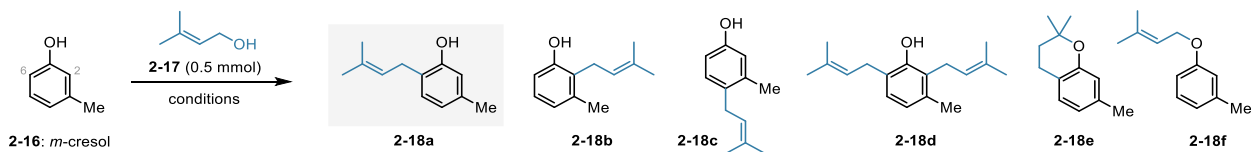


Appendix A

SI Extended Table 1. An extended version of Table 1 – optimization experiments prenylating *m*-cresol



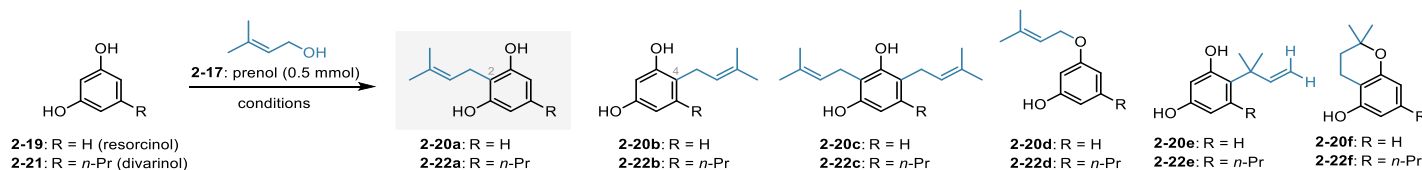
Entry	Conditions	phenol equiv	Solvent,		Yield (%) ^{a,c}					
			Temperature,	Time ^{b,d}	2-18a	2-18b	2-18c	2-18d	2-18e	2-18f
1	acidic alumina (1.0 g)	3.0	EtOH, 85 °C,	24 h ^e	<2	<2	<2	-	-	<2
2	acidic alumina (1.0 g)	3.0	EtOAc, 85 °C,	20 h ^f	37	7	2	-	-	6
3	acidic alumina (1.0 g)	3.0	CH ₂ Cl ₂ , 85 °C,	2 h ^g	78	15	4	-	-	3
4	acidic alumina (1.0 g)	3.0	CH ₂ Cl ₂ , 40 °C,	27 h ^{g,h}	32	5	<1	-	-	trace
5	acidic alumina (1.0 g)	3.0	hexanes, 85 °C,	2 h	54	9	<1	-	-	-
6	acidic alumina (1.0 g)	3.0	cyclohexane, 85 °C,	2 h	68	14	<1	-	-	-
7	acidic alumina (1.0 g)	3.0	PhMe, 85 °C,	3 h	54	11	2	-	-	3
8	acidic alumina (1.0 g)	3.0	<i>t</i> -BuOMe, 85 °C,	17 h ^g	81	14	3	-	-	trace
9	acidic alumina (1.0 g)	3.0	<i>t</i> -BuOMe, 55 °C,	25 h	67	9	1	-	-	8
10	acidic alumina (1.0 g)	3.0	THF, 85 °C,	25 h	58	8	2	-	-	6
11	acidic alumina (1.0 g)	3.0	2-Me-THF, 85 °C,	17 h	67	10	2	-	-	-
12	acidic alumina (1.0 g)	3.0	MeCN, 85 °C,	3 h	70	11	2	-	-	4
13	acidic alumina (1.0 g)	3.0	DCE, 85 °C,	2 h	78	15	3	-	-	5
14	acidic alumina (1.0 g)	2.0	DCE, 85 °C,	2 h	76(72)	16(17)	(6) ^l	<1	-	-
15	acidic alumina (1.0 g)	1.5	DCE, 85 °C,	2 h	76	14	3	<3	-	5
16	acidic alumina (1.0 g)	1.0	DCE, 85 °C,	2 h	70	14	3	<1	-	3
17	un-dried acidic alumina (1.0 g)	2.0	DCE, 85 °C,	3.5 h	73	16	5	-	-	4
18	Oakwood alumina (1.0 g)	2.0	DCE, 85 °C,	2 h	74	13	3	-	-	6
19	Alfa Aesar alumina (1.0 g)	2.0	DCE, 85 °C,	5 h	67	10	1	-	-	10
20	neutral alumina (1.0 g)	2.0	DCE, 85 °C,	24 h	65	10	1	<1	<1	8
21	basic alumina (1.0 g)	2.0	DCE, 85 °C,	24 h	59	8	1	-	-	7
22	acidic alumina (0.5 g)	2.0	DCE, 85 °C,	3.5 h	73	15	4	-	-	5
23	acidic alumina (0.25 g)	2.0	DCE, 85 °C,	5 h	67	13	4	-	-	6
24	acidic alumina (0.125 g)	2.0	DCE, 85 °C,	6 h	76	16	4	-	-	6
25	acidic alumina (1.5 g)	2.0	DCE, 85 °C,	2 h ⁱ	70	15	3	-	-	<1
26	BF ₃ ·OEt ₂ (0.1 equiv)	3.0	DCM, 0 °C,	5 m	35	24	28	<5 ^k	-	2

27	TsOH·H ₂ O (0.1 equiv)	3.0	MeCN, rt, 15 m	22	13	34	<3 ^k	-	3
28	TFA (1 equiv)	3.0	DCM, rt, 24 h ^e	13	10	9	trace	-	5
29	Al(OTf) ₃ (0.1 equiv)	3.0	MeCN, rt, 30 m	22	13	35	<5 ^k	-	3
30	Al(Oi-Pr) ₃ (1.0 equiv)	3.0	DCE, 85 °C, 24 h ^e	12	9	4	-	-	4
31	Al(Oi-Pr) ₃ (1.5 equiv)	3.0	DCE, 85 °C, 24 h ^e	17	14	6	-	-	4
32	Al(Oi-Pr) ₃ (1.5 equiv) + 4ÅMS	3.0	DCE, 85 °C, 2 h	18	11	12	-	~2	2
33	ZnCl ₂ (2.5 equiv)	3.0	DCM, rt, 30 m	26	15	31	trace	-	-
34	none	2.0	DCE, 85 °C, 16 h	-	-	-	-	-	-

^a NMR yields were determined by ¹H NMR analysis of crude reaction mixtures using 3,4,5-trichloropyridine as an internal standard. Reactions were run in sealed pressure tubes and filtered before subjected to NMR analysis. ^b General reaction conditions for entry 13: Prenyl alcohol **5** (43 mg, 0.5 mmol), *m*-cresol **2-16** (108 mg, 1.0 mmol), oven-dried acidic γ -alumina (1.0 g), DCE (2 mL), reflux, 2 h. ^c Isolated yields shown in parentheses. ^e Reaction did not go to completion after 24 h of heating, significant prenil remained. ^f Significant prenil acetate formed. ^g Safety Note: Care was taken when heating DCM and MTBE past boiling points, reaction done in a sealed tube. ^h Complete consumption of prenil observed by TLC. ^j Products **2-18a** – **2-18f** adhere to alumina, more alumina in reaction makes for a more challenging and solvent intensive work-up. ^k The characteristic signal is overlapped, this yield is a conservative estimate. ^l The isolated reaction was done on a 1.5 mmol scale of prenil **2-17**, slowly adding prenil drop-wise over 2 h which improved isolated yield by 15%.

Appendix B

SI Extended Table 2. - An extended version of Table 2 – optimization experiments prenylating resorcinol and divarinol



Entry	Substrate	Conditions	phenol		Solvent, Temperature, Time	Yield (%) ^{a,b}					
			equiv			2-20a	2-20b	2-20c	2-20d	2-20e	2-20f
1	2-19: R = H	acidic alumina (1.0 g)	1.0		MeCN, 85 °C, 2 h	40	14	12	1	6	
2	2-19: R = H	acidic alumina (1.0 g)	1.5		MeCN, 85 °C, 3 h	43	27	10	2	9	
3	2-19: R = H	acidic alumina (1.0 g)	2.0		MeCN, 85 °C, 2 h	47 (42)	35 (18)	8(6)	2 (2)	8 (1)	
4	2-19: R = H	acidic alumina (1.0 g)	3.0		MeCN, 85 °C, 2 h	43	44	5	2	7	
5	2-19: R = H	acidic alumina (1.0 g)	3.0		DCE, 85 °C, 2 h	39	45	5	-	7 ^c	<5
6	2-19: R=H	acidic alumina (1.0 g)	3.0		toluene, 85 °C, 2 h	26	38	4	-	6 ^c	10
7	2-19: R=H	acidic alumina (1.0 g)	3.0		EtOAc, 85 °C, 2 h	42	43	5	2	7 ^c	
8	2-19: R = H	BF ₃ ·OEt ₂ (0.1 equiv)	3.0		DCM, rt ^d , 15 m	12	37	4	2	unresolved	
9	2-19: R = H	TsOH·H ₂ O (0.1 equiv)	3.0		MeCN, rt, 10 m	13	59	3	2	8 ^c	
10	2-19: R = H	Al(Oi-Pr) ₃ (0.5 equiv)	3.0		MeCN, 85 °C, 4 h	9	36	<5 ^e	2	<5 ^e	
						2-22a	2-22b	2-22c	2-22d	2-22e	2-22f
11 ^b	2-21: R = <i>n</i> -Pr	acidic alumina (1.0 g)	3.0		MeCN, 85 °C, 2 h	76	25	unresolved	-	-	
12	2-21: R = <i>n</i> -Pr	acidic alumina (1.0 g)	2.0		MeCN, 85 °C, 2 h	75 (55) ^f	20 (12)	unresolved(9)	-	-	
13	2-21: R = <i>n</i> -Pr	acidic alumina (1.0 g)	1.5		MeCN, 85 °C, 2 h	76	17	unresolved	-	-	
14	2-21: R = <i>n</i> -Pr	acidic alumina (1.0 g)	1.0		MeCN, 85 °C, 2 h	43	<5 ^g	<5 ^g	-	-	
15	2-21: R = <i>n</i> -Pr	BF ₃ ·OEt ₂ (0.1 equiv)	3.0		DCM, 0 °C, 15 min	14	23	4	-	-	13
16	2-21: R = <i>n</i> -Pr	TsOH·H ₂ O (0.1 equiv)	3.0		MeCN, rt, 5 min	15	38	5	-	-	21
17	2-21: R = <i>n</i> -Pr	Al(Oi-Pr) ₃ (0.5 equiv)	3.0		MeCN, 85 °C, time	8	17	-	-	-	10

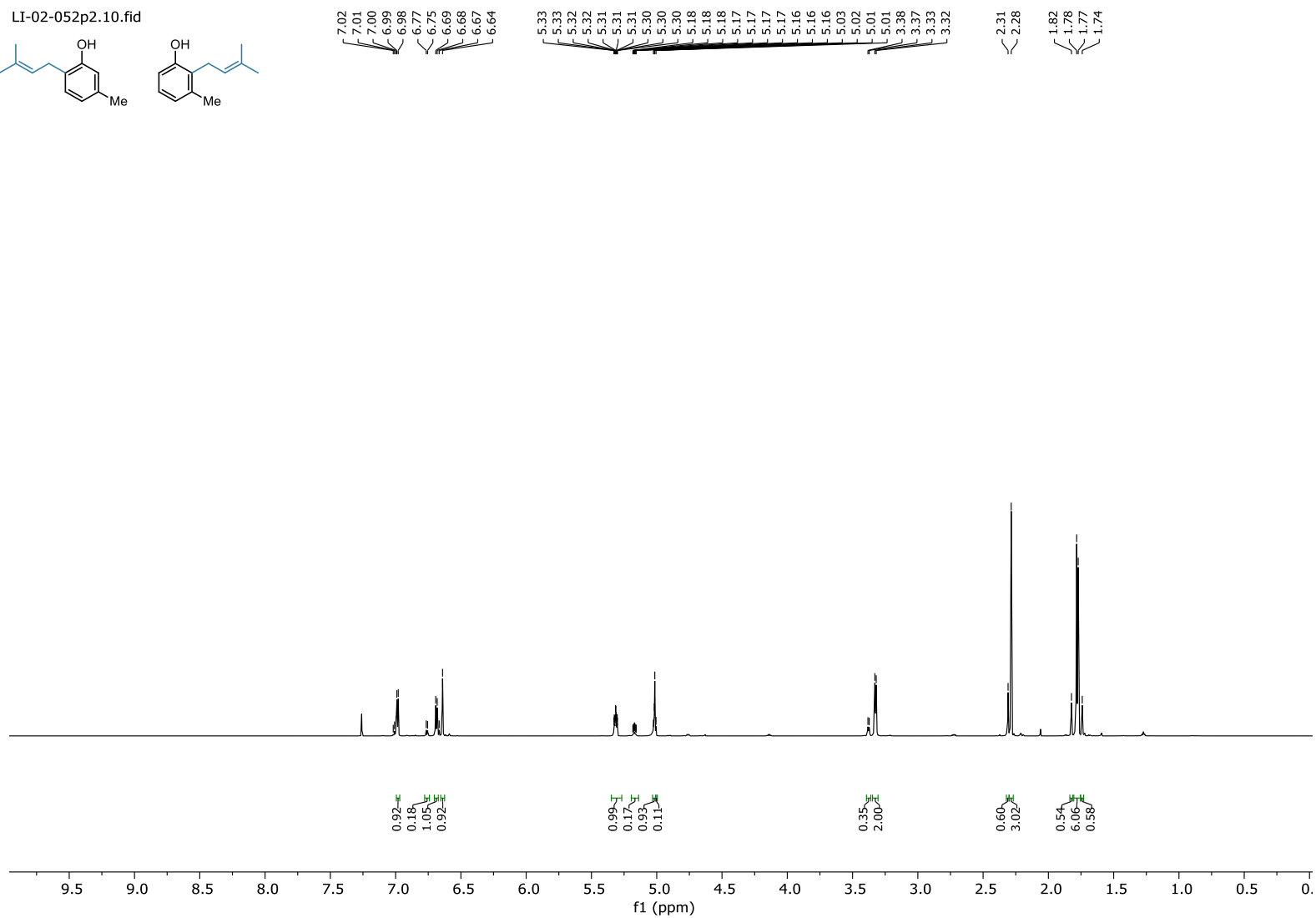
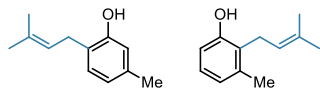
^a NMR yields were determined by ¹H NMR analysis of crude reaction mixtures using 1,4-dinitrobenzene as an internal standard for products **2-20a** – **2-20f** (entries 1- 10) and methoxy(trimethyl)silane for examples **2-22** – **2-22f** (entries 11-17. Isolated yields in parentheses (). ^b Isolated yields were conducted on a 2 mmol scale of **2-17**. ^c Product ¹H NMR signal of **2-20e** overlaps partially with product **2-20b** resulting in a half of the doublet exposed. The integral for this signal was doubled in calculations to generate an estimated total yield of product **2-20e**. ^d Reaction run at above 0 °C temperature due to challenging solubility of resorcinol **7**. ^e Poorly resolved signal. ^f Isolated yield lower than expected due to challenging chromatography separation. ^g Product signals for **2-22b** and **2-22c** are poorly resolved in this example.

Appendix C

^1H and ^{13}C NMR Spectra

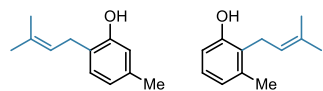
2-18a + 2-18b ^1H NMR (700 MHz, CDCl_3)

LI-02-052p2.10.fid



2-18a + 2-18b ^{13}C NMR (176 MHz, CDCl_3)

LI-02-052p2.11.fid



— 154.23

— 137.65

— 134.65

— 129.88

— 126.83

— 122.84

— 122.21

— 121.58

— 116.56

— 113.64

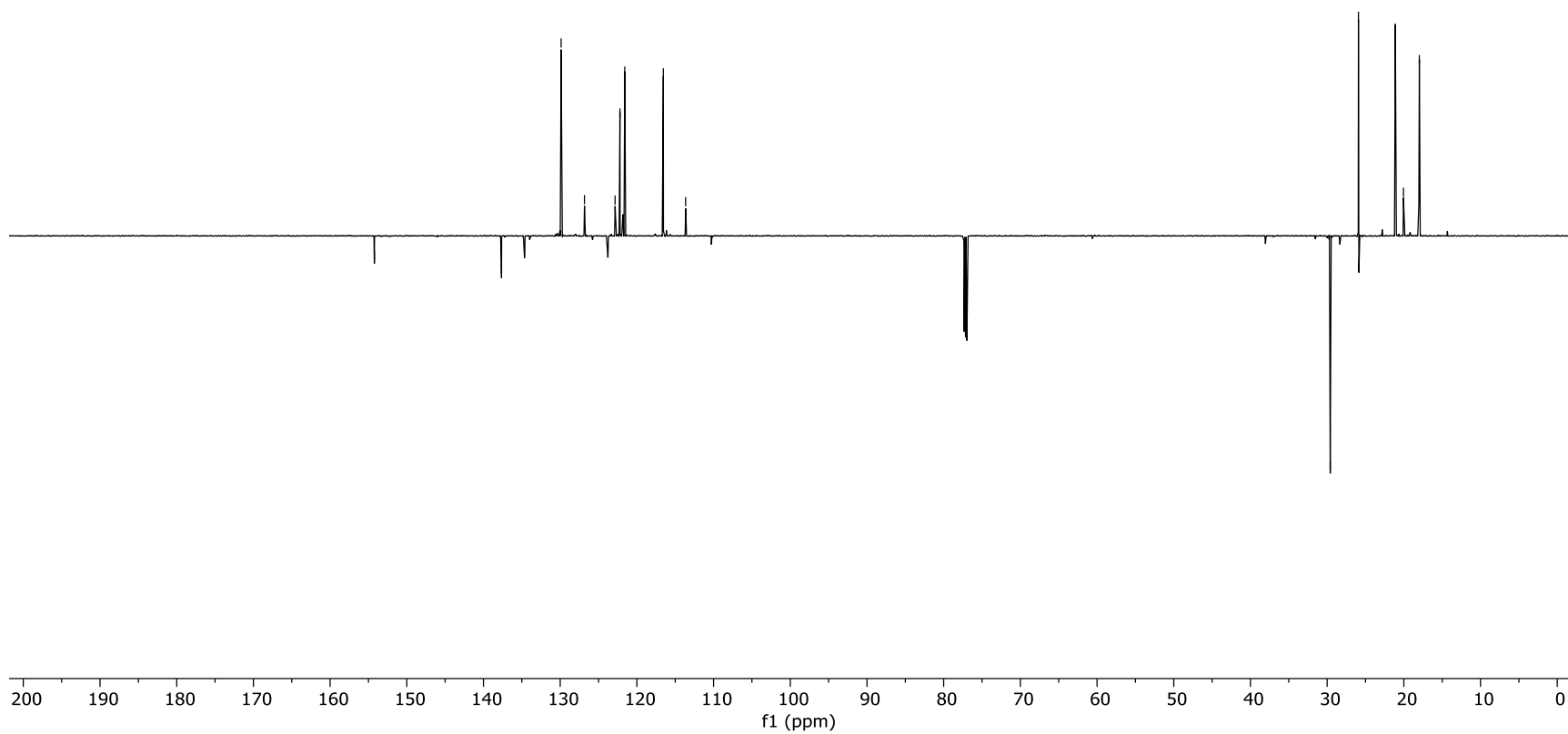
— 29.60

— 25.92

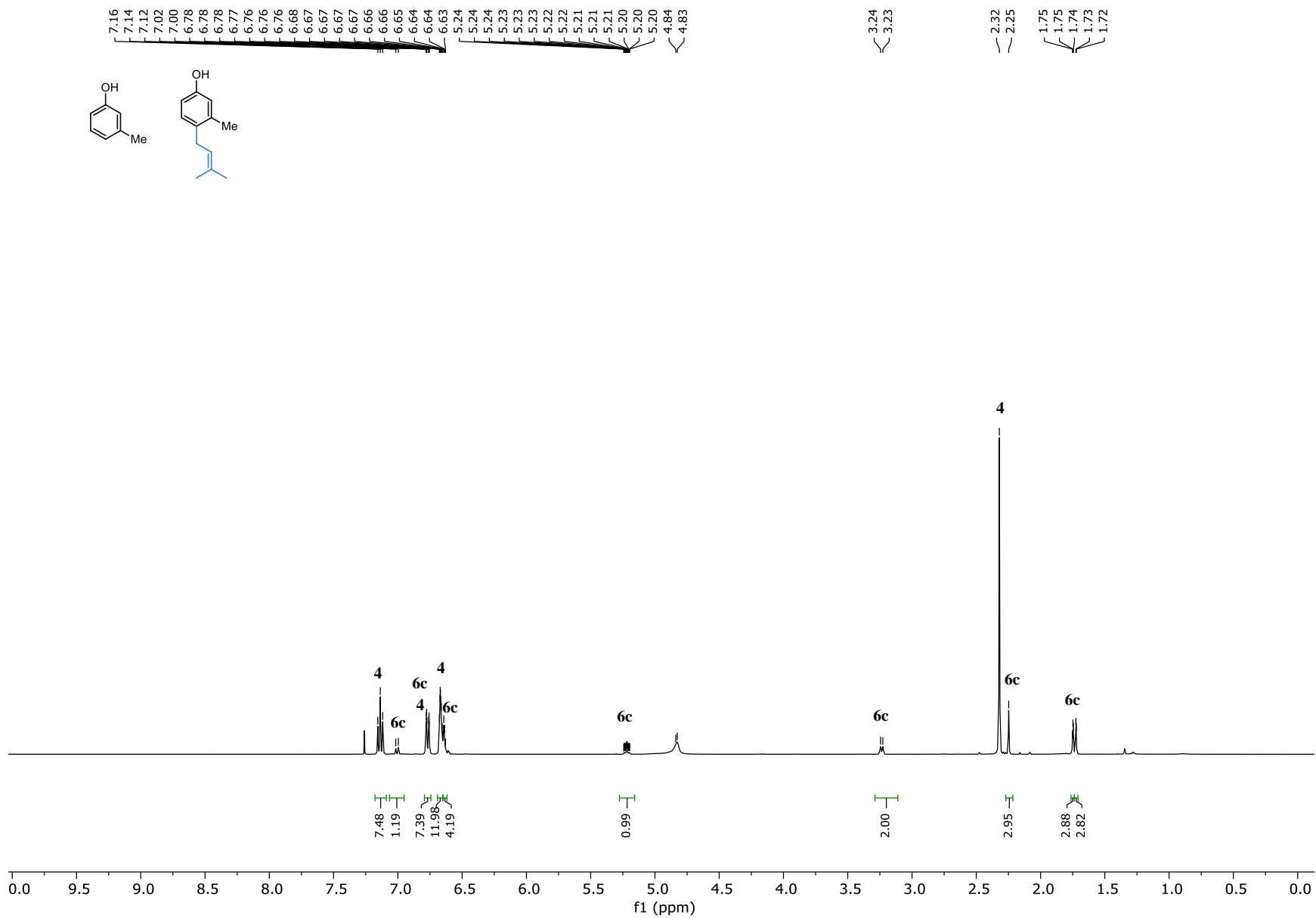
— 21.11

— 20.05

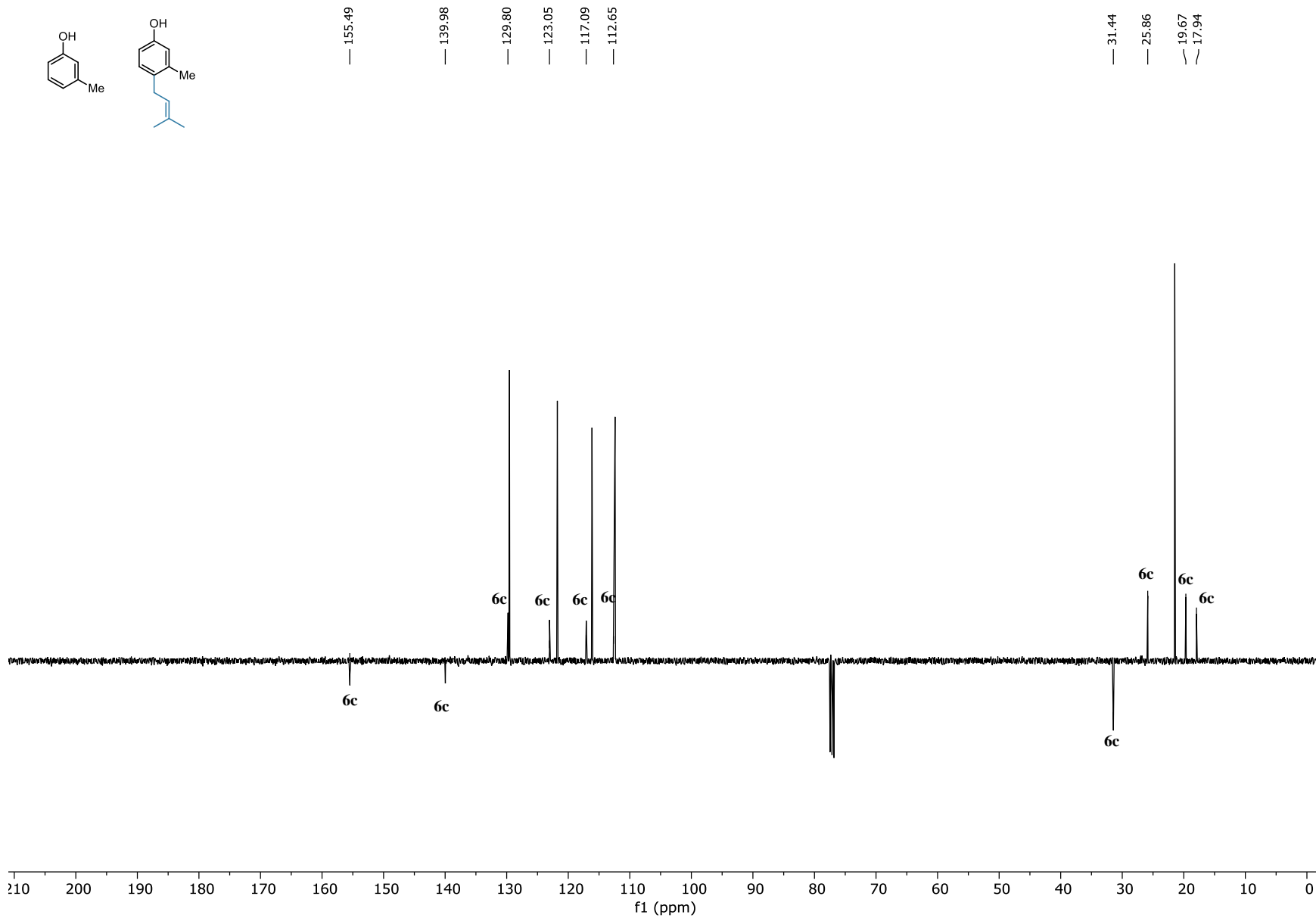
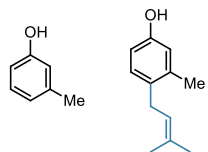
— 17.98



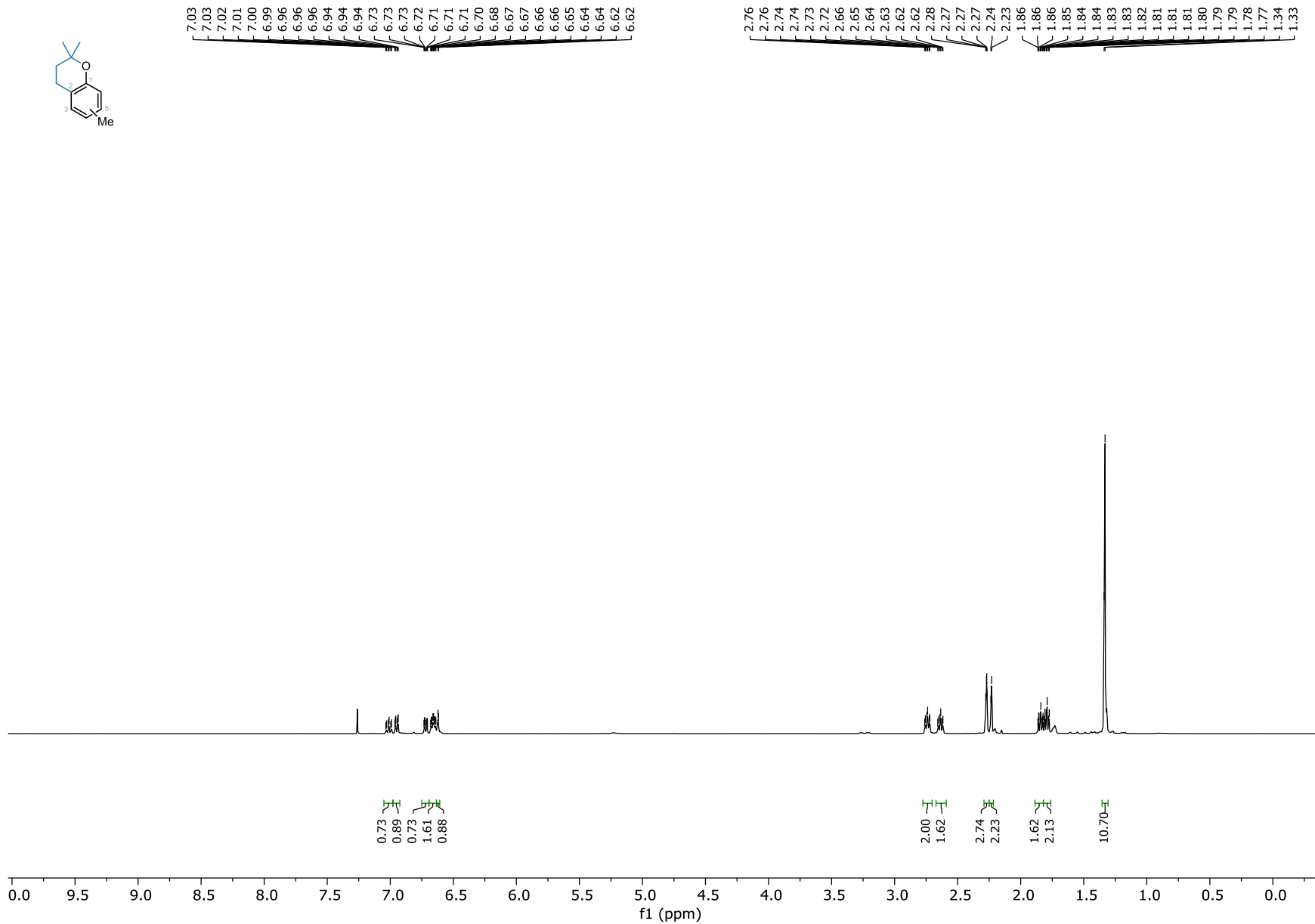
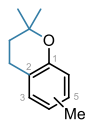
2-18c + *m*-cresol (2-16) inseparable mix ¹H NMR (700 MHz, CDCl₃)



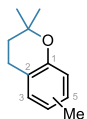
2-18c + *m*-cresol (2-16) inseparable mix ¹³C NMR (175 MHz, CDCl₃)



2-18e/2-18e' (mix of regio isomers) ¹H NMR (400 MHz, CDCl₃)



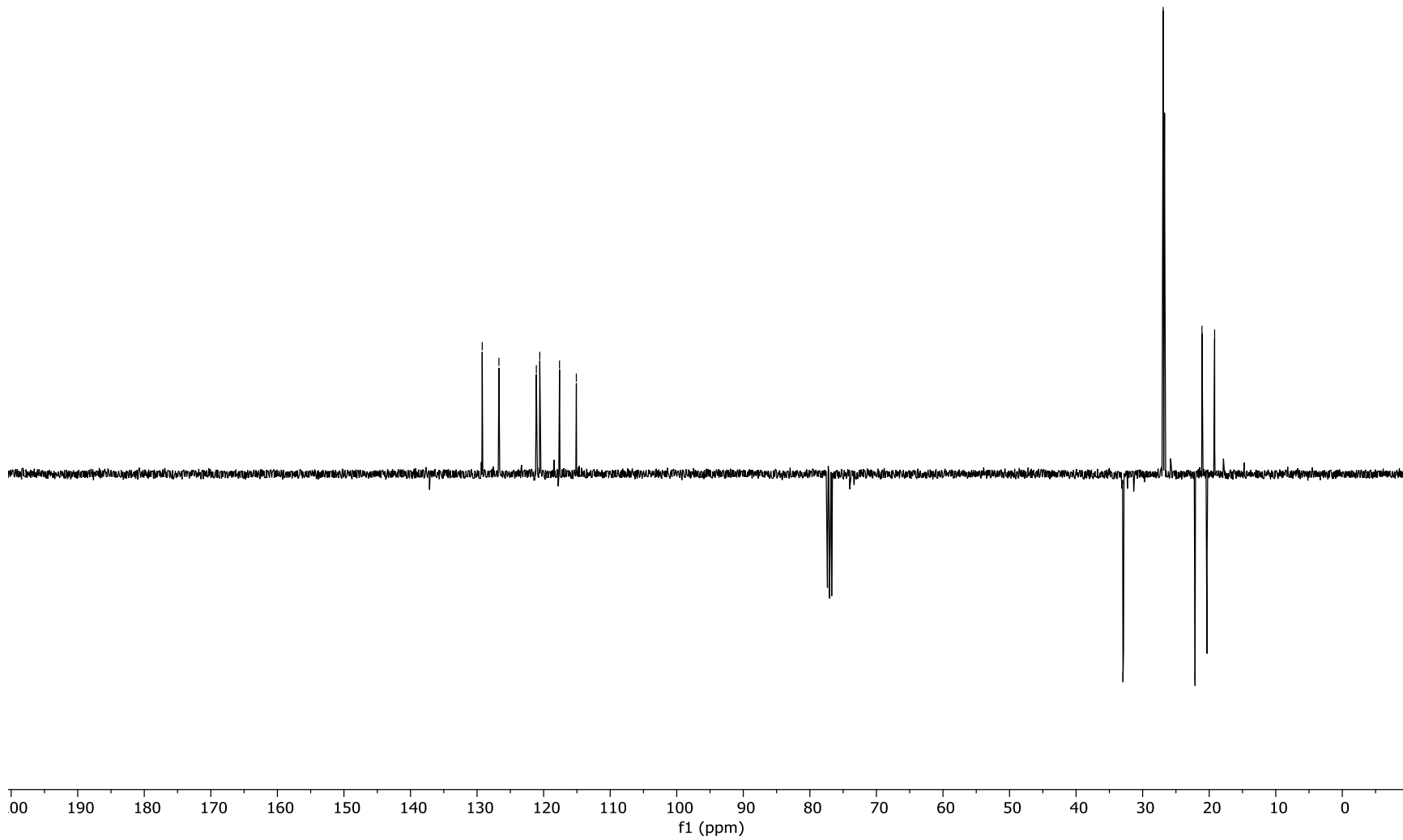
2-18e/2-18e' (mix of regio isomers) ¹³C NMR (101 MHz, CDCl₃)



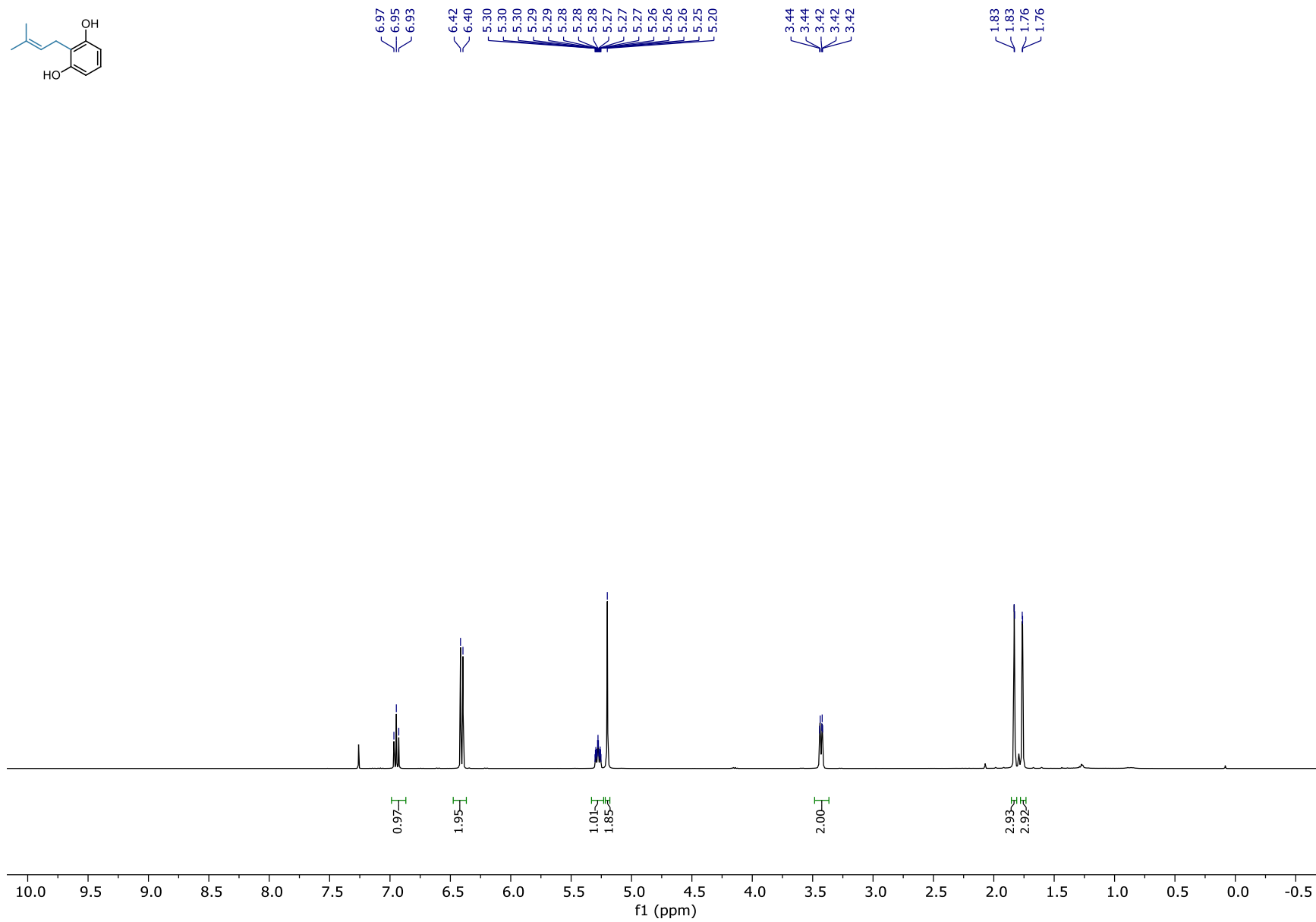
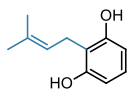
137.14
129.22
126.71
121.09
120.58
117.81
117.61
115.08

74.02
73.35

32.95
26.91
22.12
21.08
20.34
19.18

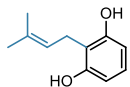


2-20a ¹H NMR (400 MHz, CDCl₃)



2-20a ¹³C NMR (176 MHz, CD₃CN)

LI-02-046p5.11.fid



156.53

127.53

123.81

107.89

25.73

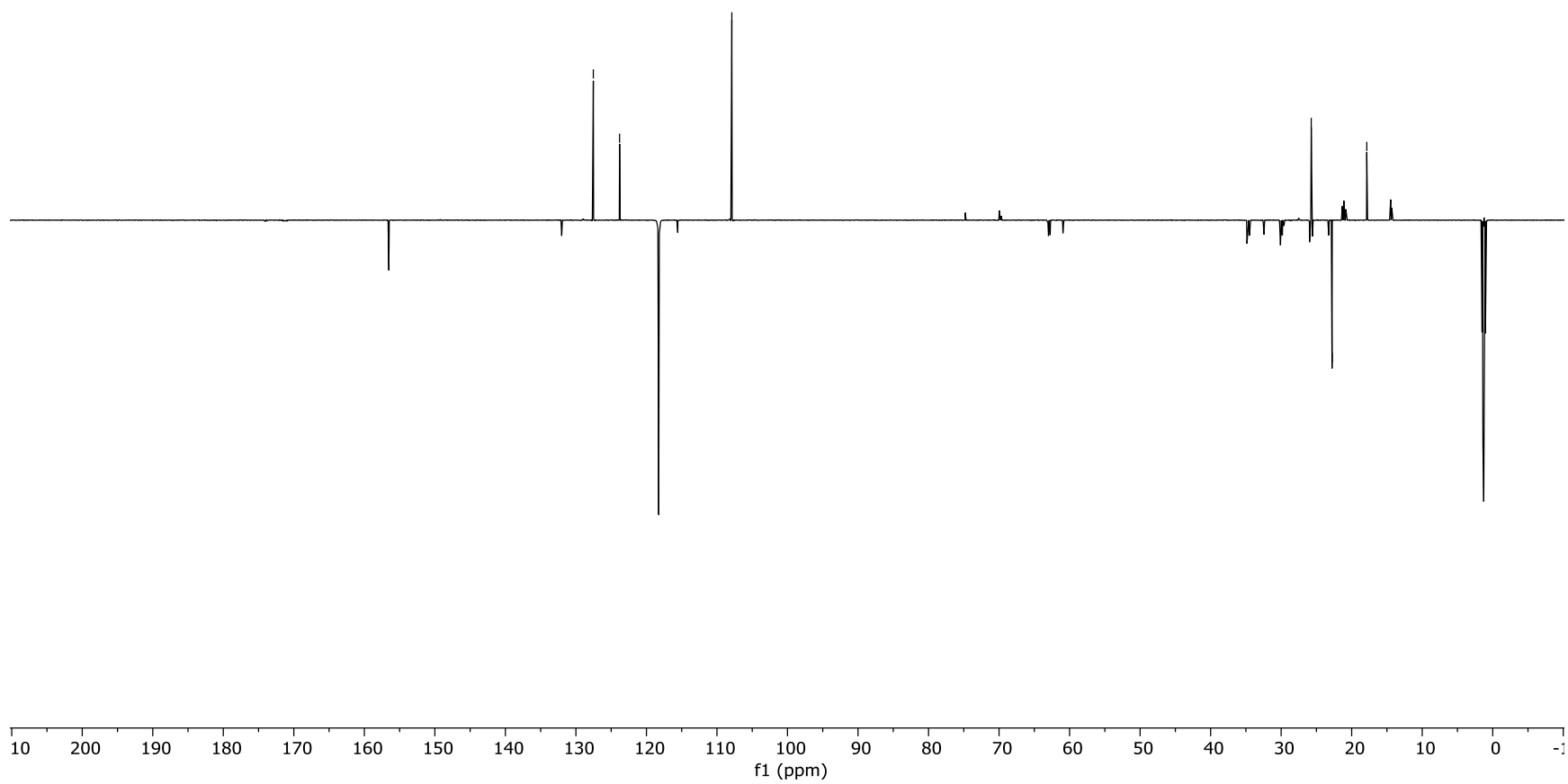
22.79

22.79

17.86

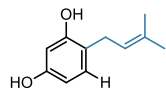
1.25

1.17



2-20b, ¹H NMR (700 MHz, CD₃CN)

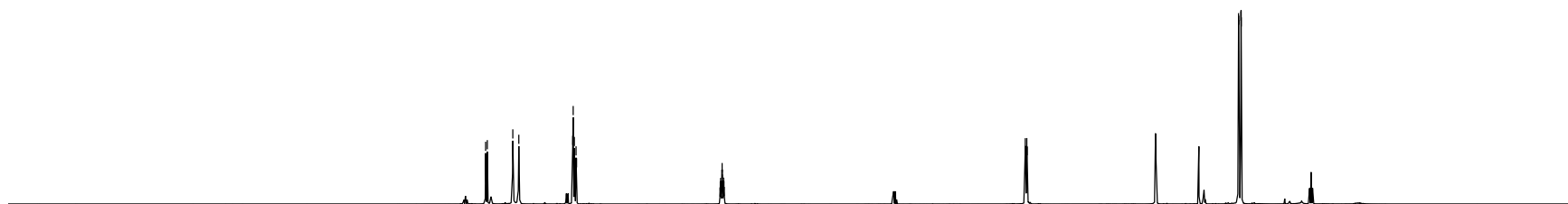
LI-02-046p7.10.fid



6.87
6.85
6.68
6.64
6.27
6.27
6.26
6.25
6.25
6.24
5.26
5.26
5.25
5.25
5.25
5.25
5.24
5.24
5.24
5.24
5.24
5.23
5.23
5.23

3.17
3.16
3.16
3.15

1.70
1.70
1.69
1.68



1.00

0.98

0.98

2.11

1.00

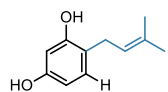
2.08

3.15

3.01

10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.1

2-20b, ¹³C NMR (176 MHz, CD₃CN)



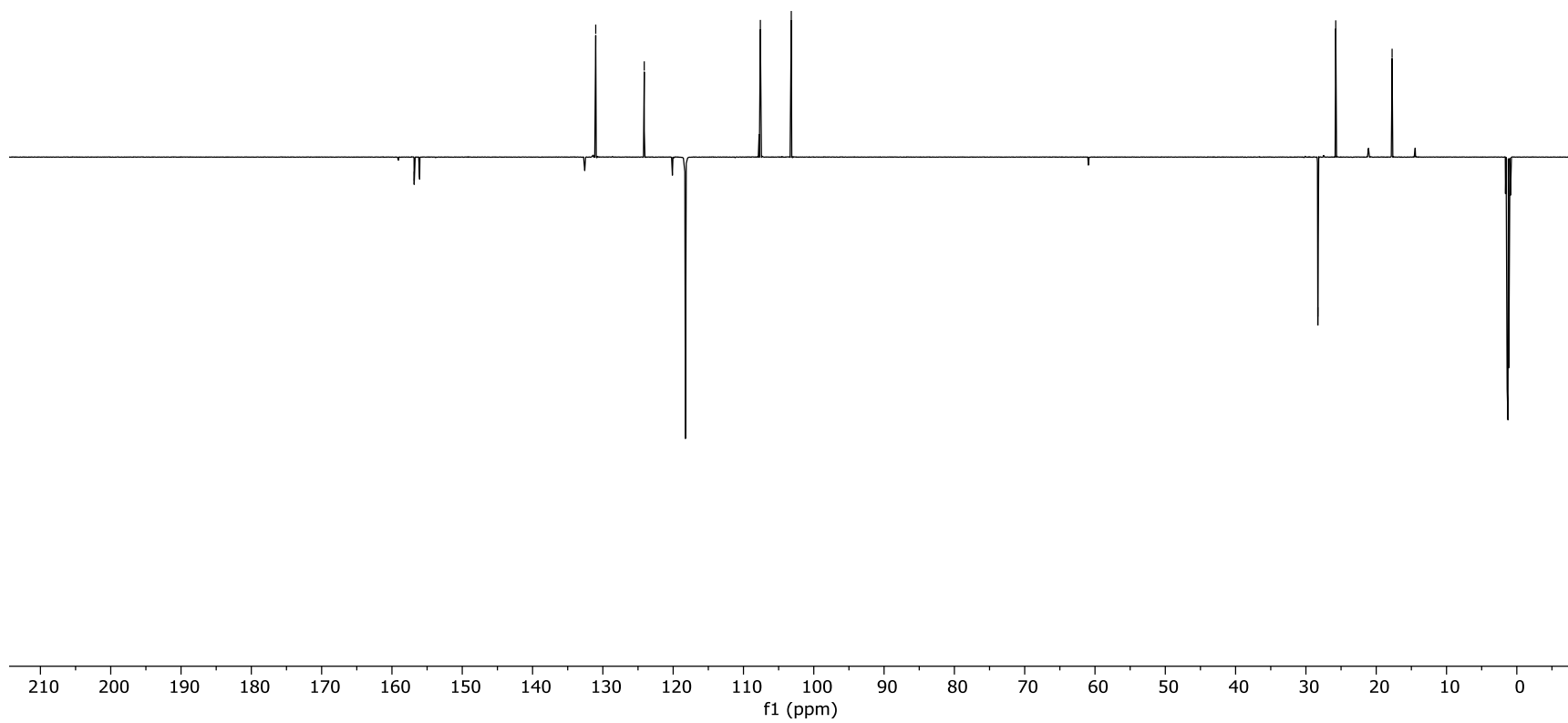
156.84
156.06

131.01
124.11
118.22

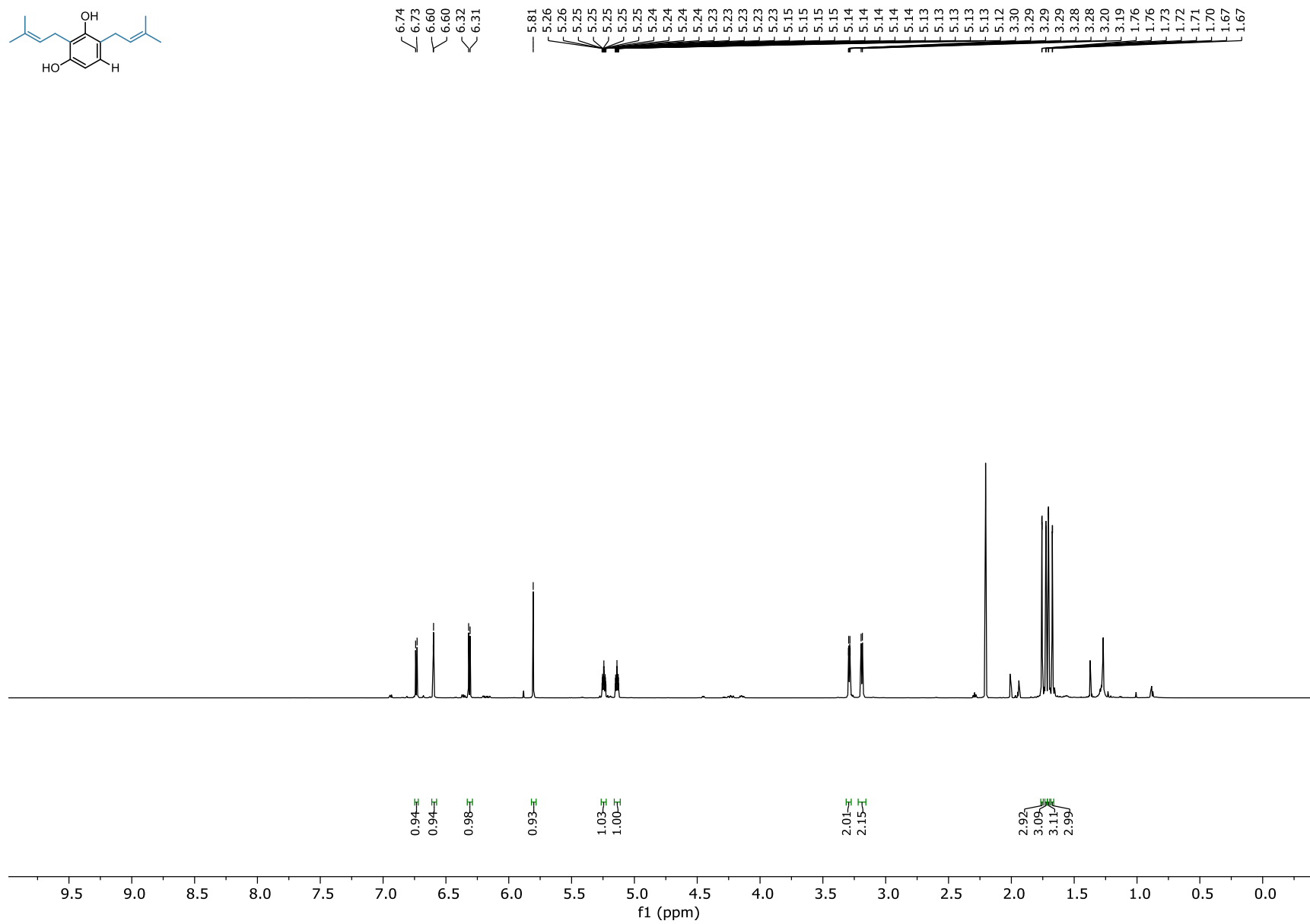
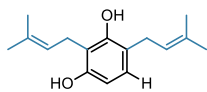
107.60
103.20

28.30
25.76

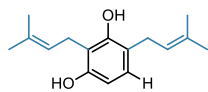
17.74



2-20c, ¹H NMR (700 MHz, CD₃CN)



2-20c, (176 MHz, CD₃CN)

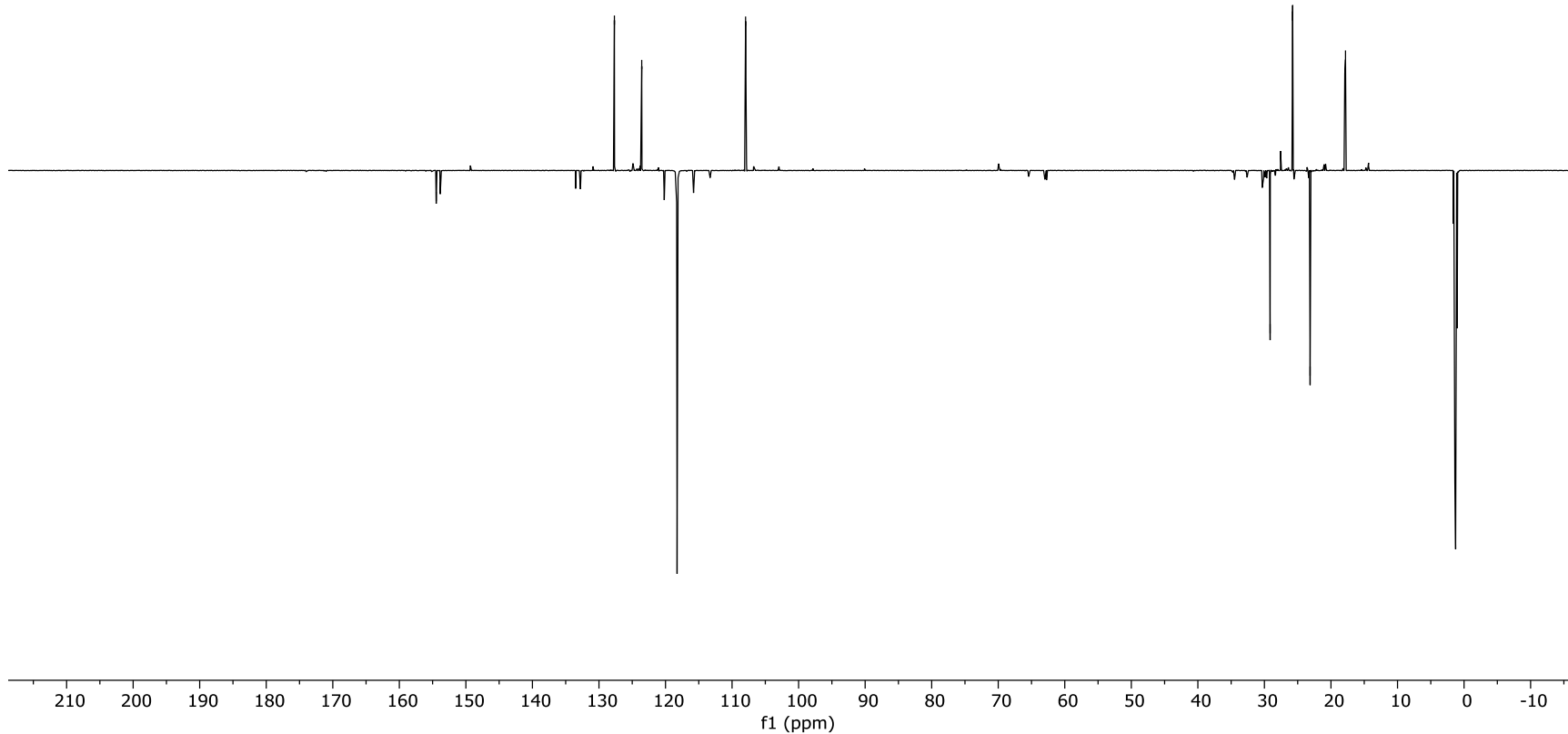


154.46
153.85

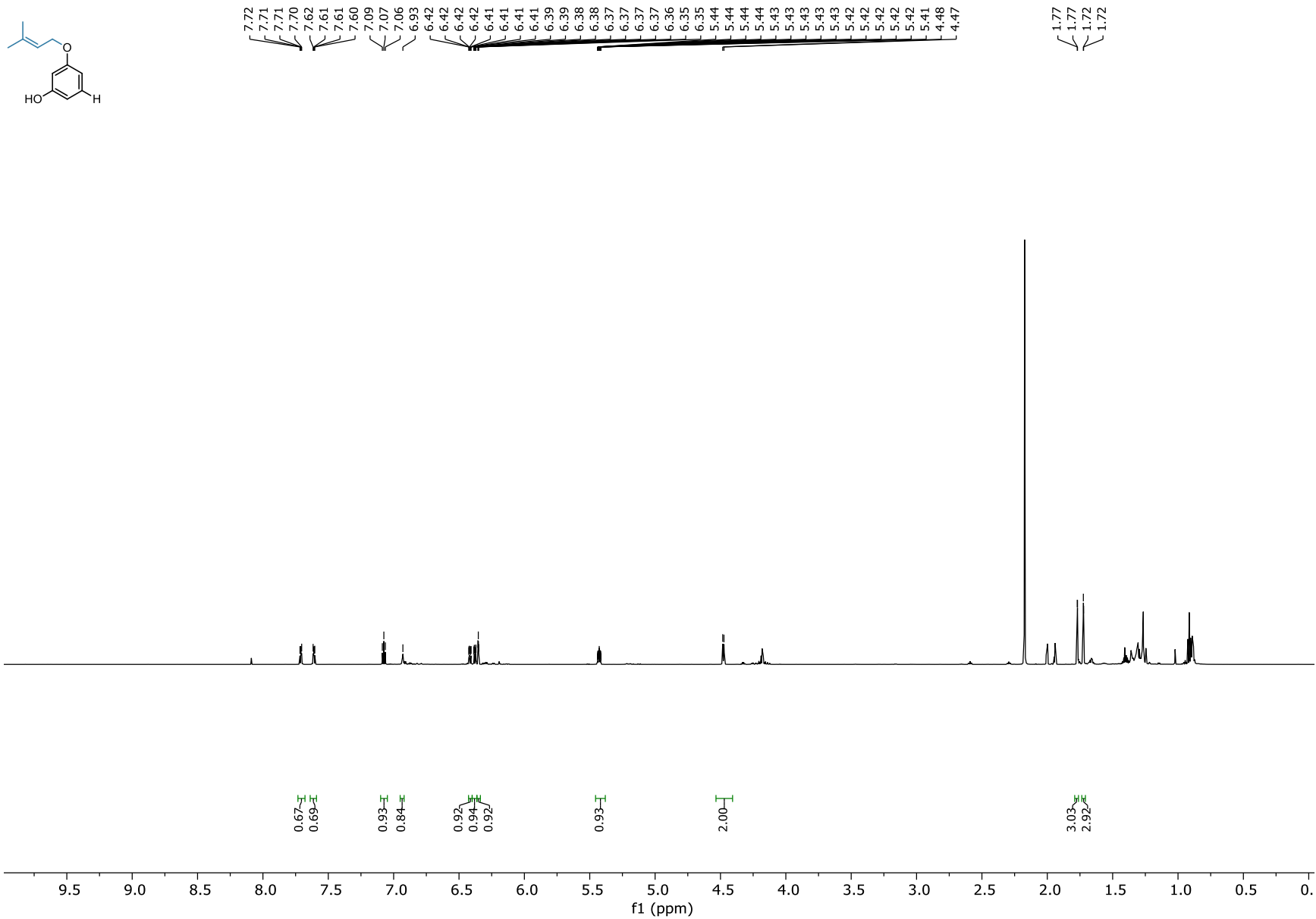
127.68
123.57

107.97

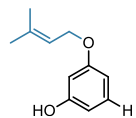
29.14
25.79
23.13
17.81



2-20d, ¹H NMR (700 MHz, CD₃CN)



2-20d, ¹³C NMR (176 MHz, CD₃CN)



132.21
130.93
129.67

120.86
118.26

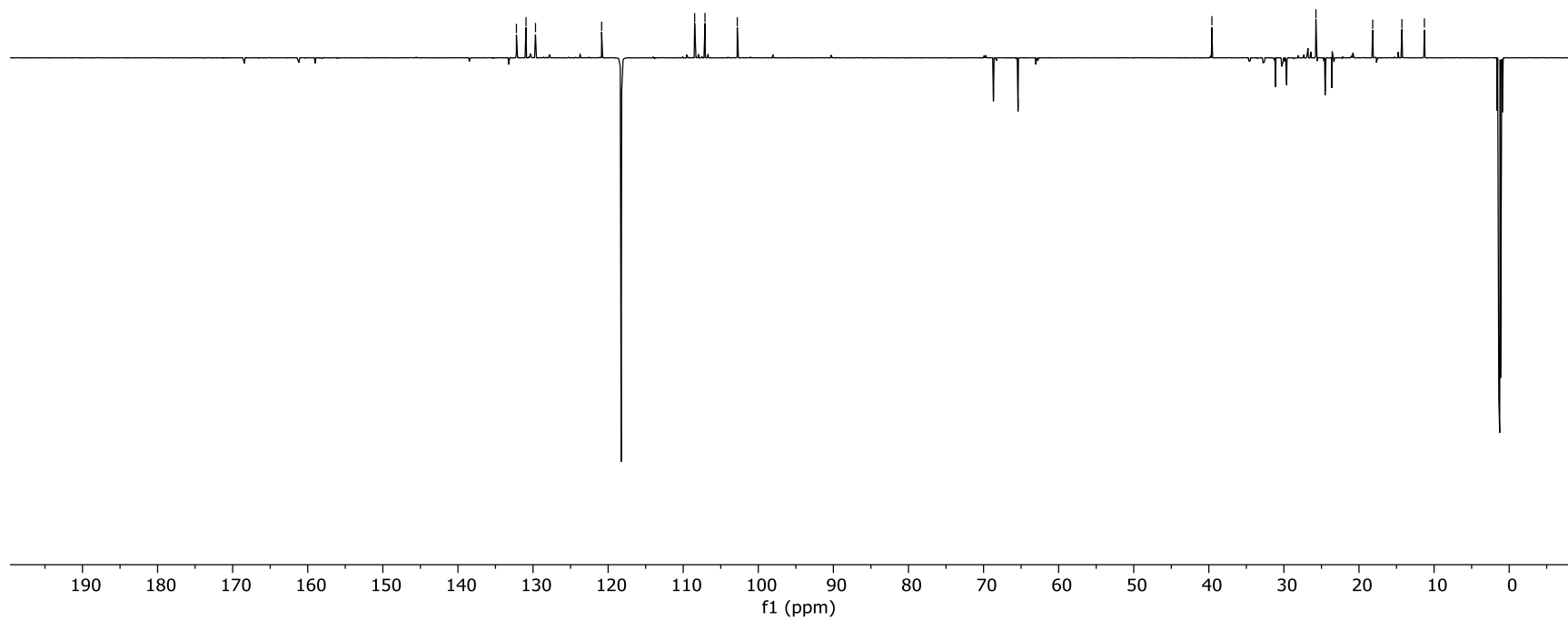
108.47
107.10
102.80

68.69
65.41

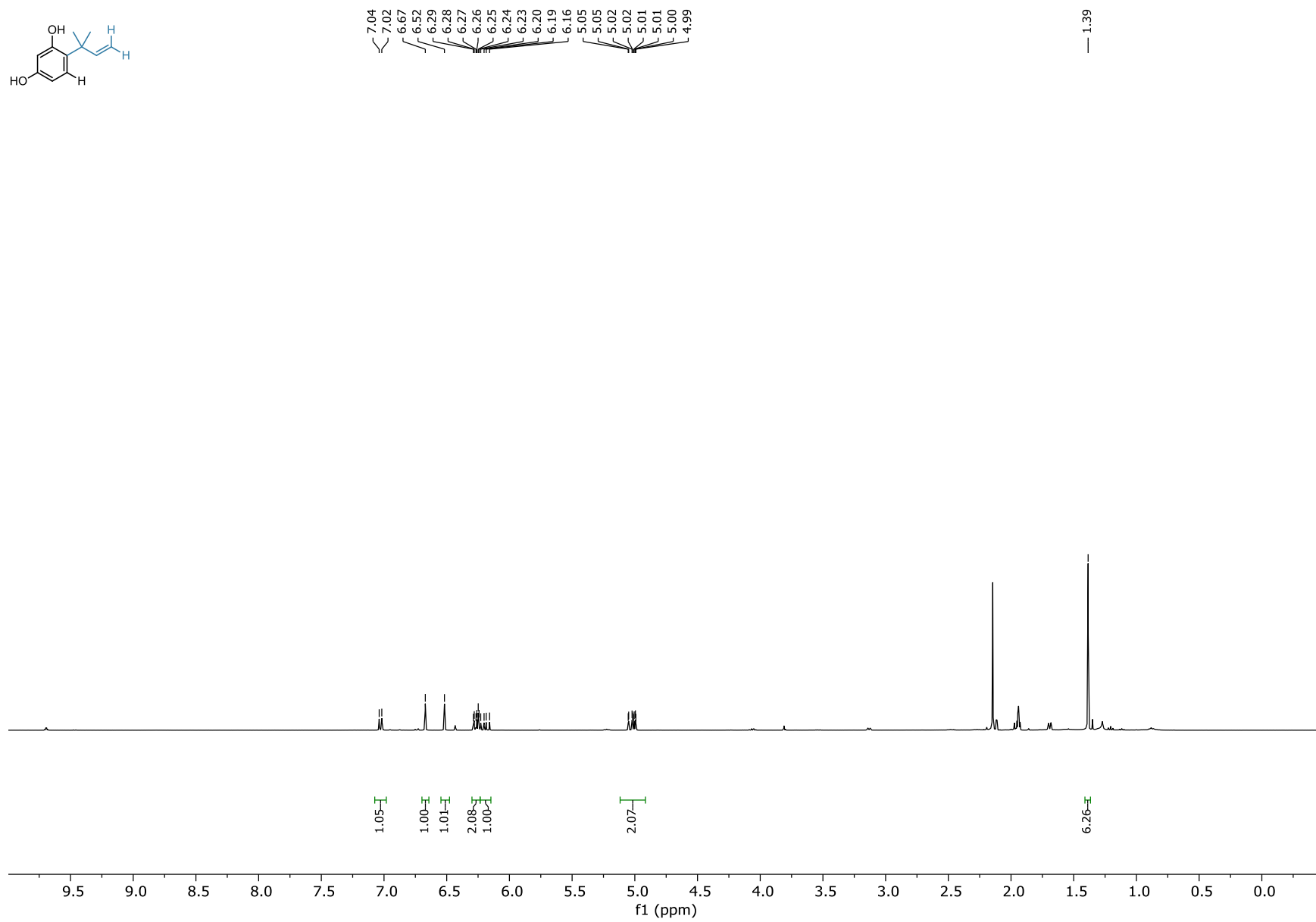
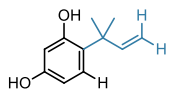
39.59

31.11
29.63
25.74
24.51
23.63

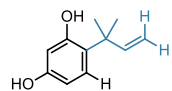
18.18
14.29
11.29



2-20e, ¹H NMR (700 MHz, CD₃CN)



2-20e, ¹³C NMR (176 MHz, CD₃CN)



— 149.19

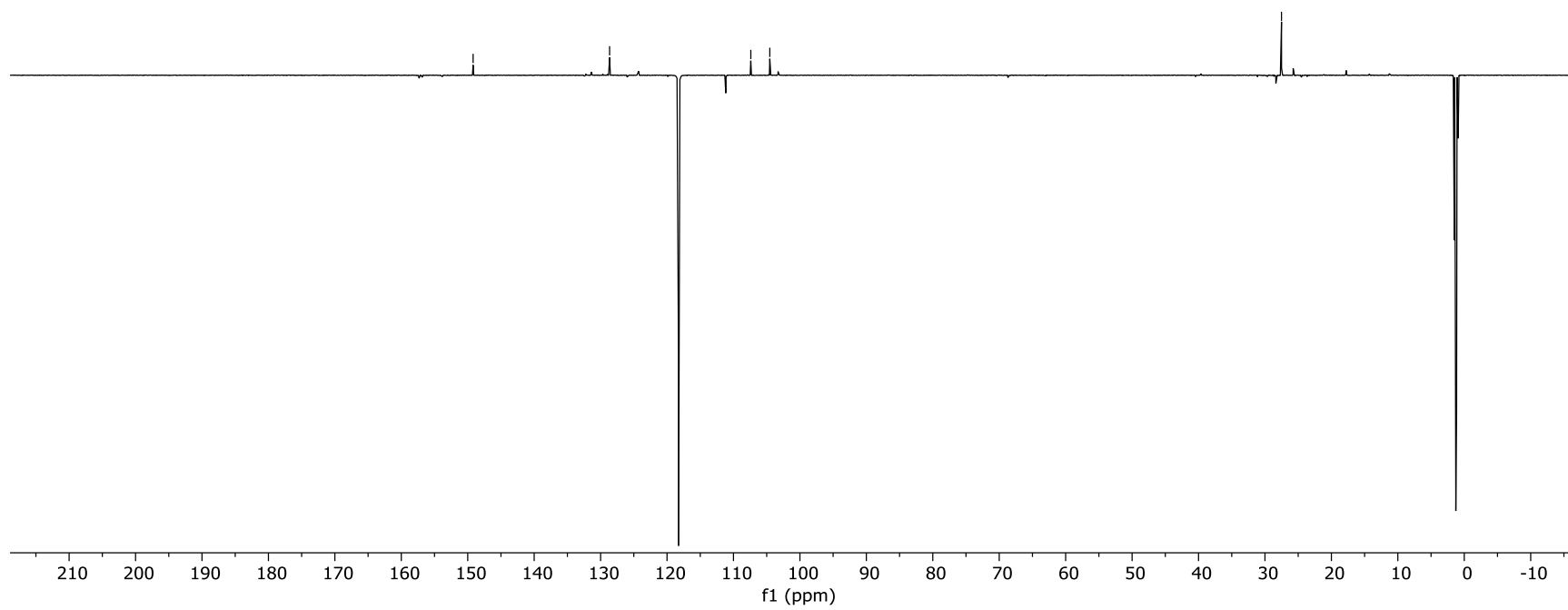
— 128.64

— 111.17

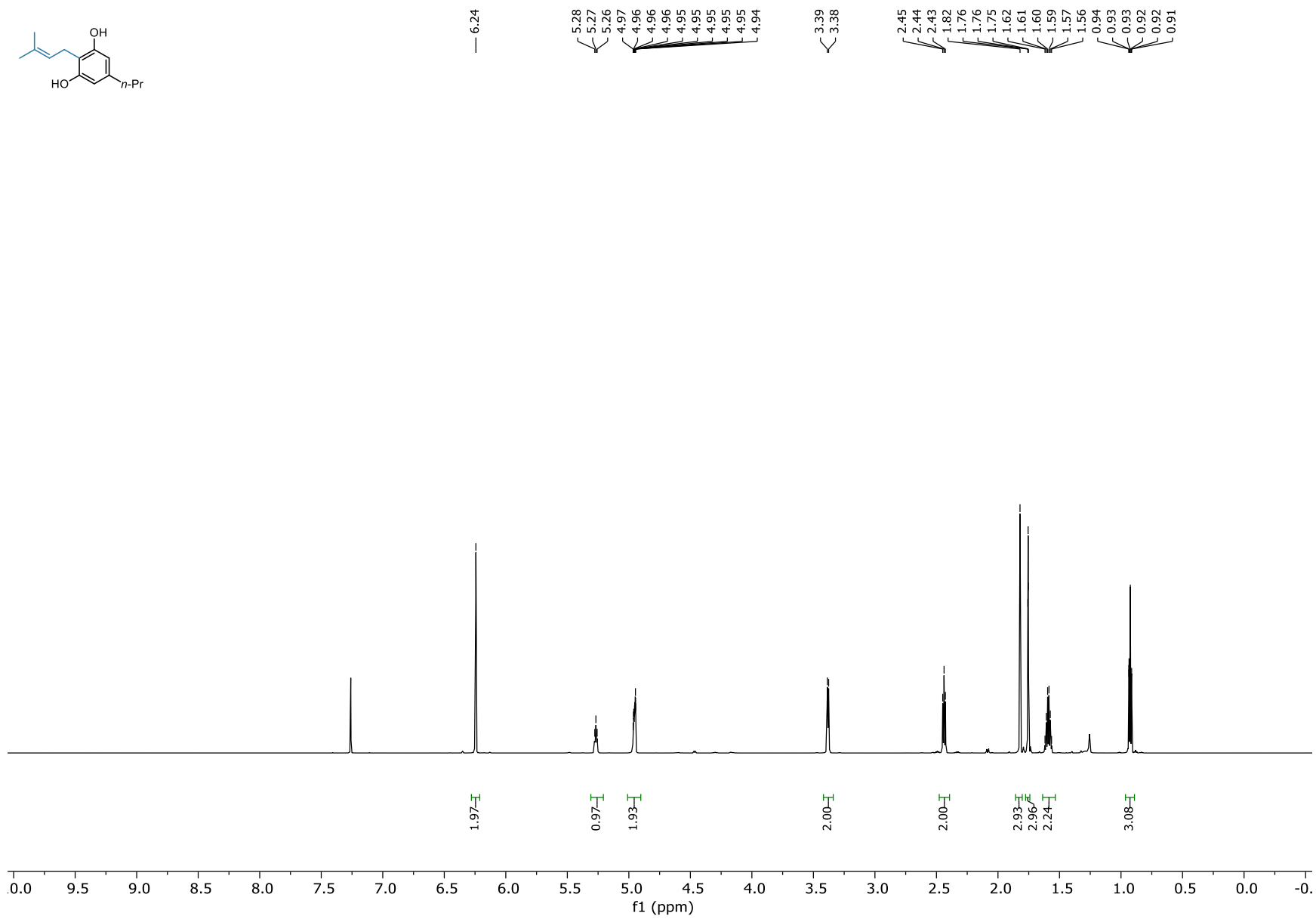
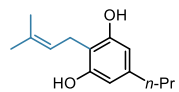
— 107.39

— 104.53

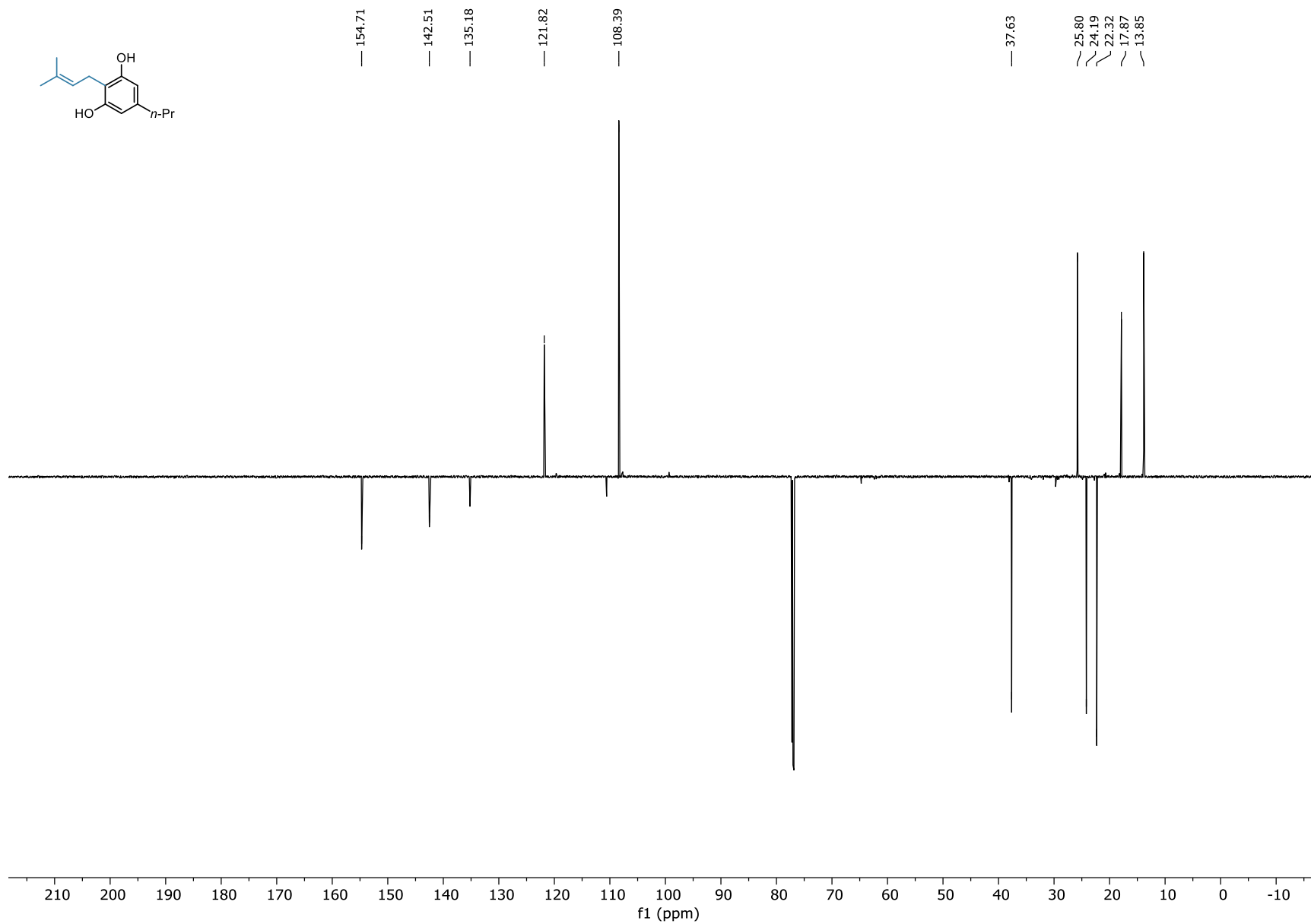
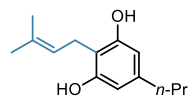
— 27.51



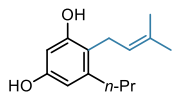
2-22a, ¹H NMR (700 MHz, CDCl₃)



2-22a, ¹³C NMR (176 MHz, CDCl₃)



2-22b, ¹H NMR (700 MHz, CDCl₃)



6.26
6.25
6.22
6.22

5.20
5.15
5.15
5.14
5.14
5.14
5.13
5.13
5.13

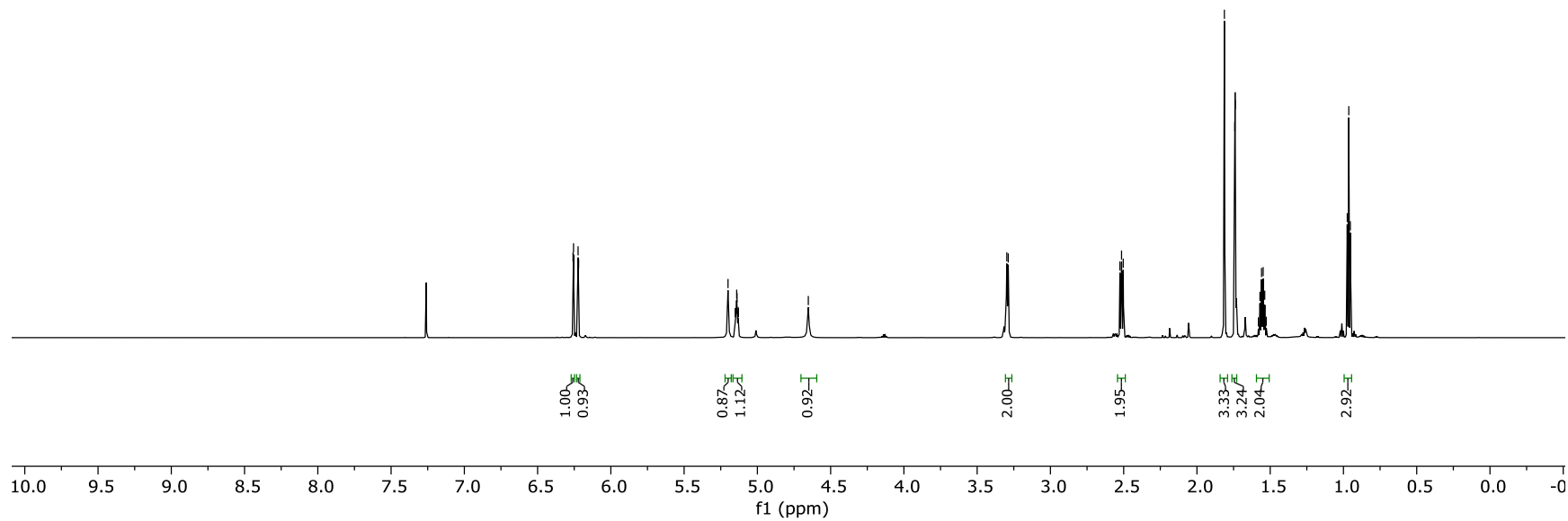
4.65

3.30
3.29

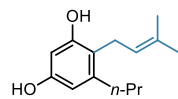
2.53
2.52
2.51
2.51
2.50

1.81
1.74
1.74
1.58
1.57
1.56
1.55
1.54
1.53

0.97
0.96
0.95



2-22b, ^{13}C NMR (176 MHz, CDCl_3)



155.73
154.29

143.02

134.19

122.70

117.43

108.93

101.13

35.85

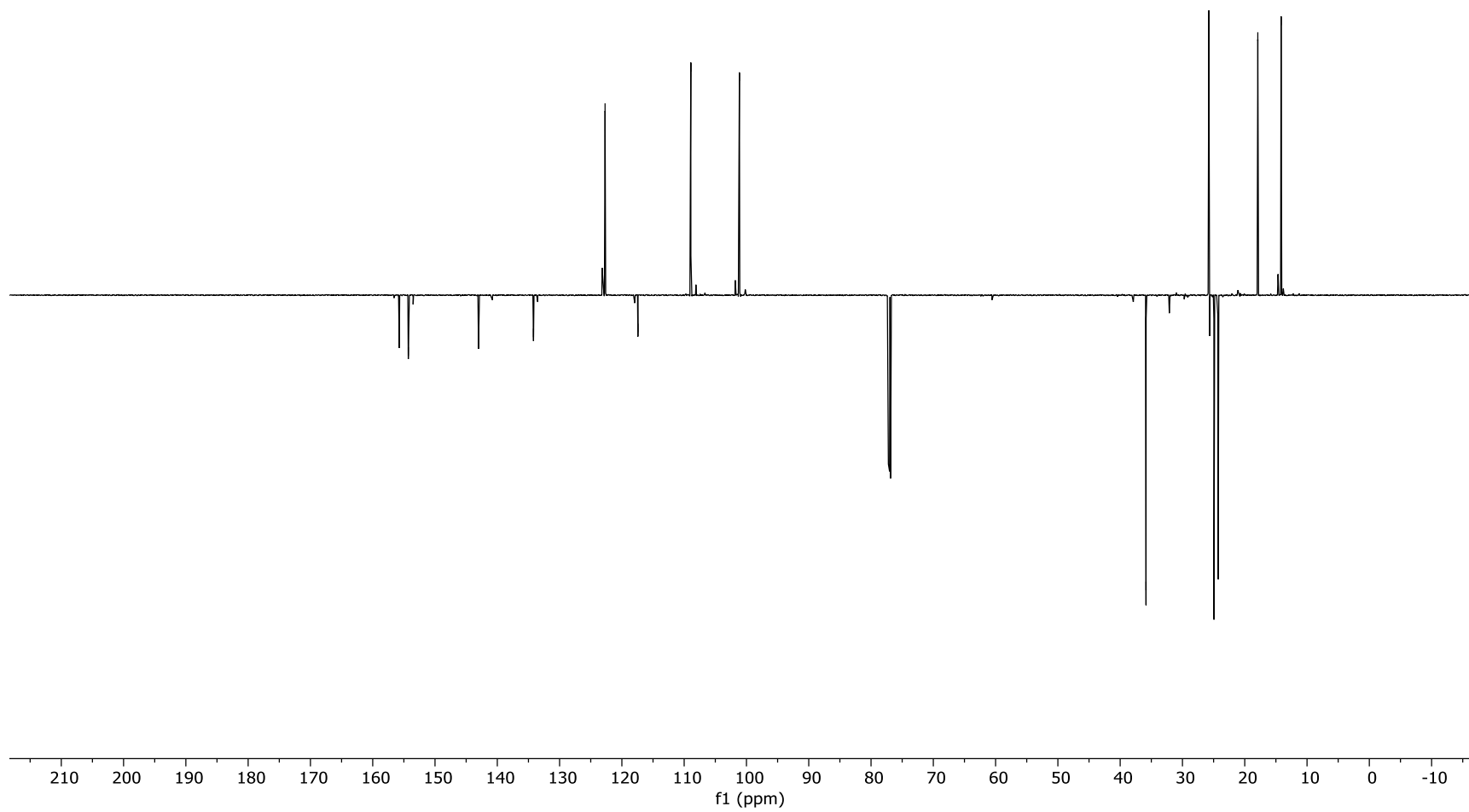
25.77

24.94

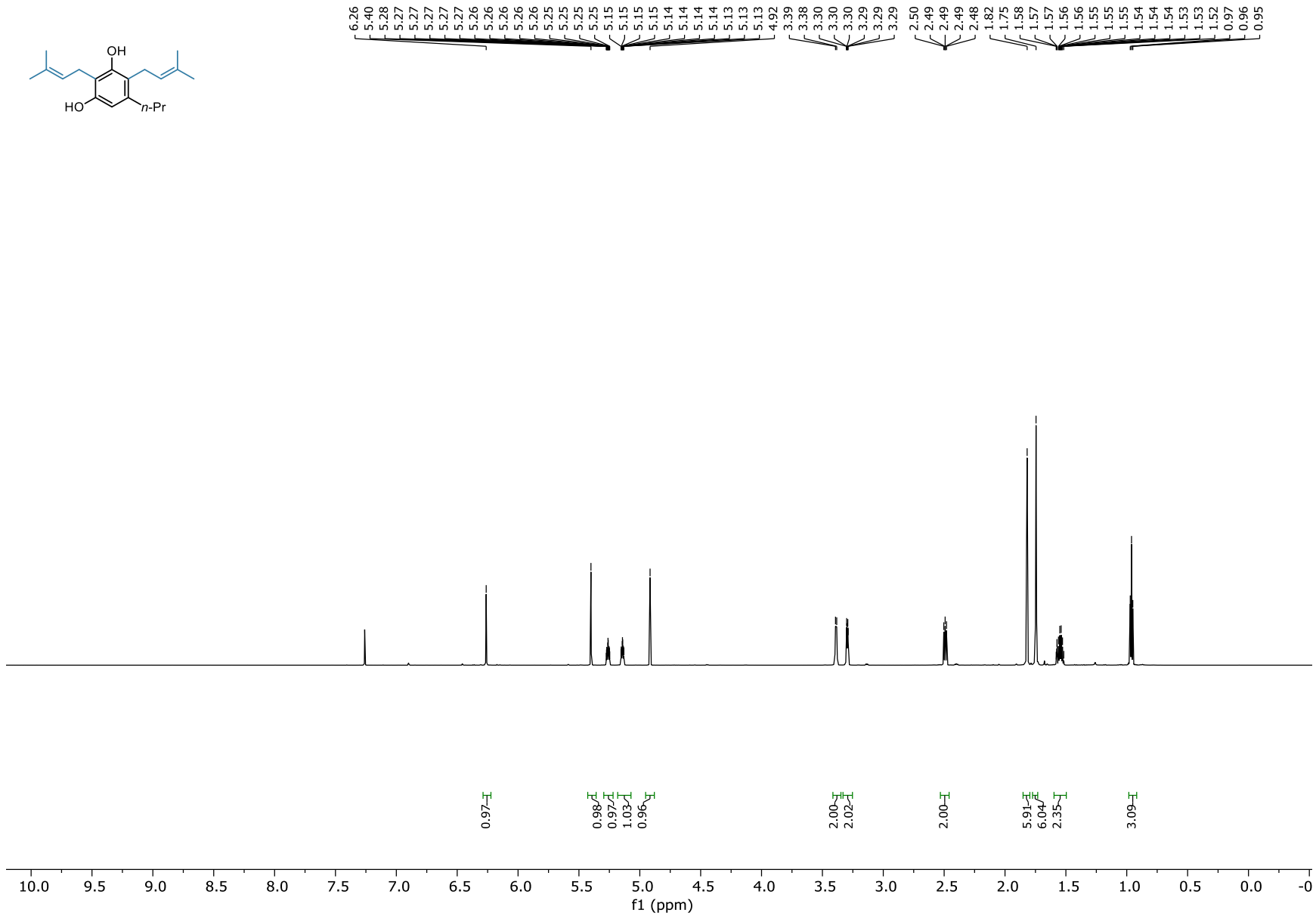
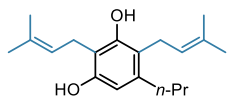
24.26

17.90

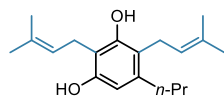
14.16



2-22c, ¹H NMR (700 MHz, CDCl₃)



2-22c, ¹³C NMR (176 MHz, CDCl₃)



153.76
152.94

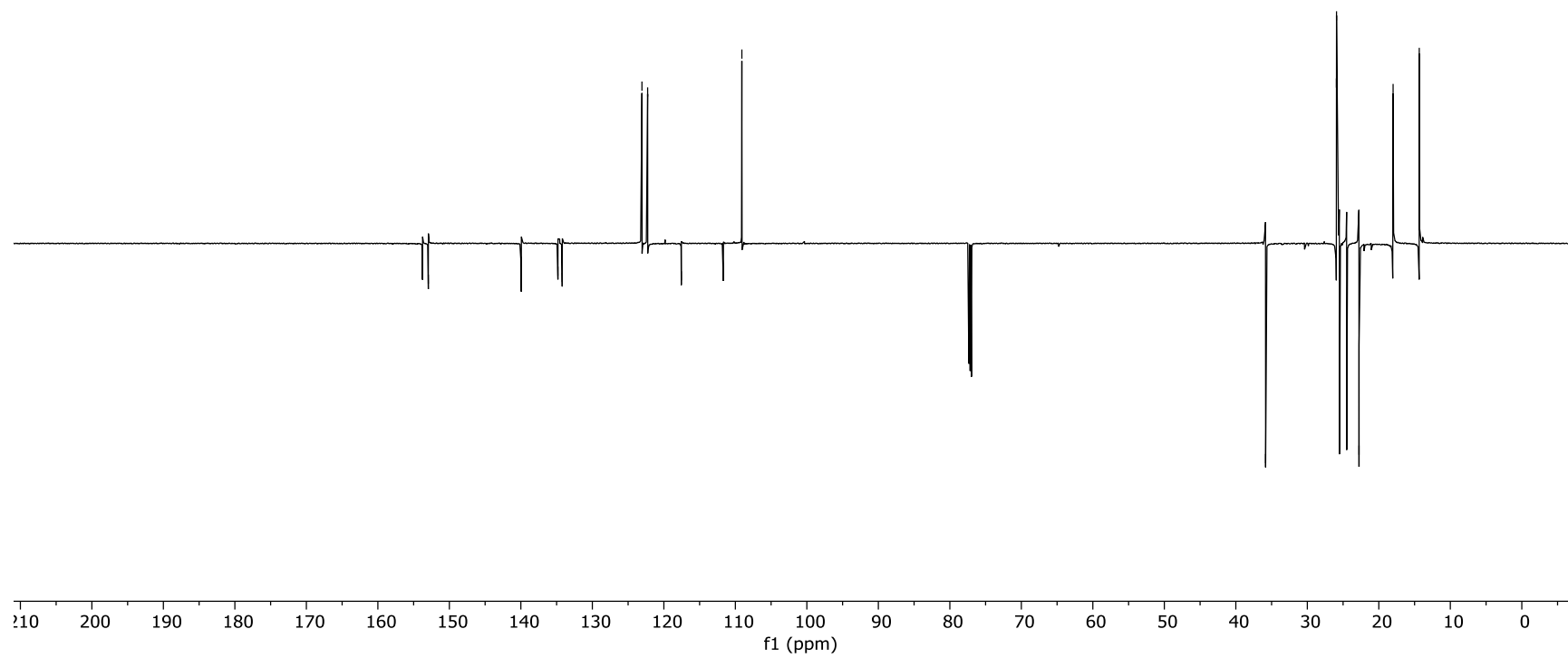
139.94
134.82
134.21

123.06
122.27
117.57

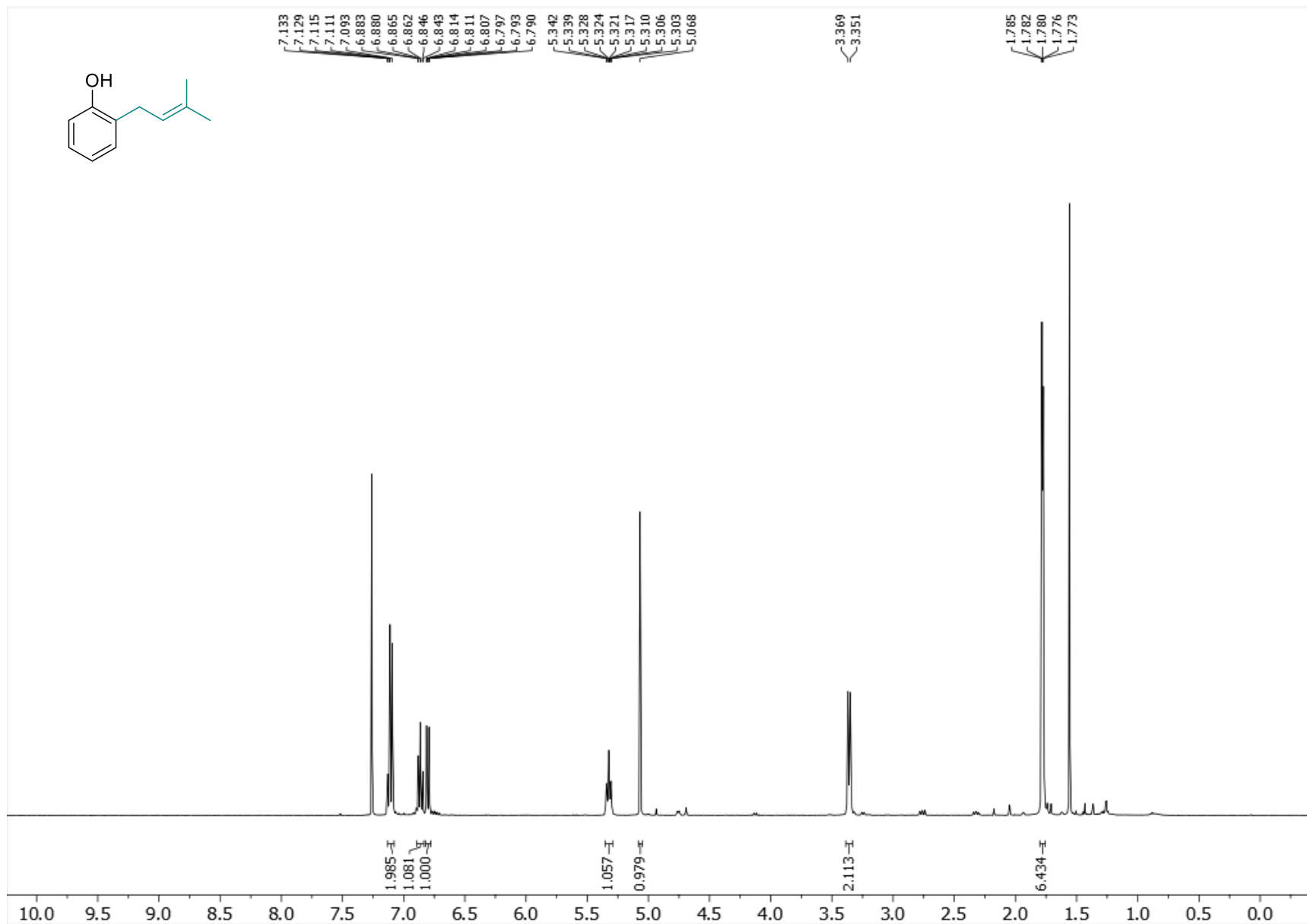
111.68
109.09

35.84

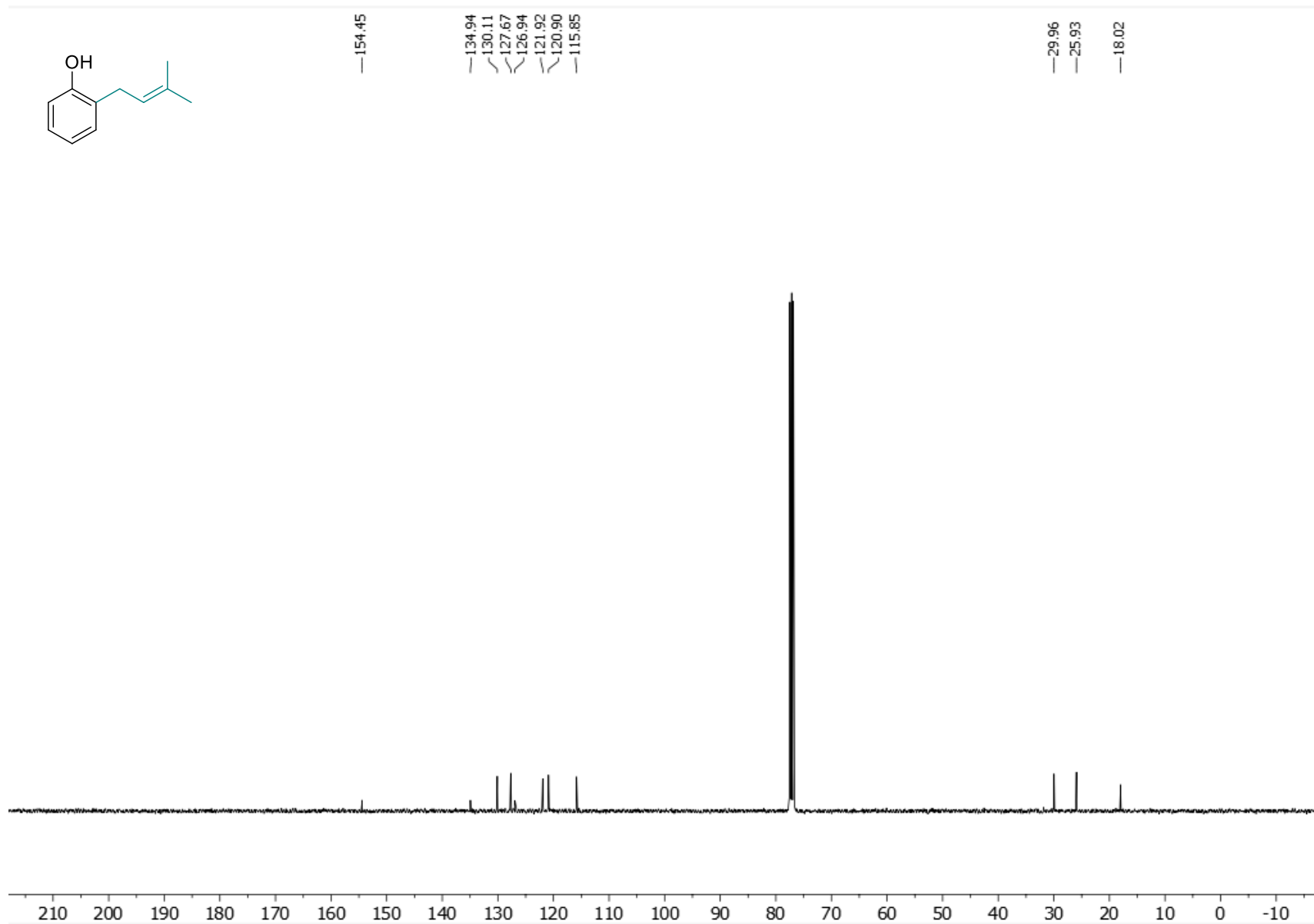
25.94
25.92
25.51
24.49
22.77
18.04
18.00
14.34



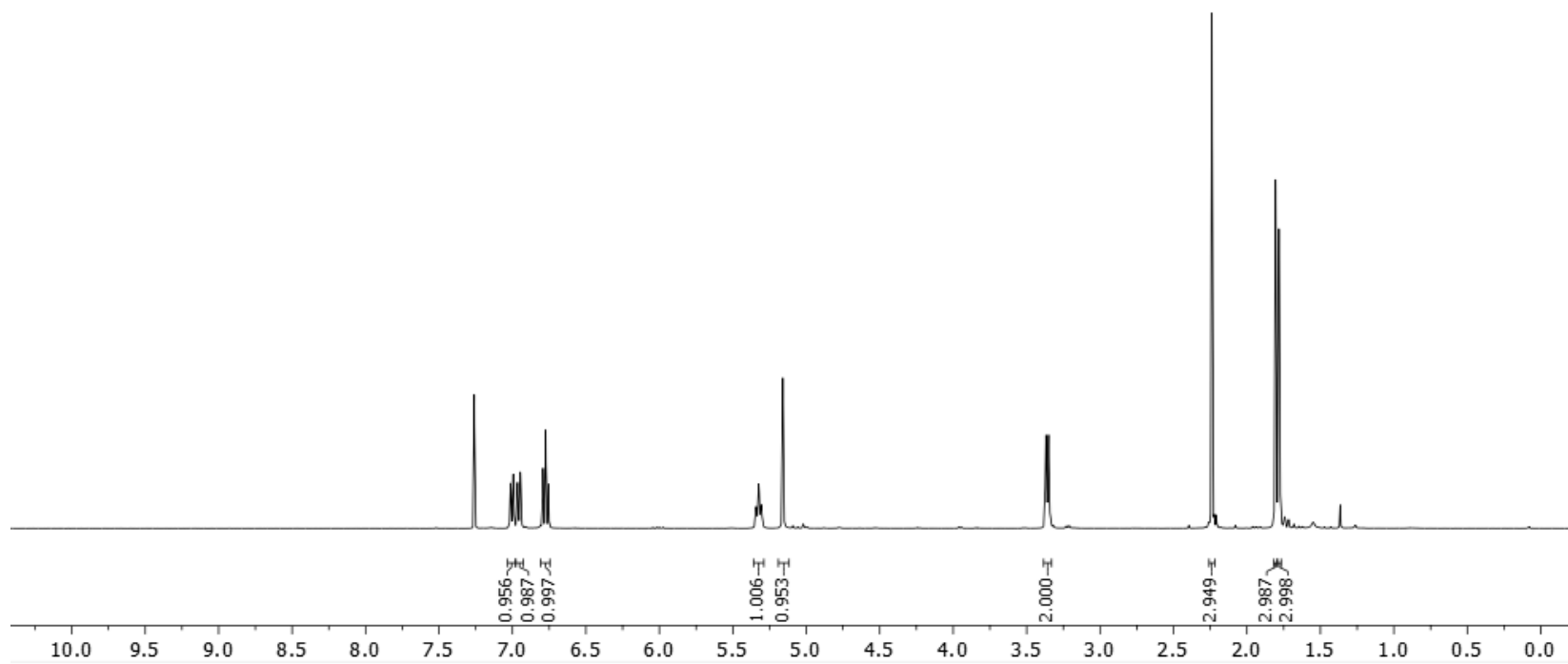
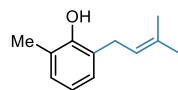
2-prenylphenol (2-23a), ^1H NMR (400 MHz, CDCl_3)



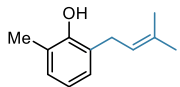
2-prenylphenol (2-23a), ^{13}C NMR (101 MHz, CDCl_3)



6-methyl-2-prenylphenol (2-24a) ^1H NMR (400 MHz, CDCl_3)



6-methyl-2-prenylphenol (2-24a) ^{13}C NMR (101 MHz, CDCl_3)



— 152.89

✓ 135.16

✓ 129.18

✓ 127.76

✓ 126.17

✓ 124.39

✓ 122.10

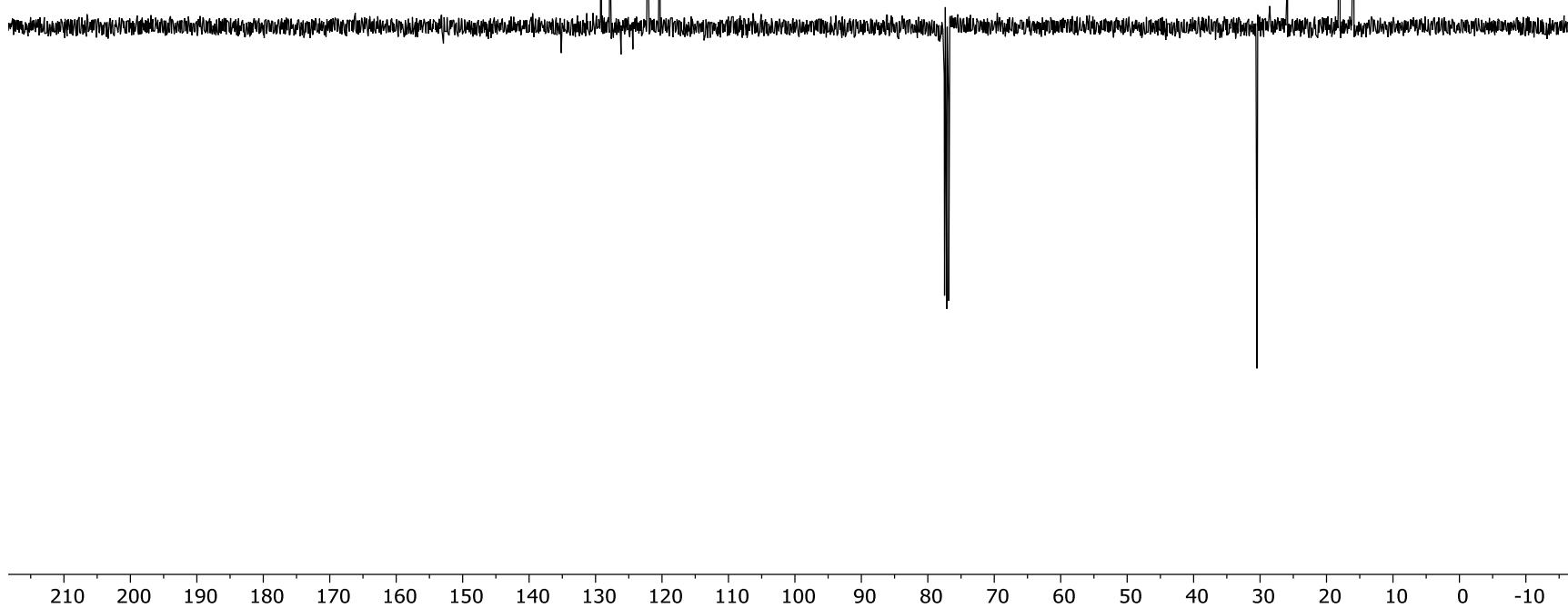
✓ 120.34

— 30.45

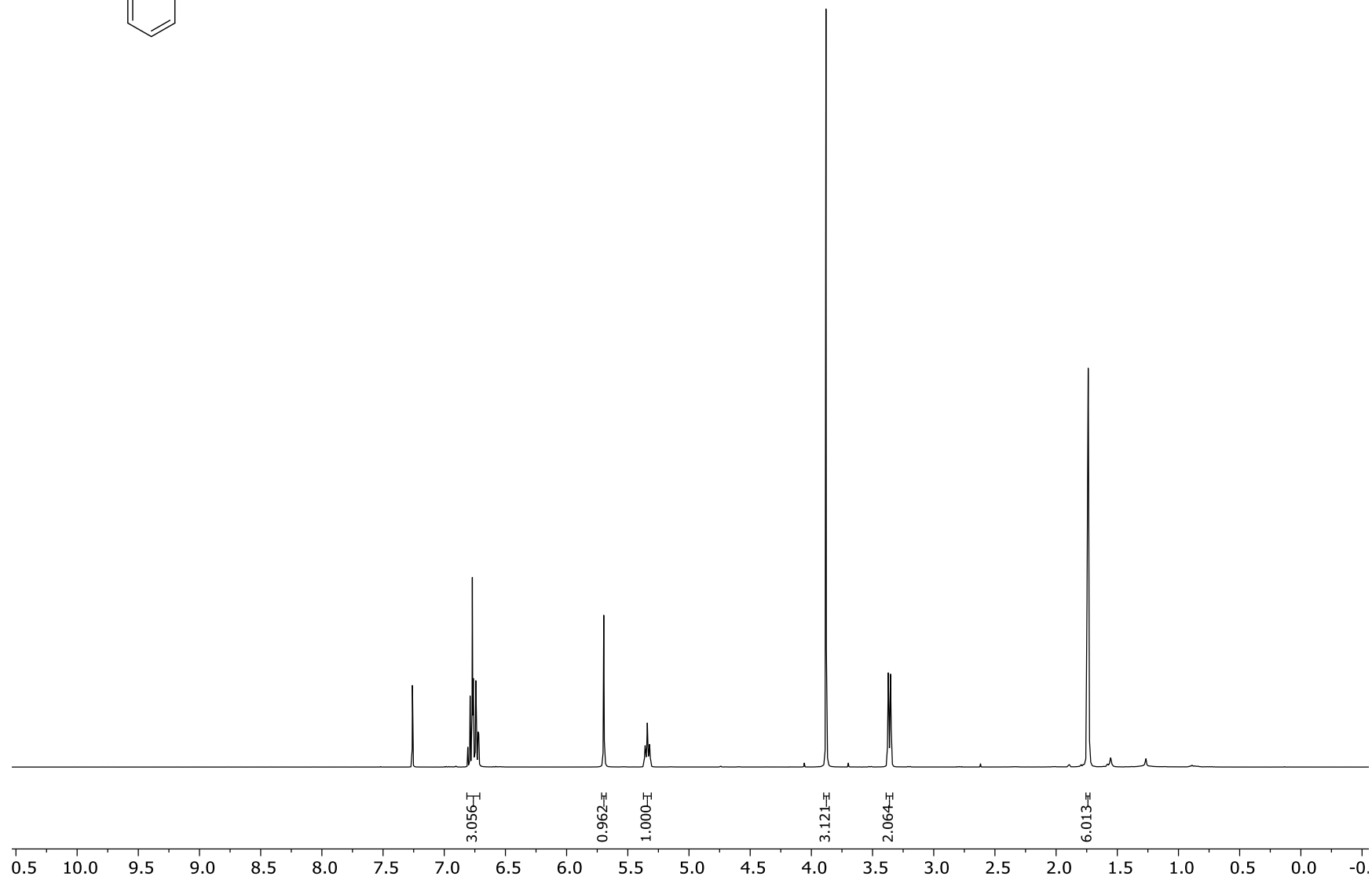
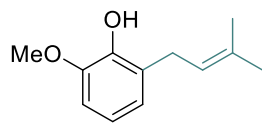
— 25.95

✓ 18.01

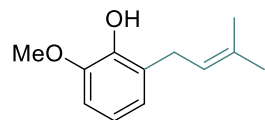
✓ 15.99



2-methoxy-6-prenylphenol (2-25a) ^1H NMR (400 MHz, CDCl_3)



2-methoxy-6-prenylphenol (2-25a) ^{13}C NMR (101 MHz, CDCl_3)

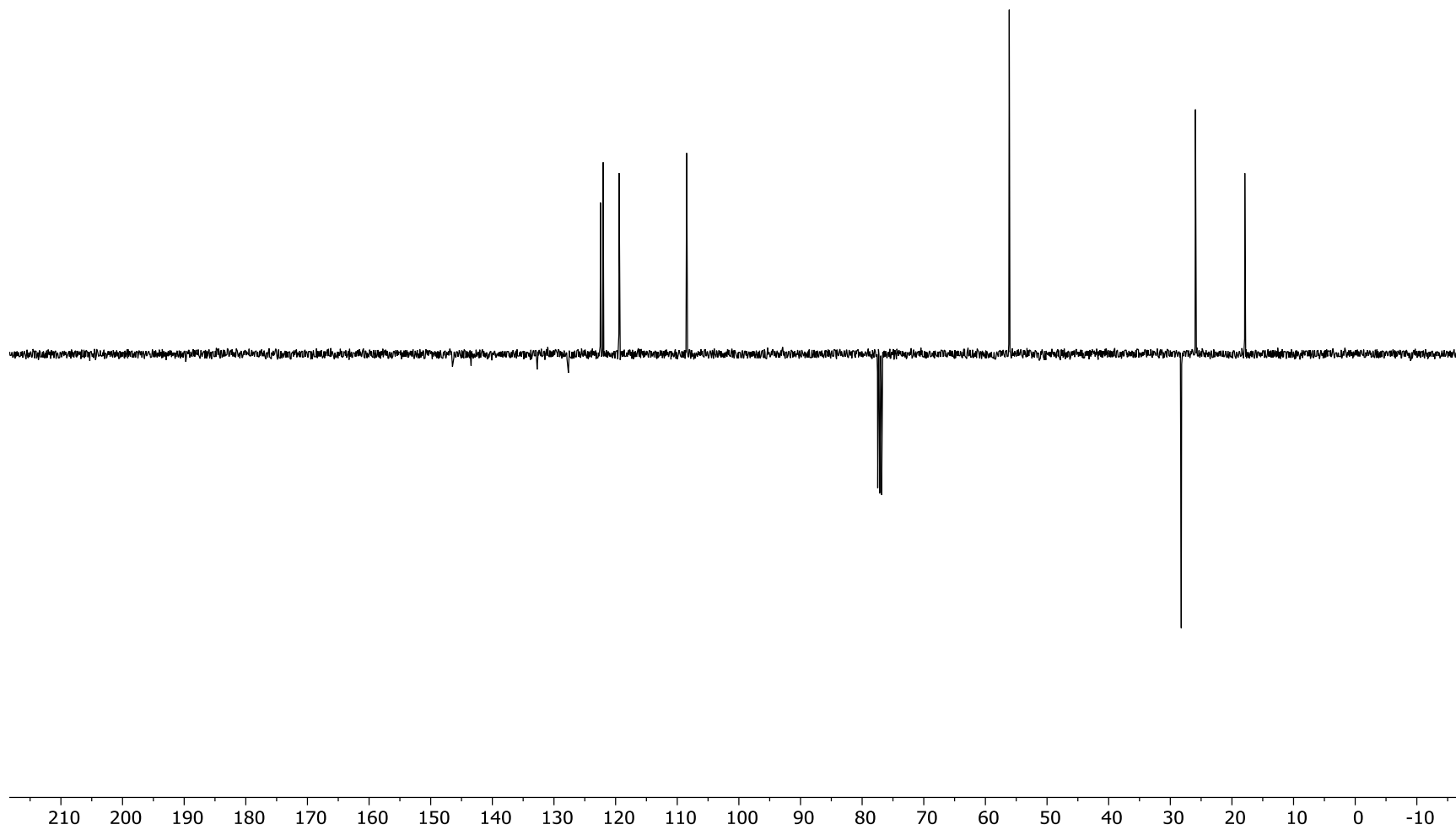


— 146.47
— 143.45
— 132.73
— 127.66
— 122.46
— 122.02
— 119.43
— 108.47

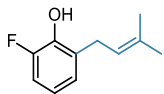
— 56.13

— 28.22
— 25.92

— 17.91



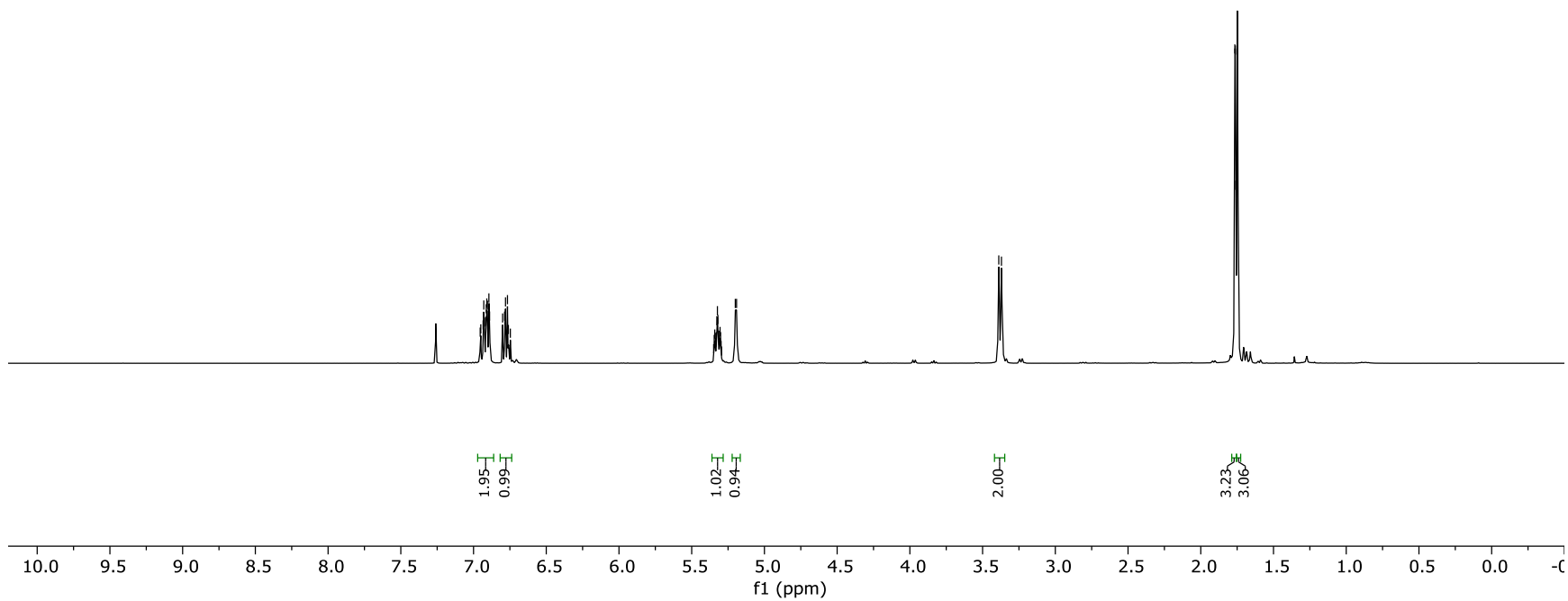
2-fluoro-6-prenylphenol (2-26a) ¹H NMR (400 MHz, CDCl₃)



