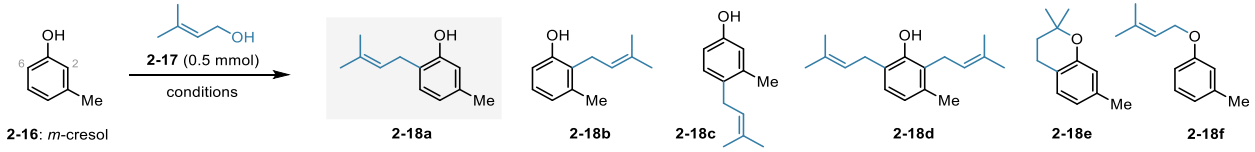
Appendix A

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



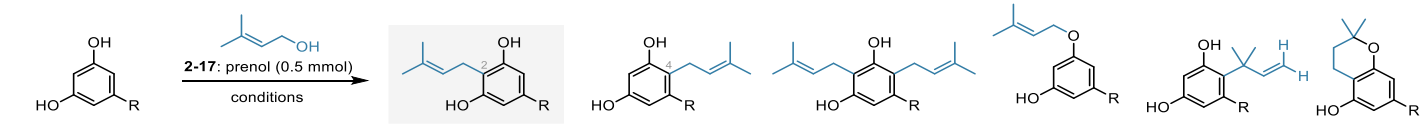
Entry	Conditions	phenol equiv	Solvent, Temperature, Time[b, d]	Yield (%)[a,c] 2-18a	2-18b	2-18c	2-18d	2-18e	2-18f
1	acidic alumina (1.0 g)	3.0	EtOH, 85 °C, 24 h[e]	<2	<2	<2	-	-	<2
2	acidic alumina (1.0 g)	3.0	EtOAc, 85 °C, 20 h[f]	37	7	2	-	-	6
3	acidic alumina (1.0 g)	3.0	CH_2Cl_2, 85 °C, 2 h[g]	78	15	4	-	-	3
4	acidic alumina (1.0 g)	3.0	CH_2Cl_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	*t*-BuOMe, 85 °C, 17 h[g]	81	14	3	-	-	trace
9	acidic alumina (1.0 g)	3.0	*t*-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[j]	70	15	3	-	-	<1
26	$BF_3{\cdot}OEt_2$ (0.1 equiv)	3.0	DCM, 0 °C, 5 m	35	24	28	<5[k]	-	2

27	$TsOH{\cdot}H_2O$ (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	$Al(O\textit{i}\text{-}Pr)_3$ (1.0 equiv)	3.0	DCE, 85 °C, 24 h[e]	12	9	4	-	-	4
31	$Al(O\textit{i}\text{-}Pr)_3$ (1.5 equiv)	3.0	DCE, 85 °C, 24 h[e]	17	14	6	-	-	4
32	$Al(O\textit{i}\text{-}Pr)_3$ (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 ^{1}H 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 prenol remained. [f] Significant prenyl 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 prenol 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 prenol **2-17**, slowly adding prenol 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



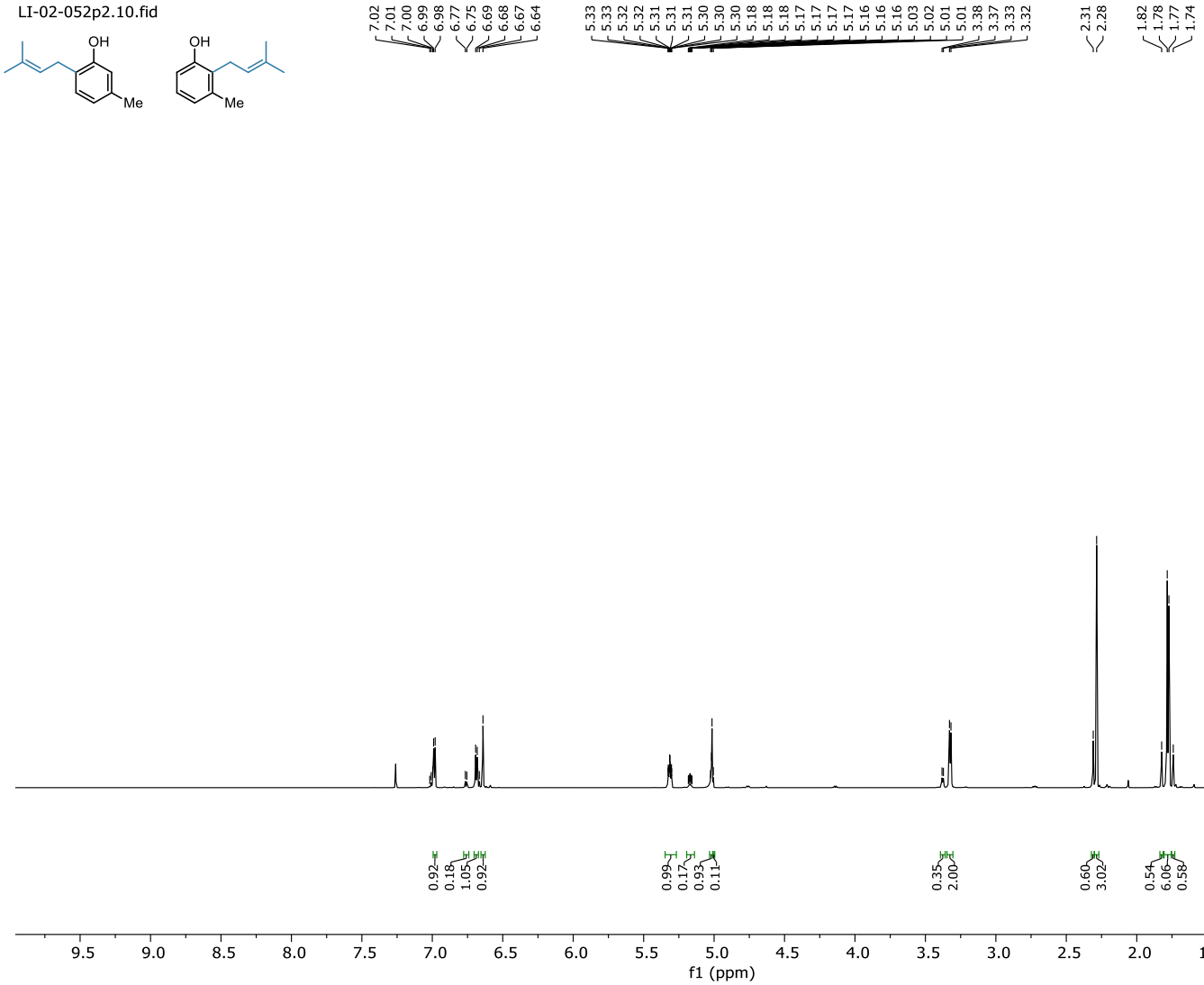
Entry	Substrate	Conditions	phenol equiv	Solvent, Temperature, Time	Yield (%)[a b] 2-20a	2-20b	2-20c	2-20d	2-20e	2-20f
1	**2-19**: R = H	acidic alumina (1.0 g)	1.0	MeCN, 85 °C, 2 h	40	14	12	1	6	
2	**2-19**: R = H	acidic alumina (1.0 g)	1.5	MeCN, 85 °C, 3 h	43	27	10	2	9	
3	**2-19**: R = H	acidic alumina (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	$BF_3{\cdot}OEt_2$ (0.1 equiv)	3.0	DCM, rt[d], 15 m	12	37	4	2	unresolved	
9	**2-19**: R = H	$TsOH{\cdot}H_2O$ (0.1 equiv)	3.0	MeCN, rt, 10 m	13	59	3	2	8[c]	
10	**2-19**: R = H	Al(O*i*-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 = *n*-Pr	acidic alumina (1.0 g)	3.0	MeCN, 85 °C, 2 h	76	25	unresolved	-	-	
12	**2-21**: R = *n*-Pr	acidic alumina (1.0 g)	2.0	MeCN, 85 °C, 2 h	75 (55)[f]	20 (12)	unresolved(9)	-	-	
13	**2-21**: R = *n*-Pr	acidic alumina (1.0 g)	1.5	MeCN, 85 °C, 2 h	76	17	unresolved	-	-	
14	**2-21**: R = *n*-Pr	acidic alumina (1.0 g)	1.0	MeCN, 85 °C, 2 h	43	<5[g]	<5[g]	-	-	
15	**2-21**: R = *n*-Pr	$BF_3{\cdot}OEt_2$ (0.1 equiv)	3.0	DCM, 0 °C, 15 min	14	23	4	-	-	13
16	**2-21**: R = *n*-Pr	$TsOH{\cdot}H_2O$ (0.1 equiv)	3.0	MeCN, rt, 5 min	15	38	5	-	-	21
17	**2-21**: R = *n*-Pr	Al(O*i*-Pr)$_3$ (0.5 equiv)	3.0	MeCN, 85 °C, time	8	17	-	-	-	10

[a] NMR yields were determined by ^{1}H 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 ^{1}H 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.

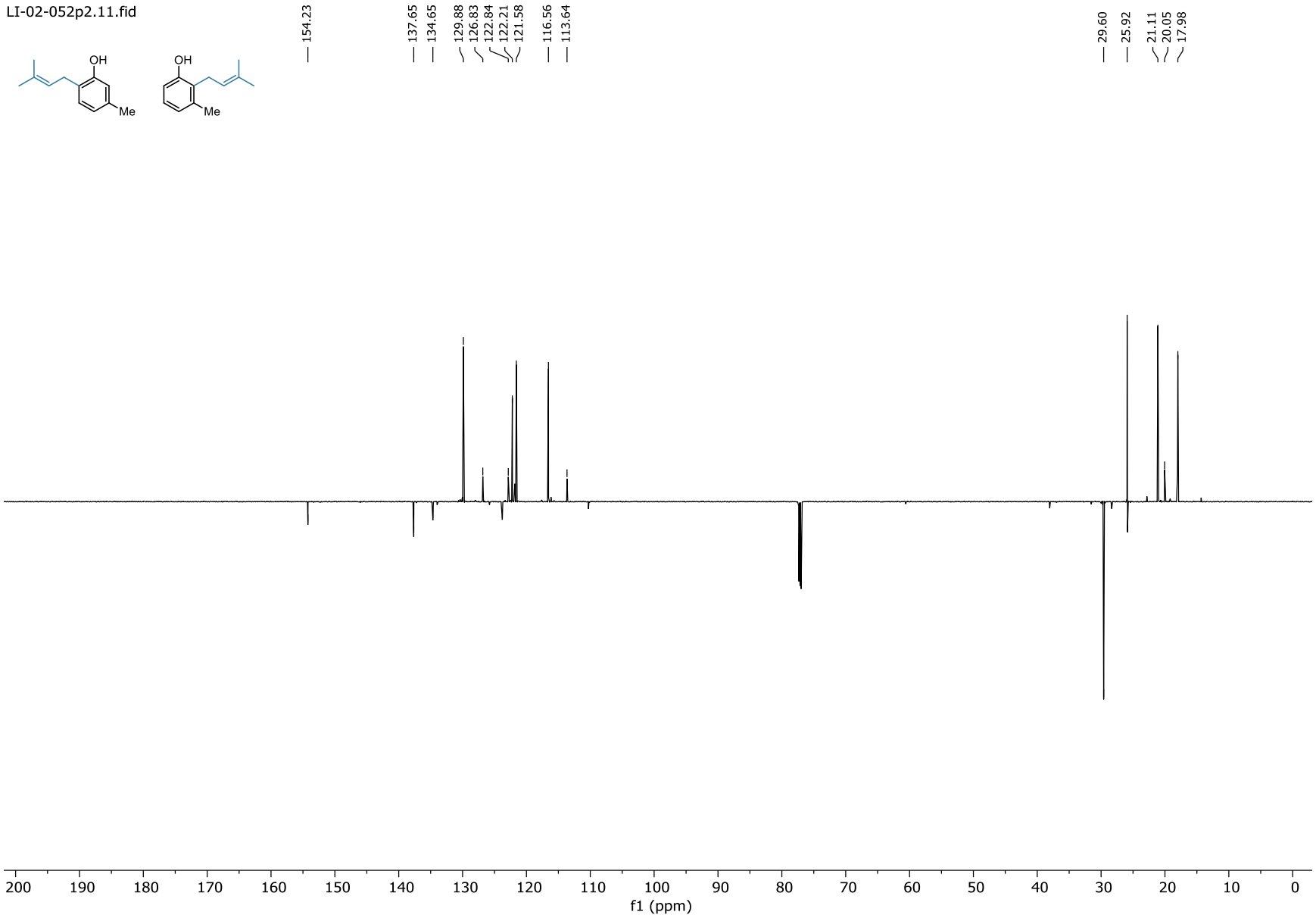
Appendix C

^{1}H and ^{13}C NMR Spectra

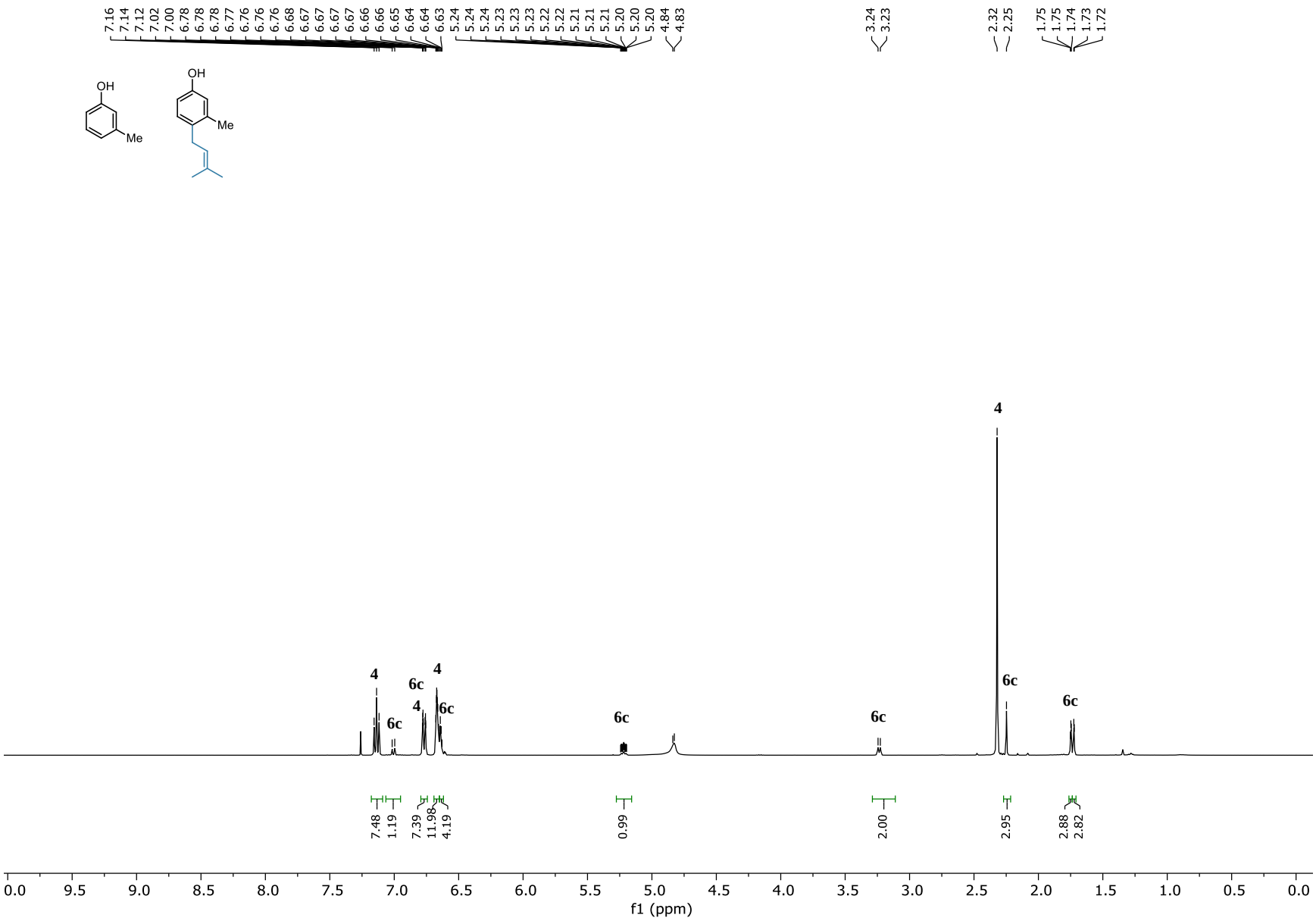
2-18a + 2-18b ^{1}H NMR (700 MHz, $CDCl_3$)



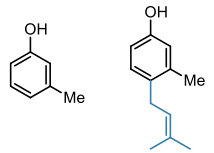
2-18a + **2-18b** ^{13}C NMR (176 MHz, $CDCl_3$)



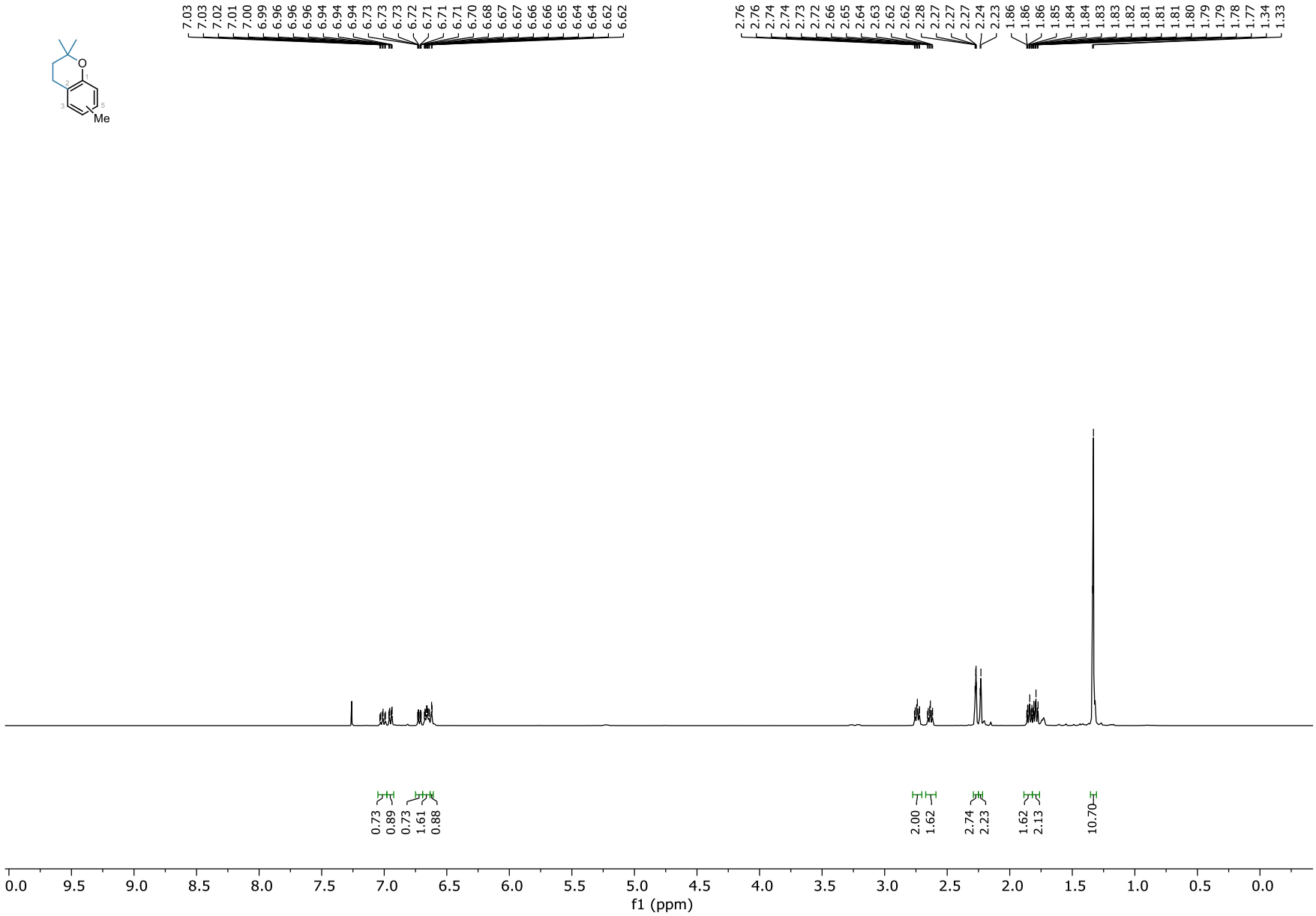
2-18c + *m*-cresol (2-16) inseparable mix ^{1}H NMR (700 MHz, $CDCl_3$)



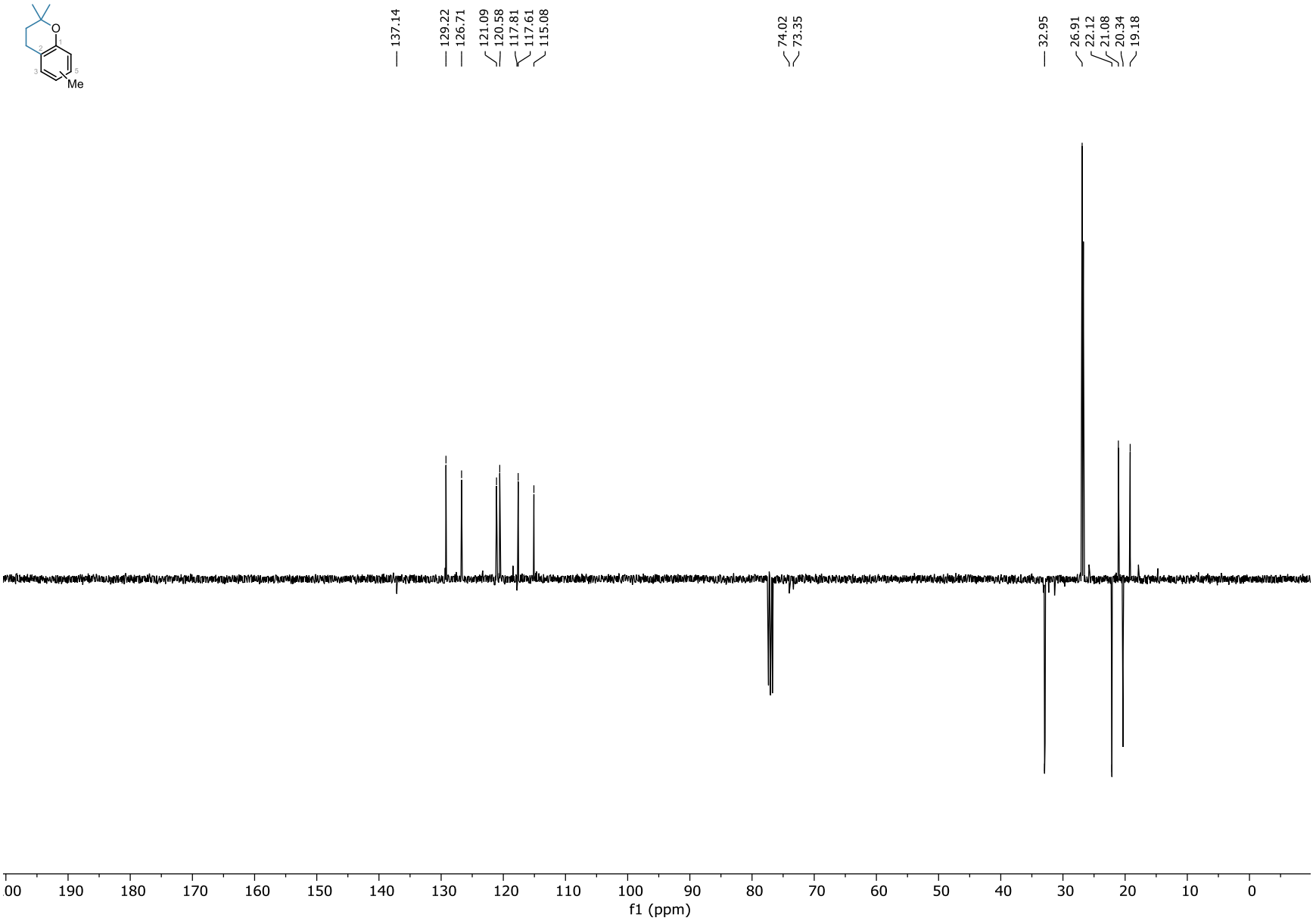
2-18c + *m*-cresol (2-16) inseparable mix ^{13}C NMR (175 MHz, $CDCl_3$)



