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ABSTRACT BOOK

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ABSTRACT BOOK

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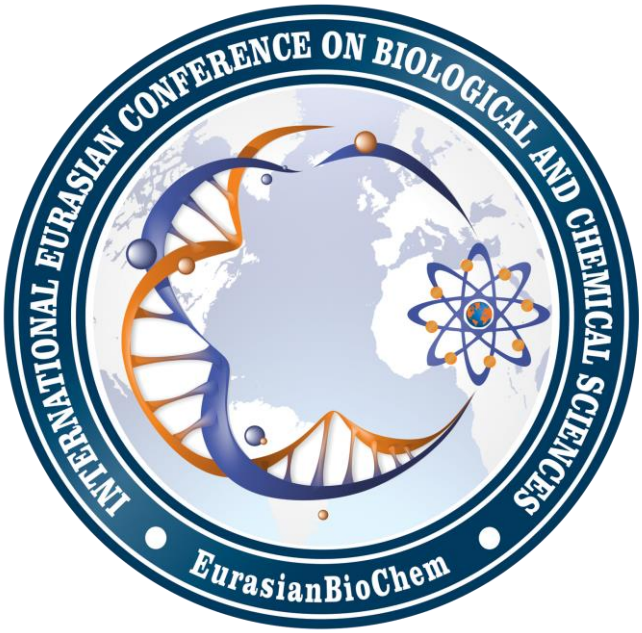

ORAL PRESENTATIONS

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➢ **ORAL PRESENTATION**

Microplastic Pollution and Aquatic Ecosystems

Sema İşisağ Üçüncü*

*Ege University, Faculty of Science, Department of Biology, Bornova-İzmir-Turkey

Sorumlu yazar e-mail:sema.isisag@ege.edu.tr

Abstract

Although they are invented only 110 years ago, plastics, our "die hard" synthetic polymers, are known as the most used man-made substances of modern word. Everybody knows that plastics are omnipresent in our ordinary lives, from packaging food and wter bottles to medical equipment, from clothing to cars, from building to furniture, from cell phones to cables.

As a result of continuously growing production and consumption, mismanaged waste and limited recycling capacities, plastic pollution is becoming a global environmental problem, especially for aquatic environment. When thought that the disposal of plastics at sea was not completely banned until the end of 1988, it is easy to concern the greatness of the problem.

Now it is well known that, once they are entered to environment, plastics gradually breakdown into persistent and smaller (<5 mm in size) particles called as microplastics. Because of their sizes and difficulties of removing, the long term effects of these fragments in aquatic environment are rightfully identified as a major environmental burden. All of the aquatic organisms are exposed to microplatics that widely dispersed in water and sediment. With their complex and persistent structures, microplastics can surely be accumulated, enter the food chain, and move up to human. Thus, not only the polymers, but also the plasticizers, dyes…etc. affects all of the organisms, and cause wide-ranging health impacts.

The multitude of cumulative toxic effects of microplastics had been attracted a growing interest in recent years. The aim of this presentation is to overview the current knowledge on aquatic microplastic pollutions, and to evaluate the new approaches improved on the solving of this environmental problem.

Keywords: Microplastic, Pollution, Aquatic Environment

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➢ **ORAL PRESENTATION**

Novel Peripheral Thiochalcone Substituted Zinc(II), Cobalt(II) and Nickel(II) Phthalocyanines: Application in Dye-Sensitized Solar Cells

Hüseyin Karaca[1]*, İlkay Şişman[1], Emre Güzel[1], Serdar Sezer[2], Faysal Selimoğlu[3], Bahar Ergezen[1], Meryem Karaca[1], Volkan Eyüpoğlu[4]

*[1]Sakarya Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Sakarya, Türkiye
[2]TÜBİTAK Marmara Araştırma Merkezi, kocaeli, Türkiye
[3]Necmettin Erbakan Üniversitesi, Konya, Türkiye
[4]Çankırı KaratekinÜniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Konya, Türkiye

Corresponding author e-mail: karaca@sakarya.edu.tr

Abstract

For dye-sensitized solar cells (DSSCs) application new metallophthalocyanines (MPcs, M = Zn, Co, Ni) bearing the chalcone, (E)-3-(4-hydroxyphenyl)-1-(thiophen-2-yl)prop-2-en-1-one, were synthesized. The characterization of all phthalocyanines were achieved by FT-IR, ^{1}H-NMR, ^{13}C-NMR and UV–Vis spectroscopy techniques. The electrochemical, optical and photovoltaic properties of all the MPcs as sensitizers were examined. Electrochemical studies show that while the ZnPc (**4**) and NiPc (**6**) give only Pc ring-based redox reactions, the CoPc (**5**) shows the redox reactions based on both the central metal and the ring due to the metal 3d orbitals locate between the Pc HOMO and LUMO. Most probably due to redox behaviour of Co(II) Pcs complex **5** sensitizer gave the lowest power conversion efficiency (0.51%). The complex **4** has the power efficiency as 1.27% although complex **6** has the power efficiency 1.11% on DSSC application. The DSSC based on complex **4** showed slightly higher power conversion efficiency compared with that of complex **6** cell. It can be attributed to higher molar extinction coefficient and narrower band gap of former than that of latter.

Keywords: Chalcone, Phthalocyanine, Central metal ions, Electrochemistry, Dye-sensitized solar cells

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➢ ORAL PRESENTATION

Methylene Blue Dye Removal Using *Sphagnum palustre* L. Bog-moss as a Reusable Biosorbent

Nalan Oya San Keskin*, Güray Uyar

Polatlı Science and Literature Faculty, Biology Department, Gazi University, Ankara 06900, Turkey

Corresponding author e-mail: oyasan@gazi.edu.tr

Abstract

At present, several technologies have been developed to remove dyes from wastewater. Adsorption is considered as an efficient approach due to its inexpensiveness, universal nature and ease of operation among various other water treatment methods. Therefore, usage of decolorization technologies which are based on the capability of different type of organism to decolorize effluents, such as adsorption, are utilized, as these technologies offer lower cost and environment friendly methods.
In this study, *Sphagnum palustre* L. Bog-moss (SPM) was used as a reusable and low-cost biomaterial for the removal of methylene blue (MB) from aqueous solution. In the batch experiments, the effects of initial pH, temperature, contact time, static/shaking conditions, adsorbent dose and dye concentration were investigated. We evaluated MB removal characteristics of moss at varying MB concentrations, and observed that moss can almost completely remove (99.5%) MB at low (50 mg l^{-1}) concentration within 1 h, while 85% dye removal was observed at a higher concentration (500 mg l^{-1}) during the same period. Equilibrium data were accurately fitted onto Langmuir, Freundlich, Toth and Linear isotherms. Investigations showed that the adsorption isotherm data were fitted well to the Langmuir isotherm. Furthermore, reusability tests revealed that *Sphagnum palustre* can be used in at least six successive decolorization steps in which the decolorization rate of the MB was found to be 65 ± 0.2% after the sixth reuse step. These results are promising and therefore suggest that Sphagnum moss could be applicable for the decolorization of dyes due to their versatility and reusability.

Keywords: Decolarization; Dye; Reusability*; Sphagnum palustre* L.

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➢ ORAL PRESENTATION

Dimethoate Pollution and Its Effects on Fish

Hikmet Yeter Çoğun[1], Tüzün Aytekin[2], Özge Temiz[3], Hazal Sağ Varkal[3], Gülbin Gök Firidin[4], Ferit Kargın [3]

[1]Department of Physiology, Ceyhan Veterinary Faculty, Cukurova University, 1330 Adana, Turkey
[2]Vocational School of İmamoğlu, Cukurova University, 01700 Adana, Turkey
[3]Department of Biology, Faculty of Science and Letters, Cukurova University, 01330 Adana, Turkey
[4]Life Science Research and Application Center, Gazi University, 06830 Ankara, Turkey

Corresponding author e-mail: hcogun@cu.edu.tr

Abstract

Pesticides are biologically active chemicals. Excessive and incorrect use of pesticides used in agricultural activities seriously harmful the environment. Dimethoate, an organophosphorus insecticide, is widely used in agricultural pests. The main objective of the present study was to investigate on the effects of dimethoate in the water and the aquatic life, especially in fish, was examined. In this review examines the biochemical and physiological effects of dimethoate toxicity in many species of fish. Due to the biochemical responses of fish in pesticide studies, the use of fish in such studies is very important.

Keywords: Dimethoate, Toxicity, fish, Pesticide, biochemical and physiologycal parameters.

This study was supported by a research project from the University of Çukurova, Scientific Research Projects Department (Project Number: FBA-2017-7756).

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➢ **ORAL PRESENTATION**

1H-Indazole Molecules Reduced the Activity of Human Erythrocytes Carbonic Anhydrase I and II Isoenzymes

Zuhal Alım

Ahi Evran University, Faculty of Science and Arts, Department of Chemistry, 40000, Kırşehir, Turkey

zuhal.alim@hotmail.com

Abstract

Carbonic anhydrase (CA) is an important metabolic enzyme family closely related to many physiological and pathological processes. Currently, carbonic anhydrase inhibitors are the target molecules in the treatment and diagnosis of many diseases. In present study, we investigated the inhibitory effects of some indazole molecules on the CA-I and CA-II isoenzymes isolated from human erythrocytes. Indazole derivatives are important heterocyclic organic molecule with a very broad range of biological activities. We showed that human CA-I and CA-II activities were reduced by of 1H-indazole, 4-bromo-1H-indazole, 6-bromo-1H-indazole, 7-bromo-1H-indazole, 4-chloro-1H-indazole, 6-chloro-1H-indazole, 7-chloro-1H-indazole at low concentrations. IC_{50}, K_i values and inhibition types for each indazole molecule were determined. The IC_{50} values were found to be 1.902, 1.296, 0.619, 0.403, 0.469, 0.560, 1.502 mM for hCA-I for 1H-indazole, 7-bromo-1H-indazole, 6-bromo-1H-indazole, 4-bromo-1H-indazole, 7-chloro-1H-indazole, 6-chloro-1H-indazole, 4-chloro-1H-indazole, respectively and 2.265, 0.812, 0.748, 0.700, 1.082, 1.083, 0.683 mM for hCA-II for 1H-indazole, 7-bromo-1H-indazole, 6-bromo-1H-indazole, 4-bromo-1H-indazole, 7-chloro-1H-indazole, 6-chloro-1H-indazole, 4-chloro -1H-indazole, respectively. K_i values were found to be 2.317±0.644 mM, 1.099±0.527 mM, 0.684±0.126 mM, 0.383±0.021 mM, 0.533±0.054 mM, 0.817±0.215 mM, 2.128±0.148 mM for hCA-I for 1H-indazole, 7-bromo-1H-indazole, 6-bromo-1H-indazole, 4-bromo-1H-indazole, 7-chloro-1H-indazole, 6-chloro-1H-indazole, 4-chloro-1H-indazole respectively. On the other hand, K_i values were found to be 3.030±0.711 mM, 1.122±0.359 mM, 0.841±0.062 mM, 0.935±0.098 mM, 0.558±0.215 mM, 2.645±0.796 mM, 0.409±0.083 mM for hCA-II for 1H-indazole, 7-bromo-1H-indazole, 6-bromo-1H-indazole, 4-bromo-1H-indazole, 7-chloro-1H-indazole, 6-chloro-1H-indazole, 4-chloro-1H-indazole respectively. Each indazole molecule exhibited noncompetitive inhibition effect. Bromine and chlorine bonded indazoles were found to be more potent inhibitory effects on carbonic anhydrase isoenzymes. In conclusion, we conclude that these results may be useful in the synthesis of carbonic anhydrase inhibitors.

Keywords: Carbonic anhydrase, human erythrocytes, indazole, inhibition.

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➢ **ORAL PRESENTATION**

Changing Trends of Carbapenem Resistance of *Escherichia coli* and *Klebsiella pneumoniae* Strains Isolated from Intensive Care Units, Inpatient Services and Outpatient's Clinics: A Five Year Retrospective Analysis

Yücel Duman

Inonu University Medical Faculty, Malatya, Turkey

Correspondingauthore-mail: yucel.duman@inonu.edu.tr

Abstract

Carbapenem resistance (CR) was rarely reported in *Klebsiella pneumoniae* and *Escherichia coli* strains until ten years ago. In recent years, increasing carbapenem resistance in gram negative bacteria is a substantial concern.

In this study; we aimed to evaluate the changing frequency of CR in *K.pneumoniae* and *E.coli* strains that were isolated from the patients from intensive care units, inpatient services and outpatients' clinics in the last four years.

Data of antimicrobial susceptibility belonging to clinical isolates of *K.pneumoniae* and *E.coli* strains determined between 2013 and 2017 were retrospectively collected from Laboratory Information System. Results were statistically analyzed.

A total 5477 *K.pneumoniae* and 16914 *E.coli* strains were included. The CR of *K.pneumoniae* strains were found as 11.6%; while of *E.coli*'s were found as 0.6%. The highest CR frequency was detected among intensive care units' isolates of *K. pneumoniae* as 20.1%. We determined that CR significantly increased in intensive care unit isolates of *E.coli* and *K.pneumoniae* about 5-10 folds throughout the study period; however, there was no remarkable change in the CR of *E.coli* strains from the outpatients' clinics.

We determined that the resistances of *K.pneumoniaee* and *E.coli* strains to carbapenems were progressively increasing by years, especially in intensive care units and inpatient services. Therefore, appropriate antimicrobial use policies sought to be considered against to this growing problem.

Keywords: *Carbapenems, Escherichia coli, Klebsiella pneumoniae, Intensive Care Units.*

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➢ **ORAL PRESENTATION**

Research of Changes in Hematological Parameters in Permetrin-Exposed Carp Fish (*Cyprinus carpio* L. 1758)

İbrahim Örün[1*], Şevket Kandemir[2], Hüseyin Polat[3], Belda Erkmen[1], Mehmet İlker Doğru[1], Arzu Doğru[4], Kenan Erdoğan[1], Gülnihal Örün[5], Nezahat Kandemir[2], Nuh Korkmaz[1]

[*1]Aksaray University, Faculty of Science and Letters, Biology Department, Aksaray, Turkey.
[2]Amasya University, Faculty of Education, Department of Elementary Education, Amasya, Turkey.
[3]Aksaray University, Faculty of ScienceandLetters, Depart. of Biotech. and Mol. Bio., Aksaray, Turkey.
[4]Aksaray University, Faculty of Education, Department of Elementary Education, Aksaray, Turkey.
[5]Aksaray University,Technical Sciences Vocational School,Aksaray, Turkey.

Correspondingauthore-mail:orunibrahim@gmail.com

Abstract

In this study, the effect of synthetic pyrethroid permethrin on the hematological parameters of carp (*Cyprinus carpio* L. 1758) fishes at acute (4 days) and subchronic (21 days) phase and at different doses (control, vehicle, 10 ppm and 20 ppm) was researched.

The carps used in the experiment were transported from Yedikır Fisheries Farm (Samsun, Turkey). They have the weight of 50-60 g and length of 12-14 cm. The experiment was carried out with a semi-static system in natural light (12h light-12h dark). During the experiment, fish were nourished with Pinar pellet feed (45% protein, 19% fat, 3% crude fiber) once a day. In fish, hematological analyzes were carried out by using commercially available kits (Cat. No. WD1153) on veterinary Ms4 (Melet Schloesing, France) which is used as a blood counting device.

The decrease in total leukocyte count (WBC), lymphocyte and granulocyte ratios, erythrocyte count (Rbc), hemoglobin (Hb) amount and hematocrit (Hct) values at the permethrin 10 ppm and permethrin 20 ppm dose groups were statistically significant according to the control group ($p<0.05$). There wasn't any statistically significant difference was found in monocyte ratios ($p>0.05$). Also in the time-dependent comparisons; WBC, lymphocyte, granulocyte, Rbc, H band Hct values were found statistically significant in the Per 10 and Per 20 dose groups ($p<0.05$).

At the end of the study, depending on the dose and duration, it was concluded that permethrin has an inhibitory property on the hematopoietic system of carpfish.

We would like to thank the Amasya University BAP Coordination Unit for supporting this project with the FMB-BAP-17-0285 code project.

Keywords: permethrin, hematological parameters, *Cyprinus carpio.*

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➢ **ORAL PRESENTATION**

The Effect of Different Antioxidants Thawed Bull Semen

Atalay Uslu*, Alper Koçyiğit

Department of Reproduction and Artificial Insemination, Faculty of Veterinary Medicine, Cumhuriyet University, Sivas, Turkey

Corresponding author e-mail: atalayuslu@hotmail.com

Abstract

In artificial insemination, one of the factors that affect success the extension of the protection solution end motility and life span it is of great importance. Thus, obtained from LHMAE 40 straws of frozen bull semen were divided into 4 groups. Each group will have 10 straws thawed on the way; group 1. In the placebo group, group 2 5 mg/ml dose of folic acid, group 3 200 µg/ml dose of vitamin E and group 4 1000 µg/ml dose of vitamin E was added. Start of sperm motility was determined as 75%. Dead-alive rate initially set at 8 - 10% and since the beginning of the study has been made of all data every hour. Fastest dead and motility in the group increased the proportion of spermatazoa group 2 again. As a result, semen antioxidant supplementation, particularly when they remain high longer than the sperm motility with vitamin E after it was noted that the intense death. Furthermore, the solution of increasing the motility end with the solution of vitamin E used in particular as they affect the motility end of antioxidants 200 µg/ml in the group were found to create a beneficial effect and they extend the motility of the sperm.

Keywords: Sperm, Antioxidant, Motility, Fertility, Folic acid, Vitamin E.

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➢ ORAL PRESENTATION

The Effect of Bovine Serum Albumin in the Cryopreservation of Kangal Dogs Sperm

Alper Koçyiğit

Department of Reproduction and Artificial Insemination, Faculty of Veterinary Medicine, Cumhuriyet University, Sivas, Turkey.

Corresponding author e-mail: vhkalper@gmail.com

Abstract

The Kangal dog significant richness of our country within region of Sivas is under risk at venereal diseases and unconscious mating. Animal genetic resources in-situ and ex-situ methods can be protected using. Ex-situ methods; animals outside the environment in which they live, to keep these animals or gametes, embryos, is to protect the cells or DNA. The protection of specific species such as stud Kangal dogs, possible by cryopreservation. The semen from Kangal dogs were diluted and frozen with two different diluents in the study. Higher values were determined by the diluent supplemented with BSA in terms of the post-thawing sperm motility (%45 and %55). As a result, it is evaluated that the addition of BSA to Tris-egg yolk-based extenders in freezing of Kangal dog semen can positively affect the fertility rates after artificial insemination.

Keywords: Kangal dog, Cryoppreservation, Extender, Motility.

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➢ **ORAL PRESENTATION**

Overcoming Centrosome Duplication Defects by the SESA Network

Bengü Ergüden

Gebze Technical University, Faculty of Engineering, Department of Bioengineering, Gebze, Kocaeli, Turkey.

Corresponding author e-mail: b.sezen@gtu.edu.tr

Abstract

The correct separation of chromosomes during mitosis is necessary to prevent genetic instability and aneuploidy which causes cancer, and other diseases. The main criteria for this is the correct duplication of the centrosome. *MPS2* is an essential gene in yeast required for the insertion of the centrosome into the nuclear membrane. Upon its deletion, cell cycle is stopped and the cell dies. Recently, we reported that Smy2 can suppress essential role of *MPS2* and co-operates with Eap1, Scp160, Asc1 for this task and we gave the name SESA network (Smy2, Eap1, Scp160, Asc1) to the system consisting of these four proteins. Detailed analysis showed that the SESA system is part of a mechanism which regulates translation of *POM34* mRNA. Thus, SESA, is a system which suppresses yeast centrosome duplication defects by inhibiting the translation of *POM34* mRNA (Sezen et. al, 2009). Although many important points regarding SESA network have been discovered, many others remain obscure. How is the information about duplication failure carried to SESA? While SESA inhibits translation of *POM34* mRNA, it has no effect on *POM152* mRNA. How does SESA choose its target protein Pom34's mRNA? Are there any other proteins than Pom34, of which SESA inhibits synthesis? Recently, we uncovered that *POM34* mRNA is the only mRNA targeted by the SESA network (Ergüden, 2017). Moreover we showed that Dhh1 is a member of the SESA network and propose that Dhh1 contributes to the highly selective nature of the inhibition of translation by SESA system (Ergüden, 2018).
Current status of the SESA project, makes an unexpected connection between centrosome duplication and translational control. In this presentation our latest results on the SESA network will be reported, possible role of the new members and targets of the pathway will be discussed.

Keywords: *S. cerevisiae*, centrosome duplication, translational control, SESA network.

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➢ **ORAL PRESENTATION**

Teeth Variations of *Canis lupus* (Mammalia: Carnivora) in Turkey

Elif Yıldız Ay, İrfan Albayrak

University of Kırıkkale, Faculty of Science and Arts, Department of Biology, Yahşihan, 71450, Kırıkkale, Turkey

Corresponding author e-mail: elifyildiz_ka@hotmail.com

Abstract

Because of the feeding habits of the carnivores in the last step of the food chain, the teeth are forced mostly during hunting, food fracture and chewing. In this sense, missing teeth and tooth anomalies are common in carnivores. This research is based on the examination of the properties of tooth structure of 25 wolves specimens collected from Turkey between 2014 and 2017. In this study, in the head skeletons belonging to the adult age group, the tooth excess, tooth missing, tooth fracture and tooth root anomaly in lower and upper jaw were examined in detail. Six of the cases were determined at the upper tooth row, and four at the lower tooth row. Unified root in the lower tooth row and P_1P_1 structure feature are among the important variations in the dentition. As a result, approximately 50% tooth loss and dental anomalies in wolves show a conformity with the literature data.

Keywords: Tooth root, dentitation, *Canis lupus*, gray wolf, Turkey

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➢ ORAL PRESENTATION

Effect of Different Level of Biyoderm® on Performance, Egg Quality Traits and Haematological Parameters in Laying Hens

E. Eren Gültepe[1], Aamir Iqbal[1], I.Sadi Çetingül[1], Cangir Uyarlar[1], Ümit Özçınar[1], Ismail Bayram[1]*

Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine, Afyon Kocatepe University, Afyonkarahisar, Turkey.

Corresponding author e-mail: aamir_vet@yahoo.com

Abstract

This study aimed to investigate the effects of Bioderm® on egg production, egg quality and some blood parameters in laying hens fed on mixed drinking water. A total of 192 Babcock white laying hens (67 weeks old) were divided into 4 groups (n=48) with 8 subgroups containing 6 hens in each. Bioderm® was added to the drinking water of the experimental groups with 0%, 2.5%, 5.0%, and 10% respectively for 8 weeks. The results revealed that feed consumption ($P<0.05$), egg mass ($P<0.05$) and egg yield ($P<0.01$) had increased significantly in the group supplemented with 10%. Moreover, the group supplemented with 2.5% displayed significant results in terms of egg weight ($P<0.01$) and egg yolk ($P<0.01$) by producing darker yellow egg yolks. Regarding immunity, the group supplemented with 5% produced higher neutrophil counts ($P<0.05$) and large amounts of IgG ($P<0.05$) indicating that significant results were also observed in the immunological response of laying hens vaccinated against the Newcastle virus. Moreover, the ALT level in serum increased ($P<0.05$) in Bioderm® treatment groups whereas glucose levels decreased significantly ($P<0.01$). It is concluded that Bioderm® showed positive effects on the performance parameters and immune system of laying hens without any adverse effects on egg traits.

Keywords: Bioderm®, Laying hen, Egg yield, Blood parameters

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➢ **ORAL PRESENTATION**

Ozone Use in Veterinary Surgical Diseases: 12 Cases

İbrahim Yurdakul

Cumhuriyet University, Faculty of Veterinary, Department of Surgery, Sivas, Turkey

Corresponding author e-mail: ibrahimyurdakul5858@hotmail.com

Abstract

Ozone is a gas with colorless, characteristic odor at room temperature consisting of three oxygen atoms (O_3). Medical ozone is always used in the form of a mixture of pure ozone and pure oxygen in concentrations between 1 and 100 µg / ml (0.05-5% O_3). It is bactericidal, fungicidal and virostatic. Increases blood circulation. Ozone causes an oxidative effect in the organism and activates the antioxidant enzyme systems. Antioxidant. It activates the immune system. Today, ozone; wound healing, tumors, peritonitis, orthopedic diseases, eye diseases and dentistry applications.

Study material consisted of 12 animals including 6 cattle and 6 kids brought to the Cumhuriyet University Veterinary Faculty Animal Hospital between 2017-2018 with various complaints. Of 6 cattle that brought to the clinic with complaints of lameness, rusterholz ulcer in 3, ungulae wound in 2, bruised solea in 1 were diagnosed. and 6 kids detected conjunctivitis

After cleansing the lesioned areas of the rusterholz ulcer, the bruised solea and the ungulae wound, ozone was applied on the gauze on the gauze cloth and applied to the surface of the lesioned areas in the buffer style and taken to the dry pressure bandage. This process was repeated every 3 days. On the average 21th day in rusterholz ulcer cases, on the 16th day in ungulae wound cases and on the 14th day in case of bruised solea recovery was detected.

Staphylococcus and gram-negative basil were isolated as causative factors in swaps from six kids belonging to the same herd with the diagnosis of conjunctivitis. Three drops of ozone were applied to the eyes of kids with conjunctivit in every 8 hours. On the third day of application at the 4 kids, and on the 5th day at 2 kids were fully healed.

As a result of this study, it is aimed to share the ozone remedy effects that have not yet been found in veterinary surgical field and to present it as a new treatment procedure to our country veterinary practice.

Keywords: Cattle, Conjunctivit, Laminit, Ozone, Wound.

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➢ ORAL PRESENTATION

Crystal Structure of Zwitterionic (E)-9-(((3-hydroxyphenyl)iminio)methyl)-1,2,3,5,6,7-hexahydropyrido[3,2,1-ij]quinolin-8-olate

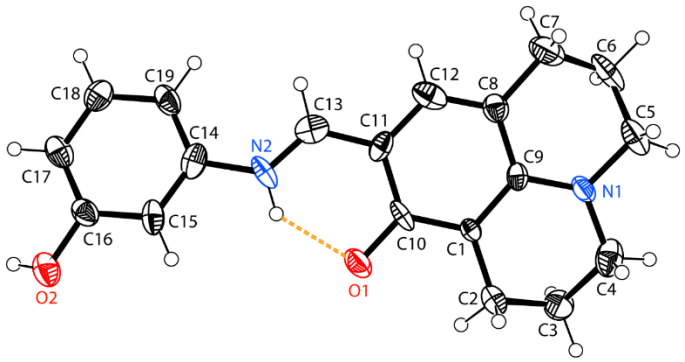
Necmi Dege[1*], Nermin Kahveci Yağcı[2], Hasan İnaç[3] , Sevgi Kansız[1]

[*1]Ondokuz Mayıs University, Faculty of Arts and Sciences, Department of Physics, Samsun, Turkey.
[2]Kırıkkale University, Faculty of Arts and Sciences, Department of Physics, Yahşihan, Kırıkkale, Turkey.
[3]Kırıkkale University, Faculty of Education, Department of Elementary Education, Science Teacher Training Programme, Kırıkkale, Turkey.

Corresponding author e-mail: necmid@omu.edu.tr

Abstract

The title compound, $C_{19}H_{20}N_2O_2$, crystallized with single molecule in the asymmetric unit and is present in the zwitterionic form. The compound was synthesized from the condensation reaction of 8-hydroxyjulolidine-9-carbaldehyde and 3-aminophenol. In solid state compound adopts the keto–amine tautomeric form, with the H atom attached to the N atom, which participates in an intramolecular N—H···O hydrogen bond with an S(6) ring motif. The conformation about the C=N bond is E. The aromatic ring of the julolidine moiety is inclined to the phenol ring by 13.00 (10)°. The fused non-aromatic rings of the julolidine moiety adopts a screw-boat conformations. In the crystal, the molecules are connected by N—H···O and O—H···O hydrogen bonds, with adjacent molecules related by a 21 screw axis, generating–A–B–A–B–zigzag chains extending along [010]. Furthermore, adjacent molecules are linked by pairs of C—H···O interactions, forming a ladder-like structure propagating along the a-axis direction.



Keywords: Schiff base; julolidine; 8-hydroxyjulolidine-9-carboxaldehyde; hydrogen bonding; zwitterion; 3-aminophenol.

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➢ **ORAL PRESENTATION**

MMP-2 Relationshıp with Intestınal Inflammation in Naturally Infected Dogs with Parvovirus

Mehmet Önder Karayiğit

University of Cumhuriyet, Faculty of Veterinary, Departmant of Pathology, Sivas, Turkey

karayigit09@hotmail.com

Abstract

Canine parvoviral enteritis a common disease in young dogs. After ingestion, the virus attacks rapidly dividing cells in the intestinal tract and bone marrow, causing severe vomiting, diarrhoea, fever, rapid dehydration, lethargy and decreased activity. Matrix metalloproteinazlar (MMP) can be categorized into collagenases (MMP-1, -8, -13), gelatinases (MMP-2, -9), stromelysins (MMP-3, -10, -12), matrilysin (MMP-7), and membrane-type matrix metalloproteinases (MT-MMP-1 through -5). MMPs are crucial for embryonic development, differentiation, proliferation, and regeneration of tissues. In humans with inflammatory bowel diseases such as ulcerative colitis and Crohn's disease, levels of MMP-2 are increased in inflamed tissue sites. However, increased levels of MMP-2 have also been reported in animals with chemical and bacterial intestinal inflammation. The aim of this study is to investigate the role of MMP-2 in the intestinal enfection of dogs with parvovirus. In this study, intestinal tissues of 23 dog naturally infected with parvovirus were stained with MMP-2 antibody and five normal healty dog tissues were used as control. At the end of the study, MMP-2 expression was significantly increased in the intestine of parvovirus-infected animals, whereas MMP-2 expression was not observed in control animals. In conclusion, these results point towards an important role of MMP-2 in mediating parvovirus-induced enteritis pathogenesis.

Keywords: Parvoviral enteritis, MMP-2, Dog.

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➢ ORAL PRESENTATION

Modified Pectin Production from Banana Peel with Ultrasound Assisted Extraction

Aslı Gök

Istanbul University, Engineering faculty, Chemical Engineering Department, İstanbul, Turkey.

Corresponding author e-mail: aslig@istanbul.edu.tr

Abstract

Banana has a large consumption at worldwide. There has been increasing of banana peel waste due to increase amount of banana processing. The waste peel is usually used as animal food but this is neither economic enough nor ecologically friendly solution whereas the other important option is extracting pectin from waste peels.

Pectin is a high-molecular weight, biocompatible, nontoxic, and anionic natural polysaccharide extracted from cell walls of higher plants. Because of its excellent emulsifying properties and stability, it can be used as gelling agent and stabilizer in food industry. It can be also used as dietary suplement after modifications. Pectin is conventionally extracted at high temperatures in the presence of strong acids like sulphuric acid hydrochloric acids. Another extraction method of pectin is Ultrasound Assited Extraction (UAE). It is an enviromentally friendly extraction method and needs short times for extraction. Moreover UAE is influence on the pectin molecular weigth. When the molecular weight is decreased, the chance of getting into the blood stream is increased so it can be used as dietary supplement. Recently the researchers have studied about reducing the molecular weight of pectin for the health benefits of modified pectin .

In this study, the pectin extraction from banana peel was performed with ultrasound assisted extraction method. The molecular weight of Banana peel pectin was reduced with different extraction conditions and the molecular weight was determined.

Keywords: Modified Pectin, Banana peel, Extraction

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➢ **ORAL PRESENTATION**

Efficient Synthesis of Potential Biological Active Benzimidazoles Containing Phenoxy Ring at C-6 Position

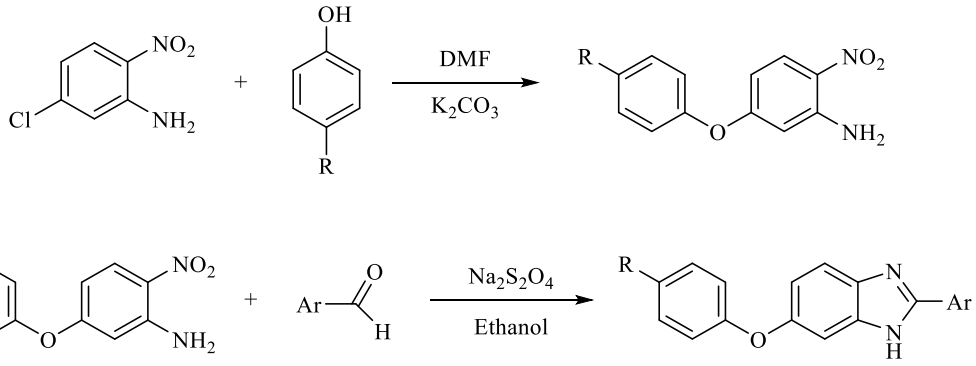
Musa Özil

Recep Tayyip Erdogan University, Art and Science Faculty, Department of Chemistry, Rize, Turkey

E-mail: musaozil@hotmail.com

Abstract

It would be rewarding to design and synthesize some novel benzimidazole derivatives bearing different moiety and to screen them for potential biological activities. These ligands and their derivatives display a wide range of pharmacological activity such as antifungal, antineoplastic-abemaciclib, anticancer, antibacterial, antitubercular, anti-inflammatory, antihypertensive, antiviral, antidiabetic, anticoagulants, and antioxidant activities [1-3].



In this study, we present a synthesis of benzimidazole compounds from 4-chloro-2-nitroaniline which have phenoxy group at C-6 position. In the literature, there were three steps for obtained such benzimidazoles with expensive catalysis such as Pt and Pd. However with this study we obtained such benzimidazole derivatives with two steps under mild conditions by using both microwave and conventional methods.

A series of novel compounds of benzimidazoles containing phenoxy derivatives were designed and efficiently synthesized with good yield by employing rapid ‘one pot’ nitro reductive cyclization. The synthetic approach provides inexpensive, rapid, and efficient routes for the access to new benzimidazole derivatives which containing phenoxy derivatives at C-6 position in good yields by microwave technique.

Keywords: Benzimidazole, Microwave, One-Pot, Cyclization.

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➢ **ORAL PRESENTATION**

AAAB Tipi Metalsiz Ftalosiyanin Sentezi ve Sıvı Kristal Özelliklerinin İncelenmesi

Ömer Güngör*, Safiye Bozkurt Ekren

Kocaeli Üniversitesi, Hereke Ö.İ.U. MYO, Kimya ve Kimyasal İşleme Teknikleri, Kocaeli, Türkiye

Sorumlu yazar e-mail: safiye@kocaeli.edu.tr

Özet

Koordinasyon bileşiklerinin önemli bir üyesi olan ftalosiyaninler günümüz teknolojik ürünleri arasında önemli bir yer tutmakta ve sıvı kristal, nonlineer optik, fotodinamik terapi, iyono elektronik, lazer boyası, bilgisayar teknolojileri vb. alanlarda yoğun olarak araştırılmaktadır [1,2].
Uzun alkil zincirleriyle periferal olarak sübstitüe edilmiş ftalosiyaninler kolomnar sıvı kristal özellik gösterirler [3].
Bu çalışma kapsamında sıvı kristal özellik gösteren ve periferal pozisyonlarda alkiltiya grupları ve amin grubu içeren AAAB tipi (asimetrik) metalsiz ftalosiyanin bileşiği sentezlenerek yapısı spektroskopik yöntemlerle aydınlatıldı. Ftalosiyanin bileşiğinin sıvı kristal özellikleri ise polarize mikroskop, DSC ve X- ışınları difraksiyon teknikleri kullanılarak aydınlatıldı.
DSC spektrumlarından elde edilen sonuçlar değerlendirildiğinde bu bileşiğin oda sıcaklığını da kapsayan geniş bir sıcaklık aralığında sıvı kristal özellik gösterdiği ve 30 ^{0}C'de alınan X-ışınları kırınımı ölçümlerinden diskotik hegzagonal kolomnar (Col_h) şeklinde sıralandıkları tespit edilmiştir [4].
Oda sıcaklığında sıvı kristal olan bu molekülün kimyasal sensör algılayıcı olarak kullanılabilirliği araştırılacaktır.

Anahtar Kelimeler: Sıvı Kristal, Ftalosiyanin, Asimetrik.

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➢ **ORAL PRESENTATION**

Yeni Metal Organik $Co[C_{12}H_8N_2]_3[BF_4]_3.H_2O$ Tek Kristalin Sentezlenmesi ve Kristal Yapısının Analizi

Nermin Kahveci Yağcı[1*], Esra Kılıç[2]

[*1]Kırıkkale Üniversitesi, Fen Edebiyat Fakültesi, Fizik Bölümü, Kırıkkale, Türkiye
[2]Milli Eğitim Bakanlığı, Özel Koru Anadolu Lisesi, Ankara, Türkiye

Sorumlu yazar e-mail: kahvecinermin@gmail.com

Özet

Bu çalışmada, $Co(BF_4)_2.6H_2O$ (Cobalt (II) tetrafluoroborate hexahydrate) bileşiği; 1,10-phenanthroline monohydrate ($C_{12}H_8N_2.H_2O$) ligantı ile tepkimeye sokularak $Co[C_{12}H_8N_2]_3[BF_4]_3.H_2O$ yeni metal organik tek kristal sentezlenmiştir. Kristale ait kırınım şiddet verileri tek kristal difraktometresi ile toplandı ve toplanan kırınım şiddet verileri SHELXS-97 ve SHELXL-97 bilgisayar programları ile çözüldü ve arıtıldı. Moleküler kristal yapının birim hücre parametreleri a = 17.5980 Å, b = 18.2950 Å, c = 23.0554 Å, $\alpha = 90°$, $\beta = 93.072°$, $\gamma = 90°$ and monoklinik yapıya sahip olduğu tespit edildi. Bu kristallere ait bağ açıları, bağ uzunlukları vb. yapısal özellikler incelendi. Elde edilen değerlerden bazıları; Co1—N2 ve N1—C2 bağ uzunlukları sırayla 1.933(5) Å, 1.355(7) Å , N2—Co1—N1 ve C1—N1—Co1 bağ açıları ise 93.81(19) °, 130.1(4) ° dır.

Anahtar Kelimeler: Kristal yapı, Yapı çözümü, Metal organik yapılar, SHELXS-97, SHELXL-97.

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➢ **ORAL PRESENTATION**

Spesifik Olmayan Bağlanma Ajanlarının İmmünosensörün Tekrar Kullanılabilirliği Üzerine Etkisi

Nagihan Soyer Tuzlalı*, Sema Salgın, Uğur Salgın

Cumhuriyet Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Sivas, Türkiye

nagehansoyer@hotmail.com

Özet

Bir immünosensörün ideal olabilmesi için yüksek hassasiyet, spesifiklik, seçicilik, tekrar kullanılabilirlik ve düşük maliyetli olması gibi özelliklere sahip olması gerekmektedir. İmmünosensörün tekrar kullanılabilir olması, sensörün üretim aşamasının tekrarını ortadan kaldırdığı için üretim maliyetini de azaltmaktadır. Tekrar kullanılabilirliğin özellik olarak arttırılabilir olmasında farklı stratejiler uygulanmakta ve bu konuda manyetik nanopartiküller, bir mıknatıs yardımı ile tepkime ortamından kolay ayrılabilmeleri ve enzim etiketli immünosensörün aktivite ölçümlerinde yıkama ve ayırma adımlarındaki kazanımlarının yüksek olması nedeni ile özellikle tercih edilmektedir.

Bu çalışmada spesifik olmayan bağlanma (NSB)'nın engellenmesinde kullanılan bovin serum albumin (BSA), Triton X-100, Polietilen glikol (PEG) ve lizin ajanlarının manyetik özellikteki prostat spesifik antijen (PSA) immünosensörünün tekrar kullanılabilirliğine etkisi incelenmiştir. Manyetik immünosensörün platformunu oluşturmak üzere birlikte çöktürme yöntemiyle sentezlenen manyetik demir oksit nanopartiküller silanlama tepkimesi ile modifiye edilmiştir. Modifiye edilmiş nanopartikül içeren tepkime ortamına N-(3-dimetilaminopropil)-N'-etil karbodiimid hidroklorür ve N-hidroksi süksinimid çapraz bağlayıcı ajanları ve NSB ajanları eklenmiş ve daha sonra sırasıyla monoklonal birincil PSA antibadi (mAb_1-PSA), PSA ve horseradish peroksidaz (HRP) enzim etiketli monoklonal ikincil PSA antibadi (mAb_2-PSA-HRP) eklenerek orbital çalkalayıcıda 4 h süresince 25 ^oC sıcaklık ve 200 rpm karışma hızı koşullarında tepkime gerçekleştirilerek manyetik PSA immünosensörü sentezlenmiştir.

Tekrar kullanılabilirlik ölçümleri için tepkime sonrasında neodyum mıknatıs ile tutulan manyetik özellikli immünosensör, deiyonize su ile yıkanarak bağlanmadan kalan yapılar ortamdan uzaklaştırılmıştır. Daha sonra immünosensör bileşeni olan HRP enziminin aktivitesi UV spektrometre (UV-1800, Shimadzu) kullanılarak belirlenmiştir. Bu işlemler her bir NSB ajanı için enzim aktivitesi gözlenmeyene kadar tekrar edilmiştir.

Anahtar Kelimeler: İmmünosensor, PSA ve tekrar kullanılabilirlik.

Bu çalışma M-538 No'lu proje kapsamında Cumhuriyet Üniversitesi Bilimsel Araştırma Projeleri (CÜBAP) Birimi tarafından desteklenmiştir.

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➢ **ORAL PRESENTATION**

Selection of Effective Support for Ru catalyst by using Fuzzy AHP and TOPSIS Methods

Kübra Kiziloğlu[1*], Duygu Yilmaz Aydin[2], Derya Öncel Özgür[2], Ümit Sami Sakalli[1]

[*1]Kirikkale University, Faculty of Engineering, Department of Industrial Engineering, Kırıkkale, Turkey.
[2]Gazi University, Faculty of Engineering, Department of Chemical Engineering, Ankara, Turkey.

Corresponding author e-mail: guldogankubra@gmail.com

Abstract

The energy requirement of a country is increasing with technological developments, population and economic growth. However, *parallel* to these *developments*, the energy resources in the world deplete as well. Although various sustainable energy sources have been discovered, hydrogen is regarded as by many to be the *energy of the future. To supply high-quality energy facilities in a wide range of applications in a clean, efficient and safe manner, the hydrogen-based energy system is considered as an advantageous and viable alternative.* Ammonia borane (AB, NH_3BH_3) is emerging as a leading solid chemical hydrogen storage carrier due to having a high- hydrogen storage capacity of 19.6 wt %, particularly for power generation in portable devices. Among the existing catalysts, ruthenium-based ones have exhibited significantly higher activity for hydrogen generation from AB. This study addresses the choosing of supported materials to enhance the performance of the ruthenium catalyst and thus provides high-hydrogen yield. An extensively used multi criteria decision making tool *fuzzy AHP* (Analytical Hierarchy Process) was used as an approach to determine the weights of criteria for the support material selection problem. The support options were ranked using the fuzzy *TOPSIS* (Technique for Order Preference by Similarity to Ideal Solution) method based on the concept that the chosen alternative should have the shortest distance from the positive ideal point and the farthest distance from the negative ideal point concurrently. According to TOPSIS results, Ru@TiO_2(anatase +rutile) was found to be the effective catalyst for hydrogen evolution from ammonia borane.

Keywords: Ammonia borane, catalytic hydrolysis, fuzzy AHP, fuzzy TOPSIS.

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➢ **ORAL PRESENTATION**

Theoretical Analysis of $TcO_3(OH).(H_2O)_2$

Zeki Büyükmumcu

Erciyes University, Faculty of Science, Department of Chemistry, 38039, Kayseri, TURKEY..

Corresponding author e-mail: zekib@erciyes.edu.tr

Abstract

Childs et al. [1] postulated that technetium is transported as $TcO_3(OH)$ in the gas phase during vitrification and condenses in the presence of water as $TcO_3(OH)(H_2O)_2$ in the solid state. TcO_3^+ and $TcO_3(OH)$ together with their S and Se analogs, TcS_3^+, $TcSe_3^+$,$TcS_3(OH)$ and $TcSe_3(OH)$, have been previously analyzed employing the hybrid meta-GGA functional TPSS [2]. In this study, $TcO_3OH(H_2O)_2$ complex have been analysed theoretically. All of the calculations have been carried out by means of Gaussian 09 program package [3]. Possible orientations of two water molecules have been examined and one of them is concluded to be the most stable one (Fig. 2). As seen from the figure, water molecules are bonded to $TcO_3(OH)$ with hydrogen bonding which has binding energy ranging in between 6.8 and 11.5 kcal/mole per water molecule. Additionally, charge, geometry, frontier orbital analysis based on the optimized structures of the isomers have been done.

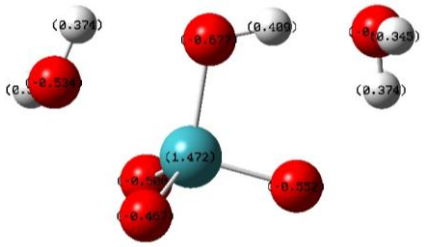

Fig.1. Geometry and Mulliken charge distribution of the most stable isomer of the complex.

Keywords: Hydrogen bonding, technetium, Mulliken charge distribution, frontier orbitals, isomer.

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➢ ORAL PRESENTATION

Preparation of PVA/Starch Scaffolds by Cryogelation Method for Tissue Engineering Applications

Seda Ceylan[1,2], Didem Demir[1], Nimet Bölgen Karagülle[1],*

[1]Mersin University, Engineering Faculty, Chemical Engineering Department, Mersin, Turkey.
[2]Adana Science and Technology University, Bioengineering Department, Adana, Turkey.

*Corresponding author e-mail:nimetbolgen@yahoo.com, nimet@mersin.edu.tr.

Abstract

In this study, a series of PVA/Starch cryogels with different additives/polymer ratios were prepared and effects of them on the characteristic properties of cryogels was investigated. Chemically cross-linked cryogels were synthesized using glutaraldehyde (GA) as the crosslinking agent. For the physically cross-linked cryogels, Sodium Dodecyl Sulfate (SDS) was used during cryogelation as the foaming agent. PVA/Starch cryogels produced by cryogelation technique in cryostat at -10 ^{o}C. Chemical groups and pore morphology of cryogels were analyzed by Fourier transform infrared spectroscopy (FTIR) and Scanning electron microscopy (SEM) respectively. SEM images revealed that with increasing PVA concentration the average pore diameters increases for chemically and physically cross-linked cryogels. The maximum average pore diameter of PVA/Starch (GA) cryogel (chemically cross-linked) and PVA/Starch (SDS) cryogels (physically cross-linked) was measured as 27.25±8.37 μm and 7.11±2.12 μm respectively. The effect of additives/polymer ratios on its swelling and degradation profiles was also investigated, and the results revealed that additives/polymer ratios affect the architecture and characteristic properties of the cryogels.

Keywords: PVA, Starch, Cryogel, Tissue engineering.

This work was supported by The Scientific Research Projects Unit of Mersin University (2018-1-TP3-2731).

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➢ **ORAL PRESENTATION**

Çocukluk Çağında Skalp Ve Kalvaryumdan Eksize Edilen Kitlelerin Histopatolojik Bulguları

Asuman Kilitci

*Ahi Evran Üniversitesi, Tıp Fakültesi, Patoloji Anabilim Dalı, Kırşehir, Türkiye

Sorumlu yazar e-mail: dr.asuk@gmail.com

Özet

Giriş:Saçlı derideki lezyonlar kalvaryumun lezyonlarından daha yaygın olmasına rağmen, demografik ve patolojik spektrumdaki tıbbi literatür sınırlıdır. Bu çalışmanın amacı pediatrik hastalarda skalp ve kalvaryum hastalıklarının görülme sıklığını ve ana histopatolojik özelliklerini belirlemektir. Olgu serimiz, bu lokalizasyondaki histopatolojik değerlendirmenin, tanı ve tedavi zorluklarını klinisyene ve patoloğa yansıtabilir.
Materyal-metod: Bu retrospektif çalışmada saçlı deride kitle şikayeti ile başvuran 33 pediatrik hastadan eksize edilen toplam 37 lezyon incelenmiştir. Klinikopatolojik bulguları, tanı, tedavi ve takip bulguları kaydedildi.
Bulgular: Hastaların 15'i kız (% 45.5), 18'i erkek (% 54.5) idi. Yaş ortalaması 14.1 (4-18) olarak belirlendi. 35 lezyon yalnızca saçlı deride bulunurken, 2 lezyondan biri (Langerhans hücreli histiyositozis (LHH), n=2) oksipital kemik konfluens sinuum üzerinde ve diğeri temporal kemikte saptandı. Lezyonların 11'i (%29.7) intradermal nevüs, 5'i (%13.5) epidermal kist, 5'i (%13.5) verruka vulgaris, 4'ü (%10.8) skuamöz hücreli papillom, 3'ü (%8.1) pyojenik granülom, 2'si kompound nevüs (%5.4), 2'si LHH (%5.4), 1'er olgu (%2.72) trikilemmmal kist, fibroepitelyal polip, follikülit, seboreik dermatit ve molloskum kontagiosum olarak belirlendi. 1 olgunun aynı operasyonda eksize edilen 2 farklı lezyonundan 2 farklı tanısı mevcuttu. 2 olgunun ise aynı tanıdan multipl lezyonları tespit edildi. 35 lezyonda basit eksizyon yeterli olurken, dura matere de uzanım gösteren 2 LHH olgusunda kranioplasti uygulandı. Olguların takiplerinde rekürrens veya malign özellikler görülmedi.
Sonuç: Çalışmamızda, pediatrik yaş grubunda saçlı deride yerleşen lezyonlar arasında en sık patolojik tanının intradermal nevüs olduğu izlendi. Kalvaryumda yerleşen her iki olgu da LHH idi. Saçlı deri ve kafatasının benign lezyonları malign lezyonlarına göre daha sıktır. Bunların büyük çoğunluğu nöral yapılarla ilişki veya intrakranial uzanım göstermez. Palpasyon sırasında kemiğe fikse olduğu saptanan lezyonlar daha fazla klinikoradyolojik değerlendirme gerektirebilir. Ayırıcı tanı için histopatolojik inceleme yapılmalıdır.

Anahtar Kelimeler: skalp, kalvaryum, histopatoloji.

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➢ ORAL PRESENTATION

Dependence of Photoelectric Properties of n-ZnO/p-Si Heterojunction Devices on Thickness of ZnO Films

M. Sbeta[1*], N.E. Koksal[1,3], A. Yildiz[2]

[*1]Ankara Yıldırım Beyazıt University, Faculty of Engineering and Natural Sciences, Department of Electrical and Electronics Engineering, Ankara, Turkey.
[2]Ankara Yıldırım Beyazıt University, Faculty of Engineering and Natural Sciences, Department of Energy Systems Engineering, Ankara, Turkey.
[3]Niğde Ömer Halisdemir Üniversitesi, Faculty of Engineering, Electrical Electronic Engineering, Niğde, Turkey.

Corresponding author e-mail: sbita6@yahoo.com

Abstract

n-ZnO/p-Si heterojunction devices were fabricated by spin coating of undoped ZnO thin films on p-Si substrates. Different spin coating cycles (1, 3, and 5) were applied for altering the thicknesses of ZnO films. The structural and morphological properties of ZnO films were investigated using XRD and AFM, respectively. The rectification behavior and photovoltaic property of the devices were analyzed from current-voltage (I-V) characteristics performed under dark and illumination conditions. The obtained results demonstrated a strong dependency, in different manners, of devices performance on the thickness of ZnO films. By increasing the spin coating cycles of ZnO films from 1 to 5 cycles, the rectification ratio at ±3 V was increased from 104 to 327, while the photosensitivity at -3 V was decreased from 3984 to 1840. The analysis of PV property of devices showed a continous increase in open circuit voltage (V_{oc}) with thickness of ZnO films, while an insignificant variation in short circuit current (I_{sc}) was observed. This study showed that performance parameters of n-ZnO/p-Si heterojunction-based devices can be strongly controlled by altering the thickness of ZnO layer, which has to be optimized according to the aimed functionality of device.

Keywords: ZnO films, spin coating, rectification ratio, photosensitivity, photovoltaic property

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➢ **ORAL PRESENTATION**

Antibacterial and Antimycobacterial Activity of 5,5-Diphenylpyrrolidine *N*-aroylthiourea Derivatives

Mahmut Ülger

Mersin University, Faculty of Pharmacy, Department of Pharmaceutical Microbiology, Mersin, Turkey

Corresponding author e-mail: mahmutulg@yahoo.com.tr; mahmutulger@mersin.edu.tr

Abstract

Aroylthiourea derivatives are intensively studied in drug research and development studies [1] due to the fact that these compounds exhibited a wide range of other pharmacological activities such as antibacterial, antimycobacterial [2, 3], anticancer [4], cholinesterase [5] and urease inhibitors [6]. In this study antibacterial and antimycobacterial activity of 5,5-diphenylpyrrolidine *N*-aroylthioureas [7], containing 4-methylbenzoyl, 2-chlorobenzoyl, 2,4-dichlorobenzoyl, and 2-naphthoyl, were evaluated using a literature method [2]. The compounds showed antibacterial activity against *S. aureus*, *B. subtilis*, *A. hydrophila*, *E. coli*, and *A. baumannii* with MIC values in the range of 31.25-125 μg/mL against these bacterial strains. Antimycobacterial activity of the compounds was investigated against the *M. tuberculosis* H37Rv strain and the compounds exhibited antimycobacterial activity in the range of 40-80 μg/mL.

Keywords: Antibacterial activity, Antimycobacterial activity, Aroylthiourea, *M. tuberculosis*

Acknowledgments: I would like to thank Assist. Prof. Dr. Yahya NURAL for supplying the compounds.

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➢ **ORAL PRESENTATION**

Effect of Geraniol on Liver Metallothionein Level in Lead Acetate Administered Rats

Ertan Yoloğlu[1*], Miraç Uçkun[2] and Ahmet Özkaya[3]

[1*] Adıyaman University, Faculty of Education, Department of Mathematics and Science Education, Adıyaman, Turkey
[2] Adıyaman University, Faculty of Engineering, Department of Food Engineering, Adıyaman, Turkey
[3] Adıyaman University, Faculty of Science and Arts, Department of Chemistry, Adıyaman, Turkey

Corresponding author e-mail: ertanyologlu82@gmail.com

Abstract

The aim of the study was to determine the effects of geraniol on liver metallothionein (MT) level in lead acetate administered rats. Lead (Pb), which is one of the most abundant toxic metals, has been known as a risk factor causing several damages such as hepatic, nephrotic, and hematologic disorders. Geraniol is the primary component of plant oils and shows a wide spectrum of pharmacological effects such as insect repellent effect, potent antimicrobial activity and antioxidant activity. Metallothioneins have been regarded as biomarkers of metal toxicity and constitute a family of low molecular weight, rich in cysteine, metal-binding proteins, mainly involved in regulation of essential metals as well as in the detoxification of non-essential metals. Animals were randomly divided into four groups as control, geraniol, Pb acetate, and geraniol + Pb acetate. Totally, twenty-eight adult male *Wistar albino* rats (n=7 each group) were used. Geraniol (50 mg/kg) was administered by an orogastric gavage with a one-day interval, and Pb acetate was given as daily 500 mg/kg in drinking water for 30 days. MT levels were measured spectrophotometrically using the method described by Viarengo et al., with some modifications. The Pb residues in the liver were determined by inductively coupled plasma mass spectrometry (ICP-MS) (NexION 350). According to our results, the highest amount of Pb was determined in Pb acetate and Pb acetate+ geraniol groups. Liver MT levels were significantly increased in Pb acetate and Pb acetate + geraniol groups when compared to the control group (p<0.05). Our results showed that Pb acetate causes an oxidative and toxic damage in the liver and geraniol may have a protective role on these adverse effects.

Keywords: Metallothionein, Geraniol, Lead acetate, Toxic effect, Rat

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➢ **ORAL PRESENTATION**

Effects of para-Substitution and Alkyl Chain Length on the Melting Points of Tunable Aryl Alkyl Pyrazolium Hexafluorophosphate Ionic Liquids

Melek Özdemir

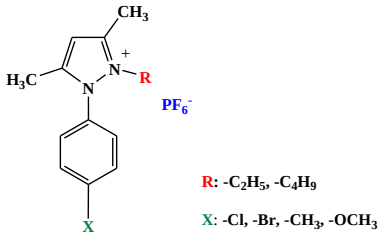
Middle East Technical University, Faculty of Engineering, Department of Environmental Engineering, Ankara, Turkey.

Corresponding author e-mail: ozmelek@metu.edu.tr

Abstract

Ionic liquids (ILs) are low-melting organic salts that consist entirely of ions. During the last decade, they have found numerous applications because of their unique properties such as wide liquid range, non-flammability and negligible vapor pressure at ambient temperatures [1-3]. The properties of ILs can be tuned by changing the constituent ions. In recent years, unlike commonly known alkyl substituted ILs a new class of ILs called Tunable Aryl Alkyl Ionic Liquids (TAAILs) has drawn attention [4-6]. By replacing one of the two alkyl groups on the cation with an aryl ring, a wide range of possibilities to tune the properties of TAAILs is provided.

In this study, eight new tunable aryl alkyl pyrazolium hexafluorophosphate ionic liquids were synthesized via three step reaction and characterized. The effects of para-substituted electron-withdrawing (-Br, -Cl) and electron-donating (-CH_3, -OCH_3) substituents and alkyl chain length (-Ethyl, or –Butyl) on the melting points of synthesized salts were investigated.



Keywords: Ionic liquids, TAAILs, Pyrazolium cations, Hexafluorophosphate, Substituent effects, Alkyl chain length

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➢ ORAL PRESENTATION

Alterations of Intestine Histology and Histomorphometry of Zebrafish (*Danio rerio*) Exposed to Polyvinyl Chloride (PVC) Microparticles

Burak Gökçe[1*], Özlem Önen[2], Mustafa Kıran[1], Sema İşisağ Üçüncü[1]

[*1]Ege University, Faculty of Science, Department of Biology, Zoology Section, Izmir, Turkey.
[2]Kafkas University, Faculty of Art and Sciences, Department of Biology, Kars, Turkey

Corresponding author e-mail: burak_gokce@yahoo.com

Abstract

Once plastic particles are entered to aquatic systems, they are effected by environmental factors and gradually break down into smaller fragments, and form microparticles (<5 mm in size). Despite the fact that microplastics are persistent in the environment, the studies on microplastic pollution are still limited. In order to gain more information on potential harmful effects of microplastics, it was aimed to research histopathological and some morphometrical alterations of the intestine of adult zebrafish exposed to different concentrations (3, 6, 9 ppm) of polyvinyl chloride (PVC) microparticles. Forty adult, male zebrafishes were randomly divided into one negative control and three experimental groups that were exposed to PVC microparticles for 96 hours. All of the fish were anaesthetized, the intestines were dissected, sectioned, stained and investigated by light microscope. Histopathological alterations were photographed, histomorphometric properties were measured, scored and compared with controls. In the epithelial cells of gastrointestinal tracts, prominently hypertrophic Goblet cells, lifting, hemorragie and necrosis were recorded. Due to the degradations of villi and microvilli, surface area of mucosa were seen as reducted. All of these effects are seemed to be related with increasing concentrations of PVC microparticles. It is clear that more research is necessary to understand the potential harmful effects of microplastic on fish, when it is considered that little is known about the fate of increasing plastic degradation in the freshwater, and/or seawater environment.

Keywords: PVC microplastic, zebrafish, intestine, histopathology, histomorphometry.

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➢ **ORAL PRESENTATION**

Investigation of Dislodging Activity of Aromatic Butanesulfonyl Hydrazone Derivatives Against Bacterial and Fungal Biofilms

Ali Öztürk[1*], Ümmühan Özdemir Özmen[2], Olkar Abdulmajed[3], Fatma Hamurcu[4] Ozan Sanlı Senturk[5]

[*1]Niğde Ömer Halisdemir University, Faculty of Medicine, Department of Medical Microbiology, Niğde, Turkey.
[2]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey.
[3]Gazi University, Faculty of Medicine, Department of Medical Microbiology, Ankara, Turkey.
[4]Bartın University, Faculty of Science, Department of Molecular Biology and Genetics, Bartın, Turkey
[5]Istanbul Technical University, Faculty of Science and Letters, Department of Chemistry, Istanbul, Turkey

Corresponding author e-mail: ozturkali@ohu.edu.tr

Abstract

Adhesion is the first stage of microbial biofilm formation that can cause serious infections. Many strategies have been evolved against the biofilm of bacteria and fungi but they failed due to the ability of these pathogens to develop multidrug resistant. Therefore, as an alternative it is necessary to find identified new chemically synthesized compounds against the biofilm. One candidate could be sulfonyl hydrazone derivatives.
In this study, we reported for the first time the potential of three aromatic butanesulfonyl hydrazone derivatives (5-bromosalicylaldehydebutanesulfonylhydrazone, 2-hydroxy-1-naphthaldehydebutane sulfonylhydrazone, indole-3-carboxaldehydebutanesulfonylhydrazones) in inhibiting biofilm adhesion of pathogenic bacteria and fungi strains at different concentrations. A total of six clinical isolates of bacteria and fungi strains were examined: 2 Gram-positive (*S. aureus* and *S. epidermidis*), 2 Gram-negative (*E. coli* and *P. aeruginosa*) and 2 of Candida spp. (*C. albicans* and *C. parapsilosis*). In vitro biofilm dislodging assay was performed by using 96-well polystyrene flat bottom plates. The bacterial and fungal biofilm dislodging percentages were calculated for each strain at different concentrations for each compound.
Our results indicate that all compounds have ability to biofilm dislodging from the plate in the range of 9-88% at 32-0,5 µg/ml concentrations. This ability observed against all bacterial and fungal species tested. Specially, against *S. aureus* and *E. coli* at 32 µg/ml concentration (up to 88% and 86%, respectively). Hence, we believe that aromatic butanesulfonyl hydrazone derivatives as an anti-biofilm agents are promising substances for its potential biomedical applications in surgical instruments and implants.

Keywords: Sulfonylhydrazone derivatives; adhesion; biofilm dislodging assay.

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➢ **ORAL PRESENTATION**

Covalent Immobilization of Laccaseenzyme onto Chemically Activated poly(2-hydroxyethyl methacrylate) Microbeads

Haydar Altınok

Kırıkkale University, Faculty of Arts and Science, Department of Chemistry, 071450, Yahşihan, Kırıkkale, Türkiye

e-mail: haydar@kku.edu.tr

Abstract

Laccase enzyme from *Trametesversicolor* was covalently immobilized onto the poly (2-hydroxyethyl methacrylate), p(HEMA) microbeads, which were activated by using epichlorhydrin (ECH).The properties of the immobilized enzyme were investigated and compared with those of the free enzyme. The optimum pH was 5.0 for free laccase, 6.0 for ECH activated p(HEMA) bound enzyme. The optimum temperature was 40°C for free invertase, 45°C for ECHactivated p(HEMA) bound enzyme. Michaelis-Mentenconstant (K_m) andmaximumreaction rate (V_{max}) valueswerefound as $1.70x10^{-2}$mM and $2.08x10^{-3}$mM.min^{-1}forfreeenzyme, respectively. $K_m$andV_{max}valueswerefound as $2.8x10^{-2}$ mM and $5.30x10^{-3}$ mM.min^{-1}for ECH activated p(HEMA) bound immobilizedenzyme, respectively.After 30days of storage at 4^{o}Cfreeenzymeretained 60% of itsoriginalactivityandimmobilizedenzymewereretained 87% of itsoriginalactivity, after 30days of storage at 4^{o}C. İmmobilizedenzymewasusedrepeatedly10times, wereretained84% of itsoriginalactivity.

Keywords: Covalent immobilization; epichlorhydrin;activation; Poly (2-hydroxyethyl methacrylate); Laccase.

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➢ ORAL PRESENTATION

Determination of the Thermal Conductivity Value of Silver Nanoparticles Synthesized in Solution

Özge Bildi Ceran[1], Semahat Barlak Doruk[1] , Barış Şimşek[1,*], Osman Nuri Şara[2]

[*1]Çankırı Karatekin University, Faculty of Engineering, Chemical Engineering Department, Çankırı, Turkey.
[2]BursaTeknik University, Faculty of Natural Sciences Architecture and Engineering, Department of Chemical Engineering, 16310, Bursa, Turkey

Corresponding author e-mail: barissimsek@karatekin.edu.tr

Abstract

In recent years, nano metal dispersions have been used as release materials in the pharmaceutical industry and conductive coating or printing materials in the ink industry. It is very important to determine the thermal conductivity value of nano metals for conductive ink and nano fluid applications. In this study; the thermal conductivity value of silver nanoparticles obtained using glucose by green chemical reduction method was determined by KD2 pro device at room temperature. The average thermal conductivity of the silver nanoparticles was determined as 0.6643 W/ m*K for 5 glucose/$AgNO_3$ mole ratios. It was observed that the thermal conductivity value of the silver nano particles increased to 0.6928 W/m*K from the 0.6643 W/ m*K when the glucose/$AgNO_3$ mole ratios reached 7.5 by volume. However, the thermal conductivity of the silver nano particles has been reached to 0.5857 W/m*K at glucose/$AgNO_3$ mole ratios is 5. The fluctuations' cause of the silver nanoparticles' thermal conductivity synthesized in dispersion can be ordered as follows. The cause of thermal conductivity fluctuations is predicted that the amount of silver nanoparticles in dispersion is low and interaction with nanoparticles.

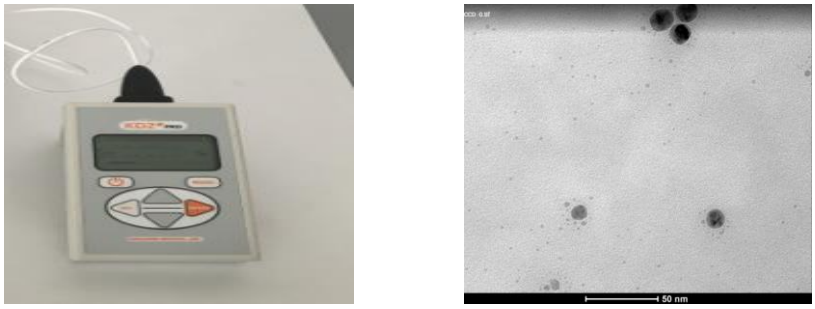

Figure 1. a) Thermal conductivity test device b) TEM image of synthesis silver nano particle (glucose/$AgNO_3$ mole ratio is 5)

Keywords: Silver Nano Particles, thermal Conductivity, Green Synthesis.

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➢ **ORAL PRESENTATION**

Tuz Stresi Altındaki Ayçiçeği Bitkisi Yapraklarında Bitki Hormonları ve SNP Uygulamalarının Sinyal Molekülleri Üzerine Etkileri

Oğuz Ayhan Kireçci[1*], Füsun Yürekli[2]

[*1] Bitlis Eren Üniversitesi, Hizan Meslek Yüksekokulu, Bitkisel ve Hayvansal Üretim Bölümü, Bitlis, Türkiye
[2]İnönü Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Malatya, Türkiye

Sorumlu yazar e-mail: kireccioguzayhan@gmail.com

Özet

Bu çalışmada, tuz stresinin ayçiçeği (*Helianthus annuus* L. cv. Tarsan-1018) bitkisinin yaprak dokularındaki sinyal iletim molekülleri ve prolin miktarı üzerindeki etkileri araştırılmıştır. Bunun için Ayçiçeği bitkisi (*Helianthus annuss* L. cv. TARSAN – 1018) Trakya Tarımsal Araştırma Enstitüsü aracılığıyla temin edilmiştir. Yapılan ön denemelerle NaCl şartlarına dayanabilecekleri maksimum konsantrasyon belirlenmiştir. Denemeler sonucunda 300 mM NaCl konsantrasyonun maksimum tuzluluk konsatrasyonu olduğu saptanmış ve çalışmada tu stresi oluşturmak için kullanılmıştır. Alınan örnekler sıvı azot içinde dondurulmuş ve analizler yapılıncaya kadar -40°C ısıda derin dondurucuda muhafaza edilmiştir. NaCl (300 mM), SNP (100 µM), ABA (100 µM) ve IAA (100 µM) kullanılarak deney grupları; kontrol, 300 mM NaCl, 100 µM SNP, 300 mM NaCl+ 100 µM SNP, 300 mM NaCl+ 100 µM ABA, 300 mM NaCl+ 100 µM IAA, 300 mM NaCl+ 100 µM GA, 300 mM NaCl + 100 µM SNP + 100 µM ABA, 300 mM NaCl + 100 µM SNP + 100 µM IAA, 300 mM NaCl + 100 µM SNP + 100 µM GA, 100 µM ABA, 100 µM IAA ve 100 µM GA olacak şekilde oluşturulmuştur. 5 hafta boyunca Hoagland kültür çözeltisinde kontrollü iklim odasında (25±2 ^{o}C'de %60-65 nem) yetiştirilmiş ve 5. haftanın sonunda yukarıdaki gruplara göre 72 saat süreyle uygulamalar yapılmıştır. 72. saat sonunda örnekler alınmıştır.Nitrik oksit, cGMP ve Ca^{+2} analizleri kit ile belirlenmiştir. Elde edilen sonuçlar; tuz stresinin sinyal moleküllerinin miktarında artışa neden olduğunu, SNP uygulamasının ise sinyal molekülleri üzerine olumlu etki yaptığını göstermiştir. Hormonların sinyal molekülleri ile sinerjistik etkileşim yaptığı da belirlenmiştir.

Anahtar Kelimeler: Bitki hormonları, *Helianthus annuus*, Tuz stresi, , Sinyal molekülleri

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➢ **ORAL PRESENTATION**

An Efficient Enantioselective Route to Medicinally Privileged Chromenes

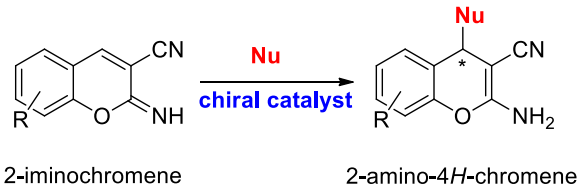
Gamze Koz

Bursa Technical University, Faculty of Natural Sciences, Architecture and Engineering, Department of Chemistry, Bursa, Turkey.

gamzedkoz@gmail.com

Abstract

Functionalized chromenes are components of numerous natural products. Among various chromene structures, 2-amino-4*H*-chromenes are especially important for medicinal applications. Within this report, asymmetric Michael addition of a variety of nucleophilic reagent to 2-iminochromenes was performed successfully. A series of substituted 2-amino-4*H*-chromenes were synthesized using different types of chiral catalysts and the enantiomeric excesses were determined with HPLC.



2-iminochromene 2-amino-4*H*-chromene

This is a practical method using easily accessible chiral catalysts. Besides the substrate scope of the reaction is wide compared to the present methods as it is possible to use substituted 2-iminochromenes and different types of nucleophiles.

Keywords: 2-iminochromene, asymmetric Michael addition, chiral catalyst

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➢ **ORAL PRESENTATION**

Importance of Seconder Metabolites in Animal Nutrition

Mehmet Tazeoglu, Yavuz Gurbuz

University of Kahramanmaras Sutcu Imam, Faculty of Agriculture, Department of Animal Science, Campus of Avsar, Kahramanmaras-TURKEY

Corresponding author e-mail: yavuz@ksu.edu.tr

Abstract

The main function of secondary metabolites produced by plants and called secondary minerals is protection of the plant. Among them, secondary metabolites including terpenes, phenolics, nitrogen (N) and sulfur (S) containing compounds are effective in defense of abiotic stresses in plants against various plant embryos and pathogenic microorganisms. These secondary metabolites can affect nutritional assessment, animal performance and animal health positively or negatively. Therefore, they are important in determining the use and amount of feeds in the preparation of rations. These are micronutrients found in feeds and often referred to as anti-nutritional factors. The absorption of micro and macro nutrients can be a negative and positive effect on these substances. Therefore, the harmful effects of anti-nutritional factors vary depending on the concentration in the feed, the chemical structure, the interaction with other elements in the environment and the duration of consumption. It appears that there are no direct roles of second-hand metabolites in the transport of dissolved matter, transport, protein synthesis, digestion, differentiation, or in the formation of carbohydrates, proteins and lipids. Because the secondary metabolites are often encountered only in a particular species or close species, the primary metabolites are found in all the members of the plant kingdom. Therefore, in this article, plants will be informed about herbivores, pathogenic microbes, and seconder compounds and their functions that are effective in protecting themselves against various abiotic stresses. Some studies have focused on the harmful effects of these compounds on animals and how to alleviate them. However, studies on the use and effects of secondary metabolites in rations have been put on the agenda in order to remove the anxiety that human chemical compounds used to increase the performance, health and well-being of animals have had. As a result, these compounds have recently started to be used as natural feed additives, instead of chemical feed additives, in animal wrecks. In this review, the mechanisms of action of secondary minerals composed of hydrophilic and hydrophobic compounds and their effects on livestock will be given.

Keywords: Secondary metabolites; animal feed, feed additive.

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➢ ORAL PRESENTATION

Ascorbic Acid Improves Sperm Motility of Rainbow Trout *Oncorhynchus mykiss*

Filiz Kutluyer, Önder Aksu, Mehmet Kocabaş, Abdullatif Ölçülü

[1]Munzur University, Fisheries Faculty, 62000, Tunceli, Turkey.
Karadeniz Technical University Faculty of Forestry, Department of Wildlife Ecology & Management 61080, Trabzon, Turkey.

Corresponding author e-mail: filizkutluyer@hotmail.com

Abstract

Experiments were designed to examine the effect of ascorbic acid addition on sperm motility of rainbow trout *Oncorhynchus mykiss*. Activation solution was supplemented with levels of 0 mM (Control), 1 mM, 2 mM, 4 mM and 8 mM ascorbic acid and, motility and survival of sperm cells were assessed. Significant effect of ascorbic acid addition was determined on the percentage and duration of motile spermatozoa ($p<0.05$). The maximum increase was evoked at the highest concentration (8 mM). Consequently, we showed that L-arginine supplement can improve sperm motility of *O. mykiss*.

Keywords: Ascorbic acid, sperm quality, *Oncorhynchus mykiss*, rainbow trout.

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➢ ORAL PRESENTATION

Metastatic Breast Cancer Cell Line MDMB231 Shows Increased Adhesion to Extracellular Matrix Proteins

Ediz Sarıışık

Giresun University, Department of Biology, Giresun, Turkey

Corresponding author e-mail: ediz.sariisik@giresun.edu.tr

Abstract

During metastasis in breast tissue, breast cancer cells need to interact with the components of breast tissue. These components are mainly extracellular matrix proteins (ECM). It is known that extracellular matrix proteins play an important role in the development, differentiation, spreading and adaptation of cancer cells to the tissues they spread. Cancer cells interact with different ECM proteins during process of cancer development. As the cancer cells spread through the basal membrane, content of the extracellular material alters with the developing cancer, thereby metastazing cancer cells deal with several ECM proteins like collagen and fibronectin. Therefore, we have studied the interaction of breast cancer cells, namely MDMB231 and MCF7 lines, with the ECM matrix proteins collagen type-I (Col-I) and fibronectin (Fib). Adhesive capacity of the cancer cells was measured with the AFM-based single cell force spectroscopy and fluorescence microscopy-based adhesion assay and compared between two different cancer cell lines on two different ECM proteins coated surfaces. Metastatic breast cancer cell line MDMB231 dissipated more energy during the forced de-adhesion AFM experiments and showed significantly more adhesive and stronger bonds compared to MCF7 cells, especially when they had contact with the Col-I protein. Moreover, adhesion assays showed that metastatic MDMB231 cell densities were significantly higher than the non-metastatic cell MCF7 on both of the ECM coated surfaces, Col-I and Fib.

Keywords: Breast cancer, cell adhesion, ECM proteins

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➢ ORAL PRESENTATION

Efficiency of A Waste Phyco-Biomass for Bioremoval of An Unsafe Synthetic Food Dye from Aqueous Area

Fatih Deniz*, Hakan Yildiz

Harran University, Bozova Vocational School, Department of Environmental Protection Technologies, 63850 Bozova/Sanlıurfa, Turkey

Corresponding author e-mail: f_deniz@outlook.com

Abstract

This research was focused on the biosorption of a hazardous synthetic food dye (Food Green 3) from aqueous solution onto a green marine macroalgae (*Ulva lactuca*) waste biomass. A series of batch biosorption studies were conducted and the effects of solution pH, dye concentration, quantity of biosorbent and contact time on the dye bioremoval were investigated. The biosorption data of kinetic and equilibrium were modeled using various mathematical models. The dye removal increased with increased pH, dye concentration and contact time, and decreased with increased biosorbent quantity. The equilibrium state was reached within about 120 min. The process kinetics was best described by Elovich model while the isotherm data of biosorption best obeyed Langmuir equation. The obtained results presented an interesting option for bioremediation of contaminated environments with synthetic dye molecules.

Keywords: Biosorption; Waste phyco-biomass; Marine macroalgae; Synthetic food dye.

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➢ **ORAL PRESENTATION**

Türkiye İçin Yeni Bir Epifitik Briyofit Birliği (*Leucobryo-Tetraphidetum pellucidae*)

Mevlüt Alataş[1*], Nevzat Batan[2], Tülay Ezer[3]

[*1] Munzur Üniversitesi, Mühendislik Fakültesi, Biyomühendislik Bölümü, Tunceli, Türkiye
[2] Karadeniz Teknik Üniversitesi, Maçka Meslek Yüksek Okulu, Trabzon, Türkiye
[3] Niğde Ömer Halisdemir Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Niğde, Türkiye

mevlutalatas@hotmail.com

Özet

Bu çalışmada, Türkiye'deki 122 Önemli Bitki Alanından biri olan Doğu Karadeniz Dağları'nın sınırları içerisinde yer alan Kamilet Vadisi (Artvin-Arhavi) ve çevresinin epifitik briyofit vejetasyonu araştırılmıştır. 2016 yılının farklı vejetasyon dönemlerinde, ağaç gövdelerinden alınan örneklik alanların, klasik Braun-Blanquet metodu ve Multivaryete analiz yöntemleri (TWINSPAN ve DECORANA) ile değerlendirilmesi sonucunda; *Leucobryo-Tetraphidetum pellucidae* birliği Türkiye'den ilk kez tanımlanmıştır. Tanımlanan bu birlik, *Cladonio digitatae - Lepidozietea reptantis* Jez. & Vondr. 1962 sınıfı, *Cladonio digitatae - Lepidozietalia reptantis* Jez. & Vondr. 1962 ordosu ve bu ordonun *Tetraphidion pellucidae* von Krusenstjerna 1945 alyansının karakteristiklerini bulundurmasından dolayı bu sınıf, ordo ve alyansa bağlı olarak sınıflandırılmıştır. Birliği oluşturan 20 taksondan 6'sı ciğerotu 14'ü karayosunu olup karayosunlarının 8'i pleurokap 6'sı akrokarptır. Birliğin karakteristiği olan higrofit takson *Tetraphis pellucida*, en yüksek tekerrüre sahip ikinci takson olup örneklik alanlar içerisinde kalıcılığı % 78'dir. Ekolojik özellikler açısından ise birliğimiz; mezo-higrofitik karakterli olup asidik ve yarı nötral gölgeli alanlarda yayılış göstermektedir.

Anahtar Kelimeler: Briyofit, Epifitik, Vejetasyon, Kamilet Vadisi, Türkiye

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➢ **ORAL PRESENTATION**

Covalent Functionalization of Single-Walled Carbon Nanotubes with Ciprofloxacin to Improve Its Antibacterial Activity

Mohyeddin Assali[1*], Abdel Naser Zaid[1], Farah Abdallah[1], Motasem Almasri[2], Rasha Khayyat[3]

[*1]Department of Pharmacy, Faculty of Medicine and Health Sciences, An Najah National University, Nablus, Palestine.
[2]Department of Biology and Biotechnology, Faculty of Science, An Najah National University, Nablus, Palestine.
[3]Department of Biomedical Sciences, Faculty of Medicine and Health Sciences, An Najah National University, Nablus, Palestine

Corresponding author e-mail: m.d.assali@najah.edu

Abstract

Despite the modern medicinal chemistry in designing new therapeutic agents by using different new innovative techniques in molecular modeling and combinatorial chemistry, beside to their expensive cost, infectious diseases continue to be one of the greatest health challenges worldwide, the demand toward alternative agents is continuously increasing. Recent advancement in nanotechnology has expanded our ability to design and construct nanomaterials to treat bacterial infections. Carbon nanotubes are one among these nanomaterials. Herein, we describe the development of new nanoantibiotic based on the covalent functionalization of the single-walled carbon nanotubes (SWCNTs) with multiple molecules of ciprofloxacin. The prepared nanoantibiotics were characterized using different techniques, including transmission electron microscopy, thermogravimetric analysis and Raman spectroscopy. The characterization of the nanoantibiotic confirmed the successful covalent functionalization of the SWCNTs with 55% of functionalization as has been observed by thermogravimetric analysis. The release profile revealed that 90% of the loaded ciprofloxacin was released within 2.5 h at pH 7.4. Interestingly, the results of the antibacterial activity indicated that the functionalized SWCNTs have significant increase in the antibacterial activity against the three strains of bacteria – by 16-fold for Staphylococcus aureus and Pseudomonas aeruginosa and by 8-fold for Escherichia coli – in comparison to the ciprofloxacin free drug. Moreover, the synthesized nanoantibiotic showed high hemocompatibility and cytocompatibility over a wide concentration range.

Keywords: Hydrophilic/Hydrophobic Balance, Carbon Nanotubes, Nanoantibiotic, Biocompatibility

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➢ ORAL PRESENTATION

Positive Matrix Factorization Studies in the Coarse and Fine Mode Aerosols Collected in Bolu Atmosphere

Hatice Karadeniz[1*], Serpil Yenisoy Karakaş[1]

[*1]Faculty of Art and Sciences, Department of Chemistry, Bolu, Turkey

Corresponding author e-mail: yenisoykarakas_s@ibu.edu.tr

Abstract

Daily coarse and fine mode teflon filter were collected in the campus of Abant İzzet Baysal University between March 2013 and February 2014. Teflon filters were used to determine the amounts of ions (NO_3^-, SO_4^{2-}, NH_4^+) and elements (Li, Be, Na, K, Mg, Al, P, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ge, As, Se, Rb, Sr, Y, Mo, Cd, Sn, Sb, Cs, Ba, La, Ce, Pr, Nd, Eu, Sm, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, W, Hg, Pt, Au, Pb, Bi, Tl, Th, U). For the analysis, ICP-MS and ion chromatography were used. The measured concentrations of each parameter were evaluated statistically by using EPA Pozitive Matrix Factorization (PMF) version 5.0. The results of PMF combined with back trajectories gave 8 factors affecting the sampling site for both particulate modes. They were named as traffic, coal and wood burning, aged aerosol, agricultural activities, polluted soil, iron-steel works, soil, sea-long range transportation for coarse particulate matter and soil (Saharan effect), urban factor, sea-long range transportation, poultry sector, coal and biomass burning, traffic-mining, aged aerosol, waste incineration-iron-steel works for fine mode.

Keywords: Coarse particulate matter, fine particulate matter, elements, ions, PMF

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➢ **ORAL PRESENTATION**

Kıl Keçilerinde İntestinal Kanal Müsinlerinin Histokimyasal Değerlendirilmesi

Zelal Karakoç

Siirt Üniversitesi Veteriner Fakültesi, Histoloji ve Embriyoloji Anabilim Dalı, Siirt

zelalkarakoc@siirt.edu.tr

Özet

Gastrointestinal kanal, dış dünyadan yiyecek içeceklerle gelen zararlı ajanlara (patojen mikroorganizma, kimyasal ajanlar), besin maddelerinden oluşan antijenlere ve normal gastro-intestinal flora orijinli antijenlere karşı savaşırken geliştirdiği savunma mekanizmalarından biri sistemin lümene bakan yüzeyini kaplayan ve viskoelastik yapıda olan mukus tabakasıdır. Bu çalışma, kıl keçilerinin bağırsaklarındaki mukusun salgı kompozisyonlarını belirleyerek, salgı ürünlerinin sindirim sistemindeki koruyucu rolünün anlaşılmasına yardımcı olacaktır. Bununla birlikte, hastalık etkenlerine karşı gastro-intestinal sistemde bariyer olarak görev yapan musinlerin, sindirim sistemi mukozası ile ilişkili birçok hastalığın mekanizmasının anlaşılmasına da katkı sağlayarak, ekonomik değeri yüksek olan kıl keçilerinde sindirim sistemi hastalıklarından kaynaklı ekonomik kayıpların önüne geçilebileceği düşünülmektedir. Çalışmada 6-8 aylık oğlaklara ait bağırsak dokuları temin edilip, ince bağırsakların 3 bölgesinden (deodenum, jejenum, ileum) ve kalın bağırsakların kolon kısmından doku parçaları alındı. Rutin histolojik takipten sonra alınan kesitlere Phenylhydrazine-PAS boyama, Alcian Blue (pH.2.5) -PAS boyama ve Alcian Blue (pH.2.5)-Aldehyde Fuchsin histokimyasal boyamaları uygulandı. Genç hayvanların bağırsaklarında nötral müsinlerin, mikst müsinlere oranla daha yoğun bulunduğu saptandı. Tüm bağırsak bölümlerinin karboksilli müsinler yönünden zayıf olduğu belirlendi. Duodenumdan kolona doğru N-asetil siyalomüsinlerin arttığı, özellikle de kolon da derinde yer alan bezlerde daha zengin olduğu ortaya kondu.

Anahtar Kelimeler: Bağırsak, histokimya, kıl keçisi, mukozal bariyer.

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➢ ORAL PRESENTATION

Bisphenol a Levels in Ankylosing Spondylitis

Ramazan Okur

Mustafa Kemal University, Science and Letters Faculty, Department of Chemistry, 31024 Hatay, Turkey

ramazanokur81@hotmail.com

Abstract

Ankylosing Spondilitis (AS) is systemic inflammatory chronic disorder that mainly involves axial skeleton and the sacroiliac joints causing characteristic inflammatory back pain, stiffness, and often peripheral arthritis. The disease is characterized by new bone formation, which leads to the development of syndesmophytes and ankylosis of the spine and sacroiliac joints. Although the etiology of AS is unidentified, combinations of genetic and environmental factors are responsible to produce clinical disease (Özgöçmen et al., 2012). Bisphenol A (BPA) which act as a protective lining on the inside of metal-based food and beverage cans, is a chemical produced in large quantities for use primarily in the production of polycarbonate plastics such as hard plastic bottles and epoxy resins. BPA is an endocrine disruptor that has been shown to cause negative health effects in animal studies. BPA has estrogenic properties that can bind and activate estrogen receptors (Fernandez and Russo, 2010). The aim of this study is to investigate the relationship between ankylosing spondilitis and concentration of BPA in serum samples.
The study had a total of 80 consecutive subjects, including 50 ankylosing spondilitis patients and 30 healthy volunteers. The mean value of BPA was found 4.42 ng ml^{-1} in ankylosing spondilitis patients and 0.57 ng ml^{-1} in control group. These data clearly show that serum BPA levels are significantly higher in patients with AS in comparison to normal group ($p = 0.006$). Although there is a positive relationship between BPA and body mass index, we did not find such a relation in our AS patients and in our controls. High levels of BPA in our patients may be due to delay in elimination.

Keywords: Ankylosing Spondilitis (AS), bisphenol A (BPA), HPLC.

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➢ **ORAL PRESENTATION**

A Novel Thresholding Procedure for Assessing Scale-Free Gene Co-Expression Networks

Muhammed Erkan Karabekmez

Istanbul Medeniyet University, Faculty of Engineering and Natural Sciences, Department of Bioengineering, Istanbul, Turkey.

Corresponding author e-mail: erkan.karabekmez@medeniyet.edu.tr

Abstract

Expression of functionally related genes are co-regulated upon external and internal disturbances in living systems. Network biology is an emerging sub-discipline in biology which considers biological associations and interactions as mathematical networks. Biological networks are supposed to have scale-free topology. There are various approaches in the literature to convert correlated changes in mRNA levels to interactions of a corresponding network. These approaches are obliged to assess scale-free gene co-expression network. In this study, an alternative and multi-parameter function was used for thresholds of a yeast transcriptomic dataset collected from literature. The validity of this novel thresholding function for obtaining scale-free gene co-expression networks was shown and a guideline for its parameter optimization was suggested.

Keywords: Network Biology, Gene Co-expression Networks, Scale-free Topology.

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➢ ORAL PRESENTATION

Sesame Oil Has Gastroprotective and Anti-Oxidative Properties: An Experimental Study in Rats with Indomethacin-Induced Gastric Ulcers

Nurulhunda Hanci[1], Fehmi Odabasoglu[2], Fadime Atalay Dumlu[2], Ozlem Aydin Berktas[3], Zerrin Kutlu[1], Elif Cadirci[4], Mesut Halici[5], Zekai Halici[4]

[1]Faculty of Pharmacy, Dep. of Biochemistry, Ataturk Univ., 25240, Erzurum-Turkey.
[2]Faculty of Medicine, Dep. of Medical Biochemistry, Kafkas Univ., 36100, Kars-Turkey.
[3]Faculty of Healthy Science, Dep. of Nursing, Giresun Univ., 28100, Giresun-Turkey.
[4]Faculty of Medicine, Dep. of Pharmacology, Ataturk Univ., 25240, Erzurum-Turkey.
[5]Faculty of Veterinary, Dep. of Biochemistry, Ataturk Univ., 25240, Erzurum-Turkey.

Abstract

Introduction: Sesame oil (SO) is a component of the traditional health food in India as well as in oriental countries and has long been thought to possess the ability to prevent various diseases. We examined the protective effects of sesame oil against acute gastric mucosal damage induced in rats by nonsteroidal anti-inflammatory drug indomethacin (IND).
Material and Methods: We also intended to determine the relation between antiulcer effect of SO and its antioxidant properties by biochemical evaluation. In this study a total of 5 rat groups were used for ulcer experiment. Antiulcer effects of SO have been investigated on 24 hour fasted 5 rat groups with indomethacine (IND)-induced ulcer model in the presence of positive (Famotidine, FAM), negative (untreated IND group) and intact control groups. In ulcer experiments, two doses of SO exerted significant anti-ulcerogenic effects. In gastric tissues, sesame oil administration decreased the level of LPO and activities of CAT, GR which were increased after IND application.
Results and Discussion: The results suggest that the gastroprotective properties of SO, which has a strong anti-oxidative potency, could be related to its positive effects on activities of the CAT, MPO enzymes and levels of LPO in gastric tissues in rats.

Keywords: Sesame oil, Indomethacin, Gastroprotective effect, Vegetable oil, Antioxidant enzyme

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➢ **ORAL PRESENTATION**

Sıçanlarda Metotreksat Kaynaklı Karaciğer Hasarına Karşı E vitaminin Etkileri

Ahmet Uğur Akman[1*] Zuleyha Erişgin[2] Sibel Türedi[3] Yavuz Tekelioğlu[3]

*[1] Sağlık Bilimleri Üniversitesi Trabzon Kanuni Eğitim Araştırma Hastanesi, Trabzon, Türkiye
[1] Sağlık Bilimleri Üniversitesi Trabzon Kanuni Eğitim Araştırma Hastanesi, Trabzon, Türkiye
[2] Giresun Üniversitesi, Tıp Fakültesi, Histoloji Anabilim Dalı, Giresun,Türkiye
[3] Karadeniz Teknik Üniversitesi, Tıp Fakültesi, Histoloji Anabilim Dalı, Trabzon, Türkiye

Sorumlu yazar e-mail: ahmetugurakman@hotmail.com

Özet

Bu çalışmada sıçanlarda Metotreksat (MTX) kaynaklı karaciğer hasarına karşı E vitamininin etkilerinin araştırılması amaçlandı.
Çalışmada 32 adet erişkin erkek Spraque dawley tipi sıçan kullanıldı ve 4 gruba (n=8) ayrıldı. Kontrol grubuna deney süresi (5 gün) boyunca intraperitonal (i.p.) serum fizyolojik verildi. MTX grubuna sadece çalışmanın ilk günü 20 mg/kg i.p. olarak tek doz MTX uygulandı. E vitamini grubuna 5 gün boyunca 100 mg/kg E vitamini i.p. olarak uygulandı. MTX+E vitamini grubundaki sıçanlara ise çalışmanın ilk günü 20 mg/kg i.p. MTX uygulandı ve daha sonra ilk günde dahil olmak üzere 5 gün boyunca 100 mg/kg i.p. olarak E vitamini uygulandı. Deney süresinin bitiminde tüm hayvanlar sakrifiye edilerek karaciğerleri alındı. Karaciğer doku örnekleri ışık mikroskobunda histopatolojik olarak değerlendirildi. Hepatositlerdeki apoptozu değerlendirmek için, doku örneklerinin bir kısmı enzimatik parçalama yöntemi ile süspansiyon haline getirildikten sonra akım sitometrik incelenmesi yapıldı.
Histopatolojik değerlendirmeler sonucunda, kontrol ve E vitamini gruplarında karaciğer yapısı normal olarak izlendi. MTX grubunda hepatosit dejenerasyonu,sinüzoidal dilatasyon, mononükleer hücre infiltrasyonu, vasküler konjesyon, hepatosit hipertrofisi, hepatositlerde vakuolizasyon ve piknotik çekirdek bulguları gözlendi. MTX+E vitamini grubunda MTX' in oluşturduğu bozuklukların önemli ölçüde düzeldiği görüldü. Akım sitometri analizine göre apoptotik indeks en yüksek MTX grubunda bulunurken, MTX+E vitamini grubunda ise MTX grubuna göre anlamlı olarak azaldığı gözlendi.
Metotreksatın karaciğerde oluşturduğu hasara karşı, E vitaminin koruycu etkisi bulunmaktadır.

Anahtar Kelimeler: Akım sitometri, E vitamini, Karaciğer, Metotreksat, Sıçan.

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➢ **ORAL PRESENTATION**

CLEA Biyokatalizörleri ile Rasemik Karışımın Enzimatik Kinetik Rezolüsyonu

Mustafa Çakal*, Sema Salgın, Uğur Salgın

Cumhuriyet Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği, Sivas, Türkiye.

Sorumlu yazar e-mail: mcakal@cumhuriyet.edu.tr

Özet

Endüstriyel prosesler için kararlı, dayanıklı ve geri kazanılabilir biyokatalizörlerin geliştirilmesi günümüzde araştırmaların odak noktası haline gelmiştir. İşletme koşullarında uzun süreli enzim kararlılığının sağlanamaması, enzimin geri kazanımı ve yeniden kullanımının zorluğu gibi bazı dezavantajlar enzimlerin endüstriyel uygulamalarını engellemektedir. Bu dezavantajları gidermek için, immobilizasyon teknolojisi enzim özelliklerini geliştirmek adına potansiyel bir araç olarak düşünülmektedir. Çapraz bağlı enzim agregatları (Cross-linked enzyme aggregates; CLEAs) yakın geçmişte enzim immobilizasyonu için yeni ve çok yönlü bir yaklaşım olarak ortaya çıkmıştır.

Bu çalışmada, rasemik naproksen metil esterinin kinetik rezolüsyonunu katalizlemek için *Candida rugosa* lipaz enziminin manyetik ve manyetik olmayan CLEA formları sentezlenmiştir. Manyetik CLEA sentezinde kullanılan manyetik demir oksit nanopartiküller (MIONP) birlikte çöktürme yöntemiyle üretilmiş ve yüzeyleri silanlama tepkimesi ile modifiye edilmiştir. Manyetik CLEA'ları sentezlemek için MIONP ve CLEA konjügasyonu sağlanmıştır. Manyetik ve manyetik olmayan CLEA'ların performanslarını karşılaştırmak için rasemik naproksen metil esterinin (NME) kinetik rezolüsyonu, sulu tampon çözelti/*izo*-oktan iki fazlı sisteminde incelenmiştir. Substrat olarak kullanılan NME'nin enantiyomerik aşırılık (%ee_s) değeri üzerine pH ve sıcaklığın etkisi kesikli reaktör sistemde incelenmiştir.

Anahtar kelimeler: Manyetik CLEA, CLEA, rasemik karışım, kinetik rezolüsyon.

Bu çalışma TÜBİTAK (113Z170) ve Cumhuriyet Üniversitesi Bilimsel Araştırma Projeleri Fonu (CÜBAP M-591) tarafından desteklenmiştir.

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➢ **ORAL PRESENTATION**

Siklodekstrin Nanosüngerlere İlaç Yüklemesi Üzerine Sıcaklık Etkisi

Halil İbrahim Çetintaş*, Sema Salgın, Uğur Salgın

Cumhuriyet Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Sivas, Türkiye.

hcetintas@cumhuriyet.edu.tr

Özet

Suda çözünürlüğü düşük olan ilaçların sudaki çözünürlüğünü artırmak, günümüzde araştırmacıların en sık karşılaştığı başlıca sorunlardan biridir. İlaçların çözünürlük problemlerini ortadan kaldırabilecek etkin ilaç taşıyıcı sistemlerden biri olan nanosünger (NS)'ler bu nedenle giderek daha fazla dikkat çekmektedir. NS'ler, suda çözünürlüğü oldukça düşük olan birçok ilaca ev sahipliği yapabilen hidrofobik kavitelere sahip, üç boyutlu ağ yapısında oldukça küçük nanomateryallerdir. Siklodekstrin nanosünger (CDNS)'ler, diizosiyanatlar, karboksilik asitler, dianhidritler ya da aktif karbonil bileşikleri gibi uygun çapraz bağlayıcı ajanlarla siklodekstrin (CD)'in tepkimesinden elde edilen önemli bir polimer grubunu oluşturmaktadır.

Bu çalışmada piromellitik dianhidrit çapraz bağlı, suda çözünebilir formdaki CD polimerlerin karakterizasyon ve ilaç yükleme sonuçları sunulmuştur. Suda çözünürlüğünün oldukça düşük olmasından dolayı ketoprofen (KP) model ilaç olarak seçilmiştir. CDNS'lere ilaç yüklemesi üzerine sıcaklık etkisi, üç farklı sıcaklık değeri için incelenmiştir. Yapılan FTIR çalışmaları KP'nin CDNS ile etkileşimini doğrulamaktadır. CDNS'lere KP yüklemesi, 300 rpm karıştırma hızında, 25, 35 ve 45^{o}C sıcaklık koşulları altında orbital karıştırıcıda gerçekleştirilmiştir. KP derişimleri sıvı kromatografi analizleriyle belirlenirken, her bir sıcaklık için yükleme verimleri hesaplanmıştır.

Anahtar kelimeler: Nanosünger, Siklodekstrin, Ketoprofen, İlaç yükleme.

Bu çalışma, Cumhuriyet Üniversitesi Bilimsel Araştırma Projeleri Komisyonu tarafından M-564 Nolu proje kapsamında desteklenmiştir.

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➢ **ORAL PRESENTATION**

The Effect of Terebinth (*Pistacia terebinthus* L.) Extracts on Some Biochemical Parameters of Carp (*Cyprinus carpio* L. 1758)

İbrahim Örün, Serap Altındağ*

Aksaray University, Faculty of Science and Letters, Department of Biology, Aksaray, Turkey.

Corresponding author e-mail: altindag21@hotmail.com

Abstract

In this study, it is aimed to investigate the possible effects of the extracts obtained from the fruits of terebinth (*Pistacia terebinthus*) which has an antioxidant, anti-carcinogen, anti-microbial, anti-inflammatory, anti-parasitic and anti-mutagenic properties, on some biochemical parameters of carp fish (*Cyprinus carpio* L. 1758). The carps used in the experiment were transported from Yedikır Fisheries Farm (Samsun, Turkey). 10 carp fish was placed in each 250 L aquarium and were kept there for 20 days to provide adaptation to the aquarium conditions. The terebinth extracts applied weekly to the carps. Approval of the Ethics Committee of the study was taken at the Faculty of Veterinary Medicine of Selçuk University (approval letter dated 16.03.2012 and numbered 472). At the end of the experiment, increasing at both period in serum Na, P, Cl, Ca, Tp, Alb levels and decreasing in serum K, ALP, ALT and AST levels at 10 and 20 ppm dose groups were found to be statistically significant ($p < 0.05$) according to the control group. In the study; it was understood that terebinth fruit extracts at the acute and subchronic period induced hematopoietic organs and did not have hepatotoxic effect on the liver tissue. For this reason, the addition of such herbal stimulants to fish feed can reduce stress on fish and accelerate growth.

Keywords: *Cyprinus carpio*, *Pistacia terebinthus*, Biochemical parameters.

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➢ ORAL PRESENTATION

The Effect of D-H…A Hydrogen Bond on Vibrational Frequencies of 4-(3-Methyl-3-phenylcyclobutyl)-2-(2-(2-nitrobenzylidene)hydrazinyl)thiazole

Uğur Akcakaya[1*], Çiğdem Yüksektepe Ataol[1], İbrahim Yılmaz[2], Alaaddin Çukurovalı[3]

[*1]Cankiri Karatekin University, Faculty of Science, Department of Physics, Cankiri, Turkey
[2]Karamanoglu Mehmetbey University, Faculty of Kamil Ozdag Science, Department of Chemistry, Karaman, Turkey
[3]Firat University, Faculty of Science, Department of Chemistry, Elazig, Turkey

Corresponding author e-mail: akcakayau@gmail.com

Abstract

The single crystal structure of 4-(3-Methyl-3-phenylcyclobutyl)-2-(2-(2-nitrobenzylidene)hydrazinyl)thiazole is obtained by the X-ray diffraction technique. The monomer and dimer molecular structures of the crystal structure using X-ray results are optimized by using the Density Functional Theory (DFT) and Hartree-Fock (HF) from computational chemistry methods. B3LYP hybrid functions for DFT and different basis sets (6-311G and 6-311G(d, p)) have been selected to achieve the optimized results in the theoretical calculations. The bond parameters of the compound are compared with the X-rays and the theoretical calculation results. Besides these, using the optimized monomer and dimer molecular structures, the vibration frequencies of the molecular structure were calculated with different basis sets. And also, the effect of D-H…A intermolecular hydrogen bond on the vibrational frequencies is investigated.

Keywords: Hydrazine, DFT, X-ray, Single Crystal, Hydrogen Bond

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➢ **ORAL PRESENTATION**

Periosteum Hasarının Tamiri için Hücrelerinden Arındırılmış Kemik Hücre Dışı Matriksi Kaynaklı Filmlerin Üretilmesi

Aykut Yıldız, Yavuz Emre Arslan*

Çanakkale Onsekiz Mart Üniversitesi, Mühendislik Fakültesi, Biyomühendislik Bölümü, Çanakkale, Türkiye

Sorumlu yazar e-mail: yavuzea@gmail.com

Özet

Kemik doku; kan hücresi üretme, mineral depolama, organları destekleme ve vücut hareketlerini sürdürme gibi önemli rollere sahiptir. Travma, tümör, periost kılıf hasarı ve osteoporoz gibi hastalıklar her yıl milyonlarca insanı etkileyen kemik hasarlarına neden olmaktadır. Otogreft ve allogreft gibi uygulamaların güncel klinik tedavilerde donörde bıraktığı bölgesel hasar, immünolojik ret ve enfeksiyon açısından sınırlamalara sahiptir. Kemik doku mühendisliği biyoloji ve mühendislik prensiplerini kullanarak kemik hasarlarının iyileşmesinde umut verici yaklaşımlar sunmaktadır. Hasarlı kemik dokunun yenilenmesi ve onarılması için kemik doku mühendisliğinin temel bileşenleri; hücre iskeleleri, sinyal molekülleri ve hücrelerdir. Kemik dokusu eklem yüzeyleri hariç dış yüzeyde periost tabakası ile kaplıdır. Kemik doku hasarlarının iyileşmesinde önemli rol oynayan çok yönlü farklılaşma yeteneğine sahip mezenkimal kök hücreler periost tabakasından hasarlı bölgeye gelmektedirler. Bu çalışmada, doğal periosteumu taklit eden hücre dışı matriksi kaynaklı filmlerin üretilmesi için gerekli kemik dokusu kesimhanelerden temin edilerek soğuk zincir bozulmadan laboratuvara ulaştırılmıştır. Kemik dokuları 15x15x15 mm boyutunda parçalara ayrılarak -26 °C'da saklanmıştır. Hücre dışı matrikste bulunan allojenik ve zenojenik hücresel ajanlar alıcı tarafından yabancı olarak kabul edilmekte ve dokunun immün olarak reddine neden olmaktadır. Bu nedenle elde edilen filmlerin biyolojik aktivitesinde ve mekanik bütünlüğünde karşılaşılabilecek olumsuz etkilerin en aza indirgenmesi için hücrelerinden arındırma çalışmaları yapılmıştır. Parçalara ayrılan kemik dokuları sırasıyla Trizma.HCl/EDTA, Triton X-100, DNAz, RNAz ve perasetik asit ile muamele edilerek hücrelerinden arındırılmıştır. Ardından hücrelerinden arındırılan kemik dokusu pepsin enzimi ile sindirilmiştir ve 10X PBS, 0,1 N NaOH kullanılarak petri kaplarına dökülerek film haline getirilmiştir. Elde edilen filmler N-hidroksi süksinimit (NHS), N-(3-dimetilaminopropil)-N'etil-karbodiimit (EDC) ile çapraz bağlanarak mekanik özellikleri arttırılmış ve liyofilize edilerek hücre kültürü çalışmaları için uygun hale getirilmiştir. Sonuç olarak kemik dokusu başarılı bir şekilde hücrelerinden arındırılmış ve kemik hücre dışı matriksi kaynaklı filmler elde edilmiştir. Üretilen biyoiskelelerin periost doku hasarlarının tamirinde yüksek potansiyele sahip olduğu düşünülmektedir. Bu çalışma Çanakkale Onsekiz Mart Üniversitesi BAP tarafından FBA-2014-200 numaralı projeyle desteklenmiştir.

Anahtar Kelimeler: Hücrelerinden arındırma, Periosteum, Hücre Dışı Matriks, Biyoiskele, Kemik doku mühendisliği, Rejeneratif Tıp.

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➢ **ORAL PRESENTATION**

Serbest Radikal Temizleme (DPPH) Aktiviteleri ve Yağ Asidi Değerleri Belirlenen Bazı Karayosunlarının İçerik ve Aktivitelerinin Karşılaştırılması

Sevinç Aydin Keskin[1], Mevlüt Alataş[2], Nevzat Batan[3], Ökkeş Yilmaz[4]

[1] Munzur Üniversitesi, Mühendislik Fakültesi/Gıda Mühendisliği, Tunceli, TÜRKİYE
[2] Munzur Üniversitesi, Mühendislik Fakültesi/Biyomühendislik, Tunceli, TÜRKİYE
[3] Karadeniz Teknik Üniversitesi, Maçka Meslek Yüksekokulu, Trabzon, TÜRKİYE
[4]Fırat Üniversitesi, Fen Fakültesi/Biyoloji Bölümü, Elazığ, TÜRKİYE

Corresponding author e-mail: sevincaydin2380@gmail.com

Özet

Bu çalışmada Doğu Karadeniz Dağları'nın sınırları içerisinde yer alan Kamilet Vadisi (Artvin-Arhavi)'den toplanan bazı karayosularının (***Anomodon attenuatus, Anomodon viticulosus***, ***Isothecium alopecuroides*** ve ***Isothecium myosuroides***) **s**erbest radikal temizleme aktiviteleri ve yağ asidi içerikleri araştırılmıştır. Her iki cinse ait türler Türkiye'de genişce yayılış göstermektedirler. Yapılan bu çalışma ile bu türlerin serbest radikal temizleme aktiviteleri ve yağ asidi içerikleri belirlenip karşılaştırılarak bu konuda ileride yapılacak diğer çalışmalara temel oluşturulması amaçlanmıştır. DPPH, serbest radikal temizleme aktivitesi, Brand-Williams ve arkadaşları (1995) tarafından belirtilen metoda göre yapılmıştır. Lipit ekstraktı içindeki yağ asitleri ise metil esterlerine dönüştürüldükten sonra gaz kromatografisi ile analiz edilmiştir (Hara ve Radin, 1978). Çalışmanın sonunda, ***Anomodon attenuatus*** türünün DPPH radikal temizleme etkisinin hem ***Anomodon viticulosus*** türüne göre hem de ***Isothecium*** cinsine ait türlere göre belirgin düzeyde düşük olduğu ($p<0.001$), ***Anomodon viticulosus*** türünün ise 1000 µl de diğer türlere göre en yüksek etkiyi gösterdiği tespit edildi. Diğer türlerle karşılaştırınca ***Isothecium alopecuroides*** türünün ise en iyi etkiyi 250 ile 500 µl de, ***Isothecium myosuroides*** türünün ise 100 µl de en iyi etki gösterdiği gözlendi. Bitki ekstraktları içeriğindeki polifenolik bileşiklerin düzeyi ile $DPPH^{\cdot}$ radikalini temizleme etkinliği arasında güçlü bir ilişki bulunuğu bilinmektedir. Yağ asidi içerikleri incelendiğinde ise özellikle doymuş yağ asidi miktarlarının ***Isothecium myosuroides*** türünde diğer türlere oranla yüksek olduğu gözlendi ($p<0.001$). Doymamış yağ asidi içerikleri bakımından ise özellikle ***Anomodon*** türlerinin yüksek içeriğe sahip olduğu tespit edildi ($p<0.001$). Bu değişimlerin karayosunlarının gelişme ortamında bulunan şeker, mineraller ve diğer karbon kaynaklarından ileri geldiğini düşünmekteyiz.

Anahtar Kelimeler: DPPH, Yağ asidi, *Anomodon*, *Isothecium*.

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➢ ORAL PRESENTATION

Determinig Cytotoxic Effects of Fluorinated Phenylhydrazines on A549 Lung Carcinoma Cell Line

H. A. Zafer Sak[1*], Faruk Süzergöz[2], Veli T Kasumov[3]

[*1]Harran University, Medical Faculty, Department of Chest Dissease, Şanlıurfa, TURKEY.
[2]Harran University, Art Science Faculty, Department of Biology, Şanlıurfa, TURKEY.
[3]Harran University, Art Science Faculty, Department of Chemistry, Şanlıurfa, TURKEY.

Corresponding author e-mail: drsak19@gmail.com

Abstract

Lung cancer is one of the most lethal cancers worldwide and non-small cell lung cancer is the most common type of lung cancer. For the discovery of a new chemotherapeutic agent for use in lung cancer, fluorinated Schiff bases have been tested for anti-cancer properties on A549, non small cell lung cancer, cell line. 6-fluorinated Schiff base synthesized on the basis of phenylhydrazines and salicylaldehydes were tested for cytotoxic and apoptotic effects on A549 cells. Cytotoxic effects of the compounds were determined as IC50 values by ATP method and ability of apoptosis induction determined as Cleaved caspase-3 expression by immnflorescent staining method. Morphological changes related to the formation of apoptosis in the cells were tested by histopathological staining methods (giemza, hematoxylin & eosin and papanicolaou). It was observed that the strongest cytotoxic effect on A549 cells was induced by compound 5 (2,5-F2phHz-SAL, IC50: 3,22 μM). As a result of interactions of A549 cells with Fluorescent Schiff bases active caspase-3 expression, which is an apoptosis indicator, was observed. In histopathological analyzes, morphological changes indicating apoptosis in cells such as chromatin condensation, membrane blebbing, and the formation of apoptotic bodies in cells was observed. It is an important finding that Compound 5 shows a strong cytotoxic effect in A549 cells via apoptosis induction in these cells. The ability to be a new chemotherapeutic agent for lung cancers of compound 5 should be evaluated with in vivo investigations.

Keywords: Lung carcinoma, A549, Phenylhydrazine, Fluorine, IC50, Apoptosis

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➢ **ORAL PRESENTATION**

Effects of Feeding Frequency on Growth Performance and Skin Coloration Of Rusty Cichlids (*Iodotropheus sprengerae*)

Onur Karadal[1*], Gürel Türkmen[2], Derya Güroy[3]

[*1]İzmir Kâtip Çelebi University, Faculty of Fisheries, Department of Aquaculture, Çiğli, İzmir, Turkey
[2]Ege University, Faculty of Fisheries, Department of Aquaculture, Bornova, İzmir, Turkey
[3]Yalova University, Armutlu Vocational School, Department of Aquaculture, Armutlu, Yalova, Turkey

Corresponding author e-mail: onur.karadal@ikc.edu.tr

Absrtact

Rusty cichlid is an ornamental fish, which belongs to mbuna group of Cichlidae family. This species is popular in freshwater aquariums and is cultured and traded in ornamental fish sector. The number and diversity of ornamental species were increased day by day with the growing of aquarium industry and more people are tended to interest to this hobby. However, this situation can be led some problems such as unregularly feeding of fish because of lack of knowledge or time inadequacy. Therefore, proper feeding regimes should be determined for ornamental fish species.

In this study, effects of five different feeding frequencies including every other day (2F1), one (F1), two (F2), three (F3) and four (F4) times daily on growth performance and coloration of rusty cichlid (mean body weight 2.04±0.01 g) were investigated. Rusty cichlids (*Iodotropheus sprengerae*) were obtained from a commercial importer (Fishmekan Aquarium, İstanbul, Turkey). The trial was carried out in 15 green fiberglass circular tanks (100 L) with three replicates for 16 weeks. Fish were fed with commercial ornamental cichlid granules (42% protein, 5% lipid) to near satiation. The temperature was held at 26.6±0.3 ºC and pH was 7.85±0.13 during the experiment. Growth performance was monitored biweekly by collectively weighing and measuring the lengths of fish from each tank. At the end of the feeding trial, fish were starved for 24 h, and the total number and individually fish weight in each tank were determined for calculation of growth performance. All fish were individually measured for skin colour using a Minolta CR-300 Chroma Meter before commencement of the feeding trial to establish baseline measurements (week 0) and then every two weeks for the 16 weeks period. The measurements were performed on left surface (10 mm) of body area and caudal region of each fish. The Chroma Meter was set to take absolute measurements in the L^*, a^*, b^* measuring mode.

The final mean weight (FMW) and specific growth rate (SGR) increased with feeding frequency ($P<0.05$). Although final mean weights (FMW) and final mean total lengths (FMTL) of F2, F3 and F4 groups were statistically similar ($P>0.05$), the highest value has been found in F3 group. The final redness (a^*) of F4 group was the highest for both body and caudal regions ($P<0.05$).

The present feeding research carried out with rusty cichlid indicates that different feeding frequencies significantly affect the growth performance and skin coloration in rusty cichlid. Three and four times daily feeding are recommended for this species in culture condition and home aquarium according to results of the current research. Further studies are necessary to evaluate the effect of different feeding regimes of this species and other mbuna cichlids.

Keywords: Aquarium fish, mbuna cichlid, feeding strategy, pigmentation.

Acknowledgements: This study is a part of Ph.D. thesis of Onur Karadal prepared in Graduate School of Natural and Applied Sciences, Ege University, İzmir, Turkey.

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➢ **ORAL PRESENTATION**

Functional Fermented Beverage Production By Using Cereal and Pseudo-Cereal

Aysun Mete[1], Prof. Dr. Kamuran Ayhan[1*]

Ankara University, Faculty of Engineering, Department of Food Engineering, Ankara, Turkey

Corresponding author e-mail: amete85@gmail.com

Abstract

Alternative nutritional demands of vegetarian consumers, lactose intolerance, allergic reactions to milk proteins, demand for foods with low fat/cholesterol content and economic reasons suggest the necessity of grains as substrates in the development of foods with a new functional features. For this purpose, cereal and pseudo-cereal, which is containing high quality protein, important minerals such as calcium and iron and dietary fiber, based beverages are seen as a potential food source.

When the substrate formulation, starter culture development capacity and productivity, the stability of probiotic strains during storage, the organoleptic properties and the nutritional value of final product are taken into consideration, compositions of cereals are considered as ideal fermented substrates for the development of lactic acid bacteria and yeast. During fermentation process, the content and quality of cereal proteins can be changed, availability of probiotic compounds, dietary fiber and lysine are increased. As a consequence of nutritional compositions, there are high potential in such new products especially for the elders, children, athletes, diabetics, coeliac patients and lactose intolerance consumer groups.

This study is about pseudo-cereal and / or cereal based fermented functional beverage production method that using cereal (wheat, barley, rye, oats, corn, rice) and/or pseudu-cereals (quiona, amaranth and buckwheat) as raw material, culture strains of " *Saccharomyces cereviciae*" and "*Lactobacillus plantarum*" as a starter.

Keywords: Functional, Cereal, Pseudo-cereal, Fermented, Beverage

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➢ ORAL PRESENTATION

Molecular Docking Studies of Some Benzimidazole Derivatives for Antioxidant Activity

Mustafa Emirik

Department of Chemistry, Art and Science Faculty, Recep Tayyip Erdogan University, Rize, Turkey.

mustafa.emirik@erdogan.edu.tr

Abstract

In silico analysis was carried out to understand the mode of interaction with superoxide dismutase (SOD) and human tyrosine kinase using docking protocols in order to find out the most active antioxidant drug having high inhibitory activity in cancer. The newly synthesized compounds illustrated in Fig 1 were taken as ligands and docked against target molecules. Molecular docking was carried out to determine the binding pose and affinity of synthesized compounds at the binding sites of targets using induced fit docking (IFD) approach.

All ligand molecules buried at the active side of the target around the Cu-Zn binding loop, which is important for SOD to increase its activity on oxidative stress induced by ROS. Hydrogen bond interactions are the most important contributions between ligands and the active site of SOD. All molecules showed good docking scores ranging from -5.14 kJ/mol to -8.53 kJ/mol. The docking studies showed that the best orientation of compound 5a in the active pocket was formed by hydrogen bonding with the amino acid residues of Asn63, Ser66, Glu131 and Lys134. SH moieties of ligand, 5a make hydrogen bond interaction with Ser66 and Glu131 residues at distances 1.97 and 3.23 Angstrom, respectively. Binding modes of ligand 3 showed that hydrogen bond interactions occurred between His61, Asn63, Arg141 and Thr135 residues at Cu-Zn loop of the SOD and CO, NH and NH2 moieties of ligand 3.

Keywords: Antioxidant**,** Docking, In Slico analysis.

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➢ **ORAL PRESENTATION**

Reuse of Industrial Solid Waste Fly Ash in Geopolymer Construction Material Production

Neslihan Doğan-Sağlamtimur[1*], Ahmet Bilgil[2], Sefa Ertürk[3], Vakkas Bozkurt[3], Hatice Öznur Öz[2], Pervin Nas[1], Arife Gözde Akan[1], Elif Süzgeç[1], Betül Dikkaya[1]

[*1]Niğde Ömer Halisdemir University, Engineering Faculty, Department of Environmental Engineering, Niğde, Turkey.
[2]Niğde Ömer Halisdemir Üniversitesi, Engineering Faculty, Department of Civil Engineering, Niğde, Turkey.
[3]Niğde Ömer Halisdemir Üniversitesi, Faculty of Arts and Sciences, Department of Physics, Niğde, Turkey.

*Corresponding author e-mail: neslihandogansaglamtimur@gmail.com

Abstract

Accumulation of industrial waste has become a major problem to the environment as well as human beings. There is a global concern about eco-friendly solutions for the safe disposal of industrial waste to sustain a cleaner and greener environment. Coal ash is one of the biggest sources of industrial waste produced from industries and power plant stations. In Turkey, it is estimated that amount of fly ash (FA) emerging from the burning coal is approximately 13 million tons (Mt) per year. The main objective of this research is to develop environmentally-friendly FA-based geopolymer building material which can be used as a substitution for Ordinary Portland Cement (OPC)-based building material. Geopolymer materials have attracted a lot of attention for various applications due to their excellent fire resistance, low curing/hardening temperatures, low air and water permeability, and environmental durability.

The materials used in the study are Çatalağzı Thermal Power Plant (Zonguldak, Turkey) fly ash (CTPPFA), sodium hydroxide (NaOH) and sodium silicate (Na_2SiO_3). This study presents the laboratory tests during the production of geopolymer building material and the physical-mechanical results of this material. In the experimental step, firstly, the sieve analysis, loose/tight unit weight and loss of ignition of the FA were made. In the second step, the tests named as water absorption percentage, porosity, unit weight, axial compressive strength (ACS), absorption of radiation were conducted on the FA-based geopolymer specimens activated by NaOH and Na_2SiO_3. The maximum ACS values were measured as 28.8 and 20.5 MPa, 35.2 and 20 MPa for the samples incorporating CTPPFA+NaOH and CTPPFA+Na_2SiO_3 with the curing temperature at 70 °C and 105 °C in 28 days, respectively. The results of this study show that increasing temperature is not necessary during the curing for obtaining better ACS values and NaOH is better than Na_2SiO_3 as chemical binder to produce geopolymer.

Keywords: Construction, environment, fly ash, geopolymer, reuse, waste

Acknowledgments
This study was a part of the project "Development of eco-friendly composite materials based on geopolymer matrix and reinforced with waste fibers" funded by the European Commission, within the 7th Framework Programme for Research and Technology Development (FP7), Topic #02: Waste management, recycling and urban mining (Project No. ELAC2015/T02-0721) under the ERANet-LAC: Latin America, Caribbean and European Union and supported by a grant of the Turkish Scientific and Technological Research Council of Turkey (TÜBİTAK). The Turkish project number is 116Y549.

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➢ **ORAL PRESENTATION**

Drosophila SMART Yöntemi ile Fungusitlerin (Metiram, Kresoxim-methyl ve Hymexazol) Genotoksisitelerinin Araştırılması

Burçin Yalçın[1], Merve Güneş[1], Özlem Saygın[1], Bülent Kaya[1]

[1]Akdeniz Üniversite, Fen Fakültesi, Biyoloji Bölümü, Antalya, Türkiye

e-mail: byalcin@ogr.akdeniz.edu.tr

Özet

Tarımsal alanlara ürün verimini arttırmak amacıyla her yıl artan miktarlarda pek çok pestisit uygulaması yapılmaktadır. Ancak bunların gerek farklı etkileri yeteri kadar kontrol edilmeden piyasaya sürülmesi gerekse bilinçsizce kullanılması doğadaki pestisit yükünü arttırmakla beraber ekolojik sorunlara yol açabilmektedir. Ayrıca elde edilen mahsuller üzerindeki pestisit kalıntılarının bu ürünleri tüketen canlılar üzerindeki potansiyel genotoksisiteleri hakkında endişe yaratmaktadır. Fungusitler de pestisitlerin önemli alt gruplarındandır ve tarımsal ürünleri fungal enfeksiyonlardan korumak amacıyla kullanılmaktadır. Ülkemizde de fungusitler kullanılan pestisitlerin büyük bir grubunu oluşturmaktadır. Bununla birlikte fungusitlerin genotoksik potansiyelleri hakkındaki çalışmalar hala çok sınırlıdır. Bu çalışmada, yaygın kullanılan üç fungusitin (metiram, kresoxim-methyl ve hymexazol) genotoksik potansiyelleri *Drosophila* Kanat Somatik Mutasyon ve Rekombinasyon Testi (SMART) kullanılarak araştırılmıştır. Bu fungusitlerin genotoksik etkileri değerlendirilirken her bir derişim için, normal kanatlı bireylerden kanat preparatları hazırlanarak klon sayıları incelenmiştir. Uygulaması yapılan 3 fungusitin üçünde de tüm dozlarında (1, 2, 5 ve 10 mM) toplam klon sayısı kontrol grubu distile suya göre istatistiki açıdan pozitif sonuç gözlenmemiştir.

Anahtar Kelimeler: Hymexazol, Metiram, Kresoxim-methyl, *Drosophila melanogaster*, Somatik mutasyon ve rekombinasyon testi, Genotoksisite, Fungusit

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➢ **ORAL PRESENTATION**

Nephroprotective Effects of Apricot Against Ketamine Induced Renal Toxicity in Rat Model

İsmet Yılmaz[1*] , Hatice Eröksüz[2]

[1]Inonu University, Pharmacy Faculty, Department of Pharmacology, 44280 Malatya, Turkey. [2]Firat University, Veterinary Faculty, Department of Pathology, 23119 Elazig, Turkey.
E-mail: yilmaz.ismet@inonu.edu.tr

Abstract

The apricot is an important nutritional fruit in regard to it's content of mineral and vitamins. It is wellknown the benefical effects of the apricot on gastrointestinal, cardio-vascular, nervous and musculoskletal system. Ketamine is an anesthetic drug used in human and veterinary procedures. Ketamine is also used for pediatric anesthesia and conscious sedation in asthmatic patients. Recently, people have started using ketamine as a recreational and dissociative drug, especially in nightclubs and dance parties. The aim of this study was to evaluate the nephroprotective effects of the dietary apricot in rats induced by ketamine toxicity in regard to biochemical, histopathological and immunohistochemical examinations. In this study; twenty eight, male, 12 week old, Sparaque Dawley rats were divided into 4 groups, (n=7/groups). Group I: control group. Group II: rats were injected intraperitoneally with ketamine (100 mg/kg/day) for two weeks. Group III: rats received 5% apricot containing diet for 14 days, and Group IV: rats received 5% apricot containing diet and intraperitoneally injected ketamine (100 mg/kg/day) for 14 days. On 15th days of study, all rats were sacrified and collected kidney and blood samples for pathological and biochemical analysis. Serum BUN levels were measured, and histological kidney sections were subjected to H & E, Tunel, immunohistochemical (Caspase 3) stains and followed by statistical analysis. In group II; immunohistochemical caspase-3 positivity and tunel positive cells were significantly increased in cortical tubules as compared to control. Furthermore, there were vacuoler degeneration in proximal and medullar tubulus, intersitisal hemorrhage in medulla. These lesions were less severe in group IV, whereas positivity tunnel positive cells and caspase immunoreactivity were less significant in group IV.
Overall, apricot containing diet has nephroprotective effects on ketamine toxicity in rats.

Key words: Ketamin, Apricot, Nephroprotective Effect, Rats.

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➢ **ORAL PRESENTATION**

Yeni Sentezlenen Barbitürat Türevinin Kromozomal Anormallik Testi İle Genotoksik Potansiyelinin Belirlenmesi

Merve Ayşe Doğancı[1*], Ahmet Ali Berber[2], Tuna Demirci[3], Betül Aygün[1], Hüseyin Aksoy[1]

[*1]Sakarya Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Sakarya, Türkiye
[2]Çanakkale Onsekiz Mart Üniversitesi, Sağlık Hizmetleri MYO, Tıbbi Hizmetler ve Teknikler Bölümü, Çanakkale, Türkiye
[3]Düzce Üniversitesi, Bilimsel ve Teknolojik Araştırmalar Uygulama ve Araştırma Merkezi, Düzce, Türkiye

Sorumlu Yazar e-mail: ayse.doganci@ogr.sakarya.edu.tr

Özet

Barbitüratlar dünya genelinde çoğunlukla tıp alanında anestezik, sedatif, antidepresan, antiepileptik ve diğer farklı etkileri etkilerinden dolayı yaygın olarak kullanılan 2500'ün üzerinde türevi bulunan kimyasallardır. Yeni bir tedavi/ilaç hammaddesi hastaya verilmeden önce, kullanım güvenliğinin belirlenmesi için laboratuarlarda kontrollü yapay koşullar altında çeşitli testlerden geçirilmelidir ve bu testlerin bir kısmını genotoksisite testleri oluşturmaktadır. Bu çalışmada ilaç hammaddesi olabileceği düşünülen yeni sentezlenen barbitürat türevi 1,3-dimetil-8-fenil-1,7,8,8a-tetrahidroprido[3,2-d]primidine-2,4,6(3H)-trion' un genotoksik potansiyelinin *in vitro* olarak insan periferal lenfosit hücreleri üzerinde kromozom anormalliği (CA) metodu kullanılarak belirlenmesi amaçlanmıştır. Bu amaçla 72 saat kültüre alınmış insan periferal kan lenfositleri barbitüratın 600, 300, 150 ve 75 µg/mL' lik konsantrasyonlarına 24 ve 48 saat süresince maruz bırakılmıştır. 24 saatlik uygulama sonucunda kontrole göre tüm konsantrasyonlarda CA frekansında anlamlı bir farklılık görülürken, çözücü kontrole göre en düşük konsantrasyonu (75 µg/mL) hariç tüm konsantrasyonlarda anlamlı bir farklılık görülmüştür. 48 saatlik uygulama sonucunda ise her iki kontrol grubuna göre sadece en yüksek iki konsantrasyonda anlamlı farklılıklar görülmüştür. Mitotik indeks değerlendirmesinde ise her iki uygulama grubunda da en düşük konsantrasyon hariç anlamlı azalışlar görülmüştür. Bu sonuçlara göre yeni sentezlenen barbitürat türevinin sitotoksisite bakımından her iki uygulama grubunda benzer etkileri göstertirken, 24 saatlik maruziyetinin 48 saatlik maruziyete göre daha genotoksik olduğu görülmektedir.

Anahtar Kelimeler: Genotoksisite, kromozom anormalliği, insan periferal kan lenfositleri, barbitürat türevi

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➢ **ORAL PRESENTATION**

Extraction, Isolation and Activity Studies of Water-Based Propolis and Their Phytochemical Contents

İbrahim Demirtaş[1,2,*], İbrahim Erkayacan[1,2] and Şevket Çınar[2]

[*1]Department of Chemistry, Faculty of Science, Çankırı Karatekin University, Cankırı-Turkey
[2]Mada Grup Aş., Ankara Technopark, Ankara-Turkey.

Corresponding author e-mail: ibdemirtas@gmail.com

Abstract

Extraction, isolation and activity studies of water-based propolis and their phytochemical contents are studied using chemical and biological techniques. The propolis are phytotherapy products that have been used in traditional and complementary medicine for healing in many diseases. Though there are thousands of studies on these products, there are still shortcomings in scientific studies in particular, there are many deficiencies related to the fields of use, forms of use and standardization.

The results we obtained during the studies conducted in the direction of the company requests will be presented as framework of the study for pure propolis samples prepared with water without using any organic solvent. A number of different *in vivo* activity studies were conducted with the analysis of the secondary metabolite content of the prepared water-based propolis sample. The chemical content analyzes were compared with the samples sold on the markets and prepared using alcohol. It has been determined that water-based propolis samples in their chemical compositions are much higher than samples in the market prepared with ethyl alcohol. Some of the results obtained in the content analysis study can be listed as caffeic acid (279 mg/kg in water based, 186 mg/kg in ethanol based, less than 0.01 g/kg provided from the company) and other phenolics. Some phenolic and flavonoid components are present in the water-based propolis (such as routine, 4-hydroxybenzaldehyde, scutelarin, quercetin-3-β-D-glucoside, naringin and ferulic acid) but not in the samples obtained from the company or prepared in the ethyl alcohol solution determined. In a quantitative study with total of 44 standards, it was observed that water-based propolis content had significantly higher phenolic values than the samples prepared in ethyl alcohol.

In the laboratory studies, the results of the activities were found to be consistent with the chemical contents and *in vivo* diabetic studies.

Keywords: White propolis, water extraction, isolations, activity studies.

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➢ **ORAL PRESENTATION**

Isotherm and kinetic studies on removing of anionic textile dye using waste seafood shells

Sahra Dandil[1], Deniz Akin Sahbaz[2], Deniz Uygun[1*], Behanur Tugba Unal[1], Cağlayan Acikgoz[1]

[*1]Bilecik Seyh Edebali University, Engineering Faculty, Chemical and Process Engineering Department, Bilecik, TURKEY.
[2]Afyon Kocatepe University, Engineering Faculty, Chemical Engineering Department, Afyonkarahisar, TURKEY.

Corresponding author e-mail: caglayan.acikgoz@bilecik.edu.tr

Abstract

In recent years, developing economical adsorbents from seafood proccesing wastes to treat contaminations in wastewater has attracted great interest. Among the seafood wastes, mussel shell contains high level carbonate that could be used as an adsorbent to treat wastewater. This study focused on adsorption of Reactive Blue 221 onto mussel shell waste treated chemically and physically. Adsorption experiments were conducted using various parameters such as contact time, adsorbent dosage, dye concentration and temperature. For the adsorption studies, 50 mL of dye solutions containing known concentrations of dye (30, 60, 90, 120 and 150 mg/L) were added to various dosages of adsorbent (2.5, 5, 7.5, 10 g/L). Two kinetic models were used, pseudo-first-order and pseudo-second-order for the design and the optimization treatment. The kinetic analysis revealed that the pseudo-second-order model fitted to the experimental data. The experimental isotherm data were analyzed using Langmuir and Freundlich isotherm equations. The best fit was obtained by Freundlich model. The values of thermodynamics parameters such as entropy change (ΔS^0), enthalpy change (ΔH^0) and Gibbs free energy (ΔG^0) were calculated based on the Van't Hoff equation. The thermodynamic parameters indicated that the adsorption of Reactive Blue 221 was a feasible and spontaneous. The results showed that a cost-effective adsorbent can be obtained from mussel shell waste and is technically possible to replace the commercial active carbon.

Keywords: Adsorption, Reactive blue 221, Seafood shells, Wastewater

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➢ **ORAL PRESENTATION**

Ayakkabı Dezenfeksiyonu ve Koku Giderimi için Ozon Cihazı Tasarımı

Neslihan Doğan-Sağlamtimur[1*], Baybars Sağlamtimur[2], Selen Sağlamtimur, Sudem Sağlamtimur, İbrahim Acar

[*1]Niğde Ömer Halisdemir Üniversitesi, Mühendislik Fak., Çevre Mühendisliği Bölümü, Niğde, Türkiye
[2]Mersin Üniversitesi, Su Ürünleri Fakültesi, Yetiştiricilik Bölümü, Mersin, Türkiye
[3]Atatürk Ortaokulu, Niğde, Türkiye

Sorumlu yazar e-mail: neslihandogansaglamtimur@gmail.com

Özet

Doğrudan gaz fazında dağılarak ya da katı-sıvı fazlardan buharlaşarak ve gazlaşarak burnumuzdaki algılama sistemlerine, hissedilebilen seviyede veya rahatsız edici etki ve uyarı yapabilen etken olarak bilinen kokunun algılanması, temel duyu organlarımızdan olan buruna ulaşan maddeye karşı vücutta oluşan cevaptır. Koku, hoşa giden veya gitmeyen bir kalite gösterir. İnsanlar açısından kokunun önemi, vücuda yaptığı doğrudan zararın yanı sıra psikolojik stresle ilgilidir.

Ozon yara iyileştirici, antibakteriyel, dezenfektan ve koku giderici etkiler yapmaktadır. Bu çalışmada, ayaklarımızı içine yerleştirdiğimiz bir kap görevi üstlenen günlük hayatta hemen her gün kullandığımız ayakkabılarımızdaki mikroorganizma faaliyeti ve terleme etkilerinden oluşan kötü koku problemine çözüm bulmak ve ayakkabı dezenfeksiyonu amacıyla bilimsel literatürde ilk kez kullanılabilir bir cihaz tasarlandı. Yapılan cihazın ozon üreten silindir şekilli çelik ünitesi (ozon jeneratörü), korona boşalması ile ozon gazını üretmektedir. Bu ozon jeneratörüne uygun elektrik akımını sağlayan siyah plastik kutu içerisindeki güç ünitesi, 2 adet elektrik kablosu ile bağlanmıştır. Ayrıca hava akımını ozon jeneratörüne ve orada üretilen ozon gazını da ayakkabının konulduğu sisteme pompalayan bir akvaryum hava pompası kullanılmıştır. Kullanılan akvaryum hava pompası çift hava çıkışlı olup çıkışlardan bir tanesi kapatılmış ve tek çıkıştan hava alınmıştır. Hava pompasının, hava pompalama kapasitesi 98 mL/dakika'dır. Gaz, akvaryum hortumu aracılığıyla ayakkabının konduğu kapalı sisteme doğru ilerlemiştir. Ozon jeneratörü gerilim ünitesinin boyutları 70x36x32 mm ve çalışma gücü 5 W/70 mA'dir. Ozon jeneratörü 500 mg/saat kapasitede ozon gazı üretebilmektedir.

Bu çalışmada ozon uygulaması yapılmış ve yapılmamış ayakkabı tekinden örnek alınıp petri kaplarına ekim yapılmıştır. Ozon uygulanmamış ayakkabı tekinde mikroorganizma üremesinin daha fazla olduğu belirlenmiştir. Ozon gazı mikroorganizmalara karşı dezenfektan işlevi yapmış, ayrıca ayakkabıdaki kötü kokuyu da gidermiştir. Çalışmada tasarlanan/üretilen ozon cihazı bireysel kullanımların yanı sıra fabrika, askeriye, hastane, spor salonu, kayak kiralama merkezi ve öğrenci yurdu gibi toplu yaşanan ve hijyen gerektiren yerlerde ayakkabı çeşitleri, terlik ve giysi gibi koku yapabilen ve mikroorganizma üremesine zemin oluşturabilen eşyaların koku gideriminde ve dezenfeksiyonunda kullanılabilir.

Anahtar Kelimeler: Dezenfeksiyon, Koku, Ozon

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➢ ORAL PRESENTATION

Immobilization of Polyphenol Oxidase Enzyme, Purified from Moral Mushroom (Morchella esculenta), via Langmuir-Blodgett and Spin-Coating (SC) Films Techniques and Its Biosensor Application

Bahri Gür[1*], Elif Duygu Kaya[2], Fatma Gür[3], Ayşe Türkhan[2], Yavuz Onganer[4]

[*1]University of Iğdır, Faculty of Sciences-Arts, Department of Biochemistry, Iğdır, Türkiye.
[2]University of Iğdır, Faculty of Engineering, Department of Food Engineering, Iğdır, Türkiye.
[3]University of Atatürk, Health Services Vocational School, Erzurum, Türkiye.
[4]University of Atatürk, Faculty of Sciences, Department of Chemistry, Erzurum, Türkiye.

bahri.gur@igdir.edu.tr

Abstract

Immobilization of the enzymes is one of the substantial opportunities of biotechnology. Biosensors take significant place in medicine, agriculture, food, pharmacy, environmental pollution, defense industry and many other industries activities, especially automation, quality control, assessment and energy storage. Moreover, they are used in the determination of organic molecules such as food substances, metabolites, vitamins, antibiotics, medicines, some inorganic compounds enzymes, viruses and microorganisms. Applications of biosensors are performed by electrochemical biosensor applications one commonly used and they have a commercial value.

Enzymatic browning reactions caused by PPO during maturation, storage and processing of fruits and vegetables contribute to economic loss. Therefore food technologists have directed their attention to this enzyme and it has been purified from many products such as fruits, vegetables and mushrooms. Besides, its kinetic properties were examined and many studies were performed in order to prevent browning.

PPO enzyme is also used in cosmetics especially for sun protection, drug entrapment and melanin production. Aside from this, use of this enzyme come to the fore for treatment of some cancer types since it was observed that tyrosinase activity showed an increase in the cancerous cells. There are many studies related to the removal of toxic phenolic compounds from water by converting them into quinones using tyrosinase activity of PPO. Another important field where PPO is used is the production of L-DOPA which is utilized for the treatment of Parkinson's diseases.

In this study, the PPO enzyme was purified by affinity chromatography from the morel mushroom (Morchellaesculenta). Then, enzyme-ODA/ITO and enzyme-ODA/FTO glass electrodes were prepared on ITO and FTO glass surfaces by immobilizing LB and SC film techniques. Optimal pH, temperature, optical and morphological properties of free and immobilized enzyme were determined to explain the importance of the immobilization. Finally, electrochemical biosensor applications of the enzyme-ODA electrodes were tested against the catechol substrate.

Keywords: Electrochemical Biosensor, Langmuir-Blodgett Film, Spin-Coating Film, Cyclic, Voltammogram, Scanning Electron Microscopy, Enzyme Immobilization

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➢ **ORAL PRESENTATION**

Delphinium staphisagria'nın L. Potansiyel Sitotoksik ve Genotoksik Etkilerinin Araştırılması

Nurbahar Çiftci[1], Ferda Arı[1], Serap Çelikler Kasımoğulları[1]

[1]Uludağ Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Bursa/Türkiye

Sorumlu yazar e-mail: nurbahar2452@gmail.com

Özet

Kanser, yaşla beraber artan, kontrolsüz hücre çoğalması ve yayılımı ile karakterize bir hastalıktır. Amerikan Kanser araştırma Merkezinin (AICR) verilerine göre her yıl 12 milyon kanser teşhisi konmakta ve 8 milyon kişi kanser nedeniyle ölmektedir. Erkeklerde en sık görülen kanserler akciğer ve prostat kanseri iken, kadınlarda en sık görülen meme kanseridir.Gastrointestinal sistemin en sık rastlanan tümörleri ise, kolorektal kanserlerdir ve dünyada 4. sıklıkta görülenmalignite olup kansere bağlı görülen ölüm nedenleri arasında 2. sırada yer almaktadır.Günümüzde kanser tedavisinde kullanılan cerrahi, kemoterapi ve radyasyon gibi tedavi yöntemlerinin bağışıklık sistemine zarar vermesi ve savunmasız bırakmasıinsanları yeni arayışlara yöneltmiştir. Bu nedenle antikanser özellikli maddeler sürekli araştırma konusu olmuştur. Özellikle bitkiler üzerinde yapılan çalışmalar hızla artmıştır. Şifalı bitkilerin biyolojik ve tedavi edici özellikleri nedeniyle kanser tedavisinde tamamlayıcı ve alternatif potansiyeli bulunan tıbbi bitkiler üzerinde yapılan çalışmalarda artış vardır. *Delphiniumstaphisagria* (Entele otu), Düğün çiçeğigiller (Ranunculaceae) familyasından çoğunlukla Türkiye'de İzmir ve Manisa çevrelerinde yetişen bir bitki türüdür.*Delphiniumstaphisagria* (Entele otu) bitki ekstraktlarının farklı insan kanser hücreleri üzerinde sitotoksik ve genotoksik potansiyeli araştırılmıştır. Bu amaçla *Delphiniumstaphisagria*bitki ekstraktı insan akciğer (H1299), meme (MDA-MB-231) ve kolon kanser hücresinde (HCT-116) kullanılmıştır. SRB canlılık testi ile yapılan çalışma sonucunda MDA-MB-231 ve HCT-116 hücre soylarında daha etkili olduğu ve %85'e varan inhibisyona neden olduğu gözlenmiştir. Elde edilen sonuçlar neticesinde*Delphiniumstaphisagria*bitki ekstresinin insan kanser hücrelerinde inhibisyona neden olduğu sonucuna varılmıştır.

Anahtar kelimler: *Delphinium staphisagria*(EnteleOtu), Anti kanser aktivite, Sitotoksite, Genotoksisite, Apoptozis.

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➢ **ORAL PRESENTATION**

Bitkisel Yağlarda Vitamin E (α-, β+γ- and δ-tokoferol) Düzeyleri

Cengiz Gökbulut[1], Elif Aksöz[1], Oğuzhan Korkut[1], Dilek Akşit[2]

[1]Balıkesir Üniversitesi, Tıp Fakültesi, Tıbbi Farmakoloji A.D., Balıkesir, Türkiye
[2] Balıkesir Üniversitesi, Veteriner Fakültesi, Farmakoloji ve Toksikoloji A.D., Balıkesir.Türkiye

Sorumlu yazar e-mail:cgokbulut@hotmail.com

Özet

Son yıllarda, sentetik ilaçların ciddi yan etkileri olduğu düşüncesi, bitkilerle tedaviyi popüler hale getirmiştir. Geleneksel kültürün bir parçası olan bu bitkiler, günümüzde ulusal ve uluslararası ticaretin önemli bir kaynağı haline gelmiştir.

E vitamini, insan plazmasındaki yağda çözünen en güçlü antioksidan bileşiktir. En zengin kaynakları bitkisel yağlardır. Anti-oksidatif etkilerinin yanısıra, anti-inflamatuar, anti-obezite, anti-hiperglisemik, anti-hipertansif ve anti-hiperkolesterolemik özellikleri ortaya konmuştur. Osteoporoz, kalp hastalıkları, inflamatuar, alerjik, nörolojik hastalıklar, diyabet, demans ve kanserde potansiyel koruyucu etkilerinden bahsedilen birçok araştırma bulunmaktadır. Ayrıca, E vitamini kozmetik sektöründe de yaygın olarak kullanılmaktadır. Ülkemizde bolca bulunan, katma değeri yüksek bitkisel yağlardaki E vitamini düzeylerinin belirlenmesi, bunların sektöre kazandırılması açısından birincil önemdedir. E vitamini, tokoferol ve tokotrienol bileşikleri içerir. Çalışmamızın amacı, tıbbi veya kozmetik değeri olan bitkisel yağlarda alfa, beta+gama ve delta tokoferol yoğunluklarını belirlemektir.

Bu amaçla yağ üretimi yapan firmalardan ve lokal marketlerden 42 adet bitkisel yağ örneği alınmış; analiz aşamasına kadar karanlıkta ve 4°C'de muhafaza edilmiştir. Analizler, yağ örneklerinin 1:1 oranında 2-propanol ile seyreltilmelerini takiben yüksek performanslı sıvı kromatografisi kullanılarak gerçekleştirilmiştir.

Analiz sonuçlarımız, farklı bitkisel yağlardaki toplam tokoferol düzeylerinin 11,44 mg/kg ile 3468,18 mg/kg gibi geniş bir aralıkta değişkenlik gösterdiğini ortaya koymuştur. Toplam tokoferol içerikleri açısından en yüksek ilk beş, sırasıyla nar çekirdeği, buğday rüşeym, incir çekirdeği, yalancı iğde ve mısır yağı iken; alfa-tokoferol içerikleri açısından ilk beş buğday rüşeymi, incir çekirdeği, aspir, ayçiçek ve fındık yağı olarak sıralanmıştır. Ayrıca, nar çekirdeği ve buğday ruşeym yağının diğer yağlara göre çok daha yüksek toplam tokoferol yoğunluğuna sahip oldukları görülmüştür.

Ülkemiz zengin florasıyla çok sayıda tıbbi bitkiyi barındırmaktadır. Fakat, farmakolojik bitki endüstrimiz gelişmediğinden, bitkiler işlenmeden ihraç edilmekte, bu nedenle dünya bitkisel ilaç ticaretinden çok az pay alınmaktadır. Bitkisel tohum yağları, yüksek tokoferol içerikleri ile gıda, ilaç ve kozmetik endüstrileri tarafından kullanılabilme potansiyeline sahiptirler. Ülke ekonomisine etkin katkısının sağlanması için bir an evvel harekete geçilmelidir.

Anahtar Kelimeler: E vitamin, Tokoferol, HPLC, Bitkisel yağlar

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➢ **ORAL PRESENTATION**

Preliminary Study to Determine the Water Quality of The Göksu Stream (Istanbul-Turkey) by Using Benthic Macroinvertebrates and Some Biotic Indices.

Esra Albayrak*, Serap Koşal Şahin

Istanbul University, Institute of Science, Department of Basic Sciences, Istanbul-Turkey
[2] Istanbul University, Faculty of Aquatic Sciences, Istanbul -Turkey

Corresponding author e-mail: serap@istanbul.edu.tr

Abstract

The Göksu Stream is located within the borders of Istanbul-Beykoz district near the Anatolian side of the Bosphorus. The source of the stream is the first Elmalı Dam. The Göksu Stream is poured into the Istanbul Bosphorus from Anadoluhisarı site (Albay 1994). In this study, it is aimed to find out the water quality of the Göksu Stream (Istanbul-Turkey) by using benthic macroinvertebrates and some biotic indices. Also this study, we will aim to contribute our biological inventory and to determine suitable biotic indices of the our country conditions. Sampling was done at 5 different stations in Göksu Stream by using D frame dip net (hand net) in December 2017. Macroinvertebrates samples were preserved in 70 % ethanol. Water temperature (^{0}C), pH, dissolved oxygen(DO mg/L) electrical conductivity meter (EC meter µs/cm) biological oxygen requirement(BOI mg /L) , salinity (mg/L), were measured by using YSI 556 model multi-parameter instrument as in situ. Also flow rate were measured by using flow meter. The levels of NH_4--N (ammonium nitrogen mg /L), NO_2-N (nitrite nitrogen mg /L) , NO_3-N **(**nitrate nitrogen mg /L), PO_4 (phosphate**;** mg /L) , AKM suspended solid material (mg /L) ,TP total phosporus (mg /L) were measured in the laboratory according to standart method (APHA). Geographical data (coordinates) were recorded with geographical positioning system(Garmin e-trex-GPS) unit. As a result of this study, a total of 15 species (*Hirudo verbana, Neanthes caudata , Physella acuta, Planorbis corneus, Mytilus galloprovincialis, Lumbricus terrestris, Limnophilus* sp., *Nais* sp., *Chironomus (Chironomus) riparius., Endochironomus tendens, Cricotopus (Cricotopus) bicinctus, Cricotopus (Cricotopus) cylindraceus, Asellus aquaticus, Gammarus pulex, Baetis rhodani*) were found in December 2017. The levels of DO were between 7,41- 10,57 mg/L pH were between 7,73- 8,19, water temperature were between 7,7- 14,1 (^{0}C), electrical conductivity were between 418,89- 668 µs/cm, salinity were between 0-10,1 mg/L, flow rate were between 0,1-0,95 m/s, biological oxygen requirement were between 1,17-4,02 mg/L; levels were between NH_4-N mg/L 0 and <0,6 levels were between NO_3-N mg/L 0,017 and < 0,2 levels were between NO_2-N mg/L 0,011 and < 0,3 levels were between PO_4 mg/L 0,004 and < 0,04 levels were between total phosporus mg/L 0,034 and <0,6 and levels were between suspended solid material mg/L 0,23 and < 2. The values of Margalef diversity index were found between 0,418-2,016. The lowest value was for station 1 and the highest value was for station 3. The highest ASPT and BMWP index values were determined at station 5. The lowest BMWP index value was found at station 1, the ASPT index value was detected at station 2. According to the results of the environmental parameters and the applied biotic indices, the water quality of Göksu Stream was over polluted/ polluted. For this reason, it is necessary to take precautions immediately. This study is the first study to determined water quality of the Göksu Stream by using macroinvertabrates and biotic index.

Keywords: Benthic macroinvertebrates, Biotic index , Göksu Stream, Water quality, Istanbul

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➢ ORAL PRESENTATION

Recognition of Basic Red by Using Molecularly Imprinted Polymers Prepared via RAFT Polymerization

Meshude Akbulut Söylemez, Ceren Kaymaz*, Olgun Güven, Murat Barsbay

Hacettepe University, Department of Chemistry, 06800 Beytepe, Ankara, TURKEY

Abstract

In the textile industry, about half of the used dyes are lost during the dying process and discarded in wastewater which causes the formation of foams on the water surface and loss of natural color of water. The dyes are classified as azo, anthraquinone, triphenylmethane and heterocyclic dyes according to the their chemical structures [1]. Triphenylmethanes are widely used in the textile industry for the coloration of various materials and represent a major environmental concern due to its potential toxicity to animals and humans [2]. Moreover these toxic compounds are not eliminated by conventional wastewater treatment methods. Because of this a novel method is necessary to remove and recognize dyes from water.

Molecularly imprinted polymers are tailor-made materials which prepared by polymerization/crosslinking of functional monomers/monomer and crosslinking agent in the presence of a selected template molecule. In this study molecularly imprinted polymers (MIPs) were prepared by using RAFT polymerization to remove/recognize of basic red. Methacrylic acid was selected as functional monomer and functional monomer/template molecule ratio was kept as 4/1 and ethylene glycol dimethacrylate (EGDMA) were employed as crosslinker in ethanol. The bulk polymers were ground and sieved. After removal of template molecule the binding performances of obtained particles was investigated againts various factors such as concentration of analyte, pH and time. Control polymers (NIP) were synthesized with exactly the same compositions as MIP in the absence of template molecule, basic red. The binding performances of MIPs were evaluated in HPLC column and SPE cartridges.

Keywords: Basic red, molecularly imprinted polymers, RAFT polymerization.

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➢ **ORAL PRESENTATION**

An Immunohistochemistry and Histopathological Study of the Salubrious Effect of Ankaferd Blood Stopper in a Rat Model of Cervical Inflammation

Fatma Beyazıt[1], Başak Büyük[2*]

[1]Department of Obstetrics and Gynecology, Çanakkale Onsekiz Mart University, Çanakkale, Turkey.
[*2] Department of Histology and Embryology, Çanakkale Onsekiz Mart University, Çanakkale, Turkey.

Corresponding author e-mail: basakbuyuk@comu.edu.tr

Abstract

Ankaferd Blood Stopper (ABS) is a medicinal plant extract used topically as a hemostatic, anti-inflammatory and anti-oxidant agent. Its cytoprotective effect mainly depends on its pleiotropic properties by modulating inflammatory mediators such as IL-1β, IL-6 and TNF-α. The aim of this study is to test the possible therapeutic effect of ABS in the treatment of erosive and inflammatory conditions occurring in uterine cervix.

Twenty female Wistar Albino rats were used in the present study. Trichloracetic acid was applied intravaginally to establish an experimental rat model of cervicitis. The rats were randomly divided into three groups: group I (injury), group II (injury+serum physiologic), and group III (injury+ABS). After 3 estrous cycle of ABS and serum physiologic treatment, the amount of inflammation, vascular congestion and erosion were evaluated in the cervical tissues with using a modified semi-quantative scale of 0-3. Immunohistochemical staining with monoclonal antibodies against IL-1β was also performed.

Compared with group I and II, ABS group showed least inflammatory cell infiltration, vascular congestion and cervical erosion. Moreover compared with ABS group a prominent IL-1β staining was observed in group I and group II.

Our data suggest that ABS is a highly effective alternative for to induce normal cervical epithelium and can be used safely in the treatment of cervical inflammation with or without cervical erosion.

Keywords: Ankaferd Blood Stopper, cervicitis, inflammation, IL-1 β

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➢ ORAL PRESENTATION

Regression Analyses of the Morphological Properties of Methacrylate Based PolyHIPE/TiO_2 Composites

Peter Krajnc[1], H. Hande Mert[2], E. Hilal Mert[3,*]

[1]University of Maribor, Faculty of Chemistry and Chemical Engineering, PolyOrgLab, Smetanova 17, Maribor, Slovenia.
[2]Yalova University, Faculty of Engineering, Department of Chemical and Process Engineering, Yalova, Turkey.
[*3]Yalova University, Faculty of Engineering, Polymer Engineering Department, Yalova, Turkey.

Corresponding author e-mail: hmert@yalova.edu.tr

Abstract

1,3-butanediol dimethacrylate (1,3-BDDMA) based water-in-oil high internal phase emulsions (HIPEs) having 80 vol. % of internal phase were used as templates for the preparation of methacrylate based open porous polymer composites. In order to obtain a highly crosslinked polymer network methyl methacrylate (MMA) or 2-ethylhexyl acrylate (EHA) was used as a crosslinker co-monomer. Moreover, 1 to 10 wt% of colloidal TiO_2 nanoparticles were introduced into the continuous phase of the HIPEs for the alteration of morphological properties. With the aim of determining the influence of nanoparticles on the material morphology average cavity size, interconnected pore diameter and surface area of the resulting composites were investigated and the relationship between the properties and nanoparticle loading was enlightened by regression analyses.

Keywords: polyHIPE, TiO_2, regression analyses, morphological properties.

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➢ **ORAL PRESENTATION**

Holstein Sığırlarında Büyüme Hormonu (bGH) Geni AluI Polimorfizminin Allel ve Genotip Frekansının Meta Analizi

Aytaç Akçay[1], Fadime Özdemir[2], Elif Çelik[3], Korhan Arslan[2], Bilal Akyüz[2]

[1]Erciyes Üniversitesi, Veteriner Fakültesi, Biyometri Anabilim Dalı,Kayseri, Türkiye
[2]Erciyes Üniversitesi, Veteriner Fakültesi, Genetik Anabilim Dalı, Kayseri, Türkiye
[3]Erciyes Üniversitesi, Sağlık Bilimleri Enstitüsü, Zootekni Anabilim Dalı, Kayseri, Türkiye

e-mail: aakcay@erciyes.edu.tr

Özet

Büyüme Hormonu (bGH) geni sığırlarda 19. kromozom üzerinde 5 ekzon ve 4 introndan oluşan 1793 baz çifti büyüklüğünde bir gendir. Sığırlarda *Arthrobacter luteus* dan elde edilen *AluI* restriksiyon enzimi kullanılarak bGH geninde bulunan farklı polimorfizmlerin araştırıldığı çok sayıda çalışma bulunmaktadır. Bu çalışmada Holstein ineklerde *AluI* restiriksiyon enzimi ile bGH geni polimorfizmlerinin araştırıldığı çalışmalardan elde edilen genotip ve allel frekanslarını meta analizi yöntemi ile sentezlemek, heterojenlikleri tespit etmek ve ortak frekans belirlemek amaçlanmıştır. Çalışma materyalini, Holstein ırkı ineklerde *AluI* restiriksiyon enzimi ile bGH geni polimorfizmlerinin araştırıldığı çalışmalar oluşturmuştur. İncelenen yaklaşık 35 çalışma içerisinden seçilen 10 çalışmadaki toplam 2811 baş Holstein sığır analize dahil edilmiştir. Meta analizine dahil edilme kriterleri çalışmaların Holstein sığırlar ile yapılmış olması ve *AluI* restiriksiyon enzimi ile genotiplenmiş bGH geni genotip ve allel frekanslarının bulunmasıdır. Çalışmada uygulanan meta analizinde rassal etki modeli (Der-Simonian Laird yöntemi) kullanılmıştır. Rassal etki modeli, çalışmaların hem kendi içlerindeki hem de çalışmalar arası varyansını dikkate almaktadır ve tüm çalışmalar arasında etki büyüklüğü bakımından farklar olduğunu varsaymaktadır. Meta analizleri Comprehensive Meta-Analysis Software (CMA) ile yapılmıştır. Çalışmada bGH genine ait; LL, LV ve VV genotipleri ile L ve V allellerinin frekansları için meta analizleri yapılmıştır. Çalışma örneklemlerinin yanlı olmadığı Begg ve Mazumdar Sıra Korelasyonları testi ve Klasik fail-safe N testi ile belirlenmiştir. Çalışma sonucunda, tüm genotiplerde (LL, LV ve VV) çalışmalar arasında yüksek heterojenlik bulunmuş, bu nedenle rassal etki modeli kullanılmıştır. Rassal etki modeline göre ortak frekanslar LL, LV ve VV genotiplerinde sırası ile 0.788, 0.179 ve 0.016 hesaplanmış ve bu oranların tümü istatistiksel olarak önemli bulunmuştur ($P < 0.001$). L ve V allel frekansları için çalışmalar arasında yüksek heterojenlik bulunmuş, rassal etki modeline göre ortak frekanslar sırası ile 0.886 ve 0.113 hesaplanmış ve istatistiksel olarak önemli bulunmuştur ($P < 0.001$).

Anahtar kelimeler: AluI, Büyüme hormonu (bGH) geni, Holstein, Meta Analizi

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➢ **ORAL PRESENTATION**

Biomass Yield and Secondary Metabolites Production in Callus Culture of *Echinacea angustifolia* D.C. Treated with Yeast and Chitosan

Muhammed Akif Açıkgöz[1], Şevket Metin Kara[1], Ebru Batı Ay*[2]

[1]Department of Field Crops, Faculty of Agriculture, Ordu University, Ordu, Turkey
*[2]Suluova Vocational School, Amasya University, Amasya, Turkey

Corresponding author e-mail: makifacikgoz@gmail.com

Abstract

Yeast, one of the endophytic funguses, and chitosan which is the main component of cell walls of certain fungi species are biotic elicitors protecting plants against phytopathogenic microorganisms and increasing plant tolerance to abiotic stress factors. In this study, aiming to increase accumulation of alkamide, caftaric acid and echinacoside using cell suspension cultures in *Echinacea angustifolia* D.C., biotic stresses conditions driving cell defense systems were carried out. Various concentrations (0, 25, 50 and 100 mg l^{-1}) of yeast and chitosan were applied to eight-day-old cell cultures. The cells were daily harvested up to the seventh day of the culture. The content of secondary metabolites were determined using Headspace-GC-MS and cell number, cell viability and cell dry weight were also recorded. Both yeast and chitosan elicitors resulted a significant increase in alkamide accumulation, cell growth and cell viability. The highest alkamide accumulation was recorded as 415 µg g^{-1} dw with the application of 100 mg l^{-1} in cells harvested on the 5th day. The application of 50 mg l^{-1} chitosan increased alkamide content by 6.1 fold, in comparison to the control culture at the end of 7th day. Morever, 50 mg l^{-1} chitosan doses produced toxic effects and significantly decreased cell growth and cell viability. The highest caftaric acid and echinacoside accumulations, however, were observed at the end of the 7th day in the cells subjected to 100 yeast application (80.02 µg g^{-1} dw and 93.6 µg g^{-1} dw, respectively). This study showed that biotic stress factors in *Echinacea angustifolia*, by driving cell defense systems, had potential for increasing some secondary metabolites cell suspension culture.

Keywords: Asteraceae, Caffeic acid derivatives, Medicinal plant, Phenolic acids

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➢ **ORAL PRESENTATION**

Effect of Guelder rose (*Viburnum opulus* L.) Extract on Lipid peroxidation and Antioxidant System of Carp (*Cyprinus carpio* L. 1758) Exposed to Ammonia

Arzu Doğru[1*], Mehmet İlker Doğru[2], İbrahim Örün[2], Belda Erkmen[2], Hüseyin Polat[3], Kenan Erdoğan[2], Gülnihal Örün[4] and Nuh Korkmaz[5]

[1]Aksaray University, Education Faculty, Department of Elementary Education, Aksaray, Turkey.
[2]Aksaray University, Faculty of Arts and Sciences, Department of Biology, Aksaray, Turkey.
[3]Aksaray University, Faculty of Arts and Sciences, Depart. of Biotech. and Mol. Bio., Aksaray, Turkey.
[4]Aksaray University, Vocational School of Higher Education, Aksaray, Turkey.
[5]Aksaray University, Institute of Science, Aksaray, Turkey.

akocagun@gmail.com

Abstract

Ammonia has negative effects on fish quality and fish meat quality because it is a toxic substance that mixes to the water by the feed and excretion system as a result of the fish's own metabolic residues. Guelder rose (*Viburnum opulus* L.) is a plant with antioxidant, anticarcinogenic and antibacterial effects and used for this purpose. In this study, the effects of guelder rose (*Viburnum opulus* L.) fruit extract (25, 50, 100 mg/kg) was investigated on lipid peroxidation levels and antioxidant enzyme activities of carp (*Cyprinus carpio* 1758 L.) exposed to ammonia (5 mg/L) for 4 days and 21 days. The carps used in the experiment were transported from Yedikır Fisheries Farm (Samsun, Turkey). They have the weight of 70-80 g and length of 15-17 cm. The experiment was carried out with a semi-static system in natural light (12h light-12h dark). During the experiment, fish were nourished with Pinar pellet feed (45% protein, 19% fat, 3% crude fiber) once a day. In the liver and gill tissues, antioxidant enzyme activities (catalase; CAT, glutathione peroxidase; GSH-Px and superoxide dismutase; SOD) and malondialdehyde (MDA) levels for lipid peroxidation assay were determined spectrophotometrically. MDA levels increased in ammonia exposed groups when compared to the control group in liver and gill tissues ($p<0.05$). Generally, antioxidant enzyme activities of ammonia exposed groups decreased when compared to the control group in liver and gill tissues ($p<0.05$). Moreover, in guelder rose + ammonia groups MDA and antioxidant enzyme activities generally compensated to the control groups levels. When the experimental results taken together, it can be concluded that guelder rose extracts may have compensatory effects on oxidative stress status of carps exposed to ammonia.

Keywords: *Cyprinus carpio*, *Viburnum opulus*, lipid peroxidation, antioxidant system.

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➢ **ORAL PRESENTATION**

Research on The Fruit flies (Diptera: Tephritidae) Fauna in Yozgat Province

Mehmet Torbalı[1], Mehmet Yaran[2], Murat Kütük[1], Vedat Görmez[2], Mürşit Ömür Koyuncu[3]

[1]Department of Biology, Faculty of Science and Arts, Gaziantep University, 27310 Gaziantep, Turkey

[2] Gaziantep University, Department of İslahiye Vocational High School, İslahiye, Gaziantep, Turkey
[3] Gaziantep University, Department of Araban Vocational High School, Araban, Gaziantep, Turkey

Corresponding author e-mail: yaran@gantep.edu.tr

Abstract

Tephritidae are picture-winged flies of variable size belonging to the superfamily Tephritoidea within the suborder Brachycera (De Meyer, 2006). According to Freidberg (2006), fruit flies (Diptera: Tephritidae) include 3 to 6 subfamilies, about 40 tribes and subtribes, approximately 500 genera, and about 4500 species. This study was based on the fruit fly (Diptera: Tephritidae) materials collected from Yozgat province of Turkey during 2016 and 2017. Fruit fly materials were collected randomly from host plants using standard insect net in various locations of Yozgat province during 2009 and 2010. Species were identified using the keys of Hendel (1927), White (1988), Freidberg and Kugler (1989), Merz (1994), Korneyev and White (1993 and 1999), Kütük (2003 and 2006), Korneyev (2003 and 2006), and Korneyev et al. (2013). Specimens have been deposited at the insect museum of Gaziantep University. In the study, 26 species belonging to 10 genera in 3 subfamilies were determined from Yozgat province: *Acanthiophilus helianthi , Euaresta bullans, Chaetorellia jaceae, C. loricata, Chaetostomella cylindrica, Orellia falcata, Oxyna flavipennis, Tephritis acanthiophilopsis, T. bardanae, T. formosa, T. postica, T. simplex, Terellia gynaecochroma, T. luteola, T. ruficauda, T. tussilaginis, T. serratulae, T. virens, Trupanea amoena, Urophora affinis, U. cuspidata, U. jaceana, U. mauritanica, U. phalolepidis, U. quadrifasciata, U. stylata*. Species are listed in alphabetical order. In addition, material examined, wing figures and zoogeographic distribution of all species and will be presented.

Keywords: Tephritidae, Fruit fly, Fauna, Yozgat, Turkey

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➢ **ORAL PRESENTATION**

Antitumoral Effects of Two Plant Extracts on HeLa Cells

Özlem Dağdeviren Özsöylemez[1]*, Gül Özcan[2]

[*1] Istanbul University, Institute of Graduate Studies in Science and Engineering, Department of Radiobiology, Istanbul/Turkey.
[2]Istanbul University, Faculty of Science, Department of Biology, Istanbul/Turkey.

Corresponding author e-mail: o_dagdeviren@hotmail.com

Abstract

Natural products are common for devoloping anticarcinogenic drugs which is continuous for various cancer types. Colchicum (Colchiciaceae/Liliaceae) is genus of containing up to 90 species in the world. In Turkey these species is represented by approximately 45 species and 15 of them are endemic. The medical importance of the genus Colchicum attributed to the presence of tropolonic alkaloids as colchicine, demecolcine etc. This alkaloids has been used in treatment gout, chirosis, myeloid leukemia, Hodgkin's syndrome, psoriasin, Behçet's syndrome, Mediterranean Fever.
Aim of this study is applying *Colchicum umbrosum* Steven and *Colchicum baytopiorum* CD Brickell (one of the endemic species in Turkey) extracts on HeLa cell lines and determine changes on cytotoxicity and viability. For this aim kinetics parameters as proliferation rate and apoptotic index have been researched. Also some apoptosis-related genes have been examined by RT-PCR method. 5 different concentrations of the both extracts from the two Colchicum species have cytotoxic effect and it has been understood that HeLa cells were more sensitive to the most effective concentration of the *C. baytopiorum* exract is 0.1 mg/ml and it showed antitumoral effects by causing apoptosis for 48 hours.
The cytotoxic activity and apoptotic effects of *Colchicum umbrosum* and *Colchicum baytopiorum* (Colchicaceae/Liliaceae) has been studied for the first time on HeLa cell lines.

Keywords: HeLa cells, *Colchicum baytopiorum*, *Colchicum umbrosum*, Bcl-2 gene family, Apoptosis, Cancer

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➢ ORAL PRESENTATION

Kırmızı Kantaron Bitkisi Çiçeğinin Süperkritik Karbon Dioksit yöntemiyle özütlenmesi ve Bazı Flavonoid İçeriğinin Belirlenmesi

Levent Nuralın

Gazi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail:leventnuralin@gazi.edu.tr

Özet

Kırmızı kantaron bitkisi Amerika, Avrupa ve Asya kıtalarında yaygın şekilde yetişebilen ve çiçeği, yaprağı ve saplarından elde edilen kapsülleri satılmakta olan birçok derde deva bir bitkidir. Geleneksel tıpta çok çeşitli alanlarda kullanılan kırmızı kantaron bitkisi sindirim bozukluğuna, mide rahatsızlıklarına iyi geldiği, hazmı kolaylaştırdığı iştah açtığı, ateş düşürücü ve terletici özelliklerinin olduğu, kansızlık tedavisinde ve karaciğeri güçlendirmede, zeytinyağında bir yıl bekletilirse iltihap ve yara iyileştirmede çok etkili olduğu, insanı kuvvetlendirdiği şeker hastalığının iyileştirmesinde, uyku bozukluklarında, kolesterolün düşürülmesinde, prostat tedavisinde, damar sertliği tedavisi ve akciğer hastalıkları tedavisinde faydalarının olduğu bilinmektedir. Bu bitkinin bilinen özütleme işlemleri konvansiyonel yöntemlerle ve kanserojen riskler taşıyan solventlerle yapılmaktadır. Yeni ve kalıntısız bir özütleme yöntemi olan süperkritik karbon dioksit ile düşük sıcaklık olan 35-65 °C aralığında 140-220 bar basınç aralığında farklı parçacık boyutlarında ve farklı CO_2 akış hızlarında çalışılarak aktif maddelerin bozunmasına müsaade etmeksizin özütlerinin elde edilmesi ve bu özütlerdeki bazı flavonoidlerin miktarlarının belirlenmesi, içerik analizi bakımından önemli olup bu değerli ve şifalı maddelerin münferiden eldelerinde yol gösterici bir çalışma olarak planlanmış ve gerçekleştirilmiştir.

Anahtar Kelimeler: Flavonoidler, süperkritik CO_2, özütleme, kırmızı kantaron.

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➢ **ORAL PRESENTATION**

Research on the Fauna of Tephritinae (Diptera: Tephritidae) in Amasya Province

Vedat Görmez[1*], Murat Kütük[2], Mehmet Yaran[1], Mürşit Ömür Koyuncu[3]

[1]Plant and Animal Production Department, İslahiye Vocational High School, Gaziantep University, Gaziantep, Turkey
[2]Department of Biology, Faculty of Sciences and Arts, Gaziantep University, Gaziantep, Turkey
[3]Plant and Animal Production Department, İslahiye Vocational High School, Gaziantep University, Gaziantep, Turkey

Corresponding author e-mail: vgormez@gantep.edu.tr

Abstract

Tephritinae is one of the most important subfamily for biological control of family Asteraceae. Larvae of species feed on flower heads of the Asteraceae. There are 4500 species of fruit flies in the world and 160 species in our country. This study was conducted in order to determine the Tephritinae fauna of Amasya province. During the study, adult specimens were collected from possible host plants using an insect net in different localities of Amasya province of Turkey between 2015 and 2017 years. Collected materials were killed in the killing jar and pinned in the laboratory for identification. Specimens were diagnosed using identification key of Freidberg and Kugler (1989), Merz (1994), Korneyev and White (1999), Kütük (2003), Görmez (2011) and Yaran (2014). As a result of the study, 22 species (*Acanthiophilus helianthi* (Rossi), *Campiglossa producta* (Loew), *C. tesellata* (Loew), *Euaresta bullans* (Wiedemann), *Oxyna flavipennis* (Loew), *Sphenella marginata* (Fallen), *Tephritis dioscurea* (Loew), *T. divisa* Rondani, *T. fallax* (Loew), *T. formosa* (Loew), *T. hyoscyami* (Linnaeus), *T. mariannae* Merz, *T. matricariae* (Loew), *T. nigricauda* (Loew), *T. postica* (Loew), *T. praecox* (Loew), *T. sauterina* Merz, *T. seperata* Rondani, *Tephritomyia lauta* (Loew), *Trupanea amoena* (Frauenfeld), *T. stellata* (Fuesslin), *Xphosia miliaria* (Schrank)) of 9 genera belonging to Tephritinae were obtained in the research region. Eighteen species were recorded for the first time in Amasya province with this study. For the species in the region, wing and aculeus figures, host plants, material examined and zoogeographic distribution will be reported and a diagnostic key will be prepared. Specimens are deposited at the Zoology Museum of Gaziantep University.

Keywords: Fruit flies, Tephritinae, Fauna, Amasya, Turkey.

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➢ **ORAL PRESENTATION**

Manda Sütlerinde Epidermal Büyüme Faktörü Konsantrasyonu

Filiz Kazak[1*], Gül Fatma Yarım[2], Ayris Salt[2], Mehmet Kemal Delmecioğlu[2], Murat Yarım[3]

[*1]Mustafa Kemal Üniversitesi, Veteriner Fakültesi, Biyokimya Anabilim Dalı, Hatay, Türkiye
[2]Ondokuz Mayıs Üniversitesi, Veteriner Fakültesi, Biyokimya Anabilim Dalı, Samsun, Türkiye
[3]Ondokuz Mayıs Üniversitesi, Veteriner Fakültesi, Patoloji Anabilim Dalı, Samsun, Türkiye

Sorumlu yazar e-mail: filizkazak@mku.edu.tr

Özet

Manda sütü, lipit, protein, vitamin ve mineral madde içeriğinin diğer sütlere oranla daha fazla olması nedeniyle insan beslenmesinde önemli bir değere sahiptir. Polipeptid yapılı bir büyüme faktörü olan epidermal büyüme faktörü (EGF), hücrelerin bölünmesi, farklılaşması, yaşaması, çoğalması, büyümesi ve göçünü uyarmakta ve organizmadaki fizyolojik ve patolojik süreçlerde rol oynamaktadır. Meme bezi epitel hücrelerinde reseptörleri bulunan EGF'nin meme bezi hücrelerinin çoğalmasını uyardığı ve meme dokusunun gelişiminde rol oynadığı bilinmektedir. Sunulan çalışmanın amacı sağlıklı manda sütlerinde EGF konsantrasyonunu belirlemektir.

Sunulan çalışmada, laktasyon periyodundaki, 3-6 yaşlarındaki mandalardan alınan süt örnekleri kullanıldı. Mandaların dört ayrı meme lobundan alınan süt örneklerine Kaliforniya mastitis test uygulandı ve sütte mikroskobik sayım metodu ile somatik hücre sayımı gerçekleştirildi. Kaliforniya mastitis test negatif ve somatik hücre sayısı 300.000 hücre/ml'den az olan 30 adet mandaya ait 120 adet süt örneği çalışma materyalini oluşturdu. Süt örneklerinde EGF konsantrasyonu sığıra özgü EGF enzim bağlı immünosorbent analiz kiti kullanılarak belirlendi.

Manda sütlerinde EGF konsantrasyonunun 4,3 ng/ml - 9,8 ng/ml aralığında ve ortalama olarak 8,3±1,5 ng/ml olduğu belirlendi.

Sunulan çalışmanın, manda sütü ile ilgili bilimsel çalışmalara katkı sağlayabileceği düşünülmektedir.

Anahtar Kelimeler: Epidermal büyüme faktörü, manda, süt

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➢ **ORAL PRESENTATION**

Epidermal Growth Factor Concentration in Milk of Water Buffaloes

Filiz KAZAK[1*], Gül Fatma YARIM[2], Ayris SALT[2], Mehmet Kemal DELMECİOĞLU[2], Murat YARIM[3]

[*1]Mustafa Kemal University, Veterinary Faculty, Department of Biochemisty, Hatay, Turkey
[2]Ondokuz Mayis University, Veterinary Faculty, Department of Biochemistry, Samsun, Turkey
[3]Ondokuz Mayis University, Veterinary Faculty, Department of Pathology, Samsun, Turkey

filizkazak@mku.edu.tr

Özet

Aim: Water buffalo milk has an important value in human nutrition because of its lipid, protein, vitamin and mineral content is higher than other milk. Epidermal growth factor (EGF), a polypeptide-structured growth factor, stimulates cell division, differentiation, life, proliferation, growth and migration. It plays a role in the physiological and pathological processes in the organism. It is known that EGF, which has receptors in mammary gland epithelial cells, stimulates the proliferation of mammary gland cells and plays a role in the development of mammary tissue. The purpose of the present study is to determine the EGF concentration in healthy water buffalo milks.

Material and Methods: In the present study, milk samples taken from water buffaloes at 3-6 years of age in the lactation period were used. California mastitis test were performed on milk samples taken from four separate mammary lobes of the water buffaloes and somatic cell counts were performed by microscopic counting method. The study material is constituted 120 milk samples, taken from 30 water buffaloes, negative for California mastitis test and somatic cell counts less than 300,000 cells/ml milk. The concentration of EGF in milk samples was determined using an bovine specific immunoglobulin immunoassay kit.

Results: EGF concentration in the water buffalo milks was determined 4.3 ng/ml to 9.8 ng/ml and as mean 8.3 ± 1.5 ng/ml.

Conclusions: It is believed that the present study can contribute to the scientific studies related to the water buffalo milk.

Keywords: Epidermal growth factor, milk, water buffalo

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➢ ORAL PRESENTATION

Biyolojik Vaks Mono Esterlerin Kimyasal Esterfikasyon ve Transesterfikasyon Reaksiyonları Üzerinden Yeşil Sentez Yöntemi

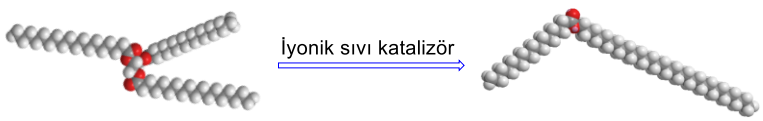
Sebghatullah Mudaber[*], Ayhan Yıldırım[2]

[*1] Uludağ üniversitesi, Fen ve Edebiyat fakültesi, Kimya bölümü, Bursa, Türkiye
[2] Uludağ üniversitesi, Fen ve Edebiyat fakültesi, Kimya bölümü, Bursa, Türkiye

Sorumlu yazar e-mail: s.mudaber.19@gmail.com

Özet

Farklı bitkisel ve hayvansal organizmaların yüzey kısımlarında bulunan vaks esterleri önemli biyolojik fonksiyonları yerine getirirler. İlaç, gıda, kozmetik ve daha pek çok farklı endüstriyel alanda çeşitli amaçlarla kullanılırlar. Bu vaks esterlerin başlıca doğal kaynakları sperm balinası ve jojoba bitkisidir. Ancak günümüzde soylarının tükenme tehlikesi nedeniyle, bu balinaların avlanılması yasaklanmıştır. Jojoba bitkisinin Avrupa ülkelerinde yetiştirilmesi iklim açısından uygun değildir ve ayrıca bitkinin dikiminden ancak 5 yıl sonra tohumlar elde edilir. Vaks esterlerinin alternatif bir başka kaynağı da, bu maddelerin ucuz, bol bulunan, toksik olamayan, biyobozunur ve yenilenebilir çıkış maddelerinden hazırlanmasıdır. Bu amaçla enzimatik veya kimyasal prosesler bir araştırma konusudur. Enzimatik prosesler günümüzde hala geliştirilmektedir ve çok az şirket bu prosesle ilgilenmektedir. Dolayısı ile bu maddelerin, kimyasal sentez yöntemleri popülaritesini korumaktadır. Ancak literatürde mevcut kimyasal sentez yöntemlerinin pek çok dezavantajları vardır. Bu çalışmada, çevreci, ekonomik ve etkin bir kimyasal sentez prosesi geliştirildi. Bu amaçla; eşdeğer oranlarda (1:1) uzun zincirli yağ asitleri ve yağ alkolleri çözücüsüz ortamda esterleşme, eşdeğer oranlarda (1:1) uzun zincirli yağ asitleri metil esterleri ve yağ alkolleri çözücüsüz ortamda transesterleşme ve ayrıca, tristearin doğrudan yağ alkolü ile (1:3) oranında transesterleşme reaksiyonlarına alındı. Katalizör olarak, yeni sentezlenen ve metal içermeyen iyonik sıvı özelliğinde bir Bronsted asidi kullanıldı. Ayrıca büyük ölçekli sentez çalışmaları ve katalizörün tekrar kullanım çalışmaları yapıldı. Reaksiyonların sonunda vaks esterleri kristallendirme gibi basit bir teknikle kolayca saflaştırıldı.



Anahtar Kelimeler: Biyolojik vaks mono esterler, Solventsiz sentez, , İyonik sıvı, Yeşil kimya

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➢ **ORAL PRESENTATION**

Epiphytic Bryophyte Vegetation of Akyazı District (Sakarya/Turkey)

Tülay Ezer[1*], Mevlüt Alataş[2], Güray Uyar[3], Muhammet Ören[4]

[*1]Niğde Ömer Halisdemir University, Faculty of Science and Arts, Biology Department, Niğde, Turkey
[2]Munzur University, Faculty of Engineering, Bioengineering Department, Tunceli, Turkey
[3]Gazi University, Polatlı Faculty of Science and Arts, Biology Department, Ankara, Turkey
[4]Bülent Ecevit University, Faculty of Science and Arts, Biology Department, Zonguldak, Turkey

Corresponding Author: e-mail:tuezer@gmail.com

Abstract

Although the bryofloristic studies have increased rapidly in recent years, the bryosociological studies haven't reached yet sufficient level in Turkey. There are only a few detailed studies on epiphytic bryophyte vegetation. In this study, epiphytic bryophyte vegetation of Akyazı (Sakarya) was studied during different vegetation periods in 2017. The investigation of the epiphytic bryophyte vegetation was carried out according to the Braun-Blanquet's phytosociological methodology. And also, 85 relevés, taken from the different tree species in the study area, were ordinated using DECORANA and classifed using TWINSPAN. As a result of the phytosociological evaluation of 85 relevés, 6 epiphytic bryophyte association and 2 subassociation were determined. Among them, *Orthotrichetum pallentis-isotheciethosum alopecuroidis* is new to science world. In addition, while *Pterigynandretum filiformis - leucodontethosum sciuroidis* is new to Turkey, *Orthotrichetum pallentis* is recorded for the second time from Turkey. TWINSPAN classified epiphytic bryophyte vegetation into eight clusters at third hierarchical level. DECORANA ordinated evironmental gradients that were related to species distributions within the epiphytic bryophyte communities.

Keywords: Akyazı, Bryophyte, Epiphytic, Turkey, Vegetation

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➢ ORAL PRESENTATION

Measurement of the Penetration Depth for 635 nm Laser Light in Chicken Liver Tissue

Bahar Pehlivanöz[1*], Halil Arslan[2]

[*1]Institute of Natural Sciences, Biomedical Engineering Department, Sakarya University, Turkey.
[2]Faculty of Technology, Electrical and Electronics Engineering Department, Sakarya University, Turkey.

Corresponding author e-mail:b.phlvnz@gmail.com

Abstract

Laser-tissue interaction is very important in biomedical optics for both diagnostic and therapeutic applications. Optical penetration depth, which is a measure of how deep light can penetrate into the target tissue, is important to know for all kinds of such applications. In this study, the optical penetration depth of 635 nm laser light has been measured in vitro in chicken liver tissue. For the experiment, 6 different tissue samples with various thicknesses ranging from 0.8 mm to 3.2 mm have been prepared. The transmittance, which is the ratio of the transmitted light to the incident light, has been measured for each sample. Transmittance values have been plotted as a function of tissue thickness and fitted to an exponential function (Beer-Lambert law) to get the penetration depth. As a result, the optical penetration depth of the 635 nm laser light in the chicken liver tissue has been found to be 1.37±0.02 mm, which is in good agreement with the values in the literature.

Keywords: Laser-tissue interaction, Penetration depth, Beer-Lambert law.

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➢ **ORAL PRESENTATION**

Thermal Conversion of Biomass

Turgay Kar, Sedat Keleş, Kamil Kaygusuz*

*Karadeniz Technical University Faculty of Science, Department of Chemistry, Trabzon, TURKEY

Corresponding author e-mail: kamilk@ktu.edu.tr

Absrtact

Biomass fuel from renewable energy sources is seen as one of the most important alternatives to traditional fossil fuels, along with the rapid increase in global energy demand and increasing environmental problems and sustainability issues. Today, biomass and wastes contribute about 10% of global energy supply. It is predicted that the annual biomass potential will be about $1.08x10^{11}$ teo (tons of equivalent oil), nearly 10 times the world energy need. The abundance of biomass reserves from coal industry renewability and CO_2 neutrality has been the main driving force for the exploration and use of biomass. The thermochemical conversion processes used for biomass conversion to energy and chemicals can be classified as direct burning, pyrolysis, gasification. Direct burning of biomass in combustion boilers can generate hot water, steam and electric energy. Pyrolysis of biomass is a thermochemical process that results in the formation of liquid biofuels, solid bio-char and non-condensable gases, generally by burning biomass in an oxygen-free atmosphere. Depending on the heating rate and the retention time of the solid mass, it can be divided into three main types, including biomass pyrolysis, slow (conventional) pyrolysis, rapid pyrolysis and flash pyrolysis. Slow pyrolysis, called coalification, has traditionally been applied to coal production. Gasification is a chemical process that transforms carbon-containing materials such as biomass into beneficial gaseous fuels and chemical substances. The energy is trapped in the chemical bonds in the gasification, while the energy is emitted direct combustion. Gasification is not only an energy conversion, but also an important application in which chemical raw materials are produced in some industrial processes.

Keywords: Biomass, Direct combustion, Pyrolysis, Gasification

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➢ **ORAL PRESENTATION**

Effect of Glass Surface Treatment on Boron Nitride Thin Film Formation

Duygu Gokdai[1], Alev Akpinar Borazan[1*], Nuran Ay[2]

[*1]Bilecik Seyh Edebali University, Engineering Faculty, Department of Chemical Engineering, Bilecik, Turkey
[2]Anadolu University, Engineering Faculty, Department of Material Science and Engineering, Eskisehir, Turkey

Corresponding author e-mail: alev.akpinar@bilecik.edu.tr

Abstract

Boron nitride (BN) has extensive applications due to its many unique features. It is believed that BN crystal structure with an exposed crystal surface will benefit from many unique properties, such as excellent high thermal conductivity, mechanical strength. Thanks to these features thin h-BN coatings find applications in several fields such as protective coating for oxidation, UV, humidity and corrosion. Adhesion is one of the most important factors in thin film formation. In order to increase the adhesion between the two phases (glass substrate and film), the glass surface must be treated before coating. In this study, after the glass surfaces were treated using TEOS silane group and piranha solution, the coating was applied. The retention times of the glass surfaces in the piranha solution and the adherence of different ratios of the silane solution to the glass surface were investigated. Fourier Transform Infrared Spectrophotometer (FT-IR) analysis was performed for analysis of bond structures of the components in the thin film structure. Scanning Electron Microscopy (SEM) images were taken at different magnification ratios to define the surface morphology of the thin films. When the results were examined, it was observed that the piranha and silane solutions improved the glass surface. According to the SEM images, the silane was coated on the glass surface and the coating material was held on the silane.

Keywords: thin film, boron nitride, surface treatment, silane

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➢ ORAL PRESENTATION

Prangos pabularia (Apiaceae) Lindl. Türünün Meyve ve Yapraklarının Uçucu Yağ Kompozisyonu

Gülden Doğan[1], Şükrü Hayta[2*], Eyüp Bağcı[1]

[1]Fırat Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Elazığ, Türkiye
[2*]Bitlis Eren Üniversitesi, Mühendislik ve Mimarlık Fakültesi, Çevre Mühenlisliği Bölümü, Bitlis, Türkiye
Sorumlu yazar e-mail: shayta@beu.edu.tr

Özet

Ülkemizde daha çok Doğu, Orta ve Güney Anadolu'da yetişen *Prangos pabularia* Lindl. türü çok yıllık, otsu bir bitkidir. Bu çalışmada, *Prangos pabularia* türünün meyve ve yaprakları GC/GC-MS kullanılarak analiz edilmiştir. Bu analiz sonucunda; meyvenin uçucu yağ verimi % 0.5 (v/w), yaprakların ise % 0.6 (v/w) olarak saptanmış, toplamda yağın sırasıyla % 87.1 ile % 93.6' sını oluşturan 32 ve 34 bileşen tespit edilmiştir. Major bileşenlerin meyvede; Akorenon (%63.8) ve Germakren D (%10.3), yaprakta ise Akorenon (%52.5), Etilbenzen (%10.5) ve Germakren D (%7.4) şeklinde olduğu saptanmıştır. Bu analiz sonuçlarına göre Akorenon, türün kemotip bileşeni olabilir.

Anahtar Kelimeler: *Prangos*, Apiaceae, Uçucu yağ, Akorenon.

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➢ **ORAL PRESENTATION**

Solvents Effect on the Acidity of Some 3-Alkyl(Aryl)-4-[3-ethoxy-2-(4-methoxybenzoxy)-benzylidenamino]-4,5-dihydro-1*H*-1,2,4-triazol-5-ones

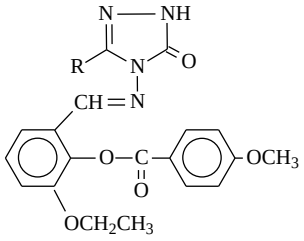
Faruk Kardaş[1], Zafer Ocak[2*], Murat Beytur[3], Sevda Manap[3], Haydar Yüksek[3]

[1] Erzincan University, Faculty of Education, Department of Science Education, Erzincan, Turkey
[*2] Kafkas University, Faculty of Education, Department of Science Education, Kars, Turkey
[3] Kafkas University, Faculty of Science and Letters, Department of Chemistry, Kars, Turkey

Corresponding author e-mail: zafcak@gmail.com

Abstract

Although water is an extraordinarily versatile solvent in which to carry out acid-base titration, there are occasions when a nonaqueous solvent may be necessary or preferred. Such as when the analyte is not water soluble and the neutralization reaction is not sufficiently complete in water (Hargis L. G 1988). It is known that 4,5-dihydro-1*H*-1,2,4-triazol-5-one ring has weak acidic properties and very low solubility in water. In this study the acidic properties of nine 3-alkyl(aryl)-4-[3-ethoxy-2-(4-methoxy-benzoxy)-benzylidenamino]-4,5-dihydro-1*H*-1,2,4-triazol-5-ones (**1**) were investigated in non-aqueous media. The compounds were synthesized according to the literature (Kardaş et al., 2015). In non-qaueous medium, isopropyl alcohol and *tert*-butyl alcohol among the amphiprotic type, and acetone and *N*,*N*-dimethylformamide among the dipolar aprotic type were preferred as solvent. The potentiometric method used in determining the end-points in titrimetric analyses was utilized for the determination of acidity. The acidity constants of the compounds in the solvents chosen were calculated using the graphs and the data obtained with half-neutralization method (Yüksek et al., 2015). The acidity strength of the compounds was observed to differ from the information obtained. The acidity strength of **1** type compounds with varying R groups in different solvents, dielectric constant of the solvents, autoprotolysis constant and leveling-differentiation effects were investigated.



1

R	1
a	CH_3
b	CH_2CH_3
c	$CH_2CH_2CH_3$
d	$CH_2C_6H_5$
e	$CH_2C_6H_4CH_3$(*p*-)
f	$CH_2C_6H_4OCH_3$ (*p*-)
g	$CH_2C_6H_4Cl$(*p*-)
h	$CH_2C_6H_4Cl$(*m*-)
i	C_6H_5

Keywords: Amphiprotic solvents, Dipolar Aprotic solvents, Half-Neutralization method.

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➢ **ORAL PRESENTATION**

Estimation of Heterosis and Heterobeltiosis in a 8x8 Diallel Cross Bread Wheat F_3 Population

Hüseyin Güngör[1*], Ertuğrul Filiz[2], Ziya Dumlupinar[3]

[*1]Duzce University, Agriculture and Natural Sciences Faculty, Field Crops Department, Duzce, TURKEY
[2]Duzce University, Department of Crop and Animal Production, Cilimli Vocational School, Cilimli, Duzce, TURKEY
[3]Kahramanmaras Sutcu Imam University, Agricultural Faculty, Agricultural Biotechnology Department, Kahramanmaras, TURKEY

*Corresponding author: hgungor78@hotmail.com

Abstract

Hybrid vigor values which often observed in F_1 plants is also important in F_3 generations. Eight bread wheat (*Triticum aestivum* L.) genotypes (Midas, As-14, Rumeli, Esperia, Gl-14, Krasunia odes'ka, Masaccio and Lucilla) from different origins were crossed in a diallel cross and evaluated for heterosis and heterobeltiosis in F_3 populations for some yield and yield components. The experiment was conducted in randomized complete blocks design with four replications in Lüleburgaz/Kırklareli under farmer conditions in 2016-17 cropping year. Significant and positive heterosis and heterobeltiosis were observed for all investigated traits in almost all crosses. The values of heterosis and heterobeltiosis values for spike length, spikelets number per spike, grain number per spike, grain weight per spike and grain yield per plant were 28.76 and 22.73%; 10.75 and 5.51%; 25.46 and 16.52%; 46.66 and 31.61%; 46.92 and 32.20%, respectively.

Keywords: diallel cross, heterosis, heterobeltiosis, bread wheat, yield traits

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➢ **ORAL PRESENTATION**

Cephalanthera longifolia türünün vejetatif organlarının anatomik özellikleri

Öznur Ergen Akçin[1*], Tuğba Özbucak[1], Merve Yasemin Altıntaş[2], Sema Sevil Kolcu[1]

[*1]Ordu Üniversitesi, Fen-Edebiyat Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Ordu,Türkiye
[2] Ordu Üniversitesi, Fen Bilimleri Enstitüsü, Moleküler Biyoloji ve Genetik Anabilim Dalı, Ordu,Türkiye

Sorumlu yazar e-mail:oakcin@gmail.com

Özet

Cephalanthera L.C.M. Richard (Orchidaceae) cinsi ülkemizde 9 tür (6 tanesi doğal tür, 3 tanesi melez tür) ile temsil edilmektedir. *C. longifolia* L.Fritsch türü "kuğu salebi" olarak bilinmekte ve bazı yörelerde salep olarak tüketilmektedir. Bu çalışmada *C. longifolia* türünün vejetatif organlarının anatomik özellikleri incelenmiştir. İncelenen örnekler Ordu Ünye Kent Ormanından toplanmıştır. Anatomik incelemeler için bitkilerin kök, gövde ve yapraklardan alınan örnekler %70'lik alkolde tespit edilmiş ve örneklerden el yardımıyla kesitler alınmıştır. Anatomik incelemelerde türün kök, gövde ve yaprak kesitlerinde epiderma, kollenkima, parankima, endoderma ve sklerenkima hücrelerinin boyutları ile trake ve floem elemanlarının çapları NIS Elements Imaging Software 3.00 SP5 programı kullanılarak ölçülmüş. Türün anatomik çekimleri Nikon Eclıpse E400 marka mikroskop ile çekilmiştir. Bitkinin kökünden alınan enine kesitlerde korteks parankimasında mantar peletonlarının varlığı dikkat çekicidir. Ayrıca korteks hücrelerinde rafit kristalleri ve nişasta taneleri de görülmektedir. Ksilem poliarktır. Gövde enine kesitinde dış yüzeyde tek sıralı epiderma tabakası bulunmaktadır. Korteks de parankimatik hücreler ve nişaşta tabakası yer almaktadır. İletim demetlerinin üzerinde perivasküler lifler bulunmaktadır. İletim demetlerinde ksilem oldukça geniş bir alan kaplamaktadır. Yapraktan alınan enine kesitlerde alt ve üst yüzeyde tek sıralı epiderma hücreleri görülmektedir. Yaprak unifasiyal tiptedir ve amfistomatiktir. Epidermis hücreleri belirgin şekilde dalgalı çeperlidir. Stomalar komşu hücrelerine göre 4.tip veya tetrastiktir. Yaprağın adaksiyal tarafında 1 mm²'de ortalama 130 stoma, 235 epiderma hücresi vardır. Yaprağın abaksiyal tarafında ise 1 mm²'de ortalama 140 stoma, 210 epiderma hücresi vardır. Yaprağın adaksiyal yüzeyinde stoma indeksi 35.6, yaprağın abaksiyal yüzeyi için stoma indeksi 40 olarak bulıunmuştur.

Anahtar Kelimeler: Orchidaceae, *Cephalanthera*, *C. longifolia*, Anatomi.

Teşekkür: Bu çalışma Ordu Üniversitesi Bilimsel Araştırma Projeleri tarafından TF-1206 nolu proje kapsamında desteklenmiştir.

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➢ ORAL PRESENTATION

Deafness Risk Estimation Analysis of Native Genetic Resource Kangal Shepherd Dog Breed: Sivas Province Example

Mustafa Kockaya[1*], Yusuf Ozsensoy[2], Hakan Murat[3]

[*1] Cumhuriyet University, Faculty of Veterinary Medicine, Department of Veterinary Physiology, Sivas, Turkey
[2] Cumhuriyet University, Faculty of Veterinary Medicine, Department of Veterinary Biometrics and Genetics, Sivas, Turkey
[3] Cumhuriyet University, Faculty of Veterinary Medicine, Department of Livestock Economics and Management, Sivas, Turkey

e-mail: vet_mustafakockaya@hotmail.com

Abstract

The present study was aimed to conduct deafness risk estimation analyses of Kangal shepherd dogs that were raised in Sivas province of Turkey. Brainstem Auditory Evoked Response (BAER) test was conducted for to screen deafness in 160 Kangal shepherd dogs that were raised in centrum and towns of Sivas province. Test subjects were not isolated from their native environments during applications. Also, mostly docile animals were chosen for analyses to overcome presences of movement derived artifacts.
Dogs were divided into three groups include their general, ages and genders. Differences between left and rights ears in 20, 40, 60, and 80 decibels (dB) were investigated. Comparisons were made in age groups by using one-way ANOVA and Duncan multiple comparisons tests while comparisons in other groups were made by using the t-test for independent groups. All statistical analyses were performed in SPSS v.15 software.
In conclusion of analyses, one side deafness was found in a total of 2 dogs. It was also detected that the sense of hearing did not improve in puppies up to 11 days old. Group comparisons were revealed statistical significance for right ear 40 and 60 dB for age groups, and right ear 80 dB for gender groups ($P<0.05$). No statistical significance was detected for other groups' frequencies ($P>0.05$). This study is the first that deafness investigation conducted in Kangal shepherd dogs. This work is supported by the Scientific Research Project Fund of Cumhuriyet University under the project number V-043.

Keywords: Kangal shepherd dog, Deafness, Sivas, BAER

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➢ **ORAL PRESENTATION**

Biological Properties and Metal Complexes of 2-Amino-6-substituebenzothiazole Derivatives on Literature Study

Halil İlkimen[1*], Cengiz Yenikaya[1]

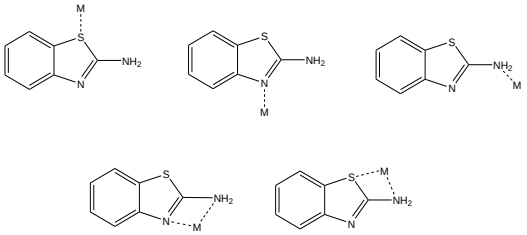
[*1]Dumlupınar University, Faculty of Arts and Science, Department of Chemistry, Kutahya, Turkey

Corresponding author e-mail: halil.ilkimen@dpu.edu.tr

Abstract

2-Aminobenzothiazole derivatives and their simple metal complexes are well known for their biological activities, such as antimicrobial, anticancer, antifungal, anti-inflammatory, anthelmintic, antiulcer, antitumor and carbonic anhydrase inhibition [1,2]. Simple transition metal complexes of 2-aminobenzothiazole derivatives and the mixed ligand metal complexes between 2-aminobenzothiazole derivatives and other organic acid have been reported in literature [3-7]. 2-Aminobenzothiazole derivatives coordinate to transition metals by N or S or NH_2 atoms [7].

In this study, structure and biological properties of same simple transition metal complexes of 2-amino-6-substituebenzothiazole derivatives and the mixed ligand metal complexes between 2-aminobenzothiazole derivatives [2-amino-6-(bromo;ethoxy;carboxylato;chloro;methyl;methoxy;nitro) benzothiazole] and other organic compounds such as, acetilasetone; o-, p-, m-nitrobenzoic acid, 2,6-pyridinedicarboxylic acid, have been investigated in literature [3-7].



Keywords: 2-Amino-6-substituebenzothiazole, carboxylic acid, metal complex, biological properties.

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➢ **ORAL PRESENTATION**

Cerambycidae (Coleoptera) Familyası Üzerine DNA Barkodlama Çalışmalarının Türkiye'deki Durumu

Naciye Cihan Tüzün[1*], Hakkı Taştan[2], Hüseyin Özdikmen[2]

[*1]Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye
[2] Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: naciyecihan@windowslive.com

Özet

Cerambycidae familyası, dünyada yaklaşık 36,300 tür ile Coleoptera takımının en çok türü bulunan önemli gruplarından biridir. Ülkemizde ise 2012 verilerine göre 824 tür grubu takson (721 tür ve 103 alt tür) ile temsil edilmektedir. 'Teke böcekleri' olarak da adlandırılan familya üyelerinin tamamı ksilofag ya da fitofag olarak bitkisel maddelerle beslenir. Bu grubun da içinde bulunduğu tanımlanmış yaklaşık 1 milyon civarı tür çeşitliliği ile Insecta sınıfında daha çok sayıda yeni tür tanımlanmayı beklemektedir. Biyoçeşitlilik açısından bu kadar zengin olan canlılar taksonomik açıdan bazı güçlükleri de beraberlerinde getirmektedirler. Ayrıca bu kalabalık hayvan grubuyla çalışan taksonomistlerin sayısı da oldukça yetersizdir. Geleneksel morfolojik tanımlama yöntemlerinin tüm sorunları dört temel kısıtlayıcı unsurda toplanmaktadır. Birincisi, tür teşhisinde kullanılan karakterlerdeki fenotipik ve genetik plastisitenin ikisi de yanlış tanımlamalara neden olabilmektedir. İkincisi, çoğu grupta yaygın olan morfolojik olarak kriptik sayılan taksonlar gözden kaçırılabilir. Üçüncüsü, morfolojik anahtarlar sıklıkla sadece belirli bir yaşam evresinde ya da eşeyde etkili olduğu için, var olan çoğu birey tanımlanamayabilir. Aynı zamanda, teşhis anahtarlarının kullanımı yüksek derecede bir uzmanlık gerektirdiğinden çoğu zaman yanlış teşhislerle karşılaşılabilir. Morfolojik taksonomik yöntemlerdeki bu sınırlamalardan dolayı bilim insanları moleküler taksonomi alanında çalışmalar yaparak oldukça verimli taksonomik araçlar elde etmişlerdir. Bu araçlardan biri olan DNA barkodlama, bu problemlerden çoğuna cevap veren, düşük maliyetli ve hızlı bir analiz metodudur. Bu metot, metazoon mitokondriyal DNA sekansında yer alan sitokrom c oksidaz (COI) genini barkod olarak kullanarak türlerin tanımlanmasını sağlar. Metot sayesinde oluşturulan COI veri tabanı hayvanlar için küresel bir biyo-tanımlama sisteminin temelini oluşturmakta ve tür tanımlamada yüksek başarı oranı göstermektedir. Ayrıca bu mikrogenomik tanımlama sistemi, tür ayrımı konusundaki morfolojik yaklaşımların eksikliklerini gidermekte, tür içi çeşitliliğin sınırlarını ölçmekte, sibling türlerin dahi teşhis edilebilmesini sağlamakta ve böylece taksonomik kararların objektif verilmesini ve tüm yaşam evrelerinin tanımlanabilmesini gerçekleştirebilmektedir. Bunun yanı sıra, Web tabanlı bilgi dağıtımı aracılığıyla, bu sistem taksonomik bilgiye kolay erişimi sağlamaktadır. Bu çalışmada, dünyadaki cerambycid türlerindeki DNA barkodlama tekniği araştırılarak, Türkiye faunası üyelerinin durumu analiz edilmiştir.

Anahtar Kelimeler: DNA Barkodlama, Türkiye, Cerambycidae, Biyoinformatik

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➢ **ORAL PRESENTATION**

Autophagy

Ayfer Çelebi[1*], Ertan Oruç[2]

[1*]Selcuk University, Graduate School of Health Sciences, Department of Pathology
Konya, TURKEY
[2]. Selcuk University, Faculty of Veterinary Medicine, Department of Pathology
Konya, TURKEY

Corresponding author e-mail: ayfercelebi367@gmail.com

Abstract

The transporting of damaged cellular structures to the cytosol,separating into basic components and re-transferring to the cell cytosol for reuse is defined as autophagy.

In recent years new forms of cell death have been discovered other than necrosis and these cell death mechanisms have been shared with the scientific world.

In this presentation, detailed information about autophagy, will be presented and compared with other cell death patterns.

Keywords: Cell death, Autophagy, Pathology

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➢ **ORAL PRESENTATION**

Foodborne and Biofilm Forming Pathogens

Esin Orhan Yanıkan[1*], Maria Ruiz Rico[2], Jose Manuel Barat Baviera[2], Ana Isabel Jimenez Belenguer[2], Kamuran Ayhan[1]

[*1] Ankara University, Faculty of Engineering, Department of Food Engineering, Ankara, Türkiye
[2] Polytechnic University of Valencia, Faculty of Engineering, Department of Food and Technology, Valencia, Spain

Corresponding author e-mail: orhane@ankara.edu.tr

Abstract

Biofilm is a major concern for industry and this structure causes both health risks and economic loss such as resistance in heat flowing, heat and yield loss, increasing in corresion rate of production equipment surfaces (Raffaella et al. 2016; Martinelli et al. 2014; Rajasekar et al. 2010; Gün and Ekinci 2009; Garret et al. 2008). In food industry, *Staphylococcus* spp., *Escherichia coli (E. coli)*, *Salmonella* spp., *Pseudomonas*, *Listeria monocytogenes*, *Bacillus* spp. are determined as major biofilm forming pathogens causing wide range of production and health problems. Particularly, some processes like scalping, cutting, washing, rinsing, usage of drainage systems and packing are exibited primary sources of cross contamination of the pathogens (Srey et al. 2013).

In the present study, samples were collected from a meat factory, which was established in January 2017 in Ankara (Turkey), and this firm involved in the production of different types of meat and meat products i.e. salami, sausage, fermented sausage, fried meat, meatball and minced meat. Four different production surfaces were chosen in order to characterize the bacterial communities in a meat processing environment: under line of deboning belt conveyor (UN), upper line of deboning belt conveyor (UP), modified atmosphere packaging unit (MP) and vacuum packaging unit (VP).

As a consequence of our findings, 9 Gram positive and 11 Gram negative isolates were identificated according to conventional methods and API test kits. Detected Gram positive bacteria were determined as *Listeria grayi*, *Staphylococcus warneri*, *Lactobacillus paracasei*, *Micrococcaceae* while Gram negative isolates were *E. coli* and *Acinetobacter baumannii*. In addition to this, 16s rRNA was carried out as molecular method for Gram negative bacteria due to be presumptive pathogen. Results indicated 6 of Gram negative were *E. coli* and 5 of them were *Acinetobacter baumannii* with the identification rate >%96.

Keywords: Biofilm, Meat, Pathogen, Bacteria, Food Industry

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➢ ORAL PRESENTATION

Quercetin Decreases H_2O_2-Induced Oxidative Stress and Sterile Inflammation Proteins In Clone 9 Liver Cells

Erhan Sahin[1], Sinem Dabagoglu[2], Varol Sahinturk[1], Tansu Koparal[2]

[*1]Eskisehir Osmangazi University, Medicine School, Histology and Embryology Department, Eskisehir, Turkey
[2]Anadolu University, Faculty of Science, Biology Department, Eskisehir, Turkey

Corresponding author e-mail: sahine@ogu.edu.tr

Abstract

The aim of this study is to investigate the effects of quercetin on hydrogen peroxide (H_2O_2) induced oxidative stress and NLRP3 and caspase 1 proteins involved in sterile inflammation.
First, the half maximal inhibitory concentration (IC_{50}) of the H_2O_2 in the clone 9 liver cells was determined by 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2H-tetrazolium bromide (MTT) assay. Then MTT assay was performed to find the protective dose of quercetin. Then the cells were first given a protective dose of quercetin, after 24 hours the medium was drained and the medium containing IC_{50} dose of H_2O_2 was administered. MTT assay was performed again after 24 hours. The same experimental protocol used with 4',6-diamidino-2-phenylindole dihydrochloride (DAPI) fluorescent staining to show the morphological effects on cell nucleus, and fluorometric 2',7'-dichlorodihydrofluorescein diacetate (DCF-DA) kit to detect the amount of ROS. NLRP3 and caspase-1 immunocytochemical stainings were also performed to detect the sterile inflammation.
The IC_{50} dose of H_2O_2 in clone 9 liver cells and the protective dose of quercetin against H_2O_2-induced damage were determined as 278 µM and 15 µM, respectively. H_2O_2 was found to cause pyknosis in clone 9 cell nucleus, whereas quercetin was found to protect cell nucleus against H_2O_2-induced damage. Quercetin pretreatment significantly reduced ROS production (p <0.05). It was found that NLRP3 and caspase 1 immunoreactivity increased in H_2O_2-treated group but quercetin pretreatment reduced expression of these proteins.
In conclusion, it has been shown that quercetin reduces oxidative stress, induced by H_2O_2, in clone 9 liver cells and the expression of NLRP3 and caspase 1 proteins. A detailed investigation of the antioxidant properties of quercetin and its suppressive effects on NLRP3 inflammasome may be useful in the treatment and prevention of many diseases.

Keywords: Clone 9 liver cells, oxidative stress, quercetin, NLRP3 inflammasome.

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➢ **ORAL PRESENTATION**

Kanser Tedavisi için Ftalosiyanin Fotosensitizer Türevlerinin Sentezi ve Fotokimyasal Özelliklerinin İncelenmesi

Safiye Bozkurt Ekren, Ömer Güngör

Kocaeli Üniversitesi, Hereke Ö.İ.U. MYO, Kimya ve Kimyasal İşleme Teknikleri, Kocaeli, Türkiye

Sorumlu yazar e-mail: omer.gungor@kocaeli.edu.tr

Özet

Ftalosiyaninler, dört iminoisoindolin çekirdeğinden oluşan 18π elektron sistemli düzlemsel makro halkalardır. Ftalosiyaninler günümüzde, güneş hücrelerinde katalizör, boyar madde, doğrusal olmayan optik malzemeler, sıvı kristal, gaz sensör ve fotodinamik terapide fotosensitizer (fotoduyarlaştırıcı) olarak kullanılmaktadır[1]. Bu bileşikler, yüksek triplet hal kuantum verimleri, uzun süre triplet ömürleri ve etkili singlet oksijen üretebilme özelliklerinden dolayı fotodinamik terapi (PDT) için uygun fotosensitizer (fotoduyarlaştırıcı) adayıdırlar [2]. Bu çalışmada silisyum ve çinko ftalosiyanin tetra sübstitüe (SC_6H_{13} ve OC_6H_{13}) türevleri sentezlenmiştir. Sentezlenen bileşiklerin yapıları standart spektroskopik yöntemler (FT-IR, ^{1}H-NMR, UV/Vis ve mass) ve elementel analiz yöntemi ile aydınlatılmıştır. Ayrıca bu bileşiklerin PDT'de fotosensitizer olarak kullanılabilirliğini araştırmak amacıyla fotokimyasal (singlet oksijen üretimi ve fotobozunma) özellikleri incelenmiş ve standart olarak kullanılan sübstitüe edilmemiş çinko ftalosiyanin (ZnPc) ve silisyum ftalosiyanin (SiPc) bileşikleriyle karşılaştırılmıştır.

Anahtar Kelimeler: Ftalosiyanin, PDT, Fotosensitizer, Singlet Oksijen

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➢ **ORAL PRESENTATION**

Geriatrik Romatoid Artritli Bireyde Hastalığa İlişkin Yaşanan Deneyim, Duygu Ve Düşünceler: Olgu Sunumu

Güler Balcı Alparslan, Burcu Babadağ*

Eskişehir Osmangazi Üniversitesi, Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü, İç Hastalıkları Hemşireliği ABD, Eskişehir, Türkiye

Sorumlu yazar e-mail:burcubabadag1@gmail.com

Özet

Bu çalışma, geriatrik romatoid artritli bireyde hastalığa ilişkin yaşanan deneyim, duygu ve düşünceleri incelemek amacıyla Haziran 2017 tarihinde yürütülmüştür.

Bir üniversite hastanesinin iç hastalıkları kliniğinde yatarak tedavi gören RA tanısı almış geriatrik hasta ile yürütülmüştür. Araştırmanın yapılabilmesi için izin kurumdan gerekli izinler ve hastadan bilgilendirilmiş onam alınmıştır. Veriler tanıtıcı özellikler formu ve yarı yapılandırılmış form ile bireysel görüşme tekniği yaparak toplanmıştır.
68 yaşındaki erkek hasta özellikle son üç aydır artan eklemlerde ağrı, eklem hareketliliklerinde kısıtlılık, kilo kaybı, iştahsızlık ve yorgunluk şikayeti yaşamaktadır. Ayrıca hastanın iki buçuk aydır geçmeyen üst solunum yolu enfeksiyonu bulunmaktadır. Yapılan tetkikler sonucunda plevral sıvıda artış olduğu tespit edilmiş, ileri tetkik yapılmak ve şikayetler kontrol altına alınmak üzere yatışı yapılmıştır. Hasta 15 yıldır devam eden hipertansiyon ve romatoid artirit tanısıyla izlenmektedir. Hasta tıbbi tedavide; Humira 40 mg/ 0.8 ml SC (iki haftada bir), Norvasc 10 mg PO (1x1), Cordura 4 mg PO (1x1) kullanmaktadır. Hastanın laboratuar bulgularında; CRP: 58 mg /dl, Sedimantasyon: 32 mm/ h, Hbg 8 g/dl ‘dir.
Görüşme sonucunda, hastalığın günlük yaşam aktivitelerinde kısıtlılık yarattığı ve sınırlılıklara neden olduğu saptanmıştır. Hastanın yürümede güçlük yaşadığı bu nedenle de yürüme isteğinin azaldığını ifade etmiştir. Hastanın sabah kalktığında sabah tutukluğu yaşadığı, özellikle sol elini ve sağ bacağını hareket ettirmede zorlandığı görülmüştür. Birey en çok ağrı ve akciğer ve kardiyolojik sistemle ilişkili komplikasyon gelişme riskleri nedeniyle korkuyla yaşadığını belirtmiştir. Hasta; ailesinde kardiyolojik rahatsızlıklar nedeniyle kayıplar yaşadığını söylemiştir. Hastalık tanısına bağlı yaşam tarzı değişiklikleri ve sosyal kayıplar yaşandığı belirlenmiştir.
Hasta bakış açısıyla incelenen çalışmanın sonuçları, RA ya ilişkin duygu/düşüncelerin ve hasta yaşamlarının etkilenme durumlarının belirlemesi ve bireye özgü hemşirelik bakım yaklaşımlarının geliştirilmesine katkı vermesi açısından önemlidir.

Anahtar Kelimeler: Romatoid artirit, geriatri, hemşirelik

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➢ **ORAL PRESENTATION**

Östrojen Reseptör Gen Polimorfizmlerinin Miyomlarla İlişkisinin İncelenmesi

Nihan Bozkurt[1], Ömer Ateş[1], Saime Sezer Sondaş[1], Muhammed Toprak[2], Fazlı Demirtürk[2], Sümeyya Deniz Çelik[1]

[*1]Gazi Osmanpaşa Üniversitesi, Tıp Fakültesi, Tıbbi Biyoloji AD, Tokat, Türkiye
[2] Gazi Osmanpaşa Üniversitesi, Tıp Fakültesi, Kadın Hastalıkları ve Doğum AD, Tokat, Türkiye

nihan.bozkurt08@gmail.com

Miyomlar özellikle doğurgan dönemde görülen en yaygın uterus neoplazmasıdır. 35 yaş üstü bayanların % 25-30'unda görülür. Sıklığı yüksek olmasına karşın patofizyolojisi ve proliferatif yolağı henüz açık değildir Ancak çoklu genler, hormonlar, büyüme faktörleri, sitokinler ve çevresel faktörlerin etkili olabileceği düşünülmektedir. Doğurganlık döneminde ortaya çıkması ve menopoz sonrasında gerilemesi miyom gelişiminde overlerden salgılanan steroid hormonların rolünü öne çıkarmakta ve gelişiminin daha çok östrojen bağımlı olabileceğini düşündürmektedir. Miyom, östrojene normal miyometriuma göre daha duyarlıdır ve miyomlarda östrojen konsantrasyonu daha fazladır. Östrojen, hedef hücrelerdeki fizyolojik etkisini ER□□ve ER□□olarak bilinen spesifik nüklear reseptörlerine bağlanarak gösterir. ER□ ve ER□□□kodlayan genin allelik varyantları, reseptör ekspresyonu ve fonksiyonundaki değişikliklerle ilişkili olabilir. Bu çalışmada miyom gelişimde etkili olabileceği düşünülen ER□ gen polimorfizmleri incelendi. Bu amaçla çalışmaya Gazi Osman Paşa Üniversitesi Tıp Fakültesi Kadın Hastalıkları ve Doğum polikliniğine miyom tanısıyla başvuran ve patolojik tanısı miyom olan 103 kadın hasta ile polikliniğe miyom dışı sebeplerle başvuran 110 gönüllü kadın hasta dahil edildi. Çalışma gruplarından alınan kan örneklerinden DNA izolasyon kiti kullanılarak DNA izolasyonu yapıldı. ER □ -351 XbaI A/G ve -397 PvuII T/C polimorfizmleri sırasıyla XbaI ve PvuII enzimleri kullanılarak restriksiyon fragmenti uzunluk polimorfizmi (RFLP+PZR) tekniği ile allel tipleri belirlendi. Verilerin istatistiksel analizi ki-kare ve Fisher's exact test ile yapılarak p değeri 0.05'in altında bulunan değerler anlamlı kabul edildi ve %95 güven aralığı ve O.R.değerleri hesaplandı. Çalışma sonuçlarına gore ER □ -351 XbaI A/G ve -397 PvuII T/C gen polimorifizmlerinin genotip dağılımı (sırasıyla p=0.5447; p= 0.6226) ve allel sıklığı (p=0.364; p= 0.179) bakımından hasta ve kontrol grupları arasında anlamlı bir fark tespit edilemedi. Çalışma sonuçlarımız, ER □ -351 XbaI A/G ve -397 PvuII T/C gen polimorifizmlerinin miyom gelişimine yatkınlıkta bir rolü olmadığını göstermektedir.

Anahtar Kelimeler: Gen Polimorfizm, Miyom, Östrojen Reseptör

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➢ **ORAL PRESENTATION**

Sentetik Pyrethroid Türevi Tetramethrin İndüklü DNA Hasarının *Drosophila melanogaster* Hemositlerinde Değerlendirilmesi

Merve Güneş*, Burçin Yalçın, Havva Ertuğrul, Bülent Kaya

Akdeniz Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Antalya, Türkiye

Sorumlu yazar e-mail: mgunes@ogr.akdeniz.edu.tr

Özet

Pyrethroidler krizantem (*Chrysanthemum cinerariae folium)* çiçeğinden doğal olarak elde edilebilen bunun yanında sentetik olarak da hazırlanabilen böceklerin kontrolünde çoğunlukla evlerde iç ve dış mekanlarda en çok kullanılan insektisitlerden bir tanesidir. Günümüzde birçok zararlıya karşı pestisitlerin kullanımı kaçınılmaz bir şekilde artma eğilimindedir. Özellikle böceklerle mücadele amacıyla birçok bölgede çok büyük miktarlarda insektisit, yoğun ve bilinçsiz şekilde kullanılmaktadır. Küresel gıda talebindeki artış tarımda pestisit kullanımında önemli bir artışla sonuçlanmıştır. Bu artış, çevre ve insan sağlığı açısından endişe yaratmakta ve pestisit toksikolojisi ile ilgili yapılan çalışmalar değer kazanmaktadır.

Drosophila Tek Hücre Alkali Jel Elektroforez Testi (KOMET) yöntemi tek iplik kırıklarının saptanmasında kullanılan hassas, önemli ve *in vivo* bir test sistemidir. Bu çalışmada sentetik pyrethroid grubuna ait olan Tetramethrin'in *Drosophila melanogaster* hemositlerinde meydana gelen DNA hasarı KOMET yöntemi ile değerlendirilmiştir. Çalışmada Tetramethrin'in 5 farklı dozu (0.1, 0.5, 1, 2 ve 5 mM), negatif kontrol olarak distile su ve pozitif kontrol olarak etil metan sülfonat (EMS) kullanılmıştır. Tetramethrin uygulaması yapılan *Drosophila* larvalarının hemositlerinde kuyruk uzunluğu bakımından doza bağlı olarak artan istatistiksel olarak anlamlı DNA hasarı gözlenmiştir.

Anahtar Kelimeler: Pesitisit, insektisit, tetramethrin, *Drosophila*, DNA hasarı.

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➢ **ORAL PRESENTATION**

Türkiye'de Yayılış Gösteren *Allactaga* Cinsinin Fenotipik Varyasyonları ve Ekolojik Niş Modellemesi

Zeycan Helvacı

Aksaray Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Aksaray, Türkiye

Sorumlu yazar e-mail: zeycanhelvaci@gmail.com

Özet

Bu çalışma Türkiye'de yayılış gösteren bir çöl hayvanı/kemiricisi olan *Allactaga* cinsinin coğrafi yapısı ve morfolojik varyasyonlarını araştırmayı hedeflenmiştir. Fenotipik varyasyonları ölçmek için birinci üst moların şekil ve büyüklüğü geometric morfometri (eliptik fourier analiz) analizleriyle ölçülmüştür. Alınan ilk morfometrik sonuçlar 3 türün *A. elater, A. williamsi, A. euphratica* farklı seviyelerde birbirlerinden ayrıldığını doğrulamıştır. *A. euphratica* ve *A. williamsi* birinci üst moların büyüklüğü ve şekli açısından yakın ilişkide gözükmelerine rağmen coğrafi olarak *A. elater*' e kıyasla oldukça uzaktır. Bu sonuçlar bize; kısmen simpatrik yaşayan *A. williamsi* ve *A. elater'in,* habitat tercihlerine bağlı diş morfolojisi farklılaşması olabileceğini ortaya koymuştur. Buna ek olarak allopatric yaşayan *A. euphratica* ve *A. williamsi* türlerinin sınırlı fakat oldukça anlamlı bir fenotipik farklılık gösterdiği tespit edilmiştir. Bu sebeple, iki tür için Toros dağlarının vikaryant bir bariyer olabileceği düşünülmektedir. Sonuç olarak; Türkiye'de yayılış gösteren *Allactaga* türleri benzerlik ve farklılıkları açısından oldukça kompleks bir model sergilemiştir.

Anahtar Kelimeler: *Allactaga*, geometrik morfometri, fenotipik varyasyon

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➢ **ORAL PRESENTATION**

Tekstil Nanopartiküllerinin Aktif Çamur Sisteminde Davranışı ve Etkileri

Fehiman Çiner[1*], Rahman Çalhan[2]

[*1]Niğde Ömer Halisdemir Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Niğde, Türkiye
[2] Karabük Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Karabük, Türkiye

Sorumlu yazar e-mail:fciner@ohu.edu.tr

Özet

Nanoteknoloji hızla genişleyen bir alandır ve gıda, tekstil, ilaç-kozmetik, kimya, malzeme, bilişim, otomobil ve metal endüstrileri gibi birçok sektörde her geçen yıl daha fazla uygulama sahası bulmaktadır. Birçok uygulama alanının yanısıra çeşitli çevre projelerinde de nanoteknoloji son yıllarda hızla yaygınlaşmaktadır. Su, hava ve toprak kirliliğinin giderilmesini sağlayan alternatif arıtma teknikleri ve üretim kaynaklı çevre kirliliğinin azaltılması ve daha az atık üretimi sağlayan daha az hammadde ile üretim yapılan nanoteknolojiler/nanocihazlar, nanoteknolojinin çevre sektöründeki başlıca uygulamalarıdır. Nanoteknolojik ürünlerin hem üretimi hem de kullanımı sonucunda, ortaya nano boyutlu kirleticiler çıkmaktadır. Ortaya çıkan nanokirleticiler oldukça ciddi çevre sorunlarına neden olabilmektedir. Bu çevresel sorunların önlenebilmesi için öncelikli olarak nanokirleticilerin çevredeki durumu ve davranışları belirlenmelidir.

Bu çalışmada, tekstil endüstrisinde kumaşa fonksiyonel özellikler kazandırmak amacıyla kullanılan nanoteknolojik kaplamalar sonucunda ortaya çıkan nanopartiküllerin (NP) aktif çamur sisteminde davranışları ve mikroorganizmalar üzerine toksisite etkisi biyolojik aktif çamurun oksijen tüketim hızının (OTH) izlenmesi ile araştırılmıştır. Degussa P25 TiO_2 NP maddesinin EC_{50} değeri 13250 mg/l ve gümüş katkılı TiO_2 NP içeren solün EC_{50} değeri 166 mg/l olarak bulunmuştur. Sonuçlar, Degussa P25 TiO_2 NP'nin çok yüksek konsantrasyonlarda dahi aktif çamur mikroorganizmalarına hiçbir etkisinin olmadığını, gümüş katkılı TiO_2 NP içeren solün ise düşük konsantrasyonlarda toksik etkisinin olduğunu göstermiştir.

Anahtar Kelimeler: Aktif çamur, Degussa P25, Nanopartikül, Nanoteknoloji, Oksijen tüketim hızı, TiO_2

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➢ **ORAL PRESENTATION**

Polygonum aviculare Türünün Vejetatif Organlarının Anatomik ve Bazı Mikromorfolojik Özellikleri

Öznur Ergen Akçin[1], Emine Yüksel Yeşilay[2], Şükran Öztürk*[2]tuğba Özbucak[1]

[1]Ordu Ünivesitesi,Fen EdebiyatFakülte,Moleküler Biyoloji ve Genetik Bölümü, Ordu, Türkiye
[2]Ordu Ünivesitesi,Fen Bilimleri Enstitüsü,Moleküler Biyoloji ve Genetik Bölümü, Ordu, Türkiye

e-mail:sukranguney0@hotmail.com

Özet

Polygonum L. cinsi Polygonaceae familyasına ait bir cinstir. Kozmopolit bir dağılıma sahip olan Polygonaceae familyası, yaklaşık 48 cins ve 1200 tür ile temsil edilmektedir. *Polygonum* cinsi ülkemizde 40 tür ile temsil edilmektedir. *Polygonum* cinsine ait bazı türler tedavi amacı ile gıda maddesi olarak tüketilmektedir.Bu çalışmada *Polygonum* cinsinin *P. aviculare* L., türünün vejetatif organlarının anatomik ve bazı mikromorfolojik özellikleri incelenmiştir. Türe ait örnekler Trabzon ilinde farklı lokalitelerinden toplanmıştır. Anatomik incelemeler için bitkilerin kök, gövde ve yapraklardan alınan örnekler %70'lik alkolde tespit edilmiş ve örneklerden el yardımıyla kesitler alınmıştır.Mikromorfolojik incelemeler JSM-7001F marka Taramalı Elektron Mikroskobunda (SEM) yapılmıştır.Çekim yapabilmek için kuru yaprak örnekleri çift taraflı karbon bant üzerine yapıştırılarak sabitlenmiştir. Sabitlenen örnekler 12.5-15 nanometre (nm) altın ile kaplanmıştır. Anatomik incelemelerde türün kök, gövde, petiyol ve yaprak kesitlerinde peridem, epiderma, kollenkima, parankima, endoderma ve salgı hücrelerinin boyutları ile trake ve floem elemanlarının çapları NIS ElementsImaging Software 3.00 SP5 programı kullanılarak ölçülmüş. Tür belirgin sekonder kalınlaşmış kök yapısına sahiptir.Gövde enine kesitte üst tabakada tek sıralı epidermis bulunmaktadır. Epidermisin hemen altında belirli aralıklarda köşelerde toplanmış kollenkima hücre kümeleri görülmektedir. Bitki ekvifasiyal (izolateral) ve amfistomatik yaprak tipine sahiptir. Bitkide anizositik ve anomositiktipte stomalar bulunmaktadır. Yaprak üst yüzeyinde 1 mm²'de ortalama 4.9stoma, 20 epiderma hücresi vardır. Yaprağın alt yüzeyinde ise 1 mm²'de ortalama 7.7stoma, 32.2 epiderma hücresi vardır. Yaprağın üst yüzeyi için stoma indeksi 19.67, alt yüzeyi için 19.29 olarak bulunmuştur. Mikromorfolojik incelemelerde stoma açıklığının uzun ve geniş bir yapıda olduğu görülmektedir. Epidermis hücreleri belirgin periklinal ve antiklinal çeperlere sahiptir.

Anahtar Kelimeler: Polygonaceae, *P. aviculare*,anatomi,mikromorfoloji

Teşekkür: Bu çalışma TF-1519 nolu proje kapsamında Ordu Üniversitesi Bilimsel Araştırma Projeleri tarafından desteklenmiştir.

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➢ ORAL PRESENTATION

Fenoksiimin (FI) Türevi Yeni Nesil Post-Metalosen Katalizör Olarak 2-Hidroksi-5-klor asetofenonbütansülfonilhidrazonun ve Ti(IV) Komplekslerinin Sentezi, Karakterizasyonu ve Etilen Polimerizasyonunda Katalitik Aktivitesinin İncelenmesi

Fatma Hamurcu

Bartın Üniversitesi Fen, Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Bartın, Türkiye

fhamurcu@bartin.edu.tr

Özet

VI B grubu geçiş metali katalizörleri, olefin polimerizasyonu ile ilgili yapılan araştırmalara önemli bir katkı sağladı. Bugüne kadar yapılan bilimsel çalışmaların ardından yüksek performanslı olefin polimerizasyon katalizörlerinin keşfedilmesi, istenilen özelliklere sahip yeni olefin esaslı materyallerin üretilmesiyle sonuçlandı. Son zamanlarda yapılan araştırmalar sayesinde, elektronik olarak esnek "ligand odaklı katalizör tasarımı"na dayalı oldukça etkili katalizörler elde edildi. Ligand odaklı katalizör tasarımı konseptine dayanarak, fenoksi-imin bağlı VI B grubu geçiş metal kompleksleri, MAO (metilaluminaoksan) ile aktive edildiğinde yüksek etilen polimerizasyon aktivitesi sergiledi. Bu aktivite, mevcut metalosen katalizörlerinin aktivitesinden daha yüksekti. 1990'lardan bu yana Mitsui Grubu, olefin polimerizasyonu için fenoksi-imin (FI) veya pirolid-imin (PI) tabanlı ligandlardan oluşan iyi tanımlanmış geçiş metal komplekslerini inceledi ve bu kompleksler (MAO) gibi kokatalizörlerle aktive edilerek etilenin polimerizasyonunda son derece yüksek katalitik aktivite gösterdi.

Bu çalışmada öncelikle 2-hidroksi-5-klorasetofenonbütansülfonilhidrazon (H_2L) sentezlendi. Yapısı X-ışını kırınım yöntemiyle aydınlatıldı. H_2L ligandının iki aşamalı deprotonasyonu sonucunda sodyum tuzları NaHL ve Na_2L sentezlendi ve bunların IVB grubu geçiş metal tuzu $TiCl_4$ ile tepkimelerinden $TiHLCl_3$ ve $TiLCl_2$ yapısında yeni bileşikler elde edildi. Bileşiklerin yapıları ^1H-^{13}C-NMR, FT-IR gibi spektroskopik yöntemlerle aydınlatıldı. Katalizörlerin polimerizasyondaki aktiviteleri PETKİM pilot tesislerinde incelendi. Sonuçlara sentezlenen yeni FI katalizörlerinin etilen polimerizasyonunda ticari metalosen katalizörlere göre çok daha yüksek aktivite gösterdiği belirlendi (Tablo1).

Tablo 1. FI katalizörlerinin etilen polimerizasyonundaki katalitik aktiviteleri

Bileşikler	Katalizör (mol)	MAO(mol)	Aktivite
$Ti(HL^1)Cl_3$	$1x10^{-6}$	$5x10^{-3}$	120
$Ti(L^1)Cl_2$	$1x10^{-6}$	$5x10^{-3}$	131
$TiCp_2Cl_2$[b]	$1x10^{-6}$	$5x10^{-3}$	32

Anahtar Kelimeler: Post-metalosen katalizör, fenoksi-imin katalizörleri, etilen polimerizasyonu.

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➢ **ORAL PRESENTATION**

HPLC-DAD Analysis and Cytotoxic activity of *Descomyces albus*

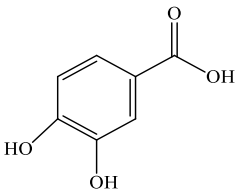
Gülsen Tel-Çayan[1*], Selçuk Küçükaydın[2], Fatih Çayan[1], Mehmet Emin Duru[2], Mustafa Türk[3]

[*1]Muğla Sıtkı Koçman University, Muğla Vocational School, Department of Chemistry and Chemical Processing Technologies, 48000 Muğla, TURKEY.
[2]Muğla Sıtkı Kocman University, Faculty of Science, Department of Chemistry, 48000 Muğla, TURKEY
[3]Kırıkkale University, Faculty of Engineering, Department of Bioengineering, 71460 Kırıkkale, Turkey

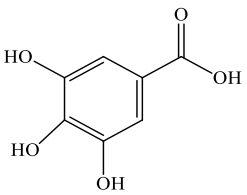
Corresponding author e-mail: gulsentel@mu.edu.tr

Abstract

Truffles are known as delicious edible mushrooms and are of great economic value. Recent research have indicated that truffles contain a large number of bioactive compounds that have potential biological activities such as antioxidant, anti-inflammatory, cytotoxic, antiviral, antimicrobial, hepatoprotective, anti-tuberculoid and anti-mutagenic [1]. *Descomyces albus* (Berk.) Bougher & Castellano belonging to the Basidiomycetes class of Bolbitiaceae family is a Truffle species that naturally grows associated with Eucalyptus tree in the winter. We investigated here the cytotoxic and phenolic profile of *D. albus*. The cytotoxic activity was performed against breast (MCF-7), lung (H1299) and L929 Fibroblast cell lines using WST-1 assay. The phenolic profile was analyzed by HPLC-DAD. Sixteen phenolic and organic acids namely; gallic acid, fumaric acid, protocatecheuic acid, catechin hydrate, p-hydroxybenzoic acid, 6,7-dihydroxy coumarin, caffeic acid, vanillin, 2,4-dihydroxy benzoic acid, p-coumaric acid, ferulic acid, coumarin, trans-2-hydroxycinnamic acid, ellagic acid, rosmarinic acid and trans-cinnamic acid were analyzed.



Protocatechuic acid



Gallic acid

Protocatecheuic acid (24.98 µg/g) and gallic acid (9.74 µg/g) were identified as major phenolic compounds. Against H1299 lung cancer cell line, the water extract exhibited toxicity with percentage relative cell viability of 29.4 at 200 µg/mL concentration while the methanol extract showed toxicity with percentage relative cell viability of 47.2 at 200 µg/mL concentration against MCF-7 breast cancer cell line. In addition, the results showed that more than 80% of the L929 fibroblast cancer cell line was viable after incubation of methanol and water extracts at 6.25-100 µg/mL concentration.

This study was financed by The Scientific and Technological Research Council of Turkey (TUBITAK-114Z644).

Keywords: Truffle, *Descomyces albus*, Cytotoxic activity, Phenolic profile, HPLC-DAD.

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➢ ORAL PRESENTATION

Determination Of Fungicides In Fruit Juice Using Solidified Effervescent Tablet-Assisted Dispersive Liquid–Liquid Microextraction

Elif Yildiz*, Hasan Çabuk

Bülent Ecevit University, Faculty of Science and Letters, Department of Chemistry, 67100, Zonguldak, Turkey

Corresponding author e-mail: ozdalelif@gmail.com

Abstract

Various fungicides are widely used in grain crops, fruits, and vegetables to prevent and control plant diseases [1]. However, the widespread use of these compounds has caused undesirable residues on the fruit after harvest [2]. These residues can be passed on to fruit products such as fruit juice [3]. In this study, a sensitive, rapid and environmentally friendly analytical method, called solidified effervescent tablet–assisted dispersive liquid–liquid microextraction (SET-DLLME) combined with liquid chromatography-ultraviolet detection, was developed for the determination of fungicides in fruit juice samples. The effervescent tablet was readily prepared using sodium dihydrogen phosphate, sodium carbonate and 1-dodecanol in an empty medicine strip and cooled in a refrigerator. Hence, an effervescent tablet was obtained within 5 min without the need for a press machine thanks to the solidification of 1-dodecanol under room temperature. The fungicides in the fruit juice were extracted by 1-dodecanol dispersed from the tablet with the aid of CO_2 bubbles. Under the optimized conditions, the limits of detection were 0.09–0.19 μg L^{-1}. Relative standard deviations based on five replicate extraction of 3 μg L^{-1} of each analyte were less than 4.8 % for intra-day and 7.6 % for inter-days precision.

Keywords: Fungicides, effervescent tablet, dispersive liquid–liquid microextraction, fruit juice.

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➢ **ORAL PRESENTATION**

Electrochemical Oxidation Behaviour of Dimethylamine Borane as Fuel in Fuel Cell Applications on Au nanoparticles modified Cu-Phthalocyanine/Carbon Nanotube Composite Electrode

Çağrı Ceylan Koçak[1], Şükriye Ulubay Karabiberoğlu[2*], Zekerya Dursun[2]

[1]Dokuz Eylul University, Occupational Health and Safety Department, Bergama Vocational School, İzmir, Turkey
[2]Ege University, Department of Chemistry, Science Faculty, 35100 Bornova, Izmir, Turkey.

Corresponding author e-mail: sukriye.karabiberoglu@ege.edu.tr

Abstract

Fuel cells are devices that convert chemical energy obtained from fuel supply to electrical energy, which basically starts with the reaction between hydrogen in the anode and oxygen or air in the cathode. Since hydrogen has a carriage and storage problems, hydrogen rich chemicals such as formic acid, borohydride, ammino borane and dimethylamine borane (DMAB) chemicals were widely used as a storage method [1-3]. Among all chemicals, DMAB attracted an attention due to its high energy density, easily and cheap production and relatively less toxic structure [4]. In order to increase of efficiency of fuel oxidation, the developing of composite material is important issue in the fuel cell application. In this study, DMAB oxidation behaviour was studied to investigate the ability of prepared catalytic surfaces as an anode material for fuel cells. For this purpose, metal nanoparticles modified phthalocyanines-carbon nanotube composite electrodes for DMAB oxidation. The electrode surface was characterized by scanning electron microscopy, electrochemical impedance spectroscopy and X-Ray photoelectron spectroscopy. The best catalytic activity for electrooxidation of DMAB in term of peak and peak potential was observed on Au nanoparticlec modified Cu-phthalocyanines carbon nanotubes composite glassy carbon electrode (Au/CuPc-CNT/GCE). The mass transfer to the electrode was diffusion controlled and transferred electrons during oxidation reaction were calculated as 5.97 on Au/CuPc-CNT/GCE. The DMAB oxidation studies show that catalytically active, easy prepared and relatively cheape anode composite electrode could be fabricated by using very small amount AuNPs on CuPc-CNT films for DMAB based fuel cells.

Keywords: Fuel cell, Dimethylamine borane, Composite electrode, Characterization.

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➢ ORAL PRESENTATION

Bioassay-guided Isolation of Compounds from *Reddellomyces westraliensis* and Their Antiradical Activities

Fatih Çayan[1*], Gülsen Tel-Çayan[1], Ebru Deveci[2], Mehmet Emin Duru[2], Mehmet Öztürk[2]

[*1]Muğla Sıtkı Koçman University, Muğla Vocational School, Department of Chemistry and Chemical Processing Technologies, 48000 Muğla, TURKEY.
[2]Muğla Sıtkı Kocman University, Faculty of Science, Department of Chemistry, 48000 Muğla, TURKEY

Corresponding author e-mail: fatihcayan@mu.edu.tr

Abstract

Reddellomyces westraliensis (G.W. Beaton & Malajczuk) Trappe, Castellano & Malajczuk, belonging to the Ascomycetes class of Helvellaceae family, is a Truffle species that grows associated with Eucalyptus tree in the winter and spring seasons. Bioassay-guided isolation of *R. westraliensis* yielded compounds: Brassicasterol (**1**), Ergosterol D (**2**), Ergosterol peroksit (**3**), Adenozin (**4**), D-Ribitol (**5**), Fumarik asit (**6**) and Mannitol (**7**). Purified compounds were characterized using 1D, 2D NMR, and MS analysis. The structures of compounds were given in Figure 1.

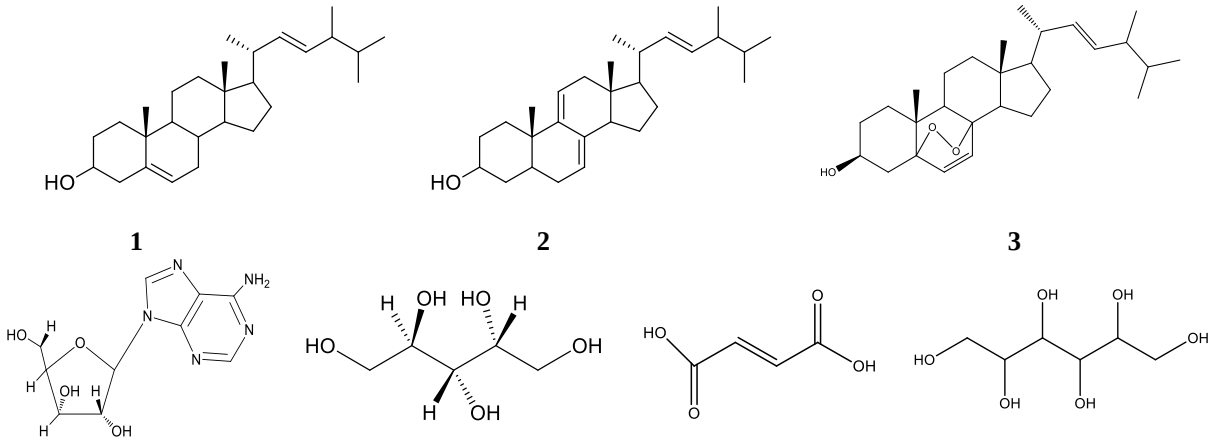

Figure 1. Structures of the isolated compounds from *R. westraliensis*

Antiradical activities of compounds were tested by free radical scavenging DPPH$^{\bullet}$ and cation radical scavenging ABTS$^{\bullet+}$. Among the compounds, adenozin (**4**) showed the highest antiradical activity with IC_{50} values of 8.38±0.40 and 6.74±0.22 µg/mL determined by DPPH$^{\bullet}$ and ABTS$^{\bullet+}$, respectively.

Keywords: Truffle, *Reddellomyces westraliensis*, Isolation and structure elucidation, Antiradical activity.
This study was financed by The Scientific and Technological Research Council of Turkey (TUBITAK-114Z644).

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➢ ORAL PRESENTATION

Removal Of Malachite Green Dye From Aqueous Solution By Adsorption Using Industry Waste

Yasemin İşlek Coşkun[1*], Nur Aksuner[1], Jale Yanık[1]

[*1] Ege University, Faculty of Science, Department of Chemistry, İzmir, Turkey.

Corresponding author e-mail: yasemin.islek@ege.edu.tr

Abstract

Dyes are used in many industries such as food, textiles in order to color their products. The discharge of colored wastewater from these industries into natural streams has caused many significant problems such as increasing the toxicity and chemical oxygen demand (COD) of the effluent and also reducing light penetration. From the aesthetic point of view, the presence of dyes, in particular, carcinogenic compounds, in surface and underground waters is not safe.[1]

Although many physical and chemical methods such as reverse osmosis, precipitation, electroflotation, and flocculation have been used for the removal of dyes and other toxic chemicals from the effluents, adsorption appears to offer the best prospects over others and proved itself among one of the most effective methods for the removal of pollutants from aqueous solutions. [2-4]

In this study, industrial wastes have been used for the removal of malachite green dye from aqueous solutions. Hence, waste sandpaper was used as adsorbent after calcination and carbonization to remove malachite green dye. Adsorption studies were carried out using a batch method. The variables affecting the adsorption conditions of malachite green dye in aqueous solutions have been studied. The determination of malachite green dye is carried out by UV-Vis spectrophotometer.

Keywords: Malachite green, Cationic dye, Adsorption, Sandpaper, Spectrophotometer.

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➢ **ORAL PRESENTATION**

Antioxidant and Cytotoxic Activities of Chemical Components from *Hysterangium inflatum*

Meltem TAŞ[1], Mehmet Emin DURU[1], Selçuk KÜÇÜKAYDIN[1], Mehmet ÖZTÜRK[1], Mustafa TÜRK[2]

[1]Mugla Sitki Kocman University, Faculty of Science, Department of Chemistry, Mugla, Turkey.
[2]Kırıkkale University, Department of Bioengineering, Kırıkkale, Turkey

Corresponding author e-mail: tasmeltem@hotmail.com

Abstract

Truffles are seasonal and socio-economically important mushrooms in all over the world. The popularity of truffles was due to their impressive flavor, delicious taste and potantial health benefits. In modern medicine, truffles considered a large source of therapeutic compounds with an antiinflammatory, antimutagenic, antioxidant and antimicrobial agent.
In this study, the chemical components of *H. inflatum* were isolated by chromatographic methods. Antioxidant activity tests performed by two complementary tests systems: DPPH radical scavenging and ABTS cation radical scavenging assay. Cytotoxic activities were tested against lung (H1299), breast (MCF-7) cancer cell lines. Purified compounds were elucidated chemical structures using by 1H-NMR, 13C-NMR, 2D-NMR, FTIR and MS techniques. Accordingly, the chemical structures of 7 compounds from H. inflatum was elucidated succesfully. These compounds are namely; Ergosta -7,9,22 triene- 3-O-β-D-glucoside, β-Ergosta -5,22-diene, mannitol, Ergosterol D, Triacontanoic acid, Ergosterol peroxide and N-[3-hidroxy,9-methyl-1-glucopyranosyl tetradeka-4,9-dienyl]-2-hidroxy eicosanamide. According to , DPPH radical scavenging and ABTS cation radical scavenging assay N-[3-hidroxy,9-methyl-1-glucopyranosyl tetradeka-4,9-dienyl]-2-hidroxy eicosanamide showed highest antioxidant activity IC50= 143.1±0.50 µg/ml and 102.7±0.74 µg/ml respectively. And also N-[3-hidroxy,9-methyl-1-glucopyranosyl tetradeka-4,9-dienyl]-2-hidroxy eicosanamide exhibited the highest cytotoxic activity in breast (MCF-7) cancer cell lines (IC50=18.11±0.21 µg/ml) while, Ergosta -7,9,22 trien- 3-O-β-D-glucoside showed highest cytotoxicity (IC50: 27.61±0.18 µg/m) against Lung (H1299) cancer cell lines.

This study was financed by The Scientific and Technological Research Council of Turkey (TUBITAK-114Z644).

Keywords: *Hysterangium inflatum*, Truffle, Cytotoxicity, Antioxidant, MCF-7, H-1299

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➢ ORAL PRESENTATION

Inula graveolens Inhibites Proliferation, Induces Apoptosis and Downregulatesproinflammatory Cytokines Interleukin-6 And 8 In Human Cervical Cancer Cells

Onder Yumrutas

Department of Medical Biology, Faculty of Medicine, University of Adıyaman, Adıyaman-Turkey

Corresponding author e-mail: yumrutasonder@gmail.com, oyumrutas@adiyaman.edu.tr

Abstract

Cancer is an important disease that causing to deaths in the world. Cervical cancer is one of the most common cancer types showing among women, and has to be treated quickly to prevent the cell proliferation. The natural products have been used for cancer treatment due to their antiprolifetive and apoptosis induction properties. In the present study, we aimed to determine the antiproliferative and apoptosis induction activities of methanol extract of Inula graveolens (IG-MeOH) in human cerival cancer cell line (HeLa). Antiproliferative activity of IG-MeOH was evaluated by using MTT (3-[4,5- dimethylthiazol- 2- yl]- 2,5- diphenyl- tetrazolium bromide) method. Apoptosis induction activity was determined by AnnexinV/propodium iodide staining with FACS. ROS induction was determined by DCFH-DA (2′,7′-Dichlorofluorescin diacetate) staining. Interleukin 6 and 8 levels (IL-6 and 8) were determined by the Elisa method. IG-MeOH exhibited antiproliferative effect and induced apoptosis in the HeLa cells. IL-6, IL-8 and intracellular ROS levels were decreased after treatment of IG-MeOH. Consequently, IG-MeOH was found to have an anticancer effect by induction of apoptosis.

Keywords: Cervical cancer, Apoptosis, Antiproliferation, ROS, Proinflammatory Cytokines**,** Inula graveolens

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➢ ORAL PRESENTATION

Odun Üretim Çalışmalarında Meşçere İçerisinde Kalan Ağaçlarda Meydana Gelen Zararların Tespiti

Tolga Öztürk*, Necmettin Şentürk

İstanbul Üniversitesi, Orman Fakültesi, Orman İnşaatı ve Transportu Anabilim Dalı, İstanbul, Türkiye.

Sorumlu yazar e-mail: tozturk@istanbul.edu.tr

Özet

Ülkemiz yaklaşık 22.3 milyon ha ormanlık alana sahip olup, ormanlık alanların genel ülke alanına oranı ise %28,6'dır. Ülke nüfusumuzun artması ile doğru orantılı olarak odun hammaddesi ihtiyacı da günden güne artmaktadır. Ülke genelinde ormanlık alanlarımız yıllar süren yoğun kullanım neticesinde dağlık bölgelere ve yüksek alanlara doğru çekilmiştir. Dağlık ve eğimin yüksek olduğu alanlarda ormancılık çalışmaları ve odun üretimi zordur. Üretim çalışmalarının zor olması yanında, bu alanlarda çevresel zararlar artmakta, taşınan ürüne zararlar verilebilmekte ve aynı zamanda iş güvenliği önemli bir sorun olarak karşımıza çıkmaktadır. Bu çalışma, İstanbul Orman Bölge Müdürlüğü, Bahçeköy Orman İşletme Şefliği, Bentler Orman İşletme Şefliği sınırları içerisinde yapılmıştır. Çalışma alanında sürütme yolu üzerinde traktörler ile sürütme, taşıma ve yükleme çalışmaları yapılmıştır. Odun üretim çalışmaları bakım amaçlı yapılmış ve bölme içerisinde tomruk haline getirilen ürünler bölmeden çıkarılmıştır. Odun üretim çalışmalarında traktörlerin sürütme, taşıma ve yükleme çalışmaları esnasında bölme içerisinde dikili halde bulunan ağaçlara çeşitli zararlar verilmiştir. Meşçere içerisinde kalan ağaçlara verilen zarar tipleri; ağaç kabuklarının kopması, sıyrılması ve yarılması şeklinde görülmüştür. Aynı zamanda, tomrukların sürütme yolu üzerinde sürütülmesi ve taşınması esnasında çevredeki ağaçların dip kısımlarında, yükleme çalışmalarında ise ağaçların gövdelerinin ortalama 1.5 – 3.0 m yüksekliğinde kabuk zararları meydana geldiği görülmüştür. Bu kabuk zararları özellikle ibreli ağaçların bulunduğu ve kabuk böceklerinin zararlı olduğu alanlarda çok önemli bir hal almaktadır. Yaralanan ağaçların yara kısımlarından ağacın içerisine giren kabuk böcekleri ağaca ve çevredeki diğer ağaçlara büyük zarar verebilmektedir. Özellikle büyük yaraların ağaç salgıları tarafından kapatılması uzun zaman aldığı için bu ağaçların böceklerin ve mantar zararlılarının açık hedefi haline gelmektedir. Bu durum ormanlık alanlarımız ve çevre için çok önemlidir.

Anahtar Kelimeler: Odun üretimi, sürütme yolu, çevresel zararlar, kabuk zararları

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➢ ORAL PRESENTATION

The Effects Of Agomelatıne And Melatonın On Human Colorectal Cancer: An In Vıtro Study

Ihsan Serhatlioglu

University of Firat, Faculty of Medicine, Department of Biophysic, Elazig, Turkey

Corresponding author e-mail:iserhatlioglu@firat.edu.tr

Abstract

Nearly one million people all around the world are diagnosed annually by colorectal cancer (KRK), and 500.000 patients are lost due to KRK. According to the cancer records in our country, the prevalence of CRC -among all other cancer types- ranks the third in women and the fourth in men. Melatonin, which is known to have high anti-oxidant and anti-carcinogenic effects, is synthesized and secreted by the pineal gland in the brain. Agomelatine is a hormone receptor of the Melatonin and is an anti-depressant drug, which has been used in recent years in our country. This study was conducted to investigate the effects of melatonin and Agomelatine on human colorectal cancer (HCT-116 and Caco-2) cell viability. In the present study, HCT-116 and Caco-2 cell lines were used. 96% ethyl alcohol (Melatonin and Agomelatine dissolver) was applied for 24 hours together with 0.1, 1, 5 and 10 mM concentrations to all cell lines. The changes that occurred in cell viability were determined with the 3-(4,5-dimetiltiazol-2-il)-2,5-difeniltetrazolyum bromide (MTT) Assay Method. The statistical analyses of the data were made with IBM SPSS Statistics 24.0 Windows Package Program with Bonferroni Correction and with the Mann Whitney U-test. The $p<0.05$ value was accepted to be statistically significant. According to the MTT Assay Results, the inhibiting logarithmic concentration 50 (LogIC50) value was computed. It was determined that all concentrations of melatonin and Agomelatine applied for 24 hours to human colorectal cancer cells (HCT-116 and Caco-2) (0.1, 1, 5 and 10 mM) reduced % cell viability ($p<0.05$). The results of the present study have revealed that Agomelatine and Melatonin have strong cytotoxic and antitumor properties.

Keywords: Cancer, Melatonin, Agomelatine, HCT-116, Caco-2.

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➢ **ORAL PRESENTATION**

Bakırın *Oreochromis niloticus*'un Karaciğer ve Böbrek Dokularında Bazı Enzimlere Etkisi

Gülbin Firidin

Gazi Üniversitesi, Fen Bilimleri Enstitüsü, Çevre Bilimleri Anabilim Dalı, Ankara, Türkiye

Sorumlu yazar e-mail: gulbinfiridin@gazi.edu.tr

Abstract

Akuatik ortamda biriken metaller, organizmalarda çeşitli biyokimyasal bozukluklara yol açmaktadır. Bu çalışmada, tatlı su balığı *Oreochromis niloticus*'un karaciğer ve böbrek dokularında bakırın (Cu) catalaz (CAT), glutatyon peroksidaz (GPx) ve glutamik piruvat transaminaz (GPT) aktivitelerine etkisi incelenmiştir. Balıklar 7 ve 14 günlük sürelerle 0.1 ve 1.0 ppm Cu konsantrasyonlarının etkisine maruz bırakılmıştır. Dokuların enzim aktiviteleri ultraviyole spektrofotometrik yöntem ile ölçülmüştür. Dokulardaki CAT aktivitesi her iki sürede de kontrol grubuna göre yükselmiştir. GPx aktivitesi kontrole göre karaciğerde azalış böbrekte ise artış göstermiştir. GPT aktivitesi karaciğerde artış, böbrekte ise azalış göstermiştir. Dokulardaki enzim aktivitesindeki değişiklikler belirli bir sürede ortam derişimindeki artışa ve belirli bir ortam derişiminde etkide kalma süresindeki artışa paralel olarak değişmiştir. Araştırma sonuçları, metallerin balıkların karaciğer ve böbrek dokularında CAT, GPx ve GPT aktivitelerinin değişmesine neden olduğunu göstermiştir.

Keywords: Bakır, karaciğer, böbrek, enzim, *Oreochromis niloticus*

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➢ ORAL PRESENTATION

Effect of GZO Film Thickness on Photosensitivity and PV Property of n-GZO/p-Si Heterojunction Devices

N.E. Koksal[1,2*], M. Sbeta[2], A. Yildiz[3]

[*1]Niğde Ömer Halisdemir Üniversitesi, Faculty of Engineering, Electrical Electronics Engineering, Niğde, Turkey.
[2]Ankara Yıldırım Beyazıt University, Faculty of Engineering and Natural Sciences, Department of Electrical and Electronics Engineering, Ankara, Turkey.
[3]Ankara Yıldırım Beyazıt University, Faculty of Engineering and Natural Sciences, Department of Energy Systems Engineering, Ankara, Turkey.

Corresponding author e-mail: nurefsankoksal@gmail.com

Abstract

This paper presents the results of photosensitivity (PS) and photovoltaic (PV) property of n-GZO/p-Si heterojunction devices fabricated by deposition of Ga-doped ZnO films on p-Si substrates using spin coating technique. Different numbers of spin coating cycles were applied to fabricate devices of variuos thicknesses of GZO film layer. The results for the devices of 1 and 5 spin coating cycles were present and compared. PS and PV property of the devices were analyzed from current-voltage (I-V) characteristics performed under dark and illumination conditions. The device of 5 cycles showed better results in terms of photosensitivity, while the device of 1 cycle showed better results in terms of PV property.

Keywords: GZO film, heterojunction, photosensitivity, photovoltaic

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➢ **ORAL PRESENTATION**

Synthesis, Characterization and H_2 Adsorption Performance of Novel Polymeric Co(II) Complex of Pyrazine-2,3-dicarboxylic acid and 1-vinylimidazole

Semih Gorduk[1*],Omer Andac[2], Hakan Yilmaz[2]

[*1]Yildiz Technical University, Faculty of Art and Sciences, Department of Chemistry, Istanbul, Turkey.
[2]Ondokuz Mayis University, Faculty of Art and Sciences, Department of Chemistry, Samsun, Turkey.

Corresponding author e-mail: semih_grdk@hotmail.com

Abstract

The design and synthesis of new coordination polymers (CPs) owing to specific architectures, varied topologies and desired functions are one of the most important research fields in current coordination chemistry. CPs have attracted particular interest of researchers for their wide biological and chemical applications including gas storage and adsorption , luminescence , magnetism , catalysis , sensors , drug delivery and antibacterial effect . Especially, CPs have been extensively studied for their capabilities of hosting molecules in gas storage [1,2].

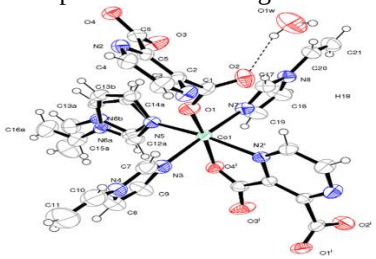

Fig. 1 Crystal structure of Co(II) complex, showing coordination environment of the Co(II) ion

We studied the synthesis and characterization of novel polymeric coordination complex of Co(II) ion with pyrazine-2,3-dicarboxylic acid and 1-vinylimidazole. Elemental analysis, infrared spectroscopy, powder X-ray diffraction, magnetic susceptibility, thermal analysis and X-ray single crystal techniques were used in the characterization. The X-ray single crystal analysis suggests that the pyrazine-2,3-dicarboxylato ligand acts as a bridging ligand through the oxygen atoms of the carboxylate groups and the nitrogen atoms on pyrazine ring. The 1-vinylimidazole ligand behaves as a monodentate ligand via the ring nitrogen atom. The Co(II) complex crystalizes in the hexagonal system with $P6_5$ space group and the geometries around Co(II) ions are octahedral. The Co(II) complex decomposes in two steps and the decomposition starts at low temperature. Further, H_2 adsorption studies were carried out at 75 K for various increasing pressures and the highest H_2 adsorption performance for Co(II) complex was estimated as 2.7 wt% at 87 bar. The theoretical calculations using the crystal data were also performed to determine the void in the structure of the Co(II) complex.

Keywords: Pyrazine-2,3-dicarboxylic acid, 1-Vinylimidazole, Polymeric complex, Bridging ligand, H_2 adsorption

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➢ ORAL PRESENTATION

The Effects of Dietary Commercial by-Product (Stevia and Ginger Extracts) on Laying Performance and Serum Biochemical Parameters in Quails Exposed to Heat Stress

Tahir Bayril[1*], Fatih Akdemir[2], Sema Gürgöze[3]

[1]Department of Animal Husbandry, Faculty of Veterinary, Dicle University, 21280, Diyarbakir,Turkey

[2] Department of Nutrition, Faculty of Fisheries, Inonu University, 44280, Malatya, Turkey

[3]Department of Biochemistry, Faculty of Veterinary, Dicle University, 21280, Diyarbakir,Turkey

[*]Corresponding author e-mail: tbayril@hotmail.com

Abstract

Heat stress is one of the major causes of a decreased performance of laying quail. The aim of this study was to determine the effects of various levels of supplemental commercial product (Stevia and Ginger extracts) on laying performance and serum biochemical parameters in quails exposed to heat stress. A total of 120 quails were divided through a completely randomized design into four groups with five replicates and six quail per each at 6 weeks of age. The added doses of extract were included 0 (control-C), 0.5 (T1), 1.0 (T2) and 1.5 (T3) g/kg of diet for treatments 1-4, respectively. In quails fed with the commercial product, feed intake at days of 31-60, 61-90 and 1-90 ($P<0.01$, $P<0.001$ and $P<0.001$, respectively), egg production at days of 1-30, 31-60, 61-90 and 1-90 ($P<0.001$, for all), egg weight at days of 31-60 and 1-90 ($P<0.05$, and $P<0.01$, respectively) were significantly highest in treatment groups than control group, and also feed conversion ratio at days of 1-30, 31-60, 61-90 and 1-90 ($P<0.001$, for all) was lower in treatment groups than C group. Serum aspartate aminotransferase (AST) levels in quails of T2 group were significantly lower than the other groups ($P<0.01$). Serum glucose and cholesterol levels were the lowest in T2 and T3 groups than C group ($P<0.05$, for both). But, there was no different between the groups in serum lactic dehydrogenase (LDH) and creatine kinase (CK) levels. Serum triiodothyronine (T3) levels of treatment groups were significantly lower than the control group ($P<0.01$). In conclusion, these results suggest that dietary commercial product including Stevia and Ginger extracts improves laying performance and alleviates the negative effects of heat stress on some biochemical parameters of quails exposed to high environmental temperature.

Keywords: Heat stress, Quail, Laying performance, Commercial extract

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➢ **ORAL PRESENTATION**

Different Perspective Towards Interaction Between β-Lactoglobulin and AITC

Nurdan Ersoz, Ceyda Dudak*

Hacettepe University, Engineering Faculty, Food Engineering Department, Ankara, Turkey.

Corresponding author e-mail: ceyda@hacettepe.edu.tr

Abstract

β-Lactoglobulin (bLg) is a globular milk protein considering as a major component of the whey with ~ %60 ratio. It belongs to the lipocalin family which allows binding of bLg to the wide range of hydrophobic ligands. More importantly, bLg can act as a transporter by the means of this property. A monomer bLg has two disulphide bonds and one free thiol group which play essential role to form tertiary structure of bLg. Therefore, this infrastructure of bLg reacts to pH change in a very different and specific way. In this study, the interaction between bLg and allylisothiocyanate (AITC) which is well-known anticarcinogenic and antimflamatuar organosulfur compounds presenting in cruciferous vegetables (Brassicaceae) is studied. The interaction is examined against varied pH (3-8.5) and characterized by Isothermal Titration Calorimetry (ITC) and Circular Dichroism (CD) devices. According to ITC results, AITC and bLg complex showed the *3 site of sequential binding model* (KNF model) and high affinity at a level of $\underline{10^4\text{-}10^5}$ M^{-1} association constant. Additionally, AITC bound exothermic and endothermic at different pH which means ligand binding sites of bLg changes its conformation at different pH. The results showed that characteristic properties of the interaction between bLg AITC makes the bLg accompanying AITC promising anticarcinogen compound to develop for treatment of cancer on the cell basis.

Keywords: Lactoglobulin, broccoli, ITC, CD, secondary structure

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➢ ORAL PRESENTATION

Ozonlanmış Fındık Yağı'nın Sitotoksik Etki Potansiyelinin Belirlenmesi

Sami Serhat Tonus[*1], Sibel Bayıl Oğuzkan[*2], Bekir Sıddık Kurt[*1], Mehmet Özaslan[*1], Işık Didem Karagöz[*1], Halil İbrahim Uğraş[*3], İbrahim Halil Kılıç[*1]

[*1]Gaziantep Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji, Gaziantep, Türkiye
[*2]Gaziantep Üniversitesi, Sağlık Hizmetleri Meslek Yüksekokulu, Tıbbi Hizmetler ve Teknikleri, Gaziantep, Türkiye
[*3] Düzce Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Düzce, Türkiye

E-mail: kilic@gantep.edu.tr

Özet

Fındık ülkemizde üretilen besleyici değeri yüksek olan son derece önemli bir tarım ürünüdür. Fındık yağının kullanımı da giderek artmakla beraber ozonlanmış formu daha önce hiç elde edilmemiştir. Ozonlu bitkisel yağlar, uygulanması ve elde edilmesi kolay olduğu için ozon tedavisinde çok tercih edilmektedir. Bu çalışmada 7-8 debide farklı sürelerde ozonlanarak elde edilen fındık yağı ticari formu olan rafine fındık yağı ile mukayese edildi. Ozonlanmış fındık yağlarının güvenli bir şekilde kullanılabilirliğinin tespiti için 3 farklı hücre hattında MTT testi uygulanması ile sitotoksik etki potansiyeli belirlendi. Bunun için H1299 akciğer kanseri, HUVEC endotel hücreleri ve A549 hücre dizisinde 48 ve 72 saat inkübasyon sonrası her numunenin 5 farklı konsantrasyonunda ki canlılık oranları hesaplandı.

Sonuç olarak 3 farklı hücre hattına 5 farklı konsantrasyonda (100/50/25/12,5/6,25µg/ml) uygulanan fındık yağlarının sitotoksik bir etkisinin olmadığı saptandı. Aynı zamanda rafine ozonlanmış fındık yağı ile kıyaslandığında numunelerin ozonlanma ile oluşan toksik bir etkisinin olmadığı da ortaya konuldu. Bu nedenle ozonlanmış fındık yağlarının, rafine fındık yağına alternatif bir ürün olarak ozonlama işleminden kaynaklanan herhangi bir toksik etkisinin olmadan kullanılabileceği bu çalışma ile ortaya konuldu. Bu bilgiler ışığında fındık yağının ozonlanmasının sitotoksik bir etkisinin olmaması güvenilir bir şekilde kullanılabileceği aynı zamanda ozonun gerek farmakolojik gerekse de kozmetik etkilerini de bünyesinde bulunduran fonksiyonel bir yağ olarak üretilebileceği kanaatine varılmıştır.

Anahtar Kelimeler: MTT, Ozonlu fındık yağı, Sitotoksik etki

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➢ **ORAL PRESENTATION**

A Novel Electrochemical Approach for Synthesis of Molybdenum Blue

Ozge Koyun[1*], Semih Gorduk[1] , Melih Besir Arvas[1] and Yucel Sahin[1]

[1]Yildiz Technical University, Faculty of Arts & Science, Department of Chemistry, Istanbul, Turkey.

Corresponding author e-mail: ozgekyn34@gmail.com

Abstract

Polyoxometalates (POMs), are molecules formed by oxygen atoms with early transition metals such as V, Mo and W in high oxidation values. In addition, they may also contain various heteroatoms such as Si, Ge and P, As. POMs are a group of molecular metal oxides which are definable from the majority of the metal oxides, and may include large number of metal atoms that achieve nuclearities as high as 368 in one single cluster structure creating nanoparticles [1]. The blue material, first described by C. W. Scheele in 1778, now known as "molybdenum blue" (MB), and generally amorphous, is also a POM variety. Since that time, this material has been subject to many publications [2, 3].

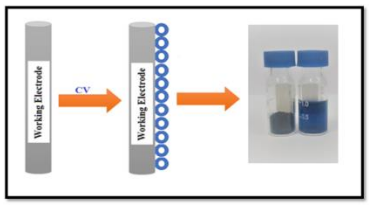

Figure 1. Schematic of the synthesis process of molybdenum blue.

This study is the first to report the direct, one-step synthesis of molybdenum blue (MB) in solid state, via application of cyclic voltammetry. Electrochemical synthesis of MB was carried out in a three-electrode cell in 1.0 M sulfuric acid and at the appropriate amount of sodium molybdate dihydrate. Both a pencil graphite electrode and a platinum plate electrode were used as working electrodes. The structure of electrochemically synthesized MB was characterized using such techniques as Ultraviolet-visible spectroscopy, Fourier Transform Infrared Spectroscopy, Resonance Raman Spectroscopy, Scanning Electron Microscopy, Energy-Dispersive X-Ray Spectroscopy, X-Ray Powder Diffraction, X-ray Fluorescence Spectroscopy, and X-Ray Photoelectron Spectroscopy. In addition, the electrochemical behavior of the synthesized MB was examined via cyclic voltammetry. Finally, the determination of phosphate was conducted using a UV-vis spectrometer with electrochemically synthesized MB.

Keywords: Molybdenum blue, phosphomolybdenum blue, polyoxometalate, cyclic voltammetry, electrochemical synthesis.

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➢ **ORAL PRESENTATION**

Fabrication and Transport Properties of Nanoporous Polymer Membranes

Dila Kaya[*1], Kaan Keçeci[1]

[*1] Faculty of Engineering and Natural Sciences, Department of Chemistry, Istanbul Medeniyet University, Istanbul, 34700, Turkey
[1] Faculty of Engineering and Natural Sciences, Department of Chemistry, Istanbul Medeniyet University, Istanbul, 34700, Turkey

Corresponding author e-mail: dila.kaya@medeniyet.edu.tr

Abstract

Nanopores formed in solid materials are used in various separation techniques and sensing applications for biomolecules [1]. These materials can be biological or synthetic, and can include single or multiple nanopores. While single nanoporous materials are used for determination and detection of analytes, studies based on selective transport of analytes from multiple nanoporous membranes can also be performed. Biological nanopores are not resistant to factors such as pH, temperature, ion concentration and potential, which necessitates the production of these structures synthetically [2]. The desired attributes for pores are that they are low cost, reproducible, chemically and thermally robust and stable. Among many nanopore fabrication techniques the track-etching method is often preferred.

Nanoporous membranes produced with desired pore size, density and thickness are an alternative for controlled release of pharmacological agents [3]. However, in order to use a membrane in such technologies, the selectivity or molecular flux of the nanoporous structure must be able to match the desired process. It is also desired that the process of obtaining nanoporous membranes be economical and reproducible. For all these reasons, extensive research is needed on analyte transport from nanoporous membranes.

In this work, we have investigated the transport properties of track-etched poly(ethylene terephthalate) (PET) membranes in order to pursue possible applications for effective separation and sensing purposes. We have obtained cylindrical and conical nanopores on PET membranes using symmetrical and asymmetrical track-etch methods, respectively. We have used the fabricated nanopores for the transport of charged dye molecules. Effect of applied potential, temperature and pore geometry was shown for Crystal Violet dye. We have also investigated the transport of Methyl Orange and shown negatively charged carboxylate groups on the PET nanopore walls along with applied potential enhanced the selective transport of cations. The temperature and conical geometry were also found to promote the transport of cations.

Keywords: Track-etched nanopore; mass transport; PET membrane; crystal violet; methyl orange.

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➢ **ORAL PRESENTATION**

Tıp Fakültesi Öğrencilerinin Anatomi Eğitimi İle İlgili Pedagojik Algılarının Geliştirilmesi

Mehmet Demir

Sütçü İmam Üniversitesi, Tıp Fakültesi, Anatomi Anabilim Dalı, Kahramanmaraş, Türkiye.

e-mail:mdemir2779@gmail.com

Özet

Son 30 yılda Tıp fakülteleri eğitim-öğretim programında yer alan anatomi dersi müfredatında önemli değişiklikler olmuştur. Bunlar arasında müfredat değişiklikleri, uygulanan modern pedagojik yöntemler, ve ders saatlerinde azalma önemli yer tutmaktadır. Tüm bunlara rağmen anatomi eğitimi günümüzde temel bir disiplin olarak önemini korumaktadır. Bu çalışmamızdaki amacımız Tıp fakültesi öğrencilerinin anatomi eğitimiyle ilgili planladığımız bazı yenilikler veya devam eden eğitim ile ilgili görüşlerini alarak onların öğrenme ve ilgisini arttırmaktır.
Çalışmamıza Sütçü İmam Üniversitesi Tıp Fakültesinde eğitim gören dönem I, dönem II ve dönem III öğrencileri olmak üzere toplam 268 kişi katılmıştır. Tüm öğrencilere anatomi eğitimiyle ilgili 17 soruluk bir anket (Dersin verilmesiyle ilgili 6, İnternet kullanımıyla ilgili 1, Testler ile iliği 1, uygulanan sınavlarla ilgili 5 ve laboratuvar ile ilgili 5 soru) uygulanmıştır.
Çalışmamıza Dönem I'den 100 (%37,3), Dönem II' den 106 (%39,6) ve Dönem III 'den ise 62 (%23,1) öğrenci olmak üzere toplam 268 kişi katılmıştır. Tıp öğrencileri, anatomi dersinin iyi bir hekim olmak için mutlaka gerekli olduğunu (%92,9), dersin son 15 dakikasının vaka tartışmalarına ayrılmasını (%84,7), fakültenin web sayfasında tüm ders materyallerinin bulunabilirliğini (%89,6), değerlendirme sınavlarında mutlaka çizimlerden de sorulması gerektiğini (%47,8), sınavlarda sorulan anatomi soru sayısının yeterli olduğunu (%70,9) laboratuvar eğitiminde yer alan maket (%96,3) ve kadavra diseksiyonunun önemini (%67,2) ve laboratuvar düzenin daha iyi organize edilmesi (%86,9) gerektiğini tercih etmişlerdir.
Sonuç olarak bazı pedagojik yenilikler ve eğitim materyalinin geliştirilmesi ile tıp öğrencilerinin anatomi öğrenimine olan duyarlılığını arttırmak mümkündür.

Anahtar Kelimeler: Tıp, Anatomi, pedagoji, müfredat

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➢ **ORAL PRESENTATION**

Galleria mellonella Büyüme ve Gelişimi Üzerine Bakır ve Çinkonun Etkileri

Mustafa Coskun[1*], Tamer Kayis[1], Yusuf Yılmaz[1], İskender Emre[2]

[*1]Adıyaman Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Adıyaman, Türkiye
[2] Çukurova Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Adana, Türkiye

Sorumlu yazar e-mail:mcoskun@adiyaman@edu.tr

Özet

Ağır metaller gibi çevresel kirleticiler ekosistem içerisinde geniş ölçüde yayılım göstermektedirler. Canlılarda birikim gösterebilen bu metaller fizyolojik, biyokimyasal ve genotoksik etkilerinin yanında, canlıların üreme ve yaşam sürelerini de önemli ölçüde etkileyebilirler.

Son yıllarda çevresel kirleticilerin potansiyel etkilerinin ortaya çıkarılmasında model organizmaların kullanımı oldukça yaygın hale gelmiştir. Sunulan çalışmada model organizma, *Galleria mellonella'* da besin yoluyla verilen Cu ve Zn'nin eşey oranı, büyüme ve gelişme üzerine olan etkilerinin ortaya çıkarılması hedeflenmiştir. *G. mellonella* larvaları 10, 50 ve 100 mg/100gr Cu ve Zn içeren besinlerde yetiştirilmiş ve bu besin ortamında yetiştirilen larvaların larva dönemi süreleri, pupa dönemi süreleri ve erginliğe ulaşan dişi ve erkek bireylerin ömür uzunlukları ile metallerin böceğin eşey oranına olan etkileri araştırılmıştır.

Bakır böceğin larva ve pupa periyotlarının uzamasına ve dişilerin ömür uzunluğunun azalmasına neden olurken, Zn dişi ve erkek bireylerde ömür uzunluğunu önemli ölçüde azaltmış, bunun yanında larval periyodun uzamasına neden olmuştur. Ayrıca her iki metal de böceğin eşey oranında değişikliklere neden olmuş ve özellikle yüksek konsatrasyonda kontrole göre önemli derecede ölüm oranının artmasına yol açmıştır.

Sonuç olarak Cu ve Zn *G. mellonella*'da büyüme ve gelişme parametreleri ile eşey oranını önemli ölçüde değiştirmiş, ömür uzunluğunun azalmasına neden olmuştur. Bakır ve çinkonun model bir organizma olan *G. mellonella*'da büyüme ve gelişme parametreleri, eşey oranını ve ömür uzunluğuna olan etkileri, gelişmiş canlılarda ağır metallerin potansiyel etkilerini göstermesi bakımından önemlidir.

Anahtar Kelimeler: Bakır, Çinko, Eşey Oranı, Ömür Uzunluğu, *Galleria mellonella*

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➢ **ORAL PRESENTATION**

The Investigation of Antiproliferative Effects of Hypobaric Stress Conditions *In vitro*

Gul Ozcan[1*], Gizem Akman[1], Walid Khalilia[2]

[*1]Istanbul University, Science Faculty, Biology Department, Istanbul, TURKEY.
[2]Istanbul University, Instute of Gratuate Studies in Science and Engineering, Istanbul, TURKEY.

Corresponding author e-mail: gozcan@istanbul.edu.tr

Abstract

Nowadays increasing effectiveness in cancer therapy and investigation of formation of new strategies that enhance antiproliferative activity against target organs has become a subject of interest. Hypobaric conditions that create hypoxia promote apoptosis by inhibiting cell cycle. In this study, determination of the effects of fractional hypobaric applications at different times on C-4 I cells at cellular levels were targeted. Experiments were carried out under hypobaric conditions (35.2 kPa) in a specially designed hypobaric cabin including 2% O_2 and 98% N_2. Application of fractional hypobaric conditions was repeated two times for 3 hours with an interval of 24 hours. Cell kinetic parameters such as MTT and apoptotic index were used in determination of the effect of hypobaric conditions on C-4 I cells. The antiproliferative effect in our experiments showed a significant decrease in the rate of proliferation compared to the control ($p < 0.01$). The antiproliferative effect of hypobaric stress conditions on C-4 1 cells was found to be 47%, 55% and 36% respectively 0, 24 and 48 hours. However, apoptotic index values have been shown to increase in a time dependent manner. AI was found 25% in the 0. hour experimental group, 51% in the 24. hours experimental group and 84% in the 48. hours experimental group. The use of alternative treatment methods has been a widespread research topic in recent years. The results that found in this study were shown that hypobaric conditions revealed the antiproliferative effect begins at 0. hour from the time of application, and most effective at 48. hours. As a result, we concluded fractional administration of hypobaric conditions to C-4 I cell cultures increase both antiproliferative and apoptotic effect.
This work was supported by Scientific Research Projects Coordination Unit of Istanbul University. Project number 46813.

Keywords: C-4 I, hypobaric conditions, in vitro, apoptosis, cancer

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➢ **ORAL PRESENTATION**

Efficacy of Iron Chelators Dp44mT and DFO for the Survival of Breast Cancer Stem Cells

Ufuk Ozer[1,2]

[1]University of South Carolina, Center for Colon Cancer Research, Columbia, SC, USA
[2]Dicle University, Faculty of Science, Department of Molecular Biology and Genetics, Diyarbakır, Turkey

ufuk.ozer@dicle.edu.tr

Abstract

Cancer cells consist of higher systemic iron and copper, vital nutrients that are involved in cell growth and metabolism, compared to normal cells. Human epidermal growth factor receptor 2 (HER2) is overexpressed around 30% in breast cancer cells and elevates the proportion of cancer stem cells (CSCs) that lead to cancer recurrence. Iron and copper are capable of changing the redox cycle since they play a role as cofactors within enzyme active sites. Sequestering these metals may cause oxidative stress, making these cells vulnerable to cell death. Understanding of how exposure to iron chelators alters HER2-induced CSC population might reveal novel targets for breast cancer therapy. Breast cancer cell lines MCF7-HER2, overexpressing HER2, and MCF7-vec control cells, HCC1954, MDA-MB-435 and Hs578T were used to evaluate the effect of HER2 in this study. ROS production, iron levels and CSC survival were detected in treatment of iron chelators DFO and Dp44mT utilizing flow cytometry and cell viability was measured by MTT assay. It has been found that iron levels are higher in MCF7-HER2 than MC7-vec cells and HER2-increased CSCs are vulnerable to iron chelation. In addition, other breast cancer cell lines indicate similar sensitivity of CSCs to iron reduction. Finally, the concept is shown in neoplastically transformed breast cancer cell line, HMLER, as well. Dp44mT relatively induced ROS levels in the cells and iron combination reversed this induction while copper combination further induced ROS. In parallel, it inhibited cell growth and the inhibition was slightly rescued by NAC supplement. This study demonstrates that iron depletion causes toxicity for CSCs. Dp44mT both depletes iron and binds copper to form redox active complex that leads to oxidative stress. These dual cytotoxic cases are significant for survival of breast cancer stem cells.

Keywords: Breast cancer stem cells, Iron chelators, Dp44mT, DFO

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➢ **ORAL PRESENTATION**

Multicentric Cutaneous Mast Cell Tumor in a Male Pitbull Dog

Fatih Hatipoglu*, M. Burak Ates, M. Kemal Ciftci, Ozgur Ozdemir [@] Ertan Oruc, Funda Terzi, Gokhan Akcakavak, Mustafa Ortatatli

Selcuk University, Faculty of Veterinary Medicine, Department of Pathology, Konya, Turkey.

[@] Corresponding author e-mail: oozdemir@selcuk.edu.tr

Abstract

Mast cell tumors are ubiquitous in domestic animal species. The neoplasms can be focal or multicentric in the skin and may occasionally involve internal viscera such as spleen, liver, and intestine. There is species variation in location and biological behavior, but the similarities outweigh the differences.
In this report, multicentric mast cell tumour known also as mastocytoma characterized by cutaneous nodule formation were described in a 8-year-old male pitbull dog. The walnut-sized masses on different body region of the dog were noticed by the owner about for 2 years. One of these masses on right gluteal region was removed by the surgical operation at the Clinics of Veterinary Faculty and brought to Pathology Department. It was reported that the mass was localized subcutaneously and had no connection with deep tissues.
In the macroscopic examination, it was noticed that the extracted mass was alopecic, nonulcerated, 3x2x2 cm in size with soft and fleshy consistency and the cut surface was gelatinous, edematous, yellowish-gray colored with reddish foci. The mass was routinely processed and stained with Hematoxylin & Eosin, and examined by light microscope.
Microscopically, the tumor was composed of round cells had a round central to slightly eccentric small nucleus, a single inconspicuous nucleolus and abundant, gray/blue colored granulated cytoplasm. These granules were purple with metachromatic stains (Toluidine Blue). Cytoplasmic borders were distinct, cellular variation and mitotic figures were rare. Tumour cells were arranged in rows or loose sheets separated by collagen bundles. Eosinophil granulocytes were also found locally among tumoral mast cells. Fibrinoid degeneration on vessel wall, collagenolysis, edema and many hyperemic vessels were seen in tumoral stroma. The overlying epidermis was intact.
In conclusion, the case was defined as multicentric mast cell tumor and it was found to appropriate for contributing to the veterinary oncology.

Keywords: Multicentric mast cell tumor, cutaneous, pitbull dog, pathology

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➢ **ORAL PRESENTATION**

The Case of Pregnancy Toxemia along with Salmonellosis, Paratuberculosis and Extreme Sarcosporidiosis in a Sheep

M. Burak Ates*, Ozgur Ozdemir, Mustafa Ortatatli, M. Kemal Ciftci[@]
Ertan Oruc, Funda Terzi, Fatih Hatipoglu

Selcuk University, Faculty of Veterinary Medicine, Department of Pathology, Konya, Turkey.

[@] **:**Corresponding author e-mail: mkciftci@selcuk.edu.tr

Abstract

In this presentation, the pregnancy toxemia together with Salmonellosis, Paratuberculosis and very intense Sarcosporidiosis in 4 years old an Akkaraman sheep have been described in the pathological aspect.

As anamnesis, it has been reported that anorexia, weakness, numbness and deaths are seen in sheep giving birth twin or single. At necropsy; the liver was pale yellow, swollen and easily fissionable and fragile structure. It was noted that there was thickening in the intestinal mucosa, and it had transverse folds that could not be corrected by pulling.

At microscopical examination; in the liver, large droplet fattening within hepatocytes around portal area, mononuclear cell infiltration and paratyphoid nodules involving multifocal necrosis and kupffer cells activation in the parenchyma were determined. In the intestines, numerous eosinophil granulocytes and various numbers of epithelioid cells in lamina propria, intense epithelioid cells in the submucosa, and lymphangitis in the serosa were seen. In the Ziehl-Neelsen staining, numerous acid-resistance bacteria were detected especially in the cytoplasm of epithelioid cells. In addition, too many sarcosporidium cysts were seen in the heart myocardium even though there was no inflammatory reaction.

As a result, it has been noticed that salmonellosis, paratuberculosis and severe sarcosporidiosis diseases were found in the sheep brought with doubt of pregnancy toxemia and that this situation caused to increase in the number of death in the herd. Although clinically only pregnancy toxemia findings are remarkable because of the large number of twin pregnancies, the presentation of this complex case has been found appropriate in order to draw attention to the fact that all dead animals must be necropsied and histopathologically examined.

Keywords: Pregnancy toxemia, salmonellosis, paratuberculosis, sarcosporidiosis

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➢ **ORAL PRESENTATION**

A Case of Unusual Settled Transmissible Venereal Tumor in The Nasal Cavity of a Male Dog

Ertan Oruc*, Fatih Hatipoglu, Mustafa Ortatatli, M. Burak Ates[@], Funda Terzi, Ayse Celebi, Ozgur Ozdemir, M. Kemal Ciftci,

Pathology Department, Faculty of Veterinary Medicine, Selcuk University, Konya, Turkey

[@]:Corresponding author e-mail: mehmetburakates@selcuk.edu.tr

Abstract

Transmissible Venereal Tumor (TVT), a round cell neoplasm, is one of the the most common genital tumors of dogs. In general, it is coitally transmitted and more common in females. External genital organs are the main localization where the tumor is frequently involved. Oral and nasal localization is rare. Its incidence is higher in sexually activite dogs and more frequent in the vagina and vulva of females and in the penis and prepuce in males. The size of the tumor varies and metastasis is not common. Metastasis usually occurs to the regional lymph nodes, skin and subcutis, spleen, kidney, eye, brain, mesenteric lymph nodes, peritoneum.

In this presentation, a case of TVT in left nasal concha of male dog was described. Male dog had been treated with the suspicion of nose bleeding and fungal infection 8 months ago. Due the poor prognosis of the disease, Tissue specimens were examined for pathology. In macroscopic examination, hemorrhagic and necrotic areas were seen on the tumor surface. It consisted of a large number of foci ranging from 0.2 to 0.7 mm in diameter.

Histopathological specimens were prepared from biopsy material. In histopathologic examination, tumor cells were round shaped and separated from each other. It has minimal stroma and necrosis were seen in some areas.

According to histopathological findings, the case was described as TVT. Because it is rarely seen in the nasal cavity, this case would be useful for presentation.

Keywords: TVT, histopathology, male dog, nasal cavity

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➢ ORAL PRESENTATION

Screening of synergistic antibacterial activity ethanolic and methanolic extracts of some traditional herbals

Fatma MATPAN BEKLER[1], Merve DEMİRTAŞ[2], Seçil YALAZ[3], Reyhan Gül GÜVEN[4] Kemal GÜVEN[2]

[1] Dicle University, Science Faculty, Biology Department, 21280 Diyarbakır/Turkey
[2] Dicle University, Science Faculty, Molecular Biology and Genetics Department, 21280 Diyarbakır/Turkey
[3] Dicle University, Science Faculty, Mathematics Department, 21280 Diyarbakır/Turkey
[4]Dicle University, Ziya Gökalp Education Faculty, Science Teaching Section, 21280 Diyarbakır/Turkey

Corresponding author: kemalg@dicle.edu.tr

Abstract

In vitro antibacterial activities of ethanolic and methanolic extracts of heather leaf (*Calluna* sp.), willow herb (*Epilobium* sp.), sorb (*Sorbus* sp.), senna (*Folliculj* sp.), rose of Jericho (*Anastatika hierochuntica*), common buckthorn (*Rhamnus* sp.), fumewort (*Fumaria* sp.) were evaluated for both single and combined effects against pathogen bacteria using disc-diffusion method. Each assay was repeated triplicate. All plates were observed for zones of growth inhibition and the diameter of these zones was measured in millimetres. The results were statistically evaluated. Maximum activities of ethanolic extracts of sorb-rose of Jericho and sorb-fumewort were observed against *K. pneumoniae*, while the highest activity of the extract of sorb- heather leaf was against *P. aeruginosa*. In addition, methanolic extract of heather leaf- willow herb had an antimicrobial effect against *K. pneumoniae* and *P. aeruginosa.* Consequently, in this study it was revealed that single effects of tested plants on tested bacteria were low, but combined effects had higher antibacterial activities.

Keywords: Antibacterial activity, combined effect, synergistic

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➢ **ORAL PRESENTATION**

Cases of Severe Interstitial Emphysema with Enzootic Pneumonia in Calves

Ozgur Ozdemir*, Ertan Oruc, Funda Terzi, Mustafa Ortatatli[@]
M. Kemal Ciftci, M. Burak Ates, Evsen Bayer, Fatih Hatipoglu

Selcuk University, Faculty of Veterinary Medicine, Department of Pathology, Konya, Turkey.

[@] **:**Corresponding author e-mail: morta@selcuk.edu.tr

Abstract

In this presentation, acute interstitial emphysema along with fibrinohemorrhagic and viral pneumonia was defined in 4-6 month old calves.
The necropsy of 2 calves died within 2-3 days with complaints of respiratory distress and fever were performed. It was reported that 6 calves died with the same findings in the farm.
In the macroscopic examination of calves, widespread subcutaneous emphysema in the thorax region spreading to the abdomen was seen. In the lung, hazelnut-baseball ball sized emphysema and bullae were seen in caudal lobes with interstitial and subpleural location. In addition, the *consolidated areas* were found in the cranial and medial lobes. In a calf, emphysema in pericardial wall, submucosal hemorrhages and foamy exudate in lumen of trachea drew attention, too.
Microscopic examination revealed sharply demarcated air bubbles (bullae) in interlobular septum and subpleural areas. Emphysema, edema, fibrin, spilled epithelial cells, and dense erythrocytes in alveoli and hyperemia in capillary vessels were found. In both calves, syncytial cell formation and intracytoplasmic inclusion bodies were detected in alveoli and bronchioles. In addition, a wide bleeding extending from submucosa to the layers of the muscles was noticed in the trachea.
Considering the clinical and pathological findings and the anamnesis information, it was concluded that tracheal haemorrhage and severe acute interstitial emphysema could be releated with mycotoxin inhalation in straw or clover. Besides, it was thought that syncytial giant cells and inclusions in the lung might be associated with bovine respiratory syncytial virus.
As a result, it has been pointed that in the case of enzootic pneumonia in calves, inhalation of mycotoxin spores with dusts of moldy straw may lead to rapid deaths by causing acute interstitial emphysema and fibrinohemorrhagic pneumonia.

Keywords: Interstitial emphysema, enzootic pneumonia, pathology, calves

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➢ ORAL PRESENTATION

Kaposi-like Vascular Tumor on Scapular Region in a Golden Retriever Dog

Mustafa Ortatatli*, M. Kemal Ciftci, M. Burak Ates, Fatih Hatipoglu[@]
Funda Terzi, Ertan Oruc, İsmail Filikci, Ozgur Ozdemir,

Selcuk University, Faculty of Veterinary Medicine, Department of Pathology, Konya, Turkey.

[@] **:**Corresponding author e-mail: fhatip@selcuk.edu.tr

Abstract

A tumoral mass with a solid consistency, subcutaneously localized in left scapular region of a female golden retriever dog was brought to the Pathology laboratory for examination after taken by surgical biopsy process. Macroscopic appearance of biopsy specimen was 7x4x2 mm sized, grey-red in surface, and a dark red colored in the middle.

After routine histopathological laboratory procedures, in microscopical examination of the sample performed; the cavernous structures, some of them filled with eosinophilic, some with basophilic amorphous material, and some with dense erythrocytes have been detected in the middle of section. Among these structures, the vessels, in some of which endothelium could be selected, with pink hyalinous walls and with erythrocytes in their lumens have been noticed. Around the cavernous structures, a large number of capillary vasculature, most of them opened to circulation, were formed and loose connective tissues, edema and bleeding areas were observed among these capillary structures. The capillary endothelia, which had a large and majority oval shaped nuclei and prominent nucleoli, showed atypical cell characteristics and moderate mitosis. In close proximity to the cavernous structures, these capillary endothelia were a more elongated and parallel to each other, and formed tubular structures, extending towards the cavernous space. Oval and shuttle-shaped cells were found in interstitial tissue.

As a result of histopathological appearance mentioned above, it was identified that the tumor was resembling the Kaposi tumor, which was a malignant vessel tumor observed in humans. Thus in the light of literature information, the tumor has been described as Kaposi-like vascular tumor which is rarely observed in dogs and whose diagnosis is still controversial. It was thought that it would be appropriate to present this rare phenomenon hoping to contribute to the field of veterinary oncology.

Key words: Kaposi-like tumor, dog, oncology, pathology

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➢ **ORAL PRESENTATION**

Polioencephalomalacia in a Three Months Old Simmental Calf

M. Kemal Ciftci*, Mustafa Ortatatli, Fatih Hatipoglu, Ertan Oruc[@]
M. Burak Ates, Ayse Celebi, Funda Terzi, Ozgur Ozdemir,

Selcuk University, Faculty of Veterinary Medicine, Department of Pathology, Konya, Turkey.

[@] **:**Corresponding author e-mail: ertanoruc@selcuk.edu.tr

Abstract

Polioensefolomalacia (cerebrocortical necrosis) is characterized by the necrosis (malacia) of the gray matter of the brain and more common in lambs and calves. The most important cause of the disease is thiamine insufficiency.

In this presentation; case of polioensefolomalacia in a three-month-old Simmental calf was defined. In history; clinical findings such as suddenly started blindness and deviation of the head to the back were observed a few days ago in the calf brought to Department of Pathology. It is also stated that mainly corn silage ration is given in the anamnesis and the corn is medicated against the insecticides just before the harvest. Systemic necropsy was performed and macroscopically in the brain of the calf; the paleness in hemispheres, flattening in the gyrus and opaqueness in the meninges were seen. In hemispherical sections, the yellowish cavities with malacial foci were observed in all cortical areas, more intense in dorsal and dorsolateral cortices. A blood clot filling the right lateral ventricle was noted.

Microscopic examination of brain sections showed edema, hyperemia, and some haemorrhage areas in the meninges and neuropil tissue. Wide necrosis and malacia areas with numerous Gitter cells were drew attention in substantia grisea. In addition, there were neuronal necrosis and neuronophagia, swelling in the astrocytes and hypertrophy in the vascular endothelium.

As a result; development of typical polioencephalamalacia has been determined in the so young calf. It has been found appropriate to present the case to draw attention to faulty management and feeding in calves.

Key words: Polioensefolomalacia, calf, brain, pathology

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➢ **ORAL PRESENTATION**

Triticeae Dumort. (Gramineae) Tribus'unda Bulunan *Hordeum* L., *Triticum* L., *Secale* L. Cinslerine Ait Bazı Taksonların Polen Morfolojileri

Birol Başer[1*], Evren Cabi[2], Musa Doğan[3], Sevil Pehlivan[4]

[*1]Bitlis Eren Üniversitesi Fen Edebiyat Fakültesi Biyoloji Bölümü
[2]Namık Kemal Üniversitesi Fen Edebiyat Fakültesi Biyoloji Bölümü
[3]Orta Doğu Teknik Universitesi Biyoloji Bölümü,
[4]Gazi Üniversitesi, Fen Fakültesi Biyoloji Bölümü

Sorumlu yazar e-posta: baser2007mail.com

Özet

Angiospermlerin monokotiller sınıfında yer alan Gramineae (Poaceae) familyası, dünya çapında 6 alt familya, 50'den fazla tribus, 650 cins ve 10 000 türe sahip büyük bir familyadır. Ülkemizde ise 142 cins, 520 tür, 19 alt tür ve 52 varyete ile temsil edilir. Bu çalışmada 2005–2008 yılları arasında devam etmekte olan 105T171 numaralı ve "Türkiye'de Bulunan Triticeae Dumort.(Gramineae) Oymağının Revizyonu" isimli TÜBİTAK projesi kapsamında, tüm Türkiye çapında yürütülen araştırmalarda Gramineae familyasının Triticeae tribüsüne ait Triticum, Secale, Hordeum, cinslerine dahil olmak üzere toplamda 7 taksonun polen morfolojileri IM ve SEM ile ayrıntılı olarak incelenmiştir. Araştırılan taksonlara ait polenlerin ortak özellikleri tektat, monoporat, polen şekillerinin prolat-sferoidal, subprolat, oblat-sferoidal ve suboblat, simetrisinin heteropolar, ve por şeklinin prolat-sferoidal, subprolat olmasıdır. Çalışmamızda ornamentasyona göre polenler; Skabrat, Gruplu skabralar karışık; Skabralar bir araya gelerek grup oluşturmuş. Bazı yerlerde arada serbest skabralarda var ve karışık görünüm sergilemektedir: *Triticum aestivum Secale anatolicum*. İnsular skabrat karışık; *Hordeum murinum ssp. leporinum, Hordeum geniculatum, Hordeum bulbosum* var. bourgaei, *Triticum turgidum*.

Anahtar kelimeler: Gramineae, *Hordeum*, *Secale*, *Triticum*, Polen morfoloji

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➢ **ORAL PRESENTATION**

Anesthetic Potential of Geranium (*Pelargonium graveolens*) Oil for Two Cichlid Species, *Sciaenochromis fryeri* and *Labidochromis caeruleus*

Erkan Can[1]*, Volkan Kizak[1], Şafak Seyhaneyildiz Can[2], Esin Özçiçek[3]

[1*]Fisheries Faculty, Department of Aquaculture, Munzur University, 62000, Tunceli, Turkey
[2]Engineering Faculty, Department of Bioengineering, Munzur Universit, 62000, Tunceli, Turkey
[3]Fisheries Faculty, Department of Basic Sciences, Munzur University, 62000, Tunceli, Turkey

Corresponding author e-mail: ecanengineer@gmail.com

Abstract

The anesthetic potential of geranium oil (*Pelargonium graveolens L.*) was evaluated in two freshwater aquarium fish species, the electric blue hap (*Sciaenochromis fryeri*, mean body weight of 2.00 ± 0.61 g) and blue streak hap (*Labidochromis caeruleus*, mean body weight of 2.31 ± 0.52 g). Fish were exposed to nine concentrations of anesthetic (25, 50, 75, 100, 125, 150, 200, 250, 300 μl^{-1}). Three replicates of 7 fish were used to assess the effectiveness of each concentration. The induction time generally decreased significantly with increasing concentration of geranium oil for both of the fish species studied. The recovery time increased with the enhancing geranium oil concentration. Deep anesthesia took between 61.19±7.25 and 165.43±6.78 sec for *S. fryeri* and between 73.32±8.92 sec and 171.12±10.74 for *L. caeruleus.* Recovery occurred after 101.32±6.36 sec, with the longest being 291.45±8.31 sec. The minimal effective concentration was 75 $\mu l\ L^{-1}$ for deep anesthesia (A5) for both two species, and 50 $\mu l\ L^{-1}$ was found as the minimal sedative concentration at the stage of loss of equilibrium (A3). These findings suggested that geranium oil is a new potential anesthetic for two ornamental fish species.

Keywords: Anaesthesia, Geranium, Essential oil, *Labidochromis caeruleus*, *Sciaenochromis fryeri*

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➢ **ORAL PRESENTATION**

Türkiye Denizleri İçin İskatari Balığı'nın (*Spondyliosoma cantharus* Linnaeus, 1758) Maksimum Boy Kaydı

Özgür Cengiz

Çanakkale Onsekiz Mart Üniversitesi, Deniz Bilimleri ve Teknolojisi Fakültesi, Çanakkale, Türkiye

Sorumlu yazar e-mail: ozgurcengiz17@gmail.com

Özet

Maksimum boy ve ağırlık değerleri, balıkçılık yönetimi açısından oldukça önemli parametrelerdir. Bu parametreler, doğrudan ya da dolaylı olarak, stok tayini çalışmalarının çoğunda kullanıldıkları için, özellikle, ticari açıdan sömürülen balık türlerinin maksimum boy ve ağırlık değerlerinin güncellenmesi her geçen gün önem kazanmaktadır. Bu bağlamda, 39,0 cm (TL) boya ve 340,00 g (TW) ağırlığa sahip dişi bir birey 10 Haziran 2013 tarihinde Seddülbahir limanı (Gelibolu Yarımadası, Kuzey Ege Denizi) açıklarında balıkçılar tarafından yakalanmıştır. Elde edilen bu sonuç, Türkiye denizleri için İskatari (*Spondyliosoma cantharus* Linnaeus, 1758) balığının maksimum boy ve ağırlık değerlerini ortaya koymuştur.

Anahtar Kelimeler: İskatari Balığı, *Spondyliosoma cantharus*, Maksimum Boy, Gelibolu Yarımadası

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➢ ORAL PRESENTATION

Adducin and Plasminogen Activator Inhibitor 1 Gene Polymorphisms in Coronary Artery Bypass Surgery

Kürşat Kargün [1*], Sefa Şenol [2]

[*1]Firat University, Faculty of Health Sciences, Elazig, Turkey
[2]Department of Cardiovascular Surgery, Educational and Resarch Hospital, Elazığ, Turkey

Corresponding author e-mail: kkargun@firat.edu.tr

Abstract

In this study, coronary artery patients involved in a coronary artery bypass graft (CABG) and a control group displaying no coronary artery disease (CAD) are being compared in terms of alpha adducin Gly460Trp and plasminogen activator inhibitor 1 (PAI-1) gene polymorphisms. Ninety patients (64 men, 26 women; avarage age: 59.8 ± 9.2) who were recommended for a coronary artery bypass graft because of their coronary artery disease and 80 healthy people (57 men, 23 women; avarage age: 58.3 ± 7.4) who were not coronary artery patients were included in this study. Within these samples, adducin Gly460Trp and plasminogen activator inhibitors 1 (PAI-1) gene polymorphisms were determined by the real time polymerase chain reaction method. According to the obtained results, in the comparison between the coronary artery bypass graft group and the control group, there were no statistically significant differences in terms of adducin Gly460Trp and plasminogen activator inhibitor 1 (PAI-1) gene polymorphisms ($p>0.05$). In this study, it was concluded that the interpretation of adducin Gly460Trp and plasminogen activator inhibitor 1 (PAI-1) gene polymorphisms as being risk factors for development and undevelopment of coronary artery diseases can't be substatiated. Especially in patients with coronary artery adducin and plasminogen activator inhibitor-1 gene polymorphism else think it would be more useful to be evaluated.

Keywords: Adducin; Plasminogen activator inhibitor 1; Gene polymorphism; Coronary artery disease.

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➢ **ORAL PRESENTATION**

Aniline Degradation by Subcritical Water Oxidation using Hydrogen Peroxide

Erdal Yabalak*, İpek Topaloğlu, A. Murat Gizir

Mersin University, Faculty of Arts and Science, Department of Chemistry, Çiftlikköy Campus, Mersin, Turkey

e-mail: yabalakerdal@gmail.com

Abstract

Aniline is one of the 129 priority pollutants, identified by the EPA due to being a toxic non-irreversible material with low biodegradability. There are various studies to degrade aniline or decontaminate polluted water with aniline such as oxidation, extraction, biodegradation, and adsorption. Subcritical water oxidation is an effective and environmentally friendly alternative to these methods. In addition, Subcritical water oxidation is a thermochemical process in which hydroxyl radicals and active oxygen species form at high temperatures and pressures.
In this study, we investigated the effect of temperature, treatment time and H_2O_2 concentration on the total organic carbon removal of aniline. We achieved the degradation of aniline with 92.73 % percent of TOC removal at 403 K, in the presence of 80 mM of H_2O_2, in 80 minutes of treatment time. The effect of mentioned parameters was optimised by the response surface method. ANOVA test was applied to examine the reliability of the method. Also, aniline removal was spectrometrically analysed by UV-Vis spectroscopy. Aniline removal was achieved at above 99 % in almost all experimental conditions. Figure 1 displays the effect of H_2O_2 concentration and temperature on the TOC removal of aniline at the fixed treatment time of 30 min. It is clearly seen that elevated TOC removal rates were obtained, especially at the high level of H_2O_2 concentration and the medium level of temperature at the fixed treatment time of 30 min.

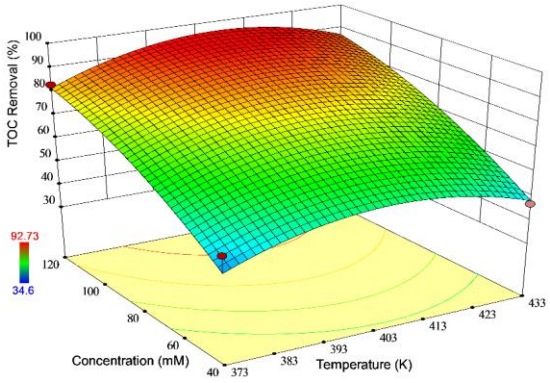

Figure 1. Variation of TOC removal rate of aniline based on the H_2O_2 concentration and temperature at fixed treatment time of 30 min.

Keywords: TOC removal, Response surface method, Aniline removal, Subcritical water.

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➢ **ORAL PRESENTATION**

Morphology and Histology of the Male Reproductive System and Ecology of *Leptinotarsa decemlineata* (Say.) (Coleoptera: Chrysomelidae)

Selami Candan, Nurcan Özyurt Koçakoğlu*, Zekiye Suludere

Gazi University, Faculty of Science, Biology Department, 06500 Ankara, Turkey

Corresponding author e-mail: nurcanozyurt@gazi.edu.tr

Abstract

Leptinotarsa decemlineata (Say.) (Coleoptera: Chrysomelidae) is economically important species. *L. decemlineata* is a polyphagic pest that feeds on many plants of the Solanaceae family and Potato beetle is also the vector of bacterial ring rot disease. In order to combat with *L. decemlineata* which is economically important insect need to well-know the structure of the reproductive system of this insect. Therefore, the purpose of this study is to describe the morphological and histological structure of the male reproductive system of *L. decemlineata* and contribute to the knowledge of the male reproductive biology of Chrysomelidae. Adult males of *L. decemlineata* were collected from Nevşehir, in July 2017, Turkey. Structure of the male reproductive system of *L. decemlineata* is studied morphologically and histologically using both light and scanning electron microscope (SEM). The male reproductive system in *L. decemlineata* consists of a pair of yellow colour and bilobed testes, vasa efferentia, two vesiculae seminales, a pair of vasa deferentia, a pair of accessory glands, an ejaculatory duct and aedeagus. Each lobe is separately enclosed in peritoneal sheath and consist of a 20 testes follicles. Trachea and tracheoles extend out of the inner surface of the sheath. Three development zones were seen within the testes follicles; the growth zone, the maturation zone, the differentiation zone. Each follicles is attached to the vesiculae seminales by a small stalk-like and yellow vas efferens. The vesiculae seminales are connected with vasa deferentia. The vesiculae seminales are surrounded by a monolayer squamous epithelium and in the lumen, sperm tails have been distinguished in bulk. *L. decemlineata* has a pair of accessory glands and opening to the vesiculae seminales. The accessory glands have single-layered cylindrical epithelium. In lumen of their was seen secretions. The vasa deferentia linked to the ejaculatory duct. The ejaculatory duct has a monolayer cylindrical epithelium and is surrounded by a very thick muscle layer.

Keywords: Spermatozoa, testis, follicle, scanning electron microscope.

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➢ **ORAL PRESENTATION**

Live Cell Calcium Imaging in Primary Cardiac Fibroblasts

Naim Kittana

Department of Biomedical Sciences, Faculty of Medicine & Health Sciences, An Najah National University, Nablus, Palestine.

Corresponding author e-mail: naim.kittana@najah.edu

Abstract

Ca^{2+} is a universal second messenger that can influence many aspects of cellular patho-physiology. Unlike cardiomyocytes and neuronal cells, the study of Ca^{2+} handling in cardiac fibroblasts (CF) is challenging, since these cells are thin, sensitive and quit heterogeneous, i.e. individual CF may respond to varying degrees upon stimulation, and that requires the use of a large number of cells to get reliable data. This protocol describes a high throughput method for real-time monitoring and semi-quantification of Ca^{2+} handling in primary cultured rat and human cardiac fibroblasts under basal conditions and following stimulation with Ang II. The assay is based on the utilization of "Screen Quest Fluo8-No Wash Kit" from AAT Bioquest. The kit utilizes Fluo-8 AM Ca^{2+} sensitive fluorescent dye, which is more than 2 times brighter than Fluo-4 AM, and 4 times brighter than Fluo-3 AM, according to the manufacturer. The manufacturer mainly designed the kit to be easily adopted for automated monitoring of total change of fluorescence intensity in cells cultured in 96-or 384-well plate. However, this method does not allow determination of parameters for individual cells, monitoring individual cell status and reactions to the treatment conditions; therefore we present here a modified protocol that deals with these limitations.

Keywords: 3-6 words. Cardiac fibroblasts, live cell calcium imaging, calcium transient, angiotensin II

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➢ **ORAL PRESENTATION**

Investigation of Parasporin Gene Contents of Native *Bacillus thuringiensis* Strains

Müjgan Kesik Oktay, Hatice Güneş*

Mugla Sitki Kocman University, Faculty of Science, Biology Department, Mugla, Turkey

Corresponding author e-mail: haticegunes@mu.edu.tr

Abstract

Parasporins are the crytal proteins which produced by *Bacillus thuringiensis* (Bt) during sporulation phase. Parasporins are capable of killing cancer cells but they do not have cytotoxic activity against normal cells. Because of cell spesific activity, parasporins have being gained so much attention for cancer research during recent years. In this study, native Bt strains were isolated from soil samples and the parasporin gene contents of 120 native Bt isolates were screened by PCR. Genomic DNA and primers for 6 different parasporin genes were used for detection of parasporin positive Bt strains. Totally 8 isolates showed amplification with parasporin primers. PCR products were purified from the agarose gel and subjected to DNA sequencing. Among them, five Bt strains harboured parasporin-6; two strains contained parasporin-1; and one strain had parasporin-2 gene. According to BLAST analyses, %99-100 alignments were found between relevant parasporin genes and PCR products. Phylogenetic trees were prepared by Mega7 program to show the proximity with the other parasporin genes. Finally, protein extractions from parasporin positive isolates and their cytotoxic activities against different cancer cell lines have being under investigation.

Keywords: *Bacillus thuringiensis*, parasporin, cytotoxicity

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➢ **ORAL PRESENTATION**

Bioinformatics and Expression Analyses of ATP Sulfurylase (*ATPS*) Gene in Sorghum (*Sorghum bicolor*) Under Cadmium And Salinity Stresses

Ertugrul Filiz[1,*], M. Aydın Akbudak[2]

[*1]Duzce University, Cilimli Vocational School, Department of Crop and Animal Production, Cilimli, Duzce, Turkey
[2]Akdeniz University, Department of Agricultural Biotechnology, Antalya, Turkey

Corresponding author e-mail: ertugrulfiliz@gmail.com

Abstract

ATP sulfurylase (ATPS, EC: 2.7.7.4) is a vital enzyme and plays important roles in sulfate assimilation pathway in both plastids and cytosol in plants. In this study, two *ATPS* genes (*Sobic.001G094300* and *Sobic.006G008700*) were identified in sorghum (*Sorghum bicolor* L.) genome at genome-wide scale. These *SbATPS* genes contain five exons and an ATP-sulfurylase domain (PF01747) structure. In phylogenetic analysis, monocot-dicot divergence of ATPSs was not observed and they clustered together in phylogenetic tree. The digital gene expression analyses revealed that *Sobic.001G094300* gene have higher expression values than *Sobic.006G008700* gene at development stages and anatomical parts of sorghum. In this study, ***Sobic.001G094300*** **gene was up-regulated in roots, whereas** ***Sobic.006G008700*** **was down-regulated in roots and leaves** under cadmium (Cd) stress. **Under salt (NaCl) stress,** *Sobic.001G094300* and *Sobic.006G008700* genes were up-regulated in leaves, whereas they were down-regulated in roots. Also, the 3D structure analyses of sorghum ATPS proteins indicated that these two *SbATPS* genes had some structural divergences and different channel topologies. In conclusion, some variations at nucleotide and protein levels were found in ATPSs and abiotic stress conditions such as Cd and NaCl tightly induced the sorghum *ATPS* genes in sorghum.

Keywords: ATP sulfurylase, *Sorghum bicolor*, abiotic stress, bioinformatics.

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➢ **ORAL PRESENTATION**

Use of RNAi Technology to Reduce Lignin Content in Rice

M. Aydın Akbudak[1*], Ertugrul Filiz[2]

[*1]Akdeniz University, Department of Agricultural Biotechnology, Antalya, Turkey
[2]Duzce University, Department of Crop and Animal Production, Cilimli, Duzce, Turkey

Corresponding author e-mail: aydinakbudak@hotmail.com

Abstract

Rice straw is one of the largest biomass in the world that can potentially be exploited for bio-fuel. Nevertheless, the association of lignin with cellulose and hemicellulose has hindered the efficient utilization of rice straw for cellulosic bio-fuel. The objective of this study was, therefore, to down-regulate genes involved in lignin biosynthesis pathway, such as hydroxycinnamoyl CoA: shikimate hydroxycinnamoyl transferase (HCT), cinnamoyl CoA reductase (CCR), and cinnamyl alcohol dehydrogenase (CAD) through terminator-less construct to reduce lignin in transgenic rice straw for its use in cellulosic bio-fuel. Real-time qPCR analyses of the selected T1 transgenic rice plants indicated at least 36-87% transcript reduction in HCT lines, 75-94% in CCR lines, and 14-85% in CAD lines. Of the nine down-regulated lines (three lines from each genes) analyzed for lignin, total lignin content was significantly reduced in seven lines (HCT-4, HCT-7, CAD-1, CAD-7, CCR-3, CCR-7, and CCR-12) with lignin reduction ranged from 4.6% to 10.8%. The results from this study indicated that the simple binary vector without termination sequence can be used for down-regulation of lignin genes in rice; and that the rice straw from transgenic lines containing reduced lignin could be used as feedstock for cellulosic biofuel.

Keywords: Biofuel, Gene silencing, Lignin.

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➢ ORAL PRESENTATION

Elazığ'da Yayılış Gösteren *Nigella nigellastrum* (L.) Willk. ve *Nigella oxypetala* Boiss. (Ranunculaceae) Türlerinin Taksonomik Yönden İncelenmesi

Yaşar Kıran[1*], Gülden Doğan[1], Zeynep Demirkan[1]

*[1]Fırat Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Elazığ, Türkiye
Sorumlu yazar e-mail: ykiran@firat.edu.tr

Özet

Bu çalışmada, *Nigella* L. cinsine ait 2 tür (*Nigella nigellastrum* (L.) Willk. ve *Nigella oxypetala* Boiss.) morfolojik, anatomik ve karyolojik özellikleri bakımından incelenmiştir. Her bir lokaliteden toplanan örneklerin morfolojik yapıları incelenmiş ve ölçümleri yapılmıştır. Türlerin anatomik özellikleri kök, gövde ve yapraktan alınan kesitlerle belirlenmiştir. Çalışılan türlerin anatomik yapı olarak bu cinse ait diğer türlerden belirgin farklılıklar göstermediği tespit edilmiştir. İncelenen türlerin, kromozom çalışmaları için tohumlarından yararlanılmıştır. Bölünür somatik hücrelerde yapılan çalışmalar sonucunda türlerin kromozom sayıları ve karyotip analizleri belirlenerek ideogramları çizilmiştir. *Nigella nigellastrum* ve *Nigella oxypetala* türlerinin kromozom sayılarının $2n=2x=12$ olduğu tespit edilmiştir.

Anahtar Kelimeler: *Nigella*, Ranunculaceae, Morfoloji, Anatomi, Karyotip, Sitotaksonomi.

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➢ **ORAL PRESENTATION**

Chemical Computational Methods for the Characterization of Sciff Bases

Zeynep Demircioğlu[1*], Orhan Büyükgüngör[2], Cem Cüneyt Ersanlı[1]

[*1]Sinop University, Faculty of Arts and Science, Department of Physics, Sinop, Turkey.
[2]Ondokuz Mayıs University, Faculty of Arts and Science, Department of Physics, Samsun, Turkey.

Corresponding author e-mail:zdemircioglu@sinop.edu.tr

Abstract

Schiff bases are important in physics, chemistry and engineering area. They are used especially in dye and polymer technologies, pharmaceutical and agriculture industries, medicine and biology. In recent years, among the chemical computational methods calculating the electronic structure of molecular systems. Density Functional Theory (DFT) methods has been favorite one due to its great accuracy in reproducing the experimental values of molecular geometry and other chemical properties. In order to obtain stabilitiy of the structures in the ground state were optimized at DFT/B3LYP level theory. After a successful optimization, the information about energy, dipole moment, frontier orbitals, hardness and softness reports (chemical activity), molecular electrostatic potential map (MEP), natural bond orbital (NBO) analysis, Mulliken population analysis (MPA), Natural population analysis (NPA) and the second order nonlinear optical (NLO) properties which are not able to analysed experimentally, were obtained by computational chemical calculations. The results of chemical computational calculations are interpreted.

Keywords: Chemical Computational Method, Density Functional Theory, Chemical Activity Analysis

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➢ ORAL PRESENTATION

Tissue-specific Expression of Proline Biosynthesis Genes (*P5CS1* and *P5CS2*) Under Boron Stress in *Arabidopsis thaliana* (L.)

Yonca Surgun-Acar

Faculty of Agriculture, Department of Agricultural Biotechnology, Çanakkale, Turkey.

Corresponding author e-mail: yoncasurgun@gmail.com

Abstract

Plants have developed several ways of adapting to various stress conditions. Proline accumulates in higher plants in response to environmental stresses. Besides acting as an osmolyte, proline plays key roles such as metal chelator, an oxidative defense and a signaling molecule. The Δ^1-pyrroline-5-carboxylate synthase (P5CS), an essential enzyme in proline biosynthesis, is encoded by *P5CS1* and *P5CS2* genes in *Arabidopsis thaliana*. In this study, mRNA levels of P5CS1 and P5CS2 genes were investigated in root and leaf of *Arabidopsis thaliana* (L.) plants exposed to boron (B) deficiency or toxicity using Real-Time PCR. In leaf, expression level of *P5CS1* gene increased as a result of boron deficiency and toxicity treatments. While expression of *P5CS1* gene was not affected by B stress in roots of ten-week-old plants, the expression of *P5CS2* gene was increased under both B toxicity and B deficiency applications. These results reveal that expression of *P5CS1* and *P5CS2* genes shows tissue-specific expression pattern in *A. thaliana* under boron stress conditions.

Keywords: *A. thaliana* (L.), proline, *P5CS1*, *P5CS2*, boron, gene expression.

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➢ **ORAL PRESENTATION**

Synthesis, Anticholinesterase Activity of Novel Coumarin Carbamate Derivatives

Belma Zengin Kurt

Bezmialem Vakif University, Faculty of Pharmacy, Department of Pharmaceutical Chemistry, Istanbul, Turkey.

Corresponding author e-mail: bzengin@bezmialem.edu.tr

Abstract

Alzheimer's disease (AD) is the most common neurodegenerative disease with symptoms of memory loss, cognition defect and behavioural impairment [1]. AD is associated with a selective loss of cholinergic neurons in the brain and decreasing levels of acetylcholine (ACh) [2]. The classical hypothesis of AD is the cholinergic hypothesis, which suggests that acetylcholinesterase inhibitors (AChEI) could increase the levels of ACh in AD patients through the inhibition of AChE and, therefore, relieve some symptoms experienced by AD patients.

Carbamates have common biological and pharmacological properties. Additionally, carbamate-class of the AChEI is well known and used in the cure of a various illnesses involving AD. Carbamates, such as rivastigmine, neostigmine, phenserine and physostigmine, easily pass the blood-brain barrier to inhibit cholinesterase in the central nervous system, spearheading advanced cognition in dementia [3]. Therefore, the synthesis of novel carbamate derivatives as cholinesterase inhibitors has been the focus of attention of scientists both in academia and in industry.

In this study, new coumarin derivatives with the carbamate moiety were synthesized and their inhibitory effects on acetylcholinesterase (AChE) and butyrylcholinesterase (BuChE) were evaluated. 4-methyl-2-oxo-2H-chromen-7-yl cycloheptylcarbamate (**4h**) showed the strongest inhibition against AChE with IC_{50} values of 2.30 µM, and 2-oxo-2H-chromen-7-yl-(cyclohexylmethyl)carbamate (**4c**) and 4-methyl-2-oxo-2H-chromen-7-yl-(cyclohexylmethyl)carbamate (**4g**) were found to be the most potent BuChE inhibitors with IC_{50} value of 0.003 µM and 0.004 µM, respectively.

Keywords: Acetylcholinesterase, butyrylcholinesterase, carbamate, coumarin.

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➢ ORAL PRESENTATION

Dumanlı Ormanlarının (Refahiye/Erzincan) Trombidioid Akarları Üzerine Gözlemler: Bir Ön Çalışma

Rukiye Yıldırım[1]*, Sevgi Sevsay[2]

[1]Erzincan Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Anabilim dalı, Erzincan, Türkiye
[2] Erzincan Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Erzincan, Türkiye

r.ozger@hotmail.com

Özet

Bu çalışmada Dumanlı Ormanlarının Trombidioid akarlarının varlığının ortaya konması ile bu canlıların ekolojik isteklerinin araştırılması ve bu alanın biyoçeşitliliğine katkı sağlanması amaçlanmıştır. Denizden yüksekliği 2000 m olan Dumanlı ormanı, çok sayıda farklı yükseltilere ve farklı habitatlara sahip olduğundan biyolojik çeşitlilik bakımından oldukça zengin bir alandır. Özellikle ekolojik çalışmalarda önemli olan bakı, yükseklik, sıcaklık, nem ve toprağın kimyasal özelliği gibi değerler, türlerin yayılımında etkili olduğundan bu çeşitliliği içeren alanlarda çalışmak oldukça önemlidir. Yaşam ortamı olarak sulu ve yarı sulu habitatlar ile çimenli toprak, toprak, liken, yosun ve döküntüyü tercih eden trombidioid akarlar (kadife akarı), biyolojik besin zincirinde oldukça önemli bir yer tutmaktadır. Bu akarlar on dört familya içermektedir ve her familyanın içerdiği üyeler farklı habitatları tercih ederler. Bu tercih, söz konusu canlıların farklı habitatları içeren alanlarda daha zengin tür ve birey sayısını içermesine sebep olur. Bu çalışmada Nisan- Kasım 2017 aylarında yapılmış olan arazi çalışmalarına ait ön bilgi ve gözlemler sunulmuştur. Dumanlı Ormanlarında gerçekleştirilen arazi çalışmaları sonucunda farklı lokalitelerden alınan toprak örneklerinin ekolojik parametreleri alınmıştır. Berlese düzeneği ile ayıklanan örnekler ile doğadan çıplak el / aspiratör ile canlı olarak toplanan örnekler değerlendirilmiştir. İncelenmesi tamamlanan örneklerin çizim ve ölçümleri Leica DM 4000 ışık mikroskobu ile gerçekleştirildi. Terminoloji Makol'e (2005) göre verilmiştir. Çalışma sonucunda dört familyaya ait dokuz tür tespit edilmiştir.

Anahtar Kelimeler: Acari, Erzincan, Fauna, Trombidioidea

Bu çalışma, Erzincan Üniversitesi Bilimsel Araştırma Projesi (BAP) FYL-2017-469 numaralı projenin desteği ile yürütülmüştür. Desteklerinden dolayı EUBAP koordinatörlüğüne teşekkür ederiz.

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➢ **ORAL PRESENTATION**

Ilısu Baraj Havzası Sinek (Diptera) ve Kelebek (Lepidoptera: Papilionoidea) Faunası

Mustafa Cemal Çiftçi[1*], Derya Çiftçi[2]

[*1]Siirt Üniversitesi, Ziraat Fakültesi, Bitki Koruma Bölümü, Siirt, Türkiye
[2]Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail:empididae@gmail.com

Özet

Kelebeklerin (Lepidoptera) doğal ekosistemde polinatör ve besin zincirinde önemli bir besin maddesi olarak önemli bir rolü vardır. Sinekler (Diptera) ise, polinatör olarak görev alması yanında bitkisel ve hayvansal maddelerin bozunumunda ve geri dönüşümünde çok önemli bir grup olup besinlerin toprağa dönüşmesinde önemli bir rol oynar. Ayrıca larvaları besin zincirinin önemli bir bileşenidir. Bu çalışmada, ekolojik ve biyolojik olarak büyük öneme sahip bu takımların Ilısu barajı su toplama havzasındaki tür çeşitliliği belirlenmeye çalışılmıştır.

Çalışma alanı olan Ilısu barajı su toplama havzası Güneydoğu Anadolu Bölgesinde, Batman, Diyarbakır, Mardin, Siirt ve Şırnak il sınırları içerisinde bulunmaktadır. Ilısu barajı Dicle nehri üzerine kurulmuş ve su toplama havzası Dicle nehri ve yan kollarından oluşmaktadır. Ilısu baraj havzası etrafı ağırlıklı olarak tarım alanlarından oluşmakta olup ıslak çayırlık ve riparyan habitatlarda bulunmaktadır.

Bu çalışma ile Güneydoğu Anadolu bölgesinde önemli bir akarsu sistemi üzerinde yer alan Ilısu baraj havzasının biyoçeşitlilik açısından önemli olan Diptera ve Lepidoptera faunasının ortaya konulması, Türkiye faunasına katkıda bulunulması ve tür çeşitliliğin ortaya çıkarılması amaçlanmıştır.

Ilısu barajı havzasında bulunan dipter ve lepidopter türlerinin tespiti için 2015-2017 yılları arasında arazi çalışmaları yapılmıştır. Arazi çalışmaları için çalışma alanında farklı habitatlara sahip 24 istasyondan örnekler toplanmıştır. Örnekler atrap kullanılarak süpürme yöntemi ile toplandıktan sonra uygun yöntemler ile standart müze materyali haline getirilmiş ve ilgili literatürler kullanılarak teşhisleri yapılmıştır.

Arazi çalışmalarında toplanan örneklerin teşhisi sonucunda Diptera takımdan 7 familyaya ait 35 tür ve Lepidoptera takımdan 5 familyaya ait 39 tür toplamda ise alandan 74 tür tespit edilmiştir. Tespit edilen 39 kelebek türü "Türkiye'deki Kelebeklerin Kırmızı Kitabı" kriterlerine göre değerlendirilmiş ve 37'sinin "Düşük Risk (LC)" statüsünde 2 türün ise "Yetersiz Veri (DD)" statüsünde yer aldığı tespit edilmiştir.

Güneydoğu Anadolu Bölgesi Diptera ve Lepidoptera tür çeşitliliğinin bölgenin diğer yerlerinde yapılacak ayrıntılı çalışmalar ile bölgedeki böcek faunasının büyük bir kısmının ortaya çıkarılmasında oldukça önemli olacaktır. bu çalışmalarla bölgenin tür çeşitliliğinin artacağı düşünülmektedir.

Bu çalışmada değerlendirilen örnekler Devlet Su İşleri Genel Müdürlüğü (DSİ) ve Çınar Mühendislik Müşavirlik A.Ş. tarafından desteklenen "Ilısu Barajı Biyolojik Çeşitlilik Koruma Tedbirlerinin Uygulanması ve İzlenmesi projesi" kapsamında toplanmıştır.

Anahtar Kelimeler: Ilısu Barajı, Diptera, Lepidoptera, Fauna

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➢ **ORAL PRESENTATION**

The Influence of Calcium Chloride, 1-MCP and Hot Water on the Activities of Cell Wall Hydrolases During Storage in Sweet Cherry (*Prunus avium* L.)

Damla Güvercin[1*], Müge Özeren [2], Halime Keriman Sarıkaya [2], Yaşar Karakurt[2]

[*1] Suleyman Demirel University, Faculty of Arts and Sciences, Department of Biology, Isparta, Turkey
[2] Suleyman Demirel University, Faculty of Agriculture, Department of Agricultural Biotechnology, Isparta, Turkey

Corresponding author e-mail: damlaguvercin@sdu.edu.tr

Abstract

Sweet cherry (*Prunus avium*) has a short post-harvest shelf life and this greatly affects the consumer preference and export of fresh fruits. In this study, it was aimed to determine the changes in the activities of cell wall degrading enzymes in response to hot water, calcium chloride and 1-MCP treatments during postharvest storage in cherries. Cherries were treated with various concentrations of $CaCl_2$, 1-MCP and hot water at various degrees and stored for 30 days at 4 °C. The results showed that the firmness of cherries decreased significantly and their cell walls have undergone significant changes during 25 days storage period after harvest. The activities of polygalacturonase (EC 3.2.1.15), pectin methyl esterase (EC 3.2.1.11), xyloglucanase (EC 3.2.1.151), beta 1-4 endoglucanases (EC 3.2.1.4), α-(EC 3.2.1.22) and β-galactosidase (EC 3.2.1.23) have significantly increased during storage. The increases in enzyme activity were either completely inhibited or significantly reduced by these treatments. Among these treatments, 1-MCP (5 µL / L), $CaCl_2$ (2%) and 55 ^{0}C for 60 s hot water treatments significantly reduced the activities of cell wall hydrolases. The results suggest that 1-MCP, $CaCl_2$ and hot water treatments could be used to delay cell wall degradation after harvest and extend the shelf life of sweet cherry.

Keywords: Sweet cherry, Cell wall, Enzyme activity, Shelf life

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➢ ORAL PRESENTATION

Morphology and Ultrastructure of the Malpighian Tubules of *Isophya nervosa* (Orthoptera, Tettigoniidae)

Damla Amutkan*, Zekiye Suludere

Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.

Corresponding author e-mail: damlamutkan@gazi.edu.tr

Abstract

The excretory system in insects consists of structures called Malpighian tubules (MTs). MTs are the main osmoregulatory and excretory organs of insects. They are responsible for the production of an isosmotic filtrate from hemolymph, removal of the last products of metabolism and carry the toxic compounds into the hindgut. The MTs of the insects are structurally different. In this study, The MTs of *Isophya nervosa* Ramme, 1951 which is a species in Orthoptera order, was investigated by using light and electron microscopes in detail. For light microscopy, adult specimens of *I. nervosa* were collected in Kızılcahamam, Ankara in 2017. Extracted MTs were fixed in Formaldehyde. After washing and the dehydration process samples were embedded in paraffin. After that, sections were stained and photographed. For the scanning electron microscopy, specimens cleaned and dried with Critical Point Drying, then specimens were coated with gold and examined with JEOL JSM 6060 LV scanning electron microscope. For the transmission electron microscopy, MTs of *I. nervosa* which were fixed in glutaraldehyde were post-fixed in OsO_4. Then the samples were dehydrated in ascending series of alcohol and were embedded in Araldite. Ultra-thin sections were stained with heavy metal salts. Afterwards they were examined with a JEOL JEM 1400 electron microscope and photographed. This species has a great number of MTs as other species in Orthoptera order. One end of the MTs in this species is attached to the ileum, the other end is closed and free in hemolymph. The outer surface is covered with muscles and trachea. It is surrounded by a single layer cuboidal epithelium. There are microvilli on the apical region of cells.

Keywords: Malpighian tubules, Ultrastructure, Electron microscopy, Light microscopy.

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➢ ORAL PRESENTATION

Use of Mercapto-Modified Bentonite for Adsorption of Cd(II) Ions from Aqueous Environment Via Response Surface Methodology (RSM)

Şakir Yılmaz, Ümit Ecer, Tekin Şahan*

Van Yuzuncu Yıl University, Faculty of Engineering, Department of Chemical Engineering, Van, Turkey.

Corresponding author e-mail: tekinsahan@yyu.edu.tr

Abstract

Heavy metals which have hazardous effects on living organisms, plants and animals have been released to the environment from various industries. For this reason, it is necessary to remove these toxic metals from aqueous environment. In this work, Cd(II) adsorption onto 3-mercaptopropyl trimethoxysilane-modified bentonite (MMB) was investigated by using response surface methodology (RSM). Central Composite Design (CCD) in RSM was used to optimize the most important adsorption parameters such as initial pH, temperature (°C), initial Cd(II) concentration (C_o, mg/L) and adsorbent dosage (g). A total of 30 sets of experiments were designed by the CCD to obtain maximum %Cd(II) adsorption. The optimum values of selected parameters with the quadratic model equation obtained from CCD were determined as 6.40, 20 °C, 49.55 mg/L and 0.17 g for initial pH, temperature, initial Cd(II) concentration and adsorbent dosage, respectively. Based on the optimal adsorption conditions, the adsorption amount of Cd(II) and adsorption yield were found to be 27.55 mg/g and 94.52%, respectively. The Langmuir, Freundlich and Dubinin-Radushkevich (D-R) equations were used to interpret the adsorption isotherm data. The results showed that the Langmuir and D-R adsorption isotherm models were more suitable for adsorption equilibrium data. Moreover, thermodynamic studies were carried out to evaluate the thermodynamic behavior of process. Thermodynamic studies indicated that the adsorption process was spontaneous and exothermic.

Keywords: Adsorption, bentonite, mercapto, optimization, response surface methodology.

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➢ **ORAL PRESENTATION**

The Effect of pH on the Interaction Between Coumarin 151 and PVP

Ebru Bozkurt[1*], Yavuz Onganer[2]

[*1] Program of Occupational Health and Safety, Erzurum Vocational Training School, Ataturk University, 25240 Erzurum, Turkey.
[2] Department of Chemistry, Faculty of Science, Ataturk University, TR-25240 Erzurum, Turkey.

Corresponding author e-mail: ebrubozkurt@atauni.edu.tr

Abstract

The interaction between Coumarin 151 (C151) and Polyvinyl-pyrrolidone (PVP) was investigated in pure water and buffer solutions with different pH values (pH 2, 4, 6, 7, 9, 10, 12). Absorption and steady-state fluorescence measurements were taken for the optical characterization of C151 ($1x10^{-4}$ M)-PVP ($1x10^{-3}$ M) system in pure water and buffer solutions with different pH values. It was observed that that the absorption band maximum of C151 shifted blue region and the absorption intensity of its decreased at the basic pH values. Fluorescence properties were also investigated in the same media after the absorption characteristics of C151 in $1x10^{-3}$ M PVP prepared in pure water and buffer media at different pH values were determined. It was shown that C151 had a high intensity of fluorescence around 480-485 nm except for extreme basic pH values (pH 10-12).

Keywords: Coumarin 151, PVP, absorption, fluorescence, pH.

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➢ **ORAL PRESENTATION**

His-Inorganic Hybrid Nanoflowers

Nalan Özdemir[1*], Sureyya Tavlaşoğlu[1], Cevahir Altinkaynak[2]

[*1]Erciyes University, Faculty of Science, Chemistry Department, Kayseri, Turkey.
[2]Nevşehir Hacı Bektaş University, Avanos Vocational School, Nevşehir, Turkey.

Corresponding author e-mail: ozdemirn@erciyes.edu.tr

Abstract

The protein molecules can form complexes with some metal ions (especially Cu^{2+}) because of their strong affinity. The interaction between proteins and metal ions is based on the coordination between metal ions and electron donor groups from the protein surface. Proteins can bind specifically to the metal ion coordination sites through certain amino acid residues like histidine exposed on the protein surface. Interaction between the proteins (also aminoacids) and metal ions allows the formation of hybrid structures with flower-like shapes under certain conditions. In 2012, firstly Dr. Zare and co-workers reported protein-inorganic hybrid nanoflowers made of some proteins and Cu^{2+} ions.
In this work, we synthesized flower-like organic-inorganic hybrid structure (His-Cu^{2+} hybrid nanoflowers) using histidine aminoacid as organic component and Cu^{2+} ions as inorganic component, and studied some important features of these hybrid nanoflowers as a function of synthesis conditions. For this purpose, SEM, FTIR, EDX and XRD analysis were performed. And, the peroxidase like activity of the synthesized His-Cu^{2+} hybrid nanoflowers was determined.

Keywords: Histidine, Hybrid nanoflowers, Cu^{2+} ions.

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➢ **ORAL PRESENTATION**

Genetic Diversity and Phylogenetic Analyses of Turkish rice (*Oryza sativa*) Varieties by Using Chloroplast *trnL-F* Region and ISSR Markers

Mehmet Emin Uras[1], Ertugrul Filiz[2], Ibrahim Ilker Ozyigit[1,3], Ugur Sen[1], Huseyin Gungor[4]

1 Marmara University, Faculty of Science and Arts, Department of Biology,
34722, Goztepe, Istanbul, Turkey
2 Duzce University, Cilimli Vocational School, Department of Crop and Animal Production,
81750, Cilimli, Duzce, Turkey
3 Kyrgyz-Turkish Manas University, Faculty of Science, Department of Biology,
72001, Bishkek, Kyrgyzstan
4 University of Duzce, Faculty of Agriculture and Natural Sciences, Department of Field Crops,
81620 Duzce, Turkey

Corresponding author e-mail: ertugrulfiliz@gmail.com

Abstract

Rice (*Oryza sativa*) is one of the staple foods for billions of people and more than 3.5 billion people depend on rice for more than 20% of their daily calories. Thus, assessing and maintaining genetic variability in rice cultivars are prior requirements for the success of rice breeding. Selection and/or detection of elite germplasm collections in rice will increase the yield, since these materials are already highly productive. In this study, relationships and the genetic diversity levels were investigated in 17 Turkish rice varieties (TRVs). *trnL-F* intergenic spacer sequences were used as possible indicators for phylogenetic relationships in Poaceae family. According to phylogenetic analysis, three major groups were observed and named as A, B, and C. TRVs clustered with Poaceae members in group A with 77% bootstrap value. Genetic diversity analysis were conducted by using 10 ISSR markers and total of 60 clear bands were identified. 37 of them were polymorphic (61.67%). The highest polymorphic band ratio (100%) was obtained by amplification of UBC807 primer and the lowest polymorphic band ratio (20%) was obtained from UBC827. Overall, percentage of polymorphic loci was calculated as 61.67%. Nei's gene diversity (h) and Shannon's information index (I) were given the following average values 0.2173 and 0.3235, respectively. The results revealed medium level genetic diversity among the TRVs. This result could reflect the current rice cultivation and breeding status in Turkey. 90% of rice cultivation has been done by using local varieties and/or certificated varieties, and the parent plants used in breeding programs of these TRVs are generally originated from Turkey. Additionally, rice cultivation is most commonly done in Thrace Region of Turkey, and genetically similar varieties are adapted to the geographical characteristics of the region could also support our obtained results.

Keywords: Molecular marker, cpDNA, phylogeny, genetic differentiation

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➢ **ORAL PRESENTATION**

Alpha-Lipoic Acid Stimulates Insulin Secretion and Causes Necrotic Cell Death Via Oxidative Stress

Ayse Karatug Kacar

University of Istanbul, Faculty of Science, Department of Biology, Istanbul, Turkey
Corresponding author e-mail: akaratug@istanbul.edu.tr

Abstract

Insulinoma INS-1 cells are pancreatic tumors that have been shown important characteristics of pancreatic beta cells. Alpha-Lipoic acid (ALA) has been used as an anticancer agent in Ehrlich carcinoma cell, human non-small cell lung cancer cells, breast carcinoma cell line, A549 Cell Lines. Furthermore, ALA has a binding site to insulin receptor. The aim of this study was to investigate the cellular death and to determine oxidative stress at occurred cellular death in insülinoma INS-1. We also aimed to show the relationship between ALA and insulin secretion in insulinoma beta cells. We have used insulinoma INS-1 cell line. The cell viability was assessed with MTT assay. Early, late apoptotic cells and necrotic cells were detected by flow cytometer using FITC-conjugated Annexin V and propidium iodide staining. Reactive oxygen species were measured by using dichlorofluorescein diacetate. Insulin levels were analyzed by ELISA method. MDA and protein carbonyl levels were measured from INS-1 cell lysate, spectrophotometrically. Cell viability was decreased at 3, 4 and 5 mM doses of ALA in INS-1 cells. Necrotic cell death was increased at decreasing doses of cell viability. Reactive oxygen species and MDA levels were increased at 4 and 5 mM doses of ALA. Protein carbonly levels were not change with given ALA. Insulin levels were increased at 4 mM doses of ALA, while it was not change at 5 mM doses of ALA. As a result, administration of ALA to insulinoma INS-1 cells caused necrotic cell death thought to have occurred with increased oxidative stress. Despite cell death, ALA that are not too high doses increases insulin secretion which is important for beta cells.

Keywords: Alpha-Lipoic Acid, Insulinoma INS-1 cells, Necrosis, Oxidative Stress, Insulin.

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➢ ORAL PRESENTATION

Use of Sea Squid Ink In The Food Of Chicken to Increase the Nutrational Value of the Food

Dr. Abass Al- joudi* , Ashia S. Al- Wahabee, Ali S. Al Aisaee

College of applied science, Department of food Science Al-sharqiyah University, sultanate of Sultanate of Oman
Later: al- Isrraa er/ University College, Department of Medical Lab Technology –IRQA.

Email/abas_joudi@hotmail.com

Abstract

Squid is one of the marine animals in the sea of Oman, it produces and ejects black ink when it is frightened and terrified, which makes a cloudy liquid in the marine water. It releases the ink as predators attack. The blackened ink color comes from melanin, which is a common organic pigment found in plants and animals. Besides large amount of melanin, this ink includes proteins, lipids, glycosaminoglycan and various types of minerals.

The ink is used in some ways in human dishes as support for nutritional value and other clinical purposes as reported by many researchers. It promotes thromboxane and kills cancer cells, as well as anti-oxidants and anti-bacterial properties.

Squid ink has been traditionally used in the cuisines of Japan, Italy and Spin and used in Chinese culture for a long time.

This study was conducted to explore the effects of squid ink on the growth performance of Chicken and animal weight during the period of experiments as it supported the chicken feed. Also chemical analysis of squid inks and their benefits as toppings in food dishes was determined.

Chemical components of the ink for this species were analyzed and the percentage was also determined. Three different groups of chicken samples were used with one control group, these were fed with basal diet and three groups Exp2, Exp4, Exp6 were fed with basil food supplemented with 2, 4 and 6 gm/kg of squid ink which were prepared.

Weight of the chicken set were taken and growth performances of the chickens during 22 day and 42- 45 day were followed up. Results showed that the growth of chicken was promoted by using the squid ink with the food on different group especially in the Exp6. Which should highly significant difference compere to other group and to control? Also we can determine the effect of these components in some organs in other steps of this test.

From the chemical analysis of the ink we found lots of important and useful material which can be used as food supplements and as clinical treatments as reported by many researchers.

Keywords: Squid ink, chicken feeding, thromboxane ,killers cancer cells, anti-oxidants , anti-bacterial.

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➢ **ORAL PRESENTATION**

The Effects of Silver Nanoparticles Stabilized with Auxins on *In Vitro* Rooting of Microcuttings in *Pyrus* Rootstocks

Serdar Korpayev[1], Shabnam Alizadeh[3], Ayşe Karakeçili[2], Hatice Dumanoğlu[3*]

[1] Biotechnology Institute, Basic Biotechnology, Ankara University, Ankara, Turkey.
[2] Faculty of Engineering, Chemical Engineering Department, Ankara University, Ankara, Turkey.
[*3] Faculty of agriculture, Department of Horticulture, Ankara University, Ankara, Turkey.

Corresponding author e-mail: dmanoglu@agri.ankara.edu.tr

Abstract

Micropropagation is an important plant propagation technique for mass clonal production throughout the year, without being tied to time in rootstocks of fruit crops. However, the rooting success must be enhanced in the hard-rooted genotypes. Conventional auxin applications in clonal propagation of these genotypes are insufficient to solve the rooting problem. Nanoparticles having different physical and chemical properties from the bulk material could increase rooting success by controlled release of these substances when stabilized with auxin due to their ability to reach the active substance up to the target cells as a carrier system [1]. The purpose of this study is to investigate the effects of silver nanoparticles stabilized with natural (IAA, indole-3-acetic acid) and synthetic (IBA, indole-3-butyric acid) auxins on the *in vitro* rooting in microcuttings of two *Pyrus* rootstocks. The microcuttings were applied by slow dipping (4 hours) method with silver nanoparticle stabilized with IAA or IBA at 0, 20, 40, 80, 200, 400 mg/L doses or with only IAA at 12.3, 24.5, 49.0, 122.6, 245.2 mg/L or IBA at 16.3, 32.5, 65.0, 162.6, 325.2 mg/L. As a result of the study, it was determined that compared with IAA or IBA treatments, silver nanoparticles stabilized with IAA or IBA did not increase *in vitro* rooting rates of microcuttings in *Pyrus* genotypes. The highest rooting rates (75% and 33.3%) in the silver nanoparticle applications were found at 80 mg/L of stabilized IBA in Old Home Farmingdale 333 (*Pyrus communis* L.) and 400 mg/L of stabilized IBA in a wild pear genotype (*Pyrus elaeagrifolia* Pall.), respectively. On the other hand, in the auxin treatments, the highest rate (83.3%) in OHxF 333 was determined in 122.6 mg/L and 245.2 mg/L of IAA treatments. In the wild pear genotype, this rate was recorded as 33.3% at 32.5 mg/L of IBA.

Keywords: Nanotechnology, Silver nanoparticles, Micropropagation, Rooting, *Pyrus*, Auxin.

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➢ **ORAL PRESENTATION**

Effects of Sulfur Supplementation on Thyroid Hormones in Angora Goats Fed With a High-Nitrate Diet[#]

Gülcan Avcı[1*], Yavuz Osman Birdane[2], Mehmet Özdemir[3], İsmail Küçükkurt[1], Abdullah Eryavuz[4]

[*1]Afyon Kocatepe University, Faculty of Veterinary Medicine, Department of Biochemistry, Afyonkarahisar, TURKEY
[2] Afyon Kocatepe University, Faculty of Veterinary Medicine, Department of Pharmacology and Toxicology, Afyonkarahisar, TURKEY
[3]Karabuk University, Faculty of Health Sciences, Karabuk, TURKEY
[4]Afyon Kocatepe University, Department of Physiology, Faculty of Veterinary Medicine, Afyonkarahisar, TURKEY

*Corresponding author e-mail: gulcanavci@hotmail.com

Abstract

This study was to aimed for determination the effect of high dietary nitrate intake and inorganic sulphur supplementation on thyroids hormones in Angora goats. In this study, eighteen male Angora goats were divided into three groups (n = 6): control group fed with a basal diet, nitrate group fed with a basal diet supplemented with 1500 ppm nitrate, and nitrate + sulfur group fed with a basal diet supplemented with 1500 ppm nitrate and 1.8% sodium sulfate. On days 45, 90, 135, and 180 of the study, the concentrations of the thyroid-stimulating hormone (TSH), total and free triiodothyronine (TT_3 and FT_3), and tetraiodothyronine (TT_4 and FT_4) were measured in the serum samples. On day 180, except for TT_4, the serum TSH and total and free T_3 and free T_4 concentrations were higher ($P<0.05$) in the nitrate + sulfur group than in the control and nitrate groups. This study suggested that Angora goats could tolerate a feed containing 1500 ppm nitrate with respect to the thyroid hormones, and inorganic sulfur might serve as a natural source for alleviating the negative effects of the high-nitrate diet on the thyroid gland in a dose-dependent manner.

Keywords: Angora goat, nitrate, sulfur, thyroid hormones

This research was supported by funds from the Scientific and Technological Research Council of Turkey (TOVAG Project No: 104 O 380). One part of this study (Effects of supplementation of inorganic sulfur on some biochemical parameters in Angora goat's diet containing high nitrate levels) was published in 'Turk J Vet Anim Sci 2014; 38:526-533.

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➢ **ORAL PRESENTATION**

The Effect of Olive Ripening on Quality Criteria and Fatty Acid Composition of Halhalı and Karamani Olive Oils

Dilşat Bozdoğan Konuşkan

Mustafa Kemal University, Faculty of Agriculture, Department of Food Engineering, Hatay/Turkey

Corresponding author e-mail: dilsat@mku.edu.tr

Abstract

Hatay has a quite important potential in the olive production of our country in terms of its appropriate climatic and geographic conditions as well as its property of being called as the motherland of olives. In this study, influence of ripening on the quality criteria such as free fatty acids, peroxide value, UV absorption values (K232, K270, ΔK) and fatty acid composition of olive oils obtained from Halhalı and Karamani olives which are among important indigenous varieties in Hatay was investigated. Halhalı and Karamani olives harvested from Hatay Altınözü by hand-picked at three ripening stages (September-October-November) during 2017-2018 crop season were extracted to the oil by using two phases mechanical system (crushing, malaxing and centrifuge) without any delay. Free fatty acids, peroxide value, K232 and K270 values were in the range of 0.52-0.91%, 6.45-9.53 meq O_2 kg oil, 1.58-1.74, 0.13-0.16, respectively in olive oils. For oil samples from both varieties, it was determined free fatty acids increased, while peroxide value and UV absorption values decreased as ripening progressed and these changes were statistically important ($p<0.05$). The main fatty acids found in olive oils were oleic acid (67.12-71.18%), palmitic acid (10.67-14.38%), linoleic acid (8.14-11.05%), stearic acid (3.31-4.46%), palmitoleic acid (0.82-1.23%), linolenic acid (0.86-1.11%) and arachidic acid (0.42-0.56%). As ripening advanced the content of oleic and palmitic acid decreased, whereas the content of linoleic acid increased and it was determined this change was found to be statistically important ($p<0.05$). The range of fatty acids as percentage showed differences according to both olive varieties.

Keywords: Olive, Ripening, Halhalı, Karamani,Fatty acid composition

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➢ **ORAL PRESENTATION**

Epigenetic Effect of Vincristine and Decitabine on miR-34a Gene in Gastric Cancer Cell Lines

***M. Burcu Irmak-Yazicioglu, Feyza Nur Arguc,**

Haliç University, Faculty of Science and Arts, Department of Molecular Biology and Genetics, İstanbul, Turkey

Corresponding author e-mail: burcuyazicioglu@halic.edu.tr

Abstract

Gastric cancer is an aggressive disease with high incidence in the world. Epigenetic factors, such as DNA methylation and RNA interferance, as well as genetic factors are also influential in gastric cancer formation and progress. The aberrant DNA methylation of a promoter region is an important epigenetic mechanism for gene silencing. This epigenetic regulation on DNA results in high or low expression of miRNAs which affect tumorigenesis, proliferation, invasion and metastasis in gastric cancer. It has been reported that low expression of miR34a, a tumor suppressor in gastric cancer, is due to hypermethylation in miRNA genes. The DNA methylation is reversible; gene expression can be restored by demethylation agents such as decitabine (DAC), which was approved by the FDA in 2006, its clinical use is presented as a therapeutic agent in diseases. Vincristine (VCR), which is used therapeutically in many types of cancer, functionally blocks tumor growth by blocking microtubules in mitotic spindles. Therapeutic use of VCR may suggest that this agent activates tumor suppressor genes or inhibits protooncogenes due to the gene methylation. Our methylation-specific PCR and qRT-PCR results with comparative analysis with control group showed that exposure of VCR and DAC alone and combination usage of DAC and VCR decrease methylation of miR-34a gene and consequently increases the expression level of pri-miR-34a in AGS and MKN45 gastric cancer cell lines. Our findings showed that there is a realtion between VCR- and DAC-dependent methylation of pri-miR-34a gene and its expression levels in gastric cancer. Therefore, epigenetic-based therapeutic approach using VCR and/or combination therapy with DAC can be beneficial. This results may provide important information for the development of sensitive drug therapies for the treatment of gastric cancer.

Keywords: DNA Methylation, Gastric Cancer, Vincristine, miRNA, Decitabine

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➢ **ORAL PRESENTATION**

Vibrational Spectroscopic Monitoring of Pure Copper Phosphate Nanoflower Formation

Talat Özpozan[1*], Hatice Arı[2], Cevahir Altınkaynak[3], Nalan Özdemir[1]

[*1]Erciyes University, Faculty of Science, Department of Chemistry, Kayseri, Turkiye.
[2]Bozok University, Faculty of Science & Art, Department of Chemistry, Yozgat, Turkiye.
[3]Nevşehir Hacı Bektaş Veli University, Avanos Vocational School, Nevşehir, Turkiye.

Corresponding author e-mail: ozpozant@erciyes.edu.tr

Abstract

Investigation of formation mechanisms of nanoflower crystals is still a popular topic which gives critical information on many useful properties and functionality (i.e. enhanced activities) of these nanostructures.

Formation of flowerlike $Cu_3(PO_4)_2$ nanocrystal has been monitored by vibrational spectroscopic measurements in certain time intervals to follow the developments of the copper phosphate nanoflower (CPNF) in the sense of structural growth. CPNF were prepared from aqueous copper sulfate solution by mixing phosphate buffer solution. The mixture was incubated at different time intervals changing from 1 -72 hours. The blue precipitate formed were centrifuged and dried under vacuum before spectral recording.

The SEM image and the IR spectra taken successively at certain time intervals can be seen in the following figure.

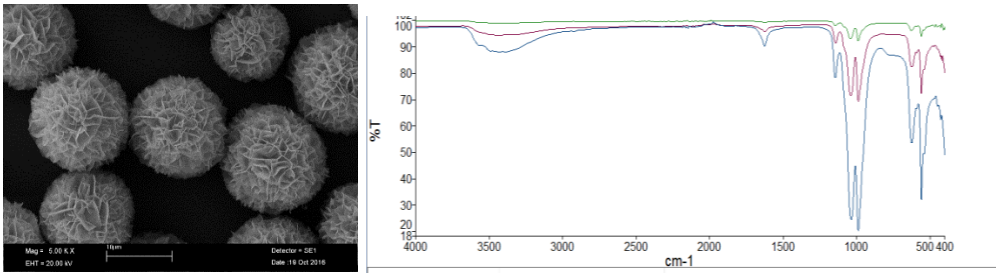

Figure The SEM view and the IR spectrum of CPNF

Keywords: copper phosphate, nanoflower, IR spectrum

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➢ ORAL PRESENTATION

4-Hidroksi Alternariol Sekonder Metabolitinin İnsan Prostat, Over ve Meme Kanseri Hücreleri Üzerindeki Sitotoksik Etkisinin Belirlenmesi

Yavuz ERDEN[1], Ahmet KARAKUŞ[2], Suat TEKİN[3]

[1] Bartın Üniversitesi, Fen Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Bartın, Türkiye
[2] Bartın Üniversitesi, Fen Fakültesi, Biyoteknoloji Bölümü, Bartın, Türkiye
[3] İnönü Üniversitesi, Tıp Fakültesi, Fizyoloji Anabilim Dalı, Malatya, Türkiye

Sorumlu yazar e-mail: akarakus@bartin.edu.tr

Özet

Kanser dünya genelinde büyüyen bir sağlık problemidir ve kalp-damar hastalıklarından sonra ikinci en önemli ölüm sebebidir. Kanser tedavisinde yeni ilaçların keşfi veya geliştirilmesi oldukça önemlidir. Son zamanlarda tıbbi açıdan büyük öneme sahip olan bitki ve mantarlardan elde edilen sekonder metabolitlerin kanser tedavisinde kullanımı ile ilgili araştırmalar hız kazanmıştır. Bu çalışmada *Alternaria* cinsi fungusların sekonder bir metaboliti olarak tanımlanan 4-hidroksi alternariol bileşiğinin insan kanser hücre hatlarında sitotoksik etkisinin belirlenmesi amaçlandı.

Çalışmada 4-hidroksi alternariol bileşiğinin 1, 5 25, 50 ve 100 µM'lık konsantrasyonları hazırlandı. Hazırlanan konsantrasyonlar insan prostat (PC-3, LNCaP), yumurtalık (A2780) ve meme (MCF7) kanseri hücre hatları üzerine uygulandı. 24 saatlik inkübasyondan sonra bileşiğin hücre hatları üzerine sitotoksik etkinliği MTT (3-(4,5-dimetiltiazol-2-il)-difenil tetrazolium bromid) yöntemiyle belirlendi. Sonuçlar % canlılık olarak ifade edildi.

4-hidroksi alternariol bileşiğinin kanser hücre serilerinde artan doza bağlı olarak önemli düzeyde hücre canlılığını azalttığı belirlendi ($p<0.05$). Sonuç olarak bir alternariol türevi olan ve yeni tanımlanan 4-hidroksi alternariol bileşiği, *in vitro* ortamda göstermiş olduğu güçlü sitotoksik etkinliği sayesinde önemli bir terapötik ajan olarak düşünülebilinir.

Anahtar Kelimeler: Sitotoksisite**,** Fungal metabolit, 4-hidroksi alternariol, Hücre kültürü

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➢ **ORAL PRESENTATION**

Gıdalarda Aflatoksinlerin Varlığı ve Önemi

Burak Demirhan*

*Gazi Üniversitesi, Eczacılık Fakültesi, Eczacılık Temel Bilimleri anabilim Dalı, Ankara, Türkiye

Sorumlu yazar e-mail: burakdemirhan@hotmail.com

Özet

Mikotoksinlerin gıda ürünlerine bulaşması önemli ekonomik kayıplara neden olmaktadır ve halk sağlığı açısından ciddi risk oluşturmaktadır. *Aspergillus* cinsleri doğada en yaygın küflerden biri olarak bilinmektedir. Genellikle *Aspergillus flavus* ve *Aspergillus parasiticus* türlerinin bazı suşları tarafından üretilen aflatoksinler gıda ve yem kontaminasyonunda başlıca rol oynamaktadır. Aflatoksinler akut ve kronik toksisiteye ve büyük bir bölümü ise karsinojenik, mutajenik ve teratojenik etkiye sahip sekonder metabolitlerdir. Aflatoksinlerle oluşan mikotoksikozise "aflatoksikozis" adı verilmektedir. İnsanların aflatoksinlere maruz kalması kontamine tarımsal ürünlerin veya kontamine yemle beslenen hayvanlardan elde edilen ürünlerin tüketilmesi ile gerçekleşmektedir. Bu kontaminasyon, hasat veya uygun olmayan depolama sırasında küf gelişimi ile ortaya çıkabilmektedir. Gıdalarda bulunan başlıca aflatoksinler; aflatoksin B1 (AFB1), aflatoksin B2 (AFB2), aflatoksin G1 (AFG1) ve aflatoksin G2 (AFG2)'dir. AFB1 ve AFB2'nin hidroksillenmiş metabolitleri olan aflatoksin M1 (AFM1) ve aflatoksin M2 (AFM2) ise süt ve süt ürünlerinde bulunabilmektedir. AFB1 insan sağlığı açısından en toksik ve en yaygın olanıdır. Türkiye'de ve diğer birçok ülkede bazı gıda ürünlerinde aflatoksin kontaminasyonu yasal olarak sınırlandırılmıştır. Yapılan çalışmalarda yerfıstığı, mısır, pirinç, baharatlar, kakao çekirdeği, susam, fındık, badem, ceviz, bebek mamaları, süt ve süt ürünleri gibi gıdalarda farklı düzeylerde aflatoksinlerin tespit edildiği bildirilmektedir. Aynı zamanda, aflatoksinlerin mikrobiyolojik ve kimyasal detoksifikasyonu ilgili çalışmaların bazılarında aflatoksin düzeylerinde belli oranda azalma görüldüğü belirtilmektedir. Fakat bu durum detoksifikasyonun yeterli olmadığı şeklinde değerlendirilmektedir. Sonuç olarak, gıdalarda aflatoksin kontaminasyonu tüketiciler açısından sağlık riski oluşturabilmektedir ve küresel bir gıda güvenliği sorunudur. Gıdaların üretiminden tüketimine tüm aşamalarda aflatoksinler açısından analitik yöntemlerle tespitleri yapılarak kontrolleri sağlanmalıdır.

Anahtar Kelimeler: Aflatoksin, Gıda, Kontaminant, Mikotoksin

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➢ ORAL PRESENTATION

Microwave-Assisted Synthesis of Oxygen-Bridged Pyrimidine Fused with Benzimidazole Ring

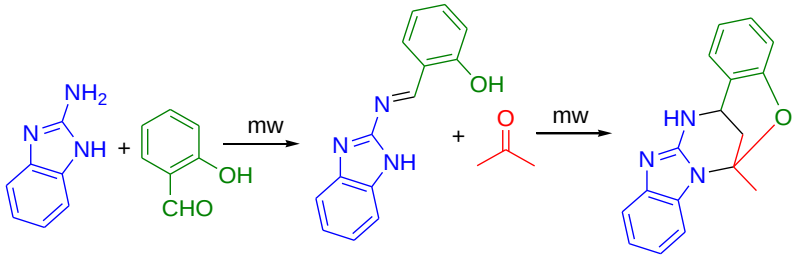
Mustafa Kemal Gümüş

Science-Technology Research and Application Center, ArtvinÇoruh University, Artvin 08000, Turkey

e-mail: mkgumus@artvin.edu.tr

Abstract

4-Aryl-3,4-dihydropyrimidine-2(1H)-ones and -thiones, known as Biginelli compounds, display a wide spectrum of significant pharmacological activities.[1] For example, these pyrimidine derivatives were assayed as antihypertensive agents, selective α_{1a}-adrenergic receptor antagonists, neuropeptide Y antagonists and were used as a lead for the development of anticancer drugs.[2] The Biginelli products have also been found to be potent hepatitis B replication inhibitors.[2] Recently, the ability of oxygen-bridged azolopyrimidine derivatives to inhibit Eg5 activity has been examined.[3]
This oxygen-bridged benzimidazolopyrimidine compound will be synthesized via following protocols and various reaction conditions will be evaluated to obtain the best yields.



Keywords: Benzimidazole, pyrimidine, oxygen-bridged structure, Biginelli reaction, microwave-assisted synthesis.

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➢ ORAL PRESENTATION

Design of Curcumin Loaded Levan-PLGA Nanoparticles for Active Targeted Cancer Therapy

Zahra Eskandari[1,2], Vildan Betul Yenigun[3], Abdurrahim Kocyigit[3], Mehmet S. Eroglu[4,5], Fatemeh Bahadori[*,6],Ebru Toksoy Oner[*,1]

1 IBSB, Department of Bioengineering, Marmara University, 34722, Kadikoy, Istanbul, Turkey
2 Department of Chemistry, Biochemistry Division, Faculty of Sciences and Arts, Yildiz Technical University, Istanbul, Turkey
3 Department of Medical Biochemistry, Faculty of Medicine, Bezmialem Vakif University, Istanbul 34093, Turkey
4 Department of Chemical Engineering, Marmara University, Istanbul, Turkey
5 TUBITAK-UME, Chemistry Group Laboratories, Kocaeli, Turkey
6Department of Pharmaceutical Biotechnology, Faculty of Pharmacy, BezmialemVakif University, 34093

Corresponding author's e-mails: fbahadori@bezmialem.edu.tr, ebru.toksoy@marmara.edu.tr

Abstract

Curcumin is a hydrophobic polyphenol derived from the spice turmeric. It has a number of chemopreventive properties such as anti-inflammatory activity, induction of apoptosis, inhibition of angiogenesis as well as inhibition of tumor metastasis. Despite its well-known potentials, it has not been usedproperly in clinical applications due to its low water solubility and consequentlypoor bioavailability.

Nanoparticle-based drug delivery systems have considerable potentials for delivery of therapeutic agents exhibiting poor aqueous solubility. Besides, nanoparticles used as drug carriers have some advantages such as high stability, high delivery capacity, feasibility of incorporation with both hydrophilic and hydrophobic substances and capability with variable routes of administration.Poly (D,L-lactic-co-glycolic acid) (PLGA) is the most frequently used biodegradable and biocompatible polymer (approved by FDA) in the design of nanoparticles for biomedical applications.

Levan is a homopolysaccharide, composed of β-D-fructofuranose with ß-(2–6) linkages between fructose rings. This naturally occurring polymer is highly biocompatible and its amphiphilic structure provides self-assembly property, by which, Levan gains the carrier role in drug delivery applications. Furthermore, fructose monomers located on the surface of these nanoparticles result in enhancement of their uptake by cancer cells via receptor-mediated endocytosisdue to overexpression of sugarreceptors on these cells.

This studyaimed to enhance aqueous solubility, bioavailability,absorption and stability of hydrophobic curcumin in order to increase its therapeutic potential. Curcumin loaded PLGA-Levan nanoparticles were synthesized and characterized with different methods.

The efficiency of pure Curcumin and Curcumin-loaded nanoparticles in MCF-7 human breast cancer cell lines was investigated. Particle size obtained was 165 nm, zeta potential was measured as -8.38 and 2.4 mg curcumin was successfully uploaded to 50 mg of PLGA micelles. In vitro data shows that levan coating increses the cytotoxic effect of polymeric micelles in a very significant ratio.

Keywords: Cancer Therapy, Curcumin, Drug Delivery System, Levan, Nanoparticles, PLGA

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➢ **ORAL PRESENTATION**

Tyhpha latifolia L. ile Ağır Metal Gideriminde Biyolojik Sentez Demir Nanopartiküllerinin İşleyişine Tuzun Etkisi

Şeyda Yılmaz [1*], Dilek Demirezen Yılmaz[2]

[1]Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Anabilim Dalı, Kayseri, Türkiye
[2]Erciyes Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Kayseri, Türkiye

Corresponding author: *seyda.yilmaz.100@gmail.com

Özet

Bu çalışmanın amacı, *Lemna minor* bitki ekstraktı kullanılarak, demir nanopartiküllerinin sentezi, karakterizasyonu ve ağır metal içeren atık suyun iyileştirilmesinde kullanım potansiyeline tuz stresinin etkisini araştırmaktır. Bu çalışmada, sucul ekosistemlerden ağır metal gideriminde etkili olduğu bilinen, *Typha latifolia* materyal olarak kullanılmıştır. Sentezlenen demir nanopartiküllerinin karakterizasyonu UV-Visible spektrofotometre, Taramalı Elektron Mikroskobu, X-ışını enerji dağılım spektroskopisi ve FTIR kullanılarak yapılmıştır. Karakterizasyon sonuçları, demir nanopartiküllerinin formasyonunu ve varlığını ve biyolojik sentez olduğunu ortaya koymaktadır. SEM görüntüleri, elde edilen demir nanopartiküllerinin ortalama 50 nm boyutunda olduğunu ortaya koymuştur. Demir ve diğer ağır metal analizleri ICP-MS cihazında yapılmıştır. Bu çalışmadan elde edilen sonuçlar, İki yönlü ANOVA testi ile değerlendirilmiştir. Elde edilen sonuçlar, sucul ortamdan ağır metal gideriminde, FeONP miktarının etkili olduğunu, ancak tuz ilavesinin ortam pH'ını dolayısıyla biyolojik sentez demir nanopartiküllerinin stabilitesini etkilediğini göstermiştir. Sonuçlar, kirleticilerin ortamdan uzaklaştırılmasında çevre dostu ve etkili bir yöntem olarak biyolojik sentez demir nanopartiküllerinin kullanılabileceğini ortaya koymaktadır.

Anahtar Kelimeler: Biyosentez, Demir Nanopartikülü, Ağır Metal, *Typha latifolia*

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➢ **ORAL PRESENTATION**

Green Synthesis and Characterization of IronNanoparticles Using *Ficus carica* Fruits Extract

Derya Aksu Demirezen[1*], Dilek Demirezen Yilmaz[2], Şeyda Yılmaz[3]

[1,3] Erciyes University, Graduate School of Natural and Applied Sciences, Kayseri, Turkey
[2] Erciyes University, Biology Department, Faculty of Sciences, Kayseri, Turkey

E-mail: dademirezen@gmail.com*

Abstract

Ficus carica (fig) fruit extract was used for iron nanoparticles (FeNPs) synthesis in this study. FeNPs were produced and stabilized due to the biomaterials that are found in the content of the seed extract. Particle characterization was analyzed by Transmission electron microscopy (TEM), Energy - dispersive X-ray Spectroscopy (EDX), UV- Visible spectroscopy, Dynamic light scattering (DLS), X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR). Zeta potential and pH were measured. The UV-Visible, XRD, FTIR and analysis results showed that FeNPs were produced in oxide form. Absorption peaks at the wavelength of 205 nm and 291 nm indicated the formation of hydrolysis products of metallic iron (Fe^0). FTIR, XRD and EDX analysis showed signals due to the oxide and oxyhydroxide iron nanoparticles. TEM images clearly showed that the nanoparticles were in spherical shape mostly with 9 nm diameters and were seen as polydisperse. Colloid stability was determined as moderate according to 20.7 mV value which was in the range of ± 20 – 30 mV.

Keywords: Iron Nanoparticles, Green Synthesis, Green Nanotechnology, *Ficus carica*

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➢ ORAL PRESENTATION

New Record of the Genus *Intercanuella* Becker & Schriver, 1979 (Copepoda: Canuelloida: Canuellidae) From the Mediterranean Sea with Description of a New Species

Serdar Sönmez

Adıyaman University, Faculty of Science and Letters, Biology Department, Adıyaman, Turkey.

Corresponding author e-mail: sonmezserdar@gmail.com

Abstract

The monotypic genus *Intercanuella* of the family Canuellidae Lang, 1944 was erected by Becker and Schriver in 1979 to accommodate a new species, *I. lima* which was described from a single female specimen that was collected at 2000 m depth of the Peru–Chile Trench in the eastern Pacific Ocean. The diagnosis of the new genus as well as the description of the species was very short and lack of important details like the shape and armature of the mouthparts, except the mandible. In his revision of the family, Por (1984) considered the systematic position of the *Intercanuella* doubtful as the only known species of the genus was described from a single female. In the samples that were collected from a rock pool at the Koru Coast of Gazipaşa, Antalya at 09.07.2017, two females and one male specimen which belong to the genus *Intercanuella* was encountered and described as new to science. Also, the taxonomic status of the genus was discussed on the basis of the new characters that were obtained from the male and the female of the new species and a proper and detailed re-diagnosis of the genus was given. Also, the genus was reported for the first time from the Mediterranean Sea and from the medio-littoral zone.

Keywords: biodiversity, meiofauna, rock pool, Gazipaşa, Turkey.

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➢ ORAL PRESENTATION

Calcium Carbonate Precipitation by Ureolytic Bacteria and Its Promising Engineering Applications-A Review

Merve Tepe*, Nazime Mercan Doğan

Pamukkale University, Faculty of Arts&Sciences, Biology Department, Denizli, Turkey.

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mervetepe1@gmail.com

Abstract

Microbiologically-induced calcium carbonate precipitation (MICP) by ureolysis gains major interest in recent years. Researches center upon this mechanism due to its potential use in various engineering technologies such as hydraulic fracturing, enhanced oil recovery, heavy metal bio-sorption, soil stabilization, rubber and plastic filling, dust suppression, limestone remediation, reservoir sealing, polychlorinated biphenyl remediation, surface barriering, groundwater remediation and atmospheric carbondioxide sequestration. This present review gives brief information about this promising technologies but it mainly focuses on the discussion of the effect of MICP on various parameters of cement-based materials and concrete as compressive and tensile strength and water and gas permeability. Recent applications about concrete surface and crack repair are negotiated and self-healing, sustainable, less carbondioxide releasing and more cost-effective concrete investigations are discussed in detail based on recent researches. Special emphasis about the necessity of displacing non-biodegradable, unsustainable, expensive and polluting cement-based materials with MICP applied materials is made either.

Keywords: MICP, Ureolytic Bacteria, Biocementation, Biomineralisation, Sustainability.

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➢ **ORAL PRESENTATION**

Beç Tavuğu (*Numida meleagris*) Plexus lumbalis' i Üzerinde Makroanatomik Araştirmalar

Nilgün Kuru[1*], İsmail Türkmenoğlu[2], Hasan Hüseyin Ari[1]

[*1]Cumhuriyet Üniversitesi, Veteriner Fakültesi, Anatomi Anabilim Dalı, Sivas, Türkiye
[2]Afyon KocatepeÜniversitesi, Veteriner Fakültesi, Anatomi Anabilim Dalı, Afyon, Türkiye

Sorumlu yazar e-mail: nilgun_kuru@hotmail.com

Özet

Bu çalışma Beç tavuklarının (*Numida meleagris*) plexus lumbalis' inin oluşumu ve dallanmasının araştırılması amacı ile yapıldı. Çalışmada materyal olarak Sivas ilinden sağlanan 5 adet Beç tavuğu kullanıldı. Hayvanların anestezisi sağlandıktan sonra vücut boşluğu açığa çıkarıldı. Materyallerin kanları boşaltıldı ve % 10 'luk formaldehit ile tespit edildi. Plexus lumbalis'i oluşturan sinirler diseke edildi ve fotoğrafları çekildi. Bulgular Nomina Anatomica Avium'a uygun olarak isimlendirildi. Plexus lumbalis'in os ilium'um ventrocranial'inde yer alan m. iliotrochantericus cranialis'in ventral yüzü ile sağ tarafta dalağın caudadorsal'inde, sol tarafta ise böbreğin cranial lobunun dorsal'inde yer alan 2., 3. ve 4. spinal sinirlerin ramus ventralis'leri tarafından oluşturulduğu saptandı. Plexus lumbalis'den köken alan sinirlerin, n. pubicus (ilioinguinalis), n. cutaneus femoris lateralis, n. cutaneus medialis (n. saphenus), n. femoralis ve n. obturatorius olduğu görüldü.
Sonuç olarak, plexus lumbalis'i şekillendiren spinal sinirlerin ramus ventralis'lerinin sayısı, kalınlığı, seyirleri; plexus'un oluşumu ve dallara ayrılmasında türler arasında farklılıkların olduğu belirlendi.

Anahtar Kelimeler: *Morfoloji, Plexus lumbalis, Beç tavuğu, Numida meleagris*

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➢ ORAL PRESENTATION

Prenatal Down Syndrome Screening Tests From Beginning To Today; Results Of A Historical Study In 1997

Melahat Atasever[1*], Emre Ekmekci[2]

[*1]Giresun University, Faculty of Medicine, Obstetrics and Gynecology, Giresun, Turkey.
[2]Sanliurfa Education and Research Hospital, Maternal-Fetal Medicine Unit, Sanliurfa, Turkey.

Corresponding author e-mail: atasevermelahat@gmail.com

Abstract

Defining risk for a disease in low-risk population is the goal of screening. At the beginning only maternal age was screening criteria for DS. Over years, many circulating analytes have been described for screening. This historical study is conducted in 1997, to evaluate the efficacy of triple test for screening of DS. Although the results aren't worthy today, are good examples to present the evolution. The study consists of total 304 pregnant women between 16-18weeks. AFP, hCG and unconjugated estriol levels are measured and described as MOM levels. The risk higher than 1/250 is accepted high risk for DS. 23 patients had high risk and offered for amniocentesis. Seven patients accepted. Total two DS detected. One was in risk positive group and the other was not. Detection rate of test was 50% (1/2) and specifity was 92.7%. False positive rate was 7.3% (22/302). Positive and negative likelihood ratios were 6.86 and 0.54 respectively. Although results of this study don't have significance today, they were steps during evolution of screening. Over years first and second trimester screening tests have been applied in clinical practice with improving detection rates. Most successful detection rates are acquired by first trimester screening test, that's obtained with the combination of sonographic nuchal translucency measurement with free β-hcG and PAPP-A levels, reaching 92% detection rates. Major development in prenatal screening in recent years is the detection of cell-free fetal DNA in the maternal circulation. Although detection of DS from maternal blood has improved over time, it still cannot take the place of invasive karyotyping. It can be placed as an intermediate step between conventional serum screening and diagnostic testing. In 20 years, great developments are experienced. Today we can detect DS prenatally with 98-99% success rate. May be we will diagnose DS non-invasively in a little while.

Keywords: prenatal screening tests, Down Syndrome, triple test,

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➢ ORAL PRESENTATION

Cu (II) 5,5-dietilbarbitürat Kompleksinin İnsan Meme Kanseri Hücreleri Üzerindeki Sitotoksik ve Apoptotik Etkilerinin Araştırılması

İmren Alioğlu[1], Veysel T. Yilmaz[2] Ferda Arı[1]

[1]Uludağ Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Bursa/Türkiye
[2]Uludağ Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, Bursa/Türkiye

Özet

Meme kanseri günümüzde dünyada yaygın olarak görülen ve yüksek ölüm oranına sahip kanser türlerinden biridir. Meme kanseri dünyada kadınlar arasında en sık görülen malign tümör olup, kadınlarda görülen tüm kanserlerin yaklaşık %30'unu oluşturmaktadır. Ayrıca kansere bağlı ölümler içinde akciğer kanserinin ardından ikinci sırada gelmektedir. Meme kanser tedavisinde pek çok yöntem kullanılmasına rağmen halen tatmin edici bir başarı elde edilmemekte ve yeni etkili tedavi seçenekleri araştırılmaktadır. Son yıllarda farklı metal komplekslerinin kanser tedavisine yönelik araştırmalar da oldukça artmıştır. Bu çalışmada yeni sentez edilen ve karakterizasyonu yapılan Cu(II) 5,5-dietilbarbitürat kompleksin anti kanser aktivitesi insan meme kanser hücrelerinde (MCF-7 ve MDA-MB-231) ve sağlıklı hücrelerde araştırıldı. Kompleksin hücre canlılıkları üzerine etkileri SRB ve ATP canlılık testi ile; apoptotik etki ise floresans boyama ve kırılmış sitokeratin 18 (M30) ile belirlendi. Cu(II) kompleksinin insan meme kanseri hücrelerinde doza ve zamana bağlı olarak sitotoksik etkiye neden olduğu ve aynı dozlarda sağlıklı hücrelerde etkili olmadığı gözlendi. Cu(II) kompleksinin MCF-7 hücrelerinde IC_{50} değeri 2.89, MDA-MB-231 hücrelerinde 2,33 olarak bulundu. Ayrıca Cu(II) kompleksinin hücreleri sekonder apoptozisle öldürdüğü belirlendi. Sonuç olarak, Cu(II) 5,5-dietilbarbitürat kompleksinin insan meme kanser hücrelerinde anti kanser potansiye sahip olduğu ve ileri analizlerin yapılması gerektiğini düşünmekteyiz.

Anahtar Kelimeler: Meme Kanseri, Cu(II) dietilbarbitürat, Sitotoksite, Apoptozis

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➢ ORAL PRESENTATION

Curcuma longa (Zerdeçal) ve *Nigella sativa*'nın (Çörek Otu) mutfaktan Veteriner Kliniğine Geçiş Zamanı: Demodikozisli Köpeklerde Destekleyici Sağaltım

Kerem Ural[1], Adnan Ayan[2*], Hasan Erdoğan[1], Mehmet Gültekin[1], Serdar Paşa[1]

[1]Adnan Menderes Üniversitesi, Veteriner Fakültesi, İç Hastalıkları A.B.D., Işıklı, Aydin, Türkiye
[*2]Van Yüzüncü Yıl Üniversitesi, Veteriner Fakültesi, Genetik A.B.D., Van Türkiye

Sorumlu yazar e-mail: adnanayan@yyu.edu.tr

Özet

Demodikozis köpeklerde yaygın olarak gözlemlenen, juvenil ve yetişkin şekilde generalize ya da lokalize bir klinik tablo sergileyen deri hastalığıdır. Bu çalışmada lokalize (n=5) ya da generalize (n=3) demodikozis tanısı (derin deri kazınıtısının mikroskobik muayenesi, sitoloji, algoritmik yaklaşım) konulan ve haftalık 0.6 mg/kg s.c eprinomektin ile sağaltılan köpeklerde lokal zerdeçal, çörek otu ile d vitamini (Dermacumin krem, Veterinary Herbal Medicine, Antalya) kullanımının etkinliği araştırıldı. Klinik (9-16. günler arasında bulgularda düzelme/gerileme) ve parazitojik (11.-29. günler arasında ardışık deri kazıntılarında ölü akarların saptanması) kür saptandı. Sonuç olarak zerdeçal, çörek otu ve d vitamini takviyesinin antiinflamatuvar, antioksidant ve antienfeksiyöz özellikleri sağaltımda destekleyici yarar sağlayabileceği için kullanılabilir.

Anahtar Kelimeler: *Curcuma longa, Nigella sativa,* demodikozis

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➢ ORAL PRESENTATION

Organik Madde İçeren Atıksuların Katalitik ve Oksidant Etkili Mikrodalga Işınım Yöntemi ile Arıtılabilirliğinin İncelenmesi

Tijen Ennil Bektaş[1], Sevgican Göl[2*], Fazilet Çoker[2], Handan Öztel[2]

[1]Çanakkale Onsekiz Mart Üniversitesi Mühendislik Fakültesi Kimya Mühendisliği Bölümü, Çanakkale, Türkiye
[2*]Eskişehir Osmangazi Üniversitesi Mühendislik Mimarlık Fakültesi Kimya Mühendisliği Bölümü, Eskişehir, Türkiye
e-mail:sevgican.gol@gmail.com

Özet

Mikrodalga enerjisi, geleneksel ısıtmaya göre; tepkime karışımının ani ve hızlı ısıtılması, ısıtma seçiciliği, enerji ve zaman tasarrufu sağlaması gibi birçok avantaja sahiptir. Organik içerikli atıksu uygulamalarında mikrodalga enerjisini kullanarak pek çok organik bileşen etkin bir şekilde uzaklaştırılabilir. Süt ve süt ürünleri endüstrisi, temel ihtiyaçlarımızın karşılanmasını sağlayan ve üretim miktarı oldukça yüksek olan bir endüstri grubudur ve ülkemizde önemli bir paya sahiptir. Oluşan atıksu hacmi, kirliliği ve kullanılan su miktarı bakımından da göz ardı edilemeyecek bir potansiyele sahiptir. Bu çalışmada organik kirleticiler içeren Pınar Süt Fabrikası atıksuyunun, katalizör ve oksidant etkili mikrodalga yöntemi ile arıtılabilirliği araştırılmıştır. Katalizör olarak bentonit ve kalsiyum hidroksit; oksidant madde olarak ise hidrojen peroksit kullanılmıştır. Yapılan çalışmada katalizör miktarı, oksidant miktarı, mikrodalga ışınım süresi, gücü ve çözelti başlangıç pH'ı gibi parametreler değiştirilerek sonuçlar irdelenmiştir. 250 mL atıksu örneğinde; bentonit için 2,5 gr miktarında 2,5 mL oksidant ilave edilerek yüksek güç ve 3 dk ışınım süresi sonunda % KOİ indirgemesi 30, % askıda katı madde verimi 43 olarak edilirken % yağ ve gres giderimi 9,5 bulunmuştur. Kalsiyum hidroksit için 5 gr miktarında 5 mL oksidant ilave edilerek yüksek güç ve 3 dk ışınım süresi sonunda % KOİ indirgemesi 75, % askıda katı madde verimi 63 olarak edilirken % yağ ve gres giderimi 38,5 bulunmuştur.

Anahtar Kelimeler: Organik madde, katalizör, oksidant,mikrodalga, KOİ.

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➢ **ORAL PRESENTATION**

Karbapenem Dirençli *Acinetobacter baumannii* İzolatlarında Antibiyotik Direnç Durumunun Araştırılması

Umut Safiye Say Coskun

University of Gaziosmanpasa, Faculty of Medicine, Department of Medical Microbiology, Tokat, Turkey

Sorumlu yazar e-mail: umut.saycoskun@gop.edu.tr

Özet

Hastanede uzun süre yatan, invaziv girişimler uygulanan hastalarda *Acinetobacter baumannii* (*A. baumannii*)'nin neden olduğu ciddi enfeksiyonlar sık görülür. Tüm ilaçlara dirençli izolatların ya da çoklu ilaca dirençli olarak nitelendirilen bir ya da iki grup antibiyotik dışında tüm antibiyotiklere dirençli izolatların ortaya çıkması, *A. baumannii* enfeksiyonlarının tedavi edilmesini giderek zorlaşmaktadır. Yakın geçmişte karbapenemler, çok ilaca dirençli *A. baumannii* kaynaklı enfeksiyonları tedavi etmek için seçilen ilaçtı. Ancak karbapenemlere karşı direnç artmaktadır. Bu çalışmanın amacı hastanemizde çeşitli örneklerden üreyen karbapenem dirençli *A. baumannii* izolatlarının antibiyotik direnç oranlarını belirleyerek ampirik tedavinin planlanması aşamasına ışık tutmaktır.Bu çalışmada Ocak 2016-Temmuz 2017 tarihleri arasında Gaziosmanpaşa Üniversitesi Tıp Fakültesi Araştırma ve Uygulama Hastanesi Mikrobiyoloji Laboratuvarı'na çeşitli kliniklerden gönderilen örneklerden (Beyin omurilik sıvısı, kan, solunum yolu örnekleri, idrar vb,) izole edilen enfeksiyon etkeni olarak kabul edilen 237 karbapenem dirençli *A. baumnnii* izolatının antibiyotik direnç oranları retrospektif olarak incelendi. İzolatların tanımlanmasında Vitek 2 (BioMerioux, Fransa) cihazı kullanıldı. Antibiyotik duyarlılıkları "Clinical and Laboratory Standards Institute (CLSI)" ve "European Committee on Antimicrobial Susceptibility Testing (EUCAST)" önerileri doğrultusunda belirlendi. Verilerin yüzde ve frekans değerlerinin belirlenmesinde SPSS 21 programı kullanıldı.Hastaların 133 (%56.1)'ünün erkek, 104 (%43.9)'unun kadın ve yaş ortalamasının 66.1 olduğu görüldü. İzolatların 99'unun (%41.8) solunum yolu, 84'ünün (%35.4) kan, 33'ünün (%13.9) yara, 16'sının (%6.7) idrar, 5'inin (%2.1) diğer örnekler tanımlandığı tespit edildi. İzolatlara karşı en duyarlı antibiyotikler %0.4 direnç oranı ile kolitsin ve %23.9 direnç oranı ile tigesiklindi. Diğer antibiyotiklere karşı direnç durumu Tablo 1'de gösterildi.Son dönemlerde karbapeneme dirençli *A. baumannii* izolatlarının yaygınlaşmasının önlenmesi için uluslararası stratejilerin geliştirilmesi gündeme gelmiştir. Bu amaçla Dünya Sağlık Örgütü hastane ve diğer sağlık kuruluşlarındaki sürveyans çalışmalarının yapılması gerektiğini vurgulamıştır. Yüksek direnç oranlarımız tehlikenin boyutlarını göstermekte ve gelecekte karşılaşabileceğimiz tablo konusunda fikir vermektedir.

Bununla birlikte bu çalışmada hastanemizde karbapenem dirençli *A. baumannii* enfeksiyonlarının tedavisinde kolistin ve tigesiklinin birer alternatif olabileceği düşünülmüştür.

Tablo 1. *A. baumannii* izolatlarının çeşitli antibiyotiklere direnç durumları.

Antibiyotik	Direnç oranı % / Sayı
Gentamisin	% 77.2 (183/237)
Amikasin	% 70.9 (168/237)
Tobramisin	%52.5 (96/183)
Aztreonam	% 100 (150/150)
Sefepim	% 100 (192/192)
Seftazidim	% 95 (198/198)
Siprofloksasin	% 99.6 (235/236)
Levofloksasin	% 100 (184/184)
Kolistin	% 0.4 (1/236)
Tigesiklin	%23.9 (55/230)
İmipenem	% 100 (237/237)
Meropenem	% 100 (237/237)
Piperasillin/Tazobaktam	% 100 (199/199)
Tetrasiklin	% 98 (147/150)
Trimetoprim/sulfametoksazol	% 84 (199/237)

Anahtar kelimeler: *Acinetobacter baumannii*, Antibiyotik direnci, Karbapenem, Kolistin, Tigesiklin.

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➢ ORAL PRESENTATION

Comparing Dynamical Behaviors of Bacterial and Human Ribosomal Complexes in Coarse-Grained Scale

Pelin Guzel[1*], Ozge Kurkcuoglu[1]

[*1]Faculty of Chemical and Metallurgical Engineering, Chemical Engineering Department, Istanbul, Turkey.

Corresponding author e-mail: uzunpe@itu.edu.tr

Abstract

Ribosomal complexes are responsible for protein synthesis using the genetic information carried by mRNA, across all kingdoms of life. The complex is mainly formed of a small and a large subunit. Small subunit is responsible to decipher the genetic code while large subunit catalyzes the peptide bond synthesis between amino acids, carried by tRNAs. Experimental data point that human ribosome complex displays similar globular motions as the bacterial ribosome critical for the correct translation [1], such as the universal "ratcheting" of the subunits to translocate tRNAs docked at the interface of subunits.

We examine collective and functional movements of the bacterial and human ribosomal structures using coarse-grained approaches, namely the elastic network model (ENM) [2] via in-house code and molecular dynamics (MD) simulations using RedMD [3]. While MD simulations capture 100 ns long motions of the ribosomal complexes, ENM delivers first ten normal modes corresponding to harmonic motions at higher time scales, related with globular functional motions.

Root-mean-square deviation from initial structure and root-mean-square fluctuations were calculated to analyze MD trajectories. Globular and local conformational changes were obtained from MD simulations and normal mode analysis of ENM. For both bacterial and human ribosomes: (i) universal ratchet-like motion and (ii) swivel movement of small subunit 30S/40S head and beak regions in the direction of E-tRNA (iii) critical L1 stalk fluctuations were observed. Additionally, rotation of small subunit body around a vertical axis perpendicular to the classical rotation axis termed "subunit rolling" (eukaryote specific) was observed only for human ribosome.

While globular motions of human and bacterial ribosomes are alike, ENM and MD analyses indicated that local fluctuations of some parts differ, such as for the ribosomal protein uL4. This protein located at the ribosomal tunnel entrance is known to be critical for macrolide discrimination between human and bacteria.

Keywords: ribosomal complexes, elastic network model, reduced molecular dynamics

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➢ ORAL PRESENTATION

Anaerobik Koşullarda Sulfat İndirgeyen Bakteri Kullanılarak Ağır Metal Arıtımı

[1]Ayla BİLGİN, [2]Peter R. Jaffe

[1]Artvin Çoruh Universitesi, Çevre Mühendisliği Bölümü, Artvin,
[2]Princeton Üniversitesi, Çevre ve İnşaat Mühendisliği Bölümü, Princeton/USA

Sorumlu yazar e-mail: ayla.bilgin@gmail.com

Özet

Besin zincirine katılma olasılığından dolayı toprakta ağır metallerin varlığı en önemli çevre problemlerinden biri olmaya başlamıştır. Pek çok atıksu hem metal hem de sülfat içerdiğinden dolayı, sulfat indirme metodu biyolojik sülfat indirgemesine bağlı bir uygulama haline geldi. Uygulamalar sülfat reaksiyonunun metal çökelmesine eşlendiği tam ölçekli biyoreaktörler ve yerinde iyileştirme olarak yapılmaktadır. Bu çalışmada; iki aşamalı arıtma sistemi sülfat indirgeyen bakteri vasıtası ile kullanılarak Cu^{+2} metalinin arıtımı amaçlanmıştır. İki aşamalı sistemde birinci reaktör biyolojik reaktör ve ikinci reaktörde kimyasal reaktör sisteminden oluşmaktadır. SRB ile ağır metallerin etkileşimi oldukça komplekstir. Ağır metaller SRB için toksik ve inhibitör etkisine sahiptir. Bu çalışmada; ağır metalin SRB için olan toksik etkisini ortadan kaldırarak ve bakır metallinin giderimi çalışılmıştır. Birinci reaktörde sadece kum dolgu materyali kullanılarak SRB için besleme yapılmıştır. İkinci reaktörde ise ilave olarak bakır metali eklenmiş ve ikinci reaktörde kimyasal olarak bakır çöktürme işlemi gerçekleştirilmiştir.

Anahtar Kelimeler: Ağır metal kirliliği, Anaerobik arıtım, Bakır kirliliği, Su kirliliği, Su arıtımı

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➢ **ORAL PRESENTATION**

Immobilization and Characterization of Acetylcholine Esterase onto ElectrospunPolyvinyl Alcohol-Zn^{2+} as a New Nanofiber MembranPlatform

Ceyhun Işık[1], Yasemin İspirli Doğaç[2], İlyas Deveci[3], Mustafa Teke[1]

[1]Department of Chemistry, Muğla Sıtkı Koçman University, Muğla, Turkey.
[2]Department of Chemistry and Chemical Processing Technology, Muğla Sıtkı Koçman University, Muğla, Turkey.
[3]Department of Chemistry and Chemical Processing Technology, Selcuk University, Konya, Turkey.

Corresponding author e-mail: cyhn87@yahoo.com

Abstract

Acetylcholinesterase (AChE; EC 3.1.1.7) inactivates acetylcholine (ACh) by breaking into acetate and choline. Central and peripheral tissues, nerve, placental and muscle tissues, motor and sensory fibres, cholinergic and non-cholinergic fibres and red blood cells have AChE enzyme [1]. If ACh, which is found in synaptic spaces, is inactivated too much, nerve transmission is interrupted. Then, Alzheimer's disease begins. AChE is used for treatment of Alzheimer's disease and determination of pesticides [2].
Enzyme immobilization has a wide working area in clinical and industrial aspects. Immobilized enzymes have most advantages such as repeated use of the enzyme, inhibition of the enzyme by matrix, inhibition of contaminating with the product, resistance to effects such as pH and temperature, and the possibility of achieving more than one reaction at the same time. Due to the immobilization method and application technique, the stability of the enzyme can be changed [3].
In this submitted work, AChE was immobilized onto polyvinyl alcohol (PVA)-Zn^{2+} nanofibers which were synthesized by electrospinning technique. AChE was immobilized on to the nanofibers by adsorption and crosslinking methods. For the optimization of AChE immobilization, the amount of nanofibers, the adsorption time, the amount of AChE and the amount of glutaraldehyde were investigated as basic parameters. The optimum temperature, optimum pH, thermal stability, pH stability, kinetic parameters and reusability parameters were investigated in the characterization of AChE immobilized nanofibers prepared under optimum conditions. Also characteristic parameters of immobilized AChE compared with free AChE. The significance of this study is improving of stability properties of AChE for various biotechnological applications such as a part of enzyme electrode or enzyme reactor.

Keywords:acetylcholinesterase, nanofiber, enzyme, immobilization, electrospinning.

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➢ **ORAL PRESENTATION**

Evaluation of Antibacterial Properties of Some Plants Against *Klebsiella pneumoniae*

Kemal Güven[1], Mert İpekçi[1], Fatma Matpan Bekler[2], Seçil Yalaz[3], Reyhan Gül Güven[4]

[1] Dicle University, Science Faculty, Molecular Biology and Genetics Department, 21280 Diyarbakır/Turkey
[2] Dicle University, Science Faculty, Biology Department, 21280 Diyarbakır/Turkey
[3] Dicle University, Science Faculty, Mathematics Department, 21280 Diyarbakır/Turkey
[4]Dicle University, Ziya Gökalp Education Faculty, Science Teaching Section, 21280 Diyarbakır/Turkey

Corresponding author: fmatpan@dicle.edu.tr

Abstract

K. pneumoniae cause various infections like urinary tract infections, intra-abdominal infection, skin and soft tissue infections, and pneumonia. Antimicrobial resistance is a growing problem in modern healthcare around the world. Natural plants can be considered as a vital source for antimicrobial agents instead of synthetic drugs because their costs and side effects. Therefore, it is important to find out new, effective, safer natural antimicrobial agents. In this study, in vitro antibacterial activities of six different traditional plants against *Klebsiella pneumoniae* were tested. All plants were prepared in four different solvents (ethanolic, methanolic, hexane and aquaeus) and these extracts were used for disc-diffusion method. Each assay was repeated triplicate. The analysis was carried out using two-way analysis of variance (ANOVA). The normality assumption required for the variance analysis to be applied was tested against the values of skewness and kurtosis. It has been determined that the variables are normally distributed. The highest antimicrobial activity was obtained by methanolic extracts of willow herb (23.5±4.9 mm). Ethanolic extracts of all plants had antimicrobial activity against *K. pneumoniae.*

Keywords: Antibacterial activity, *Klebsiella pneumoniae*, plant extract

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➢ ORAL PRESENTATION

Determination of Antioxidant Properties of *Salvia kurdica* Boiss. & Hohen. ex Benth. and *Salvia pachystachys* Trautv.

Mehmet Fidan[1], M. Emre Erez[1], S. Mesut Pinar[2*], Behcet İnal[3]

[1]Siirt University, Faculty of Science and Art, Department of Biology, Siirt, Turkey
[2]Van Yüzüncü Yıl University, Van School of Health, Van, Turkey
[3]Siirt University, Faculty of Agriculture, Department of Agricultural Biotechnology, Siirt, Turkey

Corresponding author e-mail: mesutpinar@hotmail.com

Abstract

There are many ethnobotanical plants in the nature. The majority of these plants are belonging to Lamiaceae family. There are more than 250 genera and approximately 7000 species in Lamiaceae. Also in this family, *Salvia* L. genus are represented with approximately 1000 species. Many species of *Salvia* is generally, used for medicinal purpose. In this study, *S. kurdica* was collected from Cudi Mountain in Şirnak and *S. pachystachys* was from Artos Mountain in Van-Edremit for analysis. Total phenolic, total flavonoid content, DPPH and FRAP activities of plants were determined. Two different solvents were used for extraction. The results were given in Table. According to results and literature, these plants possess significant values for health.

Table: The analysis results of plant samples

Sample (Water)	% DPPH İnhibition	Total phenolic (mg/ml)	Total flavonoid (mg/ml)	FRAP (mg/ml)	Sample (Ethanol)	% DPPH İnhibition	Total phenolic(mg/ml)	Total flavonoid (mg/ml)	FRAP (mg/ml)
S. kurdica	7 9,07	2 8,84±5,83	10 3,2±6,86	0 ,19±0,05	*S. kurdica*	9 1,15	38,05± 1,60	260 ,51±56,48	0 ,32±0,01
S.pachystachys	7 6,60	6 1,08±0,91	42 1,04±4,42	0 ,84±0,01	*S.pachystachys*	9 1,95	143,09 ±1,61	741 ,03±49,61	1 ,09±0,10

Keywords: Antioxidant**,** *Salvia*, total phenolic, total flavonoid

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➢ **ORAL PRESENTATION**

Disadvanteges of Conventional Fixation Techniques in Anatomy Laboratories

Sema Ozkadif[1*], Emrullah Eken[2]

[*1]Cukurova University, Faculty of Ceyhan Veterinary Medicine, Department of Anatomy, Adana, Turkey
[2]Selcuk University, Faculty of Veterinary Medicine, Department of Anatomy, Konya, Turkey

e-mail: semaerten80@gmail.com

Abstract

In medicine and veterinary faculties, cadavers are commonly fixed in formaldehyde solutions in the anatomy laboratories. Formaldehyde is used for determination of tissue and organs due to its bactericidal, antioxidant and protein precipitation effects. It is irritant and toxic chemical substance and can be transformed into gas at normal temperature. Researchers and students working with cadavers are exposed to the harmful effects of formaldehyde. They get the formaldehyde in to their body by touching the cadavers and smelling. The harmful effects are on many structures such as skin, DNA, nervous and respiratory system. In anatomy laboratories some precautions may be taken to reduce the harmful effects of formaldehyde or applying other substances instead of it. The concentration of formaldehyde can be kept in the standards set by the World Health Organization. Also the ventilation system should work very well in the anatomy laboratories. Formaldehyde can be avoided by keeping the cadavers using cold air depots and deep freezers. Furthermore modern anatomical materials can eliminate the use of formaldehyde.

Keywords: Cadavar, Chemical, Students

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➢ **ORAL PRESENTATION**

Removal of Color and COD from Olive Wastewater by Using Photocatalytic Reactor

Mehmet Uğurlu[1*], S. İlteriş Yilmaz[1], Aliimran Vaizoğullar[2]

[1]Department of Chemistry, Faculty of Science, Muğla Sıtkı Koçman University, 48000 Muğla/Turkey

[2]Vocational School of Healthcare, Med Lab Program, Muğla Sıtkı Koçman University 48000 Muğla/Turkey

Abstract

Photochemistry examines the effect of radiation energy on chemical reactions. Photochemical processes are reactions that are formed or accelerated by light energy [1]. Molecules that exceed a certain threshold energy (activation energy) in thermal reactions are favourable for the reaction. So if the activation energy is high and the temperature is low, the reaction is slow. However, in the case where the activation of the molecules is provided by light quantum absorption, the number of activated molecules depends on the light intensity. Thus, it is possible to realize thermal reactions requiring high temperatures at ordinary temperatures. In photochemical reactions, only the radiation absorbed by the reaction system is effective. However, absorption alone is not enough. For this reason, the energy of the absorbed photon must be sufficient [2-3].

The effect of different catalysts on the oxidation of olive wastewater is investigated by using a photocatalytic system. For this study, TiO_2/AC, V_2O_5/TiO_2/AC, WO_3/TiO_2/AC and TiO_2/WO_3/V_2O_5/AC (over activated carbon) catalysts were prepared by a sol–gel method in aqueous solution. The oxidation process was optimised by investigating the effects of different parameter, for example, time, suspension's pH, solid/liquid and the type of catalysts used. Optimum values for these parameters were found as 12h., 7.0-9.0, and 1.5gL^{-1} respectively. All experiments were carried out at room temperature and in the stability of constant. During the experiment, samples were taken periodically and color and chemical oxygen demand (COD) change in aqueous wastewater was analysed to evaluate the efficiency of different catalysts. The results obtained show that after 12h minutes only 100 % colour was removed in the in the presence of cataysts V_2O_5/TiO_2/AC under the same experimental conditions. In addition, the high degradation efficiency of this system is attributed to the synergistic combination of different chemical processes occurring simultaneously, for example, adsorption, electrocatalytic and electrochemical oxidations.

Keywords: Active Carbon, TiO_2, Wastewater, TiO_2, V_2O_5, WO_3, Electro catalytic.

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➢ **ORAL PRESENTATION**

Arylesterase Activities in Patients with Migraine

Suat Cakina[1,*], Selma Yücel[2], Çağan Polat[2]

[*1]Canakkale Onsekiz Mart University, Health Service Vocational College, Çanakkale-Turkey

[2]Canakkale Onsekiz Mart University, Faculty of Medicine, Department of Neurology, Çanakkale-Turkey

Corresponding author e-mail: suatcakina@comu.edu.tr

Abstract

The arylesterase (ARE) activity is known to protect lipoproteins from oxidation and provide defense against neurological disease. ARE interact and play a role in the plasma antioxidant system. ARE is serum esterases with strong antioxidant characteristics. Disturbance of ARE activity has been shown to be implicated in several neurological disease. The aim of the study was to evaluate serum arylesterase (ARE) activities in patients with Migraine. Serum samples were collected from 30 migrane patients and 30 age- and sex matched healthy volunteers. ARE activity was measured by using commercially available kits (Rel Assay Diagnostics). ARE activity was significantly lower ($P = 0.02$) in patients with migraine compared to controls. In conclusion, ARE activity indicate that the antioxidant system plays an important role in the pathogenesis of migraine.