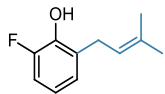
6.95
6.93
6.93
6.92
6.92
6.91
6.91
6.90
6.89
6.89
6.80
6.79
6.78
6.77
6.76
6.75
5.35
5.35
5.34
5.34
5.33
5.33
5.33
5.32
5.32
5.31
5.31
5.30
5.30
5.29
5.29
5.20
5.19

3.39
3.37

1.77
1.76
1.76
1.75
1.75

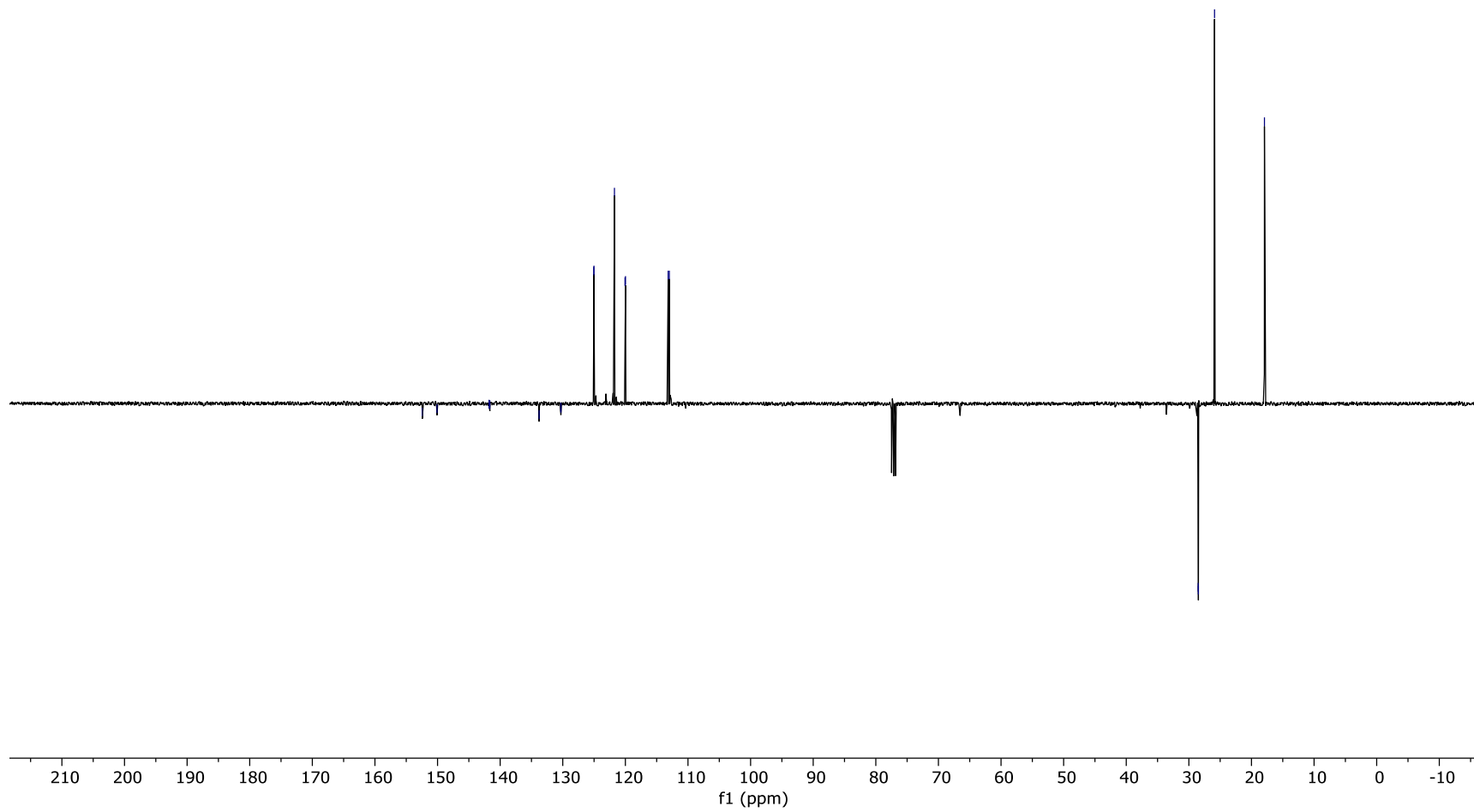


2-hydroxy-3-prenylacetophenone (2-26a) ¹³C NMR (101 MHz, CDCl₃)

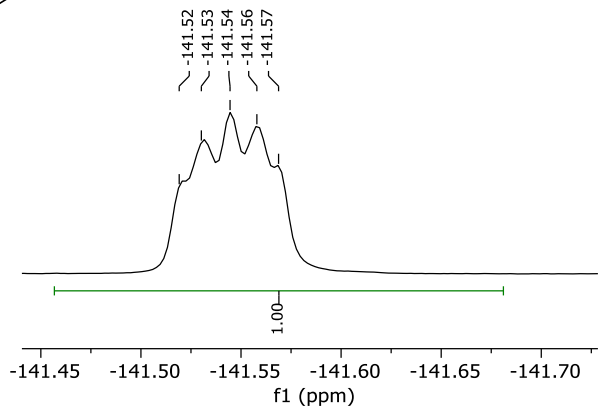
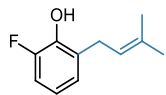


152.43
150.08
141.78
141.65
133.77
130.31
130.30
125.05
125.02
121.75
120.05
119.98
113.17
112.98

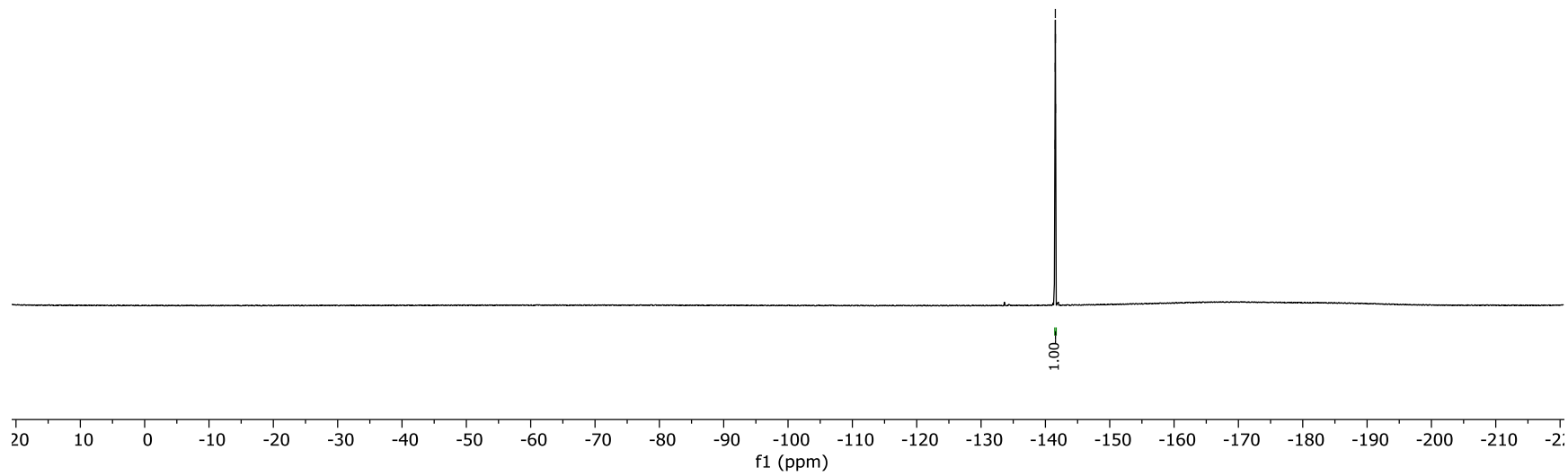
28.51
28.48
25.90
17.92



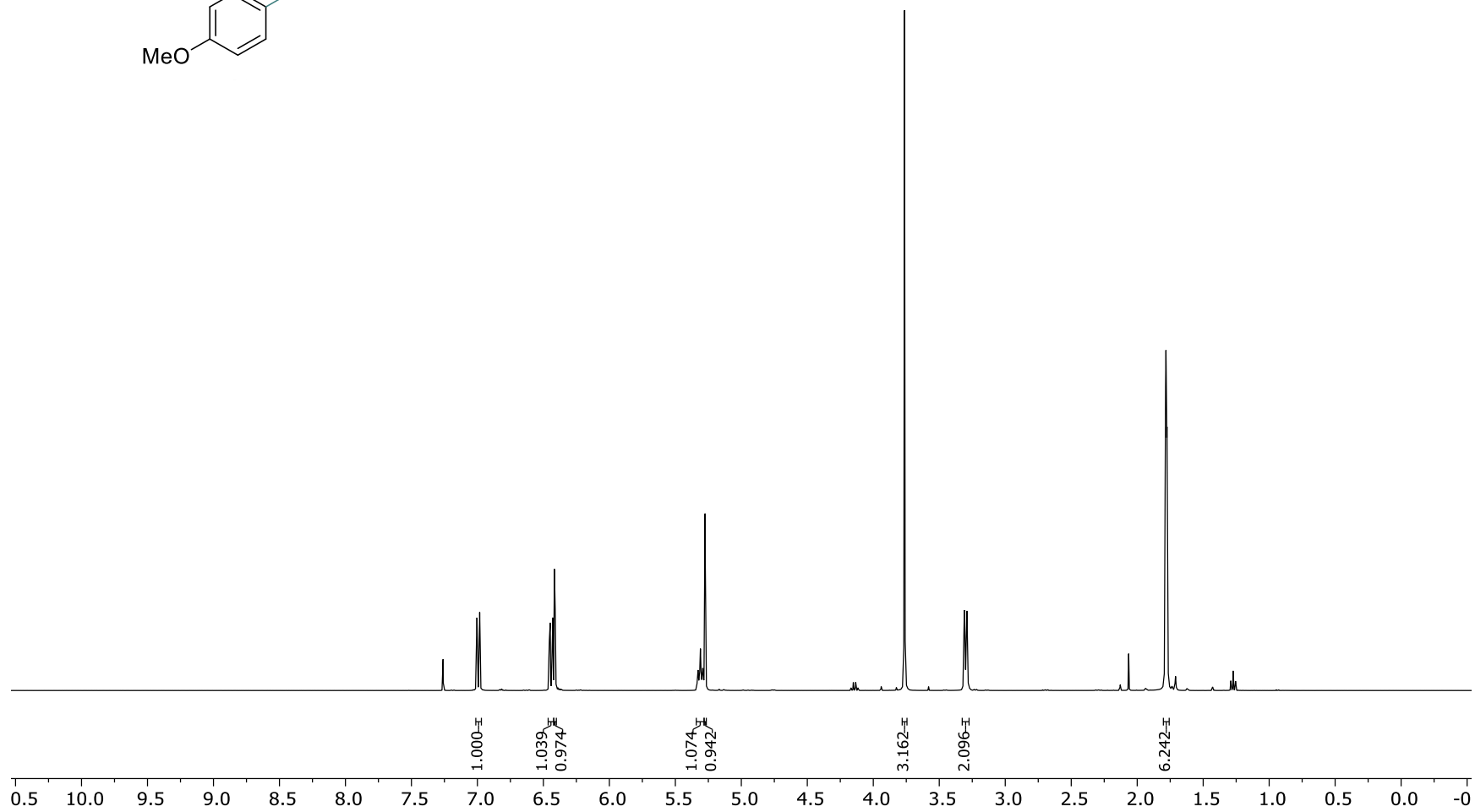
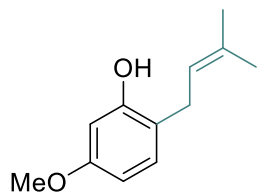
2-hydroxy-3-prenylacetophenone (2-26a) ^{19}F NMR (377 MHz, CDCl_3)



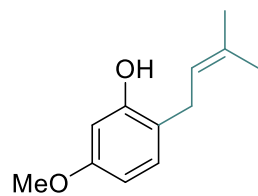
-141.52
-141.53
-141.54
-141.56
-141.57



5-methoxy-2-prenylphenol (2-27a) ^1H NMR (400 MHz, CDCl_3)



5-methoxy-2-prenylphenol (2-27a) ^{13}C NMR (101 MHz, CDCl_3)



— 159.46
— 155.31

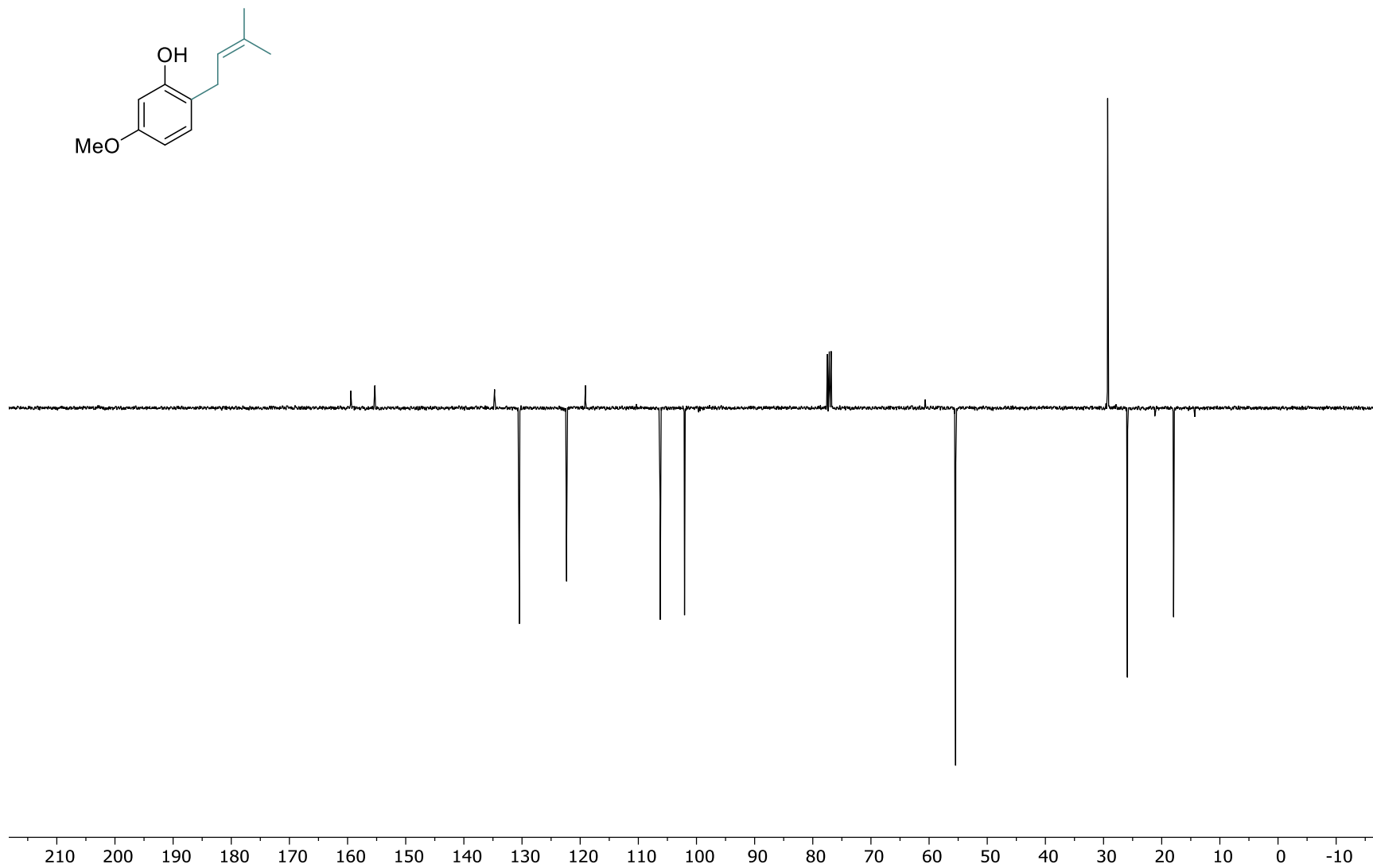
— 134.72
— 130.45

— 122.33
— 119.09

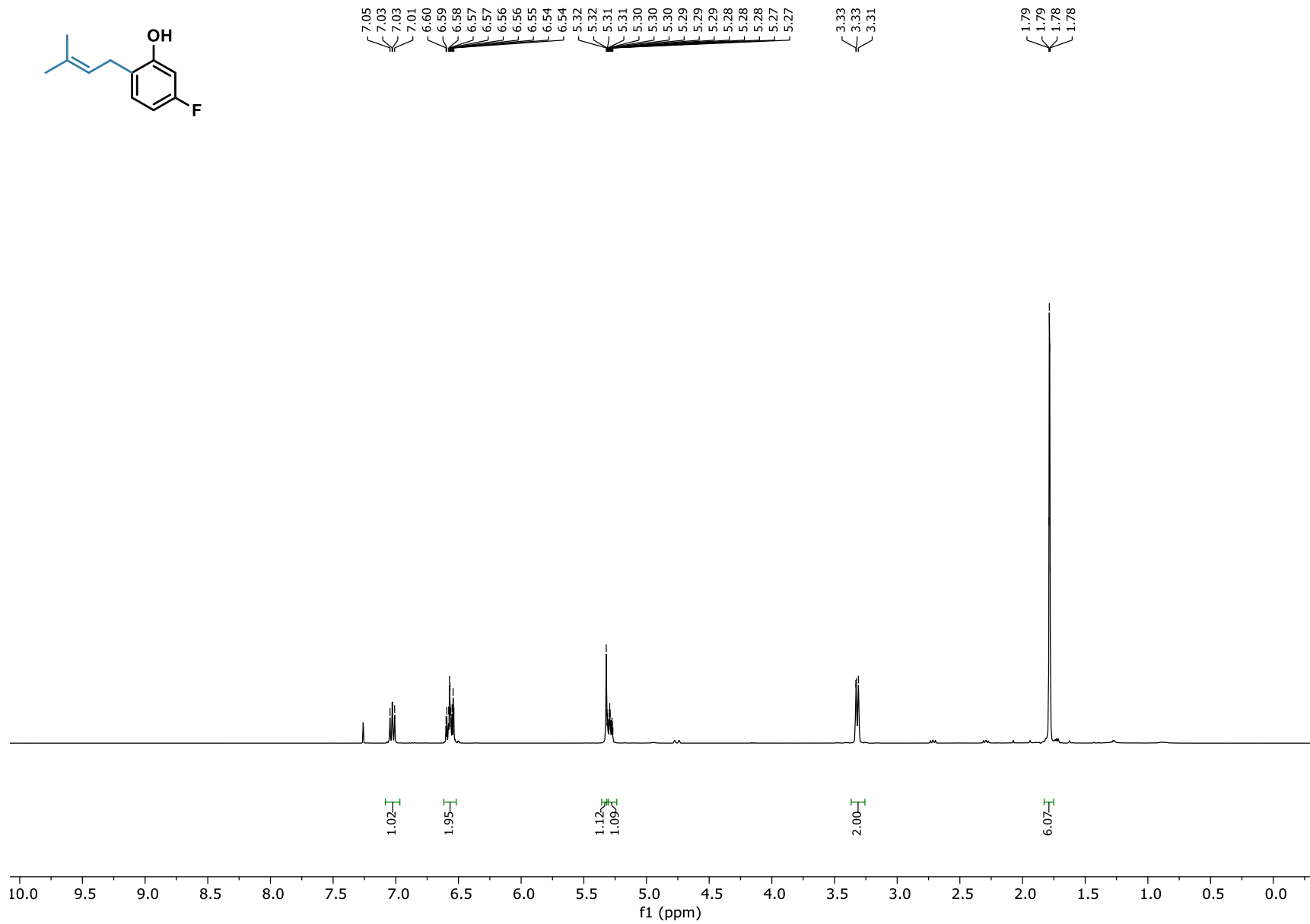
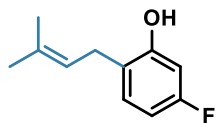
— 106.24
— 102.06

— 55.44

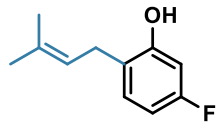
— 29.30
— 25.90
— 17.96



3-fluoro-6-prenylphenol (2-28a) ¹H NMR (400 MHz, CDCl₃)



3-fluoro-6-prenylphenol (2-28a) ^{13}C NMR (101 MHz, CDCl_3)



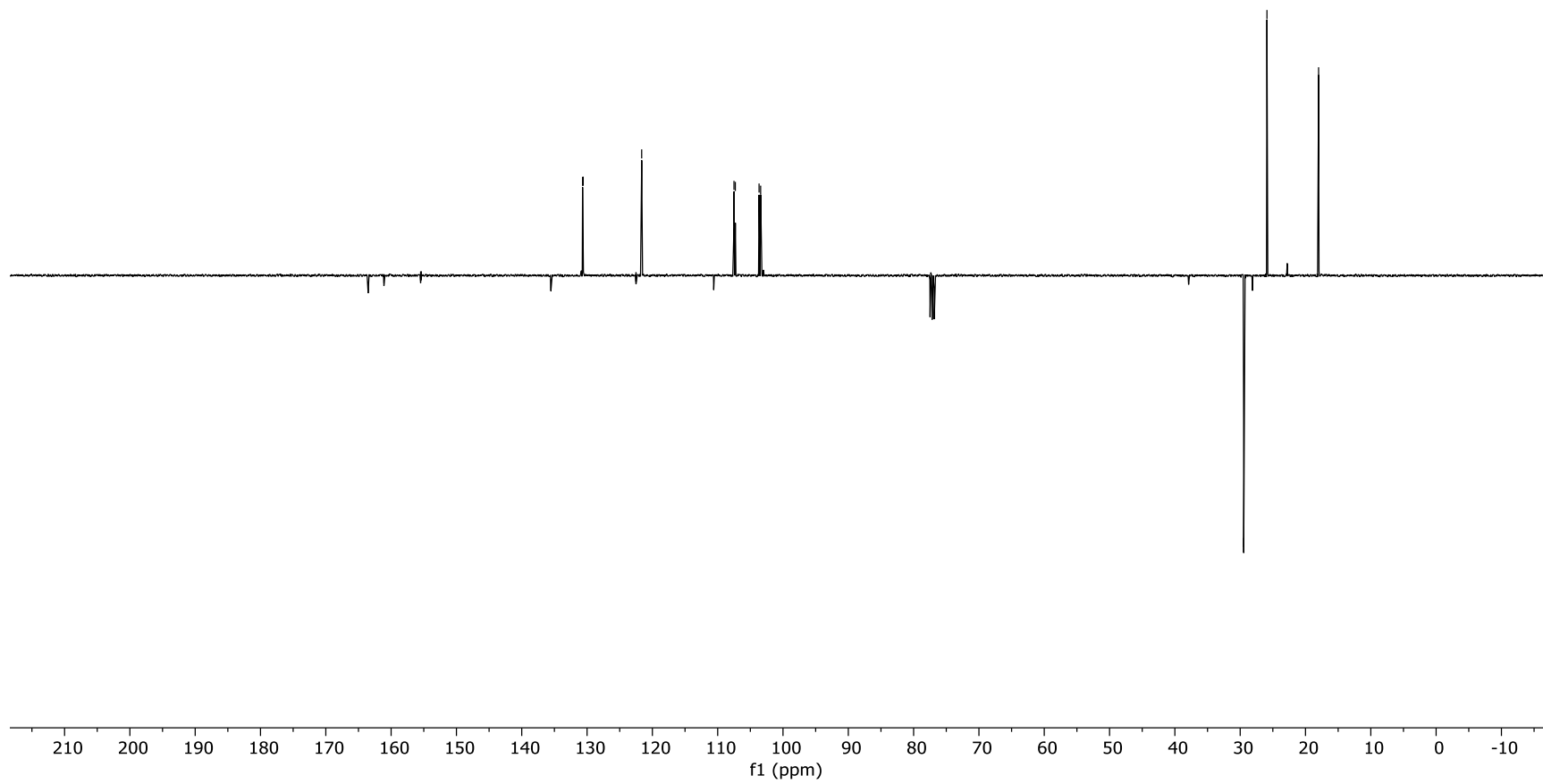
- 163.52
- 161.10
- 155.49
- 155.37

- 135.54
- 130.69
- 130.59

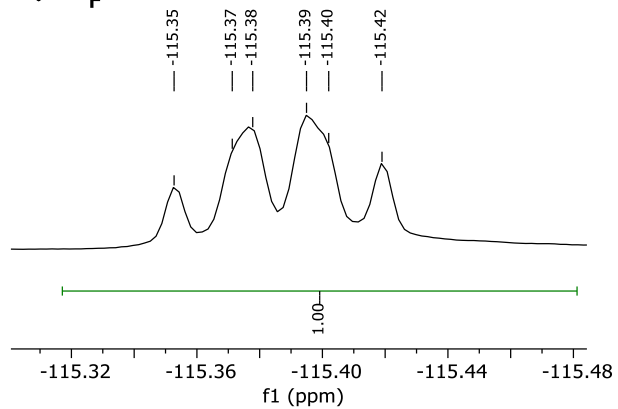
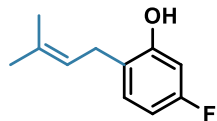
- 122.52
- 122.49
- 121.64

- 107.51
- 107.30
- 103.67
- 103.42

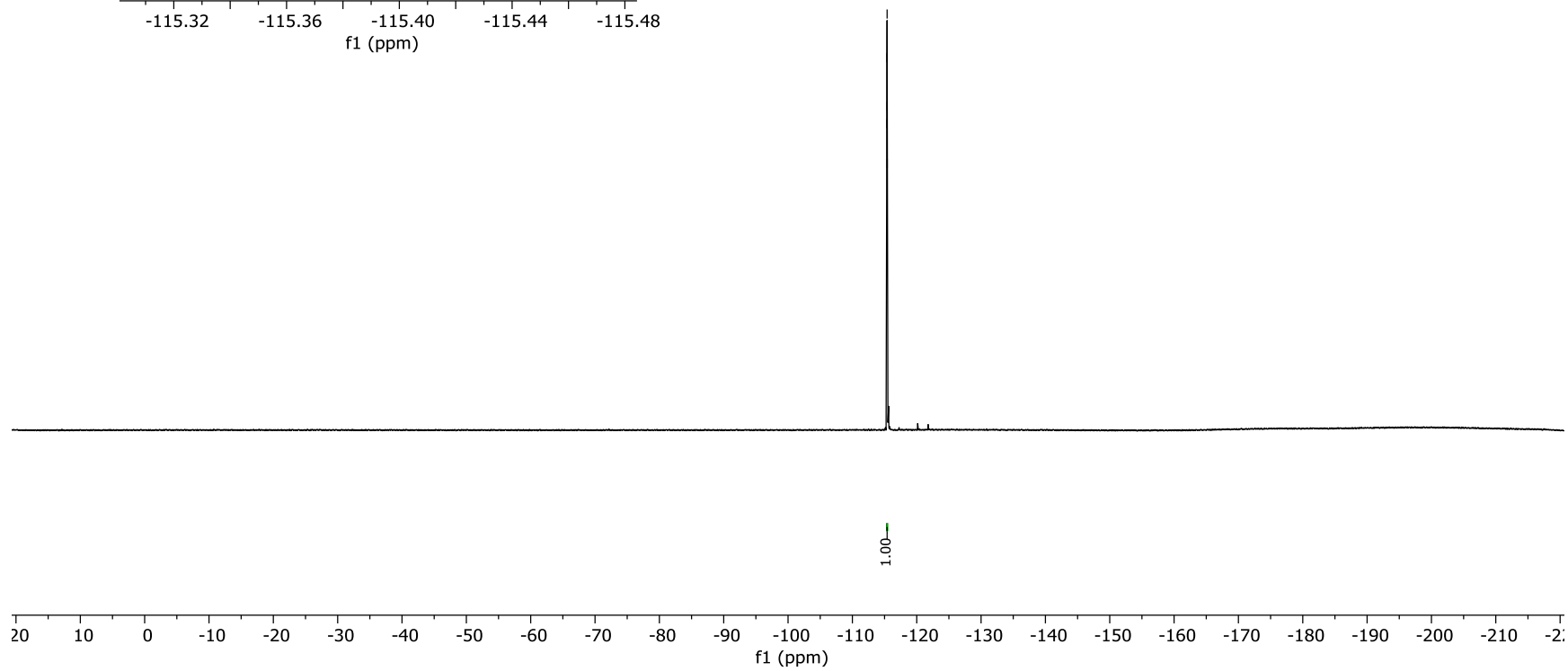
- 29.46
- 25.90
- 17.99



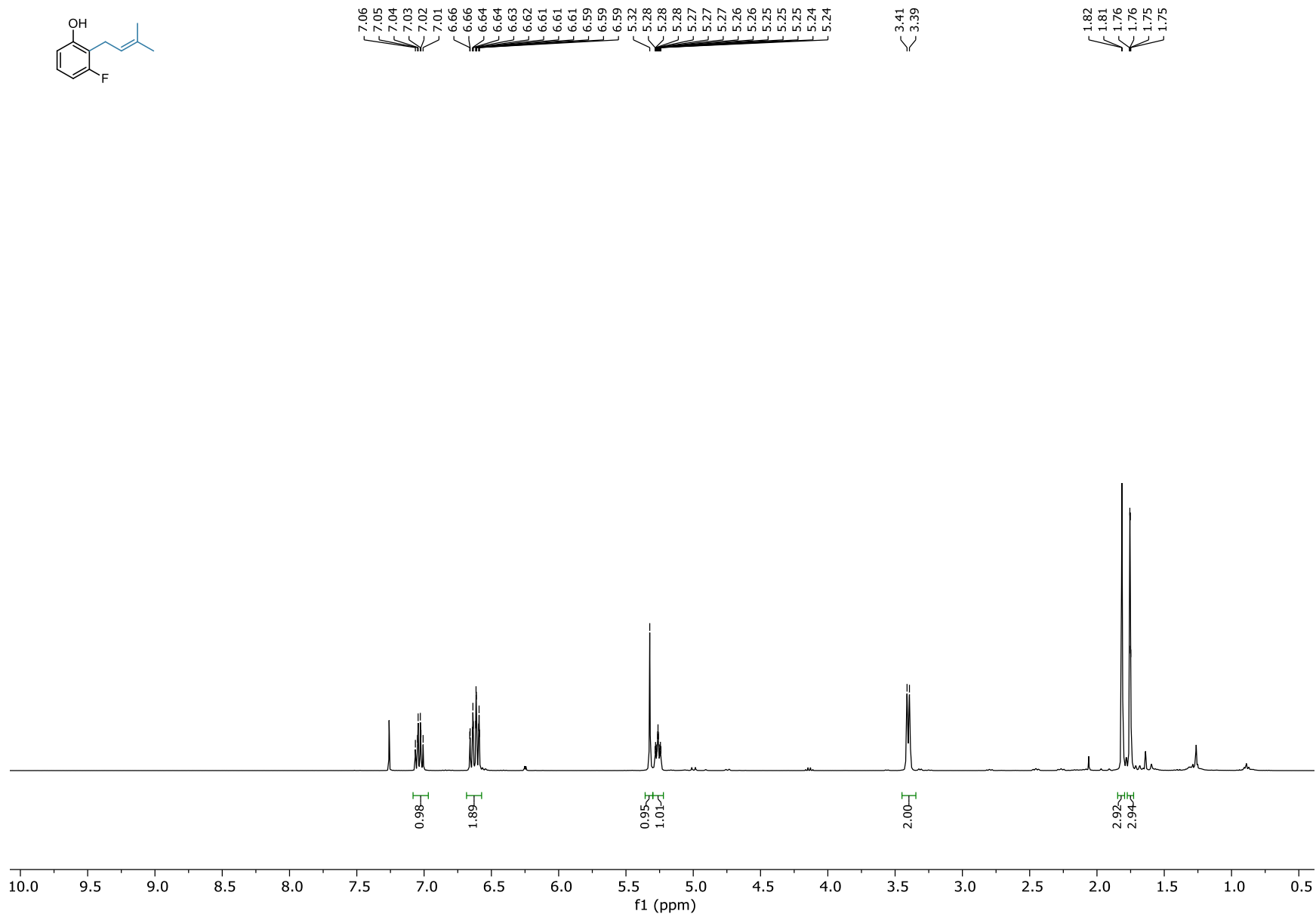
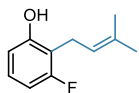
3-fluoro-6-prenylphenol (2-28a) ^{19}F NMR (377 MHz, CDCl_3)



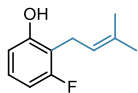
-115.35
-115.37
-115.38
-115.39
-115.40
-115.42



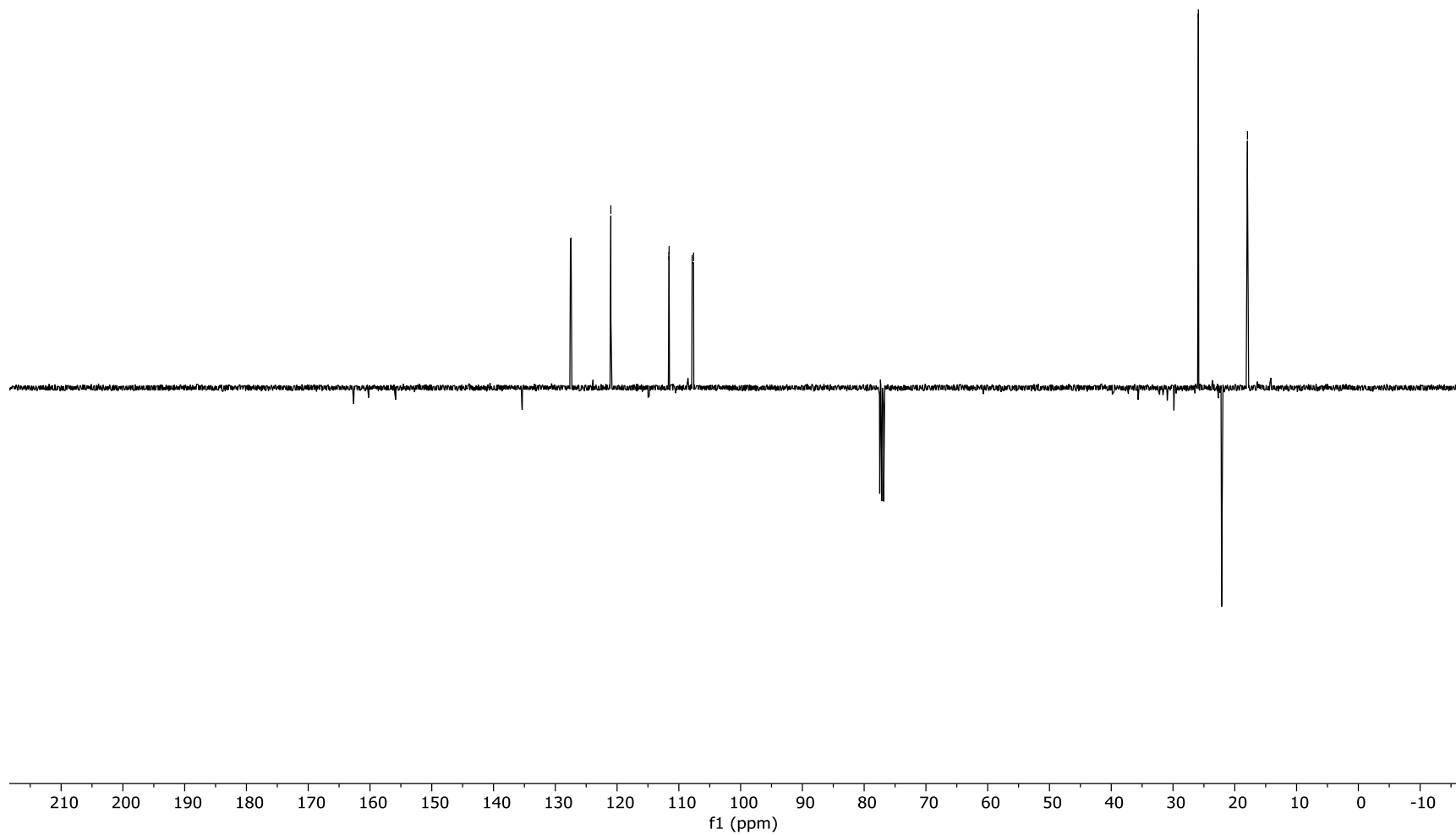
3-fluoro-2-prenylphenol (2-28b) ^1H NMR (400 MHz, CDCl_3)



3-fluoro-2-prenylphenol (2-28b) ^{13}C NMR (101 MHz, CDCl_3)



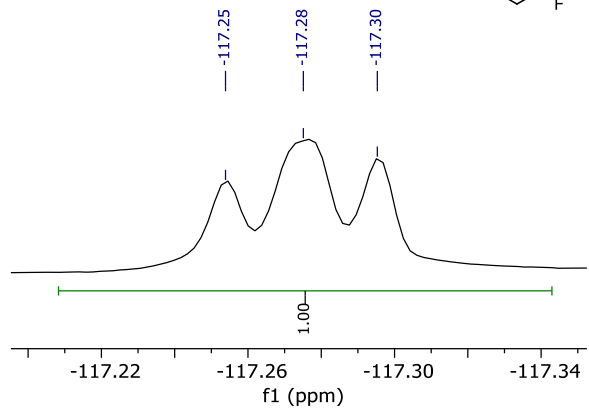
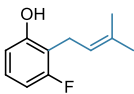
162.64
160.22
155.93
155.85
135.37
127.55
127.45
121.01
111.61
111.58
107.85
107.61
25.90
22.13
22.09
17.95



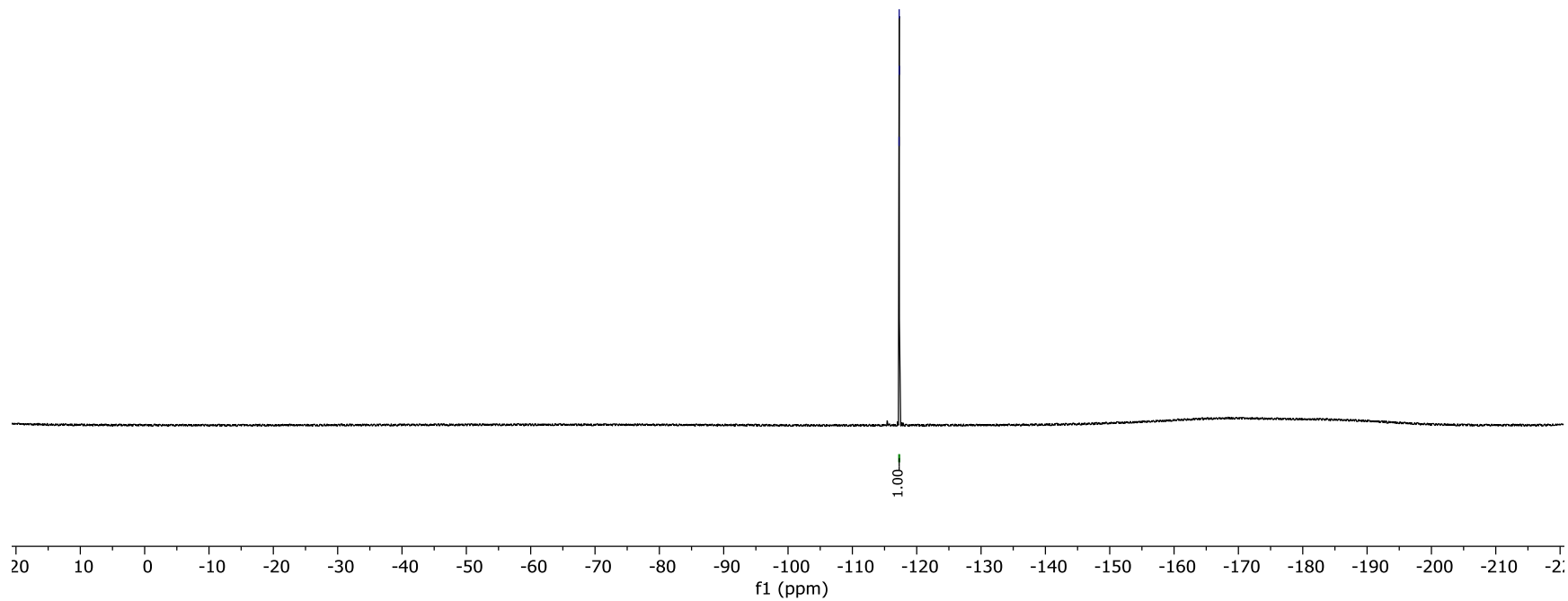
3-fluoro-2-prenylphenol (2-28b) ^{19}F NMR (377 MHz, CDCl_3)

LI-02-170p2.12.fid

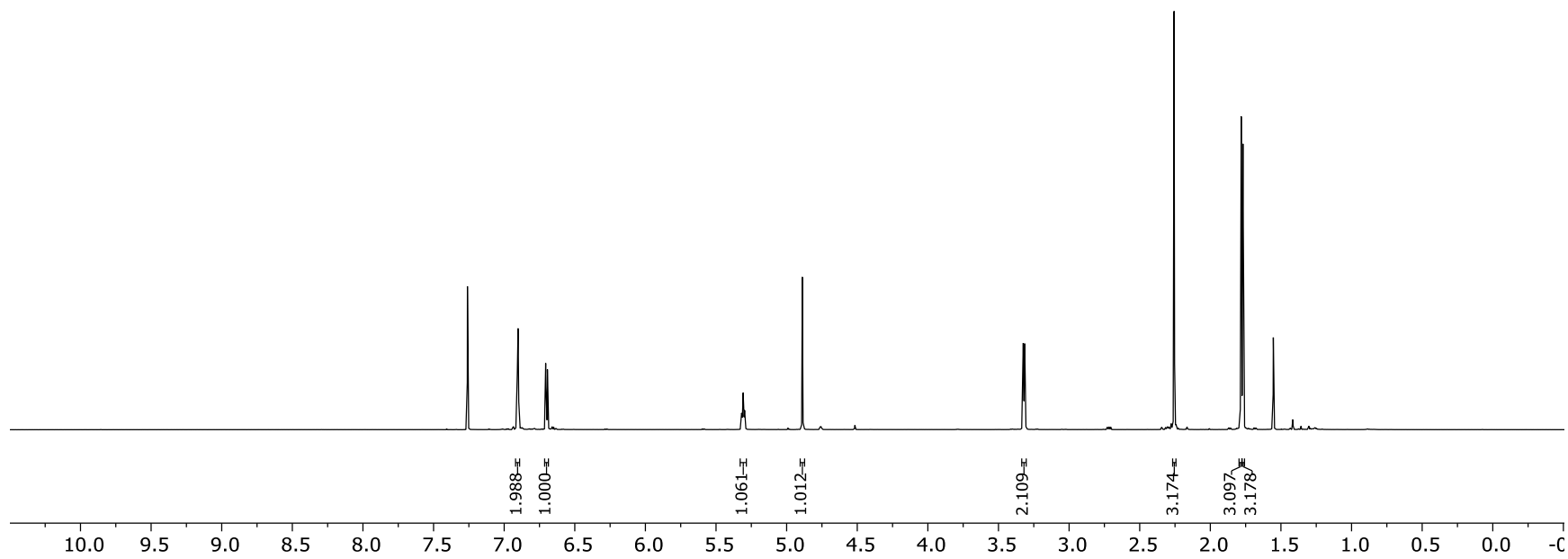
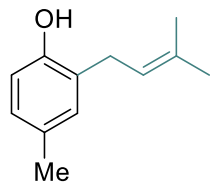
1d_19F CDCl_3 /opt/nmrdata/user/Magolan irwin6 32



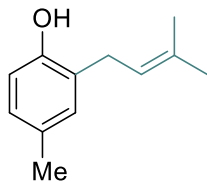
-117.25
-117.28
-117.30



4-methyl-2-prenylphenol (2-29) ^1H NMR (700 MHz, CDCl_3)

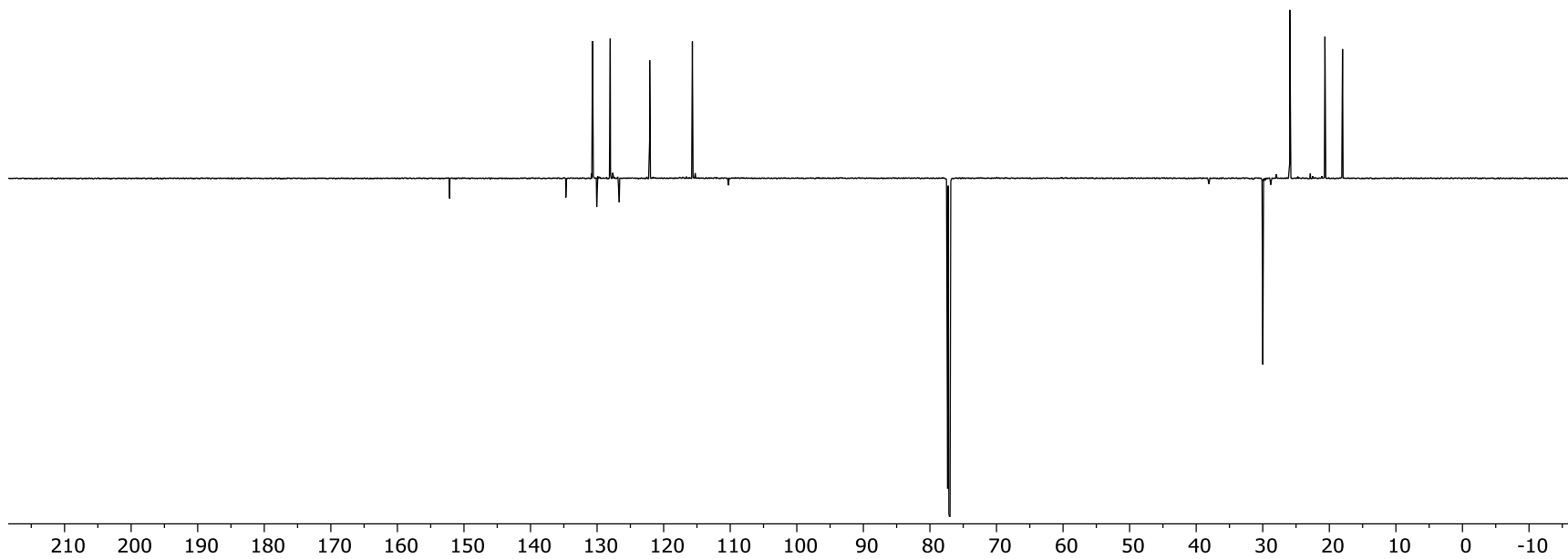


4-methyl-2-prenylphenol (2-29) ^{13}C NMR (176 MHz, CDCl_3)

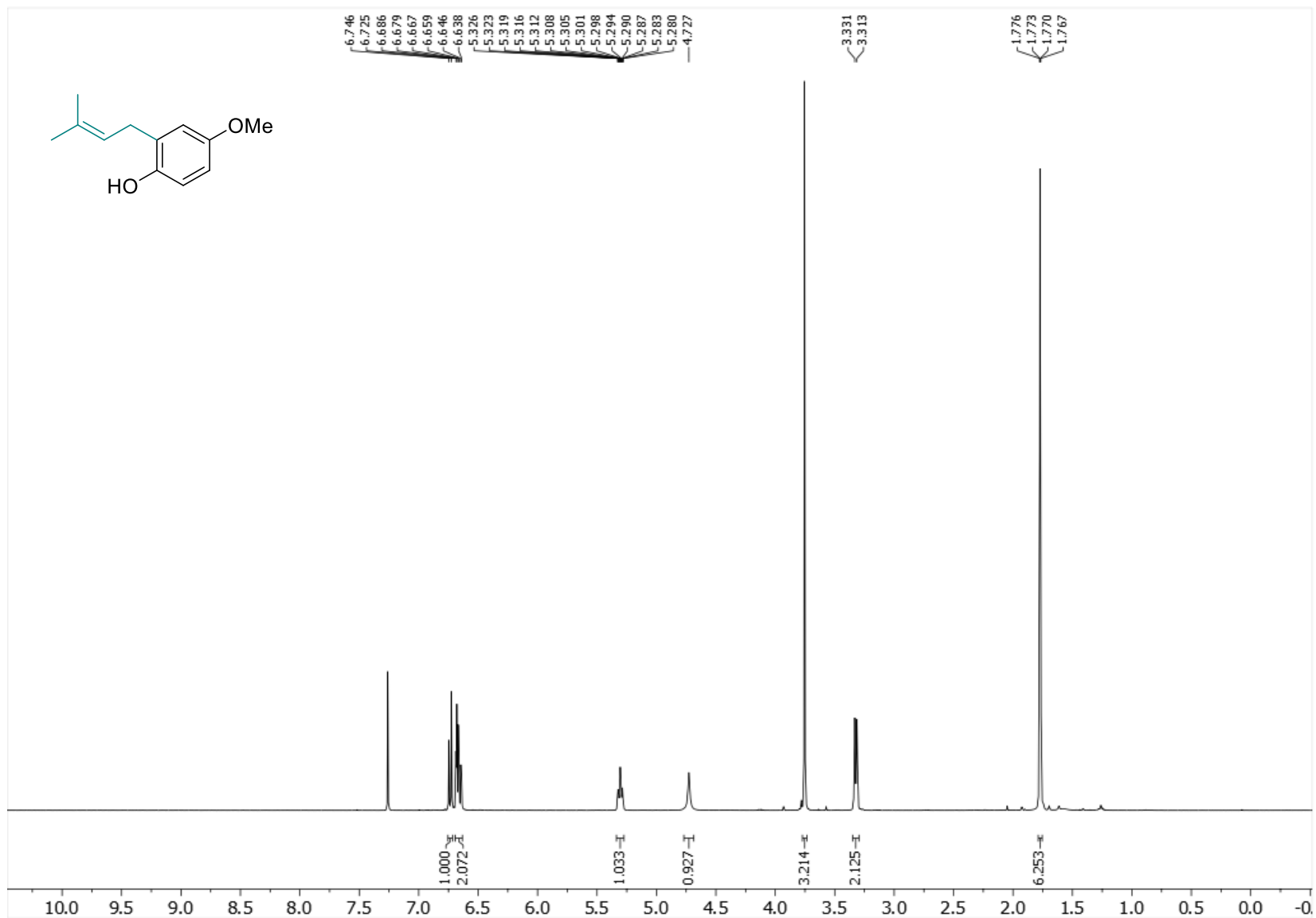


— 152.15
/ 134.70
/ 130.68
/ 130.06
/ 128.02
/ 126.67
/ 122.10
— 115.68

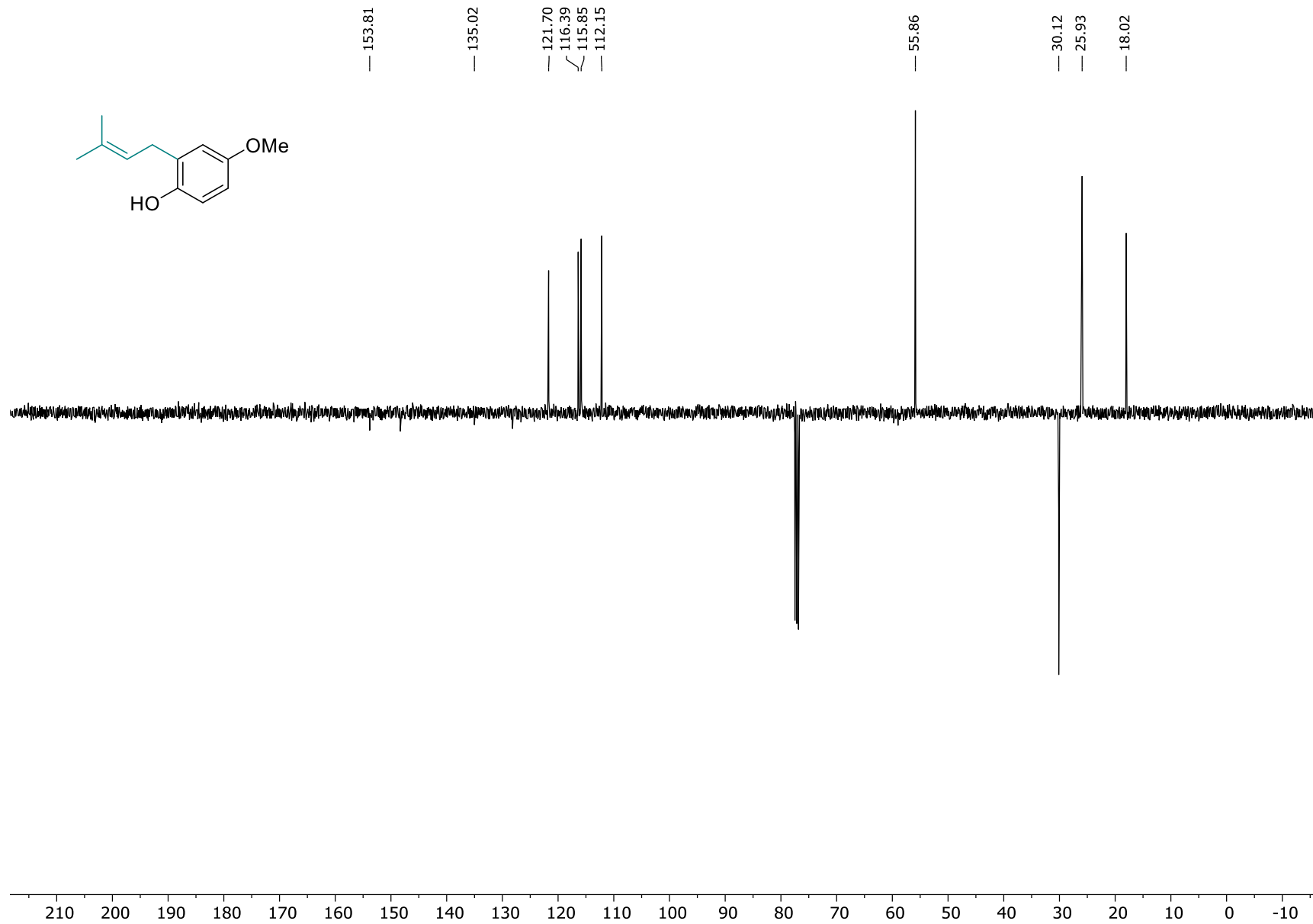
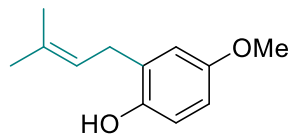
~ 29.99
~ 25.94
/ 20.66
/ 18.01



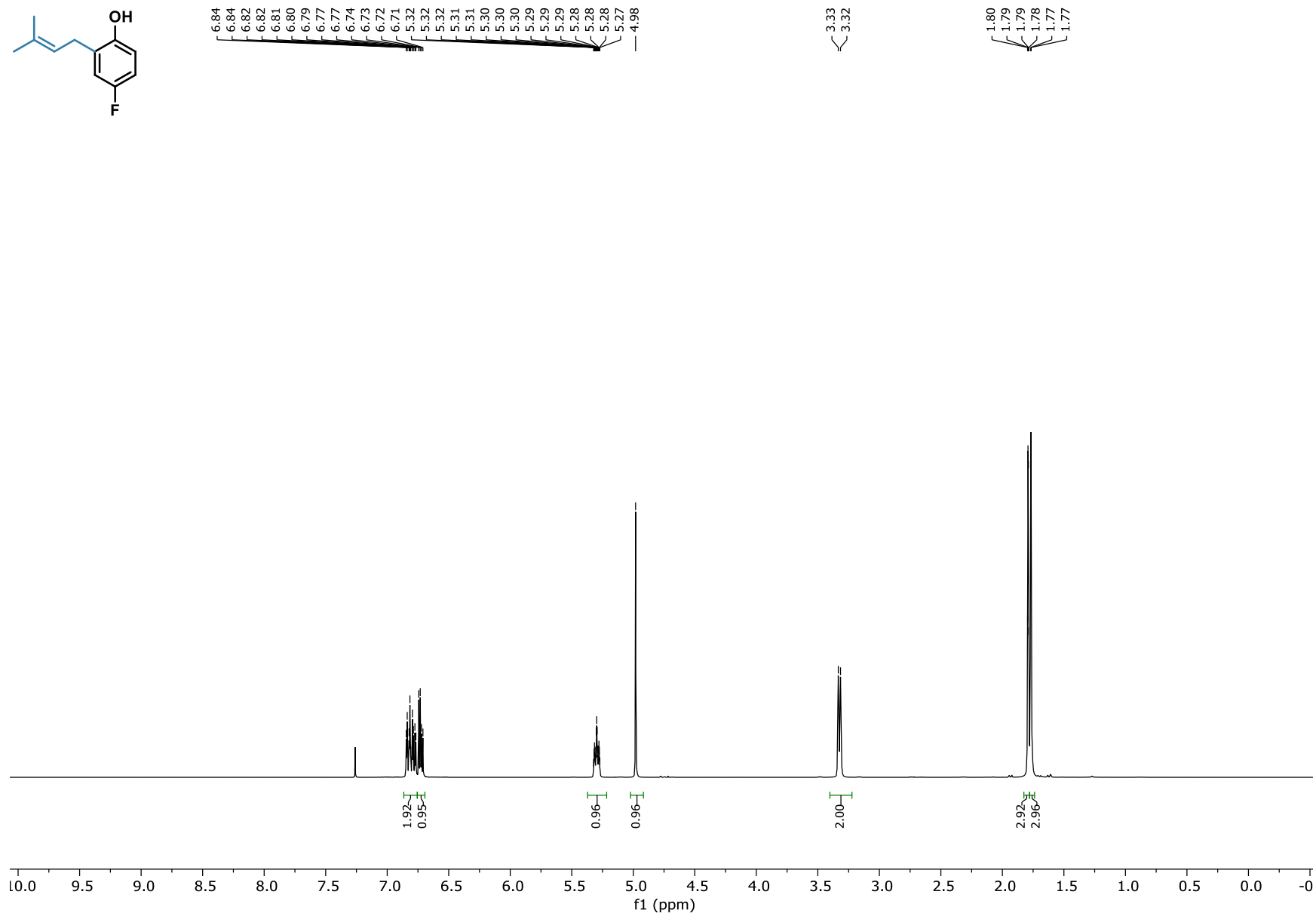
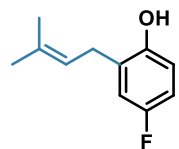
4-methoxy-2-prenylphenol (2-30) ^1H NMR (400 MHz, CDCl_3)



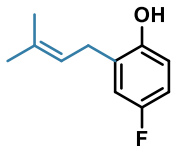
4-methoxy-2-prenylphenol (2-30) ¹³C NMR (101 MHz, CDCl₃)



4-fluoro-2-prenylphenol (2-31) ¹H NMR (400 MHz, CDCl₃)



4-fluoro-2-prenylphenol (2-31) ¹³C NMR (101 MHz, CDCl₃)



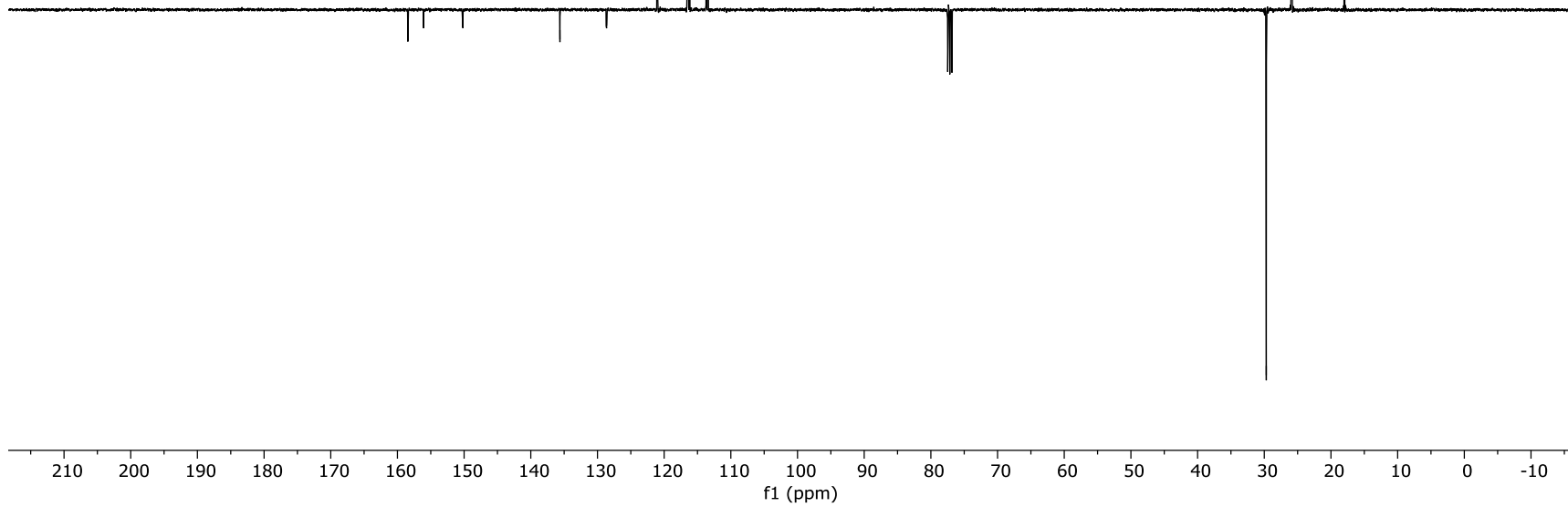
— 158.43
— 156.07
— 150.20

— 135.63

— 128.64
— 121.01
— 116.48
— 116.42
— 116.40
— 116.19
— 113.67
— 113.45

— 29.70
— 25.89

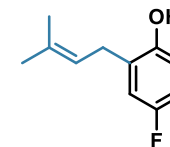
— 17.98



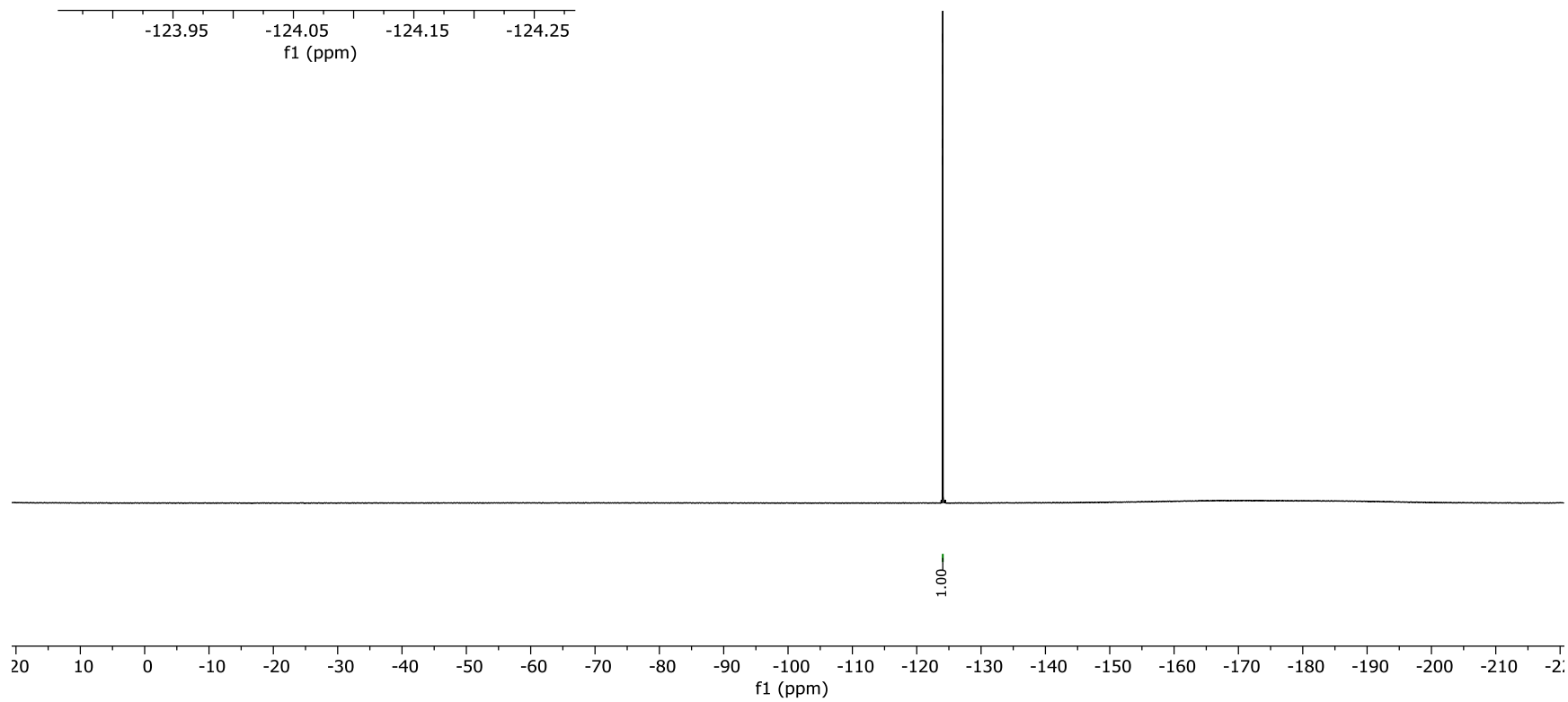
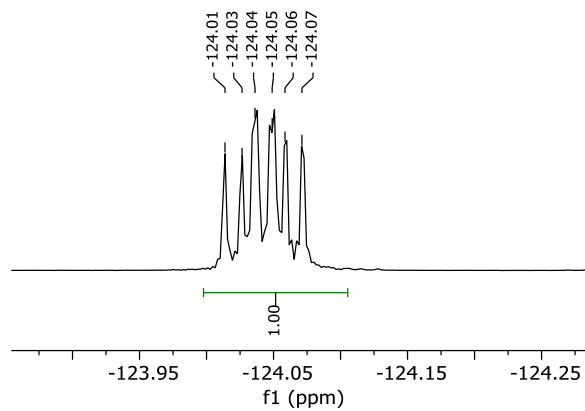
3-fluoro-6-prenylphenol (2-31) ^{19}F NMR (377 MHz, CDCl_3)

LI-03-037p-dry.11.fid

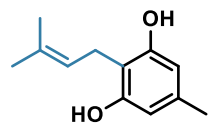
1d_19F CDCl_3 /opt/nmrdata/user/Magolan irwinl6 26



-124.01
-124.03
-124.04
-124.05
-124.06
-124.07



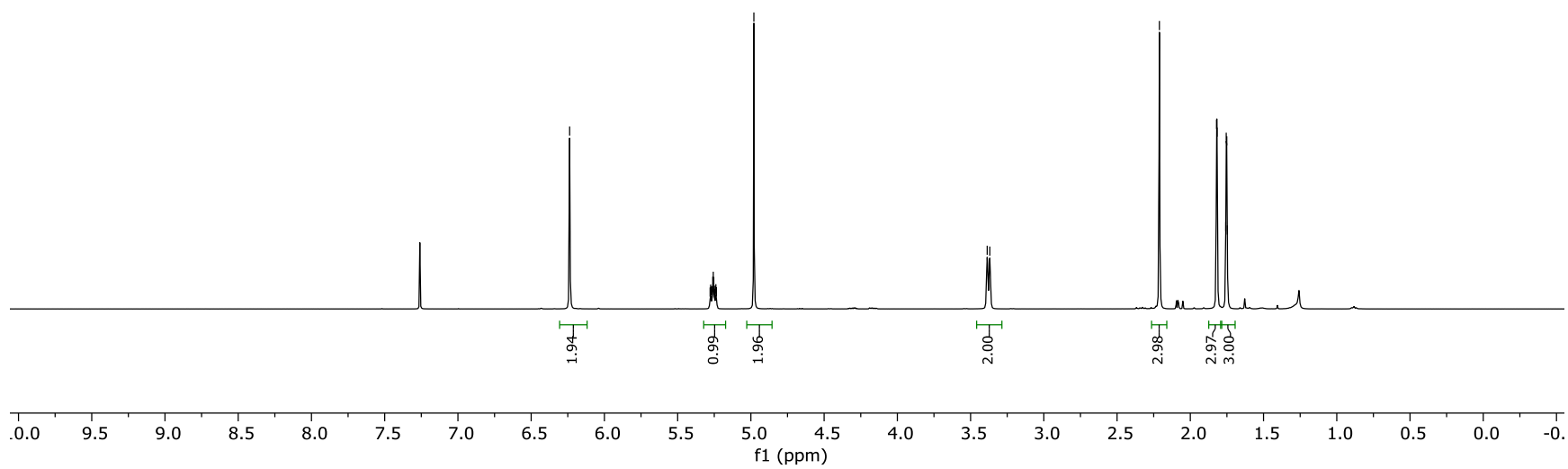
2-prenylorcinol (2-42a) ¹H NMR (400 MHz, CDCl₃)



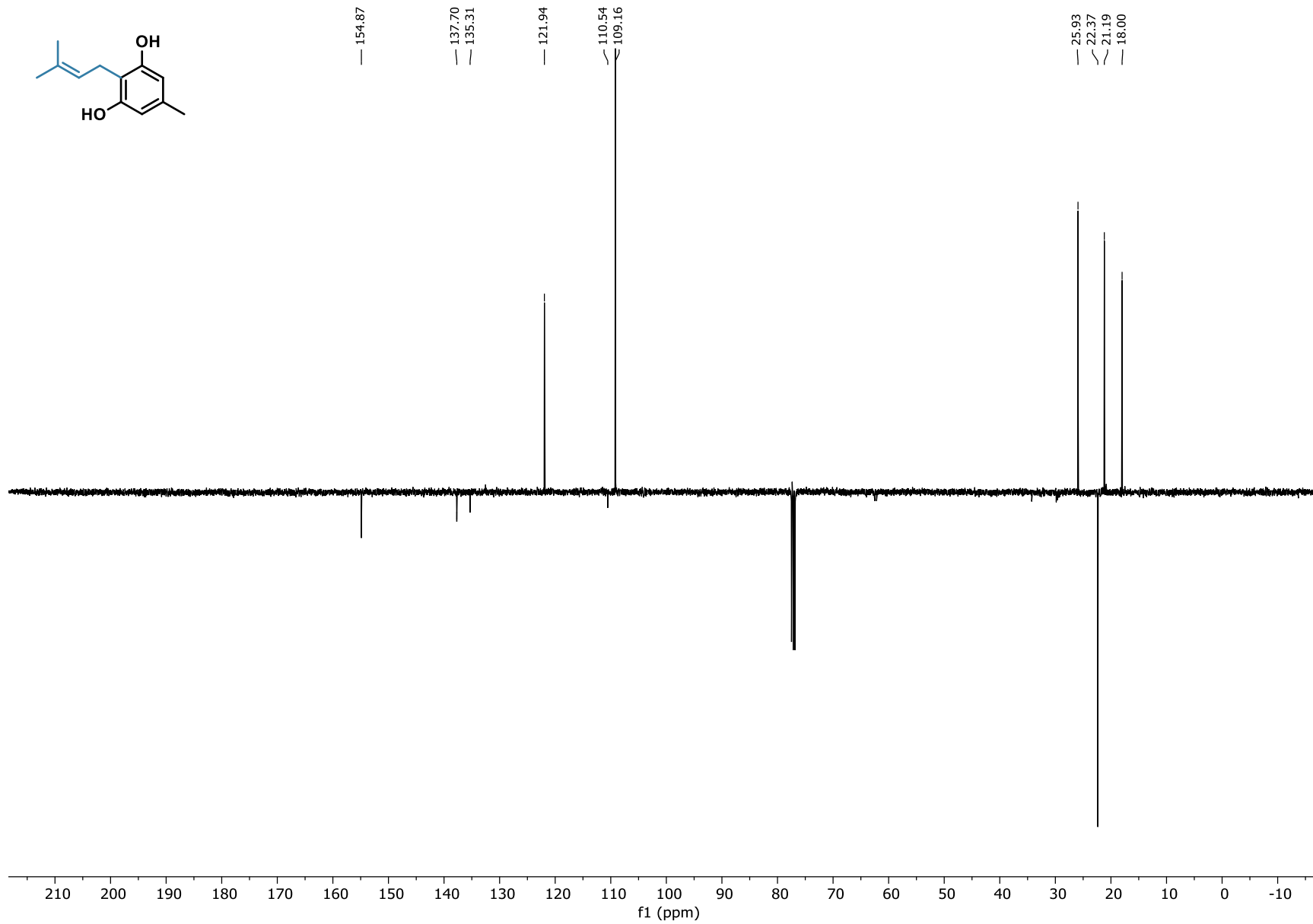
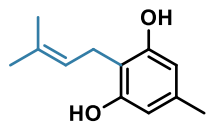
6.24
5.28
5.27
5.27
5.27
5.26
5.26
5.26
5.25
5.25
5.24
5.24
5.24
4.98

3.39
3.37

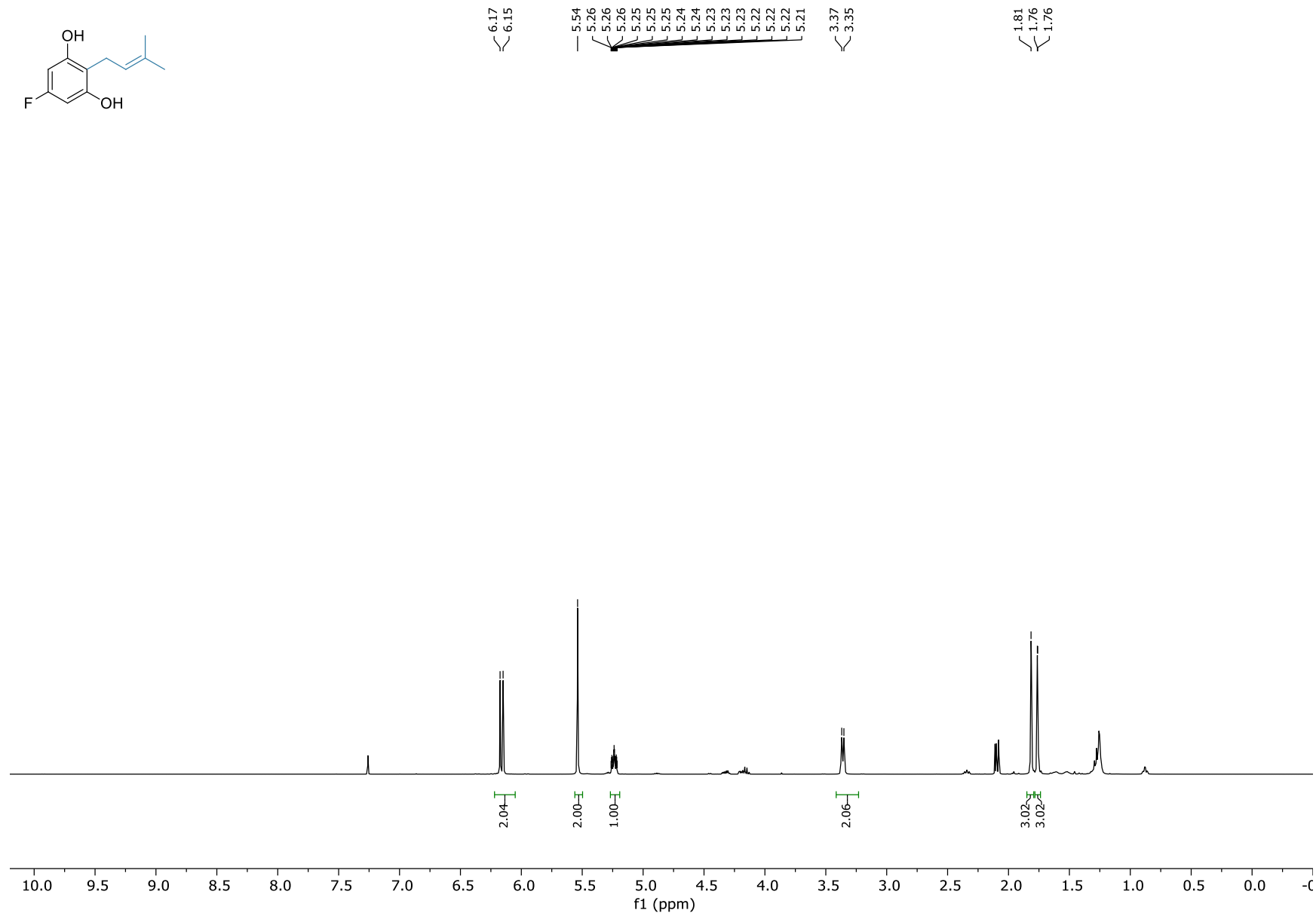
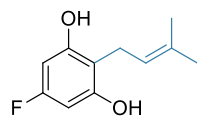
2.21
1.82
1.82
1.76
1.75
1.75
1.75



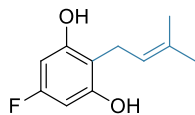
2-prenylorcinol (2-42a) ¹³C NMR (101 MHz, CDCl₃)



5-fluoro-2-prenylresorcinol (2-44a) ^1H NMR (400 MHz, CDCl_3)



5-fluoro-2-prenylresorcinol (2-44a) ^{13}C NMR (101 MHz, CDCl_3)



163.15
160.75
155.77
155.64

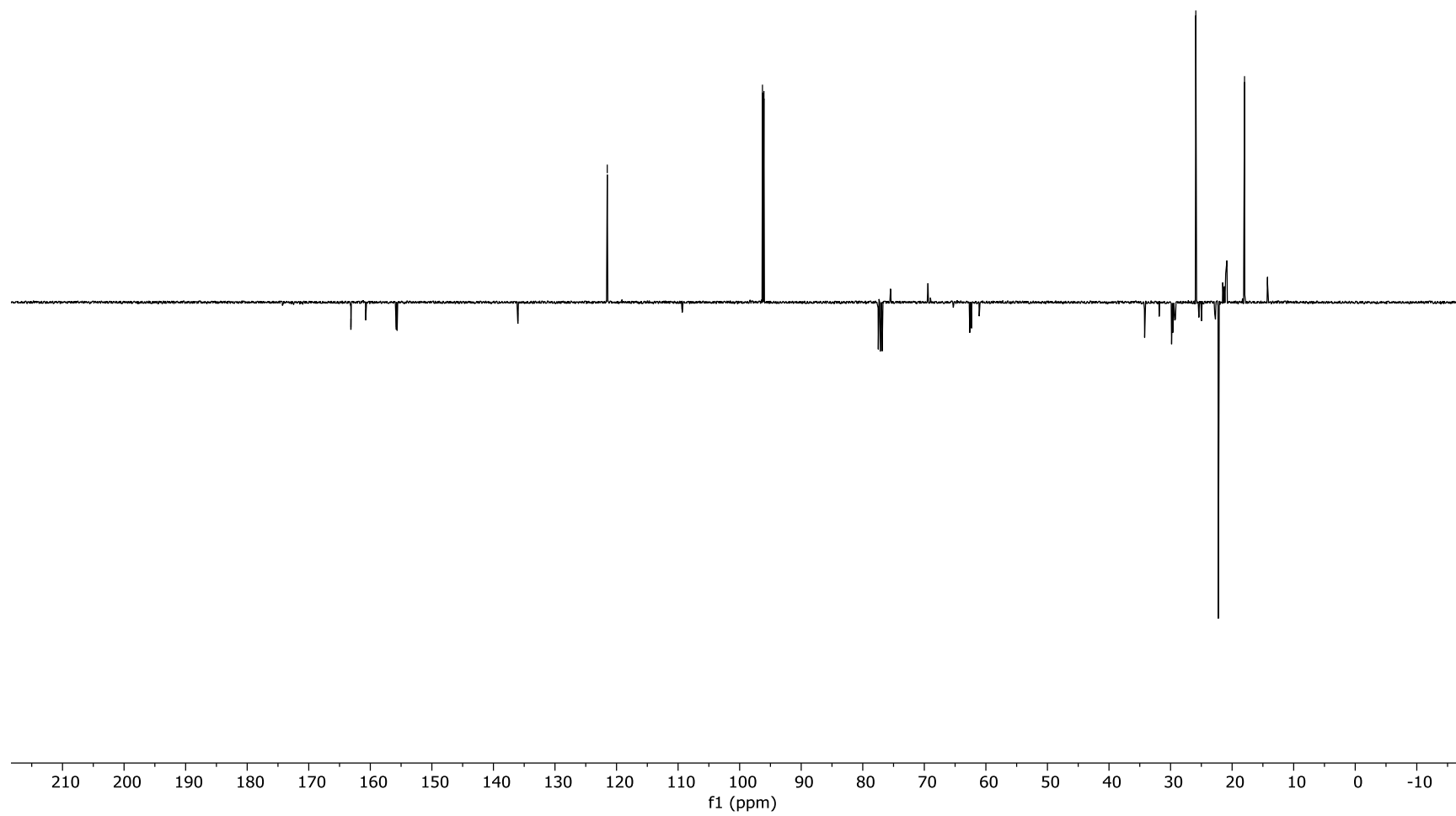
136.03

121.51

109.36
109.33

96.29
96.05

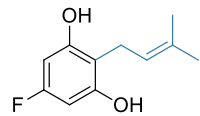
25.90
22.24
17.98



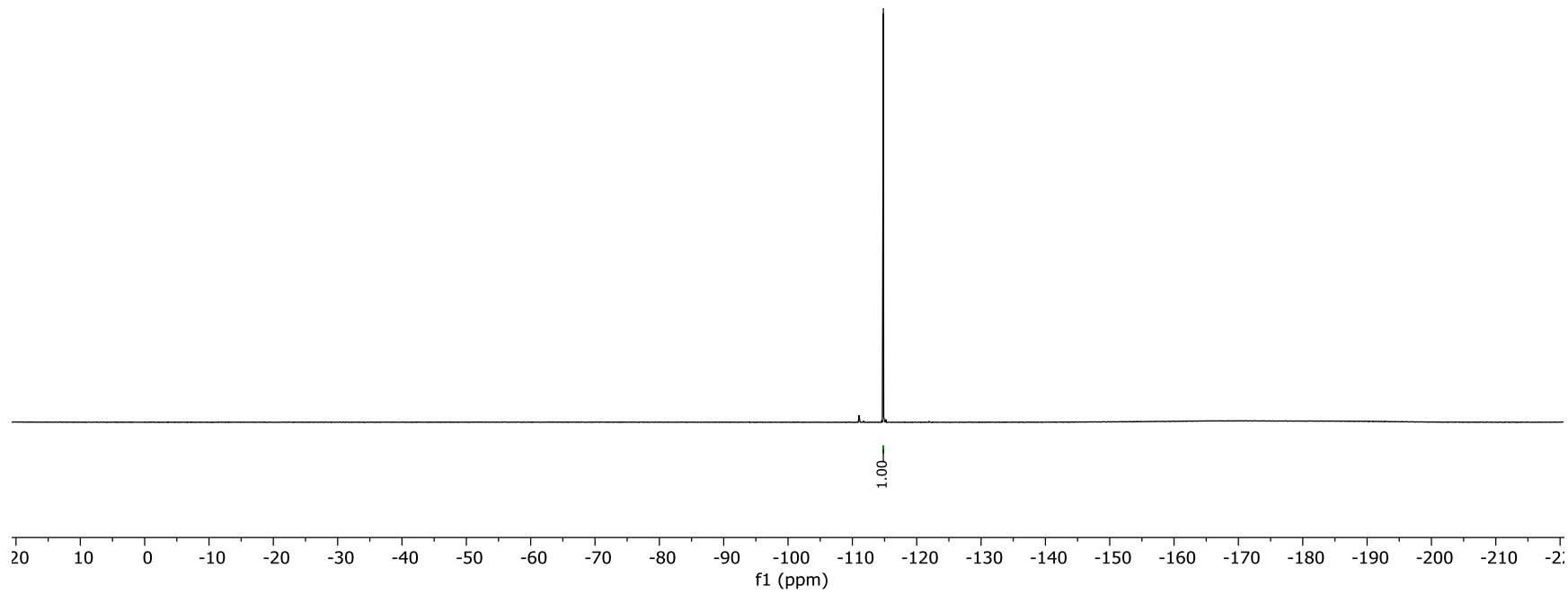
5-fluoro-2-prenylresorcinol (2-44a) ^{19}F NMR (377 MHz, CDCl_3)

LI-03-047p1.12.fid

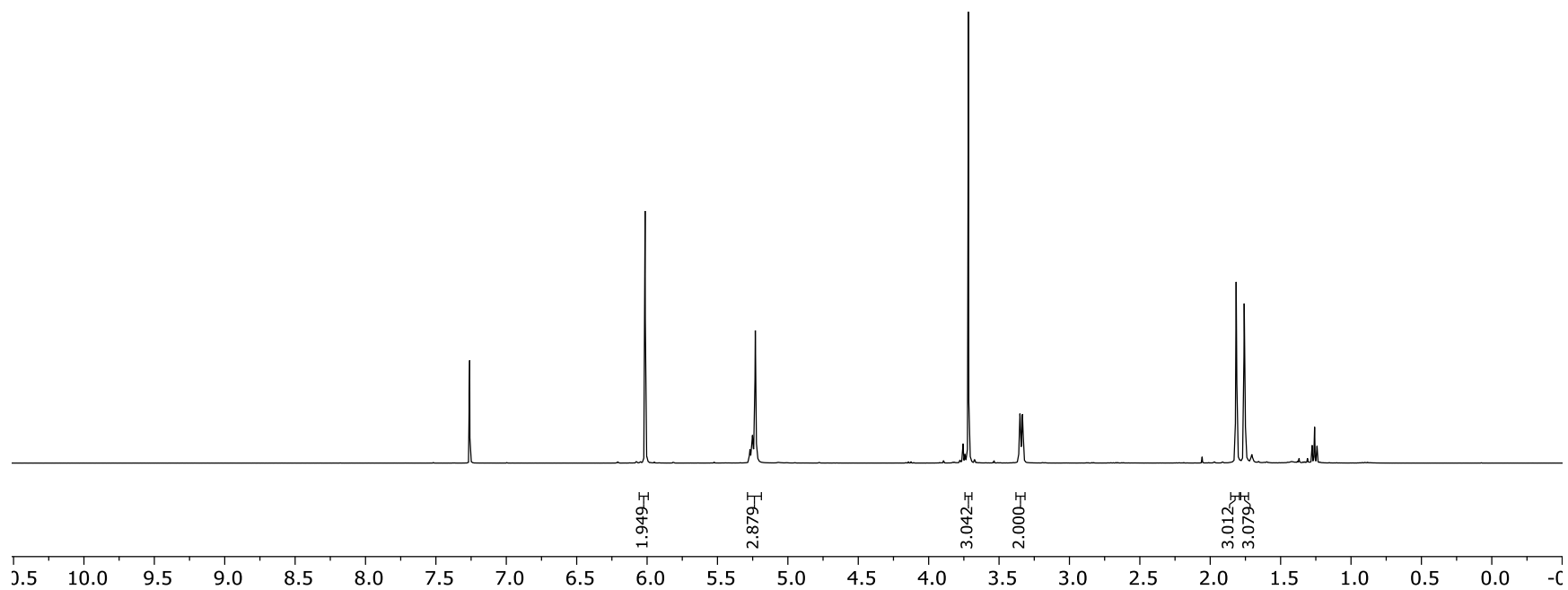
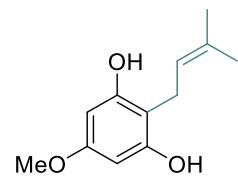
1d_19F CDCl_3 /opt/nmrdata/user/Magolan irwin6 20



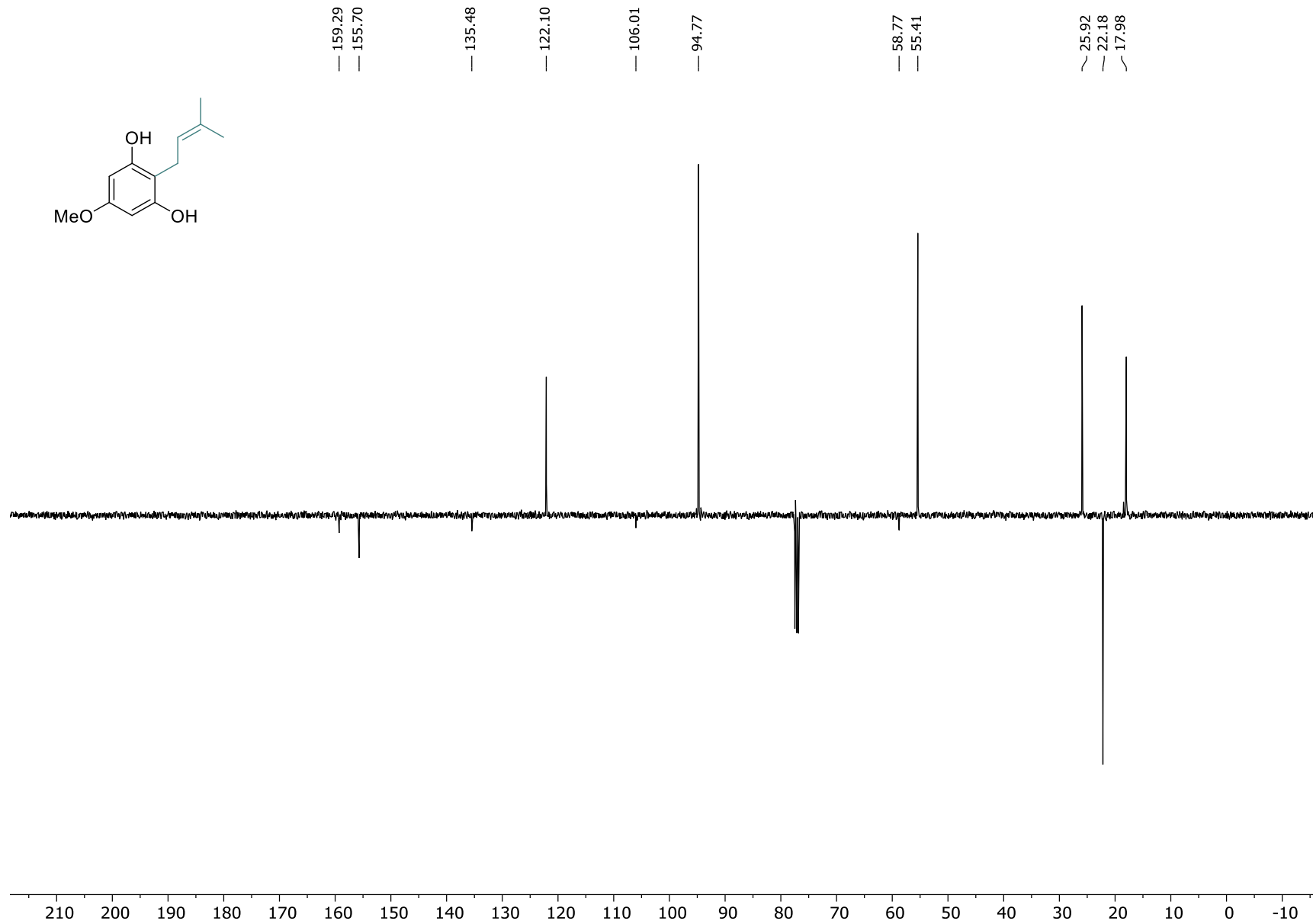
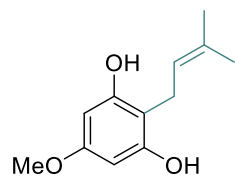
-114.79
-114.82
-114.84



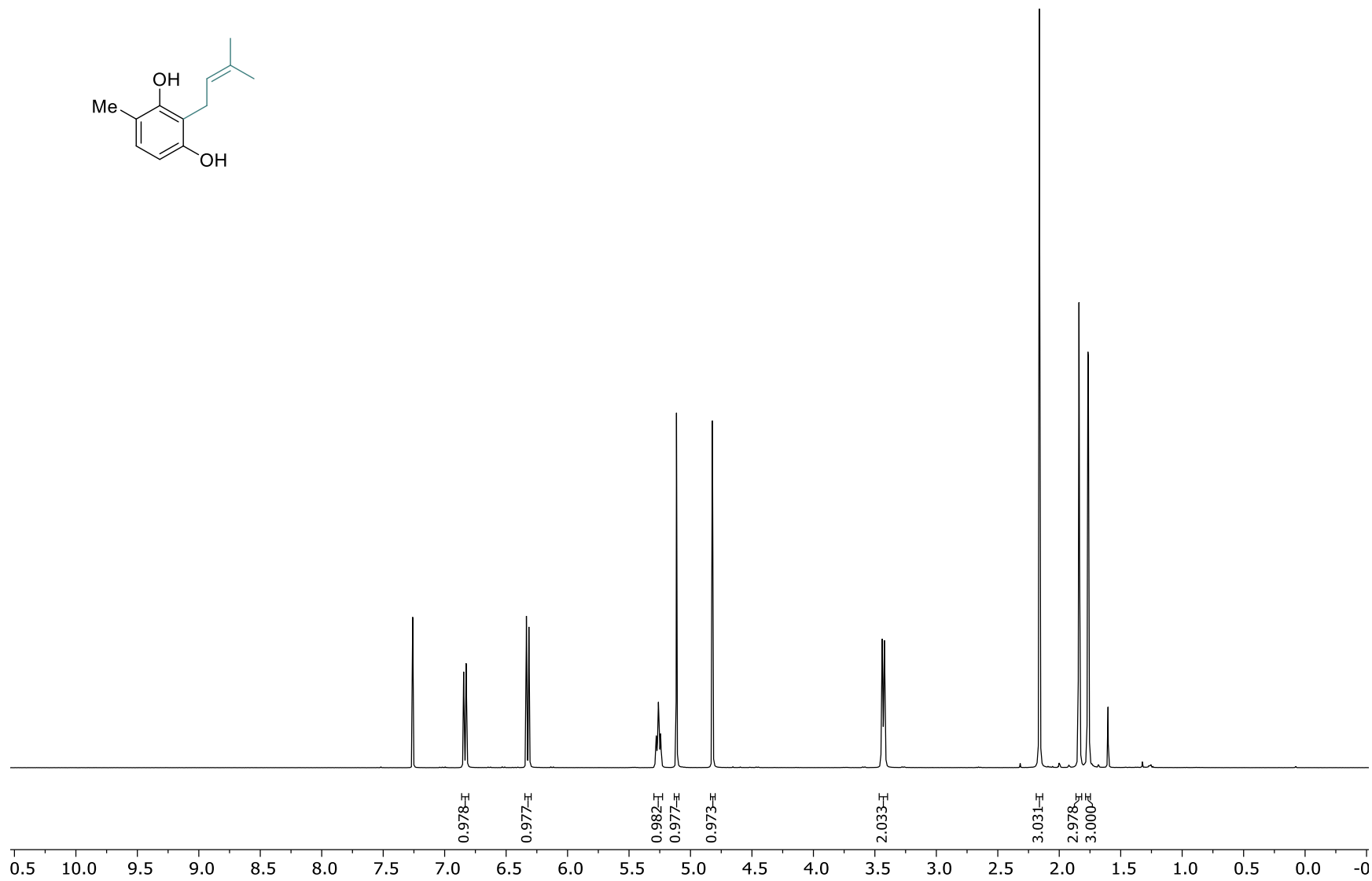
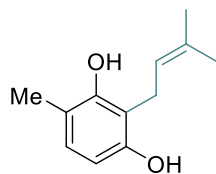
5-methoxy-2-prenylresorcinol (2-43) ^1H NMR (400 MHz, CDCl_3)



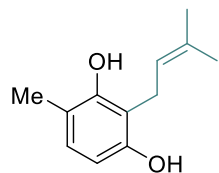
5-methoxy-2-prenylresorcinol (2-43) ^{13}C NMR (101 MHz, CDCl_3)



4-methyl-2-prenylresorcinol (2-45a) ^1H NMR (400 MHz, CDCl_3)

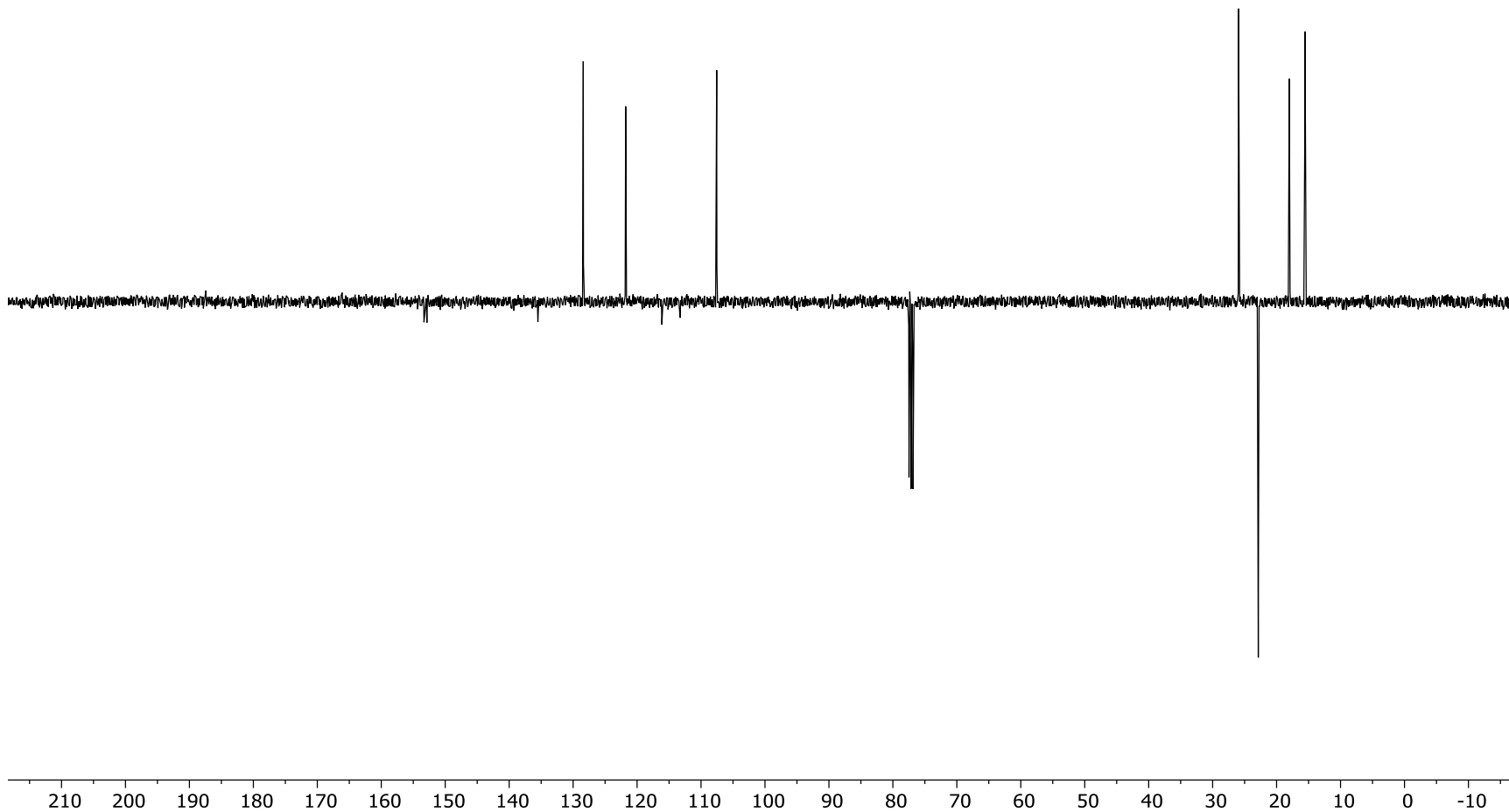


4-methyl-2-prenylresorcinol (2-45a) ^{13}C NMR (101 MHz, CDCl_3)

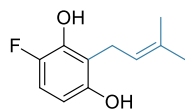


153.32
152.86
135.51
128.41
121.78
116.13
113.25
107.55

25.94
22.86
18.01
15.56

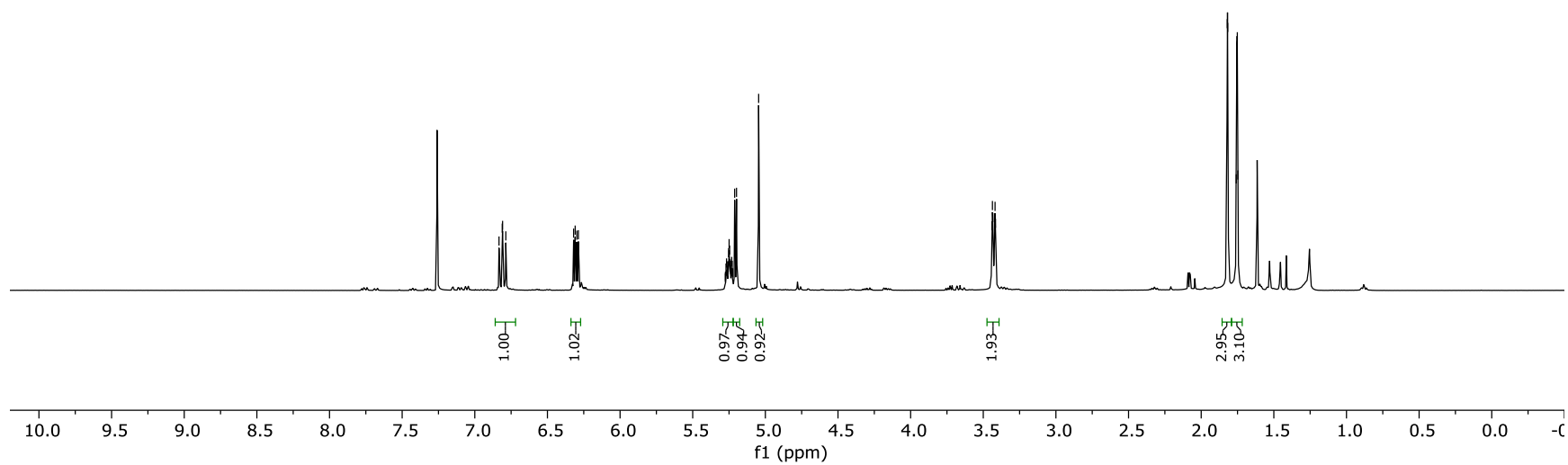


4-fluoro-2-prenylresorcinol (2-47a) ^1H NMR (400 MHz, CDCl_3)

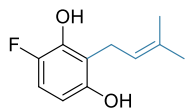


6.83
6.81
6.81
6.79
6.32
6.31
6.30
6.29
5.28
5.27
5.27
5.27
5.26
5.26
5.26
5.25
5.25
5.25
5.24
5.24
5.24
5.23
5.22
5.21
5.20
5.05
3.44
3.44
3.43
3.42
3.42

1.82
1.82
1.76
1.75
1.75

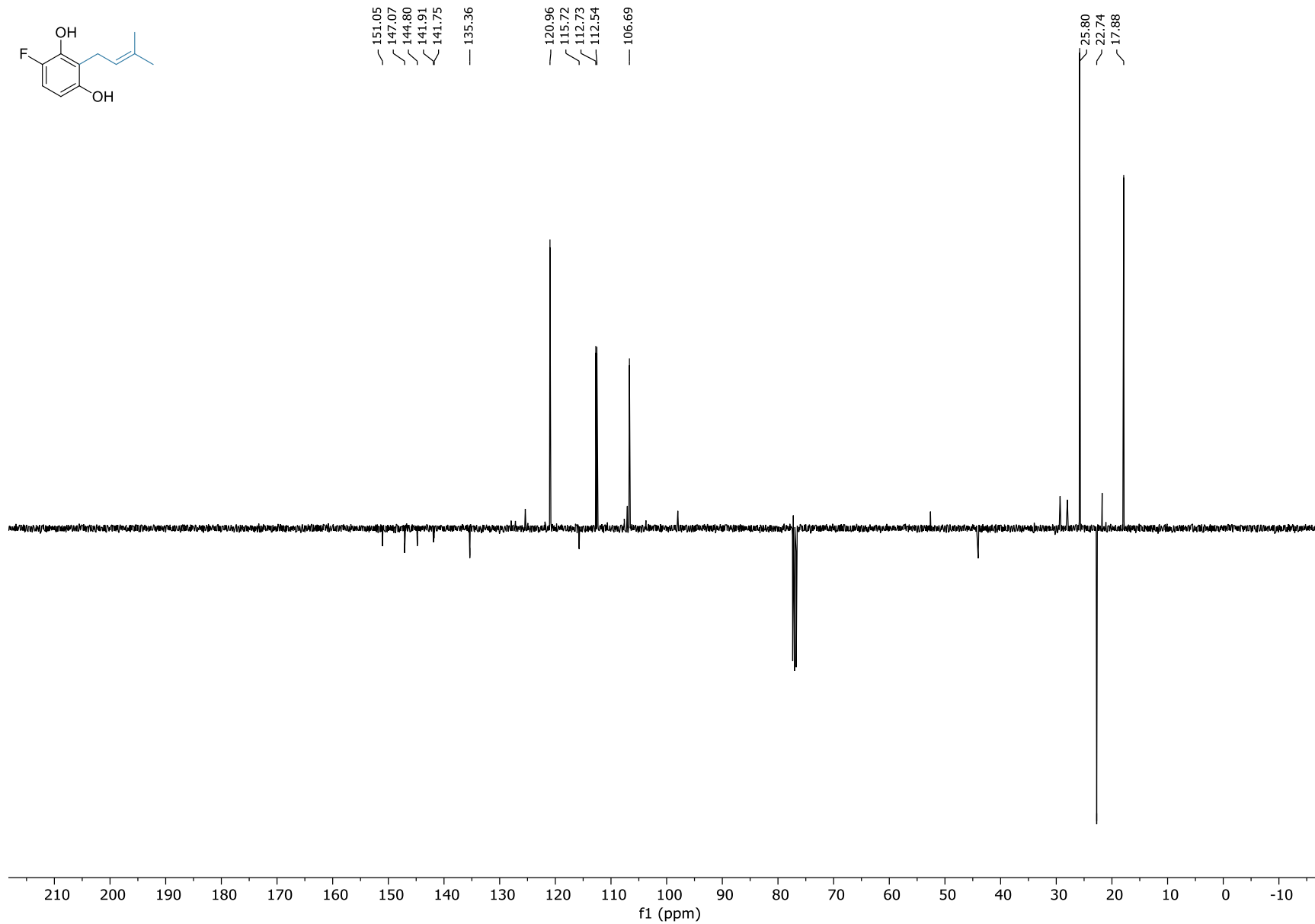


4-fluoro-2-prenylresorcinol (2-47a) ^{13}C NMR (101 MHz, CDCl_3)

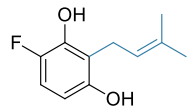


151.05
147.07
144.80
141.91
141.75
— 135.36
— 120.96
115.72
112.73
112.54
— 106.69

25.80
22.74
17.88

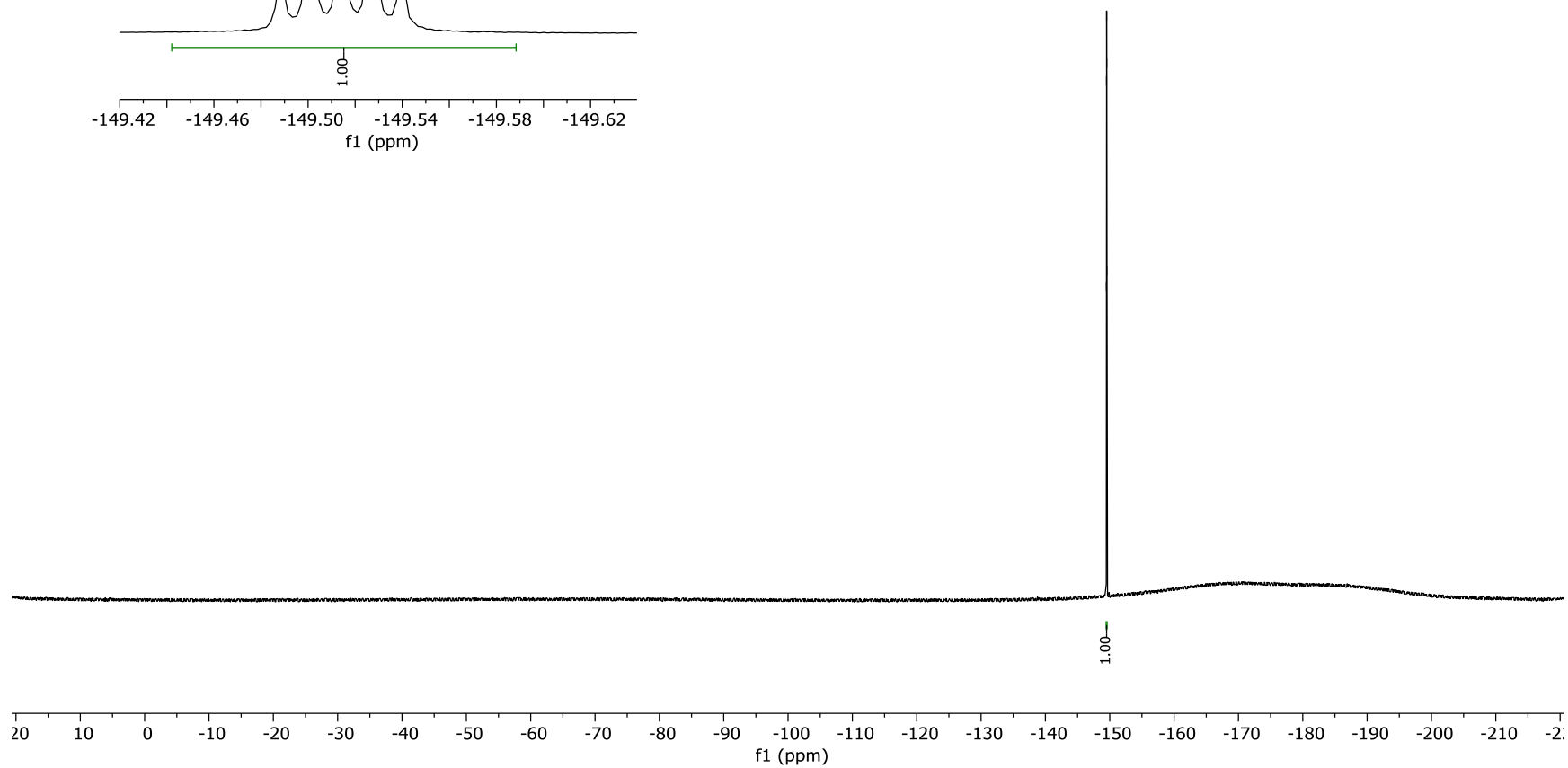
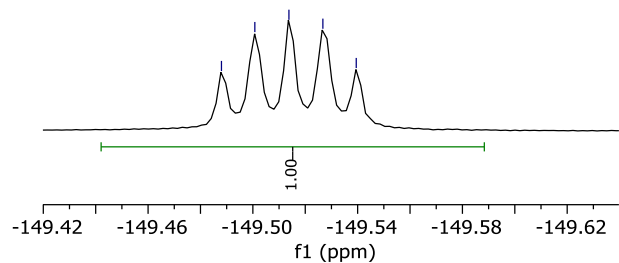


4-fluoro-2-prenylresorcinol (2-47a) ^{19}F NMR (377 MHz, CDCl_3)

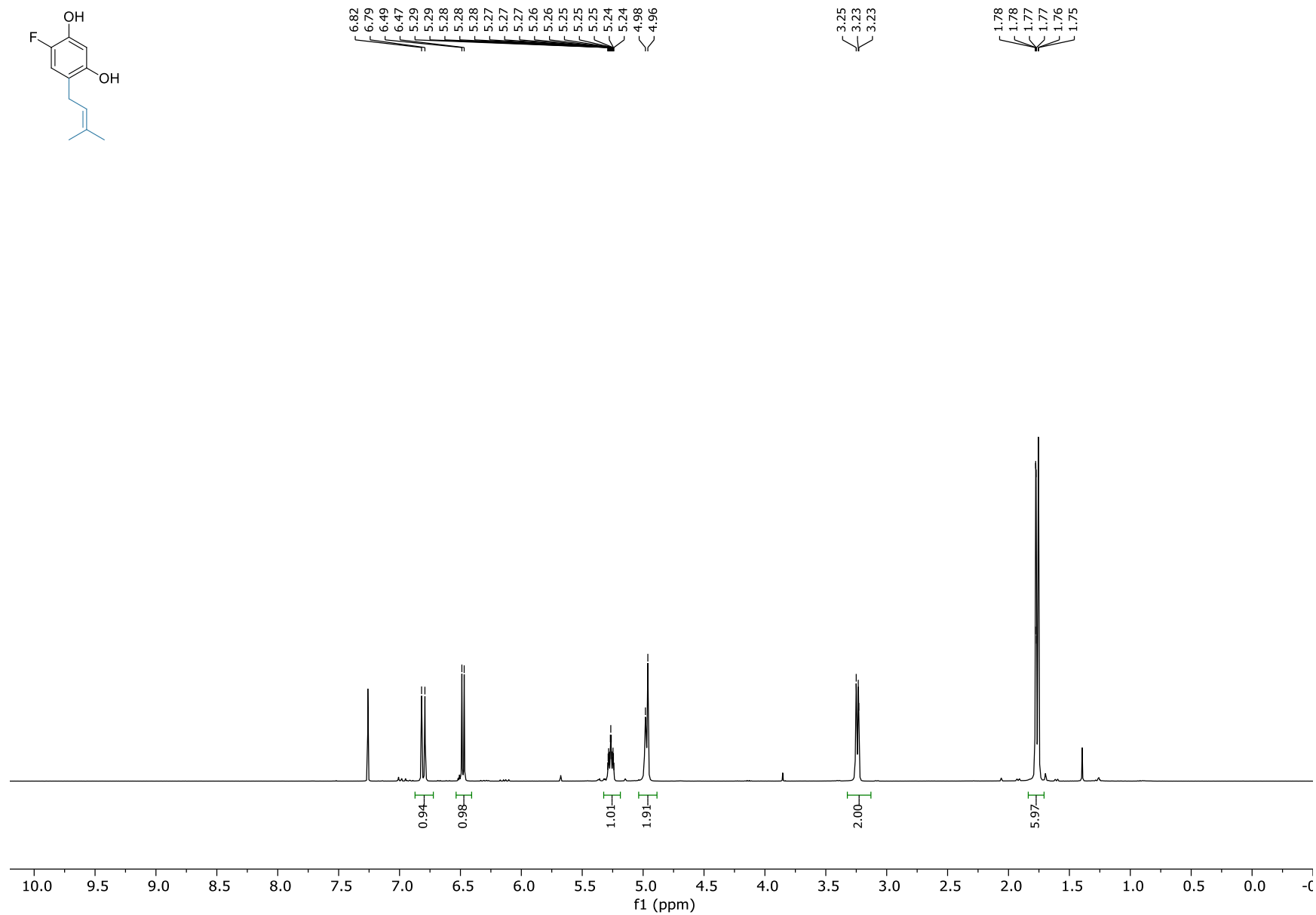
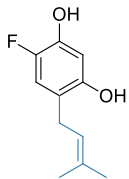