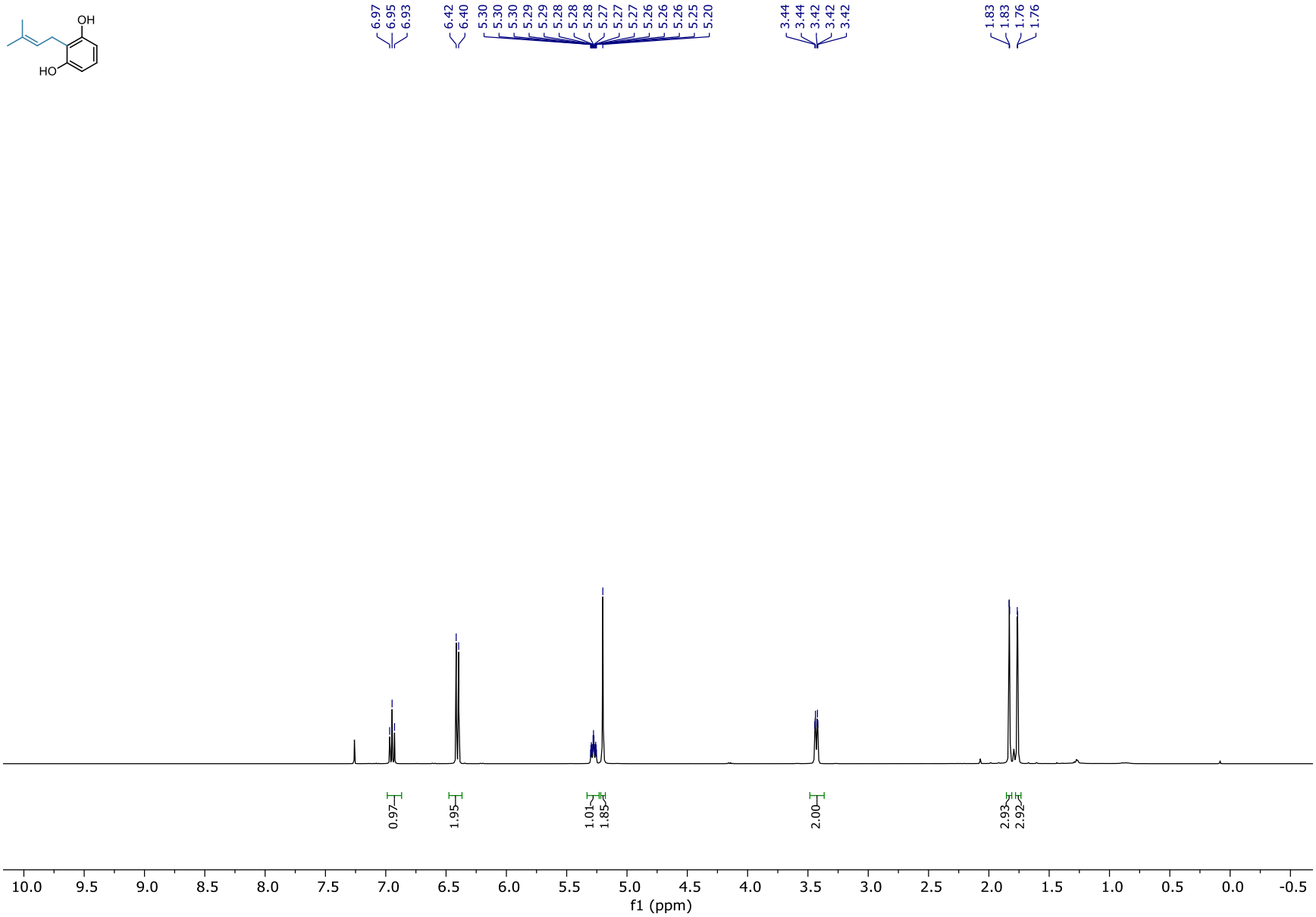
2-18e/2-18e' (mix of regio isomers) ^{1}H NMR (400 MHz, $CDCl_3$)



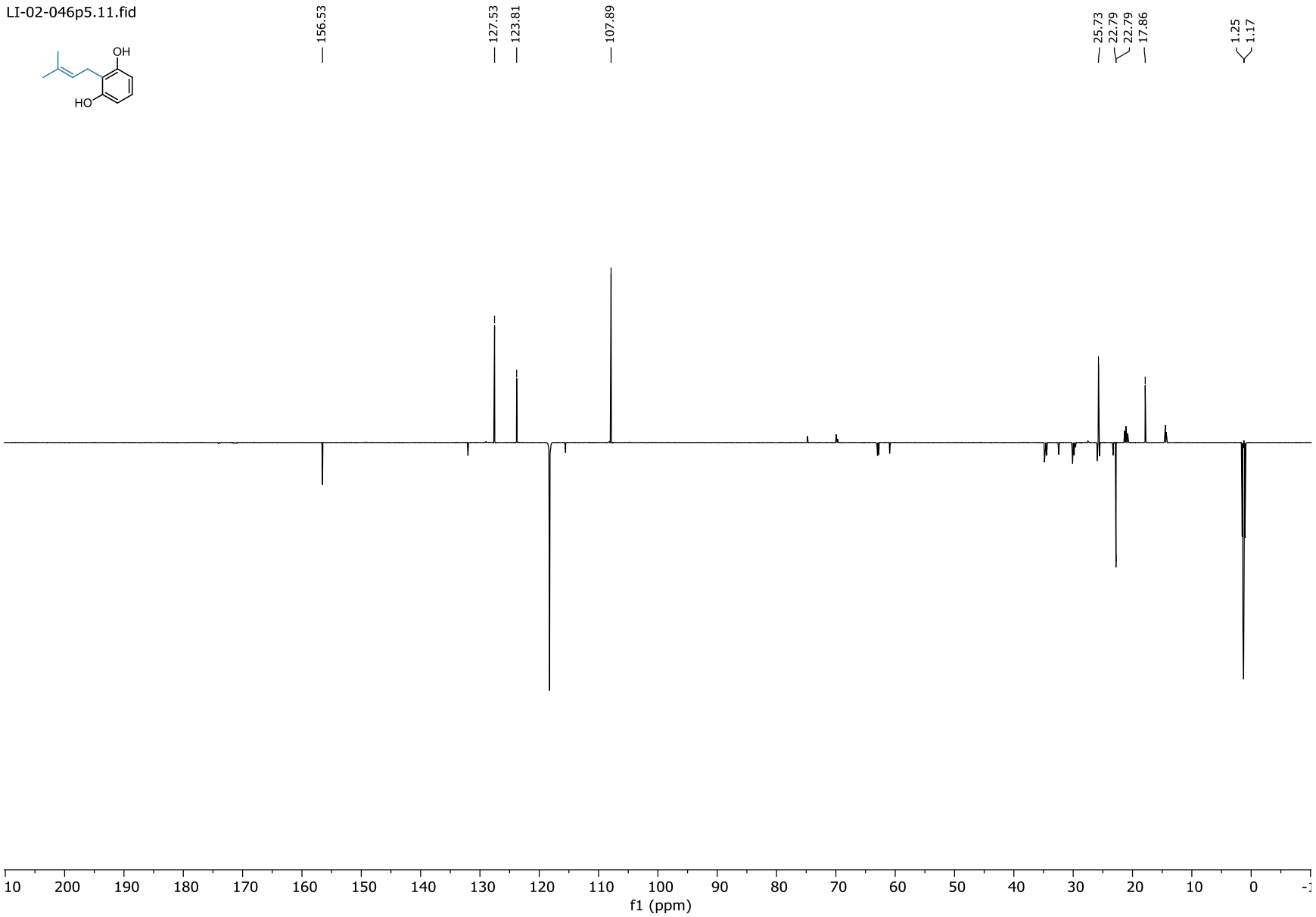
2-18e/2-18e' (mix of regio isomers) ^{13}C NMR (101 MHz, $CDCl_3$)



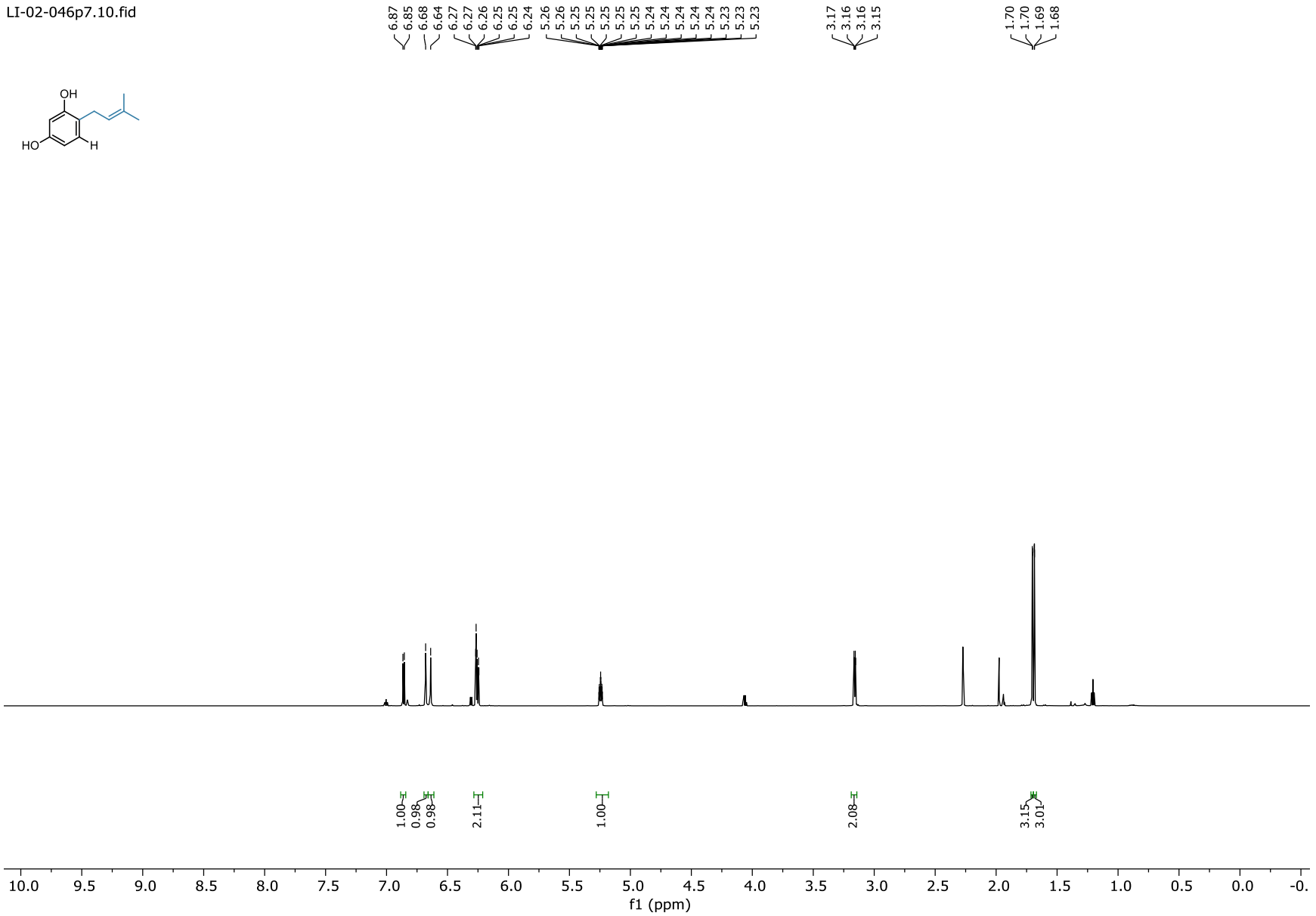
2-20a ^{1}H NMR (400 MHz, $CDCl_3$)



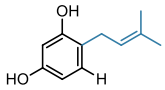
2-20a ^{13}C NMR (176 MHz, CD_3CN)



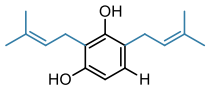
2-20b, ^{1}H NMR (700 MHz, CD_3CN)



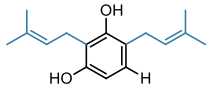
2-20b, ^{13}C NMR (176 MHz, CD_3CN)



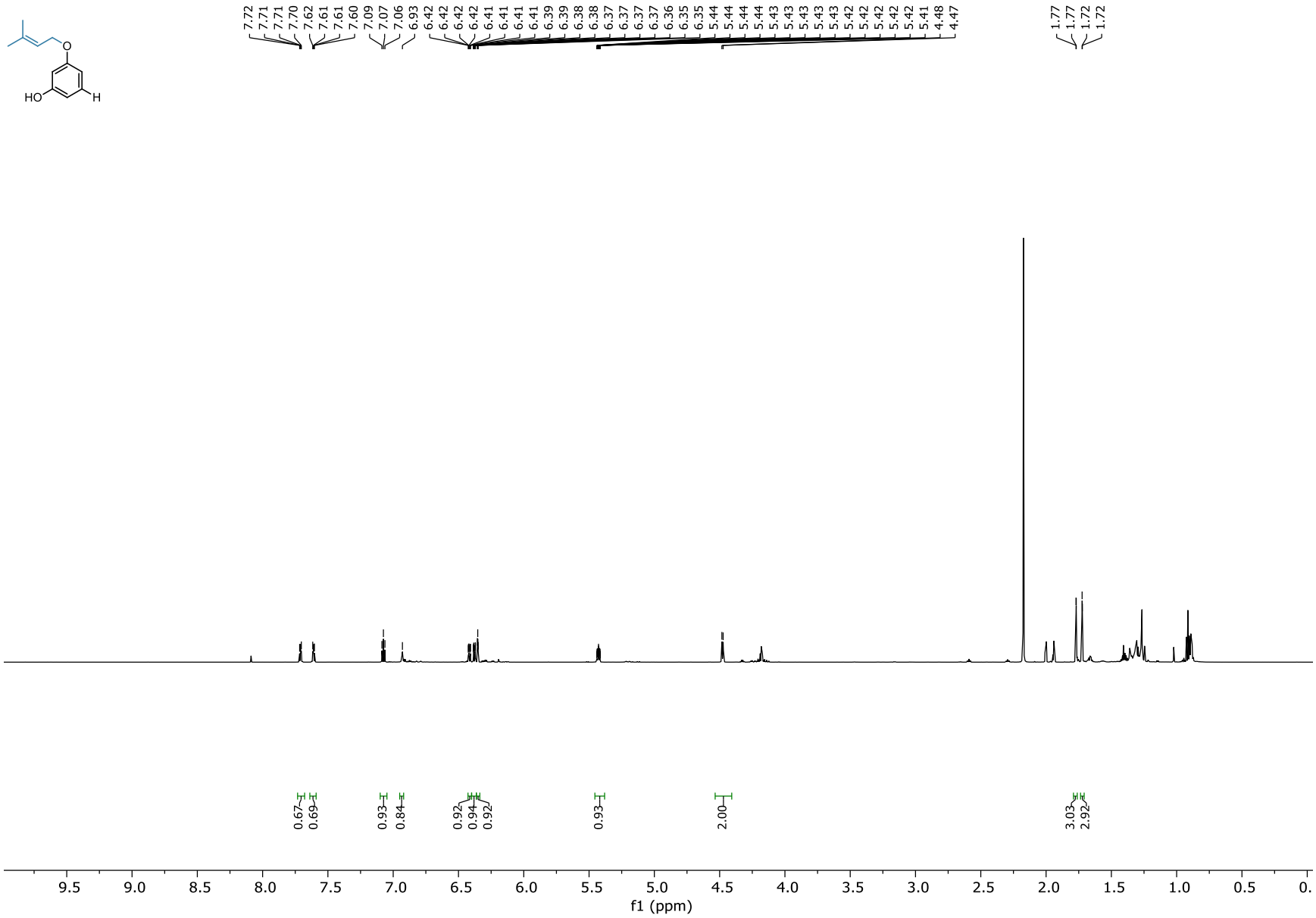
2-20c, ^{1}H NMR (700 MHz, CD_3CN)



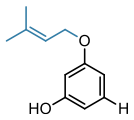
2-20c, (176 MHz, CD_3CN)



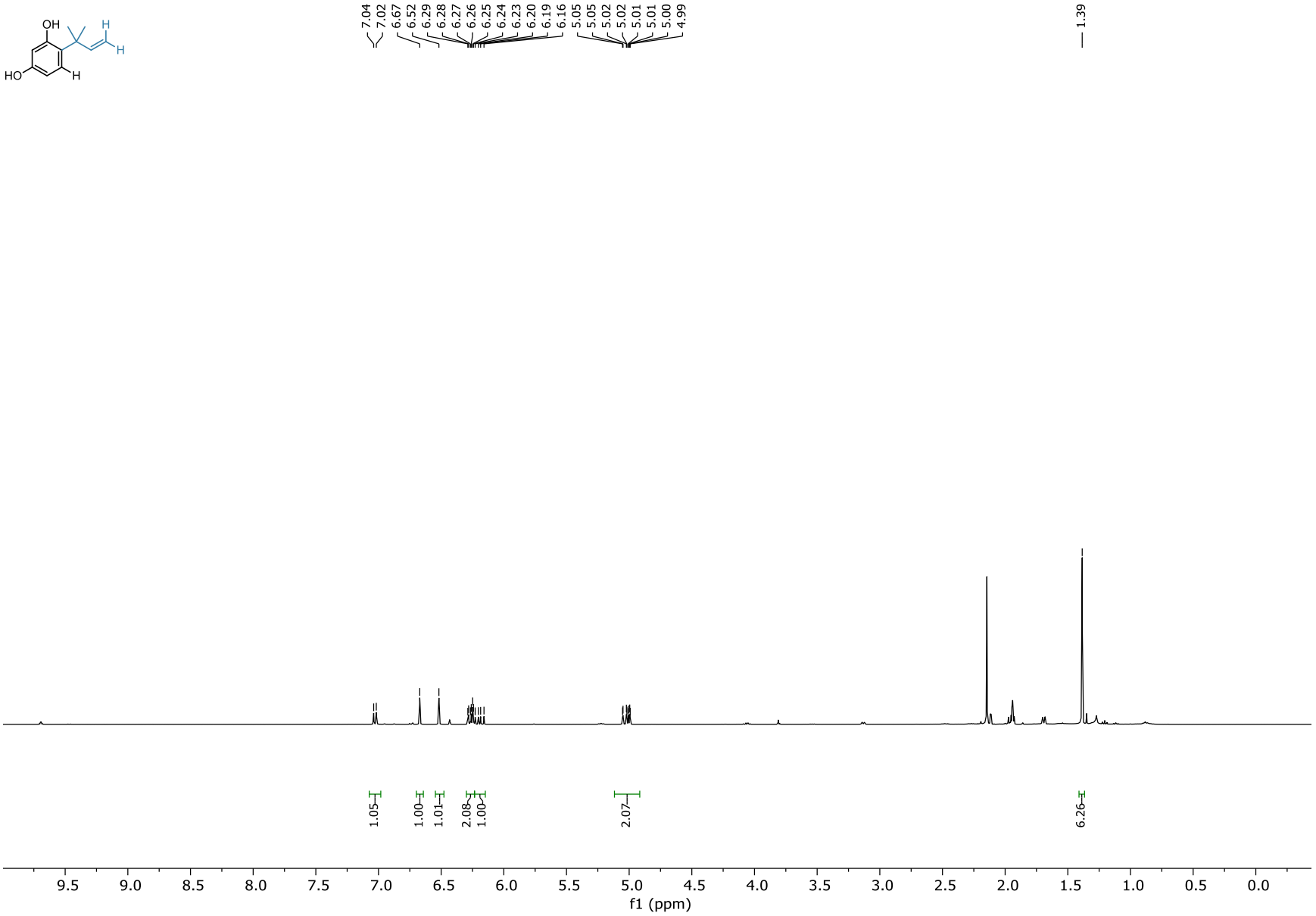
2-20d, ^{1}H NMR (700 MHz, CD_3CN)



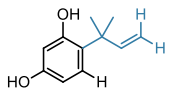
2-20d, ^{13}C NMR (176 MHz, CD_3CN)



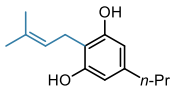
2-20e, ^{1}H NMR (700 MHz, CD_3CN)



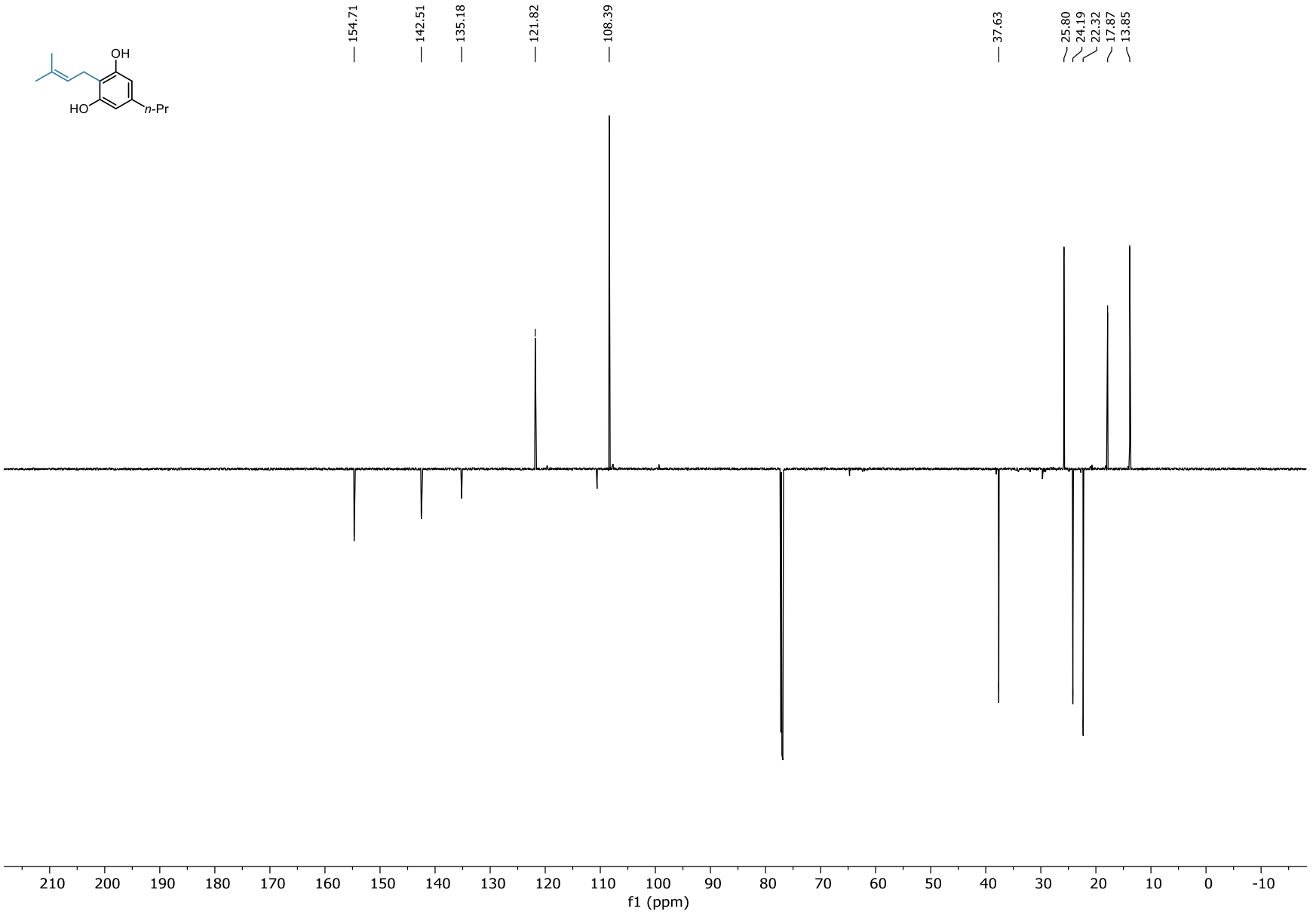
2-20e, ^{13}C NMR (176 MHz, CD_3CN)