Keywords: Arylesterase, Oxidative stress, Migraine.

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➢ **ORAL PRESENTATION**

Bazı Maraş Biberi İleri Hatlarının SRAP Markörleri Kullanılarak Genetik Çeşitliliğinin Belirlenmesi

Sümeyye Adalı[1*], Adem Bardak[2]

[*1]Yüzüncü Yıl Üniversitesi, Fen Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Van, Türkiye
[2]Kahramanmaraş Sütçü İmam Üniversitesi, Ziraat Fakültesi, Tarımsal Biyoteknoloji Bölümü, Kahramanmaraş, Türkiye

Sorumlu yazar e-mail: sumeyyedali@yyu.edu.tr

Özet

Biber (Capsicum annuum L.), Patlıcangiller (Solanaceae) familyasına ait olan, hem dünyada hem ülkemizde açıkta ve örtü altında yetiştiriciliği yapılan, sevilerek tüketilen ve endüstriyel açıdan önemi olan bir bitki türüdür. Biber, taze olarak tüketildiği gibi günümüzde gıda, ilaç, boya endüstrisi gibi birçok alanda hammadde olarak kullanılmaktadır. Maraş biberi, tüketiciye hitap eden yüksek kalite özellikleriyle yetiştiği yörede ve Türkiyede biber ihtiyacının önemli bir kısmını karşılamaktadır. Islah çalışmalarının amacı verim kalite özellikleri yüksek hatlar elde etmektir. Bir ıslah çalışmasının kilit noktası ise uygun ebeveyn seçimine bağlıdır. Dolayısıyla bir ıslah çalışmasına başlamadan önce çalışılacak türler arasındaki genetik varyasyonun bilinmesi oldukça fazla önem arzetmektedir. Bu çalışmada bazı Maraş biberi ileri hatlarında genetik benzerliğin durumu ve derecesi açıklanmaya çalışılmıştır. Bu amaçla yapılmış olan bu çalışmada 26 adet biber genotipi arasındaki genetik benzerliğin durumunu değerlendirmek amacıyla 26 adet SRAP markörü kullanılmıştır. Yapılan çalışmada çalışılan tüm *Capsicum annuum* genotipleri arasında geniş bir genetik varyasyon gözlenmiştir. SRAP markörlerinin yüksek derecede polimorfik markörler olduğu gözlenmiş ve genetik akrabalığı belirlemede kullanışlı olduğu sonucuna varılmıştır. Bu çalışma ile genetik olarak birbirine daha az benzeyen bireylerin ileride yapılacak olan ıslah çalışmalarında ebeveyn olarak kullanılabileceği düşünülmektedir.

Anahtar Kelimeler: *Capsicum annuum*, SRAP, Genetik benzerlik

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➢ **ORAL PRESENTATION**

Hızlandırılmış Yaşlandırma Testi Sonrası Aspir (*Carthamus tincttorius* L.) Tohumlarında Meydana Gelen Biyokimyasal Değişiklikler

Sercan Önder[1*], Damla Güvercin[2], Yaşar Karakurt[1], Civan Çelik[1], Muhammet Tonguç[1]

[*1]Süleyman Demirel Üniversitesi, Ziraat Fakültesi, Tarımsal Biyoteknoloji Bölümü, Isparta, Türkiye
[2] Süleyman Demirel Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Isparta, Türkiye

Sorumlu yazar e-mail: sercanonder@outlook.com

Özet

Mevcut çalışmada altı farklı aspir genotipi (Bayer-6, Bayer-12, Dinçer, Montola 2000, Linas ve Olas), iki farklı sıcaklık (43 °C ve 45 °C) ve beş zaman kombinasyonu (0, 48, 72, 96, 120 saat) kullanılarak hızlandırılmış yaşlandırma testine (HYT) tabi tutulmuştur. HYT sonrası tohumlar 25 °C'de çimlenme testine sokulmuş ve çimlenme indeksleri her iki sıcaklık koşullarında yaşlandırılan genotiplerin tohumlarında belirlenmiştir. Çimlenme indeksi sonuçlarına göre 45 °C'de yapılan yaşlandırmanın aspir için uygun olmadığı belirlenmiştir. 43 °C'de yaşlandırılan genotiplere ait tohumların canlılıkları 72 saat yaşlandırmadan sonra hızlı bir şekilde düşüş göstermiştir. 43 °C'de yaşlandırılan tohumlardan canlılık kaybı en az ve en çok olan iki genotip (Bayer-12 ile Olas) seçilmiş ve HYT boyunca tohumlarda meydana gelen biyokimyasal değişiklikleri belirlemek için kullanılmışlardır.

Bazı biyokimyasal değişiklikleri belirlemek için 7 farklı analiz yapılmıştır. Yağların ve şekerlerin parçalanması ile oluşan toplam serbest yağ asitleri ve indirgenebilir şeker miktarları HYT boyunca her iki çeşitte de artış göstermiştir. Buna karşılık toplam yağ oranı, çözünebilir protein ve şeker miktarları HYT boyunca azalmıştır. Enzimatik olmayan antioksidant bileşiklerden olan tokoferol miktarı ise Olas çeşidinde HYT boyunca azalırken; Bayer-12 genotipinde 96 ve 120 saat yaşlandırmadan sonra artmıştır. Enzimatik olmayan lipid peroksidasyonunun göstergesi olan malondialdehit (MDA) miktarı her iki çeşitte de HYT boyunca azalmıştır. Mevcut sonuçlar tohum yaşlanmasının kompleks bir olay olduğunu ve tek bir biyokimyasal değişim ile açıklanamayacağını göstermektedir.

Anahtar Kelimeler: Çimlenme, hızlandırılmış yaşlandırma testi, malondialdehit, protein, yağ asitleri

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➢ **ORAL PRESENTATION**

Investigation Effect of High-Dose Fluoxetine on Modified Semen Morphology and Protective Effect of Caffeic Acid Phenethyl Ester: An Experimental Study

Ahmet Yılmaz[1], Hayrunnisa Yeşil[2*], Ahmet Dönder[3], Seda Vatansever[4]

[1]Dicle Üniversitesi Tıp Fakültesi Aile Hekimliği AD. Diyarbakır/ TURKİYE
[*2]Celal Bayar Üniversitesi Sağlık Bilimleri Fakültesi, Ebelik Bölümü, Manisa/TURKİYE
[3]Dicle Üniversitesi Tıp Fakültesi Tıbbi Biyokimya AD. Diyarbakır/ TURKİYE
[4]Celal Bayar Üniversitesi Tıp Fakültesi, Histoloji ve Embriyoloji AD. Manisa/TURKİYE

Corresponding author e-mail: nisalisayy@hotmail.com

Abstract

Aim: Depression and antidepressant drugs induce adverse effects in male fertilty.The aim of this study was to determine the effect of high dose fluoxetine therapy on sperm morfology and investigate protective effect of Caffeic Acid Phenethyl Estercape(CAPE) on sperm morfological changes with fluoxetine treatment in rats.
Material-Method: Male Sprague Dawley rats were divided into six groups, first 7 rats as sham group; received Dimetil sülfoksit(DMSO)/ intraperitoneal(i.p.), second; control received distilled water only, third; 7 rats; received fluoxetin 10 mg/ kg/peroral(p.o.), fourth; fluoxetin 100 mg/kg/p.o., fifth; fluoxetin 10 mg/kg/p.o. + CAPE ; 10 piko gr/kg/ i.p. sixth; fluoxetin 100 mg/kg/p.o. + CAPE; 10 piko gr/ kg/ i.p. all groups treated for seven days. The morphological changes of seminiferous tubules were analysed by haematoxylin–eosin (H&E) staining technique. Each stained section was evaluated under a light microscope (Olympus BX43). TUNEL method was used to detect apoptosis in tissue samples. ApopTag kit was applied according to the manufacturer's recommended protocol (S7101, ApopTag® Plus Peroxidase In SituApoptosis Kit from EMD 40 assays, MILLIPORE).
Results: The morphological changes of seminiferous tubules of the all groups showed no important differences between each other.
Conclusion: This study showed that antidepressant treatment with fluoxetine on testicular function and sperm morfology and indicate that treatment with CAPE showed no adverse effect on this process.

Keywords: Experimental study, Semen Morphology, Caffeic Acid Phenethyl Ester

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➢ ORAL PRESENTATION

Fonksiyonel Bileşen (Yağ, İnülin) İlavesinin Domates Sosundaki Karotenlerin *in vitro* Biyoerişilebilirliği Üzerine Etkisi

Merve Tomas[1*], Osman Sagdic[2], Gizem Catalkaya[3], Derya Kahveci[4], and Esra Capanoglu[3]

[1] Gıda Mühendisliği, Mühendislik ve Doğa Bilimleri Fakültesi, İstanbul Sabahattin Zaim Üniversitesi, İstanbul, Türkiye
[2] Gıda Mühendisliği, Kimya Metalurji Fakültesi, Yıldız Teknik Üniversitesi, İstanbul, Türkiye
[3] Gıda Mühendisliği, Kimya Metalurji Fakültesi, İstanbul Teknik Üniversitesi, İstanbul, Türkiye
[4] Gıda Mühendisliği, Mühendislik Fakültesi, Yeditepe Üniversitesi, İstanbul, Türkiye

Corresponding author e-mail: mervetomas@gmail.com

Abstract

Domates dünyada birçok ülkede olduğu gibi Türkiye'de de besleyicilik değeri ile tüketimi oldukça yaygındır. İçerdiği karotenoid grubu ve flavonoid grubu bileşenler olmak üzere, yüksek düzeyde antioksidan metabolit içeriği ile bilinen domatesin sosuna %5 ve 10 düzeyinde yağ ve %5 ve 10 düzeyinde inülin eklenmesi ile zenginleştirilen sos örneklerinin HPLC ile karotenoid profilindeki değişimler tespit edilmiştir. Çalışmamızda, domates sosuna inülin eklenmesiyle likopen (%56-62), *β*-karoten (%32-59), lutein (%28-56), ve *α*-tokoferol (%59-67) bileşiklerinde istatiksel olarak önemli düzeyde sosa kıyasla azalmalar tespit edilmiştir. Domates sosuna yağ ilavesi ile α-tokoferol (1.5-2.7-fold higher), likopen (1.3-1.7-fold higher), β-karoten (1.4-1.9-fold higher), lutein (1.4-2.3-fold higher), ve klorofil a (3.6-6.1fold higher) bileşiklerinde ise sosa kıyasla önemli düzeyde artışlar tespit edilmiştir ($p < 0.05$) Taklit edilen bağırsak ortamında da domates sosuna inülin eklenmesi bu bileşiklerin biyoerişilebilirliğini olumsuz etkilerken, yağ ilavesinin pozitif etkisi olduğu bulunmuştur. İnülünün eklenmesi ile bağırsak ortamında α-tokoferol, β-karoten, lutein bileşikleri tespit edilemezken, sadece likopen bileşiği tespit edilmiştir. Yağın eklenmesiylede bağırsak ortamında α-tokoferol, lutein ve klorofil a bileşikleri gözlemlenmezken, likopen ve β-karoten bileşikleri bulunmuştur.

Keywords: karotenoid, diyet lif, yağ, antioxidant, in vitro biyoerişilebilirlik

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➢ **ORAL PRESENTATION**

The Relationships Between Type 2 Diabetic Retinopathy and Calpain-10 SNP-19 Polymorphism

Naciye Selcen Bayramci[1*], Leyla Açik[2], Çağdaş Kalkan[3] İlhan Yetkin[4]

[*1]Gaziosmanpasa University, Faculty of Engineering and Natural Sciences, Department of Genetics and Bioengineering, Tokat, Turkey.
[2]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.
[3]Ankara University, Faculty of Medicine, Department of Gastroenterology, Ankara, Turkey.
[4]Gazi University, Faculty of Medicine, Department of Endocrinology and Metabolism, Ankara, Turkey.

Corresponding author e-mail: selcenbayramci@hotmail.com

Abstract

Molecular background of diabetic retinopathy (DR) remains unknown. Genetic variations in the Calpain-10 (CAPN10) gene were previously implicated with increased risk of type 2 diabetes (T2DM). This study was designed to analyze the possible association of the CAPN10 SNP-19 polymorphism with DR and its clinical parameters. Nine patients with DR complications from 115 randomly selected patients with T2DM were studied. All subjects were genotyped for the *CAPN10* SNPs by polymerase chain reaction (PCR). No statistically significant difference was found between SNP-19 heterozygous Ins/Del and homozygous Del/Del genotypes and height (p=0.032), total cholesterol (p=0.027) and high-density lipoprotein (p=0.035) in male DR patients. In addition, a statistically significant relationship was found between allele frequencies of CAPN10 SNP-19 (P>0.05). Importantly, a statistically significant difference was found between polymorphic Ins/Del and Del/Del genotypes and duration of T2DM in general DR patient group.

Keywords: Diabetic retinopathy, type 2 diabetes, Calpain-10 gene, SNP-19, clinical parameters

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➢ **ORAL PRESENTATION**

The Role of Forests on Global Climate Change

Murat Sarginci

Düzce University, Faculty of Forestry, Department of Forest Engineering, Düzce

Corresponding author e-mail: muratsarginci@duzce.edu.tr

Abstract

Global climate change is due to the greenhouse effect caused by some gases in the atmosphere, but the most effective and controllable one is CO_2. Atmospheric CO_2 has reached 280 ppm by the end of the 18th century and has exceeded 400 ppm by 2014. This increase is currently around 4 Pg per year on average. The increase in consumption of fossil fuels along with the population growth and industrial revolution, land use changes with the pressure on natural areas and cement production can be taken in consideration for the reason of this increase. For example, land use changes, fossil fuel consumption with cement production, respiration-fire cause 1.1, 7.8 and 118.7 Pg/year C emission to the atmosphere, respectively. With photosynthesis, 123 Pg/year C is sequestrated back. The amount of C in the world is constant and actively present in the oceans, fossils, atmosphere, biomass (mostly in forests) and soil pools. The problem here is to stop increasing of CO_2 in the atmosphere pool which causes global warming and to store some of it in other pools outside the atmosphere for a long time. The most important part of biomass and soil pools in which C exists in terrestrial ecosystems is in forest areas where about 2500 Pg (10^{15} g) C is stored. In addition, the return of C from the biomass of long living trees in forest areas and the generally unprocessed forest soil pool to atmosphere is much longer than the similar ones in agricultural and meadow areas. The reduction of C emissions from biomass and soil pools in forest ecosystems, and the conversion of these areas from the source of atmospheric C to the sinks of C, is one of the most practical and effective methods which can be directly done by human activity.

Keywords: Global Climate Change, Forest, C Sequestration

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➢ ORAL PRESENTATION

Determination of Suitable Fish Barrier Location in Active Strait of Karina Lagoon

Serhat Engin[1*], Şahin Saka[1], Osman Özden[1], Cüneyt Suzer[1], M. Kürşat Fırat[1]

[*1]Ege University, Faculty of Fisheries, Department of Aquaculture, İzmir, Turkey

e-mail: serhat.engin@ege.edu.tr

Abstract

Lagoon areas are defined as aquatic environments with different salinity values ranging from bitter water to hypersaline water, separated by natural or artificial sets of marine sand or other sediments from the coast where they are located, and connected to the sea by different numbers and sizes of straits leading to the entry of saltwater from the sea. The coastal areas under the influence of both marine and continental freshwater resources are sheltered areas where many species of fish and other different organisms feed, develop and undergo at least one period of life, since they have shallow water masses with abundant nutrients.

The study was carried out in the Karina Dalyan (37 ° 37 'to 37 ° 33' north, 27 ° 08 'and 27 ° 13' east coordinates), which is the largest submarine of the Büyük Menderes Delta. In this research, there are 4 straits and 4 trap areas in Karina Lagoon. These are that located to North to South Karina, Pale, Tekdam and Arita Straits, respectively. During the survey, it is determined that traps where located at Pale and Arita Straits were not active and also not construct the trap systems in the last decade due to shoaling.

As a result of survey, several islets were detected between Karina traps and strait coast and also not expansion but shoaling has been increasing day by day. According to video record, from 2004 several efforts were carried out to construct new channels, similar in 2017, but there are no positive effects in terms of crossing of sea water from these efforts.

Anahtar Kelimeler: Karina Lagoon, Lagoon strait, Trap

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➢ **ORAL PRESENTATION**

Synthesis of Chalcone Containing Thiophene-Schiff Base And Examination of The Biological Properties

Yasemin Ünver[1,*], Meltem Tuluk[1], Ersan Bektaş[2], Nuran Kahriman[1]

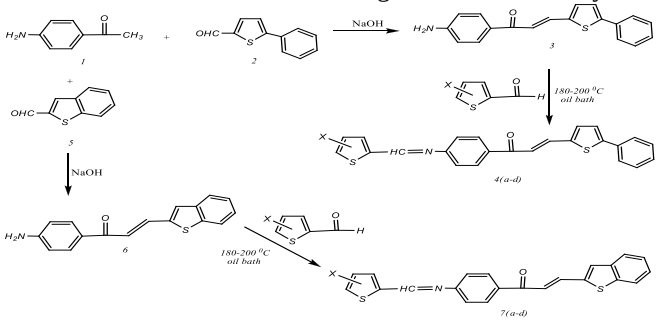
[1]Department of Chemistry, Faculty of Sciences, Karadeniz Technical University,61080 Trabzon, Turkey

[2]Giresun University, Espiye Vocational School, 28600, Espiye, Giresun

unver.yasemincan@hotmail.com

Abstract

Natural and synthetic chalcones (1,3-diaryl-2-propene-1-ones) have antiinflammatory, antiplatelet, antiviral, anticulcerative, antitumo, analgesic, antitubercular, anticancer, antituberculosis and antifungal effects [1]. In addition, some polymethoxy-chalcone derivatives, called nobiletin, tangeretin and combretastatin A-4 (CA-4), have been shown to exhibit high cytotoxicity against a variety of human cancer cells [2]. Schiff bases have biological properties such as antifungal, antibacterial, antitumor, anticancer, antiinflammatory. In particular, Schiff bases are known to be highly effective in antimicrobial activities, synergistic effects on insecticides and plant growth regulators [3]. In this study, new chalcone derivatives including Schiff base were synthezised.



Keywords: Chalcone, Schiff base, Thiophene, Antimicrobial and Antioxidant Activity

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➢ **ORAL PRESENTATION**

Ölümle Sonuçlanan Alüminyum Fosfit Zehirlenmesi: Olgu Sunumu

Hülya Karadeniz[1], Halil Boz[2], H.Çetin Ketenci[2]

[1]Karadeniz Teknik Üniversitesi, Adli Bilimler Enstitüsü, Trabzon, Türkiye
[2]Adli Tıp Kurumu Trabzon Adli Tıp Grup Başkanlığı, Trabzon, Türkiye

hulya-karadeniz@hotmail.com

Özet

Alüminyum fosfit, depolanmış tahıllara zarar veren haşere ve böceklere karşı dezenfektan olarak oldukça sık kullanılan bir insektisittir. Rastlanan alüminyum fosfit zehirlenmeleri arasında intihar amaçlı kullanım ve kazara tüketilen durumlar bildirilmiştir. Bu çalışmada bir binanın alt katında bulunan gıda deposunun fumigasyonu sonrasında, evinde sıra dışı bir şekilde gerçekleşen alüminyum fosfit zehirlenmesi sonucu ölen 13 yaşındaki olgunun otopsi bulguları ile toksikolojik ve patolojik bulguları birlikte değerlendirilerek konunun literatür eşliğinde tartışılmasıyla oral yolla kullanımı ve inhalasyonu halinde yüksek ölüm riski taşıyan alüminyum fosfitin ülkemizde kontrolsüz satışının ve kullanımının sebep olabileceği bazı olumsuzluklarla çözüm önerilerinin vurgulanması amaçlanmıştır. Olgu: Evinde fenalaşan olgunun hastanede resusite edildiği, kanında herhangi bir toksine rastlanılmadığı, otopsi kararının alındığı, evin mutfağındaki gıdalardan alınan numunelerin ve işyerinde fumigasyon için kullanılan "Phostoxin" adlı tabletin toksikolojik açıdan incelenmek üzere Adli Tıp Kurumu Trabzon Adli Tıp Grup Başkanlığı'na gönderildiği bildirildi. Yapılan dış muayenede açık kırmızı renkte ölü lekelerinin ve resusitasyon müdahalesi bulgularının saptandığı, otopside ise genel olarak mukozal ve serozal yapılar ile iç organ yüzeylerinde peteşial kanamalar, akciğer ağırlıklarında artış, parankiminde kanama, mide mukozasında hiperemi, mide içerisinde 50 cc koyu renkte sıvı saptandığı kayıtlıdır. Histopatoloji raporlarında; intermüsküler taze kanamalı myocard, intraalveoler taze kanamalı ve fokal ödemli konjesyone akciğer, intraparankimal, hafif kronik yüzeyel gastrit, mukozada hafif kronik iltihabi hücre infiltrasyonu ile lenfoid hiperplazi izlenen ince barsak, toksikolojik analizlerde; kan, organ ve mide içeriğinde fosfin gazı (PH_3) ve alüminyum tespit edildiği kayıtlıdır. Literatürlerde fosfin zehirlenmesinin genellikle intihar ve kaza sonucu ölüme neden olduğu bildirilmiştir. Olgumuzdaki fosfin zehirlenmesi oldukça sıra dışıdır. Fosfin zehirlenmesine dair herhangi bir şüphe ve spesifik bulgu olmadığından olgunun tanısı hastanede konulamamıştır. Alüminyum fosfitin ülkemizde kontrolsüz satışı ve bilinçsiz kullanımı nedeniyle zehirlenmelere rastlanılmaktadır. Toksik etkisi yüksek bu tür maddelerin satışlarının kontrol altına alınabilmesi için; satıcılara zorunlu bir eğitim sonucu satış yetkisi verilmelidir. Böylece satıcılar hem kendilerini yasal olarak korumuş hem de kullanıcıları bu tür maddelerin kullanımı ve zararları konusunda bilinçlendirmiş olacaktır.

Anahtar Kelimeler: Alüminyum fosfit, zehirlenme, otopsi, toksikoloji

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➢ **ORAL PRESENTATION**

Determining Appropriate Preceding Crops for Optimization of Organic Pepper (*Capsicum annuum* L.) Production in Turkey

Alev Kir[1*], Mahmut Tepecik[2], Nur Okur[2], Koray Kacan[3], Hakan Geren[4], H. Husnu Kayikcioglu[2], Ahmet Kalin[5], Ibrahim Duman[6] , Uygun Aksoy[6] , Yildiz Nemli[7]

[*1]Olive Research Institute (ORI), Bornova, Izmir / TURKEY
[2]Ege University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Bornova, Izmir / TURKEY
[3]Mugla Sitki Kocman University, Ortaca Vocational School, Mugla / TURKEY
[4]Ege University, Faculty of Agriculture, Department of Field Crops, Bornova, Izmir / TURKEY
[5]Aegean Agricultral Research Institute (AARI), Menemen, Izmir / TURKEY
[6] Ege University, Faculty of Agriculture, Department of Horticulture, Bornova, Izmir / TURKEY
[7] Ege University, Faculty of Agriculture, Department of Plant Protection, Bornova, Izmir / TURKEY

Corresponding author e-mail: alev.kir.etae@gmail.com, alev.kir@tarim.gov.tr

Abstract

In order to increase organic pepper production under open field conditions, a rotation programme was designed and carried out between 2011 and 2016 for 5 years on an organically managed experimental field of the Aegean Agricultural Research Institute (AARI), İzmir,Turkey under Mediterrenean climatic conditions. Different soil building winter crops were tested as preceding crops for the main summer crops. Sweet red pepper (*Capsicum annuum* L., cv Yalova Yaglik-28), melon (*Cucumis melo* L.), and maize (*Zea mays* L.), produced widely in the Aegean Region were used as summer crops. Spinach (*Spinacia oleracea* L.), faba bean (*Vicia faba* L.), broccoli (*Brassica oleracea* L. var. italica), and common vetch (*Vicia sativa* L.)+ barley (*Hordeum vulgare* L.) mixture were tested as preceding crops for winter seasons. Parcels where soil is kept bare during the winter seasons were included as control treatment. Some soil productivity (0-30 cm.), soil microbiological activity, pepper-leaf and fruit macro-micro elements, and pepper-fruit quality analyses were performed in two different seasons yearly. Morphological characteristics, weed observations and yields were also investigated for 5 years. The experiment was arranged in a split-plot randomized block design with 3 replications. Main-plots were winter crops and sub-plots were summer plots in 45 parcels. Only 'in-house compost' obtained by composting plant residues (broccoli, faba bean, etc.) and manure of the Institute's organic experimental field was applied for soil fertility after soil productivity analysis yearly. Maximum application rate of compost was 170 kg N/ha/year in all treatments. Data was analysed using analysis of variance and tested for sources of variance. It is found that faba bean as a preceeding crop showed significant effect on pepper yield and quality compared to other tested winter preceding crops statistically significant at 5% (Duncan) level. Additionally, pepper yields in all applications reached to 0.4 ton/ha which is the declared mean yield in 'description certificate'of the variety.

Keywords: Organic Farming, rotation, pepper, faba bean, yield, quality.

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➢ **ORAL PRESENTATION**

Determining Cytotoxic Effects of Polyfluorinated Salicylaldimines on Capan-1 Pancreatic Adenocarcinoma Cell Line

Faruk Süzergöz[1*], H. A. Zafer Sak[2], Veli T Kasumov[3]

[*1]Harran University, Art Science Faculty, Department of Biology, Şanlıurfa, TURKEY.
[2]Harran University, Medical Faculty, Department of Chest Dissease, Şanlıurfa, TURKEY.
[3]Harran University, Art Science Faculty, Department of Chemistry, Şanlıurfa, TURKEY.

Corresponding author e-mail: suzergoz@yahoo.com

Abstract

Schiff bases have recently attracted attention with their use in the health as well as other chemical properties. In the study, the anticancer effects of fluorine bearing 3-tert-butyl salicylaldimines on Capan-1 cells, a pancreatic adenocarcinoma cell line, were investigated. The polyfluorinated 3-tert-butyl salicylaldimines are ordered as Compound 1-9 according to the number of fluorine atoms they carry and the position of the fluorine atoms. The IC50 values of each compound were determined using the luminometric ATP assay. The ability of the compounds to stimulate apoptosis in the cells was evaluated immunohistochemically with annexin-V and active caspase-3 expression, histopathologically with giemza, H&E and PAP staining. The strongest cytotoxic effect on Capan-1 cells was obtained with Compound 5 ($F_{3,5}$-3TBS) bearing 2 fluorine atoms (IC50: 6.7 µM). It has been understood from the expression of annexin-V and active caspase-3 on the cells that the cytotoxic effect of Compound 5 is caused by induction of apoptosis in the cells. The morphological changes observed in histopathological analyzes indicate the development of apoptosis in cells. As a result, 3-tert-butyl salicylaldimine compound bearing 2 fluorine atoms at the 3-5 position showed strong cytotoxic and apoptotic properties on Capan-1 pancreatic adenocarcinoma cells. This finding is a promising development in the discovery of a new chemotherapeutic agent in the treatment of the disease.

Keywords: Pancreatic cancer, Capan-1, Cytotoxic effects, ATP assay, Active caspas-3

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➢ **ORAL PRESENTATION**

The Photoluminescent Properties of Eu^{3+}-Doped Lanthanium Stannate Pyrochlores

Esra Öztürk*, Erkul Karacaoglu

Karamanoglu Mehmetbey University, Faculty of Engineering, Department of Metallurgy and Materials, Karaman, TURKEY

Corresponding author e-mail: esracircir@gmail.com

Abstract

The high ionic conductivity, superconductivity, luminescence and ferromagnetism, etc. properties of pyrochlore-type materials have a wide variety of compositions. Pyrochlores have the empirical formula $A_2B_2O_7$, where A is a rare earth trivalent element and B is a tetravalent transition element. Among various pyrochlore oxides, lanthanide stannates, $Ln_2Sn_2O_7$ (Ln=Y, La-Lu), have been well investigated in environment-related high temperature catalytic reactions (NO reduction, NO decomposition) as well as photoluminescent properties. In this research, Eu^{3+}-ion doped lanthanium stannate ($La_2Sn_2O_7$) pyrochlore was synthesized through a high temperature solid state reaction (ceramic) method at 800°C-2 h, 1400°C-24 h and 1500°C-60 h heat treatment process under open atmosphere. The thermal analysis (DTA/TG) were carried out until 1300 °C to determine reaction conditions and possible phase formation. The phase properties which were characterized by X-ray powder diffraction (XRD) showed the cubic single phase formation of $La_2Sn_2O_7$ with lattice parameters a=b=c= 10.703 Å and α=β=γ=90°. The photoluminescence (PL) analysis were investigated including excitation, emission and decay time properties by using a PL spectrometer under room temperature (Figure 1.). The PL investigations showed excitation maximum at 272 nm which was contributed to ligand-to-Eu^{3+} charge-transfer transitions (LMCT). The emission maximum at 588 nm belongs $^5D_0 \rightarrow {}^7F_1$ transition of the Eu^{3+} ions.

Keywords: Lanthanium stannate pyrochlore, Eu^{3+}, photoluminescent, solid state reaction.

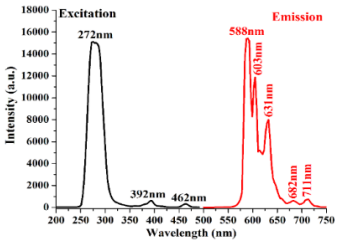

Figure 1. The excitation and emission spectrum of $La_{1.90}Eu_{0.10}Sn_2O_7$ pyrochlore.

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➢ **ORAL PRESENTATION**

Effect of 2100 MHz Radio Frequency Radiation on Hypertensive and Normal Rats on Oxidant Stress in Kidney Tissue

Dilek Kuzay[1], Çiğdem Özer[2], Bahriye Sırav Aral[3], Fatih Şentürk[3]

[1] Ahi Evran University, Medicine Faculty, Physiology Department, Kırşehir
[2] Gazi University, Medicine Faculty, Physiology Department, Ankara
[3] Gazi University, Medicine Faculty, Biophysics Department, Ankara

dilekkuzay@gmail.com

Abstract

With the advancement of Science and Technology, Radio Frequency Radiation (RFR) exposure is increasing in all areas of our lives. Although there are studies in the literature about the harmful effects of RFR exposure on the kidney, we did not find an effect on the effects of systemic hypertension. We aimed to investigate the effects of RFR exposure on oxidant stress and antioxidant levels of hypertensive and non-hypertensive rats on renal tissue. Twenty-four male Wistar Albino rats were used in this study. The rats were divided into 4 groups; 1) Control (K), 2) Control + Hypertension (K + H), 3) Radiation (R), 4) Radiation + Hypertension (R + H). The rats were given oral gavage 60 mg / kg L-NAME dissolved in 1 ml of tap water for 1 month (1). At 1 month, systolic blood pressure of 140 mmHg and diastolic blood pressure of 90 mmHg were considered hypertensive (2). Rats were exposed to 2100 MHz RFR for 60 minutes / 5 days / 8 weeks / day. At the end of the treatments, the rats were decapitated under anesthesia to study oxidant stress indicator malondialdehyde (MDA) (3), nitrite + nitrate (NOx) (4) and antioxidant glutathione (GSH) levels in kidney tissues. The results were compared with the one-way Anova Tukey test between groups and with the in-group Paired Sample t-Test. $p < 0.05$ was considered significant. MDA and NOX levels were significantly increased ($p < 0.01$) and GSH levels were decreased in kidney tissue according to K group in R and R + H groups ($p < 0.05$). Studies on the effects of radiation on the kidneys support the results of our study (6,7). In our study, radiation application significantly increased oxidant stress in kidney tissue, resulting in decreased antioxidant levels. There was no significant difference between the healthy group with radiation exposure and the hypertensive group with radiation exposure.

Keywords: L-NAME, Hypertension, Radio Frequency Radiation (RFR), Rat, Oxidative Stress, Antioxidant, Kidney

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➢ **ORAL PRESENTATION**

Novel N-heterocyclic carbene complexes: Synthesis and anticancer properties

Neslihan Şahin[1*], Serap Şahin Bölükbaşı[2]

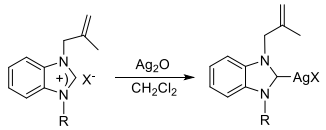
[1]Faculty of Education, Department of Basic Education, University of Cumhuriyet, 58140, Sivas, Turkey
[2]Faculty of Pharmacy, Department of Biochemistry, University of Cumhuriyet, 58140, Sivas, Turkey

neslihan@cumhuriyet.edu.tr

Abstract

Cancer is a major public health problem worldwide and is the second leading cause of death. According to GLOBOCAN 2012, an estimated 14.1 million new cancer cases and 8.2 million cancer-related deaths occurred in 2012, compared with 12.7 million and 7.6 million, respectively, in 2008. [1]. Although modern treatment of cancer contains many different medicines, the side effects of these drugs and the emergence of resistance against cancer are considered to be a serious health problem. Therefore, it is important to design and synthesize new anti-cancer agents that are chemically different from existing ones, have broad spectrum and low cytotoxicity at the same time. Metal-NHC complexes have been popularly investigated due to their noteworty biological properties [1-3]. Among the metal–NHC complexes, the derivatives of silver–NHC complexes has been attracting particular attention due to their use in extensive biological applications.

In this study, we present the synthesis and characterization of two benzimidazole-based NHC salts and their silver(I) complexes. All compounds were prepared using Schlenk techniques in inert atmosphere. The carbene complexes were prepared by the interaction of carbene precursors and Ag_2O.



R= -$CH_2C_6H4CH_3$-4
-$CH_2C_6H_4CH(CH_3)_2$-4

The cytotoxic activities of the salts and complexes was determined by cell proliferation analysis using standard (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay [4]. DU-145 prostate cancer cells cells were grown in EMEM medium, MCF-7, MDA-MB-231 breast cancer cells and L-929 normal adipose cells were grown in DMEM medium containing supplemented with 10% FBS and 1% penicillin. The cells were plated at a cell density of $1x10^5$ cells in 96-well plates and treated by different concentrations (1-20 µM) of salts and complexes during 24, 48 and 72 hours. The values that obtained reading at 570 nm spectrophotometrically were analyzed with GraphPad Prism7(GraphPad Software, San Diego,CA, USA) and IC_{50} growth inhibition values was determined. The results of MTT assay showed that cytotoxicity of salts and complexes caused concentration and time dependent decreases in MTT staining in DU-145, MCF-7, MDA-MB-231 cancer cells.

Keywords: N-heterocyclic carbene, Silver, Breast cancer, Prostate cancer

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➢ ORAL PRESENTATION

mono- ve *hetero*- Nükleer Ni Kompleksleri Sentezi ve Fotovoltaik Özelliklerinin İncelenmesi

Murat Sönmez*, Hasan Nazır

Ankara Üniversitesi, Fen Fakültesi, Kimya Bölümü, 06100 Ankara, Türkiye

Sorumlu yazar e-mail: msonmezfen@gmail.com

Özet

Gelecek yıllarda Dünya'nın büyüme talebini karşılamak için gerekli enerji kaynaklarını bulmak küresel toplumun en büyük zorluklarından biri olacaktır. Dünya nüfusu arttıkça ve küçük ülkeler gelişmelerini sürdürdükçe, küresel enerji talebi de büyük oranda artacaktır. Gelecekte, fosil yakıtların rezervleri bu talebi karşılamakta yetersiz kalacak ve güneş enerjisi bir enerji kaynağı olarak önemli bir rol üstlenecektir. Güneş enerjisinin absorpsiyonu konusuyla ilgili olarak Grätzel, Boya Duyarlı Güneş Pilleri (DSSC) çalışmasını rapor ettikten beri, DSSC basit cihaz yapısı, kolay hazırlanabilme, ucuzluk ve yüksek verim gibi nedenlerden dolayı halen çok çalışılan konular arasında yer almaktadır.

Yapılan çalışmada, *i*- mono- ve hetero- nükleer Ni kompleksleri sentezlendi ve yapıları X-ışınlarıyla aydınlatıldı, *ii*- komplekslerin güneş pili hücreleri hazırlanarak, altı ayrı görünür dalga boyunda ve beyaz ışıkta akım-potansiyelleri (I-V) ölçüldü, *iii*- Bulgular QSAR, Molekül orbitalleri teorisi-Band Teorisi- ve Moleküler Elektrostatik Potansiyelleri hesaplamalarıyla desteklendi ve yorumlandı, *iv*- koordinasyon kimyası bakımından mono- ve hetero- nükleer komplekslerde koordinasyon küresi etrafındaki donör atomların yük ve metal atomun koordinasyon değişiminin fotovoltaik özelliğe olan etkisi tartışıldı.

Anahtar Kelimeler: mono- hetero- nükleer kompleks, boya duyarlı güneş pili, fotovoltaik özellik.

Teşekkür: Bu çalışma, Ankara Üniversitesi Bilimsel Araştırma Projeleri Koordinatörlüğü tarafından 12B4240001 no.lu proje ile desteklenmiştir.

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➢ ORAL PRESENTATION

Katı Faz Ekstraksiyon Yöntemiyle Çevresel Su Örneklerinde Eser Miktardaki Civa Tayini

Berrin Topuz

Abant İzzet Baysal Üniversitesi, Mühendislik Mimarlık Fakültesi , Çevre Mühendisliği Bölümü, Bolu, Türkiye.

Yazar e-mail: berrintopuz@ibu.edu.tr

Özet

Çevresel su numunelerinden eser miktardaki inorganic civa için hassas ve seçici bir analiz yöntemi önerilmiştir. Eser miktardaki civanın katı faz ekstraksiyonu (SPE) ile önderiştirilmesi ve ayrılması, ardından geliştirilen spektroskopik yöntemle tayini araştırılmıştır. Bu amaçla sentezlenen 2,6-dimethyl-morpholine dithiocarbamate (DMMDTC) ligantı ve mikrokristal naftalin (MN) katı adsorbanı üzerine sorplanan Hg(II)'nin, etanol içinde %5 asetik asit çözeltisiyle su sumunesinden ayrılması ve önderiştirilmesi gerçekleştirilmiştir. Önderiştirilen ve ayrılan civanın triton X-100 surfaktan ortamında ditizon reaktifi ile renkli kompleksinin 490 nm'de UV-VIS spektroskopik tayini gerçekleştirilmiştir. DMMDTC-MN ile uygulanan SPE yönteminin performansını etkileyen çözelti pH'sı ve hacmi, elüentin türü ve miktarı, karıştırma süresi ve yabancı iyon etkisi gibi farklı paramatreler tek tek incelenerek pH 5'de 15 dakika ekstraksiyon süresi ile 175 önderiştirme verimiyle civanın %95 geri kazanımı sağlanmıştır. (DMMDTC-MN) SPE materyalinin adsorpsiyon kapasitesi 47.7 µmol/g olarak belirlendi. Önderiştirilen ve ayrılan Hg(II)-dithiozone compleksinin 490 nm'de belirlenen karakteristik renginde molar absorpsiyon katsayısı 4.96×10^5 $Lmol^{-1}cm^{-1}$ olarak belirlendi. Önerilen yöntemin doğruluğu için CRM-036 Trace Metal Loamy Sand Sertifikalı referans madde analiz edilmiş ve sonuçlar sertifikalı değerlerle karşılaştırılmıştır. Ayrıca Hg(II) ile spike edilmiş çevresel su numuneleri yöntemle analiz edilerek %97'nin üzerinde geri kazanım değerleri elde edilmiştir. Farklı su numunelerin analiz sonuçları civa analizör sonuçları ile karşılaştırılmıştır.

Keywords: Katı Faz Ekstraksiyonu, Civa tayini, Spektrofotometrik Yöntem, Civa Analizör

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➢ **ORAL PRESENTATION**

Heavy Metal Concentrations in Some Molluscs from The Dardanelles Strait, Marmara Sea, Turkey

Saniye Türk Çulha [1*], M. Yeşim Çelik[2]

[*1]Izmir Katip Celebi University, Fisheries Faculty, Department of Basic Sciences, İzmir, Türkiye
[2]Sinop University, Fisheries Faculty, Department of Aquaculture, Sinop, Türkiye

Corresponding author e-mail: trksanye@gmail.com

Abstract

Utilization of marine sources has vital importance both economically and socially for our country. Thus, preventing marine pollution has became compulsory. Necessary precautions must be taken by monitoring and determinig the sources of pollution. Accumulation levels of 9 trace metals (Cd, Cu, Pb, Zn, Ni, Cr, Co, Fe and Mn) in 7 molluscs species (*Mytilus galloprovincialis, Ostrea edulis, Ruditapes decussatu Ruditapes philippinarum, Rapana venosa, Chamelea gallina, Donax trunculus*) were investigated from predetermined 3 stations (Bandırma, Musakça, Denizkent) between February 2011 and February 2012 quarterly. Trace metal determinations were performed by ICP-AES device. Physicochemical parameters of water were also measured for every station in-situ.
Trace metal contents are varied significantly among seasons ($p<0.05$). Pb, Cd, Co, Cr, Ni concentrations in molluscs from Bandırma station; Pb, Cd, Co, Cr concentrations in molluscs from Musakça and Denizkent stations are below the detection limits. Zn, Cu and Fe are determined as of the most accumulated trace metals in all samples. Bivalves *R. decussatus* and *C. gallina* are designated as useful bioindicators for Ni. Trace metal levels in species are determined to vary significantly according to seasons and accumulations are higher in autumn and winter. Results are also compared with national and international standarts.

Keywords: Heavy metal accumulation, Mollusca, Dardanelles Strait, ICP-AES

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➢ **ORAL PRESENTATION**

First Molecular Characterization of *Demodex* mite (Acarina: Demodicidae) from Pet Dogs in Turkey

Didem Pekmezci[1], Gokmen Zafer Pekmezci[2*], Cenk Soner Bolukbas[3]

[1]Ondokuz Mayis University, Faculty of Veterinary, Department of Internal Medicine, Samsun, Turkey
[2] Ondokuz Mayis University, Faculty of Veterinary, Preclinical Science, Samsun, Turkey
[3] Ondokuz Mayis University, Faculty of Veterinary, Department of Parasitology, Samsun, Turkey

*Corresponding author e-mail: zpekmezci@omu.edu.tr

Abstract

Canine demodicosis (CD) is an inflammatory skin disease caused by excessive proliferation of *Demodex* mites (Acarina: Demodicidae) in the hair follicles and sebaceous glands in dogs. In Turkey, *Demodex* mites have been only morphologically identified from pet dogs. However, there has not been any study regarding molecular characterization of *Demodex* mite from pet dogs in Turkey. Mitochondrial genes have been successfully applied in order to carry out taxonomic and phylogenetic studies in different groups of mites. The aim of the present study is amplify and sequence a segment of the mitochondrial gene from *Demodex* mite and establish their phylogenetic relationships. In the present study, *Demodex* mites are primarily identified microscopically by skin scrapings from pet dogs with CD. Total DNA was extracted from *Demodex* mite using the DNA extraction kit. Then, the fragment of mitochondrial gene was amplified by PCR using specific primers and sequenced both directions with same primers. Molecular analyses were carried out comparatively according to *Demodex* sequences in dogs from GenBank. Phylogenetic relationships were also determined by distance methods. In conclusion, interspecies pairwise sequence divergences and phylogenetic relationships of our isolate and other known *Demodex* mite from dogs were evaluated and discussed. Moreover, this is the first molecular characterization of *Demodex* mite from dogs in Turkey.

Keywords: Demodex mite, dog, molecular characterization, mitochondrial gene, Turkey

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➢ **ORAL PRESENTATION**

Unexpected Reaction of 5-Chloromethyl-1,2,4-oxadiazole Derivatives with KCN

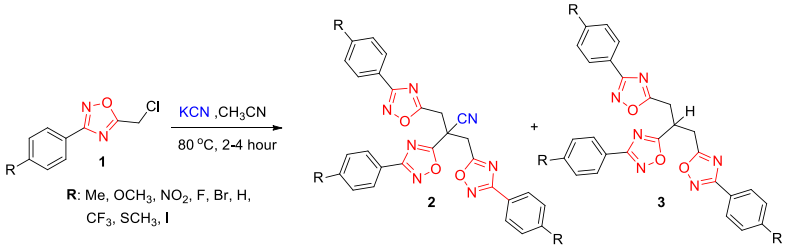
Akın Sağirli[1*], Yaşar Dürüst[2]

[*1]Abant Izzet Baysal University, Science and Art Faculty, Chemistry, Bolu, Turkey.
[2] Abant Izzet Baysal University, Science and Art Faculty, Chemistry, Bolu, Turkey.

Corresponding author e-mail: sagirli_a@ibu.edu.tr

Abstract

In recent years, extensive research has been carried out for the synthesis of oxadiazole derivatives, since oxadiazoles are considered to be significant biologically active molecules and important chemical intermediates (Lee et al., 2008). In addition, 1,2,4-oxadiazoles have an important role among oxadiazole derivatives due to their various bioactivities, such as tyrosine kinase inhibition, muscarinic agonism, histamine H3 antagonism, anti-inflammatory, antitumoral and monoamine oxidase inhibition (Nicolaides et al., 1998; Leite et al., 2000; Luthman et al., 1999). We report here a new synthetic protocol for the synthesis of 2,3-bis(3-phenyl-1,2,4-oxadiazol-5-yl)-2-((3-substitutedphenyl-1,2,4-oxadiazol-5-yl)methyl)propanenitrile **2** and 5,5',5"-(propane-1,2,3-triyl)tris(3-substitutedphenyl-1,2,4-oxadiazole) **3** starting with 5-(chloromethyl)-3-substituted phenyl-1,2,4-oxadiazoles **1** and excess amount of KCN. The structure of title products were identified by means of IR, ^{1}H NMR, ^{13}C NMR and mass measurements.



Keywords: Oxadiazole, KCN, 1,2,4-oxadiazole

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➢ **ORAL PRESENTATION**

İpekböceği *Bombyx mori*' de Pupal Dönemde Glukagonun Ovaryum Gelişimine Etkisi

Büşra Günay[1*], Ebru Göncü[1]

[*1,2]Ege Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, İzmir, Türkiye

ozerbusra54@gmail.com

Özet

Memeli glukagonu karaciğerde glikojenolizi arttırarak kan şekerini yükseltici etki göstermektedir. Böceklerde ise bu işlevi glukagon benzeri peptid olarak tespit edilen adipokinetik hormon (AKH) üstlenmiştir. AKH, yağ dokuda, hemolenfe salınmak üzere depo edilmiş glikojeni trehaloza, trigliseritleri ise digliserite dönüştürmesinden dolayı memelilerdeki glukagon hormonuna analogdur. Bu çalışmada memeli glukagon hormonunun dişi ipek böceği *Bombyx mori* pupalarının ovaryum gelişimi üzerine etkileri araştırılmıştır. Bu amaçla memeli glukagonu enjeksiyonu pupal evrenin farklı günlerinde yapılmış; ovaryum gelişimi histolojik ve biyokimyasal metotlar kullanılarak analiz edilmiştir. Elde ettiğimiz bulgular, memeli glukagonunun dişi *Bombyx mori* pupalarının ovaryum gelişimi süresince biyokimyasal parametrelerinde değişimler meydana getirdiğini göstermiştir. Ovaryum ve yumurta gelişiminde kritik bir organ olan yağ doku pupal dönem süresince yumurta gelişimi için gerekli materyali sağlayan temel organdır. Omurgalı karaciğer ve yağ dokusu ile analog bir organ olması yağ dokunun, glukagonun hedef organı olduğuna işaret etmektedir. Bundan dolayı ovaryumda meydana gelen değişimlerin yağ doku ile bağlantılı olması olasıdır.

Anahtar Kelimeler: *Bombyx mori*, ovaryum, glukagon

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➢ **ORAL PRESENTATION**

Omurgalı İnsülin Hormonunun İpekböceği Bombyx Morı Pupal Döneminde Ovaryum Gelişimi Ve Temel Hemolenf Proteinleri Üzerine Etkileri

Tuğçe Ergin*, Kübra İçli, Ebru Goncu

Ege Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, İzmir, Türkiye

tugcee.erginn@gmail.com

Özet

Omurgalı canlılarda pankreasın Langerhans adacıklarından salınan insülin vücudun şeker metabolizmasının düzenlenmesinde önemli hormonlardan biridir. Omurgalı ve omurgasız hayvanlarda insülin ve insülin ilişkili peptidlerin büyüme, farklılaşma, metabolizma ve apoptozis gibi hücresel süreçlerin düzenlenmesinde önemli bir rol oynadığı bilinmektedir. Omurgalı insülini, glikojen yıkımını inhibe ederken glikoz alımını ve dönüştürmeyi aktive ederek anabolik metabolizmayı etkiler. Omurgasız hayvanlardaki insülin benzeri peptid olarak belirlenen ilk molekül *Bombyx mori'* de belirlenmiş ve bombyxin adını almıştır. Bombyxinler, böcek büyümesini, karbonhidrat metabolizmasını ve yumurta gelişimini düzenler. Böceklerdeki insülin benzeri peptidler moleküler formda memelilerin insülinlerine homologdurlar, ayrıca işlevsel olarak eşdeğerdirler. Hemolenf, hayvanın vücudunu mikroorganizmalardan ve antijenlerden koruyan hemositlerden ve plazmadan oluşur. Hormonların ve besin maddelerinin hedef hücrelere taşınımı ve atıkların boşaltım organlarına gönderilmesi gibi tüm olaylar hemolenf aracılığıyla olur. Dişi böceklerdeki üreme fizyolojisinde rol oynayan anahtar organlar yağ doku ve ovaryumdur. Yağ doku hücreleri tarafından sentezlenen bazı proteinler pupal dönem boyunca hemolenf aracılığıyla ovaryuma taşınır ve yumurta gelişiminde rol alır. Farklı fizyolojik süreçlerden dolayı hemolenf proteinlerin içeriği ve miktarı larval, pupal ve ergin evrelerde değişmektedir. Bu çalışmada pupal evrenin farklı günlerinde *Bombyx mori* dişi pupalarına omurgalı insülini enjekte edilmiş, ovaryum gelişimine ve temel hemolenf proteinleri üzerindeki etkileri araştırılmıştır. Bu amaçla histolojik ve elektroforetik yöntemler kullanılmıştır. Elde ettiğimiz bulgular omurgalı hormonu olan insülinin, dişi *Bombyx mori* pupalarının ovaryum ve hemolenfinde bulunan temel proteinlerin nispi yoğunluklarında değişimler meydana getirdiğini göstermiştir.

Anahtar Kelimeler: *Bombyx mori*, hemolenf, ovaryum, insülin, protein

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➢ **ORAL PRESENTATION**

Applications of Edible Oleogels in Food Products

Emin Yılmaz

Çanakkale Onsekiz Mart University, Faculty of Engineering, Department of Food Engineering

Corresponding author e-mail: eyilmaz@comu.edu.tr

Abstract

Natural solid fats (butter, margarines, palm stearin, coconut oil, and chocolate fat) are indispensable parts of many food products. To supply their shortages, hydrogenated and fractioned fats have also been used. These solid fats contain large amounts of saturated fats and some *trans* fatty acids, which are considered as negative for human health. Hence, alternative technologies have been in search. Oleogelation technology has recently been introduced as a solution. Oleogels were defined as self-standing, termoreversible, anhydrous, three-dimensional gel networks of edible oils. They were produced by adding some organogelator agents into liquid oil, and the oil is entrapped within a 3-dimentional network created by the organogelators. Organogelators assemble themselves into supramolecular structures via non-covalent interactions. Most of the time, organogelators form crystalline dispersions, lyotropic phases and polimer strands to structure the oil, but no change in fatty acid saturation level or no formation of *trans* acids occur as the main advantages. All hard fats including the oleogels are expected to provide structure, hardness, spreadability, air incorporation, starch and gluten network protection, melting and cooling effects, flavor release, protection and delivery of bioactives, controlling oil migration and other functions to the food products. To replace oleogels with hard fats, studies with oleogels to produce margarines and spreads, chocolate and confectionary products, comminuted meat products, bakery products, dairy products, delivery systems and others have been conducted. Although some success have already been presented, future studies to provide more mechanical stability, conformity for flavor and mouthfeeling and clinical evidence for safety are needed. Furthermore, regulatory issues must be cleared before commercialization. In this study, descriptions of oleogel applications in various foods are provided. The gains and deficiencies are discussed to demonstrate future research demands. At present, some oleogel products seem a good candidate for food products as solid fat stock.

Keywords: Oleogel, Structure, Food, Application, Solid fat, Health.

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➢ ORAL PRESENTATION

Some Population Parameters of European Catfish (*Silurus glanis* L., 1758) in Demirköprü Dam Lake

Hakkı Dereli[1], Turhan Kebapçıoğlu[2], Yusuf Şen[3], Zeki Serkan Ölçek[3], Murathan Özdemir[3]

[1]Izmir Katip Çelebi University, Faculty of Fisheries, Department of Fisheries and Fish Processing Technology, İzmir-Turkey
[2] Akdeniz University, Manavgat Tourism Faculty, Department of Recreation Management, Antalya-Türkiye
[3] Izmir Katip Çelebi University, Graduate School of Natural and Applied Sciences, İzmir-Turkey

Corresponding author e-mail: hakkidereli@gmail.com

Abstract

Demirköprü Dam Lake (Manisa Province) is the largest surface area and one of the most important inland fishery area in the Aegean Region. This study aimed to determine the some population characteristics (growth and reproduction parameters) of European catfish (*Silurus glanis* L., 1758) important target species for commercial fisheries in the lake.

Samples were obtained monthly with gillnet, fyke net and seine net between December 2015 and November 2016. Sampling was carried out every 15 days between March 2016 and May 2016 to clearer identification of the reproductive period. Temperature values of surface water were recorded every month with portable multiparameter device. Total length (TL) and total weight (W) of the fish were measured and then their sexes were recorded after dissection. Vertebrae was used to estimate the age of the species.

The age of the population was ranged from 2 to 11, the length also between 28 and 160 cm. Length - weight relation was determined as $W = 0.0062TL^{2.9944}$. Von Bertalanffy equality parameters was calculated as a: 9.443023; b: 0.98108; k: 0.0191; t_0: -2.357452; L_∞: 499.136 cm, W_∞: 744.628 g for female; as a: 8.623223; b: 0.98082; k: 0.0193633; t_0: -2.696204; L_∞: 449.665 cm and W_∞: 544.755 g for male. Length at first maturity of the European catfish was calculated as 66.8 cm in females and 70.3 cm in males. The spawning was realized in June when the water temperature reach to 24 ^oC in Demirköprü Dam Lake.

Key words: European Catfish, *Silurus glanis*, Gonadosomatic Index (GSI), Von Bertalanffy Equation, Demirköprü Dam Lake

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➢ **ORAL PRESENTATION**

Some Biochemical Parameters of Calves Born after Cesarean Section

Mushap Kuru[1], Enes Akyüz[2*], Abdulsamed Kükürt[3]

[1] Department of Obstetrics and Gynecology, Veterinary Faculty, Kafkas University, Kars, Turkey
[2]Department of Internal Medicine, Veterinary Faculty, Kafkas University, Kars, Turkey
[3]Department of Biochemistry, Veterinary Faculty, Kafkas University, Kars, Turkey

e-mail: enesakyuz_44@hotmail.com

Abstract

In this study, it was aimed to determine the some biochemical parameters of calves born after cesarean section. A total of 20 calves, 10 cesarean section and 10 normally born were used in the study. Immediately after the parturition or cesarean section blood was taken from the *vena jugularis* from all of the calves. Concentrations of glucose, urea, creatinine (CREA), alanine aminotransferase (ALT), aspartate aminotransferase (AST), gamma-glutamyl transferase (GGT), total protein (TP) and lactate dehydrogenase (LDH)were measured by colorimetric methods using commercial kit (Mindray Bio-Medical) in serum samples. In the statistical evaluation of the data, it was determined that glucose, CREA, ALT, GGT, TP and LDH concentrations increased ($P<0.05$), urea and AST concentrations did not change ($P>0.05$) in the calves born after cesarean section. In conclusion, it was observed that the calf born after cesarean operation changed some biochemical parameters of stress caused by delayed delivery.

Keywords: Calf, cesarean section, biochemical parameters

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➢ ORAL PRESENTATION

Investigation of Effects of Carbaryl on Muscle Vitamin E Level and Serum Paraoxonase Activity in *Capoeta capoeta* [Guldenstaedt, 1773]

[*]İnan Kaya [A]özlem Önen [B]müge Mavioğlu Kaya [C]abdulsamed Kükürt [D]muhitdin Yilmaz [E]mahmut Karapehlivan

[a] Department of Biology, Faculty of Arts and Sciences, Kafkas University, 36100 Kars, Turkey
[b] Department of Molecular Biology and Genetic, Faculty of Arts and Sciences, Kafkas University, 36100 Kars, Turkey
[c] Department of Biochemistry, Faculty of Veterinary Medicine, Kafkas University, 36100 Kars, Turkey
[d] Department of Bioengineering, Faculty of Engineering and Architecture, Sinop University, 57000 Sinop, Turkey
[e] Department of Biochemistry, Faculty of Medicine, Kafkas University, 36100 Kars, Turkey

[*]Corresponding author. E-mail address: inankaya_@hotmail.com

Abstract

The aim of this study is to investigate of the levels of vitamin E and paraoxonase activity in *Capoeta capoeta* treated carbaryl. Thirty *Capoeta capoeta* fish caught in Kars Creek were equally divided into three groups and acclimatized in separate tanks for 10 days. The fish were kept in tanks as follows: Group I (control) was kept in normal water. Group II and III were kept in separate tanks containing 0.3 mg/L and 0.6 mg/L carbaryl, respectively. The blood and muscle samples were taken from the fish at the end of the study period for seven days. Levels of vitamin E of homogenated muscle and serum paraoxonase activity were detected by spectrophotometric methods. Vitamin E and serum paraoxonase activity in the groups treated carbaryl compared with the control group were lower. As a result, it was concluded that carbaryl under of LC_{50} value caused toxic stress by decreasing the levels of vitamin E and paraoxonase activity of *Capoeta capoeta*.

Keywords: Fish, Carbaryl, Vitamin E, Paraoxonase

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➢ **ORAL PRESENTATION**

Sağlıklı Bireyler İle Amalgam Diş Dolgusu Olanlarda Kan Civa Seviyesi Ve Optik Koherenstomografi Bulgularının Karşılaştırılması

Şemsettin Bilak

Adıyaman Üniversitesi, Tıp Fakültesi, Göz Hastalıkları Anabilim Dalı, Adıyaman, Türkiye

Sorumlu yazar e-mail:semsettinbilak@hotmail.com

Özet

Bu çalışmanın amacı sağlıklı bireyler ile amalgam diş dolgusu olanlarda kan civa seviyesinin karşılaştırılması ve bu duruma bağlı oluşabilecek kronik civatoksisitesininretinal sinir lifi tabakası, retinalganglion hücre tabakası, retinal iç pleksiform tabakası ve koroid kalınlıkları üzerine olan etkilerinin optik koherenstomografi cihazı ölçümleri ile karşılaştırılmasıdır. Amalgam dolgusu olan 56 birey ile 44 sağlıklı birey bu çalışmaya dahil edildi. Tüm katılımcıların ayrıntılı göz muayenesi yapıldı. Venöz kan örnekleri alınarak, kan civa seviyesi analiz edildi. Her iki gözden optik koherenstomografi çekimleri yapılarak, retinal tabakaların ve koroidin kalınlığı saptandı. Amalgam gurubunda kan civa seviyesi kontrol gurubuna göre yüksek bulundu (p=0.04). Amalgam grubunda iki gözden elde edilen retinalganglion hücre tabakası (p=0.04, p=0.02) ve retinal iç pleksiform tabakası (p=0.03, p=0.02) kalınlık ölçümleri anlamlı olarak daha ince saptandı. Halen yaygın olarak kullanılmakta olan amalgam diş dolgusuna bağlı oluşabilecek kronik civatoksisitesi, toplum sağlığı açısından üzerinde durulması ve önlem alınması gereken bir durumdur

.**Anahtar Kelimeler:** Amalgam, Civa, Toksisite, Optik Koherens Tomografi

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➢ ORAL PRESENTATION

Some Oxidative Stress Parameters in Sheep with Pneumonia

Abdulsamed Kükürt[1]*, Mahmut Karapehlivan[2], Enes Akyüz[3],İnan Kaya[4], Metin Öğün[1], Hacı Ahmet Deveci[5]

[1]Kafkas University, Faculty of Veterinary Medicine, Department of Biochemistry, Kars, Turkey
[2] Kafkas University, Faculty of Medicine Department of Medical Biochemistry, Kars, Turkey
[3] Kafkas University, Faculty of Veterinary Medicine Department of Internal Medicine, Kars, Turkey
[4] Kafkas University, Faculty of Arts and Sciences Department of Biology, Kars, Turkey
[5] Gaziantep University, Islahiye Vocational School, Gaziantep, Turkey

*Corresponding author e-mail: samedkukurt@gmail.com

Abstract

In this study, it was aimed to evaluate GSH, MDA and NO concentrationsin sheep clinically diagnosed with pneumonia.In the study, a total of 54 sheep were used. Thirty four of them were selected for study group, diagnosed with pneumonia, and 20 clinically healthy sheep for control. Blood samples were collected from vena jugularis. The sera were obtained by centrifuging blood samples. Malondialdehyde (MDA) and nitric oxide (NO) concentrations were measured in serum samples. Glutathione (GSH)concentrations were measured whole blood. The measurements were made on a spectrophotometer with colorimetric methods.After the analysis performed, compared with the control group, there was a statistically significant increase in MDA and NO concentrations and decrease in GSH concentration in the pneumonia group. Consequently, the obtained results indicated the pneumonia caused oxidative stress in sheep.

Keywords: Pneumonia, sheep, oxidative stress, GSH, MDA, NO

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➢ **ORAL PRESENTATION**

Farelerde Tamoksifen'in Ovaryum Üzerine Etkisi

Ender Deniz Asmaz[1*] Berrin Zık[1]

[1]Uludağ Üniversitesi, Veteriner Fakültesi, Histoloji ve Embriyoloji, Bursa, Türkiye

Sorumlu yazar e-mail: dnz.smz@gmail.com

Özet

Bu çalışma, Tamoksifen'in, puberta dönemindeki farelerde ovaryum morfolojisi ve follikül sayısına etkisini incelemek amacıyla planlanmıştır.
Çalışmada 80 adet dişi fare (8 haftalık) kullanıldı. Deney hayvanları araştırma merkezinden temin edilen hayvanlar 4 gruba ayrıldı. Hayvanlar; hiçbir enjeksiyon yapılmayan (Kontrol A grubu), TAM'ın eritildiği taşıyıcı solüsyonun enjekte edildiği (Kontrol B grubu), 0.5mg/fare/gün TAM enjekte edilen (0,5 TAM), ve 1.5mg/fare/gün TAM (1,5 TAM) enjekte edilen olmak üzere gruplandırıldı. Eritilen TAM ve taşıyıcı solusyon subkutan yolla hayvanlara 5 gün boyunca enjekte edildi.
Deney sonrasında hayvanların ovaryum ağırlığı ve canlı ağırlık kazancı değerlendirildi, ovaryumun histolojisi incelendi, folliküllerin sayımı yapıldı. Ovaryum kesitlerine Ki 67 (hücre proliferasyon markırı), genel yapının gözlenmesi için üçlü boyama ve apoptozisi belirlemek için TUNEL yöntemi uygulandı.
Çalışmada, hayvan grupları arasında canlı ağırlık kazancı ve ovaryum ağırlığı bakımından istatistiksel olarak farklılık gözlenmedi. Tamoxifen uygulanan grupların ovaryumunda, primordial folliküllerin sayısının kontrol grubuna göre yüksek, antral follikül sayısının ve korpus luteum sayısının ise az olduğu belirlendi. Bununla birlikte, tamoxifen'in folliküllerde atreziyi arttırdığı, hücre proliferasyon oranını azalttığı, intersitisyel hücrelerde artış, stromada follikül kistlerinin oluşumuna sebep olduğu ve ovaryum morfolojisini etkilediği gözlendi.
Sonuç olarak, uygulanan tamoxifen dozlarının, ovaryum follikül rezervini etkilemeyip follikül gelişimini baskıladığı ve ovaryum morfolojisini olumsuz yönde etkilediği gözlendi.

Anahtar Kelimeler: Apoptozis, Follikül, Ki 67, Ovaryum, Tamoksifen.

Teşekkür: Bu sözlü sunum 117O695 numaralı proje kapsamında TÜBİTAK tarafından desteklenmektedir.

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➢ **ORAL PRESENTATION**

The Evaluation of Physiological and Biochemical Responses of Some Durum Wheat (*Triticum turgidum* L. var *durum*) Cultivars Against Salt Stress

Can Yılmaz[1*], Abdülhamit Battal[2]

[*1]Van Yuzuncu Yil University, Faculty of Science, Department of Molecular Biology and Genetics, Van, Turkey.
[2] Van Yuzuncu Yil University, Faculty of Pharmacy, Department of Pharmaceutical Biotechnology, Van, Turkey.

Corresponding author e-mail: cyilmaz@yyu.edu.tr

Abstract

Wheat is an important crop species which is the primary carbohydrate source of almost 1 of each 3 people living on the world. The yield of wheat is often affected by salt stress which causes decrease in growth and photosynthesis and increase in oxidative stress. Although durum wheat was reported as moderately tolerant to salt stress, there are numerous studies to enhance its productivity at saliferous soil by breeding more resistant cultivars. In this sudy, three different durum wheat cultivars (Kızıltan-91, Ç-1252, Fuatbey 2000) were subjected to salt stress in hydroponic culture under controlled environment having the same growth conditions except the salt amount. Unlike control groups, four different salt concentrations (50 mM, 100 mM, 150 mM and 200 mM) were applied to test groups after 10th day of sowing and samples were harvested at 16th day of study. Samples were measured for root/shoot length ratio, chlorophyll a, b, and (a+b) amount, carotenoid content, proline, total protein and total thiol concentrations and total cytosolic Glutathione S-transferase activity. As a result of salt stress, a decrease in total chlorophyll and carotenoid content and an elevation in the levels of proline were detected. Concordantly, total thiol pool was shrunk and specific enzyme activity values of total cytosolic GSTs rised, significantly in relatively salt tolerant Kızıltan-91and Ç-1252 cultivars. Decreased growth rate and decreased root/shoot ratio were consistent with total soluble protein concentration with severe salt stress.

Keywords: Durum wheat, salt stress, proline, photosynthetic pigments, GSH, GST

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➢ ORAL PRESENTATION

Reducing Power Properties of Newly Synthesized Pyrimidine Derivatives

Metin Konuş[1*], Esvet Akbaş[2], Erdem Ergan[2], Can Yılmaz[1], Nurhan Didem Kızılkan[1], Doğan Çetin[1]

[*1]Institute of Natural and Applied Sciences, Faculty of Science, Department of Molecular Biology and Genetics, Van, Turkey.
[2]Institute of Natural and Applied Sciences, Faculty of Science, Department of Chemistry, Van, Turkey.

Corresponding author e-mail: mkonus@yyu.edu.tr

Abstract

The pyrimidine derivatives have special ring system that can mediate lots of biological activities such as analgesic, anti-inflammatory, antibacterial and antioxidant activities. Reduction capacities of compounds may serve as a meaningful marker of their potential antioxidant activities. Antioxidant molecules might play an important role in absorbing and neutralizing free radicals due to their reducing capacities. A study was carried out to determine reducing power properties of pyrimidine derivatives, which were synthesized via Biginelli cyclocondensation reaction in acetic acid under reflux condition. Reducing power properties of these newly synthesized pyrimidine derivatives were determined with FRAP and phosphomolybdenum assays, according to the modified Benzie and Strain (1996) and Prieto et al. (1999) methods, reciprocally. According to the phosphomolybdenum assay, some of the synthesized pyrimidine derivatives showed almost same reducing activity compared to trolox, vitamin E analogoue. However, in FRAP assay, we could not detect any measurable reducing activities of these newly pyrimidine derivatives compared to trolox standard.

Keywords: Pyrimidine, Reducing Activity, Trolox, Antioxidant

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➢ **ORAL PRESENTATION**

Mikrobiyal Yakıt Hücresi İle Elektrik Enerjisi Üretimi ve Biyosensör Olarak Kullanımı

Afşın Yusuf Çetinkaya

Aksaray Üniversitesi, Teknik Bilimler Meslek Yüksek Okulu, Çevre Kontrol ve Koruma Programı, Aksaray, Türkiye

Sorumlu yazar e-mail:afsincetinkaya@gmail.com

Özet

Bakterilerin yaşamlarını sürdürebilmeleri için enerjiye ihtiyaçları bulunmaktadır. Bakteri bu enerji ihtiyacını iki şekilde karşılayabilmektedir. Birincisi elektronların organik maddelerden (yükseltgenme) karşılanması, ikincisi ise oluşan elektronların bir alıcıya (oksijen veya nitrat gibi) verilmesi (indirgenme) ile enerji ihtiyacının karşılanmasıdır. Mikrobiyal Yakıt Hücresi (MYH)'de ikinci mekanizma gerçekleşmektedir. Anot bölmesinde ki mikroorganizmalar, organik maddenin oksidasyonundan elektron üretirler ve elektronlar anot elektrotta toplanarak harici bir direnç üzerinden katot elektrota iletilirler ve böylece bir biyolojik pil meydana getirilir (Logan, 2008). Biyosensörler, analiz edilecek madde ile seçimli bir şekilde etkileşime giren biyoaktif bir bileşenin, bu madde ile etkileşimi sonucu ortaya çıkardığı sinyalin, ileten bir iletici sistemle birleştirilmesi ve bu etkileşim ürünlerinin bir ölçüm sistemi ile ölçülmesi olarak tanımlanabilir. Biyoreseptör olarak kullanılan birçok biyolojik molekülün kaynağı mikroorganizmalardır. Mikroorganizmaların kendileri de biyoreseptör olarak kullanılabilirler. Çoğunlukla inorganik veya organik toksik kimyasal maddelerin tespitinde kullanılırlar ve diğer biyoreseptör moleküllere göre daha fazla çeşitlilikte kimyasal yapı saptayabilirler. Sanayileşmenin artması ve gelişen teknoloji ile birlikte atıksulardaki konsantrasyonları gittikçe artan ağır metallerin, alıcı ortamlara, dolayısıyla tüm canlılara olumsuz etkilerinin önlenebilmesi ve su kalite standartlarının sağlanabilmesi için, bu atıksuların arıtıma tabi tutulmaları gerekmektedir. Ancak bu atıksular toksik kirletici içeriklerinden dolayı biyolojik arıtma proseslerini olumsuz yönde etkilerler. Bunun yanısıra bu tür atıksular arıtılmadan deşarj edildikleri taktirde alıcı su ortamlarındaki canlı yaşamını tehlikeye sokarlar. Bu çalışmada, elektrik üretim potansiyeline sahip olan mikrobiyal yakıt hücrelerinin hem elektrik üretim kapasitesinin hemde toksisite sensörü olarak kullanılması amaçlanmıştır.

Anahtar Kelimeler: Mikrobiyal Yakıt Hücresi, Biyosensör, Elektrik Üretimi

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➢ ORAL PRESENTATION

COx-Free Hydrogen From Ammonia Over Iron Incorporated Catalysts in Microwave Assisted Reactor System

Cansu Korkusuz[1], Timur Doğu[2], Dilek Varışlı[1*]

[*1]Gazi University, Department of Chemical Engineering, Ankara, Turkey.
[2]Middle East Technical University, department of Chemical Engineering, Ankara, Turkey.

Corresponding author e-mail: dilekvarisli@gazi.edu.tr

Abstract

Hydrogen, which could be utilized in different ways as an important energy source, is generally produced from carbonaceous materials, however, the COx components, which are formed as byproducts, are not preferred due to their poisoning effects. Decomposition of ammonia is one of the effective way of producing COx-free hydrogen and number of metals, such as cobalt, iron, molybdenum and support materials, such as silicate and mesoporous carbon, have been worked for this reaction. Recent years, microwave assisted reactor systems have become an attractive way to proceed reactions, especially for endothermic ones. Energy is transferred directly to the active species and heat losses due to conventional heating mechanisms could be prevented so that higher activities could be achieved at lower reaction temperatures in comparison to conventionally heated system. While working with microwave system, dielectric properties of either active species or support materials are very important to get high activity. Materials having high dielectric constant could be either used as a support or should be added to catalysts mixture. For this reason, carbon based materials, such as mesoporous carbon, carbon fiber has been selected in our recent works. Among the transition metals, iron was selected and impregnation procedure was followed to prepared iron incorporated carbon based materials. The synthesized catalysts were characterized with different techniques such as TGA-DTA, TPR, XRD, Nitrogen Physisorption, SEM-EDX, HRTEM. It was observed that total conversion of ammonia was achieved at about 450^{o}C under the flow pure ammonia flow (36,000 ml/h.gcat). It is a great enhancement in the activity of catalyst indeed the same catalyst showed negligible activity when they tested in conventionally heated reaction system.

Acknowledgement: Financial support of TUBITAK 214M148 was gratefully acknowledged.

Keywords: Ammonia, hydrogen, microwave, iron, carbon

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➢ **ORAL PRESENTATION**

Ortopedik Uygulamalar için Poroz Ti-Nb alaşımının Karakterizasyonu

Eren Yılmaz[1*], Azim Gökçe[2], Fehim Fındık[1,2], H. Özkan Gülsoy[3]

[*1]Sakarya Üniversitesi, Biyomedikal, Manyetik, Yarıiletken Malzemeler Uygulama ve Araştırma Merkezi (BİMAYAM), Sakarya, Türkiye
[2]Sakarya Üniversitesi, Teknoloji Fakültesi, Metalurji ve Malzeme Mühendisliği, Sakarya, Türkiye
[3]Marmara Üniversitesi, Teknoloji Fakültesi, Metalurji ve Malzeme Mühendisliği, İstanbul, Türkiye

Sorumlu yazar e-mail: erenyilmaz@sakarya.edu.tr

Özet

Poroz yapılar, biyomedikal uygulamalarda implant ve kemik arasındaki mekanik uyumsuzluğu giderirler. Ayrıca, kemik dokunun porozite içine büyümesi ile implantın biyolojik sabitlenmesini sağlarlar. Bu çalışmanın amacı, belirli miktarda boşluk tutucu malzeme (NH_4HCO_3) içeriğinin Ti-16Nb alaşımının mikroyapı ve mekanik özelliklere olan etkisini incelemektir. Bu amaçla poroz Ti-16Nb alaşımı toz metalürjisi yöntemi ile üretilmiştir. Elde edilen sonuçlar, daha önceki çalışmalarımızda üretilen teorik yoğunluğa yakın yoğunluktaki Ti-16Nb alaşımı ile karşılaştırılmıştır. Hacimce %30 NH_4HCO_3 kullanılan poroz Ti-16Nb alaşımında %23 porozite miktarı belirlenmiştir ve mekanik özellikler kemiğin mekanik değerlerine yaklaştırılmıştır. Alaşıma hacimce %30 NH_4HCO_3 ilavesi ile elastik modül 103GPa'dan 61 GPa'a, basma mukavemeti ise yaklaşık 1400 MPa'dan 700 MPa'a düşürülmüştür.

Anahtar Kelimeler: Poroz Ti-Nb alaşımı, implant, toz metalurjisi

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➢ **ORAL PRESENTATION**

Tetracycline Loading to Magnetic Chitosan-Iron Oxide Nanocomposites and Controlled Release

Yeşim Sağ Açıkel[1*], Parinaz Raeiatbin[2]

[*1]Hacettepe University, Engineering Faculty, Chemical Engineering Department and Bioengineering Division, Institute of Science, 06800, Beytepe, Ankara, Turkey.
[2]Hacettepe University, Bioengineering Division, Institute of Science, 06800, Beytepe, Ankara, Turkey.

Corresponding author e-mail: yesims@hacettepe.edu.tr

Abstract

Iron oxide (Fe_3O_4) containing magnetic chitosan (CTN-Fe_3O_4) nanocomposites were prepared with tetracycline as drug carrier by co-precipitation techniques. The morphological surface properties and sizes of Fe3O4 nanoparticles and iron oxide coated chitosan (CTN-Fe_3O_4) nanocomposites were scanned by SEM and the magnetic properties of the nanocomposites were evaluated by vibrational scanning magnetometer (VSM) measurements. The saturation magnetization value of CTN-Fe_3O_4 nanocomposites was measured as 53.0 emu/g. Tetracycline was loaded on CTN-Fe_3O_4 nanocomposites, and then controlled drug release was investigated. Tetracycline loading efficiency and release percentages were calculated. Tetracycline loading on CTN-Fe_3O_4 nanocomposites was carried out at pH 5.0 by adding 5.0 g/L nanoparticle in to solution contining 50 mg/L tetracycline. At the end of this process, 40.32 mg/L drug was loaded to CTN-Fe_3O_4 nanocomposites. Tetracycline loading efficiency was determined as 80.04%. After the tetracycline-loaded magnetic chitosan nanocomposites were freeze-dried, the tetracycline release of the CTN-Fe_3O_4 nanocomposites was performed in 0.1 M phosphate buffer solution (PBS), at pH 7.4, similar to in vivo medium. Tetracycline release studies were performed at 37 ˚C at body temperature by adding 0.5 g / L drug-loaded CTN-Fe_3O_4 in 100 mL PBS. Drug release from CTN-Fe_3O_4 nanoparticles in PBS continued up to 20 hours. At the end of this time, 56.80% of the loaded tetracycline released into the PBS. The first rapid tetracycline release from the CTN-Fe_3O_4 nanocomposites may have been due to the rapid dissolution of drug crystals. A controlled release was then achieved by slow desorption of tetracycline localized on the surface of the CTN-Fe_3O_4 nanocomposites.

Keywords: Drug Carrier, Controlled Release, Tetracycline, Magnetic chitosan-iron oxide nanocomposites

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➢ **ORAL PRESENTATION**

Melissa officinalis L. Kallus Kültürlerinin Antoksidan Özellikleri

Aykut Topdemir*, Zümre Demir, Nazmi Gür

Fırat Üniversitesi Mühendislik Fakültesi Biyomühendislik Bölümü Elazığ Türkiye

Sorumlu yazar e-mail: atopdemir@gmail.com

Özet

Tıbbi ve aromatik bir bitki olan *Melissa officinalis* L., Labitae familyasından, Akdeniz bitkisi olup limon kokuludur. Melisa 60-100 cm arasında bitki boyu oluşturan çok yıllık otsu bir bitkidir. Hoş kokusu nedeniyle uzun zamandır bilinen ve kullanılan bir bitkidir. Arıcılıkta oğul ekmede etkili olduğu için, halk arasında bu bitkiye oğul otu da denilmektedir. Sitral,stranellal,linalol ve pinemi içeren uçucu yağlar ile flavonoid ve reçine içerdiğinden dolayı tıbbi ve aromatik bir bitkidir. Çalışmamızda antoksidan özelliği olduğu da daha önce yapılan çalışmalarla belirlenmiş olan bu bitkiden, in vitro olarak üretilen kallusların antioksidan aktivitesi belirlenmiştir. Explant kaynağı olarak *Melissa officinalis* L. nodları kullanılmıştır. Nodlar Murashige Skoog besiyerinde kallus oluşumu için farklı bitki büyüme düzenleyici kombinasyonları ile teşvik edilmiştir. Sonuçta oluşan kallusların antioksidan aktivitesi ABTS yöntemi ile belirlenmiş ve sonuçlar "TEAC (troloks eşdeğer antioksidan kapasite) eşdeğeri" olarak verilmiştir. En yüksek antioksidan kapasite (0.365 mmol/L), 1.5 mg/L 2,4-D + 1 mg/L PİC + 0.5 mg/L KİN ile indüklenmiş kalluslarda görülmüştür. En düşük değer ise (0.191 mmol/L), 1.5 mg/L 2,4-D + 0.5 mg/L BAP ile teşvik edilmiş kalluslardan elde edilmiştir.

Anahtar Kelimeler: *Melissa officinalis*, kallus, antioksidan

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➢ **ORAL PRESENTATION**

Chitosan Electrolytes Incorporating PEDOT:PSS For Electrochromic Devices

Esin Eren[1,2*]

[1] Innovative Technologies Application and Research Center, Suleyman Demirel University, 32260, Isparta, Turkey.
[2] Department of Chemistry, Faculty of Arts and Science, Suleyman Demirel University, 32260 Isparta, Turkey.

Corresponding author: e-mail: eso_eren@yahoo.com.tr

Abstract

Recently, biopolymers, like polysaccharides and proteins, have gained significant attention for use in solid polymer electrolytes. Chitosan (Ch) is a class of the cationic amino-polysaccharide that derives from the alkaline deacetylation of chitin [1,2]. Moreover, chitosan is a natural low cost biopolymer that can be used as polymer matrix for ionic conduction [3]. These properties make Ch material of substantial interest for several applications in biomedical, pharmaceutical, biosensors, electrochromic device [1-3].
In this contribution, the preparation of solid polymer electrolyte based on chitosan, propylene carbonate as plasticizer, lithium trifluoro methane sulfonate as salt are described. Futhermore, PEDOT:PSS was added in chitosan-based electrolytes to improve the ionic conductivity [4]. A WO_3 coated glass/ITO, a bare glass/ITO, and a solid polymer electrolyte were sandwiched to an assembled electrochromic device structure: glass/ITO/WO_3||PEDOT:PSS doped chitosan-based electrolyte||ITO/glass. Electrochromic behavior was investigated in detail.

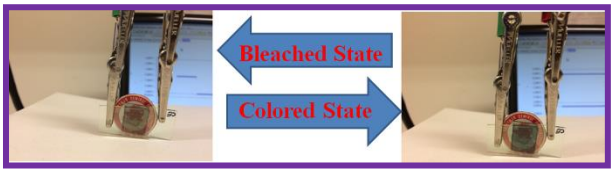

Figure 1. Photographs of the ECD with WO_3/PEDOT:PSS doped chitosan-based electrolyte configuration in its bleached state and colored state.

Keywords: Chitosan, PEDOT:PSS, Electrochromic Device

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➢ **ORAL PRESENTATION**

Feasibility of Using Sandwich Type Phthalocyanine as a Possible Photosensitizer Agent For Cancer Photodynamic Therapy

Sinan Soylu

Department of General Surgery, Cumhuriyet University Faculty of Medicine, Sivas, Turkey

Abstract

Aim: We investigated the anticancer effects of Sandwich Type phthalocyanine (ST Pc) on both breast (MCF-7) and osteosarcoma (MG63) cancer cells, and healthy fibroblast cells (L929).
Material- Method: The L929, MCF-7 and MG63 cell lines were prepared. Cells were irradiated at 640 nm wavelenght. In all groups cells were exposed to the laser for 5, 15 and 25 minutes. Since there was time dependent cytotoxity in all groups, the cytotoxity values belongs to 15 min exposure were used.
Results: The effect of photoactivation of Sandwich Type (ST) Phthalocyanines, 40, 20, 10, 5 and 2.5 μM concentrations of ST Pc was investigated by administrating agents on cells lines alone and followed by laser photoactivation. The cytotoxic effect was significantly stronger in MCF7 cells than both L929 and MG63 cells ($p<0.05$). When cells pretreated ST Pc is irradiated by the laser, it has been observed in L929 cells that cytotoxicity is increased by irradiation, yet there was no significant difference between ST Pc only and ST Pc+Laser groups ($p<0.05$). Laser application significantly enhanced the cytotoxicity of ST Pc on both MCF-7 and MG63 cells ($p<0.05$). Laser application caused a statistically significant cytotoxic effect in especially MG63 cells ($p<0.05$). The highest cytotoxicity was achieved in MCF-7 cell line in both ST Pc and ST Pc+Laser groups
Conclusion:The photoactivation of (ST Pc)was achieved by the irradiation of BT Pc treated cells at 640 nm wavelength of laser. The synthesized molecule was found to be promising in cancer photodynamic therapy.

Keywords: Sandwich Type Phthalocyanines, photodynamic theraphy, MCF-7, MG63

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➢ ORAL PRESENTATION

Orman Alanlarında Biyolojik Çeşitliliğin Belirlenmesi (Dereli Örneği)

Seçil Yıldırım[1*],Cemile Çakır[1], Nuray Mısır[2], Mehmet Mısır[2], Sinem Şatıroğlu[2]

[*1]Ondokuz Mayıs Üniversitesi, Vezirköprü Meslek Yüksekokulu, Ormancılık Bölümü, Samsun, Türkiye
[2] Karadeniz Teknik Üniversitesi, Orman Fakültesi, Orman Mühendisliği Bölümü, Trabzon, Türkiye

Corresponding author e-mail: secil.erkut@omu.edu.tr

Özet

Biyolojik çeşitlilik dünya üzerinde yaşayan tüm canlıların bileşkesi olarak karşımıza çıkmaktadır. Bu çeşitliliği meydana getiren elemanlar arasındaki ilişkiler sağlıklı yaşanabilir bir çevrenin göstergesidir. Biyolojik çeşitlilik tüm ekosistemlerde ekolojik dengenin temelini oluşturmaktadır. Ancak insan faaliyetleri doğada geri dönüşü olmayan zararlara neden olmaktadır. Bu zararlar bütün çevrenin işleyişini etkilemekte ve doğal döngülerin gerçekleşmesini zorlaştırmaktadır. Canlı yaşamın bir göstergesi olan biyolojik çeşitliliğin ortaya konması ve korunması doğadaki dengenin devamı açısından büyük önem taşımaktadır. Orman alanları biyolojik çeşitliliğin önemli bir kısmını ihtiva eden ekosistemlerdir. Bu sebeple orman alanlarında bulunan biyolojik çeşitliliğin ortaya konması gerekmektedir. Biyolojik çeşitliliğin belirlenmesinde kullanılan çeşitli yöntemler bulunmaktadır. Çalışmada kullanılan biyoçeşitlilik indeksleri, farklı bileşen türlerinden oluşan bir veri grubunun biyolojik çeşitliliğini değerlendirmek için geliştirilmiş istatistiksel bir yöntemdir. Doğu Karadeniz Bölgesi canlı çeşitliliği açısından zengin olup endemik tür sayısı fazla olan bir bölgedir. Bu sebeple Giresun Orman İşletme Müdürlüğüne bağlı Dereli Orman İşletme Şefliği çalışma alanı olarak seçilmiştir. Şeflik sınırları bünyesinde yer alan karışık meşcerelerden 30 adet geçici örnek alan alınmıştır. Örnek alanlarda yapılan ölçümler sonucunda elde edilen veriler kullanılarak meşcerelerin Shannon-Weaner, Simpson, MacArthur ve Pielou Düzenlilik İndeksleri hesaplanarak biyolojik çeşitlilikleri karşılaştırılmıştır.

Anahtar Kelimeler: Biyoçeşitlilik indeksi, Karışık meşcere, Tür karışımı, Ağaç sayısı oranı, Göğüs yüzeyi oranı

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➢ **ORAL PRESENTATION**

Microwave Assisted for Obtaining o-,m-,p-bromophenyl-1,3-benzothiazole Derivatives: *in vitro* Antibacterial and Anticancer Activity Measurements

Sefa Durmuş[1], Mesut Özdinçer[2*], Görkem Dülger[3], Merve Alpay[4], Aslıhan Dalmaz[2]

[1]Duzce University, Faculty of Science and Arts, Department of Chemistry, Duzce, Turkey.
[2*]Duzce University, Graduate School Natural and Applied Sciences, Department of Composite Material Technology, Duzce, Turkey.
[3]Duzce University, Faculty of Medicine, Department of Medical Biology, Duzce, Turkey.
[4]Duzce University, Faculty of Medicine, Department of Medical Biochemistry, Duzce, Turkey.

Corresponding author e-mail: mesutozd81@gmail.com

Abstract

Heterocyclic compounds are group of compounds known to chemists for centuries and are considered very useful due to their diverse chemical reactivities. In particular as sulfur and nitrogen containing heterocyclic compounds, benzothiazoles are the basic building blocks of various natural and synthetic compounds. 2-substituted benzothiazole derivatives represent an important class of heterocyclic compounds. At the same time, benzothiazoles are frequently preferred in the field of drug discovery process as they exhibit different pharmacological activities such as anti-stress, ulcer and anti-cancer agents. In this work, various substituted benzothiazoles were obtained by short reaction time under microwave irradiation. The structures of the synthesized compounds were investigated using some spectral methods. For cellular activity of benzothiazoles application, we used osteosarcoma cell. The antimicrobial activities of the compounds were evaluated using the minimal inhibitory concentration (MIC) dilution method, against 4 bacteria [*Shigella flexneri*, *Yersinia pestis*, MRSA (Methicillin resistant-*Staphylococcus aureus)*, *Listeria monocytogenes*] and the results compared with specific commercial antibiotics (Azitromycin for *S. flexneri*, Ciproflaxacin for *Y. pestis*, Vancomycin for MRSA and Erythromycin for *L. monocytogenes*). MIC testing was performed according to CLSI specifications. In most cases, the compounds tested showed broad-spectrum (4-8 µg/mL) activities that were either more effective than or as potent as the references. The cells were cultured according to ATCC protocol. Cells were treated with increasing log concentrations of compounds. Morphological changes were pursued by invert mic. The potency of cell growth inhibition for each molecule was expressed as IC50 value. The absorbance measured by MTT assay at 570 nm. This product induced antiproliferative activity in Saos-2 related to doses whereas no cytotoxic effect. Each compound showed different visual effects on the cell structurally.

Keywords: Heterocycles, Minimal Inhibition Concentration, Anti-bacterial, Anti-cancer Activity.

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➢ ORAL PRESENTATION

A Study on the Antioxidant Activities of N-[4-(3-aryl-3-methylcyclobutyl)thiazole-2-yl]-N′-Arylthioureas Compound

Akif Evren Parlak[1*] Pelin Koparir

[*1]Firat University,Vocational School of Keban, Elazig, Turkey.
[*2]Institute of Forensics, Department of Chemistry, Malatya, Turkey.

Corresponding author e-mail: akifevren@firat.edu.tr

Abstract

Thiazole and its derivatives have biological significance, e.g., it is a struc- tural fragment of the vitamin B1 and of the coenzyme cocarboxylase molecules [1]. The penicillin molecule also contains a thiazolidine ring. 2-Aminothiazoles are known mainly as biologically active compounds with a broad range of activities and as intermediates in the synthesis of antibiotics and dyes [2]. It is well known that 3-substituted cyclobutanecarboxylic acid derivatives exhibit anti-inflammatory and antidepressant activities [3, 4] and liquid crystal properties [5]. Various thiazole derivatives show herbicidal [6], anti-inflammatory [7, 8], antimicrobial [9], or antiparasitic activity [10]. 1,1,3-Tri- substituted cyclobutanes containing thiazole and thiourea functions in their molecules seem to be suitable candidates for further chemical modifications and might be of interest as pharmacologically active compounds and ligands useful in coordination chemistry. Thiouracil moieties play a vital role in many biological processes and are used as intermediates for the synthesis of drugs [11, 12].
The aim of this study is to investigate the antioxidant effects of N-[4-(3-aryl-3-methylcyclobutyl)thiazole-2-yl]-N′-arylthioureas. In this study, antioxidant activities were measured by different methods such as, reducing power capacity, metal chelating activity, superoxide anion radicals scavenging activity, H_2O_2 scavenging activity.
In conclusion, compound had effective antioxidant and free radical scavenging activity when compared with BHT and α-tocopherol as reference antioxidants.

Keywords: Thiazole, Thiouracil, Antioxidant activity, Radical scavenging activity

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➢ **ORAL PRESENTATION**

In vitro Antimicrobial Evaluation and Antitumoral Activity (Human Saos-2 cell line) of Schiff Bases Bearing Dimeric Sulphur: Preparation and Characterization

Sefa Durmus[1], Aslihan Dalmaz[2*], Gorkem Dulger[3], Merve Alpay[4]

[1]Duzce University, Faculty of Science and Arts, Department of Chemistry, Duzce, Turkey.
[2*]Duzce University, Graduate School Natural and Applied Sciences, Department of Composite Materials Technologies, Duzce, Turkey.
[3]Duzce University, Faculty of Medicine, Department of Medical Biology, Duzce, Turkey.
[4]Duzce University, Faculty of Medicine, Department of Medical Biochemistry, Duzce, Turkey.

Corresponding author e-mail: aslihandalmaz91@gmail.com

Abstract

For biological and pharmaceutical reasons, synthesis of novel Schiff base derivatives and investigation of their chemical and biological behavior has gained great interest in recent decades.These compounds can fine-tune their steric and electronic properties and so make them attractive in the field of coordination chemistry.In particular, substituted disulphide Schiff base derivatives possess broad spectrum of biological activity in both medicinal and pharmaceutical, such as, anticonvulsants, antitubercular, analgesics, anticancer, antiviral, antihelmintic, antioxidant and antimicrobial.In this work, various derivatives of disulphide-Schiff bases were synthesized as a result of condensation of dimeric sulphurous-containing aromatic a amine and different aldehydes.The structures of the obtained compounds are characterized by using various spectral methods.The antibacterial and anti-candidal activities of the compounds have been screened *invitro* against the organisms *Acinetobacter baumannii*, *Escherichia coli*, *Klebsiella pneumoniae* (Gram negative bacteria), *Staphylococcus aureus* (Gram positive bacteria) and *Candida albicans*, *Candida tropicalis*, *Candida guilliermondii*, *Candida glabrata*.In conclusion, this study shows that test compounds have a different effect on test microorganisms compared to standard antibiotics(Cefotaxime andAmoxicillin/clavulanicacid for bacteria; Posacanazole for yeast).As a result of disc diffusion test, the compounds showed moderately antimicrobialactivity against the test organisms. For cellular activity of sulphur-containing Schiff base application,was used *in vitro* osteosarcoma cell.The cells were cultured according to ATCC protocol. Cells were treated with increasing log concentrations of compounds.Morphological changes were pursued by invert mic. The potency of cell growth inhibition for each molecule was expressed as IC50 value.The absorbance measured by MTT assay at 570nm.All compounds caused different visual changes on the cell depending on the presence of the functional groups, structurally and depending on the position of the groups.

Keywords: Thio-Schiff base, Pharmacy, Multidrug-resistant, Anti-cancer, *In vitro*

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➢ ORAL PRESENTATION

Cyclic and Differential Pulse Voltammetry Measurements of 3,5-ditertiarybutylsalicylaldehydemethanesulfonylhydrozone and its Cu(II) Complex on CarbonicAnhydrase I

Demet Uzun[1*], Ayla Balaban Gündüzalp[1], Ebru Erdoğdu[1], Neslihan Özbek[2], Ümmühan Özdemir Özmen[1]

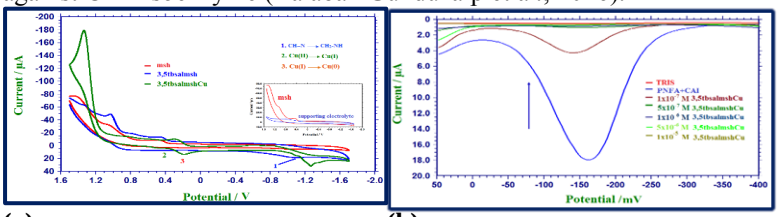
[*1]Gazi University, Science Faculty, Chemistry Department, Ankara, Turkey
[2]Ahi Evran University, Education Faculty, Mathematics and Science Department, Kırşehir, Turkey

demetuzun@gazi.edu.tr

Abstract

Enzyme inhibitors can be used for controlling harmful diseases mediated by specific enzymes, so their following is important. The carbonic anhydrases (CAs) are a class of metalloenzymes playing an important role in many physiological processes in human system. Many applications have been made for the development of CAI inhibitors (CAIs) with a view to treatment of some diseases such as glaucoma, brain and pancreas. Therefore, a large number of aromatic/heterocyclic sulfonamides containing imine (C=N) group have been synthesized(Supuran et al., 1996) and investigated by electrochemical methods.

In this study, the newly synthesized compounds named 3,5-ditertiarybutylsalicylaldehydemethanesulfonylhydrazone (3,5tbsalmsh) and its copper complex (3,5tbsalmshCu) were used for the CA I inhibition studies. Their inhibition effects in TRIS buffer were compared with the reference compound acetazolamide (AAZ). The cyclic voltammograms (CVs) of 3,5tbsalmsh and 3,5tbsalmshCu were firstly taken to investigate their electrochemical behaviours. And also the inhibition competency of ligand and its copper(II) complex were evaluated by differential pulse voltammetry (DPV). The enzyme inhibition was measured by following reduction peak current of the p-nitrophenol (PNF) obtained from the enzymatic hydrolysis of p-nitrophenilacetate (PNFA) with CAI and it was found that Cu(II) complex has higher activity than ligand against CA I isoenzyme (Balaban Gündüzalp et al., 2016).



(a) **(b)**

Figure 1.(a) TheCVs of msh, 3,5tbsalmsh and 3,5tbsalmshCu complex, **(b)**DPVs of PNF in the presence of inhibitor

Keywords: Carbonic anhydrase I, Enzyme inhibition, Voltammetry.

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➢ ORAL PRESENTATION

Effects of Methoxychlor Exposure During Prenatal and Neonatal Periodon Rat Testis

Özlem Özden Akkaya

Afyon Kocatepe Universty, Veterinary Faculty, Department of Histologyand Embryology, Afyonkarahisar, Turkey

Corresponding author e-mail: ozlemozden@aku.edu.tr

Abstract

Methoxychlor (MXC) is an organochloride pesticide and is known to be endocrine disruptor. MXC as an exogenic agent contributes estrogenic, antiestrogenic and antiandrogenic effects, among other effects on reproductive system.

In this study, our aim was to detect, how the effects of MXC on the body weight proportionally affect the testis weight in adult rats at postnatal day 30 and 60 after MXC treatment [20 mg/kg/day) (low dose) or100 mg/kg/day (high dose)] between embryonal (E)18- postanatal day (PND) 7.

It was observed that MXC treatment decreased body weight at PND30 both at low and high doses. In addition, MXC exposed animals had both reduced testis weights (g) and relative testis weights [testis weight (mg)/ body weight (g)] at PND30. In low dose group, statistically significant reduction whilein high dose group statistically insignificant increase in the diamater of seminiferous tubules was observed at PND30 compared to control group. Besides in low dose group at PND30, some tubules showed suppression of primary spermatocyte development and had only Sertoli cells and spermatogoniums. Irregularities in some tubular epithelium and some spermatocytes were observed in some tubules in the high dose group at PND30.In the control group, all the tubules had primary spermatocytes. In MXC-treated groups, apoptotic cells were higher than control.

Exposure to low or high dose MXC had no change on body weight or testis weight atPND60.At PND60 there were no differences in diamater of seminiferous tubules in testis between both MXC groups and control group. Also the other findings of the MXC groups were similar to the control group at PND60.

All above findings regarding exposure to MXC during intra-uterine and neonatal periods suggest that its pre-pubertal (PND30) effects are greater on rat testis, but morphological and histological effects may be compensated later in puberty.

Keywords: Methoxychlor, Rat, Testis

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➢ ORAL PRESENTATION

Compared of Theoretical Properties of Novel 1-(Morpholine-4-yl-Methyl)-3-(*p*-Methoxybenzyl)-4-(4-Isopropylbenzylidenamino)-4,5-Dihydro-1*H*-1,2,4-Triazol-5-One Acording to Two Method

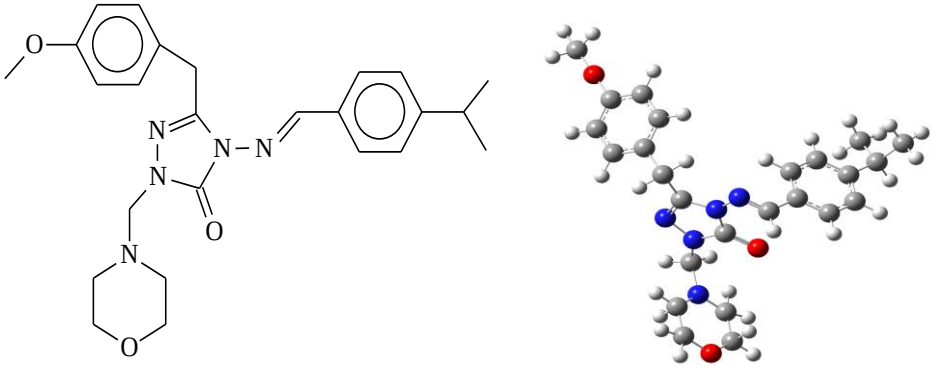
Gül Kotan[1*], Haydar Yüksek[2]

[*1]Kafkas University, Kars Vocational School, Kars, Turkey
[2]Kafkas University, Department of Chemistry, Kars, Turkey

Corresponding author e-mail: gulkemer@hotmail.com

Abstract

In this study, 1-(morpholine-4-yl-methyl)-3-(*p*-methoxybenzyl)-4-(4-isopropylbenzylidenamino)-4,5-dihydro-1*H*-1,2,4-triazol-5-one molecule was optimized by using the B3LYP/HF 6-31G(d) and B3LYP/HF 6-311G(d) different two method. This optimized structure used to calculation of the various theoretical properties of the compounds. IR absorption frequencies of analysed molecule were calculated by two methods. Then, they were compared with each other and experimental data, which are shown to be accurate. Infrared spectrum were composed by using the data obtained from both methods. The veda4f program, was used in defining IR data, which were calculated theoretically. ^{1}H-NMR and ^{13}C-NMR isotropic shift values were calculated by the method of GIAO using the program package Gaussian G09W. Experimental data obtained from the literature. Experimental and theoretical values were inserted into the grafic according to equatation δ exp=a+b. δ calc. The standard error values were found via Sigma Plot program with regression coefficient of a and b constants. Additionally, bond angles, bond lengths, the HOMO-LUMO energy, electronegativity, dipole moment and mulliken charges of this compound was investigation by using the B3LYP/HF 6-31G(d) and B3LYP/HF 6-311G(d) basis sets.



Keywords: 1,2,4-Triazol-5-one, Veda4f, GIAO, HOMO-LUMO.

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➢ ORAL PRESENTATION

Possible Association of Serum Inflammatory Cytokines and Ferritin Levels with Metabolic Syndrome

Hatice Tuğçe Açа[1*], Burcu Baba[2], Cem Onur Kıraç[3], Bahadır Öztürk[4], Aysun Hacışevki[2]

[*1]KTO Karatay University, Health Sciences College, Department of Nutrition and Dietetics Konya, Turkey
[2]Gazi University, Faculty of Pharmacy, Department of Biochemistry, Ankara, Turkey
[3]Selcuk University, School of Medicine, Department of Internal Medicine, Division of Endocrinology and Metabolism, Konya, Turkey
[4]Selcuk University, School of Medicine, Department of Medical Biochemistry, Konya, Turkey

Corresponding author e-mail: hatice.tugce.aca@karatay.edu.tr

Abstract

The metabolic syndrome (MetS) is a common and complex disorder combining obesity, hyperglycemia, dyslipidemia, hypertension, and insulin resistance. It is a major and increasing public-health and clinical challenge worldwide. To date, the mechanisms linking components underlying the MetS remain unclear. However, it has been suggested that inflammation plays an important role in the pathogenesis of MetS. At the present study, we aimed to evaluate serum ferritin and inflammatory cytokine levels and their correlations between individuals with MetS and without MetS. The study included 74 individuals diagnosed with MetS (mean age 40.7±13.1 years and mean BMI was 34.5±6.7 kg/m^2) and 76 controls without MetS (mean age 28.0±8.7 years and mean BMI was 29.8±4.9 kg/m^2). Serum IL-1α, IL-10 and IFN-γ as inflammatory markers and ferritin levels were measured by using ELISA kits. Furthermore, demographic data, body mass index, antrophometric measurements and biochemical parameters were evaluated. It was found that serum ferritin, IL-1α and IFN-γ levels were statistically higher in MetS group compared to controls ($p<0.05$). However, there was no statistically significant difference between groups according to IL-10 levels. It was found that there is a positive significant correlation between serum triglycerides and IFN-γ levels in MetS group ($p<0.05$). BMI and age were found to be statistically higher in MetS group compared to controls ($p<0.05$). The result of this study showed that increased age and BMI were found to be an important risk factor for the development of MetS and increased serum ferritin, IL-1α and IFN-γ levels were associated with MetS. These findings suggest that ferritin, IL-1α and IFN-γ levels may help to identify the presence of MetS. Further studies in larger groups are required to unravel the role and association of the emerging biomarkers with the MetS and their implication in therapeutic intervention.

Keywords: IL-1α, IFN-γ, IL-10, cytokine, ferritin, metabolic syndrome.

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➢ **ORAL PRESENTATION**

Yenilebilir Otların Salata Yapımında Kullanımı: Mersin İli Örneği

Vildan Özhan[1*], Tuba Pehlivan [2]

[*1]Arel Üniversitesi, Otel Lokanta ve İkram Hizmetleri Bölümü, Aşçılık Programı, İstanbul, Türkiye
[2] Gaziantep Üniversitesi, Güzel Sanatlar Fakültesi, Gastronomi ve Mutfak Sanatları Bölümü, Gaziantep, Türkiye

Sorumlu yazar e-mail: vildanozhan@arel.edu.tr

Özet

Gelişmiş ya da gelişmekte olan ülkelerin en önemli sağlık sorunlarından biri haline gelen obezite ile mücadele her geçen gün daha da artmaktadır. Çağın hastalığı olan obezite ile mücadelede en önemli şey sağlıklı ve bilinçli beslenmedir. Sağlıklı yaşam ve dengeli beslenme de en önemli besin kaynağımız olan otlar ve bu otlardan yapılan yemekler, salatalar günlük almamız gereken besin değerlerini karşılamada önemli bir yer tutmaktadır. Her yemeğin yanında sınırsız tüketebilen salatalar artık ana öğün özelliği taşımaktadır. Türkiye, hem coğrafi konumu ve çeşitli toprak gruplarına sahip olması hem de farklı iklim özelliklerini bi arada barındırması sebebiyle zengin bir biyoçeşitliliğe sahiptir. Ülkemizin sahip olduğu coğrafik özelliklere bağlı olarak çeşitlilik gösteren otlar sağlıklı yaşamın gerekliliklerinden biridir. Doğada kendiliğinden yetişen ve kültüre alınmayan yüzlerce ot yetiştiği coğrafya ile sınırlı kalmakta ve sadece yerel halk tarafından tüketilmektedir. Birçoğunun da fark edilmeden nesli tükenmektedir. Hem kültürel mirasımızın nesilden nesile aktarılmasını sağlamak hem de bu şifalı otların gıda sektöründe yer almalarını sağlamak amacıyla yapılan bu çalışmada Mersin yöresinde yetişen yenilebilir otlardan çiğ ve salata olarak tüketilebilinen 11 çeşit yabani ota ulaşılmıştır. Yapılan etnobotanik çalışmaların büyük bir kısmı ilaç ve kozmetik sanayiye katkı sağlamak amacıyla yapılmaktadır. Sağlıklı yaşamın için tüketilmesi elzem olan ve önemli bir kültürel miras özelliği taşıyan yabani otların, kırsal kesimle sınırlı kalmasının önüne geçilerek mutfağımızda ve gıda sektöründe yer almalarını sağlamak amacıyla daha fazla çalışmalar yapılması gerekmektedir.

Anahtar kelimeler: Yenilebilir otlar, sağlıklı beslenme, salata.

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➢ **ORAL PRESENTATION**

Tiyoasetamid İndüklü Karaciğer Hasarında Silimarinin Karaciğer ve Periferik Kandaki Koruyucu Rolü

Özgün Teksoy[1], Adnan Ayhancı[1*], Mustafa Cengiz[2], Burak Birlik[1], Döndü Tuğçe Tanrıverdi[1], Esma Köroglu[1]

[1] Eskişehir Osmangazi Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Eskişehir, Türkiye
[2] Siirt Üniversitesi, Eğitim Fakültesi, Fen Bilgisi Öğretmenliği, Siirt, Türkiye

Sorumlu yazar e-mail: aayhanci@ogu.edu.tr

Özet

Hepatik ensefalopati (HE), karaciğer hasarında gelişen hiperamonyemi sonucu amonyağın kan beyin bariyerini geçmesiyle oluşan bir hastalıktır. HE tedavisinde en büyük sorun minor nörolojik değişikliklerden derin komaya kadar uzanan klinik çeşitliliğin fazla olmasıdır. HE tedavisinde amaç karaciğer fonksiyon bozukluğunu ve onun sekellerini kontrol etmektir. Günümüzde karaciğer transplantasyonu dışında karaciğer fonksiyonlarını yerine koyacak bir tedavi yöntemi olmadığından ve HE'li hastalarda çoğunlukla araya giren presipitan faktörler bulunduğundan tedavi hastayı iyileştirme için en uygun şartları sağlamaya yönelik olmaktadır. Bu çalışmada tiyoasetamid (TAA) indüklü karaciğer hasarı nedeniyle gelişen HE hastalığında güçlü antioksidan ve doku yenileyici özelliklerinin yanında kemokoruyucu özelliği bilinen ve 2000 yıldır karaciğer hastalıklarının tedavisinde kullanılan bitkisel bir ilaç olan silimarin (SM)'nin muhtemel hepatoprotektif etkileri araştırılmıştır. Bu amaçla erkek Wistar Albino sıçanlar (n=7) dört gruba (Grup I-kontrol; Grup II-50mg/kg TAA; Grup III-50mg/kg SM+50mg/kg TAA; Grup IV-100mg/kg SM+50mg/kg TAA) ayrılmıştır. TAA'lı gruplarda TAA uygulamasından iki hafta önce gavaj yoluyla SM uygulanmaya başlanmış sonraki iki hafta TAA i.p olarak verilmiştir. Deney sonunda ketamin/ksilazin ile anestezi edilen sıçanlardan alınan kan örneklerinin bir kısmından elde edilen serumdan ALT, AST, ALP, LDH ölçümleri diğer kısımdan eritrosit (RBC), lökosit (WBC) ve trombosit (PLT) ölçümleri yapılmıştır. Sadece TAA verilen grupta serum ALT, AST, ALP, LDH ile RBC, WBC ve PLT değerlerinin önemli oranda arttığı saptanmıştır. SM'nin her iki dozu da hem periferik kan değerlerini hem de serum biyokimya değerlerini kontrole yaklaştırmıştır. Deney sonuçlarımız SM'nin HE hastalığında hücre koruyucu bir rol oynayabileceğini göstermektedir.

Anahtar Kelimeler: Hepatik Ensefalopati, Tiyoasetamid, Silimarin, Hepatoproktivite, Hematoprotektivite

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➢ **ORAL PRESENTATION**

Iğdır Ekolojisinde Çilek Üretim Olanaklarının Tespiti

Mustafa Kenan GEÇER*

*Iğdır Üniversitesi Ziraat Fakültesi Bahçe Bitkileri Bölümü, Iğdır, Türkiye

Sorumlu yazar e-mail: mkenangecer@hotmail.com

Özet

Iğdır, ülkemizin doğusunda ve karasal iklim kuşağında yer almasına rağmen sahip olduğu ekolojik özellikleri sayesinde geniş bir biyolojik çeşitliliğe sahiptir. Özellikle meyve tür ve çeşitleri bakımından bazı türler dışında hemen hemen tüm meyve türlerinin yetiştiği zengin ekolojik özelliklere sahiptir. Ancak sahip olduğu bu özelliklerine rağmen Iğdır'da çilek ve diğer üzümsü meyvelerin üretimi pek mümkün olmamıştır. Önceki yıllarda yapılan çiftçi destek projesi ile çilek üretimi teşvik edilmeye çalışılmış ancak istenilen sonuca varılamamıştır. Bu çalışma ile Iğdır ekolojisinde bazı çilek çeşitlerinin yetiştirilme imkânları araştırılmıştır. Çalışmada Aromas, Camarosa, Monterey, Selva ve Sweet Charlie çilek çeşitleri kullanılmıştır. Meyve verimi bakımından Sweet Charlie çeşidi en yüksek değere (289.76 g/bitki) sahip olmuştur. En fazla meyve sayısı 30.24 adet/bitki ile Selva çeşidinden sağlanmıştır. Ortalama meyve ağırlığı Camarosa çeşidine ait meyvelerde 16.28 g/meyve ile en iyi sonucu vermiştir. Suda çözünür kuru madde bakımından en yüksek değerler % 9.58 ve % 9.13 olarak belirlenirken en yüksek değeri veren çeşitler sırasıyla Sweet Charlie ve Aromas olmuştur. Meyve pH'sı bakımından ise en yüksek sonuca Aromas (3.68) ve Camarosa (3.74) çeşitlerinden ulaşılmıştır. Ayrıca titre edilir asitlik bakımından ise Camarosa çeşidi %0.87 ile en yüksek değeri sunmuştur. Çalışma ile Iğdır ilinde meyve verimi ve kalitesi bakımından özellikle de turfandacılık açısından çilek üretiminin başarılı bir şekilde yapılabileceği ortaya konulmuştur.

Anahtar Kelimeler: Iğdır ekolojisi, biyolojik çeşitlilik, çilek üretimi.

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➢ **ORAL PRESENTATION**

Effect of The Insecticide Clothianidin on Some Biochemical Parameters in *Saccharomyces cerevisiae*

Ayse Dilek Ozsahin[1], Safet Kanbay[1], Okkes Yilmaz[2]

[1]Bitlis Eren University, Art and Science Faculty, Department of Biology, Bitlis
[2]Fırat University, Faculty of Science, Department of Biology, Elazığ

Corresponding author e-mail: molekuler@gmail.com

Abstract

Neonicotinoid insecticides are an important contribution to plant protection products. At the same time, their environmental impact on non-target organisms is often problematic. Clothianidin (CTD)is one of the latest members of the synthetic organic insecticides, the neonicotinoids. Today, Yeasts are used often as the subject of toxicology research. Studies with *Saccharomyces cerevisiae* are used as a model for human body. Aim of this study, demonstrates the effects of pesticide toxicity on MDA, GSH and total protein in *S. cerevisiae*.
S. cerevisiae FMC 16 was used in the experiment. Development and proliferation of *S. cerevisiae* FMC 16 was provided in YEDP growth medium (1 g yeast extract 100 mL, 2 g bactopeptone, 2 g glucose). Pecticide groups (CTD) were prepared to 2 µl, 4 µl and 8 µl concentration, and allowed to incubation for 72 hours at 30°C. The end of incubation, analysis was performed on the supernatant. Determination of MDA was made according to the method of Ohkawa et al. GSH was determined with Elman reagent. Determination of total protein content was made according to Lowry. Statistical calculations were performed with SPSS.
Decreased total protein content was determined in all groups compared to the control group. This decrease was found to be significantly in 8 µl concentration group ($P < 0.005$). MDA levels increased in all pesticide treatment when compared to the control group ($p < 0.0001$). The highest MDA level was observed by 2 µl concentration applications. The level of GSH increased in 8 µl concentration application group when compared to the control group ($p < 0.0001$).
Pesticides are accumulating a high degree in environment and organisms. Thus, all living organisms should avoid these pesticides. Especially, the increase of MDA levels showed that, accumulating of pesticides cause the severe damage in in all living cells.

Keywords: *S. cerevisiae*, Pesticide, MDA, GSH, Total Protein

The study was carried out with the support of Bitlis Eren University Scientific Research Projects Department (BEBAP2016.02).

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➢ ORAL PRESENTATION

Estimation of Water Quality Variation in Turkish Part of Orontes River Resulting From Syrian Civil War

Ece Kiliç

İskenderun Technical University, Faculty of Marine Sciences and Technology, Department of Water Resources Management and Organization,31200,Hatay,Turkey

Corresponding author e-mail: ece.kilic@iste.edu.tr

Abstract

Water quality in the surface waters depended on many natural and anthropogenic processes in the watershed. Additionally, politic status, development status and environmental management concerns of stakeholder countries become an important parameter if a transboundary river like Orontes River is of concern. In this study, impact of Syrian civil war on the water quality of Orontes River was evaluated using 8 years (2006-2014) monitoring results which was obtained from State of Hydraulics of Turkey. It is found that water quality in the Orontes River decreased sharply after 2011 and improved slightly after 2013. This time periods corresponds to period when conflicts between regime forces and dissidents. Causes of this water quality reduction was identified as polluters occurring during conflicts especially residuals of explosives, immigration activities, changes occurred during water management practices. In addition, Principal component analysis results indicate that NO_2^- and NO_3^- concentration in the Orontes River may be used as an indicator of impact of Syrian civil war since they may used for the production of explosives. It is concluded that, even though anthropogenic activities happening in the Turkish part (domestic and industrial wastewater discharges, diffuse pollution from agricultural activities), sudden water quality reduction could be due to the war happening in Syrian borders.

Keywords: Orontes River, water quality, Syrian civil war, impact assessment

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➢ **ORAL PRESENTATION**

Erythromycin Attenuates İsolated Urinary Bladder Contractions of Hyperthyroid Rats[#]

Abdullah Karaca, Sinan İnce[*]

[1]Department of Pharmacology and Toxicology, Faculty of Veterinary Medicine, Afyon Kocatepe University, Afyonkarahisar, Turkey

Corresponding author e-mail:since@aku.edu.tr

Abstract

The aim of this study was to clarify the effect of erythromycin on hypertyhroid rat urinary bladder contractile response to characterize its possible potential inhibitor agent. Adult male Wistar albino rats weighing 250-350 g were used in all experiments. Rats were divided into two groups (n = 10 in each group), the first group was given standard rat diet and drinking water (euthyroid), the second group was administered L-thyroxine subcutaneously at a daily dose of 50 µg/100g body weight for 10 days (hyperthyroid). Rat urinary bladders were suspended in a perfusion organ bath. The contractile response as E_{max}, pD_2 and shiftEC_{50} levels of carbachol (10^{-3}-10^{-8} M) and potassium (10^{-2} – 6×10^{-2} M, KCl) were determined in the absence and presence of erythromycin (10^{-3}, $5x10^{-4}$ ve 10^{-8} M). The contractile responses to carbachol (10^{-3}-10^{-8} M) in the presence of atropine (10^{-8} M), verapamil (10^{-8} M) or in calcium-free Krebs Henseleit solution were also determined in the absence and presence of erythromycin. Treatment of erythromycin significantly reduced the response to carbachol and KCl-evoked contraction. The atropine-resistant components of carbachol evoked contractions were not inhibited in the presence of erythromycin. The contractile response to carbachol was reduced in calcium-free Krebs Henseleit solution and 10^{-8} M verapamil. Also, erythromycin was added to verapamil 10^{-8} M, the contractile response to carbachol was inhibited. In conclusion, erythromycin inhibited urinary bladder contractions of hypertyhroid rats by means of the inhibition of calcium influx and the modulation of calcium movement.

Keywords: Erythromycin, hyperthyroid, urinary bladder, contraction, inhibition, rat.

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➢ **ORAL PRESENTATION**

A New Approach To Infertility Treatment: The Power Of Melatonin

Cemile Merve Seymen

Gazi University Faculty of Medicine, Department of Histology and Embryology, Ankara, Turkey

Corresponding author e-mail: cmerveseymen@gmail.com

Abstract

Infertility is defined as the inability to conceive within 12 months though a regular sexual relationship with not apply any protection method. Already, in vitro fertilization (IVF) is the most advanced and successful treatment option available to these couples.

Recurrent cycle and implantation failures in IVF treatment, have caused to appear different applications in assisted reproductive technology (ART). Hysteroscopy, changing the stimulation protocol, blastocyst transfer, assisted hatching implementation, preimplantation genetic diagnosis, vitamin and antioxidants supplementations can be described within this applications.

Nervous system and reproductive health are closely related therefore, recent studies have especially focused on melatonin. Because melatonin is the most important hormone for regulating the circadian rhythm in ART applications and also it has strong antioxidant capacity.

It has been known according to studies that using oral supplementation of melatonin has increased the quality of oocyte and embryo, also addition of in vitro culture medium with melatonin has helped to the maturation of immature oocytes that has especially seen within polycystic ovary patients in IVF treatment. Melatonin also prevents the oxidative stress in folliculogenesis. Additionally, studies on experimental animals have reported that melatonin supplementation has a positive effects on sperm quality.

In this review, recent approaches to the use of melatonin in IVF treatment will be presented.

Keywords: Melatonin, Oocyte, Embryo, Sperm, In Vitro Fertilisation

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➢ ORAL PRESENTATION

Antioxidant, antimicrobial and anticancer activity of the Aspergillin PZ: An in vitro study

Yavuz Erden[1*], Suat Tekin[2], Kevser Betul Ceylan[1], Cigdem Tekin[3], Sevda Kirbag[4]

[*1] Bartin University, Faculty of Science, Department of Molecular Biology and Genetics, Bartin, Turkey.
[2] Inonu University, Faculty of Medicine, Department of Physiology, Malatya, Turkey.
[3] Inonu University, Vocational School of Health Services, Malatya, Turkey.
[4] Firat University, Faculty of Science, Department of Biology, Elazig, Turkey.

Corresponding author e-mail: yerden@bartin.edu.tr

Abstract

The importance of fungal secondary metabolites in terms of human health is increasing day by day. It has been reported that these compounds have numerous physiological and pharmacological effects particularly antimicrobial, anticancer and antioxidant features. Nowadays many researchers have studies on isolation, characterization and detection of biological features of fungal metabolites. The main objective of this project is to detect anticancer, antimicrobial and antioxidant properties of aspergillin PZ, which is isolated from Aspergillus and have been subjected to limited number of studies.
Antimicrobial effectiveness of Aspergillin PZ at the different concentrations was determined by applying compounds with disc diffusion method on both gram positive and gram negative bacteria. Antioxidant activity was detected by DPPH free radical scavenging method. Cytotoxic effect of Aspergillin PZ on human prostate (LnCAP and PC3) and ovarian (A2780) cancer cell lines was determined by MTT assay.
Aspergillin PZ showed low antimicrobial activity (2-3mm zone) on microorganisms. The high concentration of aspergillin PZ showed the DPPH free radical scavenging activity markedly, while at low concentration the scavenging activity (%) was quite low. In addition, the compound exhibit significant cytotoxic activity on human cancer cell lines ($p < 0.05$).
We consider that aspergillin PZ can have significant biological activity because of its high cytotoxic effect on cancer cells.

Keywords: Aspergillin PZ, anticancer effect, antimicrobial effect, antioxidant activity

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➢ **ORAL PRESENTATION**

Hedeflenen Fototermal Terapi: Patojenin Etkili Olarak İnaktive Edilmesi için DNA Aptamer İşlevselleştirilmiş Manyetik Grafen Oksitin Geliştirilmesi

Muserref Arslan Ocsoy[1] Ahmet Ulgen[2], Ismail Ocsoy[3]*

[1]Erciyes Üniversitesi, Fen Fakülte, Fizik Bölümü, Kayseri, Türkiye
[2]Erciyes Üniversitesi, Fen Fakülte, Kimya Bölümü, Kayseri, Türkiye
[3]Erciyes Üniversitesi, Eczacılık Fakülte, Analitik Kimya Anabilim Dalı, Kayseri, Türkiye

Sorumlu yazar e-mail: ismailocsoy@erciyes.edu.tr

Özet

Metisilin Dirençli Staphylococcus aureus (MRSA) günümüzün en tehlikeli patojenik (hastalık yapıcı) bakterilerinden biri olup tedavisi çok güç hatta ölüme sebebiyet veren enfeksiyonlara neden olmaktadır. Ayrıca, MRSA insanlar ve hayvanlarda kolayca kolonize olabilir ve aynı zamanda insandan-insana, hayvandan-hayvana ve hayvandan-insana kolayca temas yolu ile geçiş yapabilir. Bundan dolayı bu bakterinin hızlı, doğru, hassas ve seçimli olarak tayin ve yok edilmesi gerekmektedir.

Bu çalışmada, MRSA bakterisinin seçici ve hassas olarak yakalanması ve fototermal olarak yok edilmesi için çok fonksiyonlu bir nano platform geliştirilmiştir. MRSA aptamerler ile fonksiyonel hale getirilmiş manyetik grafen oksit (GO) bu amaç için üretildi. Öncelikle GO üzerine demir oksit (Fe_3O_4) nanopartiküller (NPler) büyütüldü ve manyetik GO MRSA için özel olarak sentezlenmiş bir ucu amin (-NH2) grubu ile modifiye edilmiş aptamerler ile fonksiyonlaştırılmıştır. Aptamerler ile fonksiyonlaştırılırmış manyetik GO (Apt@mGO) ile MRSA spesifik olarak hızlı, hassas ve doğru bir şekilde yakalanmıştır ve yakın kızılötesi lazer (Near Infrared Laser, 808 nm) altında fototermal olarak yok edilmiştir. Aptamer MRSA' ya spesifik olarak bağlanırken, GO üzerindeki Fe_3O_4 NPler sayesinde MRSA reaksiyon ortamından santrifüje ihtiyaç duymadan bir mıknatıs yardımı ile manyetik olarak ayrılmıştır. GO ise aptamer ve Fe_3O_4 NPler için bir platform olarak kullanılırken, aynı zamanda 808 nm dalga boyunda yakın kızılötesi ışığa maruz bırakıldığında lazer ışığını ısıya dönüştüren bir fototermal ajan olarak da faydalanılmıştır. Ayrıca, GO'nun plaka şeklinden ve üzerindeki çeşitli fonksiyonel grupları taşımasından dolayı, GO'nun MRSA'yı kundak (swaddling clothes) şeklinde sıkıca sarması düşünülmektedir.

Anahtar Kelimeler: Manyetik grafen oksit, DNA, MRSA, patojen ve fototermal tedavi

Teşekkür: Bu çalışma Erciyes Üniversitesi Bilimsel Araştırma Projeleri Birimi tarafından FDA-2017-6980 nolu proje ile ve TÜBİTAK 215Z572 nolu proje tarafından desteklenmektedir.

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➢ ORAL PRESENTATION

Examination of stress-related HSPB1 and HSPA1A gene expressions in different muscle groups of bovine

Mehmet Cevat Temizkan

Department of Genetics, Institute of Health Sciences, Ankara University, Ankara, Turkey

cevat@hotmail.co.uk

Abstract

This study was performed to compare different skeletal muscle groups of the bovine to detect the expression levels of the stress-related HSPB1 and HSPA1A genes. Theoretically, genes must be expressed different levels in different muscle groups in order to be effective on the maturation of the meat. Otherwise, genes that expressed equally in all muscles should analogously contribute to the transformation of the meat on entire carcass. In this regard, we expected to observe statistically significant differences or at least a trend between high and low quality muscles, especially the genes associated with meat maturation. In the present study, 15 Angus were used in the same age and gender, and 12 different muscle groups were sampled which were offered for consumption. Gene expression values of HSPB1 and HSPA1A analyzed by using qPCR. Surprisingly, our work uncovered that there were no significant differences in expression of HSPB1 and HSPA1A genes between the high and low quality muscles and there is no trend with it. Hence, despite the extensive evidence suggesting HSPs has a central role for the meat quality, effect of the HSPB1 and HSPA1A genes on meat quality should be questioned more.

Keywords: HSPB1, HSPA1A, qPCR, Different skeletal muscles, Bovine

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➢ **ORAL PRESENTATION**

Production of Bioethanol from Waste Bunches of Vineplants by Adapted Yeast Strain

Evrim Özkale Kaya [1*], H. Tansel Yalçın [2]

[*1]Manisa Celal Bayar University, Faculty of Arts and Sciences, Biology Department, Manisa, Turkey.
[2]Ege University, Faculty of Science, Biology Department, Izmir, Turkey.

Corresponding author e-mail: evrimmiko@gmail.com

Abstract

Bioethanol production from yeasts is challenged by the stressful conditions correlated with the fermentation process (such as increase in ethanol concentration, temperature, osmotic stress and bacterial contamination) and by their ability to ferment pentose sugars. Some yeasts from genera *Pichia*, *Candida*, *Schizosaccharomyces* and *Pachysolen* are capable of fermenting pentoses to ethanol (Mussato et al. 2012). *Pichia kudriavzevii* can produce ethanol in high salt concentration- acidic medium in amounts significantly larger than that obtained from *Saccharomyces cerevisiae* (Isono et al., 2012). Lignocellulosic biomass is a chemically complex renewable resource, 5-20 % of which consists of xylose and arabinose (Hahn- Hägerdal et al. 2006, Ammar and Elsanat, 2014).. Yeasts which have the ability to convert xylose to ethanol efficiently in defined media were reported to perform poorly in pretreated biomass hydrolysates or waste liquors of lignocellulosic material. The decrease in fermentation efficiency has been attributed to the inhibitory effect of available hexoses on xylose utilization (Harner et al., 2015).

13 xylose metabolizing yeast strains were screened for their ethanol production ability on defined media, five of which demonstrated efficiency higher than that of other isolates. The five isolates were further tested for their ability to produce ethanol on dilute acid hydrolysate obtained from waste bunches of vineplants. The ethanol concentrations and yields obtainted from the tested strains on both media were compared. The strain *P. kudriavzevii* D12, which was superior in ethanol production on non-detoxified and undiluted hydrolysate medium, underwent sequential fermentations to enhance its adaptation.

As the results of fermentation on hydrolysate medium of the strain D12 were compared to that of the defined media; a 63 % increase in ethanol production (g/L) and 1.6 fold increase in productivity (g/g) were recorded. Hence, organic waste based medium prepared from vineplants bunches represents a suitable alternative for bioethanol production by yeasts.

The development of robust microorganisms that are able to ferment hydrolysate to ethanol without detoxification would be economically highly important and useful (Huang et al.2009).

Keywords: Bioethanol, yeast fermentation, *Pichia*, adaptation

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➢ **ORAL PRESENTATION**

Enantioselective reduction of aryl and hetero aryl methyl ketones using lactic acid bacteria as a biocatalyst

Caner Tozlu*, Engin Şahin, Enes Dertli

*1Bayburt University, Faculty of Engineering, Department of Food Engineering, Bayburt, Turkey

canertozlu@hotmail.com

Abstract

Chiral secondary alcohols are valuable intermediates in the preparation of a number of pharmaceuticals and biologically active molecules. The interaction of chiral compounds, especially in biological systems, can result in different biological and opposing effects of enantiomers. Therefore, the enantiomeric purity of the product is of major importance. The asymmetric reduction of prochiral ketones is one of the most important transformation in organic synthesis due to the structural advantage and the formation of optically active alcohols, which are usually used as intermediates for the products such as drugs, antimicrobials, fragnances, agrochemicals, and other industrial compounds. Single enantiopure secondary alcohols are one of the most important chiral building blocks for many chiral pharmaceuticals, such as (*S*)-fluoxetine, (*R*)-tomoxetine, and L-chlorprenaline. In this work, we studied asymmetric reduction of aromatic ketones to produce the corresponding chiral secondary alcohols using lactic acid bacteria (LAB) as new biocatalysts. Seven LAB strains were screened for their ability to reduce aryl and hetero aryl ketones to their corresponding alcohols. Among these strains, *Lactobacillus paracasei* BD101 was found to be the most successful at reducing the ketones to the corresponding alcohols. The reaction conditions such as pH, temperature, incubation period and agitation speed were further systematically optimized for this strain and high enantioselectivity (99%) and very good yields were obtained. The results obtained confirm that the *Lactobacillus paracasei* BD101 has broad substrate specificity and selectivity in catalyzing aryl and hetero aryl ketones. The current methodology substantiates a promising and alternative green approach for the synthesis of secondary chiral alcohols of biological importance in a mild, cheap and environmentally benign process.

Keywords: Chiral alcohols, Biocatalyst, *Lactobacillus paracasei*, Enantioselective bioreduction, Biotransformation

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➢ **ORAL PRESENTATION**

Investigation of the Stability of N'-((2-hydroxynaphthalen-1-yl)methylene)isobutyrohydrazide in Different Solvent Media by DFT

Çiğdem Yüksektepe Ataol[1*], Ayşin Zülfikaroğlu[2]

[*1]Cankiri Karatekin University, Faculty of Science, Department of Physics, Cankiri, Turkey
[2]Amasya University, Faculty of Arts and Science, Department of Chemistry, Amsya, Turkey

Corresponding author e-mail: yuksektepe.c@karatekin.edu.tr

Abstract

The single crystal structure of N'-((2-hydroxynaphthalen-1-yl)methylene)isobutyrohydrazide is obtained by the X-ray diffraction technique. The molecular structures of the crystal structure using X-ray results are optimized by using the Density Functional Theory (DFT) from computational chemistry methods. B3LYP hybrid functions for DFT and different basis sets (6-31G, 6-311G and 6-311G(d, p)) have been selected to achieve the optimized results in the theoretical calculations. The bond parameters of the compound are compared with the X-rays and the theoretical calculation results. Also, the molecular structure is optimized in different solvent media by using B3LYP. Using the molecular structures optimized in different solvent environments, the energy of the molecular structure is calculated. The stability of the molecule in different solvent environments was investigated by evaluating the total energy of the molecule, the Homo-Lumo energy range, the electrophilicity index and chemical hardness. And also, the Fukui functions of the molecule are calculated and the reactive atoms of the molecular structure have been decided.

Keywords: Hydrazide, DFT, X-ray, Single Crystal, Homo-Lumo Gap

International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2018)

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➢ **ORAL PRESENTATION**

Sıçanlarda Tolüen Toksisitesinin Glutatyon Peroksidaz, Katalaz ve Süperoksit Dismutaz Aktiviteleri Üzerine Etkisinin Post-mortem Araştırılması

E. Gonca Pekel[1*], Abdelazim Adil Mohammed [2], Egemen Dere[3]

[*1]Uludağ Üniversitesi, Fen Bilimleri Enstitüsü, Kriminalistik, Bursa, Türkiye
[2]Uludağ Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji, Bursa, Türkiye
[3]Uludağ Üniversitesi, Fen-Ed. Fakültesi, Bursa, Türkiye

Sorumlu yazar e-mail: pekelgonca@gmail.com

Özet

Post-mortem biyokimyasal araştırmalar organizmada ölüm sonrası gerçekleşen biyokimyasal değişimlerin belirlenmesini sağlayarak ölüm nedeni ve ölüm zamanı araştırmalarına, canlılık süresinin, ölüme sebep olabilecek durumların, ölüm sürecinde kişinin metabolik durumu gibi konuların, ante-mortem ve post-mortem süreçlerin aydınlatılmasına katkı sağlar. Farklı belirteçlerle yapılacak araştırmalar ile bu alanda yeni bilgilere ulaşılması önemlidir. Bu çalışmada post-mortem etkilerini araştırmak üzere, endüstriyel alanda ve günlük yaşamda kullanım alanı fazla ayrıca kötüye kullanımı da yaygın, uçucu bir bileşik olan tolüen kullanılmıştır.Yapılan araştırmalara göre uçucu madde bağımlarının %90'ı tolüen kullanmaktadır. Tolüen maruziyeti birçok doku ve organ üzerinde ciddi hasarlar bırakır ve yüksek dozlarda maruziyetin oluşturduğu toksik etkiler ölüme yol açabilmektedir. Tolüen metabolizması sırasında hücreler ve dokular üzerinde zararlı etkileri olan reaktif oksijen türleri oluşur ve bunlara karşı savunmada antioksidanlar görev yapar. Bu çalışmada, sıçanlarda tolüen maruziyeti nedeniyle gerçekleşen ölümlerde antioksidan enzim (Glutatyon peroksidaz,Katalaz,Süperoksit dismutaz) aktivitelerinin nasıl etkilendiği ve post-mortem zamana bağlı değişimleri araştırılmıştır.Bu amaçla, 30 adet Wistar-albino erkek sıçan kontrol grubu ve deney grubu olarak ayrılmış, deney grubu sıçanlara tolüen enjeksiyonu yapılarak tolüen maruziyetine bağlı ölüm gerçekleştirilmiştir. Kontrol grubuna ise serum fizyolojik uygulanmıştır. Post-mortem 0, 6, 12, 24 ve 48 saat sonunda kontrol ve deney grubu sıçanların karaciğer dokuları ve kalp kanı örnekleri toplanarak GSH-Px, CAT ve SOD aktiviteleri incelenmiştir. Sonuçta yüksek dozda tolüen maruziyeti nedeniyle gerçekleşen ölümlerde tolüenin karaciğerde GSH-Px (6., 12., 24. saatte), SOD (48. saatte) ve CAT (24. saatte), kanda ise GSH-Px (6. ve 24. saatte) aktivitelerini arttırıcı etkisi ortaya konulmuştur. Post-mortem zamana bağlı değişim ise GSH-Px ve CAT enzimlerinde özellikle ölüm sonrası 12-48 saat aralığında enzim aktivitelerinde artış olarak gözlemlenmiştir. Çalışmanın sonuçları ölüme neden olacak yüksek doz akut tolüen maruziyetinin antioksidan enzimler üzerine etkisini ve bu enzim aktivitelerinin ölüm sonrası zamana bağlı değişimini göstermiştir. Bu sonuçlar ile daha ileri post-mortem zaman dilimleri kullanılarak ve çalışılan enzimlere ilave farklı belirteçlerin de araştırılmasıyla geliştirilebilir nitelikte bir çalışmadır.

Anahtar Kelimeler: post-mortem biyokimya, tolüen, glutatyon peroksidaz, katalaz, süperoksit dismutaz

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➢ ORAL PRESENTATION

Investigation of Oxidative Stress Index and Lipid Profile in Calves with Respiratory Tract Problems

Oguz Merhan[1], Kadir Bozukluhan[2*]

[1]University of Kafkas, Faculty of Veterinary Medicine, Department of Biochemistry, Kars, Turkey
[*2]University of Kafkas, Kars School of Higher Vocational Education, Kars, Turkey

kbozukluhan@hotmail.com

Abstract

The aim of this study was to define the oxidative-antioxidative capacity and lipid profile in calves with respiratory tract problems. A total of 35 calves were used in the study, among those, 20 demonstrated clinically respiratory tract problems while 15 were control. Biochemical analysis included malondialdehyde (MDA), reduced glutathione (GSH), triglyceride (TG), total cholesterol (TC), high-density lipoprotein-cholesterol (HDL-C), very low-density lipoprotein-cholesterol (VLDL-C) and low-density lipoprotein-cholesterol (LDL-C). GSH, TC, HDL-C, LDL-C value was found to be statistically significantly lower, MDA, TG and VLDL-C values were found to be higher in calves with respiratory tract problems compared to the control group. It has been determined that it causes significant changes in the oxidative-antioxidative capacity and lipid profile in calves with respiratory tract problems. These data obtained may contribute to define the severity of the inflammation and to its diagnosis in particularly this disease.

Keywords: Respiratory tract problems, lipid profile, calves

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➢ ORAL PRESENTATION

Investigation of Solvent Effect on Molecular Orbital Energies of 2-(4-Ethyl-5-pyridin-4-yl-4*H*-[1,2,4]triazol-3-ylsulfanyl)-1-(3-methyl-3-phenyl-cyclobutyl)-ethanone by Density Functional Theory*

Gamze Tunar[1*], Çiğdem Yüksektepe Ataol[1], İbrahim Yılmaz[2], Alaaddin Çukurovalı[3]

[*1]Cankiri Karatekin University, Faculty of Science, Department of Physics, Cankiri, Turkey
[2]Karamanoglu Mehmetbey University, Faculty of Kamil Ozdag Science, Department of Chemistry, Karaman, Turkey
[3]Firat University, Faculty of Science, Department of Chemistry, Elazig, Turkey

Corresponding author e-mail: gamze_tunar90@hotmail.com

Abstract

The single crystal structure of 2-(4-Ethyl-5-pyridin-4-yl-4*H*-[1,2,4]triazol-3-ylsulfanyl)-1-(3-methyl-3-phenyl-cyclobutyl)-ethanone is obtained by the X-ray diffraction technique. The molecular structure of the crystal structure using X-ray results is optimized by using the Density Functional Theory (DFT) and Hartree-Fock (HF) from computational chemistry methods. In the calculations, the B3LYP base function, which gives good results for organic structures, and 6-311G (split valance) and 6-311G (d, p) (polarized), Hartree-Fock (HF)/6-311G(d, p) and B3PW91/6-311G were chosen as basis sets. Molecular orbital energies of molecular structures were calculated using TD-DFT with ultraviolet spectroscopy technique using the optimized structures with different basis sets. First, the molecular orbital energy levels in a gas phase are calculated using a molecular structure, the B3LYP/6-311G and B3LYP/6-311G (d, p) methods, and then the energy levels are calculated in different solvent environments of this molecular structure to determine the molecular energy levels of the solvent effect and dipole moment effect was investigated.

Keywords: Triazole, DFT, X-ray, Single Crystal, UV-vis

This work was supported by the Bap Unit of Cankiri Karatekin University. FF270516L15

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➢ ORAL PRESENTATION

Synthesis of Some New 3-Alkyl(Aryl)-4-[2-(1-Naphthylsulfonyloxy)-Benzylidenamino]-4,5-Dihydro-1*H*-1,2,4-triazol-5-One Compounds

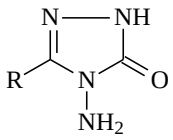
Onur Akyıldırım

Kafkas University, Faculty of Engineering and Architecture, Department of Chemical Engineering, Kars, Turkey.

Corresponding author e-mail: onurakyildirim@gmail.com

Abstract

Imin type schiff bases are formed from a reaction of primary amines with aldehydes and ketones. Schiff bases have a wide range of usage, including medicine, industry, technology and many areas of chemistry. Therefore, in this study it was aimed to synthesize some novel Schiff bases including a 1,2,4-triazol ring. Firstly, some 3-alkyl(aryl)-4-amino-1*H*-1,2,4-triazol-5-one (**1**) was obtained from nitriles which are anti to them via esterethoxycarbonylhydrazone compounds. 2-hydroxybenzaldehyde was reacted with 1-naphthylsulfonyl chloride in the presence of triethylamine in the cold to give 2-(1-naphthylsulfonyloxy)-benzaldehyde (**2**). With the reaction of type (**1**) and type (**2**), 9 new 3-alkyl(aryl)-4-[2-(1-naphthylsulfonyloxy)-benzylidenamino]-4,5-dihydro-1*H*-1,2,4-triazol-5-one (**3**) compounds were synthesized, and the structures were elucidated using spectroscopic methods.



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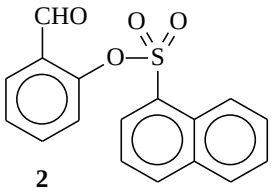

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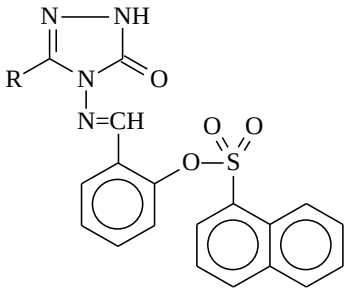

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Keywords: Schiff base, 4,5-dihydro-1*H*-1,2,4-triazol-5-one, synthesis.

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➢ ORAL PRESENTATION

In Vitro Genotoxic Effects of Antidiabetic Drug Metformin by Micronucleus and Comet Assays

Deniz Yüzbaşıoğlu[1], Jalank H. Mahmoud[1], Sevcan Mamur[2], Fatma Ünal[1]

[1] Department of Biology, Science Faculty, Gazi University, 06500, Ankara, Turkey
[2] Life Sciences Application and Research Center, Gazi University, 06830, Ankara, Turkey

Corresponding author e-mail: deniz@gazi.edu.tr

Abstract

Antidiabetic drugs are an important group of medications used worldwide. Metformin is an active ingredient of antidiabetic drug which is generally used in the treatment of Diabetes mellitus (DM). Metformin has no direct effect on pancreatic β cells and it does not directly affect insulin secretion. It decreases hepatic gluconeogenesis and hepatic glucose production and increases peripheral glucose uptake by reducing plasma glucose level. Therefore, metformin is considered as antihyperglycaemic not as hypoglycaemic. In this study, *in vitro* genotoxic effects of metformin has been determined in human peripheral blood lymphocytes using micronucleus (MN) and comet (Single cell gel electroforesis, SSGE) assays. Cells were treated with 12.5, 25, 50, 75, 100 and 125 µg/mL concentrations of metformin for 24 and 48 hours. A negative and a positive control [Mitomycin-C (MMC, 0.20 µg/mL) for MN assay; hydrogen peroxide (H_2O_2, 40 µM) for comet assay] were also maintained. This study showed that metformin did not affect the frequency of MN at any concentration except 125.0 µg/mL. Metformin did not affect tail intensity (except to 125 µg/mL) and tail moment at all concentrations. Therefore, metformin has not clastogenic and aneugenic effects (except 125.0 µg/mL) in human lymphocytes *in vitro.*

Keywords: Genotoxicity, antidiabetic drug, metformin, micronucleus, comet assay

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➢ ORAL PRESENTATION

Heavy Metals, Trace Elements and Free Radical Scavenging Activity of Seashells from Blacksea Cost

Ayşegül Çebi*[1], Elif Neyran Soylu[2], Ispandiyar Rustemzada[3]

*[1]Faculty of Engineering, Deparment of Food Engineering, Giresun University, Giresun, Turkey
[2]Faculty of Science and Art, Deparment of Biology, Giresun University, Giresun, Turkey
[3]Institute of Health Sciences, Giresun University, Giresun, Turkey

Corresponding author e-mail: cebiaysegul@hotmail.com

Abstract

The aim of the study was to determine the levels of heavy metals, trace elements and free radical scavenging activity of the seashells at the Blacksea cost in Giresun. Seashells were collected from Blacksea cost in Giresun. Seashells were washed with a stream of a tap water and then washed with distilled water. They were dried at room temperature in the dark. Dried shells were grounded and dissolved by adding 6N HCl. The pigments were extracted gradually by dietyl ether. The ether layer of the mixture was washed with NaCl (5%) 3 times and dryed with anhydrose sodium sulfate. The extract was obtained by evaporation and the pigments were dissolved in ethanol. Spectrophotometric 1,1-diphenyl-2-picrylhydrazyl (DPPH) and 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid (ABTS) method was used for the determination of free radical scavenging activity. Butylated hydroxytoluene (BHT) and trolox were used as standart. Heavy metal and trace elements (Cu, Zn, Fe, Mo, Pb, Cd, Ni, Cr) of the seashells were measured by ICP.

Keywords: seashell, heavy metal, trace elements, free radical scavenging activity

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➢ **ORAL PRESENTATION**

Vibrational and Electronic Properties of Coumarin 102 (C16H17NO2)

Ümran Ceren Başköse[1*], Yusuf Erdoğdu[2], Semran Sağlam[2], Süleyman Özçelik[1,2]

[*1] Gazi Üniversitesi, Fotonik Uygulama ve Araştırma Merkezi, Ankara, Türkiye
[2] Gazi Üniversitesi, Fen Fakültesi, Fizik Bölümü, Ankara, Türkiye

cerenbaskose@gazi.edu.tr

Abstract

The structural stability and the vibrational spectra of the dye synthesis solar cell compound Coumarin 102 was investigated by the DFT B3LYP/6-311G (d,p) calculations. Coumarin 102 was predicted to exist predominantly as non-planar structures. The vibrational frequencies and the ^{1}H and ^{13}C NMR chemical shifts of the low energy structures of Coumarin 102 was computed at the DFT B3LYP level of theory. Complete vibrational assignments were provided by combined theoretical and experimental data of Coumarin 102. The ^{1}H and ^{13}C NMR spectra of both molecules were interpreted by experimental and DFT calculated chemical shifts of the molecules.

Keywords: Coumarin 102, Vibrational, FT-IR, FT-Raman

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➢ **ORAL PRESENTATION**

An Environment-Friendly Microbial Insecticide; *Bacillus thuringiensis*

Uğur Azizoğlu

Erciyes University, Tomarza Mustafa Akıncıoğlu Vocational College, Department of Crop and Animal Production, Kayseri, Turkey

Corresponding author e-mail: azizoglu@erciyes.edu.tr

Abstract

Use of chemical insecticides has decreased as compared to the past, but it is still a common method for the control of pest insects. Several methods have been developed as an alternative to chemical pesticides and serious effort is put into optimizing these alternative methods. *Bacillus thuringiensis* (*Bt*), a microbial control agent, has been used as an efficient tool for many years worldwide. *Bt* is a gram-positive aerobic or facultative spore-forming bacterium which produces parasporal inclusions upon sporulation. *Bt* can be isolated from various ecological environments. *Bt* and its products are more desirable for insect management because of negative effects of chemical insecticides on environment. They have been successfully used as bio-insecticides against lepidopteran, dipteran and coleopteran pest insects. They are almost exclusively active against larval stages of different insects and kill the insect by disruption of the midgut epithelial cells. Research on this exceptional bacterium not only focused on insecticidal activity, but also on the enzymes and proteins with potential use. The use of *Bt* products should be given to importance as an alternative control strategy to the chemical insecticides for sustainable agriculture and environmental protection.

Keywords: Plant protection, Bio-insecticide, *Bacillus thuringiensis*, Cry protein, Pest insects.

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➢ **ORAL PRESENTATION**

Researching On Antioxidant Properties And Phenolis Compounds Of *Hydnum repandum*

Celal Bal[1*], Hasan Akgül[2], Mustafa Sevindik[2], Zeliha Selamoglu[3], Ilgaz Akata[4]

[*1]Gaziantep University, Oğuzeli Vocational School, Gaziantep, Turkey.
[2]Akdeniz University, Science Faculty, Biology Department, Antalya, Turkey.
[3]Omer Halisdemir University, Medicine Faculty, Medical Biology, Nigde, Turkey.
[4]Ankara University, Science Faculty, Biology Department, Ankara, Turkey.

Corresponding author e-mail:bal@gantep.edu.tr

Abstract

Mushrooms are also known for their medical use as well as their food properties from past to present. It is possible to distinguish fungi as edible, non-edible and poisonous mushrooms. In this study, it was aimed to determine antioxidant activity, total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI) and phenolic contents of *Hydnum repandum* L. from edible mushroom. In this context, the samples of the mushrooms collected as a result of the field studies were dried and powdered. Then, extraction with ethanol was carried out in a soxhlet apparatus. Antioxidant capacity was determined using DPPH method, TAS, TOS and OSI values were determined using Rel Assay Kits, and phenolic contents were determined using HPLC. As a result of the studies carried out, the percent inhibition value of DPPH activity was determined to be 56.34. TAS value was 3.103 mmol / L, TOS value was 21.767 μmol/L and OSI value was 0.701. Gallic acid, Catechin, Chlorogenic acid, Epicatechin, Caffeic acid, Kumaric acid, Syringic acid and Cinnamic acid have been determined in the mushroom. As a result, antioxidant potential of *H. repanum* was determined. However, it was determined that the oxidative stress value is at high levels depending on the TOS value. In this context, it is thought that it can be used as an antioxidant source of *H. repandum* to be collected from suitable regions in terms of oxidative stress condition. Besides, it is considered that natural resources may be considered in terms of the compounds determined in the field.

Keywords: *Hydnum repandum*, Edible Mushroom, Phenolic contents, Antioxidant, Oxidant, Oxidative stress

Acknowledgement: This research was supported by Ömer Halisdemir University Scientific Research Projects. Project number: FEB 2017/06-HIDEP

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➢ ORAL PRESENTATION

Analysis of Relationship Between LEPR Gene Polymorphism with Childhood Obesity

Emel Ensari[1*], Omer Ates,[1] Nihan Bozkurt[1], Ali Gül[2], Serap Bilge[2]

[*1] Gaziosmanpasa University, Medical Faculty, Department of Medical Biology, Tokat, Turkey
[2] Gaziosmanpasa University, Medical Faculty, Department of Pediatrics, Tokat, Turkey

emel-ozsoy@hotmail.com

Abstract

Childhood obesity is a major and rapidly growing public health challenge all around the world, prevalence of up to 25% in developed countries. The rise in obesity is likely multifactorial. It's well known that several environmental factors are also caused to obese including increased food availability and decreased physical activity, Although there is certainly a genetic predisposition to obesity. Defects in leptin production cause severe obesity. In recent studies, two mutations in leptin gene (LEP) and one in leptin receptor gene (LEPR) have been shown to produce severe early-onset obesity, with concomitant perturbations of different hormonal and physiological processes. Leptin receptor (LEPR) gene mapped to 1p31. LEPR gene products have defined a new biological pathway for the regulation of food intake and energy expenditure. The aim of this study was to evaluate the possible association between the LEPR Gln223Arg polymorphism and childhood obesity. In this study, 146 obese and 150 healthy (control) children and adolescents aged 6-17 years were enrolled. Genotyping for the LEPR Gln223Arg polymorphism was performed by Polymerase Chain Reaction-Restriction Fragment Length Polymorphisms (PCR-RLFP) method. A statistically significant difference was observed between patients and controls according to genotype distrubition of LEPR gene Gln223Arg polymorphism ($p = 0.044$, OR 1.13, 95 % CI 0.80–1.58). According to our findings, the LEPR gene Gln223Arg polymorphism is maybe associated with childhood obesity.

Keywords: Chilhood Obesity, Genetic Susceptebility, LEPR, Polymorphism

This work was supported by Gaziosmanpasa University Scientific Research Projects Fund.

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➢ ORAL PRESENTATION

Investigation of Insulation of Karamanoğlu Mehmetbey University Campus Buildings for Efficient Use of Energy

Selmin Ener Rusen[1*], Mehmet Ali Topcu[2*], Beril Ozturk[1]

[*1] Department of Energy Systems Engineering, Faculty of Engineering, Academic Energy Research Group (AKEN), Karamanoglu Mehmetbey University,70100, Karaman, Turkey
[2] Department of Metallurgy and Material Engineering, Faculty of Engineering, Academic Energy Research Group (AKEN), Karamanoglu Mehmetbey University,70100, Karaman, Turkey.

Corresponding author e-mail: selmin.enerrusen@gmail.com

Abstract

The energy savings that can be achieved with correctly and efficiently use is an alternative energy source that can be obtained at lower cost. In our country, efficient use of energy will contribute significantly to reducing climate change caused by greenhouse gases, increasing energy supply security, lowering energy costs and reducing energy dependency on the environment. Since the construction sector constitutes a significant part of energy consumption for heating and cooling the buildings, the development and implementation of technologies for efficient use of energy in the building sector will contribute greatly to the economy of the country. The energy wasted due to the lack of insulation leads to air pollution caused by poisonous gases such as sulfur dioxide, carbon monoxide and so on. Therefore, thermal insulation is the most aspect of policies developed depending on the concept of energy efficiency all over the world. In this study, it was determined whether the buildings in Karamanoglu Mehmetbey University settlement are in conformity with TS-825 standards, and recommendations for unsuitable buildings were suggested. According to the experimental results and measurements, 11.91 m^3 of natural gas can be saved per hour with insulation of building skin with suitable insulation material. In addition, insulation of building skin will be removed approximately 166 tons of CO_2 per year from the atmosphere and positive steps will be taken about the environment and climate change.

Keywords: Energy Efficiency, Thermal Insulation, Karaman

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➢ ORAL PRESENTATION

Akdeniz Bölgesinde Doğal Yayılış Gösteren Bazı *Origanum* Türlerinin Fizyolojik Özellikleri

İmran UYSAL[1*], Mustafa PEHLİVAN[2] ve Muhittin DOĞAN[1]

[1]Gaziantep Üniversitesi, Fen-Edebiyat Fakültesi Biyoloji Bölümü, Gaziantep
[2]Gaziantep Üniversitesi, Nurdağı Meslek Yüksekokulu, Nurdağı-Gaziantep

Sorumlu yazar: uysal-imran@hotmail.com

Özet

Bu çalışma, Akdeniz Bölgesi'nde doğal yayılış gösteren dört farklı *Origanum* türünün (*O. boissieri, O. micranthum*, *O. syriacum* var. *bevanii* ve *O. laevigatum*) bazı fizyolojik özelliklerinin belirlenmesi amacıyla yapılmıştır. Araştırma kapsamında Haziran-Ağustos 2017 tarihlerinde Adana, Mersin, Hatay, Kahramanmaraş ve Osmaniye illerinde bitki örnekleme çalışmaları yapılmıştır. Uygun şartlarda laboratuvara getirilen örneklerde toplam protein, toplam karbonhidrat, fenolik madde, protein olmayan SH gruplar, prolin, antosiyanin ve fotosentetik pigment miktarları belirlenmiştir. *Origanum* türlerinin toplam karbonhidrat, protein olmayan SH grup, toplam fenolik madde ve prolin içeriklerinin *O. micranthum*> *O. laevigatum*> *O. syriacum* var. *bevanii*> *O. boissieri* şeklinde olduğu belirlenmiştir. Yine benzer olarak en yüksek protein içeriği *O. micranthum*' da, en düşük protein ise *O. boissieri*'de bulunmuştur. Antosiyanin içerikleri *O. laevigatum* > *O. boissieri*> *O. syriacum* var. *bevanii*> *O. micranthum* şeklinde bulunmuştur. Ayrıca, en yüksek klorofil-a *O. laevigatum*'da, klorofil-b *O. micranthum*'da ve karotenoid ise *O. syriacum* var. *bevanii*'de belirlenmiştir. Sonuçlarımıza göre, önemli bir tıbbi ve aromatik bitki olan *Origanum*'un fizyolojik parametrelerinin türler arasında farklılıklar gösterdiği belirlenmiştir.

Anahtar Kelimeler: *Origanum*, Akdeniz bölgesi, Fizyolojik özellikler

Teşekkür: Bu çalışma Gaziantep Üniversitesi Bilimsel Araştırma Projeleri Yönetim Birimi tarafından desteklenmiştir. (Proje No: FEF.DT.16.10)

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➢ ORAL PRESENTATION

First Record Of *Lampris guttatus* (Brünnich, 1788) in North-Eastern Mediterranean (Mersın Bay, Turkey)

Deniz Ergüden[1], Deniz Ayas[2], Ayhan Altun[1*], Sibel Alagöz Ergüden[3], Yusuf Kenan Bayhan[4]

[*1]University Iskenderun Technical, Faculty of Marine Science and Technology, Department of Marine Sciences, Iskenderun-Hatay, Turkey
[2]University of Mersin, Faculty of Fisheries, Mersin, Turkey
[3]University of Çukurova, Vocational School of Imamoglu, Imamoglu, Adana, Turkey
[4]University of Adıyaman, Vocational School of Kahta, Kahta, Adıyaman, Turkey

*Corresponding author: ayhan.altun@iste.edu.tr

Abstract

During the last few decades, deep-water fishing activitiy has become a commonly performance throughout the northeastern Mediterranean area where many new species have been discovered in the region as the result of this activity. A single male specimen of the Opah *Lampris guttatus* (Brünnich, 1788) (50 cm in total length and 5 kg in weight) was caught off Erdemli coast, Turkey at a depth of 255 m by a commercial trammel net on 27 May 2017. The present paper is the first report of *L. guttatus* from the North-eastern Mediterranean coast of Turkey. All measurements and counts, and the morphological description and colour of the opah agree with previous descriptions. Although *L. guttatus* has distributed at a large area covering both tropical to temperate waters including Mediterranean. This is the first confirmed report of the species from Turkish marine waters including the Mediterranean area.

Keywords: Opah, *Lampris guttatus*, Erdemli coast, Mediterranean Sea

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➢ ORAL PRESENTATION

Determination of Pravastatin in Drug Formulation by Square-Wave Voltammetry on a Glassy Carbon Electrode

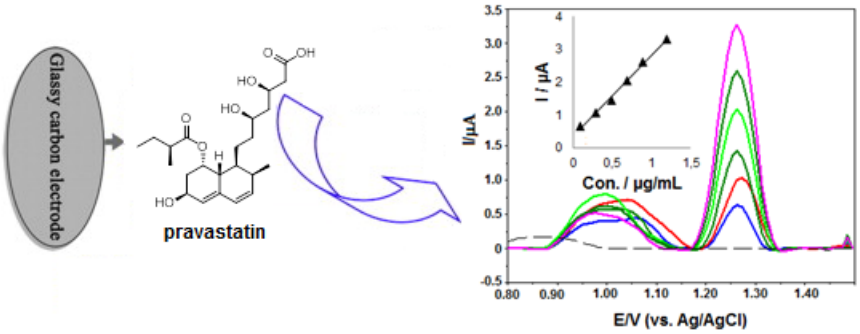
Pınar Talay Pinar*[1], Tamer Tuluk[1], Zuhre Senturk[2]

[1]Van Yuzuncu Yil University, Faculty of Pharmacy, Department of Analytical Chemistry, Van, Turkey.
[2]Van Yüzüncü Yıl University, Faculty of Arts and Sciences, Department of Chemistry, Van, Turkey.

Corresponding author e-mail: ptalay@gmail.com

Abstract

The electrochemical behavior of pravastatin on a glassy carbon electrode were explored in Britton–Robinson buffer solution by using cyclic and square-wave voltammetry. Cyclic voltammetric studies indicated the oxidation of pravastatin at the electrode surface through a single two-electron irreversible step and fundamentally controlled by difussion. The solution conditions and instrumental parameters were optimized for the determination of the authentic drug by square-wave voltammetry. The oxidation peak was used to determine pravastatin in range 0.235 to 28.2 µM with a detection limit of 0.047 µM. The procedure was successfully applied for the assay of pravastatin in tablets (Pravachol)®. The percentage recoveries were in agreement with those obtained by the reference method.



Keywords: Pravastatin; square-wave voltammetry; drug formulation; glassy carbon electrode

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➢ **ORAL PRESENTATION**

Distribution Patterns of *Allactaga williamsi*

Gül Olgun Karacan[1*], Reyhan Çolak[2], İrfan Kandemir [2]

[*1]Aksaray University, Vocational School of Health Services, Aksaray, Turkey.
[2]Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey.

Corresponding author e-mail: glolgn@gmail.com

Abstract

A. williamsi is one of the species of genus *Allactaga* and this species have three controversial subspecies as *A. w. williamsi* from Van, *A. w. laticeps* from the western part of Turkey, and *A. w. schmidti* from the north-eastern parts of Turkey. The aim of the present study is to survey the genetic structure and the validity of *A. williamsi* inferred from 1049 bp of the mitochondrial DNA cytochrome b (Cytb) gene and 430 bp of 12SrRNA. According to the results, the lineage of *A. williamsi* divided into four sub-lineages about 1.9 Mya, corresponding to the subspecies *williamsi*, *schmidti* and *laticeps*. The sub-lineage *laticeps* was further differentiated into 2 sub-groups present in the west of the Euphrates river. Also, the validity of *A. w. shmidti* has become problematic and might be denied as the specimens of this subspecies grouped with subspecies *A. w. williamsi*. This study was supported by The Scientific and Technological Research Council of Turkey (TÜBİTAK) (Project no: 114Z941).

Keywords: *Allactaga williamsi*, Turkey, mtDNA

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➢ ORAL PRESENTATION

Effect of Mn doping on NiO Films Synthesized by Spray Pyrolysis: Structural, Optical and Morphological Studies

Olcay Gençyılmaz

Çankırı Karatekin University, Çerkeş Vocational School, Materials and Material Processing Technologies Department, Çankırı, Turkey

ogencyilmaz@karatekin.edu.tr

Abstract

The aim of this work is to obtain NiO and NiO:Mn films with improved characteristics using Ultrasonic Spray Pyrolysis (USP) which is a simple and inexpensive technique and to investigate the effect of Mn incorporation on some physical properties of NiO films. The effects of Mn doped on structural (x-ray diffraction (XRD)), morphological (field emission-scanning electron microscopy (FESEM)), and optical (ultraviolet/visible (UV/Vis) properties of the films were investigated. XRD experiment evidence that all the patterns exhibit a face centered cubic crystal structure and preferred orientation along (111) plane. The structural parameters including the texture coefficient (T_c), the dislocations (δ), the stain (<e>), lattice constants (a_{111}) and the grain size (D) were also calculated from X-ray diffraction experiments. FESEM images reveal that the surface morphology of the films consists of grains different size and clusters depending on the doping content. Absorbance spectra were taken in the wavelength range of 300-1100 nm at room temperature. By UV/Vis analysis, the optical band gap and Urbach energy values were calculated using optical method.

Keywords: Spray pyrolysis, NiO and Mn doped NiO, XRD, FESEM, UV/Vis

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➢ **ORAL PRESENTATION**

Amniotic Fluıd Cadmium and Chromium Levels in Pregnant Women with Fetal Neural Tube Defects

Tugba Atılan Arıkan

Kahramanmaras Sutcu Imam University, Education Faculty, Department of Elementary Science Teaching, Kahramanmaras, Turkey

e-mail: tatilan76@hotmail.com

Abstract

Amniotic fluid has great importance for proper development of the embryo and fetus. Water contained in the amniotic fluid comes originally from maternal plasma and penetrates the fetal membranes in a hydrostatic and osmotic way. Current knowledge of the concentration of elements in amniotic fluid and their role in fetal growth is limited. The etiology of neural tube defect (NTD) is still unknown, and environmental factors, alone or in the presence of particular genetic backgrounds, are believed to play a major role in it. Essential and toxic element concentrations in amniotic fluid may be a predictor of complications and disorders in pregnancy. Cadmium (Cd) and chromium (Cr) are two heavy metals that are known occupational hazards and environmental contaminants having multiorgan toxicity. They have neurotoxic effects through mechanisms ranging from oxidative stress, protein misfolding, altered DNA and protein synthesis and cell death thus providing biological plausibility for an association with NTDs. The aim of the present study was to evaluate the Cd and Cr levels in the amniotic fluid of pregnant women with fetal NTD. The study population consisted of 51 pregnant women; 29 pregnant women with healthy fetuses (Group 1), and 22 pregnant women with NTD in their fetuses (Group 2). Cadmium and Cr measurements were performed in graphite furnace atomic absorption spectrophotometer (Perkin Elmer Analyst 800) using Zeeman background correction. Between the groups, mean age and gestational week at amniocentesis were similar ($p>0.05$). The amniotic fluid Cd and Cr levels were significantly higher in Group 2 than Group 1; 2.52 ± 2.27 vs 1.60 ± 1.57 and 1.28 ± 0.59 vs 1.04 ± 0.21, respectively ($p<0.05$). In conclusion, we found increased levels of neurotoxic heavy metals in amniotic fluid of pregnant women with fetal NTD. This could support the hypothesis that these heavy metals are involved in NTD etiology.

Key words: Amniotic fluid, neural tube defect, cadmium, chromium

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➢ **ORAL PRESENTATION**

Zinc, Magnesium and Prealbumin Serum Levels Of Children With Type 1 Diabetes Mellitus

Ayat Jawad, M. Enes Coşkun

Gaziantep University, Science, Biochemistry Science and Technology, Gaziantep, Turkey
Gaziantep University, Faculty of Medicine, Department of Pediatrics, Gaziantep, Turkey

E-mail: ajaltameemi@gmail.com

Abstract

Several trace elements are involved in insulin signal transduction and glucose metabolism. Also, some of proteins such as serum prealbumin has a prognostic value in several diseases, but its serum levels can be influenced by different factors. Our aim for this present study was to compare the levels of magnesium (Mg), zinc(Zn) and prealbumin between patients with type 1 diabetes mellitus (DM) and healthy children.
34 type 1 diabetic children who were under follow up of Pediatric Endocrinology Department and 94 healthy children who were under regular control of Social Pediatrics Department at University of Gaziantep were enrolled in this study. Serum zinc, magnesium and prealbumin levels of patients diagnosed type1 diabetes mellitus were compared with separate control groups for each parameter. The ethical permission was taken from the ethical committee of University of Gaziantep. Informed consents of participants or their legal guards were taken.
The present study consisted of 34 diabetic children at average ages of 10.88±3.98. Serum prealbumin levels were found significantly low in type 1 DM patients compared to healthy children at 16.87±3.63 vs 21.88±7.7 ($p<0.000$), respectively. Additionally, diabetic children showed a marked decrease in Mg levels at 1.9±0.14 compared to 2.01±0.13 in controls ($p=0.005$). On the other hand, no statistical significance was detected in serum Zn values between patients and healthy controls with figures of 0.82±0.16 and 0.86±0.10, respectively ($p=0.329$).
The role of prealbumin as a biomarker is not clear yet. However, it is thought as a negative inflammatory marker. Within this context, the low levels of prealbumin in diabetic patients may be attributed to the chronic inflammatory status of the type 1 diabetes. Regarding Mg, the slightly decreased levels in type1 diabetic children were consistent with literature. With respect to Zn, this research did not reveal any difference between the study groups. However, there are controversial results regarding Zn levels in the literature. In conclusion, regularly measurement of Mg and Zinc levels of type 1 DM patients may be required in terms of supplementation when necessary. Furthermore, prealbumin levels may play a role as a biomarker in terms of monitoring inflammatory status of type 1 DM patients.

Keywords: diabetic type 1, prealbumin , Magnesium , Zinc

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➢ **ORAL PRESENTATION**

Farklı Saman Çeşitlerinin Yem Kalitesinin Bulanık Mantık Yöntemi ile Modellenmesi

Burcu Bayyurt[1], Lütfi Bayyurt[2*], Ömer Faruk Algur[3]

[1]Cumhuriyet Üniversitesi, Tıp Fakültesi, Tıbbi Biyoloji Anabilim Dalı, Sivas, Türkiye
[2*]Ondokuz Mayıs Üniversitesi, Ziraat Fakültesi, Zootekni Bölümü, Samsun, Türkiye
[3]Atatürk Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Erzurum, Türkiye

Sorumlu yazar e-mail: bayyurt_25@hotmail.com

Özet

Bu çalışmanın amacı faklı saman çeşitlerinin yem kalitesinin bulanık mantık yöntemi ile modellenmesidir. Araştırmamızda arpa (A), buğday (B), arpa-buğday (AB) ile çeşitli mikroorganizmalarla muamele görmüş A, B ve AB samanlarına ait veriler kullanılmıştır. Yem analizi sonuçlarına göre 108 adet saman örneğine ait kuru madde sindirilebilirliği (KMS) kuru madde tüketilebilirliği (KMT), nispi yem değerleri (NYD) hesaplanmıştır. NYD sonucuna göre ise samanların hangi yem kalite sınıfına dahil oldukları belirlenmiştir. Deneysel aşamada elde edilen veriler bulanık mantık yöntemi kullanılarak modellenmiştir. Yem kalitesinin belirlenmesinde deney sonuçları ile bulanık mantık model sonuçları karşılaştırılmıştır. Sonuç olarak, geliştirilen bulanık mantık modeli ile deneysel olarak elde edilen yem kalite değerleri arasında %92 gibi yüksek bir oranda korelasyon belirlenmiştir.

Anahtar Kelimeler: Bulanık mantık, Saman, Yem kalitesi

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➢ ORAL PRESENTATION

The Biological Activities of Some Newly Synthesized Heterocyclic Compounds

Yonca Yılmaz, Ahmet Harmankaya, Murat Beytur, Haydar Yüksek, Özlem Gürsoy Kol, Fevzi Aytemiz

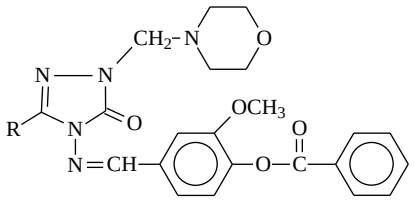
Kafkas University, Faculty of Sciences and Letter, Department of Chemistry, Kars, Turkey

Corresponding author e-mail: yoncaylmz36@gmail.com

Abstract

In this study, 3-alkyl(aryl)-4-(3-methoxy-4-benzoxy)-benzylidenamino-45-dihydro-1H-1,2,4-triazol-5-ones benzoates were treated with morpholine in the presence of formaldehyde according to the Mannich reaction to synthesize six novel 4-[1-(morpholin-4-yl-methyl)-3-alkyl (aryl)-4,5-dihydro-1H-1,2,4-triazol-5-one-4-yl-azomethine]-2-methoxyphenyl benzoate. The structures of synthesized novel heterocyclic compounds were characterized by IR, 13C-NMR and 1H-NMR spectroscopic methods.

The synthesized novel 4-[1-(morpholin-4-yl-methyl)-3-alkyl (aryl)-4,5-dihydro-1H-1,2,4-triazol-5-one-4-yl-azomethine]-2-methoxyphenyl benzoates (1) were investigated in vitro antioxidant properties by using free radical scavenging activity, reducing power and metal chelate activity method. Then, the new compounds were also examined in-vitro antimicrobial properties against 6 different microorganisms (Bacillus substilis (ATCC11774), BacilluscCereus (ATCC11778), Staphylococcus aureus (ATCC6538), Escherichia coli (ATCC25922), Pseudomonas aeruginosa (ATCC27853) and Klebsiella pneumonia (ATCC4352)) by the agar well method and the obtained results were evaluated.



1

	R
a	CH_3
b	CH_2CH_3
c	$CH_2C_6H_5$
d	$CH_2C_6H_4CH_3$ (*p-*)
e	$CH_2C_6H_4Cl$ (*p-*)
f	$CH_2C_6H_4OCH_3$ (*p-*)

Keywords: Schiff base, Mannich base, Antimicrobial, Antioxidant.

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➢ ORAL PRESENTATION

Synthesis, in Vitro Antoxidant and Antimicrobial Activities of 3-Alkyl(aryl)-4-(2-(4-nitrobenzoxy)-benzylidenamino-4,5-dihydro-1*H*-1,2,4-triazol-5-ones

Haydar Yüksek[1], Asıf Berkyürek[1], Havva Balseven[1], Sevda Manap[1], Muzaffer Alkan[2*]

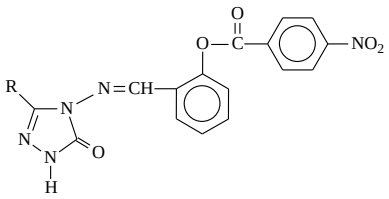
[1]Kafkas University, Faculty of Sciences and Letter, Department of Chemistry, Kars, Turkey
[*2]Kafkas University, Education Faculty, Department of Mathematics and Science Education, Kars, Turkey

Corresponding author e-mail: *muzafferalkan61@gmail.com*

Abstract

1,2,4-Triazole derivatives have drawn considerable attention for the past few decades because of their diverse biological properties. Many 1,2,4-triazole derivatives are found to be potent antioxidant, anti-inflammatory, antimicrobial and antiviral agents. The identification of triazoles and determination of their antibacterial activities are of considerable interest because of the role they play in pharmacological actions.

This study was planned as two parts; in the first part, nine 3-alkyl(aryl)-4-(2-(4-nitrobenzoxy)-benzylidenamino-4,5-dihydro-1H-1,2,4-triazol-5-ones (Yüksek et al., 2010) were analyzed for their in vitro potential antioxidant activities in three different methods; including reducing power, according to the method of Oyaizu (1986); free radical scavenging activity, using the method of Blois (1958) and metal chelating activity, by the method of Dinis, Madeira & Almeida (1994). Butylated hydroxytoluene (BHT), butylated hydroxyanisole (BHA) and α-tocopherol were used as reference antioxidant compounds. In the last part of the study, antibacterial activities of the title compounds were evaluated against six bacteria such as Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus, Bacillus subtilis, Bacillus cereus and Klepsiella pneumonia according to agar well diffüsion method.



	R
a	CH_3
b	CH_2CH_3
c	$CH_2CH_2CH_3$
d	$CH_2C_6H_5$
e	$CH_2C_6H_4CH_3$(*p-*)
f	$CH_2C_6H_4OCH_3$ (*p-*)
g	$CH_2C_6H_4Cl$(*p-*)
h	$CH_2C_6H_4Cl$(*m-*)
i	C_6H_5

Keywords: 1,2,4-Triazol-5-one, Schiff base, Antioxidant, Antimikrobial.

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➢ **ORAL PRESENTATION**

Determination of pK_a Values of Some 3-Alkyl/Aryl-4-[3-ethoxy-2-phenylacetoxybenzylidenamino]-4,5-dihidro-1H-1,2,4-triazol-5-ones

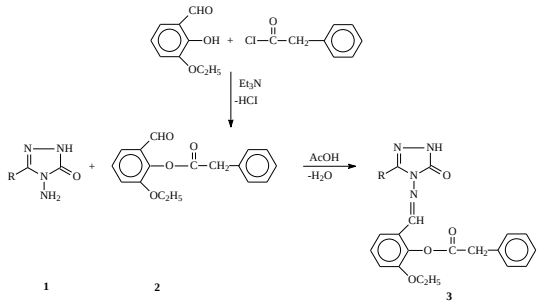
Faruk Kardaş[1*], Murat Beytur[2], Haydar Yüksek[2]

[*1]Erzincan University, Education Faculty, Department of Mathematics and Science Education, Erzincan, Turkey.
[2]Kafkas University, Faculty of Sciences and Letter, Department of Chemistry, Kars, Turkey

Corresponding author e-mail: fkardas2400@gmail.com

Abstract

Determination of pK_a values of the active constituent of certain pharmaceutical preparations is important because the distribution, transport behaviour, bonding to receptors, and contributions to the metabolic behaviour of the active constituent molecules depend on the ionization constant. In the present study, nine 3-alkyl/aryl-4-[3-ethoxy-2-phenylacetoxybenzylidenamino]-4,5-dihidro-1H-1,2,4-triazol-5-ones were synthesized from the reactions of the corresponding 3-alkyl(aryl)-4-amino-4,5-dihydro-1H-1,2,4-triazol-5-ones with 3-ethoxy-2-phenylacetoxybenzaldehyde which was obtained from the reaction of 3-ethoxy-2-hydroxybenzaldehyde with phenylacetyl chloride by using triethylamine. The synthesized new compounds were titrated potentiometrically with tetrabutylammonium hydroxide in four non-aqueous solvents such as acetonitrile, isopropyl alcohol, tert-butyl alcohol, and N,N-dimethylformamide, and the half-neutralization potential values and the corresponding pKa values were determined for all cases.



Keywords: 4,5-Dihydro-1H-1,2,4-triazol-5-one, Schiff base, Acidity, Potentiometric titration.

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➢ ORAL PRESENTATION

Synthesis and *In-Vitro* Biological Activities of Some 1-(Morpholine-4-yl-methyl)-3-Alkyl(Aryl)-4-[3-(4-Methoxybenzensulfonyloxy)-4-Methoxy-Benzylidenamino]-4,5-Dihydro-1*H*-1,2,4-triazol-5-Ones

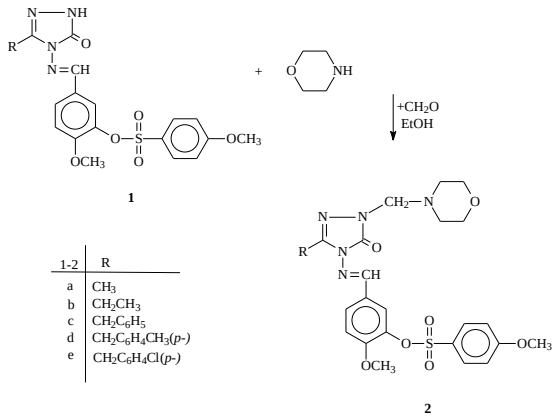
Özlem Aktaş Yokuş[1*], Sevda Manap[2], Muzaffer Alkan[1], Murat Beytur[2], Haydar Yüksek[2,]

[1*]Kafkas University, Faculty of Education, Kars, Turkey.
[2]Kafkas University, Department of Chemistry, Kars, Turkey

Corresponding author e-mail: *ozak36@gmail.com*

Abstract

In this study, it was aimed to synthesize some novel Mannich bases having a 1,2,4-triazole ring. Therefore, 3-Alkyl(Aryl)-4-[3-(4-methoxybenzensulfonyloxy)-4-methoxy-benzylidenamino]-4,5-dihydro-1*H*-1,2,4-triazol-5-ones **(1a-e)** (Aktaş Yokuş et al., 2017) reacted with formaldehyde and morpholine to afford 1-(morpholine-4-yl-methyl)-3-alkyl(aryl)-4-(4-ethoxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones **(2a-e)**. The structures of five new Mannich bases were established from the elemental analysis, IR, 1H NMR, 13C NMR and UV spectral data. Then, the synthesized compounds were analyzed for their in vitro potential antioxidant activities in three different methods; including reducing power, free radical scavenging and metal chelating activity. Furthermore, these new compounds were screened for their antimicrobial activities.



1

1-2	R
a	CH_3
b	CH_2CH_3
c	$CH_2C_6H_5$
d	$CH_2C_6H_4CH_3(p\text{-})$
e	$CH_2C_6H_4Cl(p\text{-})$

2

Keywords: Mannich base, synthesis, biological activity.

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➢ **ORAL PRESENTATION**

A study on *Amanita muscaria*: Antioxidant, Antimicrobial Potential and Oxidative Stress Status

Mustafa Sevindik

Akdeniz University, Science Faculty, Biology Department, Antalya, Turkey.
Corresponding author e-mail: sevindik27@gmail.com

Abstract

In this study, it was aimed to determine antioxidant activity, antimicrobial activity, total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI) of *Amanita muscaria* (L.) Lam. mushroom which is a poisonous mushroom. Methanol and dichloromethane extracts of mushroom samples were prepared on a soxhlet device. Antioxidant activity was determined using the DPPH method. TAS, TOS and OSI values were measured using Rel Assay Kits. Antimicrobial activity was determined by modified agar dilution method on *Staphylococcus aureus, S. aureus* MRSA, *Enterococcus faecalis, Escherichia coli, Pseudomonas aeruginosa, Acinetobacter baumannii, Candida albicans, Candida krusei* and *Candida glabrata*. As a result of the studies carried out, the percent inhibition value of DPPH activity was determined as 92.89 for MeOH and 34.23 for DCM. TAS value was 4.251 ± 0.134 mmol/L, TOS value was 7.774 ± 0.061 μmol/L and OSI value was found to be 0.183 ± 0.004. It was also determined that MeOH extracts were effective on microorganisms at 200-400 μg/mL concentrations. DCM extracts were found to be effective at 200-800 μg/mL concentrations. As a result of the studies done, it has been determined that the antioxidant potential of the mushroom is high. However, the oxidative stress condition of the mushroom was found to be at normal levels. It has also been found that antimicrobial activity is at normal levels. In this context, it has been determined that the mushroom *A. muscaria* may be a natural source in terms of antioxidant and antimicrobial resource.

Keywords: *Amanita muscaria*, Mushroom, Antioxidant, Antimicrobial, Oxidant, Oxidative stress

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➢ **ORAL PRESENTATION**

The Killer Traps of Waters; Parachute Fishing Net Bingöl Example

Mustafa Koyun[1*], Abdullah Mart[2] Nimetullah Korkut[1]

[*1] Bingol University, Faculty of Arts and Sciences, Biology, Bingol, Turkey
[2] Osmaniye Korkut Ata University, Faculty of Arts and Sciences, Biology, Osmaniye, Turkey

Sorumlu yazar e-mail: koyunmustafa@yahoo.com

Abstract

This study was carried out with the aim of drawing attention and creating awareness on hunting materials prohibited to use and very dangerous for water ecology which is called Tırıvırı (Turkish name) and defined as a killer tor or parachute net.
It was carried out in a part of Göynük Stream (Bingöl) creek bed at the various times during the years 2015-2016-2017. The study had been carried out in about 40 km of the Göynük Stream, separated from the Murat River by three steps towards its upstream. These sections were taken as; between Genç county railway bridge-Kervansaray (18 km), Kervansaray-Ilıcalar (11 km), and Ilıcalar-Alatepe (12 km). From these sections, there were found 45 in the first interval, 52 in the second interval, 33 in the third interval, and 130 in total old and new looking fish net residues were determined of the creek bed.
Throughout the study, only the fish net residues outside the water could be counted, and it can be estimated that the amount cannot be counted in the water is 3-4 times of those detected. It has been attempted to give the awareness that this hunting material is only a spending day activity whereas the adverse effects continue for a long time.

Key words: Parachute fishing net, Goynuk Stream, Bingol.

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➢ **ORAL PRESENTATION**

The Protective Role of Caffeic Acid Phenethyl Ester (CAPE), an Active Component of Propolis, Against Lead-Induced Nephrotoxicity

Gökhan Nur[1*], H.Ahmet Deveci[1]

[1] Gaziantep University, Vocational School of Islahiye, Department of Veterinary, Gaziantep

*Corresponding author e-mail: gokhannur@gantep.edu.tr

Abstract

In our time, many industrial materials and especially lead, which is one of the heavy metals commonly used in industry, are very toxic. Acute or chronic intoxications are observed due to lead exposure in urban life and especially in those who work in lead-based industries. In the current study that was designed to identify nephrotoxic effects of lead, 4 groups were formed, and 32 Spraque Dawley male rats (8 to 9 week old, 240 to 275 g) were used including 8 rats in each group. The first group was injected with dimethyl sulfoxide (DMSO) as a solvent (intraperitoneal, 2 ml kg^{-1}). Lead was administered to the second group (intraperitoneal, 70 mg kg^{-1}). Starting 3 days in advance of lead injections, CAPE (intraperitoneal, 10 µmol kg^{-1}) injections were made to the third group followed by lead administration (intraperitoneal, 70 mg kg^{-1}) after half an hour. And the fourth group was administered with CAPE solubilised in DMSO (intraperitoneal, 10 µmol kg^{-1}). All administrations were maintained for 14 days. At the end of this time period, bloods of the animals were drawn from the heart under ketamine/xylazine anesthesia and then they were sacrificed by cervical dislocation. Plasma samples obtained by centrifugation at 3000 rpm for 10 minutes were stored at -20°C until the beginning of analyses. Total antioxidant and oxidant levels of the obtained plasma samples were examined. Kidney tissues taken for histological examinations were embedded in paraffin after routine tissue processing, and 5 µm sections were taken with microtome. Histopathological changes were examined at the light microscopic level by applying them hematoxylin-eosin as a histological staining method. In the histological examination of the kidney tissues, normal structures were observed in the DMSO and CAPE groups (the control group). Inflammatory cell infiltrations, tubular degeneration and glomerular atrophy were observed in the groups treated with lead and lead + CAPE. According to the results of a biochemical data assessment, there is no significant difference in total oxidant and antioxidant capacity between the DMSO and CAPE treatment groups. In the group treated with lead, however, an increase in the oxidant level and a decrease in the antioxidant level were found compared with the control group. As for the values of the group treated with lead and CAPE concurrently, the oxidant level decreased and the antioxidant capacity increased comparatively. It was concluded that, especially by disturbing the prooxidant and antioxidant balance in cells, lead causes histopathological changes in the kidneys due to a resulting increase of lipid peroxides and reactive oxygen types, that it disturbs the total oxidant/antioxidant balance, and that CAPE could be partially beneficial in reducing these adverse effects.

Keywords: Nephrotoxicity, Lead acetate, CAPE, Total oxidant/antioxidant balance

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➢ **ORAL PRESENTATION**

Anti-inflammatory Activity of Indole Derivatives Containing 4-Substituted Piperazine Moieties

Tunca Gül Altuntaş[2], Sezen Yılmaz[1*], Tülay Çoban[1]

[*1]Ankara University, Faculty of Pharmacy, Department of Pharmaceutical Toxicology, Ankara, Turkey.
[2]Ankara University, Faculty of Pharmacy, Department of Pharmaceutical Chemistry, Ankara, Turkey.

Corresponding author e-mail: szn-ylmz@hotmail.com

Abstract

Oxidative stress is an imbalance between production of free radicals, reactive metabolites including reactive oxygen species (ROS) and antioxidant defences system. Overproduction of free radicals and generation of oxidative stress trigger inflammatory pathways and production of inflammation. Inflammation and oxidative stress are pathogenic mediators of many diseases including asthma, cancer, autoimmune diseases such as rheumatoid arthritis, diabetes, neurodegenerative diseases such as Alzheimer's and Parkinson's disease. Chemicals with anti-inflammatory properties inhibit inflammation, protect cells from oxidative stress and could be used in the treatment of inflammation-related diseases. Several studies indicate that indole derivatives could be used as neuroprotective and also anticancer agents. Fifteen indole derivatives containing 4-substituted piperazine moieties were synthesized. Compounds 1, and 4-15 were obtained by amidification reaction using 1,1'-carbonyldiimidazole (CDI) and compounds 2 and 3 were obtained by the reaction of amine and substituted chloropyridine ring using potassium carbonate. Anti-inflammatory activities of the compounds were determined by measuring human red blood cell membrane stabilizing potentials in comparison with acetylsalicylic acid which was used as a reference drug. The results of our study suggest that compound 14 showed the highest human red blood cell membrane stabilizing effect followed by compound 5 and 4 (IC50: 1.73, 1.83 and 1.95 mM, respectively). Except compound 9, the others exhibited similar protective effects on damaged erythrocyte membrane as an indicator of anti-inflammatory activity.

Keywords: anti-inflammatory activity, indole derivatives, red blood cell membrane

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➢ **ORAL PRESENTATION**

The Effect of Fruit Addition on The Shelf Life of Kefirs

Sezen Harmankaya[1]*, Güven Gülbaz[2]

[1]Kafkas University, Vocational School Kars, Food Processing of Department, Kars, Turkey
[2]Kafkas University, Engineering and Architecture Faculty, Department of Food Engineering, Kars,Turkey

Corresponding author e-mail: sezenyildizhan@hotmail.com

Abstract

In this study, effects of kefir on the chemical (titratable acidity and pH), microbiological (*Lactobacillus* spp., *Lactococcus* spp. and yeast counts) and sensory properties of kefir that was prepared with fruits (strawberry, apricots, banana) (at a ratio of 20 %) during the storage (checked at 1, 2, 3, 4, 5, 6, 7 and 14 days) period were investigated. Significant differences ($p<0.05$) were found in the analysis of the characteristics of the different kinds of fruit kefir when compared with plain kefir. Differences were found both between the kinds of fruit and the time points at which the samples were analyzed. At the end of the storage periods, *Lactobacillus* spp. and *Lactococcus* spp. counts were found to be higher in the fruit kefirs than in plain kefir. At the end of the storage period (at +4 °C), apricots kefir (0,700) had the highest acidity and the pH level was higher in all fruit kefirs when compared with plain kefir (5,200). Yeast counts were found to be the lowest in apricot kefir (3,041 log10 cfu/ml). Comparison of fruit kefirs with sensory analysis failed to identify any statistically significant effect of the fruit on the sensory characteristics, but the best-liked types were banana and plain kefir. We proved that the added varieties of fruit affected the pH and acidity levels of the kefir and also influenced the development of microflora, so we concluded that this could consequently affect the product's shelf life.

Keywords: Fruit kefir, microflora, chemical and sensory analysis, *Lactococcus* and *Lactobacillus spp.*

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➢ **ORAL PRESENTATION**

Histological investigation of the effect of A-Tocopherol on Arterial Wall Structure in Diabetic Rat Model

Leyla Bahar[1*], Mehmet Gül[2], Nehir Sucu[3]

[*1]Mersin University, Vocational School of Health Service, Mersin, Turkey
[2] İnönü University Faculty of Medicine, Department of Histology and Embryology, Malatya, Turkey
[3] Mersin University Faculty of Medicine, Department of Cardiovascular Surgery, Mersin, Turkey

Corresponding author: leylabahar@mersin.edu.tr

Abstract

Objective:Cardiovascular diseases are the most important cause of mortality in diabetic individuals. If free radical production exceeds the capacity of the antioxidant defense, oxidative stress occurs and results in cellular damage. The role of antioxidants in the struggle against oxidative stress is very important. The aim of our study is to investigate histologically whether the use of alpha-tocopherol in diabetic rats would have an effect on the antioxidant system and would provide positive effects on vessel wall damage.
Material and Methods: For the study, 32 wistar Albino rats were randomly divided into 3 groups. One of the experimental groups DM model was established and the groups; Control + SF, DM model, DM + alpha-tocopherol "Arterial tissue specimens were fixed formaldehyde. Routine tissue follow-up was performed and hematoxylin-eosin (H-E) staining was performed. In addition, vascular endothelial growth factor (VEGF) immunoreactivity was determined by immunohistochemical method. Vein wall damage score and immunoreactivity positivity (H score) were calculated. As a result of the evaluation, Kruskal-Wallis, Mann-Whitney Test and descriptive analyzes were applied for statistical analyzes.
Results: In light microscopic examinations; in DM group was determined endothelial cell damage ,intracytoplasmic edema and swelling in the smooth muscle cells, deformation in the elastic lamina and separation in the fibers. In sections of the DM + alpha-tocopherol group, endothelial cells were evaluated as normal. VEGF immunoreactivity positivity was moderate. Although there were no differences between DM and DM + alpha-tocopherol groups, there was a significant difference in luminal diameter between Control and DM + alpha-tocopherol in evaluating parameters such as vessel diameter, lumen cap, vessel wall thickness and Tunica media thickness. ($p< 0,005$).
Conclusion:In our study, the use of alpha-tocopherol in diabetic rats was thought to have an effect on the antioxidant system, which could have a positive effect on vessel wall injury. However, it has come to the conclusion that the therapeutic effect of alpha-tocopherol on cellular damage due to vascular complications in the vascular structure of diabetes is limited.

Key words: Diabetes mellitus, Cardiovascular system, alpha-tocopherol, Vascular injury

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➢ ORAL PRESENTATION

Determination of Some Quality Properties of Forage Pea (*Pisum sativum* L.) Cultivars In Middle of Turkey

Tolga Karaköy*, Ahmet Demirbaş, Esra Uçar Sözmen

Department of Crop and Animal Production, Vocational School of Sivas, University of Cumhuriyet, Sivas, Turkey

Corresponding author e-mail: tolgakarakoy73@hotmail.com

Abstract

Forage pea is an annual cool-season forage crop commonly produced either for forages or seeds. Peas are widely grown for hay, pasturage or silage production either or mixed with cereals. As a forage crop, pea hay and seed is rich in crude protein content, and most mineral elements. Due to their high nutritive value, peas are an important feed grain legume for animal production operations in the Turkey. A field experiment using 11 pea lines and 5 pea cultivars was carried out in 2016 at Sivas (middle of the Anatolia), Turkey. Field trials was planted as randomized complete block design, with four replications. The trial received adequate fertilization, irrigation, and weed control for optimum production. There were statistically significant differences among pea lines and cultivars for all quality properties which were investigated. Present study was aimed to investigate quality parameters like acid detergent fiber (ADF), neutral detergent fiber (NDF), digestible dry matter (DDM), crude protein, drymatter contents, organic matter, crude oil and raw fiber. General mean of ADF, NDF, crude protein (CP), crude fat, crude fiber, moisture and dry matter 35.18%, 54.63%, 14.07%, 1.39%, 26.44%, 8.16% and 92.19% respectively. CUSİV-9, Ürünlü and Whistler genotypes contains higher contents of these traits with great level of crude protein. CUSİV-6 genotype behaved poorly for all studied traits. Results of this study are clearly expressing the baviour of different pea genotypes for various traits and CUSİV-9, CUSİV-3, Ürünlü and Whistler genotypes can be effectively used in the breeding of pea to produced improved pea genotypes having more crude protein and produce higher quality fresh and dry forage yield.

Keywords: Forage, pea, quality characters.

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➢ **ORAL PRESENTATION**

The Effects of Applications of Fertigation and Mycorrhiza on Yield and Nutrient Uptake of Pepper Plant Under Field Conditions

Ahmet Demirbas[1*], Zulkuf Kaya[2], Cagdas Akpinar[3], Ibrahim Ortas[2]

[*1] University of Cumhuriyet, Vocational School of Sivas, Department of Crop and Animal Production, Sivas, Turkey.
[2]University of Cukurova, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Adana, Turkey.
[3]University of Osmaniye Korkut Ata, Kadirli School of Applied Sciences, Department of Organic Farming Business Management, Osmaniye, Turkey.

Corresponding author e-mail: ademirbas@cumhuriyet.edu.tr

Abstract

This study was conducted to investigate the effects of different fertilization frequency (Fertigation in every irrigation, Fertigation in every second irrigation, Fertigation in every third irrigation) and inoculation of mycorrhizae on yield and nutrient uptake of pepper plant. The experiment was carried out under field conditions during two years with three replications at University of Çukurova, Faculty of Agriculture, Department of Soil Science and Plant Nutrition. In the experiment fertigation was compared with conventional irrigation system and mycorrhiza (*Glomus caledonium*) was inoculated and pepper was used as test plant. In the study, yield and N, P, K, Fe, Zn, Mn, Cu concentration and root colonization of pepper plant were determined. Results revealed that, in the first year, the highest yield was obtained with phosphorus application mycorrhizae inoculated in second every irrigation (28.09 t ha^{-1}). In the second year, without phosphorus application mycorrhizae inoculated in every irrigation was significantly increased pepper plant yield with 21.13 t ha^{-1}. Also, the application of fertilizer in every irrigation significantly increased P concentration of pepper plant, compared with other treatments. Generally, the mycorrhizae inoculated plants have higher yield and nutrition uptake than non-inoculated plants.

Keywords: Fertigation frequency, mycorrhizae, pepper, yield.

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➢ ORAL PRESENTATION

The Effects of Different Salt Doses on Yield and Nutrient Uptake of Tobacco Plant Under Greenhouse Conditions

Hasan Durukan*, Ahmet Demirbas, Tolga Karakoy

University of Cumhuriyet, Vocational School of Sivas, Department of Crop and Animal Production, Sivas, Turkey.

Corresponding author e-mail: hasandurukan@cumhuriyet.edu.tr

Abstract

The aim of this study was to investigate the effects of different salt doses on yield and nutrient uptake of tobacco plant. The study was conducted under the greenhouse conditions with three replications according to the experimental pattern of randomized plots. In the study plastic pots was used with the capacity of 3 kg and 5 salt doses were applied; 0 dS m^{-1}, 3 dS m^{-1}, 6 dS m^{-1}, 9 dS m^{-1}, 12 dS m^{-1} and NaCl was used as a source of salt. The tobacco plant was harvested when it was 13-14 leaves and shoot dry weight, macro and micro elements concentrations were determined.

The results have shown that increasing salt doses decreased shoot dry weight of tobacco plant. The highest shoot dry weight was obtained with 29.93 g pot^{-1} in 0 dS m^{-1} application. Also, generally salt applications were decreased P, Mg, Fe and Mn concentrations. The highest N, Ca and Cu concentrations were 2.56 % N, 0.88% Ca and 12.3 mg kg^{-1} Cu respectively with 12 dS m^{-1}application. However, the 3 dS m^{-1} application was increased such as Fe, Zn and Mn micronutrients concnetrations of tobacco plant with 119.8 mg kg^{-1} Fe, 48.3 mg kg^{-1} Zn and 46.2 mg kg^{-1} Mn respectively.

Keywords: Salt doses, tobacco, yield, nutrient uptake.

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➢ ORAL PRESENTATION

Partial Purification and Characterization of β-galactosidase from *Bacillus subtilis* Strain 4NK

Şaban Tunç[1], Fatma Matpan Bekler[2], Reyhan Gül Güven[3], Kemal Güven[1]

[1] Dicle University, Science Faculty, Molecular Biology and Genetics Departement, 21280 Diyarbakır/Turkey
[2] Dicle University, Faculty of Science, Biology Department 21280 Diyarbakır/Turkey
[3] Dicle University, Education Faculty, Science Teaching Section, 21280 Diyarbakır/Turkey

Abstract

The β-galactosidase from *Bacillus subtilis* strain 4NK was partially purified by ammonium sulphate precipitation and dialysis with a fold purification of 2.8 and a yield of 85.2%, respectively. The effect of temperature and pH on β-Galactosidase enzyme was examined at 25-65 °C and pH 4.0-11.0. The optimal temperature and pH values for *Bacillus subtilis* 4NK were 45 °C and pH 6.0, respectively. Thermal stability of enzyme for *Bacillus subtilis* 4NK was examined at 40-50 °C for 30-120 min, respectively. *Bacillus subtilis* 4NK was found to be resistant to thermal stability. The effect of different concentrations of chelating agent (ethylenediaminetetraacetic acid), some chemicals (dithiothreitol, phenylmethlysulfonyl fluoride, 4-chloromercuribenzoic acid, N-ethylmaleimide and iodoacedemide) and divalent metal ions (Mg^{2+}, Ca^{2+}, Cu^{2+}, Zn^{2+}, Mn^{2+}, Co^{2+}, Ni^{2+}, Cd^{2+}) on enzyme activity was assayed. According to the results, it was found that DTT, PMSF and NEM caused low rate inhibition of these chemicals while iodoacetamide did not have a serious effect on the enzyme but PCMB caused very high inhibition. In addition, enzyme was highly active by Co^{2+}, Cd^{2+} and Mn^{2+} at low concentrations (1.0 and 2.5 mM), also $Cu^{2+}$and Cd^{2+} caused inhibition at high concentrations (10 and 20 mM). β-galactosidase was significantly activated by EDTA at all concentrations.

Keywords: β-galactosidase, *Bacillus subtilis*, characterization, inhibition

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➢ ORAL PRESENTATION

Effects of NaCl and Bisphenol A Applications on Nutrient Contents in *Ceratophyllum demersum* L.

Serap Şahin Yiğit*, Gülsüm Doğançay, Didem Koçum, Muhittin Doğan

Department of Biology, Faculty of Arts and Sciences, Gaziantep University 27310 Gaziantep-Turkey

Corresponding author e-mail: serap.syigit@gmail.com

Abstract

In the present study, effects of single and combined applications of bisphenol A (BPA) and NaCl on the accumulation of nutrients (Mg, K, Ca, Fe, Mn, Zn and Cu) in *Ceratopyllum demersum*, which were grown in a climate chamber. The macrophyte were treated with 0 (without treatment), 17.2 mg/L BPA, 10 mM NaCl, 100 mM NaCl, and 17.2 mg/L BPA+10 mM NaCl and 17.2 mg/L BPA+100 mM NaCl. Na contents were increased with rising NaCl concentrations. On the other hand, BPA application decreased Na contents when compared to to individual NaCl applications. In all applications, Mg and K contents reduced up to 29.91% at 17.2 mg/L BPA and 12.30% at 17.2 BPA+100 mM NaCl, respectively. Ca contents of macrophyte tissues were increased by BPA and NaCl applications, exception of 17.2 BPA+100 mM NaCl application. Despite the fact that Mn content was decreased by 17.2 mg/L BPA, the content increased in the ohter applications. Iron contents were also increased by applications. Contrary to these, Cu and Zn contents of the macrophyte tissues were reduced by the applications. In BPA+NaCl applications, Fe and Mn contents were increased with respect to individual NaCl treatments. On the other hand, Cu and Zn contents were decreased in the combine applications when compared to individual NaCl treatments. As a results, BPA, NaCl and their combinations disturbed the uptake nutrients in *C. demersum* and induced its nutrient imbalance.

Keywords: Bisphenol A, NaCl, *Ceratopyllum demersum*, mineral nutrients.

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➢ **ORAL PRESENTATION**

Türkiye Mikromikobiotası için *Capronia* Sacc. ve *Taeniolella* S.Hughes cinslerinden İki Yeni Kayıt

Faruk Selçuk[1], Merve Ulukapı[1*], Hakan Allı[2]

[1]Ahi Evran Üniversitesi, SHMYO, Kırşehir, Türkiye
[2]Muğla Sıtkı Koçman Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Muğla, Türkiye

Sorumlu yazar e-mail: merveulukapi@gmail.com

Özet

Türkiye mikromikobiotasına katkı yapmak amacı ile gerçekleştirilen bu çalışmada, mikrofungus örnekleri Ege Bölgesi Muğla ili, Ortaca ilçesi ve Akdeniz Bölgesi Mersin ili, Silifke ilçesi sınırlarındaki saha çalışmaları esnasında farklı lokalitelerden 2016–2017 yıllarında toplanmıştır. Örneklerin makro ve mikro fotoğrafları için Olympus SZX16–Olympus DP 26 digi–CAM (Japon) diseksiyon mikroskobu ve Olympus BX 53–Olympus DP 22 digi–CAM (Japon) araştırma mikroskobu (Axio imager 2 DIC Optik) kullanılmıştır. Sonuç olarak: *Arbutus andrachne* L. gövdesi üzerinde ***Capronia minima*** (Ellis & Everh.) M.E. Barr (Sin.: *Strickeria minima* (Ellis & Everh.) Kuntze) ve *Pinus brutia* Ten. gövde kabuğunda ise ***Taeniolella muricata*** (Ellis & Everh.) S. Hughes türleri teşhis edilmiş olup, literatür taramaları sonucunda her iki türün Türkiye mikromikobiotası için yeni kayıt olduğu sonucuna varılmıştır. Örnekler Fungaryum materyali halinde Ahi Evran Üniversitesi, Fen-Edebiyat Fakültesi, Mikoloji Laboratuvarında muhafaza edilmektedir.

Anahtar Kelimeler: *Capronia*, Mikrofungus, *Taeniolella*, Türkiye, Yeni kayıt.

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➢ ORAL PRESENTATION

Determination of Pesticide Concentrations Seasonally in Karasu (Araban, Gaziantep) and Merzimen (Yavuzeli, Gaziantep) Streams

Onur Baykal[1], Demet Doğan[2*], Muhittin Doğan[1]

[*1]Department of Biology, Faculty of Arts and Sciences, University of Gaziantep, 27310 Gaziantep, Turkey
[2]University of Gaziantep, Vocational School of Araban, Araban-Gaziantep, Turkey

Corresponding author e-mail: demetdogan@gantep.edu.tr

Abstract

The present study was conducted to determine the pesticide levels and seasonal changes in pesticide concentrations in Karasu (Araban) and Merzimen (Yavuzeli) streams flowing into the Fırat River and being under the effects of excess irrigation and agricultural activities. For this purpose, water sampling was performed from both streams seasonally and the samples were analysed for the presence of organochlorine insecticides (hexachlorobenzene, alachlor, aldrin, isodrin, alpha-chlordane, gamma-chlordane, endosulfan-I, endosulfan-II, endosulfan sulfate dieldrin, endrin, toxaphene, 4,4´-DDT). For Merzimen stream, all analysed pesticides had detectable levels and individual pesticides having the highest concentrations were as follows: Aldrin 0.000032 mg/L, Alachlor 0.00002 mg/L, 0.00003 mg/L and 0.000024 mg/L in winter, spring, summer and autumn respectively. In Karasu stream, determined highest pesticide concentrations were as follows: Aldrin 0.000049 mg/L, 0.000037 mg/L, 0.000035 mg/L, Alachlor 0.00008 mg/L in winter, spring, autumn and summer respectively. According to our results concentrations of analysed organochlorine pesticides were lower than the permissible limits prescribed by the European Commission Directive for drinking purposes and there was no statistically significant difference in pesticide concentrations between Merzimen and Karasu streams seasonally.

Keywords: Karasu Stream, Merzimen Stream, pesticide level, organachlorine pesticides.

Acknowledgement: The authors would like to thank the Gaziantep University Research Fund for financial assistance (Project Number: AMYO.YLT.17.01).

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➢ **ORAL PRESENTATION**

The inhibition effect of Piperine on MMP9 and MMP-13

Faik Gökalp

Kırıkkale University,Education Faculty, Department Of Mathematics and Science Education, Science Education Division, Yahşihan/Kırıkkale, 71450 Turkey

Corresponding author e-mail: akgokalp@gmail.com

Abstract

Matrix metalloproteinase 9 (MMP9), a variety of inflammatory and oncology, is a member of a large family of proteases that are secreted as inactive zymogens and also an important regulator of the extracellular matrix, involved in the degradation of various extracellular matrix proteins1. Collagenase-3 (MMP-13) is a matrix metalloproteinase involved in human breast cancer pathology and in arthritic processes2. Piperine is a bioactive component of black pepper and used for daily consumption and in traditional medicine3. Piperine significantly reduced the mRNA expression of MMP-9 and MMP-134. The molecular binding energy of piperine with MMP9 and MMP-13 is investigated to determine the inhibition effect by using docking.

Keywords: Piperine, MMP9, MMP-13

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➢ **ORAL PRESENTATION**

Irisin and Its Metabolic Effects

Fatih Mehmet Gür

Department of Histology&Embriology, Faculty of Medicine, Nigde Ömer Halisdemir University, Nigde, Turkey

e-mail: fgur@ohu.edu.tr

Abstract

It is known that exercise in mammals has beneficial effects on various organs and systems. In 2012, Bostrom et al. identified a myokin secreted from the skeletal muscle cells after exercise and this myokin was called "irisin". Exercise induces expression of PPAR gamma co-aktivator 1 alpha (PGC1alpha), PGC1 alpha activate the fibronectin type III domain containing 5 (FNDC 5) gene. Activating of this gen causes synthesis of FNDC 5 transmembrane protein that found in almost all tissues and organs as well as skeletal muscle cells. The irisin is formed by the cleavage of the synthesized FNDC5 by an intracellular protease. The irisin, which reaches the white fat tissue cells via bloodstream, increases PGC1 alpha expression in these cells via receptors. Increased PGC1 alpha enhances the synthesis of uncoupling protein 1 (UCP1). As it known, mitochondrial membranes of brown fat tissue cells have UCP1 protein that pumps protons from the intermembrane space into the mitochondrial matrix. When UCP1 is active, there is no ATP synthesis, instead, heat energy is released. Increase in UCP1 synthesis in white adipose tissue cells causes white adipose tissue cell to turn into brown fatty tissue. Increase in the amount of brown fat tissue in the body, maintain weight control and energy balance. Although the functions of irisin have not yet been exactly elucidated, it has been suggested that irisin has effects on weight loss, decreased insulin resistance, glucose and lipid metabolism. Increased irisin expression in mice was reported to lead to weight loss and improved glucose tolerance. The results obtained in studies show that irisin may have potency to be used as a drug in the treatment of metabolic diseases such as obesity and diabetes.

Keywords: Irisin, Exercise, Weight control, Obesity, Diabetes

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➢ ORAL PRESENTATION

Adventitious Shoot Regeneration from Internodal Explants *of Limnophila aromatica* (Lamk.) Merr.

Muhammet Dogan, Kubra Ugur*

Department of Biology, Kamil Özdağ Faculty of Science, Karamanoğlu Mehmetbey University, Karaman, Turkey

mtdogan1@gmail.com

Abstract

In this study, internodal explants of *Limnophila aromatica* (Lamk.) Merr were cultured for multiple and rapid production on Murashige and Skoog (MS) medium containing combinations of 0.10 mg L^{-1} Gibberellic acid (GA_3) and 0.05-0.160 mg L^{-1} Tidiazuron (TDZ) for eight weeks. In general, high shoot regeneration percentages were obtained. The maximum number of shoots per explant (17.46) and the highest shoot length (1.60 cm) were obtained in MS medium supplemented with 0.10 mg L^{-1} GA_3 + 0.20 mg L^{-1} TDZ and 0.10 mg L^{-1} GA_3 + 0.05 mg L^{-1} TDZ, respectively. Regenerated shoots were successfully rooted on MS medium containing 0.25 mg L^{-1} indole butyric acid (IBA). Successful adaptation of the rooted shoots to the aquarium environment has been achieved.

Keywords: Internodal explant, propagation, *in vitro*, *L. aromatica*, TDZ.

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➢ **ORAL PRESENTATION**

In vitro genotoxicity and cytotoxcity of miceller formulation of sugar bounded commercial anticancer agent

Çinel Köksal Karayıldırım[1*], Mustafa Kotmakçı[2], Erkan Halay[3], Kadir Ay[4], Yücel Başpınar[2]

[*1]Department of Biology, Faculty of Science, Ege University, 35100, Bornova, İzmir, Turkey.
[2]Department of Pharmaceutical Biotechnology, Faculty of Pharmacy, Ege University, 35100 Bornova, İzmir, Turkey
[3]Scientific Analysis Technological Application and Research Center, Uşak University, 64200, Uşak, Turkey
[4]Department of Chemistry, Faculty of Science&Letters, Manisa Celal Bayar University, 45140 Yunusemre, Manisa, Turkey

Corresponding author e-mail: cinel.koksal.karayildirim@gmail.com

Abstract

Cancer has been a serious global threat to human welfare and socioeconomic development. Especially nowadays, it has become one of the world's major health problems. It is important to develop novel, effective and also harmless pharmaceuticals for the treatment phases. 5-Fluorouracil (5-FU) is potent agent clinically used against solid tumors like breast, colorectal, oesophageal, stomach, pancreatic, head and neck.

Carbohydrates are one of the most common organic molecules and it is well known that they can improve the absorption across a cell membrane. In addition to this, carbohydrates bounded drugs can help to overcome pharmacokinetic problems. Thus, in this study, we design a molecule that contain an anti-cancer agent (5-FU) and sugar. The synthesis of 5-fluorouracil derivative (5-FUD) 1-[{1'-(2",3",4",6"-tetra-*O*-acetyl-*β*-D-glycopyronosyl)-1'*H*-1',2',3'-triazole-4'-yl} methyl]5-fluorouracil was carried out from a commercial anti-cancer agent (5-FU) and tetra-*O*-acetylglycose as starting matrials *via* alkylation, azidation and finally click reaction.

After synthesis of 5-FUD, a micellar formulation of it was prepared and characterized in terms of particle size, polydispersity index, zeta potential, refractive index and pH. In further step, the cytotoxicity and mutagenicity of the 5-FUD was investigated using an *in vitro* cell culture model and the AMES test. According to the results of this study, the novel 5-fluorouracil derivative could be a drug candidate for the therapy of cancer and needs further *in vivo* investigations.

Keywords: 5-fluorouracil, Micelles, Cytotoxicity, Genotoxicity, Ames test, Anticancer activity

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➢ **ORAL PRESENTATION**

Bioactive Compounds Isolated from Aromatic and Medicinal Plants

Ramazan Erenler[1*], Mahfuz Elmastas[2], Nusret Genc[1]

[1]Gaziosmanpasa University, Faculty of Arts and Sciences, Department of Chemistry, Tokat, Turkey.
[2]Health Sciences University, Faculty of Pharmacy, Department of Biochemistry, Istanbul, Turkey.

*Corresponding author e-mail: rerenler@gmail.com

Abstract

Aromatic and medicinal plants play an important role in drug discovery and development process. Herbal medicines have been main source of primary healthcare in many nations. About 80% of world populations are still dependent on traditional medicines. The drugs for cancer (60%) and infectious diseases (75%) are natural origin. Recently, there has been a rapid escalation in the discovery of molecular targets that may be applied to the discovery of novel tools for the diagnosis, prevention, and treatment of human diseases. Active principles from plants were isolated in 1800. It was at this point that the effectiveness of medicinal natural products began to be attributed to science and not to magic or witchcraft**.**

Apigenin (**1**), ferulic acid (**2**), vitexin (**3**), caprolactam (**4**), rosmarinic acid (**5**), and globoidnan A (**6**) were isolated from *Origanum Rotundifolium*. Vitexin (**3**) revealed the most antiproliferative activity against HeLa, HT29, C6 and Vero cells lines. Kaempferol-3-*O*-*β*-xylopyranosyl-(1-2)-*β*-rhamnopyranoside (**7**), quercetin-3-*O*-*β*-xyloside (**8**), kaempferol-3-*O*-*β*-glucoside (**9**), quercetin-3-*O*-*β*-glucoside (**10**), kaempferol-3-*O*-*β*-rhamnopyranoside (**11**), and kaempferol-3-*O*-*β*-d-neohesperidoside (**12**) were isolated from ethyl acetate extract of *Cynanchum acutum* L. subsp. *sibiricum.* Quercetin-3-*O*-*β*-xyloside (**10**), kaempferol-3-*O*-*β*-rhamnopyranoside (**11**) revealed the outstanding antiproliferative activity against HeLa cell lines. 5,6,3′-Trihydroxy-7,8,4′-trimethoxyflavone (**12**), hesperetin (**13**), hydroquinone (**14**), arbutin (**15**) and rosmarinic acid (5) were isolated from the water-soluble ethyl acetate extract of aerial parts of *O. majorana*. Antioxidant activities of isolated compounds and water-soluble ethyl acetate extractwere investigated using assays of $DPPH^{\bullet}$, $ABTS^{\bullet+}$, reducing power and total phenolic content. Antiproliferative activities of the isolated compounds and plant extracts were investigated against C6 and HeLa cell lines Both hesperetin (**13**) and hydroquinone (**14**) were determined to have stronger antiproliferative activities against C6 and HeLa cells than the other isolated compounds and 5-fluorouracil.

Keywords: Flavonoids, antiproliferative activity, antioxidant activity, spectroscopy, chromatography.

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➢ ORAL PRESENTATION

Gebe Eğitiminin Anne ve Babanin Anksiyete, Depresyon Düzeylerine Etkisi

Dilek Şayık[1], Semahat Arı[2], Yeliz Kaya [*3], Emine Kaya Usta[1]

[1] Eskişehir Devlet Hastanesi, Eskişehir, Türkiye
[2] Yunus Emre Devlet Hastanesi, Eskişehir, Türkiye
[*3] Eskişehir Osmangazi Üniversitesi, Sağlık Bilimleri Fakültesi, Doğum ve Kadın Hastalıkları Hemşireliği ABD, Eskişehir, Türkiye

Sorumlu yazar e-mail:yelizyilmazturk@gmail.com

Özet

Bu çalışmada, gebelik döneminde anne ve baba adaylarının anksiyete ve depresyon düzeylerinin belirlenmesi ile bu düzeylere gebe eğitimin etkisini belirlemek amaçlandı.

Araştırma gerekli izinler alındıktan Eskişehir Devlet Hastanesi'nde 302 kişi ile yapıldı. Gebelik nedeniyle hastaneye başvuran, 24 hafta ve üzerinde gebeliğe sahip olan, gönüllülük esasına dayalı olarak gebe okulundan eğitim almak isteyen ve doktoru tarafından onay verilen kadınlar ve eşleri "eğitim grubu"nu , eğitim almak üzere gebe okuluna başvuruda bulunmayan ancak veri toplama formları doldurmaya gönüllü, 24 hafta ve üzerinde gebeliğe sahip olan, rutin gebelik takibi nedeniyle hastaneye başvuran kadınlar ve eşleri "kontrol grubu"nu oluşturdu. Çalışmada kullanılan veri toplama formları, Fatma Altınçelep (2011) tarafından oluşturulmuş Gebe Bilgi Formu, Beck ve ark. (1988) tarafından hazırlanan, Ulusoy ve ark. (1998) tarafından geçerliliği güvenirliği yapılan Beck Anksiyete Ölçeği, Beck ve ark. (1961) tarafından hazırlanan, Hisli (1988) tarafından geçerliliği güvenirliği yapılan Beck Depresyon Ölçeğidir. Verilerin analizinde IBM SPSS Statistics 22 paket programı kullanıldı.

Çalışmamıza katılan eğitim grubundaki kadınların eğitim öncesi Beck Anksiyete Ölçeği puan ortalaması 17.20±10.49, kontrol grubundaki kadınların 14.61±10.26 olup aralarında istatistiksel açıdan anlamlı farklılık bulunamadı ($p>0.05$); ancak eğitim grubunda postpartum 1. Gündeki ölçek puanı 7.86±10.85 ile eğitim öncesine göre düşüş gösterdi. Eğitim grubundaki kadınların eğitim öncesi Beck Depresyon Ölçeği puan ortalaması 14.14±6.92, kontrol grubundaki kadınların 10.56±10.47 olup aralarında istatistiksel açıdan anlamlı farklılık bulundu ($p=0.002$); eğitim grubunda postpartum 1. Gündeki ölçek puanı 3.08±5.81 ile eğitim öncesine göre düşüş gösterdi. Eğitim grubundaki erkekler de kadınlarla benzer sonuçlar göstererek postpartum 1. Gün puanlarında eğitim öncesine göre düşüş gösterdi.

Anksiyete ve depresyon düzeyini arttırabilen gebelik süreci, anneyi ve babayı olumsuz etkileyebildiğinden, gebelik eğitimlerine anne ve babaların birlikte katılması anksiyete ve depresyon düzeyleri üzerinde olumlu sonuçlar sağlamaktadır.

Anahtar Kelimeler: Anne, baba, gebe eğitimi, anksiyete ve depresyon

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➢ ORAL PRESENTATION

Kızılcık, Likarba ve Japon İğdesi Meyvelerinin Bazı Enzim İnhibisyonları ve Antioksidan Aktivitelerinin Belirlenmesi

Zehra Can[1*], Nimet Baltaş[2], Yakup Şirin[3], Hilal Ebru Çakır[3], Onur Tolga Okan[4]

[1]Giresun Üniversitesi, Şebinkarahisar Teknik Bilimler Meslek Yüksek Okulu, 28400, Giresun, Turkey
[2]Recep Tayyip Erdoğan Üniversitesi, Fen Fakültesi, Kimya Bölümü, 53020, Rize, Turkey
[3]Karadeniz Teknik Üniversitesi, Fen Fakültesi, Kimya Bölümü, 61080, Trabzon, Turkey
[4]Karadeniz Teknik Üniversitesi Hukuk Fakultesi Teknoloji Transfer Ofisi Kanuni Kampüsü 61080, Trabzon-Türkiye

zehracan@giresun.edu.tr

Özet

Teknolojinin gelişmesiyle, oluşan çevre kirliliği ve diğer pek çok etken çeşitli toksik maddelere maruz kalmamıza neden olmaktadır. Bu toksik maddelerden dolayı insanlarda oluşan hastalıkların (kalp, kanser, erken yaşlanma vb. gibi) sayısı da her geçen gün artmaktadır. Bu bakımdan insanların tedavi amaçlı olarak doğal ürünlere talebi giderek artmaktadır. Yapılan çalışmada fenolik içerik olarak zengin olan kızılcık, japon iğdesi ve likarba meyvelerin antioksidan aktiviteleri ve bazı klinik açıdan önemli enzim inhibisyonları üzerine etkileri incelenmiştir. Toplam fenolik madde miktarı, toplam flavonoid madde miktarı ve antioksidan aktivite olarak DPPH ve FRAP testleri yapıldı. Enzim inhibisyonu olarak asetilkolin esteraz, ksantin oksidaz ve üreaz enzim inhibisyonu yapıldı. Sonuçlara göre kızılcık meyvesinin antioksidan aktivitesi ve enzim inhibisyonu üzerine etkisi diğer meyvelere göre daha yüksek bulundu.

Anahtar Kelimeler: Ksantin oksidaz, asetilkolin esteraz, üreaz, inhibisyon, antioksidan

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➢ ORAL PRESENTATION

Nanopartiküllerin Yüklü Nanogözenklerden Taşınımının Moleküler Boyutta Modellenmesi

Nazar İleri-Ercan

Boğaziçi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, İstanbul, Türkiye

Sorumlu yazar e-mail: nazar.ileri@boun.edu.tr

Özet

Moleküllerin bireysel olarak nanogözeneklerden geçerken harici bir voltaj altında algılanması popüler bir araştırma alanıdır. Söz konusu yaklaşım, moleküller nanogözenekleden geçerken iyon akımındaki tespit edilebilir geçici blokajlara dayanır. Akımdaki bu değişimin, nanoparçacık ve nanogözenek boyut ve geometrisinin yanı sıra dış elektrik alanının bir fonksiyonu olduğu gösterilmiştir. Ancak, bu bağlamda geliştirilen modeller, deneysel olarak gözlemlenen davranışları (örneğin, teknolojik açıdan önemli olan ince nanogözeneklerdeki akım düşüşünün azalan farklarını ve algılama oranlarını) tahmin etmede yetersiz kalmaktadır. Bu amaçla, bu çalışmada, harici elektrik alanı altındaki orta ila düşük en-boy oranına sahip silindirik nanogözeneklerden kolloidal nanoparçacık translokasyonuna ait moleküler dinamik simülasyonlarının ön sonuçları verilecektir. Nanogözenek boyutunun iyon dağılımı ve iyon seçiciliği üzerindeki etkileri sunulacaktır.

Anahtar Kelimeler: Nanoteknoloji, algılama, nanogözenekler

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➢ ORAL PRESENTATION

Black Alder (*Alnus orientalis*) is a New Candidate for Being a Bioenergy Crop

Halbay Turumtay[1*], Emine Akyüz Turumtay[2], İbrahim Turna[3], Adem Demir[2], Emine Kılıçkaya Selvi [2]

[*1]Karadeniz Technical University, Department of Energy System Engineering, Trabzon, Turkey.
[2*]Recep Tayyip Erdoğan University, Department of Chemistry, Rize, Turkey
[3*]Karadeniz Technical University, Department of Forestry Engineering, Trabzon, Turkey

Corresponding author e-mail: hturumtay@gmail.com

Abstract

With the increasing the population of the world day-by-day and rising living standards, demands for energy also have increased. Oil and other fossil fuels are estimated to be depleted in the near future. Because the use of this fuel brings along many problems such as air pollution, global warming and climate change, production and use of renewable alternative sources have spread in the world. The use of bioethanol as a fuel would reduce both usage of gasoline fuel and air pollution resulting from the use of gasoline. Sugar containing raw materials (sweet sorghum, sugar beet, sugar cane), starch containing raw materials (maize, barley, wheat) and lignocellulosic (straw, wood, grass) raw materials are used as a source of bioethanol in the world. Recent findings about Black Alder (Alnus orientalis) has been proposed that Black alder is the most suitable raw material for bioethanol production in northeast part of Turkey. In spite of dry land not good soil conditions, less fertilizer and irrigation compared to other plant Black alder take high volume yield in per unit area.

Keywords: Black Alder, Biofuels, Lignocellulosic Biomass

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➢ ORAL PRESENTATION

Comparative Genetic Research on *Microtus levis* (Miller, 1908) Distributed in Asia and Europe Inferred From Mitochondrial Cyt-*b* and COXI

Derya Çetintürk[1*], Nuri Yiğit[1], Riccardo Castiglia[2], Gabriele Senczuk[2], Ercüment Çolak[1]

[*1]Ankara Üniversity, Faculty of Science, Biology Department, Ankara, Turkey.
[2]La Sapienza University, Institute of Charles Darwin, Department of Biology and Biotechnology, Rome, Italy.

Corresponding author e-mail: dcetinturk@ankara.edu.tr

Abstract

Microtus levis (Miller, 1908) is a vole species widespread in Asia and Europe, and this species are also frequently found in watery meadows in Turkey except for Eastern Northsea and Southeastern Anatolia. Thrace and Anatolia populations of *M. levis* have been seperated by Bosporus and Dardanelle Straits, and therefore genetic differentiation due to these straits were investigated. With this purpose, Cytochrome oxidase-I (COXI) and Cytochrome-*b* (Cyt-*b*) gene regions were analysed using Polymerase Chain Reaction (PCR) with 40 samples from Turkey, and in addition to these samples, sequences from GenBank were also used in the analyses. Genetic diversity and genetic distance values as well as pyhlogenetic dendrograms were obtained using Cyt-*b* and concatenated sequences. Bayesian Markov Chain Monte Carlo Dendrogram was constructed using GTR+G+I Model in Cyt-*b* region and in this dendrogram, Asia and Europe haplotypes were grouped with posterior probability values: pp= 0.99 and pp= 0.50, respectively. For concatenated region, GTR Model (Tavaré, 1986) for Cyt-*b* and K80 Model (Kimura, 1980) for COXI were used. Bayesian MCMC dendrogram shows two well-supported clades consisting in Turkish Thraces (pp= 99) and Central Anatolia haplotypes (pp= 90). On the other hand, the mean and net genetic distance values were calculated based on Kimura-2 Parameter (Kimura, 1980) and were found to be considerably low. Mean genetic distance was found to be 0.017±0.004 and net genetic distance was found to be 0.010±0.003 for Cyt-*b* region and for concatenated region, mean and genetic distance values are 0.013±0.003 and 0.007±0.002, respectively. It could be concluded that genetic divergence of *M. levis* between Europe and Asia populations are notably low, and the speciation process of this species is in its the early stages.

Keywords: *Microtus levis*, voles, Mitochondrial DNA, phylogeny

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➢ **ORAL PRESENTATION**

Determination of Some Biochemical Parameters in Cattle with Tongue Rolling Disease

Özkan Duru[1*], Alparslan Kadir Devrim[1], Ali Haydar Kirmizigül[2], Ekin Emre Erkiliç[2]

[1]Kırıkkale University, Faculty of Veterinary Medicine, Department of Biochemistry, Kırıkkale, Turkey
[2]Kafkas University, Faculty of Veterinary Medicine, Department of Internal Medicine, Kars, Turkey

Corresponding author* e-mail: ozkanduru@kku.edu.tr

Abstract

Tongue rolling is a disease characterized by non-physiological tongue movements, such as continuous seizures, rolling and twisting the tongue from the mouth. Although the precise cause of the disease is not fully known, it may be a habit due to stressful nutritional conditions, game and imitation as well as hereditary factors. It is also reported that the deficiencies of some trace elements such as copper, cobalt and manganese may be formed.

This study was aimed to determine the levels of calcium, inorganic phosphorus, uric acid, creatine kinase, triglyceride, alkaline phosphatase (ALP), aspartate transaminase (AST), and alanine transaminase (ALT) according to the groups of age, breed and sex in cattle with tongue rolling disease. A total of 53 cattle were used as study material, 42 of which were tongue rolling disease and 21 were healthy. The animals were evaluated in female and male sex groups, indigenous and Simmental breed groups and in separate groups of 1, 2, 3 and 4 years of ages. Spectrophotometrical analyzes were carried out in blood sera obtained from the animals which diagnosed by clinical findings.

Our data were statistically evaluated by ANOVA and Multiple Comparisons tests. The levels of inorganic phosphorus were increased significantly ($p < 0.05$) in male patients, 3 aged animals and Simmental breed cattle compared to the control group. Additionally, creatine kinase values were elevated in females and 2 and 3 years old cattle. Uric acid values were significantly higher in sick females and 3-year-old animals. In terms of ALP values, the patient was found to be significantly higher in males, above 4 years of age and in Simental breed animals. It was concluded that biochemical parameters such as creatine kinase, ALP and phosphorus, which are the parameters of muscle metabolism may play roles in the etiology of tongue rolling disease.

Keywords: Tongue rolling disease, Cattle, Clinical Biochemistry, Muscle Metabolism.

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➢ ORAL PRESENTATION

Some Biological Features of Lesser Horseshoe Bat (Mammalia: Chiroptera) in Turkey

İrfan Albayrak

University of Kırıkkale, Faculty of Science and Arts, Department of Biology,
71450, Yahşihan, Kırıkkale

e-mail: iralbayrak@yahoo.com

Abstract

This study is based on field notes and a total of 203 *Rhinolophus hipposideros* specimens obtained from Turkey between 1977 and 1989. Additionaly, some ecological observations on the species have been continued with fieldwork conducted without interruption until 2018. Notes on diagnostic characters, habitat, pelage colour, measurements and karyology were given. Informations about active times of this species has been recorded using a bat detector. The ultrasonic peak frequency of this species is 106 to 116 kHz. *R. hipposideros*, the smallest member of 5 species in the family Rhinolophidae is encountered in caves, dens and vacant buildings. This species constitutes approximately a total of 40-50 individuals of nursery and maternity colonies. Flight of *R.hipposideros* is slow but its maneuverability is high. Our materials show that females have larger values in terms of some external and cranial characteristics than those of males. Comparing the data of our samples with those of *R.h.minimus* and *R.h.midas* in nearest geographic regions, it is found that the nominate form distributes in Turkey.

Key Words: *Rhinolophus hipposideros*, Ecological features, Active time, Nursery colony, Turkey

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➢ **ORAL PRESENTATION**

Dişi Köpeklerde Acil Kontrasepsiyon

Zahid Paksoy

Gümüşhane Üniversitesi, Gümüşhane MYO, Veterinerlik Bölümü, Gümüşhane, Türkiye

Sorumlu yazar e-mail: paksoyland@yaho.com

Özet

Köpek sahipleri veteriner hekimlere istenmeyen gebeliklerin önlenmesi için oldukça sık bir şekilde başvurmaktadır. Bu kapsamda, çiftleşmeden sonraki günlerde yapılan ve gebeliği önlemeyi amaçlayan işlemlerin tamamı kontrasepsiyon olarak adlandırılmaktadır. Acil kontrasepsiyon yöntemleri arasında en sık uygulanan metodlardan birisi ovariohisterektomi operasyonudur. Hayvan sahibi köpeğinden hayatı boyunca yavru almak istemiyorsa bu operasyon çoğunlukla tercih edilir. Bununla birlikte ileride yavru almayı planlıyorsa daha farklı yöntemlerle konsepsiyon sonlandırılabilir. Türkiye'de en fazla tercih edilen ilaç bir progesteron blokörü olan aglepristondur. Çiftleşme sonrası günlerde kullanıldığında gebeliği önler, eğer gebelik şekillendikten sonra kullanılırsa abortusa neden olur. Progestagenler (proligeston) de gebeliği önlemek için kullanılan ilaçlardandır ve beklenen östrüsten önce verildiğinde uzun süre kızgınlığı erteler ve böylece çiftleşme engellenir. Bir androjen olan miboleron, progestinler gibi östrüsün oluşmasını engeller ve 24 aya kadar kullanılabilir. Son zamanlarda GnRH agonistleri (deslorelin) implant formunda bu maksatla kullanılmaktadır. İmmunokontraseptif aşılar gelecek vadeden diğer bir kontrasepsiyon yöntemidir. Bu aşılardan birisi (SpayVac®) zona pellucida proteinlerine karşı antikor oluşturmakta ve böylelikle oosit ve sperm arasındaki etkileşim önlenmektedir. Diğer aşı (GonaCon™) ise GnRH'a karşı antikor oluşturmakta ve böylece FSH ve LH salınımı engellenmektedir. Ancak deslorelin ve immunokontraseptif aşılar ülkemizde bulunmamaktadır. Sonuç olarak, dişi köpeklerde istenmeyen gebelikleri engellemek için tek başına aglepriston kullanımı oldukça etkili ve yaygın bir metot olmakla birlikte cerrahi operasyonla kısırlaştırma işlemi daha fazla yapılmaktadır. Bu sebeple immunokontraseptif aşılar ve implant formunda uygulanan hormonlar üzerinde çalışmalar devam etmektedir. Özellikle bu aşı ve implantların ülkemizde ruhsat alması ile birlikte dişi köpeklerin cerrahi yolla kısırlaştırılmalarının önüne geçilmesi mümkün olabilecektir.

Anahtar Kelimeler: Köpek, istenmeyen gebelik, post-coital kontrasepsiyon

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➢ ORAL PRESENTATION

The crystal structure, DFT study and Hirshfeld surface analysis of hexaaquacobalt(II) dihydrogen 1,2,4,5-benzenetetracarboxylate

Sevgi Kansız[1*], Necmi Dege[1], Fatih Şen[2]

[*1]Ondokuz Mayıs University, Faculty of Arts and Sciences, Department of Physics, Samsun, Turkey.
[2]Bozok University, Sorgun Vocational School, Department of Opticianry, Yozgat, Turkey.

Corresponding author e-mail: sevgi.koroglu@omu.edu.tr

Abstract

The crystal structure, Density Functional Theory (DFT) calculations and Hirshfeld surface analysis of $[Co(H_2O)_6][C_{10}H_4O_8]$ are reported in this paper. The title compound is monoclinic with space group P2/m, a=6.4851(9), b=9.9161(14), c=6.5305(9) Å, β= 115.451(9)˚, V=379.20(9) $Å^3$, Z=1, Dx=1.836 g/cm^3, Mr=419.16, μ= 1.21 mm^{-1}. The crystal structure was determined by direct methods, and refined by full-matrix least-squares method for the final R=0.040 and wR=0.124. In the crystal, intermolecular O—H···O hydrogen bonds link the molecules into the supramolecular chains propagating. The modeling of cobalt (II) complex was made by geometric optimization. The calculated structural parameters (bond lengths, bond angles, torsion angles) compared with their experimental data. Hirshfeld surface analysis and two dimensional fingerprint plots have been used to analyse the intermolecular interactions present in the crystal.

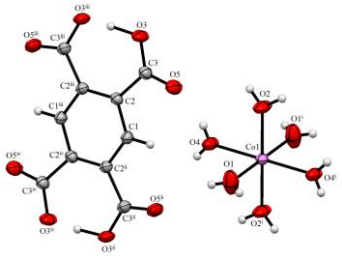

Figure 1. The crystal structure of $[Co(H_2O)_6][C_{10}H_4O_8]$. [Symmetry codes: (i) –x, -y, -z+1; (ii) –x, y, -z; (iii) x, -y+1, z; (iv) –x+1, y, -z+1]

Keywords: Cobalt(II), DFT, Hirshfeld surface, benzenetetracarboxylate.

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➢ ORAL PRESENTATION

Dimethyl Ether Production from Syngas Over Tpa Incorporated Methanol Synthesis Catalysts

Birce Pekmezci Karaman[1], Derya Erkal[1], Nuray Oktar[1],Gülşen Doğu[1], Timur Doğu[2]

[*1]Gazi University, Engineering Faculty, Chemical Engineering Department, Ankara, Turkey
[2]Middle East Technical University, Engineering Faculty, Chemical Engineering Department, Ankara, Turkey

Corresponding author e-mail: oktarnuray@gmail.com

Abstract

There are two approaches for dimethyl ether (DME) production from synthesis gas. One is a two-step method, including consecutive methanol synthesis and its dehydration reactions. Another is a one-step method for direct conversion of DME (STD) from syngas over a bi-functional catalyst. In this study, dimethyl ether (DME) synthesis from syngas was investigated over a bi-functional catalyst, which was prepared by impregnating varying amounts of tungstophosphoric acid (TPA) into a copper based commercial methanol synthesis catalyst. Initial activity test results of the pure commercial methanol synthesis catalyst (HifuelR-120) in methanol synthesis from syngas were performed at 50 bar and 275^{o}C. In these tests, quite a high of methanol selectivity value was observed (about % 82.5) at a CO conversion value of about % 6. In order to increase the surface acidity of HifuelR-120, TPA was incorporated into the catalyst structure by an impregnation method. Catalysts containing different TPA ratios (5, 10, 25%) were prepared. Activity tests performed with these catalysts showed an increase in DME selectivity and CO conversion with an increase in TPA ratio in the catalyst. Maximum CO conversion and DME selectivity values are obtained in the presence of 25TPA@HifuelR-120 catalyst, as 26% and 54%, respectively. In situ conversion of produced methanol to DME is the main reason of increase of CO conversion in the presence of the bi-functional catalyst. Results obtained with TPA impregnated methanol synthesis catalysts were highly promising for the direct synthesis of DME from synthesis gas.

Keywords: Dimethyl ether, Tungstophosphoric acid, Methanol, HifuelR-120.

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➢ **ORAL PRESENTATION**

Kayısı (*Prunus armeniaca L.*) Çekirdeği Yağının Fare 3T3-L1 Pre-adiposit Hücre Hattı Üzerinde Sitotoksik Etkisinin İncelenmesi

Büke Demir[1], Fadime Kıran[2], Yavuz Emre Arslan[1*]

[*1]Çanakkale Onsekiz Mart Üniversitesi, Mühendislik Fakültesi, Biyomühendislik Bölümü, Çanakkale, Türkiye

[2]Ankara Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: yavuzea@gmail.com

Özet

Bitkilerin tedavi amaçlı kullanımı neredeyse insanlık tarihiyle birlikte başlamıştır. Dünya üzerinde tıbbi ve aromatik bitkiler oluşturdukları tedavi ve hastalık önleyici etkileri sebebiyle talep görmektedir. Özellikle bitki ekstraklarının antioksidan, antimikrobiyal ve hatta anti-tümör aktivitelerinin keşfiyle *in vitro* çalışmalar çeşitlenerek hız kazanmıştır. Tıbbi ve aromatik bitkiler grubuna dahil olan kayısı; kanserden dermatolojiye çeşitli medikal tedavilerde etkili ilaç aktif madde barındırması sebebiyle oldukça önemlidir. Bu çalışmada, Çanakkale ili Kepez beldesine özgü kayısı (*Prunus armeniaca L.*) çekirdeklerinden ekstrakte edilen yağın fare 3T3-L1 pre-adiposit hücre hattı üzerindeki sitotoksik etkisi *in vitro* çalışmalarla belirlendi. Özgü olduğu bölgeden ve 15-25 yıllık kimyasal gübreleme uygulanmamış ağaçlardan, mevsiminde toplanan kayısılar etli meyve ve dış kabuk kısmından ayıklanıp temizlenerek yaş kayısı çekirdeği elde edildi. Etüvde 37 °C'da 5 gün boyunca kurutulan kayısı çekirdekleri ekstraksiyona hazırlanmak üzere öğütüldü. Çözücü olarak hekzanın kullanıldığı ekstraksiyon işlemleri Rotary evaporatör cihazında yapıldı. Ekstraksiyon verimi %31,09±0,94 (n=6) olarak bulundu. Kayısı çekirdeği yağının asitlik değerleri; mg KOH/g cinsinden 0,050 ve %oleik asit cinsinden 0,027 bulunurken; GC-FID sonucunda ise %45 undekanoik asit, %17 kaprik asit ve %16,2 laurik asit tespit edildi. Hücre kültürü çalışmalarına başlamadan önce kayısı çekirdeği yağı 1 ug/uL konsantrasyonda dimetil sülfoksit içerisinde çözüldü. Fare 3T3-L1 pre-adiposit hücre hattı ise %5 CO_2, 37 °C ve %80-90 bağıl nem sağlayan bir inkübatörde kültüre edilerek pasajlandı. Yeteri bolluğa ulaşan hücreler hemositometre ile sayıldı ve 96 kuyucuklu doku kültür plastiğine 50,000 hücre/kuyucuk olacak şekilde ekildi. Ertesi gün besi yeri 0-20-40-60-80-100 ug/kuyucuk kayısı çekirdeği yağı içeren taze besi yeriyle değiştirildi (n=3) ve 24 saat süreyle kültür devam ettirildi. Süre sonunda invert faz kontrast mikroskobu görüntüleri alınan hücrelere XTT testi uygulandı ve kayısı çekirdeği yağının fare 3T3-L1 pre-adiposit hücre hattı üzerindeki sitotoksik etkisinin çok düşük olduğu bulundu. Elde edilen sonuçların kayısı çekirdeği yağının farmakoloji alanında kullanılması adına yeni çalışmalara ışık tutacağı düşünülmektedir. Bu çalışma ÇOMÜ BAP tarafından 2518 numaralı projeyle desteklenmiştir.

Anahtar Kelimeler: Kayısı çekirdeği yağı, Sitotoksisite, XTT testi, Ekstraksiyon, fare 3T3-L1 pre-adiposit, Tıbbi bitkiler

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➢ **ORAL PRESENTATION**

Maden Yataklarında Yaşayabilen Bazı Bakterilerin Ağır Metallerin Biyoremidasyonda Kullanılabilme Potansiyellerinin Belirlenmesi

Tuğba Özbucak[1], Gülaycan Polat[1*], Ömer Ertürk[1], Öznur Ergen Akçin[1], Selahattin Özbucak[2]

[1] Ordu Üniversitesi Fen-Edebiyat Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Ordu, Türkiye
[2] Dr. Hilmi Güler Bilim Sanat Merkezi

Sorumlu yazar e-mail: gulaycan.polat06@gmail.com

Özet

Bu çalışmada Ordu ili sınırları içinde bulunan Cu(bakır)-Pb(kurşun)-Zn(çinko) maden yatağına ait topraklardan izole edilen bazı bakterilerin ağır metallerin biyoremidasyonunda kullanılabilme potansiyelleri belirlenmeye çalışılmıştır. Bu amaçla maden yatağından alınan topraklardan saf kültürler hazırlanarak 7 çeşit bakteri izolatı elde edilmiştir. Bu bakteriler farklı boyama yöntemleri ile boyanarak ışık mikroskobu ile görüntülenmiştir. Biyokimyasal özellikleri ise Vitek 2 yöntemi ile belirlenmiştir. Teşhisi yapılan bakteriler; *Pseudomonas luteola*, *Paenibacillus polymyxa*, *Staphylococcus pseudintermedius*, *Staphylococcus vitulinus Pseudomonas stutzeri*, *Leuconostoc mesenteroides* ssp. d*extranicum, Yersinia frederiksenii*'dir. Çalışmamızda tespit edilen bu bakterilerden ağır metal absorbe edebilen *Pseudomonas luteola*, *Paenibacillus polymyxa* ve *Pseudomonas stutzeri* türleri kültür yapılarak çoğaltılmıştır. Steril hale getirilen topraklara bu üç bakterinin tekli ve ikili kombinasyonları ekilerek sinerjik etkileri belirlenmeye çalışılmıştır. Bu etkileşim (1 tanesi kontrol, 6 toprak örneği) topraktaki Cu(bakır)-Pb(kurşun)-Zn(çinko) ağır metalleri ile organik madde ve Ph değişimi açısından değerlendirilmiştir. Kontrol toprağındaki sonuçlara göre maden yatağı topraklarında en fazla miktarda kurşun daha sonra çinko, en az miktarda ise bakır elementinin bulunduğu görülmektedir. Deneme topraklarında ise ortama ilave edilen bakteri ve bakterilere göre ağır metallerde, organik madde ve Ph'da kontrole göre bazı değerlerin artığı bazı değerlerinde düştüğü tespit edilmiştir. Çalışmada kullanılan *P. luteola* ve *P. polymyxa* bakterilerinin ayrı bulunduklarında özellikle bakır elementini, *P. luteola* ve *P. polymyxa* bakterilerinin bir arada bulundukları ortamda ise çinko elementini uzaklaştırmada etkili oldukları belirlenmiştir. Bu iki bakterinin ayrı ve bir arada bulundukları ortamlarda ise kurşun miktarının attığı tespit edilmiştir.

Anahtar Kelimeler: Biyoremidasyon, Ağır metal, *Pseudomonas luteola*, *Paenibacillus polymyxa*, *Pseudomonas stutzeri*

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➢ ORAL PRESENTATION

The Chronic Effects of Nonylphenol and Vitamin C on the Level of Gene Expression in Rat Liver

Fahriye Zemheri[a], Cevdet Uguz[b] And Metin Erdogan[b]

[a]Bartın University, Faculty of Science, Department of Moleculer Biology and Genetics, Biotechnology, Bartın, Turkey
[b]Afyon Kocatepe University, Faculty of Veteriner Medicine, Department of Medical Biology and Genetics, Afyonkarahisar, Turkey

Abstract

Other natural or artificial chemicals are adversely affected by all living things, including humans, in the environment. These compounds are natural chemicals, plastics, food additives, detergents, pesticides, chemicals such as cosmetics and pharmaceuticals, water and air pollutants, tobacco smoke, and phenolic compounds such as alcohol. The possible effects of many environmental pollutants increased on human health and this increase causes to be in discussion. Some of these contaminant adversely affect on endocrine system of living. Endocrine-disrupting chemicals particularly contain on detergent, pesticides and industrial products. These chemicals are included compounds such as styrene, 1,3-butadiene, formaldehyde, vinyl chloride, acrylamide, bisphenol A (BPA) and nonylphenol (NP). In this study, it was sought to determine whether environmentally relevant concentration of NP has an effect on the expresson of genes that regulates apoptosis in rat liver. Hence, rats were exposed 0 (control), EtOH alone (solvent control), 0.1, 10, 100, 1000µg/ml concentrations of NP disolved in ETOH or in combination of different concentration of NP with Vitamin C for 90 days. To determine the level of changes in the gene expression in liver, total RNA was isolated and the relative quantity of target mRNA has been determined using fluorescent data acquired in real-time PCR and assessed in line with the data analysis method. Results showed that NP caused a significant decrease in the expression of apoptotic *caspase-3* gene and anti-apoptotic *bcl-2* genes *in the liver* of all treatment groups. The vitamin C enhanced the effects of NP in both cases (p<0.05). NP caused increase in the expression of *bcl-XL* genes in females whereas it caused *a decrease* in a dose dependent manner *in the liver of males*. Moreover, NP caused a dramatic decrease in the expression of p53 genes *in the liver of* all treatment groups. In conclusion, while NP alleviate the expression of apoptotic and anti-apoptotic gene and vitamin C had been shown to accelarate the NP-induced effects.

Keywords: Nonylphenol, vitamin C, gene expression, rat, liver

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➢ **ORAL PRESENTATION**

Fifteen New Chrysomeline Leaf Beetles (Chrysomelidae: Chrysomelinae) for Çankırı Province, Turkey

Neslihan Bal[1*], Suat Kıyak[2], Meltem Demirer[2], Hüseyin Özdikmen[2]

[*1]Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye
[2] Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: neslihansilkin@gmail.com

Abstract

We had the opportunity to study material of the subfamily Chrysomelinae (Chrysomelidae) collected during the expedition of Çankırı province in 2013-2015. Chrysomeline leaf beetles have been reported only by 9 species [*Chrysolina* (*Erythrochrysa*) *polita* (Linnaeus, 1758), *Chrysolina* (*Synerga*) *herbacea* (Duftschmid, 1825), *Chrysomela saliceti* (Weise, 1884), *Chrysomela tremula* Fabricius, 1787, *Chrysomela vigintipunctata* (Scopoli, 1763), *Gastrophysa* (*Gastrophysa*) *polygoni* (Linnaeus, 1758), *Gonioctena* (*Spartomena*) *fornicata* (Brüggemann, 1873), *Phratora* (*Phyllodecta*) *laticollis* (Suffrian, 1851) and *Phratora* (*Phyllodecta*) *vitellinae* (Linnaeus, 1758)] from Çankırı province until now. In a result of this work, 15 new records [*Chrysolina* (*Chalcoidea*) *analis* (Linnaeus, 1767), *Chrysolina* (*Hypericia*) *didymata* (Scriba, 1791), *Chrysolina* (*Ovosoma*) *orientalis* (Olivier, 1807), *Chrysolina* (*Ovosoma*) *halysa* Bechyné, 1950, *Chrysolina* (*Stichoptera*) *gypsophilae* (Küster, 1845), *Chrysolina* (*Sulcicollis*) *chalcites* (Germar, 1824), *Chrysolina* (*Taeniosticha*) *pseudolurida* (Roubal, 1817), *Chrysomela populi* Linnaeus, 1758, *Colaphellus sophiae* (Schaller, 1783), *Entomoscelis adonidis* (Pallas, 1771), *Entomoscelis suturalis* Weise, 1882, *Leptinotarsa decemlineata* (Say, 1824), *Neophaedon pyritosus* (Rossi, 1792), *Plagiodera versicolora* (Laicharting, 1781) and *Prasocuris* (*Prasocuris*) *junci* (Brahm, 1790)] of the subfamily Chrysomelinae for the fauna of Çankırı province were detected. Especially, *Chrysolina* (*Ovosoma*) *halysa* Bechyné, 1950 has been reported from Turkey without any exact locality up to now. So, this record of the species is the first record from Turkey with an exact locality. In addition, *Colaphellus sophiae* (Schaller, 1783) that is represented by the subspecies *Colaphellus sophiae amasiae* Machatschke, 1954 in Çankırı province, has been known only from Amasya province in Turkey until now. So, this record of the taxon from Çankırı province is the second record for Turkey.

Keywords: Chyrsomelidae, Chrysomelinae, new records, Çankırı, Turkey

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➢ **ORAL PRESENTATION**

Bazı *Cryptocephalus* ve *Pachybrachis* (Chrysomelidae: Cryptocephalinae) Cinsi Üyelerinin Erkek ve Dişi Genital Morfolojilerinin Cins ve Alt Cinsler Temelinde Karşılaştırmalı Analizi

Meltem Demirer[1*], Suat Kıyak[2], Neslihan Bal[2], Hüseyin Özdikmen[2]

[*1]Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye
[2] Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: meltemdemirer@yahoo.com

Özet

Türkiye Cryptocephalinae faunası toplam 4 cinse ait (*Acolastus, Cryptocephalus, Pachybrachis* ve *Stylosomus*) 9 alt cinsden 105 tür içermektedir. Bunlardan *Acolastus* cinsi Türkiye'de 1 alt cinse ait sadece 2 tür, *Stylosomus* cinsi ise yine 1 alt cinse ait sadece 3 tür ile temsil edilmektedir. *Cryptocephalus* cinsi 73 tür ve *Pachybrachis* cinsi ise 27 tür ile tür sayısı bakımından zengin olan cinslerdir. Halen Çankırı İli Cryptocephalinae faunasının toplam olarak 3 cinse ait 31 türden oluştuğu bilinmektedir. Bu çalışma ile 2013-2015 yılları arasında Çankırı ilinden toplanan *Cryptocephalus* ve *Pachybrachis* (Chrysomelidae: Cryptocephalinae) cinslerinden toplam 5 alt cinse ait 20 türün erkek ve dişi genital morfolojileri cins ve alt cinsler bazında karşılaştırmalı olarak incelenmiş ve analiz edilmiştir. İncelenen türler *Cryptocephalus* cinsinden *Asionus* alt cinsinden *C. amasiensis*, *Burlinius* alt cinsinden *C. connexus, C. exiguus, C. fulvus, C. ocellatus, C. populi* ve *C. pygmaeus*, *Cryptocephalus* alt cinsinden *C. biguttatus, C. bipunctatus, C. cribratus, C. duplicatus, C. flavipes, C. moraei, C. octocosmus, C. paphlagonius* ve *C. trimaculatus*, *Heterichnus* alt cinsinden *C. prusias* türleri ve *Pachybrachis* cinsinden *Pachybrachis* alt cinsine ait *P. fimbriolatus, P. limbatus* ve *P. tesellatus* türleridir. Araştırma sonucunda Cryptocephalinae alt familyasının genital morfolojileri itibarıyla polifiletik bir grup olduğu kanısına varılmıştır. Bu genel değerlendirme dışında, bu çalışmada sadece birer türü incelenebilen *Asionus* ve *Heterichnus* alt cinsleri hakkında kendi içerinde bir yorum yapma imkanı bulunamamıştır. Diğer taraftan 9 türü incelenen *Cryptocephalus* alt cinsinin kendi içerisinde görülen farklılıklar sonucunda polifiletik bir grup olduğu, buna karşın 6 türü incelenen *Burlinius* alt cinsinin kendi içerisinde görülen benzerlikler sonucunda monofiletik bir grup olduğu kanısına varılmıştır. Benzer şekilde 3 türü incelenen *Pachybrachis* cinsinin de kendi içerisinde polifiletik bir grup olduğuna görülen farklılıklar sonucunda karar verilmiştir.

Anahtar Kelimeler: Chyrsomelidae, Cryptocephalinae, *Cryptocephalus*, *Pachybrachis*, Çankırı

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➢ **ORAL PRESENTATION**

Experimental and Modeling Investigation of Mass Transfer for Kumquat Slices during Infrared Drying

İlknur Küçük* and İbrahim Doymaz

Yildiz Technical University, Department of Chemical Engineering, Istanbul Turkey

*Corresponding author e-mail: kucuk@yildiz.edu.tr

Abstract

Drying is a traditional or industrial preservation method that is used in the food industry. The drying process is intended to remove water from foodstuff to prevent microbial spoilage and chemical alterations, thus prolonging shelf-life while realizing space and weight savings. Infrared drying has gained popularity as an alternative drying method for agricultural products. When infrared radiation is used to warm up or dry moist materials, it penetrates into them and the energy of radiation converts into heat. Compared with hot air drying, infrared radiation heating offers many advantages such as greater energy efficiency, heat transfer rate, and heat flux, which results in reduced drying time and higher drying rate.

In this work, we tried to evaluate mass transfer during an infrared drying of kumquat slices. Infrared radiation power (50–88 W) as drying parameters, are evaluated on drying characteristics of kumquat slices. The infrared power affected the drying and colour characteristics of kumquat slices. Drying time decreased with increased infrared power. Five different mathematical models were evaluated for moisture ratios using nonlinear regression analysis. The results of regression analysis indicated that the Midilli & Kucuk model is the best to describe the drying behaviour with the lowest RMSE values and highest R^2 value. The effective moisture diffusivity at each infrared power was determined by Fick's second law of diffusion., an increase in the power led to increase in the effective moisture diffusivity between 8.31×10^{-9} and 1.89×10^{-8} m^2/s. The dependence of effective moisture diffusivity on infrared power was expressed by an modified Arrhenius type equation. Activation energy was estimated by a modified Arrhenius type equation as 1.92 kW/kg. A positive effect was observed on the ΔE with increasing in infrared power and with rising in infrared radiation power it was decreased. Whereas, the chroma values increased with rising in infrared radiation power.

Keywords: Activation energy, effective moisture diffusivity, kumquat slices, infrared drying, mathematical modelling

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➢ ORAL PRESENTATION

Analysing and Future Modelling of Sea Surface Temperature Change in Gulf of Iskenderun

Mehmet Ugur Gucel[1], Abdulla Sakalli[1,*]

[1] Iskenderun Technical University, Faculty of Marine Science and Technology, Meydan Mah. 512 Sk. Iskenderun, Hatay

[*] Corresponding Author: abdulla.sakalli@iste.edu.tr

Abstract

Climate change is one of the major challenge for Earth Systems in this century. Since the Industrial revolution, energy demands of countries has been rapidly increased which also causes an accelerated burning fossil fuels and increased greenhouse gases emission (GHG) in to the atmosphere. Sea surface temperature (SST) is a pointer of the water temperature, which mainly related to sea surface layer and also plays an important role for keeping the energy balance between atmosphere and marine ecosystems. Various studies show that surface temperature of the inner seas surface temperature is affected by anthropogenic climate change. Gulf of Iskenderun is located in the southeast Mediterranean region of Turkey. The gulf is important mainly for its industrial facilities and thermal power stations of Turkey. Due to the Suez canal and strait of Gibraltar the gulf has also very important meaning for migration of the alien species into the Mediterranean Sea. To investigate the sea surface temperature (SST) change in the bay over the period of 1982-2015 we used remote sensed data, which have 4x4 km high spatial and daily temporal resolution. This data collected from Copernicus Marine Services which based on satellites Advanced Very High Resolution Radiometer (AVHRR) Pathfinder Version 5.2 (PFV52). Furthermore, to simulate change of SST for the period between 2071-2100 we used a linear model for the 34 years period of (1982-2015). In the study period, the highest SST anomaly is determined in a DJF (December-January-February) season. The warmest region was the north is part of the bay. The SST change about 1.5º C in the study period. The average SST increase in the last 30 years of this century (2071-2100), SST increase predicted to be about 4.2º C in the bay.

Keywords: SST, climate change, remote sensing, forecast

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➢ **ORAL PRESENTATION**

Catalytic activities investigation of silica-based mesoporous catalysts in the production of mono-di-trilaurin

Veli Şimşek[1], Zerrin Pat[2], Kirali Murtezaoglu[3]

[1]Bilecik Seyh Edebali University, Faculty of Engineering, Chemical and Process Engineering Department, Bilecik, Turkey
[2]Bilecik Seyh Edebali University, Faculty of Arts and Science, Chemistry Department, Bilecik, Turkey
[3] Gazi University, Faculty of Engineering, Chemical Engineering Department, Ankara, Turkey

Corresponding author e-mail: veli.simsek@bilecik.edu.tr

Abstract

The main aim of this work is the use of new generation acidic catalysts in the production of mono-di-tri laurin (ML-DL-TL) and compare with a commercial catalyst. Hence, the production of ML-DL-TL between glycerol and lauric acid (LA) was conducted in the presence of 0.4g STA/MCM-41 (W/Si:10,50%) and commercial Amberlyst 21 catalysts with 3/3/1 (glycerol/ethanol/lauric acid) molar feed ratios at 393, 413 K in the semi-batch reactor during 6h. Moreover, the effect of the reaction, calcination temperature and amount of active compound on the LA conversion and ML-DL-TL selectivity were investigated. As a result, it was observed that the calcination temperature and the loading rate of the active ingredient were limited in the effect of lauric acid conversion. However, significant differences in ML-DL-TL selectivity were calculated. On the other hand, results of STA/MCM-41 (W/Si:10,50%) and Amberlyst 21 experiments were compared. It was indicated that catalysts had high catalytic activity. Moreover, the maximum LA conversion and ML-DL-TL selectivities were obtained with 10% STA/MCM-41 catalysts as 99%, 94%, 77% and 9%, respectively. After the esterification reaction, structural changes on the catalysts were determined by SEM/MAPPING analysis.

Keywords: STA, MCM-41, Glycerol, Lauric Acid, Mono-Di-Trilaurin

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➢ ORAL PRESENTATION

Identification of Irradıited Chickpea, Dried Bean and Lentil by DNA Comet Analysis

Nurcan Cetinkaya

Ondokuz Mayis University, Faculty of Veterinary Medicine, Department of Animal Nutrition and Nutritional Diseases. Kurupelit, TR-55139, Samsun, Turkey.

Corresponding author: nurcanc@omu.edu.tr

Abstract

An advantage of irradiation is that it has broad-spectrum in its application to insect species and is suitable for most horticultural commodities. The irradiation technology can be used for insect disinfestation treatment worldwide in near future and be replaced with methyl bromide for quarantine and pre-shipment purposes. However, some people concern about to consume the irradiated foods and want to know while purchasing the foods irradiated or not. Identification methods for irradiated foods are important to implement such control, once the food items have left the irradiation facility. One of the screening methods is the CEN-EN 13784 Foodstuffs - DNA Comet Assay for Detection of Irradiated Foodstuffs - Screening Method-European Committee for Standardization. DNA Comet analysis has been described as a rapid and inexpensive test to identify irradiated both plant and animal orginated foods.Turkish Standardization Institute was also published the standard in Turkish in 2004. The objective of the present study was to determine irradiated dried beans, chickpeas and lentils by using of DNA Comet Assay. Dried vegetables(10 from each) were collected after harvesting from markets and transferred to laboratory. They were irradiated with 0.5-1 KGy doses at Co-60 Gama Irradiation Facility (Gammacell 60-Co, does rate 1.31 kGy/h) at Saraykoy Nuclear Research and Training Center,TAEA, Turkey. The DNA Comet Analysis was carried out under neutral conditions. DNA damages were observed on irradiated dried beans, chickpeas and lentils with 0.5-1 KGy applied doses. In conclusion, DNA Comet Analysis can be used for detection of low dose irradiated stored produces

Keywords: Chickpea: DNA Comet Assay; Dried bean: Irradiation; Lentil.

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➢ **ORAL PRESENTATION**

Equilibrium and Thermodynamic Studies for Adsorption of Heavy Metal on TiO_2/Activated Sludge

Gamze Topal Canbaz*, Neşe Keklikcioğlu Çakmak, Mustafa Küçükyazıcı, Ünsal Açıkel

Cumhuriyet University, Engineering Faculty, Department of Chemical Engineering, 58140 Sivas, TURKEY

Corresponding author e-mail: gamzetopal@hotmail.com

Abstract

In this study, the Cu(II) ions adsorption by sol- gel method synthesized TiO_2/ activated sludge in batch stirred reactors was investigated. TiO_2 nanoparticles and TiO_2/ activated sludge were prepared via sol-gel method using the precursor Titanium (IV) butoxide under sonication. Experiments were carried out at pH 4, at 25 ^oC, 10 g/L adsorbent dosage and 360 min contact time. Equilibrium studies revealed that the Cu(II) up take increased with increasing initial Cu(II) ions concentrations. The adsorption equilibrium data were analyzed with Langmuir and Freundlich isotherm models at varying initial heavy metal ion concentrations (20 mg/L to 100 mg/L).With respect to the Langmuir model, when the surface of the activated sludge was saturated Cu(II) ions as a complete layer, the maximum adsorbed amount of Cu(II) per unit weight of activated sludge, Q^o, was 47.61 mg/g and adsorption energy constant K was 0.0015 mg/L. Freundlich constant K_F showing adsorption capacity was determined as 2.91 L/g, the adsorption intensity parameter indicating favourable adsorption, n, was 4.54. Thermodynamic studies were carried out at between 25 and 40 ^oC. The maximum adsorption capacities were obtained at 40 ^oC and, the maximum adsorbed amount of Cu(II) per unit weight of activated sludge was 54.44 mg/g. The thermodynamic parameters (ΔH, ΔS, ΔG) were calculated for the studied temperature range. Gibbs energy (ΔG) values obtained from thermodynamic data have shown that adsorption takes place spontaneously at all concentrations. This study was financially supported by the Cumhuriyet University (number of project M-647)

Keywords: Wastewater, Cu(II), TiO_2, activated sludge, adsorption, thermodynamic parameters

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➢ ORAL PRESENTATION

The distribution, behaviour and ectoparasite of The Hooded Crow (*Corvus cornix*) in Turkey

Göknur Eker[1], Esra Per[1*]

[1]Faculty of Science, Biology Department, Gazi University, Teknikokullar, Ankara, Turkey

Corresponding author e-mail: esraper@yahoo.com

Abstract

The Hooded crow is a passerine species belong to the order Passeriformes. It is the resident and common species in Turkey. They commonly inhabit in cities, agricultural areas, gardens, parks, mountainous places, on forest edges, around the marshes and reeds. There is no specific research about the hooded crow in Turkey. The main aim of this study is to determine the distribution, behaviours and ectoparasites of the hooded crow (*Corvus cornix*) in Turkey. The source of data: observation records from KuşBank and eBird databases between 1946 and 2018 used for determine distribuition; TRAKUŞ photos between 2006 and 2018 were used for to identify bird behavior and ectoparasite. All observations were recorded every wehere in Turkey but commonly recorded in and around urban and rural areas. Their distribution area and dominance are expand in and around urban areas. It has demonstrated interaction and competition with the domestic cat, the cinereous vulture, the common buzzard, the gull, and the common tern. They are show a great deal of diversity in feeding behavior; walnut, earth worm, mussels, fish, cherry, mouse, grasshopper, acorn, spider, water snake, bread, hazelnuts and peanut. It showed scavenger activity by fed on calf, dog, rat and wild boar carcasses. Based on this research the Hooded crow is the host for Ixodidae family ticks.

Keywords: The Hooded Crow, Distribution, Behavior, Ectoparasite, Competition, Turkey

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➢ **ORAL PRESENTATION**

Miyomda Progesteron Reseptör Gen Polimorfizmi

Saime Sezer Sondaş[1], Ömer Ateş[1], Nihan Bozkurt[1], Muhammet Toprak[2], Fazlı Demirtürk[2], Emel Ensari[1]

[1]Gaziosmanpaşa Üniversitesi Tıp Fakültesi Tıbbi Biyoloji AD., Tokat, Türkiye
[2]Gaziosmanpaşa Üniversitesi Tıp Fakültesi Kadın Hastalıkları ve Doğum AD., Tokat, Türkiye

saimesezer@gmail.com

Abstract

Miyom, miyometriyumun düz kas hücrelerinde sıklıkla görülen iyi huylu bir tümördür. 35 yaş üstü kadınların % 25-30'unda görülmektedir. Miyom hem genetik hem de çevresel faktörler tarafından belirlenen çok faktörlü bir etiyolojiye sahip olmasına rağmen, moleküler patogenezi halen bilinmemektedir. Progesteron, miyom gelişiminde önemli rol oynamaktadır. Güncel çalışmalar, miyomda siklusun salgı evresinde mitotik aktivitenin arttığını ve miyom büyümesinin progesteron seviyeleri tarafından etkilendiğini düşündürmektedir. Bugüne kadar Türk toplumunda progesteron reseptör polimorfizminin miyom ile ilişkisini gösteren sınırlı sayıda çalışma bulunmaktadır. Bu çalışmada progesteron reseptör (PGR) genindeki PROGİNS polimorfizminin miyom oluşumundaki rolünün araştırılması amaçlanmıştır. Çalışmaya, Gaziosmanpaşa Üniversitesi Tıp Fakültesi Kadın Hastalıkları ve Doğum Ana Bilim Dalı polikliniğine miyom tanısıyla başvuran ve patolojik tanısı miyom olan 103 kadın hasta ile tanısı miyom olmayan 110 gönüllü kadın dahil edildi. Katılımcıların izni ve bilgisi dahilinde çalışma da rutin tetkikler için alınan kan örneklerinin arta kalan kısımlarından DNA izolasyonu yapıldı. PROGİNS polimorfizmini analiz etmek için diziye spesifik Polimeraz Zincir Reaksiyonu (PZR) yöntemi kullanıldı. Veri sonuçlarının istatistiksel olarak değerlendirilmesi $\chi 2$ ve Fisher's exact testi ile karşılaştırıldı. p değerinin $\leq 0,05$ olması, istatistiksel olarak anlamlı kabul edildi. Buna göre, PGR geni PROGİNS polimorfizmi ile miyom arasında genotip ve allel frekans dağılımı bakımından anlamlı bir fark olmadığı bulundu (sırasıyla; p= 0.0584; 0.488). Çalışma sonuçlarımız Türk toplumunda PGR geni PROGİNS polimorfizminin miyoma yatkınlıkta rol alan faktörlerden biri olmayabileceğini göstermektedir. Gen polimorfizmlerinin farklı ırklar ve etnik gruplar arasında değişkenlik göstermesi ve çalışmamıza dahil edilen birey sayısının az olması nedeniyle, veri sonuçlarımızın daha büyük çalışmalarla doğrulanmasına gereksinim duyulmaktadır.

Anahtar Kelimeler: Miyom, Progesteron Reseptör (PGR), PZR

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➢ ORAL PRESENTATION

Antiradical, Antimicrobial, Phytochemical Properties of *Capsicum frutescens* L.

Ersin Demir[*1], Serhat Keser[2], Omer Kaygili[3], Fatma Keser[2], Sevda Kirbag[4], Okkes Yilmaz[4], Mustafa Karatepe[2]

[*1]Duzce University, Faculty of Agriculture and Natural Sciences, Agricultural Biotechnology Department, Duzce/Turkey
[2]Firat University, Faculty of Science, Chemistry Department, Elazig/Turkey
[3]Firat University, Faculty of Science, Physics Department, Elazig/Turkey
[4]Firat University, Faculty of Science, Biology Department, Elazig/Turkey

ersncan.dmr@gmail.com

Abstract

C. frutescens (cayenne pepper) is belonging to Solanaceae family, it uses hot pepper sauce and spices, and it is a vegetable that holds an important place in human nutrition. It is known to cayenne pepper have important properties such as antioxidant, anti-allergic and anticancer. In this study, it was determined that antiradical (against to ABTS, DPPH and OH radicals), phytochemical (total phenolic, total flavonoid, total proanthocyanidine, phenolic acids, flavonoids, lipid soluble vitamins, sterols and fatty acids), and antimicrobial properties (on the *B. megaterium*, *B. subtilis*, *E. coli*, *P. aeruginosa*, *L. monocytogenes*, *K. pneumonia*, *P. vulgaris*, *S. aureus* bacteria and *C. albicans* yeast) of *C. frutescens* water and ethanol extracts. According to study results, it was observed that *C. frutescens* extracts were better scavenged ABTS and OH radicals than standard antioxidant; it was found that this plant was quite rich in terms of tocopherol, sterols and phenolic acids. Consequently, it has been found that *C. frutescens* extracts contain high levels of phytochemical compounds, have strong antioxidant antiradical activity.

Keywords: *C. frutescens*, antiradical, antimicrobial, phytochemical

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➢ **ORAL PRESENTATION**

Biyoterapötik yara örtüsü içeriğinde kullanılmak üzere etkin probiyotik suşun belirlenmesi

Tuğçe Önbaş, Hazal Kibar, Özlem Osmanağaoğlu, Fadime Kıran*

*Ankara Üniversitesi, Fen Fakültesi, Biyoloji Bölümü,Ankara, Türkiye

Sorumlu yazar e-mail: fkiran@science.ankara.edu.tr

Özet

Bu çalışmanın temel amacı, potansiyel etkiler sergileyen etkin probiyotik suşun biyoterapötik yara örtüsü içeriğinde kullanılmak üzere seçilmesidir. Bu kapsamda, geleneksel gıda ürünlerinden ve insan mikrobiyotasından izole edilen 40 farklı Laktik Asit Bakteri izolatının anti-mikrobiyal etkinlikleri yara olgularında en sık rastlanılan ve çoklu ilaç dirençliliği sorunu yaşanan patojenlerden Pseudomonas aeruginosa PAO1/ATCC 27853, metisilin dirençli Staphylococcus aureus ATCC-43300 ve bu türlerin kronik yara örneklerinden izole edilen hastane kaynaklı suşlarına karşı değerlendirilmiştir. Sağlıklı anne sütüyle beslenen bebek fekal mikrobiyotasından izole edilen Lactobacillus plantarum F-10 izolatı, çalışma kapsamında kullanılan tüm patojenlere karşı en yüksek anti-mikrobiyal aktivite sergileyen probiyotik aday olarak belirlenmiştir. İzolatın canlı hücreleri ve hücre bağımsız ekstraktı (HBE) patojenlerin gelişimini inhibe ederken, nötralize HBE'de herhangi bir etki gözlemlenmemiştir. Biyofilm oluşumu kristal viyole analizi ile belirlenmiş olup sonuçlar Taramalı Elektron Mikroskobu ve Konfokal Lazer Taramalı Mikroskop ile de görüntülenmiştir. Tüm patojenlerin biyofilm oluşumunda % 100 azalma HBE'nin sub-MİK değeri (12.5 mg/mL) ile birlikte inkübasyon neticesinde elde edilmiştir. HBE'nin sub-MİK değerinin PAO1 suşunun hareket yeteneği ve virülans faktörleri (proteaz ve elastaz aktivitesi, piyosiyanin ve ramnolipid üretimi) üzerinde de inhibisyon etkiye sahip olduğu gözlemlenmiştir. Probiyotik açıdan değerlendirildiğinde; izolatın hemolize neden olmadığı ve yüksek otoagregasyon (%50±4.1) ve patojenlerle ko-agregasyon özelliği sergilediği tespit edilmiştir. Antibiyotik dirençlilik profili ise Avrupa Gıda Güvenilirlik Otoritesine göre güvenilir bulunmuştur. İzolatın laktik asit üretimi 151±11.8 g/L; hücre dışına salınan ekzopolisakkarit (EPS) miktarı 1.157±102 mg/L, hücre yüzeyine bağlı EPS miktarı ise 750±32 mg/L olarak belirlenmiştir. HBE'nin antioksidan aktivitesi toplam antioksidan etki, fenolik ve flavanoid içerik açısından değerlendirilmiş ve sub-MİK değerinin DPPH radikalini giderici etkisi %88.6±3.5 olarak belirlenmiştir. HBE'nin HT-29 hücre hattı üzerindeki sitotoksik etkisi MTT testi ile belirlenmiş ve sub-MİK değerinin kanser hücrelerinde %98±2.5 oranında azalmaya neden olduğu tespit edilmiştir (IC50:5.9 mg/mL). Çalışmamız, çeşitli yara tedavilerinde enfeksiyon ve oksidatif stresin azaltılması adına tamamen yerli, doğal ve yeni nesil bir yaklaşım sunmaktadır.

Anahtar Kelimeler: Mikrobiyota, Probiyotik, Yara iyileşmesi, Enfeksiyon, Biyofilm, Quorum sensing

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➢ **ORAL PRESENTATION**

Aedes geniculatus (Diptera: Culicidae) Sivrisinek Türünün Moleküler Karakterizasyonu

Serkan Dede[1], Fikriye Polat[2], Günsel Bingöl[3*]

[1]Kocaeli Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Bölümü, Kocaeli, Türkiye

[2]Kocaeli Üniversitesi, Eğitim Fakültesi, Matematik ve Fen Bilimleri Eğitimi Bölümü, Kocaeli, Türkiye

[*3]Ankara Yıldırım Beyazıt Üniversitesi, Mühendislik ve Doğa Bilimleri Fakültesi, Biyomedikal Mühendisliği Bölümü, Ankara, Türkiye

[*]Sorumlu yazar: Günsel Bingöl, gbingol@gmail.com

Özet

Bu çalışmada, Kocaeli'de yayılış gösteren sivrisinek türlerinin kompozisyon ve moleküler karakterizasyonlarının belirlenmesi hedeflenmiştir. Sivrisinekler, Culicidae familyası, Diptera takımın içerisinde yer alırlar. Kanla beslenen bu canlılar insanlarda sıtma, sarıhumma gibi birçok hastalığı taşıyabilirler. Çalışma süresince Kocaeli yöresinden Haziran- Kasım 2017 tarihleri arasında ergin sivrisinek örnekleri toplanmış ve alkol içerisinde saklanmıştır. Toplanan örneklerden DNA izolasyonu yapıldıktan sonra tür bazında tayin edebilmek için DNA dizi analizi yapılmıştır. Bunun için, evrensel primerler kullanılarak, DNA barkod gen bölgesi olan mitokondrial sitokrom oksidaz I (COI) geni Polimeraz zincir reaksiyonu kullanılarak analiz edilmiştir. NCBI-Blast ile DNA dizimizin %99 benzerlikle *Aedes geniculatus voucher* (Diptera: Culicidae) alt türüne ait olduğu tespit edilmiştir. Aynı tür için 18S, 28S, 16S rRNA ve ITS gen bölgeleri çalışmaları devam etmektedir. Bu çalışma ile Kocaeli ilinde yayılış gösteren *A. geniculatus voucher* türüne ait genlerin dizi analizleri yapılarak veri bankalarına kaydı sağlanmış olacaktır. Patojenleri taşıma yetenekleri bakımından önemli olan bu canlıların moleküler karakterizasyonlarının yapılmasını hedefleyen bu çalışma, sivrisinekler ile mücadelede daha etkin yolların belirlenmesine ışık tutabilecektir.

Anahtar Kelimeler: Culicidae, Aedes geniculatus, COI, Filogenetik analiz, Kocaeli.

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➢ **ORAL PRESENTATION**

Cadmium Induced Expression Profiling of Sulfate Transporter (SULTR) Genes in Sorghum (*Sorghum bicolor* L.)

Kübra Kontbay[1*], Ertuğrul Filiz[2], M. Aydın Akbudak[1]

[*1] Akdeniz University, Department of Agricultural Biotechnology, Antalya, Turkey
[2] Duzce University, Cilimli Vocational School, Duzce, Turkey

Corresponding author e-mail: kubrakontbay@gmail.com

Özet

Sulfur is an important element for all living organisms. It plays vital roles in many metabolic pathways and is found in the structure of some vitamins, coenzymes, proteins, amino acids such as cysteine and methionine. The plants convert inorganic sulfur to organic sulfur by complex enzymatic processes. Our study, aimed to reveal the expression profiles of eleven putative SULTR genes (SbSULTR1, SbSULTR1, SbSULTR1, SbSULTR2, SbSULTR2, SbSULTR2, SbSULTR3, SbSULTR3, SbSULTR3, SbSULTR3, SbSULTR3, and SbSULTR4) under cadmium stress. Sorghum plants first exposed to 200 µM cadmium (Cd) stress for 6 and 24 hours and then expression of the SULTR genes were determined using RT-qPCR. In total, 6 genes, SULTR1;2, 1;3, 2;2, 3;3, 3;5, and 4 were expressed in both leaf and root tissues while the other 5 SULTR genes were SULTR1;1, 2;1, 3;2, and 3;4, expressions were not detected in the tissues tested. Results showed the expression of the SULTR1;2, 1;3, 3;3, and 3;5 genes increased in the roots, whereas the expression of the SULTR2;2 and SULTR4 genes decreased in the roots. The results of this study have contributed to the understanding of the regulation and roles of the SbSULTR genes under cadmium stress in *Sorghum bicolor* L.

Keywords: Sulfate transpoter genes, Heavy metal stress, Cadmium stress, Sorghum

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➢ **ORAL PRESENTATION**

Highly Selective Colorimetric Recognition of Hg(II) Ions in Aqueous Medium Based on Naphthoquinone-Aniline Ensemble via Naphthoquionone C-Atoms and Aniline N-Atoms

Zeliha Mermer* **and İsmail Yılmaz**

İstanbul Technical University, Faculty of Science and Letters, Department of Chemistry, İstanbul, Turkey.

zelihakanat@gmail.com

Abstract

During recent years, the development of sensors for the recognition of biologically and environmentally important metal ions has attracted much attention from environmentalists and chemists. Among the ions, mercury is one of the most important analyte because of deleterious effects on human health and natural ecosystems, high reactivity, extreme volatility and tissue solubility. Concern over its extermely toxic impact on the environment and human health has led chemists to focus much attention on the development of chemosensors for Hg(II) ion**.** Therefore, it has become almost imperative to develop new methods for sensing Hg(II) which are simple, rapid, facile, and applicable in aqueous medium.
For the first time an easy to make receptor naphthoquinone-aniline ensemble (R) has been prepared and characterized. The receptor exhibits a striking color change from orange to maroon instantaneously with Hg(II) ion in DMSO:Water (1:1 v/v at pH 8 buffer solution) highly selectively and sensitively. The binding properties of receptor with Hg(II) was studied via UV-Vis titration experiment (Figure 1). Electronic, and ^{1}H NMR titration experiments show that the mechanism of sensing involves the formation of $[Hg(R1)_2]$ complex having binding constant 2.07×10^3 M^{-1}. The complex is characterized using FT-IR, UV-Vis, NMR, MALDI-TOF/MS spectroscopy and Elemental Analysis, which suggest the coordination of R1 to Hg(II) ion between naphthoquionone C-atoms and aniline N-atoms after deprotonation.

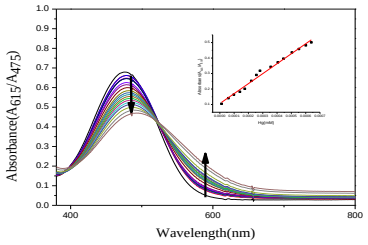

Figure 1. Absorption change of R($1.5x10^{-4}$ M) upon adding of Hg(II) ions (0-$6.5x10^{-4}$).

Keywords: Mercury, Sensor, Naphthoquionone, Colorimetric.

Choi MG, Ryu H, Han MS, Chang SK 2016. Hg2+-selective Fluorogenic signalingprobe based on the hydrolysis of hydrazine, Tetrahedron Lett. 57:4360–4363.

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➢ **ORAL PRESENTATION**

Synthesis and Radical scavenging properties of some coumarin derivatives incorporating dipeptide/amino acid †

Özgül İlgen[1], Hasan Küçükbay[1,*], F. Zehra Küçükbay[2]

[*1]İnönü University, Faculty of Arts and Sciences, Department of Chemistry, 44280 Malatya-Turkey
[2]İnönü University, Faculty of Pharmacy, Department of Basic Pharmaceutical Sciences, 44280 Malatya, Turkey

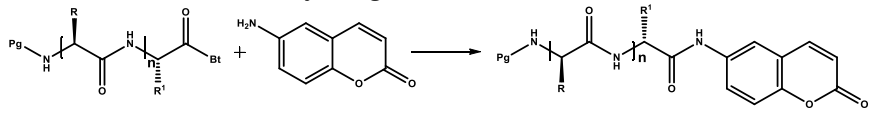
*E-mail: hasan.kucukbay@inonu.edu.tr

Abstract

The coumarins are an important class of heterocyclic compounds with several biological activities such as anti-inflammatory, antibacterial, antiviral, anti-cancer and carbonic anhydrase enzyme inhibitor. The coumarin derivatives have also been used in a variety of technological purposes such as optical brighteners, optical sensor, organ light emitting diodes, laser dyes, photonic and gap materials, light harvesting materials, fluorescent labels and probes in medical applications.[1]

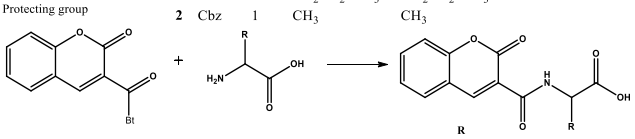
When the literature is reviewed, it will be understood that, there are very limited information about dipeptide /amino acids coumarin conjugates. Therefore, we planned to synthesize and investigate possible antioxidant properties of some novel dipeptide / amino acid- coumarin conjugates.

The new coumarin derivatives incorporating dipeptides or amino acids (summarized below) were synthesized using benzotriazole mediated methodology similar to our previous report [2]. The antioxidant activity of the coumarin derivatives was determined by using the method of Blois [3].



Bt= Benzotriazole
Pg= Protecting group

	Pg	n	R	R¹
1	Cbz	1	$CH_2CH_2SCH_3$	$CH_2CH_2SCH_3$
2	Cbz	1	CH_3	CH_3



Bt= Benzotriazole

3	$CHCH_3CH_2CH_3$
4	$CH_2CH_2SCH_2Ph$
5	$CH_2CH(CH_3)_2$
6	CH_2CH_2SH

All compounds showed moderate antioxidant activities studied in five different concentrations ranged between 7.42 % and 58.6 %. Among the compounds tested here, compound **3** was found to be the most efficient antioxidant at 125 µg/mL concentration with 58.60 %.

Keywords: Coumarin, dipeptide, amino acid, antioxidant activity

† This work was financially supported by the İnönü University Research Fund (FLY-2017/705)

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➢ **ORAL PRESENTATION**

The Effects of the Salicylic Acid in Hulled and Non-Hulled *Hordeum vulgare* L. Cultivars under Combinations of Drought, Heat and Salinity

Hülya Torun

Faculty of Agricultural and Natural Sciences, Duzce University, Duzce, Turkey

hulyatorun@duzce.edu.tr

Abstract

In natural and agricultural conditions, plants are exposed to more than one stresses at the same time. Understanding tolerance mechanisms against environmental stresses is important to reduce significant yield losses and quality. Drought, salinity and heat stresses causes significant crop losses in plants globally. Salicylic acid (SA) affecting various physiological and biochemical functions in plants is an important signal molecule against biotic and abiotic stresses and therefore, it is also important issue explaining tolerance mechanisms in plants under multiple stresses. Additionally, the effects of SA on the reactive oxygen species (ROS) signalling is not known under combination of these stresses. For that purpose, growth parameters, relative growth rate, leaf water loss, relative water content, osmotic potential, photosynthetic yield, relative electrolyte leakage amd membrane stability index as physiological parameters and lipid peroxidation, hydrogen peroxide, proline and antioxidant defence system enzymes (superoxide dismutase (SOD; EC 1.15.1.1), peroxidase (POX; EC 1.11.1.7, catalase (CAT; EC 1.11.1.6), ascorbate peroxidase (APX; 1.11.1.11), glutathione reductase (GR; EC 1.6.4.2)) as biochemical parameters were measured under multi stresses in hulled barley 'Tarm' and non-hulled barley 'Özen'.

With this study, how the hydrophonically application of SA affects hulled and unhelled barley genotypes under drought+salinity+heat stress combinations and antioxidant defence mechanism and what are the effects of exogeous application of SA before stress treatments were enlightened. As a result, barleys showed different responses to the oxidative stress. SA application reduced cell damaged under drought, salinity and heat combinations with affecting antioxidant defence system was found and hulled barley Tarm showed a better protection mechanism against oxidative damage caused by multi stress combinations.

Keywords: Barley, Drought, Heat, *Hordeum vulgare*, Salicylic acid, Salinity

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➢ **ORAL PRESENTATION**

Beyin Gelişimi ve Sialik Asit

Başak Özlem Perk*, Benay Can Eke

Ankara Üniversitesi, Eczacılık Fakültesi, Farmasötik Toksikoloji ABD, Ankara, Türkiye

perk@ankara.edu.tr

Özet

Yeni doğan bebeklerin hayatlarının erken dönemlerinde nörolojik ve zihinsel gelişimleri için besin ihtiyaçlarının karşılanması gerekmektedir. Bu nedenle yeni doğan bebeklerin sağlıklı gelişimi için gerekli besin maddelerini almaları oldukça önemlidir (Wang, 2009). Anne sütü, bir bebeğin gelişimi için gerekli tüm biyoaktif maddeleri içermektedir. Anne sütünde bulunan ve beyin gelişimini destekleyen sialik asit (SA) mannozamin ve piruvattan türeyen 9-karbonlu asidik bir şeker molekülüdür. Anne sütü alan bebeklerin mama ile beslenen bebeklere göre tükürüklerinde %50 daha fazla SA bulunması bebek mamalarında SA miktarının anne sütünden daha düşük olmasından kaynaklanmaktadır (Tram ve ark., 1997). Beyin gangliosidlerinde yaygın olarak bulunan SA'in diyetle alınması beyin gelişimi ve öğrenme yeteneğini arttırdığı pek çok çalışmada gösterilmiştir. Yüksek ve düşük doz SA ile beslenenler karşılaştırıldığında yüksek doz alan deney hayvanlarının öğrenme yeteneklerinde artış gözlenmiştir. Ayrıca beynin frontal korteksinde SA miktarında özellikle sialillenmiş glikoproteinlerin doza bağlı artışı görülmüştür. Buna rağmen yeni doğan bebeklere takviye SA verilmesinin zihinsel işlevler üzerine etkisinin ve doğuracağı sonuçların aydınlatılması için daha çok randomize kontrollü çalışmalara ihtiyaç vardır (Wang, 2009).

Anahtar Kelimeler: sialik asit, yeni doğan, beyin gelişimi

Kaynaklar

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➢ **ORAL PRESENTATION**

IQOS®'un İnsan ve Çevre Sağlığı Üzerine Etkileri

Naile Merve Güven*, Rahman Başaran, Benay Can Eke

Ankara Üniversitesi, Eczacılık Fakültesi, Farmasötik Toksikoloji ABD, Ankara, Türkiye

*nmguven@ankara.edu.tr

Özet

Geleneksel sigaraların yanması sonucunda ortaya çıkan tütün dumanı nikotin, arsenik, benzen, karbonmonoksit, ağır metaller ve tütüne özgü nitrosaminler gibi birçok zararlı kimyasalı içermektedir. Tütünün yanmasıyla oluşan 6000'den fazla kimyasalın yaklaşık % 1'i akciğer kanseri, kardiyovasküler hastalıklar ve amfizem gibi sigara içimine bağlı hastalıkların nedeni veya potansiyel nedeni olduğu bilinmektedir. Sigara içiminde tütünün yanması yerine ısıtıldığı sistemler, yirmi yıldan fazla süredir tasarlanmaktadır. 'Heat-not-Burn (HNB)' tütün ürünleri olarak bilinen bu ürünler, ilk kez 1988'de piyasaya çıkmış ve ticari bir başarı sağlayamamıştır. Son 10 yılda pekçok sigara üreticisi firma tarafından yeni tasarımlı ısıtmalı tütün ürünleri yeniden piyasayasürülmüştür. Bu ürünler nikotin içeren ve aerosol üreten bir elektronik cihaz tarafından ısıtılan tek kullanımlık tütün çubuklarıdır. İlk kez Japonya ve İtalya'da tanıtılan I-Quit-Ordinary-Smoking (IQOS®), günümüzde 30'dan fazla ülkede satışa sunulmuş ve ABD'de modifiye risk tütün ürünü olarakF DA'e başvurusu yapılmıştır. Geleneksel sigara ve elektronik sigara arasında hybrid olarak Kabul edilen IQOS®, tütünün yanmadığı ve 350 ^{0}C'ye kadar ısıtıldığı yeni teknolojisi ile geleneksel sigaralara kıyasla zararlı bileşenlerin seviyesinde önemli derecede azalma vaat etmektedir. Klinik ve klinik dışı araştırmalar tamamen IQOS®'a geçiş yapan sigara içicilerinde birden fazla zararlı bileşene maruz kalma oranının azaldığını, IQOS® tarafından üretilen buharın sigaradumanından çok daha az toksik olduğunu, IQOS® kullanımının iç hava kalitesini olumsuz yönde etkilemediğini ve IQOS®'un pasif içicilik için bir duman kaynağı olmadığını gösteren önemli bulguları içermektedir. Bu çalışmanın amacı, IQOS® üzerine yapılan bilimsel araştırmaların incelenerek, IQOS®'un insan sağlığı ve çevre üzerine etkilerini objektif bir şekilde ortaya koymaktır.

Anahtar Kelimeler: IQOS®, ısıtmalı tütün ürünleri, nikotin, tütün, sigara

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➢ **ORAL PRESENTATION**

Hastane Kaynaklı, Antibiyotik Dirençli *E. coli* İzolatlarınınBiyosit Direnç Profillerinin Belirlenmesi

M.Burcu Külahcı[1*], Tuba Aktuğran[1], Sumru Çıtak[1]

[*1]GaziÜniversitesi Fen FakültesiBiyolojiBölümüGenelBiyolojiAnabilim Dalı, Ankara, Türkiye

meryemburcu@gazi.edu.tr

Özet

Antibakteriyel ajanların bulunması ve klinikte uygulanması bakteriyel enfeksiyonlar sonucu morbidite ve mortalite oranlarının ciddi olarak azalmasını sağlamıştır. Fakat bugün kullanılan birçok antibakteriyel ajana dirençli bakterilerin ortaya çıkması ve antibiyotik ve biyosidal maddelere ortak direnç mekanizmalarının bulunması toplum sağlığı açısından büyük bir risk oluşturmaktadır.
Araştırmamızda, Kasım 2017 ile Şubat 2018 tarihleri arasında Ankara'daki bir özel hastanedeki çeşitli klinik örneklerden izole edilen antibiyotik direnç gösteren 64 *E.coli*izolatı ile çalışılmıştır. Klasik kültür yöntemleriyle izole edilen bakteri örneklerinin tür tanımlamaları ve antibiyotik direnç profillerinin belirlenmesi Vitek 2 Compact cihazında yapılmıştır. Hastanede rutin çalışılan antibiyotiklerden bir veya birden fazlasına dirençli olarak belirlenen izolatlar seçilmiş ve MİK yöntemiyle biyosit (sodyum hipoklorit, povidoniyodin, benzalkonyumklorit, hekzaklorofen, klorhekzidin) dirençlilikleri belirlenmiştir. Çalışmamızda kontrol suşları olarak *E.coli* ATCC 35218 ve*E.coli* K12 kullanılmıştır.
Çalışılan 64 *E.coli*izolatının 12(%18,7)'si bir veya iki antibiyotiğe, 52(%81,3)'si üç ile onüç arasında değişen sayıda antibiyotiğe dirençli (çoklu antibiyotik direnci) olarak belirlenmiştir.Çalışılan izolatlarınbiyosit MİK değerleri; benzalkonyumklorit için, 62 izolatta 4-32 µg/mlarasında, 1 izolatta 64 µg/ml, 1 izolattaise 256 µg/mlolarak, klorhekzidiniçin, 63 izolatta 0,25-8 µg/mlarasında, 1 izolattaise 16 µg/mlolarak, hekzaklorofeniçin, 8-32 µg/mlarasında, 1 izolatta 4 µg/ml, 1 izolatta 2 µg/mlolarak, triklosaniçin 0,25-8 µg/mlarasında 1 izolatta 32 µg/mlolarak, sodyumhipokloritiçin 25 mg/ml ile 391 µg/mlarasında, 1 izolatta 24 µg/ml, povidone iyodiniçinise, 3125-6250 mg/l arasındabelirlenmiştir.
Hastanelerde dezenfektanların yaygın veya hatalı olarak kullanılması sonucu, biyosidal duyarlılıkta azalma olabileceği, bununla birlikte antibiyotiklere direncin de artabileceği gösterilmiştir. Aynı zamanda yanlış ve çok fazla antibiyotik kullanımının da çoklu antibiyotik direncine ve buna bağlı olarak da biyosit direncine sebep olabileceği belirtilmiştir.

Anahtar Kelimeler: *E.coli*, antibiyotik direnç, biyosit direnci

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➢ **ORAL PRESENTATION**

The Catalytic Activity of Sol-Gel Alumina Supported Ni Catalysts for Methane Dry Reforming

H.Mehmet Tasdemir[1*],Huseyin Arbag[1]

[*1] Gazi University, Engineering Faculty, Chemical Engineering Department, Ankara, TURKEY.

Corresponding author e-mail: mtasdemir@gazi.edu.tr

Abstract

In this study, the catalytic activities of alumina supported Ni catalysts (5% by weight) were investigated in methane dry reforming reaction. The support alumina (SGA) was synthesized following a new sol-gel method. The synthesis procedure was performed in an inert N_2 environment. Alumina supported Ni catalysts were synthesized by impregnation (Ni@SGA) and one-pot methods (Ni-SGA). The characterization of the synthesized catalysts was carried out using N_2 adsorption-desorption, XRD, XPS, ICP-MS, TGA, SEM and TPR analyzes. The N_2 adsorption-desorption isotherms of synthesized materials showed that both SGA and Ni catalysts have mesoporous structure with well-defined hysteresis loops. The BET surface area of the pure SGA is 316 m^2/g with a pore volume of 8.9 nm. Ni incorporation decreased the BET surface area due to clogging of pores with metal loadings. γ -Al_2O_3 crystalline phase together with amorphous structure was observed in the XRD pattern of SGA. In the XRD pattern of the Ni-SGA catalysts, elemental Ni and γ-Al_2O_3 crystal structures were observed. However, no peak corresponding the metallic Ni was observed in the XRD pattern of the Ni@SGA. The catalytic activity tests of the synthesized materials were performed at 750^oC and atmospheric pressure. The Ni@SGA catalyst, synthesized using impregnation method, showed stable activity during 4 h activity test and the obtained conversion values was close to thermodynamic equilibrium conversion values. However, the Ni-SBA catalysts, synthesized using one-pot sol-gel method, lost its activity after 1.5 h due to coke to coke formation. The higher crystal size of the Ni-SGA catalysts than Ni@SGA catalyst was one of the possible explanation of the deactivation of the Ni-SGA catalyst. Quick gel formation during the one-pot synthesis of the Ni-SGA may lead to the higher crystal size. TGA of the spent catalysts supported activity test results. In the SEM images of the Ni-SGA catalyst, filament carbon was observed.

Keywords: Dry reforming, Alumina, Ni, catalyst, Sol-gel.

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➢ **ORAL PRESENTATION**

N2S2 ve N2O2 Donör Atomu İçeren Schiffbazligantları Üzerine Teorik Çalışma

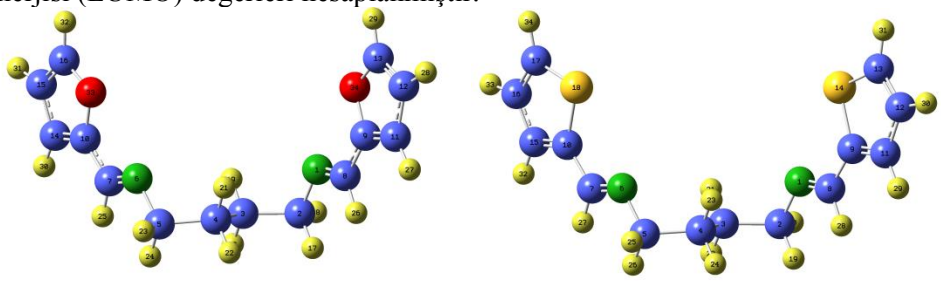
Gühergül Uluçam

Trakya Üniversitesi, Fen Fakültesi, Kimya Bölümü, 22030 Edirne, TÜRKİYE

gulergul@trakya.edu.tr

Özet

N, S, O gibi donör atomlara sahip olan Schiffbazligantları ile kompleksleri endüstride, klinik ve biyolojik sistemlerde oldukça yaygın kullanım alanlarına sahiptir. Ayrıca ilaç, tarım, teknoloji, polimer teknolojisi, elektronik gibi kullanım alanlarının yanı sıra özellikle kanser hücrelerinin tedavisinde önemli çalışmalar yapılmaktadır.
(1E,1'E)-N,N'-(bütan-1,4-diil) bis(l-(furan-2-il) metanimin) ve (1E,1'E)-N,N'-(bütan-1,4-diil) bis(1-(tiyofen-2-il) metanimin) Schiffbazligantların teorik özellikleri, B3LYP/6-311G ++(2d,p) temel baz setleri kullanılarak incelenmiştir. Gaussian G09w paket programı kullanılarak NMR ve IR değerleri hesaplanmıştır. Ligantların bağ uzunlukları, bağ açıları, dihedral açılar, Mulliken yükleri, dipol momentleri, en yüksek dolu moleküler orbital enerjisi (HOMO) ve en düşük boş moleküler orbital enerjisi (LUMO) değerleri hesaplanmıştır.



Anahtar Kelimeler: Schiffbaz, furan, tiyofen, Gaussian, yoğunluk fonksiyonal teori

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➢ **ORAL PRESENTATION**

Identification of Yellow Rust Reactions in Some Winter Bread Wheat Landraces Pure Lines

Kadir Akan[1*], Mevlut Akçura[2],Onur Hocaoğlu[2]

[*1]Ahi Evran University, Agriculture Faculty, Plant Protection Department, Kırsehir , Turkey
[2]Çanakkale Onsekiz Mart University, Agriculture Faculty, Field Crops Department, Çanakkale, Turkey

Corresponding author e-mail: kadir.akan@ahievran.edu.tr

Abstract

Turkey is one of the world's important gene centers for bread wheat genetic resources. Yellow (stripe) rust, caused by the pathogen *Pucciniastriiformis* f. sp. *tritici* (*Pst*), can occur the worldwide where wheat is grown especially in cool and humid areas. The aim of this research was to screen genotypes which selected from some winter bread wheat landraces for yellow rust reactions. In this study, 200winter bread wheat landraces genotypes were used. The test materials were evaluated for seedling stage and adult-plant stage resistance to yellow rust in at Central Research Institute for Field Crops (Turkey) during the 2014-2015 growing season.

For seedling stage reactions; Materials were planted in pots (7x7x9 cm) and plants were grown at 18±3°C. Materials were inoculated with suspension of urediniospores of *Pst*population (virulent on *Yr2, 6, 7, 8, 9, 25, 27, Sd, Su* and *Av*s in Europe/World differential set) in mineral oil (Soltrol 170®) at Zadoks growth stage 11-12. Following inoculation, seedlings were placed in a dew chamber overnight at 9±1°C and then transferred to greenhouse adjusted at 18±3°C. Disease was scored according to 0-9 scale after 14 days.

For adult plant stage reactions; Materials were inoculated with local *Pst* populations (virulent on *Yr2, 6, 7, 8, 9, 25, 27, Sd, Su* and *Av*s in Europe/World differential set). Stripe rust development on each entry were scored using the modified Cobb scale when the susceptible check Little Club had reached 80S infection severity in June, 2015. Coefficients of infections were calculated and values below 20 were considered to be resistant.Six (3%) genotypes were resistant to seedling stage, ten (5%) were resistant to adult plant stage; and Six (3%) genotypes were resistant to both seedling stage and adult plant stage. The resistance sources to stripe rust were determined with this research.

Key words: Wheat (*Triticum* spp.), winter bread wheat landraces, yellow rust (*Pucciniastriiformis* f. sp. *tritici*)

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➢ ORAL PRESENTATION

Pyren-functionalized Carbon Nanotubes as Emerging Nanocarriers: Insight From Experimental and Molecular Dynamic Simulation

Mehdi Meran[1*], Elif Baysak[2], Ozge Kurkcuoglu[1], Gurkan Hizal[2], Nilgun Yavuz[3], F. Seniha Guner[1]

[1]Istanbul Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Chemical Engineering, Istanbul, Turkey.
[2]Istanbul Technical University, Faculty of Art and Sciences, Chemistry Department, Istanbul Technical University, Istanbul, Turkey.
[3]Istanbul Technical University, Energy Institute, Department of Energy Science and Technology, Istanbul Technical University, Istanbul, Turkey.
[*]Corresponding author e-mail: mmeran@itu.edu.tr

Abstract

The fabrication of novel nanocarrier is often restricted by administration problems of drugs, such as low solubility, inefficient blood circulation time and the inability of drugs to cross cellular barriers. Owing to their unique physicochemical and biological properties,carbon nanotubes (CNTs) are an importantclass of nanomaterials that make them promising nanomaterials for bioimaging and biomedical applications. The advantages of using a carbon nanotube-basedtherapeutics delivery system includeimproved efficiency of tumor targeting due to an auto-internalization and near-infrared property of the carbon nanotubes whichcan be efficiently employedin living organisms.The molecular approach via noncovalent interactionsplays an important role in the surface modification of carbonnanotubes.

In this study, it was establishedthat aromatic molecule, pyrene, can anchor onto thegraphitic surface of carbon nanotubes noncovalently through π-π interactions. We have developed a multifunctional nanoplatforms based on noncovalent strategy in CNT coating (Figure 1). CNTs were first synthesized, characterized, and then were non-covalently coated withpyrene bearingcarboxylic acid, diol and -OH as functional groups. Various techniques including TGA, NMR, UV and TEM, were employed to characterize each sample synthesized in this stage. The results showed that carboxylic acid functionalized carbon nanotubes have efficiently coated carbon nanotubes surfaces. Hydroxy group functionalized CNT was also displayed satisfactory results. At the final stage, molecular dynamic studies were performed to examine the interaction between pyrene-COOH, pyrene-$(OH)_2$ and pyrene-OH with CNT side wall.

Based on the results gathered from MD simulation and experimental studies, it can be concluded thatpyrene functionalized CNTs may be considered as an effective delivery system with highly integrated functionalities promising in biomedicine.

Keywords: Carbon nanotubes, Pyrene, MD simulation

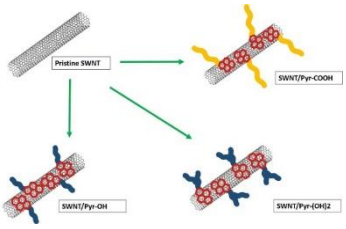

Figure1. Schematic representation of the fabricated functionalized CNT

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➢ **ORAL PRESENTATION**

Adana İli Scoliidae (Insecta: Hymenoptera: Vespoidea) Türleri

Merve Sönmez[1*], Ayla Tüzün[1]

[*1]Ankara Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: mrvsonmez@ankara.edu.tr

Özet

Bu çalışmada 2017 Mayıs - Eylül aylarında Adana ili ve ilçelerinden toplanan Scoliidae familyasına ait toplam 245 örnek incelenmiştir. Örnekler 25-30 cm çapında atrapla yakalanıp potasyum siyanür ve alçı karışımıyla hazırlanan öldürme şişelerinde öldürülmüştür. Cinsiyetlerine göre ayrılıp özel böcek iğneleri, pens ve yumuşatma kapları kullanılarak müze materyali haline getirilmiştir. Türlerin teşhisinde baş, thorax, abdomen ve bunların uzantılarındaki morfolojik karakterler ile kanat damarlarındaki discoidal ve kübik hücrelerinin yapısı esas alınmıştır. Teşhis için önemli olan vücut parçaları Leica marka EZ4 model stereo mikroskopta incelenmiştir. Türlerin teşhislerinde ve sınıflandırılmasında Osten & Özbek (1999), Osten (1999, 2005a), Tüzün & Bağrıaçık (2000), Tüzün (2004), Anlaş & Çevik (2004), Özbek & Anlaş (2007, 2011), Samin, Bağrıaçık & Gadallah (2014), Augul (2016), Bağrıaçık (2016)'dan yararlanılmıştır.

Scolia (Discolia) hirta hirta (Schrank 1781), *Scolia (Scolia) fuciformis* Scopoli 1786, *Scolia (Scolia) sexmaculata sexmaculata* (Muller 1766), *Scolia anatoliae* Osten 2004, *Colpa (Colpa) sexmaculata* (Fabricius 1793), *Megascolia (Regiscolia) maculata maculata* (Drury 1773) Adana ili Scoliidae faunası için yeni kayıttır. *Scolia (Scolia) flaviceps flaviceps* Eversmann 1846, *Scolia schrenckii* (Eversmann 1846) Adana ili Scoliidae faunası için ilk kayıttır.

Sonuç olarak Scoliidae familyasından 6 tanesi yeni kayıt, 2 tanesi ilk kayıt olmak üzere toplam 8 tür tespit edilerek Adana ili faunasına katkı sağlanmıştır.

Anahtar Kelimeler: Insecta, Hymenoptera, Vespoidea, Scoliidae, Adana, Fauna.

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➢ **ORAL PRESENTATION**

Laboratuvarımızda Çalışılan Klinik Biyokimya Testlerinin Analitik Performanslarının Değerlendirilmesi

Kenan Güçlü[1], Bilal İlanbey[2], Rukiye Nar[2]

[1]Ahi Evran Üniversitesi Eğitim Araştırma Hastanesi Biyokimya Laboratuvarı, Kırşehir
[2]Ahi Evran Üniversitesi Tıp Fakültesi Tıbbi Biyokimya Ana Bilim Dalı, Kırşehir

Özet

Tıbbi Laboratuvarımızda ulusal ve uluslararası kalite standartları gereği test sonuçlarının doğruluğu ve kesinliği, dolayısıyla hasta güvenliğini sağlamak için uygun periyotlarda iç kalite kontrol ve dış kalite kontrol programlarının uygulanması yapılmaktadır. Laboratuvar Hizmetleri Daire Başkanlığı Standardizasyon ve Harmonizasyon çalışma grubu tarafından 2016 yılında 15 biyokimya test parametresi için izin verilen hata sınırları belirlenerek laboratuvarların yöntem performanslarının değerlendirilmesi ve izin verilen toplam hata sınırları dışındaki test parametreleri için düzeltici önleyici faaliyet uygulanması önerilmiştir. Bizde bu amaçla laboratuvarımızda rutin çalışılan 15 test parametresi için (Albümin, ALT, ALP, AST, Klor, Total Kolesterol, Kreatinin, Glukoz, HDL Kolesterol, LDH, Potasyum, Total Protein, Sodyum, Trigliserid, Üre) 2017 yılına ait geriye dönük 12 aylık internal ve eksternal kalite kontrol verilerimizi kullanarak Toplam Analitik Hata (TAH) değerimizi hesapladık. Sonuçlarımızı Laboratuvar Hizmetleri Daire Başkanlığının yayınladığı, ülkemize ait izin verilen toplam hata sınırlarıyla karşılaştırmayı gerekirse düzeltici önleyici faaliyet planlamayı amaçladık. Bu hesaplama için öncelikle dış kalite kontrol verilerinden ‘’bias’’, iç kalite kontrol verilerinden ‘’%CV’’ değerleri hesaplandı. Toplam Analitik Hata hesabı %TAH=%Bias+1.65*%CV formülü kullanılarak her parametre için ayrı ayrı hesaplandı. Laboratuvarımızda çalışılan 15 klinik biyokimya test parametresi izin verilen hata sınırlarından daha düşük toplam analitik hataya sahipti. Bu sonuçlar yöntem performansımızın bu 15 analit için uygun olduğunu göstermiştir.

Hasta güvenliği ve test sonuç kalitesi açısından sadece SDI değerlerine göre laboratuvar performansının değerlendirilmesi yetersizdir. Laboratuvarlar, Rastlantısal Hata ve Sistematik Hatanın toplamı olan Toplam Analitik Hatalarını izin verilen toplam hata ile kıyaslayarak analitik kalitesini bulabilir. Hasta güvenliği bakımından, Toplam Analitik Hatanın İzin Verilen Toplam Hata sınırını aşmaması gerekir. Her laboratuvar, test performanslarını izin verilen sınırlar içerisinde olsa dahi en az yılda bir kez değerlendirmelidir. İzin verilen sınırlar dışında çıkması durumunda ise yapılan düzeltici önleyici faaliyetlerle sınırlar içerisinde çıkana kadar ayda bir kez tekrarlaması gerekmektedir.

Anahtar Kelimeler: Toplam Analitik Hata, Bias, Analitik Performans

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➢ **ORAL PRESENTATION**

Synthesis of radiation-induced molecularly imprinted RAFT-mediated bulk polymers for the detection and removal of acid red 26, disperse blue 7 and direct blue 2b

Meltem Okan[1], Meshude Akbulut Söylemez[2], Olgun Güven[2], Murat Barsbay[2]

[*1]Hacettepe University, Faculty of Science, Nanotechnology and Nanomedicine Division, Ankara, Turkey
[2]Hacettepe University, Department of Chemistry, Polymer Chemistry Division, Ankara, Turkey

Corresponding author e-mail: muratbarsbay@yahoo.com

Abstract

Dyes are among the major water pollutants due to their wide usage mainly textile industries. It has been reported that around 15 % of the dyes produced are lost during the dying processes and released to the environment [1]. Even at trace amounts dyes are considered to be dangerous for human health and aquatic biota [2]. Therefore, removal of dyes from aqueous solutions is among the top priority water treatment approaches. There are several methods to remove dyes from water and among these the most effective and easy one are the adsorption techniques. However, the adsorbents used have several drawbacks such as lacking selectivity, being high cost, having low binding capacity, tedious post-processing, and difficult regeneration steps [2].

Molecular imprinting is a useful tool to prepare tailor-made materials with high specific selectivity. This technique commences with the formation of a complex between functional monomer and template molecule which is followed by crosslinking reactions and template removal. At the end, specific cavities for the template in terms of functionality, size and shape are obtained. This study presents synthesis and characterization of molecularly imprinted polymers for the recognition and removal of acid red 26, disperse blue 7 and direct blue 2b. Methacrylic acid and poly(ethylene glycol dimethacrylate) were used as functional monomer and crosslinking agent, respectively. Cumyl dithiobenzoate was employed as the RAFT agent. Bulk polymerizations were carried out by radiation-induced RAFT-mediated polymerization in ethanol/water mixture (1/1, v/v) at ambient temperature. Total adsorbed dose was optimized as 1.18 kGy. Characterizations of molecularly imprinted polymers were carried out with ATR-FTIR, SEM and positron annihilation lifetime spectroscopy (PALS) techniques. Binding performances of the MIPs were tested against various factors such as pH, time and initial template concentration by UV-Vis spectroscopy. The results were quite promising and demonstrated the effectiveness of the synthesized polymers.

Keywords: Radiation Polymerization, RAFT Polymerization, Molecularly Imprinted Polymers, Azo Dyes

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➢ **ORAL PRESENTATION**

Contribution to the Knowledge of the Vespidae (Insecta: Hymenoptera: Vespoidea) From Adana Province of Turkey with Some New Records

Samet Eray Yalniz*, Ayla Tüzün

Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey.

Corresponding author e-mail: seyalniz@ankara.edu.tr

Abstract

This study is based on the examination of 1276 specimens of Vespidae collected from different localities of Adana Province between May and September 2017. The specimens were caught with a 25-30 cm of the aerial net and killed in killing bottles prepared with a mixture of potassium cyanide and gypsum. Their head, thorax, abdomen and morphological characters in their extensions were used for the identification of the species. For the identification and classification of the species, the studies of Carpenter (1987), Tüzün & Tanyolaç (1987), Archer (1989a, 1989b), Goulet & Huber (1993), Carpenter & Kojima (1997), Yıldırım & Gusenleitner (2001), Tezcan et al. (2005), Dvořák & Castro (2007), Yıldırım (2012, 2016) were referred.

The first records belonging to the family Vespidae is *Vespula (Paravespula) vulgaris* (Linnaeus 1758), *Polistes (Polistes) biglumis* (Linnaeus 1758), *Polistes (Polistes) associus* Kohl 1898, *Allodynerus floricola floricola* (Saussure 1853), *Ancistrocerus longispinosus* (Saussure 1855), *Ancistrocerus parietum* (Linnaeus 1758), *Symmorphus (Symmorphus) gracilis* (Brulle 1832), *Eumenes pomiformis* (Fabricius 1781).

Vespa crabro Linnaeus 1758, *Vespa orientalis* Linnaeus 1771, *Vespula (Paravespula) germanica* (Fabricius 1793), *Dolichovespula (Metavespula) sylvestris* (Scopoli 1763), *Polistes (Polistes) gallicus* (Linnaeus 1767), *Polistes (Polistes) nimpha* (Christ 1791), *Polistes (Polistes) dominula* (Christ 1791), *Ancistrocerus auctus* (Fabricius 1793), *Euodynerus (Euodynerus) dantici* (Rossi 1790), *Rhynchium oculatum hebraeum* Giordani Soika 1952, *Delta unguiculatum unguiculatum* (Villers 1789), *Eumenes dubius dubius* Saussure 1852, *Eumenes mediterraneus* Kriechbaumer 1879, *Allodynerus delphinalis* (Giraud 1866), *Antepipona orbitalis ballioni* (Morawitz 1867), *Eumenes coarctatus lunulatus* Fabricius 1804 belonging to the family Vespidae are new records.

As a result, in this study, we have contributed to the knowledge of fauna of Adana Province, Turkey with the total of 24 specimens belonging to the family Vespidae, 16 of which are the new record and 8 of which are the first record.

Keywords: Insecta, Hymenoptera, Vespidae, Vespinae, Polistinae, Eumeninae.

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➢ ORAL PRESENTATION

*Gypsophilla simoni'*den Saponin Ekstraksiyonu Eldesi, Antiviral ve Antibakteriyel Özelliklerinin İncelenmesi

Bekir Sıtkı Çevrimli, Şükrü Kalaycı*,

Gazi Üniversitesi Teknik Bilimler MYO Kimya Teknolojileri Bölümü, Ankara *

skalayci@gazi.edu.tr

Özet

Gypsophila Erioalyx Boss adlı endemik bitki Çankırı Tüney civarından toplandı, bitkinin kökleri ayrıldıktan sonra temizlenip gölgede kurutuldu, ufak parçalara ayrıldıktan sonra öğütülerek toz haline getirildi. Toz haline getirilen materyal kartuşlara doldurularak Soxhlet cihazında ekstrakte edildi. Ekstraksiyon çözeltisinden ham saponinler alındı. Ham saponinler kolon kromatografisi ile bileşenlerine ayrıldı. Ayrılan kısımların saf olup olmadıkları Kağıt Kromatografisi ve İnce Tabaka Kromatografisi ile kontrol edildi. Daha önceden yapı tayini yapılan izole saponini ayrılan bileşenlerin R_f değerleri hesaplandı,^{1}H NMR, ^{13}C NMR,FT-IR ve MS gibi spektroskopik verilerin değerlendirilmesiyle yapısı önerilen bileşikle örtüşdüğü gözlendi. Ayrıca ayrılan kısımların bazılarının anti viral ve anti bakteriyel özellikleri incelendi. Ayrılan saf olduğu düşünülen saponinin şeker molekülleri ile arasındaki bağ türünün $alfa'mı\ beta'mı$ olduğu belirlendi. Saf olduğu düşünülen saponin hidroliz edilerek saponin halkasına bağlı şeker türleri de tespit edildi.

Anahtar Kelimeler: Saponin, *Gysophilla simoni*, Antibakteriyel Etki

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➢ **ORAL PRESENTATION**

Removal of tetracycline using new *Candidatropicalis*-Polyacrylonitrile and *Candidalypolitica*-Polyacrylonitrile biocomposites from aqueous solutions

Feray Kip[1*], Ünsal Açıkel[2]

Cumhuriyet University, Department of ChemicalEngineering, Sivas, Turkey

Mail : feray.kip@gmail.com

Abstract

In this study, tetracycline adsorption by *Candida tropicalis* and *Candida lypolitica* on immobilized polyacrylonitrile (PAN) was investigated. The characterization of *Candida tropicalis*on immobilized polyacrylonitrile (PAN) biocomposite and tetracycline adsorbed biocomposite was performed by FTIR and SEM analysis. To find the optimum operating parameter values, it was identified that the temperature was 25-55 ^{0}C, PH was 2-7, theconcentrationwas 10-100 mg/L, the optimum PH value was 4.0, the temperature was 25 ^{0}C and the maximum tetracycline adsorption capacity obtain edat the seconditions was 0.94 mg/g for PAN-*Candida tropicalis* biocomposite. The adsorption equilibrium data was represented by Freundlich isotherm model while tetracycline kinetic data showed consistence with the pseudo-second-order kinetic model. The adsorpti on enthalpy, entropy and Gibbs free energy change were determined and the physicochemical nature of tetracycline adsorption by PAN-*Candidatropicalis* was observed to be exothermic and spontaneous. The enthalpy, entropy and Gibbs free energy changes were found as -15.03 kj/mol, -1.84 j/mol, -10.02kj/mol, respectively. This study proved that new PAN-*Candidatropicalis* biocomposite might can be used for tetracycline removal from biomedical waste waters effectively.

Key words: Wastewater, polyacrylonitrile (PAN), *Candida tropicalis,Candida lypolitica*, tetracycline, adsorption.

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➢ **ORAL PRESENTATION**

The Histopathological Changes of Imidacloprid on Intestine of a Freshwater Teleost

Özlem Önen[1*], Evren Koç[2], İnan Kaya[1]

[*1]Kafkas University, Science and Art Faculty, Department of Biology, Kars, Turkey.
[2]Kafkas University, Engineering Faculty, Bioengineering Department, Kars, Turkey.

Corresponding author e-mail: onenozlem@gmail.com

Abstract

It is the easiest, cheapest and most common way of using pesticides in combating various agricultural pests in our country, which draws attention with its biodiversity. However, pesticides are a major threat to all environmental phases and aquatic life, depending on their production, storage and use stages and their physicochemical properties. In this study, it was aimed to investigate the histopathological effects of imidacloprid, a widely used neonicotinoid pesticide in our country, on the liver structure of *Capoeta capoeta* used as a food source in this region. This study was carried out in accordance with the Animal Ethics Committee Report (No.2015-017) based on Decisions of Animal Experiments Local Ethics Committee prepared by Kafkas University. Samples were acclimated to the laboratory environment for 15-days in 500-liter tanks filled with resting mains water. In the study, four groups were formed with 10 individuals in each group. Control specimens were kept in the same conditions as the samples in the experimental groups and were fed in the same manner once a day. Experimental groups were exposed to imidacloprid for 96 hours at three concentrations (0.001ppm, 0.005ppm and 0.01ppm). After that, the control and experimental group samples were anesthetized with MS222, liver samples taken for histological examinations were fixed, passed through increasing alcohol series and embedded in paraffin. The sections, which are 4-6µm thickness, taken with microtome were stained with hematoxylin-eosin; examined under a light microscope and photographed. The results showed that the imidacloprid-exposed-specimens had histopathological damage occurred in the liver. As a result of acute imidacloprid exposure, histological damage in the liver structure of *C.capoeta* was found to be significantly higher than in the negative control group. Also these results have shown that imidacloprid exposure is histological methods are useful in evaluating the effects of imidacloprid because of the determinant aspect of histopathology.

Keywords: Pesticides, neonicotinoids, imidacloprid, histopathological effects, liver, teleost.

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➢ **ORAL PRESENTATION**

Bitkisel Atık Yağların Denizel Ekosistem Üzerine Etkisi

Burcu Çağlayan[1] , Emine Erdem Yürür[2*] , Yüksel Abalı[1]

[1] Manisa Celal Bayar Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, Manisa, Türkiye
[2*] Manisa Celal Bayar Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Manisa, Türkiye

sorumlu yazar: yabali@yahoo.com

Özet

Çeşitli nedenlerle deniz suyu, içme suyu ve tarımda kullanılan suların insan, hayvan ve bitki örtüsüne zarar verecek şekilde kimyasal yapısının bozulması su kirliliği olarak tanımlanmaktadır. Denizel ekosistemde kirlenme doğrudan veya dolaylı olarak insanlar tarafından kirliliğe işaret eder. Bu ortamlarda kirlilik enerjiden kaynaklanabildiği gibi çeşitli maddelerden de kaynaklanabilmektedir; dolayısıyla canlı organizmaya, insan sağlığına zarar vermektedir. Bu durum aynı zamanda deniz suyunun kalitesinin bozulmasına ve balıkçılık faaliyetlerine de engel teşkil etmektedir. Kirleticiler, akarsu ve nehirlerle doğrudan taşınabildiği gibi noktasal deşarjlarla da karadan denizlere taşınmaktadır. Birleşik Devletler Çevre Koruma Kurumu (USEPA) tarafındanbelli konsantrasyonlardabirincil çevresel risk olarak kabul edilen bitkisel atık yağlar ile evsel ve endüstriyel atıkların arıtılmadan veya gerektiği gibi arıtım yapılmadan nehir sularına bırakılması veya birikimi nedeniyle, nehirlerde yaşayan birçok canlı yok olma tehlikesiyle karşı karşıya bırakılmaktadır.
Dünyada kişi başı yağ tüketim ortalaması 15kg/yıl**,** Türkiye'de 20 kg/yılikengelişmiş ülkelerde ise oran 30-38kg/yılarasında değişmektedir. Ülkemizde yıllık yaklaşık olarak 1,5Milyon tonbitkisel yağ tüketilmektedir. Bu yağdan ise yaklaşık olarak 350.000 ton atık yağoluşmaktadır.Bunun ancak % 1-2'lik miktarı toplanmakta olup son yıllarda çevre bilincinin artması ve Çevre ve Şehircilik Bakanlığı'nın ilgili yönetmelikleri gereği lisanslı toplayıcıların devreye girmesiyle bu oran ancak % 5'lere kadar ancak çıkabilmektedir. Geri kalan yaklaşık % 95'likkısım kontrolsüz şekilde çevreye salınmaktadır.
Günümüzde geri kazanım teknolojileri olarak distilasyon, asit-kil, ince film buharlaştırıcısı, çözücü ekstraksiyonu ve hidrojenasyon prosesleri kullanılmaktadır. Günümüzde birçok ülke ve ülkemizde çevresel düzenlemeler ile atık yağların toprağa, suya ve kanalizasyon sistemlerine direk deşarjı ağır cezalar ile yasaklamıştır. Uygun proses ile geri kazanılan atık yağlarda toksik bileşikler tamamen giderilmiş olup ağır metaller ise bertarafa gidecek kısım olan atık keklerin bünyesine kazandırılmış olmaktadır.

Anahtar Kelimeler: Denizel Ekosistem, Bitkisel Atık Yağlar, Kirlilik, Geri Kazanım

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➢ **ORAL PRESENTATION**

Evaluation of the Chronic Toxic Effect of *Melanopsis praemorsa* Exposed to a Glyphosate-Based Herbicide Using Biochemical Biomarkers

Özlem Demirci * Birgül Otludil, Feysel Çakmak, A. İsmail Özkan

Dicle University, Science Faculty, Department of Biology, Diyarbakır, Turkey.

Corresponding author e-mail: ozdem22@gmail.com

Absrtact

Glyphosate is one of board-spectrum herbicides widely used in the world. It is important to determine its effects on non-target organisms since broad-spectrum pesticides are used in many areas such as urban, agriculture, forestry. Aquatic environment is one of the areas where xenobiotics cause the most frequent contamination. Invertebrates are important indicator species in the aquatic environment. In this study, we investigated biochemical changes in *Melanopsis praemorsa* exposed to different concentrations of glyphosate. It has been found that statistically significant changes were observed in Glutathione reductase (GR) and Glutathione s-transferase (GST) enzyme activities over the first 20 days at different doses compared to the control. As a result, it was observed that glyphosate caused a significant toxic effect on *Melanopsis praemorrhea*, especially in the early period of exposure.

Keywords: Glutathione s-transferase, Glutathione reductase, *Melanopsis praemorsa*,

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➢ **ORAL PRESENTATION**

Efficacy of *Pyrus elaeagnifolia* subsp. *elaeagnifolia* in acetic acid–induced colitis model

Mert Ilhan[1,2], Esra Küpeli Akkol[1*], Hakkı Taştan[3], Fatma Tuğçe Gürağaç[1]

[*1]Department of Pharmacognosy, Faculty of Pharmacy, Gazi University, Etiler 06330, Ankara, Turkey
[2]Department of Pharmacognosy, Faculty of Pharmacy, Yüzüncü Yıl University, Tuşba 65080, Van, Turkey
[3]Department of Biology, Faculty of Science, Gazi University, Etiler 06330, Ankara, Turkey

[*] Corresponding author: esrak@gazi.edu.tr

Abstract

In Turkish folk medicine, the fruits of *Pyrus elaeagnifolia* subsp. *elaeagnifolia* have been used to treat diarrhea. The aims of the study were to evaluate the ethnopharmacological usage of the plant using *in vivo* and *in vitro* experimental models and different-polarity extracts from the plant and also elucidate the possible mechanism underlying the histological integrity of colon in a rat colitis model. Experimental colitis was performed by intrarectal administration of acetic acid in rats, and the extracts were administered orally for one month. The colonic malondialdehyde (MDA), tumor necrosis factor (TNF-α), interleukin-6 (IL-6), and nitrite levels, in addition to the myeloperoxidase (MPO) and caspase-3 activities, were measured to determine the response to treatment with plant extracts. Moreover, the total phenolic, tannin, and flavonoid contents were evaluated for all extracts. The methanol (MeOH) extract revealed a significant decrease in MPO and caspase-3 levels compared with the control group associated with mild acetic acid–induced lesions in the histological sections. MPO and caspase-3 levels in the colonic tissues significant increased. The morphological changes in the colonic mucosa were evaluated using hematoxylin and eosin, and Trichrome stains, which revealed alteration of the colonic mucosa as evident by crypt architecture disarray, mucin depletion from goblet cells, epithelial degeneration, and necrosis accompanied by cellular infiltration in the lamina propria and submucosa. The results of the study revealed a decline in MDA, nitrite, IL-6, and TNF-α levels in the colon tissue and blood in the MeOH extract group compared with the control group. The total phenolic, tannin, and flavonoid contents were determined in the main active extract, which was the MeOH extract of *P. elaeagnifolia* subsp. *elaeagnifolia*. The findings of this study can help in treating various disorders, such as *Clostridium difficile* infection, irritable bowel syndrome, and inflammatory bowel diseases.

Key words: Caspase-3; colitis; myeloperoxidase; *Pyrus elaeagnifolia*; Rosaceae

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➢ **ORAL PRESENTATION**

Comparison of cellulose nanocrystals (CNCs) and cellulose nanofibrils' (CNFs) nanomechanical behavior

Nadir Yıldırım[*], Yusuf Ziya Erdil[2] and Stephen Shaler[3]

[*1]Bursa Technical University, Faculty of Forestry, Department of Forestry Industry Engineering, Bursa, Turkey.
[2]Mugla Sıtkı Koçman University, Faculty of Technology , Department of Woodworking Industrial Engineering, Mugla, Turkey.
[3]University of Maine, School of Forest Resources, Orono, ME, United States of America.

Corresponding author e-mail: nadir.yildirim@btu.edu.tr

Abstract

Nanocellulose (NC) is a sustainable bionano-polymer can be generated from a variety of biobased sources. The best known types of nanocelluloses are; cellulose nanofibrils (CNFs) and cellulose nanocrystals (CNCs). The CNFs and CNCs are usually used as reinforce polymers in composites. These reinforcing polymers have unique thermal, mechanical and physical properties. Their unique set of performance, environmental footprint, and costs make them interesting candidates for developing or improving new type of materials.

In this exploratory study, the atomic force microscope (AFM) was used to investigate the compression modulus of CNFs and CNCs by applying nanoforces to the surface of the CNCs and CNFs. As a result, the cellulose nanocrystals' compression modulus values were found statistically larger than what was obtained from cellulose nanofibrils.

This pioneer study helps end users to understand the potential effect of CNFs and CNCs on the performance properties of final composite product. The obtained key information is useful and critical for composite material producers and the academia.

Keywords: Nanocellulose (NC), composite materials, atomic force microscope (AFM)

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➢ **ORAL PRESENTATION**

Behçet Hastalığında CXCL5 ve Reseptör (CXCR2) Polimorfizmlerinin Önemi

Sanem Arıkan

Pamukkale Üniversitesi, Tıp Fakültesi, Temel Tıp Bilimleri, Biyofizik Anabilim Dalı, Denizli, TÜRKİYE

Sorumlu yazar e-mail: syildiz@pau.edu.tr

Özet

Behçet Hastalığı tekrarlayan kronik, multisistemik bir hastalıktır. Hastalığın patogenezi tam olarak aydınlatılamamış olsa da çevresel ve gensel faktörlerin hastalığın gelişiminde önemli rol oynadıkları öne sürülmektedir. Behçet hastalığında gelişen lezyonlarında nötrofil hücrelerinin baskın olduğu bilinmektedir ve kemokinler ile reseptör polimorfizmlerinin bu hastalığa katkısı araştırılmaktadır. CXCL5 (ENA 78, *Epithelial cell-derived neutrophil-activating peptide)*, nötrofilleri etkileyen proinflamatuvar kemokin olup hücre üzerindeki etkileri CXCR2 ile bağlanmasıyla gerçekleşir. Nötrofillerin toplanması dışında, anjiogenez ve bağ dokuların şekillenmesine etkisi olduğu saptanmıştır.

Bu yaklaşımlardan yola çıkılarak, çalışmamızda Behçet hastaları ile sağlıklı bireyler arasında, CXCL5 geni promotor bölgede yer alan rs352046 (-156, G>C) ve CXCR2 reseptörü geni 3'UTR kısmında yer alan rs1126579 (+1208, C>T) odaklarındaki polimorfizmlerin olası farklılıkları ve hastalığa etkileri araştırılmıştır.

Çalışmamızda, onay formu alınan 87 Behçet Hastası ve 111 sağlıklı kontrol grubundan elde edilen DNA örnekleri ile çalışıldı. rs352046 (-156, G>C) ve rs1126579 (+1208, C>T) odaklarına özgü primerler ve restriksiyon enzimleri kullanılarak PCR-RFLP yöntemi ile polimorfizmler belirlendi. Allel ve genotip frekansları ile OR *(Odds Ratio)* analizleri sonucunda, Behçet hastalarında ilk kez çalışılan CXCL5 rs352046 (-156, G>C) odağında hasta ve kontrol grupları arasında G ve C allelleri açısından istatistiksel olarak anlamlı fark saptandı ($p<0,05$). Bunun yanında rs352046 GG genotipi frekansı hem Behçet hastalarında hem de kontrol grubunda GC ve CC genotiplerine göre yüksek bulunmuştur (OR=2,11, % Cl: 1,06-4,21; $P<0,05$). CXCR2 geni rs1126579 (+1208, C>T) SNP odağından alınan veriler değerlendirildiğinde Behçet hastaları ve kontroller arasında anlamlı fark bulunmadı ($p>0,05$). Buna karşın Behçet hastalarının cinsiyet ve klinik bulguları değerlendirildiğinde sadece artriti olan Behçet hastalarında artriti olmayanlara göre CT allelinde anlamlı fark saptandı (OR=0,15% Cl: 0.01-1.42; $P<0,05$). Sonuç olarak, bulgularımız Behçet hastalığı ile kemokin ve reseptör polimorfizm ilişkilerinin aydınlatılması için daha geniş çalışmalara gereksinim olduğunu işaret etmektedir.

Bu çalışma, TÜBİTAK SBAG-2388 ve TÜBİTAK 113S163 No'lu projeler kapsamında yapılmıştır.

Anahtar Kelimeler: Behçet Hastalığı, CXCL5, CXCR2, polimorfizm

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➢ **ORAL PRESENTATION**

Kanserle İlişkili Tiyoredoksin Redüktaz Enziminin Yeni İnhibitörlerinin Araştırılması

Deryanur Kılıç[1], İkranur Felek [2], Ebru Akkemik[2,3*]

[1]Aksaray Üniversitesi, Sabire Yazıcı Fen Edebiyat Fakültesi, Kimya Bölümü, Aksaray, Türkiye
[2]Siirt Üniversitesi, Mühendislik Mimarlık Fakültesi, Gıda Mühendisliği Bölümü, Siirt, Türkiye
[*3]Siirt Üniversitesi, Bilim ve Teknoloji Uygulama ve Araştırma Merkezi, Siirt, Türkiye

Sorumlu yazar e-mail: eakkemik@siirt.edu.tr

Özet

Tiyoredoksin proteini nukleotidlerin deoksiribonükleotidlere indirgenmesi, ksenobiyotiklerin, oksidantların ve radikallerin detoksifikasyonu gibi birçok fizyolojik proseste önemli rol oynamaktadır. Tiyoredoksinin redoks fonksiyonu Tiyoredoksin redüktaz (TrxR) enzimine bağlıdır. Yukarıda bahsedilen fizyoterapi/patolojik süreçler üzerindeki dolaylı katılımı göz önüne alındığında, TrxR'nin inhibisyonu önemli bir klinik hedeftir. Ne yazık ki TrxR inhibitörlerinin hedef enzime bağlanma afiniteleri ve mekanizmaları ile ilgili olarak çok az bilgi mevcuttur. Genellikle TrxR enziminin kanser ile olan ilişkisi nedeniyle potansiyel kanser ilaçlarının etkileri söz konusu enzim üzerinde araştırılmıştır. Bu çalışma ile bazı amino asit türevlerinin Tiyoredoksin redüktaz enzim aktivitesi üzerindeki etkileri *in vitro* şartlarda araştırıldı. Çalışılan amino asit türevleri sırasıyla; bestatin HCl, Fmoc-D-Val-OH, Z-Gly-Bt, hippuric Asid, Z-Phe-Bt ve tetrahidrofolik asid şeklindedir. Bestatin HCl ve hippurik asit etki etmezken en yüksek inhibisyonu Z-Gly-Bt (IC_{50} 0.221 mM) göstermiştir. Z-Phe-Bt ise enzim aktivitesi üzerinde aktivasyona sebep olmuştur. En yüksek inhibisyon etkisi gösteren bileşiğin docking çalışması yapılarak bağlanma modelleri ve muhtemelen etkileşim gösterdikleri amino asitler ortaya çıkarılmıştır.

Anahtar Kelimeler: Tiyoredoksin redüktaz, amino asit türevleri, inhibisyon, aktivasyon

Teşekkür: Bu çalışma "2017-SİÜMÜH-44" nolu proje koduyla Siirt Üniversitesi tarafından desteklenmiştir.

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➢ ORAL PRESENTATION

The Evaluation of the Effects of pH and Protein:Fat Ratio on Rheological Properties of Plain Yogurt

Ahmet Ayar, Hatice Siçramaz*

Sakarya University, Facultyof Engineering, Department of Food Engineering, Sakarya, Turkey.

*Corresponding author e-mail: haticesicramaz@sakarya.edu.tr

Abstract

In this study, yogurts with different protein:fat ratios were produced. Each sample groups were also divided into three parts to apply different incubation times. At the first day of storage, yogurts were monitored for their firmness and viscosity. The results revealed the effects of protein:fat ratio of yogurt milk, and also determined the limits of optimum pH's for varying compositions of milk.

Keywords: yogurt, protein:fat ratio, optimum pH, rheological properties.

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➢ ORAL PRESENTATION

Mineralization of Dimethyl Sulfoxide by Subcritical Water Oxidation using Response Surface Methodology

Erdal Yabalak*, Barış Saçlı, A. Murat Gizir

Mersin University, Faculty of Arts and Science, Department of Chemistry, Çiftlikköy Campus, Mersin, Turkey

e-mail: yabalakerdal@gmail.com

Abstract

Dimethyl sulfoxide is an organic solvent which is used as detergent as well as stripping agent in the manufacture of semi-conductors and thin film transistor of liquid crystal display. Also, it is toxic due to being easily absorbed by organisms. It can dissolve both polar and non-polar compounds and also is miscible in several organic solvents. Various methods have been applied for treatment of wastewater polluted with dimethyl sulfoxide such as, photocatalysis by TiO_2, ozone based advanced oxidation process, and UV/H_2O_2. In contrast to other methods, subcritical water degradation is effective and environmentally friendly process. In addition, using H_2O_2 in subcritical water medium favours the efficiency of the method. To the best of our knowledge, there is no mineralization treatment of dimethyl sulfoxide by subcritical water oxidation in literature. Thus, dimethyl sulfoxide was mineralized by subcritical water oxidation using H_2O_2 and obtained results were evaluated by response surface methodology, which is a collection of many statistical techniques. Degradation percentages of dimethyl sulfoxide were calculated by comparing the total organic content of treated samples and stock solution. The effect of process parameters such as temperature, treatment time and H_2O_2 concentration on the mineralization of dimethyl sulfoxide were evaluated by central composite design. Figure 1 displays the mineralization rate based on TOC removal percentages. Maximum TOC removal percentage was obtained as 59.61 % at 373 K in 120 minutes of treatment time using 150 mM of H_2O_2.

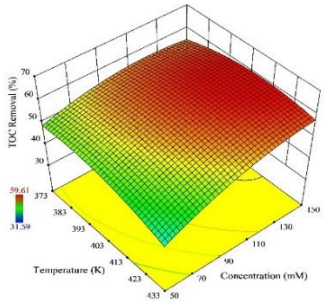

Figure 1. 3D display of TOC removal rates of dimethyl sulfoxide at fixed treatment time of 90 min.

Keywords: TOC removal, Subcritical Water, Dimethyl Sulfoxide, Central Composite Design

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➢ ORAL PRESENTATION

First Description of the Deutonymph of *Eustigmaeus turcicus* Doğan and Ayyıldız (Acari: Stigmaeidae)

Sibel Doğan[1*], Salih Doğan[1], Orhan Erman[2]

[1]Erzincan University, Arts & Sciences Faculty, Biology Department, Erzincan, Turkey
[2]Fırat University, Sciences Faculty, Biology Department, Elazığ, Turkey

[*]Corresponding author e-mail: sdilkara@erzincan.edu.tr

Abstract

The genus *Eustigmaeus* is one of the oldest mite genera in the Stigmaeidae with 128 described species. One of them, *E. turcicus* was only known Turkey and given before from type locality, Erzurum, and later reported from Afyonkarahisar, Yozgat, Kütahya, Bingöl, Kelkit Valley and Erzincan. By now, female and male of this species were known, but its immature stages were unknown. In this study, 6 deutonymph specimens of *E. turcicus* were found from Vauk Gate (Turkey). The description, illustrations of the deutonymph specimens and its measurements for some body parts were made, and the morphological characters of the deutonymph stage were compared with mature of this species. This is the first record of deutonymph of *E. turcicus*.

Keywords: *Eustigmaeus*, deutonymph, first record, Turkey.

This study was prepared mainly from the mite material collected by a research project (№ 113Z094) supported by the Scientific and Technological Research Council of Turkey (TÜBİTAK).

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➢ **ORAL PRESENTATION**

Evaluate the Toxicity of Sunset Yellow on *Allium cepa* Root Meristematic Cells With Comet assay

Kemal Koç[1*], Dilek Pandır[1]

[1]*Bozok University, Institue of Sciences, Department of Biology, Yozgat, Turkey
[2]Bozok University, Faculty of Arts and Science, Department of Biology, Yozgat, Turkey

Corresponding Author: durak77@gmail.com

Abstract

Food additives are used as synthetic or natural chemicals and are added to foods for sweetening, coloring, flavoring and as protecting agent agains bacterial degradation. Microbiological, chemical and enzymatic changes of foods are impeded by food preservatives. This work was conducted to evaluate the toxicity of the food additives Sunset Yellow (SY) on *Allium cepa* root meristematic cells. Control and treatment groups were created from germinated roots. Group 1 (control group) did not receive chemicals. Group 2 (SY-treatment group), received increasing doses of SY (25, 50, 100 and 500 ppm) with time periods of 24, 48 and 72 h. DNA damage was measured by comet assay. The % tail DNA values ranged from 50.09±2.74 to 107.33±22.15 and tail length values ranged from 1.18±0.55 to 85.05±8.75 in the SY-treatment group ($p < 0.05$). The comet assay was usually used to detect biological effects of various chemical stresses on DNA in living cell. In another study, lack of genotoxicity of tartrazine and carvacrol were obtained by utilizing our well-established different tissue system with DNA damage by comet assay. Tartrazine and carvacrol did not induced DNA damage in a dose-dependent fashion on the rat tissues. In this study, after the exposure period, single and/or double strand DNA breaks were detected by using micro gel electrophoresis (comet assay). Single and/or double strand DNA breaks were measured as tail DNA%, tail length and tail moment of comet. The effects of SY on the root cells of *A.cepa* with regard to tail DNA% and tail length were determined. It is clearly demonstrated that particularly tail DNA% and tail length increased in the SY treatment group for 72 h.

Key words: SY, DNA damage, Genotoxicty, Allium test

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➢ ORAL PRESENTATION

The Microbiological Quality of the Village and Market Eggs Sold at Retail in Nigde and Kayseri

Fulden Karadal[1*],Nurhan Ertas Onmaz[2], Harun Hızlısoy[3], Yeliz Yıldırım[2], Serhat Al[2], Zafer Gonulalan[2], Ismail Ulger[4]

[1] University of Nigde, Bor Vocational School, Department of Food Processing, Niğde-TURKEY
[2] University of Erciyes, Veterinary Faculty, Department of Food Hygiene and Technology, Kayseri, TURKEY
[3]University of Erciyes, Veterinary Faculty, Department of Veterinary Public Health, Kayseri-TURKEY
[4] University of Erciyes, Faculty of Agriculture, Department of Livestock Kayseri-TURKEY

Corresponding author e-mail: fkaradal@ohu.edu.tr

Abstract

In this study, it is aimed to investigate the microbiological quality of market and village eggs. A total of 200 eggs (100 market and 100 village) were randomly collected from different markets and village bazaars in Nigde and Kayseri. Each egg shell and content were investigated for coliform, *E. coli*. *Campylobacter* spp., *S. aureus*, *Salmonella* spp. and yeast- mold contaminations. None of the egg samples were contaminated with *Campylobacter* spp. and *S. aureus* while *Salmonella* spp. was determined in one sample (eggshell). In addition, it was determined that 27 (13.5%) egg shells and 6 (3%) egg contents were found contaminated with coliforms, where 12 (6%) and 31 (15.5%) of the egg shells were found contaminated with *E. coli* and yeast and mold respectively. Total coliform, *E. coli* and yeast- mold counts were detected to range from 3.69 to 5.62 log cfu/mL, 3.35 to 3.55 log cfu/mL and 6.80 to 6.97 log cfu/mL, respectively. Obtained data revealed that the microbiological load on egg shells may lead to contaminations in refigerator and kitchen environments while egg content contaminations may constitute a risk for public health through undercooked egg consumption. In conclusion, preventive measures must be taken to keep both market and village eggs under +8 °C during storage, besides, producers and consumer's awareness should be raised about the fact that egg is also a risky food that must be kept cold.

Keywords: Market egg, microbiological quality, prevalence, village egg

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➢ **ORAL PRESENTATION**

Camerobiid (Acari: Camerobiidae) Mites in Dilek Peninsula and Büyük Menderes Delta National Park, Turkey

Mustafa Akyol [1*], Melis Pınar Gül [2]

[*1] Manisa Celal Bayar University, Faculty of Arts and Sciences, Department of Biology, Manisa, Turkey.
[2] Manisa Celal Bayar University, Institute of Science, Department of Biology, Manisa, Turkey

Corresponding author e-mail: makyol77@gmail.com

Abstract

The Camerobiidae is the second largest family in the superfamily Raphignathoidea after the Stigmaeidae. They are generally predaceous, feeding on phytophagous mites, unarmored scale insects and the first instar nymphs of armored scale insects. Members of this family are usually found in grass, moss, leaf litter and various soil habitats. This family inculudes 7 valid genera (*Acamerobia*, *Bisetulobius*, *Camerobia*, *Decaphyllobius*, *Tillandsobius* and *Tycherobius*) and more than 161 described species. By now, 3 genera and 35 species in this family were found in Turkey: Genus *Camerobia* (1 species), *Neophyllobius* (23 species) and *Tycherobius* (11 species). In order to determine the camerobiid fauna of the Dilek Peninsula and the Büyük Menderes Delta National Park and to contribute to biodiversity, for a period of per month in year, the camerobiid specimens extracted from the litter and soil samples collected from the study area *Neophyllobius* Berlese, 1886 (4 species: *N. lachishensis* Bolland, 1999, *N. karabagiensis* Akyol and Koç, 2006, *N. populus* Akyol and Koç, 2006, *N. yunusi* Akyol and Koç, 2006) and *Tycherobius* Bolland, 1986 (*T. izmirensis* Akyol and Koç, 2017) species in the Camerobiidae family have been identified as a new record in this study. This work was supported by the Project 2016-024 by Manisa Celal Bayar University, Scientific Research Projects Coordination Unit.

Keywords: Acari, Raphignathoidea, Camerobiidae, National park, Turkey.

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➢ ORAL PRESENTATION

Syntheses and Spectroscopic Characterizations of Cis- and Trans-dispirocyclic Ferrocenylphosphazenes Bearing Vanillinato Groups

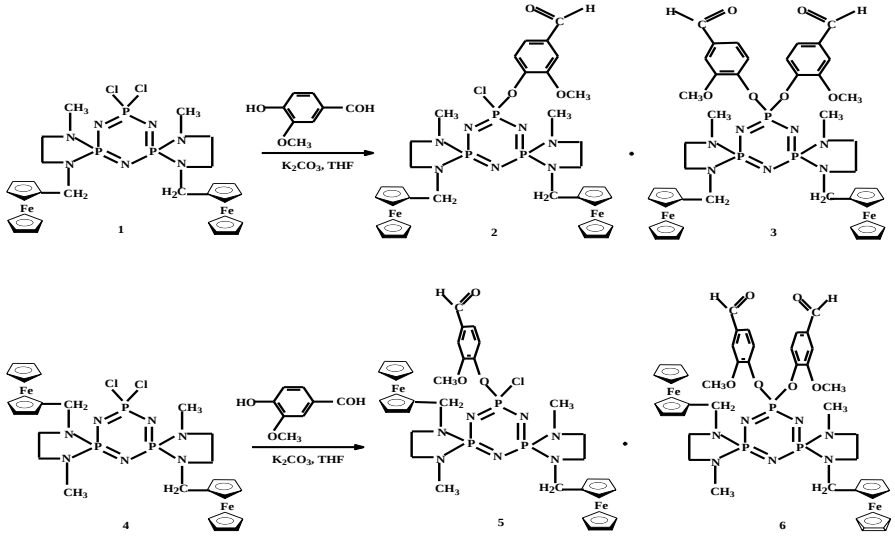
Yasemin Tümer, Gönül Arslan

Department of Chemistry, Karabük University, 78050 Karabük, Turkey;

yasemintumer@karabuk.edu.tr

Abstract

Dichloro cis- and trans-dispirocyclic ferrocenyl cyclotriphosphazenes (**1** and **4**) were obtained from the reactions of $N_3P_3Cl_6$ with *N*-(1-ferrocenyl methyl)-*N*-methyl-ethylenediamine [1,2]. The gradual Cl replacement reactions of NN cis- and trans-dispirocyclic ferrocenyl cyclotriphosphazenes (**1** and **4**) with the potassium vanillinate resulted in the mono (**2** and **5**) and di (**3** and **6**) vanillinato substituted phosphazene derivatives (**Scheme 1**). The synthesized compounds were purified by column chromatography. The structures of the new cyclophosphazene derivatves were determined by FTIR, 1H, 13C{1H} and 31P{1H}NMR spectral data.



Scheme 1 Syntheses route of cis- (2 and 3) and trans- (5 and 6) dispirocyclic Ferrocenylphosphazenes Bearing Vanillinato Groups

Keywords: Dispiroferrocenylphosphazenes, vaniline, hexachlorocyclotriphosphazene, spectral analysis.

Acknowledgments

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➢ **ORAL PRESENTATION**

Carbon Monoxide: A New Class of Pharmaceuticals?

Elvan Üstün*, Mutlu Sönmez Çelebi, Songül Kirlak

*Ordu University, Faculty of Science and Arts, Department of Chemistry, 52200, Ordu, Turkey.

Corresponding author e-mail: elvanustun@odu.edu.tr

Abstract

Carbon monoxide (CO) is a well-known toxic. However, it is endogenously produced during the degradation process of *heme* proteins by either inducible or constitutive forms of the enzyme heme oxygenase. In fact, there are regularly certain amounts of CO in healthy tissue. The researches show that CO rate in healing process of unhealthy tissue is much more than that of accepted routine. This induced new researches about functions of carbon monoxide as a new therapeutic agent. The results of these studies evidenced the bioactivities of carbon monoxide such as vasodilatative, anti-inflammatory, renoprotective, anti-apoptosis. CO-releasing molecules (CORMs) are chemical species that synthesized for deposit and transport of carbon monoxide in a possible healing process. Metal carbonyl complexes are most promising candidates for deposit and transport carbon monoxide [1, 2].

The type of the metal, which will be used in CORM candidate, is very important. The researches generally continue about iron, manganese and rhenium that are well-known bioactive transition metals. On the other hand, the ligand type and number, which are effective about CO-releasing properties, are also important [3].

In this study, $[M(CO)_3(bpy)L]PF_6$ [bpy:2,2-bipyridyl, L:imidazole/benzimidazole derivative ligands] type manganese and rhenium carbonyl complexes were synthesized and characterized structurally/electrochemically and CO-releasing properties of molecules were analyzed. In addition, the structural and electronic properties of complexes were investigated by DFT/TDDFT approaches.

Keywords: CO-releasing molecules, metal carbonyl complexes, DFT/TDDFT.

Acknowledgement: Support of Ordu University Scientific Project Coordination Department (ODUBAP, Project No: HD-1601) is gratefully acknowledged.

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➢ **ORAL PRESENTATION**

UV-dependent Electrochemical Characterization of CO-releasing Manganese (I) complexes

Mutlu Sönmez Çelebi*, Elvan Üstün

Ordu University, Faculty of Science and Arts, Department of Chemistry, 52200, Ordu, Turkey.

Corresponding author e-mail: mutlucelebi@odu.edu.tr

Abstract

As important catalysts, metal carbonyl complexes have received considerable attention in recent years owing to their ability to store and transport carbon monoxide that have been proven to function as antiinflammatory, antiapoptotic or antiproliferative agents. CO has been known as toxic since ancient times, because the CO binds to empty coordination site of hemoglobin to form carbonmonoxy hemoglobin (COHb) and impairs oxygen transport to tissue. On the other hand, CO is produced endogenously as a by-product during degradation of hemoglobin [1] and COHb levels of up to 10% are asymptomatic [2].

In this study, $[Mn(CO)_3(bpy)L]X$ (bpy = 2,2-bipyridyl; X = PF_6, SO_3CF_3, L: imidazole, N-methylimidazole, benzimidazole, N-benzylbenzimidazole, N-4-chlorobenzylbenzimidazole) complexes have been characterized electrochemically and related to CO-releasing properties. Cyclic voltammograms (CVs) of the compounds were recorded using a CHI Model 600E Potentiostat with 3-electrode configuration. The working electrode was a pencil graphite electrode (PGE) with a diameter of 0.5 mm. A Pt wire was used as the counter electrode and a saturated calomel electrode (SCE) was used as the reference electrode. The complex molecules were dissolved in acetonitrile and tetra-n-butylammonium perchlorate (TBAP) was used as the supporting electrolyte. Analytical concentration of the solutions was 4.0 mM for each molecule. All the electrochemical experiments were performed after purging a sufficient amount of pure nitrogen gas to the solutions in order to remove the dissolved oxygen.

Keywords: Manganese (I) complexes, Electrochemical Characterization, CO Release, UV-Exposure.

Acknowledgement: This study was supported by Technological Research Council of Turkey (TÜBİTAK) with grant number 112T320.

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➢ ORAL PRESENTATION

Farklı Oranlarda Kırmızı Pul Biber İçeren Set Tipi Yoğurtların Bazı Fizikokimyasal, Mikrobiyolojik ve Duyusal Özellikleri

Özge Duygu Okur

Bülent Ecevit Üniversitesi, Mühendislik Fakültesi, Gıda Mühendisliği Bölümü, Zonguldak, Türkiye

Sorumlu yazar e-mail: oduyguokur@beun.edu.tr

Özet

Bu çalışmada baharat (kırmızı pul biber) ilave edilmemiş (Kontrol=K) ve farklı oranlarda (%0,2/%0,5/%1,5/%2) kırmızı pul biber ilave edilmiş set tipi yoğurtların depolamanın 1, 7 ve 15. günlerinde bazı fizikokimyasal, mikrobiyolojik ve duyusal özellikleri araştırılmıştır. Depolama süresinin yoğurt örneklerinde titrasyon asitliği, pH üzerine etkisi önemli ($p<0,05$) bulunurken, su tutma kapasitelerindeki değişim üzerine etkisi önemsiz bulunmuştur. Depolama sürecinde K ve %0,2 pul biber ilaveli yoğurtların serum ayrılması değerleri önemli değişim gösterirken, %0,5/%1,5/%2 örneklerinin serum ayrılması değerleri değişimi özellikle 1. ve 15. gün depolamalarında önemlilik arzetmiştir. Depolama sürecinde serum ayrılması değerleri azalma göstermiştir. K ve %0,2 pul biber ilaveli yoğurt örneklerinde depolama süresince kuru madde değişimi önemsizken, %0,5/%1,5/%2 örneklerinde 1. ve 7. günler arasındaki değişim önemli bulunmuştur. Mikrobiyolojik analizler sonucunda, en yüksek *Lactobacillus* içeriği (5,73 log kob/g) % 0,5 pul biber ilaveli yoğurtta, en yüksek *Lactococcus* içeriği (8,89 log kob/g) ise % 0,5 ve % 1,5 oranında kırmızı pul biber içeren örnekte belirlenmiştir. Depolama süresince *Lactococcus* sayısında artma olduğu, *Lactobacillus* sayısının ise depolamanın 7. gününe kadar arttığı, daha sonra azalmaya başladığı belirlenmiştir. Mikrobiyolojik değerlendirmeler sonucunda depolama süresince örneklerin hiçbirinde koliform bakteriye rastlanmamıştır. Duyusal analiz değerlendirmeleri sonucunda ise, en fazla puan alan ürünler %1,5 kırmızı pul biber ilaveli yoğurt ve kontrol grubu olurken, ikinci sırayı %0,5 kırmızı pul biber ilaveli yoğurt örneği almıştır. almıştır. En düşük genel skoru, % 2 kırmızı pul biber ilaveli yoğurt örneği almıştır. Yoğurt üretiminde % 1,5 oranında kırmızı pul biber kullanımının uygun olacağı kanısına varılmıştır.

Anahtar Kelimeler: Yoğurt, Kırmızı Pul Biber, Fonksiyonel, Raf ömrü

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➢ ORAL PRESENTATION

Usage Random Amplified Polymorphic DNA (RAPD) Fingerprint in Liver Tissue on Male Rats

Ali Demirbağ[1*], Züleyha Doğanyiğit[2*], Fatih Oğuz Bekdemir[3*], Zehra İlçe[3], Kemal Koç[3], Fatma İlçe[3], Dilek Pandır[1], Sedat Per[1]

[*1] Bozok University, Faculty of Arts and Science, Department of Biology, Yozgat, Turkey
[2] Bozok University, Faculty of Medicine, Department of Histology and Embryology, Yozgat, Turkey
[3] Bozok University, Institue of Sciences, Department of Biology, Yozgat, Turkey

e-mail: durak77@gmail.com

Abstract

The aim of this study was investigate the effects of lipopolysaccharide (LPS) on liver tissue of male rats. Lipopolysaccharide (LPS) is found in the cell wall of gram-negative bacteria with endotoxin properties. When experimental animals exposured to LPS, interstitial pneumonia, adult respiratory fatal syndrome, acute tubular necrosis, fatal effects such as coagulopathy and hypoglycaemia may be seen in these animals. In this study male rats were exposed to LPS which is isolated from *E. coli* and the toxic effects of LPS on the lung tissue of these rats were examined on the basis of DNA damage. The study steps are: DNA extraction from lung tissue, RAPD-PCR applications and observation of differences in DNA band profiles by gel electrophoresis. Total genomic DNA was extracted from liver tissue on male rats according to method of Sambrook et al. (1989). RAPD-PCR was performed after DNA extraction. The PCR mastermix consisted of 2,5 ul 10X PCR Buffer (Fermentas), 4 ul $MgCl_2$ (25mM, Fermentas), 1 ul dNTPs (10 pmol, Fermentas), 4 ul DMSO, 1 ul random primers, 0,5 ul Taq polymerase (5U/ul, Fermentas), 1 ul Template DNA (50 ng/ul) and the final volume was completed with bidistilled water as 25 ul. The RAPD-PCR protocol is as follows: Initial denaturing step of 2 min at 95 °C, Denaturation step of 1 min at 95 °C (45 cycles), Annealing step of 1 min at 36 °C (45 cycles), Extension of 2 min at 72 °C (45 cycles), Final extension of 4 min at 72 °C. PCR products were run on 1% agarose gel electrophoresis for 1 hour at 50 V. DNA damage was determined with DNA band profiles. DNA damage was created in liver tissue by LPS treatment. LPS treatment in liver tissue caused a significant increase in DNA damage.

Keywords: RAPD, LPS, Rat, Toxicity, Liver

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➢ ORAL PRESENTATION

Yeni Tür Diaril Fumarat Bileşiklerinin Sentezi ve Asetilkolin Esteraz İnhibisyonunun İncelenmesi

Günay Kaya Kantar

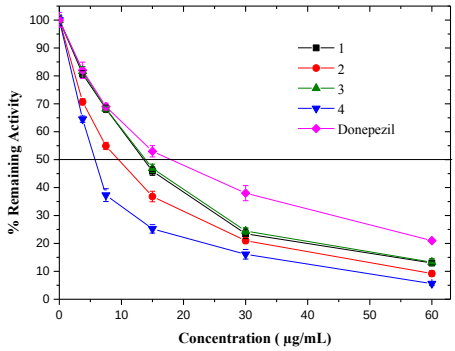
Recep Tayyip Erdoğan Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Rize, Türkiye

Sorumlu yazar e-mail: gunay.kaya@erdogan.edu.tr

Özet

Bu çalışmada, bazı doğal fenoller (öjenol, guaiakol, izoöjenol ve vanilin) içeren yeni fumarat bileşikleri (I-IV) sentezlendi ve yapıları IR, ^{1}H-NMR, ^{13}C- NMR, X-Ray analizi ile karakterize edildi. Sentezlenen fumarat bileşiklerinin asetilkolin esteraz (AChE) inhibisyon özellikleri incelendi ve hem kendi aralarında hem de literatürdeki oksalat bileşikleri ile karşılaştırıldı. Fumarat bileşiklerinin (I-IV) AChE inhibisyonu için standart olarak kullanılan donepezil hidroklorür'e (IC_{50} =16.02±0.66 µg/mL) oranla daha iyi anti-asetilkolin esteraz aktivitesi gösterdiği bulunmuştur. Bileşiklerin AChE inhibisyon etkisi IC_{50} değerlerine göre sıralandığında IV> II> I = III> Donepezil olarak belirlenmiştir. IV numaralı bileşik (IC_{50}=5.25±0.51 µg/mL) bu bileşikler arasında en iyi AChE inhibisyonu gösteren madde olarak bulundu. Bileşiklerin doza bağlı AChE inhibisyon değerleri şekil 1'de gösterilmiştir.

Bu çalışma Recep Tayyip Erdoğan Üniversitesi FBA-2016-697 numaralı BAP projesinin desteğiyle yapılmıştır.



Şekil 1. Sentezlenen bileşiklerin ve satandartın (Donepezil hidroklorür) konsantrasyona bağlı olarak % kalan AchE aktivite değerleri.

Anahtar Kelimeler: Fumarat bileşikleri, Asetilkolin Esteraz, İnhibisyon

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➢ ORAL PRESENTATION

Hipersalin Çevrelerden İzole Edilen Fungal İzolatların Boya Giderimi Açısından Taranması ve Faktöriyel Tasarım ile Optimizasyonu

Cansu Filik İşçen[1*], Ülküye Dudu Gül[2], Arzu Altın Yavuz[3], Semra İlhan[4]

[1]Eskisehir Osmangazi University, Faculty of Education, Department of Elementary Education, Eskisehir/Turkey
[2]Vocational School of Health Services, University of Bilecik Seyh Edebali, Bilecik/Turkey
[3]Eskisehir Osmangazi University, Faculty of Sciences and Arts, Department of Statistics, Eskisehir/Turkey
[4]Eskisehir Osmangazi University, Faculty of Sciences and Arts, Department of Biology Eskisehir/Turkey

Corresponding author e-mail:cfilik@gmail.com

Özet

Bazı endüstrilerin en önemli problemlerinden birisi boya içeren atıksularını arıtmaktır. Geleneksel yöntemler bazı boyaların rengini gidermede hem pahalı hem de yetersiz kalmaktadır. Buna karşılık tekstil boyalarının fungal degradasyonu etkili, ucuz ve çevre dostu bir yaklaşımdır.

Bu çalışmada, Tuz Gölü ve Çamaltı Tuzla'sından izole edilen 60 fungal kültür 10 farklı sentetik boya için dekolorizasyon potansiyelleri açısından taranmıştır. Fungal izolatlar ilk olarak 20 ppm boya içeren Malt Ekstrat Agar besiyerine ekilmiş ve yüksek dekolorizasyon aktivitesi gösteren izolatlar sırasıyla 40, 80 ve 100 ppm boya içeren katı besiyerine transfer edilmişlerdir. Renk giderimi açısından başarılı bulunan bir izolat ve bir boya seçilerek boya degradasyon koşulları istatistiksel bir deneysel tasarım modeli kullanılarak optimize edilmiştir.

Bu çalışmanın birinci aşaması olan tarama sonucunda, denenen tekstil boyaları için *Aspergillus* türlerinin yüksek dekolorizasyon aktivitesine sahip olduğu görülmüştür. Yapılan gözlemlere dayanarak, fungusların renk giderimini biyodegradasyon ve biyoakümülasyon gibi farklı mekanizmalar aracılığıyla başardığı anlaşılmaktadır.

İkinci aşamada *A. niger* fungusunun Remazol Black B boyasını gidermesinde bir faktöriyal tasarım planlanmıştır. Başlangıç pH, melas konsantrasyonu, başlangıç boya konsantrasyonu ve tuzun boya giderimine etkisi değerlendirilmiştir.

Sonuç olarak, hipersalin çevrelerden izole edilen fungusların boya ve tuz içeren endüstriyel atıksuların arıtımında potansiyel dekolorizasyon ajanları olarak kullanımı önerilmektedir.

Anahtar Kelimeler: Funguslar, biyodegradasyon, sentetik boyalar, deneysel tasarım

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➢ ORAL PRESENTATION

X-ray and IR Spectra Studies of 2-((5,6-diphenyl-1,2,4-triazin-3-yl)thio)-1-(3-methyl-3-phenylcyclobutyl)ethan-1-one*

Murat Örnek[1*], Çiğdem Yüksektepe Ataol[1], İbrahim Yılmaz[2], Alaaddin Çukurovalı[3]

[*1]Cankiri Karatekin University, Faculty of Science, Department of Physics, Cankiri, Turkey
[2]Karamanoglu Mehmetbey University, Faculty of Kamil Ozdag Science, Department of Chemistry, Karaman, Turkey
[3]Firat University, Faculty of Science, Department of Chemistry, Elazig, Turkey

Corresponding author e-mail: muratornek19@hotmail.com

Abstract

The single crystal structure of 2-((5,6-diphenyl-1,2,4-triazin-3-yl)thio)-1-(3-methyl-3-phenylcyclobutyl)ethan-1-one is obtained by the X-ray diffraction technique. The molecular structure of the crystal structure using X-ray diffraction data is optimized using the Density Functional Theory (DFT) of computational chemistry methods. B3LYP hybrid functions and different basis sets have been selected to achieve the optimized results in the theoretical calculations. The bond parameters of the compound are compared with the X-rays and the theoretical calculation results. And also, using the optimized molecular structures, the vibration frequencies of the molecular structure were calculated with different basis sets and the experimental and theoretical results were compared.

Keywords: Triazin, DFT, X-ray, Single Crystal, Vibrational Frequencies

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➢ **ORAL PRESENTATION**

Some Solutions to Problems of *in vitro* Commercial Lily Production

Çiğdem Alev Özel

Gazi University, Faculty of Education, Department of Biology Education, Teknikokullar, 06500, Ankara, Turkey

Corresponding author e-mail: cigdemozel@gmail.com

Abstract

All lilies (*Lilium spp.*) are counted among the four most sought plants all over the world. They have huge range of long lasting attractive colours that make them excellent elegant looking among other cut flowers, pot plants, garden plants and dry flowers everywhere. These days almost all bouquets has lily flower as an integral part that has resulted in increased consumer preference and demand of these high quality flowers. These are largely multiplied through bulbs and bulb scales. Many small and large commercial facilities are involved in their production every where both under *in vitro* and *ex vitro* conditions to meet the constantly growing market demands. They are considered important for all occasions from death to weddings with a large share in economies of many countries. Quality plays a vital role to reach competitive export and domestic markets. Care during production, harvest and postharvest conditions contribute positively to the aesthetic values, longevity, attraction and market value of cut-flowers. Therefore, high care is needed to look after these plants during indoor and outdoor plantings. Biotic stress (Fungal, viral, bacterial, and nematodal infections etc.) and abiotic stress (light, temperature, cold, drought etc.) are the most serious obstacles that significantly affect yields of these plants. This study looks into tissue culture and genetic transformations studies suggesting ameliorations to the problems arising under *in vitro* culture conditions.

Keywords: abiotic stress, biotic stress, *in vitro* condition, lily export, trangenic lily

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➢ **ORAL PRESENTATION**

Effect of *in vitro* Bioaccessibility on Polyphenols Contents During Shalgam Beverage Fermentation

Beraat Özçelik[1], Fatih Bildik[2*], Betül Tokdas[3]

[1]Istanbul Technical University, Faculty of Chemical and Metallurgical Engineering,Department of Food Engineering, Maslak-İstanbul, TURKEY
[2*]Istanbul Technical University, Faculty of Chemical and Metallurgical Engineering,Department of Food Engineering, Maslak-İstanbul, TURKEY
[3]Istanbul Technical University, Faculty of Chemical and Metallurgical Engineering,Department of Food Engineering, Maslak-İstanbul, TURKEY
bildikfatih@itu.edu.tr

Abstract

Shalgam beverage is produced by lactic acid bakteria from carrot, bulgur, salt and water.The production of shalgam beverage involves fermentation [1].Black carrot is used as the major raw material and is considered to be one of the most important source of polyphenol content.The consumption of product having high antioxidant capacity leads to various health benefits [2].
In this study, that has focused on the changes polyphenols contents and in vitro bioaccesibility of the main raw material and shalgam beverage in the fermentation stage.As the fermentation progresses beneficial compounds to increase in shalgam beverage.This increments was lower in the last 12 days of fermentation compared with the first 12 days.Black carrot exhibited the highest value polyphenols contents all samples before bioaccesibility test, recovery of polyphenols and anthocyanins for shalgam beverage was found to be mostly identical with black carrot result.In vitro bioavailability test demostrate that containing high amounts of health benefical compounds in the early fermentation stage was significantly lower than with end product.While 16 different phenolic were identified in shalgam beverages only cyanidin was dedected in shalgam beverage and black carrot.

Keywords: shalgam; fermentation; polyphenols; HPLC.

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➢ ORAL PRESENTATION

The Evaluation of the Rate of Helicobacter pylori in the Normal Mucosa Adjacent to the Gastric Carcinoma with the Histopathological Development Pattern and the Degree of Differantiation of the Gastric Carcinoma. A retrospective Analysis of 104 Gastrectomy Cases

Mahir Tayfur*, Mecdi Gürhan Balcı

Erzincan University, Mengucek Gazi Education And Research Hospital, Department of Pathology, Erzincan, TURKEY

Corresponding author : drmahirtayfur@gmail.com

Abstract

Introduction:The stomach is part of the digestive tract. It is between esophagus and duodenum. It is separated from proximal to distal as cardia, fundus, corpus and pyloric antrum macroscopically. The stomach wall consists of mucosa, submucosa, muscularis propria and serosa from the inside to the outside. The majority (%95) of gastric cancer are carcinomas developing from mucosa. Helicobacter pylori is a common type of bacteria that grows in the digestive tract. Helicobacter pylori infections are usually harmless but Helicobacter pylori infection is responsible for the majority of gastric ulcer disease and gastric cancer.

Materials and Methods:We reevaluated 104 gastrectomy materials operated due to cancer in Istanbul Haseki Education and Research Hospital. The sections prepared from gastric cancer were examined by Hematoxylin-Eosin and Giemsa staining.

The cases were classified as positive and negative according to the presence of Helicobacter pylori in the adjacent mucosa to gastric carcinoma.

The rate of Helicobacter pylori in the normal mucosa adjacent to the gastric carcinoma between the histopathological development pattern and the degree of differantiation of the gastric carcinoma was investigated.

Results: Helicobacter pylori was avaliable in 44 of 104 cases (43,1%). Helicobacter pylori was more in expanding type than infiltrating type. There was a statistically significance between expanding type and infiltrating type of carcinoma according to the presence of Helicobacter pylori ($p<0,05$).

Helicobacter pylori was less in indifferantiated carcinoma than other types. There was a statistically significance between indifferantiated carcinoma and other types of carcinoma ($p<0,05$). There was no statistically significance between other types except indifferantiated carcinoma ($p>0,05$).

It was emphasized that early diagnosis of Helicobacter pylori with urease test, histochemical and immunohistochemical staining methods and eradication of Helicobacter pylori would reduce the rate of gastric cancer development.

Keywords : Helicobacter pylori, gastric carcinoma, degree of differantiation, development pattern

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➢ ORAL PRESENTATION

Growth Performance and Muscle Development Of Broilers Fed with Low Protein Diets Supplemented with Or Without a Blend of Branched-Chain Amino Acids with Different Valin Content Up to 14 D of Age

Canan Kop Bozbay*[1], Ahmet Akdağ[2], Helin Atan[1], Nuh Ocak[2]

[*1] Eskişehir Osmangazi University, Faculty of Agriculture, Department of Animal Science, Eskişehir, Turkey
[2] Ondokuz Mayis University, Faculty of Agriculture, Department of Animal Science, Samsun, Turkey

Corresponding author e-mail: cbozbay@ogu.edu.tr

Abstract

Branched-chain amino acids (BCAA) may have extra-protein effects in low-protein diet. This study was conducted to determine the effect of branched chain amino acid (BCCA) blends having different valine content (4:1:1 and 4:1:3 L-Leucin, L-Isoleucin and L-Valine, respectively) supplementation in starter diets with low protein (20%) on growth performance, weights of breast muscle (pectoralis muscle, PM) and thigh muscle (iliotibialis muscle, ITM) in broiler. In total, 768 Ross 308 0-d mixed sexed chicks were allocated randomly into experimental six treatments, according to a 3×2 factorial arrangement for two crude protein level (CP; 22% and 20%) and three BCCA supplementation (with no supplementation BCAA or supplemented with 1.5 g BCAA/kg in 4:1:1 ratio and supplemented with 2 g BCAA/kg in 4:1:3 ratio) for 14 d. From 14 d to 42 d all groups were fed *ad libitum* with standard broiler diet. No significant differences were noted among treatments in terms of characteristics examined during the experiment. These results indicated that diet having 20% protein can be used for feeding Ross-308 broilers up to 14 d of age without any deterioration on growth performance and muscle development, irrespective of BCCA blend.

Keywords: Broiler, growth performance, breast meat, branched chain amino acid.

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➢ ORAL PRESENTATION

Investigation of Free Living Amoebae from Produced Water Samples in Turkey: A Preliminary Study

Miray Üstüntürk-Onan

Istanbul University, Faculty of Science, Department of Biology, Istanbul, Turkey.

Corresponding author e-mail: ustuntrk@istanbul.edu.tr

Abstract

Free-living amoebae (FLA) belonging to the genera *Acanthamoeba*, *Balamuthia*, *Naegleria* and *Sappinia* are of medical relevance, not only as facultative pathogens but also as vehicles for pathogenic bacteria. Most FLA have a worldwide distribution and can occur in diverse habitats. Some are known to survive and also grow under extreme environmental conditions owing mainly to their resistant cysts. Very few studies have described the diversity of FLA in the environment and the role of environmental factors that could shape the amoebal populations. In petroleum industry, oil and gas are extracted from the underground formations accompanied by water, so-called produced water (PW). In the current study, PW samples from two oil fields (oil field 1 and oil field 2, respectively) and one oil well which are located in the Adıyaman region of Turkey were screened for the presence of FLA. 100 ml of PW samples were filtered through 0.45 µm pore size cellulose nitrate membrane filters. Filters were then inverted on *Escherichia coli*-coated nonnutrient agar plates. All plates were incubated at 30°C and examined daily for up to 14 days under an inverted microscope for the presence of FLA. PW sample from only oil field 1 yielded FLA growth. The absence of FLA in the other two PW samples, taken from oil field 2 and oil well, might due to high salinity when compared to oil field 1. Further studies will be performed to identify the isolated strain using molecular methods. To the best of author's knowledge, this is the first study on the investigation of FLA from PW in Turkey.

Keywords: Free living amoebae, Oil field, Oil well, Produced water.

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➢ **ORAL PRESENTATION**

Trombidiid Akar Tarafından Parazitlenen Yalancı Akrebin İlk Tür Kaydı

Sevgi Sevsay[1]*, Evren Buğa[2]

[1]Erzincan Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Erzincan, Türkiye
[2]Erzincan Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Anabilim dalı, Erzincan, Türkiye

Sorumlu yazar e-mail: ssevsay@erzincan.edu.tr

Özet

Karasal Parasitengona'nın en geniş alt grubunu oluşturan Trombidioidea'nın bugüne kadar 226 cins ve 917 türü kaydedilmiştir. Ülkemizden ise sadece 67 türü rapor edilmiştir. Kadife akarları olarak da bilinen trombidioid akarlar, parlak kırmızı renkleri ve kadife gibi kılları ile doğada dikkati çekmektedir. Biyolojik mücadele ve besin döngüsünde önemli bir yere sahip olan bu canlıların faunistik tespiti, ülkemizin hem akar faunası hem de biyolojik çeşitliliğinin ortaya çıkarılması bakımından oldukça önem arz etmektedir. Trombidioid akarlar ergin dönemde serbest, larva döneminde ise parazit olarak yaşarlar. Omurgasızlar üzerinde parazit olarak beslenen bu canlılar konakçılarına stylostom adı verilen beslenme borusunu palp ve keliserlerinin yardımıyla geçirip yeterince beslendikten sonra konakçıdan ayrılırlar. 21 Haziran 2015 tarihinde Erzincan ili Ahmediye köyünden alınan (39° 51'08'' N, 39° 25'42'' E, 2106 m) toprak örneklerinin incelenmesinde, bir yalancı akrep türü olan *Neobisium crassifemoratumun* (Beier, 1928)'un dişi deutonimfi üzerinde iki adet *Trombidium brevimanum* (Berlese, 1910) larvası gözlenmiştir. Yapılan incelemede larvaların pleural membranın IV opistohosamal segmentinin sağ tarafı üzerine tutulduğu görülmüştür. Örnekler önce %70'lik etil alkol içeren şişelerde toplanmış, daha sonra Olympus BX63 microskobunda ölçümleri yapılarak şekilleri çizilmiştir. Morfolojik terminoloji olarak Mąkol (2007)'dan istifade edilmiştir. *Trombidium* cinsine ait larvaların daha önce 3 farklı yalancı akrep türü üzerinde parazit olarak görüldüğüne dair çalışmalar mevcuttur. Bu çalışma ile *N.crassifemoratumun* yalancı akrep türü, ilk defa yeni bir konakçı olarak verilmektedir. Ayrıca daha önceki konakçıların tamamı ergin birey iken örneğimizin tutunduğu konakçı ilk defa deutonimf safhasından verilmiştir. İlave olarak *Trombidium brevimanum*'un parazitlendiği diğer konakçılar özetlenmiştir.

Anahtar kelimeler: Acari, Parazit, *Trombidium*, Yalancı akrep

Bu çalışma, Erzincan Üniversitesi Bilimsel Araştırma Projesi (BAP) FEN-A-210514-0076 numaralı projenin desteği ile yürütülmüştür. Desteklerinden dolayı EUBAP koordinatörlüğüne teşekkür ederiz.

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➢ **ORAL PRESENTATION**

Structural Characterization DTA/TG and Gaussian Studies of a New Schiff Base

Halime Güzin Aslan, Zülbiye Kökbudak

Erciyes University, Faculty of Science, Chemistry Department, Kayseri, Turkey.

guzina@erciyes.edu.tr

Abstract

The new ligand, named N'-(3,5-dimethoxybenzylidene)-N-methylbenzenesulfonohydrazide, was synthesized. Structural characterization was accomplished using ^{1}H NMR, ^{13}C NMR and FT-IR methods. In my previous studies, the synthesized ligands were metal-bonded via the -N and -OH groups[1]. But this material does not have -OH groups, I think it will only attach to the metal atom with free electron pairs on the -N atom. Figure 1 shows the synthesis scheme of the compound and figure 2 shows the ^{1}H NMR diagram.

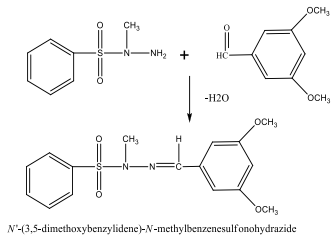

Figure 1. The reaction scheme of N'-(3,5-dimethoxybenzylidene)-N-methylbenzenesulfonohydrazide

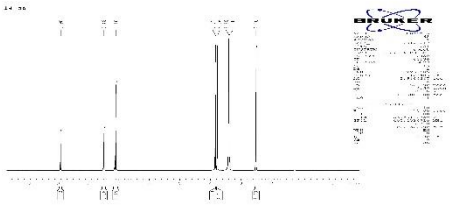

Figure 2. 1H NMR diagram of N'-(3,5-dimethoxybenzylidene)-N-methylbenzenesulfonohydrazide.

Keywords: Sulfonyl hydrazone, Schiff Base, DTA/TG, FT-IR.

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➢ **ORAL PRESENTATION**

The Therapeutic Effects of Gilaburu (*Viburnum opulus* L.) Seeds Extracts on Kidney and Intestine Histopathological Changes of Carp Fish (*Cyprinus carpio* L. 1758) Exposed to Ammonia

Kenan Erdoğan[1*], Mehmet İlker Doğru [1], Arzu Doğru[2], İbrahim Örün[1], Belda Erkmen[1], Hüseyin Polat[3], Gülnihal Örün[4], Nuh Korkmaz[1], Hamiyet Polat[1]

[*1]Aksaray University, Faculty of Science and Letters, Department of Biology, Aksaray, Turkey.
[2]Aksaray University, Education Faculty, Department of Elementary Education, Aksaray, Turkey.
[3]Aksaray University, Faculty of Arts and Sciences, Depart. of Biotech. and Mol. Bio., Aksaray, Turkey.
[4]Aksaray University, Vocational School of Higher Education, Aksaray, Turkey.

Corresponding author e-mail: kerdogan2003@gmail.com

Abstract

Ammonia is toxic to fish in natural and artificial waters. High levels of ammonia nitrogen may occur during intensive fish culture as a result of excretion and decomposition of feces and residual feed. Gilaburu plant (*Viburnum opulus* L.) is a plant with antioxidant, anticarcinogenic and antibacterial effects and used for this purpose. Despite the negative conditions of the environment where the fish live in fish breeding, it is important to grow in time of the fish. In this study, the therapeutic effects of gilaburu plant (*Viburnum opulus* L.) fruit extract was investigated on histopathological effects of carp fish (*Cyprinus carpio* 1758 L.) exposed to ammonia for 4 days and 21 days. Experimental groups were designed as; control, ammonia, gilaburu (25, 50 and 100 mg/kg) and ammonia+gilaburu (25, 50, and 100 mg/kg) applied groups (8 groups for each duration). The kidney and intestinal tissues of the fishes in the groups were taken after the dissection and then paraffin blocks were prepared after fixation, dehydration, clarification and paraffin impregnation. Sections 5-7 μm in thickness were taken from the blocks and hematoxylin eosin staining technique was applied and then examined by light microscopy after covering the lamella. In the studies done, glomerular atrophy, degeneration of proximal and distal tubules, mononuclear cell infiltration and congestion (bleeding) histopathologies were observed on ammonia-exposed carp groups kidneys in subchronic phase. These histopathological findings were more intensive than gilaburu and ammonia + gilaburu dose groups. In the intestine tissue, histopathologic findings such as shortening and union in the villus and enlargement, narrowing and obstruction in the lumen were encountered. As a result, the acute and subchronic duration effects of ammonia-induced carp were reported histopathologically. In addition,it was determined that the gilaburu plant extracts have therapeutic effects.

Keywords: *Cyprinus carpio, Viburnum opulus*, kidney histopathology, intestine histopathology.

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➢ ORAL PRESENTATION

Sağlıklı Bireyler ile Piterjium Hastalarının D Vitamini Seviyelerinin Karşılaştırılması

Şemsettin Bilak[1], Burak Bilgin[2]

[1]Adıyaman Üniversitesi, Tıp Fakültesi, Göz Hastalıkları Anabilim Dalı, Adıyaman, Türkiye
[2]Bahçeşehir Üniversitesi, Tıp Fakültesi, Göz Hastalıkları Anabilim Dalı, İstanbul, Türkiye

Sorumlu yazar e-mail:burbilgin@yahoo.com

Özet

Bu çalışmanın amacı sağlıklı bireylerde ve piterjiumu olan hastalarda D vitamini eksikliği görülme sıklığını karşılaştırmak ve piterjium hastalarında D vitamin eksikliği oranını araştırmaktır. Pterjiumu olan 108 hasta ile 94 sağlıklı birey bu çalışmaya dahil edilmiştir. Gruplardan kan örnekleri alınarak, serum 25-hidroksivitamin D (25(OH)D) ve parathormon (PTH) seviyeleri ölçülmüş ve sonuçlar analiz edilmiştir. D vitamin eksikliği görülme oranı piterjium grubunda %83.3, sağlıklı bireylerde ise %61.7 oranında bulunmuştur (p=0.001). D vitamini eksikliği görülme oranı piterjium grubunda anlamlı olarak yüksek bulunmakla birlikte, sağlıklı grupta tespit edilen yüksek D vitamini eksiklği oranı toplum sağlığı açısından üzerinde durulması ve önlem alınması gereken bir durumdur.

Anahtar Kelimeler: Piterjium, D vitamini, Parathormon

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➢ **ORAL PRESENTATION**

New Brypophillic Ascomycetes Records for Turkey

Abdullah Kaya, Yasin Uzun*

Karamanoğlu Mehmetbey University, Science Faculty, Department of Biology, Karaman, Turkey.

Corresponding author e-mail: yasinuzun_61@hotmail.com

Abstract

Fungi are heterotrophic organisms growing on either dead organic material or on different organs of some other living organisms. Those growing on gametophytic or sporophytic organs of bryophytes are usually known as bryophilous fungi. Since they require similar environmental conditions, moss and fungus could also live together. Though research on bryoparasitic Pezizales has a long tradition in some European countries and the presence of about 300 species of ascomycetes growing on the gametophytes of mosses or hepatics were reported, bryophilous fungi has received almost no attention in Turkey, and only 19 bryophillic ascomycete taxa have so far been reported from Turkey. Compared to 81 octosporoid fungi existing in Europe there is still much to be done in Turkey.
Within the scope of a project carried out on Pezizales of Turkey growing in Eastern Black Sea Region, some bryophillic ascomycete members were collected and identified as *Lamprospora campylopodis* W.D.Buckley, *Octospora lilacina* (Seaver) Svrček & Kubička and *Octospora tuberculata* (Seaver) Caillet & Moyne. According to the current literature, they were found to be new for the mycobiota of Turkey.

Keywords: Biodiversity, bryoparasitic fungi, *Pyronemataceae*, new records, Turkey

The work was supported by Karamanoğlu Mehmetbey University Research Fund (02-D-17) and aims to make a contribution to the mycobiota of Turkey by adding new bryophilous ascomycete taxa.

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➢ **ORAL PRESENTATION**

In Vitro Antitumor Effects of *Momordica charantia* Plant Extracts

Hatice Güneş[1], Mehlika Alper[2], Nevin Çelikoğlu[1]

[1]Department of Biology, Molecular Biology Division,
[2]Department of Molecular Biology and Genetics, Muğla Sıtkı Koçman University, Turkey

haticegunes@mu.edu.tr

Abstract

Cancer is one of the main causes of death in human. In the struggle against this disease, various biological resources have being investigated intensively to develop new anticancer drugs. Because plant secondary metabolites is an excellent source for new bioactive compounds, effects of ethanolic and acetonic extracts of seed and fruit of *Momordica charantia* (MC) collected from Trakya region were analyzed for the first time based on cytotoxicity and angiogenic activity against different cancer cell lines. Ethanolic fruit extract resulted in 90, 92, 85 and 87% cytotoxicity against K562, A549, MCF-7 and Jurkat cell lines, respectively. However, ethanolic seed extract was less effective (≤42%) on cytotoxicity against cancer cells. In addition, acetonic fruit extract caused 82,75 and 59% cytotoxicity on MCF-7, Jurkat and K562 cells, respectively whereas 20% cytotoxicity was observed on A549 cells. Moreover, dose analyses of ethanolic extract indicated that K562 cells had the lowest IC_{50} value (0.082 mg/ml) wehereas IC_{50} values of A549 and MCF-7 cells were 0.106, and 0.178 mg/ml. Furthermore, flow cytometry and caspase-3 assays showed the induction of apoptotic cell death in A549 cells treated with ethanolic fruit extract. When the angiogenic effects were examined in A549 cells treated with either fruit extract or LPS, 3 fold and 14 fold increase were repectively observed in VEGF secretion compared to untreated control cells. In conclusion, both ethanolic and acetonic fruit extracts were more effective than seed extracts on cytotoxicity. High cytotoxic and very low angiogenic effects indicate that MC fruit extract is a potential source for development of anti tumor compounds and for being used as a supportive additive in diet for cancer treatment.

Keywords: cytotoxicity, cancer cell line, vegf secretion, *Momordica charantia*

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➢ **ORAL PRESENTATION**

Anti-Oxidative Effects of Curcumin on Sodium Arsenite Induced Oxidative Damage in 3T3 Embryonic Fibroblast Cells

Banu Orta Yilmaz[1], Yasemin Aydin[1], Nebahat Yildizbayrak[1], Mehmet Can Perker[1], Melike Erkan[1*]

[*1]Istanbul University, Faculty of Science, Department of Biology, Istanbul, Turkey.

Corresponding author e-mail: merkan@istanbul.edu.tr

Abstract

Arsenic is a toxic metalloid element that is present in air, water and soil. Exposure to arsenic through food and drinking water is an important public health problem affecting some countries. Today, more laboratory data are needed about the effects of early embryonic development and toxicity of arsenic exposure. In recent years, it has been determined that polyphenolic antioxidants, which are found in many plant in the nature, have free radical scavenging properties due to various toxic substances. Curcumin, known as a polyphenol derivative, is used as a spice which gives a yellow color to foods obtained from *Curcuma longa* plant. It has been shown to exhibit wide variety of biological and pharmacological activities namely antioxidant, anti-inflammatory, antimicrobial and anticarcinogenic activities. In this study, sodium arsenite was applied to 3T3 embryonic fibroblast cells at concentrations of 0.01-0.1-1-10 µM and, in addition to these concentrations, curcumin (2.5 µM) for 24 hours. Cell viability, glutathione content, antioxidant enzyme activities, lipid peroxidation, hydroxyl radical, hydrogen peroxide, cytotoxicity and apoptosis / necrosis rates were measured in embryonic fibroblast cells. The findings of this study showed that cell viability and the antioxidant enzymes catalase, superoxide dismutase, glutathione peroxidase, glutathione s-transferase levels decreased, lipid peroxidation, hydroxyl radical, hydrogen peroxide, cytotoxicity and apoptosis / necrosis increased. As a result, sodium arsenite induced apoptosis due to lipid peroxidation and formation of reactive oxygen species (ROS) in 3T3 embryonic fibroblast cells. In addition, curcumin has been found to be a protective role against the toxicity caused by sodium arsenite.

Keywords: Embryonic fibroblast, Sodium arsenite, Oxidative damage, Apoptosis, Curcumin.

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➢ **ORAL PRESENTATION**

Synthesis and Characterization of TiO_2 Nanoparticles by Sol-Gel Method

Neşe Keklikcioğlu Çakmak*, Gamze Topal Canbaz, Atakan Eroğlu

[1]Department of Chemical Engineering, Cumhuriyet University, Sivas, Turkey,

e-mai-l: nkeklikcioglu@cumhuriyet.edu.tr

Abstract

Nanotechnology is a relatively new branch of science that has found a wide range of applications that range from energy production to industrial production processes to biomedical applications. Nanoparticles are tiny materials having size ranges from 1 to 100 nm (1).They possess unique physical and chemical properties due to their high surface area and nanoscale size. TiO_2 nanoparticles might be considered as the most important photosensitizer due to high photocatalytic and sonocatalytic efficiency, low toxicity, excellent biocompatibility, low cost and high chemical stability (2). In this study, pure TiO_2 nanoparticles were synthesized by sol–gel method. A solution containing 160 ml of ethanol and 20 ml of iso-propanol was mixed slowly with 20 ml (50 mmol) of Titanium (IV) butoxide under sonication. The resultant mixture was slowly added to 100 ml of deionized water containing 2 g of cetyltrimethyl ammonium bromide (CTAB) to form a white precipitate. The system was kept under constant stirring at 80 ^{0}C for 4 h. The excess water was removed by evaporation on the water bath with continuous stirring. The resultant precursor was then dried at 110 ^{0}C for 12 h and then finally calcined at 500 ^{0}C for 4 h in high temperature muffle furnace (3).They were calcinated to 500 ^{0}C to get high degree of crystallization. The calcinated TiO_2 nanoparticles were characterized by XRD, UV, FTIR and SEM. The Powder XRD spectra reveal that, the main phase of TiO_2 nanoparticles are anatase phase. In the UV-VIS absorption spectra TiO_2 nanoparticles and water suspensions shown a peak at 354 nm wavelength. FTIR spectra displayed the peaks attributed to the presence of O-H groups at 3420 cm^{-1} and 1630 cm^{-1}. Also FTIR spectra show the vibrational mode of TiO_2 around 600 cm^{-1}. SEM image displayed the uniform morphology in the form of nano clusters.

Keywords: Sol–gel, X-ray diffraction (XRD), SEM, TiO_2 nanoparticles, Titanium (IV) butoxide.

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➢ **ORAL PRESENTATION**

Leiomyoma Gelişiminde CYP1A1 ve CYP1B1 Gen Polimorfizmlerinin Etkisi

Ömer Ateş[1], Nihan Bozkurt[1], Saime Sezer Sondaş[1], Muhammed Toprak[2], Fazlı Demirtürk[2],

[*1]Gazi Osmanpaşa Üniversitesi, Tıp Fakültesi, Tıbbi Biyoloji AD, Tokat, Türkiye
[2] Gazi Osmanpaşa Üniversitesi, Tıp Fakültesi, Kadın Hastalıkları ve Doğum AD, Tokat, Türkiye

omerates27@yahoo.com

Abstract

Uterin leiomyoma kadınlarda görülen iyi huylu pelvik tümörlerden biridir. Kadınların yaklaşık olarak %25'ini etkilemektedir. Leiomyoma oluşum sebebi bilinmemesine rağmen, bu tümörlerin epidemiyolojisi, genetiği ve hormonal açıdan önemi literatürde önemli bir yer kaplamaktadır. Leiomyoma için risk faktörleri genellikle epidemiyolojik çalışmalarla tanımlanan bir durumla ilişkili olarak karakterize edilirken herhangi bir genetik bozukluğun tümör oluşumunun asıl nedeni olduğu düşünülmektedir. P450 sitokrom sistemi (CYP450), karsinogenezin metobolik aktivitesi kadar steroid hormon biyosentezine de dahil olan bir enzim grubudur. CYP1A1 ve CYP1B1 östrojen katabolizmasıyla ilgili temel CYP450 enzimleridir. CYP1A1 ve CYP1B1 genlerinin polimorfizmleri endometriozis, göğüs kanseri, endometrial adenokarsinom gibi hastalıklarla ilişkilidir. Yapılan bu çalışmanın amacı; CYP1A1 ve CYP1B1 gen polimorfizmlerinin leiomyoma gelişmesinde etkili olup olmadığını araştırmaktır. Bu amaçla çalışmaya Gazi Osmanpaşa Üniversitesi Tıp Fakültesi Kadın Hastalıkları ve Doğum polikliniğinde leiomyom tanısı alan 103 kadın hasta ile polikliniğe leiomyom dışı sebeplerle başvuran 110 gönüllü kadın hasta dahil edildi. Çalışma gruplarından alınan kan örneklerinden DNA izolasyonu yapılarak Polimeraz Zincir Reaksiyonu (PZR) ve Restriksiyon Parça Uzunluk Polimorfizmi (RFLP) yöntemleri ile CYP1A1 Ile462Val ve CYP1B1 Leu432Val gen polimorfizmlerinin allel tipleri belirlendi. Verilerin istatistiksel analizi, Epi İnfo Software 3.2.2 versiyonu programı kullanılarak yapıldı. Leiomyom hasta ve kontrol gruplarında CYP1A1 ve CYP1B1 gen polimorfizmlerinin dağılımı χ^2 veya Fisher's exact testi ile karşılaştırıldı. p değerinin $\leq 0,05$ olması, istatistiksel olarak anlamlı kabul edildi. Çalışma sonuçlarımıza göre CYP1A1 Ile462Val gen polimorfizmi ile leiomyoma arasında istatistiksel olarak anlamlı bir fark gözlenmezken (sırasıyla, p=0.6355 ve p=0.224) CYP1B Leu432Val C/G gen polimorfizmi ile leiomyoma arasında genotip dağılımı ve allel sıklığı bakımından anlamlı bir fark tespit edildi (sırasıyla, p=0.000 ve p=0.105). Bu sonuçlar ışığında; CYP1B1 Leu432Val C/G gen polimorfizminin leiomyomaya yatkınlıkta etkili olan faktörlerden bir tanesi olabileceği düşünülmektedir. Bu sonuçların farklı etnik ve büyük çalışma grupları ile doğrulanmasına ihtiyaç vardır.

Anahtar Kelimeler: CYP Gen Polimorfizmleri, Miyom, PZR-RFLP

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➢ **ORAL PRESENTATION**

Uludağ (Bursa, Türkiye)'dan Toplanan *Bryoria fuscescens* ve *Bryoria nadvornikiana* Likenlerinin HPLC-DAD Analizi ve Antioksidan Kapasitesi

Seyhan Oran[1*], Saliha Sahin[2]

[*1]Uludağ Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Bursa, Türkiye
[2]Uludağ Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Bursa, Türkiye

Sorumlu yazar e-mail: seyhana@uludag.edu.tr

Özet

Bu çalışmada, Bursa, Uludağ'dan toplanan *Bryoria fuscescens* ve *Bryoria nadvornikiana* liken türlerinin içerdikleri liken asitleri, evernik, fumarprotosetrarik, lekanorik ve stiktik asit miktarları yüksek performanslı sıvı kromatografisi (HPLC-DAD) tekniği kullanılarak belirlenmiştir. Bunun yanısıra 2 liken türünün antioksidan kapasite ve toplam fenol içeriği, ABTS [2,2'-azino-bis (3-etilbenzotiazolin-6-sülfonik asit)] ve Folin-Ciocalteu yöntemleriyle ölçülmüştür. Toplam fenol değerleri gallik asit eşdeğerinde, antioksidan kapasite değerleri ise troloks eşdeğerinde hesaplanmıştır. Liken asitlerinin ekstraksiyonunda farklı çözücü sistemlerinin etkinliğini belirlemek için aseton, etanol ve metanol kullanılmıştır. Tespit edilen liken asitleri açısından değerlendirildiğinde *B. fuscescens*'te stiktik ve fumarprotosetrarik asit, *B. nadvornikiana*'da bu asitlere ilave olarak lekanorik asit ve evernik asit belirlenmiştir. En yüksek antioksidan kapasite ve toplam fenol değerleri her iki türde de metanol ekstraktlarında gözlenmiştir. 2 tür arasında karşılaştırma yapıldığında *B. nadvornikiana*'nın antioksidan aktivite ve toplam fenol içeriği (6,95±0,06 mg troloks/g; 4,89 ±0,13 mg gallik asit/g örnek) *B. fuscescens*'e göre (3,28±0,06 mg troloks/g; 1,71±0,02 mg gallik asit/g örnek) daha yüksek bulunmuştur. Liken ekstraktlarının toplam fenol ve antioksidan kapasite miktarları arasında doğrusal bir etkileşim olduğu görülmektedir.

Anahtar Kelimeler: Antioksidan kapasite, *Bryoria*, liken asitleri

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➢ **ORAL PRESENTATION**

Synthesis and Chemical Nuclease Activity of Mixed-Ligand Copper(II) Complex

Ufuk Yıldız[1*], Burak Çoban[1]

[*1]Bulent Ecevit University, Faculty of Arts and Sciences, Department of Chemistry, Zonguldak, Turkey.

Corresponding author e-mail: ufyildiz@gmail.com

Abstract

Chemical nucleases show potential applications in the fields of biotechnology and therapeutic reagents [1]. They are efficient tools for the cleavage of DNA. A large number of transition metal complexes have been explored with good DNA cleavage activities [2]. The transition metal complexes are known to bind DNA via both covalent and non-covalent interactions such as intercalative, electrostatic and groove (surface) binding. The transition metal complexes can also induce cleavage of DNA under physiological conditions. The oxidative DNA cleavage involves either oxidation of the deoxyribose moiety by abstraction of sugar hydrogen atoms or oxidation of nucleobases, followed by cleavage of the nucleosidic bond and subsequent strand breakage. $[Cu(Phen)_2]^{2+}$ is an effective chemical nuclease that induces DNA degradation through free-radical oxidation of deoxyribose [3]. Thus, by varying both the metal center and coordinated phenanthrene base, unique interactions on DNA and within human-derived cancer cells can be achieved.

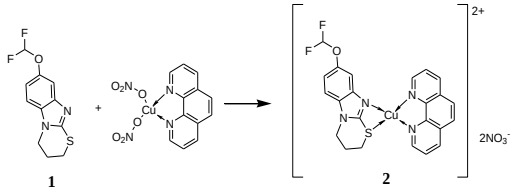

Fig. Copper(II) phenanthrene based complex studied in this work.

In this study, synthesis and chemical nuclease activity of copper(II) complex (2) containing 1,10 phenanthroline and thiazino benzimidazole (1) based ligands have been reported. Also DNA interaction mode of complex have been investigated by spectroscopic methods.

Keywords: Copper(II), chemical nuclease, DNA binding, DNA cleavage.

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➢ ORAL PRESENTATION

Multiplex PCR for Identification of Drought Tolerance on Wheat Genotypes

Begüm Terzi, Nimet Genç, Zeki Mutlu Akar, Ahmet Yildirim, Özlem Ateş Sönmezoğlu

Karamanoğlu Mehmetbey University, Engineering Faculty, Bioengineering Department, Karaman, Turkey

Corresponding author e-mail: begumterzi19@gmail.com

Abstract

Drought is one of the most important environmental stress factor that limiting the crop production and yield. Wheat is important plant in the world due to its ability to adapt a wide range of crops and its prevalence in human nutrition. The yield of wheat decreases with drought that threatens sustainability and world food safety in agricultural production. Today, polymerase chain reaction (PCR) based molecular markers are widely used in wheat genetic characterization and molecular plant breeding. Microsatellite markers, also known as simple sequence repeats (SSR), are widely used in genetic characterization and genomic research in wheat due to their multiallinal nature, chromosome specificity, high polymorphism rate and broad distribution throughout the wheat genome. Thus, methods of genotyping with SSR should be improved in speed and efficiency. In this study, a multiplex PCR technique was optimized for these SSR markers (Xwmc 78, Xwmc 304, Xgwm 357) used determination the drought tolerance of some wheat varieties. Multiplex PCR conditions were optimized for these SSR primer sets. That technique used succesfully for the drought tolerance characterization studies on wheat genotypes in a short time. Multiplex PCR is practicable to marker assisted breeding and mlecular characterization in wheat.

Keywords: multiplex PCR, drought tolerance, wheat.

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➢ ORAL PRESENTATION

Improvement the Nutritive Values of Corn Straw with *Pleurotus osteritus, Pleurotus eryingii* and *Lantinula edodes*Treatment

Aydan Atalar[1*]Nurcan Cetınkaya[2]

[1]Aydan Atalar is with Health Services Vocational School, Zonguldak Bulent Ecevit University, 67600, Zonguldak, Turkey.
[2]Ondokuz Mayis University, Faculty of Veterinary Medicine, Department of Animal Nutrition and Nutritional Diseases. Kurupelit, TR-55139, Samsun, Turkey.