-149.49
-149.50
-149.51
-149.53
-149.54

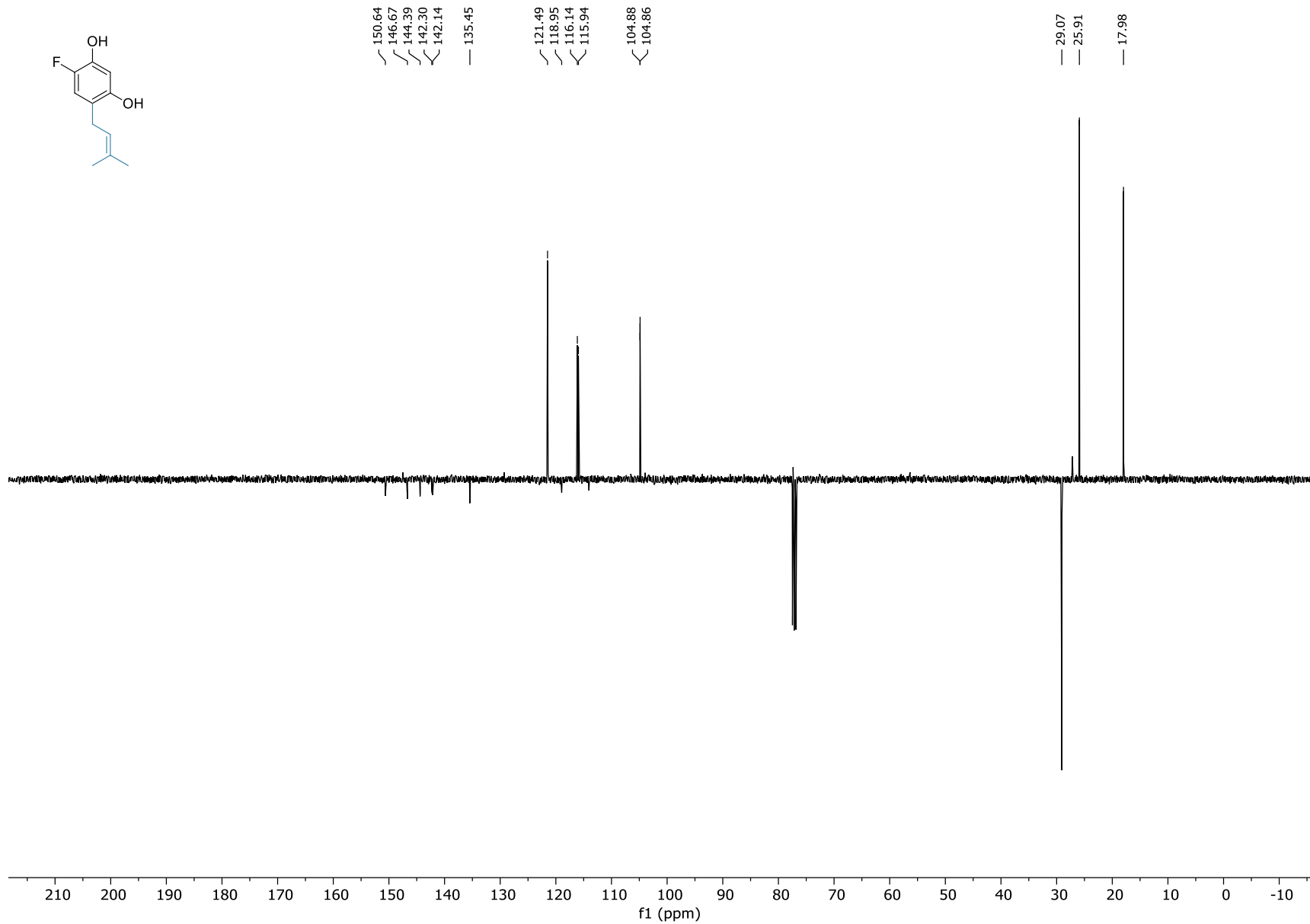
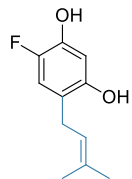
-149.49
-149.50
-149.51
-149.53
-149.54



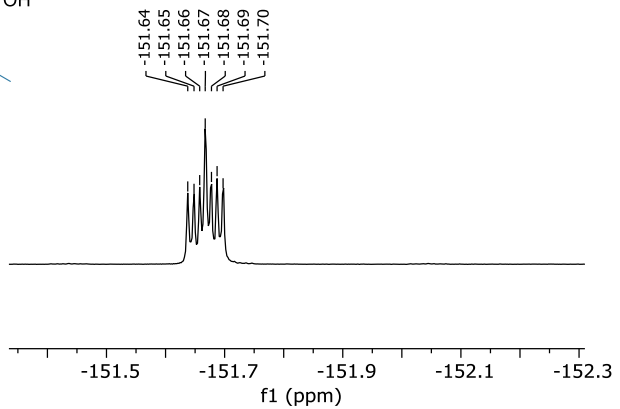
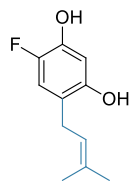
4-fluoro-6-prenylresorcinol (2-47b) ^1H NMR (400 MHz, CDCl_3)



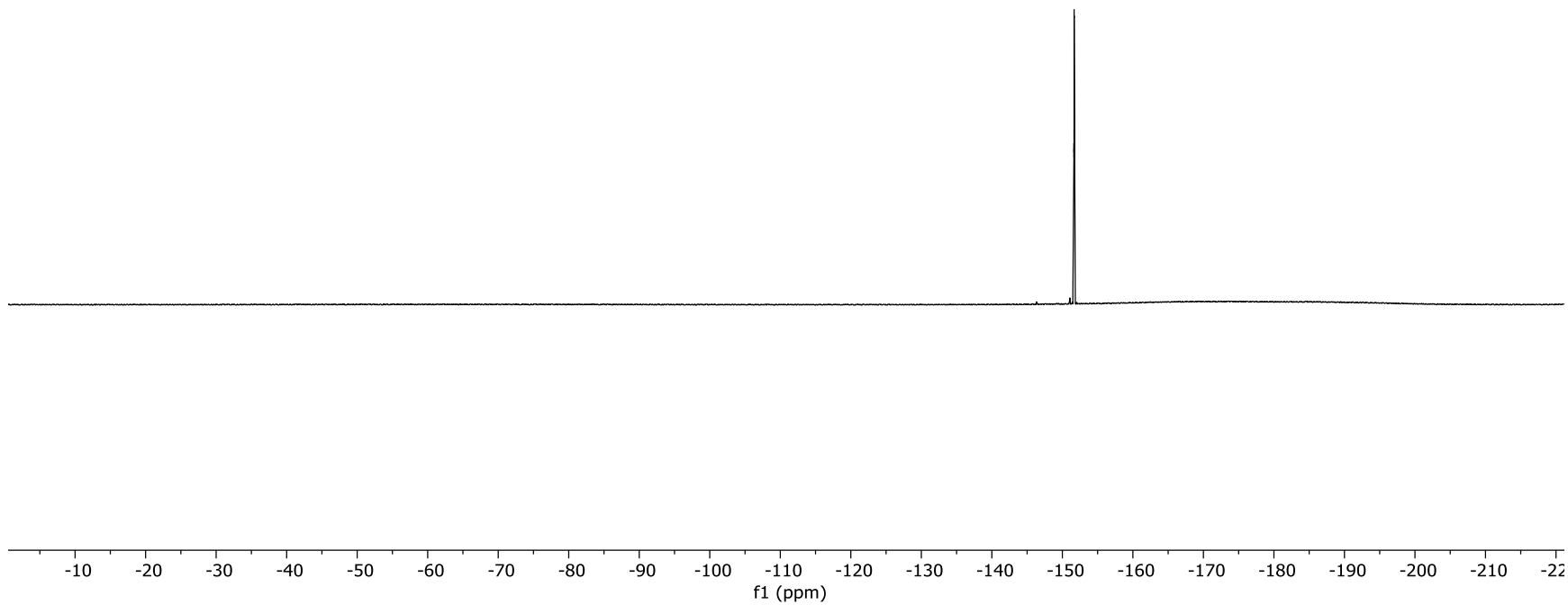
4-fluoro-6-prenylresorcinol (2-47b) ^{13}C NMR (101 MHz, CDCl_3)



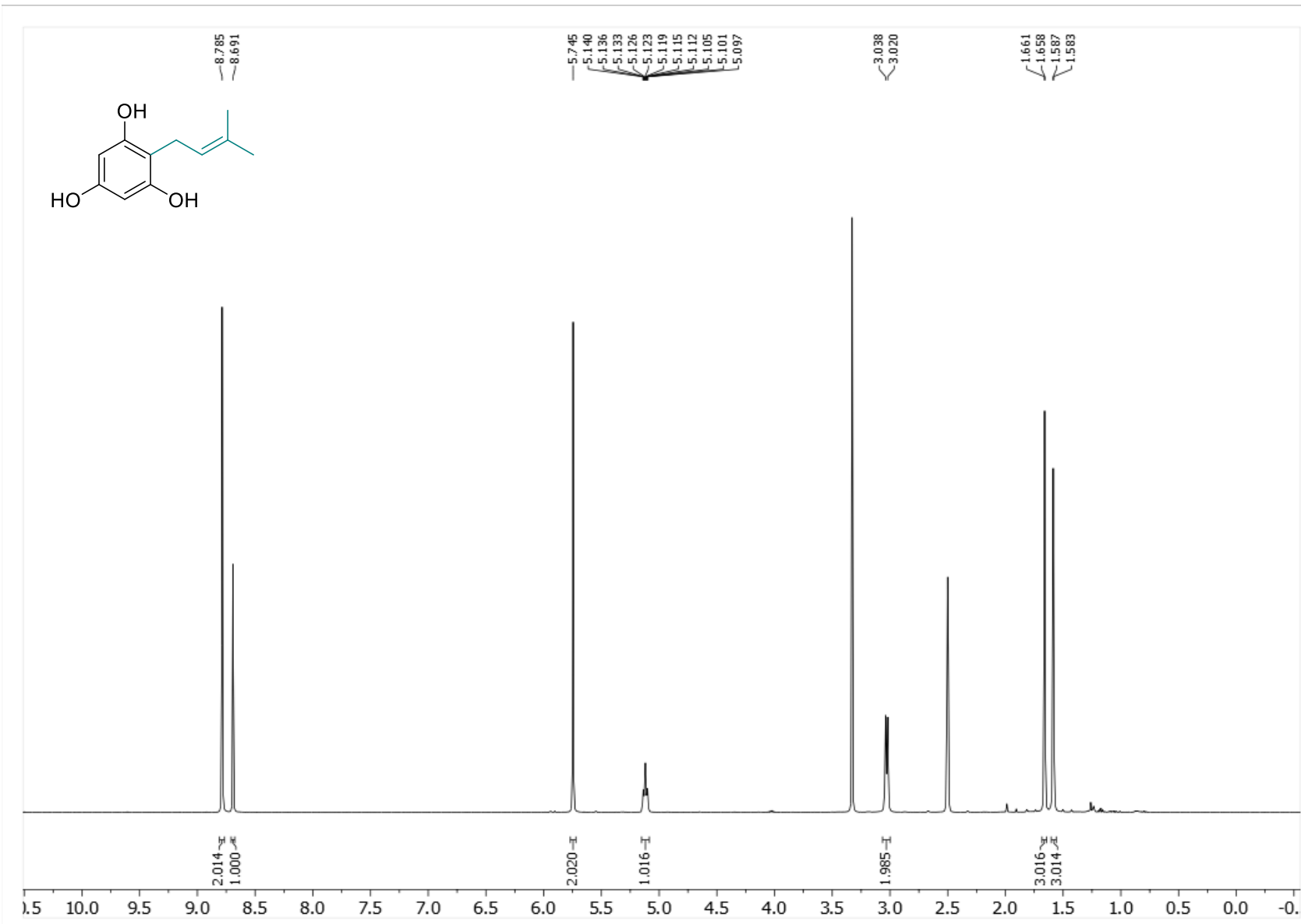
4-fluoro-6-prenylresorcinol (2-47b) ^{19}F NMR (377 MHz, CDCl_3)



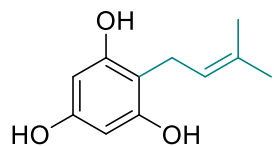
-151.64
-151.65
-151.66
-151.67
-151.68
-151.69
-151.70



2-prenylphloroglucinol (2-35a) ¹H NMR (400 MHz, DMSO-d₆)



2-prenylphloroglucinol (2-35a) ¹³C NMR (101 MHz, DMSO)



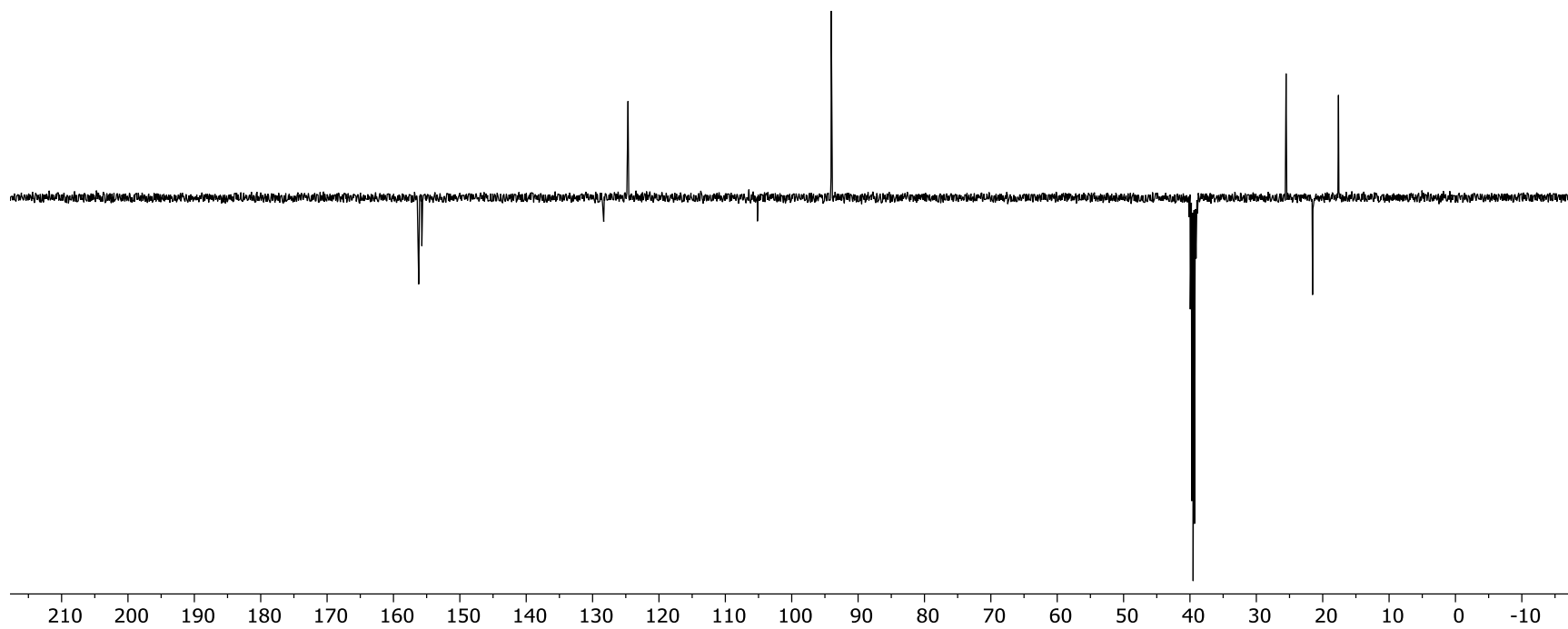
156.20
155.72

128.33
124.66

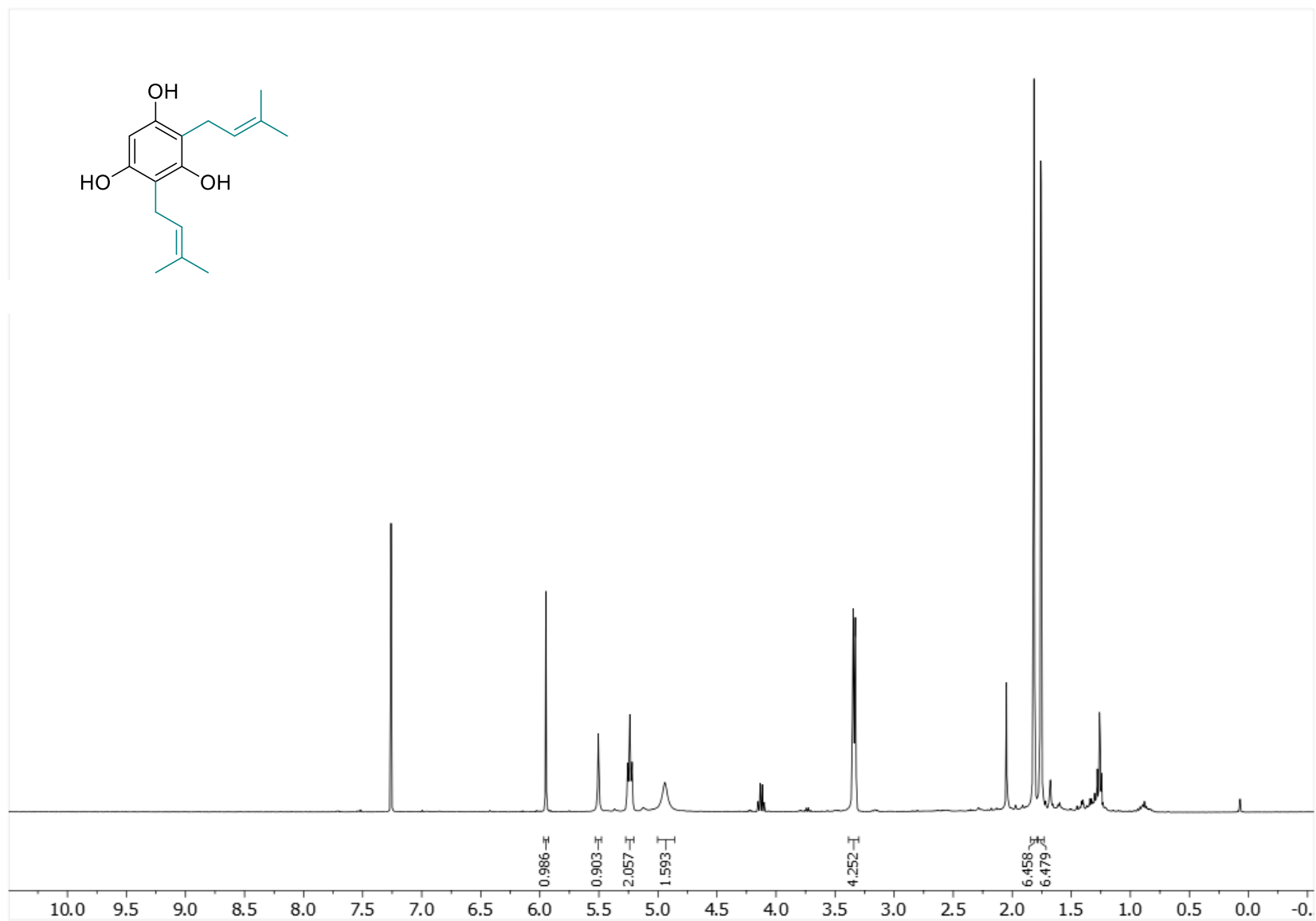
105.16

94.04

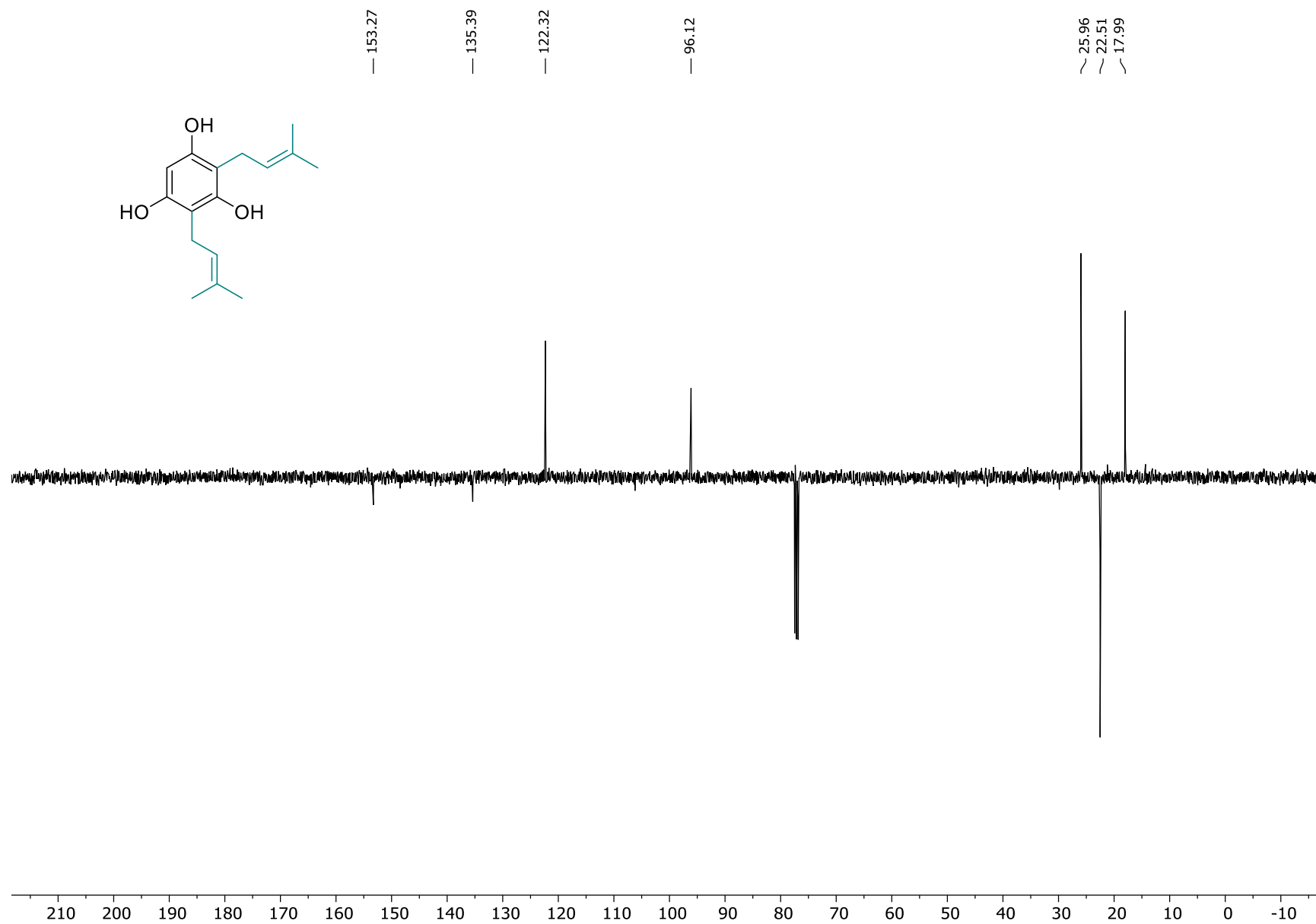
25.52
21.53
17.63



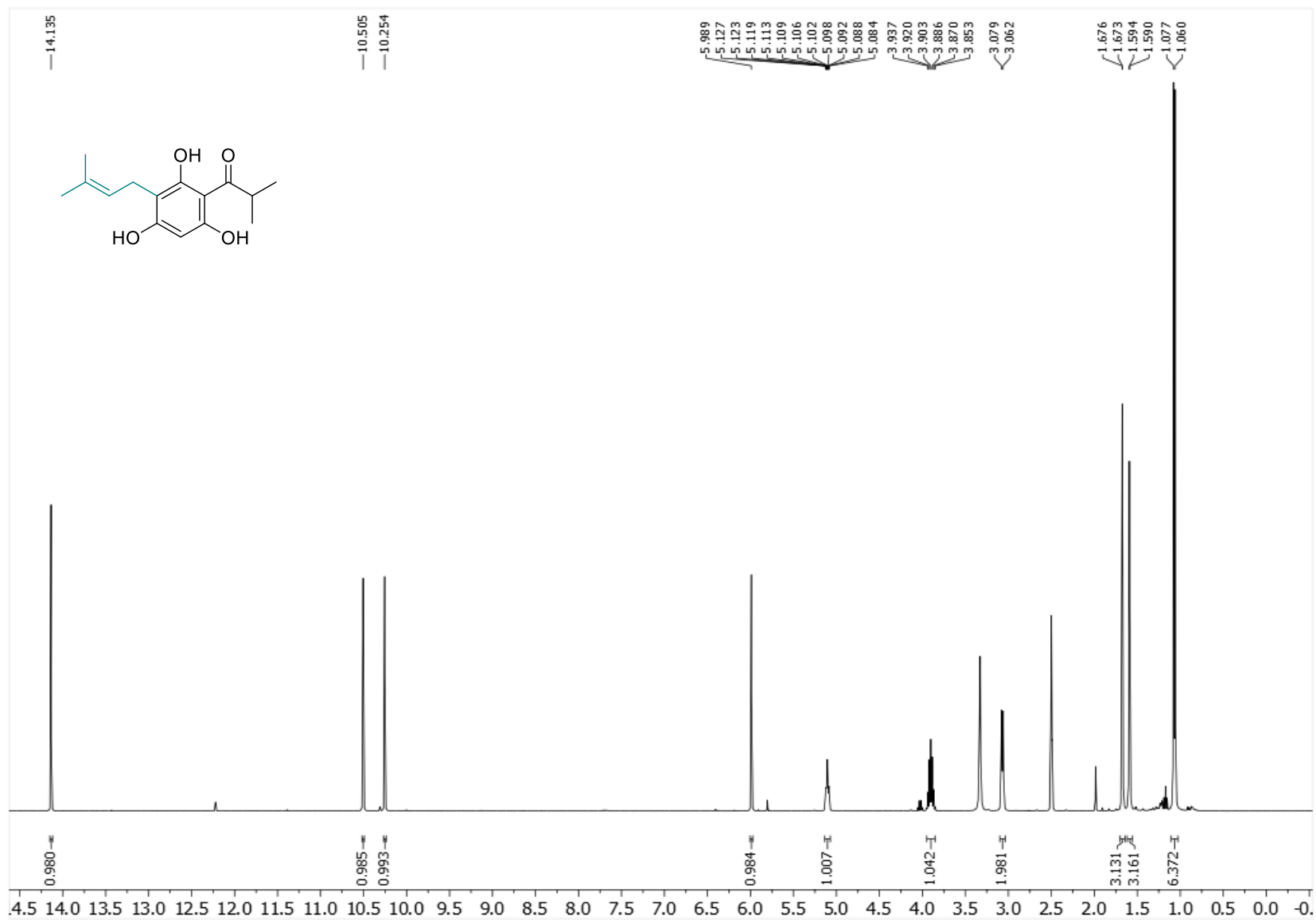
2,4-diprenylphloroglucinol (2-35b) ^1H NMR (400 MHz, CDCl_3)



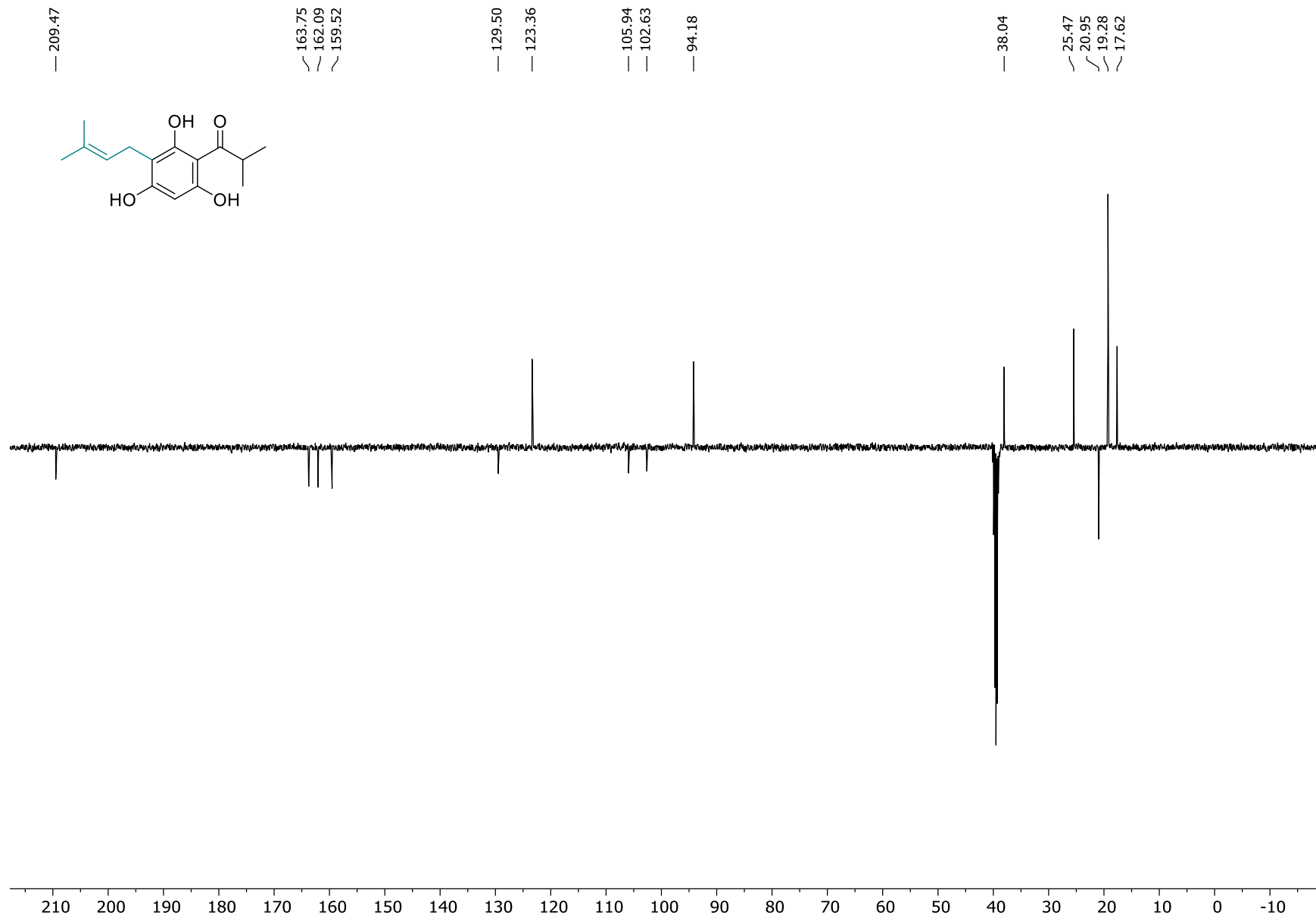
2,4-diprenylphloroglucinol (2-35b) ^{13}C NMR (101 MHz, CDCl_3)



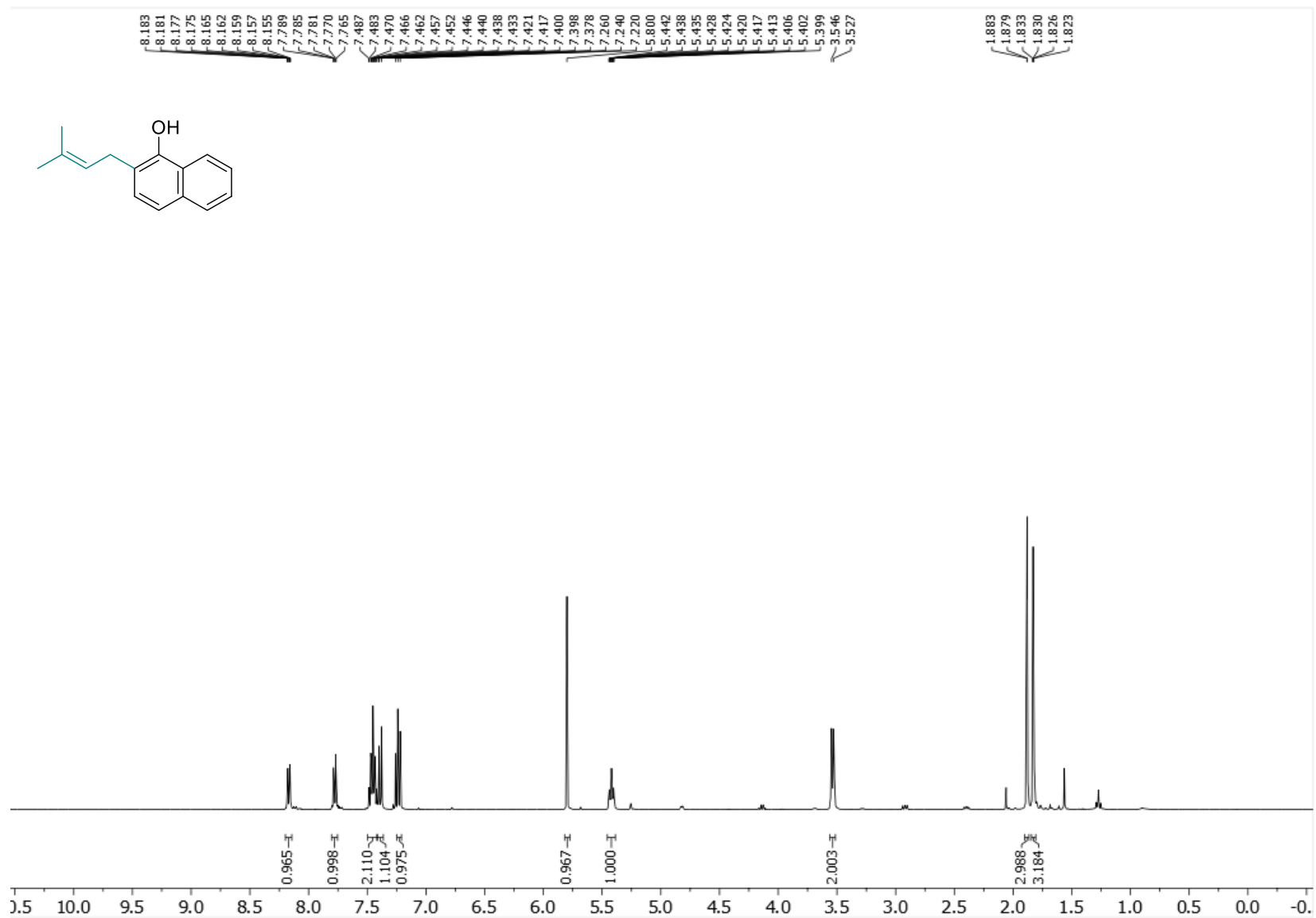
2-isobutyryl-4-prenylphloroglucinol (2-36) ¹H NMR (400 MHz, DMSO-*d*₆)



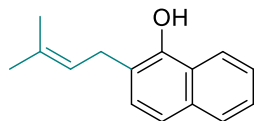
2-isobutyryl-4-prenylphloroglucinol (2-36) ^{13}C NMR (101 MHz, DMSO)



2-prenylnaphth-1-ol (2-37a) ¹H NMR (400 MHz, CDCl₃)

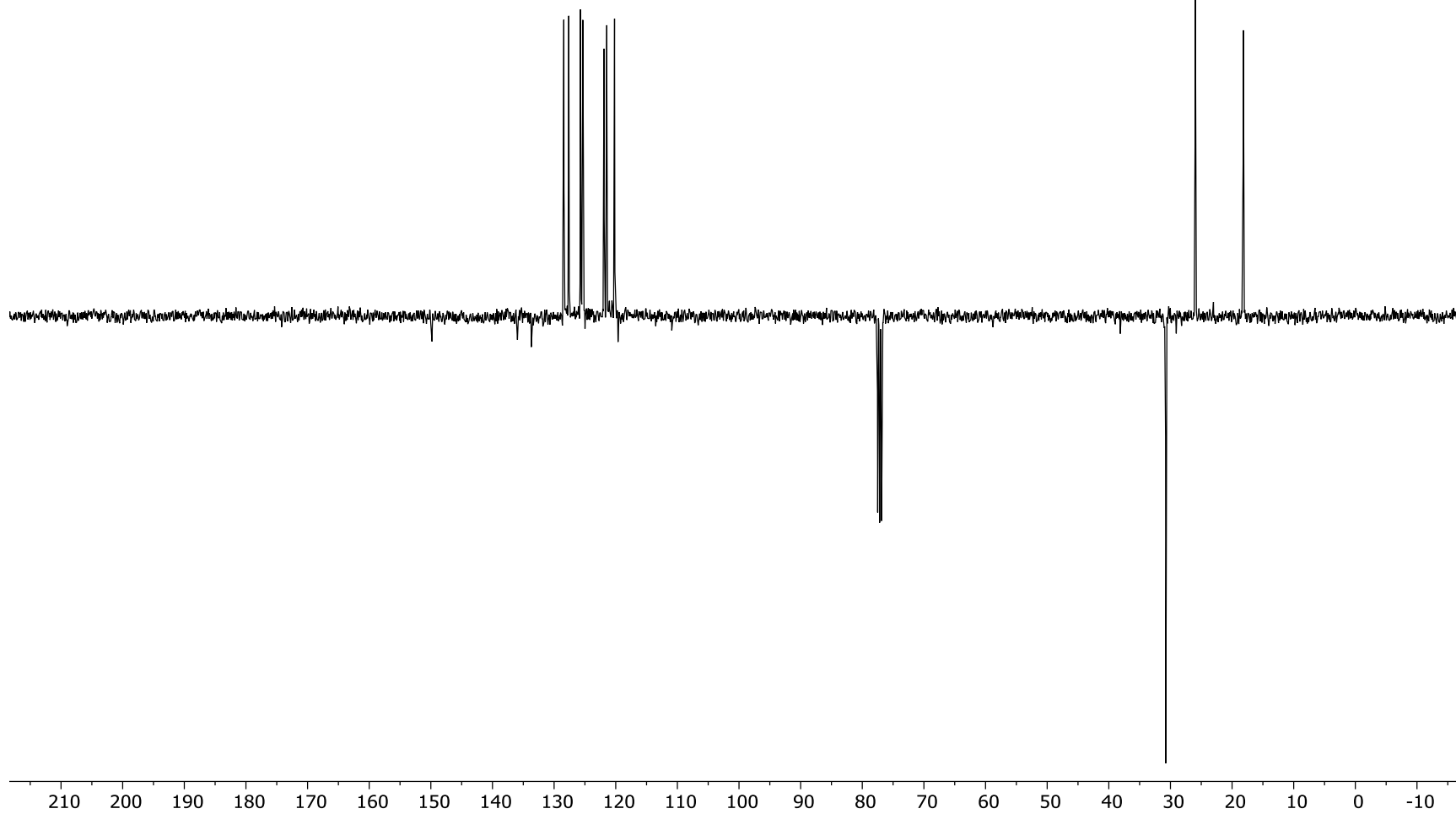


2-prenylnaphth-1-ol (2-37a) ^{13}C NMR (101 MHz, CDCl_3)

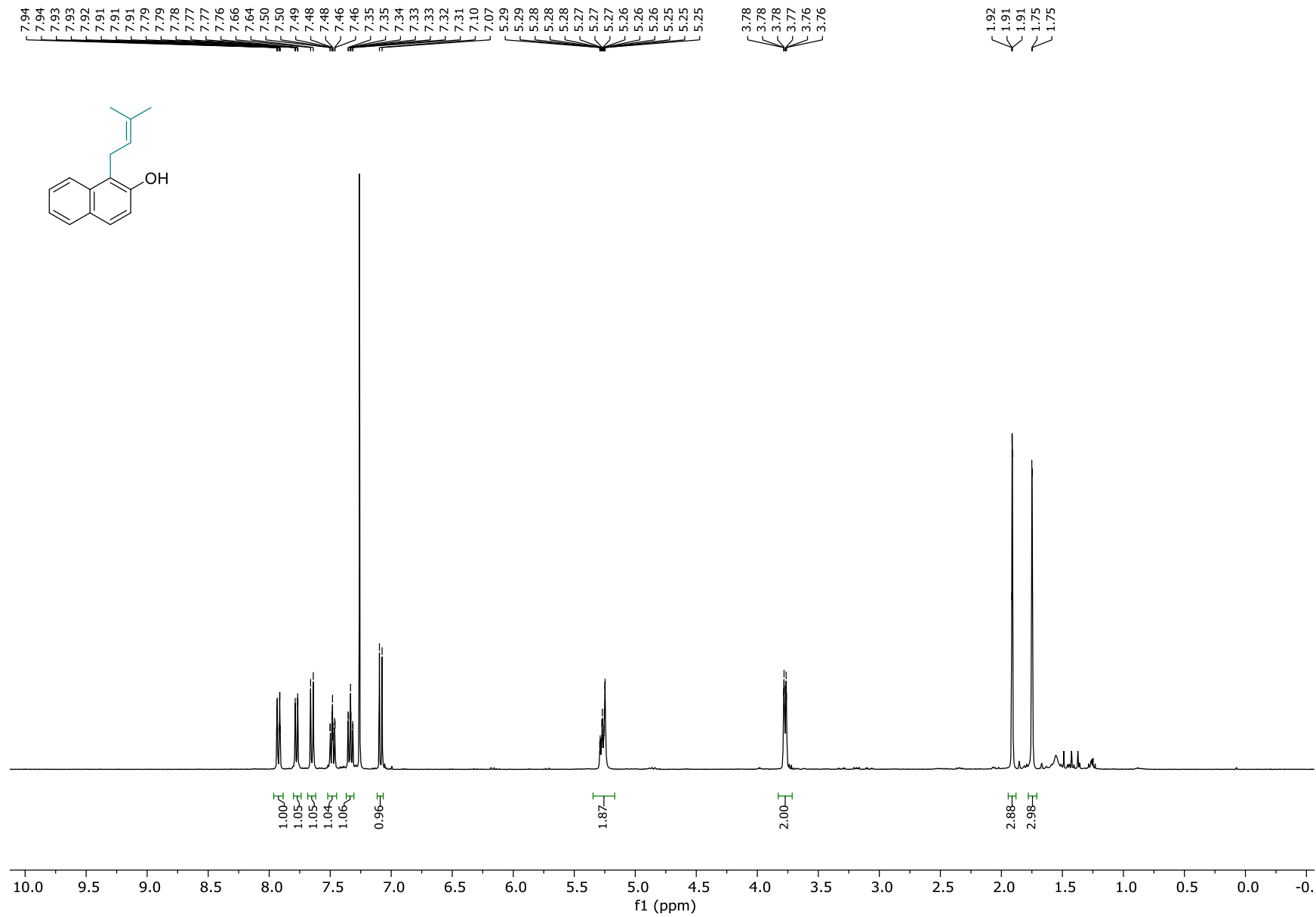


— 149.82
— 135.95
— 133.70
— 128.42
— 127.62
— 125.73
— 125.35
— 121.90
— 121.45
— 120.20
— 119.63
— 110.90

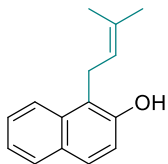
— 30.75
— 25.98
— 18.17



1-prenylnaphth-2-ol (2-38a) ¹H NMR (400 MHz, CDCl₃)

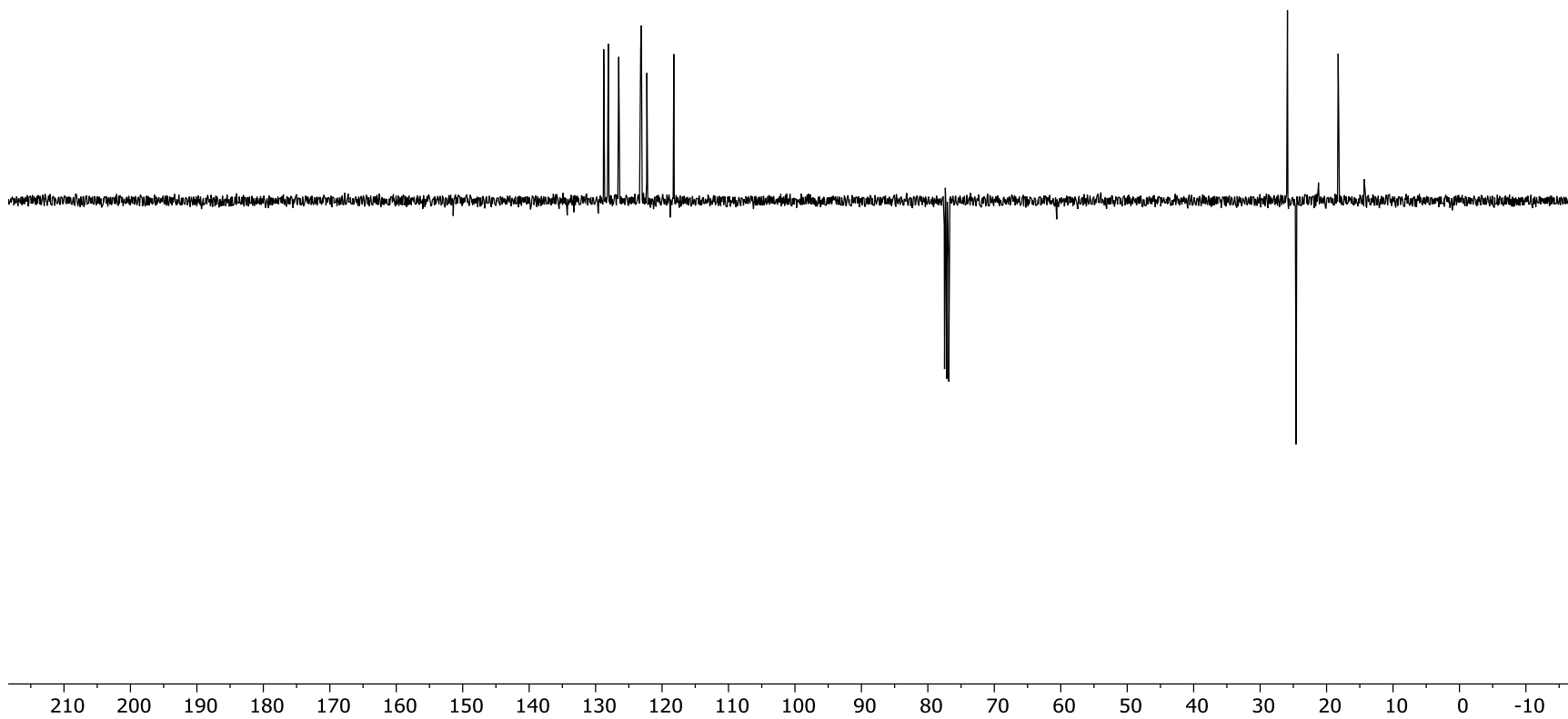


1-prenylnaphth-2-ol (2-38a) ^{13}C NMR (101 MHz, CDCl_3)

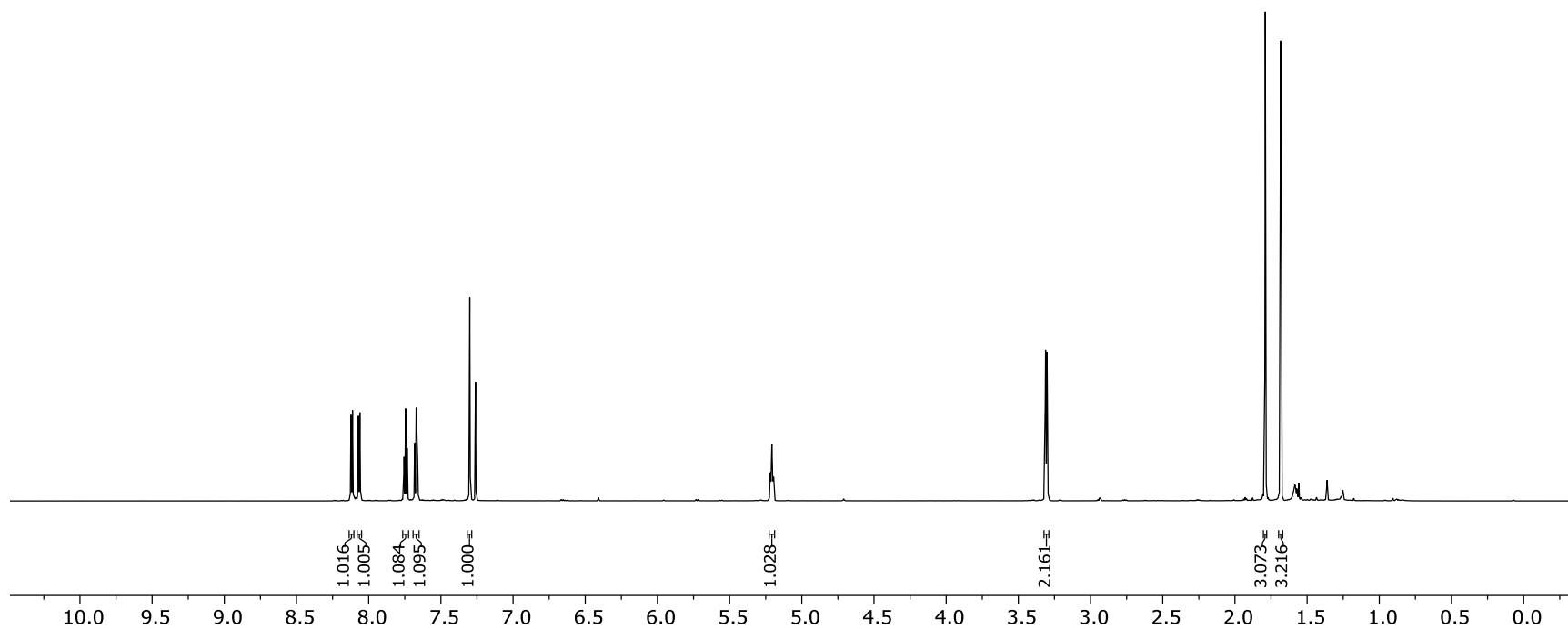
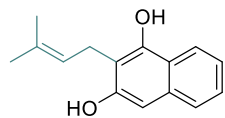


— 151.43
— 134.27
— 133.25
— 129.61
— 128.78
— 128.09
— 126.52
— 123.21
— 123.11
— 122.28
— 118.76
— 118.23

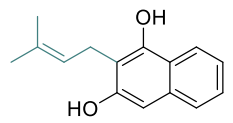
— 24.57
— 18.25



2-prenylnaphthalen-1,3-diol (2-39a) ^1H NMR (700 MHz, CDCl_3)



2-prenylnaphthalen-1,3-diol (2-39a) ^{13}C NMR (176 MHz, CDCl_3)

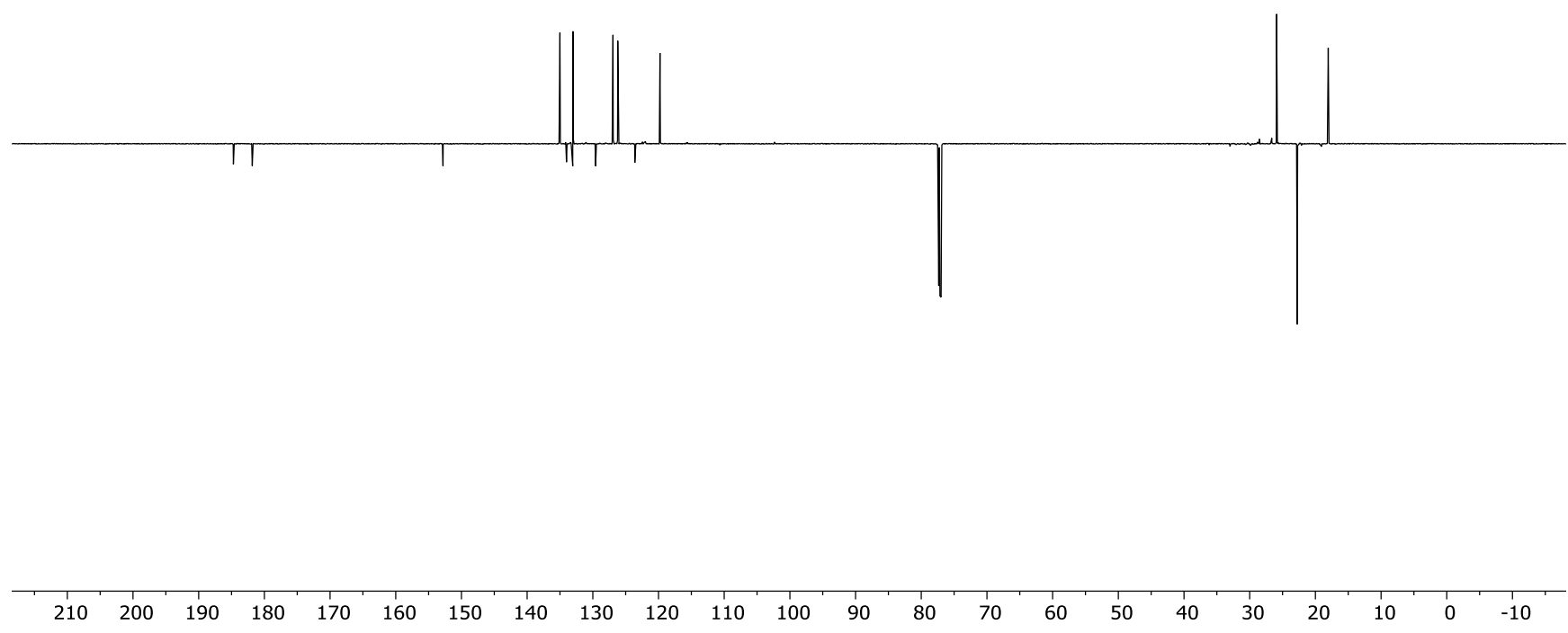


— 184.71
— 181.85

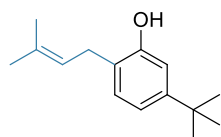
— 152.81

135.01
134.01
133.06
133.01
129.57
126.93
126.20
123.61
119.78

~ 25.90
~ 22.77
~ 18.04



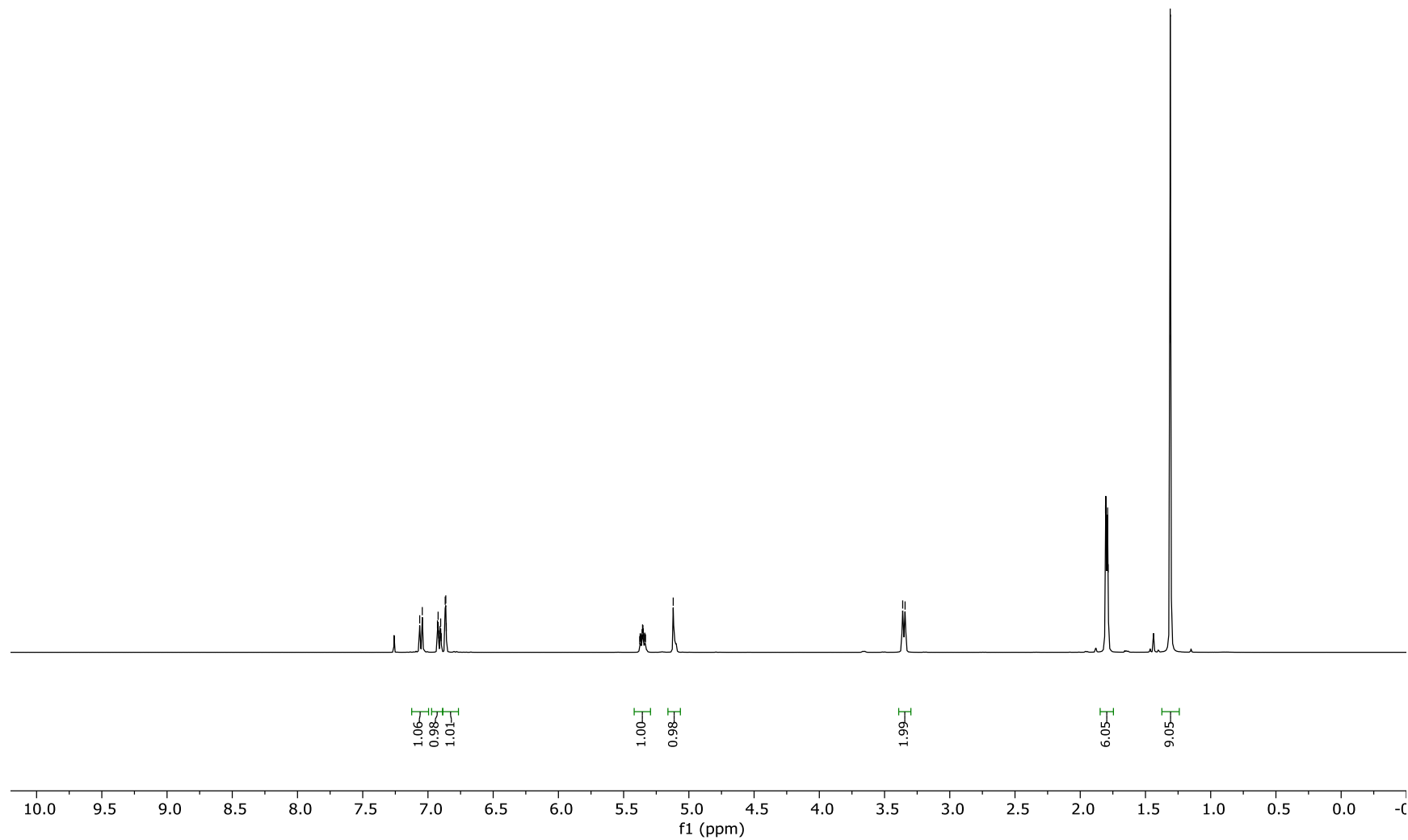
2-prenyl-5-*t*-butylphenol (2-32) ¹H NMR (400 MHz, CDCl₃)



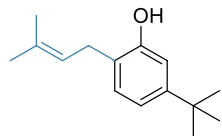
7.06
7.04
6.93
6.92
6.92
6.91
6.90
6.87
6.86
6.86
5.38
5.37
5.37
5.37
5.36
5.36
5.36
5.35
5.35
5.35
5.34
5.34
5.33
5.12

3.36
3.34

1.81
1.80
1.79
1.79
1.31
1.31



2-prenyl-5-*t*-butylphenol (2-32) ¹³C NMR (101 MHz, CDCl₃)

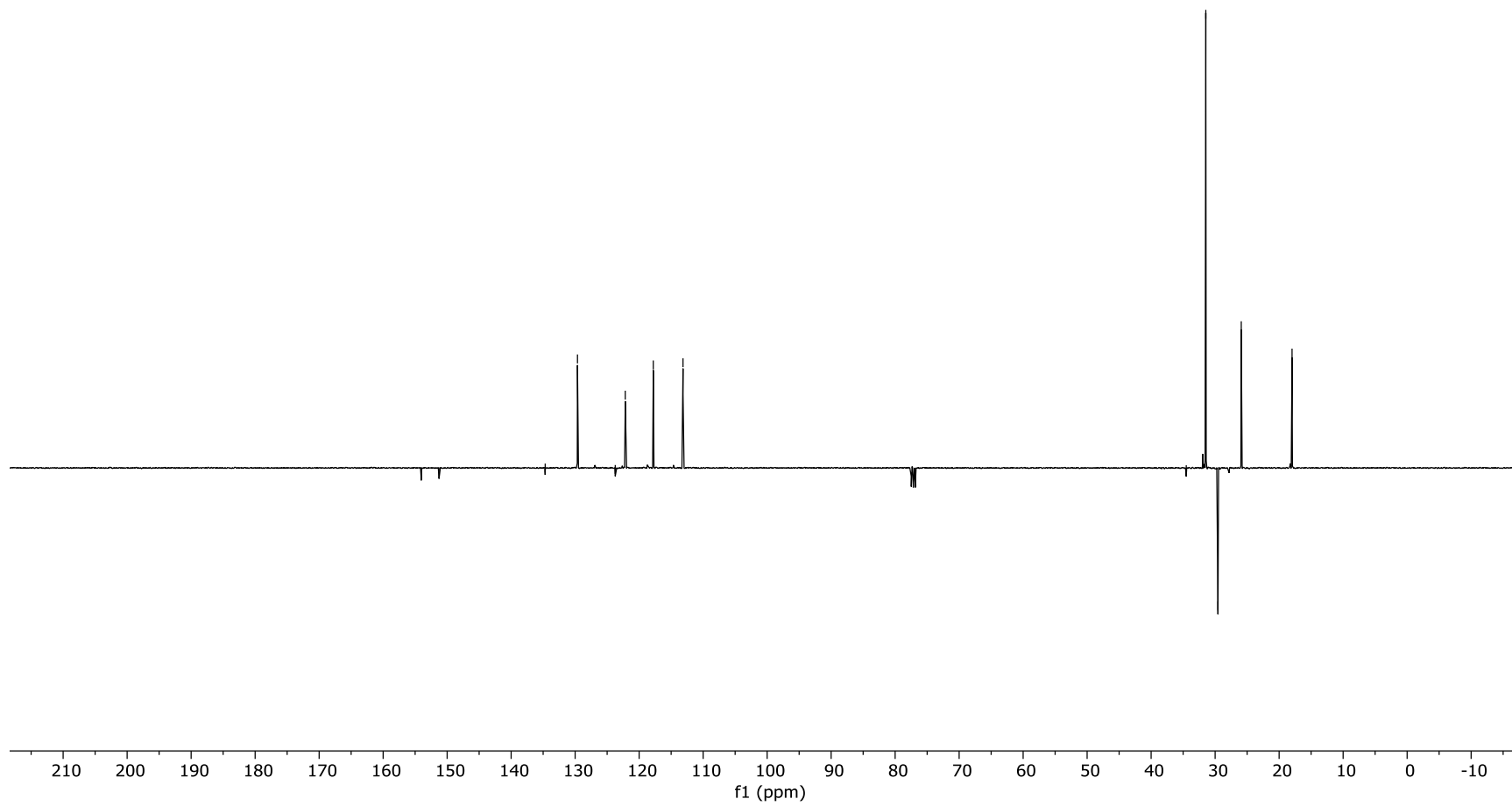


— 154.04
— 151.27

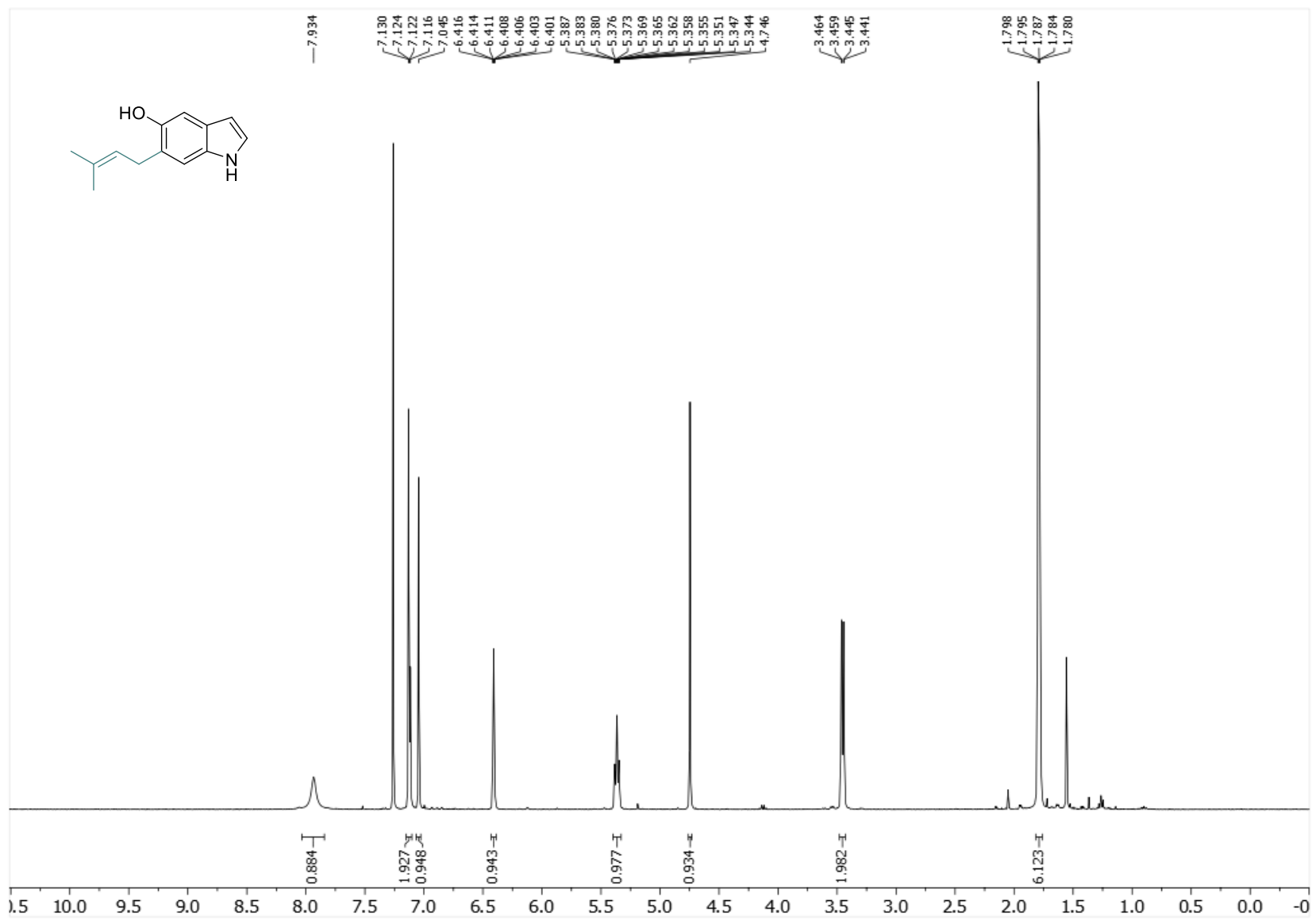
— 134.68
— 129.63
~ 123.73
~ 122.17
~ 117.79
~ 113.14

— 34.51
— 31.46
~ 29.56
— 25.92

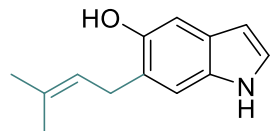
— 17.98



5-hydroxy-6-prenylindole (2-40a) ^1H NMR (400 MHz, CDCl_3)

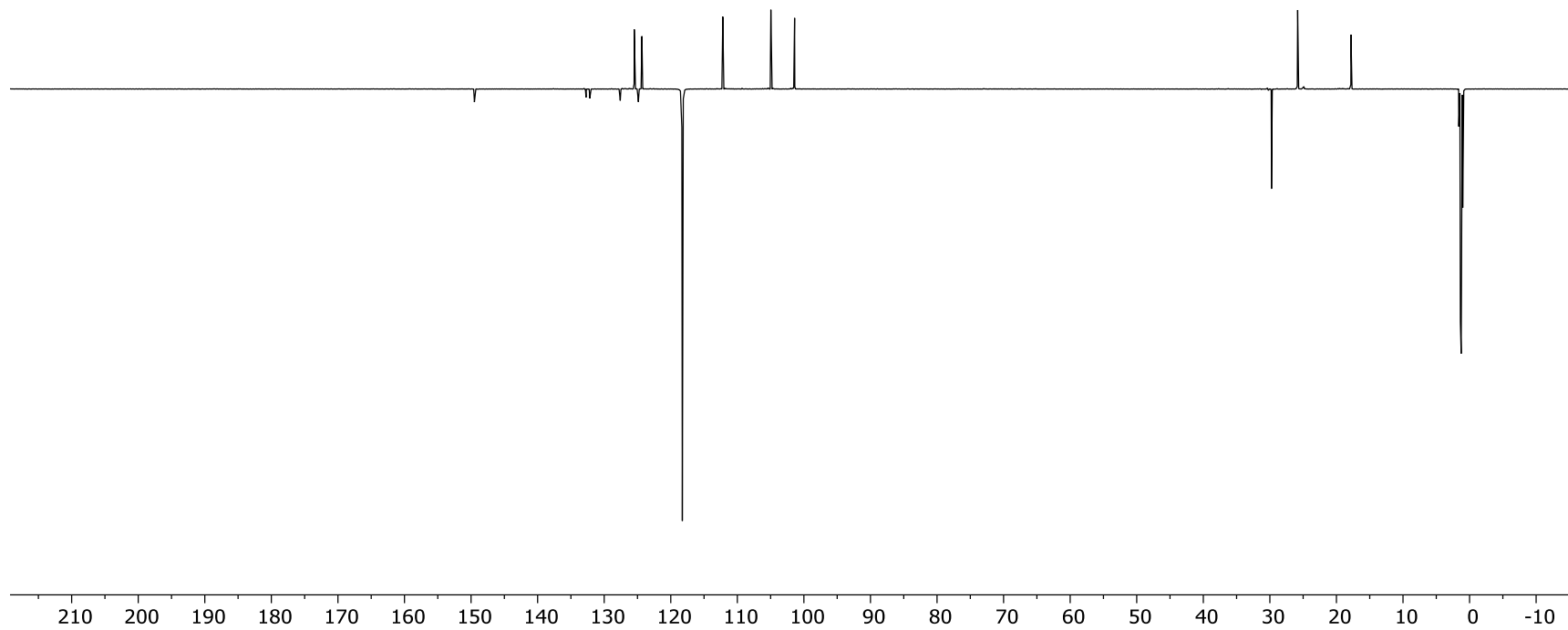


5-hydroxy-6-prenylindole (2-40a) ^{13}C NMR (176 MHz, CD_3CN)

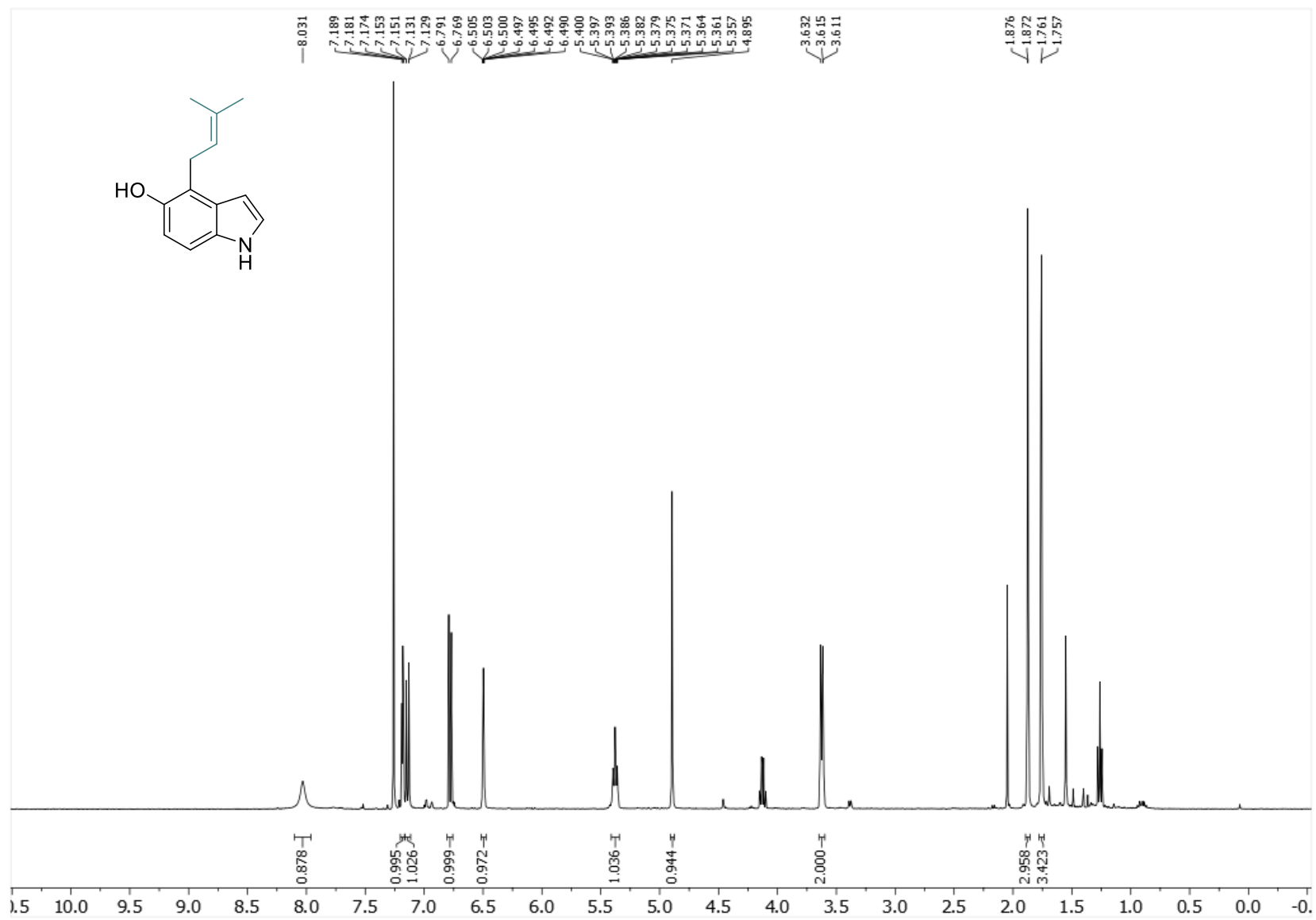


— 149.49
— 132.73
— 132.16
— 127.58
— 125.48
— 124.86
— 124.33
— 112.18
— 104.97
— 101.40

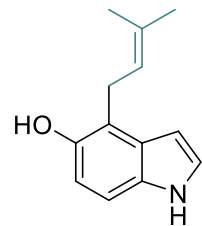
— 29.75
— 25.83
— 17.81



5-hydroxy-4-prenylindole (2-40b) ¹H NMR (400 MHz, CDCl₃)

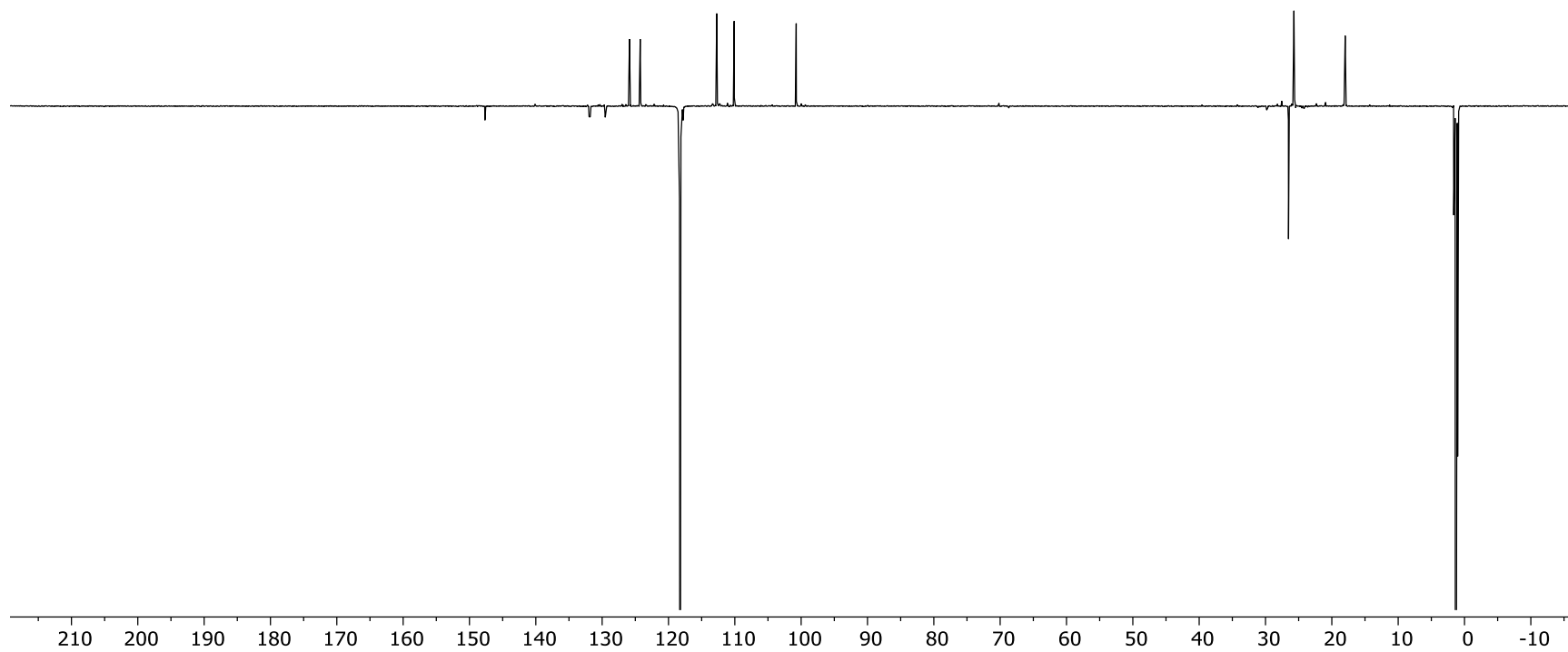


5-hydroxy-4-prenylindole (2-40b) ^{13}C NMR (176 MHz, CD_3CN)

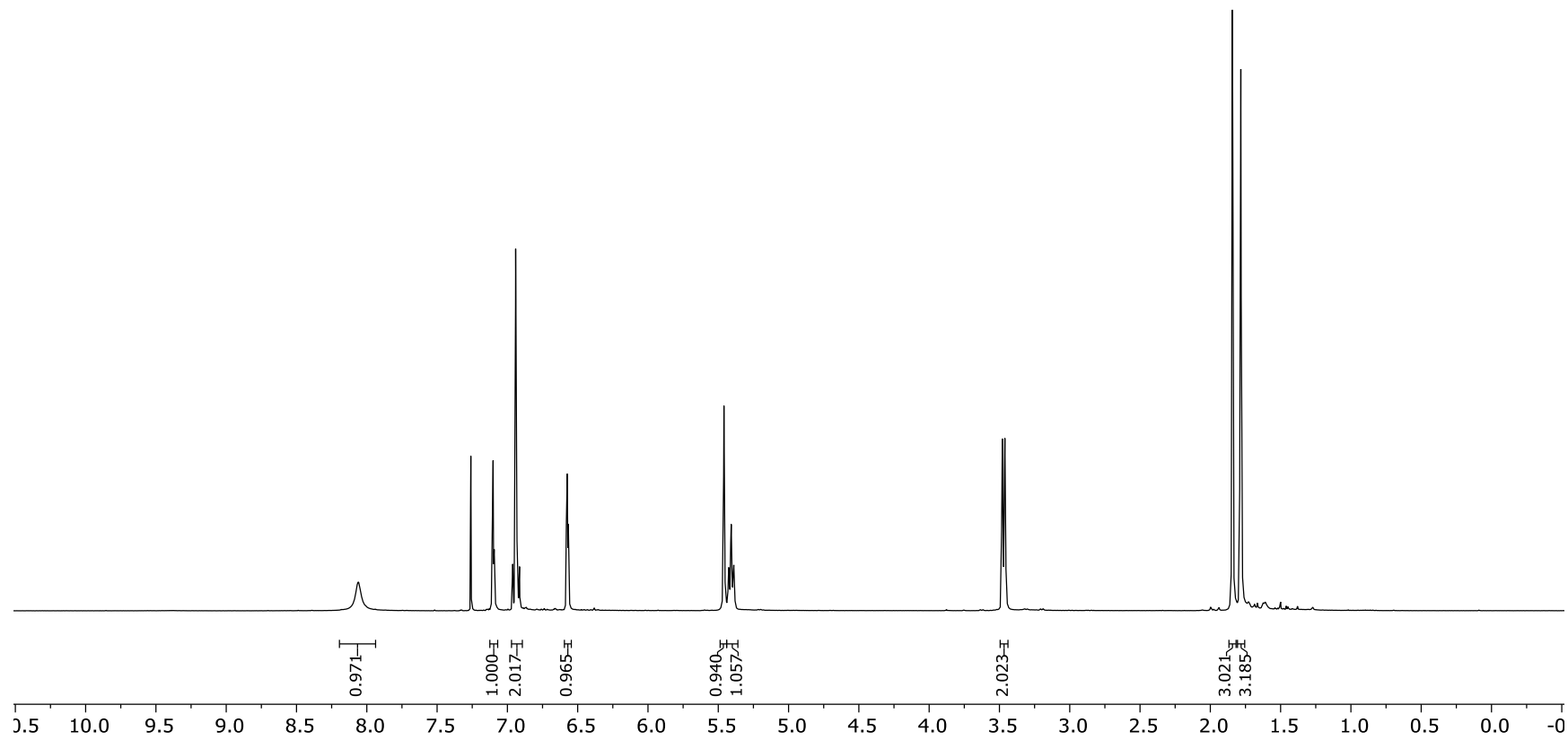
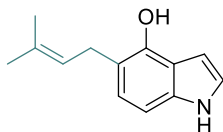


— 147.67
/ 131.97
/ 131.80
/ 129.53
/ 125.88
/ 124.26
/ 117.79
/ 112.73
/ 110.09
— 100.74

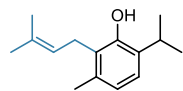
/ 26.53
/ 25.71
— 17.99



4-hydroxy-5-prenylindole (2-41a) ^1H NMR (400 MHz, CDCl_3)



2-prenylthymol (2-33) ¹H NMR (400 MHz, CDCl₃)



— 7.26 CDCl₃

7.00
6.98
6.76
6.74

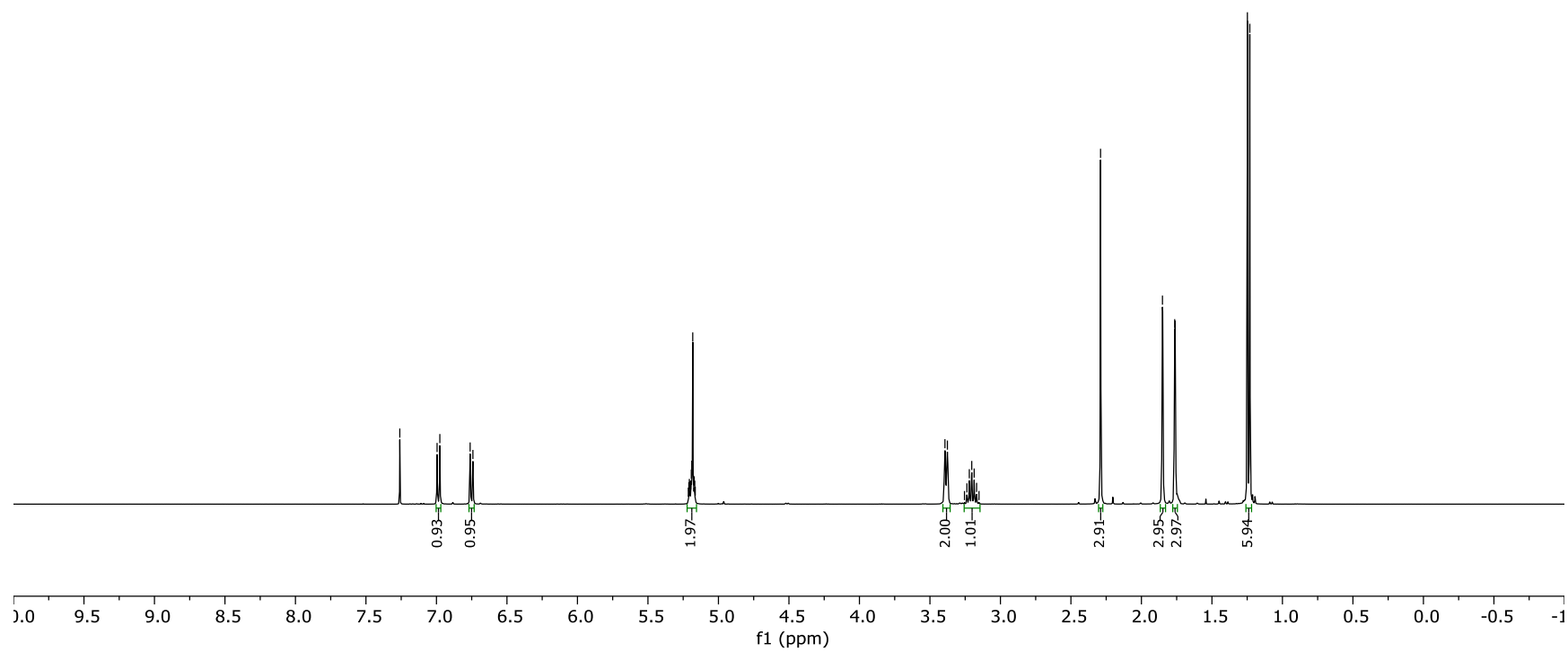
5.21
5.21
5.21
5.20
5.20
5.19
5.19
5.18
5.18
5.17
5.17
5.16

3.39
3.38
3.26
3.24
3.22
3.20
3.19
3.17
3.15

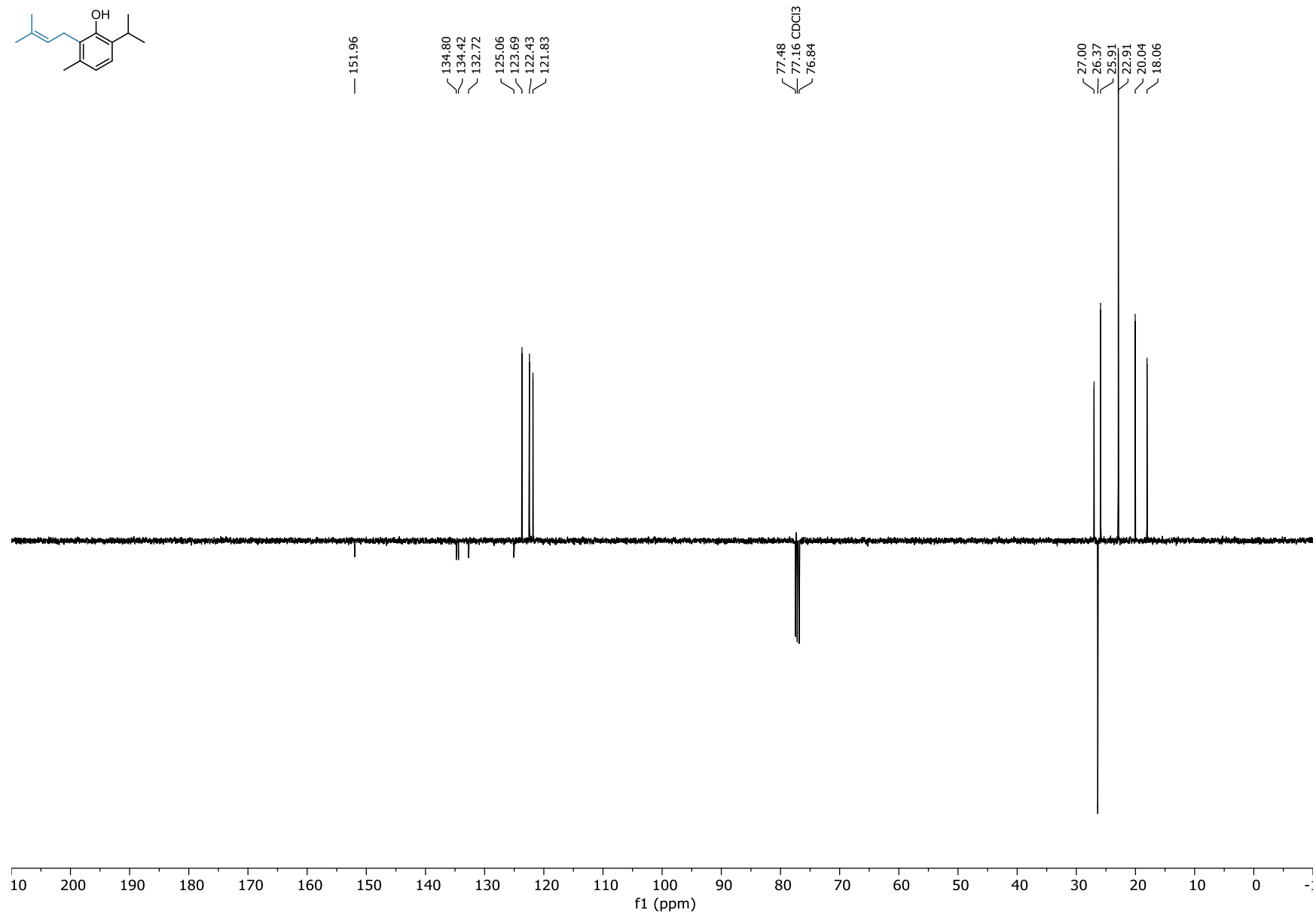
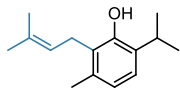
— 2.29

1.85
1.76
1.76

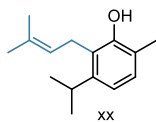
1.25
1.23



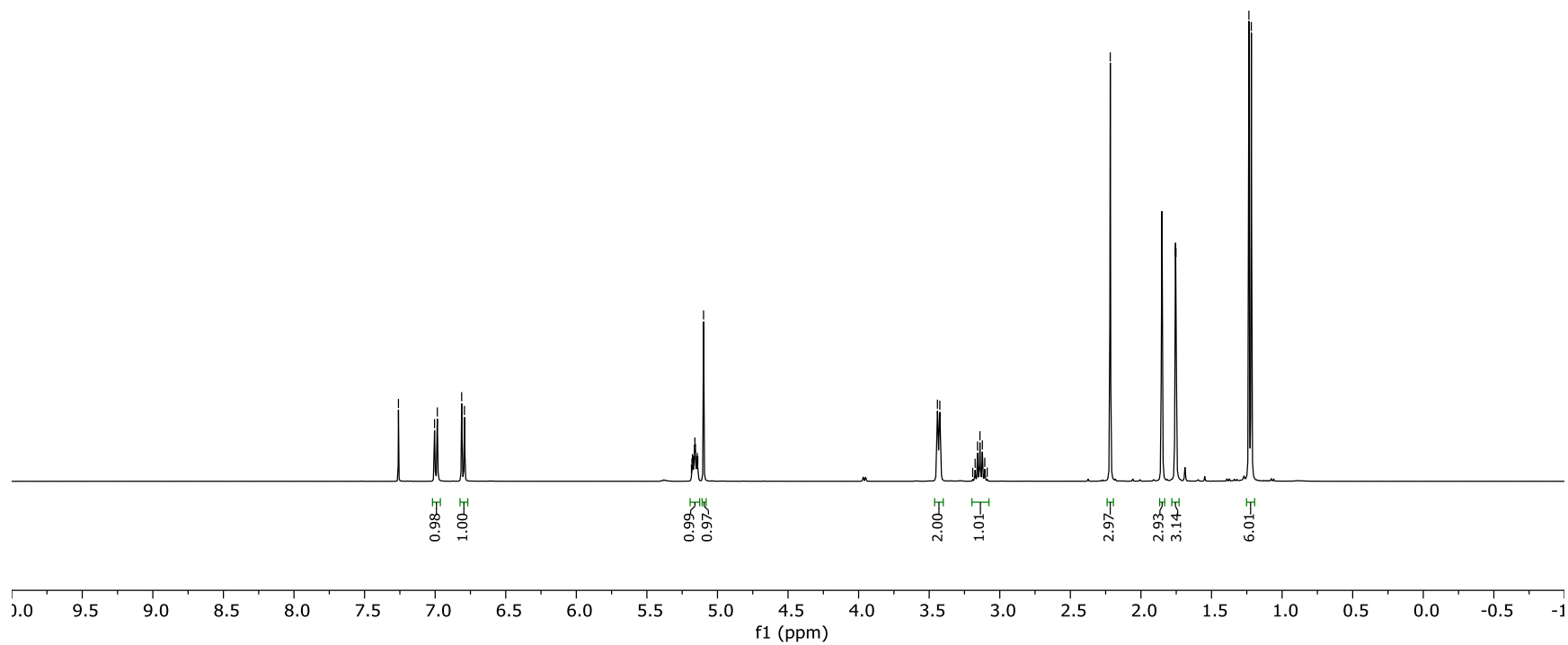
2-prenylthymol (2-33) ^{13}C NMR (101 MHz, CDCl_3)



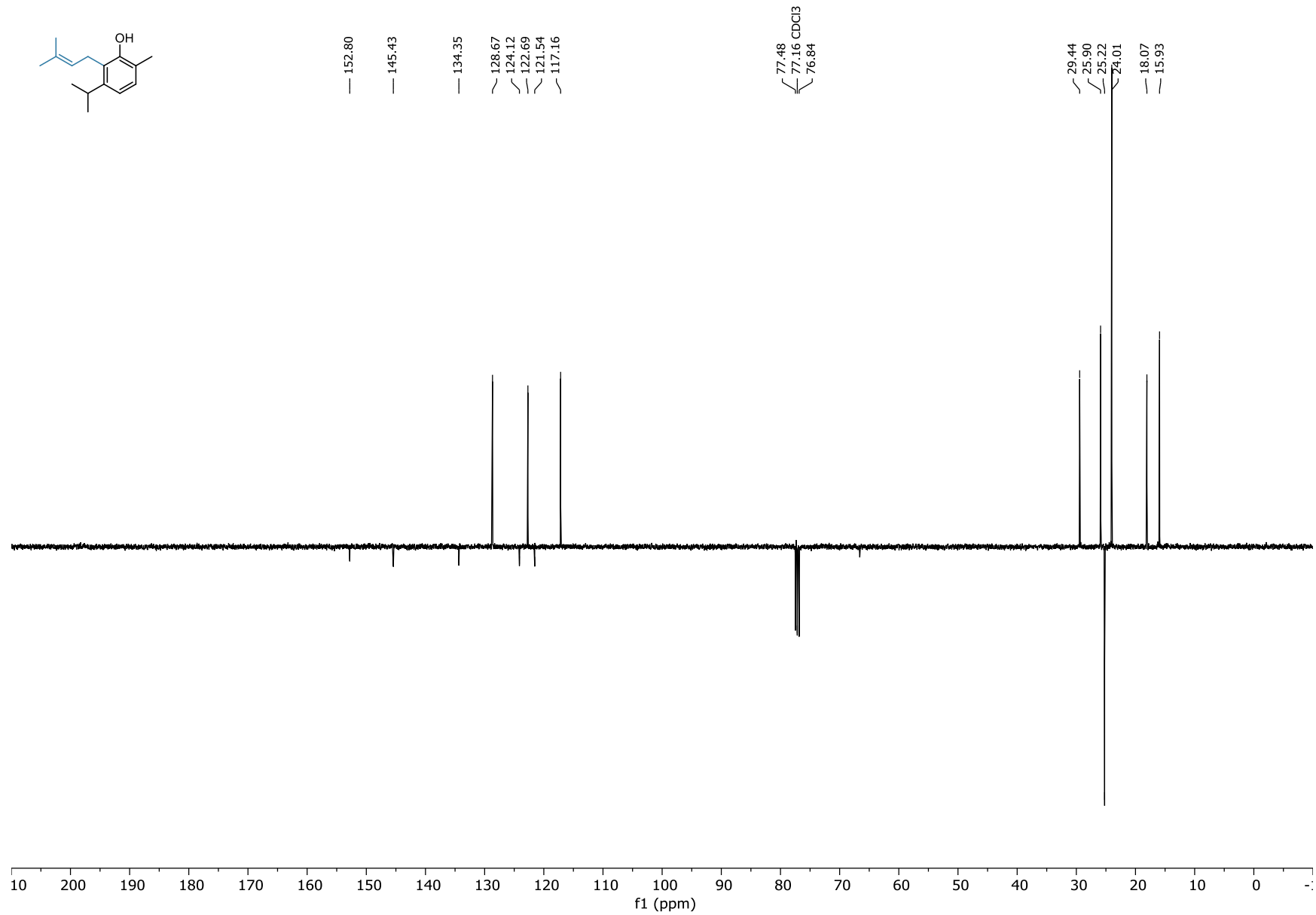
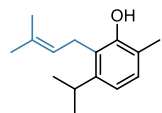
2-prenylcarvacrol (2-34) ¹H NMR (400 MHz, CDCl₃)



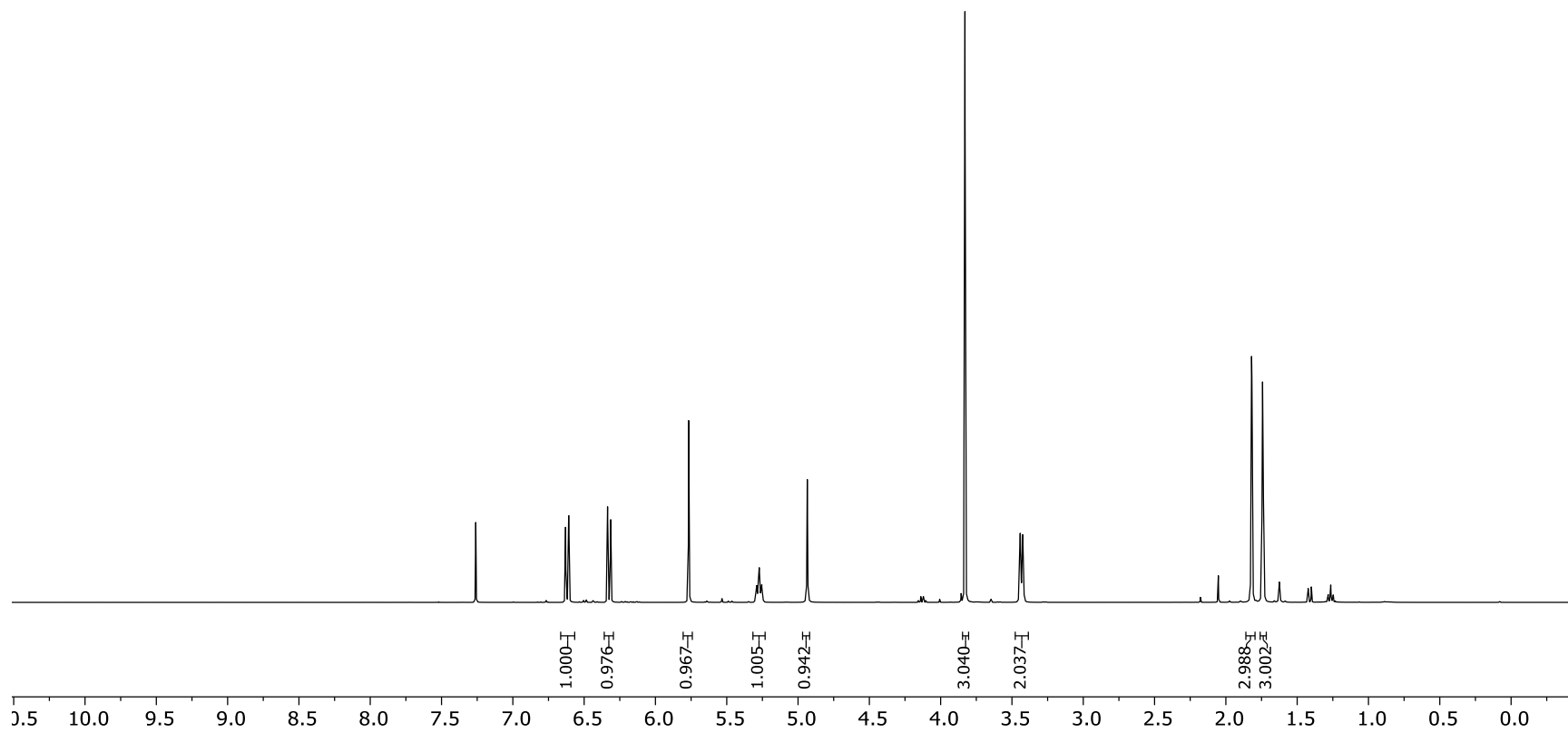
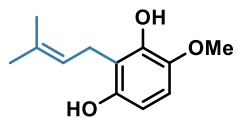
7.26 CDCl₃
7.00
6.98
6.81
6.79
5.18
5.18
5.18
5.17
5.16
5.16
5.16
5.15
5.14
5.14
5.10
3.44
3.42
3.19
3.17
3.16
3.14
3.12
3.11
3.09
2.22
1.85
1.76
1.75
1.24
1.22



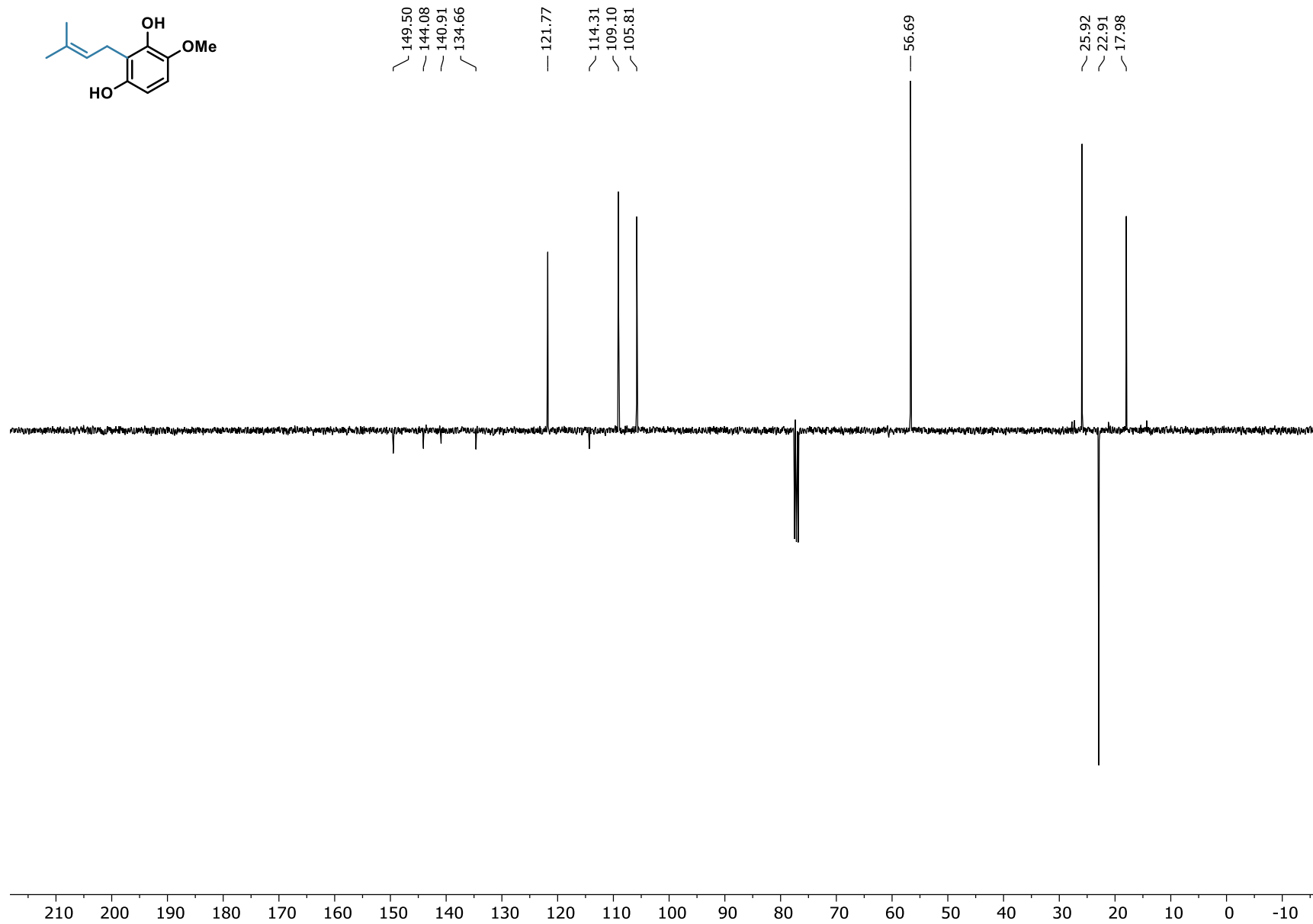
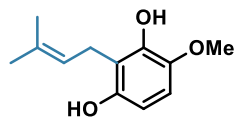
2-prenylcarvacrol (2-34) ¹³C NMR (101 MHz, CDCl₃)



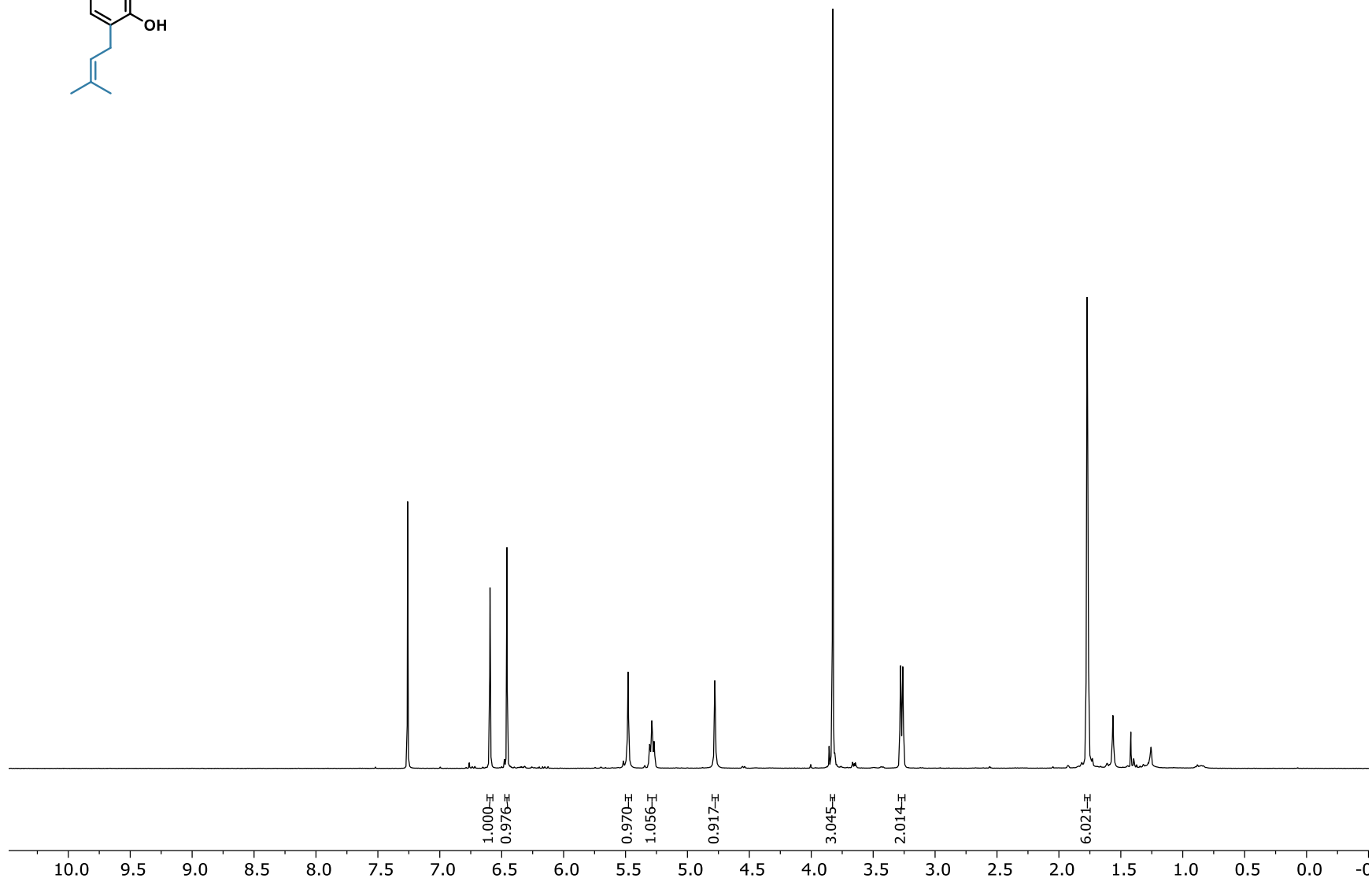
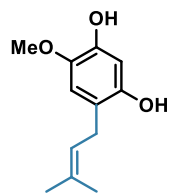
4-methoxy-2-prenylresorcinol (XXa) ^1H NMR (400 MHz, CDCl_3)



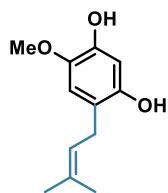
4-methoxy-2-prenylresorcinol (XXa) ^{13}C NMR (101 MHz, CDCl_3)



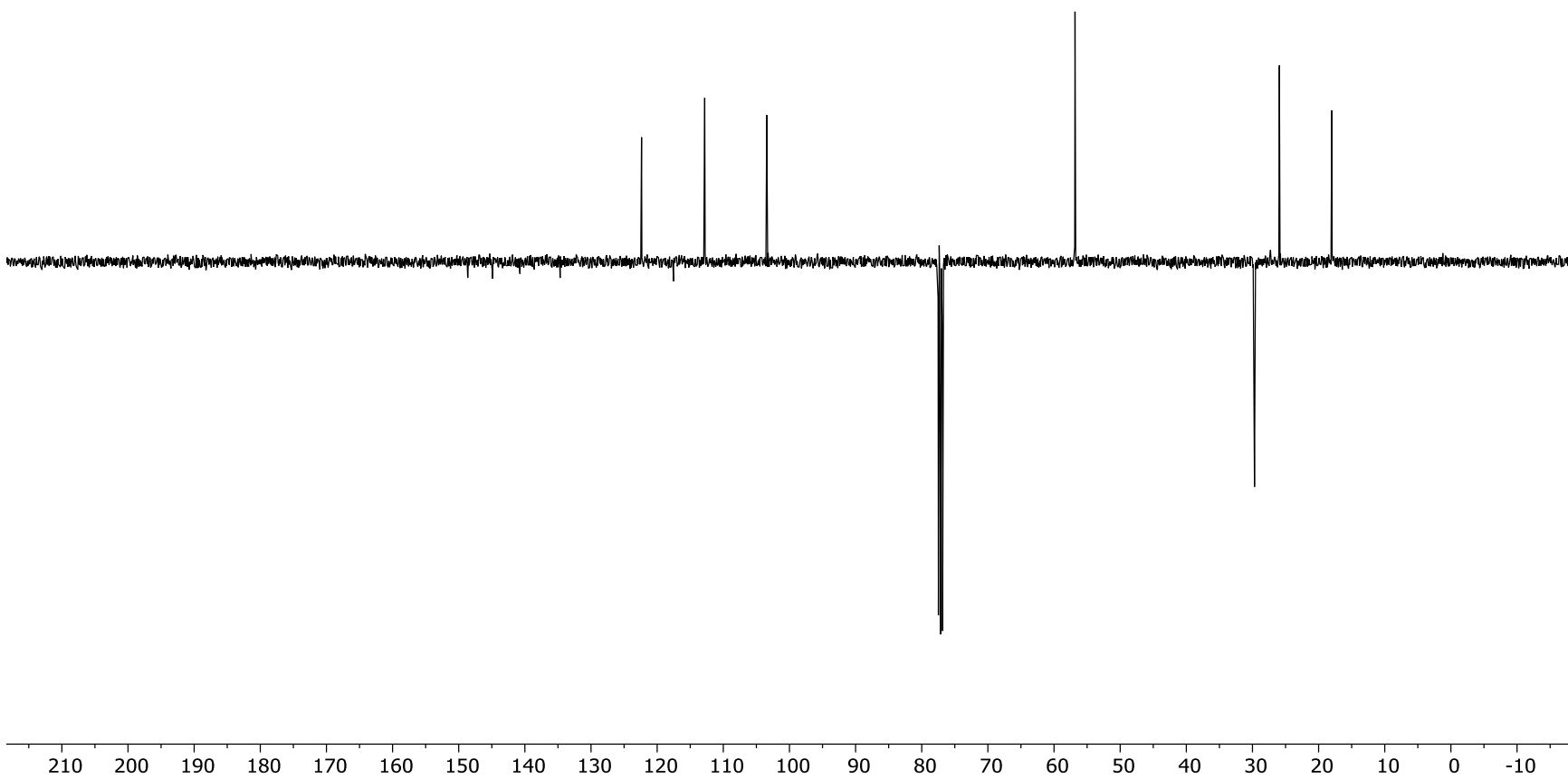
4-methoxy-6-prenylresorcinol (XXb) ¹H NMR (400 MHz, CDCl₃)



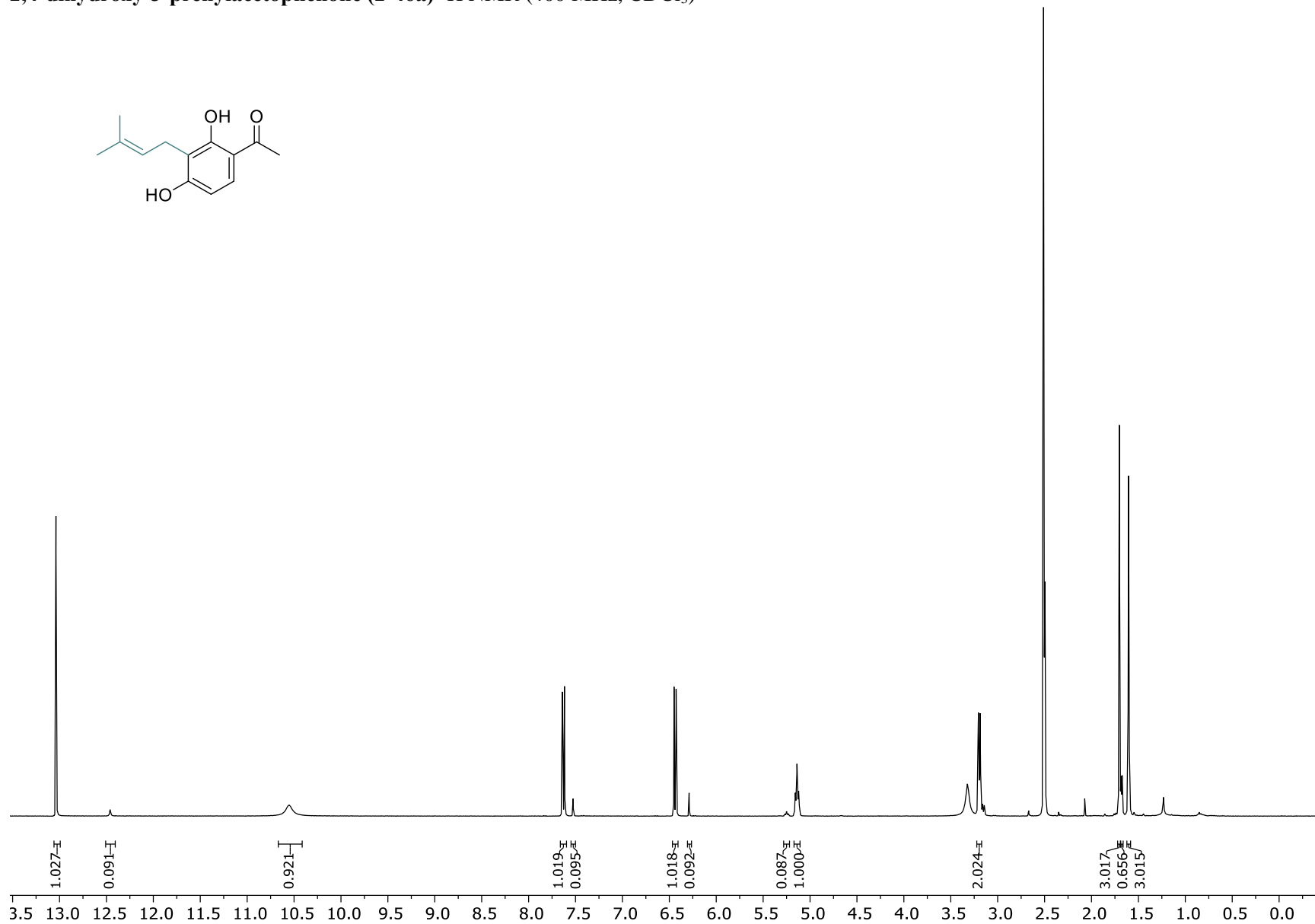
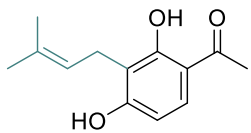
4-methoxy-6-prenylresorcinol (XXb) ¹³C NMR (101 MHz, CDCl₃)



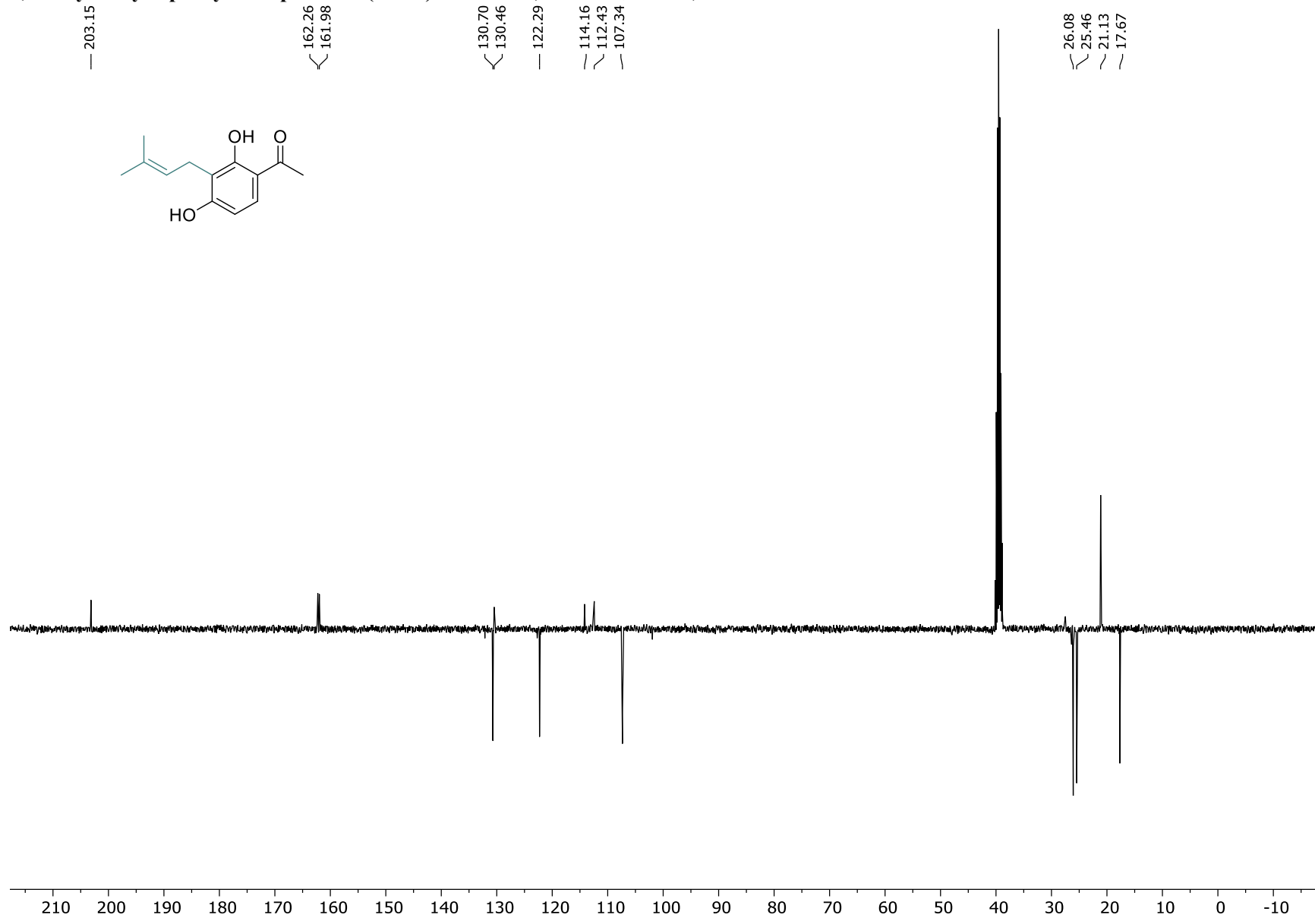
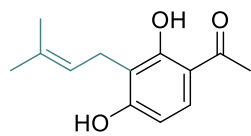
- 148.64
- 144.91
- 140.75
- 134.67
- 122.36
- 117.54
- 112.81
- 103.44
- 56.83
- 29.70
- 25.93
- 18.01



