

Supplementary Materials to

Preparation and Evaluation of 6-Gingerol Derivatives as Novel Antioxidants and Antiplatelet Agents

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Table of contents

Figure S1. HRMS spectrum of compound 4

Figure S2. HRMS spectrum of compound 12

Figure S3. HRMS spectrum of compound 14

Figure S4. HRMS spectrum of compound 15

Figure S5. HRMS spectrum of compound 16

Figure S6. HRMS spectrum of compound 17

Figure S7. HRMS spectrum of compound 18

Figure S8. HRMS spectrum of compound 22

Figure S9. ¹H-NMR spectrum of compound 4

Figure S10. ¹³C-NMR spectrum of compound 4

Figure S11. ^1H -NMR spectrum of compound **12**

Figure S12. ^{13}C -NMR spectrum of compound **12**

Figure S13. ^1H -NMR spectrum of compound **14**

Figure S14. ^{13}C -NMR spectrum of compound **14**

Figure S15. ^1H -NMR spectrum of compound **15**

Figure S16. ^{13}C -NMR spectrum of compound **15**

Figure S17. ^1H -NMR spectrum of compound **16**

Figure S18. ^{13}C -NMR spectrum of compound **16**

Figure S19. ^1H -NMR spectrum of compound **17**

Figure S20. ^{13}C -NMR spectrum of compound **17**

Figure S21. ^1H -NMR spectrum of compound **18**

Figure S22. ^{13}C -NMR spectrum of compound **18**

Figure S23. ^1H -NMR spectrum of compound **22**

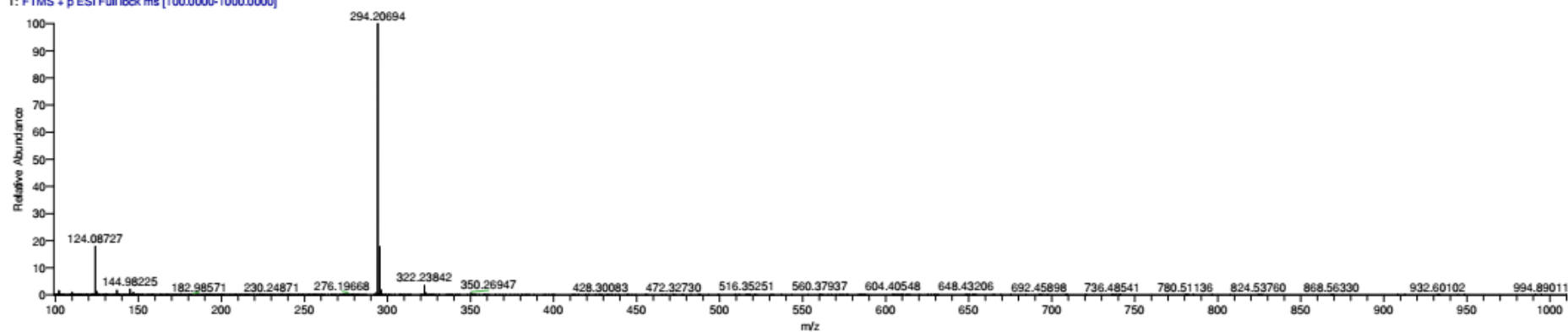
Figure S24. ^{13}C -NMR spectrum of compound **22**

Figure S25. Correlation between the antiplatelet and COX-1 inhibitory activities of the tested compounds

Table 1. Docking results obtained using AutoDockTools 1.5.7 and Discovery Studio visualizer (21.1.0.20298)

Figure S1. HRMS spectrum of compound **4**

GT-20201212POS-1 #3536-3547 RT: 18.38-18.39 AV: 4 NL: 1.11E9
T: FTMS + p ESI Full lock ms [100.0000-1000.0000]



GT-20201212POS-1 #3536-3547 RT: 18.38-18.39 AV: 4 NL: 1.11E9
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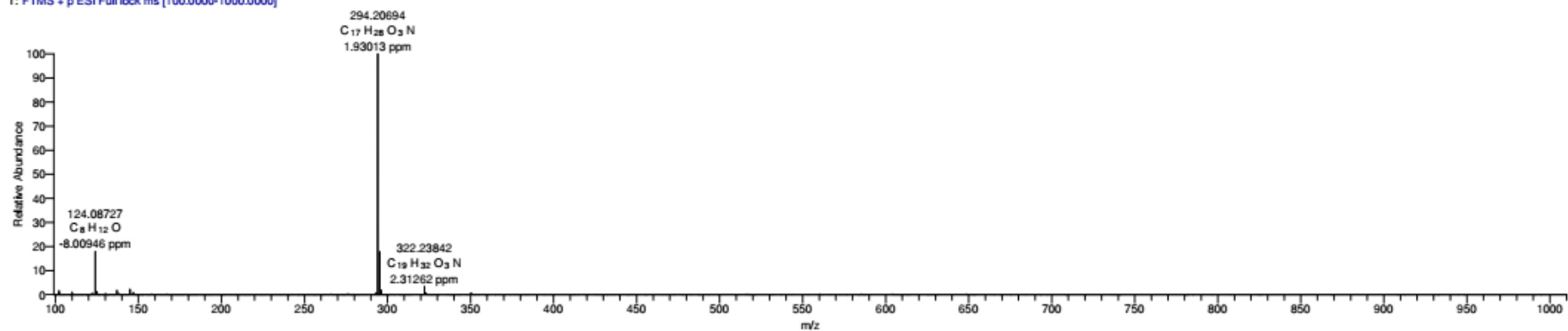
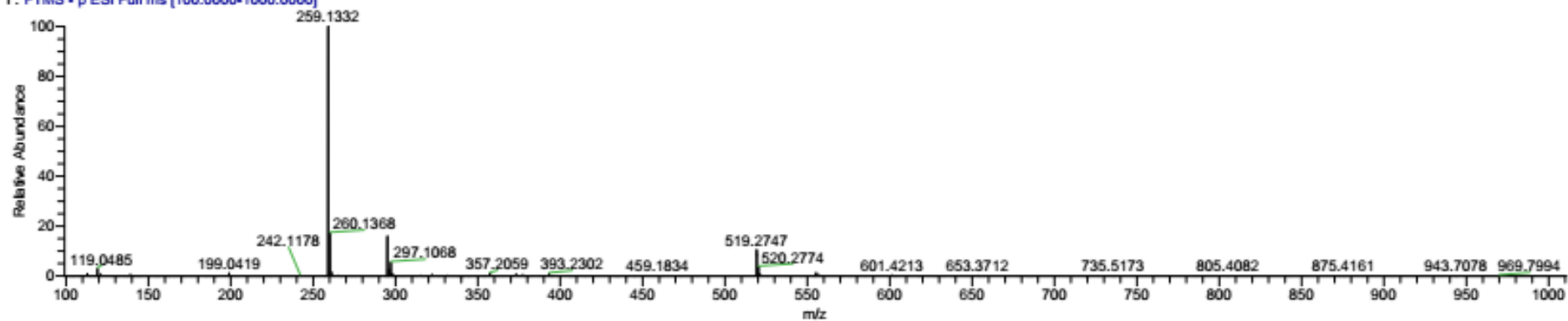


Figure S2. HRMS spectrum of compound 12

GT20210526 #80-82 RT: 0.53-0.54 AV: 3 NL: 2.72E8

T: FTMS • p ESI Full ms [100.0000-1000.0000]



GT20210526 #80-82 RT: 0.53-0.54 AV: 3 NL: 2.72E8

T: FTMS • p ESI Full ms [100.0000-1000.0000]

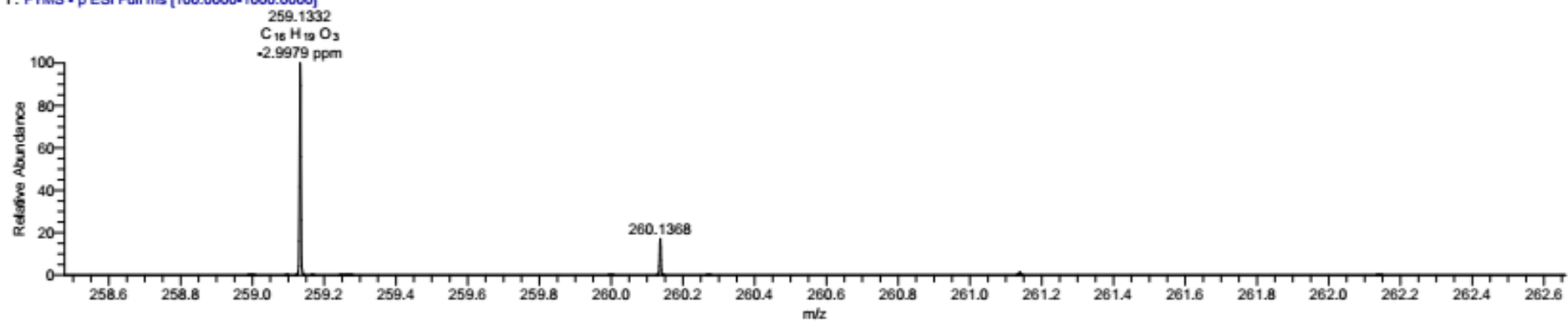
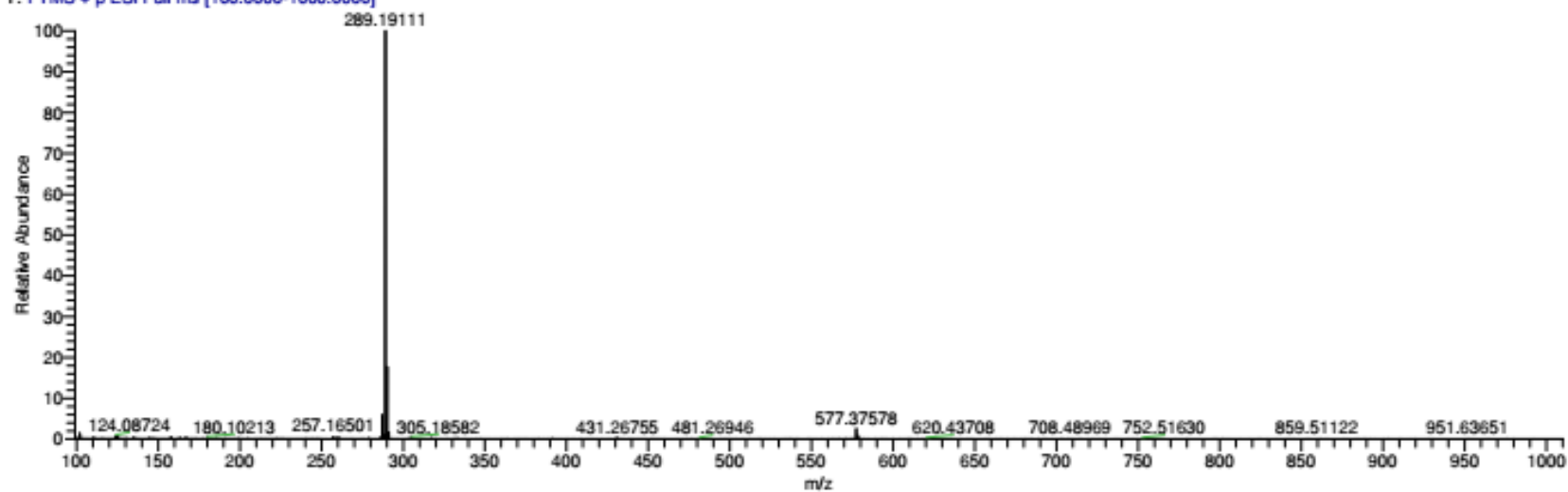


Figure S3. HRMS spectrum of compound 14

GT20210305POS-1 #2129-2188 RT: 11.31-11.61 AV: 60 NL: 1.09E9
T: FTMS + p ESI Full ms [100.0000-1000.0000]



GT20210305POS-1 #2129-2188 RT: 11.31-11.61 AV: 60 NL: 1.09E9
T: FTMS + p ESI Full ms [100.0000-1000.0000]

