

Supplementary material

Marine fungi from the sponge *Grantia compressa*: biodiversity, chemodiversity and biotechnological potential

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Table S1. Gene loci sequenced, primers for molecular analysis and PCR programs.

Fungi	Gene loci and DNA regions sequenced ^a	Primers (Forward and Reverse)	PCR amplification Conditions	References for primers
<i>Penicillium, Emericellopsis</i>	TUB	BT-2a and BT-2b	94 °C: 4 min, (94 °C: 35 sec, 58 °C: 35 sec, 72 °C: 50 sec) × 35 cycles; 72 °C: 5 min	[92]
<i>Cladosporium</i>	ACT	ACT-512F and ACT-783R	94 °C: 8 min, (94 °C: 15 sec, 61 °C: 20 sec, 72 °C: 40 sec) × 35 cycles; 72 °C: 10 min	[93]
Sterile mycelia and taxa for which no specific primers are required	ITS	ITS1 and ITS4	95 °C: 5 min, (95 °C:40 s, 55 °C: 50 s, 72 °C: 50 sec) × 35 cycles; 72 °C: 8 min	[94]
Sterile mycelia	LSU	LROR and LR7	95 °C: 5 min, (95 °C: 1 min, 50 °C: 1 min, 72 °C: 2 min) × 35 cycles; 72 °C: 10 min	[95]

^a TUB: partial beta-tubulin gene; ACT: partial actin gene; ITS: internal transcribed spacer regions and intervening 5.8S nrRNA gene; LSU: partial nuclear ribosomal DNA large subunit.

Table S2. List of taxa used for the phylogenetic analysis of *Emericellopsis* spp. and their GenBank accession number.

Species	Strain	GenBank accession number	
		ITS	TUB
<i>Acremonium exuviarum</i>	UAMH 9995	AY882946	AY882947
<i>Acremonium fuci</i>	CBS 112868	AY632653	AY632690
<i>Acremonium potronii</i>	CBS 379.70F	AY632655	AY632691
<i>Acremonium sclerotigenum</i>	A130	KC987166	KC987128
<i>Emericellopsis alkalina</i>	CBS 127350	KC987171	KC987133
<i>Emericellopsis alkalina</i>	CBS 120044	KC987169	KC987131
<i>Emericellopsis alkalina</i>	CBS 120049	KC987170	KC987132
<i>Emericellopsis donezkii</i>	CBS 489.71	AY632658	AY632674
<i>Emericellopsis glabra</i>	A.R. 3614	HM484860	HM484879
<i>Emericellopsis humicola</i>	CBS 180.56	AY632659	AY632675
<i>Emericellopsis maritima</i>	CBS 491.71	KC987175	KC987137
<i>Emericellopsis microspora</i>	CBS 380.62	AY632663	AY632679
<i>Emericellopsis minima</i>	CBS 190.55	KC987173	KC987135
<i>Emericellopsis minima</i>	CBS 871.68	KC987174	KC987136
<i>Emericellopsis pallida</i>	CBS 490.71	KC987176	KC987138
<i>Emericellopsis pallida</i>	CBS 624.73	AY632667	AY632683
<i>Emericellopsis robusta</i>	CBS 489.73	AY632664	AY632680
<i>Emericellopsis salmosynnemata</i>	CBS 382.62	AY632666	AY632682
<i>Emericellopsis stolckiae</i>	CBS 159.71	AY632668	AY632684
<i>Emericellopsis synnematicola</i>	CBS 176.60	AY632665	AY632681
<i>Emericellopsis terricola</i>	CBS 229.59	AY632662	AY632678

Table S3. List of fungal strains isolated from *G. compressa* with Mycotheca Universitatis Taurinensis (MUT) and GenBank accession number.

MUT CODE	Taxa	GenBank accession number			
		ITS	LSU	ACT	TUB
2282	<i>Coprinellus</i> sp.	MF140467	MF140459		
2332		MF140469	MF140461		
2288	<i>Ceriporia lacerata</i>	MF125292	MF125289		
2307	<i>Cladosporium allacinum</i>				-
2313				MH383514	
2314		<i>Cladosporium cladosporioides</i>			MH383515
2315	<i>Cladosporium pseudocladosporioides</i>			MH383516	
2273	<i>Emericellopsis pallida</i>	MH399734	MG845233		MH480660
2274	<i>Emericellopsis pallida</i>	MH399735	MG845234		MH480663
2316	<i>Eurotium chevalieri</i>	MH399736			MH383517
2334	<i>Euthypella scoparia</i>	MH399739	MG845235		
2317	<i>Fusarium solani</i>	MH399737			
2321	<i>Penicillium chrysogenum</i>				MH383518
2328	<i>Penicillium oxalicum</i>	MH399738			
2322	<i>Penicillium paneum</i>				MH383519
2326					MH383520
2331	<i>Psathyrella candolleana</i>	MF125293	MF125290		
2415	<i>Rhodotorula mucilaginosa</i>	MF423718			
-	<i>Tetracladium</i> sp.				
2410	<i>Tolyposcladium cylindrosporium</i>	MH399740			
2413		MH399741			

Echinulin (1):

¹H NMR (500 MHz, CDCl₃, δ /ppm, J/Hz): 8.05 (1H, s, 1-NH), 7.13 (1H, s, H-4), 6.80 (1H, s, H-6), 6.10 (1H, dd, J = 17.3, 10.6, H-2'), 5.42 (1H, t, J = 6.8, H-2'''), 5.35 (1H, m, H-2''), 5.14 (2H, m, H-3'), 4.41 (1H, m, H-9), 4.10 (1H, q, J = 6.8, H-12), 3.66 (1H, dd, J = 14.6, 3.2, H-8), 3.53 (2H, d, J = 7.1, H-1'''), 3.39 (2H, d, J = 7.1, H-1''), 3.18 (1H, dd, J = 14.6, 11.8, H-8), 1.87 (3H, s, CH₃-3'''), 1.81 (3H, s, CH₃-3'''), 1.74 (3H, overlapped, CH₃-3''), 1.51 (3H, overlapped, CH₃-1').

¹³C NMR (125 MHz, CDCl₃, δ /ppm): 168.6 (C-10), 167.9 (C-13), 145.9 (C-2'), 141.5 (C-2), 134.0 (C-5), 133.1 (C-3'''), 132.4 (C-7a), 131.7 (C-3''), 129.1 (C-3a), 124.6 (C-2''), 123.5 (C-7), 123.0 (C-2'''), 123.0 (C-6), 115.2 (C-4), 112.5 (C-3'), 104.2 (C-3), 54.7 (C-9), 51.0 (C-12), 39.1 (C-1'), 34.7 (C-1''), 31.5 (C-1'''), 29.6 (C-8), 28.1 (CH₃-1'), 27.9 (CH₃-1'), 25.9 (CH₃-3'''), 25.9 (CH₃-3''), 20.0 (C-15), 18.1 (CH₃-3'''), 18.1 (CH₃-3'').

LR-ESI-MS: m/z 462.2 [M + H]⁺.

Neoechinulin A (2):

¹H NMR (500 MHz, CDCl₃, δ /ppm, J/Hz): 8.33 (1H, s, 1-NH), 7.36 (1H, d, J = 8.0, H-4), 7.27 (1H, d, J = 7.5, H-7), 7.18 (1H, m, H-6), 7.07 (1H, m, H-5), 6.08 (1H, dd, J = 17.4, 10.6, H-2'), 5.21 (2H, m, H-3'), 4.22 (1H, q, J = 6.0, H-12), 1.60 (6H, overlapped, CH₃-1'), 1.53 (3H, d, J = 6.0, CH₃-12).

¹³C NMR (125 MHz, CDCl₃, δ /ppm): 165.8 (C-13), 160.0 (C-10), 144.4 (C-2'), 143.9 (C-2), 134.4 (C-7a), 126.2 (C-3a), 124.5 (C-9), 122.5 (C-6), 121.2 (C-5), 119.0 (C-4), 113.5 (C-8), 112.1 (C-7), 111.4 (C-3'), 103.1 (C-3), 51.8 (C-12), 39.4 (C-1'), 27.5 (CH₃-1'), 21.0 (CH₃-12).

LR-ESI-MS: m/z 324.1 [M + H]⁺.

Physcion (3):

¹H NMR (500 MHz, CDCl₃, δ /ppm, J/Hz): 12.31 (1H, s, 5-OH), 12.11 (1H, s, 4-OH), 7.63 (1H, s, H-1), 7.37 (1H, d, J = 2.0, H-8), 7.08 (1H, s, H-3), 6.69 (1H, d, J = 2.0, H-6), 3.94 (3H, s, 7-OCH₃), 2.45 (3H, s, 2-CH₃).

¹³C NMR (125 MHz, CDCl₃, δ/ppm): 190.9 (C-10), 182.2 (C-9), 166.7 (C-7), 165.3 (C-5), 162.6 (C-4), 148.6 (C-2), 135.4 (C-8a), 133.4 (C-1a), 124.7 (C-3), 121.4 (C-1), 113.8 (C-4a), 110.4 (C-5a), 108.4 (C-6), 106.9 (C-8), 56.2 (3-OCH₃), 22.3 (2-CH₃).

LR-ESI-MS: *m/z* 285.1 [M + H]⁺.

Dihydroauroglaucin (4):

¹H NMR (500 MHz, CDCl₃, δ/ppm, *J*/Hz): 11.8 (1H, s, 5-OH), 10.01 (1H, s, 1-CHO), 6.90 (1H, s, H-4), 6.56 (1H, d, *J* = 15.9, H-1'), 6.44 (1H, ddd, *J* = 15.9, 10.2, 0.6, H-2'), 6.27 (1H, ddt, *J* = 15.1, 10.2, 1.4, H-3'), 5.89 (dt, *J* = 15.0, 7.0 Hz, H-4'), 5.30 (1H, m, H-2''), 4.93 (1H, 2-OH), 3.31 (2H, d, *J* = 7.5, H-1''), 2.15 (2H, m, H-5'), 1.76 (3H, s, H-4''), 1.70 (3H, s, H-5''), 1.47 (2H, m, H-6'), 0.94 (3H, t, *J* = 6.0, H-7').

¹³C NMR (125 MHz, CDCl₃, δ/ppm): 196.4 (1-CHO), 155.4 (C-5), 145.2 (C-2), 140.1 (C-4'), 139.1 (C-2'), 134.2 (C-3''), 130.6 (C-3), 129.7 (C-6), 125.3 (C-4), 124.2 (C-2''), 121.1 (C-3'), 119.5 (C-1'), 117.2 (C-1), 35.0 (C-5'), 27.4 (C-1''), 26.0 (C-4''), 22.4 (C-6'), 17.9 (C-5''), 13.9 (C-7').

LR-ESI-MS: *m/z* 301.1 [M + H]⁺.

Flavoglaucin (5):

¹H NMR (500 MHz, CDCl₃, δ/ppm, *J*/Hz): 11.91 (1H, s, 5-OH), 10.25 (1H, s, 1-CHO), 6.89 (1H, s, H-4), 5.28 (1H, m, H-2''), 4.43 (1H, 2-OH), 3.29 (2H, d, *J* = 7.5, H-1''), 2.88 (2H, t, *J* = 7.5, H-1'), 1.76 (3H, s, H-4''), 1.69 (3H, s, H-5''), 1.57 (2H, m, H-2'), 1.40 (2H, m, H-3'), 1.27 (6H, overlapped, H-4', 5', 6'), 0.88 (3H, t, *J* = 6.0, H-7').

¹³C NMR (125 MHz, CDCl₃, δ/ppm): 195.7 (1-CHO), 155.9 (C-5), 145.1 (C-2), 134.0 (C-3''), 128.7 (C-3, C-6), 125.8 (C-4), 121.3 (C-2''), 117.5 (C-1), 32.2 (C-5'), 31.9 (C-4'), 29.7 (C-3'), 29.3 (C-2'), 27.1 (C-1''), 25.9 (C-4''), 24.1 (C-1'), 22.8 (C-6'), 17.9 (C-5'), 14.2 (C-7').

LR-ESI-MS: *m/z* 305.1 [M + H]⁺.

Isodihydroauroglaucin (6):

¹H NMR (500 MHz, CDCl₃, δ/ppm, *J*/Hz): 11.93 (1H, s, 5-OH), 10.23 (1H, s, 1-CHO), 6.90 (1H, s, H-4), 6.01 (1H, overlapped, H-4'), 5.99 (1H, overlapped, H-5'), 5.59 (1H, overlapped, H-3'), 5.59 (1H, overlapped, H-6'), 5.30 (1H, m, H-2''), 4.43 (1H, 2-OH), 3.29 (2H, d, *J* = 7.5, H-1''), 2.98 (2H, t, *J* = 7.5, H-1'), 2.34 (2H, m, H-2'), 1.76 (3H, s, H-4''), 1.73 (3H, d, *J* = 6.0, H-7'), 1.69 (3H, s, H-5'').

¹³C NMR (125 MHz, CDCl₃, δ/ppm): 195.5 (1-CHO), 156.0 (C-5), 145.2 (C-2), 134.1 (C-3''), 132.2 (C-5'), 131.3 (C-6'), 129.5 (C-4'), 129.1 (C-6), 128.5 (C-3'), 127.5 (C-3), 126.0 (C-4), 117.4 (C-1), 34.4 (C-2'), 29.9 (C-2''), 27.2 (C-1''), 26.0 (C-4''), 24.3 (C-1'), 18.2 (C-5''), 17.9 (C-7').

LR-ESI-MS: *m/z* 301.1 [M + H]⁺.