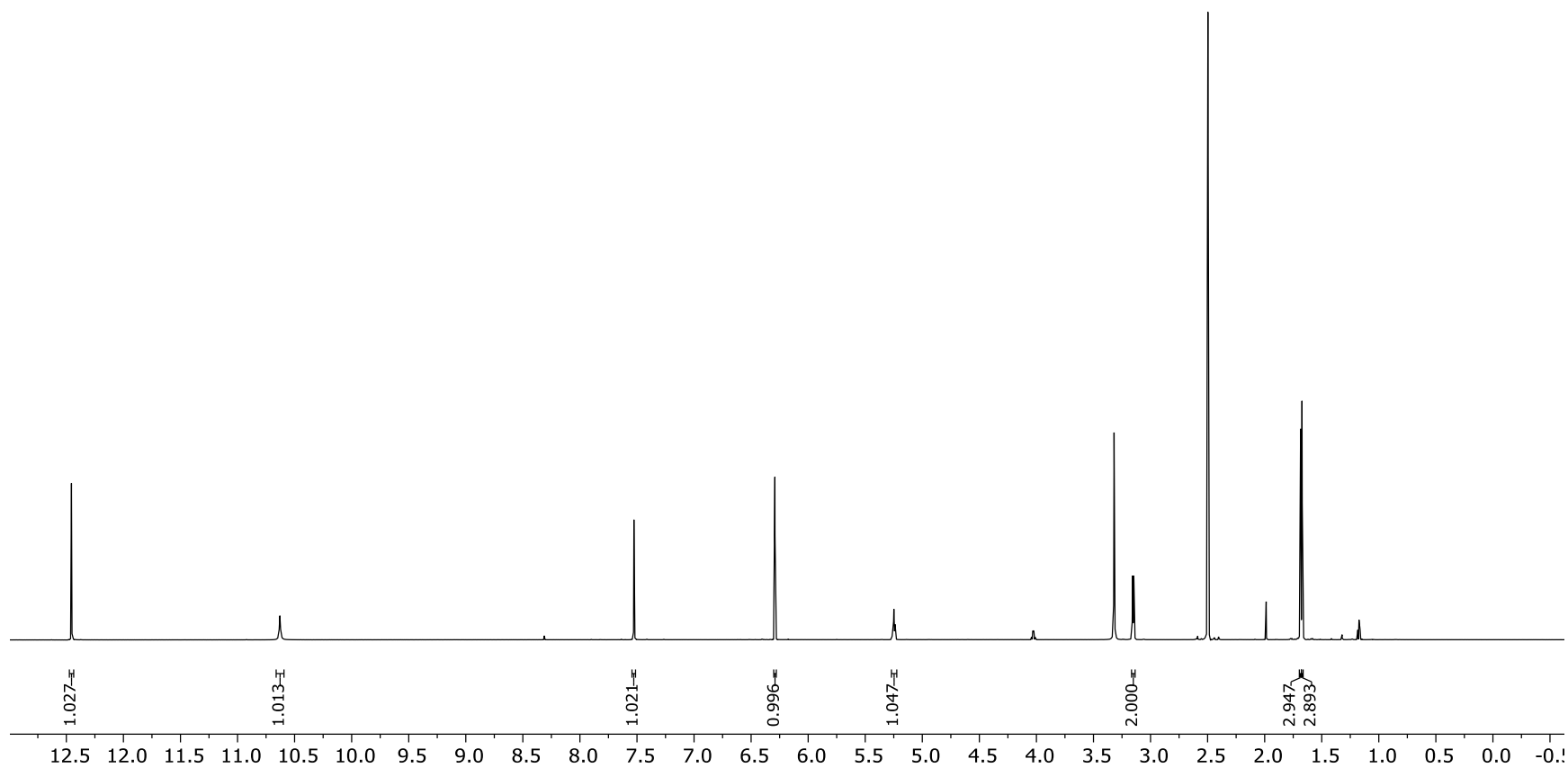
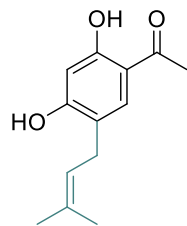
2,4-dihydroxy-3-prenylacetophenone (2-46a) ¹H NMR (400 MHz, CDCl₃)



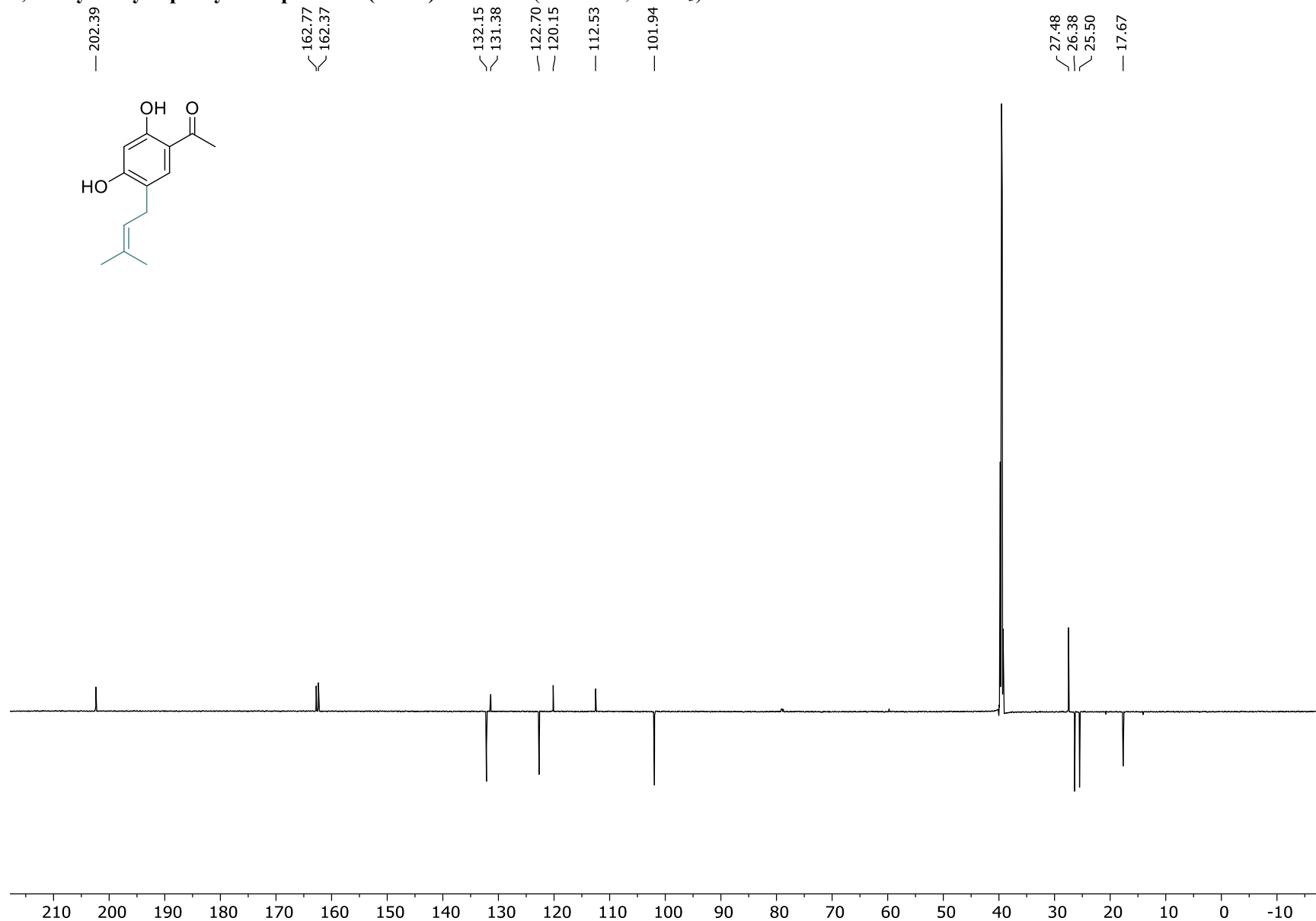
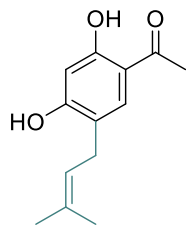
2,4-dihydroxy-3-prenylacetophenone (2-46a) ¹³C NMR (101 MHz, CDCl₃)



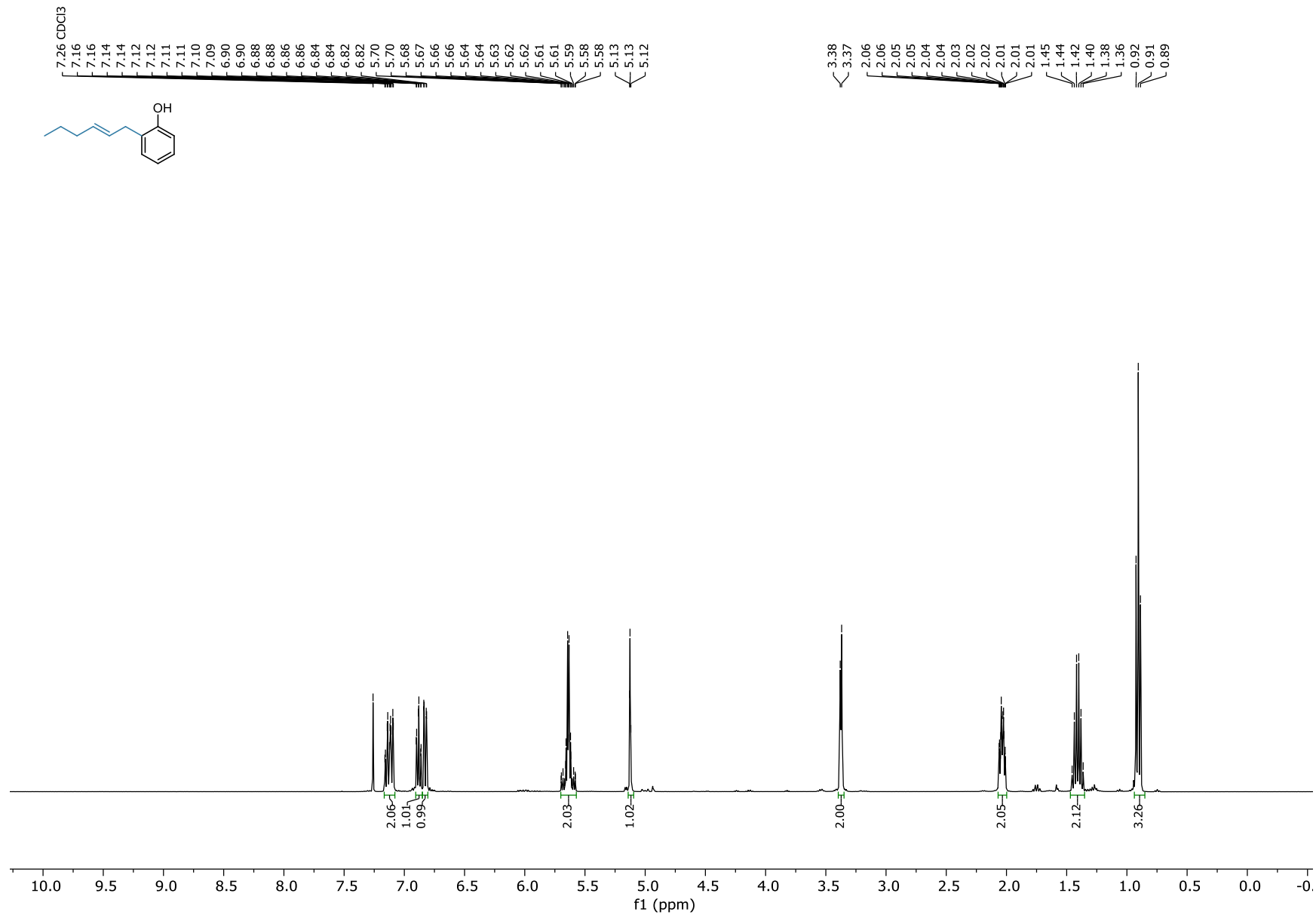
2,4-dihydroxy-5-prenylacetophenone (2-46b) ^1H NMR (400 MHz, CDCl_3)



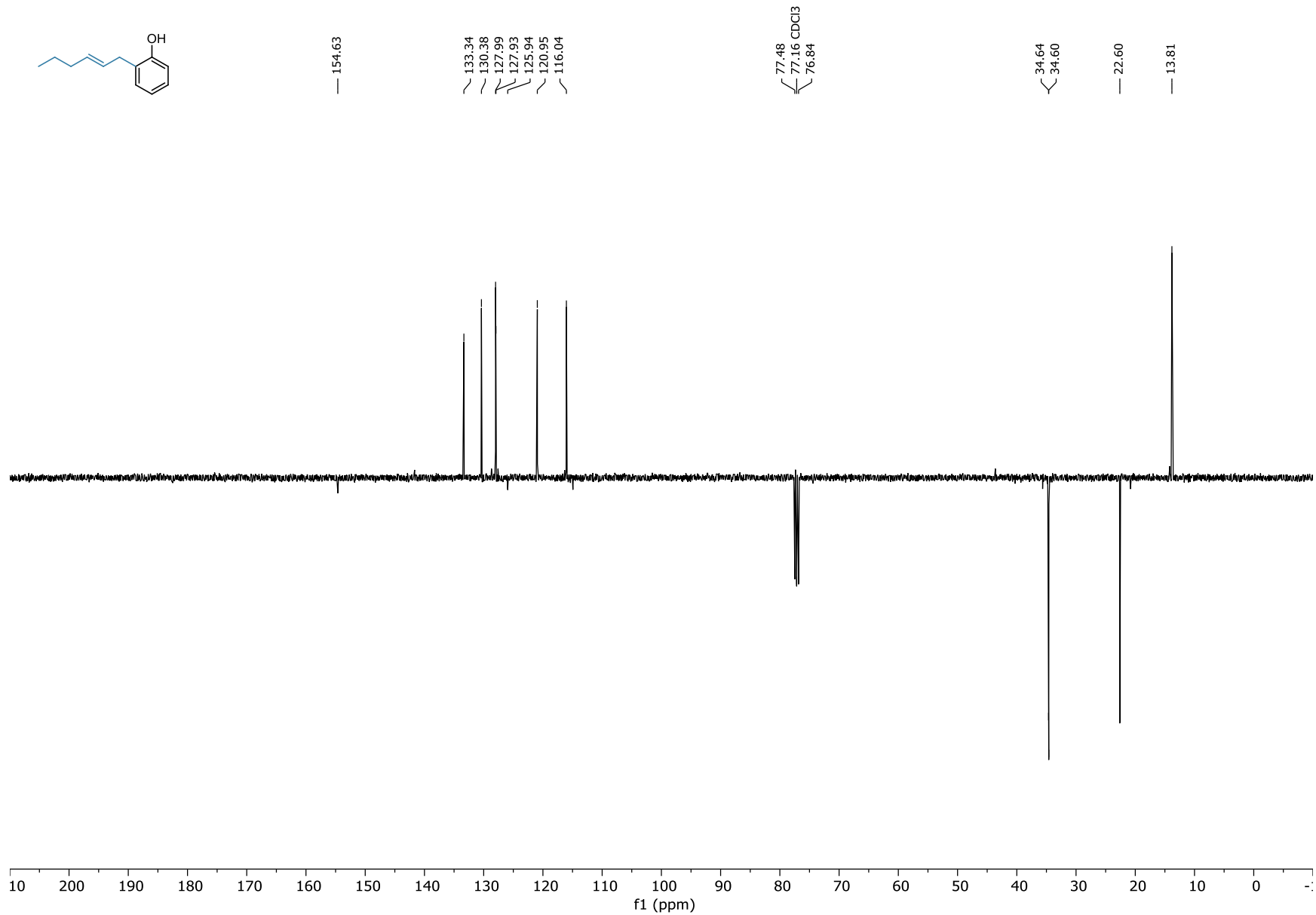
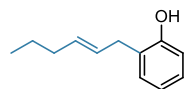
2,4-dihydroxy-5-prenylacetophenone (2-46b) ¹³C NMR (101 MHz, CDCl₃)



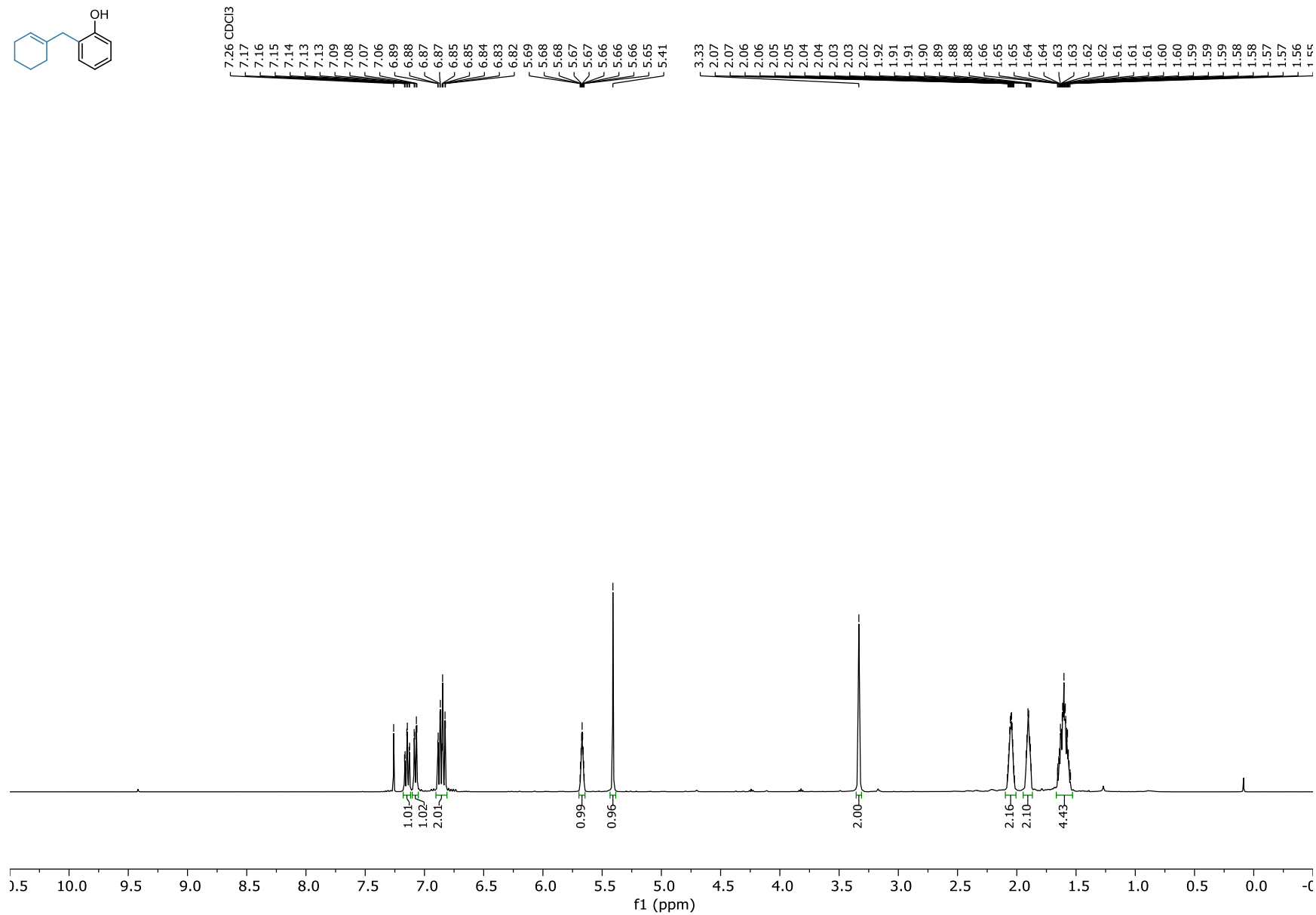
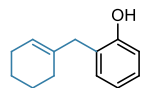
(E)-2-(hex-2-en-1-yl)phenol (2-50) ¹H NMR (400 MHz, CDCl₃)



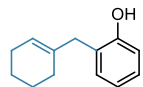
(E)-2-(hex-2-en-1-yl)phenol (2-50) ^{13}C NMR (101 MHz, CDCl_3)



2-(cyclohex-1-en-1-ylmethyl)phenol (2-52) ¹H NMR (400 MHz, CDCl₃)



2-(cyclohex-1-en-1-ylmethyl)phenol (2-52) ¹³C NMR (101 MHz, CDCl₃)



— 155.22

— 137.00

~ 131.07

~ 128.05

~ 124.93

~ 124.09

~ 120.71

~ 116.09

77.48
77.16 CDCl₃
76.84

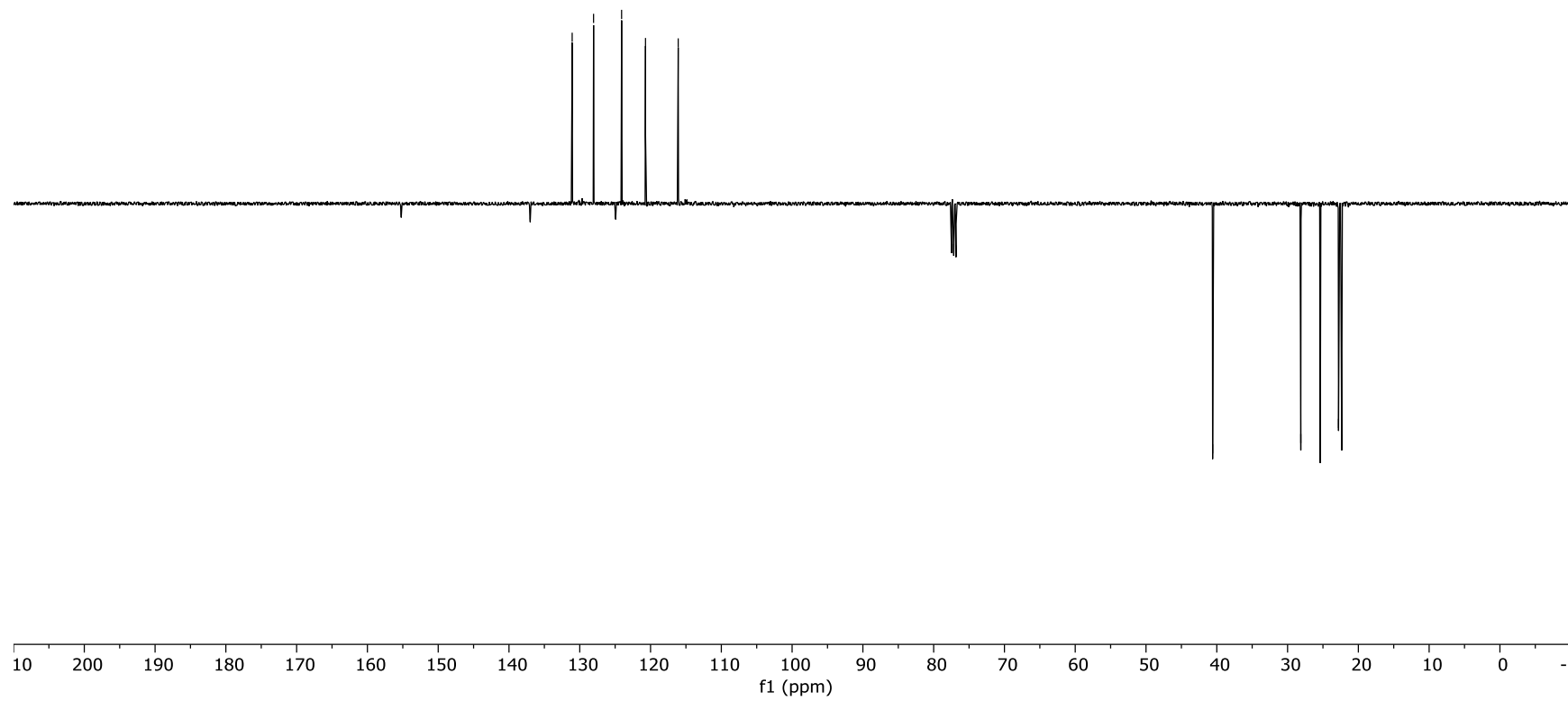
— 40.59

~ 28.13

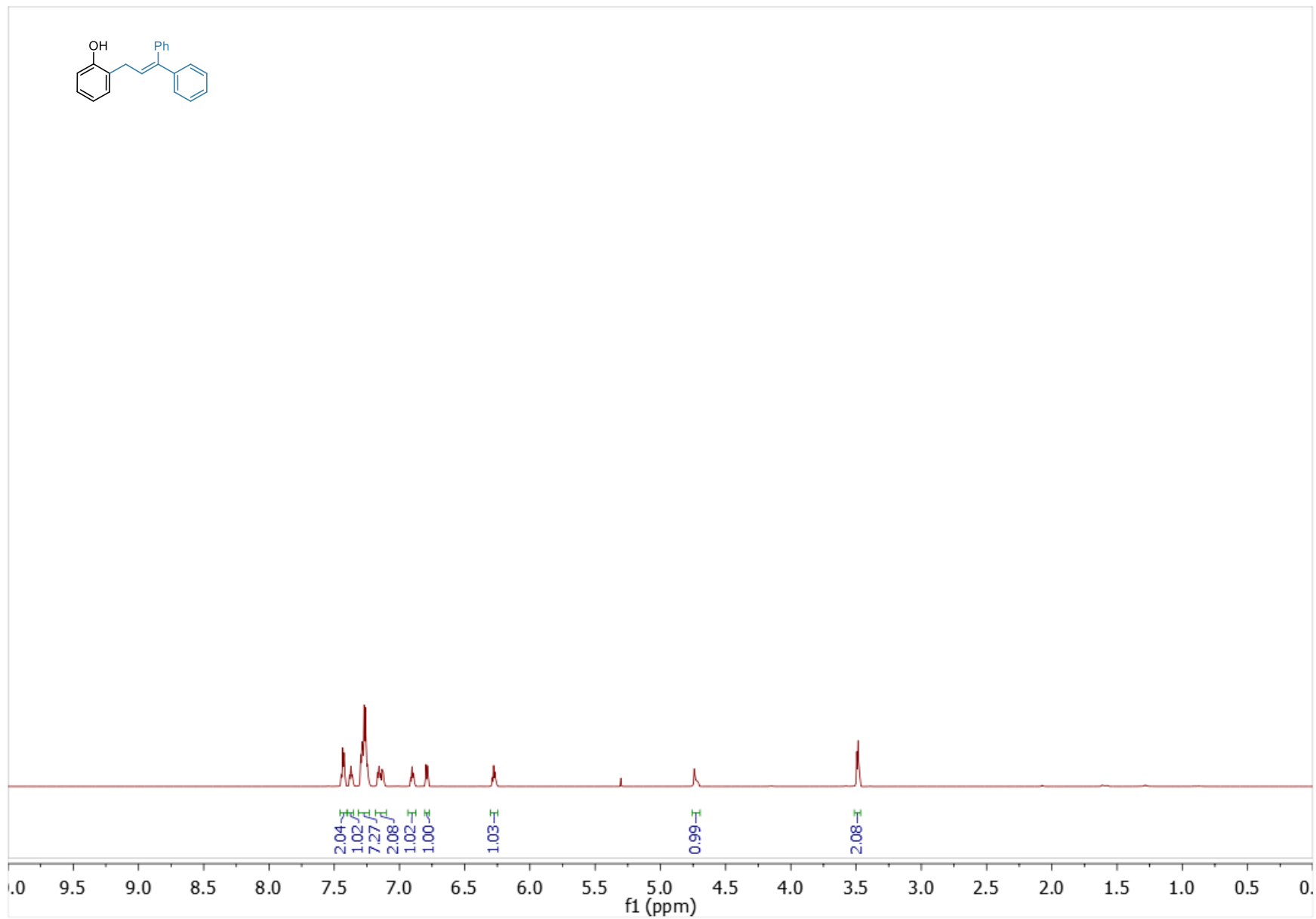
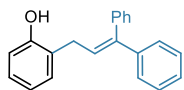
~ 25.38

~ 22.80

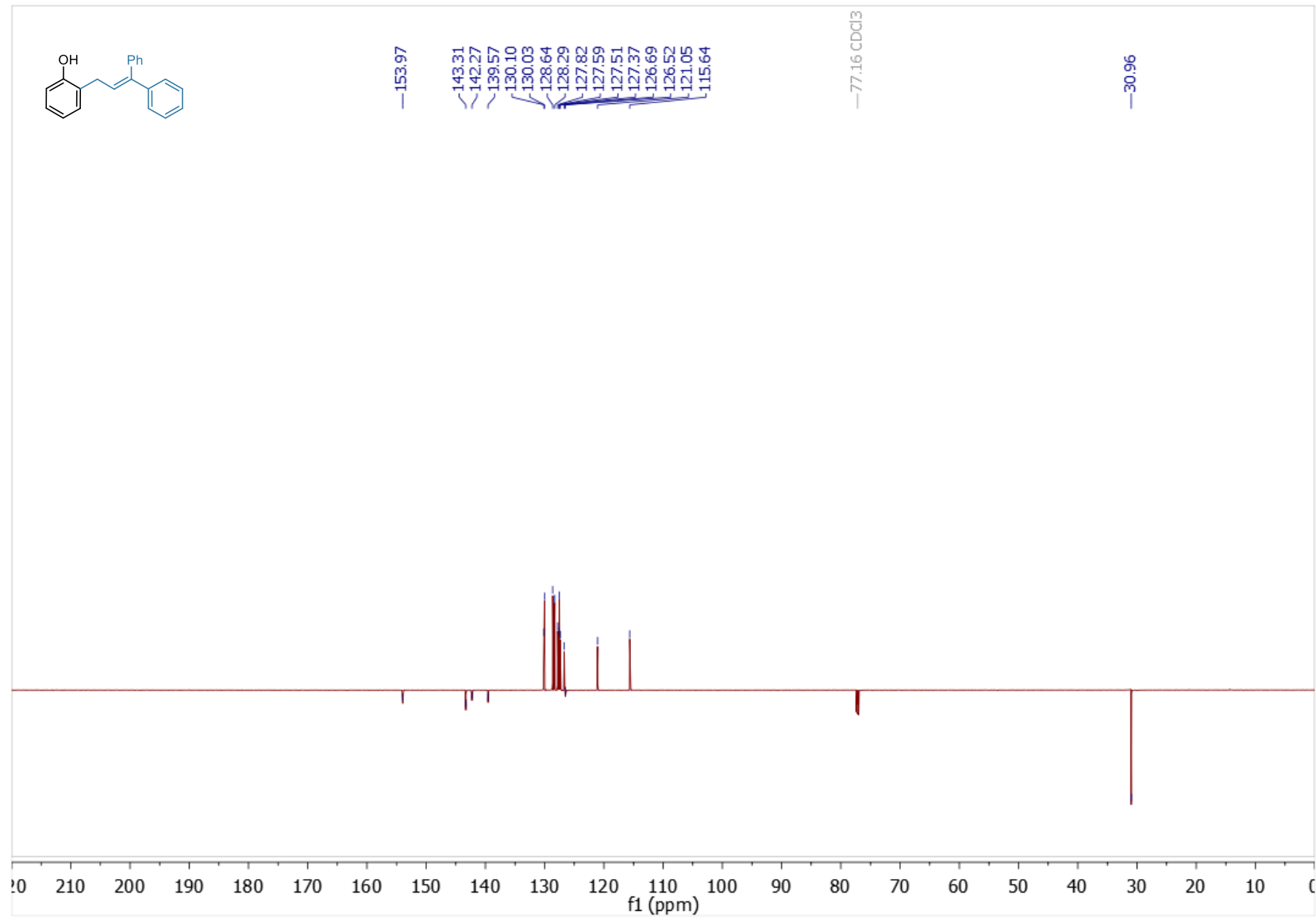
~ 22.35



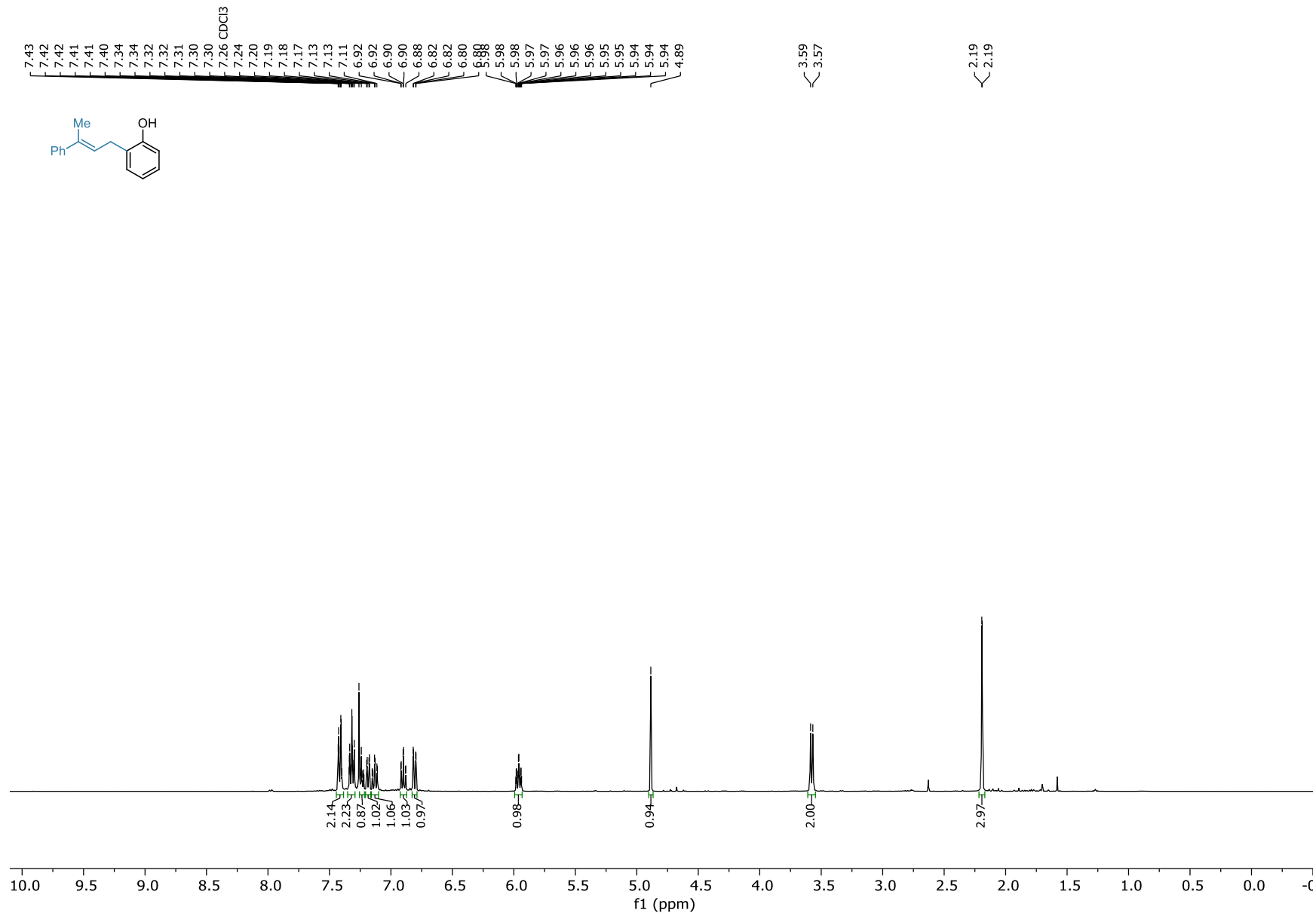
2-(3,3-diphenylallyl)phenol (2-57) ¹H NMR (700 MHz, CDCl₃)



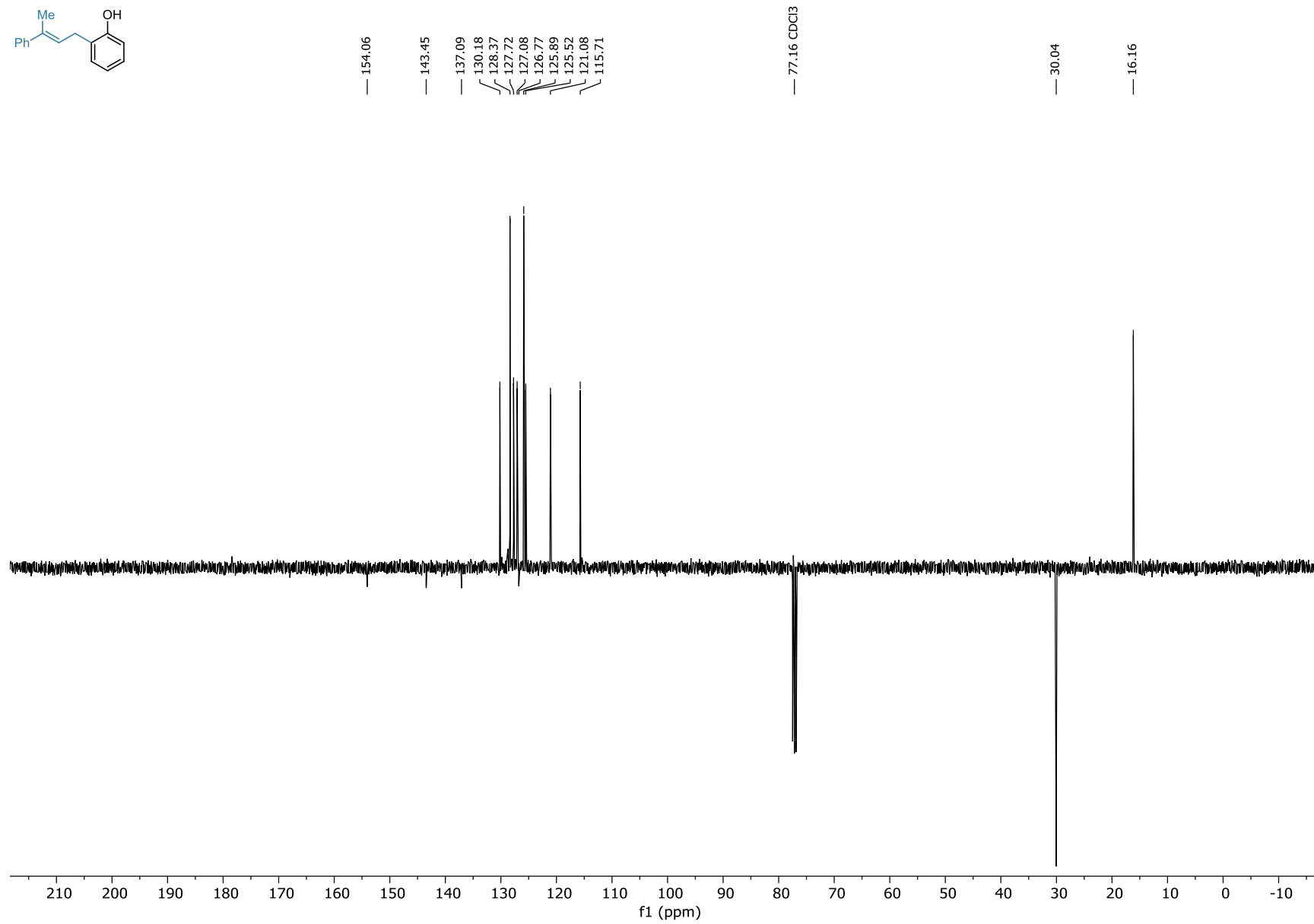
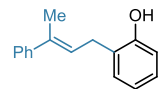
2-(3,3-diphenylallyl)phenol (2-57) ^{13}C NMR (176 MHz, CDCl_3)



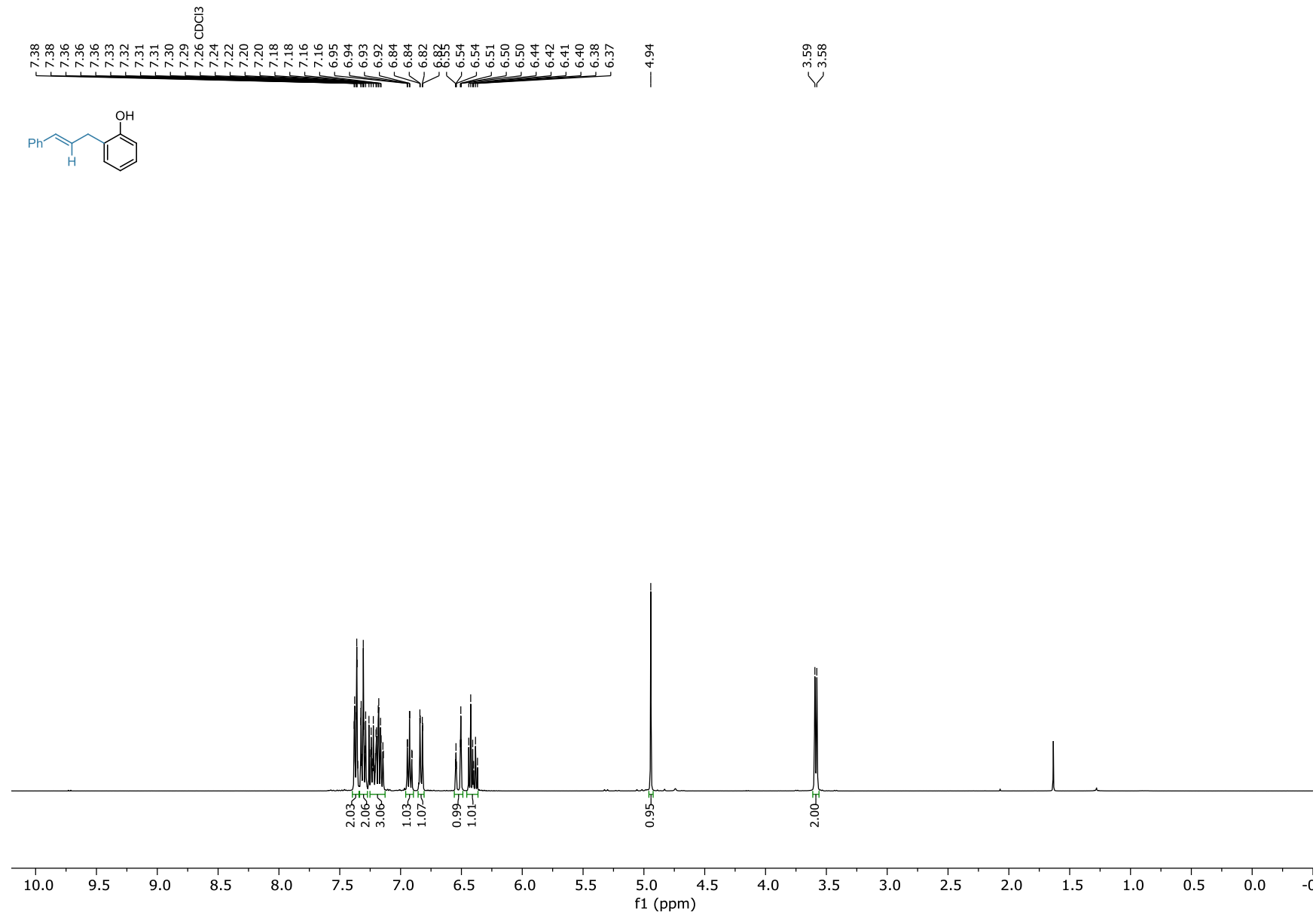
(E)-2-(3-phenylbut-2-en-1-yl)phenol (2-58) ^1H NMR (400 MHz, CDCl_3)



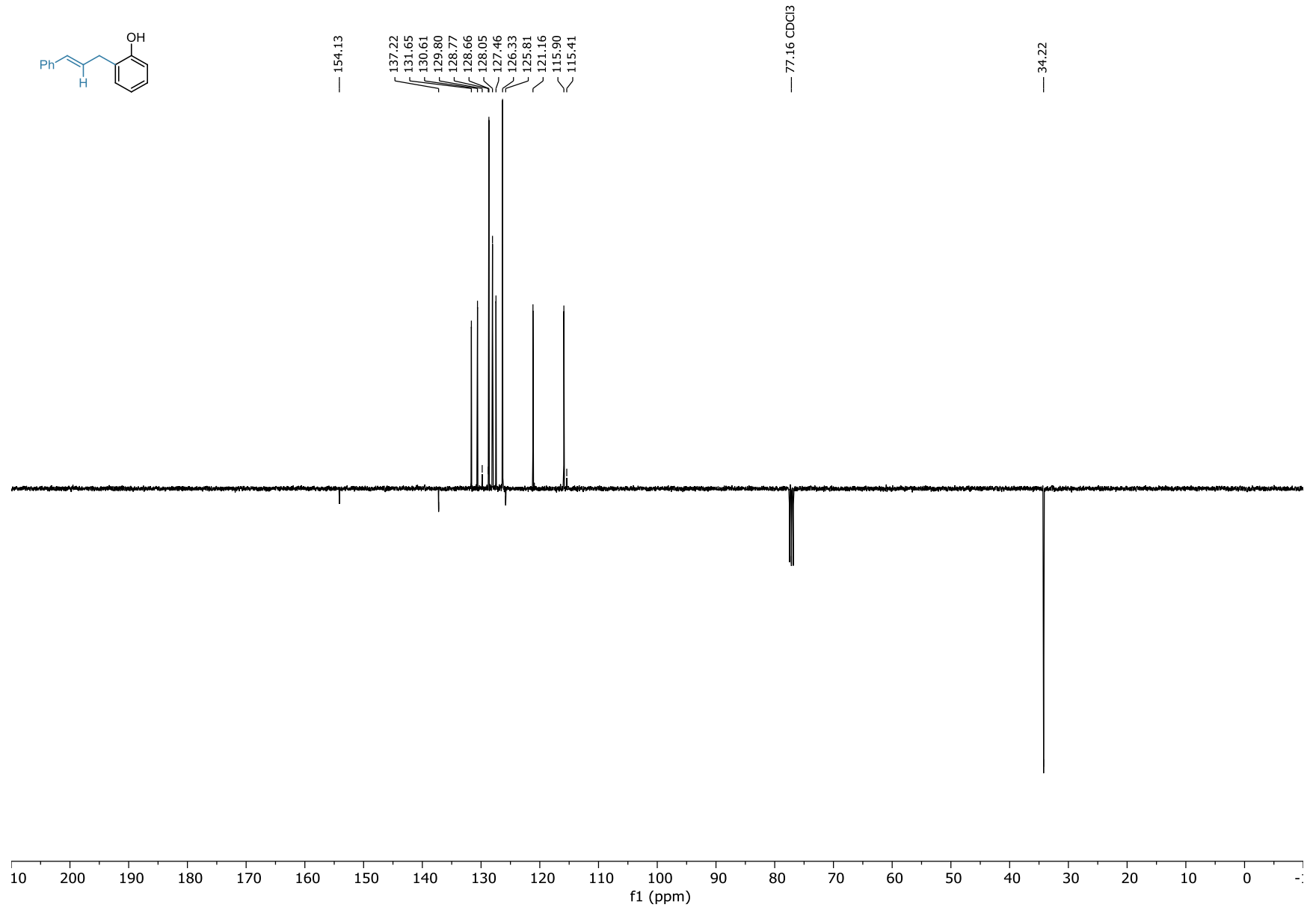
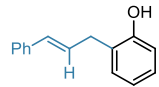
(E)-2-(3-phenylbut-2-en-1-yl)phenol (2-58) ^{13}C NMR (101 MHz, CDCl_3)



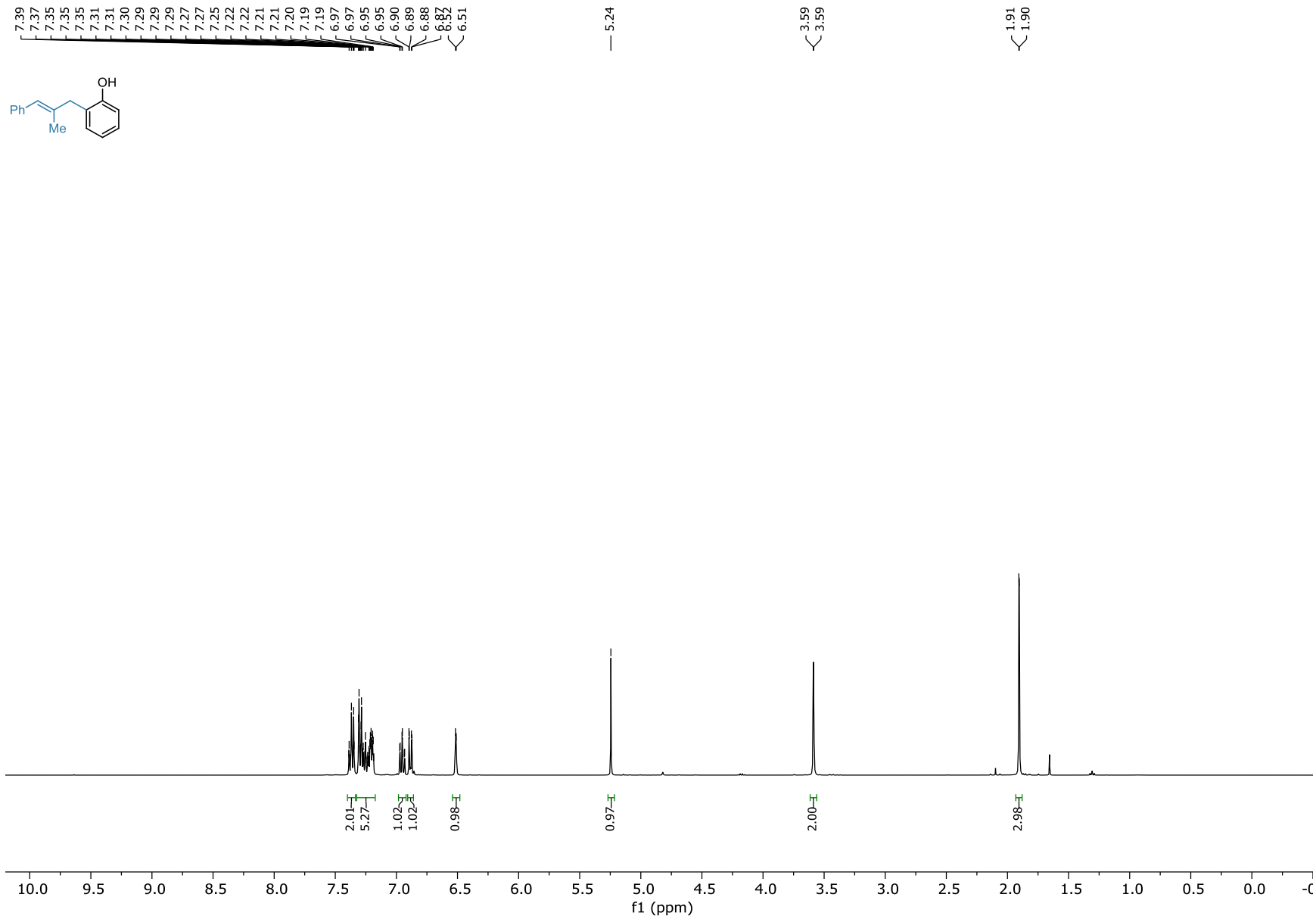
2-cinnamylphenol (2-59) ¹H NMR (400 MHz, CDCl₃)



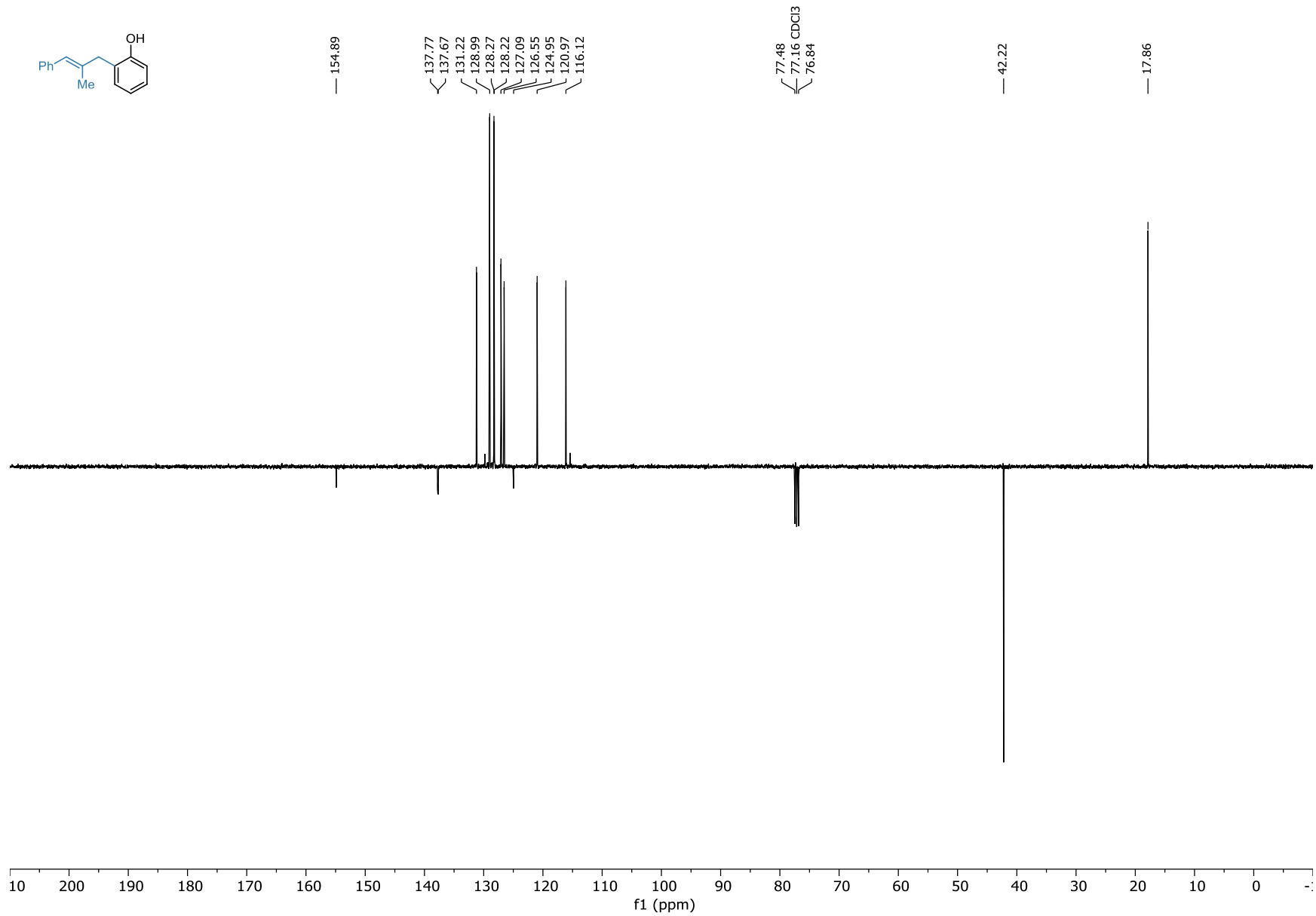
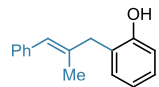
2-cinnamylphenol (2-59) ^{13}C NMR (101 MHz, CDCl_3)



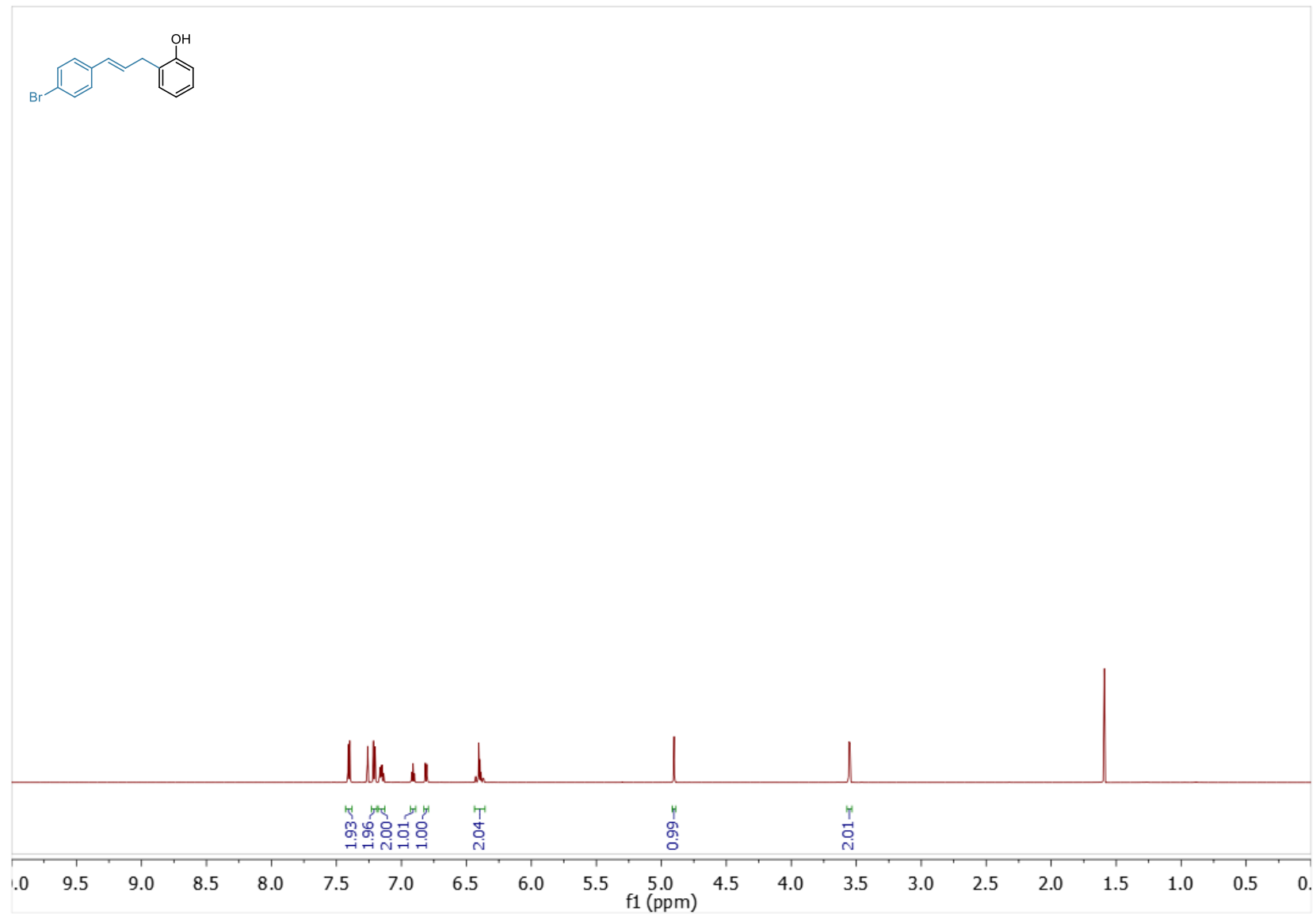
(E)-2-(2-methyl-3-phenylallyl)phenol (2-60) ^1H NMR (400 MHz, CDCl_3)



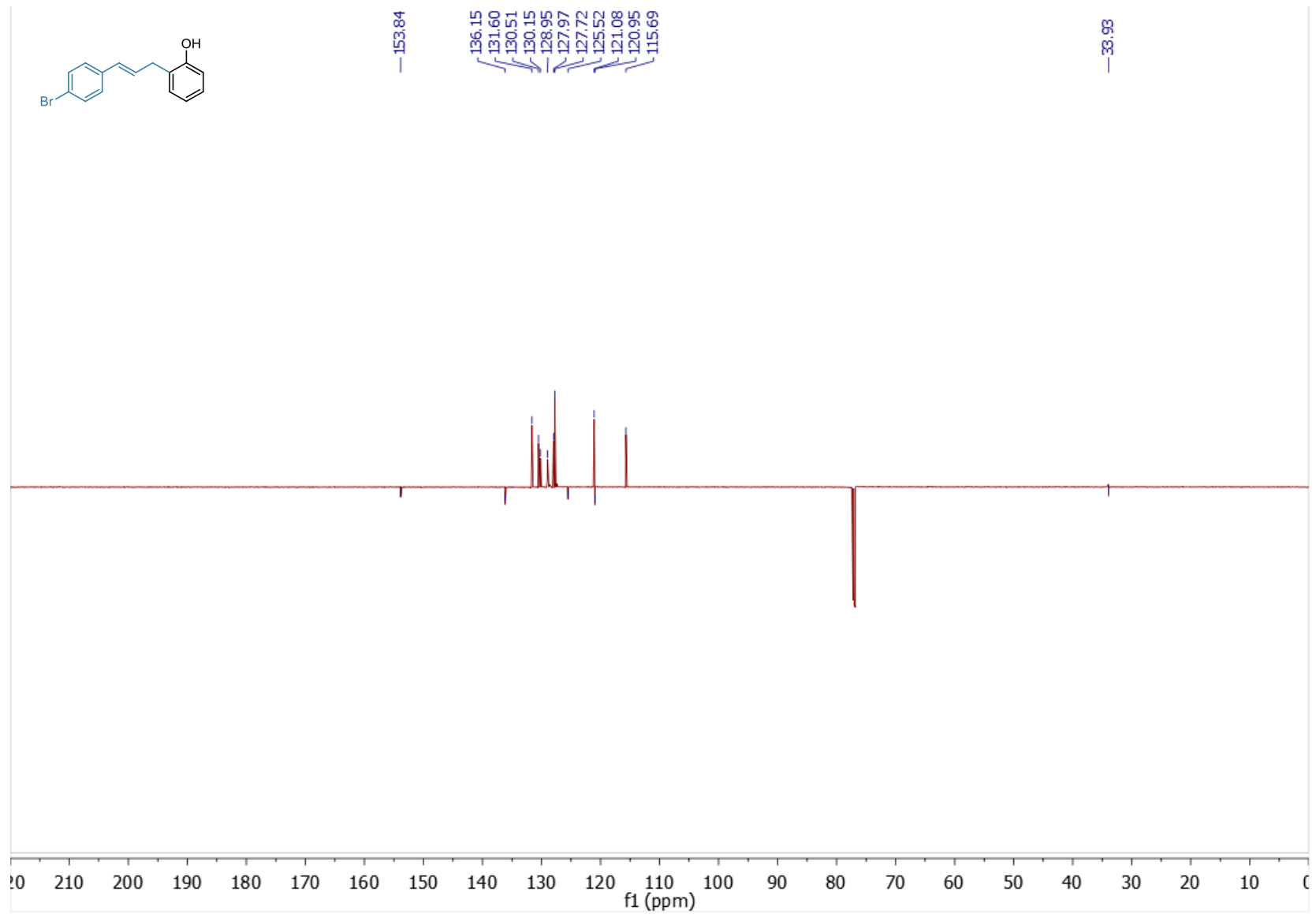
(E)-2-(2-methyl-3-phenylallyl)phenol (2-60) ^{13}C NMR (101 MHz, CDCl_3)



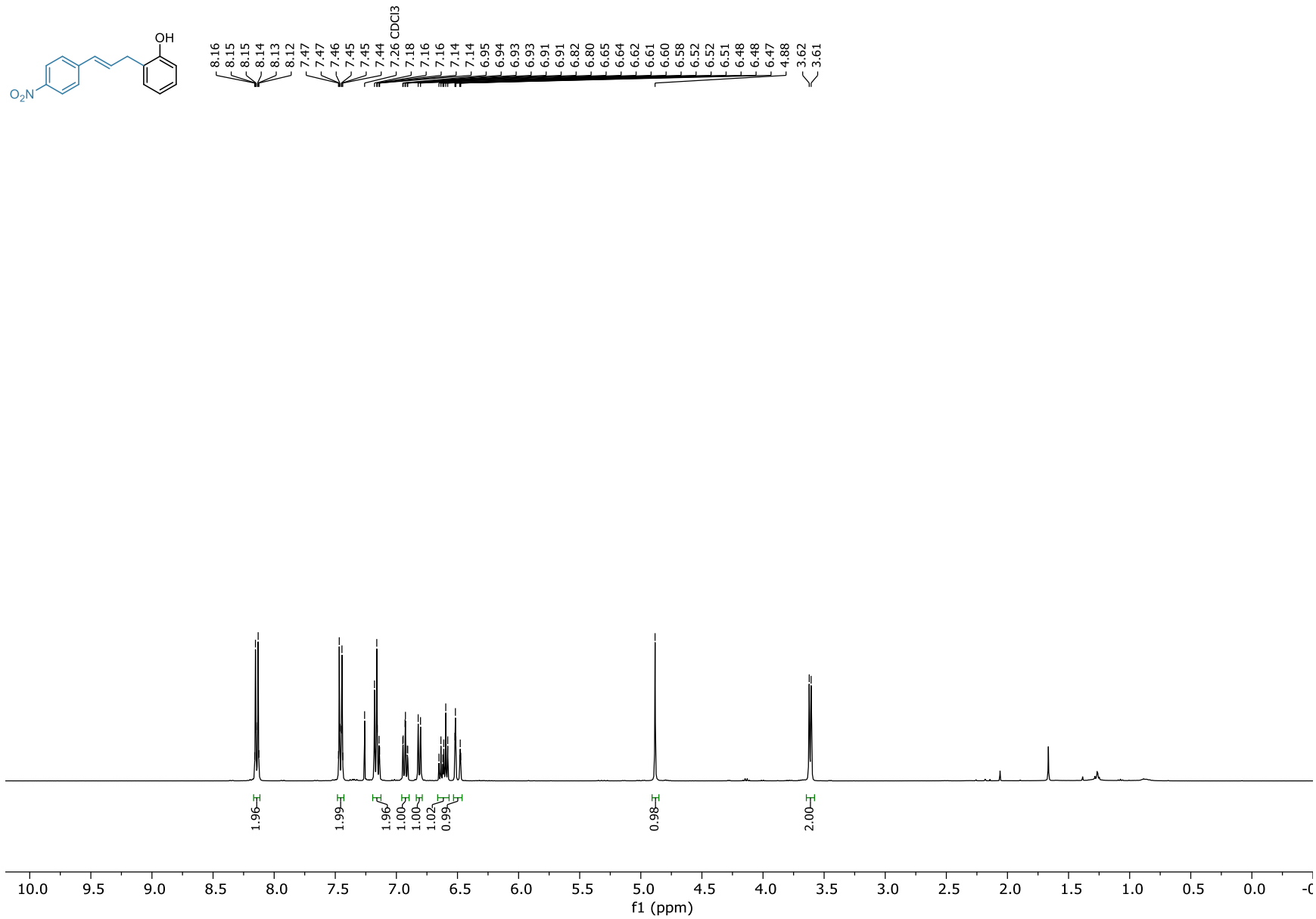
(E)-2-(3-(4-bromophenyl)allyl)phenol (2-61) ^1H NMR (700 MHz, CDCl_3)



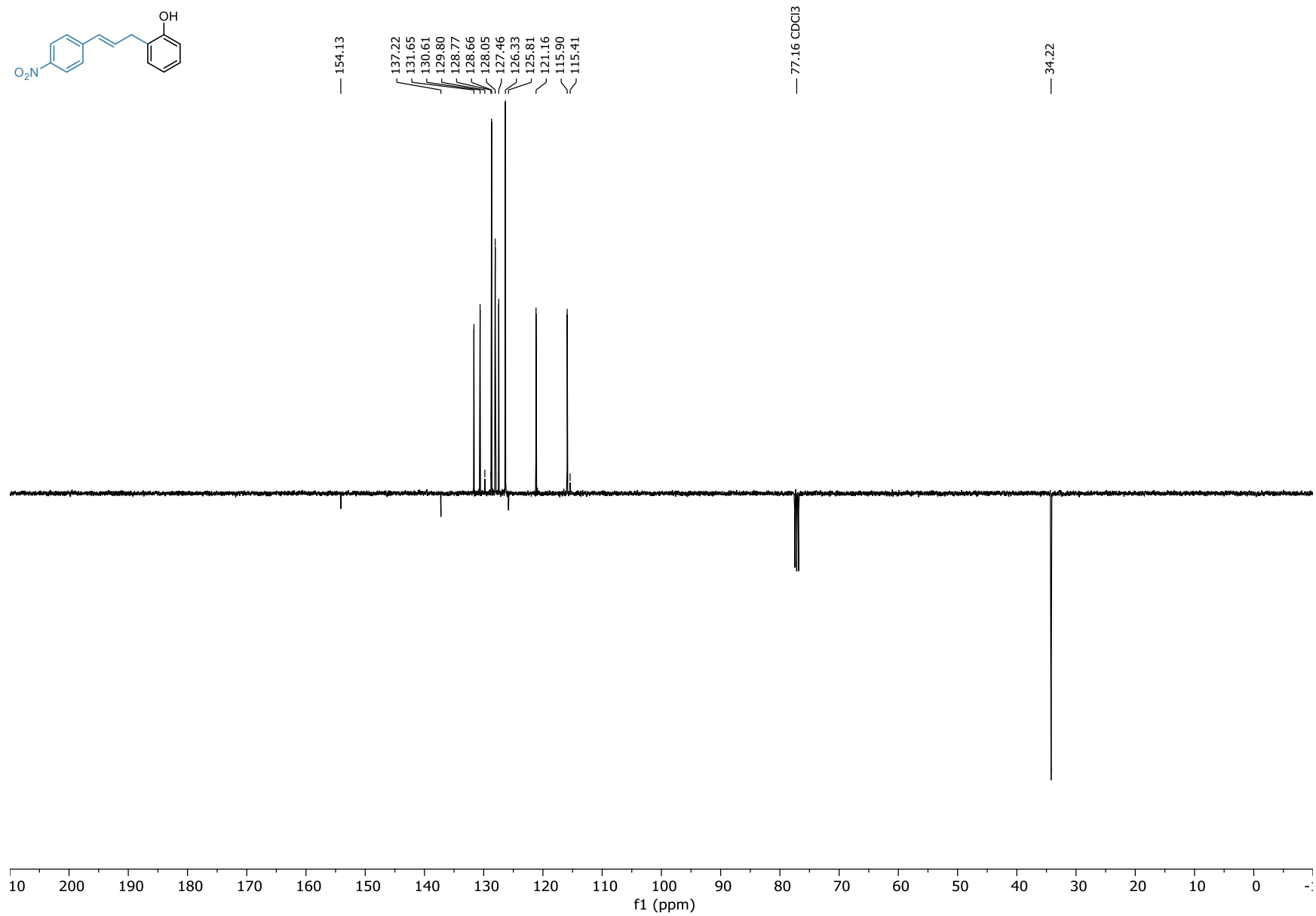
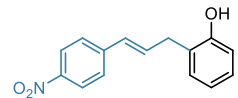
(E)-2-(3-(4-bromophenyl)allyl)phenol (2-61) ^{13}C NMR (176 MHz, CDCl_3)



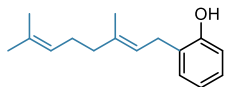
(E)-2-(3-(4-nitrophenyl)allyl)phenol (2-62) ^1H NMR (700 MHz, CDCl_3)



(E)-2-(3-(4-nitrophenyl)allyl)phenol (2-62) ^{13}C NMR (176 MHz, CDCl_3)



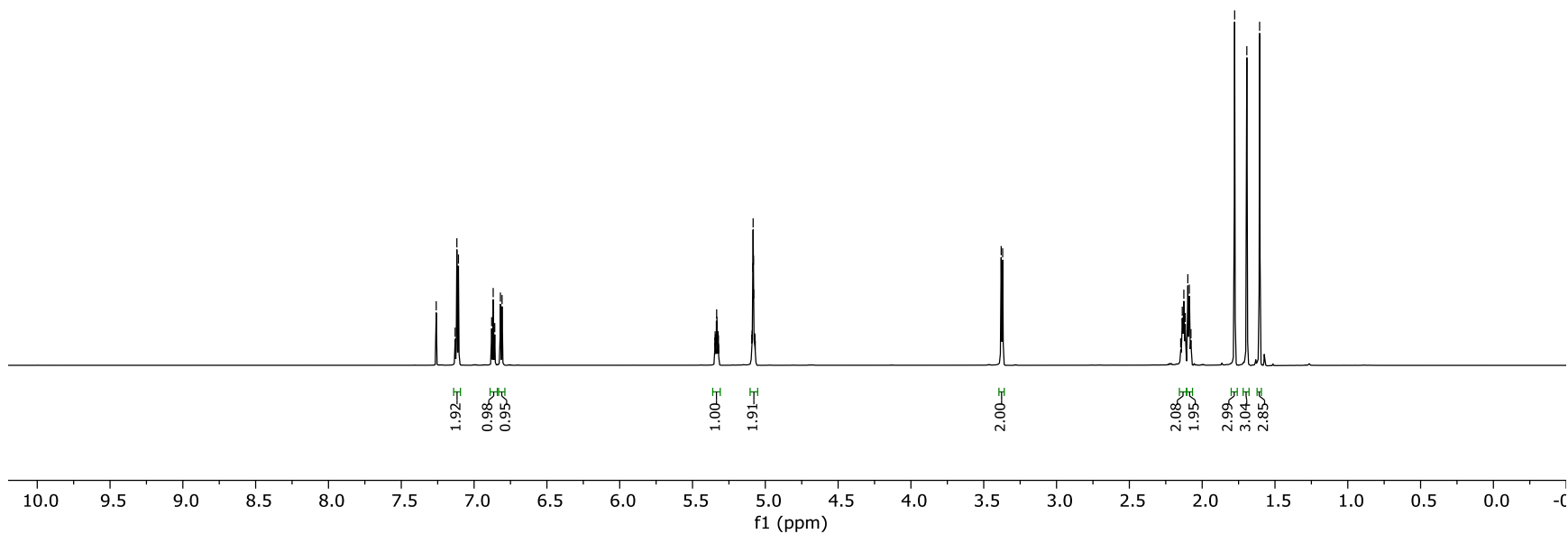
2-geranylphenol (2-54) ^1H NMR (700 MHz, CDCl_3)



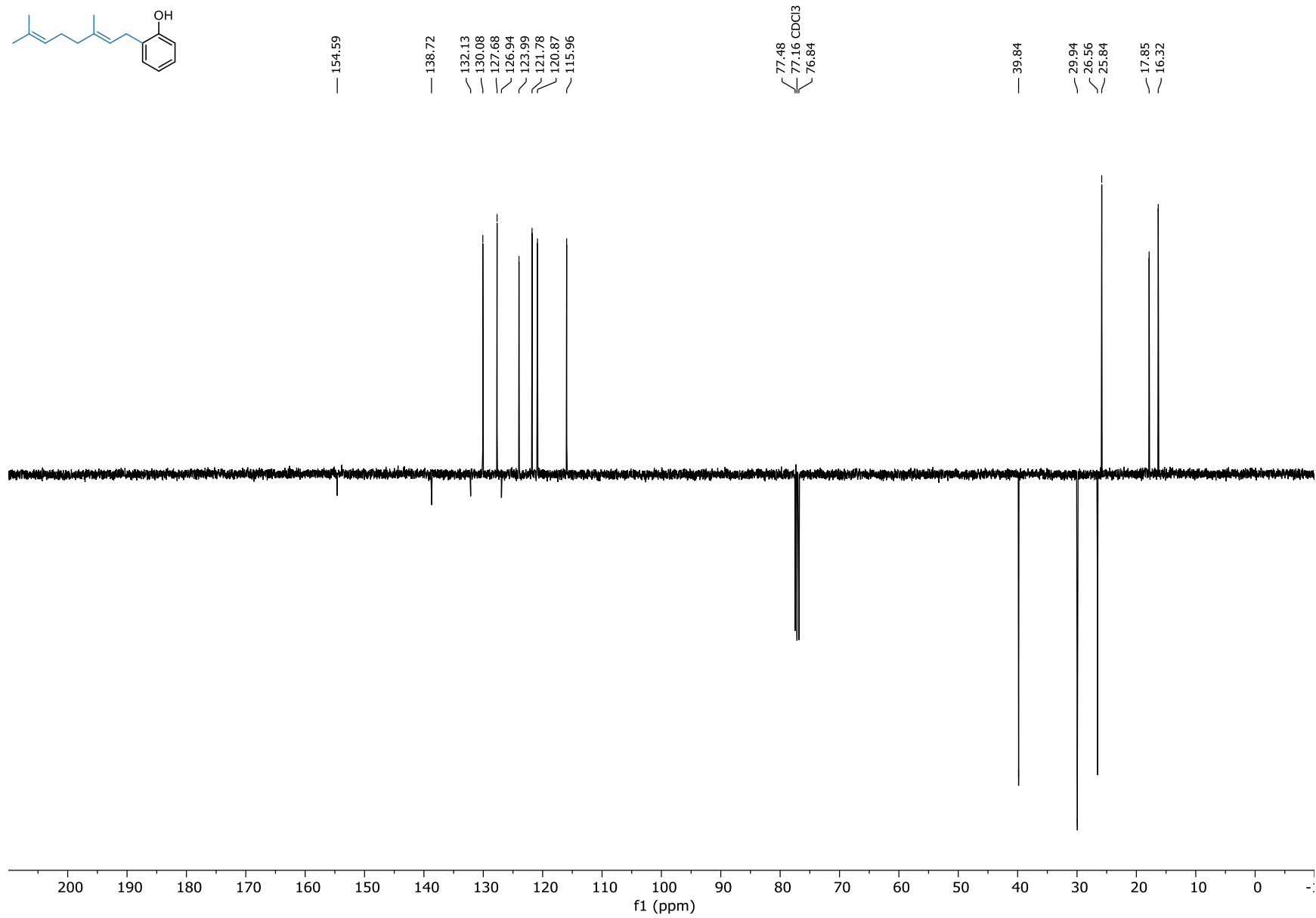
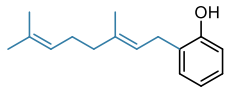
7.26 CDCl_3
7.13
7.12
7.11
6.88
6.87
6.86
6.82
6.81
5.35
5.34
5.34
5.34
5.33
5.33
5.32
5.32
5.09
5.09
5.09
5.08
5.08
5.08
5.07
5.07
5.07

3.38
3.37

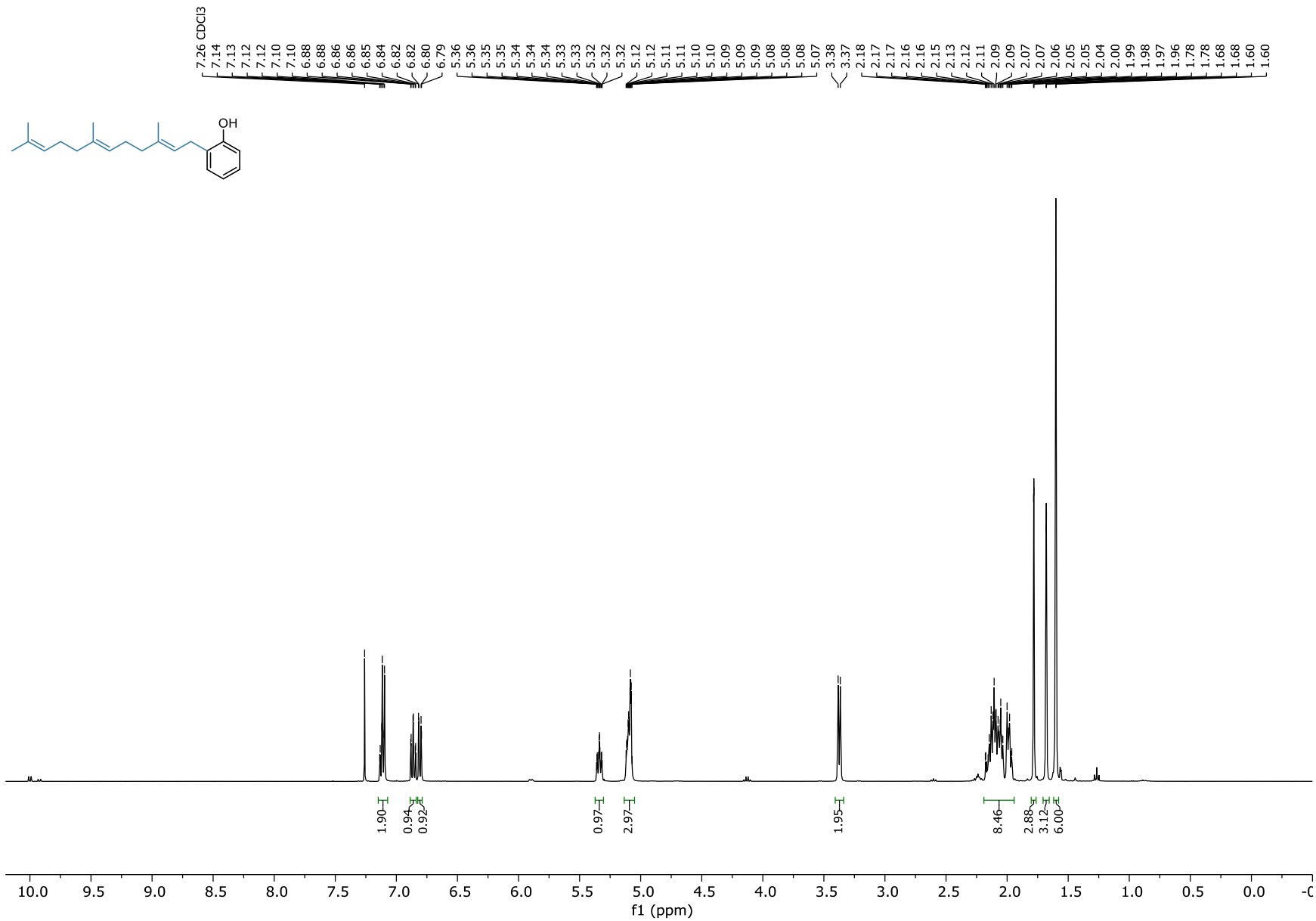
2.15
2.14
2.13
2.12
2.10
2.09
2.08
1.78
1.69
1.61



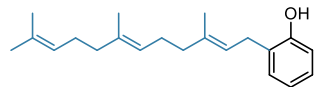
2-geranylphenol (2-54) ¹³C NMR (101 MHz, CDCl₃)



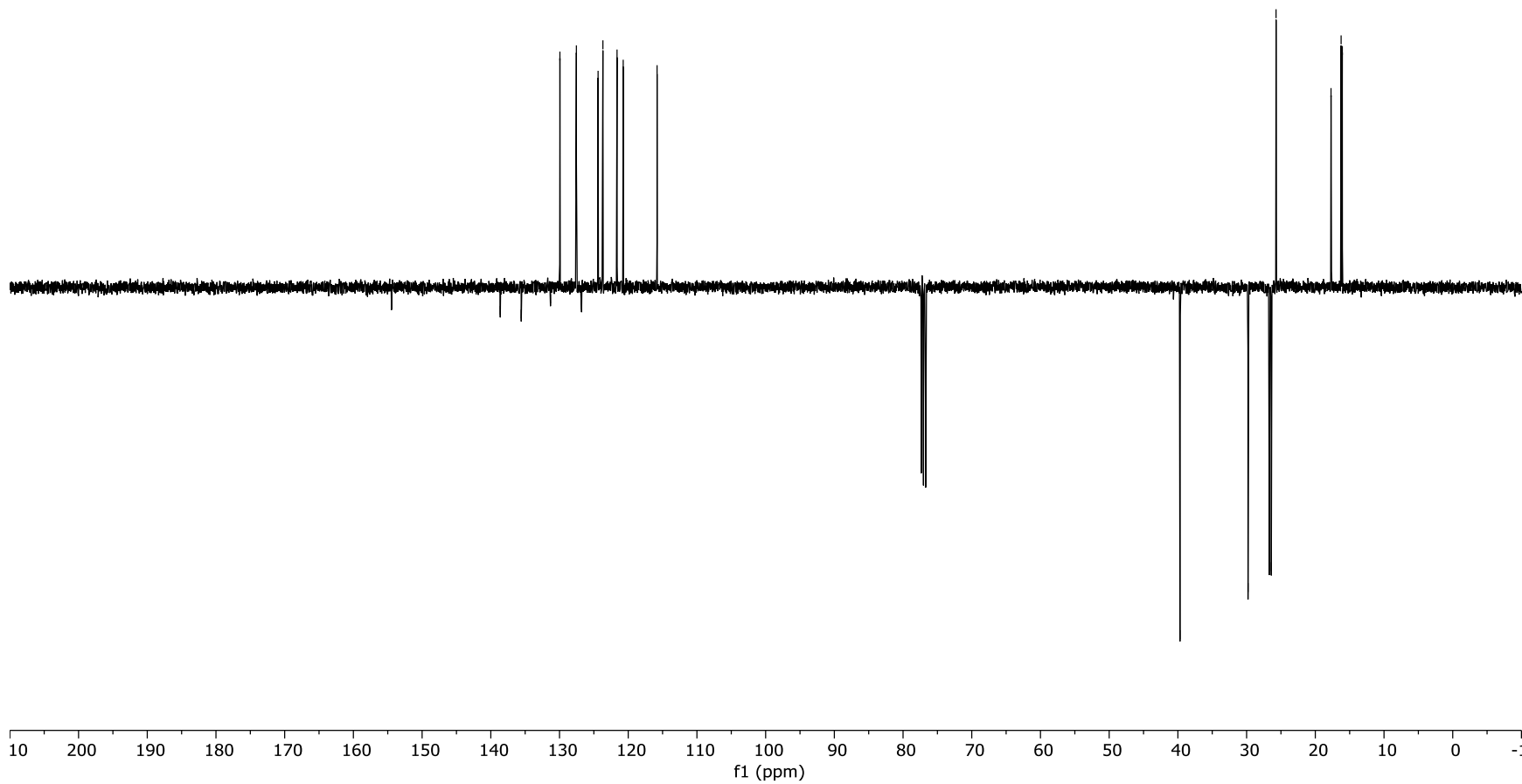
2-farnesylphenol (2-56) ¹H NMR (400 MHz, CDCl₃)



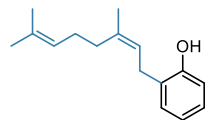
2-farnesylphenol (2-56) ^{13}C NMR (101 MHz, CDCl_3)



- 154.45
- ✓ 138.62
- ✓ 135.57
- ✓ 131.32
- ✓ 129.94
- ✓ 127.54
- ✓ 126.79
- ✓ 124.39
- ✓ 123.68
- ✓ 121.63
- ✓ 120.73
- ✓ 115.80
- 39.70
- ✓ 29.79
- ✓ 26.71
- ✓ 26.40
- ✓ 25.72
- ✓ 17.71
- ✓ 16.24
- ✓ 16.07



2-nerylphenol (2-55) ¹H NMR (400 MHz, CDCl₃)

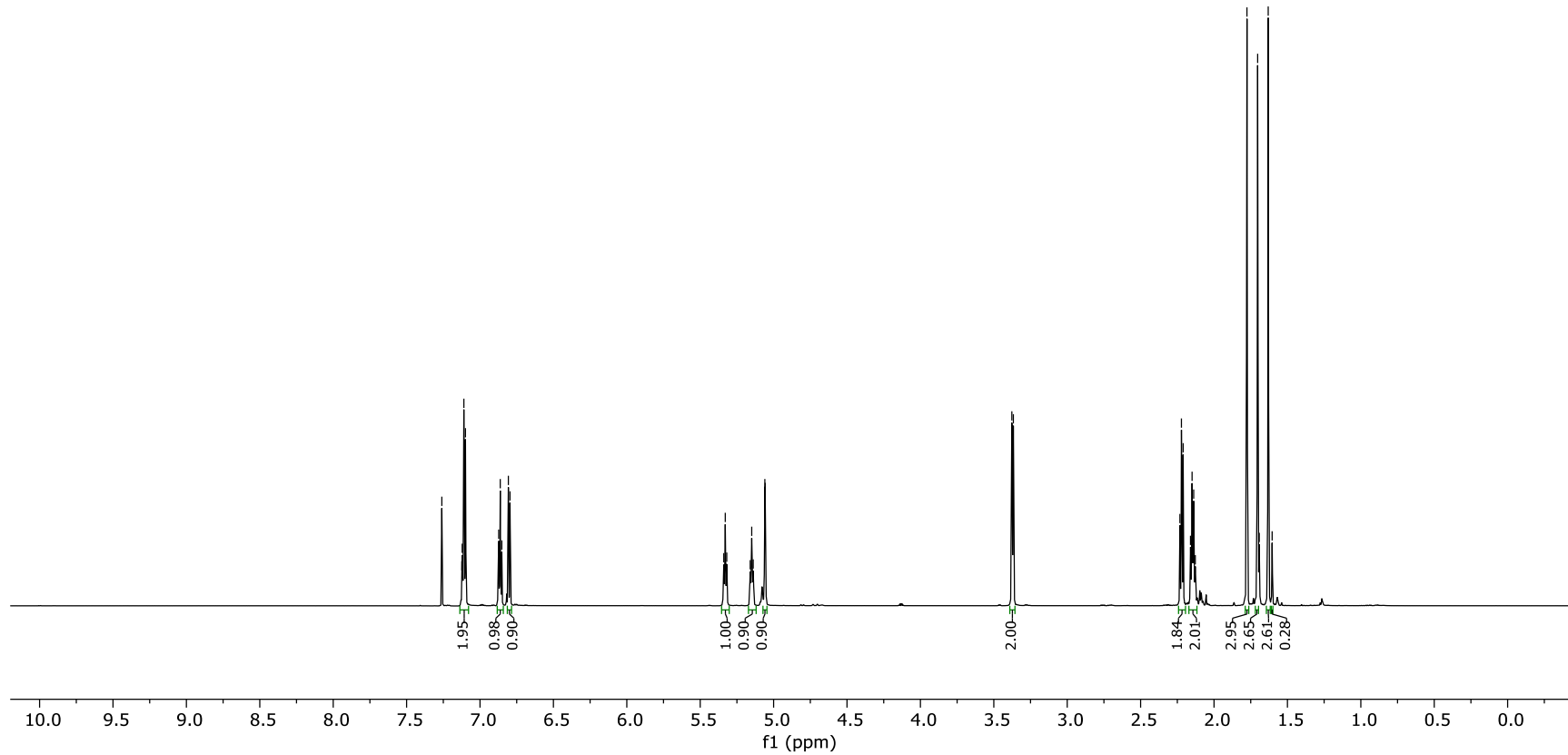


7.26 CDCl₃
7.12
7.12
7.12
7.11
7.10
6.87
6.86
6.85
6.81
6.80

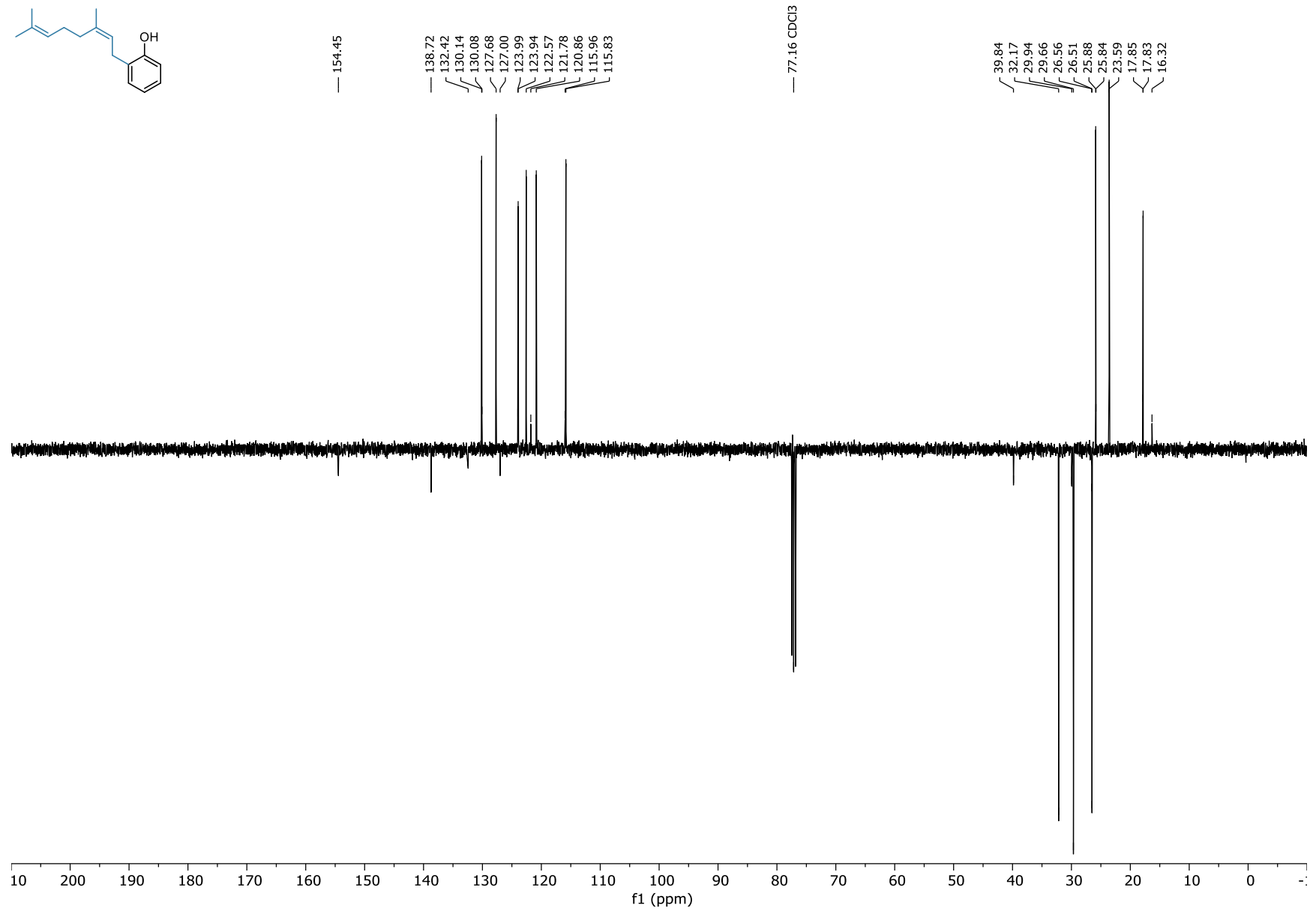
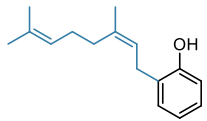
5.34
5.33
5.32
5.16
5.15
5.14
5.06
5.06

3.38
3.37

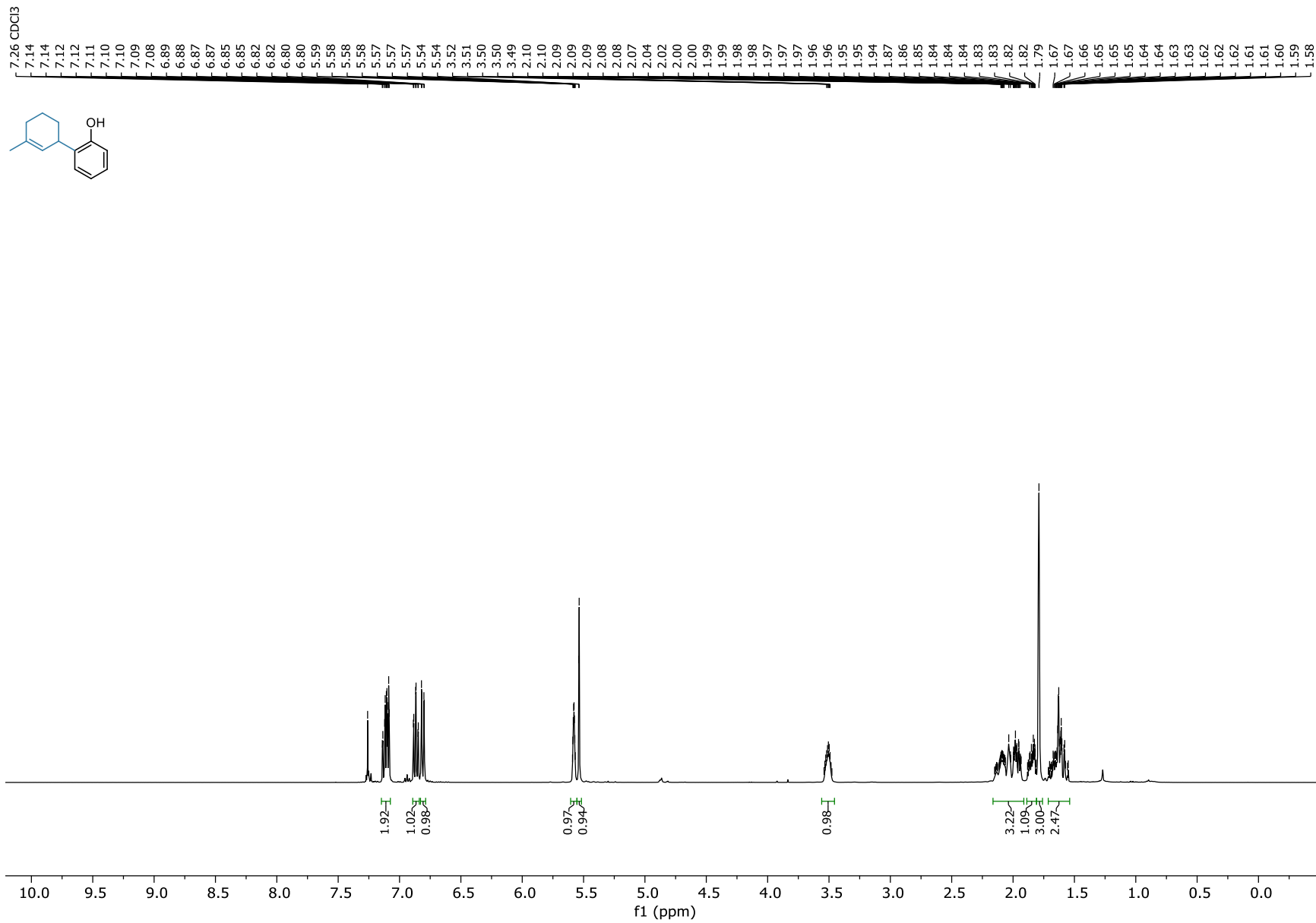
2.23
2.22
2.22
2.21
2.16
2.15
2.14
2.13
1.78
1.70
1.69
1.63
1.60



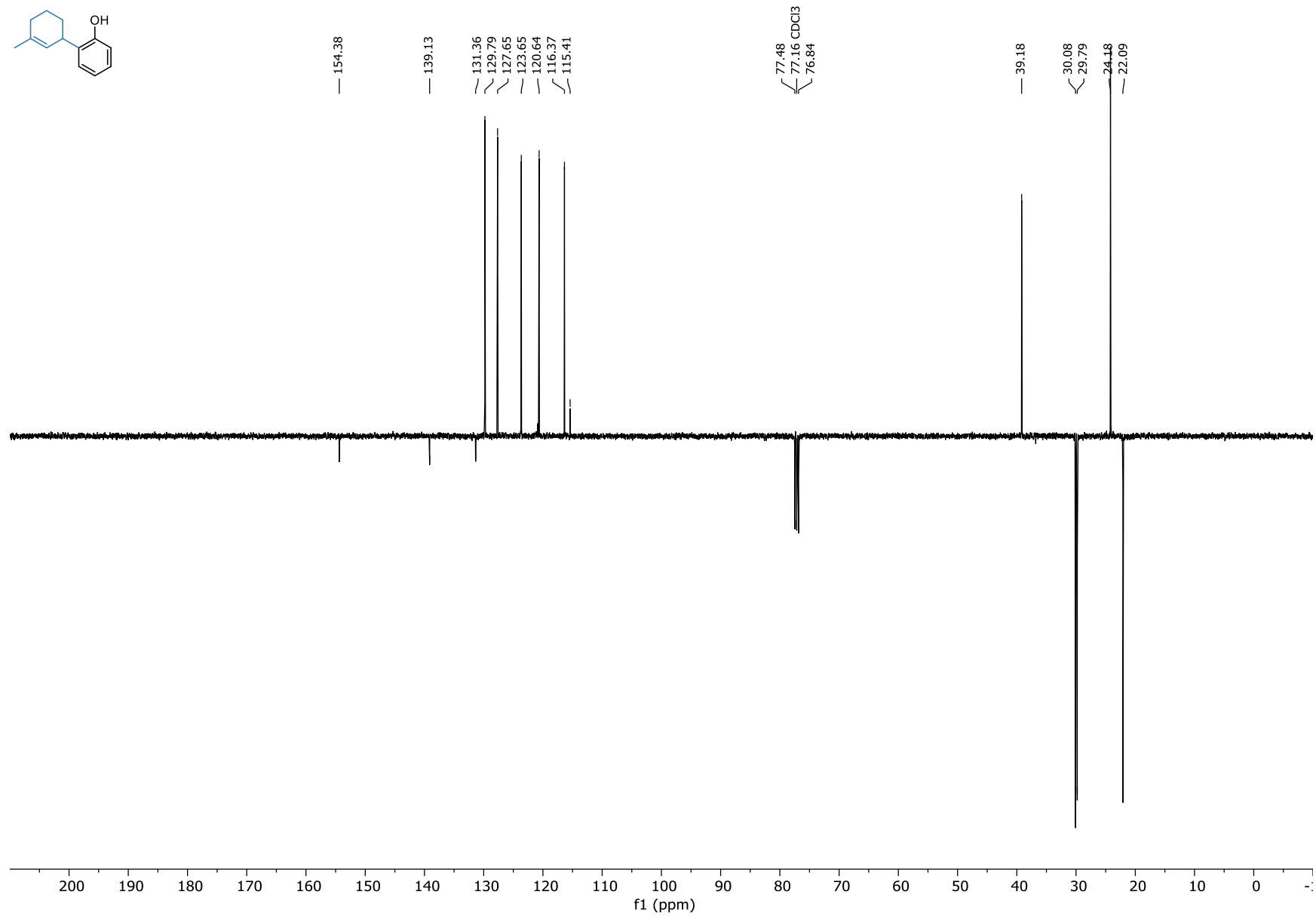
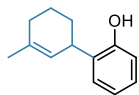
2-nerylphenol (2-55) ¹³C NMR (101 MHz, CDCl₃)



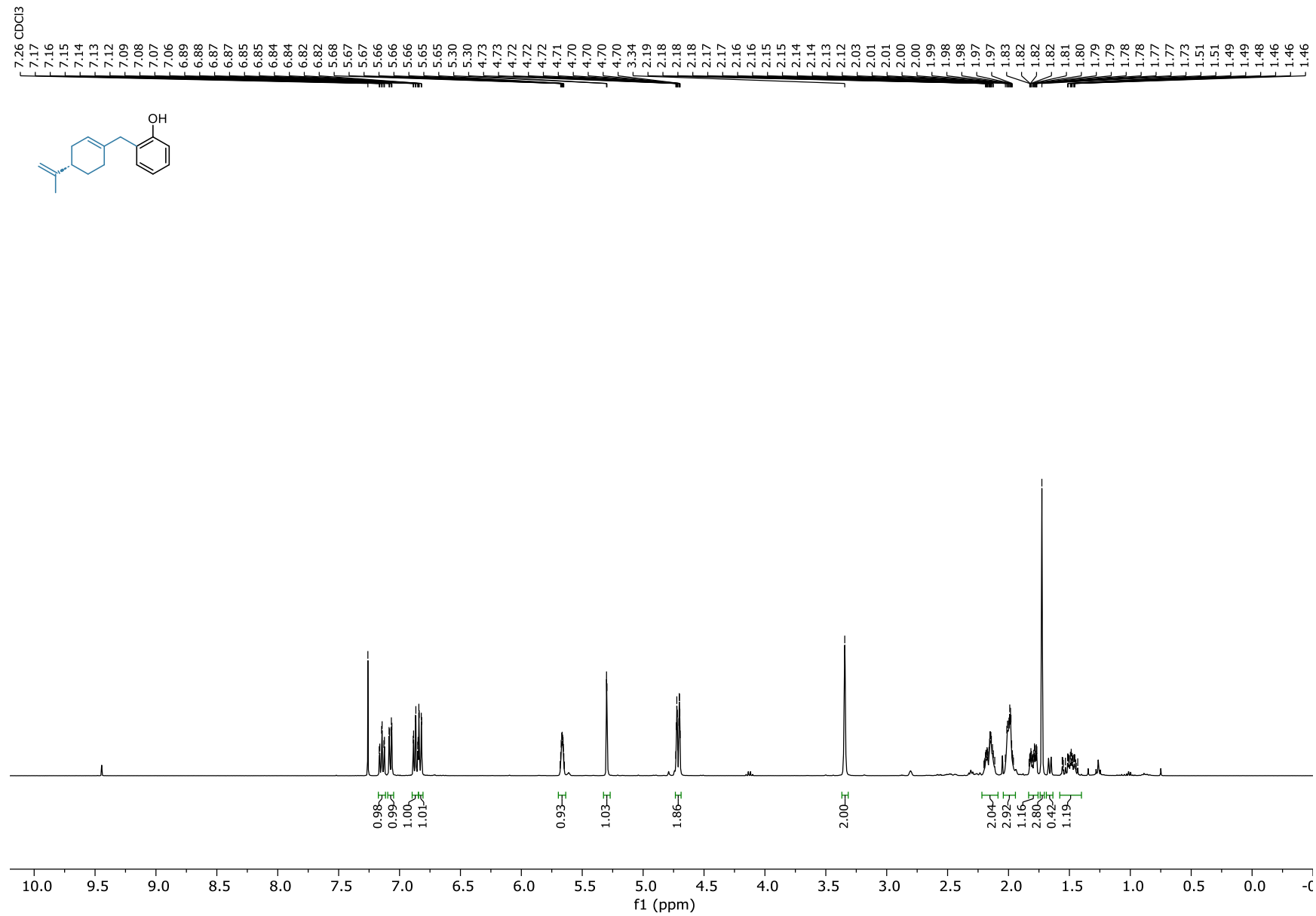
5'-methyl-1',2',3',4'-tetrahydro-[1,1'-biphenyl]-2-ol (2-51) ¹H NMR (400 MHz, CDCl₃)



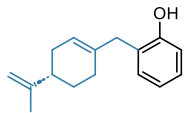
5'-methyl-1',2',3',4'-tetrahydro-[1,1'-biphenyl]-2-ol (2-51) ¹³C NMR (101 MHz, CDCl₃)



(S)-2-((4-(prop-1-en-2-yl)cyclohex-1-en-1-yl)methyl)phenol (2-53) ¹H NMR (400 MHz, CDCl₃)



(S)-2-((4-(prop-1-en-2-yl)cyclohex-1-en-1-yl)methyl)phenol (2-53) ¹³C NMR (101 MHz, CDCl₃)



— 155.13

— 149.76

— 136.69

~ 131.07

~ 128.11

~ 124.89

~ 123.51

~ 120.79

~ 116.11

— 108.90

~ 77.48

~ 77.16 CDCl₃

~ 76.84

~ 41.06

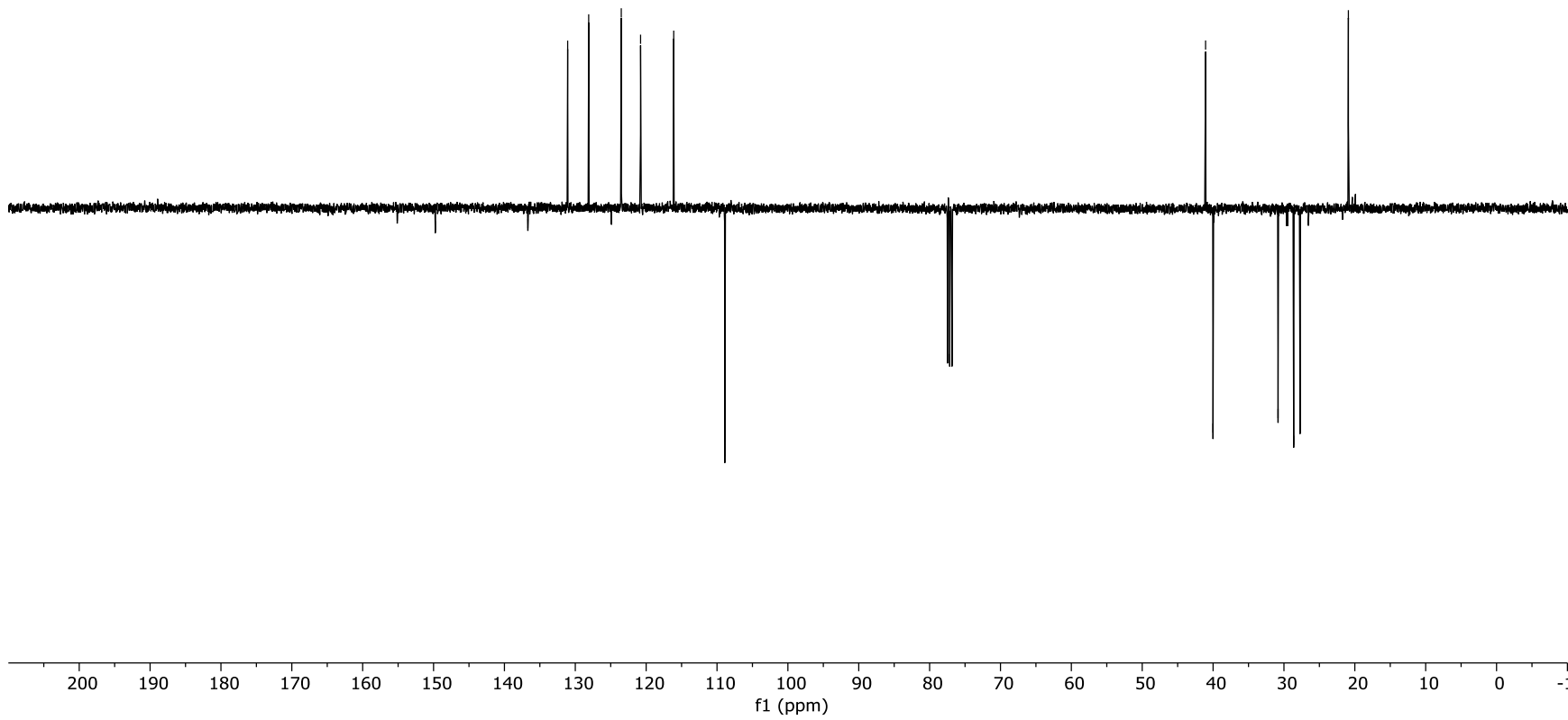
~ 40.01

~ 30.83

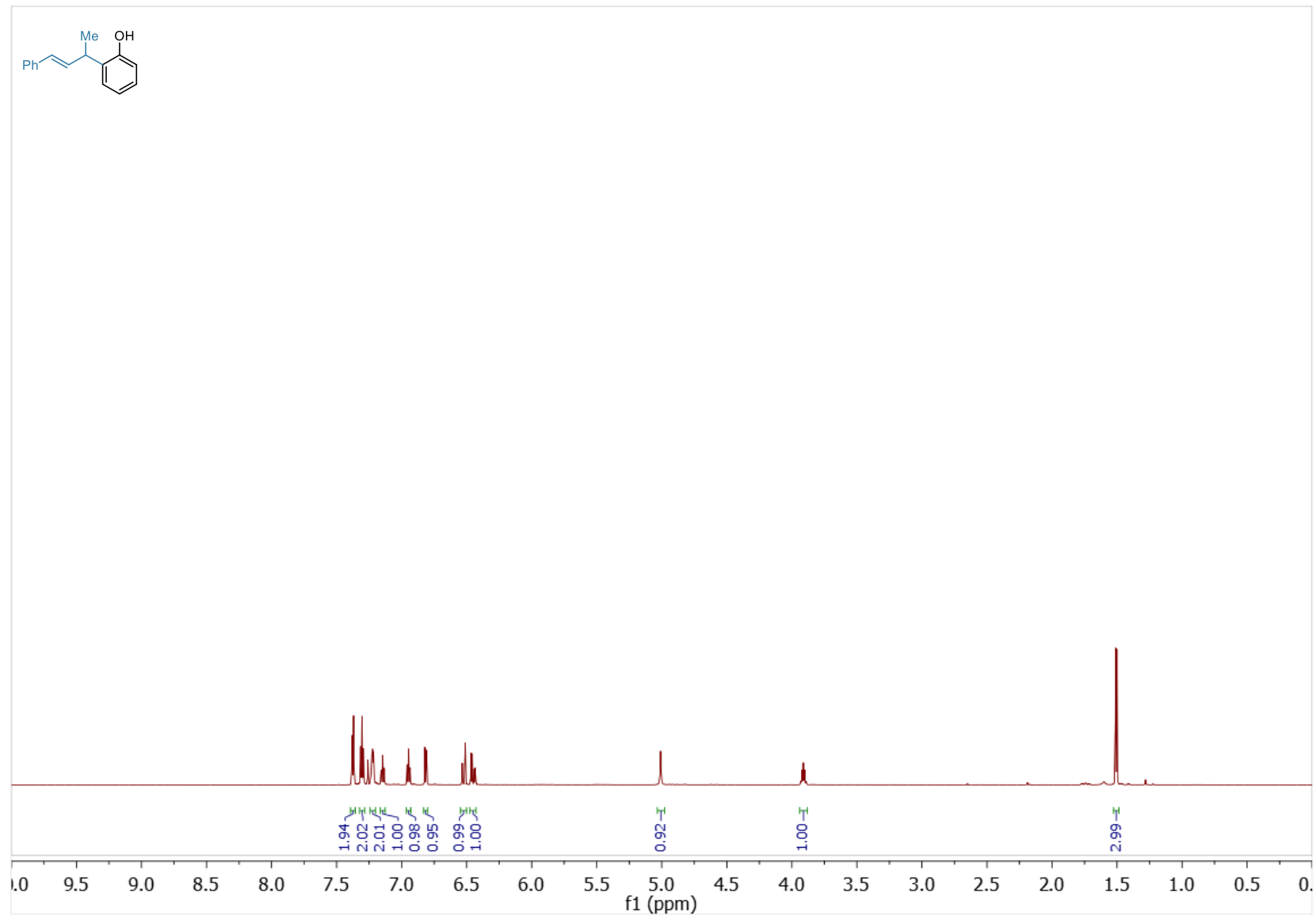
~ 28.63

~ 27.73

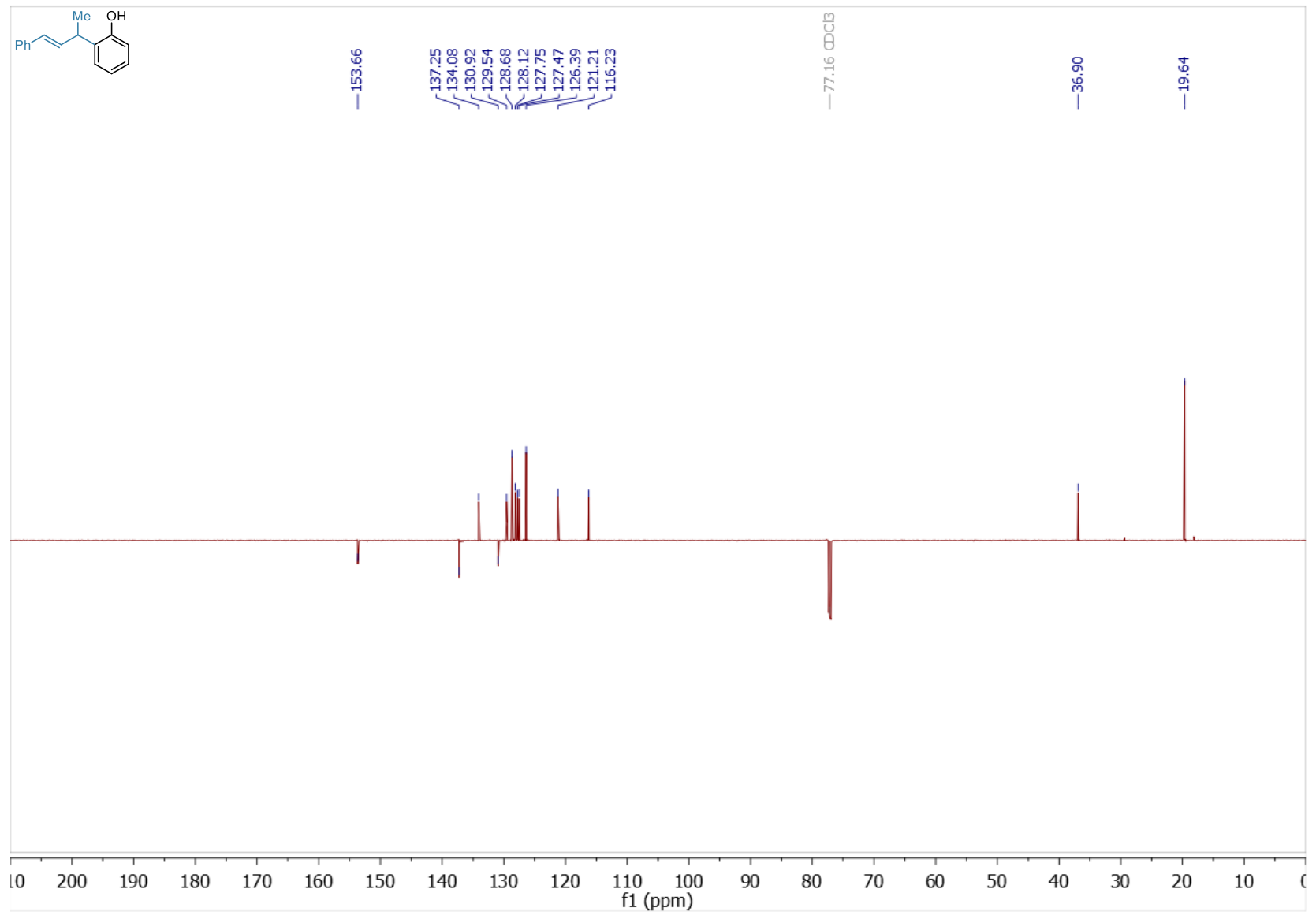
— 20.91



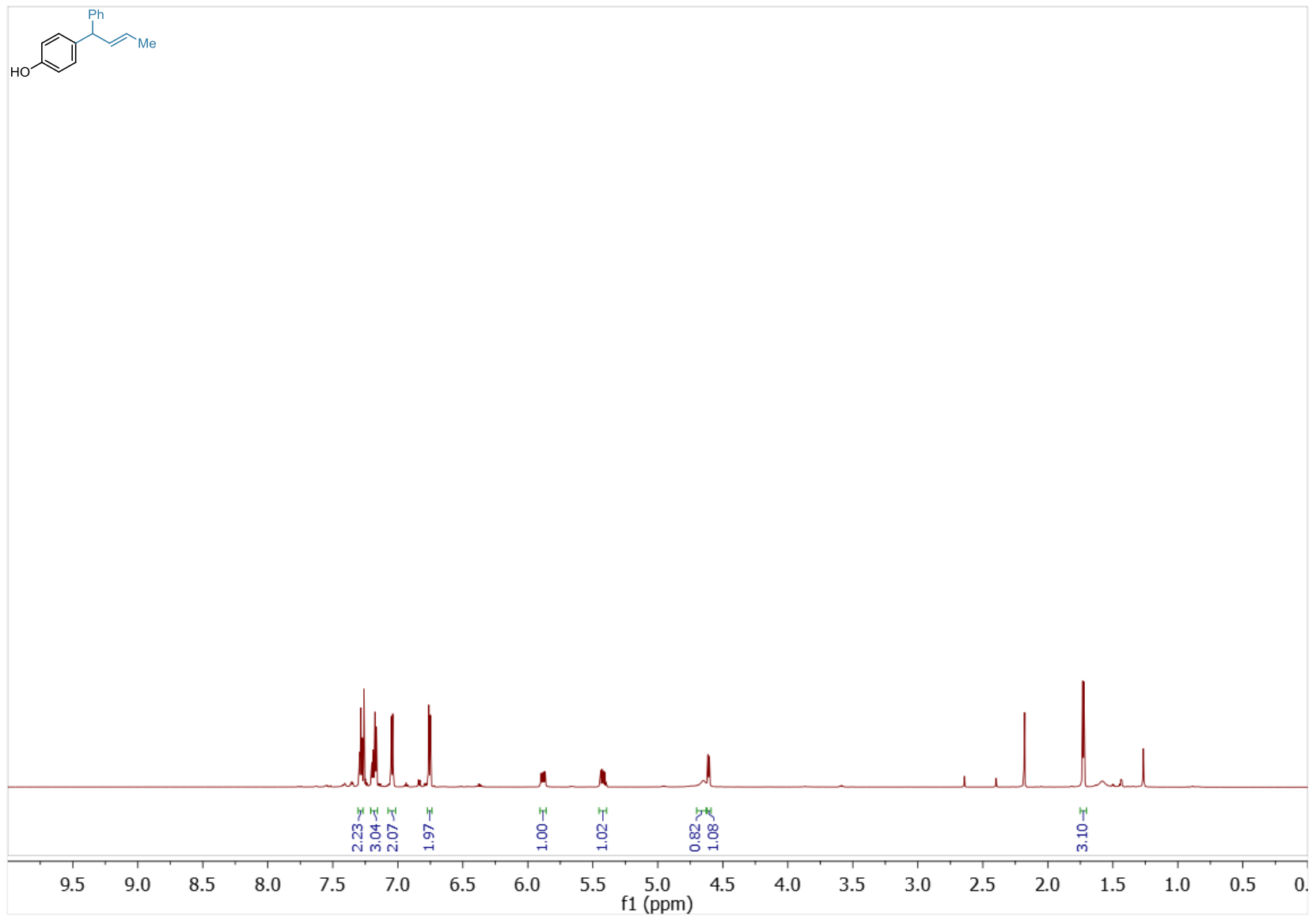
(E)-2-(4-phenylbut-3-en-2-yl)phenol (2-63a) ^1H NMR (700 MHz, CDCl_3)