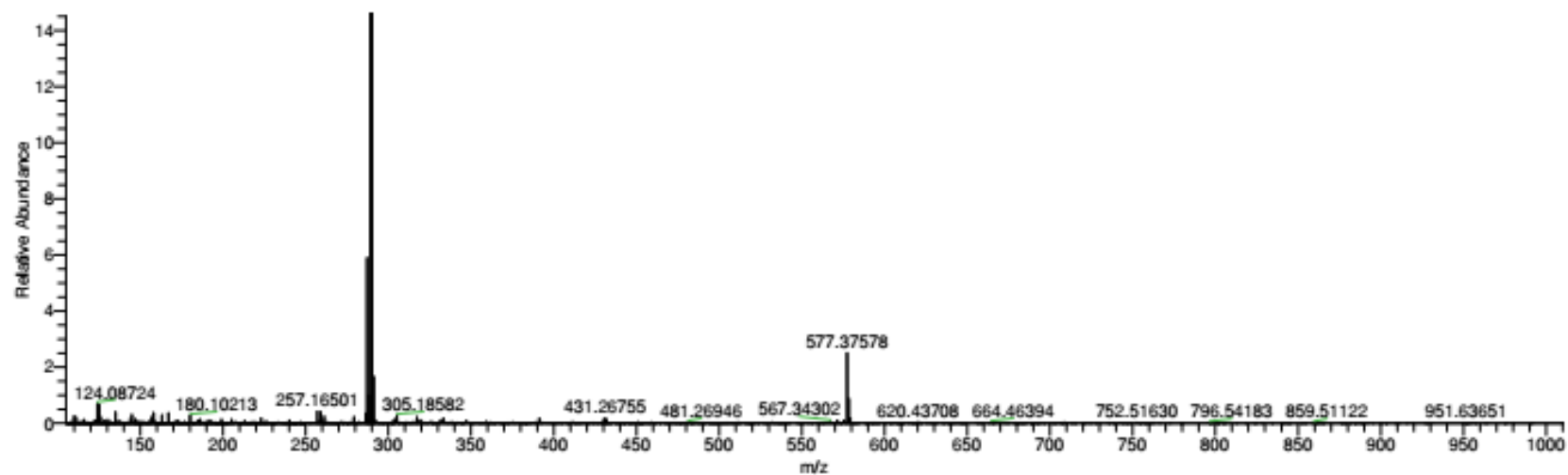


Figure S4. HRMS spectrum of compound 15

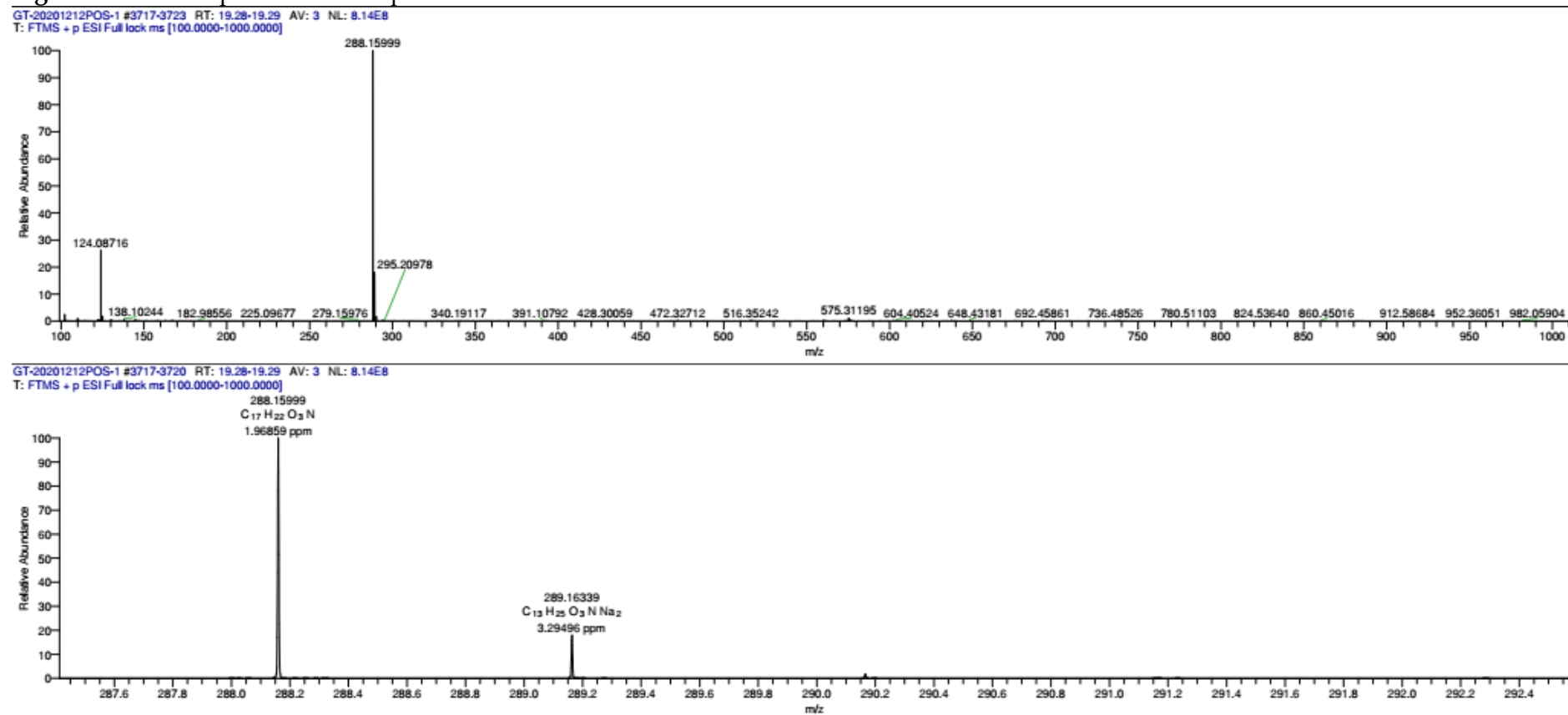


Figure S5. HRMS spectrum of compound 16

GT20210305POS-1 #494-528 RT: 2.63-2.81 AV: 35 NL: 8.66E8

T: FTMS + p ESI Full lock ms [100.0000-1000.0000]

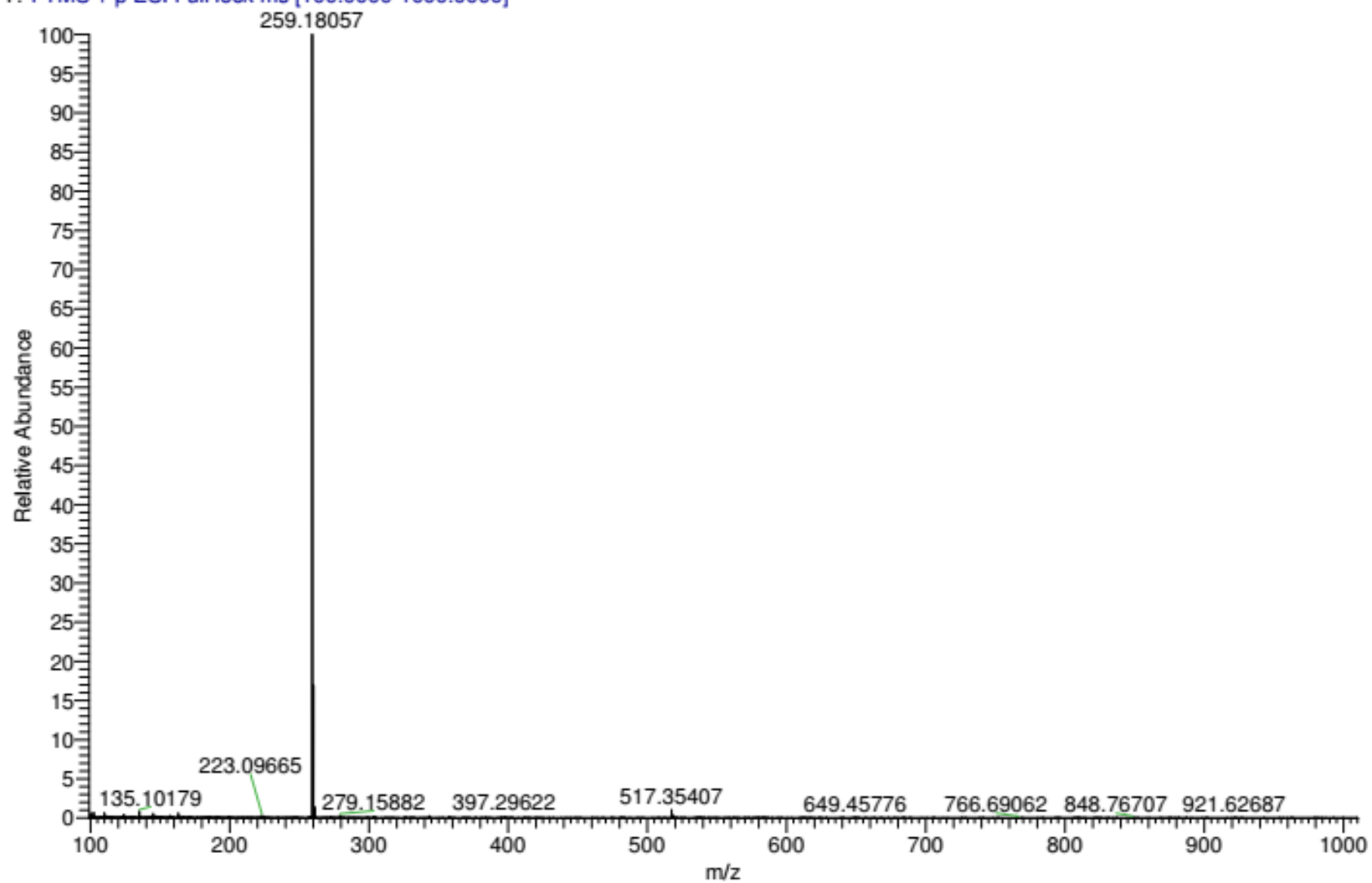
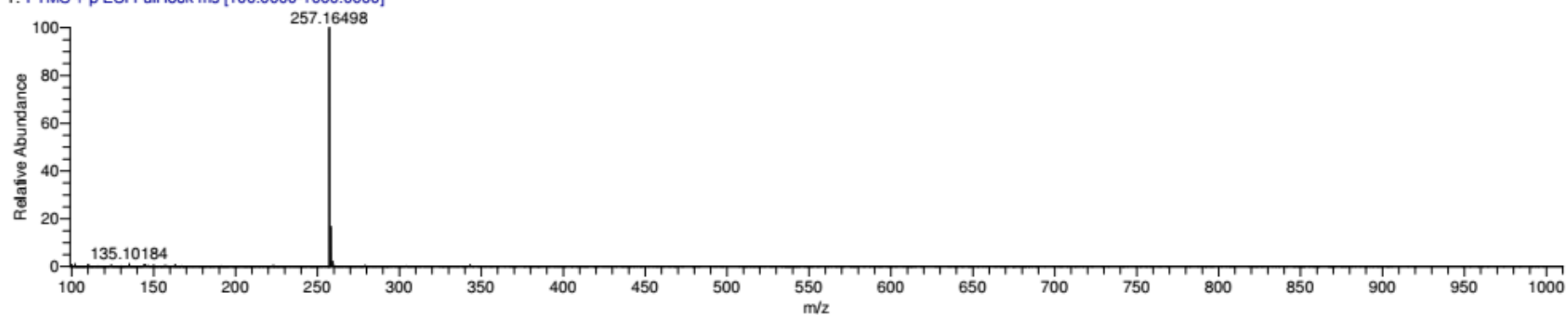


Figure S6. HRMS spectrum of compound **17**

GT20210305POS-1 #822-852 RT: 4.36-4.51 AV: 31 NL: 6.03E8
T: FTMS + p ESI Full lock ms [100.0000-1000.0000]



GT20210305POS-1 #822-852 RT: 4.36-4.51 AV: 31 NL: 6.03E8
T: FTMS + p ESI Full lock ms [100.0000-1000.0000]