Neoechinulin D (7):

¹H NMR (500 MHz, CDCl₃, δ/ppm, *J*/Hz): 8.18 (1H, s, 1-NH), 7.16 (1H, m, H-4), 7.21 (1H, s, H-7), 7.00 (1H, dd, *J* = 8.0, 1.5, H-5), 6.05 (1H, dd, *J* = 17.4, 10.6, H-2'), 5.23 (1H, m, H-2''), 5.21 (2H, m, H-3'), 4.29 (1H, q, *J* = 6.0, H-12), 3.43 (2H, d, *J* = 7.5, H-1''), 1.76 (3H, s, H-4''), 1.74 (3H, s, H-5''), 1.60 (6H, overlapped, CH₃-1'), 1.51 (3H, d, *J* = 6.0, CH₃-12).

¹³C NMR (125 MHz, CDCl₃, δ/ppm): 165.7 (C-13), 160.0 (C-10), 144.5 (C-2'), 143.4 (C-2), 124.3 (C-6), 123.8 (C-7a), 122.4 (C-3''), 124.3 (C-3a), 123.8 (C-9), 122.4 (C-5), 118.9 (C-4), 113.4 (C-8), 112.4 (C-7), 110.6 (C-3'), 103.2 (C-3), 51.8 (C-12), 39.4 (C-1'), 27.6 (CH₃-1'), 27.5 (CH₃-1'), 25.9 (CH₃-4''), 21.1 (CH₃-12), 18.0 (CH₃-5'').

LR-ESI-MS: *m/z* 392.2 [M + H]⁺.

Asperflavin (8):

¹H NMR (500 MHz, CD₃OD, δ/ppm, *J*/Hz): 6.81 (1H, s, H-10), 6.54 (1H, d, *J* = 2.0, H-5), 6.45 (1H, d, *J* = 2.0, H-7), 3.92 (3H, s, CH₃O-8), 3.01 (2H, s, H-4), 2.79 (1H, d, *J* = 16.9, H-2a), 2.79 (1H, d, *J* = 16.9, H-2b), 1.37 (3H, s, CH₃-3).

¹³C NMR (125 MHz, CD₃OD, δ/ppm): 204.5 (C-1), 166.9 (C-9), 163.3 (C-8), 162.4 (C-6), 144.1 (C-10a), 138.8 (C-4a), 118.1 (C-10), 110.7 (C-8a), 103.8 (C-9a), 99.3 (C-5), 97.8 (C-7), 71.7 (C-3), 56.7 (CH₃O-8), 52.9 (C-2), 44.6 (C-4), 29.3 (CH₃-3).

LR-ESI-MS: *m/z* 287.1 [M - H]⁻.

Cinnalutein (9):

¹H NMR (500 MHz, CD₃OD, δ/ppm, *J*/Hz): 7.51 (1H, s, H-4), 7.22 (1H, s, H-5), 6.94 (1H, s, H-7), 3.94 (3H, s, 6-OCH₃), 2.43 (3H, s, 3-COCH₃).

^{13}C NMR (125 MHz, CD_3OD , δ/ppm): 188.3 (C-9), 184.1 (C-10), 174.3 (-COOH), 170.2 (C-1 or C-8), 165.4 (C-6), 159.2 (C-1 or C-8), 142.0 (C-2 or C3), 139.5 (C-10a), 138.8 (C-4a), 131.9 (C-2 or C-3), 121.1 (C-4), 116.2 (C-9a), 109.5 (C-8a), 105.9 (C-5), 102.9 (C-7), 56.7 (1C, 6-OCH₃), 20.2 (1C, 3-COCH₃).

LR-ESI-MS: m/z 327.1 [M + H]⁻.

Cyclo-L-Trp- L-Ala (10):

^1H NMR (500 MHz, CDCl_3 , δ/ppm , J/Hz): 8.52 (1H, s, 1-NH), 7.60 (1H, d, $J = 8.0$, H-4), 7.32 (1H, d, $J = 8$, H-7), 7.06 (2H, m, H-2, H-6), 6.99 (1H, t, $J = 8$, H-5), 4.27 (1H, t, $J = 4.5$, H-9), 3.59 (1H, q, $J = 7.0$, H-12), 3.45 (1H, dd, $J = 14.9, 3.9$, H-8), 3.14 (1H, dd, $J = 14.9, 3.9$, H-8), 0.36 (3H, d, $J = 7.0$, H-13).

^{13}C NMR (125 MHz, CDCl_3 , δ/ppm): 170.6 (C-10), 169.5 (C-13), 137.8 (C-7a), 129.2 (C-3a), 125.8 (C-2), 122.5 (C-5), 120.1 (C-4), 120.0 (C-6), 112.1 (C-7), 109.3 (C-3), 57.5 (C-9), 51.7 (C-12), 30.8 (C-8), 20.0 (C-15).

LR-ESI-MS: m/z 258.1 [M + H]⁺.

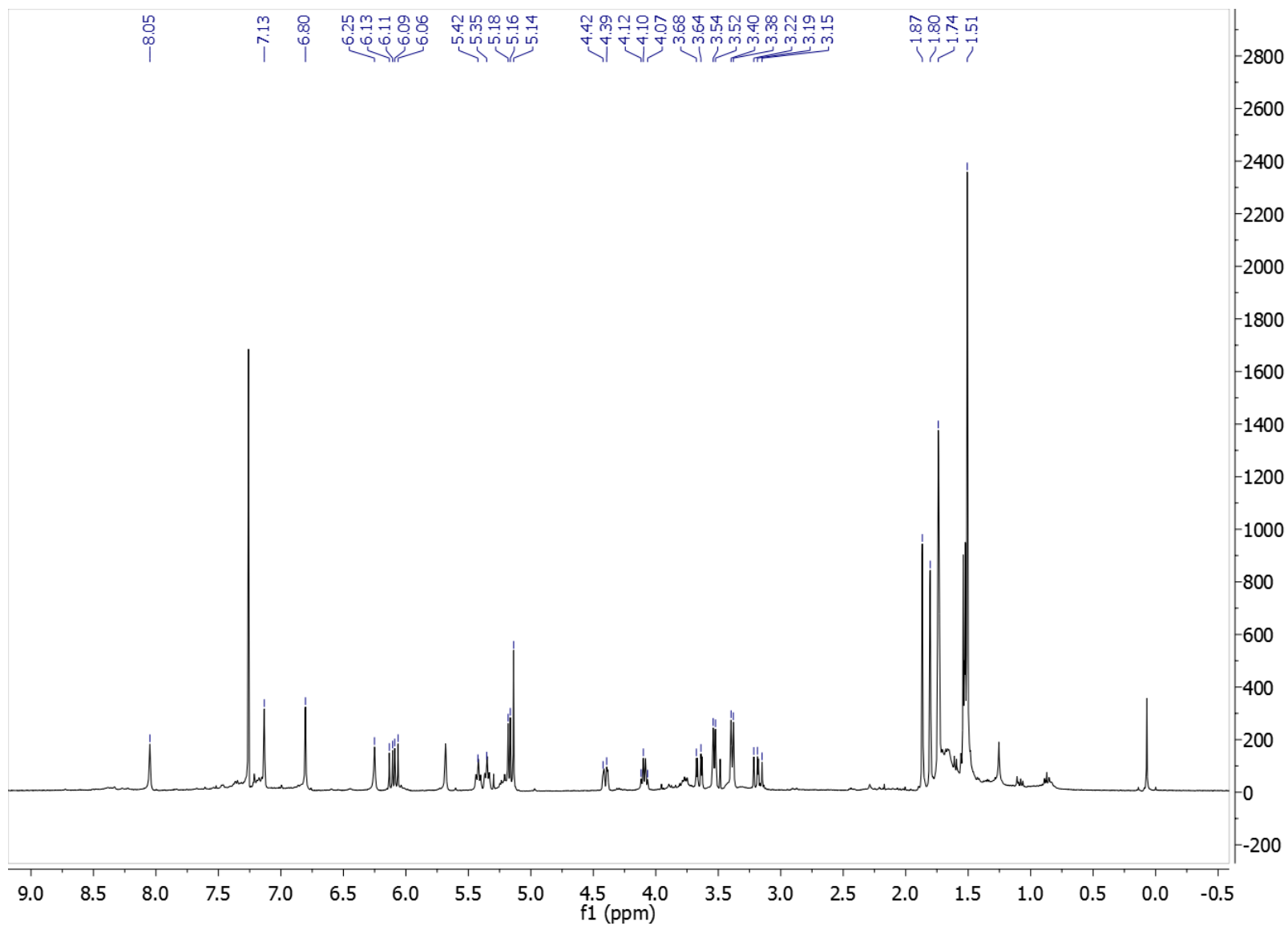


Figure S1. ¹H NMR spectrum of echinulin (1) in CDCl₃ at 500 MHz.

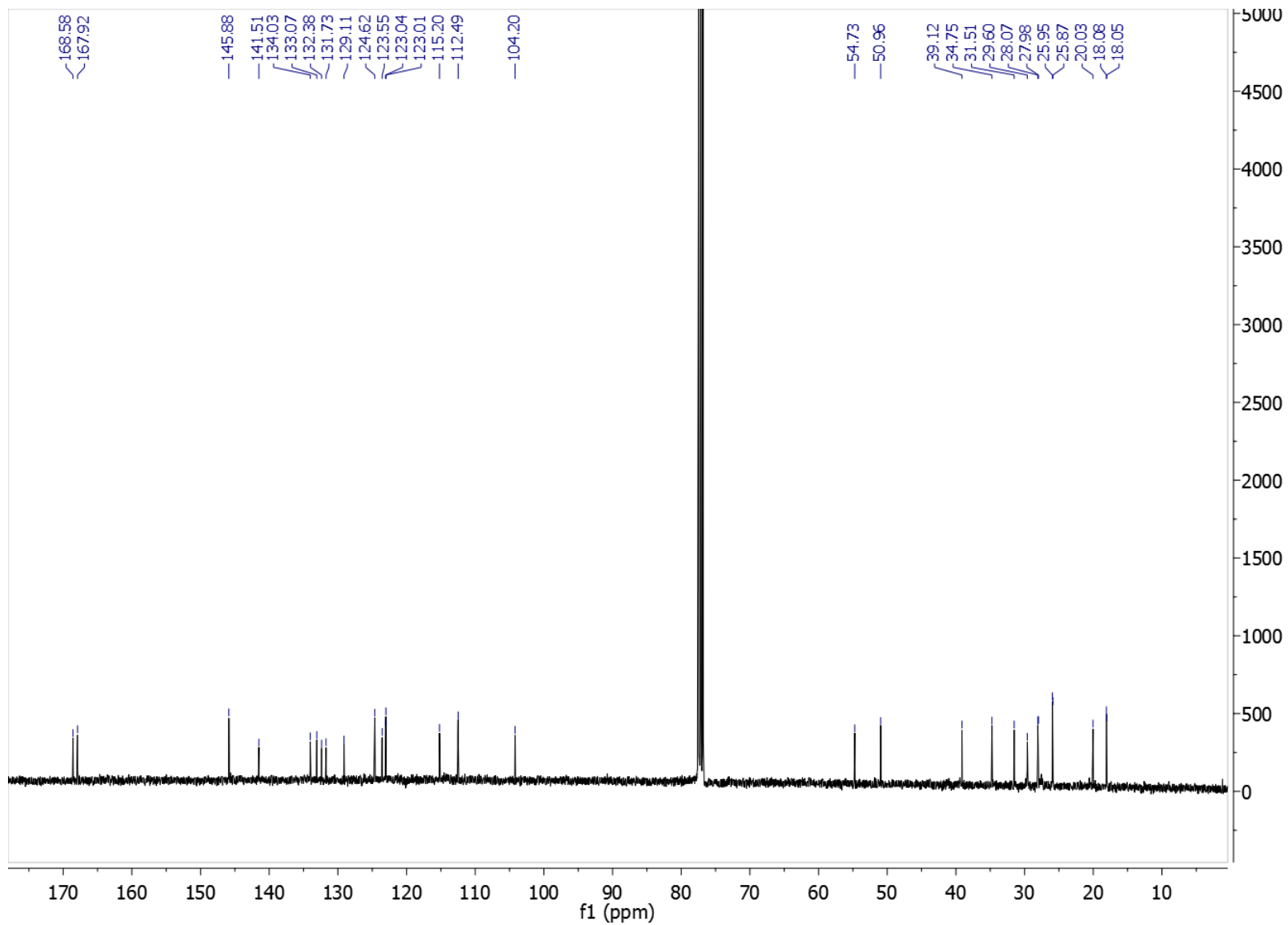


Figure S2. ^{13}C NMR spectrum of echinulin (1) in CDCl_3 at 125 MHz.