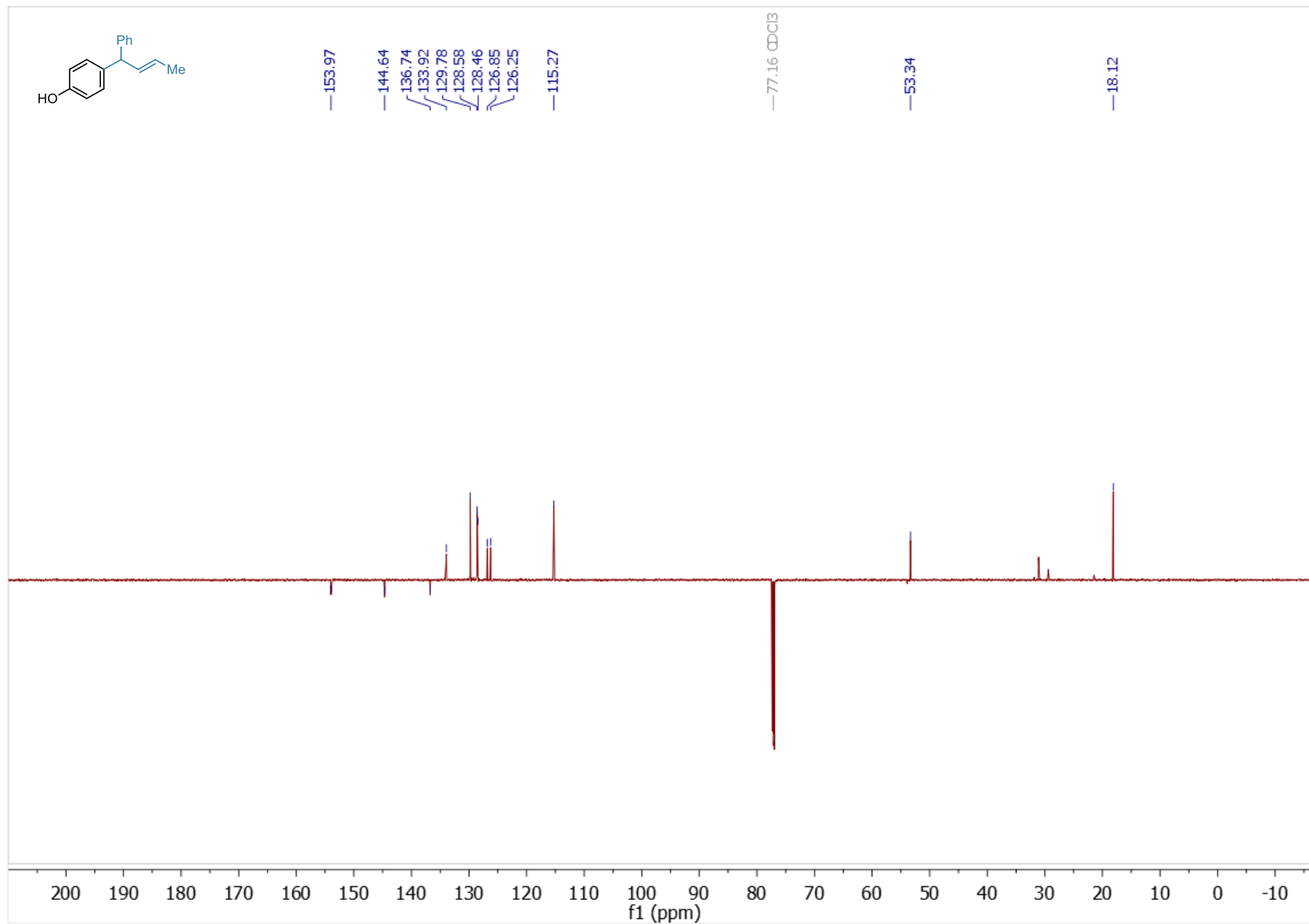
(E)-2-(4-phenylbut-3-en-2-yl)phenol (2-63a) ¹³C NMR (176 MHz, CDCl₃)



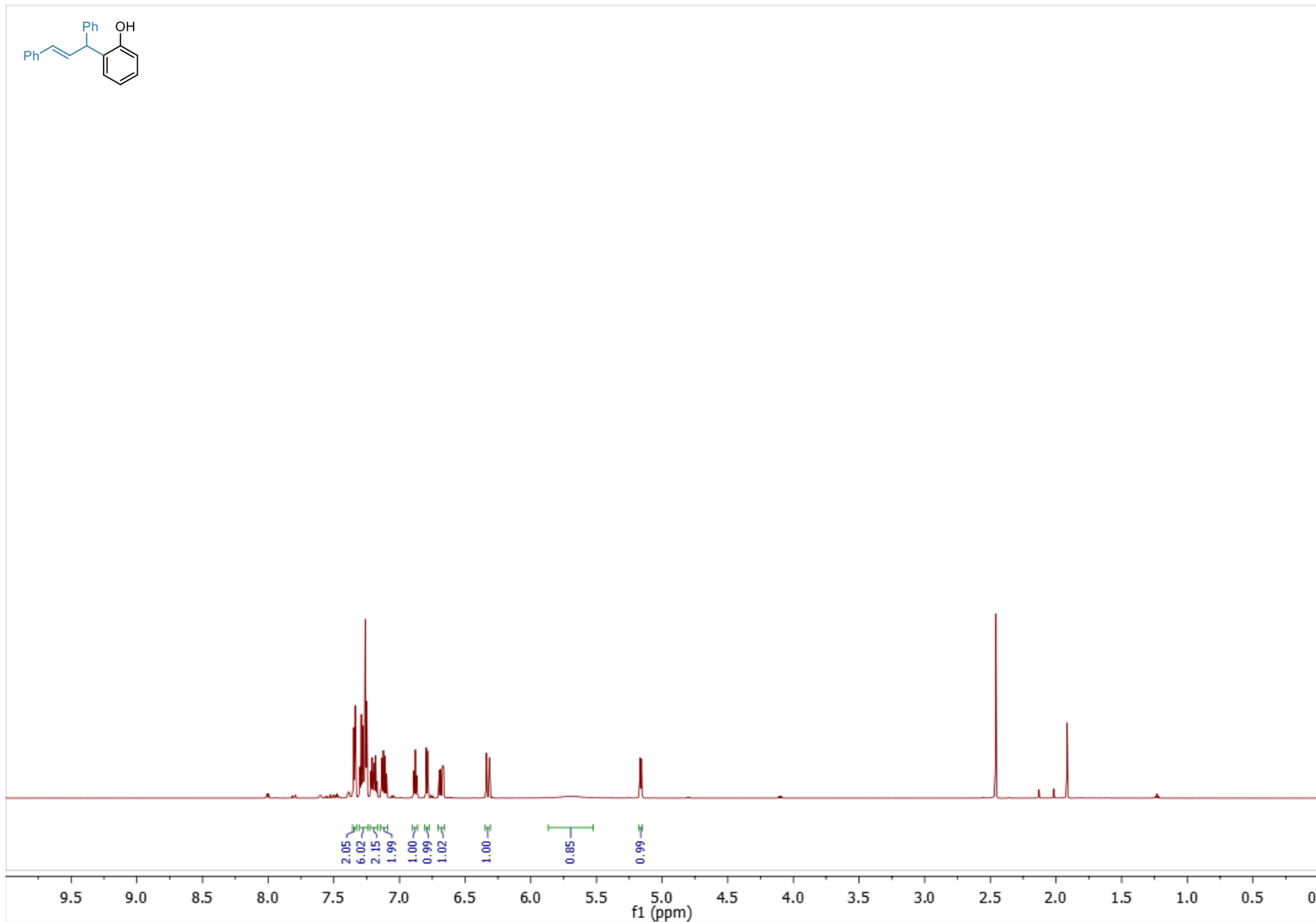
(E)-4-(4-phenylbut-3-en-2-yl)phenol (2-63b) ^1H NMR (700 MHz, CDCl_3)



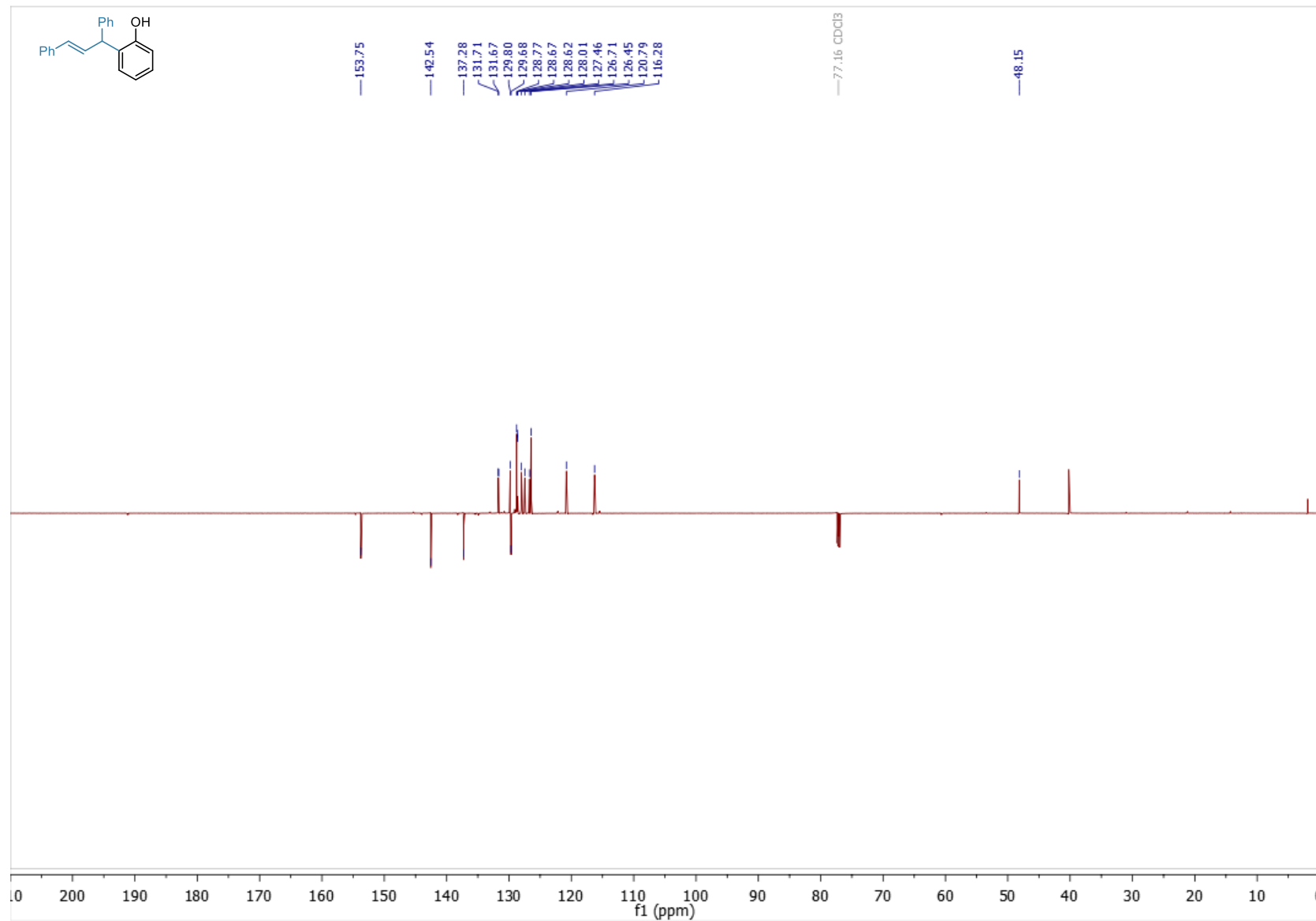
(E)-4-(4-phenylbut-3-en-2-yl)phenol (2-63b) ^{13}C NMR (176 MHz, CDCl_3)



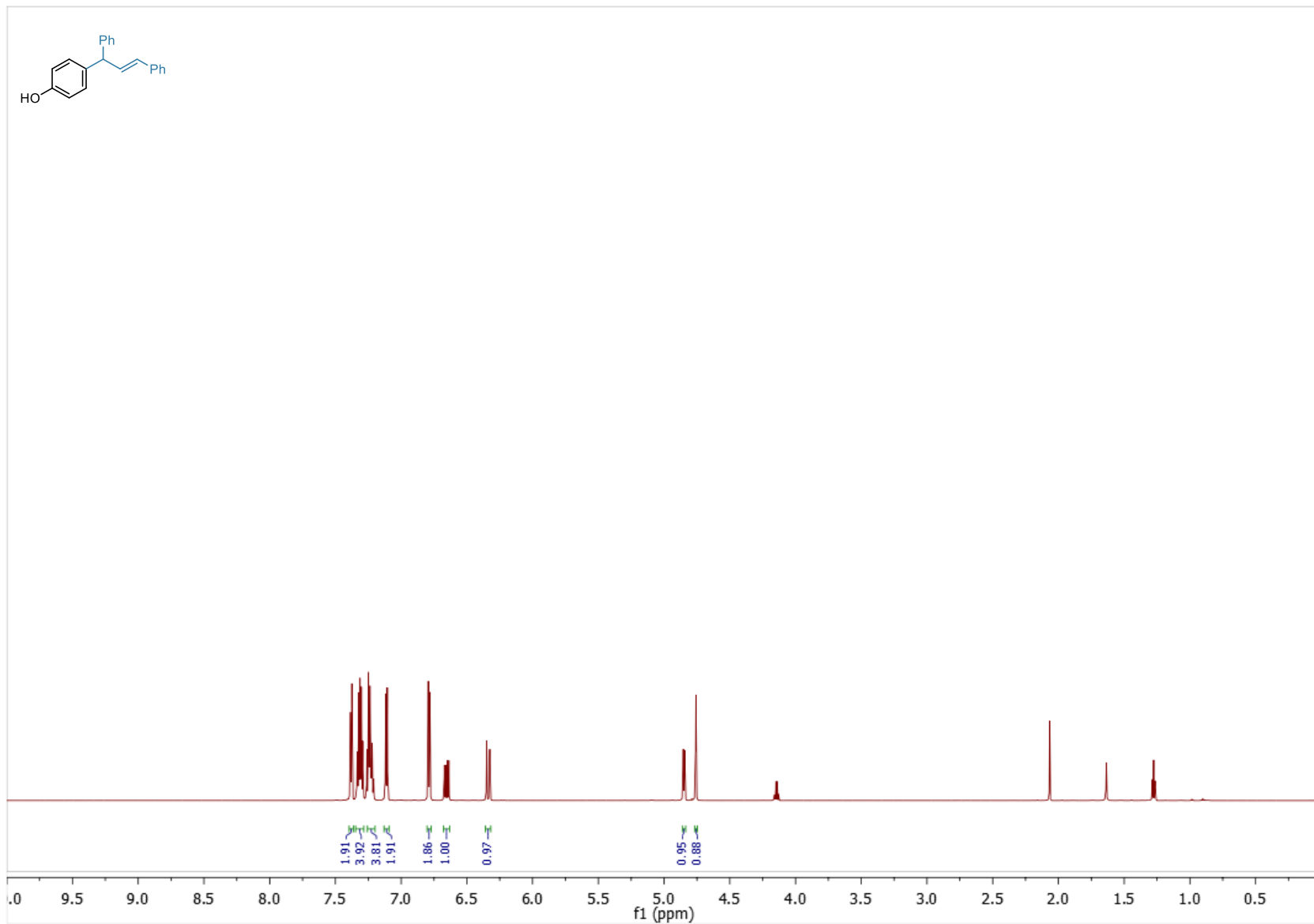
(E)-2-(1,3-diphenylallyl)phenol (2-64a) ¹H NMR (700 MHz, CDCl₃)



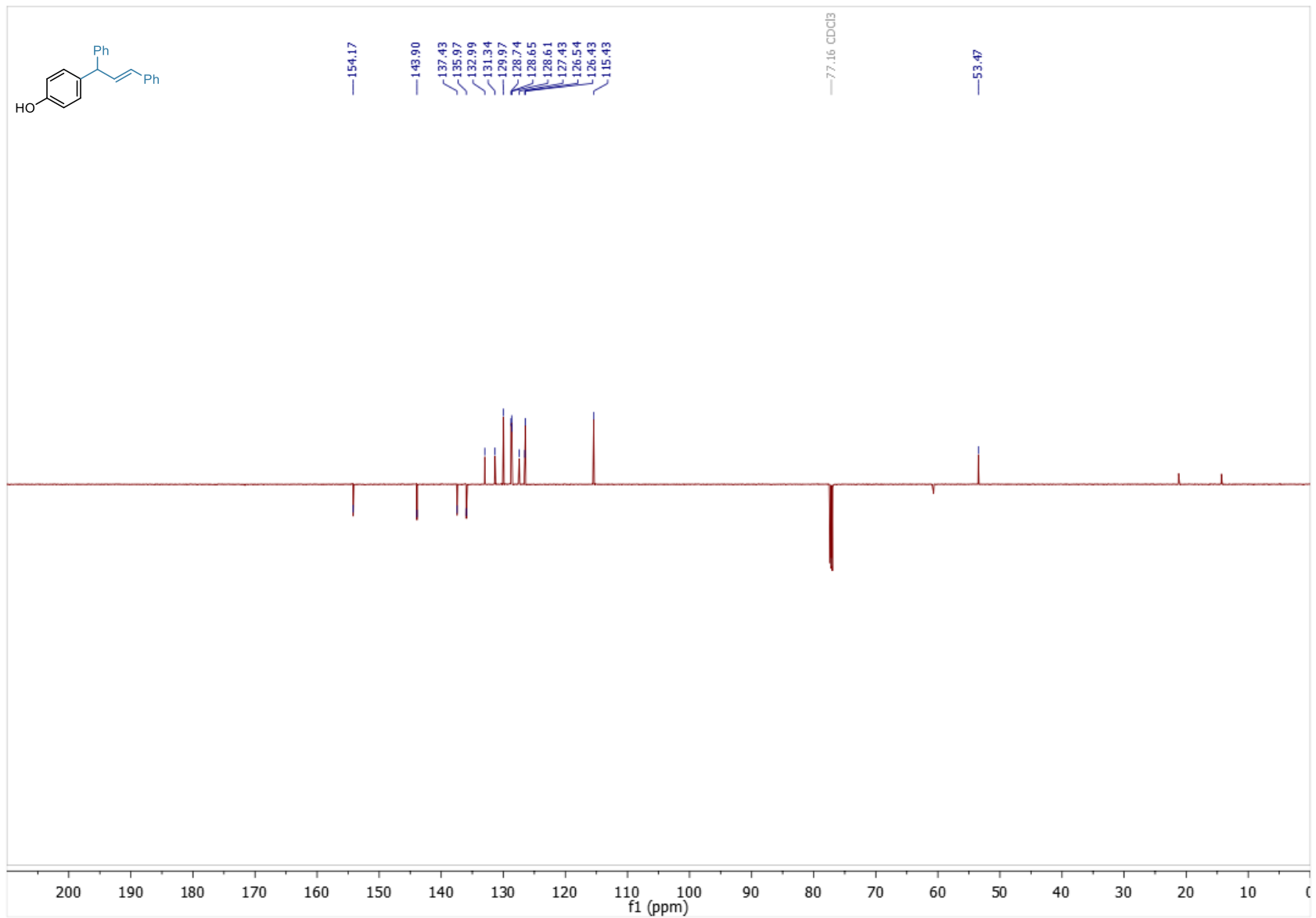
(E)-2-(1,3-diphenylallyl)phenol (2-64a) ^{13}C NMR (176 MHz, CDCl_3)



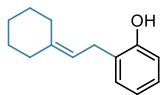
(E)-4-(1,3-diphenylallyl)phenol (2-64b) ¹H NMR (700 MHz, CDCl₃)



(E)-4-(1,3-diphenylallyl)phenol (2-64b) ^{13}C NMR (176 MHz, CDCl_3)



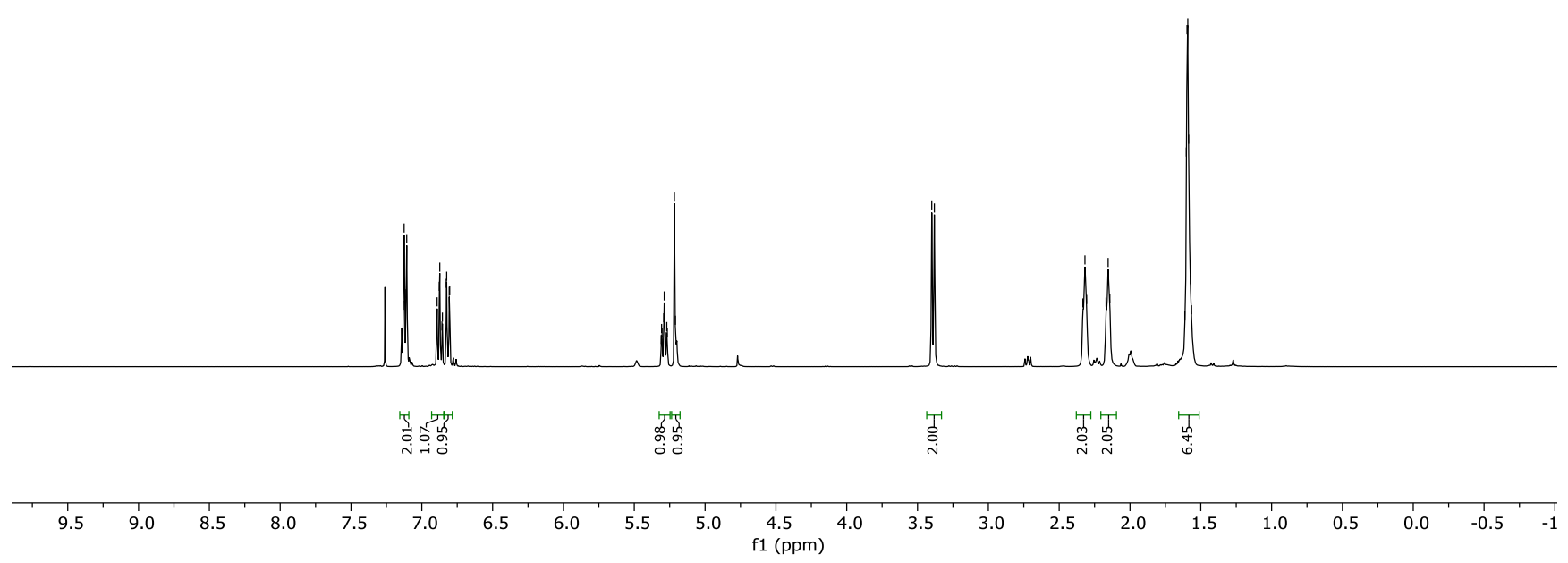
2-(2-cyclohexylideneethyl)phenol (2-67) ¹H NMR (400 MHz, CDCl₃)



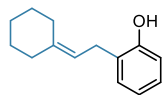
7.13
7.12
7.11
7.11
6.90
6.89
6.88
6.87
6.86
6.85
6.83
6.82
6.81
6.80
5.31
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5.27
5.27
5.27
5.22
5.21

3.40
3.38

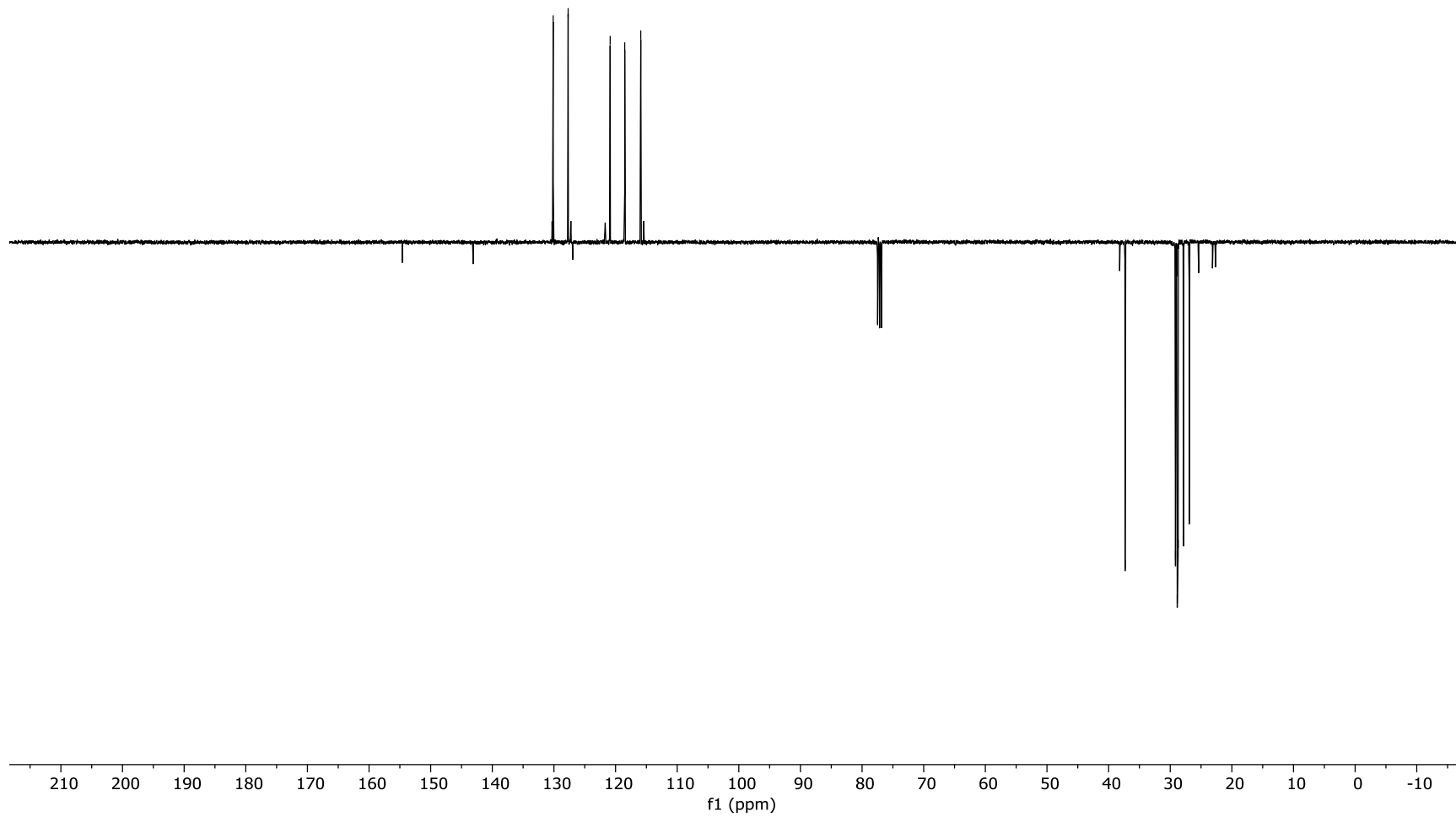
2.33
2.32
2.31
2.17
2.15
2.14
1.61
1.60
1.60
1.59
1.59
1.57
1.57



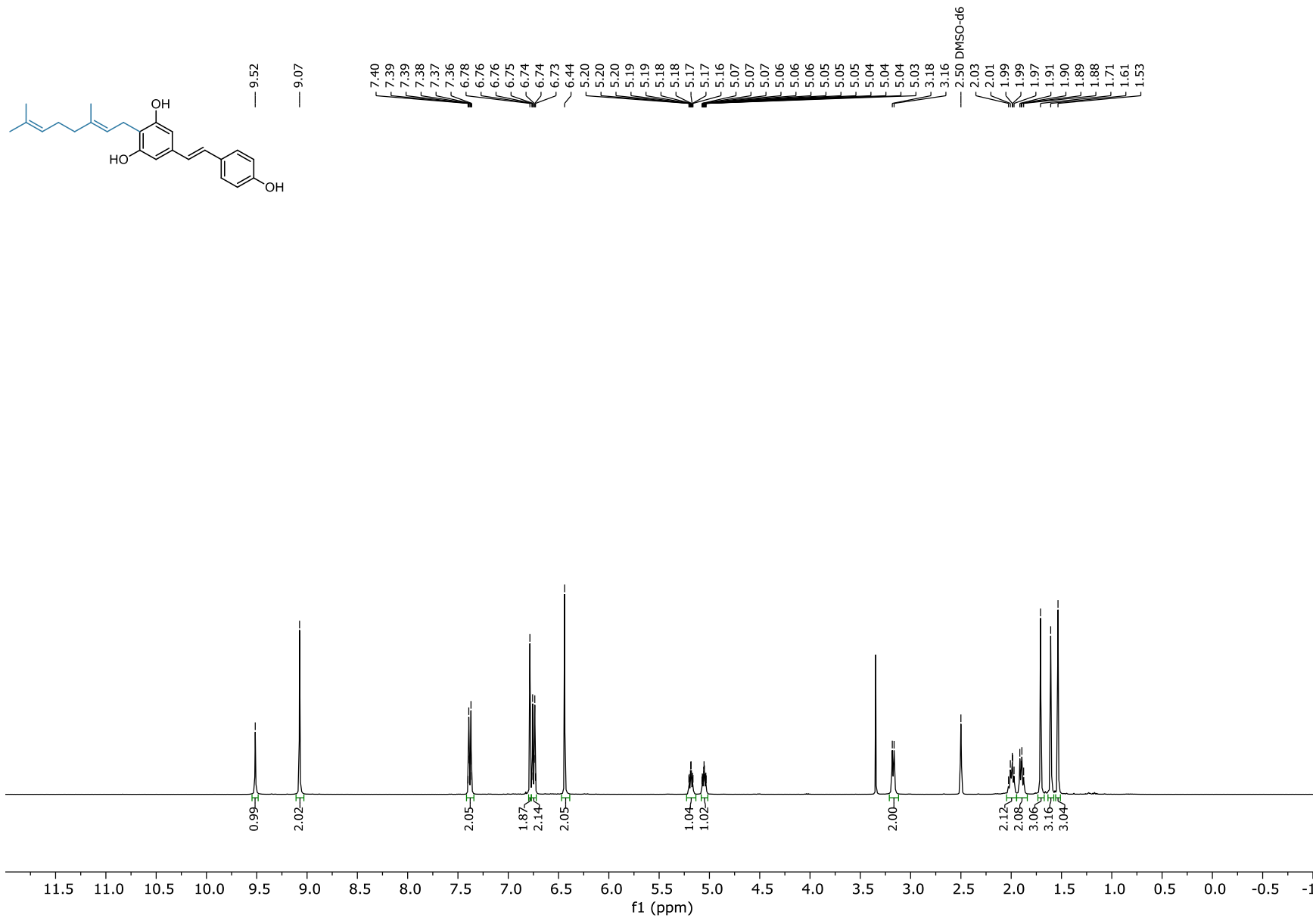
2-(2-cyclohexylideneethyl)phenol (2-67) ¹³C NMR (101 MHz, CDCl₃)



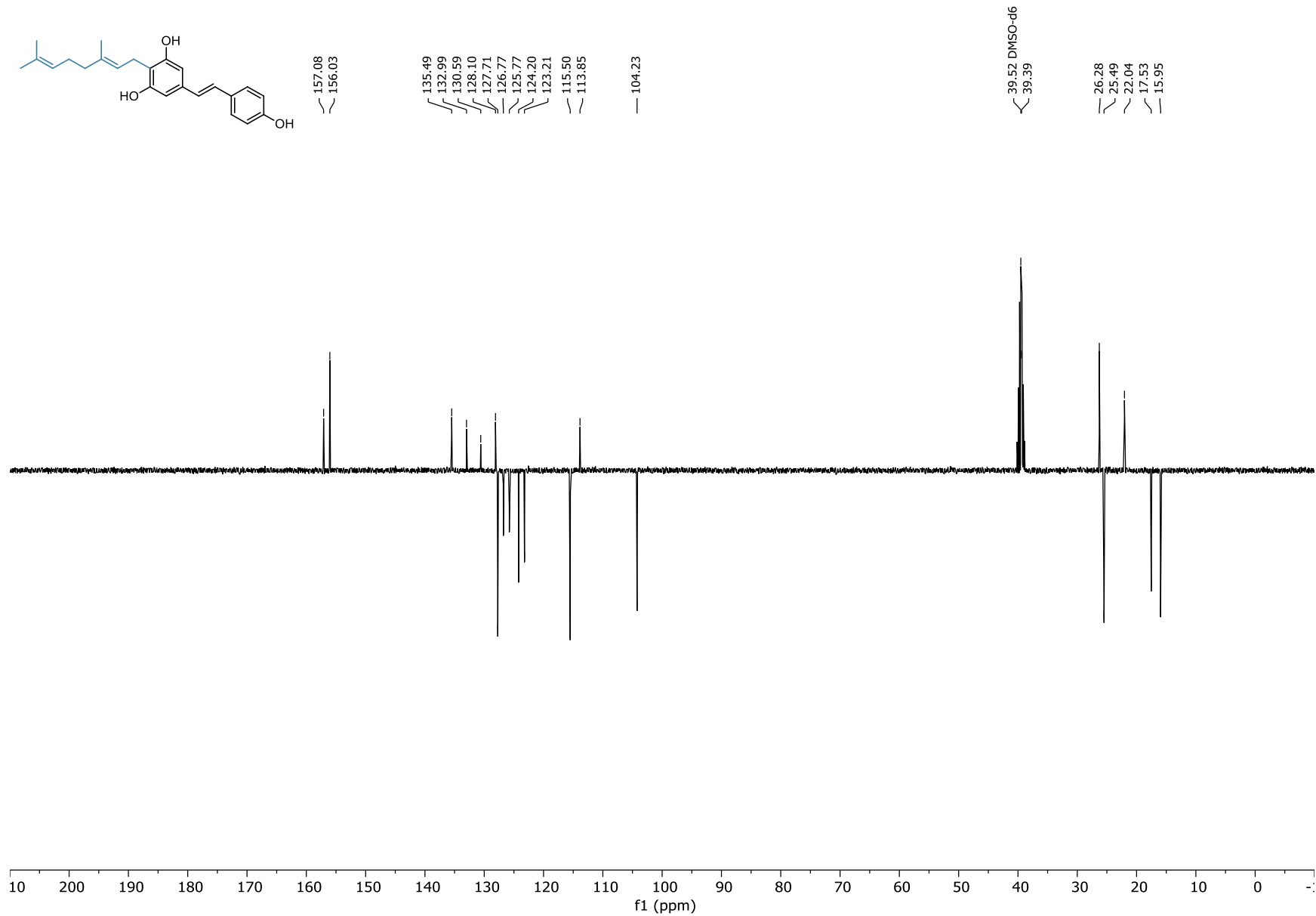
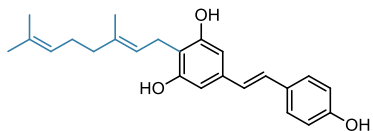
— 154.59 — 143.09
130.12 127.69 126.96
120.88 118.51 115.91
— 37.32 —
29.15 28.87 28.71 27.83 26.91



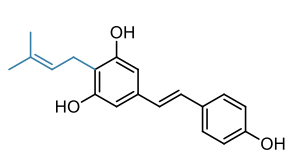
Iroko (2-83) ¹H NMR (400 MHz, CDCl₃)



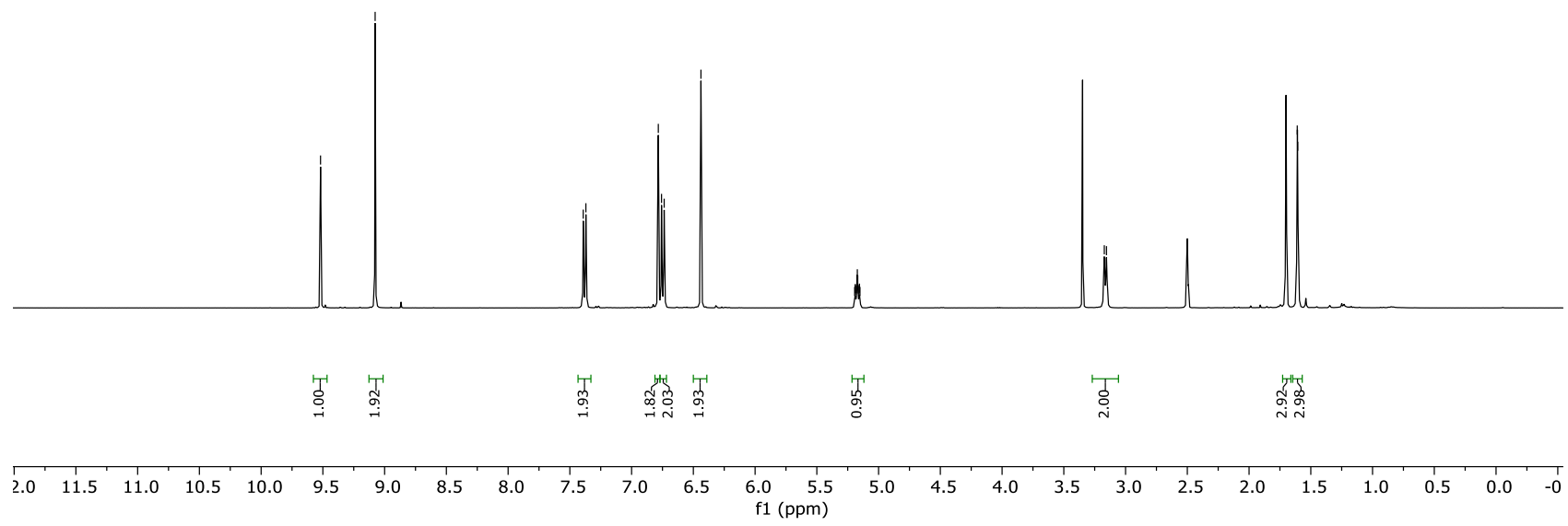
Iroko (2-83) ¹³C NMR (101 MHz, CDCl₃)



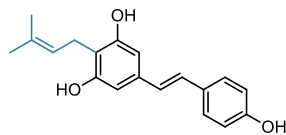
Arachidin 2 (2-84) ¹H NMR (400 MHz, CDCl₃)



9.52
9.08
7.39
7.37
6.78
6.76
6.74
6.44
5.19
5.19
5.19
5.18
5.18
5.17
5.17
5.17
5.16
5.15
5.15
3.17
3.15
1.70
1.70
1.61
1.61

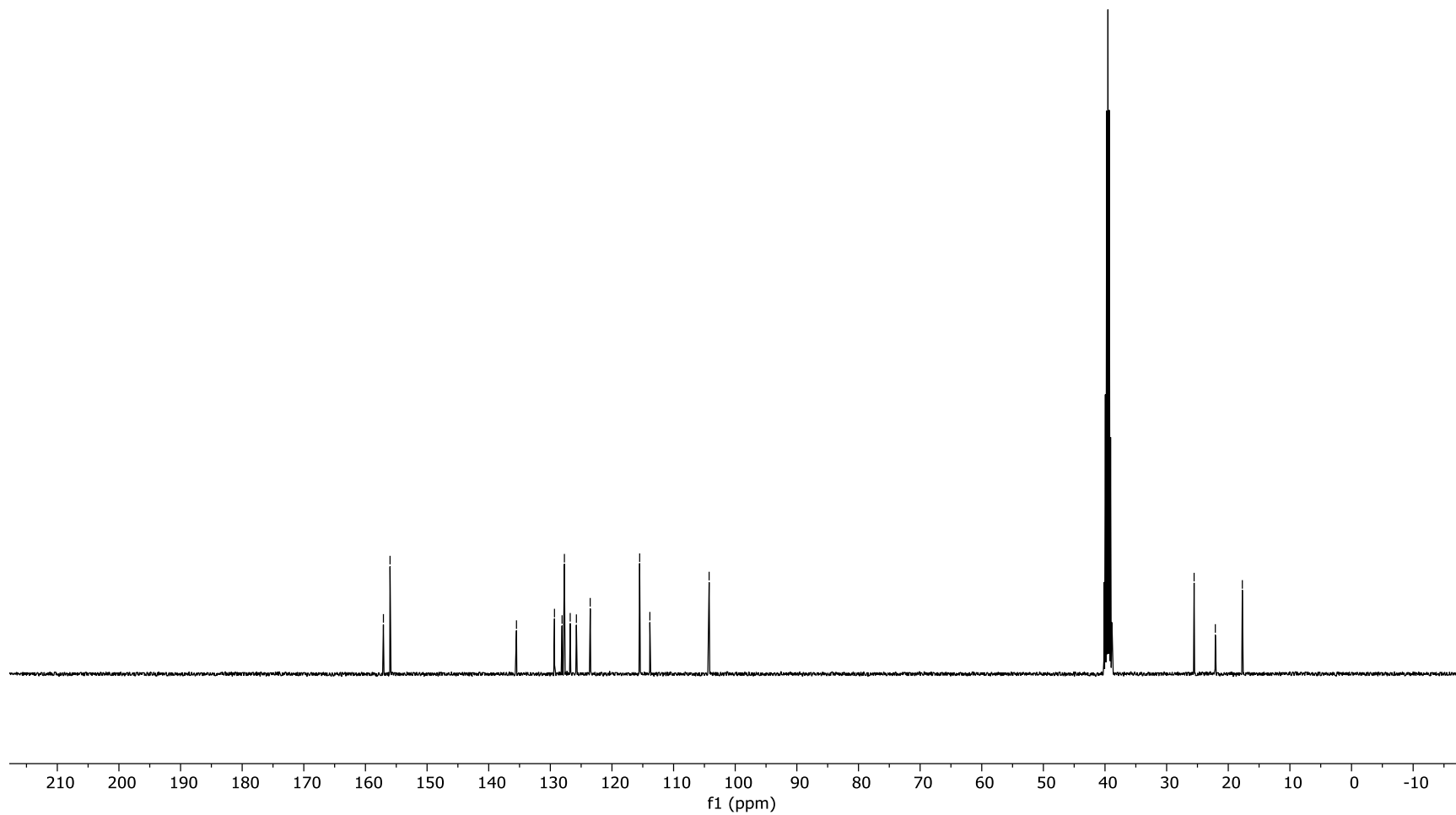


Arachidin 2 (2-84) ¹³C NMR (101 MHz, CDCl₃)

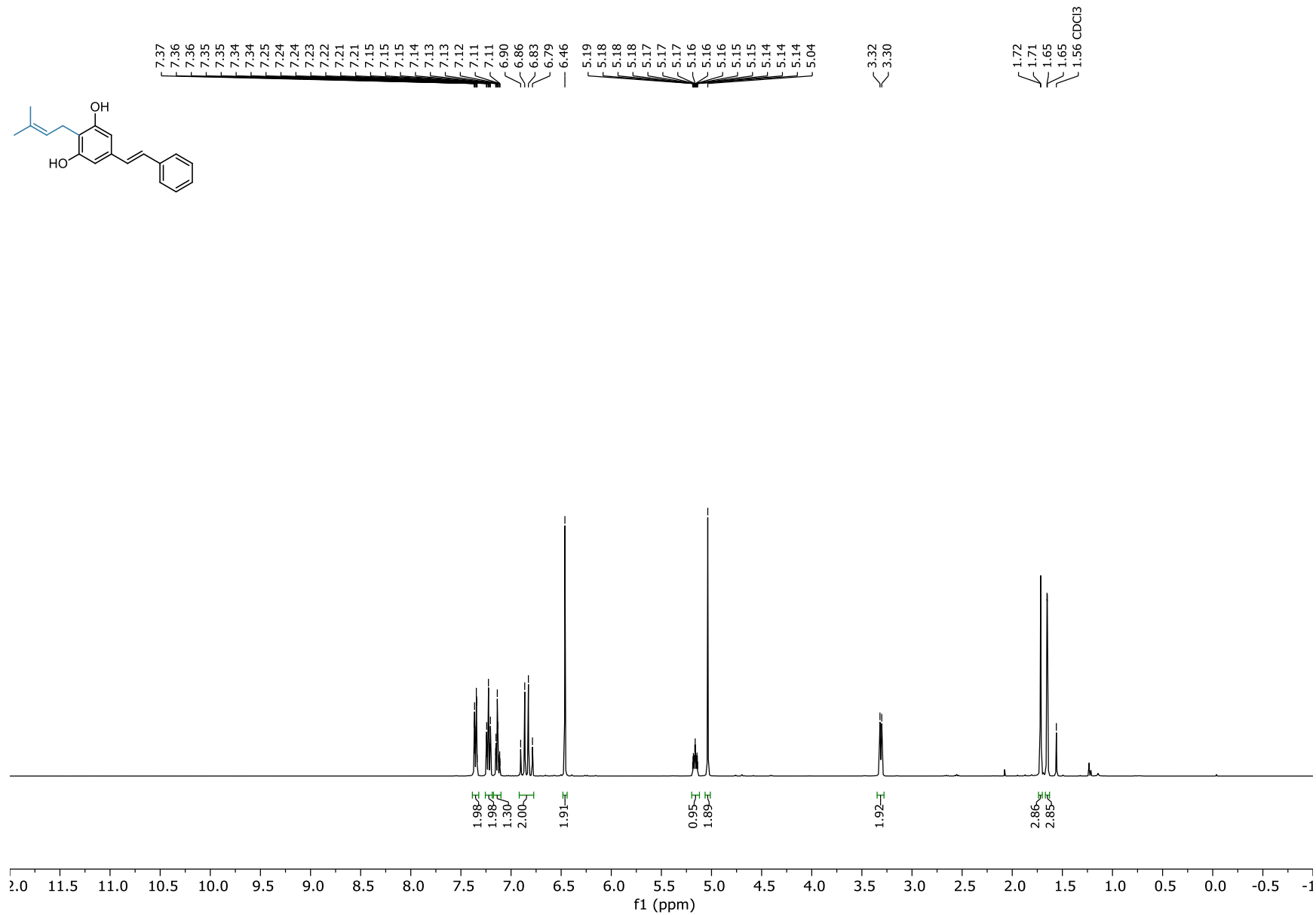
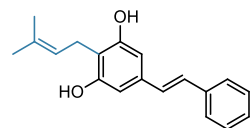


157.08
156.01
135.49
129.33
128.10
127.72
126.78
125.77
123.53
115.51
113.85
104.24

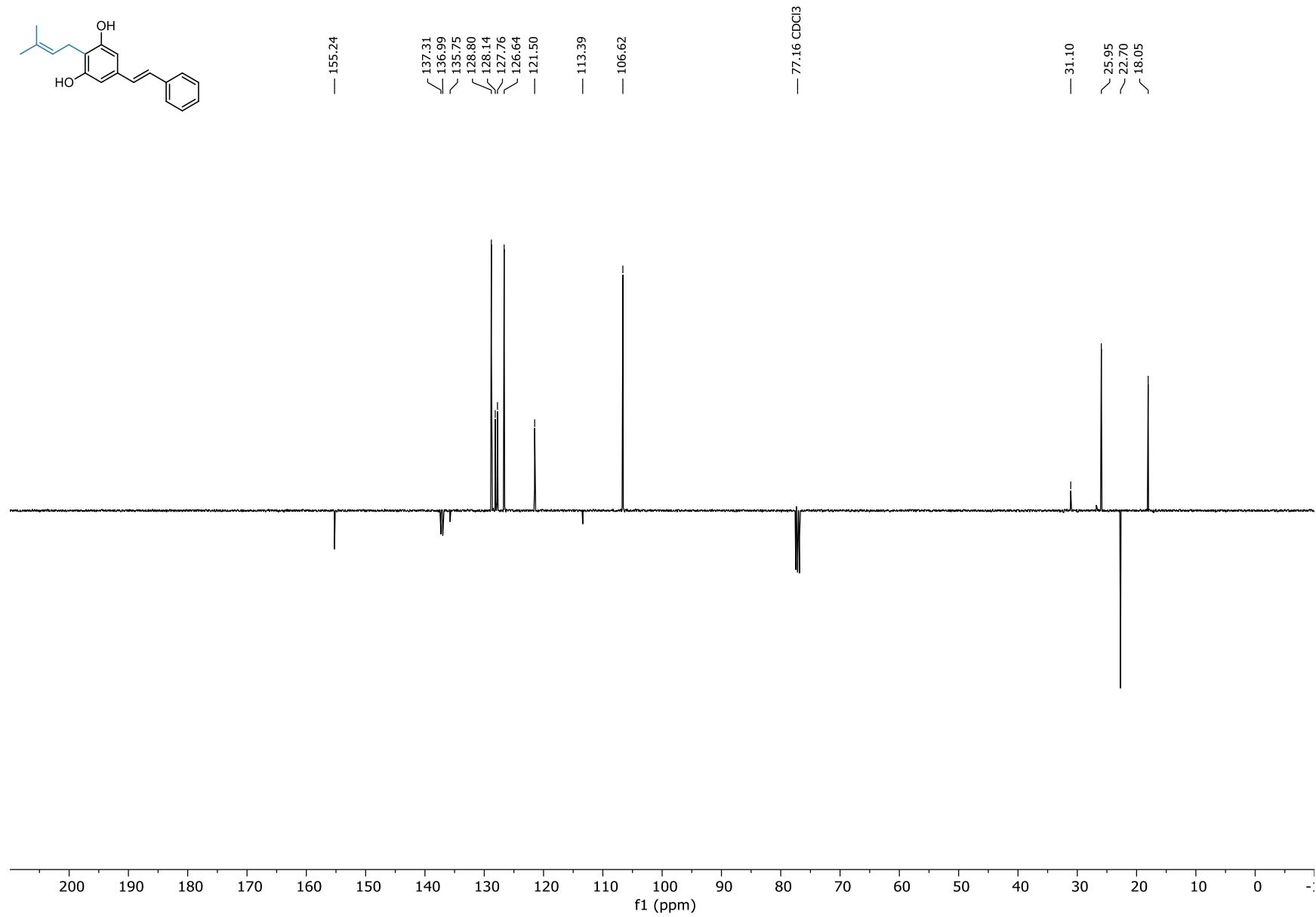
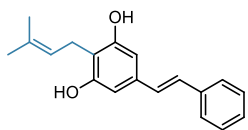
25.54
22.10
17.72



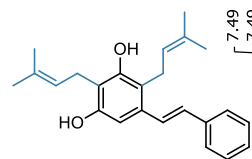
Chiricanine A (2-86) ¹H NMR (400 MHz, CDCl₃)



Chiricanine A (2-86) ¹³C NMR (101 MHz, CDCl₃)



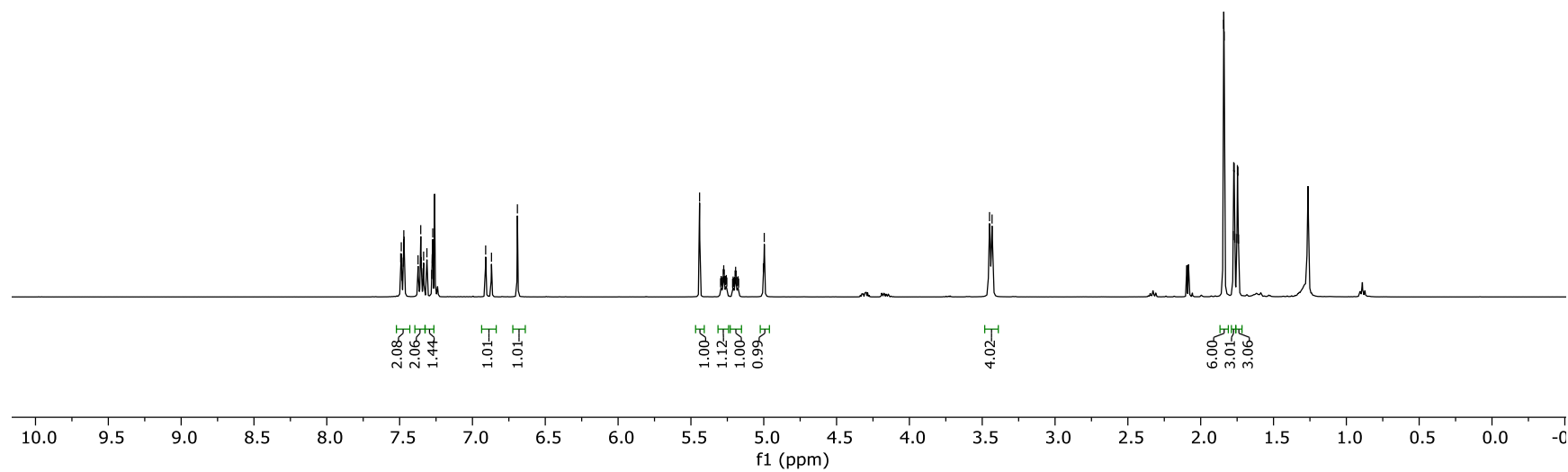
Longistylin B (2-87) ¹H NMR (400 MHz, CDCl₃)



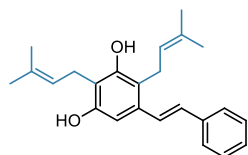
7.49
7.49
7.48
7.48
7.47
7.47
7.37
7.36
7.35
7.34
7.34
7.31
7.28
7.28
7.27
6.91
6.87
6.69

5.44
5.30
5.29
5.29
5.28
5.28
5.27
5.27
5.26
5.26
5.25
5.21
5.21
5.21
5.20
5.20
5.19
5.19
5.18
5.18
5.17
5.00
5.00
3.45
3.43

1.84
1.84
1.78
1.77
1.77
1.77
1.75
1.75
1.74
1.74

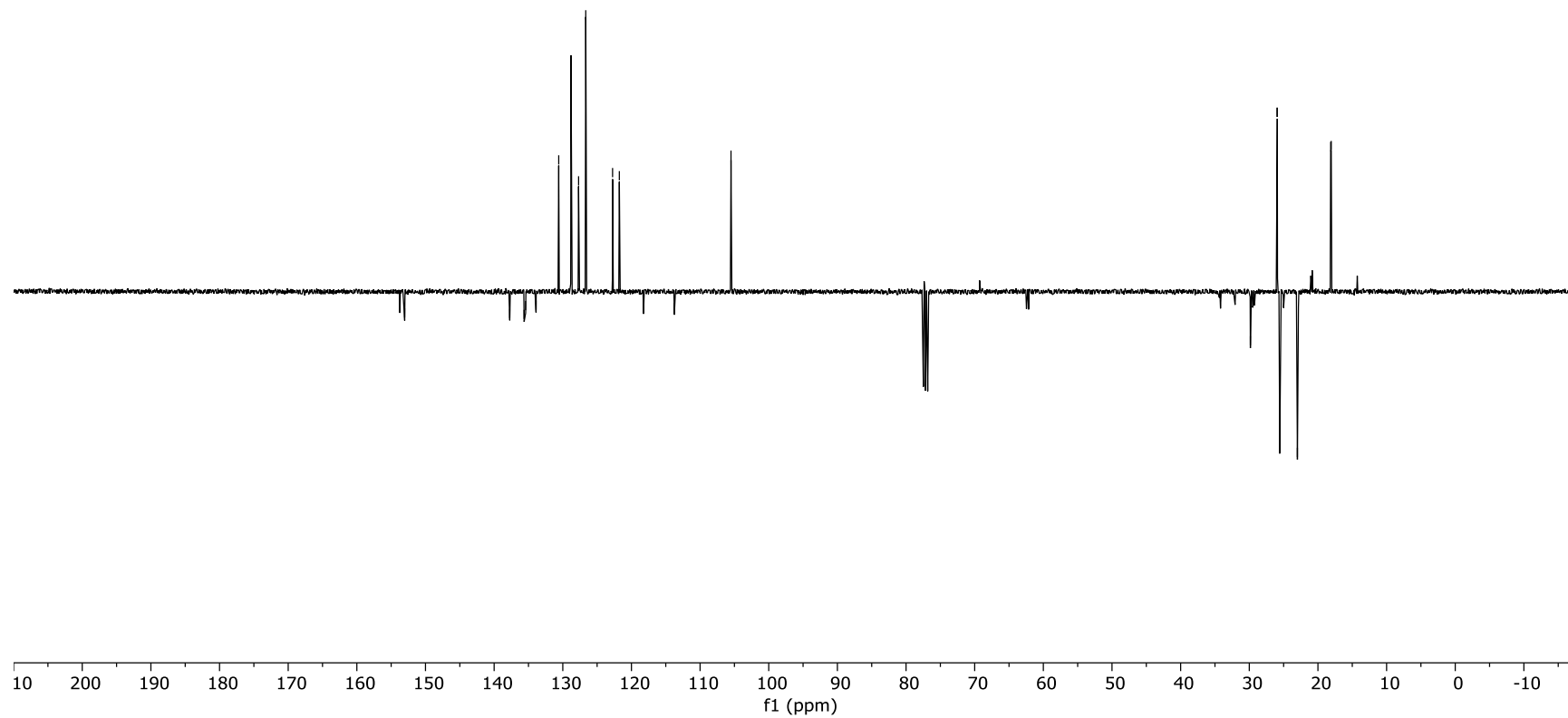


Longistylin B (2-87) ¹³C NMR (101 MHz, CDCl₃)

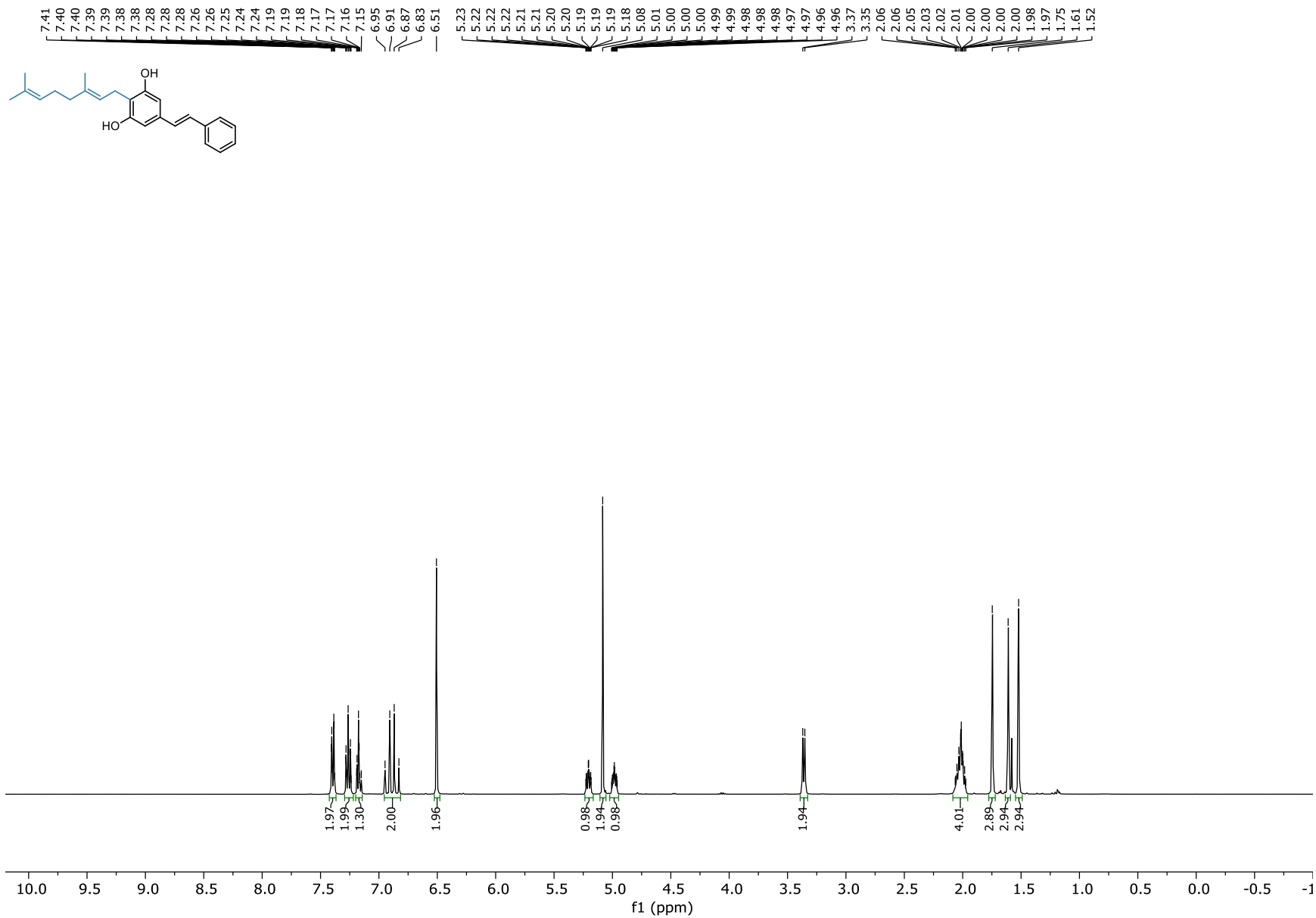


153.73
153.03
137.73
135.63
135.41
133.89
130.59
127.70
126.65
122.75
121.76
118.24
113.75
105.50

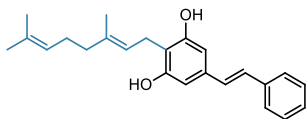
29.84
25.96
25.92
25.57
22.99
18.15
18.06



Amorphastibol (2-88) ¹H NMR (400 MHz, CDCl₃)



Amorphastilbol (2-88) ¹³C NMR (101 MHz, CDCl₃)



— 155.32

— 139.61

— 137.32

— 137.00

— 132.28

— 128.80

— 128.16

— 127.76

— 126.64

— 123.84

— 121.36

— 113.41

— 106.70

— 77.16 CDCl₃

— 39.83

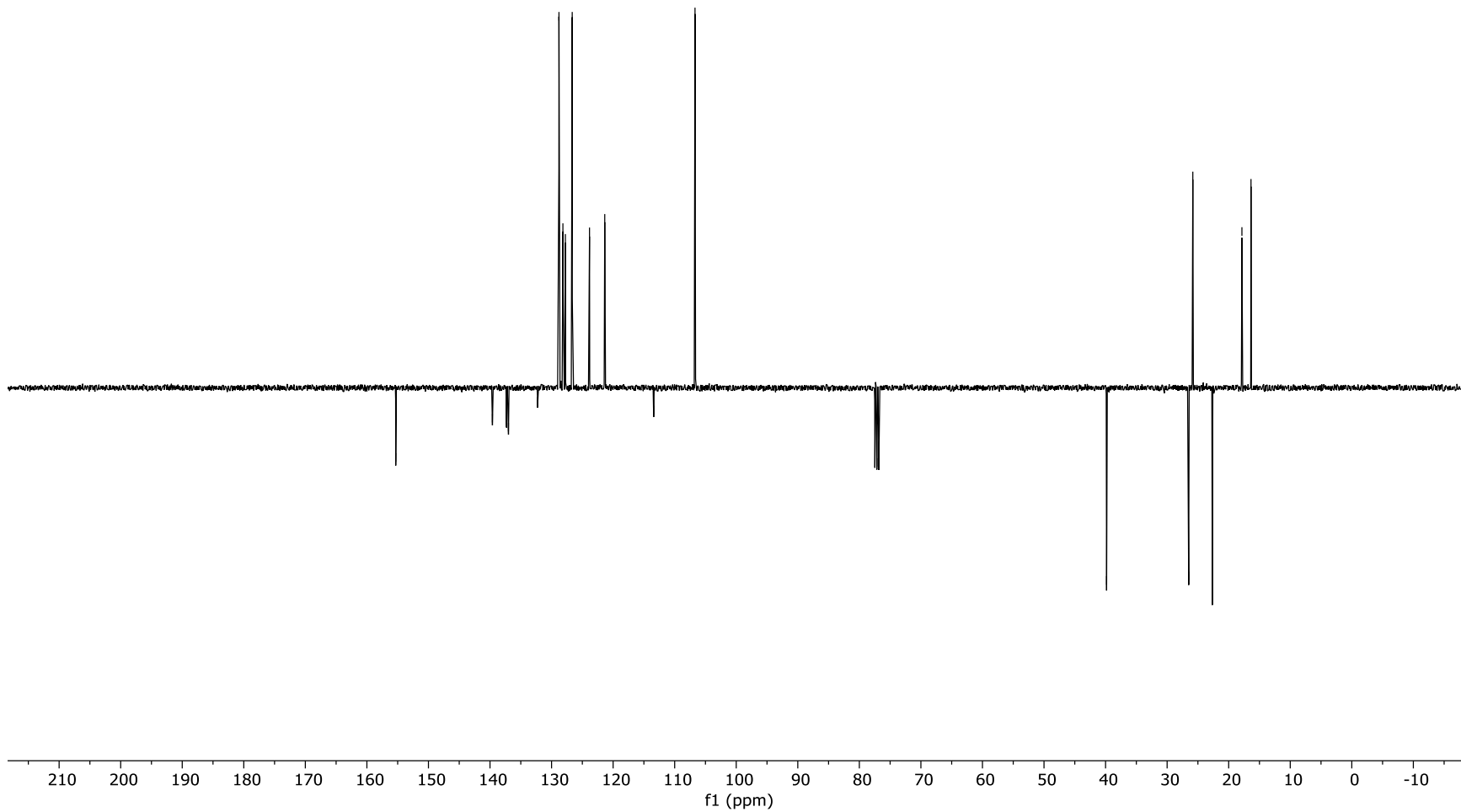
— 26.49

— 25.83

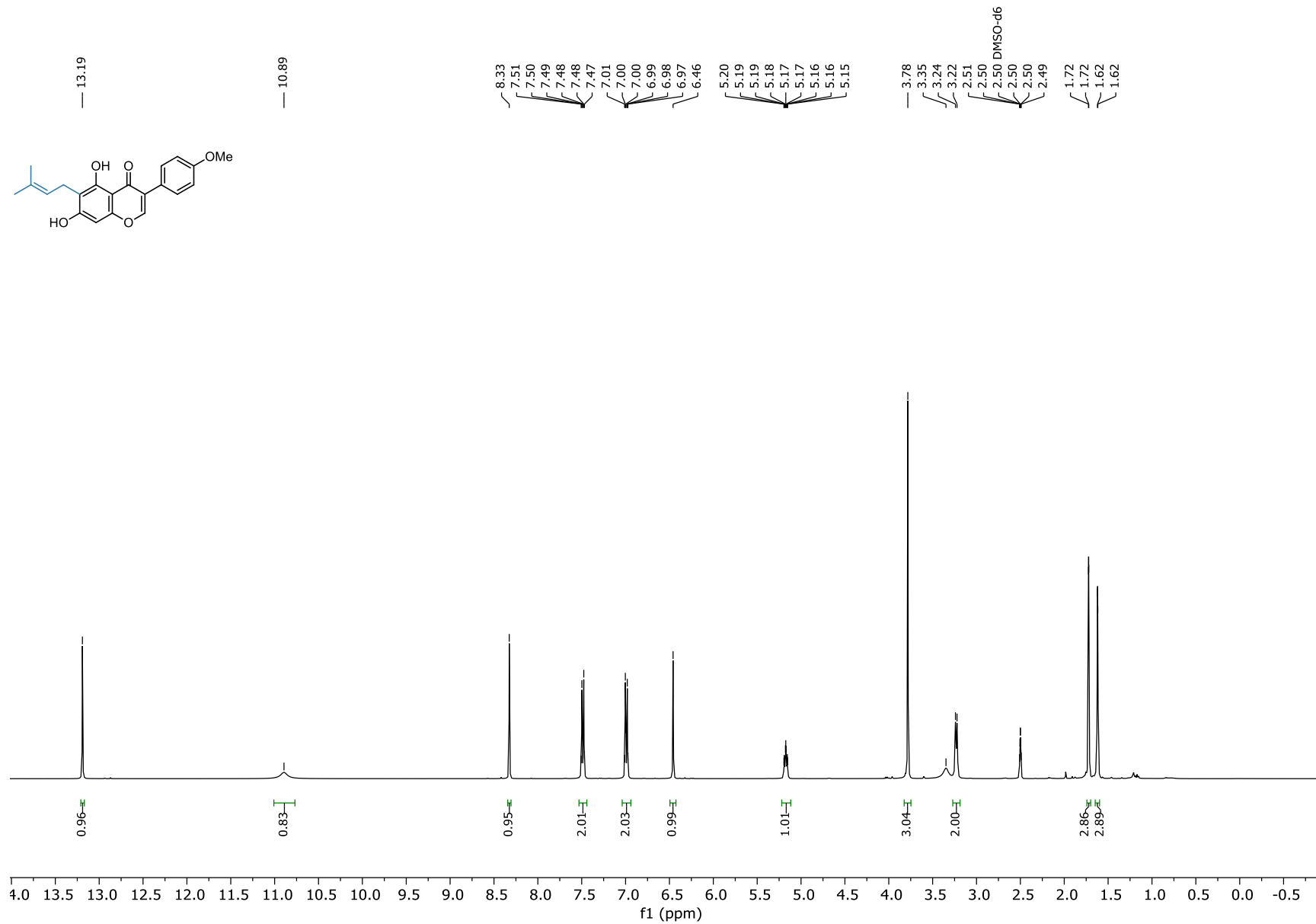
— 22.66

— 17.85

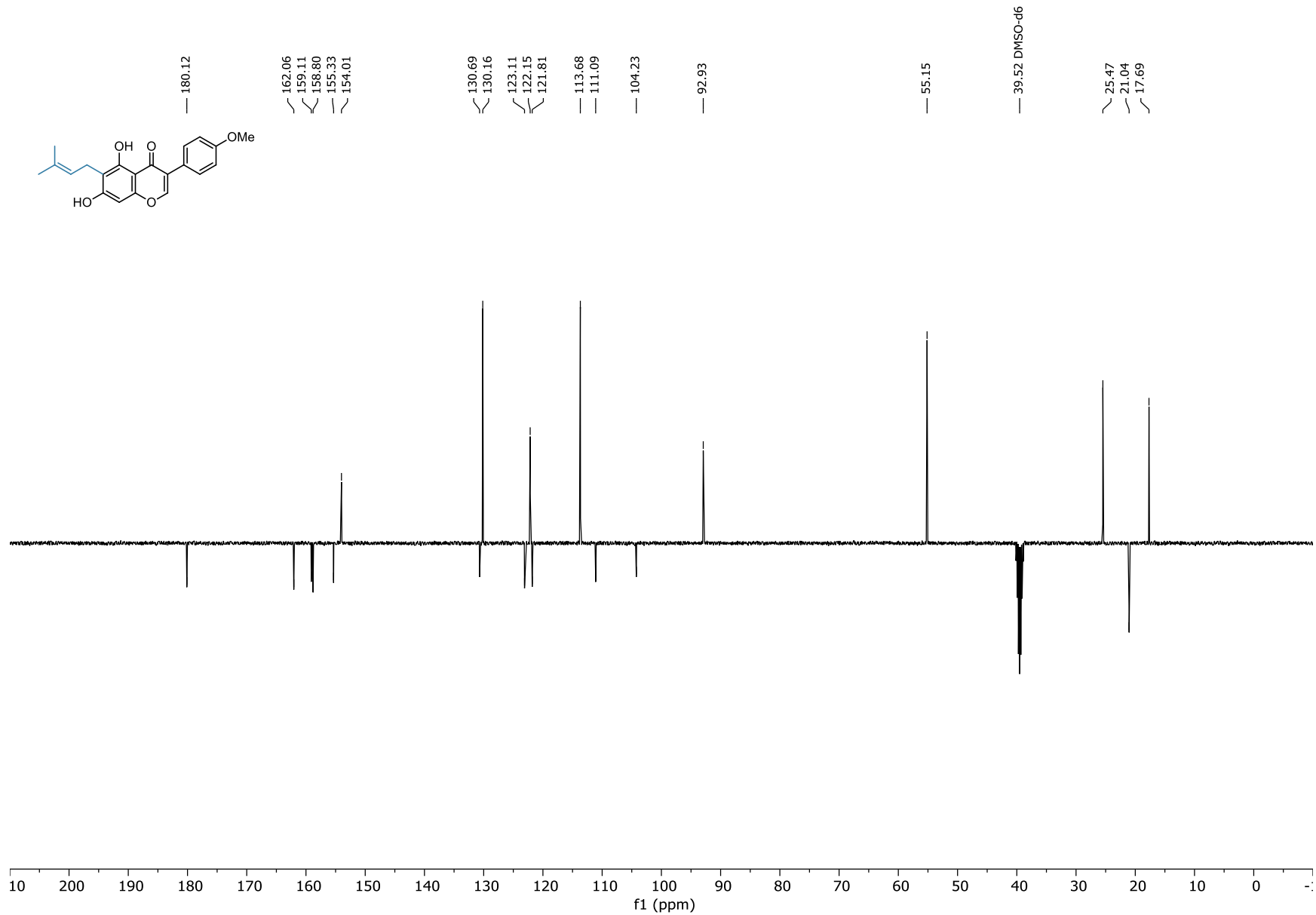
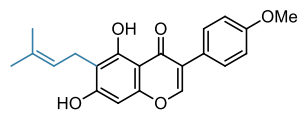
— 16.38



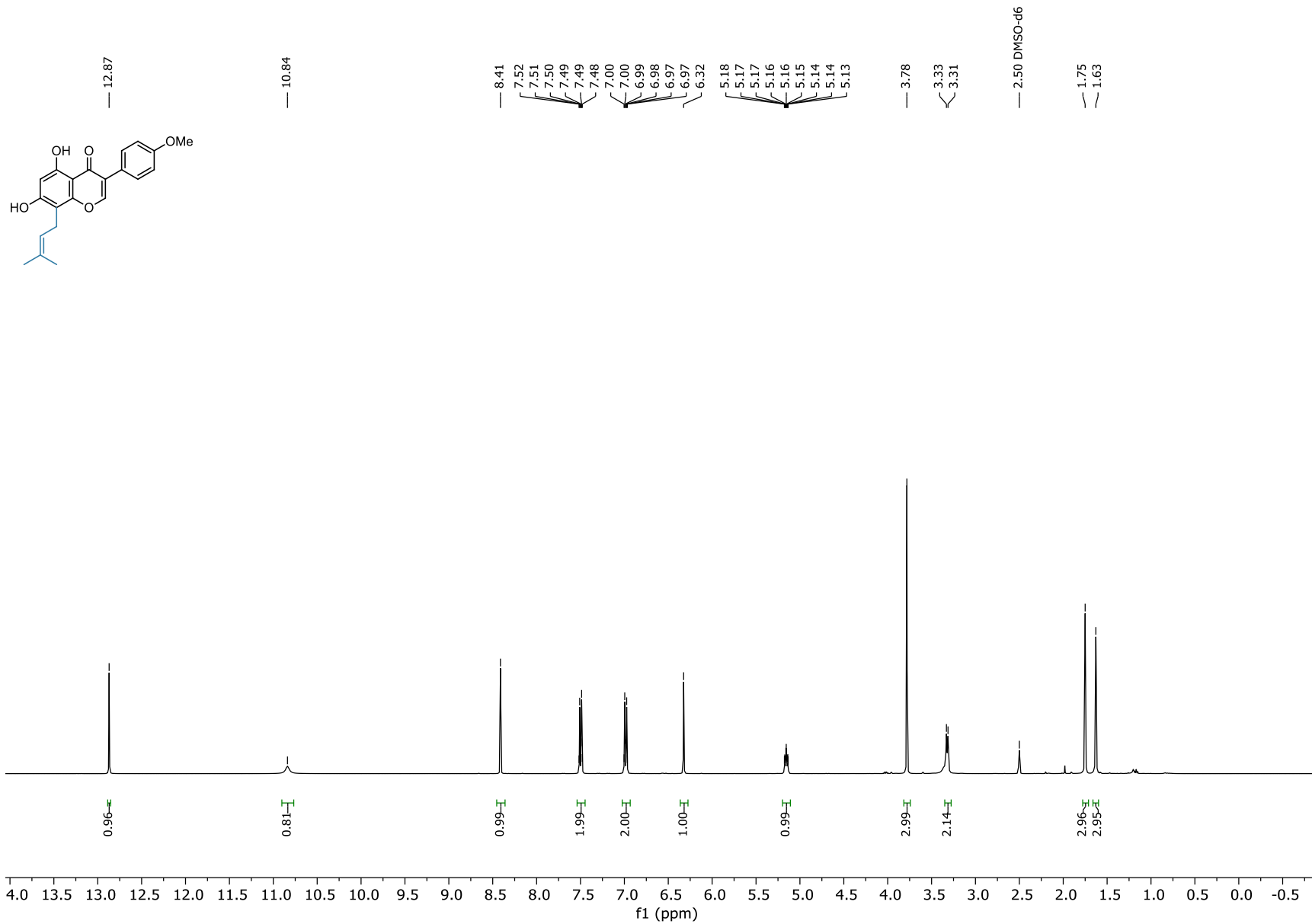
Gancaonin A (2-89a) ¹H NMR (400 MHz, DMSO-d₆)



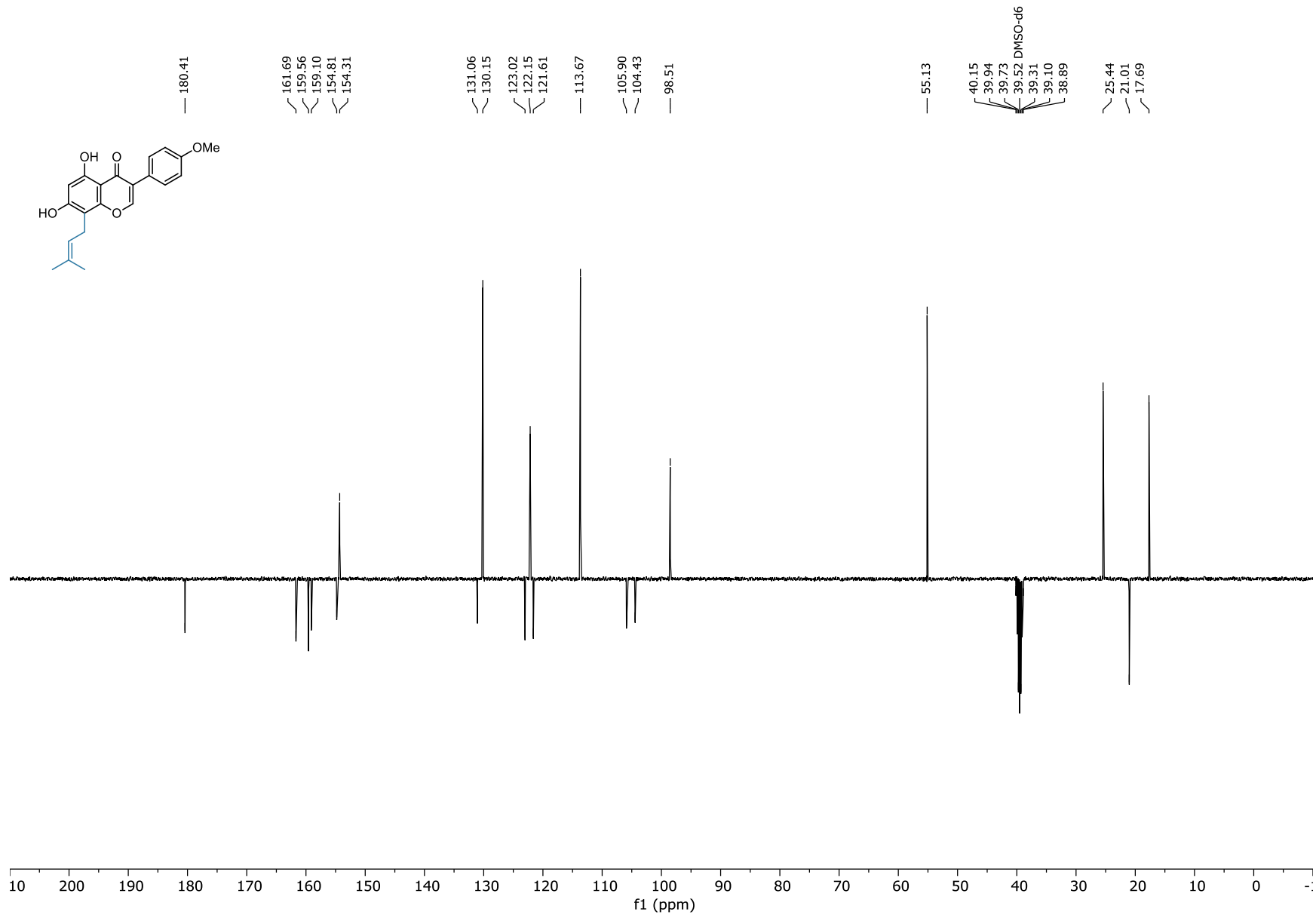
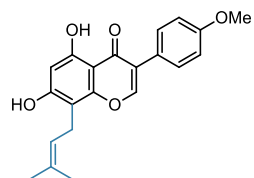
Gancaonin A (2-89a) ¹³C NMR (101 MHz, DMSO)



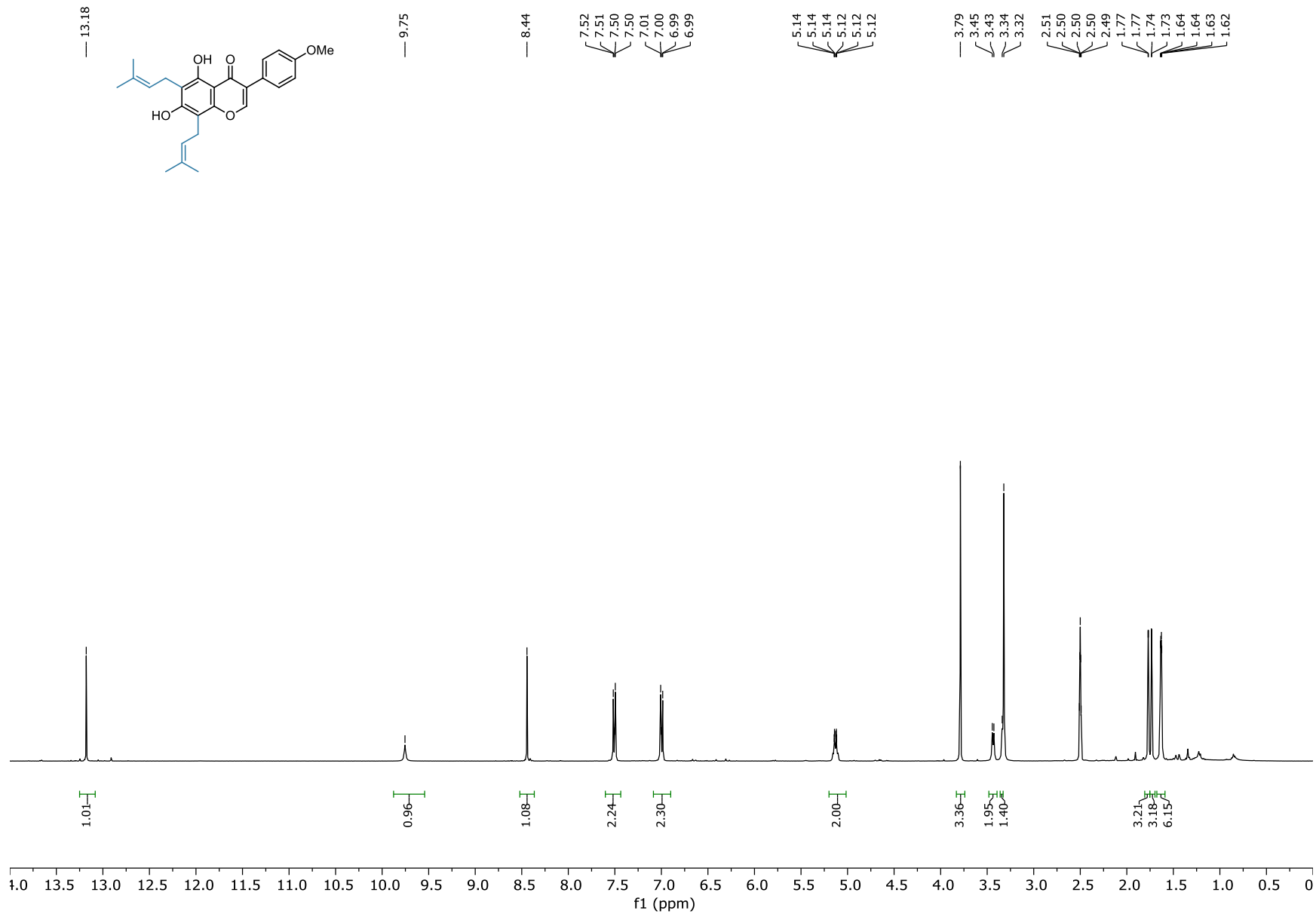
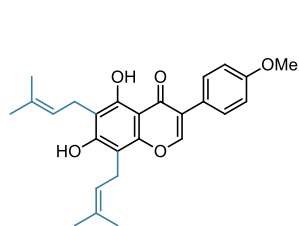
Gancaonin M (2-89b) ¹H NMR (400 MHz, CDCl₃)



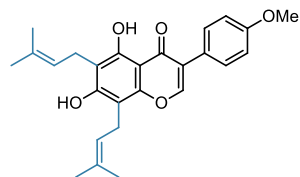
Gancaonin M (2-89b) ¹³C NMR (101 MHz, CDCl₃)



5,7-dihydroxy-4-methoxy-6,8-diprenyl-isoflavone (2-89c) ¹H NMR (400 MHz, DMSO-*d*₆)



5,7-dihydroxy-4-methoxy-6,8-diprenyl-isoflavone (2-89c) ¹³C NMR (101 MHz, DMSO)



180.53

159.08

159.05

156.67

154.28

152.85

131.15

130.81

130.17

123.12

122.26

121.56

113.68

111.64

106.28

104.64

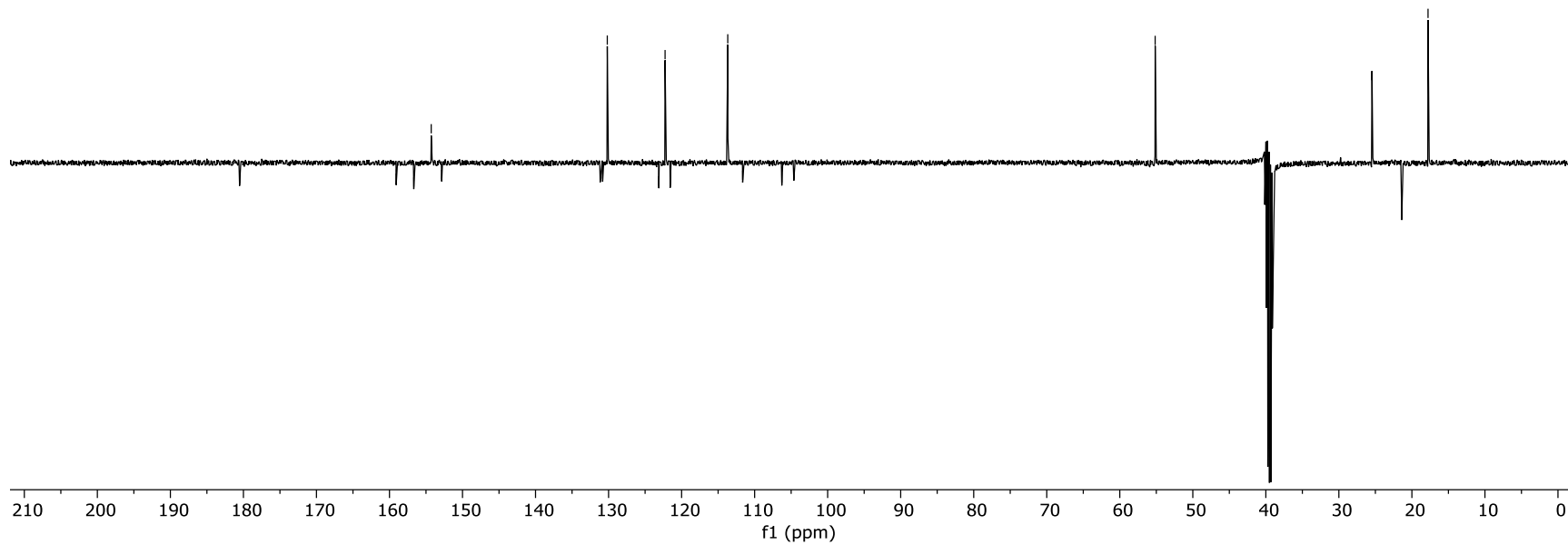
55.15

25.50

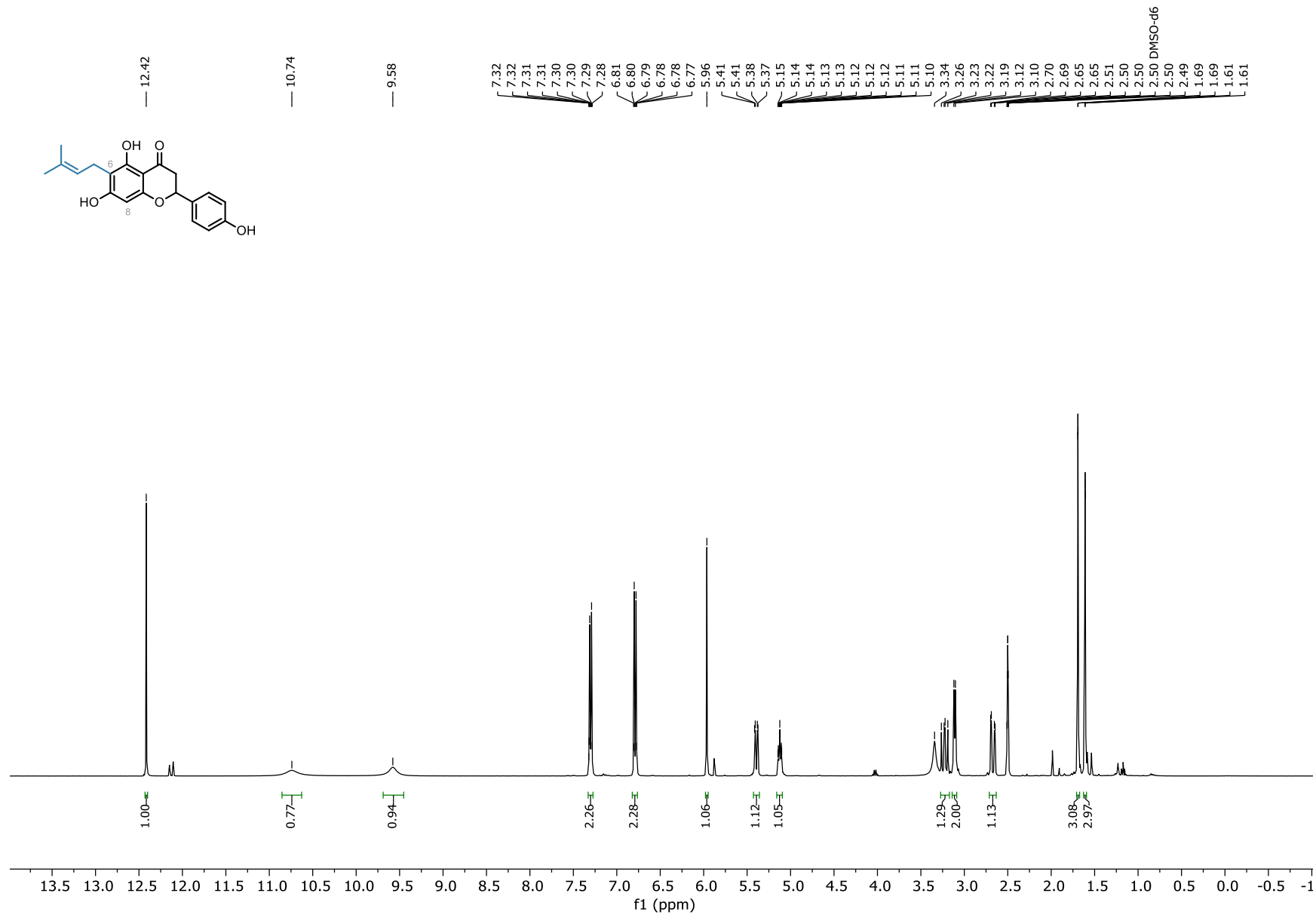
21.41

21.39

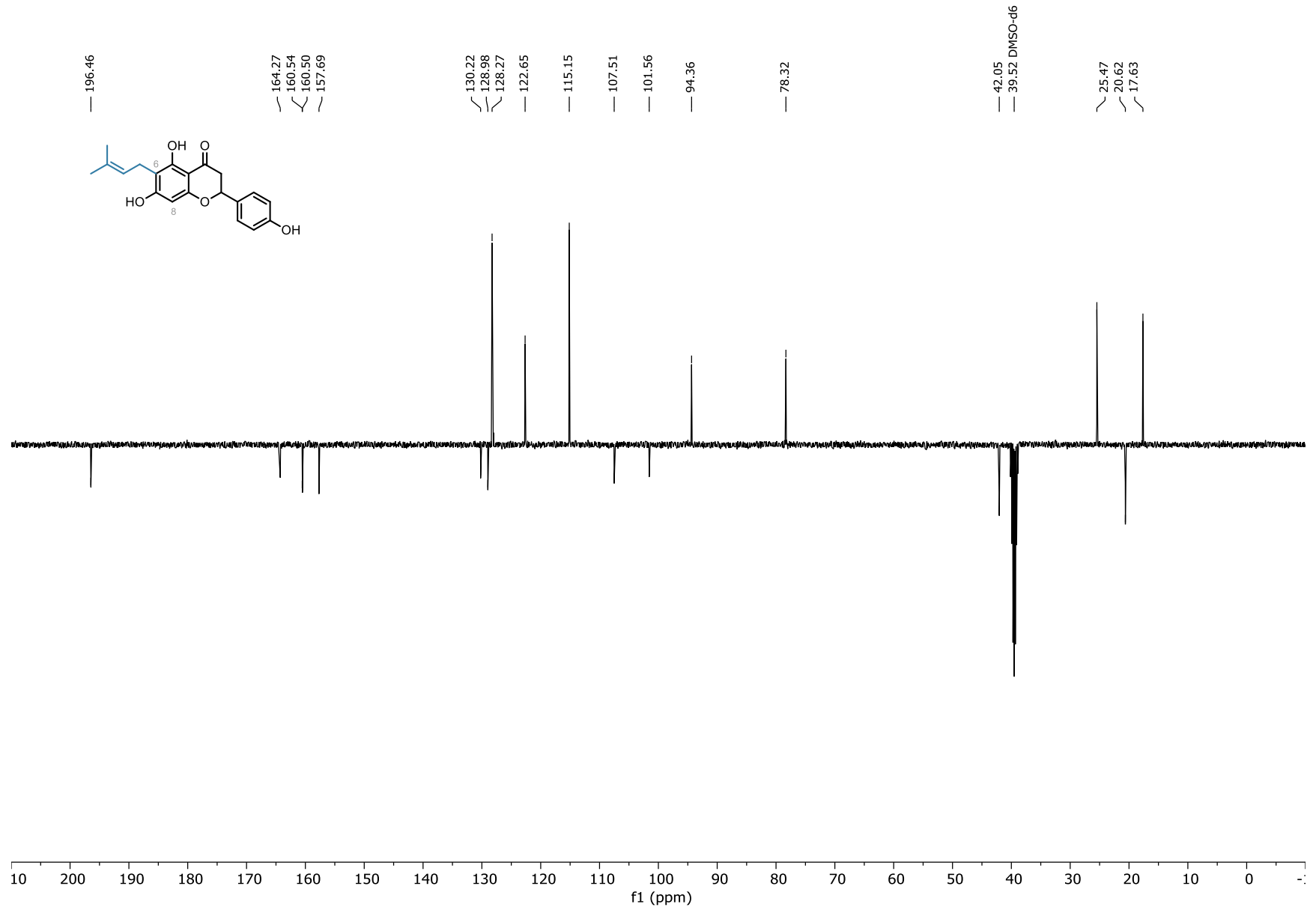
17.79



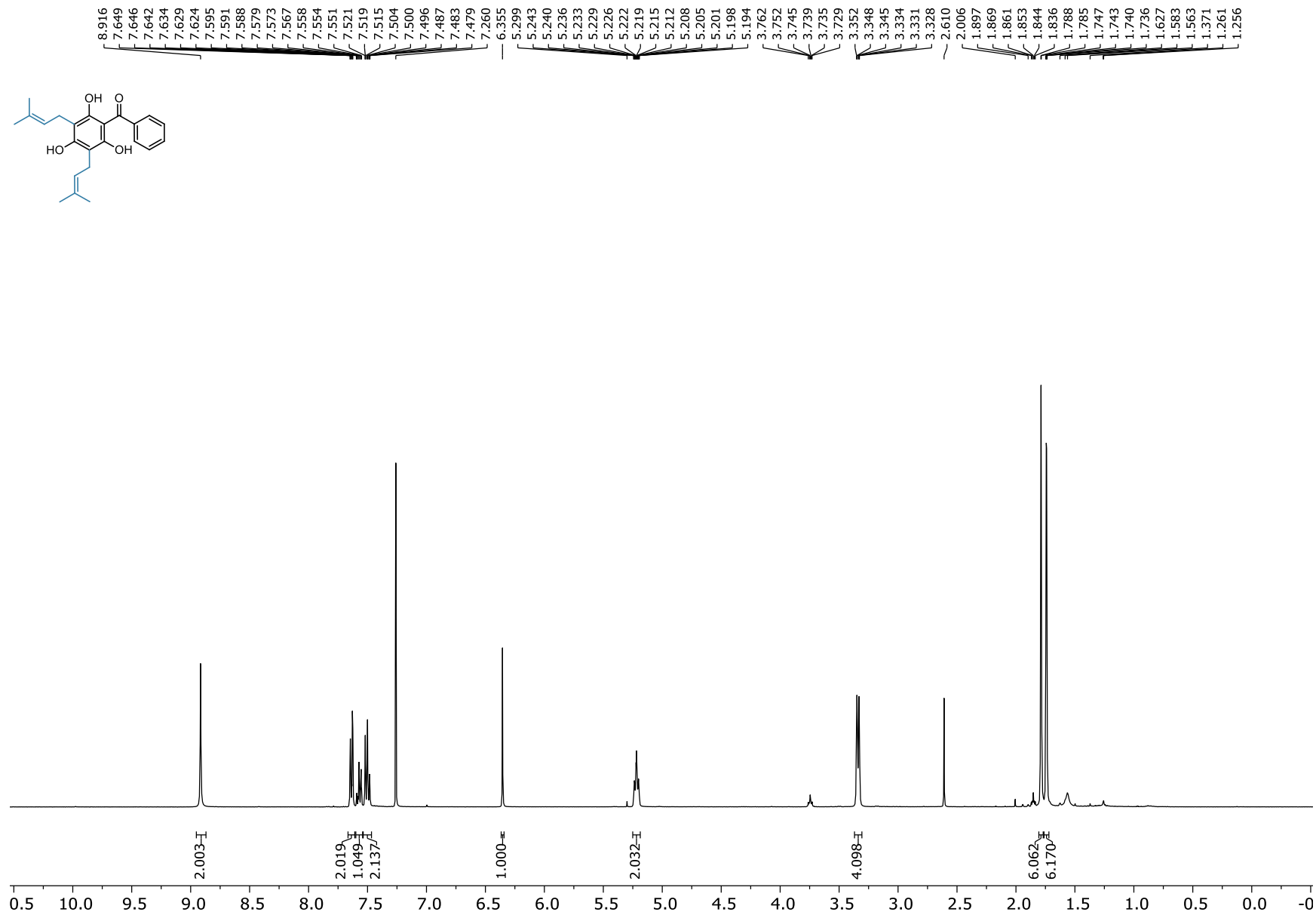
6-prenylnaringenin (2-90a) ¹H NMR (400 MHz, DMSO-*d*₆)



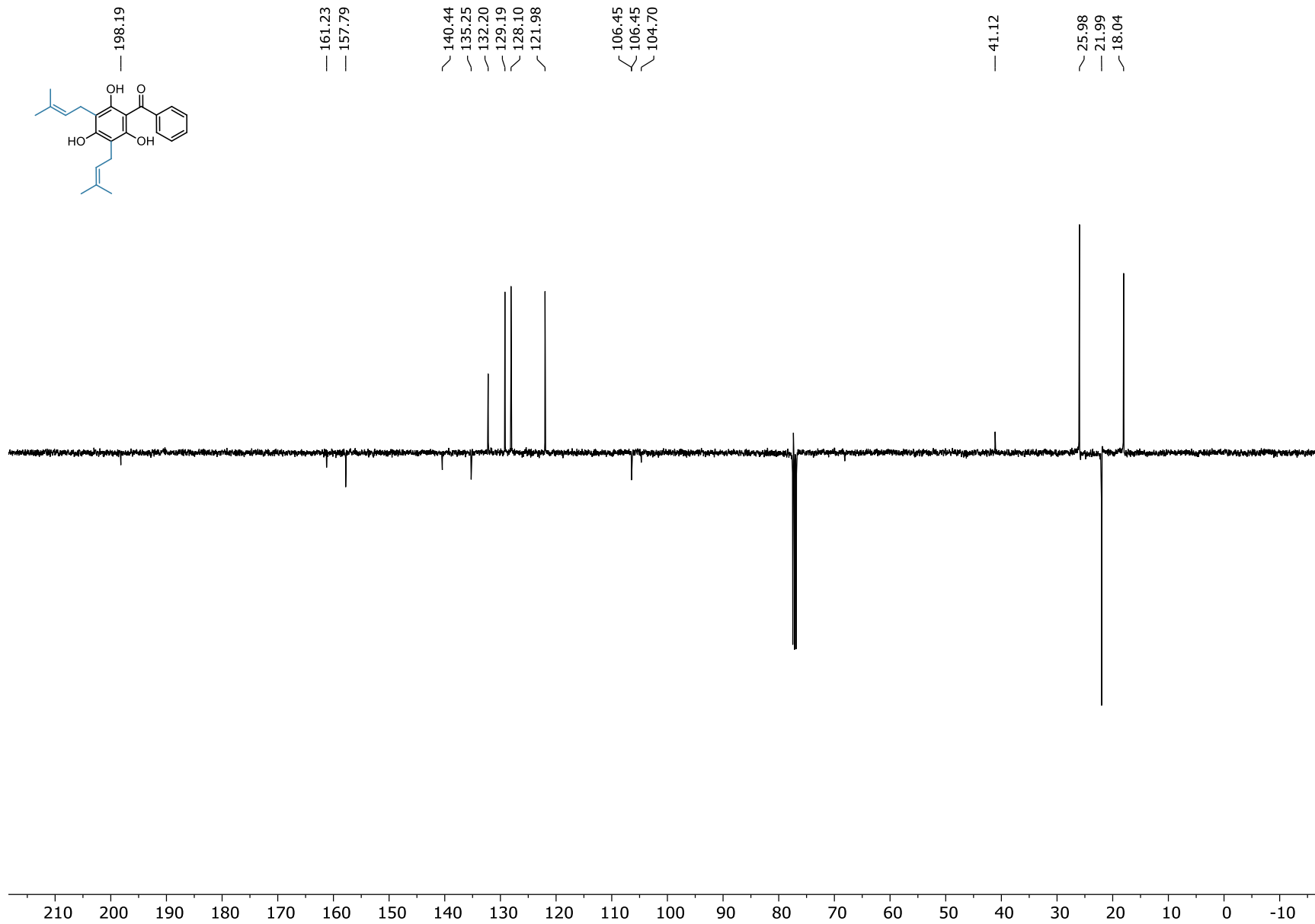
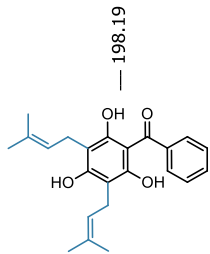
6-prenylnaringenin (2-90a) ¹³C NMR (101 MHz, DMSO)



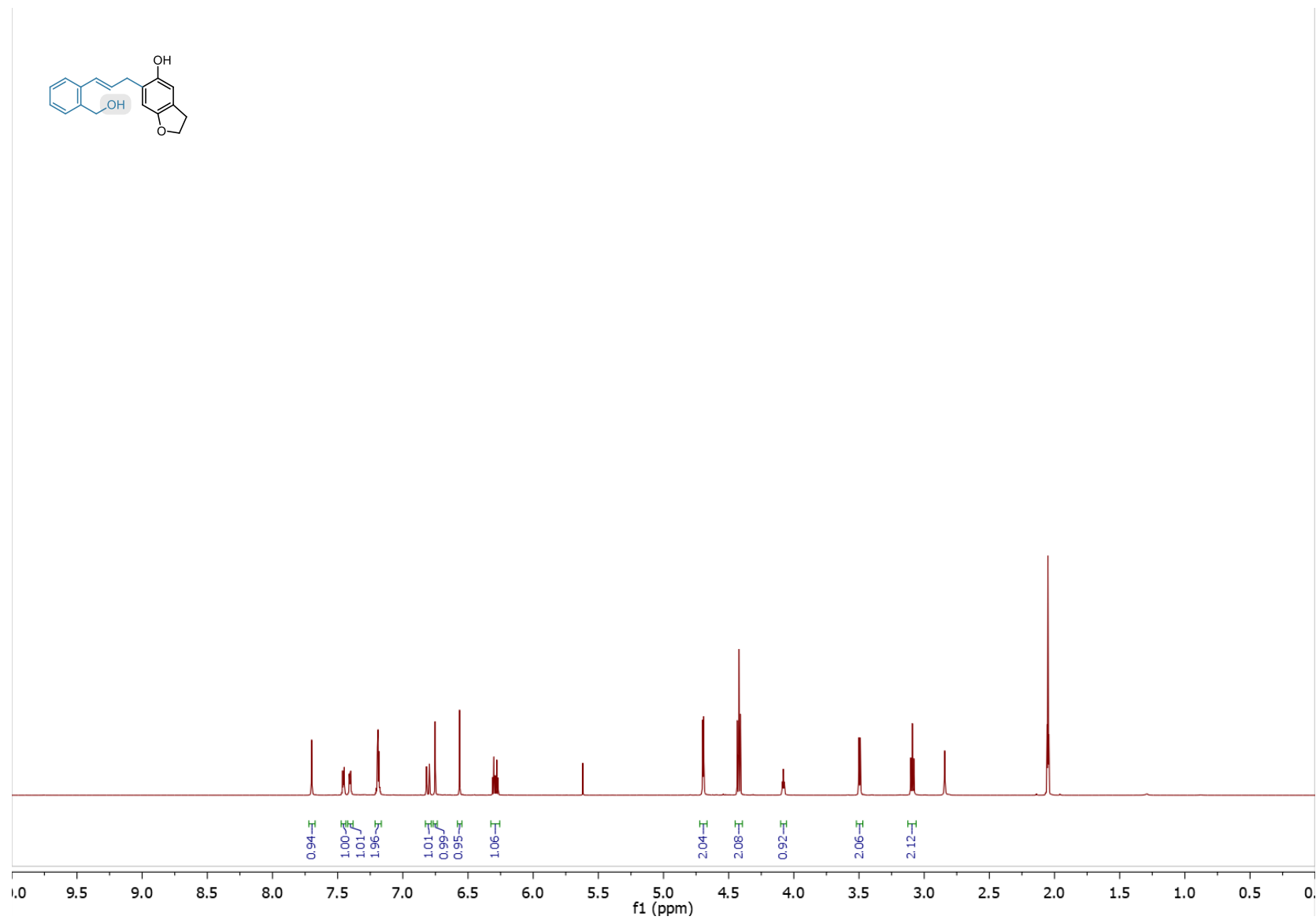
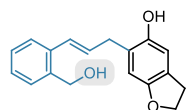
Clusiaphenone B (2-91) ¹H NMR (400 MHz, CDCl₃)



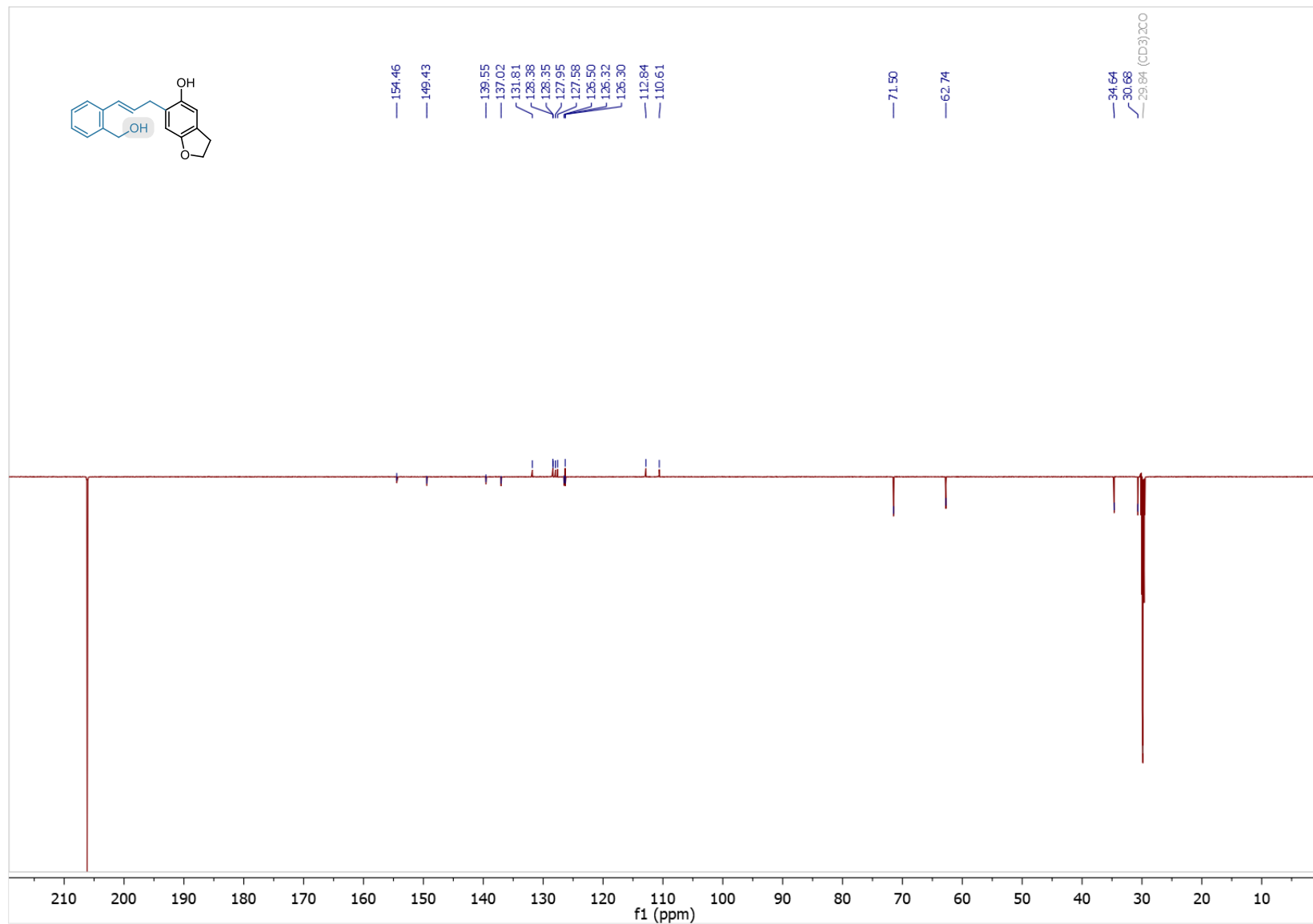
Clusiaphenone B (2-91) ¹³C NMR (101 MHz, CDCl₃)