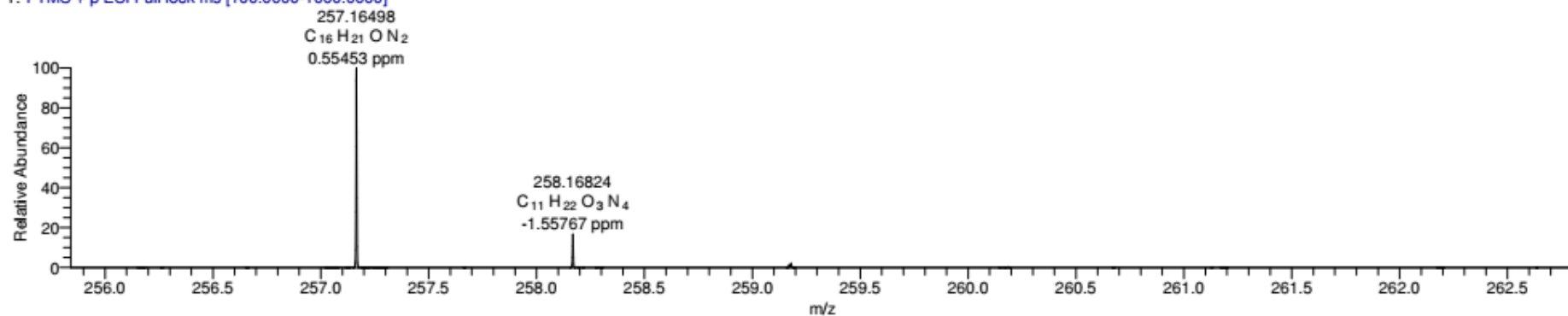


Figure S7. HRMS spectrum of compound **18**

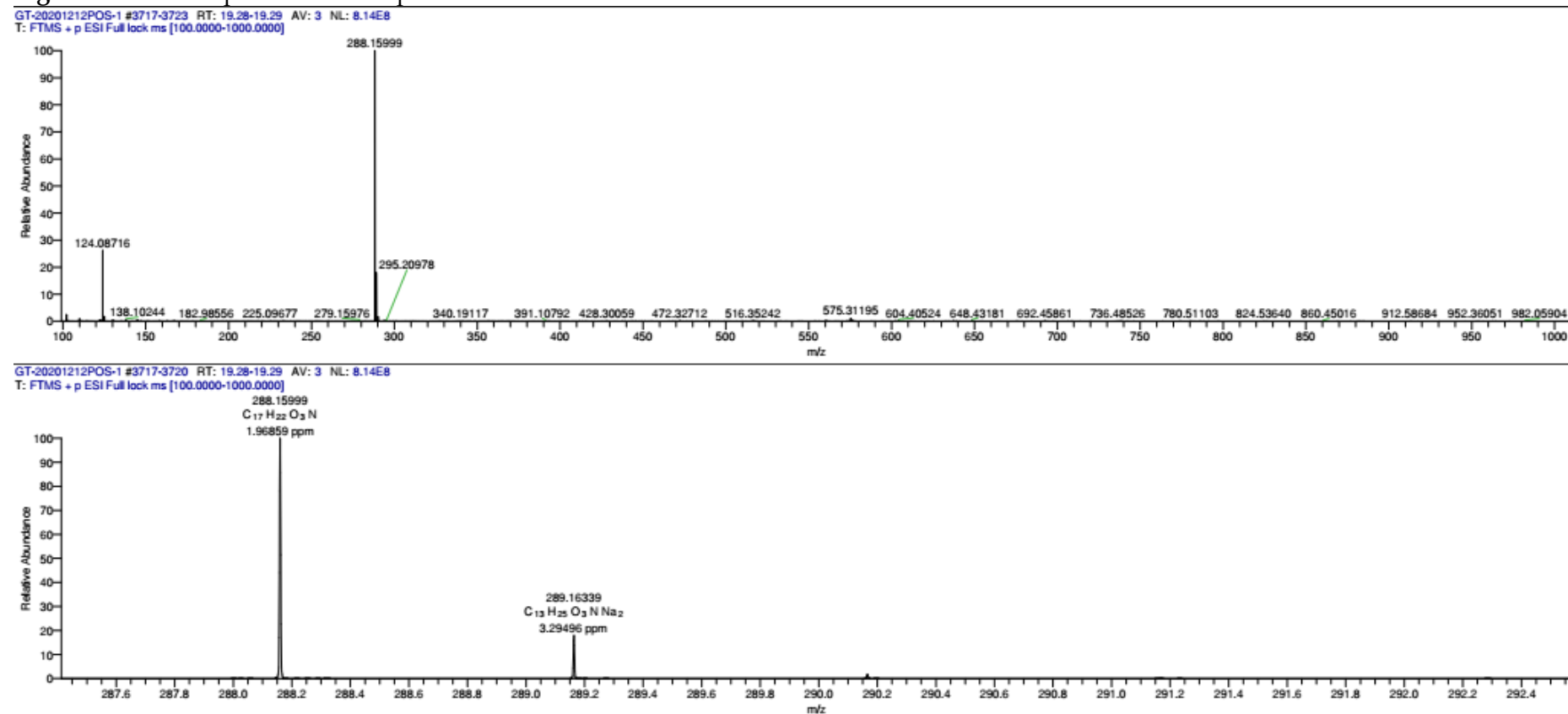
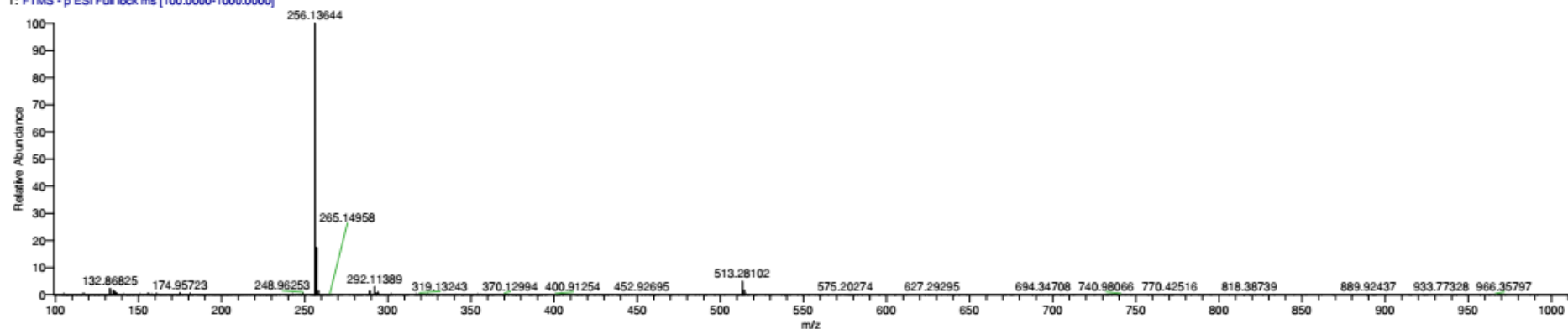


Figure S8. HRMS spectrum of compound 22

GT-20210122NEG-1 #1154-1166 RT: 7.07-7.14 AV: 13 NL: 5.63E7
T: FTMS - p ESI Full lock ms [100.0000-1000.0000]



GT-20210122NEG-1 #1154-1166 RT: 7.07-7.14 AV: 13 NL: 5.63E7
T: FTMS - p ESI Full lock ms [100.0000-1000.0000]