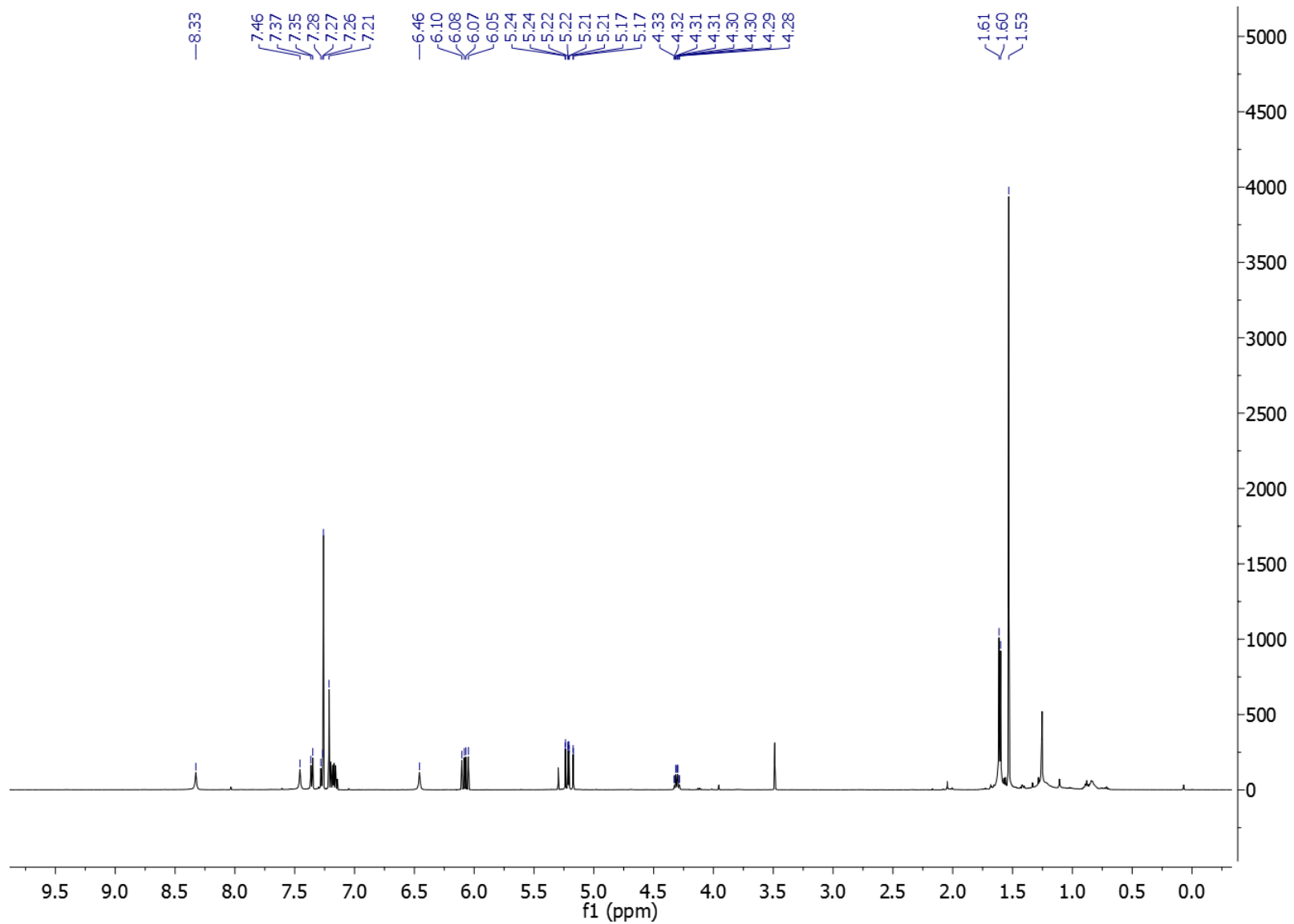


Figure S3. ^1H NMR spectrum of neoechinulin A (2) in CDCl_3 at 500 MHz.

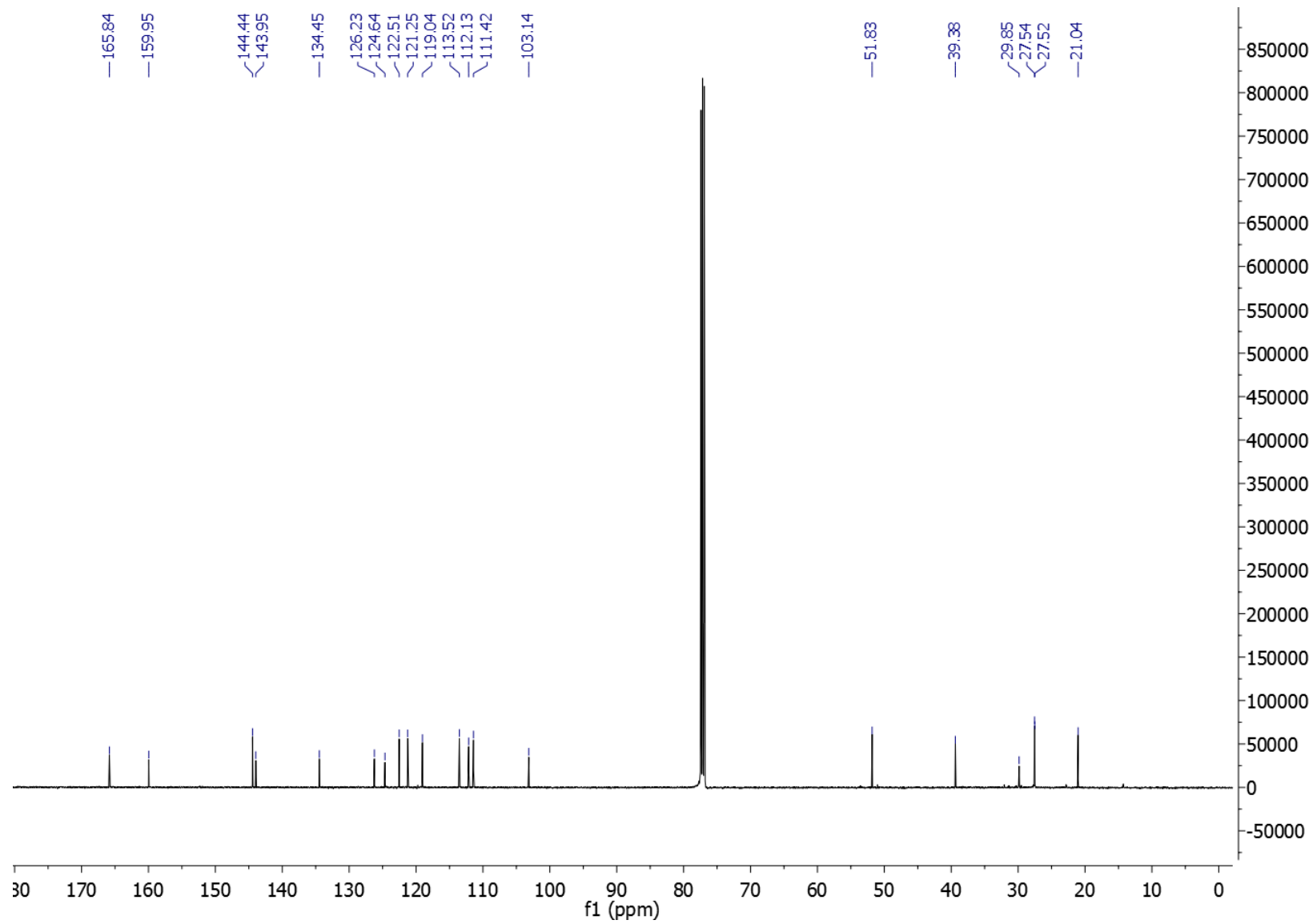


Figure S4. ^{13}C NMR spectrum of neoechinulin A (2) in CDCl_3 at 125 MHz.

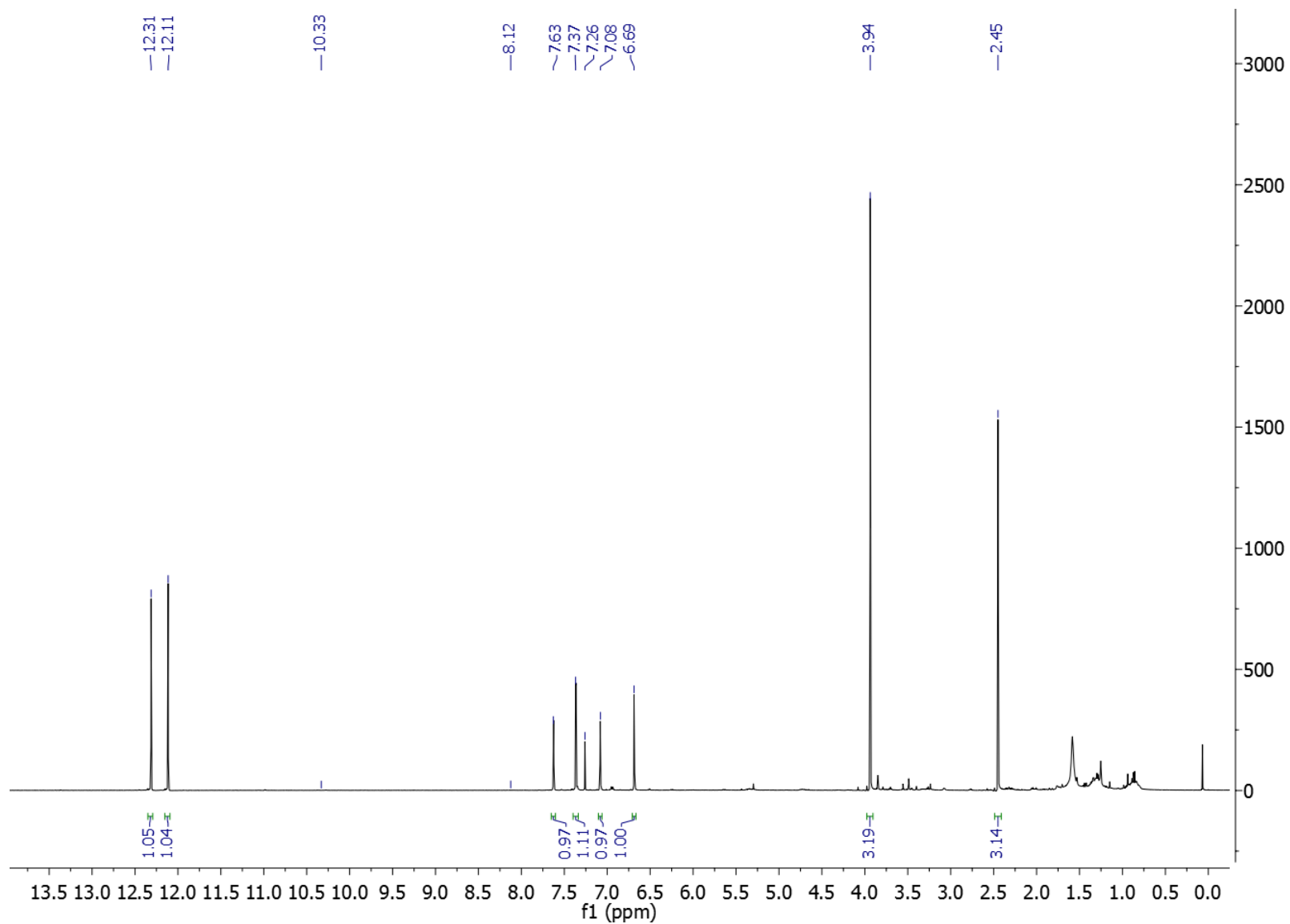


Figure S5. ^1H NMR spectrum of physcion (3) in CDCl_3 at 500 MHz.

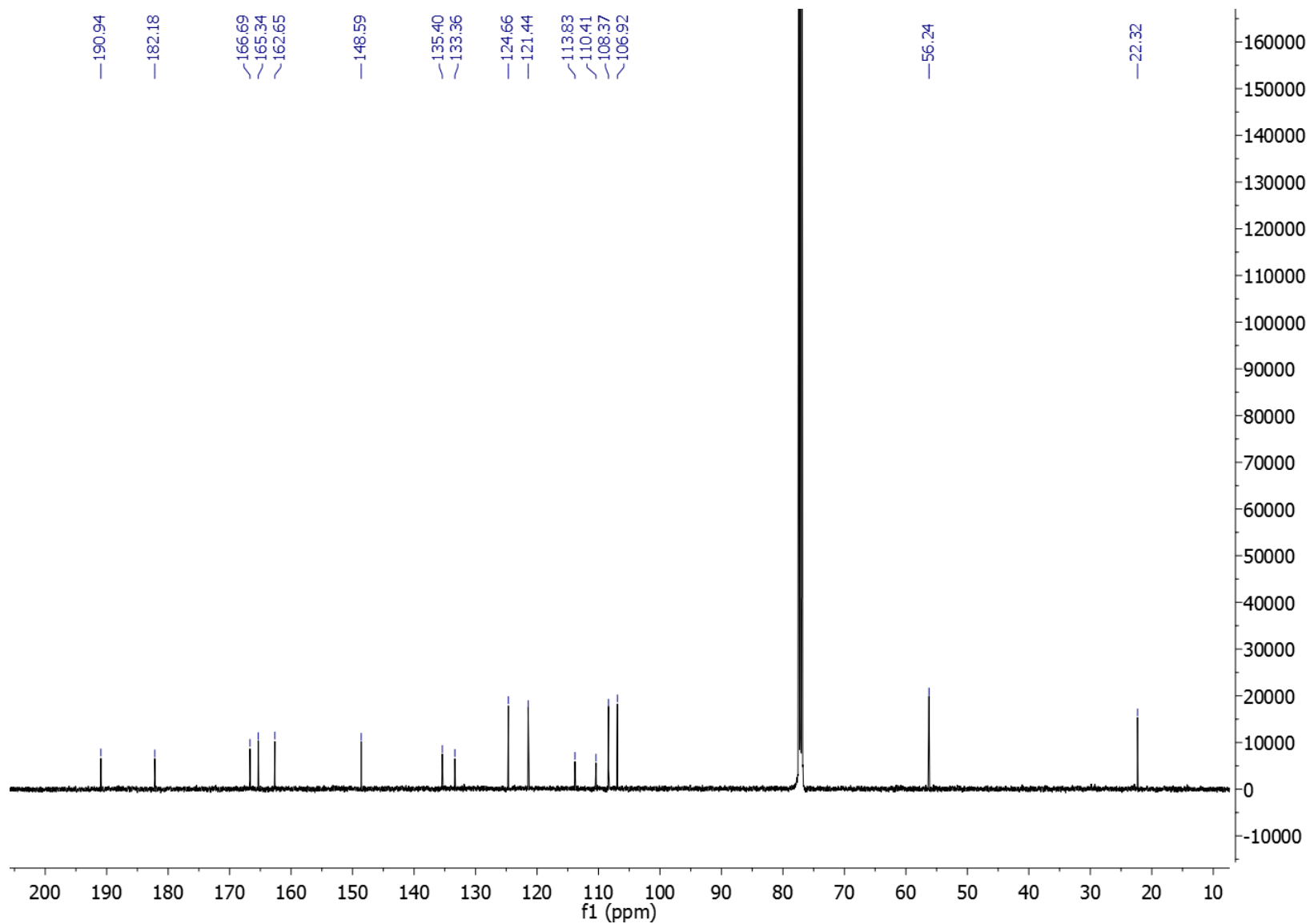


Figure S6. ^{13}C NMR spectrum of physcion (3) in CDCl_3 at 125 MHz.