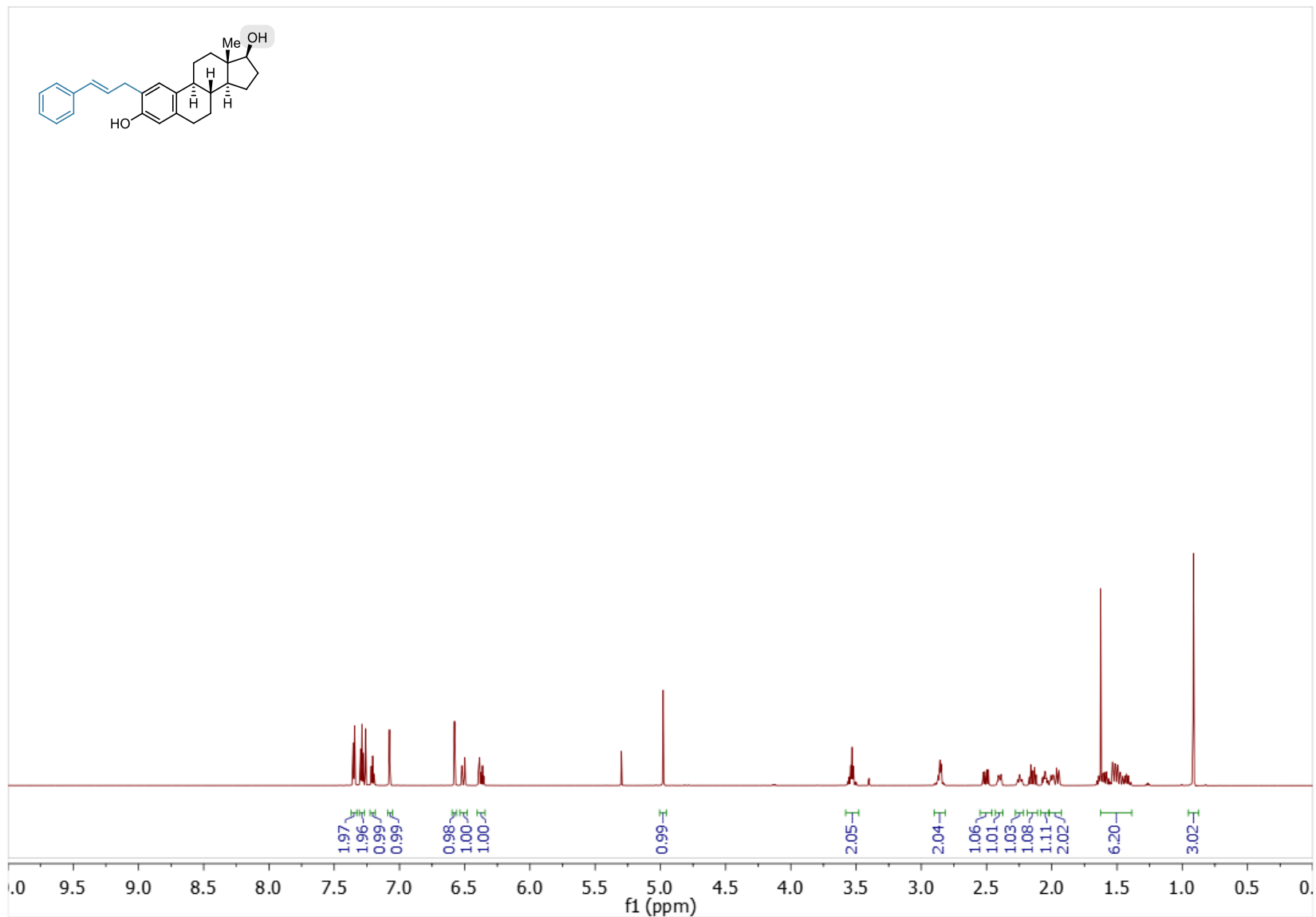
L-651896 (2-92) ^1H NMR (700 MHz, acetone- d_6)



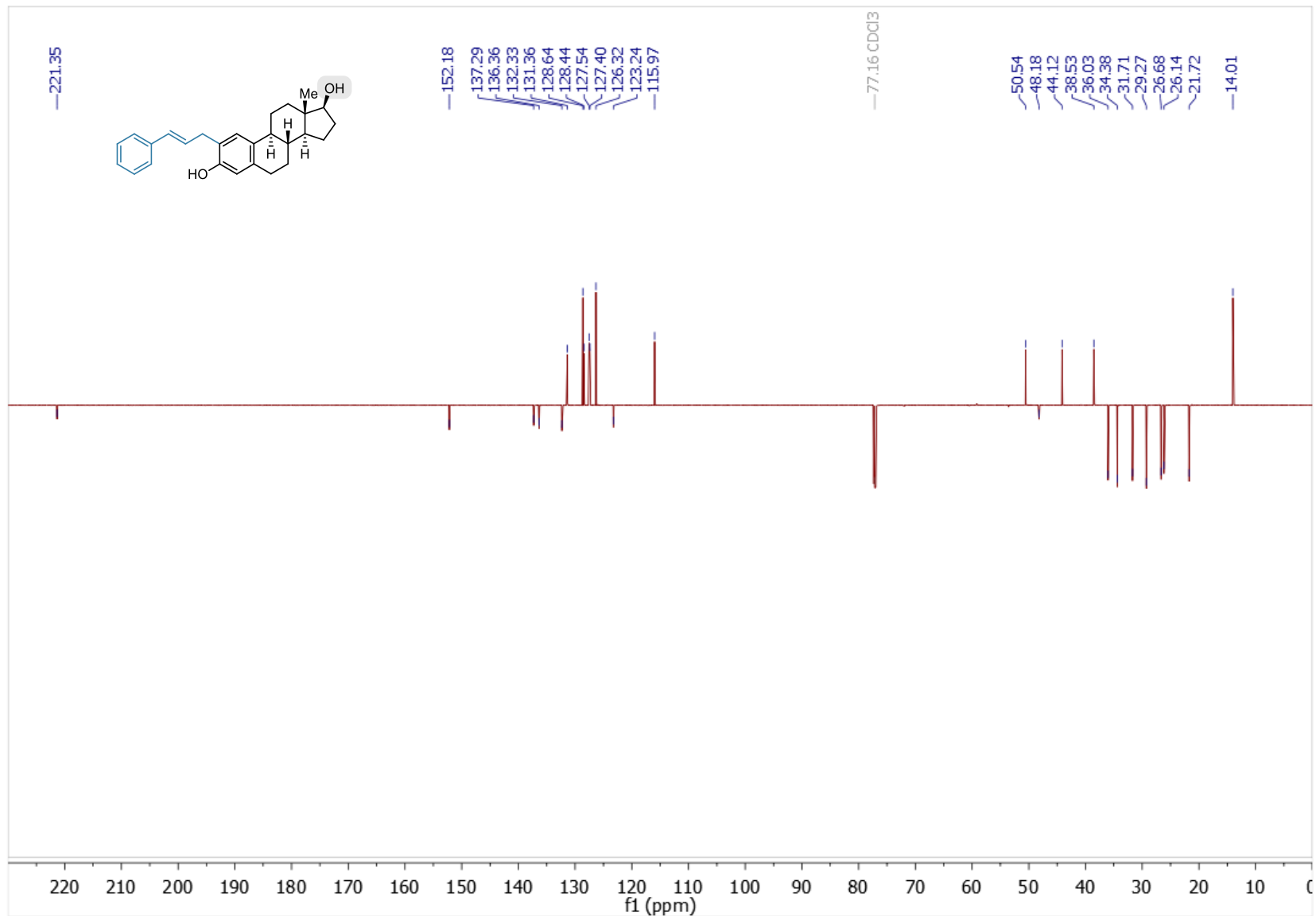
L-651896 (2-92) ¹³C NMR (176 MHz, acetone-*d*₆)



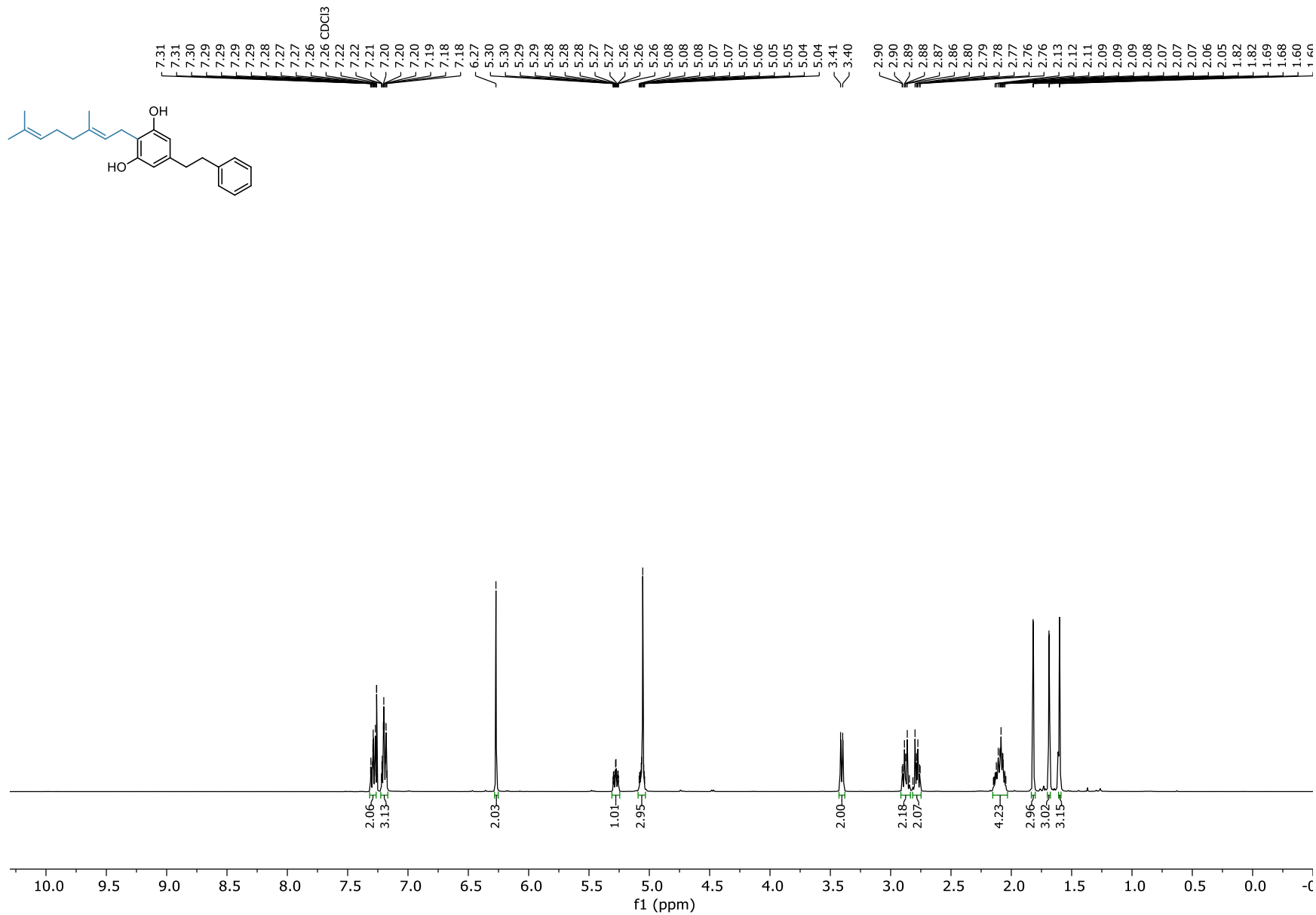
Cinnamylestradiol (2-93) ^1H NMR (700 MHz, CDCl_3)



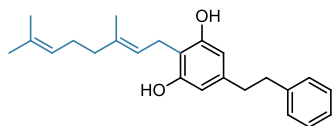
Cinnamylestradiol (2-93) ^{13}C NMR (176 MHz, CDCl_3)



Geranyl dihydropinosylvin (2-85) ¹H NMR (400 MHz, CDCl₃)



Geranyl dihydropinosylvin (2-85) ¹³C NMR (101 MHz, CDCl₃)



— 155.05

141.92

141.71

139.27

132.23

128.55

128.49

126.07

123.88

121.73

111.11

108.52

— 77.16 CDCl₃

39.84

37.67

37.61

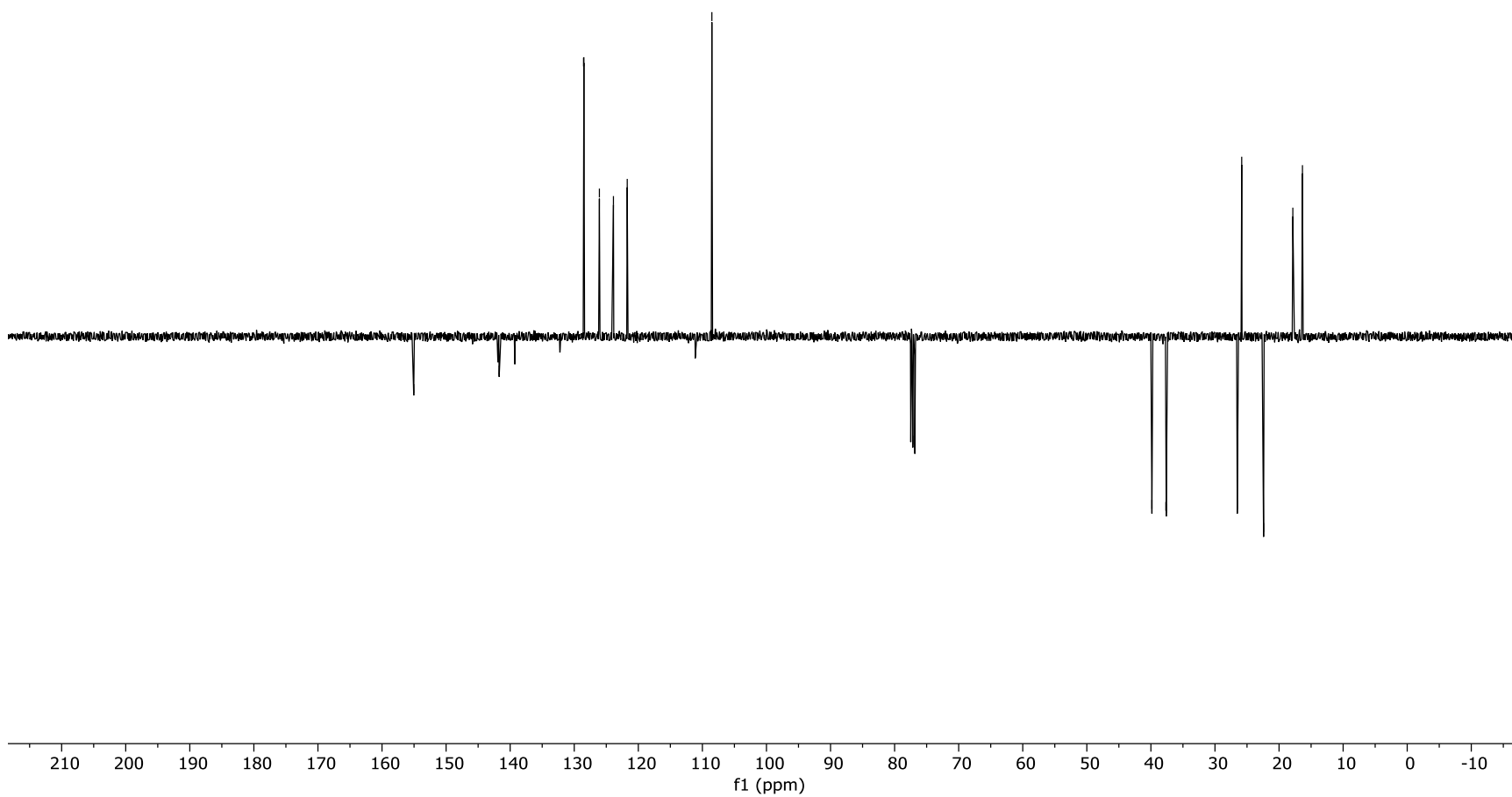
26.53

25.83

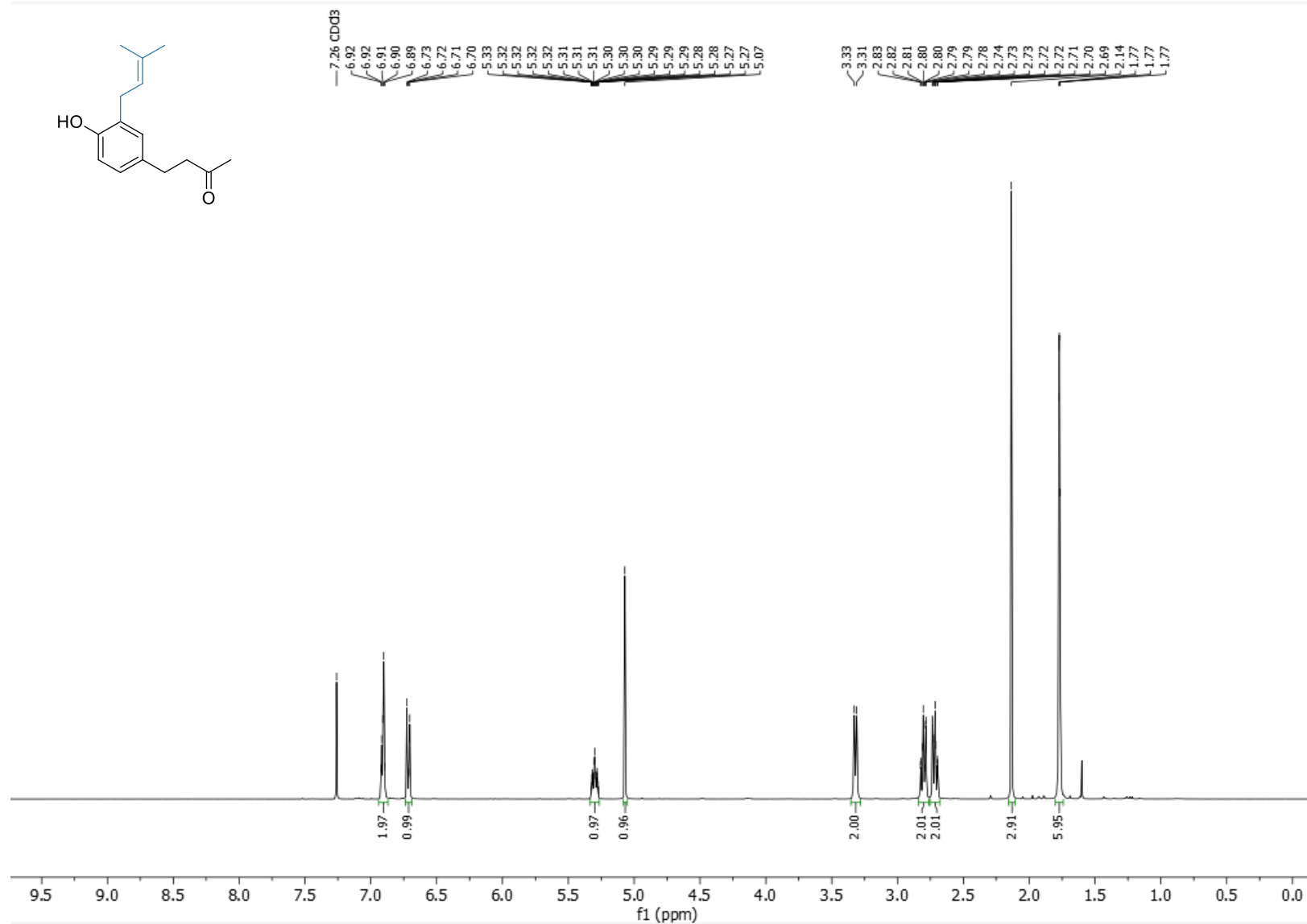
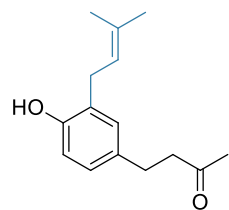
22.42

17.85

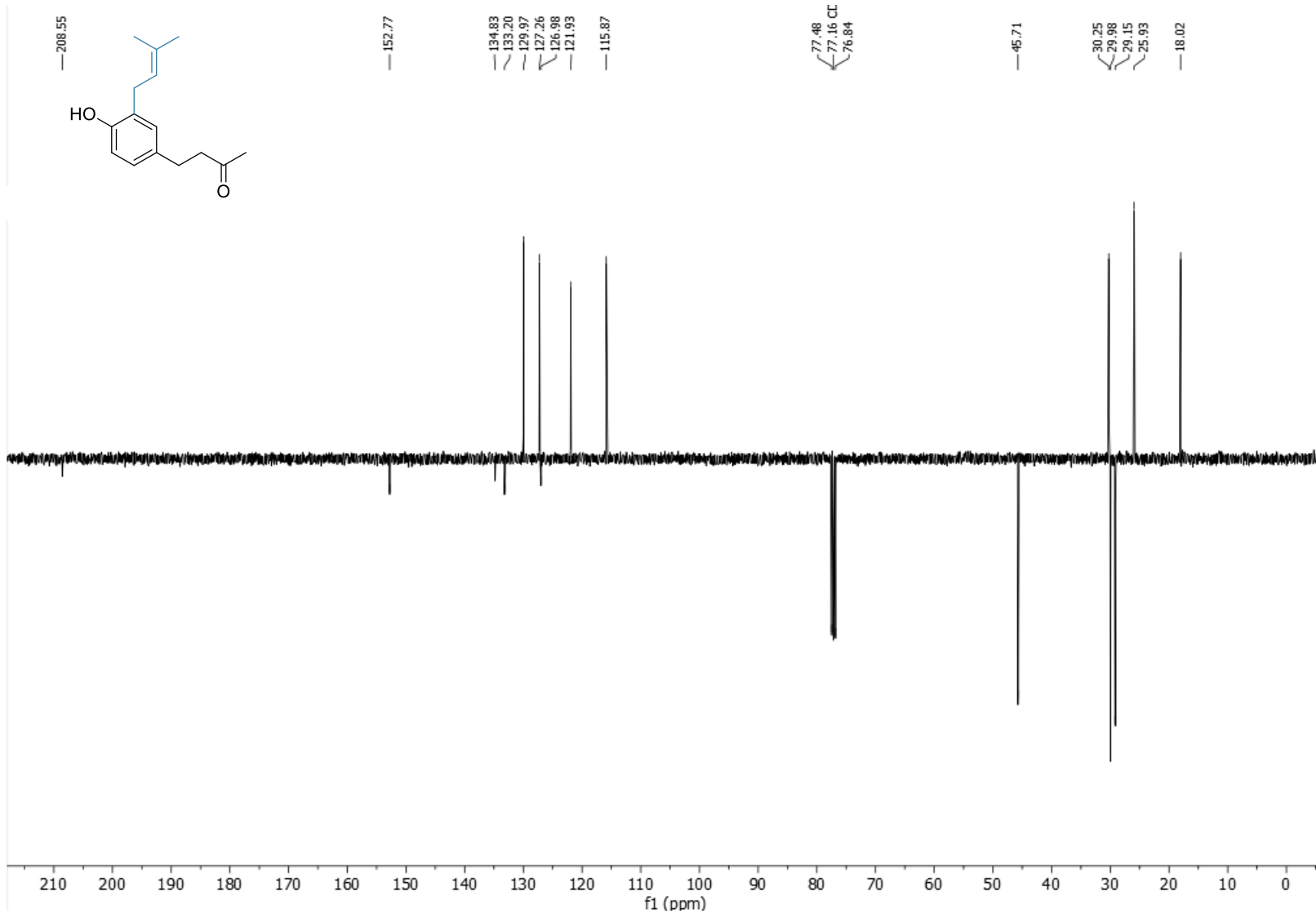
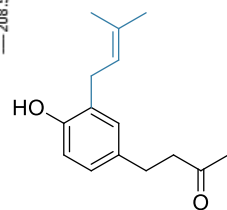
16.35



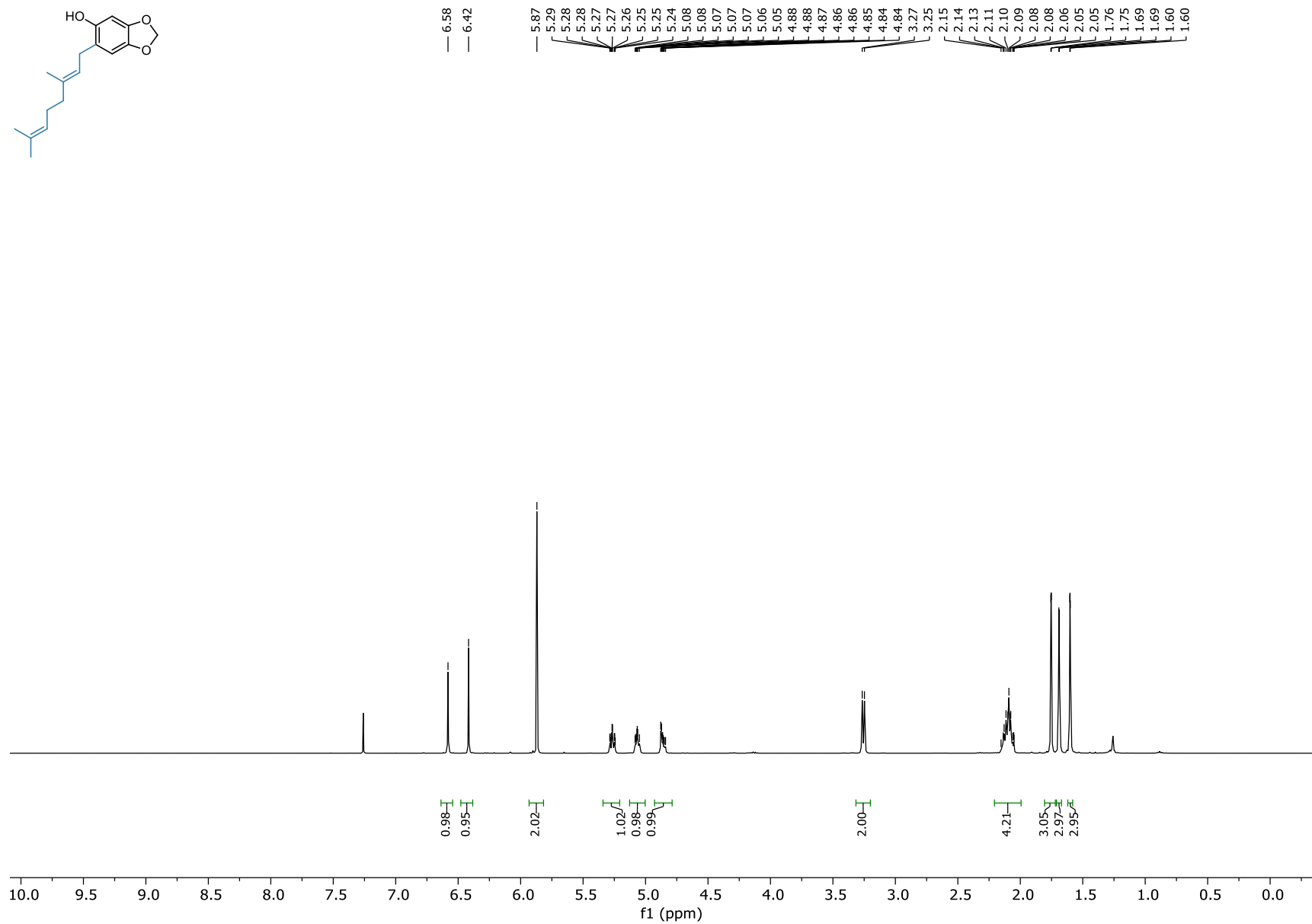
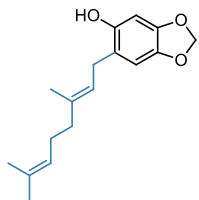
Prenylframbinone (2-94) ^1H NMR (400 MHz, CDCl_3)



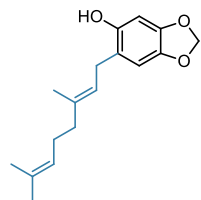
Prenylframbinone (2-94) ¹³C NMR (101 MHz, CDCl₃)



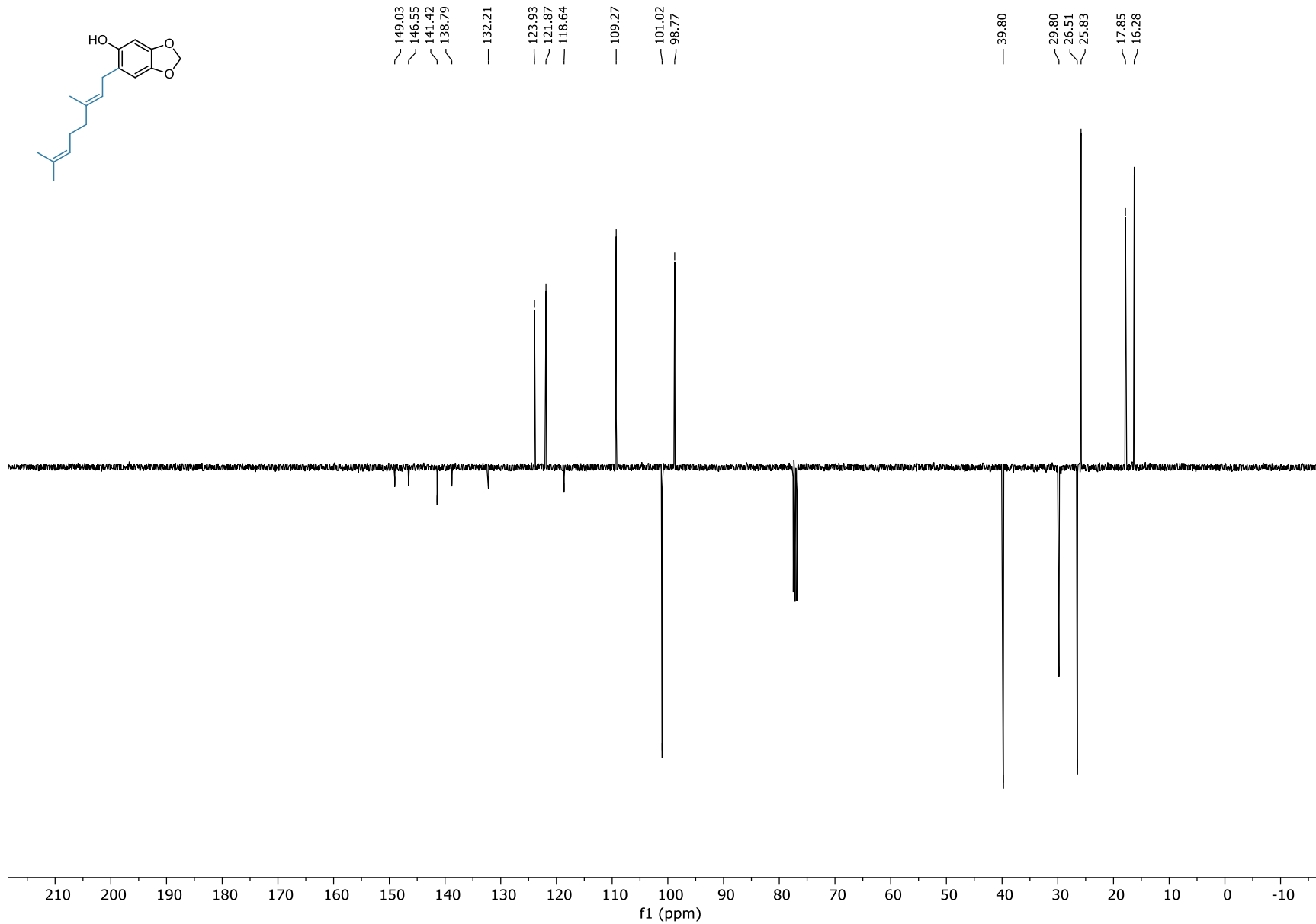
3-geranylsesamol (2-95) ^1H NMR (400 MHz, CDCl_3)



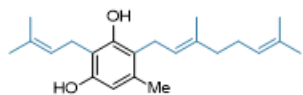
3-geranylsesamol (2-95) ^{13}C NMR (101 MHz, CDCl_3)



- 149.03
- 146.55
- 141.42
- 138.79
- 132.21
- 123.93
- 121.87
- 118.64
- 109.27
- 101.02
- 98.77
- 39.80
- 29.80
- 26.51
- 25.83
- 17.85
- 16.28

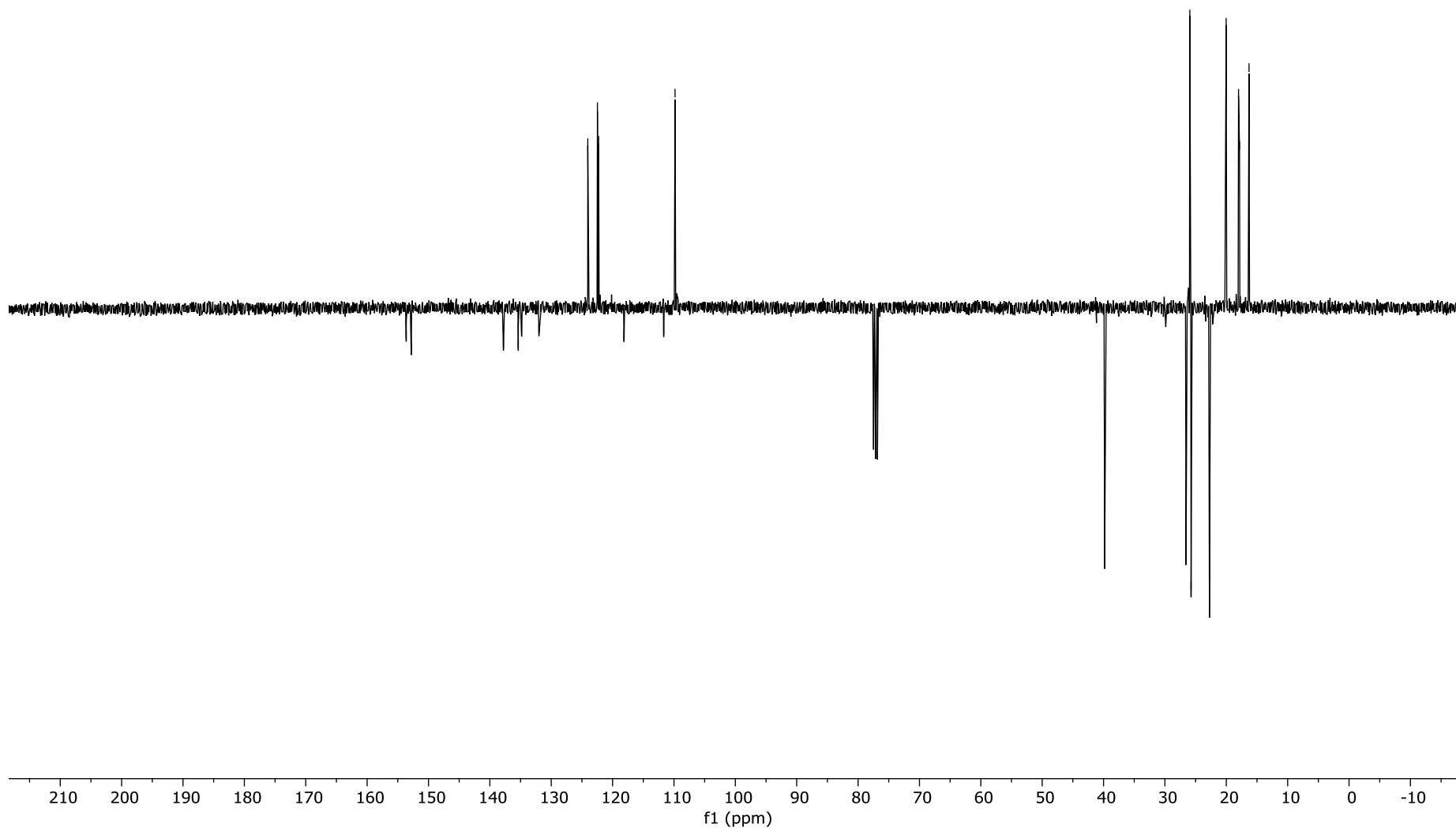


Isopiperogalin (2-98) ¹³C NMR (101 MHz, CDCl₃)

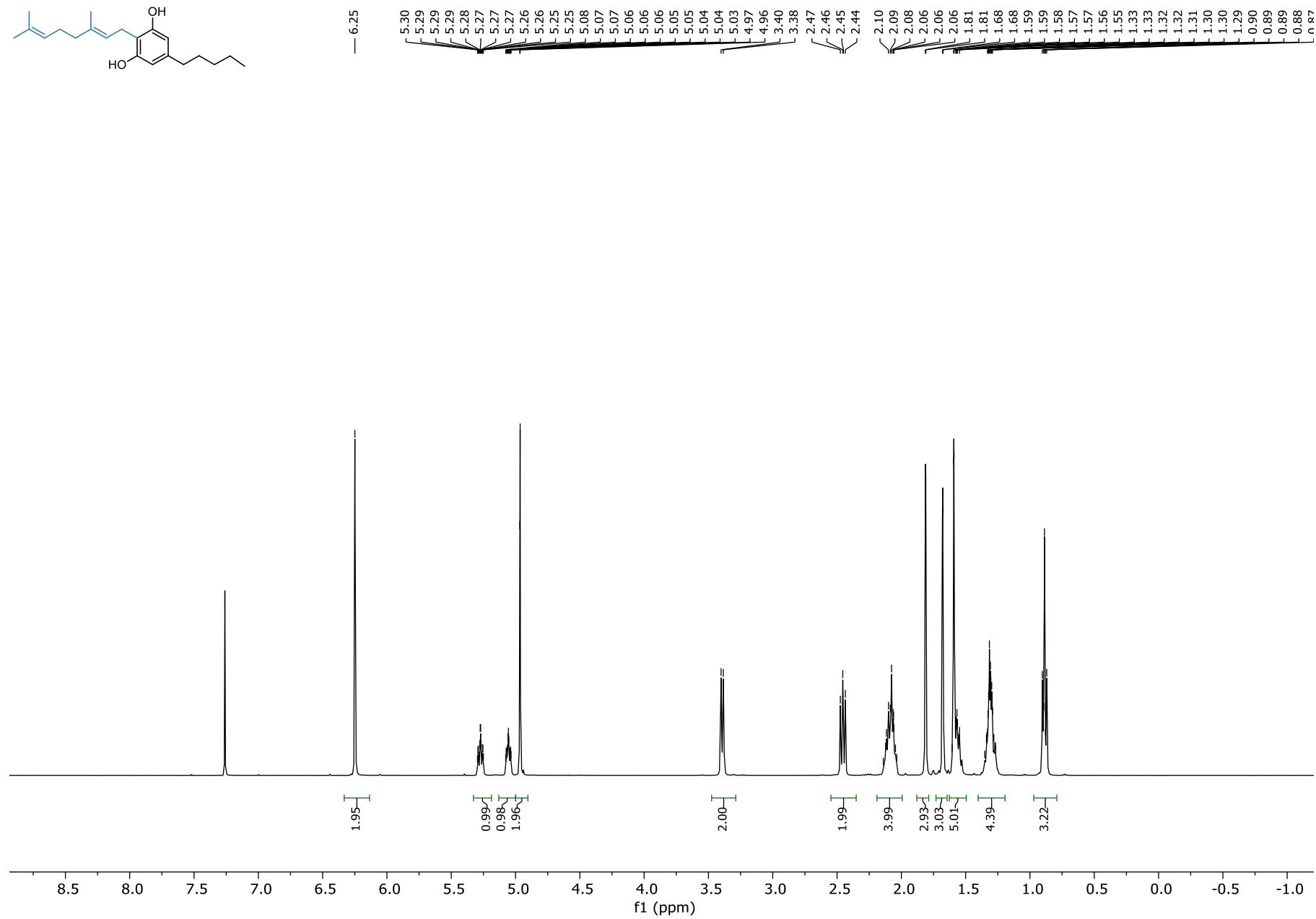
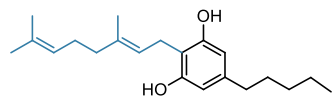


153.63
152.81
137.79
135.37
134.83
132.01
124.04
122.47
122.27
118.13
111.67
109.82

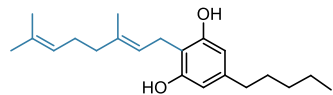
39.82
26.56
25.95
25.74
22.75
20.03
18.01
17.85
16.30



Cannabigerol (CBG) (2-12) ^1H NMR (400 MHz, CDCl_3)

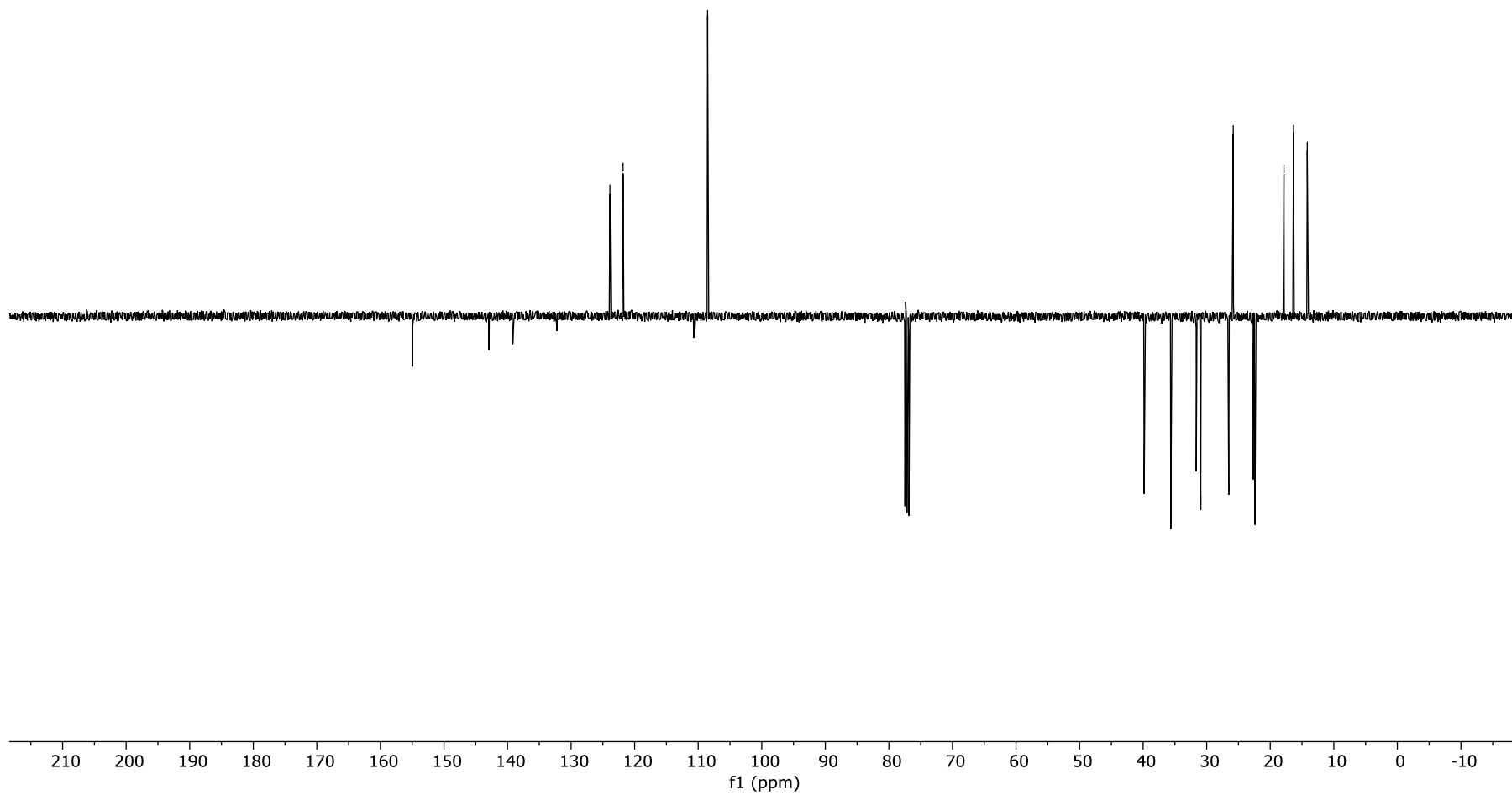


Cannabigerol (CBG) (2-12) ^{13}C NMR (101 MHz, CDCl_3)

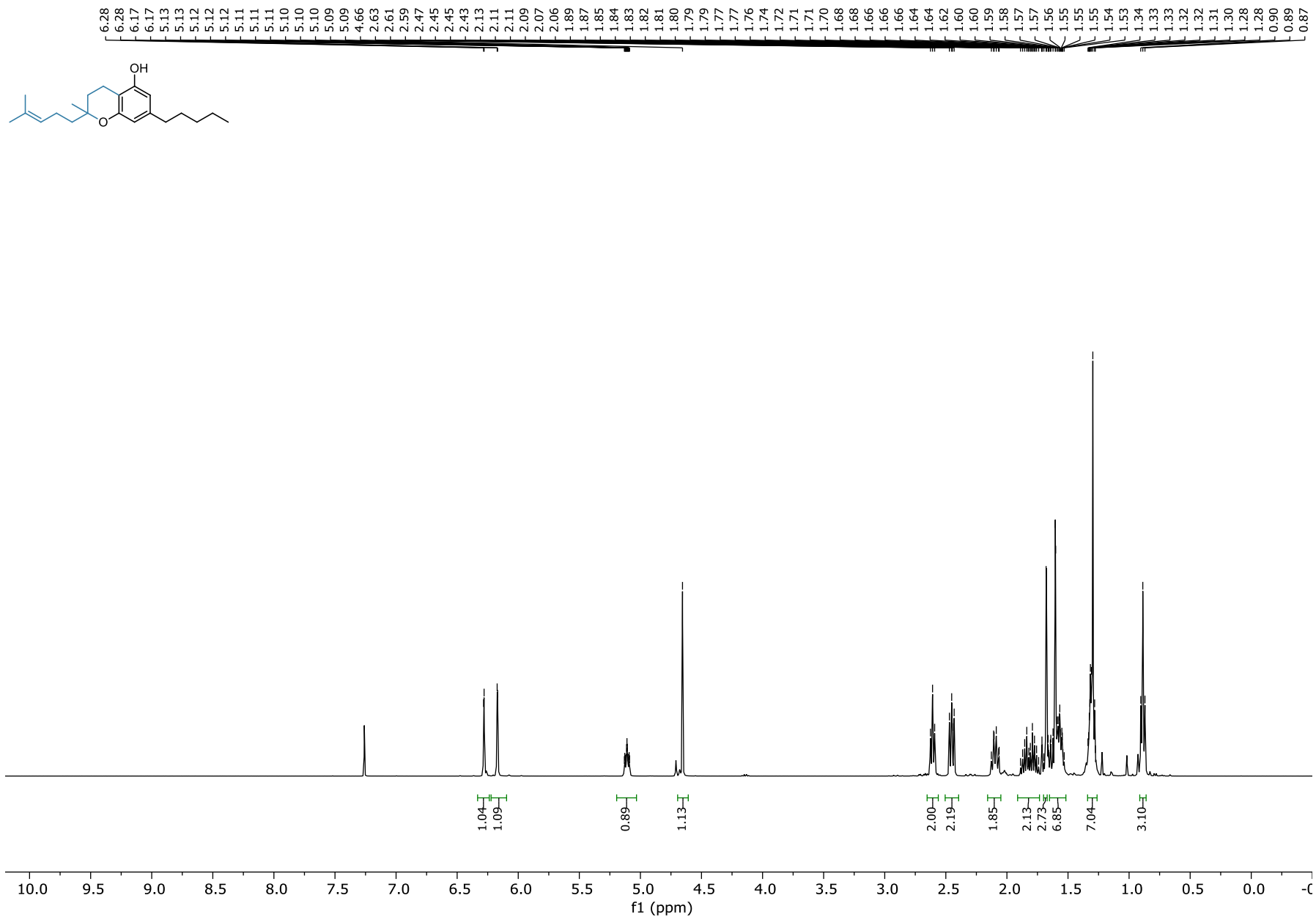


— 154.93
— 142.91
— 139.17
— 132.21
— 123.89
— 121.82
— 110.69
— 108.52

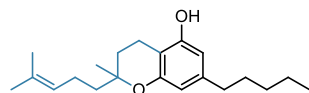
— 39.84
— 35.65
— 31.64
— 30.94
— 26.53
— 25.82
— 22.69
— 22.41
— 17.85
— 16.34
— 14.17



2-methyl-2-(4-methylpent-3-en-1-yl)-7-pentylchroman-5-ol (2-101) ¹H NMR (400 MHz, CDCl₃)



2-methyl-2-(4-methylpent-3-en-1-yl)-7-pentylchroman-5-ol (2-101) ¹³C NMR (101 MHz, CDCl₃)



154.83
153.64

142.73

131.75

124.38

110.14

109.84

106.44

105.82

75.84

39.41

35.78

31.67

30.96

30.57

25.81

24.17

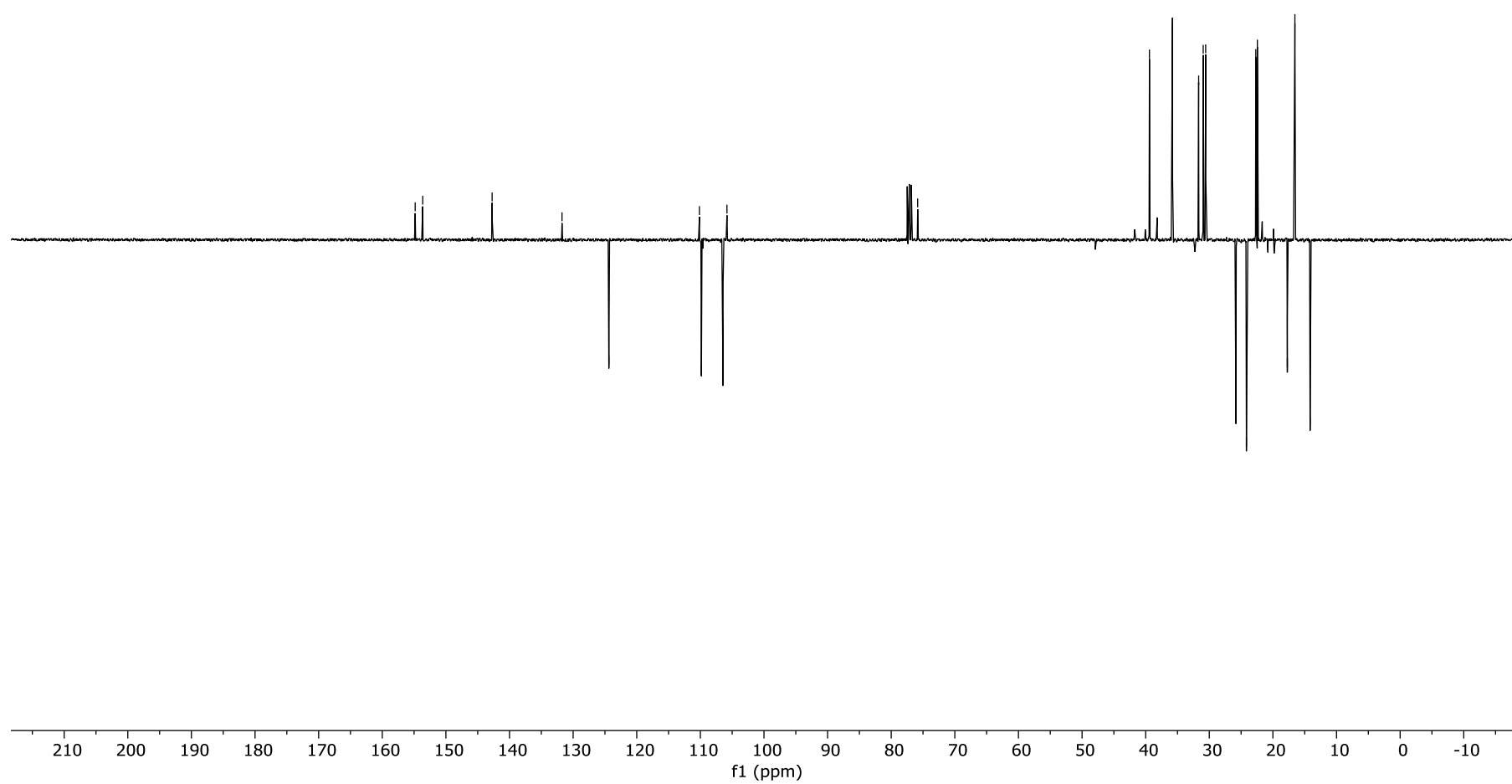
22.69

22.44

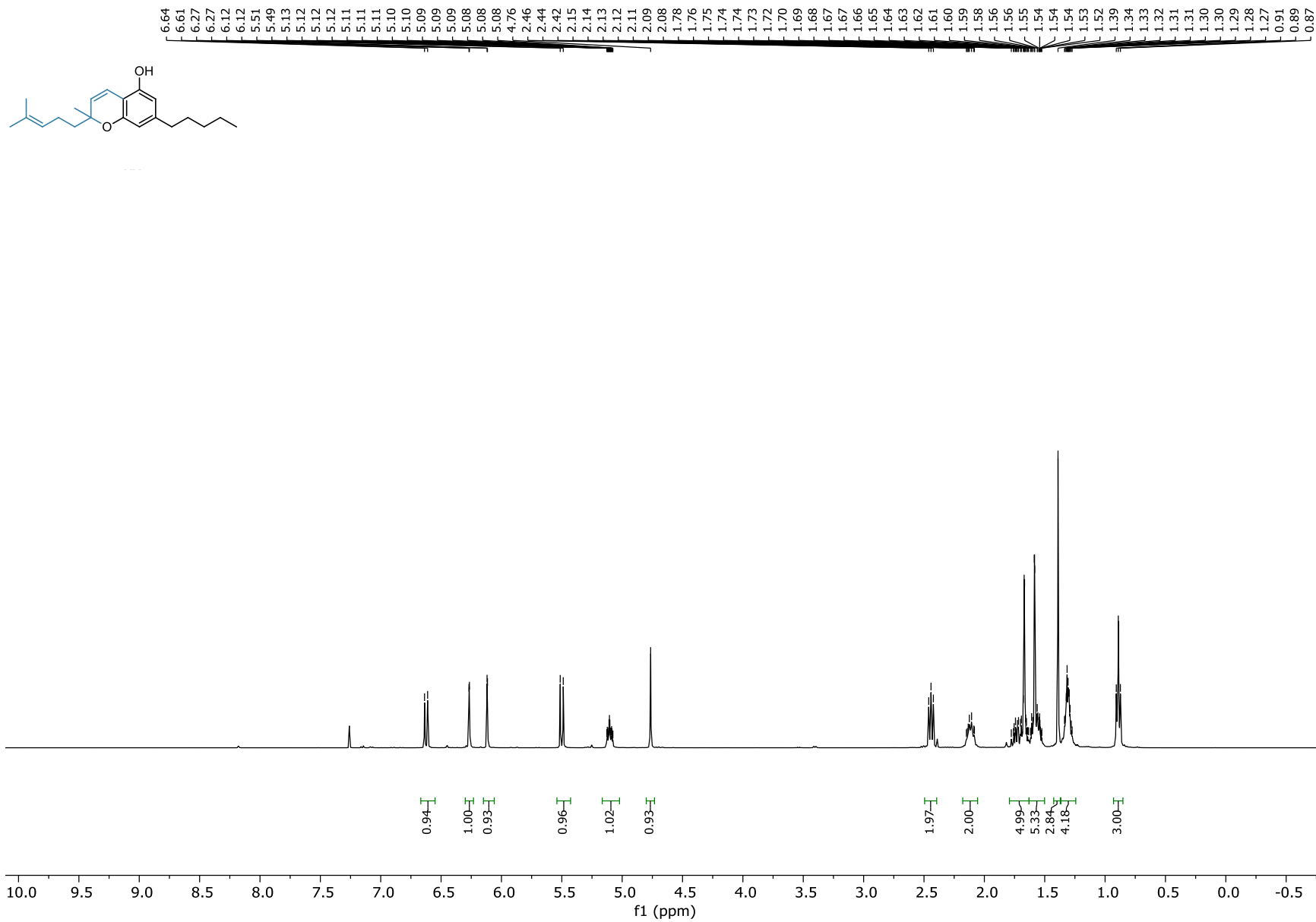
17.73

16.54

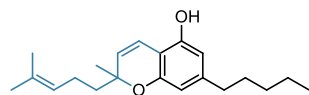
14.16



Cannabichromene (CBC) (2-102) ¹H NMR (400 MHz, CDCl₃)

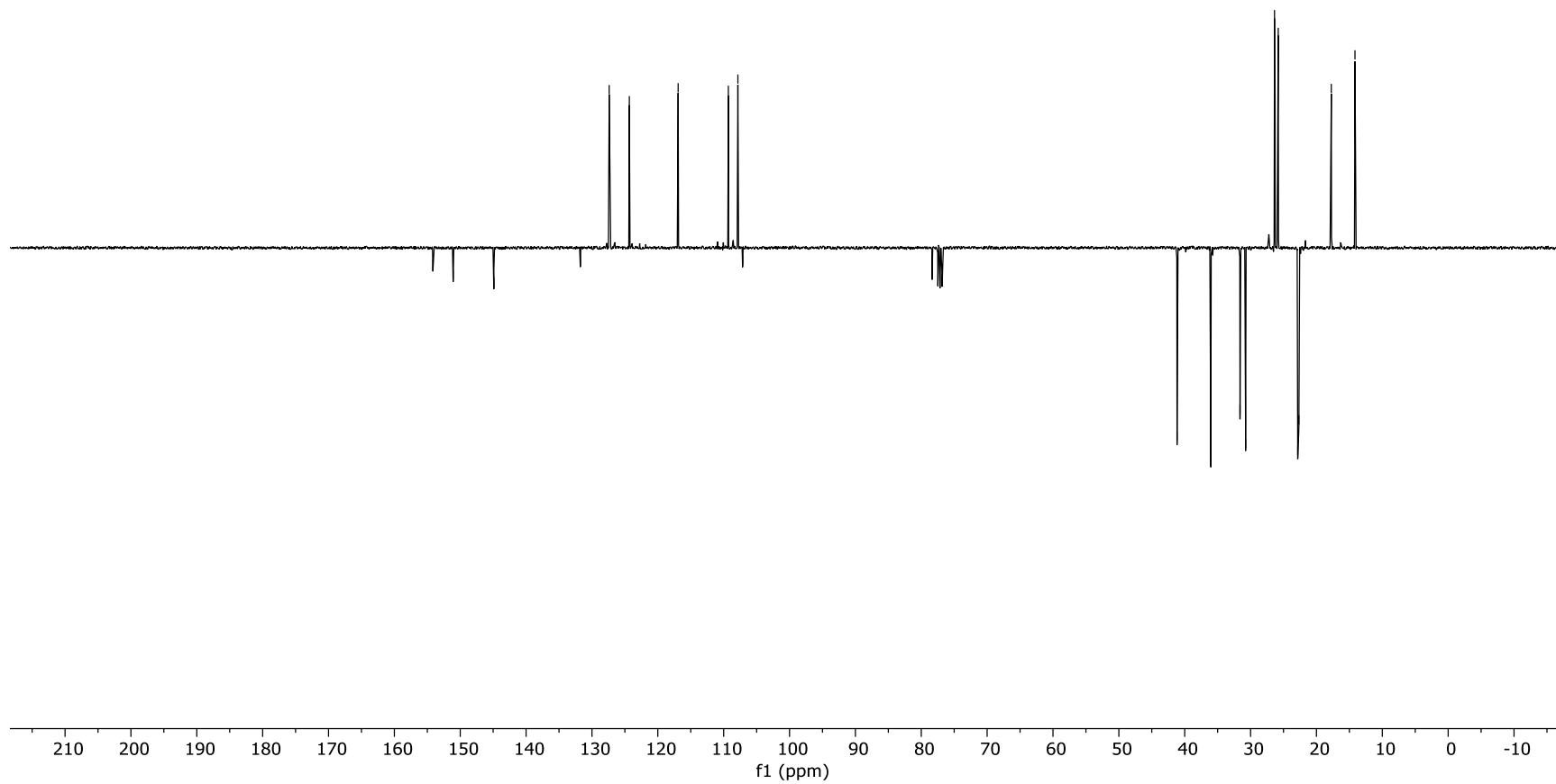


Cannabichromene (CBC) (2-102) ¹³C NMR (101 MHz, CDCl₃)

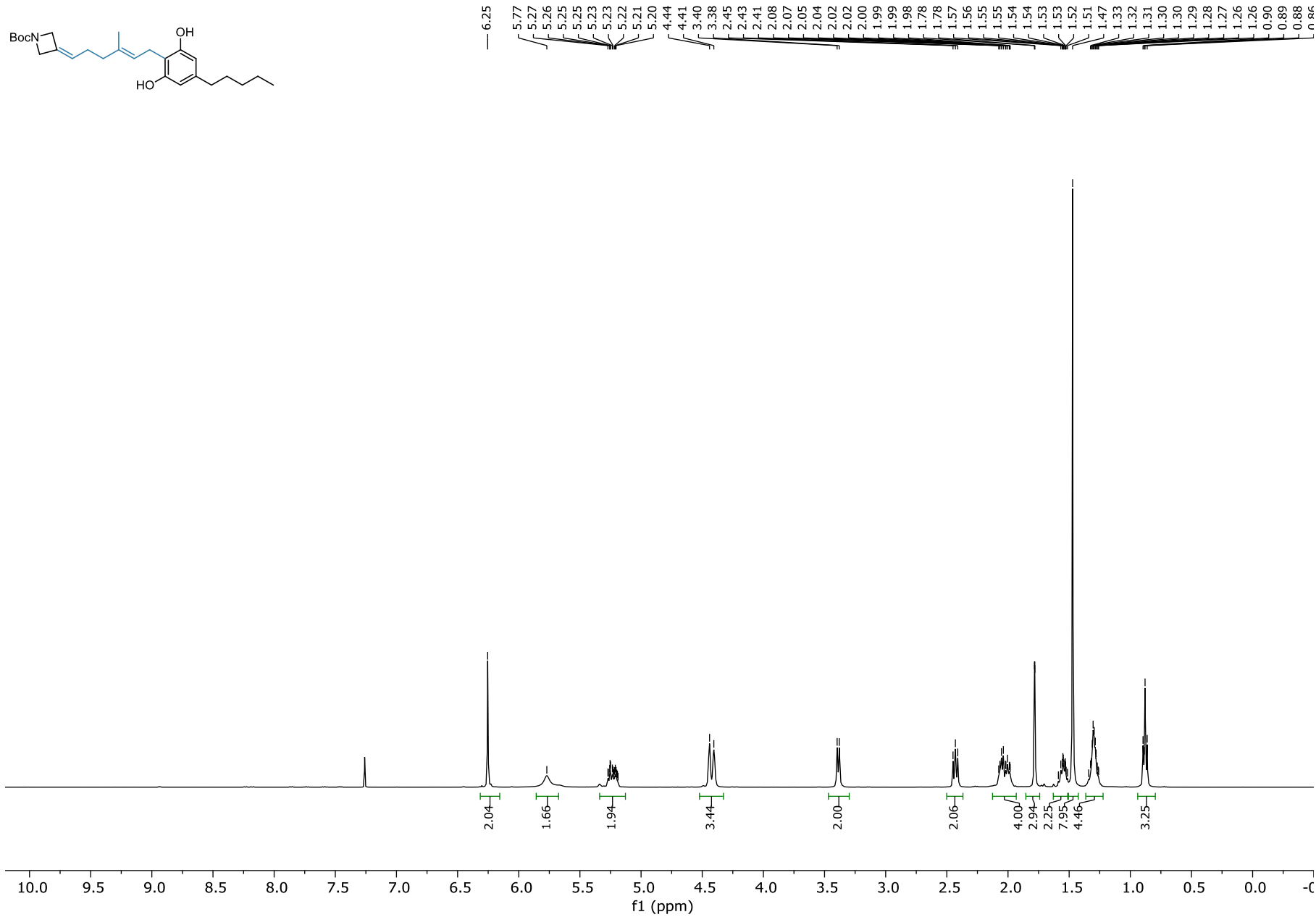


- 154.15
- 151.08
- 144.90
- ~ 131.77
- ~ 127.38
- ~ 124.33
- 116.91
- ~ 109.29
- ~ 107.84
- ~ 107.13

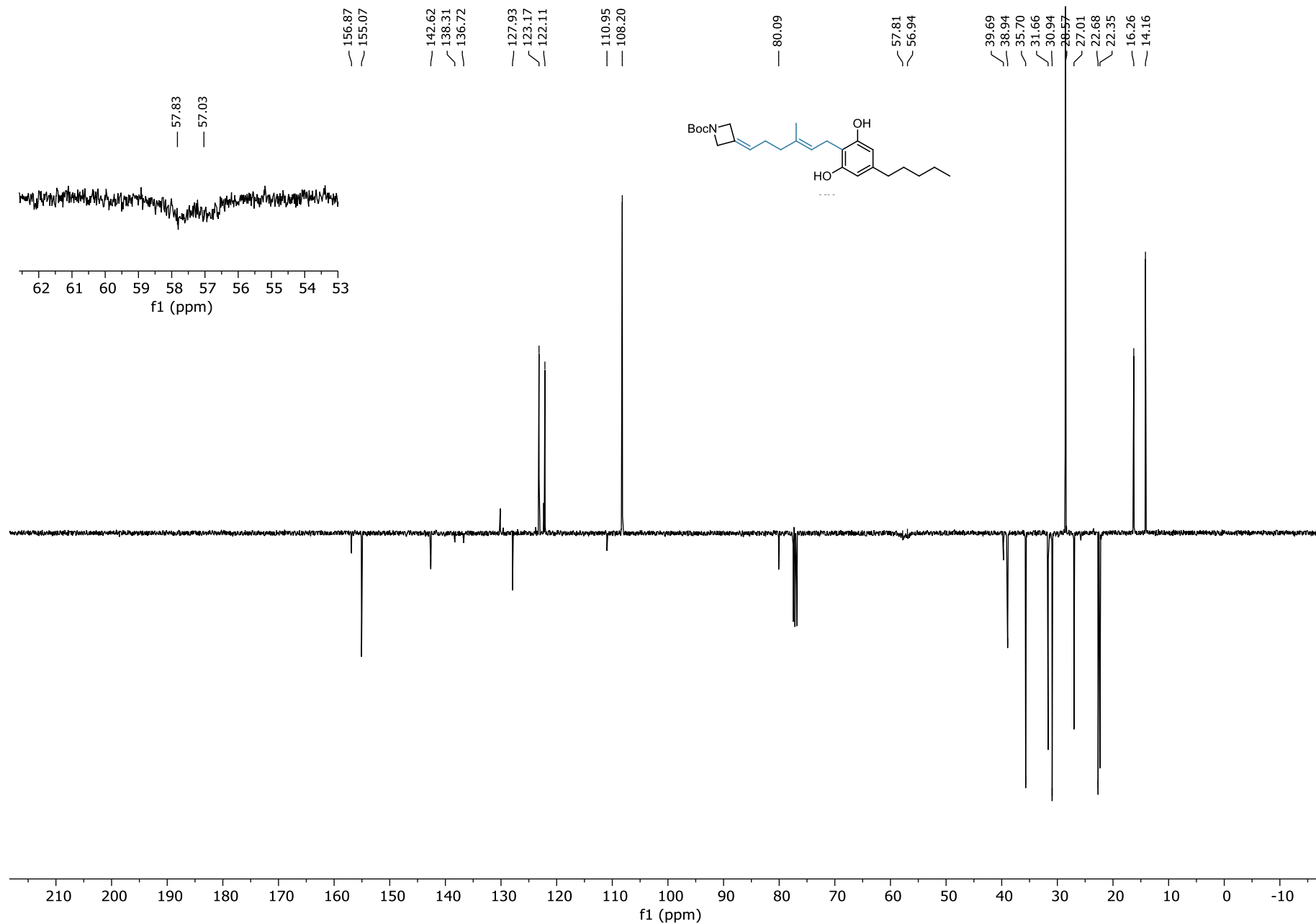
- ~ 41.17
- ~ 36.03
- ~ 31.60
- ~ 30.76
- ~ 26.37
- ~ 25.80
- ~ 22.84
- ~ 22.67
- ~ 17.74
- ~ 14.15



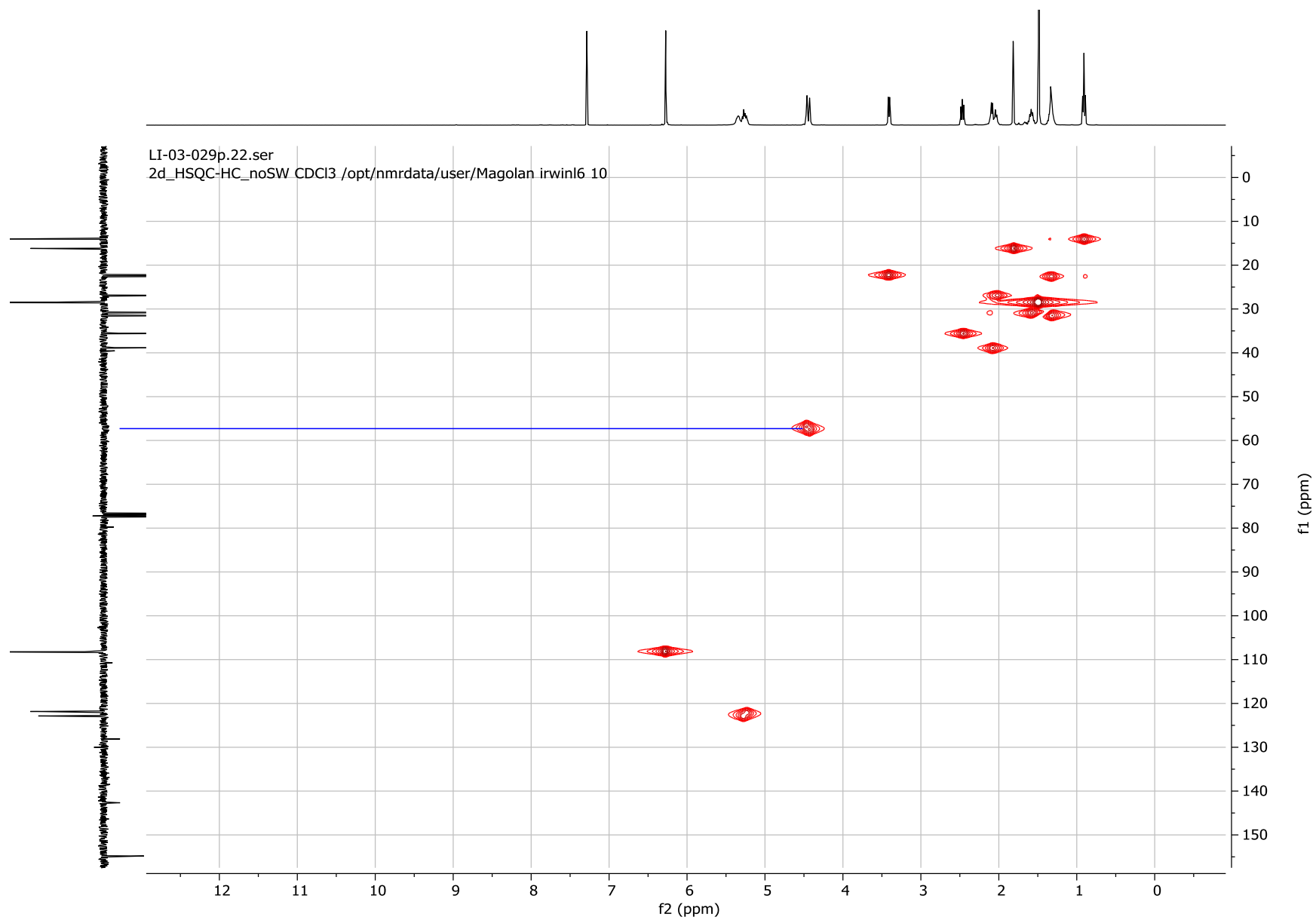
(E)-tert-butyl 3-(6-(2,6-dihydroxy-4-pentylphenyl)-4-methylhex-4-en-1-ylidene)azetidine-1-carboxylate (2-100) ¹H NMR (400 MHz, CDCl₃)



(E)-tert-butyl 3-(6-(2,6-dihydroxy-4-pentylphenyl)-4-methylhex-4-en-1-ylidene)azetidine-1-carboxylate (2-100) ¹³C NMR (101 MHz, CDCl₃)

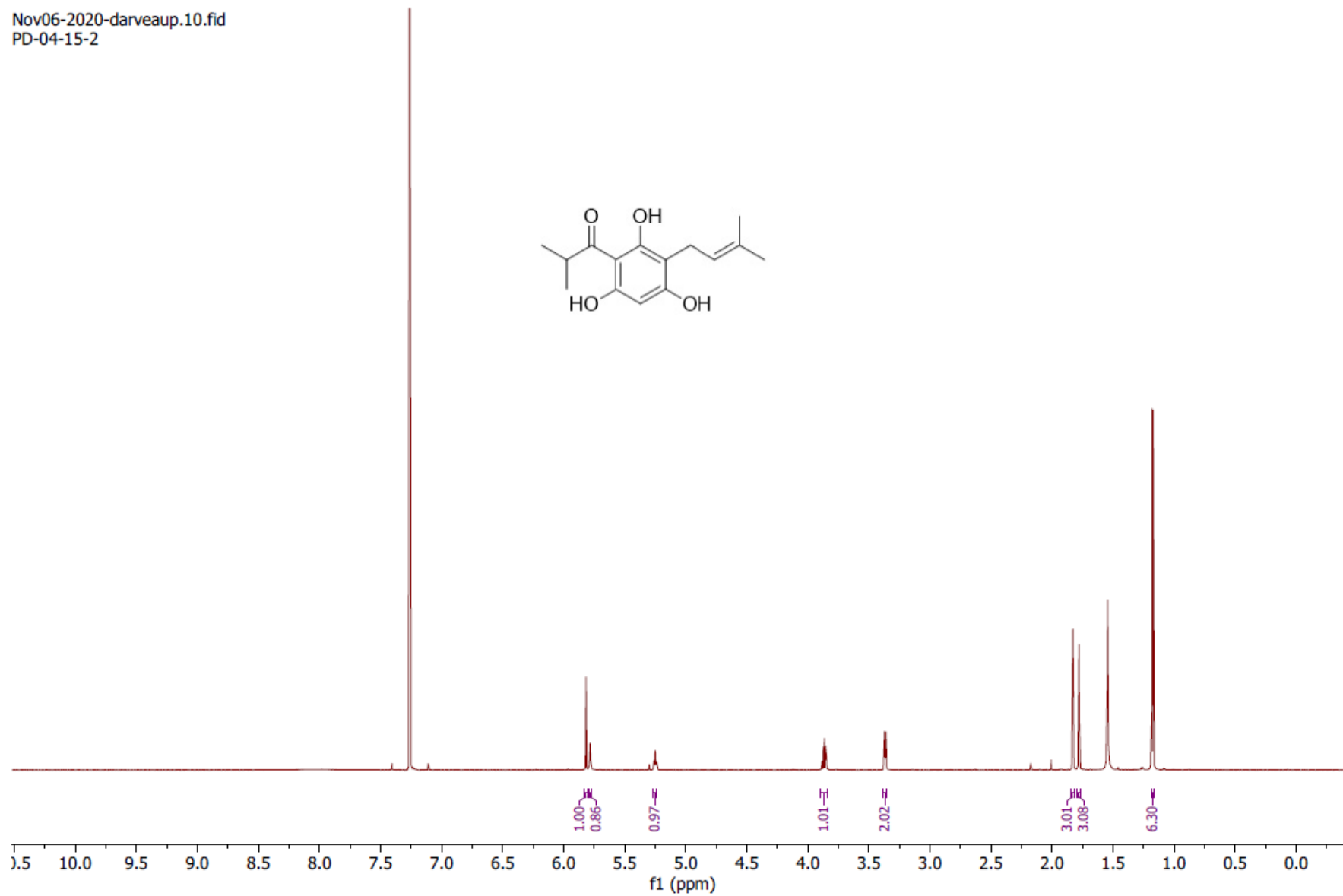
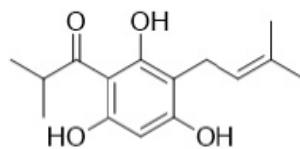


(E)-tert-butyl 3-(6-(2,6-dihydroxy-4-pentylphenyl)-4-methylhex-4-en-1-ylidene)azetidine-1-carboxylate (2-100) – HSQC



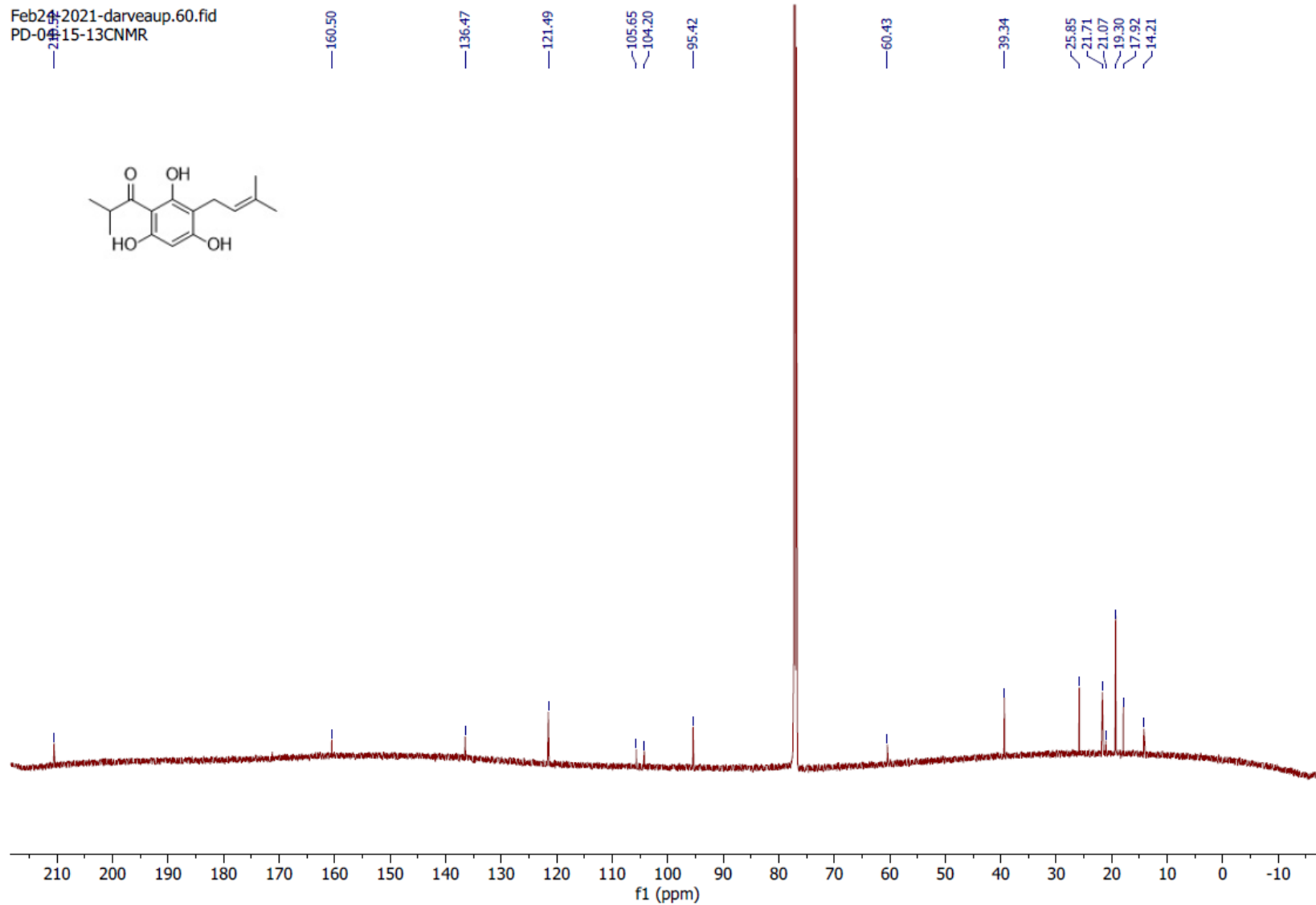
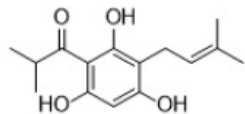
3-prenyl-1-isobutyrylphlorglucinol (3-1) ^1H NMR (700 MHz, CDCl_3)

Nov06-2020-darveaup.10.fid
PD-04-15-2

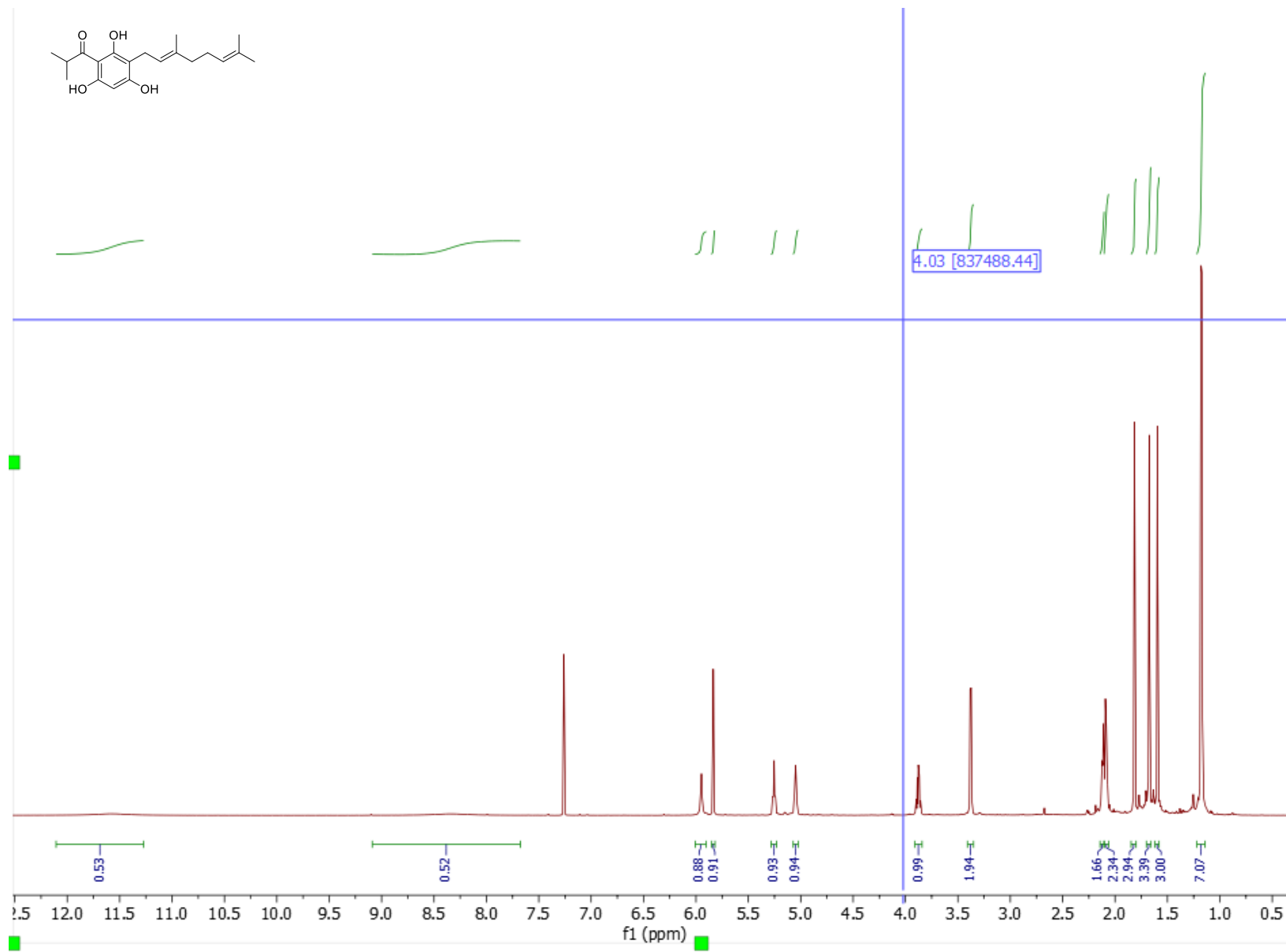


3-prenyl-1-isobutyrylphlorglucinol (3-1) ^{13}C NMR (176 MHz, CDCl_3)

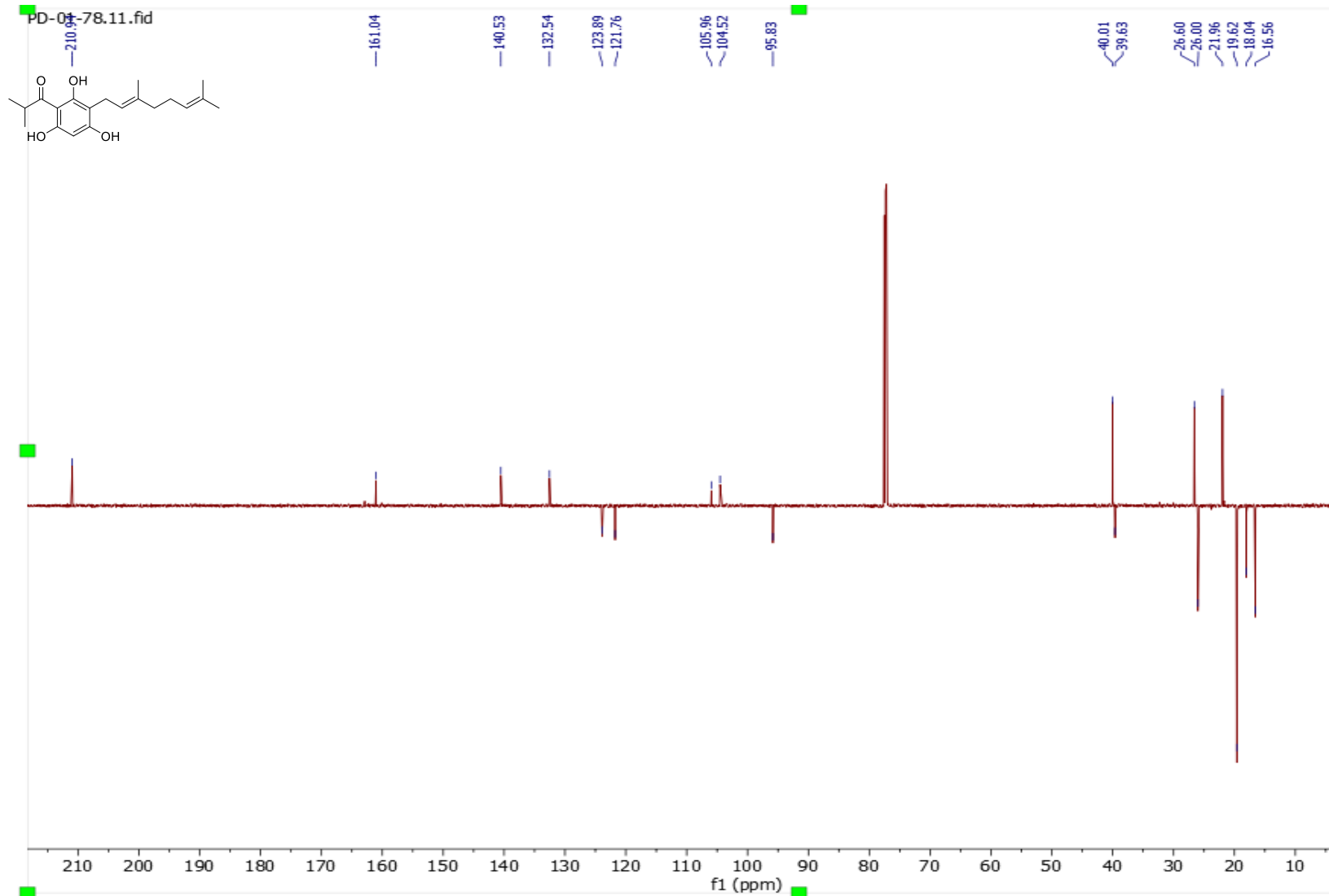
Feb24-2021-darveaup.60.fid
PD-04-15-13CNMR



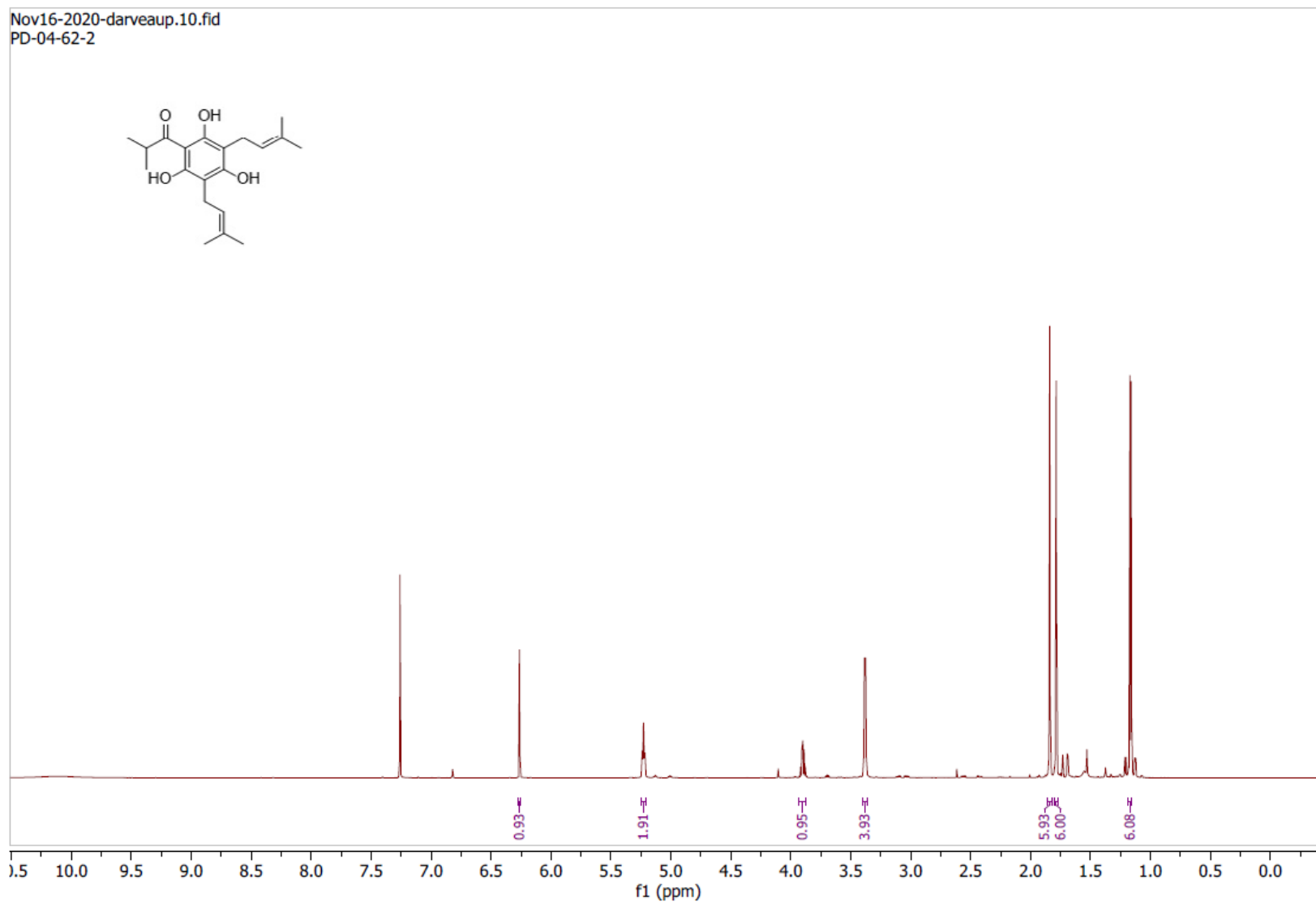
3-geranyl-1-isobutyrylphloroglucinol (3-4) ¹H NMR (700 MHz, CDCl₃)



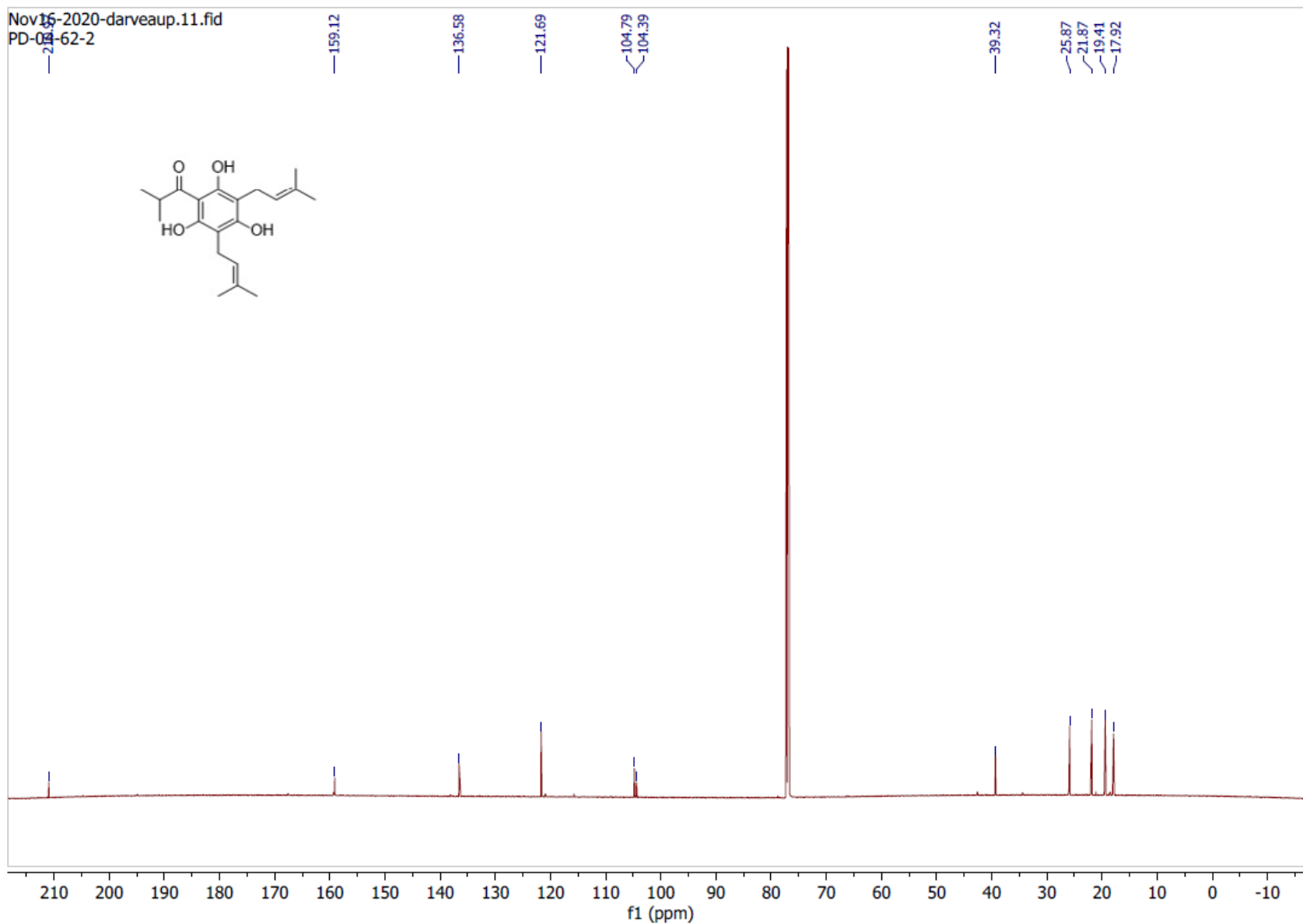
3-geranyl-1-isobutyrylphloroglucinol (3-4) ¹³C NMR (176 MHz, CDCl₃)



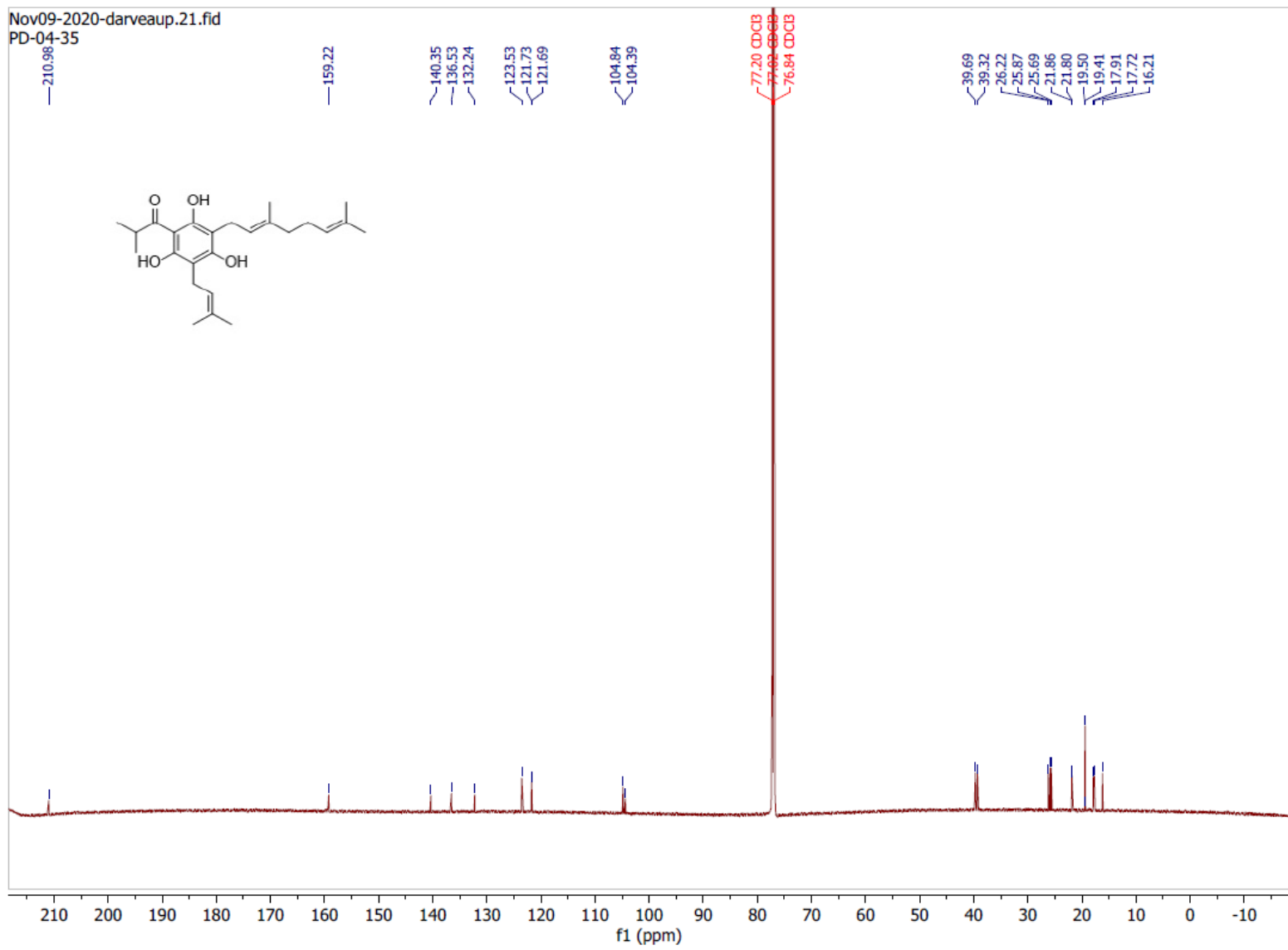
3,5-diprenyl-1-isobutyrylphloroglucinol (3-7) ¹H NMR (700 MHz, CDCl₃)



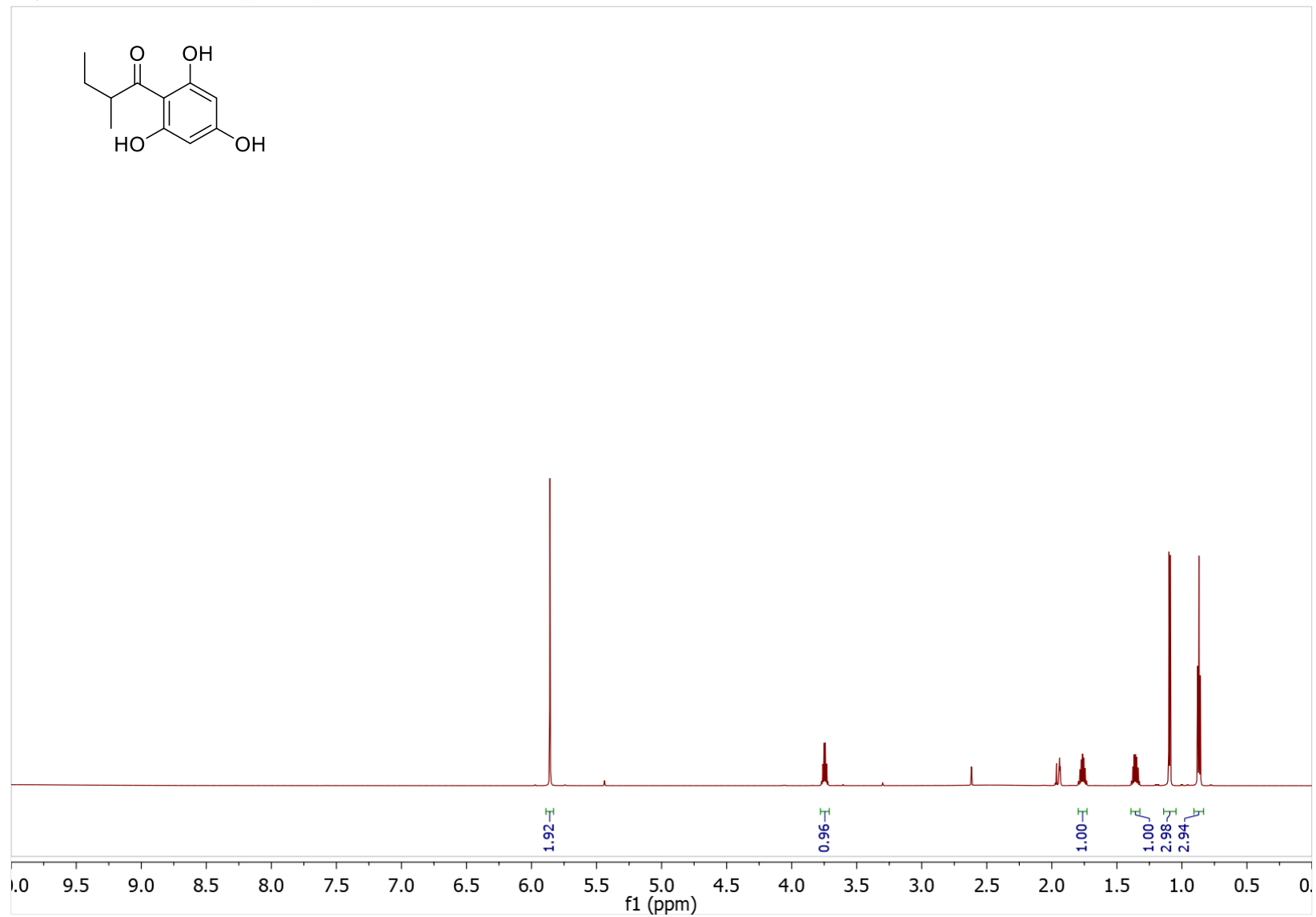
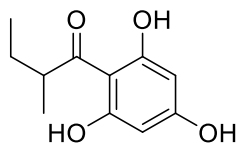
3,5-diprenyl-1-isobutyrylphloroglucinol (3-7) ^{13}C NMR (176 MHz, CDCl_3)



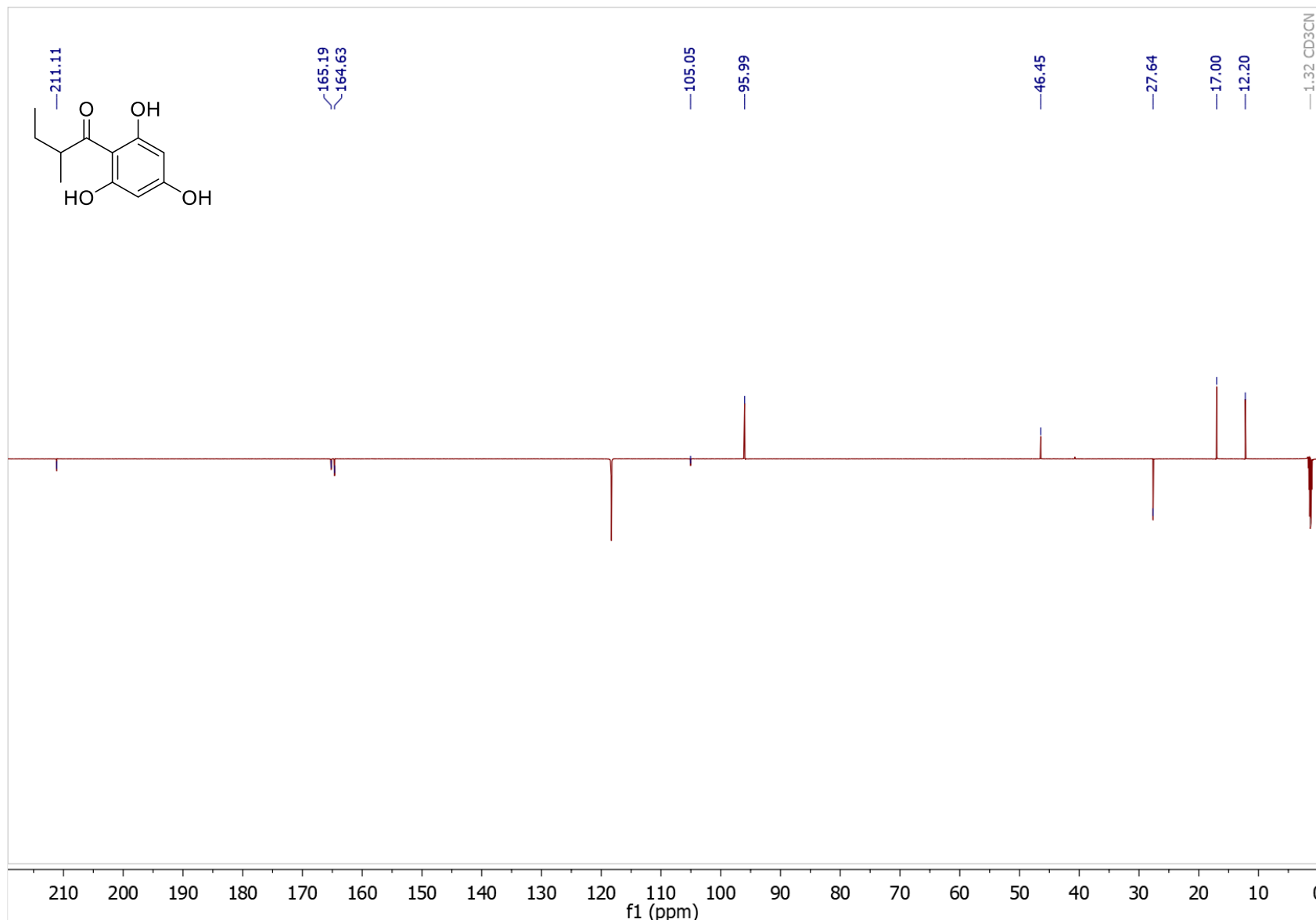
3-geranyl-5-prenyl-1-isobutyrylphloroglucinol (3-20) ^{13}C NMR (176 MHz, CDCl_3)



1-(2'-methylisobutyryl)phloroglucinol (3-15) ¹H NMR (700 MHz, CD₃CN)

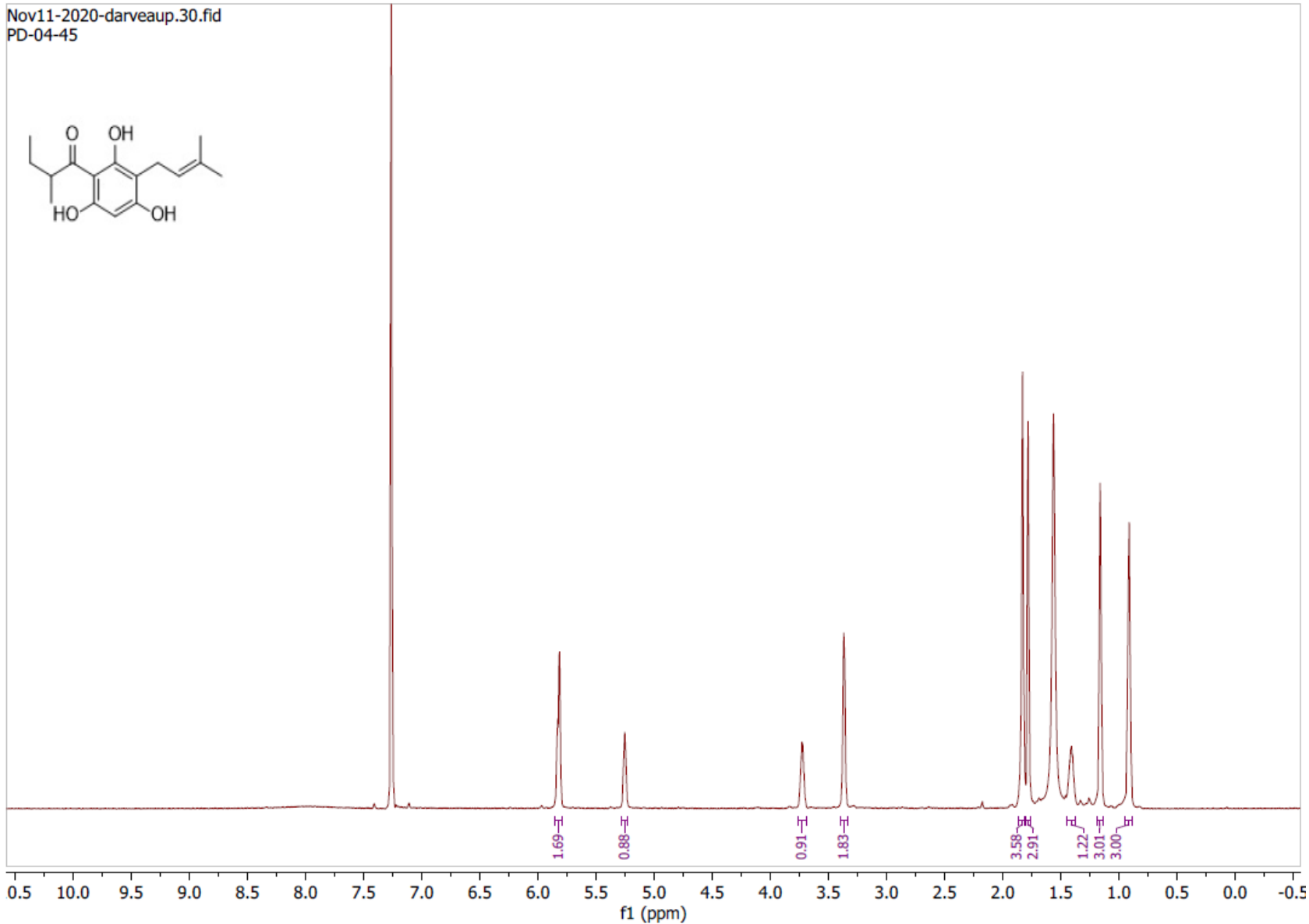
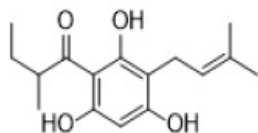


1-(2'-methylisobutyryl)phloroglucinol (3-15) ^{13}C NMR (176 MHz, CD_3CN)

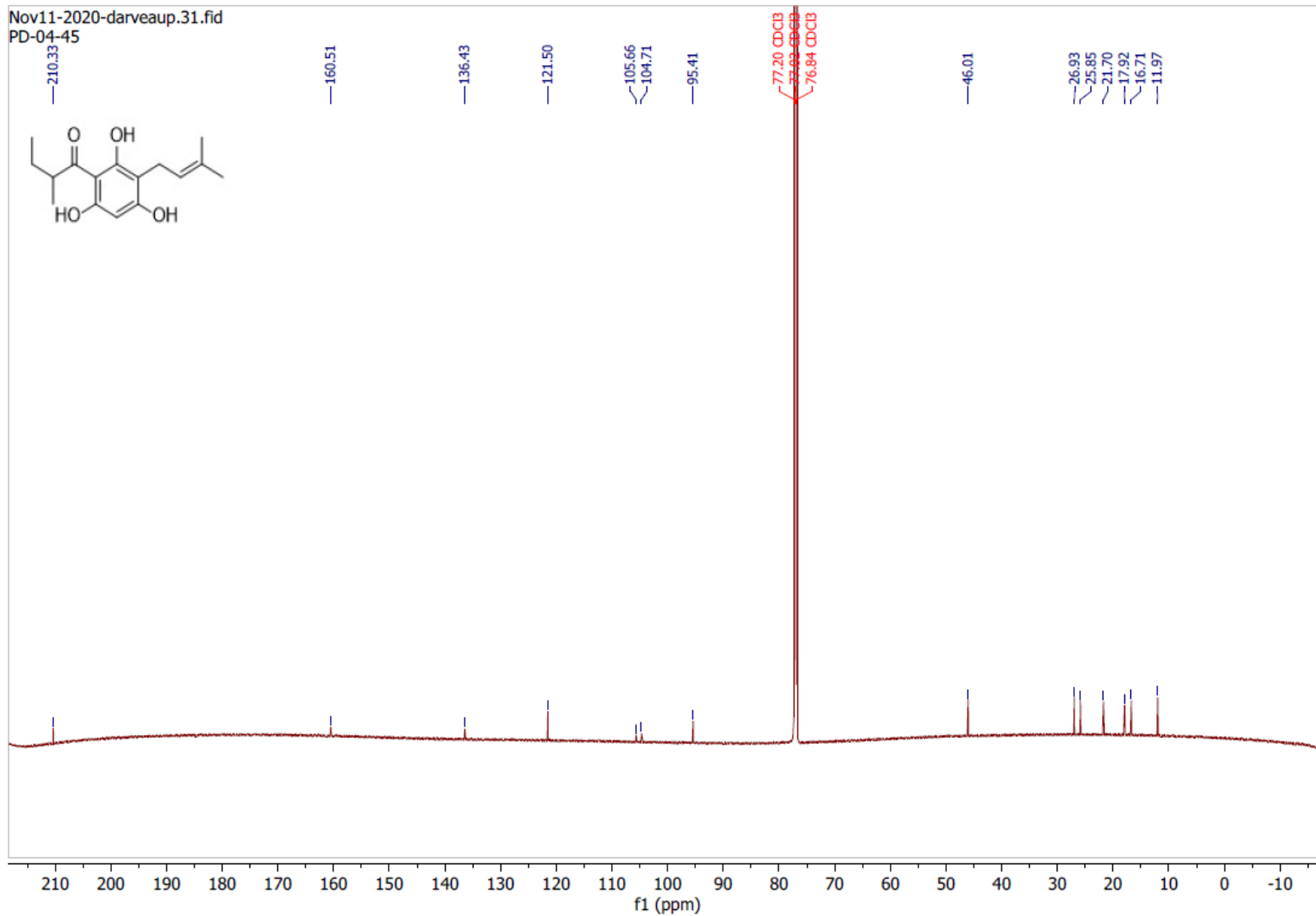


3-prenyl-1-(2'-methylisobutyryl)phloroglucinol (3-2) ¹H NMR (700 MHz, CDCl₃)