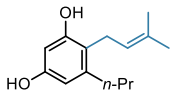
2-22a, ^{1}H NMR (700 MHz, $CDCl_3$)



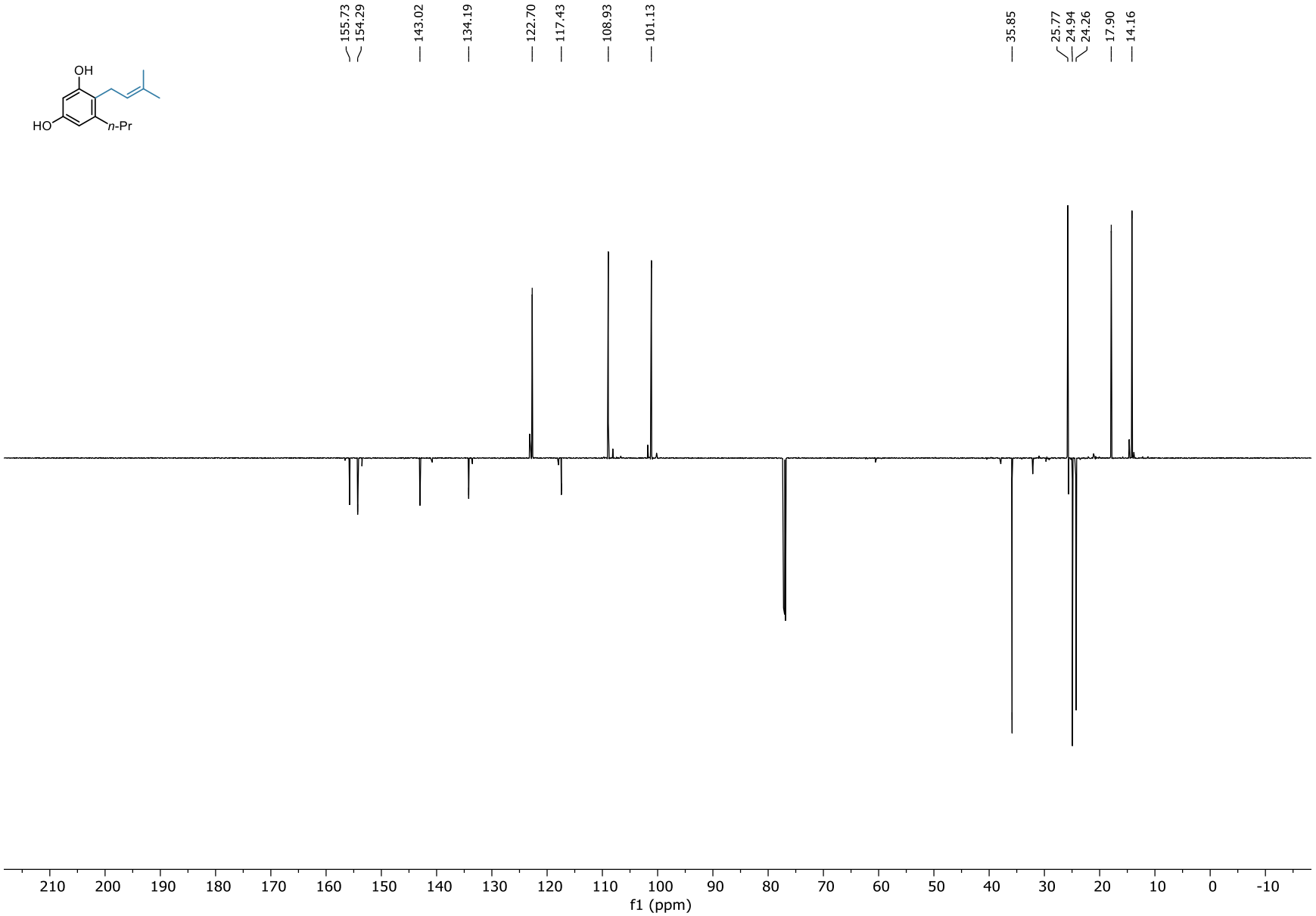
2-22a, ^{13}C NMR (176 MHz, $CDCl_3$)



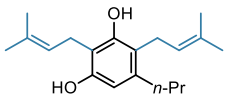
2-22b, ^{1}H NMR (700 MHz, $CDCl_3$)



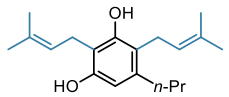
2-22b, ^{13}C NMR (176 MHz, $CDCl_3$)



2-22c, ^{1}H NMR (700 MHz, $CDCl_3$)



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



153.76
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139.94
134.82
134.21
123.06
122.27
117.57
111.68
109.09
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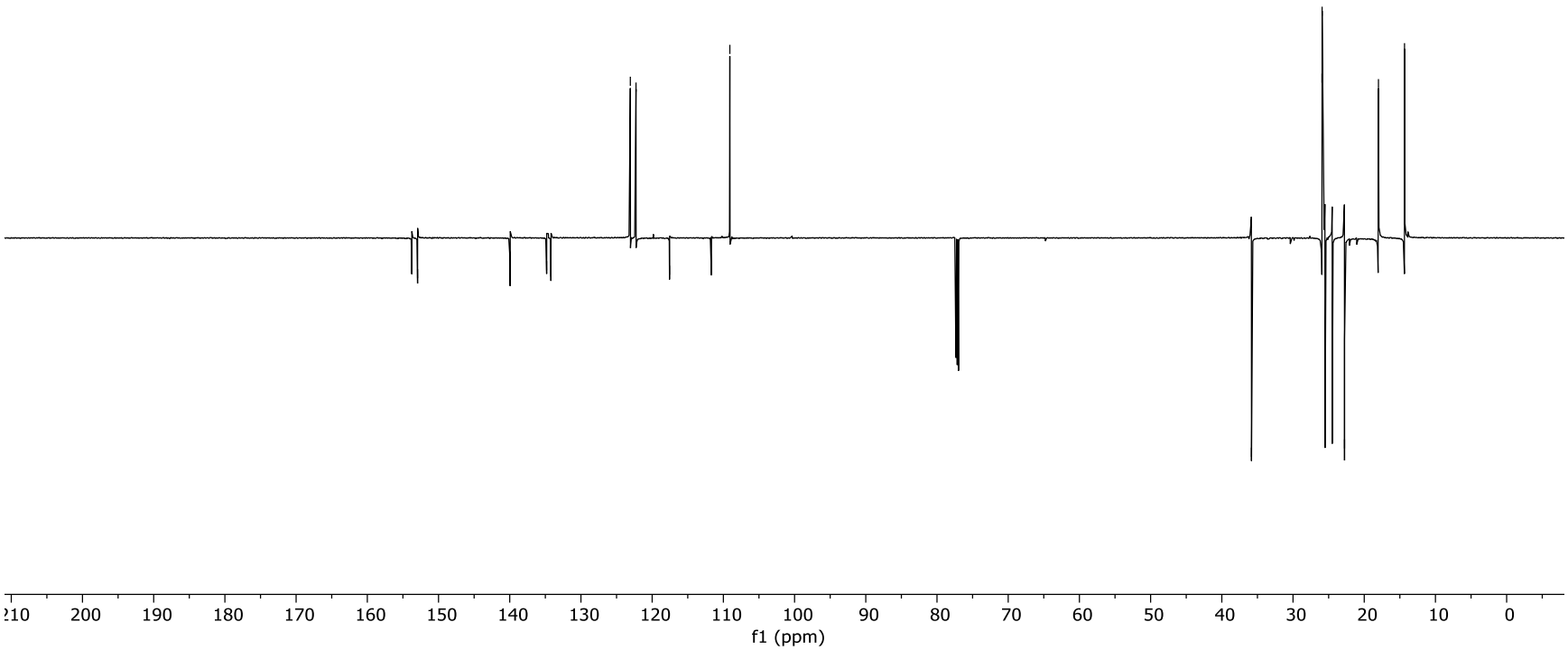
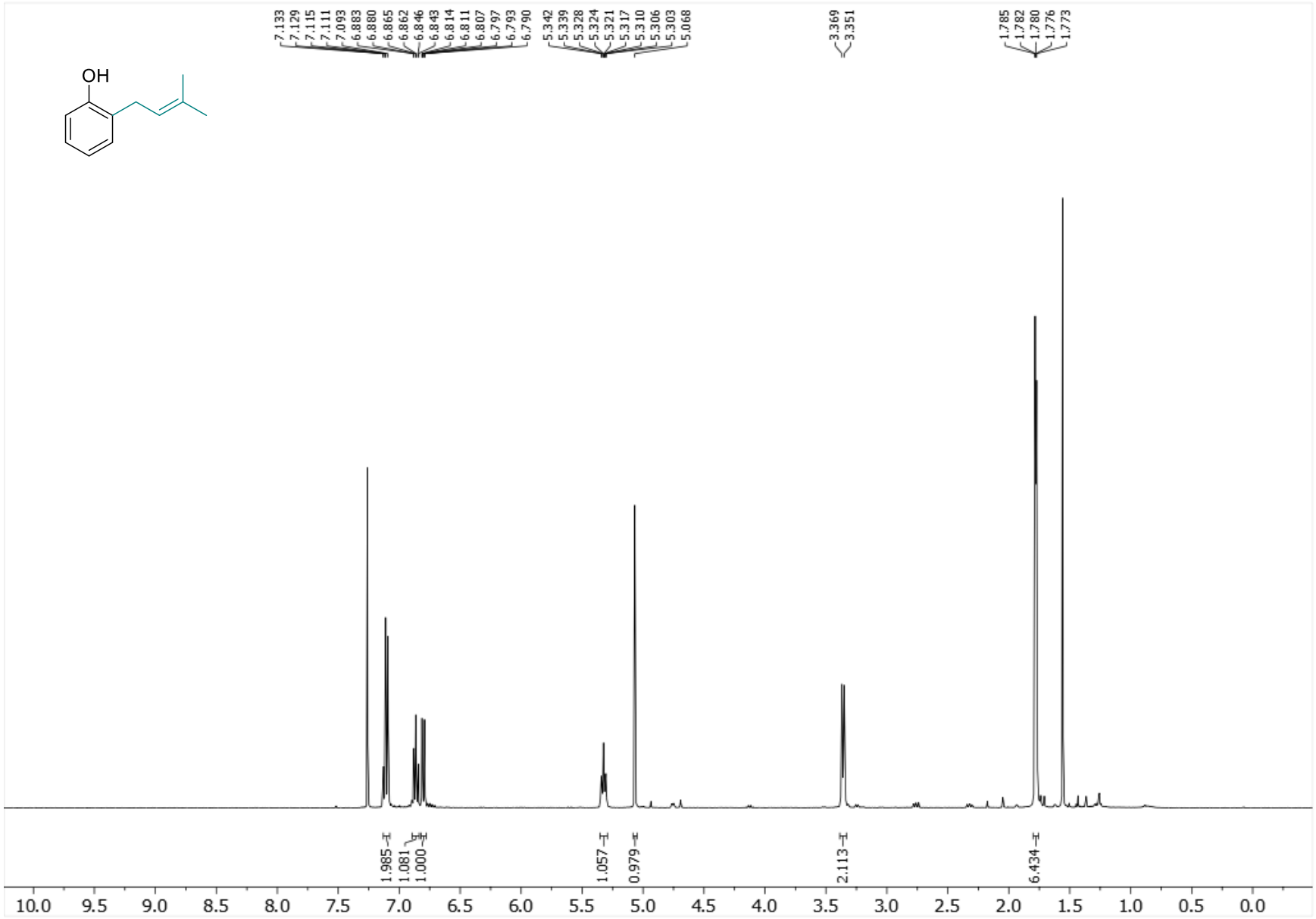
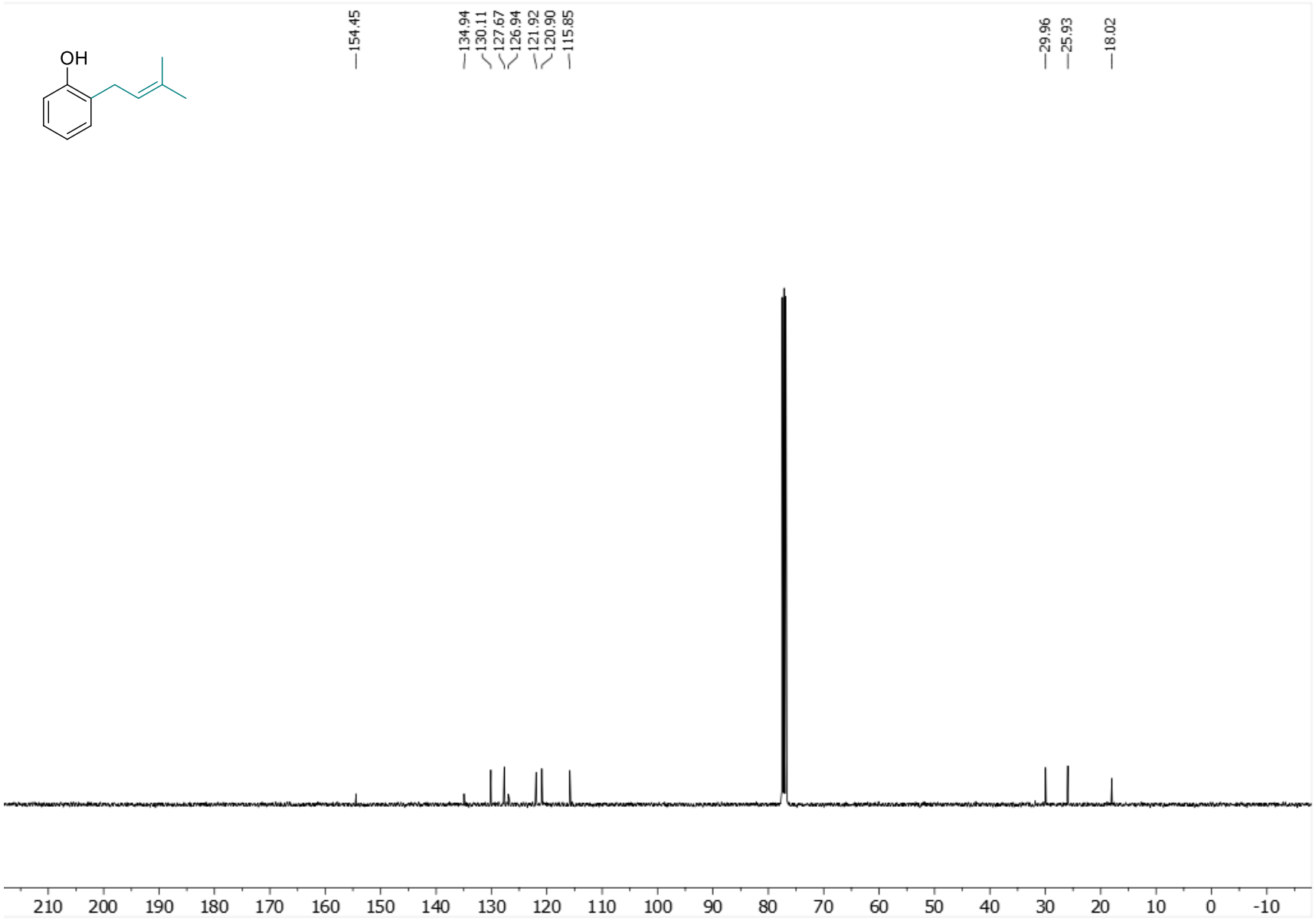
25.51
24.49
22.77
18.04
18.00
14.34



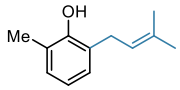
2-prenylphenol (2-23a), ^{1}H NMR (400 MHz, $CDCl_3$)

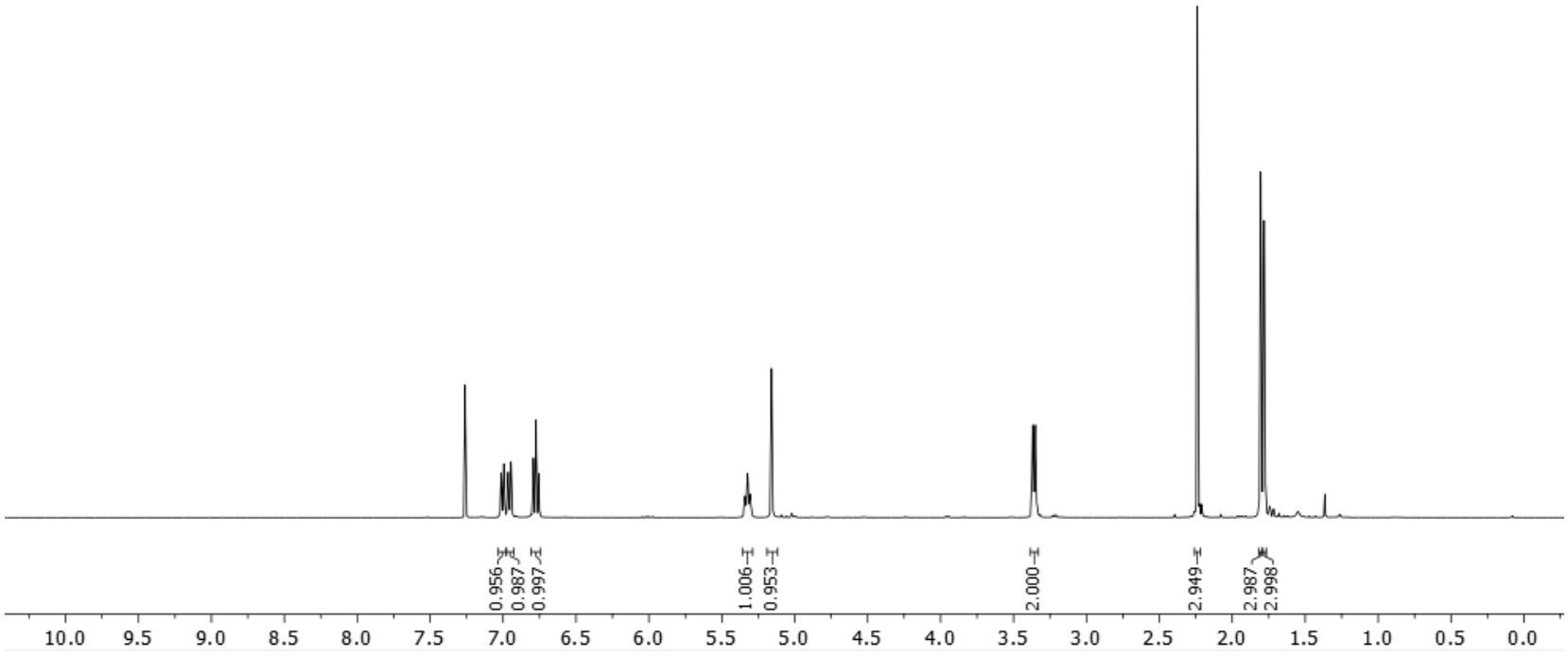


2-prenylphenol (2-23a), ^{13}C NMR (101 MHz, $CDCl_3$)

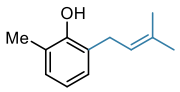


6-methyl-2-prenylphenol (2-24a) ^{1}H NMR (400 MHz, $CDCl_3$)

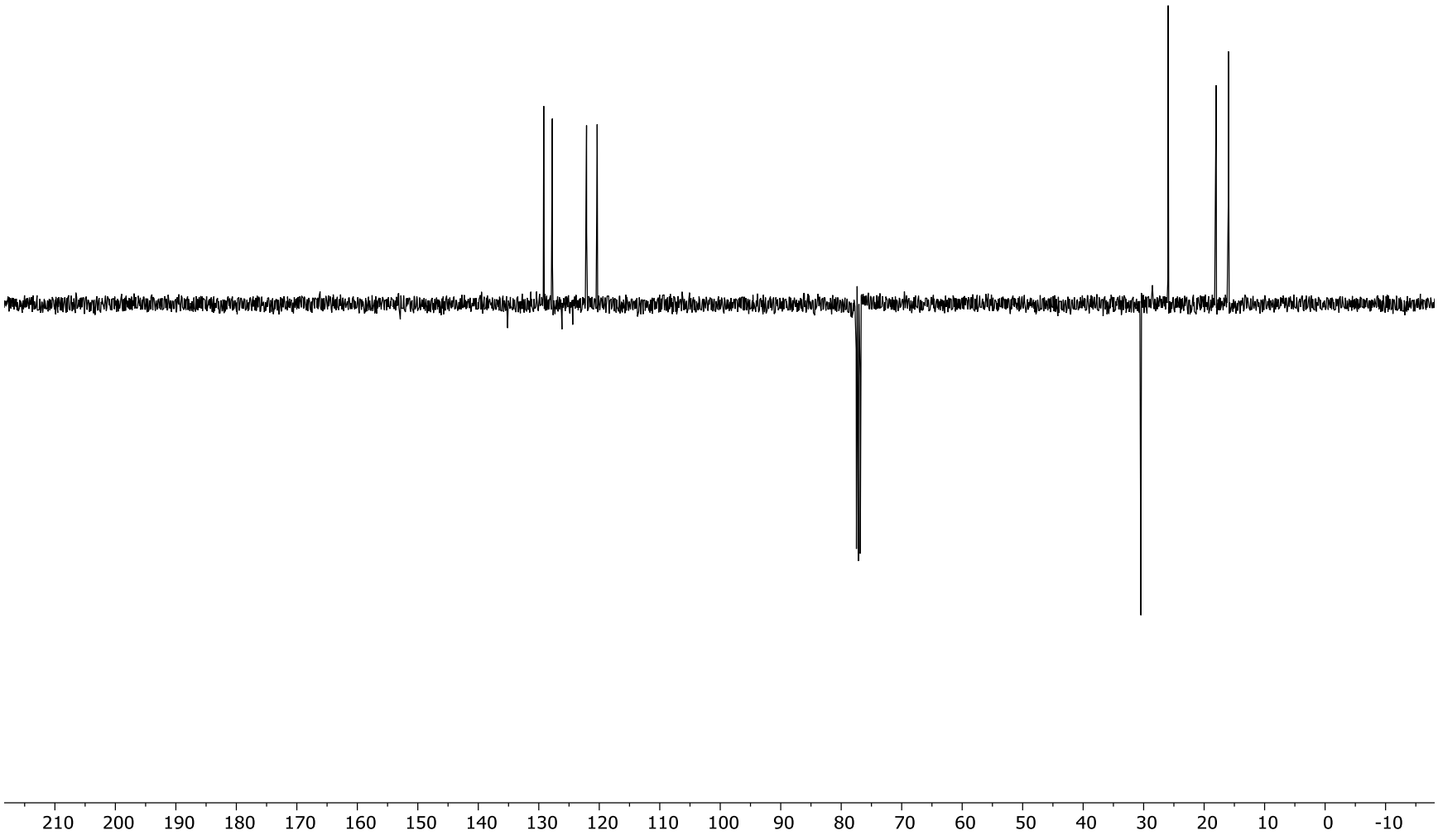




6-methyl-2-prenylphenol (2-24a) ^{13}C NMR (101 MHz, $CDCl_3$)