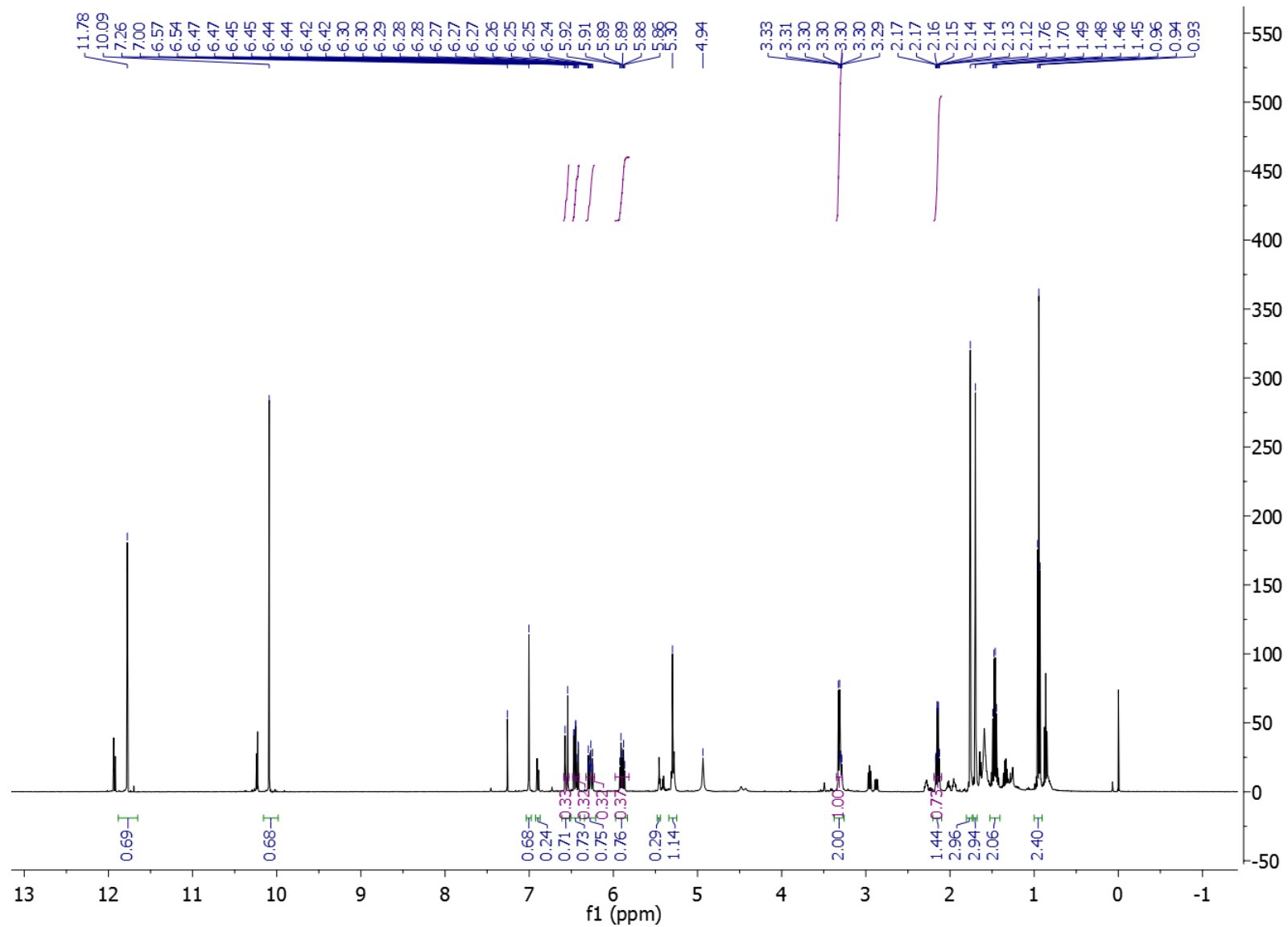


Figure S7. ^1H NMR spectrum of dihydroauroglucin (**4**) in CDCl_3 at 500 MHz.

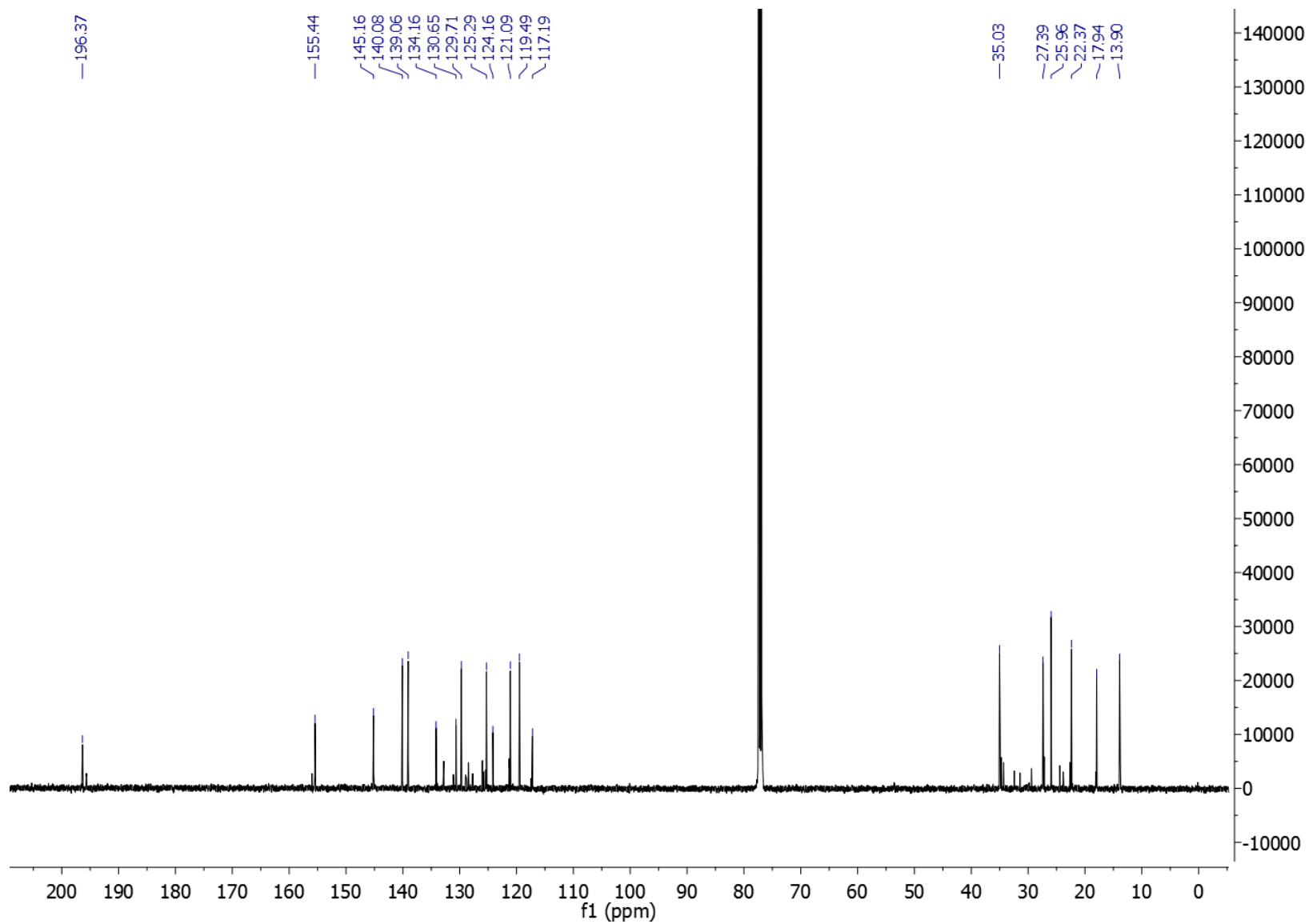


Figure S8. ^{13}C NMR spectrum of dihydroauroglucin (4) in CDCl_3 at 125 MHz.

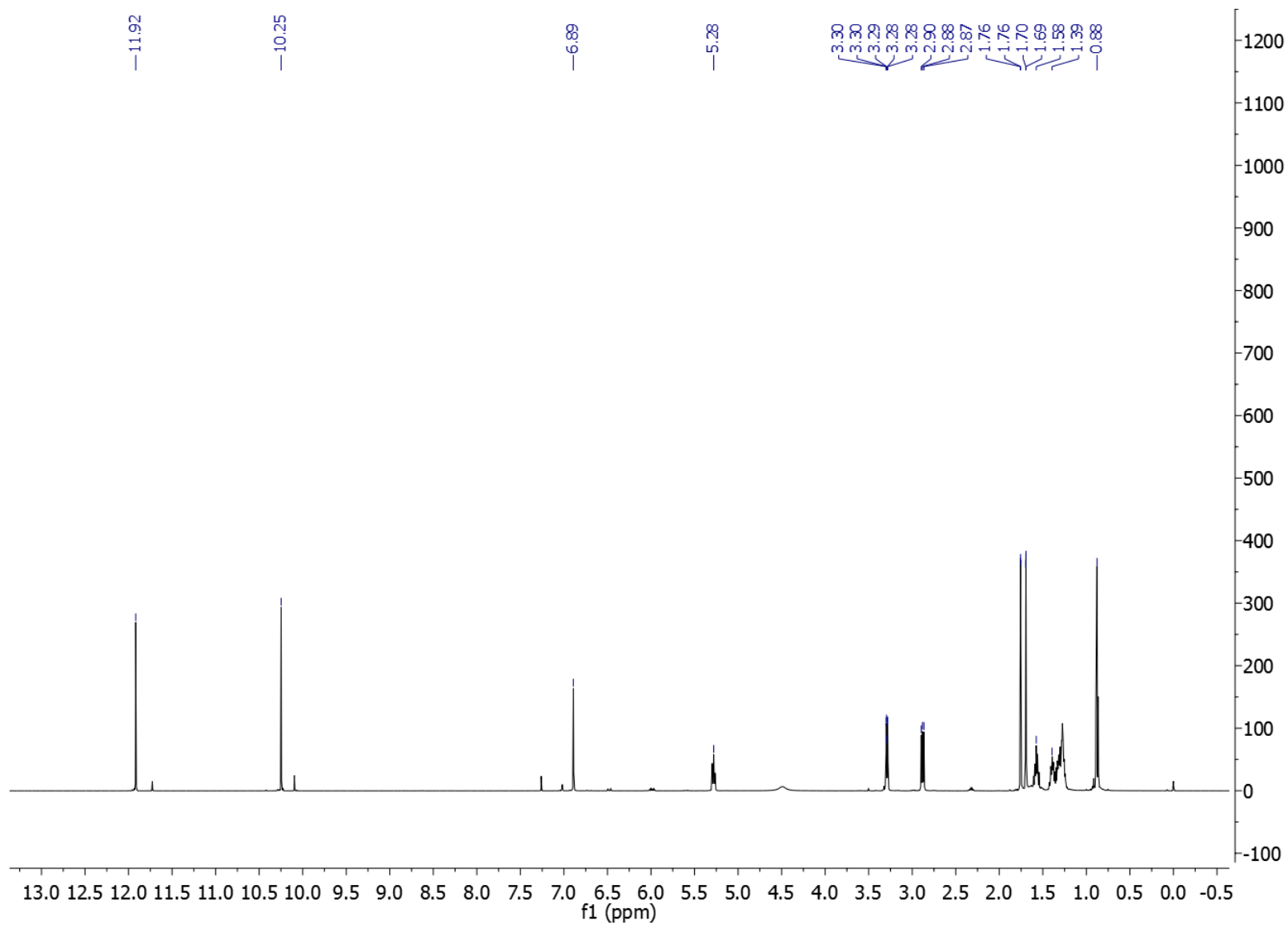


Figure S9. ^1H NMR spectrum of flavoglaucin (5) in CDCl_3 at 500 MHz.