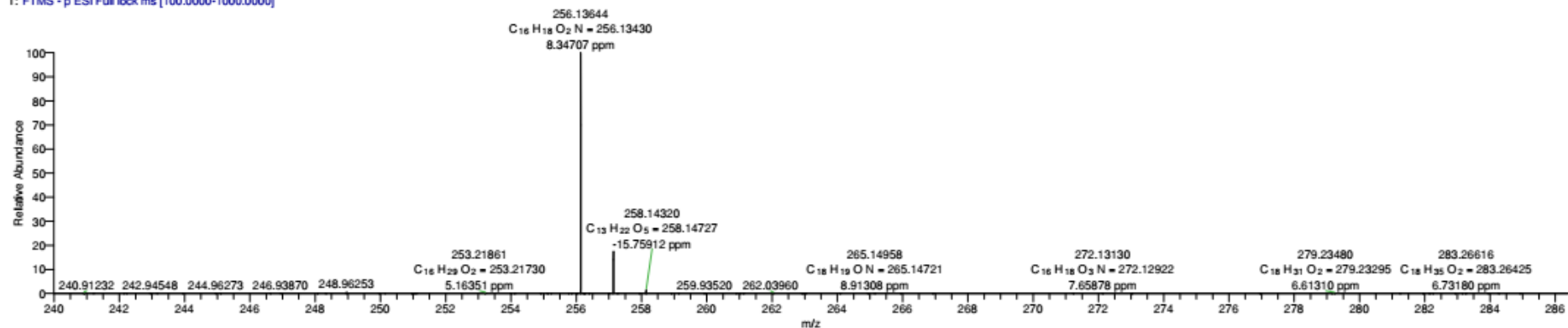


Figure S9. ^1H -NMR spectrum of compound 4

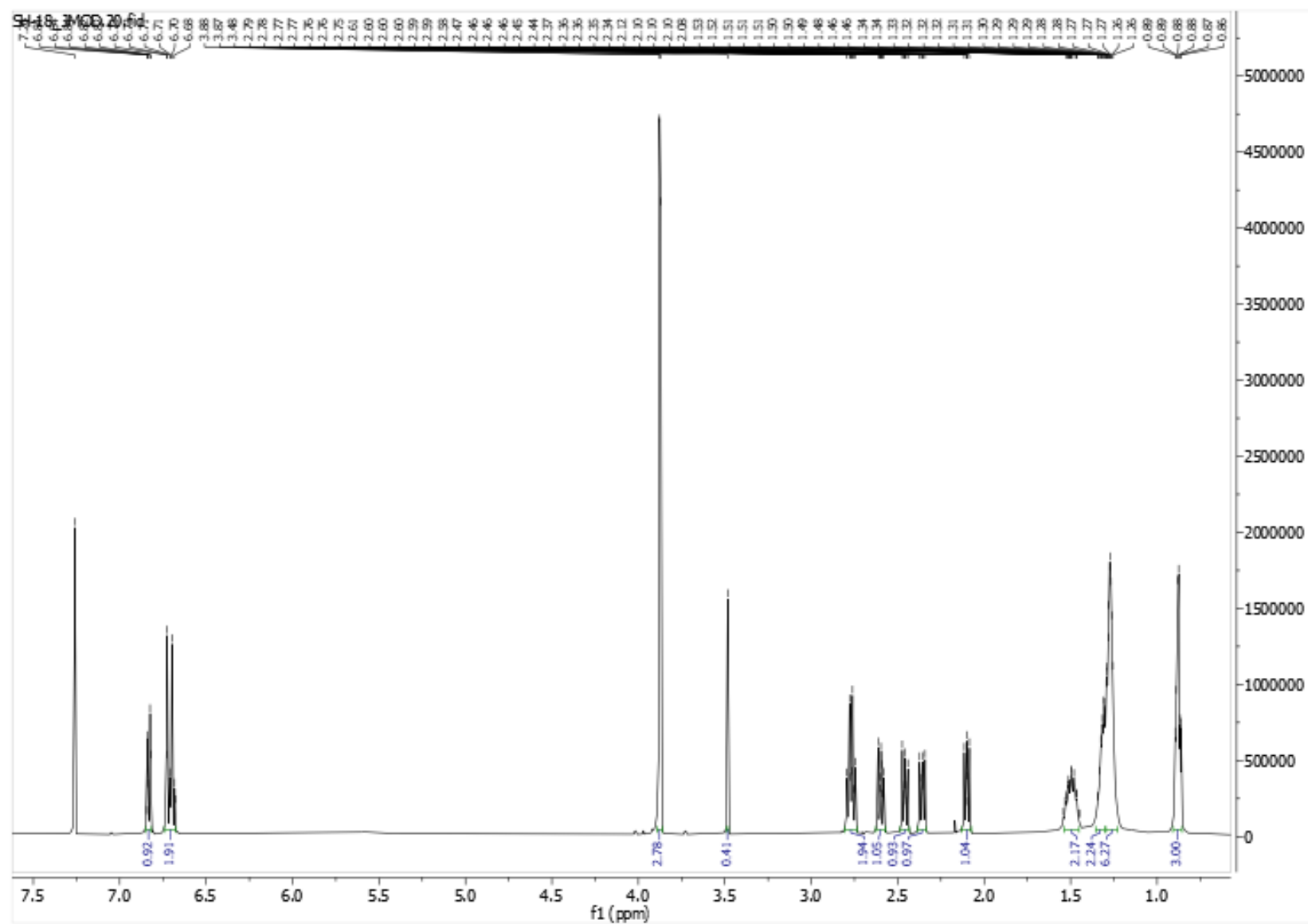


Figure S10. ^{13}C -NMR spectrum of compound 4

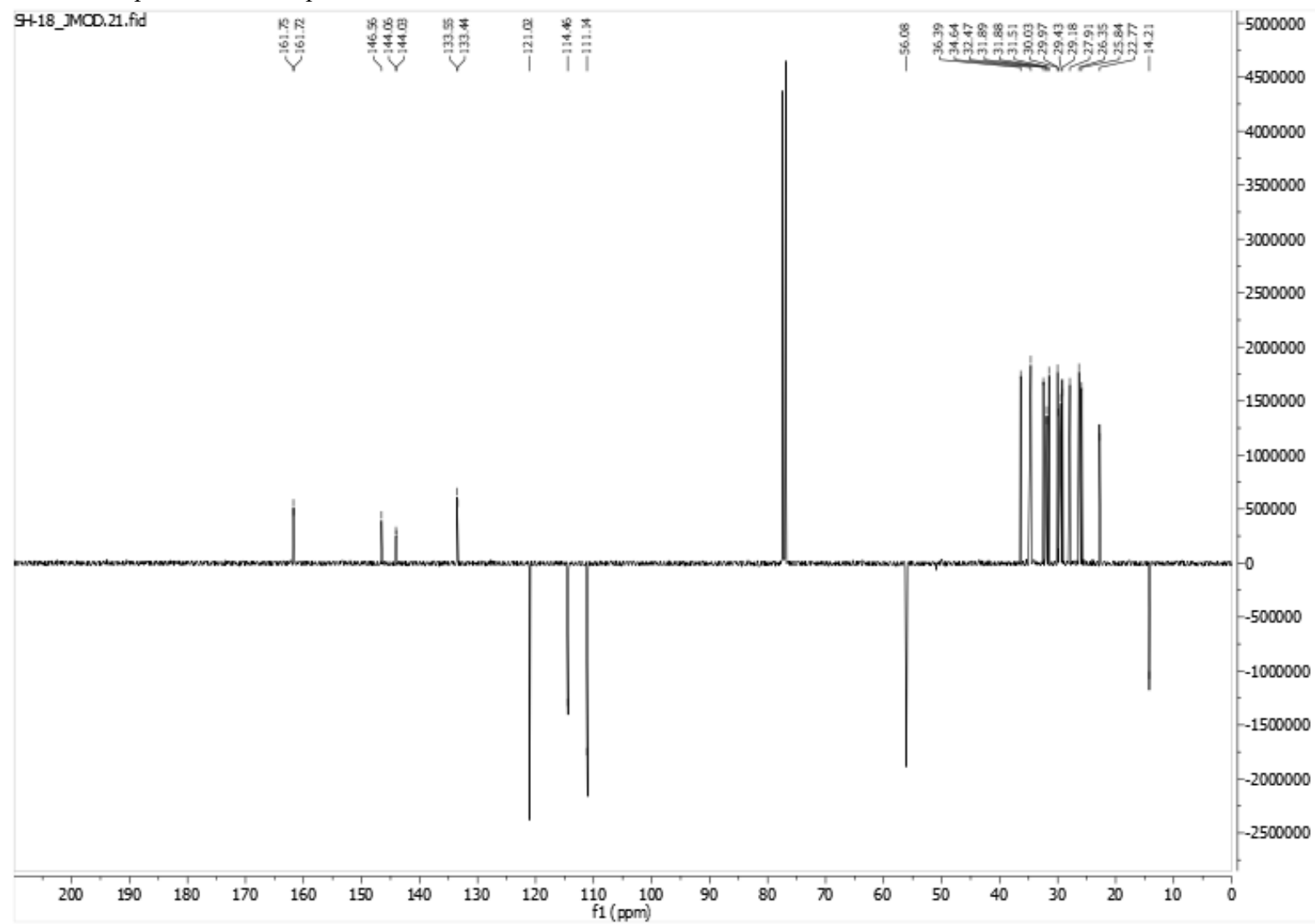


Figure S11. ^1H -NMR spectrum of compound 12

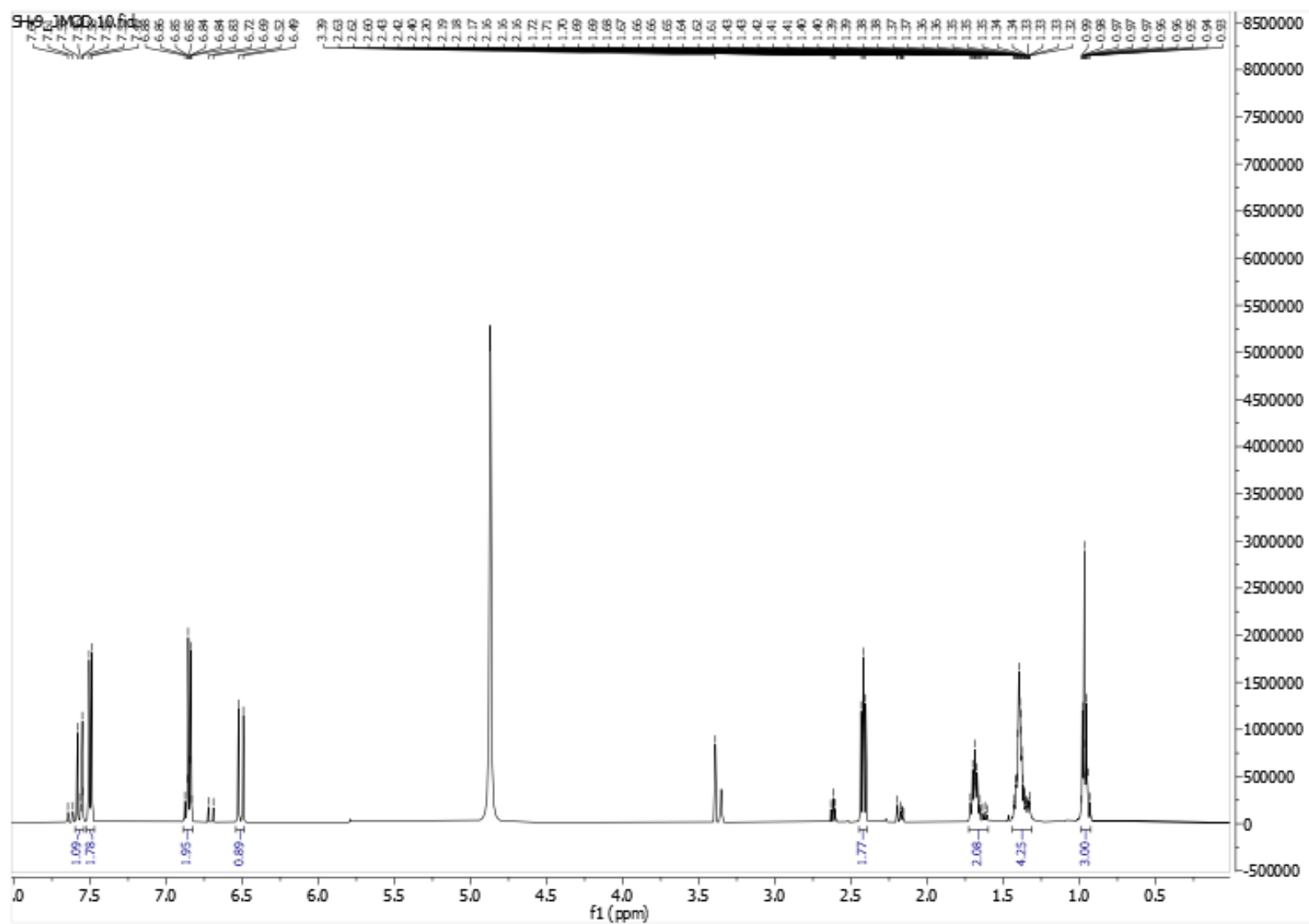


Figure S12. ^{13}C -NMR spectrum of compound **12**

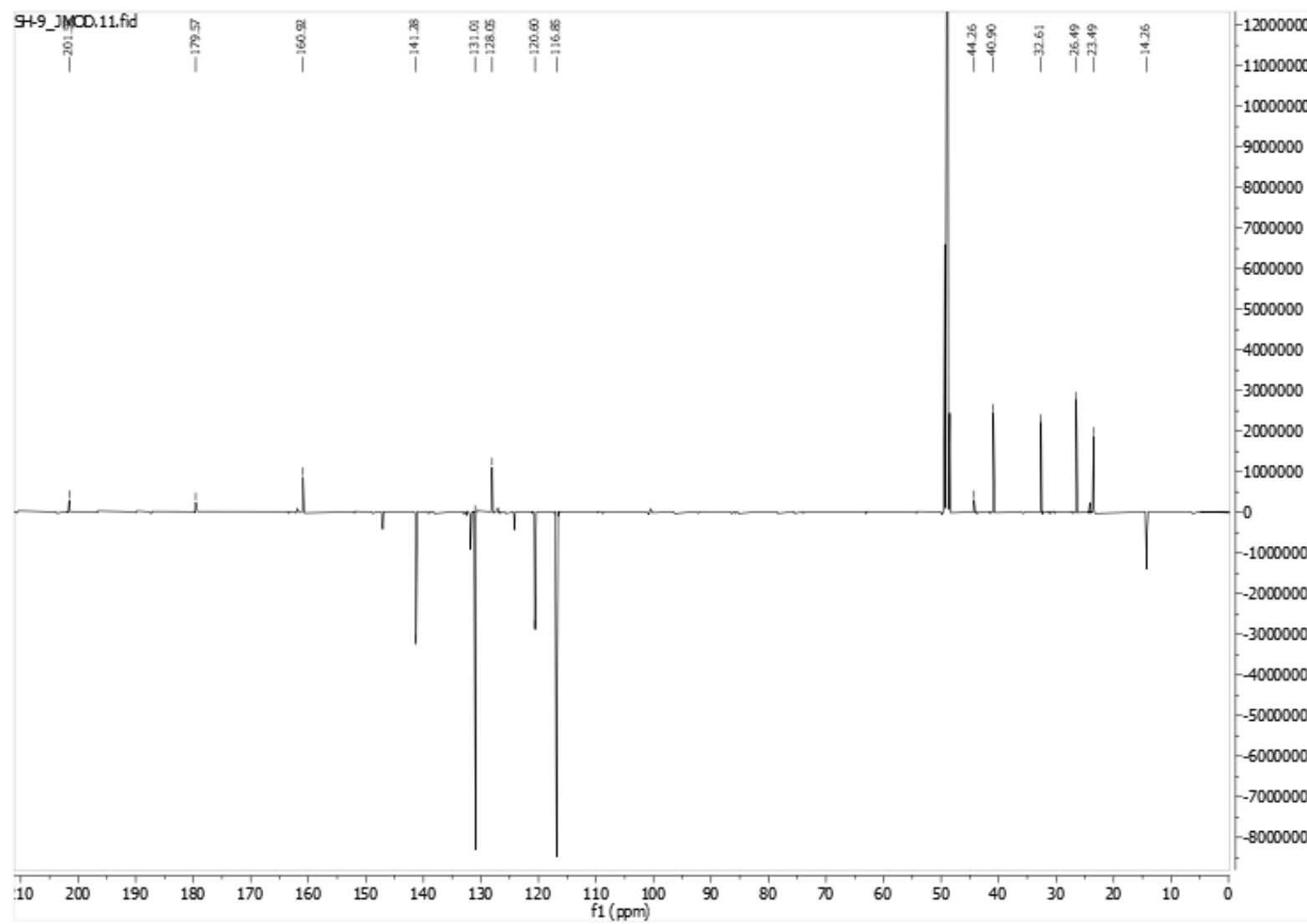


Figure S13. ^1H -NMR spectrum of compound 14

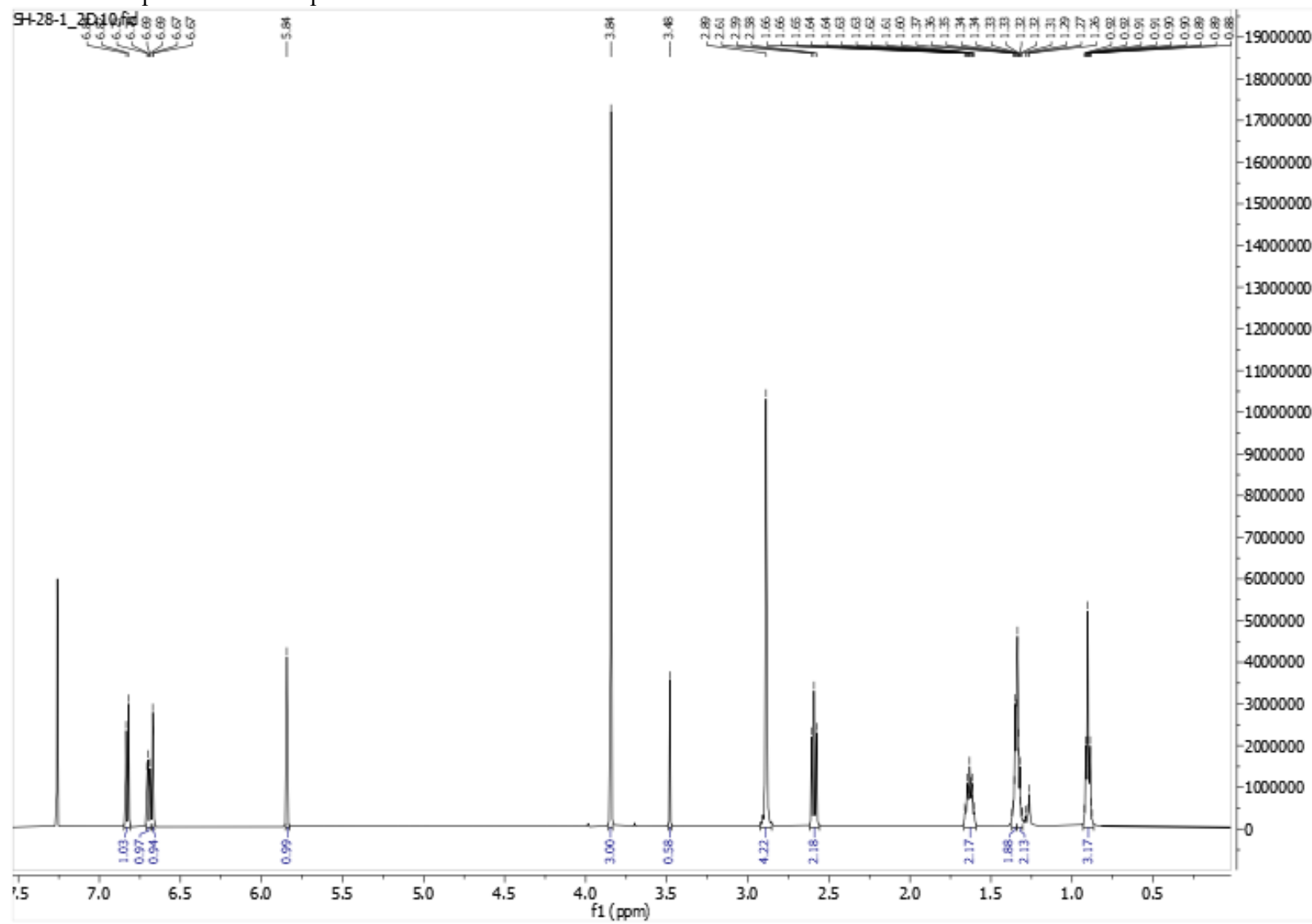


Figure S14. ^{13}C -NMR spectrum of compound **14**

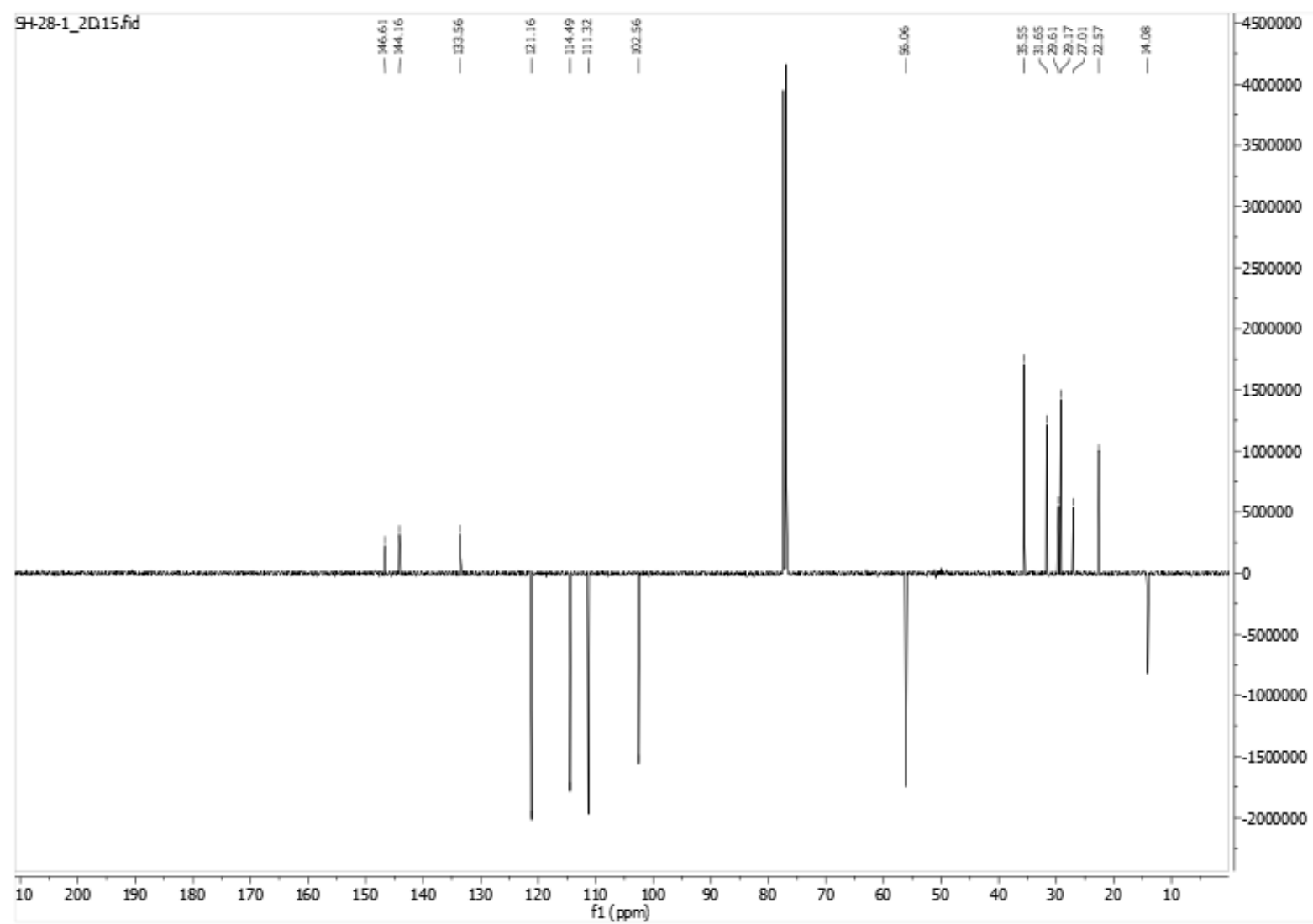


Figure S15. ^1H -NMR spectrum of compound 15

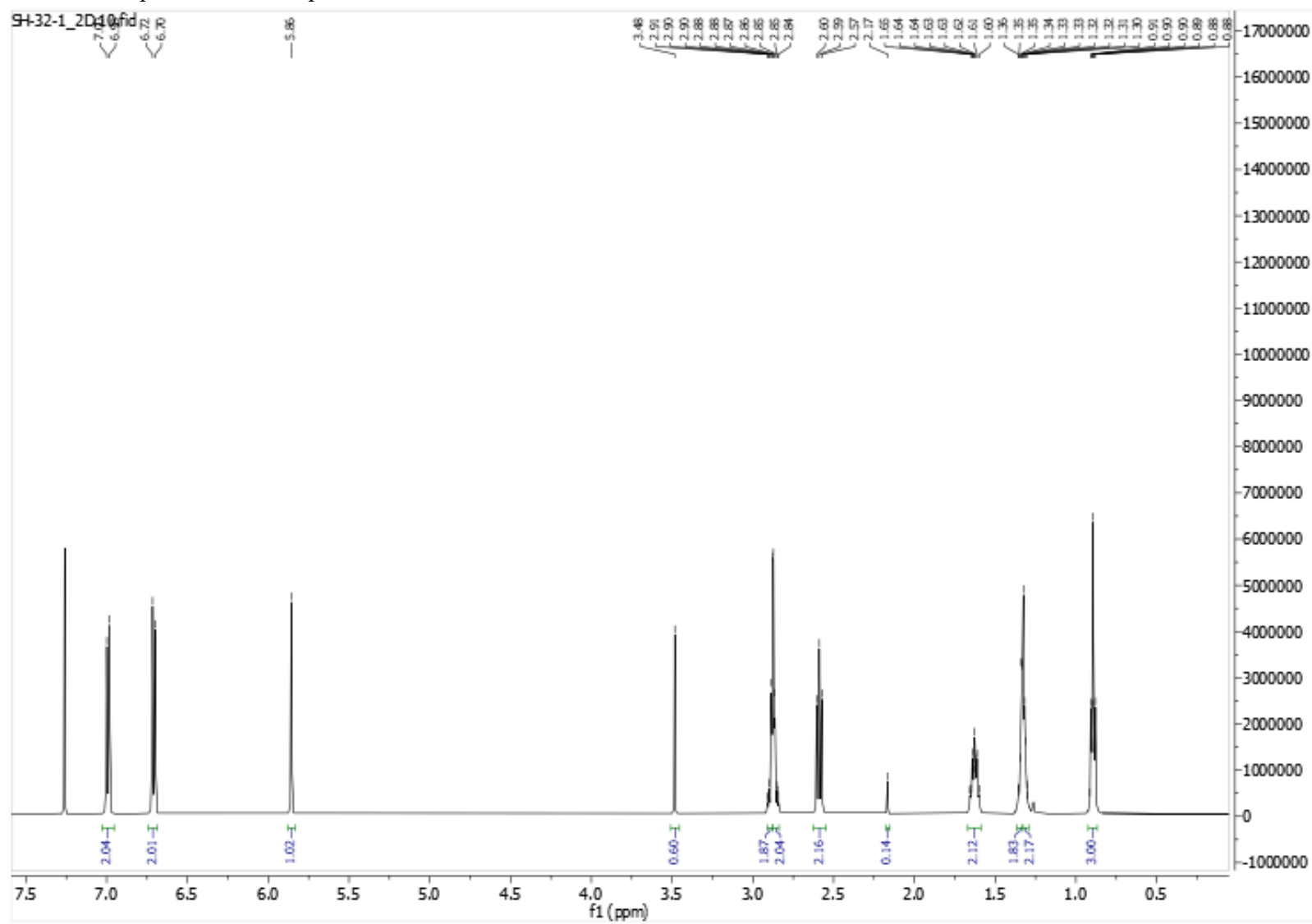


Figure S16. ^{13}C -NMR spectrum of compound 15

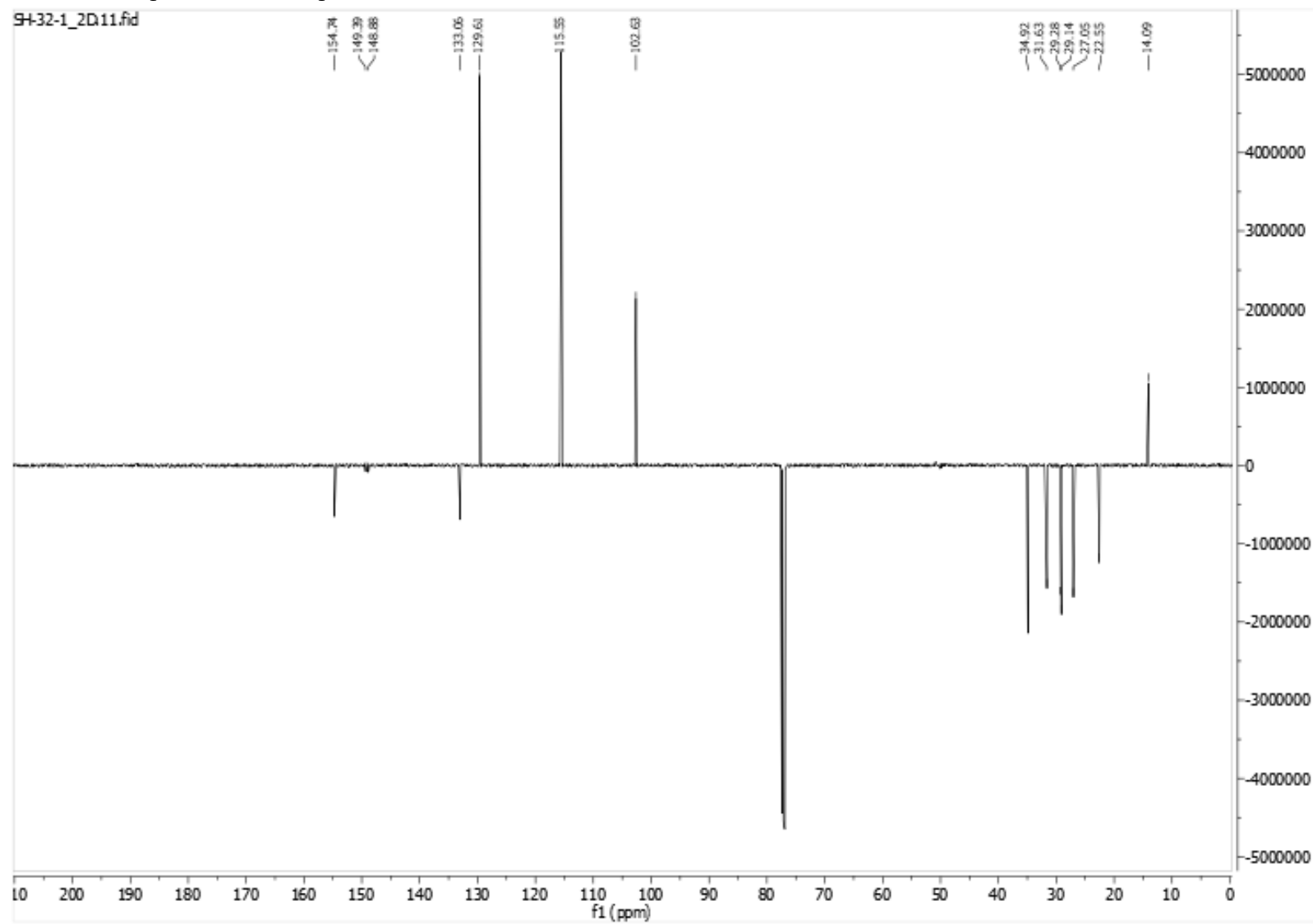


Figure S17. ^1H -NMR spectrum of compound 16

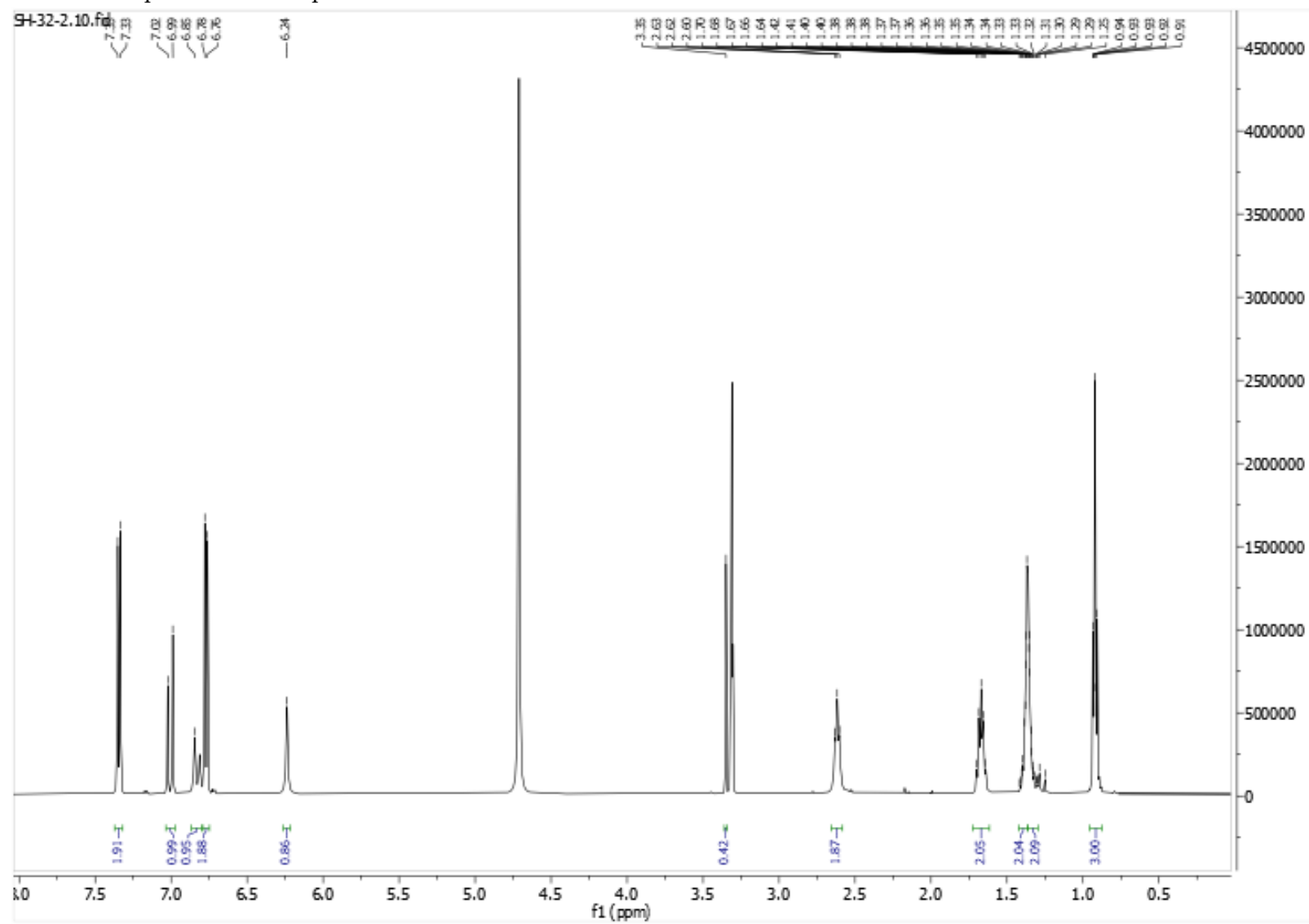
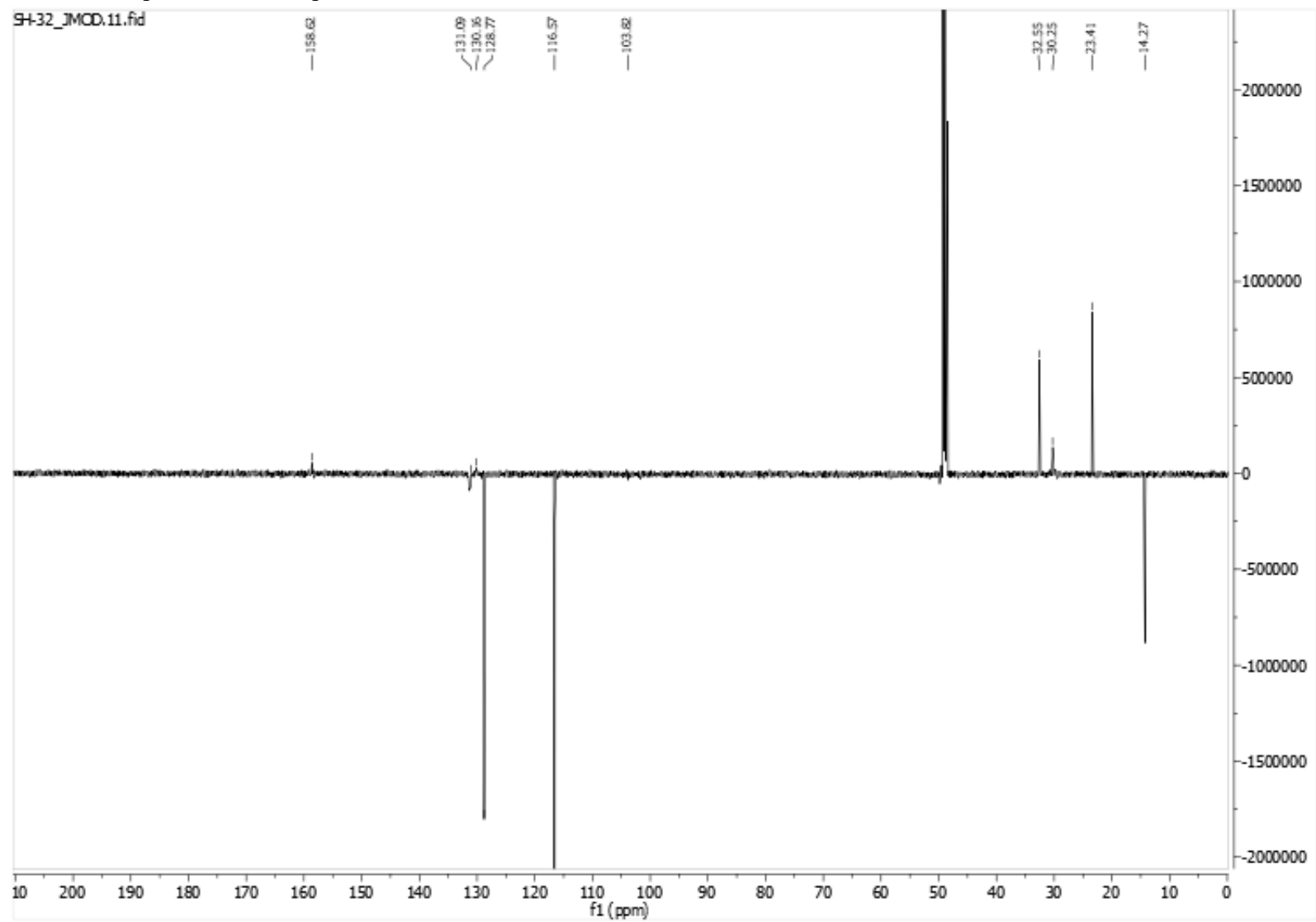


Figure S18. ^{13}C -NMR spectrum of compound **16**



9-24a CDCl_3 100 MHz

Chemical shift (ppm): 7.36, 7.35, 7.34, 7.33, 7.32, 7.31, 7.30, 7.29, 7.28, 7.27, 7.26, 7.25, 7.24, 7.23, 7.22, 7.21, 7.20, 7.19, 7.18, 7.17, 7.16, 7.15, 7.14, 7.13, 7.12, 7.11, 7.10, 7.09, 7.08, 7.07, 7.06, 7.05, 7.04, 7.03, 7.02, 7.01, 7.00, 6.99, 6.98, 6.97, 6.96, 6.95, 6.94, 6.93, 6.92, 6.91, 6.90, 6.89, 6.88, 6.87, 6.86, 6.85, 6.84, 6.83, 6.82, 6.81, 6.80, 6.79, 6.78, 6.77, 6.76, 6.75, 6.74, 6.73, 6.72, 6.71, 6.70, 6.69, 6.68, 6.67, 6.66, 6.65, 6.64, 6.63, 6.62, 6.61, 6.60, 6.59, 6.58, 6.57, 6.56, 6.55, 6.54, 6.53, 6.52, 6.51, 6.50, 6.49, 6.48, 6.47, 6.46, 6.45, 6.44, 6.43, 6.42, 6.41, 6.40, 6.39, 6.38, 6.37, 6.36, 6.35, 6.34, 6.33, 6.32, 6.31, 6.30, 6.29, 