*Corresponding author: aydantlr@gmail.com

Abstract

Theaim of the present study was to improve the nutritive values of corn straw with the treatment of *Pleurotus osteriatus* (PO), *Pleurotus eryingii* (PE) *and Lentinula edodes* (LE) and also to determine both the most effective fungus and incubation time to prepare treated corn straw for ruminant nutrition. The corn straw were choped and treated with PO, PE and LE and incubated for 10, 20, 30 and 40 days in incubator at 26 ^{0}C. After each incubation time dry matter (DM), organic matter (OM), crude protein (CP) and ether extract (EE) were determined by AOAC methods and neutral detergent fiber (NDF), acid detergent fiber (ADF), acid detergent lignin (ADL) were determined by ANCOM fiber analysis. The ME values estimated with the model base on ADF content of PO, PE and LE treated corn straws. Obtained mean values for DM%, Ash%. EE% and OM% contents of PO. PE and LE treated corn straw incubated for10, 20, 30 and 40 days were different. The estimated mean DM, OM, Ash, CP, ADF, NDF, ADL % and ME_{ADF} MJ/kg DM values for with PO treated corn straw with 20 and 30 days incubations were 93.8, 86.6, 7.20, 9.00, 1.65, 36.7, 65.50, 6.50 and 9,82; 93.30, 85.80, 7.50, 10.00, 1.24, 34.70, 65.50, 6.40% and 10.00 respectively. In conclusion, obtained results show that the most effective incubation time and white rod fungus are 20 and 30 days and *Pleurotus osteriatus*

Keywords: Biological treatment; Corn straw; Crude nutritive values

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➢ **ORAL PRESENTATION**

Gümüş İyonik Formu ve Gümüş Nanopartiküllerinin İndüklediği Genotoksik Hasara Karşı Askorbik Asitin Koruyucu Etkisinin *Drosophila melanogaster*'de Araştırılması

Bülent Kaya[1], Burçin Yalçın[1], Merve Güneş[1], Havva Ertuğrul[1]

[1] Akdeniz Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Antalya, Türkiye

e-mail: bkaya@akdeniz.edu.tr

Özet

Nanopartiküller hücrelere kolayca girebildiği ve çevrede birikebildiğinden insan sağlığına ve ekosisteme karşı potansiyel risk taşımaktadır. Metal nanopartikülleri arasında, gümüş nanopartiküller (AgNP) kendine özgü fiziko-kimyasal özellikleri ve antimikrobiyal ajan potansiyeline sahip olmaları nedeniyle çok ilgi çekmektedir. Günümüzde yara iyileştirme, yanık tedavileri, kanser terapötikleri ve biyosensörler gibi alanlarında kullanılmaktadır. Bunun haricinde antibakteriyel özelliğinden dolayı tekstil, kozmetik, beyaz eşya ve yiyecek saklama ve depolamada yaygın olarak kullanılmaktadır. Antioksidan aktivite gösteren polifenoller, flavanoidler gibi bitki sekonder metabolitleri organizmanın dış etkenlere karşı hücresel seviyede korunması bakımından oldukça önemlidir. C vitamini olarak da bilinen askorbik asit (AA) suda çözünebilen bir vitamindir ve hücresel koruma mekanizmalarına katkı sağlaması bakımından insan sağlığı için oldukça önemlidir.

Bu çalışmada iyonik gümüşün ($AgNO_3$) ile AgNP'lerinin genotoksik etkileri ve AA'nın bu etkilere karşı gösterdiği potansiyel koruyucu etki değerlendirilmiştir. Ön uygulama ve birlikte uygulama yapılarak gerçekleştirilen deneylerde $AgNO_3$ ve AgNP'nin genotoksisite yaratttığı doz belirlenmiş (sırasıyla 0.5 mM ve 10mM) bunu takiben artan dozlarda (10, 50 ve 250 mM) AA uygulaması yapılmıştır. Ön uygulamalarda 48 saatlik *Drosophila melanogaster* larvalarına AA uygulaması, 72. saatte ise $AgNO_3$ ve AgNP uygulaması yapılmıştır. Birlikte uygulamalarda 72 saatlik larvalara AA ve $AgNO_3$/AgNP aynı anda uygulanmıştır. Elde edilen bulgularda AA tüm dozlarda ve tüm uygulamalarda $AgNO_3$ ve AgNP'nin meydana getirdiği genotoksik hasarı istatistiksel olarak indirgediği gözlenmiştir.

Anahtar Kelimeler: *Drosophila melanogaster*, somatik mutasyon ve rekombinasyon testi, askorbik asit, gümüş nanopartikülleri, antimutajenite.

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➢ **ORAL PRESENTATION**

Katı Faz Fermentasyonu Sürecinde Yeni İzole Edilmiş *Ganoderma lucidum* ile Lakkaz Üretimi

Filiz Boran*, Özfer Yeşilada

İnönü Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Malatya, TÜRKİYE

filiz.kuru@inonu.edu.tr

Özet

Beyaz çürükçül funguslar yüksek düzeyde lakkaz enzimi üreticileridir. Yüksek miktarda lakkaz üretimi için üretim koşullarının optimizasyonu önemlidir. Katı faz fermentasyonu (KFF) lignoselülozik hammaddelerin lakkaz üretiminde kullanımı açısından öne çıkmaktadır. Bu çalışmada doğadan izole edilip tanımlanan *G.lucidum* suşu kullanılmıştır. Bu suşun KFF sürecinde lakkaz üretim yeteneğinin indüklenmesi amaçlanmıştır. KFF süreciyle enzim üretiminde; üretici mikroorganizma, kullanılan katı substrat, nemlendirme oranı, indükleyiciler, ortam pH'sı ve sıcaklık önemlidir. Çalışmada ilk olarak optimizasyon yapıldı ve katı substrat olarak buğday kepeği, %75 nem, başlangıç pH' sı olarak pH 5.0 ve inkübasyon sıcaklığı olarak ta 30°C en uygun koşullar olarak belirlendi. Ek faktör olarak buğday kepeği ortamına çeşitli oranlarda eklenen soya ununun lakkaz üretimini önemli oranda indüklediği saptandı. Yalnızca kepek içeren ortamda lakkaz aktivitesi 2814±105 U/L iken buğday kepeğine soya unu ilave edilmiş ortamda (1:1 oranında) lakkaz aktivitesinin indüklendiği görüldü (4080±826 U/L). Bakır da lakkaz üretimini önemli oranda indüklemiş ve distile su ortamında 2814±105 U/L olan lakkaz aktivitesi 10 mM bakır içeren ortamda 1,8 kat daha fazla bulunmuştur (5199±133 U/L). 5mM bakır eklenmiş 1:1 buğday kepeği:soya unu ortamında 4172±423 U/L, 2:1 buğday kepeği:soya unu ortamında ise 4134±652 U/L olarak belirlendi. Ayrıca erlende yapılan çalışmalardan sonra daha büyük bir ölçek olarak tava tipi fermentör çalışmaları da yapıldı. Bu amaçla, cam tava tipi fermentör kullanıldı ve distile su ile nemlendirilmiş buğday kepeği:soya unu (1:1) ortamında 1582±276 U/L; 10mM bakır içeren distile su ile nemlendirilmiş buğday kepeği:soya unu (1:1) ortamında 2008±826 U/L ve %10'luk melas ile nemlendirilen buğday kepeği:soya unu (1:1) ortamında ise 2973±220 U/L lakkaz aktiviteleri saptandı.

Anahtar Kelimeler: *Ganoderma lucidum*, Katı faz fermentasyonu, lakkaz, optimizasyon

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➢ **ORAL PRESENTATION**

Numbers of Slightly Halophilic Bacteria on Goatskins Cured in Different Countries

Pinar Caglayan[1*], Meral Birbir[2]

[*1]Marmara University, Faculty of Arts and Sciences, Department of Biology, Istanbul, Turkey
[2]Marmara University, Faculty of Arts and Sciences, Department of Biology, Istanbul, Turkey

Corresponding author e-mail: pinar.caglayan@marmara.edu.tr

Abstract

Skin is by-product of both goats and sheeps which are slaughtered for their meat. When skin is removed from the animal, bacteria may attack to raw skin structure. To prevent deterioration of freshly slaughtered skin, salt curing method is applied to skin before leather processing. Although skins are preserved with salt, which is common traditional method, salt contaminates skins with various microorganisms belonging to *Bacteria*, *Archaea* and *Eukarya*. Salt, obtained from saline environments, may harbor slightly halophilic *Bacteria*, moderately halophilic *Bacteria* and extremely halophilic *Archaea*. Examination of bacterial numbers on salted skins offers general information about skin quality. Therefore, this study was performed to detect total numbers of slightly halophilic bacteria found on cured goatskins in Australia, Africa, Bulgaria, Greece, Kuwait, Dubai, Israel, USA and Turkey. For this purpose, thirty salted goatskins were obtained from Leather Organized Tannery Region (Turkey) and immediately brought to the laboratory. Total numbers of slightly halophilic bacteria were determined by spread plate technique. The flasks, in which the salted goatskin samples were placed into 0.26 M NaCl solution, were shaken in an orbital incubator at 25°C, rotating at 100 rpm, for 4 hours. Direct and serial dilutions of bacterial suspension were spread onto the surface of the agar plates containing complex medium supplemented with 0.5% (w/v) yeast extract, with 0.26 M (w/v) NaCl. After seven days incubation of petri plates, the colonies of slightly halophilic bacteria were counted. All examined goatskin samples contained slightly halophilic bacteria. The total numbers of slightly halophilic bacteria on these skins ranged from 10^3 to 10^7 CFU/g. Mean, median, mode and range values of slightly halophilic bacteria on goatskins were respectively detected as $9.8x10^6$ CFU/g, $3.1x10^6$ CFU/g, $3.2x10^6$ CFU/g and $6.8x10^7$ CFU/g. In conclusion, curing salt collected from different contries contaminated goatskins with slightly halophilic bacteria which are metabolically active.

Keywords: Slightly halophilic bacteria, Leather industry, Goatskins

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➢ ORAL PRESENTATION

Expression of Serum Resistance and β-lactamase Associated Genes in the Presence of β-Lactam Antibiotics in *Escherichia coli* ST131 O25b:H4 Strain JJ1886

Elif Bozcal

Istanbul University, Faculty of Science, Department of Biology, Basic and Industrial Microbiology Section, Istanbul, Turkey

Corresponding author e-mail: elif.bozcal@istanbul.edu.tr

Abstract

CTX-M-15 type β-lactamase producing Escherichia coli ST131-H30Rx (O25b:H4 strain JJ1886) strain is a pandemic clone with high virulence properties. It causes serious bloodstream infections such as urinary tract infection and sepsis out of the intestinal system (1). Since Escherichia coli O25b:H4 strain JJ1886 is capable of survive in the bloodstream(2), it's significant to research serum resistance associated factors. In addition to the serum resistance of bacterium, the production of β-lactamase which hydrolyses β-lactam antibiotics can cause difficulties in the treatment of bacterial infections. Therefore the objective of this study, understanding how β-lactam antibiotics and human sera effect growth and gene expression of Escherichia coli O25b:H4 strain JJ1886.Time-dependent growth effect of Normal Human Serum (NHS) and Heat Inactivated Serum (HIS) together with β-lactam antibiotics including cefotaxime, ceftazidime and carbenicillin for Escherichia coli O25b:H4 strain JJ1886 was reported as CFU/ml. Relative gene expression of β-lactamase related genes encoding β-lactamase regulator, CTXM-15 type β-lactamase, penicillin-binding protein and serum resistance associated genes encoding periplasmic protease, murein lipoprotein, lipopolysaccharide core heptose, lipopolysaccharide biosynthesis protein, and phosphate transport system was investigated by RT-qPCR in the presence of NHS, HIS, cefotaxime, ceftazidime, and carbenicillin. Escherichia coli O25b:H4 strain JJ1886 cells proliferated during the exponential growth phase when bacterium treated with NHS. However, cefotaxime and ceftazidime together with NHS had a bactericidal effect on the bacterial cell for each time point. According to the relative gene expression, downregulation was observed in a gene encoding the periplasmic protease enzyme as a result of treatment with carbenicillin. The fold changes in gene expression for other β-lactamase and serum resistance-associated genes were not significant.

Keywords: *Escherichia coli* ST131 O25b:H4, β-lactamase, serum, RT-qPCR, β-lactam

Acknowledgement: This study was supported by The Scientific Research Unit of University of Istanbul with project ID: FBA-2017-23647.

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➢ **ORAL PRESENTATION**

Molecular Characterization of *Ditylenchus dipsaci* n. sp. from Turkey

Zeki Mutlu Akar[1], Nimet Genc, Begüm Terzi, Elif Yavuzaslanoglu[2], Özlem Ates Sonmezoglu[1]

[1]Karamanoglu Mehmetbey University, Engineering Faculty, Bioengeneering Department, Karaman, Turkey
[2]Karamanoglu Mehmetbey University, Technical Sciences Vocational School, Plant and Animal Production Department, Karaman, Turkey

Corresponding author e-mail: zekimutluakar@gmail.com

Abstract

Garlic is an important plant for human nutrition, health and therefore economically. Garlic is grown in Blacksea, Mediterranean, Aegean and Central Anatolian Provinces in Turkey. Stem and Bulb Nematode (*Ditylenchus dipsaci*) is one of the important limitation of garlic production. *Ditylenchus dipsaci* on the quarantine list at European Plant Protection Organisation, locally distributed in Turkey. *Ditylenchus dipsaci causes;* stunning, discoloration, curving of leaves, lesions and death of plant. Aim of the study is to determine the distribution of *Ditylenchus dipsaci* on important garlic production areas in Turkey. Therefore, identification of *D. dipsaci* on garlic is necessary. In this study, molecular characterization of the *D. dipsaci* have performed with DipUF/DipUR, DipUF/DIP1R, and DIT2R/DIT2F species spesific markers. Molecular identification of *D. dipsaci* gives precise and reliable results.

Keywords: *Ditylenchus dipsaci* garlic, stem and bulb nematode.

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➢ **ORAL PRESENTATION**

Steroids and Triterpenoids From *Inonotus dryadeus* With Their Bioactivities

Selçuk Küçükaydin[1*], Meltem Taş[1], Mehmet Emin Duru[1], , Mehmet Öztürk[1], Atia-Tul Wahab[2]

[*1]Muğla Sıtkı Koçman University, Faculty of Science, Department of Chemistry, Muğla, Turkey.
[2]University of Karachi, HE.J Research Institute of Chemistry, ICCBS, Karachi 75270, Pakistan

Corresponding author e-mail: selcukkucukaydin@gmail.com

Abstract

Mushrooms are considered as a substantial nutrient, which is the source of many vitamins as well as protein and mineral. Scientists increased their research interest on mushrooms in recent years since the belief whether mushrooms have the potential of being the source of modern medicinal properties. Studies on mushrooms indicated that lectins, polysaccharides, lanostane type triterpenoids, steroids and phenolics isolated from mushrooms possessed anticancer, antioxidant, antitumor, anti-inflammatory, immunomodulatory activity and cholesterol-lowering effects. The aim of this study was to isolate of compounds using by chromatographic and spectroscopic techniques from *Inonotus dryadeus* which is growing naturally in Turkey and determined their cytotoxic activities against Breast (MCF-7) and Prostate (PC-3) Cancer Cell-lines.

In this study, 4 steroids and 3 pentacyclic triterpenoids were isolated from *Inonotus dryadeus*. Structure elucidation of the isolated pure compounds were done by using 1D, 2D NMR techniques, EI-MS, and FT-IR spectral methods. Compounds which were isolated in this study were; Ergosterol D, Ergosterol Peroxide, Betulinic acid, Ursolic acid, Walsurenol, Ergosta -5,22-dien-3β-ol and Ergosta-5,22-dien-3-on. Cytotoxic activities of the pure compounds against Breast (MCF-7) cell lines; Walsurenol (IC50:16,40±0,80 µg/mL) Ergosterol D (IC50: 17,15±0,53 µg/mL), Ergosta -5,22-dien-3β-ol (IC50: 20,85±0,34 µg/mL) possessed the highest cytotoxicity while betulinic acid (IC50: 33,18±0,44µg/mL) and Ergosterol D (IC50: 36,27±0,84 µg/mL) showed the highest cytotoxicity against prostate cancer cell lines (PC-3).

Keywords: ;*Inonotus dryadeus*, MCF-7, PC-3, Steroids, Triterpenoids, Tree mushrooms.

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➢ **ORAL PRESENTATION**

Angelica sylvestris (Yabani Melek otu) Bitkisinin Sitotoksik ve Genotoksik Etkileri

Kemal Zorlı, Ferda Arı, Serap Çelikler Kasımoğulları

Uludağ Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Bursa/Türkiye

Sorumlu yazar e-mail: zorlukemal1581@gmail.com

Özet

Kanser, dünyada ve ülkemizde her geçen gün hızla artmaya devam eden ölümcül bir hastalıktır. Kanser tedavisinde kullanılan ajanların büyük çoğunluğu bitkisel kökenlidir. Bitki çeşitliliği açısından zengin olan ülkemizde anti-kanser ajan olma potansiyeline sahip bitki kaynaklarının, araştırılması ve değerlendirilmesi hem sağlık hem de ülkemiz ekonomisi açısından oldukça değerlidir. Bu yüzden bitkisel kökenli tamamlayıcı tedaviler son yıllarda önem kazanmaya başlamıştır. Ülkemizde yetişen bitki türlerinden *Angelica sylvestris* (Yabani Melek otu) özellikle Marmara Bölgesinde yaygın olarak yetişen bir bitkidir. Çalışmamızda Angelica sylvestris kökünden elde edilen ekstrenin sitotoksik aktiviteleri insan akciğer (H1299), meme (MDA-MB-231) ve kolon kanser hücresinde (HCT-116) araştırılmıştır. Bitki ekstresinin hücre canlılıkları üzerine etkileri SRB canlılık testi ile belirlenmiştir. Bitki ekstresinin doza ve zamana bağımlı olarak (3,125-200 µg/ml, 48, 72h) H1299, MDA-MB-231 ve HCT-116 hücrelerinde canlılığı azalttığı belirlendi. Bitki ekstresinin MDA-MB-231 hücrelerinde daha etkili olduğu ve 200 µg/ml dozunda *Angelica sylvestris* bitkisinin %90 inhibisyona neden olduğu gözlenmiştir. Ayrıca bitki ekstresinin MDA-MB-231 hücrelerinde genotoksik potansiyeli de komet test yöntemi ile araştırılmıştır. Alınan sonuçlara göre *Angelica sylvestris* ekstresinin insan kanser hücrelerinde büyümeyi baskılayıcı etkiye neden olduğu sonucuna varılmıştır.

Anahtar kelimler: *Angelica sylvestris* (Yabani Melek otu), Anti kanser aktivite, Sitotoksite, Genotoksisite, Apoptozis.

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➢ ORAL PRESENTATION

Investigation of Growth, Feed Utilization, Cortisol and Glucose Values of Fingerling European Catfish (*Silurus glanis* Linnaeus, 1758) Stocked at Different Densities

Hasan Kesimoğlu, Kenan Köprücü*

[1]University of Firat, Department of Fisheries Faculty, 23119 Elazig, Turkey.

Corresponding author e-mail: kkoprucu@firat.edu.tr

Abstract

In this study, the growth, feed utilization, cortisol and glucose levels in the fingerling European catfish (average weight: 64±2 g) stocked at the different densities were investigated. The research was consisted of one control (60 kg fish/m^3) and three experimental stocking groups (80, 100 and 120 kg fish/m^3). Each trial group was applied in three replicates. The experiments were carried out in glass aquariums. The water in the aquariums were aerated with the aid of an air pump to adjust the dissolved oxygen level (9 mg/L) and the water temperature (22±2 C^o) using the heater. The daily feed amount to be given to the fish was calculated taking into account the feeding coefficient and live weights of the fish, and this amount was given to the fish for 60 days with three times. In the study, the weight, length and feed consumption values and survival rates of fishes were determined with 15-day periods. Blood samples to determine the cortisol and glucose levels in the serum were take from the fish (N=12) at 1, 15, 30, 45 and 60 days of the experiment. Anesthesia (100 µl Benzocaine/L) was applied to the fish before weighing their weights, measuring their length and taking blood samples. The cortisol and glucose levels in blood serum samples was determined in ELISA using appropriate kits. Data (the weight gain, proportional growth, specific growth rate, condition factor, hepatosomatic index, survival rate, feed consumption, feed conversion ratio, feed efficiency ratio, protein efficiency ratio, and the cortisol and glucose levels in the blood serum) obtained from this study were showed that the fingerling European catfish could be stocked at 80 kg/m^3.

Keywords: European Catfish, Stoking Density, Growth, Feed Utilization, Cortisol, Glucose.

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➢ **ORAL PRESENTATION**

Effect of the *Quercus brantii* Acorns Intake On Blood Lipid Profile In The Rat Feeding With High Fat Diet

Faruk Süzergöz1[1], Ali Osman Gürol[2], Fatma Özer[3*]

[*1]Harran University, Art Science Faculty, Department of Biology, Şanlıurfa, TURKEY.
[2]Istanbul University, Aziz Sancar Institute of Experimetal Medicine, Department of Immunology, Istanbul, TURKEY.
[3]Harran University, Health Services Vocational College, Medical Laboratory Techniques program, Şanlıurfa, TURKEY

Corresponding author e-mail: fozer@harran.edu.tr

Abstract

In recent years, acorns of various species have been the subject of research in the nutritional aspects of various animals. In this study, we aimed to investigate experimentally the effects of *Quercus brantii* Lindley acorns of upon blood lipid profile in the rat. *Quercus brantii* acorns used in the experiments were collected at early-November at random from ten individual trees of native population in "Üçağıl" (Latitude; 37.26' N. Longitude; 41.08' E), where the plant is grown under natural conditions, 47 km northwest of Mardin province of Turkey. Eighteen male Sprague–Dawley rats weighing 212±6 g were randomly assigned to three groups. Control group (SD); the rats were fed with the standard diet. Positive control group (FD); In addition to the standard diet, 5% w/w coconut oil was added to the diet. Test group (QD); rats were fed with *Quercus brantii* acorns at a dose of 5 gr/kg/day for 30 days together with a standard diet and 5% w/w coconut oil. Biochemical analyses were carried out with an automated analyzer. Blood serum concentrations of circulating triglyceride, serum total cholesterol, VLDL cholesterol and HDL cholesterol were determined. The triglyceride level was significantly higher in the FD group than the SD group ($p<0.05$) and significantly lower in the QD group ($p<0.05$) than the FD group. The total cholesterol level was significantly higher in the FD group than the SD group ($P<0.05$) and was lower in the QD group than the FD group. There was no difference between the groups in terms of HDL cholesterol levels. The VLDL cholesterol level was significantly higher in the FD group than the SD group ($p<0.05$) and QD group ($p<0.05$). The results show that the intake of *Quercus brantii* acorns has positive effects on blood lipid profile.

Keywords: *Quercus brantii*, Acorns, Cholesterol, Rats.

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➢ **ORAL PRESENTATION**

Removal Conditions of Basic Blue 7 from Aqueous Solutions by Fungal Cells Immobilized on Biomatrix of *Phragmites australis*

Tamer Akar[1], Cansu Uzun[2], Sema Çelik[1*], Sibel Tunali Akar[1]

[1*] Eskisehir Osmangazi University, Faculty of Arts and Science, Department of Chemistry, 26480, Eskisehir, Turkey.

[2] Eskisehir Osmangazi University, Graduate School of Natural and Applied Science, Department of Chemistry, 26480, Eskisehir, Turkey.

Corresponding author e-mail: secelik@ogu.edu.tr

Abstract

Recent years, industrial developments bring about the problems of environmental pollution which is rapidly increasing. Synthetic dyes are common pollutants in industrial effluents and produce visible color pollution in aquatic environments at very low concentrations. Moreover their presence in water sources impacts other living systems due to their potential toxicity. These pollutants are not completely removed from aquatic media by traditional physico-chemical treatment methods due to their non-biodegradable. Biosorption is an effective alternative method for the control of water pollution caused by different pollutants such as synthetic dyes and metals. Especially, fungal origin biomasses were effectively used as biosorbent and extensively used immobllized forms owing to certain limitations of the industrial process. In the present communication, *Neurospora sitophila* cells passively immobilized onto spongy tissue of *Phragmites australis* and examined its biosorption performance for Basic Blue 7 dye from aquatic media. The effects of different parameters on the decolorization process such as initial pH (3.0–9.0), sorption time (5–60 min), initial dye concentration (25–500 mg L^{-1}), sorbent dose (0.4–2.0 g L^{-1}) were examined at batch experiments. The maximum biosorption yield was reached as %97.31 at pH 6.0 with 1.2 g L^{-1}. Maximum monolayer biosorption capacity of the developed biocomposite sorbent was calculated as 154.756 mg g^{-1} in the presence of 400 mg L^{-1} dye at 30ºC. Biosorption equilibrium was established in 50 min and kinetic findings showed that compatible with the pseudo-second order model. Consequently, this work provides a new insight into scalar enhancement of biomaterials for biosorptive treatment.

Keywords: Biosorption, Basic Blue 7, Decolorization, Immobilization, *Neurospora sitophila*.

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➢ **ORAL PRESENTATION**

The Enzyme Inhibitory Activity of *Pistacia terebinthus* Gall

Nesrin Haşimi[1*], Mehmet Boğa[2], Mesude Algan[3], Erdem Seven[4]

[*1]Batman University, School of Health, Department of Nutrition and Dietetics, Batman, Turkey
[2]Dicle University, Faculty of Pharmacy, Department of Pharmaceutical Technology, Diyarbakır, Turkey
[3]Batman University, Faculty of Science and Letter, Department of Biology, Batman, Turkey
[4]Batman University, School of Tourism and Hotel Management, Department of Gastronomy and Culinary Arts, Batman, Turkey

Corresponding Author: nesrinhasimi@hotmail.com, nesrin.hasimi@batman.edu.tr

Abstract

P. terebinthus belongs to the family *Anacardiaceae*, includes 875 species and characterized by its secretory cavities containing resins. The galls develop on plants owing to induction by several different organisms: microorganisms, nematodes and acarids. In this study, we aimed to determine the enzyme inhibitory activity of *P. terebinthus* gall induced by *Slavum* aff. *mordvilkoi* aphid.The gall was macerated by petroleum ether, acetone, ethanol and water. The inhibition of acetyl- and butyryl- cholinesterase, tyrosinase and urease enzymes were determined by spectrophotometric methods. All the extracts exhibited enzyme inhibitory activity in different power. The ethanol extract was showed the higest inhibitory activity on acetyl- (69% inhibition) and butyryl- (80% inhibition) cholinesterase, tyrosinase (75% inhibition) enzymes. On the other hand, the water extract exhibited 65% inhibition ratio on urease enzyme which was the higest activity.

Keywords: Acetylcholinesterase, Butyrylcholinesterase, Tyrosinase, Urease, Gall, *Pistacia terebinthus*

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➢ ORAL PRESENTATION

Effect of Organotin Amount on Wood Properties During ε-caprolactone Modification of Wood

Mahmut Ali Ermeydan[1*]

[*1]Bursa Technical University, Forestry Faculty, Forest Industry Engineering Department, Bursa, Turkey.

*corresponding author e-mail: mahmut.ermeydan@btu.edu.tr

Abstract

Wood is one of the best engineering materials with its light weight and high mechanical properties, and has been used for several products such as indoor/outdoor furniture, decking, siding, fences, insulation etc. However, hygroscopic/hydrophilic nature due to its lignocellulosic chemical composition limits its utilization especially at outdoor fields. The specific problem of water uptake ability of wood is increasing humidity inside makes wood susceptible to biodegradation. To protect wood from biodegradation, chemical modification methods may provide long service-life to the products. Water repellence and dimensional stability can be both improved up to 50% and 55% respectively by in-situ grafting hydrophobic poly(ε-caprolactone) inside spruce or pine wood cell walls. Tin(ethylhexonate) is an organotin compound which is used during ε-caprolactone polymerization as catalyst and initiator. The amount of organotin is critical for the success of polymerization and consequently for wood properties. In this research, economically valuable Scots pine wood was modified with a pretty new modification method by grafting hydrophobic polymer poly(ε-caprolactone) (PCL) with different content of organotin catalyst(1%, 2%, 4%). The water absorption, swelling, dimensional stability (ASE), and mass loss due to leaching values of poly(ε-caprolactone) grafted wood were characterized in order to determine effect of organotin amount and optimize the process efficiency. It was found that the amount of organotin significantly affect wood properties such as dimensional stability and water repellence because of the increasing grafting rate of poly(ε-caprolactone) polymer onto wood.

Keywords: wood modification, ε-caprolactone, graft polymerization, ring opening polymerization, wood properties.

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➢ **ORAL PRESENTATION**

Fabrication and Characterization of Electrospun Membranes Containing Quercetin For Drug Delivery System

Şükran Melda Eskitoros-Toğay[1*], Yunus Emre Bülbül[1], Nursel Dilsiz[2*]

[*1]Gazi University, Graduate School of Natural and Applied Sciences, Department of Chemical Engineering, Ankara, Turkey.
[2]Gazi University, Faculty of Engineering, Department of Chemical Engineering, Ankara, Turkey.

Corresponding author e-mail: meldaeskitoros@gazi.edu.tr

Abstract

Electrospun membranes fabricated from biopolymers have been extensively utilized in the drug delivery systems due to their tailored properties. In this study, quercetin (QU)-loaded PCL based membranes were prepared by electrospinning of PCL solution blended with PEO, PLA, and PLGA to suppress the limitation of QU release. The influence of different biopolymer combinations on the drug delivery system were investigated using SEM, FT-IR, XRD, DSC and DSA. Furthermore, in vitro release of QU from the membranes was examined in simulated physiological condition. The SEM image of the synthesized PCL/PEO membrane showed a more uniform and beadless morphology. XRD analysis indicated that PCL/PEO-QU were amorphous in nature without the crystalline peaks of QU. The results of DSC suggested that PCL reached maximum crystallization during the cooling step and exothermic phenomena related to crystallization were not observed. Drug release studies showed that QU-loaded PCL/PEO showed the highest release of QU by 76% in 240 min period. The drug release kinetics of PCL/PEO-QU membrane was closer to Korsmeyer-Peppas kinetics model. In vitro cytotoxicity study indicated that QU-loaded membrane killed 23% human breast carcinoma cells in 48 h. According to these results, PCL/PEO electrospun membrane was demonstrated the more preferable results than PCL/PLA and PCL/PLGA electrospun membranes. In conclusion, the use of these hydrophobic drug-loaded membranes could be extended to encapsulation of other drugs for several biomedical applications like tissue engineering and drug delivery as wound dressing material.

Keywords: nanofiber; electrospinning; drug release; hydrophobic drug; quercetin; biomedical.

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➢ **ORAL PRESENTATION**

Ceviz (*Juglans regia* L.) Mikromikobiotası İçin Beş Yeni Kayıt

Merve Ulukapı, Faruk Selçuk*, Cem Can Cebeci

Ahi Evran Üniversitesi, SHMYO, Kırşehir, Türkiye

Sorumlu yazar e-mail: selcuk_faruk@yahoo.com

Özet

Dünyada Ceviz (*Juglans regia* L.) üretimi bakımından üçüncü sırada bulunmasının yanı sıra, gen merkezi ve anavatanları arasında olan Türkiye, Ceviz ağacı varlığı bakımndan da önemli bir yere sahiptir. Bitki hastalıklarının en önemli etmeninin mantarlar olduğu gerçeğinden hareketle, ağaç türleri üzerinde gelişen mantarların tanımlanması mevcut rezervlerin korunması bakımından ilk ve önemli adımdır. Farklı zamanlarda yapılmış ve doğrudan ceviz ağaçlarının mikobiyotası ile ilgili olmayan çeşitli çalışmalarda Ceviz üzerinde *Ascochyta juglandis* Boltsh., *Cytospora juglandina* Sacc., *Diaporthe juglandina* (Fuckel) Nitschke, *Diplodia juglandis* Fr., *Fusicoccum juglandinum* Died., *Hendersonia juglandis* Schwarzman, *Phoma cavalliniana* Sacc., *Phyllosticta juglandis* (DC.) Sacc., *Coniothyrium incrustans* Sacc., *Eutypa ludibunda* Sacc., *Gnomonia leptostyla* (Fr.) Ces. & De Not., *Melanconium juglandinum* Kunze, *Microstroma juglandis* (Berenger) Sacc., *Nectria cinnabarina* (Tode) Fr., *N. coccinea* (Pers.) Fr., *Pestalotiopsis guepinii* (Desm.) Steyaert ve *Sporidesmium coronatum* Fuckel türlerinin tespit edildiği görülmektedir. Tarafımızdan Türkiye'deki Ceviz ağaçlarının doğrudan mikobiyotası ile ilgili olarak İç Anadolu bölgesi orta Kızılırmak havzasında bulunan ağaçlar üzerinde 2012-2013 yılları arasında yapılan çalışmada, *Alternaria nucis* Moesz, *Amphisphaeria bufonia* (Berk. & Broome) Ces. & De Not., *Camarosporium juglandis* Ellis & Barthol., *Cladosporium fasciculatum* Corda, *C. stromatum* Preuss, *Coniothyrium episphaerium* Höhn., *C. parasitans* (Berk. & Ravenel) Tassi, *Cucurbitaria juglandis* Fuckel, *Dendrodochium gelatinosum* P. Karst., *Dendrophoma juglandina* Schulzer & Sacc., *Diplodia juglandina* G.H. Otth, *D. nucis* Brunaud, *Leptosphaeria platycarpa* Sacc., *Melanomma effugiens* (P. Karst.) Berl. & Voglino, *Microdiplodia juglandis* Died., *M. microspora* Tassi, *Monosporium affine* Sacc. & Schulzer, *Mycosphaerella convexula* (Schwein.) F.V. Rand, *M. saccardoana* Jaap, *Phaeoacremonium minimum* (Tul. & C. Tul.) D. Gramaje, L. Mostert & Crous, *Stegonsporium juglandis* Schwarzman, *Torula antiqua* Corda, *Trematosphaeria melina* (Berk. & Broome) Sacc., *Trimmatostroma salicis* Corda, *Valsa juglandis* (Berk. & M.A. Curtis) Sacc. ve *V. nivea* (Hoffm.) Fr. türleri daha önce yeni kayıt olarak verilmiştir. Söz konusu türlere ilaveten; *Aposphaeria allantella* Sacc. & Roum., *A. subtilis* (Kunze) Sacc., *Hendersonia juglandina* Speg., *H. vagans* Fuckel ve *Macrophoma juglandis* Woron. türlerinin de yeni kayıt oldukları sonucuna varılmıştır. Örnekler Fungaryum materyali halinde Ahi Evran Üniversitesi, Fen-Edebiyat Fakültesi, Mikoloji Laboratuvarında muhafaza edilmektedir. Bu çalışma Ahi Evran Üniversitesi Bilimsel Araştırma Projeleri Birimi (BAP) tarafından PYO-FEN.4003.12.008 proje numarası ile desteklenmiştir.

Anahtar Kelimeler: *Juglans regia*, Mikrofungus, Türkiye, Yeni kayıt.

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➢ ORAL PRESENTATION

A Bioinformatics Approach; the Importance of Polymorphisms in Investigating the Origin of Genetic Diseases.

Onur Ozturk

Inonu University School of Medicine, Department of Biophysics, Malatya, Turkey

Corresponding author e-mail: onurphysics@gmail.com

Abstract

All genes families such as beta-globin gene families, as a general regional groups of the gene that same functions. DNA sequence similarity between genes within the this gene family, leads to a discussion of their come from a common ancestral gene hypothesis. Loci of polymorphism in the beta globin gene family has drawn the attention of researchers in the last 30 years. In this study determinated the beta globin gene cluster haplotypes in association with the various mutations and diseases cases for the Turkish population, especially in Denizli province. Understanding the genetic origin of the mutations or various diseases may elucidate population interactions such as movements, migrations, and environmental effects on mutation mechanisms in human biology throughout history. To examine the possible relationships between various mutations and diseases cases with these loci was used the statistical software program (Arlequin 3.05). Statistical analysis (haplotype analysis, Hardy–Weinberg equilibrium tests, measurement of genetic diversity and population differentiation parameters, analysis of molecular variance (AMOVA) using F-statistic, historical-demographic analyses, mismatch distribution analysis, analyses of tau (τ), SSD) was performed using my published haplotype data. In this presentation as a new approach, explained to understand the possible genetic drift, relationships, expansion and historical origin based on haplotype frequencies of Hb G-Coushatta, Hb S, Hb D-Los Angeles mutations and Behçet's disease populations. The estimated τ values showed the average time since the demographic expansion these populations ranged from approximately 38 000, 26 000, 38 000, 38 000 ybp, respectively. Calculation of the historical developmental periods of these populations provides useful data on population-related mutations or the mechanism of molecular formation of the disease. The evaluation of such data may generate valuable information to the anthropological, paleoclimatic, archaeological and phylogeographical approaches to human biology throughout the historical period of time.

Keywords: Haplotype, Population Genetics, Historical Analysis, Mutation Age, Bioinformatics

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➢ **ORAL PRESENTATION**

HT29 Hücre Hatları Kullanılarak Oluşturulan Deneysel Kolon Kanseri Modelinde Antioksidan Enzim Aktivitelerinin Araştırılması

Arzu Koçak[1*], Dursun Kısa[2], Necmettin Yılmaz[3], Ercan Çaçan[4]

[*1]Siirt Üniversitesi, Ziraat Fakültesi, Tarımsal Biyoteknoloji Bölümü, Siirt, Türkiye,
[2]Bartın Üniversitesi, Fen Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Bartın, Türkiye,
[3]Gaziosmanpaşa Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Tokat, Türkiye,
[4]Gaziosmanpaşa Üniversitesi, Fen Edebiyat Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Tokat, Türkiye.

Sorumlu yazar e-mail: arzukocak@siirt.edu.tr

Özet

Kolon kanseri en sık görülen üçüncü kanser türü olup; yaşam kaybı ile sonuçlanma olasılığı bakımından; erkeklerde akciğer kanserinden sonra ikinci sırada, kadınlarda akciğer ve meme kanserinden sonra üçüncü sırada yer almaktadır. Kansere yol açan en önemli mekanizmalar arasında ise reaktif oksijen türlerinin (ROS) aşırı üretimi olarak tanımlanan oksidatif stres gösterilmekte ve ROS'a karşı savunmada antioksidanların önemli rol oynadığı belirtilmektedir. Dolayısıyla antioksidan enzim çalışmalarının hastalığın oluşma nedenlerinin belirlenmesinde ve hastalığın önlenmesine yönelik tedavilerin geliştirilmesinde literatüre katkı sağlayacağı düşünülmektedir. Bu çalışılmanın amacı, kanser gelişimi ile bazı antioksidan enzim aktiviteleri arasındaki ilişkiyi değerlendirmektir. Çalışmanın amacı doğrultusunda Wistar Albino türü erkek sıçanlarda deneysel olarak kolon kanseri oluşturulmuştur. Kanser grubundaki sıçanlara kolon karsinoma (HT29) hücreleri enjekte edilerek sıçanlarda tümör kitlesinin oluşumu sağlanmış ve altı hafta boyunca takip edilmiştir. Altıncı haftanın sonunda, tümörsüz kontrol ve tümör grubuna ait sıçanlardan alınan karaciğer, dalak, böbrek ve sağ flank (tümör kitlesi oluşturulan bölge) doku örneklerindeki; Peroksidaz (POD), Katalaz (CAT) ve Süperoksit dismutaz (SOD) enzim aktiviteleri belirlenmiştir. Kontrol ile kanser grupları karşılaştırıldığında; genel olarak karaciğerde çalışılan tüm enzimlerin aktivitelerinde önemli bir değişim tespit edilmezken, diğer dokularda söz konusu enzimlerin aktivitelerinde farklılıklar gözlenmiştir.

Anahtar Kelimeler: Kolon kanseri, antioksidan enzimler, HT29, toplam protein.

Teşekkür: Bu çalışma, 2017-SİÜZİR-30 nolu proje kapsamında Siirt Üniversitesi tarafından desteklenmiştir.

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➢ **ORAL PRESENTATION**

Bitlis Katı Atık Tesisi Çevresindeki Bazı Hiperakümülatör Bitkilerin Ağır Metal İçeriklerinin Belirlenmesi

Nurfeşan Avcil[1*], Şükrü Hayta

[1*]Bitlis Eren Üniversitesi Fen Bilimleri Enstitüsü, Bitlis, Türkiye
[1]Bitlis Eren Üniversitesi, Mühendislik Mimarlık Fakültesi, Çevre Mühendisliği Bölümü Bitlis, Türkiye

Sorumlu Yazar e-mail: sukruhayta@hotmail.com

Özet

Bu çalışmada ağır metalleri bünyelerinde depolama özelliğine sahip hiperakümülatör adı verilen bazı bitkiler ile bu bitkilerin metal birikiminin tespiti araştırılmıştır. Bu amaçla 2017 yılında Bitlis ili Güroymak ilçesi Tahtalı Köyü Bellektepe mevkiinde yer alan Katı Atık Entegre Bertaraf Tesisi çevresinde yetişen *Hypericum scabrum*, *Achillea vermicularis*, *Anchusa azurea* var. *azurea*, *Malva sylvestris*, *Alkanna orientalis* var. *orientalis*, *Medicago sativa* subsp. *sativa* türlerine ait örnekler toplanmıştır. Bu bitkilerinin kök, gövde, yaprak ve çiçek gibi kısımları ile bu türlerin yetiştiği alanlardan alınan toprak örnekleri üzerinde çalışılarak, Kalsiyum (Ca), Magnezyum (Mg), Demir (Fe), Mangan (Mn), Çinko (Zn), Bakır (Cu), Kurşun (Pb), Krom (Cr), Nikel (Ni) ve Kadmiyum (Cd) elementlerinin miktarları incelenmiştir. Alınan bu numunelerdeki ağır metal analizleri ICP-MS cihazı kullanılarak yapılmıştır. Toprak örneklerinde Mg, Cr, Mn, Fe, Ni, Cu, Zn, Cd, Pb ve Ca elementlerinin ortalama konsantrasyonları sırasıyla 297.58, 3.17, 97.24, 7459.86, 3.80, 1.32, 9.84, 0.08, 2.43, 32.1 mg kg^{-1} olarak tayin edilmiştir.

Anahtar Kelimeler: Ağır Metal, Hiperakümülatör, Absorbsiyon, Bitlis

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➢ **ORAL PRESENTATION**

Ahlat Sazlıklarındaki, *Phragmites australis* (cav.) Trın. Ex Stend, *Typha angustıfolia* L., *Lythrum salicaria* L. Bitkilerinin ve Bunları Çevreleyen Sedimentlerde Ağır Metal Konsantrasyonlarının Belirlenmesi

Yekda Erkan[1], Şükrü Hayta[1*]

[1]Bitlis Eren Üniversitesi Fen Bilimleri Enstitüsü, Bitlis, Türkiye
[1*]Bitlis Eren Üniversitesi, Mühendislik Mimarlık Fakültesi, Çevre Mühendisliği Bölümü Bitlis, Türkiye

Sorumlu Yazar e-mail: sukruhayta@hotmail.com

Özet

Ağır metaller, çevrede bulunan bitki ve hayvan yaşamına yüksek düzeyde kalıcılık ve zehirlilik etkisi göstermesi nedeniyle en tehlikeli ve öncelikli kirletici maddelerden biri olarak kabul edilmektedir. Bu çalışmada, Ahlat Sazlıklarının baskın türleri olan *Phragmites australis* (kamış), *Typha angustifolia* (saz) ve *Lythrum salicaria* (hevhulma) bitki türleri ve bu bitkileri çevreleyen sedimentlerde ağır metal konsantrasyonlarının belirlenmesi üzerinde durulmuştur. Elde edilen sonuçlar ile sahada fitoremediasyon yöntemi uygulanarak sulak alanlardaki ağır metal kirleticilerinin bitki bünyesine alımı ve sucul ortamın kendini iyileştirme çabasının tespit edilmesi için yapılan çalışmalara katkı verilmesi amaçlanmıştır. Fitoremediasyon, diğer ıslah yöntemlerine göre sürdürülebilir, uygun maliyetli ve çevre dostu bir teknik olması nedeniyle günümüzde oldukça tercih edilen bir yöntem haline gelmiştir. Çalışmamızda bu bitkilerin ağır metal tolere edebilme kapasiteleri belirlenerek bölgedeki metal kirlilik seviyesi tespit edilmeye çalışılmıştır. Çalışmada kullanılan *Phragmites australis*, *Typha angustifolia* ve *Lythrum salicaria* bitkileri üzerinde: Mg, Cr, Mn, Fe, Ni, Cu, Zn, Cd, Pb ve Ca metallerini tolere edebilme kapasitelerine bakılmış ve bu bitkilerin metalleri akümüle etme seviyeleri belirlenmiştir. Toprak analizleri sonucunda Mg, Cr, Mn, Fe, Ni, Cu, Zn, Cd, Pb ve Ca elementlerinin ortalama konsantrasyonları sırasıyla 480.05, 2.285, 89.47, 1721.5, 2.707, 0.942, 6.611, 0.067, 1.07, 69.255 mg kg^{-1} olarak tespit edilmiştir.

Anahtar Kelimeler: Ahlat Sazlığı, ağır metaller, fitoremediasyon, hiperakümülatör bitki

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➢ **ORAL PRESENTATION**

A Traditional Product of Gaziantep Region

Osman Erkmen[1*], Zeynep Şebnem Yakar[2] , Aykut Önder Barazi[1]

[1]University of Gaziantep Faculty of Engineering Department of Food Engineering
[2]University of Gaziantep Technical Sciences Vocational School, Department of Food Processing

Corresponding author e-mail: erkmen@gantep.edu.tr

Abstract

Nowadays, new products and food products which come out in different forms with each passing day are being developed. The relationship between the health and the diet is increasing day by day. Especially in the developed countries, mind of returning to the natural things grows up. So natural products take part more in the diets and gain more importance. Bastık is a traditional product which is produced from grapes or figs in Gaziantep. It has a unique flavor and contains a lot of nutrient including sugar, protein and minerals. The juice obtained from grapes or figs is boiled and mixed with molasses soil. During mixing, necessary amount of starch is added. When it becomes consistent, it is spreaded on a cloth as a thin layer (0.5-2.0 mm). The layer is waited in the sun for a day to dry. It is hanged gently on a rope by hand and waited in the sun to dry the other face. Dried Bastık has a flexible structure. This texture simplifies to give an intended shape and intended size of cut. To prevent the adhesion, small amount of starch is strewed to the both side before folding. Bastık must be packaged by a material that has less moisture permeability and stored in a place which has no humidity. It is generally consumed during winter. Continuity of presence can be accomplished by keeping them alive. On the other hand, today's consumers request new flavors, product variety, safe and less processed food and food that includes less number of additives. Actually, traditional food comes up to supply the need of consumption in any time. They also have a wide variety with different flavors. The thing is to satisfy the expectations by keeping their basic properties under the new developments of food science.

Keywords: Bastık, Traditional food, Grape

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➢ ORAL PRESENTATION

L-Arginine Improves Sperm Motility in Threatened Trout *Salmo coruhensis*

Mehmet Kocabaş[1*], Filiz Kutluyer[2], Mine Erişir[3], Fulya Benzer[4]

[1]Karadeniz Technical University Faculty of Forestry, Department of Wildlife Ecology & Management 61080, Trabzon, Turkey.
[2]Munzur University, Fisheries Faculty, 62000, Tunceli, Turkey.
[3]Fırat University, Faculty of Veterinary, Department of Basic Sciences, Elazığ, Turkey.
[4]Munzur University, Faculty of Engineering, Department of Food Engineering, 62000, Tunceli, Turkey.

Corresponding author e-mail: mkocabas@hotmail.com

Abstract

L-arginine is a versatile amino acid and precursor of nitric oxide (NO). NO provides protection for preventing free radical damage. Herein, experiments were designed to clarify the effect of L-arginine supplementation on sperm motility of threatened trout *Salmo coruhensis*. Activation solution was supplemented with levels of 0 mM (Control), 2 mM, 4 mM and 8 mM L-arginine and, motility and survival of sperm cells were assessed. Significant effect of L-arginine supplementation was determined on the percentage and duration of motile spermatozoa ($p<0.05$). The maximum increment was evoked at the greatest concentration (8 mM). Here, we showed that L-arginine supplement can improve sperm motility of *S. coruhensis*.

Keywords: L-arginine, sperm quality, *Salmo coruhensis*, threatened trout.

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➢ ORAL PRESENTATION

Potentiometric Determination of Stability Constants of Co(II), Cu(II), Ni(II) and Zn (II) Complexes of Methyl 5-methyl-4,6-dioxo-2-(5-(2-oxo-2H-chromene-3-carbonyl)-4-phenylthiazol-2-yl)-3,3-diphenyl-octahydropyrrolo[3,4-c]pyrrole-1-carboxylate

Yahya Nural[1*], Müge Gemili[1], Hayati Sarı[2]

[*1]Mersin University, Faculty of Pharmacy, Department of Analytical Chemistry, Mersin, Turkey
[2]Gaziosmanpasa University, Faculty of Science and Arts, Department of Chemistry, Tokat, Turkey

Corresponding author e-mail: ynural1805@yahoo.com; yahyanural@mersin.edu.tr

Abstract

The stability constant parameters have an important place in drug research and development studies. The stability constant provides information to understand the formation and stability of bonds in a complex and to understand the bonding mechanisms, and to determine the concentration of the components present in a mixture in equilibrium [1-3]. In this study, stability constants of Co(II), Cu(II), Ni(II) and Zn(II) complexes of methyl 5-methyl-4,6-dioxo-2-(5-(2-oxo-2H-chromene-3-carbonyl)-4-phenylthiazol-2-yl)-3,3-diphenyl-octahydropyrrolo[3,4-c]pyrrole-1-carboxylate were potentiometrically determined at 25.0 ± 0.1 ºC in a 40% (*v*/*v*) DMSO-water mixture. The potentiometrically obtained data were used for the calculation of the stability constants values using the HYPERQUAD computer program. A number of species formulated as $MH_{-1}L_2$, MH_4L_2, MH_3L_2, MH_2L_2, MHL_2 and ML_2 are formed in DMSO-water solution at different pH ranges. The stability constants of the metal ion complexes of the ligand were found as $CuL_2 > ZnL_2 > CoL_2 > NiL_2$.

Keywords: Stability constant, Potentiometric titration, Metal complex, Thiazole, Pyrrolidine.

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➢ **ORAL PRESENTATION**

Substituent Effect on the Aromaticity of Diazanaphthalenes

Selçuk Gümüş*, Ayşegül Gümüş

Van Yuzuncu Yil University, Faculty of Science, Department of Chemistry, Van

sgumus@yyu.edu.tr, gumuss@gmail.com

Abstract

Substituted (F, Cl, OH) diazanaphthalene derivatives have been considered theoretically to obtain information about their stabilities and aromaticities. The expected decrease of aromaticity of naphthalene itself by double aza substitution has been compensated by substitution of one of the hydrogens of the system by an electronegative atom. The position of the substituent has been proved to be strongly effective on the aromaticity of the structure such that, the aromaticity is enhanced when the susbtituent iscloser to the aza points.

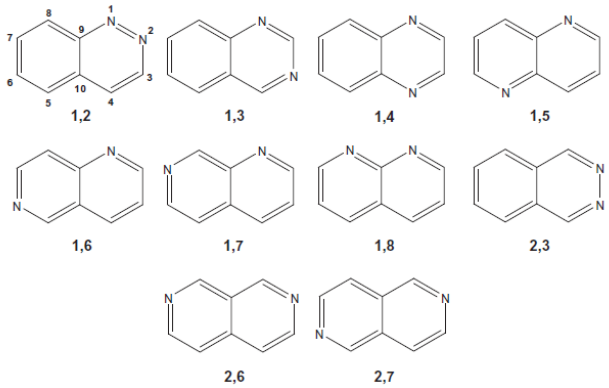

Figure. The structures of the diazanaphthalenes considered in the present study.

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➢ **ORAL PRESENTATION**

PCR Array Based Investigation Of Angiogenesis Related Genes İn Diabetic Rat Wounds Treated With Nanoparticular Tadalafil Ointment

Alparslan Kadir Devrim[1*], Mahmut Sözmen[2], Mert Sudağıdan[3], Zelihagül Değim[4]

[1]Kırıkkale University, Faculty of Veterinary Medicine, Department of Biochemistry, Kırıkkale, Turkey
[2]Ondokuz Mayıs University, Faculty of Veterinary Medicine, Department of Pathology, Samsun, Turkey
[3]Konya Food and Agriculture University, SARGEM Laboratories, Konya, Turkey
[4]Gazi University, Faculty of Pharmacy, Department of Pharmaceutical Technology, Ankara, Turkey

Corresponding author* e-mail: akdevrim@hotmail.com

Abstract

Diabetic wound care is very important for diabetic patients. The infections and pain associated with lack of proper care is life threatening all around the world. The main objective of this study was to determine the wound healing effects of the administration of nanoparticular tadalafil ointment (NTO) prepared with tadalafil which is an effective phosphodiesterase-5 (PDE5) inhibitor. Tadalafil, increases the cyclic guanosine monophosphate (cGMP) level by inhibition of PDE5, causes the expansion of blood vessels, and thus increasing blood flow which allows accumulation of fibrin-rich matrix required for cellular migration and proliferation. The expression levels of 84 angiogenic cytokine genes were scanned in the control and the ointment administrated groups using the RT2 Profiler™ PCR Array technology. Investigations were performed on a total of 70 rats including 10 in each group. Rats were injected intraperitoneally with 50 mg/kg of streptozotocin (STZ) to induce diabetes mellitus. Punch biopsy wounds (PBWs) were created in dorsal region of the rats and they were sacrificed on the post-operative 14th day. Re-epithelialization and healing were more significant in NTO applied groups. Among the 84 angiogenic cytokine genes; there was an increase in expression of Mmp3, Anpep, Mmp14, Mmp2, Mmp9, Timp1, Figf, Hgf, Timp2, Tgfb1, Ctgf, Tgfb3, Cxcl1, Itga5, Itgb3, Tgfa, Serpinf1, Itgav, Serpine1, Cdh5 and Efna1, and a decrease in expression of Nrp2, Fgf6 and Lect1 in the diabetic wound group in which tadalafil ointment was administered. By combining the obtained data, it was concluded that the levels of angiogenic cytokines were increased mainly in the NTO applied groups. This was presumably the result of improving effects of tadalafil on the organization of granulation tissue and pro-angiogenesis. Our deepest gratitude is extended to Turkish Scientific and Technological Research Council - TÜBİTAK (Project No: 113O510) for financing this study.

Keywords: Diabetic wound; angiogenic genes; phosphodiesterase type-5 inhibition; nanoparticular tadalafil ointment.

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➢ ORAL PRESENTATION

Construction of Novel Cyclic Compounds via Enzymatic Resolution

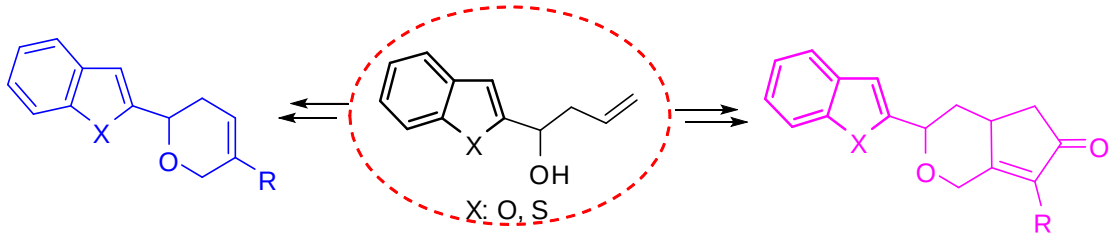
Ayşegül Gümüş*, Selçuk Gümüş

Van Yuzuncu Yil University, Faculty of Science, Department of Chemistry, Van

gumusa@gmail.com

Abstract

The acyclic alkene moieties and the O-anchoring sites on homoallylic alcohols make them valuable precursors for the synthesis of many enantiopure compounds. The key intermediates 2-benzothiophenyl and 2-benzofuranyl-substituted homoallyl alcohols are synthesized starting from their corresponding carboxyaldehyde derivatives. The racemic heteroaryl-substituted alcohol derivatives are successfully resolved, obtaining the corresponding enantiopure acetates and the alcohols in 80-99% ee by applying chemoenzymatic methods using various lipases. Diene and enyne systems from enantiomerically enriched homoallylic alcohols were converted to novel chiral heteroaryl-substituted dihydropyran and fused-cyclopentenone derivatives by ring closing methathesis and Pauson-Khand reactions, respectively.



Keywords: Homoallylic Alcohols, Enzymatic Resolution, Ring Closing Methathesis, Pauson-Khand Reactions

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➢ **ORAL PRESENTATION**

Novel Bismuth(III) Halide Complexes with 2-Imidazolidinethione Synthesis and Their Chemical Characteriation by Different Spectroscopic Metods

Okan Ucar[1*], I.I. Ozturk[1*]

[1]Tekirdag Namık Kemal University, Faculty of Arts and Sciences, Department of Chemistry, Tekirdag, TURKEY

Corresponding author e-mail: iiozturk@nku.edu.tr

Abstract

Metal ions play important roles in several cases in biological systems. Many metallotherapeutics (coordination compounds) on the other handare used in therapy or diagnosis of diseases [1]. Bismuth has been recognized as a low-toxic metal and it used in medicine since Middle Age. The first bismuth-containing drug was utilized for the treatment of dyspepsia in the form of bismuth subnitrate. Afterwards, many new bismuth com- pounds were synthesized to treat various microbial infections mainly the Helicobacter pylori. Recent studies have demonstrated that bismuth complexes of sulfur-containing ligands exhibit anticancer activities [2]. Recently, the bismuth diethyldithiocarbamate complex $Bi(Et_2DTC)_3$ was shown to be a potent in vitro cytotoxin against seven human cancer cell lines: (i) breast cancer (MCF-7, estrogen receptor (ER)+/progesterone receptor (PgR)+), (ii) breast cancer (EVSA-T, estrogen receptor (ER)-/progesterone receptor (PgR)-, (iii) renal cancer (A498), (iv) non-small cell lung cancer (H226), (v) ovarian cancer (IGROV), (vi) melanoma (M19 MEL) and (vii) colon cancer [3].

In the progress of our studies on the synthesis, characterization and study of biological activity of complexes containing metal ions of 15 group. In this work, we report the synthesis of three new bismuth (III) halides complexes with 2-Imidazolidinethione. The complexes were characterized by melting point, elemental analysis, molar conductivity, FT-IR spectroscopy, FT-Raman spectroscopy, TG-DTA analysis, ^{1}H and ^{13}C-NMR spectroscopy, UV spectroscopy and mass spectroscopy.

$$2\ IMT + BiX_3 \xrightarrow[reflux,\ 6\text{-}12\ h]{solv.} [BiX_3(IMT)_2]$$

X: Cl, Br and I

Scheme 1. Reaction scheme for synthesis of 1-3 complexes

Keywords: Inorganic Chemistry, Coordination Chemistry, Bismuth (III) Halides, 2-Imidazolidinethione

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➢ **ORAL PRESENTATION**

Prangos ferulacea (L.) Lindl. (Apiaceae) Türünün Meyve ve Yapraklarının Uçucu Yağ Kompozisyonu Belirlenmesi, Geleneksel Kullanımı

Şükrü Hayta[1*], Emel Akbaba[2], Eyüp Bağcı[2]

[1*]Bitlis Eren Üniversitesi, Mühendislik ve Mimarlık Fakültesi, Çevre Mühenlisliği Bölümü, Bitlis, Türkiye
[2]Fırat Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Elazığ, Türkiye

Sorumlu yazar e-mail: shayta@beu.edu.tr

Özet

Bitlis İlinde Ramsar alanı olarak ilan edilen Nemrut Kalderası' nda oldukça yaygın olan *Prangos ferulaceae* türü doğal habitatlarından toplanmıştır. Hidrodistilasyon yöntemi kullanılarak meyvede uçucu yağ verimi % 0.5 (v/w), yapraklarda ise % 0.6 (v/w) olarak tespit edilmiştir. Bu türün meyve ve yapraklarındaki uçucu yağ analizleri GC/GC-MS kullanılarak yapılmıştır. Toplamda yağın sırasıyla % 94.4 ile % 93.4' ünü oluşturan 47 ve 29 bileşen tespit edilmiştir. Meyve için β-elemene %26.9, β-phellandrene %18.9, □-terpinolene %14.2 , □-phellandrene %9.7, yaprakta ise β-elemene %48.9, □-terpinolene %14.6, ethylbenzene %9.7, bileşenleri majör olarak tespit edilmiştir. Ayrıca bu analizler sonucunda çalışılan bu türün farklı kısımlarında uçucu yağ bileşiminde nicel ve nitel farklılıklar bulunmuştur. Ayrıca bu bitki Van ve Bitlis illerinde yaygın olarak maraz giderici olarak besicilikte kullanılırken sebze olarak da tüketilmektedir. Pişirilerek tüketiminin yanı sıra salamurası da yapılır. Yöre insanı bu bitkiyi ''Heliz'' olarak adlandırır. Salamurası yumurta ile pişirilir ve yöresel adı ''çağ'' olan bir yemek yapılır.

Anahtar Kelimeler: *Prangos ferulacea*, Apiaceae, Uçucu yağ, β-elemene.

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➢ **ORAL PRESENTATION**

Microbial Risks for Sous Vide Cooked Meat, Poultry and Seafood Products

Serap Coşansu[1*], Sühendan Mol[2]

[*1]Sakarya University, Engineering Faculty, Food Engineering Department, Sakarya, Turkey
[2] Istanbul University, Faculty of Aquatic Sciences, Department of Seafood Processing and Quality Control, Istanbul, Turkey

Corresponding author e-mail: scosansu@sakarya.edu.tr

Abstract

Sous vide is a cooking technique whereby foods are vacuum packaged and then cooked, chilled, and stored refrigerated. Sous vide processing has many advantages such as extending shelf-life, maintaining nutritional value, eliminating recontamination risks, etc. Sous vide cooked products may cause safety concerns for several reasons: (1)being formulated with little or no preservatives, (2)having high pH and water activity values, (3)undergoing minimal thermal processing that required a strict temperature control during storage to prevent microbial growth (4)providing favorable environment for anaerobic pathogens by vacuum packaging and (5)the high possibility of maintaining at temperature abuse conditions at both retail and consumer levels. Raw meat, poultry and seafood can harbor foodborne pathogens at different levels depending on slaughtering/handling hygiene, processing, transporting and storage conditions. If a foodborne pathogen has one or more of following properties, it can be considered as a microbial risk for sous vide cooked products. The properties of particular importance are the ability to become established within the processing environment, good survival during heat treatment and growth at refrigerated temperature. Although many different pathogens can contaminate raw material of these products, the sporeforming anaerobic pathogens including *Clostridium botulinum*, *Clostridium perfringens* and *Bacillus cereus* have particular importance as their endospores can survive during sous vide cooking and the vacuum packaging support their growth at temperature abuse conditions. On the other hand, *Listeria monocytogenes* is considered as a risk for sous vide cooked animal products since it is the most heat-resistant non-sporeforming pathogenic bacterium. Additionally, by means of its psychotropic nature, surviving *L. monocytogenes* cells in sous vide cooked muscle product can multiply during storage at refrigerated temperatures. Considering the significance of the subject in view of consumer health, the properties that allow these bacteria to survive in cooked sous vide cooked meat, poultry and seafood products will be discussed.

Keywords: Sous vide, meat, poultry, seafood, microbial risk, pathogen

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➢ **ORAL PRESENTATION**

Investigation of Fuel Cell Performance of Polyvinylidene fluoride/Zirconium Phosphate Composite Membrane

Alpay Şahin*, Aygün Çali, İrfan Ar

Gazi University, Faculty of Engineering, Chemical Engineering, Ankara, TURKEY.

Corresponding author e-mail: asahin@gazi.edu.tr

Abstract

Polyvinylidene fluoride (PVDf) is thermoplastic polymer with excellent thermal, chemical and electrochemical stability which has been widely studied in proton exchange membrane fuel cell (PEMFC) as a proton exchange membrane (PEM). Zirconium phosphate/PVDf composite membranes were prepared with sol gel method. Multiple techniques Fourier Transform Infrared Spectrum (FT-IR), Impedance Analysis (EIS), Thermogravimetric analysis (TGA), water uptake capacity (WU) and swelling property of the synthesized membranes were carried out. Best results were obtained with 9% Zirconium phosphate added membrane. This membrane has 36.4% water uptake capacity, 1.1% change of thickness, 0.2 % change of surface area and 0.0127 S/cm proton conductivity at 80°C. The effect of Zirconium phosphate concentration on fuel cell performance were also studied. Membrane electrode assemblies (MEAs) were prepared by gas diffusion layer spraying method. The highest performance of 365 mA/cm^2 was obtained 9% Zirconium phosphate added membrane at 0.6V cell potential,70°C cell temperature and %100 relative humidity. At the same comditions Nafion 117 commercial membrane gave 590 mA/cm^2 current density. The results show the potential of these composite membranes to be used as proton exchange membrane in fuel cell.

Keywords: Proton exchange membrane, composite membrane, fuel cell performance, zirconium phosphate, Polyvinylidene fluoride.

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➢ ORAL PRESENTATION

Experimental Design and Response Surface Modeling for Optimization of Eriochrome Black T Removal From Aqueous Solution Using *Langermannia gigantea*

Muharrem Ince[1] , Hevidar Alp[2*],Olcay Kaplan Ince[3], Ali Onal[3]

[1] Munzur University, Faculty of Engineering, Department of Chemical Engineering, Tunceli, Turkey

[*2] Munzur University, Department of Food Process, Vocational School, Tunceli, Turkey

[3]Munzur University, Faculty of Engineering, Department of Food Engineering, Tunceli, Turkey

*Corresponding Author: halp@munzur.edu.tr

Abstract

Because of the rapid development in the technology and industry, more coloring substances have been produced and used in various fields and applications, generating more and more highly toxic and difficult degradation wastes. These wastes including agricultural and domestic are discharged to nearest receivers such as rivers, lakes and seas. These substances including synthetic dyes are a serious environmental problem, which is one of the most serious problems faced by people. The Eriochrome black-T (EBT) is an azo dye, used widely both in textile and in research laboratories as indicator in titration processes. Its chemical structure offers a greater resistance to photodegradation. The biosorption of EBT from aqueous solutions by *Langermannia gigantea* (LG) which natural and eco-friendly biosorbent was investigated using central composite design (CCD) combining with response surface modeling (RSM). The CCD method was chosen as the statistical prediction method to reduce the experimental numbers which will directly save time and chemicals and thereby reducing the overall cost. Various independent process variables including solution pH (X_1: 4.0–10.0), temperature (X_4: 25–35 ºC), contact time (X_2: 15–25 min) and adsorbent dosage (X_3: 40-80 mg) were chosen for optimization. The optimal conditions for the EBT removal were found to be 4, 25 ºC, 15 min, and 40 mg, for solution pH, temperature, contact time and adsorbent dosage, respectively. Under optimized conditions, maximum EBT removal efficiency was obtained as 51.28 mg g^{-1}. The independent variables significance and their interactions were tested by means of the analysis of variance (ANOVA) and based on the ANOVA statistical value, the adsorption of EBT onto LG has been found to be highly significant, with very low probability (p) values (<0.001). These results were justified by the relatively high correlation coefficients (R^2 = 0.9906) of the statistical prediction.

Keywords: Eriochrome black-T, *Langermannia gigantea*, Response Surface Modeling

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➢ ORAL PRESENTATION

Response Surface Methodology and Process Optimization of Methylene Blue Using Central Composite Design

Olcay Kaplan Ince[1], Hevidar Alp[2], Muharrem Ince[3], Ali Onal[1*]

[1]Munzur University, Faculty of Engineering, Department of Food Engineering, Tunceli, Turkey

[*2] Munzur University, Department of Food Process, Vocational School, Tunceli, Turkey

[3] Munzur University, Faculty of Engineering, Department of Chemical Engineering, Tunceli, Turkey

*Corresponding Author: onalali_62@outlook.com

Abstract

Organic or dyes are widely used in various industries including textile, cosmetics, and paper production. These industries contain various kinds of manmade dyes which are considered as chief sources of environmental pollution. Most of these dyes are toxic, carcinogenic, and teratogen because of very stable to light, temperature and microbial attack, making them recalcitrant compounds. When they release into water bodies have negative effects in the environment due to their toxicity and turbidity levels. From an environmental point of view, the synthetic dyes removal is of great concern. In the present days, people find simple way to prepare new ecofriendly adsorbent materials which can be extensively applicable in different fields in order to overcome energy shortage, environmental crisis and developing customer demands. In present study, removal of methylene blue (MB) from aqueous solution by *Langermannia gigantea* (LG) was preferred using central composite design (CCD) combining with response surface modeling (RSM). The CCD method was chosen as the statistical prediction method to reduce the experimental numbers which will directly save time and chemicals and thereby reducing the overall cost. Various independent process variables including solution pH (X_1: 4.0–10.0), temperature (X_4: 25–35 ºC), contact time (X_2: 15–25 min) and adsorbent dosage (X_3: 40-80 mg) were chosen for optimization. The optimal conditions for the MB removal were found to be 10, 25 ºC, 15 min, and 40 mg, for solution pH, temperature, contact time and adsorbent dosage, respectively. Maximum MB removal efficiency onto LG was calculated as 16.1 mg g^{-1} under optimized conditions. The independent variables significance and their interactions were tested by means of the analysis of variance (ANOVA) and based on the ANOVA statistical value, the adsorption of MB onto LG has been found to be highly significant ($p<0.001$).

Keywords: Methylene blue, *Langermannia gigantea*, Central Composite Design

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➢ ORAL PRESENTATION

Mezogözenekli Karbonların Tek Kap Metodu ile Sentezi ve Karakterizasyonu

Meltem Gürbüz[1], Fatma Tümsek[1*]

[*1]Eskişehir Osmangazi Üniversitesi, Mühendislik-Mimarlık Fakültesi, Kimya Mühendisliği Bölümü, Eskişehir, Türkiye

Sorumlu yazar e-mail: ftumsek@ogu.edu.tr

Özet

Gözenekli karbon materyaller su ve hava saflaştırma, gaz ayırma, kataliz, kromatografi ve enerji depolama gibi modern bilim ve teknolojinin çoğu alanında önemlidir. Çoğu gözenekli karbonlar mikrogözeneklidir. Buna rağmen büyük hidrofobik moleküllerin adsorpsiyonu, kromatografik ayırmalar, elektrokimyasal çift tabaka kapasitörleri ve lityum pilleri gibi çok sayıda diğer potansiyel uygulamalarda tercihen mezogözenek aralığında daha geniş gözeneklerin varlığı bir avantaj olmaktadır. Bu yüzden son zamanlarda mezogözenekli karbonların sentezi ilgi çekmektedir. Mezogözenekli karbonların sentezinde genel olarak kullanılan şablonlu sentez yöntemi iki aşamadan oluşmaktadır. Bu yönteme göre ilk aşama şablon olarak kullanılacak mezogözenekli silikaların sentezi, ikinci aşama ise bu silika şablonlar kullanılarak karbonların üretilmesidir. Son zamanlarda karşılaşılan ve tek kap metodu (One Pot Method) olarak isimlendirilen metotta silika ve karbon eş zamanlı olarak aynı kapta birlikte oluşmakta, böylece mezogözenekli silika oluşurken karbon ile kaplanmaktadır. Böylelikle sentez aşamasında zaman ve enerji açısından avantaj sağlanmaktadır.

Bu çalışmada literatürde CMK-8 olarak adlandırılan mezogözenekli karbonun tek kap metodu (One Pot Method) ile sentezi araştırılmıştır. CMK-8'in sentezinde Pluronik P123 yapıyı yönlendiren şablon, n-bütanol kosolvent olarak kullanılmıştır. Sükroz ve Tetraetilortosilikat (TEOS) sırasıyla karbon ve silika kaynağı olarak kullanılmıştır. Sentezlenen karbonların özellikleri üzerine karbonizasyon sıcaklığının, karbon kaynağı olarak kullanılan sükroz miktarının ve silika kaynağı olarak kullanılan TEOS molar oranının etkileri incelenmiştir. Oluşan karbonların taramalı elektron mikroskobu (SEM), geçirimli elektron mikroskobu (TEM), X-ışını kırınımı (XRD), elementel analiz ve azot (N_2) adsorpsiyonu yöntemleriyle karakterizasyonları gerçekleştirilmiştir. Yapılan analizlerde genel olarak mezogözenekli karbonların karbon içeriklerinin %90 civarında olduğu, yaklaşık olarak 1000 m^2/g değerinde yüzey alanına ve 4 nm civarında ortalama gözenek genişliğine sahip oldukları belirlenmiştir.

Anahtar Kelimeler: Mezogözenekli karbon, Tek kap metodu, Karbonizasyon, Karakterizasyon

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➢ **ORAL PRESENTATION**

Phenolic Compounds: Inhibition of Human Serum Paraoxonase (hPON1)

Cüneyt Türkeş

Erzincan University, Faculty of Pharmacy, Department of Biochemistry, Erzincan, 24100, Turkey.

cuneyt.turkes@erzincan.edu.tr

Abstract

Paraoxonase-I (Aryldialkylphosphatase, A-esterase, EC 3.1.8.1, PON1) is a Ca^{2+}-dependent, high-density lipoprotein (HDL) related arylesterase. Until now, three PON isozymes have been identified exhibiting same catalytic activity such as PON1, PON2, and PON3. Among these isozymes, on the most studied one is PON1 having detoxification and anti-atherogenic effects. PON1 associating with high-density lipoproteins (HDLs) neutralizes the radicals and protects the low-density lipoproteins (LDLs) from oxidation.

Phenols (or phenolics) are a class of chemical compounds consisting of a hydroxyl group bonded directly to an aromatic hydrocarbon group. Phenolic compounds are classified as simple phenols or polyphenols based on the number of phenol units in the molecule. Although similar to alcohols, phenols have unique properties and aren't classified as alcohols. Phenolic compounds are synthesized industrially. Also, they are also produced by plants and microorganisms, abundantly.

The present study focuses on the *in vitro* inhibition role of phenolic compounds on human paraoxonase (hPON1). For this reason, PON1 was purified from human serum by using chromatographic methods, easily. Molecular weight of the enzyme was determined by SDS-PAGE. IC_{50} values were found for esculin hydrate, 1,3,5-trimethoxybenzene, vanillic acid, p-coumaric acid and 3'-metoxyacetophenone as 0.179, 0.493, 1.172, 5.658 and 34.088 mM, respectively. *Ki* constants from Lineweaver-Burk plots were calculated as 0.0396±0.0020, 0.1026±0.0098, 0.2851±0.0204, 1.2466±0.0801 and 3.8609±0.2029 mM, respectively. All phenolic compounds had competitive inhibition on hPON1.

Keywords: Paraoxonase, PON, HDL, phenolic compound, inhibition

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➢ ORAL PRESENTATION

Examination of Possible Genotoxic Effects of MPG, A Flavor Enhancer, In Human Peripheral Lymphocytes By Comet Assay

Ece Avuloglu-Yilmaz[1,2], Fatma Unal[1], Deniz Yuzbasıoglu[1]

[1]Department of Biology, Science Faculty, Gazi University, Ankara, Turkey
[2] Department of Biology, Science and Arts Faculty, Amasya University, Amasya, Turkey (Present address)

Corresponding author e-mail: eceavuloglu@gazi.edu.tr

Abstract

Flavour enhancers are a kind of food additive and their usage are increasing rapidly. Monopotassium glutamate (MPG), potassium salt of glutamic acid, is used as flavour enhancer. However, the effect of its use on human health is controversial. The purpose of this study was to evaluate the potential genotoxic effect of MPG by using comet assay in isolated human lymphocytes. The comet assay is the most common method for investigating DNA damage in human lymphocytes. Peripheral lymphocytes obtained from three healthy young donors, a man and two women, was treated with four different concentrations (125, 250, 500, and 1000 µg/mL) of MPG. A negative and a positive control (100 µM H_2O_2) were also applied for each treatment. Isolated lymphocytes were incubated at 37ºC for one hour with different concentrations of MPG. For each concentration, 300 cells (100 cells from each donor) were evaluated by a fluorescence microscope using specialized Image Analysis System (Comet Assay IV", Perceptive Instruments Ltd., UK). According to test results, MPG increased the comet tail intensity, tail length, and tail moment at two highest concentrations in a dose-dependent manner. In our previous studies, MPG induced chromosomal aberrations, sister chromatid exchanges and micronucleus formation especially at high concentrations. All these data we obtained show that MPG is genotoxic to human lymphocytes *in vitro* especially at high concentrations.

Keywords: Genotoxicity, DNA damage, food additive, comet assay

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➢ **ORAL PRESENTATION**

Diversity of Bioactive Compound of Genetically Diverse Pepper Gene Pool

M. Kadri Bozokalfa*, Fatih Şen, Tansel Kaygısız Aşçıoğul, Dursun Eşiyok

Ege University, Agriculture Faculty, Department of Horticulture, 35100 Bornova, İzmir,

Corresponding author e-mail: mehmet.kadri.bozokalfa@ege.edu.tr

Abstract

Pepper (Capsicum spp.) is one of the world's major vegetable and spice crops and valuable horticultural species in Turkey, and the country geographical position played an important role in spread of pepper cultivation in neighboring countries during the 15th and 16th centuries. Turkey is one of the most important nations in the world for pepper genetic resources, and the large numbers of landrace, cultivars grown around the country provide an important source of variation for plant breeding. The experimental gene pool included 150 landraces and has been characterized for agro-morphological and molecular markers and each genotype reproduce by selfing for four generations. Characterization revealed that the examined plant collection displayed high genetic diversity. Nowadays, special attention to the nutritional quality of foods is required at present given the increasing in functional foods. In this context peppers are an important source of nutrients in human diet, and characterized by its high levels of vitamin C (ascorbic acid), provitamin A (carotene), rich in antioxidants, including carotenoids, tocopherols and capsaicinoids. New sources of genetic variability can be found in genotypes from genebanks, to obtain genotypes of breeder interest. However, it is necessary that they are properly characterized for to make it easier to use them for breeding program. This study is aimed to evaluate determination of genetic variability for, total soluble solid, titratable acidity, fruit color (L*, hue°, chroma), chlorophyll (a, b), vitamin C, total phenol content and antioxidant activity of diverse pepper gene pool at green stage maturity stage. The multivariate analyses revealed that examined bioactive compound exhibited high degree of variability. The minimum, maximum, standard deviation, coefficient of variation, and Shannon's diversity index, and correlations among bioactive compound were calculated. The large diversity indicates that examined pepper germplasm is a good source for further breeding for bioactive compounds.

Keywords: Capsicum spp., health benefit compound, nutritional diversity, plant genetic resources

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➢ ORAL PRESENTATION

Investigation of Chromium (VI) Adsorption on Acid Treated Bentonite Using Central Composite Design

Berat Cinar Acar[1], Mehmet Bahadir Acar[2], Zehranur Yuksekdag[1], Berkan Cetinkaya[3]

[1]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey
[2]Ceylan Mineral Mining Industry and Trade Inc., Ankara, Turkey
[3]Ege University, Institute of Nuclear Sciences, Izmir, Turkey

E-mail: cinarbrt@gmail.com

Abstract

Chromium is a toxic heavy metal that is widely used in electroplating, leather tanning, textile dyeing, and metal processing industries. Chromium exists in several oxidation states from Cr(II) to Cr(VI). In nature, chromium can be found either as Cr(VI) or as Cr(III). Cr(III) is far less toxic than Cr(VI) because of its lower solubility, mobility, mutagenicity, and carcinogenicity. Industrial waste waters contain both chromium and salt ions which have toxic effects on the microbial consortia of wastewater treatment systems.

Alternative wastewater treatment methods are developed in recent years. One elimination method of heavy metals from the wastewater is the adsorption of heavy metals. In this study, the adsorption of Cr(VI) researched using natural adsorbents as bentonite, activated bentonite with two varied acids at different concentrations (0.25, 0.5, 1.0 M H_2SO_4 and 3.0, 5.0, 7.0 M HCl). The characterization studies of the samples were made X-ray powder diffraction (XRD), X-ray fluorescence (XRF), Fourier Transform infrared spectroscopy (FTIR), Thermogravimetric analysis (TG/DTA), Surface and Porosity. Adsorption studies of 1.0 M H_2SO_4 active sample with the highest surface area (493.312 m^2/g) were carried out.

In the present study, the batch method was used for the uptake experiments of chromium. The effect of pH, temperature, initial Cr(VI) concentration, and contact time on chromium adsorption was investigated via experimental design approach using Central Composite Design. A second-order polynomial equation related to the model was obtained and 3 dimensioned surface contour plots were drawn. The variance analysis (ANOVA) of the model at %95 confidence level was investigated. The significance F value of $1.38x10^{-16}$ and the correlation coefficient (R^2) value of 0.99 indicate that the model is statistically significant at determined variable range and the model explains the Cr(VI) adsorption well.

Keywords: Adsorption, central composite design, chromium, wastewater

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➢ **ORAL PRESENTATION**

Comparatively Evaluation of Cardiopulmonary and Metabolic Response to Aerobic and Anaerobic Region of Incremental Exercise Test

Nida Aslan Karakelle[1,2], Oğuz Özçelik[1]

[1] Fırat University, Faculty of Medicine Department of Physiology, Elazığ, Turkey
[2]Gazi University, Faculty of Medicine Department of Physiology, Ankara, Turkey

Corresponding author e-mail: nida7_06@hotmail.com

Abstract

The cardiopulmonary exercise test has become increasingly used tool in clinical and sports medicine to obtain information to identify the fitness status of the subjects. The aim of this study was comparatively investigate respiratory, cardiac and metabolic parameters in the aerobic and anaerobic region of the incremental exercise test. Total of 24 healthy male (age: 19.7±1.87 years) participated to study. Each subject performed an incremental exercise test using a cycle ergometer with a work rate of 15 W/min to exhaustion. The anaerobic threshold (AT) reflects the onset of metabolic acidosis and separate aerobic to anaerobic exercise region was estimated from V-slope method. During exercise, the subjects' pulmonary gas exchange and metabolic parameters were measured breath-by-breath using metabolic gas analyser. The work rate and O_2 uptake at maximal exercise and at the AT was found to be 233±30 W and 156±25 W, 2.96±0.28 L/min and 2.02±0.20 L/min, respectively. O_2 uptake was found to be 1.291±0.18 L/min in aerobic region and 0.924±0.16 L/min in anaerobic region ($p< 0.001$). In contrast, CO_2 output was 1.301±0.16 L/min in aerobic region and 1.631±0.31 L/min anaerobic region ($p<0.001$). The ventilation for each 1 W work rate was found to be 270.8±37 ml in aerobic region and 685.4±180 ml in anaerobic region ($p<0.001$). In addition, heart rate for each 1 W work rate was 2.61±0.6 beat/W in aerobic region and 2.24±0.5 beat/W in anaerobic region ($p<0.03$). There was significant differences in O_2 uptake, CO_2 output and ventilation, heart beat response to exercise in aerobic and anaerobic exercise region. Evaluations of cardiopulmonary and metabolic responses in aerobic and anaerobic region of incremental exercise provide valuable information about the subjects fitness status with regarding aerobic, anaerobic and total capacities.

Key words: Incremental exercise test, anaerobic threshold, aerobic fitness, pulmonary gas exchange

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➢ ORAL PRESENTATION

Synthesis, Molecular Docking and Biological Evaluation of Some Benzimidazole Derivatives As Potent Pancreatic Lipase Inhibitors

Gülay Akyüz*, Emre Menteşe

Department of Chemistry, Faculty of Art and Science, Recep Tayyip Erdogan University, TR-53100, Rize, Turkey

gulay.candan@erdogan.edu.tr

Abstract

In this study, a new series of benzimidazole and bisbenzimidazole derivatives were prepared via the reaction of iminoester hydrochlorides and o-phenylenediamines and then screened for their lipase inhibition properties. Among the synthesized molecules, compounds 7a, 8a and 8c showed the best inhibitory effect against lipase enzyme with IC50 values of 1.72 ± 0.12 µM, 1.92 ± 0.28 and 0.98 ± 0.07 µM, respectively. Moreover, molecular modeling studies were performed in order to understand to the inhibitory activity of the molecules.

Keywords: Benzimidazole, lipase, inhibition

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➢ **ORAL PRESENTATION**

Synthesis of Coumarin-Benzoxazole Hybrid Molecules

Fatih Yilmaz

Vocational School of Technical Studies, Department of Chemistry and Chemical Processing Technology, Recep Tayyip Erdogan University, Rize, Turkey

fyilmaz@erdogan.edu.tr

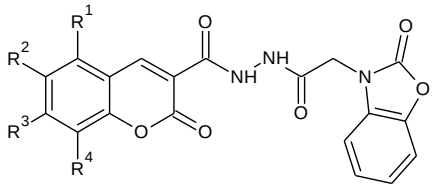
Abstract

The benzoxazole skeleton is found in several natural products and and it is incorporated in drug design. Various benzoxazole derivatives were extensively studied for their biological and pharmacological activities concerning antibiotic, antimicrobial, antifungal and antitumor activities. These heterocyclic compounds are known to be effective complexing agents with various transition metal ions via nitrogen donor atoms (1).

Coumarins are generally obtained from plants and consists of a class of phenolic compounds. they known known to show many pharmacological activities like antioxidant, anti-lipase, a-glucosidase and anticancer. Also, Coumarin is used regularly as an important nucleus in medicinal chemistry. In addition, coumarins are used as fragrant additives in food and cosmetics. The commercial application of coumarins include dispersed fluorescent brightening and as dyes for tuning lasers (2,3).

Molecular hybridization is known as an effective method for developing new bioactive compounds. This is among the molecular modification methods for achieving new molecules which have better pharmacokinetic and pharmacodynamic properties.Considering the promising activity of coumarin and benzoxsazole moieties, the use of these heterocycles in one molecule can be resulted in formation of more bioactive compounds. Hence, we decided to use the mentioned moieties in a molecular hybridization approach to design new potential bioactive compounds.

Keywords: Benzoxazole, Coumarin, molecular hybridization



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➢ **ORAL PRESENTATION**

Syntheses, Spectroscopic And Crystallographic Investigations of NN and NO Donor Type 2-pyridyl-spirocyclotriphosphazenes

Gamze Elmas

Ankara University, Faculty of Science, Department of Chemistry, Ankara, Turkey

gegemen@ankara.edu.tr

Abstract

Cyclophosphazenes are inorganic ring systems composed of a backbone that contain the repeating unit $[N=PX_2]_n$ (n=3,4,5,…) with nitrogen and phosphorus atoms and two organic, inorganic and organometallic side groups (X), linked covalently to each phosphorus atom (1). Hexachlorocyclotriphosphazene, $N_3P_3Cl_6$, is the most common starting compounds for the formation of various trimeric cyclophosphazenes (2). A wide range of the partly/fully substituted cyclotriphosphazenes is synthesized from the exchange reactions of $N_3P_3Cl_6$ with the different reagents (3). It is found that diamine, aminoalkoxide and dioxide ligands with $N_3P_3Cl_6$ produce generally spiro products regioselectively (4).

In this study, the Cl substitution reactions of $N_3P_3Cl_6$ (**1**) with one equimolar amount of sodium salt of 3-*N*-(2-pyridyl)-methylamino-1-propanol and *N*-methyl-*N′*-(2-pyridyl)-methyl-1,3-propanediamine afforded separately two kinds of 2-pyridyl-spiro-cyclotriphosphazenes (**2** and **3**). The spiro phosphazenes (**2** and **3**) reacted with excess pyrrolidine and 1,4-dioxa-8-azaspiro[4,5]decane (DASD) produced the fully substituted 2-pyridyl-spiro-cyclotriphosphazenes (**4-7**). The structures of four cyclotriphosphazenes were elucidated by the elemental analyses, FTIR, ESI-MS, ^{1}H, ^{13}C, and ^{31}P NMR techniques. The crystal structure of tetra-1,4-dioxa-8-azaspiro[4,5]decano-2-pyridyl(N/O)spirocyclotriphosphazenes (**5**) was identified by X-ray crystallography.

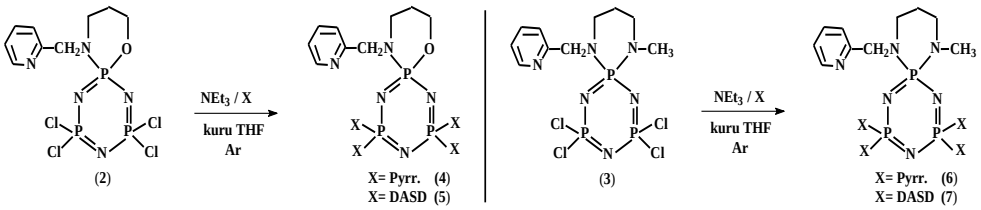

Figure 1. 2-Pyridylspirocyclotriphosphazene derivatives (**4-7**).

Keywords: 2-pyridylspirocyclotriphosphazenes, substitution reactions, spectroscopy, cystallography.

This study is supported by a grant “Scientific and Technical Research Council of Turkey” (Grant No. 216Z105).

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➢ ORAL PRESENTATION

Influence of Surfactant on the Physical and Optical Properties of SILAR-Deposited Copper Oxide Thin Films

Halit Cavusoglu

Selcuk University, Faculty of Science, Department of Physics, Konya, Turkey.

Corresponding author e-mail: hcavusoglu@selcuk.edu.tr

Abstract

Among the transparent conductive oxide (TCO) films, researches on the nanostructure copper oxide (CuO) have stimulated intensive interest because of its use in photovoltaic solar panels, optoelectronic devices, supercapacitors and biosensors. CuO is a p-type, narrow band gap semiconductor (1.2 eV-1.9 eV). It has monoclinic structure and many interesting characteristics such as high thermal conductivity, abundance in nature, non-toxic, high chemical stability, and antimicrobial activity. Various techniques have been employed so far to prepare CuO films such as hydrothermal method, sol-gel method, spray pyrolysis, chemical bath deposition, and successive ionic layer adsorption and reaction (SILAR). In the present work, CuO thin films have been prepared by the simple and low cost successive ionic layer adsorption and reaction (SILAR) technique at room temperature in the presence of polyethylene glycol (PEG) as surfactant. The effects of surfactant on structural (X-ray diffraction (XRD)), morphological (scanning electron microscopy (SEM)), and optical (ultraviolet/visible (UV–Vis) properties of the films were analyzed. The properties of CuO thin films with surfactant are compared with those of surfactant-free CuO thin films. XRD experiments evidenced that PEG considerably modifies the crystallite size of the films. The CuO thin films prepared with surfactants exhibited different morphologies. The effect of PEG concentration on the transmission and optical band gap (Eg) was also studied by UV–Vis spectroscopy. From the UV–Vis spectra of the films, it was seen that both the optical band gap and transmission properties of the films change with increasing PEG concentration in the growth solution.

Keywords: Copper oxide, thin films, SILAR, surfactant, polyethylene glycol (PEG), optical properties.

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➢ ORAL PRESENTATION

Evaluating of Drought Tolerance Level in Backcross Mutant Wheat Progenies Using Stress Related Biomarkers

Ayse Sen[1*], Irfan Ozturk[2]

[1] Department of Biology, Faculty of Science, Istanbul University, 34134, Vezneciler, Istanbul, Turkey
[2] Trakya Directorate of the Institute of Agricultural Research, 22100, Edirne, Turkey.

[*]Corresponding author E-mail: senayse@istanbul.edu.tr

Abstract

Drought is among the major abiotic stresses affecting crop yield. Effective stress related biomarkers are needed to select and implement in breeding programme for screening of drought tolerant genotypes. In the present study was conducted to evaluate drought tolerance capacity in backcross mutant progenies. A mapping population of 105 backcross mutant lines developed from reciprocal cross between Sagittario and M_6 Sagittario derived drought tolerant mutant(s). Seeds were germinated and growth under control and drought stress (induced with 20% polyethylen glycol (PEG) 6000) conditions in *in vitro* culture environment. The drought performance of segregated population were evaluated to measure stress related biochemical (chlorophyll, superoxide dismutase, guaiacol peroxidase and malondialdehyde) and physiological (seedling length, fresh weight, dry weight and drought tolerance index) markers. Principle Component Analysis (PCA) as an advanced statistical analysis was used to categorize mutant backcross progenies according to obtained results. The chosen biomarker(s) as the effective tool for screening drought tolerance in this study would be implemented in the stress related wheat-breeding programme.

Keywords: Drought stress, Backcross mutant progenies, Biomarkers, *In vitro* screening technique.

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➢ ORAL PRESENTATION

Fermented Beverage Wine: Importance in Human Health of Phenolic and Inorganic Ingredients

Nilgün Kalaycıoğlu Özpozan, Zülal Taçar

Department of Chemistry, Faculty of Science, Kayseri, Erciyes University, Turkey

E-mail :nozpozan@gmail.com

Abstract

The antioxidant phenol-structured compounds in fermented beverages are important substances for human health. Antioxidant in wine and reaction of phenolic-structured compounds; reduce the risk of paralysis cause of preventing vascular stiffness formation, prevent the blood clot due to reduce the clot proteins formation, digestive system configurator, germicidal, prevent the cancer for many cancers types have a positive effect for human health. Therefore it is lead for all researches about this field. The phenol compounds with antioxidant are substances that influence chemistry of wine. Especially there are many factors that affect the wine quality. We are researching structure of the phenol component in fermented beverages for example potassium bicarbonate, potassium metabisulfite, potassium sorbate, sodium carbonate, sodium percarbonate, sodium metabisulfite. In recent years, characterization of analysis is easier due to the rapid development of chemistry and chromatographic methods. We study fermented beverages components and anthocyanin substances necessary for dealing with the research after doing some research on the trail of this components, increasing of the amount and inorganic substances that have different effective properties that are used in the production process.

We perform our experimental study with different wine samples. Two of them belong to 2014-2015 wine samples.; we analyzed total antioxidant and total phenol, for each year we produced organic and nonorganic grape. It is considered that the studies related to the positive and negative effects of the wine on the health and the chemistry and the examination of effects of the inorganic substances, will contribute to the related studies in the literature [1,2].

KeywordS: phenol components, antioxidant, wine.

Acknowledgments: We acknowledge the financial support granted by Erciyes University (ERUBAP), (FYL-2017-7446)

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➢ ORAL PRESENTATION

How do the ascending doses of acrylamide affect Clone 9 Hepatocyte cells?

Sedat Kacar[1*], Erhan Sahin[1], N. Ezgi Bektur[1], Varol Sahinturk[1]

[*1]Eskisehir Osmangazi University, Faculty of Medicine, Department of Histology and Embryology, Eskisehir, Turkey.

skacar@ogu.edu.tr

Abstract

Acrylamide is a chemical substance, which can be readily dissolved in many solvents such as water and ethanol. It is used in several industrial sectors and also forms in high-temperature processed foods. Initially found to be sole neurotoxic, acrylamide was subsequently revealed to be toxic to other organs. In this study, we sought to ascertain the effect of acrylamide on a healthy hepatocyte cell line (Clone 9) in terms of cytotoxicity and immunocytochemical staining.

The cells were grown at 37°C in an incubator containing 5% CO_2 in ready-to-use medium with 10% fetal bovine serum and 1% penicillin-streptomycin throughout the experiment. The cells were detached by trypsin-EDTA treatment. First, the toxic effect of acrylamide on Clone 9 cells for 24 hours was analyzed by MTT colorimetric test, by which IC_{50}, IC_{75} and IC_{90} doses of acrylamide (inhibition concentrations) were determined. Then, the cells were seeded and cultured on 6-well plates and IC_{50}, IC_{75} and IC_{90} doses of acrylamide were applied. After 24 hours, cells were stained with hematoxylin-eosin and immunocytochemistry was performed for PCNA, caspase 3 and Bcl-2 proteins.

As a result of the MTT test; the IC_{50}, IC_{75} and IC_{90} concentrations of acrylamide were found as 5.44, 9.68 and 12.99 mM, respectively. In the microscopic examination, it was detected that acrylamide lead to the apoptotic bodies, cell shrinkage, cellular vacuolization, crescent-shaped nucleus and nuclear fragmentation and condensation in a dose-dependent manner. In immunocytochemistry, while caspase 3 staining showed an increase both in cytoplasm and nucleus, PCNA and Bcl-2 staining showed a decrease in acrylamide groups when compared to untreated group.

In conclusion, we herein presented the IC values of acrylamide for the Clone 9 cells and showed apoptotic and proliferating protein alterations following acrylamide treatment. We think that these IC values might be a reference for future studies.

Keywords: Acrylamide, immunocytochemistry, MTT, inhibition concentration.

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➢ **ORAL PRESENTATION**

Su Ürünlerinde Tazeliğin İzlenmesinde Laktik Asit Bakteri Bazlı pH İndikatörlerinin Geliştirilmesi

Göknur Sürengil*, Fatma Öztürk

İzmir Katip Çelebi Üniversitesi, Su Ürünleri Fakültesi, Avlama ve İşleme Teknolojisi Bölümü, İzmir, Türkiye

Sorumlu yazar e-mail: goknursurengil@gmail.com

Özet

Son yıllarda yenilikçi gelişmelerden biri olan akıllı ambalajlar, gıdanın kalitesi ve güvenliği hakkında bilgi veren ve gıdanın depolama şartlarını izleyen sistemlerdir. Akıllı ambalaj uygulamasının en bilinen örneklerinden biri olan Zaman Sıcaklık İndikatörleri (Time Temperature Indicator / TTI) ürünün, tüketiciye ulaşıncaya kadar depolanma şartlarını gösteren ambalaj aksesuarlarıdır. Zaman-Sıcaklık İndikatör etiketleri, farklı ambalajlama teknikleri ile paketlenmiş çabuk bozulabilir gıdalarda mikrobiyal üreme ve ambalaj içerisindeki gaz oluşumunu gözetleyip gıdanın kalite durumu hakkında bilgi verirler. Depolama ve dağıtım süresince sıcaklık değişimlerini ya da ambalaj içerisindeki gaz kompozisyonunun değişimini izleyerek gıdanın raf ömrünün doğruluğunu, kalitesini ve güvenliğini kontrol eden birçok indikatör çeşidi vardır. Bu indikatörler; pH değişimi ve CO_2, SO_2, NH_4, uçucu aminler, organik asitler gibi metabolit artıkların tespiti için kullanılır. pH indikatörlerinde kullanılan pH boyaları ile açığa çıkan metabolitlerin reaksiyonu sonucu renk değiştiren indikatör etiketler üretilerek ürün güvenliği kolaylıkla izlenebilmektedir. Çalışmamızda, asidik şartlarda pH değişimine duyarlı indikatörler olan bromfenol mavisi ve bromkrezol yeşili ile *Lactobacillus bulgaricus* kullanılarak pH indikatörü yapılmıştır. Ardından pH indikatör etiketleri, marine edilmiş hamsilerde kullanılmış ve meydana gelen renk değişimleri değerlendirilmiştir. Bromfenol mavi ve bromkrezol yeşil indikatörlerin renk ölçümlerinde en yüksek absorpsiyon piklerinin, boyada (mavi-yeşil renkte) 450 nm iken, LAB ile hazırlanan TTI prototipte (sarı renkte) 650 nm'ye kaydığı görülmüştür. İndikatör boyalarda, laktik asit bakterisinin konsantrasyonuna bağlı olarak pH değişimiyle birlikte farklı renk aralıkları tespit edilmiştir. Yapmış olduğumuz bu çalışma ile gıdaların depolanması sırasında, laktik asit bakteri artışıyla birlikte meydana gelen kimyasal değişimlere bağlı olarak kalitesinin tespit edilebileceği belirlenmiş olup, ürün taze iken mavi, bozulduğu anda sarıya dönen kolorimetrik pH indikatörü üretilmiştir.

Anahtar Kelimeler: zaman sıcaklık indikatörü (TTI), kolorimetrik, pH indikatörü, su ürünleri, laktik asit bakterisi

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➢ **ORAL PRESENTATION**

Removal of Zinc Oxide Nanoparticle (ZnONP) by the *Azolla filiculoides*

Şeyda Fikirdeşici Ergen

Ankara University, Faculty of Science, Department of Biology, Ankara, Tukey.

seydafikirdesici@gmail.com

Abstract

Azolla filiculoides is an aquatic macrophyte that has been earmarked for its hyperaccumulation ability. This study was conducted under laboratory conditions to assess the ability of *A. filiculoides* for the removal of ZnO NP through rhizofiltration. *A. filiculoides* was exposed to prepared solutions of ZnO NP of 0.4 ppm, 1.2 ppm and 3.6 ppm. The control groups (0 ppm) also performed in the same conditions. Experiments were carried out for 7 days. Removal percentages of ZnO NP 87.5%, 81.6%, 75.0% were recorded in 0.4 ppm, 1.2 ppm, and 3.6 ppm treatments respectively. Plant growth was measured in terms of relative growth of the treated plants as compared to the corresponding control. In the presence of ZnO NP (0.4, 1.2 and 3.6 ppm) the growth of *A. filiculoides* was inhibited by 10%, 23.7% and 27.7% respectively compared to the corresponding controls. There was found statistically significant differences between removal concentrations ($p<0.001$).

Keywords: Remediation, removal percentage, growth inhibition

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➢ ORAL PRESENTATION

Investigation of the Effects of Paclitaxel on Cell Viability and Glutathione-S-Transferase Enzyme Activities in Various Cell Lines

Melih Dagdeviren[1*], N. Ulku Karabay-Yavasoglu[2]

[*1]Ege University, Faculty of Science, Department of Biology, Izmir, Turkey.
[2]Ege University, Center for Drug Research and Development and Pharmacokinetic Applications, Izmir, Turkey.

Corresponding author e-mail: melih.dagdeviren@ege.edu.tr

Abstract

The aim of this study was to investigate the effects of paclitaxel (PTX) on glutathione-s-transferase (GST) activities of A549 and HEK293 cell lines. Cells were seeded at 10000 per cm2 on 96 well microplates. The vehicle DMSO was applied as control while PTX were applied with doses of 1,25-2,50-5,00-10,00 µg/ml concentrations. Cells were incubated for 24, 48, and 72 hours. Cell viability was tested with WST-1 reaction; protein concentration determination and GST activities were run with ELISA plate reader. Percent cell viability was significantly decreased for A549 cells with 2,5-5,00-10,00 µg/ml doses for all incubation times. Also, percent cell viability was significantly decreased for HEK293 cells with 2,5-5,00-10,00 µg/ml doses for all incubation times but an extra 1,25 µg/ml dose was affected HEK293 for 72-hour duration. An intriguing result was obtained from GST activity assays. GST activities were decreased for A549 cells significantly for 2,5-5,00-10,00 µg/ml doses for all incubation times. While for HEK293 cells GST activities were increased significantly for 2,5-5,00-10,00 µg/ml doses for all incubation times. There was an opposite reaction type for GST with a cancer cell line (A549) and a healthy cell line (HEK293) after PTX application. This may change the cancer treatment strategies.

Keywords: Paclitaxel, A549, HEK293, GST, Toxicity

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➢ ORAL PRESENTATION

Aynı Doz Karanfil Yağının (Eugenol) Farklı Büyüklükteki Levrek Balıklarında (*Dicentrarchus labrax*) Anestezik Etkileri

Sevim, Hamzaçebi*, Ramazan Serezli, Bahadır Uğural

İzmir Kâtip Çelebi Üniversitesi, Su Ürünleri Fakültesi, Yetiştiricilik Bölümü İzmir, Türkiye

sevim.hamzacebi@ikc.edu.tr

Özet

Anestezi ve sedasyon balık yetiştiriciliğinde oldukça önemlidir. Yetiştiricilikle uğraşanlar balık üretiminin farklı aşamalarında, balıkları anestezi etmek veya sedasyona maruz bırakmak zorunda kalabilmektedirler. Günümüzde anestezi ve sedasyon amacıyla kullanılan birçok kimyasal bulunmakla birlikte, üreticiler kullanım izni olan güvenilir anestezikleri kullanma ihtiyacı duymaktadırlar. Bu amaçla son zamanlarda bitkisel kökenli ürünler tercih edilmeye başlanmıştır. Daha önce yapılan çalışmalarda kullanılan anestezik maddelerin balık türü ve büyüklüğüne göre farklı dozlarda etki gösterdiği ortaya konulmuştur. Anesteziklerin etkinliği ve dozlarının belirlemesinde standart kriterler mevcuttur. Yapılan bu çalışmada bu kriterler göz önünde bulundurularak doz belirlenmiştir. Çalışma farklı iki büyüklük grubunda yürütülmüş olup levrek (*D.labrax*) balıkları aynı dozdaki karanfil yağı ile anestezi edilmiştir. Anestezi safhalarına geçiş süreleri ve ayılma süreleri belirlenmiş ve aralarındaki farklılıklar istatiksel olarak ortaya konulmuştur.

Bu çalışmada uygulanan 50 mg/L dozdaki karanfil yağı ile küçük levrek balıkları (68,6±2,45 g, 16,9±0,19 cm) tam anesteziye 166,8±17,68 saniyede girmiş, 98,3±7,86 saniyede normale dönmüş, büyük levrek balıkları ise (251,1±10,15 g, 25,5±0,42 cm) 93,75±9,48 saniyede tam anesteziye girip 238,3±19,82 saniyede normale dönmüştür. Sonuç olarak küçük balıkların tam anesteziye daha uzun sürede girip daha kısa sürede normale döndüğü, büyük balıkların ise daha kısa sürede tam anesteziye girip daha uzun sürede normale döndüğü tespit edilmiştir ($P<0,05$).

Anahtar Kelimeler: Anestezi, Eugenol, Karanfil yağı, Levrek balığı, Sea bass,

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➢ **ORAL PRESENTATION**

Cytotoxic Activity of the Isolated Compounds from *Fuscoporia torulosa*

Ebru Deveci[1*], Gülsen Tel-Çayan[2], Mehmet Emin Duru[1], Selçuk Küçükaydın[2], Mehmet Öztürk[1], Muhammad Iqbal Choudhary[3]

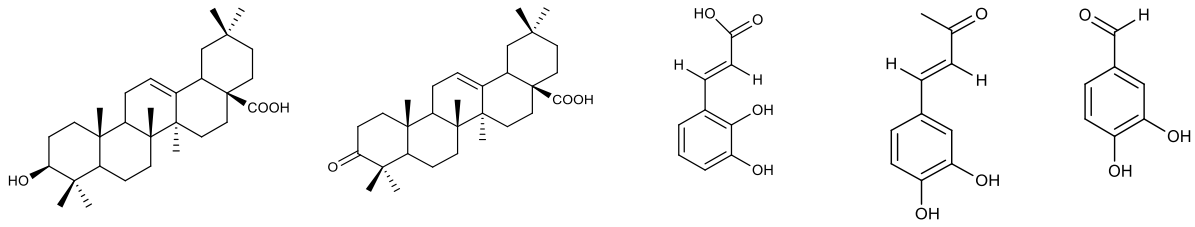
[*1]Muğla Sıtkı Kocman University, Faculty of Science, Department of Chemistry, 48121 Muğla, TURKEY
[2]Muğla Sıtkı Kocman University, Muğla Vocational School, Department of Chemistry and Chemical Processing Technologies, 48121 Muğla, TURKEY
[3]H.E.J Research Institute of Chemistry, ICCBS, University of Karachi, Karachi 75270, Pakistan

ezengin@mu.edu.tr

Abstract

Today, cancer is the leading cause of death. In 2022, 14 million people worldwide are expected to die from cancer [1]. Tobacco, diet and obesity, infections, radiation, stress, lack of physical activity, environmental pollutants and genetic factors cause the cancer [2]. There are many treatment methods such as surgery, chemotherapy, radiation therapy and palliative care used in cancer treatment, but these methods have harmful side effects [3]. For these reasons, studies are being carried out on obtaining more effective and reliable agents from natural sources in the treatment of cancer disease.

In this study, oleanolic acid (**1**), oleanonic acid (**2**), 2,3-dihydroxy cinnamic acid (**3**), 4-(3,4-dihydroxyphenyl)but-3-en-2-one (**4**), 3,4-dihydroxy benzaldehyde (**5**) were isolated from *Fuscoporia torulosa* mushroom and cytotoxic activity of the compounds against breast cancer (MCF-7 cells) were tested. MTT cytotoxicity assay was carried out to determine cytotoxic activity. Cytotoxic activity of the compounds against MCF-7 cells were decreased in the order of oleanonic acid (IC_{50}: 8.90±0.27 µg/mL)>2,3-dihydroxy cinnamic acid (IC_{50}: 17,05±0,54 µg/mL)>oleanolic acid (IC_{50}: 42.60±0.25µg/mL)>3,4-dihydroxy benzaldehyde (IC_{50}: 53.46±0.48 µg/mL)>4-(3,4-dihydroxyphenyl)but-3-en-2-one (IC_{50}: 61.78±0.14µg/mL).



1 **2** **3** **4** **5**

Fig 1. Chemical structure of the isolated compounds from *F. torulosa*

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Keywords: *Fuscoporia torulosa*, isolation, cytotoxic activity, breast cancer (MCF-7)

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➢ ORAL PRESENTATION

Ratlarda Bor ve Hyaluronik Asitin Osteokondral Defekt Onarımı ve Oksidatif Stres Üzerine Etkisinin Karşılaştırılması

Musa Korkmaz[1], Ruhi Türkmen[2], Hasan Hüseyin Demirel[3], Zülfükar Kadir Saritaş[1]

[1]Afyon Kocatepe Üniversitesi, Veteriner Fakültesi, Cerrahi Anabilim Dalı, Afyonkarahisar,Türkiye
[2]Afyon Kocatepe Üniversitesi, Veteriner Fakültesi, Farmakoloji ve Toksikoloji Anabilim Dalı, Afyonkarahisar,Türkiye
[3]Afyon Kocatepe Üniversitesi, Bayat Meslek Yüksekokulu, Afyonkarahisar, Türkiye

Sorumlu yazar: ruhiturkmen@aku.edu.tr

Özet

Bu çalışmanın amacı, borun ostekondral defekt iyileşmesi ve aynı zamanda hem kıkırdak dokusu hem de kanda bazı antioksidan ve oksidan parametreler üzerine olan etkisinin araştırılmasıdır. Çalışmada ağırlıkları 350-400 gr arasında değişen toplam 24 adet erişkin erkek Wistar rat kullanıldı. Hayvanlar kontrol grubu (n=8), bor grubu (n=8) ve hyaluronik asit (HA) grubu (n=8) olmak üzere rastgele üç eşit gruba ayrıldı. Genel anestezi altında, ratların femur kondilusunun eklem yüzeyinin ön tarafında dril yardımıyla 1,5 mm çapında ve 2 mm derinliğinde silindirik tam kat bir osteokondral defekt oluşturuldu. Bor grubunda bulunan ratlara 0,1 ml (10 mg/kg) bor, HA grubunda bulunan ratlara 0,1 ml HA ve kontrol grubunda bulunan ratlara 0,1 ml serum fizyolojik haftada bir kez olmak üzere 4 kez intraartiküler olarak uygulandı. Üçüncü ayın sonunda hayvanlara ötenazi uygulandı ve kan ve eklem dokusu MDA, GSH, SOD ve katalaz düzeyleri ölçüldü. Aynı zamanda histopatalojik inceleme için ratların defektli femur kondilusları osteokondral defekti içine alacak şekilde çıkartıldı. Histopatolojik olarak HA grubu total kıkırdak iyileşme skorunun bor ve kontrol gruplarına göre daha iyi olduğu gözlendi. Bor ve HA gruplarında kan ve eklem kıkırdağı GSH, SOD ve katalaz düzeyleri kontol grubuna göre yüksek bulunurken MDA seviyesi kontrol grubuna göre daha düşük bulundu. Sonuç olarak borun osteokondral defetk iyileşmesinde HA kadar etkili olmadığı ancak antioksidant özelliğinin HA'ten daha üstün olduğu söylenebilir.

Anahtar Kelimeler: Antioksidan, bor, eklem kıkırdağı, hyaluronik asit, osteokondral defekt

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➢ ORAL PRESENTATION

An Investigation on Heavy Metal (Pb, Zn, Cu, Ni, and Cd) Accumulation in Leaves of *Robinia Pseudoacacia* L. "Umbraculifera" Arising from Motor Vehicle

Hasan Karakeçi[1], Ömer Faruk Kaya[2], Hatice Tosyagülü Çelik[*]

[1] Provincial Directorate of Health, Şanlıurfa, Turkey
[2]Harran University, Faculty of Arts and Sciences, Department of Biology, Şanlıurfa, Turkey
[*]Ardahan University, Ardahan Vocational School of Health Services, Department of Medical Documentation and Secretary Training, Ardahan, Turkey

Corresponding author e-mail: hhaticecelik@gmail.com

Abstract

With this study, it was aimed to determine the level of heavy metal pollution caused by motor vehicles in the city center of Şanlıurfa province by means of Robinia pseudoacacia L. "Umbraculifera". 60 leaves sample from 5 stations were read out by ICP optical emission spectrometry devices and the quantities of Pb, Zn, Cu, Ni and Cd heavy metals were determined. "Tukey Test" was applied to determine the difference in the confidence interval of 99% of the heavy metals which are important according to the obtained variance table from the analysis. When the variance analysis table of Pb, Zn, Cu elements were examined, the probability of each of the three is $p < 0.01$ according to the season, station and season * station factors, so statistically the averages were found to be significantly different from each other. When the variance analysis for Ni element was examined, the probability of it was found as $p < 0.01$ according to the season and station factor, so statistically the averages of Ni for two factors are significantly different from each other, but when compared to the season * station factor p value was found bigger than 0,05 so there is no significantly difference between the average values. All of the sample results for Cd were <0.5 mg / kg and it was determined that statistical analysis was not statistically significant. Heavy metal accumulation of Pb and Cu averages range among the seasons as Spring < Summer < Fall, for Zn and Ni averages it is ranged as Spring ~ Summer < Fall. In general, it has been observed that the accumulation of heavy metal increases with time. While the levels of Pb, Zn, Cu, Ni increased depending upon the traffic intensity and time, level of Cd accumulation had no sign of increasing, so no certain relationship was determined depending upon the time.

Keywords: Heavy Metal, *Robinia pseudoacacia* L. . "Umbraculifera", Şanlıurfa, Turkey

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➢ **ORAL PRESENTATION**

Agomelatinin Mesane Düz Kas Kasılma Gevşeme Mekanizması Üzerine Etkinliğinin İncelenmesi

E. Kaçar

Fırat Üniversitesi Tıp Fakültesi Fizyoloji A.D. Elazığ, Türkiye

Abstract

Agomelatin, pineal bezde üretilen melatonin hormonun analoğu olan yeni bir antidepresandır ve bugüne kadar tanımlanmış en iyi sentetik melatonerjik ilaç olarak olarak gösterilmektedir. Melatonin özellikle sirkadiyen ritmin düzenlenmesinde görev almasının yanısıra birçok sistem üzerinde önemli fonksiyonlara sahip bir hormondur. Bu nedenle analoğu olan agomelatininde benzer etkilere sahip olabileceği olasıdır. Melatoninin mesane aktivitesini ve basıncını azalttığı bilinmektedir. Bu veriler ışığında bizde çalışmamızda bir melotonin türevi olan agomelatinin mesane kasılma-gevşeme mekanizması üzerindeki olası etkinliğini incelemeyi amaçladık.

Çalışmada Wistar-albino (n=7) cinsi intak dişi sıçanlardan alınan mesane dokuları kullanıldı. Dekapitasyonu takiben alınan 8mm uzunluğunda 2mm genişliğinde, 1 mm kalınlıkta longitudinal mesane dokuları içerisinde Krebs-Ringer bikarbonat solüsyonu bulunan 5ml'lik izole organ banyosuna 1.5 gr gerim uygulanarak asıldı. 10 µM dozda Asetilkolin (Ach) ile mesane kontraksiyonları indüklendikten sonra Agomelatin üç ayrı doz 100µM, 200µM ve 1000µM olacak şekilde nonkümülatif olarak uygulandı. Kasılmaların agomelatin uygulamadan önce ve uygulandıktan sonraki area ve p-p değerleri analiz edildi. Analiz sonucu elde edilen veriler SPSS programında eşleştirilmiş T testi kullanılarak değerlendirildi.

Ach ile indüklenen mesane kontraksiyonlarının area ve p-p değerleri %100 olarak kabul edildi ve uygulanan agomelatin sonrasındaki area değerleri bununla kıyaslandığında agomelatin 100µM dozda mesane area değerlerinde %32 ($P<0.05$), 200µM dozda %40 ($P<0.05$) ve 1000µM dozda %82 ($P<0.01$), inhibisyona yol açmıştır. p-p değerlerinde ise 100µM dozda %33 ($P<0.05$), 200µM dozda %28 ($P<0.05$) ve 1000µM dozda %79 inhibisyon tespit edildi. Her üç dozdada elde edilen bulgular p-p ve area değerleri için istatiksel olarak anlamlı idi

Bir melatonin türevi olan ve antidepresan olarak kullanılan agomelatin mesane kontraksiyonları (p-p ve area) üzerinde inhibitör etkiye sahiptir ve en güçlü inhibitör etki 1000 µM dozda gözlenmiştir.

Keywords: Agomelatin, düz kas, mesane, kasılma

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➢ **ORAL PRESENTATION**

Effects of anti-TNF-α Treatment on Inflammatory Profile in Psoriasis

Hülya Birinci[1,3*], Gülsüm Gençoğlan[2], H. Seda Vatansever[3,4]

[*1]Gaziantep University, Faculty of Medicine, Department of Histology&Embryology, Gaziantep, Turkey
Manisa Celal Bayar University, Faculty of Medicine, [2]Department of Dermatology,
[3]Department of Histology&Embryology, Manisa, Turkey
[4] Near East University, ExperimentalHealthSciencesResearch Center, Mersin, Turkey

hulya_brnc89@hotmail.com

Özet

Psoriasis is chronic inflammatory skin disease characterized epidermal hyperproliferation, parakeratosis, abnormal differentiation of keratinocytes, increased production of cytokines and infiltration of T lymphocytes to dermis and epidermis. Skin lesions arelocalized or generalized, mostly localized trauma site of the extremities, well demarcated, red papules and plaques, and usually covered with white or silver scales. Lesions cause itching, stinging.Psoriasisaffects people of all ages. It is reported that there are at least 100 million of individuals affected by psoriasis worldwide. It's etiology and pathogenesis are not completely defined yet. In this study, we aimed to investigate the proinflammatory/anti-inflammatory profile of psoriasis. For this purpose, skin samples of normal individuals (n=6, control group), non-treated psoriasis patients (n=12, from lesional and perilesional regions, Non-T group) and anti-TNF-α treated psoriasis patients (n=6, from lesional region, treated group) were taken by skin punch biopsy. TNF-α, IFN-ɣRα, IL-1β, MCP-1, IL-10, eNOS, iNOS and Sema3A antibodies were used for immunohistochemical analysis and their expressions were evaluated by h-SCORE technique. According to results, the expressions of TNF-α and IFN- ɣRα were decreased in lesional and perilesional regions of Non-T group compared to control and treated groups. While the expression of IL-1β was increased in lesional and perilesional regions of Non-T group compared to control, it was similar in treated and controlgroups. MCP-1 levels didn't differ between groups. IL-10 and Sema3A expressions were decreased in lesional and perilesional regions of Non-T group compared to control and treated groups. eNOS and iNOS levels were decreased in epidermal regions and didn't differ in dermal regions of lesional and perilesional regions of Non-T group compared to other groups. As a conclusion, more studies are required for the full understanding of the inflammatory responses of psoriasis for potential effective treatment strategies.

Anahtar Kelimeler: inflammation, psoriasis, skin lesions, TNF- α

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➢ **ORAL PRESENTATION**

Absence of Association Between Schizophrenia and Two Polymorphisms in The *Aph1b* Gene

M. Mert SÖZEN[1*] and Şükrü KARTALCI[2]

[1*]İnonu University, Faculty of Science and Literature, Department of Molecular Biology and Genetics, Malatya, TURKEY.
[2]İnonu University, Faculty of Medicine, Department of Psychiatry, Malatya, TURKEY.,

Corresponding author e-mail: mert.sozen@inonu.edu.tr

Abstract

Schizophrenia is a complex and multifactorial mental disorder. Multiple susceptibility genes contribute to the development of schizophrenia. A number of candidate genes have been found associated with the disease. Protein products of several genes associated with schizophrenia play major roles in development of specific brain circuitries.
Aph-1b gene is also implicated as a genetic risk factor for schizophrenia. Two SNPs (rs117618017 and rs1047552) in ***Aph-1b*** gene among several other polymorphisms in various genes were suggested to be associated with schizophrenia in a previous study. The paper mentioned above reports targeted exon sequencing of the genes whose products are components of NRG1 signaling pathway in a **case only study**.
In our project, we have done a **case - control study**. We have screened a larger patient group and a control group in similar sample size. We have tested the presence of any single SNP or haplotype associations between those two ***Aph-1b*** SNPs and development of schizophrenia.
Our case and control groups were consisted of 300 unrelated schizophrenia patients and 300 control samples collected from Malatya-Turkey. Two groups were compared for distributions of alleles and genotypes. We have also compared distributions of estimated haplotypes to test their association with schizophrenia in our population.
According to the results statistical tests, there was no significant difference between our case and control groups for distributions of alleles or genotypes of the SNPs we have screened. Distributions of two-SNP haplotypes were not significantly different between two groups either.

Keywords: Genetic Association, Schizophrenia, Turkish Population, Aph1B, rs117618017, rs1047552.

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➢ ORAL PRESENTATION

Determination of Aerobic Fitness levels on O_2 Uptake to Heart Rate Ratio During an Incremental Exercise Test in Young Male Subjects

Çağrı Özdenk[1,2], Oğuz Özçelik[1]

[1]Department of Physiology Faculty of Medicine, Firat University Turkey
[2]High School of Physical Education and Sport, Bayburt University, Turkey

Abstract

The O_2 uptake (VO_2) to heart rate ratio, which is called as O_2 pulse is generally considered a reflection of cardiovascular efficiency during maximal exercise. VO_2 is the product of cardiac output and the differences of arterio-venous O_2 content, and O_2 pulse reflects the oxygen consumed for each heartbeat. Anaerobic threshold (AT) that define metabolic transition point from aerobic to anaerobic metabolism, and maximal exercise performance (Wmax) are two important points to evaluate subjects' fitness status. The purpose of this investigation was to investigate importance of O_2 pulse at the AT and at Wmax and reveal its relation with fitness levels of the subjects. Total of 25 male subjects (age: 20.6±0.4 yr; weight: 72.9±1.6 kg; height: 179±1.8 cm) performed an incremental exercise (15 W/min) from baseline to exhaustion on an electromagnetically-cycle ergometer. The ethical approvement has been obtained before study. Pulmonary gas exchange parameter was measured breath-by-breath using a metabolic gas analyzer. At was estimated by using V-slope method. Aerobic fitness level was determined from maximal VO_2 for each kg of body weight. A linear regression analysis was used to evaluate fitness and O_2 pulse. The maximal O_2 uptake for body weight ranged minimum value of 27.35 ml/min/kg and maximum value of 49.07 ml/min/kg (averaged 40.51±1.1 ml/min/kg). Heart rate at Wmax was 185±1.7 beat/min. O_2 pulse was found to be 13.93±0.3 ml/beat at AT and 15.81±0.4 ml/beat at Wmax. There is a significant correlation between O_2 pulse and aerobic fitness level at the AT ($R = 0.43142$, $p=0.03$) and at Wmax ($R = 0.61572$; $p = 0.001$). Consequently, O_2 pulse values at the AT and Wmax showed a significant positive correlation with increased aerobic strength status and it can be used as a decision marker for evaluation of fitness level.

Key words: O2 uptake, exercise, Anaerobic threshold,fitness

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➢ **ORAL PRESENTATION**

Polisakkarit Bazlı Çekirdek-Kabuk (Core-Shell) Kompozit Hidrojeller

Büşra Bodur[1*], Özlem Doğan[2]

[*1] Yıldız Teknik Üniversitesi, Kimya-Metalurji Fakültesi, Kimya Mühendisliği, İstanbul, Türkiye
[2] Yıldız Teknik Üniversitesi, Kimya-Metalurji Fakültesi, Kimya Mühendisliği, İstanbul, Türkiye

Sorumlu yazar e-mail: busra_bdr@yahoo.com

Özet

Son yıllarda tedavi edici oranda ilaç düzeyinin sürekli korunması, salımın belirli hücre tipi ya da dokuya hedeflenebilmesi amacıyla kontrollü ilaç salım sistemleri üzerine pek çok çalışma yapılmaktadır. Tedavi için gerek duyulan ilaç miktarının azaltılabilmesi bu sistemin avantajlarından biridir. Dış çevrede meydana gelen pH, sıcaklık, iyonik şiddet, çözücü bileşimi, elektrik alan, manyetik alan değişimlerine karşı şişme ya da büzüşme tepkimesi verebilen hidrojellerin şişme kontrollü salım sistemlerinde taşıyıcı olarak kullanımları yıllardır araştırılmaktadır. Hidrojelin üzerine veya içerisine fiziksel tutuklama, elektrostatik etkileşimler, fiziksel adsorpsiyon ve kimyasal bağlanma gibi birçok yöntem ile immobilize edilen ilaç çevredeki pH ya da sıcaklık değişimine cevap olarak şişer ya da büzüşür ve salım işlemi gerçekleşir. İstenilen özellikteki hidrojel ilaç taşıyıcı sistemler, monomer, çapraz bağlayıcı türü ve miktarı değiştirilerek elde edilebilir.
Yüksek biyouyumluluğu, düşük toksisite göstermesi, ekonomik olması ve $Ca^{2+,}$ Mg^{2+}, Ba^{2+} gibi katyonlar varlığında basit jelleşme özelliği ile polisakkarit bazlı doğal polimerler arasında yer alan sodyum-aljinat ve kappa-kerajin, ilaç taşıyıcı sistemlerde geniş kullanım alanına sahiptir. Bu çalışmada kontrollü salım sistemlerinde kullanılmak üzere sodyum-aljinat/kappa-kerajin kompozit hidrojel küreler klasik yöntem ve çekirdek-kabuk (core-shell) yöntemi kullanılarak katkısız ve nano boyutta katkı maddesi ilave edilerek sentezlenmiştir. Nano boyuttaki katkı maddesi olarak hidroksiapatit ($Ca_{10}(PO_4)_6OH_2$) kullanılmıştır. Kompozit hidrojel küreler hazırlamak için belirlenen oranlarda sodyum-aljinat ve kappa-kerajin içeren polimer çözeltileri karıştırılarak homojen bir karışım elde edilmiştir. Bu karışım persitaltik pompa yardımıyla belirli bir hızda $CaCl_2$/KCl tuz çözeltisine eklenerek fiziksel olarak suda çözünmeyen çapraz bağlı hidrojel küreler sentezlenmiştir. İki basamaklı olarak gerçekleştirilen çekirdek-kabuk yönteminde ise; çapraz bağlı olarak elde edilen hidrojel küreler çekirdek olarak kullanılmıştır. Çekirdek kürelerin üzeri tekrar polimer çözeltisi ile kaplanmış ve sonrasında çapraz uysa işlemi yine $CaCl_2$/KCl tuz çözeltisi içerisinde yapılmıştır. Hidrojel kürelerin şişme karakteristiklerine hidrojel yapısının, katkı maddesinin ve ortam pH'ının etkisinin incelendiği deneylerde, şişme testleri saf su, pH 1,2 ve pH 7,4 ortamlarında gerçekleştirilmiştir.
Kompozit hidrojeller Fourier Transform Infrared Spektroskopisi (FT-IR) ve Taramalı Elektron Mikroskopisi (SEM) ile karakterize edilmiştir.

Anahtar Kelimeler: Kompozit hidrojel, çekirdek-kabuk (core-shell), kontrollü salım, sodyum-aljinat, kappa-kerajin.

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➢ **ORAL PRESENTATION**

Türkiye'deki *Juniperus excelsa* M. Bieb. (Boylu Ardıç) Popülasyonlarının Genetik Çeşitliliklerinin ITAP Belirteçleri Kullanılarak Değerlendirilmesi

Özay Hasan Evren*, Nuray Kaya

Akdeniz Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Antalya, Türkiye

*Sorumlu yazar e-mail: ozayevren86@gmail.com

Özet

Ardıç (*Juniperus* L.) popülasyonları Türkiye'deki toplam orman alanlarının %4.29'unu (1,113,085 hektar) kaplamaktadır. Ardıç ormanlarının %82'lik bir kısmını da *J. excelsa* M. Bieb. türü (Boylu ardıç/bozardıç) oluşturmaktadır. *J. excelsa* türü Türkiye ve komşu ülkelerinde yayılış göstermektedir. Bu çalışmanın temel amacı, *J. excelsa*'nın Türkiye'deki yayılış alanlarından ve marjinal popülasyonlarından geniş bir örneklemin ele alınarak, popülasyonların genetik çeşitliğinin belirlenmesi ve karşılaştırılmasıdır. Bu amaçla, dış gruplar (*J. polycarpos* K. Koch ve *J. foetidissima* Willd.) da dahil olmak üzere 21 popülasyondan 472 bitki örneği ITAP belirteçleri kullanılarak analiz edilmiştir. Yapılan moleküler incelemelerde sekiz adet ITAP primer çiftinden yararlanılmıştır. Analizler sonucu 134 ITAP lokusundan da 132'sinin polimorfik olduğu gözlenmiştir. *J. excelsa* popülasyonlarında polimorfizm yüzdesi 31.34 ile 55.97 arasında değişmektedir. Çalışılan *J. excelsa* popülasyonlarının genetik çeşitlilik parametrelerinden Nei (1973)'nin genetik çeşitlilik değeri 1.076 ile 1.281 arasında ve Shannon bilgi indeksi değeri de 0.051 ile 0.166 arasında değişmektedir. Genetik çeşitliliği en az olan popülasyon Denizli-Acıpayam ve en yüksek olan popülasyon ise Ankara-Beypazarı olmuştur. Populasyonlar arasındaki farklılaşmanın gösterge değeri (Gst) ve gen akışı değeri (Nm) sırasıyla 0.225 ve 1.728'dir. Populasyonlar arasındaki Nei (1972)'nin genetik uzaklık değeri 0.010 (Antalya-Termessos ile Muğla-Seydikemer) ile 0.110 (Konya-Hadim ile Isparta-Senirkent) arasında değişmektedir. Ayrıca, Pair-wise Fst değerlerinin 0.025 (Antalya-Termessos ile Muğla-Seydikemer) ile 0.582 (Isparta-Senirkent ile Denizli-Acıpayam) arasında olduğu bulunmuştur. Yapılan AMOVA analizi sonuçları, genetik varyasyonun %79'unun popülasyon içinden kaynaklandığını göstermektedir. PCoA analizleri popülasyonlarda coğrafik olarak doğu ve batı ayrışmasının ipuçlarına işaret etmiştir. Mantel-testi bulguları da coğrafik uzaklığın genetik izolasyonla anlamlı bir istatistiksel ilişkisinin olmadığını göstermiştir. Yapılan Structure analizi sonuçlarına göre tüm popülasyonlar içerisinde iki grup olduğu bulunmuştur. Konya-Hadim ve Denizli-Acıpayam popülasyonlarında birinci gruptan bireylerin; Isparta-Senirkent, Antalya-Elmalı ve Sinop-Boyabat popülasyonlarında ise ikinci gruptan bireylerin hakim olduğu gözlenmiştir. Diğer popülasyonlar ise iki gruba ait bireylerin karışımı şeklindedir. Elde edilen sonuçlar, çalışılan *J. excelsa* popülasyonlarının genetik çeşitliliklerini koruduklarını ve gen havuzlarının erozyona uğramadığını göstermektedir.

Anahtar Kelimeler: Genetik çeşitlilik, genetik farklılaşma, ITAP, *J. excelsa*

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➢ **ORAL PRESENTATION**

The Effect of Monosodium Glutamate and Omega-3 Fatty Acids Consumption on Testicular Growth Factors During Adolescence

Gülce Naz YAZICI [1*], Seren Gülşen GÜRGEN [2]

1*. Erzincan University, Faculty of Medicine,
Department of Histology and Embryology, Erzincan, Turkey
2. Celal Bayar University, School of Vocational Health Service,
Department of Histology and Embryology, Manisa, Turkey

E-mail: gulcenazyazici.ank@gmail.com

Abstract

Monosodium glutamate (MSG) is the sodium salt of glutamic acid, one of the most abundant non-essential amino acids. Many studies have investigated that MSG has toxic effects in many organs as well as testis. The aim of this study was to investigate conceivable toxic effects of MSG and the protective effects of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) by PDGF-A, VEGF and VEGF-R immunohistochemical expression in the testes of adolescents.

Six adult male Wistar albino rats were used in each group. Group 1: Control, Group 2: MSG (4 mg/kg 1.3.5.7.9. days intraperitonal), Group 3: MSG+EPA applied group (MSG + 300 mg/kg for 9 days intraperitoneal), Group 4: MSG+DHA group (MSG + 300 mg/kg for 9 days intraperitoneal), Group 5: MSG-EPA+DHA group (MSG + 300 + 300 mg/kg for 9 days intraperitoneal). At the end of 9th day, testicular tissues were removed. The results of PDGF-A, VEGF and VEGF-R expression were evaluated by immunohistochemical method.

PDGF-A expression in the control group was moderate in seminiferous tubule and poorly observed in the MSG and MSG-DHA groups. In the MSG-EPA and MSG-EPA + DHA groups, reaction was weaker then control group. In control group VEGF staining was strong in spermatogonial cells at seminiferous tubules and blood vessels in the tunica propria. In MSG group immunostaining was observed weaker, MSG-DHA/MSG-EPA groups showed moderate expression and was strong in MSG-EPA+DHA group. In VEGF-R immunostaining strong reaction was observed throughout the seminiferous tubule in the control group, while weak involvement in the MSG group and other 3 groups were determined similar to control.

When the possible protective effect of Omega-3 fatty acids is evaluated; Although not significantly affecting PDGF-A release, it was observed that VEGF and VEGF-R release significantly affected, suggesting that both spermatogonial cell proliferation and testicular regeneration were preserved.

Key words: MSG, testis, PDGF-A, VEGF, VEGF-R

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➢ **ORAL PRESENTATION**

The Importance of Brain Magnetic Resonance Imaging in Motor Neuron Disease

Mukadder SUNAR[1*], Hasan YAŞAR[2], Ahmet YALÇIN[3]

[1]*.Erzincan University Faculty of Medicine, Department of Anatomy Erzincan / Turkey
[2]. Erzincan University Faculty of Medicine, Department of Neurology Erzincan / Turkey
[3]. Erzincan University Faculty of Medicine, Department of Radiology Erzincan / Turkey

E-mail: mukaddersunar@gmail.com

Abstract

Magnetic resonance imaging (MRI) is an imaging technique that allows to view high contrast resolution especially at soft tissue imaging. MRI images are obtained using a strong magnet and radio waves. Hydrogen nuclei in water which constitutes approximately 63 % of the human body, it is the source of the MR signal.

Magnetic resonance imaging (MRI) is a diagnostic method that does not use ionizing radiation and white-gray matter separation is better than other imaging methods, and allows the diagnosis of many diseases. Magnetic resonance imaging contributes to the evaluation and recognition of structural changes in individuals with some common complaints such as walking difficulty, speech difficulty and fatigue. A neurodegenerative disease; Amyotrophic lateral sclerosis (ALS) is an idiopathic disease of the human motor system that progresses with widespread upper and lower motor neuron degeneration and results in an average of three years after the onset of symptoms. In studies, degenerations in brain gray matter structures were detected by magnetic resonance imaging in ALS patients. Degenerations have also been observed in the white matter structures of the corticospinal tract and extramontoral pathways. In our study, degenerations were seen in the corticospinal tract and it was accepted as meaningful in terms of supporting the differential diagnosis. Magnetic resonance imaging in the brain is very important in terms of facilitating the emergence and definite recognition of structural changes occurring in ALS.

Key words: Magnetic resonance, brain, ALS

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➢ ORAL PRESENTATION

Paper Sheets Coated with Nanoemulsion Containing Olive (*OleaEuropaea L.*) Leaf Extract

Derya Akbaş, Francisca Navas Morales, Serpil Şahin,MecitHalil Öztop

[1] Middle East Technical University, Faculty of Engineering,Food Engineering Department, Ankara, Turkey

Correspondingauthor e-mail: uderya@metu.edu.tr

Abstract

Today, purchase decisions of consumers have changed to more natural, fresh-like, minimally processed and healthy foods. As a result of this, the demand for replacing synthetic preservatives with natural ones, like plant extracts, has increased in active packaging applications that are becoming widespread day by day. Owing to high phenolic content, olive (Oleaeuropaea L.) leaves exert important antioxidant and antimicrobial activities. Its natural phenolic compounds are sensitive to pH, light, oxygen, etc., thus preserving of them by using an effective method such as encapsulation is important. In this study, 6% (w/w) paper sheets infused with olive leaf extract containing nanoemulsions were prepared using ultrasonic (80 kHz, 100% power, 5 min) and high-pressure homogenization (20,000 rpm, 2 min) with Tween 80 use as an emulsifier. Mean particle sizes of nanoemulsions were measured to determine whether preparation method caused significant difference in terms of particle size of nanoemulsions or not. Prepared nanoemulsions were infused in 1.5 cm diameter paper disks by using dipping and ultrasound coating methods to prepare an active package model that would be used for antifungal tests. In order to analyze prepared nanoemulsions' antifungal activity, papers were tested against Penicillium*expansum* and *Aspergillus niger* by using the agar disk diffusion method.

Keywords: Nanoemulsions, olive leaf extract, active coating

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➢ **ORAL PRESENTATION**

Vücut Dışı Polimerik Biyomalzeme Yüzeylerine Atmosferik Plasma Kullanılarak Antimikrobiyal Özellik Kazandırılması

G. Arslan[1], F. Keven Karademir[2], F. Ayhan[1*]

Muğla Sıtkı Koçman University, Faculty of Science, Department of Chemistry, Biochemistry Division, Biochemistry&Biomaterials Research Laboratory[1], Vocational School of Health Services[2], Muğla, Turkey.

Sorumlu yazar e-mail: fayhan@mu.edu.tr

Özet

Tek kullanımlık kan torbaları içine alınan kan dondurulmadan en fazla 1 hafta dayanıklıdır. Kan torbalarının içinde antikoagülan olarak sadece sodyum sitrat bulunur. Dondurulduktan sonra çözülerek hastalara verilen kan vücut tarafından etkin şekilde değerlendirilememektedir. Dondurulmadan verilecek kanın hastanın iyileşme sürecine etkisinin daha büyük olacağı açıktır. Ticari olarak elde edilecek kan torbalarının biyouyumluluğunun arttırılması ve antibakteriyal özellik kazanımı için yüzey modifikasyonu gerçekleştirilecektir.

Bu amaçla, Medikal özellikli Polivinil klorürden (medical grade PVC) üretilmiş tek kullanımlık kan torbalarının kan ile temas halinde olan yüzey özelliklerinin değiştirilmesinde, sıklıkla kullanılan bir yöntem olan Atmosferik plasma (elektriksel boşalım, glow discharge) sistemi kullanılmıştır. Konvansiyonel kimyasal adsorbsiyon yöntemleri ile gelen safsızlıkların ve toksisite faktörlerinin azaltılması ve yüzey adsorbsiyon kapasitesinin arttırılması amacıyla yüzey modifikasyon işlemlerinde fiziksel adsorbsiyon kullanılmış ve atmosferik plazma uygulanmıştır.

Araştırmada 3 farklı yüzey elde edilmesi amacı ile atmosferik plazma sistemi kullanılarak Argon inert gazı ortamında farklı sürelerde (1-3-5 dak.) ve farklı güçlerde (0,5-1-3 A) yüzeyler elektriksel boşalım yöntemi ile pürüzlendirilmiştir. İkinci aşamada pürüzlendirilmiş yüzeyler polietilen glikol (PEG) ile kaplanarak biyouyumluluğun arttırılması sağlanmış, üçüncü aşamada ise çevreci bir yaklaşımla grubumuz tarafından üretilen Gümüş nanopartiküller (AgNp) yüzeye adsorplanarak antibakteriyel özellik kazandırılmıştır. Kan ile temas halinde olan tıbbi malzemenin yüzey özellikleri, atmosferik plazma uygulanmasından sonra; PEG, AgNP, ve PEG+AgNP adsorpsiyonu olmak üzere üç farklı şekilde değiştirilmiştir.

Biyomalzeme yüzeyinin fonksiyonel grup özellikleri her aşama sonrası yapılan FTIR spektrumları ile değerlendirmiştir. Son aşamada mikroorganizmaların antimikrobiyal aktivitelerini belirlemek amacı ile Disk difüzyon yöntemi kullanılmıştır. Muller Hinton agar bulunan petri kutularına *E. coli*, *S. aureus*, *K. pneumoniae*, *P. aeruginosa*, mestisilin dirençli *S. aureus* ve *C. albicans* ekilmiştir. Yüzey özellikleri değiştirilen ve belli büyüklükte hazırlanan biyomalzemeler belli aralıklarla besiyerine yerleştirilip inkübasyona bırakılarak süre sonunda inhibisyon çapları ölçülmüştür. Yüzey modifikasyonları ile oluşan en büyük inhibisyon çaplarının mikroorganizma çeşidine göre değiştiği gözlenmiştir..

Anahtar Kelimeler: Biyomalzeme, Atmosferik plazma, PEG, Gümüş nanoparçacıklar, Fiziksel adsorpsiyon, Biyouyumluluk, Antimikrobiyal aktivite.

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➢ ORAL PRESENTATION

Silymarin Decreased Angiogenesis-Associated Proteins in Human Hepatocellular Carcinoma Cells

Ezgi Bektur*, Sedat Kacar, Varol Sahinturk

Eskisehir Osmangazi University, Faculty of Medicine, Department of Histology and Embryology, Eskisehir, Turkey

nebektur@ogu.edu.tr

Abstract

Angiopoietins regulate angiogenesis and vascular maturation in coordination with the vascular endothelial growth factor (VEGF). Tie2 receptor is the ligand of angiopoiteins and plays an important role in vascular morphogenesis and maintenance between the endothelium and supporting tissue. To promote proliferation of malignant tumors, factors related to angiogenesis such as VEGF and CD34 are always overexpressed. Thus, these two factors could be effective as prognostic indicators in various cancers. Hepatocellular carcinoma is a tumor associated with increased vascularity. Thus, angiopoietins and their receptor Tie2 have received increasing attention as promising therapeutic targets in tumor therapy.

Silymarin, obtained from milk thistle (Silybum marianum), is an herbal medicine that has been used for centuries to cure liver diseases. The antioxidant, anti-cancer, anti-angiogenic, anti-inflammatory and anti-fibrotic properties of this hepatoprotective agent have been demonstrated in many in vivo and in vitro studies.

In this study, we aimed at determining the effect of silymarin on Ang2/Tie2/VEGF pathways in HepG2 hepatocellular carcinoma cell line.

We cultured HepG2 cells in a medium with 10% serum bovine serum albumin and 1% penicillin-streptomycin at 37°C in an incubator containing 5% CO2. We detached the cells by trypsin-EDTA (25% and 0.53 mM) solution. The cells were seeded at the concentration of 25,000 cells per well. After silymarin (200 µg/ml) was added into wells the cells were grown in the incubator. After 24 hours, immunohistochemistry protocol was applied with anti-VEGF, anti- Tie-2 and anti-CD34 antibodies.

In this study, silymarin caused to death of a large number of HepG2 cells. VEGF, CD-34 and Tie-2 expressions decreased in silymarin-adminstrated HepG2 cells compared to non-treated HepG2 cells.

Herein, we concluded that 200 µg/ml silymarin dose is effective for causing obvious cell death and also decreasing angiogenic factors in HepG2 cells. Beside VEGF and CD-34, silymarin can inhibit secreting of Tie-2.

Keywords: Silymarin, HepG2, VEGF, Tie2, CD-34

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➢ **ORAL PRESENTATION**

Yerli Kara ve Doğu Anadolu Kırmızısı Irkı Sığırlarda Tüberküloz Görülme Oranı Üzerinde TLR1, TLR4, TLR9 ve SLCA11A1 Genlerinin Etkisinin Araştırılması

Esma Gamze AKSEL[1], Korhan ARSLAN[1], Aytaç AKÇAY[2], Semih GÜMÜŞSOY[3], Bilal AKYÜZ[2], Mehmet Ulaş ÇINAR[4]

[*1]Erciyes Üniversitesi,Veteriner Fakültesi, Genetik Anabilim Dalı, Kayseri, Türkiye
[2] Erciyes Üniversitesi, Veteriner Fakültesi, Biyoistatistik Anabilim Dalı, Kayseri, Türkiye
[3] Erciyes Üniversitesi, Veteriner Fakültesi, Mikrobiyoloji Anabilim Dalı, Kayseri, Türkiye
[4] Erciyes Üniversitesi, Ziraat Fakültesi, Zootekni Anabilim Dalı, Kayseri, Türkiye

Sorumlu yazar e-mail: esmayilgar@gmail.com

Özet

Mycobacterium bovis'in neden olduğu sığır tüberkülozu (bTB), özellikle süt sığırcılığında önemli kayıplara neden olan kronik bir hastalıktır. Hastalığın ortaya çıkması, alınan bakteri miktarı, bakterinin virulensi ve konakçının doğal bağışıklığına bağlıdır. Toll benzeri reseptörler (Toll-Like Receptors, TLR) doğal bağışıklık sisteminin bir patojenle karşılaştığında immun yanıtın oluşmasında önemli rol oynayan protein tabiatlı reseptörlerdir. Fagozom membranı üzerinde bulunan solute carrier family 11 member A1 (SLC11A1) proteinleri, makrofajların hücre içi bakterilerin yok edilmesinde görev alan önemli proteinlerdir. Yapılan çalışmada, Türkiye'de yetiştirilen Yerli Kara melezi (YK, n= 215) ve Doğu Anadolu Kırmızı melezi (DAK, n= 154) sığırlarda TLR1 (+1380, +1446, +1596), TLR4 (+10), TLR9 (+1310) ve SLCA11A1 (+1066) SNP genotipleri ile tüberküloz görülme oranı arasındaki ilişkisinin araştırılması amaçlanmıştır. İncelenen SNP'ler yönünden hayvanların genotipleri PCR-RFLP yöntemi ile belirlenmiştir. Tüberküloz görülme oranları üzerine genotiplerin etkisi Lojistik Regresyon Analizi ile incelenmiştir. İncelenen ırklarda, TLR1 (+1380, +1446, +1596), TLR4 (+10), TLR9 (+1310) SNP'lerinde tüberküloz görülme oranı bakımından istatistiksel olarak anlamlı bir fark tespit edilememiştir. Ancak SLCA11A1 (+1066) SNP'si açısından yapılan değerlendirme sonucunda, tüberküloz görülme oranının YK ve DAK melezi gruplarındaki genotipler arasında istatistiksel olarak farklı olduğu görülmüştür. Elde edilen sonuçlar göre DAK melezi sığırlarda tüberküloz görülme oranının; GG genotipine göre CC ve CG genotiplerinde sırasıyla 4,13 ve 3,51 kat arttığı görülmüşken, YK melezi sığırlarda tüberküloz görülme oranının; GG genotipine göre CC ve CG genotiplerinde sırasıyla 0,8 ve 0,34 kat daha düşük olduğu görülmüştür.

Anahtar Kelimeler: Toll like reseptör, SLCA11A1, PCR-RFLP, Yerli Sığır Irkı, Tüberküloz

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➢ ORAL PRESENTATION

2-Hidroksi 3-metoksi Sülfisoxazol bileşiği ile Cu(II), Pd(II) Komplekslerinin Sentezi, Yapılarının Aydınlatılması, Antibakteriyel Aktivitelerinin ve Enzim İnhibisyonlarının İncelenmesi

Cihan Şen[1*], Saliha Alyar[1] , Ümmühan Özdemir Özmen[2], Hamit Alyar[3], Şevki Adem[1], Ayse Kalkanci[4]

[1*]Çankırı Karatekin Üniversitesi, Fen Fakültesi, Kimya Bölümü, Çankırı, Türkiye.
[2] Gazi Üniversitesi, Fen Fakültesi, Kimya Bölümü, Ankara, Türkiye.
[3]Çankırı Karatekin Üniversitesi, Fen Fakültesi, Fizik Bölümü, Çankırı, Türkiye
[4]Gazi Üniversitesi, Tıp Fakültesi, Mikrobiyoloji Anabilim Dalı, Ankara, Türkiye

saliha@karatekin.edu.tr

Özet

Sülfonamitler insanlarda bakteri enfeksiyonlarının tedavisinde sistematik olarak kullanılan ilk ilaç grubudur [1]. Ticari olarak da üretilen sülfonamit türü ilaçlar geniş bir spektrumda hem Gram (+) hem de Gram (-) bakterilere karşı yüksek etkinlik göstermektedir. Bu özelliklerinden dolayı, antimikrobiyal, antiviral, hipoglisemik, diüretik ve antitümör olarak yaygın bir şekilde kullanılmaktadırlar [2,4]. Sülfonamitlerin antibiyotik olarak kullanılmasının yanı sıra bazı türevlerinin birçok tümör hücresinin büyümesini engelleyen güçlü inhibitörler olduğu belirlenmiştir. [5] Sülfonamitlerin en güçlü inhibitör etkisi gösterdiği enzim karbonik anhidraz olarak bilinmektedirler.

Bu çalışmada önemli farmakolojik özelliğe sülfonamit Schiff bazları sentezlenip yapıları karakterize edilecektir. Daha sonra sentezlenen Schiff bazlarının Cu(II) ve Pd(II) kompleksleri sentezlenecek ve yapıları aydınlatılacaktır. İkinci aşamada ise sentezlenecek hedef Schiff bazlarının CA enzim inhibitör etkileri ve çeşitli bakterilere karşı antibakteriyal etkileri incelenecektir.

Anahtar Kelimeler: Sülfonamit, antimikrobiyel aktivite, enzim inhibisyonu, Cu(II) ve Pd(II)

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➢ **ORAL PRESENTATION**

Heterojen Fenton Prosesi ile Reactive Yellow 15 Azo boyasının Giderimi ve İstatistiksel Tasarımı

Yeliz Aşçı

Eskişehir Osmangazi Üniversitesi, Müh.Mimarlık Fakültesi, Kimya Mühendisliği Bölümü, Eskişehir, Türkiye

e-mail:yelizbal@ogu.edu.tr

Özet

Yapılan bu çalışma kapsamında, tekstil endüstrisi atıksularında bulunabilen Reactive Yellow 15 boyasının Fenton prosesi ile giderilmesi Fe(III)/Sepiolite katalizörü varlığında ve Minitab-18 (statistical software) programında 2^3 tam faktöriyel deney tasarımı kullanılarak incelenmiştir. Temel olarak Fenton prosesi hidroksil radikalleri üretmek için Fe^{+2}'in H_2O_2 ile tepkimesine dayanır. Heterojen Fenton tekniği katalizör derişimi, H_2O_2 derişimi, karıştırma hızı ve sıcaklık gibi çeşitli faktörlere bağlıdır. Klasik yöntemlerde bu faktörlerin herbirinin etkisini belirlemek için bir parametre sabit tutulurken diğeri değiştirilir. Deney tasarımı ise, minimum deney sayısıyla çalışmanın süresini ve maliyetini azaltan son yıllarda bir çok farklı alanda ve çalışmada kullanılan son derece yaygın, kolay bir yöntemdir. Bu amaçla deney tasarımında kullanılmak üzere ön denemeler yapılmış ve şu faktörler ve seviyeler seçilmiştir: Başlangıç pH'ı (2, 6), katalizör miktarı (0,1 g/25 ml ve 0,3g/25 ml) ve reaksiyon süresi (30 ve 120 dak)'dır. Etkilerin önemi %95 güven aralığı içinde (ANOVA) varyans analizi kullanılarak istatistiksel olarak belirlenmiştir. Ana faktör etkilerine bakıldığında ANOVA sonuçları pH'ın en yüksek kritik etkiye sahip olduğunu göstermiştir. pH negatif etki gösterirken katalizör miktarı ve sürenin etkisi pozitiftir. İkili etkileşimler dikkate alındığında ise pH-süre etkileşimi ile pH-katalizör miktarı kritik etkiye sahiptir. Son olarak hem regresyon denklemi hem de doğrulama deneyi sonuçları maksimum renk gideriminin düşük pH (2), yüksek katalizör miktarı (0,3 g/25 ml) ve yüksek süre (120 dak.) değerlerinde elde edildiğini göstermiştir.

Anahtar Kelimeler: 2^3 tam faktöriyel tasarım, Boya Giderimi, Fe(III)/Sepiolite katalizör, Heterojen Fenton, Oksidasyon

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➢ ORAL PRESENTATION

The amounts of Some Heavy Metals in the Muscle of *Chondrostoma regium* Species from Tohma River (Malatya, Turkey)

Mustafa Düşükcan

University of Fırat, Faculty of Fisheries, Elazığ, Turkey.

e-mail: mustafadusukcan@firat.edu.tr

Abstract

In this study, it was aimed to determine the amounts of heavy metals in the muscle of *Chondrostoma regium* species captured from Tohma River (Malatya, Turkey). For this purpose, 18 fish samples with different size were used. Only Fe, Zn, Cu and Cd heavy metals were determined. The order of them according to mean concentrations (mg/L) was Fe (12.049 > Zn (6.223) > Cu (0.74) > Cd (0.033). The levels of heavy metals increased with increasing of total length and weight of fish. According to determinant coefficient (R^2), the relationship of total length was weak with Cu level and moderate with Fe, Zn and Cd levels. In addition, the relationship of weight was weak with Cu, moderate with Fe and Cd and strong with Zn. The amounts of heavy metals detected were under the acceptable value of FAO/WHO. Therefore, there is no any risk for consumption of *C. regium* species from Tohma River as human food.

Keywords: *Chondrostoma regium*, Tohma River, heavy metals.

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➢ **ORAL PRESENTATION**

Detecting Shifts in Flowering Time under Global Warming

Fatih Fazlioglu

Ordu University, Faculty of Science and Letters, Department of Molecular Biology and Genetics, Ordu, Turkey.

Corresponding author e-mail: fatihfazlio@gmail.com

Abstract

One of the major impacts of global warming on nature is shifts in flowering time of plants. Several studies used historical herbarium records to detect changes in plant phenology (i.e., flowering time) under changing climate. In this study, I collected phenological data of two largest families in a subarctic region, namely, Asteraceae and Cyperaceae, using the database of National Herbarium at the National Museum of Natural History, Smithsonian Institution in the US. In total 6150 herbarium records (23 genera and 121 species) collected between 1900–2018 years were analyzed. I found that there are significant shifts in phenology of arctic plants over the last century. Flowering time has been advanced 5 to 26 days in most species. However, some species have delayed their onset of flowering 8 to 14 days. Since plant species are sessile, understanding their response to ongoing climate change is important in terms of agriculture, ecosystem functioning, conservation, and biodiversity.

Keywords: Herbarium records, Climate change, Phenology

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➢ ORAL PRESENTATION

Effects of Lemon (*Citrus limon*) and Bitter Orange (*Citrus aurantium*) Essential Oils on Shelf-Life of Rainbow Trout (*Oncorhynchus mykiss*)

Emine Özpolat

Fırat University, Faculty of Fisheries, Fishing Technology, Elazığ, Turkey

Corresponding author e-mail: emineozpolat@hotmail.com

Abstract

In the study, lemon (*Citrus limon*) and bitter orange (*Citrus aurantium*) peel essential oil at different rates (control, 3% and 6%) on quality properties (mesophilic aerob bacteria, psycrophylic aerob bacteria, yeasts and molds, *Enterobactericeae*, *Eschrichia coli*, pH, moisture and sensory (colour, smelli structure)) of rainbow trouts (*Oncorhynchus mykiss*) were examined. The analysis result in, it was found that the sensory and microbiological quality of the used essential oil ratio was affected positively by the increase and it was found that there was no different effect on the pH and moisture properties. Especially; it has been determined that the lemon and bitter orange essential oils used at 6% prolong the shelf life of rainbow trout by an average of 6 days. It has been observed that the effects of lemon and bitter orange essential oils are similar. As a result, it has been determined that lemon and bitter orange essential oils that simple, cheap and safe method, can be used to extend the rainbow trout of shelf-life

Keywords: Rainbow Trout, Lemon Oil, Orange Oil, Shelf-Life

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➢ **ORAL PRESENTATION**

Removal of Heavy Metals Using Biomineralization: Lead Removal Example

Tuğba Önal Okyay

Engineering Faculty, Chemical Engineering Department, Usak, Turkey.

Corresponding author e-mail: tugba.onalokyay@usak.edu.tr

Abstract

Today, the contaminants which threaten humanity and the environment extremely are accepted as oil, fats, chlorinated hydrocarbons, radioactive wastes, synthetic detergents, pesticides, and heavy metals. Among those, heavy metals are considered as one of the most dangerous contaminants, because heavy metals are non-biodegradable and extremely toxic even at relatively low concentrations, accumulate in living organisms via food chain, and they threat not only the environment but also the whole liveliness. It is well known that due to industrialization, the effluent discharges from various sources release waters containing heavy metals that cause soil and groundwater contamination. For this reason, heavy metals and their contamination are one of the major environmental problems that require urgent attention. A recent biochemical process, biomineralization process, has been suggested as an alternative solution for removing heavy metals. In the biomineralization process, minerals (such as $CaCO_3$) are extracellularly produced within the microbial metabolism. Typically, ureolytic bacteria are used in the $CaCO_3$ precipitation. During bacterial incubation, growth medium's pH increases depending on the ureolytic activity and $CaCO_3$ precipitation is completed. This mechanism is also named as microbially-induced $CaCO_3$ precipitation (MICP). While minerals precipitate in MICP, cations (such as heavy metals) can precipitate simultaneously. In this study, two ureolytic bacteria (*Sporosarcina* sp. TR3 and *Sporosarcina* sp. TR20) able to precipitate high amounts of biominerals were investigated to remove lead (Pb^{2+}), which causes diseases and are commonly found in waters. The minimum inhibitory concentration was explored. Additionally, an optimization study was done using Response Surface Methodology. Optimum conditions were obtained for the maximum lead removal. This study was the first research employing local *Sporosarcina* isolates involved in MICP and lead removal.

Keywords: Heavy metal removal, lead, *Sporosarcina*, biomineralization, optimization.

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➢ ORAL PRESENTATION

Development and Validation of a Simultaneous HPLC-PDA Method for Estimation for Active and Additive Ingredients in Syrups

Şule Dinç-Zor

Yildiz Technical University, Faculty of Science and Arts, Chemistry Department, Istanbul, Turkey
.
Corresponding author e-mail: sule_dinc@yahoo.com

Abstract

Guaifenesin (GUF) and pseudoephedrine hydrochloride (PEH) are two of the common over-the-counter drugs used for the treatment of flu, cough and respiratory allergies (Abdelwahab et al., 2017; Dinç-Zor et al., 2017). Synthetic additives such as preservatives and colorant are intentionally used in syrups as excipients to inhibit the growth of microorganisms and to improve appearance, respectively. However, these synthetic additives are known to pose risk to health (Dinç-Zor et al., 2016). Therefore, there is a need for the simultaneous quantification of the drug and additives in pharmaceutical formulations.
In this study, a reversed-phase high performance liquid chromatography-photodiode array dedector method has been successfully developed for the simultaneous determination of guaifenesin, pseudoephedrine hydrochloride, sunset yellow (E110), methylparabene (E218) and sodium benzoate (E211) in syrups. The RP-HPLC method employed a C18 column with an isocratic mixture of acetonitrile and 0.025 M phosphate buffer pH 6.4 in the ratio of 15:85 (v/v) as the mobile phase. The flow rate was 1.5 mL/min and detections were recorded at 210, 220, 235 and 254 nm by means of a PDA detector. Five analytes were separated by HPLC within 6.2 min. According to validation results, the developed method is linear ($r > 0.999$), precise (RSD < 2.0 %), accurate (recoveries 95.50 - 101.65%), selective, and sensitive. In conclusion, the validated method can be used in routine quality control analysis of syrups containing the compounds of interest without any interference by excipients.

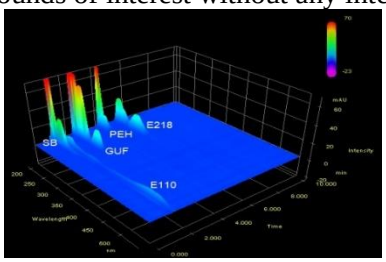

Figure 1. HPLC-PDA plot of the related compounds.

Keywords: HPLC method, PDA detector, simultaneous analysis, active ingredient, excipients.

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➢ **ORAL PRESENTATION**

Klorfeniramin Maleatin Camsı Karbon Elektrot ile Elektrokimyasal Analizi

Fatma Ağın

Karadeniz Teknik Üniversitesi, Eczacılık Fakültesi,Temel Eczacılık Bilimleri Bölümü, Trabzon

fagin@ktu.edu.tr

Özet

Klorfeniramin maleat, antihistaminik bir ilaç etken maddesidir. Genel olarak, soğuk algınlığı ve alerjik hastalıkları tedavi etmede tek başına yada diğer ilaç etken maddeleriyle kombine halde kullanılır (Pourghobadi ve Pourghobadi, 2015).

Yeni bir eşdeğer ilaç piyasaya sunulduğunda kalite, güvenlik ve etkinlik gibi üç ana özelliği sağlaması gerekmektedir. Piyasaya çıkan müstahzarların yukardaki üç ana özelliği taşıyıp taşımadığı yapılacak olan analizlerle belirlenmektedir. Piyasada bulunan bir ilaçın etkin olabilmesi için üzerinde yazılı olan etkin maddeyi veya maddeleri yine üzerinde yazılı olan miktarlarda ihtiva etmesi gerekmektedir. Bu amaçla klorfeniramin maleat etkin maddesinin miktar tayini için son derece kullanışlı ve basit olan elektrokimyasal bir yöntem olan voltametrik bir metod geliştirilmiştir.

Bu amaçla, camsı karbon elektrot ile klorfeniramin maleatın voltametrik analizi dönüşümlü voltametri ve diferansiyel puls voltametri yöntemleri ile pH 2.0-12.0 arasında yapılmıştır. Dönüşümlü voltametride klorfeniramin maleatın oksidasyon pikinin tersinmez ve difüzyon kontrollü davranış gösterdiği görülmüştür. Kantitatif amaçlı çalışmalar için tampon çalışma ortamı, en iyi ve en düzgün klorfeniramin maleat pikinin elde edildiği 0.04 M, pH 12.0 Britton-Robinson tamponu seçilmiştir. Diferansiyel puls voltametri ile konsantrasyona karşı akım grafikleriğinde 0.100-100 µM arasında lineer bir doğru elde edilmştir. Yakalama alt sınırı ve tayin alt sınırı değerleri sırasıyla 0.0146 ve 0.0442 µM olarak belirlenmiştir.

Basit, seçici, hassas ve validasyonu gerçekleştirilen diferansiyel puls voltametri metodu, klorfeniramin maleatın farmasötik dozaj formundan analizine başarılı bir şekilde uygulanmıştır ve yardımcı maddelerin herhangi bir girişimi olmadığı geri kazanım çalışması ile belirlenmiştir. Uygulanabilirliği son derece basit olan bu metod ile memnun edici sonuçlar alınmıştır.

Anahtar Kelimeler: Camsı karbon elektrot, klorfeniramin maleat, , voltametri.

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➢ ORAL PRESENTATION

Asetamiprid Toksisitesine Bağlı Mikronükleus Uyarımına Karşı *Portulaca oleracea* L. (Semizotu) Kullanımı

Halit Kızılet, Handan Uysal*

Atatürk Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Erzurum, Türkiye

e-mail: hauysal@atauni.edu.tr

Özet

Asetamiprid (ASE), kimyasal formülü $C_{10}H_{11}ClN_4$ olan neonikotinoid insektisitlerden birisidir. İlk kez Assail ve Chipco ticari ürün isimleri ile piyasaya sürülmüştür. Bu insektisit özellikle yapraklı sebzeler, pamuk, süs bitkileri ve yumuşak çekirdekli meyvelerde ürün kaybına sebep olan çeşitli zararlılara ve larvalarına karşı kullanılmaktadır. *İnsektisitler kullanıldıkları zirai alan içinde hem hedef hem de hedef olmayan organizmaları etkilemektedir. Ayrıca insektisit uygulaması yapan kişilerde bu maddeye uygulama süresi boyunca özellikle solunum ve deriyoluyla maruz kalmaktadır. Her ne kadar Dünya Sağlık Örgütü (WHO)* tarafından ASE'nin insanlarda karsinojenik olmadığı belirtilmiş olsa da genotoksik etkili olup olmadığı da önemlidir. Sunulan bu çalışmada tarımsal savaşımda sıklıkla kullanılan ASE'nin olası genotoksik etkileri mikronükleus testi (MN) ile belirlenmiştir. Ayrıca A ve C vitaminlerini bol miktarda içerdiği için "süper sebze"olarak bilinen semizotu (*Portulaca oleracea* L.) metanol ekstraktının (Pomet) antigenotoksik etkileri de ortaya konulmuştur.

Bu amaçla MN testi için ASE'nin dört farklı konsantrasyonu (25, 50, 100 ve 250 ppm) insan periferal kan kültürlerine eklenmiştir. Distile su ve ASE'nin çözücüsü olan %2 dimetilsülfoksit (DMSO) negatif kontrol, 10mM etil metansülfonat (EMS) ise pozitif kontrol olarak kullanılmıştır. En yüksek MN frekansının gözlendiği ASE uygulama grubuna (250 ppm) antigenotoksik ajan olarak da PO_{met}(1:1 v/v) ilave edilmiştir.

Mikroskobik incelemeler sonucu hesaplanan MN frekansları distile su için 0,70±0,38, DMSO için 0,83±0,65 ve EMS için ise 5,63±1,60'dır. Distile su ve DMSO kontrol grupları arasındaki fark önemsizken ($P>0,05$), EMS ile her iki kontrol grubu arasındaki fark $P<0,05$ düzeyinde önemlidir. En düşük (25ppm) ve en yüksek ASE uygulama grubunda (250ppm) ise bu değerler sırasıyla 0,95±0,70 ve 1,78±0,78 olarak bulunmuştur. Doz artışı ve mikronükleus frekansı arasında görülen bu pozitif korelasyon da istatistiki olarak $P>0,05$ düzeyinde önemlidir. Ancak ASE+PO_{met} uygulamasından sonra MN oranının 1,78±0,78'den 0,90±0,62'ye gerilediği de gözlenmiştir ($P<0,05$). Tüm bu sonuçlar düşük dozlarda bile genotoksik etkiye sahip olan ASE'ye karşı semizotunun güçlü bir antigenotoksik ajan olduğunu/olabileceğini göstermektedir.

Anahtar Kelimeler: Asetamiprid, mikronükleus, genotoksisite, semizotu, antigenotoksisite.

Teşekkür: Bu çalışma Atatürk Üniversitesi Bilimsel Araştırma Fonu tarafından desteklenmiştir [Proje Numarası = 2011/112].

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➢ ORAL PRESENTATION

Determination of Dikotan Sensitivity of Microfungi Isolated from Agricultural Areas

Fatih Kalyoncu

Manisa Celal Bayar University, Faculty of Science & Letters, Department of Biology, Manisa, Turkey.

Corresponding author e-mail: fatih.kalyoncu@cbu.edu.tr

Abstract

In this study, determination of susceptibility / resistance conditions of microfungi isolated from the areas where different agricultural crops were cultivated against dikotan which is a commonly used fungicide in agricultural production. Soil samples were taken using composite sampling method with six months intervals. A total of 378 microfungus were isolated using Rosebengal Chloranphenicol Agar. It was determined that 44 isolates of microfungi showed dikotan resistance. Totally 19 microfungus species belonging to 8 genera were identified. The most common three genera were *Aspergillus*, *Penicillium* and *Rhizopus*. Dikotan has been found to inhibit the development of these resistant strains from 21% to 62%.

Keywords: Dikotan, Fungicides, Sensitivity, Microfungus, Resistance.

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➢ **ORAL PRESENTATION**

Jeotermal Sularda Ağır Metal Sorunu: Karaali (Şanlıurfa) Örneği

Ayşe Dilek Atasoy*, M. İrfan Yeşilnacar, Perihan Derin, Celal Çiftçi, Nermin Kâhya

Harran Üniversitesi, Mühendislik Fakültesi, Çevre Müh. Bölümü, Şanlıurfa, Türkiye

*Sorumlu yazar e-mail: adilekatasoy@hotmail.com

Özet

İçme sularında bulunan sınır değer üzerindeki ağır metaller Dünya Sağlık Örgütü (WHO) ve Uluslararası Kanser Araştırmaları Ajansı (IARC) tarafından insanlar için toksik/kanserojen olarak kabul edilmiştir. Dünya Sağlık Örgütü, yapılan araştırmalara dayanarak, içme sularındaki maksimum arsenik miktarını 1993 yılında 10 µg/L olarak belirlemiş ve bu değerin üzerinde arsenik bulunduran suların toksik olduğunu ilan etmiştir. Suda en çok bulunan inorganik arsenik türlerinden arsenit (As^{+3}) arseniğin en toksik formudur ve özellikle yeraltı sularında çok bulunur. Arsenik insan vücuduna genellikle içme suları ile alınır ve zamanla dokularda birikim gösterir. Arsenik vücutta enzimlerin proteinlerin yapısını bozmakta, onları işlevsiz hale getirmekte ve hatta uzun süreli yüksek alımlarda DNA ve RNA gibi moleküllerde hasarlar oluşturmaktadır. Arsenikle kirlenmiş su birkaç yıl boyunca içildiğinde oluşan hastalık belirtilerine arsenikoz denir. İçme suyu ile arseniğe maruz kalmanın etkileri arasında çeşitli deri lezyonları, nörolojik etkiler, hipertansiyon, kalp-damar hastalıkları, solunum rahatsızlıkları, cilt ve başka kanser türleri, düşük, ölü doğum gibi zararlar sayılabilir. Yeraltı sularında arsenik; küçük konsantrasyonlarda yüksek toksisitesi ve düşük konsantrasyonlar için deteksiyon sorunu nedeniyle kaygı verici bir kirletici olarak kabul edilmektedir. Arsenik, gölet çökelleri, volkanik kayaçlar gibi jeolojik oluşumlara bağlı doğal ortamlarda bulunmaktadır. Mart 2015 tarihinde Karaali jeotermal sahasından alınan su numunelerinin ağır metal analizinde 44 µg/L ile limit değerlerinin üzerinde arsenik tespit edilmiş ve bu alandaki sıcak suyun kesinlikle içilmemesi gerektiği rapor edilmiştir. Ayrıca Molibden (146 µg/L), Vanadyum (2406 µg/L) ve Selenyum (153 µg/L) konsantrasyonları da yüksek bulunmuştur. Bu çalışmada, değişik jeotermal kaynaklardaki arsenik ve diğer ağır metal düzeyleri de göz önünde bulundurularak, Karaali jeotermal sahasından alınacak su örneklerinde su kimyası analizleri yapılacak; arsenik ve diğer ağır metal (Al, As, Cr, Fe, Mn, Ni, Pb, Sb, Se, Mo ve V) konsantrasyonları araştırılacaktır. Sonuçlar; içme, kullanma ve sulama amaçlı tüketimler için mevcut Ulusal ve Uluslararası sınır değerler/standartlar ile karşılaştırılacaktır. Özellikle, arsenik giderim yöntemleri genel hatlarıyla irdelenecek ve çözüm önerileri içerisinde sunulacaktır.

Anahtar Kelimeler: Jeotermal su, su kirliliği, toksisite, ağır metal, arsenik

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➢ ORAL PRESENTATION

Notes on a Small Collection of Ticks (Acari: Ixodidae) from Some Wild Mammals and Humans in Marmara Region, Turkey

Adem Keskin[1]*, Ahmet Yesari Selçuk[2], Haluk Kefelioğlu[2]

[*1] Department of Biology, Faculty of Science and Arts, Gaziosmanpasa University, Tokat, Turkey
[2] Department of Biology, Faculty of Science and Arts, Ondokuz Mayıs University, Samsun, Turkey

Corresponding author e-mail: ademkeskin@yahoo.com

Abstract

Ticks (Acari: Ixodidae) are one of the best known groups of blood-feeding ectoparasites of many kind of terrestrial animals. Ticks have a major importance in medical and veterinary research not only because of their role of transmission of pathogenic agents to hosts, but also cause blood loss and tick-induced paralysis. In the present study, we collected small number of tick specimens on some small mammals and humans in Marmara region (Kapıdağ Peninsula and Demirköy/Kırklareli), Turkey in November and December 2017. Forty-six small mammalian specimens belonging to four species, namely *Apodemus agrarius* (n = 1), *Apodemus flavicollis* (n = 9), *Crocidura suaveolens* (n = 21) and *Microtus subterraneus* (n = 15), were examined for the presence of tick infestations. A total of 60 ticks have been collected from 10 small mammals. Ticks were identified as *Ixodes laguri* (1 nymph), *Ixodes redikorzevi* (1 female, 47 nymphs) and *Ixodes ricinus* (4 females, 6 males, 1 nymph). In addition, during the study, we collected 42 tick specimens belonging to *Haemaphysalis inermis* (25 females, 17 males) ticks on humans in İstanbul and Kırklareli provinces. To the best of our knowledge, *Ixodes redikorzevi* ticks were reported in Marmara region, for the first time. Also, the finding of *Ixodes laguri* and *Ixodes redikorzevi* ticks on *Microtus subterraneus* represents a new host record in Turkey.

Keywords: Marmara region, humans, small mammals, ticks.

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➢ ORAL PRESENTATION

Gökkuşağı Alabalığı (*Oncorhynchus mykiss*, Walbaum 1792) Yemine Biberiye (*Rosmarinus officinalis*) Yağı İlavesinin Büyüme Performansı ve Bazı Kan Parametreleri Üzerine Etkileri

Evren Kıvrak, Behire Işıl Didinen*

[1]Süleyman Demirel Üniversitesi, Fen Bilimleri Enstitüsü, Isparta
[*2]Süleyman Demirel Üniversitesi, Eğirdir Su Ürünleri Fakültesi, Isparta

Sorumlu yazar e-mail:behiredidinen@hotmail.com

Özet

Bu çalışma ile, biberiye (*Rosmarinus officinalis)* yağının gökkuşağı alabalıklarında gelişim performansı, hematolojik ve biyokimyasal parametreler üzerindeki etkilerinin belirlenmesi amaçlanmıştır. Bu amaçla, toplam 300 adet sağlıklı gökkuşağı alabalığı(10,14±0,06 g) her bir grupta 75 balık olacak şekilde dört gruba bölünmüş ve balıklar 60 gün süreyle, %0 (kontrol) ve %0,025, 0,1 ve 0,05 biberiye yağı ilave edilen yemlerle beslenmiştir. Araştırmamız sonucunda, yeme biberiye yağı ilavesinin gelişim ve yem alımı üzerinde olumlu etkisi bulunmamıştır. İlave olarak, yeme biberiye yağı ilavesi total eritrosit sayısı, hemoglobin konsantrasyonu, glikoz, trigliserid, toplam protein ve keratinin seviyelerinde bir değişikliğe sebep olmamıştır. Bununla birlikte, yemlerine %0,025 ve %5 oranında biberiye yağı ilave edilen balıklarda beyaz kan hücresi (total lökosit) sayısı önemli derecede atmıştır ($p<0,05$). Ayrıca, kontrol grubu hariç bütün gruplarda kandaki Na^+ve Cl^- seviyeleri önemli ölçüde düşmüştür ($p<0,05$).

Anahtar Kelimeler: Gökkuşağı alabalığı, biberiye yağı, gelişim, hematolojik profil

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➢ **ORAL PRESENTATION**

Tekstil Endüstrisi Atık Suyunun Kesikli Reaktörde Anaerobik Arıtımı

Çağla Uygun[1*], Ercan Özbiçen[1], Tuba Berberoğlu[1], Cansu Filik İşçen[2]

[1]Eskişehir Osmangazi University, Graduate School of Sciences, Eskişehir/Turkey

[2]Eskisehir Osmangazi University, Faculty of Education, Department of Elementary Education, 26480 Eskisehir/Turkey,

Corresponding author e-mail:caglauygun26@gmail.com

Özet

Tekstil endüstrisi, diğer endüstriyel sektörlere oranla fazla miktarda su tüketimi olan ve yoğun kirlilik yüküne sahip atıksu üreten; deşarj hacmi ve çıkış suyu kompozisyonu göz önüne alındığında çevreyi en çok kirleten sektördür. Bu sebeple tekstil endüstrisi atıksularına deşarjdan önce boyar madde arıtımı uygulanması gerekmektedir. Hem boyar madde hem de organik yük giderimi için son yıllarda anaerobik arıtım yöntemi ön plana çıkmaktadır. Bu çalışmada, kesikli koşullarda, istatistiksel temelli deneysel tasarım uygulanarak tekstil endüstrisi atıksuyunun anaerobik arıtımının optimizasyonu yapılmıştır. Full Faktoriyel denemelerinde (*i*) farklı başlangıç atık su konsantrasyonları (%25, %50, %75), (*ii*) kosubstrat çeşidi (glukoz, propiyonik asit, asetik asit-butirik asit-propiyonik asit-ABP) değişkenleri esas alınarak 9 farklı deney düzeneği kurulmuştur. Deneyler Oxitop C şişelerinde 200 ml çalışma hacminde karıştırmalı şekilde gerçekleştirilmiştir. Anaerobik mikroorganizmaların gelişimleri için gerekli bazal ortam ilavesi yapılmış ve pH 7±0.2' ye ayarlanmıştır. Denemeler 35^{o} C'de 20 gün süre ile gerçekleştirilmiştir. Süre sonunda KOİ ve renk giderim oranları belirlenmiştir. En iyi KOİ ve renk giderimi %25 atıksu konsantrasyonunda ve kosubstrat olarak glukoz kullanıldığında sırasıyla %50,15 ve %86 olarak bulunmuştur. İstatistiksel yorumlamalarda ise başlangıç atıksu konsantrasyonu ve kosubstrat çeşidinin KOİ giderimi üzerinde anlamlı bir etkiye sahip olduğu görülmüştür (Sig.<0,05). %25 atıksu konsantrasyonunda KOİ gideriminin %50 atıksu konsantrasyonuna göre %8,69 arttığı, %25 atıksu konsantrasyonunda ise KOİ gideriminin %75 atıksu konsantrasyonuna göre %8,46 arttığı belirlenmiştir. Kosubstrat olarak glukoz kullanımında, ABP kullanımına göre KOİ gideriminin %13,78 arttığı, ABP kullanımında PA kullanımına göre KOİ gideriminin %15,6 arttığı, glukoz kullanımında PA kullanımına göre KOİ giderimini %29,38 arttığı bulunmuştur.

Anahtar Kelimeler: tekstil atıksuyu, anaerobik arıtım, full faktöriyel tasarım

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➢ ORAL PRESENTATION

Acetylcholinesterase Inhibitory Activity of *Nepeta nuda* subsp. *nuda* Essential Oil and Molecular Docking Study of the Constituents

Emel Akbaba[1*], Eyup Bagci[1], Calin L. Maniu[2]

[1] Department of Biology, Faculty of Science, Firat University, 23119 Elazig, Turkey
[2] Department of Biology, Alexandru Ioan Cuza University, Iasi 700506, Romania

eakbaba@firat.edu.tr

Abstract

Nepeta (Lamiaceae) members are distributed in Asia, Europe and North Africa constituting 300 species worldwide. *Nepeta* members are known to be used in traditional medicine against neurological diseases. In this study, in-vivo acetylcholinesterase inhibitory activity of inhaled *Nepeta nuda* subsp. *nuda* essential oil and molecular docking analysis of the oil compounds were carried out. Analysis of *N. nuda* essential oil was carried out by GC/MS system. 44 compounds were determined in the oil including 4aα,7α,7aβ-nepetalactone (50.0%), caryophyllene oxide (10.9%), (+)spathulenol (3.3%), trans-beta caryophyllene (2.7%), 4aα,7α,7aα-nepetalactone (2.6%) and germacrene-D (2.4%) as the major components. Scopolamine was applied to the rats known to increase acetylcholinesterase activity. The essential oil was administered to rats induced scopolamine for 21 days. *N. nuda* essential oil showed significant decreases in the activity of acetylcholinesterase enzyme in the brain homogenates (hippocampus and amygdala) of the rats as compared to control and scopolamine-alone treated rats. In order to evaluate in-silico analysis of the oil compounds, human acetylcholinesterase enzyme-territrem-B complex was selected for molecular docking. For the docking procedure, VEGA ZZ modelling software was used in conjuction with Autodock4. According to the docking results, many compounds gave favorable binding energies, however, perhydrofarnesyl aseton gave the most favorable binding energy (-8.60) which is not appeared within the major compounds of the oil. On the other hand, free binding energies of 4aα,7α,7aβ-nepetalactone, caryophyllene oxide, (+)spathulenol, trans-beta caryophyllene, 4aα,7α,7aα-nepetalactone and germacrene-D are -6.55, -7.63, -7.96, -7.97, -6.96, -7.91, respectively. In addition, inhibition constants of these molecules seems low which is also favoroble. In conclusion, *Nepeta nuda* subsp. *nuda* essential oil decreased acetylcholinesterase activity in hippocampus and amygdala brain homogenates of scopolamine-induced rats. Molecular docking studies suggest many compounds appeared in this oil could interact with acetylcholinesterase enzyme. Therefore, *N. nuda* ssp. *nuda* essential oil could be used as a therapeutic agent for neurological diseases including Alzheimer's disease.

Keywords: *Nepeta nuda* subsp. *nuda*, essential oil, GC/MS, acetylcholinesterase, molecular docking

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➢ ORAL PRESENTATION

In Vitro Gaz Üretim Tekniği Kullanarak Bazi Silajlik Misir Çeşitlerinin Besleme Değerinin Tespiti

Tugay Ayaşan[1*], Hakan İnci[2]

[1]Doğu Akdeniz Tarımsal Araştırma Enstitüsü, Yemler ve Hayvan Besleme Bölümü, Adana, Türkiye
[2]Bingöl Üniversitesi, Ziraat Fakültesi, Zootekni Bölümü, Bingöl, Türkiye

*Sorumlu yazar e-mail:tayasan@gmail.com

Özet

Bu çalışma, farklı silajlık mısır çeşitlerinin besin değerinin *in vitro* gaz üretim tekniği kullanılarak tespit edilmesi amacıyla gerçekleştirildi. Araştırma sonucunda, silajlık mısır çeşitleri arasında ham protein (HP), ham yağ (HY), nötr deterjan fiber (NDF) ve hemiselüloz (HES) içerikleri arasında istatistiki bir farklılık bulunurken ($P<0.05$); kuru madde (KM), ham kül (HK), asit deterjan fiber (ADF), ham selüloz (HS), sindirilebilir enerji (SE), metabolik enerji (ME) ve net enerji laktasyon (NEL) değişmemiştir ($P>0.05$). En yüksek HP içeriği %12.10 ile Ranger çeşidinden elde edilirken; en düşük değer ise %9.53 ile Mocho çeşidinden elde edildi. Adasa-16 çeşidinin HP içeriği %10.75 olarak bulundu. Silajlık mısır çeşitlerinin HY içerikleri %2.65 (PL712) ile %4.23 (Mocho) arasında değişim gösterdi. En düşük ve en yüksek HES değerleri Mocho (13.50%) ve Adasa-16 (20.85) çeşitlerinden elde edildi. En yüksek NDF değeri KM bazında %25.35 ile Adasa-16 çeşidinden elde edildi. Silajlık mısır çeşitlerinin 24 saatlik gaz üretimi ile metan gazı üretimi de saptandı. Araştırma sonunda silajlık mısır çeşitlerinin ruminant hayvan beslemede başarıyla kullanılabileceği ifade edildi.

Anahtar Kelimeler: Silajlık mısır çeşitleri, *İn vitro* gaz üretimi, kimyasal kompozisyon, sindirilebilirlik

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➢ ORAL PRESENTATION

Protein Loaded Pectin-Zeolite Wound Dressing Materials: Preperation, Characterization and Structural Analysis

Banu Arabacıoğlu Kocaağa*, Özge Kürkçüoğlu Levitas, Melkon Tatlıer, F. Seniha Güner

Istanbul Technical University, Department of Chemical Engineering, Istanbul, Turkey

*Corresponding author e-mail: bkocaaga@itu.edu.tr

Abstract

In this study, we demonstrate the preparation and characterization of pectin-zeolite based systems as a wound dressing, and examine their protein adsorption and delivery properties for controlled delivery of protein-drug conjugates in various protein concentration and pH values. Pectin imparts many advantages for wound dressings such as binding bioactive molecules, having anti-inflammatory, anti-bacterial and anti-microbial properties. Hydrogel films were prepared crosslinking pectin chains by $CaCl_2$ with plasticizer glycerol and adding zeolite A to enhance mechanic strength and oxygen permeability of the films. We used bovine serum albumin (BSA) as model protein. FTIR, circular-dichroism, rheometre, contact angle and SEM studies were performed to identify conformational, structural and morphological properties. FTIR spectra of hydrogel films indicated the successful incorporation of BSA to pectin-zeolite films with no significant conformational changes. We employed UV-Vis to reveal the effects of pH and protein concentration on the adsorption to zeolite-A particles and pectin-zeolite films. Adsorption and release profile of BSA were strongly affected by pH of the media. It was determined that 4.2 and 0.8 mg BSA/mg zeolite were irreversibly adsorbed to zeolite-A particles at pH 6.4 and at pH 4.3, respectively. Similarly, pectin-zeolite film could adsorb more BSA by two fold at pH 6.4 when compared to pH 4.7. On the contrary at pH 4.3 which is below pKa of pectin and pI of BSA no adsorbtion was observed. The decrease in protein adsorption behaviour can be explained by the increase in magnitude of negative charges on both pectin and protein surfaces at higher pH values. Moreover, the protein starts to unfold at pH<5. On the other hand, protein release patterns were also different for different pH values, especially in the release retardation time (Figure-1). According to our findings, protein adsorption and release from pectin-zeolite hydrogel films can be modulated by pH of immobilization media.

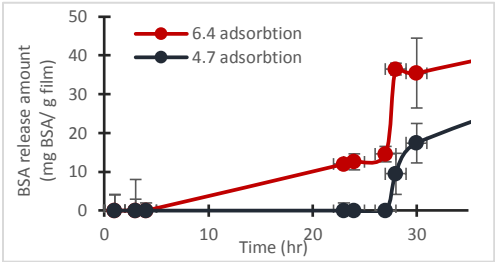

Figure 1. BSA release profiles of pectin-zeolite films.

Keywords: Controlled drug delivery, Pectin, Protein, Wound dressing, Zeolite

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➢ ORAL PRESENTATION

The Composition of the Essential Oils from Leaves and Fruit Barks of *Eucalyptus camaldulensis* DEHNH

Omer Elkiran[1*], Emel Akbaba[2], Eyup Bagci[2]

[*1]Department of Bioengineering, Faculty of Engineering & Architecture, Sinop University, Sinop,
Turkey.
[2] Department of Biology, Faculty of Science, Firat University, Elazig, Turkey.
omer_elkiran@hotmail.com

Abstract

In this study, the chemical composition of the essential oils from leaves and fruit barks obtained from the aerial parts of *Eucalyptus camaldulensis* (Myrtaceae) naturally grown in Turkey were analysed by GC and GC-MS and chemical differences were discussed in means of chemotaxonomy. The aerial parts of the plant samples were hydro-distilled to produce oils in the yields of 0.8 and 0.9% respectively. Fourty six and fifty eight components were identified representing 86.8 and 90.5% of the oils, respectively. The main compounds in the essential oils from leaves were; (-)spatulenol (28.9%), cyclanon (9.3%), 1-Acetyl-4-fluoromethylnaphtalane (6.1%), isospathulenol (5.8%), benzylbenzoate (4.1%); from fruit barks of *Eucalyptus camaldulensis* were; spathulenol (21.5%), cyclanon (12.4%), eucalyptol (11.9%), 0-cymene (10.4%), β-humulene (7.2%). The results were discussed with the genus patterns in means of chemotaxonomy and usability the essential oils and compounds in medicinal and pharmaceutical purposes.

Keywords: *Eucalyptus camaldulensis*, GC-MS, Essential oil, Chemotaxonomy.

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➢ **ORAL PRESENTATION**

Paronycia turcica Türünün Karyotip Analizi

Halil Erhan Eroğlu[1*], Derya Altay[2], Ümit Budak[1], Esra Martin[3]

[*1]Bozok Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Yozgat, Türkiye
[2]Ankara Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Anabilim Dalı, Ankara, Türkiye
[3]Necmettin Erbakan Üniversitesi, Fen Fakültesi, Biyoteknoloji Bölümü, Konya, Türkiye

Sorumlu yazar e-mail: babaarslanderya@hotmail.com

Özet

Paronychia Miller cinsi Caryophyllaceae familyası içerisinde yer almaktadır. Cins Güney Afrika, Güneydoğu Asya haricinde, tüm dünyada yayılış gösteren tek yıllık veya çok yıllık yaklaşık 110 tür içerir. Cinsin taksonları ülkemizde sıklıkla et yaran, kepek otu ve dolama otu yöresel isimleri ile bilinirken; el ve ayak parmakları arasındaki iltihapların giderilmesinde, afrodizyak, idrar söktürücü ve kan temizleyici amaçlar için tıbbi çay olarak kullanılır. Birçok *Paronychia* taksonunda diploid kromozom sayısı 2n = 36 şeklindedir. Ancak 2n = 10, 14, 16, 18 ve 28 gibi çeşitli kromozom sayıları da rapor edilmiştir. Bu çalışmada *P. turcica* türünün kromozom sayısı ilk kez rapor edilmiştir. Kromozom sayısı ve karyotip formülü 2n = 36 = 36m şeklindedir. Toplam haploid kromozom uzunluğu ve ortalama kromozom uzunluğu sırasıyla 42.98 µm ve 1.19 µm'dir. Kromozom uzunlukları 1.61-3.07 µm arasında değişmektedir. Kromozomiçi (M_{CA}) ve kromozomlararası (CV_{CL}) karyotip asimetri değerlerine göre *P. turcica* türü simetrik tipte karyotipe sahiptir.

Anahtar Kelimeler: Caryophyllaceae, Karyotip asimetrisi, *Paronychia turcica*, Poliploidi.

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➢ ORAL PRESENTATION

Regulators and Hydroelectric Power Plants (Hepp) on Tohma Brook

Mücahit Eroğlu[1*], Mustafa Düşükcan[1], Dursun Şen[1], Mehmet Zülfü Çoban[2]

[*1]Fırat University, Fisheries Faculty, Department of Basic Aquatic Science, Elazığ, Turkey.
[2]Fırat University, Keban Technical High School, Elazığ, Turkey.

Corresponding author e-mail: meroglu44@firat.edu.tr

Abstract

Depending on the development of industrialization and improvement of society, energy consumption is increasing day by day in nowadays. As well as, the establishment of thermal and nuclear centrals, wind and wave energy, building small-scale hydroelectric power plant on the river and regulators have gained pace in recent years. Tohma Brook is one of the main streams discharging into Karakaya Dam Lake. It has one main arm called Ayvalıtohma. The brooks born from Sivas province and pour into Karakaya Dam Lake. While Tohma Brook has got six active regulators and hydroelectric power plants, Ayvalıtohma has got one active regulator and hepp. These regulators, from west to east are Gökpınar, Sofular (on Ayvalıtohma), Güdül I, Güdül II, Merkez and Tohma. Also, there is Medik Dam on Tohma Brook for both irrigation and energy. With this report, it was aimed to examine the potential impact on fishes of these constructs, tried to put forward solutions. In conclusion; there are negative effects of these constructs on migration of some cyprinid species (*Capoeta umbla*, *Capoeta trutta*, *Garra rufa*, *Cyprinion macrostomum* and *Alburnus mossulensis*) living in Tohma Brook and Karakaya Dam Lake.

Keywords: Tohma Brook, Regulators, Hydroelectric power plant, Fish species.

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➢ **ORAL PRESENTATION**

Gümüş Nanopartiküllerin Fitokimyasal Aracılı Yeşil Sentez Yoluyla Üretimi

Esra Yüca

Yıldız Teknik Üniversitesi, Fen Edebiyat Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, İstanbul, Türkiye

Sorumlu yazar e-mail: eyuca@yildiz.edu.tr

Özet

Metal nanopartiküller ve metal nanopartikül temelli malzemelerin önemli pek çok teknolojik uygulaması mevcuttur. Nanopartikül sentezinde izlenen yollardan biri olan aşağıdan-yukarı yaklaşımda nanopartiküllerin homojen bir kimyasal kompozisyonla üretilebilirliği ve sentezlenen nanopartiküllerin boyut dağılımlarının belirli aralıkta olması önemli avantajlardır. Buna karşın bu yaklaşımla endüstriyel boyuttaki üretimin zorluğu bir dezavantaj olarak ortaya çıkmaktadır. Ayrıca nanopartikül sentezi için kimyasal indirgenme tekniklerinde kullanılan bileşiklerin toksik olması da önemli bir diğer dezavantajdır. Biyolojik özütlerin kullanımı ile üretimde bu dezavantajın önüne geçilebilmektedir. Özellikle antibakteriyel özellikleri nedeni ile nanomalzemelerde sıklıkla kullanılan gümüş nanopartiküllerin sentezi için kullanılan kimyasalların insan sağlığı ve çevre açısından risk oluşturması nedeniyle "yeşil üretim" olarak da adlandırılabilen çevre dostu yaklaşımların uygulanması bir gereklilik olarak karşımıza çıkmaktadır. Bu yaklaşımların tercih edilmesi için de düşük maliyetli prosesler geliştirilmesi önemlidir. Gümüş nanopartiküllerin üretiminde bitkilerin özütlerinin kullanımı çevre dostu, ekonomik, görece hızlı, güvenli ve tek adımlı bir yaklaşım sağlamaktadır. Bu yaklaşımla üretimde ilgili metal tuzu ile hazırlanan çözelti, indirgeyici ve stabilizasyon ajanları ortamda olması gereken bileşenlerdir. Sentez sırasında kullanılan bitki özütü içerdiği terpenoidler, flavonlar, ketonlar, aldehidler, amidler ve karboksilik asit gibi fitokimyasallar ile indirgeyici ve stabilizasyon sağlayıcı olarak görev almaktadır. Özüt içinde yer alan fitokimyasalların partikül yüzeyi ile etkileşime girerek nanopartiküllerin stabil olmasına yardımcı olmaları nedeniyle reaksiyona dışarıdan herhangi bir stabilizasyon ajanı eklenmesine gerek kalmamaktadır. Biyolojik yolla üretimde partiküllerin şekil ve boyutlarını etkileyen sıcaklık ve pH gibi farklı etkenler vardır. Bu çalışmada belirtilen yeşil sentez yaklaşımı ile *Salvia sclarea* bitki özütü kullanılarak farklı konsantrasyonlardaki gümüş nitrat tuzundan, farklı zaman aralıklarında gümüş nanopartiküller üretilmiştir. Üretimi takiben oluşan nanopartilüllerin spektroskopik ve taramalı elektro mikroskopisi ile karakterizasyonları yapılmıştır. Genellikle 400-450 nm arasındaki yüzey plazmon rezonansı pikleri ile karakterize edilebilen gümüş nanopartiküllerin ultraviyole-görünür spektroskopi kullanarak absorbans değerleri analiz edimiştir. Yeşil sentez yaklaşımı ile üretilen nanopartiküllerin antibakteriyel özellikleri de test edilmiştir.

Anahtar Kelimeler: Yeşil sentez, nanopartikül, gümüş

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➢ **ORAL PRESENTATION**

Laktik Asit Bakterilerinin Balıklarda Büyüme Performansı Üzerindeki Etkileri

Nalan Özgür Yiğit, Behire Işıl Didinen*, Seval Bahadir Koca, Tülay Demir

Süleyman Demirel Üniversitesi, Su Ürünleri Fakültesi, Isparta, TÜRKİYE

Sorumlu yazar e-mail:behiredidinen@hotmail.com

Özet

Bağırsak mikroflorasındaki laktik asit bakterilerinin, büyüme üzerindeki pozitif etkileri ve bakteriyel patojenlerin kolonizasyonuna engel olduğu bilinmekle birlikte, patojenik bakteri toksinlerinin ve metabolitlerin inaktivasyonu, besin ve tutunma bölgesi için patojenlerle rekabet, spesifik olmayan bağışıklık yanıtının uyarılması gibi fonksiyonlarının olduğu da bilinmektedir. Bu nedenle, gerek karasal hayvanlarda gerekse su ürünleri yetiştiriciliğinde probiyotik olarak tercih edilmektedirler. Bu derlemede, farklı laktik asit bakterisi türlerinin balıkların büyüme performansı üzerindeki etkilerinin araştırıldığı çalışmalar ele alınmıştır. Çalışmalar değerlendirildiğinde, genel olarak *Pediococcus acidilactici* türünün büyüme üzerinde olumlu etkisinin görülmediği saptanmıştır. *Streptococcus, Lactobacillus, Lactococcus* ve *Enterococcus* cinslerine ait türlerin ise balıkların büyüme performansında olumlu etkileri olduğu görülmüştür.

Anahtar Kelimeler: laktik asit bakterileri, su ürünleri yetiştiriciliği, büyüme

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➢ **ORAL PRESENTATION**

Crystal Violet (CV) Boyar Maddesinin Buğday Kepeği (wheat bran) ile Adsorpsiyonu: Kinetik Çalışmalar

Neşe Ertugay

Erzincan Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Erzincan, Türkiye

e-mail: nertugay@erzincan.edu.tr

Özet

Boyar maddelerin geniş kullanımı sebebiyle ortaya çıkan boyalı atıksuların arıtılması önemli bir çevre sorunudur. Bu nedenle boyar madde içeren tekstil endüstrisi atıksularından renk giderim prosesleri ekolojik açıdan önem kazanmaktadır. Günümüzde büyük hacimli atıksulardaki boyar maddelerin etkili ve ekonomik bir şekilde giderilebilmesi için alternatif yöntemlere gereksinim vardır. Bu makalede de ucuz ve bol miktarda bulunan perlit adsorbenti ile boyalı atıksulardan renk giderimi çalışılmıştır. Yapılan çalışmada; tekstil atık sularında yaygın olarak bulunan Crystal Violet (CV) buğday kepeği üzerine adsorpsiyonu incelenmiştir. Kepeğin CV boyar maddesinin adsorpsiyonu üzerinde etkilerini incelemek için, farklı başlangıç boya konsantrasyonları, farklı pH değerleri, farklı adsorbent konsantrasyonları ve farklı sıcaklık parametreleri denenmiş ve optimum koşullar sağlanmıştır. En yüksek giderim doğal pH (6.24)'da olduğu gözlemlenmiştir. Adsorbent miktarı belli bir değere kadar arttıkça boyar madde giderimi de artmıştır. Ayrıca, adsorpsiyonun 120. dakikada dengeye geldiği ve boyar madde konsantrasyonu arttıkça giderim veriminin düştüğü görülmüştür. Sıcaklığın 25^{o}C'den 45^{o}C'ye artırılması ile buğday kepeği ile boyar madde gideriminin adsorbent üzerindeki bağlanma bölgelerinin sayısının artması ile arttığı gözlenmiştir. Bunun yanında deneysel verilerin izoterm ve kinetik modellere uygunluğu araştırılmış ve bu modellere ait parametreler hesaplanmıştır. Adsorpsiyon prosesine ait termodinamik parametreler hesapedilmiştir. Karakterizasyon çalışmaları kapsamında *buğday kepeği* için adsorpsiyon öncesi ve sonrası FTIR ve SEM analizi yapılarak biyosorpsiyon mekanizmasındaki fonksiyonel gruplar incelenmiş ve biyosorpsiyon sonrası oluşan yapısal değişikliklerin varlığı görülmüştür.

Anahtar Kelimeler: Adsorpsiyon, boya, tekstil atık suları, izoterm, kinetik

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➢ ORAL PRESENTATION

Syntheses, Structural Investigations and Chiral Properties of Bis-*spiro*phosphazene Derivatives

Güler İnci Tanrıkulu[1*], Aytuğ Okumuş[2], Zeynel Kılıç[2], Tuncer Hökelek[3]

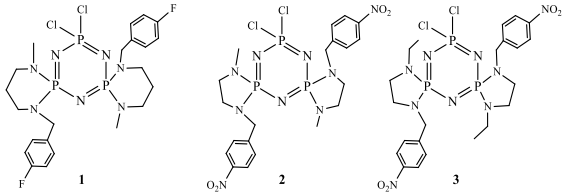
[*1]Amasya University, Faculty of Arts & Sciences, Department of Chemistry, Amasya, Turkey
[2]Ankara University, Faculty of Sciences, Department of Chemistry, Ankara, Turkey
[3]Hacettepe University, Faculty of Sciences, Department of Physics, Ankara, Turkey

inci.emiroglu@amasya.edu.tr

Abstract

The class of compounds, which exhibit both organic and inorganic character in the structure, P=N chain is known as phosphazenes. Phosphazenes are soluble in organic solvents and can give nucleophilic substitution reactions with various organic, inorganic and organometallic groups[1]. Because of the tetra-coordinated, pentavalent phosphorus atoms in cyclophosphazene derivatives are potential stereocenters. Chiral cyclophosphazenes have been investigated during the last two decades [2].

In this study, it is investigated the effect of difunctional (4-fluorobenzyl) alkyldiamines and (4-nitrobenzyl) alkyldiamines with hexachlorocyclophosphazene, $N_3P_3Cl_6$. Partly substituting as a result of the condensation reaction in dry toluene bis(4-fluorobenzyl)-*spiro* and bis(4-nitrobenzyl)-*spiro*-cyclotriphosphazenes (**1-3**) were synthesized. The structures of these compounds were evaluated by using element analyses, ESI-MS, ^{1}H, ^{13}C and ^{31}P-NMR, and X-ray crystallography techniques.



Keywords: Cyclophosphazene, chirality, crystallography.

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➢ **ORAL PRESENTATION**

Yeni Nesil Bazı Badem Klon Anaçlarının Aşı Uyuşma Durumları

Başak Özdemir[1*], Ajlan Yılmaz[2], Yeşim Okay[1], Hatice Nurhan Büyükkartal[3]

[*1]Ankara Üniversitesi, Ziraat Fakültesi, Bahçe Bitkileri Bölümü, Ankara, Türkiye
[2]Gıda Tarım ve Hayvancılık Bakanlığı, Antepfıstığı Araştırma Enstitüsü, Gaziantep, Türkiye
[3]Ankara Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye

E-mail:basakcnr87@hotmail.com

Özet

Bu araştırmada, meyve anaç ıslah programı sonucunda geliştirilen yeni nesil Rootpac melez klon anaçlarının (Rootpac R, Rootpac 90, Rootpac 70, Rootpac 40 ve Rootpac 20), dünyada yaygın olarak kullanılan Ferragnes ve Ferraduel ticari badem çeşitleri ile aşı uyuşma durumları anatomik açıdan incelenmiştir.

Rootpac-R (*Prunus cerasifera x Prunus dulcis*) ve Rootpac-90 (*P. persica x P. davidiana) x (P. dulcis x P. persica*) yüksek, Rootpac-70 (*P. persica x P. davidiana) x (P. dulcis x P. persica*) ve Rootpac-40 (*P. dulcis x P. persica*) *x* (*P. dulcis x P. persica*) orta ve orta yüksek, Rootpac-20 (*P. cerasifera x P. besseyi*) ise düşük gelişme kuvveti göstermektedir.

Araştırma, Gaziantep Antepfıstığı Araştırma Enstitüsü sera koşullarında yürütülmüştür. Aşı kalınlığına ulaşan bir yaşlı anaçlar üzerine Haziran ayında Ferragnes ve Ferraduel çeşitleri T göz aşısı ile aşılanmıştır. Kalem/anaç kombinasyonlarının anatomik analizi Haziran ayında yapılan T göz aşısından 30 gün ve 12 ay sonra alınan kesitlerde incelenmiştir.

Anahtar Kelimeler: Rootpac klon anaç, *Prunus dulcis*,aşı uyuşması

International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2018)

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➢ ORAL PRESENTATION

Comparison of Some Mineral Matter Profiles of Wild and Farmed Snails, *Cornu aspersum* (Synonym *Helix aspersa*) Müller, 1774

Meryem Yeşim Çelik[1]*, Mehmet Bedrettin Duman[2], Merve Sariipek[1], Gülşen Uzun Gören[1], Dilara Kaya Öztürk[1], Demet Kocatepe[1], Sedat Karayücel[1]

*[1]Sinop University, Faculty of Fisheries, Sinop, Turkey
[2]Çukurova university, Faculty of Fisheries, Sinop, Turkey

*yesimcelik@yahoo.com.tr

Abstract

The study was carried on *Cornu aspersum* (synonym: *Helix aspersa*) in the Black Sea region, Turkey. The mineral matter composition of the visceral and pedal mass of wild and farmed land snails, *Cornu aspersum* were compared. All mineral concentrations except Ca were higher in visceral than pedal mass of wild and farmed snails. Pedal mass of farmed and wild snails had higher Ca content than visceral parts. Ca was also the highest in mineral composition and followed by P in both of the snails. Wild snails had a higher concentration of iron and zinc than farmed snails. Selenium was 2.82 times higher in pedal mass of farmed snails than pedal mass of wild snails, respectively. In conclusion, the wild and farmed snails have good mineral source.

Keywords: land snail, visceral mass, pedal mass mineral matter, wild, farmed.

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➢ ORAL PRESENTATION

Preparation of Hybrid magnetic Sorbent for the Removal of Copper (II) from Aqueous Solutions

Özgür Arar

Ege University, Faculty of Science, Department of Chemistry, Izmir, Turkey

Corresponding author e-mail: ozgur.arar@ege.edu.tr

Abstract

Copper is an important trace element required by humans for its role in enzyme synthesis, tissues and bones development. However, the divalent copper is toxic and carcinogenic when consumed in excess through ingestion. The excessive Cu (II) consumption leads to its deposition in liver and subsequent vomiting, headache, nausea, respiratory problems, abdominal pain, liver and kidney failure and finally gastrointestinal bleeding. According to the World Health Organization drinking water guidelines, the permissible limit value for Cu (II) is 2.0 mg L^{-1}. Conventional methods such as, chemical precipitation, membrane separation, ion exchange, reverse osmosis, chemical oxidation, electrochemical treatment, and adsorption are available for the removal of Cu(II) from water/ wastewater.

In this study, hybrid magnetite – modified-biodegradable polymer was prepared. The structure and composition of sorbent was investigated with Fourier transform infrared spectroscopy (FTIR), X-ray fluorescence (XRF) and elemental analysis. The prepared sorbent then used in a series of batch sorption experiments. The removal of Cu (II) by hybrid sorbent at different solution pH values, temperature, initial Cu (II) concentrations, and contact time was optimized in batch condition.

Keywords: Biodegradable polymer, Copper, Sorption, Water treatment.

Acknowledgments: This study was supported by the Ege University Scientific Research Projects (2017 FEN 078). The author thank to Denkim Kimya A.Ş. for proving the cellulose samples.

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➢ **ORAL PRESENTATION**

Osteomiyelitin Eşlik Ettiği Florid Semento-Osseöz Displazi: Olgu Bildirimi

Nursel Akkaya[1], Duygu Ölmez[1],Vusala Guliyeva[2], Selen Işık Adiloğlu[2], Alper Aktaş[2]

[1]Hacettepe Üniversitesi, Diş Hekimliği Fakültesi, Ağız, Diş ve Çene Radyolojisi Anabilim Dalı, Ankara
[21]Hacettepe Üniversitesi, Diş Hekimliği Fakültesi, Ağız, Diş ve Çene Cerrahisi Anabilim Dalı, Ankara

Sorumlu yazar e-mail:duygudugencili@gmail.com

Özet

Floridsement-osseözdisplazi (FSOD) fibro-osseöz lezyonların çenelerin birden fazla kuadranını etkileyen bir grubudur. Yetersiz vaskülarizasyon nedeniyle, FSOD enfeksiyona duyarlıdır. Bu lezyonlar genellikle asemptomatiktir ve tesadüfi radyolojik bulgu olarak saptanabilir. Bazen hastalarda sekonder osteomiyeliti işaret eden, ağız içine açılmış sklerotik kalsifiye kitlelerle ilişkili künt ağrı ya da drenaj gibi semptomlar bulunabilir. Bu olgu bildiriminin amacı osteomiyelitin eşlik ettiği FSOD'nin klinik özelliklerini ve radyografik bulgularını sunmaktır. 46 yaşındaki kadın hasta kliniğimize sağ mandibular posterior bölgede ağız içine drenaj şikayetive şişlik öyküsü ile başvurmuştur. İntraoral muayene dişsiz alanda sekester oluşumunu düşündüren sarımsı sert kitle olduğunu göstermiştir. Radyografik inceleme mandibulanın her iki kuadranında alveoler proses bölgesinde diffüz, lobüler, düzensiz şekilli radyopasitelerin varlığını göstermiştir. Klinik tanı floridsemento-osseözdisplazi ve ilişkili bölgede osteomiyelittir. Detaylı inceleme ve tedavi planlaması için konik ışınlı bilgisayarlı tomografik görüntüleme yapılmıştır. Hastaya süpürasyon için antibiyotik verilmiş ve kemik sekesterinin uzaklaştırılması için cerrahi tedavi planlanmıştır.Osteomiyelitin eşlik ettiği bir FSOD olgusunda hastanın tedavisi yoğun mineralize doku nedeniyle güçtür. Bu nedenle asemptomatik hastalar düzenli muayenelerle izlenmeli ve diş kaybının önlenmesi için oral hijyenin önemi konusunda bilgilendirilmelidir**.**

Anahtar Kelimeler: Floridsemento-osseözdisplazi, osteomiyelit, panoramik radyografi, konik ışınlı bilgisayarlı tomografik görüntüleme (KIBT)

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➢ **ORAL PRESENTATION**

NCOA5 Geni rs2903908 Polimorfizminin MS Hastalığındaki Rolünün Araştırılması

Aydın Rüstemoğlu[1], Sema Atasever[1], Serbülent Yiğit[1], Betül Çevik[2], Semiha Kurt[2], Ömer Ateş[1]

[1]Gaziosmanpaşa Üniversitesi, Tıp Fakültesi, Tıbbi Biyoloji AD, Tokat, Türkiye
[2] Gaziosmanpaşa Üniversitesi, Tıp Fakültesi, Nöroloji AD, Tokat, Türkiye

Sorumlu yazar e-mail: arustamov@yahoo.com

Özet

Multiple skleroz (MS) merkezi sinir sistemini etkileyen, periventriküler beyaz maddenin yanı sıra birçok başka alanı tutabilen kronik seyirli ve yeti kaybına neden olan nörodejeneretif bir rahatsızlıktır. Genellikle 18- 50 yaş arasında ortaya çıkan ve ataklarla seyreden otoimmün bir hastalık olup, demiyelizasyon, inflamasyon ve akson hasarı ile karakterizedir. Nedeni tam olarak bilinmemekle birlikte MS oluşumunda genetik ve çevresel faktörlerin etkili olduğu düşünülmektedir. Hastalığın ortaya çıkmasında otoimmunitenin merkezi bir rol oynadığı dair pek çok bulgu vardır. Otoimmunitede rol oynadığı bilinen genlerle MS ilişkisini araştıran birçok çalışma literatürde bulunmaktadır. HLA-DRB1 ve tümör nekroz faktörü resöptör ailesinin bir üyesi olan CD40 bu genlerden bazıları olup, bunların MS için risk faktörü oluşturduğu düşünülmektedir.

Alpha ve beta östrojen reseptörlerinin ve orphan nükleer reseptör NR1D2'nin koaktivatörü olan Nükleer Reseptör Koaktivatör 5 (NCOA5) geni CD40 genini çok yakınında bulunmakta olup, psöriazis gibi otoimmun hastalıklarla ilişkisi olabileceği daha önceki çalışmalarda gösterilmiştir. Fakat literatürde NOCA5 ile ilgili çalışmalar çok sınırlıdır. Literatür taramaları sonucunda MS ve NCOA5 ilişkisini araştıran bir çalışmanın olmadığı anlaşılmıştır. Bu çalışmada amacımız MS ile NCOA5 geni rs2903908 polimorfizmi arasındaki olası ilişkiyi araştırmaktı.

Çalışma kapsamında 153 MS tanısı almış hasta ve 159 sağlıklı kontrol örneği incelenmiştir. Örnek kanlarından elde edilen DNA'lar kullanılarak Real_Time PCR yöntemi ile NCOA5 geni rs2903908 bölgesi için genotiplendirilme yapılmıştır. Sonuçlar SPPS 16.0 programı ile analiz edilmiştir.

Çalışma sonucunda NCOA5 geni rs2903908 bölgesi için tespit edilen TT, CT ve CC genotiplerinin sıklıkları sırasıyla hasta grubunda 0.5099, 0.3856, 0.1046 ve kontrol grubunda 0.4025, 0.5409, 0.0566 olarak bulunmuştur. Hasta ve kontrol grupları arasında genel genotip dağılımı bakımından anlamlı fark tespit edilmiştir (p=0.016). Tespit edilen genotiplerin sıklıkları ayrı ayrı değerlendirildiğinde özellikle heterozigotların hastalarda anlamlı düzeyde düşük olduğu bulunmuştur (p=0.007; OR,95%CI=0.53,0.34-0.84).

Elde ettiğimiz veriler NCOA5 geninin MS hastalığı üzerinde etkisinin olabileceğini düşündürmektedir.

Anahtar Kelimeler: Multiple Skleroz, NCOA5, rs2903908, Polimorfizm

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➢ ORAL PRESENTATION

4D-QSAR Study on Monochloroacetic Acid Derivatives with Antimicrobial

Dilek Şeyma Kızılcan*, Burçin Türkmenoğlu, Yahya Güzel

Erciyes University, Faculty of Science, Department of Chemistry, Melikgazi, Kayseri, Turkey

Correspondingauthor e-mail: d_seymakizilcan@hotmail.com

Abstract

Monochloroacetic acid (MCA) has a wide range of applications in areas such as medicine, cosmetics, paint, pesticide. The antimicrobial activities of MCA derivatives have been investigated using the Molecular Conformer Electron Topological (MCET) method we have developed yet. In this method, we tried to characterize the electronic and physicochemical properties with the Klopman index, which is the local reactivity descriptor. We obtained quite satisfactory results with Klopman index. We set the model according to the best q2 and r2 results. In 4D-QSAR calculations, we have elucidated the map of the molecules carrying the Pha, AG and APS groups, which are part of the biological structure.

Keywords: Monochloroaseticasid., MCET,QSAR

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➢ **ORAL PRESENTATION**

AzospermikİnfertilErkeklerde NCOA5 Geni rs2903908 Polimorfizminin Rolü

Hüsniye Rüstemoğlu[1],Aydın Rüstemoğlu[1], Nevin Karakuş[1], Fikret Erdemir[2]

[1]Gaziosmanpaşa Üniversitesi, Tıp Fakültesi, Tıbbi Biyoloji AD, Tokat, Türkiye
[2]Gaziosmanpaşa Üniversitesi, Tıp Fakültesi, Üroloji AD, Tokat, Türkiye

Sorumlu yazar e-mail:hakkanat2009@hotmail.com

Özet

İnfertilite, dünyadaki görülme sıklığı %15-20, klinik olarak en az 1 yıl süre ile korunmasız cinsel ilişkiye rağmen gebelik elde edilememesi olarak tanımlanmaktadır. Evli çiftlerin %2-7'sinin doğurganlık çağlarının sonuna kadar çocuk sahibi olamadıkları, olguların % 20'sinde erkeğin, % 38'inde kadının, % 27'sinde de her ikisinin sorumlu olduğu, % 15 olguda ise nedenin belirlenemediği bildirilmektedir.Erkek infertilitesininbilinen nedenlerinin yanısıra, olguların yaklaşık %40'ı idiopatik olup nedenleri bilinmemektedir.

Nükleer reseptör koaktivatör 5 (NCOA 5) geni alfa ve beta östrojen reseptörlerinin ve orphan nükleer reseptör NR1D2'nin koaktivatörüdür. NCOA5 20q12-q13.12 kromozom bölgesinde lokalizedir.NCOA5'in östrojen reseptör α ve β (ERα ve ERβ) ve NR1D2'den başka, Androjen reseptör (AR), Yağ asidi sintaz (FAS) ve TGF-β genleri için de direk düzenleyici etkiye sahip olduğunu göstermiştir.NCOA5'in kontrol ettiği ERα'nın NF-kB'yi baskıladığı gösterilmiştir. NF-kB'nin IL-6 dahil birçok genin ifadesini kontrol ettiği ve NCOA5 ifadesindeki yetersizliğin IL-6 aşırı ekspresyonuna yol açtığı bulunmuştur. Fareler üzerinde yaptıkları araştırmada NCOA5 genindeki haployetersizliğin erkek fareledeinfertiliteye yol açtığını göstermiştir. Bu bulgular NCOA5'in erkek infertilitesi üzerinde etkili olabileceğini düşündürmektedir. Bu çalışmada amacımız erkek infertilitesiile NCOA5 geni rs2903908 polimorfizmi arasındaki olası ilişkiyi araştırmaktı.

Çalışma kapsamında 121Azospermikinfertil erkek ve 99 en az iki çocuk sahibi sağlıklı erkek kontrol olarakincelenmiştir. Örnek kanlarından elde edilen DNA'lar kullanılarak Real_Time PCR yöntemi ile NCOA5 geni rs2903908 bölgesi için genotiplendirilme yapılmıştır. Sonuçlar SPPS 16.0 programı ile analiz edilmiştir.

Çalışma sonucunda NCOA5 geni rs2903908 bölgesi için tespit edilen TTgenotipininhastalarda (14.88% vs 6.06%) anlamlı düzeyde (p = 0.049) yüksek olduğu bulunmuştur. Bu bulgu TT genotipinin erkek infertilitesi için bir risk faktörü olduğunu göstermektedir (OR = 2.71, 95% CI = 1.04-7.08).

Elde ettiğimiz veriler NCOA5 genindeki değişikliklerinerkek infertilitesi üzerinde etkili olabileceğini göstermektedir. Ancak bu verilerin daha fazla örneklemle ve tüm geni kapsayacak tarama ile desteklenmesine ihtiyaç vardır.

Anahtar Kelimeler: Azospermi, Erkek infertilitesi, NCOA5, rs2903908

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➢ **ORAL PRESENTATION**

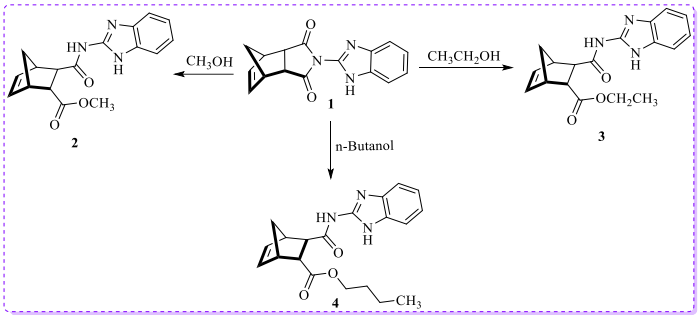
Synthesis of Norbornene-Based Compounds Containing Ester and Benzimidazole

İrfan ÇAPAN[a], Süleyman SERVİ[b]

[a]Gazi University, Technical Sciences Vocational College, Ankara, Turkey
[b]Fırat University, Faculty of Science, Department of Chemistry, 23169, Elazığ-TURKEY

irfancapan@gazi.edu.tr

Abstract



Benzimidazoles are remarkably effective compounds, extensive biochemical and pharmacological studies have confirmed that these molecules are effective against various strains of microorganisms. Benzimidazole derivatives play an important role in the medical field with so many pharmacological activities such as antimicrobial, antiviral, antidiabetic and anticancer activity. The potency of these clinically useful drugs in the treatment of microbial infections and other activities encouraged the development of some more potent and significant compounds. Benzimidazole structure containing drugs which generated organic compound have anthelmintic, antihistaminic, antitumor and anti-inflammatory features and also these drugs use in the treatment of many different diseases such as hypertension, ulcer and parasitic infections.

In this study, the reaction of different alcohols with compound **1** was investigated. Compounds **2** and **3** were taken with X ray crystallography image. Besides this, structure of the products were characterized by ^{1}H-NMR, ^{13}CAPT-NMR and 2D-NMR techniques.

Keywords: Norbornene, Benzimidazole

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➢ ORAL PRESENTATION

The Antimicrobial Activities and DNA Interactions of (4-Fluorobenzyl) Pendant Armed Octachlorocyclotetraphosphazenes

Merve Çam*[A], Gamze Elmas[b], Leyla Açık[a], Zeynel Kılıç[b], Aytuğ Okumuş[b]

[a]Department of Biology, Gazi University, TR-06500 Ankara, Turkey
[b]Department of Chemistry, Ankara University, TR-06100 Ankara, Turkey

Responsible author e-mail: mervecam93@gmail.com

Abstract

Chlorocyclophosphazenes [(N=PCl2)n] (n=3-40) are the well-known family of inorganic heterocyclic ring systems and display very various physical, chemical and biological properties depending on the types and features of the substituents bonded to the phosphorus atoms [1]. The octachlorocyclotetraphosphazene, N4P4Cl8, is consisting of an eight-membered ring which is a starting reagent used in the preparation of cyclotetraphosphazene derivatives. In N4P4Cl8, eight Cl atoms can be replaced with the mono and difunctional reagents such as primary and secondary amines, alkoxides, phenoxides, diamines, diols and amino alkoxides [2,3]. In the last decades, great attention has focused on the syntheses of cyclophosphazenes for the evaluation of the biological properties eg. antibacterial, anticancer, antituberculosis, antioxidant and antiproliferative effects of these compounds [4,5].
The Cl replacement reaction of N4P4Cl8 with one equimolar amount of sodium 3-(4-fluorobenzylamino)-1-propanoxide gave partly substituted mono-(4-fluorobenzyl)-spiro- (N/O)cylotetraphosphazene as major product. The mono-spiro phosphazene 1 reacted with excess primary and secondary amines to produce the fully substituted products. In this study, the antimicrobial activities of the mono-spiro phosphazenes were examined against some G(+) and G(-) bacteria and fungi using the standard broth dilution method. The MIC, MBC and MFC values of the products were found to be range from 15.63 to 2000 µM. Furthermore, the interactions between these compounds and supercoiled plasmid DNA were investigated agarose gel electrophoresis.

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Anahtar Kelimeler: Antimicrobial activity,NO donor-typed mono spirocyclotetraphosphazenes, phosphazenes.

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➢ **ORAL PRESENTATION**

Use of KASP Assay in Sex Determination of *Pistacia*

Zeyneb Nur Şahin[1*], Yıldız Aydın[2], Ahmet Onay[3], Ahu Altınkut Uncuoğlu[1]

[1]Marmara University, Faculty of Engineering, Department of Bioengineering, Istanbul, TURKEY.
[2]Marmara University, Faculty of Arts and Sciences, Department of Biology, Istanbul, TURKEY.
[3]Dicle University, Faculty of Science, Department of Biology, Diyarbakır, TURKEY.

Corresponding author e-mail: zeynebnursahin@gmail.com

Abstract

The genus *Pistacia* is a perennial plant and belongs to Anacardiaceae (Cashew) family. The fruits of species have an extreme importance in food, health and baking industry as a raw material. While the species have different characters like membranous, leather, deciduous or evergreen, the most common known character is dioecism of individuals. The dioecious character (being a male/female) affects the anatomical or structural traits of individuals like picking season or fruit size so identify the individual is very crucial for producers. Marker Assisted Selection (MAS) is a promising process and may help to screen the sex or many other traits of plant seedlings quickly before they reach reproduction stage or show morphological data in more than several years. In this research, eight different Pistacia species were analysed with Competitive Allele Specific PCR (KASP) assay as a marker screening system and it was focused on possible gender determination based on single nucleotide polymorphism (SNP). On the result of KASP assay, 167992 (A/T) SNP discriminated the three female individuals of Pistacia which *P. atlantica* Desf, *P. vera* L. and *P. terebinthus* L., 133396 (C/G) SNP marker discriminated only *P. vera* L. female. This result was supportive to Pistacia's ZW/ZZ (female/male) sex determination system because all discriminated females show heterozygous character as reported. This research has been supported by Marmara University Research Foundation (Project No: FEN-C-YLP-090217-0049).

Key words: KASP, *Pistacia,* SNP, sexual differentiation

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➢ ORAL PRESENTATION

Effects of Aerobic Exercise Induced Metabolic Stress on Irisin Levels in Trained Male Subjects

Sermin Algül[1,2], Oğuz Özçelik[1],

[1]Firat University, Faculty of Medicine, Department of Physiology, Elazığ, Turkey [1]
[2]Van Yüzüncü Yıl University, Faculty of Medicine, Department of Physiology, Van Turkey[1,2]

Abstract

Irisin hormone has been shown to induce browning of white adipose tissue, enhancing energy expenditure and mediating some of the beneficial effects of exercise. We aimed to estimate the effects of acute exercise induced oxidative stress determined from altered MDA levels on circulating irisin levels in trained male subjects. Total of 30 trained (18.3±0.06 yr) male subjects performed aerobic running exercise (45 min) at their anaerobic threshold determined from 64-76% of maximal heart rate. Pre and post exercise venous blood samples were taken. MDA levels were determined by high performance liquid chromatography (HPLC). Serum irisin levels were analysed using Enzyme Linked-Immunosorbent Assay (ELISA). The ethical approvement has been obtained before study. Paired t-test and person correlation analysis were used to evaluate data. During exercise, MDA levels increased significantly from 0.715±0.03 µmol/L to 0.968±0.04 µmol/L (39.4%, $p<0.05$). In addition, irisin levels increased 245.21±3.8 ng/ml to 290.08±3.8 ng/ml (18.6%, $p<0.05$). Despite increase MDA and irisin levels, there was no significant correlation between these two parameters levels ($R=0.003$, $p=0.9$). Our results showed that circulating irisin and MDA levels were acutely elevated in response to aerobic exercise. However, exercise induced oxidative stress determined from increased MDA did not correlated with energy regulatory hormones of irisin. Aerobic exercise induced increased irisin levels could be a function of muscle energy demand. Future studies need to determine the underlying mechanisms of irisin release and explore irisin's therapeutic potential.

Keywords: Exercise, anaerobic threshold, MDA, irisin, fitness

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➢ ORAL PRESENTATION

A Comparative Study of Solid Phase Extraction of Phthalates from Liquid Pharmaceutical Preparations

Pelin Köseoğlu Yılmaz*, Ufuk Kolak

Istanbul University, Faculty of Pharmacy, Department of Analytical Chemistry, Istanbul, Turkey

Corresponding author e-mail: pelink@istanbul.edu.tr

Abstract

Phthalates are a group of ortho-phthalic acid diesters. In industry, they are used as plasticizer to soften the rough polymers such as polyvinyl chloride and to hold the scent and colour of the personal care products. Researches on animals indicated that phthalates possessed some carcinogenic effects and also caused fetal defects, uterine damage, disturbances in male reproductive tract, and endocrine system disrupting activities. Considering these negative impacts on human health, it became more of an issue to develope reliable extraction and determination methods for analysis of phthalates.

Because of the low concentration levels and complex sample matrices, direct use of chromatographic methods is usually limited by their sensitivity and selectivity. That is why a pre-concentration step prior to chromatographic analysis could be necessary to improve analytical sensitivity. Solid phase extraction (SPE), which is an effective and simple sample preparation method, have found to be a suitable pre-treatment and/or extraction method for phthalates from various matrices. SPE not only requires low sample and solvent amounts, but also removes most of the interferences and enables the measurement of low concentrations.

One of the reasons of exposure to phthalates for human is pharmaceutical preparations contaminated by packaging material. In this study, it was aimed to compare phthalate retention capabilities of three different solid phases using hydrophilic-lipophilic balance, strong anion exchange and C18 SPE cartridges for 7 phthalate derivatives from liquid pharmaceutical preparations. Effects of conditioning and elution solvents types, pH values, and solvent volumes were investigated to optimize the SPE procedures using standard phthalate solutions and fortified pharmaceutical preparation samples. The developed SPE HPLC-UV method was validated in terms of linearity, LOD, LOQ, precision and accuracy.

Keywords: Phthalate, Solid phase extraction, High performance liquid chromatography, Method development and validation

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➢ **ORAL PRESENTATION**

Klinik *Acinetobacter baumannii* Suşlarında Antibiyotik Direnç Genlerinin ve Sınıf 1 İntegronların Araştırılması

Ayşegül Saral[1], Sedanur Cinemre[2], Ayşegül Çopur Çiçek[3], Azer Özad Düzgün[2*]

[1]Artvin Çoruh Üniversitesi, Sağlık Bilimleri Fakültesi, Beslenme ve Diyetetik Bölümü, Artvin, Turkiye

[2*]Gümüşhane Üniversitesi, Mühendislik ve Doğabilimleri Fakültesi, Genetik ve Biyomühendislik Bölümü, Gümüşhane, Turkiye

[3]Recep Tayyip Erdoğan Üniversitesi, Tıp Fakültesi, Temel Tıp Bilimleri Bölümü, Rize, Türkiye

e-mail:azerozad@windowslive.com

Özet

Antibiyotik direnç genlerinin Gram negatif bakterilerde bulunması ve direncin yayılması halk sağlığı açısından büyük tehdit oluşturmaktadır. Bu nedenle klinik izolatlarda antibiyotik direnç genlerinin belirlenmesi önem arz etmektedir. *Acinetobacter baumannii* klinik suşlarında beta laktamaz direnç genlerinin ve integronların varlığının araştırılması bu çalışmanın amacını oluşturmaktadır. Rize Eğitim ve Araştırma Hastanesi yoğun bakım ünitesinde yatan hastaların çeşitli klinik örneklerinden izole edilen (trakeal aspirat, kan,idrar, bronkoalveolar lavaj) 41 A. baumannii izolatının tanımlaması ve antibiyogramı Vitek 2 Compact otomatize sistemi ile çalışıldı. Total DNA izolasyonu kaynatma DNA metoduyla yapıldı. bla_{VIM}, bla_{NDM}, bla_{IMP}, bla_{GES}, bla_{CTXM-1}, bla_{CTXM-2}, bla_{OXA-58}, bla_{OXA-23}, bla_{OXA-51} ve Sınıf 1 integrona ait primerler kullanılarak PZR'ler gerçekleştirildi. Polimeraz zincir reaksiyonu; 1,5 ünite DNA polimeraz (Taq DNA polimeraz, Fermentas), 5 µl genomik DNA, 10 µl DNA polimeraz tamponu, 4 µl 2,5 mM her bir dNTP, 2 µl her bir primer stoku (20 pmol/µl), 3 µl 25 mM $MgCl_2$ ve son hacim steril deiyonize su ile 50 µl'ye tamamlanarak hazırlandı. Amplikasyonun gerçekleştiği tüm örnekler %1'lik agaroz jelde yürütüldü. Tanımlanan 41 Multi-drug rezistans (MDR) *A.baumannnii* izolatlarının direnç profili Tablo 1 de gösterilmektedir. bla_{OXA-51} geni *A. baumannii* izolatlarının tanımlanmasında kullanılmaktadır ve bu çalışmaya dahil edilen 41 *A. baumannii* suşunun tamamında bla_{OXA-51} geni tespit edilmiştir. 38 suşta bla_{OXA-23} (%92,6) sınıf D beta laktamaz geni tespit edilmiştir. Sınıf A beta laktamaz genlerinden bla_{CTXM-1} 36 suşta (%87.8), bla_{CTXM-2} 18 suşta (%43) ve bla_{GES} 1 suşta tespit edilmiştir. Araştırılan Metallo beta laktamaz genlerinin (bla_{VIM}, bla_{NDM}, bla_{IMP}) ve Sınıf D beta laktamaz kodlayan bla_{OXA-58} geninin varlığı hiçbir örnekte görülmemiştir. 34 suşta sınıf 1 integron tespit edilmiştir. Sonuçlar Sınıf A ve Sınıf D beta laktamazların *A. baumannii* izolatların da yaygın bir şekilde bulunduğunu göstermektedir.

Anahtar Kelimeler: *A.baumannii*, integron, beta-laktamaz

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➢ ORAL PRESENTATION

The Comparison of Aflatoxin Levels of Organic and Traditionally Produced Roughages

Nurcan Cetinkaya[1], Bora Bolukbasi[1]*, Cansu Celik[1], Alper Ciftci[2]

1Ondokuz Mayis University, Faculty of Veterinary Medicine, Department of Animal Nutrition and Nutritional Diseases. Kurupelit, TR-55139, Samsun, Turkey.
2Ondokuz Mayis University, Faculty of Veterinary Medicine, Department of Microbiology, TR-55139, Samsun, Turkey.

*Corresponding author e-mail: borabolukbas@gmail.com

Abstract

The objective of the present study was to compare the aflatoxin levels of organic and traditionally produced roughages. Organic roughages were rice straw(ORS), barley straw(OBS), wheat straw(OWS), maize straw(OMS), maize silage(OMSG), grass hay(OGH), alfaalfa hay (OAH) and barley-vetch hay(OBV). Traditionally produced roughages were rice straw(TRS), barley straw(TBS), wheat straw(TWS), maize straw(TMS), maize silage(TMSG), grass hay(TGH) and alfaalfa hay (TAH). Roughages were colected from two organic and two conventional farms. In all samples, chemical composition was determined by AOAC methods and total aflatoxin levels were determined by direct competitive ELISA method. The determined mean CP%, CF%, EE%, Ash%, OM% and DM % values of organic and non organic roughages were not different. The aflatoxin levels in all traditional roughage samples with the exception of TBS, TMS and TGH were below the maximum acceptable level for feeds, they were changed between 1.63 and 4.66 ppb. The highest aflatoxin level was determined for TGH (13 ppb), the others were ranged from 5.12 to 13.00 ppb. However, the aflatoxin levels for ORS, OBS and OAH were below the maximum acceptable level and they were changed between 1.94 and 4.06 ppb. Aflatoxin levels of OWS, OMS and OBV were between 5.68 and 8.90 ppb. On the other hand, aflatoxin levels of OMSG and OGH were higher than 10 ppb.Even, the level for OMSG was reached to 17.87 ppb. In conclusion, obtained results show that organic roughages contain higher amount of total aflatoxin compared to traditional roughages

Keywords: Aflatoxin; Organic roughage; Traditional roughage

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➢ **ORAL PRESENTATION**

Design of Smart Nanoliposomal Drug Delivery Systems Targeted for Breast Cancer

Derya Dincyurek Ekici [1*], Uğur Salgin [2], Sema Salgin [2]

[*1]Abdullah Gül University, Faculty of Engineering, Department of Materials Science and Nanotechnology Engineering, Kayseri, Turkey
[2]Cumhuriyet University, Faculty of Engineering, Department of Chemical Engineering, Sivas, Turkey

Corresponding author e-mail: deryadncyurek@hotmail.com

Abstract

Anticancer drugs are the most important agents in the global approach for cancer fighting. Liposomes are popular drug delivery systems for the development of new generation cancer drugs in terms of providing and controlling improved therapeutic efficacy. While hydrophobic tails of phospholipids which form the structure reduce undesirable interactions with aqueous, hydrophilic head groups of them organize themselves in such a way that aqueous forming the system makes excess contact. The encapsulation of water-insoluble materials is provided in the space between the bilayer of liposomes and water soluble materials are provided in the water surrounded by phospholipids. Industrial scale production of liposomal formulations is difficult due to limitations in current production techniques. Among the good production processes, intensive researches are being carried out for the industrial scale production and development of liposomal products in various supercritical CO_2 processes. The requirement for the use of organic solvents in the conventional production steps of liposomal systems can be completely eliminated or significantly reduced by using supercritical CO_2 technology and then can be completely removed by the supercritical CO_2 of the final organic solvents from the final product.

In the study, the design of smart nanoliposomal drug delivery systems in the supercritical antisolvent (SAS) process was performed, which could provide transport of anticancer agents to diseased tissue for treatment of breast cancer and allow the carrier system to be displayed so that the carrier system can release the active agent in a controlled manner. Soy L-α-phosphatidylcholine (SPC) have formed the basic compositions of the bilayer of hydrogenated soy L-α-phosphatidylcholine (HSPC) and cholesterol liposomal systems to improve the therapeutic efficacy of this system by providing long-term circulation in the body without interacting with the reticuloendothelial system (RES), the outer surface of the liposomal system was modified with 1,2-distearoyl-sn-glycero-3-phosphoethanolamine-N-[methoxy (polyethylene glycol) -2000] ammonium salt (DSPE-MPEG2000). Doxorubicin (DOX), an antineoplastic agent for breast cancer treatment, was used as an anticancer agent in this study. With the participation of approximately 4-5 nm gold nanoparticles between the bilayer, this layer is triggered by photo-thermal processes to enable activation of DOX release with smart treatment functionality and also has gained the potential to be displayed.

This work was supported by the Cumhuriyet University Scientific Research Projects Unit under the project M-636.

Keywords: Liposome, Drug delivery system, Supercritical CO_2, Supercritical Antisolvent Process

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➢ **ORAL PRESENTATION**

İçecek Tüketiminin Böbrek Taşı Oluşumu Üzerine Etkilerinin Değerlendirilmesi

Mehmet Arif İçer*, Makbule Gezmen-Karadağ

Gazi Üniversitesi, Sağlık Bilimleri Fakültesi, Beslenme ve Diyetetik Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: m.arif.icer@gmail.com

Özet

Nefrolitiazis (böbrek taşı hastalığı) metabolik, genetik ve çevresel faktörlerin etkileşimiyle ortaya çıkan multifaktöriyel bir etiyolojiye sahiptir. Çevresel faktörlerden biri olan beslenme alışkanlıkları en önemli böbrek taşı oluşum nedenlerindendir. İçecek tüketiminin taş oluşumu üzerine etkisinin değerlendirildiği çalışmaların çoğunda beslenmenin taş oluşumu üzerinde etkin bir rol oynadığı sonucuna varılmaktadır. Bu çalışma içecek tüketimi ve böbrek taşı oluşumu arasındaki ilişkiyi değerlendirmek amacıyla planlanıp yürütülmüştür.

Bu çalışma şu an aktif böbrek taşı hastalığı tanısı konulmuş 20-65 yaş arası 44 hasta (29 erkek, 15 kadın) ile 44 sağlıklı birey (29 erkek, 15 kadın) olmak üzere toplam 88 gönüllü üzerinde yürütülmüştür. Tüketilen içecek türlerinin ve miktarlarının taş oluşumu üzerine etkisinin değerlendirilmesi amaçlı katılımcılara besin tüketim sıklığı anketi uygulanmıştır. İçecekler; süt ve süt ürünleri, gazlı içecekler, meyve suları ve alkollü içecekler ana başlıkları altında bazı içeceklerin "Her gün", Haftada 3-5", Haftada 1-3", "15 günde 1", "Ayda 1" ve "Hiç" kategorilerinden hangisine uygun olduğu sorulmuş ve tüketim miktarları kaydedilmiştir.

Limonata, diyet kola, soda, havuç suyu ve portakal suyu tüketimlerinin hasta grubundaki erkeklerde sağlıklı gruptakilere göre daha düşük olduğu bulunmuştur ($p<0,05$). Kafeinli kahve, portakal suyu ve şeftali suyu tüketimlerine göre kadın bireyler incelendiğinde ise hasta grubundakilerin bu besinleri tüketme düzeyleri sağlıklı gruptakilerden daha düşük saptanmıştır ($p<0,05$). Ayrıca hasta grubundaki kadınlarda kola ve limonata tüketimlerinin de sağlıklı gruptakilere göre daha düşük olduğu bulunmuştur (sırasıyla $p<0,05$, $p<0,001$).

İçecekler sıvı alımını arttırması ile anti-litojenik etki göstermesinin yanı sıra içerdikleri kafein, alkol, oksalat, potasyum, sitrat vb. içerikleri ile taş oluşum riskiyle ilişkilendirilmektedir. Böbrek taşı oluşma riskini en aza indirmek için portakal suyu ve limonata gibi sitrat içeriği yüksek içeceklerin tüketiminin arttırılması düşünülebilir.

Anahtar Kelimeler: Nefrolitiazis, Beslenme, İçecekler, Sitrat.

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➢ **ORAL PRESENTATION**

In Silico Analyses of Paraoxonase 1 (*PON1*) Gene Variants (L55M, and Q192R)

Nevin Karakuş

Gaziosmanpasa University, Faculty of Medicine, Department of Medical Biology, Tokat, Turkey.

Corresponding author e-mail: nevinbalci@hotmail.com

Abstract

PON1 is a calcium-dependent antioxidant glycoprotein, mostly carried on HDL, and defense the body against oxidative stress. Variants in the *PON1* gene can effect protein concentration and activity. Both the L55M (163T>A, rs854560) and Q192R (575A>G, rs662) variants have effects on PON1 activity and have been related with the risk of different diseases. In the present study, we aimed to discover the effects of L55M and Q192R variants on the structure and function of the protein. For this reason, we used various in silico prediction tools to predict the pathogenic, stabilizing and structural effects of L55M and Q192R variants on PON1 protein. The results indicated that both the variants had destabilizing effects, however, variant L55M was more deleterious than the variant Q192R. When the structural effects of variants were assessed, it was determined that both the variants were in regions that were important for protein activity and interacted with amino acids in other regions. It is likely that these interactions are essential for the proper functioning of the protein. In conclusion, in silico approaches enable us to simulate the possible effects of missense variants at the protein level and consider the effect of variants on the protein's structure and function.

Keywords: PON1; rs854560; rs662; in silico analysis

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➢ ORAL PRESENTATION

Catalytic Properties of Ti-pillared Bentonites and Activity Test for Ethanol Dehydration

Funda Turgut Basoglu

Gazi University, Engineering Faculty, Chemical Engineering Department, 06570 Ankara, Turkey

tfunda@gazi.edu.tr

Abstract

Iron or copper was impregnated to Ti-pillared bentonite (Ti-PB) and subsequent cerium incorporation was done by wet impregnation. Different combinations of cerium, manganese or copper were impregnated through the Ti-PB under evaporation. The bentonite from the Middle Anatolia region (Hançılı) was used in the synthesis. Surface acidities of pillared samples were evaluated and Ti-PB exhibited both the Lewis and Brønsted acidities. The copper impregnation resulted in an increase in the Lewis acidity. The cerium-iron and cerium-copper impregnated samples yielded an increase in the Brønsted acidity. Thermogravimetric analysis (TGA) showed that the total weight losses of manganese incorporated samples were less than those of iron or copper impregnated Ti-PBs in the range of 25-300ºC. The X-ray photoelectron spectroscopy (XPS) data showed that the titanium in all of the samples was in the TiO_2 form (Ti^{+4}) with $2p_{3/2}$ and $2p_{1/2}$ orbitals respectively. The $2p_{3/2}$ and 2p1 orbitals of copper resulting from CuO (Cu^{2+}) was observed for the copper impregnated sample. The $2p_{3/2}$, $2p_{1/2}$ and 2s orbitals of iron from bentonite and by impregnation were also observed showing the presence of Fe_2O_3 (Fe^{+3}). The 2p3 and 2p1 orbitals of manganese resulting from Mn_3O_4 and the $3d_{3/2}$ orbital of cerium corresponding to CeO_2 (Ce^{+4}) were observed for cerium manganese containing Ti-PB. In ethanol dehydration reaction, copper impregnated Ti-pillared catalyst gave conversion value reaching to 0.77 at 350ºC and ethylene selectivity was obtained as 0.7. When iron was impregnated to Ti-PB, conversion value of catalyst was obtained as 0.60 at 400ºC and ethylene and acetaldehyde selectivities were obtained as 0.35 and 0.31 respectively.

Keywords: Ti-pillared bentonite, surface acidity, TGA, XPS, ethanol dehydration

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➢ **ORAL PRESENTATION**

In vitro Evaluation of Cytotoxic Effects of Various Plant Extracts

[1*]Gul Ozcan, [2]Ozlem Dagdeviren Ozsoylemez, [1]Gizem Akman, [2]Walid Khalilia

[1]Istanbul University, Faculty of Science, Department of Biology, Istanbul, TURKEY
[2]Istanbul University, Instute of Gratuate Studies in Science and Engineering, Istanbul, TURKEY

Corresponding author e-mail: gozcan@istanbul.edu.tr

Abstract

Cancer is a long process that leads the organism to death and is associated with the normal cells acquiring the ability to divide endlessly. Today, using natural products to treat cancer is very common, especially in developing countries. For this reason, it is very important to examine endemic / non-endemic plant extracts with unknown biological activities to develop new drugs that will lead to the use of natural medicines. Five different doses (0.001, 0.01, 0.05, 0.25 and 0.5 mg/ml) of the *Colchicum sanguicolle, Centaurea antiochia* and *Crataegus microphylla* were prepared and applied for 24, 48 and 72 hours on the HeLa and C-4 I cell lines. Subsequently, the growth rate was evaluated with the mitochondrial dehydrogenase enzyme (MTT) method. *Colchicum sanguicolle* extracts showed the most effective antitumor activity. For the *Colchicum sanguicolle* extract, the IC_{50} dose for HeLa cells was 0.01 mg/ml at 48 hours, while for the C-4 I cells it was 0.001 mg/ml at 48 hours. These results showed that C-4 I cells were more sensitive to the *Colchicum sanguicolle* extracts. The results of from this study regarding the antitumor effect of plant extracts of endemic varieties of Turkey may have an important place in design and development of anticancer drugs and would make contributions to other studies to be conducted in this area.

Keywords: Antitumor, Centaurea antiochia, Colchicum sanguicolle, Crateagus microphylla, C-4 I, HeLa.

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➢ **ORAL PRESENTATION**

Systematically Importance of Floral Features regarding Section *Staticopsis* of A*cantholimon* Boiss. (Plumbaginaceae) genus from Turkey

Feyza Candan[1], Musa Doğan[2]

[1] Department of Biology, Faculty of Science and Letters, Manisa Celal Bayar University,

Manisa, Turkey
[2] Department of Biological Sciences, Faculty of Science and Letters, Middle East Technical University, Ankara, Turkey

Corresponding author e-mail:feyzzacandan2002@yahoo.com

Abstract

Floral features have systematically importance for most of the plants. *Acantholimon* genus belongs to Plumbaginaceae family and includes about 200 species in the world. This genus is a complex taxon with interesting flowers and prickly and flapy leaves. Because of that reason, it is hard to separate them at the field without their flowers. This study is made to investigate the floral structures as regards *Acantholimon* Boiss. genus, 52 taxa of *Staticopsis* section, which of 34 are endemic collected from Turkey, in a detailed way by using scanning electron microscope (SEM). Floral micromorphology of the spikelets, calyx, calyx tube, outer bracts and hair forms were found to be taxonomically important for the sectional delimitation of species, subspecies and varieties of the section. In conclusion, variation according to flower micromorphology, sculpturing pattern and other features like stoma and hair types have systematically importance particularly at sectional and species delimitation. The results of this study support the morphologically distinction between 52 taxa of *Staticopsis* section so far determined in Turkey. All the determined characters of *Staticopsis* section concerning surface ornemantation and hair types of all investigated taxa were important and taxonomically valuable to use in the identifying key for the genus.

Keywords: *Staticopsis* section, flower, micromorphology

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➢ ORAL PRESENTATION

Developmental Features of Male and Female Reproductive Organ in *Vibirnum tinus* L.

Aslıhan Çetinbaş-Genç*, Filiz Vardar

Marmara University, Faculty of Arts and Sciences, Department of Biology, İstanbul, Turkey
aslihan.cetinbas@marmara.edu.tr

Abstract

Vibirnum tinus L. has corymb type of inflorescence which bears hermaphrodite flowers. Reproductive development starts with the conversion of apical meristem into the floral meristem in flowers. During the transformation, the apex of apical meristem widens and flattens. Both apical and floral meristem consists of sequential cell layers and intercellular spaces of the cells are considerably small. Floral meristem gives rise sexual organ primordia by successive mitotic divisions. Firstly, 5 stamen primordia differentiate from the edges of floral meristem. They start stretching and differantiating into filaments and anthers respectively. After a short time of stamen initiation, 3 carpel primordia differentiate from the center of floral meristem. They elongate and form an ovary. In progressive stages, they forms a solid style and three lobed stigma above the ovary.

Keywords: apical meristem, floral meristem, flower ontogeny, sexual organ development.

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➢ ORAL PRESENTATION

Biochemical Responses of Heavy Metal Stress in Crop Varieties: A Hydroponic Study

Elif Öztetik

Anadolu University, Science Faculty, Department of Biology, Eskişehir, Turkey.

Corresponding author e-mail: eoztetik@anadolu.edu.tr

Abstract

Rapid development of the industrial activities, recycling of wastewater through various stages and the increased traffic load and household wastes due to high population density could be counted as the major reasons of heavy metals accumulation today. As a result of air, water and soil contamination by heavy metals, this unlikeable situation firstly influence plants and thereafter HMs are transported to other higher organisms via food chain. In this study, toxic effects of heavy metals on protein, gluthatione (GSH) contents and gluthatione *S*-transferase (GST) activities in the roots and shoots of wheat (*Triticum aestivum* cv. Bezostaja) and barley (*Hordeum vulgare* cv. Erginel) varieties were investigated through different concentrations of lead chloride ($PbCl_2$), cadmium chloride ($CdCl_2$) and their combined ($PbCl_2$ + $CdCl_2$) applications. According to our results, application of HMs to plants caused differences in GST activities and in the contents of GSH and proteins as compared to their control groups.

Keywords: Barley, GSH, GST, heavy metals (Cd, Pb), protein, wheat.

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➢ ORAL PRESENTATION

Preparation, Characterization and Corrosion Inhibition Efficiencies of 4-(((1E,2E)-3-fenilallilliden) amino)-tiyoksidihidrotiyofen-3(2H) Schiff Base Self-Assembled Monolayers Films: Effect of Film Formation Time

Derya Özdemir[2] Abdullah Salcı[2], Ramazan Solmaz[1]

[1]Bingöl University, Faculty of Health Sciences, Occupational Health and Safety Department, 12000, Bingöl, Turkey
[2]Bingöl University, Science and Letters Faculty, Chemistry Department, Bingöl, 12000, Turkey

rsolmaz@bingol.edu.tr, rsolmaz01@gmail.com

Abstract

Self-assembled monolayers (SAMs) films on metal surfaces improve their properties such as surface wetting, adhesion and friction as well as provide superior protection ability against corrosion of metals. In this study, 4-(((1E,2E)-3-fenilallilliden) amino)-tiyoksidihidrotiyofen-3(2H) (Sb-CAL) Schiff base was synthesized and its SAM films were prepared on copper in methanol as solvent and different exposure time. The surface films were characterized using scanning electron microscope, energy dispersive X-ray spectroscopy and contact angle measurements. The corrosion inhibition effect of the SAMs films on the copper corrosion were tested in 3.5%NaCl solution using electrochemical impedance spectroscopy, potantodynamic polarization and linear polarization resistance techniques. It was found that Sb-CAL-SAMs films reduce greatly the corrosion rate of copper in 3.5% NaCl solution. The best film for this aim was synthesized in 0.1 mM Schiff base after 24 hour film formation time when methanol used as the solvent.

Keywords: Self-assembled monolayer films, copper, corrosion, Schiff base.

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➢ ORAL PRESENTATION

Successful Management of *Bartonella henselae* Infection in Two Scottish Fold Cats

Didem Pekmezci[1*], Yucel Meral[1], Cagatay Esin[1], Zeynep Nurselin Kot[1], Merve Gizem Sezener[2], Alper Ciftci[2]

[1]University of Ondokuz Mayis, Faculty of Veterinary, Department of Internal Medicine, Samsun, Turkey
[2]University of Ondokuz Mayis, Faculty of Veterinary, Department of Microbiology, Samsun, Turkey

*Corresponding author e-mail: dkazanci@omu.edu.tr

Abstract

Cat scratch disease (CSD) which can be found in many species including humans is a worldwide zoonosis. Domestic cats are the principle reservoir for *Bartonella henselae*, the most important zoonotic species to cause human disease. Cats may have relatively asymptomatic infection, and confirmatory diagnosis in cats cannot be determined based on clinical signs. Laboratory diagnosis of bartonellosis in cats is based on direct methods (bacterial isolation and PCR) and indirect methods are also needed. In this case report it was tried to define the successful treatment of *B. hansale* infection with a proper treatment of two Scottish fold cats, which were brought to our clinics with complaint of persistent dermatological lesions. Based on the cats' clinical lesions and complains about pustules on the arms of the owners, CSD was suspected and blood samples of both cats were molecularly analyzed. *Microsporum* infections were also detected by Wood's lamp examinations. Serum biochemical and hematological parameters were within the reference ranges. *Bartonella henselae* molecularly identified from both samples of the cats. For the molecular identification by PCR, whole blood samples were taken and genomic DNA extraction was performed. After PCR, the band of 588 bp was evaluated as positive for *B. henselae.* Ten mg/kg rifampin once a day, per orally started for 14 days, and 1% oxiconazole spray bi times in a day, topically 14 days used. The clinical presentation of the cats was gradually ameliorated, and the dermatological manifestations were regressed. Twenty days later a whole recovery was observed, and 20th blood samples were found as negative for *B. henselae* within the molecular analyzes. It is aimed to point out the importance of the zoonoses again which could be underestimated and to present successful management of *B. henselae* infection in two Scottish fold cats within this case report.

Keywords: Treatment, *Bartonella henselae*, Scottish fold cats, Zoonosis

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➢ ORAL PRESENTATION

Syntheses, Spectral Properties and Antituberculosis, Antifungal and Cytotoxic Activities of Mono-ferrocenyl-spirocyclotetraphosphazenes.

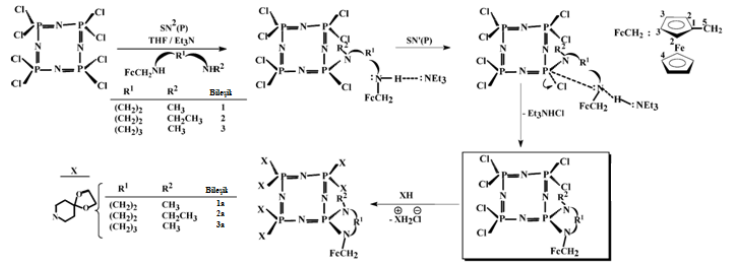
Aytuğ Okumuş[1], Gamze Elmas[1], Reşit Cemaloğlu[1*], Betül Aydın[2], Arzu Binici[3], Hülya Şimşek[3], Leyla Açık[2], Mustafa Türk[4], Zeynel Kılıç[1]

[1*]Department of Chemistry, Ankara University, 06100 Ankara, Turkey
[2]Department of Biology, Gazi University, 06500 Ankara, Turkey
[3]Public Health Institution of Turkey, 06100 Ankara, Turkey
[4]Department of Bioengineering, Kırıkkale University, 71450 Kırıkkale, Turkey

rcemaloglu@ankara.edu.tr

Abstract

The mono- and polyamino substituted cyclophosphazene derivatives have drawn a great deal of attention because of their potential as ionic liquids, biomedical materials, lubricants and anti-cancer agents [1]. Furthermore, the antimicrobial activities of cyclotri- and tetraphosphazenes were evaluated against various bacteria and fungi [2]. The antituberculosis activity studies of the cyclotetraphosphazenes are rather limited [3]. In this study, we have focused on the substituent exchange reactions of the octachlorocyclotetraphosphazene ($N_4P_4Cl_8$) with ferrocenyldiamines and secondary amines with the aim of preparing cyclotetraphosphazene derivatives and also exploring their biological activities. The fully substituted phosphazenes (**1a**-**3a**) were examined for their antituberculosis activity against reference strain *Mycobacterium tuberculosis H37Rv*, and the compound **2a** was found to be active. The antifungal activities of the phosphazenes (**1a**-**3a**) against yeast strains were carefully scrutinized. Compounds **1a** and **2a** were more efficient than the commercial antifungal agent ketoconazole in tests with the yeast culture *Candida albicans*. The interactions of these compounds with plasmid DNA and their cytotoxic activities against L929 fibroblasts and DLD-1 colon cancer cell lines were also investigated. The presence of the linear form III indicates the conformational changes of DNA when the DNA interacts with the compounds **1a** and **3a**. In the case of **1a**, the two bands corresponding to form I and from III were observed, indicating possible DNA-compound binding.



Keywords: Cyclophosphazenes, Antituberculosis, Antifungal, Cytotoxic Activity, DNA interactions

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➢ ORAL PRESENTATION

The Fauna and Flora Features of Düzce Asar Suyu Riparian Region

Engin Eroğlu[1*], Akif Keten[2], Necmi Aksoy[3], Oktay Yıldız[3], Kıvanç Ak[1], Şeref Keskin[4], Sertaç Kaya[1], Elif Atmaca[1]

[1]Duzce University, Faculty of Forestry, Department of Landscape Architecture, Düzce, Turkey
[2]Duzce University, Faculty of Forestry, Department of Wildlife Ecology and Management, Düzce,Turkey
[3]Duzce University, Faculty of Forestry, Department of Forest Engineering, Düzce, Turkey
[4]Duzce University, Faculty of Engineering, Department of Environmental Engineering, Düzce, Turkey

[*]Corresponding author e-mail: engineroglu@duzce.edu.tr

Abstract

Landscape has been defined as a mosaic. The mosaic consist of some part of the landscape such as patch, matrix and corridor. Especially, streams are the main corridors included floristic and wild life diversities. Riparian areas, which normally require more nourishment or free water areas where plants are involved. Riparian areas are very rich in terms of fauna and flora diversity compared to neighboring areas. Riparian areas contain mostly macrophyte plants, but also ruderal, coastal, terrestrial and forest ecosystems. Moreover, they have a lot of different wild life forms such as birds, fishes and amphibians. The main aim of the study is to define and determine the floristic and fauna features of the riparian zone of the Asar Suyu which go through the city center. This study that conducted along with "Asar Suyu" touched contiguous area borders of the city and overlaid the urban development limits of the city, determining of characteristics of the corridor carried out as flora and fauna. 25 different points along the corridor were selected for the samples of the study. Then, fauna and flora examples were identified in laboratories of Forest Faculty at Düzce University. As a result, 147 flora and 70 fauna elements were identified in the study area. Consequently, habitat and landscape features of the flora and fauna which is the main components of the landscape were defined as landscape features and utilizing in landscape.

Keywords: Riparian zone, Düzce, Fauna and flora.

Acknowledgement: This work has been supported by funding from The Scientific and Technological Research Council of Turkey (Tübitak-116O596; "Determining of Landscape Character of Urban Water Corridors as Visual and Ecological; A Case Study of Asar Suyu in Duzce")

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➢ **ORAL PRESENTATION**

Cystamine Core PAMAM G5 Dendrimer Functionalized with Fluoroaldehyde Derivatives for miRNA Delivery to Mesenchymal Stem Cells

Ali Oztuna[1*], Hasan Nazir[2]

[*1]Gulhane Research and Training Hospital, Department of Medical Genetics, 06010 Ankara Turkey.
[2]Ankara University, Science Faculty, Department of Chemistry, 06100 Ankara Turkey.

Corresponding author e-mail: alioztuna@gmail.com

Abstract

Control of cell behavior (cell proliferation and differentiation) has a key importance for the strategies developed for the clinical usage. The genetic engineering of stem cells takes a particular interest because of their self-renewal and pluripotency potential. miRNAs are RNA-interference based therapeutic vehicles that regulate gene expression and are effective in the genetic engineering process will be performed when they successfully transfected to the cells. Polyamidoamine (PAMAM) dendrimers are very promising alternative as a delivery vehicle due to their monodispersive, hyperbranched and nanospherical characteristics. In this study, in-vitro transfection potential of fluoroaldehyde derivatives functionalized PAMAM dendrimers for miRNA delivery to mesenchymal stem cells (MSCs) was examined. In this context; *i*- fluorinated cystamine core PAMAM G5 dendrimers were synthesized, *ii*- dendrimer-miRNA polyplex characterization was made by gel retardation assay, particle size and zeta potential measurements and transmission electron microscope imaging, *iii*- transfection cytotoxicity was tested by XTT assay, *iv*- transfection efficiency was evaluated by flow cytometry method, laser scanning confocal imaging and qRT-PCR, *v*- quantitative structure-activity relationship (QSAR) and molecular docking (MD) calculations of the dendrimer-miRNA complexes were computed to be able to discuss transfection efficiencies of the polyplexes.

Keywords: Cystamine-core, Poly(amidoamine), Fluoroaldehydes, MicroRNA, Mesenchymal stem cells.

Acknowledgements: This work was supported by the Scientific and Technological Research Council of Turkey (TUBITAK) under Grant SBAG-214S343.

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➢ **ORAL PRESENTATION**

In vitro Evaluation of Therapeutic Potential of A Lichen Compound, Friedelin in Glioblastoma Multiforme

Bugrahan Emsen[1]*, Tubanur Engin[3], Hasan Turkez[2]

[1]Department of Biology, Kamil Özdağ Faculty of Science, Karamanoğlu Mehmetbey University, Karaman, Turkey
[2]Department of Molecular Biology and Genetics, Faculty of Science, Erzurum Technical University, Erzurum, Turkey
[3]Department of Physiology, Faculty of Veterinary Medicine, Kafkas University, Kars, Turkey

*Corresponding author. E-mail: bugrahanemsen@gmail.com

Abstract

There are different herbal methods used for support in many cancer diseases. Lichens are important organisms containing unique herbal compounds and it is known that they have different anticancer activities. Starting from these features, the present study was aimed to investigate anticancer activity of friedelin (FRI), a lichen compound against glioblastoma multiforme (GBM) showed dangerous malignant properties within brain cancer species. It was used human U87MG-GBM cancer cell lines and primary rat cerebral cortex (PRCC) non-cancerous cells isolated from Sprague-Dawley rats in order to side effect level of FRI. In the experiments, cytotoxic (via 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) and lactate dehydrogenase (LDH) tests), antioxidant (via total antioxidant capacity (TAC) test), pro-oxidant (via total oxidative stress (TOS) test) and genotoxic (via 8-hydroxy-2′-deoxyguanosine (8-OH-dG) test) activities of different concentrations of FRI were tested. As a result of the study, MTT assay revealed higher cytotoxic activity in FRI on U87MG cells compared to PRCC cells (median inhibitory concentration (IC50): 46.38 and 1271.77 mg/L, respectively). Based on U87MG cells, it was determined a significant positive correlation between LDH and TOS activity. High positive correlation between TAC and cell viability on healthy PRCC cells exhibited antioxidant capacity of FRI. Consequently, the results obtained from the present study demonstrated the potential of natural product with an antioxidant capacity as a source for anticancer compound against GBM.

Keywords: Cytotoxicity, genotoxicity, lichen metabolite, total antioxidant capacity, total oxidative stress

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➢ **ORAL PRESENTATION**

The Effects of Apelin-13 on Antioxidant System in Experimental Obesity Model in Rats

Suat Tekin

Inonu University, Faculty of Medicine, Department of Physiology, Malatya, Turkey.

Corresponding author e-mail: suat.tekin@inonu.edu.tr

Abstract

Obesity is a chronic disease that affects health in a negative way decreasing life quality and causing many metabolic diseases, and is characterized with the excessive increase in the fat rate of the body. Oxidative stress is one of the factors causing obesity, and emerges with the imbalance between the reactive oxygen types and the antioxidant defense system of the cell. The reactive oxygen types that increase in obesity cause apoptosis through the oxidation of DNA, protein and lipids. The increase in the oxidative stress in the adipose tissue causes that metabolic syndrome develops in obese people. On the other hand, the weight loss that occurs due to calorie limitation decreases oxidative stress. Apelin is an adipokine excreted from the fat tissue. It was reported in previous empirical studies that the apelin-13, which is the most active form of apelin, has antioxidant characteristics. This study was conducted to determine the effects of apelin-13 infusion on the oxidative stress that occurs due to obesity formed in rats.

40 *Wistar Albino* male rats were used in the study. The rats were separated into 4 groups as the control, sham, 10 ug/kg/day apelin-13, and 100 ug/kg/day apelin infusion (n=10). The rats were fed with high-fat diet feed (Research diet, D12451) as of the 21th day of birth for 12 weeks. After 12 weeks, it was determined that obesity occurred in the rats by scoring according to the Lee Index. Then, the rats were anesthetized (except for the control group), and osmotic mini pumps (Alzet 2ML2) were placed in the peritoneal areas. With the help of the osmotic mini pumps, infusion of normal saline (solvent) was performed to the sham group at a 240 µl volume (10 µl/hour) daily; and the infusion of 10 ug/kg apelin-13 and 100 ug/kg were performed to the Study Groups. After 14 days, the rats were decapitated, and the heart and liver tissue samples were collected. The MDA, SOD, CAT, and GPx analyses were performed on the tissues collected.

Depending on the apelin-13 infusion in the liver and heart tissues, it was determined that there were increases in the SOD, CAT and GPx enzyme levels when compared with the Control and Sham Groups ($p<0.05$); and there were decreases in the MDA levels ($p<0.05$).

The results of the present study show that the chronic infusion of apelin-13 plays active roles in the reduction of the oxidative damage and in increasing the antioxidant enzyme activities depending on rat obesity model.

Keywords: Obesity, Oxidative Stress, Apelin-13, MDA, SOD, CAT

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➢ **ORAL PRESENTATION**

Cytotoxicity and Genotoxicity Properties of Chalcone Substituted Organophosphazene Compounds Bearing Trifluoromethyl Groups

Kenan Koran[1*], Suat Tekin[2]

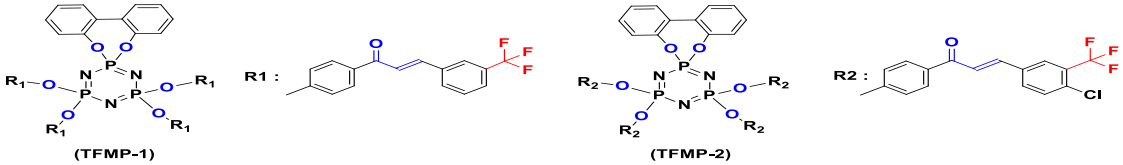
[*1]Firat University, Faculty of Science, Department of Chemistry, Elazığ, Turkey
[2]Inonu University, Faculty of Medicine, Department of Physiology, Malatya, Turkey

Corresponding author e-mail: kkoran@firat.edu.tr

Abstract

Phosphazene and chalcone compounds have a wide range of applications when considered separately, and these compound groups have a great prospect in biological field studies. Limited numbers of studies have been found in the literature about the cytotoxicity of the chalcone-substituted phosphazene compounds. The result of studies that our group have conducted on aromatic aldehydes with oxalate derivatives obtained by the reaction of 4'-hydroxyacetophenone and phosphazene compounds clearly showed that the chalcone-substituted phosphazene compounds have cytotoxic activity against certain human cancer cell lines.[1,2]

In this study, chalcone compounds containing trifluoromethyl groups were synthesized from 4'-hydroxyacetophenone with aromatic aldehydes bearing of trifluoromethyl groups by Claisen-Schmidt condensation reaction.[3] New phosphazene derivatives **(TFMP-1 and 2)** have been obtained by the interaction of these chalcone compounds with phosphazene compounds. The structures of organophosphazenes were confirmed by FT-IR, ^{31}P, ^{1}H and ^{13}C-APT NMR spectroscopy methods.



Cytotoxic effects of organophosphazene compounds on human breast (MCF-7), over (A2780) and prostate cancer (PC-3) cell lines at concentrations of 1, 5, 25, 50 and 100 µM were investigated using the MTT Assay method.[4] Genotoxicity of the synthesized compounds was investigated by single cell gel electrophoresis, a fluorescence microscopic method, or Comet Assay method, in which the cells in concentrations showing cytotoxic effect did not cause damage to DNA.[5]

According to the results of Comet Assay analysis, it was tried to determine when cytotoxic substances cause cell death whether they cause DNA damage (genotoxicity) or cell viability through a different mechanism. For this reason, in this presentation, it will be presented how all these data are affected the results obtained.

Keywords: Cytotoxicity and Genotoxicity, Organophosphazene, Trifluoromethyl Groups

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➢ **ORAL PRESENTATION**

Deterjanda Kullanılan Çoklu Enzimlerin Nanoflower Teknolojisi İle Performansının Arttırılması

Didar Taşdemir[1*], Ahmet Katı[2], İsmail Öçsoy[1*]

[*1]Erciyes Üniversitesi, Eczacılık Fakültesi, Analitik Kimya Anabilim Dalı, Kayseri, Türkiye
[2]Araştırma Geliştirme Merkezi, Hayat Kimya, Kocaeli, Türkiye

Sorumlu yazar e-mail: ismailocsoy@erciyes.edu.tr , didarda66@gmail.com

Özet

Enzimler protein yapılı ve yalnızca canlılar tarafından sentezlenebilen doğal katalizörlerdir. Enzimlerin göstermiş oldukları aktivite ve stabilitede artış meydana getirmek için çeşitli immobilizasyon teknikleri geliştirilmiştir. Son yıllarda geliştirilen farklı bir immobilizasyon tekniği ile çiçek şekilli enzim-inorganik hibrit nanokompozitler (nanoflowers, HNK) sentezlenerek, enzimlerin kararlılığının ve aktivitesinin serbest enzimlere ve diğer immobilizasyon tekniklerine göre anlamlı bir artış gözlendiği kaydedilmiştir. Enzimlerin en önemli uygulama alanlarından biri de deterjan endüstrisidir.

Bu çalışmamızda enzimlerin deterjanların temizleme performansını başarılı bir şekilde arttırmaları nedeniyle deterjan endüstrisinde sık kullanılan Pektinaz, Lipaz, Proteaz, Amilaz ve Mannanaz enzimleriyle ve iki farklı selülaz enzimi (carezyme, celluclean) içeren enzim karışımı ile çalışılacaktır. Bu enzimler; beşi bir arada, ikisi bir arada ve tüm enzimler birleştirilerek, Cu^{2+} iyonu kullanılarak PBS ortamında (fosfat tamponu) çiçek benzeri hibrit nanokompozitler (HNK) sentezlenerek deterjanlarda kullanılması hedeflenmiştir. Ayrıca sıvı deterjanlarda karşılaşılan çeşitli problemler HNK'ler kullanılarak bertaraf edilmesi amaçlanmıştır. Sentezlediğimiz enzim-HNK'lerin artan enzimatik ve antimikrobiyal aktivite ile birlikte deterjanların leke çıkarmadaki performansını arttırdığı ispatlanmış ve alanında ilk çalışma olduğu bilinmektedir.

Anahtar Kelimeler: Nanoflowers, $CuSO_4$, hibrit nanokompozit, aktivite, deterjan

Teşekkür: Bu çalışma Erciyes Üniversitesi Bilimsel Araştırma Projeleri Birimi tarafından TSA-2017-7157 nolu proje ile desteklenmektedir.

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➢ ORAL PRESENTATION

Hetero Halka İçeren Tek Kristalin, Moleküler Yapısının Deneysel-Teorik Yöntemlerle İncelenmesi ve İnhibitör Aktivite Çalışması

Tuncay Karakurt

Ahi Evran Üniversitesi, Mühendislik-Mimarlık Fakültesi, Kimya ve Proses Mühendisliği, 40100, Kırşehir, Türkiye

e-mail:tuncaykarakurt@gmail.com

Özet

Bu çalışmada, Hetero halka içeren tek kristalin sentezi yapılmış, ^{1}H-NMR, ^{13}C-NMR spektroskobik ve X-Ray analizi teknikleri kullanılarak da moleküler yapısı aydınlatılmıştır. Deneysel çalışmalara destek olmak amacıyla teoriksel olarak NMR spektrumları, MEP haritası ve frontier moleküler orbitalleri (FMO) incelenmiştir. Aynı zamanda hesaplanan enerji değerlerinden moleküle ait sertlik parametreleri de hesaplanmıştır. Tüm teorik hesaplamalar için, kuantum kimyasal hesaplama olan DFT(B3LYP) teorisini kullanan gaussian09, gaussian çıktılarını grafiksel olarak incelemek için de gausview 5 programları kullanılmıştır. Son olarak, sentezlenen tek kristalin, 2WQY protein hedef yapısı için inhibitör adayı olabilmesi amacıyla doking çalışmaları Autodock Vina programı kullanılarak yapılmıştır.

Anahtar Kelimeler: NMR, DFT, FMO, DOKİNG

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➢ ORAL PRESENTATION

A Novel and Smart Nanoflowers: Rational Formation of Hybrid Nanoflowers From Inorganic Nanocrystals to Organic-Inorganic Components

Ismail Ocsoy[1*], Didar Tasdemir[1], Vedat Yilmaz[1], Nilay Ildiz[2], Ayse Baldemir[3]

[1]Department of Analytical Chemistry, Faculty of Pharmacy, Erciyes University, 38039, Kayseri, Turkey
[2]Department of Pharmaceutical Microbiology, Faculty of Pharmacy, Erciyes University, 38039 Kayseri, Turkey
[3]Erciyes University, Faculty of Pharmacy, Department of Pharmaceutical Botany, 38039, Melikgazi, Kayseri, Turkey

Corresponding author e-mail: ismailocsoy@erciyes.edu.tr

Abstract

Various hybrid nanoparticles (NPs) with different sizes and shapes have been used for a wide variety of bioanalytical and biomedical applications. Limitations of single-component NPs have been addressed with development of hybrid NPs. In general, hybrid NPs composed of two or more different inorganic nanocrystals, exhibited advantages over single-component NPs.
In recent work, organic–inorganic nanoflowers using metal ions as the inorganic component and proteins as the organic component were developed with a novel immobilization approach. Although immobilized enzymes with conventional immobilization techniques exhibit high stability, their activity is lowered compared to free enzymes. To address these issues, nanoflowers show extraordinary catalytic activity and stability. In our work, we extended formation of organic–inorganic nanoflowers using various inorganic and organic components and we cast the light on potential mechanism underlying enhanced catalytic activity and stability. We also demonstrated the nanoflowers can be utilized as antimicrobial agent and sensors.

Keywords: Nanoflower, Peroxidase like Activity, Antimicrobial Activity, Organic Component and Inorganic Component

Note: This study is supported by Erciyes University Scientific Research Projects Unit with TSA-2017-7157 project.

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➢ **ORAL PRESENTATION**

Sübstitüe İmidazo[2,1-*b*][1,3,4]Tiyadiazol Türevlerinin Sentezi ve Biyolojik Aktivitelerinin Araştırılması

Hakan Tahtacı

Karabük Üniversitesi, Fen Fakültesi, Kimya Bölümü, Karabük, Türkiye

hakantahtaci@karabuk.edu.tr

Özet

Son yıllarda antimikrobiyal aktiviteye sahip bileşiklerin sentezlerinde ve kullanımlarında önemli artışlar olmuştur. Ancak bu bileşiklerin kullanımları; ilaç direnci, yüksek toksisite riski, çeşitli yan etkilerin gözlenmesi, farmakokinetik eksiklik ve/veya biyolojik aktivitelerindeki yetersizlikler gibi nedenlerden dolayı oldukça sınırlı kalmıştır. Bu sebeplerden dolayı sentetik organik kimyacılar, ilaç kimyasında kullanılabilecek, çeşitli biyolojik aktivitelere sahip ve yan etkilerinin minimum olduğu bileşiklerin sentezi için büyük çaba harcamaktadır.

Bu çalışmada, imidazol ve 1,3,4-tiyadiazol halkalarını birlikte içeren imidazo[2,1-*b*][1,3,4]tiyadiazol türevlerini sentezlemek, çeşitli spektroskopik yöntemlerle karakterize etmek ve bu bileşiklerin antimikrobiyal aktivitelerini araştırmak amaçlandı. Bu amaç için ilk olarak 5-amino-1,3,4-tiyadiazol-2-tiyol'ün 2-bromoasetofenon türevleri ile olan reaksiyonundan 2-amino-1,3,4-tiyadiazol türevleri sentezlendi.

Daha sonra hedef bileşikler olan imidazo[2,1-*b*][1,3,4]tiyadiazol türevleri, 2-amino-1,3,4-tiyadiazol türevlerinin, 2-bromoasetofenon türevleri ile olan reaksiyonlarından elde edildi.

Sentezlenen tüm bileşiklerin yapıları IR, ^{1}H NMR, ^{13}C NMR, elementel analiz, kütle spektrosokpisi ve X-ışını analiz teknikleri kullanılarak aydınlatıldı.

Ayrıca sentezlenen hedef bileşiklere biyolojik aktivite testleri uygulandı. Elde edilen biyolojik aktivite sonuçlarından, sentezlenen bileşiklerin çoğunun iyi derecede antibakteriyel aktivite gösterdiği ve bazılarının da orta derecede antifungal aktivite gösterdikleri belirlendi.

Anahtar Kelimeler: 2-Amino-1,3,4-tiyadiazol, İmidazo[2,1-*b*][1,3,4]tiyadiazol, 2-Bromoasetofenon, Antimikrobiyal aktivite

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➢ **ORAL PRESENTATION**

Environmental Ethics in Islamic Perspective: A Survey Study

Prof. Dr. Nesrin Çobanoğlu[1*], Ayesha Noreen[2]

[*1]Gazi University, Faculty of Medicine, Basic Medical Sciences, Ankara, Turkey.
[2]Ankara University, Faculty of Social Sciences, Environmental Sciences, Ankara, Turkey.

Corresponding author e-mail: ayesha.noreen@icloud.com

Abstract

Human induced environmental dilemma are outpouring and increasingly upsetting not only ecosystem but human health and well being. Available data shows that technical solutions have not been resulting in adequate conclusions. Therefore, the most important question to be answered is "how should human act toward the natural environment". Among theoretical deliberations, environmental ethics is getting more recognition to find a proper solution for vast environmental degradation. The molding of behavior, values, approach, commitment and practice of human beings vital to conserve and protect the environment is strongly linked with their belief, worldview, custom and culture. For this reason, religion plays a significant role in establishing new templates of attitude toward the environment.

Recent scholarly concern in religions and ecology proclaims the importance of religious models in understanding humanity's place in nature. Although Islam presents comprehensive ethical values on the environment, the current state which is seen in Turkey (as well as in Muslim countries) shows an apparent negligence to environmental issues.

This study aims to determine awareness levels of Turkish students regarding environmental issues in Turkey, Islamic environmental ethics and respective observance levels. 50 subjects participated in this survey from 5 different faculties (Medicine, Engineering, Education, Divinity and Tourism) of Akdeniz University Antalya. Questionnaire for this survey consist of three sections aiming to measure knowledge and awareness of Islamic ethics concerning Environment, Turkeys present harsh environmental condition and observance levels regarding environmental concern among university students. . Data collected through questionnaires is analyzed and results shows that awareness level in regard to slamic environmental ethics and Turkey's environmental condition is pretty high among Turkish youth but the observance levels are not satisfactory. This gap between awareness and observance levels analyzed with the help of three hypothesis questions. First reason for this disagreement is that Turkish students view environmental problem as less significant than the other issues like unemployment, terror, political instability and educational system. The second reason being Diyanet is not fulfilling its duties towards raising awareness of Islamic ethics in regard to environmental protection and third argumentation is students are failing to incorporate environmental ethics into their daily routine. Turkish students do have awareness about these ethics but they don't feel any urgency or necessity to follow them.

Keywords: environmental ethics, environmental awareness, Islamic perspective, survey study

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➢ **ORAL PRESENTATION**

Histopathological Research of The Therapeutic Effects of Grape (*Vitis vinifera* L.) Seeds Extracts on Cadmium-Exposed Carp Fish (*Cyprinus carpio* L. 1758)

İbrahim Örün[1], Belda Erkmen[1], Şevket Kandemir[2], Arzu Doğru[3], Mehmet İlker Doğru[1], Hüseyin Polat[4], Kenan Erdoğan[1], Nezahat Kandemir[2], Gülnihal Örün[5], Nuh Korkmaz[1*]

[*1]Aksaray University, Faculty of Science and Letters, Department of Biology, Aksaray, Turkey.
[2]Amasya University, Faculty of Education, Department of Elementary Education, Amasya, Turkey.
[3]Aksaray University, Faculty of Education, Department of Elementary Education, Aksaray, Turkey.
[4]Aksaray University, Faculty of Science and Letters, Depart. of Biotech. and Mol. Bio., Aksaray, Turkey.
[5]Aksaray University, Technical Sciences Vocational School, Aksaray, Turkey.

Corresponding author e-mail: korkmazhun@gmail.com

Abstract

In this study, we aimed to research the therapeutic effects of grape (*Vitis vinifera* L.) seed extracts in liver and gill histopathology of carp fish (*Cyprinus carpio* L. 1758) exposed to cadmium.
Grape seed which has been extracted with ethanol and has been known antioxidant, anticarcinogenic, antimicrobial and antimutagenic properties, were applied at different doses (5 and 10 mg/kg) and durations (4 and 30 days) to cadmium (20 ppb) exposed carp. The experimental groups were arranged as follows: control group, vehicle (0.09% ethanol), $CdCl_2$ (20 ppb), vitis (5 mg/kg), vitis (10 mg/kg), vitis (5 mg/kg) +$CdCl_2$ (20 ppb), vitis (10 mg/kg) + $CdCl_2$ (20 ppb). The study's Ethics Committee approval was issued by the Faculty of Veterinary, Selcuk University (letter No. 2014/014, dated 25.03.2014). Carps were administered grape seed extract by gavage. At the end of the experiment fixation, dehydration, clearing and paraffin impregnation of the liver and gill tissues, which is taken from the 14 groups of fish, is carried out. Tissue blocks were prepared from the appropriate size and 5-7 µm thick sections were taken. It was stained according to Harris haematoxylin and eosin staining protocol and closed. Stained preparations were examined under a light microscope and photographed.
In the acute phase, cadmium didn't cause a significant histopathological effect on the liver and gill. In the subchronic period cadmium caused bleeding (hyperaemia), mononuclear cell infiltration and extracellular degeneration in liver tissue and epithelial separation, shortening and flattening in the secondary lamellae (union) in gill tissue. *Vitis vinifera* has shown therapeutic efficacy in the liver and gill tissues of fish exposed to cadmium during acute and subchronic periods.
We would like to thank the Amasya University BAP Coordination Unit for supporting this project with the FMB-BAP-14-072 code project.

Keywords: Histopathology, *Vitis vinifera*, Cadmium, *Cyprinus carpio*.

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➢ **ORAL PRESENTATION**

Lactarius indigo Mantarında Bulunan ve Ömür Uzunluğunu İnhibe Eden Guazilen'e Karşı *Pleurotus sajor-caju* ve *Pleurotus osteratus* Mantarları

Hatice Çelik, Halit Kızılet, Murat Özdal, Özlem Gülmez, Ö. Faruk Algur, Handan Uysal[1*]

[1]Atatürk Üniversitesi,Fen Fakültesi,Biyoloji Bölümü,25240 Erzurum

*hauysal@atauni.edu.tr

Abstract

Küçük bir soru? Yaşlanmak istermiyiz? Elbette hayır. Acaba Lokman Hekim "ölümsüzlük iksiri"ni kaybetmeseydi bu süreç durdurulabilir miydi? Bilinmez ama organizmalar için önlenemez bir gidişattan bahsetmekteyiz.Yine de geciktirebilmek için neler yapmalıyız? "Organik beslenmeliyiz", "üç beyazdan uzak durmalıyız" ya da "beslenmede sebze meyveyi daha ön plana çıkarmalıyız" gibi slogan cümleleri ifade edebiliriz. Sunulan bu çalışmada yenilebilen bir mantar olan *Lactarius indigo* (mavi süt mantarı)'da bulunan ve sekonder metabolit olan guazilen (Gua)'nin sürekli alımı ve doz aşımı canlılarda yaşlanmayı tetikler mi? sorusuna cevap aranmıştır. Aynı zamanda böyle bir etki gözlenirse önlenebilir mi? *Pleurotus sajor-caju* (yaprak mantarı/Psc_{su}) ve *Pleurotus osteratus* (kayın mantarı/Po_{su}) mantarlarına ait su ekstraktları da bu amaçla kullanılmıştır. Deneylerimizde model organizma olan *Drosophila melanogaster*'in (OregonR) yabanıl soyuna ait 100♀ ve 100♂ birey farklı dozlarda Gua içeren (25,50,100,200ppm) besiyerinde kronik olarak beslenmiştir. Haftada iki kez Gua içeren taze besiyerlerine yaşayan bireyler aktarılarak en son birey ölünceye kadar aktarımlar sürdürülmüştür. Üç tekerrür ile elde edilen sonuçlar Gua'nın çözücüsü olan %1'lik DMSO kontrol grubuna ait sonuçlarla karşılaştırılmıştır. Kontrol grubunda ortalama ömür uzunluğu♀popülasyonunda48,83±1,95,♂popülasyonunda 48,30±2,22gündür.Bu değerler en düşük ve en yüksek Gua uygulama gruplarında(25-200ppm)♀♀'de sırasıyla44,91±1,45'den 12,11±0,26'ya;♂♂'de ise44,70±1,22'den 11,44±0,21'e gerilemiştir($P<0,05$).Bu gerilemenin en etkili görüldüğü 200ppm Gua içeren besiyerine kendisi kadar (1:1v/v) Psc_{su} ve Po_{su} katılmıştır. Bir kezde ♀ ve ♂ bireyler bu besiyerlerinde kronik beslenmiş ve♀♀'de 200ppm Gua'da12,11±0,26gün olan ortalama ömür uzunluğu Gua+Psc_{su}'da 21,93±0,62güne, Gua+Po_{su}'da21,83±0,66 güne ulaşmıştır. ♂♂'de ise bu değerler 200Gua'da11,44±0,21, Gua+Psc_{su}'da 19,05±0,46, Gua+Po_{su}'da 18,75±0,39günolarak bulunmuştur($P<0,05$). Muhtemelen hücresel düzeyde total oksidan seviyesinde (TOS) Gua'nın sebep olduğu artış, Psc_{su} ve Po_{su} ile bertaraf edilmiştir. *Pleurotus* cinsine ait su ekstraktları ile hücrede total antioksidan kapasitesi (TAK) lehine olan artış ise ömür uzunluğundaki artış ile kendisini göstermiştir diyebiliriz. Ancak TOS ve TAK düzeylerinin belirlenmesi konusunda yeni çalışmalara ihtiyaç bulunduğunu da belirtmek gerekir.

Anahtar kelimeler: *Lactarius indigo, Pleurotus, Drosophila melanogaster,* ömür uzunluğu, yaşlanma

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➢ **ORAL PRESENTATION**

The reactions of breat wheat lines against yellow rust population

Kadir Akan[1*], Alaettin Keçeli [2]

[*1]Ahi Evran University, Agriculture Faculty, Plant Protection Department, Kırsehir, Turkey
[2]Pamukkale University, School of Applied Sciences, Organic Farming Business Management Department, Denizli, Turkey

Corresponding author e-mail: alaettink@pau.edu.tr

Abstract

Bread wheat has been important field crop in Turkey. In breeding trials, high yield and good quality are important selection criteria. Yellow (stripe) rust, (caused by the fungal pathogen *Puccinia striiformis* f. sp. *tritici* (*Pst*)), is significant diseases affecting produce yield and quality in cool and humid areas in Turkey. In this study, it was aimed to determine reactions 26 bread wheat genotypes (Zeleny sedimentation 55-66 ml (Bezostaja-1; 58 ml) developed by the Central Research Institute for Field Crops (CRIFC) Department of Quality Assessment and Food to local yellow rust population in the seedling stage and adult plant stage at the research facilities of CRIFC during growing season of 2015 in Ankara
For seedling stage reactions; the test lines were inoculated with suspension of urediniospores of *Pst* population (virulent on *Yr2, 6, 7, 8, 9, 25, 27, Sd, Su* and *Av*s in Europe/World differential set) in mineral oil (Soltrol 170®) at Zadoks growth stage 11-12. Following inoculation, seedlings were placed in a dew chamber overnight at 9±1°C and then transferred to greenhouse adjusted at 18±3°C. Diseases were scored according to 0-9 scale after 14 days.
For adult plant stage reactions; the test lines were screened under artificial epidemic condition for local *Pst* populations (virulent on *Yr2, 6, 7, 8, 9, 25, 27, Sd, Su* and *Av*s in Europe/World differential set). Stripe rust developments on each entry were scored using the modified Cobb scale. The susceptible check cv. Little Club had reached 80S infection severity in June, 2015. Coefficients of infections were calculated and values below 20 were considered to be resistant.
Six (23%) genotypes were resistant to seedling stage, fourteen (54%) were resistant to adult plant stage; and six (23%) genotypes were resistant to both seedling stage and adult plant stage. To conclude, all 26 bread wheat lines were to stripe rust.

Key words: Bread Wheat (*Triticum aestivum*), yellow rust (*Puccinia striiformis* f. sp. *tritici*), selection, reaction

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➢ **ORAL PRESENTATION**

Effect of Synchronization Protocols on Serum Pregnancy Associated Glycoproteins in Dairy Heifers

Mehmet Akköse[1*], Çiğdem Çebi Şen[2]

[*1]General Directory of Agricultural Farms (TIGEM), Ceylanpinar Agricultural Farm, Sanliurfa-Turkey
[2]University of Harran, Department of Reproduction and Artificial Insemination, Sanliurfa-Turkey

Corresponding author e-mail: akkosem2012@gmail.com

Abstract

Pregnancy associated glycoproteins (PAGs) were described as placental antigens which are abundantly expressed products of the placenta of species within the Cetartiodactyla order and were also present in the blood serum of the mother soon after implantation. Commercial PAGs tests can be used to determine early pregnancy status in cattles between the 27th and 30th days after artificial insemination (AI). It is stated that various factors affecting PAGs levels may also impact accuracy of pregnancy diagnosis. The objective of the present study was to investigate the effect of different synchronization methods on serum PAGs levels at the 28th day after AI in dairy heifers. Group 1 (G1, control) was formed from animals that showed natural estrus during the study period. Gonadotropin-releasing hormone (GnRH) based ovulation synchronization protocols (Ovsynch or cosynch) was applied to Group 2 (G2). For synchronization of estrus, two shot prostaglandin $F_{2\alpha}$ ($PGF_{2\alpha}$) were administered to Group 3 (G3) for 11 days interval. Ultrasonography (USG) was performed on the 28th day after AI for pregnancy diagnosis and blood samples were collected from seventy eight Holstein heifers (G1, 26; G2, 26; G3, 26) from the vena coccigea. Blood samples were centrifuged at 2200 g for 15 min and the sera were stored at -20 °C until analysis. Serum PAGs levels were assessed by spectrophotometric determination of optical densities (OD) at 450 nm. There were two negative controls in the test. The OD values of the samples were subtracted from the mean OD values of the negative controls to obtain a value of S-N (Sample minus negative control). The S-N values were used as a measure of the PAGs levels because of the color intensity in the test was proportional to the serum PAGs concentrations. The mean serum PAGs (S-N) levels was 3.37±0.14 in control; 3.21±0.13 in Group 2 and 3.34±0.14 in Group 3. The differences between the groups were not statistically significant. In conclusion, two shot $PGF_{2\alpha}$ or GnRH based ovulation synchronization protocols did not effect serum PAGs levels at the 28th day after AI.

Keywords: Cosynch, Dairy Heifer, Ovsynch, PAGs, $PGF_{2\alpha}$, Pregnancy Diagnosis

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➢ **ORAL PRESENTATION**

Antioxidant Associated Compounds of Seed, Stem and Whole Parts of Fresh *Cuscuta campestris*

Emine Akyüz Turumtay[1], Halbay Turumtay[2], Emine Kılıçkaya Selvi[1,*]

[1]Department of Chemistry, Faculty of Sciences and Arts, Recep Tayyip Erdogan University, Rize, Turkey
[b]Department of Energy System Engineering, Karadeniz Technical University, Trabzon, Turkey

[*]E-mail:emine.selvi@erdogan.edu.tr

Abstract

Cuscuta species are popular folk medicines used for treatment of liver and kidney injury, chronic ulcers, curing of wounds and inflammation, improving sexual function, preventing senescence by local people in Asia. Our aim was to reveal the antioxidant associated content of fresh *Cuscuta campestris* samples by spectroscopic and chromatographic methods. For this purpose, *C. campestris* was collected from Kayseri (Turkey) and seed, stem and whole parts of plant were separately ground with a mortar. Each sample was defatted with chloroform and five different solvent extractions of each residue were performed with diethyl ether, ethyl acetate, methanol, *n*-butanol and water at 40°C for 2.5 h in a shaker. The extracts were dried by rotary evaporator and the pellets were resuspended in methanol. Phenolic acid and flavonoid content of these extracts of *C. campestris* were evaluated by HPLC-DAD analyses and antioxidant potential of them were characterized with their total phenolic (TPC) and flavonoid contents (TFC) and DPPH· free radical scavenging activities.Quercetin, kaempferol and isorhamnetin were determined as major phenolic compounds in different amounts in the all extracts along with ferulic acid, rutin, vanillic acid, *p*-coumaric acid, *p*-OH benzoic acid, protocatechuic acid and caffeic acid. Comprising the most abundant phenolic content, ethyl acetate extract of whole plant had the highest amount of isorhamnetin, quercetin and kaempferol.The same extract of *C. campestris* demonstrated the highest DPPH· scavenging activity with the lowest SC50 value, while water extracts showed the lowest scavenging activity in all extracts.The lowest TPC was detected in water extract of stem whereas the highest concentration was found in diethyl ether extract of seed. Highest concentrations of TFC were found in diethyl ether extract of stem, whereas lowest TFC were found in water extract of stem. As a result, whole plant of ethyl acetate extract, rich source of phenolic compounds, may be reliable candidate for antioxidant drug development.

Keywords: *Cuscuta campestris*, antioxidant, kaempferol, HPLC-DAD.

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➢ **ORAL PRESENTATION**

Hepatotoxic Effect of Long-Term Application of *Ginkgo Biloba* Extract in Mice (*Mus musculus*)

Evren Koç
Kafkas University, Faculty of Engineering and Architecture, Department of Bioengineering, Kars, Turkey

Corresponding author e-mail: evrenkoc@hotmail.com.tr

Abstract

Ginkgo biloba extract (GBE) has been used for variety purposes in the alternative medicine field for many years. Although GBE has been reported to have useful properties, such as antiinflammatory, antioxidant and hepatoprotective qualities, it has also been reported that GBE has harmful effects due to prolonged or incorrect doses. In the current study, we aimed to investigate the effects of long-term use of GBE on liver histopathology. For this purpose, 4 groups including 10 mice each were formed. Groups formed were: the control group and the treatment groups involving GBE exposure at different time points (500 mg / kg Ginkgo biloba extract for 30 days GBE group 1; for 60 days GBE group 2; and for 90 days GBE group 3). After the administration of GBE, the animals were anesthetized using sevoflurane and liver tissue samples were dissected out and fixed in 10% formalin solution. Tissue sections were prepared and stained with hematoxylene-eosin staining method. Preparations were examined histopathologically under a light microscope. According to microscopic examinations, the liver tissues of the control group animals were determined to be in normal appearance and without any degeneration. In GBE 1 group animals, epithelial tissue deterioration around vena centralis, pyknotic cell formation and focal necrosis areas were observed. In the livers of GBE group 2, hydropic degeneration, pyknosis, and formation of focal necrosis were detected. In the livers of GBE group 3, on the other hand, formation of focal necrosis, vacuolar degeneration, pyknosis, and hyperemia were observed, but the severity of degenerations in this group was found to be higher. According to our data, it was concluded that the unconscious use of GBE may cause harmful effects for the organism.

Keywords: *Ginkgo biloba*, mouse, liver, histopathology.

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➢ **ORAL PRESENTATION**

The Photoluminescent Properties of $Eu^{2+/3+}$-Doped Zinc Aluminate Phosphors

Erkul KARACAOGLU[1*], Esra ÖZTÜRK[1], Mesut UYANER[2]

[*1]Karamanoglu Mehmetbey University, Faculty of Engineering, Department of Metallurgy and Materials, Karaman, TURKEY
[2]Necmettin Erbakan University, Faculty of Aviation and Space Sciences, Department of Aeronautical Engineering, Konya, TURKEY

Corresponding author e-mail: ekaracaoglu@kmu.edu.tr

Abstract

Zinc aluminate ($ZnAl_2O_4$) is a wide-band gap material having a spinel structure and many advantages, such as excellent optical as well as long persistent afterglow and catalytic properties, high radiation intensity, chemical stability. So, this host structures doped with different kinds of rare-earth ions are used in various applications such as warning signs, dial plates of glow watches, transparent conductors. The investigation of thermal properties of zinc aluminate host crystal during heat treatment was analyzed by thermal analysis (DTA/TG) until 1500 °C. The synthesis process was according to solid state reaction method. The Cubic single phase $ZnAl_2O_4$ structure with lattice parameters a=b=c= 8.0848 Å and α=β=γ:90° were obtained after heat treatments according to XRD analysis. The photoluminescence (PL) properties including excitation/emission wavelengths and decay time were determined by PL spectrometer at room temperature (Figure 1). The Eu^{2+}-doped samples were excited at 310 nm which corresponding to the crystal field splitting of the Eu^{2+} d-orbital. The emission band of Eu^{2+}-doped $ZnAl_2O_4$ was at 514 nm attributed to the typical $4f^65d^1 \rightarrow 4f^7$ transition of Eu^{2+}. Eu^{3+}-doped samples has excitation maximum at 280 nm which was related with ligand to metal charge transfer (LMCT) state from fully filled 2p-orbitals of O^{2-} to partially filled $4F^7$ levels of Eu^{3+}. The Eu^{3+}-doped samples have maximum emission band at 615 nm attributed to the $^5D_0 \rightarrow {}^7F_2$ transition of Eu^{3+}.

Keywords: $ZnAl_2O_4$, Eu^{2+}, Eu^{3+}, photoluminescent, solid state reaction.

Acknowledgement: *This work was supported by Karamanoglu Mehmetbey University, Scientific Research Projects (BAP) under Project Number 001-D-18.*

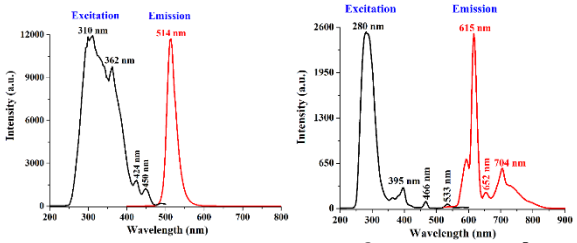

Figure 1. The excitation and emission spectrum of Eu^{2+} (left) and Eu^{3+} (right)-doped $ZnAl_2O_4$.

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➢ ORAL PRESENTATION

Optimization of Hemicellulose Extraction Conditions from Sugar Beet Bagasse and Production of Hemicellulose-Based Biodegradable Films

İmran Yazgı Yazan[1], Didem Sutay Kocabaş[*1]

[*1]Karamanoğlu Mehmetbey University, Faculty of Engineering, Food Engineering Department, Karaman, Turkey.

Corresponding author e-mail: didemkocabas@kmu.edu.tr

Abstract

In Turkey, millions of tons of waste biomass are emerging each year as a result of agricultural activities and food production, and valorization of these wastes is of great importance. There are 33 sugar factories in Turkey and more than 3 million tons of sugar beet bagasse (SBB) is produced annually as a result of sugar production. SBB is generally used to feed the animals, therefore, it is considered to be an abundant and inexpensive lignocellulosic source with a very low added value. Considering these aspects, it is important to transform SBB into high added value products. SBB has a lignocellulosic structure which is made up of three types of biopolymers: cellulose, hemicellulose, lignin and the hemicellulose fraction has many utilization opportunities due to its biodegradability, biocompatibility and bioactivity. In the last decade, hemicelluloses have received increasing attention for the production of biodegradable films and coatings because the synthetic plastic materials used today are made from petroleum-based raw materials which generate huge environmental problems due to their non-biodegradable nature.

The main objective of the present work was to statistically develop an alkaline hemicellulose extraction procedure to achieve the highest possible crude hemicellulose extraction yield from SBB with concurrent efforts to lighten the colour of hemicelluloses. Box-Behnken design based response surface methodology (RSM) was employed to optimize hemicellulose extraction conditions. The optimum extraction conditions were found as 22.7% (w/v) alkaline (KOH) concentration, 3.8% (v/v) H_2O_2 concentration, 37.1ºC temperature and 448 W microwave treatment. Experimental hemicellulose extraction yield at the optimum conditions was obtained as 28.8% (w/w). At the next stage, biofilms were produced by solvent casting technique using hemicelluloses obtained from each of the 27 experimental sets of extractions performed. As a result, films having different color, brittleness and tackiness characteristics were obtained according to the extraction condition.

Keywords: Sugar beet bagasse, hemicellulose, extraction, response surface methodology, biodegradable film.

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➢ ORAL PRESENTATION

Interleukin 8 (ıl-8) -251(a/t) Gene Polymorphism and Malignant Brain Tumor Risk

O. Tubay Bagdatoglu[1*], G. Polat[2], C. Bagdatoglu[3]

[1*]Mersin University, Medical Services Vocational School, Mersin, TURKEY
[2]Mersin University, Faculty of Medicine, Clinical Biochemistry department, Mersin, TURKEY
[3] Mersin University, Faculty of Medicine, Neurosurgery department, Mersin, TURKEY

otubay@mail.com

Abstract

Brain tumors are relatively rare tumors, however their etiology remains unclear. There are several types of risk factors governing disease susceptibility but the roles of genetic risk factors are still uncertain. IL-8 is a cytokine that has a crucial role in inflammatory and autoimmune diseases and also tumorigenesis. Alterations in IL-8 production are involved in pathological processes like malignant diseases.
In this preliminary study, we aimed to determine whether a polymorphism associated with differential expression of IL-8 cytokine is related with malignant tumors of brain.
The study group included 51 malignant brain tumor patients and 50 healthy controls. The IL-8 genotypes, AA (high expresser), AT (heterozygous) and TT (low expresser), were related with different production levels of the cytokine.
AA mutant genotype was detected as n=16 (31,37%) in tumors while n=7 (14%) in controls (p=0.393). AT genotype was n=30 (58,83%) in patients and n=41 (82%) in controls (p=0.0325). Homozygous A allele had 3,13 times more brain tumor risk compared to the more common AT genotype (p=0,026). There were no differences in genotypic distributions or allelic frequencies between low and high grade tumor groups.
In conclusion, increased expression of IL-8 was related with invasiveness in cancer. The individuals with AA genotype release higher levels of IL-8 compared with AT or TT genotypes. As discussed by several studies, the high production of IL-8 may be a risk factor in the development of solid tumours. We observed a statistically significant malignant brain tumor risk in IL-8 AA genotype. The results obtained in our study showed that a possible association of high IL-8 expressed genotype with brain tumors. Further large-scale studies are required to confirm this finding.

Keywords: IL-8, gene, brain tumor, cytokine

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➢ **ORAL PRESENTATION**

Identification of Biotransformed Products of SomeTerpenoids by *Aspergillus flavus*, *A. niger* and *Cunninghamella elegans*

Işıl Gazioğlu[1,2]

[1] Bezmialem Vakif University, Faculty of Pharmacy, Department of Analytical Chemistry, 34093 Istanbul, Turkey
[2] National Center for Toxicological Research, U. S. Food and Drug Administration, Jefferson, AR 72079, USA

Corresponding author e-mail: igazioglu@bezmialem.edu.tr

Abstract

Terpenoids are secondary metabolites of plants; they are derivatives of terpene hydrocarbons, which are composed of five-carbon isoprene units. Several terpenoids from the essential oils of plants are used in traditional medicine to treat various diseases. They exhibits a wide variety of pharmacological properties, including antioxidant, anti-inflammatory and anticarcinogenic activities.
Many microorganisms, especially certain fungi, have the ability to transform terpenoids regioselectively and stereoselectively. It is a hope that further developments in microbial biotechnology, including the discovery of new strains with unique enzyme systems for the transformation of terpenoids, may make it possible to derive a variety of newer and more useful drugs from those now available. The transformation of organic compounds by microbial cultures has long been of interest to the pharmaceutical, chemical and food industries because of numerous advantages compared to chemical synthesis.
In this study, biotransformation of d-limonene, linalool and 1,4-cineol were investigated using three fungal cultures: *Aspergillus flavus* NRRL 500, *Aspergillus niger* NRRL 599 and *Cunninghamella elegans* ATCC 36112. The major biotransformed products of limonene produced by *C. elegans* were trans-p-mentha-2,8-dienol and 4-isopropenyl-1-methyl-1,2-cyclohexanediol (limonene 1,2-diol), the major product in cultures of *A. flavus* was kojik acid and the major biotransformed product in cultures of *A. niger* was 4-isopropenyl-1-methyl-1,2-cyclohexanediol (limonene 1,2-diol). GC-MS total ion chromatograms of the linalool showed that the major biotransformation products of *A. flavus* were 1,2-dihydroxylinalool and 8-hydroxylinalool, and the major biotransformation product of *A. niger* was benzenethanol (2-phenylethanol). GC-MS total ion chromatograms of the 1,4-cineole showed that the major biotransformation product of *A. flavus* was cis-carveol, and the major biotransformation products of *A. niger* were p-menthane-1,2,3-triol and 2,2-dimethyl-1,3-dioxolane-4-methanol.

Keywords: Biotransformation, Fungus, GC-MS, Terpenoids

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➢ ORAL PRESENTATION

A Green Chemistry Technique: Solvent Free Microwave Extraction of Bioactive Compounds in Food

Buket Aydeniz Guneser

Department of Food Engineering, Usak University, Usak, 64200, Turkey

Corresponding author e-mail: buket.guneser@usak.edu.tr.

Abstract

Microwave enhanced systems have allowed to effective extraction steps with faster and higher yields than classical extraction techniques. Microwave assisted extraction is becoming popular process for the extraction of bioactive compounds such as essential oils, antioxidants, flavonoids, carotenoids, flavor and fragrances in the food research laboratories and industry. Solvent free microwave extraction system consisting of microwave heating and distillation unit. It requires a shorter heating and extraction time than hydro-distillation technique. This extraction technique has important advantages of being more simple, economic, healthier and environmentally friendly than conventional and non-conventional other extraction methods (e.g ultrasound assisted extraction, turbohydro-distillation, steam distillation, solvent extraction, supercritical fluid extraction). Several bioactive components, especially essential oils extracted by solvent free microwave technique are known to have high stability and to be used for different functional purposes as the antioxidant and antibacterial activities in food, pharmaceutical and cosmetic industry. It should be noted that the uncontrolled and careless application of microwave energy could lead to serious hazards. This review will be focused on bioactive compounds extraction from different edible materials using by solvent free microwave.

Keywords: Microwave, extraction, green chemistry, bioactive compounds, essential oils.

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➢ **ORAL PRESENTATION**

Storage Stability of Beetroot Betalains in Yogurt

Onur Guneser

Usak University, Engineering Faculty, Department of Food Engineering, Usak-TURKEY

e-mail:onur.guneser@usak.edu.tr

Abstract

In this study, it was aimed to investigate the storage stability of beetroot betalains in yogurt matrix at the storage temperatures of 4, 10 ve 20 ºC in terms of chemical kinetic. Kinetic parameters of reaction order and rate (k), activation energy, half-life ($t_{1/2}$**)** and Q_{10} values were calculated. The effect of storage temperature changes on these parameters were revealed. In addition, relationships of the degradation of betalains with L^*, a^* and b^*colour values were investigated. As a result, It was found that the degradation of betalains fitted first order kinetics while changes of L^*, a^* ve b^* values followed zero order kinetic. Activation energy for the degradation of betalains and changes of L^*, a^* and b^* values were calculated as 104.918 kJ/mol, 67.654 kJ/mol, 76.505 kJ/mol and 86.149 kJ/mol, respectively. Half-life values for the degradation of red beet betalains were found as 51.43, 30.91 ve 4.54 days at storage temperature of 4, 10 ve 20 ºC', respectively. During storage, a significant negative linear correlation were determined between betalains concentrations and L^* and b^* colour values while there was a significant positive linear correlation between a^* colour value and betalains concentrations. At all storage temperatures, multiple regression models for betalains concentrations and L^*, $a^*$and b^* colour values were also established.

Keywords: Beetroot extract, betalains, yogurt, reaction kinetics, colour values.

This study was funded by The Scientific Research Fund of Usak University (Uşak, Turkey, Project no: 2014/MF020).

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➢ ORAL PRESENTATION

Callus Formation from Full Leaf and Leaf Parts of *Rotala rotundifolia* (Buch-Ham. ex Roxb) Koehne

Muhammet DOĞAN

Karamanoğlu Mehmetbey University, Kâmil Özdağ Science Faculty, Department of Biology, Karaman, Turkey.

mtdogan01@gmail.com

Abstract

Rotala rotundifolia (Buch-Ham. ex Roxb.) Koehne is a medicinal aquatic plant belonging to the family Lythraceae. Due to its ability to accumulate heavy metals, it also has a potential to be used for wastewater treatment. In this study, The effects of the combinations of 0.05-0.25 mg/L Gibberellic acid (GA_3) and 0.25 mg/L Thidiazuron (TDZ) on *in vitro* callus formation from the full leaf, upper half of leaf and lower half of leaf explants of *R. rotundifolia* were investigated. The highest percentage of callus formation (100%) from the full leaf, upper leaf and lower leaf explants were obtained on MS medium containing 0,25 mg/L GA_3 and 0,25 mg/L TDZ, 0.05 and 0.25 mg/L GA_3 + 0,25 mg/L TDZ and 0,05 mg/L GA_3 + 0,25 mg/L TDZ. More callus concentrations were recorded in culture media containing GA_3 at low concentrations. The shortest callus formation time was determined on the lower leaf explant cultured on MS medium containing 0.05 and 0.25 mg/L GA_3 + 0.25 mg/L TDZ and on the 10th day. Various secondary metabolites from callus of *R. rotundifolia* using plant tissue culture techniques can be obtained and these metabolites can be used in the pharmaceutical field. In addition, callus formations can help gene transfer studies.

Keywords: Gibberellic acid, *In vitro*, Callus, *R.rotundifolia*, Leaf explant

Acknowledgments: This work was supported by the Scientific and Technological Research Council of Turkey (TUBITAK) (Project no: 2130190).

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➢ **ORAL PRESENTATION**

In vitro Clonal Propagation of a Medicinal Plant *Lysimachia nummularia* L.

Muhammet Dogan, Merve Sifa Hane Kose*

Karamanoğlu Mehmetbey University, Kâmil Özdağ Science Faculty, Department of Biology, Karaman, Turkey.

mtdogan1@gmail.com

Abstract

This study presents the propagation of *Lysimachia nummularia* L. by tissue culture techniques. The nodal explants of *L. nummularia* were cultured in Murashige and Skoog (MS) nutrient media containing 6-benzylaminopurine (BAP) alone or in combination with indole butyric acid (IBA) at different concentrations. Generally, high rates of shoot regeneration were obtained in both hormone trials. The maximum number of shoots per explant (12.27) was obtained in the MS nutrient medium containing 1.60 mg L^{-1} BAP, followed by MS medium containing 0.80 mg L^{-1} BAP + 0.10 mg L^{-1} IBA (11.00). The lowest number of shoots was determined in culture medium containing 0.05 mg L^{-1} BAP in both hormone applications. The number of shoots increased with increasing BAP concentration in the culture medium. The longest shoots were recorded in MS medium supplemented with 0.10 mg L^{-1} BAP (4.60 cm) and 0.10 mg L^{-1} BAP + 0.10 mg L^{-1} IBA (4.52 cm). The shortest shoot lengths were determined in MS medium supplemented with 1.60 mg L^{-1} BAP. Since the regenerated shoots in the culture medium have intensive roots, rooting experiments have not been carried out. The rooted plants were successfully acclimatized to the aquarium environment.

Keywords: BAP, *in vitro* propagation, *L. nummularia*, shoot regeneration

Acknowledgments: This work was supported by the Scientific and Technological Research Council of Turkey (TUBITAK) (Project no: 2130190).

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➢ **ORAL PRESENTATION**

Bir Çeşit Sekonder Metabolit Olan Stigmasterol Ömür Uzunluğu Üzerine Ketvurucu Olabilir mi?

Leyla Orunç[1] Handan Uysal[1*]

[1]Atatürk Üniversitesi Fen Fakültesi Biyoloji Bölümü 25240 ERZURUM

[*]hauysal@atauni.edu.tr

Özet

Terpenler sekonder metabolit olarak doğal ürünlerin en yaygın gruplarından biridir. 5 karbonlu bir hidrokarbon olan izopren ünitesinin tekrarlarından oluşurlar ve izopren sayısına göre monoterpenler, diterpenler, triterpenler vs. olarak isimlendirilirler. Bazı bitkilerde birkaç terpen bulunabilir. Örneğin limonda limonen, sitral, çam ağacında kamfor, pinen gibi. Terpenlerin bir çeşidi olan stigmasterol triterpen ve fitosteroldür. Karabiber, kolza tohumu, soya, kakao çekirdeği ve fındık gibi birçok bitki yağında bulunur. Bitkilerin dışında süt gibi hayvansal ürünlerde de bulunmaktadır. Sunulan bu çalışmada, stigmasterol (STG) akut olarak *Drosophila melanogaster*'in Oregon R yabanıl soyuna ait ♀ ve ♂ popülasyonuna uygulanmış ve ömür uzunluğu üzerine olası etkileri araştırılmıştır.

Deneysel uygulamalar için iki ayrı deney seti hazırlanmıştır. Bunlardan birisi Standart Drosophila Besiyeri (SDB) içeren saf su kontrol ve DMSO kontrol grubu. Diğeri ise akut uygulama grubu. Akut uygulama için dört saat aç bırakılan ergin bireyler daha sonra SDB+STG'nin farklı dozları ile hazırlanan (50,100;200,400ppm) besiyerlerine alınıp dört saat beslenmişlerdir. Bir kez farklı dozlarda STG'ye maruz bırakılan bireyler haftada iki kez taze besiyerlerine aktarılmıştır. Her aktarımda ölenler kaydedilmiştir. Uygulamalar üç kez tekrar edilmiş ve her uygulamada 100♂ ve 100♀ kullanılmıştır. İstatistiksel analiz için ANOVA kullanılmıştır.

Ortalama ömür uzunluğu ♀ popülasyonunda DMSO kontrol grubunda 48,85±1,95, en düşük ve en yüksek (50-400ppm) uygulama gruplarında 48,49±1,77 ve 40,09±1,51; ♂ popülasyonunda da sırasıyla 48,32±2,22, 44,92±1,65 ve 34,36±1,26 gün olarak bulunmuştur. ♀ ve ♂ popülasyonunda 50ppm uygulama grubuna ait değerler ile DMSO kontrol grubu arasındaki fark önemsizken doz artışına bağlı olarak kontrol ve uygulama değerleri arasındaki fark $P<0,05$ düzeyinde önemlidir. Ayrıca artan STG'ye bağlı olarak ömür uzunluğu azaldığı için negatif korelasyon da ♀♀'de R:-0,342, ♂♂'de R:-0,485 olarak hesaplanmıştır.

Bu çalışmada günlük diyet ile STG alımında doz-süre etkileşimine bağlı olarak *D.melanogaster'*in ♀ ve ♂ bireylerinin ömür uzunluğunun çok belirgin şekilde kısaldığı gözlenmiştir. Muhtemelen artan STG, total oksidan seviyesini artırarak *in vivo* sınırlandırıcı bir etken olarak popülasyon yaşlanmasına sebep olabilmektedir.

Anahtar kelimeler: *Drosophila melanogaster*, terpen, stigmasterol, ömür uzunluğu

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➢ ORAL PRESENTATION

Nucleolus Organizer Regions and Karyotype of the Endemic Species *Gobio microlepidotus* Battalgil, 1942 (Actinopterygii, Cyprinidae)

Sevgi Unal[1*], Muradiye Karasu Ayata[2], Muhammet Gaffaroğlu[3]

[*1]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.
[2]Ahi Evran University, School of Health, Department of Midwifery, Kırşehir, Turkey.
[3]Ahi Evran University, Faculty of Science and Arts, Department of Molecular Biology and Genetics, Kırşehir, Turkey.

Corresponding author e-mail: sevgiunal@gazi.edu.tr

Abstract

The gudgeon is one of the most divergent cyprinid fish species in Europe and Anatolia. Geographical distribution, ecological characters and morphological variability relative to sex, size are well defined in the literatüre. Aside from the only few data on the karyotype and chromosome banding patterns of this endangered and endemic species have not been studied. Cytogenetic characteristics are very useful complementor in taxonomic descriptions of cyprinid species. The aim of this study was to describe and characterize the Ag-NOR banding patterns and karyotype of *Gobio microlepidotus*. Cytogenetic examinations of specimens of gudgeon from Kayabaşı village, Beyşehir, Konya, were carried out and Giemsa staining and silver nitrate banding were used. The karyotype of gudgeon consisted of 2n = 50 chromosomes, and NF = 98 chromosome arms. Ag-NORs were located on the terminal regions of the short arms of one middle sized submetacentric chromosome pair and the size polymorphism of NORs was detected. Morphologically differentiated sex chromosomes were not observed. The presently identified first chromosomal features of *G. microlepidotus* substantially enhance the knowledge on the taxonomy of this species at cytogenetic level.

Keywords: Gudgeon, Cyprinid Species, Chromosome, Silver Nitrate Staining

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➢ ORAL PRESENTATION

Effect of Synthesized Compounds on Proliferation of Human Colorectal Adenocarcinoma (DLD-1) Cell Line as *in vitro*

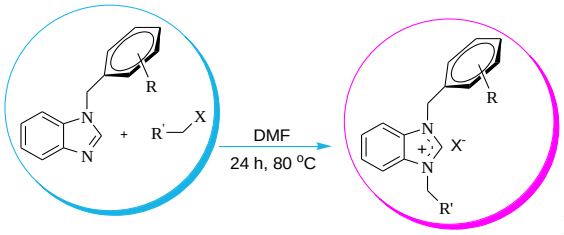
Senem Akkoç[1*], Burcu Somtürk Yılmaz[1], İlhan Özer İlhan[1] and Zülbiye Kökbudak[1]

[*1]Erciyes University, Faculty of Science, Department of Chemistry, Kayseri, Turkey.

e-mail: senemakkoc44@gmail.com

Abstract

Colon cancer, which is mostly seen in older age, affects both men and women. Various lifestyles measures like regular screenings, nutrition, exercise and bodyweight can reduce the risk of developing colon cancer. Chemotherapy, radiotherapy or surgery can be used as treatment options of this disease. For developing effective drugs against colon cancer, we synthesized and characterized many compounds [1, 2].



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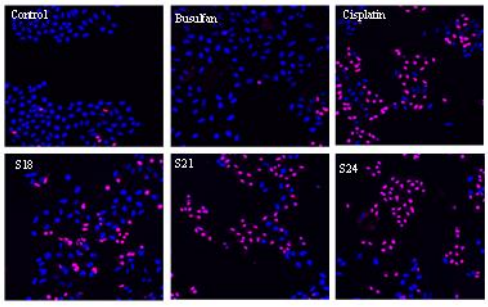

B

Scheme 1: (A) Synthesis of benzimidazolium salts. (B) Confocal images of DLD-1 cells

The structures of synthesized benzimidazolium salts were verified by ^{1}H NMR, ^{13}C NMR and IR spectroscopic methods. Compounds were evaluated for their *in vitro* cytotoxicity against human colon cancer cell line (DLD-1) using the MTT assay method for a period of 72 h. Various concentrations of compounds, ranging from 0.5 µM to 200 µM, were used to determine their cytotoxic activity. Cisplatin and busulfan were also used as a positive control drug under the same experimental conditions.
Confocal images were taken after cells treatment with synthesized compounds (20 µM) for 24 h of incubation. The cells were stained with Hoechst (blue) and PI (red).

Keywords: Benzimidazolium salt, Cytotoxic activity, Colon cancer, DLD-1, Confocal image.

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➢ **ORAL PRESENTATION**

Atmospheric Trace Element Analysis Using By Biomonitors In Kocaeli Province

Muhammet Ören[1], Gülsüm Koçak[1], Hasan Çabuk[2]

[1]Bülent Ecevit University, Science and Art Faculty, Biology Department, Zonguldak, Turkey.
[2]Bülent Ecevit University, Science and Art Faculty, Chemistry Department, Zonguldak, Turkey.

Corresponding Author: e-mail: muhammetoren@hotmail.com

Abstract

Two selected mosses *Hypnum cupressiforme* Hedw. and *Pseudoscleropodium purum* (Hedw.) M.Fleisch. were used as biomonitors in this study. Samples were collected from 52 different sites in the Kocaeli province. Air dried specimens were powdered with plant grinder and 0.1 gr of them used for analysis. Samples were digested with 7 mL HNO_3 and 2 mL H_2O_2 in microwave and analysed with ICP-MS (Inductively Coupled Plasma – Mass Spectrometer). When the average accumulation values of the trace elements were examined, it was determined that the highest accumulation at aleminum with 4639,87 µg/g and minimum accumulation cadmium with of 0,36 µg/g. The general order of the mean concentrations of the trace element levels were observed to be Al>Fe>Zn>Cu> Cr>Pb>Ni>V>Sn>Co>Mo>As>Sb>Hg>Cd. Trace elements levels in *Hypnum cupressiforme* and *Pseudoscleropodium purum* were compared with t test. There were statistically differences mean accumulation levels all elements except Sn (Tin) in two species and it was observed that retention of elements in *H. cupressiforme* higher than in *P. purum*.

Keywords: Biomonitoring, mosses, trace elements, Kocaeli.

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➢ ORAL PRESENTATION

Ratlarda Doksorubisinin Oluşturduğu Kardiyotoksisiteye Karşı Morin'in Koruyucu Etkisi

Müslüm Kuzu[1], Fatih Mehmet Kandemir[2], Serkan Yıldırım[3], Sefa Küçükler[2], Cüneyt Çağlayan[4], Erdinç Türk[5*]

[1]Ağrı İbrahim Çeçen Üniversitesi, Eczacılık Fakültesi, Temel Eczacılık Bilimleri Bölümü, Ağrı, Türkiye
[2]Atatürk Üniversitesi, Veteriner Fakültesi, Temel Bilimler Bölümü, Erzurum, Türkiye
[3]Atatürk Üniversitesi, Veteriner Fakültesi, Klinik Öncesi Bilimler Bölümü, Erzurum, Türkiye
[4]Bingöl Üniversitesi, Veteriner Fakültesi, Temel Bilimler Bölümü, Bingöl, Türkiye
[*5]Ağrı İbrahim Çeçen Üniversitesi, Eczacılık Fakültesi, Eczacılık Meslek Bilimleri Bölümü, Ağrı, Türkiye

Sorumlu yazar e-mail: eturk@agri.edu.tr

Özet

Doxorubicin (DOX) tipik antikanser bir antrasiklindir ve 1960'lı yıllarda *Streptomyces peucetius*'dan izole edilmiştir. DOX yumurtalık, göğüs ve gastrointestinal, Wilms tumor gibi solid tümörler, Hodgkin's ve non-Hodgkin's lenfoma ve pediatrik lösemi gibi hematolojik habis tümörlere karşı en çok kullanılan etkili sitotoksik ilaçlardan birisidir. DOX bağımlı toksisitenin nedeni tam olarak anlaşılamasa da oksidatif stres, apoptozis ve inflamasyonun rol oynadığı düşünülmektedir. Ortaya konulan veriler bazı doğal ürünlerin DOX kaynaklı miyokardiyal zararları in vito hücre modellerinde ve in vivo hayvan deneylerinde reaktif oksijen türleri ile apoptozisin azaltılması ve endojen antioksidan enzimlerin aktivitelerini ya da ekspresyonunu artırarak azaltabileceğini göstermiştir. Bu nedenle yapılan çalışmada kalp dokusunda DOX kaynaklı oluşan toksisiteye karşı doğal bir antioksidan olan morinin düzenleyici etkisinin tespiti amacı ile kontrol grubu, morin hidrat (100 mg/kg), DOX (40 mg/kg), DOX + morin hidrat (50 mg/kg), DOX + morin hidrat (100 mg/kg) grupları oluşturuldu. 10. gün sonunda deneysel uygulama sonlandırılarak rat kalp dokuları alındı. DOX'un oluşturduğu kardiyak hasarı ve bu hasara karşı morinin iyileştirici etkisini belirlemek için dokularda kreatin kinaz, laktat dehidrogenaz enzim aktiviteleri ile kardiyak troponin I seviyesi ölçüldü. Morinin antioksidan etkisi süperoksit dismutaz, katalaz, glutatyon peroksidaz enzim aktiviteleri ile indirgenmiş glutatyon ve MDA seviyeleri ölçülerek tespit edildi. Ayrıca antiinflamatuar etkisinin belirlenmesi amacı ile NF-κB, TNF-α, ve IL-1β seviyeleri belirlendi. Antiapoptotik etkisi ise anti-apoptotik protein Bcl-2 seviyesi ölçülerek bulundu.

Anahtar Kelimeler: Antioksidan, Doksorubisin, Morin, Kardiyotoksisite

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➢ ORAL PRESENTATION

New Method for Obtaining Hollow Silica Spheres and Comparison of its with Old Methods

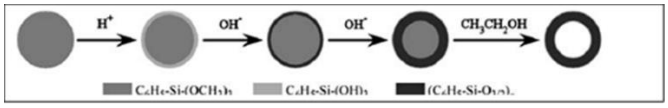
Hakan Duran*, Tuba Şişmanoğlu

Istanbul University, Engineering Faculty, Department of Chemistry, Avcılar-İstanbul,TURKEY

Corresponding author (T.Şişmanoğlu) e-mail: tusase@istanbul.edu.tr

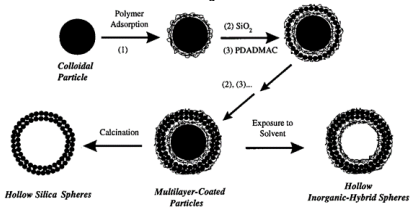
Abstract

Over the past decades, Hollow Silica Spheres (HSS) have attracted attention by lots of researches. Thanks to their such as, high chemical and thermal stability with low density, low toxicity and good suitability with other materials. HSS have typical applications; for example engineering, chemical catalysis, energy storage, photonics and biomedical. Especially highly biocompatible, and large surface areas, its use pharmaceutics and biochemistry. In addition, they have different use in chromatography, protect for enzymes or proteins, drug delivery systems, dyes or inks, photonic crystals. There are a variety of technique for synthesizing Hollow silica spheres (HSS) such as template-assisted synthesis, sol-gel method, template-free synthesis. The well known sol-gel process include a two step, at first step is hydrolysis and the second consisting of a polycondensation of metal alkoxides ($Si(OR)_4$). Hydrolysis step [$M(OH)_4$] is a difficult stage but condensation stage can be formed between either two –OH or M–OH groups and an alkoxy group to form bridging oxygen and a water or alcohol molecule.



The synthesis of a hollow silica nanostructure from PTMS with sol gel method.

Many of templating methods have been used preparation of HSS. During the hydrolysis step, the water molecule reacts with the ethoxylation group of the TEOS structure to react with the hydroxyl group and the ethoxy groups which are intermediates. Ammonia is used as a basic catalyst.



Synthesis of hybrid hollow spheres with Template Method.

This work describes recent progress in the design and development for synthesis of Hollow Silica Spheres. Including novel method design development of hollow silica spheres.

Keywords: Hollow Silica Spheres, Synthesis, Ball Milling

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➢ **ORAL PRESENTATION**

Sinnamaldehitle *Proteus mirabilis*'in Virülans Faktörlerinin İnhibisyonu

Abdurrahman Aygül[1*], İsmail Öztürk[2], Fatma Feriha Çilli[3], Şafak Ermertcan[4]

[*1]Çukurova Üniversitesi, Eczacılık Fakültesi, Temel Eczacılık Bilimleri Bölümü, Adana, Türkiye
[2]Katip Çelebi Üniversitesi, Eczacılık Fakültesi, Temel Eczacılık Bilimleri Bölümü, İzmir, Türkiye
[3]Ege Üniversitesi, Tıp Fakültesi, Temel Tıp Bilimleri Bölümü, İzmir, Türkiye
[4]Ege Üniversitesi, Eczacılık Fakültesi, Temel Eczacılık Bilimleri Bölümü, İzmir, Türkiye

Sorumlu yazar e-mail: abdurrahmanaygul@gmail.com

Özet

Patojen mikroorganizmaların çoğalmasını etkilemeksizin virülansını zayıflatabilen moleküller, klasik antimikrobiyallere alternatif olma potansiyeli taşımaktadır. *Proteus mirabilis,* komplike idrar yolu enfeksiyonlarından (İYE) sıklıkla izole edilen, karakteristik swarming hareketi, üreaz, hemolizin, fimbria gibi önemli virülans faktörleri olan bir üropatojendir. Sinnamaldehit çeşitli bakterilere karşı antibakteriyel özellik gösterebilen, tarçın kabuğunda bol bulunan, fenilpropanoid yapısına sahip bir fitokimyasaldır. Bu çalışmada, sub-inhibitör konsantrasyonlarda sinnamaldehitin *P. mirabilis* swarming hareketi ve üreaz enzimine etkileri araştırılmıştır.

Çalışmalarda *P. mirabilis* HI4320 kökeni kullanıldı. Swarming hareketine etki, 100 µM ila 1000 µM arası değişen konsantrasyonlarda sinnamaldehit içeren %2'lik LB agar plaklarında incelendi. Swarming yarıçapı 12. ve 24. saatlerde milimetre cinsinden ölçüldü. Üreaz ekspresyonuna etki ise, 100 µM ila 500 µM arası değişen konsantrasyonlarda sinnamaldehit ve %0,1 üre içeren LB broth besiyerinde yapılan kültürlerle gerçekleştirildi. 24 saat inkübe edilen kültürlerden elde edilen protein ekstreleri, üre ve fenol kırmızısı içeren mikroplakalarda 60 dk. inkübasyondan sonra OD_{550} nm'de spektrofotometrik olarak kuyucuklardaki renk yoğunluğu açısından değerlendirildi. Tüm testler üç tekrarlı yapıldı ve negatif kontrol olarak sadece besiyeri içeren besiyerleri kullanıldı. Sonuçlar kontrol grubuyla karşılaştırılarak değerlendirildi.

Swarming hareketi ve üreaz aktivasyonu, 300 µM konsantrasyonda, kontrol grubuna göre anlamlı düzeyde inhibe edildi. Artan konsantrasyonla doğru orantılı olarak swarming çapının ve üreaz aktivasyonunun azaldığı görüldü.

Sinnamaldehitin, test edilen virülans faktörlerinin her ikisini de inhibe ettiği gösterilmiştir. *In-vitro* olarak ortaya koyulan anti-patojenik etki, *in-vivo* hayvan modellerinde de incelenmelidir. Bu yönüyle sinnamaldehit, *P. mirabilis*'e bağlı İYE'lerin proflaksisi ve tedavisinde kullanılabilme potansiyeline sahiptir.

Anahtar Kelimeler: *Proteus mirabilis*, sinnamaldehit, üreaz aktivasyonu, swarming hareketi

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➢ **ORAL PRESENTATION**

Larval Development Stages of the Sea Cucumber *Holothuria tubulosa* in the Aegean Sea

Deniz Günay*, Dilek Emiroğlu, Tolga Tolon

*[1]Ege University, Faculty of Fisheries, Aquaculture Department, İzmir, Turkey.

Corresponding author e-mail: denizbalki@hotmail.com

Abstract

Holothuria tubulosa is one of the most captured sea cucumber species in Turkey. It's a valuable exported species although it's not consumed in our country. Fishing pressure on this species is recently increasing due to increasing demand worldwide. Therefore, starting of the aquaculture of this species is one of the important criteria for the sustainability of the fisheries. In this study, the samples were spawned and the eggs were incubated into the collectors with 1egg/ml stocking density. A slight aeration was applied in the larvae collectors and the dissolved oxygen value was kept over the 6mg/l via entering pure oxygen into the tanks where collectors were placed in. Temperature was kept between 23 and 24℃ and pH was kept between 7 and 7.5. Larval stages were traced after hatching every 24 hours in order to follow larval development. The first measurement was done at the 65th hour when the early auricularia stage occurred in all larvae collectors since the fertilization in the study. The mean lengths of the larvae on early, middle and late auricularia stages were measured 487,56±3,95 µ, 589,56±5,02 µ and 688,84 ±4,11 µ respectively. The mean lenght of the larvae on dolilaria stage was 352,92 ±6,02 µ. The survival rates of the larvae was %89,72±0,14 at the end of the study when they were on dolilaria stage.

Keywords: Sea cucumber, *Holothuria tubulosa*, Larvae, Larval rearing

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➢ **ORAL PRESENTATION**

Karyological Report in *Gobio battalgilae* Naseka, Erk'akan & Küçük, 2006 (Teleostei: Cyprinidae: Gobioninae) from Anatolia

Muradiye Karasu Ayata[1*], Sevgi Ünal[2], Muhammet Gaffaroğlu[3]

[*1]Ahi Evran University, School of Health, Department of Midwifery, Kırşehir, Turkey.
[2]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.
[3]Ahi Evran University, Faculty of Science and Arts, Department of Molecular Biology and Genetics, Kırşehir, Turkey.

Corresponding author e-mail: mkarasu@ahievran.edu.tr

Abstract

In this study, conventional cytogenetic techniques (Giemsa and Ag-NOR staining) were used to investigate karyological properties of Beyşehir endemic gudgeon, *Gobio battalgilae*. Three specimens were collected from Beyşehir Lake basin, Turkey. They were transported alive to the laboratory and kept in well-aerated aquaria until analysis. The chromosome preparations were obtained from the head kidney cells. At least 10 preparation was prepared from each specimen. All preparations were scanned with a microscope and photographs of metaphase chromosomes were taken with a software. At least 100 metaphase plaques were counted for determining the diploid chromosome number (2n). Chromosomes were measured with digital calliper and karyotype was arranged manually. Chromosome counts from all specimens of *G. battalgilae* revealed the 2n = 50. The karyotype was consisted of 11 pairs of metacentric, 13 pairs of submetacentric to subtelocentric and one pair of acrocentric chromosomes. The largest chromosome pair in the karyotype is a submetacentric. The fundamental arm number was calculated as 98. Morphologically differentiated sex chromosomes were not detected. Ag-NORs were detected terminally on the short arms of one middle sized submetacentric chromosome pair. The acrocentric chromosome and the largest submetacentric chromosome pair can be a cytotaxonomic marker in the Anatolian species of the genus *Gobio*. This study may contribute to cytogenetics and cytotaxonomy of Anatolian gobionines.

Keywords: Gobioninae, Beyşehir gudgeon, Karyotype, Ag-NOR staining

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➢ **ORAL PRESENTATION**

Molecular Characterization and Expression Profile of Mevalonate Kinase Gene in Olive Tissues

Görkem Deniz Sönmez

Adıyaman University, Faculty of Pharmacy, Adıyaman, Turkey.

Corresponding author e-mail: görkemdeniz@hotmail.com

Abstract

Olive (*Olea europaea* L.) fruits contain numerous secondary metabolites, primarily phenolics, terpenes and sterols, some of which are particularly interesting for their nutraceutical properties. This study will attempt to provide further insight into the molecular characterization of olive Mevalonate Kinase (OeMK) gene which catalyses a step in the isoprenoid biosynthetic pathway from different olive tissues and to identify its roles in the plant growth and development.

The partial nucleotide sequence obtained from NCBI was first blasted against non-redundant (nr) nucleotide (BLASTn) and protein (BLASTx) databases to determine its homology to database records. The homology sequences from other plants were then aligned and a phylogenetic tree was constructed using PAUP 4.0. The open reading frame (ORF) was conducted by using degenerate primers, amino acid composition, nucleotide composition of *OeMK* were determined using BioEdit 7., the theoretical isoelectric point (pl) was calculated by online software on ExPasy. Predicted 3D structure was calculated using I-TASSER. For intron analysis, primers to amplify the ORF were designed using Primer3. The expression profile among various tissues was determined by Real-Time PCR.

The results of the analyses revealed OeMK has 387 amino acids weight is 41 kD and its theoretic l pI is 5.46. The full length genomic sequence of *OeMK* gene was 1889 bp with 5 introns. OeMK showed highest homology to *Catharanthus roseus* Mevalonate Kinase (Accession: HM462019.1). Real-Time PCR results revealed that *OeMK* was expressed mostly in early stages of the fruit.

Keywords: *Olea europaea* L., isoprenoid biosynthesis, Mevalonate Kinase, Real-Time PCR

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➢ **ORAL PRESENTATION**

Palynological studies on genus *Atriplex* L. section *Teutliopsis* Dumort.

İsa Başköse[1], Aydan Acar Şahin[1]*, Ahmet Emre Yaprak, Nur Münevver Pınar[1]

[*1]Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey

Corresponding author e-mail: aydanacar24@gmail.com

Abstract

The genus *Atriplex* includes about 260 species in the world, but genus represents 19 taxa belonging to 5 section (Sect. *Teutlioides*, Sect. *Stylosa*, Sect. *Atriplex*, Sect. *Teutliopsis*, and Sect. *Sclerocalymma*) in Turkey. In this study, it is aimed to reveal and compare pollen morphological characteristics of *Atriplex patula* L., *Atriplex oblongifolia* Waldst. & Kit. *Atriplex laevis* C.A. Meyer, *Atriplex micrantha* C.A. Meyer, *Atriplex prostrata* Boucher ex DC. and *Atriplex davisii* Aellen in section *Teutliopsis*. Pollen samples used in the study were collected during the fieldwork conducted between the years of 2011-2016. The pollen morphology of 6 taxa belonging to *Atriplex* L. was studied in LM and SEM in detail. Pollen is radial symmetric, isopolar and pantopolyporate. Diameter ranges from 16.6 to 34.3 µm. Ornamentation is scabrate and in 2 µm² has 8-20 spinules. The conical spinules are 0.15-0.5 µm in length and 0.15-0.5 µm in base width. The exine is 1.1-2.0 µm and subtectate. Ectexine is thicker than endexine. The intine is 0.4-0.8 µm. Pores are 1.25-2.5 µm in diameter, circular in shape and semi-sunken, the distance between pores (C) ranges from 1.5 to 4 µm. The number of por varies between 27-149. The operculum has conical spinules with a diameter of 1-2.1 µm and a length of 0.1-0.3 µm. The largest operculum diameter was found in *A. prostrata*. The pollen diameter showed similarity between *A. patula*, *A. oblongifolia* and *A. micrantha*, while *A. laevis* has heteromorph characteristics based on pollen diameter and por numbers. The highest por number was observed in *A. micrantha* while the lowest por number was calculated in *A. davisi*.

Keywords: *Atriplex*, *Teutliopsis*, Pollen morphology, LM, SEM

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➢ ORAL PRESENTATION

Detection of β-lactamase genes and Class I Integrons in *Escherichia coli* isolated from patients with urinary tract infection

Ayşegül Saral[1], Funda Okumuş[2], Ayşegül Çopur Çiçek[3], Azer Özad Düzgün[2*]

[1]Department of Nutrition and Dietetics, Faculty of Health Sciences, Artvin Coruh University, Artvin, Turkey
[2]Department of Genetics and Bioengineering, Faculty of Engineering and Natural Sciences, Gumushane University, Gümüşhane, Turkey
[3]Recep Tayyip Erdoğan University, Faculty of Medicine, Department of Medical Microbiology, Rize, Turkey

Corresponding author e-mail: azerozad@windowslive.com

Abstract

Urinary tract infection (UTI) is the most commonly occurring bacterial infectious diseases by *Escherichia coli*. *E. coli* is being the etiologic agent so, it is an important public health problem. The purpose of this study was to investigate the presence of β-lactamase resistant genes and Class I integrons among *Escherichia coli* isolated from urine samples. A total of 90 isolates of *E.coli* were used in this study. All strains were isolated from Rize Education and Resaerch Hospital in Turkey between November 2015 and August 2016. All clinical isolates were identified by VITEK 2 Compact system. Antibiotic susceptibility tests were performed according to the Kirby-Bauer disk diffusion method and assessed according to the Clinical and Laboratory Standards Institute (CLSI) standards.Genomic DNA used as a template for PCR assays was made with using boiling method. 90 *E.coli* isolates were screened for β-lactamase-encoding genes and Class I integrons by PCR. A single reaction mixture contained: 5 µl of genomic DNA, 20 pM of each primer, 10 µl reaction buffer, 3 µl 25 mM $MgCl_2$, 200 µM of dNTPs and 1.5 U Go Taq Flexi Polymerase (Promega, Madison, USA) in a final volume of 50 µl. All PCR results were analyzed on 1% agarose containing 0.5 µg/ml ethidium bromide, and subsequently visualized under UV light. With respect to the antibiotic resistance profile; imipenem and meropenem were the most sensitive group, while beta lactam-beta lactamase inhibitor combinations, quinolanes and cephalosporins were more resistant.According to PCR result, 63% (57/90) of strains carried class 1 integron. We also observed a high prevalence of ESBLs, with 52 strains (57%) carrying a CTX-M-2 group β-lactamase and 52 isolates (57%) carrying CTX-M-1.No other β-lactamase-encoding genes (bla_{VIM}, bla_{NDM}, bla_{IMP}, bla_{GES}) were identified. The results were consistent with other studies.

Keywords: *E.coli*, UTI, antibiotic resistance.

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➢ **ORAL PRESENTATION**

Biosynthesisof Silver Nanoparticles by Persea Americana

Gamze Topal Canbaz[1*], Ünsal Açıkel[1], Yeşim Sağ Açıkel[2]

[1]Cumhuriyet University, Engineering Faculty, Chemical Engineering Department, Sivas, TÜRKİYE
[2]Hacettepe University, Engineering Faculty, Chemical Engineering Department, Ankara, TÜRKİYE

Corresponding author e-mail:gamzetopal@hotmail.com

Abstract

The biosynthesis and characterization of nanoparticles have an increasingly prevalent feature in nanotechnology. In this study, synthesis of silver nanoparticles with Persea Americana (Avocado) plant extract was carried out. Silver nanoparticles were produced by rapid, single step and completely green synthesis method using 1 mM silver nitrate solution with extract obtained from Persea Americana shell. For the production of silver nanoparticles, 5 ml of Persea Americana extract and 100 ml of silver nitrate solution were mixed. The complete reduction of the silver ions was performed in magnetically stirred vessels preserved in a dark medium at a constant temperature of 25ºC and at the end of the reaction time of 24 hours. Due to the formation of silver nanoparticles in the reaction mixture, a color change (yellow to dark brown color) in the solution was observed. The formation of silver nanoparticles was also confirmed by UV-vis spectroscopy analysis. The peaks obtained in the UV-vis spectroscopy analysis were observed at around 420 nm wavelength and these results were consistent with the literature.

Keywords: Silver nanoparticle,green synthesis, Persea Americana extract

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➢ ORAL PRESENTATION

Climate vulnerability of some Turkish lizard families and alteration potentials of their habitats

Mehmet Kursat SAHIN

Hacettepe University, Faculty of Science, Biology Department, Ankara, Turkey.
Corresponding author e-mail: kursat.sahin@hacettepe.edu.tr

Abstract

Global climate change has influenced many aspects of the biology and ecology of reptiles, which in some cases was caused the decline of their populations or serious threats. However evidence suggest that the phenomenon itself does not directly affect the organisms, but in combination with biotic and abiotic factors, increases its effects and causes diseases and infections in populations or habitat destructions in critic ecosystems. However, it remains unclear if climate change will alter population dynamics of all populations or some would be balanced due areas with suitable conditions for distribution and survival of organisms, whose survival depends largely on healthy habitats. Turkey is considered to be at risk in almost every global climate change scenarios. However, there are very few data for climate projection on North Anatolian lizards. Here the most important evaluation output of this study is that these region lizard populations, (especially Anguidae, Gekkonidae, Lacertidae and Scincidae families) would be highly vulnerable by forthcoming decades, if maximum environmental temperature continues rising constantly, which will lead to overcome of physiological threshold of tolerance and the destruction of their main habitats. Moreover, this would cause an energetic shortfall as a consequence of low food intake. In this respect the northern coasts of Turkey would probably be unable to provide suitable thermal regimes and ecosystem services for some of these organisms. However, the estimations of this study for some lizards demonstrated that if the thermal capacity of the species has a tolerance for relatively dry climates, they would have a tendency to live the inner parts of Northern Anatolia. Therefore, highlighted suggestion for understanding the effects of climate change and preventing confusions on this hot debate is “actual thermal patterns of these ectothermic species should be studied efficiently”.

Keywords: climate change, Anatolia, Thrace, lizards, thermal pattern

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➢ **ORAL PRESENTATION**

Analysis of the Gediz Delta Fishery

Zafer Tosunoğlu, Huriye Göncüoğlu Bodur, M. Hakan Kaykaç, Celalettin Aydin

Ege University, Faculty of Fisheries, 35100, Bornova, İzmir, Turkey

huriyegoncuoglu@gmail.com

Abstract

The Gediz delta covers a 40.000-hectar area in Izmir, from Mavişehir in the south through the southern borders of Foça hills in the north. It is one of the Ramsar sites with its jagged coastal structure, coves and vulnerable ecosystem, accommodating 4 fishery cooperatives with 723 fisher members. This study examines the fishery activities, fishing gears, captured species and existing problems and conveys the present situation. Data were collected through face-to-face interviews with member fishers and cooperative managers.

Frequently used fishing gears in the delta are trammel nets and fyke nets which are used alternately with respect to target species and seasons. *Ruditapes decussata* and bait species *Diopatra neapolitana, Solen marginatus and Carcinus aeustuarii* are also among the intensely targeted species. Accroding to 2016 records, the approximate amount of fish caught by the 4 fishery cooperatives in Gediz Delta totals 1450 tonnes, with 82% caught by Karşıyaka Coopearative, 10% by Tuzçullu Cooperative and the remaining 8% shared by the other two. High percentage of catch amount by Karşıyaka cooperative is attributed to the use of purse seiners, while Tuzçullu achieved this amount thanks to greater number of small scale vessels and various types of gears. In Gediz Delta, number of registered vessels in the shelters is over 500. Species frequently harvested are grey mullets (*Liza ramada, Mugil cephalus, Liza aurata, Chelon labrasus* and *Liza saliens*). Although purse seiners, Homa Lagoon and trammel nets catch the grey mullets, the most caught species is *L. ramada* with purse seiners. Most frequently caught species in the Homa Lagoon are *M.* cephalus and *L. aurata* while trammel nets also catch the grey mullets. It was also recorded that *Sepia officinalis* (over 100 tonnes) and *Octopus vulgaris* (about 50 tonnes) are harvested in the delta. This catch amount is achieved mostly by the Tuzçullu cooperative using fyke nets. Large amounts of cuttle fish are also caught occasionally using trammel nets. Members of this cooperative also land around 1000 kilos of *Anguilla anguilla* annually in the mouth of the delta and Homa-Kırdeniz lagoons.

Most prominent problems in the delta are illegal fishing and pollution. Marine areas of the delta are constantly being contaminated by residential and industrial waste, narrowing the habitat of marine species. Increasing demand due to population has also increased the fishing activities for commercial species both in legal and illegal directions, where most of the species are harvested prior to reaching spawning size. The Gediz delta is a special ecosystem that contributes to the ecological, economical and cultural wealth of the city of Izmir. However, the ecological and economical sustainability of this value has become almost exhausted. An integrated and sustainable management plan is needed to address the immediate problems of the Gediz delta.

Keywords: Gediz Delta, fisheries, fishing gear, sustainability.

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➢ **ORAL PRESENTATION**

Assessment of DFT Functionals for Calculating Vibrational Frequencies of L-Amino Acids

Hatice Arı[1*], Talat Özpozan[2], Zeki Büyükmumcu[2]

[*1] Bozok University, Faculty of Science & Art, Department of Chemistry, Yozgat, Turkiye.
[2] Erciyes University, Faculty of Science, Department of Chemistry, Kayseri, Turkiye.

Corresponding author e-mail: hatice.ari@bozok.edu.tr

Abstract

Amino acids form the protein based many of the life processes due to their role for every metabolic process. A large proportion of our cells is made up of amino acids. So they carry out many important bodily functions, such as forming the structure of the cells. Their role in the transport and the storage of nutrients is also very important [1]. Amino acids have been studied extensively by vibrational spectroscopy. Vibrational circular dichroism (VCD) and infrared absorption (IR) spectra were obtained at the theory level of DFT, B3LYP/CC-pVTZ, for 20 alpha-amino acids [2]. The vibrational modes of l-alanine, l-phenylalanine, l-aspartic and l-glutamic acid were calculated by semi-emprical methods (PM6 and RM1) and DFT method (B3LYP/6-31+G(d)) [3]. It should be noted that no theoretical study calculating the vibrational frequencies of the amino acids regarding the best DFT functional with basis set have been investigated as yet. In this work, 10 functionals and 5 basis sets for 21 amino acids have been tested. The scaling factors were improved for each method and basis set. All the DFT calculations were done employing Gaussian 09 program package [4].

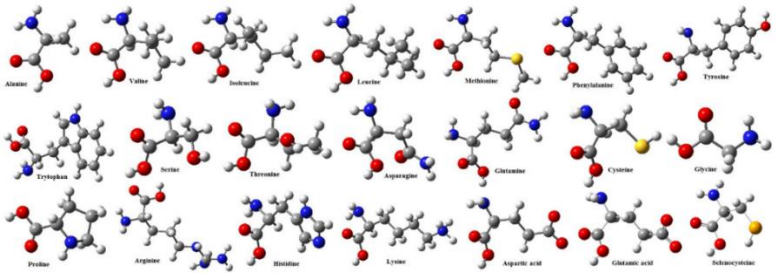

Figure Optimized structures of the amino acids

Keywords: Amino acids, vibrational spectrum, best DFT functional and basis set, scaling factor.

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➢ **ORAL PRESENTATION**

PEG-DA/Dextran Biocomposite Hydrogels for Drug Delivery

Sabiha Demirci, Fatma Ayhan*

Muğla Sıtkı Koçman University, Faculty of Science, Department of Chemistry, Biochemistry and Biomaterials Research Laboratory, Kötekli Muğla, Turkey

*Corresponding author e-mail: fayhan@mu.edu.tr

Abstract

PEG (Poly(ethylene glycol)) is a synthetic and hydrophilic polymer which has high biocompatibility, low protein adhesion, non-immunogenic and chemical attraction with high attachment ability. The high water capacity, elasticity, biocompatibility and low energy necessity are other attractive and well-known properties of PEG hydrogels for use in biomedical application areas. The complex branched and hydrophilic polysaccharides, dextrans have been extensively investigated for the targeted and sustained delivery of drugs, proteins, enzymes, and imaging agents due to excellent biocompatibility and chemical functionality.

In this research, acrylated PEG, polyethylene glycol diacrylate (PEG-DA) was used as macromere and 30 % macromer amount was used in all synthesized hydrogels. The biocomposite systems with different structures and compositions were synthesized using three dextran biopolymer ratios. Hydrogels were synthesized in the presence of photoinitiator and cross-linker by organic solvent free photopolymerization process.

The structural characterization studies of the obtained hydrogel systems were performed with the FTIR (Fourier Transformed Infrared Spectroscopy) spectra. SEM images of the hydrogels were also taken. The dynamic swelling behaviour and the release of model drug gentamisin were analysed in two different pH media, pH = 7.4 (phosphate buffer) and pH = 1.2 (citrate buffer) solutions at 37°C.

The presence of biopolymer in hydrogel structure was identified from FTIR spectrums. The surface of the dextran containing hydrogel image has a different form than PEG-DA hydrogel in SEM images. The swelling behaviour of composites were between 100 and 120 % for both three dextran ratio contents and no big difference was observed for the various ratio of biopolymer. The release of gentamicin from PEG-DA/Dekstran biocomposites occurs approximately 60 % in pH=7.4 and pH=1.2 buffer solutions within two hours and one hour, respectively.

In conclusion, the swelling behaviour increased but drug release was lagged by the addition of dextran biopolymer.

Keywords: PEG-DA (Polyethylene Glycol Diacrylate), Hydrogels, Biocomposite, Dextran, Drug Delivery.

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➢ ORAL PRESENTATION

Mikrodalga Destekli 3-Hidroksinaftil-2-il Sübstitüe 1,3,4-Oksadiazol Bileşikleri'nin Sentezi, Teorik ve Docking Çalışmaları

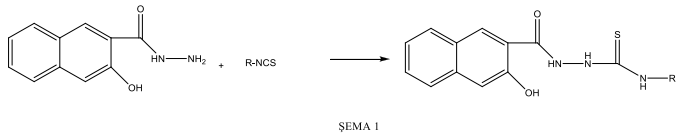
Murat Genç

Adıyaman Üniversitesi, Fen Edebiyat Fakültesi Kimya Bölümü, Adıyaman, Türkiye

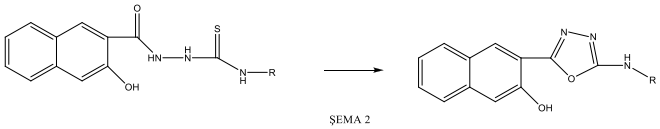
mgenc23@gmail.com

Absrtact

Yapısında 1,3,4-oksadiazol halkası içeren bileşikler geniş bir biyolojik aktivite spektrumuna sahiptir. Genel olarak; antifungal, antibakteriyel, analjezik, anti-inflamatuar, antiviral, antikanser, antidiabetik etki gösterdikleri son yıllarda yapılan çalışmalarla ortaya konulmuştur.[1,2] Bu çalışmada 3-Hidroksi naftil 2-il sübstitüe oksadiazol bileşiklerinin sentezi karbotiyoamit bileşiklerinden yola çıkılarak gerçekleştirildi. Elde edilen bileşiklerin Gaussian 09 hesaplamaları kullanılarak HOMO ve LUMO orbital enerjileri, atomların mulliken yükleri, molekülün aktivitesini belirlemek için HOMO-1 ve LUMO+1 orbital enerjileri, teorik NMR ve FT-IR hesaplamalarının deneysel değerlerle uyumu araştırıldı. Autodock Vina programı ile moleküler docking hesaplamaları yapılarak 1C14 kodlu ACP redüktaz aktivitesi araştırıldı.



ŞEMA 1



ŞEMA 2

Anahtar Kelimeler: 1,3,4- Oksadiazol, DFT, Docking

Teşekkür: Bu çalışma Adıyaman Üniversitesi Bilimsel Araştırma Projeleri Koordinasyon Birimi (Proje No: FEFBAP/2014-0003) tarafından desteklenmiştir.

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➢ **ORAL PRESENTATION**

Led Işığın Antimikrobiyal Fotodinamik İnaktivasyon Etkinliğinde Mikroorganizmalar Üzerine Etkileri

Mahmut Durgun[1*], Yeliz Durgun[2] ,İsa Karaman[3]

[*1]Karamanoğlu MehmetBey Üniversite, Mühendislik Fak., Bilgisayar Mühendisliği,Karaman,Türkiye
[2]Gaziosmanpaşa Üniversitesi, Turhal MYO ,Biyomedikal Cihaz Teknolojisi, Tokat,Türkiye
[3]Gaziosmanpaşa Üniversitesi, Müh.ve Doğa Bil.Fak., Genetik ve Biyomühendislik, Tokat, Türkiye

Sorumlu yazar e-mail:mahmutd@yandex.com

Özet

Mikroorganizmalar, çıplak gözle görülemeyecek kadar küçük bir hücre veya hücre topluluğundan oluşmuş mikroskobik organizmalardır. Dünyada yaklaşık 6.000.000 arasında farklı türde mikroorganizma olduğu düşünülmektedir. En iyi bilinen mikroorganizmalar bakteriler, mayalar, küfler, algler, protozoa ve virüslerdir. Bu canlılar tüm diğer canlılar gibi uygun ortamlar bulduklarında beslenip çoğalarak toprak, hava, insan vücudu ve tüm doğa koşullarında yaşayabilirler. Zararlı olan türleri insanların, bitkilerin ve hayvanların hastalanmalarına hatta ölümüne yol açabilirler. Bulunduğumuz ortamların fazla miktarda zararlı mikroorganizma içermesi durumunda da çeşitli enfeksiyonlar meydana gelebilmektedir. Bu durumda, yaşadığımız ve çalıştığımız ortamların, temiz ve patojen mikroorganizmalardan arındırılmış olması büyük önem taşımaktadır. Çünkü günümüzde hastanelerde dirençli mikroorganizmaların sebep olduğu enfeksiyonlar gittikçe artan bir şekilde sorun oluşturmaktadır. Ortamın temizliği, hijyeni özellikle sağlık sektöründe hassasiyetle yaklaşılması gereken bir konudur.
Mikroorganizmaların çok çeşitli oldukları ve ortam koşullarına kolaylıkla uyum sağlayarak yaşamlarını devam ettirdikleri göz önüne alındığında, özellikle toplumun bulunduğu ortam hijyeninin ne kadar hassas bir konu olduğu da anlaşılabilmektedir.Bu yüzden de ortam dezenfeksiyonunda yeni uygulanacak bir yöntem olan LED ışık teknolojisi kullanılarak ortamda bulunan mikroorganizmaların yok edilmesi amaçlanmıştır. Fotodinamik inaktivasyon olarak kabul edilen görünür ışık inaktivasyonu (PDI), özellikle 400- 430 nm dalga boyu aralığında görünür ışık gerektiren termal olmayan fotofiziksel ve fotokimyasal bir reaksiyondur ve oksijen varlığında da porfirin molekülleri gibi ışığa karşı duyarlı hale getiricidir Mikroorganizmaların direnç mekanizmaları üzerinde doğrudan etkisi olan LED ışık teknolojisini kullanarak ışınların bakterilerin ölümüne yol açtığı yapılan çalışmalarla öngörülmektedir.Işık yayılımında özellikle belli bölge aralıklarındaki morötesi LED'lerin bakterilerin, virüslerim ve mikroorganizmaların DNA'sını yok edebilmekte, böylece ortamın temizlenmesinde geleneksel yöntemlere göre çok daha etkili olmaktadır.

Anahtar Kelimeler: Led,mikroorganizma,Fotodinamik

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➢ **ORAL PRESENTATION**

Hastane Enfeksiyonlarına Sebep Olan Patojenlerin Yok Edilmesinde Yeni Teknolojiler

Yeliz Durgun[1*], İsa Karaman[2]

[*1]Gaziosmanpaşa Üniversitesi, Turhal MYO ,Biyomedikal Cihaz Teknolojisi, Tokat,Türkiye
[2]Gaziosmanpaşa Üniversitesi, Müh.ve Doğa Bil.Fak., Genetik ve Biyomühendislik, Tokat, Türkiye

Sorumlu yazar e-mail:yelizd@yandex.com

Özet

Çevremiz patojenler için bir rezervuar durumundadır.Son zamanlarda bakteriler antibiyotiklere karşı direnç oluşturmaya başlamıştır. Bu durum çeşitli problemleride beraberinde getirmektedir.Özellikle hastanelerde enfeksiyona bağlı ölümler her geçen gün artmaktadır.Dolayısıyla hastane enfeksiyonları (HAI) dünya çapındaki tüm sağlık kuruluşlarının en sık karşılaştığı sorunların, hastalıkların başında gelmektedir. HAI yaygınlığındaki artış,antibiyotik kullanımını artırırıken aynı zamanda pek çok bakterinin antibiyotiklere karşı dirençli suşlarının oluşmasına neden olmaktadır.Yara enfeksiyonlarında yaraların iyileşmesini geciktirerek kişilerin ölümüne yol açmaktadır.Yaraların sterilizasyonunu sağlayan onların iyileşme sürecini engellemeden enfeksiyonunu azaltan yeni bir dekontaminasyon metoduna ihtiyaç vardır. Işığın mikroorganizmaların inaktivasyonunda etkili olması ışık teknolojisine ilginin artmasına neden olmaktadır. Görünür dalga boylu ışık yayan diyotlar(LED) antimikrobiyal etki göstermesi sebebiyle yeni bir dezenfeksiyon metodu olarak son zamanlar da dikkat çekmektedir. Özellikle çevre dezenfeksiyon teknolojisi için LED ışığın kullanımı, güvenli, otomatik, ve sürekli olarak havada, sert ve yumuşak yüzeylerde, 7/24 zararlı bakterileri öldürülmesiyle bakterilere ev sahipliği yapan alanlarda da enfeksiyon zincirini kırarak yeni bir alan oluşturacaktır.
Görünür dalga boyundaki ışıkla ışınlamalama, dezenfeksiyon için cazip bir alternatif teknolojidir; çünkü ışık, geniş bir alandaki mikroorganizmaları inaktif hale getirebilir, kimyasal sarf malzemeleri kullanımının gerektirmez , ürünlerde kalıntı ,koku veya tad bırakmaz. Aynı zamanda insan sağlığı ve çevre üzerinde zararlı etkileri olan UV ışığının aksine, daha güvenli ve çevre dostu bir teknoloji olarak görülmektedir. Enfeksiyonları kontrol altına alabilmek için fiziksel temizlik esas alınsa da yeni temizleme ve dekontaminasyon teknolojilerinin geliştirilmesiyle yeni teknolojileri ortaya çıkaracaktır ve enfeksiyonu önleme çabalarını güçlendiren bir çözüm sunacaktır.

Anahtar Kelimeler: Enfeksiyon.dekontaminasyon.patojen

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➢ ORAL PRESENTATION

The Effects of Different Nitrogen Doses on Chemical Components of Stevia (*Stevia rebaudiana* Bert.)

Esra Ucar[1]*, Nuraniye Eruygur[2], Yasar Ozyigit[3], Mehmet Atas[4], Kenan Turgut[5]

[1]Department of Crop and Animal Production, Sivas Vocational School, Cumhuriyet University, Sivas, Turkey
[2]Department of Pharmacognosy, Selçuk University Faculty of Pharmacy Konya; Turkey
[3]Department of Horticulture, Korkuteli Vocational School, Akdeniz University, Antalya, Turkey
[4]Department of Pharmaceutical Microbiology, Cumhuriyet University Faculty of Pharmacy Sivas; Turkey
[5]Department of Field Crops, Faculty of Agriculture, Akdeniz University, Antalya, Turkey

Corresponding author e-mail: eucar@cumhuriyet.edu.tr

Abstract

In this study, the effects of the different nitrogen doses (0, 5, 10, 15 and 20 kg ha-1) was evaluated on chemical components of Stevia rebaudiana. The samples extracted with methanol by maceration method. The components in methanol extracts of plants were determined by gas chromatography-mass spectrometry (GC-MS) method. According to obtained data, extracts of *S. rebaudiana* obtained from plants, which were applied different fertilization doses, were tested. As a result of GC-MS analyzes, 37 different components were determined. The most common components are as follows; cyclohexane,1,5-diethenyl-3-methyl-2- methylene-, (1.alpha.,3.alpha.5.alpha.)- (17.44 %) for control group, 2-Furancarboxaldehyde, 5-(hydroxymethyl)- (CAS) (19.13 %, 21.62%) for respectively 5 kg/da^{-1} and 20 kg/da^{-1}, Phenol, 2,4-bis(1,1-dimethylethyl) (33.89 %) for 10 kg/da^{-1} , benzoic acid, 2-hydroxy-, methyl ester (CAS) (22.49 for 15 kg/da^{-1}.

Keywords: Antioxidant; essential oil; *Stevia rebaudiana*

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➢ ORAL PRESENTATION

The Effects of the Plant Age and Growth Period on Steviol Glycoside Rates in Stevia (*Stevia rebaudiana* Bert.)

Nuraniye Eruygur [1]*, Esra Ucar [2], Yasar Ozyigit[3], Mehmet Atas[4], Kenan Turgut[5]

[1]Department of Pharmacognosy, Selçuk University Faculty of Pharmacy Konya; Turkey
[2]Department of Crop and Animal Production, Sivas Vocational School, Cumhuriyet University, Sivas, Turkey
[3]Department of Horticulture, Korkuteli Vocational School, Akdeniz University, Antalya, Turkey
[4]Department of Pharmaceutical Microbiology, Cumhuriyet University Faculty of Pharmacy Sivas; Turkey
[5]Department of Field Crops, Faculty of Agriculture, Akdeniz University, Antalya, Turkey

Corresponding author e-mail: nuraniye.eruygur@selcuk.edu.tr

Abstract

In this work, samples taken from *Stevia rebaudiana* plants of different ages (2, 3, and 4 years) in different growth periods (H1: 1 July, H2:1 Agust, H3: 1 September and H4: 1 October) and an evaluation was made on the nutritional content values and steviol glycoside rates founnd in these samples according to the age and growth period of the plant. Determination of steviol glycosides was carried out by HPTLC and spectroscopic measurements of the stains on TLC were recorded at different wavelengths by using WinCATS-Plannar Chromatography Manager Version: 1.4.2.8121 software. In terms of plant age, the highest stevioside rate (13%) was obtained from plants of 3 years old and on the basis of time of harvesting, the samples harvestd in July was found highest in steviol glycoside (12%). The results indicated that the age of the plant and the harvesting period had an effect on the steivol glycoside rates contained in the stevia.

Keywords: *Stevia rebaudiana*, steviol glycoside, plant age, harvesting time

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➢ ORAL PRESENTATION

Changes in the Physical Properties of Heat-treated Beech and Oak Wood impregnated with Nano-TiO_2

Samet Kizilirmak, Deniz Aydemir*

Forest Industrial Engineering, Faculty of Forestry, Bartin, Turkey.

Corresponding author e-mail: denizaydemir@bartin.edu.tr

Abstract

The aim of this study was to investigate to the effects of impregnation with nano sized titanium dioxide and boron nitride of heat-treated Beech (*Fagus orientalis*) and Oak (*Quercus robur*) wood. The impregnation process was applied to wood materials with using full-cell method in a chamber. After impregnation process, the samples were dried in the climate cabin at medium such as 65% Rh and 20°C during a month, and the densities at 0% and %12 moisture content (MC), water absorption and dimensional stability of the samples were determined according to the related standards. The results showed that the impregnation of wood with nano-fillers and heat treatment of wood decreased generally the water-wood relations and the heat treatment of wood materials have more an important factor to the decrease in water absorption and dimensional stability as compare with the impregnation of nano-fillers. The impregnation of TiO_2 was also found to higher decrease the water absorption according the wood samples impregnated with nanoboron nitride.

Keywords: Wood, Nano-fillers, physical properties, nano filler impregnation.

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➢ ORAL PRESENTATION

In vitro Antimicrobial Activity and Phytochemical Screening of Pomegranate Peel

Malak Eddebbagh[1*], Nadia Ziyate[2], Fatiha Moughaoui[1], Abdelmjid Abourriche[1], Mohammed Berrada[1], Sami Darkaoui[2] and Ahmed Bennamara[1]

[1]Laboratory of "Biomolecules and Organic Synthesis", Faculty of Sciences Ben M'Sik, University Hassan II of Casablanca, Casablanca B.P. 7955, Morocco
[2]National Office for Food Safety Products, Agdal – Rabat, Morocco

Corresponding author e-mail: malak.eddebbagh@yahoo.fr

Abstract

Antimicrobial activity of extracts of *Punica granatum* was evaluated, with two strain gram-negative Escherichia coli and Pseudomonas aeruginosa and two authors gram-positive Staphylococcus aureus and bacillus subtilis. The in vitro anti-bacterial activity was performed by agar disc diffusion method. The antibacterial activity of our extracts was most striking especially on Staphylococcus aureus. The significant antibacterial activity of active extracts was compared with the standered, antimicrobics, chloramphenicol (30 µg/disc). The results obtained in the present study suggest that pomegranate peel can be used in treating diseases of human organism.

Keywords: *Punica granatum*, antibacterial activity, pomegranate peel extract.

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➢ **ORAL PRESENTATION**

Kocaeli Kent Ormanı'ndan Oribatid (Acari) Akarlar

Merve Yaşa*, Şule Baran

Sakarya Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Sakarya, Türkiye.

Sorumlu yazar e-mail: merve.yasa1@ogr.sakarya.edu.tr

Özet

Bu çalışma ile Türkiye oribatid akar faunasına katkıda bulunmak amaçlanmıştır. Kocaeli Kent Ormanı'ndan üç oribatid akar türüne *Licnodamaeus costula, Hypocepheus helveticus* ve *Suctobelba atomaria* ait yeni lokalite kayıtları verilmiştir. Ayrıca kaydedilen bu türlerin SEM görüntüleri de verilmiştir.

Anahtar Kelimeler: Acari, Oribatida, Yeni lokalite, Kocaeli, Türkiye, SEM.

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➢ ORAL PRESENTATION

Simultaneous Removal of Heavy Metal and Dye Using Natural Pea Shells: A Study in Binary System

Başak Mesci Oktay[1], Sevda Esma Akkaya[2], Semra Çoruh[2]

[1]Department of Material Science Engineering, Ondokuz Mayıs University, 55200 Samsun, Turkey
[2]Department of Environmental Engineering, Ondokuz Mayıs University, 55139 Samsun, Turkey

Corresponding author e-mail: basakm@omu.edu.tr

Abstract

The aim of this study is to investigate the simultaneous biosorption of malachite green dye and copper ions on natural pea shells. Specifically, we have studied the removal performance of this biosorbent using the binary aqueous systems: malahite green (MG) dye – Cu(II). The effects of various operating parameters, the contact time (1–240 min), adsorbent dose (0.4-12g/L) and initial concentration of Cu(II) and dye ions (30-400 mg/L) to determine the removal process and properties were investigated in a batch adsorption technique. Multi-component equilibrium experiments have been performed and used to identify and characterize the synergic adsorption in the simultaneous removal of these pollutants. These results show that the presence of malachite green dye is not affected by the presence of metallic ions. Langmuir and Freundlich isotherm models were adopted to describe the adsorption isotherms. Adsorption isotherms of dye and metal ions could be best modeled by Freundlich equation.

Keywords: Copper, binary system, biosorption, copper, malachite green dye, natural pea shell.

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➢ ORAL PRESENTATION

The Effects of Adrenomedullin and Resveratrol in the Expression of *SIRT1* in Brown Adipose Tissue of Obese Rats

Ayse Asiye Culum*, Muhittin Yurekli

The Faculty of Science and Arts, Department of Biology, Malatya, Turkey

Corresponding author e-mail: ayseasiye@hotmail.com

Abstract

Obesity is the result of the complex and variable interactions between genetic structure and environment. Resveratrol is a molecule that is effective in the activation of sirtuin 1 (*SIRT1*) gene. Furthermore, *SIRT1* gene has a regulatory effect on energy metabolism. Adrenomedullin (AdM) is a 52-amino acid peptide, and an autocrine, paracrine regulatory protein that has many functions. The effects of resveratrol over *SIRT1* gene expression and effects of AdM were investigated in brown adipose tissue. Rats were divided into 8 groups. Obese groups were fed with high fat diet that has 60% fat content as energy for 3 months. After providing obesity, 2.5 nmol/kg AdM and 10 mg/kg resveratrol were treated to experiment groups intraperitonally (i.p.) every other day for 4 weeks. *SIRT1* mRNA levels in brown adipose tissue were detected with semi-quantitative PCR; protein levels were detected with Western Blotting. Consequently, *SIRT1* expression increased with resveratrol. The treatment of AdM with resveratrol revealed completely diverse responses than the treatment of these two molecules apart. Furthermore, obese and control groups responded differently to AdM and resveratrol treatments. AdM had no effect alone over the increase of expression, but the expression increased when treated with resveratrol in control group. The results showed that resveratrol increases SIRT1 protein levels in both groups, and AdM could have ability to increase SIRT1 protein levels in obese groups.

Keywords: Obesity, SIRT1, adrenomedullin, resveratrol, brown adipose tissue, high fat diet.

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➢ **ORAL PRESENTATION**

Macrofungal Biodiversity of Reşadiye(Tokat) District

Hakan IŞIK [1], İbrahim TÜRKEKUL [2*], Mete KOYUNCU[3]

[1] Tokat Science and Art Center, 60200, Tokat,Turkey
[*2] Gaziosmanpaşa University, Faculty of Arts and Sciences, Department of Biology, 60200, Tokat,Turkey
[3] Tokat State Hospital, 60200, Tokat,Turkey

Corresponding author e-mail: ibrahim.turkekul@gop.edu.tr

Abstract

Macrofungi are found in *Ascomycota* and *Basidiomycota* divisions. Fruiting bodies can be seen without the need for a microscope. They can be edible, inedible or poisonous. Edible macrofungi collected from the natural habitat by the local people are used as food material and also provide economic income.

Besides the high diversity of plant, Turkey also has the high diversity of fungi. The number of macrofungi detected in our country is increasing rapidly with made new macrofungi records for both the mycobiota of Turkey and science World.

Reşadiye (Tokat) district is located to the east of Tokat province surrounded by Almus (Tokat) in the south; Aybastı (Ordu) and Gölköy (Ordu) in the north; Koyulhisar (Sivas) and Mesudiye (Ordu) in the east, and Niksar (Tokat) and Başçiftlik (Tokat) in the West. Reşadiye has a transition climate between the Middle and East Black Sea climate with the continental climate. The forest vegetation of Reşadiye is dominated by *Pinus sylvestris* L., *Pinus nigra* J.F. Arnold and members of the genera *Quercus, Abies, Carpinus, Cedrus.* Members of the genera *Corylus, Pyrus, Crataegus, Rosa* also are found in the this vegetation. Members of the genera *Populus* and *Salix* are mostly found in the valleys.

The macrofungi samples were collected during field studies in Reşadiye (Tokat) district between 2014-2017 years and were deposited at the Fungarium of Gaziosmanpaşa University, Faculty of Science, Department of Biology, Tokat, Turkey. As a result of the field and laboratory studies, 53 species belonging to 2 divisio, 26 families and 42 genera were detected. Five species of the idendified macrofungi belong to *Ascomycota*, other 48 species belong to *Basidiomycota*. Of these, 25 were edible (47.2%), 25 inedible (47.2%), 3 poisonous (5.6%). Species collected and consumed by local people in edible macrofungi are *Morchella elata, Agaricus campestris, Amanita vaginata, Boletus edulis, Marasmius oreades, Lactarius deliciosus.*

Keywords: biodiversity, macrofungi, taxonomy, Reşadiye, Tokat, Turkey

Acknowledgement: This paper is based on a master's thesis study titled "A Taxonomic Investigation of Macromycetes Grown In the Region of Tokat City (Reşadiye)".

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➢ **ORAL PRESENTATION**

Comparison of Antimicrobial Activity of Biologically Synthesized Silver and Zinc Nanoparticles Using *Alchemilla vulgaris* Extract

Dilek Demirezen Yilmaz[1]*, Fatih Doğan Koca[2], Şeyda Yilmaz[3]

[1]Erciyes University, Faculty of Sciences, Department of Biology, Kayseri, Turkey
[2] Erciyes University, Faculty of Veterinary Medicine, Department of Fisheries and Fish Diseases, Kayseri, Turkey
[3]Erciyes University, Graduate School of Natural and Applied Sciences, Kayseri, Turkey

Corresponding author: demirezen.dilek@gmail.com, demirez@erciyes.edu.tr

Abstract

In this study, the extract of *Allcemilla vulgaris* (Layd's mantle) for production of silver and zinc nanoparticle without use of any chemical agent was investigated. The silver (AgNPs) and zinc nanoparticles (ZnNPs) showed strong antibacterial activity against both tested *Escherichia coli* O157:H7 (Gram negative) and *Staphylococcus aureus* (Gram positive) bacteria. The antibacterial activity of bio-synthesized nanoparticles against two pathogens was assessed by minimal inhibitory concentration (MIC) assays. The MIC values of AgNPs and ZnNPs of 0.06 µg/mL and 16.2 µg/mL for *E.coli* O157:H7 AgNPs and *Staphylococcus aureus* against ZnNPs were at 4.25 µg/mL and 6.25 µg/mL for, respectively. Biologically synthesized nanoparticles were characterized by Scanning Electron Microscopy (SEM), Fourier transform infrared spectroscopy (FTIR), UV-Vis spectroscopy, X-ray diffraction (XRD) and Zeta potential analysis. This study concludes that the bio- synthesized AgNPs and ZnNPs may be used as an effective antimicrobial activity, so it can be projected as future generation antimicrobial agents and designing newer drugs.

Keywords: Biological synthesis, silver, zinc, nanoparticle, *S.aureus*, antimicrobial activity.

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➢ ORAL PRESENTATION

The Investigation of Adrenomedullin Effects over Hypoxia Inducible Factor 1-Alpha under Hypoxic Conditions in Rats

Ayse Asiye Culum[1], Canbolat Gurses[2]*, Muhittin Yurekli[3]

[1, 2*, 3] Inonu University, The Faculty of Science and Literature, Department of Biology, Malatya, TURKEY
e-mail: canbolatgurses@gmail.com
Website: canbolatgurses.com

Abstract

Adrenomedullin (AdM) is a 52-amino acid peptide, and an autocrine, paracrine regulatory protein that has many functions. The effects of AdM over *HIF1* gene expression and effects of AdM were investigated in heart, lung and kidney tissues. Rats were divided as control, hypoxia, control+AdM and hypoxia+AdM groups. Rats in hypoxia groups were provided hypoxic environment containing of 10-12% oxygen and 88-90% nitrogen for 1 week. Earth's atmosphere contains 78.08% nitrogen, 20.95% oxygen, 0.93% argon, 0.038% carbondioxide, and traces of hydrogen. Rats in AdM groups were injected intraperitoneally in a dose of 1.25 nmol/kg for 4 days before the collection of the tissues. The control group was oxygenated with normal air. The control and treatment groups were formed from 7-8 animals and AdM, HIF1-α levels were measured in taken tissues with immunoassay method. Consequently, AdM levels and HIF1-α in heart tissue were found decreased in hypoxia group when compared to the control group, and AdM levels were increased in hypoxia+AdM group when compared to the hypoxia group. HIF1-α levels were decreased in hypoxia+AdM group. AdM levels in kidney tissue were found decreased in hypoxia and control+AdM groups than control group. HIF1-α levels were higher in control+AdM group compared to other groups. In lung tissue, AdM levels were increased in all groups when compared to the control group. AdM treatment was increased HIF1-α levels in treated groups than hypoxia and control groups.

Keywords: Adrenomedullin, hypoxia, Hypoxia Inducible Factor 1-alpha (HIF1-α), vasodilatation, HIF1.

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➢ ORAL PRESENTATION

Kırıkhan –Reyhanlı Arası Çayır-Mera Topraklarının Molibden İçeriği ve Topraktaki Bazı Ağır Metaller ile İlişkilerinin Belirlenmesi

Mehmet Yalçın*, K. Mesut Çimrin

Mustafa Kemal Üniversitesi, Ziraat Fakültesi, Toprak Bilimi ve Bitki Besleme Bölümü, Hatay, Türkiye
Sorumlu yazar e-mail: myalcin@mku.edu.tr

Özet

Çalışmada Hatay ili Kırıkhan-Reyhanlı arası çayır - mera topraklarının molibden içeriğinin belirlenmesi ve toprak içerisindeki bazı ağır metaller ile ilişkilerinin saptanması amaçlanmıştır. Bu amaç için çayır mera topraklarını temsil edecek şekilde iki farklı derinlik (0-20 ve 20-40 cm) ve 40 ayrı noktadan olmak üzere toplamda 80 toprak örneği alınmıştır.

Alınan toprak örneklerinde kadmiyum, kobalt, nikel, kurşun, bakır, demir, ve molibden içerikleri belirlenmiştir. Araştırma sonuçlarına gore; toprakların kadmiyum içerikleri 0.01-0.32 ppm; kobalt içeriği 0.01-4.97 ppm; nikel içerikleri 0.00-20.00 ppm; kurşun içerikleri 3.00-67.00 ppm; bakır içerikleri 0.26-7.48 ppm; demir içerikleri 4.00-61.00 ve molibden içerikleri 0.001-0.064 ppm arasında bulunmuştur. Toprakların Mo ile Co, Ni, Pb, Cu ve Fe içerikleri arasında pozitif önemli ilişkiler belirlenmiştir. Aynı zamanda Cd ile Co; Co ile Ni, Pb, Fe; Pb ile Cu, Fe ve Cu ile Fe aralarında pozitif önemli ilişkiler belirlenmiştir. Bölge topraklarının ağır metal içerikleri sınır değerler ile karşılaştırıldığında herhangi bir ağır metal kirliliğine rastlanmamıştır.

Anahtar kelimeler: Molibden İçeriği, Çayır-Mera, Ağır Metaller.

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➢ **ORAL PRESENTATION**

Diplolepis fructuum (Hymenoptera: Cynipidae)'un Gelişim Evrelerinde Esteraz Aktivitesi

Salih Görgün[1], Lütfiye Gençer[2], Mehmet Ali Akpınar[2], Abdurrahman Aktümsek[3]

[1:] Cumhuriyet Üniversitesi Fen Fakültesi Biyokimya Bölümü Sivas, TÜRKİYE
[2]: Cumhuriyet Üniversitesi Fen Fakültesi Biyoloji Bölümü Sivas, TÜRKİYE
[3]: Selçuk Üniversitesi Fen Fakültesi Biyoloji Bölümü Konya, TÜRKİYE

Corresponding author e-mail: gencer@cumhuriyet.edu.tr

Özet

Bu çalışmada kuşburnunda hasara yol açan bir böcek türü olan *Diplolepis fructuum*'un çeşitli gelişim evrelerinde esteraz aktiviteleri spektrofotometrik ve elektroforetik olarak belirlenmiştir. *D. fructuum*'un yumurta, larva ve pupa evrelerindeki esteraz aktiviteleri arasında fark olmamasına rağmen, ergin evrede esteraz aktivitesinde önemli artış görülmüştür. Bu durum Nativ-PAGE tekniğiyle yapılan çalışmalarda da görülerek; yumurta, larva ve pupa evrelerinin esteraz profilleri farklılık göstermemesine rağmen, ergin evrede diğer evrelerde görülen esteraz bandı dışında 2 bant daha olduğu belirlenmiştir. Gelişim evrelerinde görülen esteraz bant profillerindeki farklılıklarının türün gelişimiyle yakından ilişkili olduğu belirlenmiştir.

Anahtar Kelimeler: *Diplolepis fructuum*, gelişim evreleri, esteraz

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➢ ORAL PRESENTATION

Polimer/Biyoaktif Cam Çözeltilerinin Reolojik Karakterizasyonlarının Yapılması ve Nanokompozit Malzeme Üretimi

Melek Erol Taygun*, Gül Hatinoğlu, Pelin Öztürk, Nuray Yerli, Sadriye Küçükbayrak

İstanbul Teknik Üniversitesi, Kimya Mühendisliği Bölümü, Maslak 34469, İstanbul

Sorumlu yazar e-mail: erolm@itu.edu.tr

Özet

Nanoteknoloji fizik, kimya, ilaç, elektronik, bilgisayar, malzeme, tekstil ve tıp alanında kullanıldığı gibi, gıda ve ziraat alanlarında da uygulanmaktadır. Nanoteknolojik çalışmalarda nanolifler, çapları 100 nanometrenin altında olan yapılar olarak ifade edilmektedir. Nanolifler, farklı yöntemler ile üretilebilmektedir. En yaygın olan yöntem elektrospinning (elektrodöndürme) yöntemi ile nanolif üretim tekniğidir. Bu teknik ile üretilen nanolifler, gıda ve doku mühendisliği gibi uygulama alanlarında yaygın olarak kullanılmaktadır. Nanolif üretiminde yaygın olarak sentetik polimerler ve doğal biyopolimerler kullanılmaktadır. Bu çalışmanın amacı, elektrospinning yönteminin uygulanması ile doku mühendisliği veya gıda mühendisliği gibi farklı alanlarda kullanılabilecek polimer/cam nanokompozit malzeme üretiminin gerçekleştirilmesidir. Bu amaçla, öncelikle hazırlanacak polimer çözeltilerinin reolojik karakterizasyonu yapılmıştır. Gerçekleştirilen deneyler ile jelatin/Polikaprolakton (PCL) çözeltisinde çözücü olarak kullanılan asetik asit ve formik asitin derişiminin, jelatin/PCL/aljinat çözeltisinde aljinat derişiminin ve jelatin/PCL ile jelatin/PCL/aljinat çözeltilerine biyoaktif cam ilavesinin reolojik özelliklere etkisi incelenmiştir. Jelatin/PCL, Jelatin/PCL/aljinat çözeltileri, biyoaktif cam ilaveli jelatin/PCL ve jelatin/PCL/Aljinat çözeltilerinin Newtonian tipi akışkan olduğu saptanmıştır. Reolojik karakterizasyonu yapılan bu çözeltilerin elektrospinning cihazı yardımı ile nanokompozit malzeme üretimi gerçekleştirilmiş ve taramalı elektron mikroskobu (SEM) çalışmaları ile morfolojileri incelenmiştir. Gıda ambalaj maddesi olarak kullanımı için, biyoaktif cam ilavesiz %100 formik asit kullanılarak oluşturulan jelatin/PCL nanokompozit yapının en uygun olduğuna karar verilmiştir. Buna göre seçilen nanolifin ortalama çapı 315 nm'dir. Kemik doku mühendisliğinde kullanılmak üzere biyoaktif cam ilaveli numuneler tercih edilmiştir. Bu amaç için, ağırlıkça %5 biyoaktif cam içeren jelatin/PCL nanolifi seçilmiştir. Seçilen nanolifin ortalama çapı 480 nm'dir. Yapılan çalışmalar sonucunda, üretilen nanoliflerin hem kemik doku mühendisliği hem de gıda mühendisliği alanlarında kullanılabileceği sonucuna varılmıştır.

Anahtar Kelimeler: Reoloji, Polimer, Biyoaktif Cam, Nanokompozit

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➢ ORAL PRESENTATION

Protective Effect of Vitamin E and N-Nitro L-Arginine Methyl Ester (L-NAME) on Cigarette Induced Kidney Damage

Fahrettin Akyüz[1*], Yakup Kara[1] Fatih Kar[1] Ceyhan Hacıoğlu[1], Dilek Burukoğlu Dönmez[2]

[1]Eskişehir Osmangazi University, Faculty of Medicine, Department of Medical Biochemistry, Eskişehir, Turkey

[2]Eskişehir Osmangazi University, Faculty of Medicine, Department of Histology and Emrbryology, Eskişehir, Turkey

Corresponding author e-mail:fakyuz@ogu.edu.tr

Abstract

The Cigarette is a material obtained from the leaves of a tobacco plant and believed to be comforting by many people. Cigarette components are known to have adverse effects on renal function because of oxidative stress exposure. Vitamin E is known to be an important antioxidant that protects the organism with various mechanisms and prevents damage at the cellular dimension. L-NAME inhibits nitric oxide (NO) synthase, reducing NO formation and contributing to the reduction of oxidative damage induced by reactive species. In this study, we aimed to investigate the effects of cigarette exposure on rat kidneys and protective effect of vitamin E and L-NAME. For this purpose, Forty five male albino rats were divided into five groups: control, cigarette, cigarette + vitamin E, cigarette + L-NAME, cigarette + vitamin E + L-NAME. The rats were exposed to cigarette smoke by inhalation in special cages and 200 mg/kg BW Vitamin E or 50 mg/kg BW L-NAME administered intraperitoneal for 42 days. These procedures were applied every day. At the end of the 42nd day, the kidney tissues and blood of rats were taken for biochemical and histological analysis. Malondialdehyde (MDA), glutathione (GSH) and catalase (CAT) measurements were performed on the kidney tissue homogenate, creatinine and blood urea nitrogen (BUN) were measured in the rat serum. While serum creatinine, BUN and tissue MDA levels significantly increased, GSH levels and CAT activity decreased significantly in cigarette-exposed rats. Serum creatinine, BUN, MDA, GSH and CAT levels were normalized in the treatment groups ($p < 0.05$). Histological examinations showed that there was improvement in the treatment groups. It has been observed that kidney damage resulting from cigarette-exposure can be eliminated by the use of vitamin E and L-NAME.

Keywords: Cigarette, kidney damage, vitamin E, L-NAME.

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➢ ORAL PRESENTATION

ion of Inflammation Targeted Polymeric Nano-Micelles and Studying Their Effects on Blood Biochemical Parameters in Rats

Fatemeh Bahadori[*1], Ayse Seyma Buyuk[1♣], Ahmed Serdar Kozanoglu[1♣], Zahra Eskandari[2,3], Handan Ankaralı[4], S. Evrim K. Tekkeli[5], Humeyra Nur Kaleli[6], Abdurrahim Kocyigit[6]

1 Department of Pharmaceutical Biotechnology, Faculty of Pharmacy, Bezmialem Vakif University, Istanbul, Turkey
2 IBSB, Department of Bioengineering, Marmara University, 34722, Kadikoy, Istanbul, Turkey
3 Department of Chemistry, Biochemistry Division, Faculty of Sciences and Arts, Yildiz Technical University, Istanbul, Turkey
4 Department of Biostatistics and Medical Informatics, Faculty of Medicine, Istanbul Medeniyet University, Istanbul, Turkey
5 Department of Analytical Chemistry, Faculty of Pharmacy, Bezmialem Vakif University, Istanbul, Turkey
6 Department of Medicinal Biochemistry, Faculty of Medicine, Bezmialem Vakif University, Istanbul, Turkey
♣: These authors contributed equally to this work

Corresponding author e-mail:fbahadori@bezmialem.edu.tr

Abstract

Poly (lactic-co-glycolic) acid (PLGA) is one of the best defined polymers based on to its activity and design. Celecoxib (CLX), brand named Celebrex, is belonged to NSAID family which inhibits the cytokine related COX-2 isoenzyme. CLX has less gastrointestinal side effects. Consequently, CLX is inevitable in the inflamamtion therapy for the patients with gastrointestinal problems. However, long term studies of CLX caused stroke, myocard infarction and even death in patients.

In this study we aimed to target CLX to the site of inflammation using nano-micelles made of PLGA (Nano-CLX). CLX was encapsulated in PLGA micelles using w/o/w emulsion method and the size of micelles were measured as mono-modelar 112 nm while, 50 mg PLGA was able to carry 2,5 mg CLX with Encapsulation Efficiency of 85%. 90% of the drug was released from Nano-CLX within 24 hours.

32 Wistar rats were separated into 8 groups. Complete Freund's Adjuvant was injected to the right hint paw of 3 groups. Blood sampling and hint paw size measurements were made for 6 hours after application of Celebrex orally, after injection of 1 ml of Celebrex and 1ml of Nano-CLX. Each group was compared with a control group. The obtained serums were studied for the levels of IL-1β, IL-6, TNF-α, PGE_2.

PGE2, the directly related factor to the COX-2 inhibition and the TNF-α levels were decreased for a long time by nano-CLX compared to Celebrex. IL-1 and IL-6 levels showed a dramatic decrease at orally administered rats compared to the ones treated with nano-CLX, showing accumulation of these proinflammation factors at the side of disease. Based on the hypothesis that the ratio of blood parameters is inversely proportional to that of site of inflammation, it is proved that our nano-formulation is targeted to the tissues in the systemic blood flow and have a better selective inhibition.

Keywords: Targeted Inflammation Therapy, Celecoxib, Nano Drug Delivery System, PLGA, COX2.

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➢ **ORAL PRESENTATION**

Determination of Cytotoxic, Genotoxic and Oxidative Effects of Naringenin

Selcuk Ceker[1]*, Furkan Orhan[2], Guleray Agar[3]

[*1]Agri Ibrahim Cecen University, Faculty of Pharmacy, Agri, Turkey.
[2]Agri Ibrahim Cecen University, Faculty of Science and Literature, Department of Molecular Biology and Genetics, Agri, Turkey.
[3]Ataturk University, Faculty of Science, Department of Biology, Erzurum, Turkey.

Corresponding author e-mail: sceker@agri.edu.tr

Abstract

The phenolic compounds obtained from plants are responsible for the protection of the organism against the harmful effects of reactive oxygen compounds by means of antioxidant activities and for the treatment of disorders related to radical damage. However, since the phenolic compounds frequently found in plants may have antioxidant and prooxidant effects, the chemical properties and activities of these compounds must be known. Naringenin (NG) is of the most researched flavonoid members, it possesses majority of the biological activities of flavonoids. In this work, it is aimed to investigate the *in vitro* cytotoxic, genotoxic and oxidative effects of NG, which is found in many foods in our diet.

The cytotoxic effect of NG on human umbilical cord vein endothelial cells (HUVECs) were analysed with the lactate dehydrogenase (LDH) release and cell proliferation (WST-1) methods; in human lymphocytes the oxidative properties against carbon tetrachloride (CCL_4) were examined with the measurement of catalase, superoxide dismutase and malondialdehyde; genotoxic effects were investigated with single cell gel electrophoresis (Comet) and micronuclei (MN) methods.

NG revealed cytotoxic and genotoxic properties especially at high concentrations (100 and 200 μM). The most effective results in terms of antigenotoxic and antioxidant effects for NG was observed 8 μM concentration. Therefore, care should be taken that NG does not consume food containing high levels unconsciously, and individual concentration adjustments should be made in the treatments applied.

Keywords: Naringenin, Carbon tetrachloride, Comet, LDH, Micronuclei, WST-1

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➢ ORAL PRESENTATION

The Effect of Nicotine and Melatonin on Kidney Antioxidant Enzyme Activities in Mice

Emine Dıraman, Bahar Kesici, Gönül Fatma Solmaz*

Ondokuz Mayıs Universty, Faculty of Art and Science, Departman of Biology Samsun

Corresponding author e-mail:gonul.solmaz@omu.edu.tr

Abstract

In this study, the effects of nicotine and melatonin were researched comparatively on the activities of superoxide dismutase (SOD) and catalase (CAT) as kidney antioxidants enzymes in mice.
For this purpose, nicotine and melatonin were given to mice by intraperitonal injection and after the injection at the 2th, 4th, 8th, 12th and 24th hours mice were killed by servical dislocation; and their kidneys were removed. After total enzyme fractions were obtained by applying the kidneys homogenisation, sonification and centrifugation. These fractions were used for the determination of changes in SOD and CAT activities.
As a result, it was determined that the CAT activity generally was inhibited but there was a few activation 8th hour by the effect of nicotine. Under the effect of melatonin the CAT activity generally was activated but there was a few inhibition in 2th hour. And it was observed that under the effect of nicotine+melatonin the CAT activity activated 4th and 8th hours but inhibited 2th, 12th and 24th hours.
it was determined that the SOD activity was inhibited 2th and 4th hours but activated 8th, 12th and 24th hours by the effect of nicotine. Under the effect of melatonin the SOD activity generally was activated all the hours. And it was observed that under the effect of nicotine+melatonin the SOD activity inhibited 2th, 4th and 24th hours but activited 8th and 12th hours.

Keywords: Nicotine, Melatonin, Superoxide Dismutase, Catalase, Kidney, Mice.

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➢ ORAL PRESENTATION

Psikiyatrik Hastalarda Folat ve B12 Vitamin Seviyelerinin Değerlendirilmesi

Fatih Kar*, Ceyhan Hacıoğlu, Zeynep Küskü Kiraz, Sema Uslu, Güngör Kanbak

Eskişehir Osmangazi Üniversitesi, Tıp Fakültesi, Tıbbi Biyokimya Anabilim Dalı, Eskişehir, Türkiye

Sorumlu yazar e-mail: fatihkarahasanoglu_@hotmail.com

Özet

Majör depresif bozukluk, kişinin sosyal işlevlerini ve günlük yaşama dair etkinliklerini rahatsız edecek dereceye ulaşmış üzüntü, melankoli veya keder durumudur. İlaç ile tedavisi ise, özellikle kişilerin tedaviye olumlu yanıt vermesi noktasında yetersiz ve iyileşme sürecinden uzakta kalmaktadır. Son zamanlarda yapılan çalışmalar, insanlarda meydana çıkan bu depresif bozukluklarda, beslenmede yer alan vitamin ve minerallerin önemli bir rolü olduğuna yönelik kanıtlar ortaya koymaktadır. Merkezi sinir sistemi üzerindeki etkileri sonucu folat ve B12 vitamini bu noktada çalışmaların odağı olmaktadır. Çalışmamızda, Eskişehir Osmangazi Üniversitesi psikiyatri servisine başvuran ayakta tedavi edilen hastaların Folat ve B12 vitamin düzeyleri incelendi. Bu amaçla, 2016 yılında psikiyatri servisine başvuran, B12 vitamin düzeyleri ölçülen 343 hastanın ve Folat düzeyleri ölçülen 250 hastanın verileri retrospektif olarak belirlendi. Elde edilen tüm veriler, SPSS 21 paket programı ile istatistiksel olarak değerlendirildi. Değerlendirme sonucunda, Folat eksikliğinin prevelansı %15,6, B12 vitamin eksikliğinin pravelansı ise %15,45 olarak bulunmuştur. Literatür ile uyumlu çıkan sonuçlarımız için, majör depresif bozukluk tanı ve tedavi sürecinde, rutin olarak B12 vitamininin ve folat düzeylerinin takip edilmesi gerektiği söylenebilir. Özellikle antidepresan kullanımın kısıtlanması ve semptomların giderilmesi noktasında yapılacak vitamin takviyeleri ile olumlu sonuçlar alınabileceği yorumu yapılabilir.

Anahtar Kelimeler: Folat, B12, Depresyon, Psikotik Bozukluklar

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➢ ORAL PRESENTATION

Effect of Pressure on Coke Deposition During Dry Reforming of Methane over Nickel and Tungsten Based Mesoporous Alumina Catalyst

Huseyin Arbag

Gazi University, Engineering Faculty, Chemical Engineering Department, Ankara, Turkey

Corresponding author e-mail: harbag@gazi.edu.tr

Abstract

Activity of nickel and tungsten incorporated mesoporous alumina catalysts was tested in dry reforming of methane under different reaction pressures of 1 bar and 15 bar. Ni-W catalyst was synthesized following a one-pot hydrothermal route. Nitrogen adsorption/desorption analysis showed that the catalyst had uniform mesopore size distribution. The catalyst showed high and stable activity up to 50 hours at the atmospheric pressure. TG analysis showed that almost no coke deposition was observed on the spent Ni-W catalyst after the reaction tests at 750 ^{o}C and 1 bar. SEM images and XRD pattern of the spent catalyst showed that there was no significant structural changes after 3 h activity test at 750 ^{o}C. Formation of some tungsten carbide was observed over the catalyst after the time-on stream test. The reaction pressure was increased to 15 bar, which decreased the conversions of CH_4 and CO_2. Reverse water gas shift and Boudouard reactions became more favorable at the high pressure. Coke deposition caused instabilities in the product distribution at the high pressure dry reforming methane test.

Keywords: Synthesis gas, dry reforming, nickel, tungsten, high pressure, catalyst stability

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➢ **ORAL PRESENTATION**

Immobilization of GOx over Novel Dendrons with Ferrocene-Stem; Potential an Application for Glucose Detection as Colorimetric

Elvan Hasanoğlu Özkan, Nurşen Sarı*

Gazi University, Faculty of Science, Department of Chemistry, 06500 Teknikokullar, Ankara, Turkey

Corresponding author e-mail:nursens@gazi.edu.tr

Abstract

In this work, novel dendrons were synthesized by using condensation and template method. Firstly, the first (1J) and second generation (2J) dendrons involving ferrocene were synthesized and then, expanded second generations dendrons, [2J-CH_3-Pd(II) and 2J-CH_3-Pt(II)], were obtained using "template method" with aminophenol derivatives, Pd (II) or Pt (II) cations. Their structures were characterized by molar conductivity, magnetic susceptibility, thermal analyses (TGA), FT-IR, UV-Vis, ^{1}H NMR, AAS, LC-MS methods. Then, glucose oxidase (GOx) enzyme was immobilized on them and their optimization parameters (pH, temperature, substrate concentration, reusability and storage capacity) enzyme were determined. The GOx immobilized dendrons were used for application in glucose detection by means of Trinder method. İmmobilized glucose oxidase showed improved operational stability by maintaining 81.35 % of the initial activity after 20 cycles of repeated use for 2J-CH_3Pd-GOx dendron. Furthermore, determination of glucose in artificial urine was investigated as catalytic. The results showed that glucose may be determined as calorimetry in the media artificial urine via immobilized-dendrons. This research is the first example.

Keywords: dendron with ferrocene, colorimetric determination, Trinder's reaction, template method, glucose oxidase, urine.

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➢ **ORAL PRESENTATION**

A New Approach to the Treatment of Leishmaniasis: Quercetin-Loaded Polycaprolactone Nanoparticles

Emrah Şefik Abamor

Yildiz Technical University, Chemical and Metallurgical Engineering Faculty, Bioengineering Department, Esenler, Istanbul

esabamor@gmail.com

Abstract

Leishmaniasis is one of the most important public health issues in the world. Every year 1.5 million people across the world get stricken with Cutaneous Leishmaniasis, which is mostly seen form of the disease, while 500.000 people become the victims of Visseral Leishmaniasis, which is its fatal counterpart. It is known that annually about 60.000 people lose their lives due to this disease which is endemic to 98 countries in the world. Since the antileishmanial drugs used in the treatment of the disease are toxic and expensive and parasites have recently developed resistance against them, there is an increasing need for developing new antileishmanial medicines. Quercetin, found in the roots, leaves and fruits of many plants, is a natural polyphenolic flavonoid. Quercetin is known to have antibacterial, antiviral, anti-carcinogenic, antioxidant and anti-inflammatory properties. On the other hand, because of its weak solubility in water, quercetin has had limited use on humans. To increase its bio-availability and maximize its therapeutic effects, quercetin has recently been encapsulated with nanoparticulate carrier systems. These studies are mainly based on polymeric nanoparticles. The aim of this study is to encapsulate quercetin, for the first time in literature, in bio-degradable, bio-compatible polymeric nanoparticles based on FDA approved poly-ε-caprolactone (PCL), to characterize the synthesized nanoparticles and to analyze their in vitro antileishmanial efficacy on *L.infantum* parasites. quercetin-loaded PCL nanoparticles (QPNPs) were synthesized using oil-in-water single emulsion solvent evaporation method. Characterization of the produced nanoparticles was done using scanning electron microscope (SEM) and dynamic light scattering (DLS) equipments. Encapsulation effectiveness and release profiles of QPNPs are calculated with UV-Vis spectrophotometry. The antileishmanial effectiveness of the synthesized nanoparticles was analyzed in *L.infantum* promastigote culture and amastigote-macrophage culture. The results indicated that QPNPs had an average size of 380 nm, a zeta potential of -6.56 mV, and a PDI value of 0.21. The measurements showed the quercetin-loaded nanoparticles to have an encapsulation effectiveness of 64% and a reaction efficiency of 55%. After an incubation of 240 hours, nanoparticles were seen to release 58% of their quercetin content. The synthesized quercetin-loaded nanoparticles had IC50 values on L.infantum promastigotes and amastigotes of 86 and 144 µg/ml respectively. This means that quercetin-loaded nanoparticles have reduced the vitality of promastigotes about 20 times and of amastigotes about 5 times as compared to the control group. These results demonstrate the strong antileishmanial potentials of quercetin-loaded PCL nanoparticles. It is believed that if these positive findings are supported by further in vivo studies, QPNPs may be used in the treatment of leishmaniasis.

Keywords: Leishmania, quercetin, PCL, nanoparticles, delivery.