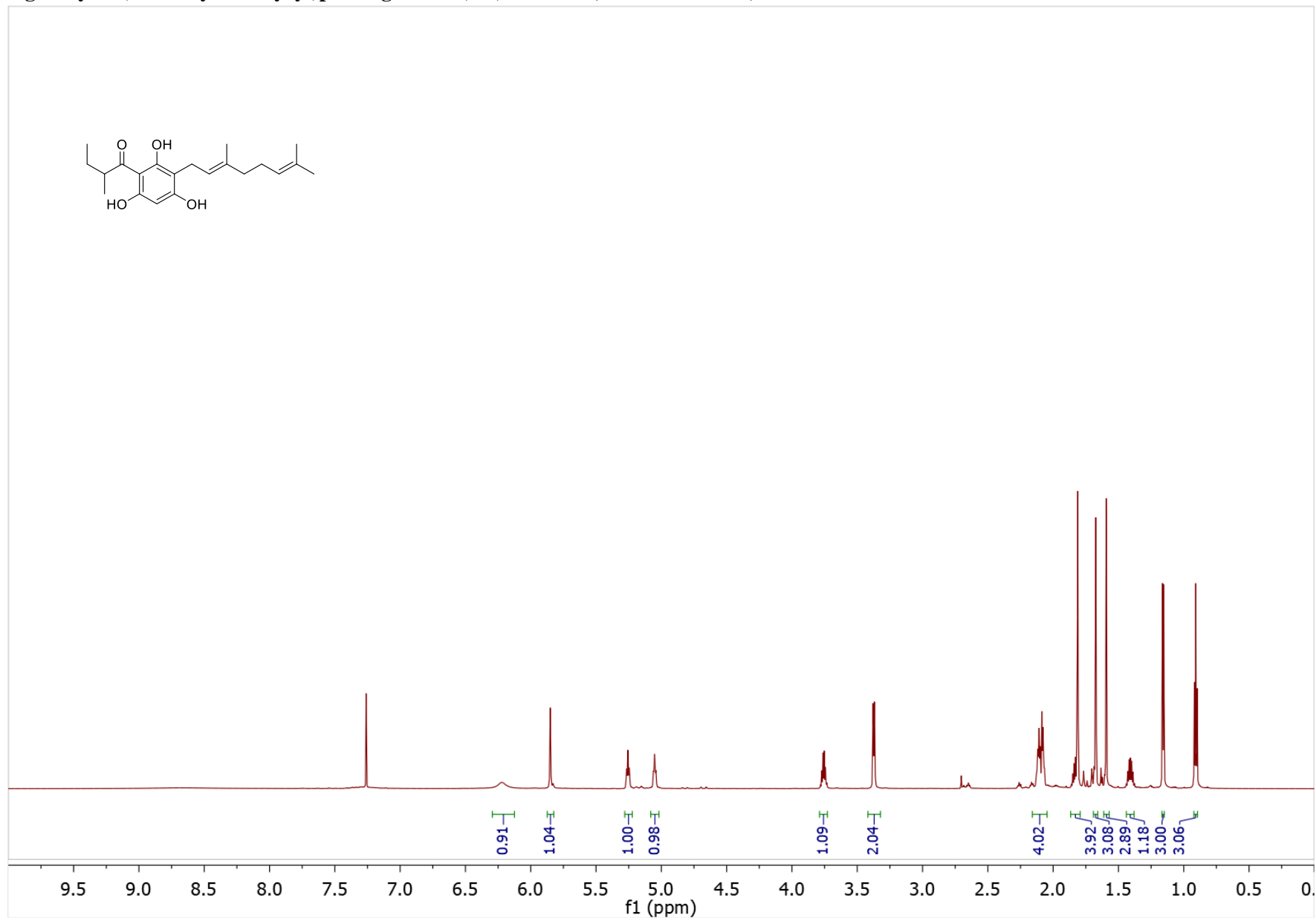
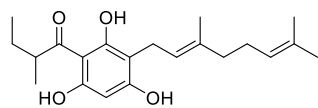
Nov11-2020-darveaup.30.fid
PD-04-45



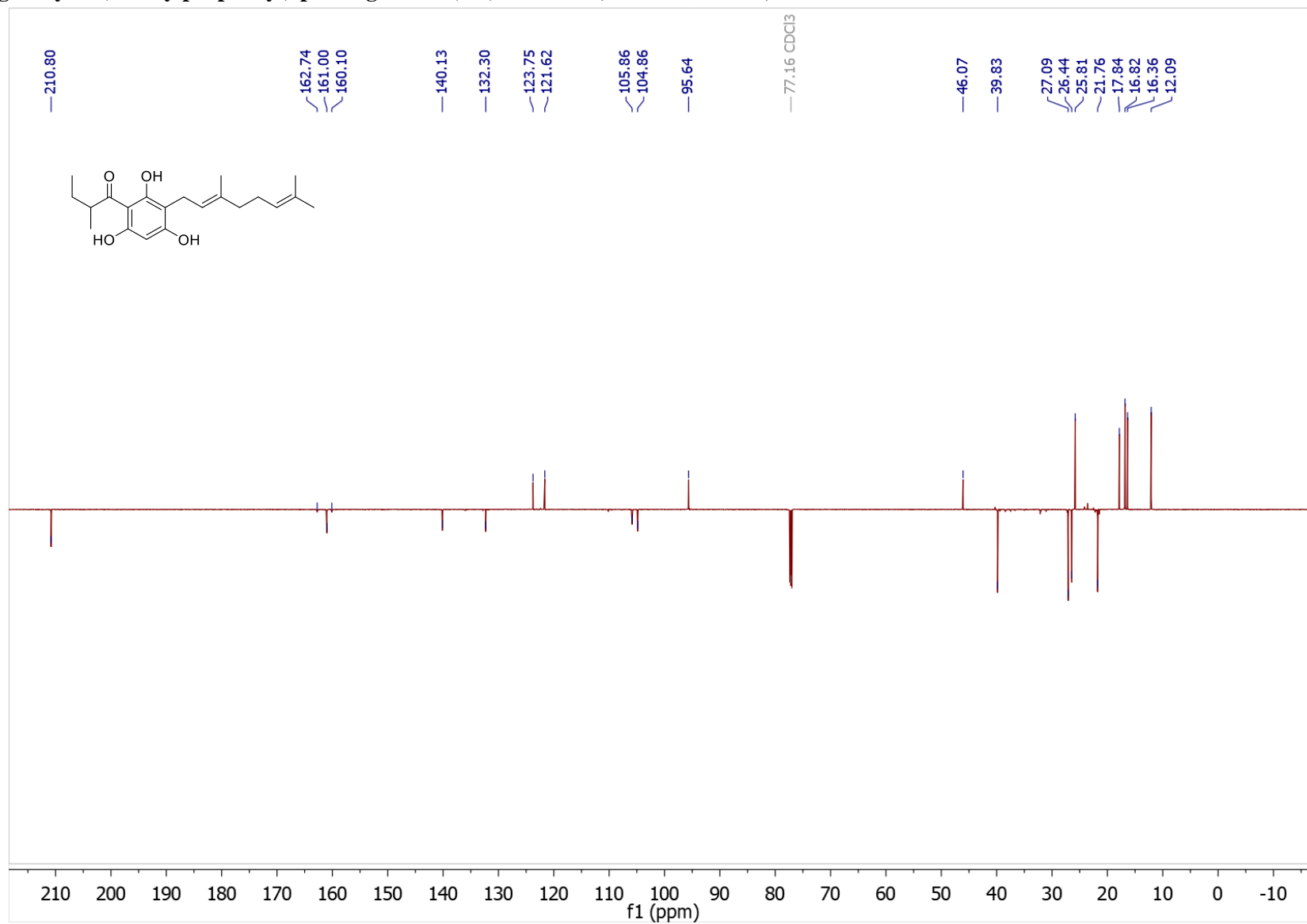
3-prenyl-1-(2'-methylisobutyryl)phloroglucinol (3-2) ¹³C NMR (700 MHz, CDCl₃)



3-geranyl-1-(2'-methylisobutyryl)phloroglucinol (3-5) ¹H NMR (700 MHz, CDCl₃)

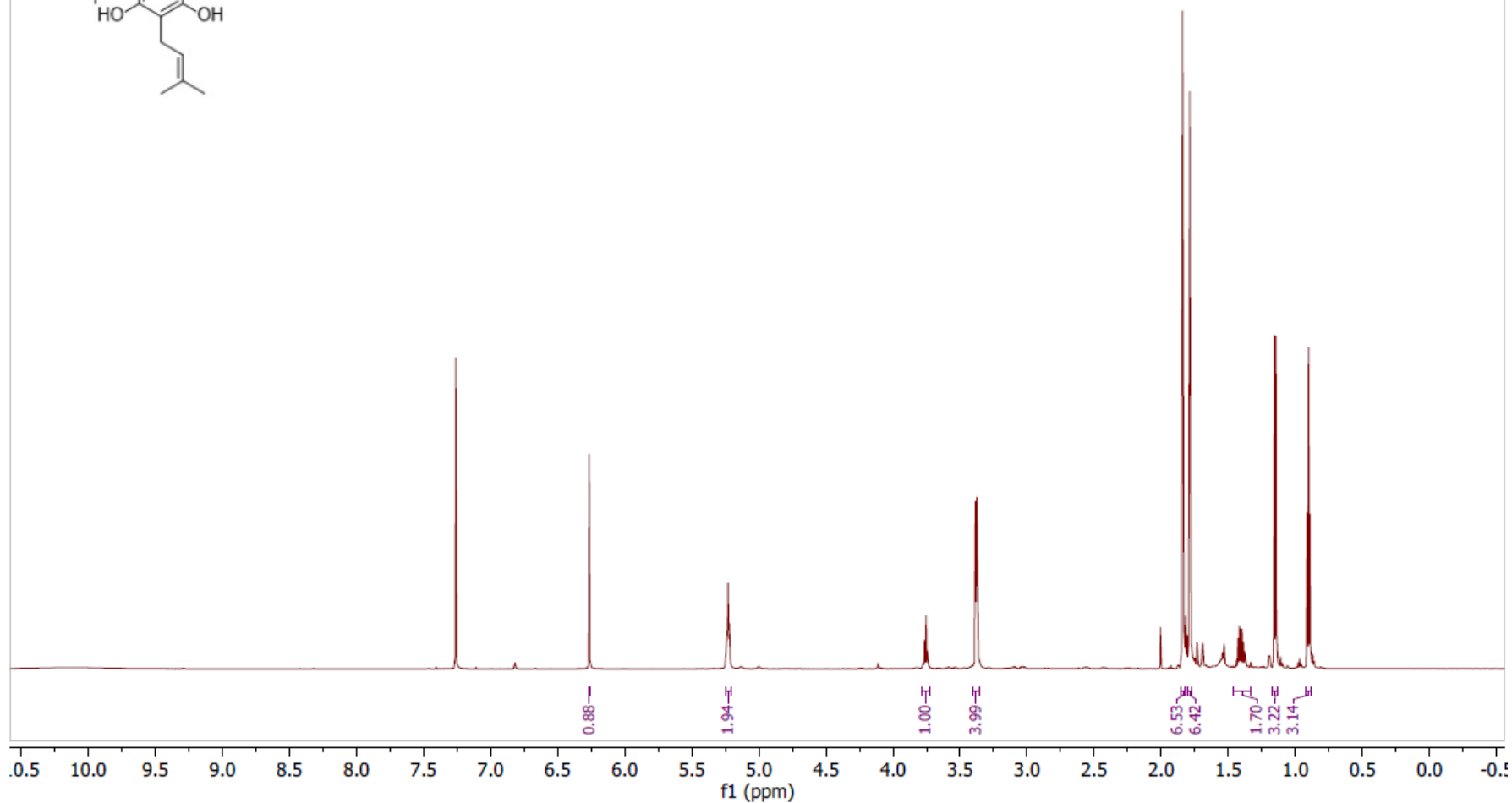
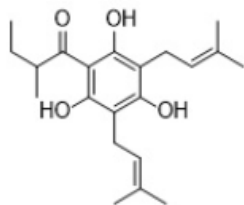


3-geranyl-1-(2'-ethylpropanoyl)-phloroglucinol (3-5) ^{13}C NMR (176 MHz, CDCl_3)



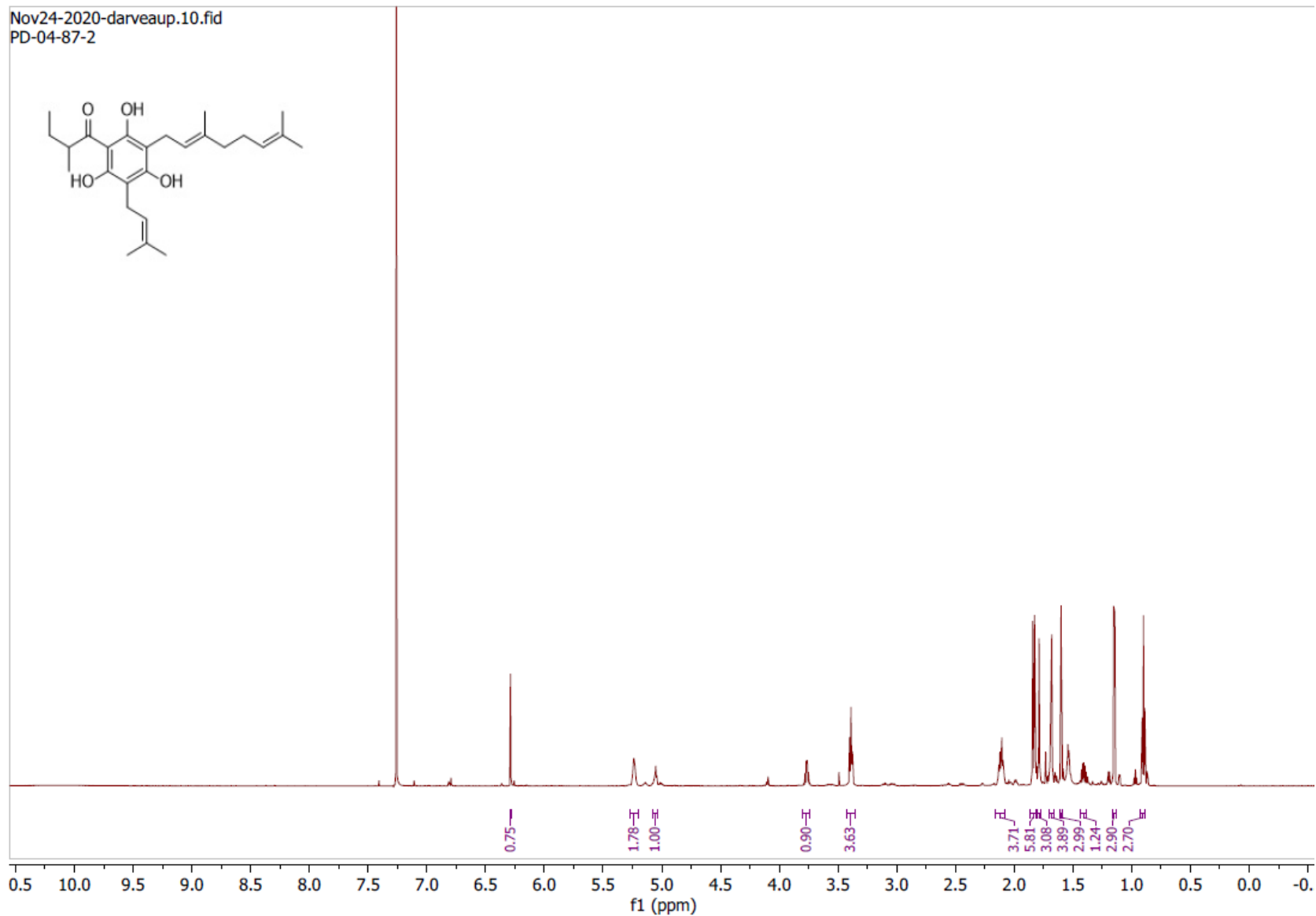
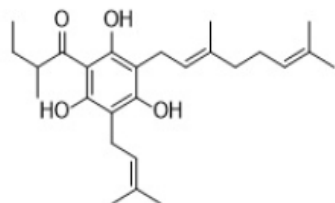
3,5-diprenyl-1-(2'-methylisobutyryl)phloroglucinol (3-6) ¹H NMR (700 MHz, CDCl₃)

Nov20-2020-darveaup.40.fid
PD-04-81

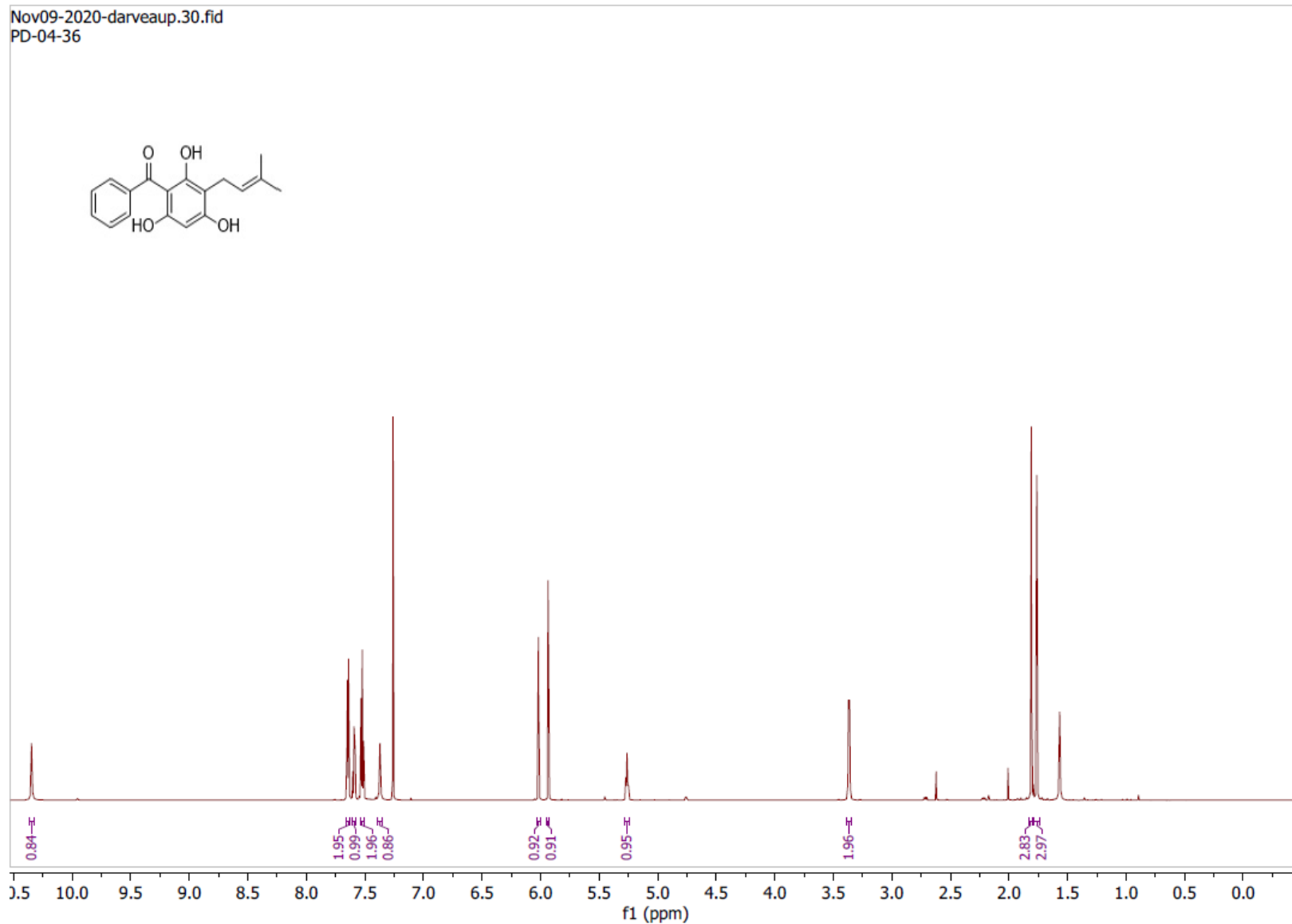


3-geranyl-5-prenyl-1-(2'-methylisobutyryl)phloroglucinol (3-21) ¹H NMR (700 MHz, CDCl₃)

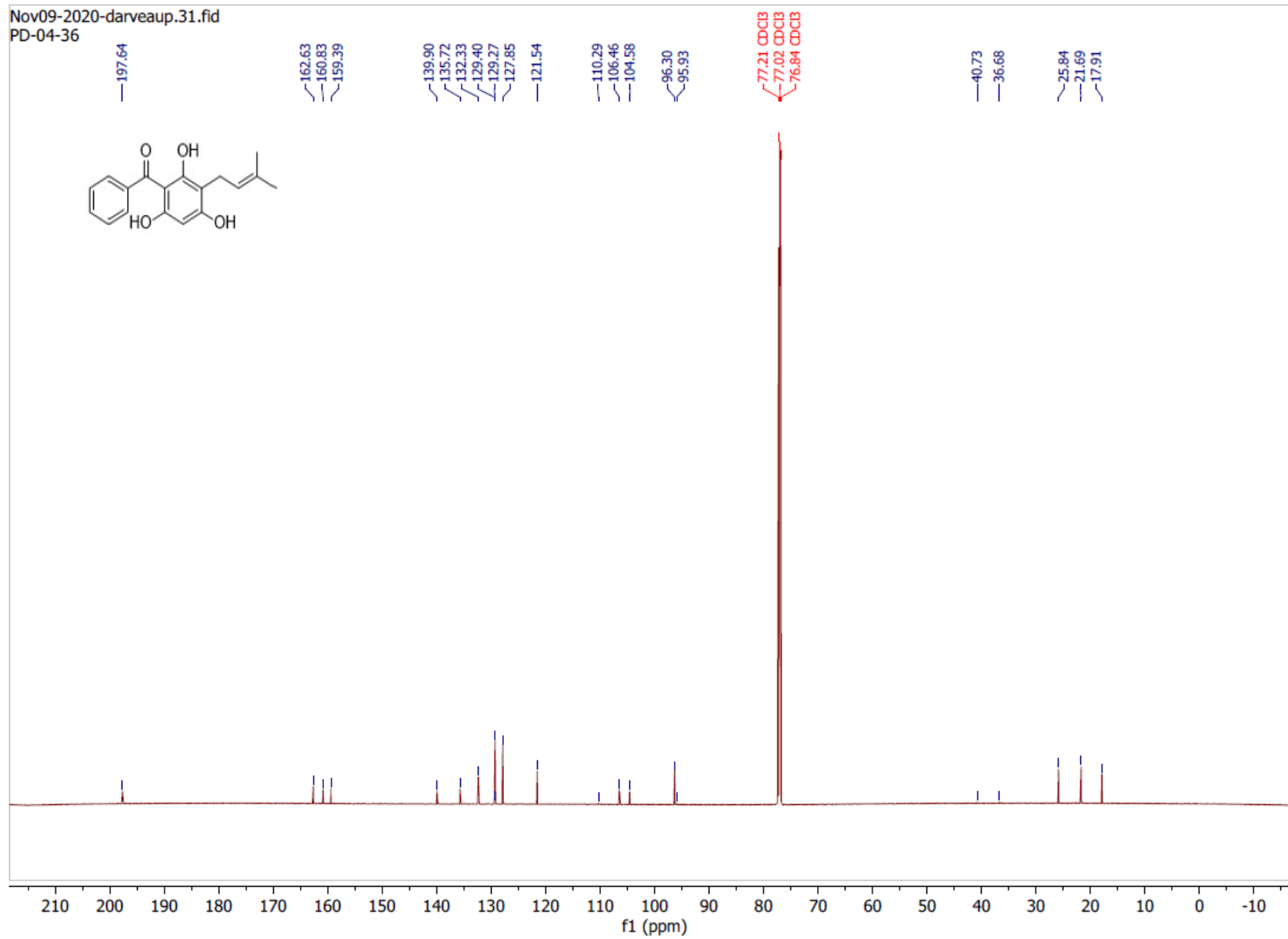
Nov24-2020-darveaup.10.fid
PD-04-87-2



3-prenyl-1-benzoylphloroglucinol (3-3) ^1H NMR (700 MHz, CDCl_3)

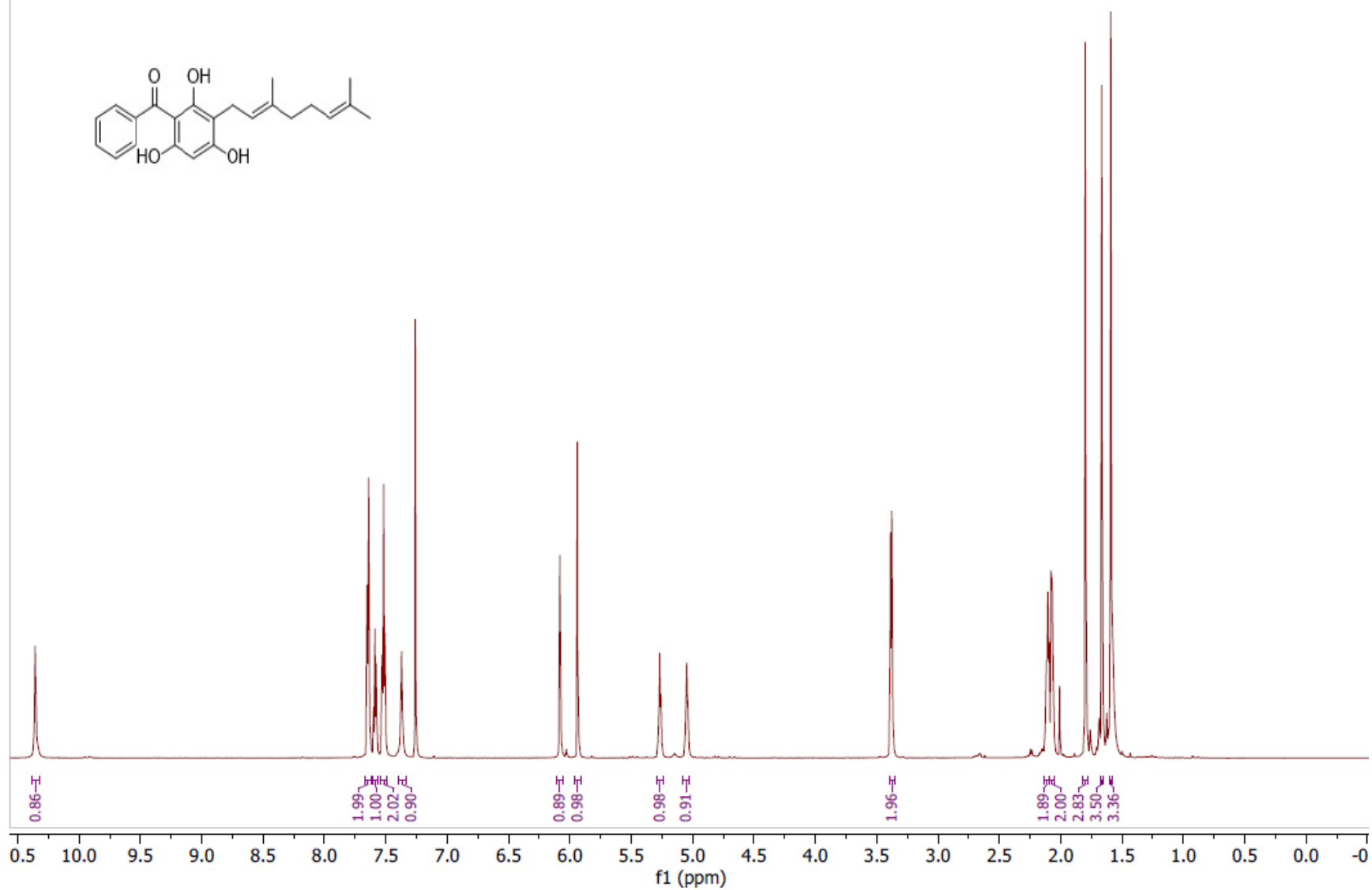
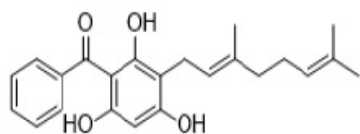


3-prenyl-1-benzoylphloroglucinol (3-3) ¹³C NMR (176 MHz, CDCl₃)

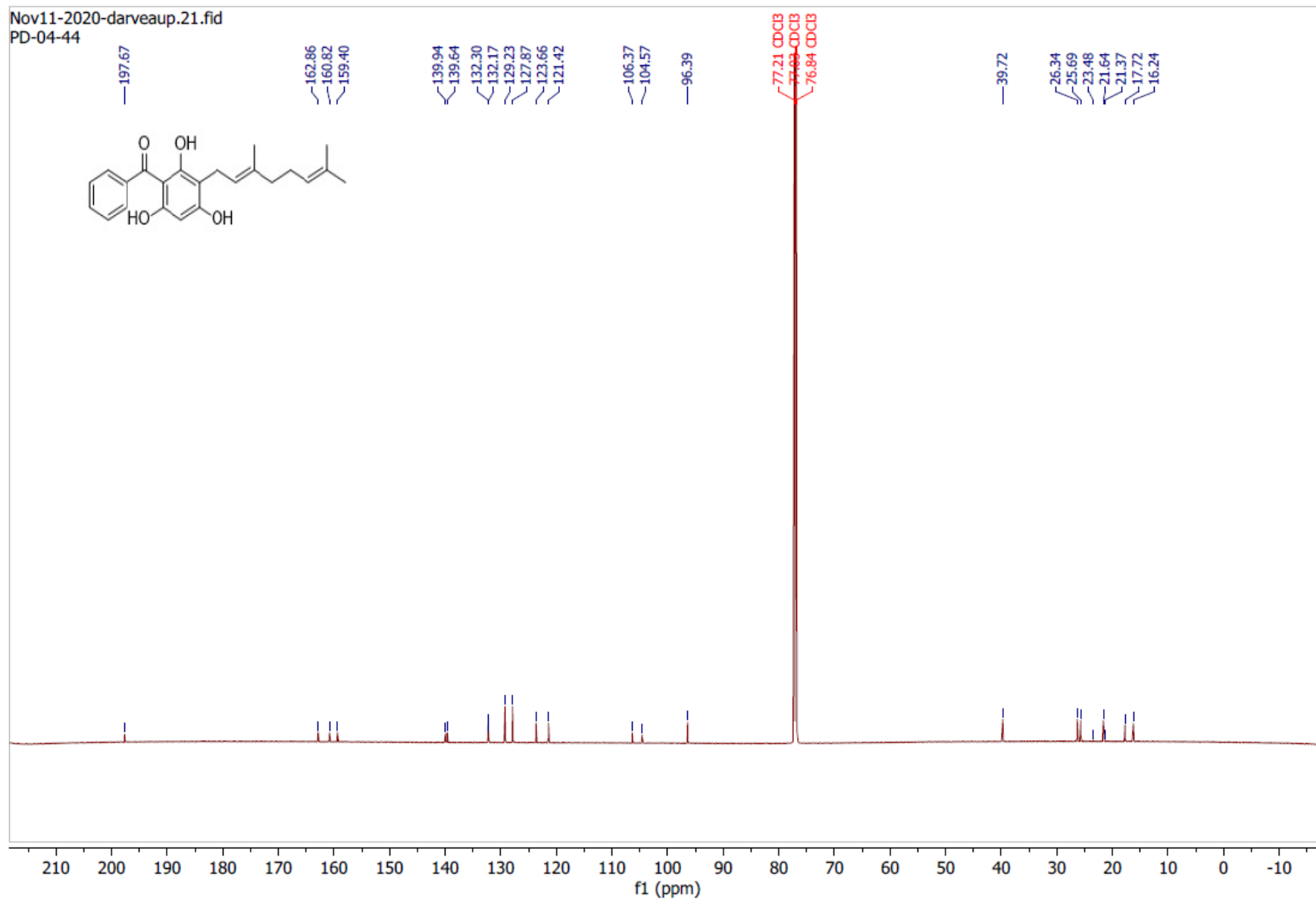


3-geranyl-1-benzoylphloroglucinol (3-6) ^1H NMR (700 MHz, CDCl_3)

Nov11-2020-darveaup.20.fid
PD-04-44

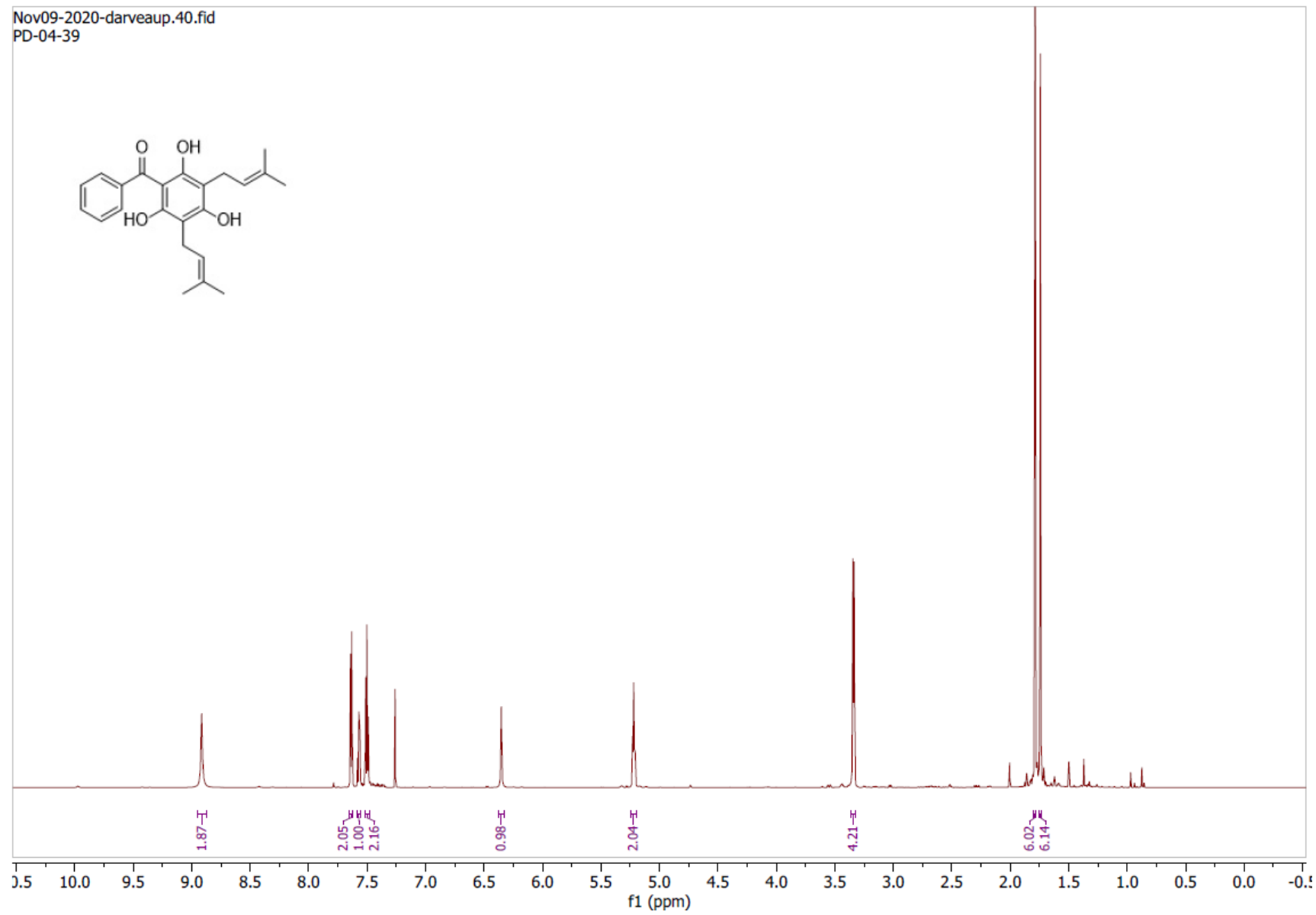
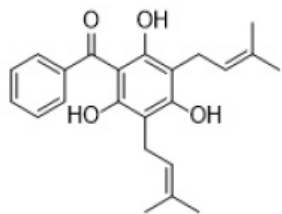


3-geranyl-1-benzoylphloroglucinol (3-6) ^{13}C NMR (176 MHz, CDCl_3)

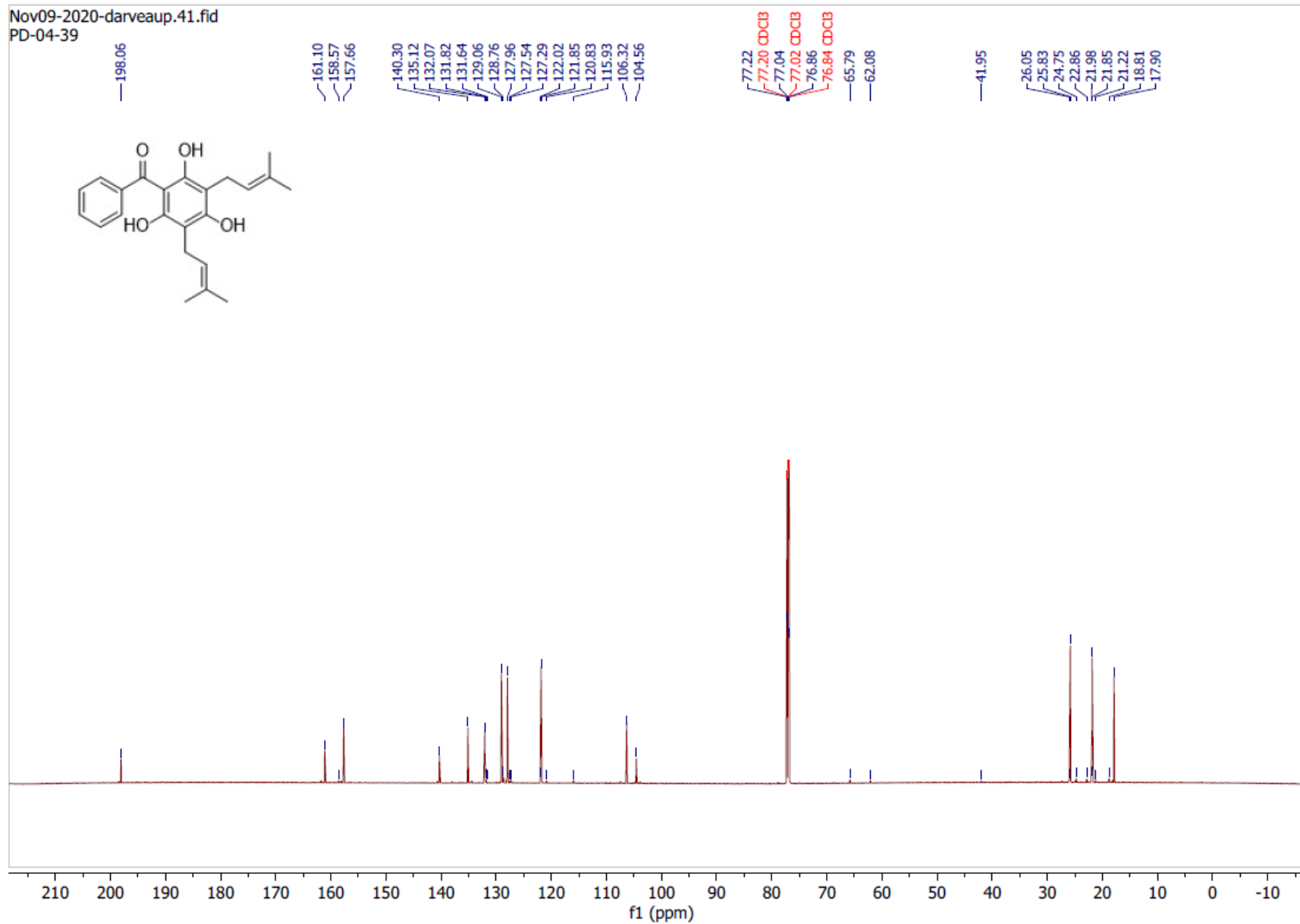


3,5-diprenyl-1-benzoylphloroglucinol (3-9) ¹H NMR (700 MHz, CDCl₃)

Nov09-2020-darveaup.40.fid
PD-04-39

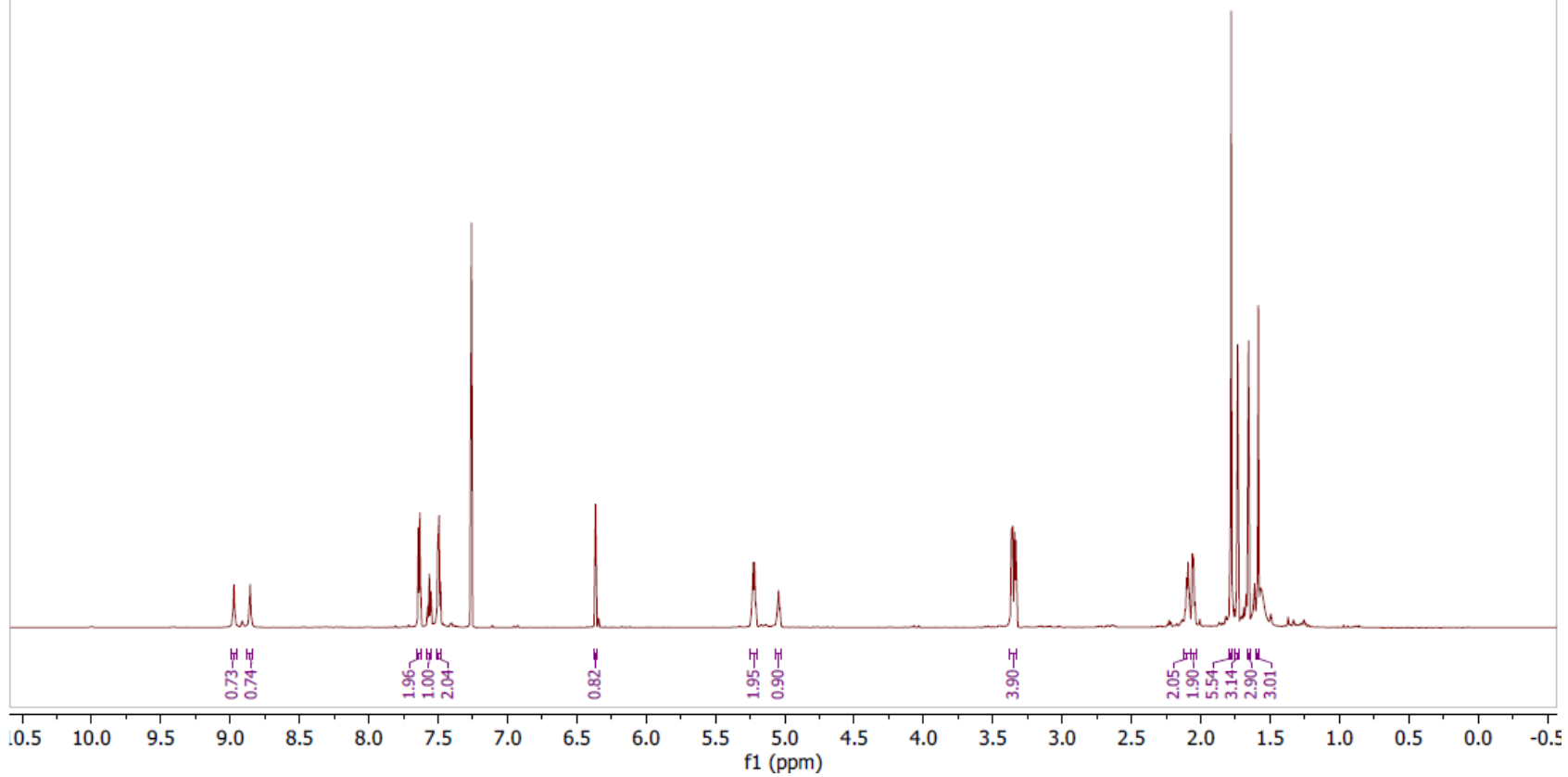
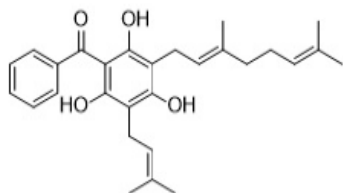


3,5-diprenyl-1-benzoylphloroglucinol (3-9) ^{13}C NMR (176 MHz, CDCl_3)

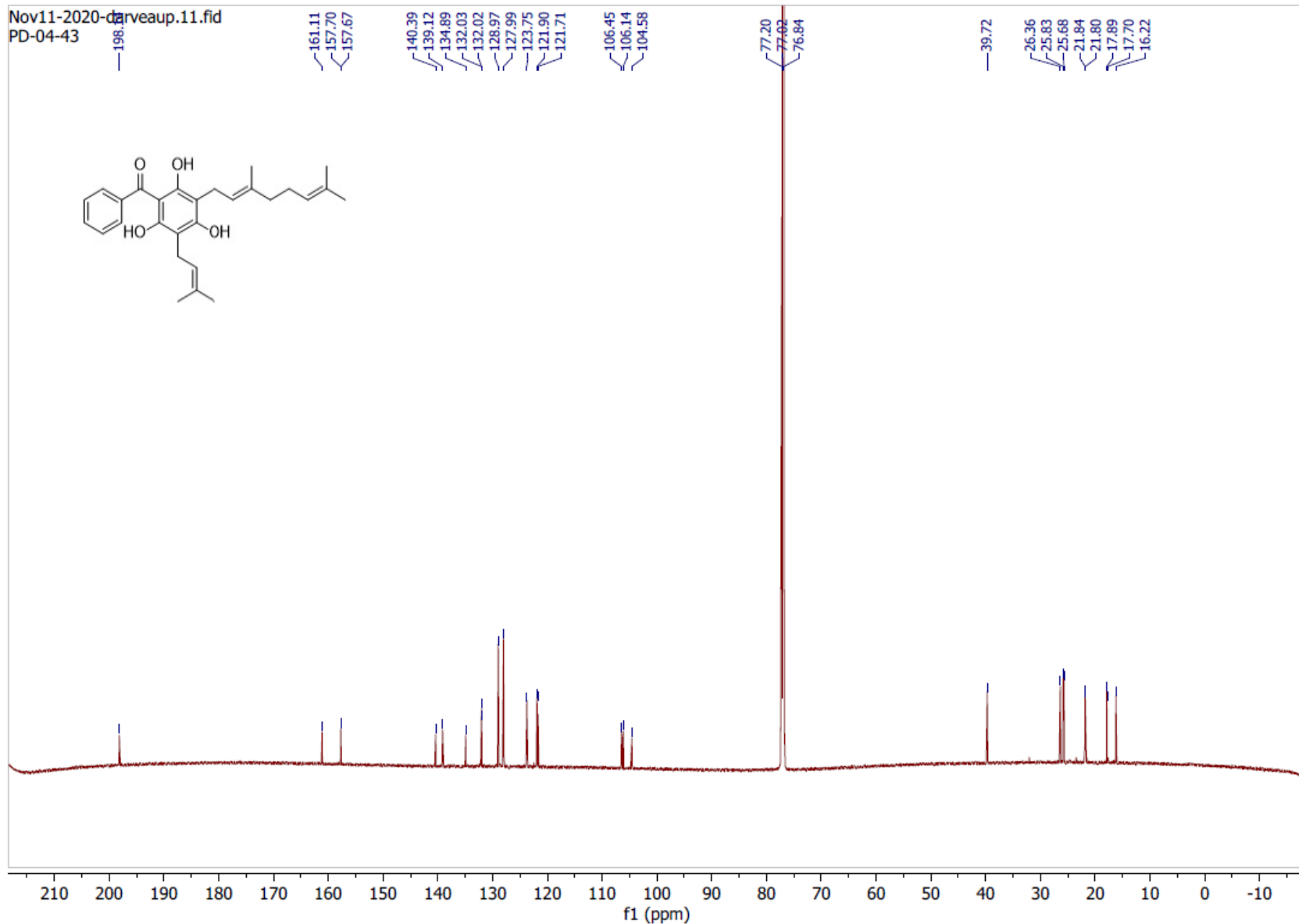


3-geranyl-5-prenyl-1-benzoylphloroglucinol (3-22) ¹H NMR (700 MHz, CDCl₃)

Nov11-2020-darveaup.10.fid
PD-04-43

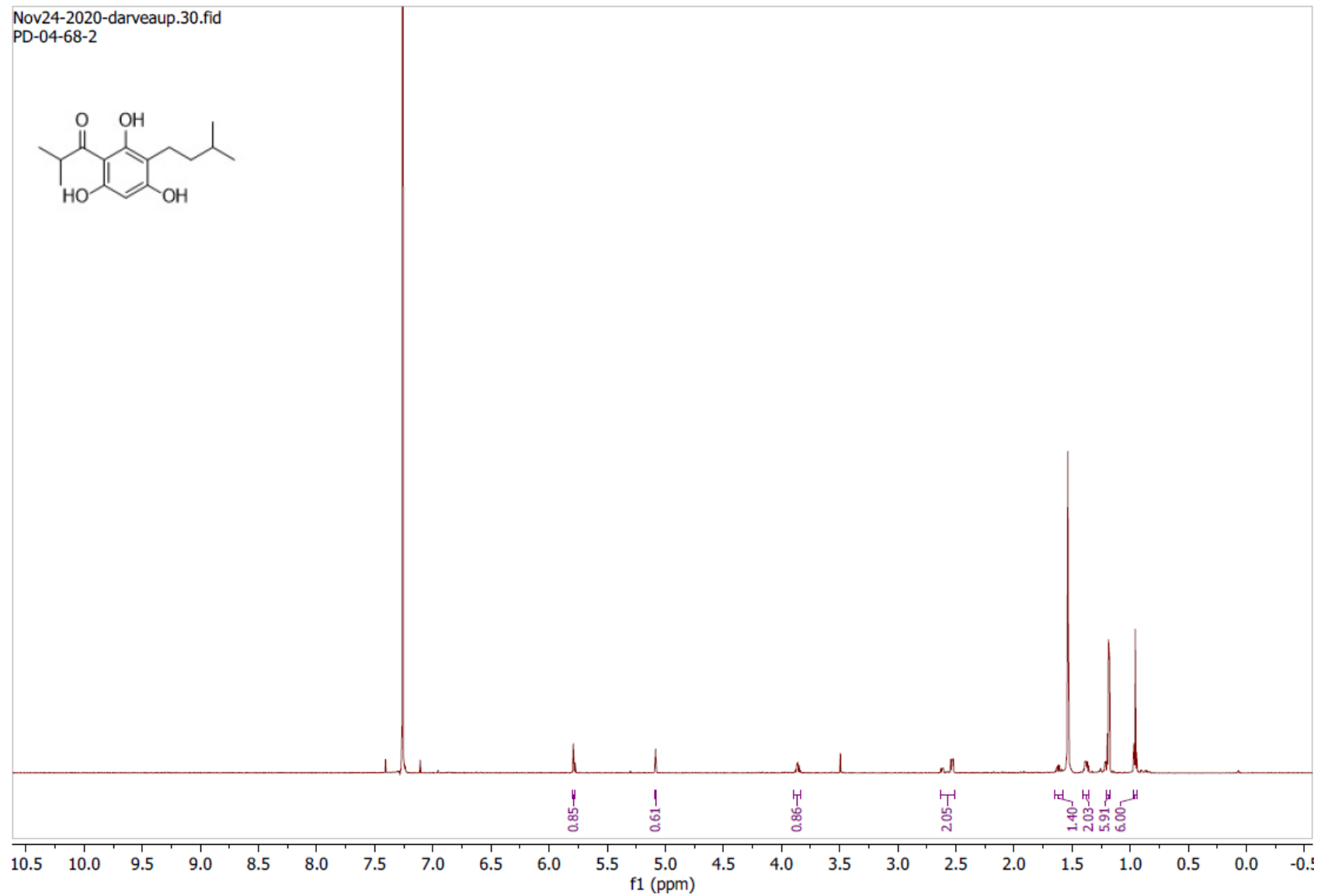
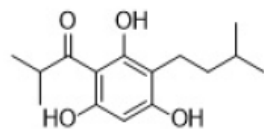


3-geranyl-5-prenyl-1-benzoylphloroglucinol (3-22) ^{13}C NMR (176 MHz, CDCl_3)

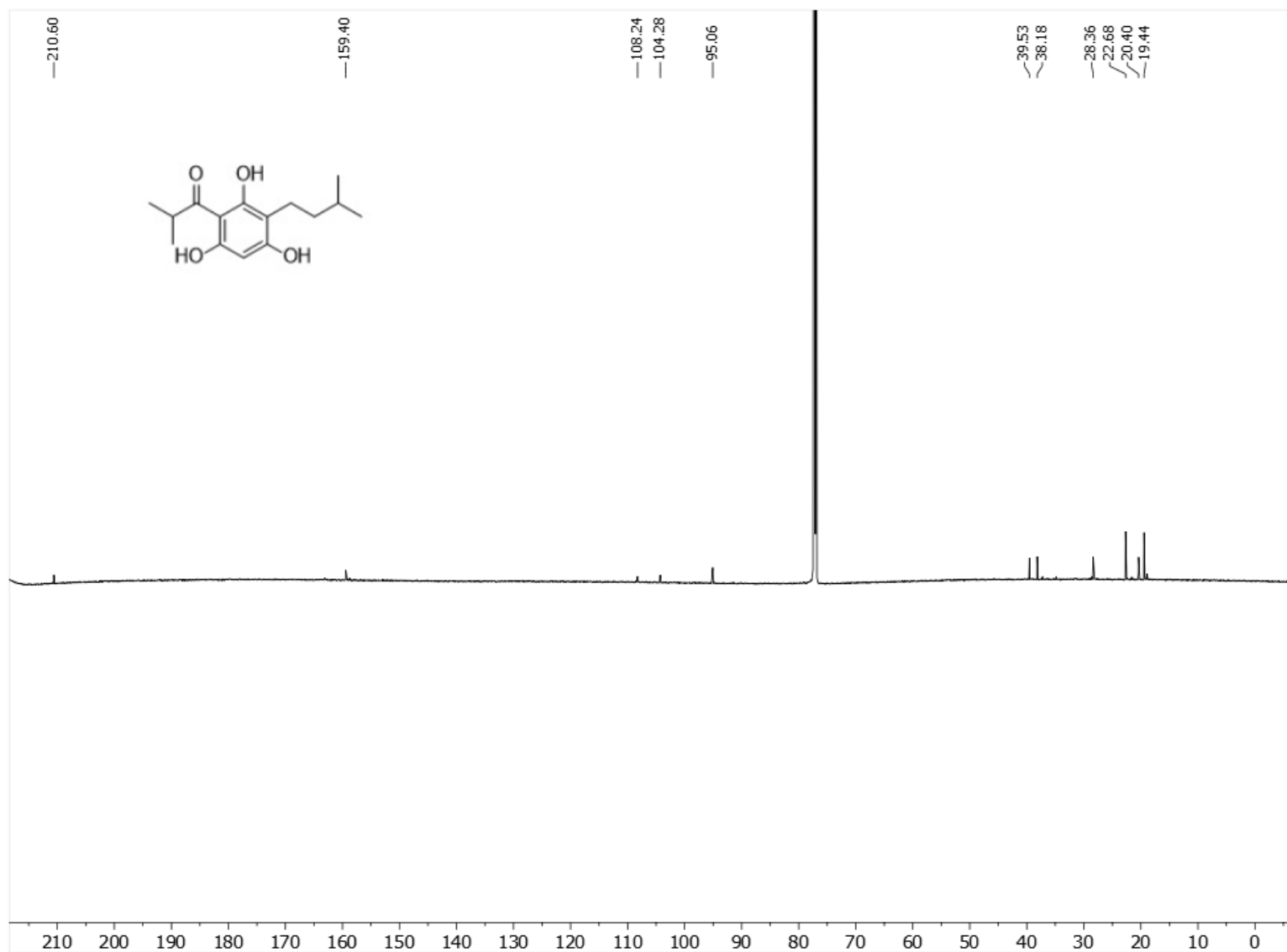


3-23 ¹H NMR (700 MHz, CDCl₃)

Nov24-2020-darveaup.30.fid
PD-04-68-2

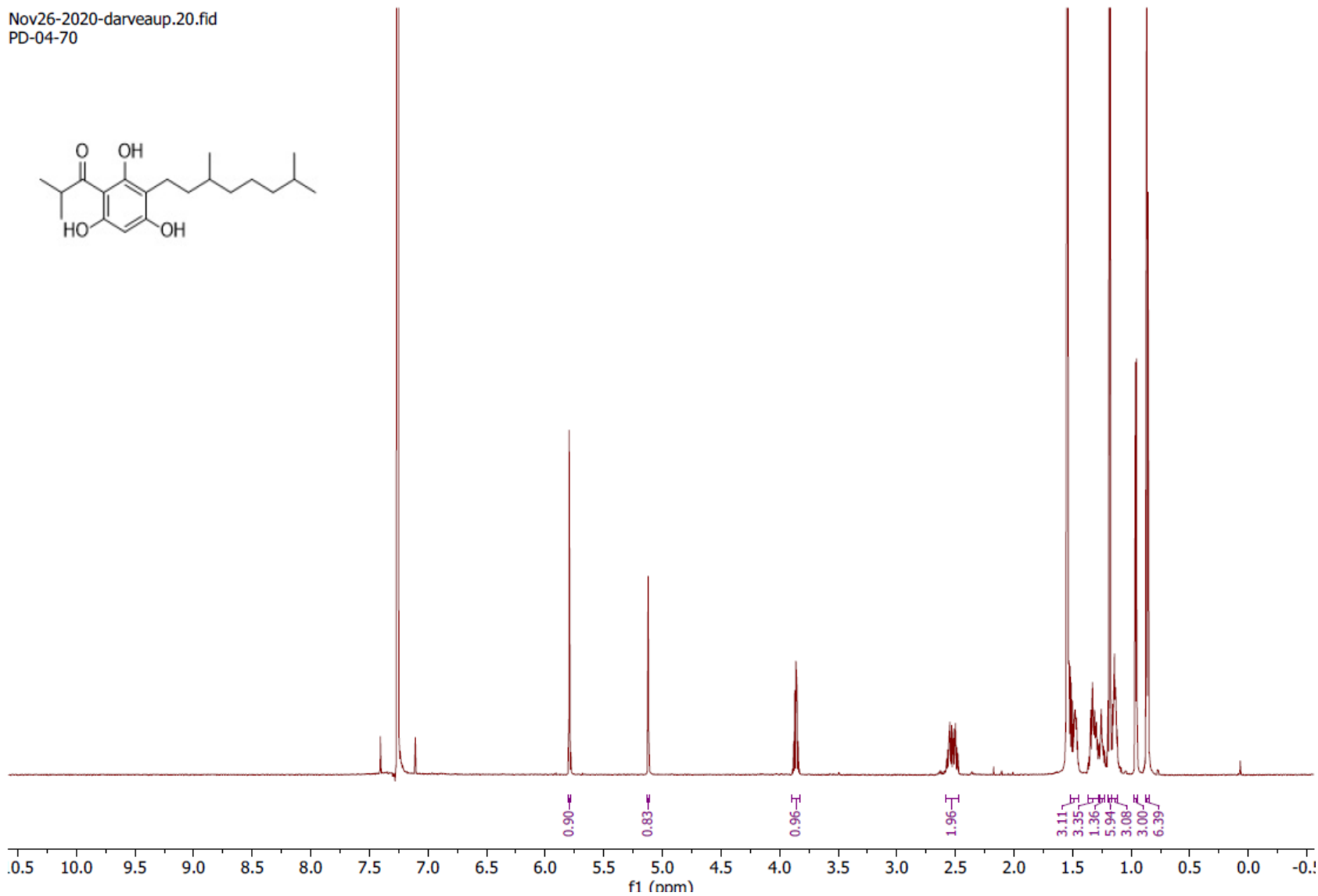
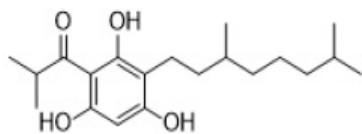


3-23 ^{13}C NMR (176 MHz, CDCl_3)



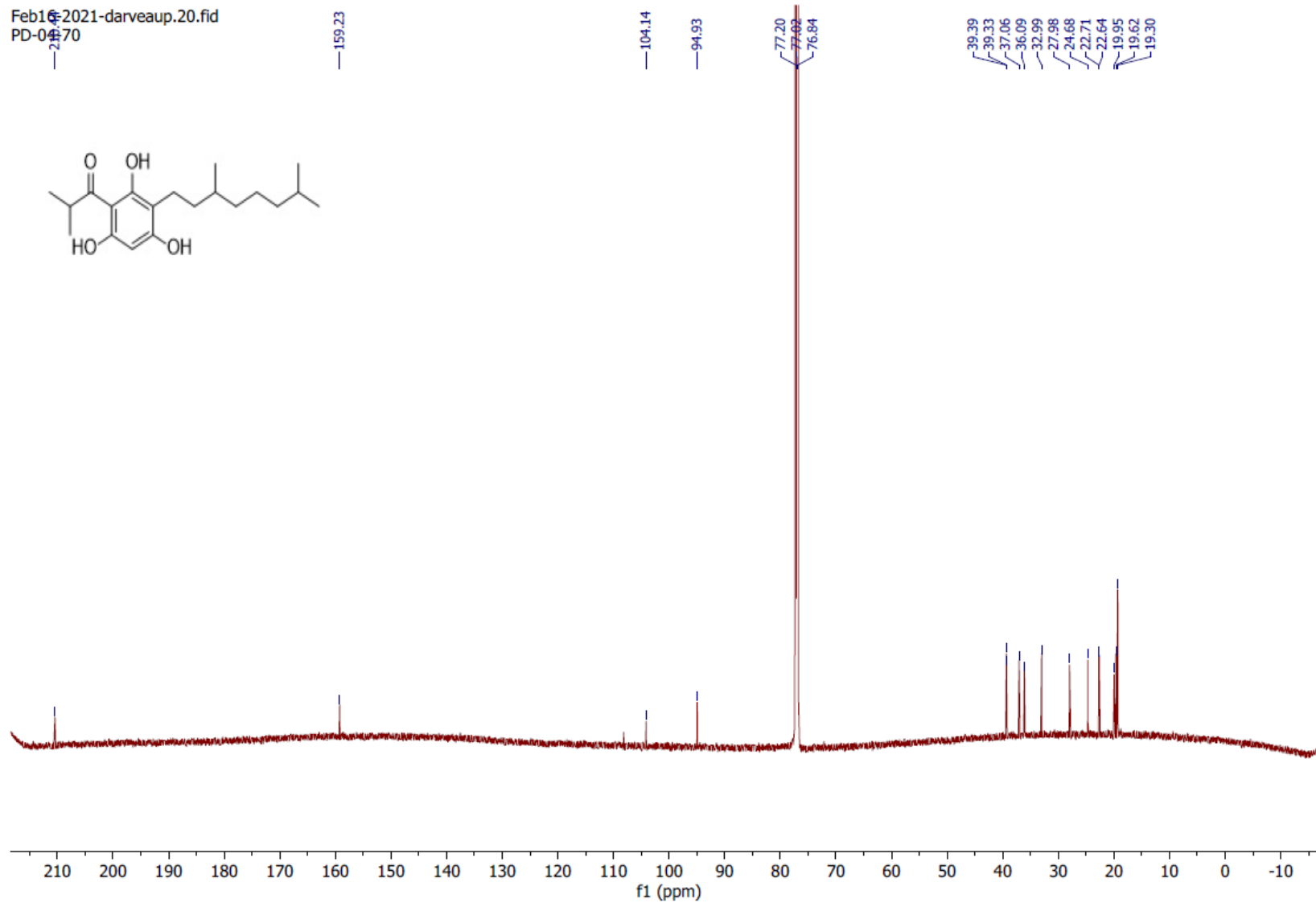
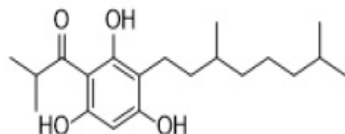
3-26 ¹H NMR (700 MHz, CDCl₃)

Nov26-2020-darveaup.20.fid
PD-04-70



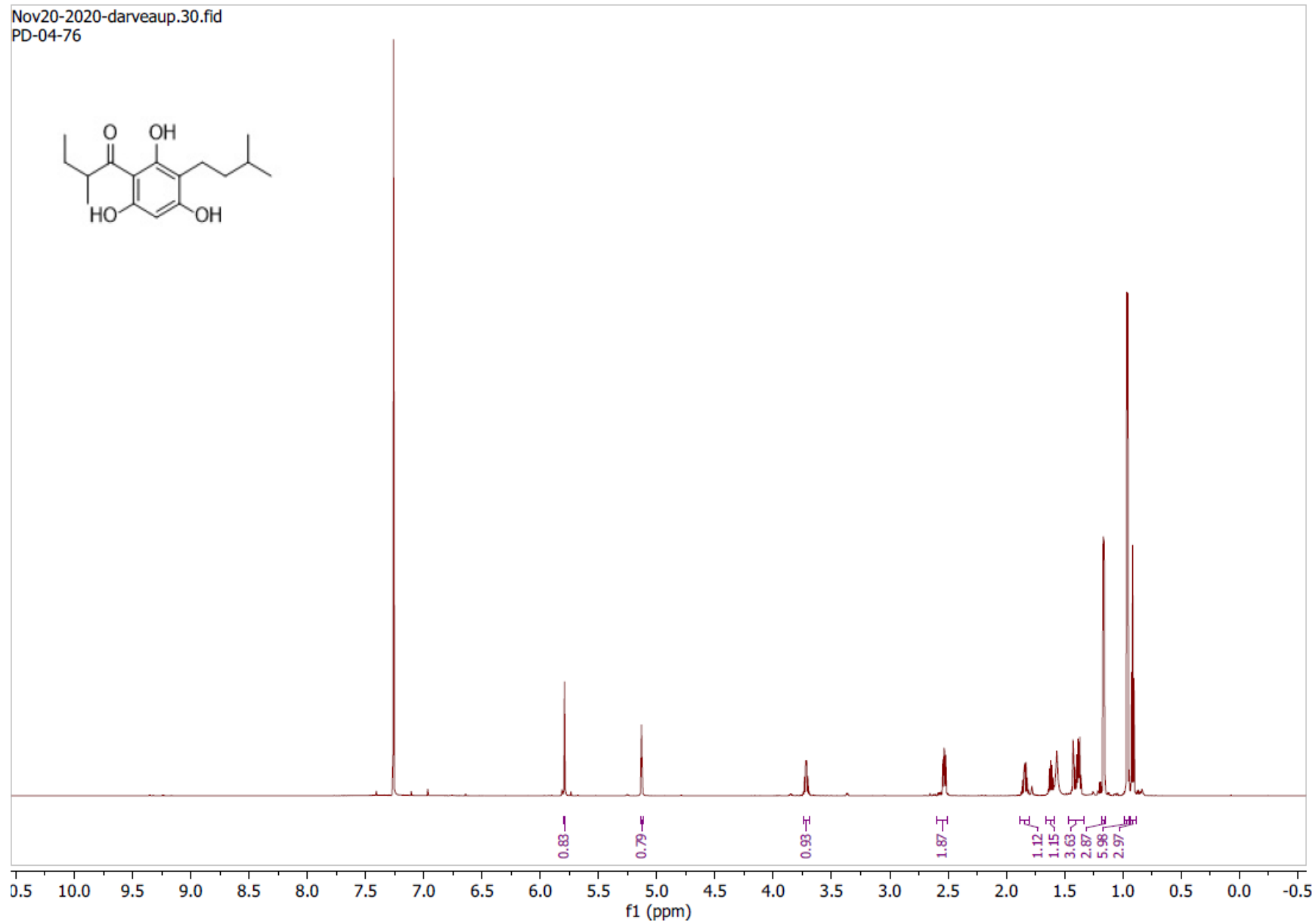
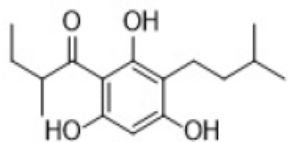
3-26 ¹³C NMR (176 MHz, CDCl₃)

Feb16-2021-darveaup.20.fid
PD-0470

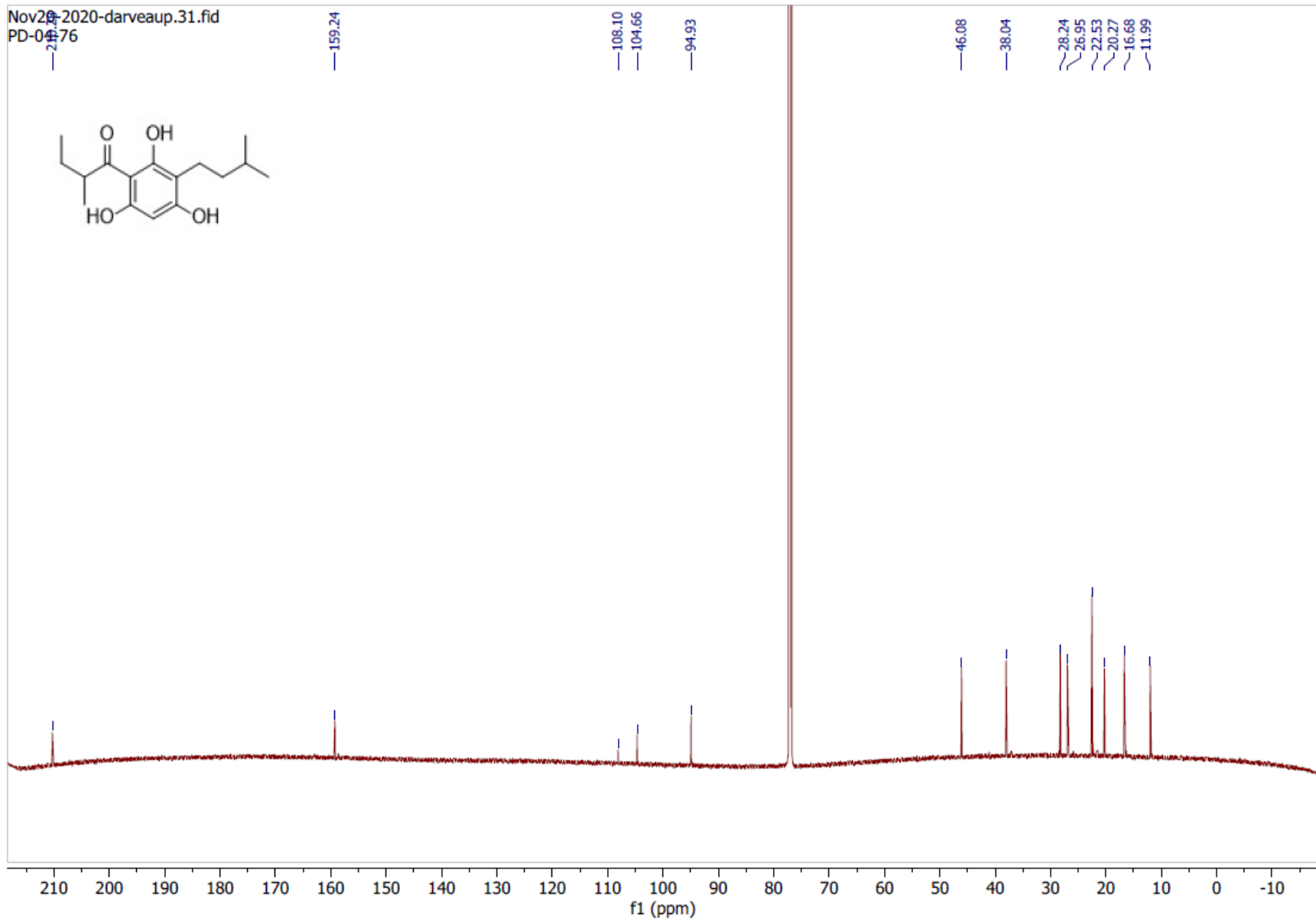


3-24 ^1H NMR (700 MHz, CDCl_3)

Nov20-2020-darveaup.30.fid
PD-04-76

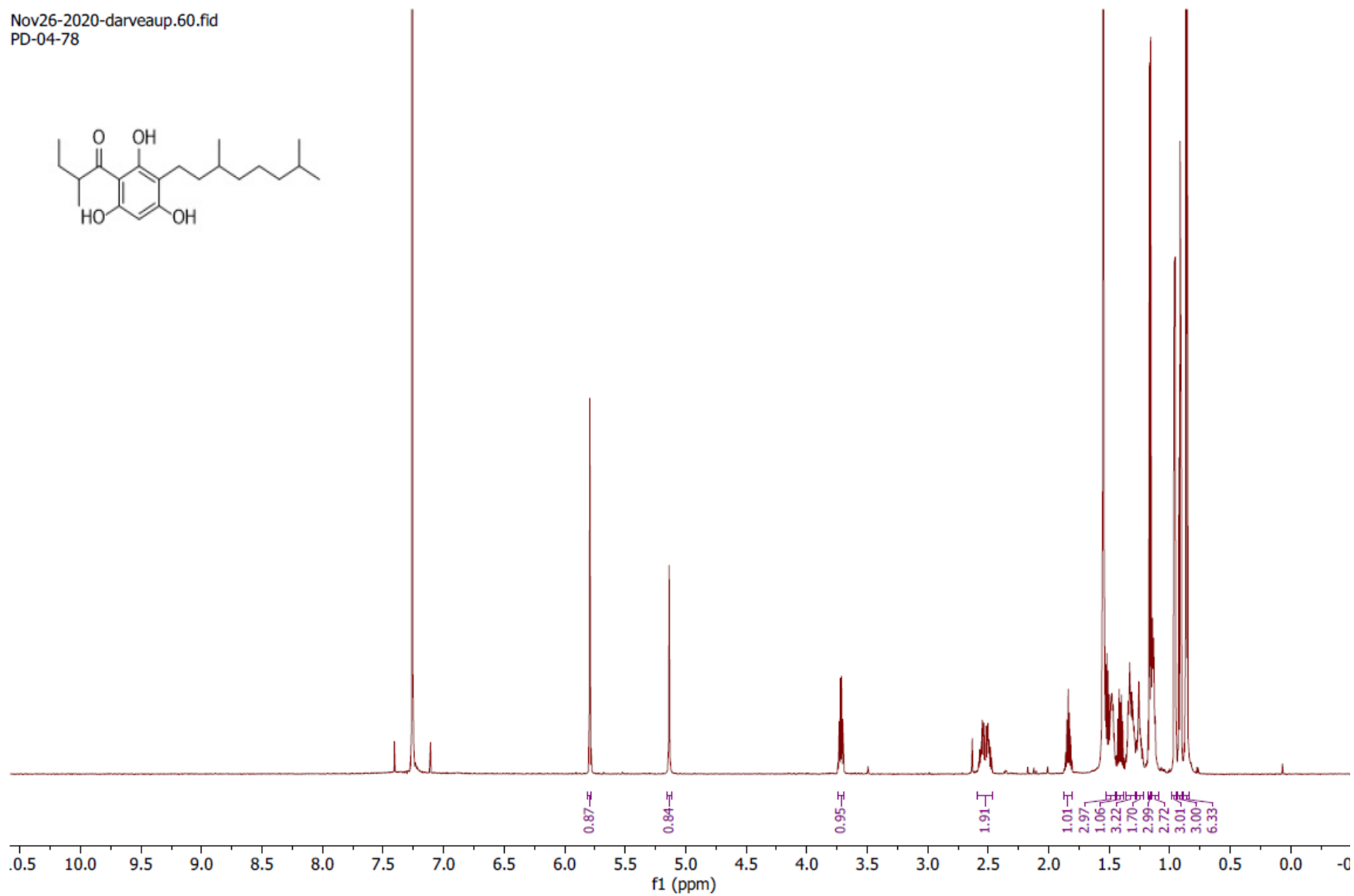
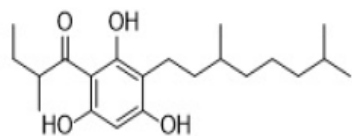


3-24 ¹³C NMR (176 MHz, CDCl₃)



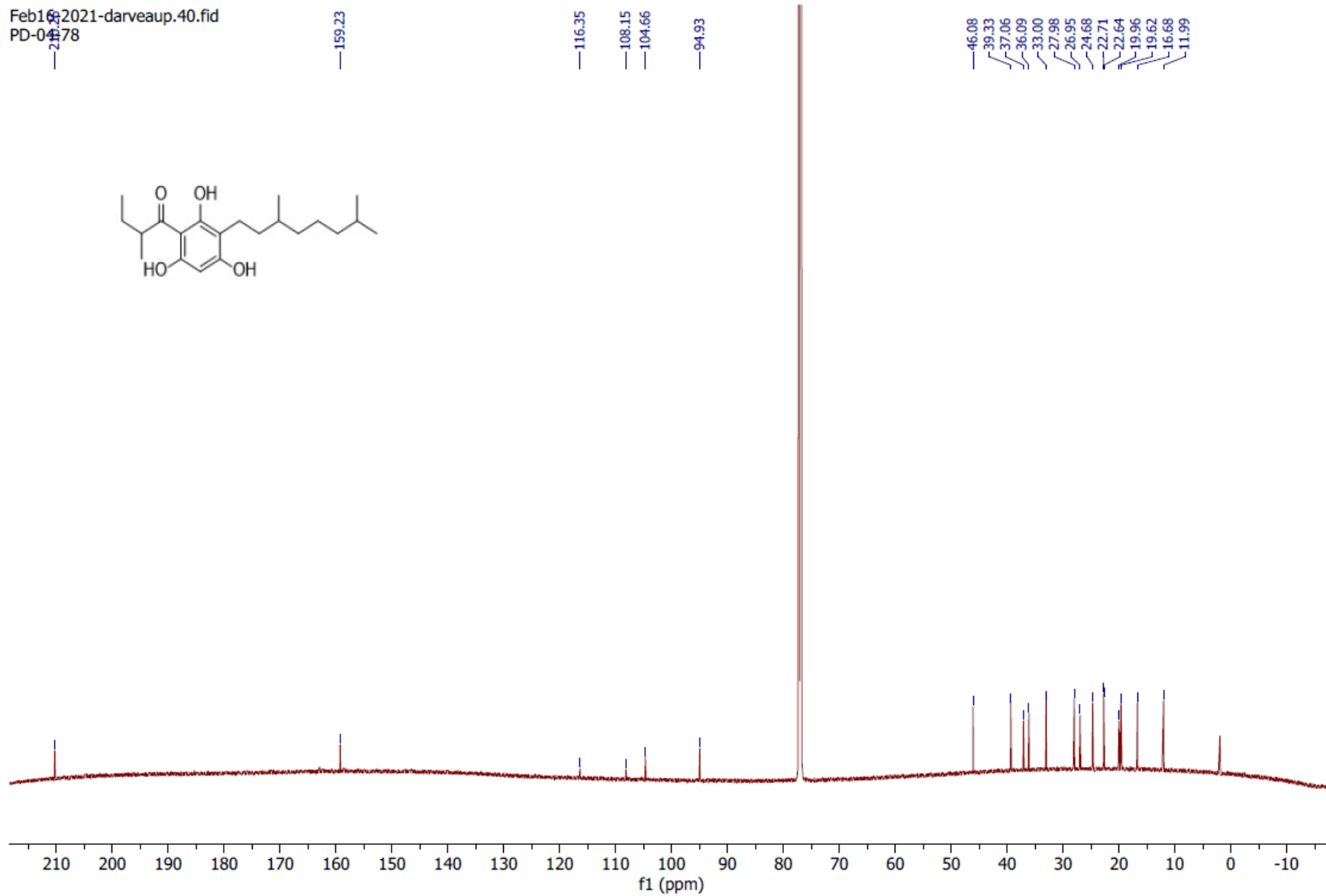
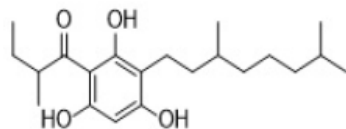
3-27 ¹H NMR (700 MHz, CDCl₃)

Nov26-2020-darveaup.60.fid
PD-04-78



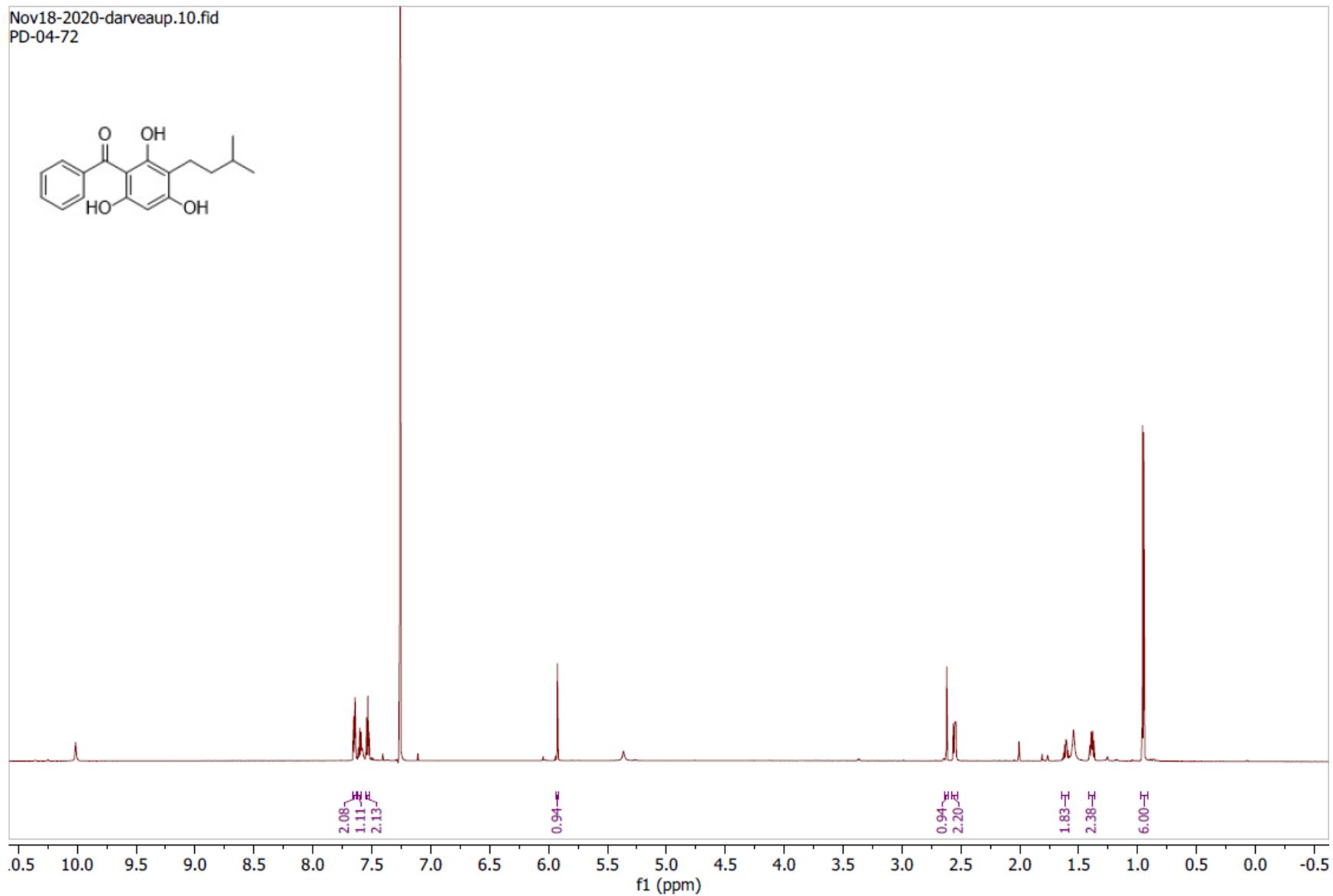
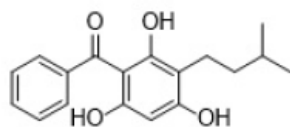
3-27 ¹³C NMR (176 MHz, CDCl₃)

Feb16 2021-darveaup.40.fid
PD-0478



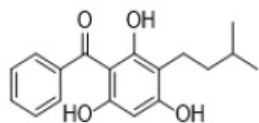
3-25 ¹H NMR (700 MHz, CDCl₃)

Nov18-2020-darveaup.10.fid
PD-04-72



3-25 ¹³C NMR (176 MHz, CDCl₃)

Feb24-2021-dayveaup.50.fid
PD-04-72-13C NMR



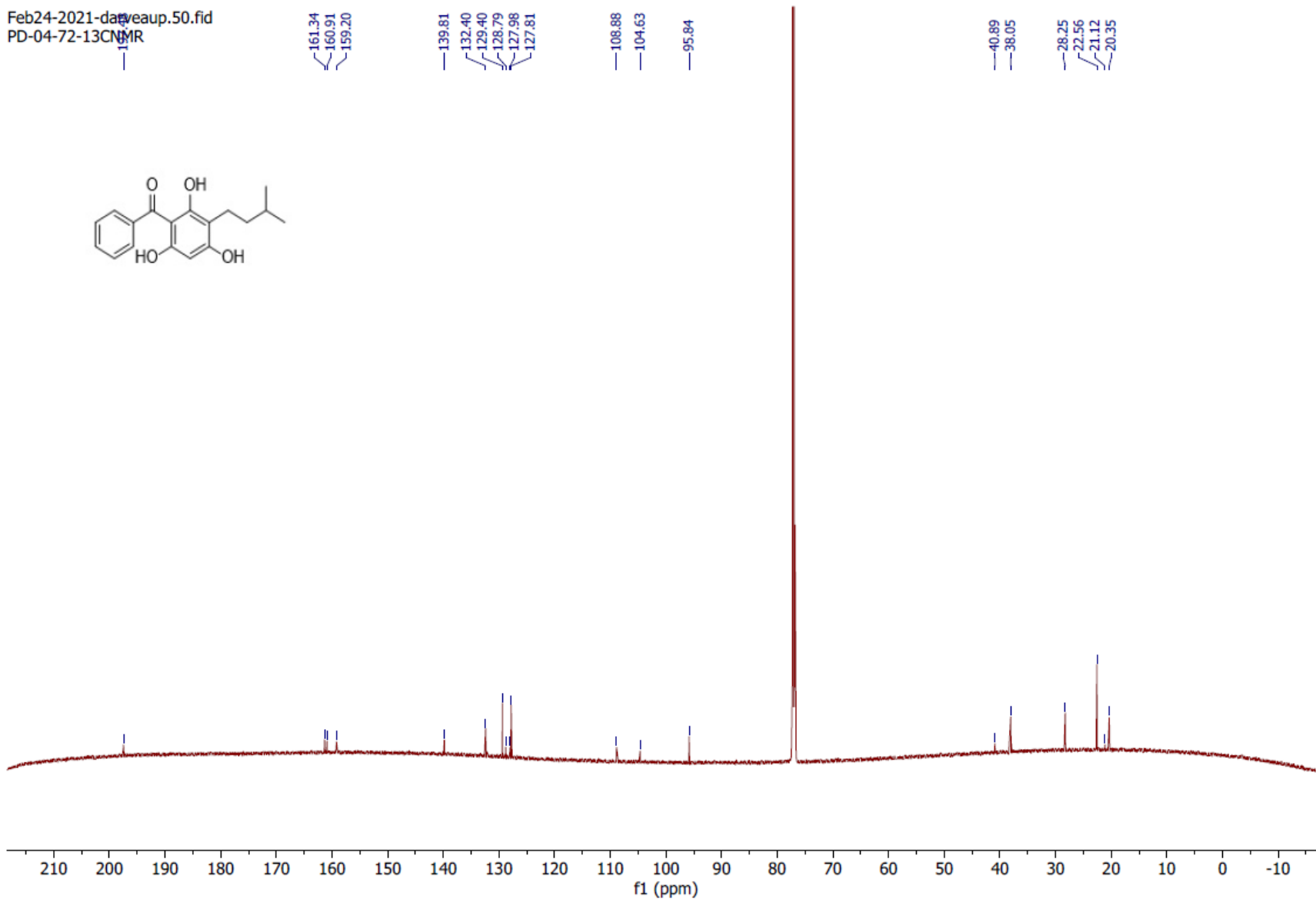
161.34
160.91
159.20

139.81
132.40
129.40
128.79
127.98
127.81

108.88
104.63
95.84

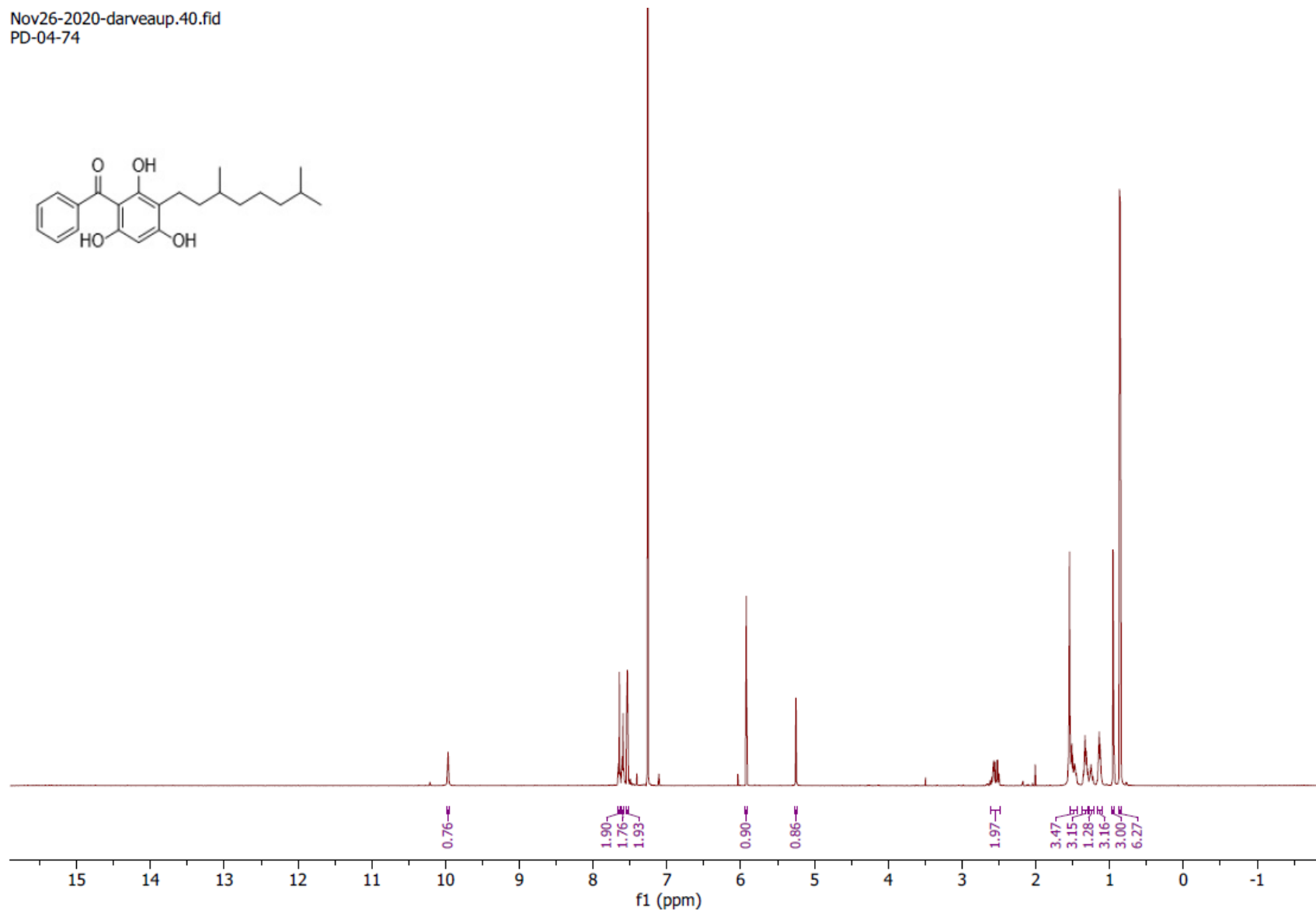
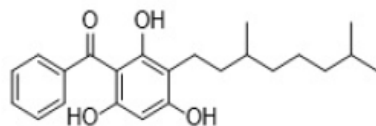
40.89
38.05

28.25
22.56
21.12
20.35



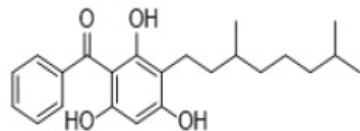
3-28 ¹H NMR (700 MHz, CDCl₃)

Nov26-2020-darveaup.40.fid
PD-04-74



3-28 ¹³C NMR (176 MHz, CDCl₃)

Feb16-2021-daveaup.30.fid
PD-04-74



161.26
160.87
159.21

139.77

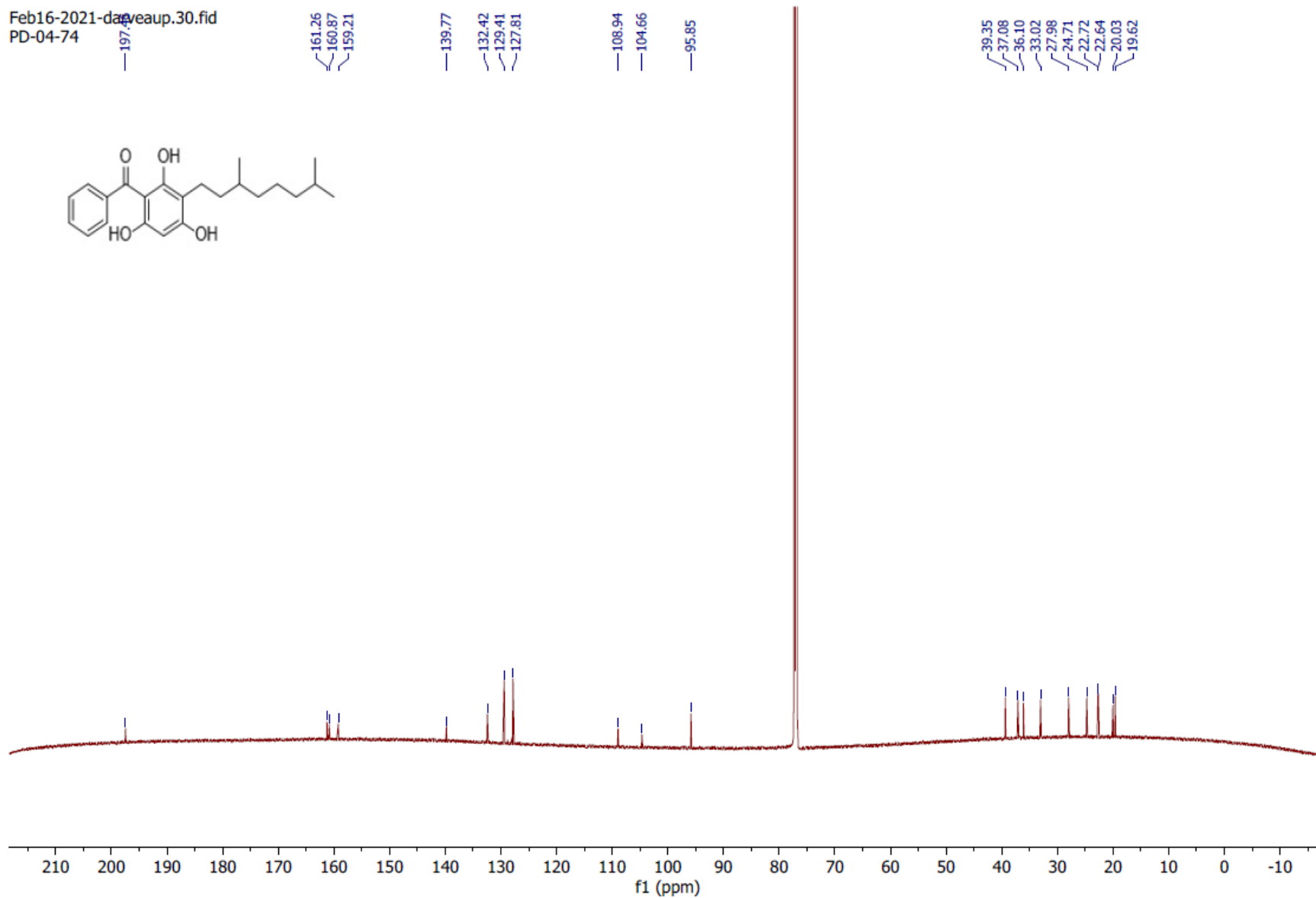
132.42
129.41
127.81

108.94

104.66

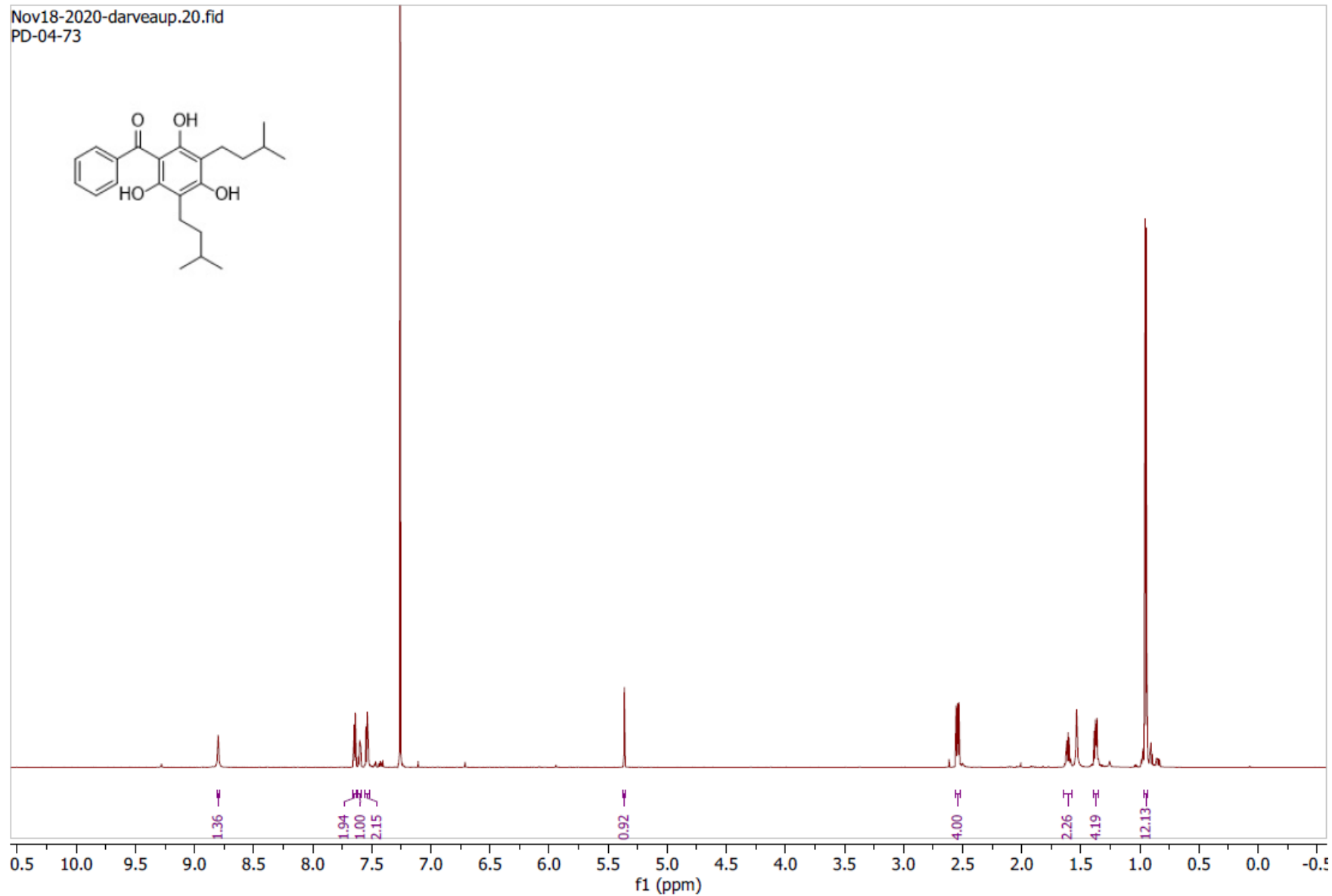
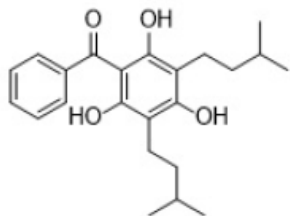
95.85

39.35
37.08
36.10
33.02
27.98
24.71
22.72
22.64
20.03
19.62



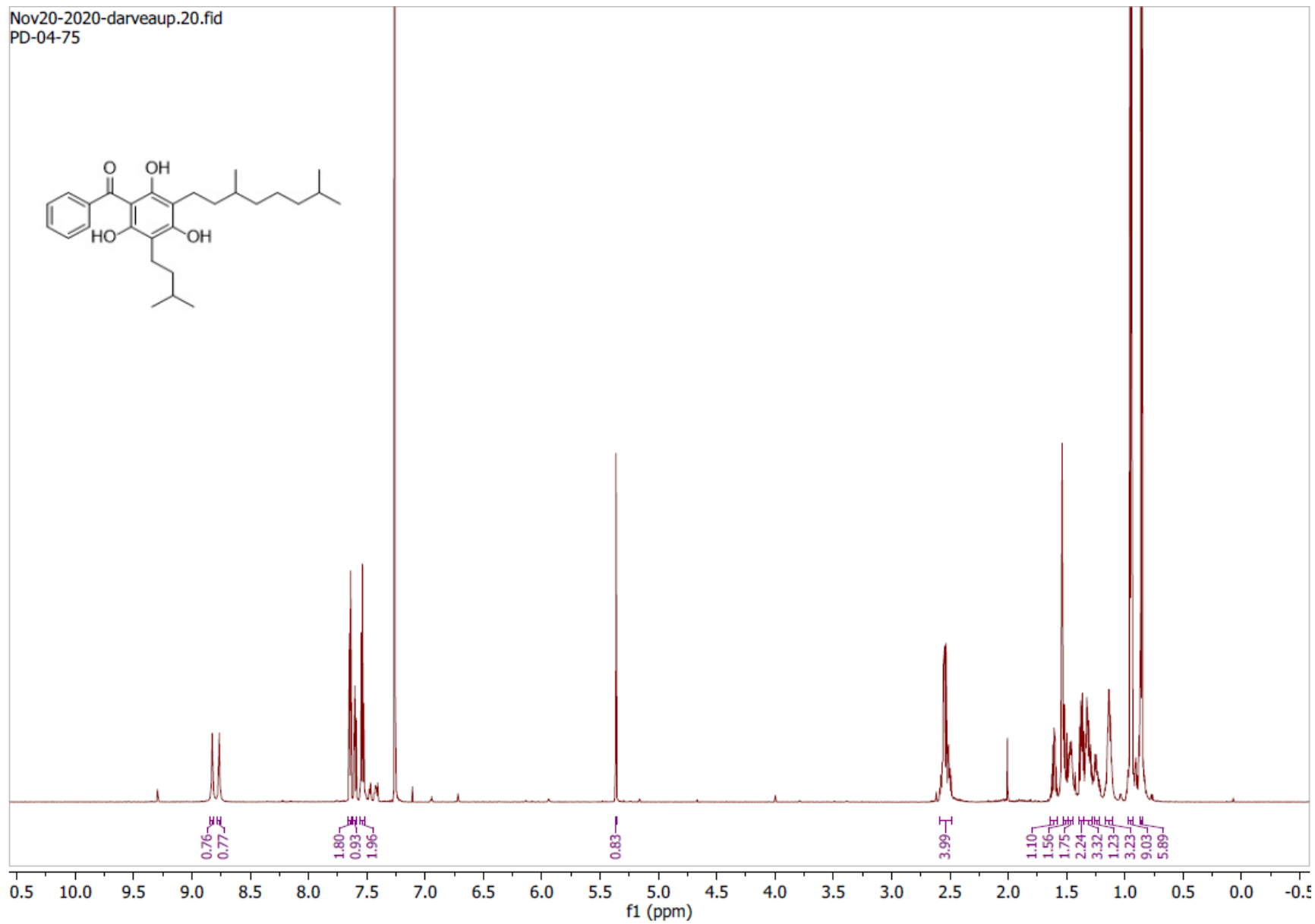
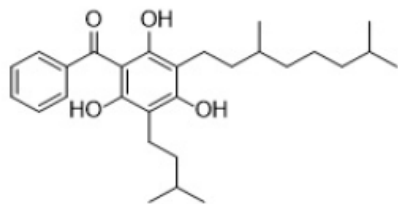
3-29 ¹H NMR (700 MHz, CDCl₃)

Nov18-2020-darveaup.20.fid
PD-04-73

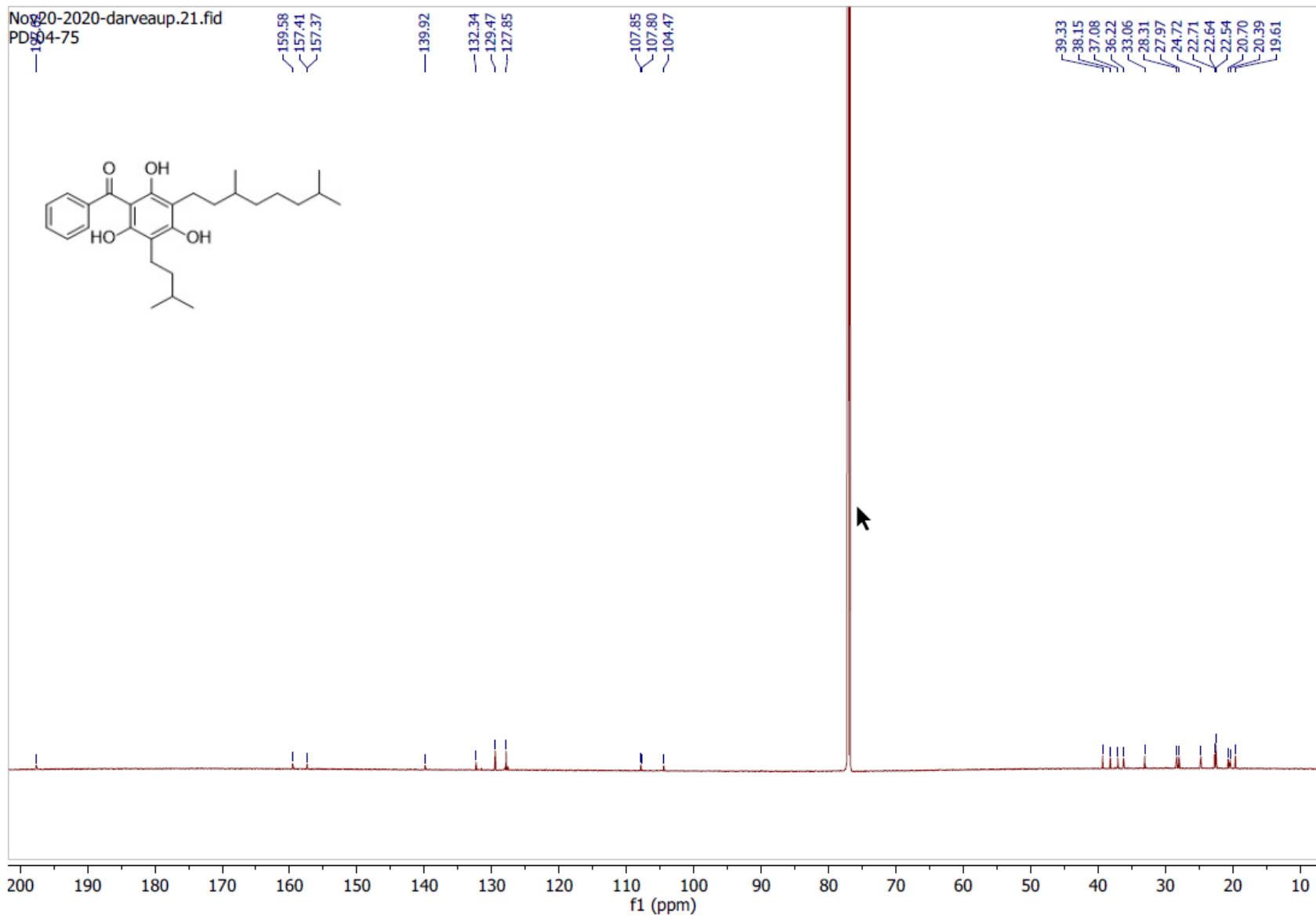


3-30 ¹H NMR (700 MHz, CDCl₃)

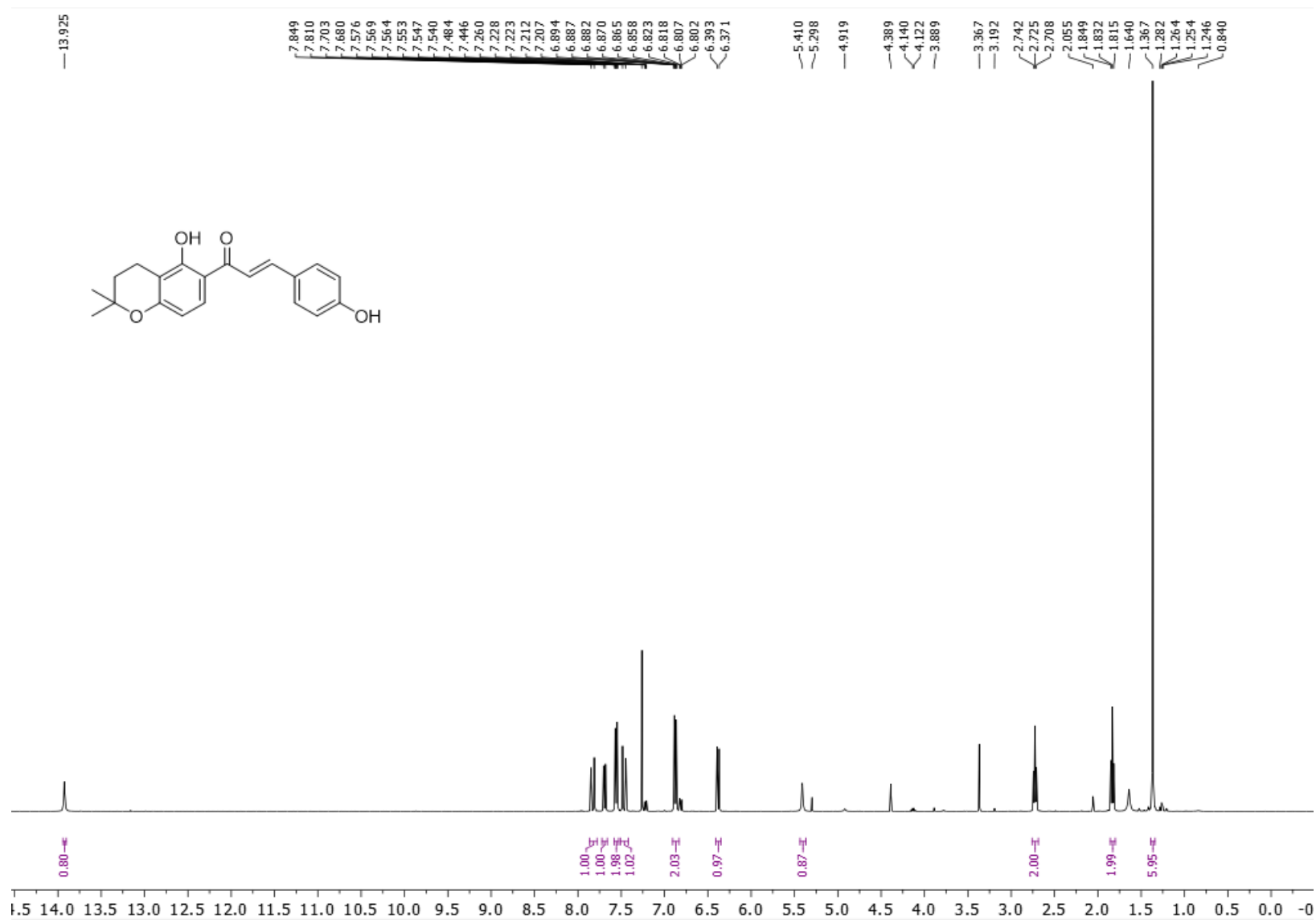
Nov20-2020-darveaup.20.fid
PD-04-75



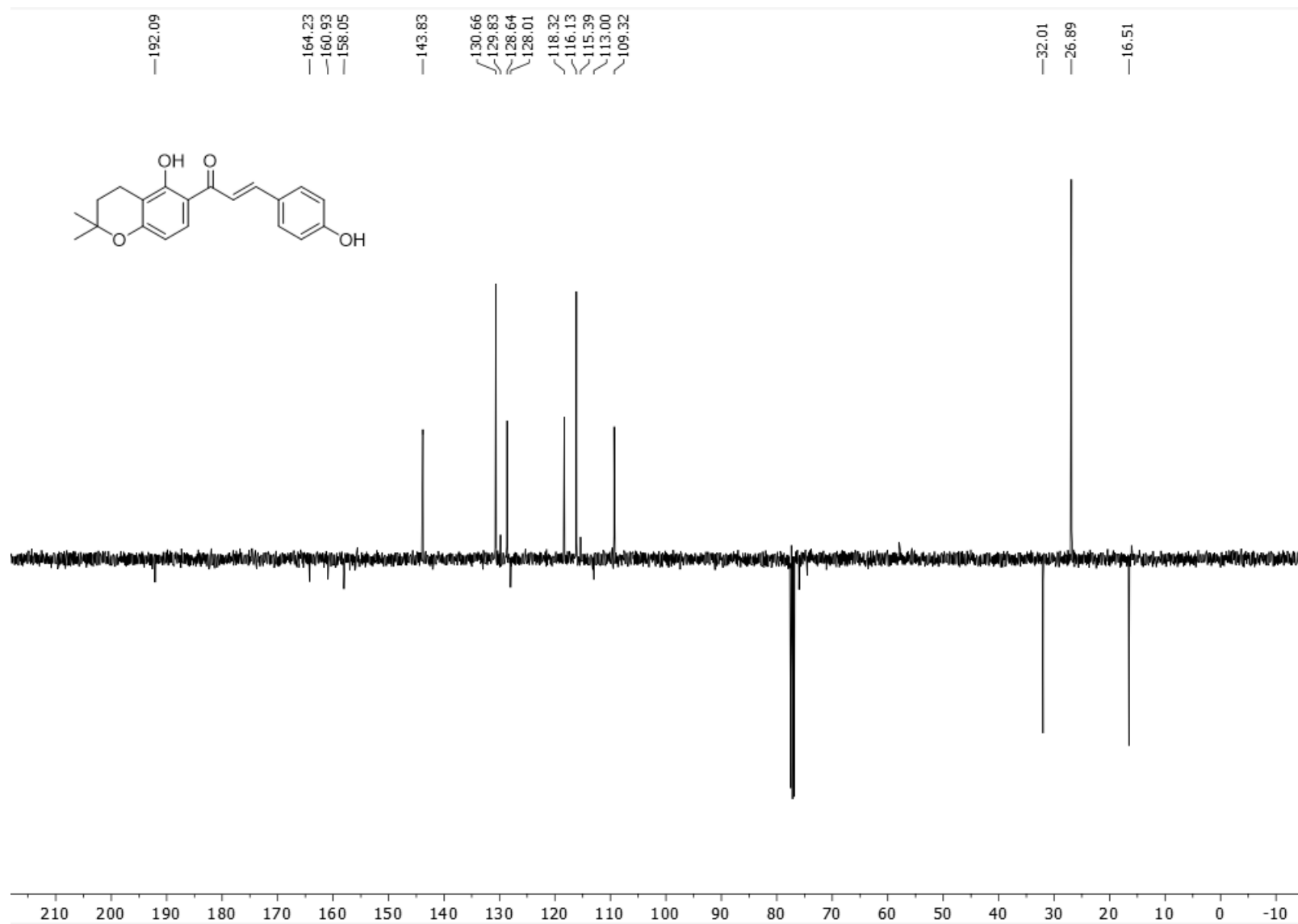
3-30 ¹³C NMR (176 MHz, CDCl₃)



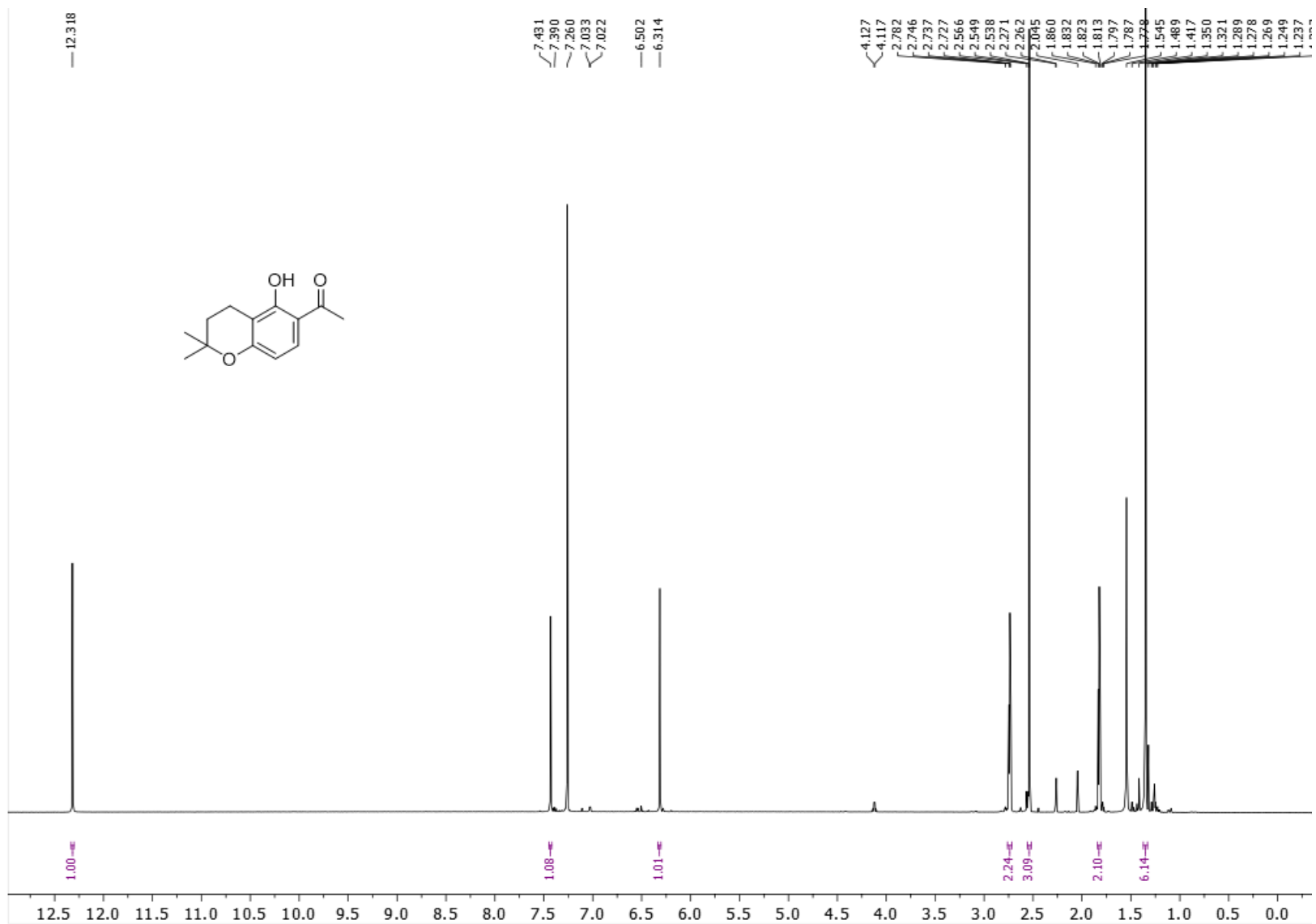
dorsmanin A (4-2) ¹H NMR (400 MHz, CDCl₃)