6.28, 6.27, 6.26, 6.25, 6.24, 6.23, 6.22, 6.21, 6.20, 6.19, 6.18, 6.17, 6.16, 6.15, 6.14, 6.13, 6.12, 6.11, 6.10, 6.09, 6.08, 6.07, 6.06, 6.05, 6.04, 6.03, 6.02, 6.01, 6.00, 5.99, 5.98, 5.97, 5.96, 5.95, 5.94, 5.93, 5.92, 5.91, 5.90, 5.89, 5.88, 5.87, 5.86, 5.85, 5.84, 5.83, 5.82, 5.81, 5.80, 5.79, 5.78, 5.77, 5.76, 5.75, 5.74, 5.73, 5.72, 5.71, 5.70, 5.69, 5.68, 5.67, 5.66, 5.65, 5.64, 5.63, 5.62, 5.61, 5.60, 5.59, 5.58, 5.57, 5.56, 5.55, 5.54, 5.53, 5.52, 5.51, 5.50, 5.49, 5.48, 5.47, 5.46, 5.45, 5.44, 5.43, 5.42, 5.41, 5.40, 5.39, 5.38, 5.37, 5.36, 5.35, 5.34, 5.33, 5.32, 5.31, 5.30, 5.29, 5.28, 5.27, 5.26, 5.25, 5.24, 5.23, 5.22, 5.21, 5.20, 5.19, 5.18, 5.17, 5.16, 5.15, 5.14, 5.13, 5.12, 5.11, 5.10, 5.09, 5.08, 5.07, 5.06, 5.05, 5.04, 5.03, 5.02, 5.01, 5.00, 4.99, 4.98, 4.97, 4.96, 4.95, 4.94, 4.93, 4.92, 4.91, 4.90, 4.89, 4.88, 4.87, 4.86, 4.85, 4.84, 4.83, 4.82, 4.81, 4.80, 4.79, 4.78, 4.77, 4.76, 4.75, 4.74, 4.73, 4.72, 4.71, 4.70, 4.69, 4.68, 4.67, 4.66, 4.65, 4.64, 4.63, 4.62, 4.61, 4.60, 4.59, 4.58, 4.57, 4.56, 4.55, 4.54, 4.53, 4.52, 4.51, 4.50, 4.49, 4.48, 4.47, 4.46, 4.45, 4.44, 4.43, 4.42, 4.41, 4.40, 4.39, 4.38, 4.37, 4.36, 4.35, 4.34, 4.33, 4.32, 4.31, 4.30, 4.29, 4.28, 4.27, 4.26, 4.25, 4.24, 4.23, 4.22, 4.21, 4.20, 4.19, 4.18, 4.17, 4.16, 4.15, 4.14, 4.13, 4.12, 4.11, 4.10, 4.09, 4.08, 4.07, 4.06, 4.05, 4.04, 4.03, 4.02, 4.01, 4.00, 3.99, 3.98, 3.97, 3.96, 3.95, 3.94, 3.93, 3.92, 3.91, 3.90, 3.89, 3.88, 3.87, 3.86, 3.85, 3.84, 3.83, 3.82, 3.81, 3.80, 3.79, 3.78, 3.77, 3.76, 3.75, 3.74, 3.73, 3.72, 3.71, 3.70, 3.69, 3.68, 3.67, 3.66, 3.65, 3.64, 3.63, 3.62, 3.61, 3.60, 3.59, 3.58, 3.57, 3.56, 3.55, 3.54, 3.53, 