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Chemical constituents of the aerial parts of *Ducrosia ismaelis*

Abubaker M A Morgan¹, Sang-Hyun Lee², Hae-Dong Jang², Sang-Un Park¹ and Young-Ho Kim¹

¹Chungnam National University, Republic of Korea

²Hannam University, Daejeon, Republic of Korea

Ducrosia species belong to the *Apiaceae* family, the members of which typically contain unusual and/or unique phytochemicals, especially coumarins. In traditional medicine, various *Ducrosia* species are used as analgesics, pain relievers and cold treatments. Antimicrobial, antimycobacterial, antifungal, central nervous system depressant, and antianxiety effects have been reported for several *Ducrosia* species, including *D. anethifolia* and *D. ismaelis*. *D. ismaelis* Asch. (commonly known as Haza or Geshea) is a perennial, herbaceous, and branched plant with a characteristic aromatic odor. The whole herb, especially its aerial parts, has been used in traditional medicines to treat skin infections and to repel insects and reptiles. A new pterocarpan glycoside, glycinol-3-O- β -D-glucopyranoside (1), and a new dihydrochalcone glycoside, ismaeloside A (2), were isolated together with 10 known compounds, including several flavonoids (3–8), lignans, and phenolic compounds (9–12), from the methanol extract of the aerial parts of *Ducrosia ismaelis*. The chemical structures of these compounds were elucidated from spectroscopic data (ESI-MS, HR-ESI-MS, 1D, 2D-NMR, UV, and FT-IR) and by comparison of these data with previously published results. The anti-osteoporotic and antioxidant activities of the isolated compounds were assessed using tartrate-resistant acid phosphatase (TRAP), oxygen radical absorbance capacity (ORAC), and reducing capacity assays. Compound 12 exhibited a dose-dependent inhibition of osteoclastic TRAP activity with a TRAP value of $86.05 \pm 6.55\%$ of the control at a concentration of $10 \mu\text{M}$. Compounds 1, 3–5, and 8 showed potent peroxy radical-scavenging capacities with ORAC values of 22.79 ± 0.90 , 25.57 ± 0.49 , 20.41 ± 0.63 , 26.55 ± 0.42 , and $24.83 \pm 0.12 \mu\text{M}$ Trolox equivalents (TE) at $10 \mu\text{M}$, respectively. All the compounds were isolated for the first time from a *Ducrosia* species.

abubaker_morgan@yahoo.com