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➢ **ORAL PRESENTATION**

Büyük Tehdit: Verimli Topraklar Yok Oluyor

Esma Nur Geçer[1*], Hüseyin Aktaş[2], Eftal Salman[3]

[*1]Gaziosmanpaşa Üniversitesi, Zile Meslek Yüksekokulu, Gıda İşleme Bölümü, Tokat, Türkiye
[2]Gaziosmanpaşa Üniversitesi, Zile Meslek Yüksekokulu, Motorlu Araçlar ve Ulaştırma Teknolojileri Bölümü, Tokat, Türkiye
[3]Gaziosmanpaşa Üniversitesi, Zile Meslek Yüksekokulu, Yönetim ve Organizasyon Bölümü, Tokat, Türkiye
[*]esma.gecer@gop.edu.tr

Özet

Tarımın icadıyla birlikte binlerce yıl süren açlık dönemi sona ermiş ve insanoğlu daha iyi beslenerek daha az hastalanmış, ölümler azalmış ve nüfus her geçen gün artmıştır. Buna bağlı olarak gıdaya olan talep de katlanarak artmıştır. Bu durum da endüstriyel tarımı ve hayvancılığı zorunlu kılmıştır. Yem üretimi ve et tüketimini karşılamak için endüstriyel tarım giderek tek yönlü tarıma dönüşmüş, toprağa sürekli aynı gıdaların ekilmesi toprağın mineral dengesini bozmuş, bu durum da parazitlerin çoğalmasına ve ürünlerin verimliliğinin düşmesine neden olmuştur.

Artan nüfusun gıda ihtiyacının karşılanması bir zorunluluktur. Bu durum suni gübre kullanımına ve tarım ilaçlarının icadına neden olmuştur. Bunun sonucunda toprağın ihtiyacı olan mineraller dışarıdan karşılanmış ve ürün verimi artmıştır. Ancak gerek tarım ilaçlarının toprağa ve suya karışması gerekse toprağın doğal yapısının bozulması birçok problemi de beraberinde getirmiş ve gastroenterolojik hastalıklar her geçen gün artmıştır. Toprak, ağaçlar ve bitkiler ilaçlara ve kimyasal gübrelere bağımlı hale gelmiştir.

Artan nüfus beraberinde barınma ihtiyacını doğurmaktadır. Her geçen gün verimli toprak arazileri imara açılmakta ve her yıl ortalama 24 milyar ton verimli toprak kaybı yaşanmaktadır ki bu kaybın 500 milyon tonu ülkemizde yaşanmaktadır. Verimli toprak kaybı beraberinde gıda ihtiyacını karşılamak için yeni alanların tarıma açılmasını zorunlu kılmaktadır. Gerek tarım alanı elde etmek için gerekse yakacak ihtiyacını karşılamak için her yıl 13 milyon hektar orman yok edilmektedir. Bu da toprağı daha korunmasız hale getirerek toprak kayıplarının artmasına neden olmaktadır.

Sonuç olarak; gıdaya olan talep her geçen gün artarken gıda üretimi giderek zorlaşmaktadır. Daha şimdiden dünya nüfusunun altıda biri açlık tehdidi altındadır. Yanlış tarım politikaları ve artan nüfus bu oranın giderek artacağının sinyallerini vermektedir.

Bu çalışmadaki amaç; ülkemizde artan nüfusla birlikte verimli toprakların azaldığına, orman arazilerinin tarım arazilerine dönüştüğüne, sağlıklı gıdaya ulaşmada sıkıntıların yaşandığına dikkat çekmektir.

Anahtar Kelimeler: Tarım, Verimli Toprak, Gıda

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➢ **ORAL PRESENTATION**

Hipoksiya ve Obezite Olgusunda Bazı Anjiogenik Faktörlerin Sıçan Dokularında Araştırılması

Meral Dağ[1], Muhittin Yürekli[2*]

[1]İnönü Üniversitesi, Tıp Fakültesi, Turgut Özal Tıp Merkezi, Malatya TÜRKİYE
[*2]İnönü Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Malatya, TÜRKİYE

Sorumlu yazar e-mail: muhittin.yurekli@inonu.edu.tr

Özet

Günümüzdeki insanların sağlıkla ilgili en önemli problemlerden birisi haline gelen obezite dünyadaki artış hızına bağlı olarak beraberinde getirdiği hastalık riskleri sebebiyle güncelliğini korumaktadır. Bu çalışmada obezite ve hipoksiyaya bağlı olarak bazı anjiogenik faktörlerin sıçan dokularında araştırılması amaçlanmıştır. Çalışmada 5 aylık Sprague Dawley cinsi erkek sıçanlar kullanılmıştır. Sıçanlar; Normal beslenme/Normal Oksijen (NB/NO), Normal Beslenme/Düşük Oksijen (NB/DO), Yüksek Kalorili Beslenme/Normal Oksijen (YKB/NO) ve Yüksek Kalorili Beslenme/Düşük Oksijen (YKB/DO) olmak üzere dört gruba ayrılmıştır. Düşük oksijen düzeyi koşulu, %17-18 oksijen olacak şekilde kapalı sistemde oluşturulmuştur. Obez gruplarındaki sıçanlarda istenen % 20-25 ağırlık artışı sağlandıktan sonra kan, karaciğer, akciğer, beyaz yağ doku (BYD) ve kahverengi yağ doku (KYD) dokuları sıçanlar sakrifiye edilerek alınmıştır. Alınan dokularda, Adrenomedullin (ADM) Hipoksik İndüklenebilir Faktör1-α (HIF1-α) ve Matriks Metaloproteinaz-II (MMP-II) düzeyleri ELISA yöntemiyle ölçülmüştür. Yapılan çalışmada, BYD'de ADM, HIF1-α ve MMP-II'de, KYD'de ise ADM ve MMP-II miktarlarında önemli artış olduğu görülmüştür. Karaciğer ve akciğerde dokularında ise HIF1-α'nın miktarında anlamlı artış olduğu görülmüştür. Plazmada ise ADM, HIF1-α ve MMP-II miktarlarında anlamlı bir artış saptanmamıştır. ADM, HIF1-α ve MMP-II obeziteye karşı koruyucu etkisinin yanı sıra BYD'nin KYD'ye dönüşümünü sağlayan metabolik yollarla enerji harcanmasını ve termogenesiz işlevini arttırabileceği düşünülmüştür. Adipoz dokunun metabolik durumuna göre ADM, HIF1-α ve MMP-II uygulaması ile BYD'nin damarlanması artırılarak enerji tüketimini sağlayabileceği düşünülmektedir.

Anahtar Kelimeler: Hipoksiya, Obezite, HIF1-α, MMP-II, ADM.

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➢ **ORAL PRESENTATION**

Investigation of the Protectıve Effect on the Rat Lung Tissue of Enoxaparin and Ticagrelor Pretreatment Against Ischemıa-Reperfusion Injury

Melda Yardimoglu [1],Yusufhan Yazir[1], Selenay Furat Rençber[1], Kubra Kavram[1], Orhan Findik[2], Atike Tekeli Kunt[2]
Koceli University Faculty of Medicine, Department of Histogy and Embryology, Kocaeli, TÜRKİYE
[2]Derince Education and Research Hospital, Department of Cardiovascular Surgery, Kocaeli, TÜRKİYE

Corresponding author e-mail: melda.yardimoglu@gmail.com; melda@kocaeli.edu.tr

Abstract

This study was conducted to reveal possible protective effects of ticagrelor and enoxaparin pretreatment on the lung tissue to ischemia-reperfusion (IR)-induced injury at light microscopic level.
Wistar albino rats (n=36) were randomized into four groups as follows: group-1 (sham-control), group-2 (control-saline+IR), group-3 (ticagrelor+IR), group-4 (enoxaparin+IR). Normal saline, ticagrelor and enoxaparin were administred, respectively in group-2, group-3 and group-4 before the ischemic period. In the 2th-4th groups, IR injury was induced by clamping the aorta infrarenally for 2 hs, followed by 4 h of reperfusion except group-1. After sacrification of animals, lungs were removed and fixed with %10 neutral buffered formalin for histological examinations in all rats. Lung tissues were evaluated in paraffin sections with stained H&E. Apoptosis was evaluated by caspase-3 immunoreactivity. Semiquantitative analyze for caspase-3 reaction performed as positive staining cells distribution in each section of the lung. Data were statistically analyzed by SPSS programme.
H&E staining slides showed that lung tissues were normal histological structure in group-1. Group-2 showed disorganised epithelial cells, hemorrhage, inflammatory cell infiltration in alveolar wall. Lung sections of treatment groups were more better than group-2. In group-2, apoptotic cells were significantly higher than sham-control and treatment groups ($p<0.001$). Apoptotic cells were noticeable in the sections of group-2, and these cells were lower in the treatment groups. In enoxaparin+IR group, caspase-3 immunostaining was lower than ticagrelor+IR group.
The histological appearance was similar to that of normal lung architecture in group-3 and group-4. Evaluation with caspase-3 IHC showed that pre-treatment with enoxaparin gave better healthy by light microscopy.

Keywords: ischemia-reperfusion, rat lung tissue, caspase-3, apoptosis.

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➢ ORAL PRESENTATION

Cu Katkılı Biyocam ve Cu Nanoparçacıklı Sr Katkılı Biyocamdan 3D Kompozit Yapı İskelesi Üretimi

Ayşe Özyuğuran*, Melek Erol Taygun, Sadriye Küçükbayrak

İstanbul Teknik Üniversitesi, Kimya-Metalurji Fakültesi, Kimya Mühendisliği Bölümü, İstanbul, Türkiye

Sorumlu yazar e-mail: kmayse@itu.edu.tr

Özet

Bu çalışmada**,** çözücü döküm ve tanecik uzaklaştırma yöntemi kullanılarak, çok işlevli yapı iskelelerinin geliştirilmesi için ilgili iyonlarla BG / polimer 3D kompozit yapı iskelelerinin üretilmesi amaçlanmıştır. Gözenekli yapıya sahip yapı iskeleleri başarıyla sentezlenmiş ve yapı iskelelerinin mikroyapısında iyi bir gözenek bağlantısının bulunduğu gözlemlenmiştir. Kompozit yapı iskelelerinin in vitro biyoaktivitesi; Taramalı Elektron Mikroskopisi (SEM), X-ışını kırınımı ve Fourier-Dönüşümlü Kızılötesi Spektroskopi ölçümleri ile teyit edilmiştir. Bunun dışında, terapötik iyonların salınımının; SBF'de kalma sürelerinin bir fonksiyonu olarak, Sr iyon salınımı 1.27-4.81 ppm aralığında iken, Cu iyon salınımları sırasıyla, Cu katkılı BG için 0.67-1.42 ppm, Sr katkılı BG-%1 Cu için 1.53-4.54 ppm, Sr katkılı BG-%2 Cu için 3.08-7.59 ppm olarak saptanmıştır. Bu sonuç yapı iskelelerinin, kemik dokusu rejenerasyonunun belirleyicisi olan SBF ortamına, stronsiyum ve bakır dozlarını kontrollü olarak verebileceğini göstermiştir.

Anahtar Kelimeler: Kompozit Yapı İskelesi, Biyoaktif Cam, Terapötik İyonlar, Kemik Doku Mühendisliği

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➢ ORAL PRESENTATION

Fabrication and Characterization of PCL/ZnO Nanocomposite Fibers for Wound Dressing Applications

Alev Akbaş*, Melek Erol Taygun, Sadriye Küçükbayrak

Istanbul Technical University, Chemical Engineering Department, 34469, İstanbul, Turkey.

akbas16@itu.edu.tr

Abstract

The problems that are encountered in the tissue and/or organ transplantation encourage the scientists to work on tissue engineering. Nanofibers have started to be used with the development of nanotechnology in tissue engineering because of its similarity to natural human tissues. Nanotechnology is an emerging field of science which deals with synthesis and development of matters at the scale of nanometer. It identifies activities such as electrical, optical, magnetic, and structural behavior at the molecular and sub molecular level. Nanotechnology has a critical role in biotechnology and medicine with aiming to develop portable, low cost, safe and practical technologies. One of these technologies includes construction of three dimensional biomimetic nanofiber scaffolds with using electrospinning method. The architecture of original extracellular matrix at nanoscale level can be mimicked by these scaffolds. Meanwhile, metal nanoparticles are also used in tissue engineering because of their unique features such as optical, electronic, catalytic, and antibacterial. According to the previous studies, metals like silver and zinc were observed as antimicrobial agents. Zinc oxide (ZnO) is a transition metal oxide and it has good catalytic, electrical, photochemical, optical, antibacterial, enhanced cell proliferation and wound healing properties. Zn ion also acts as regulator for auto debridement and keratinocyte migration, both of which are essential for wound repair. Polycaprolactone (PCL) which is biocompatible and biodegradable synthetic polymer used as biomaterial for various biomedical applications such as tissue engineering scaffolds and wound dressings. In the present study, zinc oxides nanoparticles (ZnO-NPs) synthesized by microwave irradiation were used for the fabrication of PCL/ZnO-NP nanofibers via electrospinning method. The effects of the ZnO nanoparticle concentration on the fiber diameter and fiber morphology were investigated using a scanning electron microscope (SEM). The presence of ZnO-NPs in the structure was determined by X-ray diffraction (XRD). It was observed that the average diameter of nanofibers was below micrometers. Overall results showed that PCL/ZnO-NP nanofibers were found to be suitable for wound dressing applications.

Keywords: ZnO nanoparticle, PCL, nanofiber, microwave irradiation, wound dressing, antibacterial.

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➢ ORAL PRESENTATION

Fabrication and Characterization of Polyvinyl Alcohol/Gelatin/ Silver Nanoparticle Nanocomposite Materials

Ayşen Aktürk[1*], Büşra Cenik[1], Zeliha Aydoğdu[1], Melek Erol Taygun[1] , Funda Karbancıoğlu Güler[2], Sadriye Küçükbayrak[1]

[*1]Istanbul Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Chemical Engineering, Istanbul, Turkey
[2] Istanbul Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Food Engineering, Istanbul, Turkey

Corresponding author e-mail:akturkay@itu.edu.tr

Abstract

In this study, nanofibers containing silver nanoparticles were fabricated by electrospinnining method. The blends of polyvinyl alcohol as a synthetic polymer and gelatin as a biopolymer were used to fabricate wound dressing material having antibacterial activity. Scanning electron microscope (SEM) analysis indicated that porous and interconnected nanofibrous structures were obtained for all blend compositions. X-Ray diffraction (XRD) results showed the existence of silver nanoparticles in the structure. The chemical changes related with crosslinking and the change of the structure in simulated body fluid were evaluated using Fourier transform infrared spectroscopy (FTIR). The inductively coupled plasma optical emission spectrometry results showed that controlled silver release was achieved. It was concluded that obtained nanofiber mats could be suitable candidates for wound dressing applications.

Keywords: Silver Nanoparticles, Polyvinyl alcohol, Gelatin, Electrospinning, Wound Dressing

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➢ **ORAL PRESENTATION**

Protection of Cellular Integrity Against Fluoride Neurotoxicity on Rat Synaptosomes: Ex vivo Approach to Potential Neuroprotective Effects of Coenzyme Q

Ceyhan Hacıoğlu, Fatih Kar, Güngör Kanbak

Eskisehir Osmangazi University, Faculty of Medicine, Medical Biochemistry, Eskisehir, Turkey

Corresponding author e-mail: ceyhanhacioglu@gmail.com

Abstract

Organic and inorganic wastes increase fluoride concentration in drinking water. Therefore, fluoride-contaminated water is the main resource of chronic fluorosis in livings. Recently, many studies have been carried out on cellular damage and neurotoxicity caused by fluoride exposure. In this study, we researched the neuroprotective effects of coenzyme Q_{10} (CoQ_{10}), which has a highly electronegative structure and plays a role in cellular respiration and is an important antioxidant, against fluoride toxicity. Malondialdehyde (MDA) levels, adenosine deaminase (ADA) activities, sialic acid (SA) content, Na^+/K^+ ATPase activities, and DNA fragmentation values were measured to investigate the neuroprotective effects of CoQ_{10} at 5, 25 and 50 µM concentrations versus 80 mg/L sodium fluoride (NaF) exposed to rat brain synaptosomes. According to the results obtained, 25 µM CoQ_{10} concentration has been found to provide a significant improvement over the cellular damage caused by NaF. As a result, CoQ_{10} can be used as a neuroprotective agent in protecting cellular integrity and against oxidative stress.

Keywords: Coenzyme Q_{10}, Neuroprotection, Fluoride, Neurodegeneration, Synaptosomes.

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➢ **ORAL PRESENTATION**

Synthesis of Some Phenyl Piperazine Derivatives as Antitümör Agents

Serpil Demirci

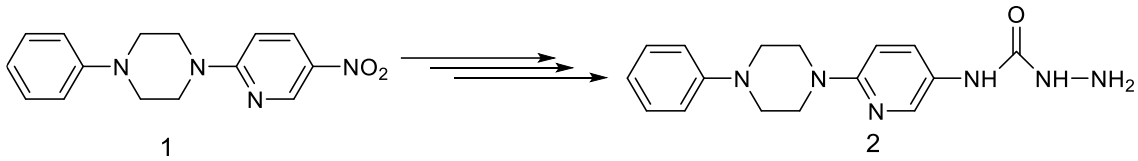
Giresun University, Vocational High School of Health Services Department of Medical Services and Techniques, 28100, Giresun, Turkey

e-mail: demirciserpil17@gmail.com

Abstract

Homolog serial design, chain branching, chain loop transformations and bioisosteric replacement are used for searching of new analogues that have higher activity and therapeutic indices compared to leader compund. Chemical modification method is to make modification on group or atoms with the aim of observing effect changes on active pharmaceutical ingredient which effects are known. Active compund which structure is known needs to be exist for applicability of this method.

In this study, it was done to synthesize new hydrazide compound and investigate anti-tumor properties these new synthesized hybrid molecule.



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Study This study was supported by TÜBİTAK project number 116Z932.

Keywords: Antitümör activity, hydrazide, heterocyclic compounds.

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➢ ORAL PRESENTATION

Preparation of Doxycycline Imprinted Contact Lenses and Determination of Their In Vivo and In Vitro Performance in Treatment of Corneal Neovascularization

Sibel Erkal Ilhan[1], Özge Kürkçüoğlu[2], Tuğçe Inan[2], Özde Zeynep Güner[2], Begüm Okutan[3], Gamze Torun Köse[3], Ayça Karabork[4], Aylin Okçu Heper[4], Özlem Gürses[5], F. Seniha Güner[2*]

[1]Ankara University, Faculty of Health Sciences, Midwifery Department, Ankara, Turkey
[2]Istanbul Technical University, Department of Chemical Engineering, Istanbul, Turkey
[3]Yeditepe University, Faculty of Engineering, Department Genetics and Bioengineering, Istanbul, Turkey
[4]Ankara University, School of Medicine, Department of Medical Pathology, Ankara, Turkey
[5]Atatürk Sitesi Hayri Çeçen Sok. 29/10, Oran, Ankara

[*]Corresponding author e-mail: guners@itu.edu.tr

Abstract

The aim of this study is to develop doxycycline imprinted contact lenses that will be used in the treatment of corneal neovascularization, which can eventually cause blindness. For this purpose, doxycycline imprinted contact lenses were firstly prepared, then they were loaded with doxycycline and their performances were determined in vitro and in vivo. In the synthesis of the contact lenses, 2-hydroxyethyl methacrylate was used as a backbone monomer. The functional monomer was selected as itaconic acid using molecular simulations. Doxycycline release profile of the lenses was determined in NaCl solution and their cytotoxic response was investigated on retinal pigment epithelium cells. In vivo experiments in rat models were performed to study the treatment patterns. The rats were sacrificed fifteen days after treatment, and clinical examination under optical microscope was performed to evaluate blood vessel, infiltration of inflammatory cells, and corneal epithelial changes. After evaluating all results, we suggested doxycycline imprinted contact lenses in the treatment of corneal neovascularization.

Keywords: Corneal neovascularization, Contact lens, Doxycycline

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➢ ORAL PRESENTATION

Measurement of Mineral Solubilities in The Quaternary System NaCl-NaH_2PO_2-$Zn(H_2PO_2)_2$-H_2O at 313 K

Vedat Adıgüzel[1], Sevilay Demirci[1*], Ömer Şahin[2]

[*1] Kafkas University, Faculty of Engineering and Architecture, Department of Chemical Engineering, Kars, Turkey.
[2] Siirt University, Faculty of Engineering, Department of Chemical Engineering, Siirt, Turkey.

Corresponding author e-mail: incesevilay@gmail.com

Abstract

Phase equilibria studies are important for some process design and control. Solid-liquid equilibria (SLE) data of $H_2PO_2^-$ including systems that relate to hydrometallurgy have been widely investigated.
In this study, solid-liquid equilibria (SLE) in the quaternary system of NaCl-NaH_2PO_2-$Zn(H_2PO_2)_2$-H_2O at 313 K were measured using isothermal method.
Eutonic points of ternary systems NaCl−NaH_2PO_2−H_2O, NaH_2PO_2−$Zn(H_2PO_2)_2$−H_2O and NaCl−$Zn(H_2PO_2)_2$−H_2O were prepared at 313K. Then $Zn(H_2PO_2)_2$, NaCl, NaH_2PO_2 was added in the tubes in certain amounts respectively until the invariant point of quaternary systems would be found. The mass fraction of eutonic point's quaternary systems were calculated as 37.69% NaH_2PO_2, 8.44% NaCl and 5.11% $Zn(H_2PO_2)_2$. 100 mole salt compositions of all test points were calculated. The calculations of crystallization areas of the salts were performed via the geometric rules from equilateral triangle with the values of 77.18% $Zn(H_2PO_2)_2$, 22.1% NaCl, and 0.72% NaH_2PO_2. As it is understood from the experimental values and figure, having the largest crystallization field in comparison with the other salts, the crystallization of $Zn(H_2PO_2)_2$ has occupied 77.18% of the general crystallization field.
The results of this study can be applicable in various industrial and recycling processes. $Zn(H_2PO_2)_2$, NaCl, and NaH_2PO_2 salts present in industrial wastes and natural salt compositions can be effectively separated each other using proposed method.

Keywords: NaH_2PO_2, $Zn(H_2PO_2)_2$, Solid-liquid equilibria, Phase diagram, solubility.

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➢ ORAL PRESENTATION

Diri ve Öz Odun Farklılığının Odun Morfolojisi ve Kimyasal Özellikleri Üzerine Etkileri

Saniye Erkan, İbrahim Bektaş*, Ahmet Tutuş

Kahramanmaraş Sütçü İmam Üniversitesi, Orman Fakültesi, Orman Endüstri Mühendisliği Bölümü, Kahramanmaraş, Türkiye

Sorumlu yazar e-mail: ibtas63@yahoo.com

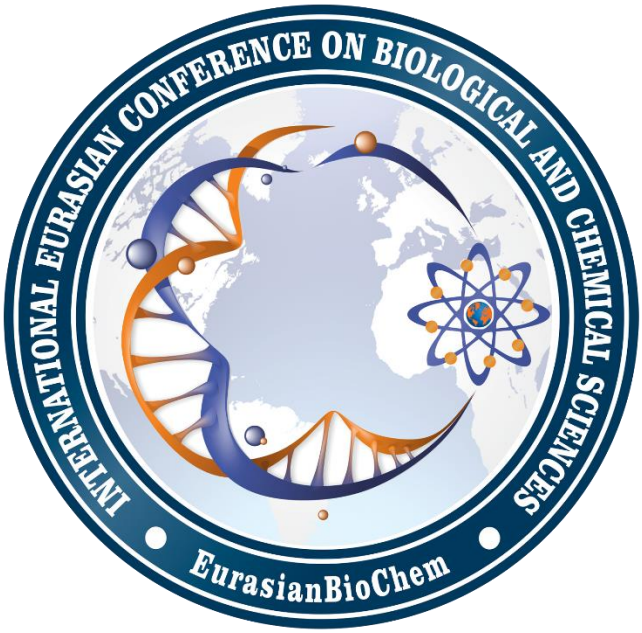
Özet

Bu çalışmada, ülkemiz topraklarında yetişebilen fıstıkçamı (*Pinus pinea*) ile yalancı akasyanın (*Robinia pseudoacacia*) öz ve diri odunlarının morfolojik ve kimyasal özellikleri araştırılarak, bunların kağıt yapımına uygunluğu değerlendirilmiştir. Araştırma kapsamında, fıstıkçamı ile yalancı akasyanın öz odun ve diri odun kısımlarının kimyasal özelliklerinden holoselüloz, selüloz, lignin, alfa-selüloz, kül oranı, eter çözünürlüğü, soğuk su çözünürlüğü, sıcak su çözünürlüğü, %1'lik NaOH çözünürlüğü tespit edilmiştir. Elde edilen sonuçlara göre, her iki ağaç türünün kimyasal ve morfolojik özellikleri diri ve öz odun örneklerinde ayrı ayrı belirlenmiştir. Son aşamada, diri ve öz odun farklılıkları üzerinde durulmuştur.

Morfolojik özelliklerin belirlenmesinde maserasyon yöntemiyle elde edilen odun lifi preparatları kullanılmıştır. Klorit yöntemiyle masere edilen odun lifi preparatlarının Olympus BX-51 marka ekranlı vizopan mikroskopta; lif uzunluğu (mm) , lif genişliği (µm), lümen çapı (µm) ve çift çeper kalınlığı (µm) ölçülmüştür. Bu ölçümlerde elde edilen veriler kullanılarak; Keçeleşme oranı, Elastikiyet katsayısı, Katılık katsayısı, Runkel sınıflandırması, Mühlstep sınıflandırması ve F faktörü hesaplanmıştır. Elde edilen verilere göre kağıdın fiziksel direnç özellikleri üzerine etkisi incelenmiş ve kağıt yapımına uygun olduğu tespit edilmiştir.

Anahtar Kelimeler: Diri odun, Öz odun, Kimyasal özellikler, Lif morfolojisi.

Bu çalışma Kahramanmaraş Sütçü İmam Üniversitesi Bilimsel Araştırma Projeleri tarafından BAP 2011/7-14 YLS no'lu proje ile desteklenmiştir.



POSTER PRESENTATIONS

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➢ **POSTER PRESENTATION**

Changes in Some Detoxification Enzymes Activities in Gammarus pulex Exposed to Metil Orange Textile Dye

Nuran Cikcikoglu Yildirim[1]*, Esref Gezer[1]

[1]Department of Environmental Engineering, Munzur University, Tunceli, Turkey

Corresponding author e-mail: nurancyildirim@gmail.com

Abstract

Textile dyes extensively used in several manufacturing process have been proved to be harmful to the human health as well as to the environment. The discharge of azo dyes into water bodies affects human and has ecological risks. The present study was undertaken to determine the toxicity of the methyl orange (MO) textile dye by using the changes of some detoxification enzyme activities in Gammarus pulex. A static test was used to determine the LC50 value. LC value of methyl Orange (MO) was determined as 1737,3 ppm and then three subletal dose of MO (1/4; 1/8 and 1/16 of LC value) were exposured to G.Pulex for 24 and 96 hours.Four experimental groups were designed as following: A (The Group containing 434,3 ppm MO); B (The Group containing 217,1 ppm MO); C (The Group containing 108,5 ppm MO) and Control Group Cytochrome p450 (CYP1A1) and Glutathione S-transferase (GST) activities were determined by using ELISA kit.

CYP1A1 activities were decreased in all the groups exposed to different doses of MO when compared to the Control Group during 24 h ($p<0.05$). The CYP1A1 activity was increased in the group A($p<0.05$) but decreased in B, C groups ($p>0.05$) compared to control group. No significant differences were found in CYP1A1 activity at different exposure times. GST activity were increased all the groups exposed to different doses of MO during 24 h ($p<0.05$) and 96 h ($p>0.05$) when compared to the Control Group. GST activities were increased in the groups B, C and Control during 96 h when compared to exposure time but the differences were significant on only B group.

In conclusion, alterations in detoxification enzymes may potentially be used as sensitive biomarkers for risk assessment of dyes in the environment and may contribute to the establishment of discharge regulations.

Keywords: Detoxification Enzyme, *G. pulex*, Metil Orange

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➢ **POSTER PRESENTATION**

Monitoring of Air Pollution by Using Glutathione S-Transferase and Malondialdehyde Levels in Plants Collected from Different Regions in Diyarbakir Province

Nuran Cikcikoglu Yildirim[1]*, Metin Yaman[1]

[1]Department of Environmental Engineering, Munzur University, Tunceli, Turkey

Corresponding author e-mail: nurancyildirim@gmail.com

Abstract

Air pollutants are exogenous substances in indoor or outdoor air including both particulates and gaseous contaminants that may cause adverse health effects in human or animals, affect plant life and impact the global environment by changing the atmosphere of the earth.The air pollution effects on Glutathione S-transferase and Malondialdeyde(MDA) were investigated on on pinus sp. in Diyarbakır. Three sampling sites representing the unpolluted (Eğil) and polluted area (Koşuyolu and Organized Industry region) are selected. Pinus sp. leaf samples of the species were taken from these stations. Glutathione S-transferase (GST) and malondialdehyde (MDA) were determined in collected plant leaf samples. Biochemical biomarkers are measured in the microplate reader using the ELISA method.

GST activities were increased in Koşuyolu and organized industry region compared to Eğil. MDA levels were decreased in Koşuyolu but increased in Organized Industry Region Compared to Eğil.

The GST and MDA levels found in this study demonstrated that Pinus sp. have a potential to be considered as effective bioindicators to reflect the environmental air quality in polluted areas.

Keywords: Glutathione, Malondialdeyde, Air pollution, Diyarbakır, Pinus sp.

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➢ **POSTER PRESENTATION**

Characterization of Some Cotton Varieties Using ISSR Markers

Cenk Burak ŞAHİN[1*], Necmi İŞLER[1], Vafa RUSTAMOVA[2]

[*1]Mustafa Kemal University, Faculty of Agriculture, Department of Field Crops, Hatay, Turkey.
[2]The Genetic Resources Institute of the Azerbaijan National Academy of Sciences, Baku, Azerbaijan.

Corresponding author e-mail: cbsahin@mku.edu.tr

Abstract

This study was conducted to determine the genetic diversity in 30 cotton (*Gossypium hirsutum* L.) cultivars extensively cultivated in Turkey by using ISSR DNA molecular markers. To investigate the genetic diversity in 30 cotton varieties by ISSR molecular marker, 24 ISSR primers were screened in 8 varieties. 9 of 24 which is produced a PCR product were selected according their polymorphism level. These ISSR primers totally produced 41 bands, and 22.3 were polymorphic. The percentage of polymorphic bands per primer was detected as 2.5. The rate of polymorphism depending on the primers ranged between 6% and 89%. Average polimorphism information content was 0.41, with minimum PIC 0.19 and maximum PIC 0.68. While the Jaccard similarity coefficient between the genotypes was detected as 0.77, 30 cotton varieties were groupped within two main clusters in respect to genetic similarity according to UPGMA analyses.

Keywords: Cotton, *Gossypium hirsutum* L., genetic diversity, ISSR.

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➢ **POSTER PRESENTATION**

Evaluation of Water Quality in Orontes River using Water Quality Index

Ece Kılıç

İskenderun Technical University, Faculty of Marine Sciences and Technology, Department of Water Resources Management and Organization,31200,Hatay,Turkey

Corresponding author e-mail: ece.kilic@iste.edu.tr

Abstract

Surface water become much more vulnerable to pollution sources depending on the anthropogenic activities around them. For that reason, water quality monitoring studies were conducted to follow water quality variations in surface waters. However, these studies were usually result with huge datasets which are hard to interpret. Water quality index (WQI) was proposed as a practical tool to access water quality variations by changing complex water quality data into simple information. In this study, monitoring data covering 11 parameters namely biological oxygen demand (BOD), chemical oxygen demand (COD), dissolved oxygen (DO), temperature (T), pH, nitrite (NO_2^-), nitrate (NO_3^-), ammonia (NH_4^-), sulfate (SO_4^{2-}) and total dissolved solids (TDS) measured seasonally at 4 different stations located at the main stream of Orontes River for the years 2006-2014 obtained from state of Hydraulic Works of Turkey was analyzed using WQI. It is found that WQI score of Orontes River vary between 1,070 to 110,009 depending on location and year. Locational variations in the water quality directly related with the land usage patterns. It is found that at the stations were agricultural activities dominant like Demirköprü and Hasanlı station, WQI score is lower than urbanized areas like Antakya and Samandağ station. Because Orontes River receives a greater pollution load due to domestic and industrial discharges in addition to diffuse pollution. On the other hand, possible causes of temporal change during study period may be needs to evaluated further for future studies.

Keywords: Orontes River, water quality variation, water quality index

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➢ **POSTER PRESENTATION**

On a long-legged mite species from Turkey: *Cheletomorpha lepidopterorum* (Shaw) (Acari: Cheyletidae)

Salih Doğan[1*], Burcu Kabasakal[1], Sibel Doğan[1]

[1]Erzincan University, Arts & Sciences Faculty, Biology Department, Erzincan, Turkey.

[*]Corresponding author e-mail: salihdogan@erzincan.edu.tr

Abstract

Cheyletid mites (Acari: Cheyletidae) have some economic importance for they are biological control agents and parasitic. The genus *Cheletonella* Womersley belonging to this family is recognized by having unusually long legs I that allows them to detect the approach of their prey. This genus currently comprises four valid species including *Cheletomorpha lepidopterorum* (Shaw). This species is one of the most striking of the cheyletids and has a *cosmopolitan* distribution. It has already been reported from Turkey by some authors, but none of the Turkish researchers has given neither morphological characteristics of the species nor its description. In the present work, description of this species based on two females and three male specimens collected in a straw sample from Şiran, Gümüşhane, was given. In this species palp tibial claws normally bear one large basal tooth in female, one to four teeth in male. In the Turkish specimens, this character also shows unilateral and bilateral variation: Each palp tibial claw bears three teeth in one male whereas one tooth in other two males, in one female right tibial claw bears two teeth whereas one tooth on that of left side. Palpal claws in other female are normal.

This work was produced mainly from mite material supported by Erzincan University Scientific Research Projects Coordination Unit (research project № 11BAP18).

Keywords: Predatory mite, cosmopolitan, asymmetry, variation, intraspecific, Turkey.

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➢ **POSTER PRESENTATION**

Investigation of Color Removal of Sunflower Oil Industrial Wastewater with Fenton Process

Şefika Kaya, Yeliz Aşçı

Eskisehir Osmangazi University, Faculty of Engineering and Architecture, Department of Chemical Engineering, Eskişehir, Turkey

e-mail:yelizbal@ogu.edu.tr

Abstract

Recently, advanced oxidation processes (AOPs) based on the generation of a free hydroxyl radical (OH·) which degrades most organic pollutants quickly and non-selectively, are reported as a potential alternative for the treatment of industrial wastewater containing non-biodegradable organic pollutants. Fenton process, one of the AOP's, employs ferrous ions and hydrogen peroxide under acidic pH conditions. Strong oxidative hydroxyl radical is produced and the ferrous ions are oxidized to ferric ions. Since both ferrous and ferric ions are coagulants, the Fenton process can therefore have the dual functions of oxidation and coagulation in the treatment process. This study was performed to investigate the removal of color from sunflower oil industry wastewater using the Fenton process. The effect of parameters such as pH (1.5-5), the concentration of $FeSO_4.7H_2O$ (150-400 ppm), the concentration of H_2O_2 (100-400 ppm), the temperature (20-50^oC), reaction time and stirring speed were evaluated to determine the optimum conditions for the removal of color in the industrial wastewater. Under optimum conditions removal of color were achieved 97%.

Keywords: Color removal, Industrial wastewater, Treatment, Fenton Process, Oxidation

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➢ **POSTER PRESENTATION**

Use of Phages as Biocontrol Agents to Inactivate *Esherichia coli* O157:H7

Pınar Şanlıbaba[1*], Başar Uymaz Tezel[2], Nefise Akçelik[3], Mustafa Akçelik[4]

[*1] Ankara University, Engineering Faculty, Department of Food Engineering, Ankara, Turkey
[2] Çanakkale Onsekiz Mart University, Bayramiç Vocational School, Food Technology Program, Çanakkale, Turkey
[3] Ankara University Biotechnology Institute, Ankara, Turkey
[4] Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey

Corresponding author e-mail: sanlibab@ankara.edu.tr

Abstract

The therapeutic potential of phages has been explored since they were discovered by Felix d'Herelle. The potential of phages to control food pathogens is reflected in recent studies involving various pathogens including *Campylobacter jejuni, Escherichia coli* O157:H7, *Salmonella, Staphylococcus aureus*, and *Listeria monocytogenes*. *E. coli* O157:H7 has emerged as one of the major foodborne pathogens. It is generally ingested by consumption of contaminated, undercooked beef and sometimes fresh fruit juices. Healthy cattle are the primary reservoir of *E. coli* O157:H7. A variety of acidic foods have also been involved in the outbreaks. Control of *E. coli* O157:H7 in foods is important for prevention of food-borne outbreaks. Although many physical, chemical, and biological methods have been used to control *E. coli* O157:H7 in foods, these control methods are not very effective for certain foods or they can alter the colour, flavour, or texture of the foods. Safe and effective alternative methods are needed to control *E. coli* O157:H7 in foods. Phage application is one of them. Phages can be added by dipping or spraying or as a liquid to a large volume of food. Use of phages specific for *E. coli* O157:H7 resulted in significant, log-unit reductions in *E. coli* O157:H7 counts in a variety of foods. Such reductions could substantially decrease a risk of food-borne infections by the pathogen. Phages specific for *E. coli* O157:H7 have previously been isolated from human fecal materials or animal manures from bovine, ovine, swine, and chicken, lake or pond water, and sewage. More than 60 phages specific *E. coli* O157:H7 have been reported. The commercial EcoShield™ is based on ECP-100 and contains a phage concentration of at least 10^{11} PFU/mL. This phage preparation was approval by Food and Drug Administration (FDA) as commercial phage cocktail of three bacteriophages to eliminate or reduce food contamination of *E. coli* O157:H7.

Keywords: *Escherichia coli* O157:H7, foodborne pathogen, phage, biocontrol

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➢ **POSTER PRESENTATION**

Three essential oils as potential anesthetic for aquatic species; *Coriandrum sativum, Bursera delpechiana and Lavandula × hybrida*

Erkan Can[1]*, Volkan Kizak[1], Esin Özçiçek2, Şafak Seyhaneyildiz Can[3]

[1*]Fisheries Faculty, Department of Aquaculture, Munzur University, 62000, Tunceli, Turkey
[2]Fisheries Faculty, Department of Basic Sciences, Munzur University, 62000, Tunceli, Turkey
[3]Engineering Faculty, Department of Bioengineering, Munzur Universit, 62000, Tunceli, Turkey

Corresponding author e-mail: ecanengineer@gmail.com

Abstract

The aim of this study was to evaluate the potential of three essential oils obtained from *Coriandrum sativum, Bursera delpechiana and Lavandula x hybrida*, as anesthetic agents. Fish (*Amatitlania nigrofasciata*, Günther, 1867) were exposed to eight concentrations of anesthetic (50, 75, 100, 125, 150, 200, 250, 300 µl L^{-1}). After exposure to the anesthetic, the fish were transferred to clean water to assess recovery. The induction time generally decreased significantly with increasing concentration of all plant oils studied. The recovery time had a tendency to increase with the increase of the anesthetic concentration. All of the essential oils produced an anesthetic effect on fish used in the study. These findings suggested that the essential oils of *C. sativum, B. delpechiana, L. × hybrida* are all novel potential anesthetics for aquatic species and the optimal concentrations were identified as 150 µl L^{-1}, 125 µl L^{-1}, 200 µl L^{-1} for deep anesthesia, respectively.

Keywords: Anesthesia, *C. sativum*, *B. delpechiana, L. × hybrida*, essential oil

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➢ **POSTER PRESENTATION**

Effects of Colostrum Powder Supplementation on The Performance, Egg Quality and Egg Yolk Lipid Peroxidation in Japanese Quails

Tahir Bayril[1*], Fatih Akdemir[2], M.Sedat Baran[3], Cemal Orhan[4], Mucahit Kahraman[1], A. Sener Yildiz[5], Kazım Sahin[4]

[*1]Department of Animal Husbandry, Faculty of Veterinary, Dicle University, 21280, Diyarbakir,Turkey
[2] Department of Nutrition, Faculty of Fisheries, Inonu University, 44280, Malatya, Turkey
[3] Department of Animal Nutrition, Faculty of Veterinary, Dicle University, 21280, Diyarbakir, Turkey
[4] Department of Animal Nutrition, Faculty of Veterinary, Firat University, 23119, Elazig, Turkey
[5]Department of Animal Health Economics and Management, Faculty of Veterinary Medicine, Dicle University, 21280, Diyarbakir, Turkey

Corresponding author e-mail: tbayril@hotmail.com

Abstract

This study was conducted to determine the effect of supplementary colostrum powder (CL-P) on egg pro-duction, egg quality, serum and egg yolk vitamin levels, and malondialdehyde (MDA) levels in laying quail. A total of 90 five-week-old laying quail were divided into three groups consisting of six replicate cages with five birds per cage. The birds were fed randomly one of three diets: a basal diet or a basal diet supplemented with either 2.5 or 5% CL-P. Die-tary CL-P supplementation caused linear increases in feed intake, egg production, and egg weight, and improved feed conversion. In addition, shell weight and shell thickness increased, whereas egg yolk color and Haugh units were unaf-fected. In serum and egg yolks, the vitamin A levels increased linearly while the MDA levels decreased linearly with increasing amounts of supplemental CL-P. In contrast, the serum vitamin E levels increased linearly whereas the egg yolk vitamin E levels were unaffected by increasing amounts of supplemental CL-P. Dietary CL-P may enhance perfor-mance and egg quality in poultry.

Keywords: Clostrum powder, malondialdehyde, performance, quail.

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➢ **POSTER PRESENTATION**

The Effects of Schiff Bases on Malondialdehyde and Glutathione Levels in *Saccharomyces cerevisiae* Cultural Environments

Ayse Dilek Ozsahin[1*], Derya Beser[1], Okkes Yilmaz[2], Ali Ihsan Ozturk[3] And Fatih Aslan[4]

[*1] Bitlis Eren University, Art and Science Faculty, Department of Biology, Bitlis
[2]Fırat University, Faculty of Science, Department of Biology, Elazığ
[3]Osmaniye Korkut Ata University, Art and Science Faculty, Department of Chemistry, Osmaniye
[4]Harran University, Art and Science Faculty, Department of Chemistry, SanliUrfa

Corresponding author e-mail: molekuler@gmail.com

Abstract

Biochemical effects of newly synthesized some Schiff bases on living creatures need to be investigated before using them. For this purpose, *Saccharomyces cerevisiae* is involved in the most important cell model. Because metabolic properties of *S. cerevisiae* are similar to the highly organized organisms, the results show parallelism, as well. Aim of this study, demonstrates the effects of newly synthesized schiff bases on MDA and GSH in *S. cerevisiae*.

In the present study; biochemical analyses of newly synthesized schiff bases were conducted in *S. cerevisiae* culture media. For this purpose, YEDP medium medium (1 g yeast exrakt 100 mL, 2 g bactopeptone, 2 g glucose) was prepared for development and growth of *S. cerevisiae* used in the experiment. 10 mg from each of schiff bases were added in to culture medium for application groups. Determination of MDA was made according to the method of Ohkawa et al. GSH was determined with Elman reagent. Statistical calculations were performed with SPSS.

MDA levels decreased in all schiff base treatment when compared to the control group ($p < 0.0001$). The lowest MDA level was observed by Hekza[4-(2-hidroksi-4-klorofenilimino)metil)fenoksi]siklo trifosfazen (M1) applications. Increased GSH content was determined in all groups compared to the control group.

As a result, newly synthesized schiff bases were determined to have different effects on MDA and GSH levels of *S. cerevisiae*. Although the mechanisms underlying the alteration in GSH levels in *S. cerevisiae* after the different doses schiff bases treatments have not been elucidated, schiff bases exposure may have inhibitory or stimulating effects on the activity of the enzymes responsible for the transcription of the respective GSH. The results of the MDA and GSH levels will be a source for similar studies on other living models and will contribute to the knowledge of the literature as support for future studies using in vivo systems.

Keywords: *S. cerevisiae*, Schiff Base, MDA, GSH

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➢ **POSTER PRESENTATION**

Antibacterial Activity of *Enterococcus* Strains against *Salmonella* spp.

Gulmire Yusufu[1], Pınar Şanlıbaba[1]*

[1]Ankara University, Engineering Faculty, Department of Food Engineering, Ankara, Turkey

Corresponding author e-mail: sanlibab@ankara.edu.tr

Abstract

Enterococci are ubiquitous Gram-positive bacteria that can be found in soil, food, and water while making up a significant portion of the normal gut flora of humans and animals. They reach environments, such as soil, receiving fertilizers of animal origin and urban sewage, as a consequence of faecal contamination. Therefore, enterococci may be present in vegetables, raw meat and cheese, and, due to cross contamination throughout all production phases, in every type of food. The objective of this research was to study antibacterial activity of *Enterococcus strains* isolated from foods against pathogen bacteria especially *Salmonella* spp. A hundred enterococcal strains were identified as *E. faecalis* (39 strains) and *E. faecium* (61 strains) by PCR and 16S rRNA gene sequencing in previous studies. Antimicrobial activity of these strains was mainly studied against 15 *Salmonella* spp. strains. The antimicrobial activity was analyzed by observing the clear zones around the colony. The clear zones were regarded as inhibitory zones, and recorded in mm. As a result of the studies, the inhibition zones ranged from 05 to 20 mm. The results revealed that 47 from 100 isolates had antimicrobial activity against indicator strains after incubation on 37 °C for 24 h. The antimicrobial activity varied according to the diameter of inhibition zone as well as: 10 isolates were high activity (inhibition zone >10 mm), 21 isolates were medium activity (inhibition zone 5–10 mm) and 16 isolates were low activity (inhibition zone <5 mm). In conclusion, we said that *Enterococcus* strains used in this study showed medium activity against *Salmonella* strains.

Keywords: *Enterococcus, Salmonella*, antibacterial activity

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➢ **POSTER PRESENTATION**

Antioxidant Effect of Black Cumin Seed Oil

Şeniz Karabıyıklı[1*], İlyas Güldal[1]

[*1] Gaziosmanpaşa University Faculty of Engineering and Natural Science Department of Food Engineering, 60250 TOKAT.

Corresponding author e-mail: senizkarabiyikli@hotmail.com, seniz.karabiyikli@gop.edu.tr

Abstract

Essential oils are bioactive substances which obtained from various parts of plants by various methods. Essential oils naturally have many functional properties. Because of these properties, they can be used in food industry, pharmacology, ethnopharmacology and cosmetic industry. In addition to being natural sources of aroma, odor and color, they also have antimicrobial, antioxidant, anticancer, antidiabetic effects.

Black cumin seed oil, which has been investigated in this review, has been used for medical purposes and food consumption since ancient times. Nigella sativa is used as a support in the treatment of many diseases such as diabetes, inflammation, asthma, arthritis, rheumatism. Some of the major components it contains are: thymoquinone, thymol, carvacrol, thymohydroquinone, α-pinene. These phenolic components are terpenic molecules.

These monoterpenes have different effects depending on the molecules they contain. Researchs has shown that; thymol and carvacrol are commonly known with their antimicrobial effects, while thymoquinone with its medicinal properties and thymohydroquinone with antioxidant properties.

Free radical molecules are unstable structures. Their unstable form cause oxidative stress. Oxidative stress can lead to arthritis, premature aging, rheumatism and arteriosclerosis, and increases cancer risk. The terpenic components in the black cumin seed oil bind free radicals, so they avoid cell damage and have antioxidant effect.

In recent years, consumers have turned to fresh, microbiologically safe, untreated and minimally processed foodstuff. This leads the producers to natural raw materials. Black cumin seed oil with its components can be used as functional food additive or can be consumed as food supplement.

Keywords: Black cumin seed oil, antioxidant components, functional food.

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➢ **POSTER PRESENTATION**

Ayçiçeği Bitkisi Yapraklarında Tuz Stresi ve Hormon Uygulamalarının Antioksidan Enzim Aktiviteleri Üzerine Etkileri

Oğuz Ayhan Kireçci[1*], Fusun Yürekli[2]

[*1]Bitlis Eren Üniversitesi, Hizan Meslek Yüksekokulu, Bitkisel ve Hayvansal Üretim Bölümü, Bitlis, TÜRKİYE
[2]İnönü Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Malatya, TÜRKİYE

Sorumlu yazar e-mail: kireccioguzayhan@gmail.com

Özet

Bu çalışmada tuz stresi ve hormon uygulamasına tabi tutulan Ayçiçeği (*Helianthus annuus* L.) yapraklarında antioksidan enzim aktiviteleri üzerine etkileri araştırılmıştır. Bunun için Trakya Tarımsal Araştırma Merkezi aracılığıyla elde edilen Tarsan-1018 Ayçiçeği Tohumları tuz stresi konsantrasyonun belirlenmesi için ön denemeye maruz bırakılmıştır. Bu denemeler sonucunda 300 mM NaCl konsantrasyonun maksimum tuz konsantrasyonu olduğu belirlenmiştir ve çalışmada tuz stresi oluşturmak için kullanılmıştır. Tohumlar 5 hafta boyunca Hoagland kültür çözeltisinde kontrollü iklim odasında (25±2 ºC'de %60-65 nem) yetiştirilmiş ve 5. haftanın sonunda aşağıdaki gruplara göre 72 saat süreyle uygulamalar yapılmıştır. Alınan örnekler sıvı azot içinde dondurulmuş ve analizler yapılıncaya kadar -40°C ısıda derin dondurucuda muhafaza edilmiştir. NaCl (300 mM), ABA (100 µM) GA (100 µM) ve IAA (100 µM) kullanılarak deney grupları; kontrol, 300 mM NaCl, 300 mM NaCl+ 100 µM ABA, 300 mM NaCl+ 100 µM IAA, 300 mM NaCl+ 100 µM GA, 100 µM GA, 100 µM ABA, 100 µM IAA ve 100 µM GA olacak şekilde oluşturulmuştur. 72. saat sonunda örnekler alınmıştır. Süperoksit dismutaz (SOD) aktivitesi Sairam vd. (2002)'e göre, Katalaz (CAT) aktivitesi Aebi (1984)'ye göre, Askorbat peroksidaz (APX) aktivite tayini Nakano ve Asada (1981)'ya göre ve Glutatyon S transferaz (GST) aktivite tayini Habig vd. (1974)'ne spestroskobik yöntemlerle belirlenmiştir. Elde edilen sonuçlar; SOD, CAT, APX ve GST aktivitelerinin tuz, ABA ve IAA uygulamalarıyla arttığını, GA uygulamasına bağlı olarak azaldığını ortaya koymuştur. Bu sonuçlar antioksidan enzimlerin stres şartlarında cevap olarak arttığı bilgisini desteklerken, bitkisel hormonların antioksidan enzimlerle etkileşim içinde olduğunu ve bitki hayatında büyük öneme sahip bu hormonların enzimler üzerine olumsuz etkiler yapabileceğini göstermiştir.

Anahtar Kelimeler: Antioksidan enzim, Ayçiçeği, Bitki hormonları, Tuz stresi

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➢ **POSTER PRESENTATION**

Antioxidant Enzyme Activities of Safflower Genotypes Subjected to Accelerated Aging

Sercan Önder[1*], Damla Güvercin[2], Yaşar Karakurt[1], Civan Çelik[1], Muhammet Tonguç[1]

[*1]Suleyman Demirel University, Faculty of Agriculture, Department of Agricultural Biotechnology, Isparta, Turkey.
[2] Suleyman Demirel University, Faculty of Arts and Sciences, Department of Biology, Isparta, Turkey.

Corresponding author e-mail: sercanonder@outlook.com

Abstract

At the present study, 6 safflower genotypes (Bayer-6, Bayer-12, Dinçer, Montola 2000, Linas and Olas), two different temperature regimes (43 ˚C and 45 ˚C) and five different aging time (0, 48, 72, 96, 120h) were used to assess the effects of accelerated aging (AA) on safflower seeds. After AA, seeds were taken to germination tests at 25 ˚C to determine the germination indices of the safflower cultivars at both temperature regimes. Results of germination indices revealed that the AA at 45 ˚C was a prohibitive temperature for safflower. Four genotypes (Bayer-6, Bayer-12, Linas and Olas) were selected based on their germination indices at 43 ˚C to study activity of antioxidant enzymes; superoxide dismutase (SOD) and peroxidise (POX) during the AA. Bayer-6 and Bayer-12 were resistant to AA while Olas and Linas were susceptible to AA.

SOD activity increased during AA period at 4 genotypes. SOD activity increase 9% and 41% for AA resistant genotypes. AA susceptible genotypes showed 67% and %79 activity increase at the end of 120 h. POX activity of genotypes were different than SOD activity. Bayer-6 exhibited regularly increased SOD activity during AA period whereas Bayer-12 showed fluctuated activity. Its POX activity decreased at 48 h and later increased at 72 h aging. Olas and Linas also exhibited fluctuated POX activity. POX activity in Linas dropped at 48 h and 72 h aging period. Activity loss reached to 51% at 72 h aging. At 96 h its activity again increased and at 120 h POX activity increase was 86% more from activity measured at 72 h. Similarly in Olas, POX activity reduced during 48 h and 72 h aging and reduction in activity reached 56% at 72 h aging. Its activity was higher at 96 h and 120 h than at 72 h.

Keywords: *Carthamus tinctorius*, superoxide dismutase, peroxidase.

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➢ **POSTER PRESENTATION**

The Effects of Imazamox on Optic Nerve and Intraocular Pressure in Wistar Rats

Elif Doğan[1], Çiğdem Sevim[2*], Ali Taghızadehghalehjoughı[2], Selim Çomaklı[3]

[1]Ataturk University, Veterinary Faculty, Department of Surgery, Erzurum,Turkey.
[2]Ataturk University, Veterinary Faculty, Department of Pharmacology and Toxicology, Erzurum, Turkey.
[3]Ataturk University, Veterinary Faculty, Department of Pathology, Erzurum, Turkey.

Corresponding author e-mail: cigdem.sevim@atauni.edu.tr

Abstract

Herbicides are used against weeds in many countries to destroy weeds. It is accepted that it uses of this chemical on soybeans. Imazamox is a kind of systemic herbicide that moves throughout the plant tissue and prevents plants from producing a necessary enzyme, acetolactate synthase (ALS), which is not found in animals. However, it is a relatively new herbicide that has not been extensively field tested, so there is some uncertainty regarding the sensitivity of non-target species. In addition to this we have no any information about bioaccumulation in rats. The aim of the present study was to determine whether optic nerve damage is created by imazamox. For this purpose, rats were given an intraperitoneal injection of %40,%80 and %120 imazamox (4mg/kg per rat). 15 animals are included per group and groups are designated as control, low dose, moderate dose and high dose. We determined starting point for measuring intraocular pressure before applied chemical. After treatment, we calculated 24th,48th and 72th hours datas according to survival rate. Per 24th hour, 5 rats were before sacrified measured IOP. After sacrificing, optic nerve is isolated carefully and put into 10% formaldehyde solution then stained as an immunohistochemistrical antibody. The main outcome measures were intraocular pressure (IOP) ,interleukin 1ß (IL1ß), c-fos and lethality. Treatments with the imazamox achieved significant increase of intraocular pressure (IOP) and c-fos concentrations, however there is no significant differences at the interleukin 1ß (IL1ß) concentrations. In general, treatments with the imazamox demonstrated the damaging effect on the optic nerve. We concluded further research is needed to characterize the potential effects of imazamox toxicity is needed for another biological marker analysis.

Key words: c-fos, interleukin 1 β, imazamox, intraocular pressure,

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➢ **POSTER PRESENTATION**

Effects of Phytogenic Feed Additives as an Alternative to Antibiotic on Broiler Performance and Carcass Characteristics

Malavan Dhahir Abdullah[1], Yavuz Gurbuz[1]

[1]University of Kahramanmaras Sutcu Imam, Faculty of Agriculture, Department of Animal Nutrition, Avsar Campus, Kahramanmaras, TURKEY

Sorumlu yazar e-mail: yavuz@ksu.edu.tr

Abstract

This study conducted to determine the effect of phytogenic feed additives as natural feed supplements with comparing avilamycin feed additives on broiler performance and various carcass characteristics. For this aim possible effects of the phytogenic feed additives and avilamycin feed additives as a feed additive on live body weight (LBW), body weight gain (BWG), feed intake (FI), feed conversion ratio (FCR), carcass weight (CW), abdominal fat (AF) and liver weight (LW) characterization of broiler chickens. A total of 252 broilers chick (ROSS 308) were selected and divided into 7 treatments and 3 replicates based on completely randomized design (CRD). 3 day-old chicks are reared for 42 days. The limited amount of feed was provided whilst water was supplied ad-libitum.

Each treatment contained three replicates of 12 birds. Each group of birds was supplied with 0. 10%, 0.15% and 0.20% of either phytogenic feed additives or avilamycin as feed additives as feed additive and control group was supplied with neither phytogenic feed additives nor avilamycin in their ratio. Data of LBW, BWG, FCR, and FI were statistically analyzed using one-way analysis of variance, and means compared using multiple range test in Statistical Analysis System Programs. Means LBW, BWG, FI, FCR, CW, AF and LW against T6 phytogenic feed additives (PFA) were significantly ($P<0.05$) higher for broilers in other groups. However, they were non-significant effect on the carcass weight, carcass yield, and abdominal fat. Results of the present study suggested that feeding phytogenic feed additives tends to improve the growth performance of the broilers and FCR.

Keyword: - phytogenic feed additives, avilamycin feed additives, feed Additives, broiler performance and carcass characteristic.

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➢ **POSTER PRESENTATION**

Isotherm Equilibrium of Removal of Pentachlorophenol by Solids Dolomitic

Ilhem Belarbi[1*], Kheira Marouf [2], Amine Khelifa[3]

Laboratory of Structure, Development and Applications of Molecular Materials
(S.E.A.2M.)
Département de Génie des Procédés, Université Ibn Badis BP 188 Mostaganem 27000 Algerie

Corresponding author e-mail: ilhembelarbi99@yahoo.com

Abstract

Dolomite ($CaCO_3.MgCO_3$) mined from a deposit located in eastern Algeria was calcined at 800 °C.The obtained samples, named dolomitic solids, were used in the removal of Pentachlorophenol (PCP) from aqueous solutions.
The equilibrium isotherms, thermodynamic parameters, kinitic and FTIR study were considered. The adsorption equilibrium of pentachlorophenol from aqueous solutions on the examined sorbents was investigated at 25, 40, and 55 ◦C via a bath process.
The kinetic study showed that a 120 minutes is sufficient time equilibrium. To determine rate and the mechanism controlling the phenomenon, four kinetic models used: models of pseudo-first order, pseudo-second order, intra-particle diffusion and Elovich. The results show that adsorption follows the model of pseudo-second order, the coefficients of determination, R2, being 0,96. In addition, the adsorbed quantity increases with the temperature which implies that it could be a chemisorption. This suggestion was confirmed by the model of Elovich which applies perfectly with R2 = 0,97.
The isotherms are of type L according to the classification of Gilles and Al In the interval of temperatures considered, they highlight a reduction in the adsorbed quantity as the temperature increases. The isotherms are described in a suitable way by the model of Freundlich. The positive values of ΔG show that it is about a nonspontaneous process with a possibility of chemisorption. These values decrease with the temperature, which indicates that a better adsorption at high temperature is obtained. The low value of ΔG, expressed by D800 with 55 °C, confirms its capacity of maximum adsorption. The adsorption of PCP by the dolomitic solids is endothermic because the ΔH are positive. So the process is supported by an increase of the temperature through activation of the sites of adsorption. The positive values of ΔS suggest an increase in the disorder to the solid interface/solution.
D800 has an excellent capacity of adsorption, about 122,2 Mg g-1. It also adsorbs very quickly during the first minutes of the process.
This work enters within the framework of the valorization of the local natural matters which can prove to be excellent adsorbents for depollution in order to preserve the environment or in catalysis.

Keywords: Dolomite; Pentachlorophenol; Removal; Adsorption ; Kinetics; Isotherms

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➢ **POSTER PRESENTATION**

Scavenging Effects of Quercetin-3-*O*-glucoside on DPPH Free Radical

Ramazan Erenler[1*], Emine Dede[1], Mahfuz Elmastas[2], Nusret Genc[1], Huseyin Aksit[1]

[1]Gaziosmanpasa University, Faculty of Arts and Sciences, Department of Chemistry, Tokat, Turkey.
[2]Health Sciences University, Faculty of Pharmacy, Department of Biochemistry, Istanbul, Turkey.

*Corresponding author e-mail: rerenler@gmail.com

Abstract

Medicinal plants have served as rich sources of pharmacologically active substances. Herbs have been used in a diverse array of purposes including medicine, nutrition, flavorings, beverages, dyeing, repellents, fragrances, cosmetics, and industrial uses [1]. *Rhododendron* is the largest genus of Ericaceae family, growing in the higher altitudes with ecological importance as well as its graceful flowers. *Rhododendron* contains nearly 1000 species distributed worldwide. Among them, about 800 species are dispersed throughout the Northern Hemisphere [2]. Recently, interest has increased considerably in finding naturally occurring antioxidants for use in foods, cosmetics or medicinal materials to replace synthetic antioxidants, which are being restricted due to their carcinogenicity [3].
In this work, quercetin-3-*O*-glucoside was isolated by chromatographic method from *Rhododendron ungernii*. Sephadex LH-20 and silica gel were used as stationary phase. The isolated compound was elucidated by spectroscopic methods such as ^{1}H-, ^{13}C-NMR and LC-TOF/MS. Quercetin-3-*O*-glucoside displayed the outstanding DPPH$^{\bullet}$, ABTS$^{\bullet+}$ scavenging activities as well as reducing power effect.

Keywords: Quercetin-3-*O*-glucoside, *Rhododendron ungernii*, antioxidant, spectroscopy, chromatography.

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➢ **POSTER PRESENTATION**

Marker Assisted Backcrossing Breeding In Plant Breeding

Tuğba Eserkaya Güleç[1], Özlem Ateş Sönmezoğlu[2], Ahmet Yıldırım[2]

[1]Karamanoğlu Mehmetbey University, Technical Science Vocational School, Plant and Animal Production Department, Karaman,Turkey
[2]Karamanoğlu Mehmetbey University, Engineering Faculty,Bioengineering Department, Karaman, Turkey
Corresponding author e-mail: tgulec@kmu.edu.tr

Abstract

Many problems have been encountered in the transfer of characters/genes which are agronomically important in plant breeding and controlled by more than one gene or locus by classical plant breeding methods, especially linkage drag. Marker assisted selection (MAS) and embryo culture are modern technological approaches that are very helpful for classical plant breeding. Marker-assisted selection is one of the techniques that increase the speed and success of traditional or classical breeding methods. Nowadays, marker-assisted breeding studies are mostly applied in the backcrossing method. The method of backcrossing is applied with the help of molecular markers in modern genetics. Marker assisted backcrossing breeding is routinely used in gene transfer in plant breeding programs. In many studies conducted, it has been determined that these two techniques can be successfully used together, especially in studies carried out on quantitative characters. MAS accelerates the development of new varieties, especially by providing time and economic advantages in reverse hybrid breeding and increasing breeding efficiency and reliability. Marker-assisted selection and breeding trials can be completed in less time and with less labor. Plant breeding trials can be completed with the aid of marker-assisted selection in less time and with less labor. At the same time, the population size required is much smaller than the classical plant breeding. With the help of MAS, it is possible to select the characters that are difficult or impossible to select by classical methods in plant breeding. The plant breeding activities to be carried out by the marker technology and the marker assisted selection technique can be carried out more effectively. It is possible to obtain successful and reliable results in a much shorter time than the classical plant breeding.

Key Words: Marker Assisted Selection (MAS), Plant Breeding, Backcrossing Breeding, Molecular Markers

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➢ **POSTER PRESENTATION**

The Combination Effect of Pycgenol and Momardica charantia on Inflammatuary Cytokines Expressions Induced by Sepsis in Mice

Çiğdem Sevim[1*], Yavuz Selim Sağlam[2], İsmail Bolat[2], Behzad Mohtare[2], Selim Çomaklı[2], Mustafa Özkaraca[2], Elif Doğan[3], Aristides M.Tsatsakis[4]

[1]University of Ataturk, Faculty of Veterinary, Department of Pharmacology and Toxicology, Erzurum, Turkey
[2]University of Ataturk, Faculty of Veterinary, Department of Pathology, Erzurum, Turkey
[3]University of Ataturk , Faculty of Veterinary, Department of Surgery, Erzurum, Turkey
[4]*University of Crete, Medical School, Deparmet of* Toxicology and Forensic Sciences, Crete, *Greece*

Corresponding author e-mail: cigdem.sevim@atauni.edu.tr

Abstract

Sepsis is still serious clinical problem that should be treated urgently, however, commonly it results in shock, organ failure and death despite intense efforts to improve survival. The main goal should be detecting main cause which leads to release excessive cytokines expression, then trying to find the best treatment. The aim of the present study that can be usefull Pycgenol and Momardica charantia combination treatment for reducing free oxygen radicals which occur in the sepsis cause damage to DNA, denaturation in cellular proteins and peroxidation in membrane lipids, by leading to tissue damage. In the study was used totally 30 mice which were to be 6 mice in every group. Except for the control group, cecal ligation was applied to the other groups which are Sham, Pycnogenol (PYG,100 mg/kg/bw, i.p.), Momordica charantia (MC, 10%, i.p.) and Pycnogenol+ Momordica charantia (PYG + MC) groups. Necropsy was performed after 6 hour of study. Kidney and liver tissues which was taken from animals were fixed in 10% buffered formalin solution. The tissues were stained with TNFα and Cleaved Caspase 3 primer antibody as a marker of inflammation. TNFα immunpositivity was severely observed in glomerulus in sham groups which was one of the experimental groups while TNFα immunopositivity lightly reduced in PYG, MC and MC-PYG groups. The Cleaved Caspase 3 immunpositivity was severely observed in cytoplasm of some hepatocytes in sham groups, whereas Cleaved Caspase 3 immunopositivity lightly decreased in PYG, MC and MC-PYG groups. In conclusion, we found evidence that the combination of drugs did not produce a synergistic effect but reduced inflammation markers

Keywords: cleaved caspase 3, momordica charantia, pycnogenol, TNFα

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➢ **POSTER PRESENTATION**

Physicochemical, Textural and Sensory Properties of Orange Pomace Added Tavuk Göğsü Ice Cream

Ahmet Ayar, Hatice Sıçramaz*, Merve Atalay, Yasemin Tayar

Sakarya University, Faculty of Engineering, Department of Food Engineering, Sakarya, Turkey

*Corresponding author e-mail: haticesicramaz@sakarya.edu.tr

Abstract

In this study, the evaluation of freeze-dried orange pomace in ice cream production from tavuk göğsü dessert was investigated. The orange pomace, as a by-product from orange juice extraction, was dried and milled. It was added to the traditional Turkish dessert-tavuk göğsü as a dietary fiber source. Then, the dessert was introduced to ice cream. Ice cream samples were analyzed in terms of physico-chemical, textural and sensorial properties. Sensory scores obtained from the study showed that tavuk göğsü dessert could be processed into ice cream and have higher acceptance than that of orange pomace added sample. In addition, the dried orange pomace enhanced the textural properties of ice creams, and had acceptable sensorial scores.

Keywords: by-product, dessert, ice cream, orange pomace, tavuk göğsü.

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➢ **POSTER PRESENTATION**

Prevalence of Diabetic Retinopathy in Patients With Type 2 Diabetes Mellitus in Turkey

Naciye Selcen Bayramci[1*], Leyla Açik[2], Çağdaş Kalkan[3],İlhan Yetkin[4]

[*1]Gaziosmanpaşa University, Faculty of Engineering and Natural Sciences, Department of Genetics and Bioengineering, Tokat, Turkey.
[2]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.
[3]Ankara University, Faculty of Medicine, Department of Gastroenterology, Ankara, Turkey.
[4]Gazi University, Faculty of Medicine, Department of Endocrinology and Metabolism, Ankara, Turkey.

Corresponding author e-mail: selcenbayramci@hotmail.com

Abstract

Diabetic retinopathy (DR) is a specific vascular complication of diabetes due to retinal vascular damage caused by poor blood glucose control. The aim of this study was to evaluate the prevalence of DR complication in patients with type 2 diabetes mellitus (T2DM) in Turkey. A total of 125 unrelated T2DM patients who presented to the Endocrinology and Metabolism Clinic of Gazi University Hospital, Ankara, Turkey. The overall prevalence of diabetic retinopathy was 7.2%. The prevalence of DR is more common in males (9.62%) than in females (5.48%). Age of patients at diagnosis ranged between 39 to 51 years of age. The mean ageof detection DR among the male patients was 45.80±4.82 years and in that of female patients was 44.25±3.86 years, respectively. The above data shows that 7.2% (n=9) patients had DR and the remaining 92.8% (n=116) were found to be negative for diabetic retinopathy.

Keywords: Diabetic retinopathy, type 2 diabetes, prevalence

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➢ **POSTER PRESENTATION**

Mites of the genus *Raphignathus* (Acari: Raphignathidae) from Harşit Valley and Örümcek Forests (Turkey)

Sibel Doğan[1], Salih Doğan[1*], Orhan Erman[2]

[1]Erzincan University, Arts & Sciences Faculty, Biology Department, Erzincan, Turkey.
[2]Fırat University, Sciences Faculty, Biology Department, Elazığ, Turkey.

[*]Corresponding author e-mail: salihdogan@erzincan.edu.tr

Abstract

Members of the genus *Raphignathus* Dugès (Acari: Raphignathidae) are predaceous and living in soil, litter, moss, lichen, stored product, house dust, bird nest and underneath tree bark. In the present work, it was evaluated mites of this genus collected from Harşit Valley and Örümcek Forests (Turkey). *Raphignathus* specimens were extracted by using Berlese funnels, cleared in 60% lactic acid and mounted on microscopic slides in Hoyer's medium. Totally, five known species *viz. Raphignathus collegiatus* Atyeo, Baker and Crossley, *R. fani* Doğan and Ayyıldız, *R. gracilis* (Rack), *R. hecmatanaensis* Khanjani and Ueckermann, *R. kuznetzovi* Doğan and Ayyıldız, were determined. The descriptions and measurements of all species mentioned, reported from the research area for the first time, were given with the original drawings. Furthermore, their distributions in Turkey and on the world were also given.

This work was prepared mainly from the mite material collected by a research project (№ 113Z094) supported by the Scientific and Technological Research Council of Turkey (TÜBİTAK).

Keywords: Fauna, Mite, Predaceous, *Raphignathus*, Turkey.

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➢ **POSTER PRESENTATION**

Linear Alkyl Benzene Sulphonic Acid Exposure Cause Ectopic Primordial Germ Cells in Zebrafish (*Danio rerio*)

Cansu AKBULUT[1*], Nazan Deniz YÖN[1]

[*1]Sakarya University Science and Letters Faculty, Department of Biology, Sakarya, TURKEY

Corresponding author e-mail: cansua@sakarya.edu.tr

Abstract

Linear alkyl benzene sulphonic acid (LAS) is one of the widely used surfactants in detergent production. It is generally use to produce dishwashing liquids, laundry powders and household cleaners. Zebrafish is a vertebrate model which is widely used in toxicological and developmental studies. Primordial germ cells (PGCs) are germline stem cells that give rise to gametes in vertebrates. These cells constitute an embryonic cell type that migrate to gonadal precursors and form the gametes. So, migration of these cells to gonadal precursors have a great importance for gonadal differentiation and reproduction. In this study, histopathological effects of LAS on morphology and migration of primordial germ cells in zebrafish was aimed. Fertilized embryos were transfered into petri dishes. After 4 hour post fertilization (hpf) healty embryos were selected under stereo microscope. The embryos were exposed to different concentrations LAS (0.25 mg/L, 0.5 mg/L and 1 mg/L). Samples were collected during 60 days. Embryos were fixed by Bouin's fixative. Dehydration were carried out in an ascending series of ethanol. After tissues were cleared in xylene, embedded in paraffin wax and cut into 5 µm sections on a microtome. The sections were mounted on glass slides and stained with PAS, Toluidine Blue, Best Carmine and Alkaline Phosphatase. Location and morphological features of primordial germ cells were monitored. While primordial germ cells in control group proceeded to the migration pathway, ectopic cells in exposure groups were detected. Ectopic cells were located different areas such as brain, eye or tail.

Keywords: zebrafish, primordial germ cell, LAS, histology.

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➢ **POSTER PRESENTATION**

Effects of Linear Alkyl Benzene Sulphonic Acid Exposure on Biochemical Parameters in Zebrafish (*Danio rerio*)

Cansu AKBULUT[1*], Nazan Deniz YÖN[1]

[*1]Sakarya University Science and Letters Faculty, Department of Biology, Sakarya, TURKEY

Corresponding author e-mail: cansua@sakarya.edu.tr

Abstract

Linear alkyl benzene sulphonic acid (LAS) is one of the widely used surfactants in detergent production. It is generally use to produce dishwashing liquids, laundry powders and household cleaners. Zebrafish is a vertebrate model which is widely used in toxicological and developmental studies. In this study, investigation the effects of LAS on biochemical parameters in zebrafish were aimed. After 4 hour post fertilization (hpf) healty embryos were seperated under stereo microscope. The embryos (n=100) were exposed to different concentrations LAS (0.25 mg/L, 0.5 mg/L and 1 mg/L). After 7 days of exposure embryos were homogenated and total protein, MDA, GSH, CAT and AChE levels were determined with spectrophotometric methods

Keywords: zebrafish, LAS, oxidative stress.

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➢ **POSTER PRESENTATION**

Bingöl'ün (Türkiye) Kırsal Turizm Açısından Değerlendirilmesi

Ömer Kılıç*[1], Zeyneb Kılıç[2]

[*1] Bingol University, Technical Science Vocational College, Department of Park and Garden Plant, Bingol, Turkey.
[2] Fırat University,Engineering Faculty, Department of Civil Engineering, Elazığ, Turkey.

Sorumlu yazar e-mail: omerkilic77@gmail.com

Özet

Kırsal turizm, gerçekleştirildiği alanda kültürel etkileşimi sağlayan ve yöre halkına gelir getiren bir alternatif turizm çeşidi olup, günümüzde birçok ülkenin kırsal kalkınma politikalarında yer almakta ve kalkınma stratejilerinde desteklenmektedir. Kırsal turizm açısından Bingöl'ün değerlendirildiği bu çalışmada amaç kırsal turizmi kavramsal açıdan incelemek ve Bingöl'ün kırsal turizm potansiyelini ortaya çıkarmaktır. Her ne kadar Bingöl turizm potansiyeli açısından fazla tanınmamış olsa da turizmin kültürlerarası etkileşimde, ilin kalkınmasında önemli bir etkisi olması sebebiyle turizmin bu bölgede daha fazla desteklenmesi gerekmektedir. Zengin bitki örtüsü, doğal güzellikleri, çeşitli doğa turizmi (Yayla-flora-kış-akarsu-av-mağara gibi turizm alanlarının olması, yaban hayatı gözlemciliği ve doğa yürüyüşü) etkinliklerinin olması Bingöl'ün kırsal turizm açısından ülkemizde ayrı bir yeri olduğunun göstergeleridir. Dolayısıyla Bingöl'ün sahip olduğu miraslar, doğal güzellikleri, kırsal turizm potansiyeli daha dikkat çekici ve farkındalık oluşturucu şekilde tanıtılmalı ve ildeki turizm faaliyetleri daha fazla desteklenmelidir.
Bu çalışmada, yapılan literatür taraması ile kırsal turizm kavramı ve kırsal turizmin önemi anlatılmaya çalışılmış ve ele alınan konu çerçevesinde Bingöl ilinin mevcut kırsal turizm potansiyeli gözlemle ve görsel materyallerle değerlendirilmiştir. Bingöl'de kırsal alanlardaki turistik ile doğal değerlerin, tarımsal ve kültürel etkinliklerin arttırılması ve tanıtılması ile yöre halkının ve yaşam standartlarının daha da iyileşecek ve ilin kalkınmasına da katkı sağlanacaktır.

Anahtar Kelimeler: Bingöl, Kırsal turizm, Turizm

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➢ **POSTER PRESENTATION**

Eko–Turizm Yaklaşımlarında Flora Turizmi: Dikme Yaylası ve çevresinin (Bingöl-Merkez) Potansiyeli

Ömer Kılıç*[1], Zeyneb Kılıç[2]

[*1] Bingol University, Technical Science Vocational College, Department of Park and Garden Plant, Bingol, Turkey.
[2] Fırat University,Engineering Faculty, Department of Civil Engineering, Elazığ, Turkey.

Sorumlu yazar e-mail: omerkilic77@gmail.com

Özet

Son yıllarda, alternatif turizm kapsamında değerlendirilen kırsal turizm, doğa turizmi, yayla turizmi gibi turizm çeşitleri, Doğu Anadolu Bölgesi'nde yatırım, tanıtım ve farkındalığın artmasına paralel olarak gelişme göstermektedir. Turizm faaliyetlerinin başını çekmese de yaylalar, yayla rekreasyonu uygulamasına olanak veren bir faaliyet alanıdır. Türkiye ve özellikle de Bingöl sahip olduğu eşsiz doğası ile her türlü turizm aktivitesine olanak sağlayan, zengin çevre ve doğal kaynaklara sahiptir. Bu bağlamda farklı özellikleri ile Doğu Anadolu Bölgesi'nde yer alan Bingöl ili, turizm ve rekreasyon aktiviteleri için kaynak olacak alanlardan biridir. Bu çalışmada Bingöl il merkezine 30 km uzaklıkta olan Dikme yaylasının alternatif turizm, flora turizmi ve rekreasyonel kullanım potansiyelinin belirlenmesi amaçlanmıştır. Araştırma arazi gözlem ve incelemelerine dayanmaktadır. Değerlendirmeler sonucunda elde edilen bilgiler literatür bilgisiyle harmanlanarak sahada yapılan ve yapılabilecek olan rekreasyonel faaliyetler belirlenmiştir.
Dikme yaylası; bozulmamış çevresi ile doğal güzellikleri, köy yerleşimleri, su kaynakları, kayak merkezi, kendine özgü zengin bitki örtüsü (2014-2015 yıllarında yaptığımız floristik çalışma sonucunda alandan 707 takson saptandı, bunların 23'ünün endemik olduğu belirlendi ve *Allium bingoelense* isimli yeni bir bitki türü keşfedildi) ile Bingöl ili için yüksek rekreasyon kapasitesine sahiptir. Çalışma sonucunda; Dikme Yaylası'nın doğal özellikleri ile alternatif turizm için uygun potansiyele sahip olduğu, fakat alandaki turizm ve rekreasyon potansiyelinin yeterince değerlendirilmediği ve tanıtılmadığı tespit edilmiş olup, buna tedbir olarak alanda alternatif etkinliklerin geliştirilmesi ve çeşitlendirilmesi konusu vurgulanmış ve bunun için önerilerde bulunulmuştur.

Anahtar Kelimeler: Bingöl, Dikme, Rekreaasyon, Yayla

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➢ **POSTER PRESENTATION**

Baraj Havza ve Gövdelerinde Erozyonu Önleme Potansiyeli Olan Bitki Türleri

Zeyneb Kılıç*[1], Ömer Kılıç[2]

[*1] Fırat University,Engineering Faculty, Department of Civil Engineering, Elazığ, Turkey.
[2] Bingol University, Technical Science Vocational College, Department of Park and Garden Plant, Bingol, Turkey.

Sorumlu yazar e-mail: zeynebboybay@gmail.com

Özet

Türkiye'deki baraj havzalarının önemli kısmı, bitki örtüsü bakımından zayıf yüksek eğimli arazilerden oluşmaktadır. Erozyon, baraj gövdelerinde yeteri derecede ve uygun bitkilendirme çalışması olmadığından baraj ömrünün kısalmasına sebep olan etkenlerden biri olarak karşımıza çıkmaktadır. Oysa erozyon kontrolü açısından, baraj havza ve gövdelerinin erozyonu maximum düzeyde önleyici farklı ve uygun bitki örtüsüyle kaplı olması arzu edilir. Zira; yeterli ve uygun bitki örtüsüyle kaplı olmayan havzalarda, rüsubat taşınımından dolayı barajlar hızla dolmakta, baraj gövdelerinde erozyon devam etmekte ve bunlar da barajların ömrünü kısaltmaktadır. Erozyon ile mücadele için yapılan çalışmalar daha çok ağaçlandırma faaliyetlerinden ibaret olup, yetersiz kalmaktadır. Bu faaliyetlere ek olarak, erozyonu önleyecek doğal bitkilerin çokça kullanılması uyum ve bakım gibi problemleri ortadan kaldıracak ve plantasyonu yapılan alanlarda bu doğal bitkiler varlığını daha kolay ve uzun süre devam ettirecek ve bu durum istenilen amaca ulaşılmasını sağlayacaktır. Doğal türlerin seçiminde yörenin toprak, iklim, topografya, yaban hayatı, barajın yeri, kullanım maksadı gibi özelliklerinin yanı sıra subasar kısımlar için suya dayanıklı türlerin kullanımına dikkat edilmelidir. Eğer kurak veya yarı-kurak bölgede ve su üretim havzasında erozyon kontrol çalışması yapılıyor ise; öncelikle o bölgede yetişen, bölgeye uyum sağlamış, suyu mümkün olduğunca az kullanan özellikte bitkiler (çalı ve çok yıllık otsu türler) tercih edilmeli ve kullanılmalıdır.
Doğal bitkilerin baraj havza ve gövdelerinde kullanılması bu arazilerin değerlendirilmesi, yeni rekreasyon ve turizm alanlarının oluşturulması, yaban hayatı için yeni barınma alanları meydana getirilmesi ve plantasyonda gelir getirici türler kullanılarak yöre halkının ekonomisine de katkıda bulunulması sağlanacaktır. Bu çalışmada, Bingöl il sınırları içerisinde erozyonu ve rüsubat taşınımını önleme potansiyeli olan doğal 45 bitki türü belirlendi ve bunların makalede belirtilen amaçları gerçekleştirmede kullanılma avantajları vurgulandı.

Anahtar Kelimeler: Baraj, Bitki, Erozyon, Havza

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➢ **POSTER PRESENTATION**

Bitki Örtüsü ve Türlerinin Su Kaynakları Üzerindeki Etkisi

Zeyneb Kılıç*[1], Ömer Kılıç[2]

[*1] Fırat University,Engineering Faculty, Department of Civil Engineering, Elazığ, Turkey.
[2] Bingol University, Technical Science Vocational College, Department of Park and Garden Plant, Bingol, Turkey.

Sorumlu yazar e-mail: zeynebboybay@gmail.com

Özet

Bir alandaki suyun kalitesi ve miktarı üzerinde çeşitli faktörlerle birlikte toprak yüzeyini örten bitki örtüsü ve türlerinin de büyük etkisi vardır. Bitkilerin yaprak form ve yüzeyleri, düşen yağışın ne kadarının bitki yüzeyinde tutulup, ne kadarının toprağa intikal edeceği hususunda etkilidir. Bitki örtüsünü oluşturan ağaç, çalı ve otsu türlerin formları da alandaki su kaynaklarının kalite ve kantitesinde önemli rol oynamaktadır. Bitki formasyonlarının su üretimini artırmadaki fonksiyonu çoktan aza doğru; otsu, çalı ve ağaçların oluşturduğu ormanlar şeklindedir. Bitkilerin toprağı kalkan gibi koruyan sürgün sistemi, toprağı yerinde tutan kök sistemi ve suyu adeta süzen ölü örtüsü ile erozyon kontrolünde, yağış suyunun buharlaşmasını azaltmada ve topraktaki suyun daha fazla tutulmasında vazgeçilmez bir yeri bulunmaktadır.
İleriki zamanlarda ortaya çıkabilecek muhtemel kuraklığın, insan yaşamında doğuracağı zararlı etkilerin azaltılmasında da bitki formasyonlarının çok önemli işlevleri bulunmaktadır. Bu nedenle, mevcut formasyonların iyi korunması, planlı işletilmesi ve geliştirilmesi önem arz etmektedir. Maki ve belirli otsu bitki yaprakları, yaz dönemi kuraklığına dayanacak bir su ekonomisine sahiptir. Dolayısıyla bu bitki türlerinin kurak özellikli bölgelerde ve su üretim havzalarında önemi büyüktür. Buradan hareketle, ülkemizin su ve hidro-elektrik barajlarını barındıran bölgelerindeki su üretiminin önem taşıdığı havzalarda, su veriminin artırılması ve su kaynaklarının daha verimli kullanılması için orman örtüsünün azaltılarak bunun yerine daha çok maki ve uygun otsu bitki türleriyle baraj havzasının plantasyonu su kayıplarını azaltacaktır. Bu yöntem, baraj havzalarının çevresinde yapılan tarımsal faaliyetlerin sürdürülebilirliğin sağlanması bakımından da önemli olacaktır.

Anahtar kelimeler: Bitki, baraj havzası, su

International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2018)

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➢ **POSTER PRESENTATION**

An Investigation of Thrace Region Oak (*Quercus Spp)* Honeys of Turkey

Zehra Can[1*], Hilal Ebru Çakır[2], Yakup Şirin[2], Hüseyin Şahin[3], Nimet Baltaş[4], Sevgi Kolayli[2]

[1]Giresun University, Şebinkarahisar Technical Sciences Vocational School, 28400, Giresun, Turkey
[2]Karadeniz Technical University, Faculty of Sciences, Department of Chemistry, 61080, Trabzon, Turkey
[3]Giresun University, Espiye Vocational School, 28600, Trabzon, Turkey
[4]Recep Tayyip Erdoğan University, Faculty of Sciences, Department of Chemistry, 53020, Trabzon, Turkey

Corresponding author e-mail : zehracan@giresun.edu.tr

Abstract

Oak honey is an important forest-honeydew honey with many different physico-chemical and biological active properties. This study investigated various characteristic features, including physico-chemical properties, phenolic compounds, mineral and sugar composition of oak (*Quercus* spp.) honey samples obtained from Northwest Turkey. Hunter color values (Lab), optical rotation, electrical conductivity, moisture, and ash were measured as physico-chemical determinants. Sugars (fructose, glucose, sucrose, maltose, trehalose, melebiose, and melezitose), proline content, phenolic acids (gallic, protocatechuic, *p*-OH-benzoic, vanillic, caffeic, syringic, cinnamic acids, and *p*-coumaric, and ferulic), flavonoids (epicathecin, catechin, rutin, quercetin, daidzein and luteolin), total phenolic contents, and total flavonoids were evaluated as chemical parameters. The results of the study have showed that showed oak honey is almost dark honey and have highly phenolic components and rutin, *p*-coumaric acid and protocatechuic acid (6.12±4.39µg/g) were the major phenolic components, and quercetin was also detected in varying amounts in all samples.

Keywords: antioxidant; honeydew; oak; phenolic; *Quercus* spp; mineral

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➢ **POSTER PRESENTATION**

The Association Between CTGF rs9402373 Polymorphism and Pseudoexfoliative Glaucoma

Canan Koçan[1*], Birsen Can Demirdöğen[1], Gökhan Özge[2], Tarkan Mumcuoğlu[2]

[1]TOBB University of Economics and Technology, Institute of Science, Department of Biomedical Engineering, Ankara, Turkey
[2] University of Health Sciences, Gülhane Education and Research Hospital, Ophthalmology Unit, Ankara, Turkey

canankocan.88@gmail.com

Abstract

Pseudoexfoliation syndrome (PES) is a disorder of the extracellular matrix characterized by the progressive accumulation of abnormal fibrillary material in many ocular tissues. Pseudoexfoliative material may cause glaucoma (PEG) by obstructing the drainage canals of aqueous humor and eventually blindness with elevation of intraocular pressure. Growth factors may have important roles in the pathophysiology of PEG. Connective tissue growth factor (CTGF) is a protein expressed in several tissues, including the anterior chamber of the eye. CTGF gene has several genetic polymorphisms. One of them, rs9402373C/G single nucleotide polymorphism (SNP) is an intron variant and may affect transcription or the stability of transcript. Aim of this study was to investigate if there is any association between PEG and rs9402373C/G polymorphism.

Study population consisted of 150 PEG patients and 150 controls. Blood samples were collected by Gülhane Training and Research Hospital, Department of Ophthalmology, Ankara. Genotypes were assigned by real-time PCR (RT-PCR) using Taq-man genotyping kits. Genomic DNAs were isolated from whole blood samples using Qiagen DNA isolation kit.

The frequency of polymorphic allele G was 0.150 in patients, and 0.177 in controls (P=0.377). Distribution of genotypes was CC: 72%, CG: 26% and GG: 2% among patients, while CC: 66.7%, CG: 31.3% and GG: 2% (OR=0.778, P=0.317) in controls. Statistical analysis showed that there is no significant relationship between CTGF rs9402373C/G SNP and PEG.

This work did not point out a role for this SNP in the risk for PEG. Rs9402373C/G was studied first time for the risk for PEG. Moreover allele frequencies of this SNP were determined for the first time in Turkish population.

Keywords: CTGF, pseudoexfoliation, polymorphism, glaucoma

Acknowledgment: This study was supported by TÜBİTAK (115S360)

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➢ **POSTER PRESENTATION**

Presence of beta-lactam antibiotic residues in raw milk obtained from Afyonkarahisar Province[#]

Eda AYCAN[1], Sinan İNCE[2*]

[1]Department of Animal Health, Food, Agriculture, and Animal Husbandry Provincial Directorate, Elbistan, Kahramanmaraş, Turkey
[2*]Department of Pharmacology and Toxicology, Faculty of Veterinary Medicine, Afyon Kocatepe University, Afyonkarahisar, Turkey

[*]Corresponding author e-mail:since@aku.edu.tr

Abstract

Antibiotics usage for treating, protective, and similar purposes of animals may cause residue in foods of animal origin. Raw milk has high risk in terms of antibiotics residue. The consumption of such foods can cause serious health problems in human. For this purpose, 80 raw milk samples were collected from Afyonkarahisar province and analysed for beta-lactam antibiotics by means of ELISA. The result of analyses showed that 38 samples did not contain beta-lactam residue, 35 samples contained different concentration and acceptable maximum residue limits of beta-lactam, and 7 samples contained residues above 3 ppb but below 30 ppb. In conclusion, relatively high level of residue in raw milk showed that milk is offered for human consumption without taking it into consideration of withdrawal time.

Key words: Antibiotic, beta-lactam, residue, milk

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➢ **POSTER PRESENTATION**

The Association Between Clusterin rs11136000 C/T Single Nucleotide Polymorphism and Pseudoexfoliative Glaucoma Risk

Sinem Demirkaya-Budak[1*], Birsen Can Demirdöğen[1], Gökhan Özge[2], Tarkan Mumcuoğlu[2]

[*1] TOBB University of Economics and Technology, Institute of Science, Department of Biomedical Engineering, Ankara, Turkey
[2] University of Health Sciences, Faculty of Medicine, Gülhane Education and Research Hospital, Ophthalmology Unit, Ankara, Turkey

Corresponding author e-mail: sinemdemirkaya1@gmail.com

Abstract

Pseudoexfoliation syndrome (PES) is an age-related systemic disorder of extracellular matrix characterized by the presence of fibrillar deposits throughout the anterior segment of the eye. Glaucoma caused by pseudoexfoliation is called pseudoexfoliative glaucoma (PEG). Clusterin is a multifunctional glycoprotein which is accumulated in pseudoexfoliation material. Clusterin functions as an extracellular chaperone and takes role in inhibition of stress-induced precipitation and aggregation of misfolded proteins. Clusterin expression level in aqueous humor of PES and PEG patients is unexpectedly low which could be due to single nucleotide polymorphisms (SNP) on *clusterin* gene. This study aimed to investigate the relationship between clusterin rs11136000 C/T SNP and PEG risk.

Study population included 150 PEG patients and 150 controls. Blood samples were obtained from Gülhane Education and Research Hospital, Ophthalmology Unit, Ankara, Turkey. Genomic DNAs were isolated from whole blood of subjects using manual DNA isolation. Genotypes were assigned by PCR followed by restriction fragment length polymorphism analysis.

T allele frequency was 0.360 in PEG patients and 0.370 in controls for clusterin rs11136000 C/T SNP (OR=0.958; *P*=0.799). The distribution of genotypes was CC: 45.3%, TC: 37.3% and TT: 17.3% among PEG patients, while CC: 40.7%, TC: 44.7% and TT: 14.7% in controls (TT vs TC+CC genotype OR=1.220, *P*=0.529; TT+TC vs CC genotype OR=0.827, *P*=0.414). There was no statistically significant difference between PEG patients and controls in terms of TT genotype and T allele frequency.

These are the preliminary findings of a larger research project. This work does not point out a relation for polymorphic allele in PEG risk.

Acknowledgment: This study was supported by TÜBİTAK (115S360).

Keywords: Clusterin, Polymorphism, rs11136000, Pseudoexfoliation, Glaucoma

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➢ **POSTER PRESENTATION**

The Influence of Hot Water and Calcium Chloride on The Changes in Color, Phenolics and Polyphenol Oxidase Activity of Mushroom During Postharvest Storage

Damla Güvercin[1*], Sercan Önder[2], Döne Toka[2], Yaşar Karakurt[2]

[*1] Suleyman Demirel University, Faculty of Arts and Sciences, Department of Biology, Isparta, Turkey
[2] Suleyman Demirel University, Faculty of Agriculture, Department of Agricultural Biotechnology, Isparta, Turkey

Corresponding author e-mail: damlaguvercin@sdu.edu.tr

Abstract

Mushrooms undergo significant changes in quality after harvest due mainly to changes in color. This study was performed to determine the effects of $CaCl_2$ and hot water on the changes in color, phenolics and polyphenoloxidase activities of mushrooms during storage. Mushrooms were treated with various concentrations of $CaCl_2$ and hot water at various degrees for different time periods and stored for 12 days at 10 ^oC. Significant changes were observed in color components during storage. Color change was associated with the increases in total soluble phenolics, esspecially increases in chlorogenic acid and polyphenol oxidase activity, suggesting that both phenolics and polyphenol oxidase contribute significantly to the browning in mushrooms. Hot water and $CaCl_2$ treatments significantly reduced color change possibly through reductions in total soluble phenolics and the activity of polyphenol oxidase. The results suggest that $CaCl_2$ and hot water treatments could be used to reduce color change after harvest and extend the shelf life of mushrooms.

Keywords: *Agaricus bisporus*, Browning, Chlorogenic acid, Enzyme activity

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➢ **POSTER PRESENTATION**

Comparison of the Biodiesel Production Performances of Zirconium Oxide-Sepiolite and Calcium Hydroxide Based Heterogenous Catalysts

Sema Aslan[1*], Necdet Aka[1], M. Hamdi Karaoğlu[1]

[*1]Muğla Sıtkı Koçman University, Science Faculty, Chemistry Department, Muğla, Turkey.

Corresponding author e-mail: semaaslan@mu.edu.tr

Abstract

Non-renewable energy resources such as fossil fuels are harshly running out and to fulfill energy demand in the future, it is important to find out and apply renewable energy sources into industry (Zhan et al. 2018). Efficient, effective, sustainable and environmental-friendly fuels are wanted. In this point of view biodiesel is a very promising alternative fuel source (Suprarukmi et al. 2014). Biodiesel can be easily produced by the help of transesterification of oils however there are still some crucial points such as the choice of the proper catalyst, that can't be underestimated. In this manner sepiolite based heterogenous catalysts are very effective and promising with their low saponification yields and conversion of the great part of the crude oil into biodiesel (Khemthong et al. 2012).

Here we synthesized a novel sepiolite based heterogenous catalyst with impregnation of zirconium onto sepiolite (ZrO_2/sep.) and utilized this catalyst in the biodiesel production from canola oil. $Ca(OH)_2$ was also investigated in the same manner and the biodiesel yields were calculated. 65.51 % yield was achieved from ZrO_2/sep. catalyst where 35.16 % biodiesel yield was obtained from $Ca(OH)_2$ used system. Also GC-MS analysis of the biodiesels and SEM characterizations of sepiolite and ZrO_2/sep. were performed and compared.

Keywords: Biodiesel, Sepiolite, Transesterification, Heterogenous catalyst, Renewable energy source.

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➢ **POSTER PRESENTATION**

Prevention and control of mycotoxins in foods

Osman Ermen[*1], Zeynep Şebnem Yakar[2], Aykut Önder Barazi[1]

[*1]University of Gaziantep Faculty of Engineering Department of Food Engineering
[2]University of Gaziantep Technical Sciences Vocational School, Department of Food Processing

Corresponding author e-mail: erkmen@gantep.edu.tr

Abstract

Mycotoxin formation causes mold growth in crops and agricultural products. Many circumstances increase mycotoxin formation. Plant sensitivity to mold growth, convenience of nutrients for molds, moisture content, physical harm of seeds, climate and temperature are the important factors. In agricultural products, there are several efficient preventive and control methods to reduce mycotoxin contamination. Biological controls, physical and chemical treatments are the ways of reduction. Some crop hybrids are resistant to molds. Using of them can reduce mycotoxin formation. The most economical and effective way is raw material drying after post-harvest. Alkalinization and ammonification are common and industrially used chemical treatments. Mycotoxins can be reduced by detoxification in foods and animal feeds. Detoxified products are not for human consumptions but they are suitable only for animal feed aims. There are some other ways to minimize contamination, such as avoiding water stress, reducing insect plague and reducing inoculum potential. Using good agricultural practices for pre-harvest and post-harvest processes would reduce the contamination problem. Use proper drying techniques provide suitable storage facilities. Separating moldy, contaminated, shriveled or insect-infested seeds from sound kernels is another useful way. High-risk agricultural products which are contaminated by selected mycotoxins and human diseases occurred due to mycotoxins can be observed to supply safe food that is not containing naturally formed contaminants. The economical hedges and human exertion for this problem, supplies better human and animal health and reduce financial losses.

Keywords: Mycotoxin, Prevention, Control, Agricultural product

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➢ **POSTER PRESENTATION**

Isotherms Equilibrium for Removal of SRL Dye Using an Eco-Friendly Biosorbant

Larbi Nour El Houda[1*], Merouani Djillali Redha[2] , Iddou Abdelkader[2], Khelifa Amine[2]

[*1]University of Mostaganem, Faculty of sciences and technology, Process Engineering, Mostaganem, Algeria.
[2]University of Mostaganem, Faculty of sciences and technology, Process Engineering, Mostaganem, Algeria

Corresponding author e-mail: larbidoct27@gmail.com

Abstract

The problem of waste is probably one of the most important in terms of public health and environmental protection. In fact, in recent years, Algeria has experienced a dynamic of investment and consumption never equaled before. This situation has meant that more and more waste is produced without a policy to deal with this nuisance being clearly defined and structured. In this context, we were interested in the recovery of sludge from a lagoon station plus organic household waste for disposal or the recovery of industrial textile dye named SRL intensively used by SOITEX Tlemcen/Algeria. The study begins with a characterization and a follow-up of the process of humification and maturation of biosorbant then an adsorption study (Isotherms Equilibrium)of the SRL dye mentioned before.
The results reveal maximum adsorption at acidic pH(pH=2) with Freundlich isotherm model and an adsorption capacity of 341 mg /g at 25°C . This shows that our Eco-Friendly Biosorbant is with great capacity of eleminating textile dyes very easily and effectively and can be majoraly used in Water treatement.

Keywords: Valorisation , Humification ,Adsorption ,Isotherms, Dyes

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➢ **POSTER PRESENTATION**

Genetic Treasure For Plant Breeding: Local Varieties

Tuğba Eserkaya Güleç

Karamanoğlu Mehmetbey University, Technical Science Vocational School, Plant and Animal Production Department, Karaman, Turkey

Author e-mail: tgulec@kmu.edu.tr

Abstract

Local varieties have emerged mostly due to the selection of individuals with high quality characteristics, adapted to the region in every generation and by natural selection. Local varieties that constitute a significant germplasm of breeding programs and contain high variation have an important place in the collection of plant genetic resources. They are extremely important in terms of their resistance to disease and harmfulness, their high quality and their high adaptability. Local varieties are the raw material for the development of high quality varieties using the rich genetic diversity they contain and the biotechnological possibilities that are rapidly advancing in recent years. Evaluation of local varieties can be carried out directly by encouraging the cultivation and consumption of these varieties or indirectly by using these varieties in breeding trials to develop new varieties. Most of the genetic resources in breeding trials are not used enough because the genetic structures are not investigated and their characteristics are not known precisely. The genetic variation within and between these varieties is not known as the genetic characterization of some plant local varieties maintained in gene banks in our country is not known. In addition, in recent years factors such as increasing population, poverty, soil degradation, environmental changes, unconscious production have also caused erosion in genetic resources belonging to cultivated plants. Therefore, the conservation of local varieties and the conservation of existing production areas are of great importance. Our country, rich in plant genetic resources, has to be one of the countries that produces and implements strategies for the identification and conservation of genetic resources. Both the development of new varieties to increase agricultural production and the transfer of local varieties of raw material to future generations without erosion will be possible with the preservation and preservation of existing plant diversity using advanced techniques.

Key Words: Local Varieties, Genetic Resource, Plant Breeding, Ex-situ Conservation

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➢ **POSTER PRESENTATION**

Effect of L-Tyrosine and β-Alanine on Sperm Motility of Rainbow Trout *Oncorhynchus mykiss*

Mehmet Kocabaş[1], Filiz Kutluyer[2], Mine Erişir[3], Fulya Benzer[4]

[1]Karadeniz Technical University Faculty of Forestry, Department of Wildlife Ecology & Management 61080, Trabzon, Turkey.
[2]Munzur University, Fisheries Faculty, 62000, Tunceli, Turkey.
[3]Fırat University, Faculty of Veterinary, Department of Basic Sciences, Elazığ, Turkey.
[4]Munzur University, Faculty of Engineering, Department of Food Engineering, 62000, Tunceli, Turkey.

Corresponding author e-mail: mkocabas@hotmail.com

Abstract

Amino acids are a well-known role on multiple biologic and psychological processes and have an effective primary defense for protection the sperm membrane structure owing to their antioxidant properties. Therefore, experiments were designed to clarify the effect of L-Tyrosine and β-alanine supplementation on sperm motility of rainbow trout *Oncorhynchus mykiss*. Activation solution was supplemented with levels of 0 mM (Control) and 2 mM L-Tyrosine and β-alanine and, motility and survival of sperm cells were assessed. Significant increase of L-Tyrosine and β-alanine supplementation was determined on the percentage and duration of motile spermatozoa ($p<0.05$). Overall, we showed that L-Tyrosine and β-alanine supplement can improve sperm motility of *O. mykiss.*

Keywords: L-Tyrosine, β-alanine, sperm quality, *Oncorhynchus mykiss*, rainbow trout.

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➢ **POSTER PRESENTATION**

Effect of Leucine and Creatinine on Sperm Motility of Rainbow Trout *Oncorhynchus mykiss*

Filiz Kutluyer[1], Mehmet Kocabaş[2], Fulya Benzer[3], Mine Erişir[4]

[1]Munzur University, Fisheries Faculty, 62000, Tunceli, Turkey.
[2]Karadeniz Technical University Faculty of Forestry, Department of Wildlife Ecology & Management 61080, Trabzon, Turkey.
[3]Munzur University, Faculty of Engineering, Department of Food Engineering, 62000, Tunceli, Turkey.
[4]Fırat University, Faculty of Veterinary, Department of Basic Sciences, Elazığ, Turkey.

Corresponding author e-mail: filizkutluyer@hotmail.com

Abstract

Experiments were realized to determine the effect of leucine and creatinine supplementation on sperm motility of rainbow trout *Oncorhynchus mykiss*. Activation solution was supplemented with levels of 0 mM (Control) and 2 mM leucine and creatinine and, the percentage and duration of motility were determined in sperm samples. Significant increase of leucine and creatinine addition was determined on the percentage and duration of motile spermatozoa ($p<0.05$). In conclusion, we showed that leucine and creatinine supplement can improve sperm motility of *O. mykiss.*

Keywords: Leucine, Creatinine, sperm quality, *Oncorhynchus mykiss*, rainbow trout.

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➢ **POSTER PRESENTATION**

Biosorption of Fast Black Azo Dye K Salt by the Bacterium *Rhodopseudomonas palustris*51 ATA

Ayten Öztürk[1*], Meysun I. Abdullah[2]

[*1] Niğde, Omerhalis Demir University, Dept. of Biotechnology, Niğde, Turkey
[2] Near East University, Faculty of Pharmacy, North Cyprus

meysun.abdullah@neu.edu.tr

Abstract

Biosorption of the Fast Black k. salt azo dye by the Bacterium *Rhodopseudomonas palustris*51 ATA, was studied spectrophotometrically at various temperatures and pH values .The optimum pH and temperature was found as 8 and the best temperature was 25ºC respectively. This study was also followed by Infra-Red spectroscopy to point out the best temperature for biosorption. IR studies at each 25ºC, 35 ºC and 45ºC revealed that the dye has been adsorbed on the bacterial surface at lower temperatures more efficiently.

Keywords: Azo dyes, Biosorption, *Rhodopseudomonas palustris*51 ATA

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➢ **POSTER PRESENTATION**

Alternative Carbon Sequestration Through Environmental Microorganisms Carrying Biotechnological Importance

Tuğba Önal Okyay

Engineering Faculty, Chemical Engineering Department, Usak, Turkey.

Corresponding author e-mail: tugba.onalokyay@usak.edu.tr

Abstract

Current scientific research reports an increase in atmospheric greenhouse gases, which trap heat in the earth's atmosphere, and potentially change Earth's climate. Hence, developing nature friendly and affordable carbon dioxide sequestration methodologies has become a matter of paramount importance to mitigate or reduce the global climate change effects. Nowadays, immobilization of the CO_2 gas by stocking it into the available geological reservoirs is the most used solution. This is commonly referred as carbon capture and storage (CCS). However, CCS has not been a completely reliable technique since it has leakage risks and some drawbacks. Therefore, precipitating CO_2 as solid carbonate minerals can be a promising substitution as an alternative strategy for CO_2 immobilization. To form $CaCO_3$ minerals, the reaction is generally not chemically favorable in nature, unless pH is higher than 9. On the other hand, microorganisms have been shown to induce $CaCO_3$ precipitation through their metabolic activities if certain conditions are available. In this research, environmental microorganisms isolated from Ca^{2+} rich environments were studied. The aim was to understand their roles on CO_2 sequestration and $CaCO_3$ precipitation. Results showed that the relationship between the urease activity, microbial $CaCO_3$ precipitation (MICP) and CO_2 sequestration were dependent on the species and influenced by environmental conditions. The results showed that CO_2 sequestration occurred through the metabolisms of bacteria and MICP. This approach is a promising alternative method for CO_2 sequestration since microorganisms were able to remove CO_2 up to 90%. The microorganisms were also indentified to reveal who is responsible from the biotic CO_2 sequestration. The studies have been continued to understand the exact mechanisms behind the microbial carbon sequestration by these microorganisms.

Keywords: Global warming, climate change, microbial carbonate precipitation, CO_2 sequestration.

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➢ **POSTER PRESENTATION**

Determination of phenolic composition and antioxidant activity in different parts of developing fruit of *Pistacia atlantica* Desf. growing wild in Algeria

Amina LABDELLI[1,2*], Ahmed ADDA[1], Abdelkrim REBIAI[3], Othmane MERAH[4,5]

[1] Laboratoire de Physiologie végétale appliquée aux cultures hors sol, Université Ibn Khaldoun de Tiaret, Algérie.
[2] Scientific and Technical Research Centre for Arid Areas (CRSTRA), BP 1682 RP, 07000 Biskra, Algeria.
[3] University of El Oued, VTRS Laboratory, P.O. Box 789, 39000, El-Oued, Algeria.
[4] Laboratoire de Chimie Agro-industrielle (LCA), Université de Toulouse, INRA, INPT, Toulouse, France.
[5] Université Paul Sabatier, IUT A, Département Génie Biologique, 24 rue d'Embaquès 32000 Auch, France

Corresponding author e-mail: aminalabdelli@yahoo.fr

Abstract

Fruits of Atlas pistachio (*Pistacia atlantica*, Anacardiaceae) are widely consumed by the local population as a nutriment and they have numerous applications in cosmetics, pharmaceutical and feed industry. Properties such as the protection against coronary heart disease and vascular, the activity anti-inflammatory, anti-tumor are often associated with phenolic compounds. This specie is known for their potential antioxidant properties, and also for their antidiabetic, antimicrobial, anti-inflammatory and cytotoxic activities.

In this study, total phenolic content (TPC) (folin-ciocalteu essay) and total antioxidant capacity (TAA) were measured in the seed and epicarp of six ecotypes of Atlas pistachio in Algeria. Seeds have a great value because of the antioxidant activity of its extracts and the epicarp is a good source of natural phenolics and antioxidants.

The highest phenolic and antioxidant activity was observed in genotype Djelfa (D) and Tiaret (T1), laghouat (L) respectively. In epicarp, positive correlation coefficient was observed between TPC and TAA. The results of phenolic composition using HPLC showed that quercetin acid, gallic acid and chlorogenic acid are the most present in all genotypes. The different constituents of the Atlas pistachio seeds are rich in flavonoids.

Antioxidants are essential for maintaining the quality of foods rich in fat and protect oxidations. They also have a beneficial effect direct on human health by avoiding the accumulation of activated forms of oxygen.

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➢ **POSTER PRESENTATION**

Dieback of the Atlas cedar in the national park of Theniet El Had (west of Algeria)

Bouazza Khaldia [1*], Dellal Abdelkader [1*], Mehdadi Zoheir [2], Zedek Mohamed [1*]

[*1] Laboratory of Agro-biotechnology and nutrition in semi-arid zone ; Faculty of Natural and Life Sciences ; University Ibn Khaldoun, Tiaret, Algeria.
[2] Plant biodiversity laboratory : conservation and valorisation ; Faculty of Natural and Life Sciences ; Djilali Liabes University, Sidi Bel Abbes, Algeria.

bouazzakhaldia@yahoo.fr

Abstract

In all the cedars of the country, that of Theniet El Had is judged by the famous forester Boudy as being one of the most beautiful natural curiosities of Algeria. But since 1984, the cedar is affected by the phenomenon of dieback.
In this work, the methodological approach adopted in the study of forest trees dieback was carried out on data collection research, at the level of decaying cedar plots, within which dendrometric parameters and ecological factors descriptors have been identified.
We have installed 59 circular temporary plots across the northern and southern slopes of the massif, mainly in cantons with high wastage rates and low dieback, where we investigated possible relationships between the rate of dieback and the factors of the environment.
eco-dendrometric results have shown that Atlas cedar dieback is frequent appeared through the exhibitions oriented toward the east, on the land where the water losses are superior to inputs, along the altitudinal between 1200 and 1456 m and on the grounds of slopes ranging between 20° and 30°.

Keywords : Atlas cedar, dieback, Theniet El Had, stationary factors.

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➢ **POSTER PRESENTATION**

The C-589T IL-4 Single Nucleotide Polymorphism as a Genetic Factor for Atopic Asthma, Eczema and Allergic Rhinitis in an Eastern Algerian Population

Dahbia Ines Dahmani[1,2,5,6], Karima Sifi[2], Ikhlass Haj Salem[3], Jamila Chakir[3], Sabah Hanach[2], Mounir Zhary Bachtarzi[4], Laila Rouabah [5], Noureddine Abadi[2], Mohamed Bougrida[1], Mahmoud Rouabhia[6*]

[1] Research laboratory of metabolic diseases. Faculty of Medicine. University of Constantine-3, Algeria.
[2] Research Laboratory of Biology and Molecular Genetics, Faculty of Medicine. University of Constantine-3, Algeria.
[3] University Institute of Cardiology and Pneumology, Laval Hospital, Laval University, Quebec City, QC, Canada.
[4]Privat allergy clinic Constantine, Algérie.
[5] Laboratory of cellular and molecular biology. Faculty of the sciences of the nature and the life, Constantine1 University, Algeria.
[6] Research Group, Faculty of Dentistry, University Laval, Quebec City, Quebec, Canada.
Corresponding author e-mail: dah.ines@hotmail.com

Abstract

In Atopy is a common familial syndrome that is due to interacting genetic and environmental factors. The atopic diseases include asthma, atopic dermatitis and allergic rhinitis.The aim of this study was to investigate the potential link between -589C/T and the levels of IgE and IL-4, atopic asthma in a young adult population. A total of 80 patients with atopic asthma and 80 non-atopic, non-allergic and non-asthmatic controls were include. Atopic asthma status was confirmed by means of the skin prick test, The IgE levels were measured by Quantia IgE immunoturbidimetric assay, while, Interleukin (IL)-4 concentrations were determined by immunosorbent assay. IL-4 C-589T polymorphism was determined by the polymerase chain reaction-restriction fragment length polymorphism method (RFLP-PCR) using the BsmF1 enzyme. Gene analyses reviled that, the IL-4 C-589T SNP shows a significant difference between asthmatic and controls when comparing the TT vs CC (OR, 3.63; OR 95% CI, 1.16-11.63; p=0.01) and TT vs CT (OR, 2.48; OR 95% CI, 0.91-6.95; p=0.05) genotypes. Likewise, a significant association was found between the TT genotype and the positive family history of asthma (OR, 3.78; OR 95% CI 0.93-17.78; p=0. 036) and positive parental smoking (OR, 3.16; OR 95% CI 0.85-12.80; p=0.05). On the other hand, the personal history of allergic rhinitis and eczema demonstrated a significant association of the CT and TT genotype with both allergic rhinitis (p = 0.04) and eczema (p=0. 005) in the asthmatic group. We also demonstrated that patients with heterozygous CT (55%) and homozygous TT (23.75%) genotypes of the IL-4 C-589T polymorphism showed significantly higher of IgE levels (631.89±187.35 IU/ml, and >1000 IU/ml, respectively) (p=0.0000) and serum levels of IL-4 (>1000) for the TT genotype and (495,96 ± 93,57) for heterozygote variant of IL-4 C-589T CT (p=0.0000). Our findings revealed that women are much more likely to develop asthma than men. We also showed a strong association between TT genotype and the incidence of eczema and allergic rhinitis in childhood.

Keywords: Asthma, Atopy polymorphism, FcεRIβ, C-590 T, IL-4, IgE

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➢ **POSTER PRESENTATION**

Nanotechnology and Its Impact on the Environment

Hikmet Yeter Çoğun[1], Tüzün Aytekin[2], Özge Temiz[3], Hazal Sağ Varkal[3], Ferit Kargın [3]

[1]Department of Physiology, Ceyhan Veterinary Faculty, Cukurova University, 1330 Adana, Turkey
[2]Vocational School of İmamoğlu, Cukurova University, 01700 Adana, Turkey
[3]Department of Biology, Faculty of Science and Letters, Cukurova University, 01330 Adana, Turkey

Corresponding author e-mail: hcogun@cu.edu.tr

Abstract

In recent years, man-made nanomaterials, which are required to effect the environment and human health. The nanomaterials used range from cosmetics such as TiO2, CdO2 and CuO to as large as solar cells. In this review we have investigated the effects of metal-oxide species used as nanomaterials both on the environment and on the living health. This study examines in detail the environmental-living effects of nanomaterials, even through many filters.

Keywords: nanomaterial, ecology, nanoparticle, nanotoxicology

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➢ **POSTER PRESENTATION**

Potentiometric Determination of Acid Dissociation Constants of 2-(pyrrolidin-1-yl)thiazole Derivatives

Yahya Nural[1*], Müge Gemili[1], Hayati Sarı[2]

[*1]Mersin University, Faculty of Pharmacy, Department of Analytical Chemistry, Mersin, Turkey
[2]Gaziosmanpasa University, Faculty of Science and Arts, Department of Chemistry, Tokat, Turkey

Corresponding author e-mail: ynural1805@yahoo.com; yahyanural@mersin.edu.tr

Abstract

Physicochemical parameters provide critical information for scientists in the many scientific fields such as drug research studies, the development of analysis methods, etc [1]. The acid dissociation constant (pK_a) is one of the most important physicochemical parameters [1-3]. In this study [4], acid dissociation constants of the potential bioactive 2-(pyrrolidin-1-yl)thiazole derivatives were potentiometrically determined at 25.0 ± 0.1 ºC in a 30% (*v*/*v*) DMSO-water mixture. The potentiometrically obtained data were used for the calculation of the pK_a values using the HYPERQUAD computer program. Three different pK_a values were found for the compounds and the pK_{a1}, pK_{a2} and pK_{a3} values were obtained in a range of 2.46 (±0.10) - 3.78 (±0.10), 5.61 (±0.07) - 6.77 (±0.08) and 8.50 (±0.03) - 10.21 (±0.03), respectively. According to these obtained results, we propose that the calculated pK_{a1}, pK_{a2} and pK_{a3} values are related to NH, SH and OH groups, respectively.

Keywords: Acid dissociation constant, Potentiometric titration, Thiazole, Pyrrolidine.

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➢ **POSTER PRESENTATION**

Uzunçayır Baraj Gölü (Tunceli) Mansap Tarafında Ağır Metallerden Ti ve V Konsantrasyonlarının Araştırılması

Murat Topal[1*], E. Işıl Arslan Topal[2]

[*1]Munzur Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Tunceli, Türkiye
[2]Fırat Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü,Elazığ, Türkiye

Sorumlu yazar e-mail:murattopal@munzur.edu.tr

Özet

Bu çalışmada, Tunceli ili, Uzunçayır Baraj Gölü'nün mansap tarafında yer alan Munzur Nehri'nde 30.11.2012 Tarih ve 28483 Sayılı Resmi Gazete'de yayınlanan Yerüstü Su Kalitesi Yönetmeliği'nde bulunan belirli kirleticilerden Titanyum (Ti) ve Vanadyum (V) konsantrasyonları araştırılmıştır. Bu çerçevede, Munzur Nehri üzerine kurulmuş olan Uzunçayır Baraj Gölü mansap tarafından yerüstü su örnekleri 2016 yılında İlkbahar ve Yaz aylarında alındı ve Titanyum ve Vanadyum analizleri ICP-MS ile analizlendi. Ayda 3 kez olmak üzere toplam 18 adet numune İlkbahar ve Yaz aylarında alındı ve analiz sonuçlarına göre en yüksek Titanyum konsantrasyonu ilkbahar mevsiminde Mayıs ayında 2.78 µg/L olarak, en düşük Ti konsantrasyonu ise Mart ayında 2.17 µg/L olarak tespit edildi. Yaz mevsiminde en yüksek Ti konsantrasyonu Ağustos ayında 9.84 µg/L olarak, en düşük Ti konsantrasyonu ise Haziran ayında 8.72 µg/L olarak tespit edildi. Vanadyum konsantrasyonları araştırıldığında en yüksek Vanadyum konsantrasyonlarının Yaz mevsiminde gerçekleştiği belirlendi. İlkbahar mevsiminde en yüksek V konsantrasyonu Nisan ayında 1.19 µg/L olarak, en düşük V konsantrasyonu Martayında 0,84 µg/L olarak tespit edildi. Yaz mevsiminde ise en yüksek V konsantrasyonu Ağustos ayında 3,44 µg/L olarak, en düşük V konsantrasyonu ise Haziran ayında 2,78 µg/L olarak belirlendi. Yerüstü Su Kalitesi Yönetmeliği'nde Titanyum için maksimum izin verilebilir çevresel kalite standardı 42 µg/L, Vanadyum için 97 µg/L olarak belirlenmiştir.Sonuç olarak, çalışmamızda tespit edilen değerler yönetmelikte verilen değerlerle karşılaştırıldığında Titanyum ve Vanadyum için yönetmelikte verilen değerlerden daha düşük değerler aldığı belirlenmiştir.

Anahtar Kelimeler: Su kalitesi, ağır metaller, yönetmelik, baraj gölü

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➢ **POSTER PRESENTATION**

Facteurs ecologiques influençant la croissance des subraires relevant du Parc National de Theniet El Had

Naggar Oumeldjilali[1*], Bouhraoua Tarik Rachid[1]

[*1] Département de Ressources Forestières, Université de Tlemcen, Laboratoire de Gestion de l'Eau, Sol et Forêts, Algérie

Corresponding author e-mail: naggaroumeldjilali@yahoo.fr

Abstract

La présente étude s'intéresse à la subéraie (*Quercus suber*) relevant du Parc National de Theniet El Had (nord-ouest d'Algérie). La croissance des peuplements à chêne liège (caractérisés par grandeurs moyennes tels que la circonférence et la hauteur) est influencée par des descripteurs écologiques (altitude, pente, exposition et topographie). Afin de caractériser ce fait, des placettes circulaires de cinq ares de surfaces sont installées durant l'année 2013. L'analyse de la variance à un seul facteur au seuil de signification de 95% montre un effet non significatif de l'exposition sur la croissance des arbres. Par ailleurs l'altitude et la topographie exercent un effet significatif dans la mesure où la croissance en grosseur est meilleure dans les basses altitudes, dans des situations topographiques favorisant l'apport d'eau.

Mots clé : *Quercus suber*, croissance, variables dendrométriques, descripteurs écologiques

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➢ **POSTER PRESENTATION**

Etude ecodendrométrique du Cèdre de l'Atlas (Cedrus alantica) relevant du Parc National de Theniet El Had

Naggar Oumeldjilali[1*], Zedek Mohamed[2], Bouazza Khaldia[2]

[*1] Département de Ressources Forestières, Université de Tlemcen, Laboratoire de Gestion de l'Eau, Sol et Forêts, Algérie
[2]Département de Nutrition et Technologie Agro-Alimentaire, Faculté Sciences de la Nature et de la Vie, Université Ibn Khaldoun de Tiaret, BP 78, Laboratoire Agro-Biotechnologie et Nutrition en Zones Semi-Arides, Algérie.

Corresponding author e-mail: naggaroumeldjilali@yahoo.fr

Abstract

La présente étude s'intéresse au cèdre de l'Atlas (*Cedrus atlantica*) relevant du Parc National de Theniet El Had (nord-ouest d'Algérie). Cette cédraie désignée comme étant l'une des plus belles curiosités naturelles, est sujette à un étage bioclimatique subhumide à hivers froid. L'analyse ecodendrométrique consiste à une recherche d'éventuelles relations entre les peuplements (caractérisé par des variables dendrométriques) et les descripteurs écologiques (exposition, pente, altitude...). De ce fait des placettes temporaires circulaires, de cinq ares de surfaces sont installées. Les résultats de l'analyse de la variance montrent un effet altitudinal sur la croissance des peuplements. En fait la croissance est d'autant meilleure à des élévations de plus de 1400m d'altitude.

Mots clé : Cèdre de l'Atlas, croissance, variables dendrométriques, descripteurs écologiques

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➢ **POSTER PRESENTATION**

Effects of Mancozeb on Zebrafish (*Danio Rerio*) Ovary Tissues

Elif Uzun[1*], Cansu Akbulut[1], Nazan Deniz Yön[1]

[a]Sakarya University, Science and Letters Faculty, Department of Biology, Sakarya, TURKEY

elif_6161_54@outlook.com

Abstract

Mancozeb is a fungicide which belongs to a subclass of carbamate pesticides called dithiocarbamates (ethylenebisdithiocarbamates - EBDC). Its main metabolite, carbondisulfide affects nervous system via inhibiting enzyme activity by complexing with metal-containing enzymes. Ecotoxicological effects of mancozeb in aquatic organisms haven't been well understood. So, in this study investigation the histopathological effects of different concentrations of mancozeb on zebrafish ovary tissues were aimed.
Zebrafish were maintained under the standardized conditions at 28ºC ± 1 ºC. The light / dark cycle was 14h/10h. In the study, two dose groups (5 ppm and 7.5 ppm mancozeb) and one control group were determined. After 48 hours of adaptation, mancozeb were added to the aquarium. For the histological analysis, at the end of the fifth day, the fishes were anaesthetized in the ice water and tissues were dissected. Tissues were fixed in Bouin's fixative for 24 h . Tissues were dehydrated and embedded in the parafin wax and sectioned at 5 µm thickness and stained with Hematoxylin-Eosin, Periodic Acid Schiff (PAS) and Masson trikrom. The samples were evaluated by examining under the light microscope.
In control group, normal ovary histology was observed.When compared to controls, degeneration was observed in the integrity of ovarium morphology in the experimental groups. . In 5 ppm exposure group, decrease in the primary oocyte numbers was observed . 7.5 ppm exposure group, openings were detected between the vitelline membrane and ooplasm. Degenerations were also detected.

Keywords: Zebrafish, Mancozeb, Ovary, Histology

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➢ **POSTER PRESENTATION**

Kronik Retinol Uygulaması ve Yaşlanma

Leyla Orunç, Handan Uysal*
Atatürk Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Erzurum, Türkiye
lyl.rnc2010@gmail.com

Özet

Terpenler sekonder metabolitlerin bir grubudur. Bunlar esansiyel yağ, reçine, mum ve kauçuk gibi doğal ürünlerin ana bileşenini oluştururlar. Özellikle iğne yapraklı bitkiler tarafından üretilirler. Ancak Papilionidae (kılıçkuyruklular) familyasına ait kelebekler de terpen salgılamaktadır. Turunçgiller, limon, çam, karanfil, nane, gül, adaçayı, gibi bitkilerin kök, yaprak, çiçek, meyve, tohum gibi kısımlarının hoş kokuları ve tatları terpenlerden kaynaklanmaktadır. Limondaki limonen, çam ağaçlarındaki pinen, karanfildeki öjenol ve güldeki geraniyol terpendir. Domates, lahana, havuç, ıspanak, biber, kavun ve greyfurt ise retinol bakımından zengindir. Terpenler gıda, temizlik, tıp, eczacılık gibi alanlarda sıklıkla kullanılmaktadır. Ancak bu maddelerin kullanımında doz-süre etkileşimi önemli midir? Farklı bir bakış açısıyla bu maddeler canlılarda ömür uzunluğu üzerinde nasıl bir etkiye sahiptirler? Sunulan çalışmada model organizma olarak *Drosophila melanogaster*'in Oregon R yabanıl soyu kullanılmış ve bu soyun erkek ve dişi popülasyonunda kronik retinol uygulamasına bağlı olarak gözlenebilecek olası ömür uzunluğu değişiklikleri araştırılmıştır.

Deneysel prosedür için farklı dozlarda retinol (50,100,200,400ppm) içeren deney grupları ile saf su ve retinol'ün çözücüsü olan dimetil sülfoksit (DMSO) kontrol grupları oluşturulmuştur. Üç tekerrürlü gerçekleştirilen her denemede aynı yaşlı (72±4 saatlik) 100♂ ve 100♀ kullanılmıştır. Tüm deney gruplarına ait yaşayan bireyler, haftada iki kez taze hazırlanan besiyerlerine aktarılarak son birey ölünceye kadar bu işlem tekrarlanmış ve her aktarımda ölen bireyler kaydedilmiştir. İstatistiksel değerlendirmeler için tek yönlü varyans analizi kullanılmıştır.

Elde edilen değerlere göre ortalama ömür uzunluğu ♀popülasyonu için saf su kontrol ve DMSO kontrol grubunda 49,16±1,99 ve 48,85±1,85; ♂popülasyonunda da 48,48±2,24, 48,32±2,22 gündür (P>0,05). Kronik retinol uygulanan ♀popülasyonunda ise en düşük ve en yüksek (50-400ppm) uygulama gruplarında bu değerler 46,23±1,35 ve 29,31±1,00; ♂popülasyonunda da 41,85±1,20 ve 26,79±1,20 gün olarak bulunmuştur (P<0,05). Artan konsantrasyona bağlı olarak ömür uzunluğunda gözlenen azalma için negatif korelasyon değeri de ♀♀'de R:-0,718, ♂♂'de R:-0,698 olarak hesaplanmıştır. Sonuç olarak bu maddenin sürekli alımı canlı sistemlerde sınırlandırıcı bir etken olarak popülasyon yaşlanmasına sebep olabilmektedir.

Anahtar kelimeler: *Drosophila melanogaster*, terpen, retinol, yaşlanma

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➢ **POSTER PRESENTATION**

Endüstriyel Tekli Enzimlerin Cu^{2+} İyonu İle Yaptığı Nanokompozitlerin Toz Deterjanlarda Kullanılan

Didar Taşdemir[1*], Ahmet Katı[2], İsmail Öçsoy[1*]

[*1]Erciyes Üniversitesi, Eczacılık Fakültesi, Analitik Kimya Anabilim Dalı, Kayseri, Türkiye
[2]Araştırma Geliştirme Merkezi, Hayat Kimya, Kocaeli, Türkiye

Sorumlu yazar e-mail: ismailocsoy@erciyes.edu.tr , didarda66@gmail.com

Özet

Yeni bir immobilizasyon tekniği geliştiren Dr. Zare ve ark. bu teknikle enzimin hem kararlılığında hem de katalitik aktivasyonunda önemli oranda artış sağlamışlardır ve ilk olarak organik bileşen olarak sığır serum albumin (BSA) proteinini, inorganik bileşen olarak ise Cu(II) iyonunu kullanarak fosfat tamponu ortamında (PBS) çiçek şekilli hibrit nano yapıları sentezlemişlerdir. Bu yapıların üretim tekniği enzimlere uygulandığı zaman ise yüksek katalitik aktivite ve kararlılık gözlenmiştir.
Enzim teknolojisinin giderek gelişmesi ürünlerin kullanım alanlarının çeşitliliği ve mali değerinin çok yüksek olması nedeniyle endüstriyel enzimler ile ilgili alanında yapılan çeşitli araştırmalar daha da önem kazanmaktadır. İlaç, gıda, tekstil, kağıt ve deri endüstrisi, kozmetik, parfümeri, biyosensör sektörlerinin yanı sıra deterjan sanayisinde de enzimlerin önemi büyüktür. Deterjanlara, temizleme etkilerini artırabilmek için bazı katkı maddeleri konulur.Bunlara temizleme gücünü arttırıcı maddeler, parfüm, enzimler, ağartıcılar, korozyon önleyiciler, antiseptik maddeler,yüzey aktif maddeler ve aşınma önleyiciler örnek verilebilir. Bu çalışmada enzimlerin lekeleri çıkarmak için ihtiyaç duyulan üstün bir temizleme performansı göstermeleri nedeniyle deterjanlarda kullanılmasından yola çıkılarak Proteaz, Amilaz ve Mannanaz enzimleriyle çalışılacaktır. Bu enzimler belirli oranda karıştırılarak, Cu^{2+} iyonu kullanılarak fosfat tampon (PBS) ortamında yeni bir immobilizasyon yöntemi ile çiçek benzeri hibrit nanoyapılar (HNY) sentezlenerek deterjanlarda kullanılması hedeflenmiştir. Oluşan enzim-HNY'lerin yüksek aktivasyonu ile birlikte deterjanların leke çıkarmada etkinliğinin büyük oranda arttığı gözlenirken bu sayede deterjan sanayisinde çok büyük ilerleme kaydedileceği öngörülmektedir.

Anahtar Kelimeler: Nanoflowers, Mannanaz, Amilaz, Proteaz $CuSO_4$, hibrit nano yapı, aktivite, morfoloji, inkübasyon süresi

Teşekkür: Bu çalışma Erciyes Üniversitesi Bilimsel Araştırma Projeleri Birimi tarafından TSA-2017-7157 nolu proje ile desteklenmektedir.

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➢ **POSTER PRESENTATION**

The Self-Assembly of BSA–Au NP Nanoflowers with Increased Efficacy in Antioxidant and Antimicrobial Activities

Muserref Arslan Ocsoy[1], Didar Tasdemir[2], Cagla Celik[2], Nilay Ildiz[3], Vedat Yilmaz[2]*, Ismail Ocsoy[2]*

[1]Erciyes University, Faculty of Science, Department of Physics, Kayseri, Turkey
[2]Erciyes University, Faculty of Pharmacy, Department of Analytical Chemistry, Kayseri, Turkey
[3]Erciyes University, Faculty of Pharmacy, Department of Pharmaceutical Microbiology, Kayseri, Turkey

*Corresponding authors; ismailocsoy@erciyes.edu.tr ; vyilmaz@erciyes.edu.tr

Abstract

Several metallic nanoparticles including gold and platinum nanoparticles (NPs) act as catalysts with excellent performance and versatility. Herein, we study, for the first time, the formation of BSA protein and gold NPs (Au NPs) integrated nanocomposite as a nanobiocatalyst and investigate their catalytic and antioxidant activities. The amin and thiol groups of BSA molecules react with pre-synthesized Au NPs and form a novel nanocomposite (BSA-Au NK). The self-assembly of BSA on Au NPs may improve their stability in aqueous solution and enhance their catalytic and antioxidant properties. The structure of BSA-Au NK is characterized by Bradford assay, TEM, SEM, FT-IR, EDX and XRD.

Keywords: BSA, Au NP, catalytic and antioxidant properties

Teşekkür: Bu çalışma Erciyes Üniversitesi Bilimsel Araştırma Projeleri Birimi tarafından TSA-2017-7157 nolu proje ile desteklenmektedir.

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➢ **POSTER PRESENTATION**

Isolation and Purification of Hesperidin and Hesperetin from Orange Peels and Synthesis of their Derivatives

Çinel Köksal Karayıldırım[1], Tamer Karayıldırım[2], Özgür Tağ[3], Kadir Ay[4], Özgen Alankuş[2]

[*1]Department of Biology, Faculty of Science, Ege University, 35100, Bornova, İzmir, Turkey.
[2]Department of Chemistry, Faculty of Science, Ege University, 35100, Bornova, İzmir, Turkey.
[3] Bionorm Natural Products Production & Marketing Co. ITOB Org., Menderes, Turkey
[4]Department of Chemistry, Faculty of Science&Letters, Manisa Celal Bayar University, 45140 Yunusemre, Manisa, Turkey

Corresponding author e-mail: tamer.karayildirim@ege.edu.tr

Abstract

Flavonoids continue to capture the interest of scientists from many different disciplines because of their structural diversity, biological and ecological significance (e.g. as the coloured pigments in many flower petals), and health-promoting and anti-cancer properties. The number of different flavonoid structures that are theoretically possible is astronomical, based on the assumption that ten carbons of the flavonoid skeleton can be substituted by a range of different groups, among which are hydroxyl, methoxyl, methyl, isoprenyl and benzyl substituents.

The most known flavonoids are anthocyanidins in blueberries, hesperidin in citrus fruits, flavan-3-ols in black tea. Hesperidin is a flavanon type glycoside which has been found in citrus fruits (Rutaceae) about 1000-5000 mg for per kilogram of fruits. Naturally multifunctional Rutaceae hesperidin and its aglycone hesperetin have a great variety of biopharmaceutical activities, e.g. anti-cancer, anti-inflammatory, antioxidant and antitumor. Consequently, hesperidin is widely used in the clinical treatment of many diseases, and it also serve as a raw ingredient for different drugs in pharmaceutical industry.

In this study, the dried and ground orange peels were extracted with n-hexane and methanol consecutively. The obtained methanol extract was subjected to open column chromatography and eluated with different solvent system in order to obtain hesperidin (I). After isolation of hesperidin, acidic hydrolysis was performed and hesperetin was obtained as pale yellow powder. Both hesperidin and hesperetin were reacted with NaOH and I2 pyridine and dosimin and diosmetin were obtained as products respectively.

Keywords: Hesperidin, Dosimin, Diosmetion, Isolation, Synthesis

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➢ **POSTER PRESENTATION**

Higher Serum Perfluorooctanoic acid (pfoa) and Perfluorooctane Sulfonic Acid (pfos) Levels in Chronic Kidney Disease

Şana SUNGUR*[1], Muaz KÖROĞLU[1], Faruk Hilmi TURGUT[2]

[*1]Mustafa Kemal University, Science and Letters Faculty, Department of Chemistry, 31024 Hatay, Turkey
[2] Mustafa Kemal University, Faculty of Medicine, Department of Nephrology, 31024 Hatay, Turkey

sungur@mku.edu.tr

Abstract

Perfluorinated compounds are used in a wide range of products of all day life. Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) are two perfluorinated compounds ubiquitously present in the environment, which could pose potential adverse effects on human health (Tang et al., 2014). Chronic kidney disease (CKD) is a major public health problem. Identifying novel risk factors for CKD, including widely prevalent environmental exposures, is therefore important. Results from experimental animal studies have suggested that an association between PFCs and CKD is plausible. Histopathologic observations have indicated that greater concentrations of PFOS and PFOA were found in the kidneys because the primary route of PFC excretion is through the kidneys (Han et al., 2005; Yoo et al., 2009; Butenhoff et al., 2004). However, in humans, the relation between serum PFCs and CKD has not been examined. Therefore, examination of the presence of PFCs in chronic kidney patients is essential. The aim of this study is to investigate the relationship between chronic kidney disease and concentration of perfluorinated compounds in serum samples.

The mean value of PFOS was found 0.765 ng ml^{-1} in chronic kidney patients and 0.221 ng ml^{-1} in control group. The mean PFOA concentration was determined 0.390 ng ml^{-1} in chronic kidney patients. In the control group, PFOA was found only one serum sample (0.873 ng ml^{-1}). PFOS values were significantly higher in chronic kidney patients than in the healthy control group ($p = 0.009$). PFOA values were not statistically significant even though they were higher than the control group ($p = 0.052$).

Keywords: Perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), chronic kidney disease, LC-MS/MS.

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➢ **POSTER PRESENTATION**

Synthesis of Thiophene-Imidazol-Containing Hydrazones

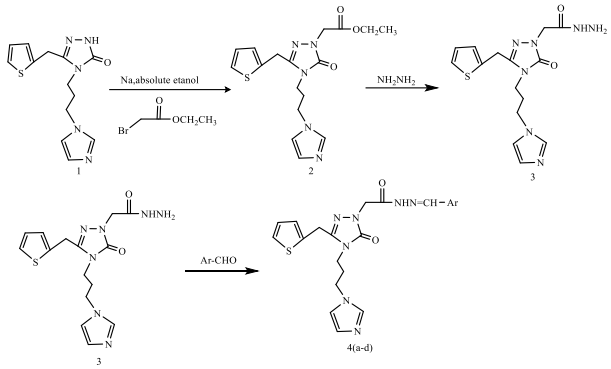
Yasemin ÜNVER[*,1], Dilek ÜNLÜER[1], Esra DÜĞDÜ[1], Fatih ÇELİK[1]

[1]Department of Chemistry, Faculty of Sciences, Karadeniz Technical University,61080 Trabzon, Turkey

unver.yasemincan@hotmail.com

Abstract

Triazole compounds are known to have very important biological properties such as antimicrobial, antitumor, antioxidant, enzyme inhibitor, antidepressant, antituberculosis, antiinflammatory, antihypertensive [1]. Inparticularly, ribavirin (antiviral), rizatriptan (antimigraine), alprazol (sedative), vorozole, letrozole, anastrozole (antitumor), posaconazole, ketoconazole and intraconazole (antimantar) has been used as drugs. Another important heterocyclic circle is imidazole. They are known to exhibit antibacterial and antifungal properties [2]. Another pharmacologically effective structure is hydrazones. Hydrazonic compounds are found to have antibacterial, antifungal, antioxidant, anticonvulsant,anti-inflammatory effects[3].



Keywords: Triazole, imidazole, Hydrazone

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➢ **POSTER PRESENTATION**

Determination of Antioxidant Migration Levels from Polyethylene Films into Legumes

Şana SUNGUR*[1], Çetin TUNUR[1]

[*1]Mustafa Kemal University, Science and Letters Faculty, Department of Chemistry, 31024 Hatay, Turkey

sungur@mku.edu.tr

Abstract

Antioxidants are key ingredients in the compounding of polyethylene and polypropylene due to the limited stability of polyolefin to high temperatures and ultraviolet light. Determination of antioxidant levels in polyolefinic material gives information about their potential migration and at the same time a measurement of plastic quality (Al-Malaika, 2004). Although there are many studies on the migration of antioxidants from polyolefinic materials, in general, they are focused on a few antioxidants, of which the phenolic antioxidants Irganox 1010 or Irganox 1076 and the phosphide Irgafos 168 are the most usual (Dopico-Garcia et al., 2007). The aim of this study is to determinate of Irganox 1010 and Irganox 1076 migration levels from polyethylene packages into legumes such as rice, cracked wheat, corn, white beans, chickpea at two different temperatures (0 ºC and 25 ºC).

To determine the migration levels of antioxidants, the legumes in the polyethylene packages are stored at two different temperatures for 30 days. Specific migration levels of each antioxidant were determined by GC-MS after pretreatment with solid-phase extraction.

Irganox 1076 concentrations were found ranging from 0.350 – 1.405 mg kg^{-1}, while Irganox 1010 levels were in the range of 0.423 – 0.656 mg kg^{-1} in the legume samples. Migration levels of antioxidants into legumes increased with increasing antioxidant content of polyethylene packages and storage time. Furthermore, it has been determined that migrations occurring in refrigerated samples are less than samples stored at room temperature.

Keywords: Irganox 1076, Irganox 1010, migration, legume, GC-MS.

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➢ **POSTER PRESENTATION**

Türkiye'de Çocukluk Çağı Zehirlenmelerinin Retrospektif Değerlendirilmesi

Hülya Karadeniz[1], G.Seçkin Kırcı [2], Mehmet Askay[3], H. İlhan Aydoğdu[3], Erdal Özer[1,3]

[1]Karadeniz Teknik Üniversitesi, Adli Bilimler Enstitüsü, Trabzon, Türkiye
[2]Trabzon Kamu Hastaneleri Birliği, Kanuni Eğitim ve Araştırma Hastanesi, Türkiye
[3]Karadeniz Teknik Üniversitesi, Tıp Fakültesi, Adli Tıp Anabilim Dalı, Trabzon, Türkiye

hulya-karadeniz@hotmail.com

Özet

Zehirlenmeler tüm dünyada özellikle çocukluk yaş grubunda, hala sık görülen önemli bir sağlık problemdir. Türkiye'de de özellikle küçük çocuklarda zehirlenmelere bağlı mortalite ve morbiditede önemli artışlar gözlenmektedir. Zehirlenmeye yol açan etkenler yaşanılan bölgeye, toplumun gelenek ve göreneklerine, eğitim düzeyine ve mevsimlere göre değişkenlik gösterebilir. Bu nedenle her ülkenin, hatta her bölgenin zehirlenme ile ilgili özelliklerinin belirlenip, uygun önlemlerin alınması gerekmektedir. Merkezi bilgi toplamadaki yetersizlik nedeniyle zehirlenmelerin Türk çocuklarındaki epidemiyolojisi ve toplam zehirlenme sayısının kesin tahmini çok zordur. Bu çalışmanın amacı, Türkiye'nin farklı bölgelerinde çocukluk çağı zehirlenmeleri ile ilgili yapılan retrospektif çalışmaların incelenmesi ve bu çalışmalardan elde edilen sonuçlar ile ülkemizdeki çocukluk çağı zehirlenmelerinin epidemiyolojik ve klinik özeliklerinin gözden geçirilmesi ve alınabilecek önlemlerin belirlenmesi amaçlanmıştır. Bu çalışmada ülkemizin 10 ilinde yapılan çocukluk çağı zehirlenmeleri yaş, cins, orjin, zehirlenmeye neden olan etken, bulgular ve sonuçlar açısından incelendi. Çalışmalarda zehirlenme vakalarında ilk sırayı 0-6 yaş grubu ve çoğunlukla erkek çocuklarda daha fazla görüldüğü bildirilmektedir. Bu yaş grubundaki zehirlenmeler genellikle kaza sonucu tekli ilaç alımıyla ortaya çıkmaktadır. İkinci sık görülen yaş grubu ise adölesan grubu (13-18 yaş) olup zehirlenmeler kız cinsiyette daha fazla görülmekte, birden çok ilaçla ve daha çok intihar amacıyla olmaktadır. Yapılan çalışmalar incelendiğinde zehirlenme nedeni olarak ilk sırada evde kullanılan ilaçlar olup, bunları temizlik ve koroziv maddeler, petrol ürünleri, tarım ilaçları takip etmektedir. Zehirlenmeler sıklıkla ilkbahar ve yaz mevsiminde görülmektedir. Sonuç olarak, zehirlemeler en sık 0-6 yaş arasında görülmektedir. Ailelerin ve çocuk bakıcıların eğitimi ve alınacak basit önlemlerle oyun çağındaki çocukların kaza sonucu olan zehirlenmelerinin büyük ölçüde önlenebileceğini düşünmekteyiz.. Özellikle bu eğitimlerde medyada etkin olarak kullanılmalıdır. Diğer önemli bir sonuçta, bölgesel hatta her ilin zehirlenme haritalarının bilinmesi çocukluk çağı zehirlenmelerinin önlenmesine, morbidite ve mortalitenin azaltılmasına önemli katkıda bulunulacaktır. Ayrıca zehirlenme tedavisinde toksikolojinin ayrı bir disiplin olarak kabul edilmesi ve acil servis çalışanların toksikoloji bilgilerinin güncellenmesi, toksikolojik tanı olanaklarının sağlanması zehirlenme sonucu hastaneye başvuran vakaların tanı ve tedavisine yardımcı olacağı kanaatindeyiz.

Anahtar Kelimeler: Zehirlenme, çocukluk çağı, retrospektif, morbidite, mortalite

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➢ **POSTER PRESENTATION**

The Essential Oil Contents of Some *Salvia* Taxa Registered to the Flora of Turkey

Belgin Coşge Şenkal[*1], Hülya Doğan[2], Cüneyt Cesur[1], Tansu Uskutoğlu[1]

[*1]Bozok University, Faculty of Agriculture, Field Crops Department, Yozgat, Turkey
[2]Bozok University, Vocational School of Technical Sciences, Department of Seed Science, Yozgat, Turkey

e-mail:belgin.senkal@bozok.edu.tr, bcosgesenkal@gmail.com

Abstarct

The members of Lamiaceae or Labiateae family comprising of nice-smelling herbs and represented with 45 genus, also includes Salvia genus, because containing essential and aromatic oils, they are important to pharmacology and perfumery industry. 97 species of *Salvia* genus are naturally spread out in flora of Turkey. 51 species of them are endemic. In this research, 4 *Salvia* taxa (*S. verticillata* L. subsp. *amasiaca* (Freyn&Bornm.), *S. candidissima* Vahl. subsp. *occidentalis* Hedge, *S. sclarea* L., and *S. aethiopis* L.) were collected from their natural flora and the components and essential oil contents of each taxa were examined. The essential oil ratio obtained aerial parts of taxa varied from 0.03% to 0.24%. In the essential oils obtained; spathulenol, caryophyllene oxide, β-guaiene, sclareol, valeranone and isolongifolene were recorded as main components.

Keywords: *Salvia* L., essential oil, GC-MS

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➢ **POSTER PRESENTATION**

Histopathological Effects of Endothall (7-Oxabicylo[2.2.1]Heptane-2,3-Dicarboxylic Acid) on Kidney Tissue of Zebrafish (*Danio rerio*)

Cansu Akbulut[1], Büşra Fidan[1] , Nazan Deniz Yön[1*]

[1]Sakarya University Science and Letters Faculty Department of Biology, SAKARYA TURKEY

Corresponding author e-mail: ndyon@sakarya.edu.tr

Abstract

Endothall is a relatively water-soluble contact herbicide, primarily used to control of submerged weeds. Since endothall is effective in treating a large range of plants, it may have a widespread effect on non target plants, especially when applied as a whole-pond treatment. Although many studies have been done with various endothall formulations that address both toxicity and environmental fate and persistence, it is still a herbicide under investigation for its effect. At the same time, herbicides are mixing with groundwater and affect the ecosystem in the water. There are some consequences of mixing these substances into the aquatic ecosystem. Our purpose in this study is to determine these results with histological methods. After one week adaptation period zebrafish divided into four group (n=10) as one control and 3 experimental groups (0.1 mg, 0.5 mg and 1 mg/L). Kidney were dissected after 5 day of the exposure. Standard histological procedures were performed. In control group normal kidney histology was observed. In 0,1mg/L exposed group; vacuolization and necrosis at tubule cells and interstitial cells, swelling and hypertorphy at tubule cells, fusion at proximal tubule, degeneration at glomerulus structure and glomerular capsule were observed. In 0,5 mg/L exposed group; vacuolization at proximal tubule cells, necrosis at distal tubule cells, interstitial cells and collecting duct cells, fusion at proximal and distal tubule, hemorrhage, hyperplasia, hypertrophy and degeneration at tubule cells, disjunction at tubule structure were monitored. In 1mg exposed group; disjunction at tubule structure, necrosis at interstitial cells, fusion at proximal tubule, hemorrhage, hyperplasia and hypertorphy at proximal tubule cells, vacuolization at tubule cells, expansion at tubule lumen, degeneration at glomerulus structure and increased intercapsular space were detected.

Keywords: zebrafish, endothall, kidney, histology

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➢ **POSTER PRESENTATION**

N-Etil-N-Nitrozüre'nin Zebra Balığı (*Danio rerio*) İnce Bağırsak Dokusu Üzerine Histopatolojik Etkileri

Cansu Akbulut[1], Büşra Fidan[1] , Meltem Yeğin[1*], Nazan Deniz Yön1[1]

[1]Sakarya Üniversitesi Fen ve Edebiyat Fakültesi Biyoloji Bölümü, SAKARYA TURKEY

Sorumlu yazar e-mail: meltemyegin17@hotmail.com

Özet

N-Nitrozo bileşikleri, 20. yüzyılın başından itibaren bilinen bir maddedir. Ancak 1956 yılında hayvanlar üzerinde yapılan araştırmalar sonucunda toksik, teratojenik, mutajenik ve kanserojenik etkilerinin olduğu belirtilmiştir. Bu bileşikler gıdalarda katkı maddesi ya da doğal olarak bulunan nitrat ve nitritin çeşitli biyolojik aşamalar sonucu metabolize olmasıyla vücutta endojen olarak meydana gelmekte veya mikrobiyal dayanıklılığın artırılması amacıyla et ürünleri, balık ve peynirlere ilave edilen nitrit tuzlarının gıdaların içeriğindeki aminlerle tepkimeye girmesi sonucunda vücuda alınmaktadır. N-Etil-N-Nitrozüre (ENU) günümüzde gıda ürünlerini koruyucu olarak kullanılan önemli bir maddedir. Bu çalışmada N-Etil-N-Nitrozüre' nin zebra balığı ince bağırsak dokusu üzerindeki histopatholojik etkilerinin araştırılması amaçlanmıştır. Bir haftalık adaptasyon süreci sonunda zebra balıkları bir kontrol grubu ve 2 doz grubu (0,5 mg/L ve 0,25 mg/L) olmak üzere 3 gruba ayrılmıştır. Doz uygulandıktan 1 saat sonra her iki gruptan da balıkların yarısı alınmış ve diseksiyonları gerçekleştirilmiştir. Kalan balıklar ise 1 saat daha bekletilerek 2 saat maddeye maruz bırakılmış ve ardından onların da diseksiyon işlemleri gerçekleştirilmiştir. Standart histolojik prosedür uygulanmıştır. Kontrol grubunda normal bağırsak histolojisi gözlenmiştir. 1 saat 0,5 mg/L ENU uygulanmış grupta epitel hücreler ve submukoza arasında ayrılmalar, goblet hücrelerinde dejenerasyon, sayıca artma ve şişme, çeşitli dejenerasyonlar, hipertrofi ve ödem, villuslarda füzyon, nekroz, hemoraji gözlenmiştir. 2 saat 0,5 mg/L ENU uygulanmış grupta, nekroz, villuslarda füzyon, epitel hücreleri ve submukoza arasında ayrılma, goblet hücrelerinde şişme, hemoraji, hipertrofi ayrıca dejenerasyonlar gözlenmiştir. 1 saat 0,25 mg ENU uygulanmış grupta, villuslarda füzyon, goblet hücrelerinde dejenerasyon, hipertrofi, hemoraji, nekroz ve vakuolizasyon gözlenmiştir. 2 saat 0,25 mg ENU uygulanmış grupta, çeşitli dejenerasyonlar ve hipertrofi, nekroz, villuslarda füzyon, hemoraji, goblet hücrelerinde şişme ve dejenerasyon gözlenmiştir.

Anahtar Kelimeler: zebra balığı, N-etil-N-nitrozüre, ince bağırsak, histoloji

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➢ **POSTER PRESENTATION**

Bioprotective Properties of Lactobacillus reuteri

Sabire YERLİKAYA, Hülya ŞEN ARSLAN

Karamanoğlu Mehmetbey University, Engineering Faculty, Food Engineering Department, Karaman, TURKEY

Corresponding author e-mail: sabirebattal@kmu.edu.tr

Abstract

Foods people consume in their diet for growing healty are important. New foods are being developed every day due to consumer demand. In order to ensure food safety, it is necessary to avoid process and to use natural additives as much as possible. Bipreservation method is recommended for this purpose. For this purpose, the antagonistic activities of lactic acid bacteria are utilized. Lactobacillus reuteri is a species of probiotic bacteria that live naturally in human intestine as well as many mammals and birds. It is one of the rare species of lactobacillus that has been harmonized with life in the digestive system since it is found naturally in the human intestine. Lactobacillus show antimikrobial activity with antimicrobial compounds as hydrogen peroxide, diacetyl, bacteriocin and reuterine. H_2O_2, an oxidative compound, has a lethal effect on vegetative cells and spores of many microorganisms. It is found diacetylin have inhibitory effect on yeasts and Gram-positive bacteria. Bacteriocins are in protein structure and has antimicrobial activity on mostly on Gram + bacteria. Reuterin has been reported to have an inhibitory effect on *Salmonella, Shigella, Clostridium, Staphylococcus, Listeria, Candida and Trypanosoma* strains.

Keywords: biopreservation, lactic acid bacteria, bacteriocin, reuteri

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➢ **POSTER PRESENTATION**

Effects on Human Health of Animal-Derıved Compounds Used as Functional Food

Hülya Şen Arslan[1*], Sabire Yerlikaya[1]

[1] Karamanoglu Mehmetbey University, Engineering Faculty, Food Engineering Department , Karaman, Turkey.

hulyasen3842@hotmail.com

Abstract

Nutrients function basically to ensure the metabolic needs of the organism. In addition to macro and micronutrient properties of foods, it also contains components which have positive effects on health. Scientific research reveals that there is a relationship between diet and illness. Many studies indicate that diet plays a role in the prevention of chronic diseases. In recent years, the prevention of diseases from "natural" routes of some foods and the scientific put forward of their effectiveness in treatment have increased the importance of nutritional support in protecting human health. For this reason, functional foods and natural health products have become more and more consumed. In addition to its nutritional properties, it is also known as functional food which is physically beneficial to the human body and / or which can reduce the risk of chronic illness. Animal-derived compounds play an active role in functional foods. The main compounds used in functional foods as animal-derived compounds are omega-3 fatty acids, conjugated linoleic acid, prebiotics and probiotics. In this study, information about functional foods of animal origin which have positive effects on human health will be given.

Keywords: Bioactive compounds, eggs, functional foods, meat, milk.

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➢ **POSTER PRESENTATION**

In vitro Cytotoxicity Properties of Chalcone-Cyclotriphosphazenes Bearing Trimethoxy Groups

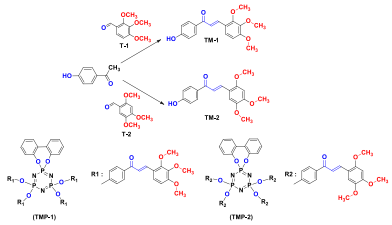
Hacer Doğan[1], Eray Çalışkan[2], Çiğdem Tekin[4], Kenan Koran[1*], Suat Tekin[3], Süleyman Sandal[3], A. Orhan Görgülü[1]

[*1]Firat University, Faculty of Science, Department of Chemistry, Elazığ, Turkey
[2]Bingol University, Faculty of Science, Department of Chemistry, Bingöl, Turkey
[3]Inonu University, Faculty of Medicine, Department of Physiology, Malatya, Turkey
[4]Inonu University, Faculty of Medicine, Department of Physiology, Malatya, Turkey

Corresponding author e-mail: kkoran@firat.edu.tr

Abstract

In this study, 1-(4-hydroxyphenyl)-3-(2,3,4-trimethoxyphenyl)prop-2-en-1-one **(TM-1)** and 1-(4-hydroxyphenyl)-3-(2,4,5-trimethoxyphenyl)prop-2-en-1-one **(TM-2)** compounds containing trimethoxy groups were obtained from 4'-hydroxyacetophenone with 2,3,4-trimethoxybenzaldehyde and 2,4,5-trimethoxybenzaldehyde by Claisen-Schmidt condensation reaction.[1,3] New substituted organocyclophosphazene compounds **(TMP-1 and TMP-2)** have been obtained from the reaction of 1-(4-hydroxyphenyl)-3-(2,3,4-trimethoxyphenyl)prop-2-en-1-one and 1-(4-hydroxyphenyl)-3-(2,4,5-trimethoxyphenyl)prop-2-en-1-one compounds with phosphazene compound bearing dioxybiphenyl[1,2], respectively. The structure characterizations of **TMP-1** and **TMP-2** were confirmed by FT-IR, ^{31}P, ^{1}H and ^{13}C-APT NMR spectroscopy methods.



In vitro cytotoxic effects of **TMP-1** and **TMP-2** compounds against various human cancer cell lines (MCF-7, A2780, PC-3) at different concentrations (1, 5, 25, 50 and 100 µM) were investigated using the MTT Assay method.[1,4] The $LogIC_{50}$ values of **TMP-1** and **TMP-2** were determined by using a Graphpad prism 6 programs. The obtained results showed that **TMP-1** and **TMP-2** compounds have a powerful cytotoxic activity especially at high doses ($p < 0.05$).

Keywords: Cytotoxicity, Cyclotriphosphazene, MCF-7, PC-3, A2780 Cell Lines
Acknowledgement: This work was supported by The Scientific and Technological Research Council of TURKEY (TUBITAK). Project number 116Z758.

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➢ **POSTER PRESENTATION**

$SnCl_2$/Hekzametildisilazan Katalizörü Kullanılarak Hetero Halkalı Organik Bileşiklerin Polimerleştirilmesi

Funda ALTAN[1*], Asgar KAYAN[2]

[*1]Kocaeli Üniversitesi, Fen Bilimleri Enstitüsü, Kimya, Kocaeli, Türkiye

funda.altan93@gmail.com

Özet

Bu çalışmada (1:1) ve (1:2) mol oranıyla $SnCl_2$/n(HMDS) (n=1,2) koordinasyon katalizörleri oluşturulmuş ve oluşturulan bu iki katalizörün aktivitesini anlamak amacıyla bu katalizörler ε-kaprolakton (ε-CL), 3-glisidiloksipropiltrimetoksisilan (GPTS), laktit (LA), glisidil izopropil eter (İPGE) ve stiren oksit (SO) gibi halkalı moleküllerin halka açılma polimerizasyonunda kullanılmıştır. Polimerlerin molekül kütleleri jel geçirgenlik kromatografisi (GPC) ile belirlenmiştir. Polimerler ayrıca ^{1}H-NMR, ^{13}C-NMR ve FT-IR spektoskopisiyle karakterize edilmiştir. Halka açılma polimerizasyonu deneyleri çeşitli sıcaklıklarda, laktit monomeri hariç çözücüsüz ortamda gerçekleştirilmiştir. Spektroskopik yöntemlerle bulunan sonuçların monomer değerinden farklı olması ve GPC sonuçlarının oligomer değerinden büyük olması halka açılma polimerizasyonunun başarılı bir şekilde gerçekleştiğini ve polimer oluşumunu kanıtlamaktadır. Bu iki katalizörden (1:1) mol oranındaki $SnCl_2$/HMDS katalizörünün bu beş farklı monomerde daha etkili olduğu ve halka açılma polimerizasyonunu daha kolay gerçekleştirebildiği gözlemlenmiştir. Halka açılma polimerizasyonuna sokulan bu beş farklı monomeri dönüşüm sıcaklıkları ve dönüşüm sürelerine göre sıralayacak olursak ε-CL > GPTS >LA > SO >İPGE sırlaması ortaya çıkmıştır.

Anahtar Kelimeler: Halka-açılma polimerizasyonu (ROP), Kalay katalizör

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➢ **POSTER PRESENTATION**

Growth-related hormone and cytokine levels in Honamlı and native hair goats during pubertal development

Alparslan Kadir Devrim[1*], Özkan Elmaz[2], Nuri Mamak[3], Mert Sudağıdan[4]

[1]Kırıkkale University, Faculty of Veterinary Medicine, Department of Biochemistry, Kırıkkale, TURKEY.
[2]Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Animal Science, Burdur, TURKEY.
[3]Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Internal Medicine, Burdur, TURKEY.
[4]Konya Food and Agriculture University, Strategic Product Research and Development Center (SARGEM), Konya, TURKEY.

Corresponding author* e-mail: akdevrim@hotmail.com

Abstract

Honamlı goats were identified as a new goat breed and had one of the highest meat production potential among the other goat breeds in Turkey. It was aimed to evaluate the changes of hormone and cytokine levels associated with growth period during puberty in Honamlı goats. Honamlı goats were originated from native hair goats, therefore parallel studies of sampling and analyzing were conducted also in native hair goats which have moderate meat production. Blood serum samples of Honamlı (n=90) and native hair goats (n=90) were obtained from the pure herds in Antalya. Levels of growth hormone (GH), myostatin (MSTN), insulin-like growth factor (IGF), growth hormone releasing hormone (GHRH), growth hormone releasing peptide (GHRP), leptin, transforming growth factor-betal (TGF-β1) and vascular endothelial cell growth factor (VEGF) levels were measured by ELISA in each breed in the age groups of 4, 8 and 12 months. The obtained data indicate interesting correlations among the age groups and examined hormone and cytokine parameters exhibited significant ($P<0.05$ and $P<0.001$) differences. The parameters investigated were usually begun to increase after 4 months of age in the both breeds and sexes. Therefore, this paper supported the view that the beginning of hormonal alterations of goats could occur at 4th month of age. The results reported here emphasize the primary role played by GH, MSTN, IGF-1, leptin, GHRH, GHRP, TGF-βi and VEGF in the first year growth period of goats. Our deepest gratitude is extended to Turkish Scientific and Technological Research Council - TÜBİTAK (Project No: 112O939) for financing this study.

Keywords: Growth endocrinology, Honamlı goat, native hair goat, pubertal development.

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➢ **POSTER PRESENTATION**

Cryopreservation of Fish Embryos

Serhat Engin

Ege University, Faculty of Fisheries, Department of Aquaculture, İzmir, Turkey

e-mail: serhat.engin@ege.edu.tr

Abstract

The control of reproduction is a key issue in aquaculture. Thus, obtaining new larvae for tank repopulation with precise timing depends on the correct and careful planning of broodstock management. In one way or another all fish species held in captivity exhibit some degree of reproductive dysfunction either caused by stress associated to captivity or inappropriate regulation of the environment (Mañanós *et al*., 2008). The male reproductive status is as important as the female reproductive status and the development of tools for evaluating spermatogenesis and sperm quality, as well as studies on male sperm quality of cultivated species, are of utmost importance. Today many fish species are frozen for a long time succesfully.

Fish embryo cryopreservation could play an important role in providing continuous supply of seedlings for aquaculture production and the conservation of commercially important and endangered fish species. However, this goal has not been achieved yet for any fish species. The difficulty in controlling the dynamics of cryoprotectant (CPA) and water movement into and inside the highly structurally complex embryos is probably the major impediment to successful cryopreservation.

With this presentation reveals about cryopreservation of fish embryos that is a new topic studies on Aquaculture.

Anahtar Kelimeler: Fish embryos, Cryopreservation, Biotechnology

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➢ **POSTER PRESENTATION**

Histo-Morphology of the Female Reproductive System of *Leptinotarsa decemlineata* (Say.) (Coleoptera: Chrysomelidae)

Nurcan Özyurt Koçakoğlu*, Selami Candan, Zekiye Suludere

Gazi University, Faculty of Science, Biology Department, 06500 Ankara, Turkey

Corresponding author e-mail: nurcanozyurt@gazi.edu.tr

Abstract

In this study, histomorphological structure of the female reproductive system in *Leptinotarsa decemlineata* (Say.) (Coleoptera: Chrysomelidae) which is economically important was investigated with light microscope and scanning electron microscope. Adult females of *L. decemlineata* were collected from the fields where potatoes are grown, in Nevşehir, in July 2017. The female reproductive system of *L. decemlineata* consists of two ovaries, a pair of lateral oviducts, a common oviduct. The ovaries have a lot of telotrophic-meroistic ovarioles. Each ovariole is enclosed in an epithelial sheath and has a terminal filament, a germarium, a vitellarium and a pedicel. The epithelial sheath surrounding an ovariole is continuous over the terminal filament and the pedicel. The germarium is cylindirical. There densely packed germ cells within the germarium from which the nutritive and oocyte cells differentiate. The vitellarium is characterized by oocytes in three different development stages: Previtellogenesis, vitellogenesis and choriogenesis. In the previtellogenic and vitellogenic stages, oocytes are attached to the germarium by means nutritive cords. In previtellogenesis, oocyte is surrounded by prefollicle epithelium. During vitellogenesis, the oocyte is surrounded by a single layer follicular epithelium. In choriogenesis stage, the epithelial layer around the oocyte rather thinned and formation of chorion layer was observed. At all stages, lipid droplets and protein granules were found in oocyte ooplasm. Mature oocytes pass through the pedicel, to the lateral oviduct. Each ovary has a lateral oviduct that ends at the common oviduct, then trough the vagina being fertilized and expelled. The trachea and tracheoles were seen at the surface of the sheath along the ovary.

Keywords: Oocyte, germarium, vitellarium, light microscope, scanning electron microscope.

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➢ **POSTER PRESENTATION**

Microbiological Quality of Some Herbal Teas Consumed During the Year in Tokat

Şeniz Karabıyıklı*, Mervenur Metin, Şeyma Ünver, Ayşe Seda Aral

*Gaziosmanpaşa University Faculty of Engineering and Natural Science Department of Food Engineering, 60250 Tokat, Turkey.

Corresponding author e-mail: senizkarabiyikli@hotmail.com, seniz.karabiyikli@gop.edu.tr

Abstract

Nowadays, one of the commonly consumed beverages is herbal teas because of the fact that it is a delicious drink and because of its positive contributions to health. In this study, 3 different herbal teas (A: sage, I: lime, B: rosemary) consumed most throughout the year in Tokat province were examined in terms of microbiological quality. The samples were analyzed as the dried plant state and the post-infusion tea state at the certain periods of infusion. Total mesophilic aerobic bacteria (TMAB), yeast-mold (Y&M) count and pH values were detected in all samples.

The TMAB count results of the dried plant samples (A, B, I) were between 3.2-5.6, the Y&M count results were between 2.1-5.4 log-cfu/g, and the pH values were between 6.2-7.14 . In the case of infusion tea samples, different results were obtained depending on the type of herbal tea used and the duration of infusion. The TMAB count results ranged from 2.0-4.2 log-cfu/ml initially (0 min), to 2.8-4.8 log-cfu/ml at the end of 30 min infusion. When the K&M numbers of the same samples were examined, it was seen that the count results were in the range of <2.0 to 5.7 log-cfu/ml. It is noticed that the pH values of the infusion tea samples were generally close to neutral values.

When the results are examined, it has been concluded that the herbal teas may have a potential risk in case of inadequate production, transport, storage and/or packaging stages. It has been observed that the number of microbiological population of herbal teas, offered without packaging, is high, and this hazard could be partially reduced by the infusion period. However, due to the consumption habits, infested tea at low temperature may still be risky, and the importance of possible mycotoxin hazard should be emphasized in consideration of the mold content.

Keywords: Sage, linden, rosemary, herbal tea, infusion.

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➢ **POSTER PRESENTATION**

Caligonellid (Acari: Caligonellidae) Mites in Dilek Peninsula and Büyük Menderes Delta National Park, Turkey

Mustafa Akyol [1*], Melis Pınar Gül [2]

[*1] Manisa Celal Bayar University, Faculty of Arts and Sciences, Department of Biology, Manisa, Turkey.
[2] Manisa Celal Bayar University, Institute of Science, Department of Biology, Manisa, Turkey

Corresponding author e-mail: makyol77@gmail.com

Abstract

Caligonellidae family is one of 11 families belonging to the Raphignathoidea supperfamily. This family was described by Grandjean (1944) based on *Caligonella humilis* Koch, 1838. Members of this family are predators that feed on small arthropods and are frequently found in habitats such as soil, leaf litter, tree bark, mushrooms, stored food, and bird nests. The peritreme on the dorsal surface of stylophore is usually used to distinguish the genera of this family, namely: *Caligonella* Berlese (1910), *Coptocheles* Summers and Schinger (1955), *Molothrognathus* Summers and Schinger (1955), *Neognathus* Willmann (1952), and *Paraneognathus* Fan (2000). This family inculudes 5 valid genera and more than 50 described species. By now, 3 genera and 10 species in this family were found in Turkey: Genus *Caligonella* (1 species), *Molothrognathus* (5 species) and *Neognathus* (4 species). In order to determine the camerobiid fauna of the Dilek Peninsula and the Büyük Menderes Delta National Park and to contribute to biodiversity, for a period of per month in year, the caligonellid specimens extracted from the litter and soil samples collected from the study area *Caligonella humilis* (Koch, 1838), *Molothrognathus kamili* Doğan, 2003 and *Neognathus* sp. species in the Caligonellidae family have been identified as a new record in this study. This work was supported by the Project 2016-024 by Manisa Celal Bayar University, Scientific Research Projects Coordination Unit.

Keywords: Acari, Raphignathoidea, Caligonellidae, National park, Turkey.

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➢ **POSTER PRESENTATION**

Computational Inivestigation of Carbene and Cyclic Olefin Reaction Mechanism

Selçuk Gümüş[1,*], Ayşegül Gümüş[1], Zeynep Turhan İrak[2]

[1]Van Yuzuncu Yil University, Faculty of Science, Department of Chemistry, Van
[2]Igdir University, Department of Environmental Engineering, Iğdır
sgumus@yyu.edu.tr, gumuss@gmail.com

Abstract

Through the reaction between olephins and carbenes some derivatives of cyclopropanes can be synthesized. In this project, bicyclocyclopropane derivatives were synthesized theoretically with the reaction of cyclic olefins and carbenes. Five, six and seven membered rings and CH2, CCl2, CBr2, tetramethyldiamine and 1,3-dimethylimidazoldine carbenes were reacted together and the reaction mechanisms were investigated theoretically.

All reactions were computed to be exothermic that is, the stability of the products are greater than that of the reactants. It is found that, the bigger the ring size the lower the activation energy of the reaction. Moreover, activation energy decreases through the increase in the stability of the carbene.

The transition states were determined during the reaction mechanism search. The transition states were confirmed by vibrational frequency analysis, simulation of the negative frequency and IRC calculations. When necessary, the reaction mechanism was investigated on two paths and the possible products were determined.

All computations were performed by Density Functional Theory with the application of B3LYP/6-31G(d,p) method on Gaussian 09 and Gaussview 5.0 package programes.

Keywords: Carbene, Cyclic Olefins, Cyclopropanation, DFT

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➢ **POSTER PRESENTATION**

Synthesis and Biological Activity Studies of Fluorescent Schiff Bases

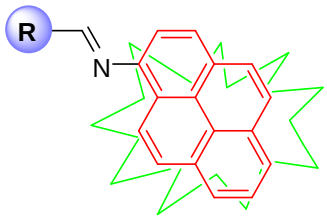
Ayşegül Gümüş[1,*], Selçuk Gümüş[1] ve Veysi Okumuş[2]

[1] Van Yuzuncu Yil University, Faculty of Science, Department of Chemistry, Van
[2] Siirt University, Faculty of Arts and Science, Department of Biology, Siirt

gumusa@gmail.com

Abstract

As an important class of compounds, Schiff bases have received much attention in the wide variety of fields due to their different applications owing to their characteristic properties such as preparative accessibility, structural variety, varied coordinating ability, thermal stability, biological activities and catalysis properties. In this work, fluorescent Schiff base derivatives were synthesized by reacting amine derivatives of pyrene unit, which is a very good fluorophore, with various aryl aldehydes. These novel Schiff-bases have been investigated for biological properties such as antibacterial and antimicrobial activities.



Keywords: Schiff bases, Fluorescent Schiff Bases, fluorophore, antibacterial and antimicrobial activities

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➢ **POSTER PRESENTATION**

The Investigation of the Preventive Effects of Coenzyme Q_{10} and Berberine on Experimental Lower Extremity Ischemia-Reperfusion Injury in Rats

Betul Apaydin Yildirim[1*]

[*1] Ataturk University, Veterinary Faculty, Department of Biochemistry, Erzurum, Turkey

Corresponding author e-mail: betul_apaydin@hotmail.com

Abstract

In this study, the role of CoQ_{10} and berberine in the treatment of ischemia-reperfusion injury is researched by analyzing the biochemical effects of CoQ_{10} and berberine administered after experimental ischemia-reperfusion injury in rats. 32 Sprague-Dawley male rats were randomly divided into four equal groups, including: control, sham and experimental groups treated with CoQ_{10} (10 mg/kg dose, 3 times with 8 h intervals) and berberine (200 mg/kg dose, 3 times with 8 h intervals) that were administered by intragastric way to the I/R+ CoQ_{10} and I/R+ berberine group before two hours ischemia two hours reperfusion. In the sham group, only gastrocnemius muscle were removed and given no CoQ_{10} and berberine. By the completion of reperfusion; rats were sacrificed after taking samples to measure levels of blood lactate dehydrogenase, creatine kinase; MDA, MPO, GSH, SOD, GPx and CAT in blood and muscle tissues. Compared to control group, ischemic-reperfusion injury significantly increased MDA and MPO levels, decreased GSH, SOD, GPx and CAT activities of blood and muscle tissues. Treatments groups showed significantly decreased MDA and MPO levels, increased GSH, SOD, GPx and CAT activities compared to the IR group. Our results suggest that CoQ_{10} and berberine may protect or treat against oxidative damage on ischemia-reperfusion injury and that can be benefical treating association with lower extremity ischemia-reperfusion injury.

Keywords: Berberine, coenzyme Q10, ischemia, rat, reperfusion

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➢ **POSTER PRESENTATION**

Ceviz Ağacı Yaprak Özütünün Balık Patojenleri Üzerine Anti-bakteriyel Etkilerinin Araştırılması

Çağatay Bayizit[1*], Sebahattin Ergün[2], Sevdan Yılmaz[2]

[*1]Çanakkale Onsekiz Mart Üniversitesi, Fen Bilimleri Enstitüsü, Su Ürünleri Yetiştiriciliği, Çanakkale, Türkiye
[2]Çanakkale Onsekiz Mart Üniversitesi, Deniz Bilimleri ve Teknolojisi Fakültesi, Su Ürünleri Yetiştiriciliği, Çanakkale, Türkiye

Sorumlu yazar e-mail:yildirimbayizit@gmail.com

Özet

Ceviz ağacı (*Juglans regia* L.) Güneydoğu Avrupa, Asya, Hindistan ve Çin gibi ülkelerde doğal olarak yetişen bir bitkidir. Ceviz ağacının bazı türleri Kuzey Amerika, Kuzey Afrika ve Doğu Asya'da kültür bitkisi olarak yetiştirilmektedir. Ülkemizin her bölgesinde ceviz ağaçları doğal olarak yetişebilmektedir. Ceviz özellikle kuru meyve şeklinde çok tüketilmekle birlikte ağacının kabuğu, meyve kabuğu, yeşil meyve kabuğu ve yaprak aksamları ilaç ve kozmetik endüstrisinde yaygın olarak, halı ve tekstil endüstrisinde ise boyar madde olarak kullanılmaktadır. Ceviz yeşil kabuk ve yaprak aksamları geleneksel tıpta halk arasında damar kuvvetlendirici, kanama durdurucu, antihelmintik, antidiaretik, antifungal, hipoglisemik, hipotansiv ve sedativ özellikleri ile bilinmekte ve kullanılmaktadır. Özellikle kurutulmuş ceviz yaprağı bazı Avrupa ve Asya ülkelerinde kırsal kesimlerde çay şeklinde yaygın olarak tüketilmektedir. Yeşil kabuk ve yaprak aksamları fenolik maddeler ve flavonoidler açısından oldukça zengindir. Bu fitokimyasallar oksidativ stresi indirgeyerek ve makromoleküler oksidasyonu engelleyerek dejeneratif hastalıklara karşı koruyucu etki sağlamakta ve serbest radikal giderici etkileri de anti-kanserojenik özellik göstermektedir. En iyi bilinen etken madde yeşil genç yapraklarda fazla miktarda bulunan juglon (5-hidroksi-1,4-naftokinon) maddesidir ve bu madde çok güçlü antioksidan ve antimikrobiyal özelliğe sahiptir. Bu çalışmada ceviz ağacı yapraklarından elde edilen etanolik özütün balık patojenleri üzerine *in vitro* antimikrobiyal etkileri araştırılmıştır.

Bu çalışma Tübitak 2209-A Üniversite Ögrencileri Arastırma Projeleri Destekleme Programı tarafından 1919B011602349 başvuru numarasıyla desteklenmiştir.

Anahtar Kelimeler: Ceviz, *Juglans regia*, antimikrobiyal, balık patojenleri

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➢ **POSTER PRESENTATION**

Çakal Eriği (*Prunus spinosa* L.)

Emine Nakilcioğlu-Taş[1*]

[*1]Ege Üniversitesi, Mühendislik Fakültesi, Gıda Mühendisliği Bölümü, İzmir, Türkiye.

e-mail: emine.nakilcioglu@ege.edu.tr

Abstract

Halk arasında güvem, gövem, göğem, güğem, dağ eriği, ayı eriği, kum eriği, domuz eriği, yaban eriği, çoban üzümü, deli erik gibi değişik isimlerle bilinen ve tıbbi bir bitki olan çakal eriği, üzümsü meyveler sınıfında yer alan bir meyvedir. Nisan-Mayıs ayları arasında beyaz çiçekler açan, 1-2 m boyunda, silindirik gövdeli, koyu gri kabuklu, çok sık dallı ve dallarının uçları dikenli bir ağaçta yetişmektedir. Sonbahar veya kışa doğru olgunlaşan mavimsi siyah renkli meyveler, yuvarlak şekilli ve ekşi lezzetlidir. 1700 m rakıma kadar Türkiye, Avrupa, Batı Asya ve Kuzeybatı Afrika'daki ormanlık alanlarda doğal olarak yetişmektedir. Yapısında organik asitler, pektin, ham lif, şeker, C vitamini, tanen bulunmasının yanı sıra yüksek oranda potasyum, kalsiyum, magnezyum, fosfor, kükürt, sodyum, demir, belirli oranlarda da selenyum ve çinko bulunmaktadır. Alternatif tıpta çakal eriğinin antitrombotik, diüretik, kabızlık önleyici, iştah açıcı özelliğinden ve toksin attırıcı, vücut direncini artırıcı etkisinden yararlanılmaktadır. Kan dolaşımı problemleri, diyabet, böbrek ve idrar yolları iltihaplanması gibi hastalıklara iyi geldiği düşünülmektedir. Çakal eriği depolama süresinin kısa olması sebebiyle, taze tüketiminin yanı sıra jöle, reçel ya da marmelat yapılarak da tüketilmektedir. Meyve suyu şeklinde tüketimi ya da alkollü içkileri aromalandırmak için kullanımı da mümkündür. Yabani meyve türlerinden biri olan çakal eriğinin besin öğelerinin belirlenmesi ve farklı gıda ürünlerine işlenmesi konusunda, daha ayrıntılı araştırmalara ihtiyaç duyulmaktadır. Gerçekleştirilecek *in vitro* ve *in vivo* çalışmalar sayesinde, sağlık etkileri kanıtlanabilecektir. Böylece çakal eriğinin tanınırlığı ve tüketimi yaygınlaştırılabilecektir.

Keywords: Çakal eriği, Dağ eriği, *Prunus spinosa* L., Üzümsü meyveler.

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➢ **POSTER PRESENTATION**

Hayıt ve İncir Ağaçlarının Yapraklarından Elde Edilen Etanolik Özütlerin Balık Patojenleri Üzerine Anti-bakteriyel Etkileri

Çağatay Bayizit[1*], Sevdan Yılmaz[2], Sebahattin Ergün[2]

[*1]Çanakkale Onsekiz Mart Üniversitesi, Fen Bilimleri Enstitüsü, Su Ürünleri Yetiştiriciliği, Çanakkale, Türkiye
[2]Çanakkale Onsekiz Mart Üniversitesi, Deniz Bilimleri ve Teknolojisi Fakültesi, Su Ürünleri Yetiştiriciliği, Çanakkale, Türkiye

Sorumlu yazar e-mail:yildirimbayizit@gmail.com

Özet

Dünya üzerinde yetiştiricilik yoluyla üretilen su ürünlerinin giderek artması ve balıkların daha yoğun stoklarda üretilmesi stres ve hastalıkları beraberinde getirmektedir. Bundan doğan ekonomik, çevresel kayıplar ve tüketici bakımından istenmeyen antibiyotik, kimyasalların kullanımını artırmaktadır. Özellikle antibiyotik kullanımından doğan günümüzdeki en önemli sorunlar; antibiyotiğe direnç kazanan bakterilerin hızla artış göstermesi, daha yoğun ve yanlış antibiyotik kullanımı, doğada geri dönüşümü olmayan kimyasal birikiminin giderek artması, doğaya karışan kimyasal maddelerin birincil üretimi doğrudan olumsuz etkilemesi, doğada yaşayan omurgalı ve omurgasız canlıların olumsuz etkilemesidir. Bu nedenle antibiyotiklere alternatif olarak balık yemlerine çeşitli katkı maddelerinin ilave edilmesi günümüzde araştırılmakta olan bir konudur. Ancak, öncelikle *in vitro* testler ile muhtemel antimikrobiyal ajanın hangi patojen üzerine etkili olduğunun belirlenmesi zaman ve ekonomik açıdan önemlidir. Bu nedenle bu çalışmada hayıt ve incir ağaçlarının yapraklarından elde edilen etanolik özütün balık patojenleri üzerine *in vitro* antimikrobiyal etkileri araştırılmıştır. Bu çalışma Tübitak 2209-A Üniversite Ögrencileri Arastırma Projeleri Destekleme Programı tarafından 1919B011602349 başvuru numarasıyla desteklenmiştir.

Anahtar Kelimeler: Hayıt, İncir, Yaprak, Özüt, Antimikrobiyal, Balık patojenleri

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➢ **POSTER PRESENTATION**

Effect of Oil Phase on Flavour Release from Emulsions

Ceyda Dadalı[1*], Yeşim Elmacı[2]

[*1]Ege University, Engineering Faculty, Food Engineering Department, Izmir, Turkey.

Corresponding author e-mail:ceyda.dadali@gmail.com

Abstract

Flavour release from emulsions contains the partitioning and mass transfer of the flavour molecules between oil phase, interface, water phase and headspace. The headspace concentration and release rate affects flavour perception. Perception of volatile flavour compounds occur when they are in contact with olfactory receptors either orthonasal by smelling or retronasal by volatile headway during mastication. Volatile release from emulsions depends on the physicochemical properties of the volatile compounds and emulsions. Most of food flavours are lipophilic, so oils play a more significant role than other emulsion properties for aroma release. Oils can act as solvents for flavour compounds, and as flavour release regulators. Change in oil property or oil content can lead to changes in flavour release. The reduction of oil content encourages the release of lipophilic volatile compounds. When oil content of an emulsion is reduced, headspace concentration of lipophilic volatiles increases. On the other hand, increasing the oil content of an emulsion did not affect or positively affect the release of hydrophilic volatile compounds . Also fat type, carbon chain length, saturation level, chain arrangement and physical state have different affinity for compounds and different effect on volatile release. This review provides an overview of effect of oil phase on flavour release from emulsions.

Keywords: flavour release, food emulsion, oil phase

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➢ **POSTER PRESENTATION**

Klordanın Somatik ve Genotoksik Uyarımı

Emrihan Özyurt[1] , Halit Kızılet[1] , Handan Uysal[1]*

[1]Atatürk Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Erzurum, Türkiye

*hauysal@atauni.edu.tr

Özet

Çiftçiler insektisitleri kullanarak bazı avantajlar elde etmiş olsalar bile göz ardı edilen en önemli nokta bu maddelerin bitkilerde kalıntı bırakmasıdır. Ayrıca solunan hava, içme ve sulama suyu ya da besin zinciri ile hayvanlara ve onlardan beslenen insanlara geçerek risk oluştururlar. Etken maddesi klor olan klordan uçucu bir insektisittir ve kullanımı yasaklı olmasına rağmen zirai mücadele amacıyla günümüzde hala kullanılmaktadır. Bu insektisit hem hedef/hedef olmayan organizmaları hem de bu maddeyi uygulayan kişileri doğrudan etkilemektedir. Sunulan çalışmada klordanın etkileri in vivo ve in vitro olarak gözlenmiştir. Hedef olmayan organizmalardan Drosophila melanogaster'in (Oregon R) yabanıl soyuna ait ♀ ve ♂ popülasyonunda klordanın farklı dozları (1,2,3,4ppm) kullanılmıştır. Üç tekerrürlü veriler tek yönlü varyans analizi ile test edilmiştir. ♀ popülasyonunda klordanın çözücüsü DMSO kontrol grubu için ortalama ömür uzunluğu 48.83±1.95 gün iken en düşük (1ppm) ve en yüksek uygulamalarda (4ppm) 38.25±1.05'den 15.03±1.01'e; ♂ popülasyonunda ise 48.30±2.22 gün olan kontrol grubu değeri 31.56±1.64'den 10.80±0.70 güne kadar düşmüştür ($P<0.05$).

Kronik beslenme sürecinde artan doza bağlı olarak ömür uzunluğundaki kısalmanın negatif korelasyon değerleri de ♀ ve ♂ popülasyonunda R:-660 ve R:-639 olarak bulunmuştur. Periferik kan kültürü ile çalışılarak klordanın insanlar için genotoksik olup olmadığı da mikronükleus testi ile belirlenmiştir. DMSO negatif kontrol grubu için bu değer 0,83±0,70 iken klordan uygulama gruplarında binükleat hücrelerdeki mikronükleus frekansı 30, 40, 50, 60 ppm için sırasıyla 0,77±0,40, 1,77±0,90, 3,00±0,18, 5,10±0,12 olarak bulunmuştur($P<0.05$).

Klordan, doz-süre etkisiyle yalnızca ömür uzunluğunu kısaltmakla kalmaz daha önce yapılan çalışmalar ışığında farklı hayvansal organizmalarda yumurta verimini düşürebilir, yavrulama dönemine ulaşılamadığı için ya da malformlu bireylerin oluşumu ile türlerin sürekliliğinde sınırlandırıcı bir etken olabilir. Ayrıca mikronükleus frekansının artışı da genotoksisitenin uyarıldığını ve somatik hücreler kadar gametik etkilenmenin de söz konusu olabileceğini göstermektedir. O halde zirai ürün artışı ya da istenmeyen organizmalardan korunma adı altında kuralsız, yasaksız ve sürekli kullanılan tüm pestisitler canlılar aleminde pek çok tür kaybını tetikleyecektir/ tetiklemektedir.

Anahtar kelimeler: Klordan, ömür uzunluğu, mikronükleus, genotoksisite.

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➢ **POSTER PRESENTATION**

First record of *Ischnopsyllus simplex* Rothschild, 1906 (Insecta, Siphonaptera) from Turkey

Adem Keskin*, Eray Şimşek, Güray Tayyar Şimşek

[*]Department of Biology, Faculty of Science and Arts, Gaziosmanpasa University, Tokat, Turkey

Corresponding author e-mail: ademkeskin@yahoo.com

Abstract

Fleas (Insecta: Siphonaptera) are small, wingless, hematophagous ecto-parasites of mammals and birds. They are laterally compressed and have numerous bristles on all body and range from 1 to 10 mm in length. Fleas have medical and veterinary importance due to their vectorial capacity to transmit disease organisms (bacteria, protozoans, rickettsia, and viruses) to humans and animals. To date, approximately, 2700 species and subspecies belonging to 18 families have been described throughout the world. Flea fauna of Turkey is currently composed of 115 taxa (83 species, 32 subspecies) belonging to 36 genera, 7 families, of which 13 species are belonging to bat fleas (Ischnopsyllidae). During our parasitological survey on some wild animals, several flea samples were collected on a Whiskered Bat, *Myotis mystacinus* (Kuhl, 1817), in Sivas province of Turkey. Flea samples were identified as *Ischnopsyllus simplex* Rothschild, 1906. This species has distributed in British Isles, west continental Europe eastwards including Slovakia, Poland and Georgia and rarely in the Mediterranean region. According to our knowledge, this is the first record of *Ischnopsyllus simplex* fleas in Turkey. With this study, the number of flea fauna of Turkey has been raised to 116 taxa.

Keywords: Bats, Fleas, *Ischnopsyllus simplex*, Siphonaptera, Turkey.

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➢ **POSTER PRESENTATION**

Synthesis of propargylamines catalyzed by bimetallic nanopartilcles

Amina BERRICHI[1,2*], Redouane BACHIR[1], Sumeya BEDRANE[1], Noureddine CHOUKCHOU-BRAHAM[1]

[1] Laboratory of Catalysis and Synthesis in Organic Chemistry, University of Tlemcen, Tlemcen BP 119, Algeria.

[2]University center Belhadj Bouchaib, Ain Temouchent, Algeria

E-mail: berrichi.amina@yahoo.fr

Abstract

Propargylamine is an intermediary for synthesis of several natural product and inhibitors of Parkinson's disease. The three compounds coupling of amine alkynes and aldehyde is the most strategy to synthesis of propargylamine using homogenous gold, cobalt catalyst and heterogeneous monometallic gold and cobalt catalys. In the last time some researchers use haloalcane as a source of the methylene fragment for the AHsA coupling but it stays limited compared with A3 coupling.

In recent years, the synthesis of bimetallic catalyst has attracted significant interest due to the peculiar properties arising from the combination of two distinct metallic species. Supported bimetallic gold catalyst shows an interesting activity in variety of reaction[1].

In the present study bimetallic gold catalyst Au-Co/TiO_2 was used in the first time in synthesis of proprgylamine by AHA coupling. The present catalyst was characterized by RDUV-Vis, XRD and MET.

Keywords: propargylamine, AHA coupling, bimetallic nanoparticle

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➢ **POSTER PRESENTATION**

Effective removal of methylene blue from aqueous solutions using material phosphate

Amina BERRICHI[1,2*], Redouane BACHIR[1], Sumeya BEDRANE[1], Noureddine CHOUKCHOU-BRAHAM[1]

[1] Laboratory of Catalysis and Synthesis in Organic Chemistry, University of Tlemcen, Tlemcen BP 119, Algeria

[2]University center Belhadj Bouchaib, Ain Temouchent, Algeria

E-mail: berrichi.amina@yahoo.fr

Abstract

Methylene blue (MB), as being the cationic dye that is mostly used as dyestuff especially in the textile industry and generally has a toxic and carcinogenesis effect when contact with such contaminants occurs, they can cause cancer, mutation and dermatological diseases. The removal of such pollutant ions is extremely important for human life and the protection of the environment. To this end, several physical and chemical methods; coagulation-flocculation, precipitation and oxidation were developed for the removal of dyestuff contaminants from industrial waste.

In this study, Phosphate material obtained by hydrothermal synthesis was used effectively for the removal of Methylene Blue (MB) from aqueous solution. Phosphate material was characterized by IR, DRX, UV-Vis,MEB and give a high concentration removal of MB.

Keywords: FePO, dyes, MB.

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➢ **POSTER PRESENTATION**

Determination of Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) Levels in Fish Species

Muaz KÖROĞLU *[1], Şana SUNGUR [2]

*[1]Mustafa Kemal University, Altınözü Agricultural Sciences Vocational School of Higher Education, Department of Food Technology, 31024 Hatay, Turkey

[2]Mustafa Kemal University, Science and Letters Faculty, Department of Chemistry, 31024 Hatay, Turkey

muazkoroglu@mku.edu.tr

Abstract

PFOS and PFOA which are the members of the perfluorinated compounds (PFCs), are commonly used in the broad of industry. The strong C-F covalent bond in PFCs accounts for the thermal and chemical stability of these compounds, which have been used in many products, such as textiles, carpets, upholstery, leather, food package, waxes, polishes, adhesives, paints, cosmetics, aviation hydraulic fluids, fire-fighting foams and papers (Renzi et al., 2013; Herzke et al., 2012). In general PFCs are extremely persistent, bio-accumulative and toxicological chemicals. Because of this properties PFOS was included in Stockholm Convention list of persistent organic pollutants (Domingo et al., 2012; Ji et al., 2012).In general human exposure to PFOS and PFOA are from drinks, house dust and especially foods (Axmon et al., 2014). In this study, levels of PFOS and PFOA in fishes (one of the most contamination sources of diets) were determined by using LC-MS/MS.

PFOS and PFOA were investigated in 16 fish species. Most of fish samples which were fished from Turkey, were collected from fish store in Hatay. The mean concentrations of PFOA and PFOS range between 0.147 – 0.543 ng g^{-1} and 7.96 – 52.43 ng g^{-1} respectively. PFOS mean values were in horse mackerel (52.43 ng g^{-1}), pike-perch (45.87 ng g^{-1}), sardine (42.83 ng g^{-1}) and black cod (41.33 ng g^{-1}) detected in maximum concentration. PFOA mean concentrations were respectively in carp (0.543 ng g^{-1}) > conger (0.493 ng g^{-1}) > pike-perch (0.467 ng g^{-1}) > salmon (0.424 ng g^{-1}) determined.

Keywords: Perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), fish, LC-MS/MS.

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➢ **POSTER PRESENTATION**

Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (Pfos) Levels in Meat and Edible Offal

Muaz KÖROĞLU *[1], Şana SUNGUR [2]

*[1]Mustafa Kemal University, Altınözü Agricultural Sciences Vocational School of Higher Education, Department of Food Technology, 31024 Hatay, Turkey
[2]Mustafa Kemal University, Science and Letters Faculty, Department of Chemistry, 31024 Hatay, Turkey

muazkoroglu@mku.edu.tr

Abstract

Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) are two synthetic perfluorinated compounds (PFCs) used in numerous industrial and commercial applications because of their unique physicochemical properties (chemically inert, non-wetting, very slippery, non-stick, highly fire resistant, very high temperature ratings, highly weather resistant). PFOA and PFOS have characteristic properties as well as perfluorinated sulfonate and long-chain perfluorinated carboxylate thus several studies showed that the bioaccumulation potential of these chemicals (Poothong et al., 2012; Herzke et al., 2012). In literature, these chemicals are also persistent in the environment, bioaccumulative in human and animal tissue and biomagnifical in food chains (Ahrens et al., 2010; Poothong et al., 2012; Lindstrom et al., 2012). In general human exposure to PFOS and PFOA are from drinks, house dust and especially foods (Axmon et al., 2014). Because of this reasons, researches about PFOS and PFOA in foods are very important for detecting contamination sources and levels of PFOS and PFOA for human health. In this study, levels of PFOS and PFOA in meat and edible offal (ones of the most contamination sources of diets) were determined by using LC-MS/MS.
In the food group of meat, PFOA (minimum = 2.340 ± 0.015 ng/g; maximum = 6.610 ± 0.006 ng/g) and PFOS (minimum = 0.100 ± 0.001 ng/g; maximum = 1.230 ± 0.006 ng/g) were detected in all samples. Mean of levels of PFOS and PFOA in cattle's meat 5.15 ng g^{-1} ve 0.841 ng g^{-1} were higher determined than small cattle and chicken's meat. In the food group of edible offal, maximum mean levels of PFOA was found in cattle's kidney (5.65 ng g^{-1}), small cattle's spleen (5.06 ng g^{-1}) and cattle's liver (5.02 ng g^{-1}) respectively. When levels of PFOS compared to other edible offal, maximum levels were found in cattle's liver (0.880 ng g^{-1}), cattle's heart (0.503 ng g^{-1}), small cattle's spleen (0.495 ng g^{-1}).

Keywords: Perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), meat, edible offal, LC-MS/MS.

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➢ **POSTER PRESENTATION**

Synthesis, Characterization and Metal-ion Binding Properties of Novel Polymeric Phthalocyanine Bridged Flexible Unit

Yaşar GÖK*, Halil Zeki GÖK

Mehmet Akif Ersoy University, Faculty of Technology, Department of Biomedical Engineering, Bucak/Burdur, Turkey.

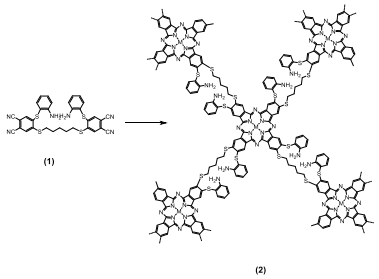
halilzekigok@gmail.com

Abstract

Developing industry and manufacturing cause the environmental pollution. These processes generate wastes containing various toxic and non-toxic metal cations[1]. The extraction and separation metal cations from the environment are very important for public health due to their toxicity and economic impact[2]. There are many different techniques for extraction and separation of metal cations. Among these, solid-liquid extraction should be mentioned in the light of metal-ion chemistry of phthalocyanine.

As part of our ongoing interest towards the development of more effective and selective ligands towards transition metal cations, we synthesized novel bisphthalonitrile monomer and its polymeric phthalocyanine derivative with flexible unit. The design of a ligand with appropriate donor atoms is a key requisite in order to obtain high extractability and selectivity. These synthesized compounds were tested and compared in metal cations extraction by using solid-liquid extraction method. The extraction ability of ligands **1** and phthalocyanine derivative **2** was investigated using solid-liquid extraction. The highest extraction efficiency was observed for Ag(I) and Hg(II) ions by 86% and 84% with polymeric phthalocyanine **2**, respectively.

Keywords: Phthalocyanine, Polymeric phthalocyanine, Solid-liquid extraction



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➢ **POSTER PRESENTATION**

Synthesis and Application of Novel Optically Pure Hydrobenzoin Substituted Phthalonitriles

Halil Zeki GÖK, Yaşar GÖK, İrem Tutkum AYKUT*

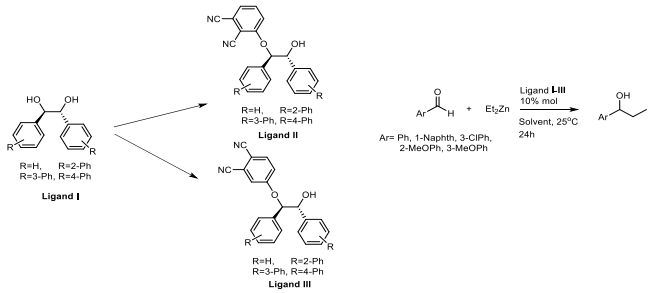
Mehmet Akif Ersoy University, Faculty of Technology, Department of Biomedical Engineering, Burdur, Turkey.

halilzekigok@gmail.com

Abstract

A large amount of the pharmaceuticals and agrochemicals contain one or more stereogenic centers. Several possible approaches have been developed to access these enantioenriched compounds. However, the best way to introduce chirality is to use a chiral catalyst because only a small amount of highly valuable catalyst is required to obtain a large amount of chiral target product. From a synthetic perspective, both enantiomers of a chiral compound are often useful and versatile in pharmaceutical, agrochemical and fragrance industries.[1] The development of novel and highly enantioselective transformations in order to obtain these enantiomers is one of the most exciting goals for organic chemists involved in the competitive and stimulating field of asymmetric catalysis.[2]
In this work, we wish to present optically pure hydrobenzoin substituted phthalonitriles and their application in enantioselective reactions

Keywords: Phthalonitrile, synthesis, chiral, application.



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➢ **POSTER PRESENTATION**

Effects of Polyfluorinated 3-tert-butyl Salicyldimines on P-gp Expression on Capan-1 Pancreatic Adenocarcinoma Cell Line

Faruk Süzergöz[1*], H. A. Zafer Sak[2], Veli T Kasumov[3]

[*1]Harran University, Art Science Faculty, Department of Biology, Şanlıurfa, TURKEY.
[2]Harran University, Medical Faculty, Department of Chest Dissease, Şanlıurfa, TURKEY.
[3]Harran University, Art Science Faculty, Department of Chemistry, Şanlıurfa, TURKEY.

Corresponding author e-mail: suzergoz@yahoo.com

Abstract

One of the most important problems in chemotherapy is the development of multidrug resistance (MDR). P-glycoprotein (P-gp), a MDR1 gene product, are responsible for resistance to different cytotoxic drugs, appears to serve as an energy-dependent efflux pump expressed on the surface of cells. In the study, effects of polifluorinated Schiff bases on P-gp expression on Capan-1 cells, derived from pancreatic adenocarcinoma, and the risk of developing MDR in these cells were investigated.The effects of 3-tert-butyl salicylaldimines (Compound 1-9) on P-gp expression of Capan-1 cells were examined by flow cytometry. After the compounds were added to 96 well culture plates at predetermined IC50 doses, Capan-1 cells were added to the wells at a dose of 10^6 cells/ml and incubated for 72 h at 37 °C in 5% CO_2 humidified environment. After incubation, the cells collected from the culture flasks were incubated with anti-P-gp (MDR1) mouse anti-human monoclonal antibody for 60 min. After this time period cells were washed with PBS and incubated with FITC labeled goat anti-mouse monoclonal antibodies for 20 min. In flow cytometric analysis, nonspecific staining were discarded using isotypic control antibodies. The percentage of P-gp positive cells was determined by using the green fluorescence intensities of the Schiff base treated cells stained with FITC labeled anti-P-gp monoclonal antibody in the FL1 histogram. Expression levels of P-gp in Capan-1 cells were ranged from 7.8 to 32.4%. P-gp expression was observed at the lowest level in cells treated with Compound 9 (F_5-3 TBS). In conclusion, we would like to emphasize the importance of determining the risk of drug resistance development, which significantly affects cancer treatment, as well as the cytotoxic effects of compounds used in anti-cancer studies.

Keywords: Pancreatic cancer, Capan-1, 3-tert-butyl Salicyldimines, P-glycoprotein, Multidrug resistance

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➢ **POSTER PRESENTATION**

Evaluate the Toxicity Of Mercury Chloride on Human Erythrocytes form *In Vitro*

Ali Demirbağ[1], Kemal Koç[*2], Fatma İlçe[2], Fatih Oğuz Bekdemir[2]. Zehra İlçe[2], Dilek Pandır[1]

[1]Bozok University, Faculty of Arts and Science, Department of Biology, Yozgat, Turkey
[2]Bozok University, Institue of Sciences, Department of Biology, Yozgat, Turkey

Corresponding Author: durak77@gmail.com

Abstract

This study aims to determine the adverse effect of increasing doses of mecury chloride in terms of erythrocytes form on human's blood. Ten milliliters of fresh blood were collected in dry tubes from six healthy male volunteers by venipuncture. Heparin was used as an anticoagulant. Erythrocytes were separated from blood plasma by centrifugation (1600 rpm at 48C for 5 min) and then washed three times with a cold isotonic saline solution (0.9% NaCl). The supernatant and the buffy coat were carefully removed after each wash. After separation, packed erythrocytes were suspended in phosphate buffer [170 mL of Na2PO4H (1.41 g/L) solution 1 77 mL of NaPO4H2 (1.19 g/L) solution 1 NaCl (8.8 g/L)] at pH 7.40 to obtain a 50% cellular suspension. Histological preparations were done and staining carried out with May-Grünwald-Giemsa method. Images of the RBC were obtained by ×100 of optical microscope (Olympus CX51, Japan).In this study, it was demonstrated that the interaction of mecury chloride with human erytrocytes membrane morphology was observed and toxic effect of mecury chloride on erytrocytes were shown in Figs. It was seen that depending on the influencing factors, membrane morphology was negatively affected, in other words changes in membrane morphology was increased. Completely normal erytrocytes cells were detected in the control but normal erythrocytes shape changed to echinocytic form in the treatment group. Several environmental factors may cause erythrocyte deformability and may change its shape under stress condition. Changing structure of cell membrane and intrinsic properties shows cell's deformability and these changings are measurable according to environmental conditions. In this study, changes in membrane morphology from humans' erythrocytes can be observed under mecury chloride conditions. Mecury chloride induced changes in erythrocytes morphology in treatment groups.

Keywords: Mecury chloride, Erythrocytes, Echinocytic form, Human blood

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➢ **POSTER PRESENTATION**

Synthesis of Metallophthalocyanine Conjugated With Four Salicylideneimino And Its Application In Catalytic Transfer Hydrogenation of Aromatic Ketones

Halil Zeki GÖK, Yaşar GÖK, İrem Tutkum AYKUT*

Mehmet Akif Ersoy University, Faculty of Technology, Department of Biomedical Engineering, Bucak/Burdur, Turkey.

halilzekigok@gmail.com

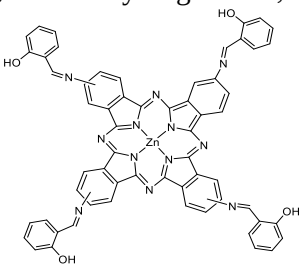
Abstract

The designing of an appropriate ligand is one of the challenges in the field of transition metal catalysis. Oxygen- and nitrogen-based ligands have been the most extensively investigated for transfer hydrogenation reaction. Among oxygen-nitrogen-based ligands, Schiff bases take the first places due to the providing a wide range steric and electronic properties.

Schiff bases have been found to be among the most convenient and attractive ligands for ruthenium complexes. First, steric and electronic effects around the Ru core can be easily fine-tuned by an appropriate selection of bulky and/or electron withdrawing or donating substituents incorporated into the Schiff bases. Secondly, the two donor atoms, N and O, of the chelated Schiff base exert two opposite electronic effects: the phenolate oxygen is a hard donor known to stabilize the higher oxidation state of the ruthenium atom whereas the imine nitrogen is a softer donor and, accordingly, will stabilize the lower oxidation state of the ruthenium. Thirdly, Schiff bases are currently prepared in high yield through one-step procedures via condensation of common aldehydes with amines, in practically quantitative yields.[1,2]

In this study, we wish to present the synthesis of a zinc(II) phthalocyanine conjugated with four salicylideneimino and its application in catalytic transfer hydrogenation of aromatic ketones

Keywords: phthalocyanine, schiff base, transfer hydrogenation, aromatic ketones



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➢ **POSTER PRESENTATION**

Synthesis of Peripheral and Non-Periferal C_2-Symmetric Diol Substituted Metallophthalocyanines: Investigation of Their Catalytic Efficiency in Benzyl Alcohol Oxidation

Halil Zeki GÖK[1*],Yaşar GÖK[1], Mustafa Kemal YILMAZ[2]

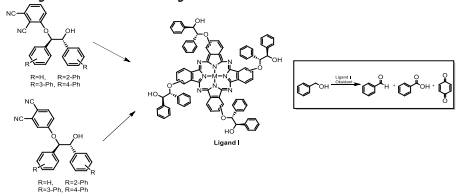
[*1]Mehmet Akif Ersoy University,Faculty of Technology,Department of Biomedical Engineering, 15030 Bucak/Burdur, Turkey.
[2]Mersin University, Faculty of Arts and Sciences, Department of Chemistry, 33343, Mersin, Turkey

halilzekigok@gmail.com

Abstract

Phthalocyanines and their metal complexes are one of the most studied functional molecular materials in the literature. They have been studied in detail for many years and still receiving much attention because of their extraordinary properties. These compounds have found application as dyes and pigments[1,2] and have potential as catalyst in oxidation of aromatic compounds[3]due to their unique properties such as strong UV-Vis light absorption, high molar absorption coefficients, electron transfer abilities, thermal and chemical stability[4].
In this study, it is aimed to synthesize peripheral and non-periferal C_2-symmetric diol substituted metallophthalocyanines and to investigate their catalytic efficiency in benzyl alcohol oxidation. For this purpose, first of all a series of C_2-symmetric diols based on hydrobenzoine skeleton have been synthesized. Then, precursor C_2-symmetric diols substituted phthalonitrile derivatives have been synthesized from the reaction obtained diols with 3-,4-nitrophthalonitrile. The derivatives of metallophthalocyanines containing Co^{2+} as metal center have been synthesized from the corresponding phthalonitrile derivatives and characterized. Finally, catalytic efficiencies of the synthesized C_2-symmetric diol substituted cobalt(II) phthalocyanine (CoPc) were evaluated in benzyl alcohol oxidation.

Keywords:*C_2*-symmetric diol, Phthalocyanine, Benzyl alcohol oxidation



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➢ **POSTER PRESENTATION**

Determination of Phthalate Levels in Breast Cancer Patients

Ramazan Okur*, Şana Sungur

Mustafa Kemal University, Science and Letters Faculty, Department of Chemistry, 31024 Hatay, Turkey

ramazanokur81@hotmail.com

Abstract

Breast cancer is one of the biggest health problems of the age. One of the important reasons is possible endocrine disruptors. These substances can trigger cancer by disrupting hormonal balance. The most well-known within endocrine disruptors are phthalates and bisphenol A (BPA). The endocrine disruptive effects of these substances have shown that a large number of studies (Legler et al., 2015). In recent years, some studies indicated that these substances are associated with cancer (Holmes et al., 2014; Hsieh et al., 2012). Phthalates are man-made, endocrine disrupting chemicals that are commonly used in plastics, medical applications, personal care products, cosmetics, perfumes, dyes, children's toys, food packaging. The ubiquitous use of phthalates results in human exposure via dietary ingestion of foods, dermal absorption of low-molecular-weight phthalates, and inhalation of the more volatile phthalates or intravenous injection (Sungur and Ustun, 2016). The aim of this study is to investigate the relationship between breast cancer and concentration of phthalates in serum samples.

The study had a total of 90 consecutive subjects, including 60 breast cancer patients and 30 healthy volunteers. 0.036 – 0.108 mg L^{-1} dimethyl phthalate, 0.041 – 0.510 mg L^{-1} diethyl phthalate, 0.018 – 0.644 mg L^{-1} dipropyl phthalate, 0.002 – 1.551 mg L^{-1} dibutyl phthalate, 0.014 – 1.048 mg L^{-1} butylbenzyl phthalate, 0.019 – 0.435 mg L^{-1} dioctyl phthalate was found in serum samples. Phthalate values were significantly higher in breast cancer patients than in the healthy control group ($p = 0.005$). However, no statistically significant relationship was found between the amounts of phthalate determined in the blood of the patients and the body mass index or waist circumference.

Keywords: Phthalate, breast cancer, GC- MS.

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➢ **POSTER PRESENTATION**

Gravlax and Gravlax Technology

Emine Ozpolat
[1]Firat University, Faculty of Fisheries, Fish Processing Technology, Elazig, Turkey
emineozpolat@hotmail.com

Abstract
The word gravlax comes from the Scandinavian word gräva/grave and lax/laks salmon. Although the Gravlax technology is not yet widely known in our country, it is a product favorably consumed in some countries. During the Middle Ages, gravlax was by fisherman, who salted the salmon and lightly fermented it by burying it in the sand above the high-tide line. Today fermentation is no longer used in the production process. Instead the salmon is "buried" in a dry marinade of salt, sugar, and dill, and cured for a few days. The Gravlax technology is based on processing fish meat with salt, sugar and dill and allowing them to a certain waiting time to mature. Gravlax is usually served as an appetiser sliced thinly and accompanied by steward sauce, a dill and mustard sauce, either on bread of some kind, or with boiled potatoes. This same method of curing can be employed for any fatty fish, but salmon is the most commonly used. Gravlax can be cured with salt, dill, beetroot, and is often eaten on rye bread.
Keywords: Gravlax Technology, Gravlax, Fish, Fish processing.

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➢ **POSTER PRESENTATION**

Synthesis and Characterization of New Antimony(III) Halide Compexes (SbX_3; X: Cl, Br and I) with 2-Imidazolidinethione

Okan Ucar[1*], I.I. Ozturk[1*]

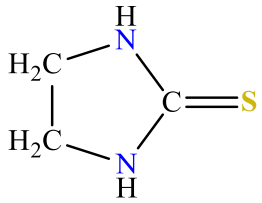
[1]Tekirdag Namık Kemal University, Faculty of Arts and Sciences, Department of Chemistry, Tekirdag, TURKEY

Corresponding author e-mail: iiozturk@nku.edu.tr

Abstract

Metal-based drugs have been used in therapeutic medicine for several hundreds of years and are used in contemporary society for the treatment of a large variety of human ailments, e.g., cancer, diabetes, and rheumatoid arthritis, as well as in diagnostic medicine [1]. For example, antimony (anti-protozoal), bismuth (anti-ulcer), gold (anti-arthritic), iron (anti-malarial), platinum (anti-cancer) and silver (anti-microbial) compounds have been usedin the treatment of various diseases [2-3]. Recently, antimony(III) thione or thiolate complexes have been shown antitumor properties. The complexes were tested in vitro for their inhibitory effect on proliferation of murine leukemia cells (L1210), murine mammary carcinoma cells (FM3A), human T-lymphocyte cells (Molt4/C8, CEM), leiomyosarcoma cells (LMS), human breast adenocarcinoma cells (MCF-7) and human cervix carcinoma cells (HeLa) [4].

In the progress of our work in the design and development of new cytotoxic compounds based on the structure activity relation- ship studies. In this work, we report the synthesis of new antimony (III) halides (SbX_3; X: Cl, Br and I) complexes with 2-Imidazolidinethione. The complexes were characterized by melting point, elemental analysis, molar conductivity, FT-IR spectroscopy, FT-Raman spectroscopy, TG-DTA analysis, ^{1}H and ^{13}C-NMR spectroscopy, UV spectroscopy and mass spectroscopy.



Scheme 1 Formula of 2-Imidazolidinethione

Keywords: Inorganic Chemistry, Coordination Chemistry, Antimony(III) Halides, 2-Imidazolidinethione

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➢ **POSTER PRESENTATION**

Characterization of Bio-Oil from the Catalytic Fast Pyrolysis of Hazelnut Cupula

Sedat Keleş[1],Turgay Kar[1], Kamil Kaygusuz[1,*]
[*1]Karadeniz Technical University, Department of Chemistry, 61080 Trabzon, Turkey

Corresponding author e-mail: kamilk@ktu.edu.tr

Abstract

Biofuels are often presented as a contribution toward the solution of the problems related to the world's strong dependency on fossil fuels, such as greenhouse gas effects and urban pollution, in addition to being a way to support rural development. Among the different available thermal, physical, and biological methods of biomass conversion, pyrolysis is considered more advantageous due to its high bio-oil yield. In this study, the aim was to characterize to bio-oil, obtained hazelnut cupula via catalytic fast pyrolysis in a fixed bed tubular reactor. The liquid phase, obtained bio-oils without and with ZnO catalyst consisted aqueous and oil phases, which were separated and weighed. The pentane soluble phase yields of 56.00% and 68.60% were obtained without and with catalyst at 600 °C, respectively. The oil phase and the subfractions of pentane-soluble fraction, obtained without and with ZnO catalyst were characterized by elemental analysis, FT-IR spectroscopy, 1H-NMR spectroscopy. It was determined that the ratio of oxygen in bio-oil reduced from 18.15 wt% to 11.75 wt% with the use of ZnO catalyst (6 wt% of feed). The action of the ZnO catalyst in removing the oxygen from the bio-oil is evident from the much reduced oxygen content of the oils. According to the experimental results the liquid products can be used as liquid fuels and chemical feedstock.

Keywords: Biomass; Bio-oil; Catalytic fast pyrolysis; Fixed bed, Hazelnut cupula

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➢ **POSTER PRESENTATION**

Synthesis of New Axially Chalcone Substituted Silicon (IV)Phthalocyanine and Investigation of Photophysical and Photochemical Properties

Nuran Kahriman[1*], Yasemin Ünver[1], İsmail Değirmencioğlu[1], Vildan Serdaroğlu[1], Hakkı Türker Akçay[2], Mahmut Durmuş[3] , Asuman D. Gülmez[3]

[*1] Karadeniz Technical University, Faculty of Sciences, Department of Chemistry, Trabzon, Turkey.
[2] Recep Tayyip Erdogan University, Faculty of Sciences and Art, Department of Chemistry, Rize, Turkey.
[3] Gebze Technical University, Department of Chemistry, Kocaeli, Turkey.

*Corresponding author e-mail:nuran_yayli@hotmail.com

Abstract

Photodynamic therapy (PDT) is a non-invasive treatment of for cancers which uses a photosensitizer (PS) and irradiation of an appropriate wavelength to generate cytotoxic reactive oxygen species (ROS), predominantly singlet oxygen, inside the cancer tissues. Also severe complications rates due to PDT are extremely low compared with surgery, chemotherapy, and radiation therapy. PS is the most important part of the therapeutic efficacy. In the last 30 years, PS have been developed to identify desirable photosensitizing systems and to optimize their photodynamic effect. Especially phthalocyanines (Pc) have been used as a PS and many substituted forms have synthesized. According to the literature, asilicon center allows the introduction of two appropriate axial ligands to inhibit the π-π stacking tendency of Pc rings; thus, axially substituted silicon phthalocyanines (SiPcs) have emerged to improve the hydrophilicity and inhibit the self-aggregation of Pcs. More importantly, SiPcs enable the introduction of two small-molecular-target-based moieties at the axial positions, which may improve the specificity to cancer and anticancer activity. For these reasons, SiPcs are of great interest of many scientists. On the other hand, due to their wide application in pharmaceutical and biological sectors, the synthesis and reactivity of chalcones has been a topic of research interest for well over a century. The concept of hybrid drugs has gained more attention wherein two or more bioactive pharmacophores are linked covalently to have synergistic effect. Therefore, in this study we synthesized and investigated photophysical and photochemical properties of new silicon (IV) phthalocyanine-chalcone conjugate (Figure 1). The results showed that this compound can be used as PDT agents since higher results than unsubstitued Zn (Pc). This study was supported by grants from Karadeniz Technical University.

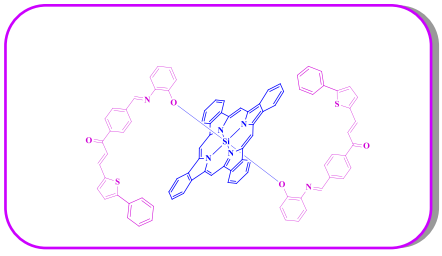

Figure1. Structure of axially chalcone substituted silicon (IV)phthalocyanine

Keywords: Chalcone, Phthalocyanine, PDT

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➢ **POSTER PRESENTATION**

The Comparative Analyses of Tryptophan Synthase (*TS*) Genes in Tomato (*Solanum lycopersicum*): Bioinformatics Approaches

Ertugrul Filiz[1,*], M. Aydın Akbudak[2]

[*1]Duzce University, Department of Crop and Animal Production, Cilimli Vocational School, Cilimli, Duzce, Turkey
[2]Akdeniz University, Department of Agricultural Biotechnology, Antalya, Turkey

Corresponding author e-mail: ertugrulfiliz@gmail.com

Abstract

Tryptophan (Trp) is a one of aromatic amino acids in plants and also serves as precursors of many natural products. Trp biosynthesis is catalyzed by Trp synthase α subunit (*TSα*) and β subunit (*TSβ*). In this study, a total of five *TS* genes were found in tomato (*Solanum lycopersicum*), one of which is a *TSα* gene (Solyc01g098550.2.1) and three of which are *TSβ* genes (Solyc10g006400.2.1, Solyc07g064280.2.1, Solyc10g005320.2.1, and Solyc10g018390.1.1). The gene structure analyses indicated that exon numbers of *TS* genes ranged from 5 to 9. While the length of TS proteins found between 347 and 468 amino acid residues, two types domain structures were identified, tryptophan synthase (PLN02591) and tryptophan synthase, beta chain (PLN02618). While pairwise distance value of *Arabidopsis* and tomato TSα protein sequences was found as 0.033, pairwise distance value of TSβ protein sequences between *Arabidopsis* and tomato ranged from 0.015 to 0.043. The phylogenetic analyses showed that tomato TSα proteins were clustered with *Arabidopsis* with the highest the bootstrap value (100%), whereas tomato TSβ proteins were not clustered with *Arabidopsis* orthologues. The 3D structures of tomato TS proteins showed the some structural differences, indicating functional diversities. Consequently, comparative analyses of *Arabidopsis* and tomato TS gene/proteins exhibited the variations at sequence and structure levels.

Keywords: Tryptophan, aromatic amino acid, tomato, genome-wide analysis.

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➢ **POSTER PRESENTATION**

Environmental Ethics in Islamic Perspective: A Survey Study

Nesrin Çobanoğlu[1*], Ayesha Noreen[2]

[*1]Gazi University, Faculty of Medicine, Basic Medical Sciences, Ankara, Turkey.
[2]Ankara University, Faculty of Social Sciences, Environmental Sciences, Ankara, Turkey.

Corresponding author e-mail: ayesha.noreen@icloud.com

Abstract

Human induced environmental dilemma are outpouring and increasingly upsetting not only ecosystem but human health and well being. Available data shows that technical solutions have not been resulting in adequate conclusions. Therefore, the most important question to be answered is "how should human act toward the natural environment". Among theoretical deliberations, environmental ethics is getting more recognition to find a proper solution for vast environmental degradation. The molding of behavior, values, approach, commitment and practice of human beings vital to conserve and protect the environment is strongly linked with their belief, worldview, custom and culture. For this reason, religion plays a significant role in establishing new templates of attitude toward the environment.

Recent scholarly concern in religions and ecology proclaims the importance of religious models in understanding humanity's place in nature. Although Islam presents comprehensive ethical values on the environment, the current state which is seen in Turkey (as well as in Muslim countries) shows an apparent negligence to environmental issues.

This study aims to determine awareness levels of Turkish students regarding environmental issues in Turkey, Islamic environmental ethics and respective observance levels. 50 subjects participated in this survey from 5 different faculties (Medicine, Engineering, Education, Divinity and Tourism) of Akdeniz University Antalya. Questionnaire for this survey consist of three sections aiming to measure knowledge and awareness of Islamic ethics concerning Environment, Turkeys present harsh environmental condition and observance levels regarding environmental concern among university students. . Data collected through questionnaires is analyzed and results shows that awareness level in regard to slamic environmental ethics and Turkey's environmental condition is pretty high among Turkish youth but the observance levels are not satisfactory. This gap between awareness and observance levels analyzed with the help of three hypothesis questions. First reason for this disagreement is that Turkish students view environmental problem as less significant than the other issues like unemployment, terror, political instability and educational system. The second reason being Diyanet is not fulfilling its duties towards raising awareness of Islamic ethics in regard to environmental protection and third argumentation is students are failing to incorporate environmental ethics into their daily routine. Turkish students do have awareness about these ethics but they don't feel any urgency or necessity to follow them.

Keywords: environmental ethics, environmental awareness, Islamic perspective, survey study

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➢ **POSTER PRESENTATION**

Effects of Thermosonication and Pectinase/NaOH Applications on Orange Segment Membrane Peeling

Aslıhan Demirdöven*, Umut Toy, Ömer Yılmaz, Dursuncan Çalışkan

Gaziosmanpaşa University, Faculty of Engineering and Natural Sciences, Department of Food Engineering, Tokat/Turkey

*Corresponding author e-mail: aslihan.demirdoven@gop.edu.tr

Abstract

The purpose of this study is to investigate combined effects of thermosonication /conventional methods and pectinase/NaOH applications at 40 °C on orange segment membrane peeling. "Washington navel" variety oranges were used as raw material. Orange samples were divided into four groups and processed as: i) Conventional heating + %2 NaOH treatment (40°C for 5 min); ii) Thermosonication + %2 NaOH treatment (40°C for 5 min); iii) Conventional heating + %0.5 pectinase (40°C for 30 min); iv) Thermosonication + %0.5 pectinase (40°C for 30 min). After productions; effects of each treatment on the amount of peeled membrane (%) were calculated. In addition; sensorial properties and color (L*, a*, b*, ΔE, ΔC, Hue°) values of oranges were investigated. Results showed that; the amount of peeled membrane percentages were changed between 3.74-20.34% (thermosonication + NaOH treatment > conventional heating + pectinase treatment > thermosonication + pectinase treatment > conventional heating + NaOH treatment). In addition, thermosonication and NaOH combination has higher acceptable sensorial scores. Thermosonication and pectinase combination, L* and a* values are higher than other groups. But highest b* value is determined in conventional heating and pectinase combination group. As conclusion, thermosonication has some valuable effects on membrane peeling of oranges and it has potential for industrial applications.

Keywords: Thermosonication, enzyme, NaOH, segment membrane, peeling.

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➢ **POSTER PRESENTATION**

Determination of Acid and Bile Resistances of Probiotic *Pichia kudriavzevii* and *Kluyveromyces marxianus* Yeast Strains Isolated from Different Dates

Jaafar Akef[1], Yavuz BEYATLI[2], Zehranur YÜKSEKDAĞ[2]

[1.]M.Sc. Biotechnology Department (Section of Biotechnology, Faculty of Science, Gazi University, Ankara
[3.]Prof.Dr. Biotechnology Department (Section of Biotechnology, Faculty of Science, Gazi University, *Ankara*
Responsible author email: caferakef@gmail.com

Abstract

Introduction: The first criteria for selection of probiotic microorganisms in human uses are considered to be acid resistances and bile salt tolerances in intestinal system. In intestinal system probiotics must be tolerate acidic conditions (pH 1.5-3.0) and bile salt concentration 0.30%. In small intestine, low pH values show antimicrobial activities by damaging the cell membranes of microorganisms, largely lipid, and fatty acid. Bile acids have undergone complete chemical changes resulting in microbial activity in the large intestine. For this reason, microorganisms to be used as probiotics should be resistant to acid and bile salts in order to function in the intestine.
Materials and Methods: In this study, 14 *Pichia kudriavzevii* and 2 *Kluyveromyces marxianus* strains were used and were isolated form different kind of dates. Strains were identified by molecular (18S rRNA) sequence analysis. YPD broth medium were used for studying acid and bile resistance of the isolates. YPD broth medium were arranged to pH 2 and inoculated with the strains, incubated at 37˚C for 48 h. Control medium were pH 6.5. After incubation the growth density (OD) of the isolates were measured at 600 nm with (Digilab Hitachi U–1800) spectrophotometer. The percentage of inhibition were calculated by comparing with the OD values in control group, pH 6.5. Percentage inhibition values of the strains in 0.30% bile concentration were calculated by comparing with the OD values in control group 0.0% bile salts.
Results: The inhibition rates of 2 *K. marxianus* JST and JZ strains on pH 2 were 87.9% and 96.78%, respectively. Inhibition rates of these strains on %0.3 bile salts were (97.02% and 91.54%). The inhibition rates of 14 *P. kudriavzevii* at pH 2 and 0.30% bile salts were 33.41-96.78% and 37.16-97.02%, respectively.
Conclusion: In this study, yeast strains showed different activities to tolerate acidic conditions and bile salts.

Keywords: Yeast, Dates, Acid, Bile, Resistance, Probiotic.

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➢ **POSTER PRESENTATION**

Effect of Calcination Temperature on Egg shell/Polyester Composites

Duygu Gokdai[1], Alev Akpinar Borazan[1*]

[*1]Bilecik Seyh Edebali University, Engineering Faculty, Department of Chemical Engineering, Bilecik, Turkey

Corresponding author e-mail: alev.akpinar@bilecik.edu.tr

Abstract

Composites are materials consisting of two or more definable components of different natures. Chicken eggshell (ES) is an agriculture product that has been listed worldwide as one of the worst environmental problems, especially in those countries where the egg product industry is well developed. ES consists of 95 % calcium carbonate and 5 % organic materials such as X collagen, polysaccharides, and other proteins. Although there have been several efforts to use eggshell reinforcements for different applications its chemical composition and availability makes eggshell a potential source of filler for polyester composites. In reported study egg shell/polyester composites were manufactured via casting method. The waste egg shells were heat pretreated prior to casting. Heating was carried out gradually at different temperatures (800, 900, 1000℃). The effect of calcination temperature on mechanical and physical properties of composites were investigated. Some mechanical properties such as bending strength, elastic modulus, hardness and izod impact were obtained. Physical properties (water absorption, open porosity, bulk density and thickness swelling) were investigated at different calcination temperatures. TGA analysis of egg shell/polyester composites was carried out to determine thermal behavior of egg shell during calcination process. SEM images were examined for morphological structure of egg shell/polyester composites.

Keywords: waste egg shell, mechanical properties, physical properties, calcination temperature

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➢ **POSTER PRESENTATION**

Determination of Hydrophobicity and Antimicrobial Activities of *Pichia kudriavzevii* and *Kluyveromycesmarxianus* Yeast Strains Isolated from Different Dates

Jaafar Akef[1], Yavuz BEYATLI[2], ZehraNur YÜKSEKDAĞ[2]

[1.]M.Sc. Biotechnology Department (Section of Biotechnology), Faculty of Science, Gazi University, Ankara
[2.]Prof.Dr. Biotechnology Department (Section of Biotechnology), Faculty of Science, Gazi University, Ankara

Responsible author email: caferakef@gmail.com

Abstract

Introduction: Yeast cells are more adherent to human epithelial cells. In the adhesion of microorganisms to different substances, there was a positive correlation between cell adhesion and cell surface hydrophobicity. Probiotic yeasts can prevent the growth of pathogenic microorganisms in gastrointestinal tract. Antimicrobial activities of yeasts related with production extracellular proteases (Mycosin) and sulfur dioxide.
Materials and Methods: Hydrophobic properties was determined of 14 *P. kudriavzevii*and 2 *K. marxianus* yeast strains isolated from different date samples. Yeast strains were activated in YPD Broth media. The percentage adhesion of yeast strains to p-xylene (nonpolar neutral solvent), chloroform (monopolar acidic solvent) and ethyl acetate (monopolar basic solvent) hydrocarbons were determined spectrophotometrically. The inhibitory effect of yeast strains on probiotic *Lactobacillus acidophilus* ATCC 4356 and pathogenic *Candida albicans* ATCC 10239 and *Pseudomonas aeruginosa* ATCC 278853 were tested by agar diffusion method.
Results: The hydrophobicity of all yeast strains to p-xylene, chloroform, and ethyl acetate hydrocarbonssolvents were measured as 55.78-86.74%,81.42-84.24% and 52.50-72.23%,respectively. All the strains have showed antimicrobial activities against probiotic *L. acidophilus* and pathogenic *P. aeruginosa*. They were inhibited both bacteria with the 9.08-19.23 mm and 10.23-24.17 mm inhibition zones respectively. None of the yeast strains had showed antimicrobial activities on pathogenic *C. albicans*.
Conclusion: All yeast strains show hydrophobicity indicating that the surface structure of the strains is complex. The yeast which used as probiotics have the ability to inhibit pathogenic bacteria.

Key words: Yeast, Dates,Hydrophobicity, Antimicrobial Activities,Probiotic.

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➢ **POSTER PRESENTATION**

Elazığ İli Yöresinde Yetişen Bazı *Alyssum* L. (Brassicaceae) Türlerinin Karyolojik Yönden Araştırılması

Yaşar Kıran[1*], Gülden Doğan[1], Gürkan Gedik[1]

*[1]Fırat Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Elazığ, Türkiye
Sorumlu yazar e-mail: ykiran@firat.edu.tr

Özet

Bu çalışmada, *Alyssum* L. cinsinin (Brassicaceae) Elazığ ili çevresinde yetişen beş türünün (*A. strigosum* Banks & Sol.**,** *A. szowitsianum* Fisch. & C.A. Mey., *A. linifolium* Steph. ex Willd., *A. desertorum* Stapf., *A. hirsutum* Bieb.) karyolojik özellikleri incelenmiştir. Kromozom çalışmaları için bitkilerin tohumlarından yararlanılmıştır. Bölünür somatik hücrelerde yapılan çalışmalar sonucunda, türlerin kromozom sayıları ve karyotip analizleri yapılarak idiyogramları çizilmiştir. Türlerden; *A. strigosum, A. szowitsianum* ve *A. linifolium'*un kromozom sayıları 2*n*=16; *A. desertorum'*un 2*n*=32, *A. hirsutum'*un ise 2*n*=46 olarak bulunmuştur. Kromozomların; median noktalı (M), median bölgeli (m), submedian (sm) ve subterminal (st) sentromerli oldukları tespit edilmiştir. *A. strigosum*'da satellit gözlemlenmiştir.

Anahtar Kelimeler: *Alyssum*, Brassicaceae, Kromozom sayısı, Karyotip, Sitotaksonomi.

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➢ **POSTER PRESENTATION**

Nerium oleander L. (Zakkum) Bitkisinin Antimikrobiyal Etkisi

Gülden Doğan*, Nazan Kara, Eyüp Bağcı, Seher Gür

Fırat Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Elazığ, Türkiye

Sorumlu yazar e-mail: gdogan@firat.edu.tr

Özet

Bu çalışmada, *Nerium oleander* L. (Zakkum) bitkisinin antimikrobiyal aktivitesinin saptanması amaçlanmıştır. Bu amaçla, doğal habitatından toplanan *Nerium oleander* bitkisinin yaprak ve çiçeklerinin etilalkol ekstarktı hazırlanıp çeşitli mikroorganizmaların (*Streptococcus sp. Bacillus cereus, Bacillus subtilis, Escherichia coli, Candida globrata* ve *Candida tropicalis*) bulunduğu besiyerlerine eklenmiştir. Zakkum bitkisinin yaprak ve çiçeklerinin antifungal etki gösterdiği, hem *Candida globrata* hem de *Candida tropicalis* deki inhibisiyon çaplarına bakılarak söylenebilir. Bu etkinin doz artışına bağlı olarak arttığı da tespit edilmiştir. Ancak yaprakların antifungal etkisinin daha fazla olduğu da gözlenmiştir. Yaprak ve çiçek ekstraktlarının *Streptococcus sp*. hariç diğer bakteriler üzerinde antibakteriyal etki gösterdiği de belirlenmiştir. Bu etkinin en çok *Escherichia coli* ve *Bacillus cereus* bakterileri üzerinde olduğu görülmüştür. Yine çiçeğe göre yaprakların antibakteriyal etkisinin daha fazla olduğu da anlaşılmaktadır. Bu çalışmada etilalkol fazı tercih edilmiş ve *Bacillus cereus* bakterisi üzerinde oldukça yüksek bir etki tespit edilmiştir. Bu da bize çalışılan bitkide antimikrobiyal etki yaratan maddelerin etilalkolda iyi çözündüğü sonucunu da göstermiştir.
Böylece, *Nerium oleander* bitkisinin hastalık yapıcı bazı mikroorganizmalar üzerinde antimikrobiyal etki gösterdiği ortaya konulmuştur.

Anahtar Kelimeler: *Nerium oleander*, Ekstarkt, Antimikrobiyal Etki.

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➢ **POSTER PRESENTATION**

Saros Körfezi'ndeki (Kuzey Ege Denizi, Türkiye) Kancaağız Pisi Balığı'nın (*Citharus linguatula*, Linnaeus 1758) Beslenmesi

Özgür Cengiz*, Ali İşmen

[1]Çanakkale Onsekiz Mart Üniversitesi, Deniz Bilimleri ve Teknolojisi Fakültesi, Çanakkale, Türkiye

Sorumlu yazar e-mail: ozgurcengiz17@gmail.com

Özet

Bu çalışma Saros Körfezi'ndeki Kancaağız Pisi balığının (*Citharus linguatula*, 1758) mide içeriğini belirlemek amacıyla yapılmıştır. Örnekler, Eylül 2006-Eylül 2008 tarihleri arasında 0-500 m derinliklerde ayda bir defa torba ağ gözü açıklığı 44 mm olan ticari dip trolü ağı kullanılarak toplanmıştır. 206 adet *Citharus linguatula* bireyinin mide içeriği analiz edilmiştir. Analiz edilen midelerden 186 (%90,29) adedi dolu, 20 (% 9,71) adedi ise boş olarak tespit edilmiştir. 2 sınıfa ait toplam 181besin (prey) tanımlanmıştır. Kancaağız Pisi balığının mide içeriği analizi sonucunda hesaplanan %IRI değerlerine göre en önemli besin grubunu balıkların (%IRI=74,53) oluşturduğu belirlenmiştir. Bunu sırasıyla kafadanbacaklılar (%IRI=25,47) izlemiştir.

Anahtar Kelimeler: Kancaağzı Balığı, *Citharus linguatula*, Beslenme, Saros Körfezi

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➢ **POSTER PRESENTATION**

Non-linear Optical (NLO) and Chemical Activity Calculations with DFT

Zeynep Demircioğlu[1*], Orhan Büyükgüngör[2], Cem Cüneyt Ersanlı[1]

[*1]Sinop University, Faculty of Arts and Science, Department of Physics, Sinop, Turkey.
[2]Ondokuz Mayıs University, Faculty of Arts and Science, Department of Physics, Samsun, Turkey.

Corresponding author e-mail: zdemircioglu@sinop.edu.tr

Abstract

Frontier molecular orbitals of Highest Occupied Molecular Orbital (HOMO) and Lowest Unoccupied Molecular Orbital (LUMO) are very significant parameters to determine reactivity of molecules. The HOMOs are as electron donors representing the capability to donate an electron and LUMOs are as electron acceptors representing the ability to obtain an electron. By using HOMO and LUMO energy values for a molecule, the global chemical reactivity descriptors of molecules such as hardness, chemical potential, softness, electronegativity and electrophilicity index as well as local reactivity have been defined. The movement of π-electron cloud from donor to acceptor i.e. intramolecular charge transfer can make the molecules more polarized and the low HOMO-LUMO energy gap, polarizability (α) and hyperpolarizability (β) values are responsible for the non lienar optical properties of molecule. The values of chemical activity indexes have been calculated for severeal compounds and the results show the stabilities of molecules. According to stability of the molecule to softness means that the molecule with least HOMO–LUMO gap and it means that it is more reactive molecule. The polarizability and hyperpolarizability values are responsible for the NLO properties of studied molecules and can be determined an attractive object for future studies of non-linear optical properties.

Keywords: Nonlinear optics (NLO), Chemical Activity, Frontier Molecular Orbitals

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➢ **POSTER PRESENTATION**

Detection of Some Viruses on Chard (*Beta vulgaris* var. cicla) in Hatay-Turkey

Gülşen SERTKAYA[1*], Hakan ÇARPAR[1], Erdal SERTKAYA[1]

[1]Mustafa Kemal University, Agricultural Faculty, Plant Protection Department, Antakya, Hatay-Turkey

[*]Corresponding author: gsertkaya@mku.edu.tr

Abstract

Chard (*Beta vulgaris* var. cicla, *Amaranthaceae*) is a popular leaf vegetable in many region and, used as a hypoglycemic agent by diabetic patients in Turkey. During field inspections in chard growing areas, virus-like symptoms as general chlorosis, stunting or upright growth, reduced leaf size, leaf deformation as severe crinkling, systemic mosaics, yellow mottling or lines on leaves or vein yellowing, and severe aphid infestation were observed on chard plants in Hatay province in 2016-2017. Dark leaf spots on chard leaf were also commonly observed in some fields in Antakya district. Aphid colonies collected from infested plants were determined as *Myzus persiceae*. Shoot and leaf samples taken from symptomatic chard plants were investigated by Double Antibody Sandwich-Enzym Linked Immunosorbent Assay: DAS-ELISA and biological indexing (sap inoculation) methods for presence of some aphid-transmitted viruses as *Alfalfa mosaic virus* (AMV), *Cucumber mosaic virus* (CMV) and *Potato Y virus* (PVY). Aphid samples containing about 100 individuals were also detected by DAS-ELISA and used in virus transmission trials to test plants (*Capsicum annuum*, *Nicotiana tabacum*) test plants inoculated by plant saps and aphid groups (about 10 individuals) were kept in an insect-proof and controlled climated room at 16-8 hours (light:dark) photoperiod at a temperature of 26°C day and 22°C night for symptom observation for 6 weeks and then also tested by DAS-ELISA. To our knowledge, Natural infection of CMV in chard plants was firstly reported in Hatay-Turkey by this study.

Keywords: Aphid, Beta cicla, biological indexing, CMV, ELISA, *Myzus persiceae*

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➢ **POSTER PRESENTATION**

Serological Typing of Potato Virus Y (Pvy) Isolates from Physalıs Peruvıana in Hatay-Turkey

Gülşen SERTKAYA[1*], Hakan ÇARPAR[1], Erdal SERTKAYA[1]

[*1]Mustafa Kemal University, Agricultural Faculty, Plant Protection Department, Antakya, Hatay-Turkey

Corresponding author: gsertkaya@mku.edu.tr

Abstract

Physalis peruviana L. (Solanaceae) commonly known as "Altın çilek" in Turkey. *Physalis peruviana* has been widely attracted interest with its medicinal and nutritional values, and began commercially produced in many areas in Turkey. Since 2010, commercial production of physalis has been increased in a short time and has decreased again in Hatay-Turkey. PVY infection on physalis plants was previously reported in Hatay-Turkey. A total of 48 leaf and fruit samples were taken from symptomatic P. peruviana plants exhibited mosaic, mottling, interveinal clearing, and crinkling and/or general chlorosis symptoms from two commercial fields in Hatay in 2015. Aphid samples were also collected from same fields and identified as Myzus persicaea. Leaf samples were tested by Double antibody sandwich-enzyme linked immunosorbent assay (DAS-ELISA) using anti-PVY polyclonal antisera for identifying PVY infection in symptomatic P. peruviana plants. PVY infection was detected in the tested plants with a ratio of 17/48 (35.4%). PVY infection of P. peruviana samples was confirmed by mechanical inoculation to N. tabacum and P. peruviana plantlets in an insect-proof room with controlled conditions at 16-8 (light:dark) photoperiod and 24°C ±2. Symptoms as mosaic and vein clearing on test plants were observed for 5 weeks post-inoculation. Some P. peruviana plants inoculated with same isolate were also exhibited chlorosis, crinkling and purple veins. Physalis peruviana seeds taken from infected plants were easily germinated, but emergence of plants were not uniform. Seedling development was also not homogeneous at acclimated room conditions. Although, very weak symptoms such as crinkling and chlorosis were observed on leaves, PVY infection was not detected in that plants obtained germination of seeds in mature fruits collected from naturally PVY infected P. peruviana plants. PVY isolates were further analyzed for strain infection by DAS-ELISA using anti-PVYN and anti-PVYO/C specific monoclonal antibodies. Many of tested P. peruviana (17/25) and N. tabacum (22/25) samples reacted positively with PVYO/C antibody. The results of both biological and serological tests showed that P. peruviana and N. tabacum samples were infected by PVYO-C. It is suggested that mixed infection with PVYO and PVYC strains may be present in positively tested samples. To our knowledge, this is the first report of PVYO/C strains on Physalis peruviana from Turkey. Detailed studies on diseases agents including PVY and other pathogens of Physalis peruviana should be carried out in Turkey.

Keywords: Cape gooseberry, ELISA, Hatay, Physalis peruviana, PVY strains

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➢ **POSTER PRESENTATION**

Essential oil Composition of the Fruit of *Prangos uloptera* (Apiaceae) DC. from Turkey

Şükrü Hayta[1]*, Gülden Doğan[2], Emel Akbaba[2]

*[1]Bitlis Eren University, Faculty of Engineering & Architecture, Department of Environmental Engineering, 13000, Bitlis, Turkey,
[2]Firat University, Faculty of Science, Department of Biology, 23169, Elazig, Turkey,
Corresponding Author e-mail: shayta@beu.edu.tr

Abstract
In this study, the essential oil composition of the fruit of *Prangos uloptera* DC. collected from Turkey was analyzed. The oils obtained by hydrodistillation using Clevenger Aparatus and chemical composition were determined by GC and GC-MS system. The oil yield was determined as 0.4% (v/w) in the essential oils. Thirty constituents were comprised the 83.7% of the total essential oil extracted from the *Prangos uloptera*. The predominant compounds of the oil were determined as Germacrene D (17.6%), Acorenone (16.9%), □-Pinene (14.9%) and □-Humulene (8.2%).
Keywords: *Prangos uloptera*, Apiaceae, Essential Oil, Turkey.

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➢ **POSTER PRESENTATION**

Coronilla scorpioides Kök Nodül Bakterilerisinin Ekzopolisakkarit Üretimi

Çiğdem Küçük[1*], Cenap Cevheri[2]

[*1]Harran Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Şanlıurfa, Türkiye
[2]Harran Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Şanlıurfa, Türkiye

Sorumlu yazar e-mail: ckucuk@harran.edu.tr

Özet

Coronilla scorpioides kök nodüllerinden *Rhizobium* sp. R6 izolatı izole edilmiştir. *Rhizobium* R6 izolatının farklı karbon, azot ve vitamin kaynaklarını içeren ortamlarda ekzopolisakkarit üretimleri araştırılmıştır. Karbon kaynağı olarak glukoz, früktoz, ksiloz, arabinoz, mannitol içeren ortamlar kullanılmıştır. R6 izolatı en iyi gelişmeyi mannitol içeren ortamda göstermiştir. Azot kaynağı olarak üre, sodyum nitrat ve L-asparajin kullanılmıştır. Farklı azot kaynaklarını içeren ortamlardan; L-asparajinde en iyi gelişme elde edilmiştir. Vitamin kaynakları olarak; biotin, thiamin ve kalsiyum pantotenat kullanılmıştır. Vitamin kaynaklarından ise en iyi gelişme thiamin içeren ortamdan alınmıştır. En yüksek ekzopolisakkarit üretimi kontrolle karşılaştırıldığında; mannitol, L-asparajin ve thiamin içeren ortamlarda belirlenmiştir.

Anahtar Kelimeler: Ekzopolisakkarit, *Rhizobium*, karbon azot ve vitamin kaynakları

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➢ **POSTER PRESENTATION**

Topraktan İzole Edilen *Bacillus* sp.'nin Fenotipik Özellikleri ve Antifungal Aktiviteleri

Çiğdem Küçük[1*], Cenap Cevheri[2]

[*1]Harran Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Şanlıurfa, Türkiye
[2]Harran Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Şanlıurfa, Türkiye

Sorumlu yazar e-mail:ckucuk@harran.edu.tr

Özet

Pamuk tarlalarından 20 *Bacillus* sp. izolatı izole edilmiştir. İzolatların morfolojik ve fenotipik özellikleri incelenmiştir. Vankomisin, gentamisin, amoxyclav, oxacillin içeren bazı antibiyotiklere karşı izolatların dirençlilikleri test edilmiş ve test edilen izolatların %60'ı test edilen antibiyotiklere karşı dirençli olarak bulunmuştur. *Bacillus* sp. izolatları *Fusarium moniliforme, Fusarium acuminatum, F.solani, F.chlamydosporum ve Drechslera sorokiniana'ya karşı antifungal aktiviteleri test edilmiştir. En yüksek inhibisyon; Drechslera sorokiniana'ya karşı Bacillus sp.'nin B11, B1, B12 ve B6 izolatları etkili olurken, F.solani'ye karşı ise Bacillus sp. B1 ve B33 izolatları etkili bulunmuştur.*

Anahtar Kelimeler: *Bacillus*, izolat, antifungal aktivite, fenotipik özellik

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➢ **POSTER PRESENTATION**

Synthesis of some new quinazolinones containing thiadiazole ring with their anti-urease activity

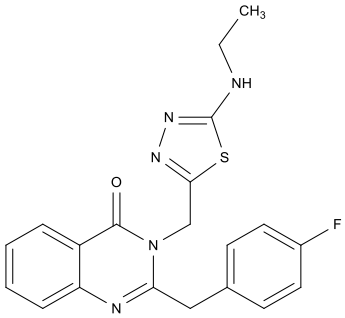
Gülay Akyüz, Emre Menteşe, Nimet Baltaş, Fatih Yilmaz

Department of Chemistry, Faculty of Art and Science, Recep Tayyip Erdogan University, TR-53100, Rize, Turkey

gulay.candan@erdogan.edu.tr

Abstract

Heterocycles and their derivatives play a major role in the field of medicinal chemistry. Quinazolinone is a fused heterocyclic system that exhibits a wide range of biological activity. Urease is an enzyme that caproductiontalyzes the hydrolysis of urea into carbondioxide and ammonia. The production of ammonia was measured by indophenol method and used to determine the urease inhibitory activity. Urease inhibitors have been regarded as targets for new antiulcer drugs. Here, we report the synthesis and urease inhibition properties of some new 2-3-disubstituted quinazolin-4(3*H*)-one derivatives containing thiadiazole ring.



IC_{50} : 1,88±0,17µg/mL.

Anahtar Kelimeler: quinazolinone, thiadiazole, urease inhibition

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➢ **POSTER PRESENTATION**

Solucan ve Yarasa Gübreleri Uygulanan Toprakta Dehidrogenaz Aktivite

Cenap Cevheri[1*], Çiğdem KÜÇÜK[2]

[*1]Harran Üniversite, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Şanlıurfa, Türkiye
[2]Harran Üniversite, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Şanlıurfa, Türkiye

Sorumlu yazar e-mail: ccevheri@harran.edu.tr

Özet

Toprakların mikrobiyal aktivitesi üzerine; toprakların kullanım yöntemleri, uygulanan tarımsal ilaç ve gübreler olumsuz etkilemektedir. Topraklardaki mikroorganizmaların çeşitliliği, aktivite ve miktarı toprakların kalitesini etkilemektedir. Ayrıca toprak mikrobiyal popülasyonu besin döngüsü üzerine etkilidir. Toprak enzimleri, toprak sağlığı ve kalitesinin biyolojik indikatörleri olarak tanımlanmaktadır. Çalışmamızda, iki farklı organik gübrenin (solucan ve yarasa) killi bünyeye sahip toprakta dehidrogenaz enzim aktivitesi üzerine etkisinin araştırılması amaçlanmıştır. Bu amaçla, farklı organik gübrelerin uygulandığı topraklar 30 gün süre boyunca inkübe edilmiştir. İnkübasyon süresi sonunda toprağın dehidrogenaz aktivitesi üzerine; kullanılan gübreler ve inkübasyon zamanı etkili bulunmuştur.

Anahtar Kelimeler: Toprak, dehidrogenaz aktivite, inkübasyon zamanı, organik gübre

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➢ **POSTER PRESENTATION**

Toprak Mikrobiyal Biyomas Karbon Üzerine Fungisidlerin Etkisi

Cenap Cevheri[1*], Çiğdem KÜÇÜK[2]

[*1]Harran Üniversite, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Şanlıurfa, Türkiye
[2]Harran Üniversite, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Şanlıurfa, Türkiye

Sorumlu yazar e-mail: ccevheri@harran.edu.tr

Özet

Ekonomik olarak önemli tarımsal ürünlerde oluşan hastalıkların önlenmesi amacıyla en fazla kimyasal mücadele kullanılmaktadır. Kimyasal ilaçlar çevre ve insan sağlığını tehdit etmekte birlikte, hedef mikroorganizmaların yanı sıra doğadaki yararlı mikroorganizmalarında ölümlerine neden olmaktadır. Bu çalışma GAP bölgesinde yaygın olarak kullanılan fungisidlerden mankozeb ve karbendezim'in topraktaki mikrobiyal biyomas karbon üzerine etkisinin araştırılması amacıyla yürütülmüştür. Araştırmada organik tarım yapılan tarla toprakları kullanılmıştır. Üç tekerrürlü olarak yürütülen araştırmada kullanılan iki fungisidin (mankozeb ve karbendezim) üç farklı inkübasyon sıcaklığında (10, 25 ve 30 ^{o}C) toprağın mikrobiyal biyomas karbon üzerine etkisi laboratuvar koşullarında araştırılmıştır. Deneme süresince topraklarda eksilen su düzeyi, tarla kapasitesinin % 40'ı seviyesine ayarlanmıştır. İnkübasyon süresinin farklı zamanlarında (0-5-10-15-20-25 ve 30 günlerinde) alınan toprak örneklerinde fungisidlerin toprakların mikrobiyal biyomas karbon içeriği üzerine etkileri incelenmiştir.

Anahtar Kelimeler: Fungisid, toprak, mikrobiyal biyomas karbon

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➢ **POSTER PRESENTATION**

Gökkuşağı Alabalıkları (*Oncorhynchus mykiss*, Walbaum 1792)'nda Vagokokkozise Karşı Etkili Antibakteriyel Tedavinin Belirlenmesi

Alper Kan[1], Behire Işıl Didinen[2]*

[1]Süleyman Demirel Üniversitesi, Fen Bilimleri Enstitüsü, Isparta
[*2]Süleyman Demirel Üniversitesi, Eğirdir Su Ürünleri Fakültesi, Isparta
Sorumlu yazar e-mail:behiredidinen@hotmail.com

Özet

Gökkuşağı alabalığında (*Oncorhynchus mykiss*) *Vagococcus salmoninarum* patojeninin neden olduğu vagokokkozis, ülkemizde görülen ve ekonomik kayıplara neden olan bir bakteriyel hastalıktır. Bu çalışmada vagokokkozisin antibakteriyel ilaçlarla tedavi seçeneklerinin belirlenmesi amaçlanmıştır. Bu amaçla, 150 g ağırlığındaki gökkuşağı alabalığının kullanıldığı 5 grup oluşturulmuştur. Tüm gruplardaki balıklar deneysel olarak *V. salmoninarum* ile enfekte edilmiştir. Bakterinin balıklara enjeksiyonunu takiben, balıkların yemlerine 10 gün süreyle sıvı bitkisel yağ ile eritromisin (100 mg/kg canlı ağırlık/gün), florfenikol (10 mg/kg canlı ağırlık/gün), doksisiklin (20 mg/kg canlı ağırlık/gün) ve amoksisillin (80 mg/kg canlı ağırlık/gün) ilavesi yapılmıştır. Kontrol grubunun yemlerine sadece bitkisel yağ ilave edilmiştir. Tedavi esnasında ve sonrasında her grupta ölen balıklar kaydedildi ve Triptic Soy Agar kullanılarak bakteriyel incelemeler yapılmıştır. Deneme sonunda, tüm gruplardaki klinik bulgular, ölüm oranları ve balıklardan etkenin reizolasyon yüzdeleri dikkate alındığında, eritromisin ve amoksisillinin tedavi için yeterli etkinlik göstermedikleri görülmüştür. Florfenikol ve doksisiklin ise enfeksiyonu tedavi etmek için çok daha yüksek etkinlik göstermiştir.

Anahtar Kelimeler: Gökkuşağı alabalığı, vagokokkozis, tedavi, antibiyotik

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➢ **POSTER PRESENTATION**

The Reactions of Bread Wheat Lines against Leaf (Brown) Rust Population in Seedling Stage

Kadir Akan[1*], Alaettin Keçeli [2]

[*1]Ahi Evran University, Agriculture Faculty, Plant Protection Department, Kırsehir , Turkey
[2]Pamukkale University, School of Applied Sciences, Organic Farming Business Management Department, Denizli, Turkey

Corresponding author e-mail: alaettink@pau.edu.tr

Abstract

In bread wheat breeding studies, quality characteristics are of the primary selection criteria. Leaf (brown) rust, (caused by the pathogen *Puccinia triticina* (*Pt*)), is significant fungal diseases, affecting yield and quality in cultivars. In this study, it was aimed to determine the reactions of 26 bread wheat genotypes (75 -81 kg/100 lt in test weight, (Konya-2002; 78 kg/100 lt in test weight) developed by the Central Research Institute for Field Crops (CRIFC) Department of Quality Assessment and Food to local *Pt* population in the seedling stage in March 2015 at the research facilities of CRIFC in Ankara.

The test lines were planted in pots (7x7x9 cm), and plants were grown at 18±3°C. Materials were inoculated with suspension of urediniospores of *Pt* population (avirulent on *Lr9, Lr19, Lr24* and *Lr28*) in mineral oil (Soltrol 170®) at Zadoks growth stage 11-12. Following inoculation, seedlings were placed in a dew chamber overnight at 16±1°C and then transferred to greenhouse adjusted at 18±3°C. Reactions were scored according to 0-4 scale after 14 days.

Ten (38%) of bread wheat genotypes were found resistant to *Pt* population in seedling stage. To suggest, leaf rust resistant genotypes will be incorporated into the Turkish leaf rust resistance breeding program as potential sources of resistance this *Pt* population.

Key words: Bread Wheat (*Triticum aestivum*), leaf rust (*Puccinia triticina*), selection, reaction

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➢ **POSTER PRESENTATION**

İlaç Yüklü Pektin Temelli Hidrojellerin Farklı Çapraz Bağlayıcı ve İyonik Kuvvet Etkisiyle İlaç Salım Davranışının Belirlenmesi ve Karakterizasyonu

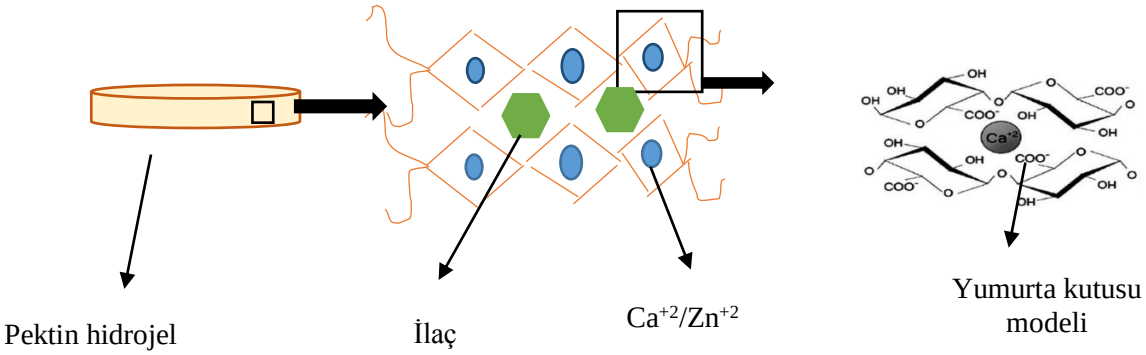
Ebru Sarıoğlu*, Banu Arabacıoğlu Kocaağa, F. Seniha Güner

İstanbul Teknik Üniversitesi, Kimya-Metalurji Fakültesi, Kimya Mühendisliği Bölümü, İstanbul Türkiye

*Sorumlu yazar e-mail: sarioglueb@gmail.com

Özet

Bir polisakkarit hidrojel olan pektin, şeffaf ve homojen film oluşturabildiği ve oksijen geçişine izin verdiği için kronik yara tedavisinde tercih edilebilecek malzemedir. Aynı zamanda toksik olmayıp biyo-uyumlu, biyo-parçalanabilir ve anti-mikrobiktir. İki değerlikli katyon varlığında çapraz bağlı yumurta kutusu modeli oluşturabildiği için pektin film kontrollü ilaç salım sistemi olarak da kullanılabilir. Bu çalışmada pektin hidrojellerin ilaç salım ve şişme davranışlarına, farklı çapraz bağlayıcı ve disolüsyon ortamının iyon derişimi etkisinin incelenmesi amaçlanmıştır. Bu amaçla basit bir şekilde iyonik jelleşme ile hazırlanan hidrojellerde (Şekil 1), plastikleştirici olarak gliserin, model ilaç olarak da teofilin kullanılmıştır. $CaCl_2$, $ZnCl_2$ ve $ZnSO_4$ olmak üzere aynı derişimde iyon içeren üç farklı çapraz bağlayıcı belirlenmiştir. Hidrojel filmlerin FTIR spektrumları alınmış ve temas açıları ölçülmüştür. FTIR sonuçlarına göre model ilaç teofilinin majör konformasyonal bir değişikliğe uğramadan, pektin hidrojeli içinde immobilize olduğu belirlenmiştir. $CaCl_2$ ile çapraz bağlanan pektin hidrojeller oda sıcaklığı ve 6,4 pH ortamında en yüksek ilaç salımı (%70) ve şişme oranına (15 kat) ulaşmıştır. $ZnSO_4$ ile çapraz bağlanan hidrojeller daha çok ilaç salıp şişmesine rağmen çok çabuk parçalanmıştır. Ayrıca, ilaç salım ve şişme testlerinde yara sıvısını taklit eden 6,4 pH değerine sahip tampon çözelti, 4 farklı konsantrasyonda Ca^{+2} iyonu içerecek şekilde hazırlanmış ve hidrojellerin bu farklı iyon derişimine sahip ortam içinde ilaç salım ve şişme performansları incelenmiştir. Elde edilen sonuçlara göre, Ca^{+2} iyonunun derişimi arttıkça şişme oranının ve ilaç salım miktarının azaldığı görülmüştür. Yani iyon derişimi arttıkça jelin Donnan potansiyel engel gücü de artmıştır. İndüktif olarak eşleştirilmiş plazma (ICP) yardımıyla tampon çözeltilerdeki ilaç salımından önceki ve sonraki iyon derişimi belirlenmiştir. Sonuç olarak yara örtüsü tasarımının iyonik kuvvetlerle önemli derecede etkileneceği ve $CaCl_2$ ile çapraz bağlanmasının avantajlı olacağı görülmüştür.



Şekil 1. Pektin film yapısı

Anahtar Kelimeler: Yara örtüsü, Hidrojel, Pektin, Çapraz bağlayıcı, İyonik etki

International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2018)

26-27April 2018, Ankara, Turkey
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➢ **POSTER PRESENTATION**

Nanostructural and Antimicrobial Analyses on Technological Fabrics Which Have Electromagnetic Shielding Properties

Sinem Diken Gür[1], Eren Özüpek[2], Semra İde [2,3]

[*1]Hacettepe University, Faculty of Science, Department of Biology, Ankara, Turkey

[2]Hacettepe University, Graduate School of Science and Engineering, Dept. of Polymer Science and Technology, Ankara, Turkey

[3]Hacettepe University, Faculty of Engineering, Department. of Physics Engineering, Ankara Turkey

Corresponding author e-mail: sinemdkn@hacettepe.edu.tr

Abstract

Harmful effects of electromagnetic waves (EMD) are increased by human sourced technological developments. In order to prevent these effects, reducing the transmission of electromagnetic radiation that affects the humans by electromagnetic shielding (EMS), can be used. For this purpose synthetic fabrics are able to used as electrical insulation. But several factors such as temperature, humidity, presence of skin dead cells and body secretions can make fabrics optimum cultures for the growth of microorganisms. Antimicrobial effect and EMS effectiveness of these fabrics have been improved by using nano composite polymers.

The present work aims (i) to do some research and development studies on recently prepared and designed EMD shielding fabrics and their polymer composite coated forms, (ii) to investigate antimicrobial properties of these fabrics.

In this study carbon nanotubes and graphene nano aggregations were used to synthesize original coating polymer composite materials. Starting fabrics and their coated forms were examined to control and develop their structure-property relations concerning with nanostructural uniformity, EMD shielding and antimicrobial properties. The antimicrobial effects of treated fabrics were investigated against *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Candida albicans*. By using disc diffusion method. Afterwards inhibition zone diameters of fabrics on the petri dishes were measured in order to determine the antimicrobial effect of these fabrics.

Nanostructurel results were obtained and samples were characterized by using SAXS and WAXS (Small and Wide Angle X-Ray Scattering) methods. When the antimicrobial test results were analyzed, the antimicrobial effect of the fabrics were found to be higher for the fungus *Candida albicans*.

Keywords: EMD shielding fabrics, Carbon nanotubes, Graphene nano aggregations, *Staphylococcus aureus, Klebsiella pneumoniae, Pseudomonas aeruginosa* and *Candida albicans.*

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➢ **POSTER PRESENTATION**

Increased Heat Sensitivity of *Listeria monocytogenes* in Sous Vide Cooked Ground Beef with Olive Leaf Extract

Serap Coşansu*, Özlem Kıymetli

Sakarya University, Engineering Faculty, Food Engineering Department, Sakarya, Turkey

Corresponding author e-mail: scosansu@sakarya.edu.tr

Abstract

The olive tree (*Olea europaea* L.) has been cultivated from ancient times in the Mediterranean area mainly for its fruits and derived products such as olive oil. Olive leaf is one of the olive byproducts. The antimicrobial activity of olive leaf extract against foodborne pathogens including *Listeria monocytogenes* has been well known. The aim of this study was to evaluate whether the combined action of mild heat treatment and olive leaf extract could increase heat sensitivity of *L. monocytogenes* in sous vide cooked ground beef. Vacuum-packaged ground beef samples with or without olive leaf extract (1%) were inoculated with *L. monocytogenes* (7-8 log CFU/g) and then heat treated in water bath adjusted to 55, 60 and 65°C for 30, 20 and 7.5 min, respectively. At appropriate time intervals, samples were removed and cooled in ice slurry until the inner temperature was reduced to 4°C. After cooling, counts of surviving *L. monocytogenes* were determined on Tryptic Soy Agar over laid with PALCAM Agar. Heating at 55°C for 30 min reduced the number of pathogen by 0.96 and 1.27 log in 0 and 1% OLE added ground beef samples, respectively. Addition of 1% OLE lead to a 1.04 log more reduction after heating at 60°C for 20 min when compared to control samples. This difference was 0.73 log cycle for ground beef samples heated at 65°C for 7.5 min. It was concluded that addition of olive leaf extract could help to control *L. monocytogenes* in sous vide cooked meat products by increasing heat sensitivity.

Keywords: *Listeria monocytogenes*, ground beef, olive leaf, heat sensitivity

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➢ **POSTER PRESENTATION**

Toksiklerin Analitik Yöntemlerle Tespiti

Hülya Şen Arslan[1*], Sabire Yerlikaya[1]

[1] Karamanoglu Mehmetbey Üniversitesi, Mühendislik Fakültesi, Gıda Mühendisliği Bölümü, Karaman, Türkiye.

hulyasen3842@hotmail.com

Özet

Analitik toksikoloji; aktif olarak çeşitli biyolojik ve diğer örneklerde toksik bileşiklerin tespiti, tanımlanması ve miktarıyla ilgilenmektedir. Analizin amacı, bir bileşiğin veya bir bileşik grubunun içeriği ile fizyolojik aktivitesini belirlemektir. İkinci bir olasılık, olan tüm toksik maddelerin tespit edilmesi, tanımlanması ve miktarlarının belirlenmesi çoğu kez mümkün değildir. Bu yüzden amaç genellikle toksik etkinin yoğunluğunu tahmin etmektir. Niteliksel ve niceliksel analizlere ek olarak, analitik sonuçların yorumlanması analitik toksikolojinin ayrılmaz bir parçasıdır. Analizin sonuçlarını etkileyen en önemli aşamanın numune hazırlama olduğu belirtilmektedir. Her analiz yöntemi için farklı numune alma metotları kullanılmaktadır. Analitik yöntem olarak fonksiyonel analiz, biyosensörler, immunosensörler, spektrofotometrik yöntemler, elektroforetik yöntemler ve kromatografik yöntemler kullanılmaktadır. Her metodun farklı avantaj ve dezavantajları bulunmaktadır. MBA eski moda, acımasız ve hata eğiliminde olan bir yöntem olarak kabul edilir. Duyarlı, basit, hızlı, düşük maliyetli ve taşınabilir dedektörler olan biyosensörler gıda kontrolü için idealdir. Spektrofotometrik yöntemler nispeten daha basit ve pahalı ekipmana ihtiyaç duymazlar. Kolon kromatografisi ise gıda toksikatörlerinin gıda güvenliği testleri ve onaylanması için nitel ve nicel analizlerde tercih edilen yöntemdir. Bu çalışmada toksiklerin analitik yöntemlerle tespiti hakkında bilgi verilmiştir.

Anahtar Kelimeler: Analitik yöntemler, gıda, toksikoloji.

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➢ **POSTER PRESENTATION**

Second Record of *Gustavia fusifer* Koch, 1841 (Acari, Oribatida) from Turkey

Şule BARAN

Sakarya University, Arts and Sciences Faculty, Biology Department, Sakarya, Turkey.

Corresponding author e-mail: sbaran@sakarya.edu.tr

Abstract

Oribatid mites are one of the most species rich group of Acari (Arachnida) with aproximately 11. 000 known species. Oribatids are diverse in the organic horizons of most soils, where their densities can reach several hundred thousand individuals per square meter. About 50-100 species can easily be yielded in undisturbed soils samples. Despite being one of the most diverse and species rich group of mesofauna, oribatid mites of Turkey are still too little known.

Oribatid mites belonging to genus *Gustavia* Kramer, 1879 (*Acari, Oribatida,* Gustaviidae) comprises 16 species and distributed in the Holarctic and Paleotropical regions. Gustaviid mites can be easily distinguished from the related taxa by notogaster without long humeral process, extremely long and narrow chelicerae, maximum of 600 μm body length; narrow rostrum, broad lamellae, globular notogaster without a margin to the porodorsum.

The species *Gustavia fusifer* was previously recorded in Turkey only from the Denizli province (Buldan). This study comprises a new locality record and redescription of the species from Sakarya province (Dokurcun, Akyazı).

Keywords: Acari, Oribatida, *Gustavia fusifer*, second record, Dokurcun,Turkey

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➢ **POSTER PRESENTATION**

Synthesis and antiproliferative activity of coumarin-chalcone derivatives

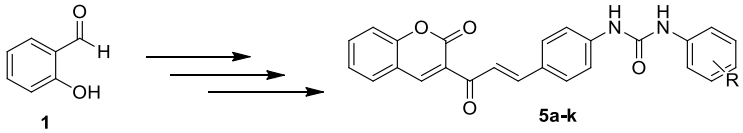
Belma Zengin Kurt[1], Fatih Sonmez[2],* Nur Ozten Kandas[3], Aydan Dag[1], Mustafa Kucukislamoglu[2]

[1]Bezmialem Vakif University, Faculty of Pharmacy, Department of Pharmaceutical Chemistry, Istanbul, Turkey.
[*2]SakaryaUniversity, Faculty of Arts and Science, Department of Chemistry, Sakarya, Turkey.
[3]Bezmialem Vakif University, Faculty of Pharmacy, Department of Pharmaceutical Toxicology, Istanbul, Turkey

Corresponding author e-mail: fsonmez@sakarya.edu.tr; bzengin@bezmialem.edu.tr.

Abstract

The increasing interest in new drug discovery is constantly up to date as drugs do not increase survival adequately against increasing cancer cases worldwide [1, 2]. Based on the reported anticancer activity of coumarin, chalcone and urea derivatives, this present investigation dealt with the design and synthesis of coumarin derivatives bearing diversely substituted chalcone-urea moieties **5a-5k**. Through a structure-based molecular hybridization approach, a series of coumarin-chalcone derivatives containing urea moiety was synthesized and screened for their in vitro antiproliferative activities against the cancer cell lines (H4IIE and HepG2). In addition, the compounds were tested on a cell line that was not cancerous (CHO) and the damage, it could give to normal cells was determined. Among the synthesized compounds, 1-(4-(3-oxo-3-(2-oxo-2H-chromen-3-yl)prop-1-en-1-yl)phenyl)-3-(4(trifluoromethyl) phenyl)urea (**5k**) exhibited better inhibition of H4IIE compared to Sorafenib and 1-(4-nitrophenyl)-3-(4-(3-oxo-3-(2-oxo-2H-chromen-3-yl)prop-1-en-1-yl)phenyl)urea (**5j**) showed better inhibition against HepG2 than Sorafenib. In particular, **5k** induced H4IIE apoptosis, arrested cell cycle at the S phase. Therefore, **5k** and **5j** may be potent antitumor agents, representing a promising lead for further optimization.



Scheme 1. Synthesis of coumaryl-chalcone substituted urea derivatives.

Keywords: Apoptosis, cell-cycle, chalcone, coumarin, cytotoxicity, urea.

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➢ **POSTER PRESENTATION**

Cyanide Degradation Efficiencies of Bacterial Consortiums Isolated from Waste Mud Pit

Nermin Hande Avcioglu[*1], Sezen Bilen Ozyurek[1], Isil Seyis Bilkay[1]

[1]Hacettepe University, Faculty of Science, Biology (Biotechnology), Ankara, Turkey.

[*]Corresponding author e-mail: hurkmez@hacettepe.edu.tr

Abstract

The release of organic and inorganic forms of different toxic compounds from industrial processes is an important threat for environmental contamination. As a result, all living organisms especially human and aquatic ones are faced with various diseases that can be fatal, such as cancer. In order to solve this problem, physical, chemical and biological treatment methods are being used for degradation or detoxification of these compounds. Biological treatment methods are known as environmentally friendly and cost effective one among them. Due to its toxic, carcinogenic and mutagenic effects, cyanide is known as an important environmental contaminant discharging from industrial processes such as mining, electroplating, metal plating, nylon, plastics, cosmetics, road salts and drug production and lots of others as an untreated effluent. Accordingly, in order to inhibit cyanide accumulation in soil and water, usable and efficient removal techniques are being investigated in different researches. In this respect, degradation of cyanide by using bacterial strains as biological treatment agents is aimed in this study. Therefore, different bacterial consortiums including *Bacillus subtilis* MG847158.1, *Enterococcus casselifalavus* NR119280.1, *Leuconostoc mesenteroides* NR074957.1, *Klebsiella pneumnoiae* NR117683.1, *Pannonibacter phragmitetus* NR028009.1 and *Bacillus halotolerans* NR115063.1 isolated from waste mud pit, are used and efficiencies of these bacterial consortiums in the removal of cyanide compounds are investigated. Additionally, sterile culture supernatants of these strains are also formed and cyanide removal efficiencies of these supernatants in the absence of bacterial strains in biodegradation media are also investigated. As a result of this study, the importance of biological treatment processes and the usage of bacterial consortiums in the removal of toxic compounds are determined.

Keywords: Bacterial consortium, Waste mud pit, Cyanide degradation.

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➢ **POSTER PRESENTATION**

Investigation and Detection of Chlorophenylpiperazine Isomers with Doped C20 Fullerenes

Özgür Alver[1], Metin Bilge[2], Cemal Parlak[2], Mustafa Şenyel[1*]

[*1]Department of Physics, Science Faculty, Anadolu University, Eskisehir, 26470, Turkey
[2]Department of Physics, Science Faculty, Ege University, Izmir, 35100, Turkey

Corresponding author e-mail: msenyel@anadolu.edu.tr

Abstract

In Fullerene based materials have been paid increasing attention in the field of sensor and drug delivery applications. Interactions of silicon and aluminum doped C20 fullerenes with ortho, meta and para chlorophenylpiperazines were examined by density functional theory. Electronic and structural properties of the nanocages were searched with M062X and B3LYP functionals with 6-31G(d) basis set in the gas phase and water media. They might be used as sensor for detection of these chlorophenylpiperazines.

Keywords: Sensor, chlorophenylpiperazines, C20 Fullerene, DFT.

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➢ **POSTER PRESENTATION**

Adsorption of 6-Chloro-3-Hydroxy-2-Pyrazinecarboxamide on Pristine and Doped C60 Fullerenes

Cemal Parlak[1], Özgür Alver[2], Ponnadurai Ramasami[3], Mustafa Şenyel[2*]

[1]Department of Physics, Science Faculty, Ege University, Izmir, 35100, Turkey
[*2]Department of Physics, Science Faculty, Anadolu University, Eskisehir, 26470, Turkey
[3]Computational Chemistry Group, Department of Chemistry, Faculty of Science, University of Mauritius, Réduit 80837, Mauritius.

Corresponding author e-mail: msenyel@anadolu.edu.tr

Abstract

The interaction with pristine and doped fullerenes seems to have a promising research field particularly for the drug delivery and sensor applications. Density functional theory was performed to study the possible interaction edges of undoped and Si- or Al-doped C60 fullerenes with 6-chloro-3-hydroxy-2-pyrazinecarboxamide in order to use the fullerene cage as a potential candidate to carry this compound. Calculations were performed by M062X and B3LYP functionals with 6-31G(d) basis set in the gas phase and water media. AlC59…the compound system in water is found as the most stable one. Electronic sensitivities of the investigated complexes depend on the dopant atom. Results found in this search reveal further insight into drug delivery systems.

Keywords: C60 Fullerene, Binding energy; Adsorption, DFT.

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➢ **POSTER PRESENTATION**

An Optimized Alkaline Comet Assay Protocol for Plants

Yonca Surgun-Acar

Faculty of Agriculture, Department of Agricultural Biotechnology, Çanakkale, Turkey.

Corresponding author e-mail: yoncasurgun@gmail.com

Abstract

The comet assay, also called the single cell gel electrophoresis (SCGE) measures low levels of DNA damage in individual cells. This technique enables the qualitative and quantitative study of DNA damage in nuclei isolated from single cells that are fixed in agarose and transferred on microscope slides. The plant cells are treated with high salt concentrations with detergents for lysing process. After DNA unwinding, samples subjected to alkali buffer for electrophoresis. DNA is stained with a fluorochrome such as ethidium bromide after electrophoresis. An image analysis system is used to measure some damage parameters. The alkaline version (pH > 13) of comet assay is capable of detecting DNA single strand breaks, alkali-labile sites, DNA-DNA/DNA-protein cross-linking, and open repair sites. The main advantages of the comet assay are (i) the collection of data at the level of the individual cell, (ii) the need for a small number of cells, (iii) sensitivity for detecting DNA damage and (iv) use of any eukaryote single cell population both in vitro and in vivo. Comet assay is a useful method in evaluating the potential of plants as stable sensors in environments and source of information on the genotoxic impact of pollutants. The present study aims to optimize the alkaline comet assay aimed at detecting the effect of pollutants exposure on plant tissues.

Keywords: Comet assay, DNA damage, genotoxic

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➢ **POSTER PRESENTATION**

The Synthesis of Eu^{3+}-Activated Pyrochlore-Type Molybdate ($Gd_2Mo_2O_7$) and Photoluminescent Properties

Esra Öztürk*, Erkul Karacaoglu

Karamanoglu Mehmetbey University, Faculty of Engineering, Department of Metallurgy and Materials Engineering, Karaman, TURKEY

Corresponding author e-mail: esracircir@gmail.com

Abstract

The Pyrochlore structures, $A_2B_2O_7$ are one of oxides included 3d, 4d and 5d electron systems and have cubic structure with the space group Fd3m, in which A, B, O(1) and O(2) occupy the sites 16d, 16c, 48f and 8b, respectively. The A (B) site forms a 3-D network of corners haring tetrahedra and formally takes A^{3+} (B^{4+}) state. The molybdate based $R_2Mo_2O_7$ (R= rare-earth element) pyrochlore has the metal-insulator (M-I) transition property depending on the rare-earth element. It has been proved to exhibit a systematic variation in transport and magnetic properties with changing R. In this research, Eu^{3+}-ion activated $Gd_2Mo_2O_7$ pyrochlore was successfully synthesized with solid state reaction (ceramic) method at 1200°C-3 h, 1300°C-3 h and 1320°C-3 h heat treatment process under N_2 atmosphere because the oxidation possibility of Mo^{4+}-ion in open atmosphere during synthesis. The thermal analysis (DTA/TG) were obtained until 1300 °C to determine reaction conditions and possible phase formations. The X-ray powder diffraction (XRD) was carried out to characterize phase properties and showed the cubic $Gd_2Mo_2O_7$ single phase formation with lattice parameters a=b=c= 10.348 Å and α=β=γ=90°. The photoluminescence (PL) analysis results (Fig. 1) showed that excitation spectrum at 314 nm which was related to the charge-transfer transition from 2p orbital of O^{2-} ions to the 4f orbital of Eu^{3+} ions. The emission maximum at 526 nm belongs $^5D_1 \rightarrow {}^7F_1$ transition of the Eu^{3+} ions.

Keywords: Pyrochlore-Type Molybdate, $Gd_2Mo_2O_7$, Eu^{3+}, photoluminescence.

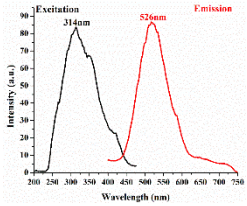

Figure 1. The excitation and emission spectrum of $Gd_{1.98}Eu_{0.02}Mo_2O_7$ pyrochlore.

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➢ **POSTER PRESENTATION**

Theoretical Analysis of Interaction Mechanism Between Silicon and Aluminiun Doped C60 Fullerenes and Phenylalanine

Cemal Parlak[1], Mustafa Şenyel[2], Mehmet Fatih Kaya[3], Özgür Alver[2*]

[1]Ege University, Science Faculty, Department of Physics, Izmir, 35100, Turkey.
[2]Anadolu University, Science Faculty, Department of Physics, Eskişehir, 26470, Turkey
[3]Piri Reis University, Faculty of Sciences and Arts, Department of Physics, İstanbul, Turkey

Corresponding author e-mail: ozguralver@anadolu.edu.tr

Abstract

Fullerenes, including their derivatives and their physical interaction mechanisms with various types of molecules and particularly drugs and biologically important molecules have been paid an increasing attention for their possible usage particularly as drug delivery vehicles and sensor applications. In this study, the optimized molecular geometric structures, along with some important structural parameters, electronic properties, natural bond orbital analyses, and the possible interaction mechanisms between C60, Si-, Al-doped C60 and 1-Phenylalanine ligand molecule were examined based on the quantum mechanical approach. It was seen that doping process and water as solvent enhance the interaction strength between fullerene and ligand system and cause some changes of electronic properties and NH stretching values of the studied complexes.

Keywords: Phenylalanine; C60; Adsorption; Electronic properties.

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➢ **POSTER PRESENTATION**

Influence of Nitric Acid Treatment on Structural and Thermal Properties of Chabazite

Burcu Erdoğan Alver[1] and Özgür Alver[1*]

[1]Anadolu University, Science Faculty, Department of Physics, Eskişehir, 26470, Turkey

Corresponding author e-mail: ozguralver@anadolu.edu.tr

Abstract

Chabazite is one of the widely used natural zeolites in industrial applications. Chabazite has a framework structure consisting of a stacked sequence of 6-rings in the order AABBCC… Three-dimensional channel system of chabazite consists of the large ellipsoidal shaped cavities (6.7 x 10 Å) that are accessible via eight-ring windows with approximate dimension 3.8 x 3.8 Å. In this study, in order to investigate the effect of treatment time on structural properties and thermal behavior, chabazite sample from Bala (Turkey) was treated with 100 ml of 1.0 M HNO_3 solutions at 80 ^oC during 2, 4, 6, 12 and 24 hours. Then, the resultant samples were separated, washed with hot deionized water several times and dried at room temperature. Prior to the experimental procedure, all samples were dried in an oven at 100 ^oC for 24 h and stored in a desiccator. The samples before and after the acid treatment were characterized using Powder X-ray diffraction, thermogravimetric analysis (TG) and differential thermal analysis (DTA) techniques. XRD diffractograms were obtained with a Bruker instrument, using CuKα radiation (λ=1.54 Å) at 40 kV and 20 mA, in the range 3-40° 2θ. Simultaneous TG and DTA experiments were performed in the temperature range of 30–1000 °C, with a heating rate of 10 °C min^{-1} using a Setsys Evolution Setaram instrument. It was determined that as the treatment time is increased thermal properties chabazite samples varied considerably as a result of induced structural changes.

Keywords: Chabazite; Acid treatment; Structural changes.

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➢ **POSTER PRESENTATION**

Check All That Apply Methodology for Sensory Analysis

Ceyda Dadalı[1*], Yeşim Elmacı[1]

[1*]Ege University, Engineering Faculty, Food Engineering Department, Izmir, Turkey.

Corresponding author e-mail: ceyda.dadali@gmail.com

Abstract

Product characterization is a key activity in sensory analysis, traditionally performed by using descriptive sensory analysis. It is a comprehensive process that requires a significant resource investment. While traditional product characterization methodologies supply right and reliable data, new methodologies for product characterization continue to be developed. Consumer-based methodologies for sensory product characterization are gaining popularity. One of these methodologies is Check All That Apply (CATA). The CATA methodology involves a pre-determined list of terms, sentences/statements which can be used by assessors by ticking as many options as needed to express their opinion about the product. This methodology is descriptive, short and flexible and could be applied on the consumers without the need for training. This approach is used to define which sensory attributes consumers perceive in food products. CATA could be applied to any food product. The terms used in the CATA lists could be purely sensory (sweet, salty), emotional (fresh, energising), functional (good for lunch). It also provides possibility to explore the ideal such as too salty or not crunchy enough. The efficiency of the CATA questions in evaluating adult and also children sensory perception of a food product has been varied by several studies. This review provides an overview of CATA methodology for sensory analysis.

Keywords: check all that apply, CATA, food, sensory analysis

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➢ **POSTER PRESENTATION**

Biosorption of Crude Oil by Different Fungal Strains

Sezen Bilen Ozyurek*, Nermin Hande Avcioglu, Isil Seyis Bilkay

Hacettepe University, Faculty of Science, Department of Biology/Biotechnology, Beytepe, Ankara, Turkey.

Corresponding author e-mail: sbilen@hacettepe.edu.tr

Abstract

Spillage of crude oil during transportation, offshore drilling, improper methods applied to the removal of oil, abandoned manufactured gas sites and various industrial processes lead to oil pollution in soil and water ecosystem. This pollution damages all ecosystems, including plants and animals, and causes contamination in drinking waters. There is a growing interest in promoting environmental methods in the process of cleaning oil pollutants. Crude oil can be degraded by microorganisms such as bacteria, fungi, yeast and microalgae. In the aquatic ecosystems, fungi play an important role in biosorption of hazardous compounds. Biosorption is a cost-effective and ecologically friendly treatment method in the removal processes of various organic compounds and heavy metals. This method can be achieved by using both of dead and living biomasses of fungal strains. In this context, with this present study it was aimed to investigate the biosorption of crude oil by using different fungal strains such as *Fusarium graminearum* KJ 017740, *Fusarium equiseti* NRRL5537, *Aspergillus parasiticus* HQ340110, *Penicillium chrysogenum* KU847861 and *Paecilomyces lilacinus* NRRL1746. Accordingly, live and dead biomasses of these fungal strains were used as bioadsorbents in order to investigate the efficiencies of these biomasses in the removal process of crude oil in Bushnell Haas media. Therefore, fungal biomasses were inoculated in 250 mL Erlenmeyer flasks containing 50 mL Bushnell Haas medium with 1% (v/v) crude oil as a sole carbon and energy source. Incubation period was carried out at 25^{o}C and 150 rpm rotation speed and all experiments were performed in triplicate. After the incubation period, gravimetric analyses were performed to determine the crude oil biodegradation efficiencies of live and dead biomasses of fungal strains. As a result of this present study, it has been shown that fungal strains could be used as an alternative to bacteria for the removal of crude oil from environment.

Keywords: Biosorption, Fungal Strains, Crude Oil, Biodegradation, Bioremediation

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➢ **POSTER PRESENTATION**

Comparison of petroleum removal by clinically and environmentally isolated *Klebsiella pneuomoniae* strains

Sezen Bilen Ozyurek*, Nermin Hande Avcioglu, Isil Seyis Bilkay

Hacettepe University, Faculty of Science, Department of Biology/Biotechnology, Beytepe, Ankara, Turkey.

Corresponding author e-mail: sbilen@hacettepe.edu.tr

Abstract

Although petroleum is one of the most important fossil fuels, it causes toxic effects on environment and living organisms. Petroleum contains different organic compounds such as benzene, toluene, ethyl benzene, xylene and naphthalene which are harmful to plants, animals and human's health. Petroleum contamination can be removed by physical, chemical and biological remediation technologies. Bioremediation is an effective technology for treatment of petroleum pollution. Furthermore, it is an environmentally friendly and cost-effective process in which toxic organic pollutants such as petroleum are converted by microorganisms into non-toxic products. A wide variety of bacteria plays an important role in the removal of petroleum contaminants. In this context, this present study is aimed to compare the petroleum biodegradation efficiencies of clinically isolated *Klebsiella pneumoniae* ATCC 700721 and environmentally isolated *Klebsiella pneumoniae* ATCC13883. The pure culture of bacteria was prepared by overnight incubation in Nutrient Broth at 30 ^{0}C for 18 hours in rotatory incubator. Biodegradation assay was carried out in 250 mL Erlenmeyer flasks containing 50 mL Bushnell Haas medium and using 1% (v/v) petroleum as a sole carbon and energy source. Bacterial culture and culture supernatant of bacteria were inoculated in Bushnell Haas medium containing 1% petroleum. The flasks were incubated at 150 rpm rotation speed at 25 ^{0}C for 7 days. The experiments were performed in triplicate. After the incubation period, spectrophotometric and gravimetric analyses were carried out respectively to determine the bacterial growth and petroleum biodegradation of *Klebsiella pneumoniae* strains. As a result, the petroleum biodegradation efficiencies of *Klebsiella pneumoniae* strains were detected and compared. So, it has been shown that *Klebsiella pneumoniae* strains can be used as an alternative in advanced bioremediation studies.

Keywords: *Klebsiella pneumoniae*, Petroleum, Biodegradation, Bioremediation

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➢ **POSTER PRESENTATION**

Determination toxicity of Titanium diokside with FRAP and TEAC in *Allium cepa*

Fatih Oğuz Bekdemir[1*], Dilek Pandır[2]

[*1]Bozok University, Institue of Sciences, Department of Biology, Yozgat, Turkey
[2]Bozok University, Faculty of Arts and Science, Department of Biology, Yozgat, Turkey
e-mail: durak77@gmail.com

Abstract

Nanotechnology is a scientific discipline that involves the production and processing of nanometer-sized materials. Despite the constant increase in interest in nanotechnology nowadays, the effects of nanoparticles on plants have not been fully elucidated. Although titanium dioxide (TiO_2) nanoparticle has widespread use in a variety of fields, studies to investigate its effect on plant growth and development are rarely encountered. In this study, the antioxidant capacity of TiO_2 nanoparticles on the onion (*Allium cepa* L.) plant was investigated. Increasing doses of were applied to determine the effect of TiO_2 on onion root cells. Onion roots were kept in the tap water for 1 night and then exposed to these doses for 3 days after they were germinated. At the end of 3 days, the roots were examined according to the FRAP and TEAC method. As a result, there was a decrease in antioxidant levels of *A. cepa* in direct proportion to the doses given.

Keywords: Nanoparticles, Titanium diokside, *Allium cepa*, FRAP, TEAC.

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➢ **POSTER PRESENTATION**

Assesment of Zinc oxide nanoparticles on DNA damage

Fatih Oğuz Bekdemir[1*], Dilek Pandır[2]

[*1]Bozok University, Institue of Sciences, Department of Biology, Yozgat, Turkey
[2]Bozok University, Faculty of Arts and Science, Department of Biology, Yozgat, Turkey
e-mail: durak77@gmail.com

Abstract

Due to increased industrial activities, the release of nanoparticles into the environment has increased. Especially in the vicinity of industrial towns, many agricultural land have been exposed to these nanoparticles. Despite efforts to detect the effects of zinc oxide (ZnO), one of these nanoparticles, on the plants, the effect was not fully determined. In this study, commet assay method was used to determine the genetoxic effects of ZnO nanoparticles on onion (*Allium cepa* L.) plants. Increasing doses of ZnO were applied to determine the effect of ZnO on onion root cells. Onion roots were kept in the tap water for 1 night and then exposed to these doses for 3 days after they were germinated. At the end of 3 days, the roots were examined according to commet assay. As a result, genetoxic impairments were observed in *A. cepa*'s root cells in directly proportion to the doses given. Accordingly, the genotoxic effect of ZnO on *A. cepa* was observed.

Keywords: Nanoparticles, Zinc okside, *Allium cepa* , Comet Assay, DNA damage.

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➢ **POSTER PRESENTATION**

Determination of Phenolic Acids and Flavonoids in the Leaves of *Mentha longifolia* (L.) Hudson from Şanlıurfa and Rize

Fatma Abak[a], Halbay Turumtay[b], Emine Akyüz Turumtay[c,*], Emine Kılıçkaya Selvi[c], Vagıf Atamov[a]

[a]Department of Biology, Faculty of Arts & Sciences, Recep Tayyip Erdogan University, Rize, Turkey
[b]Department of Energy System Engineering, Karadeniz Technical University, Trabzon, Turkey
[c]Department of Chemistry, Faculty of Arts & Sciences, Recep Tayyip Erdogan University, Rize, Turkey

*E-mail: emine.selvi@erdogan.edu.tr

Abstract

Several species of the genus Mentha from Lamiaceae family are important agricultural crops because of their culinary and fragrance properties. *Mentha longifolia* leaves are used as a condiment in various foodstuffs, besides, it is well-known herbal remedy used to treat especially nausea, flatulence, vomiting, ulcerative colitis, stomach aches, and cramps. Phytochemical compositions of *Mentha longifolia* (L.) Hudson from two different geographical locations as Şanlıurfa and Rize, were investigated and compared according to the results of HPLC-DAD analyses and spectrophotometric total phenol and flavonoid assays. For this reason, the leaves of the plants are pulverized and oil is removed with hexane. The residue of the filtered hexane extract was subjected to methanol extraction using an ultrasonic water bath and vortex.

Phytochemical contents of the leaf extracts of *Mentha longifolia* from two different locality was observed highly different based on the results of HPLC-DAD analyses. For instance, although rosmarinic acid was found as main compound with very high amount in the samples from Şanlıurfa (74.3 mg/g extract), it was not determined in the samples from Rize. Şanlıurfa leaf extract was much richer than Rize leaf extract. Luteolin, luteolin derivatives and apigenin derivatives were common compounds, while resveratrol, eriodictyol and rosmarinic acid derivatives were observed only in the Şanlıurfa sample. The results of total phenolic content were highly correlated with the results of HPLC-DAD analysis. Total phenolic content of the Şanlıurfa sample was found 6.5 times higher than Rize sample. On the other hand total flavonoid content of Rize sample was found around 2 times higher than Şanlıurfa Sample. In conclusion, geographical location differences affected seconder metabolite production of *Mentha longifolia* leaf parts.

Keywords: *Mentha longifolia*, rosmarinic acid, luteolin, apigenin.

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➢ **POSTER PRESENTATION**

Türkiye'den *Dactylothrombium pulcherrimum* (Haller, 1882) un (Acari: Microtrombidiidae) Yeni Lokalite Kaydı ve Yayılışı

Rukiye Yıldırım[1]*, Sevgi Sevsay[2]

[1]Erzincan Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Anabilim dalı, Erzincan, Türkiye
[2] Erzincan Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Erzincan, Türkiye

r.ozger@hotmail.com

Özet

Microtrombidiidae Thor, 115 cinse sahip en yaygın familyalardan biridir. Bu familyaya ait *Dactylothrombium* Feider, 1952 cinsi yalnızca iki türden bilinmektedir: *D. pulcherrimum* (Haller, 1882) ve *D. sheppardi* (George, 1913). Bu iki tür de sadece Avrupa ve Palearktik Afrika'dan daha önce kaydedilmiştir. Ülkemizden daha önce Gümüşhane'den kayın ve meşe ağaçlarının altından verilen bu tür, ülkemizden ikinci bir alan olarak Refahiye/Erzincan Dumanlı Ormanları karışık orman döküntüsünden verilmektedir. Bu çalışma ile türün dağılımına ve Türk akar faunasına katkıda bulunmak amaçlanmıştır. Bunun için şu yöntemler kullanılmıştır: El / aspirator ile toplama ve Berlese düzeneği. Materyaller 70% lik alkolde korunmuş ve 9% KOH de temizlenmiştir. Ölçümler mikrometre (µm) olarak alınmış ve çizimler dik ataşmanlı Leica DM 4000 (DIC) mikroskop ile yapılmıştır. Örneklerimiz daha önce verilenlerle karşılaştırıldığında dorsal kıllarının daha uzun olması ve uç kısımda tüberkül benzeri parçalı yapıların sayısının daha fazla olmasıyla farklılık göstermektedir.

Anahtar Kelimeler: Acari, *Dactylothrombium*, Parasitengona, Yeni kayıt, Türkiye

Bu çalışma, Erzincan Üniversitesi Bilimsel Araştırma Projesi (BAP) FYL-2017-469 numaralı projenin desteği ile yürütülmüştür. Desteklerinden dolayı EUBAP koordinatörlüğüne teşekkür ederiz.

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➢ **POSTER PRESENTATION**

Comparison of iron contents in different habitat of some wild edible mushrooms collected from Tunceli-Turkey

Hevidar Alp[1], Olcay Kaplan Ince[2], Muharrem Ince[3], Ali Onal[2*]

[1] Munzur University, Department of Food Process, Vocational School, Tunceli, Turkey
[*2]Munzur University, Faculty of Engineering, Department of Food Engineering, Tunceli, Turkey
[3] Munzur University, Faculty of Engineering, Department of Chemical Engineering, Tunceli, Turkey

*Corresponding Author: onalali_62@outlook.com

Abstract

Mushrooms have been common used as a human food material for centuries due to their texture and flavor. Besides wild mushrooms have been used for a long time in the world because of their bioactivities such as anticancer, antioxidant, immunomodulatory, antiviral, antitumor, anti-inflammatory, cytotoxic effects, anticholesterole and antimicrobial activities in humans body. Moreover it is believed that mushroom consumption is helpful in providing essential nutrients which have high protein, vitamin as well as mineral required for human growth and development.

Iron is one of the main elements found in the structure of mushrooms. In addition, mushrooms accumulate these metals from soil. It is an indispensable mineral for the human body. It is necessary for the production of red blood cells and various enzymes. Iron mineral helps to protect from diseases by strengthening the immune system. However, overdose of Fe can cause toxic effect besides arterial stiffness, premature aging and lubrication of the cells, even it can be increases the risk of cancer. Therefore, it is important to determine the basic composition and the levels of essential and toxic elements in wild edible mushrooms.

In this study was carried out iron content analyses of three wild mushroom species as *Morchella esculenta*, *Morchella vulgaris* and *Amanita vaginata* that collected from three different region of Tunceli were examined. Iron analysis was done using electrothermal atomic absorption spectrophotometer (ETAAS) and results were evaluated statistically by SPSS24. It was found out that Fe concentrations in *M. esculenta* and *M. vulgaris* were statistically similar when assessed in terms of species. On the other hand, *A. vaginata* was discovered to have the highest Fe contents in these three species. When evaluated from the point of view of the region, there is no difference in terms of Fe concentrations. In addition, it was also detected that the Fe concentrations of the fungus change correspondingly with their geographic habitat.

Keywords: *Iron, Mushroom, ETAAS*

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➢ **POSTER PRESENTATION**

Evaluation of copper contents of selected three wild edible mushrooms collected from Tunceli, Turkey: A comparative study

Hevidar Alp[1*], Olcay Kaplan Ince[2], Muharrem Ince[3], Ali Onal[2]

[*1] Munzur University, Department of Food Process, Vocational School, Tunceli, Turkey
[2]Munzur University, Faculty of Engineering, Department of Food Engineering, Tunceli, Turkey
[3] Munzur University, Faculty of Engineering, Department of Chemical Engineering, Tunceli, Turkey

*Corresponding Author: halp@munzur.edu.tr

Abstract

Edible fungus are valuable healthy food with rich vitamins, low fat, protein, iron, zinc, selenium, sodium, chitin, high fiber contents and mineral resources particularly potassium and phosphorus. Metals such as zinc, iron, copper and manganese are important metals because they play an important role in biological systems, whereas lead, nickel, arsenic and cadmium are nonessential metals because the marks are even toxic. Necessary metals found in the fungus may cause toxic effects when metal intake is excessive. It is also known that all mushrooms have the ability of bioaccumulation of metal ions. Heavy metals found in the fungus are an indication of environmental pollution and pose a significant health risk to people who consume it.

This study was carried out to copper content analyses of some wild edible mushroom species. This element is involved in the structure of many enzymes. It is also takes part in protein synthesis in the body and has a protective effect against free radicals. However, overdose of Cu can cause toxic effect. Especially it increases the cancer risk in the human body. Therefore, in this study, three wild mushroom species as *Morchella esculenta*, *Morchella vulgaris* and *Amanita vaginata* that collected from three different region of Tunceli were examined. Mushroom samples were digested by a microwave digestion system than clear solutions were analyzed using electrothermal atomic absorption spectrophotometer (ETAAS) Results revealed that Cu concentrations in *M. esculenta* and *M. vulgaris* were statistically similar when assessed in terms of species. On the other hand, *A. vaginata* was discovered to have the highest Cu content among these three species. When evaluated from the point of view of the region, there is no difference in terms of Cu concentrations.

Keywords: *Copper, Mushroom, ETAAS*

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➢ **POSTER PRESENTATION**

Determination of Micellization Parameters of Some Ionic Surfactants From Electrical Conductivity Measurements

Erol Akpinar[1], Esra Sahin[1*]

[1]Abant Izzet Baysal University, Arts and Sciences Faculty, Department of Chemistry, Bolu, Turkey.

Corresponding author e-mail: esra.sahin.94@icloud.com

Abstract

Micellar systems have been widely using in industrial and biotechnological applications. In general, they are divided into two main classes, lyotropic liquid crystals and isotropic micellar solutions. In both solutions, micelles are structural units formed by surfactants. Especially, isotropic micellar solutions of ionic surfactants are used in cosmetics (face cleaning processes) and other cleaning processes (soaps, detergents, etc.) [1]. Because lyotropic liquid crystals are in close contact with biology, they have applications in biotechnology (e.g. drug delivery systems) [2].

In this study, we determined micellization thermodynamic parameters of aqueous isotropic micellar solutions of some ionic surfactants (potassium octanoate, KC8; potassium decanoate, KC10; potassium dodecanoate, KC12) at six different temperatures from electrical conductivity measurements, Figure. Those parameters are critical micelle concentration (cmc), a degree of counterion binding to the micelles (β), micellization Gibbs energy ($\Delta_{mic}G$), micellization enthalpy ($\Delta_{mic}H$) and micellization entropy ($\Delta_{mic}S$). We discussed the results in terms of (a) the effect of surfactant alkyl chain length on micellization and (b) whether micellization processes of those surfactants are enthalpy-driven or entropy-driven as a function of temperature.

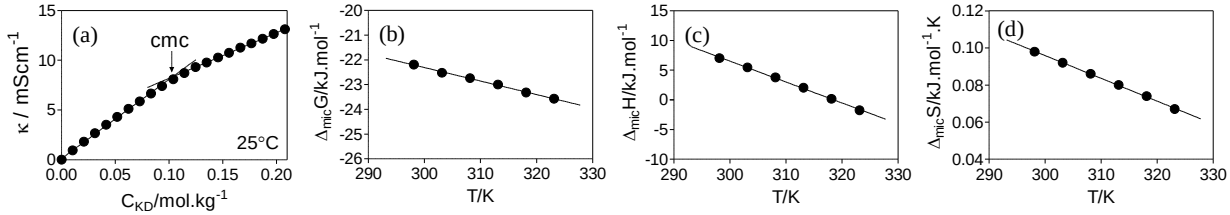

Figure. (a) Conductivity versus total surfactant concentration graph at 25°C, where the break point observed on the curve corresponds to cmc; (b), (c) and (d) are the temperature dependences of $\Delta_{mic}G$, $\Delta_{mic}H$ and $\Delta_{mic}S$, respectively, for KC10. Similar graphs were obtained for KC8 and KC12 surfactants.

Keywords: Ionic surfactants, micellization, surfactant alkyl chain length, micellization thermodynamic parameters, electrical conductivity.

Acknowledgement: This presentation was financially supported by Abant Izzet Baysal University Directorate of Research Projects Commission (BAP) [grant number: 2015.03.03.926].

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➢ **POSTER PRESENTATION**

Effect of Didodecyldimethylammonium Bromide As a Cosurfactant on Nematic Phase Behavior of Lyotropic Mixture KL/DeOH/water

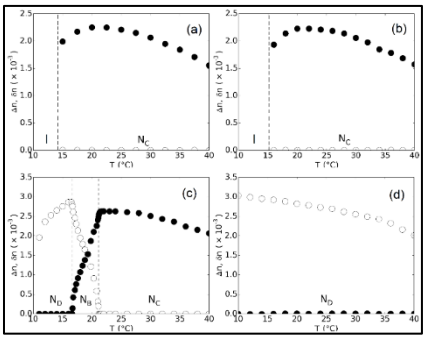
Erol Akpinar[1], Esra Sahin[1*]

[1]Abant Izzet Baysal University, Faculty of Arts and Sciences, Department of Chemistry, Bolu, Turkey.

Corresponding author e-mail: esra.sahin.94@icloud.com

Abstract

In the present study, we examined the effect of a double-chained cationic cosurfactant, didodecyldimethylammonium bromide (DDMABr), on the lyotropic nematic phase behavior of KL (potassium laurate)/decanol (DeOH)/water mixture. Lyotropic nematic liquid crystal textures were characterized by polarizing optical microscopy. The uniaxial-to-biaxial phase transitions were determined from the temperature dependence of the birefringences of the nematic phases via laser conoscopy, Figure 1. We also evaluated a second-rank symmetric tensor order parameter from the birefringences values. The results were interpreted according to "Intrinsically Biaxial Micelles (IBM)" model, Figure 2 [1].



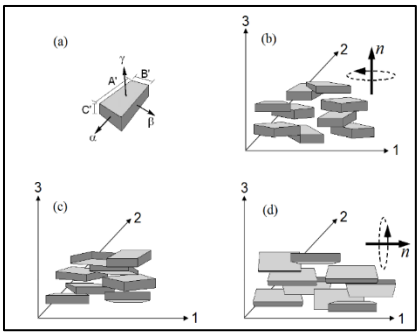


Figure 1 (left). Temperature dependences of the birefringences for (a) KL/DeOH/water mixture. (b), (c) and (d) are those for KL/DeOH/water/DDMABr with different DDMABr concentrations.
Figure 2 (right). In the IBM model, the micelles have an orthorhombic symmetry in the three nematic phases (a), and the two uniaxial and biaxial phases arise from orientational fluctuations of the intrinsic locally biaxial micelles. Orientational fluctuations that are full rotations (b) along the axis perpendicular to the largest surface of the micelle and (d) around the long micellar axis give rise to the discotic nematic (N_D) and calamitic nematic (N_C) phases, respectively. Small amplitude orientational fluctuations around the three-micellar axes give rise to the biaxial nematic (N_B) phase.

Keywords: Lyotropic liquid crystals, nematic phases, laser conoscopy, birefringences, order parameter.

Acknowledgement: This presentation was financially supported by Abant Izzet Baysal University Directorate of Research Projects Commission (BAP) [grant number: 2015.03.03.927].

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➢ **POSTER PRESENTATION**

Munzur Çayı (Tunceli)'ndan Yakalanan *Salmo trutta macrostigma* (Dumeril, 1858)'nın Gonadlarında Yağ Asitleri Düzeylerinin Araştırılması

Esin ÖZÇİÇEK[1*], Kenan KÖPRÜCÜ[2]
[*1]Munzur Üniversitesi, Su Ürünleri Fakültesi, Temel Bilimler Bölümü, Tunceli, Türkiye
[2]Fırat Üniversitesi, Su Ürünleri Fakültesi, Yetiştiricilik Bölümü, Elazığ, Türkiye

Sorumlu yazar e-mail: esinbagci23@gmail.com

Özet

Bu çalışmada, Munzur Çayı (Tunceli)'ndan yakalanan *Salmo trutta macrostigma* (Dumeril, 1858)'nın gonadlarında üreme dönemi öncesinde (Eylül-Ekim), üreme döneminde (Kasım-Aralık) ve üreme dönemi sonrasındaki (Ocak-Şubat) yağ asitleri düzeyleri araştırılmıştır. Balıkların ortalama ağırlığı 149,8 g ve ortalama total boyu ise 23,39 cm olarak belirlenmiştir. Daha sonra, gonadlardan kimyasal analizler için doku örnekleri alınmıştır. Bulgular; doymuş yağ asitleri arasında en yüksek değere stearik asidin sahip olduğunu göstermiştir. Bununla birlikte, bulgular stearik asidin üreme dönemi öncesi, üreme dönemi ve sonrası değerleri arasındaki farklılıkların istatistiksel olarak önemsiz ($P>0,05$) olduğunu göstermiştir. Tekli doymamış yağ asitleri arasında palmitoleik asidin en baskın olan yağ asidi olduğu belirlenmiştir. Palmitoleik asidin üreme dönemi öncesi ve sonrası değerleri arasındaki farklılıkların önemsiz ($P>0,05$); üreme dönemi öncesi ve üreme dönemi arasında ise önemli ($P<0,05$) olduğu bulunmuştur. Diğer taraftan bulgular çoklu doymamış yağ asitleri içinde eikosapentaenoik ve dokosaheksaenoik yağ asitlerinin baskın olarak bulunduğunu göstermiştir. Üreme dönemi öncesi, üreme dönemi ve sonrasına ait eikosapentaenoik asit değerleri arasındaki farklılıkların önemsiz ($P>0,05$) olduğu belirlenmiştir. Dokosaheksaenoik asidin üreme dönemi ve sonrası değerleri arasındaki farklılıkların önemli ($P<0,05$), üreme dönemi öncesi ve üreme dönemi arasında ise önemsiz ($P>0,05$) olduğu tespit edilmiştir.

Anahtar Kelimeler: *Salmo trutta macrostigma*, gonad, yağ asitleri.

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➢ **POSTER PRESENTATION**

Tragopogon dshimilensis extract Increases Nitric Oxide Level in Stz-Induced Diabetic Rats

Kaan Kaltalioglu[1*], Huseyin Sahin[1] , Barbaros Balabanli[2], Sule Coskun-Cevher[2]

[1]Giresun University, Espiye Vocational School, Giresun, Turkey.
[2]Gazi University, Science Faculty, Biology Department, Ankara, Turkey.

*Corresponding author e-mail: kaan.kaltalioglu@gmail.com

Abstract

Nitric oxide (NO) is a small radical, formed from the amino acid L-arginine by three distinct isoforms of nitric oxide synthase [1]. *Tragopogon* (Asteraceae) members are medicinal plants used for wound treatment in Turkey [2]. In this study, we investigate to effect of extract of *Tragopogon dshimilensis* (ETD) on NOx levels in diabetic wound healing process.

Plant samples were extracted with methanol by using soxhlet apparatus. After extraction, the methanol solvent was evaporated by using rotary evaporator. All animal experimental procedures were approved by the Gazi University Local Ethics Committee for Animal Experiments. Experiments were performed on 36 adult male Wistar-albino rats (200–250 g). The animals were divided into 3 main group: non-diabetic (NDM), diabetic (DM) and *T. dshimilensis* (ETD) groups. Diabetes was induced by a single dose intraperitoneal injection of streptozotocin (STZ) (60 mg/kg). Using an 8-mm punch, six uniform full-thickness dorsal excisional skin wounds were created in all rats. The wounds were topically treated with 50 mg/kg *T. dshimilensis* methanolic extract in the ETD group. No treatment was applied to the NDM and DM groups. After the procedures, on the 3th and 7th days of healing, the rats were sacrificed. At the same time skin punches indicating 0 days were also collected from non-wounded animals of NDM and DM groups. The NOx levels of tissue homogenates were determined by Griess reaction [3].

The NOx levels were significantly decreased in the DM group versus NDM group on days 0 and 3 ($P<0,001$). A significant increase in the NOx levels on days 3 and 7 were determined in the ETD group versus DM group ($P<0,001$). Nitric oxide can contribute to the development of healing [4]. However, in high amount it may show toxic effects. These results suggest that extract of *Tragopogon dshimilensis* increases the NOx levels of diabetic wound tissue.

Keywords: wound healing; diabetes; nitric oxide; Tragopogon dshimilensis

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➢ **POSTER PRESENTATION**

İncir Çekirdeğinin Antioksidan Aktivitesi ve Fenolik Bileşiklerinin Ekstraksiyonu Üzerine Farklı Çözgenlerin Etkisi

Emine Nakilcioğlu-Taş[1*]

[*1]Ege Üniversitesi, Mühendislik Fakültesi, Gıda Mühendisliği Bölümü, İzmir, Türkiye.

e-mail: emine.nakilcioglu@ege.edu.tr

Özet

Gıdaların antioksidan bileşiklerinin ekstraksiyonunda çözgen ekstraksiyonu, sokselet ekstraksiyonu, süperkritik akışkan ekstraksiyonu, basınçlı çözgen ekstraksiyonu ve ultrasonik ekstraksiyon gibi pek çok farklı ekstraksiyon yönteminden faydalanılmaktadır. Ekstraksiyon verimi ve antioksidan aktivite, sadece kullanılan ekstraksiyon yönteminden etkilenmemekte, bunun yanı sıra ekstraksiyon amacıyla kullanılan çözgen cinsiyle de yakından ilişkilidir. Farklı kimyasal özelliklere ve polaritelere sahip çeşitli antioksidan bileşiklerin bulunması, her antioksidan bileşiğin her çözgende çözünmemesine yol açmaktadır. Polar çözgenlerden genellikle, bitkisel matrikslerden fenolik bileşiklerin ekstrakte edilmesinde yararlanılmaktadır. Metanol, etanol, aseton, su ve etil asetat gibi çözgenler fenolik bileşiklerin ekstraksiyonunda sıklıkla kullanılmaktadır. Bu çalışmada incir çekirdeğinin polifenol içeriği ve antioksidan aktivitesi, üç farklı çözgen (% 100 metanol, % 100 etanol ve % 100 aseton) kullanımıyla, çözgen ekstraksiyonu metodundan faydalanılarak belirlenmiştir. İncir çekirdeğinin toplam fenolik içeriğini en iyi ekstrakte eden çözgen metanol olarak belirlenmiş ve onu sırasıyla aseton ve etanolün izlediği gözlemlenmiştir (p<0.05). Çözgenlerin flavonoidleri ekstrakte etme kapasiteleri arasında istatistiksel açıdan anlamlı bir farklılık saptanamamıştır (p>0.05). Metanol ekstraktında, hem DPPH hem de FRAP yöntemiyle belirlenen antioksidan aktivite değerleri en yüksek iken, aseton ve etanol ekstraklarında tespit edilen antioksidan aktivite değerleri arasında anlamlı bir farklılık bulunamamıştır (p>0.05). Çalışmanın sonucunda araştırılan üç çözgen arasında, incir çekirdeğinin polifenolik bileşiklerini en etkili biçimde ekstrakte eden çözgenin metanol olduğu ortaya konulmuştur.

Keywords: Aseton, çözgen ekstraksiyonu, etanol, incir çekirdeği, metanol.

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➢ **POSTER PRESENTATION**

Collagen Levels Are Elevated In The Diabetic Wound Tissue With Administration of *Isatis sivasica* Extract

Kaan Kaltalioglu[1*], Barbaros Balabanli[2], Huseyin Sahin[1], Sule Coskun-Cevher[2]

[1]Giresun University, Espiye Vocational School, Giresun, Turkey.
[2]Gazi University, Science Faculty, Biology Department, Ankara, Turkey.

*Corresponding author e-mail: kaan.kaltalioglu@gmail.com

Abstract

Isatis genus (Brassicaceae), locally known as "çivit otu" in Turkey, is traditionally used for wound treatment [1]. In this study, we investigate to relationship between extract of *I. sivasica* (EIS) and collagen levels during diabetic wound healing process.

Plant samples were extracted with methanol by using soxhlet apparatus. After extraction, the methanol solvent was evaporated by using rotary evaporator. All animal experimental procedures were approved by the Gazi University Local Ethics Committee for Animal Experiments. Experiments were performed on 36 adult male Wistar-albino rats (200–250 g). The animals were divided into 3 main group: non-diabetic (NDM), diabetic (DM) and *I. sivasica* (EIS) groups. Diabetes was induced by a single dose intraperitoneal injection of streptozotocin (STZ) (60 mg/kg). Using an 8-mm punch, six uniform full-thickness dorsal excisional skin wounds were created in all rats. The wounds were topically treated with 50 mg/kg *I. sivasica* methanolic extract in the EIS group. No treatment was applied to the NDM and DM groups. After the procedures, on the 3th and 7th days of healing, the rats were sacrificed. At the same time skin punches indicating 0 days were also collected from non-wounded animals of NDM and DM groups. The total collagen levels (type I-V) of wound tissue were measured using Sircol dye reagent (Sircol Collagen Assay Kit, S1111 Rat Std., Biocolor, UK) [2].

In the DM group, the collagen levels were significantly decreased on days 0, 3 and 7 compared with the NDM group ($P<0,001$). EIS administration elevated the collagen levels on days 3 and 7 compared to DM group ($P<0,001$). Collagen plays an important role in the wound healing process [3]. These results suggest that extract of *I. sivasica* increases the collagen levels of diabetic wound tissue depending on time.

Keywords: wound healing; diabetes; collagen; Isatis sivasica

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➢ **POSTER PRESENTATION**

Endotoxemia Induced DNA Damage in Rat Lung

Ali DEMİRBAĞ[1*], Züleyha DOĞANYİĞİT[2*], Fatih Oğuz BEKDEMİR[3*], Zehra İLÇE[3], Kemal KOÇ[3], Fatma İLÇE[3], Dilek PANDIR[1], Sedat PER[1]

[*1] Bozok University, Faculty of Arts and Science, Department of Biology, Yozgat, Turkey
[2] Bozok University, Faculty of Medicine, Department of Histology and Embryology, Yozgat, Turkey
[3] Bozok University, Institue of Sciences, Department of Biology, Yozgat, Turkey

e-mail: durak77@gmail.com

Abstract

This work was planned to examine the effects of lipopolysaccharide (LPS) on lung tissue of rats at the level of DNA damage. LPS is a substance found in the outer cell wall of gram-negative bacteria and shows endotoxin with its lipid A content. In this study, DNA damage was examined in rat lung tissues which is exposed to LPS by commet assay method. After mixing 50 µL of the lung cell suspension with 100 µL of 0.5% LMPA dissolved at 37 ° C, the slides were pre-plated in 1% NMPA solution and spread on agar-coated slides and allowed to settle on the frosted metal surface for approximately 5 minutes before the agar solidified. The slides were prepared in advance and immersed in the cold lysis solution kept in the refrigerator and left in the refrigerator for at least 1 hour. The electrophoresis tank was filled with the appropriate amount of cold electrophoresis solution.. After the electrophoresis stage was over, the slides removed from the electrophoresis tank and were washed three times with the neutralization solution. 60 µl (20 µg/ml) of ethidium bromide solution was added onto the slides and read for at least 10 minutes with a fluorescent microscope. DNA damage was determined with DNA tail %, tail length and moment in lung tissue. LPS treatment in lung tissue caused a significant increase in DNA damage at 10 mg/kg b.w. for 6 hours as indicated by a greater migration of DNA fragments on the agarose gel. The results of the comet assay showed a changing as increase in the mean tail length after LPS treatment when compared with a control group. Compared to the LPS group, there were statistically significantly increased values in the DNA tail % and tail length.

Anahtar Kelimeler: Comet, LPS, Rat, lung, toxicity

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➢ **POSTER PRESENTATION**

Effect of Surfactant Alkyl Chain Length on the Formation of Uniaxial and Biaxial Cholesteric Phases in Potassium Alkanoates/Rb_2SO_4/DeOH/H_2O/Brucine Lyotropic Mixtures

Seda Uyanik[1,2*], Erol Akpinar[1]
[1]Abant Izzet Baysal University, Arts and Sciences Faculty, Department of Chemistry, Bolu, Turkey.
[2] Petroyag Industrial Lubricants Inc., Gebze, Kocaeli, Turkey.

Corresponding author e-mail: seda.uyanik@hotmail.com

Abstract

Lyotropic cholesteric liquid crystal phases can be obtained by adding chiral dopants into the lyotropic mixture, presenting the nematic phase [1]. Three types of lyotropic cholesterics were identified as cholesteric discotic (Ch_D), cholesteric biaxial (Ch_B) and cholesteric calamitic (Ch_C) [2]. Cholesteric-to-cholesteric phase transitions in the lyotropic mixtures were widely discussed in the literature [3,4] and, experimentally, the Ch_D−Ch_B phase transition was shown to be continuous in their phase diagrams [5]. In all these phase diagrams, the Ch_B phase domain is located in between the Ch_D and the Ch_C domains.
In the present study, we investigated the effect of surfactant alkyl chain length on the formation of uniaxial and biaxial cholesteric phases by polarizing optical microscopy. The lyotropic mixtures were composed of potassium alkanoates/rubidium sulfate (Rb_2SO_4)/decanol (DeOH)/water/brucine. Potassium dodecanoate (KC12) and potassium tridecanoate (KC13) were chosen as potassium alkanoate surfactants. The lyotropic mixtures were prepared by replacing some amount of KC12 with the same amount of KC13 in mole fraction, i.e. the amount of total surfactant concentrations were kept constant in each lyotropic mixture. The results indicated that the longer (shorter) the surfactant alkyl chain causes the formation of Ch_D (Ch_C passing through Ch_B) phase.

Figure. Polarizing optical microscope textures of (left) Ch_D at 30°C, (middle) Ch_B at 23°C and (right) unwounded Ch_C at 18°C. Magnification of objective: 10x. Magnetic field strength: 0.9 kG.

Keywords: Lyotropic cholesteric liquid crystals, uniaxial-to-biaxial phase transitions, surfactant alkyl chain length.

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➢ **POSTER PRESENTATION**

Biological properties of *Chondrostoma angorense* Elvira, 1987 in Kirmir Stream

Semra Benzer[1*], Ali Gül[2]

[*1] Gazi University, Education Faculty, Science Education, Ankara
[2] Gazi University, Education Faculty, Biology Education, Ankara

Corresponding author e-mail: sbenzer@gazi.edu.tr

Abstract

The present study was calculated Length-Weight Relationships (LWR) and Condition factor (CF) for growth in *Chondrostoma angorense* Elvira, 1987. Thus, the present study provides the properties of the *C. angorense* in Kirmir Stream. The 100 *C. angorense* specimens were caught from Kirmir Stream. The fork length (FL), standard length (SL), total length (TL) and body weight (W) of each specimen were measured with a digital caliper to the nearest 0.1 mm, weighted to the nearest 0.01 g, and each specimen was sexed. LWR were estimated from the formula, $W = a L^b$. The present study, fork lengths (min-max), standard length (min-max), total length (min-max) and weight (min-max) of specimens were varied between 60-160 mm; 53-140 mm; 65-170 mm and 2.33-44.087 g, respectively. Length-weight relationship (LWR) and condition factor (K) of *C. angorense* were determined. LWR were found as $W=0.00813358\ FL^{3.1579}$ ($r^2= 0.881$), $W=0.01434319\ SL^{3.0827}$ ($r^2= 0.882$) and $W=0.00458321\ TL^{3.2813}$ ($r^2= 0.875$) for all specimens. The condition factor was calculated as 0.760 and 1.092 (min and max). The present study indicates structural data of population of *C. angorense*. The data of this study are very important for *C. angorense* population in Kirmir Stream. Results obtained from this study may be useful in the future to obtain information about population structure of *C. angorense*. In conclusion, this study is the first reference for the LWR of *C. angorense* population in Kirmir Stream. According to the results of present research, it is suggested that the growth of species is satisfactory in this water system

Keywords: *Chondrostoma angorense*, length-weight relation, condition, Kirmir Stream

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➢ **POSTER PRESENTATION**

X-ray Analysis and Theoretical Calculations of Compound $C_{28}H_{25}N_3OS$*

Murat Örnek[1*], Çiğdem Yüksektepe Ataol[1], İbrahim Yılmaz[2], Alaaddin Çukurovalı[3]

[*1]Cankiri Karatekin University, Faculty of Science, Department of Physics, Cankiri, Turkey
[2]Karamanoglu Mehmetbey University, Faculty of Kamil Ozdag Science, Department of Chemistry, Karaman, Turkey
[3]Firat University, Faculty of Science, Department of Chemistry, Elazig, Turkey

Corresponding author e-mail: muratornek19@hotmail.com

Abstract

The single crystal structure of compound $C_{28}H_{25}N_3OS$ is obtained by the X-ray diffraction technique. The molecular structure of the crystal structure using X-ray diffraction data is optimized using the Density Functional Theory (DFT) of computational chemistry methods. B3LYP hybrid functions and different basis sets have been selected to achieve the optimized results in the theoretical calculations. The bond parameters of the compound are compared with the X-rays and the theoretical calculation results. And also, using the optimized molecular structures, the vibration frequencies of the molecular structure were calculated with different basis sets and the experimental and theoretical results were compared. Molecular electrostatic potential (MEP) map of the compound is calculated by using DFT. Fukui functions of the molecular structure are investigated and the nucleophilic and the electrophilic atoms of the molecule have been determined by using DFT.

Keywords: Triazin, DFT, X-ray, Single Crystal, MEP

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➢ **POSTER PRESENTATION**

Barbus pergamonensis Karaman, 1971 Popülasyonununda Bazı Biyolojik Özellikler

Sergüzel Kuş[1], Sema Taşdemir[1], Semra Benzer[2], Ali Gül*[1]

[1]Gazi Üniversitesi, Gazi Eğitim Fakültesi Biyoloji Eğitimi Anabilim Dalı, Ankara
[2]Gazi Üniversitesi, Gazi Eğitim Fakültesi Fen Bilgisi Eğitimi Anabilim Dalı, Ankara

Sorumlu yazar e-mail: aligul@gazi.edu.tr

Özet

Son yıllarda, bazı sucul ekosistemlerde çeşitli ekolojik stresler ihtiyofauna popülasyonlarının yoğunluklarını olumsuz etkilemektedir. Türkiye iç sularında geniş bir dağılıma sahip olan *Barbus pergamonensis* Ege bölgesi'nde endemik bir tür olarak dağılım göstermektedir. Barbus türleri sucul ortamların hızlı akıntılı ve oksijence zengin alanlarını tercih etmektedirler. Ancak, sucul ortamdaki fizikokimyasal değişimler bu türlerin biyolojik özelliklerini de etkilemektedir. Bünyesinde çok fazla balık türü barındıran Gediz Nehri fauna açısından oldukça zengindir. Ancak çevresel kaynaklı kirlenme baskısı yoğun olan bir sucul sistemdir. Bu amaçla Gediz Nehri'nin Manisa il sınırları içerisinde bulunan kollarında Mart-Kasım 2014 tarihleri arasında elektrofisher cihazı ile avlanan *Barbus pergamonensis*'in morfometrik ve meristik özellikleri ile boy-ağırlık ilişkileri araştırılmıştır. Örneklerin ağırlığı 5,6-138g, total boy değerleri ise 80-195mm arasındadır. Vücut özelliklerinin standart boya oranında en düşük değer %4,27 ile göz çapında ve en yüksek %74,77 ile preanal mesafede saptanmıştır. Vücut özelliklerinden en düşük varyasyon %22,44 ile göz çapında, en yüksek varyasyonun ise %40,35 ile vücut yüksekliğinde belirlenmiştir. Meristik özelliklerde varyasyon en düşük pelvik yüzgeç dallanmış ışın sayısında %4,58, en yüksek linea transversal alt pul sayısında %20,12 olarak tespit edilmiştir. Linea lateral pul sayısı ortalaması 57,85 (41-67) olarak belirlenmiştir. Boy-ağırlık ilişki parametrelerinden ortamın balık üzerindeki etkisi ve balığın şekline ilişkin bilgi veren (b) katsayısı 3,3093 ve korelasyon değeri de 0,8831 bulunmuştur. Kondisyon faktörü 1,0476±0,2349 olarak tespit edilmiştir. Bu sonuçlara göre *Barbus pergamonensis* bireylerinin pozitif allometrik büyüme gösterdiği anlaşılmıştır.

Anahtar Kelimeler: Gediz Nehri, *Barbus pergamonensis*, morfometrik, meristik, boy-ağırlık ilişkisi, kondisyon faktörü

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➢ **POSTER PRESENTATION**

Investigation of Antioxidant Properties of *Rhododendron luteum*

Huseyin Sahin[1*], Zehra Can[2], Kaan Kaltalıoglu[1], Sevgi Kolayli[3]

[*1]Giresun University, Espiye Vocational School, Giresun, Turkey.
[2]Giresun University, Şebinkarahisar Technical Sciences Vocational School, Şebinkarahisar, Turkey.
[3]Karadeniz Technical University, Faculty of Science, Department of Chemistry, Trabzon, Turkey.

Corresponding author e-mail: huseyin.sahin@giresun.edu.tr

Abstract

Many species of the genus *Rhododendron* belongs to the Ericaceae family. *R. luteum* is a member of this family seen the understories of the mesic environments of the Black Sea Region Forests in Turkey. Although they contain some toxic agents known as grayanotoxins (GTXs), they also have antioxidant effects. In the present study, the total phenolic contents (TPCs) as well as antioxidative properties of *R. luteum* were determined using Ferric Reducing Antioxidant Power (FRAP), DPPH and ABTS radical scavenging assays, respectively. Plant samples collected from five different locations of Trabzon, Turkey. The specimens were dried at room temperature and divided into two parts: blossom and leaf. About 5 g of dried powder of the samples were extracted with 30 mL methanol in a flask attached to the condenser, in a sonicator apparatus (Elma® Transsonic Digital, Singen/Htw, Germany) at 60°C for 3 h. Final extract volume was adjusted with extraction solution. According to the results, TPCs, FRAP, DPPH (SC_{50}) and ABTS (SC_{50}) levels presented in *R. luteum* were expressed as follows: 4.551-35.526 mg GAE/g sample, 51.512-500.704 µmol Troloks/g sample, 0.043 mg/mL, 1.620 mg/mL, respectively. This plant could be considered excellent natural source of antioxidants.

Keywords: *Rhododendron luteum*; Antioxidant; Phenolics

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➢ **POSTER PRESENTATION**

Direct Synthesis of Dimethyl Ether from Syngas in the Presence of Solid Acid Catalysts

Derya Erkal[1], Birce Pekmezci Karaman[1], Nuray Oktar[1],Gülşen Doğu[1], Timur Doğu[2]

[*1]Gazi University, Engineering Faculty, Chemical Engineering Department, Ankara, Turkey
[2]Middle East Technical University, Engineering Faculty, Chemical Engineering Department, Ankara, Turkey

Corresponding author e-mail: oktarnuray@gmail.com

Abstract

Dimethyl ether (DME) has received great attention in recent decades, because of its clean burning properties as an alternate to conventional diesel fuel. The physical and chemical properties of DME are similar to those of liquefied petroleum gas (LPG). In this study, DME was synthesized from syngas by a direct synthesis process. Commercial HifuelR-120 ($Cu/ZnO/Al_2O_3$) was used as methanol synthesis catalyst and commercial γ-Al_2O_3 (TOYO) was also used as solid acid methanol dehydration catalyst. Moreover, TPA, super acid, was incorporated into the structure of γ-Al_2O_3 by the impregnation method to enhance the catalytic activity. The physical and structural properties of these catalysts were investigated by characterization methods such as X-ray diffraction (XRD), N_2 adsorption-desorption techniques. Multipoint BET surface area values of TOYO and HifuelR-120 were 79 and 111 m^2/g, respectively. After the TPA impregnation, surface area and pore size of TOYO catalyst decreased as a result of plugging of pores. XRD pattern of TPA incorporated TOYO catalysts showed that TPA clusters were well dispersed in catalysts structure. Bifunctional catalyst couple was obtained by physical mixing of the methanol synthesis and the dehydration catalysts and activity tests were performed at 275 ^oC and 50 bar. The performances of all of the catalysts were highly stable and highly active in direct synthesis of DME from syngas. Results showed that the product selectivity values were highly affected by the surface acidity. DME selectivity and CO conversion values obtained in the presence of γ-Al_2O_3 and HifuelR-120 mixture were 56% and 61%, respectively.

Keywords: Dimethyl ether, Tungstophosphoric acid, Methanol, HifuelR-120

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➢ **POSTER PRESENTATION**

Screening for Biologically Active Metabolites in Halotolerant/Halophilic Fungal Strains Isolated Tuz Lake and Çamaltı Saltern (Turkey)

Elif Özlü Namlı[1], Yeşim Ustacan[1], Yunus Emre Elma[1], Semra İlhan[*2]

[1]Eskişehir Osmangazi University, Graduate School of Natural and Applied Science, Department of Biology, Eskişehir, Turkey
[*2] Eskişehir Osmangazi University, Faculty of Science and Letters, Department of Biology, Eskişehir, Turkey

Corresponding author e-mail: silhan@ogu.edu.tr

Abstract

Biologically active metabolites from extremophiles play a significant role in the pharmacological industry due to their stable and strong activity and it is used in the treatment of microbial infections. In this study, the ethyl acetate extracts of halotolerant/halophilic fungi isolated from Tuz Lake and Çamaltı Saltern were screened for antioxidant and antimicrobial activity.
First of all, 150 fungal isolates were screened for the antioxidant and antimicrobial activity using DPPH free radical scavenging assay and agar diffusion assay, respectively. To determine antibacterial and antifungal activities were used Gram positive and negative test bacteria and a yeast strain, respectively. Then, the *Penicillium* and other unidentified isolates exhibited potent antioxidant and antimicrobial activity were growth in liquid medium at 27℃ for 7 days. The mycelia were filtered and filtrate was extracted with organic solvent ethyl acetate. Antioxidant and antimicrobial activities of the extracts obtained were evaluated by using DPPH free radical scavenging equivalent to BHT (inhibition %) and broth dilution method (MIC).
The results reveal that metabolites produced by halotolerant/halophilic fungi isolated from hypersaline environments can be a potential source of novel natural antioxidant and antimicrobial compounds.

Keywords: hypersaline environments, antioxidant activity, antimicrobial activity, fungi

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➢ **POSTER PRESENTATION**

Screening of Antimicrobial And Antioxidant Activity of *Aspergillus* spp. Isolated Hypersaline Environments

Yunus Emre Elma[1], Yeşim Ustacan[1], Elif Özlü Namlı[1], Semra İlhan[*2]

[1]Eskişehir Osmangazi University, Graduate School of Natural and Applied Science, Department of Biology, Eskişehir, Turkey
[*2]Eskişehir Osmangazi University, Faculty of Science and Letters, Department of Biology, Eskişehir, Turkey

Corresponding author e-mail: silhan@ogu.edu.tr

Abstract

Halotolerant/halophilic fungi, the fungi that inhabit the hypersaline environments, have become an important source of industrial, agricultural, and nutraceutical compounds based on their diversities in both structure and function. Objective of this study is to elucidate the antioxidant and antimicrobial activity of ethyl acetate extracts of halotolerant / halophilic *Aspergillus* spp. isolated from Tuz Lake and Çamaltı Saltern (Turkey) by screening tests.

Firstly, 195 fungal isolates were screened for in vitro antioxidant and antimicrobial activity. DPPH free radical scavenging assay and agar diffusion assay were used to evaluate the antioxidant and antimicrobial activity, respectively. To determine antibacterial and antifungal activities were used Gram positive and negative test bacteria and a yeast strain, respectively.

Secondly, the *Aspergillus* isolates exhibited potent antioxidant and antimicrobial activity were growth in liquid medium at 27℃ for 7 days. The mycelium was filtered and filtrate was extracted with organic solvent ethyl acetate. Antioxidant and antimicrobial activities of the extracts obtained were evaluated by using DPPH free radical scavenging (inhibition %) and broth dilution method (MIC). A significant positive correlation was found between the isolates exhibited antioxidant and antimicrobial activity in fungal extracts.

The results reveal that metabolites produced by halotolerant/halophilic fungi isolated from hypersaline environments can be a potential source of novel natural antioxidant and antimicrobial compounds.

Keywords: antioxidant activity, antibacterial activity, antifungal activity, fungi, halotolerant.

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➢ **POSTER PRESENTATION**

Farklı Odunsu Bitkiler Üzerinde Yaşayan Ökse Otunun (*Viscum album*) Antioksidan Özellikleri ve Bazı Enzim İnhibisyonlarının Belirlenmesi

Hilal Ebru Çakır[1*], Yakup Şirin[1], Zehra Can[2], Sevgi Kolaylı[1]

[*1]Karadeniz Teknik Üniversitesi, Kimya Bölümü, Trabzon, Türkiye
[2]Giresun Üniversitesi, Şebinkarahisar Teknik Bilimler Meslek Yüksekokulu, Giresun, Türkiye

hilalebruhotaman@gmail.com

Özet

Yaprakları dört mevsim sarımsı yeşillikte olan çekem, purç, gökçe, gevele, güvelek olarak da bilinen ökse otu odunsu bitkilerin (kavak, söğüt, elma, armut, kestane, meşe vb.) yüksekteki dallarının üzerinde yaşayan yarı parazit bir bitkidir. Bitkinin toprak üzerinde değil de ağaçta yetişmesi, meşe ağaçlarını infekte etmesi gibi özelikleri eski çağlarda onu ilginç kılan özelliği olmuştur. Ökse otu, özelliklerini yarı parazit olarak yaşadığı ağaçtan alması sebebiyle değişik özellikler gösterebilmektedir. Yara iyileşmesinden şeker hastalığına, kanser tedavisinden epilepsiye kadar birçok hastalıkta tedavi amaçlı kullanılmıştır.

Bu çalışmanın amacı Türkiye'nin belirli bölgelerinden toplanan ökse otlarının (*Viscum album*) antiinflamatuar, antioksidan ve gastro-koruyucu aktivitelerini belirlemektir. Bu amaçla, toplanan 5 farklı odunsu bitkinin (kestane, elma, meşe, kiraz, armut) üzerinde yaşayan ökse otlarında toplam polifenol miktarı, demir (III) indirgeme antioksidan gücü, DPPH radikalini temizleme aktivitesi, fenolik bileşenleri (14 adet; gallik asit, protokatekuik asit, *p*-OH benzoik asit, kateşin, vanilik asit, kafeik asit, şiringik asit, epikateşin, *p*-kumarik asit, ferulik asit, rutin, daidzein, *t*-sinammik asit, luteolin) ve üreaz ve asetilkolin esteraz enzimlerini inhibisyonları çalışıldı ve karşılaştırıldı. 5 farklı ökse otu yaprak ve dal olarak iki kısımda incelendi.

Anahtar kelimeler: ökse otu, antioksidan, enzim inhibisyonu, fenolik bileşen, üreaz, asetilkolin esteraz.

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➢ **POSTER PRESENTATION**

Bitkisel Kaynaklı Süt: Kestane Sütünün Bazı Fiziksel, Kimyasal ve Antioksidan Özellikleri

Hilal Ebru Çakır[1*], Yakup Şirin[1], Zehra Can[2], Sevgi Kolaylı[1]

[*1]Karadeniz Teknik Üniversitesi, Kimya Bölümü, Trabzon, Türkiye
[2]Giresun Üniversitesi, Şebinkarahisar Teknik Bilimler Meslek Yüksekokulu, Giresun, Türkiye

hilalebruhotaman@gmail.com

Özet

Günümüzde fındık, soya, kestane gibi bitkisel ürünlerle esasında süt içermeyen yeni içecek ürünler hazırlanıp fındık sütü, soya sütü, kestane sütü isimleriyle anılıp kullanılmaktadır. Bitkisel kaynaklı olduklarından laktoz intoleransı bulunan ve vegan tarzı beslenen kişiler için bu ürünlerin kullanımı önemlidir.

Doğal antioksidanlar, hücreleri serbest radikallerin ve reaktif oksijen türlerinin zararlı etkilerine karşı korumaktadır. Bu nedenle enfeksiyon, kanser, kalp-damar hastalıkları, yaşlanma ve gastrointestinal hastalıklara karşı etkilidir. Dengeli beslenmeyle alınan antioksidan kaynakları ile vücudun savunma sistemine destek sağlanmakta ve hastalıklardan korunulmaktadır.

Bu çalışmada kestane ve suyla hazırlanan iki farklı kestane sütü örneğinin bazı fiziksel, kimyasal ve biyoaktif özellikleri incelendi. Bu amaçla fiziksel özellikler olarak optik çevirme açısı, nem, iletkenlik, pH ve renk; kimyasal özellik olarak toplam protein miktarı; biyoaktif özellikler olarak toplam polifenol miktarı, demir (III) indirgeme antioksidan gücü, ayrıca yüksek performanslı sıvı kromatografisi (RP-HPLC) ile 14 tane fenolik bileşen tespit edildi. Kestane sütünün antioksidan aktivitesinin yüksek olduğu ve fenolik kompozisyonunda da gallik asitçe zengin olduğu tespit edildi.

Anahtar kelimeler: antioksidan, fenolik bileşen, kestane sütü, biyoaktif özellik

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➢ **POSTER PRESENTATION**

The Role of Natural Antisense Transcripts, HAGLR, LCMT1AS, NAV2AS5, TSIX, in Cancer

Ayshan R. YASSIN[1,2], Zekiye ALTAN[1],Yunus ŞAHİN[1], Sibel OĞUZKAN BALCI[1]

[1]University of Gaziantep, Faculty of Medicine, Department of Medical Biology, Gaziantep, Turkey
[2] University of Hawler, Faculty of Medicine, Erbil, Iraq

Contact mail: aishanku@yahoo.com

Abstract

Antisense transcripts (NATs), a class of long non-coding RNAs (lncRNAs), act by enhancing or decreasing expression levels by binding to noncoding or protein-encoding RNAs. Antisense transcripts that bind to noncoding RNAs are called lncNATs. In recent years, lncRNAs, miRNAs, siRNAs and other non-coding RNAs have been identified in a variety of cancer pathways that have functions for the diagnosis, and treatment of cancer. There are not enough studies yet for a new class of lncNATs. In this study, we used TSIX, HAGLR, LMCT1AS and NAV2AS5 antisense transcripts in normal cells (Beas2B, CRL4010, CRL8798), cancer cells (HGC-27, DU-145, A549, PC-3, HCT-116, U2OS, MDA-MB-231, CRL2329), that are commercially available cell lines from the ATCC. RNAs obtained from the cultured cells were converted to cDNA by RT-PCR. The obtained cDNAs were subjected to automatic PCR and agarose gel was loaded. The ImageJ program was used for the quantitative analysis of the each sample in gel. The qPCR method is also used for expression analysis. The result of these data showed that TSIX, HAGLR, LMCT1AS and NAV2AS5 genes have differential expression pattern in both cancer and normal cell lines. Further functional analysis is need to reveal their comprehensive role in cancer.

Anahtar Kelimeler: Cancer, HAGLR, LCMT1AS, NAV2AS5, Natural Antisens RNAs, TSIX

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➢ **POSTER PRESENTATION**

The Interaction betweeen LncRNA MEG3 and its Target, miR-203, in Bladder Cancer

Zekiye ALTAN[1], Yunus ŞAHİN[1], Ayshan RAFAT YASSIN[1,2], Khandakar A.S.M. Saadat[1]

[1]University of Gaziantep, Faculty of Medicine, Department of Medical Biology, Gaziantep, Turkey
[2] University of Hawler, Faculty of Medicine, Erbil, Iraq

Contact mail: zekiyealtan2004@gmail.com

Abstract

The American Cancer Society estimates for bladder cancer, chance men will develop this cancer during their life is about 1 in 27. Environmental factors such as working in the leather, plastic and paint industries, smoking, increase the risk of developing bladder cancer. The molecular mechanism of bladder cancer is not known precisely because there are very few genes involved in bladder cancer pathways and there is not enough information in the literature about the non-coding RNAs (ncRNAs) associated with these genes. Candidate markers that may serve as a molecular marker for bladder cancer are needed when the methods used for early detection of bladder cancer are invasive. MEG3(Maternally Expressed Gene3), a long non-coding gene, is located on chromosome 13. MEG3 is associated with various microRNAs in a variety of cancers such as osteosarcoma, hepatocellular carcinoma and bladder cancer. It has been determined that possible three-dimensional folding of the MEG3 gene could be analysed and ligated with mir-203 microRNA. QPCR and RT-PCR methods were used for expression profiling analysis of MEG3 gene and mir-203 microRNA, in 20 tissue and 13 cell lines, including CAL29 (ACC-515) bladder cancer cell line. The expression level analysis of the MEG3 gene and hsa-mir-203 in the CAL-29 cell line showed that there is cross expression level between MEG3 and hsa-miR-203 in bladder cancer cell line. Bioinformatics results also showed that MEG3 is a direct target of hsa-miR-203. In order to figure out that is there any interaction between MEG3 and hsa-miR-203 in bladder cancer, we will use mimic-miR-203 on CAL-29 cell line. After transfection, we will analyse expression levels of MEG3 and miR-203 and we will use further cell culture methods to get confirmed these results.

Anahtar Kelimeler: bladder cancer, MEG3, mir-203, lncRNA

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➢ **POSTER PRESENTATION**

The synthesis of water soluble silicon phthalocyanine and investigation of its DNA binding, DNA photocleavage, topoisomerase I, II inhibition

Zekeriya Bıyıklıoğlu[1], Turgut Keleş[1*], Burak Barut[2], Arzu Özel[2]

[*1]Karadeniz Technical University, Faculty of Science, Department of Chemistry, Trabzon, Turkey.
[2]Karadeniz Technical University, Faculty of Pharmacy, Department of Biochemistry, Trabzon, Turkey

turgutkls5055@gmail.com

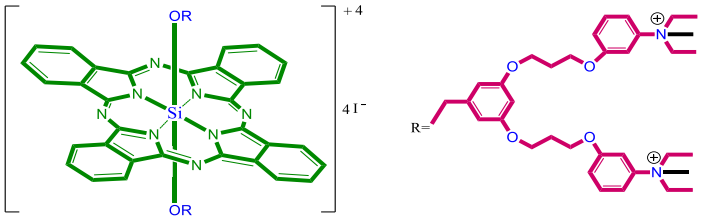
Abstract

Phthalocyanines exhibit fascinating physical properties because of their delocalized π- electronic structure and they form coordination complexes with most metals. Besides, phthalocyanines have outstanding stability to light, heat, high signlet oxigen generation ability and strong absorption in the visible region [1]. Owing to this features of phthalocyanines, phthalocyanines (Pcs) have been recognized as the most widely studied photosensitizers for photodynamic therapy [2] in the last decade. PDT is one of the alternative methods cancer treatments that activation of photosensitizer compounds by light of an appropriate wavelength causes the generation of free radicals or singlet oxygen to induce damage to malignant tumour cells via apoptosis or necrosis.

In this study, new water soluble axially disubstituted silicon phthalocyanine was synthesized for the first time. The binding modes of the Pcs with calf thymus-DNA (CT-DNA) were carried out using UV-Vis absorption titration, competitive ethidium bromide and thermal denaturation experiments. In addition, DNA-cleavage activities (hydrolytic, photoinduced, oxidative) of water soluble phthalocyanines were investigated using supercoiled pBR322 plasmid DNA on agarose gel electrophoresis. Also, the topoisomerase I,II inhibitory properties of these compounds were investigated using agarose gel electrophoresis.

This study was supported by The Scientific & Technological Research Council of Turkey (TÜBİTAK, project no: 116Z364).

Keywords: Synthesis, silicon phthalocyanine**,** DNA binding and cleavage activities.



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➢ **POSTER PRESENTATION**

Synthesis and electrochemical properties of peripheral, non-peripheral tetra 4-[2-(3,5-diphenyl-1*H*-1,2,4-triazol-1-yl)ethoxy] substituted cobalt(II), manganese (III) phthalocyanines

Zekeriya Bıyıklıoğlu[1], Turgut Keleş[1*], Ergün Gültekin[1], Olcay Bekircan[1]

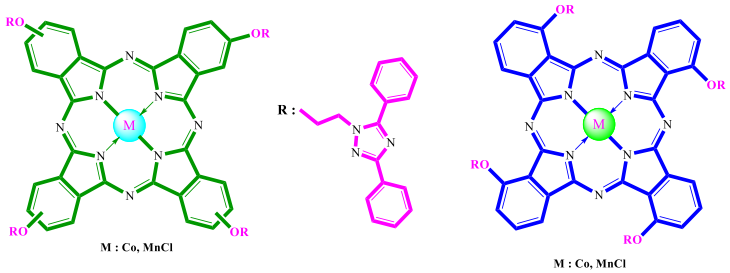
[*1]Karadeniz Technical University, Faculty of Science, Department of Chemistry, Trabzon, Turkey.

turgutkls5055@gmail.com

Abstract

Phthalocyanines (Pcs) are important compounds due to not only their blue-green color but also their electronic properties. They have been proposed and used in various technological areas such as liquid crystals, electronic devices, gas and chemical sensors, electrochromic and electroluminescent displays, non-linear optics, photovoltaics and semiconductors [1]. Triazole compounds have broad spectrum of pharmacological and biological [2]. Due to their this features, triazoles have been used for many application such as antitumor, enzyme inhibition, antiviral, antimicrobial and analgesic.
In this study, we have designed and synthesized peripheral, non-peripheral tetra 4-[2-(3,5-diphenyl-1*H*-1,2,4-triazol-1-yl)ethoxy] substituted cobalt(II), manganese (III) phthalocyanines**.** Electrochemical properties of peripheral, non-peripheral tetra 4-[2-(3,5-diphenyl-1*H*-1,2,4-triazol-1-yl)ethoxy] substituted cobalt(II), manganese (III) phthalocyanines were established by cyclic (CV) and square wave (SWV) voltammetry**.**

Keywords: Phthalocyanine, electrochemistry, 1,2,4-triazole, cyclic voltammetry.



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➢ **POSTER PRESENTATION**

Water soluble silicon phthalocyanine bearing piperazine units and investigation of its DNA binding, DNA photocleavage, topoisomerase I,II inhibition

Zekeriya Bıyıklıoğlu[1], Hüseyin Baş[1*], Arzu Özel[2], Burak Barut[2]

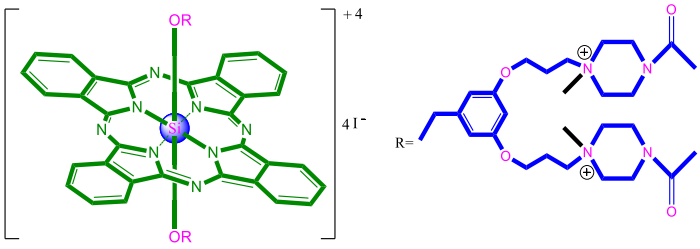
[*1]Karadeniz Technical University, Faculty of Science, Department of Chemistry, Trabzon, Turkey.
[2]Karadeniz Technical University, Faculty of Pharmacy, Department of Biochemistry, Trabzon, Turkey

hsyn_bs@hotmail.com

Abstract

Phthalocyanines are used in various biomedical and technological applications owing to their high thermal and chemical stabilities, strong π conjugative structures, optic stabilities and sharp absorption band in visible region [1]. In addition, because of their high singlet oxygen yields, strong and low toxicity in the dark phthalocyanines are used as photosensitizer agents in photodynamic therapy [2]. The water solubility increases the possible usages of phthalocyanine compounds in biomedical application.
Topoisomerase I is a nuclear enzyme resolving DNA supercoiling in the chromosomes during replication and transcription both in prokaryotes and eukaryotes cells. The level of topoisomerase I in cancer cells is higher than that of normal cells [3]. In this study, new water soluble axially disubstituted silicon phthalocyanine bearing piperazine units was synthesized for the first time. The binding modes of the Pcs with calf thymus-DNA (CT-DNA) were carried out using UV-Vis absorption titration, competitive ethidium bromide and thermal denaturation experiments. In addition, DNA-cleavage activities (hydrolytic, photoinduced, oxidative) of water soluble phthalocyanines were investigated using supercoiled pBR322 plasmid DNA on agarose gel electrophoresis. Also, the topoisomerase I,II inhibitory properties of these compounds were investigated using agarose gel electrophoresis.
This study was supported by The Scientific & Technological Research Council of Turkey (TÜBİTAK, project no: 116Z364).

Keywords: Water soluble, silicon phthalocyanine, DNA, topoisomerase I, II.



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➢ **POSTER PRESENTATION**

Synthesis and electropolymerization properties of axially disubstituted silicon phthalocyanines beraing carbazole units

Zekeriya Bıyıklıoğlu[1], Hüseyin Baş[1*]

[*1]Karadeniz Technical University, Faculty of Science, Department of Chemistry, Trabzon, Turkey.

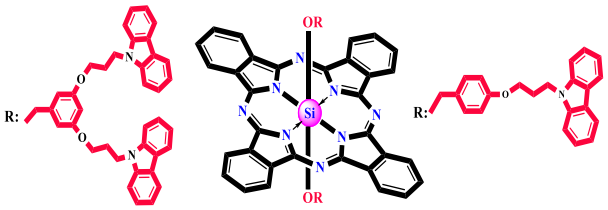
hsyn_bs@hotmail.com

Abstract

Silicon phthalocyanines (SiPcs) attract great interest due to their unusual spectral properties, increased solubility, and additional binding sites for further modification. Axially-substituted silicon phthalocyanines (SiPcs) are of great interest to industrial application because they are not able to aggregate due to their special structural features [1]. Also, they do not cause fluorescence quenching and have higher quantum yields and longer fluorescence lifetimes than other phthalocyanines [2]. Electropolymerization is a desired property for preparation of composite electrode, which has potentials for the usage in different electrochemical technologies such as, electrocatalytic, electrochromic and electrosensing applications [3].

In this study, we have designed and synthesized axially disubstituted silicon phthalocyanines bearing electropolymerizable carbazole units**.** Electrochemical properties of axially disubstituted silicon phthalocyanines were investigated by cyclic (CV) and square wave (SWV) voltammetry**.**

Keywords: Synthesis, Silicon phthalocyanine, electrochemistry, carbazole.



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➢ **POSTER PRESENTATION**

Electrical Characterization of Flexible and Conductive Polymer Composites

Zeynep Bilgin[1]*, Hatice Aylin KARAHAN TOPRAKÇI[1]*, Ozan TOPRAKÇI[1]*

[*1]Yalova University Polymer Engineering Department
Yalova University Institute of Science and Engineering Yalova, Turkey

Corresponding author e-mail: aylin.toprakçı@yalova.edu.tr

Abstract

Thermoplastic elastomers (TPE) are polymers that present the properties of both thermoplastic polymers and elastomers. TPEs are generally found in block copolymer structure with rigid and and flexible segments. While, flexible phase provides elasticity; rigit phase gives strength and resistance to mechanical deformation. Since they have thermoplastic components, TPEs can be melt processed easiliy. Although they can be used for many applications including flexible coatings, sealants and so on; they are elctrically insulating materials and can not be used in electrical applications. In order to make TPEs electrically active; conducting fillers can be incorparated into the structure. By doing this, flexible conductive composites can be fabricated. Various conducting fillers can be used to obtain electrically conductive polymer composites. Carbon nanofibers (CNFs) are hollow nucleated nanofibers composed of a single or a few graphite layers stacked parallel or helically at a certain angle to the fiber axis. Geometry of the CNFs can be changed depending on the fabrication method. Typical fiber diameter changes between 20 and 200 nm. The length of the fiber can be up to 250 μm. One of the most important properties of CNFs is their electrical conductivity; because CNFs have low electrical resistance, they are promising materials. The main purpose of this work is to produce TPE based nanocomposites with improved morphological and electrical properties and to characterize their morphological and electrical properties. Another aim of the study is to determine the potential applications in different engineering fields for nanocomposites produced within the results obtained. In his work, CNF/TPE based polymeric composites were fabricated and caharacterized.

Keywords: Carbon nanofiber (CNF), thermoplastic elastomer (TPE), conductive nanocomposites, morphological properties, electrical properties.

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➢ **POSTER PRESENTATION**

Investigation of Plasmid DNA Profiles of Potential Bacterial Strains for Crude Oil and Cyanide Removal

Nermin Hande Avcioglu[*1], Sezen Bilen Ozyurek[1], Isil Seyis Bilkay[1]

[1]Hacettepe University, Faculty of Science, Biology (Biotechnology), Ankara, Turkey.

[*]Corresponding author e-mail: hurkmez@hacettepe.edu.tr

Abstract

By means of rapidly growing industrialization in all over the world, the amount of untreated organic toxic compounds including industrial effluents releases from these processes increase. As a result, accumulation of toxic compounds in soil and even in groundwater may occur. Accordingly, toxicity of these compounds could show significant effects on the health of living organisms. Therefore, microorganisms which are able to survive in these ecosystems in the presence of these toxic compounds, are being investigated in order to obtain more information about their degradation ability against different compounds. However, in biodegradation processes, not only microbial tolerance against toxic compounds, but also their genetic information is important in order to apply these microorganisms in treatment processes of different industries. As our knowledge from previous studies, extrachromosomal DNA fragments known as plasmids, contain genes which code resistance to antibiotics, heavy metals and different catabolic functions. Therefore, plasmid isolation, plasmid elimination and plasmid profile analysis are preferable techniques to gain information about degradative abilities of microorganisms. In this respect, potential bacterial strains including *Bacillus sp.*, *Micrococcus sp.*, *Klebsiella sp.* and *Pseudomonas sp.* genus, for crude oil and cyanide degradation, are selected in this study. In order to obtain data about the relation between their biodegradation ability and plasmid DNA profiles, plasmid DNA fragments are isolated and plasmid DNA profiles of these microorganisms are determined. Accordingly, plasmid including bacteria against cyanide and crude oil are defined. As a result, this study enables to obtain information about microorganisms' degradative abilities are directly related with or without the presence of their plasmids.

Keywords: Plasmid DNA, Cyanide, Crude oil, Degradation.

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➢ **POSTER PRESENTATION**

Developmental Toxicity of Methyl Antranilate on Zebrafish (*Danio rerio*) Embryos

Tarık Dinç[1], Cansu AKBULUT[1], Hayriye Genç[2], Mustafa Zengin[2], Nazan Deniz YÖN[1*]

[*1]Sakarya University Science and Letters Faculty, Department of Biology, Sakarya, TURKEY
[2]Sakarya University Science and Letters Faculty, Department of Chemistry, Sakarya, TURKEY

Corresponding author e-mail: ndyon@sakarya.edu.tr

Abstract

Methyl antranilate is a food additive , commonly used for the preparation of watermelon, citrus, strawberries, grapes and etc. It is also used as a bird repellent. Zebrafish is a vertebrate model which is widely used in toxicological and developmental studies. In this study, developmental toxicity of methyl antranilate on zebrafish embryos were investigated.

After 3 hour post fertilization (hpf) embryos which had developed normally and reached blastula stage, were seperated under stereo microscope. The embryos were exposed to different concentrations (1, 2, 10, 20, 100, 200 mg/L). to calculate median lethal concentration (LC_{50}). The embryos were incubated at 28 ± 0.5 °C in 24 well plates with 2 ml solution in each plate for 5 days. All statistical analysis were done using SPSS 24.0. Probit analysis were used to determine LC_{50} of methyl antranilate on zebrafish embryos for 24, 48, 96 and 120h. For determining the effects of methyl antranilate on developmental defects, the presence of significant differences between dose groups from control were determined with one-way analysis of variance (ANOVA). For further analysis TUKEY HSD post-hoc test were performed. Median lethal concentrations (LC 50) for 24, 48, 96 and 120 h were found as 9.559, 7.723, 6.154, 4.827 mg/L respectively. Increase in mortality, abnormality and hatching time were detected at exposure groups. Pericardial and yolk sac edema, tail malformation, cranofacial abnormalities , conjoined twins and bent spine were monitored at embryos which belong to exposure groups.

Keywords: zebrafish, methyl antranilate, embryo, toxicity.

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➢ **POSTER PRESENTATION**

X-ray and DFT Investigation of (E)-4-bromo-5-methoxy-2-((o-tolylimino)methyl)phenol Compound

Sabiha Nur Bektaş[1*], Zeynep Demircioğlu[2], Çiğdem Albayrak Kaştaş[3], Orhan Büyükgüngör[1]

[*1]Ondokuz Mayıs Universiy, Faculty of Arts and Science, Department of Physics, Samsun, Turkey.
[2]Sinop University, Faculty of Arts and Science, Department of Physics, Sinop, Turkey.
[3]Sinop University, Faculty of Arts and Science, Department of Chemistry, Sinop, Turkey.

Corresponding author e-mail: sabihanurbektas@gmail.com

Abstract

(E)-4-bromo-5-methoxy-2-((o-tolylimino)methyl)phenol was investigated by experimental and theoretical methodologies. The solid state molecular structure was determined by X-ray diffraction method. All theoretical calculations were performed by density functional theory (DFT) method by using B3LYP/6-31G(d,p) basis set. The titled compound showed the preference of enol form, as supported by X-ray diffraction method. The geometric and molecular properties were compaired for both enol-imine and keto-amine forms for title compound. Stability of the molecule arises from hyperconjugative interactions, charge delocalization and intramolecular hydrogen bond has been analyzed using natural bond orbital (NBO) analysis. Mulliken population and natural population analyses (NPA) have been studied. Also, condensed Fukui function and relative nucleophilicity indices calculated from charges obtained with orbital charge calculation methods (NPA). Molecular electrostatic potential (MEP) and non linear optical (NLO) properties are also examined.

Keywords: X-ray Diffraction Method, Natural Bond Analysis (NBO), Natural Population Analysis (NPA), Nonlinear Optical Properties (NLO)

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➢ **POSTER PRESENTATION**

Boyarmadde İçeren Atıksuların Katalitik ve Oksidant Etkili Mikrodalga Işınım Yöntemi ile Arıtılabilirliğinin İncelenmesi

Tijen Ennil Bektaş[1], Sevgican Göl[2*], Fazilet Çoker[2], Handan Öztel[2],Esma Kara[2]

[1]Çanakkale Onsekiz Mart Üniversitesi Mühendislik Fakültesi Kimya Mühendisliği Bölümü, Çanakkale, Türkiye
e-mail:ennilbektas@comu.edu.tr
[2*]Eskişehir Osmangazi Üniversitesi Mühendislik Mimarlık Fakültesi Kimya Mühendisliği Bölümü, Eskişehir, Türkiye
e-mail:sevgican.gol@gmail.com

Özet

Son yıllarda geleneksel ısıtma yöntemlerine alternatif olarak mikrodalga enerjisi, hem endüstriyel hem de akademik alanda daha sık kullanılmaya başlanmıştır. Bu çalışmada tekstil boyarmaddesi (Sumifix yellow EXF) içeren sentetik atıksuyun, katalizör ve oksidant etkili mikrodalga yöntemi ile arıtılabilirliği araştırılmıştır. Katalizör olarak bentonit, bitkisel aktif karbon ve pomza; oksidant madde olarak ise hidrojen peroksit kullanılmıştır. Yapılan çalışmada katalizör miktarı, oksidant miktarı, mikrodalga ışınım süresi, gücü ve çözelti başlangıç pH'ı gibi parametreler değiştirilerek sonuçlar irdelenmiştir. Aktif karbon için en iyi boyarmadde giderimi 0,5g dozajında ve 0,5 mL H_2O_2 ilave edilerek düşük güçte, 3 dk asidik ortamda ışınıma maruz kaldığında %88 olarak elde edilmiştir. Bentonit için en iyi giderim, 0,5g dozajında ve 0,5 mL H_2O_2 ilave edilerek düşük güçte, 3 dk bazik ortamda ışınıma maruz kaldığında %77 olarak elde edilmiştir. Pomza ile elde edilen sonuçlarda ise en iyi boya giderimi 1,5g dozajında ve 0,2 mL H_2O_2 ilave edilerek düşük güçte, 3 dk orijinal pH'ında (6,5) ışınıma maruz kaldığında %94 olarak elde edilmiştir. Kullanılan katalizörler arasında en iyi boyarmadde giderimi vermesi, ucuz olması ve kolay bulunuşu nedeniyle pomza en uygun olanıdır.

Anahtar Kelimeler: Boyarmadde, katalizör, oksidant,mikrodalga.

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➢ **POSTER PRESENTATION**

Pestisit Uygulanan Mikorizalı Ve Mikorizasız Domates Bitkilerinde Azot İçeriğinin Ve Pestisit Kalıntı Miktarının Belirlenmesi

Tuğba ÖZBUCAK[1*], Öznur ERGEN AKÇİN[1] Döndü KABUL[2], Gülaycan POLAT[1]

[1] Ordu Üniversitesi Fen-Edebiyat Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Ordu, Türkiye
[2] Penpe İzzet Şahin Güzel Sanatlar Lisesi, Ordu, Türkiye

Sorumlu yazar e-mail:tsiozbucak@hotmail.com

Özet

Bu çalışmanın amacı mikorizalı ve mikorizasız domates bitkilerine uygulanan farklı pestisit dozlarının bitkinin yapraklarındaki azot içeriği ile meyvesindeki pestisit kalıntı miktarını belirlemektir. Uygulanan pestisit dozları çiftçiye önerilen (Ö), önerilenin yarısı (Ö/2) ve önerilenin iki katı (Ö*2) şeklindedir. Azot İçeriğine (g/dm^2) ait tanıtıcı istatistik değerleri incelendiğinde, varyans analizi sonucunda hiçbir farklılığın istatistik olarak önemli olmadığı görülmüştür ($p>0,05$). Ancak azot içeriği ile ilgili ortalama değerlere bakıldığında mikorizalı olan bitkilerin azot içeriği mikorizasız olan bitkilere göre daha yüksek bulunmuştur. Azot içeriği bakımından Ö/2,Ö ve Ö*2 mikorizalı>mikorizasız şeklinde bulunmuştur. Kontrol grubunda ise mikorizalı<mikorizasız şeklindedir. Ancak bu durum istatistikî olarak önemli bulunmamıştır. Ayrıca en yüksek azot içeriği mikorizalı bitkilerin Ö dozunda bulunmuştur. Pestisit kalıntı (mg/kg) sonuçlarına göre mikoriza bulunan bitkilerin meyvelerinde pestisit kalıntısına rastlanmamıştır. Mikoriza olmayan bitkilerin meyvelerinde ise Kontrol ve Ö/2 dozlarında pestisit kalıntısına rastlanmazken, Ö ve Ö*2 dozlarında ölçüm limitinde ve ölçüm limitinin üzerinde pestisit kalıntısına rastlanmıştır.

Anahtar Kelimeler: Pestisit kalıntı, mikoriza, domates (*Solanum lycopersicum* L.), azot

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➢ **POSTER PRESENTATION**

Farklı Dozlardaki Pestisit Uygulamalarının Toprağın Fiziksel Ve Kimyasal Özellikleri Üzerindeki Etkilerinin İncelenmesi

Tuğba ÖZBUCAK[1*], Döndü KABUL[2], Öznur ERGEN AKÇİN[1], Gülaycan POLAT[1]

[1] Ordu Üniversitesi Fen-Edebiyat Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Ordu, Türkiye
[2] Penpe İzzet Şahin Güzel Sanatlar Lisesi, Ordu, Türkiye

Sorumlu yazar e-mail:tsiozbucak@hotmail.com

Özet

Bu çalışmanın amacı farklı dozlardaki pestisit uygulamalarının toprağın fiziksel ve kimyasal özellikleri üzerindeki etkilerini incelemektir. Pestisit uygulaması önerilen (Ö), önerilenin yarısı (Ö/2) ve önerilenin iki katı (Ö*2) şeklinde yapılmıştır. Toprakta organik madde, N (%), P (%), K (%), Ca (%) ve Mg (%) elementleri ile % nem miktarı, tekstür, EC ve Ph değerleri belirlenmiştir. Toprak analiz sonuçlarına göre suyla doymuş Ph, toprakta EC ve bitkiye yarayışlı potasyum değerleri istatistikî bakımından önemli bulunmuştur ($P<0,05$).

Anahtar Kelimeler: Toprak özellikleri, Pestisit, domates (*Solanum lycopersicum* L.)

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➢ **POSTER PRESENTATION**

Effectiveness of Novel Contact Lens Disinfectants in Turkey against Trophozoites of *Acanthamoeba* spp. isolated from Swimming Pools

Miray Üstüntürk-Onan

Istanbul University, Faculty of Science, Department of Biology, Istanbul, Turkey.

Corresponding author e-mail: ustuntrk@istanbul.edu.tr

Abstract

Acanthamoeba keratitis is a progressive sight-threatening corneal infection caused by a free-living amoebae genus, *Acanthamoeba*. The use of ineffective contact lens disinfecting solutions is one of the most important risk factors for this infection. The aim of this study was to assess the amoebicidal activity of recently marketed contact lens disinfectants in Turkey. The efficacy of two different contact lens disinfectants including OPTI-FREE® PureMoist® and Biotrue™ were tested against trophozoites of four *Acanthamoeba* strains (A10, A13, A14 and A20) isolated from swimming pools in Istanbul. Most probable number technique was used for amoebic enumeration at the end of every sampling interval. Results indicated that, with the exception of the activity of OPTI-FREE® PureMoist® against the strains A10 and A20, the solutions had no trophozoiticidal effects on the tested strains by their manufacturers' minimum recommended disinfecting time. OPTI-FREE® PureMoist® demonstrated trophozoiticidal activity against the strains A10 and A20 giving a log reduction of 3.49 and 3.24, respectively. These findings present a significant concern to public health due to the limited efficacy of the tested contact lens disinfectants in this study.

Keywords: *Acanthamoeba*, Amoebicidal activity, Contact lens disinfectants, Swimming pool, Trophozoite.

Acknowledgment: This work was supported by Scientific Research Project Coordination Unit of Istanbul University. Project number: 52474.

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➢ **POSTER PRESENTATION**

Water Attitude Scale Towards Pre-Service Science Teachers: Validity and Reliability

Cemile Çankaya[1], Cansu Filik İşçen[2*]

[1]Eskişehir Osmangazi University, Graduate School of Education, Eskişehir/Turkey

[2]Eskisehir Osmangazi University, Faculty of Education, Department of Elementary Education, 26480 Eskisehir/Turkey,

Corresponding author e-mail:cfilik@gmail.com

Abstract

Water is one of the important vital resources for sustainable development. In order to protect water resources and ensure sustainability, it is necessary to change the perspective of the water and to raise awareness. The aim of this study is to develop a scale to determine the behaviour of the preservice science teachers towards water attitude. The scale is applied to 201 preservice science teachers at various universities. Expert opinion sare taken for the content validity. Exploratory and confirmatory factor analysis is made for the structure validity. It is observed that the scale consists 14 items and one dimensions. It is found out that percent of variance explained as 46.325 and the cronbach alpha coefficiants as .897. As a result, the scale has a valid and reliable structure.

Anahtar Kelimeler: Water Attitude Scale, Pre-Service Science Teachers, Validity, Reliability

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➢ **POSTER PRESENTATION**

Constituents of Essential oils from leaves and seeds of *Lauris nobilis* L.

Omer Elkiran[1*], Emel Akbaba[2], Eyup Bagci[2]

[*1]Department of Bioengineering, Faculty of Engineering & Architecture, Sinop University, Sinop, Turkey.

[2] Department of Biology, Faculty of Science, Firat University, Elazig, Turkey.

omer_elkiran@hotmail.com

Abstract

Laurus nobilis L. (Lauraceae), known as laurel or bay, is an evergreen tree or shrub being native to the south parts of Europe and the Mediterranean area. Laurel is widely cultivated throughout the world. It is an industrial plant used in drugs and cosmetics, as well as containing one of the most useful essential oils. In the current study, chemical composition of essential oils from seeds and leaves of laurel was evaluated using GC-GC/MS system. A total of 69 different compounds were identified constituting 86.7% of the total oil from the seed, while 76 compounds were determined, constituting 95.8% of the total oil extracted from the leaves. The major compounds of essential oil from laurel seeds include eucalyptol (%17.2), alpha-terpinyl acetate (%9.0), caryophyllene oxide (%6.1), spathulenol (%5.0) and methyl eugenol (%4.2), constituting 41.5% of the total oil. However, eucalyptol (%18.0), alpha-terpinyl acetate (%13.1), sabinene (%7.8), alpha-pinene (%4.5), 2 (4-methoxyphenyl)-N,N,2-trimethyl-1-pyrrolamine (%4.4) were identified as the major compounds in the oil from laurel leaves, constituting 47.8% of the total oil. Eucalyptol and alpha-terpinyl acetate, belonging to monoterpenoids, were determined in the highest concentrations within both oils. However, the other principle compounds differ between the two volatile oils.

Keywords: *Lauris nobilis,* essential oil, eucalyptol, alpha-terpinyl acetate

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➢ **POSTER PRESENTATION**

Identification of a Serpin protein encoding gene in *Aedes cretinus*

Meryem Senay SENGUL DEMIRAK[1*], Ahmet SIMSEK[1]

[1]Gaziosmanpaşa University, Faculty of Arts & Sciences, Department of Molecular Biology and Genetics, Tokat, Turkey.

[*]Corresponding author e-mail: senay.sengul@gop.edu.tr

Abstract

Aedes mosquitoes are vectors for several pathogens that cause devastating diseases such as dengue, dengue hemorrhagic fever, yellow fever and Zika virus. One way to prevent mosquito-borne diseases depends heavily on understanding mosquito-pathogen interaction which helps developing effective control strategies. Mosquitoes defend themselves from pathogens by immune responses. Because of this, it is imporant to identify proteins involved in mosquito's immune system in order to understand molecular mechanisms underlying immune responses. It is known that serine protease inhibitors (serpins) play important roles in the regulation of insect immune responses. Several studies have identified serpins as a result of immunity response but their specific roles are still elusive for mosquito species. In this study, we present the cloning and identification of a serpin gene in the mosquito species *Aedes cretinus*. Because the genome sequence is not available for this species, we performed comparative genomics with the know genomes of other mosquito species. We provide evidence that mosquito serpins shows homology suggesting that they may share common pathways for parasite tolerance.

Keywords: *Aedes cretinus*, immunity, Serpin, parasite tolerance

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➢ **POSTER PRESENTATION**

Ultrafine Fiber Production by Novel Two-Step Process

İpek Tekin[1], Ozan Toprakci[1*], Hatice Aylin Karahan Toprakci[1]

[*1]Yalova University, Faculty of Engineering, Department of Polymer Engineering, Yalova, Turkey.

Corresponding author e-mail: ozan.toprakci@yalova.edu.tr

Abstract

Nanofibers are seen as a new class of materials that enables the formation and rapid development of various industries such as tissue engineering, energy storage, filtration and protective clothing. The need for nanofibers and the development of existing production methods are increasing day by day for the development of the mentioned sectors. Electrospinning, melt blowing, phase separation, template synthesis, self-assembly are some of the methods for nanofiber production. However, these methods have limitations in terms of production volume, material selection, safety, cost etc. Even electro-spinning, the most common production method, has constraints such as compatible polymer-solvent systems, safety and low production volume. In this study, ultrafine fibers was produced by a novel two-step process with low cost and high production rate. Process is adabtable to various polymer-solvent systems. Morphological characterization of ultrafine fibers was made by using scanning electron microscopy.

Keywords: ultrafine fiber formation, centrifugal spinning

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➢ **POSTER PRESENTATION**

Discovery of a Series of Some New Heterocyclic Compounds Containing Benzothiazole and Fused Ring System

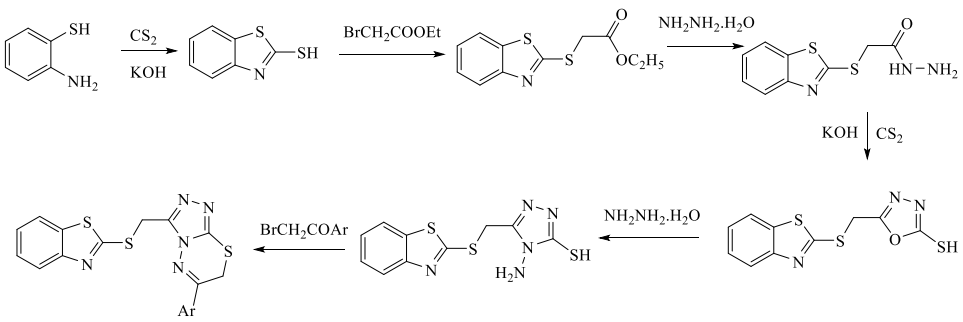
Musa Özil*, Özge Tuzcuoğlu

Recep Tayyip Erdogan University, Art and Science Faculty, Department of Chemistry, Rize, Turkey

E-mail: musaozil@hotmail.com

Abstract

Benzothiazole has considerable place in research area especially in synthetic as well as in pharmaceutical chemistry because of its potent and significant pharmacological activities. Since, a wide range of methods are available for synthesizing benzothiazole nucleus and its derivatives but a real need exists for new procedures that support many kinds of structural diversity and various substitution



The synthetic sequence was started from the reaction of 2-aminothiophenol with CS_2/KOH to give benzo[d]thiazole-2-thiol. For obtained target compounds, there are six steps required. The target compound containing both 6-aryl-1,2,4-triazolo-[3,4-b]-1,3,4-thiadiazine derivatives and benzo[d]thiazole structure. Most of reactions were carried out by microwave and conventional methods for comparing yields and time. The results showed that microwave technique is more effective than conventional method.

Keywords: Benzothiazole, Microwave, Triazole, Fused System.

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➢ **POSTER PRESENTATION**

Mikorizalı Ve Mikorizasız Domates Bitkilerine Uygulanan Farklı Pestisit Dozlarının Meyve Özellikleri Üzerindeki Etkilerinin İncelenmesi

Tuğba Özbucak[1] , Gülaycan Polat[1*] , Döndü Kabul[2], Öznur Ergen Akçin[1]

[1] Ordu Üniversitesi Fen-Edebiyat Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Ordu, Türkiye
[2] Penpe İzzet Şahin Güzel Sanatlar Lisesi, Ordu, Türkiye

Sorumlu yazar e-mail: gulaycan.polat06@gmail.com

Özet

Farklı pestisit dozu uygulamalarının mikorizalı ve mikorizasız büyütülen domates meyvesi üzerindeki etkilerinin tespit edildiği bu çalışmada meyve ağırlığı, meyve boyu, meyve çapı ve meyve hacmi özellikleri incelenmiştir. Pestisit dozları ise çiftçiye önerilen (Ö), önerilenin yarısı (Ö/2) ve önerilenin iki katı (Öx2) şeklinde uygulanmıştır. Yapılan çalışma sonucunda meyve ağırlığı, meyve boyu, meyve çapı ve meyve hacmi ölçüm sonuçları bütün pestisit dozlarında mikorizalılarda istatistiki olarak önemli bulunmuştur ($p<0.05$). Özellikle mikorizalı bitkilerin kontrol grubunun meyve ağırlığı, çapı ve hacmi mikorizasız bitkilerin kontrol grubunun meyve çapından daha yüksek bulunmuştur ($P<0,05$). Bu sonuçlar mikorizanın pestisite rağmen meyve üzerinde olumlu etkileri olduğunu göstermektedir.

Anahtar Kelimeler: Pestisit, mikoriza, domates (*Solanum lycopersicum* L.), morfoloji, meyve özellikleri

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➢ **POSTER PRESENTATION**

The Genotoxic Effects of a Flavor Enhancer, Magnesium Diglutamate, in *in vitro* Human Peripheral Lymphocytes Using Sister Chromatid Exchange Assay

Ece Avuloglu-Yilmaz[1,2], Deniz Yüzbaşıoğlu[1], Fatma Ünal[1]

[1]Department of Biology, Science Faculty, Gazi University, Ankara, Turkey
[2]Department of Biology, Science and Arts Faculty, Amasya University, Amasya, Turkey (Present address)

Corresponding author e-mail: eceavuloglu@gazi.edu.tr

Abstract

Flavor enhancers are used to bring out the flavor in a wide range of foods without adding a flavor of their own. Food flavor enhancers are commercially produced in the form of instant soups, frozen dinners and snack foods etc. A flavor enhancer, magnesium diglutamate (MDG) is a magnesium salt of glutamic acid. The purpose of this study was to evaluate the potential genotoxicity of MDG by using sister chromatid exchange test in human lymphocytes *in vitro*. For this purpose, peripheral blood obtained from three healthy young donors, a man and two women, was treated with four different concentrations (93.75; 187.50; 375.00 and 750.00) of MDG in culture conditions for 24 and 48 h. A negative and a positive control (mitomycin-C) were applied for each treatment. Replication index was also determined. MDG significantly increased the SCE/cell ratio at all the concentrations (except 93.75 µg/mL) for both 24 h and 48 h periods compared to the negative control. However, MDG did not affect replication index. In our previous study, MDG significantly increased the frequency of micronucleus in the two highest concentrations compared to negative control in human lymphocytes. These data demonstrated that MDG may have genotoxic risk to human lymphocytes *in vitro* at high concentrations. However, other tests should be performed to clarify genotoxicity of this food additive.

Keywords: Genotoxicity, Food additive, Human lymphocytes, Sister chromatid exchanges.

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➢ **POSTER PRESENTATION**

Platytrombidium fasciatum'un (C. L. Koch, 1836) (Actinotrichida: Microtrombidiidae) Yeni Lokalite Kaydı

Sevgi Sevsay[1*], Rukiye Yıldırım[2]

[1*]Erzincan Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Erzincan, Türkiye
[2]Erzincan Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Anabilim dalı, Erzincan, Türkiye

Özet

Microtrombidiidae Thor, Trombidioidea içerisinde 115 cinse sahip en yaygın familyalardan biridir. Microtrombidiidae familyası içerisinde yer alan *Platytrombidium* Thor cinsi, 4 türden oluşmaktadır. Bu türlerden bir tanesi larva safhasından Afrika'dan (*P. africanum*), ikisi hem ergin hem de larva safhasından Avrupa'dan (*P. curtipilosum* ve *P. fasciatum*) ve bir tanesi de Doğu Asya'dan ergin safhadan (*P. uencense*) bilinmektedir. Türkiye'den ise daha önce Erzurum ve Gümüşhane'den verilen *Platytrombidium fasciatum*, yosunlu ve çimenli topraklardan toplanmıştır. Bu çalışmada ilk defa Dumanlı Ormanlarından (Refahiye-Erzincan) verilen bu türün morfolojik karakterleri daha önce verilen örnekler ile karşılaştırılmış, yaşam alanları değerlendirilmiş, biyolojisi ve zoocoğrafik dağılımı verilmiştir.

Anahtar kelimeler: Acari, Microtrombidiidae, *Platytrombidium*, Türkiye

Bu çalışma, Erzincan Üniversitesi Bilimsel Araştırma Projesi (BAP) FYL-2017-469 numaralı projenin desteği ile yürütülmüştür. Desteklerinden dolayı EUBAP koordinatörlüğüne teşekkür ederiz.

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➢ **POSTER PRESENTATION**

The Effect of Different Substrate Concentrations On β-Galactosidase Activities of 4 Lactobacilli Strains

Zehranur Yuksekdag[1*], Yasemin Kilic[1], Hazer Yuksekdag[2]

[*1]Gazi University, Faculty of Science, Department of Biology, Ankara
[2]Gazi University, Vocational School of Health Services, Ankara

zehranur@gazi.edu.tr

Abstract

Lactobacilli are reported to show diverse behavior and hence have attracted attention as a potential source of new applications as well as for enzyme production. Lactase (β-galactosidase EC 3.2.1.23) is an important commercial enzyme having several applications in the food and pharmaceutical industries, for example the production of lactose-free milk for consumption by lactose-intolerant persons. This study reports effect of different substrate concentrations on β-galactosidase activities of four strains that belong to *Lactobacillus* species. Assay of β-galactosidase activity was carried out using o-nitrophenyl galactopyranoside (ONPG). One-unit enzyme activity is defined as l mol o-nitrophenol formed per mL per min. Experiments were conducted using 1% to 10% lactose as carbon source in MRS medium The effect of substrate concentrations on showed that the enzyme activity in general (except GD11 strain) increased with increasing amount substrate concentrations from 1% to 4%, while the enzyme activity decreased with increasing amount substrate concentrations from 6% to 10%. In the *L. rhamnosus* GD11 strain, an increase in enzyme activity was detected at substrate concentrations of 1% and 2%, while the enzyme activity decreased with increasing amount substrate concentrations from 4% to 10. Maximum β-galactosidase activity of 0.155 U/mL% in the *L. fermentum* ZYN17 strains was found at 4% lactose. As a result, it was determined that the enzyme activity at different substrate concentrations changed according to strain.

Anahtar Kelimeler: β-Galactosidase, *Lactobacillus*, substrate concentrations

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➢ **POSTER PRESENTATION**

Intra/extracellular folate production in different buffers of *Streptococcus thermophilus* strains

Zehranur Yuksekdag*, Meryemnur Zeydanlı, Belma Aslim

*Gazi University, Faculty of Science, Department of Biology, Ankara

zehranur@gazi.edu.tr

Abstract

Streptococci, one of the most common bacteria of the intestinal tract, help establish balance in the gut microbiota and confer health benefits to the host. One beneficial property is folate biosynthesis, which is dependent on species and strains. Folate is a generic term referring to the various forms of folic acid, one of the B vitamins. Folates are co-factors in essential metabolic pathways such as DNA synthesis and methylation pathways. Low folate levels increase the risk for neural tube defects and megaloblastic anemia and may increase the risk of certain cancer forms, cardiovascular disease and Alzheimer's disease. Although some species of lactic acid bacteria (LAB) can produce folates, little is known about the production of this vitamin by yogurt starter cultures. Since there are currently few reports of folate production by *Streptococcus thermophilus*, one of the aims of the present study was to evaluate this property in strains of this species that were isolated from traditional yogurts of Turkey. Another objective of this work was to determinate the intracellular and extracellular folate production capability by the isolated strains in Elliker, folate-free culture media (FACM), and nonfat milk under different buffers conditions (0.1 M potassium phosphate; pH 6.4, 0.1 M sodium phosphate; pH 7.4, and 0.1 M sodium acetate; pH 5.0). In the 34 bacteria screened, the intracellular folate productions were higher than extracellular folate productions. *S. thermophilus* Z151 showed the highest production of both intracellular and extracellular folates in Elliker medium at potassium phosphate buffer (177.1 and 86.4 µg/L, respectively). The folate production was also higher when the strains were suspended at potassium buffer compared to sodium phosphate and sodium acetate buffers. The strains with high folate production could be used as an alternative to fortification with the controversial synthetic chemical folic acid.

Anahtar Kelimeler: *Streptococcus thermophilus*, folate, buffers, media

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➢ **POSTER PRESENTATION**

Pericarp histology and cytology of two species of the genus *Salvia* sect. *Plethiosphace* (Lamiaceae)

Ahmet Kahraman[1] H. Nurhan Büyükkartal[2]

[1] Uşak University, Faculty of Arts and Sciences, Department of Biology, Uşak, Turkey
[2] Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey

E-mail : bkartal@science.ankara.edu.tr

Abstract

The main aims of the present study are to present detailed description of histological and cytological structure of layers composed of pericarp and seed coat (achene+pericarp) of S*alvia verbenaca* and *Salvia adenocoulon* belonging to the section *Plethiosphace* of the genus *Salvia* naturally found in Turkey and to provide a valuable contribution to the solution of taxonomic problems in the genus.
Pericarp structure of the two *Salvia* species was examined by using transmission electron microscopy (TEM).
The outer layer of oval-shaped pericarp of both species consists of elongated musilageous cells originated from epidermal ones. The mesocarp composed several layers of parenchymatous cells is located beneath the epidermis. The endocarp comprises 3-4-layered sclerenchymatous cells. Abundant and large transparent starch granules, lipid and protein particles in the endosperm have been observed.

Key words: Pericarp histology, cytology, *Salvia*, Lamiaceae.

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➢ **POSTER PRESENTATION**

Ultrastructural observations in endosperm cells of the natural tetraploid *Trifolium pratense* L. (Fabaceae) cv. Elçi

H. Nurhan Büyükkartal[1] , Esra Koç[2]

[1,2]Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey

E-mail : bkartal@science.ankara.edu.tr

Abstract

The ultrastructure of the endosperm cells in the natural tetraploid *Trifolium pratense* L. cv. Elçi that has a very low rate of seed formation was examined. Ovules from different flower buds were embedded in epon 812, and the fine structure of the endosperm cells was examined by Transmission Electron Microscopy (TEM). The primary endosperm nucleus undergoes repeated divisions without any cell wall formation. Endosperm forms first at the micropylar end of the mature megagametophyte, then spread towards the chalazal end, remaining in the free nucleate form for a while. The cytoplasm of free nuclear endosperm is characterized by numerous organelles. Endosperm cellularization begins when the embryo has developed the globular embryo stage, but a major portion remain free nuclear.
This study notes that the protein and lipid bodies are the major food reserve stored in the endosperm.

Keywords: Endosperm cells, Fabaceae, *Trifolium pratense* L., ultrastructure.

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➢ **POSTER PRESENTATION**

İnsan Karbonik Anhidraz I İnhibitörü 4,4-Dimetil-2,6-Dioksosikloheksiliden Metilenaminobenzen-Sülfonamit'in Genotoksik ve Sitotoksik Profilinin Belirlenmesi

Selen Şen[1*], Mustafa ARSLAN[2], Hüseyin AKSOY[3]

[*1]Sakarya Üniversitesi, Sağlık Bilimleri Fakültesi, Sakarya, Türkiye
[2]Sakarya Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, Sakarya, Türkiye
[3]Sakarya Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Sakarya, Türkiye

Sorumlu yazar e-mail: scakirsoy@sakarya.edu.tr

Özet

Karbonik anhidraz (KA) izoenzimlerini inhibe eden farmakolojik ajanlara, karbonik anhidraz inhibitörleri (KAİ) denir. Bilinen en güçlü KAİ'ler sülfonamitlerdir. Günümüzde, yeni KAİ sülfonamit türevlerinin sentezine yönelik arayışlar sürmektedir. Yeni sentezlenen sülfonamitler gibi bileşiklerin KA inhibisyonu gibi biyolojik aktiviteler göstermesi bunların ilaç olarak önerilebilmesi için yeterli değildir. Kemoterapide, hastayı sağlık riskleri oluşturmadan tedavi etmek esastır. Bu nedenle, ilaçlar insanlar üzerinde kullanılmadan önce birer güvenlik testi niteliğinde olan toksikolojik araştırmalardan geçirilmelidir. Toksikolojik araştırmaların aşamalarından biri, genotoksisite araştırmalarıdır. Genotoksisite araştırmalarının yapılması, ilaç geliştirmede çok önemli bir ilkedir. Çünkü, genotoksik etkili ajanların neden olduğu genetik hasarlar, insanlarda ciddi sağlık sorunlarına yol açmaktadır. İlaçların genotoksik etkilerinin belirlenmesinde kısa süreli genotoksisite testlerinden yararlanılır. Bu testlerden biri de yapısal ve sayısal kromozomal anormalliklerin belirlenebildiği *in vitro* kromozomal anormallikler (CA) testidir. Bu çalışmada, ilaç etken maddesi olarak kullanılabileceği düşünülerek sentezi ve KA I izoenzim inhibisyon aktivite belirlemesi (IC_{50}=2.12 µM) SAÜ Kimya Bölümü'nde yapılan 4,4-dimetil-2,6-dioksosikloheksiliden metilaminobenzen-sülfonamit'in genotoksik ve sitotoksik profilinin belirlenmesi amaçlanmıştır. Bu amaçla, insan periferal kan lenfositlerinde *in vitro* CA testi uygulanmıştır. Bu *in vitro* testte, test maddesinin 2.12, 1.06 ve 0.53 µg/mL'lik konsantrasyonları kullanılmıştır. Test maddesiyle yapılan hem 24 hem de 48 saatlik uygulamada, CA oluşumu bakımından hem negatif kontrole hem de çözücü kontrole göre istatistiksel olarak anlamlı farklılıklar gözlenmemiştir. Ancak, 48 saatlik uygulamada, mitotik indeks tüm konsantrasyonlarda her iki kontrol grubuna göre de anlamlı düzeyde düşmüştür. Elde edilen sonuçlar, yeni KAİ sülfonamit türevinin yüksek konsantrasyonlarda ve uzun süre maruziyette insan periferal lenfositleri üzerinde sitotoksik olduğunu ancak genotoksik olmadığını göstermektedir.

Anahtar Kelimeler: Genotoksisite, sitotoksisite, kromozomal anormallik, insan periferal lenfositleri, karbonik anhidraz, sülfonamit

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➢ **POSTER PRESENTATION**

İnsan Karbonik Anhidraz II İnhibitörü 4-(1,3-Dimetil-2,4,6-Triokso-Tetrahidropirimidin-5(6H)-Yliden) Metilenaminobenzen-Sülfonamit'in Genotoksik Profilinin Değerlendirilmesi

Selen ŞEN[1*], Tuna DEMİRCİ[2], Hüseyin AKSOY[3]

[*1]Sakarya Üniversitesi, Sağlık Bilimleri Fakültesi, Sakarya, Türkiye
[2]Düzce Üniversitesi, Bilimsel ve Teknolojik Araştırmalar Uygulama ve Araştırma Merkezi, Düzce, Türkiye
[3]Sakarya Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Sakarya, Türkiye

Sorumlu yazar e-mail: scakirsoy@sakarya.edu.tr

Özet

İnsan vücudunda, birçok dokuda bulunan ve önemli fizyolojik veya patolojik süreçlerde rol oynayan karbonik anhidraz (KA) izoenzimleri, yeni ilaç geliştirmede dikkat çeken biyolojik hedeflerdir. Günümüzde, izoenzim seçiliği olan antiglokom, diuretik ve antiepileptik karbonik anhidraz inhibitörü (KAİ) ilaçların geliştirmesine yönelik çalışmalar devam etmektedir. Ayrıca kanser, obezite ve osteoporoz tedavisinde kullanılabilecek KAİ ilaçlar da geliştirilmeye çalışılmaktadır En güçlü KAİ'ler sülfonamitler olduğundan, yeni KAİ'lerin geliştirilmesi çalışmalarında motif olarak en çok sülfonamitler kullanılmaktadır. 4-(1,3-Dimetil-2,4,6-triokso-tetrahidropirimidin-5(6H)-yliden) metilenaminbenzen-sülfonamit, ilaç etken maddesi olabileceği düşünülerek Sakarya Üniversitesi Kimya Bölümü'nde sentezlenen ve insan KA II izoenzimini inhibe ettiği belirlenen (IC_{50}=2,52 µM) bir sülfonamit türevidir. Yeni sentezlenen maddelerin ilaç olarak önerilebilmesi için, bunlara ilişkin sitotoksisite ve genotoksisite verilerinin olması gereklidir. Bu çalışmada, yeni sentezlenen insan KA II inhibitörü sülfonamit türevinin genotoksik ve sitotoksik profilinin insan periferal kan lenfositlerinde *in vitro* kromozomal anormallikler (CA) testi ile değerlendirilmesi amaçlanmıştır. Bu testte, test maddesinin 2.52, 1.26 ve 0,63 µg/mL'lik konsantrasyonları ve eş zamanlı olarak negatif ile çözücü kontroller kullanılmıştır. Test maddesi ile yapılan hem 24 saatlik hem de 48 saatlik CA testi uygulamaları sonucunda, CA oluşumu bakımından kontrol gruplarına göre istatistiksel olarak anlamlı farklılıklar gözlenmemiştir. Ancak 48 saatlik uygulamada, sitotoksik etkinin göstergesi olan mitotik indeks değerleri tüm konsantrasyonlarda çözücü kontrole göre anlamlı düzeyde düşmüş; negatif kontrole göre ise sadece en yüksek doz olan 2,52 µg/mL'lik konsantrasyonda anlamlı düzeyde düşmüştür. Elde edilen sonuçlar, yeni sentezlenen sülfonamit türevinin yüksek konsantrasyonlarda ve uzun süre maruziyette insan periferal lenfositleri üzerinde sitotoksik olduğunu ancak genotoksik olmadığını göstermektedir.

Anahtar Kelimeler: Genotoksisite, sitotoksisite, kromozomal anormallik, insan periferal kan lenfositleri, sülfonamit, karbonik anhidraz

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➢ **POSTER PRESENTATION**

Paronycia Cinsinde Yeni Kromozomal Veriler ve Poliploidi Varyasyonları

Halil Erhan Eroğlu[1], Derya Altay[2*], Ümit Budak[1], Esra Martin[3]

[1]Bozok Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Yozgat, Türkiye
[*2]Ankara Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Anabilim Dalı, Ankara, Türkiye
[3]Necmettin Erbakan Üniversitesi, Fen Fakültesi, Biyoteknoloji Bölümü, Konya, Türkiye

Sorumlu yazar e-mail: babaarslanderya@hotmail.com

Özet

Polipoidi, otopoliploidi (bir türe ait genom duplikasyonu) ve allopoliploidi (türler arasındaki hibridizasyon ile genom duplikasyonu) sonucu meydana gelen; yüksek bitkilerin türleşmesi ve evriminde önemli rol oynayan bir mekanizmadır. Poliploidi, alttürlerin türleşmelerini de etkileyebilir. Bu çalışmada, *Paroncyhia chionaea* subsp. *chionaea* ve *P. chionaea* subsp. *kemaliya* taksonlarında detaylı kromozom ölçümleri ve polipoidi varyasyonları ilk kez rapor edilmiştir. *P. chionaea* subsp**.** *chionaea* taksonunun kromozom sayısı ve karyotip formülü 2n = 4x = 36 = 36m ve 2n = 8x = 72 = 68m + 4sm şeklindedir. Toplam haploid kromozom uzunluğu ve ortalama haploid uzunluk tetraploid karyotipte 42.58 µm ve 1.18 µm iken oktoploid karyotipte 87.48 µm ve 1.22 µm'dir. *P. chionaea* subsp**.** *kemaliya* taksonunun kromozom sayısı ve karyotip formülü 2n = 4x = 52 = 52m ve 2n = 8x = 104 şeklindedir. Toplam haploid kromozom uzunluğu ve ortalama haploid uzunluk tetraploid karyotipte 46.47 µm ve 0.89 µm iken oktoploid karyotipte 82.08 µm ve 0.79 µm'dir. Ayrıca taksonların detaylı kromozom ölçümleri ve karyotip asimetri değerleri de belirlenmiştir.

Anahtar Kelimeler: Karyotip, Kromozom, *Paronychia chionaea*, Poliploidi.

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➢ **POSTER PRESENTATION**

Reduction of Hexavalent Chromium by Bacteria and Investigation of Chromium (III) Adsorption

Berat Cinar Acar[1], Mehmet Bahadir Acar[2], Zehranur Yuksekdag[1]

[1]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey
[2]Ceylan Mineral Mining Industry and Trade Inc., Ankara, Turkey

E-mail: cinarbrt@gmail.com

Abstract

Heavy metal pollution represents an important environmental problem. Heavy metals have many industrial applications due to their technological importance. The widespread industrial uses of chromium or its compounds result in the release of Cr-containing wastes into the environment that contaminates the soils and surface/ground waters. A wide variety of microorganisms such as bacteria, yeast, algae, and fungi are found in waters. These microorganisms have developed the capabilities to protect themselves from heavy metal toxicity by various mechanisms such as adsorption and reduction.
In the present study, hexavalent chromium resistant was determined at 13 bacteria were isolated from tannery effluent. All isolates also showed resistance and sensitivity against the $K_2Cr_2O_7$ in Nutrient medium with a wide range of MIC values ranging from 150 to 500 mg/L. The most resistant isolate was found to be BCA13 (500 mg/L). The effectiveness of the bioremediation was evaluated with all isolates. Based on the bioremediation efficiency, the BCA13 isolate was selected for the detoxification experiment which exhibits maximum hexavalent chromium reduction into its trivalent form.
BCA13 isolate could reduce 50,100, 150, 200, and 250 mg/L of chromate maximally to zero at 32, 56, 64, 80, and 96 hours. The effect of pH, temperature, initial Cr(III) concentration, and contact time on chromium adsorption was investigated via experimental design approach using Central Composite Design. A second-order polynomial equation related to the model was obtained and 3 dimensioned surface contour plots were drawn. The variance analysis (ANOVA) of the model at %95 confidence level was investigated.

Keywords: Bioremediation, chromium reduction, adsorption, central composite design

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➢ **POSTER PRESENTATION**

The Novel Manganese(II) Complex

[1]Zülbiye Kökbudak, [1]Halime Güzin ASLAN,

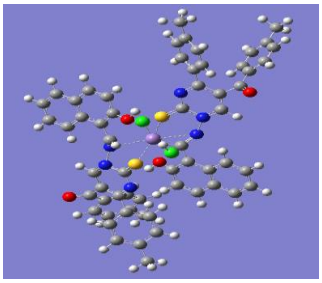
Erciyes University, Faculty of Science, Chemistry Department, Kayseri, Turkey.

guzina@erciyes.edu.tr

Abstract

The new manganese complex was synthesized with the methods we applied in previous studies.The new complex, named Bis((1-((2-hydroxynaphthalen-1-yl)methyleneamino)-2-thioxo-4-p-tolyl-1,2-dihydropyrimidin-5-yl)(p-tolyl)methanone dichloro) Mn(II). Structural characterization was done with ^{1}H NMR, ^{13}C NMR and FT-IR methods [1,2]. Ligands the binding is via the -N and = S groups in this complex. This was elucidated by FT-IR and 1 H NMR analyzes. The Manganese complex's optimization work has been done with the Gaussian software program. Figure 1 shows the optimized structure of the compound.

Figure 1. The optimize gaussian figure of Bis((1-((1-hydroxynaphthalen-2-yl)methyleneamino)-2-thioxo-4-p-tolyl-1,2-dihydropyrimidin-5-yl)(p-tolyl)methanone dichloro) Mn(II).



Keywords: Schiff Base, Transition metal complex, Gaussian, FT-IR.

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➢ **POSTER PRESENTATION**

Synthesis and Characterization of Mixed Metal Cu(II)-Ni(II) Dipicolinate Complexes

Halil İlkimen[1*], Rukiye Saygılı Canlıdinç[1], Cengiz Yenikaya[1]

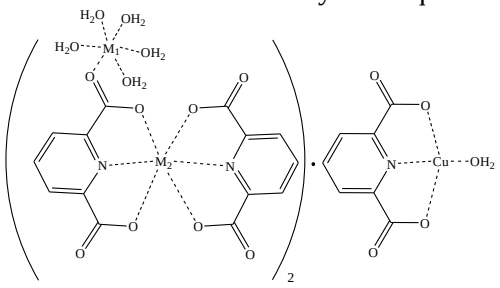
[*1]Dumlupınar University, Faculty of Arts and Science, Department of Chemistry, Kutahya, Turkey

Corresponding author e-mail: halil.ilkimen@dpu.edu.tr

Abstract

Pyridine-2,6-dicarboxylic acid (or dipicolinic acid) (H_2dipic) forms stable chelates with simple metal ions and oxometal cations and can display widely varying coordination behaviour, functioning as a multidentate ligand. Dipicolinates commonly coordinate to transition metals by either carboxylate bridging between metal centers, to form polymeric or dimeric complexes, or tridentate (O, N, O') chelation to one metal ion [1]. Dipicolinic acid is known for application in analytical chemistry [2,3], corrosion inhibition, decontamination of nuclear reactors [4] and diverse biological activity [5,6]. Moreover, dipicolinate complexes have been used as electron carriers in some model biological systems as specific molecular tools in DNA cleavage [7] and as NO scavengers [8].

In this study, two novel mixed metal copper(II)-nickel(II) complexes of H_2dipic (**1** and **2**) have been prepared and characterized by elemental, AAS, spectral (IR and Uv-Vis.), and thermal analyses, as well as by using magnetic measurement and molar conductivity techniques.



M_1 = Cu, M_2 = Ni (**1**)
M_1 = Ni, M_2 = Cu (**2**)

Keywords: 2,6-Pyridinedicarboxylic acid, metal complex, synthesis, characterization

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➢ **POSTER PRESENTATION**

Preparation of carrageenan matrix for enzyme co-immobilization

Sinem Diken Gür

Hacettepe University, Faculty of Science, Department of Biology (Biotechnology), Ankara, Turkey

Corresponding author e-mail: sinemdkn@hacettepe.edu.tr

Abstract

The development of co-immobilized multi enzyme systems is important in that they are alternative to traditional multistep synthetic methods. Although methods used in a single enzyme immobilization can be used in co-immobilization, optimum immobilization conditions need to be determined so that the enzymes can not affect each other's binding capacities.

The objectives of this study were to prepare carrageenan hydrogel matrix for co-immobilization of α amylase and pectinase enzymes and to optimize enzymes' co-immobilization.