3.52, 3.51, 3.50, 3.49, 3.48, 3.47, 3.46, 3.45, 3.44, 3.43, 3.42, 3.41, 3.40, 3.39, 3.38, 3.37, 3.36, 3.35, 3.34, 3.33, 3.32, 3.31, 3.30, 3.29, 3.28, 3.27, 3.26, 3.25, 3.24, 3.23, 3.22, 3.21, 3.20, 3.19, 3.18, 3.17, 3.16, 3.15, 3.14, 3.13, 3.12, 3.11, 3.10, 3.09, 3.08, 3.07, 3.06, 3.05, 3.04, 3.03, 3.02, 3.01, 3.00, 2.99, 2.98, 2.97, 2.96, 2.95, 2.94, 2.93, 2.92, 2.91, 2.90, 2.89, 2.88, 2.87, 2.86, 2.85, 2.84, 2.83, 2.82, 2.81, 2.80, 2.79, 2.78, 2.77, 2.76, 2.75, 2.74, 2.73, 2.72, 2.71, 2.70, 2.69, 2.68, 2.67, 2.66, 2.65, 2.64, 2.63, 2.62, 2.61, 2.60, 2.59, 2.58, 2.57, 2.56, 2.55, 2.54, 2.53, 2.52, 2.51, 2.50, 2.49, 2.48, 2.47, 2.46, 2.45, 2.44, 2.43, 2.42, 2.41, 2.40, 2.39, 2.38, 2.37, 2.36, 2.35, 2.34, 2.33, 2.32, 2.31, 2.30, 2.29, 2.28, 2.27, 2.26, 2.25, 2.24, 2.23, 2.22, 2.21, 2.20, 2.19, 2.18, 2.17, 2.16, 2.15, 2.14, 2.13, 2.12, 2.11, 2.10, 2.09, 2.08, 2.07, 2.06, 2.05, 2.04, 2.03, 2.02, 2.01, 2.00, 1.99, 1.98, 1.97, 1.96, 1.95, 1.94, 1.93, 1.92, 1.91, 1.90, 1.89, 1.88, 1.87, 1.86, 1.85, 1.84, 1.83, 1.82, 1.81, 1.80, 1.79, 1.78, 1.77, 1.76, 1.75, 1.74, 1.73, 1.72, 1.71, 1.70, 1.69, 1.68, 1.67, 1.66, 1.65, 1.64, 1.63, 1.62, 1.61, 1.60, 1.59, 1.58, 1.57, 1.56, 1.55, 1.54, 1.53, 1.52, 1.51, 1.50, 1.49, 1.48, 1.47, 1.46, 1.45, 1.44, 1.43, 1.42, 1.41, 1.40, 1.39, 1.38, 1.37, 1.36, 1.35, 1.34, 1.33, 1.32, 1.31, 1.30, 1.29, 1.28, 1.27, 1.26, 1.25, 1.24, 1.23, 1.22, 1.21, 1.20, 1.19, 1.18, 1.17, 1.16, 1.15, 1.14, 1.13, 1.12, 1.11, 1.10, 1.09, 1.08, 1.07, 1.06, 1.05, 1.04, 1.03, 1.02, 1.01, 1.00, 0.99, 0.98, 0.97, 0.96, 0.95, 0.94, 0.93, 0.92, 0.91, 0.90, 0.89, 0.88, 0.87, 0.86, 0.85, 0.84, 0.83, 0.82, 0.81, 0.80, 0.79, 0.7