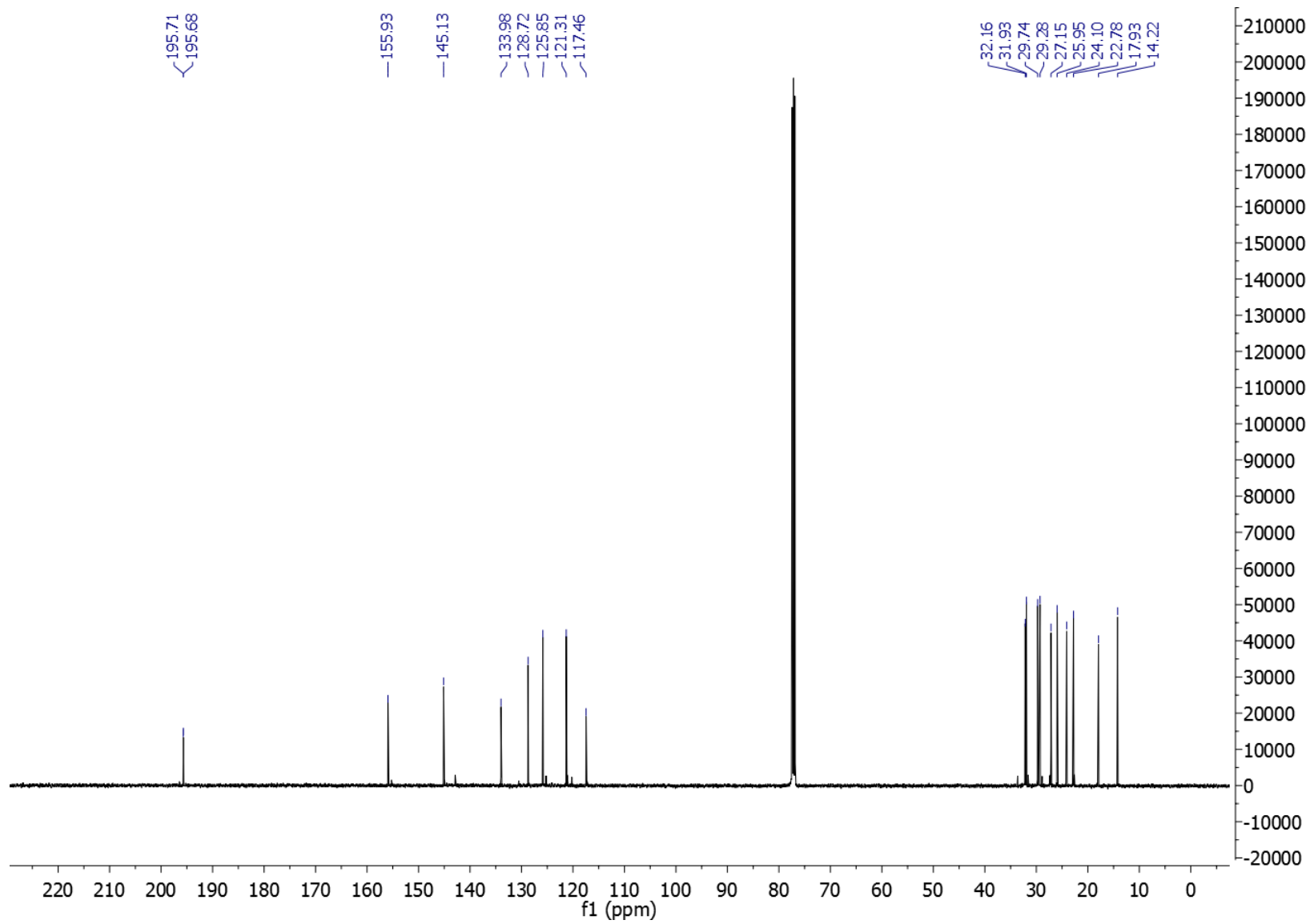


Figure S10. ^{13}C NMR spectrum of flavoglauцин (5) in CDCl_3 at 125 MHz.

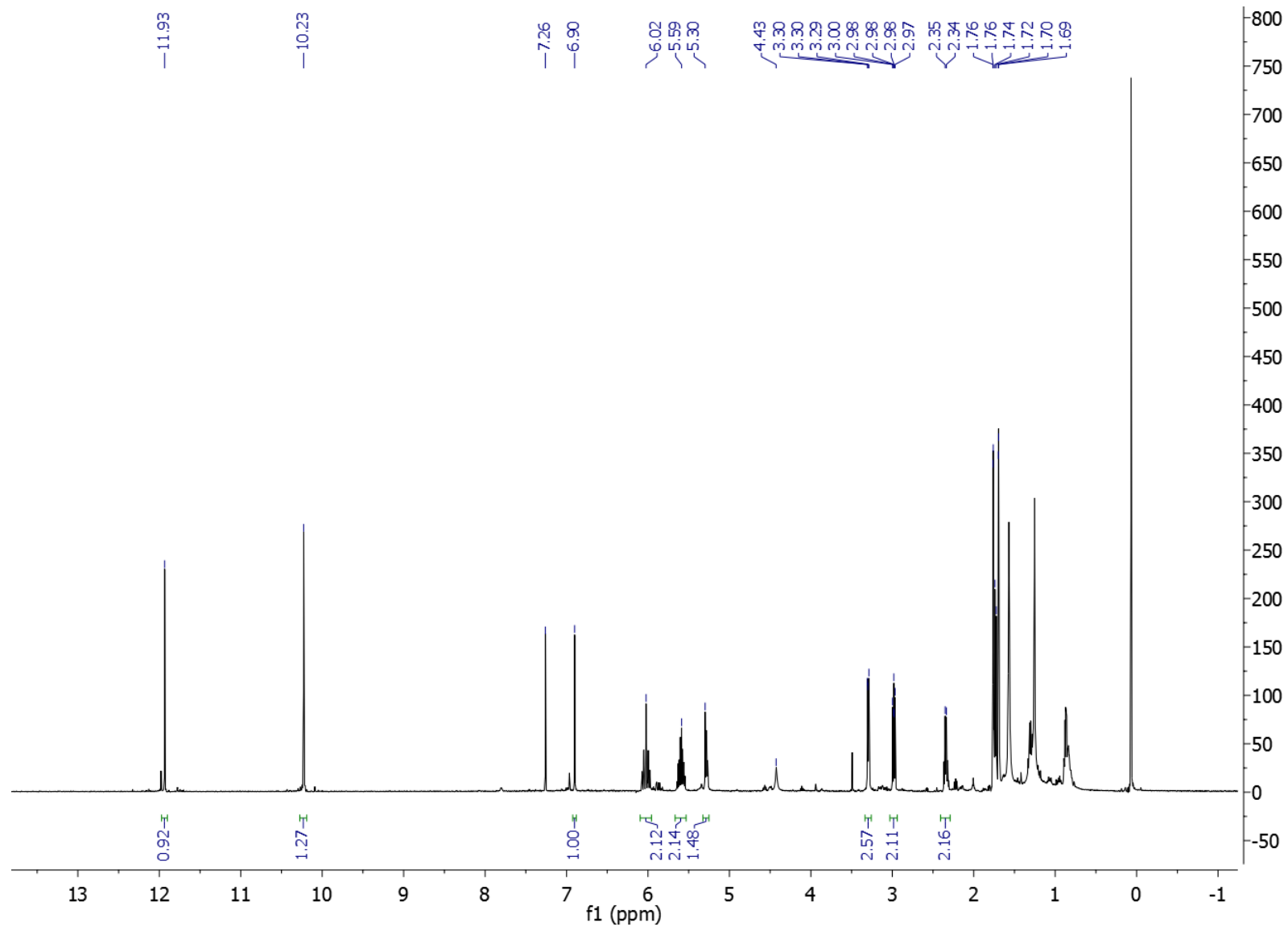


Figure S11. ^1H NMR spectrum of isodihydroauroglaucin (**6**) in CDCl_3 at 500 MHz.

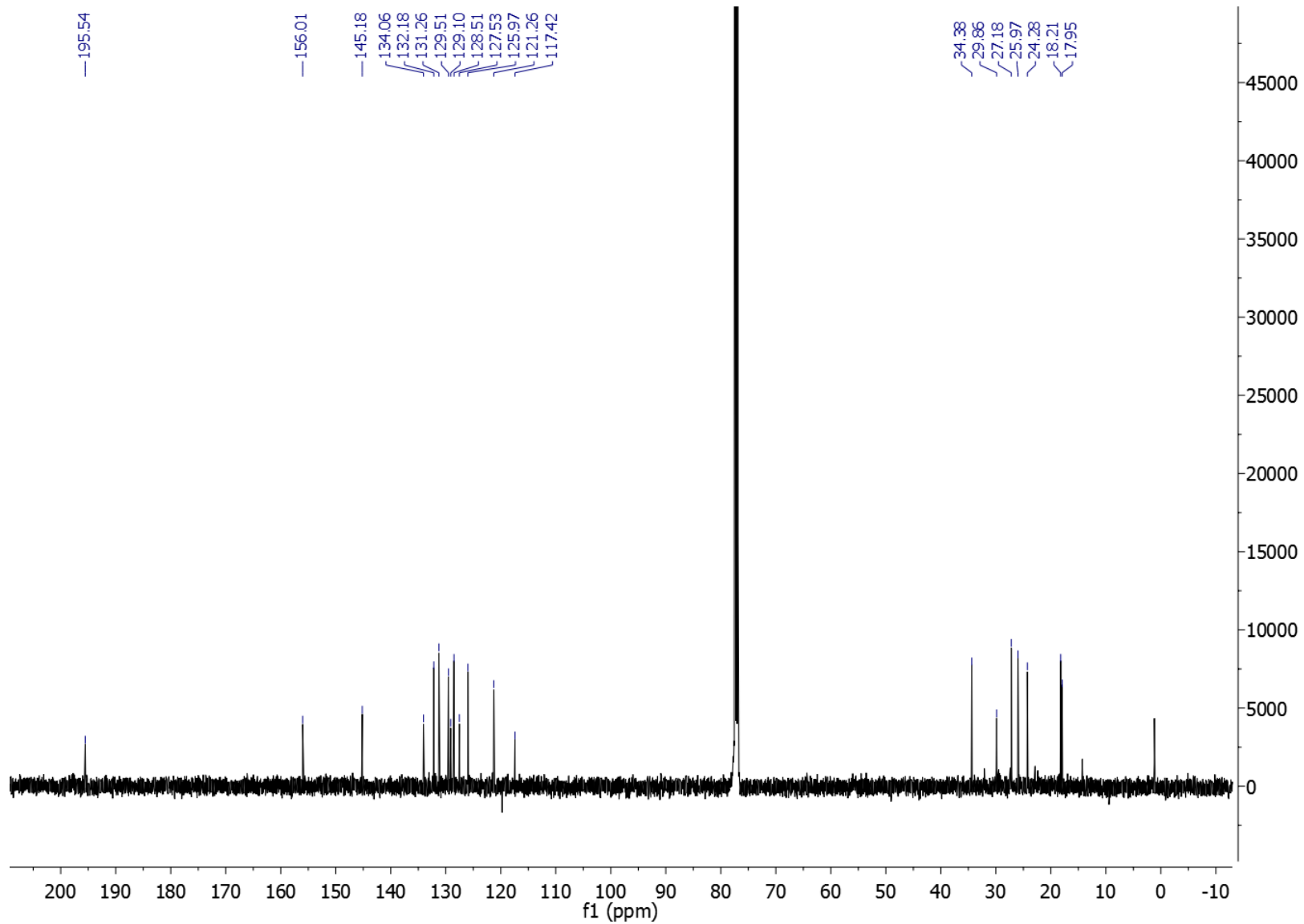


Figure S12. ^{13}C NMR spectrum of isodihydroauroglaucin (**6**) in CDCl_3 at 125 MHz.

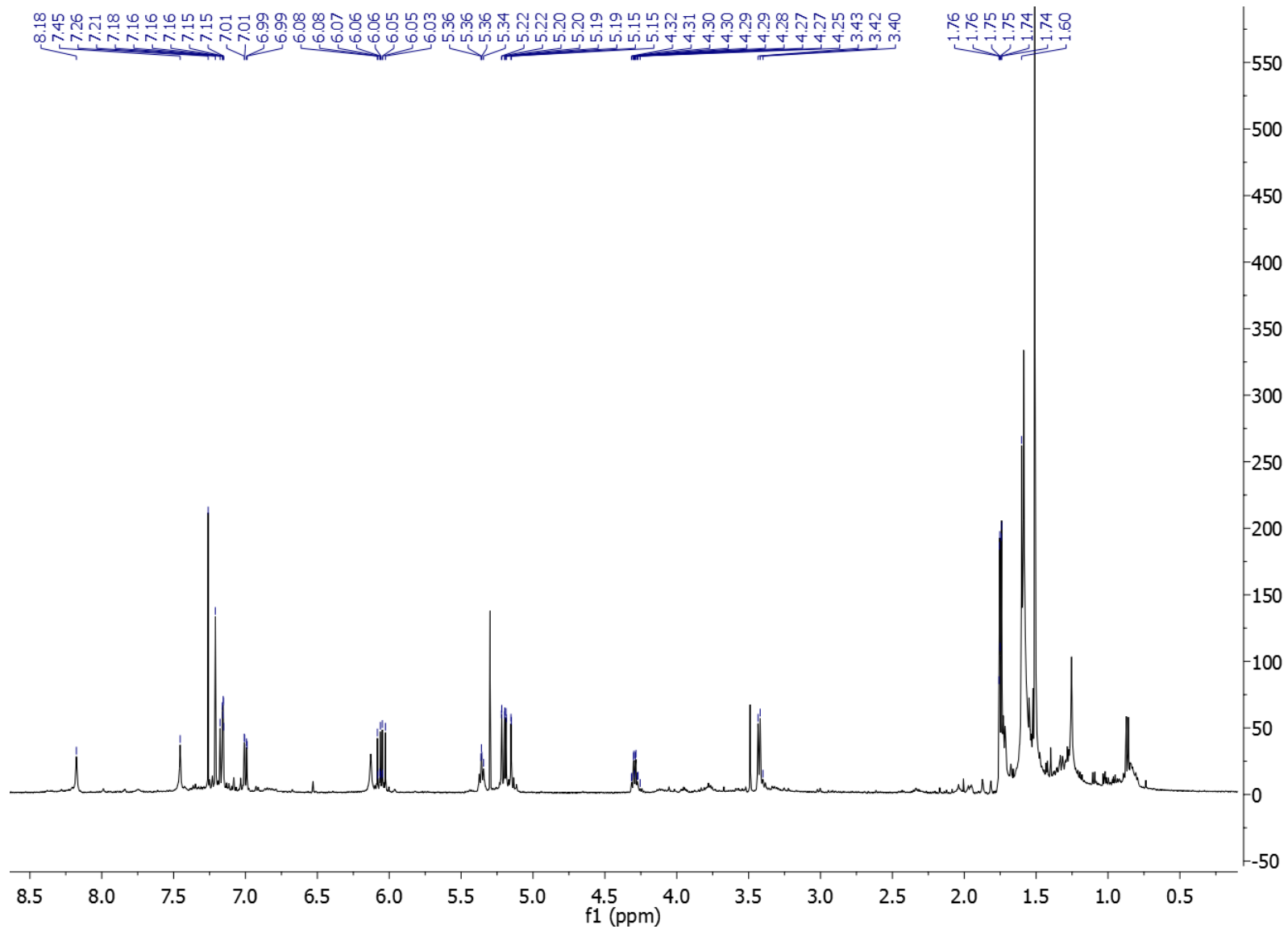


Figure S13. ¹H NMR spectrum of neochininul D (7) in CDCl₃ at 500 MHz.