κ- carrageenan hydrogel matrix was prepared. Then α amylase and pectinase enzymes were co-immobilized with this matrix. These enzymes were selected as model enzymes in order to investigate the usability of κ- carrageenan in co-immobilization studies. To optimize the immobilization method, the effects of carrageenan and enzyme concentrations were examined. For determining the α amylase activity of both soluble and immobilized enzymes, iodimetric method was used. Pectinase activity of both soluble and immobilized enzymes was measured by using Miller's colorimetric method. Then the amount of immobilized protein and immobilization efficiency were determined.

Co-immobilization of duo enzymes were accomplished in this study. The optimum immobilization conditions were determined for using carrageenan as a support material. As a result of this study two different enzymes immobilized with the same support successfully. Also they were able to work together with high immobilization yield. Additionaly, this study also highlights the use of natural polymer κ-carrageenan which can be extracted from seaweeds for making the process environmental friendly.

Keywords: κ- carrageenan, α amylase, pectinase, co-immobilization.

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➢ **POSTER PRESENTATION**

Cerambyx Linnaeus, 1758 (Coleoptera: Cerambycidae: Cerambycinae) Cinsi Üzerine DNA Barkodlama Çalışmalarının Durumu

Naciye Cihan Tüzün[1*], Hakkı Taştan[2], Hüseyin Özdikmen[2]

[*1]Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye
[2] Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: naciyecihan@windowslive.com

Özet

Cerambyx Linnaeus, 1758 cinsi Cerambycidae familyasının tip cinsi olması bakımından ayrıcalı bir öneme sahiptir. Dünyada toplam 2 alt cinse ait 28 tür ile, Palaearctic bölgede 13 tür ile, Avrupa kıtasında 7 tür ile temsil edilmektedir. Türkiye faunasının *Cerambyx* (*Cerambyx*) *carinatus* (Küster, 1846), *C.* (*C.*) *cerdo* Linnaeus, 1758, *C.* (*C.*) *dux* (Faldermann, 1837), *C.* (*C.*) *heinzianus* Demelt, 1976, *C.* (*C.*) *kodymi* Slama, 2015, *C.* (*C.*) *miles* Bonelli, 1823, *C.* (*C.*) *nodulosus* Germar, 1817, *C.* (*C.*) *welensii* (Küster, 1846) ve *C.* (*Microcerambyx*) *scopolii* Füsslins, 1775 olmak üzere toplam 9 türden oluştuğu bilinmektedir. International Barcode of Life (BOLD) ve National Center for Biotechnology Information (GenBank) veri tabanlarına göre dünyada sadece *Cerambyx* (*Cerambyx*) *cerdo* Linnaeus, 1758, *C.* (*C.*) *miles* Bonelli, 1823, *C.* (*C.*) *welensii* (Küster, 1846) ve *C.* (*Microcerambyx*) *scopolii* Füsslins, 1775 olmak üzere 4 türün mitokondriyal DNA sekansında yer alan sitokrom c oksidaz (COI) geni çalışılmış durumdadır. Bu türlerin tamamı Türkiye faunasında da mevcuttur. Bununla birlikte çalışılan bu 4 türe ait toplam 25 örneğin tamamı 3 Avrupa ülkesinden (Almanya'dan 16, Fransa'dan 8, Çek Cumhuriyeti'nden 1) toplanmıştır. Dolayısıyla henüz çalışılan hiçbir Türkiye örneği bulunmadığından, Türkiye için *Cerambyx* cinsine ait türlerin hiçbir popülasyonu hakkında barkod bilgisi mevcut değildir. Bu çalışmada, International Barcode of Life (BOLD) ve National Center for Biotechnology Information (GenBank) veri tabanlarına göre hali hazırda barkodlaması yapılmış bu 4 türün barkodları verilerek analiz edilmiş, bu sayede Türkiye faunası üyeleri üzerine yapılacak barkodlama çalışmaları için temel hazırlanmıştır.

Anahtar Kelimeler: DNA Barkodlama, Türkiye, *Cerambyx*, Cerambycidae, BOLD, GenBank

International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2018)

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➢ **POSTER PRESENTATION**

X-ray Analyses and Investigation of the Interactions with DNA Bases of Compound $C_{22}H_{26}N_4OS$*

Gamze Tunar[1*], Çiğdem Yüksektepe Ataol[1], İbrahim Yılmaz[2], Alaaddin Çukurovalı[3]

[*1]Cankiri Karatekin University, Faculty of Science, Department of Physics, Cankiri, Turkey
[2]Karamanoglu Mehmetbey University, Faculty of Kamil Ozdag Science, Department of Chemistry, Karaman, Turkey
[3]Firat University, Faculty of Science, Department of Chemistry, Elazig, Turkey

Corresponding author e-mail: gamze_tunar90@hotmail.com

Abstract

The single crystal structure of $C_{22}H_{26}N_4OS$ is obtained by the X-ray diffraction technique. The molecular structure of the crystal structure using X-ray results is optimized by using the Density Functional Theory (DFT) and Hartree-Fock (HF) from computational chemistry methods. In the calculations, the B3LYP base function, which gives good results for organic structures, and 6-311G (split valance) and 6-311G (d, p) (polarized), Hartree-Fock (HF)/6-311G(d, p) and B3PW91/6-311G were chosen as basis sets. Molecular orbital energies of molecular structures were calculated using TD-DFT with ultraviolet spectroscopy technique using the optimized structures with different basis sets. First, the molecular orbital energy levels in a gas phase are calculated using a molecular structure, the B3LYP/6-311G and B3LYP/6-311G (d, p) methods, and then the energy levels are calculated in different solvent environments of this molecular structure to determine the molecular energy levels of the solvent effect and dipole moment effect was investigated. The presence of any interaction between DNA bases such as adenine, guanine, cytosine and thymine and the compound was investigated by the DFT method. And also, the interactions between this compound and DNA bases are determined by using the ECT (electrophilicity-based charge transfer) method.

Keywords: Triazole, DFT, X-ray, Single Crystal, DNA bases

***** This work was supported by the Bap Unit of Cankiri Karatekin University. FF270516L15

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➢ **POSTER PRESENTATION**

Comparison of Phenylalanine Ammonia Lyase Response to Lead and Zinc Stress in Different Wheat Genotypes

Esra Koç[1*], Cemil İşlek[2], H. Nurhan Büyükkartal[1]

[*1]Ankara University, Faculty of Sciences, Department of Biology, Ankara, Turkey.
[2]Niğde Ömer Halisdemir University, Faculty of Art and Sciences, Department of Biotechnology, Niğde,Turkey.

Corresponding author e-mail: ekoc@science.ankara.edu.tr

Abstract

Phenylalanine ammonia lyase response to zinc and lead toxicity of two different wheat genotypes (*Triticum aestivum* L. cv. Kıraç-66 and *Triticum durum* Desf. cv. Kızıltan-91) were investigated in this study. The seedlings which were cultivated for 6 weeks in greenhouse conditions were harvested from the surface of soil. At the end of 6th weeks, seedlings were transferred to jars which filled full Hoagland nutrient solution. The zinc and lead stress treatments were carried out with addition of 0 (control), 100, 200, 300 mg zinc and lead in nutrient solution. It was determined that phenylalanine ammonia lyase activity increased in seedlings under zinc and lead stress. The highest phenylalanine ammonia lyase activity was determined in application 200 mg Pb on fourth day in cv. 'Kızıltan-91'genotype. These data show that phenylalanine ammonia lyase activity appear to protect wheat seedlings against stress-related damage.

Keywords: Abiotic stress, Defence, Phenylalanine ammonia lyase, Wheat.

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➢ **POSTER PRESENTATION**

The Effect of High Hydrostatic Pressure on the Production of Capsaicin in the Cell Suspension Culture of Free and Immobilized *Capsicum annuum* L.

Cemil İşlek[1], Esra Koç[2*], Ergin Murat Altuner[3], Hami Alpas[4]

[1]Niğde Ömer Halisdemir University, Faculty of Art and Sciences, Department of Biotechnology, Niğde,Turkey.
[*2]Ankara University, Faculty of Sciences, Department of Biology, Ankara, Turkey.
[3]Kastamonu University, Faculty of Art and Sciences,Department of Biology, Kastamonu,Turkey.
[4]Middle East Technical University, Engineering Faculty, Department of Food Engineering, Ankara, Turkey.

Corresponding author e-mail: ekoc@science.ankara.edu.tr

Abstract

The study examined the effects of immobilization procedure and high hydrostatic pressure (HHP) on the production of capsaicin in the cell suspension culture of Maraş-1 (*Capsicum annuum* L.) pepper seeds, which are among Kahramanmaraş type peppers in varying times.
Callus cultures were obtained from hypocotyl explants of pepper seedlings that were germinated in vitro and cell suspensions were formed out of the callus. Cell suspension cultures immobilized with calcium alginate and free cell suspension cultures that were not immobilized were obtained from the cell suspensions. High hydrostatic pressure with varying rates (50, 100, 200, 300 and 400 MPa) was applied to both free and immobilized cell suspensions as a stimulant. Control groups to which no stimulant was applied were formed and extraction was performed with ethyl acetate by taking samples on certain days (day 8, 10 and 12.). Capsaicin concentrations in free cells, immobilized cells and in their filtrates were determined by HPLC.
As a result of the study, it was determined that immobilization procedure had an intensifying effect on the capsaicin accumulation. The amount of capsaicin in immobilized cells was observed to be higher in control groups and samples to which stimulant was applied, compared to free cells. The highest total amount of capsaicin was determined in the immobilized cell suspension during the application of 200 MPa on the 10th day. As a result of the HHP pressure application, the excitation time that was effective for both free and immobilized cells was determined as the 10th day. The success gained from the HHP applications especially on the 10th day can be used in increasing the amount of capsaicin by applying different excitation doses for that excitation day.

Keywords: Capsaicin, High hydrostatic pressure, Immobilization, Pepper, Plant cell culture.

Acknowledgement: This study is supported by The Scientific and Technological Research Council of Turkey with Project number TUBITAK-TOVAG-113O518.

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➢ **POSTER PRESENTATION**

Nine New Tortoise Beetles (Chrysomelidae: Cassidinae) for Çankırı Province, Turkey

Neslihan Bal[1*], Suat Kıyak[2], Meltem Demirer[2], Hüseyin Özdikmen[2]

[*1]Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye
[2] Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: neslihansilkin@gmail.com

Abstract

We had the opportunity to study material of the subfamily Cassidinae (Chrysomelidae) collected during the expedition of Çankırı province in 2013-2015. Tortoise beetles have been reported only by 4 species [*Cassida seraphina* Ménétriés, 1836, *Cassida viridis* Linnaeus, 1758, *Hypocassida subferruginea* (Schrank, 1776) and *Ischyronota desertorum* (Gebler, 1833)] from Çankırı province until now. In a result of this work, 9 new records [*Cassida murraea* Linnaeus, 1767, *Cassida nobilis* Linnaeus, 1758, *Cassida pannonica* Suffrian, 1844, *Cassida sanguinolenta* Müller, 1776, *Cassida sanguinosa* Suffrian, 1844, *Cassida stigmatica* Suffrian, 1844, *Cassida subreticulata* Suffrian, 1844, *Cassida vibex* Linnaeus, 1767 and *Ischyronota jordanensis* Borowiec, 1986] of the subfamily Cassidinae for the fauna of Çankırı province were detected. Especially, *Ischyronota jordanensis* Borowiec, 1986 has been known only from Ankara province in Turkey until now. In addition, *Cassida sanguinosa* Suffrian, 1844 has been reported only from Bartın and Kastamonu provinces in Turkey until now.

Keywords: Chyrsomelidae, Cassidinae, new records, Çankırı, Turkey

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➢ **POSTER PRESENTATION**

In silico Analyses of Aromatic Amino Acid Biosynthesis Genes in Potato (*Solanum tuberosum*)

Mehmet Emin Uras[1], Ertugrul Filiz[2], Ibrahim Ilker Ozyigit[1,3] , Ugur Sen[1]

1 Marmara University, Faculty of Science and Arts, Department of Biology, 34722, Goztepe, Istanbul, Turkey
2 Duzce University, Cilimli Vocational School, Department of Crop and Animal Production, 81750, Cilimli, Duzce, Turkey
3 Kyrgyz-Turkish Manas University, Faculty of Science, Department of Biology, 72001, Bishkek, Kyrgyzstan

Corresponding author e-mail: ertugrulfiliz@gmail.com

Abstract

Plant cells have multiple highly regulated metabolic networks that play important roles on growth, synthesis or turnover of storage compounds, or the accumulation of metabolites that have a role in coping with abiotic or biotic stress. In this context, aromatic amino acids (AAAs) such as tryptophan (Trp), phenylalanine (Phe), and tyrosine (Tyr), which are not only essential components of protein synthesis, but also serve as precursors for a wide range of secondary metabolites that are important for plant growth as well as for human nutrition and health. Chorismate synthase (*CS*), chorismate mutase (*CM*), and anthranilate synthase (*AS*) genes are major genes in AAA biosynthesis in plants. In this study, *CS*, *CM*, and *AS* genes were mined in potato genome using bioinformatics tools. The sequence analyzes were performed to determine exon/intron organization, sequence length and protein domain structures. Also, expression profiles were analyzed to understand changes in gene expressions under different stresses and hormone applications. As a result, the exon numbers were found between 5 and 13, while the lengths of proteins were ranged from 254 to 587 amino acid residues. Four types of domain structures were identified for chorismate synthase (PLN02754), chorismate mutase (PLN02344), anthranilate synthase component I (PLN02445), and carbamoyl-phosphate synthase (PLN02771). Digital expression profile analyzes revealed different expression patterns for *CS*, *CM*, and *AS* genes under biotic, abiotic, and hormone treatments in potato. Particularly, *CS*, *CM*, and *AS* genes are generally down-regulated under hormone treatments; whereas heat treatment generally induced the up-regulations of *CS*, *CM*, and *AS* genes. Also, the predicted 3D structures of CS, CM, and AS proteins showed some structural divergences.

Keywords: Aromatic amino acids, potato, stress, bioinformatics.

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➢ **POSTER PRESENTATION**

Metal Ion Requirement and Effect on Mutant GI Activity and Enhancement of pH- and Thermal Stability

Cigdem Dokuzparmak[1*], Fulya Oz Tuncay[1], Ahmet Colak[1], Yakup Kolcuoglu[1], Melike Yildirim Akatin[2], Nagihan Saglam Ertunga[1]

[*1]Karadeniz Technical University, Faculty of Science, Department of Chemistry, Trabzon, Turkey
[2]Karadeniz Technical University, Macka Vocational High School, Trabzon, Turkey

cayna@ktu.edu.tr

Abstract

Glucose isomerase (GI), which catalyses the isomerization of D-glucose to D-fructose, is an enzyme that has an industrial importance in the production of HFCS (High-Fructose Corn Syrup: mixture of sweet saccharides, containing either 42% or 55% fructose). Especially, to obtain a 55% fructose content, required for industrial application, enzymes derived from thermophilic microorganisms working at higher temperatures and lower pHs have been preferred. GI has two structural metal sites (M1 and M2) and it also requires several divalent metal ions in order to work properly.

The aim of this study is, by performing mutations, to investigate the effect of metal ions on enzyme activity and to obtain a GI which is more resistant to inhibition in the presence of metal ions and to obtain a GI which is more pH- and thermal stable. For this purpose, three site-directed mutations (H99Q, V184T and D102N) were performed for *Geobacillus caldoxylosilyticus* TK4GI gene, previously cloned to pET-28a (+) vector. The obtained mutant genes were overexpressed in a suitable host cell and mutant proteins were purified. The effect of metal ions (Na^+, Li^+, Mn^{2+}, Mg^{2+}, Zn^{2+}, Cu^{2+}, Co^{2+}, Ni^{2+} and Ca^{2+}) on enzyme activity and enzyme stability studies was performed.

The highest activities of mutant enzymes were observed in the presence of Co^{2+}, Cu^{2+} and Mn^{2+} and some mutant enzymes were more resistant to inhibition in the presence of some metal ions such as Na^+, Li^+, Zn^{2+}, Cu^{2+}, Ni^{2+} and Ca^{2+} compared to the literature. All the mutations caused an increase in the pH stabilities of mutant enzymes at pH 6.0 (80 °C and 4 °C), compared to the recombinant enzyme. It was also observed that the thermal stability of mutant enzymes at 80 °C and 4 °C was improved (except V184T at 80°C) as aimed.

*This study was supported by TUBITAK **(**109T985).

Keywords: *Geobacillus*, Glucose isomerase, thermophilic, mutation, HFCS

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➢ **POSTER PRESENTATION**

Water in Metabolism

Gönül Fatma Solmaz, Emine Dıraman, Ayşegül Türkdönmez, Zafer Eren

Ondokuz Mayıs University, Faculty of Science and Literature, Department of Biology, Samsun

Abstract

Water, an indispensable molecule for life, makes biomolecules such as nucleic acids, proteins and carbohydrates soluble. Water solubility characterizes noncovalent interactions.
Water is not just a solvent formed by chemical reactions of the living organism. It is also a very good nucleophile, and at the same time it is directly involved in the reactions. Many reactions in the cell occur by nucleophilic attack. Nucleophilic attack of water molecule oxygen to 1,6-glucosidic bonds results in free glucose molecules. And thus, as a spare energy molecule in the form of free glucose, the blood sugar level is maintained in the liver and the blood is given to the blood with the aim of continuation
The atomic mass is 18 g / mol. The geometric shape of a water molecule consisting of an oxygen atom located in the middle resembles a letter "V" with an angle of 104.5 ° between its arms. The two electron pairs that are not bound to the oxygen atom form a partial positivity-negativity relationship with the hydrogen atoms in the neighboring water molecules. As a result, atoms attract themselves and hydrogen bonds form. Thus, each water molecule is bound to 4 water molecules
Water is the end product of the oxidative metabolism of nutrients. This 'metabolic water', consisting of solid foods and storage fuels, is used as a source of life for some animals living in very dry environments without drinking water for a long time.
Decrease in body water can lead to changes in consciousness-difficulty concentrating, speech impairment, weakness, decreased muscle tone, impaired vision, low blood pressure, and heart failure. Naturally, the fact that life in the evolutionary direction begins in water, or ninety-nine percent of the water in the womb of the living worm that we first find life, is a few examples of water importance.
The atomic mass of the water is 18 g / mol. The geometric shape of a water molecule consisting of an oxygen atom located in the middle resembles a letter "V" with an angle of 104.5 ° between its arms. Two electron pairs that do not bind to the oxygen atom have a partial positive-negative relationship with the hydrogen atoms in the neighboring water molecules. As a result, it attracts atoms and forms hydrogen bonds. Thus, each water molecule is bound to 4 water molecules.Water is the end product of the oxidative metabolism of nutrients. This 'metabolic water', consisting of solid foods and storage fuels, is used as a source of life for some animals living in very dry environments without drinking water for a long time.
Decrease in body water causes changes in consciousness change-concentration difficulty, speech impediment, asthenia, poor muscle tone, visual impairment, low blood pressure, and heart throbbing.

Keywords : Metabolism, water, life

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➢ **POSTER PRESENTATION**

Probing the tautomerism in (*E*)-4-bromo-2-[(3,4-dimethoxyphenylimino)methyl]-6-ethoxyphenol using experimental and computational tools

Gökhan Kaştaş[1]*, Çiğdem Albayrak Kaştaş[2], René Frank[3]

[*1]Ondokuz Mayıs University, Faculty of Aeronautics and Astronautics, Samsun, Turkey
[2]Sinop University, Faculty of Art and Science, Department of Chemistry, Turkey
[3]Leipzig University, Department of Chemistry, Germany

Corresponding author e-mail: gkastas@omu.edu.tr

Abstract

In the present work, the tautomerism in (*E*)-4-bromo-2-[(3,4-dimethoxyphenylimino)methyl]-6-ethoxyphenol, an *o*-hydroxy Schiff base, has been investigated by experimental (XRD, UV-Vis) and computational methods (DFT). XRD study shows that the compound exists in *phenol-imine* form in solid state, and has C-H···Br and halogen-oxygen (Br···O) interactions in its 3D structure which can defined by linear *C(6)* chains, $R_2^2(12)$ and $R_4^4(12)$ ring patterns. Experimental UV-vis studies in solvent media (Benzene, DMSO and EtOH) show unchanged preference of the compound in the context of structural form. Prototropic tautomerism has further investigated with DFT method at B3LYP/6-311G(d,p) level considering two possible structural forms (*phenol-imine* and *keto-amine*). In addition, a potential energy surface (PES) scan has been performed for revealing the prototropy-geometry relation. Obtained energy difference between two tautomeric forms show that *phenol-imine* form of the compound is more stable than its keto-amine form.

Keywords: Tautomerism, Phenol-imine, Keto-amine, X-ray, UV-vis, DFT

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➢ **POSTER PRESENTATION**

Investigation of two Schiff bases in terms of prototropic tautomerism

Çiğdem Albayrak Kaştaş[1]*, Gökhan Kaştaş[2], René Frank[3]

[*1]Sinop University, Faculty of Art and Science, Department of Chemistry, Turkey
[2]Ondokuz Mayıs University, Faculty of Aeronautics and Astronautics, Samsun, Turkey
[3]Leipzig University, Department of Chemistry, Germany

Corresponding author e-mail: calbayrak@sinop.edu.tr

Abstract

In the present work, the tautomerism and structures in two Schiff bases named (*E*)-4-bromo-2-[(4-methoxyphenylimino)methyl]-6-ethoxyphenol **(1)** and (*E*)-4-bromo-2-[(4-ethoxyphenylimino)methyl]-6-ethoxyphenol (**2**) has been investigated by experimental methods. Based on XRD and FTIR studies, it has been concluded that compounds **1** and **2** exists in *phenol-imine* form in solid state. The *phenol-imine* form in **1** and **2** can also be investigated with the harmonic oscillator model of aromaticity (HOMA) indices. The calculated HOMA index for the aromatic ring related to tautomerism is 0.95 for **1** and corresponding value for **2** is 0.92. These results show that rings in **1** and **2** have aromatic character, verifying the *phenol-imine* forms of both compounds. Prototropic tautomerism in the compounds has also been investigated in the case of solvent media (Benzene, DMSO and EtOH) using UV-vis spectroscopy. Results show that both compounds still prefer *phenol-imine* form in solvent media.

Keywords: Schiff Base, Tautomerism, Phenol-imine, Keto-amine, FTIR, UV-vis

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➢ **POSTER PRESENTATION**

5-acetyl-4-(4-methoxyphenyl)-6-methyl-2-thioxo-1,2-dihydropyridine-3-carbonitrile

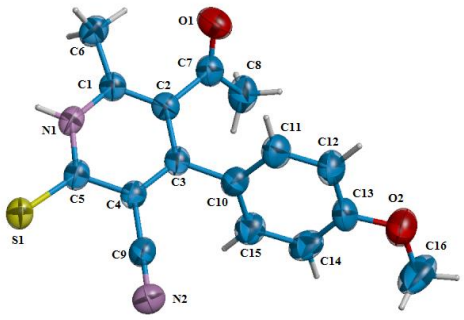
Nermin Kahveci Yağcı[1*], Necmi Dege[2]

[1]Kırıkkale University, Faculty of Arts and Sciences, Department of Physics, Yahşihan, Kırıkkale, Turkey.
[2]Ondokuz Mayıs University, Faculty of Arts and Sciences, Department of Physics, Samsun,Turkey.

Corresponding author e-mail: kahvecinermin@gmail.com

Abstract

In the crystal structure of the title compound, $C_{16}H_{14}N_2O_2S_1$, the molecules form centrosymmetric dimers via [N—H···S] hydrogen bonds. The determination of unit-cell parameters and data collections were performed with Mo Kα radiation (λ= 0.71073 Å). Unit cell dimensions were obtained with least-squares refinements, and all structures were solved by direct methods with SHELXT2015. All the non-hydrogen atoms were located in successive difference Fourier syntheses. There are two intermolecular hydrogen bonds (N1—H1···S1, C8—H8C···O2) in the molecule. There are also intramolecular hydrogen bonds (C6—H6A···O1).



Keywords: Dihydropyridine, Methoxyphenyl, Carbonitrile

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➢ **POSTER PRESENTATION**

Lead Removal from Aqueous Solution Using *Laurus nobilis* L. as Biosorbent

Fatih Gümüş[1*] Dilek Gümüş[2]

[1*] Department of Biology, Faculty of Arts and Science, Sinop University, 57000 Sinop, Turkey [2] Sinop University, Directorate of Construction & Technical Works, 57010 Sinop-Turkey

lakustrin@gmail.com

Abstract

Heavy metals are toxic and have the tendency to bio-accumulate. It has been consistently desired that their levels be reduced in industrial and municipal effluents before ultimate repository in the ecosystem. Techniques used for removal of heavy metals, like chemical precipitation, lime coagulation, ion exchange, reverse osmosis and solvent extraction are expensive and non-environmental friendly, as compared to adsorption. The adsorbent was characterized using scanning electron microscopy (SEM) images and FTIR. The effect of various parameters such as initial lead ions concentration, contact time, adsorbent dose and initial solution pH were examined. 120 minute is required for the equilibrium adsorption for lead and 6.0 of pH generally favors biosorption for Pb. Maximum biosorption capacity of 10 mg L^{-1} Pb onto *Laurus nobilis* was found and equilibrium data were best represented by Freundlich isotherm model among Langmuir, Freundlich, Temkin and Dubinin-Redushkevich adsorption isotherm models. The kinetic studies of the removal of lead are best in accordance with the pseudo-second-order model. The results indicated that the natural biomass of *Laurus nobilis* is an effective biosorbent for the lead biosorption. The biosorption increased by the increase in contact time. The increase in biosorbent dosage causes increase in lead biosorption due to increase in number of biosorption sites. The biosorption capacity (qe) was increased with increasing the initial lead concentration of the solution. Finally, this studies showed that the *Laurus nobilis* can be used for removing lead ions from contaminated waters.

Keywords: Adsorption, Lead, *Laurus nobilis* L.isotherm, kinetic

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➢ **POSTER PRESENTATION**

The Angiogenic Effects Of Adrenomedullin And Resveratrol In White Adipose Tissue Of Obese Rats

Ayse Asiye Culum*, Muhittin Yurekli

The Faculty of Science and Arts, Department of Biology, Malatya, Turkey

*ayseasiye@hotmail.com

Abstract

Obesity is a complex, chronic disease that arises according to the interaction between genetic and environmental factors. Many angiogenic factors provide formation of new vessels for the nourishment of tissues as in adipose tissue. Adrenomedullin (AdM) is also a peptide that has angiogenic features. Resveratrol is a polyphenol that has potent antioxidant, anti-inflammatory and anti-carcinogenic effects. The effects of resveratrol, the variations of vascular endothelial growth factor A (VEGF-A) and effects of AdM were investigated in white adipose tissue (WAT). Rats were divided into 8 groups. Obese groups were fed with high fat diet that has 60% fat content as energy for 3 months. After providing obesity, 2.5 nmol/kg AdM and 10 mg/kg resveratrol were treated to experiment groups intraperitonally (i.p.) every other day for 4 weeks. *AdM* and *VEGF* mRNA levels in WAT were detected with semi-quantitative PCR; protein levels were detected with Western Blotting. Obese and control groups responded differently to AdM and resveratrol treatments. The treatment of AdM with resveratrol has revealed completely diverse responses than the treatment of these two molecules apart. The results have showed that resveratrol would have a role in angiogenesis.

Keywords: Obesity, adrenomedullin, angiogenesis, wat

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➢ **POSTER PRESENTATION**

Investigation of Nitric Oxide Synthase and Superoxide Dismutase Enzyme Activities Depending on Aging and Cold Stress

Bilge Zabcı Ekinci[1], Muhittin Yürekli[2*]

[1] İnönü University, Vocational School **of** Health Services Malatya, TURKEY
[*2] İnönü University, Faculty of Science and Literature, Department of Biology, Malatya, TURKEY.

muhittin.yurekli@inonu.edu.tr

Abstract

Reactive oxygen species (ROS), such as hydrogen peroxide (H_2O_2) and superoxide anion (O_2-), are produced mainly as by-products of aerobic respiration and can damage many cell macromolecules, including lipids, proteins and nucleic acids. Nitric oxide is a highly diffusible and reactive molecule synthesized from L-arginine by at least 3 subtypes of NO synthase (NOS) This study focuses on the examination of the nitric oxide synthase (NOS) and superoxide dismutase (SOD) enzyme activities in some rat tissues depending on aging and cold stres. In order to investigate the effects of cold stress and aging on the enzyme activities and, the rats at young and the elder groups were exposed to the cold stres at 8oC for 48 h and then the related enzyme activities were measured. By aging, it was observed that nitric oxide synthase activity increased in liver, kidney and smooth muscle tissues and decreased in heart tissue. On the other hand, superoxide dismutase activity increased in striated tissue and hipotalamus and decreased in smooth muscle and heart by aging. By cold stres it was observed that nitric oxide synthase activity increased in heart and kidney tissues and decreased in smooth andn liver tissues, superoxide dismutase activity increased in heart tissue and hipotalamus and decreased in striated tissue and hipotalamus by cold stress.

Keywords: Nitric oxide synthase (NOS), superoxide dismutase (SOD), aging, cold stress

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➢ **POSTER PRESENTATION**

Genome Comparison of Multidrug Resistant *Mycobacterium tuberculosis* with The Reference Strain H37Rv

Sezer Okay[1*], Serdar Ulaş[2]

[*1]Department of Biology, Faculty of Science, Cankiri Karatekin University, Cankiri, Turkey.
[2]Department of Biology, Institute of Natural and Applied Sciences, Cankiri Karatekin University, Cankiri, Turkey.

Corresponding author: sezerokay@gmail.com

Abstract

The emergence of drug-resistant strains due to the widespread utilization of antibiotics against tuberculosis (TB) and the mutations occurring in the genome of *Mycobacterium tuberculosis* is one of the biggest problems in the treatment of TB. The strains having at least isoniazid and rifampicin resistance are called multidrug resistant *M. tuberculosis*. The genome of the *M. tuberculosis* is around 4.4 Mbp having a GC content of 65.59%. In this study, a comparative genome analysis was performed using a multidrug resistant *M. tuberculosis* and the reference strain *M. tuberculosis* H37Rv which has no antibiotic resistance. The mutations causing the shift of the triplet to code a different amino acid were identified using BLAST tool. Indels with higher number of nucleotides were also noted. As a result, more than 250 mutations were identified. High number of mutations were determined in PPE and PE-PGRS family proteins. Another group of proteins having mutations are ESX/type VII secretion systems. Many membrane proteins/transporters are also altered. The other proteins with mutations were identified as transcriptional regulators, HNH endonuclease, penicillin binding protein, oxidoreductases, transposase. This comprehensive study gives an insight about the alteration of the genome through gaining the drug resistance in *M. tuberculosis*, and the potential drug targets for new antibiotics.

Keywords: Bioinformatics, genome, *Mycobacterium*, tuberculosis.

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➢ **POSTER PRESENTATION**

Advanced Mutant Wheat Lines Screening For Salt Tolerance With Stress Related Biomarkers

Ayse Sen

Department of Biology, Faculty of Science, Istanbul University, 34134, Vezneciler, Istanbul, Turkey

*Corresponding author E-mail: senayse@istanbul.edu.tr

Abstract

High salinity in soil is one of the major abiotic stresses leading to the reduction of wheat yield. In this study, three salt tolerant wheat mutants at the M_6 generation were selected out of 1325 M_3 mutant lines by combining both *in vitro* and *in vivo* screening techniques and their salt tolerance capacities were evaluated by measuring the contents of proline and malondialdehyde, the rate of K^+/Na^+, and the activities of superoxide dismutase, guaiacol peroxidase, catalase and ascorbate peroxidase enzymes. Compare with the parental line, the salt tolerant lines demonstrated lower levels of catalase activity and higher levels of guaiacol peroxidase activity, proline content and K^+/Na^+ rate under salt stress condition. The selected wheat mutants in this study would be implemented to increase the salt tolerance in the wheat-breeding programme.

Keywords: Salt stress tolerance, mutant lines, *in vitro* and *in vivo* screening techniques, stress related biomarkers.

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➢ **POSTER PRESENTATION**

In Silico Characterization of HNH Endonuclease Family Proteins from Multidrug Resistant *Mycobacterium tuberculosis* Strain 410

Sezer Okay[1*], Serdar Ulaş[2]

[*1]Department of Biology, Faculty of Science, Cankiri Karatekin University, Cankiri, Turkey.
[2]Department of Biology, Institute of Natural and Applied Sciences, Cankiri Karatekin University, Cankiri, Turkey.

Corresponding author: sezerokay@gmail.com

Abstract

Utilization of bioinformatic tools to analyze genome-wide data enabled researchers to obtain a global point of view. *Mycobacterium tuberculosis* is the causative agent of the deadly disease tuberculosis, and the emergence of drug-resistant strains obstructs the treatment of tuberculosis. The studies to understand these drug-resistant strains would have a contribution to overcome the resistance. In this study, the HNH endonuclease family of proteins from a multidrug resistant *M. tuberculosis* strain 410 were investigated in silico. The protein sequences were obtained from the *M. tuberculosis* strain 410 chromosome, whole genome shotgun sequence (GenBank accession no. CM007646.1). Although many strains such as the reference strain H37Rv contain only one HNH endonuclease, nine genes encoding HNH endonuclease were identified in the genome of the strain 410. The amino acid sequences of these nine proteins were aligned with some other HNH endonucleases from different strains using ClustalW tool. A phylogenetic tree was constructed via Neighbour Joining method using MEGA7 software. Five out of nine HNH endonucleases from the strain 410 separated as two distinct branches in the tree. Two proteins of strain 410 were found to be closer to the one of strain PR10, and the other two were related with the one of KZN 1435, which are also multidrug resistant isolates. Moreover, Phyre2 Server was used to construct 3D structure of the proteins.

Keywords: Bioinformatics, HNH endonuclease, *Mycobacterium*, tuberculosis.

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➢ **POSTER PRESENTATION**

The Removal of Dye from Aqueous Solution Using Adsorption by Covered Zeolites

Fatih Gümüş[1*] Dilek Gümüş[2]

[1*] Department of Biology, Faculty of Arts and Science, Sinop University, 57000 Sinop, Turkey [2] Sinop University, Directorate of Construction & Technical Works, 57010 Sinop-Turkey

lakustrin@gmail.com

Abstract

Recently, considerable amount of waste water with color has been generated from many industries including textile, leather, paper, printing, dyestuff, plastic and so on. Removal of dye materials from contaminated water is very important because water quality is highly influenced by color and even a small amount of dye is highly visible and undesirable. Moreover, many dyes are considered to be toxic and even carcinogenic. Therefore, its removal and elimination from various aqueous wastes is required. There are various methods to treat dyes from contaminated water, such as adsorption, chemical oxidation, chemical reduction photodegradation, electrochemical oxidation, coagulation-flocculation, biological treatment and membrane separation. Among these methods, adsorption has attracted considerable attention because it provides a simple and efficient method for treating wastewater.

In this work, removal of methyl orange from aqueous solution onto iron oxide coated zeolite (ICZ) and potassium permanganate coated zeolite (MCZ) were investigated. The adsorbents were characterized using EDX (Energy Dispersive X-Ray Analysis) and SEM (Scanning Electron Microscopy) images. Batch adsorption experiments were performed to evaluate the influence of pH, contact time, adsorbent dose and initial dye concentration. The adsorption studies include both equilibrium adsorption isotherms and kinetics. Several isotherm models were investigated and the adsorption isotherm data were best represented by the Langmuir isotherm model and Langmuir monolayer adsorption capacities of ICZ and MCZ were 12,6 mg g-1, 14,3 mg g-1 , respectively. The kinetic studies confirm the pseudo first order process for the adsorption reaction.

Keywords: Adsorption, zeolite, isotherm and kinetic

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➢ **POSTER PRESENTATION**

Manyetik Demir Oksit Nanopartikül Yüzeyine Biyomoleküllerin Biyokonjügasyonunda Kullanılan Çapraz Bağlayıcı Ajanların Karşılaştırılması

Nagihan Soyer Tuzlalı[1*], Sema Salgın[1], Uğur Salgın[1]

[*1] Cumhuriyet Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Sivas, Türkiye

nagehansoyer@hotmail.com

Özet

Manyetik demir oksit nanopartikül (MIONP)'ler sahip oldukları üstün özelliklerinden dolayı ilaç taşınımı, manyetik rezonans görüntüleme, biyosensör ve biyoayırma gibi farklı uygulama alanlarında kullanılmaktadır. MIONP'ların biyoteknolojik uygulamaları, nanopartikül yüzeyine biyomoleküllerin biyokonjügasyonunu içermektedir. Biyokonjügasyon; kovalent ve kovalent olmayan immobilizasyon yöntemleri ile gerçekleştirilmektedir. MIONP yüzeyinde bir biyomolekül ile meydana gelen bağlanmanın daha yüksek stabiliteye sahip olmasından dolayı kovalent immobilizasyon yöntemi tercih edilmektedir. Kovalent immobilizasyon tekniği çeşitli çapraz bağlayıcı ajanlar kullanılarak gerçekleştirilmektedir.

Bu çalışmada manyetik özellikli PSA immünosensörü tasarımına temel oluşturmak üzere, MIONP yüzeyine monoklonal birincil PSA antibadinin immobilizasyonunda çapraz bağlayıcı ajan türü etkisinin incelenmesi amaçlanmıştır. MIONP'lar birlikte çöktürme yöntemine göre sentezlenmiş ve biyokonjügasyon işlemi öncesinde yüzeyleri silanlama tepkimesi ile modifiye edilmiştir. Yüzeyinde fonksiyonel gruplar oluşturulan MIONP'lara monoklonal birincil PSA antibadinin kovalent immobilizasyonu; gluteraldehit (GA), N-(3-dimetilaminopropil)-N'-etil karbodiimid hidroklorür (EDC) ve N-hidroksi süksinimid (NHS) çapraz bağlayıcıları kullanılarak 25 ^{o}C sıcaklık, 200 rpm karışma hızında, 4 h süresince gerçekleştirilmiştir. Herbir çapraz bağlayıcı varlığında gerçekleştirilen immobilizasyon işlemi sonrasında MIONP-antibadi komplekslerinin ortalama hidrodinamik çap ve zeta potansiyelleri Zetasizer (Malvern NanoZS) cihazıyla, kimyasal yapıları FTIR (Perkin Elmer Spectrum 100) spektrometresiyle belirlenerek karakterize edilmiştir.

Anahtar Kelimeler: MIONP, biyokonjügasyon ve çapraz bağlayıcı ajan.

**Bu çalışma M-538 No'lu proje kapsamında Cumhuriyet Üniversitesi Bilimsel Araştırma Projeleri (CÜBAP) Birimi tarafından desteklenmiştir.*

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➢ **POSTER PRESENTATION**

Optimization of *Ammi visnaga* tissue culture

Safak Isin, Burcu Arikan, Burcu Karpuz, Bekir Ahmet Ilgar, Keriman Gunaydin, Ozgur Cakir

Istanbul University, Faculty of Science,
Department of Molecular Biology and Genetics, 34134, Istanbul, Turkey

Abstract

Ammi visnaga is an important medicinal plant used for traditional medicine throughout centuries. For an example, dry fruit of *Ammi visnaga* have been used to cure stones on kidney and gallbladder by ancient Egyptians. In addition to usage of this medicinal plant by community, it has an economical value in these days.

Ammi visnaga's fruit and seeds consist plenty amount of khellin, visnagin and khellol glucoside. These compounds are used for their therapeutic properties. *Ammi visnaga* and some of its active compounds furanochromone derivatives are used for to alleviate the renal colic pain and urethral spasm, also they are used in urethral stone treatment due to its vasodilator and antispasmodic features. Recent researches showed that furanochromones have antineoplastic, anti-atherosclerotic, analgesic, anti-inflammatory and anti-anaphylactic properties. It is reported that furanochromone derivatives such as khellin, visnagin and khellol glucoside are present only in *Ammi visnaga* and *Eranthis hyemalis*. As a result of this establishing plant tissue cultures of these medicinal plants are really important.

In this study plant tissue culture of *Ammi visnaga* was established in order to provide the necessary cultures for the studies like abiotic stress treatment on callus cultures and increasing the production of rare secondary metabolites such as furanochromones. As a result, an optimized plant tissue protocol was developed. *Ammi visnaga* seeds were successfully germinated and their callus cultures were established by using this protocol.

Key words: *Ammi visnaga*, plant tissue culture, callus, germination, optimization

This study was financially supported by the Research Fund of the Istanbul University (Project number: FLO-2018-27976)

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➢ **POSTER PRESENTATION**

Successful treatment of *Sarcoptes scabiei* var. *vulpes* infestation in a Turkish red fox (*Vulpes vulpes*)

Murat Guzel[1], Gokmen Zafer Pekmezci[2*], Hatice Ozlem Nisbet[3], Didem Pekmezci[1]

[1]Ondokuz Mayis University, Faculty of Veterinary, Department of Internal Medicine, Samsun, Turkey
[2]Ondokuz Mayis University, Faculty of Veterinary, Preclinical Science, Samsun, Turkey
[3] Ondokuz Mayis University, Faculty of Veterinary, Department of Surgery, Samsun, Turkey

*Corresponding author e-mail: zpekmezci@omu.edu.tr

Abstract

Sarcoptes scabiei mites, a highly contagious skin disease that infect both domestic and wild animal species, causing skin disorders that may lead to severe generalized skin disease (mange). Moreover, Sarcoptic mange mite (*Sarcoptes scabiei* var. *vulpes*) infections are endemic and highly prevalent in red foxes in Europe and may influence fox populations dramatically and reduce the abundance of red fox by over 70%. However, to date any data for (*Sarcoptes scabiei* var. *vulpes*) infections among Turkish red foxes (*Vulpes vulpes*) has been reported. Therefore, the successful clinical recovery of generalized *Sarcoptes scabiei* var. *vulpes* infestation in a young, Turkish red fox (*Vulpes vulpes*) at a total of two topical 6 mg/kg, dose of 0.25 ml, REVOLUTION® (selamectin) applications with two week internal therapy is aimed to be given via present case report. Twenty one days later a whole recovery of the generalized lesions without any relapse after 6 weeks from the treatment was observed, and the treated Turkish red fox (*Vulpes vulpes*) was delivered to the Directorship of Environmental and Forestry authorities to set it free. To our knowledge, this is the first report of *Sarcoptes scabiei* var. *vulpes* infestation in a Turkish red fox (*Vulpes vulpes*) in Turkey.

Keywords: Treatment, *Sarcoptes* mite, Turkish red fox (*Vulpes vulpes*), Turkey

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➢ **POSTER PRESENTATION**

Phase Selective Organogelation Properties of N-(*p*-aryl) Bis-carbamates with long *p*-alkyl/alkoxy chains

Tuncay Hatıl, Öznur Demir Ordu

Abant İzzet Baysal University, Faculty of Arts and Sciences, Chemistry Department, Bolu TURKEY

Corresponding author e-mail: demirordu@ibu.edu.tr

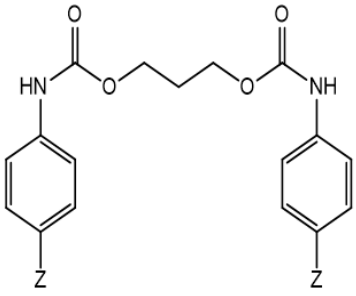
Abstract

Low molecular weight organogelators (LMWO) are a family of organic molecules that can gel organic solvents at low concentrations. Organogels are composed of self-assembled LMWOs into entangled three-dimensional networks with solvent molecules entrapped inside through weak intermolecular interactions. The main characteristic properties of these gels are their thermo-reversible gel-to-sol transition.

Gels formed by low molecular weight organic compounds have important applications for new organic soft materials. Examples of these areas include drug delivery, cosmetics, phase-selective cleaners. Phase selective organogelators have been attracting a lot of attention in water purification [1].

The main purpose of this project is to obtain bis-carbamate-based materials that can be used in environmental applications. First, bis-carbamate derivatives with long *p*-alkyl/alkoxy chain (1,3-Bis [N-(*p*-aryl) carbamoyloxy]-propanes) were synthesized (Figure 1) [2], and then their organogelation behaviors as solidifiers were studied by test tube inversion method in common organic solvents, vegetable oils (olive oil, sunflower oil, nut oil etc.), and petroleum products (gasoline, diesel etc.). It was found that the length of *p*-alkyl/alkoxy tail had an influence on organogel formation.

The phase selectivity of the resulting organogels was examined by performing oil removal experiments (Figure 2). The results showed that these materials in the form of "solidifier" may have an application for the removal of vegetable/petroleum oil spills from water.



Z:Hexyl,Hexyloxy,Heptyl, Heptyloxy,Octyl,Octyloxy, Decyl,Decyloxy

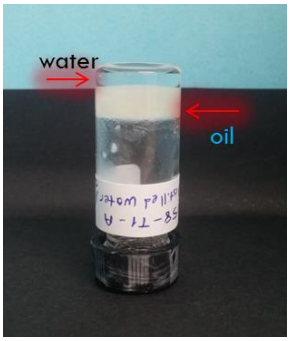


Figure 1 Chemical Structures of the bis-carbamates

Figure 2 Phase selective organogelation

Keywords: Bis-carbamates, organogelators, phase selective organogelation.

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➢ **POSTER PRESENTATION**

miRNA expression and salt stress relation in H2274 *Solanum lycopersicum*

Burcu Arikan, Burcu Karpuz, Safak Isin, Neslihan Turgut Kara, Ozgur Cakir

Istanbul University, Faculty of Science, Department of Molecular Biology and Genetics, 34134, Istanbul, Turkey

Abstract

Salinity is the second major abiotic stress factor with 20% after the drought that limits the agricultural production all around word. All Solanaceae family members such as tomato (*Solanum lycopersicum*), potato (*Solanum tuberosum*), pepper (*Capsicum annuum*), eggplant (*Solanum melongena*), and tobacco (*Nicotiana tabacum*) are salt sensitive compared to the salt tolerant halophyte (glycophytes). miRNAs are important components of post-transcriptional regulation which are 21-24 nucleotide long, non-coding double stranded RNAs. Without a doubt learning how miRNA expression regulated under salt stress for the selection and development of salt stress tolerant tomato plants will provide important information in the field of tomato cultivation. In this study, we investigated miRNA expression of commercial tomato (H2274 genotype) under 100 µM salt stress.

Keywords: Salt stress, miRNAs, tomato (*Solanum lycopersicum*)

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➢ **POSTER PRESENTATION**

Effect of Polymer Properties on Electrical Properties of Polymer Composites

Ayşe TURGUT[*1*2], Hatice Aylin KARAHAN TOPRAKÇI[*1*2], Ozan TOPRAKÇI[*1*2]

[*1]Yalova University Polymer Engineering Department
*[2]Yalova University Institute of Science and Engineering Yalova, Turkey

Corresponding author e-mail: aylin.toprakçı@yalova.edu.tr

Abstract

Thermoplastic elastomers (TPE) or sometimes referred as thermoplastic rubbers are polymers that involve both elastic behaviour of rubber and the processability of thermoplastic materials. Rubbery phase that represents soft segments in the polymer chain provides elasticity and determines service temperature limits. On the other hand, rigid phase enables melt processing and increases resistance to deformation. These type of materials generally have low elastic modulus and high strain at break when compared to other materials. Physical and mechanical properties of TPEs can be controlled with the ratio of the monomers and the length of the segments. Polymers are good insulator materials and have many application areas such as computer housings, cable and wire insulation, fuse boxes, knobs, switches and so on. In order to make polymeric materials electrically conductive; conductive fillers can be added into the structure such as carbon allotropes. Carbon nanofibers (CNFs) are one of the conductive fillers that are commonly used in the literature. The purpose of this study is to investigate the effects of polymer properties on the electrical properties of polymer composites. For this purpose two polymers with different molecular weight were used. In this work, CNF containing composites were fabricated and their electrical properties characterized.

Keywords: Polymer composites, polymer molecular weight, carbon nanofiber (CNF), thermoplastic elastomer (TPE), conductive nanocomposites, electrical properties.

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➢ **POSTER PRESENTATION**

Retrospective Study of Human and Animal Parasitic Diseases in the Western Algerian Region - Case of the Wilaya of Tiaret

BELKHARCHOUCHE Mounira[1,2], BOUMEDIENE Fayrouz[2], BOUZIANE Badreddine[2]

[1] National School of Biotechnology, Constantine 3. Algeria.
[2] Ibn Khaldoun University, Tiaret. Algeria.

mimibel7425@gmail.com

Abstract

In order to determine the epidemiological and clinical profile of human and animal parasitic diseases in the Wilaya of Tiaret, a retrospective study was conducted from 2007 to 2016 for human parasitic diseases according to several factors namely: age, month of consultation and the communes and this with the services of the director of health and population. We have revealed the presence of the following diseases: cutaneous leishmaniasis, visceral leishmaniasis and hydatid cyst. The analysis of the data shows that the situation of hydatid cyst cases in 2008 in our study area is respectively as per commune; Ksar Challala (27%); Mehdia (23.8%) and Tiaret with a percentage of 22.22%. Regarding visceral leishmaniasis, the data show that the number of cases of this disease is higher in 2011 (5 cases), moreover, the percentage of cutaneous leishmaniasis varies between 3.95% (2014) and 18.76% (2016). On the other hand, data from the Department of Agricultural Services of Wilaya de Tiaret reveal the following diseases: Hydatidosis and Fasciolosis. It has been found that the number of cases of hydatid cyst in sheep and higher than in other animals such as goats and cattle whose organ most affected is the lung than the liver. The different results recorded are illustrated in detail in this work.

Keywords: Epidemiology, Parasitosis, Retrospective Study, Hydatid Cyst, Leishmaniasis, Algeria.

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➢ **POSTER PRESENTATION**

Investigation of Cytotoxic Effect of Fusaric Acid in HUVEC Cell Line Using MTT Assay

Sevcan Mamur

Gazi University, Life Sciences Application and Research Center, 06830, Ankara, Turkey
Corresponding author e-mail: smamur@gazi.edu.tr

Abstract

Agricultural products consumed by human and animal can be contaminated by secondary fungal metabolites called mycotoxin. Fusaric acid (FA) is a Fusarium mycotoxin, which is a risk factor for humans and animals health. This investigation was undertaken to evaluate cytotoxic effect of FA in human umbilical vein endothelial (HUVEC) cell line using 3-(4,5-dimethylthiazolyl-2)-2,5 diphenyltetrazolium bromide (MTT) assay. HUVEC cells were grown to confluence at 37°C under 5% CO_2 in flasks with Dulbecco's Modified Eagle Serum (DMEM) including 10% fetal bovine serum (FBS), 1 (%) penicillin/streptomycin and 2 mM L-glutamine. Cells were treated with FA of 0.78, 1.56, 3.125, 6.25, 12.5, 25, 50, 100, 200, and 400 µg/mL concentrations for 24 and 48 hours. A solvent [DMSO, 0.5% (v/v) of the culture medium] and a negative control was also maintained. As a result, FA showed cytotoxic effect on HUVEC cells at 100, 150, 200, and 400 µg/mL concentrations compare to control and solvent control at 24 hour treatment. In addition, the cell viability was reduced by FA at three highest concentrations (150, 200, and 400 µg/mL) compared to control and solvent control (except 150 µg/mL) at 48 hour treatment period. The half of inhibitory (IC_{50}) value was determined as 150 µg/mL concentration for 24 h and as 200 µg/mL concentration for 48h treatment. This result indicated that exposure to higher concentration of FA induced cytotoxic effect in HUVEC cell line with MTT cell viability assay. However, further work should be conducted in view of its cytotoxicity using different cell lines.

Key Words: Fusaric acid (FA), mycotoxin, MTT cell viability assay, HUVEC cell line

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➢ **POSTER PRESENTATION**

Effect of ydaM and dgkA Genes of *Escherichia coli* on Biofilm Formation

Muhammed Hasan Akyıl, Filiz Şahin, Nilüfer Cihangir

Hacettepe Univesity, Department of Biology

Abstract

Microorganisms form a layer to attach on a surface or to stick to each other, which identifies as biofilm. Biofilms are known to increase resistance to antibiotics, make infectious diseases more effective and hard to cure. In this research, we aim to detect the impact of ydaM and dgkA genes of *Escherichia coli* on biofilm formation. ydaM is associated with curli fimbriae development and second messenger cyclic-di-GMP pathway. dgkA expression correlates with diacylglycerol kinase synthesis. In order to investigate the effect of dgkA and ydaM genes on biofilm formation, we knock outed these genes from *Escherichia coli* ATCC 11229 using the protocol of Datsenko "One-step inactivation of chromosomal genes in Escherichia coli K-12 using PCR products". To measure biofilm formation we used Microtiter Dish. *Escherichia coli* ATCC 11229 selected as positive control. We determined *Escherichia coli* 11229 ΔydaM %73 *Escherichia coli* 11229 ΔdgkA %15, reduction in biofilm formation. These results indicate that these genes are associated with biofilm formation.

Key Words: Biofilm formation, *Escherichia coli*, Gene deletion, ydaM, dgkA

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➢ **POSTER PRESENTATION**

Syntheses, Vibration Spectroscopic and Thermal Analyses of Heteropolynuclear Cyanide Complexes:{[M(1,2dmi)$_2$Pd(CN)$_4$]·2H$_2$O}$_n$ (M = Cu(II) or Zn(II))

Güneş Süheyla Kürkçüoğlu[1*], Özge Bağlayan[2]

[*1]Eskişehir Osmangazi University, Sciences and Arts Faculty, Physics Department, Eskişehir, Türkiye
[2]Anadolu University, Sciences Faculty, Physics Department, Eskişehir, Türkiye

gkurkcuo@ogu.edu.tr

Abstract

Two heteopolynuclear cyanide complexes of general formula{[M(1,2dmi)$_2$Pd(CN)$_4$]·2H$_2$O}$_n$ (1,2-dmi=1,2-dimethylimidazole and M = Cu(II) or Zn(II)) have been synthesized and characterized by vibrational (FT-IR and Raman) spectroscopy, thermal analyses and elemental analyses. In the complexes, four cyanide groups of [Pd(CN)$_4$]$^{2-}$ coordinated to the adjacent M(II) ions are completed by two nitrogen atoms of trans 1,2-dmi ligands. The structures of the complexes are similar. The vibration assignments are given for all the observed bands and the spectral features also supported to the thermal and elemental analyses techniques of heteronuclear complexes. Thermal behaviors of these complexes are followed using thermo-gravimetric analysis and differential thermal analysis (DTA) techniques. The spectral features suggest that these complexes are similar in structure to the Hofmann-type two-dimensional coordination polymer compounds. The C, H, N analyses were carried out for all the complexes and were found to fit the proposed formulas well. The experimental results are in agreement with the proposed formulas.

Anahtar Kelimeler: Tetracyanopalladate(II) complex, 1,2-dimethylimidazole, Copper(II) complex, Zinc(II) complex, FT-IR and Raman spectra, Thermal analyses.

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➢ **POSTER PRESENTATION**

Isolation of Biocontrol Agents Streptomyces Species Against *Fusarium culmorum*

Muhammed Hasan Akyıl, Duygu Seren Özyılmaz, Nilüfer Cihangir

Hacettepe Univesity, Department of Biology

Abstract

The livelihood of many countries in the world are grains and their economic value is great. According to the 2013 data of FAO, world wide grain production is 2.780.666.068 ton a year. In 2013 these data reacted 37.475.264 ton in our country. Fungi diseases caused by biotic stress factors account for the great percantage of grain loss. *Fusarium culmorum* causes root rot and head blight in grains. Mytoxins are produces by this fungus. Grains are contaminated by mytoxins therefore , productivity and quality decreases. Streptomyces genus has great importance the fight against fungal disease in grains. This genus is a Gram positive bacterium which has a filamentous structure similar to that of a fungus. The most important characteristic of these bacteria is their secondary metabolite reproduction. These secondary metabolites are, antivirals, antihypertensics, antimicrobials, antifungals, antitumorals and immunosuppressive. In this study we isolated 25 different Streptomyces from soil. Our soil samples obtained from various regions in Ankara. To isolate Streptomyces we used selective media Strach Casein Agar (SCA). Colonies which have the possibility of Streptomyces were purified by Streak plate method. Mueller Hinton Agar (MHA) was prepared in order to find out whether these 25 type bacteria purified through by Streak plate method had on antifungal effect against *Fusarium culmorum.* Streptomyces species were inoculated on one end of the petri and *Fusarium culmorum* was inoculated on the other end and were left for incubation for 14 days. 8 different Streptomyces species bacteria were found to be effective against *Fusarium culmorum.*

Key Words: Streptomyces, *Fusarium culmorum*, Biocontrol agent, antifungal

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➢ **POSTER PRESENTATION**

Syntheses and Characterizations of The Heteronuclear Polymeric Complexes with 2-Pyridinemethanol

Güneş Süheyla Kürkçüoğlu[1*], Özge Bağlayan[2]

[*1]Eskişehir Osmangazi University, Sciences and Arts Faculty, Physics Department, Eskişehir, Türkiye
[2]Anadolu University, Sciences Faculty, Physics Department, Eskişehir, Türkiye

gkurkcuo@ogu.edu.tr

Abstract

Two new polymeric cyanide complexes, $[M(hmpy)_2Pd(CN)_4]_n$, (hmpy = 2-pyridinemethanol, M = Zn(II) or Cd(II), hereafter abbreviated as Zn-Pd-hmpy and Cd-Pd-hmpy, respectively) have been prepared in powder form and characterized by FT-IR and Raman spectroscopy, thermal (TG, DTG and DTA) and elemental analyses. The spectral features of the complexes suggest that the Pd(II) ion is four coordinate with four cyanide-carbon atoms in a square planar geometry. Zn(II) and Cd(II) ions of the Zn-Pd-hmpy and the Cd-Pd-hmpy complexes display a distorted octahedral coordination by two N-atoms and two O-atoms of hmpy ligands, two bridging cyanide groups. In one dimensional structure of the complexes, $[Pd(CN)_4]^{2-}$ anion and $[M(hmpy)_2]^{2+}$ (M = Zn(II) or Cd(II)) cations are linked via bridging cyanide ligands. The thermal decompositions in the temperature range 30–700 °C of the complexes were investigated in the static air atmosphere.

Anahtar Kelimeler: Tetracyanopalladate(II) complex, 2-pyridinemethanol complex, Zinc(II) complex, Cadmium(II) complex, FT-IR and Raman spectra, Thermal analyses.

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➢ **POSTER PRESENTATION**

Synthesis, Characterization and Anticancer Activities of Cu(II) Complex Derived from Schiff Base: 3-Amino-5-(5-bromosalicylaldimine)-4-(3-bromo- phenylazo)-1*H*-pyrazole

Ayla Balaban Gündüzalp[1*], Özlem Toraman[1], Zuhal Karagöz Genç[2], Naki Çolak[3]

[*1] Gazi University Faculty of Science, Department of Chemistry, Ankara,Turkey
[2]Adıyaman University Faculty of Engineering, Department of Materials Engineering, Adıyaman, Turkey
[3] Hitit University Faculty of Science, Department of Chemistry, Çorum, Turkey

balaban@gazi.edu.tr

Abstract

Cancer is an important class of disease in which a group of cells show uncontrolled growth, invasion and also metastasis. The development of more effective drugs for cancer treatment has been a main attempt over the past 50 years. In recent years, various Schiff bases have been found to be associated with their anticancer activities [1]. Metal complexes of Schiff bases with heterocyclic compounds have potential anticancer treatment and prevention as potential drugs due to the presence of multifunctional groups. Copper coordination complexes play an important role in the numerous biological processes that involve electron transfer reactions or the activation of some anti-tumor substances [2]. As a part of our ongoing researches on heterocyclic compounds, which may serve as leads for designing biologically active agents, we were especially interested in Schiff base copper complexes [3]. The aim of the present work is to synthesize Cu(II) complex derived from Schiff base; 3-amino-5-(5-bromosalicylaldimine)-4-(3-bromo-phenylazo)-1*H*-pyrazole as potent anticancer agent. The structure of Schiff base and Cu(II) complex was characterized using elemental analysis (C,H,N), nuclear magnetic resonance (NMR), fourier transform infrared (FT-IR), ultraviole-visible (UV-vis), liquid chromatography-mass spectrometry (LC-MS) methods as well as thermal, conductivity and magnetic measurements. The anticancer activities of Cu(II) complex were evaluated *in vitro* mode using MTT assay against MCF-7 (human adenocarinoma), LS174T (human colon carcinoma) and LNCAP (human prostate adenocarinoma). Cu(II) complex has higher anticancer activities after 25 µM dose to MCF-7, LS174T and LNCAP cancer cells.

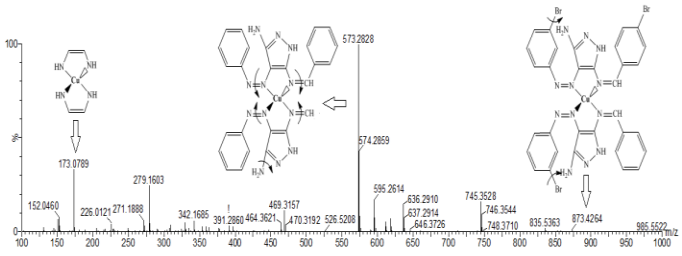

Figure 1. LC-MS fragments of Cu(II) Schiff base complex

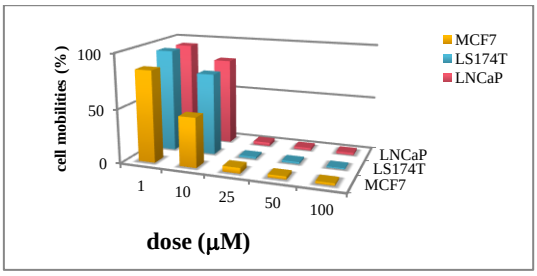

Figure 2. *Cell mobilities (%) vs dose (µM) of MCF-7, LS174T and LNCAP cells*

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➢ **POSTER PRESENTATION**

Effect of oleuropein on element distributions in liver of diabetic rats

[1]Funda KARABAĞ ÇOBAN

[1]Usak University, Faculty of Science and Art, Department of Molecular Biology and Genetic

Abstract

There is accumulating evidence demonstrating that the metabolism of many trace elements is modified in diabetes mellitus. In addition, essential elements and minerals are key to nutrition and sound health. Oleuropein, a major phenolic compound in olives, is known to reduce the blood glucose levels in alloxaninduced diabetic rats and rabbits. The purpose of this study was to compare the levels of essential trace elements, selenium (Se), manganese (Mn), copper (Cu), chromium (Cr) and zinc (Zn) in Strepsttozotocin (STZ)-induced diabetic rats and to evaluate the effects of oleuropein on trace elements levels. Animals were apportioned into 4 groups of 8 rats each. The control group was fed with standard rat provender and got no added treatment. In the oleuropein group, 20 mg/kg dosages of oleuropein were given to normal animals intraperitoneally (i.p) for 28 days. In the diabetic group, STZ was injected to rats at a single dose of 50 mg/kg i.p. The last group, 20 mg/kg dosages of oleuropein were given to diabetic animals i.p for 28 days. In this study, trace elements levels were evaluated by using ICP-MS and MDA, SOD CAT levels were evaluated by using spectrophotometers methods.

Trace elements levels were significantly ($p < 0,05$) decreased in diabetic rats liver but oleuropein was significantly ($p<0,05$) increased trace element levels in this group.

In the diabetic group, serum blood glucose levels were significantly ($p < 0,05$) increased and STZ increased total oxidant status (TOS), malondialdehyde (MDA) in the liver, whereas it decreased superoxide dismutase (SOD) and catalase (CAT) and total antioxidant capacity (TAS) in diabetic rats liver.

As a consequence, oleuropein treatment shows an antioxidant and in diabetes by reducing oxidative stress and it was increased trace element levels.

Key words: oleuropein, diabetes, trace elements, antioxidant, liver

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➢ **POSTER PRESENTATION**

Sentezlenen silika jele immobilize edilmiş *S. Cerevisiae* ile remazol sarı (RR) giderimi

Fatma ERDEM[1*], Mübeccel ERGUN[2]

[*1]Türkiye İlaç ve Tıbbi Cihaz Kurumu, Ankara, Türkiye
[2]Gazi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği, Ankara, Türkiye

Sorumlu yazar e-mail:fatmaduran82@gmail.com

Özet

Son zamanlarda immobilize biyosorbentlerle boya giderim çalışmaları hız kazanmıştır. Literatürde genellikle immobilizasyon çalışmaları için ticari silika jeller kullanılırken bu çalışmada immobilizasyon destek matrisi silika jel, asit-baz iki basamaklı sol-jel metodu ile sentezlenmiştir. *S. cerevisiae* silika jele sentez aşamasında eklenerek immobilize biyosorbent elde edilmiş ve Remazol Sarı (RR) gideriminde kullanılmıştır. Elde edilen silika jelin gözenek çapı ve hacmi N_2 adsorpsiyon verileri ile gözenek yüzey alanı 284 m^2/g, gözenek hacmi 0,4 cc/g ve gözenek çapı 15,6 A^o olarak belirlenmiştir. Silika jele *S. cerevisiae* 'nın sentez aşamasında eklenmesi ile elde edilen immobilize biyosorbent ile yapılan biyosorpsiyon deneylerinde % 51 giderim değerine ulaşılmıştır. Elde edilen giderim değeri incelendiğinde immobilizasyon aşamasında oluşan difüzyon sınırlamasının sonuç üzerinde etkin olduğu düşünülmüştür. İmmobilize biyosorbente biyosorpsiyon öncesi ve sonrası SEM (Taramalı Elektron Mikroskobu) analizi yapılarak karakterizasyon çalışmaları tamamlanmıştır.

Anahtar Kelimeler: Saccharomyces cerevisiae, Remazol Sarı (RR), Biyosorpsiyon, Silika jel

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➢ **POSTER PRESENTATION**

Synthesis, spectroscopic and thermal properties of Hofmann-Td-type complexes

Özge Bağlayan[1*], Güneş Süheyla Kürkçüoğlu[2]

[*1]Anadolu University, Sciences Faculty, Physics Department, Eskişehir, Türkiye
[2]Eskişehir Osmangazi University, Sciences and Arts Faculty, Physics Department, Eskişehir, Türkiye

obaglayan@anadolu.edu.tr

Abstract

Two new Hofmann-Td-type metal cyanide complexes, $[Zn(etim)_2Cd(CN)_4]$ (etim=1-ethylimidazole) and $[Cd(im)_2Zn(CN)_4]\cdot 4H_2O$ (im = imidazole), have been synthesized and their structures were investigated by spectroscopic (FT-IR and Raman), thermal and elemental analysis techniques. In the Hofmann-Td type metal cyanide complexes with general formula $[ML_2M'(CN)_4]'\cdot nH_2O$, M′ (M′ = Zn(II) or Cd(II)) atom is tetrahedrally coordinated to carbon atoms of the four cyanide groups. M (M = Zn(II) or Cd(II)) atom is octahedrally surrounded by six nitrogen atoms which are from ligand molecule (im or etim) and cyanide groups. The spectral and thermal analysis results suggest that these complexes are similar in structure to the Hofmann-Td-type complexes and their structures consist of polymeric layers of $|M{-}M'(CN)_4|_\infty$ with the etim or im bound to the metal (M=Zn(II) or Cd(II)) atom.

Keywords: Hofmann-Td-type complexes, Imidazole complexes, 1-ethylimidazole complexes, Zn(II) complexes, Cd(II) complexes, FT-IR and Raman spectroscopy.

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➢ **POSTER PRESENTATION**

Syntheses, spectral and thermal analyses of 2-(hydroxymethyl)pyridine metal(II) tetracyanoplatinate(II) complexes

Özge Bağlayan[*1], Güneş Süheyla Kürkçüoğlu[2]

[*1]Anadolu University, Sciences Faculty, Physics Department, Eskişehir, Türkiye
[2]Eskişehir Osmangazi University, Sciences and Arts Faculty, Physics Department, Eskişehir, Türkiye

obaglayan@anadolu.edu.tr

Abstract

In this study, two new heteropolynuclear cyanide complexes $[M(hmpy)_2Pt(CN)_4]$ (M = Cd(II) or Zn(II), hmpy = 2-(hydroxymethyl)pyridine) have been synthesized. Their structures were investigated by FT-IR and Raman spectroscopy, elemental analyses and thermal analyses. FT-IR and Raman spectra were performed between 4000-400 cm^{-1} and 4000-50 cm^{-1}, respectively. TG, DTG and DTA curves were recorded in a static air atmosphere in the temperature range of 30-1000°C. According to obtained results, the vibrational bands belong to the functional groups of the ligands were investigated from vibration spectra of the complexes. The vibrational spectra of the complexes were presented and discussed with respect to the internal modes of both the hmpy and the cyanide ligands. The C, H and N analyses were carried out for all the complexes. The FT-IR and Raman spectroscopy, thermal and elemental analyses results propose that these complexes are similar in structure to the Hofmann-type complexes.

Keywords: 2-(Hydroxymethyl)pyridine complexes, teracyanoplatinate(II) complexes, cadmium(II) complexes, zinc(II) complexes, vibrational spectroscopy, thermal analysis.

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➢ **POSTER PRESENTATION**

Various Quality Parameters And Meat Contents Of Edible Blue Crab (*Callinectes sapidus*) Caught From Turkish Costs

Onur Karadal[1*], Nilüfer Karadal[2]

[*1]İzmir Kâtip Çelebi University, Faculty of Fisheries, Department of Aquaculture, Çiğli, İzmir, Turkey
[2]Lotus Consulting, Buca, İzmir, Turkey

Corresponding author e-mail: onur.karadal@ikc.edu.tr

Abstract

Consumption of seafood in human nutrition has improved speedily worldwide. Seafood products have been mainly preferred for stimulating human health and their high valuable nutritional characteristics. Among the seafood, decapod crustaceans are more important and expensive than many fish species. Shellfish have numerous minerals and high quality protein in their contents. In addition, they contain high amounts of polyunsaturated fatty acids (PUFAs) in body tissues. Especially, the blue crab (*Callinectes sapidus*) is described to be a significant seafood. This species originally distributes along the American costs, including Nova Scotia and Uruguay. It was stated that blue crab was introduced to the Northern Aegean Sea. After a while, they were came down to the Southern Aegean Sea and then flowed through the Mediterranean. Therefore, the people in this region have begun to pay attention to consumption of this qualified seafood and caught for its high market prices. In addition to large range nutritive value of this species, there are also beneficial effects on human health because of presence of proteins, vitamins, minerals, unsaturated fatty acids and essential amino acids in their structure. For example, calcium (Ca) and phosphor (P) are indispensable to manage an optimum bone development and the PUFA content has been revealed favourable for the decrease of coronary artery disease.

The proximate biochemical composition, mineral content, fatty acid and amino acid compositions and metal concentrations on meat and tissues of blue crab from Turkish costs have been researched by some previously studies. According to these data, the total situation of meat quality parameters of blue crab has been presented in this review.

Some authors have been determined that the proximate protein compositions of breast meat and claw meat were at the range of 14.7-18.8% and 15.0-19.5% and fat compositions were 0.40-0.79% and 0.40-0.64%, respectively. In another research, essential and non-essential amino acid contents have been found as 7.25 and 8.25 g amino acid / 100 g edible portion for breast meat, 7.31 and 9.28 g amino acid / 100 g edible portion for claw meat. The total n6 fatty acids have been recorded as 5.34% and 7.80% in the breast meat and claw meat, respectively in a study carried out with this species. In a different research, Na, Mg and P contents of breast meat and K and C contents of claw meat were higher than each other. According to a metal concentration research, the highest level was observed at iron (Fe), but the authors have been declared that this situation may not affect consumption.

The blue crab has suitable and beneficial features for human nutrition and health. The meat composition is rich in protein and low in fat. Both breast and claw meats have large range essential and non-essential amino acids and n3 and n6 fatty acids. The most striking point in here, the claw meat has more than good composition than the breast meat. In conclusion, the blue crab from Turkish costs is valuable as in other regions.

Keywords: Seafood, crabmeat, biochemical composition, protein, fatty acid.

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➢ **POSTER PRESENTATION**

Endemik *Anacyclus* L. Türlerinin Yayılışları ve Tehlike Kategorileri

İsa BAŞKÖSE[1*] ve Mehmet Yavuz PAKSOY[2]

[*1]Ankara Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye,
[2]Munzur Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Tunceli, Türkiye

isabaskose@gmail.com

Özet

Bu çalışmada, *Anacyclus* L. cinsine ait endemik taksonların yayılışlarının ve tehlike kategorilerinin yeniden düzenlenerek katkı sağlanması amaçlanmıştır. *Anacyclus* L. cinsi mevcut flora kayıtlarına göre ülkemizde 4 türle temsil edilmektedir. Bu taksonlardan 2 tanesi endemiktir. Türkiye Florası'nda *Anacyclus latealatus* Hub.-Mor. türünün Burdur ilinde, tek bir lokaliteden yani tip lokalitesinden yayılışı verilmiştir. Aynı şeklide *Anacyclus anatolicus* L. Behçet & S. Almanar türü ise Muş ilinde, tek bir lokaliteden yayılışı bilinmektedir. 2014- 2017 yılları arasında yapılan arazi çalışmaları, herbaryum ve literatür taramaları sonucu bu taksonların popülasyonlarının durumu gözlemlenmiş ve yayılış bilgileri güncellenmiştir. Taksonların yayılış gösterdiği kareler ve IUCN kriterleri dikkate alınarak popülasyonların durumuna bağlı olarak tehlike kategorileri verilmiştir.

Anahtar Kelimeler: *Anacyclus*, Endemik, IUCN, Türkiye

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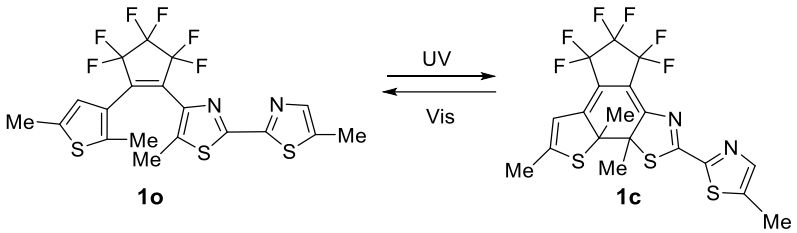
➢ **POSTER PRESENTATION**

Synthesis and Photochromic Properties of New Photochromic Diarylethene Bearing a Bithiazole and Thiophene Moiety

Leyla Gündoğdu Öztürk[1], Ersin Orhan[2] and Mahmut Kose[1]

[1]Department of Chemistry, Faculty of Arts and Science, Bülent Ecevit University, 67100, Zonguldak, Turkey, E-mail: leylagundogdu01@gmail.com or mahmutkose@gmail.com
[2]Department of Chemistry, Faculty of Arts and Science, Düzce University, 81620, Düzce, Turkey, E-mail:ersinorhan@gmail.com

Abstract



Photochromism is the reversible conversion of a chemical species between two forms by the absorption of electromagnetic radiation, where the two forms have different absorption spectra [1]. Thermally stable and fatigue resistance photochromic compounds have some possible industrial applications including, color changing lenses (such as sunglasses), actinometry, optical memory systems, molecular switches etc. Diarylethenes bearing heteroaromatic groups are important due to the high thermal stability and the high quantum yield of both steps so they have been intensively studied for practical applications [2]. In this work, a new photochromic diarylethene possessing bithiazole and thiophene group has been synthesized via a multi-step reaction and its fluorescence properties, photochromic properties, including quantum efficiency and conversion ratio was determined.

Keywords: Photochromism, diarylethene, bithiazole.

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➢ **POSTER PRESENTATION**

Potential Applications of Nanotechnology in Food Packaging

Ümran ÇİÇEK[1*]

[*1]Gaziosmanpaşa University, Engineering and Natural Sciences Faculty, Food Engineering Department, Tokat,Turkey.

Corresponding author e-mail: umran.ensoy@gop.edu.tr

Absrtact

The main aim of food packaging is protecting the food from physical, chemical and microbiological contaminations or deteriorations. For this purpose, different packaging materials such as glass, metal, paper and plastics are generally used for packaging. From the view of environmental pollution, plastic packaging materials became a serious problem. Lately, active packaging, intelligent packaging and biodegradable materials emerged as novel applications in food packaging. In recent years, the application of nanotechnology into food packaging materials or packaging technology has gained increasing attention. Nanotechnology-enabled food packaging can be classified into three groups; improved packaging, active packaging and intelligent packaging. Nanoparticles such as nano-sized clays, montmorillonite are added to the packaging material to improve the thermal stability and mechanical properties of the packaging material. Metallic and metallic oxide nanoparticles (silver, zinc oxide) can be applied to packaging polymers due to antimicrobial activity of these nanoparticles. As an intelligent packaging, nanomaterial-based sensors have a great potential for detection pesticides, chemicals, heavy metals, pathogens and toxins. The objective of this review is to describe the potential applications of nanotechnology in food packaging.

Keywords: Food packaging, Nanotechnology, Nanomaterial, Improved packaging, Nanomaterial-based sensors.

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➢ **POSTER PRESENTATION**

Endemik *Chrysocamela* Boiss. Türlerinin Yayılışları ve Tehlike Kategorileri

İsa BAŞKÖSE[1*] & Mehmet Yavuz PAKSOY[2]

[*1]Ankara Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye
[2]Munzur Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Tunceli, Türkiye

isabaskose@gmail.com

Özet

Bu çalışmada, *Chrysocamela* Boiss. cinsine ait endemik taksonların yayılışlarının ve tehlike kategorilerinin düzenlenerek katkı sağlanması amaçlanmıştır. *Chrysocamela* Boiss. cinsi mevcut flora kayıtlarına göre ülkemizde 3 türle temsil edilmektedir. Bu taksonlardan 2 tanesi endemiktir. Türkiye florasında *Chrysocamela elliptica* (Boiss.) Boiss., türü Ankara, Niğde ve Erzincan illerinde, küçük popülasyonlar şeklinde yayılış göstermektedir. *Chrysocamela noeana* (Boiss.) Boiss., Sivas ilinde birkaç popülasyonu bulunmaktadır. 2013-2016 yılları arasında yapılan arazi çalışmaları, herbaryum ve literatür taramaları sonucu bu taksonların popülasyonlarının durumu gözlemlenmiştir. Taksonların yayılış gösterdiği kareler ve IUCN kriterleri dikkate alınarak popülasyonların durumuna bağlı olarak tehlike kategorileri verilmiştir.

Anahtar Kelimeler: *Chrysocamela*, Endemik, IUCN, Türkiye

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➢ **POSTER PRESENTATION**

Karideste Tazelik Tespitinde Kullanılacak Akıllı Etiketlerin Geliştirilmesi

Göknur Sürengil[1*], Fatma Öztürk[2]

[*12]İzmir Katip Çelebi Üniversitesi, Su Ürünleri Fakültesi, Avlama ve İşleme Teknolojisi Bölümü, İzmir, Türkiye

Sorumlu yazar e-mail: goknursurengil@gmail.com

Özet

Su ürünleri, protein, EPA, DHA ve Omega-3 yağ asidi bakımından insan vücuduna ve özellikle metabolizmaya olumlu katkı sağlayan önemli bir besin maddesidir. Besin içeriği yanısıra mikoorganizmaların üremesi için uygun biyokimyasal yapıya sahip olup gıda güvenliği açısından dikkat edilmesi gerekmektedir. Genel olarak su ürünlerinde, raf ömrü boyunca kimyasal, biyokimyasal, fiziksel veya fizikokimyasal bir çok reaksiyon sonucu tazeliğinde kayıplar meydana gelmektedir. Bu kayıpların belirlenmesinde yeni nesil tekniklerden biri olan zaman sıcaklık indikatörleri kullanılmaktadır. Zaman-sıcaklık indikatörleri (TTI); tüm dağıtım zinciri boyunca gıdanın sıcaklık geçmişini, geri dönüşümsüz renk değişiklikleriyle görsel olarak algılanmasını sağlamaktadır. Ambalajlanmış gıdanın bütünlüğünü sıcaklık-zaman geçmişini, mikrobiyol kalitesini ve güvenliğini tespit etmede kullanılan tazelik indikatörlerden yararlanılarak ürünlerin kalite kontrolleri yapılabilmektedir. İndikatörlerin çalışma prensibi; bir gıdanın tazeliğini kaybedinceye kadar geçen süreç içerisinde glikoz, organik asit, etanol, biyojenik aminler, uçucu azot bileşenleri, CO_2 ve sülfür bileşiklerinin miktarında değişiklikler meydana gelirken, bu değişikliklerin tazelik indikatörleri ile tespiti mümkün olabilmektedir. Ürün tipine uygun seçildiği zaman "tazelik indikatörü"; gıdalarda sıcaklık geçmişini izlemeye ve bazı zamanlar sabit bir son kullanma tarihi yerine gerçek zamanlı raf ömrü tespitine imkân vermektedir. Bu sebeplerden dolayı çalışmanın temel amacı, su ürünlerinin tazelik kontrolünde kullanılmak üzere kolorimetrik pH indikatörlerinin çalışma prensibine uygun, başarılı TTI-ürün kombinasyonları tasarlamaktır. Bu çalışmada, su ürünlerinde bozulmanın izlenmesi için indikatör geliştirilmiş olup, bozulmaya neden olan uçucu aminlerin (trimetilamin, dimetilamin, amonyak) oluşumuyla meydana gelen pH artışının, ambalaj ortamındaki etiketlerde çıplak gözle görülebilir renk değişimleri meydana getirdiği belirlenmiştir. Çalışmada kullanılan metil kırmızı ile elde edilen etiketlerin kırmızıdan (taze) sarıya (bozulmuş), fenol kırmızı etiketlerde ise sarı (taze) renkten kırmızıya (bozulmuş) geçtiğinde karidesin bozulduğu tespit edilmiştir.

Anahtar Kelimeler: tazelik indikatörü, kolorimetrik, akıllı etiket, metil kırmızı, fenol kırmızı, karides

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➢ **POSTER PRESENTATION**

Photocatalytic TiO_2 Nanoparticles

Neşe Keklikcioğlu Çakmak [1*], Gamze Topal Canbaz[1], Atakan Eroğlu[1], Ünsal Açıkel

[1]Department of Chemical Engineering, Cumhuriyet University, Sivas, Turkey,
[*]nkeklikcioglu@cumhuriyet.edu.tr

Abstract

The growth of industry worldwide has tremendously increased the generation and accumulation of waste by products. This has caused severe environmental problems that have become a major concern. Researchers all over the world have been working on various approaches to address this issue. Photo induced processes have been studied and various applications have been developed. One important technique for removing industrial waste is the use of light energy (electromagnetic radiation) and particles sensitive to this energy to mineralize waste which aids in its removal from solution. Metal oxides are of great technological importance in environmental remediation and electronics because of their capability to generate charge carriers when stimulated with required amount of energy. The promising arrangement of electronic structure, light absorption properties, and charge transport characteristics of most of the metal oxides has made possible its application as photocatalyst. Because of this, photocatalysis research has been rapidly expanding in metal oxides. Among the metal oxides, TiO_2 nanoparticles have been extensively investigated for photocatalytic applications including the decomposition of organic compounds and production of H_2 as a fuel using solar energy. TiO_2 is used for different environmental applications, such as, photocatalytic degradations of various organic con taminants into non toxic compounds like water, CO_2 and diluted mineral acid, removing heavy metal ions from the solution and converting them into less toxic ones and water photosplitting into H_2 and O_2 [1-3]. TiO_2 has high stability, low cost and safety toward both humans and the environment. Novel applications and industrial use of TiO_2 are anticipated for the future because of its low cost, photo stability in solution, nontoxicity, redox selectivity and strong oxidizing power of holes. Continuous efforts to improve the photocatalytic properties of TiO_2 by surface modification will allow the full potential of this photocatalyst to be realized.

Keywords: TiO_2 nanoparticles, Metal oxides, Photocatalysis.

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➢ **POSTER PRESENTATION**

Synthesis, spectroscopic and crystallographic properties, and biological activities of partly- and fully-substituted monospiro-4-chlorobenzylaminophosphazenes

Nuran Asmafiliz[1*], Özlem İşcan[1], Leyla Açık[2], Pelin Özbeden[2], Tuncer Hökelek[3]

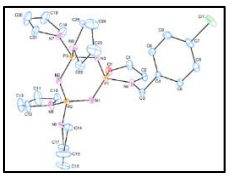
[*1]Ankara University, Faculty of Science, Department of Chemistry, Ankara, Turkey
[2]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey
[3]Hacettepe University, Faculty of Science, Department of Physics, Ankara, Turkey

gurun@science.ankara.edu.tr

Abstract

The chemistry of hexachlorocyclotriphosphazenes, $N_3P_3Cl_6$ (trimer), has been widely studied since 1960 .[1] Trimer is used as scaffolds for the construction of numerous substituted cyclotriphosphazenes.[2] The sequentially Cl replacement reactions of trimer with mono-functional reagents produce the partly and fully-substituted trimeric phosphazenes.[3] In this study, the reactions of trimer with the 4-chlorobenzylamines containing N/O donor atoms resulted in the monospiro trimeric phosphazenes. They have four reactive Cl atoms and they can give the substitution reactions with different mono ligands. Thus, the Cl replacement reactions of N/O spirocyclic monobenzylaminocyclotriphosphazenes with the pyrrolidine and morpholine resulted in the tetra-pyrrolidino and tetra-morpholino-substituted spirocyclotriphosphazenes. The structures of all the phosphazenes were evaluated using FTIR, MS, ^{1}H, $^{13}C\{^{1}H\}$ and $^{31}P\{^{1}H\}$ NMR spectral data. The molecular and solid-state structures of some phosphazene derivatives were determined using X-ray crystallography. Moreover, the interactions between the compounds and pBR322 plasmid DNA, and the antimicrobial activities of the phosphazenes were investigated.

Keywords: benzylaminospirophosphazenes, spectroscopy, antimicrobial activity, DNA cleavage, crystal structure



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➢ **POSTER PRESENTATION**

Micromorphological properties of Leaf, Fruit and Seed of *Rhododendron ponticum*

Öznur ERGEN AKÇİN[1*], Tuğba DEMİRER[1], Tuğba ÖZBUCAK[1], Yaşar AKÇİN[2]

[*1]Ordu University, Faculty of Science and Art, Department of Molecular Biology and Genetics, Ordu,Turkey
[2] Ordu University, Institute of Science, Department of Horticulture, Ordu,Turkey

Sorumlu yazar e-mail:oakcin@gmail.com

Özet

The Ericaceae family comprises about 125 genera and 3.500 species in the World. *Rhododendron* L. genus has 1.200 species and the biggest genus of this family. The genus *Rhododendron* is represented by about 5 species, 4 hybrid, 1 forma, and 2 subspecies in Turkey. *R. ponticum* L. is known as 'Komar, mor çiçekli orman gülü"in Turkish. Taxonomical properties are very important to identification of plant. Micromorphological properties of plant are important taxonomical properties. In conclusion, micromorphological features of leaves, fruit and seed surface were determined and to help recognize the *R. ponticum.*The plant specimens were collected from different localities in Ordu city. For scanning electron microscopy, dried mature leaf, fruit and seed were mounted on stubs using double-sided adhesive tape. Samples were coated with 12.5–15 nm of gold. Coated leaves were examined and photographed with a JMS-6060 LV scanning electron microscope. There are eglandular and glandular trichome on adaxial surface and eglandular trichome on abaxial surface of leaves. Leaves have wax on the both surfaces. The surface type of fruit is rugose-striate. Seedcoat of *R. ponticum* is reticulate.

Anahtar Kelimeler: Ericaceae, *Rhododendron*, *R. ponticum*, Micromorphology.

Acknowledge: This work (TF 1404) was supported by Ordu University Scientific Research Projects Unit.

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➢ **POSTER PRESENTATION**

Theoretical And Experimental Studies On Vibrational, Structural And Nonlinear Optic Properties Of Trithiocyanuric Acid ($C_3H_3N_3S_3$)

Ümran Ceren Başköse[2]*, Yusuf Erdoğdu[1], Semran Sağlam[1], Mehmet Tahir Güllüoğlu[3]

[*1]Gazi University, Science Faculty, Department of Physics, Ankara, Turkey
[2]Gazi University, Photonics Application and Research Center, Ankara, Turkey
[3]Harran University, Department of Electrical & Electronic Engineering, Sanliurfa, Turkey

cerenbaskose@gazi.edu.tr

Abstract

In this work, we studied the structural, vibrational and electronic properties of the Trithiocyanuric acid compound using experimental and theoretical methods. The FT-IR and FT-Raman spectra of the title compound in solid phase were recorded in the region 4000-400 cm^{-1} and 4000-50 cm^{-1}, respectively. The UV absorption spectrum of the title compound was recorded in the range 200-400 nm. The ^{1}H and ^{13}C NMR chemical shifts are recorded in DMSO solution. The NMR spectra (^{1}H and ^{13}C) are calculated by using the gauge-invariant atomic orbital (GIAO) method. The theoretical spectral properties of title compounds were simulated using density functional theory (DFT) and time dependent DFT methods. The electronic properties, such as excitation energies, oscillator strengths, wavelengths, frontier molecular orbitals (FMO), HOMO and LUMO energies, are determined by time-dependent density functional theory (TD-DFT). The electrostatic potential surface (ESPs), density of state (DOS) diagrams are also prepared and evaluated.

Keywords: Trithiocyanuric acid, Vibrational, FT-IR, FT-Raman

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➢ **POSTER PRESENTATION**

Green Synthesis of Nanoparticles and Their Applications

Gamze TOPAL CANBAZ[1*], Neşe KEKLİKCİOĞLU ÇAKMAK[1], Mustafa KÜÇÜKYAZICI[1], Ünsal AÇIKEL [1]

[1]Cumhuriyet University, Engineering Faculty, Department of Chemical Engineering, 58140 Sivas, TURKEY

Corresponding author e-mail: gamzetopal@hotmail.com

Abstract

Nanotechnology has become one of the most important technologies in all areas of science (1). There are a large number of physical, chemical, biological and hybrid methods available to syhthesize diffrent types of nanoparticles. These conventional techniques have various limitations, e.g., complexity, high cost, low stability, toxicity, environmental unfriendliness, etc. Nanoparticles showed new or improved properties due to their uniqe size, morphology and distribution (2). At the monent, there's a growing demand to develop eco-friendly, nontoxic nanoparticles using safe chemicals in the syhthesis protocol. In this way, with a nano-bio-technological approach, biological systems have undergone physical and chemical prosesses to obtain nano-sized particles with desirable characteris (3). The applications of these biosythesized nanoparticles in a wide spectrum of potential areas are presented including targeted drug delivery, cancer treatment, gene theraphy and DNA analysis, antibacterial agents, biosensors, enhancing reaction rates, seperation science and magnetic resonance imaging (MRI) (4).

Keywords: Biosynthesis, nanoparticle, metal nanoparticle

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➢ **POSTER PRESENTATION**

Micromorphological Properties of Ochrea, Flower and Fruit of *Polygonum aviculare*

Öznur ERGEN AKÇİN[1*], Emine YÜKSEL YEŞİLAY[2], Tuğba ÖZBUCAK[1], Gülcan ŞENEL[3]

[*1]Ordu University, Faculty of Science and Art, Department of Molecular Biology and Genetics, Ordu,Turkey

[2]Ordu University, Institute of Science, Department of Molecular Biology and Genetics, Ordu,Turkey

[3] Ondokuz Mayıs University, Faculty of Science and Art, Department of Biology, Samsun, Turkey

Sorumlu yazar e-mail:oakcin@gmail.com

Özet

The Polygonaceae family comprises about 48 genera and 1200 species in the World. *Polygonum* L. genus is represented by about 40 species in Turkey. *Polygonum* genus is diveded four section as *Aconogonon* Meissn., *Persicaria* (Miller) DC, *Polygonum* Meissn. and *Tiniaria* Meissn. in Turkey. *P. aviculare* L. belongs to section *Polygonum. P. aviculare* is known as 'köyotu"in Turkish. Taxonomical properties are very important to identification of plant. Micromorphological properties of plant are important taxonomical properties. In conclusion, micromorphological features of calyx, corolla, fruit and seed surface were determined and to help recognize the *P. aviculare.* The plant specimens were collected from different localities in Trabzon city. For scanning electron microscopy, dried mature ochrea, flower and fruit were mounted on stubs using double-sided adhesive tape. Samples were coated with 12.5–15 nm of gold. Coated structures were examined and photographed with a JMS-6060 LV scanning electron microscope. The surface of perianth is irregular reticulate-striate. Ochrea has reticulate surface. Epidermis cells of ochrea is rectangular and long. The surface type of fruit is reticulate-striate.

Anahtar Kelimeler: Polygonaceae, *Polygonum*, *P. aviculare*, Micromorphology.

Acknowledge: This work (TF 1519) was supported by Ordu University Scientific Research Projects Unit.

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➢ **POSTER PRESENTATION**

Palladium(II) Complex of An Acetyl Hydrazone Ligand: Synthesis, Spectroscopic and Quantum Chemical Studies*

Ayşin Zülfikaroğlu[1*], Güler İnci Tanrıkulu[1]

[1]Amasya University, Faculty of Arts & Sciences, Department of Chemistry, Amasya, Turkey

aysin.zulfikaroglu@amasya.edu.tr

Abstract

Transition metal complexes have a huge impact on biological applications in bioinorganic chemistry due to their coordination behaviour and importance in catalysis. The interaction of transition metal complexes with DNA has been intensively studied to develop newer materials for application in biotechnology and medicine in recent years. [1]

In this study, the Pd(II) complex of N'-(3,4-dihydroxybenzylidene)isobutyrohydrazide ligand was synthesized and characterized by elemental analysis, IR, ^{1}H-NMR and LC-MS techniques. The quantum chemical calculations of the molecular structure, vibrational frequencies, gauge-including atomic orbital ^{1}H chemical shift values were carried out using the density functional theory (DFT) at B3LYP level 6-311G+(d,p) basis set for the Pd(II) complex. The theoretical vibrational frequencies and chemical shift values were seen to be in agreement with the experimental values. The NBO/NPA atomic charges were performed to explore the character of the metal-ligand interactions. In addition, the interactions between this complex and DNA bases were determined using the ECT (electrophilicity-based charge transfer) method and the parameter ΔN (the charge transfer).

Keywords: Hydrazone ligand, Pd(II) complex, IR and NMR spectroscopy, DFT.

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➢ **POSTER PRESENTATION**

The distribution, behaviour and parasite of The Rook (*Corvus frugilegus*) in Turkey

Esra Per*, Göknur Eker

[1]Faculty of Science, Biology Department, Gazi University, Teknikokullar, Ankara, Turkey

Corresponding author e-mail: esraper@yahoo.com

Abstract

The rook is a passerine species belong to the order Passeriformes. It is the resident and common species around plains, pastures, meadows and agricultural areas in Turkey. There is no specific research about the rook in Turkey. The changing agricultural land-use, the application of pesticides and seed dressings are very important threats for this species. The main aim of this study is to determine the distribution, behaviours and parasites of The Rook (*Corvus frugilegus*) in Turkey. The source of data: The source of data: observation records from KuşBank and eBird databases between 1946 and 2018 used for determine distribuition; TRAKUŞ photos between 2006 and 2018 were used for to identify bird behavior and parasite. It has demonstrated interaction and competition with the long-legged buzzard. They are show a great deal of diversity in feeding behavior; such as walnut, bread, acorn, cereals such as barley and maize and insect. The Spreading hedge-parsley seed dispersal is carried out by the rook. The beak anomaly has been detected on five individuals in different areas. This anomaly is an indication of the Aviosepensiosis. The Aviosepensiosis caused by *Avioserpens taiwana* is common severe roundworm disease of ducks. This is a remarkable indication for a passerine species. This issue needs to be monitored on the rook individuals in the future.

Keywords: The Rook, Distribution, Behavior, Indication of Avioserpensis, Turkey

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➢ **POSTER PRESENTATION**

Karadeniz Bölgesinden Toplanan *Callithamnion corymbosum* Alg'nin Fiziksel-Kimyasal Özellikleri, Fenolik Bileşenleri, Antioksidan Aktivitesi ve Bazı Enzim İnhibisyonu

Ümit Dokuzparmak[1*], Yakup Şirin[2], Hilal Ebru Çakır[2], Emre Dokuzparmak[3], Ali Muzaffer Feyzioğlu[1]

[1]Karadeniz Teknik Üniversitesi, Deniz Bilimleri Fakültesi, Balıkçılık Teknoloji Mühendisliği, Trabzon, Türkiye
[2]Karadeniz Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Kimya Bölümü, Trabzon, Türkiye
[3]University of Strathclyde, Pure and Applied Chemistry, Technology and Innovation Centre, Glasgow, United Kingdom

umitdokuzparmak@gmail.com

Özet

Algler genel olarak suda yaşayan organizmalardır. Bu organizmalar atmosferdeki oksijenin büyük çoğunluğunu yaptıkları fotosentez neticesinde karşılarlar ve sudaki besin zincirinin ilk halkasını oluştururlar. Alglerin temel görevi, denizlerde yaşayan heterotrof canlılara besin kaynağı olması ve deniz suyundaki çözünmüş oksijen miktarını dengeleyerek canlılara solunum için gerekli oksijeni üretmeleridir. Bunun yanında algler, ekonomik olarak tıpta, eczacılıkta, kozmetikte, boya, inşaat, tekstil sanayisinde ve daha birçok alanda kullanılmaktadır.
Kırmızı algler (Rhodophyta), klorofil a ve d ile karotenoidlerden β-karoten ve lutein, iki çeşit fikobilin (fikoeritrin ve fikosiyanin) içerir. Genel olarak en bol bulunan pigment kırmızı rengini veren fikoeritrindir. Kırmızı algler, diğer alglerden farklı olarak denizlerin daha derin bölgelerinde (150-200 m) yaşayabilir (Orhon, 2009). Alg gövdesi jelatinimsi maddeyle sarılıdır ve fotosentez yaparak, karbonhidratları özel bir tip nişasta olan "floridin" şeklinde depolar. Kırmızı algler ağırlıklı olarak agar-agar ve karragen üretiminde kullanılır.
Yapılan çalışmada Nisan, 2017'de Trabzon'un sahilinden toplanan *Callithamnion corymbosum* alg'in fiziksel (Lipid= 16%, Katı içeriği= 12,63%, pH=8,15, Protein= 52%) , kimyasal özellikleri ve metanolik ekstraktlarının antioksidan aktiviteleri ile fenolik profili tayin edildi. Antioksidan parametreler olarak toplam fenolik madde miktarı, 2,2-difenil-1-pikrilhidrazil (DPPH) radikalinin temizlenmesi (SC_{50}=2,15 mg/mL) ve demir (III) indirgeme/antioksidan kapasite FRAP (334,08 Troloks® µmol/L eşdeğeri/mL numune) testleri yapıldı. Bazı enzim inhibisyon çalışmaları yapıldı (Üreaz IC_{50} = 3,21 mg/mL, Asetilkolin Estereaz IC_{50} = 5,36 mg/mL, Amilaz IC_{50} = 19,42 mg/mL).
Toplam polifenol madde miktarı *Callithamnion corymbosum*'de 79 mg GAE/100g kuru madde olarak belirlendi. Ters faz–yüksek performanslı sıvı kromatografisi (RP-HPLC-UV) ile 14 adet fenolik bileşen sıvı-sıvı ekstraksiyon metodu kullanılarak analiz edildi. Callithamnion corymbosum alg'in gallik asit, Protokatekuik asit, vanilik asit, epikateşin, rutin ve daidzein tespit edildi. p-OH benzoik asit, kateşin, luteolin, t-sinamik asit, p-kumarik asit, ferulik asit, kafeik asit, şiringik asit, tespit edilemedi. Sonuç olarak *Callithamnion corymbosum* metanolik ekstraktının değişik düzeylerde antioksidan aktivitenin varlığı tespit edildi.

Anahtar kelimeler: Alg, *Callithamnion corymbosum*, Antioksidan, Fenolik, İnhibisyon

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➢ **POSTER PRESENTATION**

Karadeniz Bölgesinden Toplanan *Cystoseira Barbata* Alg'nin Fiziksel-Kimyasal Özellikleri, Fenolik Bileşenleri, Antioksidan Aktivitesi ve Bazı Enzim İnhibisyonu

Ümit Dokuzparmak[1*], Yakup Şirin[2], Zehra Can[3], Ali Muzaffer Feyzioğlu[1], Sevgi Kolaylı[2]

[1]Karadeniz Teknik Üniversitesi, Deniz Bilimleri Fakültesi, Balıkçılık Teknoloji Mühendisliği, Trabzon, Türkiye
[2]Karadeniz Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Kimya Bölümü, Trabzon, Türkiye
[3]Giresun Üniversitesi, Şebinkarahisar Teknik Bilimler Meslek Yüksekokulu, Giresun, Türkiye

umitdokuzparmak@gmail.com

Özet

Makroalgler, deniz ekosisteminde biyolojik, ekolojik ve endüstriyel açıdan önemli olan canlılardır. En önemli biyolojik özellikleri fotosentez yaparak bulundukları ortamda birincil üretimin temelini oluşturmalarıdır. Protein, karbonhidrat ve diğer besin elementlerini içermeleri nedeniyle makroalgler önemli organizmalar arasındadır. Makroalglerin hücre duvarında bulunan agar, alginat ve karragen gibi polisakkaritler gıda endüstrisinde katkı maddesi olarak kullanıldığı gibi eczacılıkta da kullanılmaktadır.

Deniz algleri içerdikleri pigment maddelerine göre Yeşil algler (Chlorophyta), Kahverengi algler (Heterokontophyta) ve Kırmızı algler (Rhodophyta) olmak üzere üç bölüme ayrılır. Kahverengi algler, klorofil a, c, yeşil rengi örten karoten ve ksantofil ile kahverengini veren fukoksantin pigmentlerini içerir. Kahverengi alglerin tek hücreli olanları yoktur ve hücre çeperleri selüloz ve pektinden oluşur.

Yapılan çalışmada Nisan, 2017'de Trabzon'un sahilinden toplanan *Cystoseira Barbata* alg'in fiziksel (Lipid= 15%, Katı içeriği= 12,48%, pH=8,45, Protein= 60%) , kimyasal özellikleri ve metanolik ekstraktlarının antioksidan aktiviteleri ile fenolik profili tayin edildi. Antioksidan parametreler olarak toplam fenolik madde miktarı, 2,2-difenil-1-pikrilhidrazil (DPPH) radikalinin temizlenmesi (SC_{50}=4,03 mg/mL) ve demir (III) indirgeme/antioksidan kapasite FRAP (343,28 Troloks® µmol/L eşdeğeri/mL numune) testleri yapıldı. Bazı enzim inhibisyon çalışmaları yapıldı (Üreaz IC_{50} = 5,41 mg/mL, Amilaz IC_{50} = 26,12 mg/mL, Asetilkolin Estereaz IC_{50} = tespit edilmedi).

Toplam polifenol madde miktarı *Cystoseira Barbata*'da 48 mg GAE/100g kuru madde olarak belirlendi. Ters faz–yüksek performanslı sıvı kromatografisi (RP-HPLC-UV) ile 14 adet fenolik bileşen sıvı-sıvı ekstraksiyon metodu kullanılarak analiz edildi. *Cystoseira Barbata* alg'in p-OH benzoik asit, vanilik asit, epikateşin, p-kumarik asit, rutin, daidzein ve luteolin tespit edildi. Gallik asit, Protokatekuik asit, kateşin, t-sinamik asit, ferulik asit, kafeik asit, şiringik asit, tespit edilemedi. Sonuç olarak *Cystoseira Barbata* metanolik ekstraktının değişik düzeylerde antioksidan aktivitenin varlığı tespit edildi.

Anahtar kelimeler: Alg, *Cystoseira Barbata*, Antioksidan, Fenolik, İnhibisyon

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➢ **POSTER PRESENTATION**

Telomere Length Measurement by qRT-PCR in a Capsaicin Treated Mesothelioma Cell Line, ATCC-5946.

Asmaa Sundafi[1*], Sabahattin Cömertpay[1]

[1] Kahramanmaras Sutcu Imam University, Institute of Science, Department of Agricultural Biotechnology, Kahramanmaras, Turkey.

eng.asmsun@hotmail.com

Abstract

Telomerase is responsible for the elongation of telomere DNA, which comprises repeated TTAGGG sequences at chromosome ends. It is observed that with each cell division, telomere length can be shortened by ~50 - 200 bp, and this loss can be prevented by the action of telomerase. It has also been demonstrated that in 85%–90% of human tumor cells, telomerase activity is abnormally high. Mesothelioma is a type of cancer that develops from mesothelium tissue due to a long-term exposure to asbestos or erionite. Capsaicin is the principal pungent component in hot peppers, and it has been evaluated as a novel anti-cancer agent against many types of cancers. The purpose of this ongoing study is to see whether relatively long term exposure to low concentrations of capsaicin can affect the telomere length in a mesothelioma cells line, ATCC-5946, through generations *in vitro*.In order to test this idea,we have first determined the EC50 value of capsaicin upon 24 hour exposure. Later, the cells were grown in the medium consisting capsaicin at the half of EC50 concentration for four consecutive days. At the same time, ethanol treated and untreated cells were also grown as controls. DNAs were isolated from pellets of all groups. Later, the protocol of O'Callaghan and Fenech (2011) was followed to measure the telomere length. As a result, we found that, after two passages, capsaicin treated cells had 21% lower telomere length compared to the untreated cells. Ethanol exposed cells, on the other hand, were 5% shorter than the control suggesting a nearly 15% "shortening rate" for capsaicin alone. Although the results were promising, a longer exposure with a higher number of replications is required to finalize the accuracy of our approach.

Keywords: telomere, telomerase activity, capsaicin, mesothelioma..

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➢ **POSTER PRESENTATION**

Effect of 3D Network Structure on the Thermal/Mechanical Strength of Organogels based on N-(*p*-aryl) Bis-carbamates with long *p*-alkyl/alkoxy chains

Tuncay Hatıl, Öznur Demir Ordu

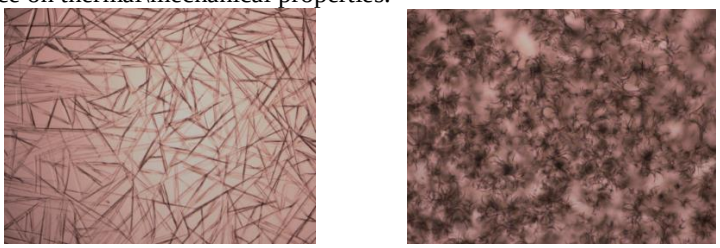
Abant İzzet Baysal University, Faculty of Arts and Sciences, Chemistry Department, Bolu TURKEY

Corresponding author e-mail: demirordu@ibu.edu.tr

Abstract

Low molecular weight organogelators (LMWO) are a family of organic molecules that can gel organic solvents at low concentrations, forming a 3D network via noncovalent interactions, such as hydrogen bonding, van der Waals interaction, □□□ stacking etc. The main characteristic properties of gels formed by LMWOs are their thermo-reversible gel-to-sol transition.

Self-assembled nanofibrillar networks with desired macroscopic properties can be designed with morphology and hence the mechanical properties of the fibrillar network. There are two different possible types of fibre network within gels: single fibre networks (single domain) and multi-domain spherulitic networks formed by Cayley-tree-like fiber growth progressing radially from a central point of origin. Since the strength of the network structure determines the thermal and mechanical properties [1], the morphology of the gels of N-(*p*-aryl) bis-carbamates [2] with long *p*-alkyl\alkoxy chains was examined by optical microscopy and compared with the results of dropping ball experiments done for the determination of thermal/mechanical strength of organogels. Light microscopy studies proved that gelation took place through the entanglement of the branched fibers or spherulites producing spaces for confining the solvent molecules. Results also showed that the compactness of network structure (Figure) had a significant influence on thermal\mechanical properties.



(a) (b)

Figure. Micrographs for *p*-heptyl derivative (a) isopropyl myristate gel (single domain) (b) sunflower oil gel (multi domain)

Keywords: Bis-carbamates, organogels, optical microscopy, 3D network structure

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➢ **POSTER PRESENTATION**

Coccomyces, A New Genus Record for Turkey

Abdullah Kaya, Yasin Uzun*

Karamanoğlu Mehmetbey University, Science Faculty, Department of Biology, Karaman, Turkey.

Corresponding author e-mail: yasinuzun_61@hotmail.com

Abstract

Coccomyces De Not. is a genus of *Rhytismataceae* within the order Rhytismatales and comprises 116 species. The genus is widely distributed one and associated with a wide spectrum of plants in 61 families, particularly *Ericaceae*, *Fagaceae*, and *Lauraceae*.

During routine field studies, carried out to determine the macrofungal biodiversity of Gaziantep province, some triangular and pentagonal *Coccomyces* samples, fructifying on dead *Quercus* sp. leaves, were collected and identified as *Coccomyces delta* (Kunze ex Fr.) Sacc. and *Coccomyces dentatus* (J.C. Schmidt) Sacc. Tracing the literature on Turkish macrofungi, it was found that any member of the genus *Coccomyces* have so far been reported from Turkey.

The study aims to make a contribution to the mycobiota of Turkey by adding new macromycete taxa. The research was supported by Turkish Scientific and Technological Council (TÜBİTAK-212 T 112) of Turkey.

Keywords: Biodiversity, *Rhytismataceae*, new records, Turkey

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➢ **POSTER PRESENTATION**

Antimicrobial Activity of Commercial Propolis

Halil Bal [1*], Mehmet Ataş[2]

[1]Ankara University, Faculty of Pharmacy, Department of Pharmaceutical Microbiology, Ankara, Turkey.
[2]Cumhuriyet University, Faculty of Pharmacy, Department of Pharmaceutical Microbiology , Sivas, Turkey.

Corresponding author e-mail: halilbal@ankara.edu.tr

Abstract

Recently, studies on the use of natural products in the treatment of infections have accelerated due to the side effects of synthetic drugs and the increasing resistance of antibiotics. Propolis is a natural substance which has been known since ancient times and produced by honey bees and has antimicrobial, antioxidant, antitumoral, antiinflammatory properties which are used in therapy. The aim of this study was to determine the antimicrobial effect of two commercial propolis samples against some pathogens. Propolis samples dissolved in DMSO. Antimicrobial effect was determined by disk diffusion well and minimal inhibitory concentration. Our results are shown in table 1.

	inhibition zones (mm)		mic values (mg/ml)	
	A	B	A	B
S.aureus ATCC 29213	30	17	> 10	>1.25
Bacillus cereus ATCC 11778	20	19	>10	>5
P.aeruginosa ATCC 27853	17	15	>10	>5
E.coli ATCC 25922	15	13	>2.5	>2.5
Candida tropicalis DSM 11953	20	15	>2.5	>2.5

Keywords: Propolis, antimicrobial effect, disk diffusion, mic

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➢ **POSTER PRESENTATION**

An Investigation of Cross-Talk Between Roasted Sesame Seed Extract and Oxidative Events During Wound Healing in Normoglycemic Rats

Sibel Gökşen[1*], Barbaros Balabanlı[2], Kaan Kaltalıoğlu[3], Şule Coşkun Cevher[2]

[1]Gazi University, Faculty of Medicine, Department of Immunology, Ankara, Turkey
[2] Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey
[3] Giresun University, Espiye Vocational School, Giresun, Turkey

Corresponding author e-mail: goksensibel@gmail.com

Abstract

Sesame is one of the oldest agricultural oil plants in the world for about 4000 years. Sesame seed is an important oilseed containing strong antioxidant compounds, especially roasted sesame seed. Traditionally, sesame seeds and its oil are used to promote healing in various wounds. Our aim in this study is to investigate oxidative events in wound tissue during wound healing process of topically applied roasted sesame extract in the dorsolateral excisional wound in rats. For this purpose, nitric oxide (NOx) and thiobarbituric acid reactive substances (TBARS) levels were measured spectrophotometrically in wound tissues. Thirty male Wistar-albino rats were divided randomly into three groups: control group, untreated group, and roasted sesame extract treated group. Two identical full-thickness excisional skin wounds were made under anesthesia in all rats except for the control group. In the roasted sesame extract treated, the wounds were treated topically roasted sesame extract (1 mL/each wound, single daily dose). After these administrations, on day 3 and day 7 of wound healing, rats were sacrificed. NOx and TBARS levels in wound tissues were spectrophotometrically measured. The mean values were evaluated using Mann–Whitney U test. On day 3, NOx and TBARS levels of the wound tissue sharply decreased in the roasted sesame extract treated, in comparison with the untreated group ($p<.05$). However, NOx and TBARS levels of the wound tissue were not statistically significant different in the roasted sesame extract treated group when compared to the untreated group on day 7 after wounding ($p>.05$). These results suggest that roasted sesame seed extract applied to the wounds of normoglycemic rats may drop oxidative damage in the inflammatory phase of wound healing.

Keywords: Sesame seed, Normoglycemic, Oxidant, Wound Healing.

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➢ **POSTER PRESENTATION**

Giresun-Kuzalan Waterfall Nature Park

Öznur Ergen Akçin[1], Tuğba Özbucak[1], Merve Yasemin Altıntaş[2*], Hüseyin Ümit Uzunömeroğlu[2]

[1]Ordu University, Faculty of Science and Art, Department of Molecular Biology and Genetics, Ordu,Turkey
[*2] Ordu University, Institute of Science, Department of Molecular Biology and Genetics, Ordu,Turkey

Sorumlu yazar e-mail:merve.yasemin.altintas@gmail.com

Abstract

Kuzalan Waterfall Nature Park is located in the Eastern Black Sea Region of Turkey, (Giresun, Dereli; **40°37′55.7076"** N, **38°23′25.9332"**E). The Kuzalan Waterfall Nature Park is declared a nature park in 2013. Harmanlar River and Taşpınar River are form 6 waterfalls up to Aksu River. In this study, the importance of the ecological structure, flora, wildlife and ecotourism of Kuzalan Waterfall Natural park was evaluated. This study was conducted as considering various scientific publications. The most important of these publications are A Checklist of the Flora of Turkey (Vascular Plants) and recent literatus about Kuzalan Nature Park. We used the our pictures and taken from the internet.The most noticeable features of the nature park are natural beauty, travertines, waterfalls, memorial trees, alkaline water, caves, hiking trail, rich flora and fauna. *Picea orientalis L.* and *Fagus orientalis L.* are most common species in the region. The other common species are *Carpinus betulus L., Acer sp. Corylus avellana* L., *Corylus colurna* L., *Populus tremula* L., *Sambucus nigra* L., *Buxus sempervirens* L., *Castanea sativa* Mill., *Platanus orientalis* L., *Salix alba* L. and some herbaceous plant. There are 6 amphibian, 14 reptile, 105 birds, 36 mammal and 7 fish species in the nature park. There are bungalows houses with 94 bed capacity. Urbanization activities have accelerated with the increasing population today. People prefer to outside the city for satisfing their aspirations to nature and relaxing. The region has significant potential for tourism. The natural resources and recreational values of the park are quite high.

Anahtar Kelimeler: Kuzalan Waterfall, Nature park, ecotourism, Giresun.

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➢ **POSTER PRESENTATION**

Antimicrobial Activity of Essential Oils of Thyme (*Thymus vulgaris*)

Halil Bal[1]*, Mehmet Ataş[2]

1Ankara Universty , Faculty of Pharmacy, Department of Pharmaceutical Microbiology, Ankara, Turkey.
2Cumhuriyet University,Faculty of Pharmacy,Department of Pharmaceutical Microbiology , Sivas,Turkey.

Corresponding author e-mail: halilbal@ankara.edu.tr

Abstract

Increasing antibiotic resistance in recent times is an important public health problem. So the discovery of new antimicrobial agents has become compulsory. Plant extracts, essential oils and natural products are promising to overcome this problem. Essential oils can be preferred in the treatment of diseases because they do not have negative effects on human and nature. Thymus has antispasmodic, antimicrobial, antioxidant, antiviral, anti-inflammatory and antiphlogistic effects due to various substances in its content. In this study, the antimicrobial activity of two different commercial thyme oils against some pathogens was evaluated. The samples were weighed 200 mg and dissolved in 1 ml of 40% dimethylsulfoxide. Antimicrobial activity was studied by adjusting appropriate dilutions in the microplate. Our results are shown in Table 1.

Table 1.

	mic values (mg/ml)	
	A	B
S.aureus ATCC 29213	> 5	>0.625
Bacillus cereus ATCC 11778	>5	>0.625
P.aeruginosa ATCC 27853	>2.5	>5
E.coli ATCC 25922	>10	>1.25
Candida tropicalis DSM 11953	>2.5	>0.625

Keywords: Thyme, mic, dmso, antimicrobial.

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➢ **POSTER PRESENTATION**

Synthesis and Characterization of Zn(II)-Coordination Polymer Based on 5-Nitroisophthalate and Bis(imidazole) Linker

Hakan Erer[1], Mürsel Arıcı[1*] and Okan Zafer Yeşilel[1]

[1]Eskişehir Osmangazi University, Faculty of Arts and Sciences, Department of Chemistry, 26480, Eskişehir, Turkey

Corresponding author e-mail: arici_mursel086@hotmail.com

Abstract

The design and construction of functional coordination polymers in the crystal engineering have been attracted interest due to their interesting architectures and their potential application areas e.g. in gas storage/separation, catalysis, photodegradation, sensor, fluorescence, magnetism, etc (Li et al. 2007; Li et al. 2009). The construction of functional coordination polymer (CP) with desired architecture has been still a big challenge since many factors such as rigidity or flexibility of organic ligand, coordination geometry of metal ion have effects on the overall structure of coordination polymers (Kwak et al. 2009). In the construction of CPs, N-donor neutral ligands, polycarboxylic acids or together of them (mixed-ligand system) have been extensively used. In this context, as a N-donor ligand, semi-flexible 1,4-bis(imidazol-1ylmethyl)benzene (pisobix) linker was used to investigate effect of sterically hindered group on the overall structure of CP. Moreover, 5-nitroisophthalic acid, as an anionic ligand, was used for constructing CP. This ligand can connect to metal ions with four potential oxygen donor atoms of two carboxylate groups with diverse coordination modes and also provide the neutrality of metal ions. In this study, mixed-ligand coordination polymer, namely, $\{[1,4\text{-isobix}H_2][Zn_3(\mu_3\text{-5-nip})_2(\mu_4\text{-5-nip})(\mu_5\text{-5-nip})]\cdot 2H_2O\}_n$ (**1**) was hydrothermally synthesized and characterized by IR spectroscopy, elemental analysis and single crystal and powder X-ray diffractions and thermal analysis techniques (TG/DTA). X-ray result showed that complex crystallized in triclinic system with the space group *P*-1. In the asymmetric unit, there are three Zn(II) ions, four 5-nip ligands, two half protonated pisobix ligands and two crystal water molecules. 5-nip ligand displayed three different coordination modes as tri- tetra- and penta-dentat. Zn(II) ions are bridged by 5-nip ligands to form 1D structure. Three Zn(II) ions are bridged by eight carboxylate groups of eight different 5-nip ligands with Zn···Zn distances of 3.227 Å and 3.696 Å to generate $[Zn_3(COO)_8]$ secondary building unit (SBU). SBUs are connected by carboxylate groups of 5-nip to form 3D structure. There are cationic pisobixH_2 in the pores of the complex. Topologically, complex possessed pcu alpha-Po topology with the point symbol of $4^{12}.6^3$. Moreover, thermal and photoluminescence properties of complex **1** was investigated.

Keywords: 5-nitroisopthalate; coordination polymer; hydrothermal synthesis.

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➢ **POSTER PRESENTATION**

Synthesis of New Calcined Sepiolite/Poly(vinylimidazole) Nanocomposites and Use for Removal of Brilliant Yellow from Aqueous Solutions

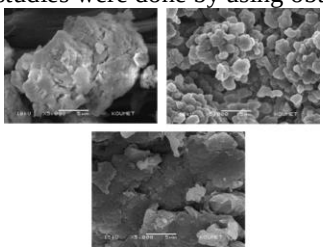
Adem Ülker[*1], Nalan Tekin[1], İnci Özdemir[2]

[1]Kocaeli University, Science and Art Faculty, Department of Chemistry, 41380, Kocaeli, TURKEY
[2]Kocaeli University, Izmit Vocational School, Property Protection and Security Department, 41285, Kocaeli, TURKEY

Corresponding author e-mail: A_ulker@outlook.com

Abstract

Organic dyes are non-degradable and persistent in the environment. Therefore, the elimination of organic dye from water and wastewater is important to protect environment and public health. Various methods of organic dye removal have been studied including physical, chemical, physico-chemical and biological methods. Adsorption is considered as an economical and efficient method for dye removal. The attempts to explore novel adsorption materials for removal of organic dyes from wastewater will be valuable due to their low cost, bio-degradability and friend-environmental nature. Polymeric hydrogel materials have attracted more scientific interest due to their many uses and applications in many fields, such as molecular filters, super absorbents, and contact lenses. In recent years, the modification of adsorption properties of the polymeric adsorbents was potentially studied. In this study novel nanocomposite materials (sepiolite, and calcined sepiolite-poly(vinylimidazole) (PVI) nanocomposites) were prepared by in situ polymerization method with cross-linker (Şekil 1). The prepared nanocomposites were characterized by various analysis techniques. After characterization, the nanocomposite was potentially studied for removal of Brilliant Yellow (BY) dye from aqueous solutions. Different factors that could affect the organic dye adsorption behavior were studied as time of contact, temperature, pH, dye concentration and amount of adsorbent. The kinetic, thermodynamic and isotherm studies were done by using obtained equilibrium adsorption data.



Şekil 1. (a) Sep (b) PVI ve (c) Sep/PVI kompozitinin SEM görüntüleri.

Keywords: Adsorption, sepiolite, nanocomposites, calcination, poly(vinylimidazole).

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➢ **POSTER PRESENTATION**

Kafein Mikrokirleticisinin Nehir Boyunca Mevsimsel Olarak İncelenmesi ve Ozonla Arıtımı

Fatma Büşra Yaman Büyükbüberoğlu

Yıldız Teknik Üniversitesi, İnşaat Fakültesi, Çevre Mühendisliği Bölümü, İstanbul, Türkiye

Sorumlu yazar e-mail: fbyaman@gmail.com

Özet

Bu çalışma kapsamında yaklaşık 800 km uzunluğa sahip ve minimum debisi 30 m^3/s olan Sakarya Nehri'nin mevsimsel olarak su kalitesi ve yüzeysel sulara bulaşma ve taşınma ihtimali çok yüksek olan Kafein (CFN) mikrokirleticisi incelenmiş ve Nehir boyunca beş farklı noktada 3 farklı ozon dozu (0,5mg/L, 1mg/L, 1,5mg/L) ile arıtım çalışmaları gerçekleştirilmiştir. CFN konsantrasyonu Çifteler, Gökçekaya ve Yenice numune noktalarında 1,46 -12,79 ng /L arasında değişim gösterirken Karasu ve Geyve'de yazın sırasıyla bu değeler 230 ng /L, 102 ng /L 'ye kadar çıkmıştır. En düşük konsantrasyonlar kışın görülürken, en yüksek konsantrasyonlara yazın rastlanmıştır. Ozonlama ile TOK ve UV_{254} gideriminin en yüksek 1 mg/L dozunda sırasıyla %19 ve %55 olduğu görülmüş ve optimum ozon dozu 1 mg/L belirlenmiştir. 1 mg/L ozon dozu ile CFN giderim verimi bazı noktalarda %100 'ü bulmuştur.

Anahtar Kelimeler: yüzeysel su, mikrokirletici, kafein, ozon.

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➢ **POSTER PRESENTATION**

The *MEFV* Gene Variant is Associated with Susceptibility to Temporomandibular Disorders in Turkish Population

Serbulent Yigit[1]*, Mehmet Kemal Tumer[2], Ayse Feyda Nursal[3],Akın Tekcan[4]
[1]Gaziosmanpasa University, Faculty of Medicine, Department of Medical Biology, Tokat, Turkey
[2]Gaziosmanpasa University, Faculty of Dentistry, Department of Oral Surgergy, Tokat, Turkey
[3]Hitit University, Faculty of Medicine, Department of Medical Genetics, Corum, Turkey
[4]Ahi Evran University, Faculty of Medicine, Department of Medical Biology, Kirsehir, Turkey

Abstract

Temporomandibular joint disorders (TMD) are a group of disorders involving temporomandibular joint and related structures. The Mediterranean fever (*MEFV)* gene which encodes pyrin protein. The most commen complication of MEFV mutations is chronic inflomation. The current study was designed to investigate the possible association of the *MEFV* variant with the risk of TMD in the Turkish population.

Peripheral blood samples were collected from 80 patients with TMD (20 males, 60 females) and 100 healthy individuals (35 males, 75 females). Genotyping of MEFV R202Q variant was evaluated by using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP).
Our results show that there is a statistically significant difference between TMD patients and control group with respect to MEFV R202Q genotype distribution and allele frequencies ($p<0.005$). Frequency of allele R was higher in patient groups ($p<0.005$), whereas allele R had a lower frequency in patients with TMD ($p<0.005$).

This is the first correlation study that evaluates the association between MEFV gene R202Q variant and TMD. The R202Q variant related to MEFV gene showed a strong pattern of association with TMD that may have a potential impact on disease counseling and management. Larger studies with various ethnicities are needed to establish the impact of MEFV R202Q variant on risk of developing TMD. Further studies are needed to confirm this observation.

Keywords: Temporomandibular joint disorders, MEFV gene, R202Q variant.

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➢ **POSTER PRESENTATION**

A New Ultraviolet Sensor for Zn^{2+} based on N,N'-Dibenzyl-1,2-diaminobenzene Unit

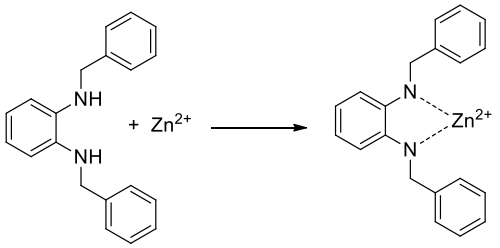
F. Zehra Küçükbay[1*], Zehra Tekin[1], Hasan Küçükbay[2]

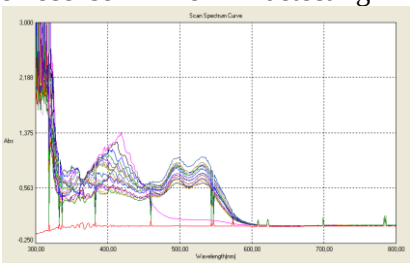
[1]İnönü University, Faculty of Pharmacy, Department of Basic Pharmaceutical Sciences, 44280 Malatya, Turkey
[2]İnönü University, Faculty of Arts and Sciences, Department of Chemistry, 44280 Malatya-Turkey

Corresponding author e-mail: zehra.kucukbay@inonu.edu.tr

Abstract

Zinc is one of the most abundant and vital element in human body and is and is considered the most abundant transition metal in organisms after iron.[1]
The divalent zinc ion plays a crucial role in the catalytic function of numerous enzymes and is involved in many crucial physiological processes, such as DNA replication and repair, gene expression, enzyme catalysis, neurotransmission and so on. However, unregulated level of Zn^{2+} ions in human body could lead to several diseases, such as β-thalassemia, Alzheimer's disease, and several neurodegenerative diseases. environmental and biological samples is required.[2]
The conventional methods used for detecting Zn^{2+} were AAS and ICP spectroscopy, which require time consuming sample preparation and expensive instruments. Therefore, the development of reliable, simple and appropriate methods for detecting Zn^{2+} in biological and environmental samples is required. In recent years, there has been an increasing interest for highly selective chemical sensors to detect metal ions in sample matrixes.
In connection with sensor application for Zn^{2+} ion, we wish to first report N,N'-dibenzyl-1,2,diaminobenzene[3] based ultraviolet chemosensor for detecting of Zn^{2+}.





Keywords: Chemosensor, ultraviolet, Zn^{2+}, N,N'-dibenzyl-1,2-diaminobenzene.

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➢ **POSTER PRESENTATION**

Decolorization of Various Dyes (Disperse Dyes) by Newly Isolated Thermophilic *Anoxybacillus* Species

Filiz Boran[1*], Emre Birhanlı[1], Özfer Yeşilada[1], Sadin Özdemir[2]

[1]Inonu University, Science and Art Faculty, Biology Department, Malatya, TURKEY
[2] Mersin University, Vocational School of Technical Sciences/Food Technology, Mersin, TURKEY

Corresponding author e-mail: filiz.kuru@inonu.edu.tr

Abstract

In textile and dying industries, large quantities of dye are utilized every year. During dying, 10 to 15% of these dyes are released in wastewater. The presence of dyes in effluents is undesirable, and they also cause the environmental and health problems. The removal of dye from textile effluents is one of the most significant environmental problems. Because their chemical structures, dyes are resistant to biological degradation. The coagulation, chemical oxidation, photo catalysis, electrochemical treatment, adsorption techniques and biological methods could be used for wastewater treatment. Disperse dyes are not ionized in aquatic environments and of them tend to bioaccumulate. Conventional biological wastewater treatment systems is not effective for dye degradation. Several microorganisms, including fungi, bacteria, yeasts and algae, were tested for their effective textile dye decolorization activity. One way is the use of the thermotolerant or thermophilic microorganisms decolorization systems. These types of microorganisms are characterized by their ability to grow optimally at elevated temperatures. For several decades, these bacteria have attracted the interest of many scientists In the present work, newly isolated species of thermophilic *Anoxybacillus* were tested for their foron black and foron red dyes decolorization ability. By *A. flavithermus* the dyes decolorization was 78% at 50°C for foron black and 80% at 55°C for foron red. It was 86% at 45-50°C for foron black and 83% for foron red at 55°C by *Anoxybacillus* sp.. *A. mongoliensis* foron black decolorization activity was approximately 80% at all the temperature values used. On the other hand, increase in temperature induced foron red decolorization activity of this bacterium. The foron black and foron red decolorization activity of *A. kestanboliensis* was 77% at 40°C and 55°C, respectively

Keywords: Decolorization, *Anoxybacillus*, dye, thermophile

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➢ **POSTER PRESENTATION**

Antimicrobial Activities of Orange (Peel Oil, Orange Pulp, Orange Peel and Orange Juice) Extracts on Some Bacteria and Some Yeasts

Halil İlkimen[1], Aysel Gülbandılar[2], Nagehan Türken[1*], Birsel İlkimen[3], Cengiz Yenikaya[1]

[1]Dumlupınar University, Faculty of Arts and Science, Department of Chemistry, Kutahya, Turkey
[2]Dumlupınar University, Altıntas Vocational School, Department of Food Technology, Altıntas, Kutahya, Turkey
[3]Kalınağaç Middle School, Kalınağaç, Siverek, Şanlıurfa, Turkey

Corresponding author e-mail: nagehan_turken@hotmail. com

Abstract

The antimicrobial properties of fruit extracts have been known for years. Therefore, the antimicrobial effects of fruit extracts against bacteria and yeast have been studied in many studies. In this study, we aimed to test the antimicrobial activity of extracts of orange peel oil, orange pulp, orange peel and orange juice.

Antimicrobial activitiy of orange peel oil, orange pulp, orange peel and orange juice extracts were tested with *Staphylococcus aureus* (ATCC 29213) (Gram positive), *Escherichia coli* (ATCC 25922), *Enterococcus faecalis* (ATCC 29212) (Gram negative) and *Candida krusei* (ATCC 6258), *Candida parapisilosis* (ATCC 22019) (yeast).

Orange peel oil, orange pulp, orange peel and orange juice extracts showed inhibition against all the test organisms (Gram positive, Gram negative and yeast). All extracts were found to be most sensitive to S. aureus. Orange pulp and orange peel showed the minimum antimicrobial effect against *Candida parapisilosis* while orange juice extract showed the minimum antimicrobial effect against *Candida parapisilosis* and *E. coli.* Similarly commercially available orange peel oil showed the minimum antimicrobial effect against *Candida crusei*.

Keywords: Antimicrobial activity, extracts, orange.

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➢ **POSTER PRESENTATION**

Wrecks Used as Artificial Reef in İzmir

Tuğçe Şensurat Genç[*1], Aytaç Özgül[2], Altan Lök[2]

[*1]İzmir Katip Çelebi University, Faculty of Fisheries, Department of Fisheries and Fish Processing Technology, İzmir, Turkey.
[2]Ege University, Faculty of Fisheries, Department of Fisheries and Fish Processing Technology, İzmir, Turkey

Corresponding author e-mail: sensurat@gmail.com

Abstract

Artificial reefs are used in seas around the world for many purposes, eg., conservation, renovation, production etc. Recreational artificial reefs are also made to create sufficient adequate areas for diving. The two main aims of these structures are to attract divers in areas where natural habitats are deficient and to decrease the human pressure on sensitive habitats. A number of ships, planes and other large man-made structures have been deliberately sunk on the sea floor to attract divers worldwide and their use is increasing.

Coastal local governments have begun to be interested in artificial reefs, after the first artificial reef application took place in İzmir Bay in 1989 where 10 trolleybuses were sunk. Following this growing interest, artificial reef studies have been continued in İzmir city coasts. İzmir is the capital of artificial reefs for Turkey in terms of both scientific studies and applied projects. Therefore, it would not be wrong to say that İzmir is the city with the highest awareness about artificial reefs in Turkey.

In İzmir, the first ship as artificial reef was intentionally sunk for diving tourism in 2010. Now up to five vessels are initially submerged to create artificial reefs. Although there is no legal regulation in Turkey about using ships, planes etc. to create diving areas, vessels are still being sunk today. Their clean up procedures still aren't well defined both in Turkey and some others. While using vessels for recreational purposes there are some important points that should be carefully evaluated when choosing the vessel and deployment site. The main significant point is vessels should only be improved where such reefs will increase native marine resources and benefit the natural marine environment. Deployed vessels not only can support aquatic habitat, but also supply an extra option for conserving, managing and developing fishery resources.

Keywords: Artificial reef, shipwreck, diving tourism, İzmir.

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➢ **POSTER PRESENTATION**

The Effects of Silymarin on Healthy Hepatocytes Cell Line

N. Ezgi Bektur*, Sedat Kacar, Erhan Sahin, Varol Sahinturk

Eskisehir Osmangazi University, Faculty of Medicine, Department of Histology and Embryology, Eskisehir, Turkey.

Corresponding author e-mail: nebektur@ogu.edu.tr

Abstract

Silymarin, obtained from milk thistle (*Silybum marianum*), is a herbal medicine that has been used for centuries to cure liver diseases. As a hepatoprotective agent, the antioxidant, anti-inflammatory and anti-fibrotic properties of silymarin have been demonstrated in many in vivo and in vitro studies. It has been shown to have a protective and curative effect in many liver related diseases. In this study, we aimed at determining the effect of different concentrations of silymarin on a healthy Clone 9 hepatocyte cell line, by using a colorimetric assay.

We cultured Clone 9 cells at 37°C in an incubator containing 5% CO_2 and 95% air in a medium with 10% fetal bovine serum and 1% penicillin-streptomycin. We detached the cells by trypsin-EDTA (25%-0.53 mM) solution. The cells were seeded at the concentration of 25,000 cells per well. After respective silymarin ranging between 0-200 µM was added into wells, the cells were grown in the incubator. After 24 hours, the cells were applied with 5 mg/ml MTT for 4 hours. Finally, they were solubilized with 100 µl of DMSO. Moreover, IC_{50} (half maximal inhibitory dose) of silymarin was calculated.

According to MTT test, at the silymarin doses of 3.125, 6.25, 12.5, 25 and 50 µM, there were no significant differences when compared to untreated Clone 9 cells. At the silymarin dose of 100 µM, although there was an almost 35% decrease in cell viability, it was not significantly different from untreated group. However, at the silymarin dose of 200 µM, we found a significant cell viability decrease ($p<0.01$). The IC_{50} value for silymarin was revealed as 153 µM.

Herein, we contributed to literature by finding IC_{50} and anti-proliferative concentrations of silymarin. We suggest that the hepatoprotective doses of silymarin should be chosen carefully to prevent undesirable outcomes.

Keywords: Silymarin, cytotoxicity, MTT, IC_{50}.

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➢ **POSTER PRESENTATION**

How Can Vessels be Cleaned up to Use as Artificial Reefs?

Tuğçe Şensurat Genç

İzmir Katip Çelebi University, Faculty of Fisheries, Department of Fisheries and Fish Processing Technology, İzmir, Turkey

Corresponding author e-mail: sensurat@gmail.com

Abstract

The artificial reefs, which provide new and attractive areas for divers, have been used around the world, especially in North America to promote diving tourism. The artificial reefs provide new shelters for marine organisms as well as increasing the profitability of diving areas. Beginning in 2006, sinking ships and other similar items as artificial reefs has become an increasing trend in our country. These activities are regulated by the General Directorate of Fisheries And Aquaculture department under the Ministry of Food, Agriculture and Livestock in our country. However, the national guide does not offer a guide or procedures for the cleaning and sinking of vessels like ships and planes as artificial reefs.

The environmental impact studies have been focused on wrecks, which sank by maritime accident; however, there are no studies on pre-cleaned ships, which were sunk intentionally. There is some guidance that identifies materials or categories of materials of concern that may be found aboard vessels and specifically identifies where they may be found and they indicate materials which are of concern including, oil and fuel, asbestos, polychlorinated biphenyls (PCBs), paint, solids/debris/floatables. But these documents address only recommended cleanup activities for vessels that are intended to be deployed as artificial reefs.

Knowing the materials of concern in vessels and how they should be cleaned will help ensure that vessels prepared for use as artificial reefs "will be environmentally sound in their use as artificial reefs".

Keywords: Artificial reef, ships to reef, ship cleanup.

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➢ **POSTER PRESENTATION**

Antimicrobial Activities of Isot (Fresh, Industrial and Traditional Methods) Extracts on Some Bacteria and Some Yeasts

Halil İlkimen[1], Aysel Gülbandılar[2], Birsel İlkimen[3], Nagehan Türken[1*], Cengiz Yenikaya[1]

[1]Dumlupınar University, Faculty of Arts and Science, Department of Chemistry, Kutahya, Turkey.
[2]Dumlupınar University, Altıntas Vocational School, Department of Food Technology, Altıntas, Kutahya, Turkey
[3]Kalınağaç Middle School, Kalınağaç, Siverek, Şanlıurfa, Turkey.

Corresponding author e-mail: nagehan_turken@hotmail. com

Abstract

"Isot" is a kind of hot spices which has a special color, taste, smell and aroma, produced from Capsicum annuum L. and it is used in various products. Red peppers have been consumed for 2000 years as fresh, dried, pepper flakes, chili powders and recent years "isot". The differences between isot and other pepper products are isot's characteristics taste and aroma.

Isot production can be achieved in two ways; industrial and traditional methods. In traditional method; isot is obtained from drying of cleaned and discolored peppers in PVC bags which are opened during the day time and closed during the night time 7-10 days.

The antimicrobial properties of vegetable extracts have been known for years. Therefore, the antimicrobial effects of vegetable extracts against bacteria and yeast have been studied in many studies. In this study, we aimed to test the antimicrobial activity of extracts of isot fresh, industrial and traditional method.

Antimicrobial activitiy of Isot (fresh, industrial and traditional methods) extracts were tested with *Staphylococcus aureus* (ATCC 29213) (Gram positive), *Escherichia coli* (ATCC 25922), *Enterococcus faecalis* (ATCC 29212) (Gram negative) and *Candida krusei* (ATCC 6258), *Candida parapisilosis* (ATCC 22019) (yeast).

Antimicrobial activitiy of orange peel oil, orange pulp, orange peel and orange juice extracts were tested with *Staphylococcus aureus* (ATCC 29213) (Gram positive), *Escherichia coli* (ATCC 25922), *Enterococcus faecalis* (ATCC 29212) (Gram negative) and *Candida krusei* (ATCC 6258), *Candida parapisilosis* (ATCC 22019) (yeast).

Isot (fresh, industrial and traditional methods) extracts showed inhibition against different bacteria and yeast. Except *E. faecalis* gr negative bacteria and *C. parapisilosis* (yeast)all were susceptible to extracts.

Keywords: Isot, antimicrobial activity, extracts.

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➢ **POSTER PRESENTATION**

Synthesis and Antioxidant Activity of Novel 4-(2-aminoethyl)benzenesulfonamide Derivatives

F. Zehra Küçükbay [1*], Nesrin Buğday [2], Hasan Küçükbay[2]

[1] İnönü University, Faculty of Pharmacy, Department of Basic Pharmaceutical Sciences, 44280 Malatya, Turkey
[2]İnönü University, Faculty of Arts and Sciences, Department of Chemistry, 44280 Malatya-Turkey

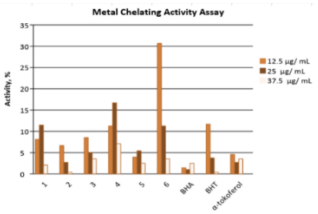
Corresponding author e-mail: zehra.kucukbay@inonu.edu.tr

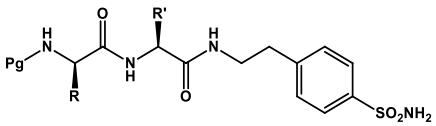
Abstract

Sulfonamides are a significant class of compounds in medicinal chemistry with several pharmacological activities. They are also effective for the carbonic anhydrase enzyme inhibition which there are many connections between carbonic anhydrase and cancer. On the other hand, there are very limited information about antioxidant properties of the sulfonamides in the literature.[1]

Therefore, we planned to investigate possible antioxidant properties of some novel sulfonamide derivatives bearing dipeptide moieties.

The antioxidant activity of the new compounds was examined by comparing to those of known antioxidants such as BHA (Butylated hydroxyanisole), BHT (Butylated hydroxitoulene) and α-tocopherol by metal chelating activity assay. As can be seen in Figure, all compounds showed moderate to good antioxidant activities (except compound **6**) studied in three different concentrations ranged between 0.42 % and 30,69 %. Among the compounds tested here, compound **5** was found to be the most efficient antioxidant at studied concentrations comparable to those of α-tocopherol.





1 Pg= Z, R= H, R'=H
2 Pg= Z, R= H, R'=$CH_2CH_2SCH_3$
3 Pg= Z, R=CH_2, R'=H
4 Pg= Z, R= CH_3, R'=CH_3
5 Pg= Z, R= CH_3, R'=CH_2Ph
6 Pg= Z, R= CH_3, R'=CH_2SCH_2Ph

Figure. Antioxidant activity results and the structures of the tested compound.

Keywords: Antioxidants, sulphonamides, dipeptide.

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➢ **POSTER PRESENTATION**

Samsun as a New Locality for Canine Leishmaniasis from the Black Sea Region

Gokmen Zafer Pekmezci[1], Didem Pekmezci[2*], Cenk Soner Bolukbas[3]

[1]University of Ondokuz Mayis, Faculty of Veterinary Medicine, Preclinical Sciences, Samsun, Turkey
[2]University of Ondokuz Mayis, Faculty of Veterinary Medicine, Department of Internal Medicine, Samsun, Turkey
[3]University of Ondokuz Mayis, Faculty of Veterinary Medicine, Department of Parasitology, Samsun, Turkey

Corresponding author e-mail: dkazanci@omu.edu.tr

Abstract

Visceral leishmaniasis (VL) is a neglected disease provoked by protozoan parasites of the *Leishmania* genus and one of the most important parasitic diseases worldwide and remains a challenge to public health in at least 65 countries. Mainly domestic dogs are the main peri-domestic reservoir of the etiological agent, the protozoan *Leishmania infantum* and shares many clinico-pathological features with the human disease. Such subtropical areas of Asia and Africa, Latin America, and Mediterranean basin are mainly harboring the disease. However, Canine leishmaniasis (CanL) has also been reported in the Marmara, Aegean, Mediterranean and South-Eastern regions of Turkey, there is only one published report from northern Turkey. While, dogs are the primary reservoir of the parasite and early diagnosis of canine leishmaniosis is crucial at the clinical and epidemiological level. In this case report it was tried to define a CanL case in a 7 years old, male, pointer dog which was brought with complaint of permanent ulcerative ear lesions to our clinics from Samsun. Generalized lymphadenopathy with ulcerative cutaneous ulcers over the ears was detected during the clinical examination. However other clinical symptoms of CanL in the dog such as, loss of appetite, cachexia, ocular lesions, onychogryphosis or epistaxis were absent. Hepatosplenomegaly was detected during the abdominal ultrasonographic examination. Clinical laboratory findings were presenting mild to moderate nonregenerative anemia with thrombocytopenia. For this reason, a chromatographic immunoassay kit for rapid and qualitative detection of the leishmania antibodies in canine serum was performed and a positive result was obtained. After diagnosis, a treatment protocol was initially started. Therefore, this report demonstrates Samsun province as a new locality for CanL from the Black Sea Region and indicates the necessity for future screening studies in this region of Turkey.

Key Words: Samsun, New locality, Canine Leishmaniasis, Black Sea Region.

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➢ **POSTER PRESENTATION**

Investigate of Roasted Sesame Seed Extract Antioxidant Levels During Diabetic Wound Healing

Sibel Gökşen[1*], Kaan Kaltalıoğlu[2], Barbaros Balabanlı[3], Şule Coşkun Cevher[3]

[1*] Gazi University, Faculty of Medicine, Department of Immunology, Ankara, Turkey
[2] Giresun University, Espiye Vocational School, Giresun, Turkey
[3] Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey

Corresponding author e-mail: goksensibel@gmail.com

Abstract

The strong antioxidant compounds in roasted sesame seeds provide positive contributions to the healing of normal and diabetic wounds. To investigate antioxidant levels in wound tissue during wound healing process of topically applied roasted sesame extract in the dorsolateral excisional wound in diabetic rats. For this purpose, glutathione (GSH) and ascorbic acid (AA) levels were measured spectrophotometrically in wound tissues. Thirty male Wistar-albino rats with streptozotocin-induced diabetes were divided randomly into three groups: control group, untreated group, and roasted sesame extract treated group. Two identical full-thickness excisional skin wounds were made under anaesthesia in all rats except for the control group. In the roasted sesame extract treated group, the wounds were treated topically roasted sesame extract (1 mL/each wound, single daily dose). After these administrations, on day 3 and day 7 of wound healing, rats were sacrificed. GSH and AA levels in wound tissues were spectrophotometrically measured. The mean values were evaluated using Mann–Whitney U test. On day 3, GSH levels of the wound tissue sharply increased in the roasted sesame extract treated group, in comparison with the untreated group ($p<.05$). On day 3, AA levels of the wound tissue did not vary significantly in the roasted sesame extract treated group when compared to the untreated group ($p>.05$). However, GSH and AA levels of the wound tissue were not statistically significant different in the roasted sesame extract treated group when compared to the untreated group on day 7 after wounding ($p>.05$). Topically applied roasted sesame extract may increase the antioxidant capacity through a nonenzymatic antioxidant GSH in the diabetic rats.

Keywords: Sesame seed, Diabetes Mellitus, Antioxidant, Wound Healing.

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➢ **POSTER PRESENTATION**

Katı Faz Fermentasyonu Sürecinden Elde Edilen *Pleurotus cornucopiae* Özütü ile Sentezlenen Altın Nanopartiküllerin Akciğer Kanseri Hücre Hattı Üzerine Sitotoksik Etkisi

Özfer Yeşilada[1], Elif Apohan[1*], Eray Tatlıcı[2], Samet Uçar[2], Sema Erdemoğlu[3]

[1]İnönü Üniversitesi Fen Edebiyat Fakültesi Biyoloji Bölümü, Malatya
[2] İnönü Üniversitesi Fen Bilimleri Enstitüsü, Malatya
[3]İnönü Üniversitesi Fen Edebiyat Fakültesi Kimya Bölümü, Malatya

elif.apohan@inonu.edu.tr

Özet

Nanopartiküller çeşitli yöntemlerle sentezlenmekte ve pek çok uygulamada kullanılmaktadır. Bu bağlamda biyolojik, kimyasal ve fiziksel yöntemlerle sentez çalışmaları yapılmaktadır. Biyolojik yaklaşımların çevre dostu olma gibi çeşitli avantajları son yıllarda bu uygulamanın öne çıkmasını sağlamıştır. Çalışmalarda, biyolojik yöntemlerle sentezlenen nanopartiküllerin toksisitesinin düşük olması ve çevre dostu olmalarından dolayı tıbbi yaklaşımlarla kullanıma daha uygun oldukları vurgulanmaktadır.
Bu çalışmada herhangi bir zararı olmayan *P. cornucopiae* kullanılmıştır. Bu fungusun katı faz fermentasyonu sürecinde elde edilen özüt altın nanopartikül sentezinde kullanılmıştır.
Elde edilen nanopartiküllerin A549 kanser hücre hattına sitotoksik etkisinin olup olmadığı değerlendirilmiş ve nanopartiküllerin kanser hücre hatları üzerine sitotoksik etki yaptığı belirlenmiştir.

Anahtar Kelimeler: Pleurotus cornucopiae, altın nanopartikül, akciğer kanseri
Bu çalışmayı 116Z336 nolu proje olarak destekleyen TÜBİTAK'a teşekkür ederiz.

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➢ **POSTER PRESENTATION**

Some Important Waterfalls of Ordu in Terms of Ecotourism

Öznur Ergen Akçin[1], Şükran Öztürk[*2], Tuğba Özbucak[1], Gülcan Şenel[3]

[1]Ordu University, Faculty of Science and Art, Department of Molecular Biology and Genetics, Ordu,Turkey
[*2] Ordu University, Institute of Science, Department of Molecular Biology and Genetics, Ordu,Turkey
[3]Ondokuz Mayıs University, Faculty of Science and Art, Department of Biology, Samsun,Turkey

Corresponding author e-mail:sukranguney0hotmail.com

Abstract

The Black sea Region is an important natural tourism area of our country with its magnificent nature. There are many waterfalls with a remarkable natural beauty in the Ordu province. Some of these; Uzundere, Karaoluk (Çiseli), Kadıncık, Kapılı(Cıngırlı) ve Gerce waterfalls. The waterfalls have natural beauty for tourism in every season. It is aimed to introduce important waterfalls in Ordu. This study was conducted as considering various scientific publications. We used the our pictures and taken from the internet. Uzundere waterfall is 17 km away from Aybastı. People who see the waterfall are fascinated by its 105m length. It consists of 7 different waterfalls, one at the top and six at the bottom. Uzundere waterfall is one of the tallest waterfalls of Turkey. There are seating areas, picnic tables and camels inside the waterfall. Karaoluk waterfall is located in central Karaoluk. Kadıncık waterfall is located in Ulubey district. The 200-year-old mill is located next to the waterfall. Kapılı waterfall is located center of Çaybaşı. It is worth seeing in terms of its natural beauties. The area where the waterfall is located is a natural excursion area. Gerce waterfall is located Kabadüz. The waterfalls of the Ordu, natural beauties, water voices, rich fauna and flora make it attractive to be a attraction point for both domestic and foreign tourists in summer and winter

Anahtar Kelimeler: Ordu, waterfall, ecotourism.

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➢ **POSTER PRESENTATION**

The Fine Structure of the Anterior Midgut of *Centrocoris variegatus* (Hemiptera: Coreidae)

Okan Şimşek*, Zekiye Suludere

Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.

Corresponding author e-mail: simsekokann@gmail.com

Abstract

Centrocoris variegatus Kolenati, 1845 is a species of the Coreidae family. This species feeds on the sap of plants. *C. variegatus* causes damage by sucking the sap from branches of plant. The biology of this species is still not defined. Similarly, the phylogeny and biogeography of it are poorly studied. Therefore, *C. variegatus* is been the subject of this study. Due to determining the biology, it is necessary to know the ultrastructure of this species. To this respect, ultrastructure of anterior midgut of *C. variegatus* was examined using light and electron microscope. For light microscopy, adult specimens of *C. variegatus* were collected in Ankara in 2017. Extracted midgut was fixed in Formaldehyde. After washing and the dehydration process samples were embedded in paraffin. After that, sections were stained and photographed. For the scanning electron microscopy, specimens cleaned, fixed and dried with Critical Point Drying, then they were coated with gold and examined with JEOL JSM 6060 LV scanning electron microscope. Midgut which have role in digestion of the nutrients are surrounded by trachea and muscles. Midgut is differentiated into three distinct portions: Anterior, median, posterior. Anterior region is a tubular in shape. Cells of inner surface are simple cubic epithelium. Apical membranes of these cells are abundant in microvilli. A continuous basal lamina lies down under the epithelium. There are a great number of granules in the cells.

Keywords: Anterior midgut, Structure, Electron microscopy, Light microscopy.

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➢ **POSTER PRESENTATION**

The Effect of Different Concentrations of Melatonin on Clone 9 Hepatocyte Cells

Sedat Kacar, Ridvan Bagci*, Erhan Sahin, N. Ezgi Bektur, Varol Sahinturk

Eskisehir Osmangazi University, Faculty of Medicine, Department of Histology and Embryology, Eskisehir, Turkey

Corresponding author e-mail: dr.ridvanbagci@gmail.com

Abstract

Melatonin is a hormone, which is synthesized and secreted by the epiphyseal gland in response to photoperiodic signals transmitted from the retina. Melatonin has been proved to reduce oxidative stress owing to its antioxidant capacity. However, its dose is important necessary to avoide from any undesirable results. Herein, we aimed at determining the effect of melatonin at different doses by using epithelial-derived, healthy rat Clone 9 hepatocyte cells. In this study, we aimed to contribute to the literature by finding appropriate dose of melatonin for Clone 9 cells.

Clone 9 cells were grown in medium containing penicillin-streptomycin and 10% FBS at 37 °C in incubator with 5% CO_2. Cells were allowed to adhere to the surface of the flask by being seeded 24 hours before the experiment. Afterwards, seven different doses of melatonin, ranging between of 0.7-44 mM, were given to the medium of the cells. After 24 hours, 5 mg / ml MTT medium was applied to the cells by diluting 10 times with culture medium. The cells were incubated for 4 hours at 37 °C. Finally, the absorbance values of the cells were measured at 570 nm following DMSO administration.

According to the MTT results, when compared to untreated cells, the viability percentages of cells at the melatonin doses, except 0.7 mM, were significantly reduced in a dose-dependent manner ($p<0.001$). The viability percentages of the cells at 11, 22 and 44 mM doses were below 20%. At 2.7 and 5.5 mM doses of melatonin, the viability was between 20% and 40%, while at 1.38 mM doses, it was detected around 55%. Besides, the IC_{50} value of melatonin for the clone 9 cells was found as 1.79 ± 0.7 mM.

In conclusion, 1.5 mM and higher doses of melatonin exert cytotoxic and antiproliferative effects on clone 9 cells. The doses of melatonin, a known antioxidant, should be suitably selected to prevent its unexpected side effects.

Keywords: Melatonin, clone 9 cell line, MTT assay, cytotoxicity.

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➢ **POSTER PRESENTATION**

Investigation of Mechanical and Thermal Properties of Cellulose Reinforced Polylactic Acid Composites

Ebru Aydın*, Afife Binnaz Hazar Yoruç

Yıldız Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Metallurgical and Materials Engineering, Istanbul, Turkey.

Corresponding author e-mail: ebruaydinb@gmail.com

Abstract

Green polymers and composites have began to be studied for sustainability and minimum energy consumption. Green composites composed of matrix and reinforcements obtained from natural sources. They are not only light, but also can fulfill the desired mechanical and thermal properties (Morella et al.,2011), (Gurunathan et al.2015).

The study is to aim the production of microcrystalline (MCC) and nanocrystalline cellulose (NCC) reinforced polylactic acid composites by twin screw extrusion. MCC and NCC are added into feeder %3 weight percentage. Zone temperatures of extruder were selected between 180° -190° C. Screw speed is adjusted as 600 rpm. Test specimens were produced by injection molding method.

Interfacial adhesion of polylactic acid and nano/micro crystalline cellulose was characterized by using Scanning Electron Microscopy (SEM). Tensile, bending and impact strength tests were applied to investigate the effect of the reinforcements on the mechanical properties. Also, changes in the transition temperatures and thermal degradation temperatures of composites are examined by DSC and TGA.

Keywords: Green composites, Biopolymers, Cellulose reinforcement**.**

Acknowledgment: This study was supported, in part, by the Yıldız Technical University, Coordination Unit of Scientific Research Projects within the scope of the project number FYL-2017-3184 and by EUROTEC Engineering Plastics foundation.

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➢ **POSTER PRESENTATION**

Nanopartiküllerin Çeşitli Kanser Hücre Hatları Üzerine Sitotoksik Etkisi

Elif Apohan[1*], Özfer Yeşilada[1], Samet Uçar[2], Eray Tatlıcı[2], Mustafa Uçkun[2], Sema Erdemoğlu[3]

[1]İnönü Üniversitesi Fen Edebiyat Fakültesi Biyoloji Bölümü, Malatya
[2] İnönü Üniversitesi Fen Bilimleri Enstitüsü, Malatya
[3]İnönü Üniversitesi Fen Edebiyat Fakültesi Kimya Bölümü, Malatya

elif.apohan@inonu.edu.tr

Özet

Bu çalışmada doğadan izole edildikten sonra izolasyonu ve tanımlanması yapılmış *Bjerkandera adusta* nanopartikül eldesinde kullanılmış ve elde edilen nanopartiküllerin çeşitli hücre hatları (K562, A549 ve BEAS2B) üzerine sitotoksik etkisi araştırılmıştır. Bu amaçla akciğer kanseri (A549) ve akciğer epitel hücrelerinin (BEAS2B) hücreleri %10 fetal sığır serumu ve %1 oranında penisilin ve streptomisin içeren DMEM, ve kronik myeloid lösemi (K562) hücreleri de %10 fetal sığır serumu ve %1 oranında penisilin ve streptomisin içeren RPMI ortamında %5'lik CO_2 içeren nemli atmosferde, 37ºC'de inkübe edilerek çoğaltılmış ve devamlılıkları sağlanmıştır.
Çalışmada, stok kültür olarak depolanmış *B. adusta* öncelikle pasajlanmış ve daha sonra üretimi yapılmıştır. Çalışma sonucu elde edilen filtratla farklı koşullarda nanopartikül sentezlenmiş ve elde edilen nanopartiküller sitotoksik aktivite çalışmalarında kullanılmıştır.
Çalışma sonuçları, nanopartiküllerin hücre hatları üzerine sitotoksik etkisinin olduğunu göstermiştir.

Anahtar Kelimeler: Nanopartikül, sitotoksisite, fungus

Bu çalışmayı 116Z336 nolu proje olarak destekleyen TÜBİTAK'a teşekkür ederiz.

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➢ **POSTER PRESENTATION**

Evaluation of Free Radical Scavenging Activity of Various Extracts of Fruit, Shell and Seed from *Crataegus monogyna* (hawthorn) from Malatya

Zehra Tekin*, F. Zehra Küçükbay

İnönü University, Faculty of Pharmacy, Department of Basic Pharmaceutical Sciences, 44280, Malatya, Turkey

Corresponding author e-mail:zehraa.kazan@gmail.com

Abstract

Recently in Turkey there has been a growing interest in knowledge and management of underutilized fruits, also known as minor, secondary or alternative fruits, such as the case of hawthorn fruits (*Crataegus spp*.). *Crataegus monogyna* (hawthorn), is a member of family Rosaceae. This species is widely distributed in Asia, Europe and North America and other north temperate regions. Over 1000 species of genus *Crataegus* have been identified worldwide. Hawthorn fruits (*Crataegus spp*.), may be a good source of antioxidants if is consumed as fresh fruit since we know that it produce a numerous beneficial effects for human health. The content of phytochemicals associated with the antioxidant activity of the fruits of species of hawthorn (*Crataegus* spp.; Rosacea) located in Turkey (Malatya) is unknown. The objective of the present study was to investigate the *in vitro* free radical scavenging activity of various fruit, shell and seed extracts (water, methanol, methanol:water, 1:1, ethanol, ethanol:water , 1:1) of *Crataegus monogyna* from Malatya (Battalgazi Town). *In vitro* free radical scavenging activities of the extracts were assessed against DPPH. The metal chelating activity and reducing power ability of the extracts were also determined. The free radical scavenging activity was found to be high in ethanolic extract for DPPH in a concentration dependent manner followed by ethanol:water, methanol:water, methanol and water extracts (Fig.1). The metal chelating activity (Fig.2) and reducing power ability was also found to be high in water extract and ethanolic extract respectively. The difference in scavenging potential of the extracts may be due to variation in the percentage of phyto-constituents extracted in various solvents. Thus the result suggests that the ethanolic extract of fruit pulp *Crataegus monogyna* could serve as a potential source of antioxidants.

Fig.1. Assay of DPPH radical scavenning activity of *Crataegus monogyna* fruit, shell and seed references BHA, BHT and alpha-tocopherol.

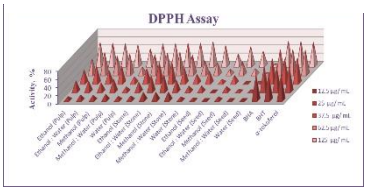
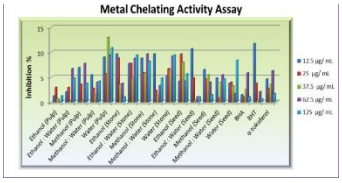


Fig.2. Assay of metal chelating activity of *Crataegus monogyna* fruit, shell and seed references BHA, BHT and alpha-tocopherol.



Keywords: Antioxidant activity, DPPH, Metal chelating activity, Reducing ability, *Crataegus monogyna.*

References: Edward J.E., Brown P.N., Talent N., Dickinson T.A., Shipley P.R., A review of the chemistry of the genus *Crataegus*, 79 (2012) 5-26

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➢ **POSTER PRESENTATION**

Sodyum Arsenat ile İndüklenen Karaciğer Toksisitesine Karşı Hesperidin'in Koruyucu Etkileri

Erdinç Türk[1*], Fatih Mehmet Kandemir[2], Serkan Yıldırım[3], Cüneyt Çağlayan[4], Sefa Küçükler[2], Müslüm Kuzu[5]

[*1]Ağrı İbrahim Çeçen Üniversitesi, Eczacılık Fakültesi, Eczacılık Meslek Bilimleri Bölümü, Ağrı, Türkiye
[2]Atatürk Üniversitesi, Veteriner Fakültesi, Temel Bilimler Bölümü, Erzurum, Türkiye
[3]Atatürk Üniversitesi, Veteriner Fakültesi, Klinik Öncesi Bilimler Bölümü, Erzurum, Türkiye
[4]Bingöl Üniversitesi, Veteriner Fakültesi, Temel Bilimler Bölümü, Bingöl, Türkiye
[5]Ağrı İbrahim Çeçen Üniversitesi, Eczacılık Fakültesi, Temel Eczacılık Bilimleri Bölümü, Ağrı, Türkiye

Sorumlu yazar e-mail: eturk@agri.edu.tr

Özet

Çevresel toksik bir ajan olan sodyum arsenat, insan sağlığı üzerinde istenmeyen birçok yan etkilere neden olur. En önemli istenmeyen etkilerinden biri ilaçların biyotrasformasyona uğradığı ve atıldığı organ olan karaciğer toksikasyonudur. Hesperidin antioksidan, anti-inflamatuvar, anti-hipertansif, anti-kanserojenik, anti-hiperlipidemik ve ödem giderici gibi birçok farmakolojik özelliklere sahip biyoflavonoiddir. Bu çalışma ratlarda sodyum arsenat ile indüklenen karaciğer toksisitesine karşın hesperidin'in koruyucu etkilerinin araştırılması için yapıldı. Ratlara (10mg/kg/gün) sodyum arsenat ve hesperidin (100 ve 200mg/kg/gün) 15 gün boyunca oral yoldan gavaj ile verildi. Sodyum arsenat; katalaz (CAT), süperoksit dismutaz (SOD) ve glutatyon peroksidaz (GPx) gibi antioksidan enzim aktivitelerini ve glutatyon (GSH) seviyesini azaltıp malondialdehit (MDA) düzeyini artırarak oksidatif hasara neden olduğu belirlendi. NF-κB, TNF-α ve IL-1β gibi inflamasyon göstergelerini artırdığı tespit edildi. Bunun yanı sıra sodyum arsenat grubunda serum alanin amino transferaz (ALT) ve aspartat amino transferaz (AST) enzim aktivitelerinde artış gözlendi. Diğer taraftan hesperidinin tedavisi doza bağımlı olarak antioksidan enzim aktivitelerini ve GSH seviyesini artırıp, malondialdehit (MDA) düzeyini azalttığı belirlendi. Hesperidin uygulan gruplarda serum ALT ve AST enzim aktivitelerinin azaldığı belirlenirken, karaciğer dokusunda inflamasyon parametrelerinin seviyesinde düşüş gözlendi. Bu çalışmadan elde edilen veriler ışığında hesperidin'in sodyum arsenat ile indüklenmiş karaciğer toksisitesine karşı koruyucu etkisinin olduğu söylenebilir.

Anahtar Kelimeler: Sodyum arsenat, Hesperidin, Hepatoksisite, Antioksidan.

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➢ **POSTER PRESENTATION**

Synthesis and Spectroscopic Properties of Novel Perylene Diimides Modified with Benzimidazole

Fatih Pekdemir*, Abdurrahman Şengül

Bülent Ecevit University, Faculty of Arts and Sciences, Department of Chemistry, Zonguldak, Turkey

Corresponding author e-mail: fatihpekdemir@beun.edu.tr

Abstract

Benzimidazole, a fused heterocycle bearing benzene and imidazole has gained considerable attention in the field of modern medicinal chemistry. Benzimidazole derivatives are of substantial importance because of its wide array of pharmacological activities [1]. On the other hand, Perylenediimides (PDIs), are highly versatile dyes and pigments which find applications in diverse fields, such as organic light-emitting diodes, molecular switches and wires, light-harvesting arrays, photoreactive thin films, solar cells, and dye lasers, among others [2]. Perylene dimides and benzimidazoles are the hot topics in current chemical research.

In this study, new benzimidazole fused perylene diimides were synthesized. The structures of these newly synthesized molecules were characterized by FT-IR, MS and ^{1}H-NMR techniques.

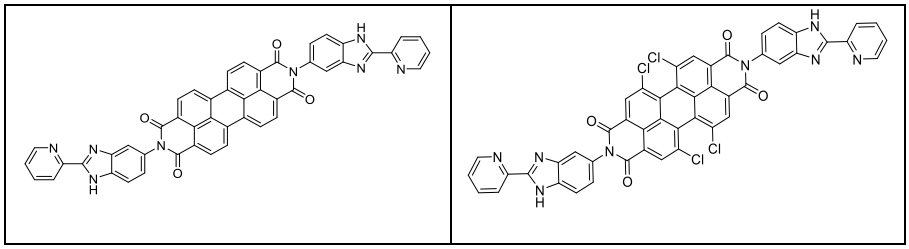

Figure 1. Novel Perylene dimide molecules.

Keywords: Benzimidazole, perylene diimide, synthesis.

Acknowledgments: This study was supported by TÜBİTAK (The Scientific and Technical Research Council of Turkey-Project Numbers: 214Z090)

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➢ **POSTER PRESENTATION**

Polistinae and Vespinae (Insecta: Hymenoptera: Vespidae) Fauna Collected from Different Localities of Turkey

Ayla Tüzün*, Samet Eray Yalniz

Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey.

Corresponding author e-mail: atuzun@science.ankara.edu.tr

Abstract

This study is based on the examination of 1596 specimens of Polistinae and Vespinae (Insecta: Hymenoptera: Vespidae) fauna collected from different localities of Turkey between 1979 and 2017. New localities have been identified for some species that were already stated to be available in Turkey. A museum material has been created with these specimens and they are identified according to their morphology, color, and pattern. A Leica brand EZ4 stereomicroscope was used for the identification. For the identification and classification of the specimens, the studies of Guseinleitner (1966), Akre vd. (1981), Carpenter (1987), Tüzün & Tanyolaç (1987), Archer (1989a, 1989b), Özbay (1992), Goulet & Huber (1993), Carpenter & Kojima (1997), Dvořák & Castro (2007), Yıldırım (2012, 2016) were referred.

The first records are as follows; for Giresun Province, Turkey; *Vespa crabro* Linnaeus 1758, *Polistes (Polistes) gallicus* (Linnaeus 1767), *Polistes (Polistes) nimpha* (Christ 1791), *Polistes (Polistes) dominula* (Christ 1791), *Polistes (Polistes) biglumis* (Linnaeus 1758), *Polistes (Polistes) associus* Kohl 1898, and for Çankırı Province, Turkey; *Vespa orientalis* Linnaeus 1771, *Vespa crabro* Linnaeus 1758, *Vespula (Paravespula) vulgaris* (Linnaeus 1758), *Dolichovespula (Metavespula) sylvestris* (Scopoli 1763), *Dolichovespula (Pseudovespula) omissa* (Bischoff 1931), *Polistes (Polistes) gallicus* (Linnaeus 1767), *Polistes (Polistes) nimpha* (Christ 1791), *Polistes (Polistes) dominula* (Christ 1791), and for Afyon, Kütahya and Uşak Provinces of Turkey; *Polistes (Polistes) nimpha* (Christ 1791), *Polistes (Polistes) dominula* (Christ 1791), *Polistes (Polistes) associus* Kohl 1898. The new records are as follows; for Çankırı and Giresun Provinces of Turkey; *Vespula (Paravespula) germanica* (Fabricius 1793), and for Giresun Province, Turkey *Vespula (Paravespula) vulgaris* (Linnaeus 1758), and for Mardin Province, Turkey; *Vespa orientalis* Linnaeus 1771, *Vespula (Paravespula) germanica* (Fabricius 1793). As a result, in this study, we have contributed to this fauna by adding 17 first records and 4 new records in Turkey.

Keywords: Insecta, Hymenoptera, Vespoidea, Vespidae, Vespinae, Polistinae.

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➢ **POSTER PRESENTATION**

Adsorption of Methylene Blue on Hollow Silica Sphere Functionalized with Natural Resin

Hakan Duran*, Tuba Şişmanoğlu

Istanbul University, Engineering Faculty, Department of Chemistry, Avcılar-İstanbul,TURKEY

Corresponding author (T.Şişmanoğlu) e-mail: tusase@istanbul.edu.tr

Abstract

Methylene blue (MB) (3,7-bis(dimethylamino)-phenazathionium chloride is a thiazine cationic dye. Methylene Blue has mutagenic and carcinogenic properties. Acacia Senegal (GA) is natural resin, GA is branched heteropolysaccharide. Hollow silica spheres gaining increasing attention, thanks to low density, high specific surface and good adsorption performance. In this work, Acacia Senegal (GA) and hollow silica sphere nanoparticles were combined for adsorption of Methylene blue (MB). In the first step ball miling was used for the preparation of hollow silica spheres. In the second step epoxidation process is applied, where HSS was functionalized using epichlorohydrin. Then GA attended on to epoxy functionalized HSS. After epoxidation of the HSS these units were chemically binding to GA units. Characterizations of GA functionalized Hollow Silica Sphere (HSEPCGA) were done by FTIR and SEM technique was used to demonstrated surface morphology. Adsorption of methylene blue on HSEPCGA was achieved a good. The absorbance values of the dyes on HSEPCGA were measured by UV-vis spectrophotometer. Adsorption isotherm experiments of these dyes at four different concentrations were carried out at 35°C with Freundlich, Langmuir and Dubinin–Radushkevich (DR) methods.

Keywords: Adsorption, Methylene Blue, Hollow Silica Sphere.

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➢ **POSTER PRESENTATION**

Sphecidae and Crabronidae (Insecta: Hymenoptera: Aculeata) Fauna of Adana Province, Turkey

Ayla Tüzün*, Merve Sönmez

Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey.

Corresponding author e-mail: atuzun@science.ankara.edu.tr

Abstract

This study is based on the examination of 331 specimens of Sphecidae and Crabronidae collected from different localities of Adana Province between May and September 2017. The specimens were caught with a 25-30 cm of the aerial net and killed in killing bottles prepared with a mixture of potassium cyanide and gypsum. Their head, thorax, abdomen and morphological characters in their extensions were used for the identification of the species. For the identification and classification of the species, the studies of Bohart & Menke (1976), Tüzün, Gülmez & Bağrıaçık (1999), Schmid-Egger (2004), Tüzün & Gülmez (2005), Yıldırım (2011, 2014, 2016) were referred.

The first records belonging family Sphecidae are *Prionyx viduatus viduatus* (Christ 1791), *Isodontia paludosa* (Rossi 1790), *Palmodes strigulasus* (Costa 1861), *Ammophila terminata mocsaryi* Frivaldsky 1877, *Ammophila sabulosa sabulosa* (Linnaeus 1758), *Chalybion (Hemichalybion) femoratum* (Fabricius 1781), and belonging to the family Crabronidae are *Cerceris flavicornis* Brulle 1833, *Bembix bicolor* Radoszkowski 1877, *Tachysphex fulvitarsis* (Costa 1867), *Tachysphex pompiliformis* (Panzer 1805).

Podalonia tydie tydei (Le Guillou 1841), *Sphex (Sphex) funerarius* Gussakovskij 1934, *Podalonia fera* (Lepeletier de Saint-Fargeau 1845), *Sphex (Sphex) flavipennis* Fabricius 1793, *Podalonia hirsuta hirsuta* (Scopoli 1763), *Sceliphron (Sceliphron) destillatorium* (Illiger 1807), *Ammophila heydeni heydeni* Dahlbom 1845 belonging to the family Sphecidae, and *Bembix oculata* Panzer 1801, *Philanthus triangulum* (Fabricius 1775), *Cerceris sabulosa* (Panzer 1799), *Cerceris arenaria* (Linnaeus 1758) belonging to the family Crabronidae are new records.

As a result, in this study, we have contributed to the knowledge of fauna of Adana Province, Turkey with the total of 13 specimens belonging to the family Sphecidae, 7 of which is new record and 6 of which is first record, and total of 8 specimens belonging to the family Crabronidae, 4 of which is new record and 4 of which is first record.

Keywords: Insecta, Hymenoptera, Apoidea, Sphecidae, Crabronidae, Fauna.

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➢ **POSTER PRESENTATION**

Çeşitli Klinik Örneklerden İzole Edilen *Staphylococcus* ve *Enterococcus* Türlerinin Antibiyotik Direnç Profillerinin Araştırılması

Tuba Aktuğran[1*], M.Burcu Külahci[1], Fatma Nurhayat Bayazit[2], Sumru Çitak[1]

[1] Gazi Üniversitesi Fen Fakültesi Biyoloji Bölümü Genel Biyoloji, Ankara, Türkiye
[2]Medikal Park Hastanesi Enfeksiyon Hastalıkları ve Mikrobiyoloji,Ankara,Türkiye

Sorumlu yazar e-mail: tubaaktugran@gmail.com

Özet

Staphylococcus ve *Enterococcus*'lar normal vücut flora üyeleri olmalarına rağmen, idrar, yara, kan enfeksiyonları gibi enfeksiyonlarda en sık görülen gram pozitif bakterilerdir. Bu bakteriler antibiyotiklere değişik yollardan dirençli hale gelebilmektedirler. Yüksek antibiyotik direnci tedavi başarısını azaltarak hastalarda mortalite, morbidite ve hastanede yatış süresinin artışına neden olmaktadır.

Bu çalışmada Kasım 2017 ile Şubat 2018 tarihleri arasında Ankara'daki bir özel hastanedeki çeşitli klinik örneklerden izole edilen *Staphylococcus* ve *Enterococcus'* ların tür dağılımı ve antibiyotik direnç profillerinin belirlenmesi amaçlanmıştır.

Klasik kültür yöntemleriyle izole edilen *Staphylococcus* ve *Enterococcus* izolatlarının tür tanımlamaları ve antibiyotik direnç profillerinin belirlenmesi Vitek 2 Compact cihazında yapılmıştır.

9'u yatan,15'sı poliklinik hastasından elde edilen 24 *Staphylococcus* izolatından 21(%87,5) izolatın penisiline, 2(%8,33) izolatın gentamisine, 10(%41,6) izolatın eritromisine, 6(%25) izolatın fusidik asite,7(%29,16) izolatın tetrasikline,4 (%16,6) izolatın klindamisine,5(%20,83) izolatın siprofloksasine,3'er (%12,5) izolatın linezolid ve oksasilin olmak üzere 2 farklı antibiyotiğe, dirençli olduğu; 2(%8,33) izolatın fusidik aside, 7(%29,16)izolatın da eritromisine orta dirençli olduğu, 2(%8,33) izolatın da çalışılan tüm antibiyotiklere duyarlı olduğu tespit edilmiştir.

11'i yatan, 17'si poliklinik hastasından elde edilen 28 *Enterococcus* izolatların 28(% 100) eritromisine, 10(%35,71) izolatın siprofloksasine, 27(%96,42) izolatın klindamisine, 21(%75) izolatın tetrasikline, 4 (%14,28) izolatın trimetoprim/sülfametaksazola, 8(%28,57) izolatın penisilin ve ampisiline olmak üzere 2 farklı antibiyotiğe ve 1(%3,57) izolatın da vankomisin ve teikoplanin olmak üzere 2 farklı antibiyotiğe dirençli olduğu; 24(%85,71) izolatın trimetoprim/sülfametaksazola orta dirençli olduğu tespit edilmiştir.

Enfeksiyonların tedavisinde antibiyotik seçiminin doğru yapılabilmesi için bölgesel antibiyotik dirençlerindeki değişimlerin izlenmesi önemlidir. Antibiyotiklerin uygun kullanılmaması antibiyotik direncinin artmasına ve başlangıç tedavilerinin başarısız olmasına neden olur. Her hastanenin direnç profilini belirlemesi uygun yaklaşım olarak değerlendirilmektedir.

Anahtar Kelimeler: *Staphylococcus, Enterococcus,* antibiyotik direnci.

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➢ **POSTER PRESENTATION**

Kapalı Devre Yetiştiricilik Sistemlerinde Amonyak Yönetimi

Ramazan SEREZLİ[1*], Sevim, HAMZAÇEBİ[1], Bahadır UĞURAL[1]

İzmir Kâtip Çelebi Üniversitesi, Su Ürünleri Fakültesi, Yetiştiricilik Bölümü İzmir, Türkiye

Sorumlu yazar e-mail: ramazan.serezli@ikc.edu.tr

Özet

Su ürünleri yetiştiriciliği, dünya genelinde büyüme gösteren ilk on üretim sektörü içerisinde yer almaktadır. Yetiştiricilik amaçlı farklı üretim uygulamaları bulunmakla birlikte, günümüzde kapalı devre yetiştiricilik sistemleri en fazla rağbet gören üretim modelleridir. Kapalı devre sistemler, yetiştiriciliğin tam kontrolünün yapılabildiği, az oranda su tüketimi ile fazla miktarlarda verim alınabilen modern sistemlerdir. Birçok avantaja sahip olan bu sistemlerde su kalitesi iyi yönetilemez ise üretim sekteye uğrayabilmektedir. Azotlu bileşikler kapalı devre sistemlerde en fazla sorun oluşturan bileşikler olup mekanik filtrasyon ve havalandırma ile uzaklaştırılamazlar. Sucul ortamlarda bulunan azotlu bileşikler nitrit, nitrat ve amonyak olup bu bileşikler belirli şartlarda birbirine dönüşebilirler. Sucul hayvanlar için amonyak ve nitrit düşük dozlar bile nitrata göre daha toksik bileşiklerdir. Amonyak, sıcaklık ve pH'a bağlı olarak iyonize (NH_4^+) veya iyonize olmamış (NH_3) yapıdadır. Her ikisinin toplamı toplam amonyak olarak ifade edilir. Ortamın pH'ı 7'nin üzerine çıktıkça iyonize olmamış amonyak artar ve sistemdeki canlı hayvanlar üzerinde olumsuzluklar meydana gelir.

Bu çalışma su ürünleri yetiştiriciliği açısından her zaman problem oluşturan en önemli azotlu bileşiklerden biri olan amonyağın etkilerini ve sucul canlılarda hangi miktarlarda etki oluşturduğunu ortaya koymak amacıyla yapılmıştır. En büyük etkiler kapalı devre yetiştiricilik sistemlerinde karşımıza çıkmaktadır ve bu nedenle amonyağın yönetimi ve ortamdan uzaklaştırılması oldukça önemlidir.

Anahtar Kelimeler: Amonyak, Nitrit, RAS, Toplam amonyum azotu, TAN.

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➢ **POSTER PRESENTATION**

Using Drag Reducing Polymer Instead of Blood and Blood Supplies during Hemorrhagic Shock

Gulden Akçay[1*], Tanzeel Ur Rehman[1], Alper Savas[2], Yasemin Yuksel Durmaz[1], Ece Salihoglu[3]

[1]Istanbul Medipol University, School of Engineering and Natural Sciences, Department of Biomedical Engineering, Istanbul, Turkey.
[2]Istanbul Medipol University, Mega University Hospital, Istanbul, Turkey
[3]Istanbul Bilim University, Department of Cardiovascular Surgery, Istanbul, Turkey

Corresponding author e-mail: gakcay@st.medipol.edu.tr

Abstract

Hemorrhagic shock is one of the most important death reasons among traumatized patient with serious hypovolemi depending hemorrhage, which is responsible for half of traumatized death. There is one treatment that lost volume is replaced with colloids or colloidal liquids. According to studies, just enough liquid should be given and never loading liquid to alter blood pressure back to normal level, otherwise, hemorrhage will be increase and this increase may lead mortality. Due to this, there is a need of aggressive resuscitation agents that can fix endogenic and hemostatic mechanism which are disturbed during hemorrhagic shock. Although there are 2.5 million units blood is yearly needed in our country, voluntaries are few. On the other hand, blood preparation is costly and has potential infection. These problems are helped to seek an alternative strategy. Drug reducing polymer (DRP) are blood soluble long chains with high molecular weight have significant effect on blood circulation even if it is added very small concentration into blood. DRP increases the blood flow and lowers the decrease in blood pressure by decreasing the resistance against blood flow.
In this study, natural Aloe vera plant based DRPs were investigated. Aloe vera plant extract was obtained as DRP and this long chain was modified to have oxygen carrying capacity. Plain DRPs are also known to help tissue oxygenation by lowering the plasma layer between vessel wall and blood. An additional oxygen carrying ability is expected to create a synergetic effect. Obtained DRPs were characterized and their drag reduction effect (DRE) was measured using Extracorporeal Membrane Oxygenation (ECMO) system. Results showed that DRE properties proportional with the molecular weight of extracted polymer as expected and modified DRP showed the potential of enhancing oxygen carrying capacity of solution.

Keywords: Hemorrhagic shock, Drug reducing polymer (DRP), resuscitation agent, blood pressure, oxygen carrier.

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➢ **POSTER PRESENTATION**

Preparation of Modified PAN Fiber for the removal of Fluoride from Aqueous Solutions

Onur Yılmaz, Aydın Çiçek, Özgür Arar*, Müşerref Arda

*1Ege University, Faculty of Science, Department of Chemistry, Izmir, Turkey

Corresponding author e-mail: ozgur.arar@ege.edu.tr

Abstract

Fluoride is a critical component for dental and bone health of mammals and is beneficial for mineralization of hard tissues in the human body, but excess fluoride from food and beverages may cause skeletal fluorosis, mottling of teeth, deformation of bones, and neurological damage. According to the World Health Organization, fluoride may be present in drinking water, and it is considered to be beneficial at levels of approximately 0.7 mg L^{-1} but hazardous above 1.5 mg L^{-1}. Various treatment technologies based on precipitation, ion exchange, adsorption, and membrane process such as reverse osmosis, nanofiltration, Donnan dialysis and electrodialysis have been suggested for fluoride removal. In this work, polyacrylonitrile fiber was modified for the removal of fluoride from aqueous solutions. The aluminum ion was loaded to fiber for the selective removal of fluoride. The prepared sorbent was characterized by various technologies. The influence of various defluoridating parameters such as initial solution pH, temperature and competing anions on the defluoridation capacity of the modified fiber was optimized. The experimental data were fitted with various isotherms to find the best-fit model for the sorption system. The analysis of fluoride was performed spectrophotometrically using Alizarin Red S method.

Keywords: Fluoride removal, PAN fiber, Sorption, Water treatment

Acknowledgments: This study has been supported by The Scientific and Technological Research Council of Turkey (TUBITAK-Program code: 2209).

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➢ **POSTER PRESENTATION**

Metal Organic Frameworks as Adsorbents to Remove Chloropropanol (MCPD) and Glycidyl Esters (GE) from Edible Oils

Emin Yılmaz*, Tülay Şahin

Çanakkale Onsekiz Mart University, Faculty of Engineering, Department of Food Engineering

Corresponding author e-mail: eyilmaz@comu.edu.tr

Abstract

Chloropropanol (MCPD) and Glycidyl Esters (GE) are process contaminants dedected in some edible oils, and their toxicological effects were well documented. Most countries in the world have limited their existence in foods by legislative issues. During edible oil refining and deodorization process and other thermal processes, they are formed chemically. It is a serious problem in palm oil, which is a commonly consumed oil in our country as well. There were studies in literature dealing to prevent their occurrence and/or to remove the present esters from edible oils. Some successful results were achieved with some natural and synthetic adsorbent materials. But the very new adsorbent materials arised from sythesis chemistry known as Metal Organic Frameworks (MOF) have not been studied in this area yet. There are quite successful findings of the removal of free acids and peroxides from edible oils by MOF applications. Hence, application of MOFs for the removal of MCPDs and GEs is a very novel idea. In this study, some important adsorbent material properties of the MOFs were discussed. Their surface and porosity properties, electron microscopy images, and X-ray diffraction patterns indicated that they are special materials. In previous studies, high capacities of free fatty acid and peroxides adsorption by the MOFs were presented. Hence, it is important to study the selective adsorption properties of the MOFs against the process contaminants MCPDs and GEs. If achieved, this would be very important in final bleaching process of palm oil refining. There are some studies with natural clays and bleaching earths to remove the MCPDs and GEs from edible oils with limited successes. This presentation is produced from the master thesis of Tülay Şahin, who is the graduate student in the Graduate School of Natural and Applied Sciences at Çanakkale Onsekiz Mart University.

Keywords: Chloropropanol, Glycidyl Esters, Palm Oil, Metal Organic Frameworks, Adsorption, Removal.

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➢ **POSTER PRESENTATION**

Güneş Panellerinde Yeni Bir Teknoloji: Solar Kar Önleyici Sistem

Emre Gül, Buket Bezgin Çarbaş*

Karamanoğlu Mehmetbey Üniversitesi, Enerji Sistemleri Mühendisliği, 70100 Karaman, TÜRKİYE
İletken Polimerler ve Enerji Uygulamaları Laboratuvarı, Karamanoğlu Mehmetbey Üniversitesi, 70100 Karaman, TÜRKİYE

Sorumlu yazar e-mail: bcarbas@kmu.edu.tr

Özet

Güneş kuşkusuz ki en büyük ve en temiz enerji kaynaklarımızdan biridir. Bu devasa güç kaynağını enerjiye çevirebilmek için birçok fotovoltaik yenilenebilir enerji sistemi geliştirilmektedir. Fotovoltaik sistemlerdeki en büyük problem enerjinin mevsimsel olarak devamlılık göstermemesidir. Bu çalışmada kış aylarında da kesintisiz bir şekilde elektrik enerjisi üretimini gerçekleştirmek amaçlanmıştır. Kış aylarında kar yağışı sırasında çalışmaya başlayan ve yağış sensörü ile otomatik olarak aktif hale gelen bir mekanik sistem geliştirilmiştir. Bu sistem insan gücü kullanmadan panel yüzey temizliğini sağlayan ve panel yüzeyinde kar birikimini önleyen bir mekanizmadır. Ayrıca bu sistem sayesinde yağmur yağışı sonucu panel yüzeyinde oluşan su lekelerinin de önüne geçilmesi hedeflenmektedir. Bu proje sayesinde gerekli olan elektrik enerjisi yaz kış kesintisiz olarak üretilebilecektir. Sistemin en önemli özelliği tüm bu işi insan gücü kullanmadan en kısa sürede, en az maliyetle, en iyi şekilde gerçekleştirmesi ve üretimin sürekliliğine destek vermesidir.

Anahtar Kelimeler: Güneş enerjisi, Fotovoltaik sistemler, Solar Panel temizliği, Mevsimsel Etki.

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➢ **POSTER PRESENTATION**

Biyomimetik Hidroksiapatit Kemik Grefti Üretiminde Tane Boyutu ve Şekil Değişiminin İncelenmesi

Afife Binnaz Hazar Yoruç[1*], Abdullah Toraman[2]

[1]Yıldız Teknik Üniversitesi, Kimya-Metalurji Fakültesi, Metalurji ve Malzeme Mühendisliği, İstanbul, Türkiye
[2]Yıldız Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Kimya, İstanbul, Türkiye

Sorumlu yazar e-mail: afife.hazar@gmail.com

Özet

Kemiği oluşturan inorganik fazın; hidroksiapatit (HA) [$Ca_{10}(PO_4)_6(OH)_2$];olarak adlandırılan kalsiyum fosfat apatiti olduğu bilinmektedir. HA; yüksek biyouyumluluğu ve kemiğin mineral yapısına benzerliği nedeniyle ortopedi ve diş hekimliği alanında yaygın bir kullanıma sahiptir.

Bu çalışmada, sert doku uygulamalarında yaygın olarak tercih edilen HA seramik tozu, kalsiyum ve fosfor içeren başlangıç maddeleri kullanılarak, fizyolojik koşullarda (37°C, pH:7.4) sentetik vücut sıvısı (SVS) içinde üretilmiştir. Üretilen HA seramik tozundan klinik kullanıma uygun özellikte çeşitli greft malzemesi üretimleri denenmiştir. Bu amaçla biyomimetik HA tozuna %5, %10 ve %20 PVA ilave edilerek çeşitli ürünler elde edilmiş, elde edilen ürünlerin özellikleri incelenmiştir.

Üretilen numunelerin FTIR ve XRD ile kimyasal yapıları, Zetasizer ile tane boyutu, BET analizi ile de yüzey alanları belirlenmiştir. Ayrıca sentezlenen tozların morfolojileri TEM ve SEM görüntüleri ile incelenmiştir.

PVA ilavesi ile üretilmiş HA seramik toz bileşimlerinin literatür bilgisiyle uyumlu olduğu görülmüştür. Üretilen greftlerin 2-5 nm çapında ve 20-50 nm uzunluk aralığında değişen, çubuksu yapıya sahip olduğu belirlenmiştir. Ayrıca %5 ve %20 oranlarında PVA çözeltisi ile karıştırılan HA greftlerin, %10 oranında PVA çözeltisi ile karıştırılan HA greftlerine göre daha homojen bir morfolojik yapı ve tane boyutu sergilediği görülmüştür.

Anahtar Kelimeler: Biyomimetik, Hidrosiapatit, PVA, Morfoloji, HA Greft.

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➢ **POSTER PRESENTATION**

Adsorbtion of Copper by *Fennelia nivea* Powder

Muhammed Hasan Akyıl*, Seda Şen, Sevgi Özacar, Melike Gümüş, Doruk Aracagök, Nilüfer Cihangir

Hacettepe Univesity, Department of Biology

Abstract

Heavy metals are naturally occurring trace amounts of toxic substances that can be transmitted to the environment in large quantities as a result of urban and industrial processesCopper is a heavy metal that causes many diseases such as stomach aches, nausea and Wilson's disease. Biosorption occurs naturally in certain biomass which allows it to bind contaminants onto its cellular structure. Biosorption is regarded as a promising future approach due to its low cost, practical implementation and high efficiency. In this study we aim to use *Fennelia nivea* powder to absorb Copper. In order to obtain *Fennelia nivea* powder, culture liquid was separated from biomass through filtration (Whatmann No.1). After filtration biomass left to dry (4 days 30°C). Dried *Fennelia nivea* homogenized with homogenizer. In further process biomass sieved(<=0,015 mm) and used for adsorption. 0,005 M CUSO4 and 0,1 gr *Fennelia nivea* powder incubated for 1 day (30 °C, 150 rpm). This study shows that Fennelia nivea for Copper adsorbtion.

Keywords: Copper adsorbtion, Heavy Metal, *Fennelia Nivea*.

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➢ **POSTER PRESENTATION**

Yenilikçi Bir Teknoloji: Akıllı Otopark Projesi

Kübra Kum, Emre Gül, Buket Bezgin Çarbaş

Karamanoğlu Mehmetbey Üniversitesi, Enerji Sistemleri Mühendisliği, 70100 Karaman, TÜRKİYE
İletken Polimerler ve Enerji Uygulamaları Laboratuvarı, Karamanoğlu Mehmetbey Üniversitesi, 70100 Karaman, TÜRKİYE

Sorumlu yazar e-mail: bcarbas@kmu.edu.tr

Özet

Teknolojinin hızlı bir şekilde gelişmesiyle birlikte, beraberinde birçok yenilik ve kolaylıklar getirmiştir. Bu özelliği ile teknoloji hayatımızın vazgeçilmez bir parçası olmuştur. Bu yeniliklerden biri de tartışmasız akıllı otopark sistemleridir. Bu proje ile otoparklardaki karmaşanın ve yaşanılan sorunların ortadan kalkması ve en aza indirilmesi amaçlanmıştır. Css c ve proteus programları kullanılarak elektronik devre tasarlanmıştır. Otoparkın dolu olup olmadığı ve araçların kaç numaralı park yerleri boşsa onlara yönlendirileceği bir sistemdir. Bunun için sistem için uygun sensörler kullanılmıştır. Proje geliştirilme aşamasında olup, otopark çıkışında araçların otomatik ücretlerinin hesaplanabilmesi için park yerlerine ayrı ayrı sensörler kullanılarak güvenlik sitemine gerek kalmadan kolaylık sağlanabilmesi amaçlanmıştır. Hayatı kolaylaştırmak için yapılan bu projede sayesinde yaşanan sorunlar ortadan kalkmıştır.

Anahtar kelimeler : Akıllı otopark sistemleri, Elektronik devreler, Devre tasarımı.

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➢ **POSTER PRESENTATION**

Chemical Constituents from *Porodaedalea pini* and Their Cytotoxic Activities

Ebru Deveci[1*], Gülsen Tel-Çayan[2], Mehmet Emin Duru[1], Mehmet Öztürk[1], Atia Tul-Wahab[3]

[1]Muğla Sıtkı Kocman University, Faculty of Science, Department of Chemistry, 48121 Muğla, TURKEY
[2]Muğla Sıtkı Kocman University, Muğla Vocational School, Department of Chemistry and Chemical Processing Technologies, 48121 Muğla, TURKEY
[3]H.E.J Research Institute of Chemistry, ICCBS, University of Karachi, Karachi 75270, Pakistan

Corresponding author e-mail: ezengin@mu.edu.tr

Abstract

Up to this time, it has been found that mushrooms are a good source of various secondary metabolites showing biological activity such as anticancer, antitumor, immunomodulating, antibacterial, cytotoxic and antioxidant activities [1]. Cancer has become the leading cause of human deaths and therefore a lot of research is being done to discover powerful and effective cancer drugs from natural sources [2].

Porodaedalea pini belongs to *Phellinus* genus and the family Hymenochaetaceae. *P. pini* is a white-rot fungus and is usually grown under the pine trees. In this study, five compounds from the methanol extract of *P. pini* were isolated by using silica gel column chromatography and recycle HPLC. Compounds were identified as ergosta-7,24(28)-dien-3*β*-ol (**1**), ergosterol peroxide (**2**), dioctyl phthalate (**3**), (+)-pinoresinol (**4**) and 4-(3,4-dihydroxyphenyl)but-3-en-2-one (**5**), based on their NMR spectral data which were in agreement with those published previously. Cytotoxic activities against breast cancer (MCF-7 cells) of the compounds were tested by using MTT cytotoxicity assay. (+)-pinoresinol exhibited the highest activity against MCF-7 cells indicating IC_{50}: 21.08±1.01 µg/mL followed by ergosta-7,24(28)-dien-3*β*-ol (IC_{50}: 24.15±0.86 µg/mL) and dioctyl phthalate (IC_{50}: 38.52±0.71 µg/mL).

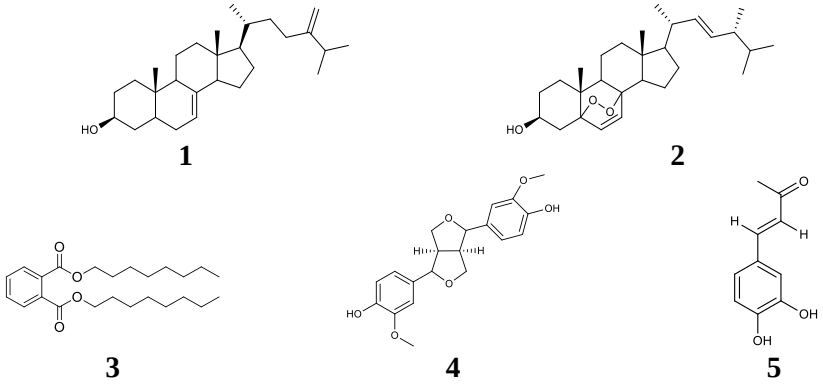

Fig 1. Chemical structure of the isolated compounds from *P. pini*

Keywords: *Porodaedalea pini*, isolation, cytotoxic activity, breast cancer.

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➢ **POSTER PRESENTATION**

Molecular Docking Studies of Some Benzimidazole Derivatives as an alpha-glucosidase inhibitors

Mustafa Emirik[1*] Musa Özil[1]

[*1]Department of Chemistry, Art and Science Faculty, Recep Tayyip Erdogan University, Rize, Turkey.

mustafa.emirik@erdogan.edu.tr

Abstract

The wide range of biological activities of benzimidazole has made it a preferred structure for the modern drug discovery. Benzimidazole structures are classified under several ATC groups such as antineoplastic-abemaciclib, antibiotic-ridinilazole, histamine H4 receptor antagonist-toreforant and the proton pump inhibitor-tegoprazan, which represents substances used in both human and veterinary medicine. Thus, benzimidazoles of both synthetic and natural sources are the key components of many bioactive compounds.

The docking scores of the studied compounds with pdbid:3TOP were obtained. The docking poses of the most active ligands 4b, 5b and 7b were illustrated. The docking scores have a positive correlation with the experimental results, in general. The crystal ligand acarbose binds with forming H-bonding connections between OH groups of the acarbose and the oxygen atom of ASP1370, ASP1279, ASP1157 and ASP1526 amino acid residues. The docking study predicted that compound 4b binds to enzyme forming a hydrogen bond with TRP1369 residue through the C=O groups of the ligand and the salt bridge through the NOO moiety at the binding cavity. The other interaction involves p–p stacking interaction with PHE1560. The prominent interaction of compound 5b with enzyme is the hydrogen bond interaction formed between the nitrogen atom of ligand and THR1586 residue of a-glucosidase protein. The other arresting interactions are the salt bridge occurring between the NOO moiety of ligand and TRP1369 residue of a-glucosidase protein and p–p stacking interaction with TYR1258 amino acid residue.

Keywords: Benzimidazole**,** Alpha-glucosidase inhibitor**,** Docking

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➢ **POSTER PRESENTATION**

Determination of Antioxidant and Oxidant Status of *Coprinus comatus*

Ali İmran Korkmaz*,Hasan Akgul, Emre Cem Eraslan

Akdeniz University, Science Faculty, Department of Biology, Antalya, Turkey
Corresponding author e.mail: korkmazaliimran@gmail.com

Abstract

Mushrooms have long been used for nutritional and medical purposes. They are rich in protein and amino acids, as well as their texture and flavour, low in calories and are considered a nutritious food. In addition to their nutritive properties, they are considered as a significant source of medicinal substances due to their important biologically active compound content. The present study aimed to determine the total antioxidant status (TAS), total oxidant status (TOS) and oxidative stress index (OSI) of ethanol extracts of *Coprinus comatus* (O.F. Müll.) Pers. collected from Gaziantep province. TAS, TOS and OSI values were determined with Rel Assay Diagnostics kits. As a result of the studies, TAS value was determined as 3.928, TOS value was 36.139 and OSI value was 0.921. As a result, although *C. comatus* has antioxidant properties, it is suggested that the fungi collected from these regions should be consumed limitedly because of high oxidant values.

Keywords: *C.comatus*, Oxidative stress, Gaziantep.

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➢ **POSTER PRESENTATION**

Antibiyotik Üreten *Streptomyces* Türleri ve Antimikrobiyal Özellikleri

Mete Karaboyun, Sevil Toroğlu*

Kahramanmaraş Sütçü İmam Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, 46100, Kahramanmaraş

Sorumlu yazar e-mail: storoglu@ksu.edu.tr

Özet

Bu derlemenin amacı, dünyada antibiyotiklere karşı artan mikrobiyal direnç ve bulaşıcı hastalıkların kontrolü nedeniyle antibiyotik üreten Streptomyces sp. lerin ve mikroorganizmların araştırılması, antimikrobiyal aktivitelerini çalışmak için uygulanan farklı metodların verilmesi ve bu konuda yapılmış olan çalışmaların sunulmasıdır. Streptomyces, Gram pozitif bakterilerin bir türü olup, çeşitli ortamlarda bulunabilen (toprak, su bitki gibi) ve şekli hifli mayalara benzeyen bir bakteridir. Bu bakteriler doğal kökenli ve klinik olarak yararlı olan antibiyotiklerin üçte ikisinden fazlasını üretirler (örn., neomisin ve kloramfenikol vs.). Streptomyces'in morfolojik farklılaşması, bir hif tabakasının formasyonunu içermeleridir, hatta bu hif tabakası bir spor zinciri içinde farklılaşabilir. Bu süreç Gram pozitifleri arasında benzersizdir olup, özelleşmiş ve koordineli bir metabolizmayı gerektirir. Streptomyces'in en önemli özelliği, antifungal, antiviral, antitümoral, anti-hipertansif, immünosüpresanlar ve özellikle antibiyotikler gibi biyoaktive sekonder metabolitler üretme kabiliyetinde olmalarıdır. Bu cinsin başka bir karakteristik özelliği ise kompleks multicellular gelişmesidir, bu durum çimlenen sporların hif oluşturmasında gözlenir ki bu durum Multi-nuklear aerial mycelium'dur. Bu olay, düzenli aralıklarla bir çekirdeksiz spor zinciri yaratan septayı olurturur. Çoğu antibiyotik üretimi, türe özgüdür ve bu sekonder metabolitler Streptomyces türleri için diğer mikroorganizmalarla rekabet edebilmek için ve hatta aynı türde temas halinde olanlarda bile önemlidir. Antibiyotiklerin keşfedilmesinin başarısı ve üretim tekniklerindeki gelişmelere rağmen, bulaşıcı hastalıklar dünyadaki ikinci ölüm nedeni olmayı sürdürüyor ve bakteriyel enfeksiyonlar başta çocuklar ve yaşlıları etkileyerek yılda yaklaşık 17 milyon kişinin ölümüne neden oluyor. Kendi kendine ilaç alma ve aşırı antibiyotik kullanımı başka bir önemli faktördür ki, bu durum antibiyotiklere direncin artmasını ve antibiyotiğin etkisinin azalmasını sağlayarak yeni antibiyotiklerin araştırılması ve geliştirilmesi için sürekli bir ihtiyaca neden olmaktadır.

Anahtar Kelimeler: Streptomyces, Antibiyotik araştırılması, Sekonder Metabolitler, Antimikrobiyal Aktivitenin Belirlenmesi.

Teşekkür: Bu çalışma Kahramanmaraş Sütçü İmam Üniversitesi Bilimsel Araştırma Projeleri tarafından desteklenmiştir (Proje no: 2014 /4-11 YLS).

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➢ **POSTER PRESENTATION**

Characterization and Antioxidant Activity of Polysaccharides from *Terfezia claveryi*

Gülsen Tel-Çayan[1*], Meltem Taş[2], Fatih Çayan[1], Mehmet Emin Duru[2]

[*1]Muğla Sıtkı Koçman University, Muğla Vocational School, Department of Chemistry and Chemical Processing Technologies, 48000 Muğla, TURKEY.
[2]Muğla Sıtkı Kocman University, Faculty of Science, Department of Chemistry, 48000 Muğla, TURKEY

Corresponding author e-mail: gulsentel@mu.edu.tr

Abstract

Terfezia and *Tuber* are known as excellent edible mushrooms with a considerable economic importance among the ascomycete truffles. Polysaccharides are the most effective active ingredients in Truffles. Recent investigations exhibited that polysaccharides from truffles have antioxidant potential and might be serve as an effective antioxidative healthcare food and source of natural antioxidants [1]. *Terfezia claveryi* Chatin belonging to the Ascomycetes class of Terfeziaceae family is a Truffle species that naturally grows in the spring season in the sandy soil. The aim of this study was to investigate the chemical characterization and antioxidant activity of polysaccharides from *T. claveryi*.

FT-IR and HPLC-DAD were used to analyze the chemical characterization and molecular weight of polysaccharides. The functional groups and linkages in polysaccharide were determined by FT-IR while three polysaccharides (2042, 1548817 and 7413102 Da) which have different molecular weights were identified by HPLC-DAD. β-carotene-linoleic acid, DPPH$^{\bullet}$ scavenging, ABTS$^{\bullet+}$ scavenging, cupric-reducing antioxidant capacity (CUPRAC), and metal chelating assays were used to test antioxidant activity. Polysaccharide extract from *T. claveryi* showed good antioxidant activity in all tests, particularly in β-carotene linoleic acid assay (IC_{50}: 149.60 ± 1.16 μg/mL) and metal chelating assays (IC_{50}: 155.25 ± 1.39 μg/mL).

Keywords: Polysaccharides, *Terfezia claveryi*, Antioxidant activity, FT-IR, HPLC-DAD.

This study was financed by The Scientific and Technological Research Council of Turke (TUBITAK-114Z644).

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➢ **POSTER PRESENTATION**

Antioxidant and Oxidant Status of *Agaricus arvensis* Collected from Gaziantep Province

Ali İmran Korkmaz*,Hasan Akgul, Emre Cem Eraslan

[1]Akdeniz University, Science Faculty, Department of Biology, Antalya, Turkey

Corresponding author e.mail: korkmazaliimran@gmail.com

Abstract

Mushrooms have been used for food and medical purposes since ancient times. They can also help to reduce the adverse effects of oxidative damage due to their antioxidant properties. In this study, it was aimed that total antioxidant level (TAS), total oxidant level (TOS) and oxidative stress index (OSI) of *Agaricus arvensis* Schaeff. collected from Gaziantep province. The fungus sample was dried in a laboratory environment and then powdered by a mechanical grinder. Then, extraction was carried out in a soxhlet device with ethanol for 6 hours at 50 ° C. TAS, TOS and OSI values were determined with Rel Assay Diagnostics kits. As a result of the studies, TAS value was determined as 2.253, TOS value was 15.252 and OSI value was 0.679. As a result, although *A. arvensis* has antioxidant properties, it is suggested that fungi collected from these regions should be consumed limitedly because of high oxidant values. On the other hand, it is thought that fungal samples collected from oxidatively stressed areas with less effect can be used as alternative antioxidant source.

Keywords: *A.arvensis*, Total Antioxidant, Total Oxidant, Oxidative stress, Gaziantep.

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➢ **POSTER PRESENTATION**

Analysis of the Electrochemical Working Range of Tyrosine Kinase Enzyme by Cyclic Voltammetry Technique

Kezban Kartlaşmış*, Umut Kökbaş, Başak Günaştı, Abdullah Tuli, Levent Kayrın

Cukurova University, Faculty of Medicine, Department of Medical Biochemistry, Adana, Turkey

Corresponding author e-mail: kkartlasmis@cu.edu.tr

Abstract

Tyrosine kinase is a protein kinase family that transfers the phosphate group from ATP to tyrosine residues in proteins. It plays an important role in cancer development and metastasis following regulation of signal transduction mechanisms that control functions such as cell proliferation and apoptosis. Tyrosine kinase identification has clinical prevention to evaluate the therapeutic process of tyrosine kinase inhibitors, particularly those used in the treatment of chronic myeloid leukemia and gastrointestinal stromal tumors. The aim of this study was to determine the starting and ending potentials on the cyclic voltamogram to examine the electrochemical properties of the tyrosine kinase. In the study, Tyrosine kinase from mushroom (Sigma Aldrich T3824-25KU) was used. In this study, a cell equipped with three electrodes was used: a reference electrode, a working electrode and a counter electrode. For the bioactive layer of the biosensor; tyrosine kinase enzyme were crosslinked with bovine serum albumin/gelatin and glutaraldehyde and fixed to the gold electrode surface, and measurements were taken at between (-1.35 V) and (1.35 V). The best cyclic voltammogram range for redox peaks in electrochemical studies for tyrosine kinase is 0.85-1.15 V. Turnaround time of cylic voltammogram peak was found 1.26 minute.

Key Words: Biosensor, Cyclic voltammogram, Tyrosine kinase.

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➢ **POSTER PRESENTATION**

A New Biosensor System Design For Determination Of Glucose-6-Phosphate Dehydrogenase Enzyme Activity

Başak Günaştı*, Kezban Kartlaşmış, Umut Kökbaş, Levent Kayrın, Abdullah Tuli

Cukurova University Health Sciences Institute, Faculty of Medical School, Department of Medical Biochemistry, Adana, Turkey.

Corresponding author e-mail: bsanna@cu.edu.tr

Abstract

Glucose-6-phosphate dehydrogenase (G6PD) catalyzes the first step of the pentose phosphate pathway, which involves the transformation of glucose 6-phosphate to 6-phosphogluconolactone concomitant with conversion of NADP to NADPH. The NADPH produced protects erythrocytes from oxidative damage. G6PD deficiency can causes of neonatal hyperbilirubinemia and chronic hemolytic anemia. Biosensors are highly sensitive and cost effective nanostructured metal oxides because of their excellent properties such as optical, electrical, selectivity and surface to volume ratio. In this study, we aim to design a novel biosensor for G6PD activity assay. All reagents were purchased from Sigma Aldrich. Poly Hema-Mac Nanopolymer coated onto gold electrode. G6PD enzyme is crosslinked by gluteraldehyde. The immobilized was used to regenerate NADPH from the Beta-Nicotinamide Dinucleotide Phosphate (β-NADP+). Optimization studies show that assay buffer is 2 mM of β-NADP+ and 6 mM D- Glucose-6-Phosphate (G6P) in 5 mM Sodium Phosphate Buffer, pH 7.0. We obtained NADPH peak at 50 mV of differansiel pulse voltammetry. In this study, a new immobilization strategies have been used independently to immobilize G6PD. When immobilizing an enzyme on a surface it is most significant point is choose a method of attachment aimed at reactive groups outside the active catalytic and binding site of that enzyme. We developed a new biosensor system preparing potassium ferrociyanide selected as a mediator, in the buffer solution. A vast number of methods of immobilization are currently available; however, an economical and small process of immobilization is still necessity. It was determined that the method is sensitive, economic, practical and less time-consuming. The current advancement in microprocessing and microelectronic devices has created a promising future for the application of G6PD as biosensors.

Keywords: Glucose-6-phosphate dehydrogenase, Biosensor, Enzyme activity.

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➢ **POSTER PRESENTATION**

Effects of Different Mineral Acids on Thermal Properties of Nanofibrillated Cellulose

Volkan Ugraskan[1*], Ebru Aydın[2], Afife Binnaz Hazar Yoruç[2]

[1]Yildiz Technical University, Faculty of Arts and Sciences, Department of Chemistry, Istanbul, Turkey.
[2]Yildiz Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Metallurgical and Materials Engineering, Istanbul, Turkey.

Corresponding author e-mail: volkanugraskan@gmail.com

Abstract

Nanofibrillated cellulose (NFC) is a promising material as a reinforcement material in composite applications due to its natural and sustainable origin, low density, low cost, environmental sensitivity and good mechanical properties. NFC is generally obtained from biomass via mechanical defibrillation with chemical, enzymatic or physical pre-treatments. Different mechanical methods have been used like refining, blending, high-pressure homogenization, high-pressure microfluidization, steam explosion, cryocrushing and grinding [1, 2].

In this study, NFC isolated from bleached eucalyptus pulp via chemical and mechanical treatments. In chemical treatment, three mineral acids used: sulfuric acid (H_2SO_4), hydrochloric acid (HCl) and nitric acid (HNO_3) with same concentrations. After chemical treatments samples treated with homogenizer to obtain nanofibrillated cellulose.

Thermal properties of NFCs were investigated with differential scanning calorimetry (DSC). In addition to this FTIR-ATR, Zeta-Sizer and X-ray diffraction (XRD) analysis were carried out and the results were compared.

Keywords: Biomass, Mineral Acids, Nanofibrillated Cellulose, Reinforcement.

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➢ **POSTER PRESENTATION**

A study on Biological Activity and Chemical Content of *Pseudevernia furfuracea* var. *ceratea*

Celal Bal[1*], Hasan Akgül[2], Mustafa Sevindik[2], Muhittin Doğan[3], Zeliha Selamoglu[4]

[*1]Gaziantep University, Oguzeli Vocational School, Gaziantep, Turkey.
[2]Akdeniz University, Science Faculty, Biology Department, Antalya, Turkey.
[3]Gaziantep University, Science and Literature Faculty, Biology Department, Gaziantep, Turkey.
[4]Omer Halisdemir University, Medicine Faculty, Medical Biology, Nigde, Turkey.

Corresponding author e-mail:bal@gantep.edu.tr

Abstract

Lichens are symbiotic associations formed by mushrooms and cyanobacteria and /or algae. Lichens are known for their powerful medicinal properties as well as for many environmental roles. In this study *Pseudevernia furfuracea* var. *ceratea* (Ach.) D. Hawksw. collected from Elmalı/Antalya region. (TAS), total oxidant status (TOS), total antioxidant level (TAS), oxidative stress index (OSI) and heavy metal levels of lichenin are aimed to determine the phenolic content, antioxidant capacity, In this context, as a result of the field studies, lichen samples were dried and powdered. Then, extraction with ethanol was carried out in a soxhlet apparatus. Antioxidant capacity was determined by DPPH method, TAS, TOS and OSI values by Rel Assay Kits, phenolic contents by HPLC and heavy metal contents by atomic absorption spectrophotometer. As a result of the studies carried out, the percent inhibition value of DPPH activity was determined to be 56.95. TAS value was 3.873 mmol / L, TOS value was 4.435 μmol / L and OSI value was 0.114. It was also determined that *P. furfuracea* var. *ceratea* had Gallic acid, Chlorogenic acid, Hydroxybenzoic acid, Syringic acid, Cinnamic acid and t-phenolic. Cr was not detected in the lichen. Other elements were determined to be at different levels. As a result, it was determined that antioxidant potential of *P. furfuracea* var. *ceratea* was found to be suitable levels for the oxidative stress status. Besides, it is considered that natural resources may be considered in terms of the compounds determined in the field.

Keywords: Lichen, *Pseudevernia furfuracea* var. *ceratea*, Antioxidant, Phenolic content, Oxidative stress, Heavy metals.

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➢ **POSTER PRESENTATION**

New Trends in Stem Cell Therapy as Innovative Researches

Mustafa Sevindik [1*], Elifsena Canan Alp [2], Zeliha Selamoglu[3]

[1]Akdeniz University, Science Faculty, Biology Department, Antalya, Turkey.
[2]Necmettin Erbakan University, Faculty of Medicine, Hospital of Meram Medicine Faculty, Konya, Turkey
[3]Omer Halisdemir University, Medicine Faculty, Medical Biology, Nigde, Turkey.

Corresponding author e-mail: sevindik27@gmail.com

Abstract

Stem cells which are generally less specialized cells and continuosly multiply themself. They are also differ one or more type specialized cell under favorable conditions. Adult's body have various types stem cells. These cells take place specialized cells instead of non replicating cells when needed such that stem cells are in the bone marrow gives all kind of blood cells. Despite of adult individuals have very few stem cells scientists who continue to identify these cell from various tissues, decompose and cultivate them in some cases. It is so easy to cultivate cells which are obtained by embrio and can give any type differentiated cells. All stem cells researches have got great potantial for medical applications. The main aim of these researches to supply cells for repairing damaged organs. The oldest source is supposed bone marrow since first time. Whereas umbilical cord blood acces more easier than acces the bone marrow. In term of stem cells are very rich in childhood teeth especially lower upper cutting teeth and adult wisdom teeth. It can be used fat tissue taken at any time. For example production of insulin-producing pancreatic cells. These researches are going on diabeties, degenerative diseases such as parkinson and Alzheimer, retinal diseases and paralysis, small bowel inflammatory diseases, treatment of many genetic and allergic diseases, cardiovascular diseases and immune system disorders. Stem cells are used in the possibilities of the bone cancer and the bone rings which caused by some genetically oriented anemi's cannot function.

Keywords: Stem cells, medical applications, degenerative diseases, stem cells therapies.

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➢ **POSTER PRESENTATION**

POSS Containing Thiol-Ene/Acrylate Based Photocured Coatings

Emrah Çakmakçi

Marmara University, Faculty of Arts and Sciences, Department of Chemistry, Istanbul, Turkey.

Corresponding author e-mail: emrah.cakmakci@marmara.edu.tr

Abstract

Polyhedral oligomeric silsesquioxanes (POSS) molecules are silicon based nano sized compounds that are soluble in organic matrices unlike common nanoparticles such as SiO_2, TiO_2, Al_2O_3, clay, etc. Besides, they can be synthesized or modified with different organic functional groups. Up to now, various POSS molecules were incorporated into different polymers to improve their mechanical and thermal properties. Among these studies, POSS containing photocurable systems constitute an important place. Generally, in previous works thiol functional or double bonds bearing POSS molecules were added to photocurable coatings. In this work, also a thiol functional POSS molecule (octamercapto-POSS) was used in conjunction with a phosphorus containing allyl compound (AADPPO) to prepare flame retardant epoxy acrylate photocured coatings. The addition of only AADPPO decreased the gel content of the cured coatings while the incorporation of octamercapto-POSS) was improved the degree of curing. Char yields both under air and nitrogen atmospheres were increased with increasing AADPPO and octamercapto-POSS. While the LOI of the epoxy acrylate based coatings significantly increased with increasing amounts of AADPPO, the addition of POSS decreased the flame retardancy of the cured composite films. The LOI of the base formulation was 20, it gradually increased and when the amount of AADPPO was 20 wt.%, the LOI of the coatings was found to be as high as 27. On the other hand, octamercapto-POSS improved the mechanical of the AADPPO containing coatings.

Keywords: POSS; epoxy acrylate, photocuring; flame retardant.

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➢ **POSTER PRESENTATION**

Biosynthesis and Characterization of Zinc Nanoparticles Using *Lavandula officinalis* and their Antimicrobial Activity

Dilek Demirezen Yilmaz[1]*, Fatih Doğan Koca[2], Şeyda Yilmaz[3], Derya Aksu Demirezen[3]

[1]Erciyes University, Faculty of Sciences, Department of Biology, Kayseri, Turkey
[2] Erciyes University, Faculty of Veterinary Medicine, Kayseri, Turkey
[3]Erciyes University, Graduate School of Natural and Applied Sciences, Turkey
Corresponding author: demirezen.dilek@gmail.com, demirez@erciyes.edu.tr

ABSTRACT

In this study, the extract of *Lavandula officinalis* for production of zinc nanoparticle without use of any chemical agent was investigated. The zinc nanoparticles (ZnNPs) showed strong antibacterial activity against both tested *Escherichia coli* O157:H7 (Gram negative) and *Staphylococcus aureus* (Gram positive) bacteria. The antibacterial activity of bio-synthesized nanoparticles against two pathogens was assessed by minimal inhibitory concentration (MIC) assays. The MIC values of ZnNPs of 25 µg/mL for *E.coli* and 36 µg/mL for *Staphylococcus aureus.* Biologically synthesized nanoparticles were characterized by Scanning Electron Microscopy (SEM), Fourier transform infrared spectroscopy (FTIR), UV-Vis spectroscopy, X-ray diffraction (XRD) and Zeta potential analysis. This study concludes that the bio- synthesized ZnNPs may be used as an effective antimicrobial activity, so it can be projected as future generation antimicrobial agents and designing newer drugs. The UV-Visible, XRD, FTIR and analysis results showed that ZnNPs were produced in oxide form. Absorption peaks at the wavelength of 291 nm indicated the formation of hydrolysis products of metallic iron (Zn^0). FTIR and XRD analysis showed signals due to the oxide and oxyhydroxide zinc nanoparticles. SEM images clearly showed that the nanoparticles were in spherical shape and were seen as polydisperse.

Key words: Biosynthesis, zinc nanoparticle, *Lavandula officinalis*, antimicrobial activity.

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➢ **POSTER PRESENTATION**

Chromatographic Techniques for Isolation, Separation and Characterization of Turkish Propolis

İbrahim Demirtaş[1,2,*], Yaşar İpek[1], İbrahim Erkayacan[1,2] and Şevket Çınar[2]

[*1]Department of Chemistry, Faculty of Science, Çankırı Karatekin University, Cankırı-Turkey
[2]Mada Grup Aş., Ankara Technopark, Ankara-Turkey.

Corresponding author e-mail: ibdemirtas@gmail.com

Abstract

The propolis is phytotherapy product that has been used in traditional and complementary medicine for healing in many diseases. This study presents an overview of the separation techniques applied to the complex challenge of dissolved propolis characterisation. The methods for isolation of natural propolis collected from different part of Turkey for separation techniques used to further fractionate this complex sticky material. The work covers both column and flash chromatographic techniques, in their various modes, and extraction based approaches. For each, the challenges that the separation and fractionation of such an immensely complex sample poses is critically studied.

The results we obtained during the studies conducted in the direction of industrial requests will be presented as framework of the study for isolated pure propolis-drived natural compounds. The prepared phenolic compounds were characterized using the spectroscopic techniques such as HPLC-TOF/MS, Head space GC-MS, NMR. The separation methods were conducted with the analysis of the secondary metabolite content of propolis samples. The chemical content analyzes were compared with commerial samples sold on the markets and prepared using organic solvents. The water-based propolis samples are much higher phenolic content than the samples prepared with alcohols such as ethanol, propilen glicol, glycerol. The compounds were separated as fumaric acid, caffeic acid, catechin, chlorogenic acid, gentisic acid, vanillic acid, rutin, 4-hydroxybenzaldehyde, scutelarin, quercetin-3-β-D-glucoside, naringin and ferulic acid.

In a quantitative study with total of 44 standards, it was observed that propolis content had significantly higher phenolic values than the samples prepared in organic solvents. In the laboratory studies, the results of the activities will have been studied with the comparison of chemical contents *in vitro* and *in vivo* at cancer, antioxidant and diabetic studies.

Keywords: Propolis, extractions, separations, structural characterization.

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➢ **POSTER PRESENTATION**

Investigation of Antiproliferative Properties of Molecules Isolated from *Satureja boissieri* Plant Against HeLa Cells

Muhammed Altun[1*], Ali Rıza Tüfekçi[1], İbrahim Demirtaş[1], Lütfi Behçet[2]

[*1]Çankırı Karatekin University, Faculty of Science, Department of Chemistry, Çankırı, Turkey.
[2]Bingol University, Faculty of Science and Literature, Department of Biology, Bingöl, Turkey.

Corresponding author e-mail: muhammedaltun@karatekin.edu.tr

Abstract

Plants synthesize numerous organic compounds as primer and secondary metabolites. Secondary metabolites are natural molecules with chemotaxonomic potential. Cancer is one of the most important diseases of our age. To benefit from therapeutic natural products, it eliminates unwanted side effects significantly. In terms of plant diversity, Turkey has a great potential. Satureja L. (Lamiaceae) is a herbaceous plant. *Satureja boissieri* is mostly distributed in the inner parts of Eastern Anatolia.[1] The antiproliferative effects of these isolated components were investigated against human cervical cancer (HeLa) cells with a real-time cell analyzer.[2] It has been shown that *Satureja boissieri* contains antiproliferative components against HeLa cells.

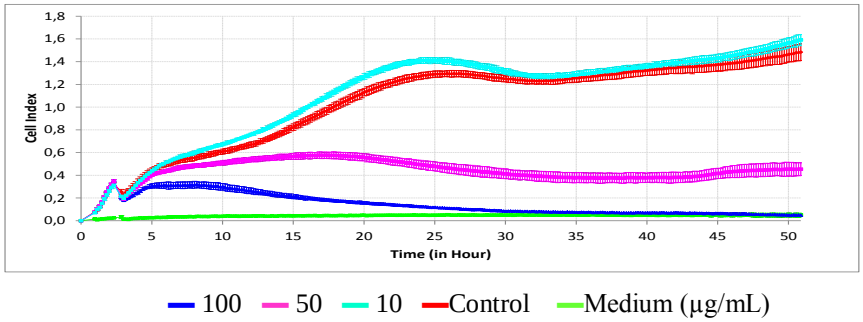

Fig. 1: Antiproliferative effect of ursolic acid against HeLa cells

Keywords: *Satureja boissieri*, antiproliferative activity, HeLa, isolation.

Acknowledgment: This work was supported by TUBITAK (Project No: 115Z627).

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2. Abay, G., Altun, M., Koldas, S., Tufekci, A.R., Demirtas, I. *Combinatorial Chemistry & High Throughput Screening* **2015**, *18*, 453-463.

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➢ **POSTER PRESENTATION**

Determination of Antiproliferative Activities of Isolated Molecules from *Satureja boissieri* Against PC3 Cells

Muhammed Altun[1*], Ali Rıza Tüfekçi[1], İbrahim Demirtaş[1], Lütfi Behçet[2]

[*1]Çankırı Karatekin University, Faculty of Science, Department of Chemistry, Çankırı, Turkey.
[2]Bingol University, Faculty of Science and Literature, Department of Biology, Bingöl, Turkey.

Corresponding author e-mail: muhammedaltun@karatekin.edu.tr

Abstract

Cancer is one of the most important diseases of our age. Plants synthesize numerous organic compounds as primer and secondary metabolites. Secondary metabolites are natural molecules with chemotaxonomic potential. *Satureja boissieri* Hausskn. ex Boiss. (Lamiaceae) is known as Catli/Kekik in Turkey.[1] In this study, various compounds isolated from *Satureja boissieri*. Antiproliferative effects of the all isolated compounds were investigated against to human prostate cancer cells (PC3) by xCELLigence Real Time Cell Analyzer device. and found out that the compounds exhibited strong activity against PC3 cells.[2]

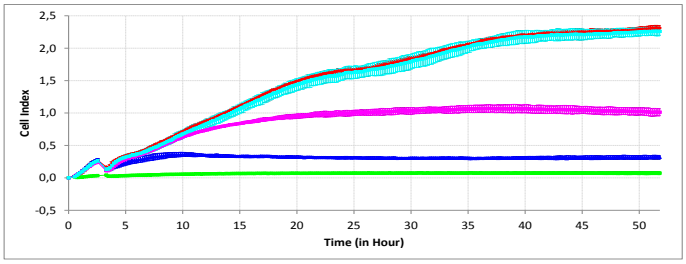

Fig. 1: Antiproliferative effect of ursolic acid against PC3 cells

Keywords: *Satureja boissieri*, antiproliferative activity, PC3, isolation.

Acknowledgment: This work was supported by TUBITAK (Project No: 115Z627).

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3. Kurkcuoglu, M., Tumen, G., Baser, K. *Chem Nat Compd.* **2001**, *37*, 329.
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➢ **POSTER PRESENTATION**

Decolorization of Various Textile Dyes by Thermophilic and Mesophilic Bacteria

Emre Birhanli[1*], Filiz Boran[1], Ozfer Yesilada[1], Sadin Ozdemir[2]

[1]Inonu University, Arts and Science Faculty, Department of Biology, Malatya, Turkey.
[2]Mersin University, Vocational School of Technical Sciences/FoodTechnology, Mersin, Turkey.

Corresponding author e-mail: emre.birhanli@inonu.edu.tr

Abstract

Increasing industrial activities have led to the development of foreign new chemicals in the environment. A great deal of these chemicals are organic macromolecules. Dyes are an important class of these macromolecules and are used in many industrial areas such as leather, textile, paint, paper, food, cosmetics, medicine, toys and plastics. Especially the wastewater released from textile and dye industries has high BOD, COD, color, pH, temperature and metal contents and also the chemical composition of the dyes found in the wastewater are very complex. Therefore, industrial wastewater of this type is very resistant to degradation. Most of the various synthetic dyes in this wastewater are toxic and carcinogenic. As a result of the discharging of textile wastewater into aquatic ecosystems, the entrance of sunlight into water decreases and accordingly photosynthetic activity decreases. Therefore, the amount of dissolved oxygen and the quality of the water are also decreasing. In addition, the dyestuffs in wastewater released into the aquatic environment cause acute toxic effects on aquatic flora and fauna, leading to significant environmental problems worldwide. In this study, *Bacillus firmus* was used as a thermophilic bacterium and *Bacillus subtilis* was used as a mesophilic bacterium in the decolorization of Foron Brown, Foron Black, Foron Turquoise, Foron Violet and Foron Red textile dyes. All of the dyes prepared at a concentration of 200 ppm were incubated for 24 hours at different temperatures with the bacteria under the agitated condition. After 24 hours of incubation, the dyes were effectively decolorized by both bacteria. Maximum decolorization rates of Foron Brown, Foron Black, Foron Turquoise, Foron Violet and Foron Red performed by *Bacillus firmus* were approximately 63, 87, 56, 77 and 74%, respectively. The highest decolorization rates of the same dyes performed by *Bacillus subtilis* were approximately 69, 80, 55, 73 and 59%, respectively.

Keywords: Bacteria, Decolorization, Textile dyes.

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➢ **POSTER PRESENTATION**

Bacterial Decolorization of Foron Brown, Foron Turquoise and Foron Violet Dyes

Emre Birhanli[1*], Filiz Boran[1], Ozfer Yesilada[1], Sadin Ozdemir[2]

[1]Inonu University, Arts and Science Faculty, Department of Biology, Malatya, Turkey.
[2]Mersin University, Vocational School of Technical Sciences/FoodTechnology, Mersin, Turkey.

Corresponding author e-mail: emre.birhanli@inonu.edu.tr

Abstract

Many textile dyes with different structural properties such as acidic, basic, disperse, azo, diazo, anthraquinone based and metal complex dyes, cause serious environmental and health problems in both terrestrial and aquatic environments due to their toxic properties and their intense colors. Therefore, various physicochemical methods such as flocculation, coagulation, adsorption and membrane filtration have been used for the treatment of these wastewaters. But, these methods have some disadvantages such as high energy cost, high sludge production, formation of byproducts and release of toxic substances. For this reason, researchers have turned to microbiological degradation which are cheaper and environmentally friendly. Various microorganisms such as fungi, bacteria, yeast and algae may be able to degrade many dyes in certain environmental conditions. But among these organisms, bacteria can remove the color of synthetic dyes economically and quickly at high rates. Accordingly, in this study, four newly isolated bacteria (*Anoxybacillus flavithermus*, *Anoxybacillus* sp., *Anoxybacillus mongoliensis* and *Anoxybacillus kestanboliensis*) were used for removal the color of Foron Brown, Foron Turquoise and Foron Violet textile dyes. The dyes (200 ppm concentrations) were treated with four bacterial isolates under agitated conditions at different temperatures and high color removal rates were achieved after 24 hour incubation. According to the experimental results, the highest decolorization rates of Foron Brown obtained with *Anoxybacillus flavithermus*, *Anoxybacillus* sp., *Anoxybacillus mongoliensis* and *Anoxybacillus kestanboliensis* were approximately 60, 61, 58 and 56%, respectively. Moreover, Foron Turquoise dye decolorization activity of the same bacteria were 56, 54, 59 and 53%, respectively. Finally, *Anoxybacillus flavithermus*, *Anoxybacillus* sp., *Anoxybacillus mongoliensis* and *Anoxybacillus kestanboliensis* decolorized Foron Violet dye by 70, 82, 66 and 71%, respectively.

Keywords: Bacteria, Decolorization, Environmental pollution, Textile dyes.

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➢ **POSTER PRESENTATION**

Clinically Diagnosed Abdominal Ulcer-Induced Cholecystitis in a Pregnant Simmental Cow: Case Report

Enes Akyüz[1]*, Mert Sezer[1], Mushap Kuru[2], Abdulsamed Kükürt[3], Erdoğan Uzlu[1], Gürbüz Gökce[1]

[1] Department of Internal Medicine, Veterinary Faculty, Kafkas University, Kars, Turkey
[2]Department of Obstetrics and Gynecology, Veterinary Faculty, Kafkas University, Kars, Turkey
[3] Department of Biochemistry, Veterinary Faculty, Kafkas University, Kars, Turkey

Corresponding author: enesakyuz_44@hotmail.com

Abstract

In this case report, a 6-year-old and 7 month pregnant Simmental cow with a history of anorexia, weight loss, abdominal pain, and dark color of the feces was presented to the Internal Medicine Clinic of the Veterinary Faculty of the Kafkas University. Clinical examination, haematology and serum biochemistry were evaluated. Clinical examination; temperature 37.9°C, heart rate 88 beats per minute, respiration rate 24 breaths per minute were determined. A peritonitis examination was performed and the glutaraldehyde test was positive at 40 seconds. Urine was checked with Urucolor TM 10® strips. No abnormality was found in the urine. Severe melena and tissue fragments were detected with trans-rectal examination. Leukocyte counts were normal (WBC: 10.29 m/mm^3) but increased in granulocyte count (7.29 m/mm^3) in haematology of this case. Lactate dehydrogenase 1082.9 U/L, urea 66.43 mg/dL, creatinine 2.2 mg/dL, glucose 99.61 g/dL, alanine aminotransferase 6.9 U/L, aspartate aminotransferase 91.3 U/L, gama glutamyl transferase 11 U/L, total protein 6.8 g/dL was measured. In addition, liver ultrasonographic (USG) examination showed that the liver parenchyma was normal but the gall bladder was very full. The content of bile was taken by the USG-guided puncture than *Escherichia coli* was detected after microbiological analysis. Bleeding of the feces, clinical findings, detection of factors in the bile and chronic gastrointestinal disturbance concluded that abomasum ulcer and related cholecystitis may have developed. As a result, the general condition of the patient was impaired and the treatment was not recommended due to excessive weakness.

Keywords: Abomasal Ulcer, Cow, Cholecystitis, Simental.

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➢ **POSTER PRESENTATION**

Antimicrobial Activity of Silver Nanoparticles Loaded PVA/Starch Scaffolds

Seda Ceylan[1,2], Didem Demir[1], Gülşah Gül[1], Zeynep iyigündoğdu[2], Nimet Bölgen Karagülle[1]*

[1]Mersin University, Engineering Faculty, Chemical Engineering Department, Mersin, Turkey.
[2]Adana Science and Technology University, Bioengineering Department, Adana, Turkey.

Corresponding author e-mail: nimetbolgen@yahoo.com, nimet@mersin.edu.tr.

Abstract

The aim of the study was to investigate antibacterial activities of green synthesized silver nanoparticles (AgNPs) loaded Polyvinyl alcohol/Starch (PVA/Starch) cryogel scaffolds. PVA/Starch scaffolds were prepared with different additives by cryogelation technique at -10 °C. The nanoparticles were prepared by green synthesis from Aloe barbadensis leaf extract and characterized. The antibacterial, antifungal and antiyeast properties of AgNPs and AgNPs loaded PVA/Starch cryogel scaffold were investigated. The highest antimicrobial activity of composite scaffold was found against Pseudomonas aeruginosa. Based on our studies, the results show that high water uptake capacity, degredable, biocompatible and antimicrobial AgNPs loaded PVA/Starch scaffold has a potential to be used at an infection site for tissue engineering applications.

Keywords: PVA/Starch scaffold, green synthesis, silver nanoparticles, antimicrobial activity.

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➢ **POSTER PRESENTATION**

Biyolojik Sentez Demir, Gümüş ve Çinko Nanopartiküllerinin *Lemna minör*'de Ekotoksik Etkileri

Şeyda Yılmaz [1*], Dilek Demirezen Yilmaz[2], Fatih Doğan Koca[3], Sultan Açıkgöz[2]

[1]Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Anabilim Dalı, Kayseri, Türkiye
[2]Erciyes Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Kayseri, Türkiye
[3] Erciyes University, Faculty of Veterinary Medicine, Kayseri, Türkiye

Corresponding author: seyda.yilmaz.100@gmail.com

Özet

Bu çalışmanın amacı, bitkisel sentezle elde edilen demir, gümüş ve çinko nanopartiküllerinin *Lemna minor* L. bitkisi kullanılarak ekotoksik etkilerinin belirlenmesi amaçlanmıştır. Demir nanopartikül sentezi için keçiboynuzu, çinko nanopartikül sentezi için Peygamber çiçeği ve gümüş nanopartikül sentezi için de lavanta bitki özütleri kullanılmıştır. Biyolojik olarak sentezlenen nanopartiküllerin karakterizasyonu SEM, UV-Visible, X-ışını enerji dağılım spektroskopisi ve FTIR kullanılarak yapılmıştır. Karakterizasyon sonuçları, demir, çinko ve gümüş nanopartiküllerinin formasyonunu ve varlığını ve biyolojik sentez olduğunu ortaya koymaktadır. Deney düzeneği eşit büyüklükteki beherlerde ve her birisinde 100 birey olacak şekilde üç tekrarlı olarak kurulmuştur. Çalışılan nanopartiküller, deney ortamına tek tek ve ikili kombinler şeklinde ilave edilmiştir. Biyolojik sentez Fe, Ag ve Zn nanopartikülleri, *L.minor* içeren akvaryumlara eşit oranda ilave edilerek, bitkideki kuru ve yaş ağırlık, klorofil ve MDA içeriği ile mortalite üzerine etkileri incelenmiştir. Elde edilen sonuçlara göre, uygulanan nanopartikül konsantrasyonunun ve ortam pH'sının bitkideki ekotoksisiteye etki ettiği belirlenmiştir. İkili kombinler şeklinde uygulanan nanopartiküllerin, tek tek uygulandıklarından daha az toksik etkili olduğu gözlenmiştir. Morfolojik değerlendirmelerde, bireylerin kombin şeklinde uygulanan nanopartikül ortamında daha sağlıklı olduğu belirlenmiştir.

Anahtar Kelimeler: Biyosentez, Nanopartikül, Ekotoksisite, MDA.

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➢ **POSTER PRESENTATION**

Parkinson ve Tedavi Yaklaşımı

Ece Sucularlı, Ezgi Tüccaroğlu, Ebru Didem Coşar*, Sedanur Demiray, Nuray Ulusoy Güzeldemirci

Farmasötik Kimya Anabilim Dalı, Eczacılık Fakültesi, İstanbul Üniversitesi, 34116 Beyazıt, İstanbul, TÜRKİYE

Sorumlu yazar e-mail: ed.cosar@gmail.com

Özet

Parkinson (PH), 60 yaş ve üzerindeki insanların %1-2'sini etkileyen, Alzheimer hastalığından sonra ikinci sıklıkta görülen erişkin yaş başlangıçlı, ilerleyici nörodejeneratif bir hastalıktır. Ailesel ve rastlantısal olarak görülebilen PH, beynin substansiya nigra pars kompakta bölgesinde bulunan dopaminerjik nöronların dejenerasyonu sonucu Dopamin üreten hücrelerin %60 ila %80'inin kayba uğraması ile belirir. En sık görülen nörodejeneratif hastalıklardan olması dolayısıyla parkinson hastalığı etiyopatogenezi önem taşımakla birlikte henüz tamamen aydınlatılamamıştır. Olası mekanizmalar genetik, çevresel faktörler, mitokondriyal disfonksiyon, oksidatif stres ve apopitoz ile ilişkilidir.
Son yıllarda Parkinson hastalığının tedavi seçenekleri genişlemeye devam etmektedir. Halen uygulanan tedaviler dopamini yerine koyma temeline dayanmaktadır. L-dopa ciddi yan etkilerine rağmen en etkili ve en iyi tolere edilen ilaç olmaya devam etmektedir. Erken PH tedavisinde L-dopayı geciktirme stratejileri motor dalgalanma ve istemsiz hareketleri önlemeye yöneliktir. Bunların yanı sıra nörotrofik faktörler ve hücre transplantasyonu gibi henüz başlangıç aşamasında olan, onarıcı yaklaşımlar da yer almaktadır. Ayrıca, dopamin agonistleri, katekolamin-O-metil transferaz (KOMT) inhibitörleri, monoaminooksidaz-B (MAO-B) inhibitörleri, amantadin, antikolinerjikler, nöroprotektif ilaçlar ve nörorestoratif cerrahi yöntemler gibi farklı ve etkili metodolojiler kullanılmaktadır. Tedavide ilaçların etkinliği kadar hastaya ait özellikler de önemli faktörleri oluşturmaktadır.

Anahtar Kelimeler: Parkinson, Dopamin, L-Dopa, Hücre transplantasyonu.

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➢ **POSTER PRESENTATION**

Equilibrium and Kinetic Studies of Reactive Black 8 Adsorption onto Crosslinked Chitosan Beads

Deniz Akin Sahbaz[1], Sahra Dandil[2], Selma Uysal[2*], Ozan Orenay[2], Caglayan Acikgoz[2]

[*1]Afyon Kocatepe University, Engineering Faculty, Chemical Engineering Department, Afyonkarahisar, TURKEY.
[2]Bilecik Seyh Edebali University, Engineering Faculty, Chemical and Process Engineering Department, Bilecik, TURKEY.

Corresponding author e-mail: caglayan.acikgoz@bilecik.edu.tr

Abstract

Environmental pollution problems by the discharge of effluent containing various contaminations from textile, paper and paint industries has become a serious issue in recent years. Dye removal from wastewater has received considerable attention for several adsorbents and several classes of dye. Reactive black 8 is an environmentally hazardous dye and most applicable intextile industries. Chitosan is a non-toxic, biodegradable and biocompatible and acts as an efficient adsorbent because of the amino functional groups. In the present work, the crosslinked chitosan beads were synthesized by using glutaraldehyde as a crosslinker and the adsorptive removal of reactive black 8 by the beads from an aqueous solution was investigated. The effect of contact time and initial dye concentration was evaluated. The adsorbent dosage was retained as 1 g/L and initial dye concentration values were varied from 30 to 150 mg/L. Equilibrium isotherms were analysed by Langmuir, Freundlich, Dubnin–Radushkevich, and Tempkin isotherm. Freundlich isotherm model was found fit effectively for the reactive black 8 adsorption. Kinetic adsorption data were evaluated using the pseudo-first-order kinetic model, the pseudo-second-order kinetic model, Banghman's equation and the intraparticle diffusion model. The adsorption followed pseudo second order kinetics. Overall, this study indicates chitosan beads as an efficient, eco-friendly and low cost adsorbent for the removal of reactive black 8 dye from aqueous solutions.

Keywords: Adsorption, Chitosan, Kinetics, Reactive Black 8.

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➢ **POSTER PRESENTATION**

The Effects of Organophosphorous Pesticides on Some Biochemical Parameters in Teleosts

İnan Kaya [1*], Özlem Önen[1], Müge Mavioğlu Kaya[2], Abdulsamed Kükürt[3], Mahmut Karapehlivan[4]

[1]Department of Biology, Faculty of Arts and Sciences, Kafkas University, 36100 Kars, Turkey
[2]Department of Molecular Biology and Genetic, Faculty and Sciences, Kafkas University, 36100 Kars, Turkey
[3]Department of Biochemistry, Faculty of Veterinary Medicine, Kafkas University, 36100 Kars, Turkey
[4]Department of Biochemistry, Faculty of Medicine, Kafkas University, 36100 Kars, Turkey

Corresponding author e-mail: inankaya_@hotmail.com

Abstract

Many organophosphorus pesticides (OPs) including pesticide members such as carbophenythion, dimethoate, parathion, trichlorfon, malathion, and pyridaphenthion, show their deleterious characteristics with inactivations of specially cholinesterases in many tissues for a long time. However, in many toxicological and biochemical studies it has been reported that these pesticides have important effects on very different parameters. OPs are extensively used in agriculture, gardens, homes, and animal practices. Teleost fish which are the most advanced and diverse of all fishes are exposed to these pesticides by rain water, drainage waters, surface runoffs and irrigation waters. This review will be concerned with the effects of OPs on parameters related to oxidative stress and energy metabolism of teleosts, especially from aquatic living organisms.

Keywords: Organophosphorus pesticides, Teleost, Biochemistry, Metabolism.

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POSTER PRESENTATION

Bio-Synthesis and Characterization of Iron Nanoparticles Using *Ceratonia siliqua* Pericarp Extract

Derya Aksu Demirezen[1*], Dilek Demirezen Yilmaz[2], Şeyda Yilmaz[3]

[1,3] Erciyes University, Graduate School of Natural and Applied Sciences, Kayseri, Turkey
[2] Erciyes University, Biology Department, Faculty of Sciences, Kayseri, Turkey

Corresponding author e-mail: dademirezen@gmail.com

Abstract

Ceratonia siliqua (carob) pericarp extract was used for iron nanoparticles (FeNPs) synthesis in this study. FeNPs were produced and stabilized due to the biomaterials that are found in the content of the seed extract. Particle characterization was analyzed by Transmission electron microscopy (TEM), Energy - dispersive X-ray Spectroscopy (EDX), UV- Visible spectroscopy, Dynamic light scattering (DLS), X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR). Zeta potential and pH were measured. The UV-Visible, XRD, FTIR and analysis results showed that FeNPs were produced in oxide form. Absorption peaks at the wavelength of 204 nm and 291 nm indicated the formation of hydrolysis products of metallic iron (Fe^0). FTIR, XRD and EDX analysis showed signals due to the oxide and oxyhydroxide iron nanoparticles. TEM images clearly showed that the nanoparticles were in spherical shape mostly with 7 nm diameters and were seen as polydisperse. The hydrodynamic diameter of the nanoparticles, that are surrounded by biologic substances adsorbed on the surface, was measured from 51 nm to 430 nm. Colloid stability was determined as moderate according to 22.2 mV value which was in the range of ± 20 – 30 mV.

Keywords: Iron Nanoparticles, Green Synthesis, *Ceratonia siliqua*, carob.

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➢ **POSTER PRESENTATION**

The Antioxidant Activity of Various Extracts and Fractions of *Marrubium cuneatum* Banks & Sol.

Mehmet Sina İçen[1*], İlhan Gürbüz [2], Fatih Demirci[3]

[*1] İnönü University, Faculty of Pharmacy, Department of Pharmacognosy, Malatya, Turkey.
[2] Gazi University, Faculty of Pharmacy, Department of Pharmacognosy, Ankara, Turkey.
[3] Anadolu University, Faculty of Pharmacy, Department of Pharmacognosy, Eskişehir, Turkey.

Corresponding author e-mail: sina.icen@gmail.com

Abstract

The genus *Marrubium* (Lamiaceae) consists of approximately 40 species distributed in Europe and Asia. Some species have been used as traditional medicine against hypotension, inflammation, asthma and pain (Meyre-Silva and Cechinel-Filho, 2010). In this present study, it was aimed to determine the antioxidant capacity of liquid-liquid fractions prepared from the aqueous and methanol extracts from *Marrubium cuneatum* Banks & Sol.

The aerial parts of were collected from Malatya in 2013 and were dried in shade. *n*-Hexane, dichloromethane, ethyl acetate, *n*-butanol fractions were prepared from the methanol extract and ethyl acetate and *n*-butanol fractions from the aqueous extract, respectively. The remaining water fractions from the liquid-liquid extracts were also obtained. The antioxidant capacity of all extracts and fractions were determined by DPPH scavenging assay (Hatano et al., 1988), ABTS radical cation decolorization assay (Re et al., 1999) and CUPRAC cupric reducing antioxidant capacity assays (Apak et al., 2004).

As a result, the most active fractions antioxidants in 3 methods were determined as *n*-butanol and ethyl acetate fractions of the methanol extract and aqueous extract. When the results were compared, it was determined that the *n*-butanol fraction showed the highest antioxidant capacity.

Keywords: CUPRAC, DPPH, Antioxidant, *Marrubium*, Liquid-liquid fractionation.

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➢ **POSTER PRESENTATION**

Anjiyoma Serpijinozum: Olgu Sunumu

Asuman Kilitci[1*], Ersoy Acer[2]

[*1] Ahi Evran Üniversitesi, Tıp Fakültesi, Patoloji Anabilim Dalı, Kırşehir, Türkiye
[2] Osmangazi Üniversitesi, Tıp Fakültesi, Dermatoloji Anabilim Dalı, Eskişehir, Türkiye

Sorumlu yazar e-mail:dr.asuk@gmail.com

Özet

Anjiyoma Serpijinozum (AS) genellikle çocuklukta başlayan ve kadınlarda, alt ekstremitelerde görülen nadir, benign, yüzeysel kapillerleri tutan, kutanöz bir vasküler hastalıktır. AS ilk olarak Hutchinson tarafından 1889'da tanımlanmış ve bugünkü ismi 1893 yılında Crocker tarafından verilmiştir. Günümüzde, AS'nin nevoid vasküler bir malformasyon ya da vasküler bir neoplazm olduğu konusunda görüş birliği bulunmamaktadır. AS'un klinik ve histopatolojik özelliklerini vurgulamak amacıyla sunmaya değer bulduk. On yaşında erkek hasta dermatoloji polikliniğine iki yıl önce farkedilen ilk olarak sol el ve önkolda başlayan ve omuza doğru proksimal serpijinöz ilerleme gösteren asimetrik punktat, kırmızımsı mor papüller, öyküsü ile başvurdu. Olgunun bilinen herhangi bir hastalığı yoktu ve ailesinde benzer lezyon öyküsü bulunmamaktaydı. Unilateral nevoid telenjiektazi (UNT) ve AS öntanıları ile önkoldan punch biyopsi alındı. Histopatolojik incelemede papiller dermis ve retiküler dermis yüzeyel kısımlarında çok sayıda dilate kapiller damarlar izlendi. UNTde östrojen ve progesteron reseptörlerinin arttığını gösteren bildiriler bulunması nedeniyle bu reseptörler için immünohistokimyasal boyamalar yapıldı ve negatif olup, AS'nin patogenezinde hormonal uyaran olmadığını düşündürdü. Klinik (çocuklukta başlaması, sporadik olması, akral tutulum, asimetrik serpiginöz yayılım, kırmızı-mor punktat papüller) ve histolojik bulguların korelasyonu ile olguya AS tanısı verildi. AS ayırıcı tanısında basit purpura, unilateral nevoid telenjiektazi, anjiokeratoma korporis diffuzum ve anjiokeratoma sirkumskriptum neviforme, pigmente purpurik dermatoz, Henoch-Schöenlein purpurası, nevus flammeus, jeneralize veya progresif esansiyel telenjiektazi düşünülmelidir. Olgumuzun histopatolojik incelemesi ve klinik özellikleri ile bu tanılar dışlandı. Lezyonun spontan gerilemesi görülebilir ve nadir olarak da lezyonda kısmi veya tam gerileme de bildirilmiştir. Lazer tedavisi kabul edilebilir ve etkili bir tedavi şekli olarak düşünülmektedir. AS, akral vasküler deri lezyonlarının ayırıcı tanısında bulunmalıdır.

Anahtar Kelimeler: anjioma, serpijinozum, deri, vasküler hastalık.

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➢ **POSTER PRESENTATION**

Matricaria chamomilla: Chemical Structure and Biochemical Analyses

Falah Saleh MOHAMMED[1*], Hasan AKGÜL [2], Mustafa SEVİNDİK [2], Bahzad M. Taher KHALED[3]

[*1]Gaziantep University, Science and Literature Faculty, Biology Department, Gaziantep, Turkey.
[2]Akdeniz University, Science Faculty, Biology Department, Antalya, Turkey.
[3]Duhok University, Agriculture Faculty, Horticulture Department, Duhok, Iraq.

Corresponding author e-mail: Falah.sindy@uoz.edu.krd

Abstract

In this study, it was aimed to determine antioxidant activity, antimicrobial activity, total antioxidant level (TAS), total oxidant level (TOS), oxidative stress status (OSI), DNA protective activity, cytotoxic effect and phenolic contents of *Matricaria chamomilla* L. plant collected from Duhok (Iraq). In this context, plant samples collected as a result of field studies were dried and powdered. Then, extraction with methanol and dichloromethane was carried out in a soxhlet apparatus. Antioxidant capacity was determined using DPPH method, TAS, TOS and OSI values using Rel Assay Kits, phenolic contents using HPLC device, chemical compositions using GC-MS device, DNA protection activity using pBR322 supercoil DNA, antimicrobial activity modified agar dilution method. In addition, cell viability of plant extracts was tested with cancer cell line A549. It has been determined that the cytotoxic effect of the plant is the result of the studies made. DPPH activity was found to be low. The absence of antimicrobial activity has been determined. TAS value was 2.019 mmol/L, TOS value was 3.120 µmol/L and OSI value was 0.154. It has been determined that plant extracts do not show DNA protective effect. In addition, Catechin, Chlorogenic acid, Caffeic acid, Quercetin, Syringic acid and Benzoic acid were determined in the plant. As a result of GC-MS analysis, 14 compounds were identified. As a result, it has been determined that *M. chamomilla* can be used as a natural source for detected phenolic compounds. It is also thought that the cytotoxic effect of the plant despite its low biological activity may be the natural source in this context.

Keywords: *Matricaria chamomilla*, Medicinal plant, Phenolic contents, Antioxidant, Antimicrobial, Cytotoxic effect

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➢ **POSTER PRESENTATION**

Investigation of Antioxidant Potential and Phenolic Compounds of *Papaver rhoaes*

Falah Saleh MOHAMMED[1*], Hasan AKGÜL [2], Mustafa SEVİNDİK [2], Bahzad M. Taher KHALED[3]

[*1]Gaziantep University, Science and Literature Faculty, Biology Department, Gaziantep, Turkey.
[2]Akdeniz University, Science Faculty, Biology Department, Antalya, Turkey.
[3]Duhok University, Agriculture Faculty, Horticulture Department, Duhok, Iraq.

Abstract

In this study, it was aimed to determine antioxidant activity, antimicrobial activity, total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI), DNA protective activity, cytotoxic effect and phenolic contents of the *Papaver rhoaes* plant collected from Duhok (Iraq). In this context, plant samples collected as a result of field studies were dried and powdered. Then, extraction with methanol (MeOH) and dichloromethane (DCM) was performed in a soxhlet apparatus. The antioxidant capacity was measured using the DPPH method, Using TAS, TOS and OSI values Rel Assay Kits, phenolic contents were determined using an HPLC devices, chemical compositions were analyzed using GC-MS instrument, Using the DNA protective activity of pBR322 supercoiled DNA, antimicrobial activity was determined using the modified agar dilution method. In addition, cell viability of plant extracts was tested with cancer cell line A549. It has been determined that the plant has cytotoxic effect as a result of the studies made. DPPH activity was found to be low. MeOH and DCM extracts were found to have antimicrobial activity. TAS value was 2.488 mmol/L, TOS value was 3.409 µmol/L and OSI value was found to be 0.137. Plant extracts showed DNA protective effect at concentrations of 200 µg / ml. In addition, Gallic acid, Catechin, Chlorogenic acid, Caffeic acid, Quercetin, Sinamic acid, Syringic acid, Benzoic acid, Hesperidin and Rosmarinic acid were determined in the plant. GC-MS analysis revealed 13 compounds. As a result, it is thought that the biological activity of *P. rhoaes* is and that it can be a natural source for the studies and the phenolic compounds detected in the studies.

Keywords: *Papaver rhoaes*, Medicinal plant, Phenolic contents, Antioxidant, Antimicrobial, Cytotoxic effect.

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➢ **POSTER PRESENTATION**

Plants Used in the Treatment of Cellulite

Sezen Yılmaz[1*], Derya Çiçek Polat[2], Maksut Coşkun[2] , Tülay Çoban[1]

[1]Ankara University, Faculty of Pharmacy, Department of Pharmaceutical Toxicology, Ankara, Turkey.
[2]Ankara University, Faculty of Pharmacy, Department of Pharmaceutical Botanic, Ankara, Turkey.

Corresponding author e-mail: szn-ylmz@hotmail.com

Abstract

"Cellulite", which is also called celulitic hypodermosis, edematous sclerotic-fibrous-edematous paniculopathy and panniculosis of the dermis, is characterized by dimpled or puckered skin and orange peel appearance on the skin surface (1). Although the main reason of cellulite is still unknown, though suspicion centres on endocrine system disorders causing structural changes in subcutaneous adipose tissue. The treatment of cellulite is mainly focused on inducing microcirculation and lipolysis; reducing the accumulation of fluids in the cell interstice and lipogenesis. Cellulite is very much seen as a female disorder all over the world. In recent years, herbal medicinal products have been used to treate skin disorders such as cellulite. The purpose of using active ingredients in topical treatments of cellulite is to reduce lipogenesis, promote lipolysis, improve the normal structure of the subcutaneous tissue (3). *Fuccus vesiculosus*, *Ruscus aculeatus*, *Ginkgo biloba*, *Cynara scolymus*, *Hedera helix*, *Aesculus hippocastanum*, *Melilotus officinalis*, *Hydrocotyle asiatica*, *Vitis vinifera*, *Carica papaya*, *Ananas sativus*, *Coffea arabica*, *Camelia sinensis*, *Gotu cola* and *Theobroma cacao* are some of the plants used in the treatment of cellulite. These medicinal plants contains numerous flavonoids, enzymes and methylxanthines which are important phytochemical *components*. Anti-cellulite *activity* of these plants may be atributed to these *constituents* (1,4).

Keywords: Cellulite, flavonoids, herbal medicine, methylxanthines, plant**.**

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➢ **POSTER PRESENTATION**

Phenolic Content and Biochemical Analyses of *Adiantum capillus-veneris*

Hasan AKGÜL[1*], Falah Saleh MOHAMMED[2], Mustafa SEVİNDİK[1], Bahzad M. Taher KHALED[3]

[*1]Akdeniz University, Science Faculty, Biology Department, Antalya, Turkey.
[2]Gaziantep University, Science and Literature Faculty, Biology Department, Gaziantep, Turkey.
[3]Duhok University, Agriculture Faculty, Horticulture Department, Duhok, Iraq.

Corresponding author e-mail: hakgul@akdeniz.edu.tr

Abstract

In this study, it was aimed to determine antioxidant activity, antimicrobial activity, total antioxidant level (TAS), total oxidant level (TOS), oxidative stress status (OSI), DNA protective activity, cytotoxic effect and phenolic contents of *Adiantum capillus-veneris* L. plant collected from Duhok (Iraq) chemical compositions. In this context, plant samples collected as a result of field studies were dried and powdered. Then, extraction with methanol (MeOH) and dichloromethane (DCM) was performed in a soxhlet apparatus. Antioxidant capacity was determined using DPPH method, TAS, TOS and OSI values using Rel Assay Kits, phenolic contents using HPLC device, chemical compositions using GC-MS device, DNA protection activity using pBR322 supercoil DNA, antimicrobial activity modified agar dilution method. In addition, cell viability of plant extracts was tested with cancer cell line A549. As a result of the studies, it was determined that the plant showed cytotoxic effects on A549 cells due to the increase of concentration of MeOH and DCM extracts. The MeOH extract was found to exhibit DPPH cleavage activity of about 50%. MeOH and DCM extracts have antimicrobial activities at 200-800 µg/mL concentrations. TAS value was 3.086 mmol/L, TOS value was 21.532 µmol/L and OSI value was 0.698. It has been determined that plant extracts have DNA protective effect. Catechin, Chlorogenic acid, Caffeic acid, Cinnamic acid, Coumaric acid, Hydroxybenzoic acid and Rosmarinic acid were determined in the plant. As a result of GC-MS analysis, 7 compounds were determined. As a result, it has been determined that *A. capillus-veneris* has biological activity and can be used as a natural source for the phenolic compounds detected.

Keywords: *Adiantum capillus-veneris*, Medicinal plant, Phenolic contents, Antioxidant, Antimicrobial, Cytotoxic effect**.**

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➢ **POSTER PRESENTATION**

Biological Activities of *Orchis mascula*

Hasan AKGÜL[1*], Falah Saleh MOHAMMED[2], Mustafa SEVİNDİK[1], Bahzad M. Taher KHALED[3]

[*1]Akdeniz University, Science Faculty, Biology Department, Antalya, Turkey.
[2]Gaziantep University, Science and Literature Faculty, Biology Department, Gaziantep, Turkey.
[3]Duhok University, Agriculture Faculty, Horticulture Department, Duhok, Iraq.

Corresponding author e-mail: hakgul@akdeniz.edu.tr

Abstract

The aim of this study was to investigate antioxidant and antimicrobial activity, total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI), DNA protective activity, cytotoxic effect and phenolic contents of *Orchis mascula* L. collected from Duhok (Iraq). In this context, plant samples collected as a result of field studies were dried and powdered. Then, extraction with methanol (MeOH) and dichloromethane (DCM) was performed in a soxhlet apparatus. Antioxidant capacity was determined using DPPH method, TAS, TOS and OSI values using Rel Assay Kits, phenolic contents using HPLC device, chemical compositions using GC-MS device, DNA protection activity using pBR322 supercoil DNA, antimicrobial activity modified agar dilution method. In addition, cell viability of plant extracts was tested with cancer cell line A549. As a result of the studies, it was determined that plant extracts of MeOH and DCM did not show cytotoxic effects on A549 cells. Plant extracts have been found to exhibit low DPPH clearing activity. It has been determined that there is no antimicrobial activity of plant extracts. TAS value was 3.719 mmol/L, TOS value was 18.664 μmol/L and OSI value was 0.505. It has been determined that plant extracts have weak DNA protective effect. In addition, Gallic acid, Catechin, Chlorogenic acid and Syringic acid were determined in the plant. GC-MS analysis, 6 compounds were identified. As a result, it has been determined that *O. mascula* has low biological activity. However, it is thought that phenolic compounds detected can be used as a natural source.

Keywords: *Orchis mascula*, Medicinal plant, Phenolic contents, Antioxidant, Antimicrobial, Cytotoxic effect**.**

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➢ **POSTER PRESENTATION**

Impact of Sequencing Batch Reactor Wastewater Treatment Plants on the Removal of Sulfonamide Resistance Genes

Serkan Kucukunsal*, Bulent Icgen

Middle East Technical University, Engineering Faculty, Department of Environmental Engineering, Ankara, Turkey.

Corresponding author e-mail: kucukunsal.serkan@metu.edu.tr

Abstract

The overuse and misuse of antibiotics have accelerated the emergence and spread of the antibiotic resistance genes (ARGs) worldwide. Wastewater treatment plants (WWTPs) that receive wastewaters from many different sources are considered as hotspots for the dissemination of ARGs freely and/or through bacteria. The ARGs spread from WWTPs can be transported by surface waters and mixed with groundwaters. These waters can easily be included in human life by their use in places such as agriculture, livestock and drinking waters. This creates a serious threat to human health and effectiveness of antibiotics in treating diseases. Sequencing batch reactor (SBR) type WWTPs have been widely applied since late 1950s due to their higher degree of operational flexibility and ability of wastewater treatment carried out in a single tank. SBR systems have been successfully used to treat municipal wastewaters. However, their impact on the removal of antibiotic resistance genes has not been defined yet. In this study, therefore, removal of the sulfonamide resistance genes was investigated in SBR type WWTP. For that reason, water samples from influents and effluents were seasonally collected from SBR type WWTP. After extraction of total DNA from influent and effluent water samples, quantification of sulfonamide resistance genes (*sul1*) was performed by quantitative polymerase chain reactions. Our results showed that SBR type WWTP removed *sul1* genes with the efficiencies of 90–100%.

Keywords: Sulfonamide Resistance Genes, *sul1* Gene, Sequencing Batch Reactor, Antibiotic Resistance Genes.

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➢ **POSTER PRESENTATION**

Colostrum Oxidant and Antioxidant Status in Tuj Sheep

Abdulsamed Kükürt[1]*, Mushap Kuru[2], İnan Kaya[3], Enes Akyüz[4], Mahmut Karapehlivan[5]

[1]Kafkas University, Veterinary Faculty, Department of Biochemistry, Kars, Turkey
[2]Kafkas University, Veterinary Faculty, Department of Obstetrics and Gynecology, Kars, Turkey
[3]Kafkas University, Arts and Sciences Faculty, Department of Biology, Kars, Turkey
[4]Kafkas University, Veterinary Faculty, Department of Internal Medicine, Kars, Turkey
[5]Kafkas University, Faculty of Medicine, Department of Medical Biochemistry, Kars, Turkey

Corresponding author e-mail: samedkukurt@gmail.com

Abstract

In this study, it was aimed to evaluate colostrum oxidant and antioxidant status of clinically healthy Tuj ewes. A total of 19 Tuj ewes were used in the study. Colostrum was collected from the sheep at 0, 24, 48 and 72 hours after parturition. Colostrum samples were centrifuged to remove the milk fat. Total antioxidant status (TAS), total oxidant status (TOS) concentrations in colostrum samples were measured by commercial kit using spectrophotometric methods. Oxidative stress index (OSI) was calculated using TAS and TOS data. TAS level decreased especially at 0, 24 and 48 hours in colostrum ($P<0.001$). TOS and OSI showed a statistically significant decrease in all sampling days ($P<0.001$). In conclusion, TOS and OSI decreased after parturition in colostrum which is the most important nutrient and immunity source for new-borns in ruminants.

Keywords: Colostrum, Tuj ewes, TAC, TOC, OSI.

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➢ **POSTER PRESENTATION**

Isolation of Probiotic Lactic Acid Bacteria (LAB) from Honey and Examination of Exopolysaccharide (EPS) Production by the Strains

Ece Şengür[1*], Yavuz Beyatli[2], Zehra Nur Yüksekdağ[2], Nilüfer Cihangir[3]

[1.]M.Sc. Department of Biology (Section of Biotechnology), Faculty of Science, Gazi University, Ankara

[2.]Prof.Dr. Department of Biology (Section of Biotechnology), Faculty of Science, Gazi University, Ankara

[3.]Prof.Dr. Department of Biology (Section of Biotechnology), Faculty of Science, Hacettepe University, Ankara

Corresponding author e-mail: ecesengur@gmail.com

Abstract

Honey is natural products is used not only as a nutritional product but also in health benefits such as; antioxidant, antimicrobial, anti-inflammatory, antiproliferative, anticancer, and antimetastatic effects. Extracellular polymeric (EPS) are natural polymers secreted by microorganisms such as bacteria and yeast. EPS derived from LAB play crucial role in improving the rheology and texture of fermented food formulations and conferring beneficial physiological effects on human health, such as antitumour activity, immunomodulating bioactivity and anticarcinogenecity. This study aims to evaluate the probiotic properties of *Lactobacillus* strains producing exopolysaccharides (EPS) isolated from different honey sources.

In the study, diferent honey samples were obtained from markets and used for isolation of Lactic Acid Bacteria (LAB). Honey samples were diluted in 0.1% peptone water and inoculated to MRS Agar + L-cysteine agar and incubated at 37 ° C for 48 hours. At the end of incubation, selected colonies were inoculated to MRS + L-cysteine broth and activated twice at 37 ° C for 48 hours. Form honey samples, 20 *Lactobacillus* strains were isolated and the morphological, colony characteristics and catalase tests of the isolates were performed. Also, strains were identified by molecular (16S rRNA) sequence analysis. The exopolisaccharide (EPS) production by the strains, cultures were inoculated to MRS Broth and incubted at 37 ° C for 24-48 hours. The EPS production were determined by phenol sulfuric acid method.

The molecular (16S rRNA) identification results showed that all *Lactobacillus* strains were belonged to *Lactobacillus rhamnosus* species. The EPS production of 20 *Lactobacillus rhamnosus* species were varied and found between (2.86 - 66.9 g / L). The highest (66.9 g / L) EPS production was detected in *L. rhamnonus* EDB4 strain.

According to the results obtained in this study, it was observed that probiotic *L. rhamonus* bacteria was dominantly present in the honey samples. The EPS production of *L. rhamonus* strains were varied.

Key words: Honeys, Lactic Acid Bacteria (LAB), EPS Produciton.

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➢ **POSTER PRESENTATION**

Determination of Acid and Bile Resistances of Probiotic *Lactobacillus rhamnosus* Strains Isolated from Different Honeys

Ece Şengür[1*], Yavuz Beyatli[2], Zehranur Yüksekdağ[2], Nilüfer Cihangir[3]

[1.]Department of Biology (Section of Biotechnology, Faculty of Science, Gazi University, Ankara
[2.]Department of Biology (Section of Biotechnology, Faculty of Science, Gazi University, Ankara
[3]Department of Biology (Section of Biotechnology, Faculty of Science, Hacettepe University, Ankara

Corresponding author e-mail: ecesengur@gmail.com

Abstract

Honey is a sweet, thick liquid made by honeybees. Probiotics are beneficial to human health. *Lactobacilli* are dominant lactic acid bacteria (LAB) found in the gastrointestinal tract of humans, animals and honeybees. The selection and use of probiotics in human will require their characterization and in vivo, human trials. Probiotic bacteria must be able to survive in the gastrointestinal tract. The pH of the gastric environment is 1.2 to 2.5. Also, Probiotics organisms must be resistance to bile acids. Bile acids are synthesized in liver from cholesterol and secreted from the gall bladder into the duodenum in the conjugated form (500-700 ml/d).

In this study, 20 *Lactobacillus rhamnosus* strains were used and were isolated form different kind of honey. Strains were identified by molecular (16S rRNA) sequence analysis. MRS broth medium were used for studying acid and bile resistance of the isolates. MRS broth medium were arranged to pH 2, pH 3 and inoculated with the strains, incubated at 37˚C for 48 h. Control medium were pH 6.5. After incubation the growth density (OD) of the isolates were measured at 600 nm with (Digilab Hitachi U–1800) spectrophotometer. The percentage of inhibition were calculated by comparing with the OD values in control group, pH 6.5. Percentage inhibition values of the strains in 0.30% bile concentration were calculated by comparing with the OD values in control group 0.0% bile salts.

The inhibition rates of 20 *L.rhamnosus* strains on pH 2 and pH 3 were varied between; 81.08-83.91% and 40,93-75,93% respectively. Inhibition rates of these strains on %0.3 bile salts were 1.2-9,6%.

In this study *L.rhamnosus* strains showed different activities to tolerate acidic conditions and bile salts.

Key words: Probiotic. Honeys, Acid, Bile, Resistance.

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➢ **POSTER PRESENTATION**

Synthesis of Some Benzoxazole Hybrid Molecules

Fatih Yilmaz[1*], Emre Menteşe[2], Bahittin Kahveci[3]

[1]Vocational School of Technical Studies, Department of Chemistry and Chemical Processing Technology, Recep Tayyip Erdogan University, Rize, Turkey
[2]Recep Tayyip Erdogan University, Faculty of Science and Literature, Department of Chemistry, Rize, Turkey
[3]Karadeniz Technical University, Faculty of Heatlh Sciences, Department of Nutrition and Diethetics, Trabzon, Turkey

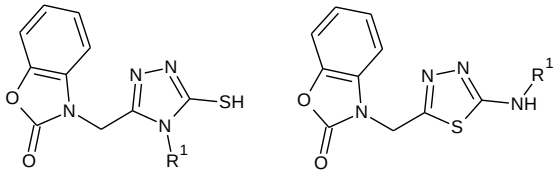
Corresponding author e-mail: fyilmaz@erdogan.edu.tr

Abstract

The molecular hybridization generally refers to the incorporation of two or more bioactive fragments into one molecule through suitable linkers. These new hybrids are always endowed with improved activity or new biological properties compared to their individual components. Molecular hybridization, as an emerging concept in drug discovery, has recently gained increasing attention among medicinal community with several successful examples reported by different groups (1).

Benzoxazoles and their derivatives have gained considerable attention because they possess several chemotherapeutic activities and biological activities. Recent pharmaceutical applications of benzoxazole derivatives are including: anticancer, anti-HIV-1 and antimicrobial, antifungal, RSK2 inhibitors, antidepressants, Human GST P1-1 inhibitors, COX inhibitors, antitumor and antibiotic (2,3).

Triazoles and thiadiazole are pharmaceutically important compounds due to their antimicrobial, antifungal, anticancer, antioxidant, antihypertensive, and antiviral activities. Compounds with these moieties have been demonstrated to have anticonvulsant activity. In addition, triazole derivatives such as vorozol (and anastrozol) and fluconazole are currently in clinical use as anticancer and antifungal agents, respectively (4). In this study, a new serries of benzoxazole hybride molecules containing 1,2,4-triazole ans 1,2,4-thiadiazole moiety were synthesized and identified their structures.



Keywords: Benzoxazole, molecular hybridization, 1,2,4-triazole, 1,2,4-thiadiazole.

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➢ **POSTER PRESENTATION**

The Seedling Reactions of Some Winter Bread Wheat Landraces Materials to Leaf Rust

Kadir Akan[1*], Mevlut Akçura[2], Onur Hocaoğlu[2]

[1]Ahi Evran University, Agriculture Faculty, Plant Protection Department, Kırsehir , Turkey
[2]Çanakkale Onsekiz Mart University, Agriculture Faculty, Field Crops Department, Çanakkale, Turkey

Corresponding author e-mail: kadir.akan@ahievran.edu.tr

Abstract

Leaf rust, caused by the pathogen *Puccinia triticina* (Pt) can occur the worldwide where wheat is grown especially in humid areas. Leaf rust is one of the important fungal diseases impressive, susceptible wheat both yield and quality all the world. Landraces of wheat are one of the important sources of useful genes for resistance breeding program. The purposes of this research were screening leaf rust reactions on the pure lines winter bread wheat landraces and determination suitable material for leaf rust resistance breeding programs.

In this study, 200 pure lines selected from bread wheat landraces were used. The test materials were evaluated for seedling stage reaction to leaf rust in at Central Research Institute for Field Crops in Ankara /Turkey in 2015. Seeds were planted in pots (7x7x9 cm) and plants were grown at 18±3°C. Materials were inoculated with suspension of urediniospores of leaf rust population (avirulent on *Lr9, Lr19, Lr24* and *Lr28*) in mineral oil (Soltrol 170®) at Zadoks growth stage 11-12. Following inoculation, seedlings were placed in a dew chamber overnight at 16±1°C and then transferred to greenhouse adjusted at 18±3°C. Disease was scored according to 0-4 scale after 14 days.

Eleven (6%) of pure lines winter bread wheat landraces pure lines were found resistant to leaf rust population in seedling stage. Leaf rust resistant material will be incorporated into the Turkish leaf rust resistance breeding program as potential sources of resistance.

Key words: Wheat (*Triticum* spp.), winter bread wheat landraces, leaf rust (*Puccinia triticina*)

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➢ **POSTER PRESENTATION**

Investigating the Vitamin C Levels in Different Type of Orange Juices

Arman Aydın, Murat Özdizdar

Uskudar American College, Chemistry Department, Istanbul, Turkey.

Corresponding author e-mail: armanaydin01@gmail.com

Abstract

Vitamin C, or ascorbic acid, is an essential antioxidant needed by the human body and a water soluble antioxidant that plays a vital role in protecting the body from infection and disease. It is not synthesised by the human body and therefore must be acquired from dietary sources – primarily fruits and vegetables. For this reason, there is a common belief that the amount of Vitamin C in orange juice decreases over a short period of time, and when the orange juice in Tetra Pak packaging boxes compared with fresh squeezed ones are excessively different in terms of Vitamin C amount. In the experiment to determine the Vitamin C levels, Redox titration method is used with iodine solution. In regard of the procedure of the experiment potassium iodide, hydrochloric acid and indicative starch are added into the sample that has been tested. The solution is titrated with a known concentration of potassium iodate solution. When all of the ascorbic acid is replaced the solution due to the presence of indicative starch changes color. As a result, the Vitamin C level does not go through a great change as predicted in the hypothesis as time passes, but there is a significant difference between fabricated and freshly squeezed orange juices except one brand of orange juice, which has the highest Vitamin C level when compared with the other brands.

Keywords: Vitamin C, ascorbic acid, orange juice, Tetra Pak.

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➢ **POSTER PRESENTATION**

The Memristance Behaviour of Slime Mold and Aloe Vera in Respect of Electrical Field

Arman Aydın*, Betül Karagöz

Uskudar American College, Physics Department, Istanbul, Turkey.

Corresponding author e-mail: armanaydin01@gmail.com

Abstract

Resistor, Capacitor and Inductor are called to be the fundamental elements of electronics. Back in 1971, a paper was published stating that there must be a fourth component to the fundamental elements of electronics and this caused many research leading up to the invention of inorganic memristors. In the production of a memristor selecting a material that transfersions in itself is vital. In the recent years, the efficiency of the organic memristors are tried to be developed and its applications are search. The reason that caused the shift from inorganic memristors to organic ones is due to the fact that organic memristors are easy to use and cheap to produce. In this research, two different types of organic memristors (Slime Mold and Aloe Vera) are measured in a circuit that varies in voltage. The behaviour of these two organic memristors are investigated and aimed to classify the areas that can be used effectively according to the properties determined. For this purpose, Slime Mold cultures were first prepared and the hysteresis curves showing the behavior of a certain potential difference range are drawn. In the same way, Aloe vera was measured and I-V (hysteresis) characteristics were examined. The different behaviour of Aloe Vera as a memristor was compared with Slime Mold. By answering the question of which living creature can show the memristor feature under which conditions, the usage areas of these organic memristors has been classified. Slime Mold has previously been used in a range of studies from the determination of the Tokyo train line to algorithms that solve complicated labyrinths and an analysis on the memristance capability of Slime Mold has been done. Due to the similarity of behaviors, Slime Molds are thought to be able to produce interesting solutions, especially when working on neural transmission.

Keywords: Memristor, Organic memristor, Slime Mold, Aloe Vera. Electrical field.

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➢ **POSTER PRESENTATION**

Metal Complexes of Schiff Bases Synthesis, Characterization and Antibacterial Activity

Daoudi Sofiane[1*], Benaissa Tahar[1], Adli Djallal Eddine[2], Far Hadjer[1]

[1]Physical Chemistry Studies Laboratory, University of Saïda Dr. Moulay Tahar, Saida Algeria.
[2]Laboratory of Biotoxicology, Pharmacognosy and Biological recovery of plants, Department of Biology, Faculty of Sciences, University of Dr Moulay Taher, Saida, Algeria

Corresponding author e-mail: Daoudi_20@yahoo.fr

Abstract

Schiff base *N*,*N*'-dicyclohexylideneethane-1,2-diamine has been synthesized by condensation of *Cyclohexanone* and ethylenediamine. The ligand is a dibasic bidentate (NN) donor. Metal complex of Cu(II) and Fe(II) have been successfully prepared in alcoholic medium.The complexes obtained are characterized by using, FTIR spectroscopy, UV–Vis spectroscopy, ^{1}H & ^{13}C NMR, and conductivity measurements . Antibacterial activities of ligand and its metal complexes have been determined by screening the compounds against various Gram (+) and Gram (−) bacterial strains.

Keywords: Schiff base, Metal complexes, antibacterial activity.

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➢ **POSTER PRESENTATION**

Evaluation of 5-lipoxygenase Inhibition of Selected Medicinal Plants from Malatya

Mehmet Sina İçen[1*], Halide Edip Temel[2], Fatih Demirci[3], İlhan Gürbüz[4]

[1] İnönü University, Faculty of Pharmacy, Department of Pharmacognosy, Malatya, Turkey.
[2] Anadolu University, Faculty of Pharmacy, Department of Biochemistry, Eskişehir, Turkey.
[3] Anadolu University, Faculty of Pharmacy, Department of Pharmacognosy, Eskişehir, Turkey.
[4] Gazi University, Faculty of Pharmacy, Department of Pharmacognosy, Ankara, Turkey.

Corresponding author e-mail: sina.icen@gmail.com

Abstract

5-Lipoxygenase (5-LOX) is an enzyme involved in arachidonic acid metabolism involved in inflammation, apoptosis, proliferation, atherogenesis and the production of leukotriene (Spanbroek et al., 2003). Due to this, LOX inhibition is an important approach for prevention and drug development. *Carduus nutans*, *Marrubium cuneatum*, *Salvia syrica*, *Teucrium polium*, *Cerasus mahaleb*, and *Pistacia terebinthus* plant material was collected from Malatya. *n*-Hexane, dichloromethane, ethyl acetate, and *n*-butanol fractions were prepared, respectively from the methanol extracts; ethyl acetate, and *n*-butanol fractions were prepared, respectively from the aqueous extracts. The remaining water fractions from the liquid-liquid extraction were also obtained. Based on the reference method, the determination of 5-LOX (from soybeans) inhibition levels of all extracts and fractions was performed by spectrophotometric kinetic method adapted with some modifications (Baylac and Racine, 2003).
As a result, ethyl acetate fraction of aqueous extract from *P. terebinthus*; ethyl acetate fraction of methanol extract from *P. terebinthus* 50 and 48% inhibitions, respectively. All samples were applied at a concentration of 100 µg/mL where nordihydroguaiaretic acid (NDGA) was used as a standard and showed 100% inhibition, the IC_{50} value was 8.43 µg/mL.

Keywords: LOX, Enzyme inhibition, Anti-inflammatory effect, Medicinal plant.

Acknowledgments: This study was financially supported by The Scientific and Technological Research Council of Turkey – TUBİTAK (Project no: SBAG-214S129).

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➢ **POSTER PRESENTATION**

Adsorption of NO_x on Barium-Based MCM-41 Sorbents

Emine Kaya Ekinci*, Kırali Mürtezaoğlu, Nuray Oktar

Gazi University, Faculty of Engineering, Chemical Engineering Department, 06570, Maltepe-Ankara, Turkey.

Corresponding author e-mail: eminekaya@gazi.edu.tr

Abstract

Nitrogen oxides (NOx) are discharged by atmospheric organic decays, forest fires, lightning, and microbiological processes in the earth. The main source of NOx is partial lean burn gasoline engines and diesel engines. NOx trap catalysts are the newest control technology for NOx emissions that consist of mostly NO and NO_2 which are corrosive on materials and toxic for human health. In atmospheric conditions NO oxidize directly to the NO_2. NOx trapping materials can be found among the alkali and alkaline earth metal oxides, in which BaO has been extensively studied. In this study, NO_2 adsorption were investigated on Ba-based MCM-41 sorbents that are synthesized both direct hydrothermal synthesis and wet impregnation method. MCM-41, which stands for Mobil Composition of Matter No. 41 discovered in 1992, shows a highly ordered hexagonal array of unidimensional pores with a very narrow pore size distribution. MCM-41supported sorbents were characterized by XRD, N_2 adsorption-desorption and SEM-EDS analysis. It was observed from XRD analysis that in Ba-based adsorbents, barium oxide and barium species were determined besides silicate formation. Adsorption-desorption isotherms showed type IV isotherm according to the IUPAC classification of adsorption isotherms typical of mesoporous solids. Homogeneous pore size distributions were obtained. Pore size of the sorbent prepared by impregnation method is larger than the sorbent prepared by direct hydrothermal method. EDS results showed that Ba had been incorporated into the structure effectively with good dispersion in both sorbents. NOx adsorption studies were conducted in a quartz-tubular continuous flow reactor (i.d.= 10 mm) using 0.2 g fresh sorbent at 200 ˚C. The outlet concentration of NO, NO_2 and total NOx were monitored online by a chemiluminescence NOx analyzer. As a result of the experimental studies, 20% Ba impregnated MCM-41 adsorbent showed better performance (39 mg NOx/ g Adsorbent) due to the surface barium oxide species that characterized by XRD analysis.

Keywords: NOx, adsorption, barium, MCM-41.

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➢ **POSTER PRESENTATION**

Substantiation of the Presence of *Molva macrophthalma* (Rafinesque, 1810) In Sigacik Bay (North-Eastern Aegean Sea, Turkey)

Deniz Ergüden[1], Yusuf Kenan Bayhan[2], Sibel Alagöz Ergüden[3], Ayhan Altun[1*]

[*1]University of Iskenderun Technical, Faculty of Marine Science and Technology, Iskenderun-Hatay, Turkey
[2]University of Adıyaman, Kahta, Vocational School of Kahta, Adıyaman, Turkey
[3]University of Çukurova, Vocational School of Imamoglu, Imamoglu, Adana, Turkey

Corresponding author e-mail: ayhan.altun@iste.edu.tr

Abstract

A single female specimen of the Spanish ling *Molva macrophthalma* (Rafinesque, 1810) (35.3 cm in total length and 96.2 g in weight) was caught by a commercial trammel net at a depth of 500 m on 19 March 2017 from İzmir coast, Turkey. This paper presents the first substantiated occurrence, and hence, the confirmation of *M. macrophthalma* in the North-eastern Aegean coast of Turkey. This record is significant because the last record of *M. macrophthalma* in the region was made over 50 years in the coastal waters of Turkey. Therefore, the species could be considered as exceptionally rare in the north-easternmost area of the Aegean Sea, Turkey. The specimen preserved in 4% formalin and was deposited in the Museum of the Faculty of Marine Sciences and Technology, Iskenderun Technical University. Morphometric and meristics characters of the specimen are given is documented.

Keywords: Spanish ling, Gadidae, *Molva macrophthalma*, İzmir coast, Aegean Sea.

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➢ **POSTER PRESENTATION**

Farklı Zemin Tiplerine Sahip Alanlarda Sürütme Yolu Üzerinde Meydana Gelen Sıkışma Değerlerinin Belirlenmesi

Tolga Öztürk[1*], Muhittin İnan[2]

[1]İstanbul Üniversitesi, Orman Fakültesi, Orman İnşaatı ve Transportu Anabilim Dalı, İstanbul, Türkiye.
[2]İstanbul Üniversitesi, Orman Fakültesi, Ölçme Bilgisi ve Kadastro Anabilim Dalı, İstanbul, Türkiye.

Corresponding author e-mail: tozturk@istanbul.edu.tr

Özet

Ülkemizde odun üretim çalışmalarında kullanılan tesisler; orman yolları, sürütme yol ve şeritleri, bakım patikaları, vinçli hava hatları ve oluk sistemleridir. Orman yolları tüm ormancılık çalışmaları için gerekli olan ana tesisler olup, sürütme yol ve şeritleri odun üretim çalışmalarında traktör, sürütücü ve hayvanlarla taşıma çalışmalarında yoğun bir şekilde kullanılmaktadır. Bu yoğun kullanım nedeniyle sürütme yol ve şeritlerinin planlanması, gerekliyse inşası, kullanımı ve bakımı çok önemlidir. Sürütme yolu ve şeritlerin üzerinde özellikle traktörlerin tomrukları sürütmesinden dolayı zeminde oluşan sıkışma ve deformasyonlar erozyon riski ve toprağın zarar görmesi açısından göz önüne alınması gereken durumlardır. Bu çalışma, İstanbul Orman Bölge Müdürlüğü, Şile Orman İşletme Müdürlüğü, Sahilköy Orman İşletme Şefliği içerisindeki ormanlık alanlarda yapılmıştır. İki farklı sürütme yolu çalışma için seçilmiştir. Bu sürütme yollarının biri killi kumlu bir toprak yapısına sahipken, diğeri kumlu balçık şeklinde bir toprak yapısına sahiptir. Çalışma alanında sürütme yolları üzerinde belirli mesafelerde enkesitler alınarak bu enkesit alanlarında el penetrometresi ile toprağın sıkışma değerleri bulunmuştur. Aynı zamanda, manuel yöntemler ve aynı zamanda düşük maliyetli yersel fotogrametri yöntemi ile sürütme yolu üzerindeki deformasyon şekli çıkarılmıştır. Sürütme yolu üzerinde her enkesitte 5 farklı noktada, aynı zamanda ormanlık alan içerisinde deformasyon olmamış alanda sıkışma değerleri ölçülmüş ve traktörler ile sürütme yapılan alan ile yapılmayan alandaki sıkışma farklılıkları zemin tiplerine göre ortaya konmuştur. Sürütme yol ve şeritleri üzerinde meydana gelen sıkışma ve zeminin deformasyonu özellikle yağışın çok olduğu ormanlık alanlarda erozyon riskini artırmaktadır. Üretim çalışmaları sonrasında doğaya bırakılan sürütme yolları aynı zamanda eğimleri de yüksek ise yağış suyunu üzerinde akıtarak yol üzerinde çığırlar açılmasına ve toprağın eğim yönünde su ile birlikte akmasına neden olmaktadır. Yağışlı bölgelerde yer alan sürütme yolları mutlaka üretim çalışmalarından sonra uygun bir şekilde değerlendirilmelidir. Eğer aynı bölgede tekrar üretim çalışması yapılmayacaksa bu yollar ağaçlandırılmalı ve doğaya bu şekilde kazandırılmalıdır.

Anahtar Kelimeler: Sürütme yolu, penetrometre, sıkışma, enkesit.

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➢ **POSTER PRESENTATION**

Metiram Genotoksisitesinin *Drosophila* Komet Yöntemi ile Araştırılması

Bülent Kaya*, Merve Güneş, Burçin Yalçın, Havva Ertuğrul

Akdeniz Üniversite, Fen Fakültesi, Biyoloji Bölümü, Antalya, Türkiye

Sorumlu yazar e-mail: bkaya@akdeniz.edu.tr

Özet

Günümüzde birçok zararlıya karşı pestisitlerin kullanımı kaçınılmaz bir şekilde artma eğilimindedir. Tarım zararlılarıyla mücadele amacıyla birçok bölgede çok büyük miktarlarda pestisit, yoğun ve bilinçsiz şekilde kullanılmaktadır. Fungusitler, bitkileri mantar ve mantar hastalıklarından korumak için kullanılmaktadır. Ancak bu kimyasal maddelerin su, toprak, bitki ve atmosferde bıraktığı kalıntılar besin zinciri yoluyla ekolojik çevreyi olumsuz etkilemektedir. Metiram da Mancozeb ve Maneb'in de içerisinde bulunduğu etilen dithiocarbamate grubuna ait sistemik olmayan bir fungusittir. Tarlada ürünlerin hasar görmesini önlemek ve hasat edilen ürünlerin depolanmasında veya taşınmasında bozulmaya karşı korumak için gıda ve süs bitkileri üzerinde kullanım alanına sahiptir. Literatürdeki pestisit çalışmalarının büyük çoğunluğunu insektisit ve herbisit araştırmaları oluşturmaktadır ancak fungusitlerin yaygın kullanımına rağmen çok az kısmına ait *in vivo* ve *in vitro* araştırma bulunmaktadır. Bunların içindeki genotoksisite çalışmaları da oldukça kısıtlıdır. Çalışma kapsamında ülkemizde tarımsal mücadelede yaygın bir kullanıma sahip olan Metiram'ın *Drosophila* hemositlerinde muhtemel DNA hasarı etkisi KOMET (Tek hücre jel elektroforezi) testi ile belirlenmiştir. Çalışma sonuçlarına göre, Metiram'ın sadece en yüksek dozunda (10 mM) kuyruk uzunluğu ve kuyruk momenti açısından istatistiki olarak anlamlı pozitif sonuç gözlenmiştir. Çalışılan diğer dozlarında (1, 2 ve 5 mM) değerlendirilen tüm parametreler (kuyruk uzunluğu, kuyruk yoğunluğu ve kuyruk momenti) açısından kontrol grubuna göre anlamlı sonuç gözlenmemiştir.

Anahtar Kelimeler: Metiram, *Drosophila melanogaster*, Tek hücre jel elektroforezi, Genotoksisite, Fungusit.

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➢ **POSTER PRESENTATION**

Usage of Lactic Acid Bakteria as Preservation Culture in Meat Products

Sabire Yerlikaya*, Hülya Şen Arslan

Karamanoğlu Mehmetbey University, Engineering Faculty, Food Engineering Department, Karaman, Turkey
Corresponding author e-mail: sabirebattal@kmu.edu.tr

Abstract

In addition to the known methods such as sterilization, freezing and drying, which are used for the protection of food components, the storage period of the components is extended and safety is increased by the use of metabolites such as organic acids, reuterine and bacteriocin produced by lactic acid bacteria. These metabolites are known as natural food bioproducts. Lactic acid bacteria exhibit antimicrobial (antagonistic) effects by competing for nutrients and producing / synthesizing metabolic compounds with one or more antimicrobial effects. Antimicrobial metabolites produced by lactic acid bacteria; organic acids (lactic, acetic, formic acid, etc.), carbon dioxide, hydrogen peroxide, diacetyl, acetaldehyde, ethanol, enzymes, reuterin and bacteriocins. One of the most important of these antimicrobial metabolites is bacteriocins. It is called preservative culture for antagonistic cultures that are added to kill only pathogenic microorganisms and prolong product shelf life. There are considerations when creating protective lactic acid bacteria cultures for fresh meat. It is better to use meat-derived lactic acid bacteria as protective culture. Because, their adaptation and growth are easier, they can compete with natural flora. They should be in GRAS status and should not create health risks. Psychrotrophic lactic acis bacteria should be chosen to prevent the development of bacterial pathogens and preventing bacteria growth by forming antimicrobial compounds such as lactic acid and bacteriocin in sufficient amounts during cold storage. It should cause no or very little change in the sensory properties of meat and products.

Keywords: meat, bacteriocin, preservation, food.

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➢ **POSTER PRESENTATION**

Characterization of Magnetic-Chitosan Coated Industrial Waste for Lead Biosorption

Sibel Tunali Akar, Fatih Sayin, Sema Çelik*, Tamer Akar

Eskisehir Osmangazi University, Faculty of Arts and Science, Department of Chemistry, 26480, Eskisehir, Turkey.

Corresponding author e-mail: secelik@ogu.edu.tr

Abstract

Nowadays, Heavy metal pollution in aquatic environment is one of the important environmental problems. Heavy metals, which can pass through living organisms and show accumulation in tissues, cause significant toxic effects in living systems. Conventional methods are generally used to remove heavy metals from aqueous media, but the application of these methods has some disadvantages. Recent years, biosorption has emerged as an alternative method due to advantages such as low cost, high efficiency, fast and environmentally friendly technology potential. Because of difficulties from large scale applications, especially magnetic and immobilized sorbents have become popular. For this purpose, industrial waste olive pomace was coated with chitosan and Fe_3O_4 and this developed sorbent was investigated for the lead biosorption performance. Some characterization analysis was examined to prove the developed sorbent lead biosorption interaction. In this context, zeta potential measurements, IR, SEM and EDX analysis were used to clarify the biosorption mechanism. The surface charges of the sorbent were measured by zeta potential analyzer and the results indicated that the sorbent surface charges were negative from pH 4.0. SEM images showed that while surface of the developed sorbent was rough, porous and irregular. The surface was become smoother and lead signals were clearly appeared in the EDX spectrum of immobilized biosorbent after the biosorption process. IR spectrum of lead loaded sorbent demonstrated intensity increases of the peaks observed at 580, 1458 and 1743 cm^{-1}. Also, intensity of peak was decreased at 628 cm^{-1} after biosorption. These results implied the possible involvement of these functional groups in lead biosorption process.

Keywords: Biosorption, Characterization, Immobilization, Magnetic, Olive pomace

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➢ **POSTER PRESENTATION**

Bulutlanma Noktası Ekstraksiyonu Yöntemi İle Zenginleştirilerek Parabenlerin Spektrofotometrik Tayini

Begüm Menevşe*, Tufan Güray

Eskişehir Osmangazi Üniversitesi Fen Edebiyat Fakültesi Kimya Bölümü

Sorumlu yazar e-mail: bmenevse26@gmail.com

Özet

P- hidroksibenzoik asidin (parabenler) benzoik asit (BA) ve alkil esteri, mikrobiyolojik büyümeyi önlemek için çok sayıda kozmatik, yiyecek, içecek ve kişisel bakım ürünleri kullanılan koruyucu maddelerdir(1).Bazı yeni çalışmalar parabenlerin endokrin sistemi etkileyebileceğini ve göğüs kanserine yol açtığını bildirmiştir (2).
Parabenlerin insan vücuduna karşı sözü edilen bu etkilerinden dolayı tayini için yeni metotların geliştirilmesine ihtiyaç duyulmaktadır.
Bu çalışmada, Parabenlerin spektrofotometrik tayini için ilk defa Brij 58 yüzey aktif maddesi kullanılarak bulutlanma noktası ekstraksiyonu ile zenginleştirme işlemi yapılmıştır. Yöntem, pH, yüzey aktif maddenin derşimi, ekstraksiyon süresi ve sıcaklığı, santrifüj hızı ve tuz derişimi gibi çeşitli değişkenler incelenerek optimize edilmiştir. Optimum şartlarda kalibrasyon eğrisi çizilerek Yöntemin gözlenebilme sınırı (LOD) ve tayin sınırları hesaplanmıştır.

Anahtar Kelimeler: Bulutlanma noktası ekstraksiyonu, parabenler, yüzey aktif madde.

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➢ **POSTER PRESENTATION**

Biosorptive Removal of Nickel (II) with Silica-Gel İmmobilized Grape Pomace Waste

Sibel Tunali Akar[1] , Büşra Nur Pehlivan[2], Hande Nur Ilica[1], Emrah Pilebaz[1], Sema Çelik[1*], Tamer Akar[1]

[1*] Eskisehir Osmangazi University, Faculty of Arts and Science, Department of Chemistry, 26480, Eskisehir, Turkey.
[2] Eskisehir Osmangazi University, Graduate School of Natural and Applied Science, Department of Chemistry, 26480, Eskisehir, Turkey.

Corresponding author e-mail: bsrnrphlvn@gmail.com

Abstract

Heavy metals are group of pollutants released to environment by various industrial applications. The pollution of water sources with these pollutants is a serious global concern, because of then non-biodegradable and toxic natures such as nickel. Therefore environmentally friendly and cost effective new Technologies are required for the removal of heavy metals from the aquatic environment. Biosorption is considerable technique to removal heavy metals, particularly at low concentrations, from aqueous solutions due to its many advantages such as the low cost and high efficiency of adsorbents.
The free and immobilized forms at biomaterials can be used in the biosorption process.
In the present study we developed an immobilized biosorbent proposed from an industrial waste grape pomace. It was immobilized with silica-gel matrix and investigated for the nickel (II) biosorption conditions.
The effect at initial pH on the biosorption process was examined in the range of 2.0-8.0. The biosorption was studied at optimum pH by varying contact time from 5 to 60 min. and biosorbent amount from 0.025 g to 0.12 g to optimized the these conditions.
The optimum pH, contact time and biosorbent amounts were determined as initial solution pH, 15 min and 0.1 g, respectively.
The results indicated that the prepared immobilized biosorbent can be used as alternative biomass for the removal of Ni (II) from aqueous solutions after the optimization process.

Keywords: Grape pomace, Heavy metal, Immobilization, Metal Biosorption, Nickel.

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➢ **POSTER PRESENTATION**

Optimization of the Batch Mode Biosorption of Pb (II) onto *Thamnidium elegans*

Sibel Tunali Akar[1] , Büşra Nur Pehlivan[2], Sema Çelik[1*], Tamer Akar[1]

[1]Eskisehir Osmangazi University, Faculty of Arts and Science, Department of Chemistry, 26480, Eskisehir, Turkey.
[2]Eskisehir Osmangazi University, Graduate School of Natural and Applied Science, Department of Chemistry, 26480, Eskisehir, Turkey.

Corresponding author e-mail: bsrnrphlvn@gmail.com

Abstract

The release of heavy metals into natural waters from different sources brings severe consequences to aquatic environment. The removal of heavy metals from wastewater is very important because of their extreme toxicity towards aquatic, human and other forms of life.
The current physicochemical methods applied to wastewaters are sometimes restricted by some technical and economical drawbacks. In this context studies on the alternative and effective water treatment methods are of great interest.
Biosorption process can be considered as a part of the solution of water pollution. Different types of biosorbents such as fungi, bacteria, yeast and algae are potential sources of biosorbents for this process.
In the present study Pb (II) biosorption ability of *Thaminidium elegans* biomass was investigated as a further of initial pH, biosorbent amount and contact time.
The fungal biomass was reached to 81.59% biosorption yield at optimum batch biosorption conditions (initial pH: 5.5, contact time: 20 min and 5.0 g/L biosorbent amount).
The results obtained from batch mode biosorption indicated that *T. elegans* maybe a good alternative biosorbent for the removal of lead ions from contaminated aquatic media.

Keywords: Biosorption, Heavy metal, Lead, *Thaminidium elegans.*.

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➢ **POSTER PRESENTATION**

Decolorization Conditions of Reactive Violet 1 Dye by a Biosorbent Obtained From Peapod Peel

Tamer Akar[1], Ümmü Gülsüm Uzunel[2*], Gizem Karabulut[1], Sema Çelik[1], Sibel Tunali Akar[1]

[1]Eskisehir Osmangazi University, Faculty of Arts and Science, Department of Chemistry, 26480, Eskisehir, Turkey.
[2]Eskisehir Osmangazi University, Graduate School of Natural and Applied Science, Department of Chemistry, 26480, Eskisehir, Turkey.

Corresponding author e-mail: gulsumuzunel6727@gmail.com

Abstract

The use of synthetic dyes in industrial field has been gradually increased and water containing dyestuffs that have not been sufficiently treated has a considerable role in environmental pollution. The contamination of water sources with the colored effluents can create negative effects on the living systems. In recent years, biosorption is a considerable alternative to the traditional methods for the treatment of this type of effluents. Biosorption as biotechnological method is defined as the removal of various organic or inorganic contaminants from aqueous media using different type of biomasses. Biosorption is an attractive technology with the advantages of low cost, high yield and environmentally friendly technology.

In this study low cost and environmentally friendly biosorbent obtained from peapod peel was investigated for its decolorization of a synthetic dye Reactive Violet 1 containing solutions. The effects of initial pH, contact time and biosorbent dosage on the biosorptive decolorization process were examined.The batch biosorption yield reached up to 87.60% at pH 2.0 using 0.12 g of biosorbent.

This study confirmed that after the required optimization process, the suggested biomass constitutes a low-cost, effective and environmentally friendly biosorbent for the decolorization of Reactive Violet 1 contaminated solutions. The results suggest that peas shell is an alternative biosorbent for removal of reactive dyes from aqueous solutions after optimization of experimental conditions.

Keywords: Biosorption, Decolorization, Reactive Violet 1, Peapod peel.

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➢ **POSTER PRESENTATION**

Biosorptive Decolorization Conditions of Reactive Yellow 85 in Aquatic Media Using Chitosan Coated Olive Pomace

Sibel Tunali Akar[1] , Melda Karadağ[2], Burçak Gök[1], Betül Erken[1], Sema Çelik[1*], Tamer Akar[1]

[1]Eskisehir Osmangazi University, Faculty of Arts and Science, Department of Chemistry, 26480, Eskisehir, Turkey.
[2]Eskisehir Osmangazi University, Graduate School of Natural and Applied Science, Department of Chemistry, 26480, Eskisehir, Turkey.

Corresponding author e-mail: meldakrdg@outlook.com

Abstract

Recently biosorptive decolorization process have received increasing attention for the removal of synthetic dyes from the contaminated aquatic media.
Different types of biomaterials in natural and modified forms, offer good alternatives for the decolarization of dye contaminated solutions.
The present study investigates the ability of an industrial waste olive pomace-immobilized with chitosan matrix to removal Reactive Yellow 85 dye from contaminated solutions. Optimum decolarization conditions were examined in the batch mode with the variation in the parameters of initial pH, contact time and immobilized biosorbent dosage. The dye biosorption equilibrium was attained within 50 min and the maximum decolorization yield for the immobilized biosorbent was found as pH 4.0, 100% using 0.02 g of biosorbent. These observations indicated that the suggested immobilized biosorbent can be regarded as an alternative biosorbent candidate for the removal of reactive dye contamination from aqueous solutions.

Keywords: Decolorization, Immobilization, Olive pomace, Reactive Yellow 85.

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➢ **POSTER PRESENTATION**

Batch Mode Copper Biosorption Conditions of a Macro Fungus *Lactarius salmonicolor*

Sibel Tunali Akar[1], Ümmü Gülsüm Uzunel[2*], Sema Çelik[1], Tamer Akar[1]

[1]Eskisehir Osmangazi University, Faculty of Arts and Science, Department of Chemistry, 26480, Eskisehir, Turkey.
[2]Eskisehir Osmangazi University, Graduate School of Natural and Applied Science, Department of Chemistry, 26480, Eskisehir, Turkey.

Corresponding author e-mail: gulsumuzunel6727@gmail.com

Abstract

Heavy metal pollution in aquatic environment is one of the most important environmental problems today. Heavy metals, which can pass through living systems and show accumulation in tissues, cause significant toxic effects in living systems.
Various chemical and physical processes are used in the removal of heavy metals from industrial wastewater as well as from environmental water sources contaminated with heavy metals.

In recent years; biosorption has been developed as an important alternative method because of its advantages such as low cost, no chemical and biological treatment, high efficiency, fast and environmentally friendly technology. It is known that various bacteria, fungi and algae are used for this purpose. The biomolecules of these biomaterials ensure that both living and dead biomass have a metal interest and therefore offer a biosorption capacity.

In this study, biosorption conditions for Cu^{2+} ions were optimized from aqueous solutions using the cells of *Lactarius salmonicolor* in batch mode. For this purpose effects of solutions pH, contact time and biosorbent dosage on the biosorption process were studied. The biosorption capacity of fungal biomass for Cu (II) ions was highly affected by experimental operating conditions. The maximum biosorption of Cu (II) 81.84% was achieved with the suggested biosorbent at optimum pH of initial solution, biosorbent dosage, 7 g/L and contact time of 5 min.

The results obtained in this study showed the potential applicability of *L. salmonicolor* as a low-cost and ecofriendly biomaterial for the treatment of Cu^{2+} pollution in aquatic environment.

Keywords: Biosorption, Copper, Fungal Biosorbent, *Lactarius salmonicolor*.

Acknowledgements: This work was supported by the Commission of Scientific Research Projects of Eskişehir Osmangazi University (ESOGU) with the Project Numbers 200819007. The authors gratefully acknowledge for financial support by ESOGU.

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➢ **POSTER PRESENTATION**

Gibberella fujikuroi Cells for The Retention of Cd^{2+} in The Aquatic Environment

Sibel Tunali Akar[1] , Melda Karadağ[2], Sema Çelik[1*], Tamer Akar[1]

[1]Eskisehir Osmangazi University, Faculty of Arts and Science, Department of Chemistry, 26480, Eskisehir, Turkey.
[2]Eskisehir Osmangazi University, Graduate School of Natural and Applied Science, Department of Chemistry, 26480, Eskisehir, Turkey.

Corresponding author e-mail: meldakrdg@outlook.com

Abstract

The pollution of aquatic environments by heavy metals is one of the important subject of the environmental quality evaluation with the rapid industrialization, removing toxic metal ions of effluents from discharge of various industries is a popular topic, because these pollutants negatively affect our environment and aquatic ecosystem.
In the present work, we prepare a new biosorbent using *Gibberalla fujikuroi* culture and further investigate its performance for the removal of Cd^{2+} from aquatic environment. Optimum interactions between fungal biomass surface and metal ions were absorved at pH at initial solution pH. The biosorption reached to equilibrium about 15 min. More than 56 Cd^{2+} can be successfully removed by *G. fujikuroi* biomass.
These preliminary findings indicate that biosorbent prepared from *G. fujikuroi* is a good candidate for removal of Cd^{2+} from contaminated aquatic environment.

Keywords: Cadmium, *Gibberalla fujikuroi*, Metal Biosorption.

Acknowledgements: This work was supported by the Commission of Scientific Research Projects of Eskişehir Osmangazi University (ESOGU) with the Project Numbers 200819007. The authors gratefully acknowledge for financial support by ESOGU.

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➢ **POSTER PRESENTATION**

Taflan (*Prunus laurocerasus*) Bitkisinin Meyvesi Kullanılarak Gümüş Oksit Nanopartiküllerinin Sentezlenmesi ve Karakterizasyonu

Aliye Altundas[1]*, Hayrunnisa Nadaroğlu [2,3], Azize Alaylı Güngör [3,4]

[1]Gazi Üniversitesi, Fen Fakültesi, Kimya Bölümü, Ankara, Türkiye
[2]Atatürk Üniversitesi, Erzurum Meslek Yüksekokulu, Gıda Teknolojisi Bölümü, Erzurum, Türkiye
[3]Atatürk Üniversitesi, Fen Bilimleri Enstitüsü, Nanobilim ve Nanomühendislik Bölümü, Erzurum, Türkiye
[4]Atatürk Üniversitesi, Erzurum Meslek Yüksekokulu, Kimya Teknolojileri Bölümü, Erzurum, Türkiye

Sorumlu yazar e-mail: aaltundas@gazi.edu.tr

Özet

Taflan (Laz Kirazı) olarak bilinen ve ülkemizin kuzey kesimlerinde yaygın olarak yetişen çok yıllık bitkidir. Taflan bitkisinin meyvesi, önemli antioksidan etkilere sahip flavonoidler ve fenolik bileşikler bakımından zengin ayrıca C vitamini açısından da oldukça değerlidir. Yapısında bol miktarda fenolik ve flavonoid bileşikler mevcuttur (Öztürk, 2017). Nanoteknoloji, günümüzde makine üretiminden kimyaya, sentez reaksiyonlarından optik sektörüne kadar birçok alanda yaygın olarak kullanılmaktadır. Nano teknolojinin en önemli unsurlarından birisi ise nanosentezdir (Nadaroglu et al., 2017). Nanosentez metotlarından biri olan ve günümüzde yükselen bir değere sahip yeşil nanosentez yaptığımız araştırmada kullanılmıştır. Yeşil nano sentez metodu ile daha az risk faktörü içeren reaksiyonlar mümkün kılınmıştır. Diğer sentez yöntemlerine göre daha avantajlı olan bu metotla gümüş oksit nanopartiküllerini sentezlemek için kullanılan Taflan bitkisi Trabzon ilinin Sürmene ilçesinden temin edilmiştir. Taflan bitkisi; yıkanıp, ayıklanmış, parçalayıcı kullanılarak parçalanıp santafüj edildikten sonra, pH, sıcaklık ve konsantrasyonu ayarlanarak reaksiyonda kullanılmak üzere hazırlanmıştır. Taflan kullanılarak hazırlanan reaksiyon ortamı gümüş nanopartiküllerinin sentezi için kullanılmıştır. Gümüs oksit nanopartiküller kazandıkları fiziksel ve kimyasal özelliklerden dolayı başta antimikrobiyal özelliklerinden dolayı sağlık alanında kullanılmaları, tanı amacıyla kullanımları, fotogalvanik pil üretimi, optik kullanımları ve tekstilde yaygın kullanıma sahiptir. SEM, XRD, FTIR ve TEM kromatoğrafik analizlerinden elde ettiğimiz sonuçlara göre nano boyutta gümüş partiküllerin sentezlendiği belirlenmiştir. Sonuçlar doğrultusunda elde edilen nanopartiküllerin sağlık ve tekstil başta olmak farklı alanlarda kullanılabileceği düşünülmektedir.

Anahtar Kelimeler: Taflan, Nano Gümüş, Yeşil Sentez, Nanopartikül

Kaynaklar

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➢ **POSTER PRESENTATION**

Ham Ceviz (*Juglans regia*) Kabukları Kullanılarak Bakır Oksit Nanopartiküllerinin Sentezlenmesi ve Kullanım Alanlarının Araştırılması

Aliye Altundaş[1*], Azize Alaylı Güngör [2,3], Hayrunnisa Nadaroğlu [3,4], Aynur Babagil[3]

[1*]Gazi Üniversitesi, Fen Fakültesi, Kimya Bölümü, Ankara, Türkiye
[2]Atatürk Üniversitesi, Erzurum Meslek Yüksekokulu, Kimya Teknolojileri Bölümü, Erzurum, Türkiye
[3]Atatürk Üniversitesi, Fen Bilimleri Enstitüsü, Nanobilim ve Nanomühendislik Bölümü, Erzurum, Türkiye
[4]Atatürk Üniversitesi, Erzurum Meslek Yüksekokulu, Gıda Teknolojisi Bölümü, Erzurum, Türkiye

Sorumlu yazar e-mail: aaltundas@gazi.edu.tr

Özet

Bakır oksit nanopartiküllerin sentezi, kazandıkları boyuta bağlı olarak sahip olacakları yeni fiziksel ve kimyasal özelliklerinden dolayı oldukça önemlidir. Bakır oksit nanopartiküller sahip oldukları boyuta bağlı olarak kazandıkları bu yeni özellikleriyle, elektronik alanında, elektrik devrelerinde ve nanobiyosensörler de kullanım alanı bulmuşlardır. Elektriksel iletkenlik, yanma katalizörü, termoelektrik alanında, güneş enerjisi dönüştürücülerinde kullanımı gibi özelliklerinin yanında CuO-NP'lerin antioksidatif, antimikrobiyal ve anti ülser özelliklerinin olması da oldukça göze çarpıcıdır. Ceviz ülkemizde yaygın olarak yetişen çok yıllık bir bitkidir. Meyvesinin sahip olduğu yüksek antioksidan içerik onun gıda ve ilaç sektörü gibi pek çok alanda kullanılmasına neden olmuştur (Sadrolhosseini 2016). Yaptığımız çalışmada ham ceviz kabuğu kullanılarak nanopartikül sentezi için reaksiyon ortamı hazırlanmıştır (Nadaroglu et al., 2017). Ardında elde edilen bu ortam kullanılarak da bakır nitrattan, CuO NP'lerinin sentezi gerçekleştirilmiştir. Elde edilen CuO NP'lerin karakterizasyonu TEM, SEM, FTIR ve XRD gibi kromatografik teknikler kullanılarak yapılmıştır. Yapılan analizler sonucunda nano boyutta olduğu anlaşılan CuO NP'lerinin kataliz gücünden yararlanılarak bazı sentez reaksiyonlarında ya da klinik veya daha geniş kapsamda biyosensör uygulamalarında kullanılabileceği düşünülmektedir.

Anahtar Kelimeler: Ceviz, Yeşil Sentez, Nanopartikül, Nano CuO.

Kaynaklar

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➢ **POSTER PRESENTATION**

Investigation of the Effect of β-carotene Doses on Clone 9 Liver Cells by MTT Assay

Sedat Kacar, Serife Karakaya*, Ezgi Bektur, Ridvan Bagci, Dilek Burukoglu Donmez, Varol Sahinturk

Eskisehir Osmangazi University, Faculty of Medicine, Department of Histology and Embryology, Eskisehir, Turkey.

Corresponding author e-mail: serifekarakaya@ogu.edu.tr

Abstract

β-Carotene is an organic pigment, which gives the plants and fruits red-orange color. It is also a precursor of vitamin A. β-Carotene has several beneficial effects, among others, it protects body from free radicals, prevents cognitive decline and maintain lungs healthy. On the other hand, in some cancer patients, β-Carotene was found to increase the severity of the disease. The present study was designed to determine the impacts of β-Carotene doses in Clone 9 liver cells.

Before experiment, we searched literature for β-Carotene doses and decided to use dosing range between 0 and 80 µM. Liver cells were grown in an incubator at 37°C with 5% CO_2 in a ready-to-use medium, containing FBS and penicillin-streptomycin (10:1). The cells were dislodged by trypsin-EDTA solution. During experiment, the cells were seeded in 96-well plate at a density of 25,000 cells/well. After β-Carotene treatment, the cells were kept in the incubator for 24 h. Thereafter, the cells were treated with MTT solution (final concentration 0.5 mg/mL) at 37°C for 4 h. Finally, the insoluble formazan was solubilized in DMSO and the absorbance was measured at 570 nm in an ELISA reader.

Based on the results, it is revealed that β-Carotene doses of 1.25, 2.5 and 5 µM did not inhibit the cell proliferation. Although not significant, the dose of 10 µM decreased the cell viability by 14%. At the β-Carotene doses of 20, 40 and 80 µM cell viability decreased significantly. IC_{50} concentration of β-Carotene was found as 21.6 µM.

Summarily, in the present study, β-Carotene was demonstrated to inhibit cell proliferation at its some doses and its IC_{50} dose for Clone 9 liver cells was determined. This indicates that β-Carotene dose should be carefully chosen before its usage.

Keywords: β-Carotene, cytotoxicity, MTT, IC_{50}.

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➢ **POSTER PRESENTATION**

What Are Appropriate Plating Densities of Clone 9 Hepatocyte Cells for 24, 48 and 72 Hours Cell Culture Experiment?

Ridvan Bagci*, Sedat Kacar, Erhan Sahin, Ezgi Bektur, Dilek Burukoglu Donmez, Varol Sahinturk

Eskisehir Osmangazi University, Faculty of Medicine, Department of Histology and Embryology, Eskisehir, Turkey

Corresponding author e-mail: dr.ridvanbagci@gmail.com

Abstract

Cell culture is the process by which cells are maintained in a controlled condition. The cells of interest are grown in vitro conditions and exposed to different perturbation to evaluate their response. Therefore, to have reliable and robust results, we have to optimize the cells' conditions such as living conditions, medium type, detaching method, used chemicals and plating density. In the current study, our goal was to ascertain optimized plating density of Clone 9 cell lines by microscopic examination.

First, Clone 9 cells were plated into 75 cm^2 flasks in a prepared medium containing ready-to-use medium, fetal bovine serum and penicillin-streptomycin in incubator at 37 °C with 5% CO_2. After sufficient confluency (70-80%) was achieved, the cells were removed from flasks with trypsin and plated into 96 well-plates. From the row A to G of plate, 16,000; 8,000; 4,000; 2,000; 1,000; 500 and 250 cells/well were seeded. The experiment was carried out 3 times for 24, 48 and 72 hours. After respective times, the each row of plates were examined under the microscope and photographed.

Our findings revealed that the plating density of Clone 9 cells for 24, 48 and 72 hour experiments was 25,000; 20,000 and 16,000 cells per well of 96-well plate. When we convert the plating density cells per cm^2, it was found as 78,125; 62,500; 50,000 cells per cm^2 for 24, 48 and 72 hour experiments.

In conclusion, in this study plating density of Clone 9 hepatocyte cells for 24, 48 and 72 hours were given as cell density per well and per cm^2. These values can be used for other closely related hepatocyte cell lines, too.

Keywords: Plating density, Clone 9 cell line, optimization.

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➢ **POSTER PRESENTATION**

A Non-Destructive Chemical Analysis of Wood Tissue: Confocal Raman Imaging of Siberian Pine

Mahmut Ali Ermeydan*, Mert Babacan

Bursa Technical University, Forestry Faculty, Forest Industry Engineering Department, Bursa, Turkey.

Corresponding author e-mail: mahmut.ermeydan@btu.edu.tr

Abstract

Confocal Raman microscopy has been used to illustrate chemical and molecular composition of plant and wood cell wall tissues for a decade. Two-dimensional chemical images are calculated by integrating the acquired characteristic spectral bands. Thus, direct visualization and distribution of the spectral bands on a two-dimensional image can be provided. For instance, cellulose or lignin distribution or content without any pre-treatment or staining of the cell wall can be measured. The wood cell wall has a hierarchical structure and can be assumed as a natural composite due to its polymeric composition and content of several different layers during cell growth. When wood get ages, then the inner cells are started to dead but the lignocellulosic cell wall with its tubular structure remains. That tubular cell walls sticking together to form wood. Wood cell wall has different layers called the primary cell walls and the mechanically important secondary cell wall which consists of three other sublayers (S1, S2, and S3). The cellulose microfibril angle that measures the orientation of cellulosic fibers inside wood and chemical composition differs between those sublayers. The thickest layer is S2 which is 75%–85% of the total thickness of the cell wall and provide mechanical strength to whole system. Between tubular cell walls an adhesive like layer that is called middle lamella. The chemical composition of the cell wall and the alignment of the cellulose microfibrils show significant between species. Scanning Raman microscopy in this way provides a powerful and non-destructive analysis to measure chemical composition and microfibril angle of wood cell walls by imaging changes in molecular cell wall organization with high spatial resolution. In this study, Siberian pine cell walls have been analyzed for the first time with Confocal Raman microscopy to illustrate cell wall composition and microfibril angle of cellulosic fibrils.

Keywords: confocal Raman imaging, Siberian pine, wood cell wall, vibrational spectroscopy.

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➢ **POSTER PRESENTATION**

Investigation of Biological Properties of New 1-(4-Aminocarbonyl)-piperidin-1-yl-methyl)-3-alkyl(aryl)-4-[3-(3-nitrobenzoxy)-4-methoxybenzylidenamino]-4,5-dihydro-1H-1,2,4-triazol-5-ones

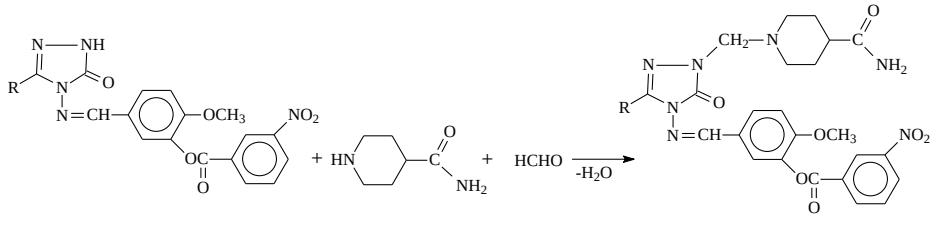
Haydar Yüksek, Fevzi Aytemiz*, Sare Demirci

Kafkas University, Faculty of Sciences and Letter, Department of Chemistry, Kars, Turkey

Corresponding author e-mail: fevziaytemiz53@gmail.com

Abstract

The biochemical properties of the triazole ring and triazole derivatives containing this ring, which are important members of the heterocyclic compounds, provide a broad field of study. Especially in recent years, the triazole ring, which is manifested in increased biological activity studies, is a ring with antimicrobial, antioxidant, anti-inflammatory and different pharmacological properties.
In the present study, the reactions of 3-alkyl(aryl)-4-[3-(3-nitrobenzoxy)-4-methoxybenzylidenamino]-4,5-dihydro-1H-1,2,4-triazol-5-ones (Aytemiz et al., 2015) with 4-piperidine carboxamide in the presence of formaldehyde were investigated and 1-(4-aminocarbonyl)-piperidin-1-yl-methyl)3-alkyl(aryl)-4-[3-(3-nitrobenzoxy)-4-methoxybenzylidenamino]-4,5-dihydro-1H-1,2,4-triazol-5-ones.
The new five compounds were characterized using IR, 1H-NMR, 13C-NMR spectral data. Antibacterial activities of the new compounds were also evaluated against six bacteria such as Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus, Bacillus subtilis, Bacillus cereus and Klepsiella pneumonia according to agar well diffusion.



1

1, 2	R
a	CH_3
b	CH_2CH_3
c	$CH_2C_6H_5$
d	$CH_2C_6H_4CH_3$ (*p-*)
e	$CH_2C_6H_4Cl$ (*p-*)

2

Keywords: 1,2,4-triazol-5-one, Mannich base, Synthesis, Antimicrobial activity.

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➢ **POSTER PRESENTATION**

In Vitro Synergism in Combination between Essential Oil or Natural Products and Antibiotics against Pathogen Microorganisms

Sevil Toroglu[1]*, Dilek Keskin[2], Mete Karaboyun[1]

[1]Kahramanmaras Sutcu Imam University, Science and Arts Faculty, Department of Biology, 46100, Kahramanmaras, Turkey
[2]Adnan Menderes University, Kosk Vocational High School, Aydin, Turkey

Corresponding author e-mail: storoglu@ksu.edu.tr

Abstract

Antibiotics have been effective against pathogen microorganisms and in treating infectious, but resistance to conventional antibiotics has led to the emergence of new and the reemergence of past infectious diseases. Since high level acquired resistance to these antibiotics is frequent, it is reasonable to use combination therapy for achieve bactericidal synergism.

The combination can be different plant extracts or essential oils (EOs) or plant extracts with standard antibiotics or EOs with standard antibiotics or antibiotics with chemicals. Combination therapy can be used to enlarge the antimicrobial spectrum, to prevent the occurrence of resistant mutants and to decrease toxicity, thereby displaying antimicrobial activity greater than that would be expected from each antimicrobial drug alone. Plant antimicrobials have been found to be synergistic enlarger in that though they may not have any antimicrobial properties alone, but when they are taken simultaneously with standard drugs they enhance the effect of that drug.Synergism is defined as a positive interaction achieved when two agents are combined and together they carry out an inhibitory effect (on the targeted pathogen microorganisms) that is greater than the complete of their individual effects.

A presume solution may be to combine existing antibiotics with phytochemicals to advance the efficacy of antibiotics. A group of phytochemicals has such effects, according to in vitro studies, is essential oils (EOs) and their components. The present review describes in detail, the observed synergy between natural extracts or EOs and standard or synthetic antibiotics fighting against microbial infections.

Keywords: Synergism; Combination therapy; Natural plant extracts; Essential oils; Standard antibiotics; Antibiotic resistance.

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➢ **POSTER PRESENTATION**

Square-Wave Voltammetric Method for Determination of Ferulic Acid using a Boron-doped Diamond Electrode

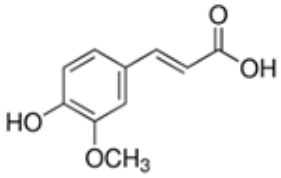
Pınar Talay Pinar*[1], Tamer Tuluk[1], Zuhre Senturk[2]

[1]Van Yuzuncu Yil University, Faculty of Pharmacy, Department of Analytical Chemistry, Van, Turkey.
[2]Van Yüzüncü Yıl University, Faculty of Arts and Sciences, Department of Chemistry, Van, Turkey.

Corresponding author e-mail: ptalay@gmail.com

Abstract

Ferulic acid is a hydroxycinnamic acid (4-hydroxy-3-methoxycinnamic acid), a type of organic compound and it is an important phenolic antioxidant found in or added to diet supplements, beverages, and cosmetic creams. Herein, a simple and sensitive voltametric method was developed for determination of ferulic acid in aqueous media (Phosphate buffer, pH 3.0) on a anodically pre-treated boron-doped diamond (BDD) electrode using square-wave voltammetry (SWV). The dependence of peak current and potential on pH, scan rate and SWV parametes were studied. The calibration curves for determination of ferulic acid showed an excellent linear response, ranging from 3×10^{-6} to 8×10^{-5} M. The limits of detection was 9.73×10^{-8} mol L^{-1}.The proposed method was successfully applied in the determination of ferulic acid in the pharmaceutical sample.



Keywords: Ferulic Acid, Voltammetry, Boron-Doped Diamond Electrode, Pharmaceutical Sample.

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➢ **POSTER PRESENTATION**

Pollen Morphological Analysis on Genus *Dianthus* L. Section Dentati

Derya Şimşek, Aydan Acar Şahin*, Ergin Hamzaoğlu, Nur Münevver Pinar

Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey

Corresponding author e-mail: aydanacar24@gmail.com

Abstract

Dianthus L. is represented by 76 species in Turkey. Many species of the genus have been grown as ornamental plants for hundreds of years due to their attractive flowers. In this study, it is aimed to compare pollen morphological characteristics of *Dianthus zonatus* Fenzl var. *zonatus. Dianthus zonatus* Fenzl var. *aristatus* (Boiss.) Reeve, *Dianthus zonatus* Fenzl var. *hypochlorus* (Boiss. & Heldr) Reeve in section Dentati. The pollen morphology of 3 taxa belonging to *Dianthus* L. was studied in LM and SEM in detail. In LM studies, pollen preparations were prepared by Erdtman (1952) method. In SEM studies morphological observations were made with JEOL JSM 6490LV model scanning electron microscope. Pollen is radial symmetric, isopolar, pantopolyporate and spheroidal. Diameter (D) ranges from 33.7 to 40.4 µm.Ornamentation is scabrate and scabrate perforate. In 10 µm² has 14-22 spinules, 1-2 punctum. The semicircular conical spinules are 0.4-1 µm in length and 0.6-0.9 µm in base width. The exine is 2.5-3.2 µm and is subtectate. Pores are 4.2-6.9 µm in diameter and circular in shape. The distance between pores (C) ranges from 8.6 to 14.6 µm. The operculum has conical spinules with a diameter of 2.2-3.5 µm and a length of 3.4 µm. The number of pore varies between 24-65. The pollen diameter showed similarity between *D. zonatus* var. *zonatus* and *D. zonatus* var. *aristatus*, while *D. zonatus* var. *hypochlorus* has the maximum pollen diameter within the taxa examined. *D. zonatus* var. *zonatus* and *D. zonatus* var. *hypochlorus* are scabrate; *D. zonatus* var. *aristatus* has scabrate perforate ornamentation. The largest pore diameter was observed in *D. zonatus* var. *hypochlorus* while the smallest was calculated in *D. zonatus* var. *zonatus*. *D. zonatus* var. *aristatus* has a minimum number of pores, while *D. zonatus* var. *hypochlorus* has a maximum number of pores.

Keywords: *Dianthus,* Dentati, pollen, morphology, LM, SEM

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➢ **POSTER PRESENTATION**

Hydrogen Production via Ammonia Decomposition Reaction over Fe, Mo Incorporated Bimetallic Catalysts in Microwave Assisted Reactor System

Melih Güler[1], Cansu Korkusuz[1], Timur Doğu[2], Dilek Varışlı[1*]

[1]Gazi University, Department of Chemical Engineering, Ankara, Turkey.
[2]Middle East Technical University, department of Chemical Engineering, Ankara, Turkey.

Corresponding author e-mail: dilekvarisli@gazi.edu.tr

Abstract

Hydrogen production from ammonia has gained great attention due to the elimination of the COx components, which are formed as byproducts in conventional hydrogen production routes and are not preferred due to their poisoning effects. In the present study, ammonia decomposition reaction was carried out using iron and molybdenum incorporated bimetallic catalysts. Multiwall carbon nanotubes (MWCNT) were used as the support material and Ammonium Molybdate ($H_{24}Mo_7N_6O_{24}$) and Iron Nitrate ($Fe(NO_3)_3 9H_2O$) were added sequentially as metal precursors. While working with microwave system, dielectric properties of materials are very important to get high activity and carbon-based materials, which are either in the structure of the catalysts or additive to the catalysts, are generally preferred due to their high dielectric constant. Reaction studies were carried out using 0.1 g of catalysts under the flow of pure nitrogen (60ml/min) in microwave heated reaction system. Results showed that total conversion was achieved at a reaction temperature of 450^{o}C in this system. Indeed, Fe, Mo incorporated bimetallic catalysts were also tested in conventionally heated reactor system under the same feed conditions and only 20 % conversion could be obtained at 600^{o}C. Moreover, results of monometallic cases, i.e. iron incorporated MWCNT and molybdenum incorporated MWCNT, also showed conversion values in the range of 20 to 27%. Recent years, microwave heated reactor systems have become an attractive way to proceed reactions, especially for endothermic ones and higher activities which could be achieved at lower reaction temperatures in comparison to conventionally heated system is explained with the transfer of energy directly to the active species.

Keywords: Microwave reactor, ammonia, hydrogen, bimetallic catalyst.

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➢ **POSTER PRESENTATION**

Determination of Radical Scavanging Activities of Novel Pyrimidine Analogoues

Metin Konuş[1*], Esvet Akbaş[2], Erdem Ergan[2], Can Yılmaz[1], Doğan Çetin[1], Nurhan Didem Kızılkan[1]

[*1]Institute of Natural and Applied Sciences, Faculty of Science, Department of Molecular Biology and Genetics, Van, Turkey.
[2]Institute of Natural and Applied Sciences, Faculty of Science, Department of Chemistry, Van, Turkey.

Corresponding author e-mail: mkonus@yyu.edu.tr

Abstract

The pyrimidine has special character because of its specific ring system. It has also important biological and chemotherapeutic properties. The pyrimidine ring containing compounds are particular classes of heterocyclic compounds that show several types of biological activities such as anticancer, antiviral and antioxidant activities. A molecule that inhibits the oxidation of other molecules called as an antioxidant. As oxidation reactions generally leads to the production of free radicals, these radicals may cause damage or death to the cell. An antioxidant molecule can terminate this process by removing radical intermediates. In this study, two different popular radical scavenging activity determination methods (DPPH and Galvinoxyl assays) were used to test in vitro radical scavenging activities of different novel pyrimidine analogous. Radical scavenging activities of synthesized pyrimidine analogous were determined with DPPH and galvinoxyl assays, according to the modified Blois (1958) and Shi et al. (2001) methods, reciprocally. According to the test results, while radical scavenging activities of tested pyrimidine analogoues showed low radical scavenging activities toward DPPH radical compared to trolox standard, some of the tested pyrimidine analogous exerted significantly higher radical scavanging activities toward galvinoxyl radical compared to the quercetin standard.

Keywords: Pyrimidine Analogous, Radical Scavenging Activities, DPPH, Galvinoxyl.

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➢ **POSTER PRESENTATION**

Hirfanli Baraj Gölündeki Suda Bulunan Eser Elementlerin ICP-OES ile Tayini

Şükrü Kalaycı*, Bekir Sıtkı Çevrimli

Gazi Üniversitesi Teknik Bilimler MYO Kimya Teknolojileri Bölümü, Ankara

Sorumlu yazar e-mail: skalayci@gazi.edu.tr

Özet

Bu çalışmada Ankara`nın içme suyu sıkıntısını gidermek için kullanılacak olan Kızılırmak Suyu`ndaki eser elementlerin tayin için ICP-OES kullanılmıştır. Hirfanlı Baraj Gölü`nün değişik yerlerinden polietilen şişelere bir iki mililitre HCl eklenerek alınan su örneklerindeki eser elementler, Bölümümüzde bulunan ICP-OES cihazıyla tayin edildi.

ICP-OES cihazıyla, barajdan gelen su örneklerindeki Kurşun, Bakır, Kadmiyum, Toplam Krom, Nikel, Mangan, Demir, Arsenik, Potasyum, Kalsiyum, Magnezyum ve Sodyum elementlerini tayin ettik. Toplam Krom 0.01 mg/L , Bakır 0.08 mg/L iken, Arsenik, Nikel, Demir, Kadmiyum, Kurşun değerleri ise bu iki değer arasında bulunmuştur. Daha yüksek değerlerde bulunan Potasyum, Magnezyum, Kalsiyum ve Sodyum miktarları 7 mg/L ile 100 mg/L arasında değişmektedir. Her bir örnek için ölçümler 4`er defa tekrarlanmıştır.

Anahtar Kelimeler: Eser Element, ICP-OES, Spektroskopi, Tayin

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➢ **POSTER PRESENTATION**

Synthesis and *In-Vitro* Antioxidant Activities of Some New 2-methoxy-4-[(3-Alkyl-5-oxo-1*H*-1,2,4-triazol-4(5H)-yl)iminomethyl]phenyl benzenesulfonates and N-Acetyl Derivatives

Murat Beytur*, Elif Tarmaşir, Haydar Yüksek

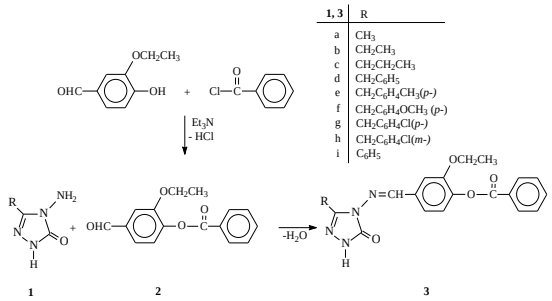
Kafkas University, Faculty of Sciences and Letter, Department of Chemistry, Kars, Turkey

Corresponding author e-mail: muratbeytur83@gmail.com

Abstract

Antioxidants are extensively studied for their capacity to protect organism and cell from damage that is induced by the oxidative stress. A great deal of research has been devoted to the study of different types of natural and synthetic antioxidant. A large number of heterocyclic compounds, containing the 1,2,4-triazole ring, are associated with diverse biological properties such as antioxidant, anti-inflammatory, antimicrobial and antiviral activity. In the present study, due to a wide range of applications to find their possible antioxidant activity, In the present study, nine 3-alkyl(aryl)-4-(3-ethoxy-4-lbenzoxy-benzylidenamino)-4,5-dihydro-1*H*-1,2,4-triazol-5-one (3) were synthesized from the reactions of the corresponding 3-alkyl(aryl)-4-amino-4,5-dihydro-1*H*-1,2,4-triazol-5-ones (1) with 3-ethoxy-4-benzoxybenzaldehyde (2) which was obtained from the reaction of 3-ethoxy-4-hydroxybenzaldehyde with benzoyl chloride by using triethylamine. The titled compounds characterized by IR, ^{1}H NMR and ^{13}C NMR spectral data.

In the second part of the study, the antioxidant properties of the compounds 3 were studied and evaluated using different three antioxidant assays; including reducing power, free radical scavenging and metal chelating activity. Some of the compounds showed moderate antioxidant activities.



Keywords: 1,2,4-Triazol-5-one, Synthesis, Antioxidant activity.

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➢ **POSTER PRESENTATION**

Evaluation of Theoretical and Experimental Properties of 2-[3-methyl-4,5-dihydro-1H-1,2,4-triazol-5-one-4-yl]-phenoxyacetic Acide

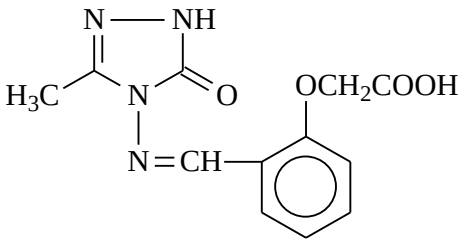
Murat Beytur[1]*, Esra Sinim[2], Mustafa Calapoğlu[2], Önder Albayrak[3], Haydar Yüksek[1]

[*1]Kafkas University, Faculty of Sciences and Letter, Department of Chemistry, Kars, Turkey.
[2]Süleyman Demirel University, Faculty of Sciences and Letter, Department of Chemistry, Isparta, Turkey.
[3]Atatürk Vocational School of Health Services, Kars, Turkey.

Corresponding author e-mail: muratbeytur83@gmail.com

Abstract

In this study, 2-[3-methyl-4,5-dihydro-1*H*-1,2,4-triazol-5-one-4-yl]-phenoxyacetic acide was optimized by using B3LYP/6-311+G(d,p) and HF/6-311G+(d,p) basis sets. Firstly, molecular structure, HOMO and LUMO energy analysis, electronic transitions, Natural Bonding Orbital (NBO) analysis, total static dipol moment (μ), the mean polarizability (<α>), the anisotropy of the polarizability (Δα), the mean first-order hyperpolarizability (<β>), electronegativity (χ), hardness (η), molecular electrostatic potential maps (MEP), and Mulliken charges of the 2-[3-methyl-4,5-dihydro-1*H*-1,2,4-triazol-5-one-4-yl]-phenoxyacetic acide have been investigated by using B3LYP and HF levels with the 6-311+G(d,p) basis set. Then, ^{1}H-NMR and ^{13}C-NMR spectral data values were calculated according to the method of GIAO using the program package Gaussian G09W Software. Experimental (Sinim et al., 2017) and theoretical values were inserted into the graphic according to equitation of δexp=a+b. δ calc. The standard error values were found via SigmaPlot program with regression coefficient of a and b constants. Also, calculated IR data of compound were calculated in gas phase by using of 6311+G(d,p) basis sets of B3LYP and HF methods and are multiplied with appropriate adjustment factors. Theoretical infrared spectrums are formed from the data obtained according to B3LYP and HF methods. In the identification of calculated IR data was used the veda4f program.



Keywords: 1,2,4-Triazol-5-one, GIAO, B3LYP, HF, Natural Bonding Orbital, HOMO and LUMO.

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➢ **POSTER PRESENTATION**

Synthesis, *In Vitro* Antifungal Activities and DNA-Binding Studies of Two Schiff Bases Derivated from Sulfamethizole and Hydroxy-Substituted Salicylaldehydes

Ender Biçer[1], Vahide Pehlivan[1*], Yeliz Genç Bekiroğlu[2]

[1]Ondokuz Mayıs University, Faculty of Arts and Sciences, Department of Chemistry, 55139 Atakum-Samsun, Turkey
[2]Ondokuz Mayıs University, Bafra Vocational School, Department of Herbal and Animal Production, 55400 Bafra-Samsun, Turkey

Corresponding author e-mail: vahideakyuz_86@hotmail.com

Abstract

Two new Schiff bases were prepared by the reactions of 3-hydroxy salicylaldehyde and 4,6-dihydroxy salicylaldehyde with sulfamethizole. These compounds were characterized by elemental analysis, FT-IR and ^{1}H NMR. It was determined that only 4,6-dihydroxy salicylaldehyde reacted with both primary and secondary amine groups of sulfamethizole. The anti-fungal potencies of the Schiff bases against *Candida albicans* (ATCC 10231) have been investigated. The Schiff bases exhibited potent antifungal activities when compared with sulfamethizole. The Schiff bases were also studied for their interactions with calf thymus-DNA (CT-DNA) at physiological pH using cyclic voltammetry technique. The experimental results showed that the currents of the main cathodic peaks of Schiff bases decreased by means of the increasing CT-DNA concentration due to the binding process between them. Although the Schiff base derivated from 3-hydroxy salicylaldehyde has higher antifungal activity (i.e. lower MIC value), its DNA-binding strength is lower than that of other Schiff base. Consequently, it was found that there was an inverse relationship between antifungal activity and DNA-binding strength for these Schiff bases.

Keywords: Schiff base, Sulfamethizole, Antifungal activity, DNA-binding.

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➢ **POSTER PRESENTATION**

Tetracycline Removal by Magnetic Halloysite Nanotubes from Medical Wastewaters

Yeşim Sağ Açıkel[1*], Parinaz Raeiatbin[2]

[1]Hacettepe University, Engineering Faculty, Chemical Engineering Department and Bioengineering Division, Institute of Science, 06800, Beytepe, Ankara, Turkey.
[2]Hacettepe University, Bioengineering Division, Institute of Science, 06800, Beytepe, Ankara, Turkey.

Corresponding author e-mail: yesims@hacettepe.edu.tr

Abstract

Tetracyclines are among the antibiotics that are used extensively for disease control and in livestock feed due to their great therapeutic values. The wide spread use of tetracyclines has led to dissemination of these compounds into the water and soil environments. In this study, the tetracycline removal from aqueous media by magnetic halloysite nanotubes (HNT-Fe_3O_4) was investigated. HNT-Fe_3O_4 nanotubes were synthesized using co-precipitation method. The adsorption of tetracycline by these nanotubes was investigated as a function of medium pH, adsorbent concentration, initial tetracycline concentration and contact time. When the contact time between tetracycline and HNT-Fe_3O_4 nanotubes was 0-30 mins., the adsorption capacity of HNT-Fe_3O_4 nanotubes showed a rapid increase. More than 80% of equilibrium adsorption capacity of tetracycline on HNT-Fe_3O_4 nanotubes was reached in a contact time of 180 minutes. The optimum conditions for the tetracycline adsorption by HNT-Fe_3O_4 nanotubes were determined as pH 5.0, 50 mg/L tetracycline concentration, 0.5 g/L nanotube concentration. When the concentration of HNT-Fe_3O_4 nanotubes was increased from 0.5 g/L to 2.0 g/L, the adsorbed tetracycline concentration and adsorption efficiency were increased from 16.99 mg/L and 84.95%; 21.68 mg/L and 100%, respectively, where as the amount of tetracycline adsorbed per unit weight of HNT-Fe_3O_4 nanotubes decreased from 33.98 mg/g to 10.84 mg/g. It can be attributed that nanotubes form agglomerates by sticking together at higher adsorbent concentrations in aqueous media and active adsorption surface area decreases. When the initial tetracycline concentration was increased from 10 mg/L to 50 mg/L, the amount of tetracycline adsorbed per unit weight of HNT-Fe_3O_4 nanotubes increased from 18.87 mg/g to 50.31 mg/g. On the other hand, the adsorption efficiency decreased from 96.31% to 47.82%. The fit of tetracycline equilibrium adsorption on HNT-Fe_3O_4 nanotubes to the adsorption equilibrium models was investigated and the values of adsorption parameters were calculated.

Keywords: Wastewater, Adsorption, Tetracycline, Magnetic halloysite nanotubes.

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➢ **POSTER PRESENTATION**

An Electrochemical Study on the Interactions of Cysteine and Glutathione with Rifampicin at Different pHs

Ender Biçer, Vahide Pehlivan*

Ondokuz Mayıs University, Faculty of Arts and Sciences, Department of Chemistry, 55139 Atakum-Samsun, Turkey

Corresponding author e-mail: vahideakyuz_86@hotmail.com

Abstract

Cysteine and glutathione are amino acids contain a thiol group. In this study, first of all, the voltammetric behaviours of cysteine and glutathione at mercury electrode were investigated using cyclic voltammetry and their main redox signals were determined. The obtained main redox signals could be attributed to the formation and reduction of mercurous thiolate salts. In the presence of rifampicin, the peak currents of mercurous cysteine and glutathione thiolates ($Hg_2(RS)_2$) decreased and their potentials shifted to less negative values owing to the formation of adducts between rifampicin and the two thiol amino acids. In addition, a new redox signal at the negative potentials, close to 0 V (*vs.* $Ag\,|\,AgCl\,|\,KCl_{sat.}$) was observed. With increasing rifampicin concentration, the current of new redox signal gradually increased; however, the peak currents of the mercurous thiolates decreased. The data obtained at the different pH values were also compared with each other. According to the experimental results, it could be concluded that the electrochemical activity of the thiol-rifampicin adducts was sourced from the redox process of the naphthohydroquinone moiety on the rifampicin molecule.

Keywords: Rifampicin, Thiol-adduct, Cysteine, Glutathione, Cyclic voltammetry.

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➢ **POSTER PRESENTATION**

Changes in Biochemical Compositions of Golden Grey Mullet (*Liza aurata*) and Gold Band Goatfish (*Upeneus moluccensis*) from Eastern Mediterranean

Yasemen Yanar*, Aygül Küçükgülmez Yandim, Mahmut Yanar

Çukurova University, Fisheries Faculty, Turkey

Abstract

The aim of this work was to study the seasonal variations of the proximate compositions, fatty acids contents and related lipid indices (atherogenic, thrombogenic and polyene index) of golden grey mullet (*Liza aurata*) and gold band goatfish (*Upeneus moluccensis*) caught from the North-Eastern Mediterranean Sea. Proximate compositions and fatty acid contents of both fish species showed statistically significant seasonal variations ($p < 0.05$). While the lipid contents were highest in autumn and were lowest in winter in golden grey mullet and gold band goatfish. The total polyunsaturated fatty acids in gold band goatfish were observed no change among the seasons, whereas that in golden grey mullet was highest in winter. Levels of EPA, DHA and n-3/n-6 ratios, as well as atherogenic, thrombogenic and polyene indices, were significantly changed among seasons. The results show that golden grey mullet and gold band goatfish, which are among the important fish in Turkey and of international commercial value, are a good source for human consumption in terms of their nutritional quality.

Keywords: *Liza aurata*, *Upeneus moluccensis*, Proximate Composition, Season, Fatty Acids.

This study was supported by the Çukurova University Research Fund (No: FBA-2016-6069).

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➢ **POSTER PRESENTATION**

Synthesis and Antioxidant Activities of New Di-{2-methoxy-4-[1-(morpholin-4-yl-methyl)-(3-alkyl-4,5-dihydro-1H-1,2,4-triazol-5-on-4-yl)-azomethine]phenyl} adipates

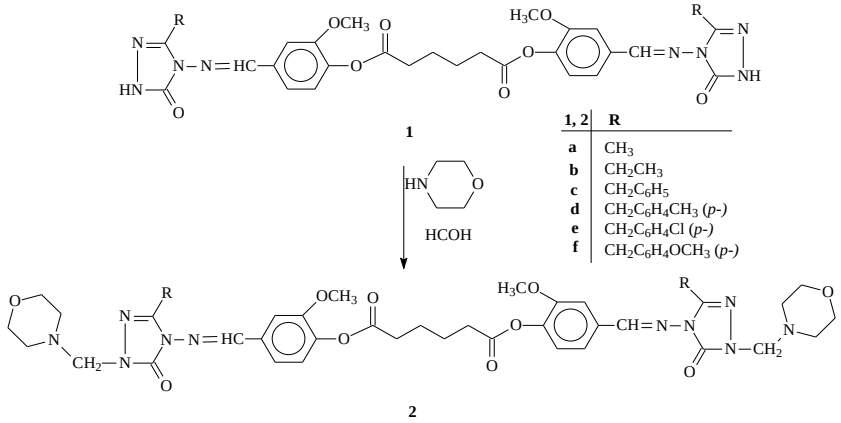
Sevda Manap*, Özlem Gürsoy Kol, Haydar Yüksek

Kafkas University, Faculty of Sciences and Letter, Department of Chemistry, Kars, Turkey.

Corresponding author e-mail: manapsevda@gmail.com

Abstract

Considering about the development of new hetero moieties by combining potential biological active scaffolds, an attempt was made here to obtain 1,2,4-triazoles bearing 3-methylpiperidine ring. In this regard, di-{2-methoxy-4-[(3-alkyl-4,5-dihydro-1H-1,2,4-triazol-5-on-4-yl)-azomethine]phenyl} adipates (1) (Yüksek and Manap, 2017) reacted with formaldehyde and morpholine to afford di-{2-methoxy-4-[1-(morpholin-4-yl-methyl)-(3-alkyl-4,5-dihydro-1H-1,2,4-triazol-5-on-4-yl)-azomethine]phenyl} adipates (2). The structures of five new Mannich bases were established from the spectral data..
In addition, di-{2-methoxy-4-[1-(morpholin-4-yl-methyl)-(3-alkyl-4,5-dihydro-1H-1,2,4-triazol-5-on-4-yl)-azomethine]phenyl} adipates were analyzed for their in vitro antioxidant activities in three different methods; including reducing power, according to the method of Oyaizu (1986); free radical scavenging activity, using the method of Blois (1958) and metal chelating activity, by the method of Dinis, Madeira & Almeida (1994). Butylated hydroxytoluene (BHT), butylated hydroxyanisole (BHA) and α-tocopherol were used as reference antioxidant compounds.



Keywords: 1,2,4-Triazol-5-one, Mannich base, Synthesis, Antioxidant activity.

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➢ **POSTER PRESENTATION**

Deniz Hıyarlarının Yan Yüzeylere Tutunma Davranışını Etkileyen Faktörler

Mustafa Tolga Tolon, Dilek Emiroğlu, Deniz Günay*

*Ege Üniversitesi, Su Ürünleri Fakültesi, Yetiştiricilik Bölümü, Bornova İzmir, Türkiye

Sorumlu yazar e-mail: denizbalki@hotmail.com

Özet

Deniz canlılarının farklı uyarıcılar karşısında verdikleri tepkileri içeren davranış biçimlerinin anlaşılması, yapay yaşam ortamlarının oluşturulduğu yetiştiricilik çalışmalarında başarıya ulaşmak için anahtar niteliktedir. Deniz hıyarlarının tank, akvaryum ve kafes gibi kapalı yetiştirme ortamlarının yan yüzeylerine tırmanma ve bu yüzeylerde tutunma eğiliminde olduğuna dair gözlemler daha önce farklı çalışmalarda bildirilmiştir. Deniz hıyarlarının yan yüzeylerde tutunma davranışı, özellikle sediment, beslenme ve stok yoğunluğu gibi, canlının tankların tabanında kalmasını gerektiren çalışmalarda elde edilen verilerin doğruluğunun azalmasına veya çalışmaların aksamasına neden olabilmektedir. Yetiştiricilik ortamında ise yan yüzeydeki bireylerin, yerdeki besinlerden yeterince yararlanamaması nedeniyle iyi gelişemediği rapor edilmektedir.

Bu kapsamda laboratuvar ortamında yürütülen çalışmada cam akvaryumlarda tutulan genç ve ergin deniz hıyarı bireylerinin yan yüzeye tutunma davranışına yaş grubu, stok yoğunluğu, ışık durumu, su seviyesi ve yan yüzeydeki besin miktarı faktörlerinin etkisi dijital davranış görüntülerinin sayısallaştırılması ile analiz edilmiştir. Çalışma sonuçlarına göre yan yüzeye tutunma davranışı juvenil bireylerde ergin bireylere göre daha sık görülmüştür. Stok yoğunuğu ile yan yüzeye tutunma arasında doğru yönlü ve güçlü bir ilişki bulunmaktadır. Deniz hıyarları juvenilleri düşük stok yoğunluğunda karanlık saatlerde daha çok yan yüzeyde görülürken yoğun stokta hem aydınlık hem de karanlık saatlerde yan yüzeyde yüksek oranda görülmektedirler. 10 cm su yüksekliği deniz hıyarlarının yan yüzeye tırmanmasını engellemekte olup su yüksekliği arttıkça tırmanan birey sayısında artış görülmüştür. Yan yüzeyde gelişen alg biyofilmi beslenme amaçlı olarak yan yüzeye tırmanmayı teşvik etmektedir.

Anahtar Kelimeler: Deniz hıyarı, *Holothuria tubulosa*, davranış

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➢ **POSTER PRESENTATION**

Farklı Bitki Büyüme Düzenleyicilerle Stimule Edilen Limon otu (*Melissa officinalis* L.) Kallus Kültürlerindeki Toplam Fenolik Bileşikler ve Flavanoidlerin Belirlenmesi

Aykut Topdemir*, Nazmi Gür, Zümre Demir

Fırat Üniversitesi, Mühendislik Fakültesi, Biyomühendislik Bölümü, Elazığ, Türkiye

Sorumlu yazar e-mail:atopdemir@gmail.com

Özet

Limon otu (*Melissa officinalis* L.), tıbbi ve aromatik bir bitki olarak kullanılan türlerden olup, iç piyasada pazarlanmakta ve ihracatı yapılmaktadır. Limon otu, eczacılık, parfümeri, kozmetik ve gıda sanayinde çok sayıda kullanım alanına sahiptir. *Melissa officinalis* L. in önemi içerisinde bulunan uçucu yağlar olan citronelal ve citral 'den kaynaklanmaktadır. Bu iki bileşenin yanında daha düşük oranlarda linalool, geraniol, ά-pinen, terpinen gibi bileşikler içermektedir. Kallus kültürleri ve hücre süspansiyon kültürleri tıbbi ve aromatik bitkilerin in vitro çoğaltım yollarıdır. Bu sayede aynı kalitede ve yüksek miktarda bitki sekonder metabolitlerini elde etmek mümkündür. Bu çalışmada in vitro olarak üretilen kallusların toplam fenolik madde ve flavanoid miktarları belirlenmiştir. Eksplant kaynağı olarak *Melissa officinalis* L. nodları kullanılmıştır. Nodlar Murashige Skoog besiyerinde kallus oluşumu için farklı bitki büyüme düzenleyici kombinasyonları ile teşvik edilmiştir. En yüksek fenolik madde miktarı 1523 mg/g ile 1.5 mg/L 2,4-D + 0.5 mg/L BAP ile teşvik edilen kallusta tespit edilmiştir. 1.356 mg/g ile en düşük fenolik madde ise 2 mg/L 2,4-D + 0.5 mg/L BAP içeren kültür ortamındaki kalluslarda görülmüştür. Flavanoid miktarının en yüksek olduğu (4.392 mg/g) kallusun bulunduğu kültür ortamında ise bitki büyüme düzenleyicisi olarak 2 mg/L 2,4-D + 1 mg/L PİC + 0.5 mg/L KİN bulunmaktadır.

Anahtar Kelimeler: *Melissa officinalis* L., fenolik bileşik, flavanoid.

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➢ **POSTER PRESENTATION**

Ladenin (*Cistus* sp.) Türkiye'deki Hasat Miktarları ve Etnobotanik Kullanımı

Gamze Tuttu*, Serhat Ursavaş, Simge Çizgen

Çankırı Karatekin Üniversitesi, Orman Fakültesi, Orman Mühendisliği Bölümü, Çankırı, Türkiye

Sorumlu yazar e-mail: gamze.tuttu@gmail.com

Özet

Bu çalışmanın amacı; ülkemizde odun dışı orman ürünü olarak kullanılan ladenin üretim miktarlarını ve bu üründen elde edilen gelirleri ortaya koymak, aynı zamanda içerdiği maddelerin önemini ve kullanım alanlarını vurgulamaktır. Ladenler ülkemizde sahil bölgeleri ve İç Anadolu'da yaygın olarak yetişen, demet tüyler ve salgı tüyleri taşıyan, en çok 3 m'ye kadar boylanabilen herdemyeşil çalılardır. Türkiye'de doğal olarak yetişen beş türü bulunmaktadır. Laden otu, pamukluk gibi yöresel isimlerle bilinen *Cistus* türleri rezin, uçucu yağ ve tanen içerirler. Anti-spazmodik, hemostatik, antidiyabetik ve antienflamatuvar etkilere sahip olan ladenler halk arasında iltihaplı hastalıkların tedavisinde, ishale karşı, mide ağrılarının giderilmesinde, romatizma ağrılarına karşı, idrar yolu enfeksiyonlarında, bazı cilt hastalıklarında, yaralar ve kesiklerde kan dindirici olarak ve şeker hastalığına karşı kullanılmaktadır. Ayrıca parfümeride koku verici olarak değerlendirilmektedir.

Orman Genel Müdürlüğü, Odun Dışı Ürün ve Hizmetler Daire Başkanlığının 1989-2016 yılları arasındaki verileri incelendiğinde laden hasadının ilk kez 1993 yılında Antalya ve Mersin Orman Bölge Müdürlüklerinde yapıldığı görülmektedir. Bu hasattan elde edilen toplam ürün miktarı 412.217 kg olup elde edilen toplam gelir 326.411 TL'dir. 28 yıllık veriler incelendiğinde şimdiye kadar: Adana, Antalya, Balıkesir, Bursa, Çanakkale, Denizli, Isparta, İzmir, Mersin ve Muğla Orman Bölge Müdürlüklerinden toplamda 7.547.859 kg laden hasadı yapıldığı ve 5.735.066 TL gelir elde edildiği görülmektedir. En fazla üretim 3.073.856 kg ile Antalya Orman Bölge Müdürlüğünden ve en az üretim ise 1.000 kg ile Balıkesir Orman Bölge Müdürlüğünden kaydedilmiştir.

Anahtar Kelimeler: Laden, *Cistus* sp., Etnobotanik, Odun Dışı Orman Ürünleri, Hasat, Türkiye.

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➢ **POSTER PRESENTATION**

Potentiometric Titrations of Novel 3-Alkyl(Aryl)-4-(3-methoxy-4-cinnamoyloxy)benzylidenamino-4,5-dihydro-1H-1,2,4-triazol-5-ones

Songül Ulufer*, Sevda Manap, Bahar Bankoğlu, Buket Göksu, Haydar Yüksek

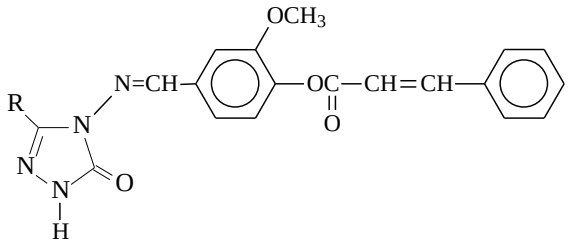
Kafkas University, Department of Chemistry, Kars, Turkey

Corresponding author e-mail: sngulufer@gmail.com

Abstract

It is known that 1,2,4-triazole and 4,5-dihydro-1H-1,2,4-triazol-5-one rings have weak acidic properties, so that some 1,2,4-triazole and 4,5-dihydro-1H-1,2,4-triazol-5-one derivatives were titrated potentiometrically with TBAH in non-aqueous solvents, and the pKa values of the compounds were determined.

In this study, nine 3-alkyl(aryl)-4-(3-methoxy-4-cinnamoyloxy)benzylidenamino-4,5-dihydro-1H-1,2,4-triazol-5-ones (Yüksek et al., 2017) were titrated potentiometrically with TBAH (tetrabutylammonium hydroxide) in four different non-aqueous solvents (isopropyl alcohol, tert-butyl alcohol, acetone and N,N-dimethylformamide) and graphs were drawn for all cases. The half notralization potentials and pK_a values were determined by half neutralization method. The effects of solvents and molecular structure upon acidity were also discussed.



	R
a	CH_3
b	CH_2CH_3
c	$CH_2CH_2CH_3$
d	$CH_2C_6H_5$
e	$CH_2C_6H_4CH_3$(*p-)*
f	$CH_2C_6H_4OCH_3$ (*p-*)
g	$CH_2C_6H_4Cl$(*p-)*
h	$CH_2C_6H_4Cl$(*m-)*
i	C_6H_5

Keywords: Synthesis, Characterization, TBAH, pK_a, Half-neutralization method.

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➢ **POSTER PRESENTATION**

Thermal Interactions Drive Unusual Hibernal Activity of *Ablepharus kitaibelii* in Hacettepe University, Beytepe Campus

Mehmet Kursat Sahin*, Zafer Ayas

Hacettepe University, Faculty of Science, Biology Department, Ankara, Turkey.

Corresponding author e-mail: kursat.sahin@hacettepe.edu.tr

Abstract

The vegetation structure has been used as an important habitat preference indicator for reptiles. The assessments of the variation in habitat preferences between seasons and the daily activity differences are crucial for understanding the biology of species. The juniper skink's (*Ablepharus kitaibelii*) habitat preference and seasonal activity pattern were evaluated among different ecological seasons (estival: June 15th – August 15th, serotinal: August 15th – September 15th, autumnal: September 15th – November 1st, hibernal: November 1st - March 1st, prevernal, March 1st - May 1st, vernal May 1st – June 15th) in Hacettepe University Beytepe Campus as a case study for urban wildlife. 10 artificial refuges [two (sun and shade) for each vegetation] were placed in 5 vegetation zones (steppe, wetland, meadow, forest openness and woodland) where the skink was observed. These refuges have still been checked two times (morning & afternoon) per day since July 2015. According to 3-year data, it is remarkable that the skink's daily activity in the hibernal periods is tend to increase year by year when all microhabitats are evaluated cumulatively. In this period, the skinks major preferred refuges -as the shelter - are the sunny ones (86,3%) in comparison to shadows (13,7%). Besides, it can be considered that there seem to have a good opportunity for skinks that positive correlation between some invertebrate groups (i.e. Isopoda, Formicidae, Arachnidae and Coleoptera) presence and their role as nutrient under and/or close to the artificial refuges. Therefore, when assessing the juniper skink's activity pattern, it can be said that, the highlighted factors are refuges solar availability, creating relatively less humidity and it has shelter effect not only for skinks, but also for the invertebrates around there. As a result, due to irregular temperature fluctuations, the first months of the year, especially in 2018, caused a "prevernal season" effect for ectothermic organisms and the activity was recorded in terms of this pattern.

Keywords: seasonal activity, ectothermy, lizard, microhabitat, urban wildlife.

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➢ **POSTER PRESENTATION**

Elit Sporcularda Metilentetrahidrofolat Redüktaz (MTHFR) Geni rs1801133 Varyantı

Serbülent Yiğit, Abdullah Cenikli, Ayşe Feyda Nursal, Aydın Rüstemoğlu, Hüsniye Rüstemoğlu*, Mehmet Yalçın Taşmektepligil

Gaziosmanpasa Universitesi, Tıp Fakültesi, Tıbbi Biyoloji, Tokat, Türkiye.
Gaziosmanpaşa Universitesi, Beden Eğitimi ve Spor Yüksekokulu, Antrenörlük Bölümü, Tokat, Türkiye.
Hitit Universitesi, Tıp Fakültesi, Tıbbi Genetik, Çorum, Türkiye.
Ondokuzmayıs Üniversitesi, Yaşar Doğu Spor Bilimleri Fakültesi, Spor yöneticiliği Bölümü, Samsun, Türkiye

Özet

Elit sporcularda performans ve dayanıklılığın genetik varyasyonlarla ilgili olduğunu gösteren çalışmalar vardır. Metilentetrahidrofolat Redüktaz (MTHFR) gen mutasyonları bu konuda oldukça az çalışılmıştır. Homozigot TT genotipine sahip bireylerin, heterozigot CT ve homozigot CC bireylere kıyasla daha yüksek plazma homosistein düzeyine sahip olduğu bilinmektedir. Bu çalışmanın amacı elit sporcu ve kontrol grubunda MTHFR geni C677T (rs 1801133) varyantını karşılaştırmaktır.
50 elit sporcu (42 erkek, 8 kadın) ve 50 kontrolden (40 erkek, 10 kadın) alınan kan örneklerinden DNA elde edildi. MTHFR, polimeraz zincir reakisyonu ve restiriksiyon parça fragman polimorfizmi (PCR-RFLP) metodu ile değerlendirildi. RFLP enzimi olarak *HinfI* kullanıldı.
MTHFR rs1801133 varyantı genotipi için elit sporcu ve kontrol grubu arasında anlamlı ilişki bulundu. MTHFR rs1801133 TT genotipi elit sporcularda kontrol grubuna göre daha yüksek çıkmıştır (*p=0.008).*
Bu çalışmamızda MTHFR rs1801133 varyantı için çalışma grupları arasında anlamlı ilişki saptanmıştır. Bulgularımızın doğrulanması ve güçlendirilmesi için farklı elit atletlerde ve daha büyük örnek sayılarında çalışma yapılmasına ihtiyaç duyulmaktadır.

Anahtar Kelimeler: MTHFR C677T, elit sporcu, homosistein.

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➢ **POSTER PRESENTATION**

Effect of UV Treatment for the Removal of Sulfonamide Resistance Gene During Wastewater Treatment

Taliye Bulut*, Bulent Icgen

Middle East Technical University, Engineering, Environmental Engineering, Ankara, Turkey.

Corresponding author e-mail: taliye.bulut@metu.edu.tr

Abstract

The dissemination of the antibiotic resistance genes (ARGs) is considered as one of the most important threats to public health. This dissemination also becomes a threat for water quality in surface waters and groundwater. Waters contaminated with ARGs can easily be incorporated into human life through several ways like drinking water, agriculture and animal husbandry. Sulfonamide resistance gene, one of the ARGs, in discharged waters increases gradually because the use of these drugs is highly common. Wastewater treatment plants (WWTPs) seem to play major role in minimizing or even complete removal of many of micropollutants and pathogenic microorganisms. However, WWTPs also provide favorable environments for the growth of diverse bacterial communities and constitute a basis for the selection and spread of many ARGs. Therefore, in this study, the spread and dissemination of the *sul1* gene that confers sulfonamide resistance was investigated through UV treatment units in WWTP. For this reason, wastewater samples were taken before and after UV treatment unit to quantitatively analyze the *sul1* gene by using quantitative polymerase chain reaction (qPCR). Primary qPCR results indicated that the *sul1* gene could not be completely removed through the UV treatment unit and many copies of the gene were discharged into the receiving bodies.

Keywords: *Sul1*- Sulfonamide resistance genes-WWTPs-UV treatment – ARGs.

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➢ **POSTER PRESENTATION**

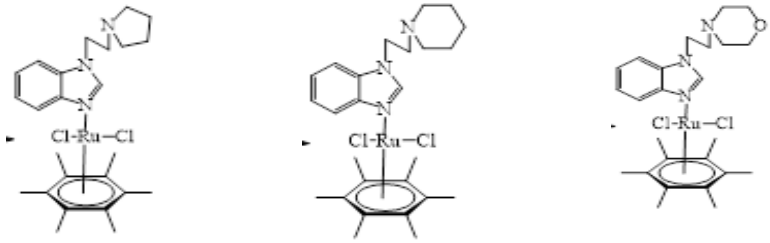
Cell Cycle Arrest Properties of Benzimidazole Derived Ru/HMB Complexes to PC-3 Prostate Cancer Cells

Neslihan Şahin[1*], Serap Şahin-Bölükbaşı[2,4], İsmail Özdemir[3], Brian S Cummings[4]

[1]University of Cumhuriyet, Faculty of Education, Department of Basic Education, Sivas, Turkey
[2]University of Cumhuriyet, Faculty of Pharmacy, Biochemistry Department, Sivas, Turkey
[3]University of İnönü, Faculty of Science and Art, Department of Chemistry, Malatya, Turkey
[4]University of Georgia, Faculty of Pharmacy, Department of Pharmaceutical and Biomedical Sciences, Athens, GA, USA
Corresponding author e-mail: neslihan@cumhuriyet.edu.tr

Abstract

Prostate Cancer is a serious health problem and a major causes of death in men all over the world. PC-3 cells are one of the most aggressive and widely used cell types for testing new drug treatments, and are derived from a bone metastasis [1]. Recently, increasing interest has focused on the anticancer activity of organometallic compounds. We synthesized dichloro-(N-(2-pyrrolidinoethyl)benzimidazole)-(HMB)-rutenyum(II) **(1),** dichloro-(N-(2-piperidinoethyl)benzimidazole)-(HMB)-rutenyum(II) **(2),** dichloro-(N-(2- morpholinoethyl)benzimidazole)-(HMB)-rutenyum(II) **(3)** and verified their structures by elementel analyses, ^{1}H NMR and ^{13}C NMR. Actively dividing eukaryote cells pass through a series of stages known collectively as the cell cycle: two gap phases (G1 and G2); an S (for synthesis) phase, in which the genetic material is duplicated; and an M phase, in which mitosis partitions the genetic material and the cell divides.



(1) **(2)** **(3)**

The present study was designed to determine cell cycle arrest properties of synthesized Ru-Benzimidazole-HMB complexes in PC-3 human prostate cancer cells. Cells were seeded in 6-well plates 1 x 10^5 for PC-3 cells and exposed to complexes at the corresponding IC_{50} of each treatment protocol, which was calculated from growth inhibition experiments. After 24, 48 and 72 h of exposure, cells were harvested and fixed in 70% (v/v) ethanol and stored at 4°C until staining. Cells were prepared for cell cycle analysis by staining with PI (50 µg/ml) in sample buffer [PBS + 1% (w/v) glucose], containing RNase A (100 units/ml) for 30 min at room temperature. Cells (1 x 10^4) were sorted and analyzed by flow cytometry. Cell cycle data were analyzed using FlowJo software (Tree Star, Inc., Ashland, OR) [2]. The differences in cell cycle observed in PC-3 cells after treatment at IC_{50} concentrations of complexes was a slight increase in S phase and slight decrease in G2/M phase compared with control.

Keywords: Cell cycle arrest, Hexametilebenzene, Ruthenium, Prostate cancer.

This work is supported by the Scientific Research Project Fund of Cumhuriyet University under the project number ECZ-019; National Institute of Health (EB016100).

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➢ **POSTER PRESENTATION**

Poly(3,4-ethylenedioxythiophene) Modified Multiwalled Carbon Nanotube-Based Electrode for Electrochemical Determination of Ascorbic Acid

Ozge Koyun* and Yucel Sahin

Yildiz Technical University, Faculty of Arts & Science, Department of Chemistry, Istanbul, Turkey.
Corresponding author e-mail: ozgekyn34@gmail.com

Abstract

Ascorbic acid (AA) is an important water-soluble substance present in many biological fluids, fruit juices, pharmaceuticals, soft drinks, vegetables, etc. AA is also added to foodstuffs as an antioxidant for stabilization of color and aroma, as well as for prolonging the life of commercial products. AA can also be used as free-radical scavenger, important in the treatment of cancer and Parkinson's disease. The accurate determination of AA concentrations is thus essential for food quality and health care. AA is electroactive and can be oxidized at positive potentials. However the kinetics of the oxidation are "sluggish" and the oxidation products tend to lead to electrode fouling. Therefore, modified electrode systems have been investigated for the selective determination of AA both at acidic and neutral pHs [1].

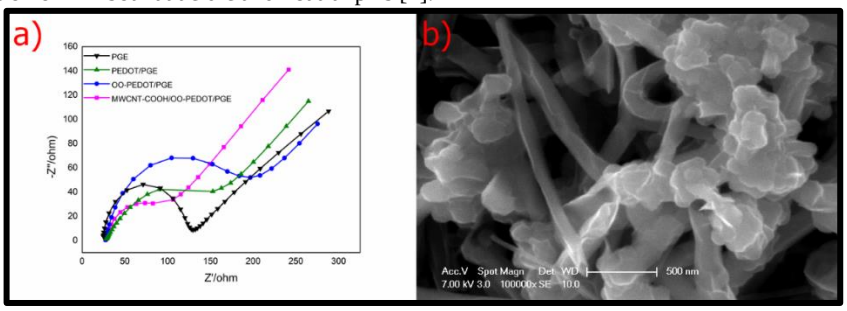

Figure 1. a) Electrochemical impedance spectra of PGE, PEDOT/PGE, OO-PEDOT/PGE and MWCNT-COOH/ OO-PEDOT/PGE b) SEM image of MWCNT-COOH/OO-PEDOT/PGE.

In this study, pencil graphite electrodes modified with chemically treated multi-walled carbon nanotube and over-oxidized poly(ethylenedioxythiophene) (MWCNT-COOH/OO-PEDOT/PGE) were prepared for AA detection. The resulting electrodes showed good selectivity and sensitivity for AA. The linear range of the prepared sensor under optimized conditions was found to be 5.0-750 μM. Its limit of detection was 2.7 μM. The characterization and morphology studies of the modified electrodes were carried out by cyclic voltammetry, electrochemical impedance spectroscopy, infrared spectroscopy and scanning electron microscopy. In addition, the performances of the modified electrodes were examined in the presence of interfering species. Finally, the effectiveness of the modified electrodes was tested on real samples of beverages. The obtained results show that the modified electrodes have the superior features such as low cost, easy preparation, disposability, short response time, high sensitivity and selectivity, which are essential characteristics that an ideal sensor should have.
Keywords: Poly(3,4-ethylenedioxythiophene), multiwalled carbon nanotube, ascorbic acid, electropolymerization, differential pulse voltammetry.

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➢ **POSTER PRESENTATION**

Göknar (*Abies* sp.) Dalının Türkiye'deki Hasat Miktarları ve Etnobotanik Kullanımı

Simge Çizgen*, Gamze Tuttu, Serhat Ursavaş

Çankırı Karatekin Üniversitesi, Orman Fakültesi, Orman Mühendisliği Bölümü, Çankırı, Türkiye

Sorumlu yazar e-mail: scizgen@gmail.com

Özet

Bu çalışmanın amacı; odun dışı orman ürünü olarak kullanılan göknar dalına ait üretim miktarlarını ve bu üründen elde edilen geliri ortaya koymak, aynı zamanda içerdiği maddelerin önemini ve kullanım alanlarını vurgulamaktır. Dünyada 49 tür ile temsil edilen ve kuzey yarıkürenin nemli bölgelerinde yayılış gösteren göknar (*Abies*) cinsinin ülkemizde doğal olarak yetişen 2 türü (*A. cilicica, A. nordmanniana*) bulunmaktadır. Türkiye'de geniş ormanlar kuran göknarlar gençken piramidal, orta yaşlarda konik bir tepe yapısına sahip, herdemyeşil, boylu orman ağaçlarıdır. Uçucu yağlar ve oleoresinler içeren göknarların ibrelerinde fotosentetik pigmentler, prolin, protein, lipit, hidrojen peroksit, çözünür şekerler (glikoz, fruktoz, sakkaroz), nişasta ve antioksidan enzimler gibi kimyasal bileşikler bulunmaktadır. Tıbbi olarak sürgünleri yara iyi edici, yaprakları balgam söktürücü ve kabız etkiye sahiptir. Park ve bahçelerde değerli bir süs bitkisi olan *A. nordmanniana* türünün genç bireyleri ise Noel ağacı olarak değerlendirilmektedir. Orman Genel Müdürlüğü, Odun Dışı Ürün ve Hizmetler Daire Başkanlığının 1989-2016 yılları arasındaki verileri incelendiğinde göknar dalı hasadının ilk kez 1990 yılında Kastamonu ve Bolu Orman Bölge Müdürlüklerinde yapıldığı görülmektedir. Bu hasattan elde edilen toplam ürün miktarı 62.166 kg olup elde edilen toplam gelir ise 489 TL olarak kaydedilmiştir. 28 yıllık veriler incelendiğinde şimdiye kadar: Adana, Antalya, Bolu, Isparta, Kastamonu, Konya ve Mersin Orman Bölge Müdürlüklerinden toplamda 279.316 kg göknar dalı hasadı yapıldığı ve 566.458 TL gelir elde edildiği görülmektedir. En fazla üretim 80.000 kg ile Antalya Orman Bölge Müdürlüğünden ve en az üretim ise 2.000 kg ile Adana Orman Bölge Müdürlüğünden kaydedilmiştir.

Anahtar Kelimeler: Göknar, *Abies* sp., Etnobotanik, Odun Dışı Orman Ürünleri, Hasat, Türkiye.

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➢ **POSTER PRESENTATION**

Beslenmede Vitamin ve Minerallerin Önemi

Selvi Selinay Açiker*, Fatma Nida Öcalan, Semra Utku

Mersin Üniversitesi, Eczacılık Fakültesi, Farmasötik Kimya Anabilim Dalı, Mersin, Türkiye

Sorumlu yazar e-mail: slny0794@gmail.com

Özet

Vitamin ve mineraller, sağlıklı bir yaşamın sürdürülebilmesi ve yaşam kalitesinin artırılabilmesi için vücudumuzun küçük miktarlarda gereksinim duyduğu hayati öneme sahip maddelerdir. Vitaminlerin büyük bir çoğunluğu ve inorganik maddeler olan minerallerin ise tamamının işlenmemiş çeşitli besinlerle düzenli olarak alınması zorunludur (Kökoğlu ve Alturfan, 2010). Koenzim veya bir enzim ortağı olarak görev yapan vitaminler ve birçok işlevi düzenleyen mineraller, beslenme ile yetersiz düzeyde alındıklarında çocukluk çağında büyüme ve gelişmede gerileme, enerji sağlayan mekanizmalar ile metabolik fonksiyonların bozulması sonucunda çeşitli hastalıklar ve semptomlar gelişebilmektedir. Örneğin Multiple Skleroz hastalarında D, B_{12} ve folik asit düzeylerinin kanda test edilmesi önerilmektedir. Ayrıca antioksidan özelliğe sahip vitamin ve mineral kullanımının hastalığın seyrini yavaşlattığı araştırmalarda gösterilmektedir (Dardiotis ve ark., 2017).

Vitamin ve mineral gereksinimin ihtiyaç duyulan miktarları yaş, cinsiyet, kronik hastalık ve gebelik, laktasyon gibi özel dönemlere bağlı olarak değiştiğinden günlük ihtiyacı karşılayacak miktarlarının diyetle veya takviye olarak alınması gerekmektedir. Son yıllarda vitamin ve mineral eksikliğinin birçok hastalığın etiyolojisinde rol oynadığı ve takviye olarak kullanımlarının birçok hastalığın gelişimini önlediği ileri sürülmektedir. Vitamin ve mineral takviyesi özellikle hastalıklardan korunmak, bağışıklık sistemini güçlendirmek, bebeklerde ve çocuklarda büyüme ve gelişmeyi hızlandırmak, yorgunluk ve halsizliği azaltmak gibi sebeplerle kullanılmakta ve akılcı kullanımları üzerine araştırmacılar yoğun bir şekilde çalışmaktadırlar (Van der Horst ve Siegrist, 2011). Hekim tavsiyesi bulunmadan, kulaktan dolma bilgilerle uygun olmayan vitamin ve minerallerin, uzun süre ve/veya yüksek dozda kullanımlarının tedavi edici etkisi bulunmamakla beraber çeşitli sağlık problemlerinin gelişmesine de neden olabilmektedir (Bülbül ve ark., 2014).

Bu çalışmada, günlük beslenme öğünlerini desteklemek amacıyla sayıları hızla artan takviye edici gıda olarak piyasaya sunulan vitamin ve mineral kullanımının gerekliliği tartışılacaktır. Ayrıca vitamin ve minerallerin eksikliğinin hastalıklarla olan ilişkisi, kullanımı sırasında dikkat edilmesi gereken etkenler, diyet ile alımlarının yeterli olup olmadığı, takviye olarak kullanımlarını gerektiren hastalıklar ve kullanımları sırasında dikkat edilmesi gereken unsurlar güncel kaynaklar ışığında ele alınacaktır.

Anahtar Kelimeler: Vitamin, Mineral, Beslenme, Takviye Gıda

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➢ **POSTER PRESENTATION**

Synthesis of New 1-(Morpholine-4-yl-methyl)-3-alkyl(aryl)-4-[3-ethoxy-4-(benzenesulfonyloxy)-benzylidenamıno]-4,5-dihydro-1H-1,2,4-triazol-5-ones

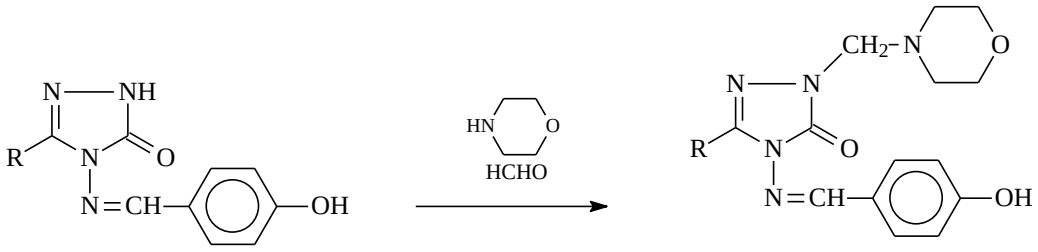
Songül Boy*, Haydar Yüksek

Kafkas University, Faculty of Sciences and Letter, Department of Chemistry, Kars, Turkey.

Corresponding author e-mail: songulboy36@hotmail.com

Abstract

In this study, 3-alkyl(aryl)-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (1) reacted with formaldehyde and morpholine to afford 1-(morpholine-4-yl-methyl)-3-alkyl(aryl)-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2). The structures of nine new Mannich bases; 1-(morpholine-4-yl-methyl)-3-methyl-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2a), 1-(morpholine-4-yl-methyl)-3-ethyl-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2b), 1-(morpholine-4-yl-methyl)-3-n-propyl-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2c), 1-(morpholine-4-yl-methyl)-3-benzyl-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2d), 1-(morpholine-4-yl-methyl)-3-(p-methylbenzyl)-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2e), 1-(morpholine-4-yl-methyl)-3-(p-methylbenzyl)-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2e), 1-(morpholine-4-yl-methyl)-3-(p-methoxybenzyl)-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2f), 1-(morpholine-4-yl-methyl)-3-(p-chlorobenzyl)-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2g), 1-(morpholine-4-yl-methyl)-3-(p-chlorobenzyl)-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2h), 1-(morpholine-4-yl-methyl)-3-phenyl-4-(4-hydroxybenzylidenamino)-4,5-dihydro-1H-1,2,4-triazol-5-ones (2d). The structures of these novel compounds were characterized by using, IR, 1H NMR and 13C NMR spectral data. The starting compounds 1 were prepared according the literature. (Yüksek et al., 2006).



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Keywords: 1,2,4-Triazol-5-one, Schiff base, Synthesis.

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➢ **POSTER PRESENTATION**

Investigation of the Relevant Medium Components for Bacterial Cellulose Production from *Komagataeibacter hansenii* DSM 5602 and PHB production from *Bacillus marmarensis* GMBE 72^T

Gülnihal Bozdağ*, Tuğba Özgören, Dilek Kazan

Marmara University, Faculty of Engineering, Department of Bioengineering, Istanbul, Turkey

Corresponding author e-mail: gulnihallbozdag@gmail.com

Abstract

Nowadays, the preference of biopolymers in different fields such as pharmaceutical and biomedical areas has led to enhance the production of these materials. Therefore, various research studies have been carried out to increase the production yield of biopolymers. However, one of the main obstacles to produce biopolymers is the cost of the bioprocesses. For that reason, researchers and entrapreneurs have evaluated the usage of different waste materials for production of biopolymers. Bacterial cellulose, an extracellular polymer, is a good alternative for plant cellulose because of its unique properties, chemical modification capacity and biocompatibility. Additionally, because of its water absorption capacity, high crystallinity degree, and high tensile strength properties, it can be used in various industrial areas such as food, paper, and health industry. For the production of bacterial cellulose, different type of microorganisms such as *Gluconacetobacter xylinus*, *Agrobacterium* and *Achromobacter* have been investigated. Besides bacterial cellulose, another commonly used biopolymer is polyhydroxybutyrate (PHB) which is produced by different microorganisms such as *Ralstonia eutropha* and *Bacillus megaterium*. Similar to bacterial cellulose, due to its biocompatibility and biodegradability, PHB has a wide range of applications in different industrial areas such as tissue scaffolding. In the light of these explanations, the objective of the present work is to investigate alternative solutions for highly efficient production of bacterial cellulose and PHB as well as for the production of biocompatible materials for tissue scaffolding. For bacterial cellulose, different type of waste materials such as orange peel, glucose syrup, and food wastes were used as feedstock to produce cellulose from *Komagataeibacter hansenii* DSM 5602. Cellulose production was carried out under static conditions and the amount of cellulose produced was determined at different conditions. Likewise, in order to increase production of polyhydroxybutyrate from *Bacillus marmarensis* GMBE 72^T, PHB production were optimized.

Keywords: Bacterial cellulose, *Komagataeibacter hansenii*, Food waste, Polyhydroxybutyrate, *Bacillus marmarensis* GMBE 72^T

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➢ **POSTER PRESENTATION**

Role of Fishery Cooperatives in Sustainabile Ecological Development: Gediz Delta Case Study

Huriye Göncüoğlu Bodur*, Zafer Tosunoğlu

Ege University, Faculty of Fisheries, 35100, Bornova, İzmir, Turkey

Corresponding author e-mail: huriyegoncuoglu@gmail.com

Abstract

This study constitutes a descriptive analysis facusing on the community-based enterpreneurship efforts practiced in the Gediz delta on the basis of sustainable ecological development. Sustainable development is defined as a "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment & Development, 1987). The Gediz Delta is an area that strives to maintain the balance among environment, economy and local community through sustainable ecological development. Due to its biodiversity, the Gediz delta is also one of the Ramsar sites with national and international conservation status. The best instance for community-based enterprise in the area are the 4 fishery cooperatives with their 723 members who contribute to sustainable fisheries by preventing illegal and excessive fishing activities. Thanks to these cooperatives, fishers have diversed the economic structure in the area and strengthened self-sustainment opportunities through local input. Achievements of these cooperatives have resulted in positive changes in terms of attitudes towards the conservation of the area and protective approach to the ecological values.

Keywords: Fisheries, Gediz Delta, sustainable development, community-based enterprise.

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➢ **POSTER PRESENTATION**

Production of Nanoliposomes in the Supercritical Anti-Solvent Process: Effect of Media Composition and Operating Conditions

Derya Dincyurek Ekici[1*], Uğur Salgın[2], Sema Salgın[2]

[1]Abdullah Gül University, Faculty of Engineering, Department of Materials Science and Nanotechnology Engineering, Kayseri, Turkey
[2]Cumhuriyet University, Faculty of Engineering, Department of Chemical Engineering, Sivas, Turkey

Corresponding author e-mail: deryadncyurek@hotmail.com

Abstract

Our country is also outsourced to active pharmaceutical ingredients (APIs) or carrier systems containing them as in many areas. The closed forms, in which lipid-based building stones are the result of spontaneous and rapid modification, which constitute liposomes that resemble living membrane systems in structure and content have attracted many biotechnology sectors, especially the pharmacology sector. Potential of trapping aqueous systems in this closed form is an ideal carrier matrix especially for the encapsulation of water-soluble APIs. Encapsulation of water-insoluble APIs can be achieved between the bilayer of this form. Nano-sized lipid-based API carrier systems provide exceptional advantages to provide high therapeutic efficacy to reduce toxicity and to target cancerous tissues. Nanolipozomes are the best potential drug delivery systems available today, for low molecular mass drugs, imaging agents, peptides, proteins and nucleic acids. Liposomes play an important role in preventing unwanted interactions with other molecules for improving both in vitro and in vivo performance of APIs.

Prior to the hydration stage of the liposomes, the production of proliposomal forms was performed in a pilot scale SFE Basic model supercritical antisolvent (SAS) process. L-α-phosphatidylcholine (SPC), isolated from soybean, hydrogenated soy L-α-phosphatidylcholine (HSPC) and cholesterol (CHOL) have formed the basic composition of the bilayer of liposomal systems. Liposomes were obtained by hydration of pre-liposomal forms with sodium phosphate buffer at 100 mM pH=7.2. Particle size distribution and zeta potentials were analyzed by using dynamic light scattering and laser doppler micro electrophoresis technique. In the scope of the study, prior to hydration step, the influence of media compositions of lipid material fed to the SAS [molar ratio of PC/CHOL (95/5-60/40), HSPC concentration (%16-26 molar)] and effect of process operating conditions [90-110 bar and 50-60 ºC] has been systematically investigated. Stable liposomal constructions with hydrodynamic diameters of about 150 nm and -30 mV zeta potential were produced from the pre-liposomal forms of the HSPC concentration %26 molar and molar ratio of PC/CHOL of 80/20 at 55 ºC and 100 bar conditions.

Keywords: Supercritical Antisolvent Process, Liposome, Hydrodynamic Diameter, Zeta Potential.

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➢ **POSTER PRESENTATION**

Osteopontin Glikoproteinin Kanser Gelişiminde Rolü

Mehmet Arif İçer*, Makbule Gezmen-Karadağ

Gazi Üniversitesi, Sağlık Bilimleri Fakültesi, Beslenme ve Diyetetik Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: m.arif.icer@gmail.com

Özet

İlk kez kemik dokusunda tanımlanan ekstrasellüler matriks proteini olan OPN sağlık üzerine önemli rolleri olan bir proteindir [1, 2]. İnsanlar da dahil olmak üzere birçok türde salınan OPN, tümör hücreleri ve makrofajlar gibi pek çok hücre tarafından salgılanabilen multi-fonksiyonel bir proteindir [3]. Tümör gelişimi ve metastazlarında OPN salınımının arttığını bildirilen çeşitli insan ve hayvan çalışmaları mevcuttur [4, 5]. Bu çalışmaların çoğunda meme, gastrik, akciğer, prostat, karaciğer ve kolon kanserleri ile ilişkilendirilen artmış OPN salınımı, tümör gelişimi, ilerlemesi ve/veya metastazı ile de ilişkilendirilmektedir [3-5]. Osteopontinin ekstrasellüler matrikste hücre göçüne sebep olarak ve çeşitli integrinlere ve CD44 reseptörlerine etki ederek tümörlerin ilerlemesine sebep olabileceği düşünülmektedir [6]. Ayrıca OPN salınımındaki artışın gastrik kanserin en önemli nedenlerinden biri olarak kabul edilen *helicobacter pylori* enfeksiyon şiddeti ile paralel seyrettiği belirtilmektedir [7, 8]. Bir diğer muhtemel mekanizma ise kronik miyeloid lösemi durumunda artmış BCR-ABL1 gen ekspresyonunun OPN salınımını arttırmasıdır [9]. Literatürde çeşitli kanser türlerinde OPN salınım düzeyi ve tümör gelişimi, ilerleyişi ve/veya metastazı arasındaki ilişkinin değerlendirildiği birçok çalışma mevcuttur. Chang ve diğerlerinin (2011) 105 *helicobacter pylori* ile enfekte hasta ve 29 sağlıklı birey ile gerçekleştirmiş olduğu çalışmada; hasta grubun gastrik OPN salınımlarının sağlıklı gruba göre istatistiksel açıdan anlamlı düzeyde daha yüksek olduğu saptanmıştır [8]. Yapılan farklı birçok çalışmada da artmış OPN salınımının phosphoinositide 3-kinase (PI3K)/AKT yolu, activator of transcription 1 (STAT1) ve pro-inflammatory immune response aracılığı ile gastrik kanser ilerleyişinde etkili olduğu belirtilmektedir [10, 11]. Sonuç olarak bazı kanser türlerinde salınımı artan OPN'in kanser tanısı ve takibinde yardımcı bir klinik biyolojik belirteç olarak kullanımı düşünülebilir [3, 5, 6]. Ancak tümör metastazında OPN'in rolünü tanımlayan moleküler mekanizmalar tam olarak anlaşılmış değildir.

Anahtar Kelimeler: Osteopontin, Kanser, Biomarker.

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➢ **POSTER PRESENTATION**

Multiple Skleroz: Nedenleri, Tanı ve Tedavi Yaklaşımları

Fatma Nida Öcalan*, Selvi Selinay Açiker, Semra Utku

Mersin Üniversitesi, Eczacılık Fakültesi, Farmasötik Kimya Anabilim Dalı, Mersin, Türkiye

Corresponding author e-mail: fatmanida1@outlook.com

Özet

Multiple skleroz (MS), enflamasyon, demiyelinizasyon ve akson hasarı ile karakterize olup ataklarla seyreden otoimmün bir santral sinir sistemi hastalığıdır. Genellikle genç ve orta yaşlarda ortaya çıkan ve kadınlarda görülme sıklığı daha fazla olan MS hastalığının nedenleri tartışmalı olmakla birlikte genetik yatkınlık, enfeksiyonlar, otoimmünite, sigara kullanımı, hormonlar ve düşük D vitamini düzeyi hastalığın risk faktörlerini oluşturmaktadır. MS belirtileri, etkilenen sinir sistemi bölgesine göre şiddet ve seyir yönünden hastadan hastaya çok büyük değişiklikler göstermektedir. Bunlar arasında halsizlik, yüzde, kollarda ya da bacaklarda karıncalanma, uyuşma ve ağrı, denge bozukluğu, çift görme veya bulanık görme, konuşma bozukluğu, titreme, kol ve bacaklarda sertlik, güçsüzlük, idrar kaçırma veya yapamama sayılabilir. Tanımlanan belirtilerin bir ya da birkaçına birlikte rastlanabilir. Sıralanan belirtilerin bir ya da birkaçının birlikte görülmesi ve bu durumun 24 saat sürmesi atak olarak tanımlanmaktadır. Ataklar ilkbaharda artış, kış aylarında azalış gösterir, geçici ya da ilerleyici olabilir (Lemus ve ark., 2017).

Bir hastaya MS tanısı konulmasındaki temel prensip, SSS içindeki lezyonların ve neden olduğu klinik tablonun zamanda ve mekânda yayılımının gösterilmesi ve benzer özelliklere sahip alternatif hastalıkların klinik ve/veya inceleme yöntemleri ile dışlanmasıdır. Bazı olgularda tanı klinik ve laboratuvar bulguları ile kolaylıkla konulabilir ama bazı vakalar için tanı konulması oldukça güçtür.

1983 yılında geliştirilen Poser tanı kriterleri ve 2001 yılında yayımlanan McDonald kriterleri ile MS tanısının konulmasında güçlükler ortadan kaldırılmaya çalışmaktadır. Tanıda Beyin Omurilik Sıvısı örnekleri, kan analizleri, Manyetik Rezonans Görüntüleme, uyarılmış potansiyeller ve optik kohorens tomografiden faydalanılır (Yamouth ve Al Khawajah, 2017).

MS'in günümüzde kesin olarak tedavisi mümkün olmamakla birlikte ataklara ve semptomlara yönelik tedavi yapılmaktadır. İnterferon-beta, mitoksantron, natalizumab, fingolimod ve daklizumab FDA tarafından onaylanmış ilaçlar olup hedefe yönelik tedavide kullanılmaktadır. Ayrıca MS hastalarının günlük yaşamını kolaylaştırmak amacıyla hastaların büyük bir kısmı fizik tedaviye yönlendirilmektedir (Baecher-Allen ve ark., 2018). Bu çalışmada görülme sıklığı giderek artan bir hastalık olan MS'in son yıllarda geliştirilen tanı ve tedavi yöntemlerinin araştırılması yanında hastalık hakkında en güncel bilgilerin derlenmesini amaçlanmaktadır.

Anahtar Kelimeler: Multiple Skleroz, McDonald kriterleri, İmminoterapi

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➢ **POSTER PRESENTATION**

Kansere Yol Açan Sebepler ve Korunma Yolları

Yasmin Aljendy*, Behice Sarıyıldız, Semra Utku

Mersin Üniversitesi, Eczacılık Fakültesi, Farmasötik Kimya Anabilim Dalı, Mersin, Türkiye

Corresponding author e-mail: Yasmin.j.95@hotmail.com

Özet

Kanser, hücrelerin normal büyüme, üreme ve gelişmelerini ve aynı zamanda bu fonksiyonların kontrollerini ve regülasyonlarını sağlayan protienleri kodlayan genlerde oluşan genetik düzeydeki değişmeler yani mutasyonlar sonucunda meydana gelen hücrelerin, kontrolsüz çoğalması ile seyreden bir hastalıktır. Tanı ve tedavi yöntemlerindeki gelişmelere rağmen kardiyovasküler hastalıklardan sonra en yüksek ölüm oranına sahip çağımızın en korkulan hastalılarından birisidir (Shashank ve ark., 2015).

Yapılan araştırmalarda kansere sebep olan birçok etken bulunmaktadır. Bunlar arasında yetersiz ve dengesiz beslenme, sigara, alkol, enfeksiyon hastalıkları, çevresel etkenler ve mesleki çalışma ortamları sayılabilir. Neoplazmanın nedenlerinin arasına, son yıllarda onkovirüsler de katılmış bulunmaktadır. Virüsler, onkogenez mekanizmasındaki, protoonkogenlerin aktivasyonu veya tümör süpresör genleri inhibisiyonu şeklinde gerçekleşir. Ayrıca sedanter yaşam, paketlenmiş hazır gıdalar ve fast food yiyecek tüketimin artmasıyla birlikte görülen obezite kanser nedeni olarak gösterilmektedir. Akrilamid ise Uluslararsı Kanser Araştırma Enstitüsü tarafından insanlarda muhtemelen kanserojenik maddeler sınıfında sınıflandırılmış olup özellikle nişasta açısından zengin olan gıdalar, yüksek sıcaklığa maruz kalınca karbon hidratlar ve amino asitler (özellikle asparajin) arasındaki oluşan maillard tepkimesi sonucu oluşmaktadır. Ayrıca teknolojinin ilerlemesi ile günlerimizin ve yaşantımızın bir parçası haline gelmiş olan cep telefonları, kablosuz internet ve blutooth insanların yüksek ve öngörülmeyen miktarlarda elektromanyetik alanlara maruz kalmalarına ve bu alanların kanser riskini arttırdığını çeşitli araştırmalarla kantılanmıştır (Akhavan-Sigari ve ark., 2014).

Kanser oluşumunda beslenme alışkanlıklarının etkisi %30-%70 arasında olduğundan kanserden korunmak için doğru besin öğelerinin seçilmesine dikkat edilmelidir. Aile öyküsünde genetik yatkınlığı yüksek olan kanser hastası bulunan kişilerin düzenli olarak kontrollerini yaptırması erken teşhis açısından çok önemli olduğu unutulmamalıdır. Ayrıca kansere karşı koruyucu olduğu belirlenen selenyum, çinko ve magneziyum gibi eser elementler ve antioksidan gıdaların tüketilmesi ve bağışıklık siteminin güçlü tutulması gerekmektedir (Sanmartin ve ark., 2012).

Bu çalışmada kansere yakalanmadan sağlıklı yaşam sürmenin mümkün olduğu, kansere neden olan etkenlerin araştırılması ve uzak durmanın yolları son yıllarda yapılan bilimsel çalışmaları göstererek anlatılması hedef alınmıştır.

Anahtar Kelimeler: Kanser, Beslenme, Apoptozis, Korunma Yolları

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➢ **POSTER PRESENTATION**

Platin(II) Kompleksi Sentez ve Yapı Aydınlatma Çalışması

Yasmin Aljendy*, Behice Sariyildiz, Semra Utku

Mersin Üniversitesi, Eczacılık Fakültesi, Farmasötik Kimya Anabilim Dalı, Mersin, Türkiye

Corresponding author e-mail: eczbehicesariyildiz3373@gmail.com

Özet

Kanser, hücrelerin kontrolsüz çoğalması invazif özelik kazanması ve metastaz yapması ile karakterize bir hastalıktır. Baş, boyun, testis, over, mesane, prostat, serviks tümörleri ve küçük hücreli olmayan akciğer karsinomları gibi pek çok kanser türünün tedavisinde Sisplatin (*cis*-diammindikloroplatin(II)) yaygın olarak kullanılmaktadır. Ancak nefrotoksisite, nörotoksisite, bulantı ve kusma gibi yan etkilerin görülmesi ayrıca tedavi sürecinde rezistans gelişmesi kullanımını kısıtlamaktadır (Wang X, Guo Z., 2013). Bu nedenlerle sisplatinin kullanımı sırasında görülen bu olumsuzlukları en aza indirmek için bilim insanları yeni platin kompleksleri tasarlamaktadırlar.

Sisplatinin yapısında bulunan klor ligandlarının, farklı ligandlar ile değiştirilmesiyle sentez edilen komplekslerde toksisitenin azaldığı ancak çapraz rezistansın engellenemediği, taşıyıcı amonyak ligandlarının farklı gruplar ile değiştirilmesiyle sitotoksik etkinin olumlu yönde değiştiği araştırmalarda öngörülmektedir (Cossa G ve ark., 2009). Pürin bazlarının yapısına benzer özellik gösteren ve B12 vitaminin yapısında bulanan benzimidazol halkası biyolojik sistemin tanıdığı bir heteroaromatik halka sistemidir. Ligand özelliği taşıyan ve değişik farmakolojik aktiviteleri taşıyan ilaçların yapısında bulunan benzimidazol halkası Medisinal Kimyacılar için büyük önem taşımaktadır (Keri RS ve ark., 2015).

Bu çalışmada, sisplatin yapısındaki amonyak ligandının 2-hidroksimetilbenimidazol (bim) taşıyıcı ligandı ve klor ligandının oksalat ligandı ile değiştirilmesiyle kapalı formülü $[Pt(bim)_2(oksalat)]$ olan, 1 platin(II) kompleksi sentezlenmiştir. Sentezlenen kompleksin kimyasal yapısı elemental analiz, ^1H NMR ve infrared spektrumu ile aydınlatılmıştır.

Anahtar Kelimeler: Platin kompleksi, Benzimidazol, Antikanser.

Bu çalışma, Mersin Üniversitesi Bilimsel Araştırma Projeleri Birimi (Proje No: 2017-2-TP1-2347) tarafından desteklenmiştir.

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➢ **POSTER PRESENTATION**

Effect of Vitamin E and Selenium on Hemocytes in the *Galleria mellonella*

Mustafa Coskun*, Tamer Kayis, Emre Gulsu, Emel Alp

Department of Biology, Faculty of Science -Literature, Adıyaman University, Adiyaman, Turkey

Corresponding author e-mail: mcoskun@adiyaman.edu.tr

Abstract

The main goal of the present study was to investigate the role of Selenium and Vitamin E on hemocytes content in the stock culture of *G. mellonella* larvae that were reared under laboratory conditions at a temperature of 28°C ± 2°C and a relative humidity of 70% ± 5% in a dark cycle. An artificial diet consisting of bran, ground honeycomb, glycerin, extracted honey and water was used to grow *G. mellonella* larvae under laboratory conditions.

Tested diets were prepared by adding either selenium (100 µg) or vitamin E (100 µg) alone or in combination with the diets used for insect rearing. Vitamin E was added to the diet after dissolving in Tween 80. The number of hemocytes was calculated by Neubauer hemocytometer.

Hemocytes counts in the control group (152×10^4 cell/ml) increased significantly with vitamin E supplementation. The lowest hemocytes counts were observed in Selenium-supplemented diet. Although the diet with vitamin E and selenium supplementation significantly decreased the hemocytes counts compared with vitamin E diets, it had no positive or negative effect on the hemocytes counts compared with the control diet. The highest hemocytes counts (168×10^4 cell/ml) were observed the diet with vitamin E.

Due to no ethical concerns, the use of *G. mellonella* has increased in studies which the effects of heavy metals, insecticides, antibiotics, bacteria and fungi are investigated. *G. mellonella* can be used as model organism for physiological effect of selenium and vitamin E.