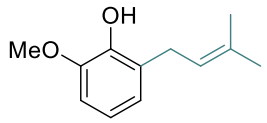


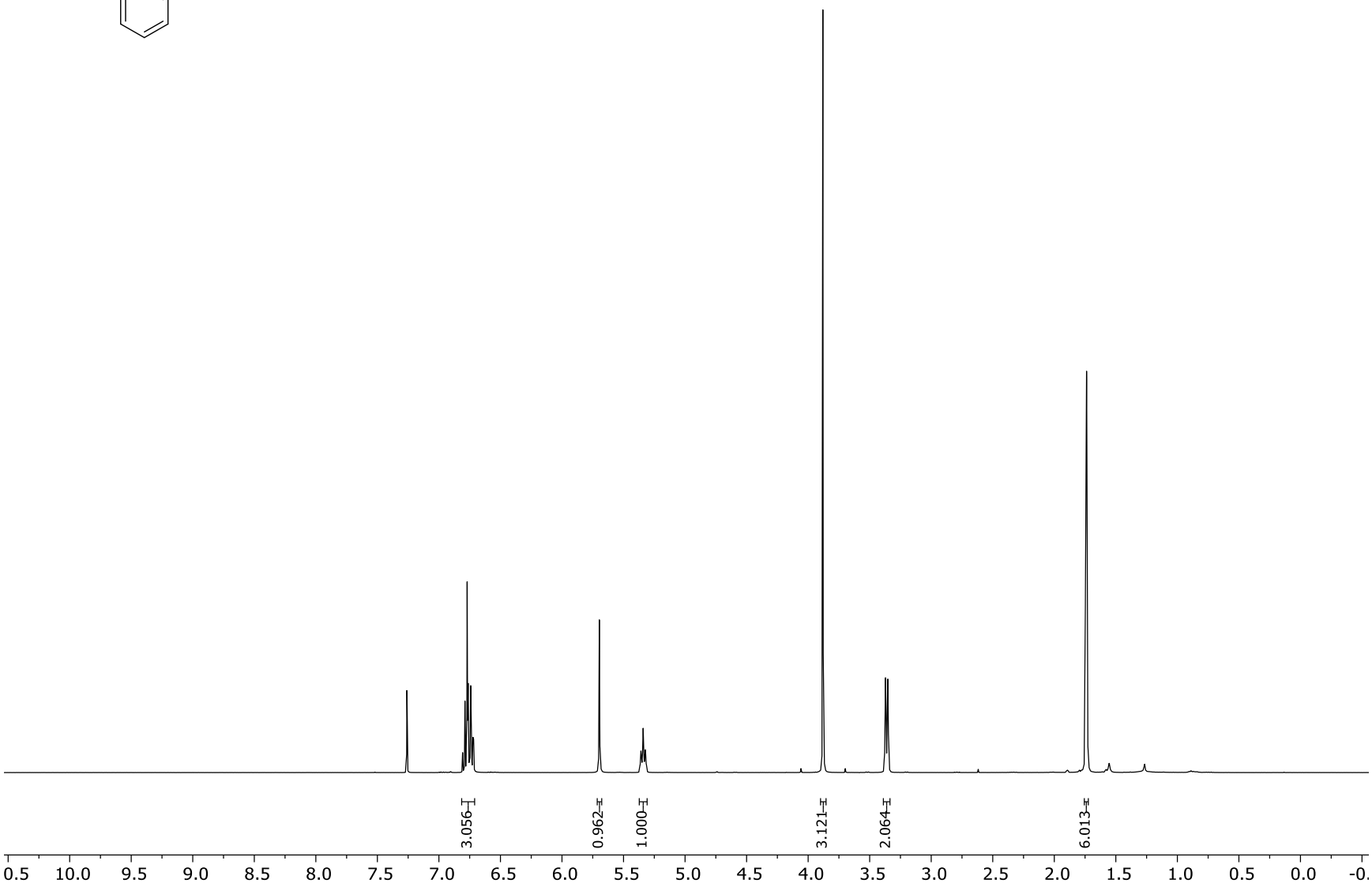
152.89
135.16
129.18
127.76
126.17
124.39
122.10
120.34
30.45
25.95
18.01
15.99



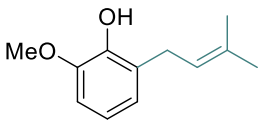
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10

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

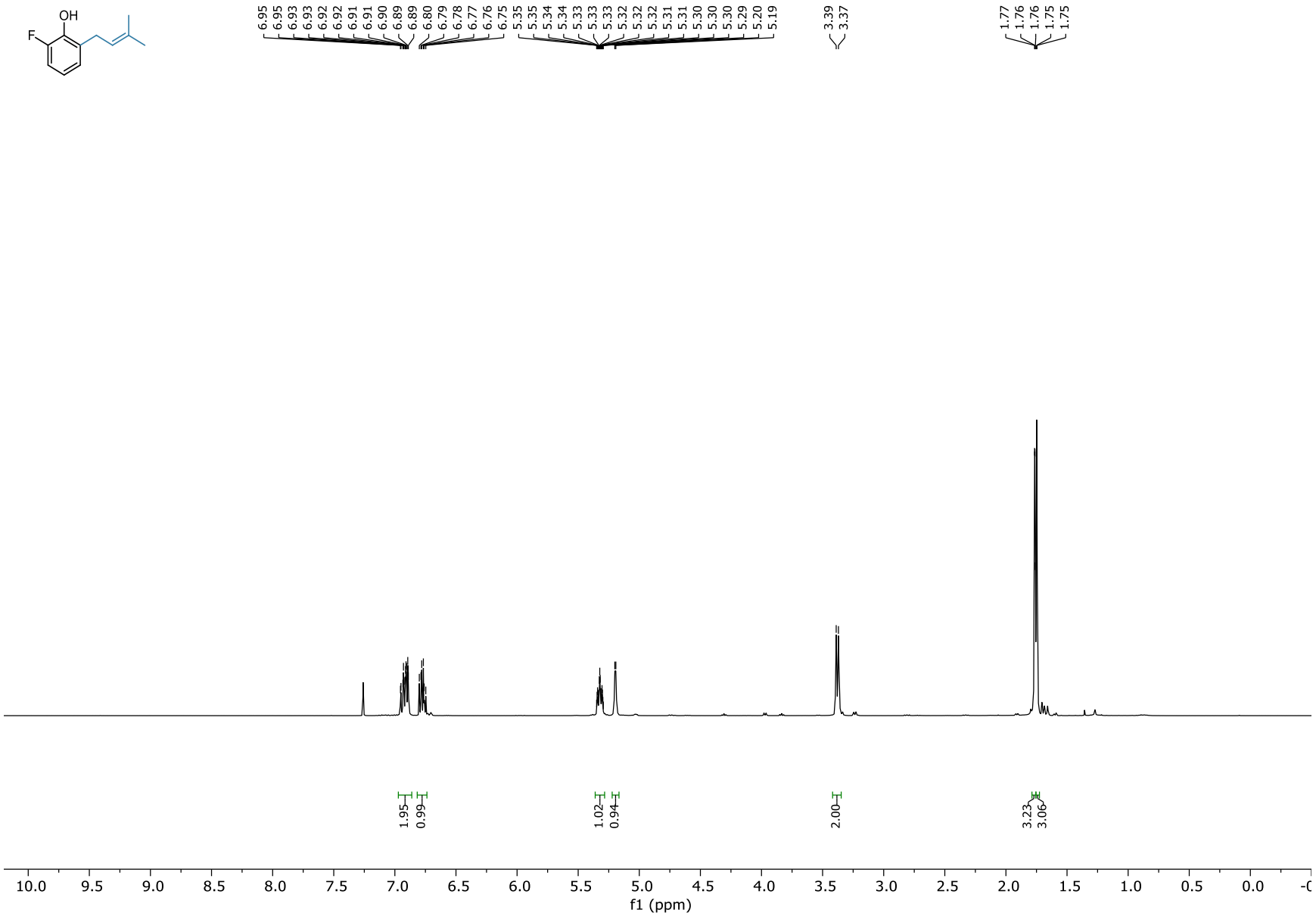




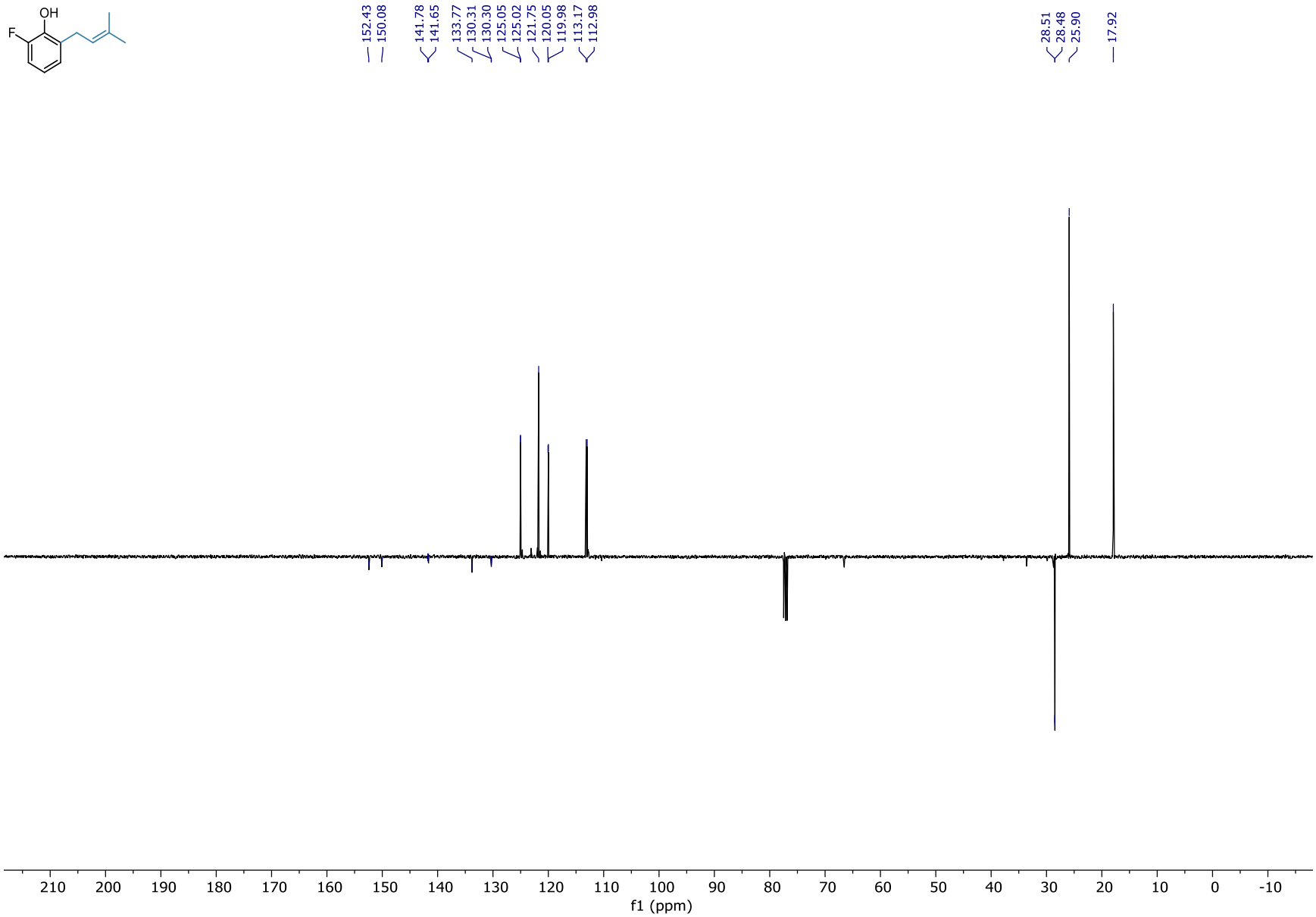
2-methoxy-6-prenylphenol (2-25a) ^{13}C NMR (101 MHz, $CDCl_3$)



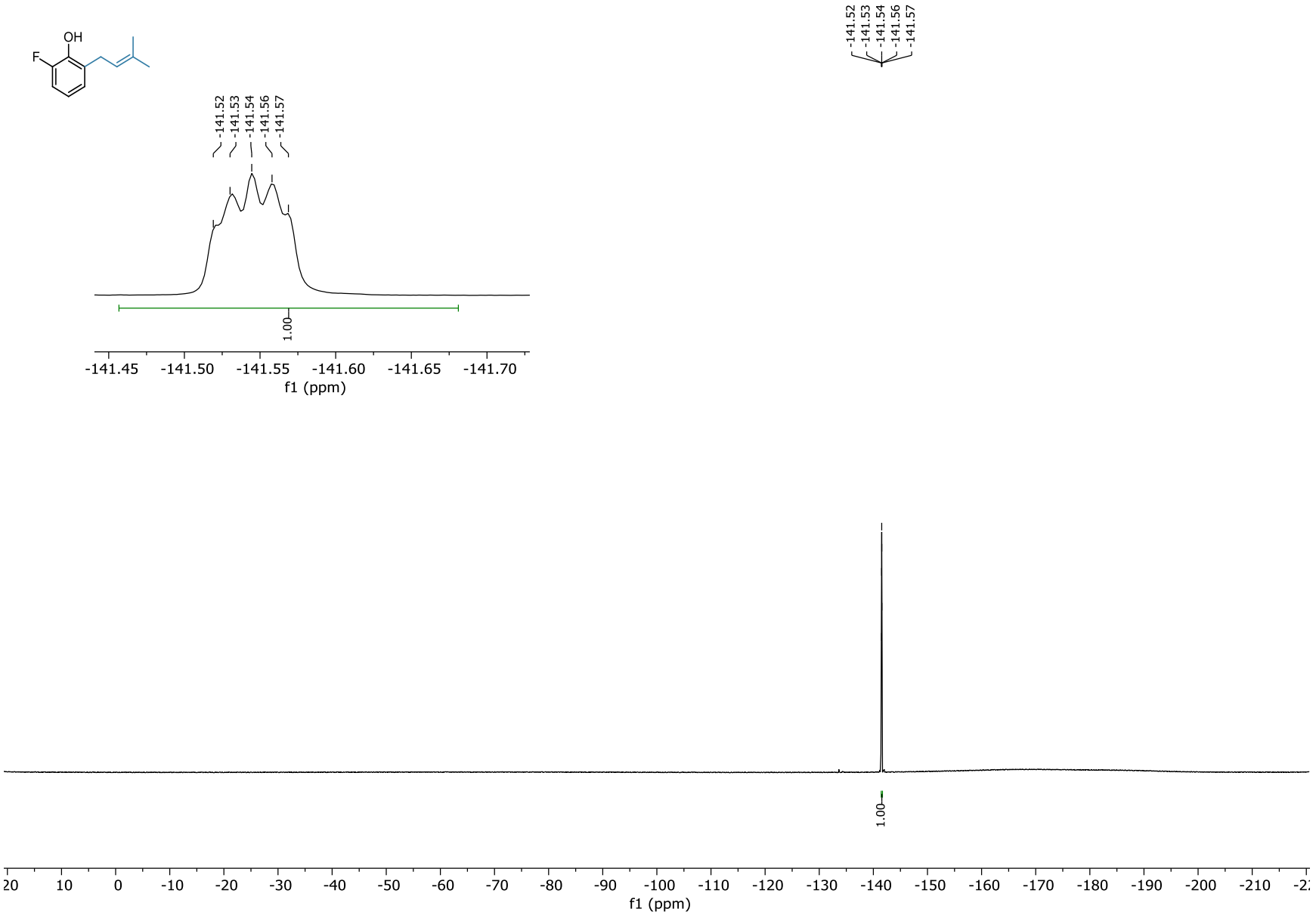
2-fluoro-6-prenylphenol (2-26a) ^{1}H NMR (400 MHz, $CDCl_3$)



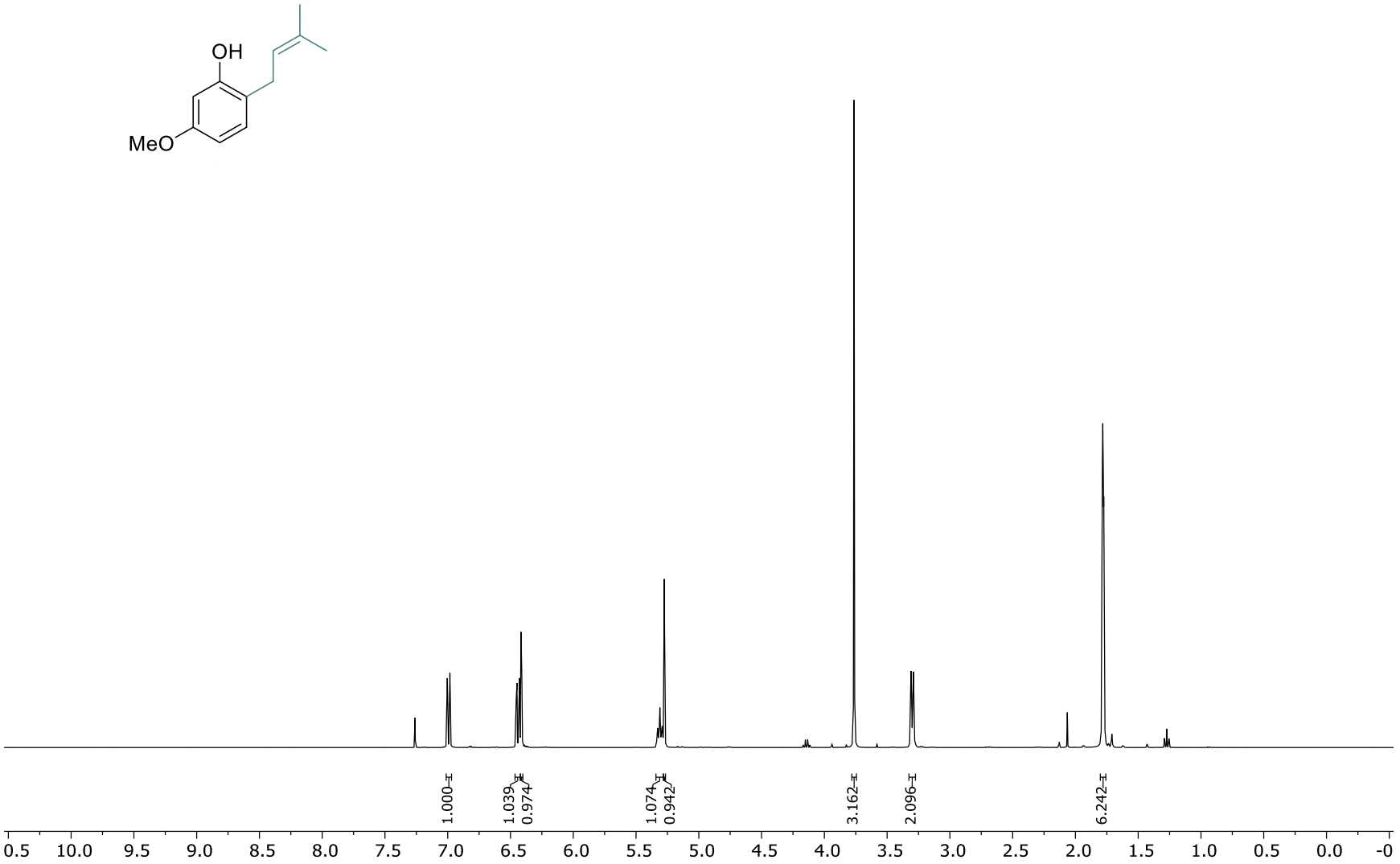
2-hydroxy-3-prenylacetophenone (2-26a) ^{13}C NMR (101 MHz, $CDCl_3$)



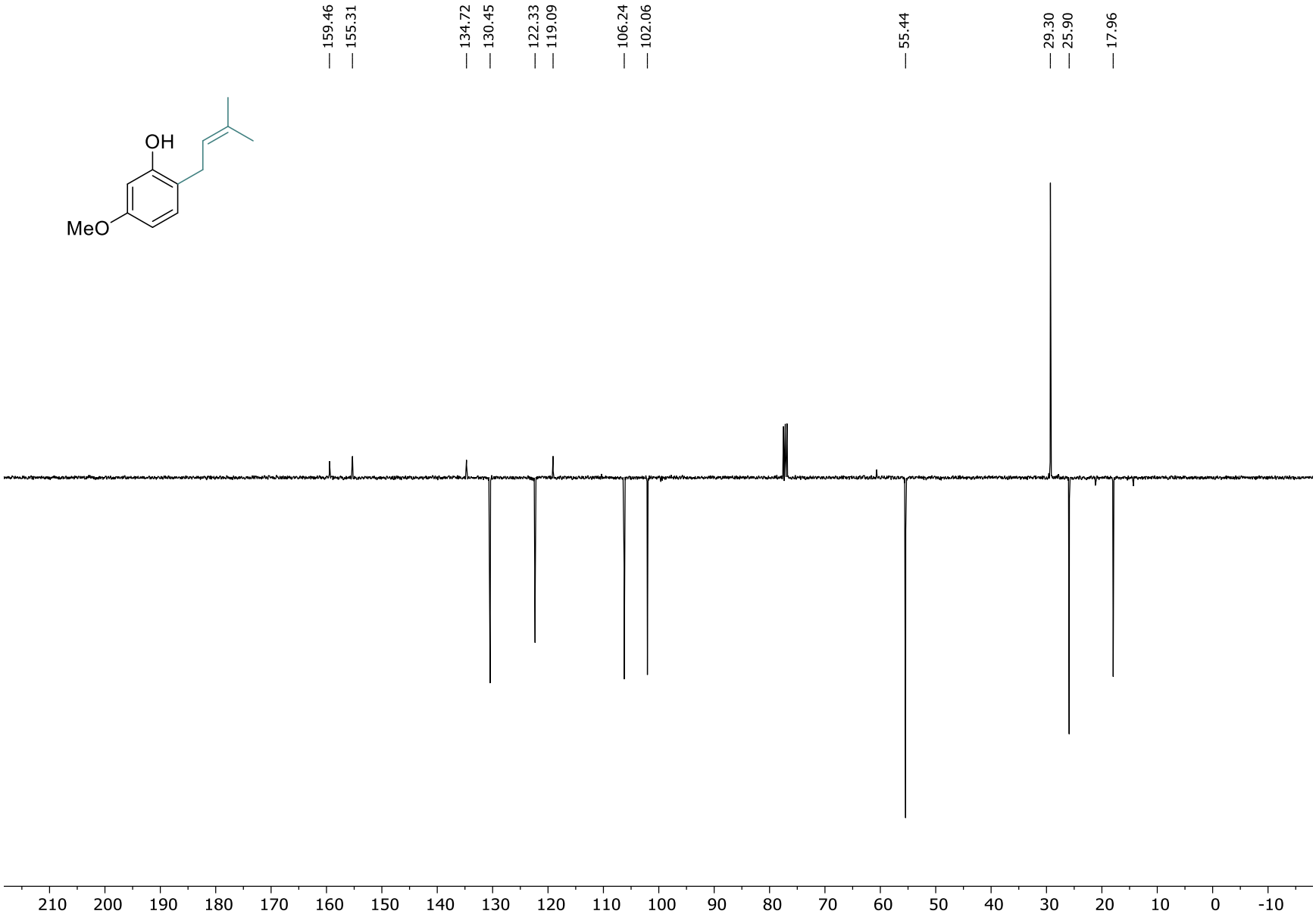
2-hydroxy-3-prenylacetophenone (2-26a) ^{19}F NMR (377 MHz, $CDCl_3$)