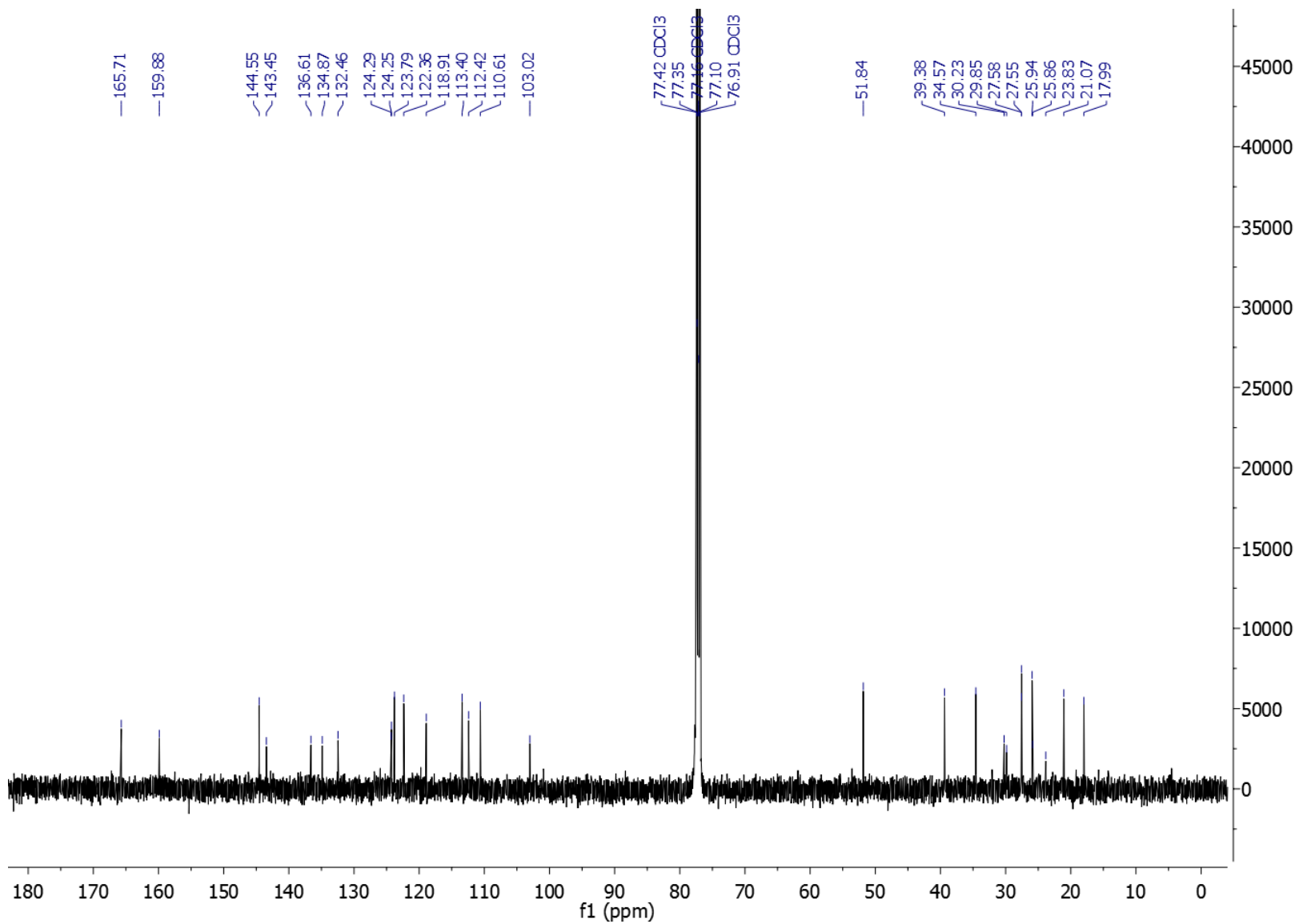


Figure S14. ^{13}C NMR spectrum of neoechinulin D (7) in CDCl_3 at 125 MHz.

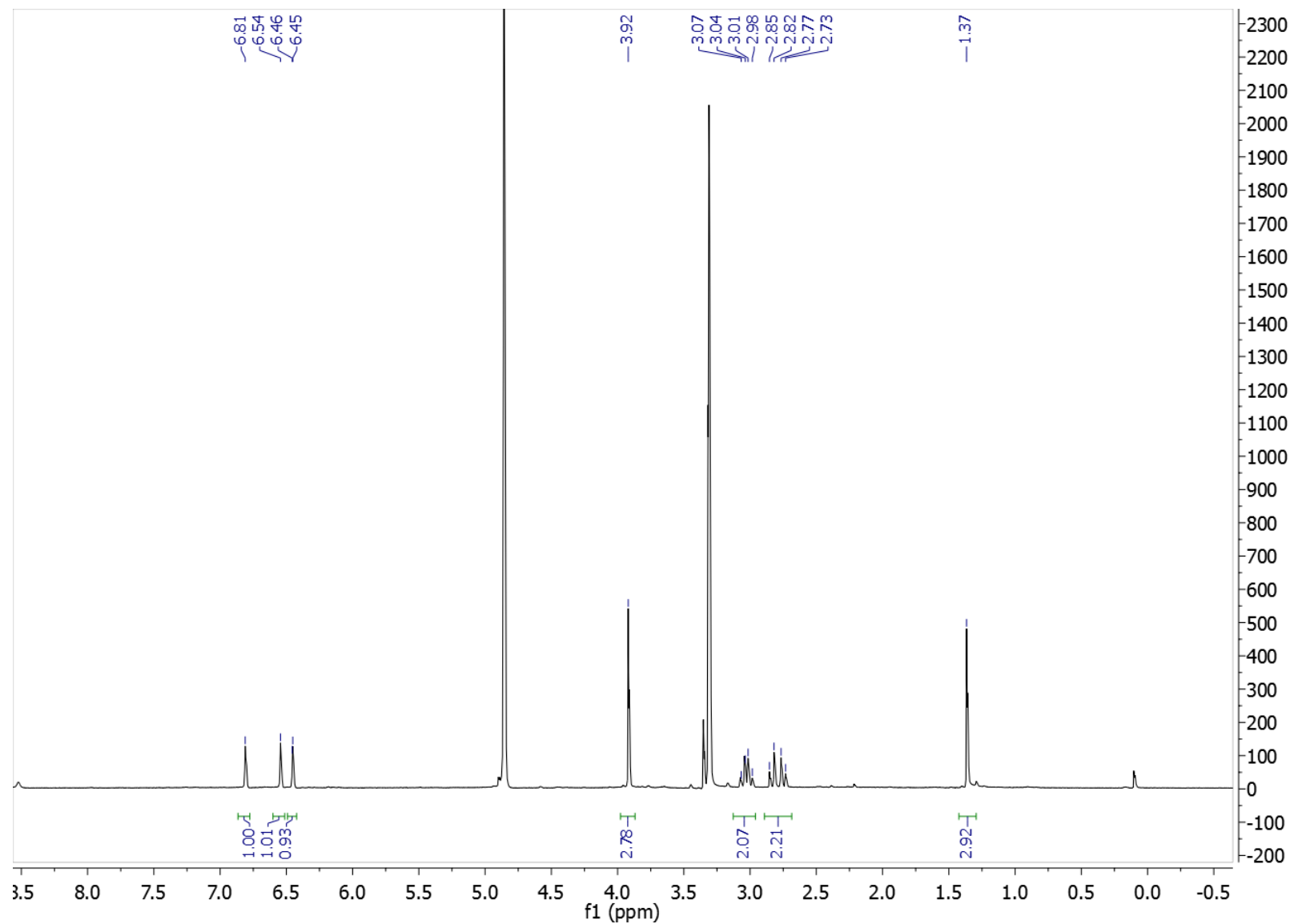


Figure S15. ^1H NMR spectrum of asperflavin (8) in CD_3OD at 500 MHz.

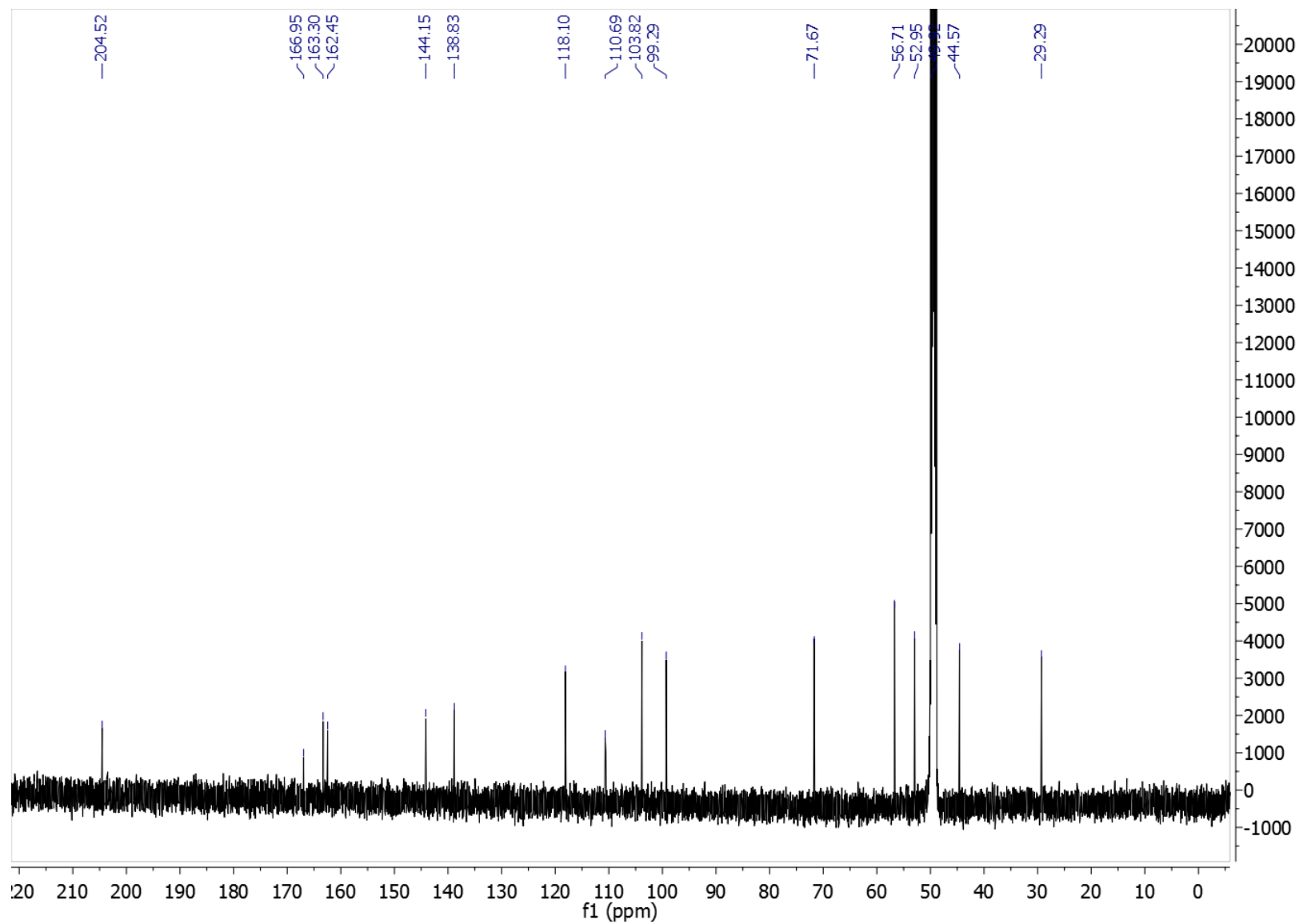


Figure S16. ^{13}C NMR spectrum of asperflavin (8) in CD_3OD at 125 MHz.