Keywords: Selenium, Vitamin E, Hemocyte, *Galleria mellonella.*

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➢ **POSTER PRESENTATION**

Oral Kanserli Hastalarda İnterleukin 6 Geni (IL6) Polimorfizmleri

Serbülent Yiğit[1], Ayşe Feyda Nursal[2], Ozge Gumusay[3], Nevin Karakus[1], Kubra Yilmaz[1] , Tuba Oz[1]

[1]Gaziosmanpaşa Universitesi, Tıp Fakültesi, Tıbbi Biyoloji, Tokat, Türkiye
[2]Hitit Universitesi, Tıp Fakültesi, Tıbbi Genetik, Çorum, Türkiye
[3]Gaziosmanpaşa Universitesi, Tıp Fakultesi, Onkoloji, Tokat, Türkiye

Sorumlu yazar e-mail: biyolog.kubra.60@gmail.com

Abstract

Oral kanser dünya çapında altıncı en sık görülen malign tümördür. Günümüzde diğer kanserlerin morbidite ve mortalite oranlarında ciddi azalma olmasına rağmen bu azalma oral kanser olguları için geçerli değildir. En önemli risk faktörü sigara ve alkol kullanımı olup sıklığı toplumda giderek artmaktadır. IL6 geni multifonksiyonel proinflamatorik ve immünomediatör bir sitokindir. Endotel hücrelerinde ve fibroblastlarda eksprese olduğu gösterilmiştir. Bu çalışmanın amacı Oral kanserli hastalarda ve kontrol grubunda IL6 geni -174G/C, - 572C/G ve -597G/A varyantlarını karşılaştırmaktır.

Araştırmaya 35 oral kanserli hasta ve 110 sağlıklı kontrol dahil edildi. Alınan kan örneklerinden DNA elde edildi. Her üç bölge her bir örnek için toplamda 2 farklı polimeraz zincir reakisyonu (IL -174G/C için bir ve IL6 -572C/G , -597G/A için toplam bir) ve 3 farklı restiriksiyon parça fragman polimorfizmi (PCR-RFLP) metodu ile değerlendirildi. RFLP enzimi olarak sırasıyla NlaII, BsrBl ve FokI kullanıldı.

IL6 -174G/C varyantı için hasta ve kontrol grubu arasında anlamlı ilişki bulundu (p:0;009). Ancak -572C/G ve -597G/A için anlamlı ilişki bulunmadı (p=0,806 ve p=0,337).

Bu çalışmamızda IL6 genindeki baktığımız 3 polimorfizmden -174G/C varyantı için çalışma grupları arasında anlamlı ilişki saptanmıştır. Bulgularımızın doğrulanması ve güçlendirilmesi için farklı hasta ve kontrol grubunda, daha büyük örnek sayılarında çalışma yapılmasına ihtiyaç duyulmaktadır.

Anahtar kelimeler: IL6 -174G/C, -572C/G, -597G/A, Polimorfizm, Oral Kanser.

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➢ **POSTER PRESENTATION**

Funda (*Erica* sp.) ve Funda Kök Odununun Türkiye'deki Hasat Miktarları ve Etnobotanik Kullanımları

Serhat Ursavaş*, Simge Çizgen, Gamze Tuttu

Çankırı Karatekin Üniversitesi, Orman Fakültesi, Orman Mühendisliği Bölümü, Çankırı, Türkiye

Sorumlu yazar e-mail: serhatursavas@gmail.com

Özet

Bu çalışmanın amacı; ülkemizde odun dışı orman ürünü olarak kullanılan funda (*Erica* sp.) ve funda kök odununun üretim miktarlarını ve elde edilen gelirleri ortaya koymak, aynı zamanda içerdikleri maddelerin önemini ve kullanım alanlarını vurgulamaktır. *Erica* cinsi çoğu dik duran çalı veya yarı çalı, nadiren ağaç halindeki herdemyeşil odunsu bitkilerden oluşmaktadır. Ülkemizde doğal olarak yetişen 5 türü mevcuttur. Bu türlerden 2'si (*E. arborea* L., *E. manipuliflora* Salisb.) tıbbi amaçla ve odun dışı orman ürünü olarak kullanılmaktadır. Halk arasında süpürge çalısı, püren gibi isimlerle de anılan fundaların çiçekli ve yapraklı dalları ericolin adlı bir glikozit içerdiğinden idrar yolları dezenfektanı, idrar söktürücü ve kabız olarak kullanılır. Ayrıca romatizma ve alerji tedavisinde, zayıflatıcı ve tansiyon düşürücü olarak kullanılmaktadır. Dalları ipek böceği yetiştiriciliğinde, yakacak ve süpürge olarak kullanılır. Köklerinde bol miktarda silisyum oksid (SiO_2) bulunur. Kırmızı kahverengi, bol silis asidi içeren ve bu nedenle kolay yanmayan kök odunları pipo başlığı yapımında kullanılmaktadır. Orman Genel Müdürlüğü, Odun Dışı Ürün ve Hizmetler Daire Başkanlığının 1989-2016 yılları arasındaki verileri incelendiğinde ilk funda hasadının 1990 yılında Muğla Orman Bölge Müdürlüğünden ve ilk kök odunu hasadının 1992 yılında Antalya ve İstanbul Orman Bölge Müdürlüklerinden yapıldığı görülmektedir. 28 yıllık veriler incelendiğinde şimdiye kadar: Adana, Adapazarı, Antalya, Balıkesir, Bursa, Çanakkale, İstanbul, İzmir, Kastamonu, Mersin ve Muğla Orman Bölge Müdürlüklerinden funda hasadı ve Antalya, Balıkesir, Bursa ve İstanbul Orman Bölge Müdürlüklerinden kök odunu hasadı yapıldığı görülmektedir. En fazla funda üretimi 514.540 kg ile İstanbul Orman Bölge Müdürlüğünden ve en fazla funda kök odunu üretimi 130.004 kg ile Bursa Orman Bölge Müdürlüğünden kaydedilmiştir.

Anahtar Kelimeler: *Erica* sp., Funda, Kök Odunu, Etnobotanik, Hasat, Odun Dışı Orman Ürünleri.

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➢ **POSTER PRESENTATION**

Evaluation of Paraoxonase 1 (*PON1*) Gene Polymorphisms in Patients with Acute Stroke

Nevin Karakus[*1], Serbulent Yigit[1], Nursah Basol[2], Pinar Cogas[1], Ali Kablan[3]

[1]Gaziosmanpasa University, Faculty of Medicine, Department of Medical Biology, Tokat, Turkey.
[2]Gaziosmanpasa University, Faculty of Medicine, Department of Emergency Medicine, Tokat, Turkey.
[3]Mardin State Hospital, Department of Emergency Medicine, Mardin, Turkey

Corresponding author e-mail: nevinbalci@hotmail.com

Abstract

Stroke is defined as sudden developing, abnormal contractions, muscle weakness and speech disorders. Paraoxonase 1 (PON1), a member of PON enzyme family, is the most studied PON especially on cardiovascular disease, stroke, inflammation and oxidative stress. In this study, we aimed to investigate the association between PON 1 gene Q192R and L55M polymorphisms and acute stroke. The DNAs of 102 acute stroke patients and 94 healthy controls have been analyzed by polymerase chain reaction (PCR) and restriction fragment length polymorphism (RFLP) assays. Statistical analyses were performed by using chi-square and analysis of variance tests. The genotype frequencies of PON1 gene Q192R polymorphism was found to be significantly different between patients and controls ($p=0.035$). However any association was not observed between two groups according to genotype frequencies of PON1 gene L55M polymorphism ($p>0.05$). As a result, our findings showed that there was an association between PON1 gene Q192R polymorphism and acute stroke. However, further studies are needed to show the association between PON1 gene polymorphisms and acute stroke more clearly in Turkish population.

Keywords: PON1; rs854560; rs662; polymorphism; acute stroke.

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➢ **POSTER PRESENTATION**

The investigation of association between PON 1 Gene in Pulmonary Embolism Petients

Nursah Basol[1], Nevin Karakus[2], Serbulent Yigit[2]*, Ilker Kaya[3], Asli Yasemen Savas[4], Tuba Ceviz[2], Serhat Karaman[1]

[1]Nursah Basol, Gaziosmanpasa University Faculty of Medicine Dept. of Emergency Medicine, Tokat
[2]Gaziosmanpasa University, Faculty of Medicine, Dept. of Medical Biology, Tokat, Turkey
[3]Tokat State Hospital, Dept. of Cardiovascular Surgery, Tokat, Turkey
[4]Tokat State Hospital, Dept. of Emergency Medicine, Tokat, Turkey

Corresponding author e-mail: Serbulent.yigit@gmail.com

Abstract

Pulmonary embolism (PE) is caused by some genetic factors for more than half patients. Paraoxonase 1 (PON1) has significant anti-oxidative and anti-inflammatory effects According to our knowledge, there is no study researching the relation between PON 1 gene polymorphisms and pulmonary embolism in literature. Therefore, it is aimed to research possible impacts of PON 1 Q/R192 and L55M polymorphisms in PE considering anti-inflammatory and anti-oxidative effects of PON 1 in Turkish population.
One hundred and five PE patients and one hundred and seventeen controls were enrolled in the study. Genomic DNA was isolated and genotyped using polymerase chain reaction (PCR) and restriction fragment length polymorphism (RFLP) analyses for the *PON1* gene Q192R and L55M polymorphisms.
Any association were not found between clinical and demographical characteristics of PE patients and the *PON1* gene Q192R polymorphism, however there were associations between surgery, chronic renal failure and cerebrovascular disease on history of patients and L55M polymorphism ($p=0.013$, $p=0.037$ and $p=0.031$, respectively). Genotype and allele frequencies didn't show any significant differences between patients and controls according to *PON1* gene Q192R and L55M polymorphisms ($p>0.05$).
The results of study suggest that there is no correlation between PE and PON 1 gene Q192 and L55M polymorphisms in the Turkish population from the Central Black Sea region. Besides, whole genotypes and alleles of Q192R and L55M are not risk factors for patients with PE in this population.

Keywords: Pulmonary embolism, PON1, polymorphism, Q192R, L55M.

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➢ **POSTER PRESENTATION**

The Effects of Some Reaction Parameters on The Biocatalytic Deracemization of Racemic Propranolol

Rahime Songür*, Ülkü Mehmetoğlu

Ankara University, Faculty of Engineering, Department of Chemical Engineering, Ankara, Turkey.

Corresponding author e-mail: rsongur@eng.ankara.edu.tr

Abstract

β-blockers are very important drugs and they are used to treatment of cardiovascular diseases. β-blockers are chiral molecules. The enantiomers of β-blockers have different pharmacokinetic and pharmacodynamics properties. While one enantiomer is showing desired effects, the other enantiomer is possible to cause side effects. Propranolol is one of the important β-blockers. In this study, the effects of some reaction parameters on the production of enantiomerically pure propranolol via biocatalytic deracemization of racemic propranolol were investigated.

The fungus *Rhizopus oryzae* CBS 111718 was used as enzyme source. The effects of some reaction parametres on the values of enantiomeric exess % (ee %) for the biocatalytic deracemization of racemic propranolol were investigated. These parameters were cell concentration in the reaction medium (25, 50, 100, 150 g/L), substrate concentration (0.5, 1, 3, 5, 10 mM), agitation rate (120, 140, 160 rpm) and reaction time (3, 4, 6 days). lt was observed that with the increasing of cell concentration in the reaction medium, ee % values were increased but there were not an important difference between 100 and 150 g/L. So, 100 g/L cell concentration was enough for 3 mM of substrate concentration. When the effect of substrate concentration was investigated, the maximum ee % value (44.7 %) was obtained at 1 mM of substrate concentration. When the agitation rate was changed, ee % values were similar. When the optimum reaction time was investigated, it was realized that the suitable reaction time was 6 days for 1 mM of substrate concentration.

Keywords: propranolol, β-blocker, *Rhizopus oryzae*, biocatalytic deracemization, enantioselectivity.

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➢ **POSTER PRESENTATION**

Electrochemical Study of Sudan I at Glassy Carbon Electrode

Rashad Mamedov[1*], Demet Uzun[1], Kuddusi Karaboduk[2], Erdoğan Hasdemir[1]

[1]Gazi University, Science Faculty, Chemistry Department, Ankara, Turkey
[2]Gazi University, Life Sciences Application and Research Center, Ankara, Turkey

Corresponding author e-mail: gfb.rsd@gmail.com

Abstract

The accurate and sensitive determination of contaminants in food samples has received much attention in the analytical and food chemistry. In particular, Sudan I (1-Phenylazo-2-naphthol) is a synthetic azo-colorant dye, has commonly been found in the adulterated chili powder, curry products and sauces (Li et al., 2016). Sudan I has been widely used for coloring of various foodstuffs, however it has been classified as a category 3 carcinogen by the International Agency for Research on Cancer (IARC). Hence, a sensitive and low level determination of Sudan I in foodstuffs is of great interest (Zhang et al., 2012).

In this study, the electrochemical behaviour of Sudan I was firstly investigated by cyclic voltammograms (CVs). The optimum experimental conditions such as supporting electrolyte, pH were determined. A simple, stable and sensitive electrochemical method was developed for the determination of Sudan I in turnip greens by differential pulse voltammetry (DPV).

Keywords: Sudan I, Electrochemical Behaviour, Determination.

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➢ **POSTER PRESENTATION**

A Comparison of Antioxidant Contents of Different Herbal Tea: The Effects of Brewing Duration and Water Type

Can Yılmaz*, Metin Konuş, Derya Ergin, Zeynep Dilek, Yavuz Akbaş, Naile Çiçek, Mukaddes Kaymış, Esma Elasan

Van Yuzuncu Yil University, Faculty of Science, Department of Molecular Biology and Genetics, Van, Turkey.

Corresponding author e-mail: cyilmaz@yyu.edu.tr

Abstract

Herbs has been used for almost all kinds of medical purposes for thousands of years. Herbal tea is essentially a herbal mixture made from leaves, seeds or roots of various plants. Herbal tea, according to many, looks like tea and is brewed as the same way as tea, but in reality it is not considered a tea at all and brewing conditions create significant changes especially in antioxidant content they provide to people. In this study, five different herbal teas, melissa, sage, rose hip, daisy and fennel, were compared with each other under different brewing conditions: brewing time and water type (distilled water and regular tap water). 10min of brewing provided slightly higher antioxidant content with respect to 3min brewing, when all the samples were measured by DPPH assay. The same experimental method was used to evaluate the effect of water type and it was detected that the tap water causes more antioxidant content released from dried herbs into tea.

Keywords: Herbal Tea, DPPH, Antioxidant, Brewing Time, Water Type.

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➢ **POSTER PRESENTATION**

A Novel Metallic Biodegradable Material for the Intrauterine Device Production and its Biodegradation Behavior in Simulated Uterine Fluid

Ebru Kaymaz*, Cem Akça

Yildiz Technical University, Department of Metallurgical and Materials Engineering, Istanbul, Turkey

Corresponding author e-mail: ebrukaymaz@outlook.com.tr

Abstract

Intrauterine devices (IUDs) are frequently preferred in birth control globally. They are known for their reliability greater that 99.9%. Although IUDs are used vastly in birth control, removal procedure could be somewhat painful and a health professional is needed for both implantation and removal operations. Thus, a novel biodegradable IUD material was developed.

Magnesium alloys are known for their biocompatibility and biodegradability in human body. Numerous magnesium alloys are used in human body to carry out different duties, from fixation of bone fractures to cardiac stent applications.

In this study, biodegradation behavior of AZ91E alloy (Mg-Al-Zn alloy) in simulated uterine fluid (SUF) was investigated. Since the pH of SUF changes in the range of 6.3-8.0 due to aging, three different SUF solutions were prepared. Magnesium alloy specimens were machined and ground to create an applicable surface roughness. Then every specimen was immersed info SUF solutions with pH values of 6.3, 7.0 and 8.0 at 37°C. Immersion time was applied as 3, 7, 15 and 30 days. Biodegradation behavior was measured using weight loss method. The results have shown that corrosion rate was lower at pH 8.0 than the others.

Keywords: intrauterine device, magnesium, birth control, biodegradable.

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➢ **POSTER PRESENTATION**

Synthesis and Characterization of Mesoporous SBA-15 Silica Material For The Poorly Water-Soluble Drug, Nimesulide

Zeynep Özaydın*, Nurdan Saraçoğlu, Fatma Suna Balcı

Gazi University, Enginerring Faculty, Department of Chemical Engineering, Ankara, Turkey.

Corresponding author e-mail: zeynepozaydin@yahoo.com

Abstract

In recent years, many studies have been conducted for reducing drug doses, prolonging dosing intervals, eliminating side effects and harmful effects of the drugs. Further, studies related with delivering drugs to their target sites and new biomedical applications have also been performed. The studies related on the enhancement of the loading capacity of drugs into the support, the increment of the solubility of drug and controlling drug release still continues. Due to their high surface areas, controllable pore structures and thermal stabilities, mesoporous silica materials are used especially for poorly water-soluble drugs. The aim of this study is to investigate the loadability of the non-steroidal anti-inflammatory "nimesulide" substance, which is poorly soluble in water, in the SBA-15 silica material. In the literature, the loading of nimesulide into SBA-15 silica material has not been previously performed. In this study, pure SBA-15 was synthesized following a hydrothermal method and their reproducibility studies were carried out. In addition, the surface modification studies of the SBA-15 were performed to investigate the effect of loading capacity. The surface of SBA-15 sample was functionalized using APTES (3-Aminopropyl triethoxysilane) by post-grafting method. Nimesulide was impregnated into the pure SBA-15 and functionalized-SBA-15. The synthesized materials were characterized using low angle X-ray diffraction pattern analysis, scanning electron microscopy (SEM), fourier transform infrared spectroscopy (FT-IR) and N2 adsorption/desorption analysis to determine the physical and structure properties of the materials. The low-angle XRD pattern of pure SBA-15 and N_2 adsorption desorption analysis showed that the synthesized pure SBA-15 has a mesoporous structure. After nimesulide loading, the diffraction peaks corresponding to nimesulide were observed in the wide-angle XRD pattern. FTIR analysis was consistent with XRD analysis, showed that nimesulide was incorporated into the structure of the SBA-15 materials successfully.

Keywords: Mesoporous, SBA-15, nimesulide, poorly water-soluble drug**.**

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➢ **POSTER PRESENTATION**

Synthesis, Structural, Thermal and Spectroscopic Properties of (acesulfamato-*N,O*) (acesulfamato-*O*)*bis*(2-aminobenzimidazole)cobalt(II) Acetonitrile

Arda Tolan*, Necmi Dege[2] , Zerrin Heren[1], Hasan İçbudak[1]

[1]Ondokuz Mayıs University, Faculty of Arts and Sciences, Chemistry Department, Samsun, Turkey
[2]Ondokuz Mayıs University, Faculty of Arts and Sciences, Physics Department, Samsun, Turkey

Corresponding author e-mail: icbudak@omu.edu.tr

Abstract

In this study, mixed-ligand acesulfame cobalt (II) complex containing *2*-aminobenzimidazole was synthesized and characterized by elemental analysis, magnetic susceptibility, FT-IR and electronic spectroscopy, and single crystal x-ray diffraction techniques. The complex $[Co(acs)_2(abz)_2].C_2H_3N$, crystallizes in the triclinic space group $P\bar{1}$. The $[Co(acs)_2(abz)_2].C_2H_3N$ compound is square pyramidal geometry. The tau angle (τ) was found as 0.10 (Addison et al., 1984). In the $[Co(acs)_2(abz)_2].C_2H_3N$ complex, the acesulfamato ligands exhibited two different coordination modes. One of the acesulfamato ligand acts as a monodentate by imino nitrogen; while the other acesulfamato ligand is coordinated to Co(II) by imino nitrogen and the carbonyl oxygen. The square pyramidal geometry is completed by the coordination of two *2*-aminobenzimidazole ligands over the pyridine nitrogen (Fig. 1). This complex is the first example in which two acesulfame ions coordinate in the same central ion (İçbudak et al., 2015). The thermal behaviour of the complex was investigated by simultaneously thermal analysis techniques (TG, DTG and DTA) in static air atmosphere. The complex melted in 198 ºC and the melting heat is 20 $kJmol^{-1}$. Final decomposition product was identified as CoO. Also, complex exhibits solvatochromic properties.

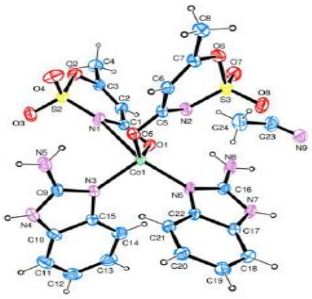

Figure1. Crystal structure of $[Co(acs)_2(abz)_2].C_2H_3N$

Keywords: Acesulfamato, *2*-aminobenzimidazole, thermal analysis, x-ray, solvatochromism

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➢ **POSTER PRESENTATION**

Synthesis, Crystal Structure, Thermal and Spectroscopic Properties of New Mn (II) Complex of 5-aminoisophtalic Acid with 4-picoline

Arda Tolan[*], Akif Özdemir[1], Gülnur Erdoğmuş[1], Yıldıray Topcu[2], Hasan İçbudak[1], Zerrin Heren[1]

[1]Ondokuz Mayıs University, Faculty of Arts and Sciences, Chemistry Department, Samsun, Turkey.
[2]Ondokuz Mayıs University, Faculty of Engineering, Department of Chemical Engineering, Samsun, Turkey

Corresponding author e-mail: zheren@omu.edu.tr

Abstract

The 5-aminoisophthalic acid (5-aip) ligand is interesting because of the potential structural chemistry of its multifunctional coordination modes, as it should be able to metal ions in different fashions (Zeng et al., 2007). 5-aip is a good spacer and its carboxylate groups may be completely or partially deprotonated resulting in rich coordination modes to the metal ions and its amino group can create hydrogen bonds with the adjacent units, which allow for the formation of novel polymeric structures (Liu et al., 2011). In this study, a new complex of *tris*(5-aminoisophthalato)*bis*(4-picoline)mangan(II) hydrate, $[Mn(5\text{-aip})_3(4\text{-pic})_2].1.5H_2O$ has been synthesized for the first time and characterized by the elemental analysis, FT-IR and electronic spectroscopy, and x-ray crystallography techniques. The complex consists of neutral monomeric units with crystallizing in monoclinic ($P\ 2_1/c$) crystal system. Each mangan(II) ion is coordinated by three 5-aip and two 4-pic forming an octahedral MnN_2O_4 coordination sphere (Fig.1). Mn(II) is coordinated by four oxygen atoms from three distinct 5-aip ligands. The 5-aip ligands exhibited two different coordination behaviours. Two of the 5-aip ligands are monodentate whereas the third one is bidentate. 4-pic is a classical *N*-monodentate ligand. The thermal behaviours of the complex have been studied by means of simultaneous TG, DTG and DTA methods in a static air atmosphere. The complex loses all water molecules in the temperature range 50-106 °C in two steps. The anhydrous compound is stable to 333 °C. The final decomposition product is MnO.

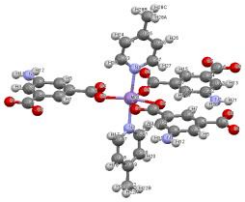

Figure1. Crystal structure of complex

Keywords: 5-aminoisophthalic acid, 4-picoline, x-ray diffraction, thermal analysis

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➢ **POSTER PRESENTATION**

Ruminantlarda Mikrobiyal Protein Miktarının Spot İdrar Toplama Yöntemiyle Belirlenmesi

Nurcan Çetinkaya[1], Aydan Atalar[2]*

[1]Ondokuz Mayıs Üniversitesi, Veteriner Fakültesi, Hayvan Besleme ve Beslenme Hastalıkları Anabilim Dalı, Samsun, Türkiye
[2]Zonguldak Bülent Ecevit Üniversitesi, Ahmat Erdoğan Sağlık Hizmetleri Meslek Yüksek Okulu, Zonguldak, Türkiye

Sorumlu yazar e-mail:aydantlr@gmail.com

Özet

Ruminantların protein ihtiyaçlarının hesaplanması için geliştirilmiş tüm yeni yem protein değerlendirme sistemlerinde kullanılan yöntemler rumende sentezlenen veya ince bağırsağa sağlanan mikrobiyal protein ölçümüne dayanmaktadır. Bu bildiride idrarla atılan pürin türevlerinin ölçülmesine dayanan spot idrar toplama tekniği ile ince bağırsağa gelen mikrobiyal proteinin belirlenmesi konusunda yapılan son çalışmaların değerlendirilmesi amaçlanmıştır. Spot idrar toplama yönteminde diğer yöntemlerde olduğu gibi hayvana cerrahi bir müdahalenin yapılmasına gerek yoktur. Ruminantlarda nükleik asit metabolizmasının idrarla atılan metabolitleri büyük baş ve küçük başruminantlarda farklılık göstermektedir. Büyük baş hayvanlardan olan sığır ve mandalarda ince bağırsakta ksantinoksidaz enzimi yüksek miktarlarda bulunduğu için idrarla atılan nükleik asitlerin son meatabolitleriallantoin ve ürik asit formundadır. Diğer taraftan küçük baş hayvanlardan keçi ve koyunlarda ince bağırsakta ksantinoksidaz enzimi bulunmadığından veya çok az miktarda olduğundan idrarla atılan pürin türevleri ksantin, hipoksantin, allantoin ve ürik asit yapısında olmaktadır. Spot alınan idrar örneklerinde spektrofotometrikveya kromatografik yöntemlerle pürin türevlerinin yani ksantin, hipoksantin, allantoin ve ürik asitin konsantrasyonları tespiti edilerek rumenden ince bağırsağa sağlanan mikrobiyal protein miktarı hesaplanmaktadır. Purin türevlerinin ölçülmesinde spektrofotometrik yöntemler daha ucuz olması nedeniyle tercih edilmektedir. Ayrıca Yüksek Performanslı Likit Kromatografi (HPLC) yönteminde pürin türevleri kolonun çok hızlı kirlenmesine neden olmaktadır. Bu derleme makalesinde spot idrar toplama tekniğinin mikrobiyal protein ve merada otlayan hayvanların yem tüketimlerinin belirlenmeleri tartışılmıştır.

Anahtar Kelimeler: Mikrobiyal protein; pürin türevleri, ruminantlar, spot idrar toplama.

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➢ **POSTER PRESENTATION**

Genotoxic and Antigenotoxic Action of Gallic Acid in Human Lymphocytes by Comet Assay

Fatma Ünal[1]*, Funda Demirtaş Korkmaz[2], Deniz Yüzbaşıoğlu[1]

[1]Department of Biology, Science Faculty, Gazi University, Ankara, Turkey
[2]Department of Medical Biology and Genetics, Medical Faculty, Gazi University, Ankara/Turkey

Corresponding author: funal@gazi.edu.tr

Abstract

Gallic Acid (GA) is a polyhydroxyphenolic compound present in various natural products as grape strawberries, tea leaves, pineapples, bananas, lemons, gallnuts, sumac, witch hazel, and many other frui Regarding its biological activity, GA exerts anti-bacterial, anti-viral, anti-inflammatory and antioxida effects. Comet assay (single-cell gel electrophoresis) is a simple method for measuring DNA strand brea in individual cells. The assay has applications in testing novel chemicals for their effects. The aim of tl study was to evaluate the genotoxic activity of GA and antigenotoxic activity of GA against H_2O_2, oxidant, in isolated human lymphocytes by using comet assay. 2, 4, 8, 12, 16, and 20 µg/ml concentrations GA and 100 µM of H_2O_2 were tested. H_2O_2 alone significantly increased DNA damage that was evaluated tail length, tail intensity and tail moment compared to the negative control. 2, 4, 8 (except for comet t length), and 12 µg/ml concentrations of GA did not significantly increase DNA damage compared to t negative control. In contrary, all comet parameters were significantly increased compared to both negati and positive controls at 16 and 20 µg/ml concentrations. On the other hand, co-treatment of all t concentrations of GA significantly decreased the DNA damage (except 2, 4 and 8 µg/ml concentration in t intensity) induced by H_2O_2. Taken together, our findings indicate that while low concentrations of GA has damaging effect, high concentrations induced DNA damages in lymphocytes. In contrary, co-treatment GA significantly prevented H_2O_2 induced DNA damages and showed antigenotoxic effect. These genotox and antigenotoxic actions can be attributed to prooxidant and antioxidant effect of GA, respectively. The results are in accordance with some other studies' results that show concentration-dependent prooxidant a antioxidant activities.

Keywords: Gallic acid, genotoxicity, antigenotoxicity, human lymphocytes, comet assay.

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➢ **POSTER PRESENTATION**

Sigaranın İnsan Semen Parametreleri Üzerine Etkisinin Araştırılması

Banu Eren[1]*, Muharrem Bal[1], Muhammed Bahattin Ulu[2], Zafer Eren[1]

[1]Ondokuz Mayıs Üniversitesi, Biyoloji Anabilim Dalı, Samsun, Türkiye
[2]TC. Sağlık Bakanlığı, İl Sağlık Müdürlüğü. Gazi Devlet Hastanesi, Samsun, Türkiye

Sorumlu yazar e-mail: banueren@gmail.com

Özet

Sanayileşme ve teknolojik gelişmelerin hayatı kolaylaştırdığı düşünülmesine karşın insan sağlığı üzerinde göz ardı edilemez olumsuz etkileri olmaktadır. En çok çevresel etmenlere özellikle duyarlı olan üreme sistemi etkilenmektedir. Sağlık kurumlarına üreme teknikleri ile çocuk sahibi olmak için başvuran çift sayısı sürekli artmaktadır. İnfertil çiftler değerlendirilirken erkek ve kadın iyi değerlendirilmeli ve yaşam biçimi davranışları (sigara, alkol, madde bağımlılığı, beslenme), mesleği (stres, çevresel maruziyet), boş zamanları değerlendirme şekilleri (telefon, diz üstü bilgisayar kullanımı vb.) ya da sağlıklı olduğu düşünülen bazı davranışları (hamam, jakuzi, sauna vb.) sorgulanmalıdır. Bu çalışmada erkek fertilitesinde riskli olabilecek yaşam biçimi davranışlarından olan sigara kullanımı değerlendirilerek, sperm kalitesi üzerine etkisi araştırılmıştır. Değerlendirmeye alınan 133 hastanın %53'ünün sigara kullandığı, %47'sinin ise hiç sigara kullanmadığı tespit edilmiştir. WHO (Dünya Sağlık Örgütü) kriterleri dikkate alınarak Makler kamarası ile sayı ve hareketlilik, Diff-quick boyaması ile sperm morfolojisi yönünden araştırılmıştır. Hazırlanan preparatlar mikroskopta fotoğraflanarak değerlendirilmeye alınmıştır. Sonuç olarak sigara içen kişilerin sperm morfolojisi ve sperm hareketliliği, sigara içmeyenlere göre daha düşük bir değerde gözlenmektedir. Bu durum sigara kullanımının üreme yeteneğini olumsuz yönde etkilemekte olduğunu düşündürmektedir.

Anahtar Kelimeler: Erkek infertilitesi, Sigara, Spermiyogram, Sperm morfolojisi, Diff- quick.

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➢ **POSTER PRESENTATION**

Oral Kanserli Hastalarda İnterlökin-4 VNTR Polimorfizmi

Özge Gümüşay[1], Ayşe Feyda Nursal[2], Serbülent Yiğit[3], Akın Tekcan[4], Kübra Yılmaz[3]*, Görkem Kısmalı[5]

[1]Gaziosmanpaşa Üniversitesi, Tıp Fakültesi, Tıbbi Onkoloji ABD, Tokat, Türkiye
[2] Hitit Üniversitesi, TıpFakültesi, Tıbbi Genetik ABD, Çorum, Türkiye
[3]Gaziosmanpaşa Üniversitesi, Tıp Fakültesi, Tıbbi Biyoloji ABD, Tokat, Türkiye
[4] Ahi EvranÜniversitesi, Tıp Fakültesi, Tıbbi Biyoloji ABD, Kırşehir, Türkiye
[5]Ankara Üniversitesi, Veteriner Fakültesi, Biyokimya ABD, Ankara, Türkiye

Sorumlu yazar e-mail: biyolog.kubra.60@gmail.com

Özet

Oral skuamoz hücreli kanser (OSHK) tüm dünyada görülme sıklığı açısından 10. sıklıkta ve ölüm nedenleri içerisinde 7. sırada yer almaktadır. OSHK erkeklerde daha sık görülmektedir ancak son yıllarda artan sigara ve alkol tüketimi nedeniyle kadınlarda da sıklığı artmaktadır. Sitokinler,organizmada immün sistemin regülasyonunda ve enflamasyonda rol oynayan moleküllerdir. İnterlökin-4 (IL-4) T2 lenfositlerin temel sitokinidir ve immün cevapta önemli rol oynar. IL-4 geni üçüncü intronunda bulunan 70 bp değişken sayılı ardışık tekrarlar (VNTR) polimorfizmi gen ekspresyonunu etkilemektedir. Bu çalışmada IL-4 VNTR polimorfizmi ve OSHK arasındaki ilişkinin araştırılması amaçlanmıştır.
Çalışmaya 36 OSHK hastası ve 100 sağlıklı kontrol birey dahil edilmiştir. IL-4 VNTR genotiplemesi Polimeraz zincir reaksiyonu (PCR) yöntemi ile yapılmıştır.
Erkek:kadın oranı hasta grubunda 22:14, kontrol grubunda 65:35 olmuştur. Ortalama yaş hasta grubunda 63.94±13.96 yıl, kontrol grubunda 57.31±11.85 olmuştur. Genotip dağılımı hasta ve kontrol grubu arasında istatiksel olarak anlamlı fark göstermiştir (*p=0.039*). IL-4 VNTR P1/P1 genotipi hasta grubunda fazla görülürken, P2/P2 genotipi kontrol grubunda fazla gözlenmiştir. IL-4 VNTR P1 allelinin hasta grubunda daha çok bulunduğu saptanmıştır (*p=0.030*; OR:2.646, 95%Cl: 1.13-6.10).
Çalışmamız IL-4 VNTR polimorfizminin OSHK gelişmesinde rolü olabileceğini desteklemiştir.

Anahtar kelimeler: oral skuamöz hücreli kanser, IL-4, polimorfizm, VNTR.

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➢ **POSTER PRESENTATION**

Renal İskemi/Reperfüzyon Hasarına Bağlı Olarak Artan Sistatin-C Düzeyini Saksagliptin Azaltır

Suat Tekin[1*], Asiye Beytur[1], Murat Çakır[2], Süleyman Sandal[1]

[*1]İnönü Üniversitesi, Tıp Fakültesi, Fizyoloji Anabilim Dalı, Malatya, Türkiye
[2]BozokÜniversitesi, Tıp Fakültesi, Fizyoloji Anabilim Dalı, Yozgat, Türkiye

Sorumlu yazar e-mail: suat.tekin@inonu.edu.tr

Özet

DPP-4 insanlarda beyin, akciğer, böbrekler, adrenal bez, pankreas, gibi birçok dokuda geniş olarak eksprese edilmektedir. Birçok sitokin ve kemokin için DPP-4 substrat olarak tanımlanmıştır ve DPP-4 antioksidan etkilere sahip olduğu yapılan çalışmalarla ortaya konmuştur. Tip II Diyabet tedavisinde kullanılan dipeptidil peptidaz-4 enzim (DPP-4) inhibitörleri inkretin hormonların yıkılmasını engelleyerek artan kan glikozunu dengelemektedir. Saksagliptin DPP-4 enzim inhibitöre ailesi için henüz yeni tanımlanmış bir üyedir. Sıçanlarda deneysel olarak oluşturulan böbrek iskemi/reperfüzyon (I/R) hasarına karşı saksagliptinin koruyucu rollerinin olduğu ve saksagliptinin yüksek antioksidan özelliklerinin olduğunu rapor etmiştik. Bu çalışmada deneysel olarak sıçanlarda oluşturulan böbrek I/R'de saksagliptin uygulamasının sistatin-C düzeyi üzerindeki etkilerini araştırmak amacıyla yapıldı.
Bu çalışma İnönü Üniversitesi Hayvan Deneyleri Etik Kurulu'ndan alınan onay ile (Protokol no: 2017 / A-28) yapılmıştır. Çalışmada Sprague-Dawley cinsi 40 adet erkek sıçan kullanıldı. Sıçanlar kontrol, I/R ile 2 ve 10 mg/kg Saksagliptin uygulanan gruplar olmak üzere 4 gruba ayrıldı (n=10). Kontrol grubu dışındaki gruplardaki hayvanların her iki böbreğine 45 dakika iskemi ve sonrasında 24 saat reperfüzyon uygulandı. I/R grubuna serum fizyolojik su (saksagliptin çözücüsü), tedavi gruplarına ise iki farklı doz saksagliptin (2 ve 10 mg/kg) oral olarak iskemiden önce verildi. 24 saat sonra tüm sıçanlar sakrifiye edildi sıçanların kan örnekleri toplandı. Kanların santrifüj edilmesiyle elde edilen serumlardan, ELISA yönetmi kullanılarak sistatin-c düzeyleri ölçüldü. Verilerin istatistiksel analizi IBM SPSS Statistics 24.0 Windows paket programında Bonferroni düzeltme Mann Whitney U testi ile gerçekleştirildi.
Kontrol grubuna göre I/R grubunda sistatin-C düzeyinin iskeminin meydana getirdiği hasar bağlı olarak arttığı ($p<0.05$), saksagliptin uygulaması yapılan gruplarda ise hasara bağlı olarak artan sistatin-c düzeyinin azaldığı ($p<0.05$) belirlendi.
Bu bulgular iskemiye bağlı olarak böbrek dokusunun fonksiyonunda meydana gelen bozulmanın kısmen de olsa saksagliptin uygulaması ile giderilebileceğini işaret etmektedir.

Anahtar Kelimeler: Saksagliptin, Sistatin-C, Böbrek, İskemi, Reperfüzyon.

Teşekkür: Bu çalışma; İnönü Üniversitesi Bilimsel Araştırmalar Koordinasyon Birimi (BAP) tarafından TCD-2017-647 no'lu proje ile maddi destek sağlanmıştır.

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➢ **POSTER PRESENTATION**

Lepidoptera Kanatlarında Renk Oluşumu

Hülya Bulut*, Banu Eren, Zafer Eren

Ondokuz Mayıs Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Samsun, Türkiye

Sorumlu yazar e-mail: hulyab99@yahoo.com

Özet

Lepidoptera, pul örtülü kanatlarından dolayı "pul kanatlılar" olarak adlandırılmaktadır. Lepidoptera üyelerinin çoğu oldukça etkileyici renklenmeye sahiptir ve birçok kelebek türü sadece kanatlarındaki renk deseniyle teşhis edilebilmektedir. Ergin bir bireyin kanatlarının dorsal ve ventral yüzeyi, kısmen üst üste binen pullarla, kutikul yapısıyla ve görünür renk desenini oluşturan pigmentasyon ile örtülüdür. Kanat gelişiminin geç dönemlerinde, bazı epidermal hücreler tek renk pigmenti depolayan pullar üretirler. Farklı renklerin pulları ultrastrüktür bakımından farklılaşır ve pigmentleri ergin oluşmadan önce farklı evrelerde bırakılırlar. Kanatlardaki bu renklenme; çiftleşme, kamuflaj, uyarı amaçlı kullanılabilmektedir.

Bazı durumlarda hem pigmentsel hem de pigmentsel olmayan etkilerle pulun bireysel görünümü oluşmaktadır. Birçok kelebek türü, optik girişimin neden olduğuna inanılan, canlı yanardöner renklenme gösterir. Pigmentsel olmayan bu renk oluşumu "Yapısal Renk " olarak adlandırılır. Yapısal renklenme doğada yaygındır ve çoğu göz alıcı sinyaller oluştururlar. Bu renklenme tipi dalga boyu-spesifik yansıma ve/veya sıralı veya kısmi sıralı yüzey tabakalarından ışığın kırınımıyla oluşmaktadır. Yapısal renkler, kelebek fenotipinde önemli bir etki oluşturur ve eşeyler arası haberleşmede, aposematik iletişimde sıklıkla kullanılmaktadır.

Anahtar Kelimeler: Lepidoptera, Kelebek, Kanat, Renk.

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➢ **POSTER PRESENTATION**

Synthesis of 1-(2-chloroquinolin-3-yl)-*N*-(*p*-tolyl)methanimine

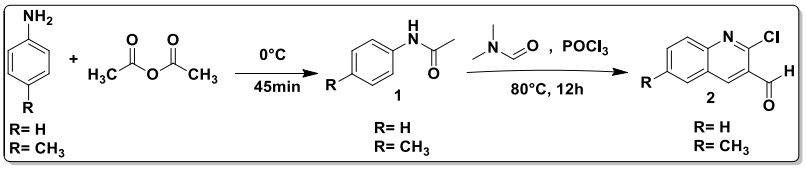
Ahmed Yacine Benzaim[1*], Ismahène Bazine[1] , Zinelaabidine Cheraiet[2] , Yasser Bouchebcheb[1] , Abbès Boukhari[1]

[1]BADJI Mokhtar University, Faculty of sciences, Department of chemistry, Annaba, Algeria.
[2]Higher school of industrial technologies, Annaba, Algeria.

Corresponding author e-mail: ahmedyacine4@hotmail.com

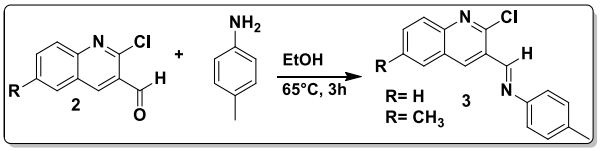
Abstract:

It is known that heterocycle chemistry is of vital importance today in the biological, medicinal and pharmaceutical fields as well as in the industrial and technological sectors. Our study focused on quinoline derivatives which represent an important family of heterocycles given these different biological activities such as: anti-malarial, vasodilator.
Several methods of synthesis of quinolinic molecules have been reported in the literature for exemple: Meth-cohn synthesis and all[1] and Adams synthesis and all[2].
In this work, we will first prepare 2-chloroquinoline-3-carbaldehyde via the Vilsmeier-Haack reaction.



Scheme 1

The product thus obtained is then converted to 1-(1-chloroquinolin-3-yl)-N-(p-tolyl)methanimine by reaction with different substituted aniline in ethanol.



Scheme 2

Keywords: Quinoline – Vilsmeier-Haack – Aniline.

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➢ **POSTER PRESENTATION**

Efficient Synthesis of Some New Pyridones Derivatives

Ikram Baba Ahmed[1,2],Wassila Hadj-Selimane[1,2], : Mehiaoui Nawael[1], Zahira Kibou[1,2*], Fatima Belhadj[1],Noureddine Choukchou-Braham[1]

[*1]Laboratoire de Catalyse et Synthèse en Chimie Organique, Université de Tlemcen, 13000 Tlemcen, Algérie, B.P.119

[2]Centre Universitaire Belhadj Bouchaibde Ain Témouchent, Institue des Sciences, 46000 Ain Témouchent, Algérie, B.P 284

Corresponding author e-mail: zahira_kibou@yahoo.fr

Abstract

The pyridones structure constitutes an important class of heterocyclic compounds [1-2]. Different methods of synthesis and the reactions of pyridones have been recently reviewed by others [3-4]. On the other hand pyridones continue to attract considerable attention of researchers in different countries because of their great practical usefulness, because of the very wide spectrum of their biological activities.

This work describes the synthesis of new derivatives of pyridones (figure 1) and related heterocycles using multicomponent reaction under solvent free conditions. The synthesis of the following compounds, and others, will be presented and discussed.

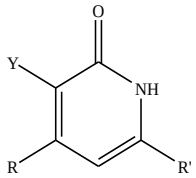

Figure 1: 2-pyridones structure

Keywords: 2-pyridones, solvent free synthesis, multi-component reaction.

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➢ **POSTER PRESENTATION**

Cytotoxic and Morphologic Effects of New Synthetic Borotungstate Agent on Lung Carcinoma

Pinar Oztopcu-Vatan[1], Hira Uğurlugungor[2]*, Alper Tolga Colak[3]

[1]Eskisehir Osmangazi University, Faculty of Arts and Sciences, Department of Biology, Eskisehir, Turkey.
[2]Eskisehir Osmangazi University, Graduate School of Natural and Applied Sciences, Eskisehir, Turkey.
[3]Dumlupinar University, Faculty of Arts and Sciences, Department of Chemistry, Kutahya, Turkey.

Corresponding author e-mail: hiraugurlugungor@gmail.com

Abstract

Lung carcinoma is one of the most common causes of cancer related death. This cancer is widely limited by lack of an effective clinical treatment. Therefore, researchers are in constant search for new anticancer agents. Recent studies demonstrated that polyoxometalates (POMs) exhibit potent antitumor activity. Borotungstate ($K_{16}[Ni(H_2O)_6]_2[BW_{12}O_{40}]_4.48H_2O$) a boron-containing POM complex. In this study, we determined the possible cytotoxic and apoptotic functions of borotungstate in human large cell lung carcinoma (H460) cells. The cells were cultured at a concentration of $1x10^4$ cells/well. Then they were treated with 10, 25, 50, 75 and 100 µM borotungstate for 24 or 48 hr. Cell survival was measured with MTT assay. The cells were further treated with 10 to 100 µM concentrations of borotungstate for 24 hr and morphological changes were detected under an inverted light microscope. Carboplatin was used as a positive control. Borotungstate decreased the survival of H460 cells in a dose and time dependent manner. The half maximal inhibitory concentration values of borotungstate were determined as 51 µM for 24 hr and 31 µM for 48 hr respectively. Borotungstate treatment of 25 µM decreased cell counts 50, 75, and 100 µM doses changed the cell morphology and declined the cell counts for 24 hr compared to the control cells. In this study a new synthetic borotungstate agent, was examined for the first time in human large cell lung carcinoma (H460) cells and some preliminary results about the cytotoxic and morphological effects of this agent.

Keywords: Borotungstate, MTT, cell morphology, lung carcinoma.

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➢ **POSTER PRESENTATION**

Rapid and Facile Synthesis of New Aminopyridines Structures

Mehiaoui Nawael[1],Ikram Baba Ahmed[1,2],Wassila Hadj-Selimane[1,2], Zahira Kibou[1,2*], ,Noureddine Choukchou-Braham[1], Amina Berrichi[1,2]

[1]Laboratoire de Catalyse et Synthèse en Chimie Organique, Université de Tlemcen, 13000 Tlemcen, Algérie, B.P.119
[2]Centre Universitaire Belhadj Bouchaibde Ain Témouchent, Institue des Sciences, 46000 Ain Témouchent, Algérie, B.P 284

Corresponding author e-mail: zahira_kibou@yahoo.fr

Abstract

Recently there has been a considerable interest for the synthesis of heterocyclic compounds. In this work we present a new methodology to the preparation of nitrogen heterocyclic compounds; such 2-aminopyridines (figure 1).The different methods of synthesis of these compounds have been recently reviewed by others [1-2]. On the other hand 2-aminopyridines continue to attract considerable attention of researchers in different countries because of their great practical usefulness and their great biological activities [3].

Here we report a new method for the synthesis of 2-aminopyridines under solvent free conditions.

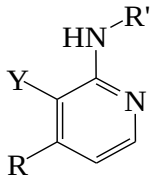

Figure 1: 2-aminopyridines structure

Keywords: 2-aminopyridines, solvent free synthesis, multi-component reaction.

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➢ **POSTER PRESENTATION**

Determination of the Combined Drug Interaction of Borotungstate Agent and Carboplatin on A549 Lung Carcinoma

Hira Uğurlugungor[1]*, Pinar Oztopcu-Vatan[2], Alper Tolga Colak[3]

[*1]Eskisehir Osmangazi University, Graduate School of Natural and Applied Sciences, Eskisehir, Turkey.
[2]Eskisehir Osmangazi University, Faculty of Arts and Sciences, Department of Biology, Eskisehir, Turkey.
[3]Dumlupinar University, Faculty of Arts and Sciences, Department of Chemistry, Kutahya, Turkey.

Corresponding author e-mail: hiraugurlugungor@gmail.com

Abstract

Lung carcinoma is the most common causes of cancer-related mortality. Metal complexes have shown promising anticancer effects opening up new treatment options. Borotungstate is a boron-polyoxometalate complex with yet unknown biological activities. Carboplatin is one of the widely used metals in the treatment of lung carcinoma. This research investigated the antagonistic or synergistic interactions between carboplatin and borotungstate. The same concentrations (10, 25, 50, 75 and 100 µM) of carboplatin and borotungstate were applied in individual and combined treatment respectively, at 1:1 ratio for 24 or 48 hr. The effects were determined by MTT assay. One-way ANOVA followed by Tukey's multiple comparison test was used for statistical analysis. Results were considered as significant for $p<0.05$. Co-efficient of drug interaction was calculated with the formula. Borotungstate doses decreased the survival of A549 cells. The half maximal inhibitory concentration values of borotungstate were determined as 60 µM for 24 hr and 37 µM for 48 hr. IC_{50} values for carboplatin could not be calculated for the two different time points. According to the combined drug interaction calculations; synergistic interaction was found between the two drugs for 24 and 48 hr treatment. In this study the new synthetic borotungstate agent showed more potent cytotoxic effects in a time and dose dependent manner, than carboplatin. In addition, the two drugs have an effective synergistic interaction in a human lung cancer cells. These findings could serve as a basis for further studies for a novel treatment of non-small cell lung cancer

Keywords: Borotungstate, Carboplatin, MTT, Drug interaction, lung carcinoma.

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➢ **POSTER PRESENTATION**

Dipodal Complexes of Chromium(III) Salen Schiff Bases with Bridging 2-chloro-4,6-(4-carboxyanilino)-1,3,5-triazine Derived Multidirectional Ligands

Ziya Erdem Koç

Selcuk University, Sciences Faculty, Department of Chemistry, Konya 42075, Turkey.

Corresponding author e-mail: zerdemkoc@gmail.com

Abstract

The design and synthesis of supramolecular polynuclear metal complexes have been an area of rapid growth for the past 20 years. During the last decade, a remarkable development in the preparation of self-assembled architecture through metal ion coordination has been observed. The first substitution is exothermic. Therefore, the temperature of the reaction mixture has to be maintained to °C. The substitution of the second chloride can be performed at room temperature. Finally, the third position is functionalized under reflux of the solvent. As a result, a careful control of the temperature during the substitution reactions will allow the synthesis of 2,4,6-trisubstituted-triazines by sequential and very selective addition of amines, alcohols, thiols (Fig. 1).

We have reported here that a cyanuric chloride and its Schiff bases have been syntheses to be a new template. The reaction of cyanuric chloride with 2 equiv of 4-aminobenzoic acid in acetone has given the desired dicarboxy in a single step, coded to be **DIPOD**. Aromatic carboxy was then reacted under room temperature with 4-aminobenzoic acid and 2-chloro-4,6-(4-carboxyanilino)-1,3,5-triazine. It may be useful to stress at this point that the new products mentioned above are the main result of this work. These are the first in the literature and we call them "Oxy-Schiff Bases Bridging Metal Complexes" due to literature. The magnetochemical properties of the μ-oxo-bridged complexes [{Cr(salen)}]O_2.

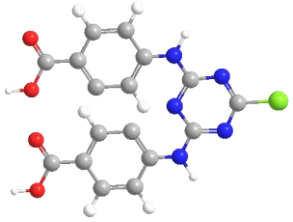

Figure 1. 2-Chloro-4,6-(4-carboxyanilino)-1,3,5-triazine

Keywords: s-Triazine, Metal Complexes, Magnetic, Dipodal.

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➢ **POSTER PRESENTATION**

Monopodal Complexes of Iron(III) Salen Schiff Bases with 2-(4-hydroxyphenylhydrazino)-4,6-dichloro-1,3,5-triazine

Ziya Erdem Koç

Selcuk University, Science Faculty, Department of Chemistry, Konya 42075, Turkey

Corresponding author e-mail: zerdemkoc@gmail.com

Abstract

An important class of compounds consists of substituted s-triazine derivatives which have anticancer, antitumor, antiviral and antifungal activity. These compounds have been used in the treatment of depression and hence gained a considerable importance. These are valuable bases for estrogen receptor modulators and also used as bridging agents to synthesize herbicides and in the production of drugs or polymers. Cyanuric chloride is definitely an excellent starting compound for the straightforward preparation of highly structured multitopic molecules. Indeed, each chloride atom of 2,4,6-trichloro-1,3,5-triazine can be substituted by any nucleophilic reactant (Fig. 1). As a result, a careful control of the temperature during the substitution reactions will allow the synthesis of 2,4,6-trisubstituted-triazines by sequential and very selective addition of amines.

We have reported here that a cyanuric chloride and its Schiff bases have been syntheses to be a new template. The reaction of cyanuric chloride ($C_3N_3Cl_3$) with 1 equiv of 4-hydrazinylphenol hydrochloride in benzene has given the desired dihydroxy in a single step, coded to be **MONOPODAL**. Aromatic hydroxy was then reacted under -5 ^oC with 4-Hydrazinylphenol hydrochloride and 2-(4-hydroxyphenylhydrazino)-4,6-dichloro-1,3,5-triazine. It may be useful to stress at this point that the new products mentioned above are the main result of this work. These are the first in the literature and we call them "Oxy-Schiff Bases Metal Complexes" due to literature. The magnetochemical properties of the μ-oxo-bridged complexes [{Fe(salen)}Cl].

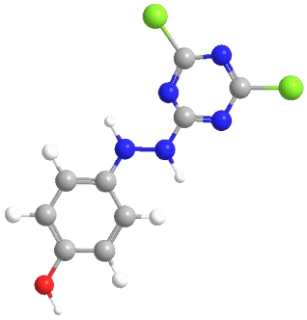

Figure 1. 2-(4-hydroxyphenylhydrazino)-4,6-dichloro-1,3,5-triazine

Keywords: s-Triazine, Cyanuric Chloride, Metal Complexes, Magnetic, Monopodal

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➢ **POSTER PRESENTATION**

Interaction of New Molecules Including Tetrazole with Guanine

Elvan Hasanoğlu Özkan, Nurşen Sarı*, Ali Dişli

Gazi University, Sciences faculty, Depertman of Chemistry, Ankara, Turkiye

Corresponding author e-mail: nursens@gazi.edu.tr

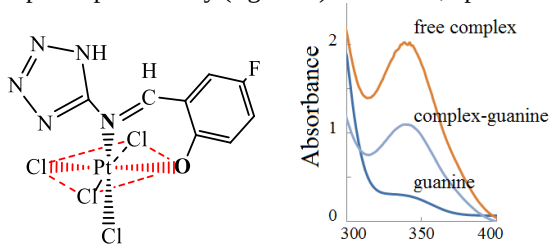
Abstract

Tetrazole chemistry has been steadily developing since the 1980s. Tetrazoles are important heterocylic compounds, known as the nitrogen analogues of the carboxylic acids [1]. Tetrazole compounds have been the focus of recent research interest focused on their use in medicinal chemistry, especially for such disease as cancer, acquired immune deficiency syndrome (AIDS), hypertension treatments as well as their HIV-protease inhibitory activity [2,3]. Inorganic molecules containing fluorine have been used for a long time as an antitumor agent. But it has side effects such as gastrointestinal toxicity. Therefore, researchers many attempts have been made to obtain polymers having both higher medicinal effectives and lower toxic side effects.

Guanine is one of nucleobases found in the nucleic acids DNA and RNA. DNA oxidation is the process of oxidative damage on Deoxyribonucleic Acid. It occurs most readily at guanine residues due to the high oxidation potential of this base relative to cytosine, thymine, and adenine. For this reason it is important to examine the interactions between guanine and chemical compounds.

The interactions in the between guanine and different molecules may be examined with easy methods. One of them is the spectrophotometric method.

In this study, the interactions between guanine and the new tetrazole/tetrazole-Pt(IV) complex (figure A) were investigated by means of UV-GB spectrophotometry (figure B). And then, spectra were compared.



A **B**

Figure. Structure of tetrazole-Pt(IV) complex (**A**) and guanine-complex interaction (**B**)

Keywords: tetrazole, Pt(IV) complex, guanine.

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➢ **POSTER PRESENTATION**

Removal of Industrial Oil By *Trichoderma citrinoviride*

Muhammed Hasan Akyıl*, Tuğçe Çalışkan, Ezgi Aktaş Nilüfer Cihangir

Hacettepe Univesity, Department of Biology

Abstract

Industries such as slaughterhouses, dairy and meat packing industries are well known for producing and suffering from fat, oil and grease problems. Oils or grease-contaminated effluents cause physical blockages in sewers, pump, screens and filter distributor arms. Flammable oils may also cause an explosion hazard, while in the treatment works, fats can be absorbed to activated sludge flocs or biological filter media reducing treatment efficiency and floating oil may be passed to rivers with the final effluent. In this study we aim to removal industrial oil by *Trichoderma citrinoviride.*We isolated *Trichoderma citrinoviride* from soil, Kocaeli. We modifield tributirin agar, used industrial oil instead of tributirin. We inoculated 10 different microorganisms and after 5 days we selected potential oil removal by detecting zones. The Affandi (2014) method was used to determine the amount of removed oil. This study showed the potential of using *Trichoderma citrinoviride* as a alternative to remove industriel oil.

Keywords: *Trichoderma citrinoviride,* Industrial Oil, Treatment.

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➢ **POSTER PRESENTATION**

Effect of Halloysite on Electrospinning and Drug Release Behavior of PCL/PEO Nanofibers

Deniz Cetiner, Nursel Dilsiz*

Gazi University, Faculty of Engineering, Department of Chemical Engineering, Ankara, Turkey

Corresponding author e-mail: ndilsiz@gazi.edu.tr

Abstract

In recent years electrospinning has been regarded as a proper and effective method of producing ultrafine fibers. It offers a promising method for fabricating continuous fibers with diameters ranging from nanometers to microns. Electrospinning has also become prominent by advantages of easy controllable fiber diameter, high diameter/length ratio, high surface area and volume. Within this context the idea of using electrospun nanocomposite mats for controlled drug release draw attention at recent researches resulting from favorability of biodegradable polymers for electrospinning. In this work biocompatible poly ethylene oxide (PEO) and halloysite nanotubes (HNT) were added to the poly caprolactone (PCL) polymer matrix to enhance the mechanical properties and bioactivity of the composite mats.
By the addition of PEO and HNT into PCL had a significant effect on the morphology of the nanofibers. Nanometer-sized fibers were obtained 18 % w/v PCL polymer solution containing 0.5-1 and 1.5% w/v PEO and 0.5 and 1 w/v HNT respectively have been prepared by using chloroform-N,N dimethyl form amide (DMF) solvents with 90:10 ratio. The morphology and diameter of the electrospun PCL/PEO and PCL/PEO/HNT fibers were arranged by controlling process parameters (i.e. distance between needle and collector, feeding rate of polymer solution and applied voltage). Smoothness and uniformity of PCL/PEO fibers were obtained by using the following optimized process parameters, 12-20 kV applied voltage, 12-20 cm tip-to-collector distances and 0.5-1 mL/h feeding rates. Furthermore, the morphology of the nanofibers were investigated using atomic force microscopy (AFM), optical microscopy and scanning electron microscopy (SEM). Fabricated nanofiber materials were also characterized in terms of average fiber diameter, chemical structure (FTIR) and water contact angle. In addition to these, change in drug release profiles from fiber mats were examined with regard to the effect of HNT addition.

Keywords: Nanofiber, electrospinning, poly caprolactone, poly ethylene oxide, halloysite nanotube, drug release.

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➢ **POSTER PRESENTATION**

Storage Stability of the Borage (*Trachystemon orientalis* L.) Plant Polyphenol Oxidase

Esma Hande Alici*, Gulnur Arabaci

Department of Chemistry, Faculty of Art and Science, Sakarya University, Sakarya, Turkey

Corresponding author e-mail: ealici@sakarya.edu.tr

Abstract

The aim of this study was determining the storage stability of polyphenol oxidase (PPO) enzyme of borage plant. Within this scope, a crude enzyme extract that contains polyphenol oxidase was obtained and it was stored at three different storage temperature values and the PPO activity was measured at specific time intervals.

Borage plant's stem, leaf and flowery parts were used for the enzyme extraction, all at once. Plant sample was washed with distilled water. After that plant sample was cut quickly into thin slices and was homogenized in phosphate buffer containing 1 mM ascorbic acid, 0.5% (w/v) polyvinylpyrrolidone and 2% (v/v) Triton X-100 at 4 °C. The homogenate was filtered through four layers of cheesecloth and then the filtrate was centrifuged at 5000g for 15 min, and the supernatant was collected. PPO enzyme activity was measured using 4-methylcatechol as substrate. In this study, the crude enzyme extract was stored at room temperature, 4 °C and at -20 °C, and activity measurement was performed in order to examine how the enzyme activity changes when stored under different temperature conditions. When the PPO activity was measured every few hours for room temperature and 4 °C, a weekly measurement was carried out for -20 °C and the relative activity (%) was calculated.

Enzyme maintained 20% of its activity even at the end of 168 hours when incubated at room temperature. It took 21 days for the enzyme to completely lose its activity at 4 °C. Also, when the borage PPO was stored at -20 °C for one year without any preservative chemicals, it was observed that it maintained 80% of its activity. In this respect, borage PPO was a very stable enzyme.

Keywords: Borage, Storage stability, *Trachystemon orientalis* L.

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➢ **POSTER PRESENTATION**

Cupric Reducing Antioxidant Capacity (CUPRAC) of Summer Savory Plant Used in Traditional Medicine

Esma Hande Alici*, Ruveyda Bastan, Gulnur Arabaci

Department of Chemistry, Faculty of Art and Science, Sakarya University, Sakarya, Turkey

Corresponding author e-mail: ealici@sakarya.edu.tr

Abstract

Antioxidants are health-beneficial compounds useful for delaying or preventing the oxidation of cellular components such as lipids, carbohydrates, proteins and DNA. Much of the diseases are mainly associated with oxidative stress resulting from free radicals. Oxidative stress can lead to various diseases such as cell ageing, cardiovascular and neurodegenerative diseases and cancer. Antioxidants balance the overproduction of oxidants, including reactive oxygen species and free radicals, which can occur in the human organism as a consequence of oxidative stress conditions. Dietary plants contain significant amounts of antioxidants. A fruit-vegetable based diet provides protection against oxidative stress-related diseases. For this reason, in plants that are important for human health, the determination of the total antioxidant capacity has great importance [1]. The summer savory (in the family Lamiaceae) is an annual aromatic medicinal plant, its dried flowers and leafy branches are used as diaphoretic, carminative, diuretic, appetizer, gastric and stimulant in traditional medicine [2]. In recent years, many methods based on free radical scavenging have been developed to determine antioxidant potential and the CUPRAC method is one of these methods. The purpose of this work was investigating the antioxidant capacity of summer savory plant by using CUPRAC method.

In this study, we investigated the antioxidant activity of two different solvent fractions (methanol and ethyl acetate) obtained from summer savory plant by using CUPRAC method.

Antioxidant capacity of methanol extract was found two times higher than ethyl acetate extract with this method. The calculated $TEAC_{CUPRAC}$ values of methanol and ethyl acetate extracts were 0.66±0.01 and 0.31±0.02 mmol Trolox equivalent/g sample, respectively. Thus, we can say that both of the extracts exhibited good antioxidant capacity and also, methanol was a better solvent based on CUPRAC method.

Keywords: CUPRAC, Summer Savory, *Satureja hortensis* L.

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➢ **POSTER PRESENTATION**

Hepatiti B Hastalarında CCR5 Geni Delta-32 Mutasyonunun Araştırılması

Aydın Rüstemoğlu[1*], Şener Barut[2], Ramazan Tetikçok[3], Özgür Günal[4], Abdülkerim Yılmaz[5]

[1]Gaziosmanpaşa Üniversitesi, Tıp Fakültesi, Tıbbi Biyoloji AD, Tokat, Türkiye
[2] Gaziosmanpaşa Üniversitesi, Tıp Fakültesi, Enfeksiyon Hastalıkları AD, Tokat, Türkiye
[3] Gaziosmanpaşa Üniversitesi, Tıp Fakültesi, Aile Hekimliği AD, Tokat, Türkiye
[4] Samsun Eğitim Araştırma Hastanesi, Enfeksiyon Hastalıkları Kliniği, Samsun, Türkiye
[5] Cumhuriyet Üniversitesi, Tıp Fakültesi, Dâhiliye AD, Tokat, Türkiye

Sorumlu yazar e-mail: arustamov@yahoo.com

Özet

Hepatit B virüs (HBV) enfeksiyonu tüm dünyada yaygın bir sağlık sorunu olmaya devam etmektedir. Enfeksiyon oluşumu ve buluşunda genetik faktörlerin rolü tartışmalı olarak kalmaktadır. CCR5 gen mutasyonunun özellikle HIV enfeksiyonuna karşı koruyucu olduğu bilinmektedir. Bu çalışmada HBV tanısı almış hastalarda CCR5Δ32 mutasyonu araştırılmıştır.

Çalışma kapsamında 90 HBV tanısı almış hasta ve 97 sağlıklı kontrol incelenmiştir. Gönüllülerin kan örneklerinden elde edilen DNA'lar çalışmada kullanılmıştır. CCR5Δ32 mutasyonunun tanımlanması için ilgili bölge PCR yöntemi ile çoğaltılmış ve jel elektroforezi ile genotipleme yapılmıştır. Sonuçlar OpenEpi 2.2 yazılımı kullanılarak karşılaştırılmıştır.

Yapılan çalışma sonucunda 90 HBV hastasından sadece birinde (%1.11) heterozigot ND genotipi saptanmıştır. Tolam 97 kontrol örneğinin 10'da (%10.31) heterozigot olarak (ND) Δ32 mutasyonu saptanmıştır. Mutasyon taşıyan birey sayısı hasta grubunda anlamlı olarak düşük bulunmuştur (p=0.01). Allel sıklıkları bakımından da hasta ve kontrol grupları arasından anlamlı bir fark bulunmuştur (p=0.011). Elde edilen veriler Δ32 mutasyonu taşıyan allelin HBV mutasyonuna karşı koruyucu olabileceğini göstermiştir (OR,95%CI= 0.01, 0.01-0.81). Fakat kesin bir kanıya varılması için bu sonuçların daha fazla örneklem ile teyit edilmesi gerekmektedir.

Anahtar Kelimeler: Hepatit B, CCR5, Δ32.

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➢ **POSTER PRESENTATION**

4-Aminoantipirin Türevli Bazı Schiff Bazlarının Spektral ve Biyoetkinlik Analizleri

Aliye Gediz Ertürk

Ordu Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, 52200 Ordu, Türkiye

Sorumlu yazar e-mail: aliyeerturk@gmail.com

Özet

Heterohalkalı bileşikler, pek çok sebeple dikkat çekicidir. Bu sebeplerden en önemlisi ise onların biyolojik aktiviteleridir ki, buna bağlı olarak pek çok ilaç heterohalkalı yapılar içerir. Azot içeren halkalardan pirazolon ilaç kimyası açısından son derece aktif bir çekirdektir. Bu ailede yer alan antipirin, biyolojik aktivite açısından en ilginç pirazolon türevidir. Özellikle 4-aminoantipirin çeşitli aldehit ve ketonlarla bir araya gelerek pirazolonların Schiff baz türevlerini oluşturmuştur. Bu bileşikler de biyolojik, farmakolojik, klinik ve analitik uygulamalarda son derece etkin reaktifler olarak kaydedilmişlerdir. 4-Aminoantipirin türevli Schiff bazlarının analjezik, antiinflamatuar, antiviral, antibakteriyal ve antitümör aktivite sergiledikleri bunun yanı sıra boya, reçine yapımında da kullanıldıkları bilinmektedir.

Bu çalışmada 4-aminoantipirin bileşiği, üç farklı aldehit ile (bifenil-4-karbaldehit, 10-kloro-9-antraldehit ve 8-hidroksi-2-kinolinkarboksaldehit) tepkimeye sokularak karşılık gelen üç Schiff baz bileşiğinin sentezi gerçekleştirilmiştir. UV-Görünür Bölge, Infrared (ATR-FTIR), Proton (^{1}H-) ve Karbon (^{13}C-) NMR Spektroskopisi ve Elementel analiz yöntemleri ile bu bileşiklerin karakterizasyonu yapılmıştır. Ardından bu bileşiklerin uygun antibiyotik ajanlar olup olmadığını araştırmak amacıyla Disk Difüzyon Metodu ile çalışılmıştır. Antibakteriyel etkinliği belirlemede kullanılmış olan bakteriler ise; Gram (-) bakteriler *Proteus vulgaris* ATCC®7829, *Escherichia coli* ATCC®25922, *Klebsiella pneumoniae* ATCC®13883, *Yersinia enterocolitica* ATCC®27729; Gram (+) bakteriler *Bacillus subtilis* B209, *Micrococcus luteus* B1018, *Staphylococcus aureus* ATCC 6538 ve mantar olarak da *Candida albicans ATCC®10231'*e karşı çalışılmıştır.

Sonuç olarak yeni sentezlenen üç molekülden bifenil içeren Schiff baz bileşiği**,** Gram (+) bakterilerden, *Staphylococcus aureus* ve *Micrococcus luteus'* a karşı etkinlik gösterirken; 10-kloro-9-antrasen içeren Schiff baz, Gram (-) bakterilerden *Proteus vulgaris* ve *Yersinia* enterocolitica' a karşı etkinlik göstermiştir. 8-hidroksi-2-kinolin ucu içeren son bileşik ise Gram (-) bakterilerden *Escherichia coli, Klebsiella pneumoniae' ya,* Gram (+) bakterilerden *Bacillus subtilis' a ve Candida albicans* mantarına karşı etkinlik göstermiştir.

Keywords: 4-Aminoantipirin, Schiff Baz, Antimikrobiyal Etki, Spektroskopi.

Ordu Üniversitesi Bilimsel Araştırma Projeleri Koordinasyon Birimi'ne (ODÜ-BAP) teşekkür ederiz (HD-1709).

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➢ **POSTER PRESENTATION**

The effects of Neopterin on the Proliferation and Motility of Different HCC Cell Lines

Marianna Najjar, Yelin Subashi, Gönül Sahin, İmge Kunter*

Eastern Mediterranean University, Faculty of Pharmacy, Famagusta, Turkish Republic of Northern Cyprus

Corresponding author e-mail: imge.kunter@emu.edu.tr

Abstract

Increased neopterin levels reflect the activation of the cellular immune system which is of importance in the pathogenesis and progression of various diseases such as Hepatocellular carcinoma (HCC).
HCC is the fifth most common cancer and the third leading cause of cancer deaths worldwide. Some studies showed that the concentrations of neopterin are very closely linked with the tumour size in patients with HCC. Generally, cancer patients have high cellular immune activity which can result in increased neopterin levels. However, the effects of neopterin on the biological activity of HCC cells are not yet illuminated. In this study our aim was to understand the effects of neopterin on specific biological activities such as the proliferation and motility of five different HCC cell lines. MTT and SRB assays were used for proliferation and wound healing assays for two-dimensional motility.
The experimental results showed that the HCC cell lines can be grouped into two categories according to their proliferative response to neopterin, sensitive and resistant. HuH-7, PLC/PRF/5, Hep-3B, SNU449 cells were resistant even under a treatment with high concentrations of neopterin. On the other hand, SK-Hep1 was the only sensitive cell line among the five different lines used. SK-Hep1 showed a statistically significant decrease in the proliferation. Our data also showed a significant increase in the motility of HuH-7, SK-Hep1, and SNU449 cells under the treatment of neopterin but not in PLC/PRF/5 and Hep-3B cells.
This data provides us with variable results concerning the proliferation and motility of the cell lines under the effect of neopterin. The underlying molecular mechanisms will be examined in further studies, mainly the effect of neopterin on the signalling pathways.
Therefore, neopterin might have an important role in the hepatocarcinogenesis and can be a good candidate for the development of new strategies for the treatment.

Keywords: Neopterin, HCC, cell proliferation, cell motility.

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➢ **POSTER PRESENTATION**

3-İmino-4-(4-(Dimetilamino)Fenil) 1,2,5-Tiyadiazolidin 1,1-Dioksit' in Antioksidan Aktivitesinin Belirlenmesi

Aliye Gediz Ertürk

Ordu Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, 52200 Ordu, Türkiye

Sorumlu yazar e-mail: aliyeerturk@gmail.com

Özet

Organosülfür bileşiklerinin önemli üyelerinden biri olan sülfamid (-$HNSO_2NH$-), üreyle (-HNCONH-) ve sulfonamitlerle (-SO_2NH_2) benzer yapısal özellikler taşır. Bu benzerlikler, sülfamid ucunun son derece ilginç biyolojik ve kimyasal özellikler göstermesine neden olur. Bu sayede sülfamidler günümüzde hem biyoorganik kimyada hem de tıbbi kimyada önemli farmakoforlardan biri olarak değerlendirilir. İlaç benzeri farmakofor olarak kabul edilen sülfamidler, toksisiteye sebep olmaz ya da taşıma için olumsuz engellemeler yapmazlar. Sülfamid fonksiyonel grubunun varlığı, protein fonksiyonunun istenilen şekilde ve güçte düzenlenmesi için cazip ve çok yönlü imkânlar sağlamaktadır. Özellikle halkalı sülfamid türevlerinden biri olan beş üyeli 1,2,5-tiyadiazolidin-1,1-dioksit yapısı farklı biyolojik reseptörlerle seçici olarak etkileşmek üzere uyarlanabilir. Bunlardan bazıları, serotonin reseptörlerindeki agonistler, HIV proteas, serin proteaz, Alzheimer hastalığında yer alan γ-sekretas ve antibiyotikler olarak sıralanabilir. Ayrıca böcek öldürücü, kas gevşetici-iltihap giderici, antioksidan, asetilkolin esteraz inhibitörü, karbonik anhidraz inhibitörü, metalloproteinaz inhibitörü antidiyabetik, antitümör etkili reaktifler olarak kullanılan çok geniş bir biyolojik aktivite yelpazesine sahiptir.
Bu çalışmanın amacı laboratuvarımızda sentezlediğimiz halkalı sülfamidlerden biri olan 3-imino-4-(4-(dimetilamino)fenil) 1,2,5-tiyadiazolidin 1,1-dioksit (İDFT) bileşiğinin antioksidan etkinliğinin araştırılmasıdır. Tiyadiazolidin ve azometin grupları gibi biyolojik açıdan değerli iki farmakoforu içeren İDFT bileşiğinin biyolojik aktivitesinin araştırılmasına dair yapılan önceki çalışmalarımızda ümit verici bir antibakteriyal etkinliğin yanı sıra insan periferal lenfosit kültürleri üzerinde önemli sitotoksik ve genotoksik etkiler gösterdiği de belirlenmiştir. Çalışmamızda İDFT bileşiğinin antioksidan etkinliğini belirlemek için kullanılan antioksidan aktivite tayin yöntemleri: $DPPH^{\cdot}$ (2, 2-Diphenyl-1-picrylhydrazyl) serbest radikal giderme, metal (Fe^{+2}) şelatlama, toplam indirgeme gücü, superoksit anyon ($O_2^{\cdot -}$) radikali süpürme, ferrik tiyosiyanat ile total antioksidan kapasite tayini metotlarıdır. Tüm testlerde antioksidan aktivitesi yüksek standart moleküller, kontrol ve köre karşı, 3 tekrarlı olarak çalışılmıştır. Elde edilen sonuçlar İDFT bileşiğinin antioksidan değeri gösterebilecek aktif bir kimyasal yapı olduğunu ortaya koymaktadır.

Keywords: Tiyadiazolidin, Sülfamid, Antioksidan Aktivite.

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➢ **POSTER PRESENTATION**

Antiproliferative Effects of Fluorinated Phenylhyrazines on A549 Cell Line Using CFSE Assay

H. A. Zafer Sak[1*], Faruk Süzergöz[2], Veli T Kasumov[3]

[*1]Harran University, Medical Faculty, Department of Chest Dissease, Şanlıurfa, TURKEY.
[2]Harran University, Art Science Faculty, Department of Biology, Şanlıurfa, TURKEY.
[3]Harran University, Art Science Faculty, Department of Chemistry, Şanlıurfa, TURKEY.

Corresponding author e-mail: drsak19@gmail.com

Abstract

In addition to the direct cytotoxic effects of a chemotherapeutic agent on cancer cells, inhibition of proliferation of cancer cells is an important factor that influences the success of chemotherapy. In our study, antiproliferative effects of 6 fluorinated Schiff base compound synthesized on the basis of phenylhydrazines and salicylaldehydes (compound 1-6) on A549 cells, a lung cancer cell line, were identified and anti-cancer capacity was observed in terms of inhibition of cell proliferation. CFSE method was used to determine the antiproliferative effects of the compounds on A549 cells. Cells were stained with fluorescent CFSE dye and analyzed immediately after by flow cytometry to determine the maximum green fluorescence intensity of the cells in FL1 histogram. CFSE-stained cells were subjected to flow cytometry analysis again after 72 hours of incubation with the compounds under normal cell culture conditions (37 ˚C, humidified atmosphere with 5% CO_2), and the green fluorescence levels of the cells were recorded using the FL1 histogram. FCS Express 4 program was used to calculate the proliferative index (PI) values from the cell division numbers using flow cytometric data. It was observed that the strongest antiproliferative effect on A549 cells was by compound 2 (4-FphHz - 3,5DTBS, PI: 8.33). The weakest antiproliferative effect among the compounds was obtained with compound 5 (2,5-F_2phHz-SAL, PI: 14.35). We underlined that consideration of antiproliferative efficacy assessment, which is a very important indicator for chemotherapy, is important for new chemotherapeutic agent studies and chemotherapeutic drug combinations for chemotherapy regimen.

Keywords:3-6words.Lung cancer, A549 cell line, Antiproliferative effects, CFSE assay.

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➢ **POSTER PRESENTATION**

Kan Basıncı ve Kontrol Mekanizmaları

Zafer Eren*, Belma Bilgi, Banu Eren, Emine Dıraman, Gönül Solmaz

Ondokuz Mayıs Üniversitesi, Biyoloji Anabilim Dalı, Samsun, Türkiye

Sorumlu yazar e-mail: zeren@omu.edu.tr

Özet

Kanın canlılarda gerekli işlevini yapabilmesi için bedenin her kesimine taşınması zorunluluğu vücudumuzdaki damarlar tarafından yerine getirilmektedir. Damarlar içinde dolaşan kanın, damar çeperine yapmış olduğu basınca kan basıncı adı verilmektedir. Kan basıncı, kalbin sistolü (kasılması) veya diastolü (gevşemesi) esnasında değişiklik göstermektedir. Sistolik kan basıncı (büyük kan basıncı) kalbin kanı atardamarlara pompaladığında oluşan basınçtır. Diastolik kan basıncı (küçük kan basıncı) ise kalbin gevşemesi esnasında oluşan basınçtır. Atardamarlarda meydana gelen bu basınç, halk dilinde tansiyon olarak bilinmektedir.

Dünya Sağlık Örgütü (WHO) verilerine göre halk dilinde "12'ye 8 olarak bilinen"; doğru ifadesi ile sistolde 120 mmHg ve diastolde 80 mmHg olan kan basıncı ideal kan basıncıdır. 120/80 mmHg' nin üzeri hipertansiyon yani yüksek kan basıncı olarak belirlenirken, sistolik kan basıncının 80–90 mmHg' nin altında olması hipotansiyon yani düşük kan basıncı olarak belirlenmiştir. Bu belirlenen limitler genetik özellikler, coğrafya, yaş ve cinsiyet gibi faktörlere bağlı olarak değişiklik göstermektedir. Kan basıncının vücudumuzdaki kontrolü, sanılanın aksine, oldukça karmaşık bir mekanizmadır. Vücudumuzda bu kontrol; hormonlar, iyonlar, sinirler ve bazı organ içi sistemler ile sağlanmaktadır. Bu mekanizmalar, kan basıncı normalden fazla arttığında ya da azaldığında basıncı ideal seviyeye getirmekle görevlidirler. Ayrıca bu mekanizmalar sayesinde günümüzde kullanılan birçok antihipertansif (hipertansiyon ilaçları – kan basıncını düzenleyen ilaçlar) ilaçlar ile tansiyon tedavisinde olumlu sonuçlar alınmaktadır.

Genel anlamda düşük tansiyonun nedenlerine bakıldığında; hipertansiyon ilaçlarının düzensiz kullanımı, sinir sistemi hastalıkları, dehidratasyon, gebelik, dahili ve cerrahi uygulamalar olduğu görülmektedir. Yüksek tansiyonun nedenleri ise; genetik yatkınlık, obezite, düşük doğum ağırlığı, aşırı alkol ve sigara tüketimi, böbrek iltihabı, kalp yetmezliği, inme vb. durumlardır.

Günümüzde tansiyon olarak bilinen kan basıncı, bugün birçok hastalığın neden olduğu, yaşam kalitesini ve günlük yaşamı oldukça etkileyen ve zaman zaman yaşamı tehdit eden önemli bir rahatsızlıktır.

Anahtar Kelimeler: Kan basıncı, Hipertansiyon, Hipotansiyon, Tansiyon, Kontrol mekanizmaları.

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➢ **POSTER PRESENTATION**

Genome-wide Identification of Chickpea (*Cicer arietinum* L.) Transposable Elements in Response to Drought Stress

Ebru Derelli Tufekci

Cankiri Karatekin University, Yapraklı Vocational High School, Department of Field Crops, Cankiri, Turkey

Corresponding author e-mail: ebru.derelli@gmail.com

Abstract

Chickpea (*Cicer arietinum* L.) is an important legume crop as a protein source across the world. Chickpea seed has prime significance for human food and animal feed because it contains 17–31% protein and biological activity of protein ranged from 52 to 78%. It is mostly grown on arid and marginal lands where it faces drought stress at different growth stages. Drought is one of the major abiotic stress factors due to the limited water resources resulting in huge yield loss in the production of crops. To copewith the challenging aspects of drought, plants use several mechanisms and produce response at physiological and molecular levels. Transposable elements (TEs) comprise a major portion of many plant genomes and explosion of TE movements cause novel genomic variation within species. TEs also have the potential to contribute to regulation of gene expression, potentially playing an important role in responses to environmental stress and some TEs exhibit stress-responsive transcription or movement. Genome analysis predicts the presence of 210 Mb as repeat elements, representing about 40.4% of the draft genome sequence, in chickpea genome and 27.31% constitutes retrotransposons, 4.55% DNA transposons. In current study, genome-wide transposon definition were achieved in root tissue of chickpea under drought stress. Forty and sixty-three TEs were found in root control and root treatment samples respectively. Among these, the most dominant TEs; Copia, MuDR, Gypsy, EnSpm, SINE were found to be the highest on root treatment sample while EnSpm, Copia, Harbinger, LINE were detected the highest on root control sample. Control and treatment root samples were exhibited different profiles in terms of TEs response to drought stress. Our findings suggest that increased expressions of TEs might have a role in response to abiotic stress in chickpea and identification of TEs which are taking part in stress can serve useful information for functional genomics and develop stress resistance plants.

Keywords: *Cicer arietinum*, drought, genome-wide, transposons.

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➢ **POSTER PRESENTATION**

Macro- and Micro-micromorphology of *Rubia davisana* Ehrend. (Rubiaceae), a Local Endemic Madder Species Naturally Distributed in Turkey

Nurettin Arı[1*], Ahmet Kahraman[2]

[1]Usak University, Faculty of Arts and Sciences, Department of Molecular Biology and Genetics, Usak, Turkey.
[2]Usak University, Faculty of Arts and Sciences, Department of Biology, Usak, Turkey.

Corresponding author e-mail: nurettin.ari64@gmail.com

Abstract

The current study presents a detailed report on macro- and micro-morphological characteristics of *Rubia davisiana* Ehrend., only one endemic species of the genus *Rubia* L from Turkey. Moreover, this study provides further information on the taxonomic assessment of *R. davisiana*. This is to date the first comprehensive investigation dealing with the micro-morphology of this species.
This subshrub plant has ascending-erect stems attaining up to 3(-4) m long and with four-broadened cartilaginous angles. Leaves are ovate-lanceolate in shape, 10-35(-50) mm in length and 3-11(-15) mm in width, are arranged in whorls of four and have palmate veins. Pedicels and peduncles are 1-3 mm and 5-15 mm long, respectively. Corolla are rotate, yellowish-green and 2-3 mm in diameter. Mericarps are globose to subglobose, blackish and 3.2-4.4 mm in diameter. Seeds are globose to subglobose, glabrous, dark brown/black and their size reveals variation among the specimens, 3.0-4.4 mm long and 2.9-4.4 mm wide. Hilum is oval-subglobose, 0.9-2.8 mm long and 0.9-2.1 mm wide.
According to leaf epidermal characteristics, sculpturing pattern and stoma presence on the abaxial and adaxial leaf surfaces are different on the same leaf. Epidermal cells of the abaxial surface are elongated in shape and have distinctly sinuate anticlinal walls but those of the adaxial surface are mostly isodiametric and have obscurely sinuate anticlinal walls. Stomata are only recognized on the abaxial leaf surface and paracytic. Stomatal size is 38.7-48.4 µm long and 39.1-51.7 µm wide. Rounded papillate cells are observed on both leaf sides. The leaf epidermis is covered by unicellular, uniseriate, rather sout and minutely scabrid trichomes (150-190 µm long) with a multicellular base and an acicular and curved apex along slightly revolute margins. Seed-coat epidermal cells are polygonal in shape and show irregular arrangement in parallel rows. Their sculpturing includes raised and undulate anticlinal boundaries and slightly concave and coarsely folded periclinal cell walls.

Keywords: Endemic species, Macro-morphology, Micro-morphology, *Rubia*, Turkey.

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➢ **POSTER PRESENTATION**

A Study of the Vegatative Anatomy of *Rubia davisana* Ehrend. Assigned to Tribe Rubieae (Rubiaceae), a Turkish Endemic Madder Plant

Nurettin Arı[1]*, Ahmet Kahraman[2]

[1]Usak University, Faculty of Arts and Sciences, Department of Molecular Biology and Genetics, Usak, Turkey.
[2]Usak University, Faculty of Arts and Sciences, Department of Biology, Usak, Turkey.

Corresponding author e-mail: nurettin.ari64@gmail.com

Abstract

The genus *Rubia* L. is commonly known as madder and have commercial, economical, and medicinal significance. This study is the first comprehensive investigation performed with regard to anatomical structures of vegetative organs of *Rubia davisiana* Ehrend., a local endemic species in *Rubia* belonging of tribe Rubieae of the coffee family Rubiaceae. For wood and leaf anatomical studies, the paraffin wax method was applied. The sections were stained with safranin and fast green, and then examined with a Leica DM1000 Light Microscope.
The wood transverse-sections reveals growth rings. The cortex is composed of multiple layers of cells. In the cortex, neither crystals nor starch grains are recognized. Vessels are in radial multiples of 2-4 and range from 40.68 to 95.68 µm in diameter. Vessel outline are almost rounded, angular or irregular. Rays are 1(-2)-seriate. In the central pith, the broken cells partially form a cavity. Raphide crystals are present in the pith. In the leaf transverse-sections, it is thick in texture (263.93–350.02 µm). The leaf epidermis is one layer of isodiametric, elongated to isodiametric cells. The upper epidermis (12.55-18.37 µm) is covered by a thicker cuticle than the lower epidermis (5.48-7.12 µm). The leaf is bifacial and hypostomatic. Stomata are placed at almost the same level as the epidermal cells. The mesophyll comprises one layer of columnar palisade cells, 52.68-70.85 µm long, and 4-5 layers of irregularly arranged spongy cells. Raphides are present in the mesophyll. The midrib includes a large collateral vascular bundles (150.21-165.07 µm in size).

Keywords: Endemic, *Rubia*, Rubieae, Turkey, Vegetative anatomy.

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➢ **POSTER PRESENTATION**

Saccharomyces cerevisiae İle Remazol Orange RR Biyosorpsiyonu İçin Biyosorbent Kapasitesinin Cevap Yüzey Yöntemi İle Araştırılması

Berdan Ulaş[1*], Mübeccel Ergun[2]

[*1]Van Yüzüncü Yıl Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Van, Türkiye
[2]Gazi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: mubeccel@gazi.edu.tr

Özet

Tekstil endüstrisinde kullanılan boyar maddelerin su kaynaklarına karışması birçok açıdan çok önemli negatif etkilere sahiptir. bu atıklar ışık geçirgenliğini azalttığından su altı yaşamdaki fotosentetik aktiviteleri önemli ölçüde etkileyebilmektedir. Bunun yanı sıra bu tür atıkların içinde bulunan metal ve klor içeren maddeler bazı su altı canlıları için toksik etki gösterebilmektedir. Bu atıkların yüksek bir etkinlikle giderilmesi gerekmektedir. Ama bu yüksek giderim kadar önemli olan bir başka konu ise atıkların daha düşük maliyetle giderilmesi gerekliliğidir. Dolayısıyla giderimin gerçekleştirildiği materyalin kapasitesi büyük önem arz etmektedir. Bu çalışmada S. *Cerevisiae*, Remazol Orange RR biyosorpsiyonu için biyosorbent olarak kullanılmıştır. Bu işlem Cevap Yüzey Yöntemi Merkezi Kompozit Tasarım ile incelenmiştir. Maksimum biyosorbent kapasitesi için pH, başlangıç boya derişimi ve biyosorbent derişimi parametrelerinin optimum değerleri araştırılmıştır. Bunun için oluşturulan modelden, istatistiksel olarak anlamsız model terimleri çıkarılmıştır ve kodlanmış değerler cinsinden son model denklemi aşağıda gösterilmiştir:

$$Biyosorbent\ Kapasitesi\ = +56{,}34 - (4{,}54 * \mathrm{A}) + (27{,}14 * \mathrm{B}) - (6{,}57 * \mathrm{C}) - (4{,}48 * A^2)$$

Maksimum biyosorbent kapasitesine (74.66 mg/g) erişilen optimum noktalar; pH 2.94, başlangıç boya derişimi 230 ppm ve biyosorbent derişimi 2.39 g/L olarak bulunmuştur. Bu noktalarda yapılan deneylerde ise biyosorbent kapasitesi 87.72 mg/g olarak bulunmuştur.

Anahtar Kelimeler: Biyosorpsiyon, atık su, *Saccharomyces cerevisiae.*

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➢ **POSTER PRESENTATION**

Remazol Orange RR Boyar Maddesinin Gideriminin Cevap Yüzey Yöntemi ile İncelenmesi

Berdan Ulaş[1*], Mübeccel Ergun[2]

[*1]Van Yüzüncü Yıl Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Van, Türkiye
[2]Gazi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: mubeccel@gazi.edu.tr

Özet

Sentetik boyarmaddeler, mürekkep, gıda, kozmetik, kâğıt ve tekstil sektörlerinde yaygın bir şekilde kullanılmaktadır. Bu endüstrilerin atıkları oldukça renklidir ve bu atıkların su kaynaklarına deşarj edilmesi çevreye zarar vermektedir. Bu çalışmada, ağırlıklı olarak tekstil endüstrisinde kullanılan ve çevre için önemli kirlilik nedeni olan boyar maddelerden Remazol Orange RR'nin, ölü Saccharomyces cerevisiae mayası ile biyosorpsiyonu, Cevap Yüzey Yöntemi kullanılarak irdelenmiştir. Bu çalışmada bağımsız değişken olarak pH, başlangıç boya derişimi ve biyosorbent derişimi seçilirken; bağımlı değişken olarak % boya giderimi seçilmiştir. Parametrelerin etkileşimleri ANOVA tablosu ile irdelenmiştir. S. *cerevisiae* ile Remazol Orange RR biyosorpsiyonu işleminde % boya giderimi için oluşturulan modelden, istatistiksel olarak anlamsız model terimleri çıkarılmıştır ve kodlanmış değerler cinsinden son model denklemi aşağıda gösterilmiştir:

$$\%\, Giderim = +75{,}97 - (13{,}26 * \mathrm{A}) + (19{,}65 * \mathrm{B}) + (8{,}31 * \mathrm{C}) + (3{,}15 * \mathrm{AB}) - (2{,}86 * A^2) - (11{,}68 * B^2) - (24{,}75 * A^2B) + (9{,}58 * AB^2)$$

Ayrıca maksimum boya giderimine (%91.52) erişilen optimum noktalar; pH 2.94, başlangıç boya derişimi 230 ppm ve biyosorbent derişimi 2.39 g/L olarak bulunmuştur. Bu noktalarda yapılan deneylerde ise % boya giderimi 95.39 olarak bulunmuştur.

Anahtar Kelimeler: biyosorpsiyon, atık su, Saccharomyces cerevisiae

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➢ **POSTER PRESENTATION**

Asymmetric Diimine Schiff Base as Potential Chemotherapeutic Drug: Antiproliferative Activity and Micronucleus Formation in Human Cancer Cell Lines

Zehra Kubra Yilmaz[1*], Belma Aslim[1], Ozlem Ozdemir[2]

[*1]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.
[2]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey.

E-mail: kubraylmaz395@gmail.com

Abstract

Metal-based drugs with extensive clinical applications hold great promise for the development of cancer chemotherapeutic agents. Some Schiff bases and their metal complexes have been reported for their antitumor properties (Fan et al., 2011; Hu et al., 2012). But, information on the cytotoxicity of asymmetric diimine Schiff bases is still rare in the literature. In this work, it has been aimed to investigation of anticancer and genotoxic effects of a new asymmetric diimine Schiff base (Figure 1) (Yilmaz et al., 2017) on human colon (HT29) and cervical (HeLa) adenocarcinoma cell lines. The anticancer activities of the Schiff base were tested by MTT assay. DNA damage ability of Schiff base (1000 µM) was evaluated with cytokinesis-block micronucleus (CBMN) assay at 24 and 48 h. DNA damage was scored by determining the number of binucleated cells containing micronuclei. Also, the cytokinesis-block proliferation index (CBPI) and cytostasis were assessed by determining the number of dividing cells (mono-, bi- and multinucleated). In addition, apoptotic morphology was determined by Giemsa staining and light microscopy. The cell proliferation of cancer cells was decreased with various Schiff base concentrations as a time and dose-dependent ($p< 0.05$). The Schiff base exhibited the highest cytotoxic activity at 500 and 1000 µM concentrations. While micronucleus forming activity was determined the best in 48 h (approximately a 1.5-fold increase in) on HT29, it was 24 h (a 1.28-fold increase in) on HeLa. There was also a dose-dependent increase in cytotoxicity, with a significant increase in the proportion of apoptotic cells. It was also observed that following treatment with Schiff base, formation of cytoplasmic vacuoles was observed in many cells, and a high proportion of the nuclear buds were being engulfed by these vacuoles, suggesting autophagy. These results suggest that the Schiff base may provide an alternative chemoprevention strategy to conventional chemotherapy.

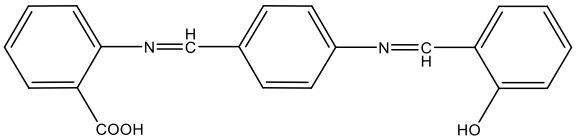

Figure 1. The structure of asymmetric diimine Schiff base

Keywords: Schiff Base, Antiproliferative Activity, Apoptosis

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➢ **POSTER PRESENTATION**

Improving Flame Retardancy of the Polymers by the Addition of Boron Containing Compounds

Figen ARSLAN[1]*, Prof. Dr. Nursel DİLSİZ[2]*

*[1]Gazi University, Chemical Engineering, Ankara, Turkey.
*[2]Gazi University, Chemical Engineering, Ankara, Turkey.

figen.arslan@hotmail.com

Abstract

In recent years, utilization of polymer composite and nanocomposite materials in packaging industry has been attractive. For this purpose, low density polyethylene (LDPE) and polylactic acid (PLA) are used widespread in packaging. LDPE and PLA were choosed as matrix for this study. Tincal, zinc borate, melamine and amonnium polyphosphate (APP) were used as additive materials. In this study, the composite materials were produced by using twin screw extruder with 40 rpm and 170-210 ^{o}C. LDPE/PLA containing APP, melamine and zinc borate gave the best LOI value (26.4). The highest thermal stability (453.5 ^{o}C) was obtained by the addition of tincal to LDPE/PLA system.

Keywords: Low density polyethylene (LDPE), polylactic acid (PLA), zinc borate.

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➢ **POSTER PRESENTATION**

Biochemical Characterization of Immobilized Recombinant N-Arabinofuranosidase

Emine Erdogan Ozseker*, Alper Akkaya

Ege University, Faculty of Science, Biochemistry Department, Izmir, Turkey

Corresponding author e-mail: emine.erdoganozseker@gmail.com

Abstract

Enzymes are successfully used in many industrial process, such as food and paper industries. Enzymes, which are derived from microorganisms living under mild conditions, are not suited for industrial processes that require high temperature, acidic or basic reaction conditions. Enzymes, which are derived from microorganisms living under extreme conditions, are needed for these industrial hard conditions. α-N-arabinofuranosidases (E.C 3.2.1.55) belong to group of glycoside hydrolysis. This enzyme group hydrolyses 1,3 and 1,5 α-arabinosyl bounds of N-arabinose containing molecules. It is also an important part of a system, which is responsible for complete hydrolysis of arabinoxylans. In this study, biochemical characterization of immobilized recombinant N-arabinofuranosidase has been purposed. For this purpose, first, recombinant N-arabinofuranosidase was immobilized to polyvinyl alcohol. After immobilization, effect of pH, temperature and mediator on enzyme activity were determined. In addition, the substrate specificity and the thermal stability of the immobilized enzyme were examined. Referring to the literature, it is seen that a small number of studies conducted with the enzyme. Therefore, this study will contribute to the literature. *Alicyclobacillus acidocaldarius* (DSM 446), which source of recombinant N-arabinofuranosidase, is acidothermophilic bacteria. As a result of characterization studies, it was determined that the enzyme keep its activity at high temperatures. The results are promising in terms of industrial applicability of this enzyme.

Keywords: Enzyme characterization, N-arabinofuranosidase, enzyme immobilization, *Alicyclobacillus acidocaldarius*.

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➢ **POSTER PRESENTATION**

Structural Characterizations, Photophysical and Biological Properties of Disperse Black9 Dye and Π-Extended Imine Derivatives

Mehmet Tümer[1*], Ferhan Tümer[1], Muhammet Köse[1], Seyit Ali Güngör[1], Sultan Akar[1], İbrahim Demirtas[2]

[*1]Chemistry Department, K.Maras Sütcü Imam University, 46100, K.Maras, Turkey

[2]Chemistry Department, Çankırı Karatekin University, 18100, Çankırı, Turkey

Corresponding author e-mail: mtumer@ksu.edu.tr

Abstract

Azo dyes form one of the most important classes of synthetic organic dyes [1]. They exhibit a broad range of colors and are widely used dying of natural and synthetic fibers. Due to the ease of azo dyes by diazotization and azo coupling reactions, many dye molecules were prepared for several applications including non-linear optics, optical data storage, dye-sensitized solar cells, ink jet printers and liquid crystalline displays (LCDs) [2]. Disperse black 9 based π-extented imine derivatives (HL^1-HL^3) and their Cu(II) and Pt(II) complexes were prepared and characterized by the analytical and spectroscopic methods. Single crystals of the Disperse black 9 and its π-extented imine derivatives (HL^1-HL^3) were obtained and their solid-state structures were investigated by X-ray diffraction studies. The photoluminescence and UV–vis spectra of the ligands and their metal complexes were investigated as the both solid in the state and solution. Based on the emission spectra of the compounds, the 1931 CIE (x, y) chromaticity coordinates were investigated. The π-extention of Disperse black 9 as well as complexation with Cu(II) and Pt(II) ions resulted in the red shift in the emission spectra.

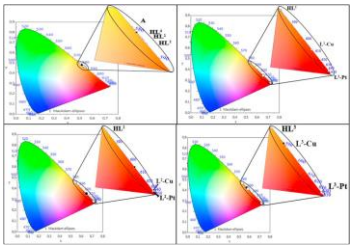

Fig. 1931 CIE color coordinates for disperse black 9 dye and its π-extended imine derivatives.

Keywords: Structural Characterizations, Biological Properties and Imine Derivatives**.**

Acknowledgments: We are grateful to The Scientific & Technological Research Council of Turkey (TUBITAK) (Project number: 115Z065) for the support of this research.

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➢ **POSTER PRESENTATION**

Structural Properties and Characterization of Paraben Substituted Dispiro Cyclotriphosphazenes

Nadide Ünal*, Elif Şenkuytu, Gönül Yenilmez Çiftçi

Department of Chemistry, Gebze Technical University, Kocaeli, Turkey

Corresponding author e-mail:n.unal@gtu.edu.tr

Abstract

Hexachlorocyclotriphosphazene, which has six active chlorine atoms in its ring, is known for its rigid inorganic platform for multifunctional mo-lecular arrangements. These chlorine atoms can easily displace with reagents having different properties [1]. These properties cause researchers to choose this com-pound as the main skeleton. The properties of the cyclotriphosphazenes may modify according to the number and properties of the functional groups. Thus, the specific physical and chemical properties of cyclotriphosphazene derivatives lead to differences in the application areas of these compounds. Some of these applications are anticancer/antimicrobial agents, organic light emitting diodes (OLEDs), flame retardants, liquid crystals and fluorescent chemosensor [2-4].
In this study, methyl/ethyl paraben substituted *monospiro/dispiro* cyclotriphosphazene derivatives have been successfully synthesized. All compounds were characterized by using general spectroscopic techniques such as mass, ^{1}H, and ^{31}P NMR spectroscopies.

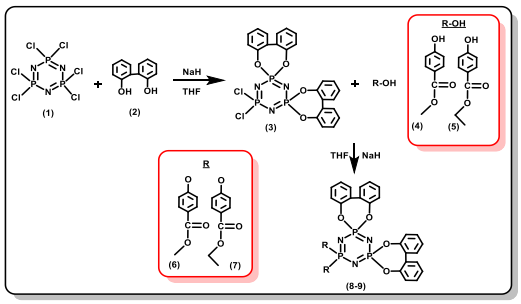

Figure 1. Methyl/ethyl paraben substituted cyclotriphosphazenes

Keywords: Cyclotriphosphazenes, methyl paraben, ethyl paraben.

Acknowledgement: The authors thank to the Gebze Technical University Scientific Research Project for financial support (Project No: BAP-2017-A-105-35).

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➢ **POSTER PRESENTATION**

Paraben Substituted *Monospiro/dispiro* Cyclotriphosphazenes: Synthesis, Characterization and DNA Interaction Analysis

Nadide Ünal*, Elif Şenkuytu, Gönül Yenilmez Çiftçi

Department of Chemistry, Gebze Technical University, Kocaeli, Turkey

Corresponding author e-mail: n.unal@gtu.edu.tr

Abstract

DNA is a target molecule for anticancer drug development and investigation on DNA interactions with synthesized potential drugs has drawn great attention from researchers in order to discover new drug candidates. Electrochemical biosensors provide good alternative for the quantitative analysis of DNA/compound interactions. Hexachlorocyclotriphosphazene, $N_3P_3Cl_6$, is a valuable compound and plays a key role in phopshazene chemistry for exploring the synthesis of different of compounds with nucleophilic substitution reactions [1, 2]. Due to their good biological activities and wide applications, cyclotriphosphazene compounds have received much attention for the discovery of improved new compounds. Side groups of the cyclotriphosphazene backbone can be substituted with compounds such as spermine, chalcone, parabens, to achieve potential drug candidates [3-5].
In this study, firstly, 2,2'-biphenoxy substituted cyclotriphosphazene compounds synthesized. Then propyl/butyl paraben substituted 2,2'-biphenoxy cyclotriphosphazenes were obtained. All compounds were characterized by using general spectroscopic techniques such as mass, ^{1}H, and ^{31}P NMR spectroscopies. In addition, their DNA effects as potential drug candidates have been investigated.

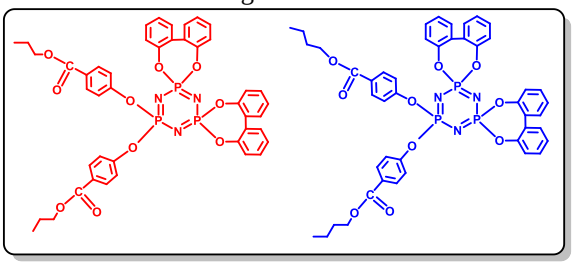

Figure 1. Paraben substituted cyclotriphosphazenes

Keywords: Cyclotriphosphazenes, propyl paraben, butyl paraben, DNA binding.

Acknowledgement: The authors thank to the Gebze Technical University Scientific Research Project for financial support (Project No: BAP-2017-A-105-35).

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➢ **POSTER PRESENTATION**

Synthesis and Catalytic Applications of Nitron Complexes

Mehmet Sevim, Batıkan Kavukcu*, Hayati Türkmen

Ege University, Faculty of Science, Department of Chemistry, Izmir, Turkey

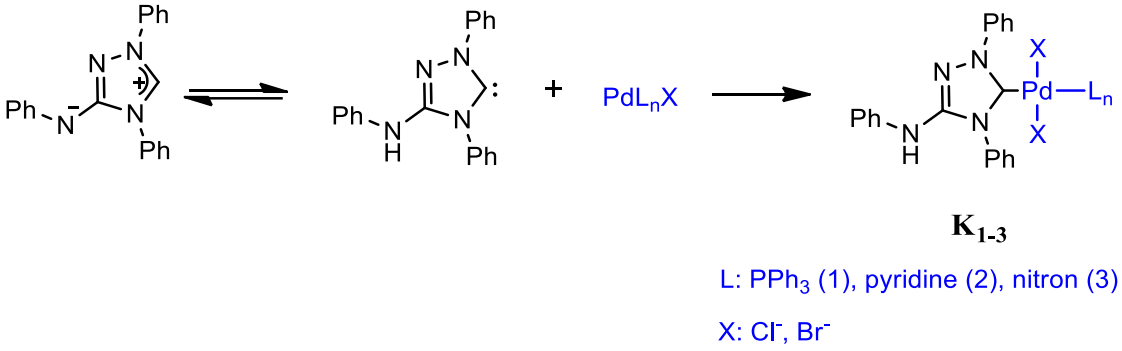
Corresponding author e-mail: sbkavukcu@gmail.com

Abstract

Nitron is a commercially available NHC molecule which is carrying bounded groups on its skeleton. In the literature, they are called "instant carben". The electron-withdrawing phenyl groups of the structure provide an additional advantage to these molecules because they can be used as NHC ligands. Because of its tautomerization; Due to the unpaired electron pair on the carbon atom, it can easily form a complex by binding to metals without the need for any base.

Carbene ligands are two electron donors with light π-backbonding. NHC compounds synthesized from imidazole, triazole and pyrazole has been studied for many years. NHC transition metal complexes are thermally more stable than phosphine complexes and are more resistant to degradation. In addition, NHCs are more electron-donating than phosphines, leading to a stronger metal ligand bond.

In this study, three different Pd-Nitron complexes were obtained by reacting $PdBr_2(py)_2$ and Pd $(MeCN)_2Cl_2$ metal salts with nitron (Scheme 1). The resulting Pd complexes will be investigated for catalytic activities in Suzuki reactions. Characterization of the complexes (**K_{1-3}**) investigated with elemental analysis, ^{1}H- and ^{13}C-NMR spectroscopy.



K_{1-3}

L: PPh_3 (1), pyridine (2), nitron (3)

X: Cl^-, Br^-

Figure 1. Synthesized NHC-Nitron complexes

Keywords: Nitron, N-heterocyclic carbene, Palladium catalyst, Suzuki.

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➢ **POSTER PRESENTATION**

Polyhydroxybutyrate (Phb) Coated Magnetic Nanoparticles For Targeting Delivery of Gemcitabine

Maryam Parsian[1], Pelin Mutlu[2*], Serap Yalcin[3], Ufuk Gündüz[1,4]

[1]Department of Biotechnology, Middle East Technical University, Ankara, Turkey
[*2]Central Laboratory, Molecular Biology and Biotechnology R&D, Middle East Technical University, Ankara, Turkey
[3]Department of Molecular Biology and Genetics, Ahi Evran University, Kırşehir, Turkey
[4]Department of Biological Sciences, Middle East Technical University, Ankara, Turkey

Corresponding author e-mail: pmutlu@metu.edu.tr

Abstract

Gemcitabine is used as anticancer drug against several solid tumors. Due to Gemcitabine hydrophilicity it could not cross the plasma membrane passively; therefore the therapeutic effectiveness is reduced. Conventional chemotherapeutic agents are unspecifically distributed all over the body where they affect both cancerous and normal cells. Thus, they cause major systemic toxicities and drug resistance, which also restricts drugs therapeutic efficacy. Recent advances in nanotechnology have explored new targeting strategies for enhancing intra-tumoral drug concentrations while limiting the systemic toxicity and side effects. Controlled release of Gemcitabine within cancer cells could be achieved by polyhydroxybutyrate (PHB) coated magnetic nanoparticles (PHB-MNPs) which could be targeted to the tumor tissue. Biomedical applications of polymeric nanoparticles limited due to their toxicity associated with the terminal NH_2 groups and multiple cationic charges. In this study, we developed PHB-MNPs, which have carboxyl end groups. As a result these dendrimreric nanoparticles are less toxic. Loading efficiencies were investigated in methanol with different drug concentrations using (2.5 mg/ml) PHB-MNPs. The loading efficiencies of 7.5, 15 and 22.5 µg/ml Gemcitabine were 32%, 27% and 29% in methanol to PHB-MNPs, respectively. Loading efficiency (29%) was increased up to 6.5 µg/ml with the highest amount of Gemcitabine (22.5 µg/ml) in methanol solution. The highest loaded concentration of drug was 22 µM. There was no significant cytotoxic effect of the of bare PHB-MNPs on SKBR-3 and MCF-7 cells in the XTT analysis (up to 1.67 and 0.85 mg/ml). Gemcitabine conjugated PHB-MNPs were found as nearly 2 fold more toxic on SKBR-3 and MCF-7 cells compared to free Gemcitabine. These results showed that Gemcitabine conjugated PHB-MNPs are more effective over breast cancer cell lines.

Keywords: MNP, PHB, breast cancer.

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➢ **POSTER PRESENTATION**

The copper complex of the novel azo imine ligand with brillant orange color

Mehmet Tümer[1*], Seyit Ali Güngör[1], Sultan Akar[1], Muhammet Köse[1], Ferhan Tümer[1]

Chemistry Department, K.Maras Sütcü Imam University, 46100, K.Maras, Turkey

Corresponding author e-mail: mtumer@ksu.edu.tr

Abstract

Schiff bases are well-known to have biological activates such as antibacterial, antifungal, antitumor, antiviral, anti-bacterial, antifungal, anti-HIV, herbicidal and influenzas A virus activities [1]. Perhaps the most common method for preparing Schiff bases is the reaction of aldehydes and ketones with primary amines. The reaction is generally carried out by refluxing the carbonyl compounds and amines in organic solvents [2]. Recent years have witnessed a major drive to increase the efficiency of organic transformations while lowering the amount of waste materials. Furthermore; the ultrasound assisted reactions are green methods in the organic synthesis which have numerous. In this study, we obtained the CuL complex as a single crystal and we solved its molecular structure by X-ray method. We investigated its electrochemical, thermal, spectroscopic and analytic methods.

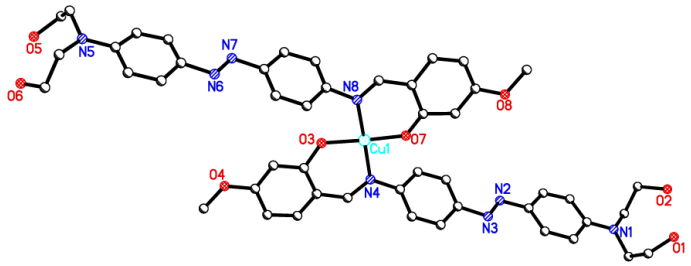

Fig. $[Cu(L^7)_2]$ Molecular structure of the complex.

Keywords: Single Crystal, Azo Imine and Biological Activates.

Acknowledgments: We are grateful to The Scientific & Technological Research Council of Turkey (TUBITAK) (Project number: 115Z065) for the support of this research.

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➢ **POSTER PRESENTATION**

The Studies on Sea Cucumbers in Turkish Coasts: A Review

Saniye Türk Çulha[1]*, Hakkı Dereli[2], M. Yeşim Çelik[3], Mehmet Aydın[4]

[1]Izmir Katip Çelebi University, Faculty of Fisheries, Department of Basic Sciences, İzmir-Turkey
[2]Izmir Katip Çelebi University, Faculty of Fisheries, Department of Fisheries and Fish Processing Technology, İzmir-Turkey
[3]Sinop University, Faculty of Fisheries, Department of Aquaculture, Sinop-Turkey
[4]Ordu University, Fatsa Faculty of Marine Sciences, Department of Fishery Technology Engineer, Ordu-Turkey
Corresponding author e-mail: trksanye@gmail.com

Abstract

This study aimed to review of studies on sea cucumbers and its fisheries in Turkish marine waters. Sea cucumbers have commercial value as food due to their rich content. Due to ever-increasing market demand by Asian countries, the overfishing of holothurian stocks in the Indo-Pacific has resulted to increasing catches of Mediterranean species. Turkey is one of main sea cucumber exporters on the Mediterranean Sea and the production performed in the country is based solely on collecting individuals from wild populations, which have not previously considered economically. Sea cucumber fishery in Turkish waters started in 1996 and focused mainly on *Holothuria polii*, *Holothuria tubulosa* and *Holothuria mammata*, which are being exported to Asian countries as frozen, dried and salted products. In recent years, fishery effort is extremely heavy (720000-1080000 sea cucumbers per day) and the export amount is around 300 tons per year.

Studies on sea cucumbers in Turkish coast are usually about their some biological characteristics and its fishery. There are few studies on processing and cultivation of the sea cucumbers, and also some research on their biochemical compositions, metal accumulation, genetic structures and fatty acid can be found in the literature.

The recommendations and scientific studies that need to be carried out for a sustainable sea cucumber fishery in Turkish waters are listed as follows: Further scientific studies should be made to determine the reproductive biology and to create species identification keys for sea cucumber. Degree of exploitation of stocks and effects of fishery activities on populations, communities and habitats should be defined. Accurate and complete data on the fishery economic and social structure should be obtained. In addition, sea cucumber aquaculture farming is necessary to prevent overexploitation and ensure sustainable production for the country. The studies on sea cucumber cultivation should be financed for sustainable aquaculture facilities.

Keywords: Sea cucumber, Holothuria, Fisheries, Biochemical composition, Turkish coasts.

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➢ **POSTER PRESENTATION**

Genotoxic Effect of Pedot Coated Rod TiO_2 Nanoparticles by Sister Chromatid Exchange in Human Lymhocytes

İrem Funda Duran*, Deniz Yüzbaşıoğlı, Fatma Ünal

Department of Biology, Science Faculty, Gazi University, 06500, Ankara-Turkey

Corresponding author e-mail: iremmfunda@gmail.com

Abstract

An engineered nanoparticle-NP may be defined as any produced material in the size of 1-100 nm in at least one dimension. Nanotechnology, technology using nanoparticles, has expanded from industrial applications and biomedical uses to commercially available consumer products including stain resistant clothing, transparent sunscreens, self-cleaning glass, paint, and sports equipment. NPs have unique characteristics and therefore exhibit special properties different from their bulk forms. However, the developments in nanotechnology have resulted in a growing public interest on the toxicity and environmental impact of NPs. TiO_2 NPs, the most commonly used metal oxide NPs, is primarily used as a pigment in several products ranging from paints, plastics and paper; to cosmetics, toothpastes and sunscreens. NPs can be covered with various materials and gain some other unique properties. Among the polymers used as covering material, the most common is the Pedot polymer, which has the appropriate fineness, flexible structure, ease of production, high conductivity. Despite the widespread use of Pedot and pedot coverd NPs, there is no adequate study to determine whether they induce genotoxic effects on living beings. The aim of this study is to investigate whether the Pedot covered Rod TiO_2 (R/Pd) NPs induce genotoxic effects in human lymphocytes *in vitro*. Peripheral blood was exposed to four different concentrations of R/Pd TiO_2 NPs (50, 100, 250, and 500 µg/ml) for 24h. Cell culture was terminated after 72h. This investigation indicated that all the concentrations of R/Pd TiO_2 NPs (except 50 µg/ml) significantly increased the mean number of SCEs compared to control. These results show that R/Pd TiO_2 NPs can pass through the cell membrane and nuclear membrane and reach to chromosome/chromatin structure in the cell. However, some more studies should be conducted to evaluate *in vitro* and *in vivo* genotoxic mechanism of R/Pd TiO_2 NPs.

Keywords: Rod/Pedot TiO_2 nanoparticles, genotoxicity, sister chromatid exchange, human lymphocytes.

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➢ **POSTER PRESENTATION**

Optimization of Reverse Transcriptase-PCR Conditions of CYP9A12 Gene from *Helicoverpa armigera* Midgut Tissues

Metin Konuş[1], Sakine Uğurlu Karaağaç[2], Can Yılmaz[1], Nurhan Didem Kızılkan[1], Doğan Çetin[1*]

[*1]Institute of Natural and Applied Sciences, Faculty of Science, Department of Molecular Biology and Genetics, Van, Turkey.
[2]Department of Environmental Engineering, Faculty of Engineering, Karabük University, Karabük, Turkey.

Corresponding author e-mail: metoxy@hotmail.com

Abstract

Helicoverpa armigera (Hübner), cotton bollworm, occurs throughout much of Africa, Asia, India, Indonesia, Australia and Turkey. Recent studies in China, India, Pakistan and West Africa have put the evidences that resistant strains showed significantly increase in cytochrome P450 monooxygenases activities compared to susceptible population. In order to analyse transcriptional level changes in cytochrome P450 monooxygenases such as CYP9A12 gene, Reverse Transcriptase-PCR (RT-PCR) method could be applied. As RT-PCR data to be meaningful, firstly, the PCR reaction conditions of cycle, annealing temperature, primer concentration and $MgCl_2$ concentration should be optimised. In order to determine these optimized conditions, optimization experiments were done with isolated RNAs, which were isolated from susceptible and field populations of *H. armigera* midgut tissues. According to the RT-PCR analysis, it was found that 29 cycles, 58 °C annealing temperature, 0,3-0,4 µM CYP9A12 primer concentration and 2 mM $MgCl_2$ were found to be optimized conditions for CYP9A12 gene by RT-PCR method.

Keywords: *Helicoverpa armigera*, Total RNA, RT-PCR, CYP9A12

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➢ **POSTER PRESENTATION**

Assessment of *In Vitro* Antimicrobial Activity of Novel Sulfonylhydrazone Derivatives

Ali Öztürk[1*], Ayla Balaban Gündüzalp[2], Ebru Erdoğdu[2], Olkar Abdulmajed[3], Ahmet Beyatlı[4] , Ümmühan Özdemir Özmen[2]

[1]Niğde Ömer Halisdemir University, Faculty of Medicine, Department of Medical Microbiology, Niğde, Turkey.
[2]Gazi University, Faculty of Science and Art, Department of Chemistry, Ankara, Turkey.
[3]Gazi University, Faculty of Medicine, Department of Medical Microbiology, Ankara, Turkey.
[4]Health Sciences University, Health Services Vocational School, Department of Medicinal and Aromatic Plants, Istanbul, Turkey

Corresponding author e-mail: ozturkali@ohu.edu.tr

Abstract

The dramatic increase of multidrug resistance for bacterial pathogens considered a global problem. Therefore, working toward developing novel antimicrobial agents will always remain an important and critical issue.

A total of three novel synthesized compounds, 5-bromosalicylaldehydemethanesulfonyl hydrazone (1), 3,5-ditertiarybutylsalicylaldehydemethanesulfonylhydrazone(2), 3-ditertiarybutylsalicylaldehydemethane sulfonylhydrazone (3) were used in this study. These compounds were screened for their *in vitro* antimicrobial activities against clinical isolates of Gram-negative bacteria *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Stenotrophomonas maltophilia*, Gram-positive bacteria *Staphylococcus aureus*, *Staphylococcus epidermidis* and fungi; *Candida albicans* and *Aspergillus fumigatus*. Minimal inhibitory concertation (MIC) and minimal bactericidal/fungicidal concertation (MBC/MFC) values were determined by broth microdilution method according procedures recommended by the Clinical and Laboratory Standards Institute (CLSI). Antimicrobial activity was replicated twice against each strain. MIC's were defined as the lowest concertation of the antimicrobial agents that inhibited growth of the microorganism and MBC or MFC were defined as the lowest concertation of the antimicrobial agents that kill the microorganism.

Our findings showed that these compounds has a wide spectrum of antimicrobial activity against tested bacteria and fungi. All tested isolates presented a MIC range between 16-64 µg/ml for compound (1), 8-32 µg/ml for compound (2) and 2-32 µg/ml for compound (3). *A. fumigatus* was found to present an overall susceptibility profile for all of the tested compounds. On the other hand all compounds possessed bactericidal and fungicidal activities against tested microorganisms with MBC/MFC ranged between 8-128µg/ml. This study has demonstrated that all used compounds has effective and strong antimicrobial activity against bacteria and fungi strains.

Keywords: Sulfonylhydrazone; pathogens; Antimicrobial activity.

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➢ **POSTER PRESENTATION**

Development of A New Bioconjugate for Reducing The Serum Uric Acid Level of Gouty

Selda Guler*, Emine Erdogan Ozseker, Alper Akkaya

Ege University, Faculty of Science, Biochemistry Department, Izmir, Turkey

Corresponding author e-mail: seldagler@gmail.com

Abstract

Gout, which results from increased serum uric acid concentration, is a disorder characterized by acute arthritis attacks and deposition of monosodium uric acid (MSUA) crystals in tissues. The most frequent clinical presentation of gout in humans is the presence of recurrent episodes of acute arthritis involving one joint at a time. By contrast, tophaceous and visceral gout are characterized by the formation of tophi, which are abscess-like creamy masses comprising MSUA crystals and dead immune cells. The aim of this study was to develope a bio-conjugate wound dressing to help heal wounds, which were caused gout disease by breaking up the UA crystals. For this purpose, polyacrylonitrile (PAN) fabric was modified with nitrilase enzyme (EC 3.5.5.1) which was hydrolyzed nitrile groups of PAN fabric to carboxylic acid groups and uricase enzyme (EC 1.7.3.3) was immobilized to modified PAN fabric. The optimization studies were performed for immobilization. After the optimization studies, bio-conjugate, which was developed at optimum condition, was tested into defibrined horse blood, that was contained 200 µg/ml UA, and 87.75 % of UA was degraded at half of a hour. The developed product was characterized by different methods (SEM and ATR-FTIR). According to the SEM images and ATR-FTIR spectrums of raw, enzymatic modified and uricase immobilized PAN fabrics, immobilization process was performed successfully.

Keywords: Uricase, gout, polyacrylonitrile, enzymatic modification, biomolecule immobilization.

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➢ **POSTER PRESENTATION**

What Might Be the Reason Behind Evolution of C4 Photosynthesis?

Gülsüm Ebru Özer Uyar [1,2*], Orhan Kanca [1]

[*1]Kocaeli University, Graduate School of Natural and Applied Sciences, Department of Horticulture, Kocaeli, Turkey.
[2]Kocaeli University, Arslanbey Vocational School, Kocaeli, Turkey.

Corresponding author e-mail: ebruozeruyar@gmail.com

Abstract

Photosynthesis is a central route in the C-cycle which serves as single prevalent flux of organic carbon in biosphere. Photosynthesis has evolved only once, and every photoautotrophic organism uses the same 'C3 pathway'. This biochemical cycle employs the enzyme RubisCO to fix CO_2 into a five-carbon acceptor molecule, producing three-carbon organic acids, while ATP and NADPH, produced from the light reactions, are consumed to generate sugars. C4 photosynthetic carbon cycle is an elaborated addition to the C3 photosynthetic pathway. The evolution of C4 photosynthesis was not a unique event but occurred at least 66 times during the past 35 million years. In this study we tried to explore the actual driving force of evolution of C4 photosynthesis. According to previous studies low CO_2 concentrations in the atmosphere cause to evolve CO_2 concentrating mechanisms since RubisCO can also add oxygen to ribulose-1,5-bisphosphate instead of CO_2, resulting in one molecule each of 3-phosphoglycerate and 2-phosphoglycolate. Photorespiration, the pathway used to regenerate 2-PG, consumes ATP and NADPH and leads to a net loss of CO_2 for the plant. This reduces the efficiency of carbon fixation in plants by up to 30% under hot and dry conditions. C4 photosynthesis greatly reduces photorespiration by concentrating CO_2 near RubisCO. Carbon-concentrating mechanism is a remarkable adaptation, evolved to maximize photosynthetic efficiency of many photosynthetic organisms in low-CO_2 environment. Another proposed hyphothesis is water-conserving mechanism. C4 plants exhibit better water-use efficiency than C3 plants. Because of the CO_2 concentration mechanism they can acquire enough CO_2 even when keeping their stomata more closed. Thus water loss by transpiration is reduced. The resultant decrease in transpiration protects the water system, allowing stomata to remain open and photosynthesis to be sustained for longer under drying atmospheric and soil conditions.

Keywords: C4 photosynthesis, photorespiration, RubisCO.

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➢ **POSTER PRESENTATION**

Determination of TADF Properties of Phenanthroline-Based Compounds Containing Donor-Acceptor Group

Zeynep Turhan İrak[1*], Erhan Öztürk[2], Selçuk Gümüş[3], Ayşegül Gümüş[3]

[*1]Igdır University, Engineering Faculty, Environmental Engineering Department, Igdır, Turkey.
[2]Igdır University, Research Laboratory Application and Research Center, Igdır, Turkey.
[3,] Yuzuncu Yil University, Faculty of Science, Department of Chemistry, Van, Turkey.

Corresponding author e-mail: zeynepsilanturhan @hotmail.com

Abstract

OLEDs are devices that can generate light via organic molecules in a thin membrane layer when an electric current is applied. They are prepared by placing one or more organic semiconductor layers between two metals. Both the anode and the cathode can be semi-permeable. The device that emits light during electroluminescence is called (OLED).
Thermally activated delayed fluorescence (TADF) materials have shown great potential for highly efficient organic light-emitting diodes (OLEDs). The current molecular design of TADF materials primarily focuses on combining donor and acceptor units,
In this study, phenanthroline based acceptor was combined with a series of donors to obtain donor-acceptor type potential thermally activated delayed fluorescence emitters.

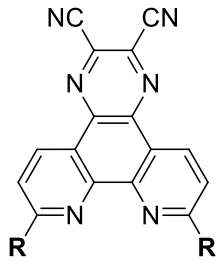

Figure 1: Structure of the parent compound

The structural and electronic properties of this series of compounds were theoretically calculated by applying two different hybrid functional and various base clusters at the level of Density Functional Theory and Time Dependent Density Functional Theory.
The work is expected to accelerate the development of a wide variety of TADF materials for high performance OLEDs.

Keywords: TADF, phenanthroline, donor-acceptor, DFT, TDDFT.

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➢ **POSTER PRESENTATION**

Experimental Models in Alzheimer's Disease

Demet Sinem Guden*, Seyhan Sahan-Firat

Mersin University, Faculty of Pharmacy, Department of Pharmacology, Mersin, Turkey.

Corresponding author e-mail: dsinem.guden@gmail.com

Abstract

Alzheimer's disease (AD), the most common form of neurodegenerative disorders, has affected a significant portion around the world. AD is characterized by a progressive loss of memory because of the pathological accumulation of amyloid β into extracellular plaques and abnormally phosphorylated tau that forms neurofibrillary tangles. Disease manifestations like cognitive impairment, mood disturbance, and behavioral and psychological abnormalities are expected to impose healthcare systems by creating huge burdens. Therefore, experimental models are essential to resemble AD pathogenesis and help researchers to test novel therapeutics. This work aims to summarize frequently applied methods that are designated to evaluate major experimental models of AD. A systematic search was conducted to review *in vivo* or *in vitro* experimental models. There are many available models including cell culture, transgenic mouse, rat and primate models as well as *Drosophila melanogaster*, *Caenorhabditis elegans* and zebrafish models that have their own benefits and limitations. Currently, there is no available cure for this disease due to the complex pathological features of AD and models have several limitations to ensure greater translation of preclinical results to patients. Undoubtedly, these experimental models will continue to play the vital role for screening novel therapies in future AD research.

Keywords: Alzheimer's Disease, Experimental Models, Neurodegenerative Disorders.

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➢ **POSTER PRESENTATION**

Hydroponic Systems in Phytoremediation

Nurdan Mısmıl [*1], Gülsüm Ebru Özer Uyar [1,2]

[*1]Kocaeli University, Graduate School of Natural and Applied Sciences, Department of Horticulture, Kocaeli, Turkey.
[2]Kocaeli University, Arslanbey Vocational School, Kocaeli, Turkey.

Corresponding author e-mail: ebruozeruyar@gmail.com

Abstract

Hydroponic system, by definition, is a method of growing plants in a water based, nutrient rich solution. Hydroponic does not use soil, instead the root system is supported using an inert medium such as perlite, rockwool, clay pellets, peat moss, or vermiculite. In general hydroponic systems are used to grow safe food products. There are many types of hydroponic systems designed to overcome problems like water scarcity and crop contamination. Because of its advantages, the total area of crops cultivated using hydroponic systems has expanded rapidly worldwide. Phytoremediation is the direct use of living green plants for *in situ*, removal, degradation, or containment of contaminants in soils, sludges, sediments, surface water and groundwater. Some contaminants can not be remediated easily by engineering based methods. A wide variety of hazardous organic and inorganic substances can be taken up, conjugated, sequestered, and rendered harmless by plants. Also phytoremediation is a cost effective and noninvasive method and it causes less disruption to ecosystems than physical, chemical, or microbial remediation so it has gained increasing attention in the recent decades. Since hydroponic systems are independent on climate and plant growing in these systems is faster than in soil based -conventional- systems, many research have been done for phytoremediation with hydroponic systems. This study compiles recent research on plants and hydroponic systems used in phytoremediation: Italian rye grass (*Lolium multiflorum L.*) growing on a floating bed for removal of nitrate, poplar growing on deep water culture for boron toxicity, *Typha spp*. growing on deep water culture for removal of carbamazepine, *Juncus acutus L.* growing on gravel for removal of heavy metal and antibiotics, *Lolium perenne* growing on hydrophonic ditches for waste water treatment and alfalfa (*Medicago sativa*) growing on deep water culture for removal of phenol.

Keywords: Hydroponic systems, phytoremediation, plant biotechnology.

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➢ **POSTER PRESENTATION**

Investigation of Antiproliferative and Antigenotoxic Effects of Some Lactic Acid Bacteria

Serap Niğdelioğlu Dolanbay[1*], Belma Aslım[2]

[1*]Gazi University, Faculty of Science, Department of Biology, 06500, Ankara
[2] Gazi University, Faculty of Science, Department of Biology, 06500, Ankara

Corresponding author e-mail: serapnigdelioglu@hotmail.com

Abstract

Colorectal cancer represents a major public health problem and about half a million deaths worldwide. Because of their antiproliferative properties, lactic acid bacteria (LAB) commonly found in the colon are important in protecting against colon cancer. Some chemical mutagens damage DNA molecules. If the damage cannot be repaired, cancer occurs. LAB with antigenotoxic properties prevents cancer by eliminating the genotoxic effect of the chemical mutagens. The aim of this study was to examine the antiproliferative effects of LAB strains on colorectal adenocarcinoma (Caco-2) and the antigenotoxic effect of LAB strains against oxidative DNA damage. In addition to, it was investigate the relationship between the capability of a lactobacilli to induce antiproliferative and antigenotoxic effects. In the study, live cells at ~10^8cfu/mL of six *Lactobacillus* spp. were used. The ability of all samples to inhibit the proliferation of cancer cells was assessed using the WST-1 cell proliferation assay kit. The genotoxic and antigenotoxic effects of LAB strains were investigated by single cell gel electrophoresis technique (comet *assay*) in human lymphocytes. According to our results, the most powerful antiproliferative effect in Caco-2 was obtained from live cells of *L. brevis* LB63 (38% cell death) (p<0.05). LAB strains did not exhibit genotoxic effects on lymphocytes. It has been found that oxidative DNA damage is inhibited by strains. While all samples showed an antigenotoxic effect, the best antigenotoxic effect was obtained from live cells of LB63 (48% inhibition) (p<0.05). A statistically significant correlation was found between the antiproliferative and antigenotoxic activities of the strains (p<0.05). These results indicate that LB63 has the potential to inhibit not only DNA damage induced by a carcinogen, but also the proliferation of colon cancer cells. Depending on the results of studies, it is possible to incorporate alternative protective or therapeutic probiotic agents for cancer into the pharmaceutical industry.

Keywords: Probiotic, lactic acid bacteria, antiproliferative, antigenotoxicity

Acknowledgments: This work was supported by the Scientific Research Project Unit of Gazi University, Ankara, Turkey, (Project code no: 46/2012-03).

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➢ **POSTER PRESENTATION**

The Adsorption of Kerosene with Zeolite-Clinoptilolite

Ali Rıza Demirkıran[1*], Mahmut Toprak[2], Michael A. Fullen[3] and Craig D. Williams[3]

[*1]University of Bingol, Faculty of Agriculture, Dep. of Soil Science and Plant Nutrition, Bingol, Turkey
[2]University of Bingol, Department of Chemistry, Bingol, Turkey
[3]Faculty of Science and Engineering, University of Wolverhampton, Wolverhampton WV1 1LY

Corresponding author e-mail: ademirkiran2000@gmail.com, ademirkiran@bingol.edu.tr

Abstract

This study reports the kerosene oil (KO) adsorption of the zeolite-clinoptilolite. The clinoptilolite samples from Turkey (C_{TR}) and USA (C_{USA}) were used and analysed. Analyses were compared with clinoptilolites from Turkey and USA. Samples were tested in replicated laboratory analyses in terms of their ability to adsorption of KO. Analyses included: Clinoptilolite samples were prepared for KO adsorption, Buchner funnels were lined with Whatman filter paper and batch adsorption experiments were conducted by adding 10 ml KO to 10 g samples of clinoptilolite. The KO infiltrating through samples was measured, thus enabling calculation of the amount of adsorbed oil. There were five replicates of each treatment. KO adsorption experiments were measured with different pH and temperures by heat treatment in a muffle furnace. Two clinoptilolites fractions, corresponding to coarse clinoptilolite (≤ 100 µm), medium clinoptilolite (≤ 63 µm), and fine clinoptilolite (≤ 38 µm) were artificially contaminated with kerosene and treated using a laboratory scale apparatus to investigate the affect of different cilinoptilolites on contaminant adsorption. The adsorption process was studied by using with different pHs, temperatures and treatment times. Results showed that adsorption phenomena and efficiency were affected by clinoptilolite type, fraction and time of treatment were key factors in adsorption process. From the results, it was seen that the best fit is obtained with the Langmuir model with R^2 values of 0.9826 for kerosene adsorption on the clinoptilolite. The adsorption kinetics of kerosene by clinoptilolite could be described by the pseudo-second-order model.

Keywords: Zeolite, Clinoptilolite, Kerosene oil, Adsorption.

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➢ **POSTER PRESENTATION**

Ultra-Sensitive Molecularly Imprinted Electrochemical Biosensor Based on Copper Oxide Nanoparticles and Polyoxometalate Decorated Carbon Nitride Nanotubes for Determination of Citrinin in Rice

Onur Karaman[1], Bahar Bankoğlu[2], Mehmet Lütfi Yola[3], Necip Atar[4], Ceren Karaman[4]*

[1]Akdeniz University, Vocational School of Health Services, Department of Medical Imaging, Antalya, Turkey.
[2]Iskenderun Technical University, Science and Technology Application and Research Center, Hatay, Turkey.
[3]Iskenderun Technical University, Faculty of Engineering and Natural Sciences, Department of Biomedical Engineering, Hatay, Turkey.
[4]Pamukkale University, Faculty of Engineering, Department of Chemical Engineering, Denizli, Turkey

Corresponding author e-mail: ckaraman@pau.edu.tr

Abstract

A sensitive imprinted electrochemical sensor based on copper oxide nanoparticles (CuONPs) and polyoxometalate (POM) decorated carbon nitride nanotubes (C_3N_4NTs) modified glassy carbon electrode (GCE) was developed for determination of citrinin (CIT) in rice. The POM was functionalized on C_3N_4NTs through electrostatic interaction between POM and C_3N_4NTs to produce a photocatalyst (POM/C_3N_4NTs) in aqueous media. CuO nanoparticles were synthesized on POM/C3N4NTs without any reducing agent and the prepared nanomaterial (CuONPs/POM/ C_3N_4NTs) was modified on GCE (CuONPs/POM/ C_3N_4NTs) under infrared light. The prepared nanomaterials molecular imprinted polymers were characterized using scanning electron microscope (SEM), transmission electron microscope (TEM), x-ray photoelectron spectroscopy (XPS), cyclic voltammetry (CV) and electrochemical impedance spectroscopy (EIS). The imprinted electrochemical sensor was validated according to the International Conference on Harmonisation (ICH) guideline and found to be linear, sensitive, selective, precise and accurate. The developed electrochemical imprinted sensor showed high sensitivity and selectivity towards CIT. In particular, the developed imprinted electrochemical sensor offers the advantages of simplicity and efficiency in target detection from food samples. In addition, this novel detection method allow for further sensor developments.

Keywords: Biosensor, Citrinin, Copper oxide nanoparticles, Polyoxometalate, Carbon nitride nanotubes.

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➢ **POSTER PRESENTATION**

Research on Cytotoxic Effects of Waste Rice Husk Biomass on Various Tumor Cell Lines by Using Bioassay Guided Extraction Optimization

Veli Barulay[1*], Gozde Budak[1], Ozlem Yesil-Celiktas[2], Canan Sevimli-Gur[1]

[1] Department of Biology, Science and Art Faculty, Kocaeli University
[2] Department of Bioengineering, Faculty of Engineering, Ege University

Abstract

In recent years, synthetic drugs have increased due to the shortage of raw materials in the pharmaceutical industry. The sector with the highest added value in the evaluation of plant wastes is the pharmaceutical industry. The aim of this study is to optimize the extraction of the waste rice husk biomass, guided by bioactivity and the investigation of antitumorogenic activity of extracts obtained by different processes on various tumor cells. In this study, firstly, parameters of high pressure hot water extraction method have been optimized with bioassay guided method. Secondly, extracts were obtained with different processes and different parameters. Following this study, protein content of extract which obtained by different processes and parameters have been calculated. Cytotoxic activity of extracts which obtained by different parameters were evaluated on MCF7 (human, breast, adenocarcinoma), MDA-MB 231 (human, breast, adenocarcinoma), A549 (human, small cell lung carcinoma) cancer cell lines and Vero (African green monkey, kidney) normal cell lines within six concentrations ranging between 3.12 and 100 µG/mL for 48 hours by using MTT assay. Waste rice husk extracts exhibited the highest cytotoxicity particularly on human lung carcinoma (A549) cells among different cancer cell lines tested and was not cytotoxicity to the normal cell Vero cells. The lowest cell viability has been seen as 22.9% at 3.13 µG/mL on pH: 10.0, temperature 60^0C, flow rate 2.00 mL/min, amount of protein is 2.4 g/l (HPHWE8) processes with A549.

Keywords: waste rice husk, cytotoxicity, tumor cells, bioassay guided, high pressure hot water extraction.

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➢ **POSTER PRESENTATION**

PEPPSI-Pd-NHC Complexes Bearing Water Soluble Piperidoimidazolin-2-ylidene Derivatives and Their Catalytic Activities

Sinem Çakir, Aslı Uslan, Hayati Türkmen*

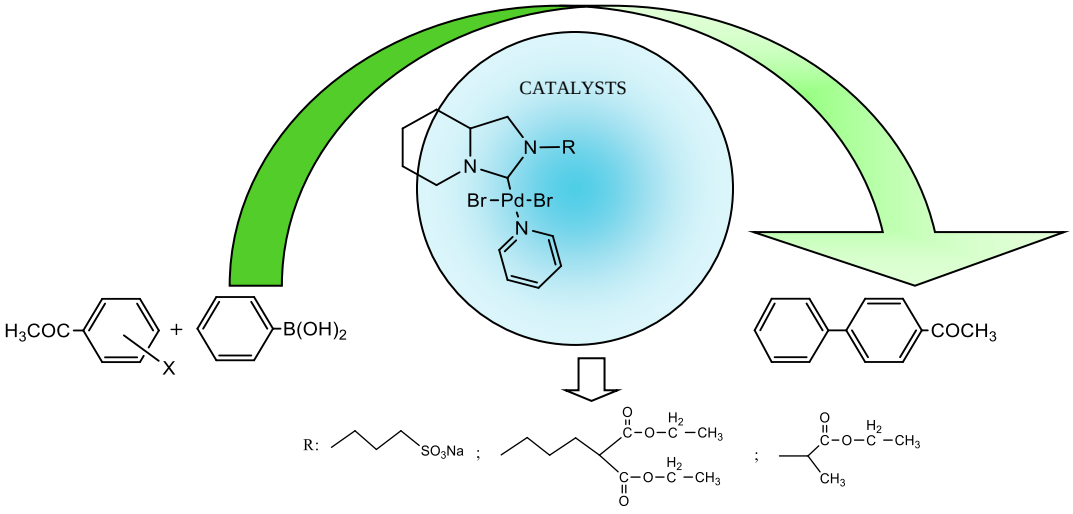
Ege University, Faculty of Science, Department of Chemistry, 35100 İzmir, Turkey

Corresponding author e-mail: hayatiturkmen@hotmail.com

Abstract

Over the last decade, a series of catalyst systems have been developed that use N-heterocyclic carbenes (NHC) as the spectator ligands in the palladium-catalyzed cross-coupling reactions. Various catalyst systems appear both very active and tolerant to functional groups and demonstrate their general applicability in cross-coupling reactions. One such catalyst is Pd-PEPPSI-IPr (PEPPSI = Pyridine-Reinforced Catalyst Preparation, Stabilization and Initiation). Synthesis of Pd-PEPPSI complexes was first performed by Organ.

The NHC ligands generally contain the 1,3-diorganylimidazole ring, substituents on the N atoms play an important role in catalytic activity and selectivity. In addition, water-soluble metal complexes can be prepared by attaching ionic groups to the nitrogen atoms which are soluble in water. The catalytic activity in water of these ligands's palladium (II) complexes can be examined in the Suzuki reaction. In this work, new NHC-carbenes bound to the 1,5-positions of the water-soluble imidazole ring were synthesized and novel Pd-PEPPSI complexes were synthesized from these synthesized new ligands. The catalytic activities of Suzuki-Miyaura of the new complexes have been investigated. The compounds and complexes characterized by elemental analysis, ^{1}H-and ^{13}C-NMR spectroscopy.



Keywords: N-heterocyclic carbene, palladium, PEPPSI.

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➢ **POSTER PRESENTATION**

Yeni Sentezlenen Sülfonil Hidrazon Bileşiklerinin Alzheimer Hastalığı Tedavisinde İnhibitör Olarak Kullanılma Potansiyelleri

Ümmühan Özdemir Özmen, Esra Bilen*, Servet Çete

Gazi Üniversitesi, Fen Fakültesi, Kimya Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: esra.bilen@gazi.edu.tr

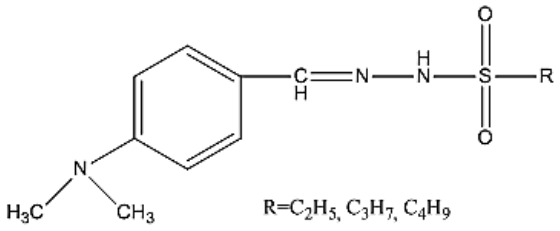
Özet

Dünyada insan nüfusunun ortalama yaşam süresinin artması ile birlikte pek çok sağlık problemi de ortaya çıkmıştır. Bunlar arasında Alzheimer Hastalığı (AH) önemli bir yer tutmaktadır. Hastaların yaşam kalitelerinin büyük ölçüde azalmasına ve hatta bazı vakalarda hastaların ölümüne neden olan AH'nin sıklığı giderek artmaktadır. Dünyada 25 milyondan daha fazla Alzheimer hastasının olduğu ve her yıl beş milyon yeni hastanın eklendiği düşünülmektedir [1].

Günümüzde Alzheimer Hastalığının tedavisinde Asetilkolinesteraz (AChE) inhibitörleri, belirli bir başarı oranının elde edildiği tek ilaç grubudur. Bu inhibitörler arasında hidrazon grubu içeren bileşiklerin de AChE enzimi üzerinde oldukça aktif oldukları bilinmektedir [2].

Bu amaçla; 4.4-Dimetilaminobenzaldehitetansülfonilhidrazon (1), 4.4-Dimetilaminobenzaldehit propansülfonilhidrazon (2) ve 4.4-Dimetilaminobenzaldehitbütansülfonilhidrazon(3) homolog serisi sentezlenmiştir ve sentezlenen bileşiklerin yapıları spektroskopik yöntemlerle (^{1}H-NMR, ^{13}C-NMR ve FT-IR) aydınlatılmıştır (Şekil1).

Bileşiklerin Asetilkolinesteraz enzimine (AChE) karşı inhibisyon etkileri spektrofotometrik yöntem ile belirlenmiştir. Sentezlenen alkil sülfonil hidrazon türevlerinin AChE enzimine karşı inhibisyon aktiviteleri, bileşiklerin IC_{50} değerleri ile karşılaştırılarak tespit edilmiştir. Yapılan ölçümler, bileşiklerin Alzheimer Hastalığının tedavisinde kullanılabilecek potansiyel inhibitör olma özelliklerini göstermektedir.



Şekil1: 4.4-Dimetilaminobenzaldehitalkilsülfonilhidrazon bileşikleri

Anahtar Kelimeler: Sülfonil hidrazon, Asetilkolinesteraz, Alzheimer hastalığı.

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➢ **POSTER PRESENTATION**

Geleneksel Türk Peynirlerinde Geç Şişme Problemi

Ece Halat*, Aslı Şahiner, Sennur Çalışkan Özdemir, Güven Özdemir

Ege Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, İzmir, Türkiye

Sorumlu yazar e-mail: ece.halat@ege.edu.tr

Özet

Peynir, sütün peynir mayası veya zararsız organik asitlerin etkisiyle pıhtılaştırılması, değişik şekillerde işlenmesi ve bu arada süzülmesi, şekillendirilmesi, tuzlanması, bazen tat ve koku verici zararsız maddeler katılması ve çeşitli süre ve derecelerde olgunlaştırılması sonucunda elde edilen besin değeri yüksek bir süt ürünüdür. Peynir, ülkemizde özellikle kahvaltılarda çok miktarda tüketilen bir gıda maddesidir. Karbohidrat ve protein içeriğinin yüksek olması ve su aktivitesinin genellikle 0,90'ın üzerinde olması, peyniri mikrobiyolojik açıdan riskli bir gıda haline getirmektedir. Geç şişme, çiğ süt ile bulaşan *Clostridium* sporlarının metabolik faaliyetleri sonucu peynirlerde tat, koku ve tekstürde istenmeyen değişikliklere neden olan mikrobiyolojik bir bozulma tipidir. Geç şişme, ismini, bazen peynir hacmini iki katına kadar çıkarabilen, heterojen yapılı geniş boşluklara neden olan gaz oluşumu nedeniyle almıştır. Özellikle olgunlaşma süreci uzun olan peynirlerde görülen bu durum; asetik asit, bütirik asit, CO_2 ve H_2 üretimi sonucu hoş olmayan kokulara ve bozuk bir tat oluşumuna neden olmaktadır. *C.tyrobutyricum*, geç şişme gösteren peynirlerden en fazla izole edilen tür olmakla birlikte, *C.beijerinckii, C.butyricum, C.sporogenes* de işlenmiş peynir ve çiğ sütten izole edilen türlerdir. Geç şişme etkeni mikroorganizmaları izole etmek için kullanılan klasik kültürel yöntemde, peynir örneği tartılıp seyreltildikten sonra ısı uygulaması yapılarak vejetatif hücrelerin ölmesi sağlanır, sonrasında ise peynir örneği laktat içeren tüplere inoküle edilir. Anaerobik ortamda inkübe edilen tüplerde, laktat fermantasyonu sonucunda gaz oluşumu ve bulanıklık görülmesi etkenin varlığının göstergesidir. Ancak metodun laktat fermantasyonu yapan tüm Clostridium türlerini çoğaltması nedeniyle ilave testler yapılır. Pozitif tüplerden elde edilen saf kültürlerde endospor yerinin saptanması, karbohidrat fermantasyon profilinin belirlenmesi, uçucu olan ve olmayan organik asitlerin yan ürünlerinin kromotografik yöntemler ile analizlerinin yapılması tür bazında identifikasyon için gerekmektedir.

Anahtar Kelimeler: Peynir, geç şişme, *Clostridium butyricum, Clostridium tyrobutyricum.*

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➢ **POSTER PRESENTATION**

An Investigation on the Usability of the *nifH* Primer Set for the Selection of Local Isolates with Nitrogen-Fixing Capability

Medine Güllüce[1], Burak Alaylar[2], Hakan Özkan[3], Mehmet Karadayı[1*], Ceyda Işık[2], Selma Sezen[4]

[*1]Atatürk University, Faculty of Science, Department of Biology, Erzurum, Turkey.
[2]Atatürk University, Institute of Natural and Applied Sciences, Erzurum, Turkey.
[3]Atatürk University, Faculty of Science, Department of Molecular Biology and Genetics, Erzurum, Turkey.
[4]Atatürk University, Institute of Health Sciences, Erzurum, Turkey.

Corresponding author e-mail: mkaradayi@atauni.edu.tr

Abstract

Plant growth-promoting rhizobacteria (PGPR) have beneficial effects on plant growth and soil ecology. It is well-known that they can improve plant growth by many different mechanisms such as; biological nitrogen fixation, phosphate solubilization, production of 1-Aminocyloproporane-1-carboxylate deaminase (ACC) and phytohormones. Among these valuable features, nitrogen-fixing capability is especially important due to its high potential for the formulation of eco-friendly fertilizers. In this regard, there are many studies on the methods for the accurate selection of nitrogen-fixing PGPR strains. However, none of these is all applicable to the all local areas. Therefore, the chosen method should be validated first. In this context, the aim of the present study was to evaluate the usability of the *nifH* primer set for the selection of local nitrogen-fixing PGPR strains. Soil samples for PGPR isolation studies were collected from agricultural fields in Erzurum. Dilution series (10^{-1}-10^{-7}) were spread on Luria-Bertani (LB) agar plates and single colonies were selected further purification studies. Then, each of isolates was inoculated onto Nitrogen Free Medium (NFM) agar plates for determination of its N_2-fixing capability. Nitrogen-fixing isolates were chosen for the molecular studies. According to the previous studies, the *nifH* gene region is the most extensive sequenced marker gene to identify bacterial N_2 fixation mechanisms. One of the well-recognized and succeeded gene primer set is called nifH1/nifH2 (5'-TGYGAYCCNAARGCNGA-3' and 5'-ADNGCCATCATYTCNCC-3') in the literature. According to the knowledge; this primer set expected to respond about %86 for PGPR species from soil samples. However, nifH1/nifH2 primer set responded %50 of all samples when the PGPR species were isolated from agricultural fields in Erzurum. Consequently; the results showed that more specific primer sets with higher accuracy should be designed for the selection of local N_2-fixing PGPR isolates.

Keywords: Biological Nitrogen Fixation, *nifH* gene, PGPR, Soil Bacteria.

This study was supported by Republic of Turkey – Ministry of Food, Agriculture and Livestock: TAGEM-15/ARGE/70.

Türkiye'de Rekombinant Enzim İthalatı ve Üretimi Sorunu

Eren Yurtdaş[1*], Remziye Yılmaz[2]

International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2018)

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➢ **POSTER PRESENTATION**

*[1]Karamanoğlu Mehmetbey Üniversitesi, Mühendislik Fakültesi, Gıda Müh. Bölümü, Karaman, Türkiye
[2]Hacettepe Üniversitesi, Mühendislik Fakültesi, Gıda Müh. Bölümü, Ankara, Türkiye

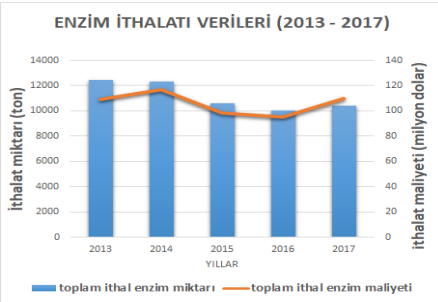
Corresponding author e-mail: erentur@kmu.edu.tr

Abstract

Enzimler canlı hücreler tarafından oluşturulan ve biyolojik reaksiyonları katalizleme yeteneğindeki maddelerdir. Enzimler, hücre içerisindeki işlevlerini hücre dışında da sürdürebildiklerinden dolayı sanayide birçok reaksiyonun gerçekleştirilmesinde kullanılabilmektedir.Enzim kullanımı 5000 yıldan çok daha öncesinde, insanların sütü hayvan midesinde saklamasıyla başlamış; günümüzde de gıda, kimya, tekstil, ilaç, deterjan gibi birçok sektöre yayılmıştır. Gıda alanında fırıncılık ürünlerinde, mayşelemede, nişasta modifikasyonunda kullanılan amilazlar; süt ürünleri üretiminde kullanılan rennin ve β-galaktosidazlar; bulanıklık engellemede yararlanılan pektinaz ve hemüselülazlar; gıda proteinlerinin besinsel değerini, su tutma kapasitesini arttıran transglutaminazlar gibi birçok enzim, gıda endüstrisinin olmazsa olmazlarıdır.

Enzimler, belirli koşullarda aktivitelerini optimum şekilde gösterebilmekte olup, bu sınırlar dışına çıkıldığında aktiviteleri büyük ölçüde azalmaktadır. Bundan dolayı dünyanın en büyük enzim şirketleri, tailer-made üretim yapmak için rekombinant enzim üretimine yönelmektedir. Dünya'da üretilen enzimlerin %40'ı genetiği değiştirilmiş mikroorganizmalardan üretilen rekombinant enzimlerdir.

Türkiye endüstrisinde geniş çaplı bir enzim ihtiyacına karşılık, sanayiye yönelik enzim üretimi çok sınırlıdır. 2017 yılında bir araştırma geliştirme ve inovasyon merkezi çalışmalarına başlamıştır. Paçal şekilde enzim üreten bir firma ile rekombinant mikroorganizmalardan peynir mayaları üreten bir diğer firma dışında Türkiye sınırları içerisinde endüstriyel boyutlara cevap verebilecek enzim üretimi bulunmamaktadır. Yetersiz enzim üretimi, sanayide ithal enzim kullanımını kaçınılmaz kılmaktadır.



Biyogüvenlik, antibiyotik direnci gelişmesi, toksisite, alerjenite, çevresel, dini, kültürel, sosyo-ekonomik, etik kaygılar nedeniyle rekombinant enzim ithalatına sınırlar getirilmiştir. Biyogüvenlik Kanunu'na göre ithal enzimler saf halde, genetik materyallerden arındırılmış şekilde satılmalıdır. Bunun yanında süreç temelli mevzuatlar doğrultusunda, enzim kaynağının da genetiği değiştirilmiş olmaması istenmektedir. Enzim üretimi yapan yabancı firmaların böyle bir belge vermeye yanaşmamalarından dolayı enzim ithalatı düşmekte, enzim ithal eden üreticileri zora sokmakta ya da Çin manşeili enzim ithalatına yöneltmektedir. Bu durum yurt içinde üretilebilecek ürünlerdeki açığın, ithal ürünlerle kapatılmasına neden olacaktır.

Yeni yasal düzenlemeler ve enzim üretimi için teşviklerle gıda sektöründeki pek çok sorunun giderilebileceği; Türkiye'de üretilecek rekombinant enzimlerin uygun fiyatlarıyla, gümrük engellerine takılmadan sıkıntıların da önüne geçileceği düşünülmektedir.

Keywords: Enzim, Rekombinant Enzim, Türkiye'de Enzim Üretimi.

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➢ **POSTER PRESENTATION**

Selective Adsorption of Lipase Using Molecularly Imprinted Hydrogel

Tuğba Çelebi*, Ayşe Dinçer

Manisa Celal Bayar University, Faculty of Science and Arts, Department of Chemistry, Manisa, Turkey
tugbacelebi_@hotmail.com

Abstract

Molecularly imprinted polymers (MIPs) have become an important tool in the preparation of artificial and robust recognition materials that are capable of mimicking natural systems (Hawkins et al., 2005). Protein imprinting in hydrogels is a method to produce materials capable of selective recognition and capture of a target protein (Zayats et al., 2014). Recently, protein-imprinted materials, as potential antibody substitutes, have attracted much attention in many fields, for example chemical sensors, chromatographic stationary phases, and artificial enzymes, owing to their long-term storage stability, potential re-usability, resistance to harsh environment, and low cost (Yang et al. 2012). Lipases (triacylglycerol hydrolases, EC 3.1.1.3) are the enzymes which catalyze the hydrolysis or synthesis of fats and oils. In addition to biochemical and physiological properties of lipases, they become subject of research due to industrial applications (Abdul Rahman et al. 2005). In this study, molecularly imprinted polyacrylamide hydrogels (HydroMIP) for the selective imprinting of lipase was prepared. For this purpose, lipase as template molecule, acrylamide (AAm), was used as monomer, N,N'-methylene bisacrylamide (MBA) was used as crosslinker and ammonium persulphate (APS) and N,N,N',N'-tetramethylenediamine (TEMED) was used as the redox initiator pair. After polymerization, lipase was removed from hydroMIP by washing with a solution of sodium dodecyl sulfate and acetic acid. SEM, and FT-IR, were used to characterize lipase imprinted hydrogel. Effect of some factors on the adsorption capacity of hydroMIP were investigated, such as pH, temperature, contact time and enzyme concentration. It has been determined that adsorption is compatible with the Langmuir isotherm and that the kinetics of adsorption is in the pseudo second order.

Keywords: Lipase, Hydrogel, Adsorption, Moleculer Imprinting.

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➢ **POSTER PRESENTATION**

Preparation and Characterization of Molecularly Imprinted Hydrogel for Recognition of α-Amylase Enzyme

Şeyda Dinsever*, Ayşe Dinçer, Tülin Aydemir

Manisa Celal Bayar University, Faculty of Science and Arts, Department of Chemistry, Manisa,Turkey
Corresponding author e-mail: seydadnsever@hotmail.com

Abstract

Aspergillus oryzae α-amylase is the most frequently studied and commercially available α-amylase produced from many fungal species. α-Amylase (E.C.3.2.1.1) is a hydrolase enzyme that catalyses the hydrolysis of internal α-1, 4-glycosidic linkages in starch to yield products like glucose and maltose. It is a calcium metalloenzyme i.e. It depends on the presence of a metal co factor for its activity (Sundarram et al., 2014). Hydrogels have become very popular due to their unique properties such as high water content, softness, flexibility and biocompatibility. Natural and synthetic hydrophilic polymers can be physically or chemically cross-linked in order to produce hydrogels (Peppas et al., 2000). The general procedure for creating molecularly imprinted polymers (MIPs) involves the assembly of functional monomers around a template molecule in a solution containing a high of cross-linker, polymerization of the resultant mixture and removal of the template (Andersson, 2000). Protein-imprinted materials have several advantages, such as notably long-term storage stability, potential re-usability, resistance to harsh environment, and low cost (Yang et al. 2012). In this study, we prepared protein imprinted polyacrylamide hydrogel (HydroMIP), using α-amylase as template molecule, acrylamide (AAm), was used as functional monomer, N,N'-methylene bisacrylamide (MBA) was used as crosslinker and ammonium persulphate and N,N,N',N'-tetramethylethylenediamine as initiators. Characterization of imprinted hydrogels were done by SEM, and FT-IR analysis. The rebinding and recognition properties of α-amylase imprinted hydrogels were evaluated. For this purpose, effect of pH, temperature, contact time and enzyme concentration on rebinding conditions were studied. The results of adsorption experiments show that the adsorption capacity of imprinted hydrogel could reach 4.3 mg/g within 120 min. Meanwhile, the specific binding experiment demonstrates the high selectivity of hydrogels for α-amylase. Furthermore, satisfactory reusability is demonstrated by seven adsorption–desorption cycles with 70 % binding capacity yield.

Keywords: Hydrogel, enzyme, moleculer imprinting, adsorption, α-amylase.

Acknowledgements: This work was supported by Manisa Celal Bayar University Scientific Research Coordination Unit (BAP 2017-003).

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➢ **POSTER PRESENTATION**

The Molecular Structure, Non-Linear Optic Property, HOMO and LUMO Analysis of 2', 6'-Dimethoxyacetophenoe by Molecular Modeling

Güventürk Uğurlu

Kafkas University, Faculty of Science and Letter, Department of Physics, Kars, Turkey.

Corresponding author e-mail: gugurlu@kafkas.edu.tr

Abstract

In this study, the equilibrium geometries, electronic energy, dipole moment, polarizabilities, and static hyperpolarizabilities and Highest Occupied Molecular Orbital (HOMO) and Lowest Un-occupied Molecular Orbital (LUMO) of the molecule under investigation was determined and analyzed theoretically at ab initio Hartree-Fock (HF) and Density Functional Theory (DFT/B3LYP) methods applying the standard 6-311++G (d,p) basis set. ^{1}H- and ^{13}C-nuclear magnetic shielding constants of the molecule were calculated by employing the direct implementation of the Gauge Including-Atomic-Orbital (GIAO) method at the B3LYP/6-311+G (2d,p) and HF /6-31G(d) levels of the theory. Also, Potential Energy Curve (PES) of title molecule was calculated using B3LYP/6-311++ G (d,p) basis set by rotation around the related C1-C11 single bond. Energies of the HOMO and the LUMO have been predicted and In addition, using the calculated the E_{HOMO} and the E_{LUMO}, electronic properties of the studied molecules such as energy gap ($\Delta E = E_{LUMO}-E_{HOMO}$), chemical potential **μ**, electrophilic index **ω**, ionization potential **IP**, electron affinity **EA**, electronegativity **χ**, molecular softness **S**, molecular hardness **η** were obtained. The dipole moment for title molecules is calculated at 4.00 Debye, with DFT/B3LYP at 4.33 Debye, with HF level of theory using the 6-311++G (d, p) basis set, respectively.

Keywords: 2', 6'-dimethoxyacetophenoe, Polarizability, Hyperpolarizability, ^{1}H and ^{13}C NMR.

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➢ **POSTER PRESENTATION**

Biosorption of Procion Red H-E3B using algal biomass*:* Batch and Continuous Systems Studies

Gulay Bayramoglu[1,2*], Ilkay Acikgoz Erkaya[3*], M. Yakup Arica[1]

[*1]Gazi University, Biochemical Process & Biomaterial Research Laboratory, Ankara, Turkey
[2]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey
[*3]Ahi Evran University, Faculty of Engineering and Architecture, Department of Environmental Science, Kirsehir, Turkey
Corresponding author e-mail: g_bayramoglu@hotmail.com; ilkay.acikgoz@ahievran.edu.tr

Abstract

Color is the first contaminant to be recognized, and environmental regulation in most European countries has made it mandatory to decolorize the dye wastewater prior to discharge. Textile dyes are heavily used in factories for coloring different cloth materials. The reactive dyes or their metabolites (e.g. aromatic amines) may be highly toxic and potentially carcinogenic, mutagenic and allergenic on exposed organisms. Biological processes have received more attention as they are cost-effective and environmentally friendly. Algal biomass capable of removing textile dyes, either by biodegradation or by biosorption. The immobilization of microorganisms might also provide several advantages such as facility to reuse and easy separation of entrapment biomass from the bulk solution. Thus, the process can become cost effective by reusing the biomass after regeneration.

The potential use of the immobilized *Monoraphidium contortum* (Thuret) Komárková-Legnerová to removal of Procion Red (PR) dye from aqueous solutions was evaluated using bare Ca-alginate beads as a control system. Ca-alginate beads containing immobilized algal biomass were incubated for the uniform growth at 22 ºC for 5 days. Effects of pH, temperature, initial concentration of dye and sorbent dosages on the biosorption of PR dye were studied. Biosorption of PR dye on the immobilized biomass increased as the initial concentration of dye increasing in the medium. The biosorption equilibrium time was about 40 min and the maximum dye uptake on the tested free and immobilized algal biomass preparations was observed between pH 3.0 and 4.0. The temperature change in the range of 10-40ºC slightly affected the biosorption capacities of the immobilized biomass. Biosorption of the dye from aqueous solution was also investigated in a continuous flow system. Maximum biosorption capacity was found to be 79.4 mg/g dry biomass at an initial dye concentration of 50 mg/L and at a flow rate of 20 ml/h.

Keywords: Algae; Ca-alginate; Biomass; Biosorption; Continuous flow system

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➢ **POSTER PRESENTATION**

Utilization of Amine Modified *Kirchneriella aperta* Teiling for Removal of Cr(VI) from Wastewaters

Ilkay Acikgoz Erkaya[1*], Gulay Bayramoglu[2*]

[*1]Ahi Evran University, Faculty of Engineering and Architecture, Department of Environmental Science, Kirsehir, Turkey

[*2]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey

Corresponding author e-mail: ilkay.acikgoz@ahievran.edu.tr; g_bayramoglu@hotmail.com

Abstract

Several methods for the removal of heavy metals have been studied. Most of them were found very expensive and not fully effective. Among these techniques, adsorption have been used as one of the useful methods and recent studies have focused on development of efficient adsorbents. In recent years, there has been considerable interest in the use of microbial biomass as an adsorbent to remove toxic metals from aqueous solution by biosorption since they are cheap and have high efficiency for removal of pollutants. Chromium (VI) is one such metal known to be carcinogenic and has an adverse potential to modify the DNA transcription process. Cr(VI) anions species are strong oxidants, which act as carcinogens, mutagens and teratogens in biological systems. Therefore, Cr(VI) ions should be removed before discharge in to water bodies.

K. aperta was isolated from the green ponds in the Beytepe campus in Ankara province for utilization in the Cr(VI) removal studies because the species grown in polluted areas were known to be more resistant, and thus having more capability of accumulating heavy metals. The algal biomasses have been recently gained interest in bioremediation studies. The glutaraldehyde activated algal biomass was modified with hexamethylenediamine (HMDA) ligand. The adsorptive groups presents on the native and amine modified algal biomass were characterized using FT-IR, BET and analytical methods. The amine modified algal biomass was used for the removal of Cr(VI) ions from aqueous solutions using native algal biomass as a control system. The maximum removal capacity was 19.6 and 47.2 mg Cr(VI)/g for native and HMDA modified algal biomass. Thermodynamic studies presented that the process was feasible and spontaneous and endothermic in nature. The study indicated that the modified algal biomass was suitable for use an efficient biosorbent for the removal or recovery of Cr(VI) ions from wastewater.

Keywords: Algal biomass; Modification; Biosorption; Cr(VI).

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➢ **POSTER PRESENTATION**

Theoretical Studies on the Molecular Structure, Conformational and Non-Linear Optic Property of (4-Carbamoylphenyl) Boronic Acid

Güventürk Uğurlu

Kafkas University, Faculty of Science and Letter, Department of Physics Physics, Kars, Turkey.

Corresponding author e-mail: gugurlu@kafkas.edu.tr

Abstract

Boronic acid and its derivatives have attract a lot of researcher's interest due to their important applications in several field of science such as analytical chemistry, medicine and biology. In this work, molecular structure, conformational analysis, electronic and non-linear optic properties of (4-Carbamoylphenyl) boronic acid are studied theoretically. Apostolova et al. experimentally determined the crystal structure of (4-Carbamoylphenyl) boronic acid. To the best of our knowledge, there is no theoretical and experimental study on title molecules except for molecular structure. The potential energy surfaces scan (PESs) of title molecule was calculated using B3LYP/6-311++ G (d,p) basis set by rotation around the related B-O1 and B-O2 single bonds. According to the obtained potential energy surface, the title molecule four possible conformers (C1, C2, C3 and C4). The structural, electronic, and non-linear optical properties for each conformer of (4-Carbamoylphenyl) boronic acid molecule has been examined theoretically using ab initio Hartree-Fock (HF) and density functional theory (DFT/B3LYP) methods applying the standard 6-311++G(d,p) basis set. ^{1}H- and ^{13}C-nuclear magnetic shielding constants of the molecule were calculated by employing the direct implementation of the gauge including-atomic-orbital (GIAO) method at the B3LYP/6-311+G (2d,p) and HF /6-31G(d) levels of the theory. The conformer C1 is the most stable in the conformers. Also, E_{LUMO}-E_{HOMO} energy gap (ΔE), electronegativity (χ) and electron affinity (A) were calculated. Structural parameters such as bond lengths, bond angles and dihedral angles of title molecules compared with the experimental data in the literature.

Keywords: (4-Carbamoylphenyl) boronic acid, DFT calculation, NMR, Non-linear optic.

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➢ **POSTER PRESENTATION**

Synthesis of Ruthenium(II) Complexes, Their Anticancer and Catalytic Properties

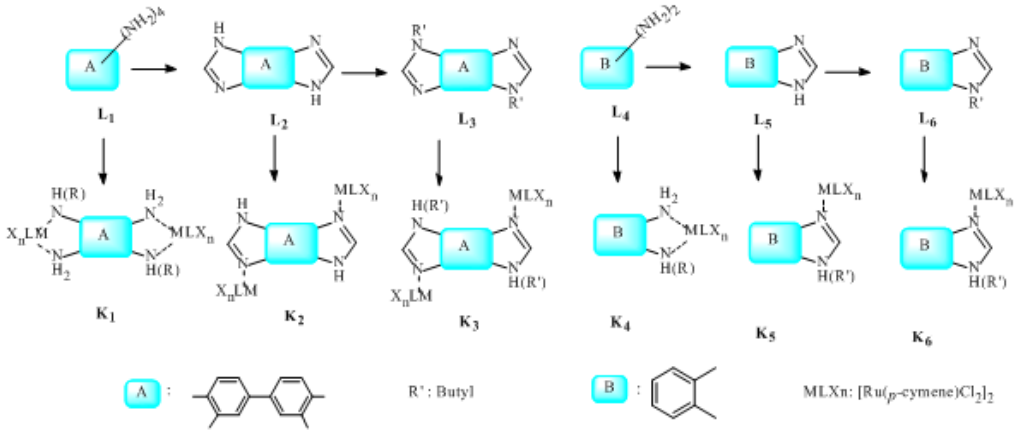
Hatice Dilayla Altıok*, Hayati Türkmen

Ege University, Faculty of Science**, Department of Chemistry, İzmir, Turkey**
Corresponding author e-mail: haticealtioktr@gmail.com

Abstract

Metal complexes play important role as *chemotherapeutic agents. The excellent properties of the metal ions and ligands provide good activity for the medicine chemistry.* In the development of metal based drugs ruthenium has some advantages. Its coordination chemistry provides routes to new compounds. Ligand exchange rate of ruthenium similar to platinum complexes or can be adjusted by ligands. It can reach several oxidation states such as +2, +3 and +4 and able to tune the electron transfer rates and redox potentials. They are less toxic than platinum drug because of the able to imitate iron and binding to biomolecules.

This study includes synthesis of ligands derivated from *3,3'*-d*iaminobenzidine* and their ruthenium complexes. The monometallic complexes and their ligands were prepared for comparision to bimetallic complexes.



The catalytic activities of mono- and bimetallic complexes in the transfer hydrogenation of acetophenone were tested. The anticancer activities of some complexes were tested in various cell lines.

Keywords: bimetallic ruthenium complexes, transfer hydrogenation, anticancer properties.

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➢ **POSTER PRESENTATION**

Synthesis of Mono- and Bi-metallic Complexes Containing N,O- Chelating Ligand and Their Catalytic Properties

Bilge Pakyapan, Hatice Dilayla Altıok*, Hayati Türkmen

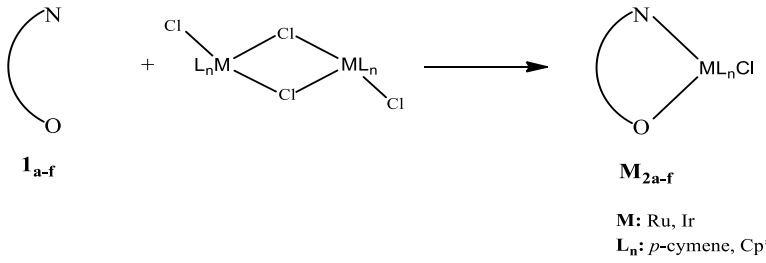
Ege University, Faculty of Science**, Department of Chemistry, İzmir, Turkey**

Corresponding author e-mail: haticealtioktr@gmail.com

Abstract

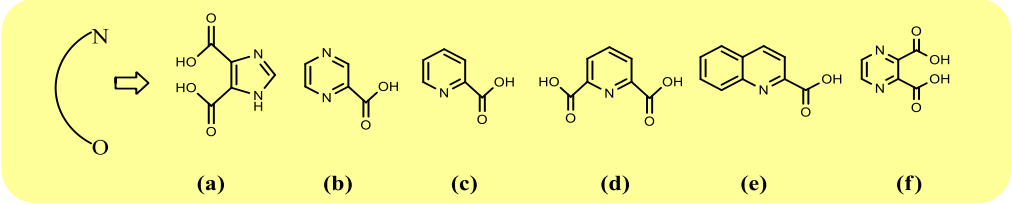
More recently, studies have shown that the electronic interactions between two metal atoms have affected the catalytic properties. This electronic interactions between two metal atoms occur via π-conjugated bond systems; therefore they change the oxidation states of metals. In addition, ligand types affects complex stability and solubility. Ligands also play an important role in homogeneous catalysis. Homogeneous catalysis is that the catalyst mixes into the reaction mixture, allowing a very high degree of interaction between catalyst and reactant molecules. Homogeneous catalysts are the catalysts that become more important in industry particularly in the area of pharmaceutical and polymer industry and have greater selectivity and milder conditions compared with heterogeneous catalysts.

In this study, mono- and bi-metallic complexes synthesized from the reaction of ligands that contain N,O-donor group with neutral metal by binding with nitrogen and oxygen atoms (N∩O). The complexes were characterized by ^{1}H-, ^{13}C-NMR and IR. The effects of the ligands on the catalytic activity and the perfomance of the complexes were studied in Transfer Hydrogenation reaction.



1_{a-f} **M_{2a-f}**

M: Ru, Ir
L_n: *p*-cymene, Cp*



Keywords: N,O-donor ligands, transfer hydrogenation, ruthenium, iridium.

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➢ **POSTER PRESENTATION**

Influence Of Low Contents Of Carboxyl Multi-Walled Carbon Nanotubes On The Properties Of Electrospun Polycaprolactone Biocomposite Nanofibers

Y. Emre Bulbul, Nursel Dilsiz*

Gazi University, Department of Chemical Engineering, Ankara, Turkey

Corresponding author e-mail: ndilsiz@gazi.edu.tr

Abstract

The use of polycaprolactone (PCL) in biomedical engineering, more specifically in bone tissue engineering, has been under explored to date due to its poor mechanical resistance. In order to overcome this drawback, this investigation presents an approach into the preparation of electrospun biocomposite fibers from PCL and low contents of carboxyl multi-walled carbon nanotubes (MWCNT-COOH) (0.03–0.12 wt. % with respect to polymer weight) as additive. We employed a wide range of characterization techniques to evaluate the properties of the resulting electrospun biocomposites, including Scanning Electronic Microscopy (SEM), Atomic Force Microscopy (AFM), Fourier Transform Infrared Spectroscopy (FTIR), X-ray Powder Diffraction (XRD), contact angle measurements (CA) and Nano indentation tests. SEM micrographs showed that smooth nanofibers were formed without the occurrence of bead defects for all obtained biocomposite nanofibers and the addition of MWCNT-COOH reduced the fibers average diameter from 635 nm to 281 nm. The nanoindentation test results pointed that MWCNT-COOH acted as reinforcement in the PCL electrospun matrix, enhancing its Young Modulus from 29.2 to 617.3 MPa with addition of 0.12 wt. % of MWCNT-COOH. This research demonstrated a feasible novel approach for producing electrospun biocomposites from PCL and low contents of MWCNT-COOH with enhanced properties, which allows for a wide range of biomedical applications for these materials.

Keywords: Electrospinning, Nanofiber, Polycaprolactone, Biocomposite, MWCNT-COOH

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➢ **POSTER PRESENTATION**

The Effect of One Extra Copy of lon Protease Gene on *Streptomyces coelicolor*

Aslı Bayraktar, Ğarip Demir, Zeynep Demir Öksüz, Sedef Tunca Gedik*

Gebze Technical University, Faculty of Science, Molecular Biology and Genetic Department, Kocaeli, Turkey.

Corresponding author e-mail: sgedik@gtu.edu.tr

Abstract

Streptomyces are gram positive bacteria belonging to actinomycetales species that reproduce vegetatively through flamentous structures. *Streptomyces* are medically and biotechnologically important bacteria because they are the producers of a wide variety of bioactive compounds (anticancer agents, immunosuppressant drugs, herbicides etc.), including 75 % of the commercialized antibiotics. Bacteria use stringent response mechanism to deal with stress such as nutrition deprivation and heat shock. When aminoacid deprivation occurs, alarmones [guanosine pentaphosphate (pppGpp) and guanosine tetraphosphate (ppGpp)], that are synthesized by RelA and SpoT proteins, modulate bacterial response by inhibiting tRNA and rRNA synthesis and stimulating protein degradation. In addition to this, Ppx enzyme which has a role in degradation of polyphosphate (polyP) is also inhibited by these alarmones. PolyP is a polymer of phosphate molecules joined together by Ppk enzyme. In *E.coli*, polyP form a complex with Lon protease and this complex is responsible for the degradation of the ribosomal proteins and supply free aminoacids to the cell. The cell uses these amino acids to synthesize enzymes that are necessary to adapt to nutrition-scarce environment. We produced a *Streptomyces coelicolor* mutant strain which have one extra copy of *lon* gene integrated to its genome. In this study we analyzed the effect of Lon on the production of secondary metabolites, polyphosphate metabolism and alarmone synthesis.

Keywords: *Streptomyces*, antibiotic, Lon, polyphosphate, stringent response.

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➢ **POSTER PRESENTATION**

Kara Salyangozu (*Helix aspersa*; synonym: *Cornu aspersum*) Yetiştiriciliğinin Türkiye Açısından Önemi

M. Yeşim Çelik*, Sedat Karayücel

Sinop University, Faculty of Fisheries, Sinop, Turkey
Sorumlu yazar e-mail: yesimcelik@yahoo.com.tr

Özet

Günümüzde popüler protein kaynaklarının pahalı olması ucuz protein kaynağı arayışını zorunlu kılmıştır. Kara salyangozları içerdikleri kaliteli protein kaynağı ile önemli alternatif protein kaynaklarından biridir. Dünyanın birçok ülkesinde lüks bir gıda olarak tüketilen kara salyangozları özellikle Fransa, İtalya, İspanya, Almanya ve İngiltere'de yoğun olarak tüketilmektedir. Türkiye'de salyangoz eti tüketilmemekle beraber, Avrupa'daki talebin önemli bir kısmının karşılanmasından dolayı ihracatta önemli bir paya sahiptir. Elverişli iklim ve toprak koşullarına sahip Türkiye'de salyangoz üretimi sadece avcılık yoluyla yapılmaktadır. Bu nedenle aşırı avcılık popülasyonlar üzerinde olumsuz etki yaratmakta, üretimde istikrarı ortadan kaldırmakta ve ürün kalitesinde değişikliğe yol açmaktadır. Oysa mevcut potansiyel göz önüne alındığında yetiştiriciliğinin yapılması sonucu; stoklar üzerindeki baskı azalacak, ürün kalitesi ve ihracat değeri artacak ayrıca yeni istihdam alanları oluşacaktır.

Anahtar Kelimeler: Kara salyangozu, yetiştiricilik potansiyeli

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➢ **POSTER PRESENTATION**

Yüzme Havuzlarında Kullanılan Farklı Dezenfektanların Stabilitelerinin ve Mikrobiyolojik Etkinliklerinin Karşılaştırılması

Aslı Şahiner*, Umut Şahar

Ege Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, İzmir, Türkiye

Sorumlu yazar e-mail: asli.sahiner@ege.edu.tr

Özet

Yüzme havuzları bakteri, fungus, virüs ve protozoonlar gibi birçok patojen mikroorganizma ile kontamine olmaktadır. Bu organizmalar, insanlarda başta intestinal enfeksiyonlar olmak üzere kulak-burun-boğaz ve göz enfeksiyonları, deri enfeksiyonları ve hatta zatürreye sebep olabilmektedir. Bu nedenle, yüzme havuzlarında kullanılan suyun etkili ve uygun sıklıkta dezenfeksiyonu, halk sağlığı açısından büyük önem taşımaktadır. Havuz suyu dezenfeksiyonunda klorlu ve bromlu dezenfektanlar, hidrojen peroksit, biguanid ve ozon gibi dezenfektanlar kullanılabilmektedir. Bu çalışmada, yüzme havuzu dezenfeksiyonunda kullanılan sodyum hipoklorit, sodyum dikloroizosiyanurat, sodyum trikloroizosiyanurat, klordioksit, hidrojen peroksit ve poliheksametilen biguanid dezenfektanlarının kimyasal stabiliteleri ve bakterisidal etkinlikleri karşılaştırılmıştır. Kimyasal stabilite denemeleri hızlandırılmış stabilite ve uzun süreli stabilite olmak üzere iki farklı şekilde gerçekleştirilmiştir. Mikrobiyolojik etkinlik denemeleri ise, *Escherichia coli, Enterococcus faecium, Pseudomonas aeruginosa, Legionella pneumophila, Staphylococcus aureus* bakterileri ile *Candida albicans* ve *Aspergillus brasiliensis* fungusları üzerinde gerçekleştirilmiştir. Etkinliğin test edilmesinde, OECD ”Guidance Document for Demonstrating Efficacy of Pool and Spa Disinfectants in Laboratory and Field testing” (OECD Series of Testing and Assessment No 170, version dated 08 October 2012) metodu kullanılmıştır. Çalışma sonucunda, sodyum dikloroizosiyanurat, sodyum trikloroizosiyanurat ve poliheksametilen biguanid yüksek sıcaklıklarda dahi oldukça stabil olduğu, klordioksit çözeltilerinin 40°C ve altındaki sıcaklıklarda stabilitesini koruduğu gözlenmiştir. Hidrojen peroksit stabilitesinin, ambalaj materyaline bağlı olarak değiştiği tespit edilmiştir. Dezenfeksiyonda en çok kullanılan sodyum hipokloritin ise sıcaklık ile bozulduğu, oda sıcaklığında dahi raf ömrünün diğer dezenfektanlara göre çok kısa olduğu belirlenmiştir. Etkinlik denemeleri sonucunda, aktif klor açığa çıkaran bileşiklerin, düşük konsantrasyonlarda ve kısa sürelerde özellikle bakteriler ve *C.albicans* üzerinde oldukça etkili olduğu saptanmıştır. Hidrojen peroksitin tek başına kullanıldığında etkili olabilmesi için yüksek konsantrasyonlara ve uzun sürelere ihtiyaç olduğu, poliheksametilen biguanid ile birlikte kullanıldığında ise antimikrobiyal etkinin arttığı görülmüştür.

Anahtar Kelimeler: Yüzme havuzu, stabilite, dezenfektan, mikrobiyolojik etkinlik.

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➢ **POSTER PRESENTATION**

Üniversite Öğrencilerinin Beden Kütle İndeksleri İle Yeme Tutum ve Davranışları Arasındaki İlişkinin Değerlendirilmesi

Yasemin Akdevelioğlu*, Teslime Özge Yörüsün

Gazi Üniversitesi Sağlık Bilimleri Fakültesi, Beslenme ve Diyetetik Bölümü, Ankara

Özet

Günümüzde zayıf olma yönündeki sosyal baskılar ve vücut hoşnutsuzluğu bireyleri hatalı diyet yapmaya yöneltmektedir. Hatalı diyet uygulamalarında yapılan katı kısıtlamalar özellikle tıkınırcasına yeme bozukluğu ve bulimia nervosa gibi yeme bozukluklarının potansiyel nedeni olarak görülmektedir. Üniversite döneminde gençler, alıştıkları aile ortamından ayrılmakta, stres düzeyleri artmakta, beslenme düzenleri değişmekte ve dış etkilere daha açık hale gelmektedirler. Bu dönem ayrıca yeme bozuklukları prevalansının en fazla olduğu yaş aralığı olarak da bilinmektedir. Bu nedenle bu araştırma yeme bozuklukları açısından hassas bir popülasyon olan üniversite öğrencilerinin olumsuz yeme davranışlarının gelişiminde rol oynayan faktörleri belirlemek amacıyla 335 (164 erkek ve 175 kadın) üniversite öğrencisi üzerinde yapılmıştır. Çalışma kapsamında araştırmacı tarafından geliştirilen anket formu uygulanmıştır. Kullanılan anket formu; genel bilgiler, sağlık bilgileri, beslenme alışkanlıklarına ait sorular, yeme tutum testi (YTT) ve Hollanda yeme davranışı anketi (DEBQ) bölümlerinden oluşmuştur. Elde edilen veriler SPSS 22.0 istatistik programı ile analiz edilmiştir. Yaş gruplarına göre anormal yeme tutumunun görülme sıklığı 17-19 yaş grubunda %35,7, 20-22 yaş grubunda %26,4, 23-25 yaş grubunda % 23,7 olarak bulunmuştur ($p>0,05$). Anormal yeme tutumu ve duygusal yeme davranışı skorlarının kadınlarda erkeklerden anlamlı şekilde fazla olduğu saptanmıştır ($p<0.05$). Diyet yapma geçmişine sahip bireylerin yeme tutum testi, duygusal ve kısıtlı yeme davranışı skorları (sırasıyla; 22,0±10,55, 36,4±15,94 ve 29,9±8,00), diyet yapma geçmişine sahip olmayan bireylerden (sırasıyla; 14,2±9,53, 29,5±14,03 ve 22,17±7,8) daha yüksek bulunmuştur ($p<0,05$). BKI ile kısıtlı ve duygusal yeme skorları arasında anlamlı bir korelasyon görülmüştür. Duygusal ve kısıtlı yeme skorları zayıf bireylerde normal ve şişmanlara göre daha düşük bulunmuştur ($p<0.05$). Sonuç olarak genç bireylerde yeme bozukluklarına yatkınlığı etkileyen faktörlerin yaş, cinsiyet, BKİ ve hatalı diyet uygulama geçmişinin olduğu belirlenmiştir.

Anahtar Kelimeler; Yeme tutumu, yeme davranışı, yeme bozuklukları, BKİ, üniversite öğrencileri

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➢ **POSTER PRESENTATION**

Comparison of Antibiotic Production Profile of *Streptomyces coelicolor* M145 Δppk and *Streptomyces coelicolor* A3(2) Δppk

Ğarip Demir, Aslı Bayraktar, Zeynep Demir Öksüz, Tuğrul Doruk, Sedef Tunca Gedik*

Gebze Technical University, Faculty of Science, Molecular Biology and Genetic Department, Kocaeli, Turkey.

Corresponding author e-mail: sgedik@gtu.edu.tr

Abstract

Polyphosphate (polyP) is a polymer of phosphate molecules found in both prokaryotic and eukaryotic organisms. PolyP has very important physiological roles inside the cell. It is one of the main energy and phosphate reservoir, regulate the adaptive responses to physical and chemical stresses and is required for stationary-phase survival of bacteria, regulate enzyme activities etc. Polyphosphate kinase enzyme (Ppk) synthesize polyP by using terminal phosphate of ATP. In this study, *ppk* gene of *Streptomyces coelicolor* M145 was deleted by using a PCR based method. Mutation was verified by both PCR and southern blot hybridization. Production of actinorhodin (ACT) and undecylprodigiosin (RED) antibiotics of this mutant strain were measured and compared with that of wild type (M145) and *S. coelicolor* A3(2) Δ*ppk* strains.

Keywords: Streptomyces, polyphosphate kinase, *ppk*, antibiotic production.

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➢ **POSTER PRESENTATION**

Supercapacitor Application of Binary Polyaniline-Au Nanocomposite

Zafer Çıplak*, Nuray Yıldız

Ankara University, Faculty of Engineering, Department of Chemical Engineering, Ankara, Turkey.

Corresponding author e-mail: zaferc@ankara.edu.tr

Abstract

In this work, polyaniline (PANI)-Au binary nanocomposite prepared with a facile one pot method. The nanocomposite prepared with simultaneous oxidation of aniline monomer by $HAuCl_4$, reduction of metal salt and formation of Au nanoparticles inside the polymeric structure in dodecyl benzene sulfonic acid (DBSA) media, without need of use any other oxidizing agents such as ammonium persulfate (APS). The prepared nanocomposite samples were characterized with Fourier transform infrared spectrophotometer (FTIR), UV-visible spectra, field emission scanning electron microscope (FESEM), energy dispersive X-ray spectroscopy (EDX), transmission electron microscope (TEM). The electrochemical performance of PANI-Au electrodes were investigated with cyclic voltammetry (CV), galvanostatic charge-discharge (GCD) and electrochemical impedance spectroscopy (EIS) via applying three electrode configuration in 1 M H_2SO_4 electrolyte. The nanocomposite containing Au nanoparticles with 40-60 nm sizes embedded in PANI structure was succesfully obtained. PANI-Au electrodes exhibited high specific capacitance and electrochemical performance towards supercapacitor application

Keywords: Polyaniline, Au nanoparticles, nanocomposite, supercapacitor

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➢ **POSTER PRESENTATION**

Meyve ve Sebzelerden Elde Edilen Antosiyaninlerin Deri Patojenleri Üzerine Antimikrobiyal Etkisinin Belirlenmesi

Aslı Şahiner*, Bahar Yeniceli, Mustafa Ateş

Ege Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, İzmir, Türkiye

Sorumlu yazar e-mail: asli.sahiner@ege.edu.tr

Özet

Antosiyaninler çiçek, meyve ve sebzelere kırmızı, pembe, mor, mavi tonlardaki renkleri veren, flavanoidlerin önemli bölümünü oluşturan sekonder metabolitlerdir. Antosiyaninler yaygın olarak üzüm, vişne, böğürtlen, erik, elma ve çilek gibi meyvelerde, kırmızı lahana, kırmızı soğan ve siyah havuç gibi sebzelerde ve gül vb. çiçeklerde bulunurlar. Doğada birbirinden farklı 500'den fazla antosiyanin bulunmaktadır. Antosiyaninlerin en önemli özelliği doğal renklendirici olmalarıdır ve bu özelliklerinin yanında insan sağlığı üzerinde de antimikrobiyal ve antioksidan etki göstermeleri antosiyaninlere olan ilginin yoğunlaşmasına neden olmuştur. Bu çalışmada, farklı yerlerden toplanan meyve ve sebze atıklarından elde edilen antosiyaninlerin, deri patojeni mikroorganizmalar üzerindeki antimikrobiyal etkisi belirlenmiştir. Bu amaçla, sebze-meyve halinden toplanan atık çilek, nar, vişne, pancar ve kırmızı lahanadan %50 etanol-HCl ve etanol-formik asit-su olmak üzere iki ayrı çözgen kullanılarak antosiyanin ekstraksiyonu gerçekleştirilmiştir. Elde edilen antosiyanin ekstraktlarının miktarı, pH diferansiyel metodu ile tayin edilmiş ve çözgenler uzaklaştırıldıktan sonra saf ektraktlar antimikrobiyal etkinlik denemesinde kullanılmıştır. Antimikrobiyal etkinlik denemeleri, deri patojeni olan *Staphylococcus aureus, Candida albicans* ve *Propionibacterium acnes* bakterileri üzerinde test edilmiştir. CLSI-M07-A9 standart metodu kullanılarak antosiyanin ekstraklarının minimum inhibisyon konsantrasyonları belirlenmiştir. Bu denemelerde, 10^8 kob/mL bakteri süspansiyonu ve 10^7 kob/mL maya süspansiyonu kullanılmıştır. Yapılan denemeler sonucunda, *S.aureus* üzerinde en yüksek etkiyi kırmızı lahanadan etanol-formik asit-su çözgeni ile elde edilen antosiyanin ekstraktı (32 mg/mL), *P.acnes*'e karşı en yüksek etkiyi ise yine aynı çözgen ile nardan ekstrakte edilen antosiyanin (64 mg/mL) göstermiştir. *C.albicans* üzerinde en etkili olan ekstrakların ise vişne ve pancardan (128 mg/mL) elde edildiği tespit edilmiştir. Nardan elde edilen antosiyanin ekstraktının ise mayalar üzerinde etkili olmadığı belirlenmiştir.

Anahtar Kelimeler: Antosiyanin, MIC, *S.aureus, C.albicans, P.acnes.*

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➢ **POSTER PRESENTATION**

N,3,5-triphenyl-4,5-dihydro-1*H*-pyrazole-1-carbox amide: Vibrational Spectroscopic Investigation and Quantum Chemical Calculations

Talat Özpozan[1*], Hatice Arı[2], Zeki Büyükmumcu[1], Nazenin Akın[1], İlhan Özer İlhan[1]

[*1]Erciyes University, Faculty of Science, Department of Chemistry, Kayseri, Turkiye.
[2]Bozok University, Faculty of Science & Art, Department of Chemistry, Yozgat, Turkiye.

Corresponding author e-mail: ozpozant@erciyes.edu.tr

Abstract

Pyrazoles are the important compounds due to their biological and pharmacological activities [1]. Pyrazoles have broad range of bioactivities such as anti-microbial, anti-fungal, anti-tubercular, anti-inflammatory, anti-convulsant, anticancer, anti-viral, angiotensin converting enzyme (ACE) inhibitory, neuroprotective, cholecystokinin-1 receptor antagonist, and estrogen receptor (ER) ligand activities [2]. N,3,5-triphenyl-4,5-dihydro-1*H*-pyrazole-1-carbox amide molecule were optimized and its vibrational spectrum were calculated with DFT (B3LYP) and 6- 31G(d) basis set calculations using the Gaussian 09 program [3]. The results of theoretically calculated spectra were compared with the experimentally measured spectra.

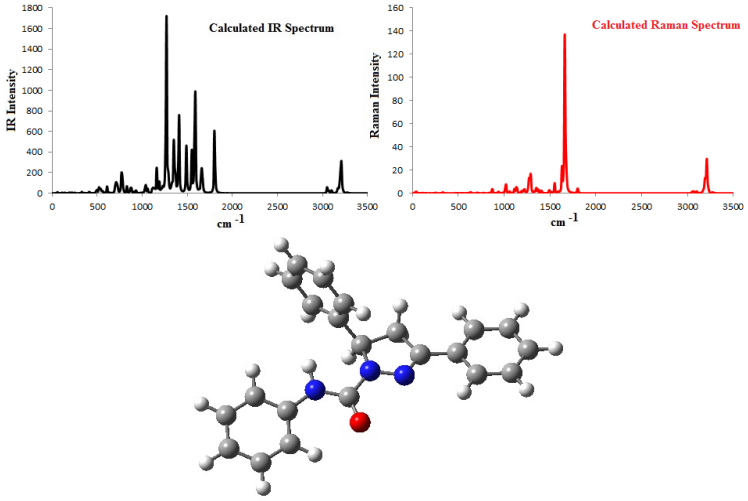

Figure Optimized structure and calculated vibrational spectra of title compound

Keywords: Vibrational Analysis, pyrazole, DFT.

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➢ **POSTER PRESENTATION**

Catalytic Activity of Reduced Graphene Oxide-Ag-Fe_3O_4 Nanocomposite

Zafer Çıplak*, Ceren Gökalp, Bengü Getiren, Nuray Yıldız, Seray Türköz, Gülşah Çöçü

Ankara University, Faculty of Engineering, Department of Chemical Engineering, Ankara, Turkey.

Corresponding author e-mail: zaferc@ankara.edu.tr

Abstract

In this study, reduced graphene oxide (rGO)-Ag-Fe_3O_4 ternary nanocomposite was prepared with a one pot solvothermal method. In this one step method graphene oxide (GO) effectively reduced, Ag and Fe_3O_4 nanoparticles homogenously decorated rGO nanosheets simultaneously. The prepared nanocomposite samples were characterized with fourier transform infrared spectrophotometer (FTIR), UV-visible spectra, field emission scanning electron microscope (FESEM), energy dispersive X-ray spectroscopy (EDX), transmission electron microscope (TEM). It was obtained that rGO nanosheets were uniformly covered with 40-70 nm spherical Ag and Fe_3O_4 nanoparticles. The ternary rGO-Ag-Fe_3O_4 was used as catalyst for reduction of 4-nitrophenol (4-NP) to 4-aminophenol (4-AP). The results showed that the nanocomposite have high potential as catalyst.

Keywords: Graphene, Fe_3O_4 nanoparticles, Ag nanoparticles, catalyst.

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➢ **POSTER PRESENTATION**

İlave Şeker Tüketimi ve Kardiyovasküler Hastalık Risk Faktörleri

Yasemin Akdevelioğlu*, Teslime Özge Yörüsün

[1]Gazi Üniversitesi Sağlık Bilimleri Fakültesi Beslenme ve Diyetetik Bölümü
Ankara/Türkiye

Özet

İlave şeker, Amerikan Kalp Derneği tarafından besinlerin bileşiminde doğal olarak bulunmayan, üretim prosesinde sonradan eklenen şeker veya şuruplar olarak tanımlanmaktadır. Günümüz diyetinin ilave şeker içeriğindeki artış, toplum sağlığını tehdit eden önemli bir sorundur. Randomize klinik ve epidemiyolojik çalışmalar, yüksek miktarda eklenmiş şeker tüketen kişilerde obezite, tip 2 diyabet, dislipidemi, hipertansiyon ve kardiyovasküler hastalık riskinin (KVH) arttığını göstermektedir. Bu çalışmada ilave şeker tüketiminin kardiyovasküler hastalıkların etiyolojisindeki rolünü inceleyen araştırmalar ele alınarak yorumlanmıştır. İncelenen çalışmalarda diyetle alınan günlük enerjinin %10-25'ini ilave şekerden alanlarda kardiyovasküler mortalite riskinin %30 daha yüksek olduğu, bu oranın %25'ten fazla olmasının ise kardiyovasküler mortalite riskini yaklaşık üç kat artırdığı belirtilmektedir. Fruktoz tarafından tetiklenen trigliserid sentezi, karaciğer trigliserid ve VLDL sentezinde artışa, hepatik insülin duyarlılığında azalmaya, hiperürisemiye neden olmaktadır. Fruktozun metabolize olabilmesi için fruktoz-1-fosfata dönüşmesi gerekmektedir. Fosforilayon sırasında ATP'nin yıkımı (ADP, AMP, IMP, ürik asit) ile ürik asit oluşmaktadır. Fazla fruktoz alımına bağlı olarak KVH morbidite ve mortalitesi için bir belirteç olan hiperürisemi görülebilmektedir. Hiperürisemi arteriyel kan basıncını artırarak hipertansiyon gelişimine yatkınlık oluşturmaktadır. Yapılan bir çalışma 2 hafta boyunca günlük 200 g fruktoz tüketimi sonucunda bireylerin sistolik kan basıncının 7mm/Hg, diastolik kan basıncının 6 mm/Hg arttığını göstermiştir. İlave şeker tüketimi ayrıca inflamasyon belirteçlerini artırmasından dolayı da KVH ile ilişkilendirilmektedir. Bu konuda yapılan bir araştırma 3 hafta boyunca 40-80 g ilave şeker tüketiminin CRP düzeylerini %60-109 arasında artırdığını ortaya koymuştur. Tüm bu çalışmaların sonucunda ilave şeker tüketiminin özellikle yüksek fruktoz içeriği nedeniyle dislipidemi, inflamasyon, obezite, hipertansiyon gibi pek çok KVH risk faktörü ile ilişkili olduğu görülmüştür. Bu nedenle Amerikan Kalp Derneği'nin önerdiği gibi diyetin ilave şekerden gelen enerjisinin kadınlarda 100 kkal/gün, erkeklerde ise 150 kkal/gün'ü geçmemesi KVH riskinin azaltılmasında etkili olabilir.

Anahtar Kelimeler: İlave şeker, früktoz, kardiyovasküler hastalıklar, diyet.

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➢ **POSTER PRESENTATION**

Onobrychis argyrea subsp. *argyrea* ve *O. albiflora*'nın Tohumlarının Esteraz Aktivitesi ve Antioksidan Özellikleri

Salih Görgün[1], Emre Koç[1*], Mehmet Tekin[2], Ferda Candan[1]

[1]Cumhuriyet Üniversitesi, Fen Fakültesi, Biyokimya Bölümü, Sivas, Türkiye
[2]Trakya Üniversitesi, Eczacılık Fakültesi, Farmasötik Botanik Bölümü, Edirne, Türkiye

Sorumlu yazar e-mail:emrekoc@cumhuriyet.edu.tr

Özet

Onobrychis argyrea Boiss. subsp. *argyrea* ve *Onobrychis albiflora* Hub.-Mor., Türkiye florası için endemik türler olup, bu çalışmada iki türe ait tohumlardaki esteraz aktiviteleri ve antioksidan özellikleri değerlendirilmiştir. Esteraz aktivitesi her iki türde de benzer özellikler sergilemekle birlikte, *O. albiflora*'da daha yüksek olduğu görülmüştür. Nativ-PAGE çalışması ile türlerin tohumlarındaki esteraz bant motiflerinin varlığı belirlenmiştir. Ayrıca, iki türün tohumlarının toplam fenolik içeriği (TPC), toplam flavonoid içeriği (TFC), ve toplam antioksidan kapasitesi (TAC) *O. argyrea* subsp. *argyrea*'da daha yüksek olduğu bulunmuştur.

Anahtar Kelimeler: *Onobrychis*, endemik, esteraz aktivitesi, antioksidan özellik.

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➢ **POSTER PRESENTATION**

Evaluation *in vitro* Antioxidant Activities of Methanolic Extract *Inula Thapsoides subsp. Thapsoides*

Meryem Orakcı, Emre Koç*, Ferda Candan

Faculty of Science, Department of Biochemistry University of Cumhuriyet, Sivas, Turkey

Corresponding author e-mail: emrekoc@cumhuriyet.edu.tr

Abstract

Plants are commonly used in medical science both as traditional medicines and as industrialized products. With the emergence of health problems caused by the use of antibiotics and chemical-containing foods, research has begun on the use of plants as food additives. The aim of this study is to investigate in vitro antioxidant effect of methanolic extract of *Inula Thapsoides subsp. Thapsoides.*

In this study, methanolic extract of *Inula Thapsoides* was investigated on total phenolic and flavonoid content, antioxidant capacities. Also , we examined the *in vitro* radical scavenging and antioxidant capacity of *Inula Thapsoides* by using different in vitro analytical methods such as 1,1-diphenyl-2-picryl-hydrazyl free radical (DPPH) scavenging, 2,20-azino-bis (3-ethylbenzthiazoline-6-sulfonic acid) (ABTS) radical and N,N'-dimetil-p- fenilendiamin (DMPD) radical scavenging activity, total antioxidant activity determination by ferric thiocyanate, total reducing ability determination using by Fe^{3+}–Fe^{2+} transformation method, hydrogen peroxide scavenging and ferrous ions (Fe^{2+}) chelating activities.

These studies resulted in identification of new natural compounds and selection of promising species in terms of their expected use for the isolation of bioactive constituents. However, the antioxidant of *Inula Thapsoides subsp. Thapsoides.*has not been investigated systematically yet.

Keywords: *Inula Thapsoides;* antioxidant activity; radical scavenging; metal chelating; reducing power.

Acknowledgements: This research was part of the project number F-347 supported by the Research Council of Cumhuriyet University in Sivas / Turkey.

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➢ **POSTER PRESENTATION**

The Theoretical and Experimetal Investigation of Luminescent Properties of Keto-Oxime Derivatives of Imidazole

Zeynep Turhan İrak[1*], Mehmet Poyraz[2]

[*1]Igdır University, Engineering Faculty, Environmental Engineering Department, Igdır, Turkey.
[2]Afyon Kocatepe University, Faculty of Science and Arts, Department of Chemistry, Afyonkarahisar, Turkey.

Corresponding author e-mail: zeynepsilanturhan @hotmail.com

Abstract

Luminescent organic materials have been extensively studied after 2005. Luminescence is the emission of light as a result of the excitation of atoms by energy other than heat. Photoluminescence is a special kind of luminescence. Photoluminescence occurs when orbital electron of a molecule or atom excited to a higher quantum state by emitting a photon of light. On the other hand in electroluminescence (EL) a material emits light in response to the passage of an electric current or to a strong electric field.

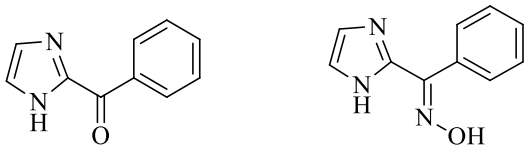

Figure 1: The molecular structure of 2-Benzoylimidazole and 2-Benzoylimidazole oxime

The molecular structure of 2-Benzoylimidazole and 2-Benzoylimidazole oxime were characterized by single crystal X-ray diffaraction. In this study, theoretical calculations have been made using Gaussian 09W programme at density functional theory (DFT). After optimization of molecules with theoretical calculations the energy differences of HOMO-LUMO (ΔE) were calculated in units of eV. $\Delta_{ESINGLET-TRIPLET}$ values determined using TD-SCF method B3LYP/camB3LYP.

The photoluminescence spectrum of compounds show photoluminesce activities. The theoretical and experimental results were compared. These results are an important predictor of whether a compounds might have OLED. It is expected that this work play an important role the synthesis optoelectronic materials.

Keywords: OLED, Optoelectronic material, Keto, Oxime, HOMO-LUMO.

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➢ **POSTER PRESENTATION**

Anti-inflammatory Activities of Methanolic Extract of *Salvia russellii and Salvia candidissima*

Emre Koç*, Selvi Cingöz, Ferda Candan

Faculty of Science, Department of Biochemistry University of Cumhuriyet, Sivas, Turkey
Corresponding author e-mail: emrekoc@cumhuriyet.edu.tr

Abstract

Inflammation is the natural defense response initiated by tissues against any kind of living or lifeless foreign influence or internal/external damage that the can ocur. Neutralization of ROS by antioxidants may alleviate inflammation. With the help of these antioxidant molecules, cells also protect against infection by inhibiting protein denaturation agents and protecting against membrane lysis.
In the present study, the anti-inflammatory activity of *Salvia* extracts were determined by measuring its activity of inhibition of protein denaturation, which is a simple and feasible method.
While, *S.russellii* gave 14.30% and *S.candidissima* gave 26.50% inhibition at 100 µg.mL^{-1} concentration, the maximum inhibition value of standard diclofenac sodium was calculated to be 92.81% at the same concentration value. *Salvia* plant extracts were able to inhibit heat-induced protein denaturation, but this activity was lower than that of diclofenac sodium used as a positive control. Also, ıt has been determined that the activity of inhibition of albumin denaturation of the plant extracts are also increased depending on dosage as is the case with diclofenac sodium, which is a standard anti-inflammatory drug.

Keywords: *Salvia russelli*; *Salvia candidissima*; antioxidant; anti-inflammatory.

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➢ **POSTER PRESENTATION**

Synthesis, Characterization and Theoretical Calculations of Schiff Bases Derived from Dopamine

Ayla Balaban Gündüzalp*, Ümmühan Özdemir Özmen

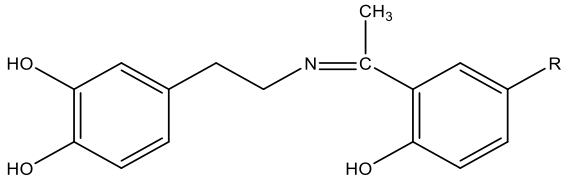
Gazi University, Faculty of Science, Department of Chemistry, Ankara,Turkey

Corresponding author e-mail: balaban@gazi.edu.tr

Abstract

The catecholamines such as dopamine, adrenaline, noradrenaline and L-dopa are neurotransmitters in the brain. The decreasing level of the dopamine causes the neurodegenerative diseases like Alzheimer, Wilson and Parkinson [1]. Many of the compounds containing dopamine moiety are used in the treatment depression and also exhibit antimicrobial and antibacterial activities. Additionally, these are used as bridging agents to synthesize herbicides in the production of drugs.[2]. Schiff bases containing aromatic ring have the function of antibacterial, antitumour and antivirotic activities. Therefore, the new Schiff bases with bioactive functional groups have already been researched purposively and developed as potential antibacterial, antitumour and antivirotic drugs in recent years [3].

In this study, Schiff bases: 2-hydroxyacetophenonedopomine and 2-hydroxy-5-Cl acetophenone dopomine were synthesized by the reaction of 2-hydroxyacetophenone and 2-hydroxy-5-Cl-acetophenone with dopamine. The structure of Schiff bases were characterized by FT-IR, ^{1}H NMR and ^{13}C-NMR (Fig 1). The molecular geometry of Schiff base was optimized by using B3LYP/6-311++G(d,p) basis set with DFT method in Gaussian 09W program. NMR chemical shifts, geometrical parameters and frontier molecular orbital (HOMO and LUMO) energies were computed by the same quantum set. The molecular electrostatic potential (MEP) surfaces were evaluated to determine electophilic and nucleofilic active sites of molecule.



R: H, Cl

Figure 1: The structure of Schiff bases

Keywords: Dopamine, Schiff bases, DFT calculations.

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➢ **POSTER PRESENTATION**

Role of Autophagy Related MicroRNAs in Lung Cancer

Seçil Eroğlu*, Ceyda Okudu, Sibel Oğuzkan Balcı

Gaziantep University, Faculty of Medicine, Medical Biology Department, Gaziantep, Turkey.

Corresponding author e-mail: secilleroglu@gmail.com

Abstract

Autophagy is a lysosomal degradation process involving packacing of intracellular damaged proteins and organelles into double-membrane vesicles called autophagosomes and fusion with lysosome, where the cargo is degraded and recycled by lysosomal enzymes. Dysregulation of autophagy has been shown to be associated with many diseases, including cancer.
MicroRNAs (miRNAs) are single stranded noncoding RNAs of about 17-25 nucleotides in length. miRNAs are post-transcriptional regulators of their *complementary* mRNA targets through suppression of translation or degradation of their target mRNAs. miRNAs have been shown to be associated not only with various biological processes including autophagy and also with diseases such as cancer.
miRNAs that are bioinformatically predicted to be associated with genes involved in autophagic pathway were chosen via bioinformatics tools. Expression levels of miRNAs were studied by qRT-PCR. $2^{-\Delta\Delta Ct}$ values were calculated and fold changes were compared between A549 cell line, a model for non-small cell lung cancer (NSCLC) and Beas2B cell line, a normal lung bronchus as control. miR-101, miR-138, let-7b and let-7c were found significantly downregulated whereas miR-96 was found upregulated in A549 compared to Beas2B. Functional studies of these microRNAs, and their relation with autophagy in lung cancer will be further investigated.

Keywords: Autophagy, microRNAs, miRNAs, lung cancer.

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➢ **POSTER PRESENTATION**

Investigation of Virulence Factors in High-level Aminoglycoside Resistant (HLAR) Enterococci Isolated from Cheese

Degnide Ephrem Adifon, Yasin Tuncer*

Süleyman Demirel University, Faculty of Engineering, Department of Food Engineering, Isparta, Turkey.

Corresponding author e-mail: yasintuncer@sdu.edu.tr

Abstract

In this study, 54 high-level aminoglycoside resistant (HLAR) enterococci (18 *E. faecalis*, 15 *E. faecium*, 12 *E. durans*, 2 *E. gallinarum* and 7 *Enterococcus* spp.) previously isolated from cheese samples were investigated by polymerase chain reaction (PCR) for presence of virulence factor genes encoding gelatinase (*gelE*), cell wall adhesin ($efaA_{fm}$ and $efaA_{fs}$), sex pheromones (*cpd*, *cob*, *ccf and cad*), collagen-binding protein (*ace* and *acm*), aggregation substance (*agg*), cytolysin (*cylM*, *cylB* and *cylA*), hyaluronidase (*hyl*) and cell wall-associated protein (esp_{fm} and esp_{fs}). PCR results showed that at least one virulence gene was detected in all strains, except for *E. faecium* S32.2. Most frequently detected virulence genes in HLAR enterococci strains were *ccf* (48/54, 88.89%), $efaA_{fs}$ *(46/54, 85.19%), acm (42/54, 77.78%), gelE (32/54, 59.26%), cpd (28/54, 51.85%),* esp_{fs} *(27/54, 50%) and ace (20/54, 37.04%). The* $efaA_{fm}$*, cob, agg, cylA, hyl, cylB and* esp_{fm} *genes were detected in 20.37% (11/54), 9.26% (5/54), 9.26% (5/54), 9.26% (5/54), 5.56% (3/54), 3.70% (2/54) and 1.85% (1/54) of HLAR enterococci strains, respectively. None of the strains carried the cad and cylM genes.* In conclusion, a high incidence of virulence factor encoding genes among HLAR enterococci strains isolated from cheese samples was observed. These results are worring for consumer health.

Keywords: *Enterococcus*, Cheese, Aminoglycoside resistance, Virulence factor genes, PCR.

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➢ **POSTER PRESENTATION**

Preparation of Nanoparticle Based Optical Sensors

Fatma Betül Bal[1*], Esma SarıÜzek[2], Elif Loğoğlu[1]
[1*]Gazi University , Science Faculty , Chemistry Department , Ankara , Turkey
[2]Hacettepe University , Science Faculty , Chemistry Department, Ankara , Turkey

fatmabetulbal0646@gmail.com

Abstract

In this study, optically based sensors were developed by preparing gold nanoparticles modified with carbon nanoparticles for the determination of Hg^{+2} to take advantage of the unique optical properties of gold nanoparticles. With the prepared sensor, fast, selective and accurate determination of Hg^{+2} was realized. TEM, XPS, XRD, FTIR, UV and fluorometric measurements were taken for the characterization of the prepared particles and conjugate.
In our work, stable gold nanoparticles were synthesized using Turkevich method [1]. This is because AuNPs have the advantage of being easily adaptable to the size, shape and chemical environment.Carbon nanoparticles were prepared with the aid of glutamic acid [2]. After synthesizing gold and carbon nanoparticles, conjugates with heavy metals were prepared and their measurements were taken on UV spectrometer and nanoparticles were found to respond to Hg^{+2}. In addition, a real water sample taken from the ladder was used to determine Hg^{+2}. Characterization is visualized by TEM.
The resulting conjugates enable the rapid and simple determination of Hg^{+2} both selectively and sensitively. The selectivity of the sensor system has been tested in the presence of competitor molecules at two different concentrations. The sensor for Hg^{+2} has been developed with the study. In the results, the best response of Hg^{+2} was found to be 100 µl of gold nanoparticle and 200 µl of carbon nanoparticle. TEM, XPS, XRD, FTIR, UV and fluorometric measurements were taken for the characterization of the prepared particles and conjugate.

Key words: Nanoparticle, Optical biosensor, Hg^{+2}

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➢ **POSTER PRESENTATION**

Gaziantep'deki *Morus alba* L., *Paulownia tomentosa* L. ve *Quercus robur* L. Polenlerdeki Alerjik Protein Konsantrasyonlarının Belirlenmesi

Asiye Gözübüyük*, Işık Didem Karagöz, İbrahim Halil Kılıç, Mehmet Özaslan

Gaziantep Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Gaziantep, Türkiye

Sorumlu yazar e-mail: asiyegozubuyuk@hotmail.com

Özet

İmmün sistemi tetikleyen ve alerjik reaksiyonların oluşmasına neden olan antijen ve türevleri, alerjen olarak isimlendirilir. Birçok uçucu alerjenler genellikle 15-50kDa arasında bulunan ve suda çözünebilen proteinler veya glikoproteinlerdir (Reid ve Gamble, 2009). Bugüne kadar yapılan çalışmalarda birçok farklı kaynaktan alerjen proteinleri saflaştırılmış ve tanımlanmıştır. Protein yapısına sahip olan hemen her şey alerjen özelliği gösterebilir ve her alerjen kaynağı çok fazla sayıda alerjik yapı içerebilir. Bu çalışma kapsamında Gaziantep ilinde yaygın olarak peyzaj amaçlı kullanılan Ak dut (*Morus alba* L.), Saplı meşe (*Quercus robur* L.) ve Prenses ağacı (*Paulownia tomentosa* L.) Polenlerinin alerjenik olabilecek protein konsantrasyonları araştırılmıştır. Polen örnekleri disseminasyon dönemlerinde (Nisan-Mayıs ayları) toplandı ve ekstre edildi. Ekstre edilen polen proteinlerinin konsantrasyonları belirlendi ve klinik uygulamalarda hazır olarak kullanılan standart alerjen kitlerin protein konsantrasyonları ile kıyaslandı. Sonuçlar değerlendirilmek üzere kaydedildi. Polen protein konsantrasyonlarının belirlenmesinde BCA Protein Assay Kit kullanıldı. Kit içeriğindeki protokol doğrultusunda yapılan çalışmada polen örneklerinin belirli oranda dilüe edilerek hazırlanan solüsyonları 562nm dalga boyunda spektrofotometre cihazı (Thermo Multiskan Go) ile ölçüldü ve kit içerisindeki standart grafik üzerindeki denklem ile konsantrasyonlar (µg/ml) belirlendi. Bu işlemlerin yanında toplanan polenler kurutulup eleme işlemiyle temizlenerek polen morfolojisi incelendi, bu inceleme işleminde safraninli gliserin jelatin metodu kullanılarak polenlerden daimi preparat hazırlandı. Polen morfolojisinin incelenmesi, polen ölçümü, polen fotoğraflarının çekim işlemleri inverted mikroskop (Nikon eclipse TS100) ile yapıldı. Ölçülen konsantrasyonlar sonucunda ticari olarak klinik deri prick alerji testlerinde kullanılan hazır kitlerdeki protein konsantrasyon oranları ile kıyaslandığında çalışmış olduğumuz bitkilerin polen-protein konsantrasyonlarının standartlar ile aynı ölçüde olduğu saptanmıştır. Tüm bu değerlendirmeler sonucunda ithal olarak alınan deri prick kitlerin yerine ülkemizde bulunan ve peyzaj amaçlı olarak sık kullanılan *Morus alba* L., *Quercus robur* L., *Paulownia tomentosa* L. bitki polenlerinin benzer protein konsantrasyonlarına sahip alternatif yerli kitlerin üretiminde kullanılabilme potansiyeline sahip oldukları belirlenmiştir.

Anahtar Kelimeler: *Morus alba* L., *Quercus robur* L., *Paulownia tomentosa* L., Polen, Alerjen.

Kaynaklar

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➢ **POSTER PRESENTATION**

Virulence Factors of Food Originated Enterococci

Degnide Ephrem Adifon, Didem Akpınar-Kankaya, Banu Özden-Tuncer, Yasin Tuncer*

Süleyman Demirel University, Faculty of Engineering, Department of Food Engineering, Isparta, Turkey.

Corresponding author e-mail: yasintuncer@sdu.edu.tr

Abstract

Enterococci, member of lactic acid bacteria, are often isolated from traditional fermented food products especially cheeses and sausages. Although enterococci play an important role to improve typical taste and flavour of these products, some members of enterococci cause various infections via virulence factors. Virulence factors are effector molecules that enhance the bacterial pathogenicity in a host. Gelatinase, cell wall adhesin, collagen binding protein, enterococcal surface protein, sex pheromones, aggregation substance, cytolysin and hyaluronidase are known virulence factors present in enterococci. Gelatinase is an extracellular zinc-dependent metalloproteinase. This protease can hydrolyze gelatine, collagen, fibrinogen, casein, hemoglobin and other bioactive peptides. Cell wall adhesin efaA is endocarditis specific antigen identified from endocarditis patients. Collagen binding protein (Ace) is surface protein with adhesive properties which plays an important role in colonisation by binding to proteins of the extracellular matrix. Enterococcal surface protein (Esp) is a cell wall-associated protein which plays a role in adhesion and evasion of the immune response of the host. Sex pheromones are small hydrophobic peptides which promote the acquisition of plasmid DNA and chemotactic for human leukocytes. Aggregation substance (AS) is a surface protein which involves in adherence to eukaryotic cells, cell aggregation and conjugation. Cytolysin is a post-translationally modified protein toxin which lyses a broad range of eukaryotic and Gram-positive cells. Hyaluronidase is mainly a degradative enzyme that is associated with tissue damage. Virulence factors present in food originated enterococci was summarized in this study.

Keywords: *Enterococcus*, Infection, Virulence factors.

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➢ **POSTER PRESENTATION**

Biological Activities of Mono-, Di- Substituted Trimeric Phosphazenes

Hande Kayalak[1*] , İpek Berberoğlu[2], Leyla Açık[1*], Nuran Asmafiliz[2], Zeynel Kılıç[2]

[1]University of Gazi, Fakulty of Science, Department of Biology, Ankara, Turkey
[2]University of Ankara, Fakulty of Science, Department of Chemistry, Ankara, Turkey

Corresponding author e-mail: handeekayalak@gmail.com

Abstract

Phosphazenes are compounds in a straight chain, cyclic or polymeric structure containing double attached between phosphorus and nitrogen atoms in the structures. Phosphazene derivatives with different properties depending on the ligands to be ligated can be used in many fields by utilizing properties such as elastomeric property, anticancer and antitumor property, antimicrobial property, interaction with DNA.

In this study, antimicrobial activities of newly synthesized trimeric phosphazene compounds were studied by agar well diffusion technique. In addition, compounds interactions with plasmid DNA were examined by agarose gel electrophoresis. The compounds meb1 and metbcdi have antimicrobial activity against *Pseudomonas aeruginosa* ATCC 27853 and *Bacillus subtilis* ATCC 6633. It was observed that the compounds had DNA cleavage activity. Restriction enzymes digestion showed that compounds bound to A / A and G / G nucleotides of the DNA.

As a result, it has been shown that some of the newly synthesized trimeric phosphazene compounds have little antimicrobial activity on microorganisms. It also observed that the compounds were effective on DNA.

Keywords: trimeric phosphazenes, DNA interactions, antimicrobial activity**.**

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➢ **POSTER PRESENTATION**

Defne Yaprağı (*Laurus nobilis* L.) Ekstraktları İle Hazırlanan Antibakteriyel Pla Kompozitlerin Deney Tasarımı Yöntemi İle Optimizasyonu

Ayça Aydın*, Feza Geyikçi

Ondokuz Mayıs Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Samsun, Türkiye

Sorumlu yazar e-mail:ayca_aydin@hotmail.com

Özet

Biyoçözünür polimerler teknolojik gelişimin çeşitli alanlarında çok büyük önem teşkil etmektedirler. Birçok bilim insanı bu konuda çeşitli araştırmalar yapmaktadırlar. Biyobozunur polimerlerden biri olan poli(laktik asit) (PLA), günümüzde oldukça etkin bir şekilde kullanılmaktadır. Özellikle sağlık alanında PLA'nın nanolif olarak kullanımı ön plana çıkmaktadır. PLA'nın, çevre dostu olması ve biyo uyumluluk gibi özelliklere sahip olması da; plastik uygulamalarında, paketleme alanında, ziraat ürünlerinde, tek kullanımlık ürünlerde ve medikal alanda potansiyel kullanım imkânı sağlamaktadır. Biyolojik olarak bozunabilir PLA'dan üretilen antibakteriyel kompozit filmler, biyomedikal ve gıda ambalaj endüstrisi için sürdürülebilir bir çözüm sunmaktadır. Antioksidan maddeler doğal ve sentetik olarak iki sınıfa ayrılırlar. Son yıllarda sentetik antioksidanların insan sağlığına olumsuz etkilerinin ortaya çıkmasından sonra doğal antioksidanların kullanımına olan ilgi artmaktadır.

Bu çalışmada biyobozunur bir polimer olan poli laktik asit (PLA)' e antibakteriyel özellik kazandırmak amacıyla Laurus Nobilis L. ile birlikte montmorillonit (MMT) ve zeolit katkı malzemeleri kullanılarak polimer kompozitler hazırlanmıştır. Tek başına kullanıldığında dayanımı ve kullanım alanı kısıtlı olan PLA' ya farklı özellikler kazandırmak amacı ile montmorillonit (MMT) ve zeolit eklenerek kompozit yapı oluşturulmuştur. Antibakteriyel malzemelere olan ihtiyacın artması, antibakteriyel ajan olarak kimyasal maddelerin sıklıkla kullanılması insan sağlığı ve çevre açısından olumlu olmaması nedeniyle doğal antibakteriyel ajanlara olan ilgi artmaktadır. Kompozitler hazırlanırken, kompoziti oluşturan materyallerin etkilerini, miktarlarını belirlemek amacıyla ekstrakt ve katkı maddeleri oranları kullanılarak antibakteriyel poli laktik asit (PLA) kompozit filmlerin deney tasarımı yöntemi ile elde edilmesi amaçlanmaktadır. Elde edilen yapıyı belirlemek için önce Lauris Nobilis L. ekstraktının Gaz Kromatografisi (GC) 'nde ölçümleri yapılmıştır. Hazırlanan PLA kompozit filmler için Fourier Dönüşümlü Infrared Spektrofotometre (FTIR) analizleri yapılmıştır.

Anahtar Kelimeler: PLA, *Laurus nobilis* L., antibakteriyel kompozit.

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➢ **POSTER PRESENTATION**

Taxonomic Composition of Epilithic Diatoms and Indicator Role in The Freshwater Ponds

A. Kadri Cetin, Vesile Yildirim*

Fırat University, Faculty of Science, Department of Biology Elazığ-Turkey

Corresponding author e-mail: vyildirim@firat.edu.tr

Abstract

In this study, epilithic diatoms of 4 stations which were different chemical properties because of the domestic and industrial waste disposal were investigated from the samples between the May 2012 and April 2013. 96 species belong to Bacillariophyta were defined. Although there was no substantial alteration between stations in terms of species number, community structure changed significantly. When *Achnanthidium minutissimum, Gomphonema parvulum, Surirella angustatum* were dominant diatoms of factory sewage lagoons, *Nitzschia palea, N. recta, Ulnaria ulna* were dominant diatoms of domestic sewage disposal station, *Fragilaria capucina Ulnaria ulna, Ditome vulgaris* were dominant diatoms of domestic sewage disposal barrage. *Achnanthidium minutissimum, Navicula cinta, N.cryptoceph* were dominant diatoms of both domestic and industrial sewage disposal station. It was established that periphyton community changes in stations which were affected from varied quality contaminator were not originated from seasonal variation. The aim of the study was to determine epilitic diatom flora of stations that were exposed to varied quality contaminator, to test these diatoms' associations with and water quality, suitability of environment quality indicators, and to determine different indicators of varied quality contaminators for quick evaluation of ecological structure.

Keywords: Epilithic diatoms, Freshwater ponds, Pollution

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➢ **POSTER PRESENTATION**

Gaziantep'deki *Pinus brutia* L., *Plantago major* L., *Platanus orientalis* L. Polenlerindeki Alerjik Protein Konsantrasyonlarının Belirlenmesi

Hatice Bakiye Özkesen Güceğlioğlu*, Işık Didem Karagöz, Mehmet Özaslan, İbrahim Halil Kılıç

Gaziantep Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Gaziantep, Türkiye

Sorumlu yazar-mail: hatice_zkesen@hotmail.com

Özet

Alerji aynı orandaki yabancı maddelere (antijenlere) maruz kalan bireylerden bazılarının vucüdunda etki gösteren aşırı duyarlılık reaksiyonu olarak ifade edilir (Gell ve Coombs, 1968; Abbas ve Lichtman, 2007). Duyarlılık reaksiyonunu tetikleyen maddeler antijen ve türevleri alerjen olarak adlandırılır. Polen alerjisine neden olan moleküller genelde 5-150 kDa molekül ağırlığına sahip proteinler veya glikoproteinlerdir (Alessandri ve diğ., 2009). Bu çalışmada Gaziantep ilinde yaygın olarak bulunan Kızılçam (*Pinus brutia* L.), Sinir otu (*Plantago major* L.) ve Doğu çınarı (*Platanus orientalis* L.) Polenlerinin alerjen protein konsantrasyonlarının belirlenmesi amaçlanmıştır. Polen örnekleri disseminasyon dönemlerinde (Nisan-Mayıs ayları) toplandı ve ekstraksiyon işlemleri gerçekleştirildi. Ekstraksiyonu yapılan polen proteinlerinin konsantrasyonları belirlendi. Klinikte hazır olarak kullanılan standart alerjen kitlerin protein konsantrasyonları ile kıyaslandı, sonuçlar değerlendirilmek üzere kaydedildi. Polen protien konsantrasyonlarının belirlenmesinde BCA Protein Assay Kit kullanıldı. Kit içeriğindeki protokol doğrultusunda yapılan çalışmada polen örneklerinin belirli oranda dilüsyonlar hazırlanarak 562nm dalga boyunda spektrofotometre cihazı (Thermo Multiskan Go) ile ölçüldü ve kit içerisindeki standart grafik üzerindeki denklem ile konsantrasyonlar (µg/ml) belirlendi. Bu işlemlerin yanında toplanan polenler işlemlere hazır hale getirildi ve daha sonra yapıları incelenmek için daimi preparat haline getirildi ve bu preparat hazırlama işleminde safraninli gliserin jelatin metodu kullanıldı. Polen morfolojisinin incelenmesi, polen ölçümü, polen fotoğraflarının çekim işlemleri inverted mikroskop (Nikon eclipse TS100) ile yapıldı. Ölçülen konsantrasyonlar sonucunda, ticari olarak klinik deri prick alerji testlerinde kullanılan hazır kitlerdeki protein konsantrasyon oranları ile kıyaslandığında çalışmış olduğumuz *Plantago major* L. polen protein konsantrasyonu standart (Ticari olarak alınan hazır deri prick alerji test kiti) ile aynı ölçüde olduğu saptanmıştır. Diğer bitkilerin (*Pinus brutia* L. ve *Platanus orientalis* L.) polen protein konsantrasyonlarının yüksek olduğu çalışma sonucunda tespit edilmiştir. Tüm bu değerlendirmeler sonucunda ithal edilen deri prick kitlerinin yerine ülkemizde bulunan *Pinus brutia L., Plantago major L., Platanus orientalis L.* bitki polenlerinin benzer protein konsantrasyonlarına sahip alternatif yerli kitlerin üretiminde kullanılabilme potansiyeline sahip oldukları belirlenmiştir.

Anahtar Kelimeler: *Pinus brutia L., Plantago major L., Platanus orientalis L.*, Polen, Alerjen.

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➢ **POSTER PRESENTATION**

Removal of Congo Red Dye from Aqueous Solution by Multi-Walled Carbon Nanotubes: Kinetics and Thermodynamic Study

Özlem Erdal[1*], Veyis Selen[1], Ömer Güler[2], M. Şaban Tanyildizi[1]

[1]Firat University, Engineering Faculty, Bioengineering Department, Elazig, Turkey
[2]Mersin University, Engineering Faculty, Metallurgical and Materials Eng. Department, Mersin, Turkey

Corresponding author e-mail: ozlemerdal6@gmail.com

Abstract

In this study, multi-walled carbon nanotubes (MWCNTs) were synthesized by chemical vapor deposition method and used to removal of Congo Red (CR) dye from aqueous solutions. MWCNTs characterized by Brunauer-Emmett-Teller (BET) surface area, fourier transform infrared (FTIR) analysis, zero point charge (pH_{zpc}) analysis, scanning electron microscopy (SEM) and transmission electron microscopy (TEM). All experiments were conducted in a closed flask (1000 mL). The flask, which contained the MWCNTs and 600 mL of the CR solution, was placed in a thermostatic water bath and mixed at 600 rpm for 60 min. The experiments to determine the effect of contact time were performed at 293, 303, 313 and 323 K for contact periods ranging from 0 to 60 min at conditions 0.25 g/L of MWCNTs and an initial CR concentration of 30 mg/L at pH 5.5. The aqueous solutions containing initial CR dye concentrations changing from 20 to 60 mg/L were contacted with MWCNTs at the various constant temperatures (20, 30, 40 and 50 ^{o}C) and to obtained equilibrium data used for the isotherm studies. At the end of equilibrium period, suspensions were centrifuged at 14100 rpm for 3 min, and the CR concentration in the supernatant was determined with a UV–vis spectrophotometer (Shimadzu UV 1800) at 498 nm. The equilibrium adsorption data were analyzed using the Langmuir, Freundlich and Redlich-Peterson Isotherm models and determined the thermodynamic parameters (ΔH^{o}, ΔG^{o}, ΔS^{o}) for the process. The results indicated that the Langmuir isotherm fits the experimental results well. The maximum adsorption capacity obtained from the equation of the Langmuir isotherm at 323 K was 138.3 mg/g. The thermodynamic parameters indicated that the adsorption of CR onto MWCNTs was a spontaneous, endothermic process. The experimental data (obtained from time course at different temperature) were analyzed by using the pseudo-first order, pseudo-second order adsorption kinetic models and intraparticle mass transfer diffusion model. The experimental data fit the pseudo-second order kinetic model. As a result, MWCNTs are a highly effective adsorbent of CR, and they can be used to remove CR from aqueous solutions.

Keywords: Adsorption, Congo Red (CR) Dye, Kinetic Models, Multi-Walled Carbon Nanotubes (MWCNTs), Thermodynamic Study.

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➢ **POSTER PRESENTATION**

Pirrol-1-Karboksamit Türevlerinin Ksantin Oksidaz İnhibitörüne Etkisi

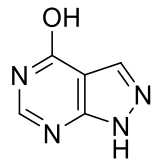
İbrahim Evren Kıbrız[1]*, Mustafa Saçmacı[1], İsmail Yıldırım[2], Samir Abbas Ali Noma[3], Burhan Ateş[3]

*[1]Bozok Üniversitesi Fen Edebiyat Fakültesi Kimya Bölümü, Yozgat, Türkiye
[2]Erciyes Üniversitesi Fen Fakültesi Kimya Bölümü, Kayseri, Türkiye
[3]İnönü Üniversitesi Fen Edebiyat Fakültesi Kimya Bölümü, Malatya, Türkiye

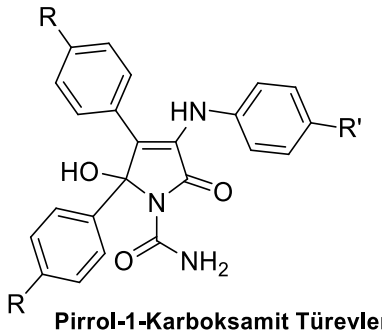
Sorumlu yazar e-mail: e.kibriz@hotmail.com

Özet

Gut hastalığı, hiperüriseminin neden olduğu eklem ve çevresinde ürat kristali depolanmasına neden olan pürin metabolizma hastalığıdır. Bu hastalığın tedavisinde Allopürinol, kronik gutta kanda artmış seviyede bulunan ürik asit seviyesini azaltmak için kullanılan bir ilaçtır. Ağızdan alınan ilaç ksantin oksidaz enzimini inhibe ederek pürin metabolitlerinin ürik asit son ürününe dönüşmesini engeller[1,2].



Allopurinol



Pirrol-1-Karboksamit Türevleri

Bu çalışmada, pirrol-1-karboksamit türevleri ve *Allopurinol* bileşiklerinin ksantin oksidaza karşı inhibisyon aktivitesi incelenmiştir.

Anahtar Kelimeler: Pirrol-1-karboksamit, Ksantin Oksidaz, Allopurinol, İnhibisyon Aktivitesi.

Bu çalışmaların bir kısmını destekleyen Bozok Üniversitesi Proje Koordinasyon Uygulama ve Araştırma Merkezine (Proje no: 6602c-FEF/17-72) teşekkür ederiz.

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➢ **POSTER PRESENTATION**

2-Thiobarbitürik Asit ile Tiollendirilmiş Pektin Temelli İlaç Taşıyıcı Hidrojellerin Sentezi

Özde Zeynep Güner*, Banu Arabacıoğlu-Kocaağa, Özge Kürkçüoğlu-Levitas, F. Seniha Güner

İstanbul Teknik Üniversitesi, Kimya-Metalurji Fakültesi, Kimya Mühendisliği Bölümü, İstanbul, Türkiye

Sorumlu yazar e-posta: ozdezeynepg@gmail.com

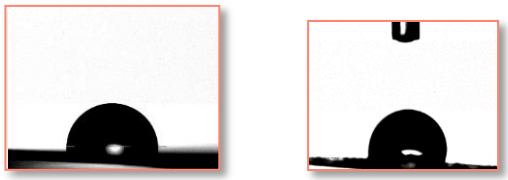
Özet

Pektin oksijen ve nem geçirgenliğinin yanında antimikrobiyal özelliği dolayısıyla medikal uygulamalarda çokça kullanılan doğal bir polisakkarittir.

Bu çalışmada 2-thiobarbitürik asit (TBA) ile tiollenmiş pektin temelli ilaç taşıyıcı yara örtüsü sentezi farklı çapraz bağlayıcı konsantrasyonlarında gerçekleştirilmiştir. Bunun yanında muhtemel sülfür köprüsü oluşumu ve etkinliği incelenmiştir. Çalışma için teofilin model ilaç olarak kullanılmıştır. Numuneler, yumurta kutusu modeli oluşturularak üç farklı yöntemle sentezlenmiştir: karıştırma, şişme ve absorpsiyon.

Sentez metodunun yanında çapraz bağlayıcı oranı (%5, 7 ve 10) ve tampon çözelti pH'ı (3,2, 4,6 ve 6,4) parametreleri incelenmiştir. Salım mekanizmasını açıklamak amacıyla şişme deneyi ve FTIR, SEM ve DSC analizleri yapılmıştır. Temas açı ölçer ile filmlerin suyla temas açışı ölçümü yapılmış ve film yüzeyinin hidrofilitesi belirlenmiştir. İlaç yükleme metodu ve ilaç salımı etkinliğini belirlemek için yükleme/salım çözeltisinin ilaç derişimi UV spektrofotometre kullanılarak belirlenmiştir.

Bulgular doğrultusunda çapraz bağlayıcı oranı artarken ilaç salımının azaldığı, bununla birlikte pH azalırken salınan ilaç miktarının arttığı belirlenmiştir. 2-Tiobarbitürik asit ile tiollenen ilaç yüklü filmlerin elastikiyetinin arttığı gözlemlenmiştir. Bu özellik özellikle yara örtüsü uygulamaları için önemlidir. Hidrojelin ilaç salım performansını kontrol eden pektin-TBA arasındaki moleküler seviyedeki etkileşimler moleküler dinamik simülasyonları ile incelenmiştir. Simülasyonlar Materials Studio yazılımı ile COMPASS kuvvet alanı kullanarak nanosaniye mertebesinde koşturulmuştur. İlaç salımı kinetik çalışmaları sonucu tiollenmiş pektin temelli hidrojellerin kontrollü ilaç salımı için iyi bir aday olduğu belirlenmiştir.



Şekil 1. Hidrojellerin temas açıları; (a) pektin film ve (b) %7 çapraz bağlayıcı ve TBA içeren film

Anahtar Kelimeler: Hidrojel, Pektin, İlaç salımı, Yara örtüsü, Moleküler Dinamik Simülasyonları.

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➢ **POSTER PRESENTATION**

Extraction and Antimicrobial Activity of Grape (*Vitis vinifera*) Seeds Oil from Winery Waste using Solvent Extraction

Veyis SELEN, Özlem ERDAL*, M. Şaban TANYILDIZI

Firat University, Engineering Faculty, Bioengineering Department, Elazig, Turkey

Corresponding author e-mail: ozlemerdal6@gmail.com

Abstract

Grape (*Vitis vinifera*) pomace consisting of grape seeds, grape stalks and grape skin is a by-production from wine, vinegar and molasses industries. Wine industry wastes may account almost 30 % (w/w) of the grapes used in wine production. Dry pomace accounts for nearly 25 % (w/w) of grapes, of which about 38 % (w/w) is seed. Grape seeds includes approximately from 3.95 to 20.71 % oil according to different grape varieties. Grape seeds oil is rich in unsaturated fatty acids, mainly linoleic and oleic acids, which are responsible for the nutritional value of the oil. Actually, linoleic acid is the predominant fatty acid in grape seed oil with quantities varying from 66 to 78 g/100 g of total oil, with a remarkable dependence on grape cultivar. In this study, extraction of grape seeds (Öküzgözü grape) was carried out in Soxhlet Extractor. The effects of extraction parameters (extraction time, size of grape seed particles, and solid/solvent ratio) on extraction yield were investigation. n-Hexane, as a solvent, was used in order to extract oil from grape seed. The grape seed was found out to contain 20.6 % raw oil. The effect of extraction time on the extraction yield of grape seed oil was investigated with different extraction time in the range of 30, 50, 70 and 100 min for 10 g grape seed. The extraction yields were determined as 58.3, 97.2, 100 and 100 % according to changing extraction time, respectively. The influence of size of grape seed particles on the extraction of grape seed oil was investigated by varying the grape seed grinding time at 1.0, 2.0, 3.0, 4.0, and 5.0 min by using blender (Waring 7011S). The extraction yields were determined as 77.3, 84.6, 96.2, 100 and 100 % at different grinding time, respectively. The effect of solid/solvent ratio on extraction yield were carried out using various amount grape seeds (10, 15, and 20 g) at constant extractor volume (250 ml). The extraction yields were determined as 100, 73.9 and 70.5 % according to changing amount of grape seed, respectively. Furthermore, the extracted grape seed oil exhibited a considerable antimicrobial activity against *Escherichia coli* the tested by disk diffusion method.

Keywords: Antimicrobial Activity, *Escherichia coli*, Grape Seed Oil, n-Hexane, Solvent Extraction.

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➢ **POSTER PRESENTATION**

Rodamin B Boyar Maddesinin İndol-3-Karbaldehit Türevleri ile Reaksiyonları

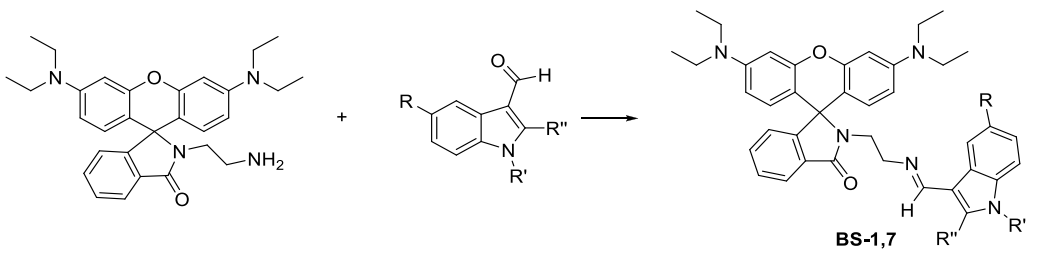
İbrahim Evren Kıbrız*, Ayşegül Atmaca, Mustafa Saçmacı

*Bozok Üniversitesi Fen Edebiyat Fakültesi Kimya Bölümü, Yozgat, Türkiye

Sorumlu yazar e-mail: e.kibriz@hotmail.com

Özet

Rodamin B boyar maddeler; kumaş, ip boyama amacı ile tekstil endüstrisinde, gıda endüstrisinde, ilaç endüstrisinde ve mikrobiyolojik çalışmalarda ise oranı, akış ve taşıma yönünü belirlemek için su içinde izlemede boya renk verici olarak kullanılmaktadır. Bununla birlikte floresans etkisi nedeni ile su yollarının takibi amacı ile hidrojeolojik çalışmalarda kullanılmaktadır[1,2].



Bu çalışmada, Rodamin B boyar maddesinin indol-3-karbaldehit türevleri ile reaksiyonları incelenmiştir. Elde edilen ürünler FT-IR, ^{1}H-NMR, ^{13}C-NMR spektroskopik yöntemleri ve HR-MS analizi ile karakterize edilmiştir.

Anahtar Kelimeler: Rodamin B, İndol-3-karbaldehit, Boyar Madde.

*Bu çalışmayı destekleyen Bozok Üniversitesi Proje Koordinasyon Uygulama ve Araştırma Merkezine (Proje No: 6602c/FBE/17-71) teşekkür ederiz.

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➢ **POSTER PRESENTATION**

Synthesis and Investigation of in Vitro Anticancer Effects of Novel Coumarin-Thiazole Derivatives

Hale Şamlı[1], Ümmühan Özdemir Özmen[2*], Buse Vatansever[3], Ömer Şahin[2], Esra Bakan[2], Zeynel Seferoğlu[2]

[1]Uludag University, Faculty of Veterinary Medicine, Department of Genetics, Bursa, Turkey
[2]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey
[3]Uludag University, Graduate School of Natural and Applied Sciences, Department of Biology, Bursa, Turkey

Corresponding author e-mail: ummuhan@gazi.edu.tr

Abstract

Cancer is an important health problem of our age. Failure of some drugs used in chemotherapy protocols makes it important to discover new drugs that are more effective for cancer patients. Therefore, many new chemical compounds have been synthesized in recent years to become drug candidates. Coumarin-thiazole is a group of compounds containing nitrogen and sulfur. While coumarin-thiazole and its derivatives exhibit a number of important biological and pharmacological activities, particularly their anti-cancer effects have been an important research area in recent years [1,2].

In this study, it is aimed to determine cytotoxic effects of the 4.4-diethylaminosalicylaldehyde coumarinthiazole ligand (L), PdL_2 and PtL_2 metal complexes on androgen independent prostate cancer cell line DU 145 and breast cancer cell line MCF-7. Working doses (1-100 μM) were prepared by diluting the stock solutions of compounds in culture medium. Cell viability was determined by the Trypan blue dye assay, which analyzes plasma membrane integrity. After 72 hours, the cytotoxic effects of all compounds on the cells were determined by tetrazolium-based MTT test and IC_{50} values (dose inhibiting 50% of cells) were determined. Cisplatin and Carboplatin were used as positive controls in the study. According to the results, L, PdL_2 and PtL_2 compounds decreased DU145 and MCF-7 cell viabilities in a dose-dependent manner and suppressed growth. In the MCF-7 cell line, the PtL_2 compound showed better cytotoxic activity than Carboplatin, a well known anticancer drug. The tested compounds are promising in terms of cytotoxic effects. We believe that further analysis is needed to better elucidate the cytotoxic mechanisms of action of these compounds.

Keywords: Coumarin-thiazole, Pt(II)/Pd(II) copmlexes, cytotoxicity, prostate and breast cancer

This work is supported by TUBITAK 214Z152.

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➢ **POSTER PRESENTATION**

Contribution of a New Record to the Turkish Macromycota from Muğla Based on Morphological and Molecular Evidence

Ezgin Tirpan*, Hakan Alli, Bekir Çöl, Esra Dibek

Biology Department, Faculty of Science, Muğla Sıtkı Kocman University, Turkey.

Corresponding author e-mail: ezgin0424@gmail.com

Abstract

Sixty six percent of the Datça Peninsula of the province of Muğla is covered with forest areas. This isolated peninsula having Mediterranean climate is rich in terms of plant and macrofungi diversity. *Agaricus dulcidulus* Schulzer species was determined in this region as a result of the field studies in 2016 and added as a new record to the list of the macromycota of our country. This species is especially found to be present in the regions in Europe, North America, North Africa and Asia. *A. dulcidulus* is also known as 'Rosy Wood Mushroom'. This edible mushroom can be found in open field regions of the forests, sand dunes, parks, gardens and meadows. Classical taxonomy and phylogenetic approaches were applied in this study in order to correctly identify this species. Also, the relationship of this species with other closely related mushrooms was illustrated and discussed. In conclusion, the current number "40" for the members of the genus *Agaricus* growing in Turkey is now revised to be "41" with the contribution of this study.

Keywords: *Agaricus dulcidulus* Schulzer., new record, phylogenetic, Turkey.

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➢ **POSTER PRESENTATION**

Synthesis and Characterization of Some Hydrazones Derived Imidazo[2,1-*b*]thiazole and Determination of Their Antiviral Activities

Mine İsaoğlu[1*], Nesrin Cesur[2]

[*1]Atatürk University, Institute of Natural and Applied Sciences, Erzurum, Turkey.
[2]Istanbul University, Faculty of Pharmacy, Department of Pharmaceutical Chemistry, Istanbul, Turkey.

Corresponding author e-mail: mine.isaoglu@gmail.com

Abstract

Hydrazones, related to ketones and aldehydes, belong to a class of organic compounds with the structure: $R_1R_2C{=}NNH_2$. These compounds possess diverse biological and pharmacological properties such as antimicrobial, antiviral, antifungal, anticancer, antimycobacterial, anti-inflammatory, analgesic, anticonvulsant, antiplatelet, cardioprotective, antimalarial, antihelmintic, antiprotozoal activities. Hydrazone compounds possess an azometine -NHN=CH- proton and the functionality of this group plays an important role in the synthesis of pharmaceutically active new agents for drug development. In the present study, some novel hydrazone compounds bearing imidazo[2,1-*b*]thiazole-5-carboxamide moiety were synthesized. For this purpose, ethyl 6-methylimidazo[2,1-*b*][1,3]thiazole-5-carboxylate, obtained from the reaction of 2-aminothiazole and ethyl 2-chloroacetoacetate, was reacted with hydrazine hydrate in absolute ethanol to afford 6-methylimidazo[2,1-*b*][1,3]thiazole-5-carbohydrazide. Condensation of these hydrazide compounds with a series of aromatic aldehydes gave eight new 6-methyl-*N*'-[(substituted phenyl)methylidene]imidazo[2,1-*b*][1,3]thiazole-5-carbohydrazides. The structures of the new compounds were confirmed by the data obtained from elemental analysis, UV, IR, ^{1}H-NMR, ^{13}C-NMR (APT) techniques. The antiviral activity of all synthesized compounds was evaluated in different viral test systems. According to the test results, the hydrazone compounds containing 3-bromobenzaldehyde, 2,6-dichlorobenzaldehyde and 2-methylbenzaldehyde moieties have been found to be effective against Feline Herpes Virus at 20.5, 24.0 and 14.0 µM concentrations, respectively, in CRFK cell cultures using HHA (EC_{50}= 3 µM), UDA (EC_{50}= 2 µM), and Ganciclovir (EC_{50}= 1 µM) as reference compounds. Additively, 3-bromobenzaldehyde derivative showed remarkable antiviral activity for Reovirus-1 in Vero cell cultures at 10 µM concentration using DS-10.000 (EC_{50}= >100 µg/mL), Ribavirin (EC_{50}= >250 µM) and Mycophenolic acid (EC_{50}= 2.8 µM) as the references. In conclusion, the present study is important in the synthesis and development of novel antiviral agents that can be used in the effective treatment of viral infections.

Keywords: Imidazo[2,1-*b*]thiazole, Hydrazone, Hydrazide-Hydrazone, Synthesis, Characterization, Antiviral Activity.

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➢ **POSTER PRESENTATION**

mTOR Pathway at a Glance: Modulation of Autophagy

Seyhan Sahan-Firat

University of Mersin, Faculty of Pharmacy, Department of Pharmacology, Mersin, Turkey.

Corresponding author e-mail: seyhansahan06@gmail.com

Abstract

Nutrients, growth factors, and cellular energy levels are key determinants of cell growth and proliferation. The mammalian target of rapamycin (mTOR), a serine/threonine kinase, is a master regulator of cellular metabolism and promotes cell growth in response to environmental cues. mTOR signaling pathway integrates both intracellular and extracellular signals and serves as a central regulator of cell metabolism, growth, proliferation, and survival. Discoveries that have been made over the last decade show that the mTOR pathway is activated during various cellular processes as tumor formation and angiogenesis, insulin resistance, adipogenesis, and T-lymphocyte activation. Dysregulation of mTOR signaling has been implicated in many human diseases, including diabetes, neurodegenerative diseases, inflammation, and cancer. Autophagy, the sequestration of intracellular components within autophagosomes and their degradation by lysosomes is a catabolic process that is important in organelle degradation and protein turnover. Among the numerous components involved in the regulation of autophagy, mTOR is a key component that coordinately regulates the balance between growth and autophagy in response to cellular physiological conditions and environmental stress. Despite the significant progress in the autophagy study field, the mechanism by which TOR regulates autophagy remains not clearly understood. Therefore, this study provides an overview of the mTOR signaling pathway with the mechanisms of this enzyme in autophagy regulation.

Keywords: mTOR pathway, serine/threonine kinase, autophagy.

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➢ **POSTER PRESENTATION**

Evaluation of Antioxidant Activities of Wormwood (*Artemisia absinthium*) Extracts

Rana Arıduru[1*], Gülnur Arabacı[2]

[*1]Sakarya University, Faculty of Science and Literature, Department of Chemistry, 54187 Sakarya, Turkey
[2]Sakarya University, Faculty of Science and Literature, Department of Chemistry, 54187 Sakarya, Turkey

Corresponding author e-mail:rana.ariduru1@ogr.sakarya.edu.tr

Abstract

Wormwood (*Artemisia Absinthium*) is a perennial herbaceous plant which is a member of *Asteraceae* family and contains essential oil, bitter substances such as absinthe, antioxidant agents such as flavon and pinene. While Wormwood is used for production of drug and drink, it has some medicinal effects such as relieving intestinal gas with flavone glycosides, tonic, diuretic and fever reducer.[1] The flavonoid structures found in plants are highly antioxidant active chemicals and have therapeutic efficacy against many chronic and cancer-like diseases. Therefore, antioxidant compounds play an important role in human dietary to improve their defense system .[2] In this study, we determined the antioxidant activities of four different solvent fractions (ethanol, methanol, acetone and ethyl acetate) obtained from Wormwood plant leaves (*Artemisia absinthium*) by employing two different assays such as Copper (II) ion reducing antioxidant capacity determination (CUPRAC) [3] and the chelating activity of iron (II) ions[4] in support of with UV-Vis spectroscopy. The results showed that ethyl acetat -extract of wormwood plant exhibited the highest Copper (II) ion reducing antioxidant capacity with CUPRAC method ($TEAC_{CUPRAC}$; 0.197), followed by methanol-extract of freshliver plant ($TEAC_{CUPRAC}$; 0.161), acetone-extract ($TEAC_{CUPRAC}$; 0.056) and ethanol-extract ($TEAC_{CUPRAC}$; 0.047). Determine the activity of the chelating activity of iron (II) ions values were found for methanol-extract (% 57.96), ethyl acetat-extract (% 22.44), ethanol -extract (% 23.11), acetone-extract (%8,76). As a result, by means of studying with different solvents we can choose the most appropriate solvent, thus accurate and high results about antioxidant capacity of plants can be obtained.

Keywords: Antioxidant activity, Wormwood, *Artemisia absinthium*.

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➢ **POSTER PRESENTATION**

Symphoricarpos albus Aqueous Extract Mediated Biosynthesis of Zinc Oxide Nanoparticles using Zinc Acetate and Zinc Nitrate as Precursors

Medine Güllüce[1], Mine İsaoğlu[2*], Mehmet Karadayı[1], Neslihan Hıdıroğlu İspirli[1], Gökçe Karadayı[3], Abdussamed Yasin Demir[2]

[1]Atatürk University, Faculty of Science, Department of Biology, Erzurum, Turkey.
[*2]Atatürk University, Institute of Natural and Applied Sciences, Erzurum, Turkey.
[3]Ağrı İbrahim Çeçen University, Faculty of Science and Art, Department of Molecular Biology and Genetics, Ağrı, Turkey.

Corresponding author e-mail: mine.isaoglu@gmail.com

Abstract

The snowberry (*Symphoricarpos albus*), also known as the waxberry or ghostberry, is the best-known member of the genus *Symphoricarpos* of Caprifoliaceae family. Besides striking white colors and honey-like juice of the fruits, they are high in various active compounds such as saponins, chelidonines, flavonoids and iridoids. This rich content of the snowberry makes it valuable for bioactivity studies. In this regard, the present study was conducted to investigate the potential for use of the snowberry plant in the biosynthesis of zinc oxide (ZnO) nanoparticles. For this purpose, the snowberry fruits were collected from the Atatürk University campus area in November 2017. The aqueous extract was prepared on a magnetic stirrer with constant stirring for 2h. Then, it was filtered by using Whatman® Grade 1 Qualitative Filtration Paper and kept at +4 °C in the dark until biosynthesis assays. Zinc acetate·$2H_2O$ and zinc nitrate·$6H_2O$ were chosen as the precursors. During the biosynthesis reactions, the aqueous extract was added into the precursor solution (200 mM), and then incubated with stirring for 6 h. In the end of this period, NaOH solution (2 M) was added and kept on the stirrer under the same conditions for overnight. The precipitate was collected by centrifugation and washed. Finally, the products were characterized by using TEM, SEM, EDX and XRD. According to the results, two different types of ZnO nanoparticles were successfully synthesized from the precursors by using the aqueous extract of snowberry fruits. The first type synthesized from Zinc acetate·$2H_2O$ precursor was plate-shaped and approximately 100 nm in size. The other one synthesized from Zinc nitrate·$6H_2O$ precursor was polygonal shaped with rounded corners and less than 50 nm in size. In conclusion, the results have been shown for the first time that the snowberry can be used for ZnO nanoparticle biosynthesis.

Keywords: Biosynthesis, Snowberry Aqueous Extract, Zinc Oxide Nanoparticles.

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➢ **POSTER PRESENTATION**

Effects of Sedative Plants on Human and Environmental Health

Senay Ozgen[1*], Zeliha Selamoglu[2]

[1*]Department of Plant Production and Technologies, Faculty of Agricultural Sciences and Technologies, Nigde Ömer Halisdemir University,Campus, Nigde 51240 Turkey
[2] Department of Medical Biology, Faculty of Medicine, Nigde Ömer Halisdemir University, Campus, Nigde 51240 Turkey

Corresponding author e-mail: senayugur01@gmail.com

Abstract

The consumption volume of medicinal plants rapidly increased due to the increase in natural product consumptions. Cultivation of plants which are collected from the nature has been increased rapidly due to demand by consumers. The most effective flavonoids and phenolic compounds which have the ability to donate hydrogen in the hydroxyl group of aromatic rings to prevent lipid, carbohydrates and proteins from becoming free radicals are found in leaf, flower and woody parts of plants. These natural plants are highly preferred in human diet because of their antioxidant characteristic which inhibits oxidation of phytochemicals in living organisms.
Plants are indispensable basic sources of life since human existence. Herbs and plant extracts have been used for the prevention and treatment of human diseases in many countries for medical purposes. Results of the latest studies show the importance of natural antioxidants in human health. Consequently, research has focused on the most powerful plants and herbal extracts as well as determining their importance on human and environmental health. Sedatives have an important role to minimize stress. The substances of sedatives act on nervous system to calm an individual. The active substances in medical plants are distributed by blood through tissues. On the other hand, the active component shows its effect on cell membrane or enzymes in the cell membrane. These agents are enzymatically affecting cell functions by either stimulate the function (stimulant) or act as a function (sedative).

Key words: Phenolic compounds, herb, plant, antioxidant, oxidation, sedative effect.

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➢ **POSTER PRESENTATION**

The Investigation of the Structural Electonical, Elastical, Thermodynamical, Dynamical and Optical Properties of Ge1-xSixO Metal Oxides Using the Ab-Initio Method

Orkun Sariarslan, M. Kemal Öztürk, Ali Gültekin

Gazi University

Corresponding author e-mail: sariarslanorkun@gmail.com

Abstract

Metal oxides such as SnO_2, TiO_2, MoO_3 or WO_3 can be applied for the design of suscebtibility layer of sensor as a strong material. In addition, the sensitiveness of sensor can be increased up to a few times by adding a new atom into the structure**.** The metal oxides such as AxB1-xO2 veya $A_xB1_{-x}O_3$ consisting of AO, BO, AO_3, AO_2, BO_3 and BO_2 metal dioxides are too important materials in terms of technological applications. The structural, optical and epitaxiel characterizations of these materials are adjested by the alloy amount, x. Therefore, the properties of the material can expanded for the special applications. . In this study, the calculations have been carried out using CASTEP which is based on Density Functional Theory. The structural, optical, electronic properties, elastic constants of Ge1-xSixO were researched. The structural, optical, electronic properties, elastic constants of $Ge_{1-x}Si_xO$ were researched. The absorbtion coefficient, the the function of energy loss and the recreactive index depending on the dielectrical constants were calculated using the Kromer-Kronig equations for the x ratios.

Keywords: CASTEP, Ab-INITIO METHOD, $Ge_{1-x}Si_xO$

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➢ **POSTER PRESENTATION**

Dezenfektanlarda Ambalaj Türlerinin Önemi

Meryem Koruyucu

Ege Üniversitesi, Fen Fakültesi, Egemikal Laboratuvarı, İzmir, TÜRKİYE

Corresponding author e-mail: meryem.koruyucu@ege.edu.tr

Özet

Biyosidal ürün gruplarından dezenfektanların[1] gerek medikal alanlarda gerekse insan sağlığında kullanılması nedeniyle içerdiği aktif madde miktarının stabil kalması büyük önem taşımaktadır. Aktif madde miktarındaki değişim üretici açısından maddi kayıplara neden olacağı için bu durum dolaylı olarak ülke ekonomisini de olumsuz etkileyecektir. Mevzuatlara baktığımızda ambalajlama için ürün tipine özgü bir ambalajlama çeşidinden bahsedilmemekte ve ürün tiplerinin ambalajlanması ile ilgili sadece su bazlı ve solvent bazlı ürünler [2] genel başlığı altında bahsedilmektedir. Bu durum da bu çalışmaya özgüllük açısından artı bir değer kazandırmaktadır.

Bu çalışmada dezenfektan gruplarından hipoklorit, povidon iyot ve hidrojen peroksit aktif maddelerini içeren formülasyonlar kullanılmıştır. Ambalaj türleri olarak HDPE-opak (Yüksek yoğunluklu polietilen), LDPE-yarı şeffaf (Düşük yoğunluklu polietilen), COEX (koekzistant), PP (Polipropilen), PE (Polietilen), PET(Polietilen tetraftalat) ve cam kullanılmıştır. Ürünlerden povidon iyot (% 8,3 'lük) ve hidrojen peroksite (% 49'luk) Biyosidal Ürün Analiz Laboratuvarlarının Çalışma Usül ve Esasları'na göre Hızlandırılmış Stabilite (54 °C-14 gün) uygulanmıştır [1]. Hipoklorit (% 12) aktif maddesi yüksek ısıya dayanıksız olduğu için 25 °C de 20 gün bekletilerek analizlenmiştir. Analiz yöntemi olarak titrimetrik metot (in-house) kullanılmıştır. Çalışma verileri hızlandırılmış stabilite öncesi ve sonrası görsel ve kimyasal olarak değerlendirilmiştir.

Sonuç olarak; aktif maddesi hidrojen peroksit olan formülasyonda cam hariç diğer ambalaj türlerinde görsel olarak deformasyonlar oluşmuş ve kimyasal olarak da en çok kayıp % 10 ile HDPE-yarı şeffaf ambalajda meydana gelmiştir. Povidon iyot için en uygun ambalaj cam olarak değerlendirilmiştir. Aktif madde olarak hipoklorit içeren formülasyonda % 15,7 ile en yüksek kayıp COEX ambalaj türünde hesaplanmıştır.

Anahtar Kelimeler: Dezenfektan, ambalaj, biyosidal

Kaynakça

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➢ **POSTER PRESENTATION**

DFT Calculations on Structural and Spectroscopic Properties of 1-(5-(4-methoxyphenyl)-3-phenyl-4,5-dihydro-1H-pyrazol-1-yl)ethan-1-one

Zeki Büyükmumcu[1*], Hatice Arı[2], Talat Özpozan[1], Funda Özdemir[1], İlhan Özer İlhan[1]

[*1]Erciyes University, Faculty of Science, Department of Chemistry, Kayseri, Turkiye.
[2]Bozok University, Faculty of Science & Art, Department of Chemistry, Yozgat, Turkiye.

Corresponding author e-mail: zekib@erciyes.edu.tr

Abstract

Pyrazole has strong medicinal scaffolds property and full spectrum of biological activities [1]. A pyrazole compound, 1-(5-(4-methoxyphenyl)-3-phenyl-4,5-dihydro-1H-pyrazol-1-yl)ethan-1-one has been optimized employing B3LYP functional with the basis set 6-31G(d). Conformational isomers were obtained by optimizing the structures in the minima of the potential energy surfaces for the selected dihedral angles. Frontier orbitals analysis, NBO analysis, charge distribution calculations and the calculations of vibrational spectra were performed using the most stable isomer. All these calculations were performed using the Gaussian 09 [2]. Potential energy distributions were calculated by VEDA 4 [3] Theoretical IR and Raman spectra have been compared with experimental ones.

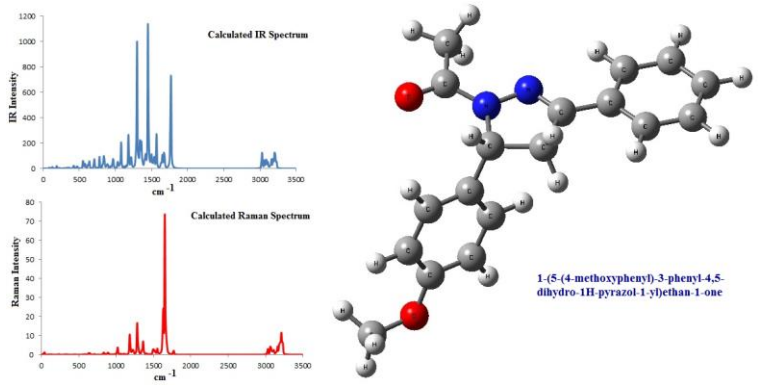

Figure Calculated IR & Raman spectra and optimized structure of title compound

Keywords: DFT, pyrazole, IR, Raman.

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➢ **POSTER PRESENTATION**

Natural Sources of Phenolic Antioxidants

Senay Ozgen[1]* H. Eda Ustuntas[1] Zeliha Selamoglu[2]

[*1] Department of Plant Production and Technologies, Faculty of Agricultural Sciences and Technologies, Nigde Ömer Halisdemir University, Campus, Nigde 51240 Turkey
[2] Department of Medical Biology, Faculty of Medicine, Nigde Ömer Halisdemir University, Campus, Nigde 51240 Turkey
Corresponding author e-mail:senayugur01@gmail.com

Abstract

The organic compounds that are not directly involved in primary metabolic processes of plants are called plant secondary metabolites. These compounds are required for plants to survive against herbivores, pests, and pathogens. Thus, secondary metabolites have biological, ecological and pharmacological importance. The phenolic compounds are the main group of plant secondary metabolites with antioxidant properties. Important natural sources of phenolic antioxidants are vegetables, fruits, nuts, cereals, legumes, herbs and spices, some animal and honey bee products. Among all vegetables, broccoli contains the highest total phenolic content, is followed by spinach, onions, carrots, cabbage, potato, lettuce and cucumber. Red pepper has the highest total antioxidant activity, is followed by broccoli, carrot, cabbage, onion, potato and lettuce. Blackberries and raspberries are the main source of anthocyanins and polyphenolic antioxidants. Wheat kernels consist of a number of phenolic compounds, named as vanillic, ferulic, caffeic, gentisic, syringic, *p*-coumaric salicylic, sinapic acids, and syringaldehyde. Barley comprises phenolic acids, tyrosine, proanthocyanidins, glycosides, anthocyanins, lignans, and materials related to lignin. The major polyphenolic compounds found in legumes (such as, lentils, soybeans, and chickpea) are phenolic acids, tannins, glycosides, anthocyanins, and tannins. Fruits are the excellent source of polyphenols, vitamins A, B, C, E and carotenoids that aid in decreasing the rate of chronic diseases. Increasing interest in the consumption of herbs and spices in food products are because of the special properties of many substances including, flavonoids, vitamins, terpenoids, carotenoids, phytoestrogens and minerals. These phytochemicals give these plants their distinct odor, taste, and color. The beneficial properties of these natural phytochemicals towards human health would be more effective if there would be defined strategies of their use in human diet. Further studies are to be needed on their isolation and evaluation using complementary procedures, mode of actions and their potential beneficial and toxic effects on human and animals.

Key words: Vegetable, fruit, herbs and spices, cereal, legume, phenolic antıoxidant.

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➢ **POSTER PRESENTATION**

Semi-Experimental and Dft Theoretical Analysis of Structural, Electronic, Optical and Dynamic Properties of $Al_{1-x-y}In_xGa_yN$ Alloys

Ali Gültekin, M. Kemal Öztürk, Orkun Sarıarslan

Gazi University

Corresponding author e-mail: aligultekin19@gmail.com

Abstract

Using the GGA function, the functional properties of AlInGaN alloys calculated with DFT for the alloy different In and Al alloy ratios and also the structural properties obtained from the xrd measurements and using quasi-experimental equations were compared. According to these calculations, $Al_{1-x-y}In_xGa_yN$ alloys have a semiconductor property in direct band transmission, Band gaps have values of 2.21 eV, 1.72 eV and 1.54 eV in the red colour spectrum of white light for x, y = (0.25, 0.50); x, y =(0.25, 0.25) and x, y = (0.50, 0.25). The alloys have 6 elastic constants since they all have a tetragonal structure. Compressibility changes according to increasing values of In vegard values and this properties is the higher value, (0.0068 1 / GPa) for x, y = (0.50, 0.25) rations of the alloy. Reel parts of refraction indices and dielectric constant show similar properties. The main peak of lose function reached in 18.82 eV value for x,y=(0.25, 0.25) that is the highest Plasmon frequency. As the Al value increases, Dulong-Petit value increases and the Dulong-Petit value of $Al_{0.25}In_{0.50}Ga_{0.25}N$ alloy is 45.5 cal / cell. Finally, $Al_{1-x-y}In_xGa_yN$ alloys with large band gap are suitable semiconductors optoelectronic devices such as diod and laser

Keywords: DFT, $Al_{1-x-y}In_xGa_yN$ alloys, GGA function.

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➢ **POSTER PRESENTATION**

Gypsogenin-Chalcone Hybrid Compounds

Gökçe Ulusoy[1], Safiye Emirdağ-Öztürk[1], Nuran Kahriman[2], Vildan Serdaroğlu[2], Nurettin Yaylı[3]

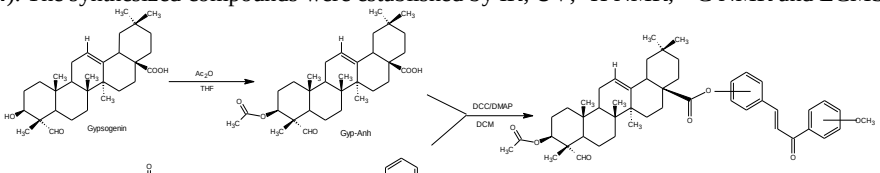
[1]Department of Chemistry, Faculty of Science, Ege University, Izmir, TURKEY.
[2]Karadeniz Technical University, Faculty of Science, Department of Chemistry, Trabzon, TURKEY.
[3]Karadeniz Technical University, Faculty of Pharmacy, 61080, Trabzon, TURKEY.

Corresponding author e-mail: safiye.ozturk@ege.edu.tr

Abstract

Saponins obtained from gypsophila species have a wide pharmacological character. Gypsogenin, which is used as a starting material, is obtained by boiling *Gypsophila arrostii* plant roots in water. The gypsogenin aglycone and the derivation studies on this aglycone are of great importance. Because of the gypsogenin aglycone is well known to have various biological properties such as antiviral, antitumor, anti-carcinogen, antioxidant and anti-cancer. On the other hand, chalcone compounds, a natural agylcone, have an important place among the natural compounds due to their properties such as biology, pharmacology and dye. Especially, it is display a wide range of biological activities, such as anticancer, antimitotic, antiinflammatory, antituberculosis, antimalarial, antileishmanial, nitric oxide regulation modulatory, cardiovascular, and antihyperglycemic, activities. Therefore, the **Gyp-Anh** compound was first obtained from gypsogenin aglycone, which is a natural compound, and then combined with methoxy-substituted chalcone derivatives which are also a natural compound. Thus, semi-synthesis studies of the novel gypsogenin-COO-chalcone hybrid compounds were carried out.

Firstly, **Gyp-Anh** compound was synthesized from gypsogenin aglycone and then was combined with chalcone derivates by using DCC/DMAP in DCM. Up to now, in our continuous work, we synthesized new gypsogenin-COO-chalcone hybrid compounds (**1-4**). The synthesized compounds were established by IR, UV, ^{1}H NMR, ^{13}C NMR and LCMS analyses.



Bileşik no	OH	R_1	R_2	R_3	R_4	R_5
1	o-	$-OCH_3$	-H	$-OCH_3$	-H	-H
2	m-	$-OCH_3$	-H	$-OCH_3$	-H	-H
3	p-	$-OCH_3$	- H	$-OCH_3$	- H	-H
4	o-	-H	$-OCH_3$	$-OCH_3$	$-OCH_3$	-H

Keywords: Gypsogenin, Chalcone, Hybrid Compounds.

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➢ **POSTER PRESENTATION**

The effect of formulation on functionality of modified chitosan films containing essential oil

A .Laaraibi[1*], I. Charhouf[1], S. Hamdouch[1], A. Bennamara[1], A. Abourriche[1], M. Berrada[1]

[*1]University Hassan II of Casablanca,Faculty of Sciences Ben M'sik, ,Department of Chemistry, Laboratory of Biomolecules and Organic Synthesis (BIOSYNTHO), Casablanca, Morocco

asmae90laaraibi@gmail.com

Abstract

Majority of materials employed for food packaging are non-biodegradable materials which do not meet increasing demands in society for sustainability and environmental safety. Thus, numerous biopolymers have been exploited to develop biodegradable food packaging materials. This work has therefore been addressed to investigate the effect of composition parameters on antimicrobial activity and properties of films based on modified chitosan containing different types ofessential oil. Specifically, response surface methodology, applied for the concentration of biopolymer and essential oilin the film forming dispersions to maximize the antimicrobial activity against two model microorganisms, Escherichia coli and Listeria innocua, as well as surface hydrophobicity, was used to determine the optimum conditions for comparison of most promising systems. Results showed that emulsion formulations had a significant effect on the intrinsic antimicrobial activity, but also that their interaction with the modified chitosan matrix affected film properties and resulting bactericidal action. This work hence contributes to promoting, through the advancement of the knowledge in the field, the incorporation of nanoemulsions of essential oils in edible films and coatings for integrated food preservation strategies.

Keywords: Modified chitosan, Antimicrobial activity, Essential oil, nanoemulsion.

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➢ **POSTER PRESENTATION**

Effect of Calcium on Plant Secondary Metabolites

H. Eda Ustuntas*, Senay Ozgen

Nigde Omer Halisdemir University, Faculty of Agricultural Sciences and Technologies, Department of Plant Production and Technologies, Niğde
Corresponding author e-mail: edaustuntas88@gmail.com

Abstract

Calcium is one of most abundant element in most soils. Since it is a common element plant has ability to tolerate high Ca2+ concentration in root zone area. In addition, plant cells also tolerate very high extracellular Ca2+ concentration. There are many studies that demonstrate variety of stimuli alter cytosolic free Ca2+ leading to a response in plant. Abscisic acid (ABA) is within terpenoid group called as plant hormone. The study showed that abscisic acid causes a rapid increase in Ca2+ concentration that precedes ABA-induced stomatal closure. Gibberellins, also a plant hormone in terpenoids, are involved in control of many physiological processes in plants, from germination to flowering. The level of calmodulin and activity of calmodulin dependent Ca-ATPase was increased in barley aleurone, thus suggesting and interaction of cytosolic Ca2+ and gibberellin action. Recent studies indicated that jasmonic acid affects calcium-dependent protein kinase expression and activity along with plant morphology. There are many studies shows that under stress condition application of extracellular Ca2+ increases the resistance of plants by elevation of phenolic in plants. Light signal was able to stimulate cytosolic Ca2+ level which was resulted increase in flavonoid synthesis of parsley leaf. Chlorogenic acid, caffeic acid and ferrulic acid are the main phenolics in potato tubers. These acids have antibacterial effects and reduce growth of soft rot. Chlorogenic acid produced by plant is for defense in result of infection or injury. It has been found that caffeic acid inhibits the growth of soft rot bacteria. Furthermore, combination of these two acids could reduce infection of soft rot pathogen in potatoes. Addition of Ca2+ in soil amendment increased concentration of phenylalanine (PAL), polyphenol oxidase (PPO) and peroxidase (POD) enzymes that are involved in plant defense mechanisms. All of these data suggests that both root zone and cytosolic Ca2+ has been linked to plant secondary metabolites, especially under stress conditions.

Keywords: Phenolics,cytosolic calcium, plant hormones.

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➢ **POSTER PRESENTATION**

The rs10733113 and rs10754558 Variants of NLRP3 Gene and Type 2 Diabetes

Cansu Ozbayer[1], Hulyam Kurt[2], Medine Nur Kebapci[3], Irfan Değirmenci[2], Emine Yagci[2*], Hasan Veysi Gunes[2]

[1] Kutahya Dumlupinar University, School of Health Sciences, Kutahya, Turkey.
[2] Eskisehir Osmangazi University, Department of Medical Biology, Eskisehir, Turkey.
[3] Eskisehir Osmangazi University, Department of Endocrinology, Eskisehir, Turkey.

Corresponding author e-mail: eminetsci@gmail.com

Abstract

In the pathogenesis of type 2 diabetes (T2DM) and obesity, the activated inflammatory response has an important role. The release of pro-inflammatory cytokines and chemokines causes β-cell death and chronic hyperglycaemia. NLRP3 (Nucleotide Oligomerization Domain-Like Receptor Family, Pyrin Domain Containing 3) is often expressed in macrophages and detects products of damaged cells such as extracellular ATP and crystalline uric acid as part of the inflammasome. Activated NLRP3 triggers an immune response. Mutations in the NLRP3 gene are associated with a number of organ-specific diseases. Accordingly, the aim of our study is to investigate the relationship of rs10733113 and rs10754558 gene variants of the NLRP3 gene, one of the main components of the inflammatory mechanism that plays an important role in the pathogenesis of type 2 diabetes. For this purpose, DNAs from 100 T2DM patients and 100 control individuals were genotyped using the Sequenom MassARRAY system and the Iplex GOLD SNP protocol for the NLRP3 rs10733113 and rs10754558 variants and then evaluated with appropriate statistical methods. As a result of our study, there was no statistically significant difference between T2DM risk and genotype frequencies of rs10733113 ($p= 0.424$) and rs10754558 ($p= 0.098$) variants. We found no significant association for the rs10733113 domain by evaluating homozygous, heterozygous, dominant, and recessive models ($p>0.05$). The GC frequency of rs10754558 genotype was significantly higher in patients with T2DM compared to CC genotype ($p=0.0360$). Additionally, in a dominant model (CC vs GC+GG), the cases who had at least one copy of allele G, were at increased risk of T2DM ($p=0.0338$).

Anahtar Kelimeler: Type2 diabetes, obesity, inflammation, NLRP-3.

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➢ **POSTER PRESENTATION**

Biosynthesis of ZnO Nanoparticles using Aqueous Extract of Potato Peel

Neslihan Hıdıroğlu İspirli[1], Gökçe Karadayı[2*], Mehmet Karadayı[1], Mine İsaoğlu[3], Medine Güllüce[1], Abdussamed Yasin Demir[3]

[1]Atatürk University, Faculty of Science, Department of Biology, Erzurum, Turkey.
[2]Ağrı İbrahim Çeçen University, Faculty of Science and Art, Department of Molecular Biology and Genetics, Ağrı, Turkey.
[3]Atatürk University, Institute of Natural and Applied Sciences, Erzurum, Turkey.

Corresponding author e-mail: gokcenardemir@gmail.com

Abstract

Zinc oxide (ZnO) nanoparticles have always been one of the most interesting topics in nanotechnology studies due to their unique features such as photocatalytic, electrical, electronic, optic and several biological activities. On the other hand, a growing concern in public and scientific communities on safety issues of conventionally synthesized nanoparticles has forced development of biosynthesis methods, which provide cheaper, biocompatible, nontoxic and environmentally friend nanomaterials. In this context, aqueous extract of potato peel was used for biosynthesis of ZnO nanoparticles from Zinc acetate·$2H_2O$ precursor in the present study. The potatoes were purchased from a local market in Erzurum. The aqueous extract was prepared on a magnetic stirrer with constant stirring for 2h. Then, it was filtered by using Whatman® No: 1 Filtration Paper and kept at +4 °C in the dark until the biosynthesis stage. In the biosynthesis reactions, the aqueous extract was added into the precursor solution (200 mM), and then incubated with stirring for 6 h. In the end of this period, NaOH solution (2 M) was added and kept on the stirrer under the same conditions for overnight. The precipitate was collected by centrifugation and washed. Finally, the products were characterized by using TEM, SEM, EDX and XRD. The results of the present study showed that ZnO nanoparticles were successfully biosynthesized from the Zinc acetate·$2H_2O$ precursor by using the aqueous extract of potato peel. The size of produced nanoparticles ranged from 10 nm to 90 nm. Moreover, all the nanoparticles were polygonal plate-shaped with rounded corners. As a result of this study, it was concluded that the aqueous extract of potato peel may be used for biosynthesis of ZnO nanoparticles from the Zinc acetate·$2H_2O$ precursor. Besides, more homogeneous sized products can be obtained with the further optimization studies in the near future.

Keywords: Biosynthesis, Potato Peel Aqueous Extract, Zinc Oxide Nanoparticles.

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➢ **POSTER PRESENTATION**

Role of Secondary Metabolites in Plant Under Drought Stress

H. Eda Ustuntas*, Senay Ozgen

Omer Halisdemir University, Faculty of Agricultural Sciences and Technologies, Department of Plant Production and Technologies, Niğde
Corresponding author e-mail: edaustuntas88@gmail.com

Abstract

Drought is one of the most important environmental factors limiting agricultural systems and food production. Drought stress is define as decreased water content and leaf water, potential and turgor loss, close of stomata and reduced cell growth and expansion. Tolerance to drought stress is seen in almost all types plant while the amount is variable according to species. Secondary metabolites have a major role in the adaptation of plants to environmental conditions. Environmental factors, temperature, humidity, light intensity, water content, minerals and co2 are factors that affect plant growth and secondary metabolites productivity. The decline in photosynthesis is the most significant under drought stress that change to secondary metabolites. Drought condition causes oxidative stress raises the amounts of flavonoids and phenolic acids. Studies showed that even medium drought stress is able to increase the synthesis of rosmarinic, ursolic, and oleanolic acid. In addition drought stress is seen to influence changes in the amount of chlorophyll "a" and "b" and carotenoids. However carotenoids have additional roles and partially help the plants to resist enemy and its plays a major role in the exchange of photosynthetic pigments. Anthocyanins are accumulated under drought stress. Plant tissues include anthocyanins are usually rather resistant to drought. Flavonoids have protective functions under drought stress. So, all of results from studies shows that secondary metabolites are effective to protect a plant that is under drought stress condition. This suggests that breeding program towards drought condition should include plant secondary metabolites as a selection criteria.

Keywords: drought stress, secondary metabolites, stress condition.

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➢ **POSTER PRESENTATION**

Characterisation of Olive Leaf extract Containing Double Emulsions Using NMR Relaxometry

Betül Çilek Tatar*, Gülüm Şumnu, Mecit Öztop

Middle East Technical University, Food Engineering Department, Ankara, Turkey

Corresponding author e-mail: bcilek@metu.edu.tr

Abstract

Encapsulation protects sensitive food ingredients against heat, oxygen, moisture and pH. In addition, it can mask the unwanted taste of nutrients that are added to the foods for fortification purposes. In this study, olive leaf extract (OLE) was encapsulated since it was regarded as one of the resources with the richest polyphenolic compounds among the plants. The objective of this research was to study the effects of different coating materials and storage time on encapsulation efficiency of OLE by using nuclear magnetic resonance relaxometry. Encapsulation was performed using double and primary emulsions. Double emulsion method was used to encapsulate OLE inside the aqueous phase of water-in-oil-in-water (W1/O/W2) emulsion which contains flour in outer aqueous phase. Lentil flour mixture (20% w/w) and chickpea flour mixture (20% w/w) were used in the outer aqueous phase of the double emulsion, as coating materials. Instant and storage stability analysis were performed for both emulsions. For NMR experiments, T1 longitudinal and T2 spin-spin relaxation time measurements were performed. T1 results were found to be highly related with the mobility of water protons and the change in T1 and T2 were observed during storage. Encapsulation efficiency of double emulsion was found to be significantly higher ($p < 0.05$) than the EE of primary emulsion. Usage of lentil flour gave significantly higher EE when compared to chickpea flour ($p < 0.05$). The microcapsules containing lentil flour and obtained after double emulsion could be recommended to be incorporated into foods to enhance their functionality.

Keywords: Double emulsion, encapsulation, nuclear magnetic resonance, olive leaf extract, stability, storage.

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➢ **POSTER PRESENTATION**

Kalsiyum Silikat Yapıların Sentezinde Ön Sıcaklık İşleminin Yapısal Özelliklere Etkisi

Buse Bozan, Fatma Suna Balcı*

Gazi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği, Ankara, Türkiye

Sorumlu yazar e-mail: sunabalci@gazi.edu.tr

Özet

Ülkemizde ekonomik düzeyde üretimi söz konusu olmayan, çeşitlilikleri Ca/Si oranlarından kaynaklanan sulu ve susuz kalsiyum silikat yapısında olan mineraller; yüksek poroziteleri, geniş yüzey alanları ve düşük yoğunluklarına rağmen yüksek mekanik dayanıma sahiptirler. Endüstride geniş yer bulan ve yakın Ca/Si oranlarına sahip susuz kalsiyum silikat wollastonit ($CaSiO_3$), sulu kalsiyum silikatlar (C-S-H) ise xonotlit ($Ca_6Si_6O_{17}(OH)_2$) ve tobermorittir ($11Å(Ca_5Si_6O_{16}(OH)_2.4H_2O$). Yüksek termal dayanımlarından dolayı sıcaklık yalıtımları ve yangından korunma amacıyla şekillendirilmiş mamul madde olarak kullanılmaktadır. Bu üstünlüklerine rağmen, doğada nadir olarak bulunmaları, safsızlık problemi ve homojen yapıya sahip olmamaları gibi dezavantajları bulunmaktadır. Homojen yapı özelliklerinin sağlanması ile mekanik dayanımını yüksek ve safsızlık içermeyen, istenilen Ca/Si oranlarında sentetik üretimi mümkündür. Sentezlenen örneklerin kristal yapısında en etkili parametre ise başlangıç Ca/Si oranıdır.

Bu çalışmada ön ısıtma işleminin yapılar üzerindeki etkisi incelenmiştir. Hammadde kaynağı olarak silis dumanı (Sigma, 0.2-0.3µm), TEOS (Aldrich, >99%) ve kalsiyum oksit (Sciencelab, >99%) kullanılmıştır. Ca/Si oranı ürün çeşitliliği açısından 0,83 ve 1,00 seçilerek, farklı sıcaklıklarda (40-60-80^oC) ön işlem uygulanmıştır. Sentez 160-200^0C aralığında otojen basınçta tamamlanmıştır. X-ışını kırınım desenlerinde ürün özelliklerini tanımlayıcı tipik C-S-H kristal pikleri tespit edilmiştir. Ca/Si oranının artırılması ile xonolit yapının tobermorit yapıya göre arttığı tespit edilmiştir. FT-IR analizlerine göre reaksiyon öncesi sıcaklığın büyük değişimler yaratmadığı ve Ca/Si=1 olduğu 80 ^oC ön sıcaklık işleminde tutulan numunede Si-O_4-tetrahedral (350-500 cm^{-1}), Si-O-Si-bükülme (671 cm^{-1}), SiO-germe titreşimleri (800- 1200 cm^{-1}) ve OH titreşim (3570 cm^{-1}) sinyalleri gözlenmiştir. TGA/DTA verilerinde C-S-H ara tabakasına adsorbe edilen suyun uzaklaşmasına ait 35-130 ^oC arasında endotermik pikler, 602 ^oC 'de şiddetli egzotermik bir pik ve tobermoritin wollastonite dönüştüğü aralık olan 830-850^oC arasında ise egzotermik piklere rastlanmıştır. 200-1100 nm aralığında çekilen Uv-vis spektrumunda Ca/Si oranının arttırılması ve ön sıcaklık işleminin düşük tutulması yansıma özelliğini düşürdüğü gözlemlenmiştir. Bu durum gıda ambalajı ve bitkilerde böcek etkilerini kontrol etmek için seralara uygulanan UV-indirgenmiş polimer filmler gibi uygulamalarda da kullanılabilmesini mümkün kılmıştır.

Anahtar Kelimeler: Xonotlit, tobermorit, Ca/Si oranı, kristal yapı.

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➢ **POSTER PRESENTATION**

Determination of Genes Expression Levels Associated with Salt Stress Mechanisms in *Triticum aestivum* L. Genotypes

Gökçe Karadayı[1*], Güleray Ağar[2]

[*1]Ağrı İbrahim Çeçen University, Faculty of Science and Art, Department of Molecular Biology and Genetics, Ağrı, Turkey.
[2]Atatürk University, Faculty of Science, Department of Biology, Erzurum, Turkey.

Corresponding author e-mail: gokcenardemir@gmail.com

Abstract

It is estimated that the world population will reach 9.3 billion rapidly increasing by 2050. Thus, human beings will be faced with starvation in the near future. As a result, cereals are the most important plant group for humanity. It is known that wheat in the cereals groups is also affected by salinity stress. Therefore, 11 genotypes of Triticum aestivum species (Tir, Karasu90, Haymana79, Kırmızıkılçık, Bayraktar2000, Es26, Müfitbey, Conkesme, Kocabuğday, Gerek79 ve Akbuğday45) were exposed to 200 mM salinity stress and *SOS1*, *SOD2* and *CIPK29* genes were investigated in these genotypes. Tolerant genotypes have been determined by calculating expression levels of genes. According to shoot and root analysis of wheat genotypes, genes showed higher upregulation in the root rather than shoot. It was observed that the genotype Mufitbey was the most tolerant in root analysis. In the stem analysis, only the *SOS1* gene showed upregulation in the Akbuğday and Tir genotypes. It has been determined that the *SOS1* gene is the most effective gene in salinity tolerance.

Keywords: Gene Expression, Salinity Stress, Wheat.

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➢ **POSTER PRESENTATION**

Highly Selective and Sensitive Determination of Be^{2+} Ion By Double Channel Sensor Based on Crown Fused Zinc(II) Phthalocyanine

Özgür Yavuz*, Mustafa Sezen, Yusuf Alçay, Zeliha Mermer, Seçil Kırlangıç Ataşen, Mustafa Semih Yıldırım, İsmail Yılmaz

Istanbul Technical University, Department of Chemistry, 34469, Maslak, Istanbul, Turkey

Corresponding author e-mail: yozguryavuz@gmail.com

Abstract

Beryllium is widely used in defense, aerospace, automotive, petrochemical, telecommunications, nuclear reactor industry (as moderator of slow neutrons in fusion reactions), metal and alloy production, due to its physical and chemical properties such as very high melting point, high stress and corrosion resistance, low density and high oxidation resistance. Especially beryllium salts such as beryllium fluoride, beryllium chloride, beryllium nitrate, beryllium sulphate are widely used in the industry. However, beryllium is the most toxic element when it is not radioactive. This metal is an occupational disease factor and causes Chronic Beryllium Disease (CBD) in workers exposed to certain doses of beryllium. Exposed to high doses of beryllium causes Acute lymphocytic pneumonia, which is not yet possible to treat in individuals. In the classification of the agents causing cancers by the International Agency for Research on Cancer (IARC), beryllium has been classified in the 2A group (proven to be causally causative of cancers in experimental animals and humans). When compared to Beryllium with other toxic metals such as Cd, Pb, the amount of exposure allowed in work areas is 100 times less. For these reasons, especially in areas where there is heavy industrialization, beryllium is extremely important in terms of human health.

In this context, a new sensor based on crown fused on zinc(II) phthalocyanine was synthesized. For the first time, the sensor based on the phthalocyanine was used to determine Be^{2+} ion. Double channel sensor was highly selective and sensitive for Be^{2+} and had a wide linear range with response time lower than 1 second in the room temperature.

Keywords: Phthalocyanines, Crown Ether, Beryllium, Spectrophotometric titration.

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➢ **POSTER PRESENTATION**

Quantum Chemical Studies on the Compound Containing Benzimidazole Ring

Mehmet Poyraz[1*], Zeynep Turhan İrak[2]

[*1]Afyon Kocatepe University, Faculty of Science and Arts, Department of Chemistry, Afyonkarahisar, TURKEY
[2]Igdır University, Faculty of Engineering, Department of Enviromental Enginerring, , Igdır, TURKEY

Corresponding author e-mail: poyraz@aku.edu.tr

Abstract

In the past few decades, benzimidazole and its derivatives have grasped much attention due to their potential as anticancer agents. Benzimidazole is a chemically stable heterocyclic aromatic organic compound. Benzimidazole derivatives possess different pharmacological activities such as anti-viral, anti-cancer, anti-fungal, anti-microbial and anti-bacterial.

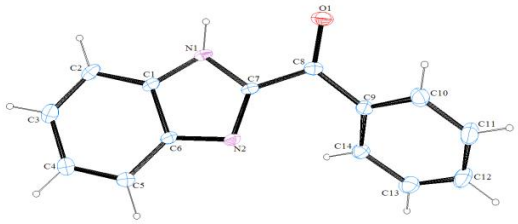

Figure 1: The molecular geometry of (2-(2'-Hidroxyphenyl)Benzimidazole) is determined with Single Crystal X-ray Diffraction

The compound with benzimidazole ring (2-(2'-Hidroxyphenyl)Benzimidazole) was characterized by single crystal X-ray diffaraction. In this study, some properties of compound such as structural, molecular, electronic and optic properties have been investigated theoretically using YFT technique. All theoretical calculations have been made using Gaussian 09W in YFT chosen Becke-3-parameter-Lee-Yang-Parr (B3LYP) hybrid functional. A good agreement was found between YFT and experimental results with small differences. In addition orbital border in gase phase was calculated. The molecular parameters (I; Ionization potential, A; Electron affinity, η; Molecular hardness, S; Molecular softness, χ; Electronegativity), the molecular electrostatic potential map, nonlinear optical properties were calculated and interpretated by using calculated orbital border energies.

Keywords: Benzimidazole, DFT, quantum chemical calculations, computational chemistry.

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➢ **POSTER PRESENTATION**

Mezo Gözenekli Metal-Silika Sütunlu Kil Katalizör Sentezinde Silika/Kil Oranının Etkisi

Burcu Yeter*, Fatma Suna Balcı

Gazi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: sunabalci@gazi.edu.tr

Özet

Şablon mekanizması üzerinde oluşturulmuş MCM-41 (Mobil Composition of Matter No:41) benzeri silika mezo gözenekli yapıların ve katalizör desteği olarak kullanılan sütunlu killerin (SK) üstün özelliklerinin yapıya kazandırıldığı Silika Sütunlu Killer (SSK) yüksek mikro gözeneklerden dolayı katalizör/katalizör desteği olarak kullanılabilirler. SSK yapılar, TOT (Tetraeder-Oktaeder-Tetraeder 2:1) yapıya sahip killerin katmanları arasına büyük organik şablonun yerleşmesi ve şablon etrafına silika duvarların kondenzasyonu ile hem kil katmanlarının arasının açılması hem de galerilerin yaratılması prensibine dayanır. Şablon uzaklaştırılması ile mezo gözenekli yapı oluşurken, silika duvar içerisinde de mikro gözenekler meydana gelmektedir. Sentez aşamasında veya sentez sonrası modifikasyonlar ile katalitik aktif bileşen yapıya yüklenerek yapının katalitik özellikleri iyileştirilebilir.

Sentez çalışmalarında kil kaynağı standart Wyoming türü SWy-2, yüzey aktif madde olarak setil trimetil amonyum bromür (CTAB), yardımcı yüzey aktif madde olarak oktilamin (OA) ve silika kaynağı olarak tetra etil ortosilikat (TEOS) kullanılmıştır. Farklı silika/kil ve metal/silika oranlarında sentez çalışmaları yürütülmüş ve farklı oranlarda titanyum ve demir yüklemeleri hidrotermal olarak gerçekleştirilmiştir. X-ışını kırınım desenlerinde, SWy-2 kilinin 1,16 nm olan bazal boşluk değerinin numunelerde 1,31-6,89 nm aralığında değişken artış gösterdiği izlenirken TEM görüntülerinde silika yapının çoğunlukla kil öbekleri arasında meydana geldiği görülmüştür. UV ve FTIR spektrumlarında silika duvar oluşumunun beklenilen etkisini; Si-O bağlarının tanımlayan bölgelerde sırasıyla 192-304 nm ve 1000-1100 cm^{-1} belirgin pik artışları ile desteklemiştir. ICP sonuçlarında gözlenen belirgin silisyum artışı da silika kil yapının başarıyla oluşturulduğunu gösterirken, aktif metal yükleme başarısının da elde edildiği gözlenmiştir. Silika/kil oranı artışı ICP analizinde silika miktarı ve spektroskopik ölçümlerde silika pik şiddetinde artışlara yol açmıştır. BET yüzey alanı değerlerinin 554-1874 m^2/g aralığında değişmekte olup, silika/kil oranı artışı ve demir yüklemenin yüzey alan artışına olumlu etki yaptığı görülmüştür.

Anahtar Kelimeler: Hidrotermal sentez, demir, titanyum, Mezo gözenek, Mikro gözenek, Karakterizasyon.

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➢ **POSTER PRESENTATION**

Efficient Preparation of Novel Nitropyrimidines

Cansu Gülbenek, Muhammet Yıldırım*

Abant İzzet Baysal Univ., Faculty of Arts and Sci., Department of Chem., TR-14030, Bolu, TURKEY.

Corresponding author e-mail: muhammetyildirim@ibu.edu.tr

Abstract

Pyrimidines are biologically very important heterocycles and represent by far the most ubiquitous members of the diazine family with uracil and thymine being constituents of ribonucleic acid (RNA) and deoxyribonucleic acid (DNA) and with cytosine [1,2]. Many analogs of pyrimidines have been found to posses antibacterial, antifungal, anti-inflammatory, antiviral, antioxidant, antihistaminic, anticancer activities etc.[3,4] The aim of present study was to create an alternative synthesis method for the preparation of novel pyrimidines which would exhibit different biological activities (antibacterial, antioxidant, cytotoxic).

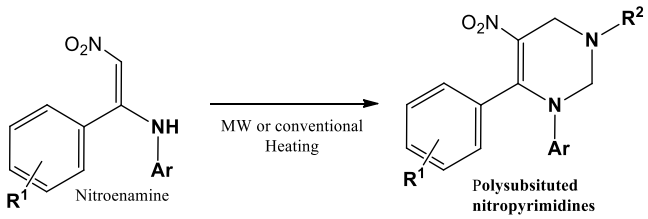

Figure 1: General synthesis method for preparation of nitropyrimidines

Several polysubstituted pyrimidines have been prepared and isolated by FCC and after the purification they were fully characterized by means of IR, proton and carbon NMR analyses. The data obtained from spectra of all products proved the structure of expected products which were obtained in moderate to good yields.

Keywords: Mannich, enamine, cyclisation, pyrimidine, cytotoxic, antibacterial.

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➢ **POSTER PRESENTATION**

Synthesis, Characterization of Novel Zn(II) Complex with Imidazole Derivative

Mehmet Poyraz[1*], Musa Sari [2]

[1]Afyon Kocatepe University, Faculty of Science and Arts, Department of Chemistry, Afyonkarahisar, Turkey
[2] Gazi University, Department of Physics Education, Besevler, 06500-Ankara, Turkey

Corresponding author e-mail: poyraz@aku.edu.tr

Abstract

Imidazole a five membered heterocycle having three carbon atoms, two nitrogen atoms and two double bonds. Imidazole is found in several well-known components of human organisms including the amino acid histidine, Vit-B12, purines, histamine and biotin. In the past decade, the medicinal chemists synthesised large number of novel imidazole derivatives because of important therapeutic properties of imidazole related drugs

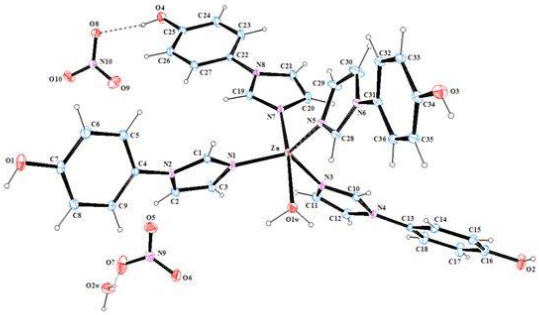

Figure 1. The molecular structure of complex

In this study, Zn(II) complex of 4-(Imidazol-1-yl)phenol has been sythesised. The structure has been determined using variosus analytical methods such as melting point determination, elemental analysis, ^{1}H NMR, IR, magnetic susceptibility, molar conductance techniques and Single-crystal X-ray diffraction. The complex was prepared by mixing zinc(II) salt, 4-(Imidazol-1-yl)phenol and potassium nitrate in the proper stoichiometric ratio. The mixture was stirred at 40 ºC. X-ray quality crystals were obtained by recrystallisation. The complex has the formula $[Zn(NO_3)_2(C_9H_8N_2O)_4(H_2O)_2]$. It crystallized in the monoclinic crystal system with Triclinic, P -1 space group. In the complex, the Zn ion displaying a square pyramide coordination environment defined by four of N atoms of 4-(1Himidazol-1-yl)phenol ligands and coordinated O atoms of water molecule.

Keywords: Zn(II) complex, 4-(Imidazol-1-yl)phenol, Crystal Structure, Square pyramide complex

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➢ **POSTER PRESENTATION**

Protective Effect of Different Boron Compounds on Aluminum Induced Genotoxicity and Oxidative Damage in Cultured Human Blood Cells

Hasan Türkez[1], Özlem Özdemir Tozlu[1], Abdulgani Tatar[2], Ahmet Hacımüftüoğlu[3], Fadime Geyikoğlu[4], Sait Keleş[5], Elvan Şahin[6*]

[1]Erzurum Technical University, Faculty of Science, Department of Molecular Biology and Genetics, Erzurum, Turkey
[2]Ataturk University, Faculty of Medicine, Department of Medical Genetics, Erzurum, Turkey
[3]Atatürk University, Faculty of Medicine, Department of Pharmacology, Erzurum,Turkey
[4]Atatürk University, Faculty of Science, Department of Biology, Erzurum, Turkey
[5]Ataturk University, Faculty of Medicine, Department of Biochemistry, Erzurum, Turkey
[*6]Sakarya University, Faculty of Medicine, Department of Histology and Embryology, Sakarya, Turkey

Abstract

Although many metals are known to stimulate DNA damage and prevent DNA repair, there is scarce information about aluminum (Al) and its genotoxic activity. The available data suggests that Al may cause DNA damage by inducing reactive oxygen species or by damaging lysosomal membranes and modifying the chromatin structure. Boron compounds like borax (BX) and boric acid (BA) are the major components of industry and their antioxidant role has recently been reported. The present study aimed to evaluate the antioxidative potential of some boron compounds including borax (BX), boric acid (BA) and colemanite (Col) in modulating the Aluminum chloride ($AlCl_3$) induced genotoxicity in cultured human bloods. Cultured human lymphocytes were treated with $AlCl_3$ (10^{-4} M) and three different boron compounds (5 and 10 ppm) for 24 h. Some genotoxicity studies (Comet assay, micronucleus and chromosome aberration assays) and some biochemical parameters [superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GSH-Px), malondialdehyde (MDA), total antioxidant capacity (TAC) and total oxidative status (TOS)] were performed on blood cells. According to the genotoxicity assays, all tested boron compounds did not show any genotoxic potential. It is also determined that these compounds showed different protective effects against $AlCl_3$ induced genotoxicity. Furthermore, the biochemical findings showed that boron compounds, especially BA and BX, exhibit antioxidant properties against $AlCl_3$. As a conclusion Boron containing compounds can be proposed to prevent Al toxicity as a nutritional supplement or a functional food component.

Keywords: Aluminum chloride, Antioxidant, Boric acid, Borax, Colemanite, Comet assay, Human blood, MDA, SOD.

Acknowledgement: This work was supported by the National Boron Research Institute (No: Ç0256)

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➢ **POSTER PRESENTATION**

Simple Way to New Substituted Oxothiazolo [3,2-c] Pyrimidines

Kübra Uysal, Muhammet Yıldırım*

Abant İzzet Baysal Univ., Faculty of Arts and Sci., Department of Chem., TR-14030, Bolu, TURKEY.

Corresponding author e-mail: muhammetyildirim@ibu.edu.tr

Abstract

Thiazolopyrimidines constitutes the main heterocyclic core of molecules containing N,S atoms which exhibit variety of biological activities. Especially, thiazolo[4,5-d]pyrimidines being tha S-analogs of pürine bases and thiazolo[3,2-a]pyrimidines gain great attention by the researchers working for development of new drugs in area of medicinal chemistry and drug industry. Thiazolopyrimidine containing molecules exhibit difeerent biological activities such as antitumor-cytotoxic, immunomodulatory,antimicrobial, antiinflammatory, anticancer etc [1-5] Last derivative, thiazolo[3,2-c]pyrimidine, has very rare synthetic and no biological activity study example in recent literature. [6,7] Therefore, alkyl 2-(4-oxothiazolinidene) carboxylate and different amines were reacted efficiently in the presence of formaldehyde and acetaldehyde to afford many 3-oxothiazolo[3,2-*c*]pirimidine-8-carboxylates in high yields (fig.1). The structures of title compounds were fully eluciduated by IR, NMR (^{1}H,^{13}C) and HRMS analyses.

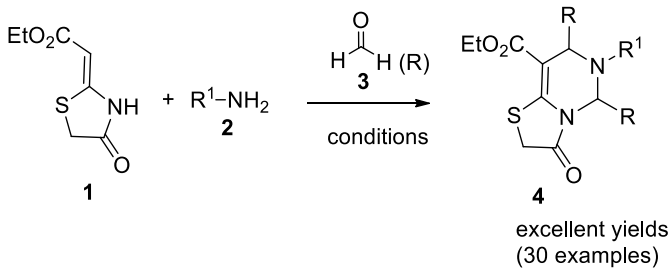

Figure 1: Preparation of new thiazolo[3,2-c]pirimidine carboxlates via Mannich reaction

Keywords: Thiazolopyrimidine, enamine, cyclisation, cytotoxic, antibacterial, microwave.

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➢ **POSTER PRESENTATION**

Investigation Effects of Some Food Additives on Paraoxonase (PON) Enzyme

Adem Ergün[1*], Nahit Gençer[2], Oktay Arslan[2]

[1]Balikesir University, Science and Technology Application and Research Center, Balikesir, Turkey

[2] Balikesir University, Faculty of Art and Science, Department of Chemistry, Balikesir, Turkey

Corresponding author e-mail: ademergun@balikesir.edu.tr

Abstract

Human serum paraoxonase is an enzyme that is bound to HDL and contains calcium and whose physiological substrate is unknown. Paraoxonase (PON1, EC3.1.8.1) is an important liver enzyme that hydrolyzes organophosphate agents (OP) and nerve gases, and is a protective effect against the formation of lipid peroxides and bacterial endotoxins by the oxidation of LDL.

In this study, the in vitro effect of some food additives (Ascorbic Acid, Folic Acid, Sodium Tartrate, Sodium Sulphite) on purified PON1 enzyme were determined. Other substances except Sodium Sulphide inhibited the PON1 enzyme. IC_{50} values of the inhibiting compounds were calculated.

Keywords: Paraoxonase, Purification, Inhibition, Food additives.

Acknowledgment: This study was supported by Balıkesir University Scientific Research Projects Unit 2013-0003.

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➢ **POSTER PRESENTATION**

Influences of Plasticizer Loading Levels to the Poly (Vinyl Alcohol)/Plasticized Casein Films

Bedriye Ucpinar[1*], Ipek Ozdemir[1] , Tugba Avcı[1] , Ayse Aytac[1,2]

[1] Kocaeli University, Department of Chemical Engineering, 41380 Kocaeli, Turkey
[2] Kocaeli University, Department of Polymer Science and Technology, 41380 Kocaeli, Turkey

Corresponding author e-mail: aaytac@kocaeli.edu.tr

Abstract

Poly (vinyl alcohol) (PVA) is water soluble vinyl polymer [1]. It is a very common used polymer to make a blend with a lot of hydrophilic synthetic polymers, biopolymers and proteins. PVA has many good properties such as compatibility, good tensile strength, toughness, a barrier to O_2 and aroma. For the food packaging applications, PVA can blend with proteins like casein [2]. Casein is a protein component in milk, which can create biodegradable films from its aqueous solutions. Casein-based films have excellent nutritional value, sensory properties and protection from environmental factors, high gas barrier properties. These features make casein, attractive for various applications, such as food packaging, edible and protective films. Besides these, using casein for packaging material has some limitations such as low mechanical properties and barrier to water vapour [3]. The tensile strength of casein can be increased by synthetic polymer addition such as PVA. To enhance the flexibility, polyol type plasticizers like poly (ethylene glycol) (PEG can be used as a plasticizer for the casein [4,5].

In our study, plasticized and non-plasticized casein-PVA films were prepared by solution casting method. Casein and PEG were dissolved in 5% triethanolamine (TEA) at 40 ^oC. PEG/casein ratios were 0/100, 10/90, 15/85, 20/80, 25/75 w/w in 6% total solid concentration. Also, PVA was dissolved in water at 80 ^oC. After that, casein/PVA solutions were blended at the ratio of 20/80 for 15 min. Each solution contains 6.0 wt% total solid. After the stirring, solutions were cast onto a polystyrene petri plate and they were dried. Obtained films were peeled off. The properties of films were determined by using tensile test, thermogravimetric analysis (TGA), differential scanning calorimetry (DSC), Fourier transform infrared spectroscopy (FTIR) and contact angle measurement. According to tensile test results, strain at break value of PVA/Casein film increased with the addition of 10 and 15% PEG as 17 and 45% respectively. When the PEG addition was increased up to 20, a slight reduction in the strain at break value was observed.

Keywords: Casein, Poly (vinyl alcohol), Films, Plasticization

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➢ **POSTER PRESENTATION**

Unprecedented One Dimensional Coordination Octahedral Polymeric Structure of Crown Fused Zinc(II) Phthalocyanine

Özgür Yavuz, Kerem Kaya, Mustafa Sezen*, Yusuf Alçay, Zeliha Mermer, Seçil Kırlangıç Ataşen, Mustafa Semih Yıldırım, İsmail Yılmaz

Istanbul Technical University, Department of Chemistry, 34469, Maslak, Istanbul, Turkey

Corresponding author e-mail : m.sezens@gmail.com

Abstract

Phthalocyanines (Pc) have become one of the most important materials both in conventional and high-tech fields, because of their perfect and useful chemical and physical properties such as optical, electrical, magnetic and catalytic properties, and their high physical and chemical stability, Nowadays, phthalocyanines are widely used as dyestuffs and pigments, photosensitizers, photo-conducting agents, chemical sensors, electrochromic materials, photodynamic reagents, media for computer read/write discs, electrodes, non-linear optical materials, liquid crystals, catalysts, magnetic materials, conductors, and so on.

The lack of solubility for planar Pc with strong intermolecular π-π stacking and consequently as parents, especially for unsubstituted Pc, confronts the challenging challenges of Pc chemistry development with limited types of unsubstituted Pc. In addition, these problems prevent deep research into the crystal structures of physical identity; this is not only to make it difficult to establish a relationship between various physical behaviours and solid state structures of computers, but also to its widespread application at the same time. As a result, in recent years, a large number of neutral Pc and ionic and sandwich-type Pc have been synthesized, including substituents at the peripheral α or β positions or axial positions, and their single crystal structures have been solved by X-ray diffraction analysis.

In this work, the one-dimensional octahedral polymeric structure of zinc(II) phthalocyanine has been obtained for the first time as crystals and its nature with the molecular conformation of zinc phthalocyanine was unambiguously revealed by single-crystal X-ray diffraction analysis and showed each zinc(II) ion to be hexacoordinated by the isoindole and crown oxygen atoms of an outer phthalocyanine ring.

Keywords: Phthalocyanines, Crown Ether, One Dimensional Coordination Polymer, X-Ray Diffraction

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➢ **POSTER PRESENTATION**

Proliferation of mononuclear lymphocytes by Somatic o.antnige of *Escherichia coli*

Dr. Shahlla Ali Hassan

Al -Assra University College / Al Assra University College

Abstract

The ability of somatic O.antigen (O.Ag) that isolated from ***Escherichia coli*** as mitogen was tested ;and observe its effect on normal human blood cells in complete RPMI_1640 (tissue culture media) using the control for comparison..

Ten blood samples were collected from healthy males , average age 25.1% years in heparinized sterile tubes. The somatic O.antigen which isolated from ***Escherichia coli*** in two concentrations 50µg/ml and 200µ/ml that were prepared and applied in current study.

Lymphocyte transformation test using whole blood was performed in order to study the effect of (O.Ag) concentrations on human lymphocyte transformation.

The results showed that there were differences between control samples and lymphocytes stimulating with Phytohemagglutinin (PHA) and between control sample and 50µg/ml somatic O-antigen, also there was differences between control sample and 200µg/ml somatic O-antigen concentrations. That is mean that the higher concentrations of the somatic O-antigen have higher effect on human lymphocyte transformation and it is better in effect on human lymphocyte transformation than the lowest concentration.

We hope that these conclusions and the commandments to be with great significance.

And ask God to live up to science and to protect Iraq and its people. It is reconciled to God.

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➢ **POSTER PRESENTATION**

Trace-amount Beryllium(II) Ion Determination with New Water Soluble Asymmetric Zinc(II) Phthalocyanines

Özgür Yavuz, Yusuf Alçay*, Mustafa Sezen, Zeliha Mermer, Seçil Kırlangıç Ataşen, Mustafa Semih Yıldırım, İsmail Yılmaz

Istanbul Technical University, Department of Chemistry, 34469, Maslak, Istanbul, Turkey

Corresponding author e-mail: yusufalcay@gmail.com

Abstract

Phthalocyanines have been extensively investigated in recent years due to their use in photocopiers as photoconductors, chemical sensors, electro and photocatalytic processes, electrochromic applications and photodynamic therapy and cancer treatments, in addition to their traditional use as pigments and pigments, The water-soluble phthalocyanines are obtained by the addition of sulfonyl, carboxyl or quaternary amino groups while permitting the dissolution of the phthalocyanines in the apolar solvents by substitution of the bulk or long chain groups. It is also possible to make targeted adjustments for the photophysical, photochemical and electrochemical behavior of phthalocyanines via modifications of periphery of the macroring or coordinated metals into cavity of macrocycle.

In this work, new phthalocyanines with high stability, water-soluble and electroactive properties were synthesized by incorporating benzo-9-crown-3 ether and *N*, *N*-dimethylaminophenyl groups directly attached to the macrocycle and the sensor properties of these compounds were determined spectrophotometric (UV- Vis, fluorometric) titration methods to select and precisely determine the trace amount of Be^{2+} ions.

Keywords: Asymmetric Phthalocyanines, Crown Ether, Beryllium, Spectrophotometric titration

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➢ **POSTER PRESENTATION**

Characterization of Protein Hybrid Flower Structures, and Their Use in the Removal of Pb^{2+} Ions from Water by Hybrid Structures

Cansu Akgöl[1*], Nüket Tirtom[2]

[1]Celal Bayar University, Faculty of Science and Arts, Department of Chemistry, Manisa, Turkey
[2]Celal Bayar University, Faculty of Science and Arts, Department of Chemistry, Manisa, Turkey

Corresponding author e-mail: cansu_akgol@hotmail.com

Abstract

Environmental pollutants, especially water pollutions, have been one of serious problems in the modern industrial societies, and there is therefore a significant need for new approaches to water purification from the development of eco friendly functional materials and their cost-effective fabrication method [1]. Metal pollutants are released into the environment and enter the food chain, thus causing serious danger to animals and people. It is therefore important that metal ions are removed from the environment before the wastes are released into the environment. Precipitation, co-precipitation, chelate formation, electrolysis, membrane, adsorption and biosorption techniques can be used to remove heavy metal ions from the water environment. One of the methods widely used today for the removal of heavy metals is the adsorption of heavy metals [2]. For this reason, there is a great need to develop environmentally friendly functional materials and to bring new approaches to water treatment with these cost-effective manufacturing methods.

In this study, protein hybrid flowers were used for the removal of Pb^{2+} ions from aqueous solutions. Hybrid flower adsorbents were produced from co-precipitation method in the presence of anhydrous $CuSO_4$ and PBS [3] (saline phosphate buffer) from the casein protein, which constitutes 80% of the cow's water. The adsorbability of the Pb^{2+} ions of the hybrid flowers was investigated Pb^{2+} ions adsorb more than 70% in 15 minutes. The large surface areas and porosity of the micro-size hybrid flowers enable water purification through adsorption of different heavy metal ions. Optimum contact time was determined at the first stage of the optimization studies of the metal binding capacities of the prepared hybrid flowers. For this purpose, the hybrid flowers with Pb^{2+} ion containing solutions were treated at different times and the optimum time was determined as one hour. The effects of pH, temperature and Pb^{2+} concentration on the metal binding capacity of hybrid flowers were investigated. The maximum adsorption capacity of hybrid flower was obtained at pH 7,0 and at 35,5 °C. SEM images were examined for the characterization of hybrid flowers. In addition, the results of adsorption studies were analyzed for compatibility with Freundlich, Langmuir adsorption isotherms. The obtained capacities were compared with the experimental capacity.

Keywords: hybrid flowers, casein, porosity, adsorption, heavy metal

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Hierarchical Hybrid Flowers and Their Excellent Adsorption Capability of Heavy Metal Ions of Pb(II), Cd(II) and Hg(II), 2016, DOI: 0.1021/acsami.5b11533

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➢ **POSTER PRESENTATION**

Determination of sulfanilamide in Pharmaceutical Preparations using Spectrophotometric Method

Dr.Tariq Y. Mahmoud, Dr.Sarmad B. Dikran and Dr. Alaa K. Mohammed

Dept. of Medical Lab. Technology/ Al- ISRRAA University College
IRAQ-BAGHDAD

Abstract

A simple and accurate spectrophotometric method was developed to determine the concentration of sulfanilamide (SNA) drug in pure form and in synthetic preparations. The proposed methods were based on charge transfer complexation of sulfanilamide (SNA) with sodium nitroprusside (SNP) and hydroxyl amine hydrochloride in alkaline medium. Variables affecting the formation of colored complex were optimized following two approaches univariate and central composite experimental design (CCD) multivariate. The final product of the reaction was orange in colour, absorbed strongly in the visible region and obeyed Beer's law at λmax 523.0 nm. and the method conforms Beer's law for SNA concentration in the range of 10.0-300.0 ($\mu g.mL^{-1}$) with molar absorptivity $774.9 L.mol^{-1}.cm^{-1}$, and r = 0.99975. Analysis of SNA pharmaceutical dosages shows a good agreement with the real amounts.

Keywords: spectrophotometric determination; sulfanilamide; sodium nitroprusside; charge-transfer complexation.

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➢ **POSTER PRESENTATION**

Ankara Keçilerinin Seçerek Yedikleri Mera Otlarının Rumende Organik Madde Sindirilebilirliklerinin Naylon Kese Yöntemiyle Belirlenmesi

Nurcan Çetinkaya, Bora Bölükbaş*, Cansu Çelik

Ondokuz Mayıs Üniversitesi, Veteriner Fakültesi, Hayvan Besleme ve Beslenme Hastalıkları Anabilim Dalı, Samsun, Türkiye

Sorumlu yazar e-mail:borabolukbas@gmail.com

Özet

Bu çalışmada merada otlayan Ankara keçilerinin meradan seçerek yedikleri otların rumende *in situ* organik madde sindirim derecelerinin naylon kese yöntemiyle belirlenmesi amaçlanmıştır. Nisan, Mayıs ve Haziran aylarında Ankara-Lalahan'da merada otlayan Akara Keçileri gözlemlenerek seçimli yedikleri mera otlarından 4 çeşit toplanmıştır. Toplanan ot örnekleri (n=12) kurutulup 1 mm elek çapına sahip değirmende öğütülmüştür. Öğütülen örneklerin in situ organik madde sindilebilirlikleri rumen kanülü takılı 3 adet Ankara keçisinde (Canlı ağırlık 30-35 kg, 2-3 yaşlı) naylon kese yöntemiyle belirlenmiştir. Alıştırma ve deneme periyodunda rumen kanüllü Ankara keçileri *ad libitum* çayır kuru otu ve 300 g/gün konsantre yemle beslenmiştir. Ankara keçilerinin önünde taze ve temiz su her zaman bulundurulmuştur. Mera otlarının kuru madde (KM), organik madde (OM) ve ham protein (HP) değerleri AOAC de verilen metotlara göre yapılmıştır. Otların Nisan ve Mayıs ayları ortalama % OM sindirilebirlikleri % 75-80 arasında, Haziran ayı % OM sindirilebirlikleri ortalaması % 72-75 arasında değişmiştir. Haziran ayının %OM sindirilebilirliklerinin Nisan ve Mayıs aylarından düşük olması otaların vegatasyon dönemine bağlı olarak lignin oranlarının artmasından kaynaklanabilir. Keçilerin seçerek yedikleri otlar yeşil etli geniş yapraklı olduklarından *in situ* organik madde sindirilebilirlikleri çayır kuru otundan yüksek bulunmuştur. Sonuç olarak, Ankara keçileri sindirilebilirlikleri yüksek olan otları seçip yemektedir, meraların iyileştirilmesinde hayvan davranışlarından yararlanılarak mera ıslahı yapılabilir.

Anahtar Kelimeler: Ankara keçisi*; in situ* naylon kese yöntemi; mera otları; sindirilebilirlik

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➢ **POSTER PRESENTATION**

A New Approach to Medicinal Plants: Organic-Inorganic Hybrid Structure (Nanoflower)

Ayşe Baldemir[1*], Nilay Ildız[2], İsmail Öçsoy[3]

[1]Erciyes University, Faculty of Pharmacy, Department of Pharmaceutical Botany, Kayseri, Turkey.
[2]Erciyes University, Faculty of Pharmacy, Department of Pharmaceutical Microbiology, Kayseri, Turkey.
[3]Erciyes University, Faculty of Pharmacy, Department of Analytical Chemistry, Kayseri, Turkey

Corresponding author e-mail: aysebaldemir@gmail.com

Abstract

Plant extracts and their active components are often used as reducing and capping agents for metallic nanomaterials synthesis by different applications. One of these is organic-inorganic hybrid structure known as nanoflower (NF). Until now, successful nanoflower syntheses from some medicinal plant extracts have been made by coworkers. As a result, nanoflowers (NFs) synthesized from plant extracts were demonstrated more effective than the non hybrid extracts for antimicrobial, antioxidant, catalytic and antiamoebicidal activities. In addition, the characterization of NFs were determined with Scanning Electron Microscopy (SEM), Fourier Transform Infrared Spectrometer (FT-IR) and Energy-Dispersive X-ray (EDX) techniques. Herein, we claim that Cu2+ ions show coordination chemistry with amide groups and/or carboxyl and diol groups of the extracts and standard molecules acted as organic components in PBS and induce the formation of Nfs. Our results demonstrated that plant extract based NFs technology is promising and may find potential applications in various scientific and technical fields.

Keywords: Plant extract, Nanoflower, Biological activity.

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➢ **POSTER PRESENTATION**

Effects of Opium Alkaloids on Metallothionein Synthesis in Mice

Emel Canpolat[1*], Mine Aydan[2]

[1]Gaziosmanpasa University, Faculty of Arts & Sciences, Department of Molecular Biology and Genetics, Tokat, Turkey.
[2]Gaziosmanpasa University, Graduate School of Natural and Applied Sciences, Tokat, Turkey.

Corresponding author e-mail: emel.canpolat@gop.edu.tr

Abstract

One of the main responses to stress developed by organisms is the synthesis of a group of proteins called stress proteins. Metallothionein (MT) is a stress protein synthesized in organisms as a cellular response to stress, which has important physiological and immune regulatory roles. In this study, it has been aimed to determine the effects of some opium alkaloids (codeine, thebaine and noscapine), which are weaker and less addictive than morphine, and also used therapeutically as antitussive, analgesic and antidiarrheal, on metallothionein synthesis. For this purpose, the opium alkaloids, codeine, thebaine and noscapine, have been administered to mice at a dose 10 mg/kg according to live weight. The presence of MT in tissue lysates and serum samples obtained after injections was determined by competitive ELISA method using anti-metallothionein monoclonal antibody (clone UC1MT). It has been shown that codeine significantly increased liver MT-2 levels. Thebaine and noscapine did not have any effect on liver MT-2 levels. All of the opium alkaloids tested in this study did not have any change on kidney and serum MT-2 levels. Results show that only the codeine, which is one of the opium alkaloids tested in this study, has a potential to induce MT-2 synthesis on liver.

Keywords: Stress proteins, metallothionein, codeine, thebaine, noscapine, competitive ELISA

Acknowledgement: This study is supported by a grant from Gaziosmanpasa University.

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➢ **POSTER PRESENTATION**

Sperm Preparatlarının Diff-Quick Yöntemi İle Boyanması

Banu Eren*, Muharrem Bal, Zafer Eren, Hülya Bulut

Ondokuz Mayıs Üniversitesi, Biyoloji Anabilim Dalı, Samsun, Türkiye
Sorumlu yazar e-mail : banueren@gmail.com

Özet

Sperm baş, gövde ve kuyruktan (flagellum) oluşmaktadır. Baş kısmı çekirdek, sitoplazma ve hücre membranından meydana gelmektedir. Başın 2/3 ön kısmı akrozom adını almaktadır. Akrozom Golgi aygıtından oluşmaktadır. Akrozom, normal hücrede lizozomlarda bulunan proteolitik enzimler içermektedir. Bunlar ovumun korona radiata ve zona pellusida'sını delme yeteneğine sahip enzimleri kapsamaktadır.

Sperm preparatları geleneksel olarak Papanicolaou, Hematoksilen-Eosin, Giemsa, Spermac ve Diff-quick yöntemleri ile boyanmaktadır. Tüp bebek merkezlerinde sperm morfolojini incelemek amacıyla genel olarak iki boya kullanılmaktadır: Diff-quick ve Spermac boyalarıdır.

Steril ortamlarda toplanan semen numunesinin likefaksiyonu için 30 dakika beklendikten sonra karıştırılarak, numunedeki sperm konsantrasyonuna göre 5-10µl numune lam üzerine alınarak, 45 derecelik açı ile en az iki yayma işlemi gerçekleştirilmektedir. Yayma, havada 20 dakika kurutulduktan sonra boyama işlemine geçilmektedir.

Diff-Quik boyama yönteminde sabitleyici olarak metil alkol içinde 1,8mg/l triarylmethane kullanılmaktadır. Arkasından 1. solüsyon (sodyum azide ile korunmuş tampon içinde 1 g/lt xanthene) ile muamele edildikten sonra 2. solüsyon (tampon içinde 1,25 g/lt thiazine boya karışımı (0,625g/l Azure A ve 0,625 g/l metilen mavisi) uygulanmaktadır.

Numunenin yayılıp kurutulduğu lam, 15 saniye sabitleyici solüsyonda tutulmaktadır. Yayma emici kağıt üzerine dik olarak yerleştirilerek fazla solüsyonlar uzaklaştırılmaktadır. Yayma 1. solüsyonda 10 saniye boyanmakta, fazla boya 10-15 kere distile suda yıkanarak uzaklaştırılmakta, 2. solüsyonda 5 saniye tutularak boyanma gerçekleştirilmektedir. Fazla boyanın atılması için, yayma preparat çeşme suyu ile yıkanmaktadır. Yıkamalardan sonra, suyun uzaklaştırılması için yayma preparatlar dik konumda yerleştirilerek kurumaları sağlanmaktadır.

Diff-Quick boyama yöntemi hızlı olduğu için tercih edilmesine karşın zeminin fazla boya alması sorun oluşturabilmektedir.

Anahtar kelimeler: Diff-quick, Sperm, Morfoloji, Spermiyogram

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➢ **POSTER PRESENTATION**

The Effect of Cationic monomers on the Thermal and Mechanical Properties of Poly(Lactic Acid)

Yesim Babacan[1*], Ayse Aytac[1,2]

[1]Kocaeli University, Engineering Faculty, Chemical Engineering Department, Kocaeli, TURKEY
[2]Kocaeli University, Polymer Science and Technology Department, Kocaeli, TURKEY

Corresponding author e-mail: aaytac@kocaeli.edu.tr

Abstract

Poly(lactic acid) (PLA) is a biodegradable polymer which is composed of repeating units lactic acid. It enters the group of aliphatic polyesters and produced from starch-rich vegetable sources such as corn, sugar cane, and wheat [1,2]. PLA has comparable properties with the synthetic polymers such as high modulus and tensile strength value. However, it also possesses some disadvantages, for example, films of PLA are very brittle and poor heat stability [3]. Therefore, is limited use some industrial applications. In the recent years, the great attention has been given to modification of PLA to the improvement of thermal and mechanical properties. In the literature, various studies have been realized by using different methods in order to improve the properties of the PLA. Many technologies, such as annealing, adding nucleating agents, forming composites with fibers or nanoparticles, chain extending and introducing crosslinking structures were used to enhancing the heat stability or mechanical properties of PLA [1,3]. Formation of polymer blends is one of the using methods in these mentioned methods to improve the properties of PLA.

In this study, it was aimed to enhance the properties of PLA by blending cationic monomers including active groups in the presence of initiator with PLA. [3-(Methacryloylamino) propyl] -trimethyl ammonium chloride (MAPTAC) and [2-(Methacryloyloxy) ethyl] trimethylammonium chloride (MATMAC) were used as cationic monomers. Experimentally, MAPTAC and MATMAC were added between 5 and 15 wt.% to PLA. 2,2'-Azobis(2-methylpropion amidine) dihydrochloride(AIBN) was used as initiator with the ratio of 5% of the total amount of monomers. PLA films were prepared by solution casting method. Chemical structure of blends was characterized by Fourier transform infrared spectrometry (FTIR). The thermal and mechanical properties of samples were also determined by means of differential scanning calorimetry (DSC), thermogravimetric analysis (TGA) and tensile testing. According to DSC results, the melting temperature of PLA blends was not changed significantly. Percent crystallinity values decreased by adding MAPTAC and MATMAC in the initiator presence. According to the FTIR results, some new peaks were observed with the addition of cationic monomers. The maximum tensile strength and strain values of the 5 wt% MAPTAC including films significantly increased compared to the neat PLA film.

Keywords: Polylactic acid (PLA), cationic monomer, initiator

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➢ **POSTER PRESENTATION**

The Histological Effects of Pyretroid Pesticides on Digestive System of Some Teleosts

Özlem Önen[1*], İnan Kaya[1], Evren Koç[2]

[1]Kafkas University, Science and Art Faculty, Department of Biology, Kars, Turkey.
[2]Kafkas University, Engineering Faculty, Bioengineering Department, Kars, Turkey.

Corresponding author e-mail: onenozlem@gmail.com

Abstract

Even if pesticide assets are being tried to be limited at the ecosystem level, wide usage of them in many areas still continues. Numerous organisms are directly or indirectly vulnerable against to the adverse effects of pesticides. On the other hand, pyrethroids are a particular pesticide group used in pest management and active substances in the majority of pest killers. The evaluation of the studies on the possible histological effects of pyretroid pesticides which are one of the most important environmental pollutants on the digestive systems of teleosts by re-examining, and the creating resource for the next studies by summarizing the reports obtained were aimed in this review. The available literatural information were arranged as review by revising in the direction of the researches in Kafkas University, Faculty of Arts and Sciences, Department of Biology Laboratories. It has been reported that pyrethroids cause similar histological changes in digestive systems of teleosts in the data obtained from various explorations. In the direction of reports that were reviewed, it was revealed that pyrethroids cause susceptibility to teleosts, histological changes increase in parallel with the increase in concentration, but the certain chemical-specific sensitivity cannot be mentioned. As a result of the studies evaluated, it was seen that the recorded findings were generally parallel to each other, and the exposure to pyrethroids has toxic effect on teleosts. In the extension of the toxic effects of pyrethroids' assessment in ecotoxicological studies with this review, it was shown that histological methods are useful, besides being one of the basic complementary methods in determining the level of toxicity.

Keywords: Pesticides, pyrethroids, histological effects, digestive system, teleost.

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➢ **POSTER PRESENTATION**

Effects of Some Soil Properties on Ash Wood

Murat Sarginci*, Turgay Birtürk, Nihan Koçer

Düzce University, Faculty of Forestry, Department of Forest Engineering, Düzce

Corresponding author e-mail: muratsarginci@duzce.edu.tr

Abstract

Although ash (*Fraxinus* L.) is one of the most important broadleaf species in Europe because of its' high-value wood, but it has not been put on imported forest species in Turkey. It is used in many forest industry areas such as furniture, wagon, sports equipment, plywood, barrels and ski kits. It distributes from riparian zones to the slope lands, from mountain ecosystems to flooded forests, and from fertile soils to unfertile soils in very different growing conditions because of its highly adaptation capability. Thus the aim of this study is to determine the effects of some soil properties on distribution and wood anatomy of native narrow leaved ash (*Fraxinus angustifolia* Vahl) in Turkey. According to the results of the correlation analysis; soil pH were positively correlated with the number of vessels and rays per mm², negatively correlated with diameters of vessel elements, vulnerability ratio and mesomorphy values. Soil available water capacity, clay percent, electrical conductivity were negatively correlated with the number of vessels and rays per mm², positively correlated with diameter of vessel elements. From the results of study it has been found that narrowed leaved ash can survive in a very different soil properties such as low soil water content to high soil water content. Results of this study can be used for future management of narrowed leaf ash for a sustainable management practice.

Keywords: Ash Tree, Soil, Wood Properties

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➢ **POSTER PRESENTATION**

Zn(II)-Thiophene-2,5-dicarboxylate Coordination Polymer with Substitue Bis(imidazole) Linker: Synthesis and Characterization

Hakan Erer, Mürsel Arıcı* and Okan Zafer Yeşilel
Eskişehir Osmangazi University, Faculty of Arts and Sciences, Department of Chemistry, 26480, Eskişehir, Turkey

Corresponding author e-mail: arici_mursel086@hotmail.com

Abstract

In recent years, coordination polymers have been gained attention not only their intriguing topology but also their application areas such as gas adsorption, separation, sensor, catalysis luminescence etc (Hong et all. 2009; Zhou et all. 2011). For above application areas, in the construction of coordination polymers, mixed-ligand system is very effective method to obtain high dimensional coordination polymers with desired structure. In this study, thiophene-2,5-dicarboxylic acid, as an aionic ligand, was used due their diverse coordination mode. Moreover, 1,4-bis(2-isopropylimidazol-1ylmethyl)benzene was also used to obtain mixed ligand coordination polymer. In this study, three dimensional mixed-ligand coordination polymer, namely, $[Zn(\mu_4\text{-tdc})(\mu\text{-pbisopix})_{0.5}]_n$ was hydrothermally synthesized and characterized by IR spectroscopy, elemental analysis and single crystal X-ray diffractions and thermal analysis technique (TG/DTA). X-ray result showed that The asymmetric unit of compound6contains one Zn(II) ion, one tdc and half pbisopix ligands. the environment around Zn(II) ion can be described as a distorted square-pyramidal geometry, in which it is coordinated by four oxygen atoms from four tdc ligands in an equatorial plane and one nitrogen atom from pbisopix ligand occupy the axial position. The tdc ligand exhibits an exotetradentate coordination mode, which constructs $Zn_2C_4O_8$ paddlewheel dimers with Zn···Zn distances of 3.1370(3) Å. A 2-fold interpenetrating 3D framework was obtained. Considering the paddlewheel dimers as six-connected node and tdc and pbetix ligand as two connected linkers, a topological analysis of the compound 6 was determined to be an interpenetrated pcu topology with the point symbol of $4^{12}.6^3$. Despite the interpenetration, the PLATON analysis show the solvent-accessible volume accounts for 10.9% of per unit cell volume.

Keywords: Coordination polymer; hydrothermal synthesis; thiophene-2,5-dicarboxylate

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➢ **POSTER PRESENTATION**

Disabled-1 Adaptör Proteininin Olası Glikozilasyon ve Fosforilasyon Pozisyonlarının Biyoinformatik Yöntemlerle Belirlenmesi ve Üç Boyutlu Yapısının Oluşturulması

Ramiz Demir*, Remziye Deveci

Ege Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, İzmir, Türkiye

Sorumlu yazar e-mail: remziye.deveci@ege.edu.tr

Özet

Glikoproteinlerin yapısında bulunan glikanlar proteinlere genelde azot (N-) ve oksijen (O-) köprüleriyle bağlanırlar ve embriyonik gelişim, farklılaşma, yaşlanma ve ölüm mekanizmaları da dahil neredeyse tüm hücresel olaylarda işlev görürler. Bir glikoprotein olan Reelin, özellikle nöral hücre göçü, korteks gelişimi, olgunlaşması, sinaptik plastisite ve hafıza oluşumunun da dahil olduğu çeşitli nöral gelişim süreçlerinde çok önem taşımaktadır. Reelin sinyal yolağında önemli düzenleyici role sahip Disabled-1 (DAB1) adaptör proteininin ise bir glikoprotein olup olmadığına ilişkin veri mevcut değildir. Ayrıca, glikoproteinlerin aktivitesinin düzenlenmesinde, glikozilasyon ve fosforilasyon arasında gerçekleşen moleküler modifikasyon yarışının post-translasyonel regülasyonda önem taşıdığı bilindiğinden, DAB1'in fosforilasyonunun da incelenmesi gerekmektedir çünkü DAB1'in sadece N-terminal PTB (Phosphotyrosine-binding) domaininin, Tirozin 185, 198, 200, 220, 232 pozisyonlarından fosforillendiği belirlenmiştir. Diğer bölgeler ise bu açıdan çalışılmamıştır. Bu nedenlerle çalışmanın amaçları; 1) DAB1 proteininin glikoprotein olup olmadığını biyoinformatik sunucular kullanarak belirlemek, 2) N-terminal PTB bölgeleri dışındaki diğer domainlerin olası fosforilasyon pozisyonlarını belirlemek ve glikozilasyonla ilişkilendirmek, 3) DAB1 proteininin üç boyutlu yapısını oluşturmaktır. Bu amaçlarla, 11 farklı türün DAB1 adaptör proteininde olası glikozilasyon pozisyonlarının belirlenmesi için NetNGlyc, NetOGlyc, DictyOGlyc ve YinOYang; fosforilasyon pozisyonları ile trasnferaz enzimlerinin belirlenmesi için NetPhos; proteinin üç boyutlu yapısının oluşturulması için Quark prediction; aminoasitlerin yüzey erişilebilirliklerinin hesaplanması için NetSurfP internet sunucuları; oluşturulan yapının doğruluk analizi için Moldfold, RAMPAGE sunucuları ve oluşturulan üç boyutlu yapının görselleştirilmesi için PyMOL programı kullanılmıştır. Biyoinformatik analizler sonucu üç türde (*Mus musculus, Gallus gallus ve Cathartes aura*) olası N-glikozilasyon pozisyonu belirlenmiştir. β-GlcNAc tip O-glikozilasyon ve Serin aminoasidi üzerinde oluşan fosforilasyon pozisyonları yoğun olarak DAB1 proteininin C-terminal bölgesinde görülmektedir. Belirlenen glikozilasyon pozisyonlarının yüzey erişilebilirlik oranları oluşturulan üç boyutlu yapı üzerinde görselleştirilmiştir. Bu çalışmadan elde edilen biyoinformatik verilerin, Alzheimer, şizofreni ve otizm gibi nörolojik ve nöropsikiyatrik hastalıklarda rol oynayan Reelin'in sinyal yolağında önemli bir molekül olan DAB1'e ilişkin yapılacak *in vitro* ve *in vivo* çalışmalara yol göstermesi beklenmektedir.

Anahtar Kelimeler: Disabled-1 (DAB1), Reelin, Glikozilasyon, Fosforilasyon, Biyoinformatik, Protein modelleme

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➢ **POSTER PRESENTATION**

Postbiyotikler ve Sağlık Üzerine Etkileri

Emine Koçyiğit*, A.Gülçin Sağdıçoğlu Celep

Gazi Üniversitesi, Sağlık Bilimleri Fakültesi, Beslenme ve Diyetetik Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: kocyigitem@gmail.com

Özet

Probiyotikler, prebiyotikler, sinbiyotiklerin sağlık züerine etkilerinin araştırıldığı çalışmalarda son günlerde postbiyotikler gündeme gelmektedir. Postbiyotikler, doğrudan ya da dolaylı olarak konağa yarar sağlayan bir probiyotik veya bakteri tarafından üretilen metabolikler olarak tanımlanmaktadır. Probiyotikler canlı organizmalar olduğundan bir süre sonra etkinliğini kaybetse de salgıladığı postbiyotikler sayesinde insan sağlığını koruyucu özelliğini devam ettirmektedir (Bongaerts ve Severijnen, 2016; Kataria ve ark., 2009; Patel ve Denning, 2013). Patojen olmayan ve toksisite göstermeyen postbiyotikler cansız nitelikte olduğundan enzim hidrolizlerine direnç göstermektedir. Postibiyotikler bakteriyosinler, organik asitler, etanol, diasetil, asetaldehitler, hidrojen peroksit, polisakkarit A, laktosepin, p40 molekülü ve kısa zincirli yağ asitleri (bütirik asit, propiyonik asit ve asetik asit) gibi suda çözünen metabolik yan ürünleri içerir (Islam, 2016). Bağırsak pH'sını azaltarak *Listeria monocytogenes, Clostridium perfringens, Salmonella enterica ve Escherichia coli* fırsatçı patojenleri inhibe ettiği, *Saccharomyces boulardii* türüne karşı bağırsak bariyer fonksiyonlarını artırdığı, a2b1 integrin kolajen reseptörlerini artırarak epitelyal hücrelerin anjiyojenezine katkı sağladığı belirtilmektedir (Gaggìa ve ark., 2010; Giorgetti ve ark., 2015; Ooi ve ark., 2015; Thanh ve ark., 2010). Yapılan araştırmalarda inülinle birlikte uygulanan postbiyotiklerin bağırsak pH'sını daha da azaltarak patojen bakterilerin proliferasyonunu inhibe ettiği, probiyotiklerin postbiyotikleri ile birlikte *Salmonella* invazyonuna karşı koruyucu özellik gösterdiği ve inflamatuvar bağırsak sendromunda devam eden inflamasyonu durdurucu etki gösterdiği, obez farelerle yapılan çalışmada postbiyotiklerin metabolik inflamasyonu azaltarak, insülin aktivitesini koruduğu ve kan glukoz düzeyini azalttığı saptanmıştır (Cavallari ve ark., 2017; Kareem ve ark., 2014; Tsilingiri ve ark., 2012). Sonuç olarak, pre ve probiyotikler gibi postbiyotiklerin de bağırsak sağlığı üzerindeki koruyucu etki mekanizmalarının daha iyi anlaşılacağı çalışmaların sayısı artmalı, elde edilen edilen verilerle hastalıklara karşı etkin farmakolojik stratejiler geliştirilmelidir.

Anahtar Kelimeler: postbiyotik, bağırsak sağlığı, patojen

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➢ **POSTER PRESENTATION**

Epilepsi Ve Moleküler Mekanizması

Zafer Eren*, Ela Zeynep Yayla Uzun, Emine Dıraman, Banu Eren, Gönül Solmaz

Ondokuz Mayıs Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Samsun, Türkiye

Sorumlu yazar e-mail: zeren@omu.edu.tr

Özet

Epilepsi; beyindeki sinir hücrelerinin artmış uyarılabilirliğinden kaynaklanan klinik bir durumdur. Aura nöbet belirtilerinden hemen önce ortaya çıkan korku veya tat halüsilasyonları ateş basması, anormal beslenme, bölgesel ağrılardır. Aura varlığı nöbetin beynin belli bir bölgesinden başladığının belirtisi olarak ortaya çıkmaktadır.

Epilepsi nöbeti; gri maddedeki artmış, hızlı ve yerel elektriksel boşalımlardan köken almakta ve klinikte belli bir süreye sınırlı olarak, bilinç, davranış, duygu, hareket veya algılama fonksiyonlarında ani başlayan, kısa süreli ve geçici stereotipik değişiklik durumu gözlenmektedir.

Epilepsi nöbetleri; dalgınlık şeklinde ortaya çıkabileceği gibi, istem dışı kasılmalar, bilinç kaybı, kendinden geçme şeklinde de ortaya çıkabilmektedir.

Epilepside voltaja baglı Na+, K+ iyon kanallarının ve liganda bağlı çalışan iyon kanallarının (GABA / Benzodiazepin; NMDA, ve nikotinik asetilkolin reseptörlerinin) çalışma düzenlerinin bozulduğu bilinmektedir. Kontrolsüz eksitasyon olmaktadır.

Epilepsi oluşumunda genelde kesin bir neden bulunmamakla birlikte günümüze kadar gelen bilimsel araştırmalar sonucunda epilepsinin sık rastlanılan sebepleri arasında doğuştan ya da doğum esnasında olan beyin hasarları, beyin yaralanmaları, beyin damarlarındaki hastalıklar, beyin tümörleri, alkol ve madde kullanımı gibi durumlar sayılabilmektedir.

Epilepsi nöbeti, gri maddedeki artmış, hızlı ve yerel elektriksel boşalımlardan köken alır ve klinikte belli bir süreye sınırlı olarak, bilinç, davranış, duygu, hareket veya algılama fonksiyonlarında ani başlayan, kısa süreli ve geçici stereotipik değişiklik durumu olarak kendini göstermektedir. Na ve Ca iyonlarının hücre içerisine girmesi ile başlamaktadır. NMDA reseptörü Na Ca ve K girişini sağlamakta, depolarizasyon gerçekleşmaktedir. GABAa ve GABAb reseptörleri inaktif durumdadırlar. Nöbet kontrolü ise Na Ca iyonlarının hücre dışına çıkması ile başlamaktadır. Nöbet sırasında hücre içerisinde biriken Cl, GABAa reseptörü etkisiyle hücre dışına atılmaktadır. Potasyum kanallarının aktif hale gelmesiyle yeni oluşacak nöbetler engellenmektedir.

Anahtar Kelimeler: Epilepsi, Epileptik nöbet, GABA reseptörü

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➢ **POSTER PRESENTATION**

Preparation of Carbon and Glass Fiber Reinforced Electrical Conducting Polyamide 6 and Polyamide 66 with High Impact Resistance at Low Temperatures

Kübra Karabacak, Hamit Erdemi*

Yalova University, Faculty of Engineering, Department of Polymer Engineering, Yalova, Turkey

Corresponding author e-mail: herdemi@yalova.edu.tr

Abstract

Synthetic polyamides known as nylon, among the engineering plastics, are used in many applications. The main characteristics of polyamides are high abrasion resistance, good mechanical properties even at high temperatures, low gas permeability and chemical stability. In some applications, nylon composites reinforced with glass particles or fibers and show higher structural resistance, impact resistance and hardness. Nylon composites reinforced 30 % with glass fiber are used in automotive industry particularly as suction manifold because of its high thermal resistance. Although the most used polyamides nylon 6 and nylon 6,6 exhibit similar properties, they have different melting points (nylon 6- 223°C, nylon 6,6′- 255°C). Generally, polyamides are completely insulators. The present work aims at conducting polymer composites technology based on fiber-reinforced polyamides, which are used from automotive industry to electronics. While conducting polymers are used widely recently, it becomes more widespread with new and unique works. In this work, our purpose was to develop a material, which can show high impact resistance and conductivity even at very hard conditions for polymeric materials, such as gear and mile application instead of standard type conductors, semiconductors and antistatic materials. With this context, glass fiber reinforced polyamides (PA) were used for high impact resistance. Carbon black (or short carbon fibers) were used to provide electrical conductivity. The obtained composites different than standard type applications are conducting engineering plastics which exhibits high impact resistance at low (-40^{o}C) and high (100^{o}C) temperatures. Twin-screw extruder prepared the required blends and test sheets were obtained using injection. The structural properties of materials were determined by DSC and FT-IR analysis while stress-strain, impact tests are used to obtain mechanical properties. Surface resistance were measured for electrical conductivity.

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Keywords: Polyamide, Polyamide blends, Conducting polymers, Electrical conductivity, Electrical conducting blends

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➢ **POSTER PRESENTATION**

Cytotoxicities of Viscum Album L. Extracts and Their Phenolic Profiles

Arzu Birinci Yildirim[1*], Arzu Türker[2]

[1] Department of Field Crops, Faculty of Agric. and Nat. Sci., Abant İzzet Baysal Univ., Bolu, Turkey
[2] Department of Biology, Faculty of Arts and Sci., Abant İzzet Baysal Univ., Bolu, Turkey

Corresponding author e-mail: arzubirinciyildirim@gmail.com

Abstract

Viscum album L. (mistletoe) is a semi-parasitic species living on trees and remain green in all seasons. In current study, a medicinal plant, *Viscum album* L. (mistletoe) was collected from 10 different trees and their cytotoxic effects were evaluated. At the same time, 6 different phenolic compounds of prepared extracts were determined by HPLC.

The results of cytotoxicity studies were generally considered, it was found that the extracts exhibited stronger cytotoxic effects against MCF-7 cell lines than HepG2/C3A cell lines. The water extracts of *Sorbus torminalis* was found to exhibit the best activity against MCF-7 cell lines. Moreover, the water extracts of mistletoe collected from *Robinia pseudo acacia* trees, methanol extracts of mistletoe collected from *Pinus sylvestris*, *Populus nigra*, *Prunus avium*,*Prunus spinosa* trees were also found to show strong antiproliferative effect against MCF-7 cell lines. Except methanol extracts of mistletoe collected from *P. sylvestris*, *P. Nigra*, both extracts (methanol,water) exhibited similar effects against HepG2/C3A cancer cell lines.

According to HPLC results, except mistletoe grown on *P. Sylvestris* tree, the analysed phenolic compounds were generally found in higher amounts in methanols extracts of the plant. However, the highest amount of kaempferol and second highest amount of syringin were found in both extracts.

When the relation of cytotoxic effects of extracts with 6 different standard compounds were compared, water extract of *S. torminalis* exhibiting the highest cytotoxic effect was found to contain quercetin in high amounts different from the other extracts. Besides, it was found that the cytotoxic effects found in extracts were not directly related with 6 different compounds which they contained.

Keywords: mistletoe, MCF-7, anticancer, quercetin, syringin, phenolics.

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➢ **POSTER PRESENTATION**

Theoretical Investigation of Structural Properties of (E) 2-((phenylimino)methyl)phenol Molecule

Erhan Öztürk[1*], Zeynep Turhan İrak[2], Ayşegül Gümüş[3], Selçuk Gümüş[3]

[*1]Igdır University, Research Laboratory Application and Research Center, Igdır, Turkey.
[2] Iğdır University, Engineering Faculty, Environmental Engineering Department, Igdır, Turkey.
[3] Yuzuncu Yil University, Faculty of Science, Department of Chemistry, Van, Turkey.

Corresponding author e-mail: kimyagerhan@hotmail.com

Abstract

Since the molecule has more than one single bond centered dihedral angle, it is possible to find the most abundant state of such flexible molecules, the energy and geometry of the conformations are determined. Conformation analysis (3D) of the molecule or the potential energy curve of the 2D to determine the stable equilibrium (bottom) state that the molecule has the minimum energy.

In this work, in order to determine the stable conformers of the molecule, calculated Conformation analysis with Gaussiano9W package program Density Functional (DFT/B3LYP) method using the 6-311+G(d,p) baseline set. This molecule steady-state conformers were found, and these conformers were at the B3LYP/6-311+G(d,p) Optimized with seti.

For conformers, the dipole moment is the highest filled molecular orbital (HOMO), lowest boiling molecular orbital (LUMO) and ΔE energy differences were calculated.

Keywords: Cis-Trans, HOMO, LUMO, Gaussian, DFT.

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➢ **POSTER PRESENTATION**

Yeni sentezlenmiş bir demir bileşiğinin ayçiçeği ve mısırda fotosentetik aktivite üzerine etkisinin klorofil a floresansı tekniği ile araştırılması

Ertuğ YILDIRIM[1], Talha AKKUŞ[1], Ali DOĞRU[2], Salih Zeki YILDIZ[1*]

[*1] Sakarya Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Sakarya, Türkiye
[2] Sakarya Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Sakarya, Türkiye

ertug1308@hotmail.com, talha.akkus@ogr.sakarya.edu.tr, adogru@sakarya.edu.tr, szy@sakarya.edu.tr

Özet

Bu çalışmada yeni sentezlenmiş demir içeren bir bileşiğin (TAR-114) ve EDDHA-Fe (Ticari menşeili) molekülünün mısır (*Zea mays*) ve ayçiçeği (*Helianthus annuus*) bitkisinde demir beslenmesini sağlama kapasiteleri, fotosentetik aktivitenin klorofil a floresansı tekniği ile değerlendirilmesi yoluyla karşılaştırmalı olarak incelenmiştir. EDDHA-Fe uygulaması mısırda alan (OJIP eğrisinde minimum ve maksimum floresans arasındaki bölge) ve tFm (maksimum floresansa ulaşılıncaya kadar geçen süre) parametrelerini kontrole ve TAR-114' e göre azaltmıştır. EDDHA-Fe uygulaması mısırda $\Delta V/\Delta t_o$ (kapalı reaksiyon merkezlerinin birikim hızı) değerini kontrole ve TAR-114' e göre artırırken, S_M (tüm reaksiyon merkezlerinin kapanması için gereken enerji) SFI_{ABS} (FS II' nin yapısal ve fonksiyonel durumunun indikatörü) ve PI_{ABS} (performans indeksi) değerini azaltmıştır. EDDHA-Fe ve TAR-114' ün mısırda Ψ_o (yakalanan bir eksitonun bir elektronu Q_A' dan elektron taşınım sistemine hareket ettirme etkinliği), ϕ_{Eo} (Q_A' dan PQ' ya elektron taşınımının kuantum verimi), $\Psi_0/(1-\Psi_0)$ (ışığa bağımlı olmayan reaksiyonların performans göstergesi) ve N (F_m' ye ulaşılıncaya kadar geçen sürede Q_A' nın indirgenme sayısı) değerlerini kontrole göre benzer oranda azalttığı belirlenmiştir. Klorofil a floresansı parametrelerinde gözlenen bu değişimler, TAR-114' ün hem reaksiyon merkezlerinden Q_A' ya doğru hem de Q_A' dan sonraki basamaklarda gerçekleşen elektron taşınım reaksiyonlarını EDDHA-Fe molekülüne göre daha olumlu etkilediğini göstermektedir. Benzer şekilde TAR-114 uygulaması ayçiçeğinde de $\Delta V/\Delta t_o$ değerini EDDHA-Fe' a göre azaltıp; alan, SFI_{ABS}, $\Psi_0/(1-\Psi_0)$ ve PI_{ABS} parametrelerini artırarak elektron taşınım reaksiyonları üzerinde daha olumlu bir etki yapmıştır. Ayrıca iki bitki türünün yapraklarındaki demir miktarı, EDDHA-Fe ile karşılaştırıldığında, TAR-114 uygulaması sonucu belirgin derecede yüksek bulunmuştur.

Sonuç olarak TAR-114 adlı bileşiğin bitki kökleri tarafından topraktan daha etkili bir şekilde alınarak yapraklara taşınması ve fotosentetik aktiviteyi artırması yüzünden tarımsal alanlarda kullanılması durumunda bitkisel verimliliği de artıracağı söylenebilir.

Anahtar Kelimeler: Ayçiçeği, EDDHA-Fe, demir, klorofil floresansı, mısır, TAR-114

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➢ **POSTER PRESENTATION**

TARİRON' un ayçiçeği ve mısırda fotosentetik aktivite üzerine etkisinin klorofil a floresansı tekniği ile araştırılması

Talha AKKUŞ[1], Ertuğ YILDIRIM[1], Ali DOĞRU[2], Salih Zeki YILDIZ[1*]

[*1] Sakarya Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Sakarya, Türkiye
[2] Sakarya Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Sakarya, Türkiye

talha.akkus@ogr.sakarya.edu.tr, ertug1308@hotmail.com, adogru@sakarya.edu.tr, szy@sakarya.edu.tr

Özet

Bu çalışmada T.C. Gıda Tarım ve Hayvancılık Bakanlığı tarafından demir içeren şelatlı gübre çözeltisi olarak tescillenmiş bir yerli ürün (TARİRON) ile EDDHA-Fe (piyasada en çok rağbet edilen ithal yabancı ürün) molekülünün, mısır (*Zea mays*) ve ayçiçeği (*Helianthus annuus*) bitkisinde demir beslenmesini sağlama kapasiteleri araştırılmıştır. Bileşiklerin bitki besleme etkinlikleri Fotosentetik aktivitenin klorofil a floresansı tekniği ile değerlendirilmesi yoluyla karşılaştırmalı olarak incelenmiştir. EDDHA-Fe uygulaması mısırda alan (OJIP eğrisinde minimum ve maksimum floresans arasındaki bölge) ve tFm (maksimum floresansa ulaşılıncaya kadar geçen süre) parametrelerini kontrole ve TARİRON' a göre azaltmıştır. TARİRON ise tFm' de kontrole ve EDDHA-Fe' ye göre belirgin bir artış sağlamıştır. EDDHA-Fe uygulaması mısırda $\Delta V/\Delta t_o$ (kapalı reaksiyon merkezlerinin birikim hızı) değerini kontrole ve TARİRON' a göre artırırken; S_M (tüm reaksiyon merkezlerinin kapanması için gereken enerji), N (F_m' ye ulaşılıncaya kadar geçen sürede Q_A' nın indirgenme sayısı), $\Psi_0/(1-\Psi_0)$ (ışığa bağımlı olmayan reaksiyonların performans göstergesi), SFI_{ABS} (FS II' nin yapısal ve fonksiyonel durumunun indikatörü) ve PI_{ABS} (performans indeksi) değerini azaltmıştır. EDDHA-Fe ve TARİRON'un mısırda Ψ_o (yakalanan bir eksitonun bir elektronu Q_A' dan elektron taşınım sistemine hareket ettirme etkinliği) ve ϕ_{Eo} (Q_A' dan PQ' ya elektron taşınımının kuantum verimi) değerlerini kontrole göre benzer oranda etkilediği belirlenmiştir. Klorofil a floresansı parametrelerinde gözlenen bu değişimler, TARİRON'un fotosistem II'de meydana gelen elektron taşınım reaksiyonlarını EDDH molekülüne göre daha olumlu etkilediğini göstermektedir. TARİRON uygulaması ayçiçeğinde alan, tFm, $\Delta V/\Delta t_o$ ve N değerini kontrole ve EDDHA-Fe' a göre artırarak elektron taşınım reaksiyonları üzerinde daha olumlu bir etki yapmıştır. Ayrıca TARİRON uygulanan ayçiçeği ve mısır yapraklarındaki demir miktarının, EDDHA-Fe uygulananlara göre sırasıyla yaklaşık 1,7 ve 3,4 kat daha yüksek olduğu belirlenmiştir.

Buna göre; TARİRON adlı bileşiğin bitki kökleri tarafından topraktan alındıktan sonra yapraklara daha etkili bir şekilde taşındığı, bu nedenle fotosentetik aktiviteyi artırdığı, etkisinin bitki türüne göre farklılık gösterdiği ve bitkisel verimliliği artırmak amacıyla ziraatte kullanılabileceği sonucuna varılabilir.

Anahtar Kelimeler: Ayçiçeği, EDDHA-Fe, demir, klorofil floresansı, mısır, TARİRON

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➢ **POSTER PRESENTATION**

The Antimicrobial Effect of Essential Oils from *Thymus vulgaris* and *Origanum vulgare* on *Klebsiella pneumoniae*; an Ecofriendly Approach

R. Soner Silme[1]*, Ömür Baysal[2], Said Nadeem[3]

[1]Technology Transfer Office, Istanbul University, Turkey.
[2]Dept. of Molecular Biology and Genetics, Faculty of Science, Muğla Sıtkı Koçman University, Turkey.
[3]Department of Chemistry, Faculty of Science, Muğla Sıtkı Koçman University, Turkey.

Corresponding author e-mail: rsoner@istanbul.edu.tr

Abstract

The pathogenic microorganisms of humans in the environment are a major problem that causes severe infection on human body. *Klebsiella pneumoniae* is a major human pathogen in the world which causes sour throat that should be treated by clinical applications. Antibiotics resistance on these pathogens start becoming problem that is already detecting by antibiotic test kits in-vitro conditions. The aim of this work was to study the antimicrobial activity of essential oils obtained from *Thymus vulgaris* and *Origanum vulgare* on *Klebsiella pneumoniae* strains isolated from clinical cultures in Turkey. All bacteria were identified as *Klebsiella pneumoniae* by 16S rDNA sequencing results. All the pathogenic bacteria were tested on culture media containing essential oils. MIC values for T. *vulgaris* were ranged between 12.5 and 7.5 mg·ml(-1), while O. *vulgare* ranged 24.4 and 8.7 mg·ml(-1), Both essential oils inhibited all strains, with better inhibitory activity than the antibiotic cephalosporin. Both oils contained high carvacrol (28.5% and 18.6%, respectively) and low thymol (1.3%). Natural products obtained from aromatic plants are good potential sources for antimicrobial activity that could be used as ecofriendly and economical biocontrol agents in medical and pharmacological science. Further studies will be carried out using nanotechnological molecule designing to increase efficiency of these essential oil by very low concentrations.

Keywords: *Thymus vulgaris*, *Origanum vulgare*, *Klebsiella pneumoniae*, pathogen bacteria, essential oil.

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➢ **POSTER PRESENTATION**

Design of Polyurethane-Based Wound Dressing Material Including *Hypericum Perforatum* Extract

Hülya Erboğa[1*], Merve Gökşin Karaaslan[2], Süleyman Köytepe[2], Burhan Ateş[2]

[1]İnönü University, Science and Literature Faculty, Molecular Biology and Genetics Department, Malatya, Turkey.
[2]İnönü University, Science and Literature Faculty, Chemistry Department, Malatya, Turkey.

Corresponding author e-mail: hulyaeerboga75@gmail.com

Abstract

Wound dressings are biomaterials that play an important role in the wound healing process. The wound dressing materials used for this purpose have important properties such as providing moisture environment, proper oxygen permeability and protection of the wound against microorganisms during wound healing. Nowadays, altough there are many commercial wound dressing materials, especially polyurethane based wound dressings draw attention because of their tissue and blood compatibility, resistance to solvents, flexibility and gas permeability. In addition to these properties, it is known that *Hypericum perforatum* plant has positive effects on wound healing especially due to its hypericin content.

For this reason, polymers were synthesized with hexamethylenediisocyanate as a diisocyanate source and PEG as a polyol source for 12 hours at 90 °C by refluxing in THF. The reaction was carried out by FTIR spectroscopy, taking into consideration the disappearance of the free isocyanate peak at a frequency of 2265 cm^{-1}, which is the characteristic peak in isocyanates. At the end of the reaction period, the polymers were obtained by removing the solvents under vacuum. The polymers were then dissolved in the alcohol and *Hypericum perforatum* ethanol extract was added at different ratios and the polymers were dried. Wound healing properties of the materials were evaluated by *in vitro* wound healing method in L-929 cell line, and it is shown that *Hypericum perforatum* increased proliferation and migration of L-929 cells.

Keywords: Wound Dressing Material, *Hypericum perforatum*, Polyurethane, L-929 Cell Line.

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➢ **POSTER PRESENTATION**

Development of Micro/Nano Methotrexate Capsules with Alginate and Nano-$NiFe_2O_4$ by Electrospinning Method

Atife Nida Onur[1*], Sevgi Balcıoğlu[2], Süleyman Köytepe[2], Burhan Ateş[2]

[1]İnönü University, Science and Literature Faculty, Molecular Biology and Genetics Department, Malatya, Turkey.
[2]İnönü University, Science and Literature Faculty, Chemistry Department, Malatya, Turkey.

Corresponding author e-mail: atifeenr@gmail.com

Abstract

All currently used cancer drugs cause unwanted inflammatory responses. This situation necessitates targeting of these drugs with nanoparticles because of the lack of selectivity of cancer drugs and high toxicity in healthy tissues.[1] The magnetic nanoparticles, such as Fe_2O_4, play an important role in targeting cancer treatment.

For this reason, in our study, the micro/nano capsules were formed via encapsulating the methotrexate chemotherapeutic agent and $NiFe_2O_4$ nanoparticles with the alginate biopolymer by electrospinning device. In the study, firstly 1.5% of alginate solution was mixed homogeneously with 3 mg/mL of Methotrexate agent and 1% of $NiFe_2O_4$ nanoparticles. In another beaker, 100 mM of aqueous $CaCl_2$ solution was prepared. An Alginate, Methotrexate and $NiFe_2O_4$ mixture was placed into an injector and then the electrospinning system. The $CaCl_2$ solution was placed in the collector unit. The distance between injector and collector was set to 10-20 cm according to the capsule size, and the encapsulation was carried out for 30 minutes under an electric current of 20 kW. In this regard, the drug encapsulated with magnetic nanoparticles is intended to be easily transported to the cancerous tissue and released over time in the organism. In addition, clogging of the pores was achieved with 2% of chitosan solution to slow the release of the Methotrexate drug from the capsule. SEM analysis was used to determine the morphology of the capsules and HPLC-UV detector system was used to determine the level of drug release.

Keywords: Electrospinning, Methotrexate, $NiFe_2O_4$ NPs, Encapsulation, Alginate, Cancer.

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➢ **POSTER PRESENTATION**

Textural Characterization of Low Calorie Gelatin and Starch Based Soft Candies

Esmanur İlhan*, Pelin Poçan, Mecit Halil Öztop

Middle East Technical University, Department of Food Engineering, Ankara, Turkey.

Corresponding Author e-mail: ilhan.esmanur@metu.edu.tr

Abstract

Confectionery gels are composite gel systems composed of high amount of sugar components such as sucrose, glucose syrup; gelling agents such as starch, gelatin or pectin along with food flavorings and colorings. Soft candies are examples for the confectionary gel systems. Gelling agent used in the production of soft candies has a vital effect on the quality of products since it directly effects the texture. In addition to the gelling agent, sugar type also has an important effect on the quality of the products. D-psicose is a type of rare sugar, which is an epimer of fructose and has 70 % of sweetness of sucrose with a caloric value 0.39 kcal/g. It is also known to affect the textural characteristics of the products that it is utilized. In this study, 2 different soft candy products containing starch (11%) and gelatin (8%) as gelling agent were designed and characterization of these products were conducted by using moisture content, water activity, texture and differential Scanning Calorimetry (DSC) experiments. DSC experiments were conducted to determine the glass transition temperatures as it is known that glass transition temperature could be associated with moisture uptake behavior of candies and thus could enable the prediction of these products under different storage conditions. For textural analysis , hardness values of the candies were recorded. Results of the studies showed that presence of D-Psicose in the formulations could affect the physical characteristics which in the long run could lead to a different shelf life.

Keywords: Soft candy, glass transition, gelling agent, water activity, texture.

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➢ **POSTER PRESENTATION**

Biosensor for Plant Pathogen DNA Detection with Gold Nanoparticles as Probes

R. Soner Silme[1]*, Said Nadeem[2], Ömür Baysal[3]

[1]Technology Transfer Office, Istanbul University, Turkey.
[2]Department of Chemistry, Faculty of Science, Muğla Sıtkı Koçman University, Turkey.
[3]Dept. of Molecular Biology and Genetics, Faculty of Science, Muğla Sıtkı Koçman University, Turkey.

Corresponding author e-mail: rsoner@istanbul.edu.tr

Abstract

A quick and sensitive molecular diagnostics approach for plant pathogen detection is a desired essential tool to reduce the production losses caused by plant diseases. We developed a nanoparticle based electrochemical biosensor for rapid and sensitive detection of plant pathogen DNA on disposable carbon electrodes. This assay is based on the rapid amplification of pathogen DNA sequences by recombinase polymerase amplification followed by gold nanoparticle-based electrochemical assessment with differential pulse voltammetry. This method is more sensitive than conventional polymerase chain reaction (PCR)/gel electrophoresis methods and could identify *Clavibacter michiganensis* subsp. *michiganensis* in infected plant samples. We believe this approach has potential as a rapid disease detection of bacterial canker caused by *Clavibacter michiganensis* subsp. *michiganensis* on infected seedlings at early stage of plant growth.

Keywords: *Clavibacter michiganensis* subsp. *michiganensis*, detection, plant pathogen bacteria, nanoparticles.

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➢ **POSTER PRESENTATION**

Image Processing Techniques in Food Processing

Rumeyse Önal[1*], İnci Çinar[2]

[1] Institute of Science and Technology, Kahramanmaraş Sütçü İmam University, Kahramanmaraş, Turkey,
[2] Department of Food Engineering, Kahramanmaraş Sütçü İmam University, Kahramanmaraş , Turkey,

Corresponding author e-mail:rumeyse_onal@hotmail.com

Abstract

In today's world, computers and computer based technologies have gained tremendous importance under the light of fast developing technology and parallel to this, the importance and utilization of image processing systems have gained interest. Image processing technology can be used in many different areas such as medicine, robotics, satellite images, biomedical, security, military defense and food processing. Food quality control analyses are, for the most part, long duration, laborious, or costly. The use of image processing technology can be successfully implemented in response to emerging technological demands and problems. Image processing technology is widely used in the determination of quality parameters and product classification. Image processing systems consist of five basic steps namely image acquisition, pre-processing, segmentation, measurement and classification. Image processing technology uses a lot of software and Matlab is widely used mainly due to its flexibility in data processing. The purpose of this work is to provide information about the basic principles of image processing techniques including all basic steps and recent studies on the use of image processing technology in the industrial food processing operations.

Keywords: Image Processing, Matlab, Food, Quality

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➢ **POSTER PRESENTATION**

Micro/Nano Encapsulation of Bioactive Cancer Drugs Through Electrospinning

Zeynep Çokluk[1*], İmren Özcan[2], Süleyman Köytepe[2], Burhan Ateş[2]

[*1]İnönü University, Science and Literature Faculty, Molecular Biology and Genetics Department, Malatya, Turkey.
[2]İnönü University, Science and Literature Faculty, Chemistry Department, Malatya, Turkey.

Corresponding author e-mail: coklukzeynep@gmail.com

Abstract

Nowadays, the adverse effects of cancer drugs on patients have led scientists to develop systems to reduce the inflammatory response of these drugs[1]. One of these methods is the encapsulation of cancer drugs. Encapsulation can provide advantages such as slow and specific release of drugs between gastric and intestinal regions. However, for tumorous tissues, access to these regions is a major problem. For this reason, in order to be able to be targeted, there are studies in which cancer drugs are given to the organism with nanoparticles.

In our study, methotrexate chemotherapeutic agent and $CoFe_2O_4$ nanoparticles were encapsulated in alginate biopolymer by electrospinning method in order to reduce the side effects of cancer drugs and to target to tumorous tissues. First, 1.5% of alginate aqueous solution, 2% $CoFe_2O_4$ and 3 mg/mL Methotrexate were mixed. This mixture was taken into an injector and placed in the sprayer of the electrospinning system. In another beaker, 100 mM $CaCl_2$ solution was prepared and placed in the collector unit of the electrospinning device. The distance between the sprayer and the collector was set to 15 cm and exposed to an electric current of 20 kW. Encapsulation was carried out for 30 min in this way and the surface pores of the obtained capsules were clogged with 1% starch. The levels of the methotrexate drug in the HPLC-UV detector and the morfology of the capsules in the SEM device were determined.

Keywords: Electrospinning, Methotrexate, $CoFe_2O_4$ NPs, Encapsulation, Alginate, Cancer.

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➢ **POSTER PRESENTATION**

NMR Relaxation Spectrum Analysis for Soft Candies

Pelin Poçan[1] , Esmanur İlhan[1], Elif Gökçen Ateş[1,2] , Mecit Halil Öztop[1]

[1]Middle East Technical University, Department of Food Engineering, Ankara, Turkey
[2]Çankırı Karatekin University, Department of Food Engineering, Ankara, Turkey

Corresponding author e-mail: pelin.pocan@metu.edu.tr

Abstract

Time Domain (TD) NMR relaxometry is a widely used technique to characterize oil and moisture containing food products. Particularly in gel like systems, it provides information on the moisture distribution and thus could be used to assess the ingredient interactions especially polymer-water. TD-NMR relaxometry is usually based on the analysis of spin-spin relaxation times (T_2) and the following mathematical transformation by using non-negative least square analysis (NNLS) to obtain a relaxation spectrum which is in fact the multi exponential behavior. Such a behavior usually shows the presence of different proton compartments which are attributed to the interactions among different ingredients. Since soft candies are sugar containing gel systems, relaxation time spectra are excellent tools investigate the differences between different formulations prepared using different gelling agents. In this study, three types of soft candies formulated using starch, pectin and gelatin were prepared. In addition to conventional gel formulations, sucrose was also substituted with D-Psicose a low caloric sugar known as *rare sugar* and effect of sugar substitution was also explored on the relaxation spectra. Spin-spin relaxation times were conducted on a 0.5 T (20.34 MHz) system using a CPMG sequence. Exponentially decaying curves were converted to a relaxation spectrum using the software PROSPA. Relaxation times obtained through the spectrum and the corresponding peak areas were calculated and compared for different formulations. It was shown that polymer, sugar and water interactions could be understood using T_2 relaxation spectra.

Keywords: Soft candy, relaxation spectrum, gelling agent, spin-spin relaxation time

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➢ **POSTER PRESENTATION**

The Effect of Acute Exercise on Behavior, Cognitive Functions, Emotional Learning, and Pain Threshold in Depressed Mice

Asuman Gölgeli[1*], Umut Bakkaloğlu[1], Bekir Çoksevim[1], Kamile Yazgan Özdıraz[2]

[1] Erciyes Üniversite, Tıp Fakültesi, Fizyoloji Anabilim Dalı, Kayseri, Türkiye
Erciyes University, Faculty of Medicine, Department of Physiology, Kayseri, Turkey
[2] Kapadokya Meslek Yüksek Okulu, Mustafa Kemal Paşa, Ürgüp, Nevşehir, Türkiye
Cappadocia Vocational College, Ürgüp , Nevşehir, Turkey

Corresponding author e-mail:golgeli@erciyes.edu.tr

Abstract

Depression is the most common psychiatric illness that can occur in the community, which is the recurrence characteristic of treatment resistance. It is known that exercise has a positive effect on correcting cognitive functions that are impaired depending on depression. However, the effect of the acut exercis was not studied in depresion. In this study, we investigated the effects of one-time acute exercise on cognitive functions, emotional learning and pain threshold in male and female rats with depression.
The depression (D) model in the mice (female N=20, male n=20) was constructed by floating the plastic narrow bucket in the depth of 50 cm for 10 minutes. The depression-generated female (n = 10) and male (n = 10) mice were floated in the water-filled swimming tank with a diameter 1.5 m. for 20 minutes to depression- acute exercise group (DE). Preferences in sucrose test, expolaration behaviour and locomotor activity in open field test, emotional learning in T maze test, pain threshold in hot plate test were evaluated.
In the sucrose test, group D in both genders consumed low sucrose water and excess fountain water than DE group. At the open field area, the number of line passing increased in DE groups and the number of itching decreased ($p < 0.05$). In the T maze test, the time spent in the D group increased and the escape time decreased ($p < 0.05$) than the DE group. There was no significant difference between the hot plate and von Frey pain threshold tests.
It was concluded that one-time acute exercise has a positive effect on some behavioral parameters that are depressed. The lack of difference in gender behavior parameters indicates that female or male mice can be used in such experiment.

This study was supported by Erciyes Üniversity Scientific Research Projects Support Unit (BAP TOA-2015: 5368).

Keywords: depression, acute exercise, behavior, emotional learning, pain threshold, mouse

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➢ **POSTER PRESENTATION**

Use of the Super Heated Steam Drying in Fruıt and Vegetable Processıng

Rumeyse Önal[1*], İnci Çinar[2]

[1] Institute of Science and Technology, Kahramanmaraş Sütçü İmam University, Kahramanmaraş, Turkey,
[2] Department of Food Engineering, Kahramanmaraş Sütçü İmam University, Kahramanmaraş, Turkey

Corresponding author e-mail: rumeyse_onal@hotmail.com

Abstract

Today, health conscious consumers demand for long lasting and high-quality processed products with minimal processing changes on the natural structure of food. Fruits and vegetables are highly perishable due to their high content of water and use of preservation techniques long term storage are needed. Drying techniques are widely used to meet these needs primarily based on hot air drying. The basic principle of superheated steam drying, which is also known as air free drying, is the use of superheated steam instead of hot air to achieve high heat transfer coefficients on the surface the food product for increased moisture removal from the product surface and thus to increase drying rate and to decrease drying time. Super heated steam drying has advantages of high drying rate, enhanced dried product quality and safety, reduced oxidative degradation reactions during the process and nature of being environmentally friendly. Superheated steam drying combines convection and conduction drying systems. In the superheated steam drying, the drying cycle consists of three periods defined as the initial rate , constant rate (equilibrium) and falling rate and can be used at three different pressure levels as low pressure, atmospheric pressure and high pressure systems according to the pressure applied. Therefore the present work aims to give brief information on basic principles of super heated steam drying, properties of super heated steam and applications of super heated steam drying in fruit and vegetable processing.

Keywords : Super heated steam, Drying, Food, Pressure.

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➢ **POSTER PRESENTATION**

Fabrication of Poly (lactic acid)/ Poly(vinylpyrrolidone) Bicomponent Nanofibers by Electrospinning: Morphology and Physicochemical Properties

Y. Emre Bulbul[1], Nursel Dilsiz[1*]

[1]Gazi University, Department of Chemical Engineering, Ankara, Turkey

Corresponding author e-mail: ndilsiz@gazi.edu.tr

Abstract

Fabrication and use of electrospun nanofiber based materials have recently received special and much attention in biomedical applications, especially as scaffolds for tissue engineering and regenerative medicine, wound dressing materials and carriers for drug delivery. Poly (lactic acid) (PLA) nanofiber scaffold has emerged as a class of biomaterials for biomedical engineering. However, the hydrophobic nature of PLA cause late degradation rates and its weak mechanical properties hinder its practical applications. In terms of biomaterials aspects, the better understanding of controlled fabrication, properties and functioning of electrospun materials is required to overcome the limitations. In this context, electrospinning of PLA blended with a water-soluble poly (vinylpyrrolidone) (PVP) was used to fabricate scaffolds with adjustable nanofiber surface morphology and controllable degradation rates. PCL/PVP electrospun nanofibers were fabricated in a wide range of compositional ratios, and the resulting scaffold architecture and degradation were chemically and morphologically evaluated. The morphology, structure and Young modulus properties of PLA/PVP porous nanofibers were studied by means of scanning electron microscopy, atomic force microscopy, X-ray diffraction, IR spectroscopy, contact angle measurements, roughness, porosity, swelling, nanoindentation and biodegradation rate. The results indicated that smooth nanofibers were formed without the occurrence of bead defects. The hydrophilicity, porosity, mechanical property (Young modulus), and swelling behavior of the PLA/PVP electrospun nanofiber scaffolds can be manipulated by altering the blend ratio of PLA/PVP. In summary, the PLA/PVP electrospun nanofiber had potential to be used in tissue engineering.

Keywords: Electrospinning, Biopolymers, Poly (lactic acid), Poly (vinylpyrrolidone), Physicochemical Properties

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➢ **POSTER PRESENTATION**

The Physico-Chemical and Bacteriological Quality of Well Water in the Wilaya of Tiaret, Algeria

Fatma Bousmaha, Malika Adamou-Djerbaoui, Et Khaldia Saim

University of Ibn Khaldoun , faculty of science and nature , Tiaret, Algéria

Corresponding author e-mail: fleurs_jasmin @yahoo.fr

Abstract

The present work was carried out in the wilaya of Tiaret, which is a semi-arid zone. It consisted of the sampling and analysis of public well water, in order to evaluate their physicochemical and bacteriological qualities.

The values of the physicochemical and bacteriological parameters obtained are generally higher than the prescribed standards. Among its latest, we quote the rate of nitrates which was respectively 72.73mg / l, 64.8 mg / l And 60.4 mg / l; for wells 1-3 and 4, indicating faecal pollution. The same was true for bacteriological analyzes that showed above-standard concentrations overall; for total and faecal coliforms, and faecal streptococci with average contents greater than 100 germs / ml. Water with such physico-chemical and bacteriological characteristics represents a real danger for its consumers and therefore a sure source of water-borne diseases such as Thyfoide fever or Bacillary dysentery.

Key words: water, nitrates, coliform, waterborne diseases.

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➢ **POSTER PRESENTATION**

Vibrational Spectroscopic Investigation and DFT Studies on 4,6-diphenyl-6-hydroxy-1-{[(1Z)-1-phenyl ethylidene] amino}tetrahydropyrimidin-2(1*H*)-one

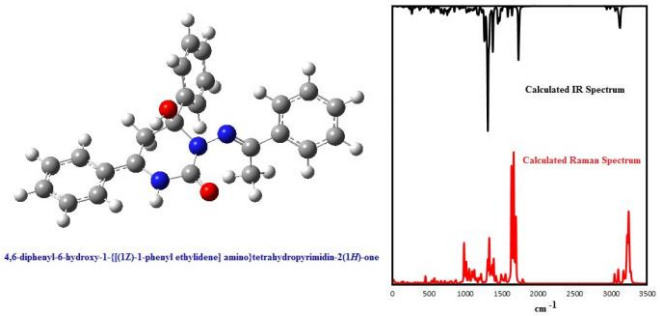
Hatice Arı[1*], Talat Özpozan[2], Zeki Büyükmumcu[2], Nazenin Akın[2],İlhan Özer İlhan[2]

[*1]Bozok University, Faculty of Science & Art, Department of Chemistry, Yozgat, Turkiye.
[2]Erciyes University, Faculty of Science, Department of Chemistry, Kayseri, Turkiye.

Corresponding author e-mail: hatice.ari@bozok.edu.tr

Abstract

Heterocycles containing pyrimidine moiety are of great interest because they constitute an important class of natural and nonnatural products, many of which exhibit useful biological activities and clinical applications [1,2]. Pyrimidine and its various derivatives have been successfully used as antimicrobial agents[3]. The title compound as one of the important pyrimidine derivative have been examined from theoretical and vibrational spectroscopic point of view. The optimization of the geometrical parameters, conformational analysis, vibrational analysis of the compound have been performed by means of DFT method using the B3LYP functional and 6-31G+(d) basis set. All the calculations were carried out using Gaussian 09 program [4].The IR and Raman spectra of the title compound have beenmeasured in the region of 4000-400 cm^{-1} and 4000-100 cm^{-1}, respectively. The comparison ofthe experimental and theoretical vibrational frequencies gave reasonable RMS value in the present work.



FigureOptimized structure and the calculatedvibrational spectra of the compound

Keywords: Vibrational Analysis, pyrimidine, DFT.

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➢ **POSTER PRESENTATION**

Research on the Pyralidae (Lepidoptera) Fauna of Kahramanmaraş Province

Murat Kütük[1], Mehmet Yaran[2], Mürşit Ömür Koyuncu[3], Vedat Görmez[2], Halil Uğur Aytekin[3]

[1] Department of Biology, Faculty of Science and Arts, Gaziantep University, 27310 Gaziantep, Turkey
[2] Gaziantep University, Department of İslahiye Vocational High School, İslahiye, Gaziantep, Turkey
[3] Gaziantep University, Department of Araban Vocational High School, Araban, Gaziantep, Turkey

Corresponding author e-mail: yaran@gantep.edu.tr

Abstract

Pyralidae (Snout moths) is the third largest family of Lepidoptera, with about 16,500 described species across the world. Currently, there are 19 subfamilies in this family, which were divided broadly into two groups viz., group Crambinina (14 subfamilies) and group Pyralinina (5 Subfamilies). There are several numbers of economically important species reported from this family, because their larvae usually cause damage to field and forest trees by acting as leaf rollers, leaf webber, root borers and leaf miners (vanNieukerken et.al 2011). Main purpose of this study is to determine the species belonging to the Pyralidae (Lepidoptera) fauna of Kahramanmaraş province. Adult butterflies were collected from different regions of Kahramanmaraş between March and August of 2015-2016. In the study, materials were collected in different altitudes, different climatic conditions and different types of vegetation owners by insect net, white curtain and light trap. As a result of this study, 10 species [*Lamoria anella* (Denis&Schiffermüller, 1775), *Epischnia prodromella* Hübner, 1799, *Etiella zinckenella* (Treitschke, 1832), *Myelois circumvoluta* (Fourcroy, 1785), *Oncocera semirubella* (Scopoli, 1763), *Sciota rhenella* (Scopoli, 1763), *Hypsopygia costalis* Fabricius, 1775, *Endotricha flammealis* (Dennis&Schiffermüller, 1775), *Synaphe consecretalis* (Lederer, 1855), *Synaphe punctalis* (Fabricus, 1775)] of Pyralidae belonging to 9 genera were determined in the research area. Materials examined, adult figures and zoogeographic distribution of each species will be presented.

Keywords: Pyralidae, Fauna, Kahramanmaraş, Turkey.

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➢ **POSTER PRESENTATION**

Research on the Tephritinae (Diptera: Tephritidae) Fauna in Ordu Province

Ümit Katrancı[1], Murat Kütük[1]*, Mehmet Yaran[2], Vedat Görmez[2], Mürşit Ömür Koyuncu[3]

[1]Department of Biology, Faculty of Science and Arts, Gaziantep University, 27310 Gaziantep, Turkey
[2] Gaziantep University, Department of İslahiye Vocational High School, İslahiye, Gaziantep, Turkey
[3] Gaziantep University, Department of Araban Vocational High School, Araban, Gaziantep, Turkey

Corresponding author: e-mail: mkutuk@gantep.edu.tr

Abstract

Tephritidae are picture-winged flies of variable size belonging to the superfamily Tephritoidea within the suborder Brachycera (De Meyer, 2006). According to Freidberg (2006), fruit flies (Diptera: Tephritidae) include 3 to 6 subfamilies, about 40 tribes and subtribes, approximately 500 genera, and about 4500 species. This study was based on the Tephritinae (Diptera: Tephritidae) species collected from Ordu province of Turkey during 2016 and 2017. Fruit fly materials were collected randomly from host plants using standard insect net in various locations of Ordu province during 2009 and 2010. Species were identified using the keys of Hendel (1927), White (1988), Freidberg and Kugler (1989), Merz (1994) and Kütük (2003 and 2006. Specimens have been deposited at the insect museum of Gaziantep University. In the study, 12 species belonging to 8 genera were determined from Ordu province: *Acanthiophilus helianthi*, *Ensina sonchi*, *Oxyna nebulosa*, *Sphenella marginata*, *Tephritis dioscurea*, *T. formosa*, *T. postica*, *T. vespertina*, *Tephritomyia lauta*, *Trupanea amoena*, *T. stellata*, *Xyphosia milliaria*. Species are listed in alphabetical order. In addition, materials examined and wing figures of all species and will be presented.

Keywords: Tephritidae, Fruit fly, Fauna, Ordu, Turkey.

This study is a part of MsC thesis of first author.

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➢ **POSTER PRESENTATION**

Research on the Crambidae (Lepidoptera) Fauna of Malatya Province

Murat Kütük[1], Mehmet Yaran[2]*, Mürşit Ömür Koyuncu[3], Vedat Görmez[2], Halil Uğur Aytekin[3]

[1] Department of Biology, Faculty of Science and Arts, Gaziantep University, 27310 Gaziantep, Turkey
[2] Gaziantep University, Department of İslahiye Vocational High School, İslahiye, Gaziantep, Turkey
[3] Gaziantep University, Department of Araban Vocational High School, Araban, Gaziantep, Turkey

Corresponding author e-mail: yaran@gantep.edu.tr

Abstract

Crambidae is the largest family under super-family Pyraloidea with a total of 9,655 species described species across the world. This family includes important pests, causing economic damage to the crops, forests, and stored products by acting as a leaf rollers leaf miners and stem borers (vanNieukerken et.al 2011). Main purpose of this study is to determine the species belonging to the Crambidae (Lepidoptera) fauna of Malatya province. Adult butterflies were collected from different regions of Malatya between March and August of 2015-2016. In the study, materials were collected in different altitudes, different climatic conditions and different types of vegetation owners by insect net, white curtain and light trap. As a result of this study, 14 species [*Hellula undalis* (Fabricius, 1781), *Aporodes floralis* (Hübner, 1809), *Cynaeda dentalis* (Denis & Schiffermüller, 1775), *Cynaeda superba* (Freyer, 1845), *Epascestria cruentalis* (Geyer, 1832), *Epascestria pustulalis* (Hübner, 1823), *Tegostoma baphialis* (Staudinger), *Ostrinia nubilalis* (Hübner, 1796), *Udea ferrugalis* Hübner, 1796, *Dolicharthria bruguieralis* (Duponchel, 1833), *Dolicharthria punctalis* ([Denis & Schiffermüller], 1775), *Dolicharthria stigmosa* (Herrich-Schäffer, 1848), *Metasia octogenalis* Lederer, 1863, *Nomophila noctuella* (Denis & Schiffermüller, 1775)] of Crambidae belonging to 10 genera were determined in the research area. Materials examined, adult figures and zoogeographic distribution of each species will be presented.

Keywords: Crambidae, Fauna, Malatya, Turkey.

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➢ **POSTER PRESENTATION**

In Vitro Antimycobacterial Properties of Some New Bis-Benzimidazole Derivatives

Naif Okuyucu, Hasan Küçükbay*

[2]İnönü University, Faculty of Arts and Sciences, Department of Chemistry, 44280 Malatya-Turkey

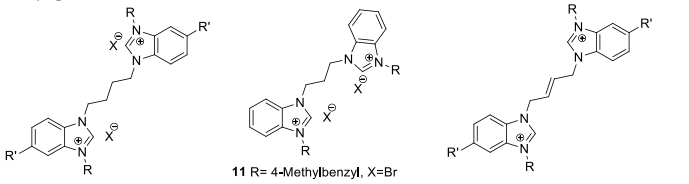
*E-mail: hasan.kucukbay@inonu.edu.tr

Abstract

Tuberculosis (TB) is caused by bacteria (Mycobacterium tuberculosis) that most often affect the lungs. Tuberculosis (TB) is one of the top 10 causes of death worldwide. In 2016, 10.4 million people fell ill with TB, and 1.7 million died from the disease (including 0.4 million among people with HIV). Over 95% of TB deaths occur in low- and middle-income countries. Tuberculosis is curable and preventable.[1] However, development of resistance by mycobacterial strains against the antituberclosis drugs demands the discovery of new and effective antimycobacterial drugs.

Benzimidazoles have been considered as privileged structures in medicinal chemistry due to their several biological properties. In connection with this, we now report on antimycobacterial properties of some new bis-benzimidazole derivatives.

The antimycobacterial activity of the bis-benzimidazole compounds was determined using Microplate Alamar Blue Assay (MABA) by the TAACF (Tubercluosis Antimicrobial Acquisition & Coordinating Facility) in USA. Nine of the compounds showed antimycobacterial activities ranged between 85 % and 52% bacterial inhibitions against *Mycobacterium tuberculosis* H37Rv (ATCC 27294) at MIC values of > 6.25 µg/mL. Among the compounds tested here, compound **9** was found to be the most efficient antimycobacterial agent with 85 % bacterial inhibition against *Mycobacterium tuberculosis* H37Rv at MIC value > 6.25 µg/mL.



1 R= Et, R'= Me, X= I
2 R= Isopropyl, R'= H, X=I
3 R= 3-Cyanopropyl, R'= H, X= Cl
4 R= Methoxyethyl, R'= Me, X= Cl
5 R= 2-Phenylethyl, R'= Me, X= Br
6 R= Benzyl, R'= Me, X= Cl
7 R= 4-Chlorobenzyl, R'= H, X= Cl
8 R= 4-Nitrobenzyl, R'= H, X= Cl
9 R= 4-Chlorobenzyl, R'= Me, X= Cl
10 R= -, R'= Me, X= -

11 R= 4-Methylbenzyl, X=Br

12 R= Me, R'= Me, X= I
13 R= Et, R'= H, X=I
14 R= Et, R'= Me, X= I
15 R= 4-Methylbenzyl, R'= Me, X= Br
16 R= 2-(4-Methoxyphenyl)ethyl, R'= H, X= Cl
17 R= 2-Phenylethyl, R'= Me, X= Br
18 R= Benzyl, R'= Me, X= Cl
19 R= 4-Nitrobenzyl, R'= Me, X= Cl
20 R= 4-Chlorobenzyl, R'= Me, X= Cl
21 R= -, R'= H, X= -
22 R= -, R'= Me, X= -

Keywords: Antimycobacterial, Bis-benzimidazoles

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➢ **POSTER PRESENTATION**

Apoptotic Effects of *Colchicum sanguicolle* on Cervical Cancer Cell Lines

Gül Özcan[1*], Özlem Dağdeviren Özsöylemez[2], Gizem Akman[1], Walid Khalılıa[2]

[1]Istanbul University, Faculty of Science, Department of Biology, Istanbul, Turkey.
[2]Istanbul University, Institute of Graduate Studies in Science and Engineering, Department of Radiobiology, Istanbul, Turkey.

Corresponding author e-mail: gozcan@istanbul.edu.tr

Abstract

In this study, we aim to find out effect mechanisms of plant extract which is endemic to our country and to what extent does molecules which have roled in apoptosis, that is aimed to be stimulated on cancer cells, intersect with each other, or to determine on which degree they differ in cellular and molecular ways.

5 different doses (0.001, 0.01, 0.05, 0.25 and 0.5 mg⁄ml) of the *Colchicum sanguicolle* were applied for 24, 48, 72 hours on the HeLa and C-4 I cell lines. The morphological criteria of apoptosis are shown in the the phase contrast and the fluorescence microscope with DAPI stain. Fluorescent plate reader was used for detection of caspase-3,7 enzymes activation in HeLa and C-4 I cells to which IC50 doses of plant extract were applied.

According to the results of apoptotic index made with *Colchicum sanguicolle* extract, it was determined that the apoptosis rate increased depending on the dose and time manner. Caspases analysis showed that caspases 3,7 enzymes activation in HeLa and C-4 I cells which were applied plant extract were 1,5 folds more than its control groups.

The results of our work will contribute to the design of anticarcinogenic drugs to be made from natural products. Note to the Scientific Comittee: This work was supported by Scientific Research Projects Coordination Unit of Istanbul University. Project number 41488.

Keywords: *Colchicum sanguicolle*, apoptosis, C-4 I, HeLa, caspases.

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➢ **POSTER PRESENTATION**

Photovoltaic Properties of *N*-Coordinate Pr^{3+} Sensitizers in DSSC

Serkan Dayan, Nilgün Kalaycıoğlu Özpozan*

Erciyes University, Faculty of Science, Department of Chemistry, 38039, Kayseri, Turkey

Corresponding author e-mail: nozpozan@gmail.com

Abstract

Since the first report on dye-sensitized solar cells (DSSCs) introduced by M. Grätzel at 1990, too much attention has been attracted to the development of new and ever more performing materials as this technology fulfils many requirements concerning the cost of the materials and cells, low energy expenditure and ease of preparation. Their maximum conversion efficiency of over 12 % suggests that they are a promising type of next generation solar cells. For their commercial application, it is important to develop low-cost materials and to achieve maximum efficiency for the cells [1-3].

The new Pr^{3+} complexes were prepared from some diaminobenzenes and Pr^{3+} salt and the sensitizers were tested as photoactive dye in the dye-sensitizers solar cells (DSSC). The structural elucidations of the N-coordinate Pr^{3+} complexes were characterized by NMR, FT-IR, UV-vis, SEM-EDX, CV etc.

Figure. Crystal imaging of *N*-Coordinate Pr^{3+} complex

Keywords: Sensitizers, Solar Cells, Complexes

Acknowledgments: We acknowledge the financial support granted by Erciyes University (ERUBAP), (FDK-2015-6013).

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➢ **POSTER PRESENTATION**

No Mutations Identified In The *Arhgap29* Gene In Turkish Patients With Nonsyndromic Cleft Lip With Or Without Cleft Palate

Deniz Aşlar Öner[1]*, Erhan Özdiler[2], Ayşe Tuba Altuğ[2], Özlem Sancak[2], Orhan Özdiler[2], Serpil Yanbakan[3], Hakkı Taştan[1]

[1]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey
[2] Ankara University, School of Dentistry, Department of Orthodontics, Ankara, Turkey
[3]LÖSANTE Children's and Adult Hospital, Ankara, Turkey

Corresponding author e-mail: denizaslar@gmail.com

Abstract

Non-syndromic cleft lip with/without cleft palate (nsCL/P) has a complex aetiology involving both genetic and environmental factors. Different researches have demonstrated an association between nsCL/P and the variants of the *ARHGAP29* gene. *ARHGAP29* encodes Rho GTPase activating protein (GAP) 29, a protein that mediates the cyclical regulation of small GTP binding proteins such as RhoA that is related in many functions connected to cellular shape, movement, cell-cell interactions and proliferation, all critical for craniofacial development. ARHGAP29 is expressed in the medial and lateral nasal processes, as well as the palatal shelves of murine embryos. The aim of this study was to investigate the association between *ARHGAP29* variants and Turkish patients with non-syndromic cleft lip with/without palate. A sum of 205 Turkish cases were enrolled; 80 nsCL/P patients and 125 unrelated individuals. Genomic DNA was isolated from peripheral blood leukocytes and *ARHGAP29* gene was amplified using PCR. After PCR, we sequenced using an automated sequencer. We found that there is no mutation in Turkish patients with nsCL/P and control groups. However, this study was a small sample size and additional studies are needed. These results clearly do not provide any proof to recommend that this ARHGAP29 gene plays a significant role in the development of nsCL/P.

Keywords: ARHGAP29, non-syndromic cleft, mutation.

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➢ **POSTER PRESENTATION**

The Effect of Hypobaric Stress Conditions on MCF-7 Cell Lines and *bcl-2* Genes Expressions by qRT-PCR

Beliz Tezel Yetiş[1], Gül Özcan[2*]

[1]Istanbul University, Institute of Graduate Studies in Science and Engineering, Istanbul, TURKEY
[2] Istanbul University, Science Faculty, Biology Department, Istanbul, TURKEY

Corresponding author e-mail: beliztezel@gmail.com

Abstract

Cancer is identified as a process which starts with uncontrolled multiplication of cells and occupation of the tissues and organs these cells belong to and continues with distrupting the processes that these vital parts have. The hypobaric stress conditions induces hypoxy and causes free radicals to damage the cell. In this study, the cytotoxic effects of hypobaric stress on breast cancer cell lines MCF-7 has been researched. For this purpose, MCF-7 cell lines has been exposed to fractional hypobaric stress conditions 3 times for 3 hours with 24 hour intervals. After the experiments, cytotoxic activites were determined by Mitocondrial Dehydrogenesis Enzyme Activity method (MTT). Gene expression levels of pro-apoptotic and anti-apopotoic genes were identified by Real-Time PCR analysis. The cytotoxicity of MCF-7 cells that were under hypobaric stress conditions were statistically comparable to the control group cells ($p<0,01$). It has been understood that the cytotoxic effects are increasing over time and the highest cytotoxic effects have been spotted on 48th hour. Also, bak and bic genes from pro-apoptotic genes were regulated upwards parallel to experiment hours in comparison to control group, meanwhile the anti-apoptotic genes *bcl-2, bcl-x, mcl-1* and *bfl-1* were regulated downwards. With results of this work, researching low pressure conditions effects on molecular mechanisms of cancer cells, will be a base research for other related investigations and create opportunities for new treatment and strategies regarding investigating the genes related to cell cycle and increasing anti-tumoral effects for target organs.

Keywords: Breast Cancer, Apoptosis, Hipobaric Stress, MCF-7, *bcl-2*.

This work was supported by Scientific Research Projects Coordination Unit of Istanbul University. Project number 53130.

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➢ **POSTER PRESENTATION**

The Acute Toxic Effects of Azoxystrobin-Based Fungicide on *Gammarus kischineffensis* (Crustacea:Amphipoda)

Özlem Demirci

Dicle University, Science Faculty, Department of Biology, Diyarbakır, Turkey.

Corresponding author e-mail: ozdem22@gmail.com

Abstract

Azoxystrobin is a broad-spectrum fungicide belonging to the class of strobilurin and has a significant effect on a wide range of products. In organisms, the mitochondrial electron transport system acts by inhibiting the cytochrome bc1 complex. The aim of our study is to determine the acute toxic effect of azoxystrobin-based fungicide on *Gammarus kischineffensis*. Mortality percentages in organisms exposed to Azoxystrobin-based fungicide increased depending on the concentration. The 24, 48, 72 and 96 hours LC_{50} values for azoxystrobin-based fungicides were 4184.8, 3222.1, 2341.3, 1921.8 µg L^{-1}, respectively. Azoxystrobin-based fungicide is moderately toxic according to US EPA classification because it is higher than 1 ppm of the 96-hour LC_{50} value.

Keywords: Acute toxicity, azoxystrobin, *Gammarus kischineffensis.*

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➢ **POSTER PRESENTATION**

Pb Heavy Metal Toxicity Effects regarding Morphology of Radish (*Raphanus sativus*) Seedlings

Feyza Candan

Department of Biology, Faculty of Science and Letters, Manisa Celal Bayar University, Manisa, Turkey

Corresponding author e-mail:feyzzacandan2002@yahoo.com

Abstract

In this study, the effects of one of the heavy metals lead (Pb) contamination on radish (*Raphanus sativus*) seedlings determined by morphological parameters. Environmental pollution is a considerable for the world and people health. Contamination of plants with heavy metals could be shown mophological changes in the point of genotoxic effects of heavy metals on DNA profile and cause damages like mutation. According to this knowledge, morphological changes can be seen on the plants as regards reflection of genome changes. Some morphological changes were caused on root, stem and leaf length and appearance of radish seedlings with the under certain concentrations of lead. Consequently, it can be defined that morphological stability had changed according to different rates of lead heavy metal induced radish as regards their morphological evaluation. On the other hand, clorosis, rips and puncture as a result of health problems under heavy metal stress were observed.

Keywords: Radish (*Raphanus sativus*), Heavy metal, Morphology.