Figure S20. ^{13}C -NMR spectrum of compound 17

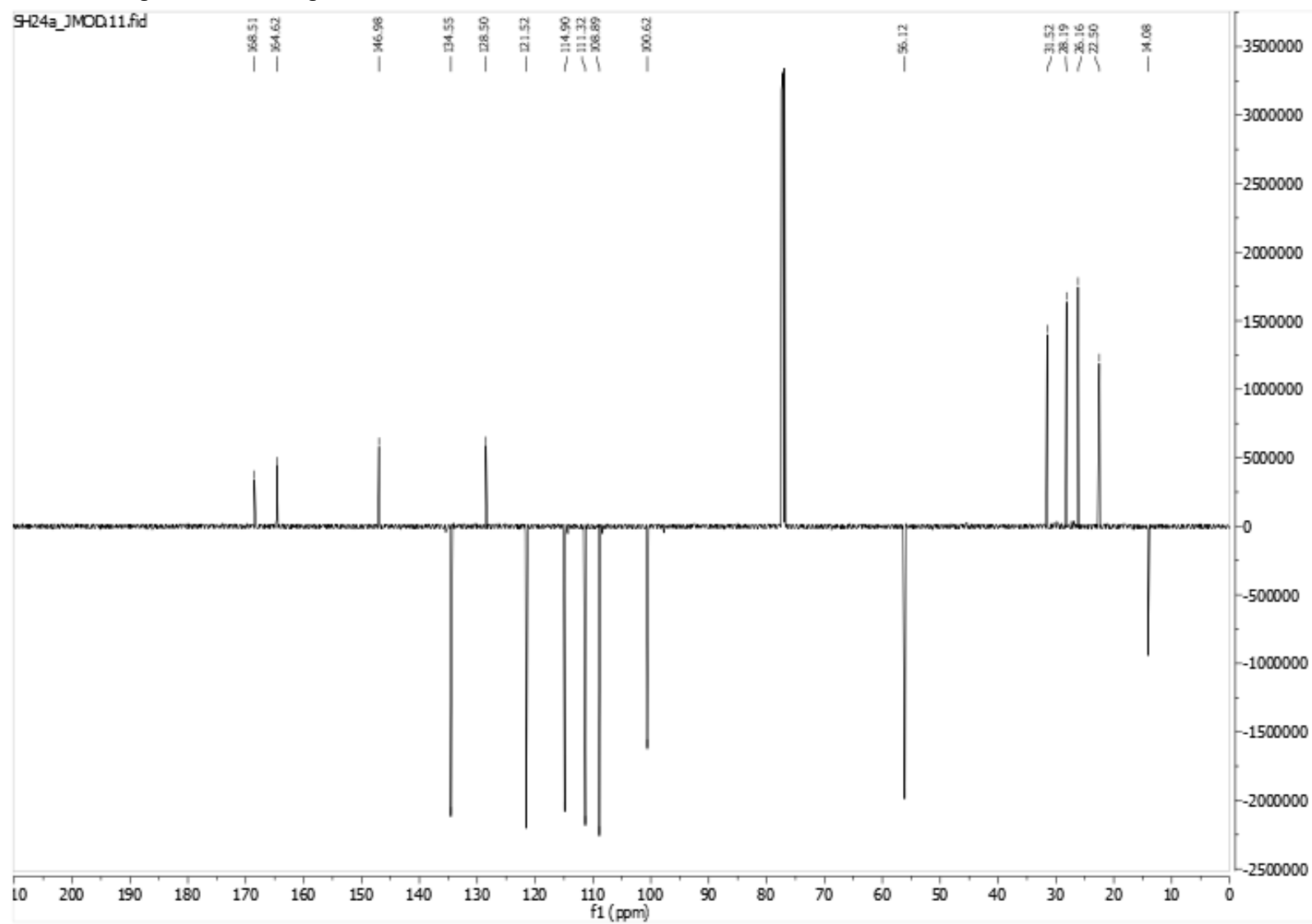


Figure S21. ^1H -NMR spectrum of compound 18

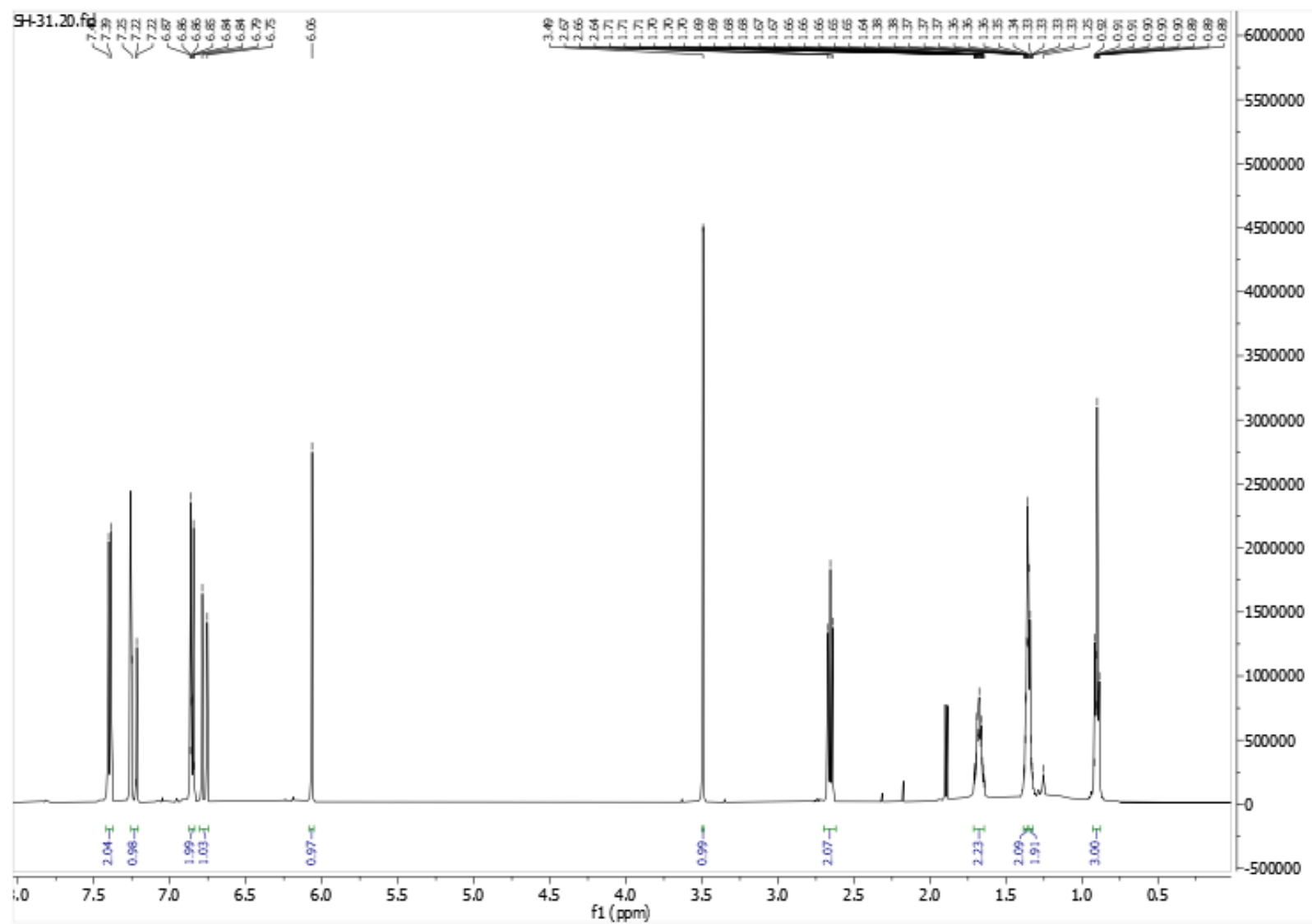


Figure S22. ^{13}C -NMR spectrum of compound 18

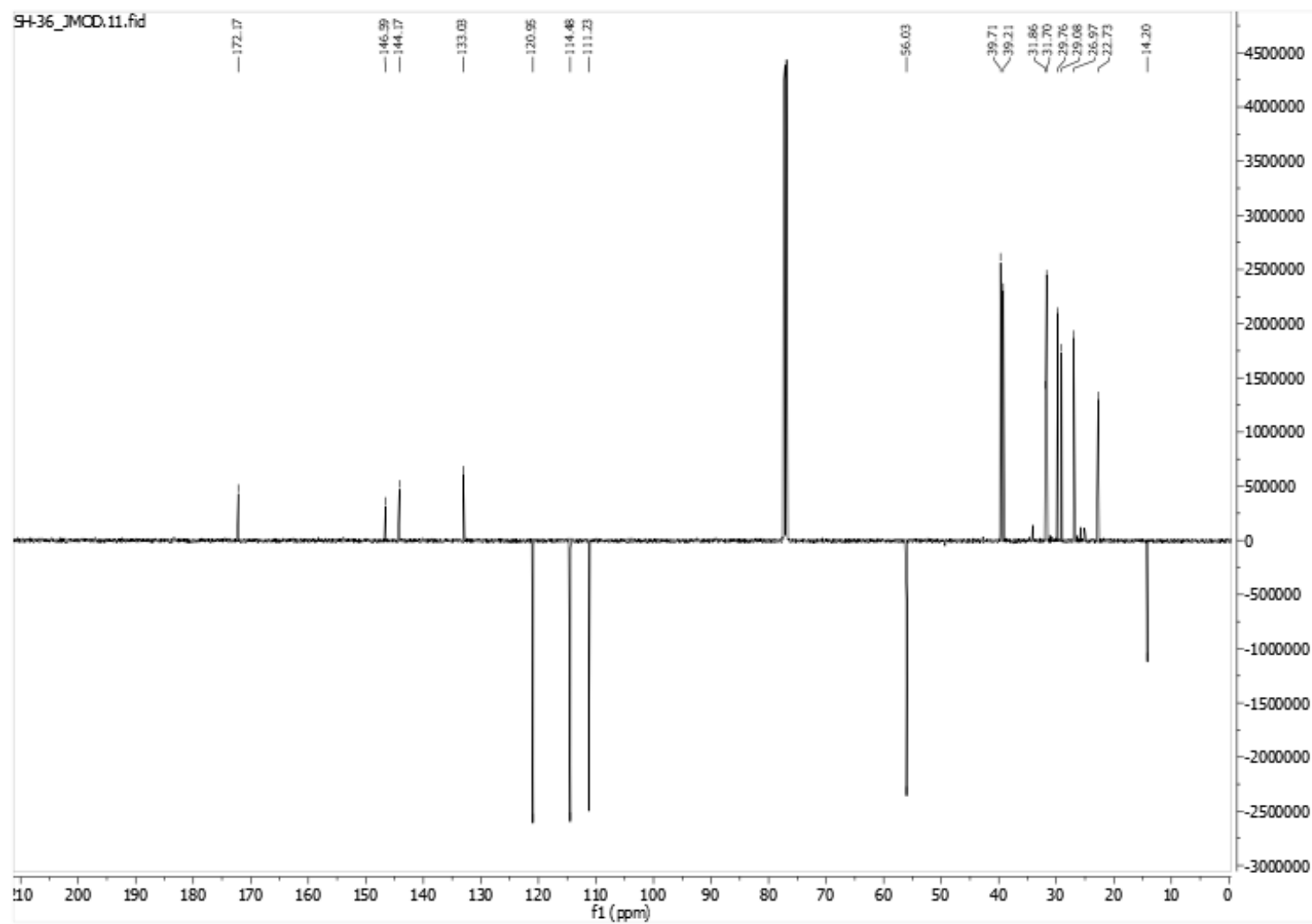


Figure S23. ^1H -NMR spectrum of compound 22

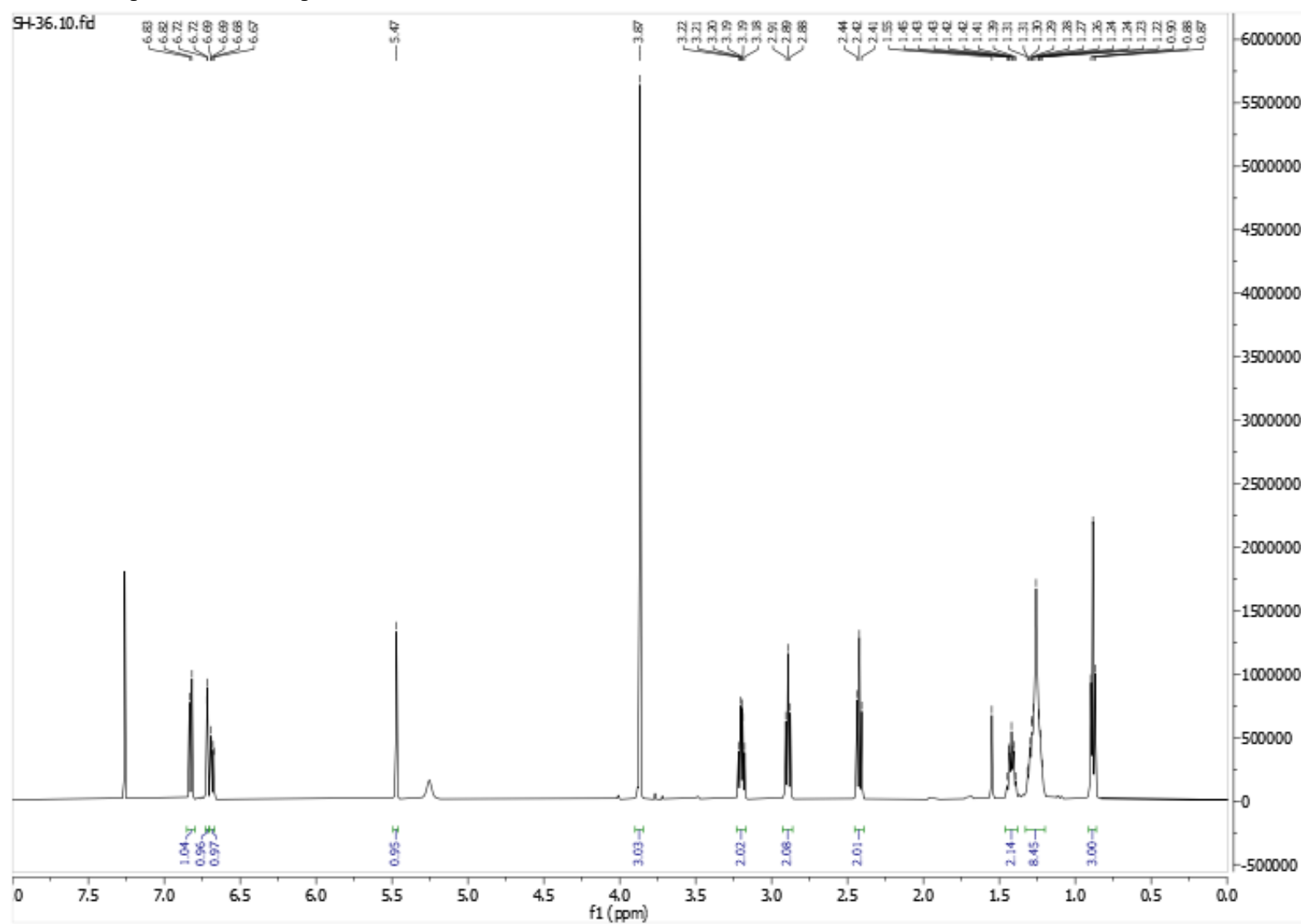


Figure S24. ^{13}C -NMR spectrum of compound 22

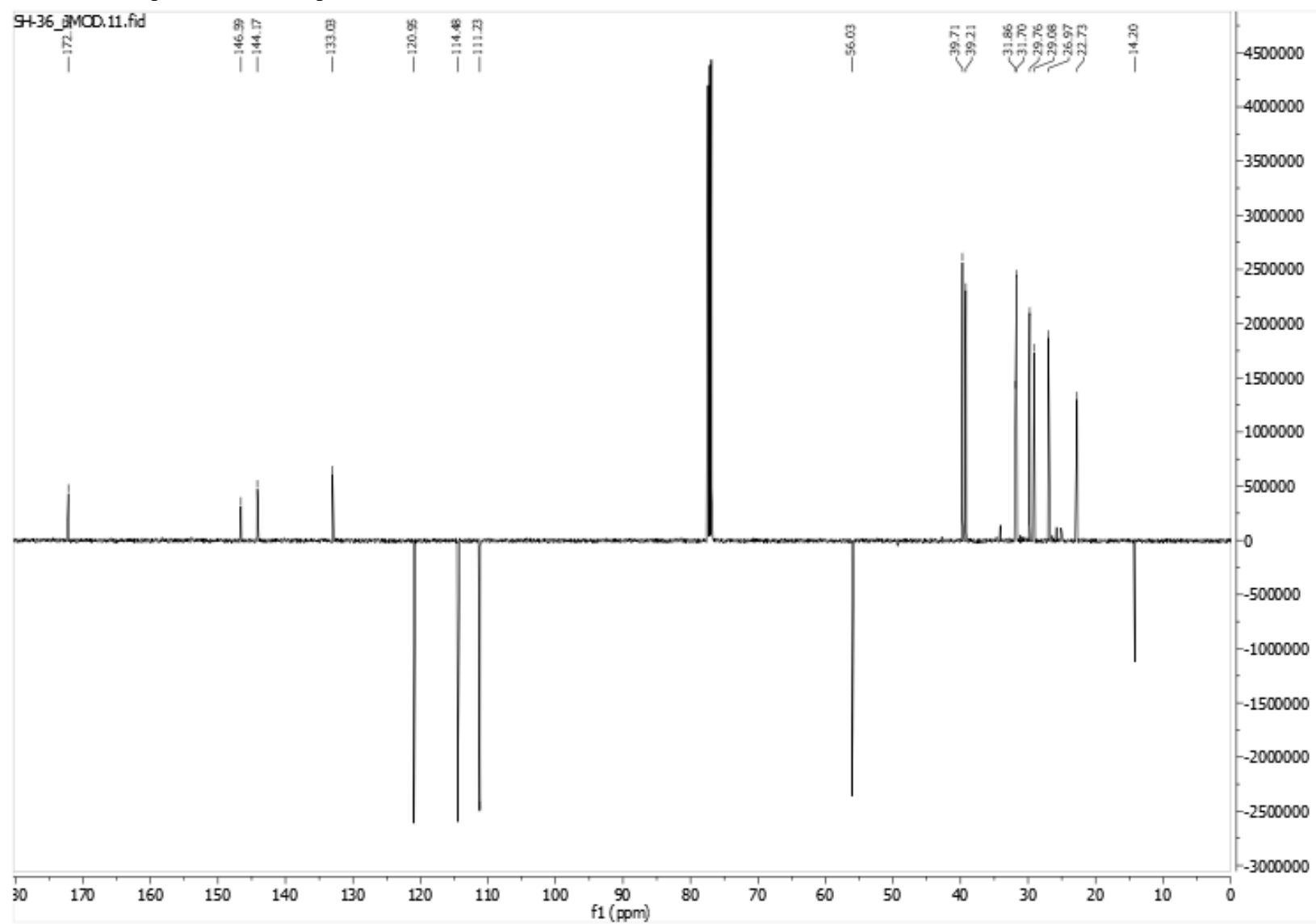


Figure S25. Correlation between the antiplatelet and COX-1 inhibitory activities of the tested compounds. Compounds inactive ($IC_{50} > 100 \mu M$ on either bioassay, i.e., **12**, **15**, **18**, and **22**) are not included but they fit in the general trend.

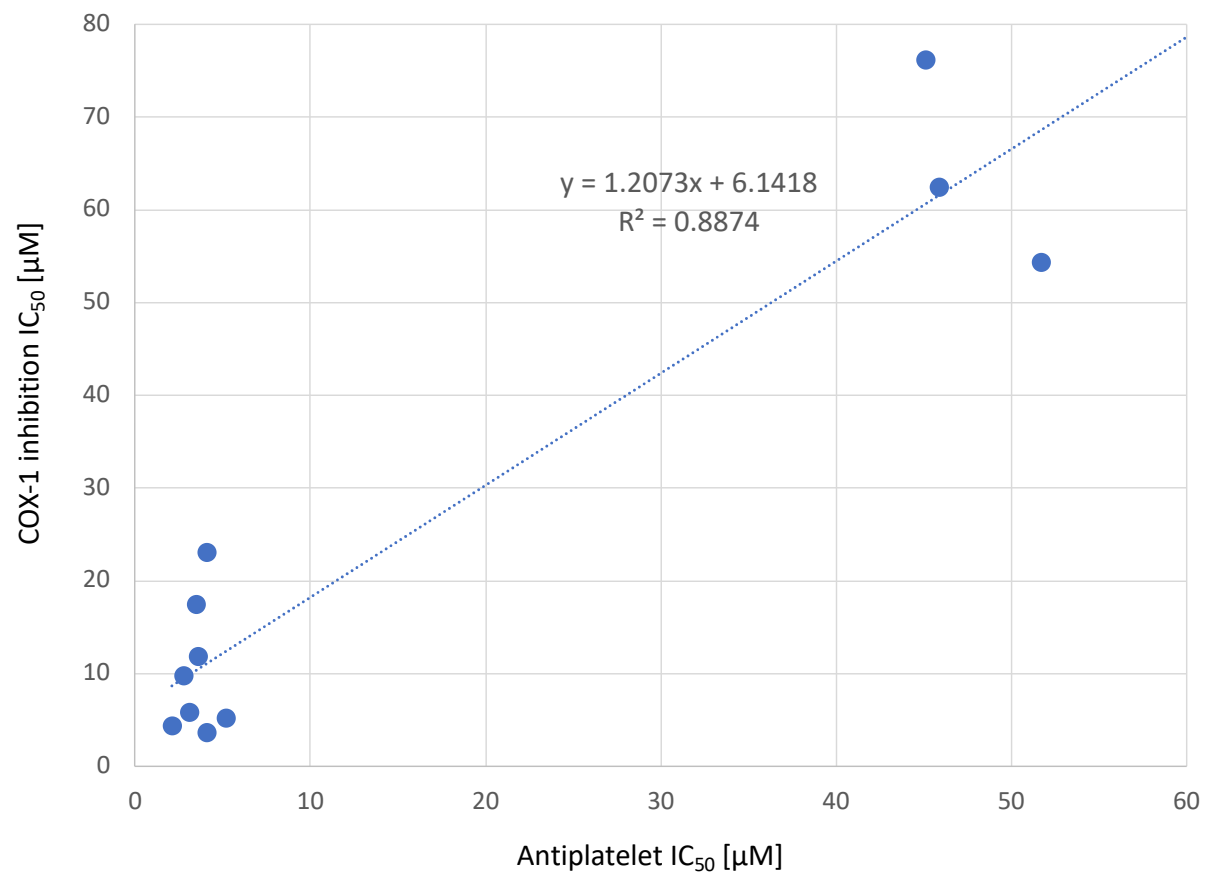


Table S1. Docking results obtained using AutoDockTools 1.5.7 and Discovery Studio visualizer (21.1.0.20298)

Compound	Binding energy (Kcal/mole)	Number of interacting AA	Number of conventional H-bonds	AA involved in H-bonds
1	-8.68	9	2	Val A:349, Ser A:530
2	-8.76	6	-	-
3	-8.50	9	1	Ile A:523
4	-8.38	11	1	Ser A:530
5	-8.01	11	1	Tyr A:355
6	-7.70	8	2	Val A:349, Ser A:530
11A	-9.29	9	-	-
11B	-8.93	9	1	Tyr A:385
11C	-8.21	4	-	-
12A	-9.23	6	3	Tyr A:385, Gly A:533, ASN A:375
12B	-8.76	5	1	GLY A:533
12C	-8.22	5	1	ASN A:375
13A	-8.30	7	1	Arg A:120
13B	-9.20	9	1	ASN A:375
13C	-8.85	11	-	-
14	-8.88	10	-	-
15	-8.36	9	1	Met A:522
16	-8.47	8	1	Gly A:533
17	-9.50	9	-	-
18	-9.32	12	1	Arg A:376
22	-8.54	10	2	Tyr A:385, Ile A:523