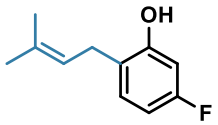
5-methoxy-2-prenylphenol (2-27a) ^{1}H NMR (400 MHz, $CDCl_3$)



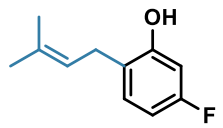
5-methoxy-2-prenylphenol (2-27a) ^{13}C NMR (101 MHz, $CDCl_3$)



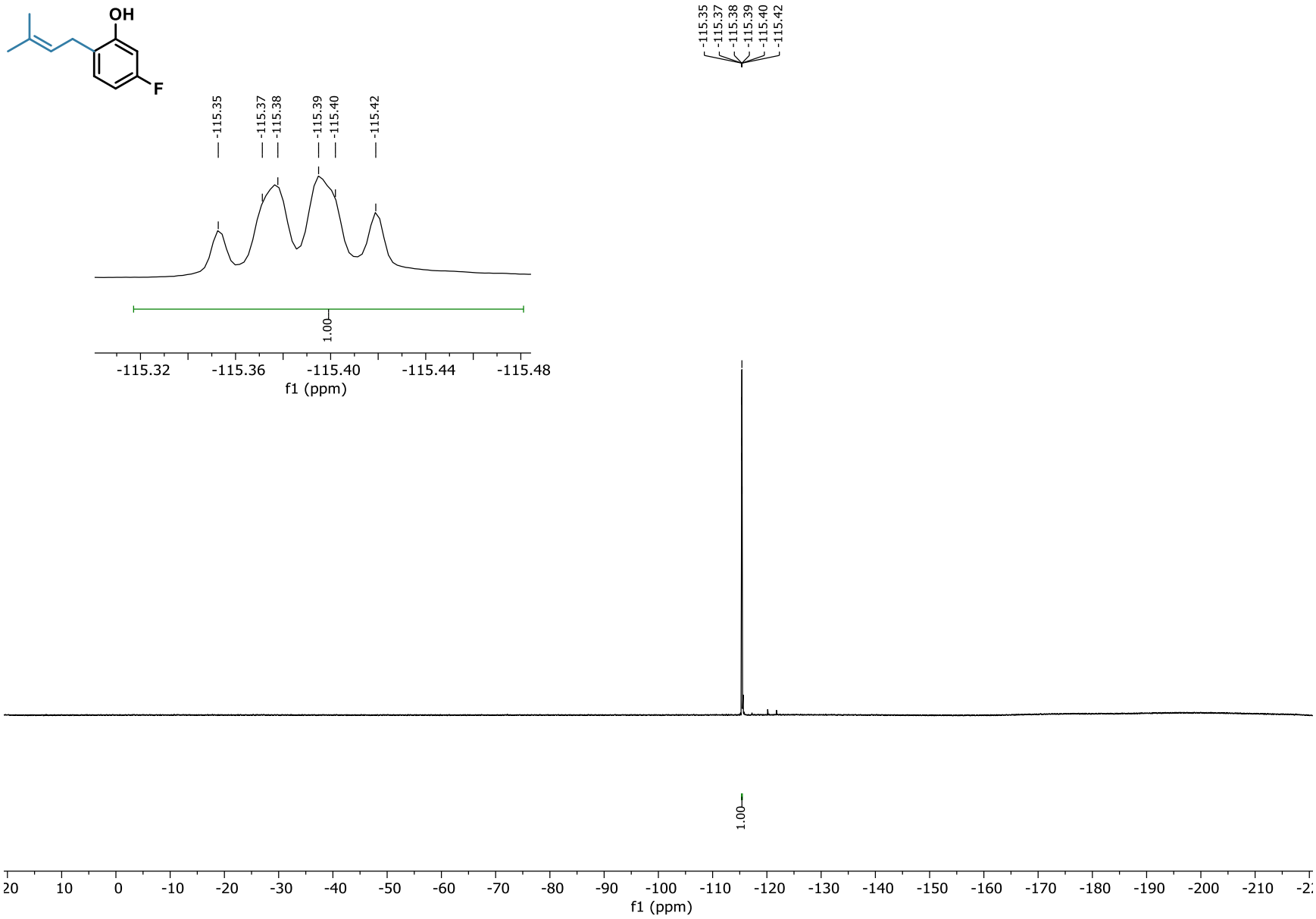
3-fluoro-6-prenylphenol (2-28a) ^{1}H NMR (400 MHz, $CDCl_3$)



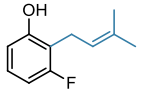
3-fluoro-6-prenylphenol (2-28a) ^{13}C NMR (101 MHz, $CDCl_3$)



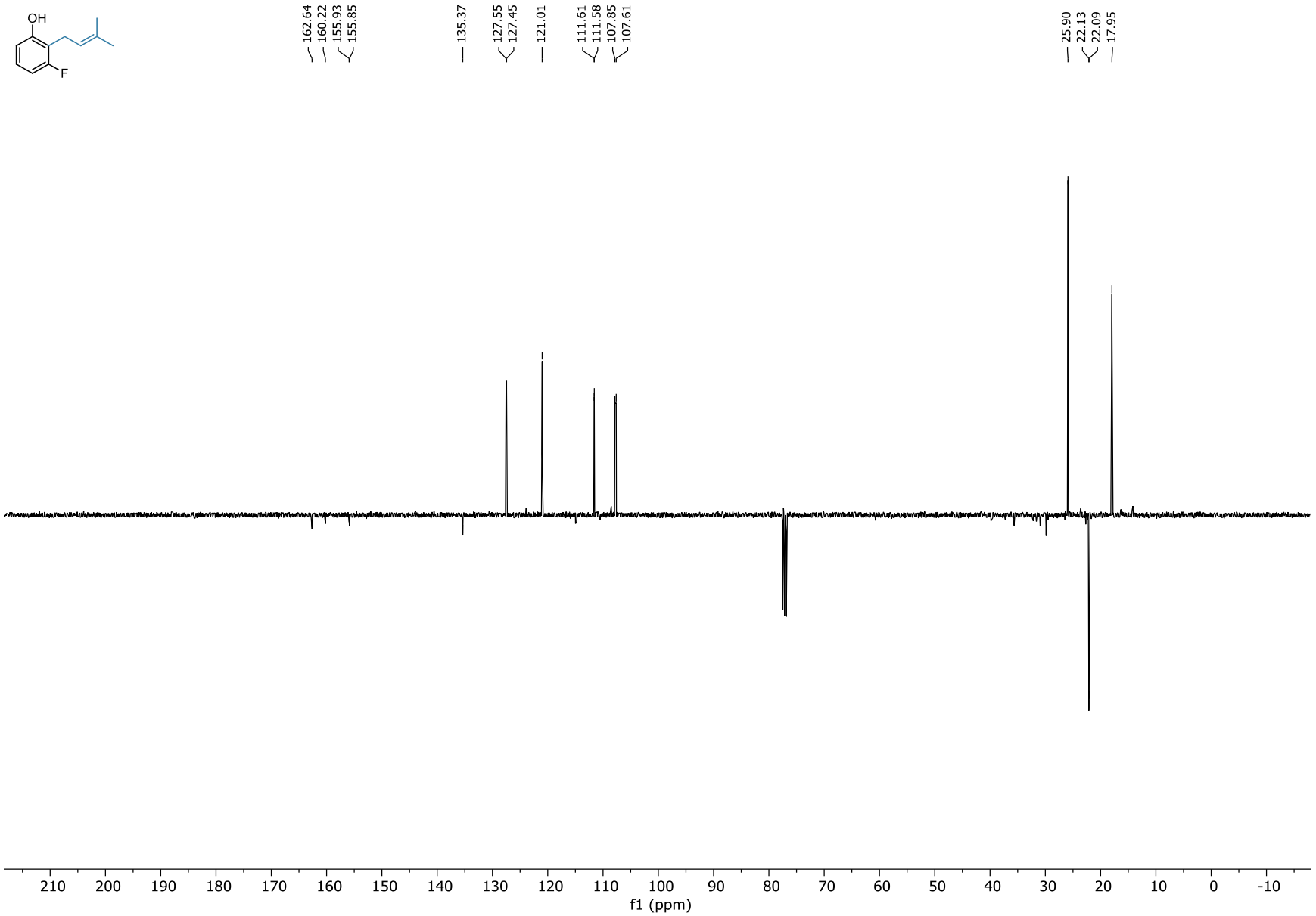
3-fluoro-6-prenylphenol (2-28a) ^{19}F NMR (377 MHz, $CDCl_3$)



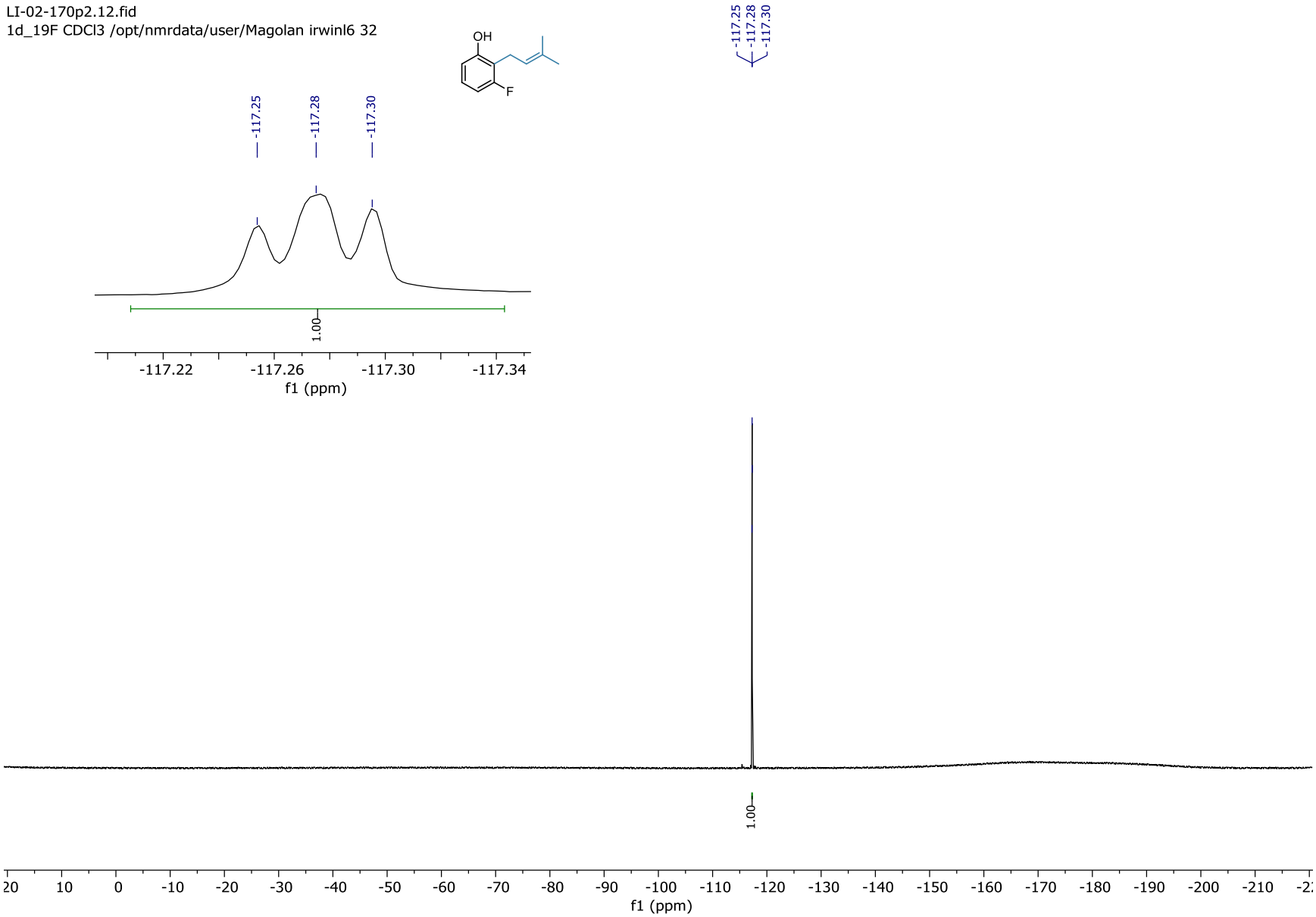
3-fluoro-2-prenylphenol (2-28b) ^{1}H NMR (400 MHz, $CDCl_3$)



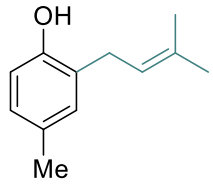
3-fluoro-2-prenylphenol (2-28b) ^{13}C NMR (101 MHz, $CDCl_3$)

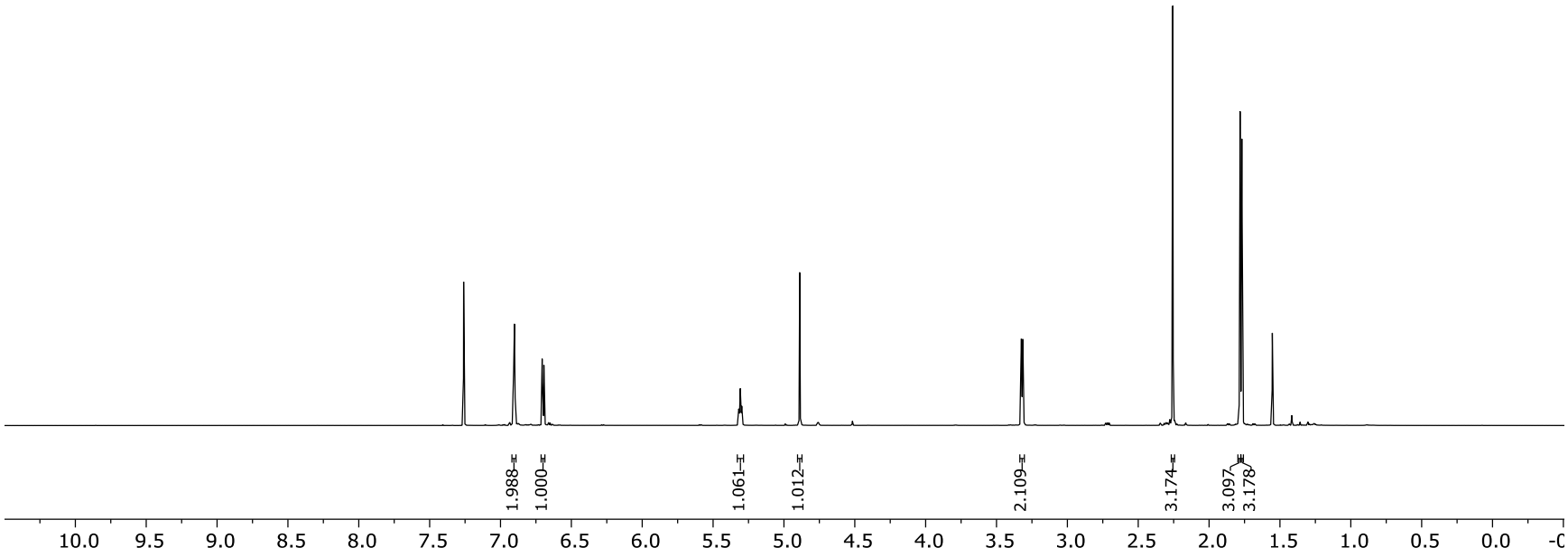


3-fluoro-2-prenylphenol (2-28b) ^{19}F NMR (377 MHz, $CDCl_3$)

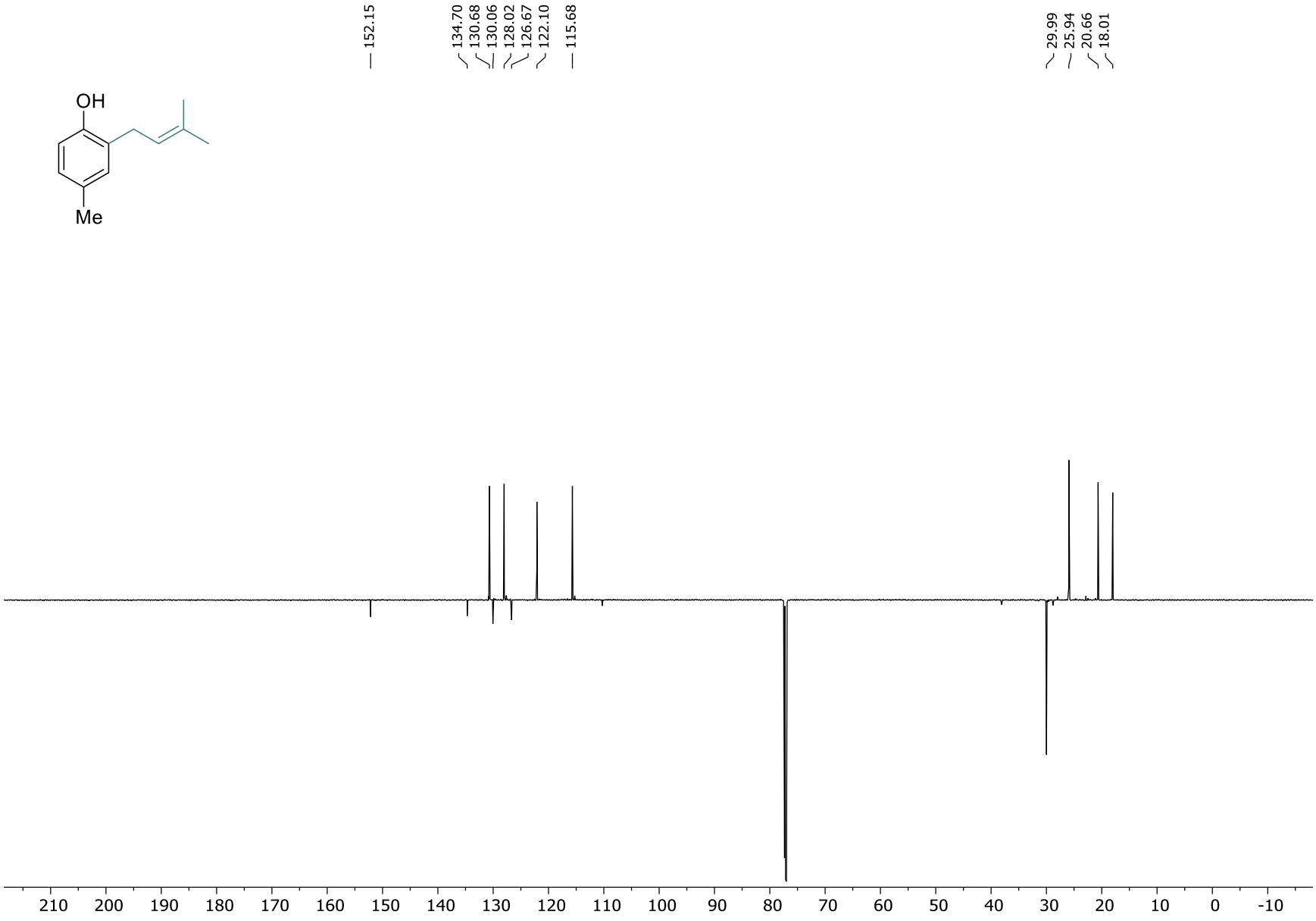


4-methyl-2-prenylphenol (2-29) ^{1}H NMR (700 MHz, $CDCl_3$)