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➢ **POSTER PRESENTATION**

Anticancerogenic Effects of *Nigella sativa* Oil on Mcf-7 and Au565 Breast Cancer Cell Lines, *In Vitro*

Sahar Dinparvar*, Adil Allahverdiyev, Melahat Bağırova, Emrah Şefik Abamor

Yildiz Technical University, Chemical and Metallurgical Engineering Faculty, Bioengineering Department, Esenler, Istanbul

Abstract

Breast cancer is known as second most common cause of deaths in females at worldwide. Chemotherapy, surgery and radiotherapy are the basis treatment options against breast cancer. The major disadvantage of chemotherapy is the damage of healthy organs and tissues besides of cancer cells. Accordingly, in recent years plant-based compounds have been emphasized according to their high therapeutic efficacies. There are some studies in the literature demonstrating that different components from Nigella Sativa oil are effective on MCF 7 breast cancer cells. However, we have not found any study indicating the activity of Nigella sativa oil on MCF 7 (which does not overexpress the HER-2/neu gene) and AU565 (which overexpresses the HER-2/neu gene) breast cancer cell lines. For the first time in the present study the effect of Nigella sativa oil has been investigated on MCF 7 and AU565 cells, in vitro. In the experiments, MCF 7 and AU565 cells were cultured in DMEM (Dulbecco's Modified Eagle Medium) and RPMI-1640 containing 10% FBS in T25 flasks. For this, AU565 and MCF 7 cells, which were reached to 60% and 90% confluence, were passaged via Trypsin/EDTA and 10,000 cells were included in each wells of 96 well plates. Then all cells were incubated at 37°C in a humidified 5% CO2 environmental incubator for 24 hours. Subsequently, six different concentrations of soluble Nigella sativa oil (50, 100, 250, 500, 750, 1000 µg/ml) that were prepared in PBS containing 10% DMSO were added over MCF 7 and AU565 cells and cells were incubated at 37°C in a humidified 5% CO2 incubator for 48 hours. Then, cell viabilities and effective oil concentrations were determined by MTT (3- ((4,5-Dimethylthiazol-2-yl) -2,5-diphenyltetrazolium bromide) cytotoxicity test method. In the experiment, the anticancerogenic effects of different concentrations of Nigella sativa oil (50, 100, 250, 500, 750, 1000 µg / ml) were examined on MCF7 and AU565 breast cancer cells. Obtained results showed that Nigella sativa oil was effective on both cell lines. However, in contrast to control group, more inhibitory activities were detected on MCF 7 cell line. All concentrations of oil inhibited cell proliferation rates of cancer cells approximately 2.5-3 times in contrast to control. Moreover, when the highest concentrations was applied, *N.sativa* oil completely inhibited the cellular viabilities of cancer cells. *N.sativa* oil demonstrated no inhibitory effect on AU565 cell line at concentrations of 50 and 100 µg/ml. However, considerable decrease was observed when N.sativa oil was applied at concentrations of 250, 500, 750 and 1000 µg / ml. It was demonstrated that 1000 µg / ml of oil lead to complete inhibition of the cells. In conclusion, this study was the first study to examine the effects of Nigella Sativa oil on two different cell lines of breast cancer (MCF 7 and AU565) and it was determined that *N.sativa* oil was effective on both cell lines but have more inhibitory activities on MCF7 cell line. These results reveal that *N.sativa* oil has a great potential in treatment of breast cancer. We suggest that combined use of these oils together with anticancerogenic drugs may be promising for completely eradication of breast cancer cells.

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➢ **POSTER PRESENTATION**

Mikrodalga Destekli N-(Naftil-1-il)-N-(5-(3-Hidroksinaftil-2-il)-1,3,4-Oksadiazol-2-il)amin'in Zn(II) Kompleksinin Sentezi ve Teorik Çalışmaları

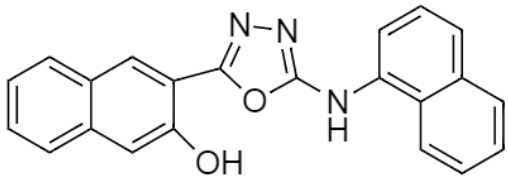
Zuhal Karagöz Genç[1], Murat Genç[2*]

[1] Adıyaman Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, Adıyaman, Türkiye
[2]Adıyaman Üniversitesi, Fen Edebiyat Fakültesi Kimya Bölümü, Adıyaman, Türkiye

Sorumlu yazar e-mail: mgenc23@gmail.com

Özet

Oksadiazol bileşikleri tıp ve farmokoloji alanlarında oldukça yaygın kullanılan bileşiklerdir. Bu bileşik türevlerinin biyolojik aktiviteleri literatürde pek çok çalışmada ortaya koyulmuştur. Bu çalışmada N-(Naftil-1-il)-N-(5-(3-Hidroksinaftil-2-il)-1,3,4-Oksadiazol-2-il)amin bileşiği tiyoamit bileşiğinin civaasetat ile reaksiyonundan elde edildi. Elde edilen bileşiğin $ZnCl_2$ ile reaksiyonundan Zn(II) kompleksi elde edildi. Kompleksin
Gaussian 09 programı ile Mulliken yükleri, molekülün aktivitesini belirlemek için HOMO-1 ve LUMO+1 orbital enerjileri, teorik NMR ve FT-IR hesaplamalarının deneysel değerlerle uyumu araştırıldı.



Anahtar Kelimeler: 1,3,4- Oksadiazol, DFT, Zn Kompleksi.

Teşekkür: Bu çalışma Adıyaman Üniversitesi Bilimsel Araştırma Projeleri Koordinasyon Birimi (Proje No: FEFBAP/2014-0011) tarafından desteklenmiştir.,

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➢ **POSTER PRESENTATION**

Ticari Kullanıma Sahip Sülfonamit İlaçlarından Türetilmiş Schiff Bazlarının Sentezi, Yapılarının Aydınlatılması ve DFT Çalışmaları

Cihan Şen[1*], Tülin Şen[1], Saliha Alyar[1] , Hamit Alyar[2], Ümmühan Özdemir Özmen[3]

[1]Çankırı Karatekin Üniversitesi, Fen Fakültesi, Kimya Bölümü, Çankırı, Türkiye.
[2]Çankırı Karatekin Üniversitesi, Fen Fakültesi, Fizik Bölümü, Çankırı, Türkiye
[3] Gazi Üniversitesi, Fen Fakültesi, Kimya Bölümü, Ankara, Türkiye.

Corresponding author e-mail: saliha@karatekin.edu.tr

Özet

Sülfonamidler, insanlardaki bakteriyel enfeksiyonların önlenmesi ve tedavisi için sistematik olarak kullanılan ilk etkin kemoterapötik maddelerdir[1,2]. Uygulamaları nedeniyle halen araştırılan organik-inorganik kimyasalların çok sayıda ve çok farklı grupları arasında sulfonamidler ve N-türevleri olağanüstü gruplardan biridir. Bakterilerin direnç kazanmaları nedeniyle günümüzde trimetropirim, tetroksoprim veya diaminopirimidin gibi dihidrofolat redüktaz inhibitörleriyle kombine edilmiş karışımları şeklinde daha çok idrar yolu enfeksiyonları, toksoplazmozis ve nokardiyoz enfeksiyonlarında kullanılmaktadır.

Bu çalışmada Sülfametoxazol ve sülfisoxazol ticari ilaçları ile elde edilmiş olan Schiff bazları sentezlenip yapıları karakterize edilecektir. İkinci aşamada ise sentezlenecek hedef Schiff bazlarının konformasyon analizi DFT/B3LYP yöntemiyle ve GAUSSIAN 03 paket programıyla yapılarak en düşük enerjili molekül yapısı elde edilecektir[3].

Anahtar Kelimeler: Sülfametoxazol, sülfisoxazol, Enzim inhibisyonu, DFT.

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➢ **POSTER PRESENTATION**

Some Chemical Properties of Kars Kashar and Cecil Cheeses

Sezen Harmankaya[1]*, Ahmet Harmankaya[2]

[1]Kafkas University, Vocational School Kars, Food Processing of Department, Kars, Turkey
[2]Kafkas University, Department of Chemistry, Kars,Turkey

Corresponding author e-mail: sezenyildizhan@hotmail.com

Abstract

In this study, intended to investigate the chemical quality of Kars kashar and cecil cheeses and identify risks and deficiencies.

In tis study, generated the main material which 25 samples from each of the cheese samples which provided from the markets in the region. The homogenized cheese samples were taken in appropriate quantities and prepared for chemical analysis. pH of the samples was determined by measuring with pH meter. The titratable acidity (as lactic acid) and salt content of the samples were determined by titration method. Fat analysis was determined by the gerber method and the moisture was determined by the gravimetric method. The results of the study were subjected to variance analysis in the SPSS PASW Statictic 18 packet program and the results were given as mean ± standard error.

According to there sults chemical composition of Kars kashar cheese was following average: titratable acidity 2,29±0,07 % (as lactic acid), moisture 42,59±1,00 %, fat 42.84±0,92 %, salt 3,58±0,12 %. According to there sults chemical composition of Kars cecil cheese was following average: pH 5,35±0,03, titratable acidity 1,03±0,06 % (as lactic acid), moisture 45,51±0,90 % fat 18,48±0,47 %, salt 2,84±0,19 %. In the direction of the obtained results, it has been seen that a lot of cheese samples are out of the chemical standard.

Keywords: Kashar cheese, cecil cheese, chemical properties

Acknowledgment: This study was supported by the Scientific Research Projects Coordination Unit of Kafkas University (Project Number 2016-TS-27)

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➢ **POSTER PRESENTATION**

Research on the Fauna of Terellinae (Diptera: Tephritidae) in Sinop Province

Vedat Görmez[1]*, Murat Kütük[2], Mehmet Yaran[1], Mürşit Ömür Koyuncu[3]

[1]Plant and Animal Production Department, İslahiye Vocational High School, Gaziantep University, Gaziantep, Turkey
[2]Department of Biology, Faculty of Sciences and Arts, Gaziantep University, Gaziantep, Turkey
[3]Plant and Animal Production Department, İslahiye Vocational High School, Gaziantep University, Gaziantep, Turkey

Corresponding author e-mail: vgormez@gantep.edu.tr

Abstract

Fruit flies (Diptera: Tephritidae) is one of the largest Diptera family including 500 genera and 4500 species. In Turkey, 160 species of fruit flies have been distributed. They are one of the most important subfamily for biological control of family Asteraceae. Larvae of species feed on flower heads of the Asteraceae. This study was conducted in order to determine the Terellinae fauna of Sinop. During the study, adult specimens were collected from possible host plants using an insect net in different localities of Sinop province of Turkey between 2015 and 2017 years. Collected materials were killed in the killing jar and pinned in the laboratory for identification. Specimens were diagnosed using identification key of Freidberg and Kugler (1989), White (1989), Merz (1994), Kütük (2003) Görmez (2011) and Yaran (2014). As a result of the study, 11 species (*Chaetorellia conjuncta* (Becker), *C. jaceae* (Robineau – Desvoidy), *C. loricata* (Rondani), *C. succinea* (Costa), *Orellia stictica* (Gmelin), *Terellia gynaecochroma* (Hering), *T. luteola* (Wiedemann), *T. nigripalpis* Hendel, *T. ruficauda* (Fabricus), *T. serratulae* (Linnaeus), *T. virens* (Loew)) of 3 genera belonging to Terellinae were obtained in the research region. All species were recorded for the first time in Sinop province with this study. Also, material examined, wings figures and zoogeographic distribution will be presented. Specimens are deposited at the Zoology Museum of Gaziantep University.

Keywords: Fruit flies, Terellinae, Fauna, Sinop, Turkey.

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➢ **POSTER PRESENTATION**

Expression of CDK Genes Under Gamma Radiation and Hypobaric Conditions *In vitro*

Gizem Akman[1*], Songül Çavdar Karaçam[2], Gül Özcan[1]

[1]Istanbul University, Science Faculty, Biology Department, İstanbul, TURKEY
[2]Istanbul University, Cerrahpaşa Faculty of Medicine, Radiation Oncology Department, Istanbul, TURKEY

Corresponding author e-mail: gizem.akman@istanbul.edu.tr

Abstract

Gamma radiation has an important place in cancer treatment by harming the DNA's of cancer cells. Hypobaric stress conditions forms free radicals and harms the cells. It is significant to inhibit the cell cycles to stop cell divison and encourage their death for the efficacy of the treatment. In this study, we aimed to show the effect of gamma radiation and hypobaric stress conditions when applied one by one and together, and the role of CDK genes in this effect. The cytotoxic activities of HeLa cells were examined via MTT method, after 0 and 24 hours of incubation. The morphological changes were examined under phase-contrast and light microscopies. To detect the expression levels of cyclin dependent kinase genes, *cyclin A*, *cyclin E* and *p21* genes were examined via RT-PCR. In this study, under 32 Gy gamma radiation and hypobaric stress conditions, it was determined that cytotoxicity of HeLa cells was statistically significant according to control group ($p<0.01$). In the end of 0 and 24 hours of incubation, HeLa cells group it was observed that only *cyclin A* gene was expressed and expression decreased according to the control group under hypobaric stress conditions, also under hypobaric stress conditions and gamma radiation. Understanding of cell cycle's mechanisms and molecules and also cell cycle checkpoints, leads to increase the effectiveness of the treatment. For that reason, it is important that our experiment revealed gamma radiation and hypobaric stress conditions proved its effectiveness in cellular and molecular level, which would elicit an increase of the current cancer treatment, also developing new treatments.

Keywords: Gamma radiation, hypobaric stress, cyclin dependent kinase, HeLa cells.

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➢ **POSTER PRESENTATION**

Degradation of Municipal Solid Waste (MSW) Landfill Leachate by Using Advanced Oxidation Proceses

Osman Gulnaz[1], Nazrin Murguzova[2*], Ahmet Sait Yılmaz[2]

[1]Facuty of education, Department of Science and Technology Education, Cukurova University, 01330 Balcalı, Adana, TURKEY
[2]Department of Biotechnology, Institute of Natural Applied Sciences University of Cukurova, 01330 Adana, Turkey

Corresponding author e-mail: nazrinmova3294@gmail.com

Abstract

Municipal solid waste (MSW) landfill leachate is an environmental problem. The landfill leachate occurs by the degradation of the solid waste by biologic activation and the rain which falls on the top of the landfill. municipal solid waste (MSW) landfill leachate contains many non-biodegradable or toxic substances, they are not removed by convencional wastewater treatment methods. In this reasearch ozonolytic and fenton proceses were used for treatment of the landfill leachate. Effect of pH on Fenton and ozonolytic degradation were evaluated and The fenton proceses used for the reduction of COD and TOC was determined as 48.4% and 37.1%, respectively. However reduction of COD and TOC by using Ozonolytic degradation were dtermined as 38.7% and 21.6%, respectively. Fenton proceses is an effective technique against to ozonolytic proceses for reduction of the COD and TOC at pH 7. The fenton proceses among the advanced oxidation processes has become an alternative efficient techniques for mineralization of recalcitrant organics in landfill leachate. (This research was supported by Cukurova University research found Project No: FBA-2017-9115)

Keywords: advanced oxidation processes, landfill leachate, Ozonolytic degradation, Fenton proceses.

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➢ **POSTER PRESENTATION**

Biosorption Reactive Red 198 by Using Chitosan

Hamiyet Özge Carbaş, Osman Gülnaz, Aygül Küçükgülmez Yandim*

Cukurova University, Biotechnology Research Center, Adana, Turkey

Corresponding author e-mail: akucukgulmez@cu.edu.tr

Abstract

Adsorption processes are more effective methods for removal of toxic substance from aqueous solutions. In this study, chitosan was used as an adsorbent. In order to determine characterization of the chitosan; degree of deacetylation, molecular weight, apparent viscosity, fourier transform infrared spectroscopy, scanning electron microscopy and X-ray diffraction analyses were applied. Analysis results showed that chitosan has different functional groups. These different functional groups have reacted with reactive red 198. The adsorption of reactive red 198 at pH 5 was determined as 142. 85 mg/g at 200 mg/L initial dye concentrations. The effect of temperature on the adsorption shows that adsorption capacity increase with higher temperature. The pseudo second-order kinetic model was fit well over the range of contact times. Adsorption of reactive red 198 on to chitosan particle towards to chemical sorption.

Keywords: Reactive red 198, chitosan, adsorption, kinetic modeling.

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➢ **POSTER PRESENTATION**

Ameliorative Effect of Karrikinolide (KAR_1) Against Boron-Induced Oxidative Stress and Genotoxicity in Wheat (*Triticum aestivum* L.)

Müjgan Kesik Oktay*, Şükrü Serter Çatav, Tuncer Okan Genç, Köksal Küçükakyüz

Mugla Sitki Kocman University, Faculty of Science, Biology Department, Mugla, Turkey

Corresponding author e-mail: mujgank@mu.edu.tr

Abstract

It is well-known that karrikinolide (KAR_1), isolated from plant-derived smoke, promotes germination and seedling growth in many plants. In addition, it has been demonstrated that KAR_1 may alleviate the adverse effect of various stress conditions such as drought and high temperature. The aims of this study were to assess the effect of KAR_1 on growth and oxidative stress parameters in wheat seedlings under boron stress, and to clarify whether it would be effective in ameliorating genotoxicity induced by boron. Our result indicated that boron stress (12 mM) significantly inhibited root and shoot growth, and led to increases in H_2O_2, MDA and proline contents in shoot tissue of wheat seedlings. Moreover, a remarkable reduction in genomic template stability [GTS (%)], which is an indicator of genotoxicity, was observed. On the other hand, application of KAR_1 (0.1 µM) improved the growth parameters, and caused a significant decrease in H_2O_2 and MDA levels. Also, a protective effect of KAR_1 against boron-induced genotoxicity in wheat seedlings was detected. Taken as a whole, we suggest that exogenous application of KAR_1 have a potential to improve the growth and yield of plants under abiotic stress conditions.

Key words: Boron, oxidative stress, genotoxicity, karrikinolide, wheat.

Acknowledgements: This study was funded by the Scientific Research Projects Coordination Unit of Muğla Sıtkı Koçman University (Grant Number 15/153).

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➢ **POSTER PRESENTATION**

Cytotoxic and Genotoxic Evaluation of Acetamiprid on Ar42j Pancreatic Cell Line

Mehtap Kara*, Gül Özhan

Istanbul University Faculty of Pharmacy Department of Pharmaceutical Toxicology, Istanbul-Turkey

Corresponding author e-mail: mehtap.kara@istanbul.edu.tr

Abstract

Neonicotinoid insecticides, nicotinic acetylcholine receptor agonists, have selective toxicity on insects through α4p2 nicotinic acetylcholine receptors (nAChR). They are used 30% part of insecticide marketing in the world. Acetamiprid "*(1E)-N-[(6-chloro-3-pyridinyl)methyl]-N'-cyano-N-methylethanimidamide*" is one of the selective neonicotinoid insecticides, and is used alone or combination with other pesticides. Its toxic effects and mechanism of action have not been clarified on pancreas, although it is known to have toxic on several organ systems, including the nervous, respiratory and immune systems. It has been reported that LD_{50} value is the range of 140-417 mg/kg b.w. in rodents, and NOAEL level is 400 ppm in 13 week mice for acetamiprid. There are a few studies about its genotoxic effects. Therefore, it was evaluated cytotoxic and genotoxic effects of acetamiprid on AR42J pancreas cell line in the present study. For cytotoxicity and genotoxicity assays, MTT test and comet assay were respectively performed. LC_{50} value was 12,61 mM. According to the results of comet assay performed in the range of 1-70 mM exposure concentration, acetamiprid induced DNA damage in 4 and 6 mM dose groups depending on concentration. The mean tail intensity values of groups were 3,84 and 10,89-32,96 for control and exposure groups, respectively. It is believed that the data obtained contributes to the literature due to the lack of research on the potency of acetamiprid's toxic effects on pancreas.

Keywords: Acetamiprid, Pancreas, AR42J cells, Comet assay, MTT.

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➢ **POSTER PRESENTATION**

Physiological Effect of NaCl Salinity on Peanut (*Arachis hypogaea* L.) Seedlings

Oummu Kulthum Mohamed Ali Hassane*, Muhittin Doğan

Department of Biology, Faculty of Arts and Sciences, University of Gaziantep, 27310 Gaziantep, Turkey

Corresponding author e-mail: medal.ummu@gmail.com

Abstract

The aim of the present study is to evaluate the physiological effects of different NaCl concentrations (0, 50, 100 and 150 mM) on peanut (*Arachis hypogaea* L. cv. Georgia green) seedlings, which were grown in plastic vessels containing perlite under climate chamber. Peanut seedlings were harvested after 12 days than some phsiological parameters were investigated. The seedeling parts were separated and dried at 80 °C in order to determine dry weight and Na content. Fresh and dry weights of root, stem and leaves were reduced by NaCl concentrations. A dose-dependent reduction was found in photosynthetic pigment contents. Whereas total carbonhyrate contents of root, stem and leaves were increased, except for seedling roots at 100 and 150 mM NaCl, total protein contents were reduced. Concentration dependant enhancement in MDA and H_2O_2 contents of the roots, stem and leaves was assumed to be resulted from provoked oxidative stress. Content of non-protein SH groups and total phenolics in the seedling organs increased following NaCl applications. This may be due to an important role in stress caused by NaCl treatment.

Keywords: *Arachis hypogaea L.*, NaCl, stress, physiological effects.

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➢ **POSTER PRESENTATION**

Oenothera biennis L.'de NaCl Uygulamasının Fizyolojik Etkileri

Suna Güngör*, Muhittin Doğan

Gaziantep Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Gaziantep, Türkiye

Sorumlu yazar e-mail: gungorsuna27@gmail.com

Özet

Tuzluluk, bitki büyüme ve gelişimini sınırlayan en önemli çevresel faktörlerden biridir. Bu çalışmada, farklı NaCl derişimlerinin (0, 25, 50 ve 100 mM) etkisinde ve su kültürü şartlarında yetiştirilen *Oenothera biennis*'teki (eşek otu) bazı fizyolojik değişimler araştırılmıştır. Bitkinin tohumları perlit ortamında ve kontrollü iklim dolabında çimlendirilmiştir. Fideler %10 besin çözeltisi içeren su kültürü kaplarına aktarılmıştır. Aklimasyon süresi sonunda, fidelere NaCl'nin farklı derişimleri 10 gün boyunca uygulanmıştır. Fidelerin kök ve sürgün ağırlıkları NaCl uygulamaları ile azalmıştır. Fotosentetik pigment içerikleri NaCl derişimlerindeki artışla birlikte azaldığı belirlenmiştir. Benzer olarak, kök ve sürgünlerin protein içerikleri de derişime bağlı olarak azaldığı tespit edilmiştir. Toplam karbonhidrat içerikleri, fide köklerinde azalmış iken, sürgünde ise artmıştır. Protein olmayan SH grupları ise kök ve sürgünde NaCl derişimleri tarafından azaltılmıştır. Fide kök ve sürgünlerinin hidrojen peroksit ve malondialdehit miktarlarında artışların bulunmuş olması, NaCl toksisitesine bağlı oksidatif stresin varlığını gösterebilir.

Anahtar Kelimeler: *Oenothera biennis L.*, NaCl stresi, fizyolojik etki.

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➢ **POSTER PRESENTATION**

Ayçiçek Yağı Uçucu Distilatının Esterleşme Reaksiyonlarının Optimizasyonu

Burcu Çağlayan[1*], Yüksel Abalı[2]

[*1]Manisa Celal Bayar Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Manisa, Türkiye

yabali@yahoo.com

Özet

Günümüz endüstriyel çalışmalarının en can alıcı kısmı bir ürünün piyasa fiyatının belirlenmesidir. Bu kapsamda rekabetçi ekonomik bakış açısının odaklandığı konulardan biri de şüphesiz yan ürünlerin katma değerini arttırmaktır. Binlerce yıllık yemeklik yağ sektörü, yan ürünlerin değerlendirilmesi konusunda oldukça yavaş gelişmektedir.

Esterler yapısal özellikleri nedeniyle geniş kullanım potansiyeline sahip, dünyada üretilmesi ve tüketilmesi hızla artan önemli yağ kimyasallarıdır. Temel özellikleri; reaktif bölgelerinin olması, polarlık ve viskozitelerinin sıcaklıkla değişiminin az olması, yüzey aktiflik özelliği, çevre dostu oluşu, sindirilebilme özellikleri ve toksik olmayışı sayılabilir.

Asit yağları, yağın cinsine ve elde edildiği rafinasyon basamağına bağlı olarak değişmekle birlikte; genel olarak koyu renkli, %40-80 serbest yağ asidi, %20-50 doğal gliserid, sabunlaşmayan madde ve safsızlık içermektedir. Rafinasyonun, deodorizasyon kademesinde oluşan distilat genel olarak serbest yağ asitleri, tokoferoller ve steroller açısından zengindir.

Yemeklik yağ sektörünün yan ürünlerinden yağ asitlerinin esterleşme reaksiyonuyla ilgili faaliyet gösteren üreticilere faydalı olacağına inandığımız bu çalışmada; yemeklik yağ rafinasyonunda açığa çıkan asit yağının esterleşme reaksiyonu incelenmiş olup kesikli olarak çalışan bir sistemde gerçekleştirilen esterleşme reaksiyonunun optimum reaksiyon şartları belirlenmiştir. Deneylerde Taguchi Fraksiyonel Optimizasyon Yöntemi kullanılmış olup; esterleşme süresi, sıcaklık, karıştırma hızı ve yağ konsantrasyon parametre olarak seçilmiştir. Reaksiyon sonucu oluşan yağ asidi esterlerinin asitlik değerleri tespit edilmiştir. Yağ asidi esterlerinin reaksiyon şartlarının optimizasyonunun, başta verimlilik ve uygulama kolaylılığı avantajlarını üreticilere ulaştırmak ve farklı kullanım alanları konusunda farkındalık oluşturmak hedeflenmiştir.

Esterleşme çift taraflı bir tepkime olduğu için reaksiyon verimliliğini yükseltmek amacıyla ilk metodla optimize edilen parametreleri; asitlik miktarında en fazla düşüşün ölçüldüğü yani reaksiyon veriminin en yüksek olduğu değerler eşliğinde üç kademeli esterleşme için tasarlandı ve optimize edildi. Tek kademeli ilk optimizasyonun verileri; alkol/yağ oranı 0.4, asit/yağ oranı 0.02, sıcaklık 55°C, reaksiyon süresi 240 dak. ve karıştırma hızı 750 devir/dakika olarak tespit edilmiştir. Üç kademeli ikinci optimizasyonun verileri; birinci kademe için; alkol/yağ oranı 0.2, asit/yağ oranı 0.006, reaksiyon süresi 48 dak.; ikinci kademe için; alkol/yağ oranı 0.1, asit/yağ oranı 0.01, reaksiyon süresi 72 dak.; üçüncü kademe için; alkol/yağ oranı 0.1, asit/yağ oranı 0.004, reaksiyon süresi 120 dak. olarak tespit edilmiştir.

Anahtar Kelimeler: asit yağı, esterleşme, taguchi metodu

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➢ **POSTER PRESENTATION**

Biyolojik Zenginlik Olarak Sulak Alanlar: Önemi ve Türkiye'deki Durumu

Yahya Ekmekçi*, Serap Şahin Yiğit

Gaziantep Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Gaziantep, Türkiye

Sorumlu yazar e-mail: yhye27@hotmail.com

Özet

Dünyanın doğal zenginlik kaynakları olarak kabul edilen sulak alanlar tropik ormanlardan sonra biyolojik çeşitliliğin en yüksek olduğu ekosistemlerdir. Bu özellikleri nedeniyle sulak alanlar pek çok çalışmaya konu olmuş birbirlerinden farklı çok sayıda sulak alan tanımı yapılmıştır. Sulak alanların korunmasını ve akılcı kullanımını hedefleyen Ramsar Sözleşmesine göre bataklıklar, turbalıklar, taşkın düzlükleri, nehirler, göller, tuzlalar, mangrovlar, deniz çayırı yatakları, mercanlar, gelgit anında altı metreden derin olmayan deniz kıyısı alanları gibi kıyı sulak alanları, atık su arıtım gölcükleri ve rezervuarlar gibi insan yapımı sulak alanlar da sulak alan tanımına dahildir. Antartika hariç tropik alanlardan soğuk tundralara kadar hemen her bölgede sulak alanlara rastlamak mümkündür. Ancak sulak alanların değeri bulundukları bölge ile doğduran ilişkilidir. Bu açıdan bakıldığında Türkiye' nin gerek Avrupa, Asya ve Afrika kıtaları arasındaki geçiş noktası üzerinde bulunuşu gerekse de üç tarafının farklı ekolojik karakterlere sahip denizlerle çevrili oluşu Türkiye sınırları içerisindeki sulak alanları oldukça önemli kılmaktadır. Türkiye'de bulunan sulak alanların çok büyük bir kısmının ekolojik karakterlerinde taşkın kontrolü ve yeni tarım alanları açma amaçları ile yapılan müdahaleler sonucunda değişiklikler olmuştur. Bu müdahaleler sonucunda bazı sulak alanlar küçülürken diğer bazıları ise tamamen yok olmuştur. Bunun bir sonucu olarak bu alanların korunması gereği anlaşılmış 1993 yılında Türkiye Ramsar sözleşmesine imza atarak taraf olmuştur. Bu sözleşmeye göre Türkiye' de toplam 14 Ramsar Alanı, 45 ulusal öneme haiz sulak alan ve 8 mahalli öneme haiz sulak alan mevcuttur. Ramsar değerlendirmeleri kapsamında yer almayan sulak alan sayısı ise 48 olarak belirtilmektedir. Türkiye bu anlaşmaya taraf olarak mevcut sulak alanlarını koruyacağını ve akılcı kullanacağını taahhüt etmiş olup mevcut Ramsar alanlarının 11 inde aktif olarak sulak alan yönetim planı uygulanmaktadır. Diğer alanlar için ise yönetim planları hazırlanmaya devam edilmektedir.

Anahtar Kelimeler: Sulak alanlar, biyoçeşitlilik, korunması.

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➢ **POSTER PRESENTATION**

Biofertilizer Formulation Comprising Plant Growth-Promoting Bacteria

Fatma Betul Bal[1]*, Eda Çinar Avar[1], Hikmet Katırcıoğlu[2], Elif Loğoğlu[1]

[1*]Gazi University, Science Faculty, Chemistry Department, Ankara, Turkey
[2]Gazi University, Faculty of Education, Department of Biology Education, Ankara, Turkey

fatmabetulbal0646@gmail.com

Abstract

As people move away from traditional agriculture and begin conventional cultivation, soil has lost its sustainability in years and has undergone great destruction. The development and extension of organic agriculture in order to transfer agricultural land and water resources to future generations without polluting and destroying their natural resources will have great benefits for each country.
The intensive agriculture requires the use of extreme chemical fertilizers, which threaten the degradation of natural resources and the sustainability of production systems and human health .It is aimed to eliminate the use of harmful chemicals with effective bacterial applications, to contribute to agricultural productivity by reducing cost and environmental pollution.Plant growth promoting rhizobacteria (PGPR) have features that promote plant growth such as biological nitrogen fixation, inorganic phosphate solubility and organic phosphate mineralization, nutrient uptake, aminocyclopropanecarboxylatedeaminase (ACCD) activity, siderophore and plant hormone production .
The resulting plant extracts did not show activity against the PGPR bacteria, which led to the conclusion that they could be used together.Thus, PGPR bacteria provide an environment that supports the plant growth, while providing protection from insects for plant growth.

Keywords: Plant Extract, PCPR Bacteria, Bioactivity, Biofertilizer, Organic Agriculture

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➢ **POSTER PRESENTATION**

Aposphaeria Sacc. Cinsi ve Doğal Ekosistemlerde Tespit Edilen Bazı Türleri

Merve Ulukapı ve Faruk Selçuk*

[1]Ahi Evran Üniversitesi, SHMYO, Kırşehir, Türkiye

Sorumlu yazar e-mail: selcuk_faruk@yahoo.com

Özet

Saprotrof olan *Aposphaeria* Sacc. cinsine ait olan *Aposphaeria allantella* Sacc. & Roum., *Aposphaeria collabascens* Schulzer & Sacc., *Aposphaeria dendrophomoides* Sacc., *Aposphaeria epicorticalis* Sacc., *Aposphaeria hemisphaerica* (Alb. & Schwein.) Sacc., *Aposphaeria protea* Peyronel ve *Aposphaeria subtilis* (Kunze) Sacc. türleri Orta Anadolu, Doğu Karadeniz ve Trakya bölgelerindeki doğal ekosistemlerde farklı zamanlarda yapılan arazi çalışmaları esnasında tespit edilmiştir. Kahverenkli, septalı ve dallanmış miselyumları olan *Aposphaeria* cinsi Piknidiyal fruktifikasyon yapısına sahiptir. Piknidyumlar konakçının kabuk ve odun dokusu üzerinde olup, yüzeysel, küresel, olgunlaştığında çöken, siyah, parlak, ayrı ayrı ve tek lokulusludur. Duvarı ince, iç tabakasını oluşturan hücreleri köşeli ve küçük. Ostiol tek, dairesel, merkezi ve basık. Konidioforlar renksiz, taban kısmında dallanmış, yukarı kısımlarında septalı, kısa ve silindirik. Konidiojen hücreler enteroblastik, şişe şeklinde, belirgin, renksiz, düz. Konidiumlar renksiz, septasız, ince duvarlı, yağ damlasız, silindirik yada elipsoidal ve düz yapıdadır.

Anahtar Kelimeler: *Aposphaeria*, Biyoçeşitlilik, Mikrofungus, Piknidyum.

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➢ **POSTER PRESENTATION**

Coniothyrium Corda Cinsi ve Doğal Ekosistemlerde Tespit Edilen Bazı Türleri

Faruk Selçuk ve Merve Ulukapı*

[1]Ahi Evran Üniversitesi, SHMYO, Kırşehir, Türkiye

Sorumlu yazar e-mail: merveulukapi@gmail.com

Özet

Orta Anadolu, Karadeniz ve Trakya bölgelerindeki doğal ekosistemlerde farklı zamanlarda yapılan arazi çalışmaları esnasında saprotrof *Coniothyrium* Corda cinsine ait *Coniothyrium concentricum* (Desm.) Sacc., *Coniothyrium episphaerium* Höhn., *Coniothyrium lignorum* (Fr.) Sacc., *Coniothyrium montagnei* Castagne, *Coniothyrium olivaceum* Bonord., *Coniothyrium parasitans* (Berk. & Ravenel) Tassi, ve *Coniothyrium popuschoji* Frolov türleri tespit edilmiştir. Cinsin fruktifikasyon yapısı piknidyum olup, piknidyumlar konukçunun genellikle dal ve gövde yapıları üzerinde dokuya gömülü halde (kimi zaman yüzeysel yada sadece zemini ile dokuya batık), ayrı ayrı, küresel–yarı küresel, koyu yada açık kahverenkli, tek lokuluslu ve ince duvarlıdır. Duvarları kahverenkli, dokusunu oluşturan hücreleri köşeli yada küremsi. Ostiol dairesel, merkezi, bazen dışarıya doğru çıkıntı yapar. Konidiofor bulunmaz. Konidiojen hücre holoblastik, annelidik, belirsizce, ayrı ayrı, renksiz yada açık kahverenkli ve düz. Konidiumlar kahverenkli, ince duvarlı, 0–1 septalı, siğilli, silindirik, küresel, eliptik yada tepesine doğru şişkinleşmiştir.

Anahtar Kelimeler: Biyoçeşitlilik, *Coniothyrium*, Mikrofungus, Piknidyum.

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➢ **POSTER PRESENTATION**

Combination of fluoropolymers with h-BN having different particle sizes in the processing of polyolefins: Applications and Their Performance as Processing Aids

Gökhan Ceyhan[1,2*], Elife Kaya[1]

[1]Food Technology Department, VocationalSchool of Technical Science, K.S.Ü, 46100, Kahramanmaraş, Turkey
[2]Research and Development Centre for University-Industry-Public Relations, K.S.Ü., 46100, Kahramanmaras¸ Turkey

gceyhan@ksu.edu.tr

Abstract

Generally, the types of additive chemical species classified for the improvement of polymer processability are quite varied. However, very few of them, those active in this type improve sharkskin and cyclic melt fracture of both yield and surface imperfections were observed. These include fluorocarbon elastomers; Impact film extrusion, impact molding or other high pressure extrusion process; Wire and pipe cabling has been effective in covering.The resins used in these processes may typically contain various additives, including blocking agents, antioxidants, fillers, lubricants. In order to improve the performance of the extrusion process it is necessary to coat or surface with a large amount of slip material in the mold wall.Film extrusion, film casting, film blowing and blowing, in many categories of polymer processing operations, result in a deterioration of the flow rate [1, 2] and limit the production rate to relatively low rates.In this study, new generation hg-boron nitride and fluoropolymer are synthesized and used as additive mastebatch in polyethylene extrusion. The surface properties of the new generation additive masterbatches to be synthesized will be determined by SEM / EDX. Flow characteristics and mechanical properties will be determined by capillary rheometer.It will also be investigated what influences you have on blow and cast film applications.

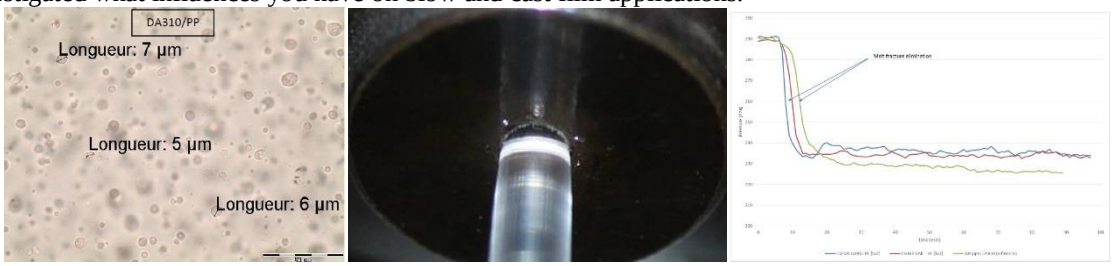

Figure 1. hg-BN-PPA-PP of interaction properties.

Keywords: h-BN, fluoropolymers, polyolefins

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➢ **POSTER PRESENTATION**

Synthesis of New Multifunctional Processing Aids: Removal of Surface Defects of Polyolefin Materials, Extrusion Process at Low Temperature

Gökhan Ceyhan[1,2*], Elife Kaya[1]

[1]Food Technology Department, VocationalSchool of Technical Science, K.S.Ü, 46100, Kahramanmaraş, Turkey
[2]Research and Development Centre for University-Industry-Public Relations, K.S.Ü., 46100, Kahramanmaras, Turkey

gceyhan@ksu.edu.tr

Abstract

The ability of polymers to process without additive materials is rarely realized. Instead, it is practically common to form formulations containing various additives at low and critical amounts. The most important of these additives are lubricants which reduce the extrusion pressure and eliminate melt defects and flow instability. In 1960, Dupont company synthesized fluorinated polymers which act as sliding agents in LLDPE resins [1]. During extrusion of the polyolefins with fluorine compounds, the entrance is covered by the fluoropolymers and the fluoropolymers flow linearly along the outlet of the mouth under the influence of the shear field. They increase the melt slip of the polyolefins along the coated surface, reducing the shear stress of the melt and causing a pressure drop of up to 20% in the mouth pressure. Polyethylene Glycol (PEG) and esters are used industrially as a lubricating compound. The use of PEG compounds in an amount of 0.02% and 0.05% in the production of an inflatable film provides improvement (such as pressure drop) in operating conditions. In this study; new process aids have been synthesized which exhibit viscoelastic behavior under stress (such as extrusion, etc.) and passive thickeners such as fumed silica to increase the lubrication efficiency by giving a polycondensation reaction of polyethylene glycol with organic acids (citric acid, oxalic acid) in low molecular weight. These new process aids reduce production costs by allowing low-temperature polymer processing, eliminate flow instabilities as LLDPE resins increase processing, and eliminate surface defects, called melt fractures. It has been determined that the synthesized compounds are effective in reducing the extrusion pressure. It is seen that plastic material alone defects defects on the surface. When the compound synthesized at a low extrusion rate is used, the extrudate has a glossy, smooth surface as shown in the Figure.

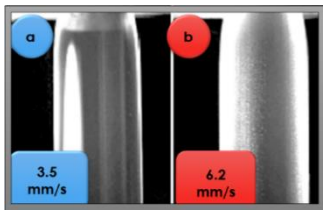

Figure: Extrudate appearance at low extrusion rate

Keywords: PEG, Polyolefin, PPA

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➢ **POSTER PRESENTATION**

Synthesis Of Water Borne Anionic Polyurethane And Acrylate Grafted Polyurethane Dispersions For Textile Coating Applications

Öznur Emeklioğlu[1*], Ömer Nafi Yavuz[2], Emine Hilal Mert[3]

[*1]Yalova University, Institute of Natural and Applied Sciences, Polymer Engineering, Yalova, Turkey.
[*1]*RUDOLF DURANER KİMYEVİ MADDELER* SAN. VE TİC.A.Ş, Bursa, Turkey.
[2]*RUDOLF DURANER KİMYEVİ MADDELER* SAN. VE TİC.A.Ş, Bursa, Turkey.
[3]Yalova University, Institute of Natural and Applied Sciences, Polymer Engineering, Yalova, Turkey.

Corresponding author e-mail: oznuremeklioglu@gmail.com

Abstract

Aqueous polyurethane (PU) dispersions provide excellent impact and abrasion resistance to the materials by forming films on their surface. For this reason, aqueous PU dispersions have wide range of applications in textile, addhesive, and wood coating industries.
Aqueous PU dispersions are defined as binary colloidal systems in which the PU particles are dispersed in a continuous aqueous medium. However, in order to disperse water immiscible PU polymer chains in water, ionic and/or nonionic hydrophilic segments should be associated with the conventional PU structure. Therefore, PU dispersions are generally prepared by dispersing isocyanate terminated PU prepolymers, in the aqueous systems consisting of colloidal stabilizers. Preparing hybrid PU/polyacrylate (PAc) colloidal systems by mixing aqueous PU dispersions with polyacrylates (PAc), on the other hand, could be a favourable approach for the improvement of mechanical and chemical resistance of the coating materials. However, poor compatibility between PAc and PU components could cause the loss of film properties most of the time. In such case, chemical bonding between PU and PAc chains could be used as a versatile approach for obtaining hybrid systems exhibiting excellent properties of both kinds.
With this study, by using aliphatic isocyanates and difunctional polyethers or polyesters, solvent-free polyurethane dispersions having 30-35% of solid content were prepared through acetone process. Afterwards, in order to introduce vinyl functionality, resulting polyurethane prepolymers were reacted with hydroxyl functional acrylate monomers. Then PAc grafting on the PU chains was achieved by the free radical polymerization between the vinyl functional groups PU chains and butyl acrylate and/or 2-ethylhexyl acrylate monomers. Final polymers were characterized by Differential Scanning Calorimetry (DSC) and Fourier Transform Infrared Spectroscopy (FTIR).

Keywords: polyurethane, PU dispersions, polyacrylate

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➢ **POSTER PRESENTATION**

Antiepileptik İlaç Lakosamid'in Fosfatidilkolin Lipidleri Ile Etkileşmesi Ve Kolesterolün Etkisi

Burçin Yağış, Sevgi Türker Kaya

Biyoloji Bölümü, Fen-Edebiyat Fakültesi, Kocaeli Üniversitesi, 41380, Kocaeli/Türkiye

burcin.yagis@gmail.com

Özet

Lakosamid (LCM) fonksiyonelleştirilmiş bir aminoasittir ve voltaj kapılı sodyum kanallarının inaktivasyonunu arttırarak nöronal membran stabilizasyonunu sağladığından epilepsi nöbetlerini baskılamada kullanılır. Aktivasyonunu gerçekleştirebilmesi için LCM'nin zar lipitleriyle olan kaçınılmaz etkileşmesi onun merkezi sinir sistemindeki etkinliğini direkt etkileyebilmektedir. LCM'nin farmakolojik ve farmokinetik özellikleriyle ilgili çalışmalar bulunsa da onun zar lipidleriyle etkileşmesinin incelendiğine dair detaylı araştırma bulunmamaktadır. Bu çalışmada, ilaç-lipit etkileşmelerinde yaygın olarak kullanılan dipalmitoilfosfatidilkolin (DPPC) lipitlerinden oluşturulmuş lipozomlarla LCM etkileşmesi ve kolesterolün etkisi incelendi. Bu amaçla, farklı konsantrasyonlardaki (%1,10,20 mol) LCM'nin kolesterol varlığında ve yokluğunda DPPC lipozomlarının ana faz geçiş sıcaklığı (Tm), entalpi (ΔH), CH_2 asimetrik (~2920 cm^{-1}), C=O simetrik (~1735 cm^{-1}) ve PO_2^- asimetrik (~1230 cm^{-1}) bantlarının frekans değerlerine etkileri Diferansiyel Tarama Kalorimetresi (DSC) ile Fourier Dönüşümü Kızılötesi (FT-IR) spektroskopisiyle incelendi.

Verilere göre saf DPPC lipozomlarına LCM ve %1 mol kolesterol eklemesi Tm değerini yüksek sıcaklığa; %10 mol kolesterol eklemesi, düşük sıcaklığa kaydırmıştır. Ayrıca %1 ve %10 mol kolesterol eklemesi sırasıyla ΔH değerini azaltmıştır. Tm'nin yüksek değere kayması ve ΔH'deki azalma LCM'nin kolesterol ile lipidlerin açil zincirleri arasındaki van der Walls etkileşimlerini arttırdığını göstermektedir. FT-IR bulgularına göre, jel ve sıvı kristal fazda CH_2 asimetrik gerilme bandının frekans ve bant genişliğindeki azalma bu durumu destekleyerek sistemin daha rijit hale geldiğini göstermektedir. Ayrıca C=O ve PO_2^- gerilme modlarındaki LCM eklenmesiyle fazlarda oluşan frekanstaki azalma (C=O jel faz hariç), LCM'nin gliserol iskeleti ve fosfat kafa grupları veya etrafındaki su molekülleriyle hidrojen bağlanmaları yaptığını gösterirken kolesterolün neden olduğu bu frekanslardaki artma bağlanmaların tekrar azaldığını gösterir.

Elde edilen sonuçlar LCM'nin gerçek membran sistemlerinde ne tarz etkileşime girdiğiyle ilgili bilgiler sunmakla birlikte daha etkin ilaç geliştirme çalışmalarına katkı sağlayabilir.

Anahar kelimeler: lakosamid, kolesterol, dipalmitoilfosfatidilkolin, DSC, FT-IR

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➢ **POSTER PRESENTATION**

The Essential Oils of Paeonia daurica subsp. macrophylla Have Potential of Therapeutic Candidate for Inflammatory Disease

Adem Demir[1*], Halbay Turumtay[2], Cemal Sandallı[3],Hüseyin Baykal[4], Emine Akyüz Turumtay[1]

[*1] Recep Tayyip Erdogan University, Department of Chemistry, Rize, Turkey
[2] Karadeniz Technical University, Department of Energy System Engineering,Trabzon, Turkey
[3]Fener Mahallesi, Rize Turkey
[4] Recep Tayyip Erdogan University, Department of Medicinal & Aromatic Plants, Rize, Turkey

Corresponding author e-mail: emine.turumtay@gmail.com

Abstract

Hydrodistilled essential oil of the fresh root, scape, fruit and fruit bark of *Paeonia daurica* Andrews subsp. *macrophylla* Albow (*P. daurica*), collected from Eastern Black Sea region, Turkey was investigated by using gas chromatography-mass spectrometry (GC-MS). Fruit bark has the richest identified essential oil content in plant parts. Thirty-three constituents, including 99.3% of the total oil composition were identified. Major constituents of the essential oil were salicylaldehyde (10%-65%), myrtanal (3.1%-45%), palmitic acid (2.1%-40.4%), methyl salicylate (3.1%-37.5%) and myrtenal (3%-35.1%). Furthermore, the essential oils of *P. daurica* were evaluated for their inhibition on *Moloney Murine Leukemia* Virus Reverse Transcriptase (M-MLV RT). All essential oil extracts has showed strong inhibition effect on viral transcriptase. To the best of our knowledge, this is the first detailed report on *P. daurica* whole plant essential oil composition and viral DNA polymerase inhibition effect. We propose the essential oils of *P. daurica* might have potential of therapeutic candidate for inflammatory disease.

Keywords: Paeonia daurica, Viral DNA polymerase inhibition, Essential oils.

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➢ **POSTER PRESENTATION**

Synthesis of Fe_3O_4@SiO_2@Aminometilfosfin-Ru(II) Complexes: Investigation of Catalytic Properties in D-Sorbitol Synthesis

Serhan URUŞ[1]*, Mehmet AKBULUT[2], Mahmut ÇAYLAR[3], Ferudun KOÇER[3]

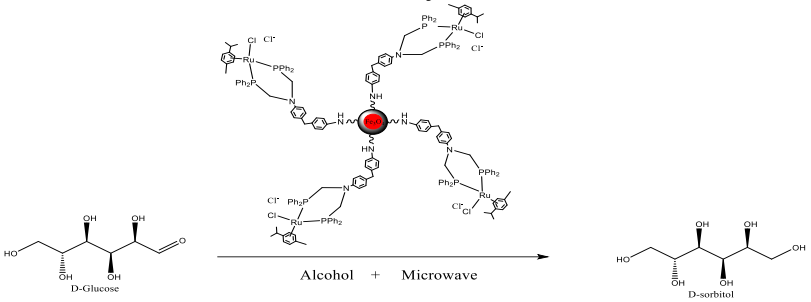
[1]Chemistry Department, Faculty of Science and Letters, Kahramanmaras¸ Sütçü İmam University, 46100, Kahramanmaraş¸ TÜRKİYE

[2]Materials Science and Engineering, Graduate School of Natural and Applied Sciences, Kahramanmaraş¸ Sütçü İmam University, 46100, Kahramanmaraş¸ Türkiye
[3]Research and Development Centre for University Industry-Public Relations (ÜSKİM), Kahramanmaraş Sütçü İmam University, Kahramanmaraş/TÜRKİYE

Corresponding author e-mail: serhanurus@yahoo.co.uk

Abstract

$(R_2PCH_2)_2NR'$ type ditertiary aminomethylphosphines ligands can also be synthesized with the reaction of a phosphonium salt $[R_2P(CH_2OH)_2]Cl$ and a primary amines $R'NH_2$. [1-6]. It has been known that chelate structured diphosphines promote the stability of the metal complex and increase the catalytic activity in organic reactions. Phosphine-Ru(II) complexes have been used as catalyst for many organic processes such as the reduction of aldehydes or ketones (with transfer hydrogenation) to synthesize biologically active compounds [1,2]. Fe_3O_4@SiO_2@$OSi(CH_2)_3NHRN(CH_2PPh_2)_2$ and Fe_3O_4@SiO_2@$RN(CH_2PPh_2)_2$ type ligands have been obtained according to our previous study [1]. Ru(II) complexes of these ligands have been novelly synthesized and characterized with FT-IR, SEM, EDX, ICP-OES and TG/DTA techniques. The synthesized complexes were used as catalysts in the synthesis of D-sorbitol from D-glucose. D-sorbitol can be obtained with transfer hydrogenation of D-glucose using an alcohol. Milestone Startsynth is used as a microwave oven in the catalytic reactions. Conversions and selectivities were calculated after HPLC injenctions.



*This study has been supported by Kahramanmaraş Sütçü İmam University, Department of Scientific Research Projects.

References:

1. a) S. Uruş, Food Chemistry, 213, 336-343, b) S. Uruş*, H. Adıgüzel, M. Keleş, İ. Karteri, Fullerenes, Nanotubes and Carbon Nanostructures, 25:2 (2017), 133-141.
2. D. Scholz, C. Aellig, C. Mondelli, J. P. Ramirez, ChemCatChem 2015, 7, 1551 – 1558.

Keywords: Phosphine, Catalyst, Nano, Iron Oxide, Transfer Hydrogenation, Sorbitol

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➢ **POSTER PRESENTATION**

Transfer Hydrogentaion of D-Glucose to D-Sorbitol Using Fe_3O_4@SiO_2@Aminomethylphosphine-Ni(II) Complexes

Serhan URUŞ[1]*, Mehmet AKBULUT[2], Mahmut ÇAYLAR[3], Ferudun KOÇER[3]

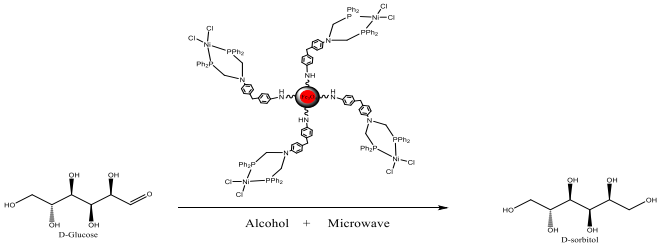
[1]Chemistry Department, Faculty of Science and Letters, Kahramanmaras¸ Sütçü İmam University, 46100, Kahramanmaraş¸ Türkiye

[2]Materials Science and Engineering, Graduate School of Natural and Applied Sciences, Kahramanmaraş¸ Sütçü İmam University, 46100, Kahramanmaraş¸ Türkiye

[3]Research and Development Centre for University Industry-Public Relations (ÜSKİM), Kahramanmaraş Sütçü İmam University, Kahramanmaraş/TÜRKİYE
Corresponding author e-mail: serhanurus@yahoo.co.uk

Abstract

$(R_2PCH_2)_2NR'$ type ditertiary aminomethylphosphines ligands can be synthesized with the reaction of a phosphonium salt $[R_2P(CH_2OH)_2]Cl$ and a primary amines $R'NH_2$. [1,2]. It has been known that chelate structured diphosphines promote the stability of the metal complex and increase the catalytic activity in organic reactions. Phosphine-metal complexes have been used as catalyst for many organic processes such as the reduction of aldehydes or ketones (with transfer hydrogenation) to synthesize biologically active compounds [1,2]. Fe_3O_4@SiO_2@$OSi(CH_2)_3NHRN(CH_2PPh_2)_2$ and Fe_3O_4@SiO_2@$RN(CH_2PPh_2)_2$ type ligands have been obtained according to our previous study [1]. Ni(II) complexes of the ligands have been novelly synthesized and characterized with FT-IR, SEM, EDX, ICP-OES and TG/DTA techniques. The synthesized complexes were used as catalysts in the synthesis of D-sorbitol from D-glucose. D-sorbitol can be obtained with transfer hydrogenation of D-glucose using an alcohol. Milestone Startsynth is used as a microwave oven in the catalytic reactions. Conversions and selectivities were calculated after HPLC injenctions.



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3. a) S. Uruş, Food Chemistry, 213, 336-343, b) S. Uruş*, H. Adıgüzel, M. Keleş, İ. Karteri, Fullerenes, Nanotubes and Carbon Nanostructures, 25:2 (2017), 133-141.
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Keywords: Phosphine, Catalyst, Nano, Iron Oxide, Transfer Hydrogenation, Sorbitol

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➢ **POSTER PRESENTATION**

N-Nitrozo-N Etilüre'nin Zebra Balığı (*Danio rerio*) Testis Histolojisi Üzerindeki Etkisinin İncelenmesi

MeltemYEĞİN[*], Cansu AKBULUT, Nazan Deniz YÖN

[*1]Sakarya Üniversitesi , Fen Edebiyat Fakültesi,Biyoloji Bölümü, Sakarya, Türkiye.

Sorumlu yazar: meltemyegin17@hotmail.com

Özet

N-Nitrozo bileşikleri, 20. yüzyılın başından itibaren bilinen, ancak 1950' lerden sonra canlı sağlığı üzerine etkileri daha çok dikkat çeken bileşiklerdir. N-Nitrozo-N-Etilüre(ENU) günümüzde gıda ürünlerini koruyucu olarak kullanılan önemli bir maddedir. Deney hayvanları üzerinde yapılan araştırmalar sonucunda toksik, teratojenik, mutajenik ve kanserojenik etkilerinin olduğu belirtilmiştir. Bu çalışmada N-Nitrozo-N-Etilüre'nin Zebra balığı testis dokusundaki histopatolojik etkilerinin ortaya konulması amaçlanmıştır. Bu çalışma kontrol ve deney grupları olmak üzere toplam 4 gruba ayrılmış, deney grupları 0.25 mM , 0.5 mM dozlarda ENU'ya maruz bırakılmıştır. Alınan doku örnekleri Hemotoksilen-Eozin ile boyanarak ışık mikroskobunda incelenmiştir. Doz ve maruziyet suresini artışına bağlı olarak tüm deney gruplarının testis dokusunda, seminifer tübüllerde yapısal dejenerasyon, seminifer tübüllerde vakuolizasyon,seminifer tübüllerde açılım ve bağ dokusunda dejenerasyonlar izlenmiştir. Bulgular ENU' nun Zebra balığı testis dokusunun histolojik yapısında olumsuz etkiler gösterdiği belirlenmiştir.

Anahtar kelimeler : Zebra balığı , N-Nitrozo-N-Etilüre (ENU) , Testis, Histopatoloji.

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➢ **POSTER PRESENTATION**

Arıtma Tesisi Çıkış Suyuna Maruz Bırakılan Sucul Bitkilerde Uranyum Konsantrasyonlarının Araştırılması

Erdal Öbek[1]*, Şule Tatar[2], Murat Topal[2], E. Işıl Arslan Topal[3]

[1]Fırat Üniversitesi, Mühendislik Fakültesi, Biyomühendislik Bölümü, Elazığ, Türkiye
[2]Munzur Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Tunceli, Türkiye
[3]Fırat Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Elazığ, Türkiye

Sorumlu yazar e-mail:eobek@firat.edu.tr

Özet

Bu çalışmada, Elazığ Belediyesi Atıksu Arıtma Tesisi çıkış sularına maruz bırakılan *Lemna minor* L. ve *Lemna gibba* L. sucul bitkilerinde radyoaktif bir element olan uranyumun alım kapasiteleri araştırıldı. Bu amaç için çalışmada kullanılan *Lemna minor* L. ve *Lemna gibba* L. sucul bitkileri İstanbul Üniversitesi Botanik Bahçesinden temin edildi. Temin edilen sucul bitkiler 4 adet reaktöre yerleştirildi. Reaktörlerin üst çapı 50 cm, alt çapı 40 cm, su yüksekliği 12 cm'dir. Reaktörlerin ikisine *Lemna minor* L., diğer ikisine *Lemna gibba* L. bitkileri (200 gr) eklendi. Elazığ Belediyesi Atıksu Arıtma Tesisi çıkış suları reaktörlere yaklaşık 0,02 L/dk olacak şekilde verildi. Bitkili reaktörler 7 gün boyunca işletildi. Sucul bitkiler günlük olarak hasatlandı ve hasatlanan bitkilerde uranyum konsantrasyonu ICP- MS (Perkin-Elmer ELAN 9000) ile belirlendi. Çalışma sonucunda elde edilen verilere göre, *Lemna minor* L. bitkilerinde en yüksek uranyum konsantrasyonu 4. gün 0,12 ppm olarak, en düşük uranyum konsantrasyonu 1. gün 0,07 ppm olarak tespit edildi. *Lemna gibba* L. bitkilerinde ise en yüksek uranyum konsantrasyonu 5 ve 7. günlerde 0,19 ppm olarak, en düşük uranyum konsantrasyonu ilk 3 gün 0,15 ppm olarak tespit edildi. Sucul bitkiler tarafından alınan uranyum konsantrasyonları karşılaştırıldığında *Lemna minor* L. bitkilerinin *Lemna gibba* L. bitkilerinden daha düşük konsantrasyonlarda alım yaptığı belirlendi. Sonuç olarak, *Lemna minor* L. ve *Lemna gibba* L. sucul bitkilerinin atıksu arıtma tesisi çıkış sularında bulunan uranyumu akümüle etme kapasitesine sahip olduğu belirlendi.

Anahtar Kelimeler: Su mercimeği, uranyum, akümülasyon, Lemna gibba L., Lemna minor L.

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➢ **POSTER PRESENTATION**

Haplotype Variations of Three Mitochondrial DNA Genes in *Microtus guentheri* (Danford and Alston, 1880)

Derya Çetintürk, Nuri Yiğit , Ercüment Çolak

Ankara University, Faculty of Science, Biology Department, Ankara, Turkey

Corresponding author e-mail: dcetinturk@ankara.edu.tr

Abstract

Taxonomical status of *Microtus guentheri* (Danford and Alston, 1880)- Guenther's vole distributed in Southeastern Anatolia, Syria, Israel, Lebanon and Northern Libya is controversial and few studies have been performed about this topic. In this study, Cytochrome-oxidase I (COXI), Cytochrome-*b* (Cyt-*b*) and 12S rRNA gene regions were analyzed and mitochondrial DNA haplotype variations were investigated by taking into consideration that synonymous site mutations doesn't change protein sequences; on the other hand, non-synonymous site mutations change protein sequences and cause aminoacide differentiation. Based on Jukes and Cantor Parameter (Jukes and Cantor, 1969), mutations and nucleotide diversity values of the synonymous and non-synonymous sites as well as synonymous and non-synonymous substitution rates (Ks and Ka values) were calculated to reveal genetic differentiation level in *Microtus guentheri*. According to the results, nucleotide diversity values in the synonymous and non-synonymous sites were close to each other in COXI and Cyt-*b* regions and higher than the values in 12S rRNA region. Additionally, Ka values were found to be higher than Ks values for three gene regions (Ka/Ks >1) which shows the genetic diversity could lead to speciation and/or sub-speciation within this species' distribution area.

Keywords: *Microtus guentheri*, mitochondrial DNA, mutation

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➢ **POSTER PRESENTATION**

Prokain Yüklenmiş Pektin Temelli Hidrojellerin Hazırlanması ve Karakterizasyonu: Kurutma Sıcaklığı, İlaç Miktarı ve pH Parametrelerinin İncelenmesi

Bengi Ezgi Çelik*, Banu Kocaağa, Fatma Seniha Güner

İstanbul Teknik Üniversitesi, Kimya-Metalurji Fakültesi, Kimya Mühendisliği Bölümü, İstanbul 34469 Türkiye

*Sorumlu yazar e-mail: celikben@itu.edu.tr

Özet

Pektin temelli malzemeler biyo-uyumlu olmaları nedeniyle yara örtüsü uygulamalarında geniş bir yere sahiptir. Fonksiyonel gruplarından dolayı eksuda ile kuvvetli etkileşmekte, yumurta kutusu modeli yardımıyla da kontrollü ilaç salımı gerçekleştirebilmektedir. Bu çalışmada, pektin hidrojele prokain ilacı yüklenip karakterize edilerek salım ve şişme özellikleri incelenmiştir. Prokain bir lokal anestezik ilaçtır ve damarları sıkıştırarak kanamayı azaltıcı etkiye sahiptir. Bu nedenle bu çalışmada yara örtüsü tasarımında tercih edilmiştir. Hidrojeller hazırlanırken plastikleştirici olarak gliserin, çapraz bağlayıcı olarak da $CaCl_2$ kullanılmıştır. Prokain yüklü pektin filmlerin hazırlanması çalışmalarında; kurutma sıcaklığı (25°C ve 50°C), yüklenen ilaç miktarı (30 mg ve 60 mg) ve kullanılan tampon çözeltinin pH'ı (pH 6.4 ve pH 9.1) değiştirilerek filmlerin özellikleri incelenmiştir. İlacın pKa'sı 8.9 olduğu için pH değerleri pKa'nın altında ve üstünde seçilerek elektrostatik gücün etkisi incelenmiştir. Şişme ve salım deneylerinin yanı sıra ilaç yüklü filmlerde FTIR, SEM ve temas açısı çalışmaları da yapılarak sonuçlar değerlendirilmiştir. FTIR verilerine göre prokain molekülünün pektin hidrojeline sabitlendiği ve yeni madde oluşmadığı görülmüştür. UV spektrofotometresiyle yapılan salım çalışmalarına göre, 9.1 pH değerine sahip tampon çözeltisi ile 60 mg ilaç yüklenerek hazırlanan ve 25°C'de kurutulan hidrojel, %77 ile en büyük salım değerine sahiptir. Diğer bir deyişle yüksek salım değeri için kurutma sıcaklığının düşük, ilaç miktarının ise yüksek olması gerektiği anlaşılmıştır. Kurutma sıcaklığının yüksek olması film içerisindeki suyun daha hızlı buharlaşmasına ve bu nedenle de daha küçük por yapısına neden olmaktadır. Bu da maksimum ilaç salım miktarını düşürücü etki yapmaktadır. Diğer taraftan, filmin yüksek miktarda ilaca sahip olması salım ortamıyla arasındaki konsantrasyon farkını artırdığı için salım kolaylaşmaktadır. Çalışmada, patlama salım göstermeyerek gecikmeli salım yapabilmeleri nedeniyle prokain yüklü pektin hidrojellerin, kontrollü salım yapabilen yara örtüsü tasarımı için uygun malzemeler oldukları sonucuna varılmıştır.

Anahtar Kelimeler: Prokain, Pektin, Yara Örtüsü, Kontrollü İlaç Salımı, Hidrojel

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➢ **POSTER PRESENTATION**

Drug-Loaded Pectin Based Wound Dressing Hydrogels: Effect of Loading pH, Drug Amount and Drying Temperature on Release Profile

Şeniz Rodoplu*, Cenk Öztürk, Banu Kocaağa, F. Seniha Güner

Istanbul Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Chemical Engineering, Istanbul, Turkey.
*Corresponding author e-mail: rodoplus@itu.edu.tr

Abstract

Pectin has been explored for wound treatment applications due to its biodegradability, biocompatibility, antibacterial properties and effectivity in drug release. This study aims to develop drug-loaded pectin based hydrogels as a wound dressing. Hydrogel films were prepared in two different loading pH (8.2 and 9.8), two different drug amounts (30 and 60 mg/g hydrogel) and at two different drying temperatures (25 °C and 50 °C). Pectin was used as polymer matrix. Glycerol and $CaCl_2$ were used as plasticizer and crosslinker, respectively. Procaine (pKa 8.9), which is local anesthetic and accelerates the healing process of wound, was chosen as drug molecule. In vitro drug release study was performed in 6.4 pH as simulation of wound exudate by using UV-vis spectrophotometer at λ=291 nm. FTIR, SEM and contact angle studies were done. FTIR study revealed that procaine was immobilized to pectin film successfully.

The hydrogel film prepared at pH 8.2 showed the highest release amount in consequence of that electrostatic interaction has the strong impact on the release pattern (Figure 1). It is observed that drug release amount for 60 mg drug loaded samples are higher than 30 mg drug loaded samples. Moreover, release amount decreased, when the drying temperature increased due to smaller pore size at 50°C. It can be clearly seen that there was no burst release. On the other hand, the hydrogel films showed retarded release which can be facilitate to immobilize and release another molecule inside of the matrix.

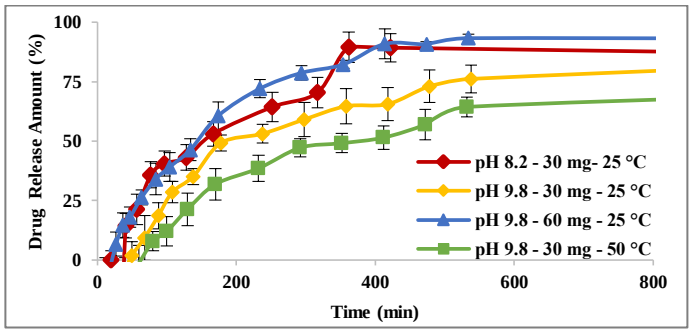

Figure 1. Drug release amount

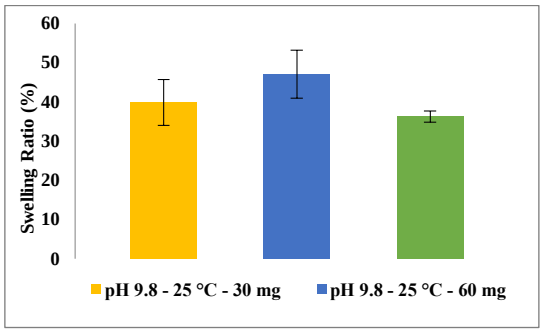

Figure 2. Swelling ratio

According to Figure 2, the highest swelling ratio is for 9.8 loading pH, 60 mg of loaded drug and 25°C drying temperature. Swelling behavior dominated drug release pattern. Hydrogel films showed controlled drug delivery character for topical release of drug procaine.

Keywords: Pectin, Hydrogel films, Procaine, Wound dressing

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➢ **POSTER PRESENTATION**

Tatlı Su Balıklarında Aminoasitler

Esin ÖZÇİÇEK[1*], Erkan CAN[2]

[*1]Munzur Üniversitesi, Su Ürünleri Fakültesi, Temel Bilimler Bölümü, Tunceli, Türkiye
[2]Munzur Üniversitesi, Su Ürünleri Fakültesi, Yetiştiricilik Bölümü, Tunceli, Türkiye

Sorumlu yazar e-mail: esinbagci23@gmail.com

Özet

Canlı organizmanın yapısına katılan en önemli yapı taşları olan proteinler, kimyasal nitelikleriyle aminoasitlerin polimerleridir. Aminoasitler, metabolizma sırasında başka maddelere dönüşebilecekleri gibi, vücudun ihtiyacı olan bazı kimyasal yapıların sentezlerinde de kullanılabilir. Canlı organizmaların yapısında yer alan aminoasitlerin %90'dan fazlası proteinlerin bünyesinde yer alırken, kalan kısmı tüm dokularda ve vücut sıvılarında serbest aminoasitler halinde bulunur.
Balıklar aminoasitlerin hepsini vücutlarında sentezleyemezler. Sentezlenemeyen aminoasitler, mutlaka yemler ile balıklara verilmelidir. Balık beslemede, uygun protein kaynakları dengeli şekilde bir araya getirilmelidir. Bu protein kaynakları, kültürü yapılan balık türünün ihtiyacı olan aminoasitleri sağlayabilmelidir. Embriyolojik ve larval dönemde proteinlerin kullanımı oldukça önemli olup, serbest aminoasitler enerji metabolizmasının en önemli elemanlarından biridir. Aminoasitler, çeşitli balık türleri için kalite indeksleri olarak da kullanılmaktadır. Bu çalışmada; tatlı su balıklarında aminoasitlerin önemi hakkında bilgiler derlenmiştir.

Anahtar Kelimeler: Aminoasitler, protein, balık, tatlı su.

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➢ **POSTER PRESENTATION**

Studies *In vitro* Propagation in Various Explants of *Indigofera zollingeriana*

Siti MAESAROH[1], Çiğdem Alev ÖZEL[2], Nurdan ŞAHİN DEMİRBAĞ[1]

[1] Ankara University, Agriculture Faculty, Department of Agronomy, Turkey
[2]Gazi University, Education of Gazi Faculty, Department of Biology Education, Turkey

Corresponding author e-mail: maesaroh@ankara.edu.tr

Abstract

Indigofera zollingeriana is an important dye and protein rich forage crop plant species that grows widely in Indonesia with high seed dormancy that affects seed germination negatively. Therefore, there is need to develop *in vitro* propagation techniques to ameliorate this problem. The study aimed to fix this problem and develop 6-benzylaminopurine based in vitro regeneration methods using hypocotyl, leaves, and cotyledon explants. The seed dormancy was fixed by treating surface sterilized seeds on liquid 0.1 mg/L GA_3. The 28 days old seedlings were used to excise leaves, hypocotyl, and cotyledons explants that were initially cultured on liquid MS medium having variable concentrations of BAP for 24 hours using thermoshake incubator at 120 rpm, 24^{o}C under dark. Subsequently, the treated explants were transferred to agar solidified MS medium. Callus regeneration was noted on all explants that induced brown soft friable calli on hypocotyl explants and white compact calli on the other explants. The maximum fresh callus weight was noted on hypocotyl explants cultured on liquid MS medium containing 15 mg/L BAP as active ingredients. Calli obtained on hypocotyl explants cultured on liquid MS medium with 5 mg/L BAP as active ingredients showed 50% root and bud/shoot induction. It was noted that the calli obtained in this study were equally suitable for somatic organogenesis.

Keywords: callus, forage crop, indigofera, legume, cytokinin

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➢ **POSTER PRESENTATION**

Protease Activities of Some Wild and Commercial Macrofungi

Fatih Kalyoncu

Manisa Celal Bayar University, Faculty of Science & Letters, Department of Biology, Manisa, Turkey.

Corresponding author e-mail: fatih.kalyoncu@cbu.edu.tr

Abstract

It is aimed to study, the enzymatic activity potential of mycelia obtained from some wild and commercial macrofungus species. For this purpose, mycelial cultures of 6 macrofungus [*Postia stiptica*, *Meripilus giganteus, Pleurotus djamor*, *Lentinula edodes, Armillaria mellea* and *Pleurotus ostreatus*] taken from a mycelium collection will be screened for production of protease. As a result of screening tests for protease production in solid skim milk medium, *Pleurotus ostreatus* and *Lentinula edodes* showed 38 and 29 mm clear zones, respectively. Therefore, enzyme analysis carried out in liquid media, 37,69 U/ml protease activity detected by mycelium of *Pleurotus ostreatus*.

Keywords: Protease, macrofungus, mycelia, Turkey.

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➢ **POSTER PRESENTATION**

Assessment of Lactococcal Phage Prevalence in Dairy Facilities

Başar UYMAZ TEZEL[1*], Pınar ŞANLIBABA[2], Gülcan ÇİFTCİ[1], Hilal YAZAN[1], Feride KURHAN[1], Burçin KÖKSAL[1], Ersin YIĞMAN[1], Nurgül PINAR[1], Kübra ŞERİ[1], Yüksel KILAVUZ[1]

[*1]Çanakkale Onsekiz Mart University Bayramiç Vocational School, Food Technology Program, ÇANAKKALE/TURKEY
[2]Ankara University Engineering Faculty, Department of Food Engineering, ANKARA/TURKEY

Corresponding author e-mail: buymaz@comu.edu.tr

Abstract

Bacteriophages are considered as the most abundant microorganisms on the planet due to their high rate of adaptive evolution and availability of hosts. Bacteriophages of mesophilic starter cultures, which were first recognised at the beginning of 1930's, have increased attention because these phages cause fermentation failure in foods; particularly in dairy products. *Lactococcus lactis* ssp. *lactis* is extensively used for milk fermentation processes. Lactococcal phages, which are recognised ten morphologically and genetically distinct groups by the latest classification, are among the most studied bacterial viruses due to their negative impacts on the quality of fermented dairy products.

The main purposes of the present study were: i) to survey of lytic lactococcal phages from dairy facilities which were obtained from dairy industry located in various areas of Turkey, ii) to isolate, iii) to determine the phage-host ranges. Phages were isolated from milk and whey samples using the double agar overlay method. Isolated phages were purified by filtering with 0.45 µm membrane filter and stored in M17 broth containing 20% glycerol at -20ºC. The purified lysate was further processed for analysing its host range by using spot method. Their host range was characterised against 30 *L. lactis* ssp. *lactis* strains.

A total of 40 samples were collected (35 milk and five whey) to assess lactococcal phage prevalence in dairy facilities. These samples were obtained from Çanakkale (26), Bursa (4), İstanbul (3), Manisa (3), Ankara (1), İzmir (1), Muğla (1) and Kırklareli (1), respectively. The prevalence of lactococcal phages was determined in 16 samples. A total of 13 phages were isolated from milk samples from Çanakkale (5), İstanbul (2), Bursa (1), İzmir (1), Muğla (1), respectively.

In conclusion, virulent lactococcal phages still pose a serious threat to industrial dairy fermentations in Turkey, and the strategies to control their numbers should be reviewed.

Keywords: Bacteriophages, milk fermentation, *Lactococcus lactis* ssp. *lactis*, lactococcal phages

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➢ **POSTER PRESENTATION**

Histopathological Effects of Fluoxetine on Zebrafish (*Danio rerio*) Heart Tissue

Cansu AKBULUT[1], Figen Esin Kayhan[2], Burcu Öztürk[1], Güllü Kaymak[1], Elif UZUN[1*], Nazan Deniz YÖN[1]

[1]Sakarya University Science and Letters Faculty, Department of Biology, Sakarya, TURKEY
[2]Marmara University Science and Letters Faculty, Department of Biology, İstanbul, TURKEY

*Corresponding author e-mail: elif_6161_54@outlook.com

Abstract

Fluoxetine is a serotonin re-uptake inhibitor, generally used as an antidepressant. With the discharge of pharmaceutical fluoxetine in wastewater, it accesses aquatic ecosystems and affects water quality and aquatic life. In our study, examination the histopathological effects of fluoxetine on heart tissue of zebrafish were aimed. Zebrafish were received 14 hours of day light and 10 hours of darkness everyday. After one week adaptation period zebrafish divided into four group (n=10) as one control and 5 experimental groups (15 min., 30 min, 60 min., 4 days, 8 days). Heart tissues were dissected after 5 day of the exposure. Tissues were fixed with 10% neutral buffered formalin and routine histological methods were done. The sections were stained with hematoxylin(H&E). In control group normal heart histology was observed. Bulb arteriosus, ventriculus, muscle cell and endocardial cell were monitored clearly. In 15 min. exposure group, degenerated muscle cells were detected. Hemorrhage at ventricle, hyperplasia, vacuolization and pleomorphic case at muscle cells, degeneration at pericardium were observed. In 30 min. exposure group, hyperplasia at atrium endothelial cells, vacuolization and degeneration at muscle cells were detected. Vacuolization were increased at ventricular structure. In 60 min. exposure group, pleomorphic case at ventricle, degeneration and vacuolization at pericardial cells, hyperplasia at bulbus arteriosus were monitored. In 4 days exposure group, vacuolization and pleomorphic states were observed at ventriculer structure. In 8 days exposure group, degeneration and vacuolization were determined at bulbus arteriosus. Vacuolization were observed at ventricular structure.

Keywords: zebrafish, fluoxetine, heart, histology.

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➢ **POSTER PRESENTATION**

Teratogenic Effects of Tau-Fluvalinate on Embryo and Larval Zebrafish

Tarık Dinç[1*], Nazan Deniz Yön Ertuğ[1], Cansu Akbulut[1]

[1]Sakarya University, Faculty of Arts and Sciences, Sakarya, TURKEY.

*Corresponding author e-mail: tdinc@sakarya.edu.tr

Abstract

Fluvalinate is a synthetic pyrethroid insecticide that is used as especially acaricide in the fields since 1985. Zebrafish is an aquatic vertebrate model organism frequently used in ecotoxicology field. Abundant number transparent embryos, fast developing rate and human genetic similarity is the important properties of zebrafish in ecotoxicology research. In this study we investigated developmental and teratogenic effects of tau-Fluvalinate on zebrafish embryo and larvae. One control and 4 exposure groups were created. Exposure groups received 16.7, 8.35, 4.18, 2.09 mg/L tau-Fluvalinate. Embryos kept in 28.5°C in 24 well polystyrene plates at 24 hours. Embryos raised in 28.5°C in 24 well polystyrene plates. Embryos and larvae are measured and all abnormalities are noted and photographed in Leica iM1 invert microscope every day. Embryo and larval parameters such as body length, motility, hearth rate death and hatching rate are also noted. All parameters in all exposure groups analyzed for statistical significance for SPSS in ANOVA tests. Tau-Fluvalinate has teratogenic effects on Zebrafish such as growth retardation, morphological malformations (craniofacial defects, spine malformations) edema (pericardial and Yolk sac swelling) and cardiovascular malformations (bradycardia and hearth malformation). Results suggested that high doses tau-Fluvalinate exposure led teratogenic changes and effects to development and should be further tested.

Keywords: tau-Fluvalinate, Zebrafish, embryo, development

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➢ **POSTER PRESENTATION**

Apoptotic Effects of tau-Fluvalinate on Zebrafish Embryo

Tarık Dinç[1*], Cansu Akbulut[1], Nazan Deniz Yön Ertuğ[1]

[1]Sakarya University, Faculty of Arts and Sciences, Sakarya, TURKEY.

*Corresponding author e-mail: tdinc@sakarya.edu.tr

Abstract

Fluvalinate is a synthetic pyrethroid insecticide that is used as especially acaricide in the fields since 1985. Zebrafish is an aquatic vertebrate model organism frequently used in ecotoxicology field. Abundant number transparent embryos, fast developing rate and human genetic similarity is the important properties of zebrafish in ecotoxicology research. In this study we investigated developmental and teratogenic effects of tau-Fluvalinate on zebrafish embryo and larvae. One control and 4 exposure groups were created. Exposure groups received 16.7, 8.35, 4.18, 2.09 mg/L tau-Fluvalinate. Embryos kept in 28.5°C in 24 well polystyrene plates at 24 hours. All of embryos are dechorionize in PBS and half of them immediately stain with 5 mg/ml Acridine Orange/ Ethidium Bromide staining for 30 minutes. Stained embryos photographed on Olympus fluoresce microscope at 450 - 480nm/515nm excitation/barrier filter and apoptotic cells counted. For TUNEL analysis, embryos were fixed in %4 paraformaldehyde at 4°C overnight. Millipore ApopTag in stu staining kit used to whole mount immunohistochemical staining for apoptotic cells. Apoptotic cells were counted and photographed in Leica DM500 microscope. All parameters in all exposure groups analyzed for statistical significance for SPSS in ANOVA tests. As a result of high dose tau-Fluvalinate exposure, increase in apoptosis on zebrafish embryo were found. Especially nervous system effected from exposure. Apoptotic cells were especially detected at hearth, caudal region and vitellus region. This study provides new evidence on the apoptosis of zebrafish embryos, which is important for the evaluation of environmental toxicity and chemical risk.

Keywords: tau-Fluvalinate, Zebrafish, embryo, apoptosis, Tunel

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➢ **POSTER PRESENTATION**

Anticancer Activity of Development Two Organic Compounds Against Human Breast Cancer (MCF-7) Cell Line

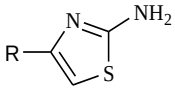
Senem Akkoç[1*], Şengül Dilem Doğan[2], Zülbiye Kökbudak[1]

[*1]Erciyes University, Faculty of Science, Department of Chemistry, Kayseri, Turkey.
[2]Erciyes University, Faculty of Pharmacy, Department Basic Science, Kayseri, Turkey.

e-mail: senemakkoc44@gmail.com

Abstract

Approximately 7.6 million fatalities occur due to cancer according to worldwide statistics produced by the International Agency for Research on Cancer (IARC). Furthermore, 12.7 million new cancer cases are diagnosed [1]. In women worldwide, breast cancer is the most commonly diagnosed cancer type [2]. In our country, this cancer type is commonly seen between women, especially in west part of Turkey due to life style. Therefore, researchers have been endeavoured to finding more effective drug against breast cancer [3].



Scheme 1: Synthesis of 4-aryl-1,3-thiazole-2-amine derivatives

The structures of synthesized compounds were verified by ^{1}H NMR, ^{13}C NMR and IR spectroscopic methods. Compounds were evaluated for their *in vitro* cytotoxicity towards MCF-7 human breast cancer cell line using the MTT assay method for a period of 72 h. Various concentrations of compounds, ranging from 0.5 µM to 200 µM, were used to determine their cytotoxic activity. Cisplatin was also used as a positive control drug under the same experimental conditions.

Keywords: 1,3-Thiazole-2-amine derivatives, Cytotoxic activity, Breast cancer, MCF-7.

Acknowledgments: This study was financially supported by Erciyes University Research Fund (FBA-2017-7340).

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➢ **POSTER PRESENTATION**

Farklı Arazi Kullanım Durumlarının Su Kaynakları Üzerine Etkileri

Ahmet Alper BABALIK[1]*, Nilüfer YAZICI[1], İbrahim DURSUN[1]

[1]Süleyman Demirel Üniversitesi Orman Fakültesi Orman Mühendisliği Bölümü, Isparta, Türkiye

*alperbabalik@sdu.edu.tr

Özet

Arazi ve su kaynakları yaşam için son derece önemli olan temel yapıyı oluşturmaktadır. Ancak bu yapı doğal ve yapay etmenler sebebiyle sürekli değişikliğe uğramakta, atmosferdeki belirsizliklerin de bu sürece eklenmesiyle küresel ve bölgesel ölçekte çevresel, kültürel ve sosyo-ekonomik olarak birçok olumsuzluğun ortaya çıkmasına sebep olmaktadır. Su kaynaklarının kullanılabilirliği ve yerel ekosistemlerin sürdürülebilirliği ile son derece ilişkili olan havzaları etkileyen en önemli etmenlerin başında arazi kullanım durumları ve iklim değişikliği gelmekte olup, bu durum su kaynakları üzerinde büyük baskı yaratmaktadır.

Son yıllarda mevcut kaynaklardaki azalma ve kirliliğe karşın küresel anlamda ekonomik gelişmeler, teknolojideki değişimler ve hızlı nüfus artışı, sektörlerin yıllık kişi başı 1000 m^3 olan temiz su ihtiyacını günden güne arttırmaktadır. 2050 yılında Dünya nüfusunun yaklaşık %66'sının şehirlerde yaşayacağı düşünülürse, iklim değişikliğinin yanında, arazi kullanım durumları ve bunun tetiklediği nüfus dinamiklerinin de su kaynaklarına olan etkisini değerlendirmek kaçınılmaz olmaktadır.

Arazi kullanım durumundaki değişikliklerin su kaynaklarına olan etkileri genellikle su bütçesi ve kalitesi üzerinde görülmektedir. Arazi kullanım durumu değişikliği; yüzeysel akışı, toprağın su geçirgenliğini, toprak yüzeyinden buharlaşmayı ve bu arazilerden su kaynaklarına ulaşan suyun miktar ve kalitesini etkilemektedir. Bu bağlamda herhangi bir bitkisel materyal ile toprak yüzeyinin örtülü olması ve bu vejetasyon örtüsünün toprak yüzeyinde oluşturduğu ölü örtü tabakası, toprak-bitki-su arasındaki doğal dengede önemli rol oynamaktadır. Zira, toprak yüzeyini kaplayan iyi bir ölü örtü tabakası hem toprak yüzeyinin strüktürünü muhafaza etmesi, hem de bu ölü örtü tabakasının çok yüksek su tutma kapasitesi nedeniyle yüzeysel akışın azalmasına, buna karşılık infiltrasyonla toprağa giren su miktarının artmasına sebep olmakta, dolayısıyla su bütçesini olumlu yönde etkilemektedir. Ayrıca bu ölü örtü bir filtre görevi yaparak su kalitesini de önemli ölçüde arttırmaktadır.

Sonuç olarak, arazi ve su kaynaklarının sürdürülebilir bir şekilde yönetilmesinde; amaç dışı arazi kullanımlarının önlenmesi, mevcut mevzuatlarda gerekli iyileştirmelerin yapılması, denetim tedbirlerinin arttırılması ve özellikle havza ölçeğinde yapılan arazi kullanım planlarının dikkate alınması gerekmektedir.

Anahtar Kelimeler: Su kaynakları, arazi kullanım durumu, iklim değişikliği, su bütçesi

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➢ **POSTER PRESENTATION**

Doğal Afetler İçinde Sel ve Taşkınların Önemi

Ahmet Alper BABALIK[1]*, Nilüfer YAZICI[1], İbrahim DURSUN[1]

[1]Süleyman Demirel Üniversitesi Orman Fakültesi Orman Mühendisliği Bölümü, Isparta, Türkiye

*alperbabalik@sdu.edu.tr

Özet

Afetler; can ve mal kaybına yol açan doğal olaylardır. Bu doğal olaylar içinde yer alan sel ve taşkınlar ise dünya ve Türkiye üzerinde en fazla görülen afetlerdendir. Sellerin en sık rastlanan sebebi, kuvvetli ve uzun süreli yağışlar ile ani kar erimesi sonucu oluşan kuvvetli akışlardır. Taşkınlar ise; bir dere yatağındaki mevcut su miktarının, havzaya normalden fazla yağmur yağması veya havzada mevcut kar örtüsünün erimesinden dolayı hızla artması ve yatak çevresinde yaşayan canlılara, arazilere, mal ve mülke zarar vermesi olayıdır.

Türkiye coğrafi konumu itibariyle sellerin ve taşkınların yaygın olarak görüldüğü ülkelerden birisidir. İlkbahar sonları ve yaz başları, sel olaylarının daha çok görüldüğü dönemlerdir. Bu dönemlerdeki seller daha etkili olmakta çoğunlukla da afet boyutuna varmaktadır. Türkiye'de sel olaylarının %51'i ilkbahar sonları ve yaz başlarında yaşanmaktadır.

Ülkemizde 1967-1987 yılları arasında akarsularda görülen sel ve taşkın olayları sayısının tüm hidro-meteorolojik afetler içindeki oranı % 33 iken; 1998-2008 yılları arasında bu oran % 14'e gerilemiştir. Son yıllarda yapılan baraj sayılarındaki artışlar, dere ıslah çalışmaları ve köylerden kentlere göçler, bu şekilde nehirlerden kaynaklanan sel ve taşkınlarda azalmaya neden olmakla birlikte, 1975-2011 yılları arasında 820 adet taşkın olayı meydana gelmiş, bu taşkınlar sonucunda 660 can kaybı olmuş, 799758 hektar tarım arazisi taşkına maruz kalmıştır. Bununla beraber son yıllarda ani seller ve bunun bir sonucu olarak da şehirlerde meydana gelen taşkınlar da görülmektedir.

Sel ve taşkın olaylarının önlenebilmesi için can ve mal kaybına sebep olan bu afetlerin temelinde ormansızlaşma ve onun ardından yaşanan erozyon olayının yatmakta ve dolayısıyla yanlış arazi kullanımlarının neden olduğu bilinmelidir. Ülkemizde sel ve taşkınların yönetimi çerçevesinde günümüze kadar çeşitli çalışmalar yapılmış olmakla birlikte, bunların büyük bir bölümünü yapısal proje faaliyetleri ile taşkın sırasındaki kurtarma ve acil yardım faaliyetleri oluşturmaktadır. Bu çalışmaların yanı sıra havzalarda yaşanan erozyon probleminin önlenmesi için erozyon kontrol projeleri, arazinin en uygun kabiliyet sınıfına göre değerlendirilmesine yönelik çalışmalar da yapılmaktadır.

Anahtar Kelimeler: Doğal afet, sel, taşkın, Türkiye

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➢ **POSTER PRESENTATION**

Histopathological Effects of Fluvalinate on Testis Tissue of Zebrafish(*Danio rerio)*

Nazan Deniz YÖN[1], Ceyda ÖZTÜRK[1], Cansu AKBULUT[1]

[1]Sakarya University Department of Biology, Sakarya TURKEY

Corresponding Author: e-mail: ceydaaozturkk@gmail.com

Abstract

Objective: Zebra fish*(Danio rerio)* Fluvalinate is applied to examine the effects on testicular tissue.
Introduction: The zebra fish *(Danio rerio)* is a widely studied model since the 1930s. Fluvalinate lepidoptera and beetles; cotton, potatoes, fruit trees, vegetables, field crops, turf, synthetic plants used in a wide range of other pests living on ornamental plants. It is used to control spider mites on fruit trees, vegetables, grains, cotton, tea, tobacco and other crops. We examined the effects of Zebra fish on testicular involvement in our study.
Method: Zebra fish were controlled in a controlled manner, 14 hours of light, 10 hours of darkness, and a lighting system was set up to create the required photo period for the fish development process. This was subjected to adaptation for 7 days under ambient conditions and the fish were fed regularly. The testis tissues were exposed to the substance to investigate the Fluvalinate effects. The wells were exposed to a medium containing 10% neutral buffered formalin and dehydrated ethanol, and the sections were cut into 5 µm on the microtome. Receipt sections were stained with hematoxylin (H & amp; E). The results were evaluated by light microscopy.
Result: Two experimental groups were used in the study. The results of the study were evaluated by light microscopy.

Key words: Fluvalinate, Zebrafish, Testis, Histopathological

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➢ **POSTER PRESENTATION**

Inhibition Studies on *Helicobacter pylori* Urease by Some Turkish Authentic Honeys

Nimet Baltaş[1*], Şengül Alpay Karaoğlu[2], Sevgi Kolaylı[3], Oktay Yıldız[4], Zehra Can[5]

[*1]Recep Tayyip Erdoğan University, Faculty of Arts and Science, Department of Chemistry, Rize, Turkey
[2]Recep Tayyip Erdoğan University, Faculty of Arts and Science, Department of Biology, Rize, Turkey
[3]Karadeniz Technical University, Faculty of Science, Department of Chemistry, Trabzon, Turkey
[4]Karadeniz Technical University, Macka Vocational School, Trabzon, Turkey
[5]Giresun University, Şebinkarahisar Technical Sciences Vocational School, , Giresun, Turkey

Corresponding author e-mail: nimet.baltas@erdogan.edu.tr

Abstract

Ethanolic extract of honey samples were prepared and the *H. pylori* anti-urease activities were tested, using the phenol-hypochlorite assay (1,2). In addition to, the total phenolic and flavonoid contents of the samples were also measured. Inhibition of *H. pylori* urease as IC_{50} ranged from 2.67-18.12 mg/mL. These results were supported by TPC and TFC had range from 22.10-79.00 mg Gallic Acid Equivalent (GAE)/100 g honey and 0.88-7.08 mg Quercetin Equivalent (QE)/100 g honey, respectively. In conclusion, propolis extracts was found to be a potential inhibitor that can be used in *H. pylori* related health problems, as auxiliary products.

Keywords: Honey, *Helicobacter pylori* urease, inhibition

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➢ **POSTER PRESENTATION**

Histopathological Effects of Thiourea dioxide on Ovary Tissue of Zebrafish (*Danio rerio*)

Ceyda ÖZTÜRK[1], Mustafa ZENGİN[2], Hayriye GENÇ[1], Cansu AKBULUT[1], Nazan Deniz YÖN[1]

[1]Sakarya University Department of Biology, Sakarya TURKEY
[2]Sakarya University Department of Chemistry, Sakarya TURKEY
Corresponding Author: e-mail: ceydaaozturkk@gmail.com

Abstract

Objective:Zebra fish (Danio rerio) is examining the effects of thiouredioxide on ovary tissue.
Introduction: The zebra fish (Danio rerio) is a widely studied model since the 1930s. Thiourea dioxide material is a reducing agent used for bleaching cotton, polyamide, wool and ippe during the removal of faulty dyes and the reduction of polyester fibers during abrasion prints. In our study, the effects of this substance on ovary tissue of zebrafish were investigated.
Method: A lighting system was set up to control the zebrafish to 14 hours light and 10 hours dark to provide the necessary photo period for the fish development process. This was subject to adaptation for 7 days under ambient conditions and the fish were fed regularly. To examine the effect of thiourea dioxide, ovary tissues were exposed to the substance. The wells were exposed to 10% neutral buffered formalin and dehydrated ethanol, and the sections were cut into 5 µm sections on the microtome. Acinar sections were stained with hematoxylin (H & amp; E). The results were evaluated by light microscopy.
Result: In the control group, normal ovary histology was observed. All oocyte stages were monitored clearly. In control group normal ovary histology was observed. In 3mM exposure group, seperation between vitelline envelope and zona radiata were monitored at cortical alveolus stage oocytes. In 4.5mM exposure group, seperation between follicular epithelium and zona radiata was detected at mature oocyte. Vacuolization at cortical alveolus stage oocytes was observed.

Key Words: Thiourea dioxide, Zebra Fish, Ovary, Histopathological

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➢ **POSTER PRESENTATION**

Baraj Havzalarının Ağaçlandırılması ve Su Kaynaklarına Etkileri

Nilüfer YAZICI[1*], Ahmet Alper BABALIK[1], İbrahim DURSUN[1]

[1]Süleyman Demirel Üniversitesi Orman Fakültesi Orman Mühendisliği Bölümü, Isparta, Türkiye

*niluferyazici@sdu.edu.tr

Özet

Doğada bulunan suyu, insanların ihtiyaçları doğrultusunda kullanabilmelerini sağlayan önemli su yapılarından birisi barajlardır. Barajlar ülkemizin en önde gelen altyapı yatırımlarından olup içme ve kullanma suyu, sulama, sanayide faydalanma, taşkın ve sel kontrolü, enerji üretimi, balıkçılık, rekreasyon, yaban hayatı ve diğer çevresel amaçlara yönelik hizmetler sağlamaktadır.

Kişi başına düşen yıllık su miktarına göre ülkemiz Birleşmiş Milletler Çevre Programının kişi başına düşen tatlı su miktarına göre yapmış olduğu sınıflandırmaya göre kişi başına düşen yaklaşık 1.455 m^3/yıl miktarı ile "Su Stresi Olan" ülke sınıfındadır. Türkiye İstatistik Kurumu, 2030 yılı için nüfusumuzun 100 milyon olacağını öngörmüştür. Bu durumda 2030 yılı için kişi başına düşen kullanılabilir su miktarının 1.120 m^3/yıl civarında olacağı öngörülmektedir.

Temiz ve kaliteli su üretimini sağlayan en önemli kaynak ormanlardır. Ormanın en önemli fonksiyonlarından biri su rejiminin düzenlenmesi, suyun az olduğu dönemlerde su kaynaklarının beslenmesinin teminat altına alınması ve suyun temizlenerek kalitesinin arttırılmasıdır. Suyu temizleyen, iyileştiren mikro organizmalara en iyi beslenme ve barınma ortamını sağlayan orman ekosistemidir. Hidrolojik fonksiyon gören ormanlar, taban suyunun, akarsu, tatlı su gölü, gölet ve barajlardaki suların temiz tutulmasını, su kaynaklarının sürekli ve düzenli olmasını sağlamaktadır.

Ülkemizde işletmeye açılmış, inşa halinde ve proje safhasında olan 427 adet baraj ve 650 adet gölet olmak üzere toplam 1077 adet tesis bulunmaktadır. Bu baraj ve göletlerin azami su kotu ile işletme kotu arasında kalan alanlar ile havza koruma alanları eylem planı çerçevesinde ağaçlandırma, erozyon kontrolü ve rehabilitasyon çalışmaları yapılarak baraj ve göletlerin çevresinde yeşil kuşaklar oluşturulmaktadır. Ağaçlandırma çalışmalarında, içme suyu temin edilen baraj havzalarında kaliteli içme suyu elde etmek için su kalitesini bozmayacak türler tercih edilmektedir. Aynı zamanda yetişme ortamı özelliklerine göre yöreye uygun türler kullanılmaktadır. Yeşil kuşak ağaçlandırmalarında da yaban hayatının ve yöredeki insanların faydalanabileceği yetişme ortamı şartlarına uygun türlere yer verilmektedir. Bu faaliyetlerle su kalitesinin ve veriminin artması da sağlanacaktır.

Anahtar Kelimeler: Baraj, baraj havzaları, ağaçlandırma, orman, su kaynakları

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➢ **POSTER PRESENTATION**

Antioxidant Properties and Inhibition Effect of Some Turkish Honey Samples on Acetylcholinesterase and Bovine Milk Xanthine Oxidase

Nimet Baltaş[1*], Semra Pakyıldız[1], Oktay Yıldız[2], Sevgi Kolaylı[3], Zehra Can[4]

[*1]Recep Tayyip Erdoğan University, Faculty of Arts and Science, Department of Chemistry, Rize, Turkey
[2]Karadeniz Technical University, Maçka Vocational School, Trabzon, Turkey
[3]Karadeniz Technical University, Faculty of Science, Department of Chemistry, Trabzon, Turkey
[4]Giresun University, Sebinkarahisar Technical Sciences Vocational School, , Giresun, Turkey

Corresponding author e-mail: nimet.baltas@erdogan.edu.tr

Abstract

In this study, it was investigated clinically important enzymes such as acetylcholinesterase, xanthine oxidase and antioxidant properties of honey samples (1,2,3). Donepezil and allopurinol were used as a standard inhibitor for acetylcholinesterase and xanthine oxidase enzymes. Antioxidant activities of the samples were determined by using three different ways; such as total phenolic content, total flavonoid content and DPPH radical scavenging methods. Honey samples showed very good inhibition on acetylcholinesterase (IC_{50}= 3.152 – 8.564 mg/mL) and xanthine oxidase (IC_{50}= 2.894 – 6.048 mg/mL) enzymes. Total phenolic (55.546-95.560 mg GAE/100 g) and flavonoid content (22.325-45.658 mgQ/100 g) were calculated.

Keywords: Honey, Acetylcholinesterase, Xanthine oxidase, Inhibition, Antioxidant

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➢ **POSTER PRESENTATION**

Determination of the cytotoxic effect of Baicalin on HUVECs

Selcuk Ceker[1]*, Hamit Emre Kizil[2], Guleray Agar[3]

[*1]Agri Ibrahim Cecen University, Faculty of Pharmacy, Agri, Turkey.
[2]Bayburt University, Central Research Laboratories Application and Research Center, Bayburt, Turkey.
[3]Ataturk University, Faculty of Science, Department of Biology, Erzurum, Turkey.

Corresponding author e-mail: sceker@agri.edu.tr

Abstract

The use of plants as medicines in the treatment of diseases is as old as human history. Therapeutic use of plants remains important despite the rapid development of synthetic drugs. Today, more than 60% of anticancer drugs and 75% of drugs used in infectious diseases are produced directly or indirectly from natural sources. The phenolic compounds obtained from plants are responsible for the protection of the organism against the harmful effects of reactive oxygen compounds by means of antioxidant activities and for the treatment of disorders related to radical damage. Baicalin (7-glucuronic acid,5,6-dihydroxyflavone), is a natural flavonoid isolated from the medicinal herb *Radix Scutellariae* derived from *Scutellaria baicalensis Georgi (Lamiaceae*) which is a Chinese traditional medicinal herb, is widely used as an anti-inflammatory, antibacterial, and hepatoprotective drug. In this study, the effects of Baicalin on cytotoxicity, cell viability and cell number were investigated by WST-1 and LDH tests on human umbilical cord vein endothelial cells (HUVECs). As a result of our study, it was determined that the concentrations of 25, 50 and 100 µM of Baicalin caused proliferative effect leading to increase in cell index and viability, while the 200 µM application increased LDH release and decreased cell viability due to concentration increase.

Keywords: Baicalin, HUVECs, LDH, WST - 1

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➢ **POSTER PRESENTATION**

Isparta İlinin Su Kaynakları, Sorunları ve Çözüm Önerileri

Nilüfer YAZICI[1*], Ahmet Alper BABALIK[1], İbrahim DURSUN[1]

[1]Süleyman Demirel Üniversitesi Orman Fakültesi Orman Mühendisliği Bölümü, Isparta, Türkiye

*niluferyazici@sdu.edu.tr

Özet

Su, insanın hayatta kalması ve sağlıklı yaşaması için bir zorunluluk olmasının yanısıra, ekonominin birçok sektörü için de son derece önemlidir. Tatlı su Dünya'daki suyun sadece %2.5'lik kısmını oluşturur ve bunun çoğu buzullar ve buz tabakaları içerisinde donmuş haldedir. Kalan donmamış haldeki tatlı su, başlıca yeraltı suyu olarak bulunur, sadece küçük bir kısmı yer üstünde ya da havada bulunur.

Dünyada su kaynakları üzerindeki baskılar özellikle kentleşme, nüfus artışı, artan yaşam standartları, su için artan rekabet ve kirlilik gibi insan faaliyetleri sonucunda gün geçtikçe artmaktadır. Bunlar küresel iklim değişikliği ile daha da şiddetlenmektedir.

Türkiye'de su kaynakları açısından öneme sahip olan illerinden biri olan Isparta ili Türkiye'nin güneybatısında Göller Bölgesi'nde yer almaktadır. Isparta ilinin toplam su potansiyeli 4690,7 hm^3 / yıl olmakla beraber bunun 4000,7 hm^3/ yıl'lık kısmını yerüstü suyu, 690 hm^3 / yıl'lık miktarını ise yeraltı suyu oluşturmaktadır.

Isparta ili, Türkiye ve hatta Dünya'da sınırlarında en fazla göl ve gölet bulunduran illerden birisi durumundadır. Bu su kaynakları üzerinde endüstriyel ve evsel kaynaklı çeşitli kirlilik problemleri yaşanmaktadır. Kirliliğe sebep olan sanayi kuruluşları su kaynakları çevresinde yoğunlaşmıştır. İlde yer alan sanayi kuruluşlarının arıtma sistemlerinin düzenli çalışmamasından kaynaklanan sorunlar mevcuttur. Ayrıca belediyelerin atık su arıtma tesislerinin olmaması veya kapasitelerinin altında çalışmasından dolayı evsel kaynaklı kirlilik sorunları yaşanmaktadır. Bunun yanı sıra tarımsal kaynaklı kirlilikte mevcuttur. Su kaynakları çevresinde fazla miktarlarda meyve bahçeleri yer almakta olup ve bu bahçelerde de bilinçsizce ve aşırı bir şekilde tarımsal ilaçlama yapılmaktadır.

Bu tür sorunların önüne geçebilmek için; tarım alanlarında yapılan ilaçlamalar ziraat mühendisleri kontrolünde yapılmalı ve tarımsal atıkların su kaynaklarına ulaşması engellenmelidir. Böylelikle su kaynaklarından yararlanma ve kullanım hedefleri, ekolojik dengeye zarar vermeyecek düzeyde tutulmalıdır. Sanayi tesislerinin arıtma sistemlerinin oluşturulması gerekmektedir. Bununla birlikte atık su arıtma sistemlerinin tesis edilmesi ve kapasitesi ölçüsünde çalıştırılması son derece önem arzetmektedir.

Anahtar Kelimeler: Isparta, su kaynakları, çevresel sorunlar, su kirliliği

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➢ **POSTER PRESENTATION**

Effect of Chitosan Coating on Physicochemical Quality and Shelf Life of Sweet Cherry

Kader TOKATLI, Aslıhan DEMİRDÖVEN*

Gaziosmanpaşa University, Faculty of Engineering and Natural Sciences, Department of Food Engineering, Tokat/Turkey

*Corresponding author e-mail: aslihan.demirdoven@gop.edu.tr

Abstract

Sweet cherry (*Prunus avium* L.) is an important fruit in Turkey with a high commercial value and studies for extending sweet cherries shelf life are gaining great importance. One of these studies is to coat sweet cherries with an edible film. In this study, sweet cherries were stored after coating with four different [Chitosan-1 (CH-1), Chitosan-2 (CH-2), Commercial-1 (C-1) and Commercial-2 (C-2)] chitosan solutions of %1 at 4°C for 25 days and 20°C for 15 days. Physicochemical attributes such as weight loss, pH, titratable acidity, total soluble solids, respiration rate and total carbohydrate content of sweet cherries were performed in five days period. It has been found that coating sweet cherries with CH-2 is the most effective application in reducing mass transfer during storage at 20°C but chitosan coating at 4°C is not effective in preventing water loss in sweet cherries. Furthermore, sweet cherries coated with CH-1 may have a longer shelf life than the control sample at both storage temperatures. In conclusion, each tested chitosan coatings have different effects on different quality characteristics at different storage temperatures.

Keywords: Sweet cherry, chitosan, shelf life, respiration rate

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➢ **POSTER PRESENTATION**

Photophysical and Photochemical Properties of Novel Silicon (IV) Phthalocyanine-Chalcone Hybrid Compound

Nuran Kahriman[1*], Yasemin Ünver[1], İsmail Değirmencioğlu[1], Hakkı Türker Akçay[2], Mahmut Durmuş[3] , Asuman D. Gülmez[3]

[*1] Karadeniz Technical University, Faculty of Sciences, Department of Chemistry, Trabzon, Turkey.
[2] Recep Tayyip Erdogan University, Faculty of Sciences and Art, Department of Chemistry, Rize, Turkey.
[3] Gebze Technical University, Department of Chemistry, Kocaeli, Turkey.

*Corresponding author e-mail:nuran_yayli@hotmail.com

Abstract

Chalcones (1,3-diaryl-2-propene-1-ones) are natural compounds, precursors of flavonoids/isoflavonoids and abundant in numerious species of plants especially in edible types . This class of compounds possess diverse chemotherapeutic effects such as anti-inflammatory, antifungal, antibacterial, antiviral, antioxidant, antitumor, antileishmanial, antimalarial, antimitotic, anticancer, anti-invasive, analgesic, inhibition of leukotriene B, inhibition of tyrosinase and aldose reductase. Literature survey reveals that when a biodynamic heterocyclic system was combined with another, obtained molecule had enhanced activity. Phthalocyanines are functional macro/heterocyclic dyes with planar structure having properties of good thermal and optic stability corresponding strong 18 π electron conjugation. Especially their strong absoption in red region of the visible spectrum makes them an efficient material in hi-tech products such as optical sensors, data storage systems, photocatalyst and in photoelectrochemical reactions. Another important property of the phthalocyanines is their ability of singlet oxygen production that non-existing in many compounds. These properties makes them appropriate photodynamic therapy (PDT) agents. On the other hand, PDT offers a real successful alternative to surgery, chemotherapy and/or radiotherapy, or can be used in synergy with these common treatment modalities rather than being just a "promising" cancer treatment. Literature survey reveals that when a biodynamic heterocyclic system was combined with another, obtained molecule had enhanced activity Therefore, in this study we synthesized and investigated photophysical and photochemical properties of new silicon (IV) phthalocyanine-chalcone conjugate (Figure 1). The results showed that this compound can be used as PDT agents since higher results than unsubstitued Zn (Pc). This study was supported by grants from Karadeniz Technical University.

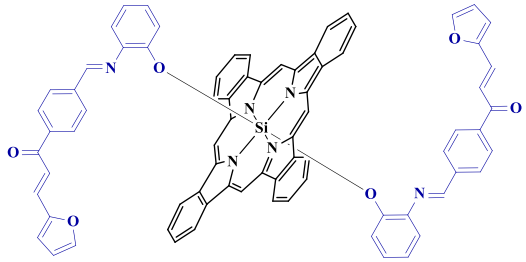

Figure1. Structure of silicon (IV) phthalocyanine-chalcone hybrid compound

Keywords: Chalcone, Phthalocyanine, PDT

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➢ **POSTER PRESENTATION**

Trans-[Ni(sac)$_2$(aeppz)$_2$]: Electrochemical Characterization, DFT/TDDFT Calculation and Antioxidant Activity

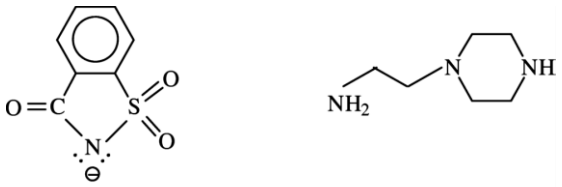
Mutlu Sönmez Çelebi[1*], Elvan Üstün[1], Melek Çol Ayvaz[1], Songül Kırlak[1], Serkan Güney[2]

[1]Ordu University, Faculty of Science and Arts, Department of Chemistry, 52200, Ordu, Turkey.
[2]Ordu University, Ulubey Vocational School, Department of Chemistry and Chemical Processing Technologies, 52200, Ordu, Turkey.

Corresponding author e-mail: mutlucelebi@odu.edu.tr

Abstract

Saccharin (o-sulfobenzimide; 1,2-benzothiazole-3(2H)-one 1,1-dioxide) is one of the best known and most widely used artificial sweetening agents [1]. Increased interest in the chemistry of saccharin and its metal complexes has developed in the last few years, owing to its suspected carcinogenic nature and limited number of studies exist about general physicochemical properties of saccharinate complexes of biologically relevant transition [2].
In this study, *trans*-[Ni(sac)$_2$(aeppz)$_2$] [sac=saccharinate and aeppz=N-(2-aminoethyl)piperazine] complex which was previously synthesized [3] has been characterized by means of cyclic voltammetry and DFT/TDDFT calculation and antioxidant activity of the complex was evaluated.



sac aeppz

Figure 1. Chemical structures of saccharinate and N-(2-aminoethyl)piperazine ligands.

Cyclic voltammograms (CVs) of the complex were recorded using a CHI Model 600E Potentiostat with 3-electrode configuration. DFT/TDDFT analysis of the complex has been made with ORCA package program by BP86 functional for obtaining the optimized geometries. Also, antioxidant activities of the ligands and complex were evaluated according to DPPH and ABTS radical scavenging activities. Furthermore superoxide dismutase and chelating activities of them were investigated.

Keywords: N-(2-Aminoethyl)piperazine, Saccharinate, Electrochemical Characterization, Antioxidant Activity, DFT/TDDFT Calculation

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➢ **POSTER PRESENTATION**

Electrochemical Characterization, DFT/TDDFT Calculation and Antioxidant Activity of *trans*-[Cu(sac)$_2$(aeppz)$_2$]

Elvan Üstün[1*], Mutlu Sönmez Çelebi[1], Melek Çol Ayvaz[1], Songül Kırlak[1], Serkan Güney[2]

[1]Ordu University, Faculty of Science and Arts, Department of Chemistry, 52200, Ordu, Turkey.
[2]Ordu University, Ulubey Vocational School, Department of Chemistry and Chemical Processing Technologies, 52200, Ordu Turkey.

Corresponding author e-mail: elvanustun@odu.edu.tr

Abstract

Saccharin (o-sulfobenzimide; 1,2-benzothiazole-3(2H)-one 1,1-dioxide) is a well-known artificial sweetening agent [1]. Metal saccharinate complexes gain attention probably due to its possible carcinogenic nature [2].
In this study, *trans*-[Cu(sac)$_2$(aeppz)$_2$] [sac=saccharinate and aeppz=N-(2-aminoethyl)piperazine] complex which was previously synthesized [3] has been characterized by means of cyclic voltammetry and DFT/TDDFT calculation and antioxidant activity of the complex was evaluated. Cyclic voltammograms (CVs) of the complex were recorded using a CHI Model 600E Potentiostat with 3-electrode configuration. DFT/TDDFT analysis of the complex has been made with ORCA package program by BP86 functional for obtaining the optimized geometries. In addition, antioxidant activities of the ligands and complex were evaluated according to DPPH and ABTS radical scavenging activities. Furthermore, superoxide dismutase and chelating activities of them were investigated.

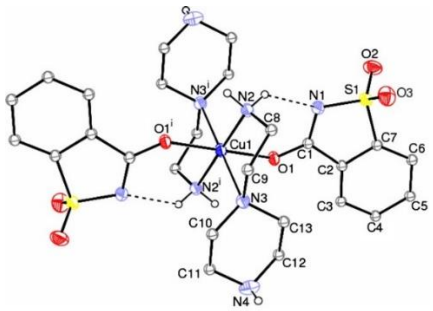

Figure 1. Chemical structures of trans-[Cu(sac)$_2$(aeppz)$_2$] complex.

Keywords: Saccharinate Complexes, Electrochemical Analysis, Antioxidant Activity, DFT/TDDFT.

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➢ **POSTER PRESENTATION**

Alabalık (*Oncorhynchus mykiss*) Bağırsaklarından İzole Edilen Probiyotik Bakterilerin Bazı Önemli Balık Patojenleri Üzerine *in vitro* Antagonistik Etkisi

Ekrem Şanver Çelik[1*], Sefa Kar[2]

[*1]Çanakkale Onsekiz Mart Üniversitesi, Deniz Bilimleri ve Teknolojisi Fakültesi, Su Ürünleri Temel Bilimler, Çanakkale, Türkiye
[2]Çanakkale Onsekiz Mart Üniversitesi, Fen Bilimleri Enstitüsü, Su Ürünleri Temel Bilimler, Çanakkale, Türkiye

Sorumlu yazar e-mail:sanvercelik@comu.edu.tr

Özet

Probiyotikler sindirim enzimlerinin aktivitesini arttırmak, bağışıklığını aktive etmek, patojenleri engellemek, büyüme ve yaşama oranını arttırmak, su kalitesini iyileştirmek ve göllerin dibindeki organik çamurda biyolojik bozunmayı gerçekleştirmek gibi avantajlar sağlamaktadırlar. Fotosentez bakterileri, mayalar ve *Pseudomonas* spp. bakterileri ile özellikle *Bacillus* spp. ve *Lactobacillus* spp. bakterileri akuakültürde kullanılan probiyotikler arsında en önemlileridir. Ancak balık yemlerinde kullanılan veya yetiştiricilik suyuna ilave edilen probiyotiklerin spesifik patojen bakteriler üzerindeki antagonistik etkisi hakkında çok fazla bilgi bulunmamaktadır. Bu çalışmada ülkemizde yetiştiriciliği yapılan çiftlik balıklarında çok sık hastalığa neden olan patojen bakteri türleri üzerine probiyotik bakterilerin antagonistik etkisinin olup olmadığı araştırılmıştır. Probiyotik bakteri olarak fakültemiz laboratuarlarında daha önce alabalık bağırsaklarından izole edilmiş olan 3 farklı *Bacillus* spp. izolatı kullanılmıştır.
Bu çalışma, Sefa Kar'ın Yüksek Lisans Tezinden üretilmiştir.

Anahtar Kelimeler: Probiyotik, Bağırsak izolatı, Antagonistik, Balık Patojenleri

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➢ **POSTER PRESENTATION**

İki Farklı Bitki Özütünün (*Hypericum* spp.) Balık Patojenleri Üzerine Antimikrobiyal Etkileri

Ekrem Şanver Çelik[1*], Neslican Katra[2], Sevdan Yılmaz[3]

[*1]Çanakkale Onsekiz Mart Üniversitesi, Deniz Bilimleri ve Teknolojisi Fakültesi, Su Ürünleri Temel Bilimler, Çanakkale, Türkiye
[2] Çanakkale Onsekiz Mart Üniversitesi, Fen Bilimleri Enstitüsü, Su Ürünleri Temel Bilimler, Çanakkale, Türkiye
[3]Çanakkale Onsekiz Mart Üniversitesi, Deniz Bilimleri ve Teknolojisi Fakültesi, Su Ürünleri Yetiştiriciliği, Çanakkale, Türkiye

Sorumlu yazar e-mail:sanvercelik@comu.edu.tr

Özet

Dünya'da yoğun olarak yetiştiriciliği yapılan balıklarda *Aeromonas* sp., *Citrobacter* sp., *Edwardsiella* sp., *Lactococcus* sp., *Listonella* sp., *Streptococcus* sp., ve *Yersinia* sp., patojen bakterilerine bağlı hastalıklar sık rastlanılmaktadır. Ülkemizde de özellikle levrek ve çipura yetiştiriciliğinde *Listonella anguillarum* ve alabalık yetiştiriciliğinde ise *Aeromonas* türleri, *Lactococcus* sp., ve *Yersinia ruckeri* bakterilerine bağlı balık ölümleri yoğun olarak görülmektedir. Özellikle balık yetiştiricliğin de hastalıkların tedavisinde kullanılan antibiyotikler patojen bakterilerin direnç kazanmasına, çevreye antibiyotik girdisi sonucu birincil üretime, diğer sucul ve karasal hayvanların doğrudan yada dolaylı yoldan etkilenmesine neden olmaktadır. Ayrıca çiftlikler de çalışan insanların doğrudan kullanılan antibiyotiklere veya diğer kimyasallara maruz kalmaktadır. Türkiye'de yoğun olarak yetiştiriciliği yapılan balıklarda karşılaşılan en önemli problemlerden birisi olan stres ve buna bağlı hastalık, ölüm, ekonomik kayıpların giderilmesi; balığın daha sağlıklı yetiştirilmesi, yemi daha iyi değerlendirmesi ve sorunların doğal yollar ile çözüme ulaştırılması amacıyla tıbbi bitkilerin kullanımı yaygındır. Bu doğrultuda bu çalışma iki farklı bitki özütünün (*Hypericum* spp.) balık patojenleri üzerine antimikrobiyal etkileri araştırılmıştır.

Bu çalışma Neslican Katra'nın Yüksek Lisans Tezinden Üretilmiş olup, Çanakkale Onsekiz Mart Üniversitesi Bilimsel Araştırma Projeleri Komisyonu tarafından FYL-2017-1213 nolu proje ile desteklenmiştir.

Anahtar Kelimeler: Tıbbi bitki, *Hypericum* spp., Antimikrobiyal, Balık Patojenleri

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➢ **POSTER PRESENTATION**

Effect of Some VDR Polymorphisms on Tuberculosis Susceptibility

R. Dilara Vaizoğlu*[1], Harika G. Gözükara Bağ[2], Ceren Acar[3]

*[1]Inonu University, Faculty of Arts and Science,Biology Department, Malatya, Turkey
[2]Inonu University, Faculty of Medicine, Biostatistics & Medical Informatics Department, Malatya, Turkey
[3]Inonu University, Faculty of Arts and Science, Molecular Biology & Genetics Department, Malatya, Turkey

Corresponding author e-mail: ceren.acar@inonu.edu.tr

Abstract

Tuberculosis (TB) is a global health problem and it causes many deaths every year around the world. According to the report of World Health Organization (WHO), 2 million people per year lose their lives due to TB. The disease can remain in the latent phase for a very long time after infecting the individual. Although some of the infected people are showing the symptoms, while in some people the disease never develops, even about 90% of them are recovered by the immune system's response. As in many infectious diseases, the difference between the number of infected people and the number of sick people is caused by differences in balance between host defense and the virulence of the organism. In literature the reports on that subject emphasizes the role of immune system on that difference but still we don't have an adequate explanation. Therefore, the genetic basis of the response to infectious agents needs to be investigated in order to understand the relationship between infectious diseases and the host. In that context since vitamin D is an immune-modulatory molecule and it can regulate the cytokine responses by its receptor-VDR- we investigated the effect of polymorphisms in VDR gene on the susceptibility to *Mycobacterium tuberculosis*. For this purpose we analysed rs 2228570 and rs731236 in 80 tuberculosis patients and 94 healthy individuals living in Malatya. We found significant association with rs2228570 both at the genotypic and allelic level.

Keywords: TB, genotyping, VDR, polymorphism

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➢ **POSTER PRESENTATION**

Bazı Yeni Fumarat Bileşiklerinin Sentezi ve Klinik Öneme Sahip Bazı Enzimler Üzerine İnhibisyon Özelliklerinin İncelenmesi

Nimet Baltaş, Günay Kaya Kantar*, Selami Şaşmaz

Recep Tayyip Erdoğan Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Rize, Türkiye

e-mail: gunay.kaya@erdogan.edu.tr

Özet

Bu çalışmada, bazı yeni fumarat bileşikleri (I-IV) sentezlendi ve yapıları IR, ^{1}H-NMR, ^{13}C- NMR, X-Ray analizi ile karakterize edildi. Sentezlenen fumarat bileşiklerinin üreaz ve α-glukozidaz inhibisyon özellikleri incelendi (1,2). Üreaz ve α-glukozidaz enzimleri için standart inhibitör olarak asetohidroksamik ve akarboz kullanıldı. Üreaz enzim inhibisyonunda fumarat türevi bileşiklerin IC_{50} değeri 40.42-48.45 µg/mL aralığında bulundu. Çalışılan bileşikler içerisinde α-glukozidaz enzimi üzerine en etkili inhibisyonu gösteren 1 numaralı bileşik için IC_{50} değeri 15.18±0.55 µg/mL olarak bulundu. Standart inhibitör olarak kullanılan akarboz için IC_{50} değeri ise 11.52±0.23 µg/mL olarak hesaplandı.

Anahtar Kelimeler: Fumarat bileşikleri, Üreaz, α-glukozidaz, İnhibisyon

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➢ **POSTER PRESENTATION**

Inhibition Impacts of Some Anesthetics on Human Carbonic Anhydrase Isoenzymes (hCA I - II) Activities

Cüneyt Türkeş[1], Yeliz Demir[2], Şükrü Beydemir[3*]

[1]Erzincan University, Faculty of Pharmacy, Department of Biochemistry, Erzincan, 24100, Turkey.
[2]Atatürk University, Faculty of Sciences, Department of Chemistry, Erzurum, 25240, Turkey.
[3]Anadolu University, Faculty of Pharmacy, Department of Biochemistry, Eskişehir, 26470, Turkey.

[*]sukrubeydemir@anadolu.edu.tr

Abstract

Carbonic anhydrases (CAs, EC 4.2.1.1) catalyze the reversible hydration of carbon dioxide. These enzymes are a member of Zn-containing metalloenzyme family and they are located in abundance in eukaryotes and prokaryotes. Until now, 16 α-hCA isoenzymes have been identified in the human body exhibiting different activity. Anesthetics are drugs preventing from pain during surgery and categorized into two classes as the general anesthetic and local anesthetic. General anesthetics cause a reversible loss of consciousness. However, local anesthetics cause a reversible loss of sensation for a limited region of the body while protecting consciousness.

In the present study, the *in vitro* effects of bupivacaine hydrochloride and prilocaine hydrochloride as local anesthetics were investigated on human erythrocyte hCA I and hCA II isozymes. For this reason, hCA I and hCA II were purified from human erythrocytes by affinity chromatography. The enzyme purity was controlled by SDS-PAGE. The inhibitory effects of the drugs were determined by spectrophotometric method. IC_{50} values for hCA I and II of bupivacaine hydrochloride and prilocaine hydrochloride were 2.43, 7.88 mM and 3.40 and 16.50 mM, respectively. *Ki* values were calculated using Lineweaver-Burk plots for two drugs. *Ki* values were 1.98, and 6.63 mM for hCA I of bupivacaine hydrochloride and prilocaine hydrochloride, respectively. For hCA II were also obtained as 3.78 and 25.60 mM by the Lineweaver-Burk plots. Both anesthetics had noncompetitive inhibition effect on hCA I. However, besides bupivacaine hydrochloride had competitive inhibition while the prilocaine hydrochloride inhibited the hCA II as noncompetitive.

Keywords: Anesthetics, carbonic anhydrase, hCA isoenzymes, erythrocyte, enzyme inhibition

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➢ **POSTER PRESENTATION**

The Effect of Eu^{2+}-Concentration on the Photoluminescent Properties of Bluish-Green Emitting $BaAl_2O_4:Eu^{2+}$ Phosphors

Erkul KARACAOGLU[1*], Esra ÖZTÜRK[1], Mesut UYANER[2]

[*1]Karamanoglu Mehmetbey University, Faculty of Engineering, Department of Metallurgy and Materials, Karaman, TURKEY
[2]Necmettin Erbakan University, Faculty of Aviation and Space Sciences, Department of Aeronautical Engineering, Konya, TURKEY

Corresponding author e-mail: ekaracaoglu@kmu.edu.tr

Abstract

Long persistent materials (LPMs) have attracted great interest due to their applications, such as displays, structural damage sensing, and medical diagnostics, etc. Among various LPMs, alkaline-earth aluminates are very important because of their efficient photoluminescence, long afterglow property, and great chemical stability. In alkaline-earth aluminates, the doping of $Eu^{2+/3+}$-ion is widely used as a luminescence center or activator, furthermore its emission wavelength depends on the host lattice, namely, the emission color is tunable from green to blue in aluminates. In this research, Eu^{2+}-ion doped $BaAl_2O_4$ phosphor at different concentrations were successfully synthesized with solid state reaction (ceramic) method at 1350°C 3 hours under 95 % N_2/ 5 % H_2 weak reductive atmosphere. The thermal analysis (DTA/TG) was used until 1500 °C to determine reaction conditions and possible phase formations. The X-ray powder diffraction (XRD) and Fourier transform Infra-Red Spectroscopy (FT-IR) were carried out to characterize phase properties and XRD showed the Hexagonal $BaAl_2O_4$ single phase formation with lattice parameters a=b=10.447 Å, c=8.794 Å and α=β=90° γ=120°. The photoluminescence (PL) analysis (Figure 1) showed that excitation spectrum at 360 nm which was related to the $4f^7$-$4f^65d$ transitions of Eu^{2+}. The bluish-green emission maximum at 497 nm having 0.8 molar percent of Eu^{2+} belongs to $4f^65d \rightarrow 4f^7$ electronic transition of Eu^{2+} ions.

Keywords: $BaAl_2O_4$, Eu^{2+}, photoluminescent, Solid State Reaction.

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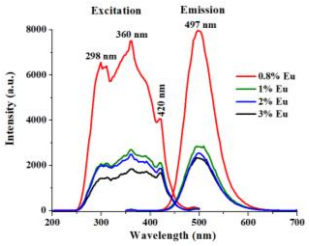

Figure 1. The excitation and emission spectrums of $BaAl_2O_4:xEu^{2+}$ (x=0.8, 1, 2, 3).

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➢ **POSTER PRESENTATION**

Biochemical and mineral Compositions of seeds of *Pistacia atlantica* Desf. from Algeria

LABDELLI Amina[1, 2*], ADDA Ahmed[1], DJELLOULI Amir[2]

[1] Laboratoire de Physiologie végétale appliquée aux cultures hors sol, Université Ibn Khaldoun de Tiaret, Algérie.

[2] Scientific and Technical Research Centre for Arid Areas (CRSTRA), BP 1682 RP, 07000 Biskra, Algeria.

Corresponding author e-mail: aminalabdelli@yahoo.fr

Abstract

The aim of this study was to determine the biochemical (soluble sugars) and mineral composition (N, Ca, Na, k, Fe, Zn, and Cu) of seeds of Atlas pistachio (*Pistacia atlantica*, Anacardiaceae) from six ecotypes in Algeria. Moisture ranged from 3.2% - 4.38%). Bechar had the highest sugar content (128.06±8.39 mg/gMF) In contrast, Batna recorded the lowest value (55.24±5.02 mg/gMF). Potassium was the predominant mineral in seeds of all ecotypes higher in Djelfa (15.83±0.25 mg/g) compared to ecotypes of Laghouat (10.18±0.25 mg/g). Calcium (Ca) was the second element in abundance in seeds. The rest of the elements are in trace. The results of the present study may highlight the potential importance of seeds of Altas pistachio as a source of essential minerals and soluble sugars in human nutrition.

Keywords: Seed, Biochemical, Minerals, Atlas pistachio.

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➢ **POSTER PRESENTATION**

Farklı Yöntemlerle Üretilen Manyetik Nanopartiküllerin Karakterizasyonu

Mustafa Çakal[1*], Sema Salgın[1], Uğur Salgın[1], Gülümser Elaldi[1]

[1]Cumhuriyet Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği, Sivas, Türkiye.

mcakal@cumhuriyet.edu.tr

Özet

Manyetik nanopartikül (MNP)'ler manyetik sıvılar, katalizörler, biyoteknoloji/biyotıp, manyetik rezonans görüntüleme, veri saklama ve çevre ile ilgili uygulamalar dahil olmak üzere çok çeşitli disiplinlerden araştırmacıların büyük ilgisini çekmektedir. Farklı bileşimlerde çeşitli MNP sentezi için uygun yöntemler geliştirilmişken, yukarıda belirtilen alanlarda MNP'lerin başarıyla uygulanması MNP'lerin partikül boyutu ve kararlılığına bağlıdır. Özellikle, bir MNP'nin benzersiz özelliklerinden biri yüzey/hacim oranının yüksek olmasıdır ve bu özellik MNP'nin çapıyla ters orantılıdır. MNP ne kadar küçükse, yüzey alanı o kadar büyüktür ve bu nedenle ilaç yükleme ve ağır metallerin giderimi gibi uygulamalar için daha fazla yükleme konumu mevcuttur. MNP'ler, birlikte çöktürme, hidrotermal sentez, ısıl bozunma, mikroemülsiyon, sonokimyasal sentez gibi farklı yöntemlerle sentezlenebilir. Farklı yöntemlerle sentezlenen MNP'lerin partikül boyut dağılımları, manyetik doygunluk değerleri ve kararlılıkları da farklı olmaktadır.

Sunulan bu çalışmanın amacı farklı sentez yöntemlerinin manyetik demir oksit nanopartiküllerin yapısı, morfolojisi, manyetik özellikleri, çapı ve yüzey yükünde meydana getirdiği değişimleri incelemektir. Bu çalışmada MNP üretiminde en sık kullanılan klasik yöntemlerden olan birlikte çöktürme yöntemi ve ısıl bozunma yöntemi ile manyetik demir oksit nanopartiküller üretilmiştir. Üretilen nanopartiküllerin partikül boyutu/ ortalama hidrodinamik çap, polidispersivite indeksi, zeta potansiyeli analizleri Zetasizer cihazıyla, manyetik doygunluk değerleri VSM analizleriyle, kimyasal yapıları FTIR ve morfolojileri ise SEM analizleriyle belirlenmiştir.

Anahtar kelimeler: Manyetik nanopartikül, birlikte çöktürme, ısıl bozunma

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➢ **POSTER PRESENTATION**

Balıklarda Hastalığa Neden Olan Laktik Asit Bakterileri

Seçil METİN*, Ayşegül KUBİLAY, Onur ÖZDİKYAR

*Süleyman Demirel Üniversitesi, Eğirdir Su Ürünleri Fakültesi, Su Ürünleri Yetiştiriciliği Bölümü, Isparta, Türkiye

Sorumlu yazar e-mail:secil_ekici@yahoo.com

Özet

Laktik asit bakterilerinin farklı türleri genellikle farklı çevresel koşullarda gelişmeye adapte olmuş ve doğada yaygın olarak bulunmaktadırlar. Farklı türde sıcakkanlı hayvanların bağırsak boşluğunda, süt ve süt ürünlerinde, bazı bitki yüzeylerinde ve su ürünlerinde yaygın olarak bulunmaktadırlar. Balıklarda mide ve bağırsaklarda 6 familya olarak tespit edilmişlerdir: Lactobacillaceae (Lactobacillus ve *Pediococcus* spp.), Carnobacteriaceae (*Carnobacterium* spp.), Streptococcaceae (Streptococcus ve Lactococcus), Enterococcaceae (*Enterococcus* spp., Vagococcus), Aerococcaceae (*Aerococcus* sp) ve Leuconostocaceae (*Leuconostoc* spp. ve *Weissella* spp.). Laktik asit bakterileri karasal hayvanların beslenmesinde en yaygın kullanılan probiyotikler olmakla birlikte, su ürünleri yetiştiriciliğinde de probiyotik olarak kullanılmaktadır. Bununla birlikte, deniz ve tatlı su balıklarının yetiştiriciliğinde önemli ekonomik kayıplara neden olan bakteriyel enfeksiyonlara yol açabilmektedirler. Bu bakteriler arasında hastalığa neden olan türler çoğunlukla *Streptococcus ineae, Lactcoccus garvieae ve Vagococcus salmoninarum*'dur. Bu derlemede su ürünleri yetiştiriciliğinde laktik asit bakterilerinin neden olduğu enfeksiyonlar ele alınmıştır.

Anahtar Kelimeler: Su ürünleri yetiştiriciliği, laktik asit bakterileri, patojen

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➢ **POSTER PRESENTATION**

Su Ürünleri Yetiştiriciliğinde Tibbi Bitkilerin Anestezik Olarak Kullanımı

Seçil METİN*, Öznur DİLER, Hakan DİDİNEN, Deniz UĞUR

*Süleyman Demirel Üniversitesi, Eğirdir Su Ürünleri Fakültesi, Su Ürünleri Yetiştiriciliği Bölümü, Isparta, Türkiye

Sorumlu yazar e-mail:secil_ekici@yahoo.com

Özet

Anestezikler su ürünleri yetiştiriciliği sektöründe balıklardan kabuklulara kadar üretimin çeşitli aşamalarında kullanılması kaçınılmazdır. Anestezik veya sedatifler sakinleştirme, balıkların hareketsiz bırakılması, uzun sürecek nakiller ve yüzeysel lezyonlara yapılacak muameleler gibi işlemler için yeterli olabilmektedir. Günümüzde en yaygın olarak kullanılan anestezikler MS222, benzokain ve 2-fenoksietanoldür. Bununla birlikte, bu kimyasalların kalıntıya yol açması nedeniyle insan sağlığı açısından olumsuz etkilere sahiptir. Bu nedenle balık etinde kalıntı yapmayan, balık tarafından iyi tölere edilen, vücuttan atılma süresinin kısa, insan ve hayvanlar için nispeten güvenli olan doğal ürünlere gereksinim duyulmaktadır. Bu bağlamda günümüzde karanfil yağı gibi bitkisel ürünlerden elde edilen farklı yağların sentetik anesteziklere karşı iyi bir seçenek olacağı düşünülmektedir. Bu nedenle, yeni bitkisel anestezik ürün arayışları devam etmektedir. Bu derlemede su ürünleri yetiştiriciliğinde kullanılabilecek farklı tıbbi bitkilerin farklı balık türlerindeki anestezik etkileri ele alınmıştır.

Anahtar Kelimeler: Tıbbi bitkiler, anestezi, su ürünleri yetiştiriciliği

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➢ **POSTER PRESENTATION**

Investigation of Nematic-Nematic Phase Transitions in Transition Metal Salts Doped Lyotropic Liquid Crystal Mixtures

Erol Akpinar[1], Nazli Uygur[1*]

[1]Abant Izzet Baysal University, Arts and Sciences Faculty, Department of Chemistry, Bolu, Turkey.

Corresponding author e-mail: nazliuygur__35@hotmail.com

Abstract

Among lyotropic liquid crystalline structures, nematic phases have been widely studied in the literature. The main reason for this is that the micelles being the structural units of nematic phases exhibit a tendency of orientations in a certain direction with their local directors and, as a consequence, they present susceptibility against magnetic field. Because lyotropic liquid crystals are in a close relationship with biological systems, they are used in some biotechnological applications (drug delivery systems or suitable medium for biosensors, etc.) [1].
There different nematic phases are identified in the literature, being uniaxial discotic (N_D), uniaxial calamitic (N_C) and biaxial (N_B) nematic phases. The transitions between uniaxial and biaxial nematic phases have been subjected for several years by the researchers in the literature [2]. In this study, we examined the effect of transition metal salts $Co(NO_3)_2$ and $Mg(NO_3)_2$ on the uniaxial-to-biaxial nematic phase transitions in sodium dodecylsulfate (SDS)/decanol (DeOH)/water lyotropic mixture via laser conoscopy. The results indicated that transition metal salts give rise to the formation of the N_D phase by affecting the uniaxial-to-biaxial phase transition, Figure.

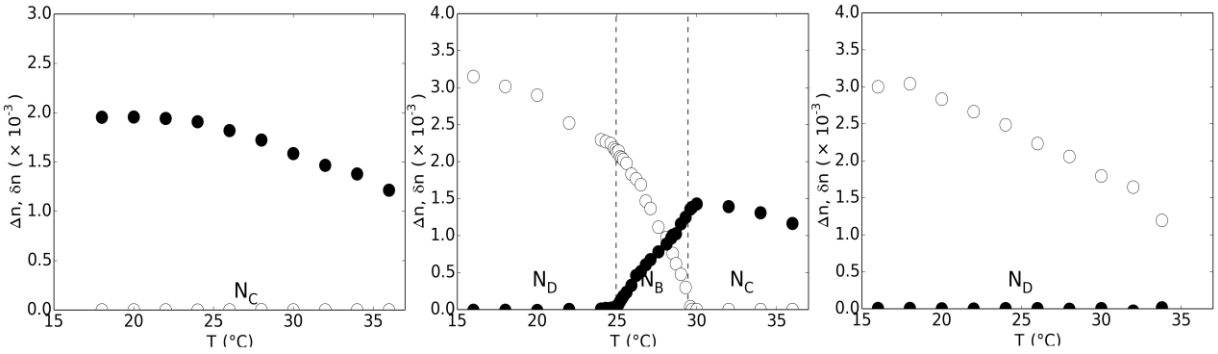

Figure. (From left to right) Birefringences versus temperature graphs by increasing the concentration of transition metal salt $Mg(NO_3)_2$ in the mixture of SDS/DeOH/water. Similar graphs were obtained for $Co(NO_3)_2$ doped mixture.

Keywords: Lyotropic liquid crystals, birefringences, uniaxial, biaxial, nematic-nematic phase transitions, laser conoscopy.

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➢ **POSTER PRESENTATION**

Comparison of Micellization of Partly Fluorinated Surfactants with Their Hydrogenated Counterparts

Erol Akpinar[1], Sinan Yurdakul[1], Nazli Uygur[1*]

[1]Abant Izzet Baysal University, Arts and Sciences Faculty, Department of Chemistry, Bolu, Turkey.

Corresponding author e-mail: nazliuygur__35@hotmail.com

Abstract

The condition for a hydrogenated surfactant to be a counterpart of a fluorinated one is that both surfactants have to exhibit approximately the same critical micelle concentrations (cmc), obtained from their isotropic diluted binary surfactant/water solutions [1]. Due to the energy contribution of each CH_2 or CF_2 group in the surfactant alkyl chain to the micellization (i.e., the micellization Gibbs energy), one CF_2 group corresponds to almost 1.5 CH_2 for surfactants with the same head group [2-3].

In the present study, we compared the cmcs of some novel partly fluorinated surfactants with their hydrogenated ones. The cmcs values were evaluated from electrical conductivity measurements, Figure. The results indicated that [1CF_2 = 1.5 CH_2] rule, in terms of the hydrophobicity, is also valid for partly fluorinated surfactants in addition to the fully fluorinated surfactants if they are compared with their exact hydrogenated counterparts. According to the results, this rule is independent of the surfactant head group type, i.e. carboxylate, sulfate or ester.

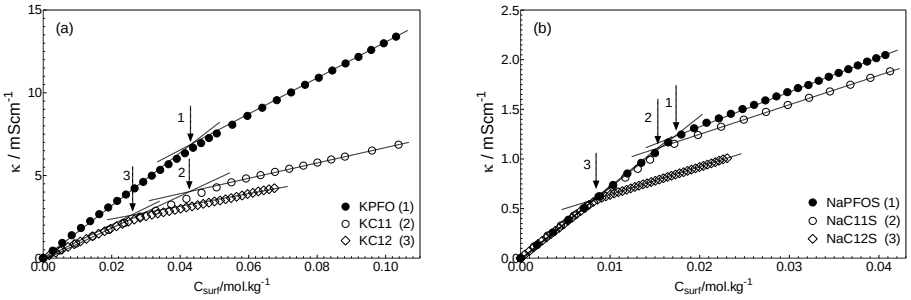

Figure. Specific conductivity (κ) versus total surfactant concentration (C_{surf}) for (a) potassium 2H,2H-perfluorooctanoate, KPFO, potassium undecanoate, KC11, and potassium dodecanoate, KC12, and (b) sodium 1H,1H,2H,2H-perfluorooctylsulfate, NaPFOS, sodium undecylsulfate,NaC11S, and sodium dodecylsulfate, NaC12S, at 35°C.

Keywords: Counterpart surfactants, micellization, partly fluorinated surfactants, electrical conductivity.

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➢ **POSTER PRESENTATION**

Amphibian, Reptile and Mammal Diversity of the Yenice District (Çanakkale, Turkey)

Pınar Çam İcik

Sinop University, Faculty of Art Science, Departmant of Biology, Sinop, Turkey

Corresponding author e-mail: pinar82mail@gmail.com

Abstract

This study aimed to identify wild life species (except Avian fauna) diversity of Yenice district of Çanakkale. In this study, field and observational study was conducted during 2017, in different habitats in Yenice district and its surroundings. During the field work, optical devices (cameras, telescopes) and GPS (*global positioning system devices)* has been used. Live capture traps for capture small mammals and mist- net mechanism for capture bats and landing net for amphibians has been used. Individuals captured were released back to nature after species identification. Moreover, determination of wild life species has been used for animal tracks (footprint, feces etc.).
This study documents the results of a one year, field study of these organisms conducted Yenice district and its surroundings in Çanakkale. A total of 22 species of amphibians, reptiles and small mammals were collected by trapping. Other species cannot be trapped, observed and photographed. A total of 13 amphibian and reptile species and 28 mammal species were either collected or observed at the study area. This research resulted in the terrestrial biotope of Yenice district and its surroundings, is likely to spread 41 species were identified. This species belong to the following families; Bufonidae (Amphibia) (2 species), Hylidae (Amphibia) (1 species), Ranidae (Amphibia) (1 species), Testudinidae (Reptilia) (1 species), Gekkonidae (Reptilia) (1 species), Lacertidae (Reptilia) (3 species), Anguidae (Reptilia) (2 species), Colubridae (Reptilia) (2 species), Erinaceidae (Mammalia) (1 species), Soricidae (Mammalia) (2 species), Leporidae (Mammalia) (1 species), Muridae (Mammalia) (5 species), Spalacidae (Mammalia) (1 species) Canidae (Mammalia) (2 species), Suidae (Mammalia) (1 species), Cricetidae (Mammalia) (1 species), Gliridae (Mammalia) (1 species), Sciuridae (Mammalia) (2 species), Mustelidae (Mammalia) (3 species), Vespertilionidae (Mammalia) (5 species), Rhinolophidae (Mammalia) (2 species) and Minopteridae (Mammalia) (1 species). Wild life fauna of Yenice district evaluated by IUCN category. There are no endemic species.

Keywords: Wildlife biodiversity, Yenice, Çanakkale

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➢ **POSTER PRESENTATION**

Siklodekstrin-Ketoprofen İnklüzyon Komplekslerinin Sentezi

Halil İbrahim Çetintaş[1*], Sema Salgın[1],Uğur Salgın[1]

[1]Cumhuriyet Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Sivas, Turkey.

hcetintas@cumhuriyet.edu.tr

Özet

Son yıllarda ilaçlarla ilgili yapılan araştırmalarda, tanımlanan yeni ilaç adaylarının suda çözünürlüklerinin çok düşük olduğu gözlenmiştir. İlaçların suda çözünürlüğünün düşük olması bazı sorunları da beraberinde getirmektedir. Çözünme derecesi ilaç için kritik bir belirleyicidir. Çünkü oral kullanımda bu ilaçların absorplanması sınırlı olacağı için biyoyararlanımı da düşük olmaktadır. Bu sorunu çözmek için doz artırımı yapıldığında ise damarda mevcut tedavi derişimi elde edilmiş olmasına rağmen mide ve bağırsak için toksik etki gösterebilmektedir. İlaçların çoğunluğu çözünürlüklerinin düşük olması, gastrointestinal sistemde degrade olmaları ve/veya hücre duvarından geçirgenliklerinin sınırlı olması nedenlerinden dolayı insan bünyesinde düşük biyoyararlanıma sahiptirler. Bu gibi problemlerin üstesinden gelmek, ilacın taşınımı ve etkinliğini kolaylaştırmak, çözünürlüğünü arttırmak için uygun siklodekstrin (CD)'ler ile ilaçların/terapötik ajanların inklüzyon komplekslerinin oluşturulması farmasötik endüstrisinde oldukça ilgi gören güncel bir konudur.
Bu çalışmanın amacı, sulu çözeltide düşük çözünürlüğe sahip olan steroidal olmayan iltihap giderici ilaç grubunda yer alan ketoprofen (KP)'in β-CD ile inklüzyon komplekslerini oluşturup nano boyutta yeni ilaç taşıyıcı sistemler geliştirerek KP'in çözünürlüğünü dolayısıyla biyoyararlanımını arttırmaktır. KP-CD inklüzyon kompleksi oluşumuna pH ve sıcaklık etkisi incelenmiş, inklüzyon komplekslerinin yapısal analizleri FTIR spektrometresi ile, boyut ve zeta potansiyeli ölçümleri Zetasizer cihazıyla yapılmıştır. KP derişimi UV spektrometresinde belirlenerek incelenen her bir durum için inklüzyon kompleksi verimi hesaplanmıştır.

Anahtar kelimeler: Siklodekstrin, ketoprofen, inklüzyon kompleksi.

*Bu proje Cumhuriyet Üniversitesi Bilimsel Araştırma Projeleri Birimi tarafından M-520 Nolu proje ile desteklenmiştir.

International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2018)

26-27April 2018, Ankara, Turkey
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➢ **POSTER PRESENTATION**

Antibacterial Effect of Oregano Essential Oil against *Staphyloccus aureus* and *Escherichia coli*

Duygu Turhan[1], Aysegul Mutlu-Ingok[1,2], Funda Karbancioglu-Guler[1*]

[1]Istanbul Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Food Engineering, Istanbul, Turkey.
[2]Duzce University, Akcakoca Vocational School, Food Technology Department, Duzce, Turkey.

Corresponding author e-mail: karbanci@itu.edu.tr

Abstract

Increased demand for safe and natural food, without chemical preservatives, provokes many researchers to investigate the antimicrobial effects of natural compounds. Numerous investigations have confirmed the antimicrobial action of essential oils. The aim of this study was to determine the antimicrobial activity of oregano essential oil against *Escherichia coli* and *Staphylococcus aureus* and to determine the minimum inhibition concentration (MIC) and minimum bactericidal concentration (MBC) values. The obtained inhibition diameters of corresponding essential oil against *E. coli* and *S. aureus* were in the range of 10-14 mm and 11-40 mm, respectively. In the second part of this study, inhibitory effect of oregano essential oil was monitored and the bacterial growth was determined by measuring optical density (OD) at 600 nm. Microdilution method was used to determine MIC. To determine the MBC, broth was taken from each well, spread on Mueller Hinton Agar (MHA) at which the microorganism did not show visible growth. Generally, both of the tested microorganisms were sensitive to oregano essential oil. Depends on the OD measurement results the MBC values were equivalent to the MIC values, confirming their microbicidal effects. In this study the results show that gram-negative *E. coli* is sensitive than gram-positive *S. aureus* with lower MIC and MBC values.

Keywords: Oregano essential oil, antibacterial effect, diameter of inhibition zone, broth microdilution.

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➢ **POSTER PRESENTATION**

Marine Bioactive Compounds and Health Benefits

Ümran ÇİÇEK[1*]

[*1]Gaziosmanpaşa University, Engineering and Natural Sciences Faculty, Food Engineering Department, Tokat,Turkey.

Corresponding author e-mail: umran.ensoy@gop.edu.tr

Abstract

Bioactive compound can be described as a compound that improve the sensorial and nutritional properties of the food and has positive effects in promoting health. These compounds can be discovered from various foods including fruits, vegetables, meat, dairy products and marine products. Marine sources/products including fishes, shellfish, cephalopods, molluscs, crustaceans, seaweeds and algae are known as rich in protein, polysaccharides, polyunsaturated fatty acids, vitamins and minerals. Bioactive peptides of marine sources display antioxidant, antihypertensive, antimicrobial and opioid agonistic functions. Marine polysaccharides including agar and carrageenan are used as an ingredient for textural modifications of foods. The other polysaccharides such as chitosan and its derivates can be applied as an edible film to foods due to its antimicrobial effects. Marine pigment and polyphenols exhibit antioxidant activity by decreasing reactive oxygen species (ROS) like hydroxyl radicals, hydrogen peroxide and superoxide anions. ROS are associated both with food deterioration and various diseases such as cancer. The objective of this review is to describe the bioactive compounds of marine sources and their health benefits.

Keywords: Bioactive compounds, Health benefit, Antioxidant, Antihypertensive, Antimicrobial.

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➢ **POSTER PRESENTATION**

Crystal structure and Hirshfeld Surface Analyses of 2-hydroxybenzoic acid

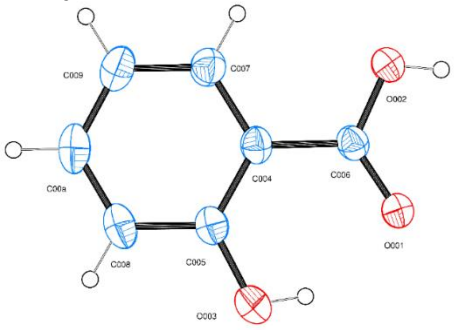
Necmi Dege[1*], Sevgi Kansız[1], Nermin Kahveci Yağcı[2], Hasan İnaç[3]

[*1]Ondokuz Mayıs University, Faculty of Arts and Sciences, Department of Physics, Samsun, Turkey.
[2]Kırıkkale University, Faculty of Arts and Sciences, Department of Physics, Yahşihan, Kırıkkale, Turkey.
[3]Kırıkkale University, Faculty of Education, Department of Elementary Education, Science Teacher Training Programme, Kırıkkale, Turkey.

Corresponding author e-mail: necmid@omu.edu.tr

Abstract

In the crystal structure of the title compound, 2-hydroxybenzoic acid, [C_7 H_6 O_3], is two-dimensional hydrogen-bonded supra-molecular complex. An Ortep III view of the molecule of is shown below. Phenyl ring is planar with maximum deviations of 0.0024 Å. Single crystal of the molecular structure synthesized and crystallizes monoclinic form, space group P $2_{1/c}$ with a = 4.921 Å, b = 11.221 Å, c = 11.587 Å, α = 90° β = 90.304°, γ = 90°, V = 639.8 Å3. Hirshfeld surface analysis and twodimensional fingerprint plots have been used to analyse the intermolecular interactions present in the crystal.



Keywords: salicylic acid, Hirshfeld surface ana

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➢ **POSTER PRESENTATION**

The raphignathoid mites (Acari: Trombidiformes) from Kemaliye District, Erzincan (Turkey)

Sibel Doğan[1*], Salih Doğan[1], Şifanur Uğurlu[1], Nurşen Daşbaşı[2]

[1]Erzincan University, Arts & Sciences Faculty, Biology Department, Erzincan, Turkey
[2]Ulalar Senior High School, Erzincan, Turkey

[*]Corresponding author e-mail: sdilkara@erzincan.edu.tr

Abstract

Raphignathoid mites (Acari: Raphignathoidea), having a large number of species, live in soil, litter, moss, tree bark and stored products. The superfamily Raphignathoidea comprises 11 families all around the world, 8 of which have been recorded from Turkey. Kemaliye (Erzincan) located in the valley between the Munzur Mountains and the Sarıçiçek High Plateau (Turkey) is rich in biodiversity. This paper reports five species belonging to tree families Raphignathidae Kramer, Stigmaeidae Oudemans and Caligonellidae Grandjean: *Raphignathus gracilis* (Rack), *Eustigmaeus anauniensis* (Canestrini), *Ledermuelleriopsis ayyildizi* Doğan, *Neognathus terrestris* (Summers & Schlinger) and *Caligonella humilis* (Koch). These species already known from Turkey were newly recorded from Kemaliye. The mite specimens were extracted Berlese funnels, cleared in 60% lactic acid and mounted on microscopic slides in Hoyer's medium. They were examined and photographed with the aid of an Olympus DIC microscope. The short descriptions, habitats and the distributions of all species on Turkey and on the world were given. The larva stage of *R. gracilis* was described herein for the first time.

Keywords: Raphignathoidea, mite, larva, description, distribution, Kemaliye.

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➢ **POSTER PRESENTATION**

Uzunçayır Baraj Gölü'nden izole edilen *Chlorella sp.* mikro alginin atık suyu arıtma potansiyelinin incelenmesi

Şafak Seyhaneyıldız Can[1*], Erkan Can[2], Kadir Yılmaz[2]

[*1]Munzur Üniversitesi, Mühendislik Fakültesi, Biyomühendislik Bölümü, Tunceli, Türkiye
[2]Munzur Üniversitesi, Su Ürünleri Fakülte, Yetiştiricilik Bölümü, Tunceli, Türkiye

Sorumlu yazar e-mail:seyhaneyildiz@gmail.com

Özet

Evsel ve endüstriyel atık sular azot, fosfor ve diğer nutrientler bakımından oldukça zengindir. Bu sular arıtılmadan deniz ve tatlı su gibi alıcı ortamlara verildiği takdirde çevresel açıdan büyük problemlere sebep olmaktadır. Oysa çevre için oldukça zararlı olan bu suların içindeki bileşikler, algler için gerekli olan asıl besin kaynaklarıdır. Alg üretimi esnasında maliyeti artıran en önemli faktör besin ham maddeleridir. Bu düşünceden yola çıkarak tasarlanan çalışmada Uzunçayır Baraj Gölü'nden izole edilen *Chlorella* sp. Tunceli ilinde bulunan biyolojik arıtma tesisinden alınan suda üretilmiştir. Tesisten alınan atık su %0, %25, %50 ve %75 distile su ile seyreltilerek besin ortamları hazırlanmış ve *Chlorella* sp.'nin 20 gün boyunca bu besin ortamlarında kültürü yapılmıştır. 20 günün sonunda yapılan analizlerde, *Chlorella* sp.'nin atık sudaki nitrit, nitrat, fosfat ve amonyumu besin olarak kullanarak, biyomaslarını artırdığını ve en iyi gelişimi %50 distile su ile hazırlanan atık su ortamında sergilediğini göstermiştir.

Anahtar Kelimeler: Atık su, *Chlorella sp*., arıtım

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➢ **POSTER PRESENTATION**

Mikrodalga Gücü Altında Nano Boyutta ZnO Çöktürülmüş Linter Liflerinden Duvar Kâğıdı Eldesi ve Radyasyon Geçirgenliğinin Ölçülmesi

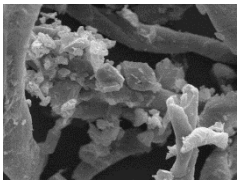
Ömer SÖĞÜT[1], Emine ÖZ[2], Ahmet TUTUŞ[3], Erhan CENGİZ[4], Serhan URUŞ[5]*

[1]Kahramanmaraş Sütçü İmam Üniversitesi, Fen-Edebiyat Fakültesi, Fizik Bölümü, Kahramanmaraş / TÜRKİYE
[2]Kahramanmaraş Sütçü İmam Üniversitesi, Fen Bilimleri Enstitüsü, Malzeme Bilimi ve Mühendisliği, Kahramanmaraş / TÜRKİYE
[3]Kahramanmaraş Sütçü İmam Üniversitesi, Orman Fakültesi, Orman Endüstri Mühendisliği, Kahramanmaraş / TÜRKİYE
[4]Karadeniz Teknik Üniversitesi, Fen-Fakültesi, Fizik Bölümü, Trabzon, TÜRKİYE
[5]Kahramanmaraş Sütçü İmam Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Kahramanmaraş / TÜRKİYE
Sorumlu yazar e-mail: serhanurus@yahoo.co.uk

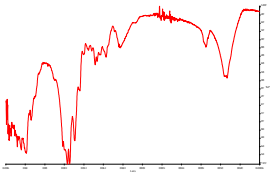
Özet

Bu çalışma ile Ülkemizde çoğunlukla yakılarak bertaraf edilen atık asidik linter liflerinin yüzeyine ilk defa nano boyutta farklı yüzdelerde ZnO çöktürüldü ve elde edilen kompozitten yapılan duvar kâğıtlarının kütle soğurma katsayıları enerji bağımlı olarak ölçüldü. Kimyasal olarak nano-ZnO çöktürme işleminde; etanol ortamında linter üzerine, Triton-X100 ve $Zn(Ac)_2.H_2O$ eklendi, pH 8.5 civarına gelene dek KOH çözeltisi damlatıldı ve elde edilen karışım mikrodalga cihazında açık sistemde konarak 600 watt mikrodalga gücü ile max. 70 ^oC de 1 saat karıştırıldı, sonra soğutulup yıkanıp filtre edildi. Nano boyutta linter üzerine ZnO çöktürüldükten sonra elde edilen bu nano-kompozit kullanmılarak kuşe sütü hazırlandı. Kuşe sütü hazırlanırken; sentezlenen nano-ZnO katkılı linter, kalsiyum karbonat (PCC) ve nişasta kullanıldı. Ve duvar kağıdına kaplama yapıldı.
Böylece radyasyon kalkanı olabilecek nano metal oksit katkılı kâğıtlardan radyasyon korumalı duvar kaplama kâğıtları üretimi yapıldı. Elde edilen radyasyon kalkanı nano-duvar kağıtları hastaneler, nükleer santraller, laboratuvarlar ve hatta evlerde bile kullanılabilecektir ve bu sayede, atık olarak atılan veya yakılan linterden, radyasyon korumalı ve katma değeri yüksek olabilecek duvar kâğıtları elde edilebilecektir.

Anahtar Kelimeler: Linter, çinko oksit, kağıt, radyasyon geçirgenliği



Nano-ZnO çöktürülmüş Linterin SEM görüntüsü



FT-IR Spektrumu

International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2018)

26-27April 2018, Ankara, Turkey
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➢ **POSTER PRESENTATION**

The Effects of Local Anaesthetic on the Acetylcholine-induced Contractions on The Isolated Rat Ileal Segments

Koç Emine

Near East University, Faculty of Medicine, Department of Physiology, Nicosia, North Cyprus

emine.koc@neu.edu.tr

Abstract

The present study investigates the effects of local anaesthetic (prilocaine) application on acetylcholine-induced contractions on isolated rat ileal segments. Since prilocaine is mostly used as local anaesthetic in dental problems it may also affect systematically the other systems such as gastrointestinal system. İn this work we have also investigated the role of calcium ions on the effect of prilocaine. For this purpose, standard and ca-free Tyrode solutions were used in our experiments. İleum segments were suspended in an isolated tissue bath containing standard Tyrode solution and contracted with acetylcholine in control group. Our preliminary investigation results showed that prilocaine application have significantly decreased ACh-induced contraction with dose-dependent in both the standard and ca-free Tyrode solution in the rat isolated ileal segments by changing the permeability of sodium and calcium channels.

Keywords: Local Anaesthetic, Acetylcholine-induced Contraction, Ileal Segments

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➢ **POSTER PRESENTATION**

Nano-TiO_2 Çöktürülmüş Atık Linter Liflerinden Duvar Kâğıdı Üretilmesi ve Radyasyon Geçirgenliğinin Ölçülmesi

Ahmet TUTUŞ[1], Emine ÖZ[2], Ömer SÖĞÜT[3], Muhammed Barut[4], Serhan URUŞ[5]*

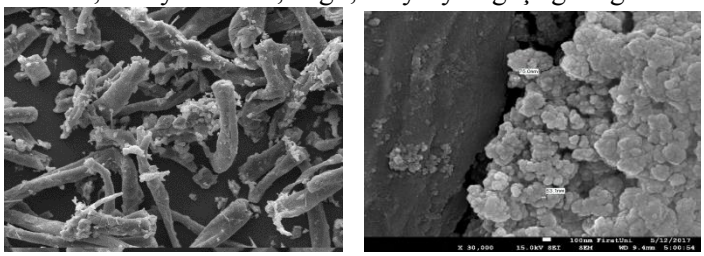
[1]Kahramanmaraş Sütçü İmam Üniversitesi, Orman Fakültesi, Orman Endüstri Mühendisliği, Kahramanmaraş / TÜRKİYE
[2]Kahramanmaraş Sütçü İmam Üniversitesi, Fen Bilimleri Enstitüsü, Malzeme Bilimi ve Mühendisliği, Kahramanmaraş / TÜRKİYE
[3]Kahramanmaraş Sütçü İmam Üniversitesi, Fen-Edebiyat Fakültesi, Fizik Bölümü, Kahramanmaraş / TÜRKİYE
[4]Kahramanmaraş Sütçü İmam Üniversitesi, Mühendislik ve Mimarlık Fakültesi, Tekstil Mühendisliği Bölümü, Kahramanmaraş / TÜRKİYE
[5]Kahramanmaraş Sütçü İmam Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, Kahramanmaraş / TÜRKİYE

Sorumlu yazar e-mail: serhanurus@yahoo.co.uk

Özet

Bu çalışma ile Ülkemizde çoğunlukla yakılarak bertaraf edilen atık asidik linter liflerinin yüzeyine ilk defa nano boyutta farklı yüzdelerde TiO_2 çöktürüldü ve elde edilen kompozitten yapılan duvar kâğıtlarının kütle soğurma katsayıları enerji bağımlı olarak ölçüldü. Kimyasal olarak çöktürme işleminde; asidik linter lifleri öncelikle KOH ile nötralleştirildi ve üzerine farklı miktarlarda Titanyum(IV)izopropoksit ve Triton-X100 eklenerek oda şartlarında karıştırılarak nano boyutta TiO_2 çöktürülmesi sağlandı.
Nano boyutta TiO_2 çöktürülmüş linter, kalsiyum karbonat (PCC) ve nişasta kullanılarak kuşe sütü hazırlandı ve duvar kağıdına kaplama yapıldı. Liflerin yüzeyine kimyasal olarak çöktürülmüş nano-TiO_2 radyasyon kalkanı olabilecek nano metal oksit katkılı kâğıtlardan radyasyon korumalı duvar kaplama kâğıtları üretimi yapıldı. Elde edilen duvar kağıtlarının kütlesoğurma katsayıları enerji bağımlı olarak ölçüldü. Radyasyon kalkanı olabilecek nano metal oksit katkılı-duvar kağıtları hastaneler, nükleer santraller, laboratuvarlar ve hatta evlerde bile kullanılabilecektir ve bu sayede, atık olarak atılan veya yakılan linterden, radyasyon korumalı ve katma değeri yüksek olabilecek duvar kâğıtları elde edilebilecektir.

Anahtar Kelimeler: Linter, titanyum oksit, kağıt, radyasyon geçirgenliği



Şekil 1: TiO_2 çöktürülmüş Linterin SEM görüntüleri

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➢ **POSTER PRESENTATION**

Crystallographic Structure And Hirshfeld Surface Analysis of Polymeric bis(1,2,4,5-benzenetetracarboxylato) Dihydroxydiaqua-trizinc(II)

Sevgi Kansız[1*], Necmi Dege[1], Fatih Şen[2]

[*1]Ondokuz Mayıs University, Faculty of Arts and Sciences, Department of Physics, Samsun, Turkey.
[2]Bozok University, Sorgun Vocational School, Department of Opticianry, Yozgat, Turkey.

Corresponding author e-mail: sevgi.koroglu@omu.edu.tr

Abstract

The structure of the title polymeric complex was determined by X-ray crystallography. The complex crystallizes in a monoclinic system and was characterized in the space group $P2_1/n$ with cell parameters a = 7.3882(3), b = 16.5424(9), c = 14.3780(6) Å, β = 95.376(3)°, Z = 2, V = 1749.53(14) Å^3. The $R1$ [$I \geq 2\sigma(I)$] and $wR2$ (all data) values are 0.056 and 0.106, respectively, for all 3551 independent reflections. Intramolecular C3−H3···O2, O1−H1b···O2 and intermolecular O5−H5b···O8 interactions were observed in the crystal lattice. Crystal Explorer program was used to determine remarkable interactions in the crystal. Hirshfeld surface analysis and two dimensional fingerprint plots have been investigated.

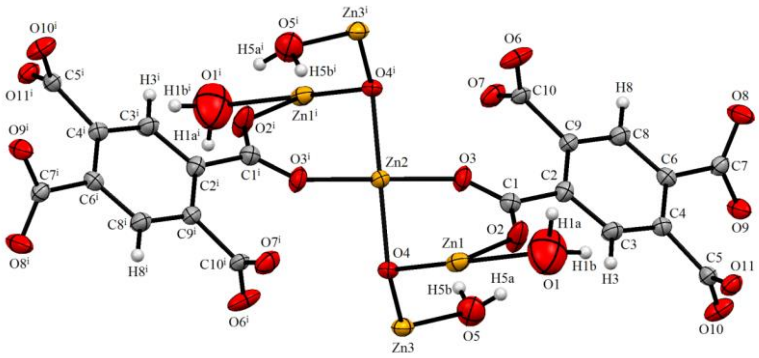

Figure 1. The crystal structure of $(C_{10}H_6O_{11}Zn_3)_n$. Symmetry code: (i) x-1/2, -y+3/2, z-1/2.

Keywords: Crystal structure, Zinc(II), Hirshfeld surface, benzenetetracarboxylate.

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➢ **POSTER PRESENTATION**

Antidiabetic and antioxidant effects of *Lupinus albus* L. seed extract in streptozotocin diabetic rats

Betul Apaydin Yildirim[1*], Ali Ertekin[2], Saban Kordali[3], Serkan Yildirim[4]

[*1] Ataturk University, Veterinary Faculty, Department of Biochemistry, Erzurum, Turkey
[2] Department of Biochemistry, Veterinary Faculty, Ondokuz Mayis University, Samsun, Turkey
[3] Department of Plant Protection, Agriculture Faculty, Ataturk University, Erzurum, Turkey
[4] Department of Pathology, Veterinary Faculty, Ataturk University, Erzurum, Turkey

Corresponding author e-mail: betul_apaydin@hotmail.com

Abstract

In the present study, we aimed to investigate effects on the levels of liver and renal tissue MDA, CAT, SOD, GPx and GSH activities of *Lupinus albus* L. seed ectract on diabetic rats. A total of 28, Sprague–Dawley male rats were used in the present study. The rats were divided into four groups (*n*=7). Group 1(Control): Received only vehicle 0.5 % CMC p.o. via gastric gavaje. Group 2(STZ-DM): Streptozotocin was given at single dose of 60 mg/kg/i.p. Group 3(LA): *Lupinus albus* L. peel was given at a dose of 10 mg/kg/p.o. via gastric gavaje 20 days. Group 4(STZ-DM+LA): STZ as 60 mg/kg/i.p. single dose+LA 10 mg/kg/day/p.o. via gastric gavaje 20 days. All animals were sacrificed on 20th day and dissected liver and renal tissues. The results of this study showed that lipid peroxidation and oxidative stress significantly increased after STZ application. MDA levels, CAT, SOD and GPx activities and reduced GSH levels were measured in liver and renal tissues of the rats. MDA levels of the liver and kidney tissues were found to be higher in STZ-DM groups according to control group. The activities of the catalase, superoxide dismutase, glutathione peroxidase and reduced glutathione significantly increased in LA and STZ-DM+LA groups according to diabetic rats in liver and renal tissues. All changes in biochemical parameters were directly proportionaled with histopathological changes of the liver and kidney tissues. *Lupinus albus* seed exstract might have a role in reducing of the lipid peroxidation, oxidative stress and associated complications and plays a beneficial role in the treatment of diabet induced tissue damage.

Keywords: Antioxidants sustances, diabetes, lipid peroxidation, *Lupinus albus* L

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➢ **POSTER PRESENTATION**

Investigation of the Interactions of the Compound $C_{15}H_{16}N_2O_2$ with DNA bases by DFT

Ayşin Zülfikaroğlu[1], Çiğdem Yüksektepe Ataol[2*]

[1]Amasya University, Faculty of Arts and Science, Department of Chemistry, Amsya, Turkey
[2*]Cankiri Karatekin University, Faculty of Science, Department of Physics, Cankiri, Turkey

Corresponding author e-mail: yuksektepe.c@karatekin.edu.tr

Abstract

The single crystal structure of N'-((2-hydroxynaphthalen-1-yl)methylene)isobutyrohydrazide is obtained by the X-ray diffraction technique. The molecular structures of the crystal structure using X-ray results are optimized by using the Density Functional Theory (DFT) from computational chemistry methods. B3LYP hybrid functions for DFT and different basis sets (6-31G, 6-311G and 6-311G(d, p)) have been selected to achieve the optimized results in the theoretical calculations. The bond parameters of the compound are compared with the X-rays and the theoretical calculation results. Also, the molecular structure is optimized in different solvent media by using B3LYP. Using the molecular structures optimized in different solvent environments, the energy of the molecular structure is calculated. The stability of the molecule in different solvent environments was investigated by evaluating the total energy of the molecule, the Homo-Lumo energy range, the electrophilicity index and chemical hardness. And also, the Fukui functions of the molecule are calculated and the reactive atoms of the molecular structure have been decided. The energy of the molecular structure is also calculated in gas phase by using DFT/B3LYP. The interaction of the molecule with the DNA bases has been investigated using energy values in the molecular anion, cation and neutral states.

Keywords: Hydrazide, DFT, X-ray, Single Crystal, DNA bases

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➢ **POSTER PRESENTATION**

X-ray, MEP, and NLO Studies of Compound $C_{21}H_{20}N_4O_2S$

Uğur Akcakaya[1*], Çiğdem Yüksektepe Ataol[1], İbrahim Yılmaz[2], Alaaddin Çukurovalı[3]

[*1]Cankiri Karatekin University, Faculty of Science, Department of Physics, Cankiri, Turkey
[2]Karamanoglu Mehmetbey University, Faculty of Kamil Ozdag Science, Department of Chemistry, Karaman, Turkey
[3]Firat University, Faculty of Science, Department of Chemistry, Elazig, Turkey

Corresponding author e-mail: akcakayau@gmail.com

Abstract

The single crystal structure of $C_{21}H_{20}N_4O_2S$ is obtained by the X-ray diffraction technique. The monomer and dimer molecular structures of the crystal structure using X-ray results are optimized by using the Density Functional Theory (DFT) and Hartree-Fock (HF) from computational chemistry methods. B3LYP hybrid functions for DFT and different basis sets (6-311G and 6-311G(d, p)) have been selected to achieve the optimized results in the theoretical calculations. The bond parameters of the compound are compared with the X-rays and the theoretical calculation results. Besides these, using the optimized monomer and dimer molecular structures, the vibration frequencies of the molecular structure were calculated with different basis sets. And also, the effect of D-H…A intermolecular hydrogen bond on the vibrational frequencies is investigated. Molecular electrostatic potential (MEP) map and non-linear optical properties (NLO) of the title compound are investigated.

Keywords: Hydrazine, DFT, X-ray, Single Crystal, MEP, NLO

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➢ **POSTER PRESENTATION**

Pinus radiata'nın Yapı Kerestesi Olarak Emniyet Gerilmeleri Bakımından Değerlendirilmesi

İbrahim Bektaş[1], Ayşenur Kılıç Ak[1], Saniye Erkan[*1]

[1]Kahramanmaraş Sütçü İmam Üniversitesi, Orman Fakültesi, Orman Endüstri Mühendisliği Bölümü, Kahramanmaraş, Türkiye

Sorumlu yazar e-mail: aysenurkilic89@gmail.com

Özet

Ağaç malzemenin özellikle yapı malzemesi olarak kullanımı sırasında bilinmesi gereken önemli kriterlerden biri emniyet gerilmesi (EG)'dir. Emniyet gerilmeleri, odunun özellikle hayati kullanım yerlerinde öne çıkar. Ağaç malzemede emniyet gerilmeleri, sahip olduğu mekanik özellikleri üzerinden hesaplanır. Bu açıklamalar doğrultusunda, laboratuarlarda %12 hava kurusu rutubet derecesinde belirlenen mekanik özellikleri yardımı ile *Pinus radiata*'nın emniyet gerilmeleri ve emniyet katsayısının (E_K) hesaplanması çalışmanın temel amacını oluşturdu. Yapılan hesaplamalar sonucunda, *Pinus radiata*'nın emniyet gerilme değerleri liflere paralel basınç direnci için 5.01 N/mm^2, eğilme direnci için 17.98 N/mm^2, liflere dik çekme direnci için 3.87 N/mm^2 ve yarılma direnci için 0.07 N/mm^2 olarak hesaplandı. Emniyet katsayısı ise *Pinus radiata* için ortalama 5.27 olarak elde edildi. Ayrıca, iğne yapraklı ağaç keresteleri yapılarda kullanımı sırasında emniyet gerilmeleri bakımından 3 kalite sınıfında değerlendirilir. Çamlarda liflere paralel basınç direncinde EG değerleri I., II. ve III. kalite sınıfları için sırası ile 11, 8.5 ve 6 N/mm^2 'dir. Eğilme direncinde ise 13, 10 ve 7 N/mm^2 'dir. Bu verilere göre *P.radiata*'nın, basınç direncinde yapı malzemesi olarak asgari şartları sağlayamamasına karşın, eğilme direncinin önemli olduğu yerlerde rahatlıkla kullanılabileceği söylenebilir.

Anahtar Kelimeler: *Pinus radiata*, emniyet gerilmesi, emniyet katsayısı

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➢ **POSTER PRESENTATION**

Phenolic Levels and Antioxidant Degrees of *Globularia orientalis*

Huseyin Sahin[1*], Kaan Kaltalıoglu[1], Ersan Bektas[1]

[*1]Giresun University, Espiye Vocational School, Giresun, Turkey.

Corresponding author e-mail: huseyin.sahin@giresun.edu.tr

Abstract

Globularia is a genus of about 22 species of flowering plants in the family Plantaginaceae. *Globularia orientalis* is one the identified species. This species is restricted to some of area in Turkey and grows on calcareous rocky cliffs. Its bioactive knowledge is limited, so it could be evaluated as untouched topic.
The aim was to investigate the phenolic contents of *Globularia orientalis* collected from Erzincan, Turkey. Phenolic constituents were analyzed by using RP-HPLC-DAD (reverse phase-high performance liquid chromatography with a diode array detector). These analyses were achieved on Thermo Scientific Dionex Ultimate™ 3000 system (Thermo Scientific, Bremen, Germany). The eluted 10 standard phenolic acids: gallic, protocatechuic, *p*-hydroxybenzoic, chlorogenic, vanillic, caffeic, syringic, *p*-coumaric, rosmarinic, benzoic, and two flavonoids: rutin, quercetin were monitored by comparison at 280 and 315 nm. Also the antioxidant properties were determined to use total phenolic content (TPC), ferric reducing antioxidant power (FRAP), and DPPH• radical scavenging activity assays.
In sample extract, analyzed phenolic concentrations were found 23.536 mg phenolic/g dry sample. Protocatechuic acid, *p*-hydroxybenzoic acid, chlorogenic acid, vanilic acid, caffeic acid, syringic acid, *p*-coumaric acid, rutin, rosmarinic acid, benzoic acid, and quercetin were detected in sample with different quantitative amounts. According to the analyzed standards, benzoic acid was the major phenolic with 22.383 mg phenolic/g dry sample. Besides phenolic results, the values of TPC, FRAP DPPH (SC_{50}) were found as 26.987±1.893 mg GAE/g sample, 126.56±0.616 µmol $FeSO_4.7H_2O$/mg sample, 25.81 µg/mL, respectively.

Keywords: *Globularia orientalis*; phenolic; benzoic acid; antioxidant

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➢ **POSTER PRESENTATION**

Lyotropic Cholesteric Phase Behaviors of Partly Fluorinated Surfactants and Their Exact Hydrogenated Counterparts

Sinan Yurdakul[1], Erol Akpinar[1], Seda Uyanik[1,2*]

[1]Abant Izzet Baysal University, Arts and Sciences Faculty, Department of Chemistry, Bolu, Turkey.
[2] Petroyag Industrial Lubricants Inc., Gebze, Kocaeli, Turkey.

Corresponding author e-mail: seda.uyanik@hotmail.com

Abstract

Cholesteric phases are one of the most common structures of lyotropic liquid crystals. They differ from their nematic counterparts since they show a helical structure with finite pitch. While their thermotropic counterparts have been used in electro-optical devices such as liquid crystal displays, optical imaging, thermometers etc., lyotropics have potential applications in biotechnology. For instance, some studies showed that lyotropic cholesteric phases were used for delivering drugs such as Cromolyn. Models were proposed to describe the chiral induction mechanism, however, it is not yet completely understood.

In this study, we examined lyotropic intrinsic cholesteric phase properties of some amino acid based chiral surfactants, with partly fluorinated and hydrogenated chains, to investigate the effect of the twist structure of fluorocarbon chain on the helical twisting power of chiral surfactants. We synthesized some chiral fluorinated/hydrogenated counterpart surfactants, taking into account the rule that 1 CF_2=1.5 CH_2 [1]. We prepared lyotropic mixtures exhibiting discotic cholesteric phases by dissolution of chiral surfactants L-alaninehydrochloride undecylester (L-AUnDE), L-serinehydrochloride undecylester (L-SUnDE) and their partly fluorinated counterparts (L-APFOE and L-SPFOE, respectively) into sodium chloride (NaCl)/water mixtures, separately. The pitch measurements were used to evaluate the helical twisting powers of each fluorinated/hydrogenated chiral surfactants. The results indicated that the twist structure of fluorocarbon chain provides higher helical twisting power with respect to the hydrocarbon chain, which supports the 'intramicellar chirality model' proposed in the literature [2].

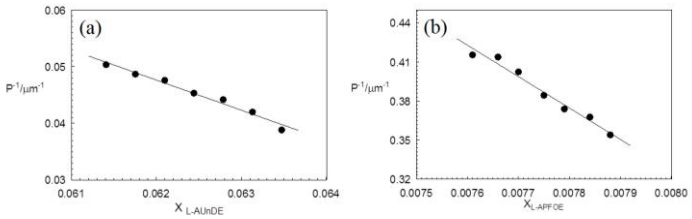

Figure. Twist as a function of the mole fraction of L-enantiomeric surfactant for (a) L-AUnDE/NaCl/water at 30.0°C and (b) L-APFOE/NaCl/water at 30.0°C. Similar results were obtained for L-SUnDE and L-SPFOE counterparts.

Keywords: Counterpart surfactants, lyotropic liquid crystals, discotic cholesteric phase, twist, pitch.

Acknowledgement: This presentation was financially supported by Abant Izzet Baysal University Directorate of Research Projects Commission (BAP) [grant number: 2017.03.03.1260].

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➢ **POSTER PRESENTATION**

Six New *Psylliodes* Flea Beetles for Çankırı Province, Turkey (Chrysomelidae: Galerucinae: Alticini)

Meltem Demirer[1*], Neslihan Bal[2], Hüseyin Özdikmen[2], Suat Kıyak[2]

[*1]Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye
[2] Gazi Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Ankara, Türkiye

Sorumlu yazar e-mail: meltemdemirer@yahoo.com

Abstract

We had the opportunity to study material of the genus *Psylliodes* (Chrysomelidae: Galerucinae: Alticini) collected during the expedition of Çankırı province in 2013-2015. *Psylliodes* Latreille, 1825 that is a cosmopolitan genus of tribe Alticini, is distributed in all of the zoogeographical regions of the World. There are over 200 species known worldwide, 164 of which have been recorded in Palaearctic region. Forty nine species have been recorded in Turkey until now. *Psylliodes* flea beetles have not been reported from Çankırı province until now. In a result of this work, 6 new records [*Psylliodes* (*Psylliodes*) *chalcomera* (Illiger, 1807), *Psylliodes* (*Psylliodes*) *chrysocephala* (Linnaeus, 1758), *Psylliodes* (*Psylliodes*) *circumdata* (Redtenbacher, 1842), *Psylliodes* (*Psylliodes*) *hyoscyami* (Linnaeus, 1758), *Psylliodes* (*Psylliodes*) *marcida* (Illiger, 1807) and *Psylliodes* (*Psylliodes*) *tricolor* Weise, 1888] of the genus *Psylliodes* for the fauna of Çankırı province were detected. Especially, *Psylliodes* (*Psylliodes*) *marcida* (Illiger, 1807) has been reported from Denizli and Erzurum provinces in Turkey. So, record of Çankırı province is the third record from Turkey.

Keywords: Chyrsomelidae, Galerucinae, Alticini, *Psylliodes*, new records, Çankırı, Turkey

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➢ **POSTER PRESENTATION**

Physical and Chemical Properties, Phenolic Materials, Antioxidant Capacity And Enzyme Inhibition Efficiency Of *Uropsora Penicilliformis* Algae From Karadeniz Region

Emre Dokuzparmak[1*], Yakup Şirin[2], Hilal Ebru Çakır[2], Ümit Dokuzparmak[3], Sevgi Kolaylı[2]

[1]University of Strathclyde, Pure and Applied Chemistry, Technology and Innovation Centre, Glasgow, United Kingdom
[2]Karadeniz Technical University, Faculty of Sciences, Department of Chemistry, Trabzon, Turkey
[3]Karadeniz Technical University, Faculty of Marine Sciences, Fisheries Technology Engineering, Surmere/Trabzon, Turkey

emre.dokuzparmak@strath.ac.uk

Abstract

Algae are with cellulosic membrane and eukaryotic and autotrophic creatures that generally live in aquatic or semi-aquatic habitat (ocean, freshwater lake, stream, polar lake, etc.) and they have ability of photosynthesis. Not only are algae the main nutritional source of aquatic creatures, but they also produce two third of total photosynthetic carbon on the world. These features make them very important in terms of ecosystem.

Uropsora Penicilliformis, which can be used as human food, has single filamentary structure and can reach up to 30 cm in length. It fall into the class of green algae. *Uropsora Penicilliformis* is the source of polysaccharide, lipid, protein, enzyme, sterol, carotenoid, vitamine, hormon and the other metabolites. It contains small amount of sodium, a large amount of iron and calcium. It has plenty of vitamin B.

In the study, *Urospora Penicilliformis* gathered from the coast of Trabzon in April in 2017 was studied in terms of physical properties (Lipid= 22%, Total Solid Matter= 15.45%, pH= 9.15, Protein= 66%), chemical properties and antioxidant activity and phenolic profile of methanolic extraction of the algae. For the detection of total phenolic material in the algae, 2,2-difenil-1-pikrilhidrazil (DPPH) (SC_{50}=1,22 mg/mL) and iron (III) reduction/oxidation capacity (FRAP) (2858,94 Troloks® µmol/L equipollent/mL simple) were performed. Also, enzyme inhibition tests were worked for urease, acetylcholinesterase and amylase(Urease IC_{50}= 1.26 mg/mL, Acetylcholinesterase IC_{50}=2.23 mg/mL and Amylase IC_{50}= unidentified).

Total phenolic material of *Uropsora Penicilliformis* was found as 153 mg/100g dry matter. Also, 14 of phenolic materials were analyzed by using reverse-phase HPLC (RP-HPLC-UV). It was found that *Uropsora Penicilliformis* has gallic acid, protocatechuic acid, catechine, vanilic acid, epicatechine, p-coumaric acid and t-cinnamic acid. On the other hand, it has not p-OH benzoic acid, daidzein, luteolin, caffeic acid, syringic acid. As a result of the study, antioxidant activity of methanolic extraction of *Uropsora Penicilliformis* was determined at different levels.

Key words: Algae, *Uropsora Penicilliformis*, Antioxidant, Inhibition

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➢ **POSTER PRESENTATION**

The Immobilization of Phytase Purified from Thermophilic *Geobacillus* TF16 in Ca-Alginate Matrix and Investigation of Phytate Degradation Effect of The Immobilized Enzyme for a Natural Source

Emre Dokuzparmak[1*], Yakup Şirin[2], Nagihan Saglam Ertunga[2]

[1]University of Strathclyde, Pure and Applied Chemistry, Technology and Innovation Centre, Glasgow, United Kingdom
[2]Karadeniz Technical University, Faculty of Science, Department of Chemistry, Trabzon, Turkey

emre.dokuzparmak@strath.ac.uk

Abstract

Phytase is a type of phosphatase enzyme which catalyses phytate to phosphorylated inositol phosphates or inositol. Thus, the interaction between phytase and phytate causes of generation of inositol, organic phosphor and chelated ions. These chemicals raise the nutritional value of food such as cereal and grain. Alginate is a kind of polysaccharide typically obtained from marine algae and the structure of alginate contains mainly D-manuronic acid (M) and L-guluronic acid (G). There are β (1-4) glycosidic bonds between D-manuronic acid molecules and α (1-4) glycosidic bonds between L-guluronic acid molecules. Molecular structure of alginate may be different by source organism.

$$2\text{Na-Alginate} + Ca^{2+} \longrightarrow \text{Ca (Alginate)}_2 + 2Na^{+}$$

The aim of the study was to increase the optimum conditions for a phytase from thermophilic *Geobacillus* TF16 by using an immobilization technique (encapsulation). The yield was 42% for phytase enzyme. As compared with pure phytase enzyme, immobilized phytase showed an improvement in optimum pH (4.0 to 3.0) and temperature (85 ^{o}C to 75 ^{o}C). K_m and V_{max} was 7.5 mM and 5011.12 U/mg, respectively. Hydrolysis efficiency of phytate in soy milk was studied and availability of the immobilized phytase was assessed for industrial process of animal feed. In the presence of protease, the phytase immobilized by Ca-Alginate could keep 60% of its activity at the end of one-hour incubation. Hydrolysis capacity of the immobilized phytase was 33% for soy milk. It has been found that the phytase immobilized in Ca-alginate has higher temperature optimum, and thermal stability and better enzymatic activities when compared to the literature.

This study was supported by TUBİTAK (Project Number is 214Z190).

Key words: Phytase, *Geobacillus* TF16, Immobilization, Soy milk, Ca-Alginate

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➢ **POSTER PRESENTATION**

Aminopyrene Substituted Cyclotriphosphazenes: Synthesis, Characterization and Fluorescence Properties

Elif Şenkuytu[1*]

[*1]Department of Chemistry, Gebze Technical University, Kocaeli, Turkey.

senkuytu@gtu.edu.tr

Abstract

Cyclophosphazenes are also important member of heterocyclic ring systems. One of the most known members of the cyclophosphazenes is hexachlorocyclotriphosphazene, trimer, $N_3P_3Cl_6$, which is consist of the repeating units trivalent nitrogen and pentavalent phosphorus atoms and has six very active phosphorous-chlorine bonds [1]. The cyclotriphosphazenes can exhibit different physical and chemical properties depending on the side groups replacing the chlorine atoms, which is lead to differences in the application areas of these compounds. The organic light emitting diodes, biomedical materials such as anticancer and antimicrobial agents, liquid crystals and fluorescence probes are some of these application areas [2-5]. Fluorescence-based chemosensors between different chemosensors have many advantages, their fluorescence measurements are usually very sensitive, very selective (monomolecular detection possible) and easily performed. The development of selective chemosensors for the detection of toxic heavy metal ions, especially in biological systems, has emerged as a significant target in the field of chemical sensors in recent years [6].

In the study, the aminopyrene substituted monospiro/dispiro cyclotriphosphazenes have been successfully synthesized and characterized by using general spectroscopic techniques such as ^{1}H, ^{13}C and ^{31}P NMR spectroscopies. The photophysical properties in THF solutions of cyclotriphosphazenes were investigated by UV-Vis and fluorescence spectroscopies.

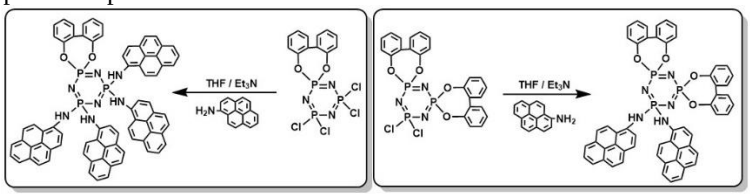

Figure 1. Aminopyrene substituted cyclotriphosphazenes

Keyword: Cyclophosphazenes, synthesis, characterization, fluorescence properties

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➢ **POSTER PRESENTATION**

Multimodal and Flexible Cyclotriphosphazene Ligands

Derya Davarcı[1], Yunus Zorlu[1]

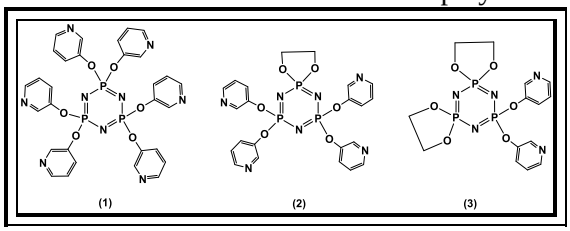
[1]Gebze Technical University, Chemistry Department, Kocaeli, Türkiye

ddavarci@gtu.edu.tr

Abstract

Cyclophosphazene compounds are capable to bind metal ions through endocyclic and exocyclic ring nitrogen atoms. Cyclotriphosphazens containing pyridyloxy groups have used as ligand in a lot of studies [1].

We have synthesized some cyclotriphosphazene derivatives containing pyridyloxy groups as ligand for preparing some coordination polymers. We have targeted to obtain coordination polymers of these ligands, and to focus on the effect of number of donor N atoms on polymeric structures.



1 has nine donor N atoms that six of them are pyridyloxy-N. The more N-donor atoms provides an opportunity to create the more coordination capacity to **1** that can form a variety of complexes and coordination polymers. Furthermore, increasing of the donor-N cause *2D* or *3D* for coordination polymers [1b]. In contrast to **1**, **3** having five N-donor atoms that two of which are pyridyloxy-N, and its *1D* coordination polymers have been reported [1d,1e]. These studies showed that the dimension of the coordination polymer to be synthesized could be predicted and that *1D* polymers were synthesized selectively using **1**. **2** has been just synthesized and studies with this ligand have continued.

The authors would like to thank the Scientific and Technical Research Council of Turkey for financial support (grant 114Z566)

Anahtar Kelimeler: Cyclophosphazene, pyridyloxy group, coordination polymers.

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➢ **POSTER PRESENTATION**

New Hexa-Bodipy Functionalized Dendrimeric Cyclotriphosphazene Conjugate: Synthesis/Characterization and Chemosensor Properties

Elif Şenkuytu[1*], Esra Tanrıverdi Eçik[1]

[*1]Department of Chemistry, Gebze Technical University, Kocaeli, Turkey.

senkuytu@gtu.edu.tr

Abstract

Transition and heavy metal ions play an important role in biological, environmental and chemical systems, so fluorescent probes are essential tools for the detection of metal ions [1]. Fluorescence-based chemosensors have many advantages over other chemosensors, their fluorescence measurements are usually very sensitive, very selective (monomolecular detection possible) and easily performed [2].

Cyclotriphosphazenes are an important member of heterocyclic inorganic ring systems. Hexachlorocyclotriphosphazene, trimer, $N_3P_3Cl_6$, which consists of the repeating units trivalent nitrogen and pentavalent phosphorus atoms and has six very active phosphorous-chlorine bonds**.** The cyclotriphosphazenes can exhibit different physical and chemical properties depending on the side groups replacing the chlorine atoms, which is lead to differences in the application areas of these compounds. Organic light emitting diodes, biomedical materials such as anticancer and antimicrobial agents, liquid crystals and fluorescence probes are some of these application areas [3-5].

In the study, the new hexa-bodipy functionalized dendrimeric cyclotriphosphazene conjugate (HBCP) have been successfully synthesized and characterized by using general spectroscopic techniques such as ^{1}H, ^{13}C and ^{31}P NMR spectroscopies. The photophysical and metal sensing properties in THF solutions of HBCP were investigated by UV-Vis and fluorescence spectroscopies.

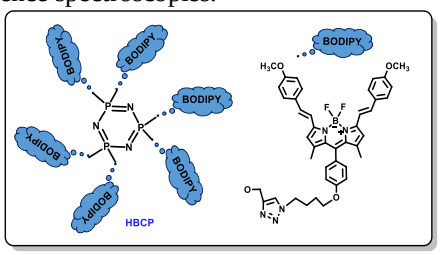

Figure 1. Bodipy Functionalized Dendrimeric Cyclotriphosphazenes

Keyword: Cyclophosphazenes, Bodipy, Photophysical Properties, Fluorescent Chemosensor

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➢ **POSTER PRESENTATION**

Design Of *1D* Coordination Polymers of Cyclotriphosphazene Ligand

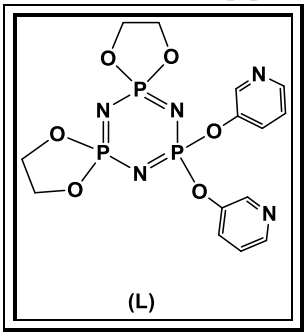
Derya Davarcı[1], Yunus Zorlu[1]

[1]Gebze Technical University, Chemistry Department, Kocaeli, Türkiye

ddavarci@gtu.edu.tr

Abstract

Coordination polymers have attracted considerable attention due to their wide potential applications in the field of catalysis, magnetism, porosity, optical and non-linear optical materials, luminescent, and conductivity. With the phenomenal growth in the synthesis of coordination polymers recent years, a variety of new structures are now available in the literature [1].



In this work, we have studied on the **L** and aimed to design of its *1D* coordination polymers with Ag (I), Mn(II), Co(II) and Zn(II). Eventually, as predicted, four new coordination polymers with *1D* polymeric zig-zag chain were synthesized and the structures of them were investigated. This study showed that the dimesion of the coordination polymer could be predicted and that *1D* coordination polymers were prepared selectively if we used dispirodipyridyloxycyclophosphazene ligand (**L**) [2].

Anahtar Kelimeler: Cyclophosphazene, pyridyloxy group, coordination polymers.

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International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2018)

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➢ **POSTER PRESENTATION**

The Fine Structure of the Rectum of *Isophya nervosa* (Orthoptera, Tettigoniidae)

Damla Amutkan[1]*, Zekiye Suludere[1]

*[1]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.

Corresponding author e-mail: damlamutkan@gazi.edu.tr

Abstract

Tettigoniids spend most of their lives on the plants that they eat. They fed on leaves, flowers, bark, and seeds. Therefore, they damage the plant which live on. *Isophya* Brunner von Wattenwyl (Orthoptera: Tettigoniidae) is one of the most specific genera of the family Tettigoniidae. The biology of groups of related species in the genus are still not defined. Similarly, the phylogeny and biogeography of the genus are poorly studied. Therefore, *Isophya nervosa* (Ramme, 1951) which is a species belongs to Tettigoniidae family, is been the subject of this study. Due to determining the biology, it is necessary to know the ultrastructure of this species. To this respect, ultrastructure of rectum of *I. nervosa* was examined using light and electron microscope. For light microscopy, adult specimens of *I. nervosa* were collected in Kızılcahamam, Ankara in 2017. Extracted rectum was fixed in Formaldehyde. After washing and the dehydration process samples were embedded in paraffin. After that, sections were stained and photographed. For the scanning electron microscopy, specimens cleaned and dried with Critical Point Drying, then they were coated with gold and examined with JEOL JSM 6060 LV scanning electron microscope. The alimentary canal is divided into three main regions: The foregut, the midgut and the hindgut. The rectum is located at the end of the hindgut. An important function of the rectum in insects is the reabsorption of water from the faeces. Reabsorbed water is recycled and added to the contents of the midgut. In this species, rectum is a wide elongated sac. Its outer surface is surrounded by well-developed trachea and muscle. Rectum has six rectal pads. Its wall is covered with monolayer cubic epithelium. The thin membrane is found at the apical region of the cells. There are a great number of bacteria which is seen in the lumen.

Keywords: Rectal pads, ultrastructure, electron microscopy, light microscopy.

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➢ **POSTER PRESENTATION**

Isotherm, kinetic and thermodynamic studies of lead(II) adsorption by using amine-functionalized magnetic Fe_3O_4 nanoparticles as an adsorbent

Şakir Yılmaz[1], Yeliz Akbulut[1], Adem Zengin[1], Tekin Şahan[1*]

[*1]Van Yuzuncu Yil University, Faculty of Engineering, Department of Chemical Engineering, Van, Turkey.

[*]Corresponding author e-mail: tekinsahan@yyu.edu.tr

Abstract

Heavy metal ions such as lead (Pb), cadmium (Cd), chromium (Cr) in aquatic environments are a serious problem because of their hazardous effects on the environment and public health. Pb as a heavy metal is released into the environment from various sources consisting battery, paint, metal plating, mining, agriculture. In present study, isotherms, kinetics and thermodynamics of Pb(II) adsorption onto Fe_3O_4@[poly(vinyl tris(amino ethyl) amine] were investigated. The adsorption isotherm models are critical for designing and explaining adsorption systems and properties. The most popular adsorption isotherm models including the Langmuir, Freundlich, and Dubinin–Radushkevich (D–R) were tested in this study. The Langmuir model provides the best fit for the equilibrium adsorption data than the Freundlich and D–R isotherms. On the other hand, the pseudo-first-order, pseudo-second-order and Weber-Morris models were used to define Pb(II) adsorption. The results showed that Pb(II) adsorption was followed by pseudo-second-order kinetic model and the rate was controlled by both intraparticle and film diffusion. To evaluate the nature of the adsorption, the thermodynamic parameters were determined. The results revealed that Pb(II) adsorption is thermodynamically spontaneous, feasible and exothermic.

Keywords: Adsorption, lead, magnetic nanoparticle, isotherm, kinetic, thermodynamic.

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➢ **POSTER PRESENTATION**

Mikrodalgada κ-Karagenan-aşı- poli(2-Dimetilaminoetil metakrilat) Kopolimerinin Sentezi ve Yapısının Aydınlatılması

Gülcan Geyik[*1], Nuran Işıklan[2]

[*1]Hitit Üniversitesi, Alaca Avni Çelik Meslek Yüksekokulu, Mülkiyet Koruma ve Güvenlik Bölümü, Çorum, Türkiye
[2]Kırıkkale Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölüm, Kırıkkale, Türkiye

Sorumlu yazar e-mail:gulcan_gyk@hotmail.com

Özet

Karagenan, kırmızı su yosunu türlerinden *Rhodophyceae* sınıfında birçok deniz yosunundan ekstraksiyon yöntemleriyle elde edilir. D-galaktopranozil ünitelerinin lineer zincirinden ve hidroksil gruplarıyla esterleşmiş sülfat gruplarından oluşmaktadır. Farklı reolojik özellik gösteren kappa (κ), iota (ι), lamda (λ), mü (μ) ve nü (ν) formlarında bulunmaktadır. Anyonik bir polisakkarit olan karagenanlar, kıvamlı helezonik yapıdaki büyük ve yüksek elastikiyetteki moleküllerden oluşmaktadır. Karagenan moleküllerinin sahip oldukları bu esnek yapıları, oda sıcaklığında farklı özelliklerde jel formlar oluşturabilmelerini sağlar.

Çevreden gelen uyarılara yapısında tersinir olarak fiziksel veya kimyasal değişiklik göstererek cevap veren polimerler uyarıya duyarlı polimerler ya da akıllı polimerler olarak adlandırılır. Akıllı polimerlerden farklı yapısal tepkiler elde etmek için fiziksel ve kimyasal uyarıcılarla muamele edilir. Fiziksel uyarılara sıcaklık, elektrik alan, çözücüler, ışık, basınç, ses ve manyetik alan örnek verilebilir. Kimyasal uyarılara pH, kimyasal ajanlar ve çeşitli iyonlar örnek verilebilir. Bu uyarılardan biri veya birkaçı polimer sisteminin faz, şekil, optik, mekanik ve moleküler tanıma özelliklerinde, elektrik alan, yüzey enerjisi, reaksiyon ve geçirgenlik hızında değişikliklere neden olabilir.

Poli(2-Dimetilaminoetil metakrilat) (PDMAEMA) polimeri pH ve sıcaklığa duyarlı olduğu, yaklaşık 38-50ºC'e arasında alt kritik çözelti sıcaklığı (LCST) gösterdiği gözlenmiştir. Amin ve N-dimetilamino grupları arasındaki hidrojen bağlarının LCST'ye hidrofobik katkı sağlamaktadır. Yapıda tersiyer amin gruplarının varlığı, polimerin aynı zamanda pH'a duyarlılık göstermesini sağlayıp geniş uygulama alanı yaratmaktadır. PDMAEMA'nın pH duyarlılığı birçok elektrolit malzemenin üretilmesini sağlamıştır. Zayıf katyonik polielektrolit olan PDMAEMA, kontrollü ilaç salım sistemlerinde, gen terapisi çalışmalarında, sağlık ürünleri gibi alanlarda kullanılmaktadır.

Bu çalışmada κ-Karagenan polimerine 2-Dimetilaminoetil metakrilat monomeri mikrodalga fırında 500 watta, 70ºC'de, 4,4'-Azobis(4-siyanovalerik asit) başlatıcısı kullanılarak aşı kopolimerizasyon gerçekleştirildi. Kopolimerizasyon farklı sürelerde (15dk- 4 saat) ve farklı monomer derişiminde (0,118-0,356M) çalışıldı. En yüksek kopolimer miktarı 2 saatlik kopolimerizasyon ve 0,237M monomer konsantrasyonunda elde edildi. Elde edilen kopolimerin yapısı FTIR, TGA, DSC ve NMR ile karakterize edildi.

Anahtar Kelimeler: κ-Karragenan, 2-Dimetilaminoetil metakrilat**,** 4,4'-Azobis(4-siyanovalerik asit), Akıllı polimer, Alt Kritik Çözelti Sıcaklığı(LCST)

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➢ **POSTER PRESENTATION**

Mikrodalgada κ-Karagenan-aşı-P(DMAEMA/AA) Kopolimerinin Sentezi ve Karakterizasyonu

Gülcan Geyik[*1], Nuran Işıklan[2]

[*1]Hitit Üniversitesi, Alaca Avni Çelik Meslek Yüksekokulu, Mülkiyet Koruma ve Güvenlik Bölümü, Çorum, Türkiye
[2]Kırıkkale Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölüm, Kırıkkale, Türkiye

Sorumlu yazar e-mail:gulcan_gyk@hotmail.com

Özet

Karagenanlar; İrlanda yosunu olarak bilinen *Chondrus cirispus* adlı kırmızı deniz yosunundan 1844 yılında Schimdt tarafından ekstrakte edilmiştir. Karagenanlar, çoğunlukla *Chondrus*, *Eucheuma*, *Gigartina* ve *Iridaea* cinsinde kırmızı yosunlardan elde edilen linear sülfat polisakkaritlerinin bir familyasıdır. Ca, Na ve K tuzları halinde alglerin yapı taşlarını oluşturmaktadır.

Fiziksel veya kimyasal uyarılara, özelliklerinde meydana gelen değişiklerle tersinir olarak cevap verebilen polimerler, uyarıya duyarlı polimerler olarak tanınırlar. Bu uyarı türleri; sıcaklık, pH, elektrik alanı, çözücüler, reaktantlar, ışık veya mor ötesi ışıma, moleküler tanıma ve manyetik alan olabilir. Bu uyarılardan biri veya birkaçı polimer sisteminin faz, şekil, optik, mekanik ve moleküler tanıma özelliklerinde, elektrik alan, yüzey enerjisi, reaksiyon ve geçirgenlik hızında değişikliklere neden olabilir.

pH'a duyarlı polimerler; ortam pH'ında meydana gelen değişmelere tepki olarak proton alan ya da veren iyonik gruplara sahip polimerik zincirlerden oluşmuşlardır. Bu polimerlerin iyonizasyon derecesi, pH değişimine bağlı olarak pKa ya da pKb denilen pH değerlerinde ani bir değişim gösterir. pH'a duyarlı polimerlerde iyonlaşmayı gerçekleştiren gruplar; karboksilik asit gibi asidik gruplar, primer aminler gibi bazik gruplar, sülfonik asit gibi güçlü asitler ve kuarterner amonyum tuzları gibi güçlü bazlardır.

pH'a duyarlı akrilik asit gibi polianyonlar yüksek pH'larda şişerler. Polielektrolit hidrojellerin şişmesi, polimer zincirinde mevcut yükler arasında elektrostatik itme kuvvetinden kaynaklanmaktadır. Bu yüklerden kaynaklanan elektrostatik itme kuvvetleri, polimerlerin pH'a bağlı şişme ya da büzüşmesine neden olur. Akrilik asitin kullanım alanlarına; tekstil materyallerinin modifiye edilmesinde, plastiklerde, zemin cilalarında, eczacılıkta ve kontrollü ilaç salım sistemleri örnek verilebilir.

Bu çalışmada κ-Karagenen polimeri üzerine 2-dimetilaminoetil metakrilat ve akrilik asit monomerleri mikrodalga fırında, 500 watta, 70ºC'de, başlatıcısı 4,4'-Azobis(4-siyanovalerik asit) başlatıcısı kullanılarak aşı kopolimerizasyon yapıldı. DMAEMA(0,178M) monomerinin derişimi sabit tutularak akrilik asit monomerinin farklı derişimlerde aşı kopolimerizasyonu çalışıldı. En yüksek kopolimerizasyon 0,145M monomer konsantrasyonunda elde edildi. Elde edilen kopolimerlerin yapıları FTIR, TGA, DSC ve NMR ile karakterize edildi.

Anahtar Kelimeler: κ-Karagenan, 2-dimetilaminoetil metakrilat**,** Akrilik asit, 4,4'-Azobis(4-siyanovalerik asit), Uyarıya duyarlı polimerler, pH duyarlı polimerler

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➢ **POSTER PRESENTATION**

Determination of some germination parameters of *Centrocema pubescens* Benth.under *in vitro* culture conditions

Siti MAESAROH[1], Çiğdem Alev ÖZEL[2], Nurdan ŞAHİN DEMİRBAĞ[1]

[1] Ankara University, Agriculture Faculty, Department of Agronomy, Turkey
[2]Gazi University, Gazi Education Faculty, Department of Biology Education, Turkey

Corresponding author e-mail: maesaroh@ankara.edu.tr

Abstract

Centrocema pubescens Benth.of genus *Centrosema* (*Leguminosae*) is vigourous, twining, trailing and climbing perennial plant with moderately drought tolerant and potential adaptation to bad lawn drainage, flood and acidic soils; is local to South America. It has been naturalized in many tropical and subtropical countries including Indonesia. Beside utilization as cover crop in palm oil plantations, it has high potential as forage crop plant due to high protein, calcium and phosphorus contents. The seeds are indeterminate, hard seed coated and less *simultaneous at ripening*. The blocking of imbitition of water and gas (the impermeability on water and gas) due to hard seed coat can be solved by scarification and stratification treatments. In line with this information, the study aimed to reduce their dormancy of the seeds stored at room temperature for 18 months. These were sterilized and scarified using different concentration of commercial bleach for 5 minutes and 98% H_2SO_4 for a range of minutes. Subsequently, the sterilized seeds were stratified on water and 0.1 mg/l GA_3 in thermoshaker at 120 rpm in dark; sandwiched blotting papers, and agar solidified MS medium under dark conditions at 24°C by incubating themin environmental growth cabinet. The seeds sterilized using H_2SO4 for 10 minutes followed by rinsing in water and stratification with 0.1 mg/L GA_3 treatments showed the best germination with high germination percentage and germination speed. This simple protocol could be best used by farmers before sowing the hard seeded *C. pubescens* to improve germination and sprouting of the plants under field conditions.

Keyword: *Centrocema pubescens*, Forage plant, *in vitro*, seed dormancy, stratification

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➢ **POSTER PRESENTATION**

Akvaryum Balık Yemlerinde Pigment Maddelerinin Kullanımı

Nalan Özgür Yiğit, Seval Bahadir Koca

Süleyman Demirel Üniversitesi, Su Ürünleri Fakültesi, Isparta, TÜRKİYE
Sorumlu yazar e-mail:nalanyigit@sdu.edu.tr

Özet

Dünyada akvaryum balıklarına olan ilgi ve talep giderek artmakta ve buna paralel olarak da akvaryum balığı ticareti büyümektedir. Ülkemizde de akvaryum balıkçılığı son yıllarda gelişmiş ve önemli bir iş kolu durumuna gelmiştir. Akvaryum balıklarında karşılaşılan önemli sorunlardan birisi istenilen düzeyde renk oluşumunun sağlanamamasıdır. Akvaryum balıklarında ise renk kalitesi, tüketicinin seçiminde önemli bir unsur olduğundan, yeterli düzeyde renklenmemiş bireylerin pazar arzı ve değeri önemli oranlarda düşmektedir. Yapılan çalışmalarda balıklarda renklenmenin genetik yapı ile ilgili olmakla beraber renklenme üzerinde alınan gıdalarında etkili olduğunu kaydedilmiştir. Burada, akvaryum balıklarının renklenmesi üzerine yapılan çalışmaların detaylı özetleri verilmiştir.

Anahtar Kelimeler: Akvaryum, Balık, Renklenme, Pigment maddeleri

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➢ **POSTER PRESENTATION**

Sphagnum palustre ve *Marchantia polymorpha* türlerinin Yağ Asidi İçerikleri ve Serbest Radikal Temizleme (DPPH) Aktivitelerinin Karşılaştırılması

Sevinç Aydin Keskin[1], Mevlüt Alataş[2], Nevzat Batan[3], Ökkeş Yilmaz[4]

[1] Munzur Üniversitesi, Mühendislik Fakültesi/Gıda Mühendisliği, Tunceli, TÜRKİYE
[2] Munzur Üniversitesi, Mühendislik Fakültesi/Biyomühendislik, Tunceli, TÜRKİYE
[3] Karadeniz Teknik Üniversitesi, Maçka Meslek Yüksekokulu, Trabzon, TÜRKİYE
[4]Fırat Üniversitesi, Fen Fakültesi/Biyoloji Bölümü, Elazığ, TÜRKİYE

Corresponding Author: sevincaydin2380@gmail.com

Özet

Bu çalışmada Kamilet Vadisi (Artvin-Arhavi)'den toplanan iki briyofit türünün (***Sphagnum palustre* ve *Marchantia polymorpha***) yağ asidi içerikleri ve ***s***erbest radikal temizleme aktiviteleri araştırılmıştır. Elde edilen veriler karşılaştırılarak bu konuda ileride yapılacak diğer çalışmalara temel oluşturulması amaçlanmıştır. DPPH, serbest radikal temizleme aktivitesi, Brand-Williams ve arkadaşları (1995) tarafından belirtilen metoda göre yapılmıştır. Lipit ekstraktı içindeki yağ asitleri ise metil esterlerine dönüştürüldükten sonra gaz kromatografisi ile analiz edilmiştir (Hara ve Radin, 1978). Çalışmanın sonunda, DPPH radikal temizleme etkileri karşalştırıldığında; ***Marchantia polymorpha*** türünün bütün µl değerlerinde ***Sphagnum palustre*** türüne göre belirgin olarak daha etkili olduğu gözlendi ($p<0.001$). Ayrıca ***Marchantia polymorpha*** türünün kendi içinde µl değeri arttıkça etkisinin azaldığı tespit edildi. Bitki ekstraktları içeriğindeki fenolik bileşiklerin düzeyi ile $DPPH^{\cdot}$ radikalini temizleme etkinliği arasında güçlü bir ilişki bulunuğu bilinmektedir. Yağ asidi içerikleri incelendiğinde; özellikle doymuş yağ asidi miktarlarının ***Marchantia polymorpha*** türünde diğer türe kıyasla yüksek oranlar gözlendi ($p<0.001$). Doymamış yağ asidi içerikleri bakımından ise özellikle ***Sphagnum palustre*** türünün yüksek içeriğe sahip olduğu tespit edilmiştir ($p<0.001$). Bu değerlerin farklılıklarının briyofitlerin gelişme ortamındaki karbon kaynaklarından ileri geldiğini düşünmekteyiz.

Anahtar Kelimeler: DPPH, Yağ asidi, *Sphagnum palustre, Marchantia polymorpha*

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➢ **POSTER PRESENTATION**

The Uses Of Porous Hollow Hydroxyapatite Microsheres For Drug Delivery

Binnaz Kırbıyık[1*], Birgül Mazmancı[2] , Tuncay İnce[3] , Kasım Ocakoğlu [3,4]

[*1] Mersin University, Science Institute Nanotechnology and Advanced Materials Department, 33343 Mersin, Turkey.
[2] Mersin University, Faculty of Arts and Science, Department of Biology, 33363 Mersin, Turkey.
[3] Mersin University Advanced Technology Research & Application Center, 33343, Mersin, Turkey.
[4] Mersin University, Faculty of Tarsus Technology Department of Energy Systems Engineering, 33480 Mersin, Turkey.

Corresponding author e-mail: bnnzkrbyk@hotmail.com

Abstract

Aim: Hydroxyapatite crystals are biocompatible, and are used as a drug delivery agent for cancer treatment due to their biodegradable properties. Tamoxifen (TAM) is an anticancer drug which is used therapeutically in patients at an advanced stage of ovarian cancer. The aim of this study is to investigate the utility of the hydroxyapatite nanoparticle as a TAM carrier. TAM loaded hydroxyapatite will, therefore, be prepared and a new working basis will be established for its utility in targeting and controlled drug release.
Method: In this study, porous hollow hydroxyapatite microspheres (PHHMs) were produced through a hydrothermal method for drug delivery studies. In the first step, vaterite, one of the calcium carbonate derivatives, is prepared in aqueous solution of poly (styrene sulfonic acid) sodium salt (PSS) by using polymer template method. In the second step, 0.2 g vaterite was dispersed in 0.1 M Na_2HPO_4 used as a phosphate source. The pH of the obtained suspension was adjusted to 11.0 by using sodium hydroxide. Then, the mixture was loaded into an autoclave, and the temperature was set to 120°C for 1 hour. The particle size and morphology of synthesized PHHMs were determined using a Field Emission Scanning Electron Microscope (FE-SEM).
Result: PHHMs combined with TAM (PHT) were analyzed by ATR-FT-IR, and the studies revealed that TAM was successfully loaded onto PHHMs. As a result of this study, the usage of PHT in specific targeting and controlled drug delivery applications will be investigated by cell culture studies.
This project supported by Mersin University, Department of Scientific Research Projects (2017-1-TP-2232).

Keywords: Hydroxyapatite, Tamoxifen, Drug delivery system.

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➢ **POSTER PRESENTATION**

Production of Poly(lactide-co-glycolide) Nanofibers by Electrospinning

Dilayda Kanmaz[1], Ozan Toprakci[1*], Hatice Aylin Karahan Toprakci[1]

[*1]Yalova University, Faculty of Engineering, Department of Polymer Engineering, Yalova, Turkey.

Corresponding author e-mail: ozan.toprakci@yalova.edu.tr

Abstract

Electrospinning is a method to produce nanofibers in a high-voltage electrostatic field. This method is a promising approach to create nanofibrious structures. Additional to conventional polymers, biodegradable polymers or polymer blends can also be used in the electrospinning process for tissue engineering applications. Poly(lactide-co-glycolide) (PLGA) is a Food and Drug Administration approved, biodegradable, biocompatible polymer and suitable for tissue engineering applications. In this study, different PLGA solutions were electrospun from the syringe and collected on the flat plate to prepare the nanofibers. The goal of this study was to prepare different concentrations of polymer solutions in order to examine its effects on nanostructures. An electro-spun PLGA was fabricated using various concentrations of solutions. Effects of different solvent systems and solution concentrations on morphology were analyzed by using Scanning Electron Microscopy (SEM). Experimental results from the SEM data showed that the fiber formation of the eletrospun polymer was successfully achieved.

Keywords: fiber formation, electrospinning, PLGA

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➢ **POSTER PRESENTATION**

Syntheses and spectroscopic investigations of mono (4-fluorobenzyl)spirocyclotetraphosphazenes

Gamze Elmas[a], Aytuğ Okumuş*[a], Zeynel Kılıç[a]

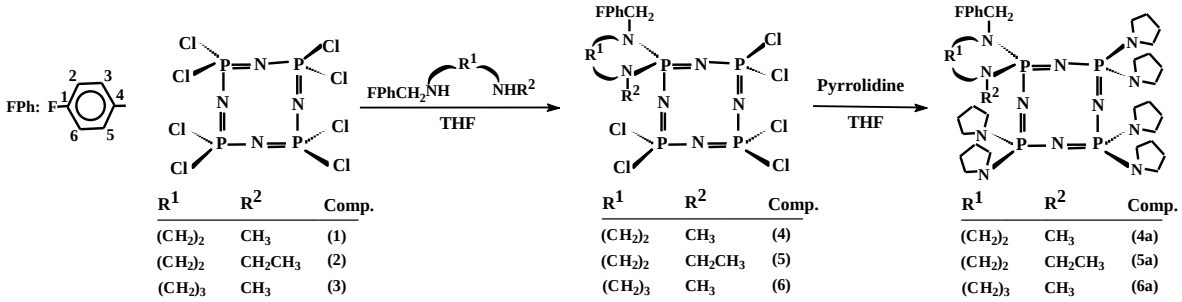
[a]Ankara University, Faculty of Science, Department of Chemistry, Ankara, Turkey

okumus@science.ankara.edu.tr

Abstract

Octachlorocyclotetraphosphazene [$N_4P_4Cl_8$, tetramer (**1**)] is a highly reactive inorganic heterocyclic ring system which is a starting material used in the syntheses of new substituted cyclotetraphosphazene derivatives (1). In tetramer, eight Cl atoms can be replaced with the monodentate, bidentate and multidentate ligands (2). The reactions of $N_4P_4Cl_8$ with diamines can give monospiro, dispiro (2,4 and 2,6), trispiro and tetraspiro products (3,4).

In this study, the Cl substitution reactions of $N_4P_4Cl_8$ with one equimolar amount of (4-fluorobenzyl)diamines (**1**-**3**) gave the mono(4-fluorobenzyl) spirocyclotetraphosphazenes (**4**-**6**) as minor products. The mono-spiro cyclotetraphosphazenes (**4**-**6**) were reacted with excess pyrrolidine in THF to give the fully substituted hexapyrrolidino- products (**4a**-**6a**) in high yields. The elemental analyses, mass spectrometry (ESI-MS), Fourier transform infrared (FTIR), and ^{1}H, $^{13}C\{^{1}H\}$, and $^{31}P\{^{1}H\}$ NMR data of the cyclotetraphosphazenes were in agreement with the suggested structures.



R^1	R^2	Comp.
$(CH_2)_2$	CH_3	(1)
$(CH_2)_2$	CH_2CH_3	(2)
$(CH_2)_3$	CH_3	(3)

R^1	R^2	Comp.
$(CH_2)_2$	CH_3	(4)
$(CH_2)_2$	CH_2CH_3	(5)
$(CH_2)_3$	CH_3	(6)

R^1	R^2	Comp.
$(CH_2)_2$	CH_3	(4a)
$(CH_2)_2$	CH_2CH_3	(5a)
$(CH_2)_3$	CH_3	(6a)

Figure 1. Mono(4-fluorobenzyl) spirocyclotetraphosphazenes (**4**-**6** and **4a**-**6a**).

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Keywords: Mono(4-fluorobenzyl) spirocyclotetraphosphazenes, substitution reactions, spectroscopy.

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➢ **POSTER PRESENTATION**

Tip 2 Diyabet ve tedavisinde yeni sınıf ilaçlar

Sedanur Demiray[1*], Ebru Didem Coşar[1], Nuray Ulusoy Güzeldemirci[1]

[1]Farmasötik Kimya Anabilim Dalı, Eczacılık Fakültesi, İstanbul Üniversitesi, 34116 Beyazıt, İstanbul, TÜRKİYE

sedanurdemirayr322@gmail.com

Özet

Diyabet, pankreastan salgılanan insülin hormonunun eksikliği veya metabolizmasındaki bozukluklardan kaynaklanan, vücutta bulunan glukozdan yeterince faydalanılamadığı durumda ortaya çıkan metabolik bir rahatsızlıktır. Uluslararası Diyabet Federasyonu'nun yaptığı çalışma sonucunda 2015 yılında dünya nüfusunun yaklaşık %8,8 (415 milyon)'inin diyabetli olduğu ve bu yüzdenin 2040 yılına kadar yaklaşık %10,4 (642 milyon)'e çıkacağı tahmin edilmektedir. Günümüzde diyabet tedavisinde İnsülin'e ek olarak birçok oral antidiyabetik ilaç bulunmaktadır. Bu poster çalışmasında, oral antiyabetik ilaçların yan etkilerinin azaltılması ve etkinliğinin artırılması yönünde yapılan çalışmalar sonucunda inkretin hormonunun keşfiyle geliştirilen yeni sınıf inkretin bazlı ilaçlar olan Dipeptidil Peptidaz-4 inhibitörleri (DPP-4 i) ve Glukagon Benzeri Peptit 1A (GLP-1A) üzerinde durulmuştur.

Anahtar Kelimeler: Diyabet, DPP-4 i, Sitagliptin, Vildagliptin, Saksagliptin

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➢ **POSTER PRESENTATION**

Topical Application of VEGF-A Accelerates the Wound Healing in Streptozotocin Induced T2DM rats.

Ebru Uzun[1], Barbaros Balabanlı[1], Kaan Kaltalıoğlu[2], Şule Coşkun Cevher[1]

[1]Gazi University, Science Faculty, Biology Department, Ankara, Turkey
[2]Giresun University, Espiye Vocational School, Giresun, Turkey

sule@gazi.edu.tr

Abstract

An important reason for the delayed wound healing in diabetics may be the insufficient generation of growth factors or the increase in its destruction. Vascular endothelial growth factor (VEGF) plays a role in wound healing by inducing the vessel development. In this study, we aim to investigate the topical VEGF administration on nonenzymatic antioxidants of wound tissue in diabetic rats. In this study, 24 female Wistar albino rats (weight range: 200-250 g) were used. The rats were got diabetic with streptozotocin. Dorsolateral excisional wounds were made on the rats, and they were randomly divided into 2 groups: Diabetic control groups (n=12), VEGF application groups (n=12). VEGF-A was applied topically to the dorsolateral wounds of rats (7ng/ml).After these administrations, on the 3rd and 7th days of wound healing, the animals were sacrificed. Vitamin C (AA) and glutathion (GSH) levels were measured spectrophotometrically in wound tissues. The results were expressed as mean ± standard deviation. The mean differences were compared by ANOVA variance analysis ($P<0.05$). Topical VEGF-A administration increased the GSH levels on the third day of postwounding when compared to diabetic controls. Furthermore, wound tissue AA levels increased both the third and the seventh day of postwounding. In the light of this findings, VEGF-A administration may increase the antioxidant capacity of wound tissue in diabetic rats

Key words: VEGF-A, diabetic wound healing, antioxidants, rat

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➢ **POSTER PRESENTATION**

Antibiotic Resistance Hazard in Pathogenic Microorganisms

Fulden Karadal[1*], Yeliz Yildirim[2]

[1]Department of Food Processing, Bor Vocational School, Nigde Omer Halisdemir University, Nigde, Turkey
[2] Department of Food Hygiene and Technology, Faculty of Veterinary Medicine, Erciyes University, Kayseri, Turkey

*Corresponding author e-mail: fkaradal@ohu.edu.tr

Abstract

Antibiotics are medicines that have antibacterial activity even at low concentrations without toxic effects on host cells. Antibiotics are primarily used to treat infections caused by bacteria and some fungi. Bacteria have been living on Earth for over 3 billion years. To this day they have protected themselves through adaptation against the substances that harm them. Antibiotics are used clinically for more than 70 years. However, antibiotic resistance is the biggest problem encountered in clinical practice all over the world. The 1960s were the golden age for the discovery and development of antibiotic drugs. Antibiotics have been called as "miracle medicines" because of treating infectious diseases that were previously deadly. However, the treatment of bacterial infections is becoming more and more complicated due to the ability of bacteria to develop resistance to different antibiotics. The development of resistance in pathogenic microorganisms is described as the greatest threat to ongoing medical innovation. According to the World Health Organization (WHO), resistant strains have rendered traditionally treatments ineffective against diseases. In this review, it is aimed to investigate the resistance mechanisms of some pathogenic microorganisms against different antibiotics.

Keywords: Antibiotics, resistance, pathogenic microorganisms.

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➢ **POSTER PRESENTATION**

Evaluation of Using Basic Fibroblast Growth Factor (bFGF) on Some Biochemical Events in the Full-Thickness Wound Model

Sevil Eraslan[1], Barbaros Balabanlı, Şule Coşkun Cevher[1]

[1]Gazi University, Science Faculty, Biology Department, Ankara, Turkey

sule@gazi.edu.tr

Abstract

Diabetes mellitus (DM) is an important systemic disease which affects millions of people in the World and our country. One of the major complications of diabetes is delayed wound healing. Basic fibroblast growth factor (bFGF), despite the known positive effects on wound healing, the healing relationship with oxidative stress is unclear. In this study, we aimed to investigate the effect of basic fibroblast growth factor (bFGF), on wound tissue malondialdehyde (MDA) and glutathion (GSH) levels in the normoglisemic rats. In this study, 24 male Wistar albino rats (weight range: 200-250 g) were used. Dorsolateral excisional wounds were made on the rats, and they were randomly divided into 2 groups: untreated control groups (n=12), bFGF application groups (n=12). bFGF was applied topically to the dorsolateral wounds of rats (10 ng/ml).After these administrations, on the 3rd and 7th days of wound healing, the animals were sacrificed. Tissues MDA and GSH levels were measured spectrophotometrically. The results were expressed as mean ± standard deviation. The mean differences were compared by ANOVA variance analysis ($P<0.05$). Wound tissue MDA levels decreased both on the third and seventh day of healing with bFGF application. Tissue GSH levels increased both inflamation and proliferation phases of wound healing. These results suggested that bFGF application may increase the antioxidant capacity and decrease lipid peroxidation of wound tissue and in normoglycemic rats

Acknowledgements This study was supported by a research grant from TÜBİTAK (215Z482)

Key words: bFGF, diabetic wound healing, antioxidant, lipid peroxidation

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➢ **POSTER PRESENTATION**

Nitril oksidin 4,7-dihidro-2H-1,3-dioksepin bileşiğine 1,3 dipolar siklokatılma reaksiyonunun incelenmesi

Sümeyye YALDUZ, Yeşim Saniye KARA

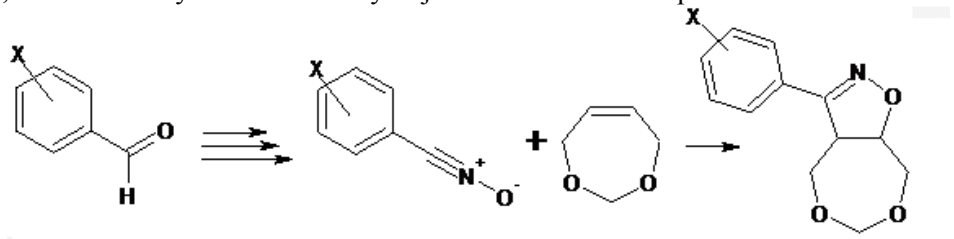
Kocaeli Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Kocaeli, Türkiye

yalduzs@gmail.com

Özet

Nitril oksitler birçok doğal ürünlerin sentezinde anahtar ara madde olarak kullanılan doğrusal yapıda bileşiklerdir [1]. Nitril oksitler, sentetik olarak kullanışlı heterosiklik yapılar oluşturmak için 1,3-dipolar siklokatılma reaksiyonlarında dipoller olarak yaygın şekilde kullanılmaktadır [2]. İzoksazoller nitril oksitlerin 1,3-dipolar siklokatılma reaksiyonları ile elde edilen ve birçok biyolojik aktif bileşikte önemli bir birim olarak bulunan bileşiklerden biridir [3]. İzoksazol türevleri düşük sitotoksisitesi sayesinde antimikrobiyal, antikanser, antibakteriyel, antioksidan, anti-diyabetik, anti-HIV aktivitesi, anti Alzheimer aktivitesi, anti tüberküloz aktiviteleri gösterir [4].

Bu çalışmada 4,7-dihidro-2H-1,3-dioksepin bileşiğine nitril oksidin 1,3-dipolar siklokatılması ile 3-fenil-3a,4,8,8a-tetrahidro-[1,3]dioksepino [5,6-d] izoksazol bileşikleşiği elde edildi. Sentezlenen bileşiğin yapısı IR, ^{1}H NMR ve ^{13}C NMR spektroskopik yöntemleri kullanılarak aydınlatıldı. Deneysel çalışmalar devam etmekte olup, sübstitüent sayısı artırılarak biyolojik aktivite bakılması planlanmaktadır.



Şekil 1. 3-fenil-3a,4,8,8a-tetrahidro-[1,3]dioksepino [5,6-d] izoksazol bileşiklerinin sentezi

Anahtar Kelimeler: Nitril oksit, 1,3-dipolar siklokatılma, izoksazol

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➢ **POSTER PRESENTATION**

Determining the Genotoxic Effect of Synthetic Auxine Picloram Using *Allium*-Comet Assay in Tissue Culture

Çiğdem Alev Özel[1*], Fatma Ünal[2], Ece Avuloğlu Yılmaz[2,3], Esra Erikel[2], Semra Mirici[1], Deniz Yüzbaşıoğlu[2]

[1*]Gazi University, Faculty of Gazi Education, Department of Biology Education, Ankara, Turkey
[2, 3]Gazi University, Science Faculty, Department of Biology, Ankara, Turkey
[3]Present address: Amasya University, Science and Art Faculty, Department of Biology, Amasya, Turkey

Abstract

Picloram (4-amino-3,5,6-trichloro picolinic acid) is used for both stimulating regeneration in tissue culture studies and as a herbicide to kill weeds in agriculture. In this study, comet assay that is a reliable and sensitive test used in recent years was applied to identify genotoxic effects of picloram in tissue culture. Bulbs of onion were surface sterilized using 25% commercial bleach for 10 min. Thereafter, the germinating roots were treated with Murashige and Skoog (MS) medium containing 0.67, 1.34, 2.01, 2.68, 3.35, 4.02 and 8.04 mg/L picloram for 24 hours. A control was also planted using untreated roots on MS medium. All concentrations of picloram (excluding 3.35 mg/L) significantly increased comet tail moment and tail intensity. In addition, the two highest concentrations (4.02 and 8.04 mg/L) showed toxic effects and insufficient cells for investigating. This auxin increased DNA damage in cells compared to the control group. These results show that picloram has genotoxic effect on root tips of *Allium cepa* germinated by tissue culture techniques.

Keywords: Picloram, *Allium cepa,* comet assay, tissue culture

Acknowledgments : The authors would like to thank the Gazi University Research Fund for financial support under Grant No. 04/2016-03

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➢ **POSTER PRESENTATION**

High Carriage of Ampicillin Resistant Enterococcoccus faecium (AREF) Among Cat and Dogs in Turkey*

Özkan Aslantaş[1], Erhan Tek[1]**

[1**]Department of Microbiology, Faculty of Veterinary Medicine, University of Mustafa Kemal, Hatay, Turkey

Corresponding author e-mail: ozkanaslantas@yahoo.com

Abstract

Enterococcus spp. are commensal inhabitants of the gastrointestinal tract of both animals and humans. During last three decades, *Enterococcus* spp., especially *E. faecium*, emerged as an important nosocomial pathogens due to the acquired high resistance profiles such as ampicillin, vancomycin and aminoglycosides, making therapy options very limited. In this study, it was aimed to determine the prevalence of ampicillin resistant enterococci (ARE) species in dogs and cats, antimicrobial susceptibility and some virulence genes (*asa1*, *esp*, *gel*E, *hyl*, *cyl*A) of the isolates. Minimal inhibitor concentration (MIC) values of ampicillin were determined by macrodilution method. For this purpose, 531 rectal swabs collected from dogs (n=276) and cats (n=255) from three different cities (İstanbul, Ankara and Mersin) in Turkey were examined. ARE was detected in 60 (21.7%) of dogs and in 47 (18.4%) of cats. Isolation rates between cities were found statistically significant (0.001<P). All isolates were identified as ampicillin resistant *Enterococcus facium* (AREF) by polymerase chain reaction (PCR). A small number of isolates (4.7%) carried virulence genes. Among the isolates, *esp*, *asa*1and *hly* genes were only virulence genes detected, but *gel*E and *cyl*A were not detected in any of the isolates tested. While all isolates were susceptible to vancomycin, various rates of resistance were observed. All isolates showed multi-drug resistance (MDR) phenotype. MIC values of the isolates varied between 64 and ≥256 µg/ml. The results indicated that both dogs ans cats were frequent carriers of AREF. Due to close contact with humans, dogs and cats may play an important role in the spread of this nosocomial pathogen in the community. Further studies are needed to elucidate the possible role of animal originated AREF strains in human nosocomial AREF infections.

Key words: Ampicillin resistance, *Enterococcus faecium*, dog, cat

*This study was partly supported by Mustafa Kemal University Scientific Research Fund (Project Number: BAP-15660).

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➢ **POSTER PRESENTATION**

Industrial Importance of the Amorphous Silica Obtained from Agro Waste-Based Materials

Buket Aydeniz Guneser, Onur Guneser*

Department of Food Engineering, Usak University, Usak, 64200, Turkey

*Corresponding author e-mail: buket.guneser@usak.edu.tr

Abstract

Recycling of agro waste-based materials and by-products are one of the most important goals of environmental sustainability. Valorization of agricultural wastes and by-products including seed, husk, hull, bagasse, ashes etc. have become an important option to develop the new raw materials and bioactive compounds that can be used in food, chemical, pharmaceutical and cosmetic industries.

Silica, also known as silicon dioxide, is the most common elements on earth and it constitutes nearly 60 % of earth's crust. Crystalline and non-crystalline (amorphous) form silica have widespread industrial applications as construction, adsorbents/desiccants, catalysts, ceramic, glass, rubber and also are used in water filtration, food industry as a filtering media to frying oil and food additive (i.e anti-caking agent, anti-foaming agent, dough modifier) Agricultural waste and by-products are known to have silica content in the range of 50-90% depending on plant and soil species, location, season, maturity, the part of plant, absorbed water content. It has been reported that silica forms can be easily extracted using economic and low-energy techniques from rice hull ash, sugarcane bagasse ash, bamboo, sorghum, sugarcane leaf ash, corn cob ash, rice and wheat straw ash. In this review, applications of silica forms obtained from agro wastes and by-products in the important industrial areas especially food and chemistry industry were discussed.

Keywords: Waste, by-product, agricultural, silica, recycling.

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➢ **POSTER PRESENTATION**

Investigation of Caffeic Acid Phenethly Ester Effect on Inflammation and Oxidative Stress in Parasetemol Induced Hepatotoxicity

Nuket KAMİŞ[1], Funda KARABAĞ ÇOBAN[2]

[1]Uşak University, Institute of Science, Molecular Biology and Genetics, Uşak, Turkey
[2]Uşak University, Faculty of Arts and Science, Molecular Biology and Genetics, Biotechnology AD. Uşak, Turkey

nuket.nk@gmail.com

Abstract

Paracetamol is a cheap, pain-relieving, fever-reducing medicine that can be easily found. Paracetamol is metabolized in the liver and kidneys. At high doses, paracetamol causes liver damage hich is called hepatotoxicity.
Caffeic Acid Phenyl Ester (CAPE) has antimicrobial, anti-inflammatory and antioxidant properties. Due to its long aromatic and aliphatic carbon structure, it passes easily through the cell wall and reaches the region where it will act more easily.
Cytokines consists of inflammatory cells and cellular regulatory proteins that are involved in the initiation of the immune response. TNF alpha has an important role in the formation of inflammation. Regulation of some genes expressed with IL-1B, IL-18 is a member of the IL-1 superfamily of proinflammatory cytokines. Cytokines are effective for many diseases, monitoring and evaluation of drug effects. Oxidative stress is thought to be responsible for the pathogenesis of many diseases. In this light, we aimed to investigate whether paracetamol-induced hepatotoxicity could induce oxidative stress and inflammatory and protective effects of CAPE.
In our study, 36 male Wistar Albino 180-200 gram male rats were used and divided into 6 groups. 1. Control group, 2. Paracetamol group, 3. Paracetamol+CAPE, 4. Paracetamol+NAC, 5.CAPE, 6. ETHANOL group. TAS-TOS, MDA, SOD, GSH, TNF alpha, IL-1B and IL-18 levels were measured from liver tissues and blood samples.
Data were statistically analyzed as standard deviation by using SPSS-18 ANOVA. $P < 0.05$ was considered significant.
At the end of the study, it was observed that oxidative stress parameters and cytokine levels of paracetamol group were statistically increased ($p < 0,05$) compared to the control group. Also, the protective effect of CAPE on inflammation and oxidative stress in the CAPE group was observed compared to paracetamol group.

Key words: paracetamol, hepatotoxicity, CAPE, oxidative stress, cytokines, rat

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➢ **POSTER PRESENTATION**

Two *Cupressus* Inhabiting Ascomycete Taxa, New for Turkey

Abdullah Kaya[1], Yasin Uzun[1], Fahri Tunahan Çevik[2*], İbrahim Halil Karacan[3], Semiha Yakar[1]

[1]Karamanoğlu Mehmetbey University, Science Faculty, Department of Biology, Karaman, Turkey
[2]Yunuskent Mehmet Akif Ersoy Anatolian High School, Karaman, Turkey
[3]Ömer Özmimar Religious Anatolian High School, Gaziantep-Turkey

Corresponding author e-mail: tunahancevik@gmail.com

Abstract

Fungi are saprophytic or biotrophic organisms. They may grow on different substrates and together with bacteria they are assumed to be the main contributers to the macrophyte decomposition. Like many ascomycetous families, Sarcoscyphaceae and Sarcosomataceae have saprophytic members growing on different organic residues. During routine field studies in Gaziantep province, two ascomycetous fungi samples growing on *Cupressus* L. remains were collected. Before collection they were photographed in their natural habitats. Then the samples were carried to the fungarium and they were identified as *Pithya cupressina* (Batsch) Fuckel (Sarcoscyphaceae) and *Strobiloscypha cupressina* B. Perić & Pfister (Sarcosomataceae) following the routine mycological techniques. Tracing the current literature it was found that three taxa belonging to the genera Microstoma Bernstein, Pithya Fuckel and Sarcoscypha (Fr.) Boud within Sarcoscyphaceae, and four taxa belonging to the genera *Plectania* Fuckel and *Pseudoplectania* Fuckel within Sarcosomataceae have so far been recorded from Turkey. But *Pithya cupressina* and *Strobiloscypha cupressina* have not been recorded before. *S. cupressina* is the first member of the genus *Strobiloscypha* in Turkey. The study aims to make a contribution to the mycobiota of Turkey by adding two new records.
Acknowledgement: The authors would like to thank TÜBİTAK (212T112) for its financial support.

Keywords: Pezizales, *Pithya*, *Strobiloscypha*, New Records, Gaziantep, Turkey.

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➢ **POSTER PRESENTATION**

Trichoglossum walteri, A New Earth Tongue Record for Turkey

Abdullah Kaya[1], Fahri Tunahan Çevik[2*], Yasin Uzun[1]

[1]Karamanoğlu Mehmetbey University, Science Faculty, Department of Biology, Karaman, Turkey
[2]Yunuskent Mehmet Akif Ersoy Anatolian High School, Karaman, Turkey

Corresponding author e-mail: tunahancevik@gmail.com

Abstract

The genus *Trichoglossum* Boud., generally known as black earth tongue, is a member of the family Geoglossaceae and and characterised by club-shaped and brownish black fruiting bodies, smooth or velvety stipes, large 4–8-spored asci, fasciculate or multiseriate and 7–15-septate smooth dark ascospores. Members of the genus grow on the ground in meadows, forests and bogs. The genus was established in 1885 by Boudier, and is distinct from other genera in the family Geoglossaceae in having black projecting trichomes on surface of ascomata and setae amongst asci and paraphyses in transverse section. Kirk et al. list 18 conformed species at Indexfungorum.org.
During a field survey in Ereğli district of Konya province, a black ascomycetous fungus, belonging to Geoglossaceae was collected. On microscopic examination, it was determined as *Trichoglossum walteri* (Berk.) E.J. Durand. The current literature indicates that, six earth tongue taxa within the genera *Geoglossum, Trichoglossum, Spathularia* and *Spathulariopsis,* currently exist in Turkey and *T. walteri* has not been reported before. The study aims to make a contribution to the mycobiota of Turkey by adding a new record.

Keywords: Biodiversity, *Trichoglossum,* New Records, Turkey.

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➢ **POSTER PRESENTATION**

The Investigation of Stimulant Effects of Bryophyte Extracts on Wheat Emergence and Seedling Growth

Bengü Türkyılmaz Ünal[1], Tülay Ezer[2*], Cemil İşlek[1], Zeynep Düzelten[1]

[*1]Niğde Ömer Halisdemir University, Faculty of Science and Arts, Biotechnology Department, Niğde, Turkey
[*2]Niğde Ömer Halisdemir University, Faculty of Science and Arts, Biology Department, Niğde, Turkey

Corresponding Author: e-mail:tuezer@gmail.com

Abstract

The effects of four different bryophytes (*Bryum schleicheri, Cinclidotus pachylomoides, Plagiomnium undulatum, Palustriella falcata*) extracts at three different solvents (ethyl acetate, ethanol and water) and different concentrations (0, 25 ve 50 mg. mL^{-1}) on emergence and seedling growth of wheat (*Triticum aestivum*) were investigated. Wheat seeds with a full-bodied appearance, robust and similar sized ones are selected and bryophyte extracts were applied. The emergence rate and time were calculated in growing seeds in the pots with the turf at 23 ± 2 °C temperature, constant humidity (50 ± 5%), 16: 8 photoperiod daylight. The radicle and plumula lengths were measured and wet-dry weights were determined in growing seedlings. While emergence was not observed at the extracts of the four different bryophytes obtained with ethyl alcohol and ethyl acetate solvent, the emergence rate increased in distilled water treatments. The highest increases were in 25 mg. mL^{-1} *C. pachylomoides* and *P. falcata* distilled water treatments with 6% compared to the control. The average emergence time was reduced in all application groups compared to the control. In all treatments at radicula-plumula length, and plumula fresh and dry weights, in 25 mg. mL^{-1} *B. schleicheri, C. pachylomoides* and *P. falcata* distilled water treatments at radicula fresh weight, and in 25 mg. mL^{-1} *B. schleicheri* treatment at radicula dry weight increased compared to control.

Acknowledgement: We are grateful to the Scientific and Technological Research Council of Turkey TÜBİTAK (TOVAG 115O923) for financial support.

Keywords: Bryophyte, *Triticum aestivum*, Seed emergence, Seedling growth

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➢ **POSTER PRESENTATION**

Analytical Detection Methods For Irradiated Foods

Nurcan Cetinkaya

Ondokuz Mayis University, Faculty of Veterinary Medicine, Department of Animal Nutrition and Nutritional Diseases. Kurupelit, TR-55139, Samsun, Turkey.

Corresponding author: nurcanc@omu.edu.tr

Abstract

Ionizing radiation does not change the identity of foods. Non irradiated and irradiated food is visually and sensorially identical. The purpose of this paper to discuss about detection methods of irradiated foods. Identification of process treatment is not unique to food irradiation-it applies to any foods, to organic foods, to traditional foods or to previously processed foods likewise to meat packed under modified atmosphere. This fact has caused great concern among consumer organizations and regulatory bodies of governments. The debates are; how much the product has received radiaton dose and the received dose is in permited dose limits. That's why analytical detection methods for irradiated foods were developed by the European Committe for Standarization-CEN and they were adopted by Codex Alimentarius Commission.Detection methods are based on the measurement of chemical, physical, and biological changes in irradiated foods.There are ten approved methods by CODEX Alimentarius Commission. Some of these methods are routinly applied by national food control laboratories. Forexample: DNA Comet Analysis as screening method for all type of foods, Detection of irradiated food contains fat. It is based on the gas chromatographic analysis of hydrocarbons and ESR methods mainly for spices have been used for market checking by Ministry of Food, Agriculture and Animal Production together with Turkish Atomic Energy Authority Labs in Turkey. There is no single method that can be used in all foods.The choosing the detection method to test depends on the chemical structure of foods.

Keywords: Dedetion methods; Food irradiation; Ionizing radiation

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➢ **POSTER PRESENTATION**

Determination of Vitamins A, C and E of Edible Mushroom *Bovista plumbea*

İbrahim Türkekul [1*], Hakan Işık [2], Aydın Şükrü Bengü [3]

[*1] Gaziosmanpaşa University, Faculty of Arts and Sciences, Department of Biology, 60200, Tokat,Turkey
[2] Tokat Science and Art Center, 60200, Tokat,Turkey
[3]Bingöl University, Vocational School of Health Services, Department of Medical Services and Techniques, Program of Medical Laboratory Techniques, Bingöl-Turkey

Corresponding author e-mail: ibrahim.turkekul@gop.edu.tr

Abstract

Naturally grown and cultured macrofungi are consumed as a food source also in our country. Wild macrofungi are a major source of living for forest loggers and it is exported to other countries. Macrofungi are also rich in essential vitamins for human metabolisms, including thiamine, riboflavin and niacin. The material of this study was collected from different localities within the boundaries of Almus districts (Tokat) during periodical field inventories between 2009-2014. This study was conducted to determine vitamins A, C, and E composition in edible macrofungi *Bovista plumbea*. Amount of vitamin A, C and E were determined by HPLC. Vitamin composition for dried sample were 105.56 mg kg -1, 39.80 mg kg -1 and 340.60 mg kg -1 for A, C and E respectively.

Key words: *Bovista plumbea*, mushroom, vitamin A, C, E

Acknowledgement: We would like to thank Gaziosmanpaşa University for its financial support (Project No: BAP 2004/09).

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➢ **POSTER PRESENTATION**

Adsorption of Safranine O and Malachite green by Two marine macro algae

Attouti. S, Behnas.Z, Bestani.B ,Benderdouche.N ,Belhakem.M

Laboratoire de Structure, Elaboration et Applications des Matériaux Moléculaires (SEAMM), Université Abdelhamid Ibn Badis de Mostaganem, B.P. 188, Mostaganem 27000, Algérie

E-mail : sattouti2010@hotmail.com

Abstract

Two marine algae namely Green and Brown, were chemically modified by HCl and used to remove a basic red, a cationic dye from simulated wastewater. Activated carbon-based marine algae were characterized by FT-IR, iodine number and methylene blue index. Microporosity by iodine number has been considerably enhanced compared to Merck activated carbon used as a reference. Appearance of new functional groups on the surface determined by infrared spectrometry was responsible for these enhancements. Maximum capacity of 277 mg/g and 294 mg/g were obtained by the green and the brown algae respectively. Thermodynamic studies of the adsorption process of both dyes confirm their spontaneity and endothermicity. Increasing solution ionic strength increased significantly the adsorption of basic red dye. This study shows that surface modified algae can be an alternative to the commercially available adsorbents for dyes removal from liquid effluents.

Keywords: green and brown algae, chemical activation, basic dye, adsorption

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➢ **POSTER PRESENTATION**

Investigation of Boron Effect on Trace Elements and Antioxidant Capacity in Paracetamol-Induced Nephrotoxicity Model

Ecem Özkan[1], Funda Karabağ Çoban[2]

[1]Uşak University, Institute of Science, Department of Molecular Biology and Genetics, Uşak, Turkey
[2]Uşak University, Faculty of Arts and Sciences, Department of Molecular Biology and Genetics, Biotechnology, Uşak, Turkey

ecemozkan92@gmail.com

Abstract

Paracetamol is a drug substance with analgesic and anti-inflammatory properties. It is significantly safe drug when taken in therapeutic doses, but overdose leads to nephrotoxicity in both humans and experimental animals. In clinical and experimental studies, it has been investigated that many compounds have protective properties against paracetamol-induced nephrotoxicity. However, the need for the new treatment protocols is still continues. Boron is an important nutrient needed by the human body in small quantities. It was determined that boron was an indispensable element for many treatments and was effective on the contrary to what is thought in human development. The purpose of this study was to investigate the boron effect on trace elements and antioxidant capacity in paracetamol-induced nephrotoxicity model.

In this study, 56 albino Wistar rats were used and divided into 7 groups: Group 1 (Control); Group 2 (2 g/kg paracetamol); Group 3 (2 g/kg paracetamol + 50 mg/kg boric acid); Group 4 (2 g/kg paracetamol + 100 mg/kg boric acid); Group 5 (2 g/kg paracetamol + 200 mg/kg boric acid); Group 6 (2 g/kg paracetamol + 140 mg/kg N-acetylcysteine + 2 g/kg paracetamol); Group 7 (200 mg/kg boric acid). To obtain the results, tissue samples taken from rats were used for trace element analysis, total antioxidant status (TAS), total oxidant status (TOS), superoxide dismutase activity (SOD), catalase activity (CAT) and glutathione peroxidase (GPx) analysis by using spectrophotometric method. Also, tissue samples were used for trace elements (Se, Cu, Co, Mn, Zn, Mg, B) analysis by using inductively coupled plasma mass spectrometry(ICP-MS). Blood samples taken from the hearts of rats were examined for creatinine and blood urea nitrogen (BUN) analyses.

As a result, significant decrease in rising free radical levels and significant increase in reduced antioxidant capacity were observed in paracetamol-boron given group when compared to control group ($p<0.05$). It was observed that the effect was also at trace element levels.

Keywords: Boron, Paracetamol, Nephrotoxicity, Trace element, Rat.

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➢ **POSTER PRESENTATION**

Determination of Nuclear DNA Content and Ploidy Level of Oat (*Avena* spp.) Species

Durmus CETIN[1*], Ertugrul FILIZ[2] , Aydin AKBUDAK[1]

[*1]Akdeniz University, Faculty of Agriculture, Department of Agricultural Biotechnology, Antalya, Turkey
[2]Duzce University, Department of Crop and Animal Production, Düzce, Turkey.

Corresponding author e-mail: durmuscetin42@gmail.com

Abstract

Genome size is a good metric used in taxonomy and plant breeding studies for characterization of the genome and determination of evolutionary distances. It is mostly invariable within species; therefore, genome size estimations could be used for species identification and determination of genetic material integrity in germplasm collections. The 2C DNA is defined as the nuclear DNA content of an unreplicated diploid cell (in G1 phase) and is used to determine both genome size and ploidy level. The genus Avena belongs to Poaceae (Gramineae) family and includes approximately 30 species including common oat (A. sativa). There are 837 Avena accessions in the USDA Germplasm Resources Information Network (USDA-GRIN) which were collected from Turkey that also represent the largest in situ Avena collection. However, initial characterization of the collection has not yet been conducted. Flow cytometry provides accurate and fast estimation for the genome size of plants. The present study targets verification of genome sizes and ploidy levels of 64 accessions classified in 13 Avena species using flow cytometry. Estimated nuclear DNA content of A. brevis, A. hirtula, A. longiglumus, A. nuda, A. strigosa, A. ventricosa, A. abyssinica, A. barbata, A. murphyi, A. vaviloviana, A. fatua, A. sativa ve A. sterilis accessions in this study ranged between 8.61–26.54 pg/2C. The results revealed that the nuclear DNA content was different among the species with the same ploidy level. Therefore the interspecific variation was observed in species belonging to the genus Avena.

Keywords: *Avena,* Nuclear DNA content, Flow cytometry, Ploidy level

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➢ **POSTER PRESENTATION**

Investigation of 1,3-Dipolar Cycloaddition Reaction of Aldonitrones with Glycidyl Methacrylate

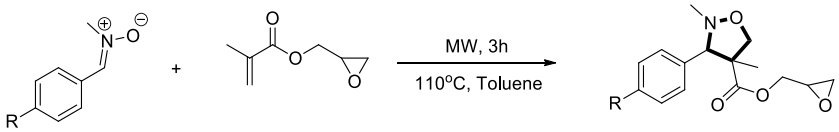
Akin Sağirli[1*], Yaşar Dürüst[2]

[*1]Abant Izzet Baysal University, Science and Art Faculty, Chemistry, Bolu, Turkey.
[2] Abant Izzet Baysal University, Science and Art Faculty, Chemistry, Bolu, Turkey.

Corresponding author e-mail: sagirli_a@ibu.edu.tr

Abstract

Nitrones are the key starting materials in assembling of 5-membered heterocycles especially isoxazolidines by means of 1,3-dipolar cycloaddition route (Merino et al., 2014; Bakthadoss and Devaraj, 2015) On the other hand, isoxazolidines are present in a broad variety of alkaloids, natural products and pharmaceutically important drugs (Shi et al., 2012; Berthet et al., 2016; Brandi et al., 2009). Taking into account of above considerations, we have been focused, in this study, on the synthesis of some isoxazolidines, namely, (3*R*)-oxiran-2-ylmethyl 2,4-dimethyl-3-(p-substituted)isoxazolidine-4-carboxylates that were obtained regioselectively by the means of the cycloaddition reaction of aldonitrones with glycidyl methacrylate. The structures and stereochemical configurations of these cycloadducts have been fully characterized by spectral /physical data. The work is ongoing for obtaining some more other examples.



R: F, Me

Keywords: Nitrone, Glycidyl methacrylate, 1,3-dipolar cycloaddition

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➢ **POSTER PRESENTATION**

Effect of Organic Acid in the Preparation of Mg-Ca Based Sorbent from Natural Huntite Mineral

Dilşad Dolunay ESLEK KOYUNCU*, Sena YAŞYERLİ

Gazi University, Faculty of Engineering, Chemical Engineering Department, Ankara, Turkey.

Corresponding author e-mail: deslek@gazi.edu.tr

Abstract

Calcium-containing natural minerals attract attention in CO_2 removal studies in terms of their high CO_2 capture capacity, low cost, easy availability, and their inert content which facilitating sorbent regeneration. In this study, the effect of organic acid treatment on the preparation of Mg-Ca based sorbent from the natural huntite mineral was investigated. Natural huntite mineral was obtained from Denizli-Acıpayam region of Turkey. It was determined by XRF analysis that the natural huntite mineral is Mg-Ca based (60.5 wt% MgO, 37.4 wt% CaO and 1.0 wt% SiO_2) and $CaMg_3(CO_3)_4$ structure was observed in the XRD patterns of raw mineral. Mg-Ca based sorbents were prepared in two ways; using citric acid (Huntite-CA) and acetic acid (Huntite-AA). Preparation of the sorbents includes; washing the milled huntite mineral with water, treating with 0.1 M organic acid solution, drying, and calcination (900 °C, 3 hours) steps. To compare the effect of organic acid treatment, Mg-Ca based sorbent was also prepared without organic acid in the same way (Huntite). It was determined by XRD analysis that MgO and CaO phases were formed in the sorbents after calcination and the crystallinity increased by citric acid treatment. BET surface areas of Huntite, Huntite-CA and Huntit-AA sorbents were found as 38, 35, and 33 m^2/g, respectively. The surface basicity of the sorbents was determined by CO_2-TPD analysis. Strong CO_2 desorption peaks were obtained at a temperature range of 600-700 °C for all sorbents and it was observed that surface basicity slightly decreased with citric acid treatment. CO_2 sorption experiments were performed with a feed mixture consisting of 4% CO_2 in He with a GHSV of 3600 $cm^3h^{-1}g^{-1}$ in a fixed bed reactor system. CO_2 sorption capacities of Huntite, Huntite-CA and Huntit-AA sorbents were found as 3.96, 3.80 and 3.63 mmol CO_2/g sorbent, respectively at 550 °C.

Acknowledgement: Gazi University Research Fund (Grants: 06/2016-01, 06/2016-04) is gratefully acknowledged.

Keywords: High temperature CO_2 sorption, Huntite, MgO, CaO

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➢ **POSTER PRESENTATION**

Syntheses and Characterization of Zn(II) and Cd(II)-Coordination Polymers Constructed From 2,2′-Dimethylglutaric Acid and 1,2-Bis((1H-Imidazol-1-yl)Methyl)Benzene Linkers

Hakan Erer[1], Pelin Köse Yaman[1, 2*], Mürsel Arıcı[1], İlknur Eruçar[3] and Okan Zafer Yeşilel[1]

[1]Eskişehir Osmangazi University, Faculty of Arts and Sciences, Department of Chemistry, 26480, Eskişehir, Turkey
[2]Dokuz Eylül University, Faculty of Sciences, Department of Chemistry, 35390, İzmir, Turkey
[3]Özyeğin University, Faculty of Engineering, Department of Natural and Mathematical Sciences, 34794, Istanbul, Turkey

Corresponding author e-mail:pelin.kose@deu.edu.tr

Abstract

The design and synthesis of coordination polymers have been attracted interest due to their fascinating architectures and potential application areas including gas adsorption/separation, catalysis, magnetism, luminescence, sensor, etc (Arici 2017).In this study, $\{[Zn_2(\mu\text{-dmg})_2(\mu\text{-obix})_2]\cdot 2H_2O\}_n$**(1)** and$[Cd_2(\mu\text{-dmg})_2(\mu\text{-obix})_2(H_2O)]_n$(**2**)complexes are synthesized with hydrothermal method by using 2,2′-dimethylglutaric acid ($dmgH_2$) and 1,2-bis((1H-imidazol-1-yl)methyl)benzene (obix). The structures of the complexes have been characterized by elemental analysis, spectroscopic (IR), thermal analysis methods (TG/DTA) and X-ray single-crystal studies. According to X-ray diffraction analysis result, the asymmetric unit of **1**consists of two Zn(II) ion, two dmg ligand, two obix ligand and two uncoordinated water molecules.Zn(II) ions exhibited distorted tetrahedral geometry.Two different dmg ligands bridge two Zn(II) ions to form a $Zn_2(dmg)_2$ 16-membered ring. Adjacent rings are linked by obix ligands to generate 1D polymeric chain and 2D planar structures. The asymmetric unit of **2** consists of two Cd(II) ion, two dmg ligand, two obix ligand and one aqua ligand. Cd1 ion exhibited distorted pentagonal bipyramidal geometry, while Cd2 ion showed distorted octahedral geometry.Two different dmg ligands bridge two Cd(II) ions to form a $Cd_2(dmg)_2$ 20-membered ring. Adjacent rings are linked by obix ligands to generate 1D polymeric chain structures. The adjacent 1D chains are connected to each other by the obix ligand to further extend a 2D coordination polymer.Furthermore, luminescence, topological, thermal and hydrogen gas adsorption properties of complexes were studied.

Keywords: Coordination polymer; 2,2′-dimethylglutarate complex; Zn(II)complex; Cd(II) complex.

Acknowledgement:This study was supported by *TUBITAK-BIDEP-2218* Postdoctoral Research Grant for Pelin Köse Yaman

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➢ **POSTER PRESENTATION**

Marmara Denizi Sahillerinde Yaşayan *Aurelia aurita* Denizanası Türünün Moleküler Karakterizasyonu

Meltem Güneş[1], Fikriye Polat[2], Günsel Bingöl[3*]

[1]Kocaeli Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Bölümü, Kocaeli, Türkiye

[2]Kocaeli Üniversitesi, Eğitim Fakültesi, Matematik ve Fen Bilimleri Eğitimi Bölümü, Kocaeli, Türkiye

[*3]Ankara Yıldırım Beyazıt Üniversitesi, Mühendislik ve Doğa Bilimleri Fakültesi, Biyomedikal Mühendisliği Bölümü, Ankara, Türkiye

[*]Sorumlu yazar: Günsel Bingöl, gbingol@gmail.com

Özet

Bu çalışmada, Marmara denizi sahillerinde yayılış gösteren denizanası türlerinin kompozisyon ve moleküler karakterizasyonlarının belirlenmesi hedeflenmiştir**. S**ölenterler (Knidliler, Cnidaria), morfolojik olarak hakiki Eumetazoa'ların en basit yapılı grubunu oluştururlar. Sölenterler şubesine ait olan denizanalarının 200'ün üstünde türü bulunmaktadır. *Aurelia aurita* ve *Rhizostoma pulmo*, Marmara Denizi kıyılarında bulunan türlerdendir. Bu türlerden *Aureli aurita* denizanası türünün moleküler karakterizasyonu çalışma kapsamımıza alınmıştır. Ekim-Aralık 2017 tarihlerinde Marmara Denizi sahillerinin kuzey noktalarından (İzmit-Seka Park, İstanbul Moda, Yeşilköy ve Haliç, Tekirdağ-Kumbağ sahillerinden) deniz anası örnekleri toplanarak, taze dokulardan DNA izolasyonları yapılmak üzere bir miktar deniz suyu içerisinde laboratuvara getirilmiştir. Tür bazında filogenetik tanımlama için evrensel mitokondriyal sitokrom oksidaz subunit I (COI) geni primerleri kullanılarak Polimeraz Zincir Reaksiyonu (PZR) yapılmış ve oluşan PZR ürünleri agaroz jel elektroforezinde görüntülenip fotoğraflanmıştır. Ardından DNA dizi analizi yapılmıştır. Sonuç olarak elde edilen DNA dizisi NCBI-Blast'da yüklü olan dizilerle karşılaştırılmış ve *Aureli aurita* türüne ait olduğu moleküler düzeyde tespit edilmiştir. Çalışmanın devamında aynı tür için 18S rDNA, 16S rDNA ve ITS1 dizileri de ortaya çıkarılacaktır. Böylece elde edilen diziler genom veri bankalarına yüklenerek Türkiye-Marmara Denizi sahilinde yaşayan *Aurelia aurita*'ya ait ilgili genlerin kaydı sağlanmış olacaktır.

Anahtar Kelimeler: Aurelia aurita, COI, filogenetik analiz, Marmara Denizi

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➢ **POSTER PRESENTATION**

Spectrophotometric Investigation of Metal Complexes with Valsartan

Caner MAZI, Serap KARADERİ, Filiz ARIÖZ

Marmara University, Department of Analytical Chemistry, Faculty of Pharmacy- 34668 Haydarpaşa, İstanbul, Turkey

canermazi@marun.edu.tr

Abstract

Hypertension is the circumstance when the values of diastolic and systolic blood pressure increases above normal values. High blood pressure can be decreased by hypertensive agents [1]. For instance, Valsartan provides to decrease high blood pressure to normal levels. At the same time, Valsartan is an angiotensin II receptor blocker and inhibits the known activities of the AT_1 receptor. It also shows the effect of angiotensin by dilating blood vessels [2]. It's mainly used in the treatment of diabetes, high blood pressure, heart failure disease [3]. In this study, the metal complex studies were investigated on related with calcium and magnesium for Valsartan. In accordance to the studies, the intake of Valsartan may lead to formation of chelates with metals. This is significant in terms of biological activity of microorganisms. The metal complex ratios were determined by UV-Vis Spectrophotometric method with using mol ratio method for Ca-Valsartan and Mg-Valsartan. And also, structures of the metals complexes are supported by spectrophotometric method. The experimental data indicate the formation of metal:ligant 1:1 complexes for Ca-Valsartan and Mg-Valsartan.

Keys words: Valsartan, metal complex, UV-Vis spectrophotometric method, mol ratio method.

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➢ **POSTER PRESENTATION**

Effective methods for waste stabilization in bioreactor landfills

Esra Tınmaz Köse

*[1]Namık Kemal University, Çorlu Engineering Faculty, Department of Environmental Engineering, Tekirdağ, Turkey.

Corresponding author e-mail: etinmaz@nku.edu.tr

Abstract

Sanitary landfills are widely used for the disposal of municipal solid waste (MSW) primarily due to their economical and convenient advantages. However leachate and gas generation from landfills may polluted the environment if not properly managed. Landfill designs include soil and/or plastic barriers above and below the waste in an attempt to reduce the infiltration of moisture into the waste mass and thus into the environment. This design method induces anaerobic decomposition of waste. Many of the world's landfills are becoming significant risks to the environment. Over time, anaerobic decomposition of wastes can have negative effects on landfill operations, which actually increase the potential for risks to human health and the environment.

In recent years, due to the advance knowledge of landfill behavior and decomposition processes of waste, there has been a strong thrust to upgrade existing landfill technology, as a bioreactor landfill. The bioreactor landfill has been defined as "A sanitary landfill operated for the purpose of transforming and stabilizing the readily and moderately decomposable organic waste constituents control to enhance microbiological processes. The bioreactor landfill significantly increases the extent of waste decomposition, conversion rates and process effectiveness over what would otherwise occur within the landfill.

Shredding, leachate recirculation, aeration, pH adjustment, temperature control and addition of nutrient and sludge are techniques used to enhance biological degradation of waste, in bioreactor landfills. The aim of this study is the evaluation of these techniques on waste stabilization, in bioreactor landfills.

Keywords: Biodegradation, Bioreactors, Sanitary landfill, Waste stabilization.

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➢ **POSTER PRESENTATION**

Synthesis of Boron Additive Biphasic Calcium Phosphate for the Improvement of Biocompatibility

Şeyma Gülnaz Yarlılar[1*], Birgül Mazmancı[2], Önder Albayrak[3]

[*1] Mersin University, Institute of Science, Department of Nanotechnology and Advanced Materials, 33343, Mersin, Turkey.
[2] Mersin University, Faculty of Arts and Science, Department of Biology, 33363, Mersin, Turkey.
[3] Mersin University, Faculty of Engineering, Department of Mechanical Engineering, 33363, Mersin, Turkey.

Corresponding author e-mail: syarlilar@gmail.com

Abstract

Aim: Among the various types of biomaterials, calcium phosphate based bioceramics are commonly used in different scientific fields such as tissue engineering, drug delivery systems and chromatographic purification. In this study the effect of boron (B) addition on calcium phosphate based bioceramics to be synthesized; will be investigated with 2 different synthesis methods and the groundwork for advanced biocompatibility and biological implant studies. For this reason, in the next step, it will be applied to osteoblasts cell culture.
Method: In the current study the methods involve the synthesis of boron-added biphasic calcium phosphate powders, pelletizing, sintering process and characterization. Acid-base method (in wet chemical synthesis methods) and solid state method were used to obtain B added biphasic calcium phosphate (BCP) powders. The procedures mentioned in the previous studies of the authors were used to obtain BCP and B-added BCP powders. $Ca(OH)_2$ and H_3PO_4 were used as the starting materials in the BCP synthesis stage, and addition to them H_3BO_3 were used in the synthesis of B added BCP using acid-base method. In the solid stage method the obtained BCP powders were ball milled with the H_3BO_3 powders. After heat treatment the obtained B-added BCP powders were characterized using X-ray diffraction (XRD), Fourier transform infrared spectrometry (FTIR) and Emission scanning electron microscopy (FE-SEM).
Results: B-added BCP samples were successfully synthesized by two different production methods. The next step of the study is to investigate the biocompatibility of B-added BCP. For this purpose, osteoblast cell line will be used and the biocompatibility will be determined cytotoxic and genotoxic assays. The production is expected to form the basis for future biocompatibility and biological implant studies.

This project supported by Mersin University, Department of Scientific Research Projects (2017-2-TP2-2556).

Keywords: Boron doped hydroxyapatite, Tricalcium phosphate, Biphasic, Biocompatibility.

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➢ **POSTER PRESENTATION**

Syntheses and Characterization of 2D Cd(II) Coordination Polymer Constructed from Thiophene-2,5-Dicarboxylate and 1,2-bis((1H-imidazol-1-yl)methyl)benzene Linkers

Mürsel Arıcı[1], Hakan Erer[1*], Murat Taş[2] and Okan Zafer Yeşilel[1]

[1]Eskişehir Osmangazi University, Faculty of Arts and Sciences, Department of Chemistry, 26480, Eskişehir, Turkey
[2]Ondokuz Mayıs University, Faculty of Education, Department of Science Education, 55139, Samsun, Turkey
Corresponding author e-mail: hakanerer@hotmail.com; herer@ogu.edu.tr

Abstract

In recent years, the field of crystal engineering of coordination polymers has attracted great attention due to their fascinating topological structures and their potential applications e.g. gas adsorption/separation, dye adsorption, photo-degradation, catalysis, sensor, magnetic and luminescence, etc (Erer et al., 2015; Arici, 2017). Heterocyclic dicarboxylic acids which can be used as a ligand coordinate the metal ions as bridging ligand at the synthesis of coordination polymers. In this study, $\{[Cd(\mu_3\text{-tdc})(\mu\text{-obix})]\cdot 2H_2O\}_n$ (**1**) complex was synthesized with hydrothermal method by using thiophene-2,5-dicarboxylic acid (H_2tdc) and 1,2-bis((1H-imidazol-1-yl)methyl)benzene (obix). The structure of the complex has been characterized by elemental analysis, spectroscopic (IR), thermal analysis methods (TG/DTA), X-ray single-crystal and powder studies. The IR spectrum of complex show characteristic bands for antisymmetric-symmetric stretching of the dicarboxylate groups range of 1558-1523cm^{-1} and 1450-1377 cm^{-1}, respectively. The asymmetric unit of complex contains one Cd(II) ion, one tdc ligand, one obix ligand and two crystal water molecules. The Cd(II) ion displays an distorted pentagonal bipyramidal geometry (CdO_5N_2), with equatorial positions occupied by five oxygen atoms of carboxylate groups from three different tdc ligands. The axial positions are occupied by a nitrogen atoms from two different obix ligands. Four different carboxylate groups coordinate two Cd(II) ions to form a parallelogram $[Cd_2(COO)_4]$ secondary building unit (SBU). These units are connected to each other by the tdc ligand to further extend a 2D coordination polymer. Complex **1** has a 2D 4-connected uninodal net with sql topology. Moreover, thermal and photoluminescence properties of complex **1** was investigated.

Keywords: Coordination polymer; thiophene-2,5-dicarboxylate complex; cadmium(II) complex.

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Erer H, Yesilel O Z, Arici M 2015. A Series of Zinc(II) 3D → 3D Interpenetrated Coordination Polymers Based On Thiophene-2,5-dicarboxylate and Bis(Imidazole) Derivative Linkers. Crystal Growth & Design, 15(7): 3201-3211.
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➢ **POSTER PRESENTATION**

2D→3D Polycatenated Zn(II) Coordination Polymer Constructed from Thiophene-2,5-dicarboxylate and 1,4-Bis(1H-imidazol-1-yl)benzene

Mürsel Arıcı[1], Hakan Erer[1*], Orhan Büyükgüngör[2] and Okan Zafer Yeşilel[1]

[1]Eskişehir Osmangazi University, Faculty of Arts and Sciences, Department of Chemistry, 26480, Eskişehir, Turkey
[2]Ondokuz Mayıs University, Faculty of Arts and Sciences, Department of Physics, 55139, Samsun, Turkey
Corresponding author e-mail: hakanerer@hotmail.com

Abstract

In the past decades, coordination polymers have received a great deal of attention due to their attractive topologies and potential applications in luminescent materials, catalyst, magnetism, nonlinear optics, and gas absorption. So far, although much effort has been carried out on the rational design and syntheses of coordination polymers, it is still a great challenge to predict the structures and properties of the target coordination polymers. Usually, the structures of the coordination polymers are dependent upon several factors, such as the pH values of the solution, reaction temperatures, geometric requirements of the metal atoms, and the organic ligands.-Among these factors, the organic ligands play a key role in the design and construction of various coordination polymers. In this regard, the heterocyclic dicarboxylic acids were widely used to construct coordination polymers because of their reliable and rich coordination modes (Erer et al., 2014). In this study, $[Zn(\mu\text{-tdc})(H_2O)(\mu\text{-dib})]_n$ (**1**) complex was synthesized with hydrothermal method by using thiophene-2,5-dicarboxylic acid (H_2tdc) and 1,4-Bis(1H-imidazol-1-yl)benzene (dib). The structure of the complex has been characterized by elemental analysis, spectroscopic (IR), thermal analysis methods (TG/DTA), X-ray single-crystal and powder studies. The asymmetric unit of complex contains one Zn(II) ion, one tdc ligand, one dib ligand and one aqua ligand. The Zn(II) ion is five coordinated with distorted square pyramidal geometry by two N atoms, two O atoms from two different tdc ligands and one O atom from aqua ligand. Each tdc ligand connects two Zn(II) ions to form an infinite one dimensional chain, and then the chains are further linked together by dib ligands to form a two-dimensional (2D) (4,4)-sql undulated network. The adjacent wave-like layers interlock each other to form the resulting 2D→3D polycatenated framework. According to thermal analysis of complex, the dehydrated complex is stable up to 285°C. Moreover, photoluminescence properties of complex **1** was investigated.

Keywords: Coordination polymer; thiophene-2,5-dicarboxylate complex; zinc(II) complex.

References:
Erer H, Yesilel O Z, Arici M, Keskin S, Buyukgungor O 2014. 2D→3D polycatenated and 3D→3D interpenetrated metal–organic frameworks constructed from thiophene-2,5-dicarboxylate and rigid bis(imidazole) ligands. Journal of Solid State Chemistry, 210: 261-266.

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➢ **POSTER PRESENTATION**

Preparation and Characterization of Chitosan Based Copolymers

Burcu Yeğiner[1*], Oya G.Atıcı[1]

[*1]Istanbul Technical University, Faculty of Science and Letters, Department of Chemistry, 34469, Istanbul, Turkey

karacaburcu@itu.edu.tr

Abstract

Biodegradable materials has a significant popularity due to ecological concerns throughout the world. Chitosan is a natural linear polysaccharide, obtained by the partial deacetylation of chitin, has a wide usage area due to its biodegradability, biocompatibility, non-toxicity (Liu et al., 2006 and Flores-Ramirez et al., 2008). The chemical modification of chitosan can control the physical/chemical characteristics such as solubility, polarity and hydrophilic/hydrophobic balance (Jayakumar et al., 2005).

In this study graft copolymerization of methyl methacrylate and N-vinyl-2-pyrollidone onto chitosan(Figure1) through functional groups of -NH, -OH,–CH was obtained via redox initiated free radical polymerization by using Ce(IV) ammonium nitrate in aqueous medium (Kalaoglu et.al, 2016) under inert atmosphere. The effects of amount of chitosan, cerium, nitric acid, methyl methacrylate N-vinyl-2-pyrollidone on reaction yield were investigated. Yield of reaction was increased at the optimum amount of variables. Graft copolymers were separated in respect of the amount of methyl methacrylate and N-vinyl-2-pyrolidone by dissolving in different amount of acetone. For both acidity and cerium amount until a critical value the yield increases and then the yield starts to decrease. The resulting derivatives were characterized by spectroscopic, rheologic, thermal, mechanic and morphologic methods.

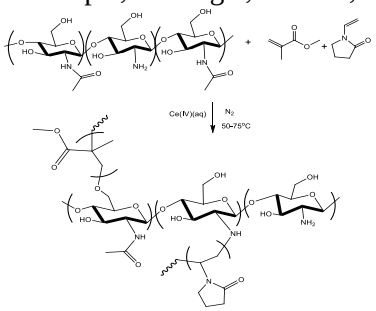

Figure1. The chemical structure of Cs-*g*-P(MMA-*ko*-VP)

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➢ **POSTER PRESENTATION**

2D Zn(II) Coordination Polymer Constructed from Thiophene-2,5-Dicarboxylate and 1,2-bis((1H-imidazol-1-yl)methyl)benzene Linkers

Hakan Erer[1], Okan Zafer Yeşilel[1*], Murat Taş[2] and Mürsel Arıcı[1]

[1]Eskişehir Osmangazi University, Faculty of Arts and Sciences, Department of Chemistry, 26480, Eskişehir, Turkey
[2]Ondokuz Mayıs University, Faculty of Education, Department of Science Education, 55139, Samsun, Turkey

Corresponding author e-mail: yesilel@ogu.edu.tr

Abstract

Coordination polymers have been of great interest due to their fascinating topological structures and potential applications in gas adsorption/separation, luminescence, sensor, magnetism, catalysis, so on [Arici et al., 2017]. In recent years, especially, mixed-ligand coordination polymers have attracted attention to obtain high dimensional structure and/or tune the structural framework with desired topology. In the mixed-ligand strategy, heterocyclic dicarboxylates and N-donor ligands have been used for constructing coordination polymers. In this study, $[Zn(\mu\text{-tdc})(\mu\text{-obix})]_n$ (**1**) (H_2tdc = thiophene-2,5-dicarboxylic acid, obix: 1,2-bis((1H-imidazol-1-yl)methyl)benzene) was synthesized by the hydrothermal reaction of $Zn(NO_3)_2 \cdot 6H_2O$, H_2tdc, obix at 170 ^oC for 4 days in H_2O. The structure of the complex has been characterized by elemental analysis, spectroscopic (IR), thermal analysis methods (TG/DTA), single-crystal and powder X-ray diffraction studies. The IR spectrum of complex show characteristic bands for antisymmetric-symmetric stretching of the dicarboxylate groups range of 1616-1531cm^{-1} and 1473-1352 cm^{-1}, respectively. The asymmetric unit of complex contains one Zn(II) ion, one tdc ligand and one obix ligand. The Zn(II) ion displays distorted tetrahedral geometry (ZnO_2N_2), with two oxygen atoms of carboxylate groups from two different tdc ligands and two nitrogen atoms from two different obix ligands. Zn(II) ions are bridged by carboxylate oxygen atoms of tdc ligand to form one dimensional (1D) structure, which are further extend to 2D structure by coordination of obix ligands. Complex **1** has a 2D 4-connected uninodal net with sql topology. The TG/DTA curve of complex shows that the complex is stable up to 313 °C. Moreover, photoluminescence properties of complex **1** was investigated.

Keywords: Coordination polymer; thiophene-2,5-dicarboxylate complex; Zinc(II) complex.

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Arici M, Yesilel O Z, Tas M 2017. Cd(II)-coordination polymers based on tetracarboxylic acid and diverse bis(imidazole) ligands: Synthesis, structural diversity and photoluminescence properties. Journal of Solid State Chemistry, 245: 146-151.

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➢ **POSTER PRESENTATION**

Construction of 3D Cd(II)-Coordination Polymer with Thiophene-2,5-Dicarboxylate and 1,4-Bis(1H-imidazol-1-yl)benzene

Hakan Erer[1], Okan Zafer Yeşilel[1*], Orhan Büyükgüngör[2] and Mürsel Arıcı[1]

[1]Eskişehir Osmangazi University, Faculty of Arts and Sciences, Department of Chemistry, 26480, Eskişehir, Turkey
[2]Ondokuz Mayıs University, Faculty of Arts and Sciences, Department of Physics, 55139, Samsun, Turkey
Corresponding author e-mail: yesilel@ogu.edu.tr

Abstract

In the recent years, coordination polymers (CPs) with entangled architectures have gained a great deal of attention not only due to their potential applications in fields such as gas adsorption and separation, drug delivery and catalysis but also due to their diverse structural topologies. It is well known that several factors, such as the organic ligands, metal centers, pH values, reaction temperatures and solvents have great influence in the final structures (Kan et al., 2012; Erer et al., 2014). Among these factors, the organic ligands play a crucial role in construction of CPs. Polycarboxylic acids are frequently used for the construction of CPs because of their variety of coordination modes and structural stability. Interpenetrated networks are one of the most investigated type of CPs. In this study, $[Cd(\mu\text{-tdc})(H_2O)(\mu\text{-dib})]_n$ (**1**) (H_2tdc = thiophene-2,5-dicarboxylic acid, dib: 1,4-bis(1H-imidazol-1-yl)benzene) was synthesized by the hydrothermal reaction of $Cd(NO_3)_2{\cdot}4H_2O$, H_2tdc, dib at 170 ^oC for 4 days in H_2O. The structure of the complex has been characterized by elemental analysis, spectroscopic (IR), thermal analysis methods (TG/DTA), single-crystal and powder X-ray diffraction studies. The asymmetric unit of **1** contains one Cd(II) ion, one dib, one tdc and one aqua ligands. Each Cd(II) ion is coordinated by three carboxyl oxygen atoms from two tdc ligands, two nitrogen atoms from two dib ligands and one aqua ligand to constitute a distorted octahedral geometry. The tdc ligand acts as μ_2-bridge linking two Cd(II) ions to generate a 1D chain. Adjacent 1D chains further are linked by dib ligand to produce undulated 2D networks. Therefore, the undulated layer is further catenated to the adjacent layers to give a 2D+2D→3D polycatenated network. The most important structural feature of **1** is the 2D→3D parallel polycatenation with $4^4.6^2$-sql topology. Moreover, photoluminescence properties of complex **1** was investigated.

Keywords: Coordination polymer; thiophene-2,5-dicarboxylate complex; 2D→3D polycatenated.

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➢ **POSTER PRESENTATION**

Aljinat-graft-Poli(N-hidroksimetil akrilamid) Kopolimer Sentezi ve Mikroküre lerinin Spektroskopik Yöntemlerle Karakterizasyonu

Nuran Işıklan[1*]

[*1] Kırıkkale Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Kırıkkale, Türkiye

Sorumlu yazar e-mail: nuranisiklan@hotmail.com

Özet

Sodyum aljinat kahverengi deniz yosunlarından elde edilen, polisakkarit sınıfından doğal bir polimerdir. Biyouyumlu, biyobozunur ve hidrofilik olması eczacılık, tıp, gıda gibi birçok alanda kullanımını sağlamaktadır. Kullanım alanlarını genişletmek ve kısa raf ömrü, mikrobiyal bozunma gibi dezavantajları ortadan kaldırmak için aşı kopolimerizasyonu uygulanan başarılı bir yöntemdir. Çalışmada poli(N-hidroksimetil akrilamid) aşılanmış aljinat (SA-g-PHMA) kopolimeri ve bu kopolimerin mikroküreleri sentezlenmiştir. Mikroküreler glutaraldehit ile çapraz bağlanma yöntemi ile hazırlanmıştır. Poli(N-hidroksimetil akrilamid) mikrokürelerin yapısal karakterizasyonu FTIR ile yapılmıştır. SA-g-PHMA mikrokürelerin yüzey morfolojisi AFM/SEM ile incelenmiş ve yüzeylerinin pürüzlü olduğu gözlenmiştir. Boş mikrokürelerin XRD profilleri incelenmiş ve mikrokürelerin amorf yapıda oldukları belirlenmiştir. Farklı aşı verimlerinde ve çapraz bağlanma derecelerinde hazırlanan mikrokürelerin pH 1,2 ve 7,4'deki denge şişme dereceleri 37 ^{o}C'da tespit edilmiş ve denge şişmelerinin hem aşı verimi ile hem de çapraz bağ derecesi ile azaldığı bulunmuştur. Ayrıca hazırlanan SA-g-PHMA mikrokürelerin *in vitro* sitotoksisite testleri MTT yöntemi ile yapılmış ve mikrokürelerin biyouyumlu oldukları belirlenmiştir. Elde edilen sonuçların ışığında aljinat-graft-Poli(N-hidroksimetil akrilamid) mikrokürelerin özellikle kontrollü ilaç sistemlerinde taşıyıcı olarak etkin bir şekilde kullanılabileceği bulunmuştur.

Anahtar Kelimeler: Aşı kopolimer, Sodyum aljinat, Poli(N-hidroksimetil akrilamid), Mikroküre

Teşekkür: Bu proje 2016/039 proje numarası ile Kırıkkale Üniversitesi BAP Koordinasyon Birimi tarafından desteklenmiştir.

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➢ **POSTER PRESENTATION**

Aljinat-g-Poli(N-hidroksimetil akrilamid) Mikroküreler de *İn Vitro* Ketoprofen Serbestleştirilmesi

Nuran Işıklan[1*]

[*1] Kırıkkale Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Kırıkkale, Türkiye

Sorumlu yazar e-mail: nuranisiklan@hotmail.com

Özet

Kontrollü ilaç salım sistemleri klasik sistemlere göre hasta uyumu, ayarlanabilir etkinlik süresi, hedefleme, kandaki dalgalanmaların önlenmesi gibi bir çok avantajlara sahiptirler. Bu çalışmada kontrollü ilaç salım sistemi olarak, ketoprofen yüklü aljinat-g-Poli(N-hidroksimetil akrilamid) mikroküreleri hazırlanmıştır. Ketoprofen steroid olmayan, anti-emflamatuvar, kısa yarılanma ömrüne sahip bir ilaçtır. Mide kanaması, ülser gibi yan etkilere sahiptir. Ketoprofen yan etkilerinin önlenmesi ve serbestleştirilmesinin kontrollü sağlanabilmesi için aljinat-g-Poli(N-hidroksimetil akrilamid) mikrokürelere tutuklanmıştır. Hazırlanan mikroküreler FTIR, ketoprofen tutuklanma verimi ve mikroküre boyutlarının ölçümü ile karakterize edilmiştir. Ketoprofen yüklü mikrokürelerin yüzey morfolojileri SEM ile incelenmiştir. İlaç yüklü aşı kopolimer mikrokürelerin XRD desenlerinden ketoprofenin mikroküre içerisinde kristalin yapıda bulunduğu tespit edilmiştir. *İn vitro* ketoprofen serbestleştirilmesi pH 1,2 ve 7,4 ortamlarında 37 ºC'da 96 saat süresince gerçekleştirilmiştir. Aljinat-g-Poli(N-hidroksimetil akrilamid) mikrokürelere ketoprofen 1/2, 1/4, ve 1/8 ilaç/polimer oranlarında yüklenmiştir. Ketoprofen serbestleştirilmesine aşılama yüzdesinin, ilaç/polimer oranının ve çapraz bağlanma derecesinin etkileri araştırılmıştır. Aljinat-g-poli(N-hidroksimetil akrilamid) mikrokürelerinden ketoprofen serbestleştirilmesinin pH ile değiştiği ve pH 7,4'te daha yüksek ilaç serbestleştirildiği gözlenmiştir. Ketoprofen salımının aljinata poli(N-hidroksimetil akrilamid) gruplarının aşılanması ile azaldığı ve ilacı daha kontrollü serbestleştirdiği görülmüştür. Ayrıca ilaç salımı; ilaç/polimer oranından ve çapraz bağlanma derecesinden etkilenmiştir. Ortam koşullarının değiştirilmesi ile 96 saat sonunda % 40 ilaç serbestleştirilebilen formülasyon ve % 100 ilaç serbestleştirilebilen formülasyon oluşturulması gerçekleştirilmiştir. Mikrokürelerden ketoprofen serbestleştirilmesinin kinetik açıdan formülasyonlara göre farklılık gösterdiği, Fick'e uymayan ve Durum II tip yani şişme kontrollü oldukları bulunmuştur. Ayrıca ketoprofen serbestleştirilmesi difüzyon sabitlerinin hesaplanması ile desteklenmiştir.

Anahtar Kelimeler: Ketoprofen, Aşı kopolimer, Sodyum aljinat, Poli(N-hidroksimetil akrilamid), Mikroküre

Teşekkür: Bu proje 2016/039 proje numarası ile Kırıkkale Üniversitesi BAP Koordinasyon Birimi tarafından desteklenmiştir. Ayrıca ketoprofen Zentiva Sağlık Ürünleri Sanayi ve Tic. A.Ş.'den temin edilmiştir.

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➢ **POSTER PRESENTATION**

Investigation Of Graft Compatibility Of Some Almond Cultivars With GF677 Rootstock

Ajlan Yılmaz[1*], Başak Özdemir[2] , Hatice Nurhan Büyükkartal[3], Yeşim Okay[2]

[1]Republic of TurkeyMinistry of FoodAgriculture and Livestock, Pistachio Research Institute, Gaziantep, Turkey
[*2]Ankara University, Faculty of Agriculture, Department of Horticulture, Ankara, Turkey
[3]Ankara University, Faculty of Science, Deaprtment of Biology, Ankara, Turkey

E-mail:basakcnr87@hotmail.com

Abstract

GF 677 (*P. persica* x *P. amygdalus*) is a clone rootstock of peach x almond, which is widely used in almond cultivation because of showing strong growth, being nematode-resistant, giving better results in clayey and calcareous soil conditions. In this study, the grafting performance of Ferragnes, Ferraduel, Nurlu and Bozkurt cultivars on GF 677 rootstock were evaluated anatomically.

The research was carried out in the greenhouse conditions of Gaziantep Pistachio Research Institute. Clonal rootstocks were grown by tissue culture and obtained from a commercial company which were stuck in tubes of 18x32 cm size filled with soil, burnt stallion and peat mortar in a ratio of 1: 1: 1. One year old rootstocks that reached the grafting thickness, were done T-eye grafting in June period.

In the sections taken from the graft union 30 days after the grafting, it was determined that callus cells developed in Ferragnes, Nurlu and Bozkurt cultivars grafted on GF 677 rootstock, but cambial continuity between rootstock and scion tissues did not occur yet. It was observed that callus cells developed and grafting fusion was good in Ferraduel cultivar. A few ordered cambium cells were encountered between rootstock and scion tissues.

It was observed that callus was completely filled the between of grafting members, vascular differentiation was increased in the samples in which cambial relation was established, callus cells gained regular parenchymal tissue properties in Ferragnes, Ferraduel, Nurlu and Bozkurt cultivars grafted on GF 677 rootstock after 12 months of grafting.

Different kinds of cambium cells reached 6-8 rows in Ferragnes and Bozkurt cultivars while 5-6 rows in Ferraduel cultivar.

Keywords: GF677 clonal rootstock, *Prunus dulcis*, grafting

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➢ **POSTER PRESENTATION**

Hypericum scabrum L. Çiçeklerinin Antioksidan, Antimikrobiyal ve Biyoaktif Bileşiklerinin İncelenmesi

Ersin Demir[*1], Serhat Keser[2], Omer Kaygili[3], Fatma Keser[2], Sevda Kirbag[4], Okkes Yilmaz[4], Mustafa Karatepe[2]

[*1]Düzce Üniversitesi, Tarım ve Doğal Bilimler Fakültesi, Tarımsal Biyoteknoloji Bölümü, Düzce/Türkiye
[2]Fırat Üniversitesi, Fen Fakültesi, Kimya Bölümü, Elazığ/Türkiye
[3]Fırat Üniversitesi, Fen Fakültesi, Fizik Bölümü, Elazığ/Türkiye
[4]Fırat Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Elazığ/Türkiye

ersncan.dmr@gmail.com

Özet

Hypericaceae familyasında yer alan *Hypericum scabrum* L. çok yıllık otsu bir bitkidir. Yapılan araştırmalar *H. scabrum*'un antienflamatuar, antioksidan, antiradikal, antimikrobiyal özelliklere sahip olduğunu göstermiştir. Bu çalışmada *H. scabrum* su ve metanol ekstraktlarının antioksidan özellikleri ABTS, DPPH ve OH radikalleri üzerinde, biyoaktif bileşikleri toplam fenolik, toplam flavonoit, toplam proantosiyanidin, fenolik asitler, flavonoitler, yağda çözünen vitaminler, steroller ve yağ asitleri miktarları bakımından incelenirken, antimikrobiyal özellikleri ise *Bacillus megaterium*, *Bacillus subtilis*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Listeria monocytogenes*, *Klebsiella pneumonia*, *Proteus vulgaris*, *Staphylococcus aureus* bakterileri ve *Candida albicans* mayasına karşı disk difüzyon metoduyla belirlendi. Çalışma sonuçlarına göre *H. scabrum* su ve etanol ekstraktlarının ABTS ve OH radikallerini, su ekstraktının ise DPPH radikallerini standart antioksidandan daha iyi yok ettiği belirlendi. Bu bitkinin fenolik asitler ve doymamış yağ asitleri bakımından zengin olduğu saptanırken, su ve etanol ekstraktlarının *B. megaterium*, *B. subtilis*, *E. coli*, *P. aeruginosa*, *L. monocytogenes*, *K. pneumonia*, *P. vulgaris*, *S. aureus* bakterileri ve *C. albicans* mayasına karşı standart antibiyotiklerden daha yüksek antimikrobiyal özelliğe sahip oldukları belirlendi. Buna göre *H. scabrum* çiçeklerinin yüksek antiradikal aktivite gösterdiği ve önemli miktarda biyoaktif bileşiğe sahip olduğu, ayrıca çalışmada kullanılan mikroorganizmalara karşı etkili antimikrobiyal özellik taşıdıkları anlaşılmıştır.

Anahtar Kelimeler: *H. scabrum*, antioksidan, biyoaktif, antimikrobiyal

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➢ **POSTER PRESENTATION**

Alterations of Some Antioxidant Enzymes and Total Protein Level in Worker Honeybees (*Apis mellifera)* Paralyzed by *Philanthus triangulum*

İlyas Can[1*], Dursun Kısa[2], Yaşar Gülmez[1]

[*1]Gaziosmanpaşa University, Faculty of Arts and Sciences, Biology Department, Tokat, Turkey
[2]Bartın University, Faculty of Science, Molecular Biology and Genetics Department, Bartın, Turkey

Correspondingauthor e-mail: ilyascan41@gmail.com

Abstract

Philanthus triangulum (Fabricius, 1775) is medium sized, solitary wasp belonging to the family Crabronidae (Insecta: Hymenoptera). Females of this species prey on honeybee (*Apis mellifera*) to provide food for their offspring. Adult honeybees are become immobilize after paralyzed by the wasp, and therefore remaining fresh food for the larva of the wasp. In this study, peroxidase (POD) and superoxide dismutase(SOD) activities which are an indication of oxidative stress and the amount of total protein in paralyzed and non-paralyzed adult worker bees were investigated. Honeybees collected from the hive and solitary wasps from their natural habitats were brought to the laboratory in separate cages as alive. In order to ensure honeybees paralyzed by the wasps, they were put in the same cages. Enzyme and total protein levels were measured periodically after paralysis (during 1, 24 and 72 hours). SOD activity in paralyzed bees is found higher than non-paralyzed ones at the end of 72 hours, which is statistically significant. POD activity significantly decreased in paralyzed bees on hours 24 and 72 when compared to non-paralyzed ones. Total protein quantity was found higher in paralyzed bees than non-paralyzed ones at 72 hours. Alterations in antioxidant enzyme activities in honey bees paralyzed by a solitary wasp, *Philanthus triangulum* were presented for the first time by this study.

Keywords: Antioxidant Enzymes, Paralyse, *Philanthus triangulum*, *Apis mellifera*, Total protein

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➢ **POSTER PRESENTATION**

Comparison of Antioxidant Enzymes and Total Protein in Venom Glands of Wasp Species, *Sphex flavipennis* (Sphecidae) and *Vespula germanica* (Vespidae) (Insecta: Hymenoptera)

İlyas Can[1*], Dursun Kısa[2], Yaşar Gülmez[1]

[*1]Gaziosmanpaşa University, Faculty of Arts and Sciences, Biology Department, Tokat, Turkey
[2]Bartın University, Faculty of Sciences, Molecular Biology and Genetics Department, Bartın, Turkey
*Correspondingauthor e-mail: ilyascan41@gmail.com

Abstract

The order Hymenoptera includes bees, ants, social and solitary wasps. Members of suborder Apocrita have venom glands and sting apparatus. Solitary wasps generally use their sting to paralyze and preserve the prey whereas social wasps to defend their colonies from vertebrate or other predators. Venom contents among Hymenoptera may vary in terms of enzymes and other substances, which have different effects on victims. In this study, venom gland of a solitary wasp (*Sphex flavipennis*) is compared to that of a social wasp (*Vespula germanica*) by superoxide dismutase (SOD), peroxidase (POD), glutathione S-transferase (GST) enzyme amounts and total protein quantity. GST level was found higher in *S. flavipennis,* however SOD and POD levels between the two species were very close to each other. On the other hand, the amount of total protein in *V. germanica* was detected remarkably higher than *S. flavipennis*. As a result, this study showed that social and solitary wasp venoms vary with regard to antioxidant enzyme content.

Keywords: Antioxidant Enzymes, Total Protein, Sphex flavipennis, Vespula germanica, Venom Glands.

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➢ **POSTER PRESENTATION**

Dextran Production by Newly Isolated Bacteria

Muhammed Hasan Akyıl, Melike Sayın, Naciye Avşar, Nilüfer Cihangir

Hacettepe Univesity, Department of Biology

Abstract

Under different enviromental conditions, microorganisms synthesise chemically unrelated products which called biomaterials. Bioplastics are one of the most important content biomaterials. Monomer composition, macromolecular structure and psyical properties show an alteration from bioplastics, due to their microbial origin. Dextran was first discovered by Louis Pasteur as a microbial product in wine. In this study we aim to produce Dextran from newly isolated bacteria. Soil samples was collected from Kırgızistan. Selective agar used for isolation dextran producing bacteria. After incubation mucoid colonies selected as potential dextran producer. For dextran production, the culture was grown in the medium containing (g l^{-1}): sucrose, 150.0; bacto-peptone, 5.0; yeast extract, 5.0; K_2HPO_4, 15.0; $MnCl_2.H_2O$, 0.01; NaCl, 0.01; $CaCl_2$, 0.05. For enzyme production, 20.0 g l^{-1} sucrose was used whereas rest of the medium composition was same as above and pH was adjusted to 7.0 before sterilization at 121ºC for 15 minutes. Growing culture of *isolated bacteria* was incubated at 30ºC for 24 hours in 10 ml broth medium and after 24 hours it was transferred into 100 ml sterile broth and again incubated at 30ºC for 24 hours which served as inoculum. After 24 hours incubation 100 ml inoculum was transferred into 900 ml sterile broth and again incubated at 30ºC for 20 hours for dextran production. The culture medium after 20 hours was precipitated using equal volume of chilled ethanol, shaken vigorously, centrifuged at 10,000 rpm for 15 minutes and the supernatant was decanted. The precipitated pellet was left to dried. After FT-IR we determined our product as Dextran.

Key words: Dextran, Bacteria, Extra Polysaccharide

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➢ **POSTER PRESENTATION**

The Effect Of Carbon Source On Biofilm Formation

Muhammed Hasan Akyıl, Melike Sayın, Ümmügül Gözlek, Pınar Kütküt, Nilüfer Cihangir

Hacettepe Univesity, Department of Biology

Abstract

Microorganisms generally adhere to the surface to produce extracellular polysaccharide, ECM, which results in the biofilm structure. Biofilm is a three-dimensional structure with a large number of bacterial layers, and outer layer is surrounded by exopolysaccharide (EPS). Osmotic shock, pH changes, drying, etc. to protect against environmental factors, to provide nutritional benefits and to gain resistance to drugs by acquiring new genetic properties through gene transfer is the reasons of biofilm formations. In this study, we aimed to investigate the effect of carbon source on biofilm formation. Microorganisms that used in this study were isolated from soil, from Çukurova, Adana. Also *Proteus mirabilis* ATCC 7002 was used for positive control. In order to observe the effect of carbon source (lactose, sucrose, glucose, fructose) on biofilm formation of microorganisms, various carbon sources were added additionally on LB medium and transferred to microtiter dish plates. We have determined that extra carbon source increase biofilm formation. Glucose, sucrose and lactose increased biofilm formation by 300%, fructose has been found to have the least effect on biofilm formation.

Key Words: Biofilm formation, Carbon source, *Proteus mirabilis*

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➢ **POSTER PRESENTATION**

Goldfish Growth (*Carassius auratus*) and Water Quality Changes in Microgreen Aquaponic and Recirculating Systems

Volkan KIZAK*, Serdar KAPALIGÖZ

Munzur University, Fisheries Faculty, Aquaculture Department, Tunceli, Turkey.

***Corresponding author e-mail: v.kizak@gmail.com , volkan.kizak@munzur.edu.tr

Abstract

Aquaponics has recently been most prevalent as a viable form of alternative aqua/agriculture. In this research, the growth of goldfish (*Carassius auratus*) was studied comparatively in microgreen aquaponic (APS) and sump filter systems (SFS as a recirculating system), and the effects of these two different filter systems on water parameters were investigated. Arugula or garden-rocket (*Eruca vesicaria*) was used in APS and produced as microgreens. Goldfish (1.76 ± 0.03 g) were stocked in six aquariums each with fifteen goldfish. Arugula seeds were germinated by being kept in wet cotton for three days. These seeds were then planted by sprinkling over aquaponic beds each with about two hundred seeds. NH_3-N, NO_2-N, NO_3-N, PO_4, and some anion and cation values were measured at specific periods for 2 months. At the end of the experiment, mean live weights of goldfish reached 3.11 ± 0.100 g in APS, and 3.07 ± 0.103 g in SFS. Any adverse effect on the health and welfare of goldfish in both of APS and SFS were not observed during the experiment. The pH value tended to decrease in both systems towards the end of the experiment. The findings showed that the nitrification process had been successfully carried out in APS and SFS. Arugula sprouts used mostly NH_4 instead of NO_3-N in high pH medium. There is no negative effect on the growth and survival rate of the goldfish in optimal conditions of APS. It is also clear that it is possible to grow arugula as microgreens.

Key Words: Aquaponic, Goldfish, Arugula, Microgreen, Water Quality.

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➢ **POSTER PRESENTATION**

Anaesthetic Efficacy of *Aniba rosaeodora and Cinnamomum camphora* Essential Oils for Goldfish (*Carassius auratus*)

Volkan KIZAK[1*] , Erkan CAN[1], Durali DANABAŞ[1], Şafak SEYHANEYILDIZ CAN[2]

[1]Munzur University, Fisheries Faculty, Aquaculture Department, Tunceli, Turkey.
[2]Munzur University, Engineering Faculty, Department of Bioengineering, Tunceli, Turkey

*****Corresponding author e-mail: v.kizak@gmail.com , volkan.kizak@munzur.edu.tr

Abstract

Many researches have been conducted on goldfish, e.g. stripping eggs or sperm, morphometric measurement, tagging, grading, hormonal injection, vaccination and transporting. All of these applications cause stress that influence fish behaviour and physiology adversely, and anesthesia is used generally for reducing the stress of fish. In this research, the optimal effective concentration of two herbal essential oils, rosewood (*Aniba rosaeodora*) and camphora (*Cinnamomum camphora*), were evaluated in the goldfish (*Carassius auratus*). Rosewood species are scattered in the Amazon Region of Brazil, Guyana, Peru, Colombia, Venezuela, and Suriname. The oil of *Aniba rosaeodora* is applied worldwide in the perfumery and cosmetic industry due to its fragrance based on high linalool content (about 85%). Rosewood oil expected to be an effective anaesthetic agent on fish owing to its high linalool component. Fish were exposed to each anaesthetic concentration and the optimal effective concentrations were chosen according to the criteria that induction stage should be achieved in less than 3 min and the recovery time should not be exceeded 5 min. Based on this criteria, the lowest effective concentrations of rosewood oil and camphora oil were detected. The induction time decreased with increasing concentration for all of the anaesthetic agents evaluated. The recovery time increased with the enhancing essential oils concentration. These results suggested that rosewood oil is a new potential anesthetic agent for fish species in aquaculture.

Keywords: Anaesthesia, goldfish, *Aniba rosaeodora, Cinnamomum camphora*.

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➢ **POSTER PRESENTATION**

Screening of Tolerant Yeast Strains to Inhibitors and Stress Conditions

Evrim Özkale Kaya [1*], H. Tansel Yalçın[2]

[*1]Manisa Celal Bayar University, Faculty of Arts and Sciences, Biology Department, Manisa, Turkey.
[2]Ege University, Faculty of Science, Biology Department, Izmir, Turkey.

Corresponding author e-mail: evrimmiko@gmail.com

Abstract

The efficiency of ethanol production on an industrial scale will be increased by using yeasts that are tolerant to inhibitors (Tofighi et al., 2014). The common challenges of yeasts can be overcome by using ethanol-tolerant and thermotolerant strains which can resist stresses can be isolated from natural resources such as soil, water, plants and animals.

One of the most common stresses that yeast cells encounter during fermentation is the increased ethanol concentration (above 20%) and rise in temperature (35-45 °C). High concentrations of alcohols like ethanol impairs cellular wall permeability also induces petite mutant without mitochondrial DNA and changes in mitochondrial genome. In combination with high temperature inactivation of some enzymes are accelerated (Ding et al. 2009, Stanley et al. 2010). Besides, thermophilic/thermotolerant yeast for bioethanol production have several process advantages including broad substrate utilization range, higher saccharification and fermentation rates etc. Due to hydrolysis of lignocellulosc substrates for bioethanol production, furan derivatives, some weak acids and phenolics are also released as major constituents from pretreated lignocellulose (Azhar et al. 2017).

In this study it is aimed to find out native xylose fermenting strains that are tolerant to high ethanol concentrations and temperature. Strains previously isolated from soil were screened for their abilities to ferment xylose sugar (2%) & YNB (0.67 %) medium at 39 °C and 42 °C. Selected strains were identified on the basis of sequencing D1/D2 domain of rRNA gene according to the homologies of the sequences using the BLAST of DNA data Bank of NCBI. Later, 13 strains were screened on the YEPX agar medium containing % 15 ethanol. Batch ethanol fermentation was performed under aerobic conditions on YEP medium containing 20 % xylose at 42 C for 24 h. Folllowing this process, fermentations were carried on the varying concentrations of lignocellulosic hydrolysates containing inhibitors. The cultures grown on the defined medium without inhibitors were used as control. Ethanol concentrations on both conditions were compared for their efficiencies.

Keywords: Bioethanol fermentation, yeast tolerance, lignocellulosic hydrolysate.

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➢ **POSTER PRESENTATION**

Karbon Nanotüplerin Potansiyel Toksisitesinin Tek Hücre Elektroforez Testi ile Değerlendirilmesi

Merve Güneş[1], Burçin Yalçın[1], Havva Ertuğrul[1], Bülent Kaya[1]

[1] Akdeniz Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Antalya, Türkiye

e-mail: mgunes@ogr.akdeniz.edu.tr

Özet

Karbon bazlı nanomateryallden olan karbon nanotüpler (CNT) elektronik, optik ve plastik endüstrisinde çeşitli uygulamalarda kullanılmakla birlikte son yıllarda farmakoloji ve tıp alanlarında ilgi çekmektedir. Yeni üretilen nanomateryallerin biyouyumluluğu uygulamalar için önemli bir konudur. Doku ve hücrelere doğrudan ulaşabilen bu maddelerin potansiyel toksisitesi ve moleküler sistemlerle olası ilişkisi literatürde cevaplanması gereken sorulardandır.

Bu çalışmada CNT'lerin genotoksik potansiyelleri *Drosophila* Tek Hücre Jel Elektroforezi (KOMET) yöntemi kullanılarak araştırılmıştır. *Drosophila* KOMET testi DNA hasarının tespiti esasına dayanmaktadır. Çalışmamızda KOMET testi ile değerlendirilecek tek iplik DNA hasarına ek olarak spesifik enzimler kullanılarak DNA'daki oksidatif hasar potasniyeli değerlendirilmiştir. *Drosophila* KOMET testi için yaban tip üçüncü evre larvalar 24 saat boyunca CNT'lere (0,1, 1, 10 ve 100 ppm) maruz bırakıldıktan sonra bu larvalardan hemositler izole edilmiş ve KOMET çalışması için kullanılmıştır. Elde edilen sonuçlarda CNT'lerin *Drosophila melanogaster* hemositlerinde DNA hasarına neden olmadığı belirlenmiştir. Ek olarak enzim uygulamalarından elde edilen bulgulara göre de test kimyasallarının DNA bazlarından purinlerde ve primidinlerde oksidatif hasar oluşturup oluşturmadığı araştırılmıştır. Elde edilen sonuçlara göre CNT'lerin gerek doğrudan gerekse oksidatif olarak DNA hasarına sebep olmadıkları da belirlenmiştir.

Anahtar Kelimeler: Nanoteknoloji, Karbon nanotüpler, Drosophila, Tek Hücre Jel Elektroforezi

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➢ **POSTER PRESENTATION**

Seryum Oksit Nanopartikülleri ve İyonik Formlarının Etkilerinin *Drosophila melanogaster* Hemositlerinde KOMET Yöntemi ile Araştırılması

Burçin Yalçın*, Merve Güneş, Havva Ertuğrul, Bülent Kaya

Akdeniz Üniversite, Fen Fakültesi, Biyoloji Bölümü, Antalya, Türkiye

Sorumlu yazar e-mail: byalcin@ogr.akdemiz.edu.tr

Özet

Metal oksit nanopartikülleri (NP), ticari ve endüstriyel ürünler için ilk olarak kullanılan nano ölçekli malzemeler arasında bulunan NP'lerin bir sınıfıdır. Metal oksit NP'lerinin yaygın olarak kullanılması bu NP'lerin çevreye kolayca yayılabileceği ve insanların çevresel kaynaklı maruziyetinin yakın gelecekte de büyük oranda artacağı endişesini ortaya çıkarmaktadır. Metal oksitlerden olan seryum oksit (CeO_2) NP'leri ise çevre gözlem sensörlerinde elektrot malzemesi olarak, katı oksit yakıt hücrelerinde oksijen iletkeni olarak, kozmetikte UV engelleyici bileşen olarak ve yüksek sıcaklıkta süper iletken olarak geniş bir uygulama alanına sahiptir. Yakıt katkı maddelerinde kullanıldığından hava kalitesi, iklim değişikliği ve halk sağlığı üzerine etkileri açısından önemlidir ve etkileri henüz belirsizdir. Bu bağlamda, CeO_2 NP'leri ile iyonik formlarının genotoksisitesini araştırmak için *Drosophila melanogaster* hemositlerinde, her biri için 4 farklı konsantrasyon (1, 2, 5 ve 10 mM) ile uygulama yapılarak KOMET (Tek hücre jel elektroforezi) yöntemi ile yaratabileceği DNA hasarı potansiyelleri araştırılmıştır. Çalışma sonucunda CeO_2 iyonik formunun yüksek konsanrasyonlarında (5 ve 10 mM) ve CeO_2 NP'lerinin sadece en yüksek dozunda (10mM) kuyruk uzunluğunu kontrol grubuna göre istatistiki olarak anlamlı bir şekilde arttırmıştır.

Anahtar Kelimeler: *Drosophila melanogaster*, Tek hücre jel elektroforezi, Genotoksisite, Seryum oksit, Nanopartikül

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➢ **POSTER PRESENTATION**

The Effect of Different Boron Sources on the Solid-State Synthesis of Dehydrated Potassium Borates at 700 °C

Azmi Seyhun Kıpçak[1], Nurcan Tugrul[1], Tuğba Tor[1], Mehmet Burcin Piskin[2], Emek Möröydor Derun[1*]

[*1]Yildiz Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Chemical Engineering, Turkey
[2]Yildiz Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Bioengineering, Turkey

Corresponding author e-mail: moroydor@yildiz.edu.tr

Abstract

In this study using the solid-state synthesis route dehydrated potassium borates are successfully synthesized. The potassium source of potassium carbonate (K_2CO_3) and the boron sources of boric acid (H_3BO_3) and boron oxide (B_2O_3) were used in the experiments. Different molar ratios of potassium element (K) to boron element (B) of 1:3 through 1:7 were selected for the investigation of the effect on the synthesis. Reaction temperature and reaction time were selected as 700 °C and 4h, respectively, where the temperature increment was selected as 10 °C/min. After the synthesis the products were characterized by X-ray diffraction (XRD) and Fourier transform infrared spectroscopy (FT-IR) techniques. According to the XRD results in set-1 (The synthesis between K_2CO_3 and H_3BO_3) experiments, two different phases of dehydrated potassium borates were obtained. The major and minor phases were identified as KB_5O_8, which has a powder diffraction file (pdf) number of "01-076-1367" and $K_5B_{19}O_{31}$, which has a powder diffraction file (pdf) number of "00-052-0259", respectively. The highest XRD score was obtained at the molar ratio of 1:4 with a value of 67 in set-1. On the other hand, at set-2 (The synthesis between K_2CO_3 and B_2O_3) experiments, again two different phases of dehydrated potassium borates were obtained. The major and minor phases were identified as KB_5O_8, which has a powder diffraction file (pdf) number of "01-076-1367" and KB_3O_5, which has a powder diffraction file (pdf) number of "00-045-0047", respectively. The highest XRD score was obtained at the molar ratio of 1:3 with a value of 30 in set-2. For the comparison between two sets, set-1 yield better XRD scores than set-1, hence it has more suitable raw material combination than set-2. At the FT-IR analysis the characteristic bands of boron to oxygen were seen.

Keywords: Boric acid, boron oxide, dehydrated potassium borate, solid-state synthesis.

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➢ **POSTER PRESENTATION**

Relationship Between G6PD Gene Expressions Levels And G6PD Enzyme Activity

Başak Günaştı[1], Umut Kökbaş[1], Kezban Kartlaşmış[1], Ebru Dündar Yenilmez[1], Elif Akün[2], Abdullah Tuli[1]

[1]Cukurova University Health Sciences Institute, Faculty of Medical School, Department of Medical Biochemistry, Adana, Turkey.
[2]Ege University Faculty of Science, Department of Biochemistry, İzmir, Turkey.

Corresponding author e-mail: basaksanna@gmail.com

Abstract

Glucose 6-phosphate dehydrogenase (G6PD; D-glucose-6-phosphate: NADP+ 1-oxidoreductase EC:1.1.1.49) is the key enzyme of pentose phosphate pathway. G6PD deficiency, an inherited X-linked recessive disorder. G6PD deficiency is a common enzymopathy affecting more than 400 million people worldwide. The deficiency of G6PD deficiency may result in hemolytic anemia due to drug toxicities, infections during the neonatal period, consumption of beans and stress conditions. In order to clarify this situation G6PD enzyme kinetics were studied from cases G6PD activity below the reference values. The aim of our study was to evaluate the relationship between G6PD gene expressions levels and G6PD activity. Enzyme activity was determined with the Beutler method of 50 cases (32 male and 18 female). G6PD was purified DE-52 anion exchange resin and then G6PD enzyme kinetics were studied. G6PD gene expression levels were analyzed using by Real Time RT-PCR. In this study we appreciated relationship of G6PD gene expression levels with other variables. There was no relationship between enzyme activity and gene expression. But there was statistically significant high positive correlation with G6PD gene expression levels and KmNADP, statistically significant moderate positive correlation with G6PD gene expression levels and KmG6P. Our study suggested that to have different specifications in the substrate binding site (NADP binding site) as a result of post-translational or post-transcriptional modifications.

Keywords: G6PD Deficiency, Enzyme Kinetics, Gene Expression.

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➢ **POSTER PRESENTATION**

The Validation Of Bienzymatic Glucose Biosensor for Diagnosis And Prognosis Of Diabetes Mellitus

Kezban Kartlaşmış[1*], Başak Günaştı[1], Umut Kökbaş[1], Abdullah Tuli[1], Elif Akün[2], Levent Kayrın[1]

[1]Cukurova University, Faculty of Medicine, Department of Medical Biochemistry, Adana, Turkey
[2]Ege University, Faculty of Science, Department of Biochemistry, Izmir, Turkey

Corresponding author e-mail: kkartlasmis@cu.edu.tr

Abstract

Diabetes is a major metabolic disease that is rapidly increasing worldwide and is predicted to reach 642 million by 2040. Type II Diabetes Mellitus, characterized by high blood glucose levels, accounts for 90% of cases. Complications of this diseases can be reduced significantly through regular monitoring of glucose. Therefore millions of diabetes patients, measure the glucose concentration in the blood regularly. Aim of this study, diagnosis and prognosis of diabetes in glucose biosensors is to validation. For glucose analysis in serum; Central laboratory of Balcalı Hospital, GLUC PAP2623 glucose oxidase-peroxidase enzyme kit and biosensor were studied and the obtained data were compared. 25 hypoglycemic and 25 hyperglycemic serum samples were used. For the bioactive layer of the biosensor; glucose oxidase enzyme and peroxidase enzyme were crosslinked with bovine serum albumin/gelatin and glutaraldehyde and fixed to the gold electrode surface, and measurements were taken at 0.9 V. A comparison of the results of the kit and the biosensor was performed with the Bland Altman analysis. A Pearson correlation analysis was performed to evaluate the correlation between the methods. As a result of the correlation analysis, r: 0,999, $p<0.01$, it was seen that there was a strong and significant correlation between the 2 methods. ROC curves plotted for these 3 methods were compared with each other. We found that the biosensor we designed for gold standard method compliance was more compatible. In studies done with serum samples; biosensor, the kit and was accepted as the gold standard central laboratory results biosensor results and was found to be excellent range.

Keywords: Biosensor, Diabetes, Validation.

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➢ **POSTER PRESENTATION**

Yeni Sentezlenen Barbitürat Türevinin Genotoksik Potansiyelinin MN Testi ile Değerlendirilmesi

Merve Ayşe Doğancı[1*], Ahmet Ali Berber[2], Mustafa Arslan[3], Mustafa Zengin[3], Betül Aygün[1], Hüseyin Aksoy[1]

[1]Sakarya Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Sakarya, Türkiye
[2]Çanakkale Onsekiz Mart Üniversitesi, Sağlık Hizmetleri MYO, Tıbbi Hizmetler ve Teknikler Bölümü, Çanakkale, Türkiye
[3]Sakarya Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, Sakarya, Türkiye

Sorumlu Yazar e-mail: ayse.doganci@ogr.sakarya.edu.tr

Özet

Günümüzde birçok hastalığa karşı yeni ilaçların geliştirilmesine ihtiyaç duyulmaktadır. Geliştirilen her yeni ilaç hammaddesi klinik kullanımdan önce, *in vitro* ve *in vivo* şartlarda çeşitli testlerden geçirilmelidir. Bu testlerin bir kısmını genotoksisite testleri oluşturmaktadır Barbitüratlar dünya genelinde çoğunlukla tıp alanında özellikle anestezik, sedatif, antidepresan ve antiepileptik etkilerinden dolayı yaygın olarak kullanılan 2500'ün üzerinde türevi bulunan kimyasallardır. Bu çalışmada ilaç hammaddesi olabileceği düşünülen yeni sentezlenen barbitürat türevi 1,3-dimetil-8-fenil-1,7,8,8a-tetrahidroprido[3,2-d]primidine-2,4,6(3H)-trion'un genotoksik potansiyelinin *in vitro* olarak insan periferal lenfosit hücreleri üzerinde mikronükleus (MN) metodu kullanılarak belirlenmesi amaçlanmıştır. Bu amaçla 72 saat kültüre alınmış insan periferal kan lenfositleri barbitüratın 600, 300, 150 ve 75 µg/mL'lik konsantrasyonlarına 48 saat süresince maruz bırakılmıştır. 48 saatlik uygulama sonucunda gözlenen mikronukleus frekanslarında kontrol ve çözücü kontrole göre anlamlı bir farklılık tespit edilmemiş ve mikronukleus frekansları bakımından uygulanan konsantrasyonların 48 saatlik maruziyetin genotoksik bir etkiye neden olmadığı görülmüştür. Yeni sentezlenen barbitürat türevinin genotoksisitesinin tam olarak belirlenebilmesi için diğer test metotlarının da uygulanması ve birlikte değerlendirilmesinin gerektiğini düşünmekteyiz.

Anahtar Kelimeler: Genotoksisite, mikronükleus, insan periferal kan lenfositleri, barbitürat türevi.

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➢ **POSTER PRESENTATION**

Investigation of Molding Properties of Yttria Stabilized Zirconia Ceramics by Cold Isostatic Pressing

Murat Mert Uz[1*], Afife Binnaz Hazar Yoruç[2]

[*1]Yildiz Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Metallurgical and Materials Engineering, Istanbul, Turkey
[2]Yildiz Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Metallurgical and Materials Engineering, Istanbul, Turkey

Corresponding author e-mail: mmertuz@gmail.com

Abstract

In the nature, pure zirconium shows three different structures as monoclinic (room temperature), tetragonal (1170°C - 2370°C) and cubic (2370°C - 2680°C). During the transition of two polymorph structure occurs the volume changes in the ceramic matrix. This situation narrows the field of industrial application of zirconia. Researchers have observed that various oxide additives act as stabilizers in the zirconia structure and these oxide additives are essential to develop the fracture thoughness of the ceramic structure at room temperature.
The presented study was used TZ-3YSB-C powder product of Tosoh Europe B.V. (Netherlands) as zirconia stabilized with %3 mol yttria powder. This product was molded with cold isostatic press at 200 MPa, 300 MPa and 400 MPa. The final sintering of the molded samples was carried out at 1450°C for 2 hours.
Crystallographic structure of zirconia ceramic powder stabilized with 3 mol% of yttria was examined by X-ray diffraction analysis; particle size and distribution were also determined with MasterSizer. Density of the samples was measured with Archimed Methos. After the sintering process, the Vickers hardness values of the molded samples were examined and the fracture toughness values were calculated by using obtained hardness values. In addition to the effect of sintering treatment was observed by scanning electron microscope (SEM).

Keywords: Stabilized Zirconia, Sintering, Cold Isostatic Pressing; Mechanical Properties.

Acknowledgements

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➢ **POSTER PRESENTATION**

Determination of Antioxidant and Oxidant Levels of *Russula delica*

Emre Cem Eraslan*, Hasan Akgul, Ali İmran Korkmaz

Akdeniz University, Science Faculty, Department of Biology, Antalya, Turkey

Corresponding author e-mail: emrecemeraslan@gmail.com

Abstract

In addition to its nutritional value, many renewable mushroom species have long been used for medical purposes in many countries of the world. In addition, it has been determined that many non-renewable and toxic species of mushrooms have important medical features. In this study, it was aimed to determine total antioxidant (TAS), total oxidant values (TOS) and oxidative stress level (OSI) of *Russula delica* Fr. collected from Gaziantep province. The ethanol extract of the fungus was extracted from the soxhlet device. TAS and TOS values were determined using Rel Assay Diagnostics kits. The OSI value is calculated using the TOS / TAS formula. As a result of the studies performed, TAS value was found to be 1.886, TOS value was 21.318 and OSI value was 1.132. As a result, *R. delica* collected from Gaziantep province is recommended to be consumed limited due to oxidative stress level. However, it is thought that fungal samples collected from regions where oxidative stress is low can be used as alternative antioxidant source.

Keywords: *R. delica*, Oxidative stress, Gaziantep.

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➢ **POSTER PRESENTATION**

Voltammetric Investigation of Interaction Between Sulfadiazine and Acesulfame-K

Emine Coşkun, Sümeyra Çelik*

Ondokuz Mayıs University, Faculty of Science Literature, Chemistry Department, Samsun, Turkey

Corresponding author e-mail: sumeyracel@gmail.com

Abstract

Artificial sweeteners are often used as a substitute for sucrose in a considerable variety of foods and beverages; as an example, the global consumption of acesulfame (ACE), saccharin (SAC) and cyclamate (CYC) in the United States was estimated to be 5, 37 and 47 kt/year, respectively. They are used in other personal care and pharmaceutical products, such as toothpastes, as well (Calzaa et al., 2017).

Sulfonamides are broad-spectrum and low-cost synthetic antibiotics used in treatment of diseases such as urinary tract infections, pneumocystis pneumonia, chronic bronchitis, meningococcal meningitis, and toxoplasmosis (Hong et al., 2012). Sulfadiazine (SDZ) is a sulfonamide antibiotic inhibiting the bacterial enzyme dihydropteroate synthase, involved in the synthesis of folate that is an important growth factor for the bacterial cells (Vione et al., 2018).

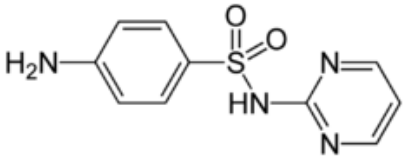

Figure 1. Chemical structure of sulfadiazine.

In this work, the interaction of sulfadiazine with acesulfame-K was studied by square-wave voltammetry technique on the hanging mercury drop electrode in acidic, neutral and alkaline mediums. After the addition of acesulfame-K into the sulfadiazine solution, the peak current of sulfadiazine decreased. Voltammetric results showed that SDZ binds with ACE-K forming 1:1 nonelectroactive molecular complex.

Keywords: Sulfadiazine, Acesulfam K, Voltammetry.

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➢ **POSTER PRESENTATION**

Thermal and Sound Insulation Properties of Different Materials for Karaman Region

Mehmet Ali Topçu[1], Selmin Ener Rüşen[2] , Beril Öztürk[2]

[*1] Department of Metallurgy and Material Engineering, Faculty of Engineering, Academic Energy Research Group (AKEN), Karamanoglu Mehmetbey University,70100, Karaman, Turkey.
[*2] Department of Energy Systems Engineering, Faculty of Engineering, Academic Energy Research Group (AKEN), Karamanoglu Mehmetbey University,70100, Karaman, Turkey

Corresponding author e-mail: selmin.enerrusen@gmail.com

Abstract

Energy efficiency is crucial issue for Turkey because it imports most of energy from foreign countries. Approximately, 30% of our energy is consumed in buildings for heating and cooling systems. Therefore, it is imported to reduce the energy consumption used for heating and cooling by suitable insulation material. Materials for exterior wall external insulation have various types and properties in terms of heat and sound insulation. For this reason, different insulation materials should be selected on the basis of the climatic conditions in Turkey. In this study, different insulation materials such as rock wool, extruded polystyrene (XPS), expanded polystyrene (EPS) was investigated by using thermal insulation unit according to the TS – 825 standard for Karaman province. According to the results, however, lowest heat transfer was obtained by using 4 cm XPS material; the highest investment cost was detected for XPS. Also, different insulation thickness was calculated for Karaman province as 23, 28, 38 mm for XPS, EPS and rock woll by considering properties of thermal insulation unit. As a result of sound insulation impressive results were detected for investigated materials.

Keywords: Energy Efficiency, Thermal Insulation, Sound Insulation, Karaman.

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➢ **POSTER PRESENTATION**

Electrocatalytic Activity of Graphene Oxide film Supported Au Nanoparticles for Electrochemical Oxidation of Sodium Borohydride

Şükriye Ulubay Karabiberoğlu*, Merve Çınar, Zekerya Dursun

Ege University, Department of Chemistry, Science Faculty, 35100 Bornova, Izmir, Turkey.

Corresponding author e-mail: sukriye.karabiberoglu@ege.edu.tr

Abstract

Fuel cells, convert chemical energy into electrical energy based on redox reactions occurring at electrode-electrolyte interfaces, have an important role to play in the future world energy scenario. Fuel cells have some advantages such as efficiency, reliability, economy, cleanliness. An alternative fuel borohydride has attracted considerable interest not only as a hydrogen-storage material but also as a fuel for direct borohydride fuel cells (DBFCs) and as an electrochemical H_2 generator due to its high energy density. In order to increase of efficiency of fuel oxidation, the developing of composite material is important issue in the fuel cell application [1-4]. Herein, electrochemical oxidation behaviour of borohydride as an anode material in fuel cell was investigated on Au nanoparticles modified graphene oxide film glassy carbon electrode (Au-GO/GCE). Graphene oxide was synthesized with Hummer's method in laboratory and Au nanoparticles was prepared on graphene oxide surface by cyclic voltammetric technique. The chemical and physical properties of prepared composite electrode was explained with scanning electron microscopy, electrochemical impedance spectroscopy and X-Ray photoelectron spectroscopy. The electrocatalytic activities of Au nanoparticles modified GO and bulk electrodes were investigated for 1.0 mM borohydride oxidation in 1.0 M NaOH media and response of electrodes were compared with each other from the corresponding cyclic voltammetric curves. There was no any oxidation reaction occurs on bare GCE and GO/GCE in the presence of borohydride. Au nanoparticles improved the catalytic activity of GO/GC electrode in terms of the manner of both peak potential and peak current. The borohydride oxidation studies show that catalytically active, easy prepared and relatively cheap anode composite electrode could be fabricated by using very small amount Au nanoparticles on GO films for DBFC based fuel cells.

Keywords: Electrooxidation of borohydride, Fuel cell, Au nanoparticles, Graphene oxide, Characterization.

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➢ **POSTER PRESENTATION**

Antioxidant and Oxidant Potentials of *Phellinus igniarius*

Emre Cem Eraslan*, Hasan Akgul, Ali İmran Korkmaz

Akdeniz University, Science Faculty, Department of Biology, Antalya, Turkey
Corresponding author e-mail: emrecemeraslan@gmail.com

Abstract

Fungi have been used in many societies throughout human history because of their food and medical features. In this study, it was aimed to determine total antioxidant (TAS), total oxidant values (TOS) and oxidative stress level (OSI) of ethanol extract of *Phellinus igniarius* (L.) Quél. collected from Gaziantep province. The fungi samples dried in the laboratory were pulverized by mechanical grinding after drying. Then, extraction was carried out in a soxhlet device with ethanol for 6 hours at 50 ° C. TAS and TOS values were determined using Rel Assay Diagnostics kits. The OSI value is calculated using the TOS / TAS formula. Yapılan çalışmalar sonucunda TAS değeri 0.856, TOS değeri 12.154 ve OSİ değeri 1.426 olarak belirlenmiştir. As a result of the studies; TAS value was determined as 0.856, TOS value as 12.154 and OSI value as 1.426. As a result, attention should be paid to the use of *P. igniarius* in Gaziantep depending on the oxidative stress level.

Keywords: *P. igniarius*, Oksidatif stres, Gaziantep.

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➢ **POSTER PRESENTATION**

A Comparative Study of Characterization and Antioxidant Activities of Tunisian and Turkish *Reddellomyces parvulosporus* Polysaccharide Extracts

Fatih Çayan[1*], Gülsen Tel-Çayan[1], Mehmet Emin Duru[2], Meltem Taş[2], Mohamed Neffati[3]

[*1]Muğla Sıtkı Koçman University, Muğla Vocational School, Department of Chemistry and Chemical Processing Technologies, 48000 Muğla, TURKEY.
[2]Muğla Sıtkı Kocman University, Faculty of Science, Department of Chemistry, 48000 Muğla, TURKEY
[3]Institute of Arid Areas, Laboratory of Range Ecology, 4119 Medenine, Tunisia

Corresponding author e-mail: fatihcayan@mu.edu.tr

Abstract

Truffles, a kind of precious food mushrooms, are medical ectomycorrhizal fungi belonging to Pezizales which continue to live symbiosis with trees and shrubs, and are used for many years in Asia and Europe [1]. Polysaccharides are the most important bioactive compounds in Truffles. A great attention was paid to truffle polysaccharides due to their unique bioactivities in recent years. Research in recent years has shown that truffle polysaccharides indicated antioxidant activity and could be discovered as potential natural antioxidants for use in functional foods [2].

The polysaccharides extracts of *R. parvulosporus* from different origins (Tunisian and Turkish) were investigated for chemical constituents and antioxidant activity by β-carotene-linoleic acid, DPPH$^{\bullet}$ scavenging, ABTS$^{\bullet+}$ scavenging, cupric-reducing antioxidant capacity (CUPRAC), and metal chelating assays. The evidence of functional groups in Tunisian and Turkish *R. parvulosporus* polysaccharides proved by the appearance of the peak which was derived from the stretching vibration using FT-IR while molecular weight of polysaccharides identified by HPLC-DAD. The Turkish *R. parvulosporus* polysaccharide extract showed the highest antioxidant activity in DPPH$^{\bullet}$ and ABTS$^{\bullet+}$ scavenging assays with IC_{50} values of 88.22±0.22 and 65.95±0.53, respectively. In β-carotene-linoleic acid, CUPRAC and metal chelating assays, Tunisian *R. parvulosporus* polysaccharide extract exhibited better activity.

Keywords: *Reddellomyces parvulosporus*, Truffle, Polysaccharides, Comparative study, Chemical content, Antioxidant activity.

This study was financed by The Scientific and Technological Research Council of Turkey (TUBITAK-114Z644).

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➢ **POSTER PRESENTATION**

Bazı Önemli Tıbbi Bitkilerin Antioksidan ve Antikanser Etkilerinin Araştırılması

Yavuz Erden[1*], Rabia Top[1], Suat Tekin[2]

[1] Bartın Üniversitesi, Fen Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Bartın, Türkiye
[2] İnönü Üniversitesi, Tıp Fakültesi, Fizyoloji Anabilim Dalı, Malatya, Türkiye

Sorumlu yazar e-mail:yerden@bartin.edu.tr

Özet

Tıbbi bitkilerin insan sağlığı açısından önemi gün geçtikçe artmaktadır. Birçok hastalığın tedavisinde bitkilerden elde edilen bileşikler kullanılmaktadır. Altın çilek (*Physalis peruviana*), Pepino (*Solanum muricatum*), Kudret narı (*Momordica charantia*) türleri de tıbbi öneme sahip bitkiler arasındadır. Bu çalışmada söz konusu bitkilerden elde edilen özütlerin antioksidan ve antikanser etkilerini araştırmayı amaçladık.

Çalışmada kullanılan bitkilerin meyve kısımları Bartın ili sınırları içerisinde toplandı. Meyvelerin özütleri 1:10 (g/ml) %80 etanol içerisinde hazırlandı ve daha sonra çözücü uçurularak toplam hacim 10 ml distile su ile eşitlendi. Hazırlanan stok çözelti seyreltilerek 1, 5, 25, 50 ve 100 mg/ml'lik konsantrasyonlar hazırlandı. Bitki özütlerinin antioksidan özelliği DPPH serbest radikal temizleme düzeyi ölçülerek ortaya konuldu. Özütlerin muhtemel sitotoksik özellikleri insan meme kanseri (MCF-7) ve over kanseri (A2780) hücre hatları kullanılarak MTT assay yöntemine göre belirlendi. Sonuç olarak her üç bitki özütünün yüksek konsantrasyonları (50 ve 100 mg/ml) düşük düzeyde serbest radikal giderme etkisi sergiledi. Buna karşın her üç bitki özütünün hem insan meme hem de over kanseri hücre hatları üzerine güçlü sitotoksik özellikler ortaya koyduğu belirlendi ($p<0.05$).

Altın çilek, pepino ve kudret narı özütlerinin göstermiş olduğu güçlü sitotoksik özellikler nedeniyle bu türlerin önemli antikanser etkilere sahip olabileceği düşünülmektedir.

Anahtar Kelimeler: Altın çilek, Pepino, Kudret narı, Antikanser etki, Antioksidan aktivite.

Teşekkür: Bu çalışma Bartın Üniversitesi Bilimsel Araştırma Projeleri Koordinatörlüğü tarafından desteklenmiştir (Proje No: 2017-FEN-CY-003).

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➢ **POSTER PRESENTATION**

A New Biosensor Design for Determining of Phenolic Compounds

Umut Kökbaş[1*], Kezban Kartlaşmış[1], Başak Günaştı[1], Suzan Elif Akün[2], Abdullah Tuli[1] , Levent Kayrın[1]

[*1]Cukurova University, Medical Faculty, Medical Biochemistry Department, Adana, Turkey.
[2]Ege University, Science Faculty, Biochemistry Department, İzmir, Turkey.

Corresponding author e-mail: umutkokbas@gmail.com

Abstract

Phenolic compounds, ubiquitous in plants are an essential part of the human diet, and are of considerable interest due to their antioxidant properties. Morewer some species of bactria degredation phenolic compounds. The bacterias were grown in the presence of phenol as the sole source of organic carbon. The aim of this study is to develop a new procedure for determination of phenolic compounds in dsifferent sources. In this study for the determination of phenolic compounds, poyphenol oxidase enzyme fixed on the gold electrode by using BSA/gelatin and crosslinking by glutaraldehyde. Cyclic voltammograms have been carried out between -0.45 V and 0.85 V potentials vs. Ag/AgCI. The developed biosensor serves as a specific result to phenolic compounds. It could accurately determine between 1µM and 320 mM of samples. Because of low costs, fast results, specificity and high detection/information effectiveness as compared with conventional determination methods, we can be offered this techique as a new alternative method.

Keywords: Biosensor, Polyphenol oxidase, Phenolic compounds.

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➢ **POSTER PRESENTATION**

Kinetic and Isotherm Modeling of The Adsorption of Aluminium by a Novel Nano Adsorbent

Yasemin İşlek Coşkun*, Emür Henden

Ege University, Faculty of Science, Department of Chemistry, İzmir, Turkey.

Corresponding author e-mail: yasemin.islek@ege.edu.tr

Abstract

Natural processes (volcanic eruptions, erosion) and anthropogenic sources (mining or agricultural activities, coal combustion) cause to release aluminium to the environment. Moreover, usage of aluminium and its compounds in preparation, packaging, preservation steps of food products and in drinking–water treatment as flocculants may cause to increase their aluminium contents.[1] The people who suffer from Alzheimer's disease have high aluminium content in certain brain cells. [2] Moreover, the kidney dialysis patients suffer from dementia when the dialysis solution contained aluminium. Therefore, trace aluminium determination has been substantial because of its negative effect on human life. The European Committee established diluted dialysis solutions should not contain aluminium concentrations higher than 10 µg/L.[3] The maximum permissible concentration of Al(III) in drinking water is only 200 µg/L. [4]

In this work, the adsorption kinetics and isotherm models of aluminium were evaluated by using a novel nano adsorbent-Ni/Ni_xB. Isotherm studies were conducted using Langmuir, Freundlich and Dubinin–Radushkevich models. Three kinetic models (pseudo first-order, pseudo second-order and intraparticle) were investigated.

Keywords: Aluminium, nanoparticles, spectrofluorimeter.

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➢ **POSTER PRESENTATION**

Effects of Increases in Vitamin C Supplementation in the Laying Hen Rations on Serum Concentrations of Vitamin C and Vitamin A

A.A. Yiğit[1*], G. Yarim[2]

[*1] Kırıkkale University, Faculty of Veterinary Medicine, Department of Physiology, Kırıkkale, Turkey.
[2] Ondokuz Mayis University, Faculty of Veterinary Medicine, Department of Biochemistry, Samsun, Turkey.

Corresponding author e-mail: aarzuyigit@kku.edu.tr

Abstract

Avian species have the inherent ability to synthesize vitamin C. However, when they exposed to environmental stress such as excessive hot or cold weather, and under stress conditions, their ascorbic acid demand increase and innate capacity of biosynthesis decrease. Under such conditions, vitamin C supplements to the the poultry diet may have a beneficial effect on performance This study was carried out to determine the effects of layer rations containing 0, 50, 100 and 200 mg/kg vitamin C on vitamin C and vitamin A concentrations in serum of hens.
A total of 96 commercial hens (28 weeks of age) were used in present experiments. There were a control and three treatment groups, each containing 24 hens. The experimental period lasted 10 weeks. Serum vitamin C and vitamin A concentrations were determined three times at 30, 34 and 38 weeks of ages.

Serum vitamin C and vitamin A concentrations increased with increasing amounts of vitamin C in rations. During the experiment, serum vitamin C concentration was increased significantly ($p<0.05$) by the addition of 200 mg/kg vitamin C, and serum vitamin A concentration was increased significantly in all groups ($p<0.05$). It is concluded that, this increase in vitamin C and vitamin A, which is antioxidant vitamins in serum by adding vitamin C to the ration, might be useful in stressful conditions which cause great economic loss in poultry industry.

Keywords: Laying hen, vitamin C, vitamin A.

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➢ **POSTER PRESENTATION**

Investigation of Sintering Behaviour of Hydroxyapatite Powder Synthesized By Chemical and Biomimetic Techniques

Deniz Uzunsoy[1], A. Binnaz Hazar Yoruç[2,*], Türkay Yıldız[2]

Bursa Technical University, Faculty of Natural Sciences, Architecture and Engineering, Department of Metallurgical and Materials Engineering, Bursa, Turkey
Yildiz Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Metallurgical and Materials Engineering, Istanbul, Turkey

Corresponding author e-mail: afife.hazar@gmail.com

Abstract

The desire to introduce man-made materials into the treatment of human body has attracted many interests in the research field of biomaterials. Approxiamately 60 wt.% of human bone is made of a calcium phosphate (CaP) mineral with a chemical composition similiar to that of hydroxyapatite[1,2]
Hydroxyapatite [HA; $Ca_{10}(PO_4)_6(OH)_2$] which composes inorganic phases of bones and teeth is one of the biomedical material used for artificial bones, reconstruction of broken or disordered bones, coating of metallic biomedical materials[3].
In this study, a biomimetic hydroxyapatite (BHA) powder was synthesized using simulated body fluids (SBF) including of $(NH_4)_2HPO_4$ and $Ca(NO_3)_2.4H_2O$. Moreover, chemically synthesized HA powders (CHA) with 1,67 Ca/P ratio and commercially supplied HA powders (KHA) were used to compare the properties of synthesized BHA powder. Characterisation of synthesized powders were performed using Fourier Transfom Infrared (FT-IR), X Ray Diffraction (XRD), particle sizer (Zeta-Sizer), Scanning Electron Microscopy (SEM), Thermo Gravimetric Differential Thermal Analysis (TG-DTA) techniques. Spark Plasma Sintering (SPS) method was used to investigate densification behavior of the HA powders.
XRD study of BHA powders showed that high purity HA without any secondary phase presence were succesfully obtained. On the other hand XRD analysis of CHA and KHA powders resulted in both hydroxyapatite and monetite phases. The structural characterisation of BHA powders also showed that crystalline strucure with rod-shaped having particle size distribution of 30-400 nm. Spark plasma sintering of BHA powders resulted in %2-4 porosity and the maximum microhardness value was 703 HV.
BHA powders including high purity HA without any secondary phase presence were succesfully obtained. CHA and KHA powders resulted in both hydroxyapatite and monetite phases. BHA powders showed the crystalline structure with rod-shaped having particle size distribution of 30-400 nm. Spark plasma sintered BHA powders resulted in %2-4 porosity and the maximum microhardness value was 703 HV.

Keywords: Hydroxyapatite Powder, Chemical and Biomimetic Techniques, Sintering Behaviour.
Acknowledgments: This study was supported by the projects of Yildiz Technical University, Coordination Unit of Scientific Research Projects (2011-07-02-YULAP01, 29-07-02-06 YTU-BAP).

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➢ **POSTER PRESENTATION**

Image Development With 3 Different Blocking Solution in Western Blotting Technique

Serife Karakaya*, Sedat Kacar, Ezgi Bektur, Varol Sahinturk

Eskisehir Osmangazi University, Faculty of Medicine, Department of Histology and Embryology, Eskisehir, Turkey.

Corresponding author e-mail: serifekarakaya@ogu.edu.tr

Abstract

Blocking solutions in western blotting are very crucial to prevent nonspecific binding of antibodies over the membrane immediately before the antibody application. There are two well-known blocking agents for western blotting: BSA and milk powder. As a third one, we tried the protein powder. By this purpose, herein, we aimed at comparing the image development qualities of these three blocking agent.

In the experiment for comparing the effects of different blocking solutions to western blot imaging, frozen healthy rat liver tissue were used. The tissue samples were cut into small pieces, homogenized with beads and centrifuged at 14,000 g for 10 min at 4 °C. The protein concentration of the supernatant was measured. 30 µg protein was added into each well of electrophoresis gel. After the electrophoresis, the samples were transferred to the PVDF membranes, and membranes were separately blocked with three blocking buffers for 1 hour at room temperature. The membranes were then incubated with appropriate β-actin primer antibody overnight at 4 °C. After washing steps and HRP conjugated secondary antibody applications, membrane images were developed by chemiluminescent substrate addition.

As a result of our experiment, after western blotting stage, we detected no proteins in 10% SDS gels following Coomassie brillant blue staining. We also confirmed by Ponceau S that all proteins were transferred to the membrane. We could not develop any images when we used milk and protein powder. However, with BSA, we have acquired a reasonable image after chemiluminescent substrate was applied.

In conclusion, the best image was observed in the membrane blocked with BSA. The milk and protein powder can hinder primary or secondary antibody binding in anyway. Considering that it is very tiring and time consuming method, choosing appropriate blocking solution for western blotting is very important.

Keywords: Western blotting, BSA, milk powder, protein powder, image development.

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➢ **POSTER PRESENTATION**

The Physiological and Biochemical Effects of 24-Epibrassinolid on *Ctenathe setosa* (Rosc.) Eichler under Drought Stress

Hülya Torun[1*], Faik Ahmet Ayaz[2]

[*1]Faculty of Agricultural and Natural Sciences, Düzce University, Düzce, Turkey
[2]Faculty of Science, Karadeniz Technical University, Trabzon, Turkey

Corresponding author e-mail: hulyatorun@duzce.edu.tr

Abstract

Drought cause a reduction in plant growth and productivity by altering the endogenous levels of plant hormones/plant growth regulators and signaling pathways. Molecular and physiological studies have determined that plant hormones and abiotic stresses have interactive effects on a number of basic biochemical and physiological processes, leading to reduced plant growth and development. Brassinosteroids (BRs), known as plant growth regulator, play crucial roles in plant development and also promote tolerance to a range of abiotic stresses.

Leaf rolling is an adaptation mechanism to the abiotic stress conditions. *Ctenanthe setosa* (Rosc.) Eichler is an ornamental plant and leaves of this plant rolls during drought because of tolerance to the long term drought periods. To investigate this, we determined the effect of 24-epibrassinolide (EBL), the most widely used brassinosteroid in agriculture, on photosynthetic pigment, malondialdehyde and total lipid contents, polyphenol oxidase (PPO) activity, antioxidant enzymes activities including superoxide dismutase (SOD) and peroxidase (POX) in *C. setosa* under drought stress. EBL was applied in two different concentrations (0.01 and 0.05 ppm) to the drought-stressed plants by foliar spray. The positive impact of EBL on drought tolerance to *C. setosa* was evident in all stressed plants. Total chlorophyll content, SOD and PPO activities decreased and POX activity and MDA, as a indicator of lipid peroxidation, contents increased in stressed plants; however treatment with EBLR increased chlorophyll content, SOD and PPO activities in *C. setosa*. The positive effect of EBL was significantly greater with 0.05 ppm application in plant stress responses.

Consequently, these results together indicate that EBL exerts anti-stress effects with the application of 0.05 ppm concentration and activates antioxidative defense system and consequently, enhances tolerance against drought stress and delayed leaf rolling.

Keywords: 24-Epibrassinolide, Antioxidative defense system, *Ctenanthe setosa*, Drought stress.

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➢ **POSTER PRESENTATION**

Preliminary Study on Antiadhesive Effect of Microbial Biosurfactants

Gül Keklik[1*], Başak Kurin[2] , Kübra Erkan Türkmen[2]

[*1]Hacettepe University, Faculty of Education, Department of Biology Education, Ankara, Turkey.
[2]Hacettepe University, Faculty of Science, Department of Biology, Ankara, Turkey.

Corresponding author e-mail: gul.keklik11@hacettepe.edu.tr

Abstract

Biosurfactants are produced by microorganisms. Biosurfactants have an extensive area of usage in industry. It has been remarkable properties such as biodegradation, low toxic effect, reusability. Also, biosurfactants have investigated in order to detect their antifungal, antibacterial and antialgal effect. Microorganisms have different pathogenicity factor like biofilm formation. Biofilm formation is microorganism and surface association that is depending on extracellular substance matrix. The first step of biofilm is adhesion to surface. Most of the study focuses on prevention of adhesion. In this study, we aimed to investigate the connection between biosurfactant and adhesion mechanism. All biosurfactant-producing bacteria were isolated from industrial area that was polluted by industrial wastes. Biosurfactant production was determined by surface tension and emulsification assays. Then, biosurfactant extraction was carried out using methods which was conducted by Amaral et. al. Adhesion studies were performed on *Candida sp.* with microplate titer assay. As a result, Our biosurfactants were affected adhesion with a different percentage. Also biofilm formation decreased substantially. In conclusion, we suggested that biosurfactant may used as a potential antiadhesion and antibiofilm agent.

Keywords: Biosurfactant, Biofilm, Surface Tension.

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➢ **POSTER PRESENTATION**

Luteal Hücre Kokültürünün Adacık Hücrelerinin Canlılığı ile Total Oksidan ve Antioksidan Kapasiteye Etkileri

A.A. Yiğit*, G. Böyük

Kırıkkale Üniversitesi, Veteriner Fakültesi, Fizyoloji Ana Bilim Dalı, Kırıkkale, Türkiye.

Sorumlu yazar e-mail: aarzuyigit@kku.edu.tr

Özet

Adacık nakli, diyabet tedavisindeki umutlardan biri olmuştur. Bu amaçla pankreastan adacık hücrelerinin izolasyonu için metotlar geliştirilmiştir. İzole edilen hücrelerin optimum canlılığını sağlamak, transplantasyonun başarısını artıran nedenlerdendir. Organizmada reaktif oksijen türleri (ROS) ile antioksidan sistemlerin arasındaki dengenin bozulmasından kaynaklanan oksidatif stres, DNA, lipit ve proteinlerde değişiklikler oluşturur. Bu olay da apoptotik hücre ölümünü artırır, hücre gelişimini ve salgılarını bozar. Buradan yola çıkarak, yapılan araştırmada, luteal hücrelerin adacık hücrelerinin canlılığına olan etkileri ile kokültürün oksidan ya da antioksidan savunma sistemine etkisinin olup olmadığı incelendi.

Bu amaçla, 25-30 günlük ratlardan luteal hücreler ve 3 aylık ratlardan da adacık hücreleri izole edilerek, hem ayrı ayrı hem de birlikte kültüre edildi. İnkubasyonunun 0. 48. ve 96. saatlerinde yapılan MTT testleri ile adacık hücrelerinin canlılığı ve aynı saatlerde alınan medium örneklerinde total oksidan kapasite (TAK) ve total antioksidan kapasite (TAK) düzeyleri ölçüldü.

Sonuç olarak, hem 48. hem de 96. saatlerde kokültür gruplarında adacık hücrelerin canlılığının arttığı görüldü. Aynı saatlerde total oksidan kapasitede luteal hücre, adacık hücre ya da kokültür medyumları arasında herhangi bir fark görülmedi. Total antioksidan kapasitenin ise 48. saatte adacık hücresinde luteal hücreye göre daha yüksek olduğu, ancak 96. saatte sürenin uzamasıyla böyle bir farklılığın kalmadığı gözlemlendi. Ayrıca, kokültürdeki TAK düzeyinin de 96. saatte 48. saate göre azaldığı belirlendi.

Bu sonuçlar değerlendirildiğinde, adacık hücreleri canlılığı üzerinde olumlu etkileri olduğu bildirilen luteal hücre kokültür çalışmasında luteal hücrelerin bu olumlu etkilerinin antioksidan savunma sistemini harekete geçirmesinden kaynaklanmadığı sonucuna varıldı.

Anahtar kelimeler. Adacık hücre, luteal hücre, total oksidan, total antioksidan.

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➢ **POSTER PRESENTATION**

Determination of The Relationship Between Biofilm Formation and Chromium Resistance

Başak Kurin[1*], Kübra Erkan Türkmen[1] , Gül Keklik[2], Nilüfer Aksöz[1]

[1]Hacettepe University, Faculty of Science, Department of Biology, Ankara, Turkey.
[2]Hacettepe University, Faculty of Education, Department of Biology Education, Ankara, Turkey.

Corresponding author e-mail: basak_kurin@hotmail.com

Abstract

Metals are the natural components of the earth. These metals are essential components for living organisms but have proved to be toxic at high concentrations for micro and macro-organisms. However, a group of metals classified as heavy metals (lead, cadmium and chromium) are toxic even at low concentrations for living things. Hexavalent Chromium (Cr(VI)) is a product or byproduct of industrial use (e.g., production from chromates from chromite ore, welding on metals that include chromium and use of pigment, ink and spray paintings). Cr(VI) is a carcinogenic agent, associated with lung, sinus and nasal cancer. Besides It's carcinogenic effects it also affects respiratory tract, skin and eye, leading to asthma, permanent eye damage and serious rash. Various methods are used for the removal of heavy metals. Biological-based methods are widely used among these. In this context, we aimed to investigate the isolation of chromium-resistant bacteria and the production of biofilm in presence chromium.
Chromium resistant Pseudomonas sp. species were isolated from soil taken from industrial regions. All colonies were inoculated on Cetrimide agar that is a selective medium for Pseudomonas species. For detection of chromium resistance, isolates were incubated Luria Bertani(LB) medium with 20-4000 µg / l chromium. Biofilm assay was carried out by microplate titer assay. As a result of study, we determined 3 different isolates which have a high resistance against to chromium. Biofilm formation increased in presence high chromium. In conclusion, we suggested that our isolates have chromium resistance with increasing biofilm formation.

Keywords: Chromium resistance, Biofilm,*Pseudomonas sp.*

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➢ **POSTER PRESENTATION**

Detection of β-thalassemia FSC 8 Frame Shift by Using Piezoelectric Genosensor

Umut Kökbaş*, Başak Günaştı, Kezban Kartlaşmış, Ebru Dündar Yenilmez, Abdullah Tuli , Levent Kayrın

Cukurova University, Medical Faculty, Medical Biochemistry Department, Adana, Turkey.

Corresponding author e-mail: umutkokbas@gmail.com

Abstract

β-Thalassemia is one of the most monogenic autosomal recessive disorder characterized by defective production of the β-chain of hemoglobin. Definition of the β-globin genotype is necessary for genetic counselling in the carriers, and for predicting prognosis and management options in the patients with thalassemia. DNA-based prenatal diagnosis of β-thalassemias routinely relies on polymerase chain reaction (PCR) and gel electrophoresis. The aim of this study is to develop a new procedure, a DNA-based piezoelectric biosensor, for the detection of β-thalassemia Fsc 8 frame shift cell free DNA from whole blood. Cell free DNA taken from patients whole blood. Bioactive layer was constituted by binding 2-Hidroxymetacrilate Metacriloamidoscystein (HEMA-MAC) nanoploymers on the electrode's surface. Single oligonucleotide probes specific for FSC 8 frame shift of β-thalassemia were attached to the nanopolymer. The measurements were executed by piezoelectric resonance frequency which is caused by binding of the cell free DNA in media with single oligonucleotide probe on the electrode surface. The results were confirmed by the conventional molecular method as ARMS. Findings: The piezoelectric resonance frequencies obtained by hybridization of the cell free fetal DNA on bioactive layer were found 218±12, 275±6, and 324±9 Hz for the samples of normal β-globin, heterozygote, and homozygote of FSC 8 frame shift, respectively. The developed biosensor serves as a specific result to FSC 8 frame shift. It could accurately discriminate between normal and FSC 8 frame shift samples. Because of low costs, fast results, specificity and high detection/information effectiveness as compared with conventional prenatal diagnosis methods, we can be offered this techique as an alternative to conventional molecular methods.

Keywords: Biosensor, Thalassemia, Frame shift.

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➢ **POSTER PRESENTATION**

Isolation and Characterization of Compounds From *Bjerkandera adusta* with Their Cytotoxicity Against MCF-7 Cell Lines

Selçuk Küçükaydin[1*], Mehmet Emin Duru[1], Meltem Taş[1], Mehmet Öztürk[1], M. Iqbal Choudhary[2]

[1]Muğla Sıtkı Koçman University, Faculty of Science, Department of Chemistry, Muğla, Turkey.
[2]University of Karachi, HE.J Research Institute of Chemistry, ICCBS, Karachi 75270, Pakistan

Corresponding author e-mail: selcukkucukaydin@gmail.com

Abstract

Mushrooms are widely consumed as food in many countries for centuries, and it is one of the essential foods due to its unique tastes, aromas and nutritional properties. Nowadays, mushrooms are used in medicine, pharmacy, food, and fermentation fields. Mushrooms have attracted the attention of researchers in recent years due to their immunomodulatory antitumor, antimicrobial, antimutagenic, antihypertensive, anti-inflammatory, antiallergic activities. The aim of this study was to isolate and characterization of compounds using with chromatographic and spectroscopic techniques from *Bjerkandera adusta* which is growing naturally in Turkey and determined their cytotoxic activity against Breast (MCF-7). Cancer Cell-line.

In this study, *Bjerkandera adusta* extracted with hexane and methanol respectively and totaly 9 compounds consisting of 4 steroids, 1 ceramide, 2 phenolic, 1 dicarboxylic acid and 1 disaccharide were isolated. Structure elucidation of the isolated pure compounds was done by using 1D, 2D NMR techniques, EI-MS, and FT-IR spectral methods. Compounds which were isolated in this study were; Ergosterol D, Ergosterol Peroxide, N-[3-hydroxy, 9-methyl-1-glucopyranosyl, tetradeca-4,9-dienyl]-2-hydroxy nonadecenamide, Ergosta -7,9,22 trien- 3-O-β-D-glucoside, α-D-glucopyranosyl, α-D-glucopyranoside, Ergosta-22-en-3β-ol, fumaric acid, Betulinan A and Betulinan B. Cytotoxic activities of the pure compounds against Breast (MCF-7) cell lines; Ergosterol D (IC50: 17,15±0,53 µg/mL), Betulinan A (IC50: 17,36±0,40 µg/mL) and Betulinan B (IC50: 27,60±0,90 µg/mL) possessed the highest cytotoxicity.

Keywords: *Bjerkandera adusta*, MCF-7, Steroids, Macrofungi, Tree mushrooms

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➢ **POSTER PRESENTATION**

Fenoksi-imin İçeren Sülfonilhidrazon Ligandının ve Ti(IV) Komplekslerinin Sentezi, Karakterizasyonu ve Etilen Polimerizasyonunda Katalitik Aktivitesinin İncelenmesi

Fatma Hamurcu[1*], Ümmühan Özdemir Özmen[2], Ozan Sanlı Şentürk[3]

[*1] Bartın Üniversitesi, Fen Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Bartın
[2] Gazi Üniversitesi, Fen Fakültesi, Kimya Bölümü, Ankara
[3] İstanbul Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, İstanbul

Sorumlu yazar e-mail: fhamurcu@bartin.edu.tr

Özet

Son yıllarda Schiff bazlarının Ti, Zr, Hf kompleksleri, ticari açıdan önem taşıyan polimerlerin elde edilmesinde hem homojen hem de heterojen tepkimelerde yüksek katalitik aktivite gösterdi. Bu komplekslerin katalitik aktiviteleri, içerdikleri ligandların cinsine, elektronik ve sterik özelliklerine, koordinasyon mevkilerine ve metal iyonuna göre bir takım farklılıklar sergiledi. 1990'lardan bu yana Mitsui Grubu, olefin polimerizasyonu için fenoksi-imin (FI) veya pirolid-imin (PI) tabanlı ligandlardan oluşan iyi tanımlanmış geçiş metal komplekslerini inceledi ve bu kompleksler metilaluminaoksan (MAO) gibi kokatalizörlerle aktive edilerek etilenin polimerizasyonunda son derece yüksek katalitik aktivite gösterdi.

Bu çalışmada öncelikle başlangıç ürünü olan bütan sülfonik asit hidrazit ve bu bileşikten yeni bir sülfonilhidrazon olan 2-hidroksi-5-klorasetofenonbütansülfonilhidrazon (H_2L), bu ligandın iki aşamalı deprotonasyonu sonucunda sodyum tuzları NaHL ve Na_2L sentezlendi. Ligandın IVB grubu geçiş metal tuzu $TiCl_4$ ile tepkimelerinden $TiHLCl_3$ ve $TiLCl_2$ yapısında yeni bileşikler elde edildi. Bileşiklerin yapıları ^{1}H-^{13}C-NMR, FT-IR gibi spektroskopik yöntemlerle aydınlatıldı. Bu bileşiklerin moleküler yapıları ^{1}H-NMR, ^{13}C-NMR, FT-IR, MALDI-TOFMS gibi spektroskopik yöntemlerle aydınlatıldı ve komlplekslerin yapıları iletkenlik ölçüm yöntemleri ile desteklendi. Son olarak komplekslerin etilen polimerizasyonu üzerindeki katalitik aktiviteleri PETKİM polietilen üretimi pilot tesisleri ve araştırma laboratuvarlarında incelendi. Elde edilen sonuçlar ticari metalosen katalizörlerle karşılaştırıldı ve yeni FI katalizörleri olan bu komplekslerin etilen polimerizasyonu için katalitik aktivite gösterdiği belirlendi (Tablo1).

Tablo 1. FI katalizörlerinin etilen polimerizasyonundaki katalitik aktiviteleri

Bileşikler	**Katalizör (mol)**	**MAO(mol)**	**Aktivite**
$Ti(HL^1)Cl_3$	$1x10^{-6}$	$5x10^{-3}$	188
$Ti(L^1)Cl_2$	$1x10^{-6}$	$5x10^{-3}$	155
$TiCp_2Cl_2$[b]	$1x10^{-6}$	$5x10^{-3}$	32

Anahtar Kelimeler: Sülfonilhidrazon, Post-metalosen katalizör, fenoksi-imin katalizörleri, etilen polimerizasyonu.

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➢ **POSTER PRESENTATION**

Molecular Docking and MCET Method Studies of Hydroxydiarylamide Compounds

Burçin Türkmenoğlu*, Dilek Şeyma Kızılcan, Yahya Güzel

Erciyes University, Faculty of Science, Department of Chemistry, Melikgazi, Kayseri, Turkey

Corresponding author e-mail: bkilic@erciyes.edu.tr

Abstract

In this study, the 2-hydroxydiarylamide derivatives (Sunghyun et. al., 2013) as TMPRSS4 inhibitor against any serine protease involved in cancer were investigated (Lee et. al., 2013). The biological activity of the compounds was calculated using the Molecular Conformer Electron Topological (MCET) method, we developed for the ligand-based QSAR approach. The Klopman's index we present as a new local reactive descriptor in QSAR studies can only be used within this method. A more realistic mechanism can be provided by a well-defined local reactive descriptor with Klopman index, which includes the hard soft acid base (HSAB) property, to demonstrate the interaction of molecules with the receptor in drug design. The activities of molecules with multiple conformers have been studied in the 4D-QSAR calculation using Pha, AG and APS groups, which are descriptors based on the Klopman index of the biological structure. By using all these parameters, the best q^2 and r^2 results were calculated as 0.949 and 0.939 respectively.

In addition, binding affinities and modes of interaction between the receptor-ligand were investigated by molecular docking. Using FlexX software, the results obtained with molecular docking based on serine protease enzyme were found to be consistent with the results in MCET.

Keywords: Molecular docking, QSAR, MCET, Hydroxydiarylamide.

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➢ **POSTER PRESENTATION**

Broyler Rasyonlarına Sarımsak (*Allium sativum*) ve Çörek Otu *(Nigella sativa)* İlavesinin Performans Üzerine Etkisi

İlkay Aydoğan[1*], Ebru Yıldırım[2], Mehmet Basalan[1]

[*1]Kırıkkale Üniversitesi, Veteriner Fakültesi, Hayvan Besleme ve Beslenme Hastalıkları, Kırıkkale, Türkiye
[*2]Kırıkkale Üniversitesi, Veteriner Fakültesi, Farmakoloji ve Toksikoloji, Kırıkkale, Türkiye

Sorumlu yazar e-mail:ilkayaydogan@kku.edu.tr

Özet

Bu araştırma, broyler rasyonlarına katılan Sarımsak (S) ile Çörek otu (Ç)' nun canlı ağırlık, canlı ağırlık artışı, yem tüketimi, yemden yararlanma ve iç organ ağırlıkları üzerine etkisini incelemek amacıyla yapılmıştır. Araştırmada hayvan materyali olarak toplam 200 adet günlük erkek broyler civciv (Ross 308) kullanılmıştır. Hayvanlar her birinde 10 hayvan bulunan, 5 alt gruptan oluşan 4 deneme grubuna ayrılmıştır. Deneme 35 gün sürmüştür. Kontrol grubu (K) rasyonuna herhangi bir ilave yapılmamıştır. Deneme grubu rasyonlarına sırasıyla 5gr/kg sarımsak (S); 5gr/kg Çörek Otu (Ç) ve 5gr/kg sarımsak + 5gr/kg Çörek Otu (S+Ç) kombine olarak katılmıştır. Denemenin sonunda, gruplar arasında canlı ağırlık, yem tüketimi, yemden yararlanma ve iç organ ağırlıkları bakımından istatistiksel bir fark tespit edilmemiştir (P>0.05).

Anahtar Kelimeler: Broyler, Performans, Çörek Otu, Sarımsak.

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➢ **POSTER PRESENTATION**

Antioxidant peptide Loaded poly(lactic-co-glycolic acid) Nanoparticles: Molecular Design, Characterization and Molecular Docking Study

Serda Kecel-Gündüz[1*], Yağmur Kökcü[2], Bilge Bıçak[1], Yasemin Budama-Kılınç[3], Rabia Çakır-Koç[3] and Ayşen E. Özel[1]

[*1]Istanbul University, Faculty of Science, Physics Department, Tr-34134 Vezneciler, Istanbul, Turkey
[2]Graduate School of Engineering and Sciences, Istanbul University, TR-34452 Beyazıt, Istanbul, Turkey.
[3] Yildiz Technical University, Department of Bioengineering, , Istanbul, Turkey

Corresponding author e-mail: skecel@istanbul.edu.tr

Abstract

Glycyl-Histidyl-Lysine (GHK), which was discovered in 1973 in human albumin, has antioxidant, anti-inflammatory, and wound healing properties.In this study, poly(lactic-co-glycolic acid) (PLGA) and GHK loaded PLGA nanoparticles were prepared by w/o/w method. The characterizations of the optimum nanoparticles were obtained with Zeta-Sizer and ATR spectroscopy methods. The optimum size of the GHK loaded PLGA nanoparticle was prepared with a 223 nm average particle size, -21 mV zeta potential, and a 0.074 polydispersity index. To understand the solvent effect on conformations of the peptide molecule used as a component of a drug were examined by molecular dynamics (MD) by using the GROMACS program. Additionally, molecular docking simulation was performed by using the Maestro software program which identify the kind of interaction between the drug and proteins.

Keywords: GHK, PLGA, Molecular Docking, Molecular Dynamic.

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➢ **POSTER PRESENTATION**

Migitation Effect of Resveratrol on Subchronic Glyphosate-Based Herbicide Induced Cardiotoxicity in Rats

Ruhi Türkmen[1*], Mustafa Kabu[2]

[1]Department of Pharmacology and Toxicology, Faculty of Veterinary Medicine, Afyon Kocatepe University, Afyonkarahisar-Turkey
[2]Department of Internal Medicine, Faculty of Veterinary Medicine, Afyon Kocatepe University, Afyonkarahisar-Turkey

ruhiturkmen@aku.edu.tr

Abstract

Glyphosate is the main active ingredient formulated in different commercially available(1-41%w/v) products of glyphosate-based herbicide (GBH). It is nonselective herbicide broadly used herbicide worldwide since the introduction of glyphosate-resistant (GR) plants, but its accidental, occupational, or intentional exposure in humans and animals is known to cause toxic effects. Oxidative stress is reported as an underlined mechanism of glyphosate induced toxicity in organisms. The aim of the present study is to investigate the effect of resveratrol against GBH induced cardiotoxicity in rats. Twenty-eight male Wistar rats were divided into four equal groups of seven each. Group I (control group) was given normal rodent diet and tap water for eight weeks. The agent(s) administered are as follows: Group II (RES), Resveratrol (20 mg/kg), group III (GBH) (375 mg/kg, 10 % of the LD50), group IV (RES+GBH), RES (20 mg/kg) and GBH (375 mg/kg). The treatment regimens were administered orally by gavage once daily for eight weeks. Serum cardiac damage biomarker (Troponin I, creatine kinase-MB), oxidative and antioxidant status (MDA, GSH, SOD and CAT) in heart homogenate were measured. Increased levels of troponin I, creatine kinase-MB in serum and MDA levels in heart tissue while reduced glutathione levels in heart tissue. In contrast, treatment with RES reversed GBH-induced oxidative stress and cardiac parameters. Consequently, our results demonstrate that RES treatment has mitigation effect on cardiotoxicity by subchronic glyphosate-based herbicide in rats.

Keywords: 1. Cardiotoxicity 2. Resveratrol 3. Glyphosate-based herbicide.

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➢ **POSTER PRESENTATION**

Emulsion Polymerization of Vinyl Acetate by Using Non-Ionic Urethane Based Polymeric Surfactant

Özlem Yilmaz[1*], Bahire Filiz Senkal[1], H. Cüneyt Ünlü[1], Ayfer Sarac[2]

[1]Istanbul Technical University, Department of Chemistry, 34469 Maslak, Istanbul, Turkey
[2]Yildiz Technical University, Department of Chemistry, 34220 Esenler, Istanbul, Turkey

Corresponding author e-mail: ozlmyiilmaz@gmail.com

Abstract

Emulsion polymerization has beneficial properties, which are producing high molecular weight polymers, being negligible volatile organic compound. Moreover, its reaction medium is generally water and ensures a naturally safe process. The reason for this is that emulsion polymerization is widely used in various sectors comprising papers, textiles, adhesives, paints, construction materials, binders for nonwoven fabrics, cosmetics and drug delivery systems [1]. Emulsion polymerization of vinyl acetate (VAc) is generally used for architectural coating, adhesives, binder and another application. Useful combinations of durability and broad existence at low cost lead to use in this application. Most commonly used surfactants are nonionic and anionic or mixture of them in vinyl acetate emulsion polymerization because enhanced compliance with negatively charged polymer particles compared to other types of surfactants.

In this study, urethane based polymeric surfactant was synthesized and chemical structure investigation was carried out by FTIR and H-NMR. Determination of critical micel concentration (CMC) of surfactant was obtained by surface tension method, and also molecular weight was found by GPC. Emulsion polymerization of vinyl acetate was performed by using different surfactant concentrations and depending on time at 70±2°C.

Keywords: Surfactant, emulsion polymerization , vinyl acetate, urethane based surfactant

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➢ **POSTER PRESENTATION**

New Synthesis Route for the Ring-Fused and Amino-Functionalized Benzimidazole

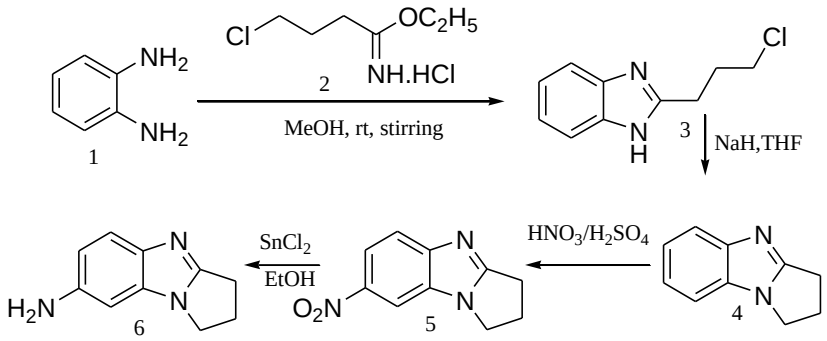
Mustafa Kemal Gümüş[1*], Bahittin Kahveci[2]

[*1]Science-Technology Research and Application Center, Artvin Çoruh University, Artvin 08000, Turkey
[2] Faculty of Health Sciences, Department of Nutrition and Dietetics, Karadeniz Technical University, Trabzon, Turkey

Corresponding author e-mail: mkgumus@artvin.edu.tr

Abstract

Benzimidazoles are a privileged moiety which is present in many bioactive molecules including natural products. Particularly, ring-fused benzimidazole derivatives have been identified as important pharmacophores for anticancer activity.[1] Synthesis of this valuable scaffold mainly relies on a multistep reaction sequence.[2]
The synthesis of this important pharmacophore will be synthesized via following protocols and various reaction conditions will be evaluated to obtain the best yields.



Keywords: Benzimidazoles, ring-fused, pharmacophore, anticancer activity.

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➢ **POSTER PRESENTATION**

Chemical Compositions of *Melanogaster broomenaus* and Their Antioxidant Activities

Gülay Şavkinci, Meltem Taş*, Çiğdem Kuş, Mehmet Öztürk, Selçuk Küçükaydin, Mehmet Emin Duru

Mugla Sitki Kocman University, Faculty of Science, Department of Chemistry, Mugla, Turkey.

Corresponding author e-mail: tasmeltem@hotmail.com

Abstract

Truffles are popular and valuable food sources in all over the world. The popularity of truffles is believed to be due to their nutritional value, delicious taste and aroma. In this study, the chemical components of Melanogaster broomeanus were isolated by chromatographic methods with antioxidant activity guided. Antioxidant activity tests performed by two complementary tests systems DPPH radical scavenging and ABTS cation radical scavenging assay. Isolation of bioactive compounds from methanol, chloroform and water extracts, respectively, with antioxidant activity guided. Purified compounds were elucidated chemical structures using by 1H-NMR, 13C-NMR, 2D-NMR, FTIR and MS techniques. Accordingly, the chemical structures of 10 compounds from M. broomeanus was fully elucidated. These compounds are namely: Ergosterol peroxide, Ergosterol, Kojibioz, 5α-6α epoxy ergosta-7,22-dien-3β-ol, Trametenolic acid, ergosta- 5,22-dien 3β-ol, fumaric acid, mannitol, Trehalose and Maleic acid.

According to DPPH radical scavenging and ABTS cation radical scavenging assay Trametenolic acid showed highest antioxidant activity IC50= 90.24±0.87 µg/ml and 75.41±0.10 µg/ml respectively.

Keywords: *Melanogaster broomeanus*,truffle, antioxidant activity.

This study was financed by The Scientific and Technological Research Council of Turkey (TUBITAK-114Z644).

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➢ **POSTER PRESENTATION**

Highly Selective Voltammetric Determination of Hg^{2+} in Aqueous Solution by Using Naphthoquinone-Aniline Ensemble

Zeliha Mermer*, Seçil Kırlangıç ,Yusuf Alçay,Özgür Yavuz and İsmail Yılmaz

İstanbul Technical University, Faculty of Science and Letters, Department of Chemistry, İstanbul, Turkey.

Corresponding author e-mail: zelihakanat@gmail.com

Abstract

Mercury ion (Hg^{2+}) is a common heavy-metal pollutant in the environment, which causes serious ill effects on the brain, heart, lungs, kidneys, central nervous system, and immune system in humans even at ppm levels of mercury accumulation. Therefore, developing simple and advanced methods for highly sensitive and selective detection of Hg^{2+} is of great significance for both the environment and human health. Many electrochemical techniques are used for Hg(II) determination, such as potentiometry, chronopotentiometry. The biological activity of the quinoid compounds is reportedly due to the redox chemistry of the quinone system It is well-known that many quinones exhibit two successive one-electron reduction processes in dry organic aprotic solvent. The first chemically reversible process at E_1 yields the monoanion radical (semiquinone) product and the second generally at least quasi-reversible process at more negative potential, E_2, produces the dianion species at customary scan speeds. The potentials of these reductions depend on the polarity of solvents, the nature of the supporting electrolyte and the presence of acidic additives, reflecting respectively nonspecific solvation energies, ion-pairing, and protonation equilibria.

In this study, the routine electrochemical behavior of naphthoquinone-Aniline Ensemble was investigated by cyclic voltammetry in the presence of 0.2 M tetra-*n*-butylammonium perchlorate (*n*-Bu_4NClO_4) as a supporting electrolyte in DMSO/water. Then, selective Hg^{2+} ion determination in micromolar level over other common metal ions was achieved using new naphthoquinone-Aniline sensor by voltammetric technique in DMSO:Water (1:1 v/v at pH 8 buffer solution).

Keywords: Mercury, Naphthoquionone, Chemosensor, Voltammetry.

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➢ **POSTER PRESENTATION**

Quality-By-Design Model in Optimization of Biodegradable Polymeric Nanoparticles for Cancer Therapy

Zahra Eskandari [1,2], Fatma Kazdal [3], Fatemeh Bahadori[4], Nabi Ebrahimi[*5]

[1] Department of Chemistry, Biochemistry Division, Faculty of Sciences and Arts, Yildiz Technical University, Istanbul, Turkey
[2] IBSB, Department of Bioengineering, Marmara University, Istanbul, Turkey
[3] Department of Medical Biochemistry, Faculty of Medicine, BezmialemVakif University, Istanbul, Turkey
[4] Department of Pharmaceutical Biotechnology, Faculty of Pharmacy, BezmialemVakif University, Istanbul, Turkey
[5] Department of Quantitative Methods, Faculty of Business Administration, Marmara University, Istanbul, Turkey

Corresponding author e-mail: nabi.ebrahimi83@gmail.com

Abstract

Applications of Nano Drug Delivery Systems (NDDS) is growing fast. Drug targeting, reducing toxicity, increasing biocompatibility and stability of drug both in formulation and body have been mentioned as advantages of NDDS. All of these features are dependent on the physicochemical properties of selected NDDS. Polymers are widely used as biomaterials due to their favourable properties. Poly (D,L-lactic-co-glycolic acid) (PLGA) is a biodegradable and biocompatible polymer approved by FDA for a clinical use.
In practice, proteins adsorbed on the surface of the nanoparticle promote opsonization, leading to aggregation and rapid clearance from the bloodstream. Identification by immune system is another challenges to be overcome.
One of the utilized strategies to increase stability is surface functionalization with poly (ethylene glycol). PEG can be grafted, conjugated, or absorbed to the surface of nanoparticles to form the corona, which provides steric stabilization and confers "stealth" properties. While there are numerous studies made on PLGA-PEG NDDS, the optimized ratio of absorbed PEG to PLGA is not defined yet.
The purpose of present study was to optimize a NDDS using PLGA-PEG by application of quality by design (QbD) approach. Based on risk assessment, effect of three variables consisted of PLGA conc., PEG conc. and MW of PLGA were studied. Central composite design (CCD) was implemented for design of experimentation with 26 runs. The particle size, polydispersity index and zeta potential of the PLGA-PEG NDDS measured by Dynamic Light Scattering were optimized. Based on QbD approach, design space (DS) was successfully optimized with a combination of the selected variables. Validation of the model was performed with three representative formulations from the DS. As a result: 43.79 mg of PLGA with high MW was incorporated with 12.61 mg of PEG. The results successfully led to the preparation of the most stable nanoparticle.

Keywords: Central Composite Design, Drug Delivery System, PLGA-PEG, Polymeric Nanoparticles, Quality by Design, Targeted Cancer Therapy

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➢ **POSTER PRESENTATION**

The effects of melatonin on possible damage will be occur on adipocytokines and liver tissue with the coadministration of fructose and bisphenol a (BPA)

Neslihan COŞKUN AKÇAY[1*], Suna ÖMEROĞLU[2], Mustafa KAVUTÇU[3], Tuncay Veysel PEKER[4], İsmail TÜRKOĞLU[2], Meriç Arda EŞMEKAYA[5], Saadet Özen Akarca DİZAKAR[2]

[1*] Hacettepe University, Faculty of Medicine, Department of Obstetrics and Gynecology, Ankara, TURKEY
[2]Gazi University, Faculty of Medicine, Department of Histology and Embryology, Ankara, TURKEY.
[3] Gazi University, Faculty of Medicine, Department of Medical Biochemistry, Ankara, TURKEY.
[4] Gazi University, Faculty of Medicine, Department of Anatomy, Ankara, TURKEY.
[5] Gazi University, Faculty of Medicine, Department of Biophysics, Ankara, TURKEY.

Corresponding author e-mail: neslihancoskun@hacettepe.edu.tr

Abstract

It is known that formation and progression of Metabolic Syndrome (MetS), the modern city life in the contributes to the sedentary lifestyle, increased obesity due to high calorie diet, physical inactivity, stress, genetic factors and environmental factors. MetS causes abnormal adipose tissue function, hepatic steatosis, heart disease, abnormal gastrointestinal activity, systemic inflammation, the release of pancreatic hormones, the activity of gastric hormones, chronic complications of diabetes which affects many physiological and biochemical processes, such as male and female reproductive function disorders. Studies have shown that BPA, which is an environmental endocrine disruptor, and fructose, which causes liver steatosis that frequently encounter the daily diet, contributes to the formation of MetS by causing increased free radical formation, glucose autooxidation, protein glycation and alteration of antioxidant defense systems. For these purpose, fourty-two pubertal male Sprague Dawley rats were divided equally into seven groups. Groups are designed; Group 1:(n=6) Control, Group 2: (n=6) Fructose Group, Group 3: (n=6) BPA Group, Group 4: (n=6) Fructose+BPA Group, Group 5: (n=6) Fructose+Melatonin Group, Group 6: (n=6) BPA+Melatonin Group, Group 7: (n=6) Fructose+BPA+Melatonin. At the end of the experimental period, received the blood samples and liver tissue, in light of these information and consistent with the literature. We investigated any variations in the liver tissue and adipocytokines when exposed to BPA and Fructose and to determine the possible effects of melatonin exposure against the variations which may occur. We found that BPA, Fructose and the simultaneous application cause histologic damage on liver structures, effects biochemical parameters and indirectly affect the formation of the metabolic syndrome. Whereas melatonin, known to be a powerful antioxidant, application was found to be successful in preventing these variations.

Keywords: Bisphenol A, melatonin, metabolic syndrome, liver, adipocytokines.

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➢ **POSTER PRESENTATION**

Lobaria pulmonaria, Peltigera elisabethae ve Peltigera praetextata'nın Antioksidan Kapasitesinin Belirlenmesi

Seyhan Oran[1*], Saliha Sahin[2], Şule Öztürk[1]

[*1]Uludağ Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Bursa, Türkiye
[2]Uludağ Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Bursa, Türkiye

Sorumlu yazar e-mail: seyhana@uludag.edu.tr

Özet

Likenler, pek çoğu kendilerine özgü olan ve genellikle liken asitleri olarak adlandırılan çok sayıda sekonder metabolit üretmektedirler. Bu sekonder metabolitler arasında antioksidan etkiye sahip oldukları bilinen aromatik yapıdaki bileşikler de bulunmaktadır. Bu maddeler yapılarındaki fenolik gruplar nedeniyle toksik özellikteki serbest radikalleri süpürücü etkiye sahiptir. Bu çalışmada, yapraksı yapıdaki 3 liken türü *Lobaria pulmonaria, Peltigera elisabethae* ve *Peltigera praetextata*'nın antioksidan kapasiteleri belirlenmiştir. Liken örnekleri Bursa ilinden toplanmıştır. Teşhisleri yapılan liken örnekleri öğütülerek gerekli miktarda tartılmış ve ekstraksiyonları metanol kullanılarak, manyetik karıştırıcı yardımıyla yapılmıştır. Toplam fenol miktarı Folin-Ciocalteu yöntemi ile, antioksidan kapasite ise ABTS (2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid)) metodu kullanılarak belirlenmiştir. Toplam fenol değerleri gallik asit eşdeğerinde, antioksidan kapasite değerleri ise troloks eşdeğerinde hesaplanmıştır. Toplam fenol değerleri *L. pulmonaria*'da; 10,57; *P. elisabethae*'de; 3,25; *P. praetextata*'da; 7,93 mg gallik asit/g örnek bulunurken, antioksidan kapasite değerleri ise, *L. pulmonaria* için 4,86; *P. elisabethae* için 7,95; *P. praetextata* için 14,65 mg troloks / g örnek bulunmuştur. Yapılan ölçümler sonucunda 3 liken türü arasında en yüksek toplam fenol değeri *L. pulmonaria* ekstraktında, en yüksek antioksidan aktivite değeri ise, *P. praetextata* ekstraktında belirlenmiştir. Toplam fenol sonuçlarına göre sıralama *L. pulmonaria* > *P. praetextata* > *P. elisabethae* şeklinde iken, antioksidan aktivite sonuçlarına göre sıralama ise *P. praetextata* > *P. elisabethae* > *L. pulmonaria* şeklinde bulunmuştur. Liken ekstraktlarının toplam fenol ve antioksidan kapasite miktarları karşılaştırıldığında arada doğrusal bir etkileşim olmadığı görülmektedir. Bu durumun fenolik maddelerin sinerjistik ve / veya antagonistik etkileşimleri nedeniyle olduğu düşünülmektedir. Çalışılan 3 liken türünün de belli oranda antioksidan etkiye sahip oldukları ve doğal antioksidan kaynağı olarak kullanılabilecekleri düşünülmektedir.

Anahtar Kelimeler: Antioksidan aktivite, toplam fenol, liken.

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➢ **POSTER PRESENTATION**

Optical, Surface and Electrical Characterization of CdO Films Produced by Spray Pyrolysis

Olcay Gençyılmaz

Çankırı Karatekin University, Çerkeş Vocational School, Materials and Material Processing Technologies Department, Çankırı, Turkey

Corresponding author e-mail: ogencyilmaz@karatekin.edu.tr

Abstract

Cadmium oxide (CdO) films are one of the most important transparent conducting oxide semiconductors. CdO films are used in many applications such as solar cells, smart window, transparent electrode and gas sensor due to its convenient optical and electrical properties. In this work, CdO films were produced on glass substrate by spray pyrolysis technique. The optical, morphological and electrical properties of the films were investigated. The thickness, refractive index and extinction coefficient values were examined spectroscopic ellipsometry technique. The optical transmittance, absorbance and reflectance spectra were obtained by UV-vis spectrophotometer. The optical band gap values were calculated as 2.28 eV using the reflectance spectra by Kubelka-Munk theory. Surface morphology was studied by atomic force microscopy showed that CdO films have been a smooth surface and average roughness of 36.91 nm. Also, electrical resistivity values determined using four-probe set-up and quality factor of films was calculated by Haacke's figure of merite.

Keywords: CdO, Spray pyrolysis, Spectroscopic ellipsometry, Atomic force microscopy, Quality factor.

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➢ **POSTER PRESENTATION**

The Effects of Solvent-Stabilizer Combinations on Structural and Optical Properties of Al-Doped ZnO Thin Films Deposited by Sol-Gel Method

M. Sbeta[1*], N.E. Koksal[1,3], A. Yildiz[2]

[*1]Ankara Yıldırım Beyazıt University, Faculty of Engineering and Natural Sciences, Department of Electrical and Electronics Engineering, Ankara, Turkey.
[2]Ankara Yıldırım Beyazıt University, Faculty of Engineering and Natural Sciences, Department of Energy Systems Engineering, Ankara, Turkey.
[3]Niğde Ömer Halisdemir Üniversitesi, Faculty of Engineering, Electrical Electronic Engineering, Niğde, Turkey.

Corresponding author e-mail: sbita6@yahoo.com

Abstract

Al-doped ZnO thin films were deposited on glass substrates by spin coating technique. The films were deposited using different coating solutions prepared using six different binary combinations of two solvents (Ethanol and 2-Methoxyethanol) and three stabilizers (Monoethanolamine (MEA), Diethanolamine (DEA) and Triethanolamine (TEA)). The crystal structure, surface morphology and optical properties of the deposited films were investigated by XRD, AFM, and UV–VIS spectroscopy, respectively. The results showed that the crystal structure and surface morphology of films are strongly affected by the type of solvent-stabilizer combination, while comparable optical properties were observed for all films except for one films.

Keywords: Al-doped ZnO, crystal structure, surface roughness, transmittance

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➢ **POSTER PRESENTATION**

Synthesis of Pyrimidine Derivatives by Biginelli Reactions

Sevtap Çağlar Yavuz*, Emin Sarıpınar

Erciyes University, Faculty of Science, Department of Chemistry, Kayseri, Turkey

Corresponding author e-mail: scaglar@erciyes.edu.tr

Abstract

Pyrimidines and their derivatives are considered to be important for drugs and agricultural chemicals (Mohana et al., 2013). A large number of pyrimidine derivatives are reported to exhibit antitumor (Reddy and Sarma, 1993), anticancer (Sondhi et al., 2001) and antimicrobial activities (Karale et al., 2002). In the work, triple reaction of aromatic aldehyde and/or its derivatives, ethylcyanoacetate and 2-benzylidenehydrazinecarboximidamide derivatives was carried out In the present study, a series of new pyrimidine analogs have been synthesized by reacting different types of starting materials in a single reaction step. The structures of all the new compounds are established on the basis of FT-IR, 1H NMR and 13C NMR data.

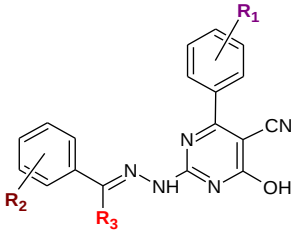

Figure 1. General molecular structure of pyrimidine derivatives

Keywords: Biginelli reaction, pyrimidine derivatives, aminoguanidine

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➢ **POSTER PRESENTATION**

Synthesis and Characterization of Some Imidazole Derivatives

Sevtap Çağlar Yavuz*, Emin Sarıpınar
Erciyes University, Faculty of Science, Department of Chemistry, Kayseri, Turkey

Corresponding author e-mail: scaglar@erciyes.edu.tr

Abstract

Imidazoles are known to have common biological activities (Vijesh et al., 2011). Many drugs contain imidazole ring, such as angiotensin II receptor antagonists (Guo et al., 2008), antimalarial (Pfaller and Krogstad, 1983), antibacterial (Khabnadideh et al., 2003), anticancer (Li et al., 2010).
In this work we have investigated reaction of aminoguanidine derivatives with phenylglyoxalmonohydrate for synthesis of imidazole derivatives. All compounds have been characterized based on IR, 1H NMR and 13C NMR.

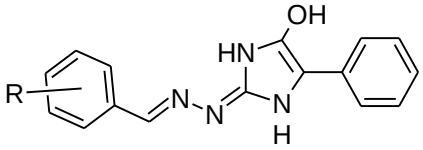

Figure 2. Basic molecular structure of imidazole derivatives

Keywords: Aminoguanidine, phenylglyoxal, imidazole derivatives.

Acknowledgments: This work was financially supported by the Scientific Research Project (BAP, Project No: FDK-2016-6664) of Erciyes University.

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➢ **POSTER PRESENTATION**

The Antioxidant Activity of *Quercus infectoria* Gall Induced by *Andricus quercusramuli*

Nesrin Haşimi[1*], Merve Doğan[2], Erdem Seven[3]

[*1]Batman University, School of Health, Department of Nutrition and Dietetics, Batman, Turkey
[2]Batman University, Faculty of Science and Letter, Department of Biology, Batman, Turkey
[3]Batman University, School of Tourism and Hotel Management, Department of Gastronomy and Culinary Arts, Batman, Turkey

Corresponding Author: nesrinhasimi@hotmail.com, nesrin.hasimi@batman.edu.tr

Abstract

The plants are assumed to contain compounds which have potential to be used in modern medicine for the treatment of diseases which are not curable. In this study we determined the antioxidant activity and total phenol/flavonoid content of *Quercus infectoria* gall induced by *Andricus quercusramuli*. The gall macerated by methanol. The total phenol and flavonoid content of the extracts were expressed as micrograms of gallic acid and quercetin equivalents, respectively. DPPH free radical scavenging activity, cupric reducing antioxidant capacity (CUPRAC) and ABTS radical cation decolorization methods were carried out to determine the antioxidant activity. BHT, BHA and ascorbic acid were used as positive controls. The phenolic content of the extract (51.54± 0.007 µgGAEs/mg extract) was higher than its flavonoid content (12.08±0.06 µgQEs/mg extract). The extract exhibited 45% inhibition in DPPH, 97% inhibition in ABTS and 0.535 ± 0.06 absorbance in CUPRAC assays at 100 µg/ml concentration.

Keywords: DPPH, ABTS, CUPRAC, Gall, *Quercus infectoria*, *Andricus quercusramuli*

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➢ **POSTER PRESENTATION**

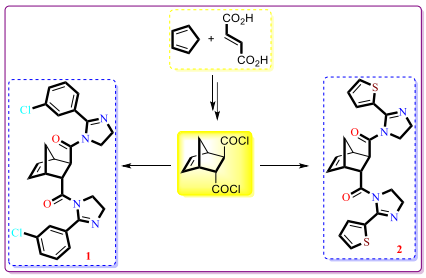
Synthesis of Novel C-2 Substituted Imidazoline Derivatives from Diacid Chlorides Having the Norbornene Skeletons

İrfan ÇAPAN, Süleyman SERVİ

Gazi University, Technical Sciences Vocational College, Ankara, Turkey
Fırat University, Faculty of Science, Department of Chemistry, Elazığ, Turkey

irfancapan@gazi.edu.tr

Abstract



Imidazoline derivatives are extensively used in medicinal and pharmaceutical chemistry. Natural or synthetic originated imidazolines are found in the molecular structure of many drugs as biologically active the component. These compounds have widely attracted the focus of biologists because of their potent properties such as anti-inflammatory, antitumor, and antiviral activities. Imidazoline derivatives, like Topsentin C, D, Cylindrospermopsin, and Spongotine A-C have been isolated from several sea sponges. Numerous studies have been carried out on the artificial synthesis and biological activities of these marine compounds. The synthesis of C-2 substituted imidazolines is of great importance in terms of both organic chemistry and medicinal chemistry. It is known that Nutlin compounds, which are C-2 substituted imidazolines, exhibit anti-tumor activity. Substitution at C-2 of the imidazoline ring system is a requirement for anti-tumor activity.

The novel imidazoline derivatives were synthesized from linked to the norbornene skeletons which were obtained by the Diels-Alder reactions of cyclopentadien with fumaric acid. Synthesis of the C-2 substituted imidazolines was performed with high yields without using a catalyst. In the different amide structures, N-acyl substituted imidazoline derivatives as hybrid molecules were synthesized from the various diacid chlorides.

The reactions completed within a very short time and could be gained with good yields. Structure of the products (**1** and **2**) were characterized by ^{1}H-NMR, $^{13}C_{APT}$-NMR, HETCOR-NMR as well as by LC-MS techniques.

Keywords: 2-imidazoline, Norbornene

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➢ **POSTER PRESENTATION**

Çam (*Pinus* sp.) İbresinin Türkiye'deki Hasat Miktarları ve Etnobotanik Kullanımı

Simge Çizgen*, Gamze Tuttu, Serhat Ursavaş

Çankırı Karatekin Üniversitesi, Orman Fakültesi, Orman Mühendisliği Bölümü, Çankırı, Türkiye

Sorumlu yazar e-mail: scizgen@gmail.com

Özet

Bu çalışmanın amacı; odun dışı orman ürünü olarak kullanılan çam ibresine ait üretim miktarlarını ve elde edilen gelirleri ortaya koymak, aynı zamanda içerdiği maddelerin önemini ve kullanım alanlarını vurgulamaktır. Koniferler içerisinde tür zenginliği bakımından en önemli yere sahip olan *Pinus* cinsi, genel olarak uzun boylu ve düzgün gövdeli bireylerden oluşmaktadır. Gövde, kabuk, tomurcuk ve yaprakları çeşitli kimyasal maddelerin elde edilmesinde kullanılan çam ağaçları uçucu yağlar, oleoresinler ve reçine içerdiklerinden tıbbi olarak yaygın bir şekilde kullanılır. Çam ağaçlarının (özellikle *P. sylvestris*) ibreli genç sürgünlerinden elde edilen esans Pinen'ler, silvestren, kadinen, terpineol ve bornil asetat gibi bileşikler içermekte, dahilen solunum yolu hastalıkları, öksürük, soğuk algınlığı ve balgam söktürücü olarak, haricen ise romatizmal ağrılara karşı kullanılmaktadır. Çam gövde kabukları ise tıpta kabız etkili, sanayide sepi maddesi olarak kullanılan tanen içermektedir. Ülkemizde geniş ormanlar kuran kızılçamlardan reçine, terebentin yağı, çam yağı, kalofan ve odun katranı gibi odun dışı orman ürünleri elde edilmektedir. Orman Genel Müdürlüğü, Odun Dışı Ürün ve Hizmetler Daire Başkanlığının 1989-2016 yılları arasındaki verileri incelendiğinde çam ibresi hasadının ilk kez 1990 yılında Antalya Orman Bölge Müdürlüğünde yapıldığı görülmektedir. Bu hasattan elde edilen toplam ürün miktarı 7.000 kg olup elde edilen toplam gelir 250 TL olarak kaydedilmiştir. 28 yıllık veriler incelendiğinde şimdiye kadar: Adapazarı, Antalya, Bolu, Bursa, Isparta, İzmir, Kahramanmaraş, Kütahya ve Mersin Orman Bölge Müdürlüklerinden toplamda 553.272 kg ibre hasadı yapıldığı ve 222.754 TL gelir elde edildiği görülmektedir. En fazla toplam üretim 471.690 kg ile Bolu Orman Bölge Müdürlüğünden ve en az üretim ise 220 kg ile Kahramanmaraş Orman Bölge Müdürlüğünden kaydedilmiştir.

Anahtar Kelimeler: Çam, *Pinus* sp., Etnobotanik, Odun Dışı Orman Ürünleri, Hasat, Türkiye.

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➢ **POSTER PRESENTATION**

Influence of Precursor Concentration on Photoelectric Properties of n-GZO/p-Si Heterojunction Devices

N.E. Koksal[1,2*], M. Sbeta[2], A. Yildiz[3]

[1]Niğde Ömer Halisdemir University, Faculty of Engineering, Electrical Electronics Engineering, Niğde, Turkey
[2]Ankara Yıldırım Beyazıt University, Faculty of Engineering and Natural Sciences, Department of Electrical and Electronics Engineering, Ankara, Turkey.
[3]Ankara Yıldırım Beyazıt University, Faculty of Engineering and Natural Sciences, Department of Energy Systems Engineering, Ankara, Turkey.

Corresponding author e-mail: nurefsankoksal@gmail.com

Abstract

n-GZO/p-Si heterojunction devices were fabricated by deposition of Ga-doped ZnO films on p-Si substrates using spin coating technique. GZO films were deposited using two different coating solutions prepared under two levels of precursors concentration (0.2 and 0.5 M/l). The current-voltage (I-V) characteristics performed under dark and illumination conditions demonstrated that both types of devices have a good rectification behavior and photovoltaic (PV) property. The devices of 0.2 m/l showed much better results compared to that of 0.5 M/l in terms of reverse saturation current (I_s), rectification ration (RR), and photosensitivity (PS). The values of I_s, RR (at ±2V), and PS (at -2V) were $9.7x10^{-8}$ A, 185, and 708 for 0.2 M/l against $14x10^{-6}$ A, 22, and 63 for 0.5 M/l, respectively. In terms of PV property, better results were also obtained with the device of 0.2 M/l which exhibited higher open circuit voltage (V_{oc}) and comparable short circuit current (I_{sc}) compared to that of 0.5 m/l. The obtained results showed that lower precursor concentration is preferred for improving the photoelectric properties of n-GZO/p-Si heterojunction-based devices fabricated using sol-gel method.

Keywords: GZO films, sol-gel method, precursor concentration, rectification behaviour, PV property.

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➢ **POSTER PRESENTATION**

Gold Nanoparticles/two-dimensional (2D) Hexagonal Boron Nitride Nanosheets Nanocomposite for Electrochemical Detection of Triclosan

Muhsin Doğan[1*], Bahar Bankoğlu[2], Mehmet Lütfi Yola[3], Necip Atar[4]

[1]Afyon Kocatepe University, Faculty of Engineering, Department of Biomedical Engineering, Afyon, Turkey
[2]Iskenderun Technical University, Science and Technology Application and Research Center, Hatay, Turkey
[3]Iskenderun Technical University, Faculty of Engineering and Natural Sciences, Biomedical Engineering, Hatay, Turkey
[4]Pamukkale University, Faculty of Engineering, Department of Chemical Engineering, Denizli, Turkey

Corresponding author e-mail: doganmuhsin.01@gmail.com

Abstract

Triclosan (2,4,4′-trichloro-2′-hydroxydiphenyl ether) (TCS) is antimicrobial agent. It was founded in a large number of consumer products. In addition, it forms highly toxic dioxin-type derivatives [1]. A new electrochemical sensor approach based on gold nanoparticles (AuNPs) incorporated two-dimensional (2D) hexagonal boron nitride (2D-hBN) nanosheets was presented for TCS detection in wastewater samples. Hexagonal boron nitride nanosheets are promising 2D materials because of important applications such as electronic, sensor and catalysis. In addition, 2D-hBN nanosheets are mainly utilized for bioimaging and drug delivery systems in biomedical applications [2,3]. All nanomaterials' formation and properties were highlighted with scanning electron microscope (SEM), x-ray photoelectron spectroscopy (XPS) and electrochemical impedance spectroscopy (EIS). 1.0×10^{-12} - 1.0×10^{-9} M and 2.0×10^{-13} M were founded as the linearity range and the detection limit (LOD). Finally, AuNPs/2D-hBN nanocomposite modified glassy carbon electrode (GCE) was used for wastewater sample analysis in presence of the pesticides.

Keywords: Electrochemical sensor; Triclosan; Gold nanoparticles; two-dimensional (2D) hexagonal boron nitride

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➢ **POSTER PRESENTATION**

Au@Ag Nanoparticles/carbon Nitride Nanotubes Nanocomposite for Determination of Quercetin

Muhsin Doğan[1*], Bahar Bankoğlu[2], Necip Atar[3], Mehmet Lütfi Yola[4], Abdullah Özkan[5]

[1]Afyon Kocatepe University, Faculty of Engineering, Department of Biomedical Engineering, Afyon, Turkey
[2]Iskenderun Technical University, Science and Technology Application and Research Center, Hatay, Turkey
[3]Pamukkale University, Faculty of Engineering, Department of Chemical Engineering, Denizli, Turkey
[4]Iskenderun Technical University, Faculty of Engineering and Natural Sciences, Biomedical Engineering, Hatay, Turkey
[5]Iskenderun Technical University, Faculty of Engineering and Natural Sciences, Department of Petroleum and Natural Gas, Hatay, Turkey

Corresponding author e-mail: doganmuhsin.01@gmail.com

Abstract

Quercetin belongs to the flavonoid family that is distributed widely in fruits and vegetables. It has antiviral, anti-cancer, anti-inflammatory, anti-allergic and anti-tumor activity and antioxidant properties [1]. Carbon nitrides are a class of polymeric materials consisting mainly of carbon and nitrogen. They can be obtained from carbon materials with substitution of the carbon atoms by nitrogen. They are prepared as an effective organic semiconductor catalyst [2,3]. All nanomaterials' formation and properties were highlighted with scanning electron microscope (SEM), x-ray photoelectron spectroscopy (XPS) and electrochemical impedance spectroscopy (EIS). 1.0×10^{-10} - 1.0×10^{-7} M and 1.0×10^{-11} M were founded as the linearity range and the detection limit (LOD). Finally, Au@Ag nanoparticles/carbon nitride nanotubes nanocomposite modified glassy carbon electrode (GCE) was used for orange juice sample analysis in presence of the flavanoids.

Keywords: Electrochemical sensor; Quercetin; Core-shell nanoparticles; Carbon nitride nanotubes

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➢ **POSTER PRESENTATION**

Harvest Yields and Ethnobotanical Use of Lichens in Turkey

Serhat Ursavaş*, Simge Çizgen, Gamze Tuttu

Çankırı Karatekin University, Faculty of Forestry, Department of Forest Engineering, Çankırı, Türkiye

Corresponding author e-mail: serhatursavas@gmail.com

Abstract

The aim of this study is to reveal the production quantities of lichens, which is used as a non-wood forest product and incomes obtained from lichens in Turkey. The importance and usage of lichen's substances were also emphasized. The majority of lichens as epiphytes live on the trunk, branches and shells of trees, in moist soil. They are the pioneer organisms that cover the bare rocks. They can live only in places with clean air; they are very sensitive to polluted air. In industrial areas, near the big cities, lichen flora is very poor. On the other hand, in clean air areas, they cover the rocks tree trunks and branches in various colors and shapes. Thus, lichens are a good indicator of clean air in an area. Because the majority of the substances found in lichens are acidic, they are called "Lichen acids". In this feature, about 150 substances are identified in lichens. Most of them are aliphatic, others are aromatic. "Lichen islandicus" drogue is also obtained from the tallus of some lichens. Since ancient times,it has been used as an expectorant and tonic. It is used exclusively for the treatment of wounds and also used in pain drugs. As Korrigen.

The lichen harvest was first carried out in Balikesir and Bolu Forest Regional Directorates in 2001 according to the data set of General Directorate of Forestry, Department of Non-Wood Products and Services between 1989-2016. The total amount of product obtained from this harvest was 10.500 kg, and the total income was recorded as 154.500 TL. When 28 years' data were analyzed, it was observed that up to now: 14.400 kg of harvest was made from Balikesir, Bolu and Kütahya Forest Regional Directorates and 184.669 TL income was obtained. The maximum total production was recorded from Balikesir Forest District Directorate with 11.000 kg and the minimum total production was recorded from Bolu Forest Regional Directorate with 500 kg.