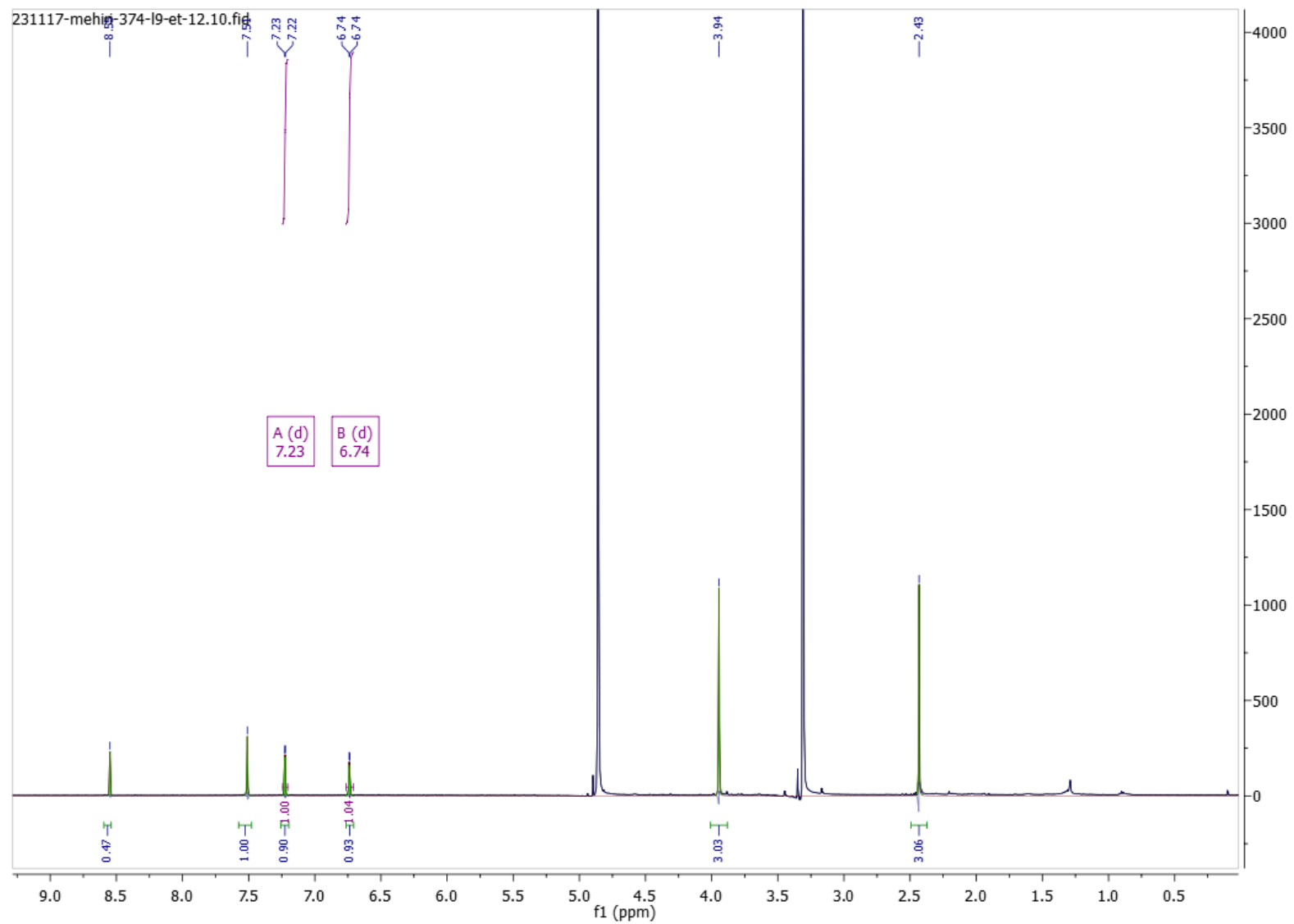


Figure S17. ^1H NMR spectrum of cinnalutetin (**9**) in CD_3OD at 500 MHz.

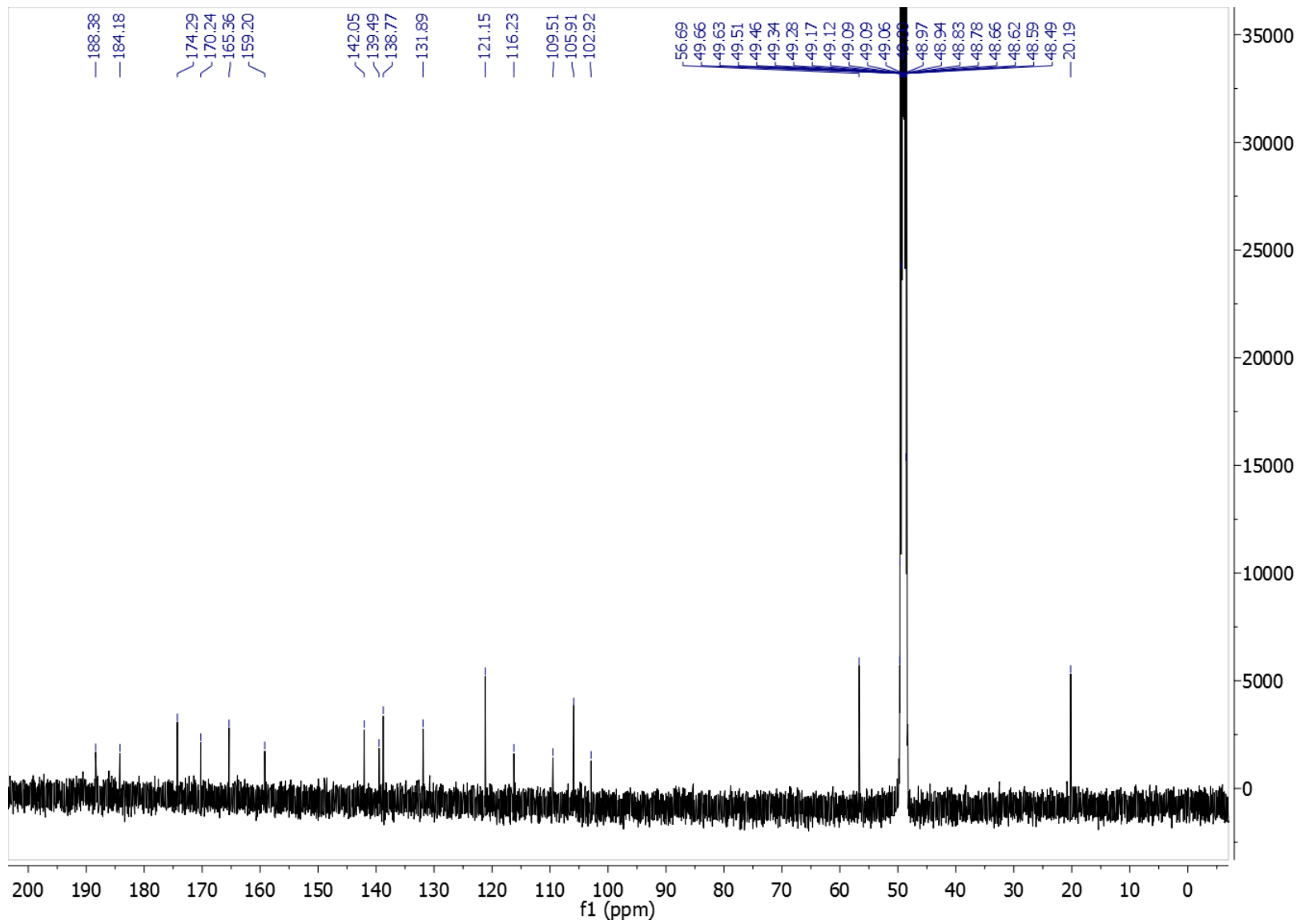


Figure S18. ^{13}C NMR spectrum of cinnalutuin (9) in CD_3OD at 125 MHz.

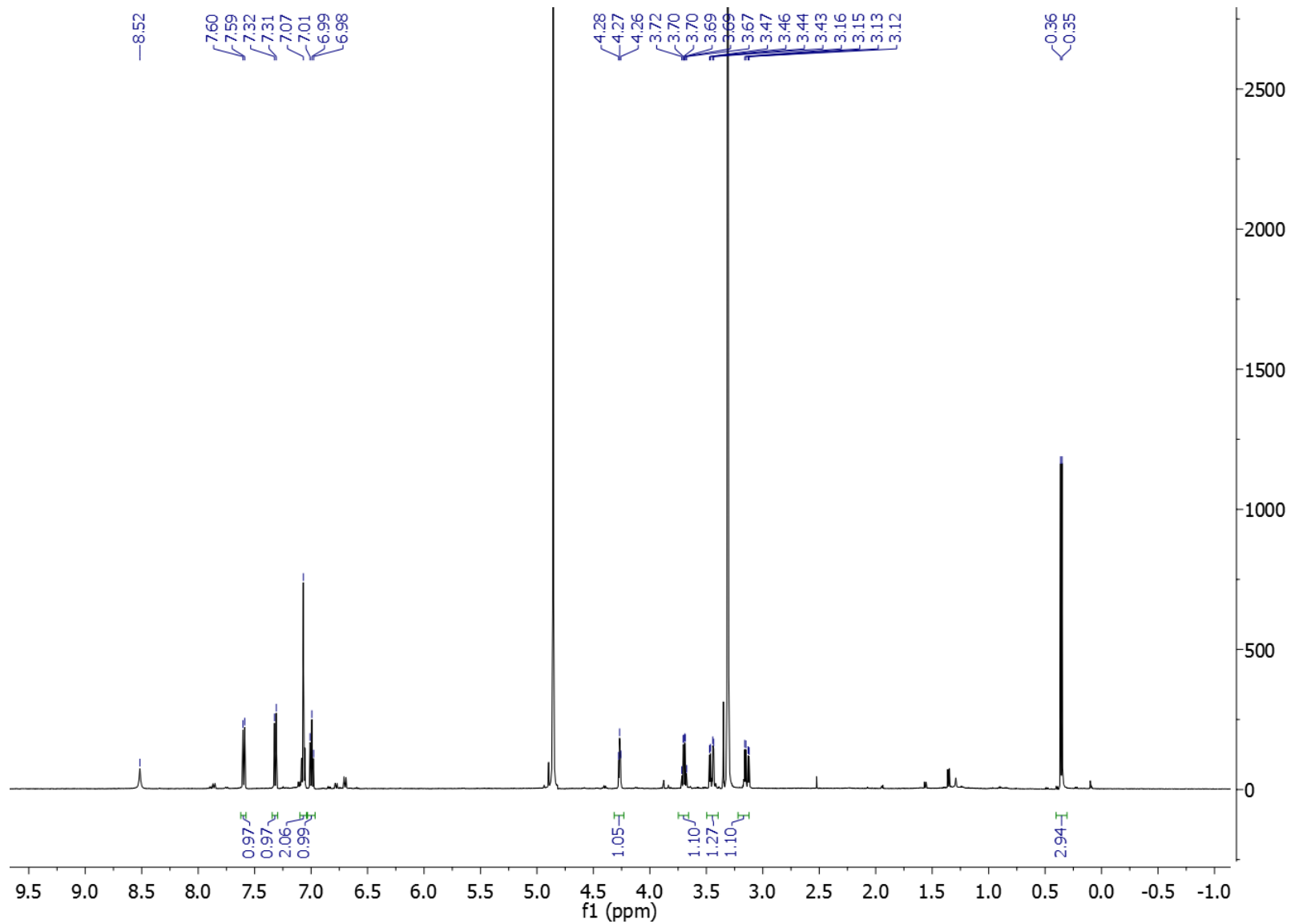


Figure S19. ^1H NMR spectrum of cyclo-L-Trp- L-Ala (10) in CD_3OD at 500 MHz.

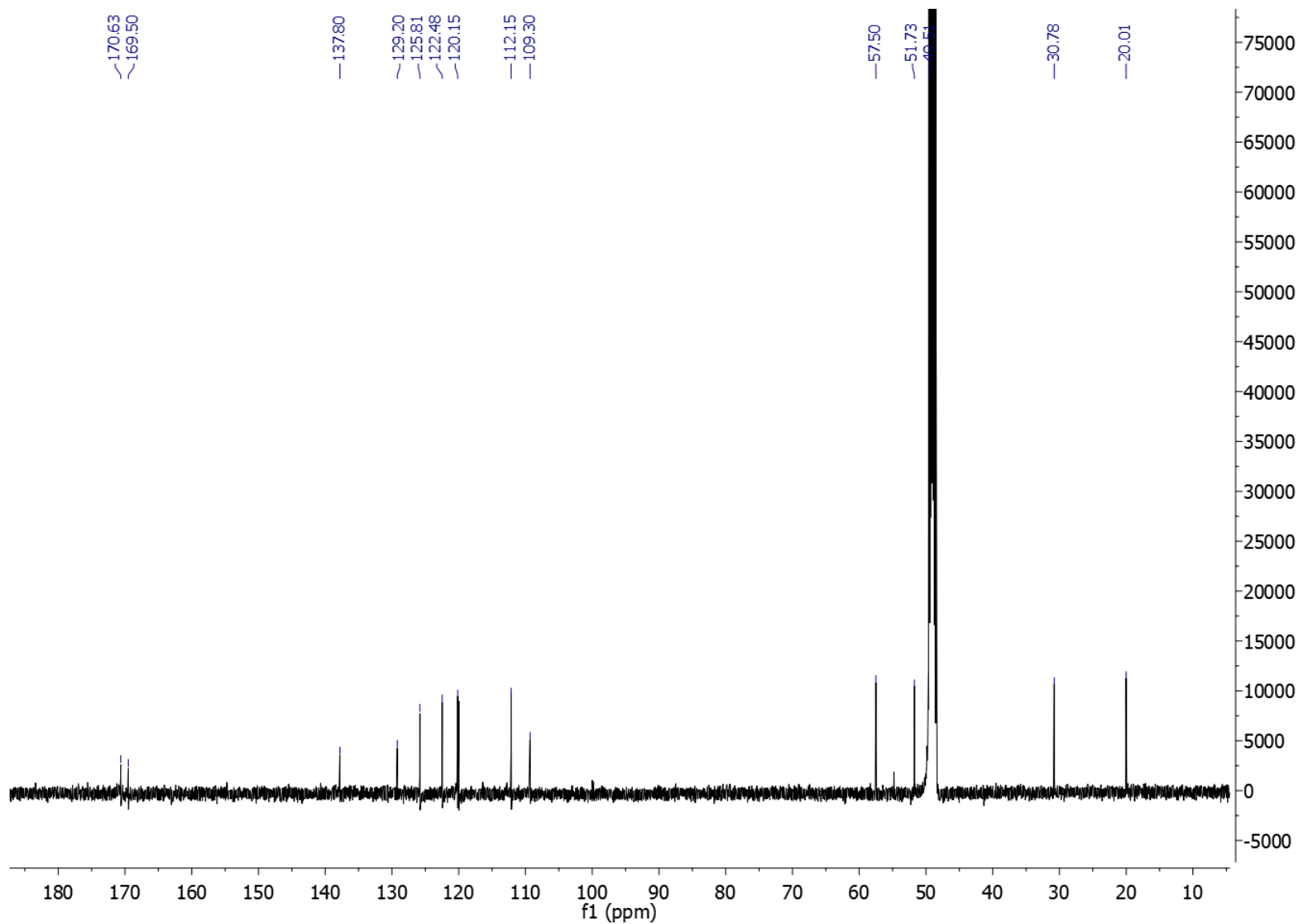


Figure S20. ^{13}C NMR spectrum of cyclo-L-Trp-L-Ala (10) in CD_3OD at 125 MHz.