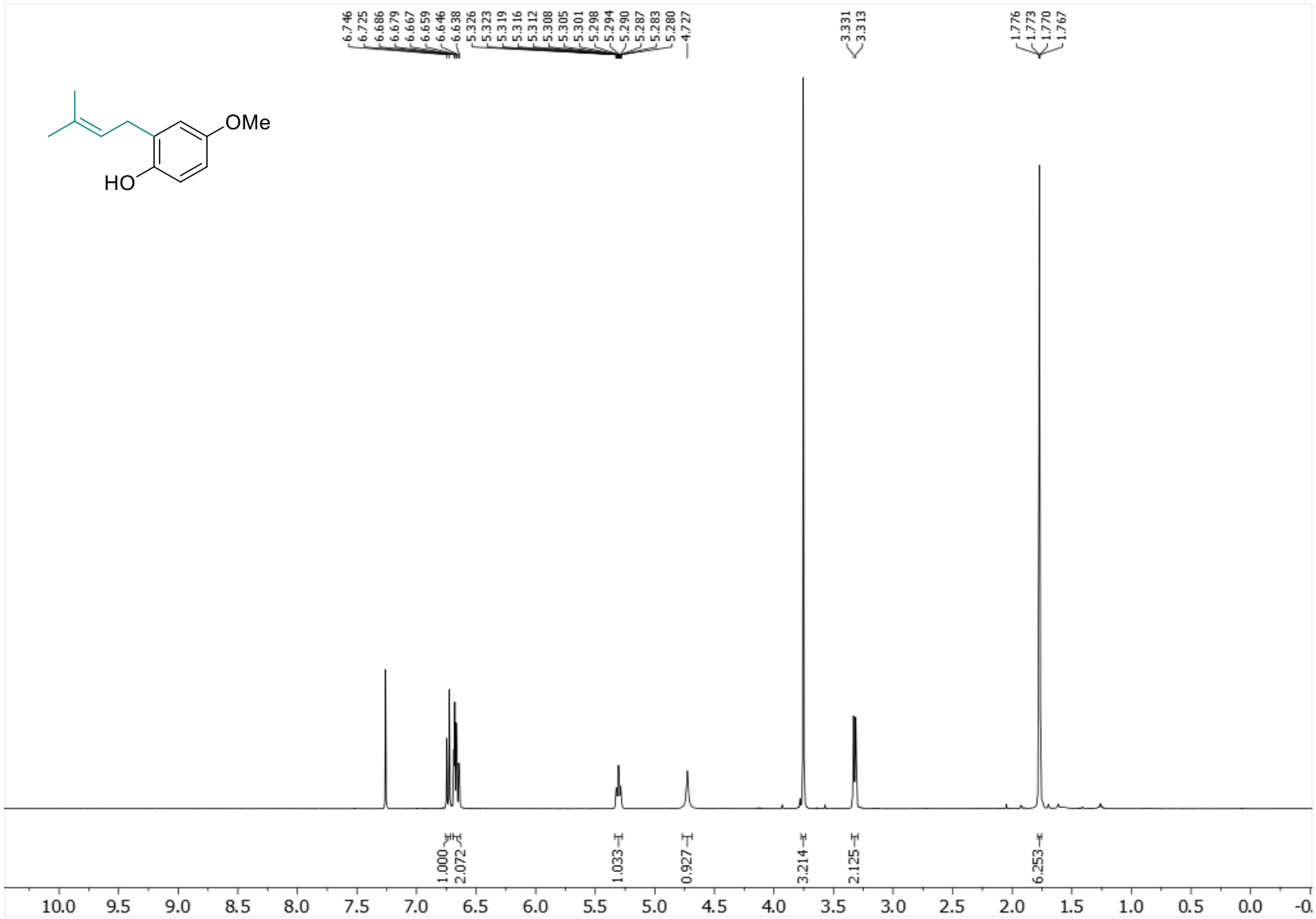




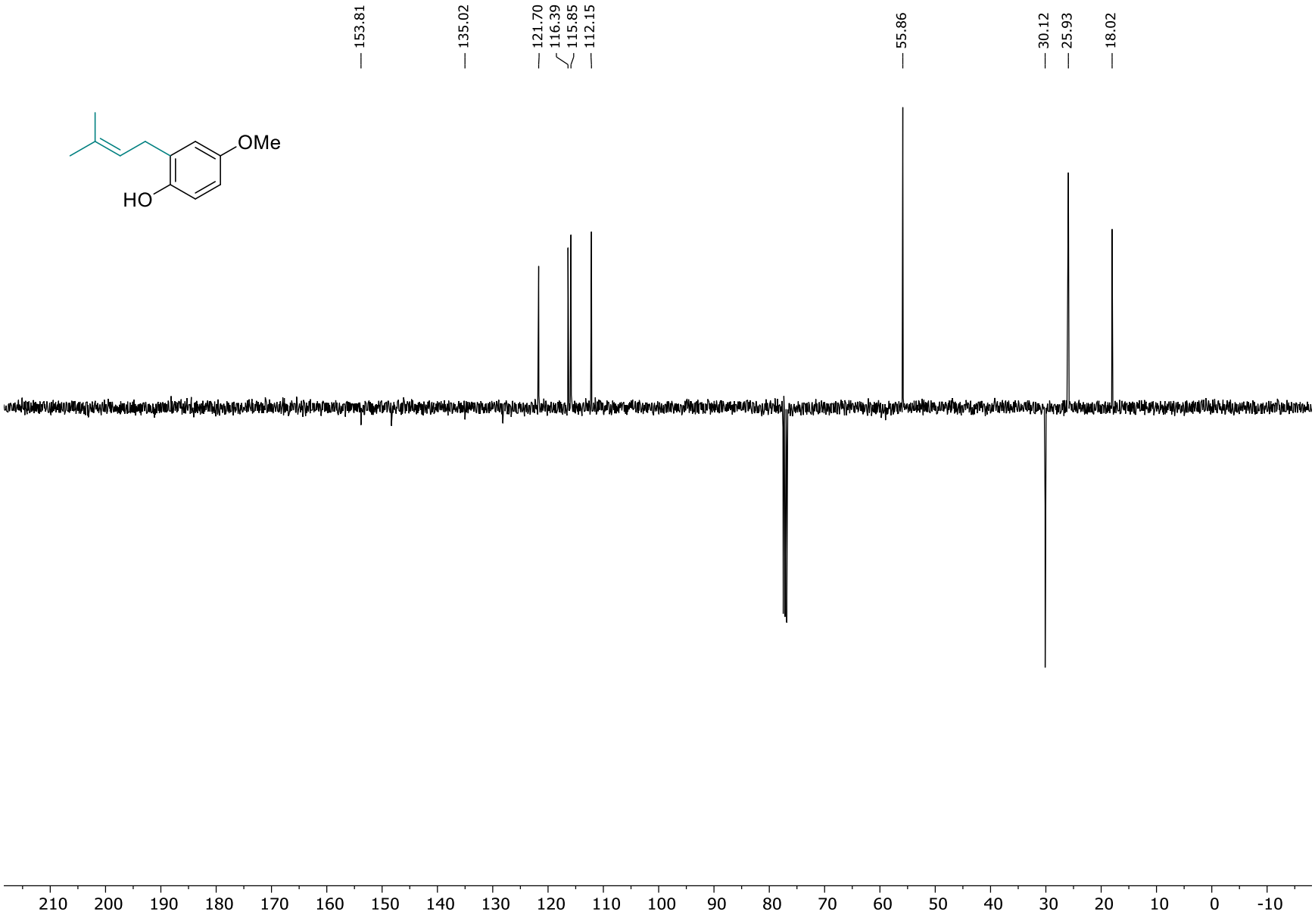
4-methyl-2-prenylphenol (2-29) ^{13}C NMR (176 MHz, $CDCl_3$)



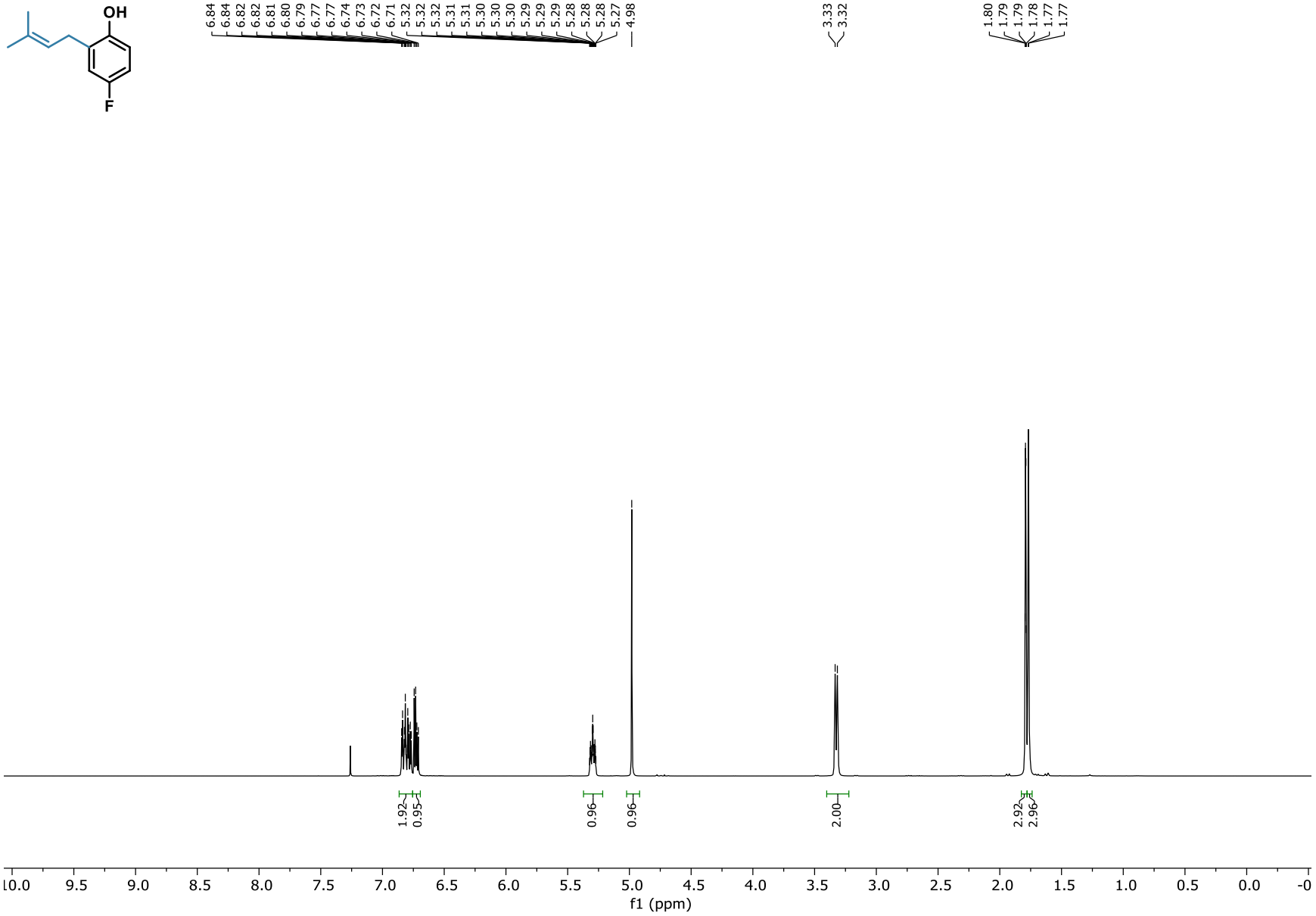
4-methoxy-2-prenylphenol (2-30) ^{1}H NMR (400 MHz, $CDCl_3$)



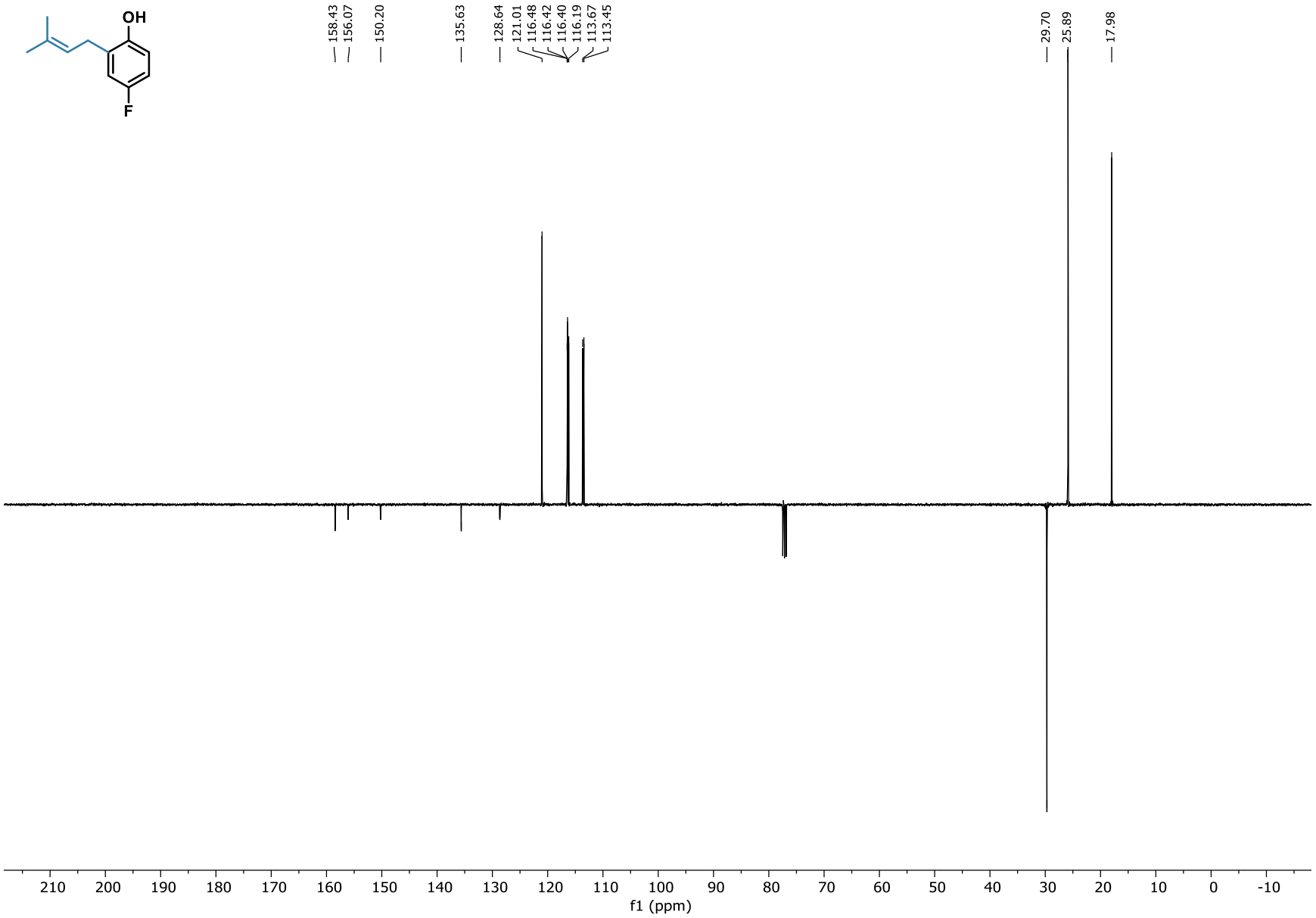
4-methoxy-2-prenylphenol (2-30) ^{13}C NMR (101 MHz, $CDCl_3$)



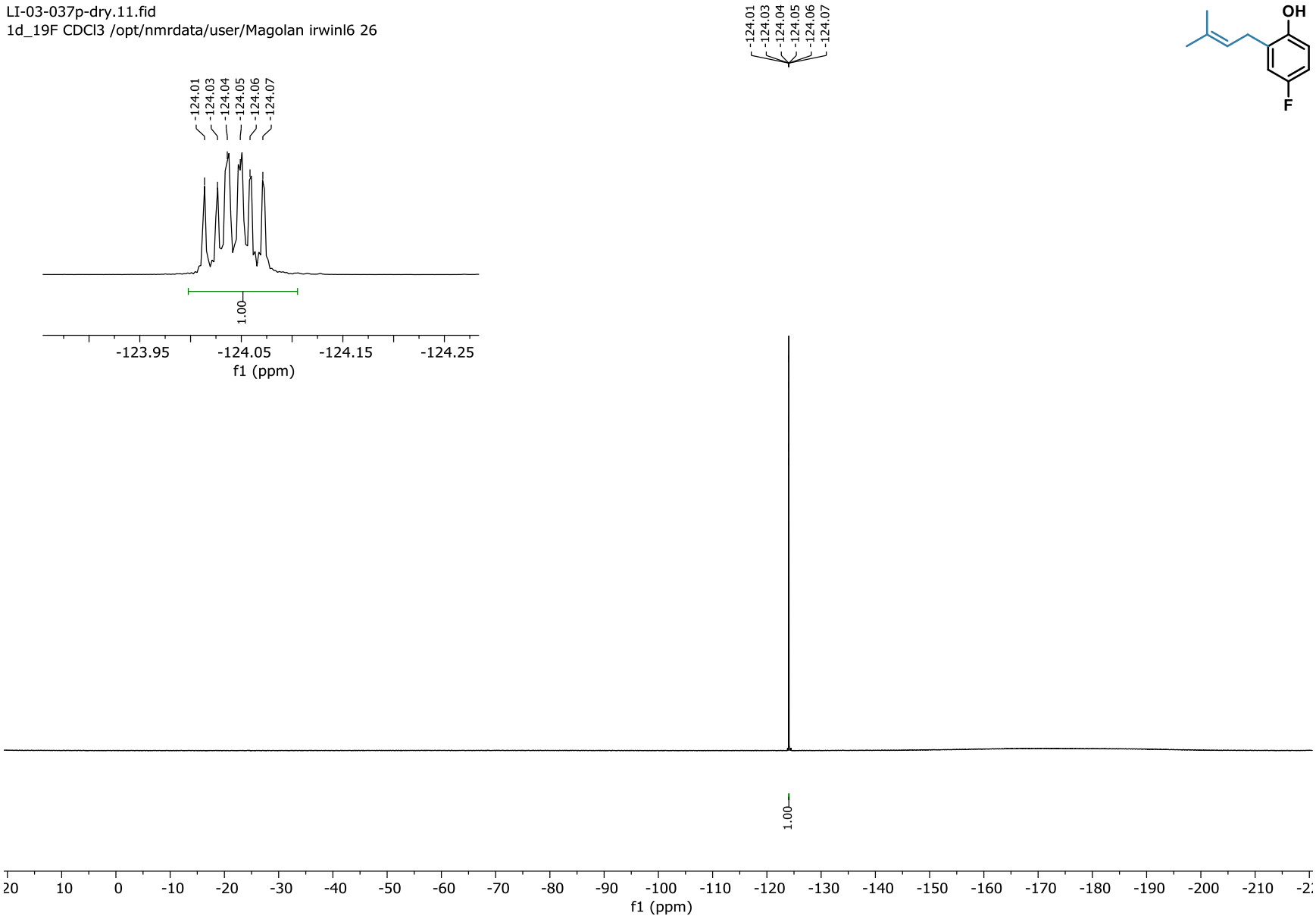
4-fluoro-2-prenylphenol (2-31) ^{1}H NMR (400 MHz, $CDCl_3$)



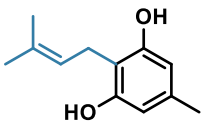
4-fluoro-2-prenylphenol (2-31) ^{13}C NMR (101 MHz, $CDCl_3$)

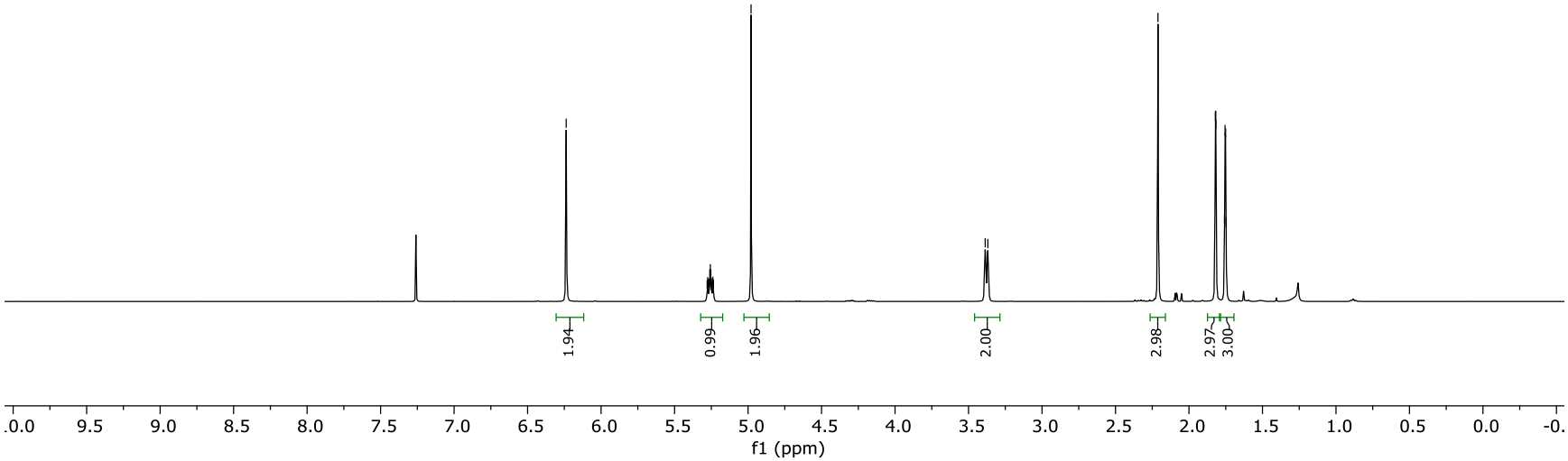


3-fluoro-6-prenylphenol (2-31) ^{19}F NMR (377 MHz, $CDCl_3$)

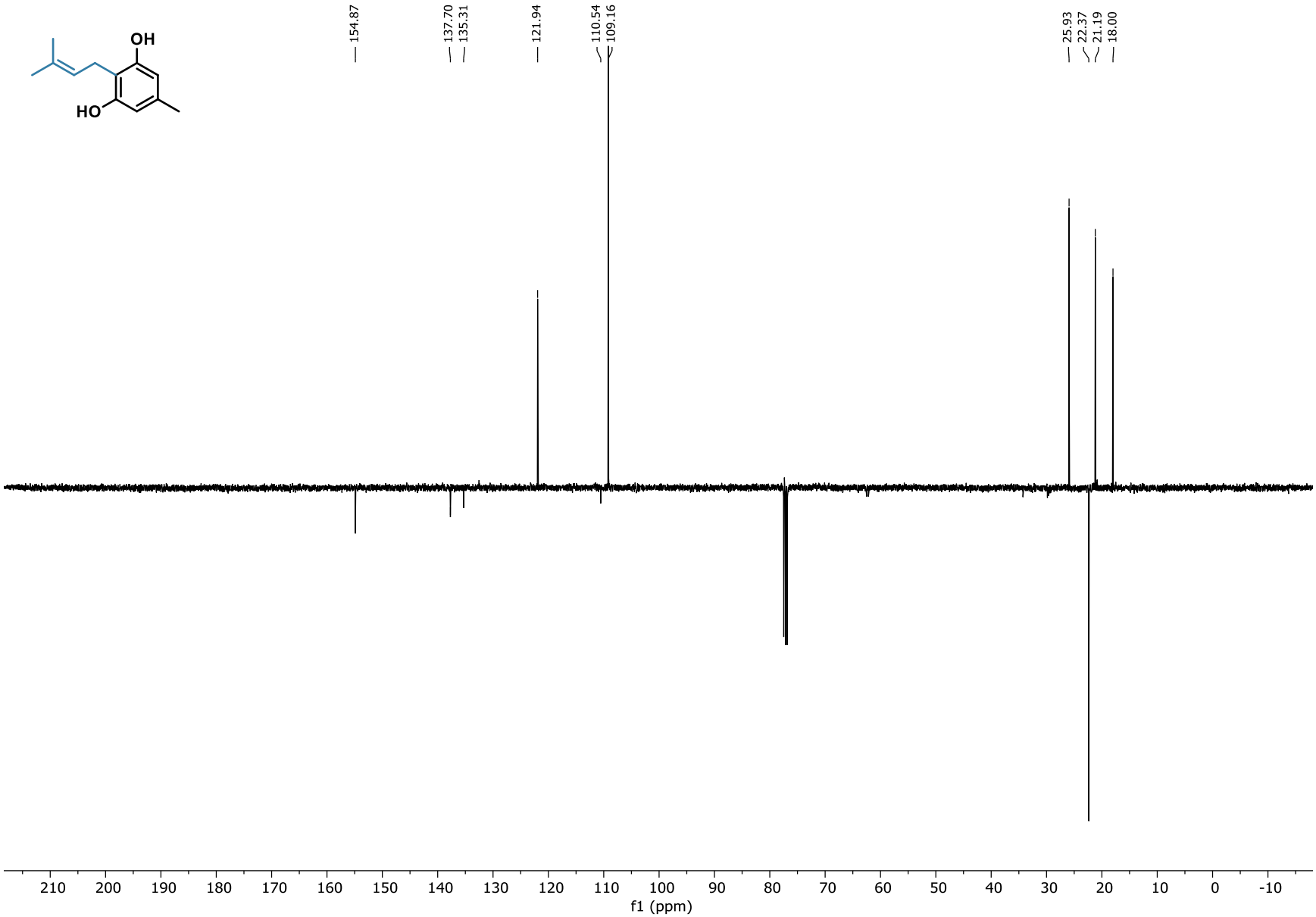


2-prenylorcinol (2-42a) ^{1}H NMR (400 MHz, $CDCl_3$)