Key words: Lichens, Ethnobotany, Non-Wood Forest Products, Harvest, Turkey.

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➢ **POSTER PRESENTATION**

Karyological Reports in the Genus *Pseudophoxinus* Bleeker, 1860 (Teleostei: Cyprinidae: Leuciscinae): A review

Muradiye Karasu Ayata[1*], Sevgi Ünal[2], Muhammet Gaffaroğlu[3]

[1]Ahi Evran University, School of Health, Department of Midwifery, Kırşehir, Turkey.
[2]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.
[3]Ahi Evran University, Faculty of Science and Arts, Department of Molecular Biology and Genetics, Kırşehir, Turkey.

Corresponding author e-mail: mkarasu@ahievran.edu.tr

Abstract

The genus *Pseudophoxinus* Bleeker, 1860 has 30 species that are distributed in the Balkans, Anatolia, the Middle East, the Caspian Sea Basin and North Africa. This genus is the fourth largest genus of Anatolian freshwater fishes, distributing 22 species in Anatolia. Of these species, 20 of them are endemic. In this study, the karyological reports that have been carried out in the representatives of the genus *Pseudophoxinus* was reviewed. For this purpose, the literature was surveyed in details and the chromosomal studies were examined. Consequently, seven different karyological studies have been reported in 12 species of the genus *Pseudophoxinus*. All of these species are endemic to Anatolia and as it follows: *Pseudophoxinus antalyae*, *P. battalgilae*, *P. burduricus*, *P. crassus*, *P. egridiri*, *P. elizavetae*, *P. evliyae*, *P. fahrettini*, *P. firati*, *P. hittitorum*, *P. maeandri* and *P. zekayi*. In these studies, the diploid chromosome numbers (2n), chromosome morphologies and chromosome banding properties (with C-banding and Ag-NOR staining) of the above mentioned species have been revealed out. Also, CMA_3 and DAPI staining of *P. firati* and G- and Q-banding properties of *P. antalyae* have been reported. It is seen that 2n is apparently conservative in the genus. However, chromosome morphologies, C-banding distributions and the number of Ag-NORs show moderately variations amongst the species. This review may be a useful knowledge to the fish cytogenetic database.

Keywords: Leuciscinae, Spring minnows, Chromosome, Chromosome bandings.

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➢ **POSTER PRESENTATION**

Polymeric Ni(II) Complex with Mixed Ligands: Synthesis, Characterization and Hydrogen Storage Property

Hakan Yilmaz[1], Omer Andac[1], Semih Gorduk[2*]

[1]Ondokuz Mayis University, Faculty of Art and Sciences, Department of Chemistry, Samsun, Turkey.
[2]Yildiz Technical University, Faculty of Art and Sciences, Department of Chemistry, Istanbul, Turkey.

Corresponding author e-mail: semih_grdk@hotmail.com

Abstract

At present, coordination polymers (CPs), which are known as having intriguing structures, unique functions, and potential applications in fields such as adsorption and separation, gas storage, luminescence, catalysis, drug delivery, and magnetism have become important research area [1]. Various factors, which all affect the final structures of complexes, should be take into consideration during the process of synthesizing complexes, such as solvent system, the reaction temperature and time, pH value, metal ions, and even the selection of organic ligands [2]. Among them organic ligands play a vital role in determining final structures and the properties of CPs, because the deprotonation degree of carboxyl groups can results in different coordination modes of ligand, further affect the structures of the complexes.

In this study, we synthesized new polymeric Ni(II) complex of pyrazine-2,3-dicarboxylic acid and 1-vinylimidazole. The polymeric complex was characterized by elemental analysis, infrared spectroscopy, powder X-ray diffraction, magnetic susceptibility and thermal analysis techniques. Magnetic susceptibility measurements show that the complex is paramagnetic. The Ni(II) complex which does not contain the crystal water decomposes at very high temperature in oxygen atmosphere, the final product is the related metal oxide for the complex. In addition, the hydrogen storage property of the complex was explored by experimental H_2 adsorption isotherms and the BET surface area was determined. It is significant that the complex with small surface area can adsorb considerable amounts of H_2 gas. H_2 adsorption studies were carried out at 75 K for various increasing pressures and the highest H_2 storage amount for Ni(II) complex was estimated 3.0 wt% at 87 bar.

Keywords: Hydrogen storage, Pyrazine-2,3-dicarboxylic acid, 1-Vinylimidazole, Ni(II) complex, mixed ligand

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➢ **POSTER PRESENTATION**

The *in vitro* Anticancer Activity of the Hemi-Salen Ligands and Their Boron Complexes

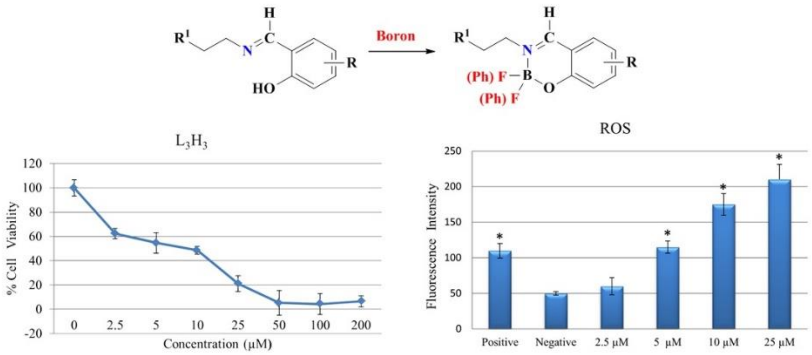
Ahmet Kilic[1*], Ismail Koyuncu[2], Mustafa Durgun[1], Ismail Ozaslan[1], İbrahim Halil Kaya[1] and Ataman Gönel[2]

[1]University of Harran, Faculty of Science and Art, Department of Chemistry, Sanliurfa, Turkey
[2]University of Harran, Faculty of Medicine, Department of Biochemistry, Sanliurfa, Turkey

Corresponding author e-mail: kilica63@harran.edu.tr; kilica63@hotmail.com

Abstract

The boron compounds containing anticancer studies, which are called as Boron Neutron Capture Therapy (BNCT) have received attention due to the increase in the number of cancer patients in the world. In this context, the development of the effective and stable new boron compounds for anti-cancer agents is one of the main targets for the scientist. In this study, the hemi-salen ligands **(L_1H_3-L_4H_3)** were synthesized by reaction of 3,5-Di-*tert*-butyl salicylaldehyde, 5-methoxy salicylaldehyde, 3,5-Dibromosalicylaldehyde, and **2**-Hydroxynaphthaldehyde with tris-(2-aminoethyl) amine, respectively. The hemi-salen based boron **[$L_{(1-4)}(BF_2)_3$]** and **[$L_{(1-4)}(BPh_2)_3$]** complexes have been prepared from hemi-salen **(L_1H_3-L_4H_3)** ligands and $BF_3.Et_2O$ or BPh_3 under simple reaction conditions. The hemi-salen **(L_1H_3-L_4H_3)** ligands and their BF_2 or BPh_2 chelating boron complexes were tested for the *in vitro* anticancer activity against various the cancer and normal cells (HeLa, DLD-1, ECC-1, PC-3, PNT-1A, and CRL-4010) and it was found that the cell viability of cancer cells was decreased while most of the healthy cells could still be viable. Also, the cytotoxicity studies showed that anti-cancer activity of hemi-salen **(L_1H_3-L_4H_3)** ligands is higher than that of boron **[$L_{(1-4)}(BF_2)_3$]** and **[$L_{(1-4)}(BPh_2)_3$]** complexes. The hemi-salen **(L_1H_3-L_4H_3)** ligands showing the strongest cytotoxic effect in **PC-3** cells were found to exhibit anticancer activity with apoptosis by increasing the level of ROS in the **PC-3** cells. However, the hemi-salen **(L_3H_3)** ligand shows higher cytotoxic activity on the **PC-3** (5,68 µM) cancer cell compared to the other hemi-salen ligands of this study in different concentrations between ranges of 0-200 µM on wells of cells grown for 24 h.



Keywords: Hemi-salen ligands, boron complexes, *in vitro* cytotoxicity, anticancer activity.

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➢ **POSTER PRESENTATION**

3,5-bis(trifluoromethyl)phenyl-based Dioxiborinane Compounds: Synthesis, Characterization and Use in Transfer Hydrogenation of Ketones

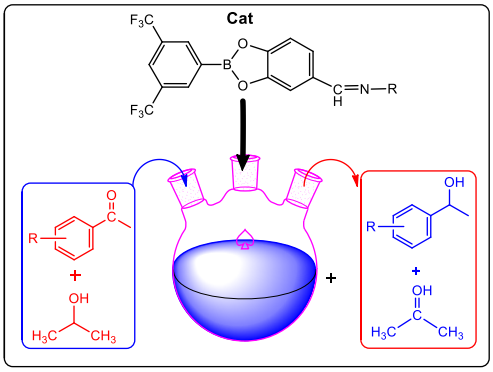
Ahmet Kilic[1*], Murat Aydemir[2] Feyyaz Durap[2], İbrahim Halil Kaya[1], Ismail Ozaslan[1]

[1*]University of Harran, Faculty of Art and Science, Department of Chemistry, Sanliurfa, Turkey
[2] University of Dicle, Faculty of Science Department of Chemistry, Diyarbakir, Turkey

Corresponding author e-mail: kilica63@harran.edu.tr; kilica63@hotmail.com

Abstract

Due to the widespread usage of the boron compounds, the synthesis and application of these systems in science and technology have attracted the attention of researchers in recent years. For this aim, we report the design, synthesis, and characterization of the new catechol-type ligands **(L_1-L_5)** via the reaction of 3, 4-dihydroxybenzaldehyde with various primary amines under proper conditions. Then, a novel class of three-coordinate dioxiborinane compounds, which have the general formula **[B(L_{1-5})]** were designed and synthesized by the condensation of 3,5-bis(trifluoromethyl)phenyl-based boronic acid and 1 mole equiv of the corresponding catechol-type ligands **(L_1-L_5)** at ambient temperature. All the new compounds were fully characterized by NMR (^{1}H, ^{13}C, and ^{11}B), FT-IR, UV-Vis, LC-MS spectroscopy, and melting point as well as microanalysis. The dioxaborinane compounds **[B(L_{1-5})]** are investigated as catalyst for transfer hydrogenation of various aromatic ketones under mild conditions. The substituents on the backbone of the ligands are found to exhibit a significant effect on the activity.



Keywords: Catechol-type ligands, Dioxaborinanes, Spectroscopy, Transfer Hydrogenation.

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➢ **POSTER PRESENTATION**

Adsorption Study of Zinc Metal in Synthetic Waste Waters using Hydroxyapatite Produced from Çayırhan Coal Plant Waste

Sila Kiziltas Demir, Azmi Seyhun Kıpçak[1], Emek Derun[1], Mehmet Burcin Piskin[2], Nurcan Tugrul[1,*]

[1]Yildiz Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Chemical Engineering, Turkey
[2]Yildiz Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Bioengineering, Turkey

Corresponding author e-mail: ntugrul@yildiz.edu.tr

Abstract

Wastes are the inevitable products occurring in the many industries. In the area of electricity production by coal plants, the wastes can be evaluated using many ways. One of the evaluation method is the production of hydroxyapatite (HAP). In this study, HAP is synthesized for the aim of heavy metal adsorption from the waste waters. From the waste material obtained from a local plant (Flue gas desulphurization waste) in Çayırhan, Ankara, Turkey. HAP is synthesized using the optimum parameters determined from our other studies and characterized by using X-ray Diffraction (XRD) and Fourier transform infrared spectroscopy (FT-IR). Then synthesized HAP is used for the zinc (Zn) adsorption from synthetic waste water, which has a concentration of 40 ppm. From the results of the Adsorption studies, the adsorption yield is found approximately 99% in 1h, which is determined using Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES).

Keywords: adsorption, HAP, waste, Zn.

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➢ **POSTER PRESENTATION**

Biodegradation of 2,4-dichlorophenoxyacetic acid (2,4-D) in Anaerobic Batch Reactor

Çağla Uygun[1]*, Cansu Filik İşcen[2]

[1]Eskişehir Osmangazi University, Graduate School of Sciences, Eskişehir/Turkey
[2]Eskisehir Osmangazi University, Faculty of Education, Department of Elementary Education, Eskisehir/Turkey

Corresponding author e-mail: caglauygun26@gmail.com

Abstract

Today, with the increasing population and growing need for food, the use of pesticides in agriculture has increased tremendously. Unconscious and unsupervised use of pesticides to provide high yields from agricultural areas is a major problem for human health and the environment. For this reason, biodegradation by anaerobic treatment of pesticides has gained importance in recent years. In this study, a herbicide 2,4-D was biodegraded by applying a statistically based experimental design in the batch reactor. In the full factorial experiments, 9 different experimental setups were established based on different pecticide concentrations (5mg L^{-1}, 25mg L^{-1}, 45mg L^{-1}) and cosubstrate variables (glucose, propionic acid, acetic acid-butyric acid-propionic acid). Experiments were performed in Oxitop C bottles. The study lasted 20 days. At the end of the study period, the biodegradation of 2,4-D was spectrophotometrically determined. The COD of the syntetic wastewater entering and leaving bioreactor was determined by the Dicromate Reactor Digestion Method.

Keywords: full factorial, biodegradation, herbicide.

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➢ **POSTER PRESENTATION**

A Comparison Between Standard and Diluted MTT Concentrations: Can It Be Diluted More?

Sedat Kacar*, Ezgi Bektur, Erhan Sahin, Dilek Burukoglu Donmez, Varol Sahinturk

Eskisehir Osmangazi University, Faculty of Medicine, Department of Histology and Embryology, Eskisehir, Turkey

Corresponding author e-mail: skacar@ogu.edu.tr

Abstract

The MTT assay is a widely used test that colorimetrically indicates cell cytotoxicity. The MTT test was first discovered by Mosmann in 1983, and in the following years, its modified versions were developed. In cell viability assays, the suggested dose of MTT is 0.5 mg/ml, which is achieved after its dilution with medium by 10 fold. In this study, we sought to ascertain how effective other diluted concentrations of MTT are.

In this respect, Clone 9 hepatocyte cells were used. The cells were cultured at 37 ° C in an incubator with 5% CO_2. MTT stock solution at the density of 5 mg/ml was prepared with PBS and passed through 0.20 µm filters. Further MTT dilutions of 10, 20, 25, 50 and 100 folds were performed with ready-to use medium. When at least 80% of the flask was confluent, the cells were removed with trypsin-EDTA and were plated at a density of 16,000 cells per well into 96 well plates. After 24 hours, the old medium was discarded and the new medium including different MTT concentrations were added into wells. Four hours later, DMSO was added and the absorbance of the cells was measured at 570 nm by ELISA reader.

When the 10, 20 and 25-fold-diluted MTT was used, reasonable absorbance values were obtained. However, when the 50 and 100 times-diluted MTT was used, the results were not consistent each other.

MTT is generally prepared and used by diluting 5 mg/ml of stock by 10 fold. In the present study, we suggest that that MTT might be also used by 20 and 25-fold dilutions as long as sufficient incubation time and cell number were ensured.

Keywords: MTT, Clone 9 cell line, optimization.

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➢ **POSTER PRESENTATION**

Klorpirifoz Kullanımına Bağlı Olarak Akciğer Dokusunda Gelişen Oksidan Stres ve Apaptotik Sürecin qRT-PZR ile Belirlenmesi

Enis Ulucam[*1], Elvan Bakar[2], Aysegül Cerkezkayabekir[3] Deniz Aksoy[4]

[*1]Trakya Üniversitesi Tıp Fakültesi Anatomi AD Edirne, Türkiye
[2]Trakya Üniversitesi Eczacılık Fakültesi Eczacılık Temel Bilimleri AD Edirne, Türkiye
[3]Trakya Üniversitesi Fen Fakültesi Moleküler Biyoloji AD Edirne, Türkiye
[4]Trakya Üniversitesi Fen Fakültesi Endüstriyel Mikrobiyoloji AD Edirne, Türkiye

Sorumlu yazar e-mail: eulucam@trakya.edu.tr

Özet

Asetilkolinesteraz (AChE) inhibitörü olan klorpirifoz (CPF) [O,O-diethyl-O-(3,5,6-trichloro-2-pyridinyl) phosphorothionate], bahçe, tarım ve orman zararlılarına karşı yaygın olarak kullanılan bir organofosfattır. Tarımsal alanlarda pestisit uygulamaları dermal, gastrointesinal ve solunum yolu ile insanlara kolayca bulaşabilmektedir. CPF toksisitesini belirleyen faktörlerden biri biyotransformasyondur. CPF, bir kükürt giderme reaksiyonu vasıtasıyla sitokrom p450 ile aktif hale getirilerek güçlü bir antikolinesteraz olan klorpirifos okson (CPO) oluşturulabilir. CPF'nin AChE aktivitesini inhibe ederek, ROS oluşumuna neden olmaktadır. Bu bileşiklerin canlılar üzerindeki etkilerinin ortaya konulması oldukça önemlidir. Çalışmamız kapsamında, CPF'nin, akciğer dokusundaki muhtemel etkilerinin qRT-PZR yöntemi ile belirlenmesi planlandı.

Wistar albino sıçanlar, rastgele kontorl ve deney grubu olmak üzere iki gruba bölündü (n=8). Deney grubundaki hayvanlara 4.05 mg/kg (LD 50/10) CPF gavaj yoluyla verildi. Deney sonrasında uygun anestezi altında hayvanların akciğer dokuları alındı ve rutin takip işlemlerinden sonra dokular parafine gömüldü. Total RNA izolasyonu, 10 µm kalınlığındaki parafin kesitlerden High Pure FFPET RNA izolasyon kiti ile yapıldı. qRT-PZR yöntemi ile süperoksit dismutaz (SOD), glutatyon sentetaz (GSH), katalaz (CAT), Bax, Bcl2 ve p53 ekspresyon düzeyleri belirlendi. Hedef genlerin ekspresyon miktarları, internal gen olan GAPDH kullanılarak normalize edildi. Kontrol grubundan elde edilen veriler ile karşılaştırılarak 2-ΔΔCT metoduna göre belirlendi.

qRT-PZR analizi sonuçlarına göre, SOD, GSH, CAT, Bax ve Bcl2, mRNA seviyelerinin anlamlı düzeyde arttığı belirlendi ($p < 0.05$). Ancak p53 ekspresyon düzeyinindeki değişim anlamlı bulunmadı. Ekspresyon düzeyinde gözlemlenen değişimler, CPF'nin akciğer dokusunda oksidadif strese yol açarak mitokondrial yolak üzerinden apoptotik süreci tetiklediğini ve bu süreçte p53'ün rol oynamadığı sonucunu ortaya koymaktadır.

Anahtar Kelimeler: Klorpirifoz, apoptoz, akciğer, antioksidan enzimler.

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➢ **POSTER PRESENTATION**

Development of Ni/C Nanocomposite Electrocatalyst for DBFC

Esra Varol*, Berker Fıçıcılar

Ondokuz Mayıs University, Engineering Faculty, Department of Chemical Engineering, Samsun, Turkey

Corresponding author e-mail: varolesra@hotmail.com

Abstract

Today, traditional energy sources such as natural gas and oil have limited reserves and are rapidly being consumed. New alternatives are being sought to meet the growing energy need. Fuel cells are electrical energy conversion systems that use hydrogen as fuel. Fuel cells are energy efficient, environmentally friendly, quiet and reliable systems. They also provide rapid energy conversion.

Direct sodium borohydride fuel cells (DBFC) are promising technologies for the energy needs of portable and stationary electronic applications, and even for the transportation. These fuel cells have eliminated the problem of the use of liquid fuel as fuel and the problem of storing hydrogen in fuel cells. Direct sodium borohydride fuel cells have the advantage of using sodium borohydride (10.6 wt%), which has a high hydrogen content as fuel. However, it was observed that sodium borohydride fuel cells can reach up to the power densities of 0.15 W/cm^2 as a result of the test conducted. It is intended to enhance this power density (0.15 W/cm^2) with improvements to the anode for direct sodium borohydride fuel cells.

In this study, Ni/C electrocatalyst which is easily oxidized to BH_4^- ions will be used as the anode side catalyst. Pt/C is a highly efficient but costly electrocatalyst. For this reason, one can reduce the cost of the electrocatalyst by using Ni/C nanocomposite catalyst. It is expected to obtain similar performance results with Ni based catalysts compared to Pt based electrocatalysts.

The results of the X-ray diffraction (XRD), BET analysis and scanning electron microscopy analyzes (SEM) used for the physical characterization of the catalyst will be presented at the congress.

Keywords: Direct borohydride fuel cells, Electrocatalyst, Energy conversion

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➢ **POSTER PRESENTATION**

Characterization of Graphite Felt Electrode and Investigation of Bromine Cathode Kinetics in H_2/Br_2 Flow Battery System

Büşranur Duman*, Berker Fiçicilar

Ondokuz Mayıs University, Faculty of Engineering, Department of Chemical Engineering, Samsun, Turkey.

Corresponding author e-mail: busranrduman@gmail.com

Abstract

In Turkey, use of renewable energy is increasing rapidly to alleviate the harmful effects of fossil fuels. Among the renewable energy resources, wind and solar system are widely used electrical energy sources and they are considered intermittent system. In order to increase energy efficiency, these electrical energy sources must be coupled with energy storage system. Flow batteries can store electrical energy with high efficiency and for longer period. One advantage of flow batteries compared to secondary batteries is that flow batteries can supply energy on demand during discharge and store electrical energy from the renewable. Among all flow batteries H_2/Br_2 flow batteries are considered has a promising battery technology due to their high cathode kinetics (~1.5 W/cm^2). To enhance H_2/Br_2 flow battery system performance one must increase electrochemical catalytic activity. This can be achieve by increasing functional oxygen groups with in the electrode structure. Supply of functional oxygen groups over the surface of graphite felt leads to increase in surface wettability and this results in improved electrical conductivity. Graphite felts used in surface modification have high electrical conductivity and porosity. Anode and cathode electrocatalyst can be loaded over GDL (gas diffusion layer) or membrane with different methods for H_2/Br_2 flow battery system. In the present study, gas diffusion layer was used at the anode and graphite felt was used at the cathode. Bromine kinetic and cell performance were investigated after surface modification of graphite felt using acidic treatment and thermal oxidation. Single cell H_2/Br_2 flow battery system was used to observe the effects of surface modification over graphite felt. In this research, benchmark tests were conducted for pure graphite felt and modification graphite felts. Physical characterizations of the synthesized graphite felt electrodes were conducted with SEM, XRD and BET techniques.

Keywords: Flow battery, Hydrogen-Bromine, Graphite Felt.

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➢ **POSTER PRESENTATION**

Separation of cobalt and nickel by nanofiltration using a FilmTec membrane

Mesli Meryem[1], Belkhouche Nesreddine[1], Sefrou Zineb[1], Baba hamed Yamina[2*], Berrichi Amina[3]

[1]Laboratory of technologies of separation and purification, Faculty of chemistry, University Abou Bekr Belkaid, Tlemcen, Algeria.
[*2] Laboratory of of Physiology, Physiopathology and Biochemistry of Nutrition, Faculty of Natural and Life Sciences ,Earthand Universe, University Abou Bekr Belkaid, Tlemcen, Algeria.
[3]Laboratory of Catalysis and Synthesis in Organic Chemistry, Faculty of chemistry, University Abou Bekr Belkaid, Tlemcen, Algeria.

Corresponding author e-mail: mina.babahamed@gmail.com

Abstract

Currently, the depletion of ore deposits containing metals of a commercial value is growing alarmingly.Metals of cobalt and nickel with similar physicochemical properties have very important industrial uses, mainly due to their resistance to corrosion and to oxidation at high temperature.As a result, many wastes in the form of metallic effluents occur, which need the treatment for recovery of metal and recycling of water for future use. This can constitute a promising interest in hydrometallurgical processes because of the possibility of recovering the valuable metals, as well as addressing environmental pollution problems. The chemical process used was the nanofiltration using Filmtec-NF270 membrane as a filtration membrane, charged negatively, in a total recycling system. The optimizationof separation process of Co(II) and Ni(II) chlorides, from their synthetic mixture, was conducted by optimizing one operating parameter at a time. Several parameters, such as hydraulic permeation of membrane, transmembrane pressure, initial concentration of feed solution, and pH of feed solution, were studied. The results showed that under the conditions of moderate pressure, slightly acidic medium of feed phase and at equimolar mixture of metal ions; the retentions were 100 and 91.94% for cobalt and nickel, respectively. The retention of nickel will become total if the quantity of cobalt, in mixture, was six times more concentrated. In fact, the retention of metal ions remained more quantitative when using nitrate ions as counter-ions where the rejections were of 0 and 18% for cobalt and nickel ions, respectively, at a conversion equal to 0.11. The retention of metal ions to wards the used membrane was conducted by the Donnan and steric effects. This was confirmed by the form of metal ion species found by speciation software and taken by the transport mechanism by nanofiltration.

Keywords: Extraction , nanofiltration , membrane , cobalt , nikel.

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➢ **POSTER PRESENTATION**

Hydrazone Ligand and Its Copper Complex Modulate *in vitro* Human T Lymphocyte Function and Intracellular Redox Status

Baba hamed Yamina[1 2 *], Merzouk Amel[1], Merzouk Hafida[1], Mesli Meryem[3], Berrichi Amina[4]

[*1]Laboratory of Physiology, Physiopathology and Biochemistry of Nutrition, Faculty of Natural and Life Sciences ,Earthand Universe, University Abou Bekr Belkaid, Tlemcen, Algeria.
[2]University Center Belhadj Bouchaïb, Aïn Temouchent,
[3]Laboratory of technologies of separation and purification, Faculty of Science, University Abou Bekr Belkaid, Tlemcen, Algeria.
[4]Laboratory of Catalysis and Synthesis in Organic Chemistry , Faculty of Science, University Abou Bekr Belkaid, Tlemcen, Algeria.

Corresponding author e-mail: mina.babahamed@gmail.com

Abstract

The aim of the present work was to determine the effects of copper complex of 1- (4-dimethylaminobenzylidene)-2-(2-hydroxybenzylidene) hydrazine **1,** synthesized in our laboratory, on the proliferative responses of human lymphocytes, Th1 and Th2 cytokine secretion and intracellular redox status. Peripheral blood lymphocytes were isolated using differential centrifugation on a density gradient of Histopaque. They were cultured with mitogen concanavalin A (Con A) and with different concentrations of the ligand and the complex (10µM-100µM -500µM- 1mM). Proliferation (MTT assay), IL-2, INFγ and IL-4 (Elisa kits), oxidative markers (intracellular glutathione, hydroperoxide and carbonyl protein contents) were determined. The Cu complex showed stronger immunomodulating action than their ligand 1. Ligand 1 decreased IL-2, INFγ and IL-4 secretion with a shift away to Th1 phenotype. Copper complex reduced IL-2 and INFγ with a shift away to Th2 phenotype. These immunomodulatory properties were however accompanied by an increase in lymphocyte intracellular oxidative stress which was light with the copper complex. In conclusion, the copper complex could be used to provide cell mediated immune responses for novel therapies in T cell mediated immune disorders.

Keywords: Hydrazone , Cytokine , Lymphocyte , Copper complex , Oxidative stress.

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➢ **POSTER PRESENTATION**

The Production of Enantiomerically Pure 1-Phenylethanol via Enzymatic Kinetic Resolution Method

Ayse Bozan*, Rahime Songur, Ulku Mehmetoglu

Ankara University, Faculty of Engineering, Department of Chemical Engineering, Ankara, Turkey.

Corresponding author e-mail: ayseeaygun@gmail.com

Abstract

The importance of enantiomerically pure compounds have been recognized in several fields; such as pharmaceutical, agricultural, fine chemicals and food industries. In this study; enantiomerically pure 1-phenylethanol, which is an important precursor in pharmaceutical, agrochemical and natural product's synthesis, was produced via enzymatic kinetic resolution method. Enzymatic kinetic resolution of 1-phenylethanol was performed in the presence of immobilized lipase catalyst, Novozym 435, considering the extraordinary catalytic performance of this lipase. In the transesterification reaction; hexane was used as solvent, vinyl acetate was used as acyl donor and hence R-1-phenylethyl acetate and S-1-phenylethanol were produced. As a general procedure; firstly racemic 1-phenylethanol and hexane were added to 25 mL glass stoppered bioreactor and stirred for a while in order to ensure smooth mixing and thermal equilibrium. After that, required amount of vinyl acetate and lipase were immediately added. All reactions were performed in orbital shaker at the desired temperature and stirring rate. After completion; lipase was removed by filtration, solvent was evaporated under vacuum, the residual were dissolved in MTBE (methyl tert-butyl ether) and filtered. The samples were analyzed by HPLC equipped with a Chiralcel OB column. Preliminary studies were performed by variating the reaction time and temperature, catalyst concentration, stirring rate, substrate concentration, molar acyl donor: substrate ratio. Of all the papers published in this subject, very few researchers applied statistical techniques together with the experimental results when optimizing process parameters. In order to make contribution to the investigations in the field, in the second step, optimum reaction parameters were determined by response surface methodology (RSM) in which statistical and mathematical techniques are used together. Optimum reaction parameters determined by RSM are as follows; substrate concentration 240 mM, catalyst loading 11 mg/mL, temperature 42^0C, reaction time 75 min.

Keywords: 1-phenylethanol, enzymatic kinetic resolution, response surface methodology (RSM).

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➢ **POSTER PRESENTATION**

Co-treatment of β-carotene and H_2O_2 Increased the Caspase 3 Expression in Clone 9 Liver Cells

Erhan Sahin*, Sedat Kacar, Dilek Burukoglu Donmez, Varol Sahinturk

Eskisehir Osmangazi University, Faculty of Medicine, Department of Histology and Embryology, Eskisehir, Turkey.

Corresponding author e-mail: sahine@ogu.edu.tr

Abstract

β-carotene is a carotenoid that is a precursor of vitamin A. It is responsible for the orange color of many fruits and vegetables. Besides, it decreases reactive oxygen species due to its antioxidant effects. The aim of this study is to investigate the effects of β-carotene on H_2O_2-treated clone 9 liver cells.
We used the half maximal inhibitory concentration (IC50) of the H_2O_2 for clone 9 liver cells, which was determined in our preliminary studies. We found the protective dose of β-carotene from literature search. In the experiment, four groups were formed as follows: control, H_2O_2 (278 μM), β-carotene (20 μM) and H_2O_2 + β-carotene. The cells were cultured at a density of 5×10^5/six-well plates onto slides. After the cells were attached onto plates, respective doses were applied to the cells. After an incubation at 37° C for 24 hours, the medium was discarded and the cells were stained with caspase 3 by immunocytochemistry.
According to our results, in H_2O_2 group, we have observed an increase in caspase 3 expression when compared to control group. β-carotene co-treatment could not decrease caspase 3 expression; in fact, increased caspase 3 expression even more.
In conclusion, the present study showed that β-carotene could not reverse the H_2O_2-induced caspase 3 increase in clone 9 liver cells. Detailed studies about the antioxidant properties of β-carotene were required in the future research.

Keywords: Clone 9 liver cells, oxidative stress, β-carotene, caspase 3.

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➢ **POSTER PRESENTATION**

Spectrophotometric Determination of Statins with Pi-Acceptor Reagents in Pharmaceutical Preparations

Gamze Ergin Kızılçay*, Sıdıka Ertürk Toker

*1Istanbul University, Faculty of Pharmacy, Department of Analytical Chemistry, 34452 Istanbul-Turkey

Corresponding author e-mail: gamze.erginkizilcay@istanbul.edu.tr

Abstract

3-Hydroxy-3-methylglutaryl coenzyme-A (HMG-CoA) reductase inhibitors, called statins, was antihyperlipidemic drugs that reduce cholesterol by inhibiting conversion of HMG-CoA to mevolanata at the hepatic and extra-hepatic cholesterol biosynthesis in the body. These drugs were used much more in the treatment of hyperlipidemia according to the other antihyperlipidemic drugs because of the low side effects and high activity.

In this study, new spectrophotometric methods were developed for the determination of simvastatin (SMV), fluvastatin (FLV), atorvastatin (ATV), rosuvastatin (RSV) and pitavastatin (PTV), which are currently in hyperlipidemia treatment, in pharmaceutical preparations. The methods were based on the reaction of these drugs as n-electron donor with 2,3-dichloro-5,6-dicyano-p-benzoquinone as π - acceptor. All variables were studied in order to optimize the reaction conditions. Beer's law was obeyed in the concentration ranges 5,0-50,0 µg/mL for SMV, 1,0-6,0 µg/mL for FLV, 0,5-50,0µg/mL for ATV, 2,5-50,0 µg/mL for PTV and 5,0-25,0 µg/mL for RSV. Methods have been validated according to ICH Q2 manual. The proposed methods have been successfully applied to the analysis of various dosage forms in the commercial form of statins. Another spectrophotometric method were used as comparison method which based on formation of charge transfer complex between these drugs and 7,7,8,8-tetracyanoquinodimethane as another π-acceptor. The results obtained by both methods statistically compared with each other by using Student's test and F-test.

Keywords: 3-Hydroxy-3-methylglutaryl coenzyme-A reductase inhibitors, statins, 2,3- dichloro-5,6-dicyano-p-benzoquinone, spectrophotometry, determination.

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➢ **POSTER PRESENTATION**

Effect Of Carbon Support And Preparation Method On The Characteristic Properties Of Fe_2O_3 Composed Catalysts

Filiz Balikçi Derekaya*, Atike Büşra Köprülü

University of Gazi, Faculty of Engineering, Department of Chemical Engineering, Ankara, Türkiye.

Corresponding author e-mail: mail: filizb@gazi.edu.tr, filizderekaya@gmail.com

Abstract

In consideration of different pore structure of carbon, resistance to acidic and alkaline medium, low price, simple accessibility, good recycle properties, low density, various synthesis ways or production in broad scale, usability at activation and carbonization methods in the field of engineering, especially in recent years, carbon came into prominence as an outstanding support material for catalysts. Because of many properties like unique structure, superior physical and chemical properties, powerful mechanical performance particularly carbon nanotubes became a popular material which studies have been carried on around the world. Within the scope of this study, iron (Fe) was supported on various carbon materials (graphene, activated carbon, meso-porous carbon). Impregnation and precipitation will use as traditional preparation methods for subjunction of active metals to support carbon. The large part of studies show that, traditional impregnation method used but precipitation method haven't been used. Catalysts were characterized by using different method. The crystal phases present in the catalysts were determined by using the X-Ray diffraction method. The BET surface areas, pore volumes, average pore diameters were determined by using the N_2 physisorption analysis. Although the highest surface was obtained from the Fe_2O_3/Active Carbon catalyst prepared by the co-precipitation method, the best surface area results were obtained from the catalysts prepared by the impregnation method and catalysts supported by the active carbon. N_2 physisorption results also showed that catalysts have average pore diameter in mesoporous diameter scale. The diffraction peaks obtained from the X-Ray diffraction study were due to the carbon and α-Fe_2O_3 crystal phases. The diffraction peak of carbon obtained at 2θ= 12.7°, 26° and the diffraction peak of α-Fe_2O_3 crystal phase obtained at 2θ= 37.7°, 43.1°, 62.7°, 75.1°, 79.2°.

Keywords: Catalyst, Fe_2O_3, Carbon Support, Characterization.

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➢ **POSTER PRESENTATION**

Characterization Studies Over The Different Carbon Supported NiO Composed Cataysts

Filiz Balikçi Derekaya*, Atike Büşra Köprülü

University of Gazi, Faculty of Engineering, Department of Chemical Engineering, Ankara, Türkiye.

Corresponding author e-mail: filizb@gazi.edu.tr, filizderekaya@gmail.com

Abstract

The purpose of this study is to examine the effect of different carbon support species and preparation methods on the characteristics properties of nickel supported metal catalysts. Due to the different pore structure, resistance to acidic and basic media, low cost, easy accessibility, good recycling properties, low density, being able to be synthesized in other forms or being used in wide scale production, activation and carburization methods in terms of engineering, carbon is a good supporting material for the catalysts. In this study, NiO composed catalysts were prepared by using different carbon supports which are mesoporous carbon, active carbon and graphene. In order to see the effect of the preparation method catalysts were prepared by using two different methods that are co-precipitation method and impregnation method. Catalysts were characterized by using different methods. The crystal phases present in the catalysts were determined by using the X-Ray diffraction method. The BET surface areas, pore volumes, average pore diameters were determined by using the N_2 physisorption analysis. Although the highest surface area was obtained from the NiO/Active Carbon catalyst prepared by the co-precipitation method, the impregnation method is more suitable method to prepare supported catalysts. These results indicate that the pores of the support were choked up by the metal component NiO when the catalysts prepared by the co-precipitation method. N_2 physisorption results also showed that catalysts have average pore diameter in mesoporous diameter scale. The diffraction peaks obtained from the X-Ray diffraction study were due to the carbon and NiO crystal phases. The diffraction peak of carbon obtained at $2\theta = \approx 26°$ and the diffraction peaks of NiO crystal phase obtained at $2\theta = 37.7°, 43.1°, 62.7°, 75.1°, 79.2°$.

Keywords: Catalyst, NiO, Carbon Support, Characterization.

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➢ **POSTER PRESENTATION**

Synthesis and Characterization of Ag^{+}, Zn^{2+} and Co^{2+} Doped Hydroxyapatite by Biomimetic Method

Serbülent Türk[1*], Ibrahim Altınsoy[2], Gözde Ç. Efe[2], Mediha İpek[2], Mahmut Özacar[1,3], Cuma Bindal[1,2]

[1]Sakarya University, Biomedical, Magnetic and Semiconductor Materials Research Center (BIMAS-RC), 54187 Sakarya, Turkey
[2]Sakarya University, Faculty of Engineering, Department of Metallurgy and Materials Engineering, 54187 Sakarya, Turkey
[3]Sakarya University, Science & Arts Faculty, Department of Chemistry, 54187 Sakarya, Turkey
Corresponding author e-mail: serbulentturk@sakarya.edu.tr

Abstract

Hydroxyapatite (HA) being a biocompatible ceramic and having close similar mineral phase in the natural bone used as calcium phosphate-based biomaterials which can be used as bone substitutes and osteoconductive scaffolds due to their chemical similarity to the inorganic phase of bone [1]. Synthesis of Ag^{+}, Zn^{2+} and Co^{2+}doped HA powders carried out at pH of 7.4 and 37°C in a simulated body fluid (SBF, as shown in **Table 1**) with 1.5 times higher ion concentration than in human body via an innovative biomimetic method. At first experiment, $AgNO_3$, $Zn(NO_3)_2.6H_2O$, and $Co(NO_3)_2.6H_2O$ salts with concentration of wt. 5% were added into 1.5xSBF for Ag^{+}, Zn^{2+} and Co^{2+}doped HA, respectively. For second experiment, The concentration of calcium and phosphate in the prepared 1.5xSBF was increased and comparison study was carried out. Morphology, phase composition of HAp powders synthesized by both route and verifying presence of doping elements depending on applied two different method was characterized by utilizing of SEM, EDS, XRD, FTIR and Raman Spectroscopy (as shown in **Fig.1**).

Ions (mM)	Na^{+}	K^{+}	Mg^{2+}	Ca^{2+}	Cl^{-}	HPO_4^{2-}	SO_4^{2-}	HCO^{3-}
Blood	142,0	5,0	1,5	2,5	103,0	1,0	0,5	27,0
SBF	142,0	5,0	1,5	2,5	147,8	1,0	0,5	4,2

Table 1. Ion concentrations in SBF and blood plasma [2]**.**

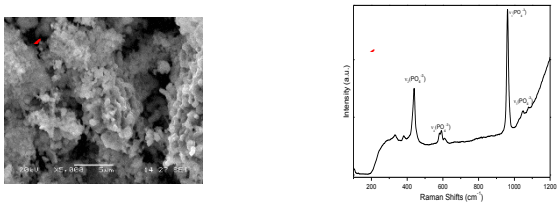

Figure 1. After biomimetic process (a) SEM image and (b) Raman spectrum of doped HA.

Keywords: Biomimetic synthesis, Hydroxyapatite, Ion doping, Simulated body fluid.

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➢ **POSTER PRESENTATION**

Responses In Growth And Lipid Accumulation Of *Chlorella* ESP-6 To Nitrogen Starvation

Togayhan Kutluk[1,2*], Nurcan Kapucu[1,2]

[1]Kocaeli University, Engineering Faculty, Department of Chemical Engineering, Kocaeli, Turkey
[2]Kocaeli University, Alternative Fuels R&D Center, Kocaeli, Turkey

Sorumlu yazar e-mail: togayhan.kutluk@kocaeli.edu.tr

Abstract

Algae are recognized as one of the oldest life-forms. They are primitive plants.The microalgae are unicellular photosynthetic organisms that use light energy and carbon dioxide, with higher photosynthetic efficiency than plants for the production of biomass. Microalgae's ability is to produce natural oils. They may be destined to different applications, such as biofuel production, purification of wastewater under either autotrophic or mixotrophic conditions, extractions of high added value foods and pharmaceutical products, or as food for aquaculture. Therefore in this study, we investigated that lipid accumulation under the nitrogen starvation of microalgae species *Chlorella* ESP-6. All of the experiments were conducted in 250 ml flasks that contained culture medium BG 11. The chemical composition of this medium was (g/L); $NaNO_3$, 1.5; KH_2PO_4, 0.04; $MgSO_4.7H_2O$, 0.075; $CaCl_2.2H_2O$, 0.036; H_3BO_3 0.0029; Na_2CO_3, 0.02; Fe(III)citrate, 0.006; citric acid 0.006. Nitrogen (N) restriction was applied at different ratios (0-25-50-75-100) % in the culture medium (BG11) for increase the lipid accumulation of the microalgae *Chlorella* ESP-6. Microalgae were cultured in a 200 rpm shaking incubator INNOVA 40 for 27 days at 27 ° C. Illumination was provided by four pieces of OSRAM brand led lamps with 7W 2400 lux. The cell concentration and growth was determined spectrophotometrically at 680 nm using Jenway 6800 UV Vis. spectrophotometer. Maximum growth rate, μ_{max}, was determined during the logarithmic phase of the growth. Lipid contents were determined according to the Bligh Dyer method. After the experimental studies, the maximum cell concentration (X_{max}= 1.98 gdw/L) and growth rate (μ_{max} = 0.0098 h^{-1}) were reached in 75% nitrogen restricted medium. The highest oil content (39%) was achieved in the presence of no nitrogen was present in the medium

Keywords: Biodiesel, *Chlorella*, microalgae, lipid.

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➢ **POSTER PRESENTATION**

Synthesis and Comparison of Calcium Phosphate Phases in Different Concentrated SBF Solutions By Biomimetic Method

Serbülent Türk[1*], Ibrahim Altınsoy[2], Gözde Ç. Efe[2], Mediha İpek[2], Mahmut Özacar[1,3], Cuma Bindal[1,2]

[*1]Sakarya University, Biomedical, Magnetic and Semiconductor Materials Research Center (BIMAS-RC), 54187 Sakarya, Turkey
[2]Sakarya University, Faculty of Engineering, Department of Metallurgy and Materials Engineering, 54187 Sakarya, Turkey
[3]Sakarya University, Science & Arts Faculty, Department of Chemistry, 54187 Sakarya, Turkey

Corresponding author e-mail: serbulentturk@sakarya.edu.tr

Abstract

Since bone transplants in the biomaterial field are the first-line transplants after the blood transfusion, calcium phosphate (CaP) phases have a great proposition in terms of both human welfare [1]. Although there are various methods for calcium phosphate synthesis, the biomimetic method is the closest production method to the bone-like calcium phosphate structure. CaP phase with the lowest Gibbs free energy is formed depending on the ionic concentration of the prepared Simulated Body Fluid (SBF) where biomimetic method was applied [2]. In this study Ca-P phases were obtained at different SBF concentrations (1xSBF, 1.5xSBF, 5xSBF) in physiological conditions. Phase composition, morphology, thermal stability of synthesized CaP bioceramics compared and characterized by XRD, FTIR, SEM (as shown in **Fig.1**) and TGA.

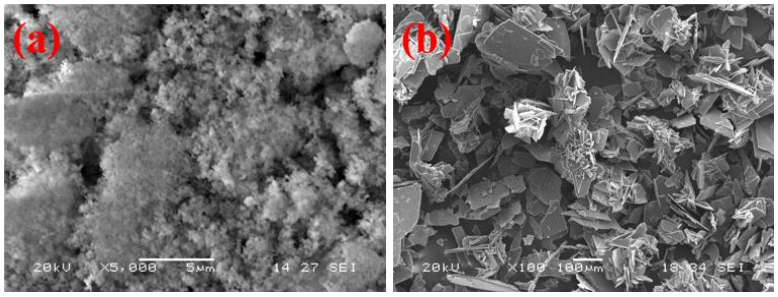

Fig.1 SEM images of obtained CaP phases in different morphologies by biomineralization (a) in 1xSBF and (b) in 5xSBF.

Keywords: Calcium Phosphates, Biomimetic method, Simulated body fluid.

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➢ **POSTER PRESENTATION**

Evaluation of Genotoxic Effects of Needle-Like TiO_2 Nanoparticles In Human Lymphocytes *in vitro* Using Micronucleus Assay

Nur Korkmaz, Deniz Yüzbaşıoğlu, Fatma Ünal*

Department of Biology, Science Faculty, Gazi University, 06500 Ankara, Turkey

Corresponding author e-mail: funal@gazi.edu.tr

Abstract

Nanotechnologies involve the production and manipulation of nanoparticles-NPs that have unique physico-chemical features compared to their bulk forms. Nanotechnology is used in very diverse areas as information and communication technologies, water decontamination, drug development, treatment of diseases, and the production of stronger and lighter materials. Therefore, there is growing concern that the human population is at risk from over-exposure to nanoparticle and the health risks that come with this exposure. TiO_2 nanoparticles (NPs) are one of the most frequently used materials in the production of paints, paper, plastics, food additive, tooth-pastes, cosmetics, and medicine. The aim of this study was to explore genotoxic effects of needle-like TiO_2 NPs using micronucleus-MN assay in cultured human lymphocytes. Lymphocytes obtained from three healthy donors (a man and two women) were incubated at 37°C for 72h. Lymphocytes were treated with different concentrations (100, 200, 300, 400, and 500 µg/ml) of needle-like TiO_2 NPs for 48h. A negative (ultra-distilled water) and a positive control (Mitomycin-C, MMC) were also maintained. MN assay results were analyzed by z-test. Needle-like TiO_2 NPs did not significantly increase the frequency of MN in lymphocytes at all the treatment concentrations compared to negative control. Similarly, TiO_2 nanoparticles had no effect on nuclear division index. There are studies in the literature showing that titanium dioxide nanoparticles are both genotoxic and non-genotoxic. These differences may result from the synthesis protocol used to produce nanoparticles, its crystal form, size and shape, and biochemical behavior in the culture medium and genotoxicity tests applied. Since nanotechnology industry and usage of TiO_2 NPs in this industry is getting growing every year, further research on the genotoxicity of titanium dioxide nanoparticles is needed.

Anahtar Kelimeler: Needle-like TiO_2 nanoparticles, genotoxicity, lymphocytes, micronucleus assay.

This study was approved by the Ethics Committee of Gazi University, Faculty of Medicine (No: 276, 05/09/2016).

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➢ **POSTER PRESENTATION**

α–Alkylated Reaction of Ketones with Alcohols via Ru (II) Catalysts

Batıkan Kavukcu*, Hayati Türkmen

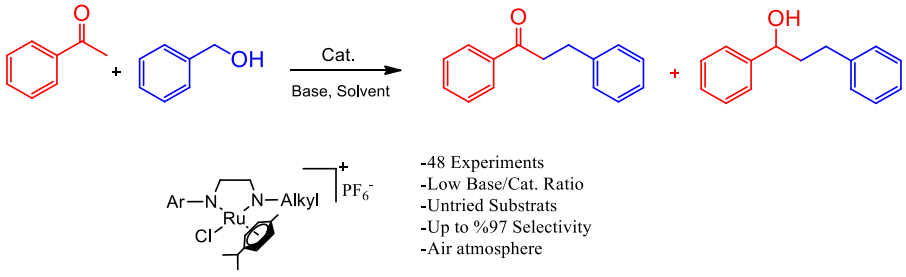
Ege University, Science Faculty, Chemistry Department, Izmir, Turkey

Corresponding author e-mail: sbkavukcu@gmail.com

Abstract

The method of forming the C-C bond is one of the notable reactions of organic synthesis. Alkylation reactions of ketones with alcohols are important reactions of this bond formation. The use of toxic and concomitant reagents (such as using alkyl halide) in alkylation reactions with conventional methods is a major problem. Alpha alkylation is preferred due to the following features: the use of alcohols as alkylating agents, the availability of atom economy, the more favorable of green chemistry and the formation of water as by-product.

A series of mononuclear Ru^{II} arene complexes with nitrogen donor chelate ligand that contain a alifatic groups have been prepared and fully characterised by ^{1}H, ^{13}C, ^{19}F and ^{31}P NMR spectroscopy, elemental analysis and X-ray diffraction. All complexes are cationic salt and stable with PF_6 anion. Each cation exhibits a pseudo-octahedral three-legged piano-stool geometry, in which three legs are occupied by one chloride ion and two nitrogen donor atoms of the chelating ligand. Although the complexes do not contain electron withdrawing groups, they have been successful in α-alkylation of ketones with alcohols reactions with in a short time (2h), with low base (0.2 mmol KOH) and relatively low catalyst (%0.25).



Scheme 1. α-alkylation reaction of ketones with alcohols

Keywords: α-alkylation, catalyst, Ru(II) arene complex, nitrogen chelate.
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➢ **POSTER PRESENTATION**

Anticancer Activities of Ru(II) Arene Complexes

Batıkan Kavukcu*, Hayati Türkmen

Ege University, Science Faculty, Chemistry Department, Izmir, Turkey

Corresponding author e-mail: sbkavukcu@gmail.com

Abstract

Platinum-based drugs are clinically used on a daily basis to treat cancers. The limitations of platinum-based drugs, dose dependent side effects and development of drug resistance mechanisms, have boosted the research for finding other metal-based drugs. Among metals, ruthenium is probably the one showing the greatest promises. Ruthenium appears to be less toxic than platinum and several biological studies have indicated that ruthenium complexes possess diverse modes of action. The redox chemistry of ruthenium is rich and compatible with biological media, and the overall toxicity of ruthenium is lower than platinum, thus allowing higher doses of treatment. In this work, we prepared a series of ruthenium complexes to investigate their anticancer activities. These complexes were characterized by ^{1}H, ^{13}C, ^{19}F, ^{31}P NMR and X-Ray.

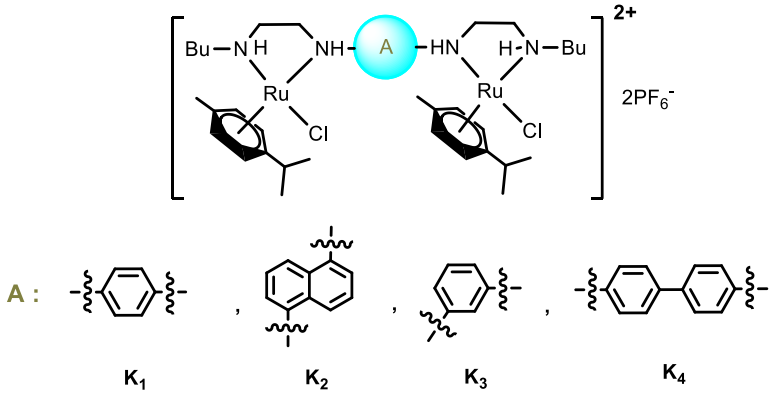

Figure 1. Synthesised Ru (II) arene complexes

Keywords: Anticancer, Ru(II) Arene Complex, Nitrogen Chelate

This project is supported by TUBITAK(214Z098).

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➢ **POSTER PRESENTATION**

Fruit Anatomical and Morphological Characteristics of Endemic *Daucus conchitae* W. Greuter From Turkey

Betül Büyükkılıç Altınbaşak[1,2*], Gülay Ecevit Genç[2],

[1]Bezmialem Vakıf University, Faculty of Pharmacy, Department of Pharmaceutical Botany, Istanbul, Turkey
[2]Istanbul University, Faculty of Pharmacy, Department of Pharmaceutical Botany, Istanbul, Turkey

Corresponding author e-mail: betulbuyukkilic@gmail.com

Abstract

Daucus L. belongs to essential oil content rich Apiaceae family. *D. carota* L. (carrot) is the best known species of the genus are cultured widely around the world. *Daucus* consists of approximately 25 species which are characterized by the presence of bracts in pedunculate umbels, dorsally compressed mericarps, hairs on primary ridges, and uniseriately arranged spines on the secondary ridges of the fruit (Lee and Park, 2014). 6 species of *Daucus* are naturally grown in Turkey. This work is about one of these species which is endemic *Daucus conchitae* W.Greuter (Duman, 2000; Tuzlacı and Bulut, 2012; Aytaç and Duman, 2013).
In this study, fruits of *D. conchitae* anatomically and morphologically were examined. Samples were obtained from the Pharmacy Faculty Herbarium of Marmara University (MARE-8731).
Anatomy of fruits cross sections were carried out on these samples. Samples were investigated in Sartur reagent. Several slides were made and photographed with the aid of a light microscope. The images on the stereo microscope were recorded to examine the morphological characteristics of the fruit.
Daucus is taxonomically one of the most problematic genera in the Apiaceae because genera has highly variable fruit morphology. Members of the Apiaceae family have characteristic anatomical features. The friut anatomy is one of the most distinguished character in Apiaceae family. In this study, *D. conchitae* fruit anatomy was studied for the first time. According to the examinations, the mesocarp dorsal is slightly flattened and contains 4 vallecullar and 2 commissural vittaes.

Keywords: *Daucus conchitae* W.Greuter, anatomy, morphology.

Acknowledgments

This study was supported by Scientific Research Projects Coordination Unit of Istanbul University. Project number: 22180

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➢ **POSTER PRESENTATION**

Bacteriophages as Markers of Human Faecal Pollution

Başar Uymaz Tezel[1*], Pınar Şanlibaba[2], Nefise Akçelik[3], Mustafa Akçelik[4]

[1]Çanakkale Onsekiz Mart University Bayramiç Vocational School, Food Technology Program, ÇANAKKALE/TURKEY
[2]Ankara University Engineering Faculty, Department of Food Engineering, ANKARA/TURKEY
[3]Ankara University Institute of Biotechnology, ANKARA/TURKEY
[4]Ankara University Department of Biology, ANKARA/TURKEY

Corresponding author e-mail: buymaz@comu.edu.tr

Abstract

Bacterial viruses, which were discovered twice by Twort in 1915 and by Herelle in 1917, were called as 'bacteriophages' which literally means 'eaters of bacteria'. Bacteriophages are recognized as the most abundant biological entities on our planet. They are ubiquitous wherever their bacterial host thrives. Contamination of water sources by sewage is a health-related risk because of the possible presence of pathogenic microorganisms. Water quality standards have been monitored using faecal indicator organisms (FIO), typically intestinal enterococci and *Escherichia coli*. The epidemiological studies have shown that the concentrations of FIOs from human source have higher disease risk to humans than non-human sources. The methods based on the enumeration of FIOs from water samples can be inadequate to determine the source of enteric pathogens. The bacteriophages are abundant in faeces, more resistant to sewage treatment processes than the bacteria they infect and have narrow host ranges. In this case, the determination of phages infecting several groups of gut bacteria is a better alternative method. The thermotolerant coliforms, *Bacteroides fragilis* phages, and somatic and F(male) specific coliphages are widely used as tools for inferring the presence of the pathogens in water sources, but there are some limitations. For example, *B. fragilis* phages are found only in some geographical areas. The prevalence/survival of thermotolerant coliforms is short and cannot be correlated with that of pathogens. The presence of F+ RNA coliphage serotype II and III in cow, pig, horse and bird faeces makes them unreliable markers for specific human faecal pollution. The using enterophages, specifically infecting *Enterococcus faecalis*, has already been proposed as a new and reliable alternative indicator of human faecal contamination. Although under the similar environmental conditions the survival of enterophages is similar to other enteric viruses, enterophages cannot detect in pristine ecosystems due they frequently found in human intestines.

Keywords: Bacteriophage, faecal pollution, indicator, enterophages.

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➢ **POSTER PRESENTATION**

The Total Antioxidant Capacity and Possible Inhibitory/Activatory Effects of a Novel Thiophen Substituted Thioanisol Derivative on GSTM2-2 Isozyme Activity

Can Yılmaz[1*], Arif Kıvrak[2], Metin Konuş[1], Muheb Algso[3], Derya Ergin[1], Ceylan Fidan[1]

[*1]Van Yuzuncu Yil University, Faculty of Science, Department of Molecular Biology and Genetics, Van, Turkey.
[2] Van Yuzuncu Yil University, Faculty of Science, Department of Chemistry, Van, Turkey.
[3] Van Yuzuncu Yil University, Technopolis, DOSE Drug R&D, Van, Turkey.

Corresponding author e-mail: cyilmaz@yyu.edu.tr

Abstract

Benzothiophenes and thiophenes have gained considerable interest in recent years owing to their wide variety of biological and pharmacological properties. In this study, a novel thiophen substitue thioanisol derivative ($C_{11}H_9BrS_2$) were synthesized and some of its biological properties were tested. Total antioxidant capacity was determined by three different methods: DPPH, ABTS and Galvinoxyl assays. All of them worked under reaction conditions and when the values were compared to one of universal antioxidants, quercetin, they didn't yield IC_{50} values, an indicator of significantly high antioxidant activity. For 33mg/ml final concentration of the derivative, DDPH, ABTS and, galvinoxyl assays concluded %RSA values of %1.88 ,%16.22, %18, respectively. GST enzyme activity measurements were performed by ELISA microplate reader system stated that, at low and normal final concentrations of the substrate CDNB (0,5mM and 1mM), there existed about 20% of activation for 250µM of thiophen derivative. Interestingly, by increasing CDNB concentration (1,5mM), this phenomena ceased dramatically.

Keywords: Thiophen, GSTM2-2, DPPH, ABTS, Galvinoxyl, inhibition/activation effect.

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➢ **POSTER PRESENTATION**

The Effect of Ag for TiO_2 Semiconductor Based Dye-Sensitized Solar Cells

Soner Çakar[1,2], Keziban Atacan[3], Nuray Güy[2,*], Mahmut Özacar[2,3]

[1]Bulent Ecevit University, Science and Technology Research and Application Center (ARTMER), 67100 Zonguldak, Turkey.
[2]Sakarya University, Science&Arts Faculty, Department of Chemistry, 54187 Sakarya, Turkey
[3]Sakarya University, Biomedical, Magnetic, Semiconductor Materials Application and Research Center (BIMAS-RC), 54187 Sakarya, Turkey

Corresponding author e-mail: nurayg@sakarya.edu.tr

Abstract

Solar energy is the clean, green and plentiful renewable energy sources [1]. The dye-sensitized solar cells DSSCs comprise of a photo anode (metal oxide semiconductor), a dye sensitizer (organometallic or organic dye), an electrolyte (redox couple) and a counter electrode (catalyst) [2]. Ever since, O'Reagen and Gratzel [3] invented the first dye sensitized solar cell in 1991 numerous research effort have focused on DSSCs based different natural dye, organic dye etc. due to the environmental friendliness and low cost product. The researchers may effort the improvement the cell efficiency. Many of researchers have improvement separately different type of dyes but these dyes have insufficient and researchers looking for a new type dyes and/or alternatives. In this study, a TiO_2 and Ag/TiO_2 nanoparticles have been prepared and used in dye-sensitized solar cells and these photoanode were characterized via XRD, FESEM and FESEM-EDS. Additionally, the indigo carmine solutions with different pH values have been prepared, characterized by UV-Vis absorbance and cyclic voltammetry techniques. The efficiency of champion solar cell is obtained 1.39% with Ag/TiO_2 photoanode and pH 11 indigo carmine dye solution. Our results strongly supported the prospects for successfully application of DSSCs based on redox indicator system and indicate the importance of molecular complexation design for redox indicator system to produce highly efficient DSSCs.

Keywords: Dye sensitized solar cells, Ag/TiO_2, indigo carmine.

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➢ **POSTER PRESENTATION**

Determination Reactive Oxygen Species (ROS) Photogenerated by BiOBr/$MgFe_2O_4$ Under Visible Light

Nuray Güy[1*], Mahmut ÖZACAR[1,2]

[1] Sakarya University, Science&Arts Faculty, Department of Chemistry, 54187 Sakarya, Turkey
[*2] Sakarya University, Biomedical, Magnetic, Semiconductor Materials Application and Research Center (BIMAS-RC), 54187 Sakarya, Turkey

Corresponding author e-mail: nurayg@sakarya.edu.tr

Abstract

As the development of the industry, the efficient ultilization of solar energy for photocatalytically treatment of organic contaminants has attracted wide attention [1]. Visible light responsed photocatalysts, which could be excited by the solar energy and solve these problems. Among them, BiOBr as an important candidate of Bi-based photocatalysts has become a great attention since it has relatively narrow band gap energy (2.64-2.91 eV) [2]. A lot of studies exhibits that the semiconductor photocatalysis via light irradiation on a surface of photocatalyts is an effective advanced oxidation process (AOPs). It includes the generation of reactive oxygen species (ROS) like superoxide anion ($O_2^{\bullet -}$), hydroxyl radical (OH•) and hydrogen peroxide (H_2O_2). These oxidizing species can completely destroy different organic contaminants in wastewater [3]. Furthermore, magnetic nanoparticles have been commonly used in the photocatalysis because of their advantage of magnetic recyclability and reusability [4].

In this study, BiOBr/$MgFe_2O_4$ nanoparticles were successfully prepared and crystal and morphological structure, optical propert'es systematically characterized. the free radical trapping experiments were performed, and disodium ethylenediaminetetraacetate ($EDTANa_2$) was chosen as the hole (h+) scavenger, tert-butanol (t-BuOH) was chosen as the hydroxyl radical (OH•) scavenger, benzoquinone (BZQ) was chosen as the superoxide radical($O_2^{\bullet -}$) scavenger, and $K_2Cr_2O_7$ was chosen as the electron (e^-) scavenger. Additionally, their reusabilities are found to be very high.

Keywords: BiOBr, $MgFe_2O_4$, reactive oxygen species.

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➢ **POSTER PRESENTATION**

Anticholinesterase Activities of Decoction and Infusion of *Sideritis pisidica* Boiss. & Heldr.

Züleyha Özer[1*], Turgut Kılıç[2], Sema Çarıkçı[3]

[1]University of Balıkesir, Altinoluk Vocational School, Programme of Medicinal and Aromatical Plants, Altınoluk, Edremit-Balıkesir, Turkey.
[2]University of Balıkesir, Faculty of Necatibey Education, Department of Science Educations, Altıeylül-Balıkesir, Turkey.
[3]University of Balıkesir, Faculty of Arts & Science, Department of Chemistry, Campus of Cagis, Altıeylül-Balıkesir, Turkey.

Corresponding author e-mail: zuleyhaozer@balikesir.edu.tr

Abstract

As a member of the Lamiaceae family the genus *Sideritis* is distributed mainly in the Mediterranean area from Caucasus to the Canary Islands over 150 species. In our country, the number of taxa reached 46 species with 12 subsp. and 2 varieties, totally 54. 41 of these are endemic. *Sideritis* species have been used in folk medicine for their anti-inflammatory, antirheumatic, digestive, antispasmodic and antimicrobial activities in Turkey. In the Mediterranean and Aegean regions they are widely consumed as herbal tea. *Sideritis pisidia* is endemic to Turkey and commonly known as "Eldiven çayı". In this study, decoction and infusion of *S. pisidica* were investigated for their anticholinesterase activities. Acetylthiocholine iodide and butyrylthiocholine iodide were used as substrates of the reaction, and the DTNB method was applied for the measurement of anticholinesterase activity.

Keywords: *Sideritis pisidica*, anticholinesterase activity, decoction, infusion.

Acknowledgments
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➢ **POSTER PRESENTATION**

Investigation of Essential Oil Chemical Composition of *Origanum sipyleum* L.

Züleyha Özer[1*], Merve Öncü[2], Turgut Kılıç[3], Sema Çarıkçı[2], Tuncay Dirmenci[4]

[1]University of Balıkesir, Altinoluk Vocational School, Programme of Medicinal and Aromatical Plants, Altınoluk, Edremit-Balıkesir, Turkey.
[2]University of Balıkesir, Faculty of Arts & Science, Department of Chemistry, Campus of Cagis, Altıeylül-Balıkesir, Turkey.
[3]University of Balıkesir, Faculty of Necatibey Education, Department of Science Educations, Altıeylül-Balıkesir, Turkey.
[4]University of Balıkesir, Faculty of Necatibey Education, Department of Biology Educations, Altıeylül-Balıkesir, Turkey.

Corresponding author e-mail: zuleyhaozer@balikesir.edu.tr

Abstract

The genus *Origanum*, belonging to the Lamiaceae family, comprises 43 species (51 taxa) and 15 hybrids worldwide. Origanum sipyleum L., is an endemic species in Turkey and commonly used as folk tea and medicine. It is commonly known as "Mor Mercan" and is used for stomach ache and cough therapy. In this study, the essential oils obtained from aerial parts of *O. sipyleum* which collected at different years 2014 and 2015 were analyzed. The essential oil from dried samples were obtained by hydrodistillation for 4 hours, using a Clevenger-type apparatus. The chemical composition of the essential oils were analyzed using Thermo Scientific TSQ GC-MS/MS. Total percentages of the determined compounds of O. sipyleum ranged from 96.85% for 2014 and 98.8% for 2015. The main components of the essential oil were τ-terpinene (33.9%), cymene (23.05%), thymol (13%) and alloaromadendrene (3.9%) for 2014, γ-terpinene (28.7%), cymene (21.6%), carvacrol (21.2%) and germacrene-D (4.0%) for 2015.

Keywords: *Origanum sipyleum*, essential oil, GC-MS/MS.

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➢ **POSTER PRESENTATION**

Investigation of Antimicrobial Activity of Jojoba Leaf Extracts and Their Potential Use as Natural Preservative to Sodium Benzoate in Food Industry

Meltem Asan-Ozusaglam*, Ayse Yavuz

Department of Biotechnology and Molecular Biology, Faculty of Science and Letters, Aksaray University, Aksaray, Turkey.

Corresponding author e-mail: meltemozusaglam@gmail.com

Abstract

Jojoba (*Simmondsia chinensis*) is an evergreen and native to America and Mexico. Nowadays, it is cultivated in Turkey due to its high economic and medicinal values. The plant grows at the arid lands of Aegean and Mediterranean coastal region of Turkey. It has been reported that the various extracts and essential oil from seeds of Jojoba can be used as natural preservatives in food against food-borne pathogens. Up to now, most of the studies with Jojoba are focused on the determination of antimicrobial activities using its fatty acids against food-borne pathogens. Considering the gap in the literature, antibacterial activity of leaves extracts from Jojoba was investigated to determine their potential use against fish pathogens for their applications as natural feed additives. Sodium benzoate is an artificial food additive used as a preservative at the concentration of 0.1-0.2% w/v (below pH 4.5) in food such as marinated fish or canned sea food products against bacteria, fungi and yeast. The antimicrobial potential of the extracts (ethanol, methanol, dichloromethane and n-hexane) and sodium benzoate were evaluated using disc diffusion and microdilution-broth methods against fish bacterial pathogens. *Lactococcus garvieae*, *Streptococcus agalactiae*, *Vibrio alginolyticus*, *Yersinia ruckeri*, *Vibrio anguillarum* (M1 and A4 strains) and *Aeromonas hydrophila* were used as test microorganisms. The results of disc diffusion method showed that, the highest and lowest inhibitory activities were obtained against *V.anguillarum* A4 (11.70 mm, n-hexane extract) and *S. agalactiae* (8.32 mm, ethanol extract). The minimal bactericidal concentration values for the test microorganisms were in the range of 10-40 µg/µl. Sodium benzoate (0.1% w/v) showed antimicrobial activity only against *A. hydrophila* and *S. agalactiae* at pH 4.0 and 5.0 among the tested fish pathogens in the study. Considering the results of Jojoba extracts can be suggested as possible candidate for the natural feed additives and food preservatives.

Keywords: *Simmondsia chinensis*, fish pathogen, antibacterial, extract.

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➢ **POSTER PRESENTATION**

Antioxidative Effects of *Streptococcus thermophilus* Strains from Human Breast Milk

Ayse Yavuz, Meltem Asan-Ozusaglam*

Department of Biotechnology and Molecular Biology, Faculty of Science and Letters, Aksaray University, Aksaray, Turkey.

Corresponding author e-mail: meltemozusaglam@gmail.com

Abstract

Oxidative stress can damage biological molecules such as proteins, lipids and nucleic acids and plays critical roles in various diseases such as cancer, diabetes, neurodegenerative diseases, emphysema, cirrhosis, atherosclerosis, myocardial infarction, arthritis, Alzheimer's and Parkinson's disease. This occurs as a result of an imbalance between the production of reactive oxygen species (ROS) or free radicals and leads to the disturbance of normal human health. Natural antioxidants from bio-resources can be used to control the increase formation of free radicals and can replace synthetic antioxidants with side effects such as liver damage and carcinogenesis. The anti-oxidative activity of lactic acid bacteria has recently been reported in a few studies. Five *Streptococcus thermophilus* strains isolated from human breast milk were investigated for their in vitro scavenging activity 2,2-diphenyl-1-picrylhydrazyl (DPPH) free radicals and ferrous ion chelating activity. The results showed that all the tested *S. thermophilus* strains exhibited antioxidant activity. The DPPH radical scavenging activities of the strains ranged from 29.84 to 36.90%. The radical scavenging of BHT, synthetic antioxidant used in food industry, at 200 µg/ml concentration was a bit higher (42.94%) than the strains. The ferrous ion chelating activity was varied from 23.44 to 30.13%. Among five strains of *S. thermophilus*, *S. thermophilus* MAS-4 showed the highest DPPH scavenging activity (36.90%) and ferrous ion chelating activity (30.13 %). In conclusion, *S. thermophilus* strains originated from human breast milk can be considered as natural potential antioxidant to commercial ones.

Keywords: Lactic acid bacteria, DPPH, ferrous ion, natural antioxidant.

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➢ **POSTER PRESENTATION**

Phenolics of *Sideritis bilgerana* P. H. Davis Tea

Sema Çarıkçı[1*], Turgut Kılıç[2] , Züleyha Özer[3], Sinem Dereli[1]

[*1]Balıkesir University, Science and Literature Faculty, Chemistry Department, Balikesir, Turkey.
[2]Balıkesir University, Necatibey Education Faculty, Science Education Department, Balikesir, Turkey.
3 Balıkesir University, Altinoluk Vocational School, Medicinal and Aromatical Plants Programme, Balikesir, Turkey.

Corresponding author e-mail: carikci@balikesir.edu.tr

Abstract

The genus *Sideritis* belongs to the family of Lamiaceae (Labiatae) and the name *Sideritis* comes from the Greek word "Sideron" which means healing iron wounds. They are mainly found in the Mediterranean area and mostly in Spain and Turkey. Throughout the ages *Sideritis* species are consumed as tea among the people due to digestive anti-inflammatory, antiulcerogenic and antimicrobial properties as well as heal the common cold, flu and allergies. The term phenolic compound means a wide range of plant substances that possess an aromatic ring bearing one or more hydroxyl substituents.The protection against oxidative damage is one of the most widely described attributes of plant polyphenols, and is connected with their antioxidant activity. They mainly have been attributed strong antioxidant properties.In this study, we aimed to determine phenolic compounds of *Sideritis bilgerana* P. H. Davis tea samples. The aerial parts of *S. bilgerana* were collected from Karaman – 6 km from the Mut, in July 2015. The plants were allowed to dry in the shade. The tea samples were prepared by two methods: decoction and infusion, and analyzed LC-MS/MS for determined quantitative amounts of the phenolic compounds. The main compounds were determined for both samples as follow: fumaric acid, chlorogenic acid and salvigenin, respectively.

Keywords: *Sideritis bilgerana* P. H. Davis, phenolic compounds, LC-MS/MS.

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➢ **POSTER PRESENTATION**

Antimicrobial activity of *Origanum bilgeri* P. H. Davis

Sema Çarıkçı[1*], Turgut Kılıç[2] , Hasibe Yılmaz[3], Tuncay Dirmenci[4], Ahmet C. Gören[3]

[*1]Balıkesir University, Science and Literature Faculty, Chemistry Department, Balikesir, Turkey.
[2]Balıkesir University, Necatibey Education Faculty, Science Education Department, Balikesir, Turkey.
[3]TUBITAK, National Metrology Institute (UME), Department of Chemistry, Gebze-Kocaeli, Turkey.
[4]Balıkesir University, Necatibey Education Faculty, Biology Education Department, Balikesir, Turkey

Corresponding author e-mail: carikci@balikesir.edu.tr

Abstract

The genus *Origanum* is member of Lamiaceae family, and one of the popular species used as spices; named as “oregano” all over the world, “kekik” in Turkey; for flavoring of food products or as herbal tea, as well as in perfumery for their spicy fragrance. The genus represented 24 species (26 taxa) and 8 hybrids in Turkey 20 of which are endemic. *Origanum bilgeri* P. H. Davis belongs to section *Chilocalyx* and known as "Cıngıllı kekik" in rural area. The species is endemic to Turkey and grown south part of Anatolia. *Oregano* extracts have been showed remarkable biologic activities, such as antioxidant, antimicrobial, antifungal, antispasmodic, antitumoral, analgesic, antimutagenic, angiogenic, antiparasitic, antiplatelet, antielastase, anticholinesterase. In this study, the antimicrobial activity of the methanol, acetone and chloroform extracts from *O. bilgeri* were tested against *Escherichia coli*, *Staphylococcus aureus Mycobacterium smegmatis*, and the fungi *Candida albicans*. Dimethyl sulfoxide and methanol were used as a negative control and ketoconazole, streptomycin, oxacillin, were used as positive control. The disc diffusion assay of Kirby-Bauer was used to screen for the antibacterial activity. The plant material collected from Antalya, between Gündoğmuş and Hanboğazı, in August 2014 and allowed to dry in the shade. The extracts prepared from a 100 g plant samples with methanol, acetone and hexane. The results showed that the extracts have weak activity against tested microorganisms and acetone extract of the *O. bilgeri* was found most active.

Keywords: *Origanum bilgeri P. H. Davis*, antimicrobial activity, *E. coli, S. aureus, M, smagmatis, C. albicans.*

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➢ **POSTER PRESENTATION**

The Effects of Industrial Pollution on Insects

Sakine Ugurlu Karaağaç

Karabuk University, Engineering Faculty, Environmental Engineering Department, Demirçelik Kampusu, 78050 Karabuk-Turkey

Corresponding author e-mail: sakineugurlu@karabuk.edu.tr

Abstract

Air pollutants like dust and particles are lead to darkening of materials, plants and tree organs. In this case, light-colored bugs caused adaptation called melanism. Industrial melanism is the evolution of dark and black color body insect forms by industrial pollution. The phenomenon has been documented in numerous species in areas subjected to heavy air pollution, mainly SO_2. Melanism has applications in practical bioindication. The phenomenon is expected to be an indication of the increased susceptibility to predation by birds of white forms of insects resting on dark tree trunks. Especially after the industrial revolution, technological developments have increased the production by changing the way of production. Therefore, the pressure on natural resources has increased and industrial pollutants have been given natural environment, causing environmental pollution. Organisms in ecosystems exposed to environmental pollution are associated with these pollutants and their metabolites in various forms. The dust and particles from these pollutants accumulate on the leaves of the plants, causing the plant to decrease the amount of photosynthesis, to shut down the stomata, and to prevent the translocation. Thus, the metabolic activities of the plant are weaken and enter the stress and remain vulnerable to harmful insects. As a result of this, the population of insect species are increased. The majority of insects are herbivorous, and high numbers of species in a food web are dependent on autotrophic plants. Consequently, factors that disturb plant physiology have effects on insect fauna relying on plants.

Keywords: Industrial pollution, pollution effects, insects, industrial melanism.

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➢ **POSTER PRESENTATION**

Investigation of the Relation of Physical Activity to Blood Parameters in Patients with Type 2 Diabetes Mellitus

Asuman Gölgeli[1*], Fatma Çalışkan Tapsız[2]

[1]Erciyes University, Faculty of Medicine, Department of Physiology, Kayseri, Turkey
[2]Halis Demir Training and Research Hospital, Department of Dietetics, Nigde, Turkey

Abstract

Today, the whole world is confronted with a Type 2 Diabetes Mellitus (DM) pandemic. It is common in developing and developed countries. The type 2 diabetes genetic background is often associated with obesity and physical inactivity. When we examined diabetes patients, we observed that their blood sugar levels were more regular in patients who changed their lifestyle and were physically active. From these personal observations, it was thought that there might be a relationship between physical activity and diabetes, and it is aimed to investigate the effectiveness of physical activity level in diabetes patients.

Type 2 diabetes patients who have had at least one year of diabetes mellitus, not older than 5 years of age with diabetes and who do not use insulin have been included in this study. The patients have applied the internal medicine policlinics in Ömer Halis Demir Training and Research Hospital. The general characteristics, health status, dietary habits, biochemical findings and physical activity level of the individuals covered by the survey were recorded in the questionnaire form by face to face interview method. The level of physical activity was determined using the International Physical Activity Form (IPAQ). HbA1c, total cholesterol, triglyceride, HDL and LDL levels were determined in the blood samples of the patients.

The subjects with type 2 diabetes who participated in the study were 54 %female, 46% were male. The duration of diabetes in individuals is 27,39 ± 15,85 months. Thirty percent of the participants were followed without medication, 33% of participation use oral antidiabetic, 33% with oral antidiabetic treatment followed by no medication and 4% with oral antidiabetics. 40% of participants are inactive, 29% are active in the middle, and 31% have sufficient activity. Total Metabolic equivalents of participants (MET-dk / week values) were found as 538,10 ± 209,77 in the inactive group, 2201,84 ± 754,05 in the medium active group and 4656,09 ± 1524,51 in the active group ($p < 0, 05$). Participants' fasting blood glucose values; 183,42 ± 47,91 in the inactive group, 133,03 ± 17,81 in the active group and 111,52 ± 12,33 in the active group ($p < 0,05$). HbA1c values of participants; 8,03 ± 1,41 in the inactive group, 6,57 ± 83 in the medium active group and 5,53 ± 1,48 in the active group ($p < 0,05$).

Higher levels of HDL are significantly higher in individuals with higher total MET-min / week values, while fasting blood glucose and HBA1c values are significantly lower than in others, suggesting that physical activity is important in individuals with type 2 diabetes.

Keywords: Type 2 Diabetes, Physical Activity, Fasting blood glucose, HBA1c, HDL.

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➢ **POSTER PRESENTATION**

Association of XRCC1 and XPD Functional Gene Yariants with Nicotine Dependence and/or Schizophrenia: A Case-Control Study and in Silico Analysis

Pehlivan S.[1], Aydin N.[2], Nursal A.F.[3], Uysal M.A.[4], Pehlivan M.[5], Tekcan A.[6], Yavuz F.K.[2], Sever U.[1], Yavuzlar H.[2], Aydin P.C.[2]

[1]Department of Medical Biology, Istanbul University, İstanbul Faculty of Medicine, Istanbul, Turkey
[2]Department of Psychiatry, Bakirkoy Research and Training Hospital for Psychiatry, Neurology and Neurosurgery, Istanbul, Turkey
[3]Department of Medical Genetics, Hitit University, Faculty of Medicine, Corum, Turkey
[4] Department of Chest Diseases, Yedikule Hospital For Chest Diseases and Thoracic Surgery Training and Research Hospital, Istanbul, Turkey;
[5] Department of Haematology, Gaziantep Univesity, Faculty of Medicine, Gaziantep, Turkey.
[6]Department of Medical Biology, Ahi Evran University, Faculty of Medicine, Kirsehir, Turkey

Abstract

The role of DNA repair mechanisms has received attention recently in schizophrenia (Sch). Sch patients show an increased prevalence of nicotine dependence (ND). This study aimed to find out whether functional SNP variants in the *XRCC1* and the *XPD* play any role both in ND and Sch+ND etiopathogenesis in a Turkish population which was followed up with a in silico analysis approach.
XRCC1 rs25487 and *XPD* rs13181 variants were determined using PCR-RFLP. In the prediction of pathogenic effect of rs25487 and rs13181 SNPs, the PANTER and SNPs &GO programs were used. Also, the PPI analysis was performed to retrieve functional partners of the XRCC1 and XPD protein.
XRRC1 rs 25487 GG genotype was significantly lower in both ND and Sch+ND group than the controls (*p=0.001*, *p=0.006*) while G allele was lower only in Sch+ND group comparison to controls (*p=0.034*). *XPD* rs13181 Lys/Lys genotype was more lower in both Sch+ND and ND group than in controls (*p=0.007*; *p=0.001*). *XPD* rs13181 Gln allele was lower in Sch+ND group compared to controls while Lys allele was higher in ND group than controls, respectively (*p=0.034*; *p=0.008*). The results of in silico prediction analysis showed that the rs25487 had neutral effect while the rs13181 had disease-related effect.
The results of the current study revealed a possible genetic association between *XRCC1*/*XPD* variants and both in ND and Sch+ND. We think that analysis of this missense SNPs using bioinformatics methods would help diagnosis of *XRCC1* and *XPD*-related diseases.

Key Words: Schizophrenia, Nicotine Dependence, Xrcc1, Xpd, Dna Repair, Variant.

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➢ **POSTER PRESENTATION**

Mn and Cu Doping of Anatase TiO_2 for Dye Sensitized Solar Cells

Burak Ünlü[1*], Mahmut Özacar[1,2]

[1]Sakarya University, Biomedical, Magnetic and Semiconductor Materials Research Center (BIMAS-RC), 54187 Sakarya, Turkey
[2]Sakarya University, Science&ArtFaculty, Department of Chemistry, 54187 Sakarya, Turkey

Corresponding author e-mail: burakunlu@sakarya.edu.tr

Abstract

Dye Sensitized Solar Cells (DSSCs) are attractive and inexpensive solar cells that are based on nanomaterials. DSSCs are consisted of photoanode, counter electrode and electrolyte. Titanium dioxide is a semiconductor material which is used as a photoanode material commonly. Band gap, surface area, morphology, crystal size etc. of TiO_2 are played major role on performance of DSSCs. Therewithal, doping can show effects on structural properties like crystal size and morphology and electronic properties such as band gap and dipole moment. For this reason, Titania powders, which were doped with Mn and Cu metals, were synthesized via microwave assisted hydrothermal method. Obtained powders were characterized via SEM, XRD, DRS, FTIR and Particle Sizer. Prepared TiO_2 particles were coated on FTO substrate with spin coater and used as a photoanode in DSSC. The 1,10-phenanthroline, platinum and I^-/IO_3^- redox couple were used as sensitizer, counter electrode and electrolyte, respectively. Linear sweep voltammetry and electrochemical impedance spectroscopy were used to investigate performance of DSSCs with an electrochemical workstation. With this study, doping TiO_2 with Mn and Cu and how this affects properties of titania such as particle size, morphology and band gap are investigated.

Keywords: DSSCs, microwave assisted hydrothermal method, Mn or Cu doped TiO_2

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➢ **POSTER PRESENTATION**

Synthesis and Characterization of Magnetically Separable Titanium-Gallic Acid Metal-Organic Framework Structures

Olcay Severgün[1], Burak Ünlü[1,*], Mahmut Özacar[1,2]

[1]Sakarya University, Biomedical, Magnetic and Semiconductor Materials Research Center (BIMAS-RC), 54187 Sakarya, Turkey
[2]Sakarya University, Science & Arts Faculty, Department of Chemistry, 54187 Sakarya, Turkey

Corresponding Author e-mail: bunlu@sakarya.edu.tr

Abstract

In this work, a new metal organic framework (MOF) has been synthesized for use in heterogeneous catalysis applications. This MOF can be used as a support material to increase the efficiency and reusability of palladium during catalysis. Synthesized structure was built on magnetic particles (MNPs) to allow easy separation. While nods of MOFs are titanium (Ti), gallic acid (GA) was used as the organic linker. The Fe_3O_4 MNPs were synthesized by the coprecipitation method. Once the MNPs was obtained they were thoroughly dispersed with the aid of a sonicator in the solution which prepare to produce the MOF. After that, the necessary precursors are added to the solution and dispersed again via sonicator, MOF was synthesized around the MNPs by the solvothermal method. Obtained magnetic MOF system and MNPs were characterized by a FTIR, XRD, UV-Vis spectrophotometry and store for further application. The synthesized and characterized Fe_3O_4@Ti-GA MOF is a good alternative as a magnetically separable material for catalysis and other chemical application.

Keywords: Fe_3O_4 MNPs, Gallic acid, Titanium, Metal–Organic Frameworks, Coprecipitation method.

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➢ **POSTER PRESENTATION**

Batık Gemilerin Çevre Üzerindeki Etkileri

Sakine Ugurlu Karaağaç

Karabük Universitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü 78050 -Karabük-Türkiye

Sorumlu yazar e-mail: sakineugurlu@karabuk.edu.tr

Özet

Dünyada artan nüfus ve gelişen teknoloji ile birlikte çevre sorunları da oldukça hız kazanmaktadır. Bu sorunlardan en önemlilerinden biri de deniz kirliliğidir. Deniz kirliliği, son elli yıldır dünya gündemini meşgul eden çevre sorunlarından biridir. Deniz ticaretinin ve taşımacılığın hızla artması ve buna paralel olarak ta deniz kazalarında görülen artış, bu sorunu büyük ölçüde etkilemektedir. Denizlerde kaza sonucu batan gemilerden yayılan sintine suları, balast suları, petrol ve türevleri, yağ/gress ve katı atıklar deniz ortamında çok büyük kirlilik yüküne neden olmakta ve çevre üzerinde önemli derecede olumsuz etkilere yol açmaktadır. Özellikle batık gemilerden sızan kirliliğin giderilmesi oldukça zordur. Bir geminin batması ile birkaç ana sonuç ortaya çıkabilir. Bunlara örnek olarak petrol ve kimyasal sızıntı ve toksik maddeler deniz yaşamı ve deniz dibi için önemli zararlar oluşturabilmektedir. Batığın incelenmesi veya çıkarılmasına bağlı olarak batıklardan kaynaklanan ikincil sonuçlar akustik kirlilik ve deniz yatağında ileri seviyede zarar oluşturabilir. Gemilerde çok iyi seviyede izolasyon yapılarak inşa edilen petrol tankları bile zaman içerisinde tuzlu su korozyonu ve güçlü dip akıntıları ile deniz dibi sedimentini değiştirebilir ve deniz yaşamının zarar görmesine sebep olabilir. Zararlı ürünlerin çoğu gemi batıklarından denizlere karışır. Bunlar nükleer ürünler veya uranyum, metaller ve asbest gibi yan ürünler olabilir. Bu ürünler hücrelere veya organizmalara girdiğinde, toksinler üretilir. Toksinler ve zararlı ürünler canlı hücrelerde onları gıda zincirinde yukarı taşıyacak şekilde birikebilirler. Toksinler ya da zararlı ürünler kritik bir düzeye ulaşırsa, bunlar canlı organizmalarda deformasyona, kısırlığa ya da ölüme neden olabilir. Deniz yatağına yerleşen yağ veya diğer çözünürlüğü olmayan ürünler yerleştiği zaman, deniz altındaki bitki yaşamına olumsuz yönde etkili olmaktadır. Sonuç olarak, batık gemilerden kaynaklanan kirlilik yükleri ve bunların çevre üzerindeki olumsuz etkileri dikkate alınarak, ulusal yönetmelikler ve uluslararası anlaşmalarla bu etkilerin azaltılması sağlanmalıdır.

Keywords: batık gemiler, deniz kazaları, deniz kirliliği, çevresel etki.

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➢ **POSTER PRESENTATION**

Reactive Red Bioremoval with Newly Isolated Yeastin the Presence of Apple Pomace Medium

Ekin Demiray, Gülşah B. Yalçınkaya, Sevgi Ertuğrul Karatay*, Gönül Dönmez

Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey

Correspondingauthor e-mail: sertugrul@ankara.edu.tr

Abstract

With the industry revolution new problems emerged. One of the biggest problem is environmental pollution. This pollution mostly derives by antropohologic factors. Textile industry creates millions of tons waste water every day and pollutes ecosystem with toxic materials such as textile dyes. This problems become serious threat for environment and human health. Bioremoval is promising method against dye pollution. By this purpose in this study bioremoval capacitys of the newly isolated yeast against reactive red were tested.

In the bioremoval experiments 20, 40 and 60 mg/L initial concentrations of reactive red were used. Bioremoval were carried out in 250 mL Erlen Mayer Flasks and working volume was 100 mL. %12 apple pomaces medium were used in all experiments. Reactive red was measured at 520 nm. wavelenght 3 mL sample were taken from medium and dye concentrations and microbial growth were monitored periodically with spectrophotometer.

As a result in first day yeast were removed reactive red 10.5% of the dye in the presence of 20 ppm initial dye concentration at pH5in first day incubation. This result shows apple pomace is suitable growth medium for microorganisms for reactive red bioremoval.

Keywords: Apple Pomace, Reactive Red, Yeast.

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➢ **POSTER PRESENTATION**

The Biological Removal of Hexavalent Chromium Using Newly Isolated Fungus

Gülşah B. Yalçınkaya, Ekin Demiray, Sevgi Ertuğrul Karatay*, Gönül Dönmez

Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey

Correspondingauthor e-mail: sertugrul@ankara.edu.tr

Abstract

Despite the chromium is an essential trace metal for living organisms, it shows a high toxicity, which renders it hazardous even at very low concentration. There are several techniques for treatment of heavy metal contaminated area such as physical, physicochemical however these methods are sometimes ineffective or expensive. In recent years, the biological processes based on the use of microorganisms that have the ability to solubilize, adsorb or precipitate heavy metals are promising alternative ways for treating the wastewaters contaminated with heavy metals. Furthermore microorganisms can be easily cultivated into inexpensive growth media which are prepeared with lignocellulosic substances such as molasses.

The disposal of large amounts lignocellulosic materials is becoming a cause for concern, therefore these materials are used in many studies as low cost alternative fermentation medium. In this current study, sugar beet molasses were used as sole carbon source for microbial growth. Because of the major part of valuable compounds such as natural sugars or vitamins are still retained in molasses after sugar processing. By this reason, the usage of molasses for fermentation medium is promising way to lower the cost of removal process.

In the present work, the Cr(VI) removal capacities of 18 newly isolated fungus was investigated in the medium prepeared with sugar beet molasses. To optimize the Cr(VI) removal, the effects of different pH (3, 4, 5, 6) values, incubation time (3, 5, 6 days) and initial Cr(VI) concentrations (10-100 mg/L) were tested. The fungus coded with 18 could remove 89.12% of the Cr(VI) at the end of 72 hours in the presence of 8% molasses and 7.66 mg/L initial chromium loading at pH 5.

Keywords: Fungus, Chromium, Molasses.

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➢ **POSTER PRESENTATION**

Electrodeposition of Platinum Electrocatalyst Under Electrical Field

Hüseyin Murat Luş[1], Aydin Haşimoğlu[2], Oğuz Kaan Özdemir[1*]

[1]Department of Metallurgical and Material Engineering, Yildiz Tech. University, Istanbul, Turkey
[2]Department of Material Science and Engineering, Gebze Tech. University, Kocaeli, Turkey

Corresponding author e-mail: kozdemir@yildiz.edu.tr

Abstract

In this work, platinum electrocatalysts are deposited on carbon paper by pulse galvanostatic deposition. The applied current density, application and waiting times are kept constant for each study. The effect of the electric field applied in different directions during the coating on the nucleation and growth of the catalysed particles was investigated. The changes in electrochemical properties of platinum catalysts depending on the applied electric field were investigated by cyclic voltammetry(CV), linear sweep voltammetry(LSV) and impedance methods(EIS). The surface morphology of the catalysts and the phases formed during the reduction were determined by XRD analysis and scanning electron microscopy.

Keywords: Platinum catalyst, PEM Fuel Cell, Oxygen Reduction Reaction.

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➢ **POSTER PRESENTATION**

İneklerde İnfertiliteye Neden Olan Bakteriler ve Oluşturduğu Sorunlar

Mücahit Palaz[1*], Müjgan İzgür[2]

[1]Ankara Üniversitesi, Veteriner Fakültesi, Mikrobiyoloji Anabilim Dalı, Ankara, Türkiye
[2]Ankara Üniversitesi, Veteriner Fakültesi, Mikrobiyoloji Anabilim Dalı, Ankara, Türkiye

Sorumlu yazar e-mail: mchtplz@gmail.com

Özet

Reprodüksiyon, hayvancılık işletmelerinin vazgeçilmez ögelerinden biridir. Birçok sütçü inek işletmesinde reprodüktif performans hedeflerine ulaşılamamakta ve ciddi ekonomik kayıplar meydana gelmektedir. Reprodüktif sürü sağlığında amaç ineklerin buzağıladıktan sonra optimal sürede tekrar gebe kalmalarını sağlamak ve dolayısıyla iki buzağılama arasındaki süreyi ekonomik sınırlar içinde tutmaktır. İnfertilite, döl veriminde azalma ve döl verim kayıplarına neden olmaktadır. Sığırlarda infertiliteye neden olan bakteriyel enfeksiyonlar ovulasyon oranları, fertilizasyon oranları, embriyonun yaşam oranları, fetal yaşam oranları veya perinatal yaşam oranlarını azaltarak etki göstermektedirler. İnfertiliteye neden olan bakteriyel patojenler içerisinde, *Campylobacter fetus subsp*. venerealis, *Histophilus somni*, *Ureaplasma* sp., *Mycoplasma* sp., yer almaktadır. *Campylobacter fetus, Histophilus somni, Ureaplasma* sp., *Mycoplasma* sp., yer almaktadır. *Campylobacter fetus* subsp. venerealis sığırlar arasında venereal yolla bulaşarak, vagina, serviks, endometrium ve plasentada enfeksiyon oluşturmaktadır. Enfekte hayvanlarda gebeliğin 4. ve 7. aylarında abortus ve erken embriyonik ölümlere bağlı infertilite bulguları görülebilir. Histophilus somni reprodüktif kanalın normal bakteri florasının bir parçasıdır. Ancak sığırlarda nadiren abortus ile ilişkilendirilmiştir. Etken embriyolarda zona pellucidaya bağlanarak infertiliteye neden olmaktadır. *Ureaplasma diversum* ve *Mycoplasma* sp.'de reprodüktif kanalın normal bakteri florasının bir parçasıdır. *Ureaplasma diversum* oluşturduğu enfeksiyonlarda sığırlarda, granüler vulvitis, infertilite, abortus ve zayıf buzağı doğumlarına neden olmaktadır. *M. bovigenitalium* enfeksiyonlarında granüler vulvovaginitis, infertilite ve endometritise neden olmaktadır. *M. bovis*'in deneysel olarak endometritis, salpingitis, infertilite ve abortuslara neden olduğu görülmüştür. Enfeksiyöz infertilite uygun gözetim, biyogüvenlik ve/veya aşılama ile önlenebilir. Ne yazık ki infertiliteye neden olan patojenlerin tanısı yapılmadan uygulanan aşılama programları gerçek anlamda bir koruma sağlamamakta ve ekonomik kaynaklarda israfa neden olmaktadır. Bu yüzden özellikle etkenlerin doğru teşhisi ve yapılacak uygun sağaltım ile ekonomik kayıplar en aza indirgenecektir.

Anahtar Kelimeler: İneklerde infertilite, bakteri, biyogüvenlik.

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➢ **POSTER PRESENTATION**

Rediscovery of the endemic *Reseda balansae* (Resedaceae) in Turkey and its Morphological, Anatomical, Palynological Properties and Seed Micromorphology

Emre Çilden*, Şinasi Yıldırımlı

Hacettepe University, Faculty of Science, Department of Biology, Botany Section, 06800, Beytepe, Ankara, Turkey

Corresponding author e-mail: emrecilden@yahoo.com

Abstract

Reseda balansae Müll. Arg. (Resedaceae) is a very restricted and endangered Turkish endemic species known only from Mersin province (South Turkey), in a hotspot of biodiversity. It was first collected in 1855, and subsequently described in 1857. After that, it was only collected once again, in 1896. In this study we report the rediscovery of these two populations of *R. balansae* in Turkey more than 120 years after its last known collection. And also morphological, anatomical, palynological properties, seed micromorphology and threaten category of the species is given.

Anahtar Kelimeler: *Reseda balansae*, rediscovery, morphological, anatomy, palynology, seed micromorphology

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➢ **POSTER PRESENTATION**

Three endemic taxa of *Iberis* L. (*Brassicaceae*) in Turkey

Emre Çilden

Hacettepe University, Faculty of Science, Department of Biology, Botany Section, 06800, Beytepe, Ankara, Turkey

Corresponding author e-mail: emrecilden@yahoo.com

Abstract

The genus *Iberis* L. (Brassicaceaee) consists of about fifty species of annuals, perennials and evergreen subshrubs worldwide. It is represented by nine taxa In Turkey; *Iberis carica* Bornm., *Iberis carnosa* Willd., *Iberis halophila* Vural & H. Duman, *Iberis odorata* L., *Iberis saxatilis* L. subsp saxatilis, *Iberis saxatilis* subsp. *magnesiana* Oskay, *Iberis sempervirens* L., *Iberis simplex* DC. and *Iberis umbellata* L.. Three taxa, *I. carica*, *I. halophila* and *I. saxatilis* subsp. *magnesiana* are endemic to Turkey, even *I. halophila* and *I. saxatilis* subsp. *magnesiana* are local and restricted endemics. In addition to the current distribution of these three Turkish endemics of *Iberis* L., general information about morphological characters, ecological requirements and phytogeographical properties of the species are discussed.

Key words: *Iberis carica*, *Iberis halophila*, *I. saxatilis*, morphology, phytogeography, Brassicaceae.

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➢ **POSTER PRESENTATION**

Preparation of Poly(2-hydroxyethyl methacrylate-glycidyl methacrylate) Cryogels Carriying Different Functional Groups for Lysozyme Adsorption

Gorkem Liman[1*], Gulay Bayramoglu[1,2*]

[*1]Gazi University, Department of Chemistry, Faculty of Science, Ankara, Turkey
[2]Gazi University, Biochemical Process & Biomaterial Research Laboratory, Ankara, Turkey

gorkem.liman1@gazi.edu.tr; g_bayramoglu@hotmail.com

Abstract

Cryogels are super-macroporous hydrogels characterized with a heterogeneous open-porous structure, and which are prepared at sub-zero temperatures. These hydrogels offer new viewpoints for construction of innovative systems for biotechnological, biomedical and pharmaceutical applications. They can be used as an alternative adsorbents instead of the beaded form materials due to their large pores, short diffusion paths, low pressure drop and very short times adsorption and elution of the target macromolecules. There are many reports about the utilization of the cryogels as support materials for immobilization of biological macromolecules (such as enzymes, nucleic acids) that give better results than those of the traditional gel carriers. The affinity cryogel adsorbents can be prepared by modification of the surface of the hydrogels. The ligands molecules can be selected according to the physical characteristic of the target protein in biological fluid and immobilized via covalent bond on the surface of the cryogel, then, used for purification of the target protein.

The poly(2-hydroxyethyl methacrylate-glycidyl methacrylate), p(HEMA-GMA), cryogels were synthesized via freeze drying (lyophilization) technique using ethylene glycol dimethacrylate as cross-linker. Chemical modification the cryogels was realized by treatment with tris(2-aminoethyl)amine or sodium sulfide. The functional amine and sulfonic acid groups were created on the cryogel surface with this modification process. Cryogels were characterized by ATR-FTIR, swelling tests and surface area measurement. Adsorptive properties of the p(HEMA-GMA)-NH_2 and p(HEMA-GMA)-SO_3H cryogels were investigated for lysozyme by varying pH, contact time, ionic strength, initial lysozyme concentration, and temperature. The optimum lysozyme adsorption was observed at pH 7.0 for both p(HEMA-GMA)-NH_2 and p(HEMA-GMA)-SO_3H cryogels. Desorption of the adsorbed lysozyme from the cryogels was studied in a batch system. The amount of the adsorbed lysozyme was desorbed about to 68% and 76% for p(HEMA-GMA)-NH_2 and p(HEMA-GMA)-SO_3H cryogels, respectively, in all cases when KSCN was used as eluent agent.

Keywords: Cryogel, Adsorption, Lysozyme.

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➢ **POSTER PRESENTATION**

Çaydaki Polifenollerinin Kanserdeki Epigenetik Değişikliklere Etkisi

Ayşe Feyda Nursal[1*], Serbülent Yiğit[2], Akın Tekcan[3], Sacide Pehlivan[4]

[1] Hitit Üniversitesi, Tıp Fakültesi, Tıbbi Genetik ABD, Çorum, Türkiye. [2]Gaziosmapaşa Üniversitesi, Tıp Fakültesi, Tıbbi Biyoloji ABD, Tokat, Türkiye. [3]Ahi Evran Üniversitesi, Tıp Fakültesi, Tıbbi Biyoloji ABD, Kırşehir, Türkiye. [4]İstanbul Üniversitesi, İstanbul Tıp Fakültesi, Tıbbi Biyoloji ABD, İstanbul, Türkiye

Özet

"*Camellia sinensis" bitkisinden elde edilen* çay tüm dünya ülkelerinde sudan sonra en çok tüketilen içecektir. *En sık kullanılan çay çeşidi olan siyah çay, dünyadaki çay tüketiminin %78'ini oluşturur, bunu %20 ile yeşil çay izlemektedir (1). Çayın kimyasal kompozisyonu farklı çay tiplerinde değişiklik göstermektedir. Bu farklılık toplama, budama, gübreleme, en önemlisi işlenme sırasındaki oksidasyon gibi farklı uygulamalara bağlıdır. Çay çeşitli kimyasal bileşimler içerir, ancak tadı, aroması ve sağlık etkilerinden sorumlu olan esas madde polifenollerdir (2). Siyah çayda, polifenoller enzimatik reaksiyonlarla okside edilmesine bağlı olarak dimerize haldedir. Kuru çay ekstraktı %25-40 polifenol içerir (3). Çaydaki esas polifenolik içerikler kateşinlerdir. Kateşinler* epigallokateşin -3-gallat (EGCG), epigallokateşin (EGC), epikateşin-3-gallat and epikateşin, gallokateşin ve gallokateşin gallat maddelerinden oluşur. Bunların arasında, en çok bulunanı EGCG 'dır.

Epigenetik DNA dizisinde değişiklik olmadan gen ekspresyonunda oluşan kalıtsal değişikliklerdir. Epigenetik değişiklikler DNA metilasyonu, histon modifikasyonları ve kodlama yapmayan RNA'daki etkileri içermektedir. Bu modifikasyonlar genomun normal fonksiyonu için gereklidir. DNA metilasyonu kanserde genlerin sessizleşmesine yol açan önemli mekanizmadır (4). DNA metilasyonu DNA metiltransferaz (DNMT) enzimleri ile katalize edilir. Epigenetik değişikliklerin geri dönüşümlü olması nedeniyle farklı diyetsel içeriklerin hedefi olabileceği düşünülmüştür.

Hücre kültürü ve hayvan modellerinde yapılan birçok çalışmada yeşil çay ekstratı veya pürifiye EGCG'ın tümör hücre çoğalmasını ve tümör büyümesini inhibe ettiği gösterilmiştir (2). Fang ve arkadaşları çaydaki polifenol EGCG'nin *DNMT* enzim aktivitesini inhibe ettiğini ileri sürmüşlerdir (5). İn vivo çalışmada, şiddetli immun yetersizliği olan maymunlara insan LAPC 4 prostat kanser hücreleri subkutan olarak yerleştirmiş ve tümor oluşturulmuştur. Su yerine yeşil çay verilen hayvanlarda tümor hacminde belirgin küçülme, tümör dokusunda DNMT1 protein ekspresyonunda azalma görülmüştür (6).

Yeşil çay ile yapılan birçok çalışma olmasına karşın, siyah çay ile çalışmalar yetersiz bulunmaktadır. Epigenetik değişikliklerin polifenoller ile geri dönüşmesi nedeniyle, polifenoller ile epigenetik tedavi kanser önlenmesi ve tedavisine yeni pencereler açacaktır.

Anahtar Kelimeler: Çay, polifenol, kanser, epigenetik.

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➢ **POSTER PRESENTATION**

Kuzey Ege Denizi'ndeki Ticari Deniz Hıyarlarının Derinliğe Göre Dağılımları

Mehmet Aydın[1], Hakkı Dereli[2]*

[1]Ordu Üniversitesi, Fatsa Deniz Bilimleri Fakültesi, Balıkçılık Teknolojisi Mühendisliği Bölümü, Ordu-Türkiye
[2]İzmir Katip Çelebi Üniversitesi, Su Ürünleri Fakültesi, Avlama ve İşleme Teknolojisi Bölümü, İzmir-Türkiye

Sorumlu yazar e-posta: hakkidereli@gmail.com

Özet

Çalışmada Kuzey Ege Denizi'nde ticari olarak avlanan deniz hıyarı türlerinin derinliğe göre dağılımı ve biyo-kütleleri araştırılmıştır. Bu amaçla 2014-2015 tarihleri arasında11 farklı istasyonda (Çanakkale-Yeniköy, Geyikli, Altınoluk, Güre, Gömeç, Ayvalık, Altınova, Şakran, Aliağa, Hekim Adası, Ildır) 3 farklı derinlik (5 m, 10 m ve 15 m) çalışılmıştır. Örneklemede line transect (25 m x 4 m) yöntemi kullanılmış ve her farklı derinlikte 2100 m^2 alan SCUBA ve nargile yöntemi ile taranmıştır.

Bölgede ticari olarak avlanan 3 deniz hıyarı türü (*Holothuria tubulosa*, *Holothuria polii* ve *Holothuria mammata*) tespit edilmiş fakat çalışmada tür ayrımı yapılmamıştır. Yapılan çalışmada 5 m, 10 m ve 15 m derinliklerde sırasıyla 5500, 3771 ve 2742 adet ticari deniz hıyarı örneklenmiştir. Örneklenen deniz hıyarlarının karkas boyları ve karkas ağırlıkları alınmıştır. 5 m, 10 m ve 15 m derinliklere göre ortalama karkas ağırlıkları ve ortalama karkas boyları sırasıyla 47,97 g ve 11 cm, 61,99 g ve 12,38 cm, 63,41 g ve 12,28 cm olarak hesaplanmıştır. Örneklenen bölgede, 5 m derinlikteki deniz hıyarı yoğunluğu 125,65 g/m^2 ve 2,62 adet/m^2 olarak, 10 m derinlikte 111,35 g/m^2 ve 1,8 adet/m^2 olarak, 15 m derinlikte ise 82,8 g/m^2 ve 1,31 adet/m^2 olarak hesaplanmıştır.

Sonuç olarak, çalışmada derinlik arttıkça ticari deniz hıyarlarının ortalama ağırlıklarının arttığı, biyo-kütleleri ve yoğunluklarının ise azaldığı tespit edilmiştir.

Anahtar Kelimeler: Kuzey Ege Denizi, deniz hıyarı, yoğunluk, derinlik dağılımı.

Teşekkür: Bu araştırma Ordu Üniversitesi, Bilimsel Araştırmalar Koordinasyon Birimi tarafından, AR-1501 proje numarası ile desteklenmiştir.

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➢ **POSTER PRESENTATION**

Preparation and Modification of Nanocomposites Based on Styrene-Ethylene/Butylene-Styrene Block Copolymer

Tahsin Çağlayan*, Olgun Güven

Hacettepe Üniversitesi, Fen Fakültesi, Kimya Bölümü, Ankara, Türkiye

Corresponding author e-mail: tcaglayan@hacettepe.edu.tr

Abstract

Nanocomposites are particle-filled composites in which at least one dimension of the dispersed particles is in the nanometer range. The addition of nanoclays to a polymer matrix has been proven to bring large improvement in the mechanical properties, thermal stability, fire resistance, gas barrier properties of starting polymeric materials. Montmorillonite is one of the most commonly used smectite-type layered silicates in the preparation of nanocomposites. For polymers not containing polar functional groups, it is necessary to use a compatibilizer to increase the interaction between polymers and layered silicates. So, layered silicates are generally modified to obtain an organophilic structure by ion exchange reaction with cationic surfactants including primary, secondary, tertiary, and quaternary alkyl ammonium salts. In this study, polymer/clay nanocomposites were prepared by melt intercalation using torque rheometer. Styrene-ethylene/butylene-styrene (SEBS) with 32% wt. styrene was used as the polymer, unmodified clay (Na^+ montmorillonite, MMT), organo-modified clays I44 P, I31 PS and clays modified by in-situ polymerization of a charged monomer were used as the nanofiller. [2-(Methacryloloxy) ethyl]-trimethyl ammonium chloride and [3-(methacryloamino)-propyl]-trimethylamonium chloride (MPTMAC) were used as modification agent instead of alkyl ammonium salt. This mixture was polymerized 18 h, 24 h and 36 h to obtain modified clay by using azobisisobutyronitrile (AIBN) initiator. The conversion of monomer to polymer was followed gravimetrically as well as by ATR-FTIR spectroscopy and thermogravimetric analysis (TGA). The maximum opening of 2.35 nm between the silicate layers of clay was obtained for 30 kGy irradiated clay as compared to 1.21 nm of untreated clay measured by X-ray diffraction (XRD). The effect of addition of modified clay on mechanical properties of SEBS was examined by mechanical tests. The increase in E-Modulus and tensile strength are about 66.7% and 42.9% respectively for SEBS/PP/Oil-%5 MPTMAC (36 h) as compared to SEBS/PP/Oil.

Keywords: Styrene-ethylene/butylene-styrene (SEBS), nanocomposites, modified clay, X-ray diffraction (XRD).

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➢ **POSTER PRESENTATION**

Diospyros lotus L. (Kara Hurma) Bitkisinin Meyve ve Çekirdek Kısımlarının Farklı Yöntemler ile Antioksidan Aktivitesinin Belirlenmesi

Zeynep Akar[1*], Aylin Karakurt[1], Funda Okumuş[1], Sedanur Cinemre[1], Bülent Akar[2]

[1*]Gümüşhane Üniversitesi, Mühendislik ve Doğa Bilimleri Fakültesi, Genetik ve Biyomühendislik Bölümü, Gümüşhane, Türkiye

[2] Gümüşhane Üniversitesi, Mühendislik ve Doğa Bilimleri Fakültesi, Gıda Mühendisliği Bölümü, Gümüşhane, Türkiye

Sorumlu yazar e-mail: akarzeynp@gmail.com

Özet

Vitamin, mineral ve antioksidan bakımından zengin içeriğe sahip olan bitkiler sağlıklı beslenme açısından oldukça önemli bir değere sahiptir. Bitkilerin birçok kısmı besin olarak kullanılmakta olup, özellikle de meyveler içerdikleri yüksek fenolik bileşikler ile birçok hastalığın oluşumunda engelleyici rol oynamaktadır. Bu nedenle, genelde yerel olarak tüketilen meyvelerin de, farklı yöntemler uygulanarak antioksidan aktivitelerinin belirlenmesi önem kazanmıştır.

Bu çalışmada, Trabzon-Akçaabat'ta doğal olarak yetişen *Diospyros lotus* L. (Kara Hurma) bitkisinden yaş olarak toplanmış meyve ve çekirdek kısımlarının antioksidan aktiviteleri farklı yöntemlerle tespit edilmiştir. Bu yöntemler; % DPPH (2,2-Difenil-1-pikrilhidrazil) radikal temizleme aktivitesi, FRAP (Demir (III) İndirgeme) antioksidan güç tayini ve CUPRAC (Bakır (II) İndirgeyici Antioksidan Aktivitesi) yöntemidir. Çalışmada kara hurmanın, meyve (M) ve çekirdek (Ç) kısımları farklı yüzdelerde hazırlanan metanol-su çözücüleri ile ekstrakte edilmiştir. Bu yöntemlerin her birinde çözücü olarak M_1 ve $Ç_1$'de %100 metanol, M_2 ve $Ç_2$'de %75 metanol - %25 su, M_3 ve $Ç_3$'de %50 metanol - %50 su, M_4 ve $Ç_4$'de %25 metanol - %75 su, M_5 ve $Ç_5$'de %100 su kullanılmıştır.

Çalışma sonucunda, uygulanan üç antioksidan tayin yönteminden DPPH radikal temizleme yönteminde, meyvelerden en yüksek antioksidan aktivite gösteren M_1 (%79,09), çekirdeklerden ise $Ç_1$ (%85,63) olarak, FRAP antioksidan analiz yönteminde meyvelerden en yüksek antioksidan aktiviteyi gösteren M_2 (347.576 µM TEAC), çekirdeklerden ise en yüksek antioksidan aktivite gösteren $Ç_2$ (471.515 µM TEAC) olarak ve CUPRAC antioksidan analiz yönteminde ise meyvelerden en yüksek antioksidan aktivite gösteren M_1 (0.052 µM TEAC) çekirdeklerden ise en yüksek antioksidan aktivite gösteren $Ç_2$ (0.575 µM TEAC) olarak bulunmuştur. Yerel olarak tüketilen kara hurmanın oldukça yüksek antioksidan aktivite gösterdiği, bunun yanında her üç antioksidan yönteminde de çekirdek örneklerinin meyve örneklerine oranla daha yüksek antioksidan aktiviteye sahip olduğu belirlenmiştir.

Dolayısıyla çalışma bulguları, *Diospyros lotus* bitkisinin meyvelerinin tüketiminin yerellikten çıkartılıp yaygınlaştırılması ve doğal olarak yetişen bu bitkilerin korunması ve aynı zamanda üretiminin artırılması için kültüre alım olanaklarının değerlendirilmesi gerektiğini göstermektedir.

Anahtar Kelimeler: *Diospyros lotus* L, Antioksidan, DPPH, FRAP, CUPRAC.

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➢ **POSTER PRESENTATION**

Organo-Modifiye Kabon Nanotüplerin Sentezi, Karakterizasyonu ve Hidrojen Depolamada Kullanımı

Fulya Kestel, Fatih Pehlivan, Mehmet Doğan, Ümit Çakır

Balıkesir Üniversitesi Fen-Edebiyat Fakültesi Kimya Bölümü 10145 Çağış/Balıkesir

Sorumlu yazar ucakir@balikesir.edu.tr

Özet

Bu çalışmada, çok duvarlı karbon nanotüp (ÇDKNT) yüzeyleri ilk önce oksidasyonla hidroksillenmiş ve bu hidroksi-karbon nanotüpler (OH-ÇDKNT), 3-(aminopropil) trietoksisilan (APTES) ile fonksiyonelleştirilerek organo-modifiye karbon nanotüp (APTES- ÇDKNT) elde edilmiştir. Fonksiyonalize karbon nanotüpler farklı karbonil bileşikleri ile [salisilaldehit (CSB1a), 4-hidroksibenzofenon (CSB2a), tereftalaldehit (CSB3a) ve 2-hidroksi-3-metoksibenzaldehit (CSB4a)] ile reaksiyona sokularak karbon nanotüp yüzeyinde değişik Schiff Bazları sentezlenmiş veya APTES ve karbonil bileşikleri dışarıda etkileştirilerek hazırlanmış Schiff Bazları immobilizasyon yöntemiyle çok duvarlı hidroksillenmiş karbon nanotüp yüzeylerine bağlanmışlardır. Elde edilen tüm karbon nanotüpler FTIR-ATR ile ve bu örneklerin yüzey morfolojileri ve termal kararlılıkları sırasıyla SEM ve DTA/TG cihazları kullanılarak incelenmiştir. Ayrıca hazırlanan karbon nanotüplerin hidrojen depolama kapasiteleri Hiden marka IMI PSI cihazı kullanılarak saptanmıştır. Ayrıca deneylerde karbon nanotüplerin hidrojen depolama kapasitesine oda ve kriyojenik sıcaklığın ve düşük ve yüksek basıncın etkileri araştırılmıştır.

Anahtar Kelimeler: Çok duvarlı karbon nanotüp, modifikasyon, Schiff Bazı, hidrojen depolama.

Bu proje Balıkesir Üniversitesi BAP Birimi tarafından 2017/048 nolu proje ile desteklenmiştir.

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➢ **POSTER PRESENTATION**

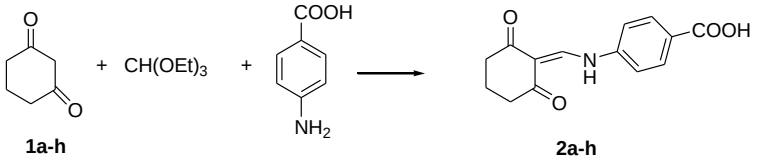
Synthesis of Methyleneaminobenzoic Acid Derivatives

Muharrem Kalaycı*, Mustafa Arslan
Sakarya University, Faculty of Arts & Sciences, Chemistry Department, Sakarya, Türkiye.

Corresponding author e-mail: muharrem.kalayci@ogr.sakarya.edu.tr

Abstract
It has been observed that during the last over 10 years many 1340cur1340 pathogenic bacteria and parasites have acquired resistance towards chemotherapeutic agents in market. Infectious disease may once again become 1340cur1340 cause of death in developing or developed countries. There is a need to give serious consideration towards development of drug.
p-Aminobenzoic acid (PABA) and derivatives are very important biologically active small molecules due to their biochemical uses and effects with applications ranging from antibacterial substances to UV protective agents. They have used the production of drug pharmaceutical products, dyes, flavours, preservatives and cosmetic products [1]. PABA which is a cyclic amino acid, belongs to the vitamin *B* group, and is used as a protective drug against solar insolation and in diagnostic tests 1340cur1340he state of the gastrointestinal tract in medicine [2]. PABA derivatives often 1340cur as metabolites with, for example, p-ABA being a precursor for folic acid and coenzyme Q. PABA have shown interesting pharmacological properties such as treatment of the Alzheimer's disease, anesthetics, intestinal treatment, antioxidant properties, inhibitors of the human tryptase , an important mediator in asthma pathology, HIV -1 protease inhibitors, İnhibitor of the mutagenicity of various chemical mutagens, antimicrobial and anticancer properties, antifungal targets, DNA binding ligand, anti-cancer targets[3].

In this study, PABA derivatives were prepared and their structures were analysed by IR, ^{1}H NMR, ^{13}C NMR and elemental analysis.



1a-h **2a-h**

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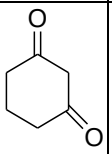
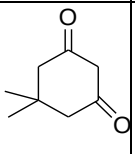
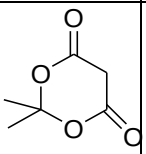
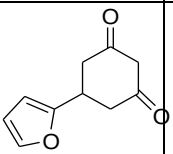
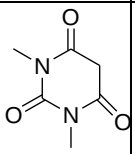
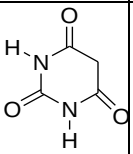
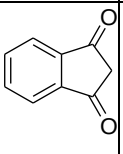
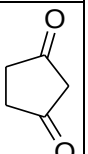
1a-h									

Keywords: 1,3-diketone, p-aminobenzoic acid, enamines, antibacterial.

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➢ **POSTER PRESENTATION**

Charge Transfer Complex Studies Of Carbazole Substituted Pyridopyrimidine with Some II-Acceptors

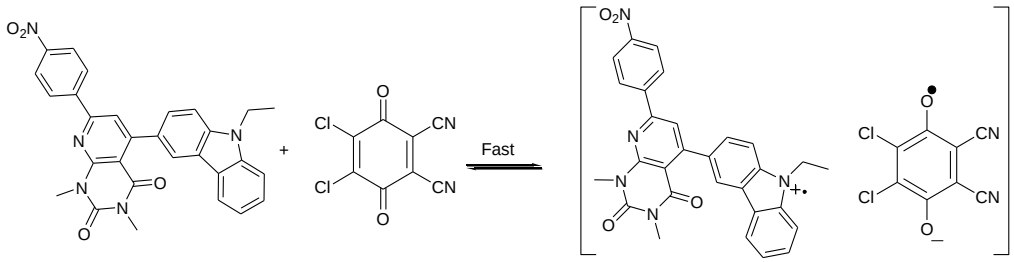
Arleta Rifati Nixha[1], Hulya Demirhan[2], Muharrem Kalaycı[3*], Mustafa Arslan[3]

[1]University of Prishtina, Faculty of Mathematical & Natural Sciences, Chemistry Department, Prishtina, Republic of KOSOVA
[2]Sakarya University, Pamukova Vocational High School, Sakarya, TÜRKİYE
[3]Sakarya University, Faculty of Arts&Sciences, Chemistry Department, Sakarya, TÜRKİYE.

Corresponding author e-mail: muharrem.kalayci@ogr.sakarya.edu.tr

Abstract

Charge transfer complexes of carbazole Substituted Pyridopyrimidine (CSPP) with some acceptors such as tetracyanoquinomethane (TCNQ) and 2,3-dichloro-5,6-dicyano-p-benzoquinone (DDQ) have been studied spectrophotometrically in acetonitrile at 21°C. The stoichiometries of the complexes were found to be 1:1 ratio by the Job method between donor and acceptors with the maximum absorption band at a wavelength of 715 nm for DDQ and 593 nm for TCNQ. The formation constants for the complexes were determined by Benesi-Hildebrand equation. The thermodynamic parameters were calculated by Van't Hoff equations and found spontaneous and exothermic.



Keywords: Spectrophotometer, charge transfer complexes, pyrimidine, TCNQ, DDQ.

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➢ **POSTER PRESENTATION**

Synthesis and Structural Properties of Cerium, Iron, Copper and/or Manganese Impregnated Ti-pillared Bentonites

Funda Turgut Basoglu

Gazi University, Engineering Faculty, Chemical Engineering Department, 06570 Ankara, Turkey

Corresponding author e-mail: tfunda@gazi.edu.tr

Abstract

Iron or copper was impregnated to Ti-pillared bentonite (Ti-PB) and subsequent cerium incorporation was done by wet impregnation. Different combinations of cerium, manganese or copper were impregnated through the Ti-PB under evaporation. The bentonite from the Middle Anatolia region (Hançılı) was used in the synthesis. From X-ray diffraction (XRD) patterns, the reflection at 2θ value of 7.3° which gave the basal spacing (d_{001}) value of 1.2 nm, moved to lower value resulting a considerable increase in the basal spacing value (d_{001} =4.41 nm) with a decrease in its intensity by the pillaring with titanium. The anatase phase of titanium dioxide was found for all of the samples and the phase was not changed with the further metal inserting. The nitrogen adsorption isotherms of all of the samples fitted the type IV isotherm which was characteristic for solids containing both micro and mesopores according to the International Union of Pure and Applied Chemistry (IUPAC) classification. Approximately 30 % of total adsorption occurred at low relative pressures ($P/P_0 < 0.1$) was related to the micropores. The Ti-PB calcined at 500 °C gave a specific Brunauer, Emmett, Teller (BET) surface area of 348 $m^2 g^{-1}$, and a micropore volume of 0.093 $cm^3 g^{-1}$. The copper and iron impregnation resulted in a decrease in the micropore properties. The Horvath and Kawazoe (HK) micropore size distribution for the Ti-pillared montmorillonite reflected generally bidispersed structure (centered at approximately 0.44 nm; 0.94-1.64 nm) in the micropore region. One narrow peak at approximately 3.63 nm-3.81 nm was obtained in the mesopore size distribution determined by the Barrett-Joyner-Halenda (BJH) method. The energy dispersive X-ray spectroscopy (EDS) analyses indicated that TiO_2 content of all PBs was near 40 mass % and metal incorporation to Ti-PB was succesfully performed by the impregnation method.

Keywords: Ti-pillared bentonite, structural properties, chemical compositon.

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➢ **POSTER PRESENTATION**

Lion Fish in Mediterranean

Ayşe Özyilmaz[1]*, Dilşat Bozdoğan Konuşkan[2], Şükran Çakir Arica[1], Sevil Demirci[1]

[*1]Iskenderun Technical University, Faculty of Marine Science and Technology, İskenderun- Hatay, Turkey

[2]Mustafa Kemal University, Department of Food Engineering, Faculty of Agriculture, Hatay, Turkey

Corresponding Author: aylaayse@gmail.com

Abstract

Lion fish belongs to Scorpaenidaeare family, are native to Red Sea and Indian Sea, and have spread at an unprecedented pace throughout the Mediterranean. Previously reported studies stated that fish probably introduced into the Mediterranean Sea from the Red Sea via the Suez Canal. First records for this fish species were observed from different parts of the Mediterranean in different times. The records showed that fish were seen in Haifa Bay in July 1991, Lebanon coast in December 2013, Cyprus coast in February 2013, Gazipaşa in May 2004, Iskenderun Bay (Kaleköy, Turkish coastal water part) in April 2014, Antalya (Kemer, Demre and Kaş, coast of Turkey) in June 2014, and Fethiye in July (coast of Turkey) 2015, Northern part of Cyprus in july 2015, Aegean Sea (Dalyan, coast of Turkey) August 2015. Lionfish is a successful invasive and has harmful effect to the environment they introduce. Their spawning period nearly every 4 days and they can produce around two million eggs per year which are planktonic and spread easily and cover large distances. According to previously reporting facts fish eggs can be found a month before their settlement. Even though fish an unwanted and an invasive species, its muscle can be consumed by carefully removing the venomous parts. According to many people, fish tastes good and there is nothing to worry about to consume it unless poisonous part cleaned correctively. This fish may be used as overfishing and get benefits of its muscle as a good tasty sea products.

Keywords: Lionfish, Scorpaenidaeare, invasive, muscle.

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➢ **POSTER PRESENTATION**

Evaluation of the Effects of Nanoparticles on Mammalia

Özlem Önen[1*], Evren Koç[2]

[1]Kafkas University, Faculty of Science and Art, Department of Biology, Kars
[2]Kafkas University, Engineering Faculty, Bioengineering Department, Kars

Corresponding author e-mail: onenozlem@gmail.com

Abstract

Over the last decade, nanoparticles have become an important class of nanomaterials utilized in the development of new nanotechnologies. Although nanoparticles are used in numerous commercial areas, our information about its hazards is incomplete. In spite of the fact that many researches have been conducted concerning the impact of nanoparticles on the environment, very little information is known about their side effects in mammals. The release of nanoparticles into the environment following the development of technology has become a phenomenon that negatively affects all living groups over time and threatens vitality with biological accumulation in the long run. The studies about the toxic effects of nanoparticles on the mammals were presented and evaluated, and it was aimed to be summarized in such a way that it can generate resources for future studies.

In this review, physiological and biochemical effects on mammals exposed to various nanoparticles have been tried to be determined by various biochemical tests, and it has been reported to cause a variety of anomalies at chemical parameters as alteration in the levels of some blood parameters in live-affected organisms, and even numerical decreases in some populations. The influence of nanoparticles on the some mammalian systems is significant because of evidence indicating that it accumulates in some mammalian tissues.

In the direction of reports that are being reviewed, it was revealed that nanoparticles cause susceptibility to Mammals, biochemical changes increase in parallel with the increase in concentration, but the certain chemical-specific sensitivity cannot be mentioned. As a result of the studies evaluated, it was seen that the recorded findings were generally parallel to each other, and the exposure to nanoparticles was toxic to mammals. In the extension of the toxic effects of nanoparticles' assessment in ecotoxicological studies with this review, it was shown that physiological and biochemical tests both useful and beneficial, besides being complementary to toxicity testing systems.

Keywords: Nanoparticles, Toxicity, Physiology, Biochemistry.

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➢ **POSTER PRESENTATION**

Preparation of Aptamer Functionalized Magnetic Silica Particles for Pre-concentration of *Brucella melintensis*

Gülay Bayramoglu[1,2], V. Cengiz Ozalp[3], Merve Oztekin[1]*, M. Yakup Arica[2]

[1]Gazi University, Department of Chemistry, Ankara, Turkey,
[2]Gazi University, Biochemical Processing and Biomaterial Research Laboratory, Ankara, Turkey
[3]Konya Food and Agricultural University, Faculty of Engineering, Bioengineering Konya, Turkey

Corresponding author e-mail: merve.oztekin2012@gazi.edu.tr; yakuparica@gmail.com

Abstract

Burucella melintensis is one of the most common causes of food-associated disease, which is widely distributed in the middle east countries. It can be transmitted to humans through contaminated milk and milk products. In addition, *B. melintensis* is a *facultative intracellular* bacterial *pathogen* that causes abortion in goats and sheep and Malta fever in humans. Monitoring microbial contamination in food samples is complicated by the diversity of molecules present in such complex samples. Commonly applied procedures for pathogen infected sample concentration include gravitational techniques, membrane filtering and recognition element functionalized particles. Magnetic pre-concentration has been adapted for pathogen pre-concentration and coupled to various sensing formats. Where the pathogen detection methods for pathogenic bacteria include PCR analysis, immunologic methods, solid phase culture techniques, and various microscopic studies. In this work, magnetic (Fe_3O_4) particles were synthesized and modified with 3-aminopropyltriethoxysilane (APTES). Then, surface of the magnetic Fe_3O_4@silica particles was grafted using atom transfer radical polymerization, ATRP, method with a first block poly(ethyleneglycol methacrylate) and as a second block with poly(glycidyl methacrylate), [Fe_3O_4@silica@pPEGMA@pGMA]. The materials were characterized using ATR-FTIR, XRD, VSM, DTA, SEM, BET and analytical methods. The magnetic properties of the materials were not changed during these modification reactions. B. *melintensis* specific aptamer was immobilized on the [Fe_3O_4@silica@pPEGMA@pGMA] particles via epoxy ring opening reaction, which were used for pre-concentration and identification of the target bacteria from dairy foods. The eluent cells were obtained by magnetic pull down method from contaminated milk samples with *B. melintensis, B. suis, S. enterica, or S. subtilis and* analysed with QCM sensor. *B. melintensis* cells from milk samples were also enumerated by culturing methods. Finally, the number of *B. melintensis* cells captured was determined by a constructed QCM sensor. The presented method is a sensitive assay to detect *B. melintensis* cells in milk samples at 10^3 CFU/ml.

Keywords: Magnetic silica particles, Aptamers, Pathogen bacteria, *Brucella melintensis*, QCM Biosensor.

Acknowledgements: This work was supported by a project grant number 115S281 from The Scientific and Technological Research Council of Turkey.

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➢ **POSTER PRESENTATION**

Kapalı Mekan Radon Maruziyeti ve Akciğer Kanseri İlişkisi

Naile Merve Güven*, Başak Özlem Perk , Benay Can Eke

Ankara Üniversitesi, Eczacılık Fakültesi, Farmasötik Toksikoloji ABD, Ankara, Türkiye

Corresponding author e-mail: nmguven@ankara.edu.tr

Özet

Radon (^{222}Rn) renksiz, kokusuz, tatsız, radyoaktif bir gaz olup, toprak ve kaya kütlelerinde bulunan uranyum ve radyumun bozunma ürünüdür. Radon oluştuktan bir süre sonra radyoaktif bozunarak kısa yarı ömürlü havada asılı kalan parçacıklara dönüşmektedir. Kimyasal olarak inert olan radon inhale edildiği zaman büyük bir kısmı hızlı şekilde ekshale edilmektedir. Ancak inhale olan radon bozunma ürünleri akciğer dokusunu etkileyen α-ışınlarını serbest bırakmakta ve dokuda kolayca birikmektedirler. Yapılan çalışmalar radon maruziyeti ile özellikle küçük hücreli karsinom ve skuamöz hücreli karsinom olmak üzere, akciğer kanserinin tüm önemli histolojik alt tipleri arasında bağlantı olduğunu ileri sürmüştür. Avrupa'daki madenciler arasında yapılan epidemiyolojik çalışmalarda akciğer kanseri insidans hızı ile radon maruziyeti arasında yüksek korelasyon olduğu saptanmıştır. Akciğer kanseri oluşumunda kapalı mekan radon maruziyeti ABD Çevre Koruma Ajansı (EPA) tarafından sigara içmeyenlerde ilk risk faktörü, sigara içiminden sonra ise ikinci risk faktörü olarak kabul edilmiştir. Radon, mesleki ve çevresel radon maruziyeti ile gelişen akciğer kanseri riski arasındaki ilişkiye dayanarak Uluslararası Kanser Araştırmaları Ajansı (IARC) tarafından Grup I'de sınıflandırılmıştır. Yaşam alanı olan binalarda, radon kaynağının büyük bir kısmını binanın temelinde bulunan toprak ve kayalar oluşturmaktadır. Ayrıca başta granit olmak üzere yapı malzemeleri, doğal gaz, içme suları ve dışarıdaki havada bulunan radon da bina içi maruziyeti arttırmaktadır. Radondan korunmak için ev inşa edilecek alanların radon haritası çıkarılarak inşaat alanları radon seviyelerine göre belirlenmelidir. Bina yapı malzemelerinin radyoaktivite analizleri yapıldığında radyoaktivite düzeyleri tavsiye edilen değerlerin üstünde bulunan malzemeler kullanılmamalıdır. Binaların toprak ile temas eden yüzeyleri radon sızıntısını önleyecek şekilde izole edilmelidir. Evlerin duvarlarında, su ve kanalizasyon borularının geçtiği yerlerde bulunan çatlaklar onarılmalıdır. Radonun evde birikmesini önlemek amacıyla evler düzenli olarak havalandırılmalıdır.

Anahtar Kelimeler: radon, kapalı mekan, akciğer kanseri, risk.

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➢ **POSTER PRESENTATION**

Essential Oil Composition of *Bunium paucifolium* var. *paucifolium* DC.

Emel Akbaba[1*], Eyup Bagci[1], M. Yavuz Paksoy[2]
[1] Firat University, Faculty of Science, Department of Biology, 23119 Elazig, Turkey
[2] Munzur University, Faculty of Engineering, Environmental Engineering, Tunceli, Turkey

Corresponding author e-mail: eakbaba@firat.edu.tr

Abstract

Bunium L. (Apiaceae) is a medicinal plant possessing a wide range of compounds with many biological activities. It comprises more than 50 species, distributed in Africa, Europe and Asia. *Bunium* species are used as additives in foods for their carminative, anti-dyspepsia and anti-spasmodic effects. The roots of *Bunium paucifolium* DC. are eaten like potatoes in eastern Anatolia, also its rhizomes are used in the treatment of urinary inflammation. In the present study, chemical composition of the essential oil from the aerial parts of *Bunium paucifolium* var. *paucifolium* DC. was evaluated using GC-GC/MS system. A total of 17 different compounds were identified constituting 86.8% of the total oil. The major compounds of the essential oil include caryophyllene oxide (23.0%), germacrene D (12.0%), beta-elemene (8.3%), trans-caryophyllene (5.5%), (-) allospathulenol (4.9%), salvial-4(14)-en-1-one (4.5%), 1-naphthalamine-4-bromo (4.4%), spathulenol (4.2%), isoaromadendrene epoxide (3.8%) and 12-norcyercene-B (3.4%). The great part of the essential oil of *Bunium paucifolium* var. *paucifolium* consists of sesquiterpenes and their derivatives.

Keywords: *Bunium paucifolium* var. *paucifolium*, essential oil, GC/MS, caryophyllene oxide.

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➢ **POSTER PRESENTATION**

Karbonik Anhidraz İnhibitörü Olan ve Fitalazin İçerikli Yeni Sentezlenen β-Laktam Türevinin Genotoksisitesinin *in vitro* Mikronukleus Testi ile Belirlenmesi

Betül Aygün[1*], Ahmet Ali Berber[2], Nurcan Berber[3], Selen Şen[4], Merve Ayşe Doğancı[1], Hüseyin Aksoy[1]

[*1]Sakarya Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji, Sakarya, Türkiye
[2]Çanakkale Onsekiz Mart Üniversitesi, Sağlık Hizmetleri MYO, Tıbbi Hizmetler ve Teknikler Bölümü, Çanakkale, Türkiye
[3]Çanakkale Onsekiz Mart Üniversitesi, Ezine MYO, Gıda İşleme Bölümü, Çanakkale, Türkiye
[4]Sakarya Üniversitesi, Sağlık Bilimleri Fakültesi, Ebelik Bölümü, Sakarya, Türkiye

Sorumlu yazar e-mail: aygnbtl90@gmail.com

Özet

Günümüzde, spesifik insan karbonik anhidraz (KA) izoenzimlerini hedef alan ve bu etkileriyle diüretik, antiglokom, antiepileptik, antiinflamatuar, antikanser, antimikrobiyal gibi kullanılabilecek yeni karbonik anhidraz inhibitörleri (KAİ) geliştirme çalışmaları sürmektedir. β-laktam ve fitalazin gibi çeşitli farmakolojik ve biyolojik aktivitelere sahip olduğu bilinen heterosiklik yapılar bu tür bileşiklerdir ve yeni KAİ ilaçların sentezlenmesi çalışmalarında kullanılmaktadır. Ancak, yeni sentezlenen bir maddenin ilaç olarak önerilebilmesi için, bu maddeye ait genotoksisite verilerinin belirlenmesi gerekir Çünkü genotoksik etkili ajanların neden olduğu hasarlar, kanser gibi ciddi sağlık sorunlarına yol açabilmektedir. Bu çalışmada, ilaç etken maddesi olabileceği düşünülerek sentezlenen ve insan KA I/KA II inhibitörü olduğu belirlenen fitalazin içerikli β-laktam türevi 1-(4-(3,3-dimetil-1,6,11-trioxo-2,3,4,6,11,13-hekzahidro-1*H*-indazolo[1,2*b*]fitalazin-13-yl)fenil)-2-oxo-4 tolylazetidin-3-yl asetat'ın genotoksik profilinin belirlenmesi amaçlanmıştır. Bu amaçla, yeni β-laktam türevinin 30, 15, 7.5, 3.75 µg/mL'lik dozları ile insan periferal kan lenfositlerinde *in vitro* mikronukleus (MN) testi yapılmıştır. Bunun için 72 saat süreyle kültüre alınan insan kan lenfositlerine 48 saat süreyle belirlenen konsantrasyonlarda test maddesi uygulanmıştır. Bu uygulama sonucunda, negatif kontrole göre MN frekansı bakımından hiçbir konsantrasyonda istatistiksel olarak anlamlı farklılıklar gözlenmezken. çözücü kontrole göre, en düşük konsantrasyon hariç tüm konsantrasyonlarda anlamlı farklılıklar gözlenmiştir. KA inhibitörü yeni β-laktam türevinin genotoksik olup olmadığının tam olarak belirlenebilmesi için diğer test metotlarının da uygulanması ve elde edilen sonuçların birlikte değerlendirilmesi gerektiğini önermekteyiz.

Anahtar Kelimeler: Genotoksisite, mikronukleus, insan periferal kan lenfositleri, β-laktam, karbonik anhidraz, fitalazin.

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➢ **POSTER PRESENTATION**

Isolation and Characterization of *Rhizobium* Spp. from Wild Yellow Sweet Clover (*Melilotus officinalis*)

Hatıce Ogutcu[1*], Hulya Avsar[2]

[1]Ahi Evran University, Faculty of Agriculture, Department of Field Crops, Kırşehir, Turkey
[2]Ahi Evran University, Kırşehir, Turkey

Corresponding author e-mail: hogutcu@gmail.com

Abstract

Legume plants are very significant not only ecologically but also agriculturally because they are responsible for major change of nitrogen from atmospheric N_2 to ammonia. Yellow sweet clover (*Melilotus officinalis*) has an important potential in terms of fodder production, and it is grown under both arid and wet conditions in every region of Turkey. Yellow sweet clover is nodulated by the strains of *Sinorhizobium meliloti*. Additionally, symbiotic rhizobia of naturally growing legumes successfully establish effective symbioses under these conditions In this study, total 42 pieces of *Rhizobium* spp. isolated from wild Yellow sweet clover (*Melilotus officinalis*) plants existing in the central and the disricts of Kirsehir province. Nodules were obtained from this plant were sterilized, YMA plates were streaked and petri dishes 28 ^{0}C were incubated for 3-5 days. Colonies appear after incubation typically constitute (white , clear or slightly opaque , mucosity) 35 isolates were selected and transferred to tubes and refrigerated YMA were stored at +4 ^{0}C. For this purpose; YMA containing Bromothymol blue, Congo red, gram stain reaction , movement and subjected to catalase and oxidase tests were evaluated. The cytological and biochemical analysis of results showed that 35 of 42 strains belonged to *Sinorhizobium meliloti*.

Keywords: *Sinorhizobium meliloti*, Wild Yellow Sweet Clover , Nitrogen fixation.

Acknowledgment: This work was supported Ahi Evran Univ. BAP No: .FEF.B2.16.004.

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➢ **POSTER PRESENTATION**

Antibacterial and Antifungal Activities of Polymeric Microspheres Including Azomethine with Pt(IV) Against Pathogenic Microorganisms

Hatıce Ogutcu[1*], Dilek Nartop[2], Elvan Hasanoğlu Özkan[3], Nurşen Sarı[4], Murat Guler[1]

[*1]Ahi Evran University, Faculty of Agriculture, Department of Field Crops, Kırşehir, Turkey
[2]Düzce University, Faculty of Technology, Department of Polymer Engineering,Düzce, Turkey
[3]Gazi University, Polatlı Faculty of Science and Arts, Department of Chemistry, Ankara, Turkey
[4]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey

Corresponding author e-mail: hogutcu@gmail.com

Abstract

Polyazomethines are an interesting class of polymers. They havebeen widely investigated due to their applications in electronics, optoelectronics, photonics, sensors[1]. Antimicrobial polymers containing carbon-nitrogenbond, natural and synthetic polymers with metal moiety proved to exhibit significant antibacterial and antifungal activities[2]. Previously, the synthesis of polymeric microspheres including Schiff bases (**L_H, Pt-L_H**) and investigate the enzymatic properties of glucose oxidase enzyme (GOx) were reported by us[3,4].(L_H, Pt-L_H)were prepared from (aminomethyl) polystyrene, terephthaldehyde and 2-aminophenol with $PtCl_4$. Here in, the antimicrobial study of these compound swere reported. The polymeric microspheres were screened *in vitro* for antimicrobial activity against pathogenic strains gram positive; *Listeria monocytogenes 4b, Salmonellatyphi H, Bacillus cereus sp.*, gram negative; *Staphylococcus epidermis, Micrococcus luteus, Escherichia coli, Staphylococcus aureus, Brucella abortus, Proteus vulgaris, Klebsiella pneumoniae* and antifungal activity against *Candida albicans*. Additionally, the antimicrobial activity of (**L_H, Pt-L_H**) was also compared with five commercial antibiotics. The polymeric microspheres were exhibited varying degree of inhibitory effects on the growth of different tested pathogenic strains.

Keywords: Polymeric microspheres, Pt(IV) ion, antimicrobial activity, pathogenic microorganism.

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➢ **POSTER PRESENTATION**

Identification of Olfactory Genes in *Aedes cretinus*

Meryem Senay Sengul Demirak*, Beyza Duran

Gaziosmanpaşa University, Faculty of Arts & Sciences, Department of Molecular Biology and Genetics, Tokat, Turkey.

Corresponding author e-mail: senay.sengul@gop.edu.tr

Abstract

Olfaction is a crucial mechanism for an insect's life for behaviors such as oviposition, mating, finding food sources, and finding a host for a blood meal. Chemical cues emanating from a host are detected by specialed structures in the antenna to initiate olfactory signal transduction events. Odorant binding proteins (OBPs) are the first proteins encountered by odorant molecules to be transported to olfactory receptors to elicit a behavior. In mosquitoes, it is important to identify OBPs and understand their functions in order to better understand the mosquito olfactory behavior. In this study, we aim to identify OBPs in *Aedes cretinus* mosquito species, which is seen in the Mediterrean cost including Turkey. Since the genome sequence of *Aedes cretinus* is not available, reference mosquito genomes such as *Aedes aegypti* and *Aedes albopictus* can be used to identify candidate OBP genes in this mosquito species. We identified a partial genomic sequence of a putative odorant binding protein gene, named AcretOBP3. The genomic sequence comparisons indicated a higher sequence homology, which indicates that this gene is a possible ortolog of AaegOBP38, AalbOBP38 and AgamOBP3, in *Aedes aegypti*, *Aedes albopictus* and *Anopheles gambiae*, respectively. The expression of AcretOBP3 was tested in adult female and male antennae and body without antennae samples using reverse-transcriptase PCR. Female and antennal-biased expression of AcretOBP3 indicates that it may be involved in the host-seeking behavior. Functional and structural characterization is necessary to understand its role in olfactory behavior. OBPs that are exclusively expressed in the antennae of female mosquitoes are ideal targets to interfere with the host-seeking behavior to prevent mosquito-borne diseases.

Keywords: *Aedes cretinus*, odorant binding protein, olfaction, antennae, gene expression.

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➢ **POSTER PRESENTATION**

Theoretical Investigation of Spectroscopic and Thermodynamic Properties of 3-Ethyl/n-propyl-4-[3-methoxy-4-(4-methylsulfonyloxy)-benzylidenamino]-4,5-dihydro-1*H*-1,2,4-triazol-5-ones

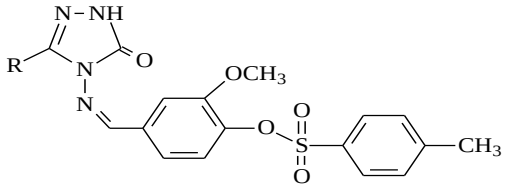
Hilal Medetalibeyoğlu*, Haydar Yüksek

*Kafkas University, Department of Chemistry, Kars, Turkey

Corresponding author e-mail: hilalmedet@gmail.com

Abstract

The optimized molecular structure, vibrational frequencies, UV–Vis spectroscopic parameters, atomic charges and frontier molecule orbitals (HOMO and LUMO) of the titled compounds have been calculated by using DFT/B3LYP and HF method with 6-31G(d) basis set. All quantum chemical calculations were carried out by using Gaussian 09W (Frisch et al., 2009; Wolinski, Hilton & Pulay, 1990) program package and the GaussView molecular visualization program (Frisch, Nielson & Holder, 2003). The molecular structure and vibrational calculations of these compounds were computed by using Becke-3-Lee Yang Parr (B3LYP) (Becke, 1993; Lee, Yang & Parr, 1988) density functional method with 6-31 G(d) basis set in ground state. IR absorption frequencies of analyzed molecules were calculated by two methods. Then, they were compared with experimental data (Medetalibeyoğlu & Yüksek, 2009), which are shown to be accurate. Infrared spectrum was composed by using the data obtained from both methods. The assignments of fundamental vibrational modes of the title molecules were performed on the basis of total energy distribution (TED) analysis by using veda4f program (Jamroz, 2004).



a) R=CH_2CH_3, b) R=$CH_2CH_2CH_3$

Keywords: 4,5-Dihydro-1*H*-1,2,4-triazol-5-on, Gaussian 09W, GIAO, B3LYP, HF, 6-31G(d).

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➢ **POSTER PRESENTATION**

Association of MTHFR C677T (rs1801133) Polymorphism with Multiple Sclerosis

Suat Cakina[1,*], Ozgul Ocak[2], Adile Ozkan[2], Selma Yücel[2], Handan Isın Ozısık Karaman[2]

[*1]Canakkale Onsekiz Mart University, Health Service Vocational College, Çanakkale-Turkey
[2]Canakkale Onsekiz Mart University, Faculty of Medicine, Department of Neurology, Çanakkale-Turkey

Corresponding author e-mail: suatcakina@comu.edu.tr

Abstract

Multiple sclerosis (MS) is a chronic, demyelinating disease of the central nervous system(CNS). Genetic and environmental factors are important in disease development. The aim of this study was to investigate a possible association between the methylenetetrahydrofolate reductase (MTHFR) gene and multiple sclerosis. 80 MS patients and 80 healthy control subjects were included in the present study. PCR-RFLP methods were used to genotype MTHFR at position 677. Our results show a significant difference of the allelic frequency distribution between the case and control groups for MTHFR (C677T) ($p<0.05$). Our findings suggested that the MTHFR (C677T) gene polymorphism might be associated with MS.

Keywords: Multiple sclerosis, MTHFR, SNP, genotype.

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➢ **POSTER PRESENTATION**

Alıç (*Crataegus* sp.) Meyvesi ve Yaprağının Türkiye'deki Hasat Miktarları ve Etnobotanik Kullanımları

Gamze Tuttu*, Serhat Ursavaş, Simge Çizgen

Çankırı Karatekin Üniversitesi, Orman Fakültesi, Orman Mühendisliği Bölümü, Çankırı, Türkiye

Sorumlu yazar e-mail: gamze.tuttu@gmail.com

Özet

Bu çalışmanın amacı; ülkemizde odun dışı orman ürünü olarak kullanılan alıç (*Crataegus* sp.) meyvesi ve yaprağının üretim miktarlarını ve elde edilen gelirleri ortaya koymak, aynı zamanda içerdikleri maddelerin önemini ve kullanım alanlarını vurgulamaktır. *Rosaceae* familyasının bir üyesi olan alıçlar yaprak döken, genellikle dikenli ağaç veya çalılardır. Melezleşme gösteren karmaşık bir cins olan alıçlar dünyada 100-200 türle, ülkemizde 16 tür, 3 alttür, 6 varyete ve 6 melez olmak üzere toplam 27 taksonla temsil edilmektedir. Meyve, yaprak ve çiçekleri gıda ve tıbbı olarak kullanılan alıçların bileşiminde aminler, tanen, vitamin C, potasyum, fenolik maddeler, antioksidant ve antimikrobiyal aktiviteye sahip maddeler bulunmaktadır. Tıbbi olarak kalp-damar rahatsızlıkları başta olmak üzere yatıştırıcı, spazmları azaltıcı, kalp hareketlerini düzenleyici, tansiyon düşürücü, kolesterol düşürücü, idrar söktürücü ve kabız etkilerinden faydalanılmaktadır. Hafıza kaybı, dikkat eksikliği, göz kanlanması ve ağız kokusu önleyici olarak da kullanılır. Meyveleri çiğ, marmelat, reçel, hoşaf, turşu, tarhana, çay, sirke yapımında, çiçek ve yaprakları çay yapımında kullanılmaktadır. Orman Genel Müdürlüğü, Odun Dışı Ürün ve Hizmetler Daire Başkanlığının 1989-2016 yılları arasındaki verileri incelendiğinde ilk alıç yaprağı hasadının 2003 yılında 1.000 kg olarak Mersin Orman Bölge Müdürlüğünden yapıldığı saptanmıştır. 28 yıllık veriler incelendiğinde şimdiye kadar: Adana, Amasya, Bolu ve Mersin Orman Bölge Müdürlüklerinden alıç yaprağı hasadı yapıldığı görülmektedir. En fazla alıç yaprağı üretimi 6.683 kg ile Amasya Orman Bölge Müdürlüğünden kaydedilmiş olup toplamda 14.493 kg üretim yapılmıştır. Alıç meyve hasadı ile ilgili kayıtlar ise 2015 ve 2016 yıllarına ait olup Amasya, Kayseri ve Kütahya Orman Bölge Müdürlüklerinden kaydedilmiştir. Bu 2 yılda toplamda 46.740 kg alıç meyvesi hasat edilmiş ve 1.010 TL gelir sağlanmıştır.

Anahtar Kelimeler: Alıç, *Crataegus* sp., Etnobotanik, Odun Dışı Orman Ürünleri, Hasat, Türkiye.

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➢ **POSTER PRESENTATION**

Azo Dye Removal Using Free and Immobilized Fungal Biomasses: Isotherms, Kinetics and Thermodynamic Studies

Meltem Yilmaz[1]*, Gulay Bayramoglu[2,3]*

[1]Gazi University, Polatlı Faculty of Sciences and Arts, Department of Biology, Ankara Turkey
[2]Gazi University, Biochemical Processing and Biomaterial Research Laboratory, Ankara, Turkey
[3]Gazi University, Faculty of Sciences, Department of Chemistry, Ankara, Turkey

meltemyilmaz@gazi.edu.tr; g_bayramoglu@hotmail.com

Abstract

Environmental pollution caused by the toxic organic and inorganic compounds (such as synthetic dyes, pesticides, drugs, and heavy metals) is a matter of great concern. The azo dyes are characterized by the presence of azo bonds, aromatic rings and sulphate, and amino groups. Wastewaters containing dyes are highly coloured and these effluents impair the living things in the aquatic systems. For adsorption of micro-pollutants, many different composite adsorbents have been synthesized using natural polymers such as chitin, alginate, cellulose and their derivatives, and synthetic polymers such as poly(vinyl alcohol), poly(ethyleneimine), and poly(acrylic acid). For example, a composite adsorbent can be easily prepared by combination of microbial biomass with one of these polymers via immobilization techniques can improve the adsorbent performance and adsorption capacity.

Lentinus concinnus biomass was immobilized in polyvinyl alcohol/polyethyleneoxide hydrogels (PVA/PEO; referred as composite biomass) and used for removal of Reactive Yellow 86 dye (RY-86) from aqueous solution using free fungal biomass as a control system. The free fungal and composite fungal biomasses were characterized using ATR-FTIR, SEM and analytical methods. FTIR studies of the adsorbent preparations show that carboxylate, hydroxyl and amine groups should be involved in adsorption of the RY-86 dye. The adsorption of RY-86 dye on these adsorbents increased as the initial concentration of RY-86 dye in the medium increased up to 200 mg/L. The maximum RY-86 dye adsorption for the free fungal and composite fungal biomasses, was obtained as 87.6 and 71.8, respectively, using 200 mg/L initial dye concentration, at 25 °C, and at pH 5.0 with 2.0 h contact. The equilibrium data were well described with the Freundlich and Temkin isotherm models. The adsorption of RY-86 dye was fitted best by the pseudo second-order kinetic model. Thermodynamic parameters ($\Delta G°$, $\Delta H°$ and $\Delta S°$) showed that RY-86 dye adsorption on both adsorbents were spontaneous process.

Keywords: Composite biomass; Reactive Dye; Adsorption; Isotherms; Thermodynamics.

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➢ **POSTER PRESENTATION**

Experimental and Theoretical Studies of Potent Bioactive 2-Hydroxy-1-naphthaldehyde Propanesulfonylhydrazone

Ebru Aktan*, Ümmühan Özdemir Özmen

Gazi University, Faculty of Science, Chemistry Department, Ankara, Turkey

Corresponding author e-mail: ebruaktan@gazi.edu.tr

Abstract

Sulfonyl hydrazones are significant derivatives of sulfonamides due to their pronounced biological and pharmaceutical properties such as antibacterial, diuretic, antitumor, antiviral, antineoplastic activity and enzyme inhibition to carbonic anhydrase species [1,2].
In this study, 2-Hydroxy-1-naphthaldehydepropanesulfonylhydrazone (nafpsh) was synthesized and characterized by FT-IR, ^{1}H NMR, LC/MS spectroscopic methods. Quantum chemical calculation is an effective way to study the molecular structure and structural properties of inorganic and organic compounds besides experimental methods. In continuation of our work, the molecular structure of nafpsh was determined by computational studies using density functional theory (DFT). The geometry optimization of the possible tautomers performed using the B3LYP functionals supplemented with the 6-31+G(d,p) basis set using Gaussian 09 package program.
In ^{1}H-NMR spectra of nafpsh; NH protons exhibit at 11,16 ppm. Azomethine (HC=N) proton observed at 8.83 ppm. In FT-IR spectra: band at 3220 cm^{-1} may be due to (NH) stretching vibration. The stretching vibration of the azomethine (C=N) group observed at 1603,1620 cm^{-1}. According to the DFT calculation results, it was determined that the phenol-imine is the most stable form among the tautomeric forms (Fig.1). As a result, this study will be useful to a scientist who wants to investigate the details of the molecule.

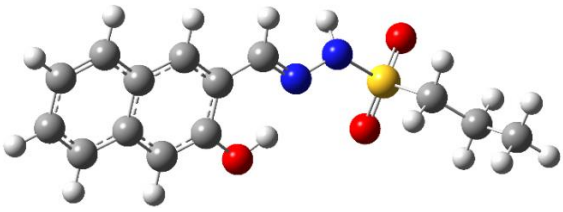

Fig. 1.The optimized structure of phenol-imine tautomeric form of nafpsh

Keywords: sulfonylhydrazone, tautomerism, DFT.

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➢ **POSTER PRESENTATION**

Pyrazolium based Ionic Liquids: Crystal Structures and Theoretical Calculations

Ebru Aktan[1*], Melek Canbulat Özdemir[2], Ertan Şahin[3]

[1]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey
[2]Middle East Technical University, Faculty of Engineering, Department of Environmental Engineering, Ankara, Turkey.
[3]Atatürk University, Faculty of Science, Department of Chemistry, Erzurum, Turkey

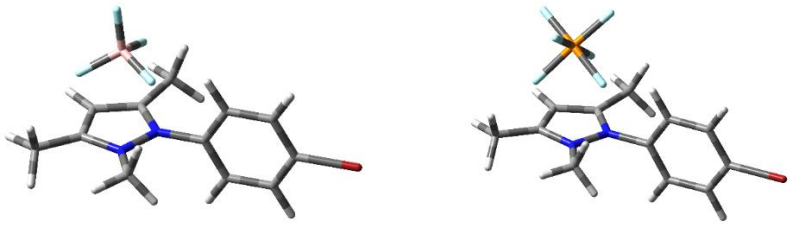
Corresponding author e-mail: ebruaktan@gazi.edu.tr

Abstract

Ionic liquids (IL) are ionic, salt-like materials and composed of an organic cation and anion. Different types of anions and cations can be used to modify the chemical and physical properties of the IL. Phosphonium, ammonium, sulfonium, imidazolium, picolinium, pyridinium, pyrrolidinium, thiazolium, oxazolium and pyrazolium cations are widely used cations in the synthesis of ionic liquids, while hexafluorophosphate and tetrafluoroborate are the most prominent anions used in IL synthesis [1].

A series of tunable aryl alkyl ionic liquids (TAAILs) based on 1-aryl-3,5-dimethyl-1H-pyrazoles were synthesized and characterized by Özdemir and Özgün [2]. The crystal structures of two of these ionic salts 1-(4-bromophenyl)-2,3,5- trimethylpyrazolium tetrafluoroborate (I) and 1-(4-bromophenyl)-2,3,5- trimethylpyrazolium hexafluorophosphate (II) were obtained by X-ray diffraction techniques. The optimized molecular geometries (Figure 1) and $^{1}H/^{13}C$ NMR chemical shift values were obtained using Gaussian 09 package program.

The DFT/B3LYP method together with basis set 6-311+G(d,p) was used to study the molecular structures of ILs. Their ^{1}H NMR and ^{13}C NMR chemical shift values were compared with the calculated results obtained by B3LYP/6-311G++(2d,2p) in the solvent $CDCl_3$ by applying GIAO approach. It was observed that the calculated geometrical parameters are very compatible with X-ray diffraction results.



I II

Figure 1. Optimized geometries of I and II.

Keywords: Ionic liquids, TAAILs, Pyrazolium cations, Crystal structure, DFT.

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➢ **POSTER PRESENTATION**

Antiproliferative Effect of Abacavir on Human Breast Cancer Cells

Zülal Atlı Şekeroğlu[1*], Vedat Şekeroğlu[1], Sevil Işık[2]

Department of Molecular Biology and Genetics, Faculty of Science, Ordu University, Ordu, Turkey
[2]Department of General Surgery, Faculty of Medicine, Ordu University, Ordu, Turkey

Corresponding author e-mail: zulalatli@hotmail.com

Abstract

Previous studies have demonstrated that nucleoside reverse transcriptase inhibitors, widely used in AIDS therapy, inhibit the endogenous reverse transcriptase activity in some human cancer cell lines, reducing the cell growth rate. Abacavir is a nucleoside reverse transcriptase inhibitor. The aim of this study is to investigate the cytotoxicity effect of abacavir on the breast cancer cell line, MCF7. MTT assay was used to investigate the inhibitory effect of abacavir on cell viability of MCF-7 cells. The cells were treated with abacavir at concentrations ranging from 0 to 100 mM for 24, 72 and 120 h at 37°C. Abacavir showed significant inhibitory effects after 10 mM for 24 and 72 h, and 0,75 mM for 120 h. Our results indicate that abacavir can inhibit the proliferation of MCF-7 cells.
This study was financially supported by a grant from Scientific Research Funding of Ordu University (Turkey) with the project number: AR-1668.

Keywords: Abacavir, MTT assay, MCF-7 cells, Cytotoxicity.

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➢ **POSTER PRESENTATION**

Effects of Whey Protein on Acrolein-Induced Cardiac Injury and Dyslipidemia

Vedat Şekeroğlu[1], Zülal Atlı Şekeroğlu[1*], Birsen Aydın[2]

[*1]Department of Molecular Biology and Genetics, Faculty of Science, Ordu University, Ordu, Turkey
[2]Department of Biology, Faculty of Science, Amasya University, Amasya, Turkey

Corresponding author e-mail: zulalatli@hotmail.com

Abstract

Acrolein (AC) is ubiquitously present in foods and in environment. Whey protein (WP) is widely used weight-loss supplements. We aimed to evaluate blood lipidemic profiles and cardiac injury markers in rats treated with AC and/or WP. For this purpose, animals were orally gavaged with AC, WP and AC+WP for six days per week during 30 days. Co-treatment AC with WP significantly increased levels of creatinine kinase-MB and lactate dehydrogenase which are cardiac injury markers, when compared to control group. AC significantly increased triacylglycerol, low density lipoproteins, very low density lipoproteins, high density lipoproteins levels. Co-treatment AC with WP improved and normalized only levels of low density lipoproteins and high density lipoproteins. In conclusion, although WP significantly reduced AC toxicity, co-treatment with AC+WH adversely affected some biochemical parameters of the cardiovascular system.

Keywords: Whey protein, acrolein, cardiac injury, dyslipidemia.

This study was financially supported by a grant from Scientific Research Funding of Amasya University (Turkey) with the project number: FBM-BAP-14-068.

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➢ **POSTER PRESENTATION**

Fast and Sensitive Detection of the Target Pathogen in Milk Samples Using Aptamer Functionalized Magnetic Silica Solid Phase and MCM-41-aptamer Gate System

Uğuray Dinçbal[1*], Gülay Bayramoğlu[1,2*], V. Cengiz Özalp[3], M. Yakup Arica[2]

[*1]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey
[2]Gazi University, Biochemical Process & Biomaterial Research Laboratory, Ankara, Turkey
[2]Konya Food and Agricultural University, Department of Bioengineering, Konya, Turkey

Corresponding author e-mail: uguray.dincbal1@gazi.edu.tr; g_bayramoglu@hotmail.com

Abstract

The applications of aptamer-based biosensors have been reported for a wide range of targets from small molecules to whole cells like bacteria. Association of aptamers with nanoparticles provided enhanced performance for highly efficient purification of targets as well as biosensor applications. A few studies have been reported for *Salmonella spp.* detection using aptamers. *S. enterica* is one of the most common causes of food-associated disease, which is widely distributed in the environment. General detection methods for *S. enterica* include PCR analysis, immunologic methods, solid culturing techniques, and various microscopic studies. In this report, we aimed fast detection of pathogen cells through an efficient magnetic capture and subsequent quick detection based on aptamer affinity. Magnetic separation-sensing approaches have been reported, showing the usability of pre-concentration of the target pathogens from food materials. The Fe_3O_4@SiO_2@pGMA and MCM-41 particles were prepared separately and used for pre-concentration and detection, respectively. *S. enterica* specific aptamer was immobilized on both amine functionalized MCM-41 and Fe_3O_4@SiO_2@pGMA particles via glutaraldehyde coupling. The captured *Salmonella* cells were determined by a fluorescent homogenous assay in the samples by aptamer gated MCM-41 silica particles. Our method achieved a sensitive assay to detect *Salmonella* cells in milk samples as low as 10^3 CFU/ml without any culturing. Hence, the proposed sensing strategy might be an efficient platform for detection of pathogenic bacteria in food samples.

Keywords: Aptamers; Pathogen bacteria; Salmonella; Silica nanoparticles; Biosensor.

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➢ **POSTER PRESENTATION**

Polyoxometalate/Hexagonal Boron Nitride Nanosheets Modified Glassy Carbon Electrode : Simultaneous Determination of β-agonists

Ceren Karaman[1*], Bahar Bankoğlu[2], Mehmet Lütfi Yola[2], Necip Atar[1], Alime Yılmaz[1], Onur Karaman[4]

[1]Pamukkale University, Faculty of Engineering, Department of Chemical Engineering, Denizli, Turkey.
[2]Iskenderun Technical University, Science and Technology Application and Research Center, Hatay, Turkey.
[3]Iskenderun Technical University, Faculty of Engineering and Natural Sciences, Department of Biomedical Engineering, Hatay, Turkey.
[4]Akdeniz University, Vocational School of Health Services, Department of Medical Imaging, Antalya, Turkey.

Corresponding author e-mail: ckaraman@pau.edu.tr

Abstract

A new electrochemical approach based on polyoxometalate (POM) decorated hexagonal boron nitride nanosheets (POM/2D-hBN) was presented for simultaneous determination of β-agonists such as phenylethanolamine A (PEA), clenbuterol (CLE), ractopamine (RAC) and salbutamol (SAL) in urine samples. Formation and properties of POM/2D-hBN were highlighted with x-ray diffraction (XRD) method, scanning electron microscope (SEM), cyclic voltammetry (CV) and electrochemical impedance spectroscopy (EIS). POM/2D-hBN modified glassy carbon electrode (POM/2D-hBN/GCE) was prepared for simultaneous determination of β-agonists. The prepared electrochemical sensor was used for urine sample analysis. In addition, the prepared sensor was investigated in terms of selectivity, stability, reusability and repeatability.

Keywords: β-agonists; two-dimensional hexagonal boron nitride; polyoxometalate; urine sample

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➢ **POSTER PRESENTATION**

Silica Nanoparticles Functionalized Via SI-ATRP for Removal of Methylene Blue as a Basic Dye

Gulay Bayramoğlu[1,2*], Uguray Dinçbal[1*], M. Yakup Arica[2]

[*1]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey
[2]Gazi University, Biochemical Process & Biomaterial Research Laboratuvary, Ankara, Turkey

Corresponding author e-mail: g_bayramoglu@hotmail.com; uguray.dincbal1@gazi.edu.tr

Abstract

Silica nanoparticles have proven to be useful in many applications in the areas of chemistry, nanomedicine and other technologies. It contains highly active surfaces that provide a tremendous driving force for diffusion and consequently, high mass transfer and short separation time. Furthermore, the many possible surface modifications of silica nanoparticles allow precise control of surface chemistry to electrostatic attraction or repulsion between silicate-based supports and the hazardous such as reactive dye molecules of interest. Pollution by colored molecules has attracted a considerable attention because they severely threat the human health and natural ecosystem. For this purpose, in this study silica nanoparticles have been functionalized by surface initiated atom transfer radical polymerization (SI-ATRP) and then modified to create an anionic adsorbent for removal of Methylene Blue (MB) as a model basic dye. Monodisperse and uniform-size silica nanoparticles (SN) particles were prepared using by sol–gel process and modified with (3-aminopropyl) triethoxysilane (APTES), then grafted with poly(glycidyl methacrylate) p(GMA) by surface-initiated atom transfer radical polymerization (SI-ATRP). The p(GMA) grafted SN particles were functionalized with N-5-(Amino-1-carboxypentyl) iminodiacetic acid (ACIDA), and used as an adsorbent for the removal of MB from aqueous medium. The p(GMA) grafted SN particles and ACIDA modified SN-g-p(GMA) nano particles were characterized by BET, X-ray diffraction, thermo-gravimetric, Fourier transform infrared spectroscopy, zeta potential, nitrogen adsorption desorption isotherms, scanning electron microscope and analytical methods. Adsorption potential of MB was evaluated by varying experimental conditions. The designed adsorbent was removed MB with high efficiency in a wide pH range 4.0-7.0. The equilibrium adsorption data were analyzed by Langmuir, and Freundlich models and found to fit the Langmuir model well for adsorption of MB on the ACIDA modified SN-g-p(GMA) nano particles. The adsorption kinetic was well described by pseudo-second-order equations.

Keywords: Silica nanoparticles; SI-ATRP; Removal; Basic dye.

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➢ **POSTER PRESENTATION**

A Highly Selective and Sensitive Voltammetric Sensor with Molecularly Imprinted Polymer Based Carbon Nitride Nanotubes/Graphene Quantum Dots/Core-Shell Nanoparticle Composite for Determination of Ochratoxin A

Ceren Karaman[1*], Alime Yılmaz[1] , Bahar Bankoğlu[2] , Necip Atar[1], Mehmet Lütfi Yola[3], Onur Karaman[4]

[1]Pamukkale University, Faculty of Engineering, Department of Chemical Engineering, Denizli, Turkey.
[2]Iskenderun Technical University, Science and Technology Application and Research Center, Hatay, Turkey.
[3]Iskenderun Technical University, Faculty of Engineering and Natural Sciences, Department of Biomedical Engineering, Hatay, Turkey.
[4]Akdeniz University, Vocational School of Health Services, Department of Medical Imaging, Antalya, Turkey.

Corresponding author e-mail: ckaraman@pau.edu.tr

Abstract

In present article, Ag@Au core-shell nanoparticles (Ag@Au NPs) involved in carbon nitride nanotubes (C_3N_4 NTs) functionalized graphene quantum dots (GQDs) nanocomposite based molecular imprinted polymer (MIP) was formed for ochratoxin A (OCH) recognition. Firstly, C3N4 NTs@GQDs nanocomposite was prepared by means of hydrothermal treatment. Secondly, this nanocomposite was functionalized with 2-aminoethanethiol (AET) via the affinity of gold-sulphur for binding Ag@Au NPs. After that, OCH imprinted voltammetric sensor was prepared in presence of 100.0 mM phenol as monomer containing 25.0 mM OCH by cyclic voltammetry (CV). All nanomaterials' formation and properties were highlighted with scanning electron microscope (SEM), transmission electron microscope (TEM), x-ray photoelectron spectroscopy (XPS), energy dispersive x-ray analysis (EDX), raman spectroscopy, cyclic voltammetry (CV) and electrochemical impedance spectroscopy (EIS). 1.0×10^{-12} - 1.0×10^{-9} M and 2.0×10^{-13} M were founded as the linearity range and the detection limit (LOD). Finally, OCH imprinted glassy carbon electrode (GCE) was used for urine sample analysis.

Keywords: Ochratoxin A, Carbon Nitride Nanotubes, Graphene Quantum Dots, Core-Shell Nanoparticles, Molecular imprinted polymer, Voltammetry.

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➢ **POSTER PRESENTATION**

4-Nitro Benzaldehit Türevli Sülfonil Hidrazon Bileşiklerinin, Karakterizasyonları ve Ellman Metodu İle Asetilkolinesteraz Enzimine Karşı İnhibitör Özellikleri

Esra Bilen*, Ümmühan Özdemir Özmen, Servet Çete

Gazi Üniversitesi, Fen Fakültesi, Kimya Bölümü, Ankara, Türkiye

Corresponding author e-mail: esra.bilen@gazi.edu.tr

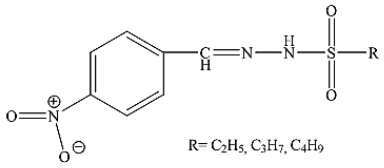
Özet

Sülfonil hidrazonlar ve türevleri, tıp endüstrisi için önemli bileşiklerdir ve günümüzde farklı hastalıkların tedavisinde veya korunmasında yaygın olarak kullanılmaktadır [1]. Bu bileşikler klinik tıpta anti-kanser, anti-mikrobiyel, anti-obezite, anti-karbonik anhidraz ve Alzheimer Hastalığı için anti-kolinesteraz inhibitör ajanları olarak faydalanılmaktadır [2].

Bu çalışmamızda farklı alkil grupları içeren sülfonil klorur türevleri ile hidrazinhidrat ve 4-nitrobenzaldehit bileşiği reaksiyona sokulmuş ve yeni bir seri alkil sülfonil hidrazon bileşikleri sentezlenmiştir (Şekil1). Sentezlenen sülfonil hidrazon bileşiklerinin yapıları, ^{1}H-NMR, ^{13}C-NMR ve FT-IR gibi spektroskopik yöntemlerle karakterize edilmiştir. Ayrıca bu bileşiklerin Asetikolinesteraz enzimine (AChE) karşı inhibisyon etkileri spektrofotometrik bir yöntem olan Ellman metodu ile *in vitro* olarak belirlenmiştir.

Yapılan ölçümler; 4-Nitro Benzaldehit içeren alkil sülfonil hidrazon bileşiklerinin AChE enzimine karşı inhibisyon etkisine sahip olduğunu göstermiştir. Özellikle 4-nitrobenzaldehit bütilsülfonil hidrazon bileşiği diğer türevlere göre daha düşük IC_{50} (2,57 x 10^{-5} M) değerine sahiptir yani AChE enzimini daha iyi inhibe etmektedir.

Bu sonuçlar bileşiklerin Alzheimer Hastalığı tedavisinde ümit verici inhibitör olma kapasitelerini göstermektedir.



Şekil1: 4-nitrobenzaldehitalkilsülfonil hidrazonlar

Anahtar Kelimeler: Sülfonil hidrazon bileşikleri, Asetilkolinesteraz, Alzheimer hastalığı.

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➢ **POSTER PRESENTATION**

Platinium/Palladium Nanoparticles Involved Carbon Nitride Nanotubes as Microbial Fuel-Cell Electrode for Bio-Energy Production

Onur Karaman[1], Bahar Bankoğlu[2], Necip Atar[3], Mehmet Lütfi Yola[4], Ceren Karaman[3*]

[1]Akdeniz University, Vocational School of Health Services, Department of Medical Imaging, Antalya, Turkey.
[2]Iskenderun Technical University, Science and Technology Application and Research Center, Hatay, Turkey.
[3]Pamukkale University, Faculty of Engineering, Department of Chemical Engineering, Denizli, Turkey
[4]Iskenderun Technical University, Faculty of Engineering and Natural Sciences, Department of Biomedical Engineering, Hatay, Turkey.

Corresponding author e-mail: ckaraman@pau.edu.tr

Abstract

Carbon nitride nanotubes (C_3N_4NTs), a new class of nanosturctured carbons, display the strong catalytic behaviour. Combined with their other some advantages such as chemical stability, aqueous dispersibility, biocompatibility, intrinsic low toxicity, and amenability of low-cost and large-scale production. Platinium and palladium nanoparticles (Pt/PdNPs) dispersed of C3N4NTs was prepared as a microbial fuel cell (MFC) electrode. The Pt/PdNPs involved C_3N_4NTs (Pt/PdNPs/C_3N_4NTs) were characterized by optic, microscopic, spectroscopic and electrochemical techniques. Pt/PdNPs/C_3N_4NTs enabled the catalytic reduction of oxygen at the cathode and the electron transfer to the anode. Pt/PdNPs/C_3N_4NTs electrode showed high OCP, current density and power density. Pt/PdNPs/C_3N_4NTs can be used as an alternative electrode for MFCs.

Keywords: Nanoparticle, Carbon nitride nanotubes, Microbial fuel cell.

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➢ **POSTER PRESENTATION**

Effects of Hospital Wastewaters on the Dissemination of Tetracycline Resistance Genes

Osman Kayali[1*], Bulent Icgen[1,2]

[1]Middle East Technical University, Department of Biotechnology, Ankara, Turkey
[2]Middle East Technical University, Department of Environmental Engineering, Ankara, Turkey

Corresponding author e-mail: osman.kayali@metu.edu.tr

Abstract

Today emergence and dissemination of antibiotic resistance are considered one of the major threat to the public health. Antibiotics are also used in agriculture, animal husbandry and veterinary practices. This kind of intensive usage increases the exposure of antibiotic resistant bacteria and resistance genes to the natural habitats. Hospital wastewaters act as reservoirs for antibiotic resistance genes and resistant bacteria due to its infectious and toxic content. Tetracyclines are discovered in 1940s and the first resistant bacteria is isolated in early 1950s. They have widespread use against Gram-positive and Gram-negative bacteria. The drug tetracycline inhibits bacterial protein synthesis by binding in ribosomal 30s subunit. There are 3 well studied resistance mechanisms for tetracyclines as efflux proteins, ribosomal protection and enzymatic inactivation. Most of the genes that provide tetracycline resistance are associated with mobile elements. This underlines horizontal gene transfer as the main mechanism responsible for the wide distribution of tetracycline resistance genes. The gene *tetA* is one of the tetracycline resistance gene that encodes for an efflux protein. In this study, therefore, the primers targeting *tetA* gene were used for quantitative analysis of seasonally collected effluents of hospital wastewaters. Outcome of the study will be used to determine the effects of hospital wastewaters on the tetracycline resistance dissemination in the environment.

Keywords: Hospital wastewaters, Antibiotic resistance, Tetracycline resistance genes, *tetA*

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➢ **POSTER PRESENTATION**

The Determination of Some Heavy Metals and Phosphorus Levels in Spring Waters of Istanbul Region with Inductively Coupled Plasma–Mass Spectrometer(ICP-MS) Method

Ercan Keles[1*], Gulbin Erdogan[2]

[1]Marmara University, Institute of Health Sciences, Istanbul.
[2]Marmara University, Faculty of Pharmacy, Department of Analytical Chemistry, Istanbul.

Corresponding author e-mail: ercan_kls@hotmail.com

Abstract

Heavy metals are elements of crust of the earth. Some of the crucial features of heavy metals are that, they have high density and have toxic effect even in a low concentration. Therefore, it is so important to use technology during the analysis of heavy metals. In other studies, it is seen that many devices can be used for the analysis of heavy metals. However, between those devices ICP- MS is so crucial whether its speed or ppt level to perform an analysis, or analysing a lot of elements at the same time.
In this research, spring waters of Istanbul region and some of the heavy metals (As, Cr, Mn, Pb) incresing the alga development and phosphorus (P) levels leading eutrophication were searched. For the study, water samples were taken from 25 different sources in 11 districts of Istanbul. Those samples were taken from drinkable bottled waters represented to the markets. While making this research ICP-MS method were used. The result of the analysis the WHO (2008), US EPA (2012) was commented with the consideration of Regulation on Waters for Human Consumption, published in 2013, the scope of Ministry of Health of the Republic of Turkey. As a result, it was seen that all the analyzed waters didn't exceed the limit.

Keywords: ICP-MS, Spring Water, As, Cr, Mn, Pb, P

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➢ **POSTER PRESENTATION**

Investigation of Adsorption Kinetics and Equilibrium of Methylene Blue on Magnetic Halloysite Nanotubes-Alginate Hydrogel Beads

Görkem Polat[1*], Yeşim Sağ Açıkel[2]

[1*]Hacettepe University, Bioengineering Division, Institute of Science, 06800, Beytepe, Ankara, Turkey.

[2]Hacettepe University, Engineering Faculty, Chemical Engineering Department and Bioengineering Division, Institute of Science, 06800, Beytepe, Ankara, Turkey.

Corresponding author e-mail: gorkmplt@outlook.com

Abstract

In this study, alginate (ALG) hybrid beads supported with magnetic halloysite nanotubes (MHNTs) were synthesized. The removal of methylene blue, a cationic dye, from wastewaters was performed easily and effectively using MHNT-ALG hydrogel beads. Magnetic property was gained to halloysite nanotubes using "co-precipitation" method. The synthesis of MHNT-ALG beads was performed by "dripping" method using $CaCl_2$. In order to remove methylene blue dye, experiments were carried out in batch reactors. The methylene blue adsorption was investigated as a function of medium pH, initial dye concentration, amount of composite hydrogel and the mass ratio of MHNT to ALG. Adsorption equilibrium data were obtained at the optimum conditions, pH 5.0, the mass ratio of MHNT to ALG 1:2, the MHNT-ALG amount of 12.5 mg in 100 mL working volume. The adsorption equilibrium of methylene blue on MHNT-ALG beads was evaluated using adsorption equilibrium models, Langmuir Type I and Type II, Freundlich, Redlich-Peterson models. The adsorption equilibrium was represented well by Langmuir Type I model. The Langmuir adsorption constant, q_m, representing the amount of methylene blue adsorbed per unit weight of adsorbent at equilibrium when the surface of the adsorbent was coated methylene blue as a complete layer was found to be 805.94 mg/g. The adsorption equilibrium constant, K_L, calculated from Langmuir Type I model was determined as 0.0316 L/mg. The fit of adsorption kinetics was investigated using both the pseudo first order and second order models. The adsorption kinetics of methylene blue was represented better by pseudo second order model than pseudo first order model. The pseudo second order kinetic constant was found to be 3×10^{-4} g/mg.min as an average value within a methylene blue concentration range of 50-500 mg/L.

Keywords: Wastewater treatment, Adsorption, Methylene blue, Magnetic halloysite nanotubes-alginate hydrogel beads.

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➢ **POSTER PRESENTATION**

Sulbutiamine HCL Alters Locomotor Activity in Eisenia fetida.

Hasan Çalışkan[1*], Gözde Karabulut[2]

[*1]Ankara University, Medicine Faculty, Physiolgy Department, Ankara, Turkey
[2]Hacettepe University, Science Faculty, Zoology Department, Ankara, Turkey

Corresponding author e-mail: hasanmonica @hotmail.com

Abstract

Sulbutiamine HCl (SUL) is a synthetic compound. which composed of two thiamine (vitamin B1) molecules bound together by a sulfur group. Sulfur group provide lipophilic feature. SUL can cross swiftly the blood –brain barrier. SUL is prescribed freuqently for for the treatment of asthenia and chronic fatigue. The aim of this study is to evaluate the effect of sulbutiamine on the anxiety like behaviour and locomotor activity in Eisenia fetida.

24 Eisenia fetida(1 years old, dimension approximately 9cm. and n= 8) were used in the present study. Worms were left for adaptation for 4 weeks. The subjects were maintained under 12 h light/12 h dark cycle at a temperature of 23-25 °C and damp (50-70%) controlled room. Each worm was removed from its home and placed into an exposure chamber containing test compound or saline for 30 minute. Saline, Sulbutiamine 200 mg/kg and 300 mg/kg were administered respectively in experiment group. After 30 min, each worm was placed in to experiment chamber(modified light dark box test) and recorded via camera 10 min. Light zone time, dark time zone, light/dark zone entrance number, locomotor activity, dark zone entrance latency and velocity were analyzed. IBM SPSS Statistics 23.0 was conducted for statistical analysis.

Light zone time, dark zone time, light/dark zone entrance number and dark zone entrance latency were no difference between the groups. Locomotor activity and velocity were increased signifacntly 200 and 300 mg/kg SUL groups compere to controls ($p < 0.01$).

Our Data showed that SUL is not anti-anxiety property. On the other hand SUL demonsrated psychomotor stimulant like behaviour. For this reason SUL is prescribed heedfully.

Key Words: Eisenia fetida, Sulbutiamine HCL, Anxiety and locomotor activity.

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➢ **POSTER PRESENTATION**

Bolu-Gerede Heteroptera Faunasının Mevcut Durumu

Şeyma Şahin[1*], Suat Kıyak[2]

[*1]Gazi Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Anabilim Dalı, Ankara, Türkiye

[2]Gazi Üniversitesi, Fen Fakültesi, Biyoloji Anabilim Dalı, Ankara, Türkiye

Sorumlu yazar e-mail: seyma.sahin1@gazi.edu.tr

Özet

Bu çalışmada Gerede ilçesi Heteroptera faunasının mevcut durumu ele alınmıştır. Çalışmada elde edilen veriler kütüphanelerden katalog ve dijital ortamlardan yapılan taramalar sonucu ortaya konulmuştur. Heteroptera takımı dünya üzerinde 40.000'den fazla tür ile temsil edilmektedir. Türkiye Heteroptera faunasına yönelik yapılan son çalışmalarla birlikte 40 familyaya bağlı 1526 tür olduğu bildirilmiştir. Yapılan bu araştırma sonucunda Bolu ilinde toplam 17 familyaya bağlı 140 tür, 14 alttür bulunduğu tespit edilmiştir. Miridae familyasına bağlı *Plagiognathus amygdali* (Linnavuori, 1965) ve *Grypocoris heinzi* (Wagner, 1966) türlerinin Bolu iline endemik olduğu bildirilmiştir. Gerede ilçesinde ise 14 familyaya bağlı 25 tür bildirilmiştir. Bu veriler ile Gerede ilçesi ele alındığında Bolu ilinde yapılacak çalışmalar için göz ardı edilemeyecek öneme sahip olduğu görülmektedir.

Anahtar Kelimeler: Heteroptera, Bolu, Gerede, Fauna

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➢ **POSTER PRESENTATION**

$[Ni(phen)_2(dppz\text{-}idzo)]^{+2}$ Sentezi, Karakterizasyonu ve DNA Etkileşimlerinin İncelenmesi

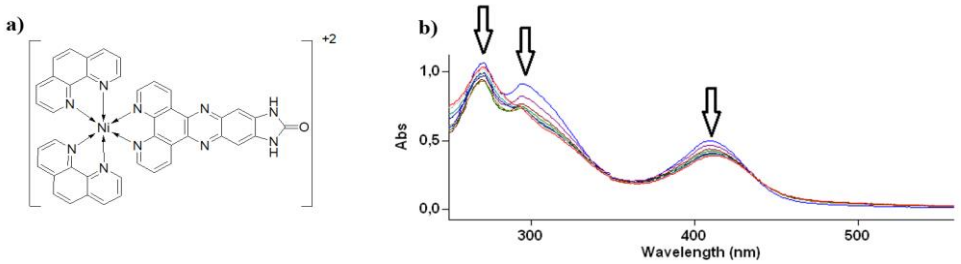
Bahruz Abulhasanov*, Burak Çoban, Ufuk Yıldız

Bülent Ecevit Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Zonguldak, Türkiye

Sorumlu yazar e-mail: ebulhesenli@gmail.com

Özet

Bu çalışmada $[Ni(phen)_2(dppz\text{-}idzo)]^{+2}$ (phen= 1,10 fenantrolin; dppz-idzo= dipirido[3,2-a:2,3-*c*]fenazin-10,11-imidazolone-2) kompleksinin sentezlenmesi ve DNA ile etkileşim türünün ve bağlanma derecesinin belirlenmesi amaçlanmıştır.(Şekil 1)



Şekil 1: $[Ni(phen)_2(dppz\text{-}idzo)]^{+2}$ kompleksinin (a) artan DNA miktarıyla UV titrasyon grafiği (b).

Son yıllarda küçük moleküllerin DNA'ya bağlanmalarının incelenmesi çok ilgi çeken bir çalışma alanı olmuştur. Spesifik DNA hedefli ilaçların sentezi için bu moleküllerin DNA'ya bağlanma türünü belirlenmesi son derece önemlidir [1]. Moleküller DNA'ya kovalent ve kovalent olmayan (interkalasyon, oyuk bağlayıcı ve elektrostatik) yollarla bağlanabilirler. DNA'ya interkalasyon yoluyla bağlanan moleküller genelde katyonik bir merkeze ihtiyaç duyarlar ve bu katyonik merkez geçiş metal atomları sayesinde sağlanabilir [2].

Dipirido[3,2-*a*:2′,3′-*c*]fenazin (DPPZ) türevleri ve bunların metal kompleksleri iyi bilinen DNA interkalatörlerindendir [3]. Bu çalışma kapsamında, karakterize edilen $[Ni(phen)_2(dppz\text{-}idzo)]^{+2}$ kompleksinin DNA ile etkileşimleri farklı spektroskopik ve elektroforetik yöntemlerle incelenmiştir. Yapılan çalışmalar geniş π-elektron yüzeyi ve düzlemselliği sayesinde DPPZ-idzo'nun DNA'ya interkalasyon yoluyla bağlandığına işaret etmektedir.

Anahtar Kelimeler: Ni kompleksi, DPPZ, DNA-ilaç etkileşimi, interkalasyon.

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➢ **POSTER PRESENTATION**

Investigation of Antifungal Activities of Plant Extracts prapered from *Cymbopogon ssp*. and *Helianthemum ssp.,*

Mustafa Tokar[1*], Yurdagül Şimşek Erşahin[1]

*[1]Çankırı Karatekin University, Health Science of Faculty, Departmnet of Nursing
[2] Çankırı Karatekin University, Science of Faculty, Departmnet of Biology

Abtract

New plant-derived antibacterial agent researches have increased in recent years, because of increased resistance to antimicrobial agents that used against to pathogen microorganisms, and unwanted side effects of food additives.

The aim of this research was to investigate the, in-vitro antifungal activities *and* ***Cymbopogon jwarancusa*** which grown from Turkey and ***Cymbopogon citratus,*** which grown from India and ***Helianthemum kahiricum*** which grown from Egypt and ***Helianthemum lippi*** which grown from Syria plant extracts on as yeast fungus ***Candida albicans, Candida crusei, Candida lusitania, Candida parapsilosis, Candida tropicalis*** and as mold fungus ***Aspergillus spp. Fusarium spp. Penicillium spp.*** of which also in the etiology of nosocomial infections, by disk diffusion method.

The diameter of the inhibition zone in the disc-diffusion method shows that all the plant extracts (20µg/disc) have antifungal activity only on ***Candida albicans*** different levels (12-38 mm). ***Cymbopogon citratus*** extract showed the highest antifungal activity with disc diffusion method.

In conclusion, particularly ***Cymbopogon citratus*** plant extract, besides other plant extracts are thought to be effective against to fungus in many areas like medical, cosmetic and food industries. But there is need new in vitro and in vivo studies in future.

Key Words: Antifungal activity, Disc diffusion, and Nosocomial

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➢ **POSTER PRESENTATION**

Gelsemium Elegans Show Anxiolytic Effect in Eisenia fetida.

Hasan Çalışkan[1*], Gözde Karabulut[2]
[*1]Ankara University, Medicine Faculty, Physiolgy Department, Ankara, Turkey

[2]Hacettepe University, Science Faculty, Zoology Department, Ankara, Turkey

Corresponding author e-mail: hasanmonica @hotmail.com

Abstract

Anxiety and depression are the most frequently diagnosed mental disorders. Different drugs and supplements were prescribed for this disorders. Our aims were to investigate Gelsemium elegans anxiolytic effect on Eisenia fetida.

24 Eisenia fetida(1 years old, dimension approximately 9cm. and n= 8) were used in the present study. Worms were left for adaptation for 4 weeks. The subjects were maintained under 12 h light/12 h dark cycle at a temperature of 23-25 °C and damp (50-70%) controlled room. Each worm was removed from its home and placed into an exposure chamber containing test compound or saline for 30 minute. Saline, Gelsemium 2 mg/kg and 10 mg/kg were administered respectively in experiment group. After 30 min, each worm was placed in to experiment chamber(modified light dark box test) and recorded via camera 10 min. Light zone time, dark time zone, light/dark zone entrance number, locomotor activity, dark zone entrance latency and velocity were analyzed. IBM SPSS Statistics 23.0 was conducted for statistical analysis.

Light zone time, dark zone time, light/dark zone entrance number and dark zone entrance latency were increased significantly in 10 mg/kg Gelsemium group compare to control ($p<0.05$). Locomotor activity and velocity were no difference 2 and 10 mg/kg Gelsemium groups compere to controls.

Our Data showed that Gelsemium is anti-anxiety property. On the other hand Gelsemium was not triggered off psychomotor stimulant like behaviour. Gelsemium alkaloids will be conducted as the treatment anxiety disorders.

Keywords: Anxiety and locomotor activity, Gelsemium elegans and Eisenia fetida.

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➢ **POSTER PRESENTATION**

Investigation of Adsorption Kinetics and Equilibrium of Cr (VI) Ions on Magnetic Halloysite-Chitosan Nanocomposites

Ezgi Türkeş[1*], Yeşim Sağ Açıkel[2]

[*1]Hacettepe University, Bioengineering Division, Institute of Science, 06800, Beytepe, Ankara, Turkey.

[2]Hacettepe University, Engineering Faculty, Chemical Engineering Department and Bioengineering Division, Institute of Science, 06800, Beytepe, Ankara, Turkey.

Corresponding author e-mail: turkesezgi99@outlook.com

Abstract

The aim of this study is to remove Cr (VI) heavy metal which are toxic and permanent even in low concentrations in wastewater. Cr (VI) ions were removed by making nanocomposite with magnetic halloysite nanotubes (MHNTs) and biopolymeric chitosan (CTN). The magnetic properties of pure halloysite nanotubes (HNTs) were obtained by using co-precipitation method and magnetic halloysite nanotubes (MHNTs) were synthesized. MHNTs were coated by chitosan biopolymer via electrostatic interactions and adsorption. Cr (VI) adsorption on MHNT-CTN nanoparticles were investigated as a function of medium pH, amount of adsorbent, the ratio of the components forming the nanocomposite material, and the initial concentration. The optimum conditions for Cr (VI) adsorption on the MHNT-CTN nanocomposites were found to be pH 5.0, the MHNT-CTN amount of 150 mg in 25 mL working volume, and the mass ratio of MHNT to CTN 1:2. At these optimum adsorption conditions the amounts of Cr (VI) adsorbed per unit weight of MHNT-CTN and per unit surface area of MHNT-CTN were determined as 2.29 mg/g and 0.039 mg/m^2, respectively. The maximum adsorption efficiency was found to be %77.63. The adsorption equilibrium data of Cr (VI) ions on MHNT-CTN nanocomposites were evaluated using the Langmuir, Freundlich and Redlich-Peterson models. Adsorption equilibrium data of Cr (VI) ions by MHNT-CTN nanocomposites were shown to be best represented by Freundlich isotherm. The values of the Freunlich adsorption constants showing the adsorption capacity and intensity, K_F and n, were found as 1.03 and 6.15, respectively. On the other hand, when the correspondence to the kinetic models were also examined, it was determined that Cr (VI) adsorption on MHNT-CTN nanocomposites was represented by a pseudo second-order kinetic model. The pseudo second order kinetic constants for Cr (VI) adsorption changed from 0.0442 to 0.1504 g/mg.min within the studied concentration range of 11.01-66.95 mg/L.

Keywords: Wastewater treatment, adsorption, Cr (VI) ions, magnetic halloysite-chitosan nanocomposite.

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➢ **POSTER PRESENTATION**

Investigation of Metronidazole Loading and Release on / from Chitosan Nanoparticles

Merve Öztekin[1*], Yeşim Sağ Açıkel[2]

[*1]Hacettepe University, Bioengineering Division, Institute of Science, 06800, Beytepe, Ankara, Turkey

[2]Hacettepe University, Chemical Engineering Department and Bioengineering Division, 06800, Beytepe, Ankara, Turkey

Corresponding author e-mail: mrvoztkn@gmail.com

Abstract

In recent years, intensive efforts have been made to study drug release from polymer-based biomaterials. In scientific research on polymeric nanoparticles, the use of nanoparticles as drug carrier particles has gained importance. The aim of the study is to produce chitosan nanoparticles by ionic gelation method and to obtain drug carrier materials from these particles. For this reason, chitosan nanoparticles were produced in the study and the loading and release of metronidazole drug to chitosan nanoparticles were investigated. Chitosan nanoparticles were loaded with the metronidazole antibiotic selected from the nitroimidazole family. Characterization of chitosan nanoparticles was performed, and the morphology and size range of the particles were determined. The effects of chitosan / TPP ratio on the sizes of chitosan nanoparticles synthesized by ionic gelation technique have been investigated. The analyzes made show that the smallest nanoparticles were obtained using 0.25% of tripolyphosphate as the crosslinker at pH = 5. The effect of parameters such as pH, drug concentration, amount and size of nanoparticles were investigated. The optimum conditions were determined as 5 mg/l metronidazole concentration and 0.2 g chitosan nanoparticle in 100 ml solution. 10 mg drug loaded chitosan nanoparticle was added to 100 mL PBS solution. The encapsulation efficiency of metronidazole to chitosan nanoparticles was found to be 41,33 % in Phosphate Buffer Solution (PBS) at pH 7.4. The metronidazole loading capacity of chitosan nanoparticles was determined as 19,71 % in PBS. In order to be similar to in-vivo medium, the metronidazole release experiments were performed in 0.1 M PBS at pH 7.4 and at 37ºC. The metronidazole release was observed up to 20 hour and 58.67% of the loaded metronidazole was released in the medium.

Keywords: chitosan nanoparticles; metronidazole; drug loading; release.

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➢ **POSTER PRESENTATION**

Equilibrium and Thermodynamic Studies for Adsorption of Cu(II) on Activated Sludge

Gamze Topal Canbaz[1*], Ünsal Açıkel[1], Yeşim Sağ Açıkel[2]

[1]Cumhuriyet University, Engineering Faculty, Chemical Engineering Department, Sivas, TÜRKİYE

[2]Hacettepe University, Engineering Faculty, Chemical Engineering Department, Ankara, TÜRKİYE

Corresponding author e-mail:gamzetopal@hotmail.com

Abstract

In this study, the Cu(II) ions adsorption by activated sludge in batch stirred reactors was investigated. Experiments were carried out at pH 4, at 25 °C, 0.5 g adsorbent dosage and 240 min contact time. Equilibrium studies revealed that the Cu(II) up take increased with increasing initial Cu(II) ions concentrations.The adsorption equilibrium data were analyzed with Langmuir and Freundlich isotherm models at varying initial heavy metal ion concentrations (25 mg/L to 750 mg/L).With respect to the Langmuir model, when the surface of the activated sludge was saturated Cu(II) ions as a complete layer, the maximum adsorbed amount of Cu(II) per unit weight of activated sludge, Q^o, was 55.55 mg/g and adsorption energy constant K was 0.041 mg/L. Freundlich constant K_F showing adsorption capacity was determined as 4.697 L/g, the adsorption intensity parameter indicating favourable adsorption, n, was 2.43. Thermodynamic studies were carried out at between 25 and 40 °C. The maximum adsorption capacities were obtained at 40 °C and, the maximum adsorbed amount of Cu(II) per unit weight of activated sludge was 71.42 mg/g. Thethermodynamic parameters (ΔH, ΔS, ΔG) were calculated for the studied temperature range. Gibbs energy (ΔG) values obtained from thermodynamic data have shown that adsorption takes place spontaneously at all concentrations.

Keywords: Wastewater, Cu(II), activated sludge, adsorption, thermodynamic parameters

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➢ **POSTER PRESENTATION**

The Relationship Between Epilithic Diatom Communities and Water Quality Variations Across Tohma Stream (Malatya-Turkey)

Vesile Yildirim*, A. Kadri Cetin

Fırat University, Faculty of Science, Department of Biology Elazığ/TURKEY

Corresponding author e-mail: vyildirim@firat.edu.tr

Abstract

Epilithic diatom community of Tohma Stream, as well as physicochemical properties of the stream were studied through samples collected from the specified 4 stations in monthly periods for one year. 70 species from 21 genera were identified in the study. In epilithon in the stations, *Navicula* spp. (16 taxa) was the most remarkable genus in terms of both number of species and the number of individuals from species and this was followed by *Cymbella* (13 taxa) and *Nitzschia* (9 taxa). The water quality in the Tohma stream varied at different stations based on levels of pollution. The epilithic diatom communities responded to changes in the aquatic environment. Dominant species had variation among the stations. Dominant species of the station 1 were *Cocconeis placentula, Diatoma vulgaris, Cymbella affinis* and *Gomphonema olivaceum*. *Navicula cryptocephala, C. minuta, Ulnaria ulna, Nitzschia amphibia, and N. thermalis* were dominant diatoms of the stations 2 and 3. Dominant diatoms of the station 4 were *Achnanthidium minutissimum, N. palea, Gomphonema parvulum,* and *Surirella angustata*, diversity of diatoms also varied in all stations in parallel to water quality.
We concluded that Tohma stream has a water quality gradient and this led to apparent variances in species composition of diatom across the stream. The results have confirmed that epilithic diatoms are crucial biological indicators to evaluate ecological quality of Tohma stream.

Keywords: Tohma Stream, Epilithic diatoms, Water quality, Pollution

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➢ **POSTER PRESENTATION**

Effects of Azadirachtin on the Melanization Reaction in *Galleria mellonella* L. (Lepidoptera: Pyralidae) Larvae

Z. Ulya Nurullahoğlu, Eda Cansu*

*Marmara University, Faculty of Science and Arts, Department of Biology, Istanbul, Turkey.

Corresponding author e-mail: edamiaj@gmail.com

Abstract

Azadirachtin (AZA) is a bioinsecticide material that has many effects on insects such as growth regulatory, antifeedant, reduce fecundity and fertility. The melanization reaction is an immune response of insects to pathogens which is the production and deposition of melanin pigments are occurred. The aim of this study was to determine the effects of AZA on the melanization reaction in the greater wax moth *Galleria mellonella* larvae. For the experimental design, four different doses (0.5, 1, 1.5, 2 µg/larva) of AZA (Technical AZA Sigma, St. Louis, MO) were used. The selected larvae (0.16 ± 0.01g in weight) were individually fed with AZA solution by the force - feeding method through a Hamilton injector. After 48 hours of force-feeding application, pre-prepared Sephadex DEAE Chromatography beads were injected into larvae. Larvae were dissected and the level of the melanization reaction was determined by microscopy at 24^{h} after treatment. According to the results, the levels of melanization responses in *G. mellonella* larvae were changed by different doses of AZA.

Keywords: Azadirachtin, *Galleria mellonella*, Melanization, Immune System.

Acknowledgement: This study was supported by The Scientific Research Committee of Marmara University (BAPKO), Project number: FEN-C-YLP-170118-0017

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➢ **POSTER PRESENTATION**

Cytogenetic Documents of the Genus *Squalius* Bonaparte, 1837 (Actinopterygii, Cyprinidae)

Sevgi Unal[1*], Muradiye Karasu Ayata[2], Muhammet Gaffaroğlu[3]

[*1]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.
[2]Ahi Evran University, School of Health, Department of Midwifery, Kırşehir, Turkey.
[3]Ahi Evran University, Faculty of Science and Arts, Department of Molecular Biology and Genetics, Kırşehir, Turkey.

Corresponding author e-mail: sevgiunal@gazi.edu.tr

Abstract

The genus *Squalius* Bonaparte, 1837 belongs to the subfamily Leuciscinae, the major element of the western Palearctic region cyprinid fauna. In Anatolian inland waters, 22 species are recognized and 13 of them are endemic. Although literature have so many studies about of the chub, cytogenetic researches are limited. So the aim of this study is to examine the cytogenetic documents of the genus *Squalius* species, comparing studied as karyologically Anatolian and European *Squalius* species. However the three Anatolian (endemic species *S. anatolicus*, *S. seyhanensis* and native species *S. cephalus*) and 12 European (*S. albus*, *S. alburnoides*, *S. aradensis*, *S. carolitertii*, *S. cephalus*, *S. keadicus*, *S. lucumonis*, *S. pyrenaicus*, *S. squalus*, *S. svalize*, *S. tenellus* and *S. torgalensis*) species looked at have been shared 2n = 50 chromosomes and the largest acrocentric chromosome pair in the complement, they have been characterized with karyotypic differences in terms of the number of uni and biarmed chromosomes and the localization of different banding patterns for some species. Except from hybridization studies the sex chromosomes have not been reported. The present review indicate that the classical cytogenetic information herein may become useful to elucidate karyotype differences and resemblances among the species in the genus *Squalius* and other related groups.

Keywords: Chub, *Squalius*, Chromosome, Karyotype

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➢ **POSTER PRESENTATION**

Determination of Cytotoxic and Apoptotic Effects of Diosgenin on Glioblastoma Multiforme Cell Lines

Ahmet Yağbasan[1*], Levent Elmas[2], Mücahit Seçme[2], Yavuz Dodurga[2], Emre Tepeli[3], Muhammed Hamza Müslümanoğlu[1]

[*1]Yıldız Technical University, Faculty of Arts and Science, Molecular Biology and Genetics Department, Istanbul, Turkey

[2]Pamukkale University, Faculty of Medicine, Department of Medical Biology, Denizli, Turkey

[3]Pamukkale University, Faculty of Medicine, Department of Medical Genetics, Denizli, Turkey

Corresponding author e-mail: yagbasan@yildiz.edu.tr

Abstract

Glioblastoma Multiforme (GBM) is one of the most common brain tumors with agressive and malignant characteristics. Diosgenin is a glycoside that has a lipophilic core in the steroid or triterpenoid structure and one or more carbohydrate side chains naturally found in various plants. It has been shown that Diosgenin has anti-inflammatory, anti-oxidant, anti-metastatic and anti-carcinogenic effects on various cancer types, including colon cancer, lung cancer etc. The study is an attempt to determine the therapeutic effects of diosgenin on invasion, colony formation and apoptotic mechanisms in LN18 and T98G glioblastoma multiforme cell lines under *in vitro* circumstances. Cytotoxic effects of diosgenin in the cell lines were determined via XTT method in time and dose-dependent manner to calculate half maximal inhibitory concentration (IC_{50}) doses. Tri-Reagent was used to isolate Total RNA. cDNA synthesis was performed via commercial kit. Expression levels of anti-apoptotic and pro-apoptotik genes were determined by quantitative real-time PCR. The invasion capacity of LN18 and T98G cells treated diosgenin was analyzed by matrigel-chamber. The effect of diosgenin on colony formation was analyzed with the help of colony formation assay. IC_{50} dose of diosgenin was found to be 30 µM and 30 µM on 24th hours in the LN18 and T98G cell lines, respectively. In LN18, diosgenin increased *Apaf, Bax, Bid, caspase-3, caspase-8, caspase-10, DR4, FADD, TRADD, Noxa, Puma, p53, PTEN, TIMP1, TIMP2* and reduced *PARP, Bcl-XL, MMP-2* gene expressions significantly. In T98G cell line, *caspase-8, caspase-9, DR5, p21* and *Puma* gene expressions were significantly increased and *Bcl-2* and PARP gene expressions were reduced. Cell invasion and migration was significantly inhibited and colony formation was significantly decreased by diosgenin treatment in both cell lines. In the light of these results, Diosgenin may be a novel agent for treatment of GBM as a single agent or in combination with other agents.

Keywords: Glioblastoma multiforme, Diosgenin, Apoptosis, Invasion

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➢ **POSTER PRESENTATION**

Supported Bimetallic Catalyst for the Glucose Conversion

Zehra Sevde Hatipoğlu[1],*, Emir Zafer Hoşgün[2], Halit L. Hoşgün[3], Berrin Bozan[2]

[1*]Bilecik Şeyh Edebali University, Engineering Faculty, Chemical Engineering Department Bilecik, Turkey.
[2]Anadolu University, Engineering Faculty, Chemical Engineering Department, Eskişehir, Turkey.
[3]Faculty of Natural Sciences, Architecture and Engineering, Department of Chemical Engineering, Bursa Teknik University, Bursa, Turkey.

Corresponding author e-mail: zehrasevde.hatipoglu@gmail.com

Abstract

The Aluminum-Chromium doped bimetallic Montmorillonite catalyst was prepared by impregnation method and labeled as Al-Cr/MMT. Synthesized catalyst was characterized by Brunauer-Emmett-Teller (BET), X-ray diffraction (XRD) and Temperature programmed desorption of ammonia (TPD). Catalytic hydrolysis were carried out in a high temperature-high pressure stainless steel reactor (Parr, USA) in the temperature of 180°C. Samples were taken at the time interval of 30-60-90-120-150-180-240-360 minutes. Compositions of liquid products were analyzed by high-performance liquid chromatography (HPLC). Glucose conversion was increased by time and reached to 92.55% at the end of 360 minutes. Glucose was transformed into 5-Hydroxymethylfurfural (5-HMF) and 5-HMF yield was maximized at 180 minutes (22.8%). After this time HMF yield was slightly decreased due to the transformation of 5-HMF into levulinic acid and formic acid.

Keywords: Bimetallic catalyst, Glucose conversion, 5-HMF.

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➢ **POSTER PRESENTATION**

Effects of Azadirachtin on the Encapsulation Reaction in *Galleria mellonella* L. (Lepidoptera: Pyralidae) Larvae

Z. Ulya Nurullahoğlu, Eda Cansu*

Marmara University, Faculty of Science and Arts, Department of Biology, Istanbul, Turkey.

Corresponding author e-mail: edamiaj@gmail.com

Abstract

Azadirachtin (AZA), a chemical compound obtained from neem seed, has many adverse effects on insects. Recently AZA is widely used for insect pest control. The encapsulation reaction mediated by hemocytes is one of the important part of the cellular immune response in insects to pathogens. The greater wax moth *Galleria mellonella* is an excellent model organism for physiological and toxicological studies. The aim of this study was to determine the effects of AZA on the levels of the encapsulation response in *G. mellonella* larvae. For the treatments, four different doses (0.5, 1, 1.5, 2 µg/larva) of AZA (Technical AZA Sigma, St. Louis, MO) were used. The selected last instar larvae (0.16 ± 0.01g in weight) were individually fed with AZA solution by the force - feeding method through a Hamilton injector. After 48 hours of force-feeding application, pre-prepared Sephadex Chromatography beads were injected into each larva. Larva was dissected at 24h after injection and the level of the encapsulation response was determined by microscopy. The results showed that the levels of the encapsulation reaction in *G. mellonella* larvae were similar to the control group that not exposed to AZA.

Keywords: Azadirachtin, *Galleria mellonella*, Encapsulation, Cellular Immune System.

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➢ **POSTER PRESENTATION**

Aromatik Tiyadiazol İçeren Taç Eterlerin Kompleksleşme Özelliklerinin Kondüktometrik Yöntem ile Belirlenmesi

Baki Çiçek[1], Musa Canbolat[2*], Ümit Çalışır[3]

[1]Balıkesir Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, Balıkesir, Türkiye
[*2]Balıkesir Üniversitesi, Fen Bilimleri Enstitüsü, Kimya Anabilim Dalı, Balıkesir, Türkiye
[3]Siirt Üniversitesi, Bilim ve Teknoloji Uygulama ve Araştırma Merkezi, Siirt, Türkiye

Sorumlu yazar e-mail: musa_canpolat80@hotmail.com

Özet

Pedersen tarafından ilk kez gün ışığına çıkarılan taç eterler içerdikleri hidrojen ve karbon atomlarının oluşturduğu apolar hidrofobik bir dış kavite, heteroatomların (oksijen, kükürt, azot) oluşturduğu hidrofilik polar bir iç kaviteye sahiptirler. Bu özellikleri metal katyonları gibi katyonlarla doğrudan ve bu katyonların counter iyonları olan anyonlarla da dolaylı yoldan kompleksleşmektedirler [1]. Oluşan kompleksler oldukça kararlı kompleksler olup bazı ortamlardan metal katyonlarının uzaklaştırılmasında ya da taşınmasında başarılı olarak uygulanabilmektedirler. Oluşan kompleksler ve kompleksleşme sabitleri birçok yöntem (AAS, ICP, NMR, FT-IR, UV-Vis spektrofotometresi, kondüktometri, vb.) kullanılarak belirlenebilmektedir. Her bir yöntemin kendine göre avantaj ve dezavantajları mevcuttur. Örneğin ICP ve AAS yöntemlerinde kullanılan çözücü sorunu ve maliyet; FT-IR ve UV-Vis spektrofotometresi yöntemlerinde düşük derişimlerde çalışamama; kondüktometri yönteminde çoklu element çalışamama birer dezavantajdır. Ancak kondüktometri yöntemi diğer yöntemlere göre ucuz bir yöntem olup çok düşük derişimlerde bile doğru sonuçlar vermektedir [2,3].

Bu çalışmada aromatik tiyadiazol taç eter bileşikleri (4 adet) ile $CaCl_2$, $MgCl_2$, $AgNO_3$, $FeCl_2$, $FeCl_3$, $ZnCl_2$, $AlCl_3$, KCl, NaCl, $CoCl_2$ ve $CuCl_2$ metal tuzları kullanılarak % 50 dioksan/su sisteminde [4,5] Kompleks Oluşum Sabiti (K_e) ve Serbest Entalpi değerleri (ΔG^{θ}) belirlenmiştir. Bütün kondüktometrik deneyler 25^{o}C'deki sıcaklık hücresinde gerçekleştirilmiştir. Ayrıca tüm işlemler sadece tuz çözeltisi ile tekrarlanarak kalibrasyon eğrileri çizilmiştir. Dioksan/su karışımından elde edilen veriler kullanılarak Zn^{2+}, Fe^{2+}, Fe^{3+}, Mg^{2+}, Ca^{2+}, Cu^{2+}, Co^{2+}, Ag^{+}, Al^{3+}, Na^{+}, K^{+}'nın iyon-tiyadiazol taç eter komplekslerinin eşdeğer iletkenlik değerleri incelenmiştir.

Anahtar Kelimeler: Tiyadiazol taç eter, Kompleks oluşum sabiti, Serbest Entalpi, Kondüktometri

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➢ **POSTER PRESENTATION**

Memeli Hayvanlarda Hibrit Bölge (Hibrit Zon) Çalışmaları

Pınar Çam İcik

Sinop Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Sinop, Türkiye

Sorumlu yazar e-mail: pinar82mail@gmail.com

Özet

Hibrit bölgeler, genetik olarak farklılaşmış iki populasyonun yeniden temas kurdukları, çiftleşerek verimli döller meydana getirebildikleri sınırlı, dar geçiş bölgeleridir. Son yirmi yılda, modern moleküler biyoloji tekniklerinin de gelişmesiyle, hibrit bölgeler araştırılarak evrimsel süreçler açıklanabilmiştir. Hibrit döller hayatta kalır ve üremeye devam ederlerse, iki ana populasyonun kesişim hattında hibrit zon olarak tanımlanan bir bölge oluşur. Hibrit zonlar belirgin olarak iki durumda ortaya çıkmaktadır: (1) allopatrik olarak izole olmuş türler arasında tekrardan temas olur ve bireyler bir araya gelip çiftleşirlerse ve (2) parapatrik türleşme sırasında, yani farklılaşmakta olan populasyonlar arasında hibrit zonlar oluşabilir. Hibrit döllerin uyum gücü, saf döllere daha düşük ya da yüksek olabilmekte ve farklı sonuçlara yol açabilmektedir. Son yıllarda yapılan birçok çalışma, memeli hayvanlarda hibrit bölge oluşumunun sıklıkla gerçekleştiğini ortaya çıkarmıştır. Memeli hibrit bölgeleri, eş seçimini ve eş seçiminden kaynaklanan birçok genetik mekanizmayı araştırmak ve ortaya koymak için oldukça avantajlı bölgelerdir. Primatlarda, rodentlerde ve bazı deniz memelilerinde, hibrit zonların genetik, davranış ve ekolojik temelli analizleri yapılarak; eşeysel seçilimle yakından ilgili olan birçok evrimsel mekanizmanın varlığı ortaya çıkarılmıştır. Yakın zamanda izole olmuş populasyonlar tekrar temasa geçer ve aralarında çiftleşme şansı bulurlarsa hibrit bireyler meydana gelir. Sitolojik yöntemlerin gelişmesiyle; rodentler üzerine yapılan karyolojik analizler de hibrit bölge çalışmalarına katkı sağlamıştır. Farklı kromozom düzenine sahip gruplar arasındaki çiftleşme davranışları laboratuvar ortamında da incelenerek, kromozom farklılığının gen akışını kesebilen bir kriter olabileceğine dikkat çekilmiştir. Memeli hayvanlarda doğal hibrit bölgelerin meydana gelme oranı daha fazla olsa da; diğer omurgalılarla kıyaslandığında, hibridizasyon sonucu ortaya çıkan tür sayısı oldukça azdır. Plesantanın varlığı memeli hayvanların hibrit oluşturmalarında önemli bir bariyerdir. Özetle, memeli hayvanlar, sahip oldukları genetik ve morfolojik mekanizmalarla, başarılı bir hibrit oluşumuna, diğer omurgalı sınıflarına kıyasla daha fazla engel oluşturmaktadırlar. Bu çalışmada, çoğunlukla Rodent türleri olmak üzere, memeli hayvanların hibrit bölge çalışmaları irdelenmiş, birçok çalışmadan bilgiler sunulmuştur. Hibritleşmenin derecesine, sebeplerine değinilerek, memeli hayvanların hibrit zon çalışmalarının önemine vurgu yapılmıştır.

Anahtar Kelimeler: Hibrit Bölge, Hibridizasyon, Memeli hayvanlar, Hibrit Zon

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➢ **POSTER PRESENTATION**

Synthesis and Spectroscopic Properties of Morpholino-Substituted Monospiro-Benzylaminophosphazenes

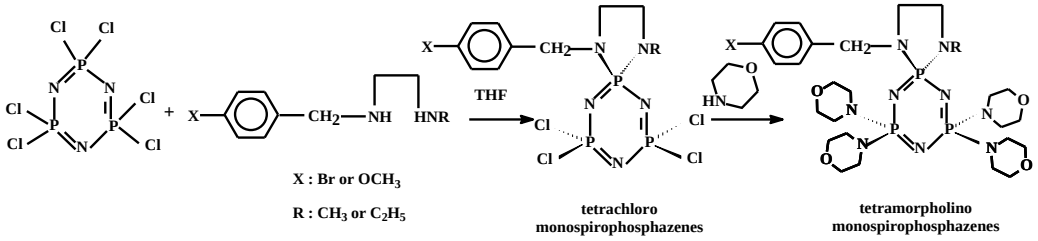
Nur Güven Kuzey*, Nuran Asmafiliz

*Ankara University, Faculty of Science, Department of Chemistry, Ankara, Turkey

Corresponding author e-mail: gurun@science.ankara.edu.tr

Abstract

In the literature, numerous cyclotriphosphazene derivatives are obtained by the reactions of the hexachlorocyclotriphosphazatriene ($N_3P_3Cl_6$; trimer) with mono-, di- and multidentate ligands [1]. The sequentially replacement reactions of the Cl atoms of $N_3P_3Cl_6$ with monodentate ligands produce the partly- and fully-substituted phosphazene derivatives [2,3]. In this study, the reactions of trimer with the 4-bromo and 4-methoxybenzylamines containing N/N donor atoms gave the monospirophosphazenes. They have four reactive Cl atoms and they can give the replacement reactions with different monodentate amines. Therefore, the Cl nucleophilic substitution reactions of the spiro-benzyldiaminocyclotriphosphazenes with the excess amount of morpholine resulted in the fully-substituted phosphazenes. The structures of all the phosphazenes were elucidated using FTIR, MS, ^{1}H, $^{13}C\{^{1}H\}$ and $^{31}P\{^{1}H\}$ NMR spectral data.



Keywords: synthesis, phosphazenes, benzylaminospirophosphazenes, spectroscopy

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➢ **POSTER PRESENTATION**

Köpek Testislerindeki Gen Ekspresyonu Üzerine 4-Vinylcyclohexene Diepoxide'in Etkileri

Zahid Paksoy*

* Gümüşhane Üniversitesi, Gümüşhane MYO, Veterinerlik Bölümü, Gümüşhane, Türkiye

Sorumlu yazar e-mail: paksoyland@yaho.com

Özet

Bu çalışmada; 4-Vinylcyclohexene diepoxide (VCD)'in köpeklerde testiküler gen ekspresyonu üzerine olan etkisi araştırıldı. Materyal olarak 18 erkek köpek kullanıldı ve bunlar rastgele 3 gruba ayrıldı. Birinci gruba (n=6) 8 gün boyunca günde bir kez susam yağı intraperitoneal yolla (i.p) uygulandı ve bu grup kontrol olarak kullanıldı. İkinci gruba (n=6) düşük doz VCD (80 mg/kg), üçüncü gruptaki (n=6) köpeklere de yüksek doz VCD (320 mg/kg) 8 gün boyunca günde bir kez (i.p) uygulandı. Son uygulamadan bir gün sonra, köpeklerden cerrahi kastrasyon ile testisler alınarak RNA stabilizasyon solüsyonu içerisine konuldu ve -20° C'de muhafaza edildi. Daha sonra doku örneklerinden mRNA'lar elde edildi. RNA izolasyonundan sonra cDNA'lar sentezlendi. En sonunda mastermix hazırlandı ve real time PCR cihazında gen ekspresyon düzeyleri incelendi. Bütün gruplarda B-cell lymphoma 2 (Bcl-2), tumor supressor protein (tp53), Bax, Caspase gen ailesinden CASP2, CASP3, CASP8, CASP9 ve β-actin gen ekspresyonu araştırıldı. Gruplar arası karşılaştırmalar student t testi ile yapıldı. Tedavi gruplarındaki tp53 gen ekspresyonun, kontrol grubu ile karşılaştırıldığında daha yüksek olduğu görüldü. Bcl-2 ekspresyonunun özellikle 320 mg/kg dozda VCD uygulanan hayvanların testislerinde azaldığı belirlendi. CASP-3'ün yüksek doz grubunda daha çok eksprese edildiği, CASP-9'un ise down regüle olduğu görüldü. Ayrıca CASP-8 gen ekspresyonu her iki tedavi grubunda anlamlı bir şekilde azaldı. Bu çalışma sonucunda, VCD uygulaması ile erkek köpeklerin testislerinde görülen tp53, Bcl-2, CASP-3, CASP-8 ve CASP-9 genlerindeki ekspresyon değişimlerinin apopitotik değişikliklere sebep olabileceği kanısına varıldı.

Anahtar Kelimeler: Vinyl cyclohexene diepoxide, apopitoz, köpek, testis.

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➢ **POSTER PRESENTATION**

Determination of Antioxidant Activities in Rue (*Ruta graveolens)* Plant

Rana Arıduru[1*], Gülnur Arabacı[2]

[*1]Sakarya University, Faculty of Science and Literature, Department of Chemistry, 54187 Sakarya, Turkey
[2]Sakarya University, Faculty of Science and Literature, Department of Chemistry, 54187 Sakarya, Turkey

Corresponding author e-mail: rana.ariduru1@ogr.sakarya.edu.tr

Abstract

The grass type Rue (*Ruta graveolens*) grown in Sakarya, Turkey was investigated for antioxidant activities. Rue is an example plant of the Rutaceae family. Partial split, small and round leaves are blue-green colored, bitter sweet and fragrant, contained fat spots because of the appearance of mottled. The above-ground parts of the Rue plant contain essential oils, alkaloids, tannin, resin, routinely called pectin with glycoside. While Rue is used for production of drug and drink, it has some medicinal effects such as good for stomach discomfort, increase appetite, soothe spasms, facilitate digestion.[1]Flavonoid structures of some plants show high antioxidant activity. The flavonoids in these plants have good therapeutic effects on many different diseases like cancer; heart, lung, liver diseases and many other chronic diseases. Thus, the body's endogenous defense system should be supported by dietary antioxidant compounds.[2] In this study, we determined the antioxidant activities of four different solvent fractions (ethanol, methanol, acetone and ethyl acetate) obtained from Rue plant leaves (Ruta graveolens) by employing three different assays such as 2,2-diphenyl-1-picrylhydrazyl hydrate (DPPH),[3] Folin-Ciocaltaeu[4] and Aluminum Nitrate[5] method and in support of with UV-Vis spectroscopy. The results showed that ethanol-extract of freshliver plant exhibited the highest total phenolic contents with Folin-Ciocaltaeu method (41.40 mg GAE/g extract), followed by methanol -extract of Rue plant (16.62 mg GAE/g extract), acetone (10.08 mg GAE/g extract) and ethyl acetat -extract extract (11.58 mg GAE/g extract). Total flavonoid contents with Aluminum Nitrate method the values were found for methanol-extract (2481.82 µg flavonoid /g extract), acetone-extract (1332.90 µg flavonoid /g extract), ethanol-extract (1170. 36µg flavonoid /g extract), ethyl acetate -extract (581.63 µg flavonoid /g extract). Free radical removal activities as % inhibition of DPPH method, the values were found for methanol extract % 85.63, ethanol extract, % 22.01, acetone extract % 4.51 and ethyl acetate extract % 0.54. As a result, by means of studying with different solvents we can choose the most appropriate solvent, thus accurate and high results about antioxidant capacity of plants can be obtained.

Keywords: Antioxidant activity, Rue, *Ruta graveolens*.

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➢ **POSTER PRESENTATION**

Bazı Benzo-tiyo ve Benzo Taç Eterlerin Kompleksleşme Yeteneklerinin Kondüktometri Yöntemi ile Belirlenmesi

Baki Çiçek[1], Hüsamettin Albayrak[2]*, Ümit Çalışır[3]

[1]Balıkesir Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, Balıkesir, Türkiye
[*2]Balıkesir Üniversitesi, Fen Bilimleri Enstitüsü, Kimya Anabilim Dalı, Balıkesir, Türkiye
[3]Siirt Üniversitesi, Bilim ve Teknoloji Uygulama ve Araştırma Merkezi, Siirt, Türkiye

Sorumlu yazar e-mail: h.albayrak1010@gmail.com

Özet

Sentezlenen birçok taç eterin metal katyonlarıyla çok iyi bağlanma özellikleri gösterdikleri görülmektedir [1]. Kükürt içeren taç eterlerin diğer oksijenli ve azotlu analoglarına göre ağır ve değerli metaller olarak sınıflandırılan metallere karşı ilgisinin olduğu tespit edilmiştir [2]. Ayrıca benzo taç eterler alkali ve toprak alkali metal katyonlarına ilgi gösterirken üzerinde yapılacak modifikasyonlar (kükürt atomu, disülfit bağı, vb.) ile bu metallere olan ilgisi azalmakta ve ilgisi geçiş metallerine kaymaktadır [3]. Geçiş metallerinin birçoğu enzimlerin aktif bölgelerinde yer almaktadır. Enzimlerin aktif bölgelerinde bulunan metal atomları ile de bu ligandlar kompleks oluşturmaktadırlar. Bu sayede enzimleri aktive ya da inhibe etmektedirler [4].

Bu çalışma kapsamında daha önceden sıvı-sıvı iyon çiftleri metal ekstraksiyonu ile metal seçicilikleri belirlenen bileşiklerin **U2** (bis(1,2-dibenzo) octathio tetracarbonil-29-crown-6), **U5** (bis(1,2-dibenzo) tetrathio tetracarbonil-29-crown-6) karbonik anhidraz enzimiyle aktivasyon çalışmaları yapılmıştır. Çalışmalarda alkali ve toprak alkali metallerine yüksek konsantrasyonlarda herhangi bir bağlanma gerçekleşmemiştir. Ancak diğer metal tuzlarına bağlanma gerçekleşmiştir [3]. Kondüktometri metodu çok düşük derişimlerde dahi yüksek hassasiyet göstermektedir. Bu sebeple ligandlarının $AgNO_3$, $CaCl_2$, $MgCl_2$, $FeCl_2$, $FeCl_3$, $ZnCl_2$ metal tuzlarıyla kondüktometri özellikleri belirlenecektir. Bu amaçla dioksan/su (%50) sulu sisteminde ligand-katyon kompleksinin yapısı, kompleksleşme sabiti (Ke) ve iletkenlik parametreleri (K, Λ ve α) hesaplanacaktır [5-6]. Son olarak Sonuçlar daha önceki sıvı-sıvı iyon çiftleri ekstraksiyonu ile karşılaştırılacaktır.

Bu uygulama ile kondüktometrenin düşük derişimlerde dahi ölçüm yapma imkânı kullanılarak hassas bir şekilde iletkenlik parametreleri hesaplanacaktır. Sonuçların enzimatik çalışma yapan bilim adamlarına ön çalışma olması ve metal sensör çalışmalarına katkı sağlamasını öngörmekteyiz.

Anahtar Kelimeler: 2,2'-ditiyodibenzoik asit, benzo tiyo taç eter, Kompleks oluşum sabiti, Serbest Entalpi, Kondüktometri

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➢ **POSTER PRESENTATION**

Protective Effects of Ozone Therapy and L-Carnitine Against Acetaminophen-Induced Hepatotoxicity and Genotoxicity Model in Rats

Gökhan Nur[1*], Pınar Aksu Kılıçle[2], Haci Ahmet Deveci[1], Özlem Nur[1], Yağmur Yıldız[2]

[*1]Gaziantep University, Vocational School of Higher Education in Islahiye, Department of Veterinary, Gaziantep, Turkey.
[2] Kafkas University, Faculty of Science and Arts, Department of Biology, Kars, Turkey.

*Corresponding author e-mail. gokhannur@gantep.edu.tr

Abstract

Overdose of acetaminophen (N-acetyl-p-aminophenol, APAP), one of the most common analgesic antipyretic drugs, is an essential reason for acute liver failure. The aim of this study is to investigate the possible protective effects of L-carnitine (600 mg/kg) and medical ozone (O_2/O_3, 1 mg/kg) against APAP-induced (1000 mg/kg) hepatotoxicity and genotoxicity model in rats. 80 female Wistar-albino rats, including 10 in each group, were used in the study. At the end of study, the rats were euthanized by cervical dislocation under general anesthesia and the tissues were dissected and then analyzed for genotoxic and histological examinations. In the study, 8 groups were assigned as control, O_2/O_3, L-carnitine, O_2/O_3+L-carnitine, APAP, APAP+O_2/O_3, APAP+L-carnitine, and APAP+O_2/O_3+L-carnitine. In the study, it was determined in genotoxic examinations that APAP administration decreased mitotic activity compared to control group but increased the frequency of micronucleus. Also, the decreased ratio of polychromatic erythrocytes to normochromatic erythrocytes (PCE/NCE) indicated that acetaminophen had an effect on bone marrow cells. In the histopathological examination; congestion in central and interlobular vena, eosinophilic hepatocytes, leukocyte cell infiltration, and focal necrotic areas were observed in sections of liver. L-carnitine was more effective than medical ozone in elimination of both genotoxic and histopathological intensity. It was conclude that APAP was toxic at the dose applied in both genotoxic and histopathological examinations. On the other hand, medical ozone and especially L-carnitine reduced the toxic effect of APAP and both substances were applicable as supportive therapy in APAP poisonings.

Keywords: Acetaminophen, Hepatotoxicity, Genotoxicity, Ozone therapy, L-carnitine.

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➢ **POSTER PRESENTATION**

Chemical and Biological Studies of Coumarin-Thiazole Based Bioactive Molecules

Ümmühan Özdemir Özmen[1*], Hale Şamli[2], Ömer Şahin[1] Buse Vatansever[3]

Zeynel Seferoğlu[1]

[*1]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey
[2]Uludag University, Faculty of Veterinary Medicine, Department of Genetics, Bursa, Turkey
[3]Uludag University, Graduate School of Natural and Applied Sciences, Department of Biology, Bursa, Turkey

Corresponding author e-mail: ummuhan@gazi.edu.tr

Abstract

The heterocyclic compounds containing coumarin-thiazole hybrid system exhibit enhanced antimicrobial activities against different pathogens [1], and such compounds have also good anti-cancer, anti-inflammatory, anti-analgesic and anti-cholinesterase activity [2].
In this work, coumarin-thiazole based Schiff base and its metal copmlexes have been synthesized and characterized by using elemental analysis, spectrophotometric methods (^{1}H- ^{13}C NMR, FT-IR, LCMS), magnetic moment and molar conductivity. The cytotoxic effects on cancer cells (breast and prostate cancers) of synthesized compounds have been determined through experimental work using MTT assay method, that is widely used as an enzymatic test method .
In this work, the anticancer activities on various cancer cells of Salicylaldehydethiazole-4-diethyl aminocoumarin Schiff base and its Pt(II)/Pd(II) copmlexes have been investigated for the first time. *In vitro* anticancer activity of the synthesized compounds were evaluated against the human cancer lines MCF-7 (human breast adenocarcinoma), and DU145 (human prostate adenocarcinoma) using MTT assay with 1, 10, 25, 50 ve 100 µM doses.
According to the results, the Schiff base has similar effect to the reference drug cis platinum on both cancer cells (MCF-7 and DU145). It is also much more effective than the other reference drug, carboplatin. In addition, the palladium (II) complex is particularly effective on breast cancer cells (MCF-7).

Key word: Coumarin-thiazole Schiff base, Pt(II)/Pd(II) copmlexes, anticancer activities

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➢ **POSTER PRESENTATION**

The Role of Some Boron Compounds Against Aluminum-Induced Neurotoxicity of Primary Cultured Rat Neurons

Elvan Şahin[1*], Özlem Özdemir Tozlu[2], Abdulgani Tatar[3], Ahmet Hacımüftüoğlu[4], Fadime Geyikoğlu[5], Sait Keleş[6], Hasan Türkez[2]

[*1]Department of Histology and Embryology, Faculty of Medicine, Sakarya University, Sakarya, Turkey.
[2]Department of Molecular Biology and Genetics, Faculty of Science, Erzurum Technical University, Erzurum, Turkey.
[3]Department of Medical Genetics, Faculty of Medicine, Atatürk University, Erzurum, Turkey.
[4]Department of Pharmacology, Faculty of Medicine, Atatürk University, Erzurum, Turkey.
[5]Department of Biology, Faculty of Science, Atatürk University, Erzurum, Turkey.
[6]Department of Biochemistry, Faculty of Medicine, Atatürk University, Erzurum, Turkey.

Corresponding author e-mail: elvansahin@sakarya.edu.tr

Abstract

Aluminum (Al) is a commonly known neurotoxin that inhibits more than 200 biologically important functions and induces different adverse effects in plants, animals, and humans. Al accumulates mainly in the brain, liver and kidneys of animals. Although some studies have reported that the acute or chronic exposure to Al causes structural, physiological and neurochemical changes in the nervous system, the relation between aluminum exposure and neurodegenerative diseases, including amyotrophic lateral sclerosis, Parkinsonism dementia and Alzheimer's disease remains controversial. Boron compounds are known as an essential micronutrient that have antioxidant potential. In this study, Al-induced neurotoxicity and the effects of boron compounds including boric acid (BA), borax (BX), colemanite (Col) and ulexite (UX) on this neurotoxicity were investigated using neuronal cultures. Rat neuron cultures were incubated with aluminum chloride ($AlCl_3$) (10^{-4} M) and four different boron compounds (0.01-20 ppm). The effects of boron compounds on Al-induced neurotoxicity were assessed by 3-[4,5-dimethylthiazole-2-yl]-2,5-diphenyltetrazolium bromide (MTT) assay. Our findings showed that $AlCl_3$ caused cytotoxicity in neuronal cells. Moreover, all of the tested boron compounds have different levels of protection against toxicity by Al. The highest protection degrees were observed on neuronal cell treated with BA and BX. It can be concluded that boron compounds, especially BA and BX, have beneficial influences and could be able to antagonize $AlCl_3$ toxicity in neurons.

Keywords: Aluminum chloride, Boric Acid, Borax, Colemanite, MTT assay, Neurotoxicity, Ulexite.

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➢ **POSTER PRESENTATION**

Sample Preperation for SPR Based Biosensor to Detect Foodborne Pathogens in Complex Food Matrices

Esma Eser*, H. İbrahim Ekiz

*University of Mersin, Department of Food Engineering, Mersin, Turkey.

Corresponding author e-mail: esmaeser@mersin.edu.tr

Abstract

Nowadays conventional time-consuming methods with long detection times up to one week are replaced by rapid methods that take only a few hours. With the development of new, rapid, and accurate methods for the detection of food pathogens, sample preparation is the critical step with respect to the applicability of novel methods. There are various rapid detection methods available but, surface plasmon resonance (SPR) biosensors have been proven to be a promising technique for bacteria detection due to their portability and sensitivity. SPR sensors are label-free optical sensors and investigate the interactions between an analyte in solution and the biomolecular recognition element immobilized on the SPR sensor surface.

Thus, the goal of this work is to demonstrate SPR as a rapid method for the detection of pathogenic microorganisms in complex food matrices. Prior to the SPR detection, the optimization of the sample preparation process was performed to make the complex food matrices suitable for application onto the SPR. We focused on the usage of filtration and centrifugation for sample preparation. Food samples, egg, beef, milk, carrot, bay leaf, cumin and mushroom were purchased from a local supermarket. First of all food samples were sterilized and inoculated with *Escherichia coli* O157:H7. After that, bacteria were recovered from inoculated surface. In filtration, bacteria is separated from the food particles based on its size as food matrices are forced through filters with varying pore sizes. In centrifugation, the interfering particles are pelletized leaving the bacteria in the supernatant fluid. These are necessary to obtain suitable samples for SPR analysis by minimising the interfering particles. These process steps are simple to perform, reliable, economic and take a short time.This study suggested that the use of SPR biosensor for bacterial detection looked promising and hence could be employed for rapid and label-free detection of different bacterial pathogens.

Keywords: SPR based biosensors, foodborne pathogens, *Escherichia coli*.

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➢ **POSTER PRESENTATION**

Metal Bioaccumulation, Oxidative Stress and Antioxidant Defenses in *Trichoderma harzianum* Response to Pb Exposure

Semra Malkoc[1], Hulyam Kurt[2], Cansu Ozbayer[3], Emine Yagci[2*]

[1] Anadolu University, Applied Research Centre for Environmental Problems, Eskisehir, Turkey.
[2] Eskisehir Osmangazi University, Medical Faculty, Department of Medical Biology, Eskisehir, Turkey.
[3] Kutahya Dumlupinar University, School of Health Sciences, Kutahya, Turkey.

Corresponding author e-mail: eminetsci@gmail.com

Abstract

One of the biggest problems of the global world is environmental pollution. Much work is being done to prevent environmental pollution and expenditures are being made for this area. The use of biological molecules instead of physical and chemical methods for the removal of metals from industrial water is an alternative, economical and highly effective method. Metal tolerance and detoxification mechanisms in fungi, like many other microorganisms, with bioaccumulation ability to heavy metals, were quite a little knowledge. In this study, the relationship between lead (Pb) bioaccumulation and oxidative stress and antioxidant defences of *Trichoderma harzianum* was investigated. In order to determine the minimum heavy metal tolerance to lead heavy metal of Trichoderma harzianum in the first stage, PDA media containing lead at different concentrations (50, 100, 200, 300, 500, 750 and 1000 mg / L) were prepared and sowed for 10 days at 28 ° C they were incubated. At the end of the incubation, molds were removed from the medium and liquid medium was prepared with three levels of tolerance (100, 200 and 300 mg / L). Sowing mediums were liquefied by acid in the microwave combustion unit by following 2-4-6-9 and 14 days in a shaking incubator and lead levels were measured. It has been observed that as the metal content in the medium increases, the number of mold colonies developed decreases. Total antioxidant / oxidant levels were then measured , respectively, by TAS (Total Antioxidant Status) Assay Kit and TOS (Total Oxidant Status) Assay Kitand OSI (Oxidative Stress Index) values were calculated. Low OSI (Oxidative Stress Index) values (<0.4) suggest that *Trichoderma harzianum* inhibits lead by tolerating lead.

Keywords: Bioaccumulation, lead, *Trichoderma harzianum,* total oxidant, pollution.

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➢ **POSTER PRESENTATION**

Preperation and Characterization of MOF/Chitosan Scaffolds

Ali Mert Erdek*, Berna Topuz, Ayşe Karakeçili

Ankara University, Chemical Engineering, Ankara, Turkey.

Corresponding author e-mail: akarakecili@ankara.edu.tr

Abstract

Metal-organic frameworks (MOFs) are nanostructured materials which possess large surface areas and tunable pore sizes with excellent chemical, thermal and hydrothermal stability. These properties make them attractive for various applications in the biomedical field including molecular imaging and drug release of anti-cancer agents. Chitosan is a well-known natural polymer used in the biomedical field with unique properties like being non-toxic, biodegradable, and biocompatible. In this study, the conditions for the preparation of MOF containing chitosan scaffolds were optimized. As a sub-family of MOFs, zeolitic imidazolate framework-8 nanoparticles (ZIF-8 NPs) were synthesized and embedded into chitosan scaffold prepared by wet-spinning technique. The type of coagulation bath, spinning time, needle diameter and ZIF-8 content were optimized to obtain bead-free fibres. 1, 3, 5 and 10% (w/w) of ZIF-8 nanoparticles were added to chitosan solution (2%, w/v). Methanol, ethanol, isopropanol, methanol: isopropanol (1:1), acetone, methanol: acetone (1:1) and 0.5 M Na_2SO_4 in distilled water were used as coagulation bath. The flow rate was varied between 3, 5, 7 and 17 mL/h. The needle diameters used were 0.45, 0.5 and 0.8 mm. Wet-spun scaffolds were characterized by FTIR-ATR, FE-SEM and TGA/DSC. The results obtained from the studies showed that the preparation of bead free fibres depends mostly on the type of the coagulation bath used. The amount of ZIF-8 content affected the spinning stability. Meanwhile, the change in flow rate has only influenced the macroscopic dimensions of the scaffold.

Keywords: Chitosan, ZIF – 8, Wet Spinning

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➢ **POSTER PRESENTATION**

A Taxonomic Study on the Agaricus Species Naturally Growing in İzmir

Ezgin Tirpan*, Hakan Alli, Esra Dibek, Bekir Çöl,

[1]Biology Department, Faculty of Science, Muğla Sıtkı Kocman University, Turkey.

Corresponding author e-mail: ezgin0424@gmail.com

Abstract

The genus *Agaricus* is globally popular particularly due to the fact that it contains edible species. In addition to this, there are about 289 species in the world and 40 species in our country. It was known that, in İzmir province, there are a number of 5 *Agaricus* species determined by mycologists in the studies conducted up to this date. In this study that took place between 2015 and 2017, the distributions of the genus *Agaricus* naturally grown in İzmir were determined and the specimens were noted together with their ecological characteristics. As a result, 11 species were added to *Agaricus* species growing in İzmir province. In addition, genomic DNAs were isolated from the fruiting bodies of the mushroom samples and following PCR and Sanger sequencing, the gene sequences of the internal transcribed spacer (ITS) regions were obtained for the eleven species found in the study. Finally, all of the 16 species currently present in İzmir was presented via a phylogenetic tree constructed utilizing the sequence results of this study and the sequences of the closely related species downloaded from the NCBI databases.

Keywords: *Agaricus* L., İzmir, ITS gene, Turkey.

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➢ **POSTER PRESENTATION**

Kelebekler Ve Histolojisi

Banu Eren[1]*, Damlanur Ekşioğlu[1], Zafer Eren[1], Emine Diraman[1], Sevcan Mercan[2], Burcu Yılmaz[3], Dilek Sağır[4], Gönül Solmaz[1]

[1]Ondokuz Mayıs Üniversitesi, Biyoloji Bölümü, Samsun, Türkiye
[2]Ondokuz Mayıs Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu, Samsun, Türkiye
[3]Ordu Üniversitesi, Akkuş Meslek Yüksek Okulu, Ordu, Türkiye
[4]Sinop Üniversitesi, Sağlık yüksek Okulu, Sinop, Türkiye

Sorumlu yazar e-mail: banueren@gmail.com

Özet

Lepidoptera takımı şube olarak Arthropoda (Eklembacaklılar), sınıf olarak Insecta (Böcekler) sınıfına ait bir takımdır. Lepidopter ismi Grekçe Lepis (pul) kelimesinden köken almaktadır ve Jura devrinden günümüze kadar varlıklarını devam ettirmişlerdir.

Kelebekler hakkında elde edilen ilk bilgiler Yunan filozof Aristo'nun çalışmalarında yer almaktadır. İlk bilimsel araştırmalar ve incelemeler ise İsveçli bilim adamı Linnaeus tarafından başlamıştır. Daha sonra birçok araştırmacı tarafından yeni türler bulunmuştur.

Kelebekler holometabol (tam başkalaşım) geçiren canlı grubundandır. Başkalaşımlarını yumurta, tırtıl, pupa ve kelebek olmak üzere dört safhada gerçekleştirirler. Dişi birey çiftleşmeden sonra döllenmiş yumurtasını uygun besin bitkisinin üzerine veya yakın bir alana bırakır. Yumurtanın embriyonik gelişimi bazı türlerde bir hafta gibi kısa bir sürede tamamlanır. Bazı türlerde uzun bir kış dönemi uyku halinde geçirilebilmektedir. Yumurtalar olgunlaştıktan sonra içerisinden larvalar çıkmaktadır. Larvaların baş, göğüs ve karın kısımları birbirinden ayırt edilebilir şekildedir. Olgunlaşmasını pupa içerisinde tamamlayan birey pupa kılıfını çatlatarak dışarı çıkar ve kanatlarını şişirerek ergin bir birey şeklini alır. Tırtıl aşamasında tarım alanları, ormanlık alanlar ve şehirdeki yeşil alanlar için ciddi zarara neden olabilmektedirler. Erginler çiçekli bitkilerin tozlaşmasına katkı sağlamaktadır.

Kelebeklerin sistematiği yapılırken ergin birey üzerindeki anten tipleri, damarlanma tipleri, ağız parçaları, renk ve desen, kanat şekli, yumurtanın şekli ve deseni gibi özellikleri dikkate alınmaktadır. Böcekler, hayvanlar alemindeki türlerin yaklaşık olarak %85'ni oluşturmaktadır. Ekonomik, ekolojik ve tarımsal yönlerden oldukça önem arz eden bu canlılar, çevrelerine ve insanlara doğrudan veya dolaylı yollardan yarar sağlamaktadır.

Kelebekler üzerinde çalışma yapabilmek için, morfoloji, fizyoloji ve ekolojileri hakkında bilgi sahibi olmak gerekmektedir. Günümüzde kelebeklerin histolojisi üzerine çeşitli çalışmalar yapılmaktadır. Özellikle üreme ve sindirim sistemi histolojisi, bu araştırmaların geniş bir alanını oluşturmaktadır.

Anahtar Kelimeler: Lepidopter, Larva, Kelebek, Morfoloji, Histoloji

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➢ **POSTER PRESENTATION**

Sülfon ve Triazol Fonksiyonlandırılmış Polistiren Karışımların Proton İletkenlik Davranışları

Sinem Kozan, Mehmet Arslan, Hamit Erdemi*

Yalova Üniversitesi, Mühendislik Fakültesi, Polimer Mühendisliği, Yalova, Türkiye

Sorumlu yazar e-mail:herdemi@yalova.edu.tr

Özet

Proton değişim membranı olarak bilinen yakıt pilleri (PEMFC) geleceğin temiz enerji teknolojisi açısından umut vaat etmektedir. Son çalışamalar gösteriyor ki, yakıt pillerinin uygulama alanlarından taşıtlar ve mobil elektronik aygıtlarda kullanımı son derece başarılı olmuştur. Susuz proton iletken polimer elektrolitler için imidazol, benzimidazol ya da triazol gibi heterosiklik yapılar ile suyun yerine geçen alternatif proton solventleri çalışılmıştır. Azot içeren aromatik heterosiklik yapıların proton iletme özellikleri ve sülfürik asitle dop edilerek veya sülfonlanmış polimer karışım sistemleriyle polimer elektrolitlerde kullanılabilirliği fark edilmiştir. Bu çalışmada, susuz proton iletken polimerler için triazol ve sülfonik asitle fonksiyonlandırılmış polistiren yeni bir yaklaşım olarak çalışılmıştır. Bir dizi sülfonlanmış polistiren (20, 30 ve 40% sülfonasyon derecelerinde), sülfonasyon ajanı olarak trimetilsilil klorosülfonat (TMSCS) kullanılarak başarılı bir şekilde sentezlenmiştir. Triazol fonsiyonlandırılmış polistiren türevi, 1H-1,2,4,-Triazol-3-tiol ile klorometil stirenin reaksiyonu ile gerçekleştirilmiştir. Sonuç olarak fonksiyonlandırılmış polimerlerin karışımları ve bunların filmleri hazırlanmıştır. Bu sistemin susuz ya da düşük nem koşullarında proton iletim mekanizması aracısız iletim mekanizmasıyla gerçekleşir. Bu mekanizmada proton iletimi bir taraftan diğerine iletilirken herhangi bir mobil araca ihtiyaç duymaz.

Anahtar Kelimeler: proton iletkenliği, polistiren, triazol, sulfonasyon

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➢ **POSTER PRESENTATION**

Investigation of Sonacatalytic Activity of SiO_2/TiO_2 Core/Shell Nanoparticles

İlyas Deveci [1*], Bedrettin Mercimek[2]

[1] Selçuk University, Vocational School of Technical Sciences, Chemistry and Chemical Processing Technologies, Konya, Turkey.
[2]Necmettin Erbakan University, Ahmet Kelesoglu Faculty of Educational Sciences, Department of Mathematics and Science Education, Konya, Turkey.

Corresponding author e-mail: deveci-ilyas@hotmail.com

Abstract

In this study, the sonocatalytic degradation of Rhodamine-B by using SiO_2/TiO_2 Core/Shell Nanoparticles as catalysts was investigated. SiO_2 with the diameter of 500nm was prepared by Stöber method [1]. TiO_2 Shell was incorporated on silica particles by solvothermal method. Catalyst structure was characterized by XRD, SEM, FTIR-ATR and N_2 adsorption studies. Although the SiO_2/TiO_2 Core/Shell Nanoparticles have been used for the removal of Rhodamine B as a photocatalyst, the sonocatalytic activity of the SiO_2/TiO_2 Core/Shell Nanoparticles for the removal of rhodamine B has not been investigated yet. Catalytic activity studies were performed in batch system by using ultrasonic bath (Bandelin electronic RK 255H) at 35 kHz and 160W. As a result of the experiments, the percentage of Rhodamine B removal was found to be 51.5% in 90 minutes. As seen in Figure 1, the peak at 554 nm wavelength, which belongs to the maximum absorbance of Rhodamine B, decreased sharply in time. It was found that the TiO_2 coating increased the degradation ratio Rhodamine B with respect to the uncoated SiO_2 particles and ultrasound alone. For comparison, degradation experiments were performed with the commercial TiO_2. The degradation ratio of Rhodamine B was found as 32.20% and 51.5%; for, commercial TiO2 and SiO_2/TiO_2 core/shell particles used experiments, respectively.

Keywords: Sonocatalyst, Ultrasound**,** SiO_2/TiO_2 core/shell particles, Rhodamine-B

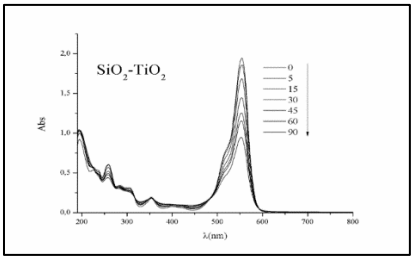

Figure1: Time dependent change of Rh-B spectrum with ultrasonic irradiation in the presence of SiO_2/ TiO_2 core/shell particles

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➢ **POSTER PRESENTATION**

Simultaneous Determination of Sodium Benzoate, Sunset Yellow, Methyl Paraben and Pseudoephedrine HCl in Syrups by Using HPLC-DAD Coupled With Partial Least Squares Multivariate Calibration

Ecem Şen, Bürge Aşçı, Şule Dinç-Zor*, Özlem Aksu Dönmez, Abdürrezzak E. Bozdoğan

Yıldız Technical University, Faculty of Science and Arts, Department of Chemistry, Istanbul, Turkey

Corresponding author e-mail: sule_dinc@yahoo.com

Abstract

Several chemometric methods have been utilized for the analysis of overlapping chromatographic peaks without complete separation of the analytes. In particular, Partial Least Squares (PLS) algorithm is able to resolve the overlapped peaks into corresponding chromatographic, spectral and concentration profiles even in the presence of interferences.
In this work, a simple and rapid analytical method for the determination of sodium benzoate, sunset yellow, methyl paraben and pseudoephedrine HCl in syrup preparations was proposed by means of PLS multivariate calibration technique of high-performance liquid chromatography with diode array detection (HPLC-DAD). Although the peak area does not directly measured, good recoveries of the studied compounds were obtained with HPLC-DAD coupled with PLS calibration. Also, a simple mobile phase consisting of water and acetonitrile was used throughout the analysis. The method which does not require complete separation of the analytes was applied to complex matrices such as commercial syrup samples and the obtained results *were found* to be *satisfactory* as compared with a classical HPLC method. *As a conclusion,* the developed HPLC-DAD-PLS method has some advantages such as isocratic elution, short analysis time and easy preparation of mobile phase.

Keywords: HPLC-DAD-PLS, sodium benzoate, sunset yellow, methyl paraben and pseudoephedrine HCl.

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➢ **POSTER PRESENTATION**

Perlit Destekli Palladyum Katalizörünün Hazırlanışı ve Alken Hidrojenasyonunda Kullanımı

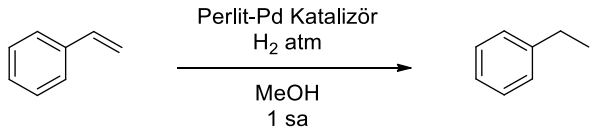
Mustafa Zengin[1], Ahsen Bolat[1], Mustafa Arslan[1], Nil Toplan[2], Hayriye Genç*

[1] Sakarya Üniversitesi Fen Edebiyat Fakültesi Kimya Bölümü, Serdivan, Sakarya, Türkiye
[2] Sakarya Üniversitesi Mühendislik Fakültesi Metalurji Ve Malzeme Mühendisliği Bölümü, Serdivan, Sakarya, Türkiye

Sorumlu yazar e-mail: hayriyegenc@sakarya.edu.tr

Özet

Pd, Pt ve Rh dahil olmak üzere pahalı metal katalizörleri ile katalize edilen alken hidrojenasyonu petrokimyasal dönüşümler ve farmasötik sentezde en çok kullanılan yöntemlerdendir. Fakat, bu değerli metal katalizörlerinin yüksek maliyeti ve bahsi geçen yöntemlerin yüksek basınç ve yüksek sıcaklıklarda yanıcı hidrojen gazı kullanımı gerektirmesi ciddi bir dezavantajdır. Bu nedenle günümüzde destek katısına tutturulmuş değerli geçiş metal katalizörlerinin kullanımı giderek önem kazanmaktadır. Bu çalışmada, perlit üzerine tutturulmuş Pd metal katalizörlerinin hidrojenasyonda etkinliği araştırılmıştır.



Perlit, yaklaşık %70-75 SiO_2 ve %12-18 Al_2O_3 içeren, ucuz bir mineral karma oksit karışımdır. Paladyum ise pahalı bir metal katalizörüdür. Bu nedenle, perlit katalizörü üzerindeki paladyumun katalizör olarak kullanımı yüksek verim sağlayan, etkili, kullanımı kolay, düşük fiyatlı, geri döndürülebilir ve güvenilir bir yöntemdir.

Anahtar Kelimeler: hetorojen katalizör, palladyum, perlit, hidrojenasyon

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➢ **POSTER PRESENTATION**

Bazı Oksim Türevi Beleşiklerinin Sentezi ve Antibakteriyel Özelliklerinin İncelenmesi

Hayriye Genç[1*], Oğuz Karabay[2], Mustafa Zengin[1]

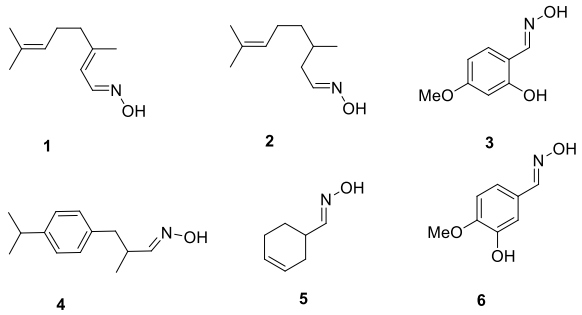
[1] Sakarya Üniversitesi Fen Edebiyat Fakültesi Kimya Bölümü 54187 Serdivan/SAKARYA
[2] Sakarya Üniversitesi Tıp Fakültesi Enfeksiyon Hastalıkları ve Klinik Mikrobiyoloji Bölümü 54290 Adapazarı/SAKARYA

Sorumlu yazar e-mail: hayriyegenc@sakarya.edu.tr

Özet

Görülmemiş bir hızla büyüyen antibakteriyel direnç ve neticesinde bazı enfeksiyonların tedavi edilememesi günümüzde birçok ülke için halk sağlığını tehdit eden başlıca sorunlardan biri haline gelmiştir.

Oksim bileşikleri endüstride Nylon-6 polimer sentezinde kullanılır. Medikal kimyada ise sinir ajanlarına yönelik panzehir olarak kullanımı vardır. Aynı zamanda birçok organik maddenin sentezinde ara ürün olarak kullanılır. Bu çalışmada ise bazı oksim bileşiklerinin (1-6) sentezi gerçekleştirilmiş ve *A. baumannii, P. aeruginosa, E. coli* ve *S. aureus* suşlarına karşı antibakteriyel özellikleri hali hazırda ilaç olarak kullanılan ajanlarla kıyaslanarak değerlendirilmiştir.



Şekil. Sentezlenen oksim bileşiklerinin yapıları

Anahtar Kelimeler: oksim, antibakteriyel direnç, *A. baumannii, P. aeruginosa, E. coli*, *S. aureus*

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➢ **POSTER PRESENTATION**

Antimicrobial Activity of Yeasts Isolated From Fruits

Sebahat Öztekin[1,2*], Enes Dertli[2], Funda Karbancioğlu-Güler[1]

[1] Istanbul Technical University, Faculty of Chemical & Metallurgical Engineering, Department of Food Engineering, Istanbul, Turkey.
[2]Bayburt University, Faculty of Engineering, Department of Food Engineering, Bayburt, Turkey.

Corresponding author e-mail: sozakca@itu.edu.tr

Abstract

The aim of this research is to reveal the antimicrobial properties of yeasts isolated from different kinds of fruits. Firstly, yeasts were isolated from grape, rosehip, olive leaf, blackberry, cranberry, apple and hawthorn fruits. The randomly selected yeast colonies were examined for their killer activity by conducting agar overlay technique. Identification of the yeasts were carried out by sequencing of the PCR amplified 600 base pair of D1/D2 region of the yeast 26S ribosomal DNA followed by the BLAST search GenBank Database. According to identification results, the yeasts that showed antagonistic activity were belonged to mostly *Metschnikowia* spp. (60%), *Hanseniaspora* spp. (32%), and *Pichia* spp. (8%). These yeast isolates were further tested for their antimicrobial activities and 26% of the examined *Metschnikowia* spp. showed antibacterial activity against *Escherichia coli* ATCC 25922, while 12% of *Metschnikowia* spp. showed antibacterial activity against *Staphylococcus aureus* ATCC 25923. All of the *Hanseniaspora* spp. had limited antibacterial activity against *E.coli* while only 33% of *Hanseniaspora* spp. inhibited the growth of *S.aureus. Pichia kluyveri* was found to show antibacterial effects against both *E. coli* and *S. aureus* with same inhibition zones (<2mm). The isolated yeasts were also investigated against *Candida albicans* and *Candida krusei* by agar spot overlay method but none of them showed inhibitory activity. The antagonistic activity was found to be strain dependent and the findings obtained were in accordance with the previously reported results. These findings have potential to shed light on the usage of yeasts as a postharvest biocontrol agent.

Keywords: Antagonistic yeast, killer yeast phenomenon, biocontrol agent, fruit yeast.

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➢ **POSTER PRESENTATION**

In Vitro Cytotoxicities of Candidate Active Agents: Thiazolo[3,2-c]pyrimidines

Arzu Birinci Yildirim[1*], Esra Cansever Mutlu[2] ,Muhammet Yildirim[3]

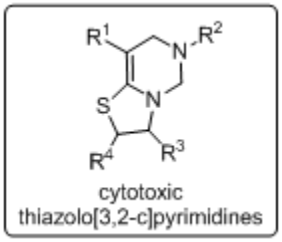
[1] Department of Field Crops, Faculty of Agr. and Nat. Sci., Abant İzzet Baysal University, Bolu, Turkey
[2]Scientific Ind. and Techn. Appl. and Res. Center, Abant İzzet Baysal University, Bolu, Turkey
[3]Department of Chemistry, Faculty of Arts and Sci., Abant İzzet Baysal University, Bolu, Turkey

Corresponding author e-mail: arzubirinciyildirim@gmail.com

Abstract

Since the famous anticancer agents such as 5-FU, paclitaxel, docetaksel, doxorubicin and camptotecin are supplied from overseas, this kind of provisions can not be sustained for long time. Therefore, the invention and preparation of new cytotoxic agents is one of the most important issue of drug industry and research institutes in developing country.

Due to the broad diverse biological effects of thiazolopyrimidines, many examples for their preparation have been reported in recent literature up to date. Besides, a diverse range of anticancer or antitumor thiazolopyrimidines have been identified due to their strong cytotoxic effects against various cancer cell lines such as liver, prostate, colon, lung, epidermal, glioblastoma, leukemia, CNS and MCF-7[1-6]. For this reason, in the study, *in vitro* cytotoxic activity studies of new thiazolo[3,2-*c*]pyrimidines at varying concentrations have been performed against human breast (MCF-7) and hepatocellular (HEPG2/C3A) carcinoma cell lines for different time periods (24, 48, 72h). The results of *in vitro* studies showed that some of the thiazolo[3,2-*c*]pyrimidine carboxylates exhibited strong cytotoxic effects against both MCF-7 and HEPG2/C3A carcinoma cell lines at 100 µM concentrations. IC_{50} values of cytotoxic thiazolo[3,2-c]pyrimidines were determined after 24-, 48-, 72-h test. Also, the findings of the test showed that thiazolo[3,2-c]pyrimidines are promising cytotoxic active agent candidates for further drug encapsulation and conjugation studies.



cytotoxic
thiazolo[3,2-c]pyrimidines

Keywords: cytotoxicity, MCF-7, HEPG2/C3A, thiazolopyrimidines.

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➢ **POSTER PRESENTATION**

The Effect of Bisphenol A (BPA) in the Light/Dark Preference of Eisenia Fetida.

Gözde Karabulut[1*], Hasan Çalışkan[2]

[1]Hacettepe University, Science Faculty, Zoology Department, Ankara, Turkey
[2]Ankara University, Medicine Faculty, Physiolgy Department, Ankara, Turkey

Corresponding author e-mail: gozdekarabulut6@gmail.com

Abstract

Anxiety is a behavioral mechanism in animals to cope with difficult situations. Fear and anxiety share the same physical and mental symptoms,like avoidance, hypervigilance and an increased alert level to avoid damage. Bisphenol A is an important endocrine disruptor and it is used in industry for the production of resins and polycarbonate plastic. the ingestion of BPA from food or water is the predominant route of exposure (Lorber et al., 2015), there are other nonfood routes, such as inhalation of free BPA (concentrations in indoor and outdoor air), indirect ingestion (dust, soil, and toys), and dermal route (contact with thermal papers and application of dental treatment), which contributes to the total BPA exposure. The aim of this study is to evaluate the effect of Bisphenol A on the anxiety like behaviour and locomotor activity in Eisenia fetida.

24 Eisenia fetida (1 years old, 9cm. and n= 8) were used in the present study. Worms were left for adaptation for 4 weeks. The subjects were maintained under 12 h light/12 h dark cycle at a temperature of 23-25°C and damp (50-70%) controlled room. Saline group was used for control group. For experiment, 150 and 300 mg/kg/day of BPA were used. Each worm was removed from its home and placed into an exposure chamber containing test compound or saline for 30 minute. After 30 min, each worm was placed in to experiment chamber (modified light dark box test) and recorded via camera 10 min. Light zone time, dark time zone, light/dark zone entrance number, locomotor activity, dark zone entrance latency and velocity were analyzed All the results were presented as mean ± standard error of the mean (SEM). The data were evaluated by analysis of variance (ANOVA) followed by Student's t-test and Neuman–Keuls post hoc test.

The end of the experiment, light zone time were decreased and dark zone time were increased. Also, light/dark zone entrance number and dark zone entrance latency were decreased between the groups. Locomotor activity and velocity were also decreased significantly in 150 and 300 mg/kg/day of BPA groups compere to control ($p < 0.01$).

Bisphenol A (BPA) increased anxiety like behaviour of Eisenia fetida.

Key Words: Eisenia fetida, Behaviour, Animal model, light/dark.

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➢ **POSTER PRESENTATION**

The Behavioral Change of Di (2-ethylhexyl) Phthalate (DEHP) in Eisenia fetida.

Gözde Karabulut[1*], Hasan Çalışkan[2]

[1*]Hacettepe University, Science Faculty, Zoology Department, Ankara, Turkey
[2]Ankara University, Medicine Faculty, Physiolgy Department, Ankara, Turkey

Corresponding author e-mail: gozdekarabulut6@gmail.com

Abstract

Di (2-ethylhexyl) phthalate (DEHP), among others, is very important endocrine disruptor due to the widespread distribution of products that contain it. According to the World Health Organization (WHO), it can cause adverse health effects in an intact organism, or its progeny. It can be found in food and beverage processing, and in many other commercial products such as epoxy resin cans, dental sealants, personal care products, baby bottles, building materials, flame retardant materials, optical lenses, materials for the protection of window glazing, DVDs, and household electronics. The aim of this study is to evaluate the effect of DEHP on the anxiety like behaviour and locomotor activity in Eisenia fetida.

24 Eisenia fetida (1 years old, 9cm. and n= 8) were used in the present study. Worms were left for adaptation for 4 weeks. The subjects were maintained under 12 h light/12 h dark cycle at a temperature of 23-25°C and damp (50-70%) controlled room. Saline group was used for control group. For experiment, 100 and 200 mg/kg/day of DEHP were used. Each worm was removed from its home and placed into an exposure chamber containing test compound or saline for 30 minute. After 30 min, each worm was placed in to experiment chamber (modified light dark box test) and recorded via camera 10 min. Light zone time, dark time zone, light/dark zone entrance number, locomotor activity, dark zone entrance latency and velocity were analyzed. All data were analyzed by one-way analysis of variance (ANOVA) followed by a Tukey's post hoc test for multiple comparison.

The end of the experiment, light zone time were decreased and dark zone time were increased. Also, light/dark zone entrance number and dark zone entrance latency were decreased between the groups. Locomotor activity and velocity were also decreased significantly in 100 and 200 mg/kg/day of DEHP groups compere to control ($p < 0.01$).

Di (2-ethylhexyl) phthalate (DEHP) increased anxiety like behaviour of Eisenia fetida.

Key Words: Eisenia fetida, Di (2-ethylhexyl) phthalate, Phthalate, Anxiety.

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➢ **POSTER PRESENTATION**

Effect of External Oxygen Supply on Sonacatalytic Activity of Sio_2/Tio_2 Core/Shell Nanoparticles

İlyas Deveci [1*], Bedrettin Mercimek[2]

[1] Selçuk University, Vocational School of Technical Sciences, Chemistry and Chemical Processing Technologies, Konya, Turkey.
[2]Necmettin Erbakan University, Ahmet Kelesoglu Faculty of Educational Sciences, Department of Mathematics and Science Education, Konya, Turkey.

Corresponding author e-mail: deveci-ilyas@hotmail.com

Abstract

Although it is perceived that there is unlimited amount of potable water sources in the world, in fact, when the growing population is considered, potable water supplies are limited. In this study, the effect of external oxygen supply on degradation of Rhodamine-B by using SiO_2/TiO_2 Core/Shell Nanoparticles as catalysts was investigated. The gas type and solubility have a critical role in sonocatalytic degradation. Dissolved gases behave like nucleation points during the formation of ultrasonic cavitation. Stöber method was used for preparation of SiO_2 particles with diameter of 500nm and SiO_2/TiO_2 Core/Shell Nanoparticles was prepared by solvothermal method. Catalyst structure was characterized by XRD, SEM, FTIR-ATR and N_2 adsorption studies. Catalytic activity studies were performed in batch system by using ultrasonic cleaner (Bandelin electronic RK 255H at 35 kHz ,160W) and the oxygen gas was supplied trough the reaction vessel with the rate of 0.5 L/min. In order to observe the effect of the dissolved O_2 in the solution, for the removal of Rhodamine B, all other parameters were kept constant (25 ° C, 10 ppm dye concentration, pH = 7.3, 10 mg / L catalysis amount,). 1.5 ml samples were taken at specific period. The changes in the Rhodamine B spectrum were examined for 90 min. When compared with experiments without air use, in external oxygen supplied experiments using, SiO_2, SiO_2/TiO_2 as catalyst and without catalyst, a 22.87%, 9.35% and 16.64% increase in removal was achieved, respectively.

Keywords: External Oxygen Supply**,** Sonocatalyst, Ultrasound**,** SiO_2/TiO_2 core/shell particles, Rhodamine-B

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➢ **POSTER PRESENTATION**

Pesticide Evoked Target Organ Toxicity in Fish: Liver

Demet Doğan

University of Gaziantep, Vocational School of Araban, Araban-Gaziantep, Turkey

Corresponding author e-mail: demetdogan@gantep.edu.tr

Abstract

The excessive use of pesticides in agriculture results in environmental pollution and toxicity to non-target organisms. As the aquatic environment is the final destination for most of anthropogenic contaminants including pesticides, fish species being particularly sensitive to the water pollution are directly exposed to pesticides affecting certain physiological and biochemical processes and impairing health status of the organism. The liver is a vital organ playing function in the metabolism like regulation of glycogen, synthesis of plasma protein, production of hormone, thus maintaining and regulating homeostasis. Even if it is not an initial organ which is exposed to contaminant, its strategic role in detoxification makes it a major target organ for xenobiotics being independent of the route of exposure. Therefore impact of pesticides on liver as target organ in fish has been subjected to many investigation and adverse effect of different endpoints have been reported by using an integrated biomarker approach. Verified changes are final outcome of highly complex pathways and thus they have potential to provide an early warning of damaging changes caused by pesticides before mortality occurs.

Keywords: Pesticide, fish, liver, target organ toxicity

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➢ **POSTER PRESENTATION**

Effect of the Schiff Base Artificial Nucleases on the DNA Cleavage Activity in Presence of Activators nnd Reactive Oxygen Species (ROS) for Molecular Target DNA

Zehra Kubra Yilmaz[1*], Belma Aslim[1], Ozlem Ozdemir[2]

[1]Gazi University, Faculty of Science, Department of Biology, Ankara, Turkey.
[2]Gazi University, Faculty of Science, Department of Chemistry, Ankara, Turkey.

Corresponding author e-mail: kubraylmaz395@gmail.com

Abstract

Interaction of metal-based drugs targeting nucleic acids is of immense interest for the development of new artificial nucleases for cancer chemotherapy owing to the fact that many treatment have failed or fall short either in terms of efficiency. And, platinum-based drugs show side effects as nephro-, neuro- and hematotoxicity (Tabassum et al., 2014). The aim of the present study was investigation of the mechanistic pathway (oxidative or hydrolytic) of the cleavage activity in the presence of reductant of a new asymmetric Schiff base (Yilmaz et al., 2017). Cleavage mechanistic of the Schiff base (2000-3500 μM) was carried out in the presence of activators (H_2O_2 (hydrogen peroxide), Asc (ascorbate)) and reactive oxygen species (NaN_3 (sodium azide), EtOH (ethyl alcohol)). The DNA cleavage experiments were done by pBR322 DNA and the plasmid forms were observed in the agarose gel. The extent of cleavage of DNA was determined by measuring the intensities of the bands using the Image Lab™ software. The Schiff base can cleave DNA both through hydrolytic and oxidative processes. The cleavage activity of Schiff base was significantly enhanced by the activators, and activating efficiency surprisingly follows the order, Asc > H_2O_2. In the presence of NaN_3, DNA cleavage activity of Schiff base was strongly inhibited indicating the involvement of singlet oxygen and a singlet oxygen-like entity in DNA strand scission suggesting oxidative cleavage mechanism. On the other hand, no obvious inhibition was observed in the presence of EtOH. These results suggest that the interaction of Schiff base with the pBR322 DNA results in the cleavage of DNA by an oxidative DNA damage pathway, in which giving ROS such as singlet oxygen or singlet oxygen-like entity that cleaves DNA. The ROS attack DNA and cause the DNA strands scission, this process may also be relevant to the growth inhibition in tumor cell lines observed.

Keywords: Schiff Base, DNA Cleavage, Mechanistic Pathway

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➢ **POSTER PRESENTATION**

Investigation of Rotavirus Frequency in Childhood Gastroenteritis

Nergis Aşgın*, Elçin Kal Çakmaklıoğulları
Karabuk University, Faculty of Medicine, Medical Microbiology Department, Karabuk, Turkey

Corresponding author e-mail: drnasgin@gmail.com

Abstract

Rotavirus is an important pathogen commonly observed in childhood gastroenteritis in the developing countries. The aim of the present study was to determine the frequency of rotavirus in children aged 0-12 years in our region suffering from diarrhoea, and to investigate the relationship with age, gender, and seasons.

Rotavirus antigen test was performed using an immunochromatographic method on stool specimens of 2879 patients aged 0-12 years who were admitted to our hospital with the complaint of diarrhoea between January 2016 and December 2016. Distribution of the prevalence of rotavirus according to age, gender, and seasons was investigated

Hundred and ninety-five out of 2879 stool specimens tested positive for rotavirus antigen. No significant relationship was observed between gender and rotavirus positivity. It was observed that 79% of rotavirus-positive children were aged five years and younger. Rotavirus positivity was most commonly seen in the 25-60 months age group with a prevalence rate of 44.6%. Rotavirus positivity was most frequently observed in the spring season and this difference was found to be statistically significant.

Rotavirus should be considered as a causative agent of gastroenteritis in spring along with winter in children under five years of age in our region. Rapid detection of rotavirus in stool specimens is important. This allows early start of treatment and contributes to the policies promoting rational use of antibiotics by avoiding unnecessary antibiotic consumption. Thus, it can be suggested that rotavirus antigen test should be routinely carried out in primary health care facilities.

Keywords: Childhood, Gastroenteritis, Rotavirus.

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➢ **POSTER PRESENTATION**

Antimicrobial Activity of Aqueous Extracts of Heather Leaf (*Calluna* Sp.) and Common Buckthorn (*Rhamnus* Sp.) Berries

Kemal Güven[1], Mert İpekçi[1*], Fatma Matpan Bekler[2], Seçil Yalaz[3], Reyhan Gül Güven[4]

[1] Dicle University, Science Faculty, Molecular Biology and Genetics Department, 21280 Diyarbakır/Turkey
[2] Dicle University, Science Faculty, Biology Department, 21280 Diyarbakır/Turkey
[3] Dicle University, Science Faculty, Mathematics Department, 21280 Diyarbakır/Turkey
[4]Dicle University, Ziya Gökalp Education Faculty, Science Teaching Section, 21280 Diyarbakır/Turkey

Corresponding author: fmatpan@dicle.edu.tr

Abstract

Calluna sp., a perennial shrub in the Ericaceae family, grows in the Mediterranean, western and northern Anatolia. *Calluna* sp. and *Rhamnus* sp. are widely used as a traditional herbal tea for treatment of different diseases. The plants were obtained from an herbal shop in Diyarbakır. In vitro antimicrobial activities of aqueous extracts against human pathogen bacteria (*Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*) were determined using the agar disc-diffusion assay. The inhibition zones are measured in mm. Each assay was repeated triplicate. The aqueous extract of *Calluna* sp. had showed an antimicrobial effect against *E.coli*, *K. pneumoniae*, and *S. aureus* whereas common buckthorn (*Rhamnus* sp.) berries extract had antimicrobial effect against all test microorganisms.

Keywords: Antimicrobial activity, aqueous extract, *Calluna* sp., *Rhamnus* sp.

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➢ **POSTER PRESENTATION**

Antepfıstığı Perikarpının Besinsel İçeriğinin Kimyasal Olarak Saptanması ve Kullanılabilirliğinin Araştırılması

Deniz Barut[1*], Hüseyin Tekin[2], İbrahim Halil Kılıç[3]

[*1]Gaziantep Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji, Gaziantep, Türkiye
[2]Gaziantep Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji, Gaziantep, Türkiye
[3]Gaziantep Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji, Gaziantep, Türkiye

Sorumlu yazar e-mail: deniz.barut@tarim.gov.tr

Özet

Ülkemizde, son 5 yıllık ortalamaya göre yıllık 115 bin ton Antepfıstığı üretimi yapılmaktadır. Bunun yaklaşık %15-18'i dış yumuşak kabuktan (perikarp) oluşmaktadır. Fıstık işletme tesislerinde oluşan 17-20 bin tona yakın bu dış yumuşak kabuk atıkları hem işletme için hem de çevre için önemli bir sorun teşkil etmektedir. Bu nedenle oluşan atıkların değerlendirilebilir bir potansiyele sahip olup olmadığını belirlemek amacıyla kurutulmuş Antepfıstığı dış yumuşak kabuklarında (Kırmızı, Boz, Siirt çeşitleri) protein, yağ, kül, selüloz, kalori ve bitki besin elementleri tayini yapılmıştır. En yüksek protein (% 11,40), yağ (8,86) ve selüloz miktarı (% 21,14) Boz Antepfısığında, kül miktarı (%13,66) Siirt fıstığında ve en yüksek kalori miktarı Kırmızı antepfıstığı (316,78 cal/100 gr) dış yumuşak kabuğunda tespit edilmiştir. Bitki besin elementleri (Makro ve mikro) analizi sonucunda Cu, Fe, Zn, ve P elementleri (Cu:12ppm, Fe:420ppm, Zn:2,10ppm P:%0,15) en yüksek Boz Antepfıstığında, Ca ve Mn elementleri Kırmızı Antepfıstığında (Ca:%1,82, Mn:29,74ppm), K ve Mg ise en çok Siirt fıstığı dış kabuğunda (K:%7,02, Mg:%0,29) tespit edilmiştir.
Yapılan analizler sonucunda işletmeler için ekonomik ve ekolojik açıdan ciddi sorunlara sebep olan antepfıstığı yumuşak dış kabuğunun (perikarp) gübre, yem ve yakıt sanayisinde değerlendirilebilir potansiyele sahip olduğu görülmüştür.

Anahtar Kelimeler: Antepfıstığı, Perikarp, Atık, Kimyasal yapı, Bitki Besin Elementi

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➢ **POSTER PRESENTATION**

Dolgulu Kolon Reaktörlerde Doğal Zeolitler İçin İz Maddenin Belirlemesi

Ayla Bilgin[1*], Selim Latif Sanin[2]

[1]Artvin Çoruh Üniversitesi, Çevre Mühendisliği Bölümü, Artvin,
[2]Hacettepe Üniversitesi, Çevre Mühendisliği Bölümü, Ankara

Sorumlu yazar e-mail: ayla.bilgin@gmail.com

Özet

Reaktörlerde, biyobariyer oluşumu ve reaktörün hidrodinamik koşullarını belirlemek amacı ile iz madde belirleme çalışmaları yapılmaktadır. Deney çalışmalarında, model biyobariyer olarak dikey yerleştirilmiş piston akışlı kolon reaktör kullanılmıştır. Biyofilm gelişimi için dolgu malzemesi olarak, Manisa (Gördes) yöresinden getirtilen doğal zeolit kullanılmıştır. . Klinoptilolitin bünyesinde var olan katyon tipi, katyon değiştirme mekanizmasını doğrudan etkileyen bir parametredir. Her bir katyonun yapıdaki yerleşim yeri, elektronegatifliği, koordinasyon sayısı, dipol momenti, iyon çapı vb. özelliklerine bağlı olarak diğer bir inorganik veya organik katyonla iyon değiştirme kapasitesi ve ayrıca gaz halindeki $C0_2$, $S0_2$, CH_4 vb. moleküllerle olan etkileşimleri farklıdır. Bu amaçla; dolgulu kolona uygun (yüzeyle en az etkileşen ve biyofilme zarar vermeyecek) iz maddenin belirlenmesi amacıyla $CaCl_2$, KCl ve NaCl ile deneysel çalışmalar yapılmıştır. Kolonlarda taşınımı belirlemek için iletkenlik ölçümleri yapılmıştır. Elde edilen iletkenlik verileri E-eğrilerine dönüştürülmüştür. Yapılan izleyici deney sonucu zeolit yüzeyi ile etkileşimin NaCl=$CaCl_2$<KCl sırası ile olduğu elde edilmiştir. KCl zeolit tarafından tutuklanması tekrarlanan iz-madde analizleri ile kesin olarak belirlenmiştir

Anahtar Kelimeler: Doğal zeolit, biyobariyer, izleyici test

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➢ **POSTER PRESENTATION**

Experimental and Theoretical Studies of 4-nitrophthalonitrile

Nesuhi Akdemir*, Ayşin Zülfikaroğlu

*Amasya University, Faculty of Arts and Sciences, Department of Chemistry, Amasya, Turkey.

Corresponding author e-mail: nasuhi55@hotmail.com

Abstract

4-Nitrophthalodinitrile is a good starting material for the synthesis of mono substituted phthalonitriles, because the nitro group can be replaced by various nucleophiles. Mono substituted phthalonitriles generally used for preparing symmetrically and unsymmetrically peripherally substituted phthalocyanine complexes and subphthalocyanines.
In this study, 4-nitrophthalonitrile was synthesized and the molecular structure investigated with computational quantum chemical methods. The molecular geometry parameters, vibrational frequencies, ^{1}H-NMR and ^{13}C-NMR chemical shifts were examined using Density Functional Theory (DFT/B3LYP) method with 6-311G(d,p) basis set. The theoretical analyses were realized by using the Gaussian 09 software and GaussView 5.0 molecular visualization programme.

Keywords: Phthalonitrile, IR and NMR spectroscopy, DFT

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➢ **POSTER PRESENTATION**

Spectroscopic and DFT Computational Studies of on 4,5-dichloro-3,6-dihydroxyphthalonitrile

Nesuhi Akdemir*, Ayşin Zülfikaroğlu

Amasya University, Faculty of Arts and Sciences, Department of Chemistry, Amasya, Turkey.

Corresponding author e-mail: nasuhi55@hotmail.com

Abstract

Phthalonitriles are a class of chemical compounds, which show thermal and oxidative stability. Phthalonitriles are commonly used for aerospace, marine, and electronic packaging applications. Phthalonitriles are the main starting material for phthalocyanines, which are important components for dyes, pigments, gas sensors, optical limiters and liquid crystals, and which are also used in medicine, as singlet oxygen photosensitisers for photodynamic therapy (PDT). Some phthalocyanines have been used by the petroleum industry as catalysts for the oxidation of sulfur compounds in the gasoline fraction. Applications as photoconductors in the xerographic double layers of laser printers and copy machines, and as active materials in writable disks, are also known.

In this study, we have reported structural properties of the 4,5-dichloro-3,6-dihydroxyphthalonitrile compound using spectral techniques such as FT-IR, ^{1}H-NMR, ^{13}C-NMR and quantum chemical computational methods. All the theoretical calculations have realized through Density Functional Theory (DFT/B3LYP) method with 6-311G(d,p) basis set using Gaussian 09 software and GaussView 5.0 molecular visualization program. The experimental results have compared with the theoretical vibrational frequencies and chemical shift values.

Keywords: Phthalonitrile Derivatives, IR and NMR spectroscopy, DFT calculations

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➢ **POSTER PRESENTATION**

Yeni Tek Dağılımlı Heterojen Paladyum Nanoparçacıkların Hidrojenasyonda Katalitik Etkinliği

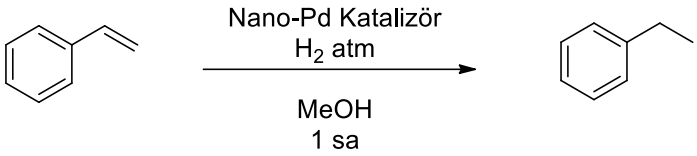
Fatma Diler[1*], Betul Sen[2], Hayriye Genç[1], Buse Demirkan[2], Mustafa Zengin[1], Fatih Sen[2]

[1] Sakarya Üniversitesi, Fen Edebiyat Fakültesi, Kimya Bölümü, Sakarya, Türkiye
[2]Dumlupınar Üniversitesi, Fen Edebiyat Fakültesi, Biyokimya Bölümü, Türkiye

Sorumlu yazar e-mail: fatma.diler1@ogr.sakarya.edu.tr

Özet

Yeni tek dağılımlı heterojen paladyum nanoparçacıkları yeni ultrasonik indirgeme metodu ile sentezlenmiş olup, sentezlenen nanoparçacıklar X-ışını kırınım, X-ışını fotoelektron spektroskopisi, Raman spektroskopisi, Geçirmeli elektron mikroskobu vb gibi tekniklerle karakterize edilmiştir. Hazırlanan nanoboyutlu taneciklerin tek dağılımlı olduğu ve parçacık boyutları dağılımı belirlendikten sonra uygun çalışma koşulları belirlenip çeşitli alken molekülleri üzerindeki hidrojenasyonu incelenmiştir (Şekil 1). Bunun için çeşitli çözücü ortamları ve katalizör miktarı değişimleri yapılmıştır. Katalizörün geri dönüşümü santrifüj ile sağlanarak tekrar kullanılabilirliği uygun görülen reaksiyon koşullarında test edilmiştir.



Şekil1: Genel hidrojenasyon yöntemi reaksiyon özeti

Sonuç olarak bu yeni katalizörün alkenhidrojenasyonu için deneyleri yapılarak oldukça yüksek verim elde edilmiştir. Katalizörün tekrar kullanım deneyleri ile etkinliğinin yüksekliği kanıtlanmıştır.

Anahtar Kelimeler: Paladyum, nanokatalizör, hidrojenasyon.

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➢ **POSTER PRESENTATION**

Encapsulation of *Laurus nobilis L.* Essential Oil in Electrospun Zein Nanofibers

Gülden Gökşen*, H.İbrahim Ekiz

Mersin University, Faculty of Engineering, Food Engineering Department, Mersin, Turkey

Corresponding author e-mail: gulgok33@gmail.com

Abstract

In recent years, the nanofibers have been manufactured by electrospinning technique. It is relatively inexpensive and more suitable for encapsulation of bioactive compounds due to very large surface area to volume ratio and more resistant to environmental factors (temperature, relative humidity etc.). The functional nanofibers including bioactive compounds such as essential oils possess antioxidant and antimicrobial activity can be effectively used for food industry especially active food packaging. Essential oils are volatile, insoluble in water and naturally occurring antimicrobial substances from plants.
Laurus nobilis is an evergreen shrub or tree native of the southern Mediterranean region and its dried leaves and *Laurus nobilis* essential oil (LEO) are used in the food industry as a spicy for flavoring and natural food preservative. The aim of this study is encapsulation of LEO coated with zein nanofibers by electrospinning process and determination of optimizing solution and electrospinning parameters to manufacture homogenious and fine nanofibers. The optimized solution concentrations of zein (25% w/v) and LEO in ethanol/acetic acid (7:3) for electrospinning were determined and were measured electrical conductivity and viscosity. The characterization properties of the resulting functional LEO electrospun were examined by a field emission-scanning electron microscope (SEM), Fourier transform infrared spectroscopy (FTIR) and differential scanning calorimetry (DSC). SEM pictures from control (0% LEO), 5% LEO and 10% LEO samples were also obtained to confirm the success of LEO encapsulation into the 25% zein electrospun that the uniform fibers with smooth and beadless surface. Nanofibers sizes ranged from 84.30 nm to 358.70 nm. The results show that LEO loaded zein electrospun has high potential as an antimicrobial food packaging and a bioactive delivery applications.

Keywords: Essential Oil, Encapsulation, Electrospinning, Nanofibers, Food Applications

Acknowledgments
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➢ **POSTER PRESENTATION**

Antibacterial Action of Conjugated Linolenic Acid (CLNA) Extracted from Pomegranate Seeds

Elif Ayse Erdogan[1*], Gulden Goksen[2], Deniz Ayas[3]

[1]Mersin University, Vocational School of Technical Sciences, Food Technology Department, Mersin, Turkey
[2]Mersin University, Faculty of Engineering, Food Engineering Department, Mersin, Turkey
[3]Mersin University, Faculty of Fisheries, Seafood Processing Technology Department, Mersin, Turkey

Corresponding author e-mail: eliferdogan81@gmail.com

Abstract

By their functional properties, fatty acids with high industrial importance such as conjugated linolenic acid (CLNA), conjugated linoleic acid (CLA), oleic acid, linoleic acid, linolenic acid, stearidonic acid are used. CLNA is a fatty acid group of positional and geometric isomers of octadecatrienoic acids that contain three double bonds in conjugation. CLNA commonly exists in seed oils of some plants. In our study, antibacterial action of CLNA extracted from cold-pressed pomegranate seeds oil were investigated. The composition of oil profile were analysed by gas chromatography-mass spectrometry (GC-MS) and (GC) comparing the Nist and Willey libraries. Then, we determined antibacterial activity of CLNA from pomegranate seeds against to *Escherichia coli* (ATCC 25293), *Salmonella thyphimurium*, *Bacillus subtilis* (ATCC 6633), *Staphylococcus aureus* (ATCC 25925), *Enterococcus feacalis* (ATCC 29212) by using disc diffusion method. As a result, we showed that CLNA has similar activity on all bacteria species.

Keywords: Antibacterial activity, Conjugated linlenic acid, pomegranate seeds
Acknowledgments: This study was supported by Mersin University Scientific Research Projects Unit. [Project no: 2016-2-AP1-1918]

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➢ **POSTER PRESENTATION**

Perlit Destekli Paladyum Katalizörünün Hazırlanışı ve Kenetlenme Reaksiyonlarında Kullanımı

Ahsen Bolat[1], Hayriye Genç[1], Fatma Diler[1], Mustafa Arslan[1], Nil Toplan[2], Mustafa Zengin[1]

[1]Sakarya Üniversitesi Fen Edebiyat Fakültesi Kimya Bölümü, Serdivan, Sakarya, Türkiye

[2]Sakarya Üniversitesi Mühendislik Fakültesi Metalurji Ve Malzeme Mühendisliği Bölümü, Serdivan, Sakarya, Türkiye

Sorumlu yazar e-mail: fatma.diler1@ogr.sakarya.edu.tr

Özet

Paladyum grubu metallerinin özellikle kenetlenme reaksiyonlarında katalizör olarak kullanımı kimya alanında yeni bir devri başlatmış, karbon-karbon bağ oluşumuna izin veren bu yöntemler sayesinde birçok değerli kimyasal pratik metotlarla üretilmeye başlanmıştır. Bu tür reaksiyonların en büyük dezavantajı ise pahalı geçiş metali katalizörlerinin kullanımıdır. Bu nedenle birçok koşulda hassas Paladyum grubu metallerinin katı bir destek maddesi ile heterojen katalizörlere dönüştürülüp kararlı ve tekrar kullanılabilir hale getirilmesi üzerine oldukça fazla çalışma yapılan bir konudur.

Perlit, yaklaşık %70-75 SiO_2 ve %12-18 Al_2O_3 içeren, ucuz bir mineral karma oksit karışımıdır. Yapılan bu çalışmada, perlitin paladyum için kararlılık sağlayan bir destek katısı oluşturduğu ve perlit destekli paladyum katalizörün kenetlenme reaksiyonlarında kullanılabilirliği araştırılmıştır. Literatürde daha çok homojen Paladyum katalizörleri ile yapılan ve Suzuki ve Heck reaksiyonları olarak bilinen kenetlenme reaksiyonları hazırlanan perlit destekli paladyum katalizörü ile denenmiştir. Sonuç olarak yüksek verim sağlayan, etkili, kullanımı kolay, düşük fiyatlı, tekrar kullanılabilir ve güvenilir bir katalitik yöntem geliştirilmiştir.

Anahtar Kelimeler: heterojen katalizör, paladyum, kenetlenme reaksiyonları

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➢ **POSTER PRESENTATION**

A Fungal Isolate for Bioethanol Production from Lignocellulosic Biomass

Medine Güllüce[1], Selin Doğan[2], Mine İsaoğlu[2], Mehmet Karadayı[1*], Ekrem Güllüce[2], Taha Yasin Koç[2]

[*1]Atatürk University, Faculty of Science, Department of Biology, Erzurum, Turkey.
[2]Atatürk University, Institute of Natural and Applied Sciences, Erzurum, Turkey.

Corresponding author e-mail: mkaradayi@atauni.edu.tr

Abstract

Bioethanol production is one of the most promising energy technologies for the future. On the other hand, the use of food-based raw materials in the fermentation stages of conventional production methods causes concerns. Lignocellulose is the most common type of raw material for removing these concerns. In this regard, the aim of the present study was determined as isolation of fungal strains with lignocellulosic activity and determination of their ethanol production capabilities. For this aim, decaying woody materials were collected from Erzurum and near locations and aseptically transferred to the laboratory. Purification of isolates was done according to general procedures. After lignocellulolytic activity determination tests, the ethanol production determination for each active isolate was done by cultivation in modified BMC media and ethanol levels were determined by gas chromatography method. Molecular identification of the isolates was done by using PCR with universal ITS primers, sequencing of amplicons and the BLAST analysis of NCBI database. According to the lignocellulolytic activity results, an active strain (MG55) was determined. It also produced bioethanol at 30.66 g/L a concentration in modified BMC media for 5 days of the fermentation process. Finally, the MG55 isolate was identified as *Mucor* sp. Consequently, the experimental data of the present study offers that *Mucor* sp. MG55 strain shows valuable properties for the development of new technologies in the bioethanol production from lignocellulosic biomass. The amount of ethanol production can be increased by optimization studies in the future.

Keywords: Bioethanol, Biomass, Lignocellulose, *Mucor*, Renewable Energy.

*This study was supported by Republic of Turkey – Ministry of Food, Agriculture and Livestock: TAGEM-13/ARGE/17.

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➢ **POSTER PRESENTATION**

The Effect of Karayemis Extracts on Carbonic Anhydrase Enzyme

Adem Ergün[1*], Nahit Gençer[2], Zuhal Güneş[3], Fatih Sönmez[3], Taki Demir[4], Oktay Arslan[2]

[1]Balikesir University, Science and Technology Application and Research Center, Balikesir, Turkey
[2] Balikesir University, Faculty of Art and Science, Department of Chemistry, Balikesir, Turkey
[3] Sakarya University, Faculty of Art and Science, Department of Chemistry, Sakarya, Turkey
[4] Sakarya University, Faculty of Engineering, Department of Food Engineering, Sakarya, Turkey

Corresponding author e-mail: ademergun@balikesir.edu.tr

Abstract

The metalloenzyme carbonic anhydrase (CA) catalyzes a very simple but critically important physiological reaction: The involvement of the CA enzyme family, which catalyzes the physiological hydration of CO_2 to yield bicarbonate and a proton, in many physiological/pathological processes open up widespread opportunities for the development of diverse, specific inhibitors for clinical applications.
Karayemis or Taflan (local names of *Prunus laurocerasus* L.) is a member of Rosaceae family and grown in eastern Black Sea, Marmara and Aegean regions in Turkey. Karayemis (Cherry laurel) has been used as traditional medicine for many years. Karayemis's juice, obtained from fresh leaves, has the effect of relieving abdominal pain, cough, and nausea. Karayemis is also used as drug material in pharmacology. Antioxidants in Karayemis effective against cancers, Alzheimer's disease, diabetes, tissue and skin diseases and cell renewal in the body. The antioxidant obtained from Karayemis protects the body against harmful free radicals. With its antioxidant properties, Karayemis delays aging by reducing the oxidative damage that occurs in the body as it grows older.
In this study, we determined the in vitro effects of four different Karayemis extracts on purified hCA1 and hCA2 activities. All of the extracts inhibited the enzymes. IC_{50} values of the extracts were found with range 2-5 mg/mL.

Keywords: Carbonic Anhydrase, Purification, Inhibition, Extraction, *Prunus laurocerasus*.

Acknowledgment: This study was supported by Balıkesir University Scientific Research Projects Unit 2017/166.

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➢ **POSTER PRESENTATION**

Hastanemizde İzole Edilen Yara Enfeksiyon Etkenleri ve Antibiyotik Duyarlılıkları

Nergis Aşgın[1*], Elçin Kal Çakmaklıoğulları[1*]

[*1]Karabuk University, Faculty of Medicine, Medical Microbiology Department, Karabuk, Turkey

Sorumlu yazar e-mail: drnasgin@gmail.com

Özet

Bu çalışmada Ocak-Aralık 2016 tarihleri arasında hastanemiz yoğun bakım ve servislerinde yatan hastaların yara kültürlerinden izole edilen mikroorganizmaların dağılımı ve antibiyotik direnç durumunun belirlenmesi amaçlanmıştır.

Yara kültürleri kanlı agar , çikolata agar ve EMB agara ekilerek etüvde 24-48 saat inkübe edilmiştir. Bakterilerin identifikasyonu ve antibiyotik duyarlılığı BD-Phoenix 100(USA) tam otomatize sistem kullanılarak tespit edilmiştir. Antibiyogram sonuçları EUCAST standartlarına göre değerlendirilmiştir.

Toplam 161 suşun 70'i kadın 161' i erkek hastalara aittir. Hastaların 20 si yoğun bakım (%12), 141'i (%78) servis hastasıdır. En sık Genel Cerrahi (%34.7), Palyatif bakım(%28.3) ortopedi(%12.7) ve enfeksiyon (%8.5) servislerinden izole edilmiştir. Bakterilerin 50'si(%31) gram pozitif, 111 i(%69) gram negatiftir. Gram negatif bakterilerin 50 si E.coli (%45), 27 sı A. baumanni (%24) , 17 si Pseudomonas spp. (%15), 8 i Klebsiella spp (%7), 5 Enterobacter spp ve 4) diğer türlerdir(%3). Gram pozitif bakterilerin 22 si S. aureus(% 44), 15 'i Corynebacterium spp.(%30), 12'si Enterococcus spp. (%24) ikisi Streptococcus spp (%4) idi. ESBL pozitifliği E.coli, Klebsiella ve Enterobacter spp için sırasıyla %84, %75, %40 tır. Karbapenem direnci A. baumanni de %85, Pseudomonas spp de %6 dır. E.coli, Klebsiella ve Enterobacter türlerinde karbapenem direnci gözlenmemiştir. İki A. baumanni izolatında kolistin direnci saptandı (%8). Stafilokok izolatlarının üç tanesi Metisiline dirençli idi(%14). Enterokok türlerinde Vankomisin direnci saptanmadı. Corynebacterium izolatları, Klindamisine %86 Gentamisine %79, Siprofloksasine %64 dirençli bulundu. Vankomisin ve linezolide direnç gözlenmedi.

Hastanemizde gram negatif bakterilerde antibiyotik direnci oldukça yüksek bulunmuştur. Acinetobacterlerde Kolistin ve Pseudomonaslarda da karbapenem direncinin diğer türler arasında yayılma riski söz konusudur. Bu nedenle mikroorganizmaların antibiyotik direnç profillerinin belirlenmesi ve buna uygun antibiyotik kullanım politikalarının oluşturulması enfeksiyon kontrolü açısından önemlidir. Her hastane kendi direnç profilini tespit etmeli ve ona göre tedavi protokolleri geliştirmelidir.

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➢ **POSTER PRESENTATION**

Investigation of Nonlinear Optical Properties of Donor-Acceptor Type Molecules

Erhan Öztürk[1*], Zeynep Turhan İrak[2], Selçuk Gümüş[3], Ayşegül Gümüş[3]

[1]Igdır University, Research Laboratory Application and Research Center, Igdır, Turkey.
[2] Iğdır University, Engineering Faculty, Environmental Engineering Department, Igdır, Turkey.
[3] Yuzuncu Yil University, Faculty of Science, Department of Chemistry, Van, Turkey.

Corresponding author e-mail: kimyagerhan@hotmail.com

Abstract

In recent years, non-linear optical property (NLO) molecules in the field of communication technology applications and designs, especially in fields such as optical data storage hold an important place. NLO materials with semiconductor-based structures have been obtained from inorganic and organic molecular systems.
The greatest interest has been focused on organic molecules with hyperpolarizability. In this study, different donor-acceptor type molecules containing phenanthroline have been considered for their non-linear optical properties by Density Functional Theory (DFT) using the B3LYP hybrid approach methods. The 6-31+g(d,p basis set was used in the calculations. By making geometry optimizations of the molecules, electronic energies, dipole moments, molecular orbital energy differences (HOMO-LUMO) and static polarizability, anisotropic polarizability and static hyperpolarizability were calculated. Different donor-acceptor type molecules show big changes in NLO properties of molecules. As a result, the data obtained in this study may shed light to the scientists working on the area.

Keywords: NLO, HOMO-LUMO, phenanthroline, donor-acceptor, DFT.

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➢ **POSTER PRESENTATION**

Vapor Phase Polymerization Of Aniline On Gamma Irradiated Woven Fabrics

Uğur Adnan SEVİL

Department of Polymer Engineering, Hitit University, Çorum, Turkey

uguradnansevil@hitit.edu.tr

Abstract

Coating of fabrics by polyaniline (PANI) has been receiving increasing attention due to the possibility of preparing materials with versatile properties for applications such as sensors, corrosion inhibitors, dissipation of static charge, electromagnetic shielding and enhanced conductivity. Conducting polymers can be deposited on fabrics or any other surfaces chemically or electrochemically by solution polymerization of aniline. In this work mobile vapor phase polymerization (MVPP) of aniline was conducted on the surfaces of gamma irradiated fabrics. Irradiation of fabrics by gamma rays in air 10 and 20 kGy doses led to significant increase in the formation of PANI coating on their surfaces. Polymerization of aniline vapors adsorbed on the fabric surfaces was very fast leading to the formation of PANI layer with a conductivity of 1 S/cm. PANI coated fabrics were found to be stable against abrasion. PANI coated fabrics were characterized by ATR-FTIR, Reflection UV-vis spectroscopies, SEM as well as conductivity measurements.

Keywords: Vapor Phase Polymerization, Polyaniline , Gamma Irradiation, Conductıng Polymers

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➢ **POSTER PRESENTATION**

Inhibition of Proliferation and Induction of Apoptosis by *Sideritis perfoliata* in Hela Cervical Cancer Lines

Gizem Bağlama[1], Mustafa Pehlivan[2*], Önder Yumrutaş[3]

[1]Department of Biology, Institute of Science, Gaziantep University, Gaziantep-Turkey
[2]Department of Medical and Aromatic Plants, Nurdağı Vocational School, Gaziantep University, Gaziantep-Turkey
[3]Department of Medical Biology, Faculty of Medicine, University of Adıyaman, Adıyaman-Turkey

Corresponding author e-mail: mpehlivan@gantep.edu.tr

Abstract

In this study, we aimed to determine anticancer and antioxidant activity of methanol extact of *Sideritis perfoliata* (SPM). For this aim, doses in different concentration of SPM were applied to determine the cell viability of HeLa cells by MTT method. After administration of SPM, apoptosis was determined by Annexine V and propodium iodide staining. Cytokines IL6 and IL8 levels were determined in supernatants which taken from wells. Antioxidant activity of SPM was observed with DPPH and DNA nicking test systems. Some of phytochemicals of SPM was determined by LC-MS-MS. SPM inhibited proliferation and induced apoptosis in Hela cells. Although IL6 and 8 levels was increased in doses 25, 50, 100 µg/ml of SPM, they were reduced in dose 200 µg/ml. SPM showed the DPPH scavenging activity in a dose dependent manner. DNA protection activity was observed in all of doses. Quercetine, acetohydroxycinnamic acid, vanillic acid, resvaratrol, caffeic acid, acetohydroxycinnamic acid, alizarin and salicylic acid were determined in SPM. As a result, it can be said that SPM has an anticancer activity on Hela cervical cancer cells through induction of apoptosis and is a source of natural antioxidants.

Keywords: Apoptosis, Cytokine, Antioxidant, Cervical cancer, *Sideritis perfoliata*.

Acknowledgement: This Study is Supported by the Scientific Research and Funds (Bilimsel Araştırma Projeleri Yönetim Birimi, Project Number: NMYO.YLT.17.01) of Gaziantep University

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➢ **POSTER PRESENTATION**

Thermal and of Mechanical Properties of Heat-treated Beech and Oak Wood

Gokce Bürüç, Deniz Aydemir[1,*], Kıvanc Bakır

[1]Forest Industrial Engineering, Faculty of Forestry, Bartin, Turkey.

Corresponding author e-mail: denizaydemir@bartin.edu.tr

Abstract

Wood has been used to many advantages such as their easy processing, strength values, and price in the many sectors. For all that, wood materials have many disadvantages such as high hidrofilic behavior, low thermal stability. The various treatment technics were used to overcome the disadvantages. The heat treatment of wood materials is one of the technics. The aim of this study was to determine the thermal and mechanical properties of heat-treated wood at 180°C and 220°C for 4 h. After heat treatment process; mechanical properties such as flexural MOR and MOE, compression MOR and lap shear strength, thermal properties such as thermal stability with TGA were investigated. According to the results, mechanical properties of heat-treated wood materials decreased, and while temperature in the heat treatment was rising from 180°C to 220°C, the mechanical properties decreased more. Thermal properties increased with heat treatment.

Keywords: Wood, Heat treatment, thermal properties, mechanical properties.

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➢ **POSTER PRESENTATION**

In Vitro Antimicrobial Effect of Tragcanth Gum

Fatma Matpan Bekler[1], Merve Demirtaş[2], Seçil Yalaz[3], Kemal Güven[2]

[1] Dicle University, Science Faculty, Biology Department, 21280 Diyarbakır/Turkey
[2] Dicle University, Science Faculty, Molecular Biology and Genetics Department, 21280 Diyarbakır/Turkey
[3] Dicle University, Science Faculty, Mathematics Department, 21280 Diyarbakır/Turkey

Corresponding author: fmatpan@dicle.edu.tr

Abstract

Tragcanth gum is a type of glue which is found in white or cream-colored plates or strips that leak from the bodies of various species of Astragalus growing in Anatolia. Tragcanth gum was prepared in different solvents (ethanol, methanol, hexane and aqueous). In vitro antibacterial activity was evaluated using the agar disc-diffusion assay against pathogen bacteria (*Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*). Each assay was repeated triplicate. The analysis was carried out using two-way analysis of variance (ANOVA), and all the tests were considered statistically significant. The ethanolic and methanolic extracts of tragcanth gum had an antimicrobial effect against all microorganisms tested whereas the aqueous extract had an antimicrobial effect against *K. pneumoniae*. Also, hexan extract was more effective than other extracts against *K. pneumoniae*. In this study, it was showed that the tragcanth gum had an antimicrobial effect on pathogenic microorganisms.

Keywords: Antimicrobial activity, *Asragalus*, disc diffusion, tragcanth gum

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➢ **POSTER PRESENTATION**

Novel Benzenesulfonamide Derivative Substituted Phthalocyanine: Synthesis, Characterization and Spectroscopic Properties

Gülen Atiye Organ[1], Hakan Şahal[2], Fatih Mutlu[1], Mehmet Pişkin[3]*, Ömer Faruk Öztürk[1], Erdal Canpolat[2]

*[1]Çanakkale Onsekiz Mart University, Department of Chemistry, Çanakkale
[2]Fırat University, Faculty of Education, Department of Science, Elazığ
[3]Çanakkale Onsekiz Mart University, Vocational School of Technical Sciences, Department of Food Technology

Corresponding author e-mail: mehmetpiskin@comu.edu.tr.

Abstract

Sulfonamides have been widely investigated due to their attractive use as drugs in the treatment of diseases, and represent an important class of pharmaceutical compounds with a wide spectrum of biological activities. Metal complexes modify the pharmacology and toxicology of the sulfonamide base ligands. Especially sulfonamide coordination compounds and their derivatives are widely used important medicines like anticancer, antibacterial, antitumor, antihypertensive, anti-inflammatory. Phthalocyanines (Pcs) that are synthetic materials are 18 π-electron aromatic macrocycles comprising four isoindole units linked together through their 1,3-positions by aza bridges. The particular electron delocalization over these macrocycles gives rise to unique physical and chemical properties. Their bright colors, conductivity, and chemical and thermal stability have made them very desirable for many applications. Pcs continually find their usefulness in contemporary and emerging technologies such as catalysis, photodynamic therapy (PDT), nonlinear optics, gas sensors, thermal writing displays, and solar cells. Specificity in the applications of Pcs can be introduced by modification of the Pc ring or by changes in the central metal or axial ligands[1]. The aim of the present study is to produce new synthetic compound combining Pc and benzenesulfonamide derivative containing schiff base. The novel complex's spectroscopic properties were investigated by IR, UV–*vis*, ^{1}H NMR, MALDI-TOF mass spectroscopies and elemental analysis and determined.

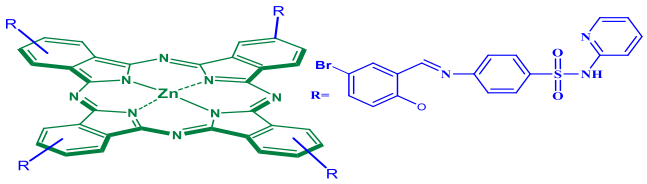

Fig1

Keywords: Phthalocyanine; schiff base, spectroscopic, benzenesulfonamide.

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➢ **POSTER PRESENTATION**

Schiff Base Derivative Bearing Zinc(II) Phthalocyanine: Synthesis, Characterization and Spectroscopic Properties

Fatih Mutlu[1], Gülen Atiye Organ[1], Hakan Şahal[2], Mehmet Pişkin[3]*, Ömer Faruk Öztürk[1], Erdal Canpolat[2]

[*1]Çanakkale Onsekiz Mart University, Department of Chemistry, Çanakkale
[*2]Fırat University, Faculty of Education, Department of Science, Elazığ
[*3]Çanakkale Onsekiz Mart University, Vocational School of Technical Sciences, Department of Food Technology
Corresponding author e-mail: mehmetpiskin@comu.edu.tr

Abstract

Phthalocyanines (Pcs) have received increasing attention for a wide variety of applications due to their unique physical, chemical, biological and spectral properties. [1]. Metallo phthalocyanines (MPcs) are organometallic macrocycles that typically comprise the usually planar organic ligand and a metal ion or metalloid within the central cavity of the ring. MPcs have attracted considerable attention in solar cells, photodynamic therapy, gas sensors, as liquid crystal, and electrochromic displays because of their remarkable optical, and electrical properties, the conjugated system, as well as chemical and thermal stability [2]. Particularly, the optical, electrochemical and spectroscopic properties of phthalocyanines can be significantly altered by incorporating substituents at the non- peripheral positions. They are also the presence of a highly conjugated 18 π-electron system, intense absorption in the red/near-IR (Q band) region, capability to exhibit changeable conductivity and photocatalytic effects. [2] The aim of the present research is to synthesize highly soluble and capable of long wavelength absorption maximum new peripherally tetra-the substituted zinc(II) Pc complex and characterized by various spectroscopic techniques in this study.

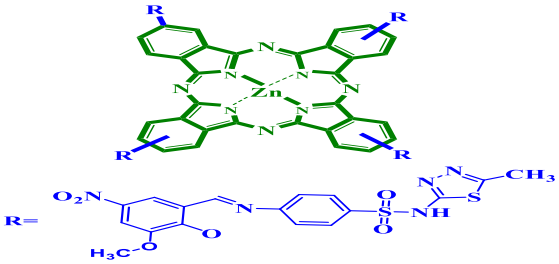

Fig1.

Keywords: Zinc(II); phthalocyanine; spectroscopic; PDT.

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➢ **POSTER PRESENTATION**

Synthesis and Characterization of New Fluorescein Derivatives

Şerife Saçmacı[1*], Esra Özyol[2], Mustafa Saçmacı[2]

[1*]Erciyes University, Faculty of Science, Department of Chemistry, 38030, Kayseri, Turkey
[2]Bozok University, Faculty of Arts and Sciences, Department of Chemistry, 66200, Yozgat, Turkey

Corresponding author: sacmaci@erciyes.edu.tr

Abstract

Fluorescein is a dark orange/red color synthetic organic molecule (Fig. 1) and generally utilized as a fluorescent tracer in microscopy, in a type of dye laser as gain medium, and in forensics and serology to detect latent blood stains [1]. Fluorescein was also utilized for developing fluorescence-polarization assay, derivatizing fluorescent reagent for aliphatic amines and food samples, and determining the hydrolytic properties of fluorescein esters, artificial photosynthesis and solar energy conversion, measurement of mammalian phosphoinositide-specific phospholipase C. activity, proteolytic activities, and the conjugate addition of amino acid side chains [1-2].

In this study, we have synthesized/characterized of new fluorescein derivatives using spectroscopic methods (IR, NMR) and elemental analysis. Such compounds can serve to demonstrate the potential of the fluorescein moiety as biological activity.

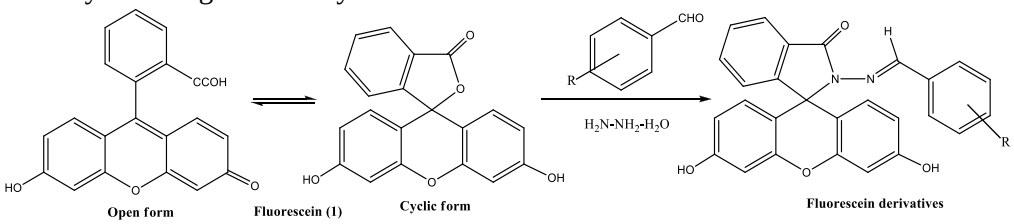

Fig. 1. Structures of fluorescein derivatives

Keywords: Fluorescein, Spirolactam moiety, IR, NMR

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➢ **POSTER PRESENTATION**

Migrenli Hastalarda Serum Nitrik Oksit Düzeylerinin Tayini

Hikmet Saçmacı[1], Şerife Saçmacı[2,*], Recep Saraymen[3], Meral Mirza[4]

[1]Bozok Üniversitesi Tıp Fakültesi Nöroloji Anabilim Dalı, 66200, Yozgat
[2]Erciyes Üniversitesi Fen Fakültesi Fakültesi Kimya Anabilim Dalı, 38030, Kayseri
[3]Erciyes Üniversitesi Tıp Fakültesi Biyokimya Anabilim Dalı, 38030, Kayseri
[4]Erciyes Üniversitesi Tıp Fakültesi Biyokimya Anabilim Dalı, 38030, Kayseri

Corresponding author: sacmaci@erciyes.edu.tr, hsacmaci@hotmail.com

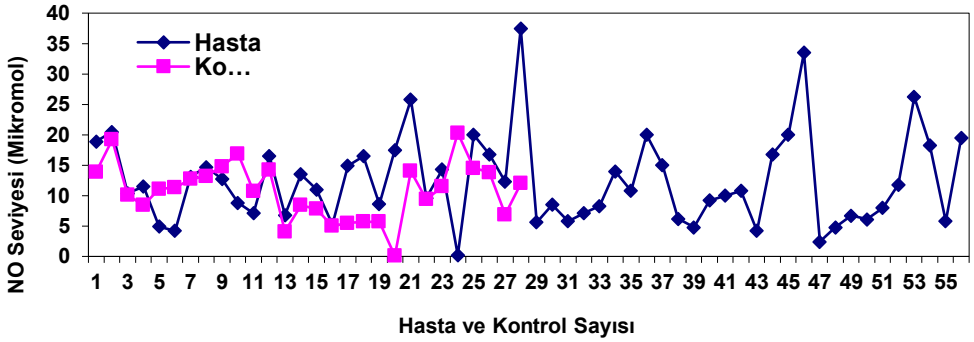
Özet

Migren atağı, beyin sapından parasempatik aktivasyonla nitrik oksit (NO) ve diğer kimyasal ajanlar salgılanmasından sonra vazodialatasyon nedeniyle olur. NO; hiperaljezi, kronik ağrı, inflamasyon ve santral sensitizasyondan sorumludur ve migren hastalarında akut atak ağrısına neden olur. Bu çalışmada nörojenik inflamasyon, oksidatif stresin migren patogenezindeki rolü araştırılmış ve bulguların literatüre katkısı tartışılmıştır. Çalışma 51 hasta ve 27 sağlıklı kontrol grubu ile yapılmıştır.

Numune Toplanması: Baş ağrısı olmayan ataklar arası dönemde 12 saat açlığı takiben alınan kan örneklerinden 5 dk. 3000 devirde santrifüj edilerek serum kısmı NO için ayırt edildi ve -20 ve -80 derecede 3 ay muhafaza edildi. NO için ölçüm ise griess yöntemi ile yapılmış olup çalışma tamamlanmıştır.

Çalışmamızda hasta ve kontrol grubu arasında NO değerleri açısından anlamlı fark bulunmamıştır (p = 0,958). Bunun nedeni ise NO'nun baş ağrısı olmayan dönemde değerlendirilmesi olabilir.

Tablo 1: Hasta ve kontrol grubunda NO değerleri



NO'nun atak anında yükselmesine rağmen ataklar arasında normal kalması olabilir. **N**itratın kanda yükselmesi serbest O_2 radikallerinin artışına neden olur. NO'nun en önemli yıkım ürünü peroksinitrit olup, peroksinitrit agresif ve potent hücresel oksidasyon yapar. Migren hastalarında NO artışı oksidatif strese neden olur ve peroksinitrit endotel hücrelerinin görevlerini etkiler ve migrende endotel disfonksiyonundan sorumludur.

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➢ **POSTER PRESENTATION**

Biosynthesis of plant extract directed Cu Nanoparticles (Cu NPs)

Sibel Özsoy*, Şerife Saçmacı

Erciyes University, Faculty of Science, Department of Chemistry, 38030, Kayseri, Turkey

e-mail: sibelozsoy06@gmail.com

Abstract

Nanoparticle research has witnessed tremendous growth due to the unusual chemical and physical properties which have been demonstrated to be an intermediate state of matter [1-2]. The catalytic activity of the particles generally depends on their size, shape, and stabilizing agents, which are controlled by the preparation conditions [3]. There are diverse approaches to the preparation of the nanoscale materials that have been reported in the literature [4]. Some of these methods include controlled chemical reduction, electrochemical reduction, and metal vaporization. Plant extracts contain sources of antimicrobial and antioxidant compounds that have been used as a reducing and stabilizing agents for biosynthesis of nanoparticles (NPs) [4].
In this study, we report preparation of various plant extract with copper NPs (Cu NPs). Some plant were purchased from organic market and copped to fine pieces approximately (1–2 cm). Weighted to 100 g copped plant in 100 mL alcohol was extracted using microwave oven (900 w power of microwave) for 120 s. Alcohol extract were filtered by vacuum filter and stored at 20° C for further analysis and experiments. Nanoscale particles of metallic copper have been prepared the reduction of copper(II) sulfate in an alcohol medium. The FT-IR, and UV-visible studies support the reduction products of Cu(II) ions as metallic copper nanocrystallites.

Keywords: Nanoparticle; CuNPs; Plant Extract

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➢ **POSTER PRESENTATION**

Corrosion Inhibition Effect of Self-Assembled Monolayer of 4-(((1E,2E)-3-fenilallilliden) amino)-tiyoksidihidrotiyofen-3(2H) Schiff Base on Copper in NaCl Solution

Derya Özdemir[2] Abdullah Salcı[2], Ramazan Solmaz[1]

[1]Bingöl University, Faculty of Health Sciences, Occupational Health and Safety Department, 12000, Bingöl, Turkey
[2]Bingöl University, Science and Letters Faculty, Chemistry Department, Bingöl, 12000, Turkey

rsolmaz@bingol.edu.tr, rsolmaz01@gmail.com

Abstract

Self-assembly monolayers (SAMs) films provide stable and dense structures on metalic substrates. Due to their unique properties, SAM films have suitable applications in corrosion prevention of metals especially copper. In the present study, 4-(((1E,2E)-3-fenilallilliden) amino)-tiyoksidihidrotiyofen-3(2H) Schiff base was synthesized and its SAMs were prepared on copper in chloroform solvent. The surface films were characterized using scanning electron microscope, energy dispersive X-ray spectroscopy, atomic force microscopy techniques. The inhibition effect of the films against copper corrosion was tested in 3.5%NaCl solution using many electrochemical techniques such as electrochemical impedance spectroscopy, potantodynamic polarization and linear polarization resistance techniques. It was found that the SAMs films reduce efficiently the corrosion rate of copper in 3.5% NaCl solution. The high protection ability of the films were assigned to formation of a dense and protective surface film formation.

Keywords: Shiff base, self-assembled monolayer films, copper, corrosion

Acknowledgements: This study was financially supported by The Scientific and Technical Research Council of Turkey (TUBITAK) (Project Number: 115M613). The authors are greatly thankful to TUBİTAK. The authors also would like to thank to Bingöl University Central Laboratory for characterization measurements.

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➢ **POSTER PRESENTATION**

Karadeniz Bölgesinden Toplanan Padina Pavonica Alg'nin Fiziksel-Kimyasal Özellikleri, Fenolik Bileşenleri, Antioksidan Aktivitesi ve Bazı Enzim İnhibisyonu

Çiğdem Dokuzparmak[1*], Ümit Dokuzparmak[2], Yakup Şirin[1], Emre Dokuzparmak[3], Sevgi Kolaylı[1]

[1]Karadeniz Teknik Üniversitesi, Fen Fakültesi, Kimya Bölümü, Trabzon, Türkiye
[2] Karadeniz Teknik Üniversitesi, Sürmene Deniz Bilimleri Fakültesi, Balıkçılık Teknoloji Mühendisliği, Trabzon, Türkiye
[3]University of Strathclyde, Pure and Applied Chemistry, Technology and Innovation Centre, Glasgow, United Kingdom

cayna@ktu.edu.tr

Özet

Makroalgler deniz ortamında, intertidal zondaki temel biyokütleyi oluşturan fotosentetik çok hücreli organizmalardır. Dünya üzerinde yaklaşık 6000 kadar makroalg türü tanımlanmış ve bu türler üç farklı sınıflara ayrılmıştır: yeşil (Klorofil), kahverengi (Pheophytes) ve kırmızı (Rhodophytes) algler.
Deniz makro alglerinden izole edilen bioaktif bileşikler bu güne kadar yapılan çalışmalarda, antibakteriyel aktivite, antioksidan potansiyeli, anti-inflamantör özellikler, antikoagülan aktivitesi, antiviral aktivite ve apoptotik aktivite gibi çeşitli biyolojik aktiviteleri göstermiştir. Şimdiye kadar 7000'den fazla deniz doğal ürünü izole edilmiştir. Bunların %25'i deniz makroalglerinden elde edilmiştir. Dolayısıyla bu veriler, makro yosunlardan gelen farmakolojik olarak aktif metabolitlerin keşfinin doğal tıbbi ürünlerde çok önemli bir yer tuttuğunu ortaya koymaktadır.
Yapılan çalışmada Nisan, 2017'de Trabzon'un sahilinden toplanan *Padina Pavonica* alg'in fiziksel (Lipid=21%, Katı içeriği=14,14%, pH=9,45, Protein=57%) , kimyasal özellikleri ve metanolik ekstraktlarının antioksidan aktiviteleri ile fenolik profili tayin edildi. Antioksidan parametreler olarak toplam fenolik madde miktarı, 2,2-difenil-1-pikrilhidrazil (DPPH) radikalinin temizlenmesi (SC_{50}=4,85 mg/mL) ve demir (III) indirgeme/antioksidan kapasite FRAP (440,87 Troloks® µmol/L eşdeğeri/mL numune) testleri yapıldı. Bazı enzim inhibisyon çalışmaları yapıldı (Üreaz IC_{50} = 5,68 mg/mL, Amilaz IC_{50} = tespit edilmedi, Asetilkolin Estereaz IC_{50} = tespit edilmedi).
Toplam polifenol madde miktarı *Padina Pavonica* 45 mg GAE/100g kuru madde olarak belirlendi. Ters faz–yüksek performanslı sıvı kromatografisi (RP-HPLC-UV) ile 14 adet fenolik bileşen sıvı-sıvı ekstraksiyon metodu kullanılarak analiz edildi. *Padina Pavonica* alg'in, Protokatekuik asit, vanilik asit, epikateşin, p-kumarik asit, rutin, daidzein ve t-sinamik asit tespit edildi. Gallik asit, p-OH benzoik asit, kateşin, ferulik asit, kafeik asit, şiringik asit ve luteolin tespit edilemedi. Sonuç olarak *Padina Pavonica* metanolik ekstraktının değişik düzeylerde antioksidan aktivitenin varlığı tespit edildi.

Anahtar kelimeler: Alg, *Padina Pavonica*, Antioksidan, Fenolik, İnhibisyon

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➢ **POSTER PRESENTATION**

Zinc contents of corn and soils collected from Gaziantep and Ergene Basin

Halim AVCI [A,*], Eylem KINA [B], Muhittin DOĞAN [B], Meryem KUZUCU [C], Cemile ÖZCAN [D] , Metin AÇIKYILDIZ [A], Mehmet YAMAN [E], Bülent ŞENGÖRÜR [F]

[A] Kilis 7 Aralık University, Science and Art Faculty, Chemistry Department, Kilis, Turkey
[B] Gaziantep University, Science and Art Faculty, Department of Biology, Gaziantep, Turkey
[C]Kilis 7 Aralık University, Technical Sciences MYO, Kilis, Turkey
[D]Kirklareli University, Science and Art Faculty, Chemistry Department, Kirklareli, Turkey
[E] Firat University, Science Faculty, Chemistry Department, Elazig, Turkey
[F] Kirklareli University, Kirklareli, Turkey

*E-mail: halimavci77@gmail.com

Abstract

Soil samples collected from corn grown agricultural lands of Ergene Basin and Gaziantep, more Zn contents were determined in polluted areas. However, all findings are at acceptable levels according to soil pollution regulations. Corn samples collected from polluted areas in Gaziantep were found to contain Zn at higher concentrations than unpolluted areas. In addition, values above WHO and Indian standards were obtained in corn collected from polluted areas. On the other hand, it was determined that maize grown in unpolluted areas contained more Zn in samples collected from Ergene Basin. In conclusion, our results revealed that the average Zn concentrations in both corn and soil samples are below the reference values. It is known that Zn deficiency is the most widespread micronutrient deficiency in soils and plants in Turkey. The data obtained this study also supports this situation.

Keywords: Zinc level, soil, corn, pollution.

Acknowledgement: This work was supported by TUBİTAK (Project Number: 215O538).

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➢ **POSTER PRESENTATION**

Spontan Abortus/Ölü Doğum Yapmış Olan Kadınlarda *Brucella* Antikorlarının Araştırılması

Kevser Dokumacı, Yasemin Zer*

Gaziantep Üniversitesi Tıp Fakültesi Tıbbi Mikrobiyoloji Anabilim Dalı

*Sorumlu yazar e-mail: yaseminzer@hotmail.com

Özet

Brucella cinsi bakterilerin neden olduğu bruselloz dünya genelinde en yaygın görülen zoonotik hastalıktır. Bruselloz Türkiye dahil bir çok ülkede endemiktir ve buralarda önemli bir halk sağlığı sorunu oluşturmaktadır. Hayvanlarda yavru atımı (abort) ve infertilite nedeniyle önemli ekonomik kayıplara neden olmaktadır. Neden olan bakterinin fizyolojik özellikleri göz önüne alınarak etkenin insanlarda enfekte ettiği dokuların farklı olduğu saptanmıştır. Hayvanlarda özellikle salgı bezleri ve salgısal fonksiyonları olan hücrelerde replike olan bakteri, insanda genellikle RES hücrelerinde replike olmaktadır. Bu fark nedeniyle de insanda abort, infertilite, asemptomatik taşıyıcılık gibi hayvanlarda gözlenen klinik seyir görülmemektedir. Bu çalışma, spontan abortus veya ölü doğum yapan hastalarda brusellozisin etyolojik nedenlerden biri olup olmayacağının sorgulanması amacıyla yapılması planlanmıştır.

Gereç-yöntem: Ağustos-Aralık 2017 tarihleri arasında Gaziantep Üniversitesi Tıp Fakültesi Kadın Hastalıkları ve Doğum kliniği ve Özel Yaşam Hastanesi Kadın Hastalıkları ve Doğum kliniğine başvuran, düşük yapan veya ölü bebek doğuran hastalardan 8-10 mL kan örneği alınarak serumları -20 °C'de muhafaza edildi. Kan alınan hastalar klinik ve demografik (ateş, sistemik bulgular, önceki düşük-ölü bebek sayısı, vb.) özellikler açısından sorgulandı. Hasta örneği alınan kliniklerden, normal gebelik seyrinde olan kadınlardan da kontrol grubu olarak kan alındı. Tüm serum örneklerinde brusella antikorları Brucellacapt (Vircell, Spain) testi kullanılarak araştırıldı.

Bulgular: Çalışma süresinde 120 hasta, 28 kontrol grubundan bulunan gebeden alınan kan örneği çalışıldı. Hasta ve kontrol grubunun demografik özellikleri Tablo1'de gösterilmiştir.

Tablo 1. Hasta ve kontrol grubunun demografik özellikleri

Özellik	Hasta (n: 120)	Kontrol (n: 28)
Yaş	19-43 (ortalama 32.85)	20-40 (ortalama 29.07)
Düşük sayısı	0-12 (ortalama 1.29)	1-2 (ortalama 0.33)
Doğum sayısı	0-11 (ortalama 2.35)	1-3 (ortalama 0.82)
Canlı doğum sayısı	0-5 (ortalama 1.54)	1-3 (ortalama 0.82)
Ölü doğum sayısı	0-6 (ortalama 0.81)	Yok

Hastaların brusella antikor testi sonucu Tablo 2'de gösterilmiştir.

Tablo 2. Brusella blokan antikor testi sonuçları

Brucella antikor titresi	Hasta (n: 120)	Kontrol (n: 28)
1/80	1	0
1/160	6	0
1/320	1	0
1/640	3	0
TOPLAM	11 (%9.16)	0

Hasta grubunda 11 (%9.16) hastada, brusellaya karşı antikor saptanırken kontrol grubunda hiçbir gebede saptanmamıştır.

Sonuç: Spontan abortus yapan gebe grubunda brusella antikorlarının daha yüksek bulunmuş olmasından dolayı, özellikle endemik bölgelerde tekrarlayan düşüklerde brusellozisin araştırılmasının faydalı olacağı düşünülmektedir.

Anahtar kelimeler: Bruselloz, düşük, blokan antikor

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➢ **POSTER PRESENTATION**

Effect of Decreased P Application Under the Humic Acid Treatment on the Growth and Nutrition of Corn Genotypes (*Zea mays* L.)

Mehmet Rüştü Karaman[1], Metin Turan[2], Aydın Adiloğlu[3] Ayhan Horuz[4], Esra Kutlu[5]

[1]Ankara University Region of Technopolis, Dışkapı, Ankara, Turkey
[2]Yeditepe University Faculty of Engineering Genetics and Bioengineering Dept. İstanbul, Turkey
[3]Namık Kemal Univ., Faculty of Agriculture, Depart. of Soil Sci. and Plant Nutrition, Tekirdağ, Turkey
[4]Ondokuzmayıs Univ., Faculty of Agriculture, Dept. of Soil Sci. and Plant Nutrition, Samsun, Turkey
[5]Ordu University, Faculty of Agriculture, Department of Soil Sci. and Plant Nutrition, Ordu, Turkey

e-mail: rkaraman2000@hotmail.com

Abstract

This research was performed under the greenhouse conditions according to trial design of completely randomized design with three replications. In the research, ten different corn genotypes (*Zea mays* L.) obtained from Central Anatolia region. In the experiment, Leonardite based Base Actosol^{R} (12 % humic acid) product in doses of 0, 60, 120 mg humic acid/kg is used as humic material source that developed based on biotechnology by Turkey Coal Corporations Foundation. Although phosphorous fertilizer is used in doses of 0, 100 mg P kg^{-1} and applied in the H_3PO_4 form. Additionally, for normal plant growing in dose of 100 mg N kg^{-1} ammonium nitrate and according to need the other plant nutrient elements are applied in equal amounts for each planter as nitrous fertilizer, irrigation and other controls are made routinely. After approximately eight weeks developing period, the plants are harvested from the soil surface and the dry weights of plant is identified until to come in the proven weight at 68 ^{o}C. According to result of research; the humic acid applications have positive side affected on dry matter amount and nutrient mechanism of corn genotypes and depend on the corn genotypes, humic acid x phosphorus dose interactions were showed differences.

Key words: Corn genotypes, humic acid, bacterial fertilizer, phosphorus

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➢ **POSTER PRESENTATION**

Protective Role of Chard Against Valproic Acid Induced Brain Injury in Rats

Esra Sule ÇIMEN, Sevim TUNALI, Refiye YANARDAG

Istanbul University, Faculty of Engineering, Department of Chemistry, 34320 Avcilar, Istanbul, Turkey

e-mail: esrasule@gmail.com

Abstract

Valproic acid (VPA; 2-propyl-pentanoic acid) a branched short chain fatty acid, is widely used antiepileptic drug all round the world. This drug is used for the treatment of certain types of seizures, migraine and other disorders as mania in bipolar patients. The adverse drug reactions associated with the VPA usage include drowsiness, dizziness, headache, diarrhea, weight changes, liver toxicity memory loss and hair loss. Chard (*Beta vulgaris* L. var. *cicla*) (Chenopodiacea) is a herbaceous biennal leaf vegetable cultivated in many parts of the world for its year round availability. The leaves can be used in salads or cooked like spinach. This plant has antioxidant, antidiabetic and anticholinesterase activities. The aim of this study is to investigate the effects of chard against valproic acid-induced brain injury in rats. Sprague Dawley 5-6 months female rats were used. The rats were divided into four groups. Control group; chard given control group (100 mg/kg/ day, by gavage), VPA (0.5 g/kg/day, i.p.) given group and VPA + chard (in same dose and time) given group. The aqueous extracts of chard were given 1 h prior to administration of VPA for 7 days. On the 8 th day of experiment, all of the animals were fasted overnight and sacrificed, then brain tissues were taken. Glutathione peroxidase (GPx), glutathione reductase (GR) and superoxide dismutase (SOD) activities were determined in brain homogenates. In VPA group, brain GPx, GR and SOD activities were increased compared to control group. Administration of chard extract decrease these values in VPA + chard group. The present study demonstrates that chard might prevent VPA induced oxidative stress in brain.

Keywords: Valproic acid, brain, chard, antioxidant enzymes.

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➢ **POSTER PRESENTATION**

Hegzadesil-3,5-di-tert-bütil-4-hidroksibenzoat Bileşiğinin Sentezi, Karakterizasyonu ve Poliolefinlerdeki UV-Stabilizatör Etkisinin Araştırılması

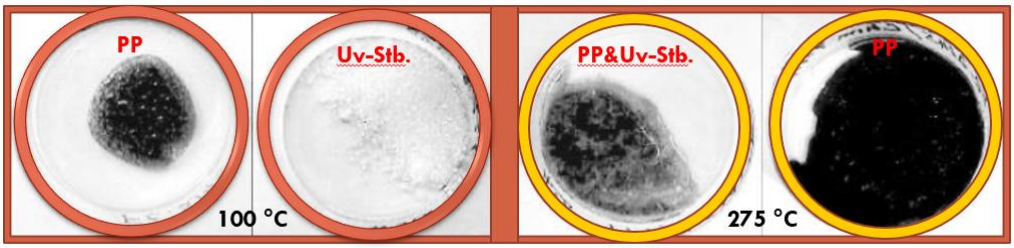
Gözde Özlem KINOĞLU[1*], Vakkas KORKMAZ[2], Harun BODUR[1], Gökhan CEYHAN[1,2,3]

[*1]Department of Materials Science and Engineering, Kahramanmaras¸ Sütçü İmam University, 46100, Kahramanmaraş¸ Turkey
[2]Department of Bioengineering and Science, Kahramanmaras¸ Sütçü İmam University, 46100, Kahramanmaraş¸ Turkey
[3]Research and Development Centre for University-Industry-Public Relations, K.S.Ü., 46100, Kahramanmaras¸ Turkey

gozdekinoglu@gmail.com

Özet

Polimerin foto oksidasyonu, ışık ve oksijenin birlikteliğinin etkisinin sonucudur. Havada oksijeninin varlığında güneş ışığının etkisi, en önemli nedendir. Foto oksidasyona termal oksitlenme eklenir. Bu olayların en gözle görülür sonucu, malzemelerin görünüşünün bozulmasıdır. Bununla birlikte, aynı zamanda, mekanik ve fiziko-kimyasal özellikler de değişir. Birçok sentetik reçinenin foto-oksidasyona maruz kalması nedeniyle, bu tür bozulmaları engelleme veya en azından geciktirme yollarının araştırılması endüstrinin büyük bir çabası olmuştur [1]. En önemli UV stabilizatör sınıfları 2-hidroksibenzofenonlar, 2 hidroksifenilbenzotriazoller, organik nikel bileşikleri ve sterik olarak engellenmiş aminlerdir (HALS). PP'de, izole edilmiş hidroperoksit grupları ve hidroperoksit gruplarının sekansları, moleküller arası oksidasyon aşamalarında oluşturulmaktadır. Bu nedenle, başlangıçta mevcut olan kromoforların fotokimyasal olarak aktif hale geldiği kısa bir maruz kalma süresinden sonra, kayda değer miktarlarda hidroperoksitler oluşturulabilir. Sonraki bozunma, bu hidroperoksitlerin ayrışma reaksiyonları ile belirlenir. PE, foto oksidasyona PP'den daha az duyarlıdır. Bununla birlikte, UV ışığı ve hava ile bozulmasını indükler. Bununla birlikte, PE foto-oksidasyonu daha karmaşık gözükmektedir, çünkü bu poliolefin, çeşitli şekillerde gelir. HDPE, Phillips veya Ziegler tipi katalizörleri içeren iki ana prosesle üretilebilir. Yeni teknolojiler daha da fazla çeşitlilik getirir. Yüksek basınç, düşük yoğunluklu PE (LDPE), metal katalizörleri içermez, ya boru biçimindeki reaktörlerde sürekli bir işlemde ya da otoklavlarda bir toplu işlemde üretilir.



Bu çalışmada Hegzadesil-3,5-di-tert-bütil-4-hidroksibenzoat bileşiği sentezlenerek analitiksel ve spektroskopik yöntemlerle karakterize edilmiştir. Daha sonra PE ve PP film uygulamalarında üç farklı konsantrasyonda (100, 250 ve 500 ppm) masterbatchleri hazırlanarak Uv yaşlandırma testleri yapılarak incelenmiştir.

Anahtar Kelimeler: Uv-Stabilizatörler, PE, PP

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➢ **POSTER PRESENTATION**

2,6-di-tert-bütil-fenol Bileşiğinin Sentezi ve Termoplastiklerdeki Antioksidan Özelliklerinin Araştırılması

Gözde Özlem KINOĞLU[1*], Vakkas KORKMAZ[2], Harun BODUR[1], Gökhan CEYHAN[1,2,3]

[*1]Department of Materials Science and Engineering, Kahramanmaras¸ Sütçü İmam University, 46100, Kahramanmaraş¸ Turkey
[2]Department of Bioengineering and Science, Kahramanmaras¸ Sütçü İmam University, 46100, Kahramanmaraş¸ Turkey
[3]Research and Development Centre for University-Industry-Public Relations, K.S.Ü., 46100, Kahramanmaras¸ Turkey

gozdekinoglu@gmail.com

Özet

Hem sentetik hem de doğal kaynaklı organik materyaller, oksijenle reaksiyona girer [1]. Bu tür oksidasyon reaksiyonları, organik materyal bir polimer olduğunda hayati öneme sahiptir, çünkü önemli özellikler genellikle çok düşük dönüşüm oranında değişmektedir. Örneğin, oksidasyon reaksiyonu, 10000 monomer birimleri ile lineer bir polimerin zincir skalasına yol açarsa, polimerin molekül ağırlığını yarıya indirmek için 100 ppm'lik bir dönüşüm oranı yeterlidir. Polimerler oksitlendiğinde, mekanik özelliklerini kaybederler, örneğin, gerilme mukavemeti ve daha pürüzlü yüzey görünümü ve plastik ürünün renginin bozulmasıyla sonuçlanabilir. Bir polimerin yaşam döngüsünün her aşamasında oksidasyon meydana gelebilir. Polimer reçinenin üretimi ve depolanması sırasında ve ayrıca üretilen plastik ürünün işlenmesi ve son kullanımında. Plastik malzemeler, oksidasyona olan doğal duyarlılıkları bakımından birbirinden çok farklıdır. Polipropilenin oksidatif duyarlılığı oda sıcaklığında görülürken, polistiren ve poli (metil metakrilat) işlem sıcaklıklarında bile oldukça stabildir. Butadien veya izopren'den türetilen kauçuklar veya kopolimerler gibi oldukça doymamış polimerler oksidasyona aşırı derecede duyarlıdır. Polimerlerin, peroksitler, alkoller, ketonlar, aldehitler, asitler, fenoller ve p-laktonlar gibi parçalanmasının bir sonucu olarak çok sayıda oksidasyon ürünü oluşur. Yüksek sıcaklıklar, ışınlama ve metaller ve metal iyonları gibi katalizörler oksidasyon oranlarını arttırır. Polimerlerin çoğu, oksidatif bozunma reaksiyonlarına özellikle eğilimli olan yapısal elemanlara sahiptir. Spektroskopik incelemeler, bozunma ürünlerinin, düşük moleküler ağırlıklı hidrokarbonların oksidasyonu ile oluşturulanlarla aynı fonksiyonel grupları içerdiğini göstermektedir. H-donör olarak etki eden fenolik antioksidanlar, polimerler için en yaygın kullanılan stabilizörlerdir. Doğal olarak oluşan α-δ tokoferoller (Vitamin E) gibi fenollerin in vivo olarak antioksidanlar oldukları bilinmektedir [2]. Fenoksil radikalinin stabilitesi, 2,6-konumunda sübstitüentlerin sterik engellenmesi ile yönetilir. Ortam sıcaklıklarında, fenoksil radikalleri polimer omurgasından gelen hidrojeni soyutlamamaktadır. Polimerlerin > 120-150 °C sıcaklıklarda uzun süre sıcaklığa maruz kalması için kullanılan sterik olarak engellenmiş fenolik antioksidanların etkinliği, sırasıyla 2,6 di-tert-butil> 2-tert-bütil-6-metil> 2,6-dimetil gruplarıdır [3].

Bu çalışmada 2,6-di-tert-bütil-fenol bileşiği sentezlenerek analitiksel ve spektroskopik yöntemlerle karakterize ediliştir. Özellikle şişirme film uygulamalarında kullanılan LLDPE reçine içerisine katılarak bir mastebatch hazırlanmak suretiyle antioksidan özellikleri incelenmiştir.

Anahtar Kelimeler: Fenolik Antioksidan, Termoplastik

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➢ **POSTER PRESENTATION**

Doğal Tetraploid *Trifolium pratense* L.' nin Antioksidan Aktivitesi

Havva Atar[1*], Hatice Çölgeçen[1], Tayfun Aktaş[1]

[*1]Bülent Ecevit Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Zonguldak, Türkiye

havva01030@hotmail.com

Özet

Bülent Ecevit Üniversitesi Biyoloji Bölümüne ait deneme bahçesinde yetiştirilen *Trifolium pratense* L.' nin 18 farklı bireyinden herba örnekleri alınmıştır. Bitkiler liyofilizatör ile kurutulduktan sonra 1 g olarak tartılmış ve % 99 MeOH ile ektraksiyonu yapılmıştır. Hazırlanan metanolik ekstraktlar arasında DPPH radikali ile antioksidan aktivitesi açısından bir fark olup olmadığı karşılaştırılmıştır. En yüksek DPPH süpürücü radikal aktivite % 97, en düşük DPPH süpürücü radikal aktivite % 34 olarak bulunmuştur.

Anahtar Kelimeler: Antioksidan aktivite, doğal tetraploid *Trifolium pratense* L., DPPH.

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➢ **POSTER PRESENTATION**

Rotala rotundifolia (Buch-Ham. ex Roxb)'nın *In vitro* Köklendirilmesi Üzerine Bazı Oksin Hormonlarının Etkileri

Muhammet Dogan

[1] Karamanoglu Mehmetbey Üniversitesi, Kamil Özdağ Fen Fakültesi, Biyoloji Bölümü, Merkez, Karaman, Türkiye

mtdogan1@gmail.com

Özet

Bu çalışmada, oksin gurubundan Indol Bütirik Asit (IBA) ve Naftalin Asetik Asit (NAA)'in *Rotala rotundifolia* (Buch-Ham. ex Roxb)'nın *in vitro* köklendirilmesi üzerine etkileri araştırılmıştır. Doku kültürü teknikleri ile üretilen *R. rotundifolia*'nın sürgünleri 2,0 cm uzunluğunda kesilmiş ve 0,25-1,00 mg/L IBA ve NAA içeren Murashige ve Skoog (MS) temel besin ortamına aktarılmıştır. Kültür ortamlarında ilk kök oluşumları 11. günde 0,25 mg/L IBA eklenmiş MS besin ortamında, ardından 12. günde 0,50 mg/L NAA içeren MS ortamında tespit edilmiştir. Bitkilerin MS ortamı dışında kalan gövde kısımlarından da köklerin çıktığı gözlenmiştir. *R. rotundifoli*'nın sürgünlerinden çıkan kök sayısı IBA içeren MS ortamında 8,88-15,00 adet arasında değişirken, NAA içeren MS ortamında ise 9,16-13,61 adet arasında değişmiştir. Tüm köklendirme ortamlarında en fazla sayıda kök oluşumu (15,00 adet) 0,25 mg/L IBA içeren MS ortamında elde edilirken, en az sayıda (8,88 adet) kök oluşumu ise 1,00 mg/L IBA içeren MS ortamında elde edilmiştir. Bitkilerden çıkan en uzun 1,68 cm ile 0,50 mg/L NAA içeren MS ortamında tespit edilmiştir. IBA içeren MS ortamında ise 1,42 cm ile 0,50 mg/L IBA içeren MS ortamında arasında belirlenmiştir. Sürgünlerden en kısa kökler ise 0,95 cm ile 1,00 mg/l IBA içeren MS ortamında ve 1,03 cm ile 1,00 mg/l NAA içeren MS ortamında kaydedilmiştir. Genel olarak NAA içeren ortamdaki kök uzunlukları IBA içeren MS ortamdan daha uzun olduğu görülmüştür.

Anahtar Kelimeler: *In vitro* köklendirme, Doku kültürü, MS besin ortamı, Oksin

Teşekkür: Bu çalışma, Türkiye Bilimsel ve Teknolojik Araştırma Kurumu (TÜBİTAK) tarafından 2130190 numaralı proje ile desteklenmiştir. Desteklerinden dolayı TÜBİTAK'a teşekkür ederim.

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➢ **POSTER PRESENTATION**

In Vitro Koşullarda Çoğaltılan *Lysimachia nummularia* L.'nın *Ex-Vitro* Koşullara Alıştırılması Üzerine Farklı pH'ların Etkileri

Muhammet Dogan, Kübra uğur*, Merve Şifa Hane Köse

[1] Karamanoglu Mehmetbey Üniversitesi, Kamil Özdağ Fen Fakültesi, Biyoloji Bölümü, Merkez, Karaman, Türkiye

mtdogan1@gmail.com

Özet

Doku kültürü teknikleri ile üretilen bitkilerin dış koşullara alıştırılması oldukça önemli ve zor bir aşamadır. Alıştırma için sıcaklık, ışık ve nem gibi birçok değişkene dikkat edilerek denemeler kurulmakta ve bitkinin dış koşullara alıştırılması sağlanmaktadır. Bu çalışmada, *in vitro* koşullarda üretilen *Lysimachia nummularia* L.'nın *ex vitro* koşullara alıştırılmas için optimum pH seviyesinin belirlenmesi amaçlanmıştır. pH çalışmasında kullanılan rejenere bitkiler 0,10 mg/L Benzil Amino Pürin içeren sıvı Murashige ve Skoog (MS) besin ortamından alınmıştır. *L. nummularia* sürgünlerinden yaklaşık 5 cm uzunluklarında 5'er bitki pH'ı 4, 5, 6, 7, 8, 9 ve 10 olan distile suda cam beherler içerisine alınarak, dört hafta süreyle 16 saat aydınlık ortamda (beyaz LED ışık, 1500 lüks) bekletilmiştir. En iyi gelişim gösteren bitkiler pH'ın 8 olduğu su ortamında elde edilirken, ardından ise sırayla en iyi gelişim gösteren bitkiler pH 7>9>6>10>5>4 ortamında elde edilmiştir. Su ortamındaki asidik ve bazikliğin derecesi arttıkça bitki gelişiminin yavaşladığı belirlenmiştir. Genel olarak bitkiler bazik ortamda daha iyi gelişim gösterirken, asidik ortamda gelişimleri biraz yavaşlamıştır. pH 4'te su ortamında bitkilerin yapraklarında sararmalar ve sürgünlerin uçlarında ölmeler gözlenmiştir. pH 10'da ise bitkiler diğer bazik ortamlara göre bodur kalmıştır.

Anahtar Kelimeler: Alıştırma, Doku kültürü, *in vitro*, *L. nummularia*, *ex vitro*

Teşekkür: Bu çalışma, Türkiye Bilimsel ve Teknolojik Araştırma Kurumu (TÜBİTAK) tarafından 2130190 numaralı proje ile desteklenmiştir. Desteklerinden dolayı TÜBİTAK'a teşekkür ederim.

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➢ **POSTER PRESENTATION**

Tiyoasetamid İndüklü Karaciğer Hasarında Silimarinin Karaciğer ve Periferik Kandaki Koruyucu Rolü

Özgün Teksoy[1], Adnan Ayhancı[1*], Mustafa Cengiz[2], Burak Birlik[1], Döndü Tuğçe Tanrıverdi[1]

[1] Eskişehir Osmangazi Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü, Eskişehir, Türkiye
[2] Siirt Üniversitesi, Eğitim Fakültesi, Fen Bilgisi Öğretmenliği, Siirt, Türkiye

Sorumlu yazar e-mail: aayhanci@ogu.edu.tr

Özet

Hepatik ensefalopati (HE), karaciğer hasarında gelişen hiperamonyemi sonucu amonyağın kan beyin bariyerini geçmesiyle oluşan bir hastalıktır. HE tedavisinde en büyük sorun minor nörolojik değişikliklerden derin komaya kadar uzanan klinik çeşitliliğin fazla olmasıdır. HE tedavisinde amaç karaciğer fonksiyon bozukluğunu ve onun sekellerini kontrol etmektir. Günümüzde karaciğer transplantasyonu dışında karaciğer fonksiyonlarını yerine koyacak bir tedavi yöntemi olmadığından ve HE'li hastalarda çoğunlukla araya giren presipitan faktörler bulunduğundan tedavi hastayı iyileştirme için en uygun şartları sağlamaya yönelik olmaktadır. Bu çalışmada tiyoasetamid (TAA) indüklü karaciğer hasarı nedeniyle gelişen HE hastalığında güçlü antioksidan ve doku yenileyici özelliklerinin yanında kemokoruyucu özelliği bilinen ve 2000 yıldır karaciğer hastalıklarının tedavisinde kullanılan bitkisel bir ilaç olan silimarin (SM)'nin muhtemel hepatoprotektif etkileri araştırılmıştır. Bu amaçla erkek Wistar Albino sıçanlar (n=7) dört gruba (Grup I-kontrol; Grup II-50mg/kg TAA; Grup III-50mg/kg SM+50mg/kg TAA; Grup IV-100mg/kg SM+50mg/kg TAA) ayrılmıştır. TAA'lı gruplarda TAA uygulamasından iki hafta önce gavaj yoluyla SM uygulanmaya başlanmış sonraki iki hafta TAA i.p olarak verilmiştir. Deney sonunda ketamin/ksilazin ile anestezi edilen sıçanlardan alınan kan örneklerinin bir kısmından elde edilen serumdan ALT, AST, ALP, LDH ölçümleri diğer kısımdan eritrosit (RBC), lökosit (WBC) ve trombosit (PLT) ölçümleri yapılmıştır. Sadece TAA verilen grupta serum ALT, AST, ALP, LDH ile RBC, WBC ve PLT değerlerinin önemli oranda arttığı saptanmıştır. SM'nin her iki dozu da hem periferik kan değerlerini hem de serum biyokimya değerlerini kontrole yaklaştırmıştır. Deney sonuçlarımız SM'nin HE hastalığında hücre koruyucu bir rol oynayabileceğini göstermektedir.

Anahtar Kelimeler: Hepatik Ensefalopati, Tiyoasetamid, Silimarin, Hepatoproktivite, Hematoprotektivite

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➢ **POSTER PRESENTATION**

Performance and Final Sludge Quality Investigation of Separate and Mixed Sewage Sludge Fractions at Upper Mesophilic Range

Gool Mohammed Ebrahimi, Mohammed Nazir Malekzade, Dilek Erdirençelebi*

Selçuk University, Engineering Faculty, Environmental Engineering Department, Konya, TR.

*dbaktil@hotmail.com

Abstract

Lab-scale study on anaerobic digestion performance and stabilized sludge quality regarding volatile solid (VS) and dewaterability of sewage sludge fractions was conducted at increasing VS loading rate (LR) and upper mesophilic range (38 and 40 ^{o}C). Paralel semi-continuous digesters received primary (PS) and secondary sludge (SS) fractions at VS loading rates of 1.3–1.6 and 0.3–0.5 kg VS/m^3.d, respectively, regulated on the basis of hydraulic retention time (HRT) at 22-25 and 20-22 d, comparable to current mesophilic practice. Increased VS loading promoted toxicity effect of hydrogen sulfide which was eliminated by the addition of Ferric Iron Chloride resulting in improvement in the methane yield, VS degradation and dewaterability. Separate sludge digestion at upper mesophilic range provided a significant potential towards energy yield and promoted destruction at the current practice.

Key Words: Sewage sludges, anaerobic, digestion, upper-mesophilic.

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➢ **POSTER PRESENTATION**

Methyl Red Removal From Aqueous Solutions Using Natural And Biochar Prina: Full Factorial Design Approach

Başak Mesci Oktay[1], Sevda Esma Akkaya[2], Yusuf Tibet[2], Semra Çoruh[2]

[1]Department of Material Science Engineering, Ondokuz Mayıs University, 55200 Samsun, Turkey
[2]Department of Environmental Engineering, Ondokuz Mayıs University, 55200 Samsun,

Corresponding author e-mail: basakm@omu.edu.tr

Abstract

Dyeing wastewater discharged into natural receiving waters may make them unacceptable for public consumption. The aim of the this study is to investigate the adsorption of methyl red dye ion on natural and biochar prina from aqueous solutions using 23 full factorial designs. Factorial design of experiments is employed to study the effect of three factors adsorbent amount (0.03g/30mL and 0.3g/30mL), initial dye concentration (30 and 300mg/L) and adsorbent type (natural and biochar prina) at two levels low and high. The selected experimental factors were determined to influence the adsorption process, but their importance varied according to the following sequence: adsorbent type> methyl red concentration > adsorbent amount. The results showed that adsorbent type is the most significant factor that affects the removal of dye. The principal effect of adsorbent amount did not show a high statistical significance.

Keywords: Adsorption, biochar, dye, full factorial design, prina.

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➢ **POSTER PRESENTATION**

A Novel One-Pot Green Synthesis and Characterization of Substitue Bis-Iminothiazolidinones

Fatma Tulay Tugcu[1*]

[*1]Yildiz Technical University, Faculty of Arts and Sciences, Department of Chemistry, Istanbul,Turkey

Corresponding author e-mail:ftugcu@yildiz.edu.tr

Abstract

In this study, some new substituted bis-iminothiazolidinone derivatives which are considered that may possess biological activity have been obtained via one-pot three-component reactions. The study consists of two steps. In the first step, substituted bis-thioureas **(1a-d)** have prepared by the reaction of aryl isothiocyanates with substituted amines. In the second step which is the main part of the study, cyclocondensation of each of the previously prepared substitued bis-thioureas with chloroacetic acid and substitue thiophene-2-carbaldehydes achieved by the technique of one-pot multicomponent reaction; and new bis-iminothiazolidinone compounds have been obtained. The structures of all these synthesized compounds**,** 3,3'-(1,4-Phenylene)bis[2-(phenylimino)-5-(thiophen-2-ylmethylene)thiazolidin-4-one] **(2a)**, 3,3'-(1,4-Phenylene)bis{5-[(3-methylthiophen-2-yl)methylene]-2-(phenylimino)thiazolidin-4-one} **(2b)**, 3,3'-(1,4-Phenylene)bis[5-(thiophen-2-ylmethylene)-2-(p-tolylimino)thiazolidin-4-one] **(2c)**, 3,3'-(1,4-Phenylene)bis{5-[(3-methylthiophen-2-yl)methylene]-2-(p-tolylimino)thiazolidin-4-one} **(2d)**, 3,3'-[4,4'-Methylenebis(4,1-phenylene)]bis[2-(phenylimino)-5-(thiophen-2-ylmethylene)thiazolidin-4-one] **(2e)**, 3,3'-[4,4'-Methylenebis(4,1-phenylene)]bis{5-[(3-methylthiophen-2-yl)methylene]-2-(phenylimino)thiazolidin-4-one} **(2f)**, 3,3'-[4,4'-Methylenebis(4,1-phenylene)]bis[5-(thiophen-2-ylmethylene)-2-(p-tolylimino)thiazolidin-4-one] **(2g)**, 3,3'-[4,4'-Methylenebis(4,1-phenylene)]bis{5-[(3-methylthiophen-2-yl)methylene]-2-(p-tolylimino) thiazolidin-4-one} **(2h)** have been determined and characterized by infrared, nuclear magnetic resonance, mass spectral data.

Keywords: Bis-iminothiazolidinone, bis-thiourea, one pot reaction.

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➢ **POSTER PRESENTATION**

Poly(Methyl Methacrylate)/Organozeolite Composite Characterization By Inverse Gas Chromatography

Ceyda Bilgiç[1], Bengi Bozkır[2]

[1,2] Eskişehir Osmangazi University, Engineering and Architecture Faculty, Department of Chemical Engineering, , 26480 Eskişehir, Turkey
Corresponding author e-mail: bozkirbengi@gmail.com, ceydabilgic@gmail.com

Abstract

Poly(methyl methacrylate)/Organozeolite composite was prepared using the solution blending method with the application of ultrasound and using chloroform as solvent. Ultrasonic waves were used to enhance the nanoscale dispersion of the zeolite. The Organozeolite is obtained through the purification of Gördes–Manisa (in Western Anatolia of Turkey) zeolite and was organically modified by hexadecyltrimethyl ammonium bromide (HTAB). Polymer nanocomposites of a Poly(methyl methacrylate) (PMMA) matrix containing 5% organozeolite (OZ) by mass was investigated using inverse gas chromatography (IGC). IGC was applied to characterize the surface of PMMA/OZ composite. The dispersive component of the surface energy (γ_S^d), and the acid/base character of composite surface were estimated by using the retention time of different non-polar and polar probes at infinite dilution region. The specific free energy of adsorption (ΔG^{sp}), the specific enthalpy of adsorption (ΔH^{sp}), and the specific entropy of adsorption (ΔS^{sp}) of polar probes on PMMA/OZ were determined. ΔG^{sp} were correlated with the donor and acceptor numbers of the probes to quantify the acidic K_A and the basic K_D parameters of the PMMA/OZ surface. The values obtained for the parameters K_A and K_D indicated a basic character for PMMA/OZ surface. Polymer composite of a PMMA matrix containing 5% Organozeolite (OZ) by mass was investigated using X-ray diffraction (XRD), Scanning electron microscopy (SEM) and transmission electron microscopy (TEM).

Keywords: Poly(methyl methacrylate) (PMMA); organo-zeolite; nanocomposites; inverse gas chromatography, Characterization.

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➢ **POSTER PRESENTATION**

Influence of Metformin on Pancreatic Tissue in Sepsis Model Induced by Lipopolysaccharide in Rats

Ezgi Yaver[1*], İ. Özkan Alataş[1], Varol Şahintürk[2], Semih Öz[3]

[1] Eskişehir Osmangazi University, Faculty of Medicine, Department of Medical Biochemistry, Eskişehir, Turkey
[2]Eskişehir Osmangazi University, Faculty of Medicine, Department of Histology and Embryology, Eskişehir, Turkey
[3]Eskişehir Osmangazi University, Vocational School of Health Services, Eskişehir, Turkey

[*]Corresponding author e-mail: eyaver@ogu.edu.tr

Abstract

In this study, the effects of metformin on pancreatic tissue after lipopolysaccharide (LPS)-induced sepsis were investigated. 30 Sprague Dawley male rats were used in the study. Five groups were formed: control, sepsis, pre-sepsis metformin, sepsis+1 metformin and sepsis+3 metformin as 6 animals in each group. LPS and metformin was prepared at 5 mg/kg and 200 mg/kg volumes, respectively, and injected intraperitoneally to the rats. Blood samples and pancreas tissues were taken from the rats 24 hours after LPS injection. Amylase, glucose and insulin parameters were measured in serum of rats. Malondialdehyde (MDA) and myeloperoxidase (MPO) parameters in pancreas tissues of rats were evaluated. Pancreatic tissues were examined by hematoxylin-eosin (H-E) staining method histopathologically. When the results were evaluated, it was seen that LPS caused sepsis and pancreatic tissue damage in rats. However, it has been determined that metformin significantly alleviates these damages in the treatment groups. In particular, metformin administered prior to sepsis has been shown to have protective effects in the pancreatic tissues of rats.

Keywords: Lipopolysaccharide, Metformin, Pancreas, Rat, Sepsis

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➢ **POSTER PRESENTATION**

Inverse Gas Chromatographic Determination of the Surface Properties of Al-Pillared Montmorillonite/ Polystyrene Composite

Ceyda Bilgiç[1], Özge Kanık[2], Naile Karakehya[3]

[1,2] Eskişehir Osmangazi University, Engineering and Architecture Faculty, Department of Chemical Engineering, , 26480 Eskişehir, Turkey
[3] Eskişehir Osmangazi University, Environmental Control and Protection Programme, Eskişehir Vocational School, 26480 Eskişehir,Turkey

Corresponding author e-mail: ozgedgnknk@gmail.com, ceydabilgic@gmail.com

Abstract

Pillared clays are a new class of materials, in which large surface and pore volumes can be obtained according to the type of pillars. These solids have enormous potential for application in adsorption and catalytic processes. The pillared clay (Al- pillared montmorillonite) of a commercial product was used in this work. Al- pillared montmorillonite/ Polystyrene composites were prepared using the solution blending method with the application of ultrasound and using chloroform as solvent. Ultrasonic waves were used to enhance the nanoscale dispersion of the silicate. Polymer composite of a polystyrene (PS) matrix containing 2% Al- pillared montmorillonite (Al-PILC) by mass was investigated using inverse gas chromatography (IGC). The dispersive component of the surface energy (γ_S^d), and the acid/base character of composite surface were estimated by using the retention time of different non-polar and polar probes at infinite dilution region. The specific free energy of adsorption (ΔG^{sp}), the specific enthalpy of adsorption (ΔH^{sp}), and the specific entropy of adsorption (ΔS^{sp}) of polar probes on Al-PILC/PS were determined. ΔG^{sp} were correlated with the donor and acceptor numbers of the probes to quantify the acidic K_A and the basic K_D parameters of the Al-PILC/PS surface. The values obtained for the parameters K_A and K_D indicated an acidic character for Al-PILC/PS surface. The IGC data showed that the introduction of a very small amount of Al-PILC into the polymer matrix significantly changed the surface characteristics of the final material.

Keywords: Polystyrene (PS); Al-PILC; Surface energy, IGC

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➢ **POSTER PRESENTATION**

HDI Trimer Based Fluorine Containing Low Surface Energy Photocured Coatings

Emrah Çakmakçı[1*]

[*1]Marmara University, Faculty of Arts and Sciences, Department of Chemistry, Istanbul, Turkey

Corresponding author e-mail: emrah.cakmakci@marmara.edu.tr

Abstract

With the emerging technologies, the need for low surface energy, water repellent and hydrophobic coatings is increasing. In this work, fluorine containing two different urethane methacrylate resins were prepared by reacting 2-hydroxyethyl methacrylate (HEMA) and a fluoroalcohol with a hexamethylene diisocyanate (HDI) trimer. The synthesized resins were applied onto glass substrates via spin coating technique and cured under UV radiation. Additionally, these resins were also blended with trimethylolpropane triacrylate (TMPTA) to reduce their viscosity in order to improve the applicability and the film quality. Several properties such as gel-content, pencil hardness, gloss, contact angle, surface energy and thermal decomposition of these cured coatings were determined and compared to the non-fluorine containing resin. The highest water and the hexadecane contact angles reached in this work are 109°±2 and 59°±3, respectively. All coatings exhibited high surface hardness (4H and 5H) and good adhesion. The TMPTA diluted formulations were better in terms of surface wettability than the neat resins. This situation was attributed to the ease of segregation of the fluorous tails due to reduced viscosity.

Keywords: fluorine; HDI; photocuring; hydrophobic; low surface energy

Acknowledgments
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➢ **POSTER PRESENTATION**

Efficient One-pot Synthesis of Phthalazine Derivatives Catalyzed by Triflate

Kadir Turhan*, Zuhal Turgut

Yildiz Technical University, Faculty of Art and Sciences, Department of Chemistry, Istanbul, Turkey

e-mail: kturhan@yildiz.edu.tr

Abstract

An efficient synthesis of 2*H*-indazolo[2,1-*b*]phthalazine-1,6,11(13*H*)-trione derivatives from the three-component condensation reaction of phthalhydrazide, cyclic 1,3-dione, and aromatic aldehydes using $M(OTf)_x$, $[Y(OTf)_3]$ as catalyst has been performed in ethanol. In addition, a series of 1*H*-pyrazolo[1,2-*b*] phthalazine-5,10-diones has been synthesized by one-pot three-component cyclocondensation reaction of phthalhydrazide, malononitrile and aromatic aldehydes catalyzed by $Cu(OTf)_2$ in good to excellent yields and short reaction times.

Keywords: Indazolo[2,1-*b*]phthalazine-trione, Pyrazolo[1,2-*b*]phthalazine-dione, Triflate, 1,3-diketone.

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➢ **POSTER PRESENTATION**

Novel Coordination Compounds Based on 2-Methylimidazole and 2,2′-dimethylglutarate Containing Ligands: Synthesis and Characterization

Pelin Köse Yaman[1*], Hakan Erer[2]

[1]Dokuz Eylül University, Faculty of Sciences, Department of Chemistry, 35390, İzmir, Turkey
[2]Eskişehir Osmangazi University, Faculty of Arts and Sciences, Department of Chemistry, 26480, Eskişehir, Turkey

Corresponding author e-mail: pelin.kose@deu.edu.tr

Abstract

Two novel copper and cadmium complexes with 2-methylimidazole (2-meim) and 2,2′-dimethylglutarate (dmg^{2-}) as ligands, $[Cu_2(\mu\text{-}dmg)_2(2\text{-}meim)_4]\cdot 5H_2O$ **(1)** and $\{[Cd(\mu\text{-}dmg)(2\text{-}meim)_2]\cdot H_2O\}_n$ (**2**), have been systematically synthesized and characterized. The result in organic-inorganic crystalline solid. Their solid-state structures have been solved with elemental analysis, IR spectroscopy, and the single-crystal X-ray diffraction. The Cu(II) ions distorted square planar geometry (CuO_2N_2) while Cd(II) ions showed a distorted octahedral geometry (CdO_4N_2). Complex **1** is dimeric structure, in which Cu(II) ions were bridged by dmg ligand. These dimeric units are extended to the 3D supramolecular structure with hydrogen bonding, C–H···π, C–O···π and π···π interactions. The complex **2** is 1D polymeric structure, where Cd(II) ions are connected by bis(bidentate) dmg ligands to form 1D zig-zag polymeric chains which are further extended in 3D supramolecular structure through hydrogen bonding, C–H···π and C–O···π interactions. The thermal properties of the complexes were investigated.

Keywords:2,2′-Dimethylglutarate complexes; 2,2′-Dimethylglutaric acid; 2-methylimidazole; Coordination polymers, Supramolecular.

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➢ **POSTER PRESENTATION**

Levels of serum cytokines (TNF-α, IL-15 and IL-35) after treatments with conivaptan and mannitol following bilateral common carotid artery occlusion

Betül Can[1], Semih Öz[2], Ahmet Musmul[3], Tuğba Erkmen[4], Ezgi Yaver[1], Meltem Erdaş[1], Özkan Alataş[1]

[1]Eskisehir Osmangazi University, Faculty of Medicine, Department of Medical Biochemistry, Eskisehir, Turkey
[2]Eskisehir Osmangazi University, Vocational School of Health Services, Health Services Department, Eskisehir, Turkey
[3]Eskisehir Osmangazi University, Vocational School of Health Services, Department of Medical Services and Techniques, Eskisehir, Turkey
[4]Dokuz Eylul University, Faculty of Medicine, Department of Biochemistry, Izmir, Turkey

Corresponding author e-mail: betul_cn@yahoo.com

Abstract:

In this study, it was aimed to investigate the post-ischemic effects of treatments with aquaretic conivaptan and diuretic mannitol on serum tumor necrosis factor-α (TNF-α), interleukin-15 (IL-15) and interleukin-35 (IL-35) levels following an experimental cerebral ischemia-reperfusion (I/R) rat model. Healty male Sprague-Dawley rats (n=58) were randomly divided into five groups: Control (Sham-surgery), I/R (I/R+Saline), MAN (I/R+mannitol), CON10 (I/R+conivaptan 10 mg/ml), and CON20 (I/R+conivaptan 20 mg/ml). Cerebral ischemia was conducted using bilateral common carotid artery occlusion technique for 30 minutes. Just after out-clamping, saline, conivaptan and mannitol were administrated intravenously for 30 minutes. The cardiac blood samples were taken at 6th hours of reperfusion. Serum levels of TNF-α, IL-15 and IL-35 were measured by using commercial ELISA Kits. The biochemical and statistical analyses showed that TNF-α levels were decreased in conivaptan treatment groups compared to the I/R group ($p<0.001$). IL-15 levels in the CON10 group was lower than the control, I/R and MAN groups, and in the CON20 group was detected a decrease compared to the I/R and MAN groups ($p<0.001$). IL-35 levels were increased in the I/R and all treatment groups, it was significant only in the CON20 group compared to the control ($p<0.001$). The results of Spearman's correlation analyses showed that serum TNF-α levels were positively correlated with IL-15 levels ($p<0.001$, $r=0.596$) and IL-35 levels ($p<0.05$, $r=0.319$). According to our findings on pro-inflammatory and anti-inflammatory cytokine levels, conivaptan was dose-dependently more effective than mannitol in balancing inflammatory response. This study may provide useful information in the development of treatment strategies for ischemia and inflammation related diseases such as stroke and brain edema.

Keywords: brain edema, conivaptan, interleukin, mannitol, serum cytokines, vasopressin

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➢ **POSTER PRESENTATION**

Thermal Characteristics and Kinetic Parameters Assessment of Chitosan

Sevgi POLAT*, Perviz SAYAN

Marmara University, Faculty of Engineering, Chemical Engineering Department, Istanbul, TURKEY

Corresponding author e-mail:sevgi.polat@marmara.edu.tr

Abstract

In the present study, thermal decomposition kinetics of chitosan was investigated by a thermal analyzer. Firstly, the experiments were performed at three different heating rates from 30 °C to 800°C under inert atmosphere. The results showed that heating rates significantly affected the maximum peak temperatures but it did not affect the conversion. When the heating rates increased, the maximum peak temperatures shifted towards the higher temperature region. In the second part, TG kinetic data was used to calculate the activation energies based on Flynn-Wall-Ozawa (FWO), Kissinger-Akahira-Sunose (KAS), Starink and Tang kinetic models. All models used provided accurate fits of experimental data and yielded acceptable errors. The values of the average activation energy for FWO, KAS, Starink and Tang models were determined to be 148.5, 146.4, 148.3 and 146.7 kJ/mol, respectively.

Keywords: chitosan, kinetic, thermal decomposition, activation energy

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➢ **POSTER PRESENTATION**

Effects of 2100 MHz Radio Frequency and 50 Hz Very Low Frequency Radiation on Oxidative Stress of Brain Tissue and Plasma of Diabetic and Non Diabetic Rats

Dilek Kuzay[1*], Bahriye Sırav Aral[2], Çiğdem Özer[3] , Sinem Oruç[2], Kevser Delen[2]

[1] Ahi Evran University, Medicine Faculty, Physiology Department, Kırşehir,Turkey
[2] Gazi University, Medicine Faculty, Biophysics Department, Ankara, Turkey
[3] Gazi University, Medicine Faculty, Physiology Department, Ankara, Turkey

e-mail:dilekkuzay@gmail.com

Abstract

Exposure to RF and ELF radiation, which takes place in almost every area of our lives, is increasing steadily with the progress of technology and industrialization. There are various studies about the effects of such radiation on the body and our study is important for the application of RF and ELF radiation exposure at the same time and on diabetic rats. Experiment groups were designed as follows; C (control) , S (sham), ELF (ELF magnetic field exposure), RF (RF radiation exposure), ELF+RF (ELF magnetic field and RF radiation exposure), D-C (Diabetic Control), D-S (Diabetic Sham), D-ELF (Diabetic group with ELF magnetic field exposure), D-RF (Diabetic group with RF radiation exposure), D-ELF+RF (Diabetic group with ELF magnetic field and RF radiation exposure). The experimental diabetes model was induced with a single dose of 65mg/kg streptozotocin (STZ). RF radiation groups exposed to 2100 MHz RF and ELF groups exposed to 50 Hz magnetic field 20 minutes/day, 5 days/week for 1 month. Total Nitric Oxide (NOx), Malondialdehyde (MDA) and Glutathione (GSH) levels were measured in brain tissue and plasma. When compared to ELF or RF exposure alone RF + ELF radiation exposure in groups with and without diabetes in brain tissue and plasma resulted in a greater increase in MDA and NOx levels.($p<0,05$). Diabetic groups were more affected than non-diabetics under the RF exposure.

Key Words: Diabetes, Brain, Plasma, Radiofrequency Radiation, Very Low Frequency Radiation, Oxidant Stress

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➢ **POSTER PRESENTATION**

Genişlemiş Spektrumlu Beta Laktamaz Üreten *Escherichia coli ve Klebsiella spp.* Suşlarında Fosfomisin Duyarlılığı

Merih ŞİMŞEK

Afyon Kocatepe Üniversitesi Tıp Fakültesi, Tıbbi Mikrobiyoloji Anabilim Dalı, Afyonkarahisar, Türkiye

Sorumlu yazar e-mail: smerih16@gmail.com

Özet

Toplum kökenli enfeksiyonların başında üriner sistem enfeksiyonları gelmektedir. Bu tip infeksiyonlarda, en sık karşılaşılan etkenler, *Escherichia coli* ve *Klebsiella spp.* türleridir. Bu türlerde görülen Geniş Spektrumlu Beta-laktamaz üretimindeki artışla birlikte tedavi için alternatif antibiyotik arayışı zorunlu hale gelmiştir. Genişlemiş spektrumlu beta-laktamaz (GSBL) üreten suşlar nedeniyle tedavide sorun yaşanmaktadır.Fosfomisin üriner sistem enfeksiyonlarının tedavisinde kullanılabilecek en önemli alternatif ilaçlardan biridir.

Bu çalışmada, hastanemiz çeşitli poliklinik ve kliniklerine başvuran hastaların idrar kültürlerinden izole edilen *Escherichia coli ve Klebsiella spp.* suşlarının genişlemiş spektrumlu beta-laktamaz (GSBL) üretiminin ve fosfomisine direnç oranlarının belirlenmesi amaçlanmıştır.

Bu amaçla çalışmada, idrar kültürlerinden izole edilen *E.coli* ve *Klebsiella spp.için* son üç yıla ait idrar kültür sonuçları retrospektif olarak analiz edilmiştir . *E.coli* türlerinin identifikasyonu için kromojenik agar kullanılırken, *Klebsiella spp.* türlerinin identifikasyonu ve tüm antibiyogram işlemleri için VITEK 2 tam otomatize identifikasyon ve antibiyogram sistemi kullanılmıştır.

Çalışma süresince idrar kültürlerinden 2418 *E. coli* ve 450 *Klebsiella spp.* suşu izole edilmiştir. *E.coli* suşlarının 844 (%34.90)'ünde, *Klebsiella spp.* suşlarının 305 (%67.77)'inde GSBL üretimi saptanmıştır. İzole edilen GSBL (+) *E. coli* suşlarında fosfomisin direnç oranı %1.25 iken, GSBL (-) *E. . coli* suşlarında fosfomisin direnç oranı %0.78 olarak belirlenmiştir. GSBL (+) *K. pneumoniae* suşlarında fosfomisin direnç oranı %20.60 iken, GSBL (-) *K. pneumoniae* suşlarında fosfomisin direnç oranı %14.12 olarak belirlenmiştir. *K. oxytoca* için GSBL(+) olan suşlarda fosfomisin direncine rastlanmazken, GSBL (-) olan 15 suştan beşinde direnç belirlenmiştir.

Sonuç olarak, düşük direnç oranı ve bir çok avantajı da göz önününe alınarak fosfomisinin günümüzde üriner sistem enfeksiyonlarında özellikle *E.coli*'ye karşı ilk basamak ampirik tedavide iyi bir alternatif olabileceğini düşünmekteyiz. Ancak, *Klebsiella spp.* türlerinde nispeten görülen yüksek direnç oranını, üriner sistem enfeksiyonlarında güvenli bir şekilde kullanılan fosfomisinde de direnç problemlerinin başlangıcının bir habercisi olarak kabul etmekteyiz. Bu nedenle, gün geçtikçe daha fazla klinik çalışma yapılarak fosfomisin tedavisinin klinik başarısının invivo ve invitro denemelerle ortaya konması yararlı olacağı sonucuna varılmıştır.

Anahtar Kelimeler: Fosfomisin, Genişlemiş spektrumlu beta laktamaz, *E.coli ve Klebsiella spp.*

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➢ **POSTER PRESENTATION**

Assessments of Immunological Activity of *Achillea millefolium* Methanolic Extract on Albino Male Mice.

Ruqaya M. Al-Ezzy[1], Rafal S. A.al anee[2], Niran A. Ibrahim[3]

College of Biotechnology, Al-Nahrain University[1], Iraq.
College of Pharmacy, Al-Nahrain University, Iraq.
College of education for pure science Ibn Al Haithum, University of Baghdad[3], Iraq

*Corresponding author's E-mail: rafalshakeeb@yahoo.com

Abstract

Achillea millefolium (Asteraceae) is a permanent herb highly recognized in traditional medicine for its anti-oxidant and anti-inflammation properties. However, studies on phytochemical constituents of *A. millefolium* underlying these properties are scarce. The present work focuses on examining the effect of methanol extract of *A. millefolium* L. on total and differential blood cells account on albino male mice. The results showed the methanol extract increase the account of lymphocyte, and monocyte cells, and total account as well as this extract showed highly decrease in the oxidative stress of MTX after the interfere between the extract and MTX due to increase in the leucocyte cells compare with controls. Concluded from these results that methanol extract of *A. millefolium* has ability enhancement in leucocyte cells in the blood and it has detoxification effect of MTX

Keywords: Achillea, lymphocyte, monocyte and MTX.

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➢ **POSTER PRESENTATION**

Beta Glucosidase Recognition By Imprinted Polyacrylamide Hydrogels

Mervecan Sevildik [1*], Ayşe Dinçer [1] , Tülin Aydemir [1]

[*1] Manisa Celal Bayar University, Faculty of Science and Arts, Chemistry Department, Manisa, Türkiye.

e-mail: m-sevildik@hotmail.com

Abstract

In this study, selective adsorption of β-glucosidase using imprinted polyacrylamide hydrogels were prepared. For this purpose imprinted hydrogels were prepared using β-glucosidase as a template molecule, acrylamide (AA) as a monomer, N,N'- methylenebisacrylamide (MBAA) as the covalent crosslinker, ammonium persulphate (APS) and N,N,N',N'-tetramethylethylenediamine (TEMED) as initiators. β-Glucosidase imprinted hydrogel (HydroMIP) were washed with a solution of sodium dodecyl sulfate (SDS) and acetic acid to remove the template molecule. Non-imprinted hydrogel (HydroNIP) was also prepared without using β-glucosidase. The adsorption and recognition performance of this hydroMIPs towards β-glucosidase was discussed through adsorption isotherms, adsorption kinetics, thermodynamic parameters and reusability tests. In batch template rebinding experiments, the MIPs displayed quite high template binding capacity than non-imprinted polymers (NIPs). The theoretical maximum adsorption capacity (Qmax) was determined by the Langmuir model, which turned out to be 7.2 mg/g and 4.6 mg/g for hydroMIP and hydroNIP respectively. Reusability was tested for four consecutive adsorption–desorption cycles, and no significant change in adsorption capacity was recorded. A pseudo-second-order model was suitable to interpret kinetic data.

Keywords: β-Glucosidase, polyacrylamide, hydrogel, molecular imprinting.

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➢ **POSTER PRESENTATION**

Conductivity, Dielectric and Modulus Studies of Methylcellulose-NH_4TF Polymer Electrolyte

M. S. M. Misenan[1*], A. S. A. Khiar[2]

[1,2] Faculty of Science and Technology, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan, Malaysia

Corresponding author: [1] syukrimisenan@gmail.com ; [2]azwanisofia@usim.edu.my

Abstract

Solid biopolymer electrolyte based on methylcellulose (MC) were prepared with different weight percentage of ammonium triflate (NH_4TF) salt via solution casting technique. The film was characterized by impedance spectroscopy to measure its ionic conductivity. Samples with 45% of NH_4TF exhibit the highest conductivity of 1.14×10^{-4} S cm^{-1}at ambient. Dielectric data were analysed using complex permittivity and complex electrical modulus for the sample with highest conductivity. Dielectric data proved that the increase in conductivity is mainly due to the increase in number of charge carriers.

Keyword: Solid biopolymer electrolyte; Methyl Cellulose; salt; conductivity.

Acknowledgements

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➢ **POSTER PRESENTATION**

Distribution of Blood Groups in Different Types of Leukemia Patients in Eskişehir, Turkey

Fatih Kar[1*], Neslihan Andıç[2], Zeynep Küskü Kiraz[1], Ş. Oğuzhan Albayrak[4] , Buket Aydın[4], Ekin Çapar[4], Aybüke Keskin[4], Elif Kivrak[4], T. Harun Özdemir[4], Uğur Şekertekin[4], Damla Tüysüzoğlu[4], Setenay Öner[3], Sema Uslu[1]

[*1]Eskişehir Osmangazi University, Faculty of Medicine, Department of Medical Biochemistry, Eskişehir, Turkey
[2]Eskişehir Osmangazi University, Faculty of Medicine, Department of Hematology, Eskişehir, Turkey
[3]Eskişehir Osmangazi University, Faculty of Medicine, Department of Biostatistics, Eskişehir, Turkey
[4]Eskişehir Osmangazi University, Faculty of Medicine, Eskişehir, Turkey

Corresponding author e-mail: fatihkarahasanoglu_@hotmail.com

Abstract

Biochemical and genetic studies by developing technology since the beginning of the 19th century have clarified the functional classification of human blood group antigens, the structures of A, B, H and Lewis determinants and the enzymes that produce them. Moreover, many studies have investigated whether blood group antigens are associated with disease risk. In this retrospective study, we aimed to determine the blood group distribution of patients who had different leukemia diagnoses. Patients were admitted to the Hematology Clinic of Eskişehir Osmangazi University between the years of 2010-2017. ABO and Rh(D) typing of 1055 patients were noted. There were 362 Acute Myeloid Leukemia (AML), 151 Acute Lymphoblastic Leukemia (ALL), 101 Chronic Lymphocytic Leukemia (CLL), 139 Lymphoid Leukemia) and 147 Chronic Myeloid Leukemia (CML) patients. When we examined the data, we showed the blood group distribution of leukemia patients as percentages A, 0 and B, respectively, but not statistically ($p>0.05$). At the same time, we found that the A Rh(D)+ blood group was more relevant when taken into account in the Rh(D) blood group. In this study, ABO and Rh (D) blood group distribution of different leukemia types (AML, ALL, CLL, CML) was shown for the first time in Eskişehir, Turkey. As a result, we obtained different results from the literature. However, we can't say which blood group is effective in different types of leukemia, so further research is needed.

Keywords: Blood groups, ABO, Rh (D), Leukemia, Eskişehir, Turkey

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➢ **POSTER PRESENTATION**

Synthesis, Characterization of 1,2-Diol Substituted Metallophthalocyanines and Their Application in Enantioselective Catalytic Reactions

Yaşar GÖK*, Halil Zeki GÖK

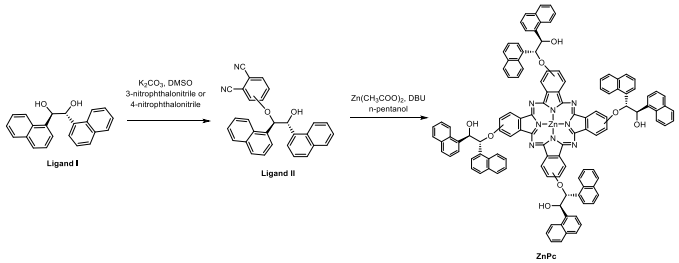
Mehmet Akif Ersoy University, Faculty of Technology, Department of Biomedical Engineering, Bucak/Burdur, Turkey.

yasar_gok@yahoo.com

Abstract

Catalysis of organic reactions is key for an efficient synthesis and, thus, represents one of the most economically important technologies.[1] The growing demand for enantiopure compounds in the life sciences has stimulated an increased interest in asymmetric catalysis.[2] Design and development of new ligands is the most delicate and challenging part of asymmetric catalytic technologies.
Phthalocyanines (pcs) have aroused extensive interest in the past decades since their unique properties led to their use in a wide number of applications in the area of materials science, such as chemical sensors, liquid crystals, catalysis, anisotropic conductors and nonlinear optics.[3] As part of our ongoing interest towards the development of more effective and selective ligands towards asymmetric catalysis, we have synthesized optically pure (1*R*,2*R*)-di(1-napthyl)-1,2-ethanediol and its metallophthalocyanines for enantioselective cayalytic reactios**.**

Keywords: Phthalocyanine, Catalysis, Chiral, Synthesis.



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➢ **POSTER PRESENTATION**

Şarapta Bulunan Zararlı Mayalar ve Laktik Asit Bakterileri

Esma Nur Geçer[1*], R. Ertan Anlı[2]

[*1]Gaziosmanpaşa Üniversitesi, Zile Meslek Yüksekokulu, Gıda İşleme Bölümü, Tokat, Türkiye
[2]Ankara Üniversitesi, Mühendislik Fakültesi, Gıda Mühendisliği Bölümü, Ankara, Türkiye

esma.gecer@gop.edu.tr

Özet

Üzüm şırasının şaraba dönüşümü, farklı mikroorganizmaların varlıkları ile karakterize edilen bir fermantasyon işlemi olarak tanımlanmaktadır. Şarap üretiminde sıklıkla Saccaromyces cerevisie türü maya kullanılıyorsa da, üzümlerin üzerinde doğal olarak farklı maya türleri de bulunmaktadır. Bunlara örnek olarak Brittanomyces, Kloeckera, Schizosaccaromyces ve Zygosaccaromyces cinsleri verilebilir. Üzüm taneleri üzerinde bulunan doğal maya florası şarap fermantasyonlarında önemli role sahiptir ve farklı cins, tür ve hatta suşlar metabolik aktiviteleri aracılığıyla şarabın duyusal kalitesini ve organoleptik özelliklerini etkilemektedirler. Bunun yanında, şarap mayaları şarap hatalarının birçoğundan sorumludurlar. Fermantasyon işlemi, son ürünün özelliklerinin belirlendiği en kritik basamaklardan birisidir ve bu basamakta sıcaklık kontrolü ile beraber maya bileşimi de son derece dikkat gerektiren hususlardan birisidir. Kloeckera ve Candida gibi cinslerin ortamda var olması istenmeyen yan ürünler oluşturarak şarapta istenmeyen tatlara ve fiziksel olaylara sebep olurlar. Şarap üretiminde Saccaromyces cerevisie kullanılmış bile olsa eğer bilinmeyen ya da uygun olmayan bir suş ile çalışılıyor ise şarapta hatalar olabilmektedir. Bunun nedeni, bazı Saccaromyces cinsi mayaların şarap üretiminde kullanılan aynı cins mikroorganizmalara göre daha yüksek asetik asit, asetaldehit ve tiyol grubu bileşenler üretmesidir. Ortamda oksijen bulunması halinde bazı Candida ve Pichia türleri şarap tankının üst kısmında bir film oluştururlar ve eğer bu şekilde kalmalarına izin verilirse, fermantasyon karışımında oksidasyonu ve mikrobiyal saldırıyı engelleyen sülfür bileşiklerini tüketirler. Ortamda bulunan Pichia cinsi mayalar asetik asit, etil asetat ve izoamil asetatı metabolize ederek şarabın pH'ını arttırırlar ve böylelikle başka agresif mikroorganizma türlerinin saldırılarına sebep olmaktadırlar. Laktik asit bakterilerinin malolaktik fermantasyonu sırasında malik asiti laktik asite çevirmek gibi olumlu görevleri vardır. Buna karşın fermantasyon sonunda şarap içerisinde kalmaları, başka bileşikleri metabolize etmelerine, bunun sonucunda da şarap hatalarına neden olur. Malolaktik fermantasyondan geçmeyen şaraplarda da laktik asit bakterileri bulunabilir ve bu durum bulanık ve köpüren bir şarabın oluşmasına neden olur. Laktik asit bakterileri acı tat ve yapışkanlık gibi başka şarap hatalarına da sebep olmaktadırlar.

Anahtar Kelimeler: Şarap Hataları, Zararlı Mayalar, Fermantasyon

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➢ **POSTER PRESENTATION**

Some Hematological Values of *Myotis blythii* (Mammalia: Chiroptera) in Turkey

Hava BAĞATUR ÖZCAN, İrfan ALBAYRAK

University of Kırıkkale, Faculty of Science and Arts, Department of Biology,
71450, Yahşihan, Kırıkkale
Corresponding author e-mail: bagaturr06@hotmail.com

Abstract

This study is based on the determination of blood cell of 10 *Myotis blythii* specimens collected from Kırıkkale and Hatay provinces between July 2012 and December 2013. Animals received blood in the field or in the laboratory were released in the habitats. From arteries in the tail membrane or in the forearm of bats were taken heparinized 5 hematocrit capillary tubes with the aid of special injection needle. Smear preparations were prepared from blood sample. Also values of hemoglobin, hematokrit and total protein amount with erythrocyte and leukocyte counts were determined. $1mm^3$ blood erythrocyte count to *Myotis blythii* is mean 14526666. Leukocyte count is mean 4296. With this study, blood values related with *Myotis blythii* were researched the first time in Turkey.

Keywords: Blood cells, Erythrocyte, Leukocyte, *Myotis blythii*, Turkey

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➢ **POSTER PRESENTATION**

Emilebilir ve Emilemeyen Türdeki Cerrahi İpliklerde Bazı Metal Türlerinin Tayini İçin Yöntem Geliştirilmesi

Meral Elcan[1,2], Hakan Erdoğan[2], Orhan Acar[1*]

[*1]Gazi Üniversitesi, Fen Fakültesi, Kimya Bölümü, Ankara, Türkiye
[2]Türkiye İlaç ve Tıbbi Cihaz Kurumu, Ankara, Türkiye

Sorumlu yazar e-mail: oacar@gazi.edu.tr

Özet

Günümüzde, tıbbi cihaz ürünlerine yönelik analiz parametrelerini öngören standart ve farmakope monografları ürün çeşitliliğindeki artış hızına yetişememekte ve bazı tıbbi cihaz ya da tıbbi cihazların yapıldığı materyallere yönelik deney metotları bu referans kaynaklarda kısıtlı şekilde yer almaktadır. Tıbbi cihaz sınıfındaki ürünlerin yapımında kullanılan malzemelerden biri de polimer malzemelerdir. Bu nedenle özellikle hasta ile doğrudan veya dolaylı etkileşim içerinde bulunan polimerik malzemelerin kimyasal kontrollerinin yapılması önem arz etmektedir. Bu çalışmada tıbbi cihaz sınıfında bulunan ve sıklıkla kullanılan polimer cerrahi ipliklerin içerisindeki bazı metal türlerinin tayinlerine yönelik olarak yöntem geliştirilmesi hedeflenmiştir. Bu amaçla vücut içerisinde emilebilen özellikteki polidioksanon, poliglikolik asit ve emilemeyen özellikteki polipropilen cerrahi ipliklerden salınabilen metal içeriklerine yönelik olarak yöntem geliştirilmesi amaçlanmıştır. Çalışmada polimer endüstrisinde renklendirme, katalizör, stabilizatör olarak kullanılabilen Pb, Zn, Al, Cu, Ni, Cr elementlerinin tayinleri elektrotermal atomik absorpsiyon spektroskopi yöntemi (ETAAS) ile tayin edilmiştir. Yöntemde bu metal türlerinin salınması üzerine sıcaklık, pH, süre gibi parametrelerin etkisi de ayrıca incelenmiştir. Ayrıca cerrahi ipliklerdeki toplam metal içeriklerini belirlemek ama mikrodalga asidik yakma yaklaşımı ile polimer malzeme tamamen çözülerek Pb, Zn, Al, Cu, Ni, Cr tayinleri ETAAS yöntemiyle gerçekleştirilmiştir.

Anahtar Kelimeler: Cerrahi İplik, Polipropilen, Polidioksanon, Poliglikolik asit, ETAAS.

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➢ **POSTER PRESENTATION**

The Relationship between Vapor Pressure and Molecular Descriptors of Pesticides Using Chemometric Methods

Bouakkadia Amel [1,2*], Haddag Hamza [1], Kertiou Noureddine [1], Messadi Djelloul [1]

[1]Environmental and Food Safety Laboratory, Badji Mokhtar University, Faculty of sciences, Department of chemistry, Annaba, Algeria.
[2]Abbas Laghrour University of Khenchela

e- mail: amelbouakkadia@yahoo.fr

Abstract

Physicochemical properties of an organic chemical compound play an important role in determining its distribution and fate in the environment. A quantitative structure- property relationship QSPR models were developed for the prediction of vapor pressure of an heterogeneous set of pesticides. The approaches based on multilinear regression (MLR), partial least squares (PLS), every time associated with genetic algorithm (GA) selection of the most important variables, lead to models of very different qualities. The modeling of vapor pressure by the partial least square method has allowed us to eliminate the autocorrelation descriptors. Comparing the quality of MLR and PLS models for vapor pressure, both MLR and PLS models are both acceptable: quality adjustment, robustness and predictive capacity.

Key words: Vapor pressure, Molecular descriptors, QSPR methods, Pesticides, Multiple linear regression, Partial least square regression.

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➢ **POSTER PRESENTATION**

Genotoxic Risk Assesment of Newly Synthesized Iminothiazolidinones by the Ames *Salmonella* Assay

Fatma Tülay Tuğcu[1], Kadir Turhan[1], Mehmet Karadayı[2*], Medine Güllüce[2]

[1]Yildiz Technical University, Faculty of Science and Art, Department of Chemistry, İstanbul, Turkey
[*2]Atatürk University, Faculty of Science, Department of Biology, Erzurum, Turkey

Corresponding author e-mail: mkaradayi@atauni.edu.tr

Abstract

Synthetic chemicals play a major role to meet growing demands in medicinal and pharmaceutical industries. In this manner, iminothiazolidinones have been one of the important compound groups due to their broad range of biological activities. The count of research studies on iminothiazolidinone derivatives has been growing fast and this situation necessitates conduction of their risk assessment studies before proceeding to study more complex, time-consuming and expensive advance bioactivity assays. In this context, the present study was designated to synthesize new iminothiazolidinone derivatives and make genotoxic risk assessment by using the Ames *Salmonella* assay. In the end of the synthesis step, five new (C1-C5) iminothiazolidinone derivatives were synthesized and characterized. To assess their mutagenic potential, *S. typhimurium* TA1535, TA1537, TA1538, TA98 and TA100 were chosen as the tester strains. According to the genotoxic risk assessment results, the synthesized iminothiazolidinone derivatives did not show any mutagenic effect on the tester strains at any tested concentrations up to 1 mM/plate. The highest revertant colony count was observed as 47.17 ± 1.94 for C4 (0.8 mM/plate – *S. typhimurium* TA1538), insignificant when compared to the control groups. In conclusion, the newly synthesized test compounds of the present study can be considered as genotoxically safe at the tested concentrations up to 1 mM/plate, and the findings reported here are valuable for performing advance bioactivity assays.

Keywords: Genotoxicity, Iminothiazolidinones, The Ames *Salmonella* Assay.

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➢ **POSTER PRESENTATION**

Aromatik Tiyadiazol İçeren Taç Eterlerin Sentezi ve Karakterizasyonu

Baki Çiçek[1], Musa Canbolat[2*]

[1]Balıkesir Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, Balıkesir, Türkiye
[*2]Balıkesir Üniversitesi, Fen Bilimleri Enstitüsü, Kimya Anabilim Dalı, Balıkesir, Türkiye

Sorumlu yazar e-mail: musa_canpolat80@hotmail.com

Özet

Taç eterler 1967 yılında Pedersen tarafından ilk defa sentezlenen makrohalkalı yapılar olup toprak alkali, alkali, geçiş metal katyonlarıyla kararlı yapıda kompleksler oluşturan bileşiklerdir. Metal komplekslerini ev sahibi-konuk (host-guest) kompleks sistemi üzerinden gerçekleştirdiğinden, metal içeren proteinler ve metaloenzim alanlarında kullanım bulmaktadır [1].

Tiyadiazol halkası içeren bileşikler metal bağlama özellikleri sayesinde birçok organik, inorganik kimya alanında, ilaç ve sanayi uygulamalarında uygulama alanı bulmaktadır. İçerdikleri kükürt atomlarının cıva, kadmiyum, demir, bakır, vb. ağır metal katyonlarına olan ilgisi [2,3] ve aynı zamanda bu ilginin yüksek seçicilik özelliği sayesinde kendi aralarındaki bağlama yüzdelerinin farklı olması (seçiciliği) bileşiklerin önemini günden güne sentezlenen her bir türevle birlikte ortaya çıkarmaktadır. Fonksiyonel grupların değişmesi, halka boyutunun değişmesi iskelet yapı aynı olmasına rağmen biyolojik uygulamalarında farklara neden olmaktadır [4].

Bu çalışmada 2-amino-5-merkapto-1,3,4-tiyadiazol ile dietilen glikol diklorür, trietilen glikol diklorür, tetraetilen glikol diklorür bileşikleri sezyum karbonat bazı varlığında asetonitril içerisinde "yüksek seyretme tekniği" (High-Dilution) kullanılarak 88 ^{o}C sıcaklıkta mikrodalga sentez cihazı içerisinde 2-4 saat mualeme edilmiştir. Optimum deney şartları belirlenerek (katalizör cinsi ve miktarı, sıcaklık ve süre) ilgili yöntem elde edilmiştir. Ürünler diklorometandan (3x10 ml) ekstrakte edilmiştir. Kristallendirme ile saflaştırılan ürünler FT-IR, ^{1}H NMR, ^{13}C NMR ve MS teknikleriyle karakterize edilmiştir[**].

Anahtar Kelimeler: 2-amino-5-merkapto-1,3,4-tiyadiazol, Tiyadiazol taç eter, Tiyo-azo taç eter, Mikrodalga sentez

Kaynaklar

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[1]Yildiz Technical University, Faculty of Science and Art, Department of Chemistry, İstanbul, Turkey
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Corresponding author e-mail: mkaradayi@atauni.edu.tr

Abstract

Synthetic chemicals play a major role to meet growing demands in medicinal and pharmaceutical industries. In this manner, iminothiazolidinones have been one of the important compound groups due to their broad range of biological activities. The count of research studies on iminothiazolidinone derivatives has been growing fast and this situation necessitates conduction of their risk assessment studies before proceeding to study more complex, time-consuming and expensive advance bioactivity assays. In this context, the present study was designated to synthesize new iminothiazolidinone derivatives and make genotoxic risk assessment by using the Ames *Salmonella* assay. In the end of the synthesis step, five new (C1-C5) iminothiazolidinone derivatives were synthesized and characterized. To assess their mutagenic potential, *S. typhimurium* TA1535, TA1537, TA1538, TA98 and TA100 were chosen as the tester strains. According to the genotoxic risk assessment results, the synthesized iminothiazolidinone derivatives did not show any mutagenic effect on the tester strains at any tested concentrations up to 1 mM/plate. The highest revertant colony count was observed as 47.17 ± 1.94 for C4 (0.8 mM/plate – *S. typhimurium* TA1538), insignificant when compared to the control groups. In conclusion, the newly synthesized test compounds of the present study can be considered as genotoxically safe at the tested concentrations up to 1 mM/plate, and the findings reported here are valuable for performing advance bioactivity assays.

Keywords: Genotoxicity, Iminothiazolidinones, The Ames *Salmonella* Assay.

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➢ **POSTER PRESENTATION**

Determination of phytochemical contents of some medicinal aromatic plants (*Echinacea pallida, Melissa officinalis, Hypericum perforatum and Sideritis syriaca*) belonging to Antalya region

Serkan KÜÇÜK[1*], Ali Rıza TÜFEKÇİ[2], Fatih GÜL[1], İbrahim DEMİRTAŞ[1]

[1*]Cankiri Karatekin University, Science Faculty, Chemistry, Cankiri, TURKEY
[1] Cankiri Karatekin University, Science Faculty, Chemistry, Cankiri, TURKEY

e-mail: alpertunga05s@hotmail.com

Abstract

Echinacea pallida, Melissa officinalis, Hypericum perforatum and Sideritis syriaca are valuable for its pharmaceutical, medicinal and agricultural properties. These plants were extracted with methanol/chloform (1:1) solvent, filtered, and solvents were removed by rotary evaporator to get four separate extracts. Quantifications of chemical constituents of extracts were determined by TOF-LC/MS and GC-MS. The main compounds of extracts for *E. pallida* were 4-Hydroxybenzoic acid Caffeic acid, for *M. officinalis* were Eupatorin and Diosmin, for *S. syriaca* Chlorogenic acid and Fumaric acid, for *H. perforatum* Quercetin-3-β-D-glucoside and Morin. The fatty acid contents of *E. pallida* is Palmitic acid composition (30.07%), of *M. officinalis* is Octadecatrienoic acid (, of *H. perforatum* is Octadecatrienoic acid (31.37%) and of *S .syriaca* is Linoleic acid (34.89%).

Keywords: *Echinacea pallida, Melissa officinalis, Hypericum perforatum and Sideritis syriaca*, HPLC-TOF/MS, GC-MS, Fatty acid

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➢ **POSTER PRESENTATION**

Determination of phenolic profile of *Cirsium arvense* (L.) Scop. subsp. *vestitum* (Wimmer et Grab.) Petrak plant

Ali Rıza TÜFEKÇİ[1*], Hüseyin AKŞİT[2], Fatih GÜL[1], İbrahim DEMİRTAŞ[1]

[1*]Cankiri Karatekin University, Science Faculty, Department of Chemistry, Cankiri, TURKEY
[2] Erzincan University, Faculty of Pharmacy, Basic Pharmacy Sciences, Erzincan, Turkey

e-mail: alirizatufekci@gmail.com

Abstract

The chemical composition and fatty acid contents of *Cirsium arvense* subsp. *vestitum* aerial parts (flowers (CaF) and stem-leaf (CaSL)) was examined in this study. Aerial parts of this plant were extracted with various solvents such as hexane (CaFH and CaSLH), chloroform (CaFC and CaSLC) and methanol / chloroform (CaFMC and CaSLMC). Fatty acid analysis of the hexane extracts was carried out by GC-MS device and the phenolic content of other extracts were determined by HPLC-TOF/MS device. Palmitic acid methyl ester composition in extract of CaFH (9.99%) and α-amyrenyl acetate compound in extract of CaSLH (23.13%) were founded as main components. The number of components and the amount in the chloroform extracts were determined to be very little. Content analysis of CaFMC and CaSLMC extracts revealed some differences and different components. In these extracts, apigenin and apigenin-7-*O*-β-D-glucuronide compounds were determined as the major components. In addition, phenolic component analysis was performed for the first time on this plant species.

Keywords: *Cirsium arvense* subsp. *vestitum*, GC-MS, HPLC-TOF/MS, phenolic compounds

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