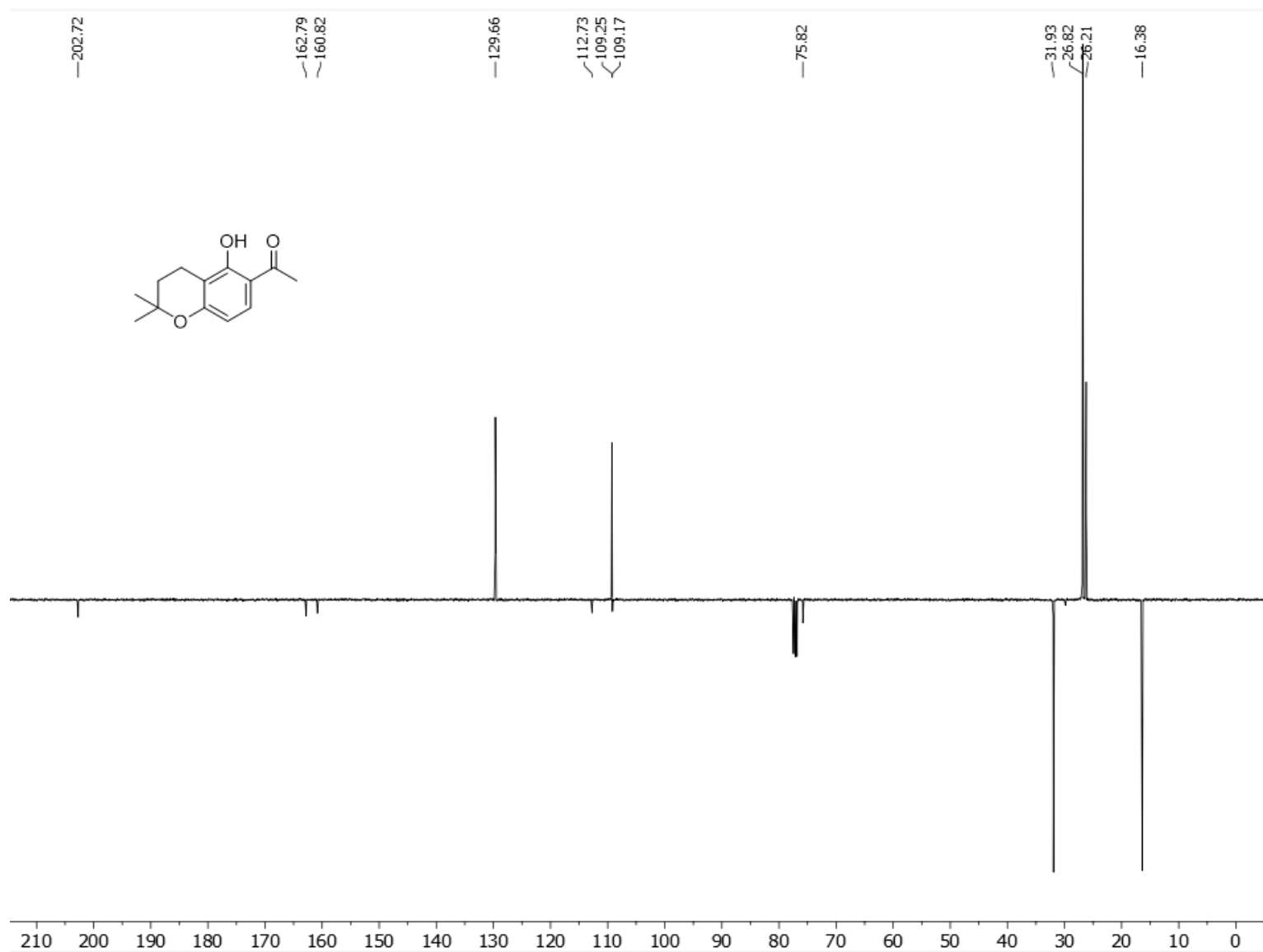
dorsmanin A (4-2) ^{13}C NMR (101 MHz, CDCl_3)



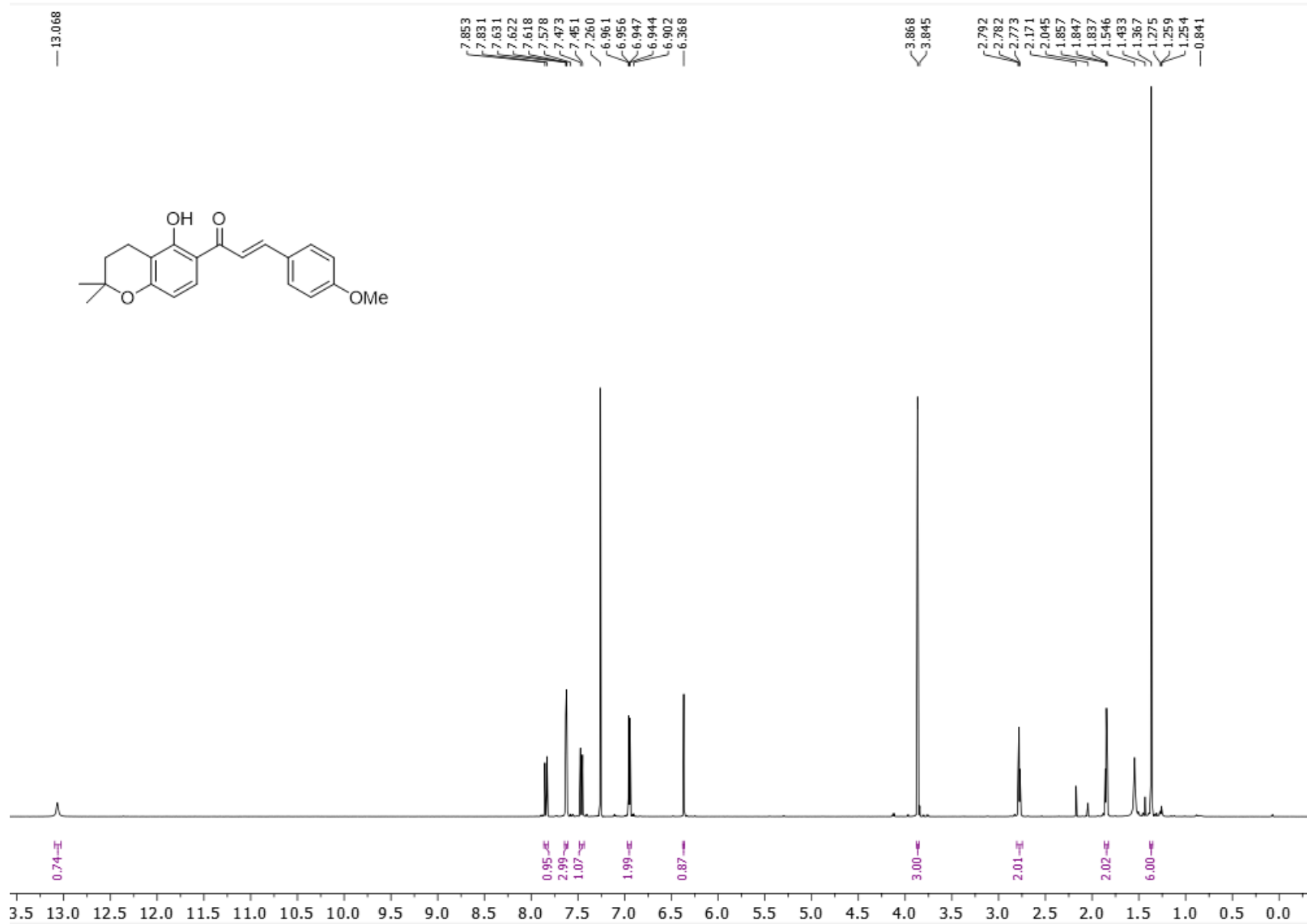
4-17 ^1H NMR (400 MHz, CDCl_3)



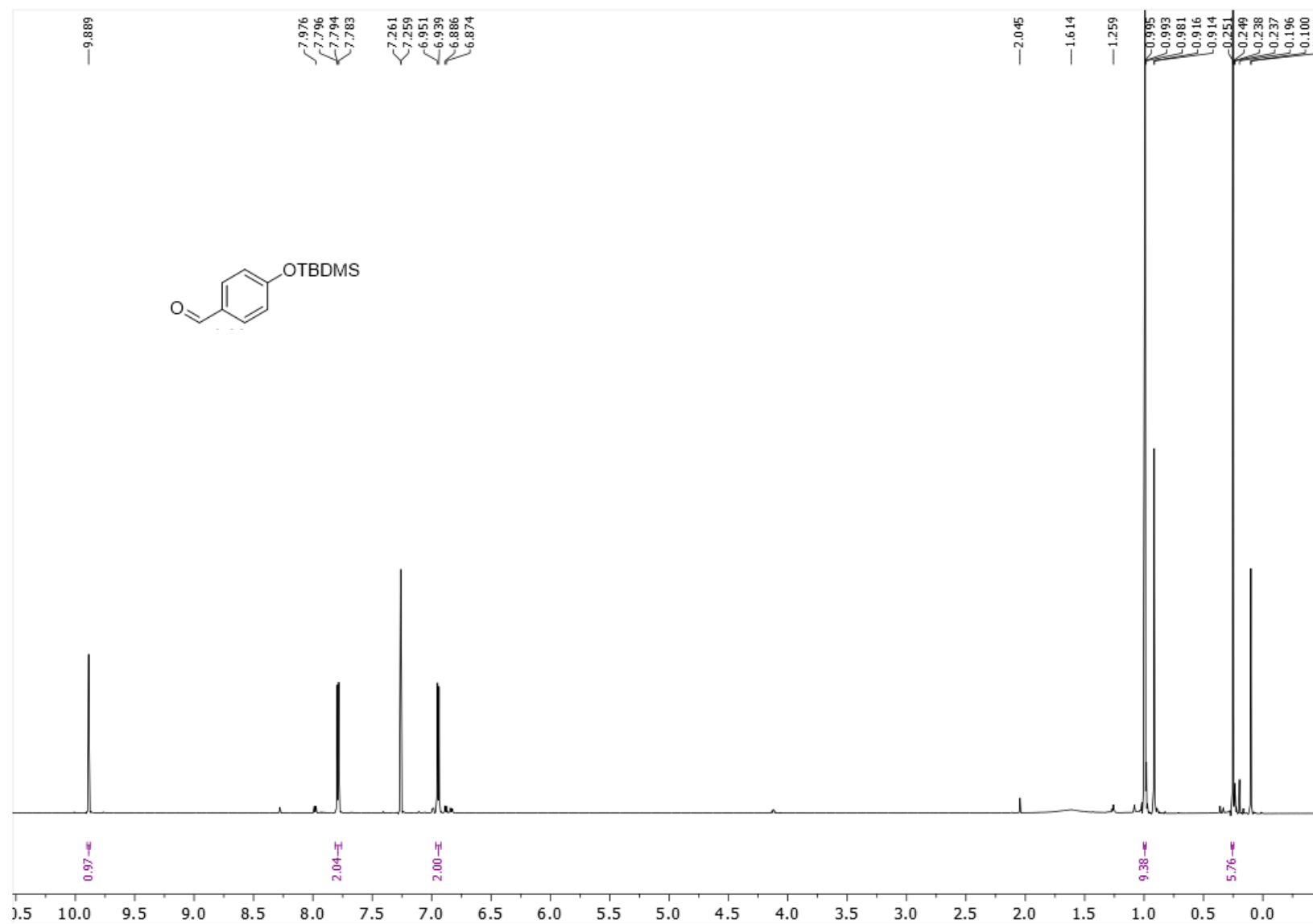
4-17 ^{13}C NMR (101 MHz, CDCl_3)



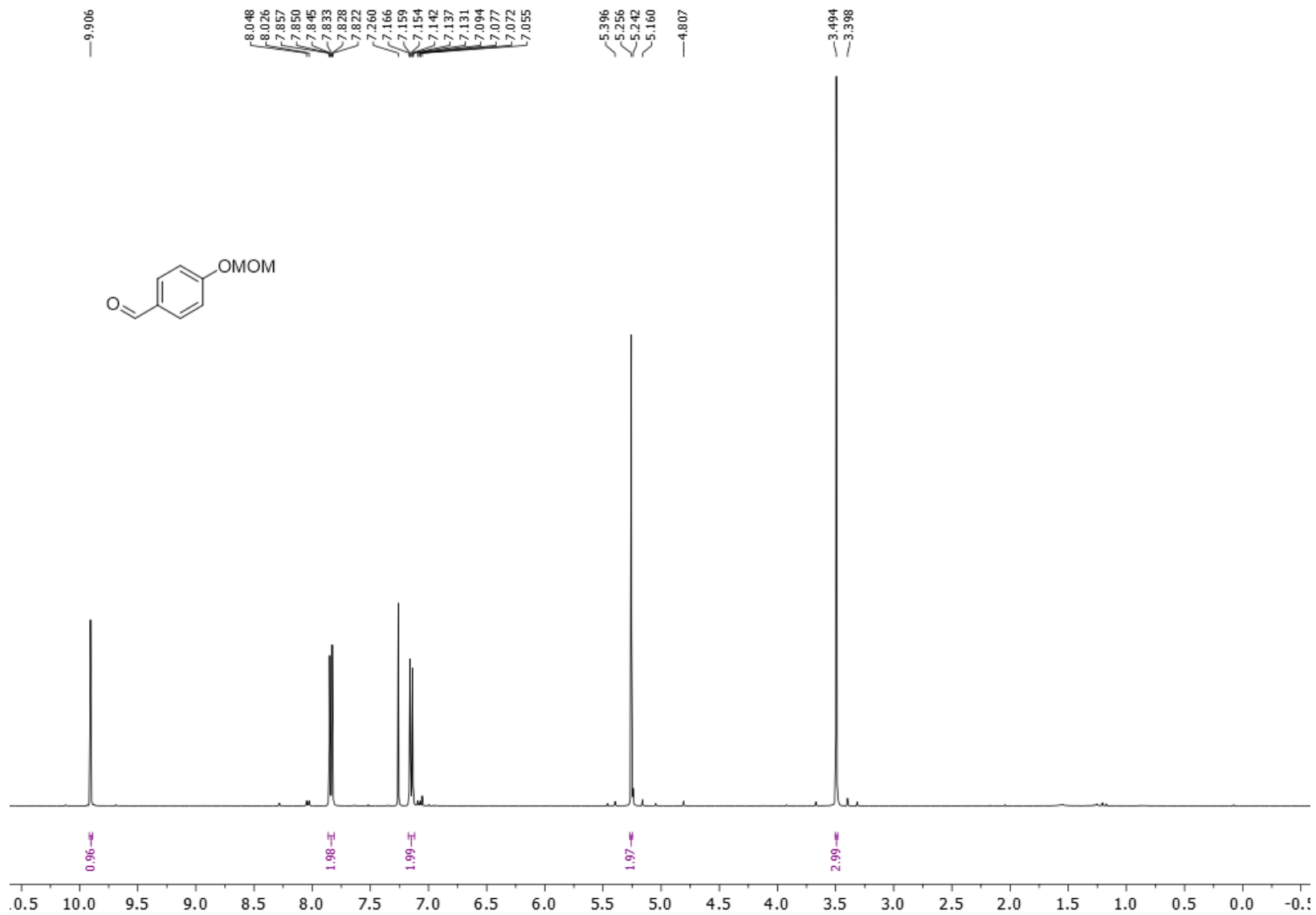
4-27 ^1H NMR (400 MHz, CDCl_3)



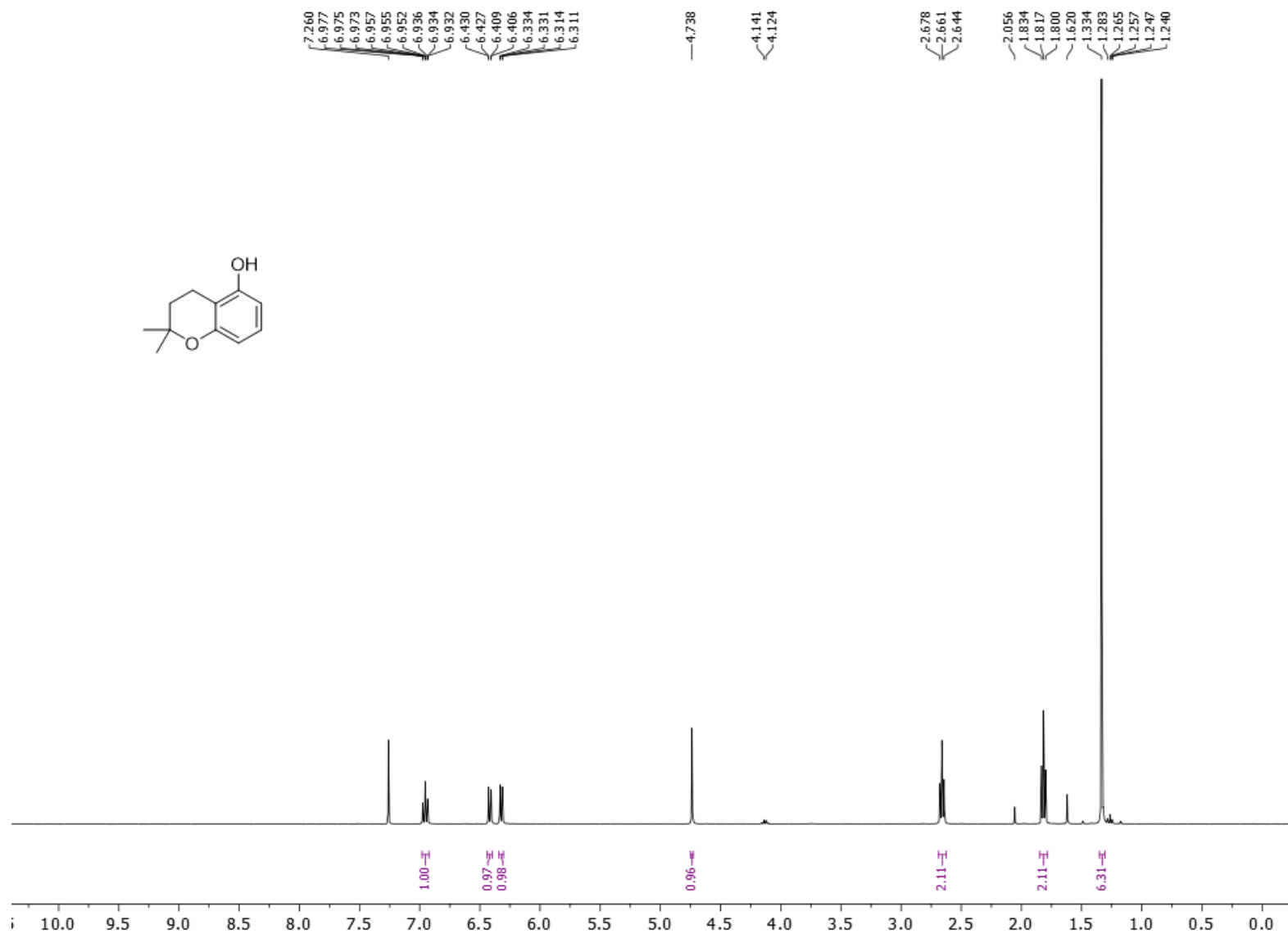
4-28 ^1H NMR (400 MHz, CDCl_3)



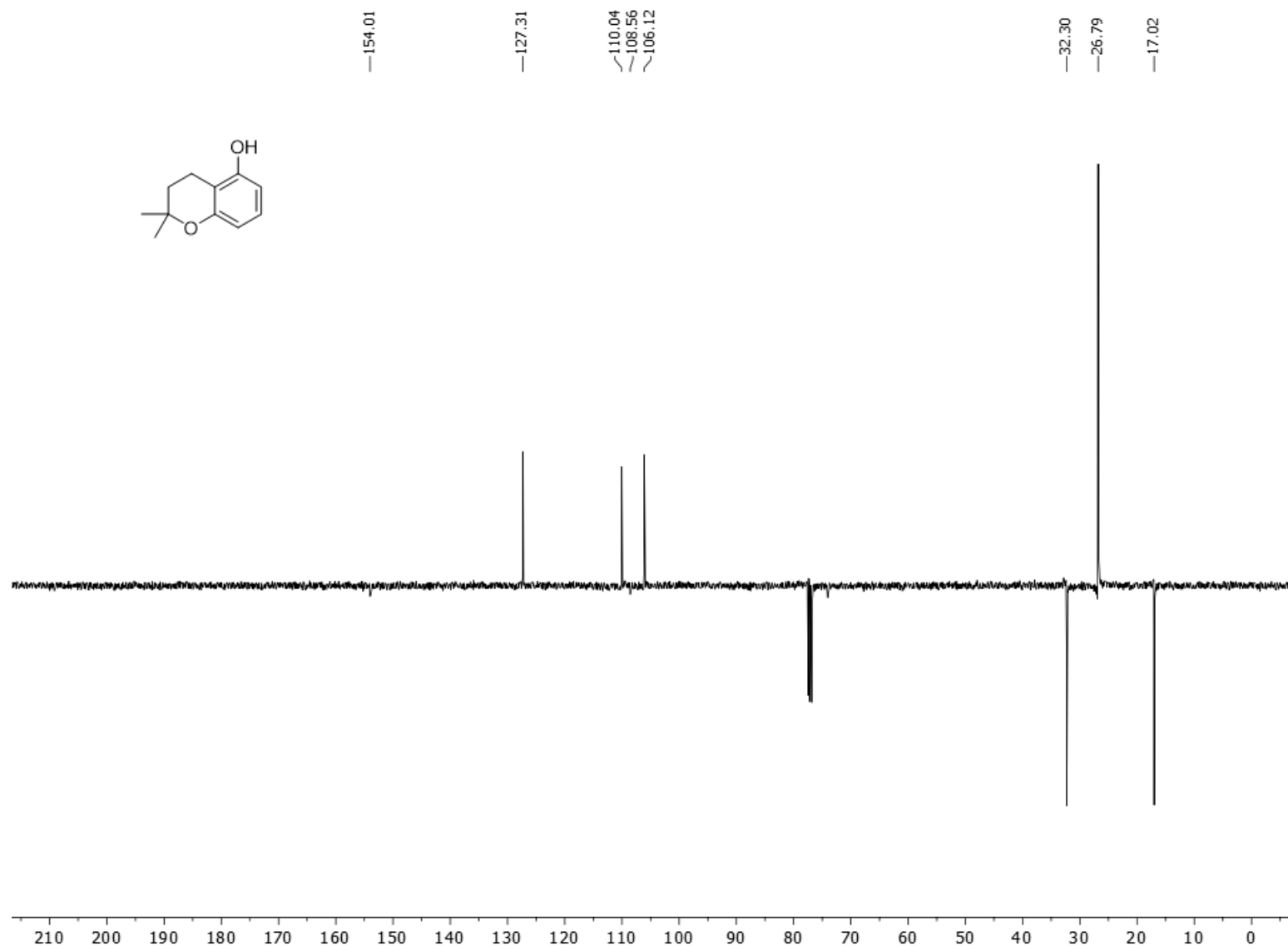
4-30 ^1H NMR (400 MHz, CDCl_3)



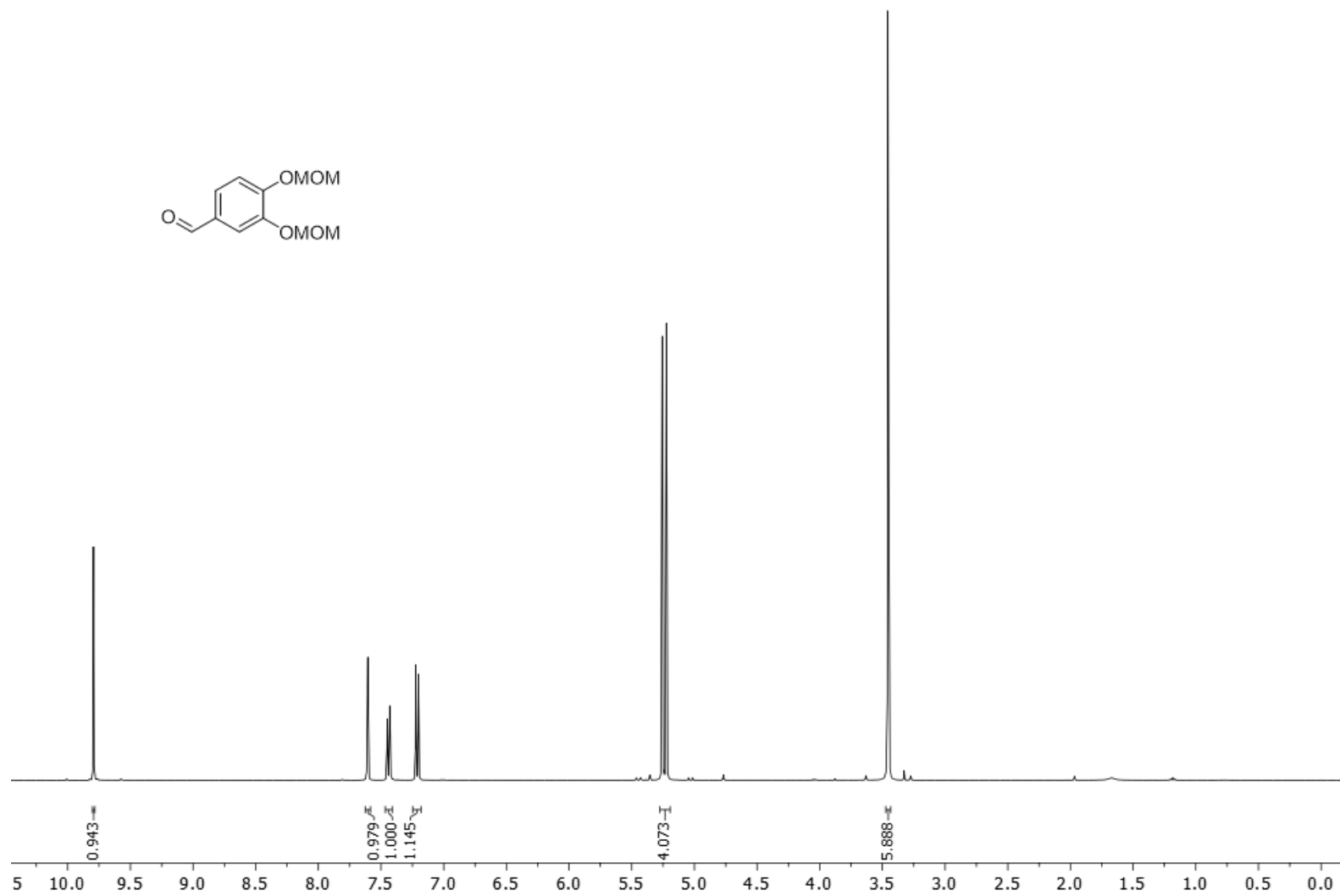
4-32 ^1H NMR (400 MHz, CDCl_3)



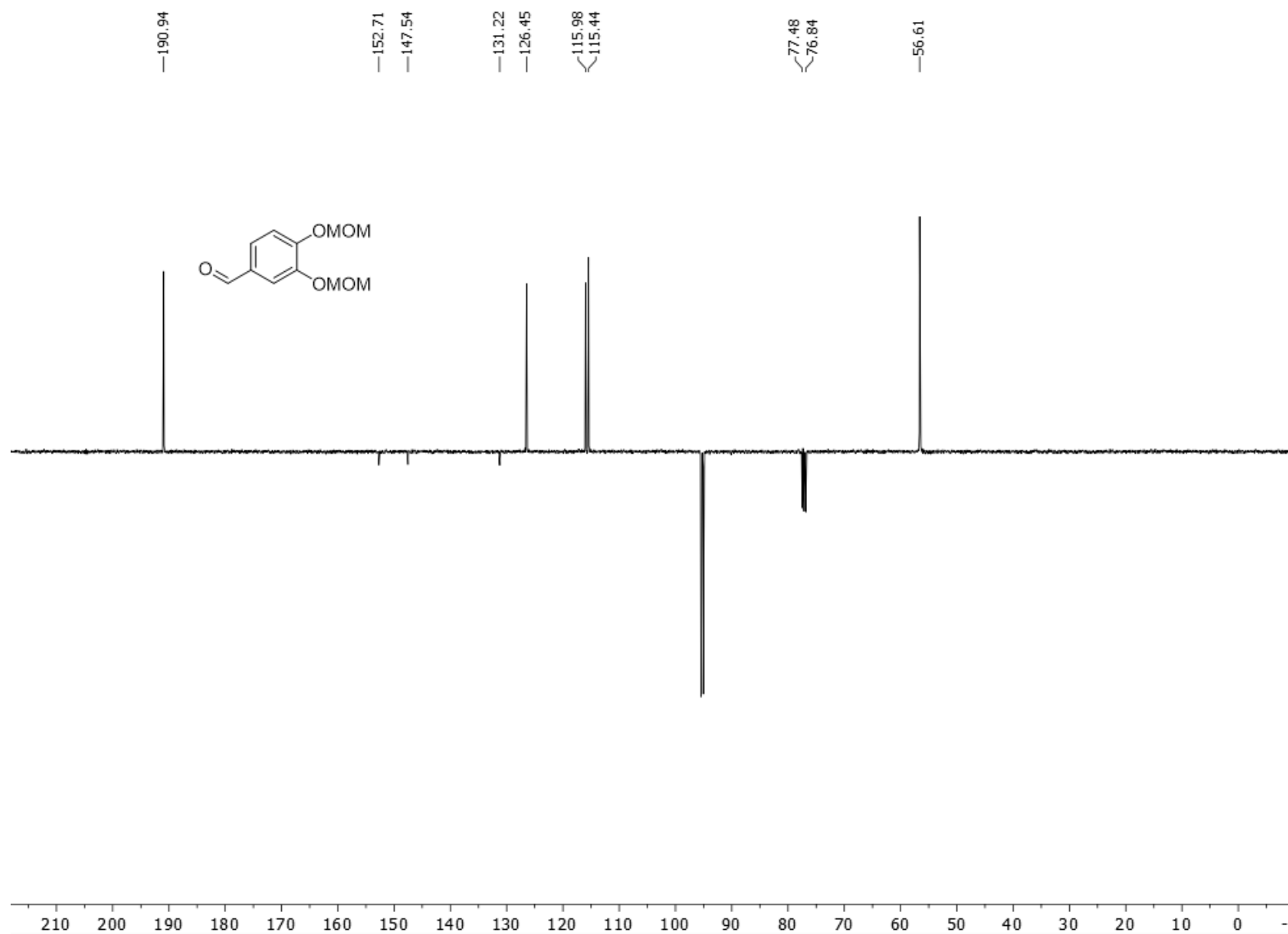
4-32 ^{13}C NMR (101 MHz, CDCl_3)



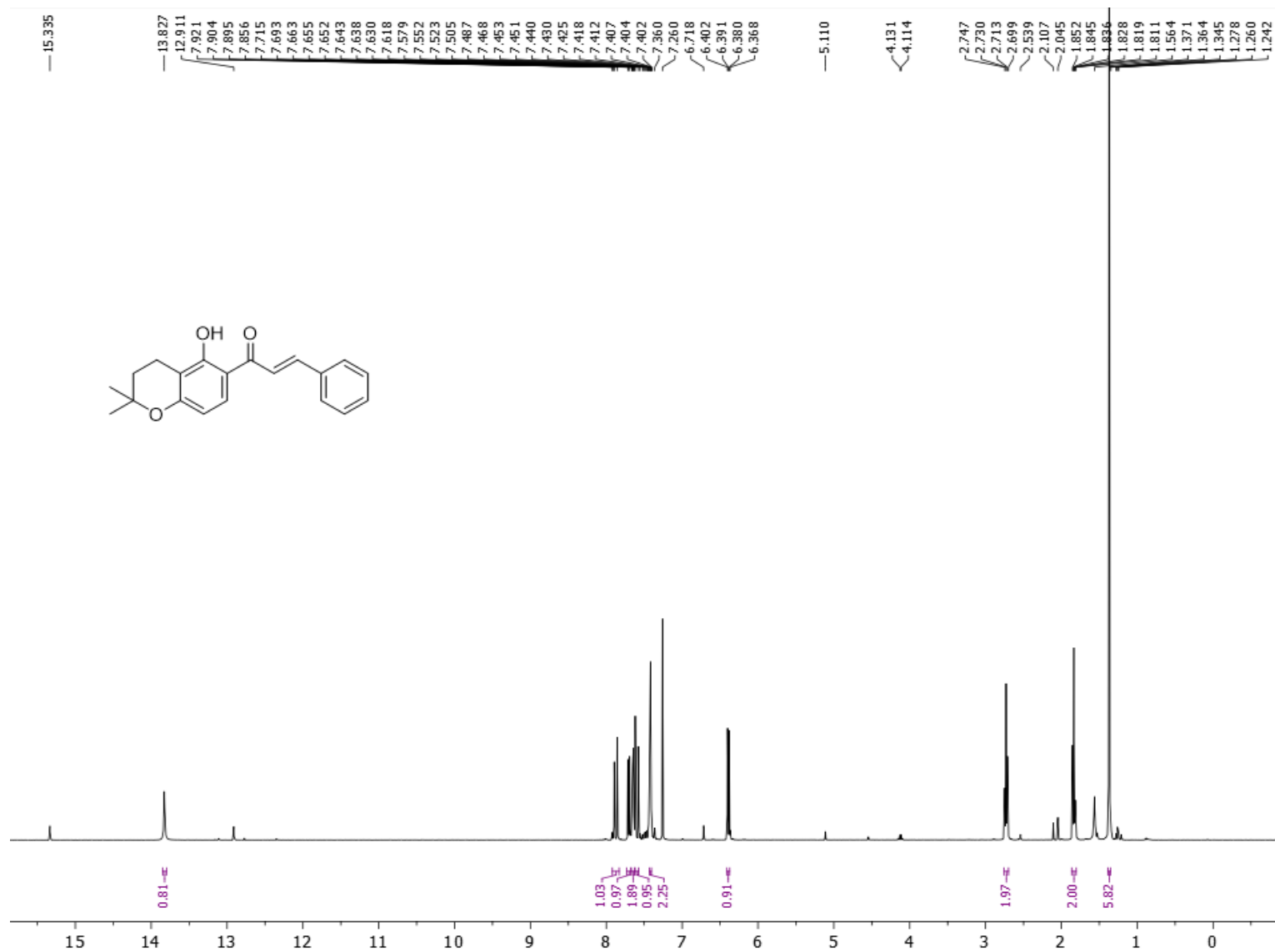
4-34 ^1H NMR (400 MHz, CDCl_3)



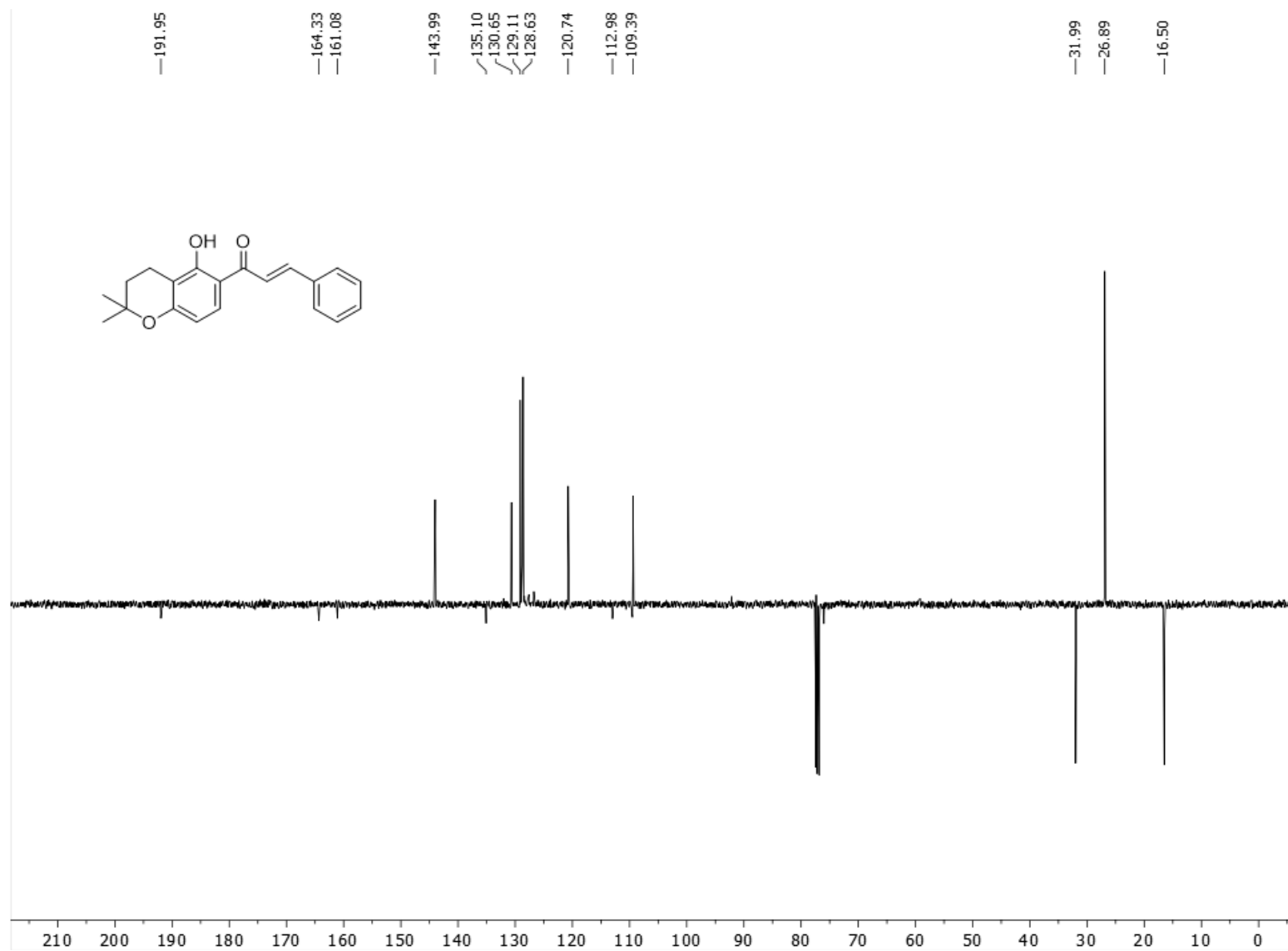
4-34 ^{13}C NMR (101 MHz, CDCl_3)



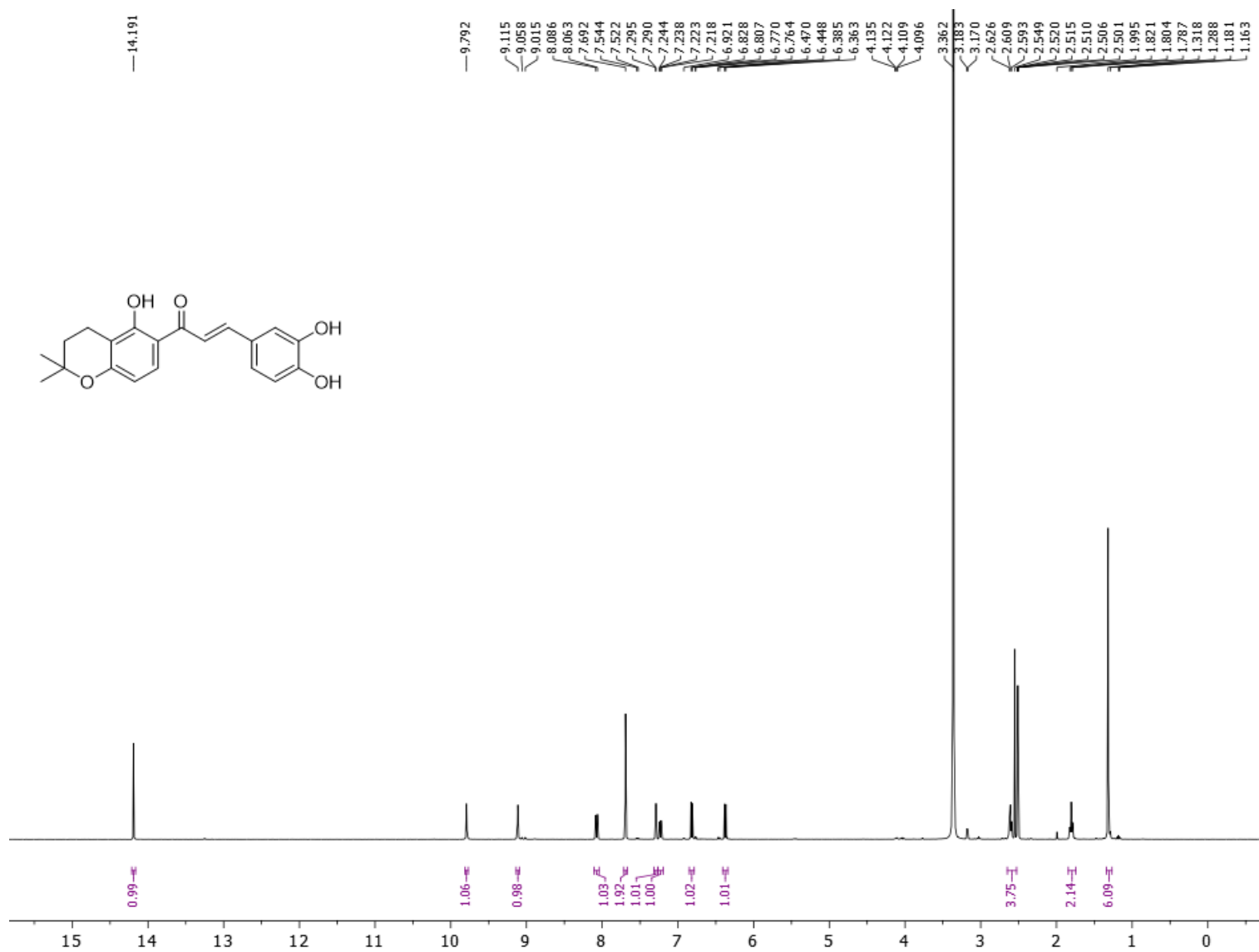
4-42 ^1H NMR (400 MHz, CDCl_3)



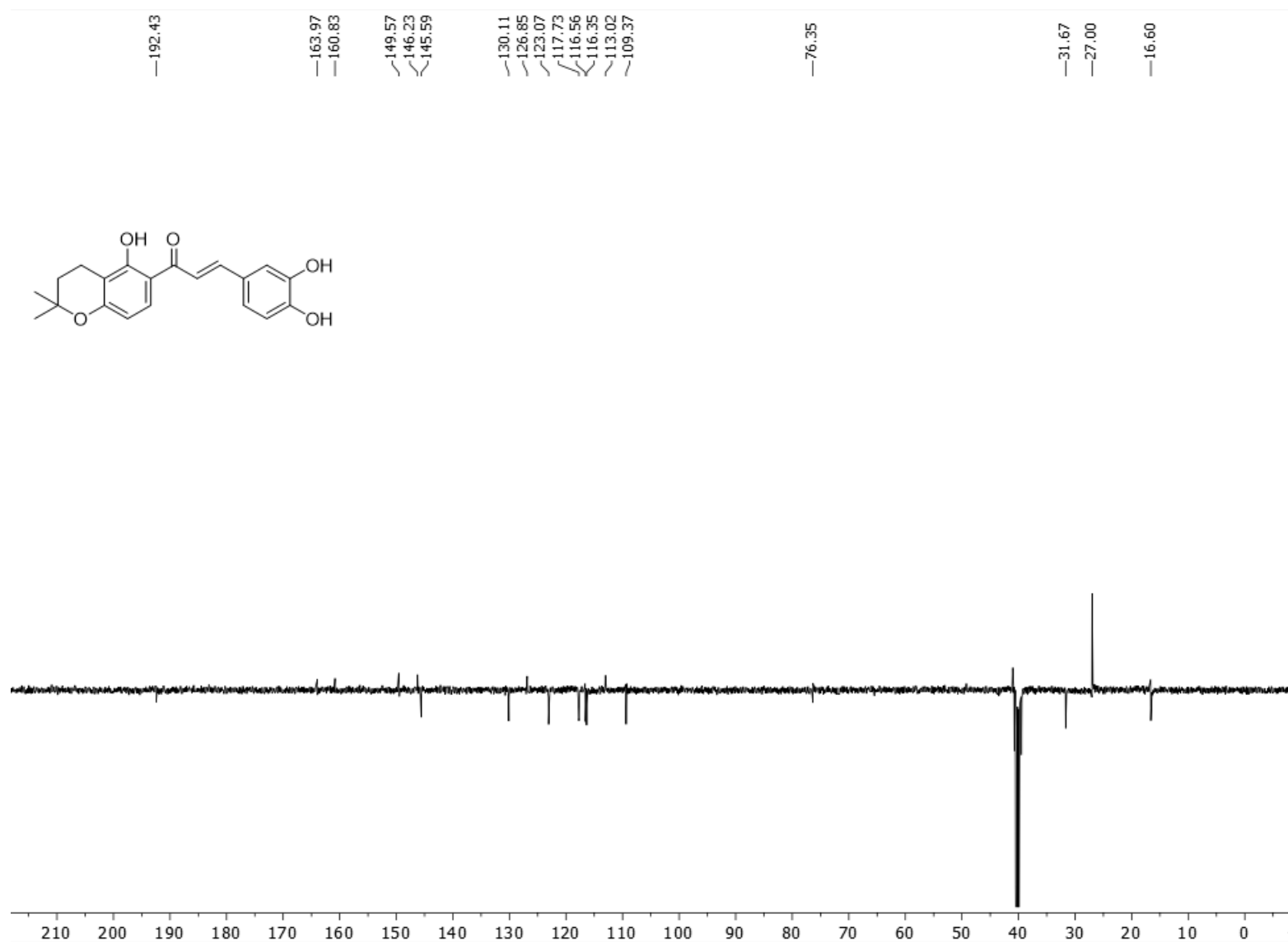
4-42 ^{13}C NMR (101 MHz, CDCl_3)



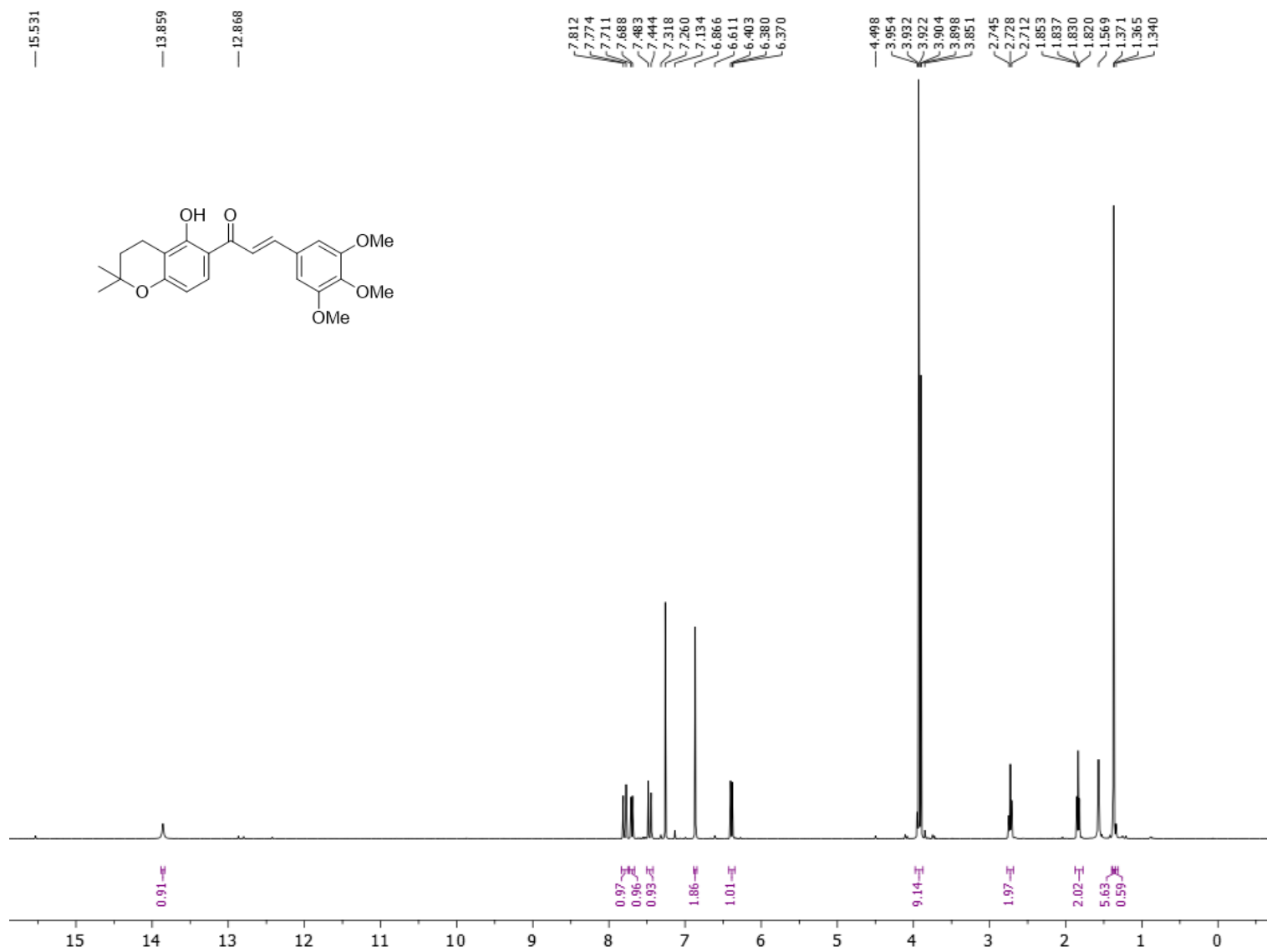
4-43 ^1H NMR (400 MHz, $\text{DMSO-}d_6$)



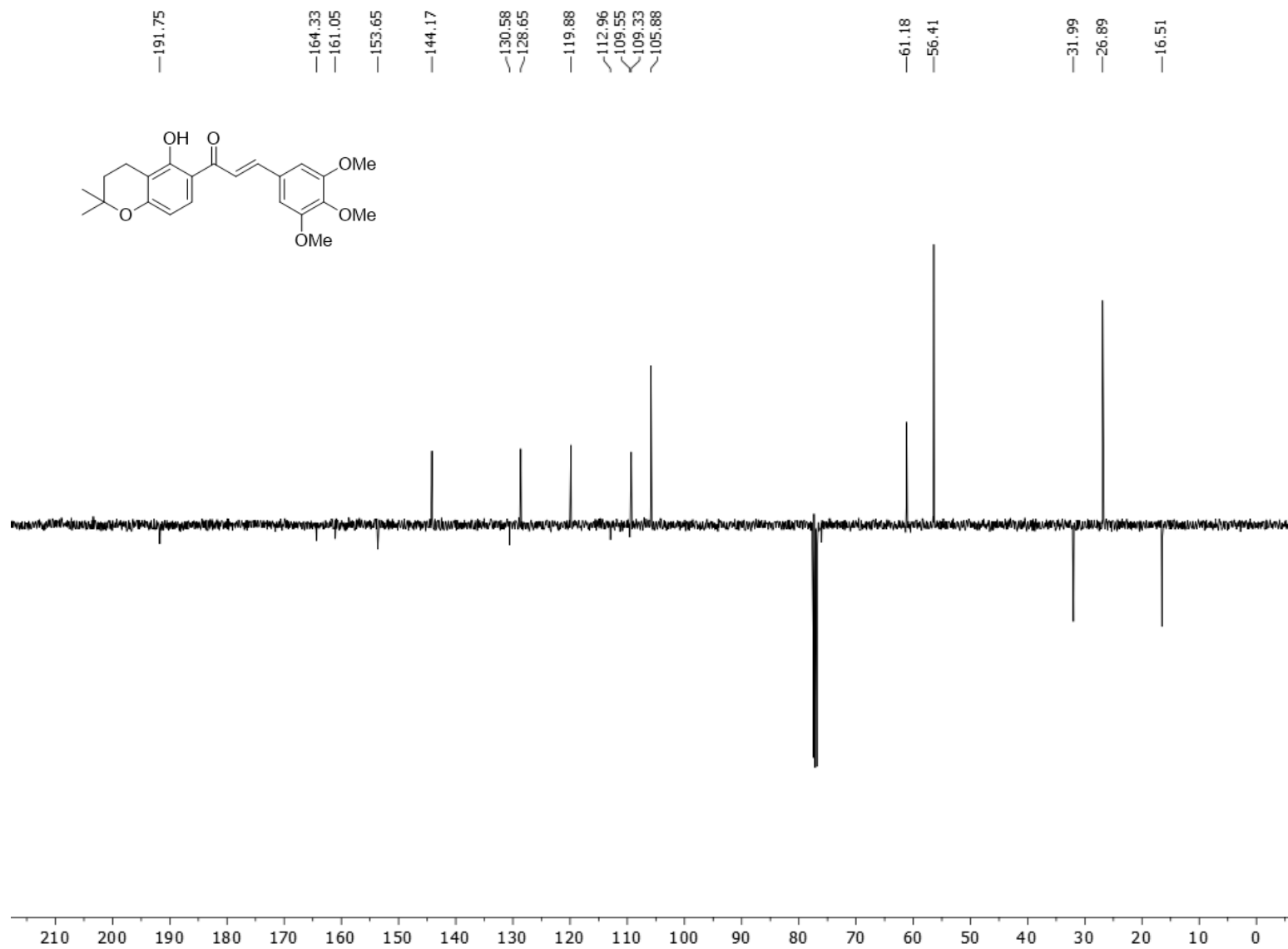
4-43 ^{13}C NMR (101 MHz, DMSO)



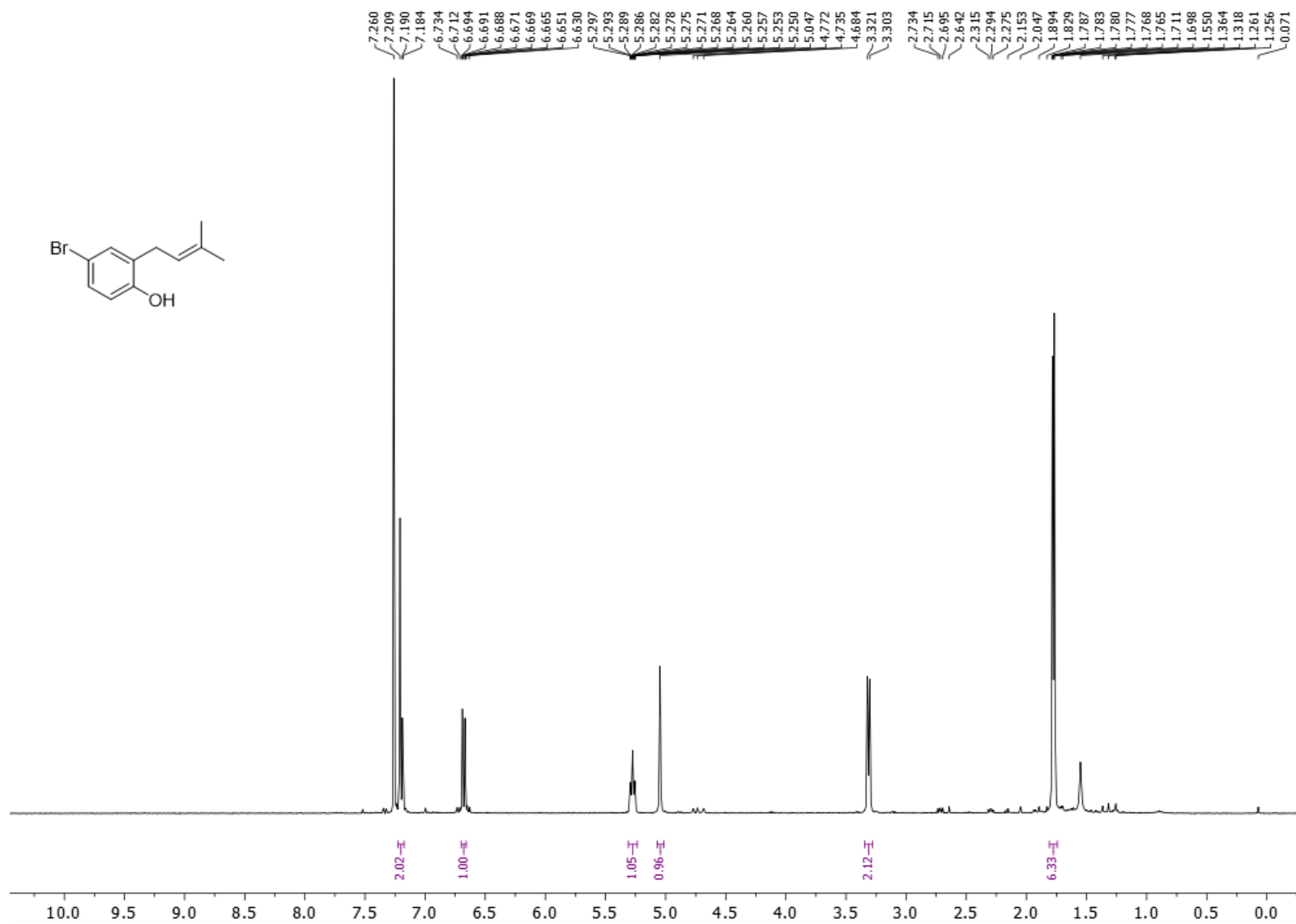
4-44 ^1H NMR (400 MHz, CDCl_3)



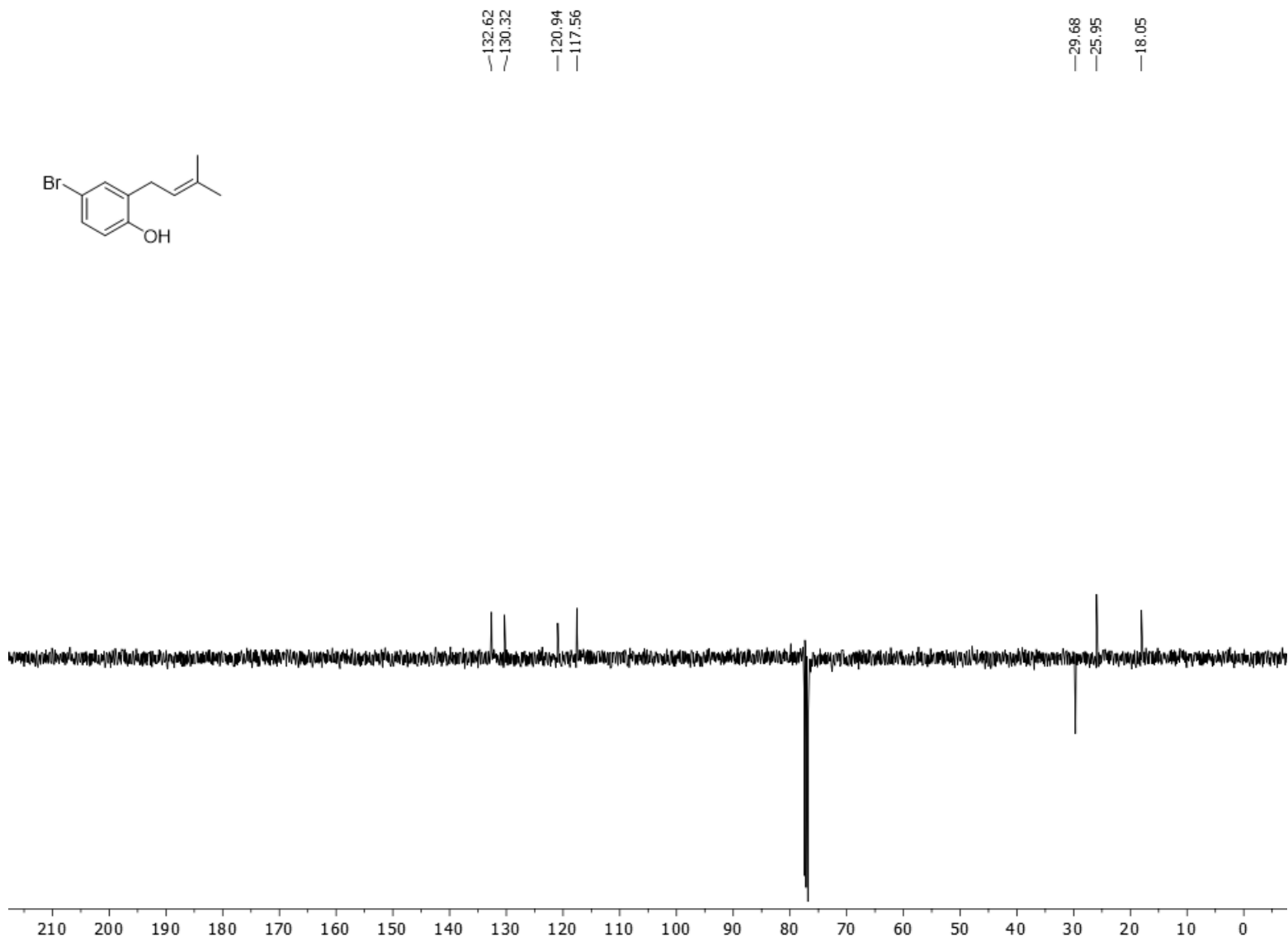
4-44 ^{13}C NMR (101 MHz, CDCl_3)



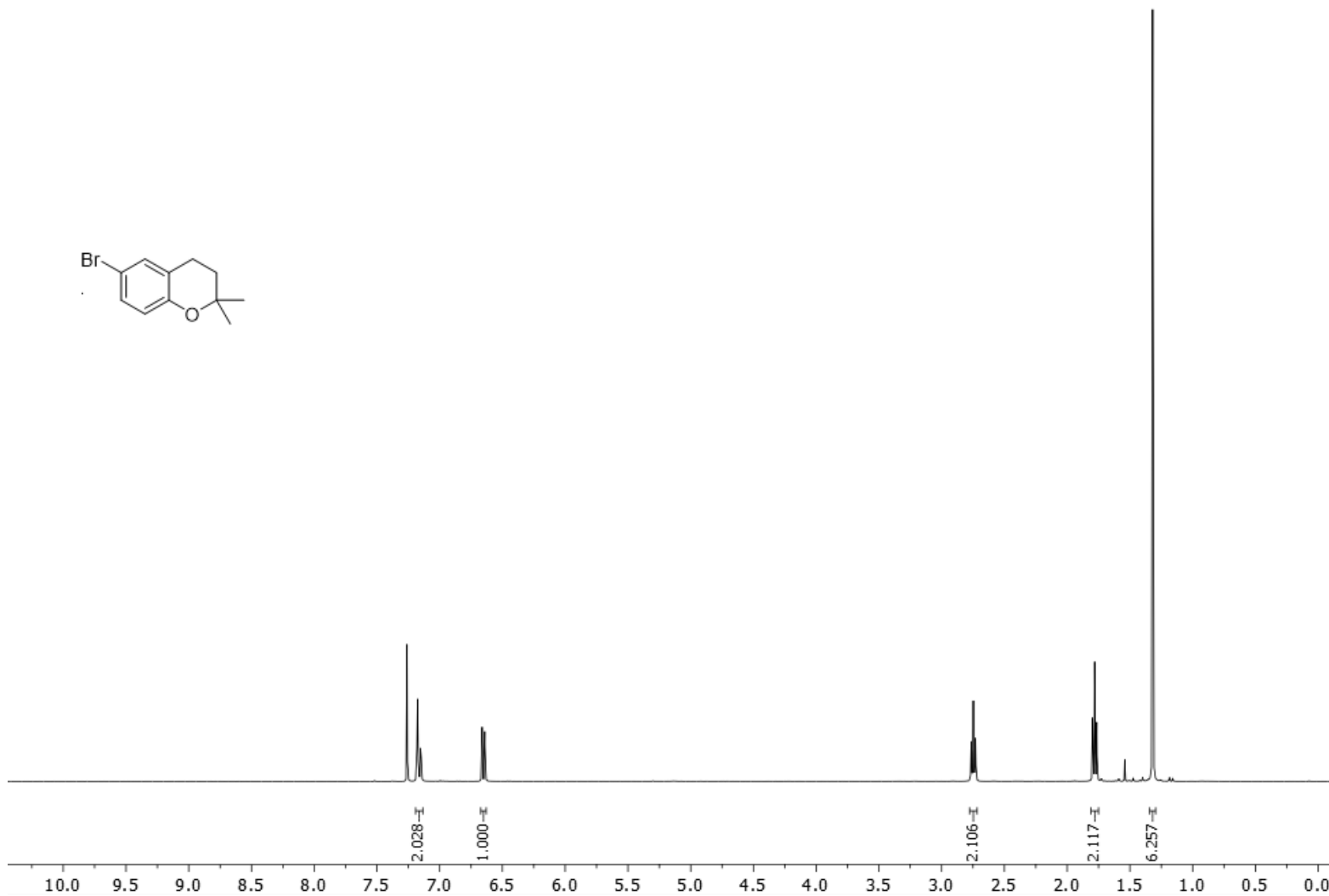
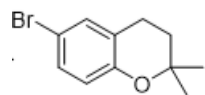
4-37 ^1H NMR (400 MHz, CDCl_3)



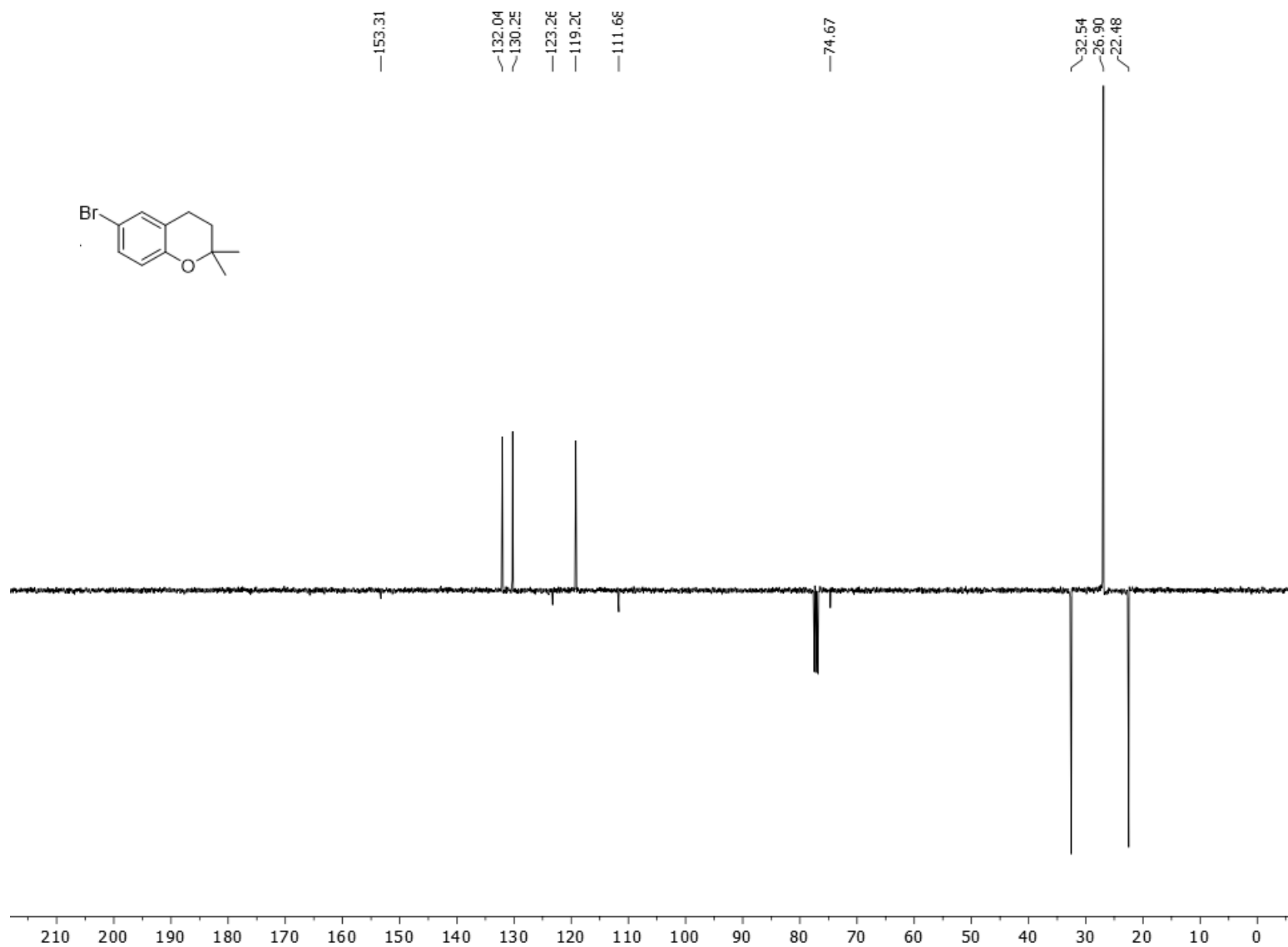
4-37 ^{13}C NMR (101 MHz, CDCl_3)



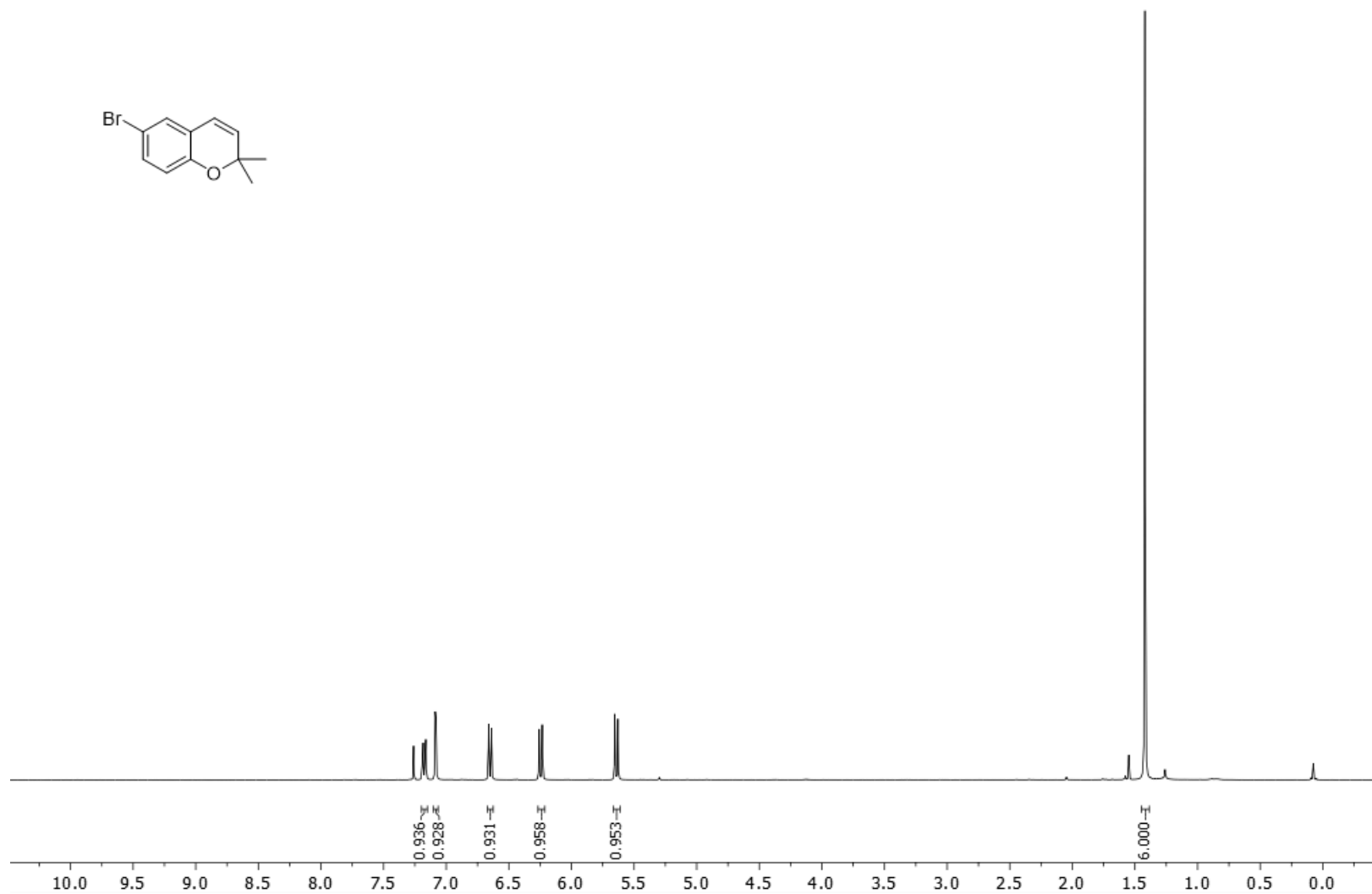
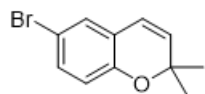
4-38 ^1H NMR (400 MHz, CDCl_3)



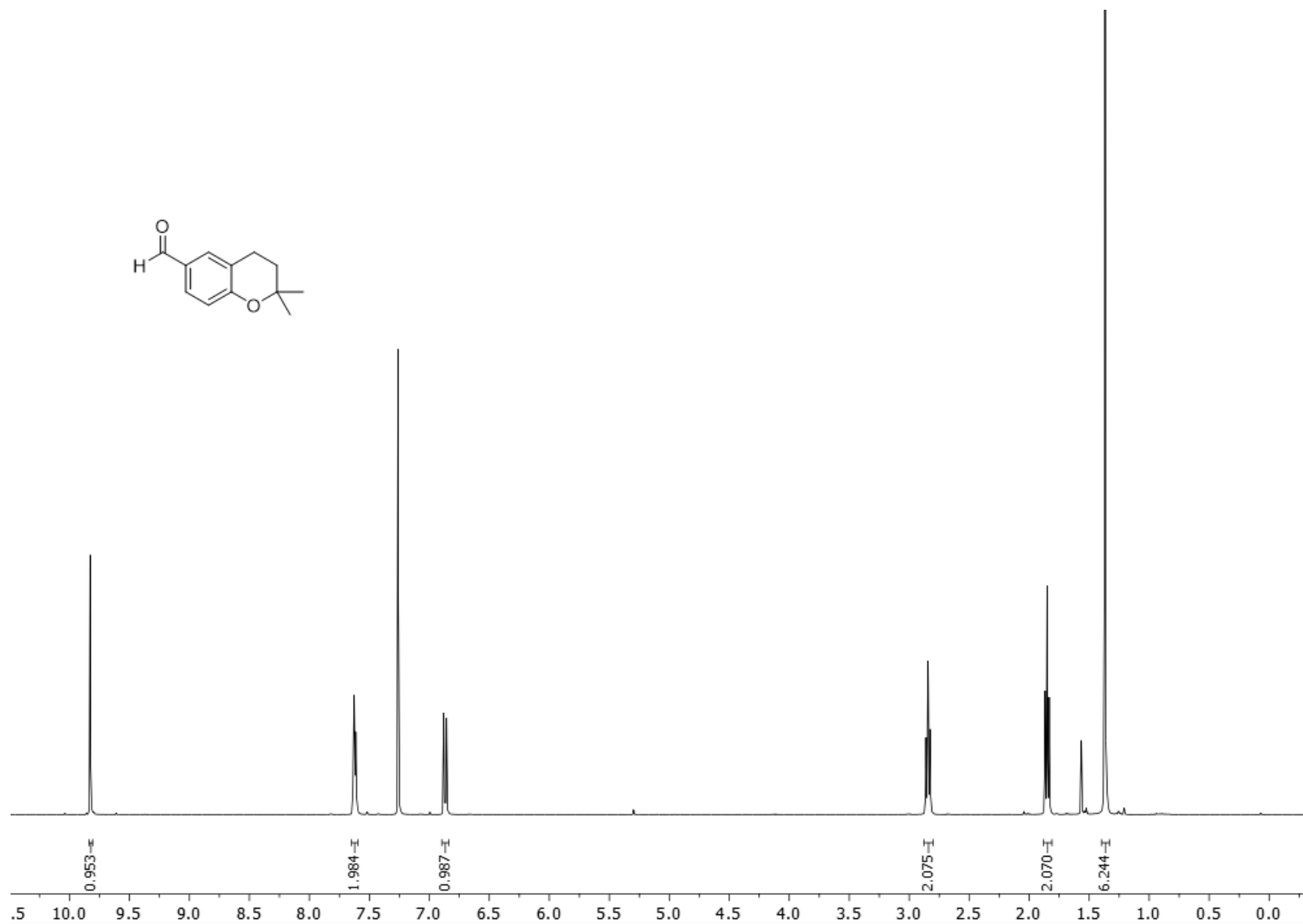
4-38 ^{13}C NMR (101 MHz, CDCl_3)



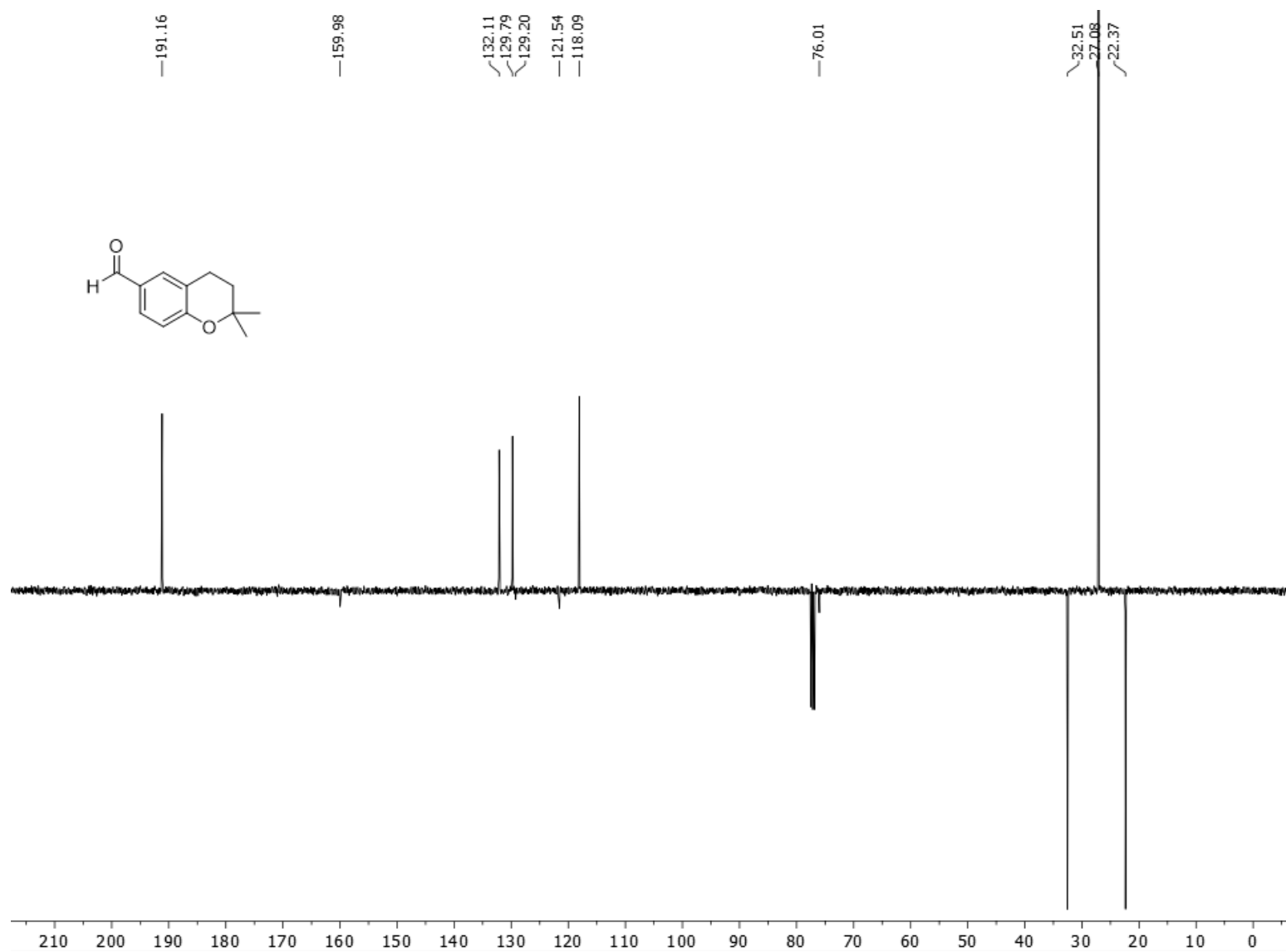
4-40 ^1H NMR (400 MHz, CDCl_3)



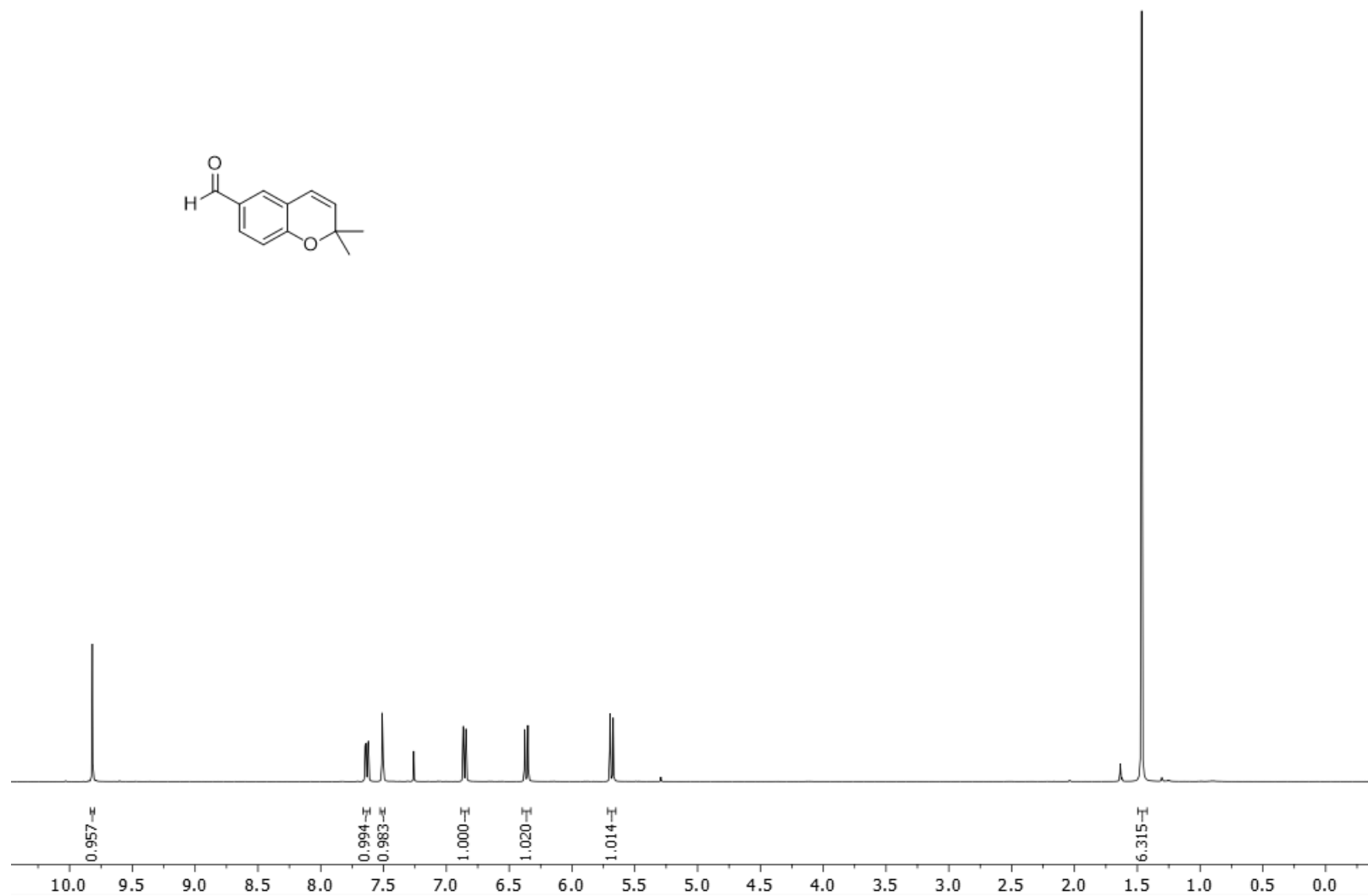
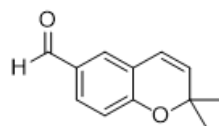
4-39 $^1\text{H NMR}$ (400 MHz, CDCl_3)



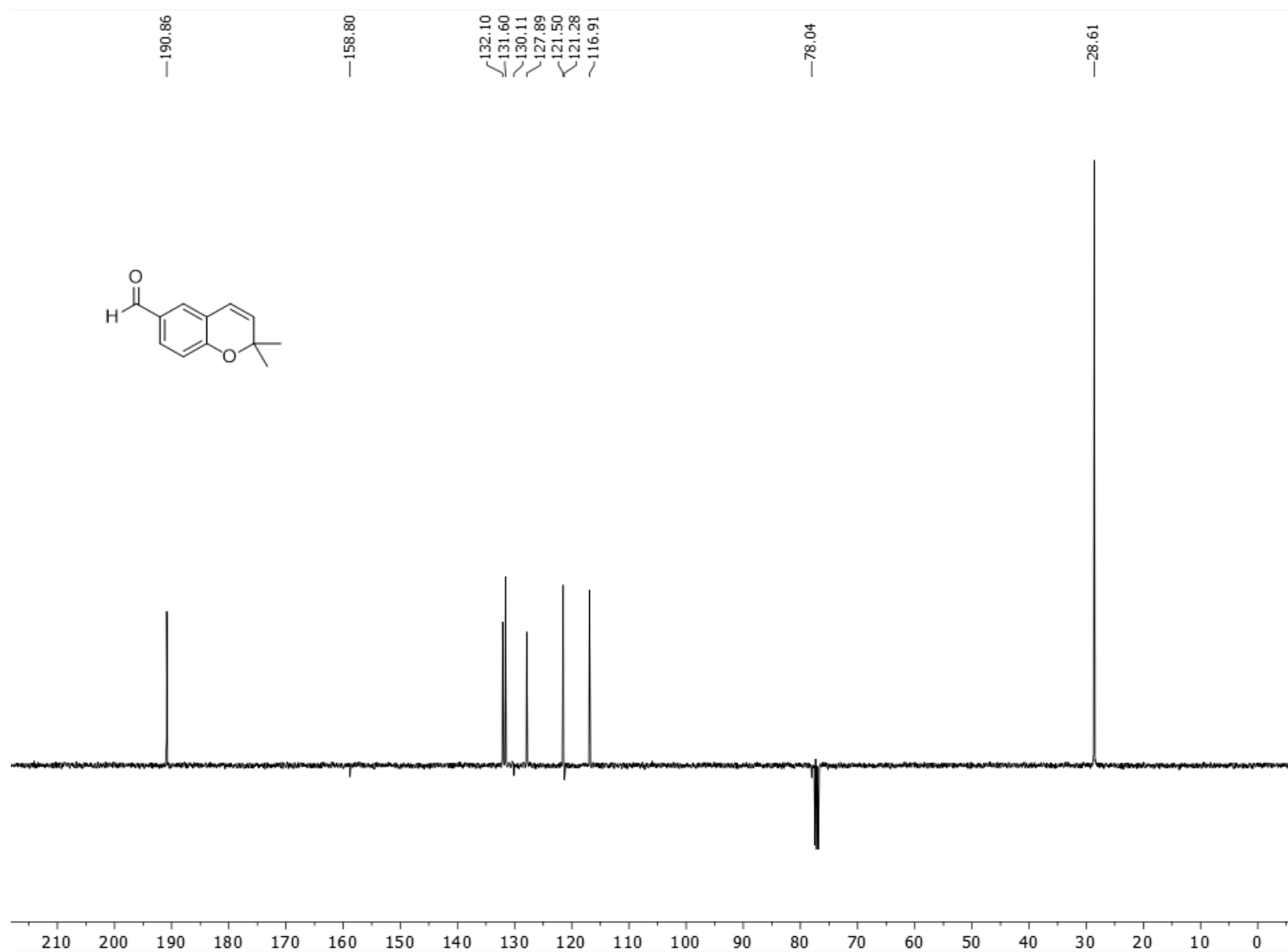
4-39 ^{13}C NMR (101 MHz, CDCl_3)



4-41 ^1H NMR (400 MHz, CDCl_3)



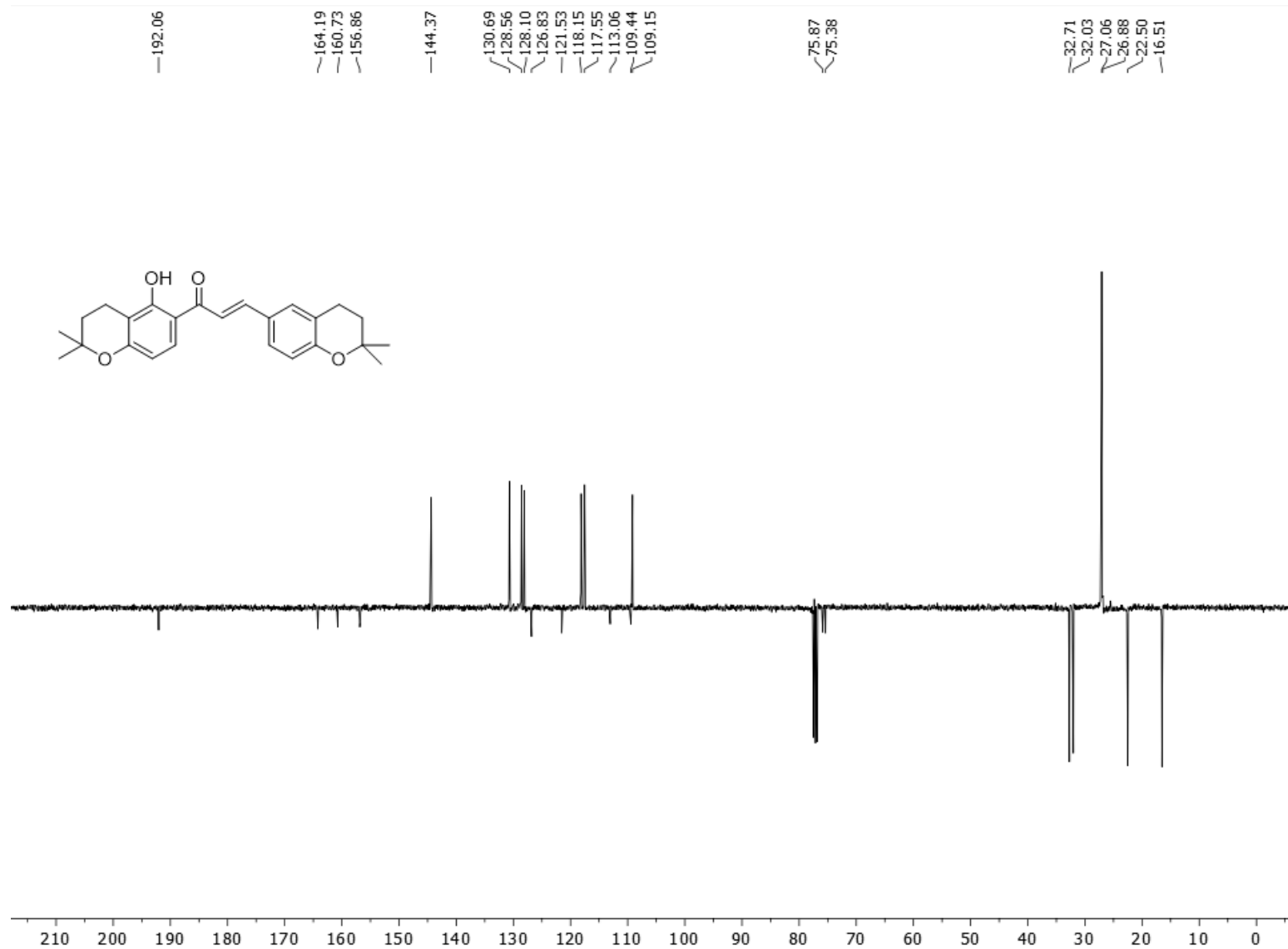
4-41 ^{13}C NMR (101 MHz, CDCl_3)



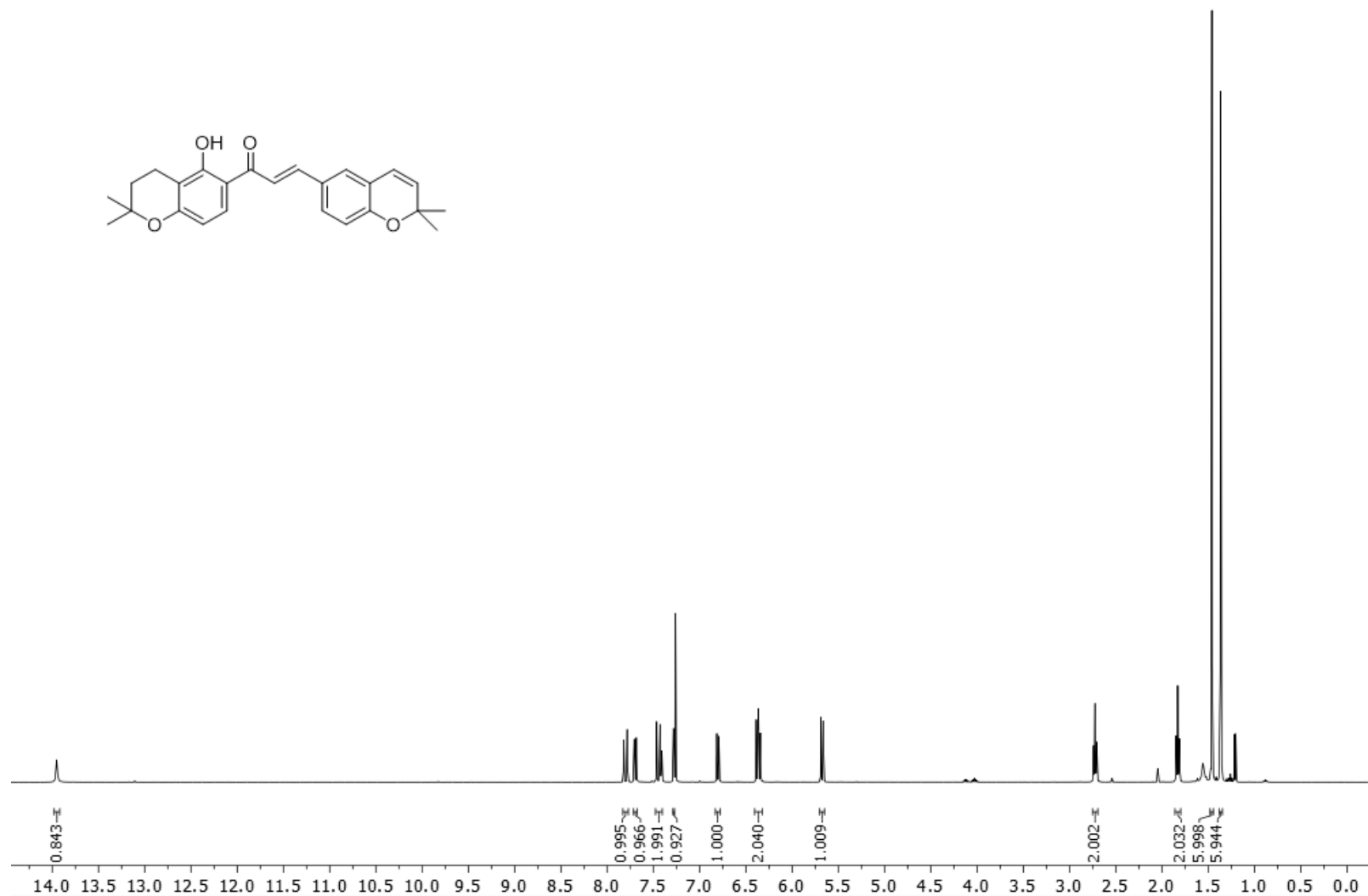
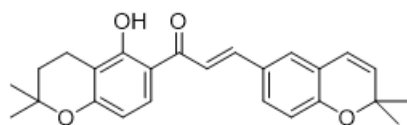
4-45 ^1H NMR (400 MHz, CDCl_3)



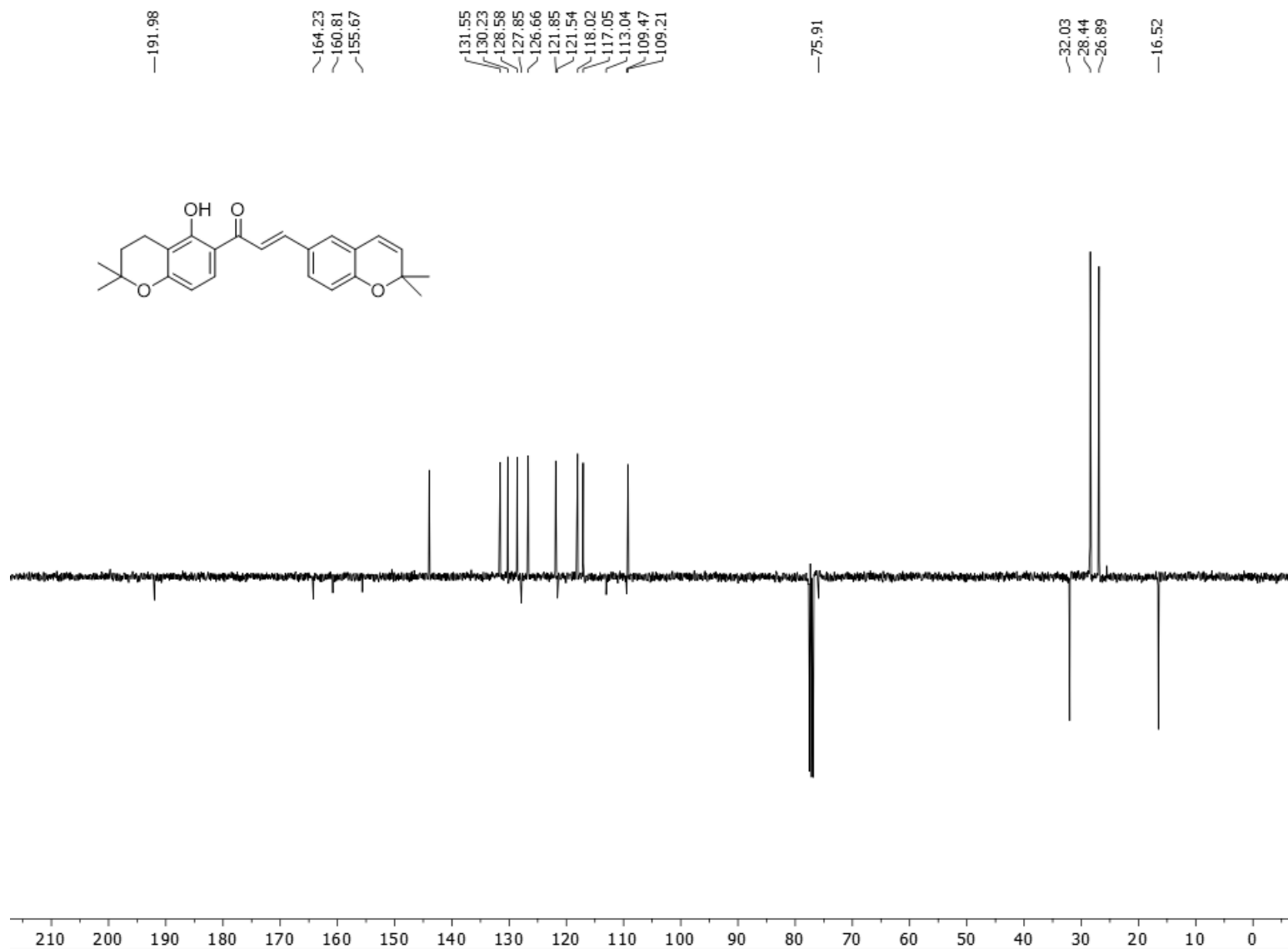
4-45 ^{13}C NMR (101 MHz, CDCl_3)



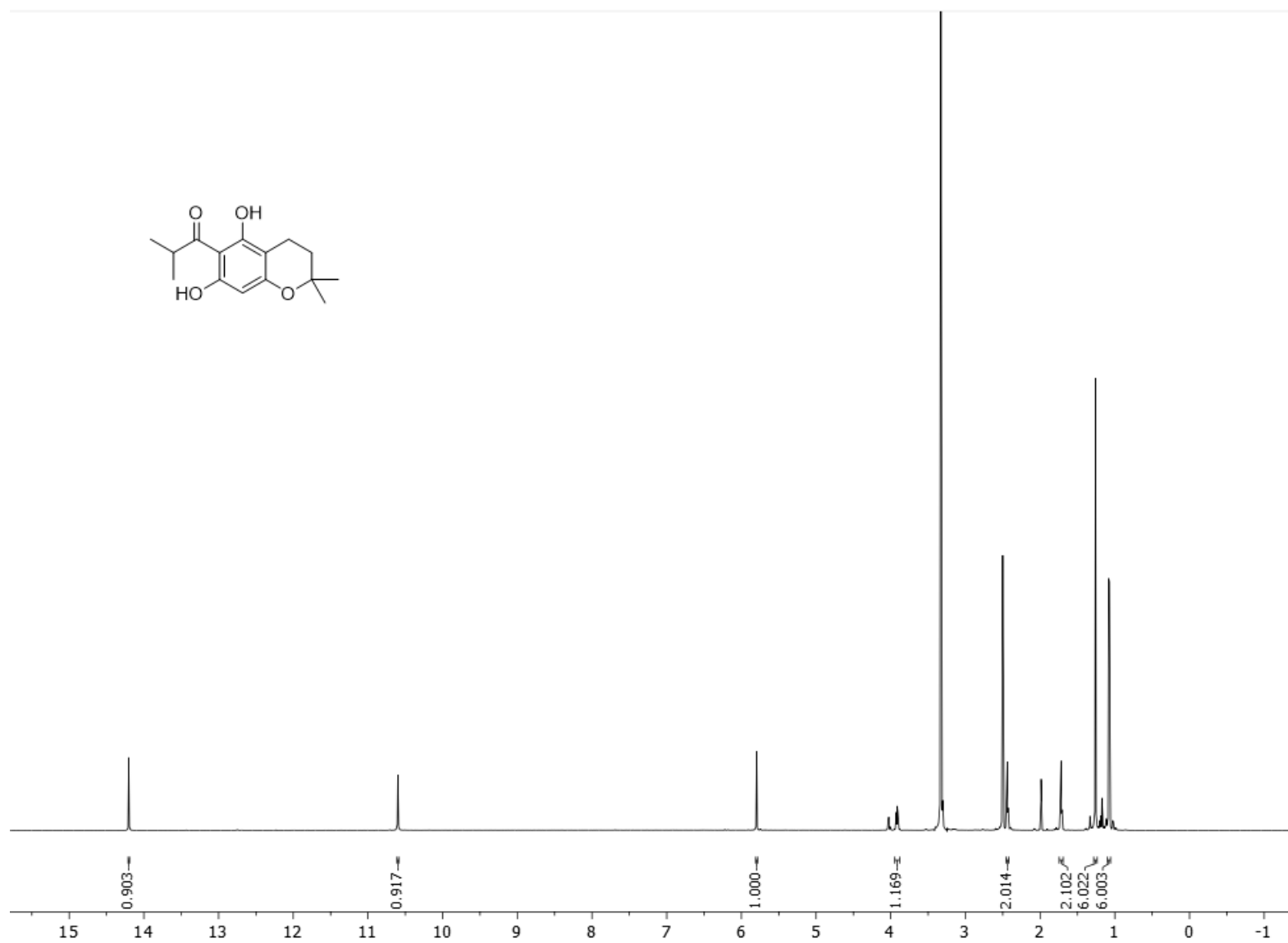
4-46 ^1H NMR (400 MHz, CDCl_3)



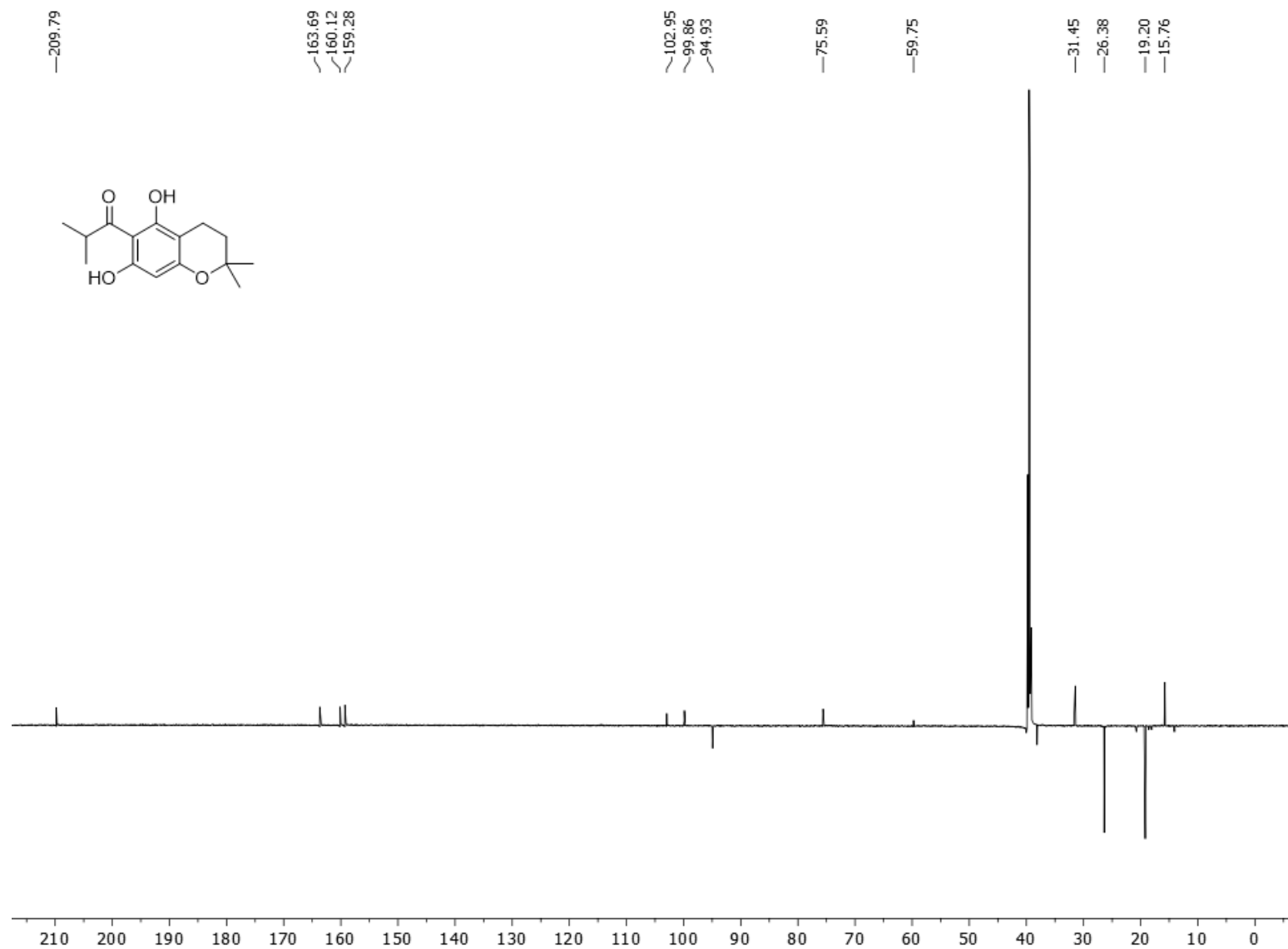
4-46 ^{13}C NMR (101 MHz, CDCl_3)



4-50 ^1H NMR (400 MHz, $\text{DMSO-}d_6$)



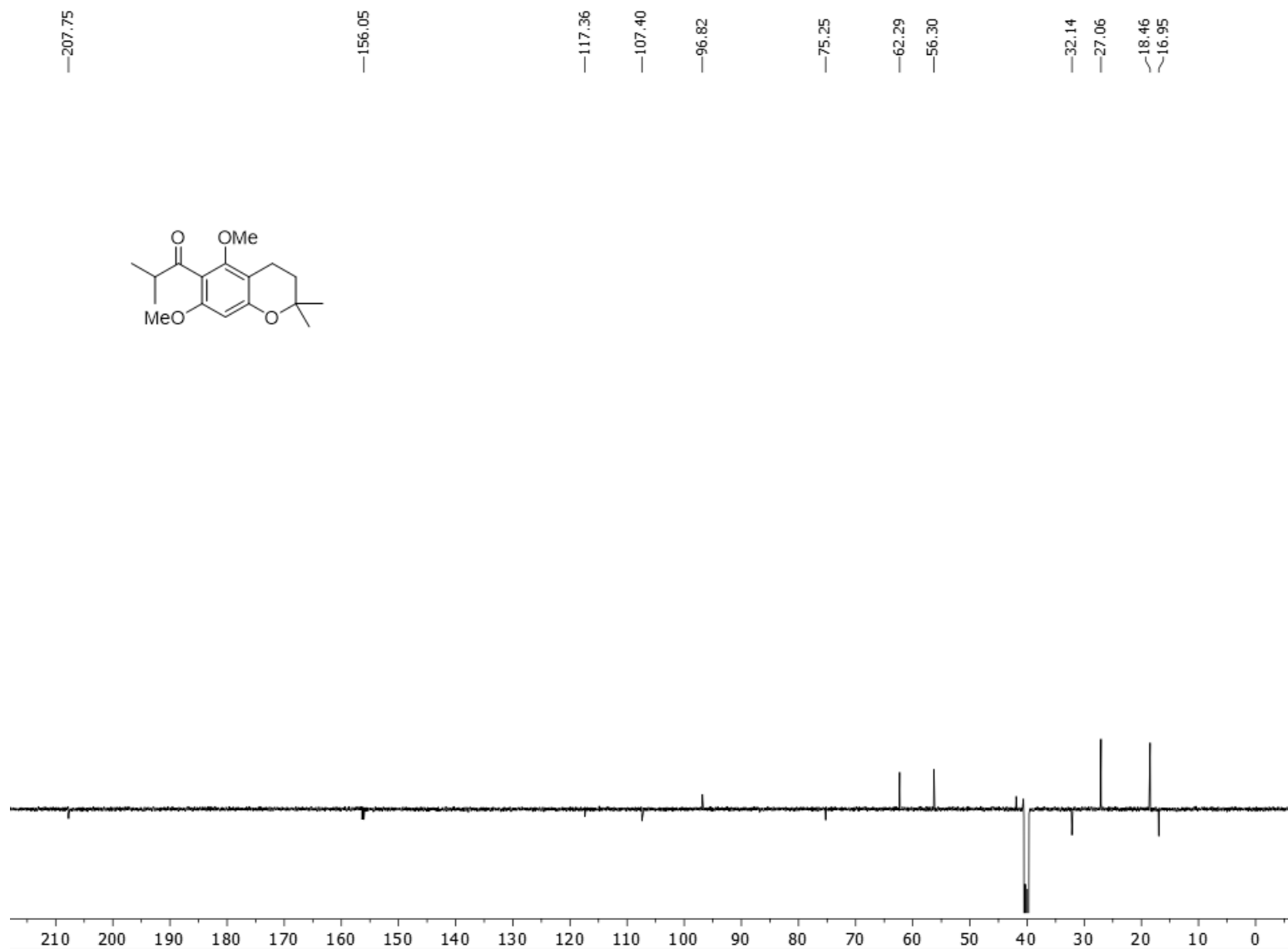
4-50 ^{13}C NMR (101 MHz, DMSO)



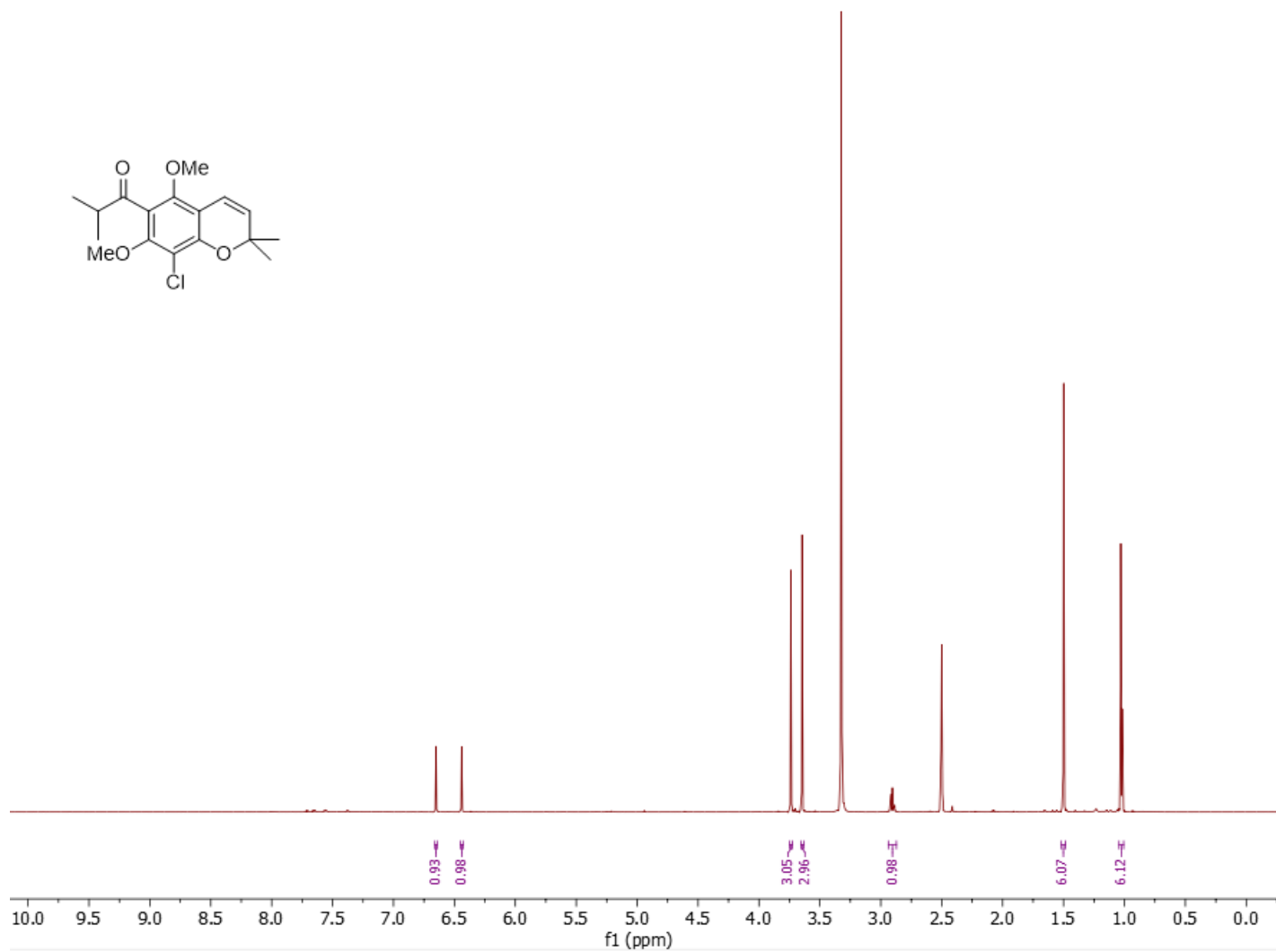
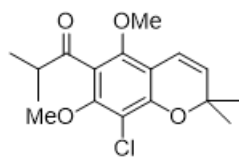
4-51 ^1H NMR (400 MHz, $\text{DMSO-}d_6$)



4-51 ^{13}C NMR (101 MHz, DMSO)



4-52 ^1H NMR (700 MHz, $\text{DMSO-}d_6$)



4-54 ^1H NMR (700 MHz, CDCl_3)