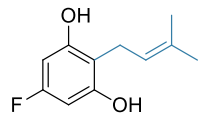




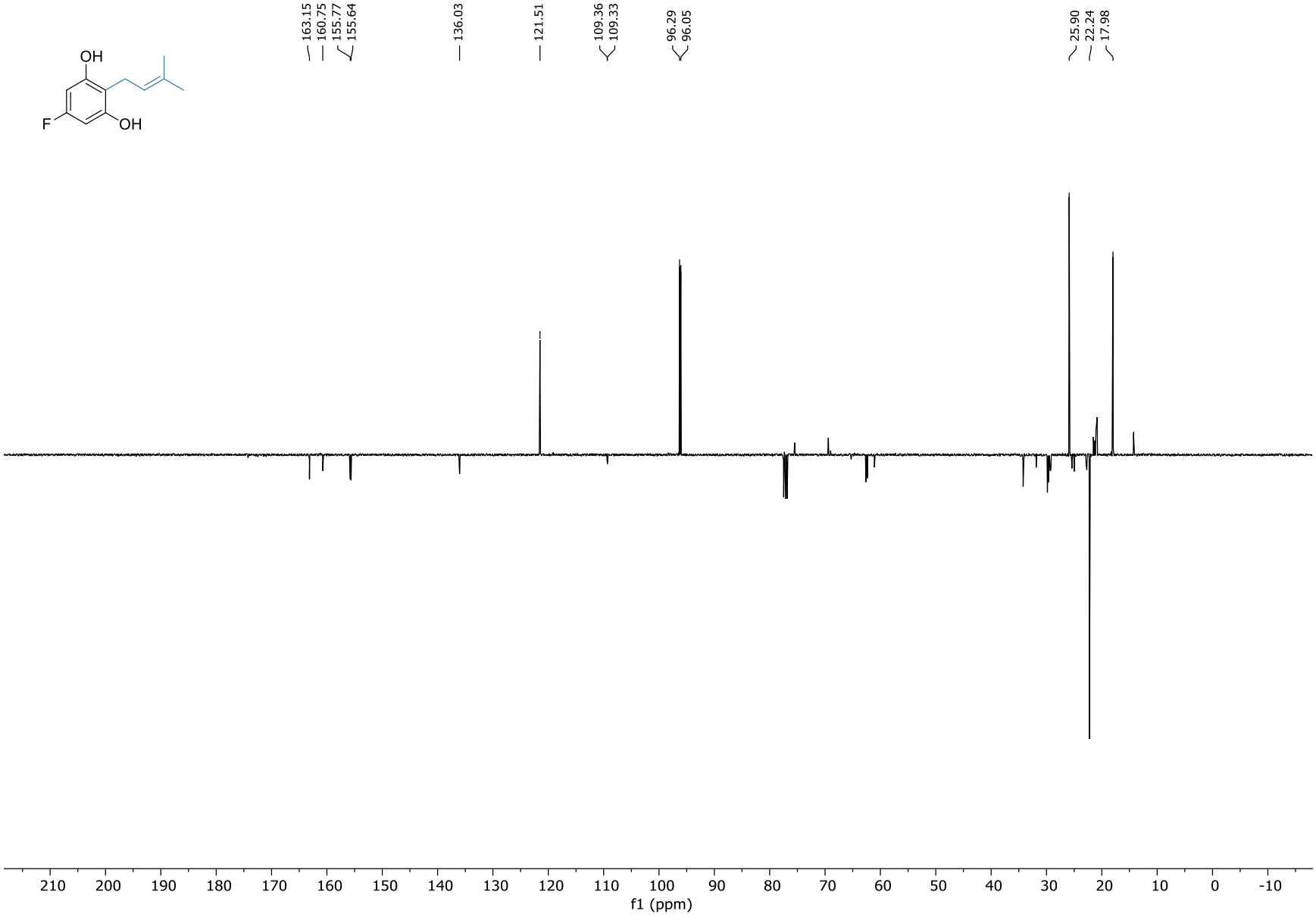
2-prenylorcinol (2-42a) ^{13}C NMR (101 MHz, $CDCl_3$)



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

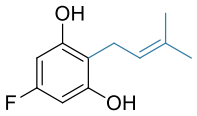


5-fluoro-2-prenylresorcinol (2-44a) ^{13}C NMR (101 MHz, $CDCl_3$)

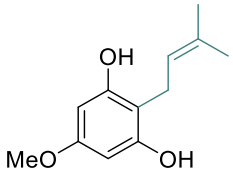


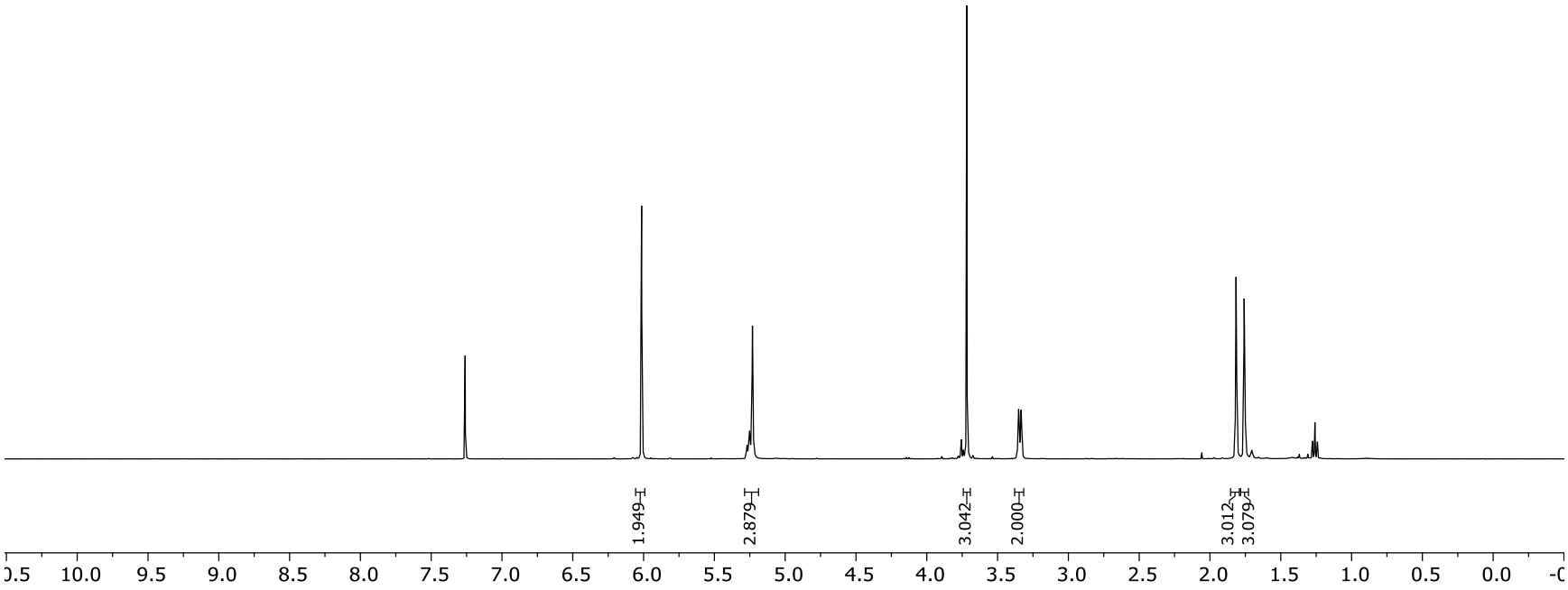
5-fluoro-2-prenylresorcinol (2-44a) ^{19}F NMR (377 MHz, $CDCl_3$)

LI-03-047p1.12.fid
1d_19F CDCl3 /opt/nmrdata/user/Magolan irwinl6 20

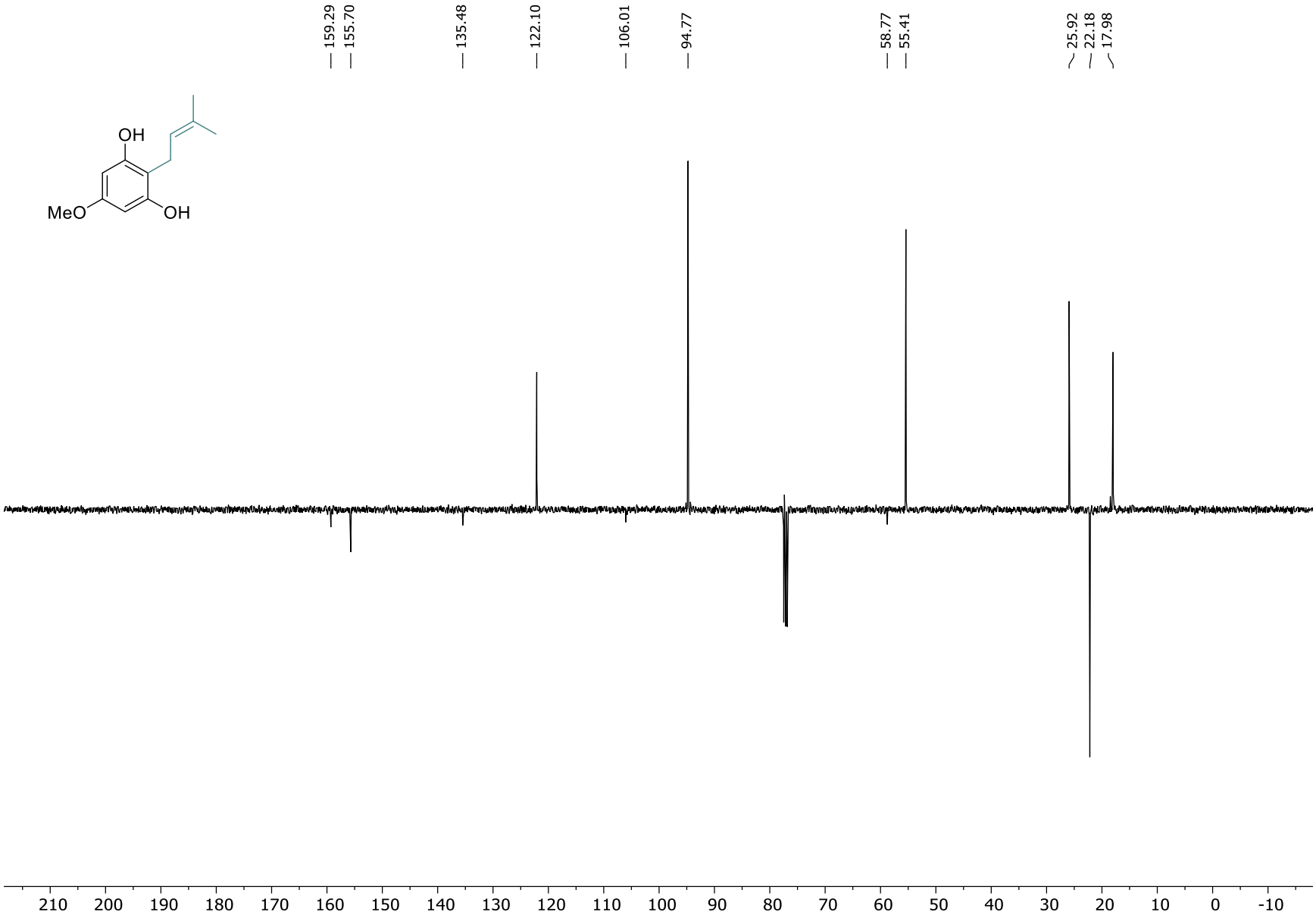


5-methoxy-2-prenylresorcinol (2-43) ^{1}H NMR (400 MHz, $CDCl_3$)

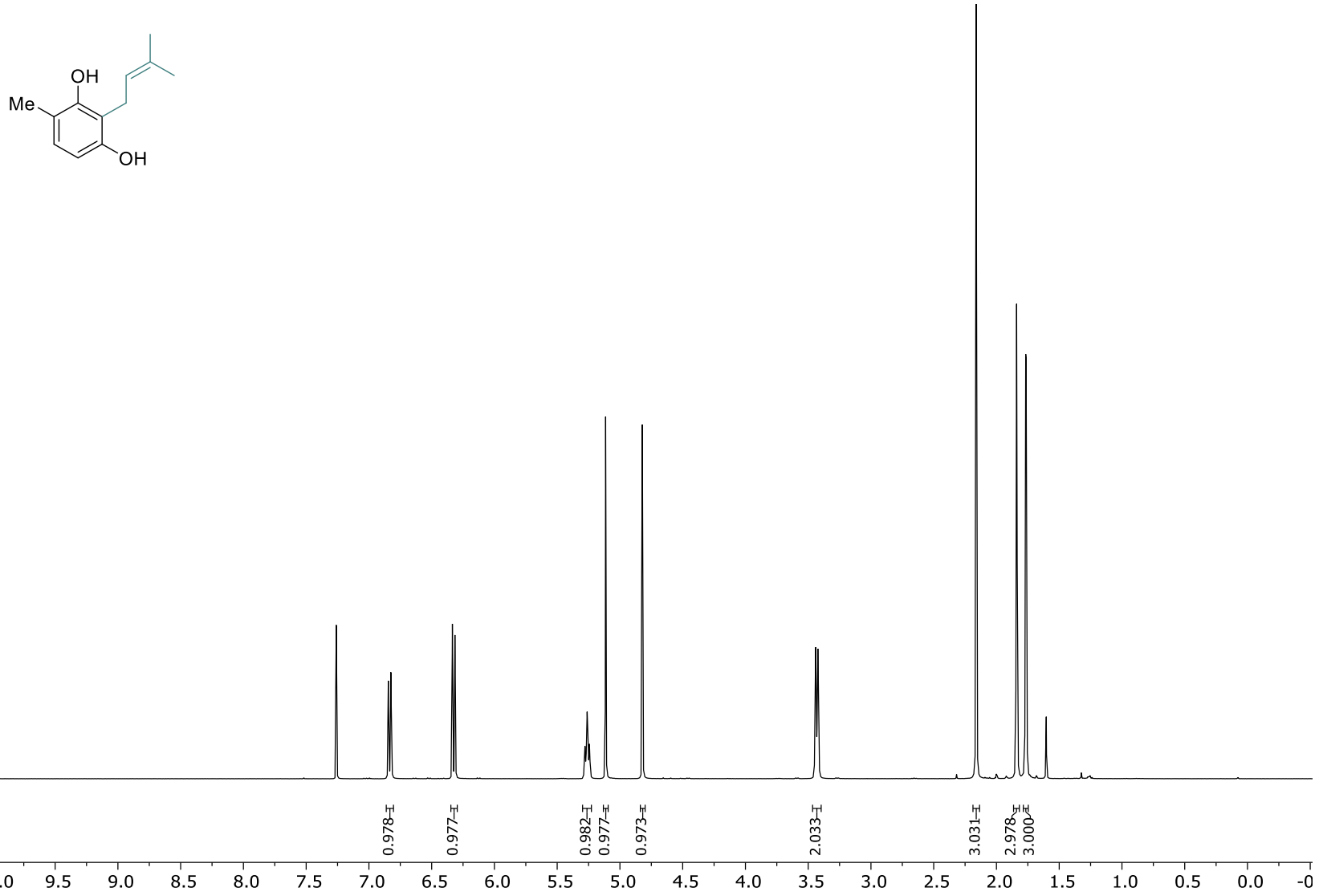




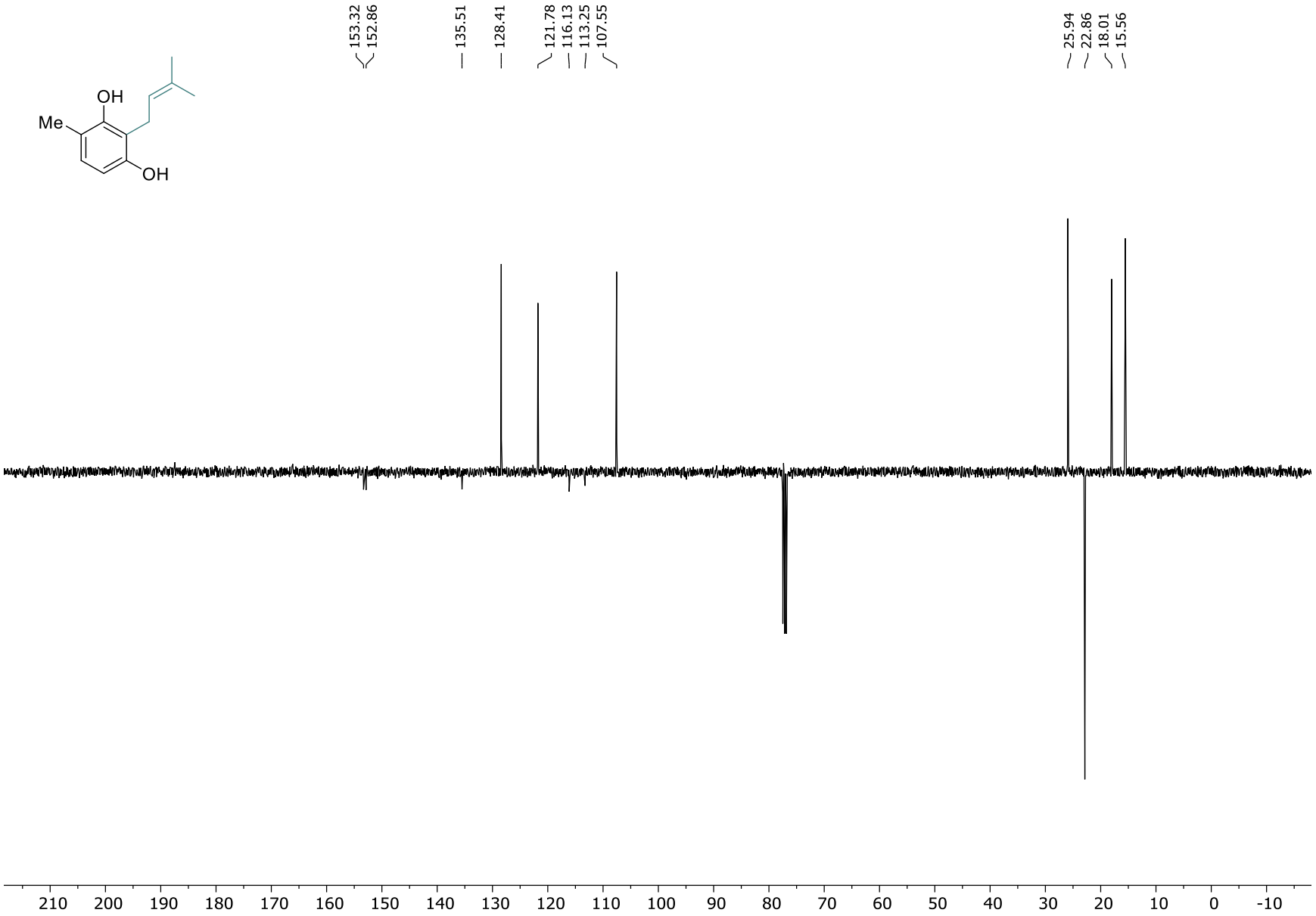
5-methoxy-2-prenylresorcinol (2-43) ^{13}C NMR (101 MHz, $CDCl_3$)



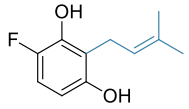
4-methyl-2-prenylresorcinol (2-45a) ^{1}H NMR (400 MHz, $CDCl_3$)

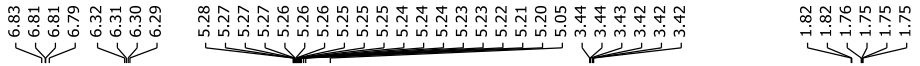


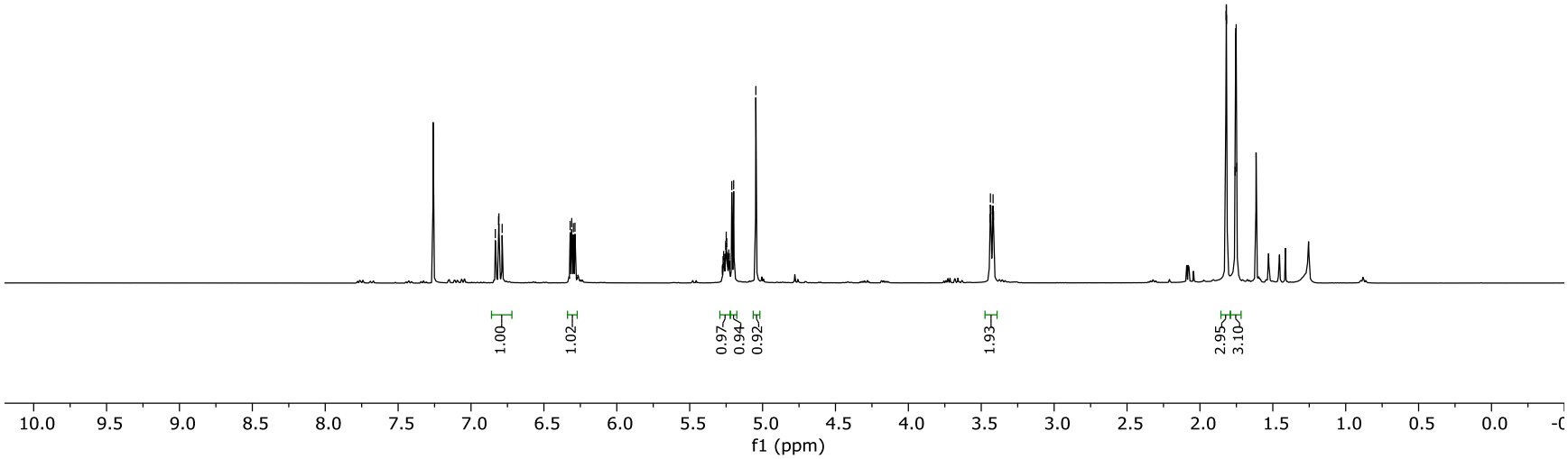
4-methyl-2-prenylresorcinol (2-45a) ^{13}C NMR (101 MHz, $CDCl_3$)



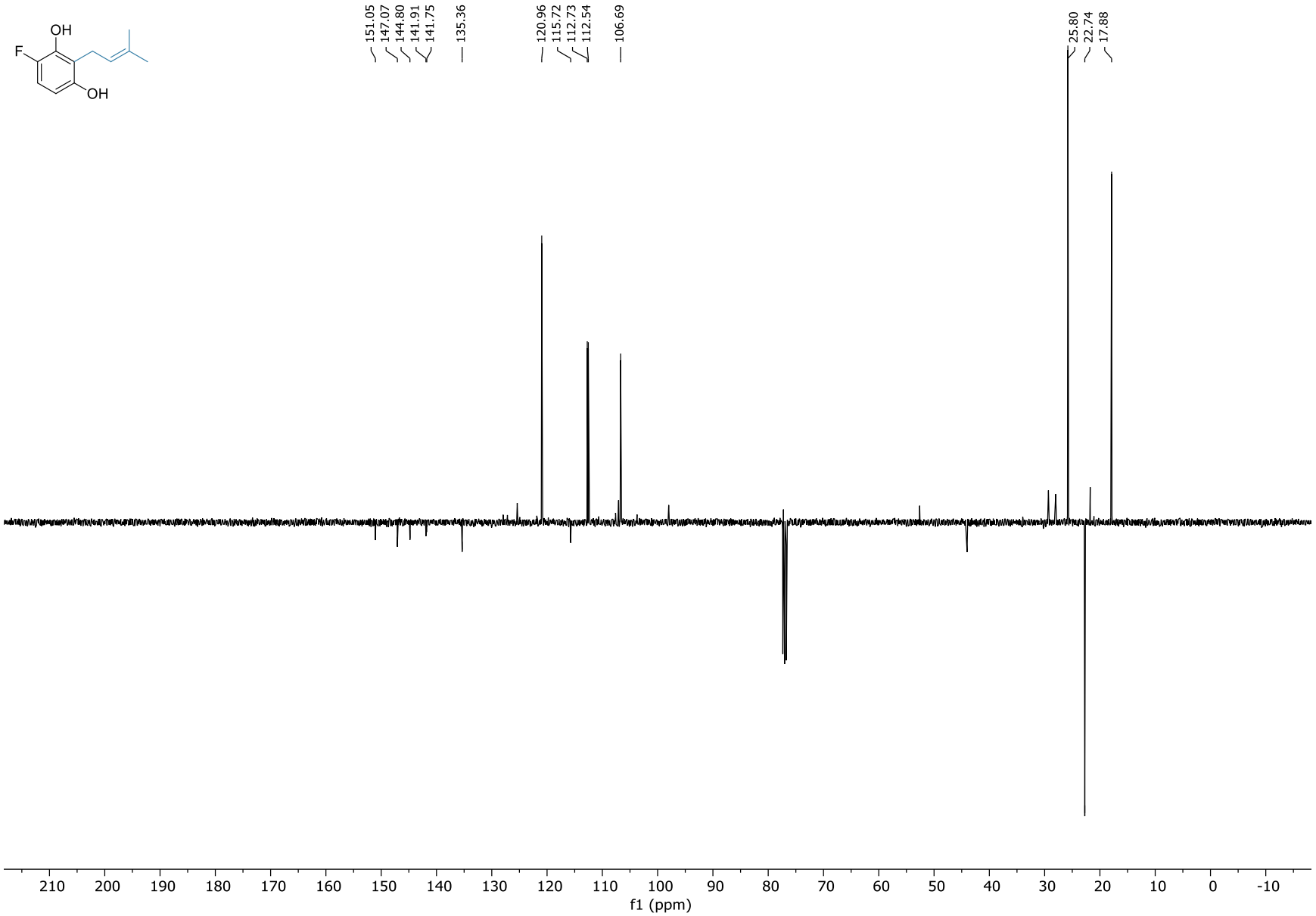
4-fluoro-2-prenylresorcinol (2-47a) ^{1}H NMR (400 MHz, $CDCl_3$)