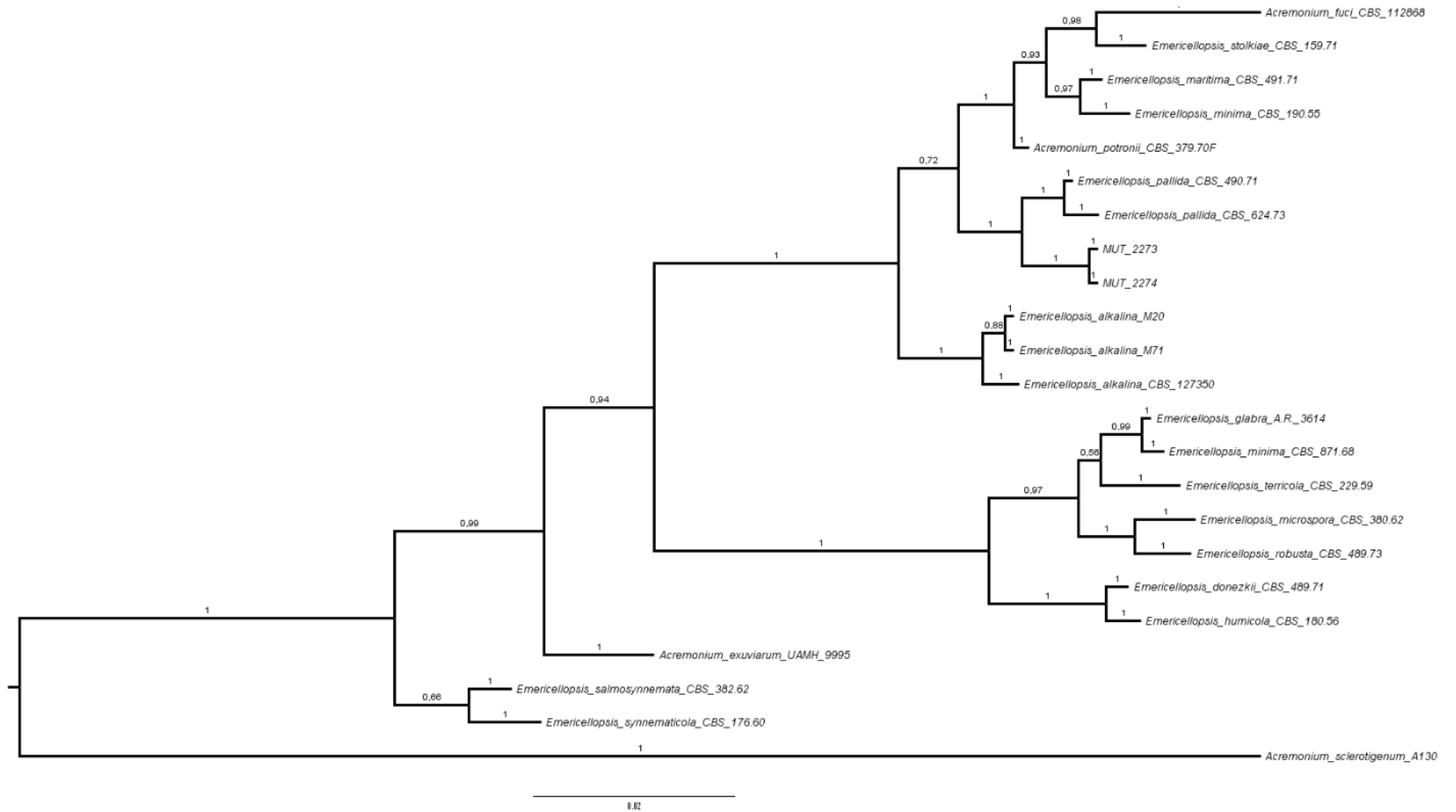


Figure S21. Bayesian phylogram of the genus *Emericellopsis* based on a combined dataset of ITS and beta tubulin partial sequences. MUT 2273 and MUT 2274 were identified as *Emericellopsis pallida*. Branch numbers indicate BPP values.

Table S4. Effect of different growth conditions on the HPLC-UV 280 nm chemical fingerprint of fungi, expressed as classes 1, 2, 3 and 4 at the increasing of the metabolic diversity. Exclusive peaks of each condition indicated in parenthesis. The changing in colours from dark to light blue and white indicated the increasing of the metabolic diversity.

MUT code	Taxa	Pure culture						Co-culture					
		WH	WHS	PDA	PDAS	GA	GAS	WH	WHS	PDA	PDAS	GA	GAS
2288	<i>Ceriporia lacerata</i>	2	1	1	1	1	1	1 (1)	1	1	1	1	1
2307	<i>Cladosporium allicinum</i>	2 (2)	2	2 (2)	2	2	1	1	1	2 (1)	2	2	1
2313	<i>Cladosporium allicinum</i>	2 (2)	2 (1)	2	2 (1)	2	2	2 (2)	2	1	1	2	2
2314	<i>Cladosporium cladosporioides</i>	3	2	2	2	1	1	2	1 (1)	2	2	1 (3)	1
2315	<i>Cladosporium pseudocladosporioides</i>	2 (1)	1	2 (1)	1 (2)	2	2	1	2	2 (1)	2	2 (2)	1
2282	<i>Coprinellus</i> sp.	2 (1)	1 (1)	1	1 (1)	1	1	1	1	1	1	1	1
2332	<i>Coprinellus</i> sp.	2	1 (1)	1	1	1	1	1	1 (1)	1 (1)	2	1	1
2273	<i>Emericellopsis pallida</i>	2	2	4 (1)	3	2	1	1 (2)	1 (1)	3 (3)	3	1	1
2274	<i>Emericellopsis pallida</i>	1 (1)	1 (1)	2	1	1	1	1	1 (1)	2	1	1 (2)	1
2316	<i>Eurotium chevalieri</i>	4	4 (1)	4 (1)	4 (4)	1	1	4	4 (2)	4 (3)	4	1 (1)	1 (1)
2334	<i>Euthypella scoparia</i>	2 (2)	1 (1)	1	1	1	1 (1)	1 (3)	1	1	1 (1)	1	1
2317	<i>Fusarium solani</i>	1	1	4	2	2	1	1	1	3	2	2	1
2321	<i>Penicillium chrysogenum</i>	1	2	2	4	1 (1)	1	3	2	4	3	1	1
2328	<i>Penicillium oxalicum</i>	4	3 (1)	3	3	2	2	3 (1)	4 (2)	4	3 (1)	1	1
2322	<i>Penicillium paneum</i>	2 (1)	2	2	3	1	1	2	2	3	3	2	1
2326	<i>Penicillium paneum</i>	2	2	2 (2)	2	1	1	2	2	2	2	1	1
2331	<i>Psathyrella candolleana</i>	2 (2)	1	1	1	1	1	2	2	3	1	1 (1)	1
2415	<i>Rhodotorula mucillaginosa</i>	2	2	1 (1)	1 (1)	1	1	1	2	1	1	1	1
2413	<i>Tolypocladium cylindrosporium</i>	1 (1)	2 (1)	2	2	2	2	2	2 (1)	2	2 (1)	1	1
2410	<i>Tolypocladium cylindrosporium</i>	3 (1)	2 (2)	2 (2)	1 (1)	2	2	3	2	1	2	2 (1)	1

Table S5. Effect of different growth conditions on the development of the fungus (-, +, ++, +++); production of exudates (*e*), soluble pigments (*s*) and high sporulation (*h*); fungal-bacteria interaction as antagonistic response (*a*), predominance of the fungus (*p*) or complete inhibition of the bacterial growth (*n*). The changing in colours from dark to light blue and white, underlined the increasing of growth classes.

MUT code	Taxa	Pure culture						Co-culture					
		WH	WHS	PDA	PDAS	GA	GAS	WH	WHS	PDA	PDAS	GA	GAS
2288	<i>Ceriporia lacerata</i>	+++ (<i>e, s</i>)	++	+++	+++	+++	+++	+++ (<i>e, s, p</i>)	+++	+++ (<i>p</i>)	+++ (<i>n</i>)	+++	++
2307	<i>Cladosporium allicinum</i>	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	++ (<i>h</i>)	++	++ (<i>h, a</i>)	++ (<i>h, a</i>)	++ (<i>h, a</i>)	+++ (<i>h, p</i>)	+ (<i>h</i>)	+
2313	<i>Cladosporium allicinum</i>	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	++ (<i>h</i>)	+	+++ (<i>h, a</i>)	+++ (<i>h, a</i>)	+++ (<i>h, a</i>)	+++ (<i>h, a</i>)	++ (<i>h</i>)	+
2314	<i>Cladosporium cladosporioides</i>	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	++	+++ (<i>h, a</i>)	+++ (<i>h, a</i>)	+++ (<i>h, a</i>)	+++ (<i>h, p</i>)	++ (<i>h</i>)	++
2315	<i>Cladosporium pseudocladosporioides</i>	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	++ (<i>h</i>)	+	+++ (<i>h, a</i>)	+++ (<i>h, a</i>)	+++ (<i>h</i>)	+++ (<i>h, n</i>)	+ (<i>h</i>)	+
2282	<i>Coprinellus</i> sp.	+++	+++	+++	+++	+++	+	+++ (<i>p</i>)	++	+++ (<i>p</i>)	++	++	+
2332	<i>Coprinellus</i> sp.	+++	++	+++	+++	+++	-	++ (<i>p</i>)	+	+++ (<i>p</i>)	++	+	+
2273	<i>Emericellopsis pallida</i>	+++	+++	+++	+++	++	+++	+++ (<i>a</i>)	+++	+++ (<i>a</i>)	+++	++	++
2274	<i>Emericellopsis pallida</i>	+++	+++	+++	+++	+++	+++	+++ (<i>a</i>)	+++ (<i>p</i>)	+++ (<i>a</i>)	+++ (<i>p</i>)	++	++
2316	<i>Eurotium chevalieri</i>	+++ (<i>e, h, s</i>)	+++ (<i>h, s</i>)	+++ (<i>h, s</i>)	+++ (<i>h, s</i>)	+	++	++ (<i>e, h, s</i>)	+++ (<i>h, s, a</i>)	++ (<i>h, s</i>)	+++ (<i>h, s, n</i>)	+	++
2334	<i>Eutypella scoparia</i>	+++	+++	+++	+++	++	++	+++	+++	+++	++	++	-
2317	<i>Fusarium solani</i>	+++ (<i>s</i>)	+++	+++ (<i>s</i>)	+++	+++	+++	+++ (<i>s</i>)	+++ (<i>p</i>)	+++ (<i>s, p</i>)	+++ (<i>p</i>)	+++	+++
2321	<i>Penicillium chrysogenum</i>	+++ (<i>h, s</i>)	+++ (<i>h, s</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h, s</i>)	+++ (<i>h</i>)	+++ (<i>h, s, a</i>)	+++ (<i>h, s, a</i>)	+++ (<i>h</i>)	+++ (<i>h, n</i>)	++ (<i>h, s</i>)	++ (<i>h</i>)
2328	<i>Penicillium oxalicum</i>	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	+++ (<i>h</i>)	++	++	+++ (<i>h, p</i>)	+++ (<i>h, p</i>)	+++ (<i>h, p</i>)	+++ (<i>h, p</i>)	+++	+++
2322	<i>Penicillium paneum</i>	+++	+++	+++ (<i>h</i>)	+++ (<i>h</i>)	++	+	+++ (<i>a</i>)	+++ (<i>a</i>)	+++ (<i>h, p</i>)	+++ (<i>h, p</i>)	+++	+
2326	<i>Penicillium paneum</i>	+++	+++	+++ (<i>h</i>)	+++ (<i>h</i>)	+++	++	+++ (<i>a</i>)	+++ (<i>a</i>)	+++ (<i>h</i>)	+++ (<i>h, n</i>)	+++	+
2331	<i>Psathyrella candolleana</i>	+++	+	+++	-	+++	-	++ (<i>a</i>)	+	+++ (<i>a</i>)	-	++	-
2415	<i>Rhodotorula mucillaginosa</i>	+++	+++	+++	+++	+	+	+++	+++	+++	+++	-	+
2413	<i>Tolypocladium cylindrosporum</i>	+++	+++	+++	+++	+++	+++	+++ (<i>a</i>)	+++ (<i>a</i>)	+++	+++	++	++
2410	<i>Tolypocladium cylindrosporum</i>	+++	+++	++	++	++	+	++	++	++	++	+	+