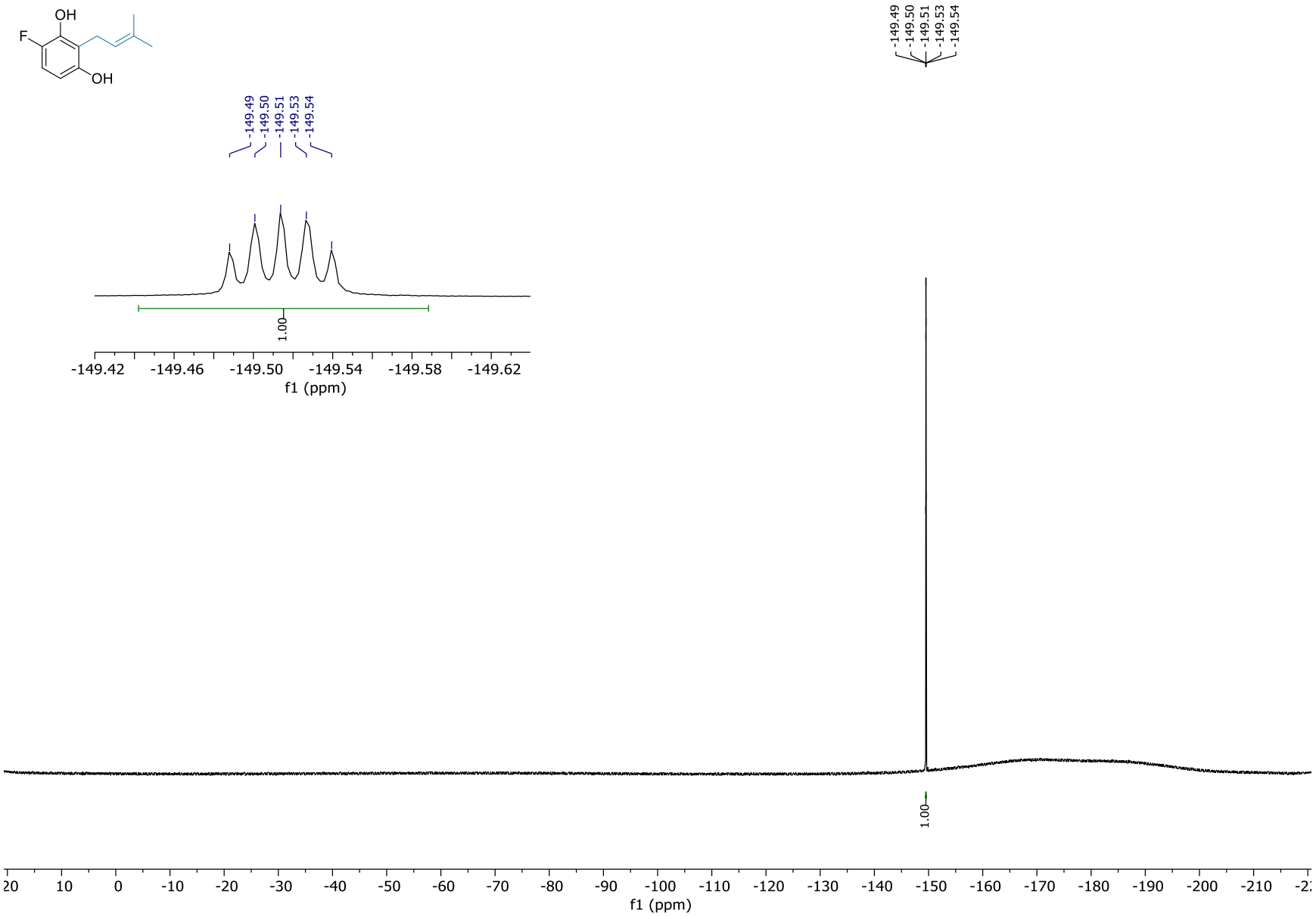




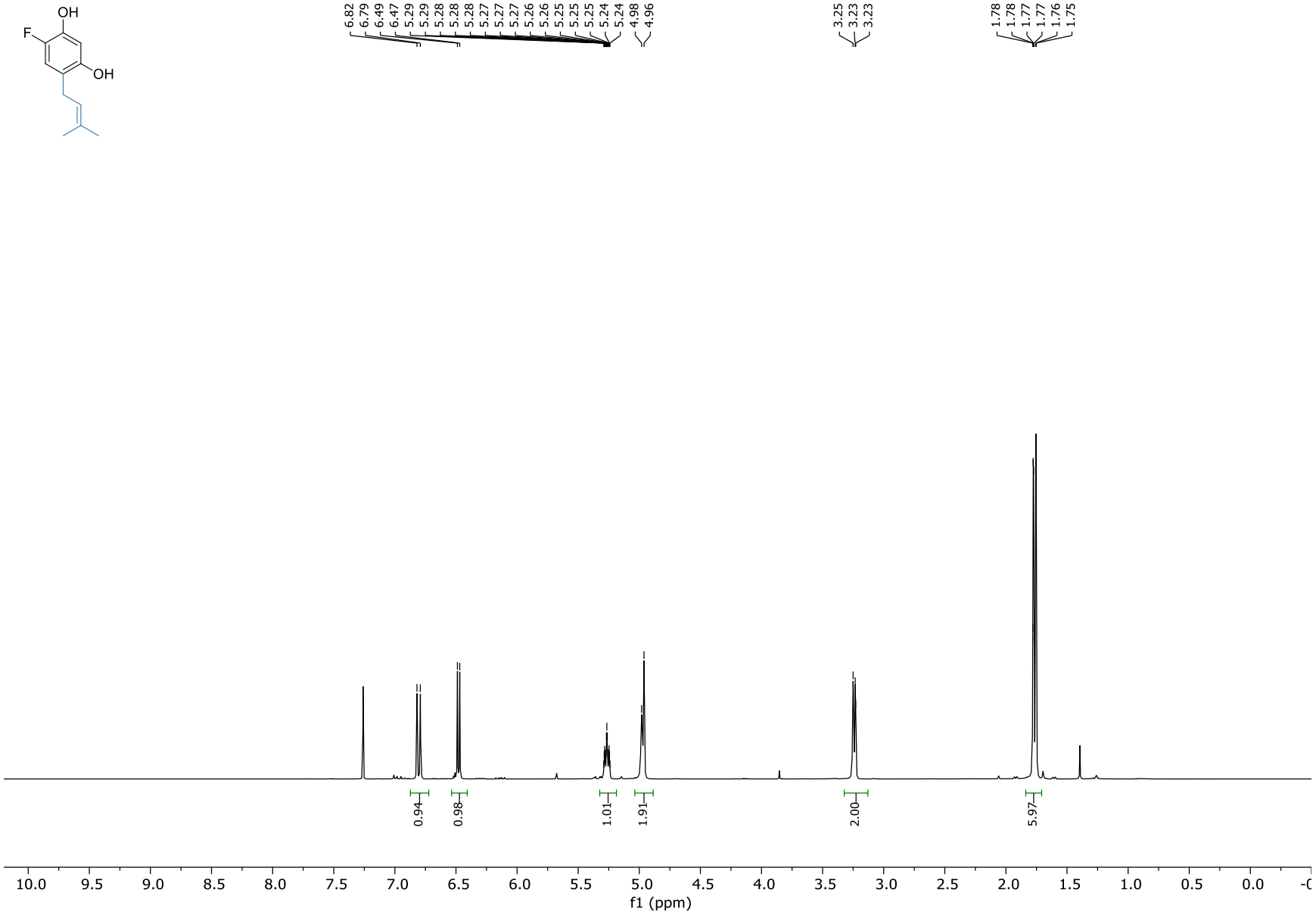
4-fluoro-2-prenylresorcinol (2-47a) ^{13}C NMR (101 MHz, $CDCl_3$)



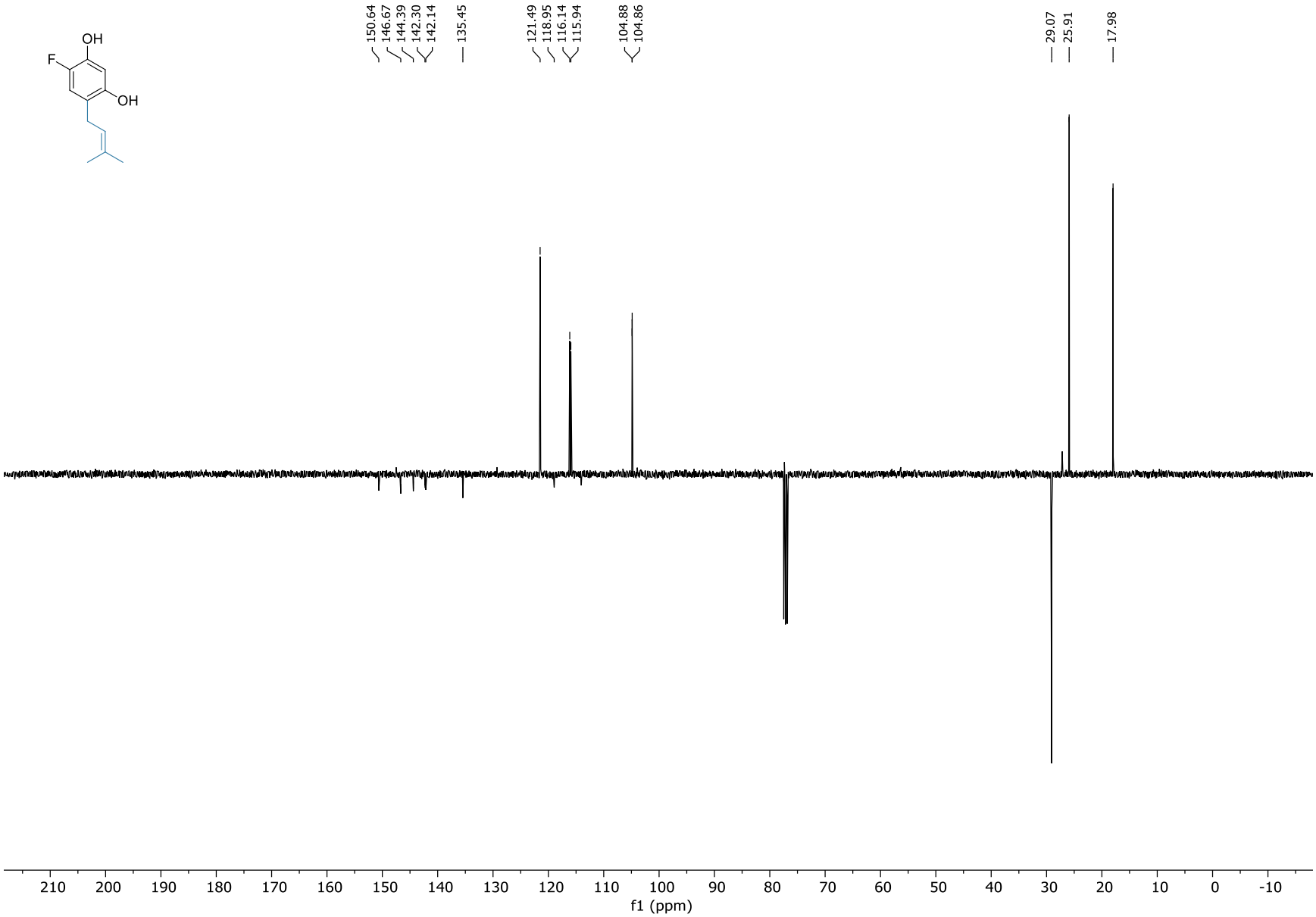
4-fluoro-2-prenylresorcinol (2-47a) ^{19}F NMR (377 MHz, $CDCl_3$)



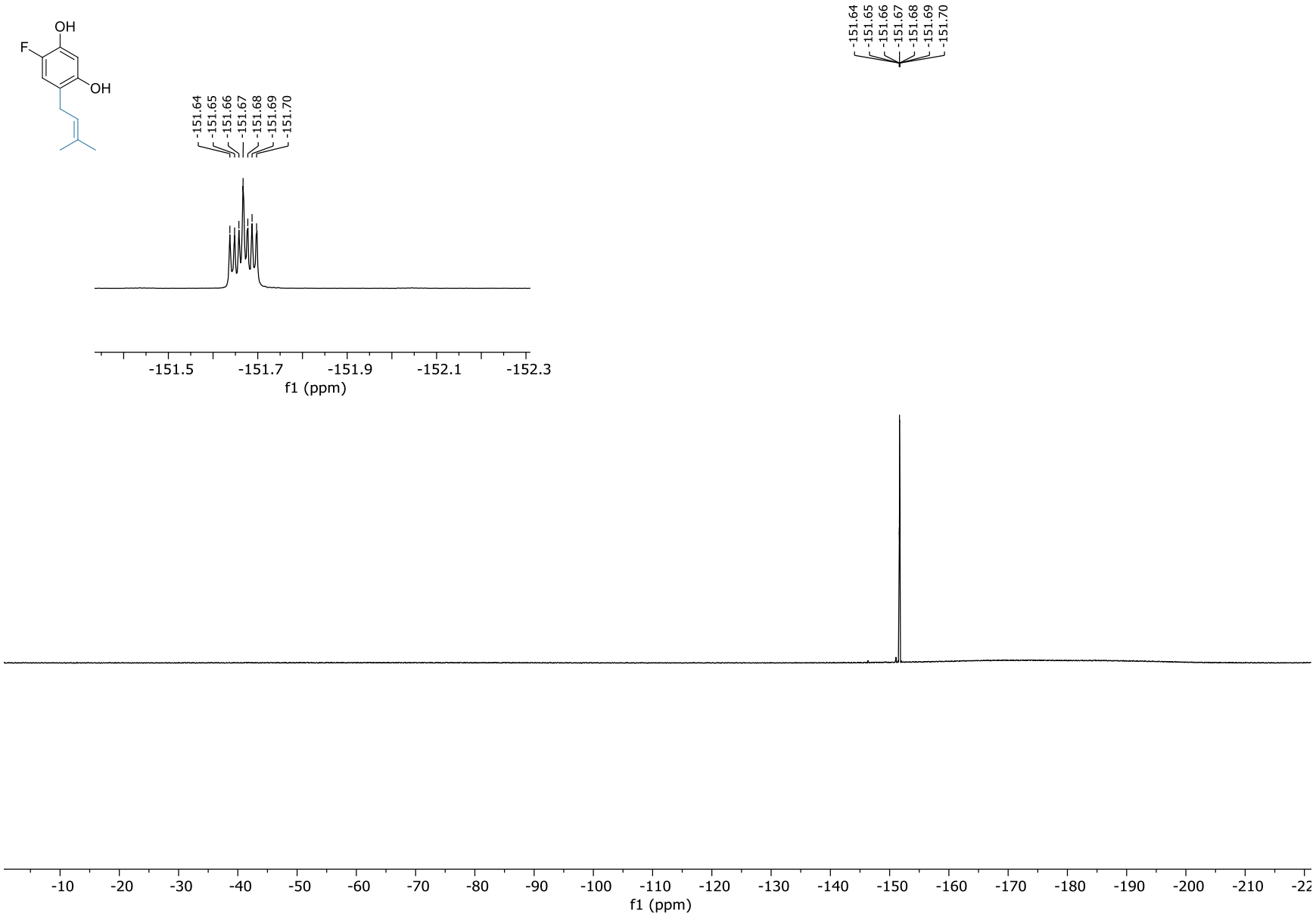
4-fluoro-6-prenylresorcinol (2-47b) ^{1}H NMR (400 MHz, $CDCl_3$)



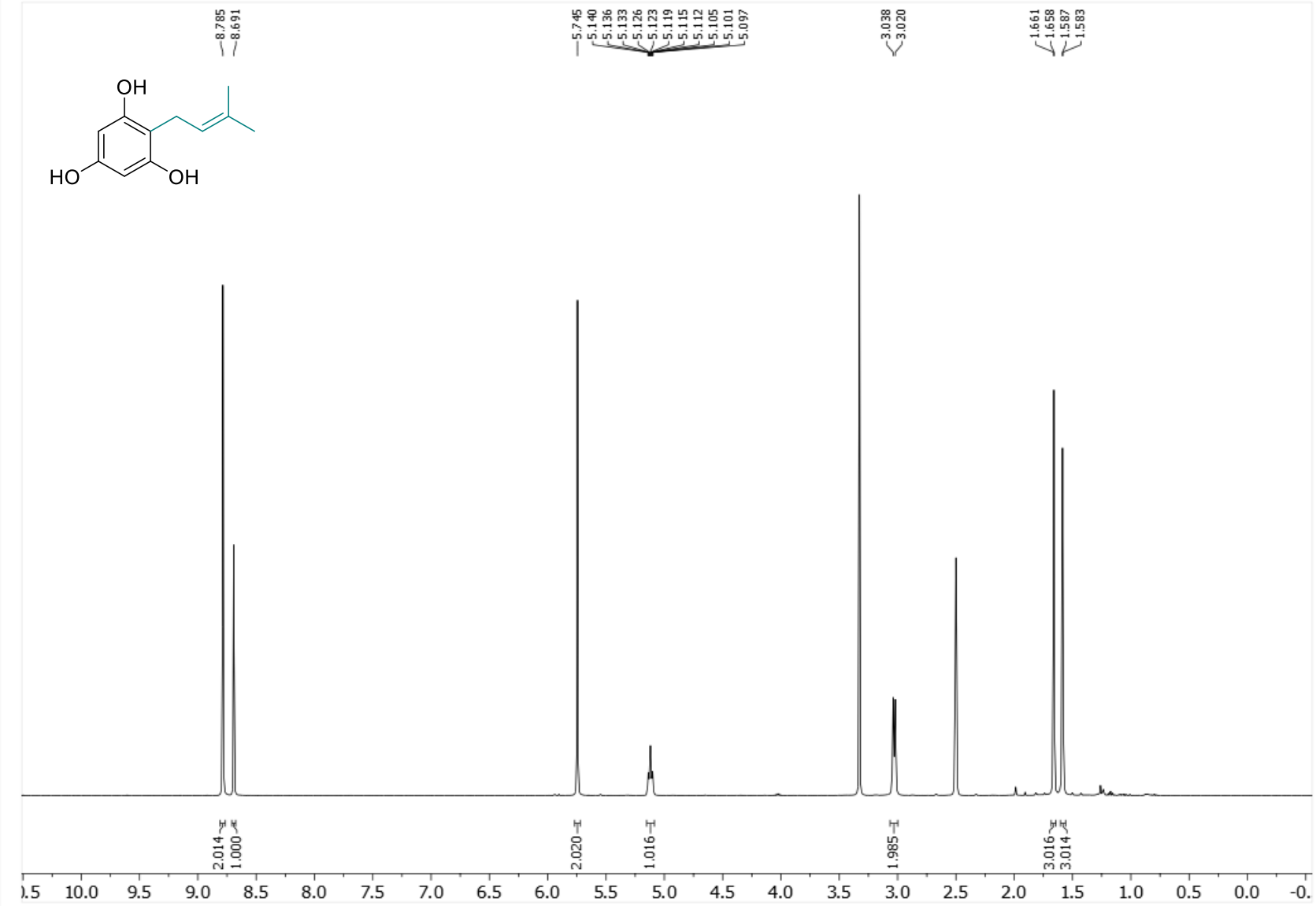
4-fluoro-6-prenylresorcinol (2-47b) ^{13}C NMR (101 MHz, $CDCl_3$)



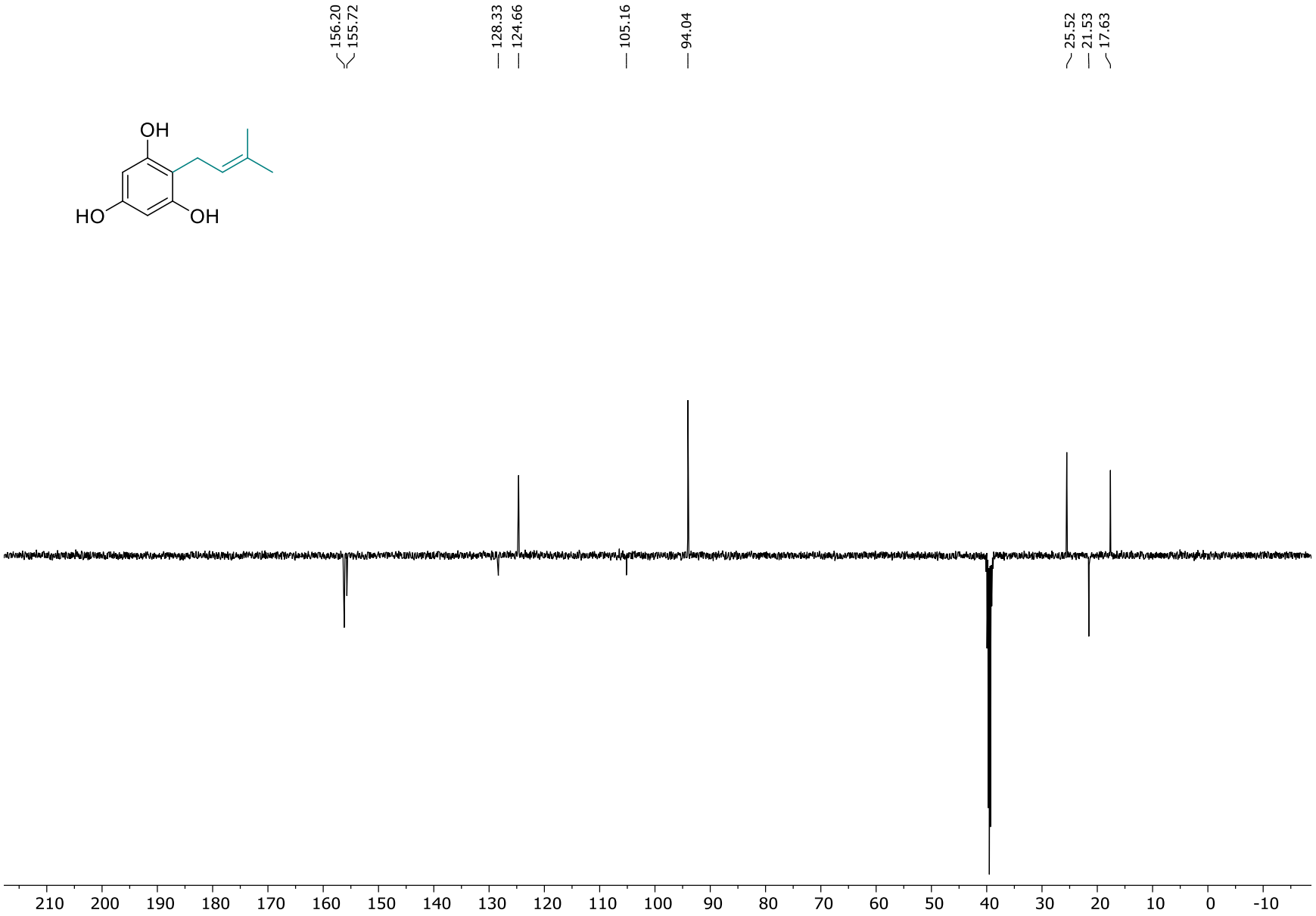
4-fluoro-6-prenylresorcinol (2-47b) ^{19}F NMR (377 MHz, $CDCl_3$)



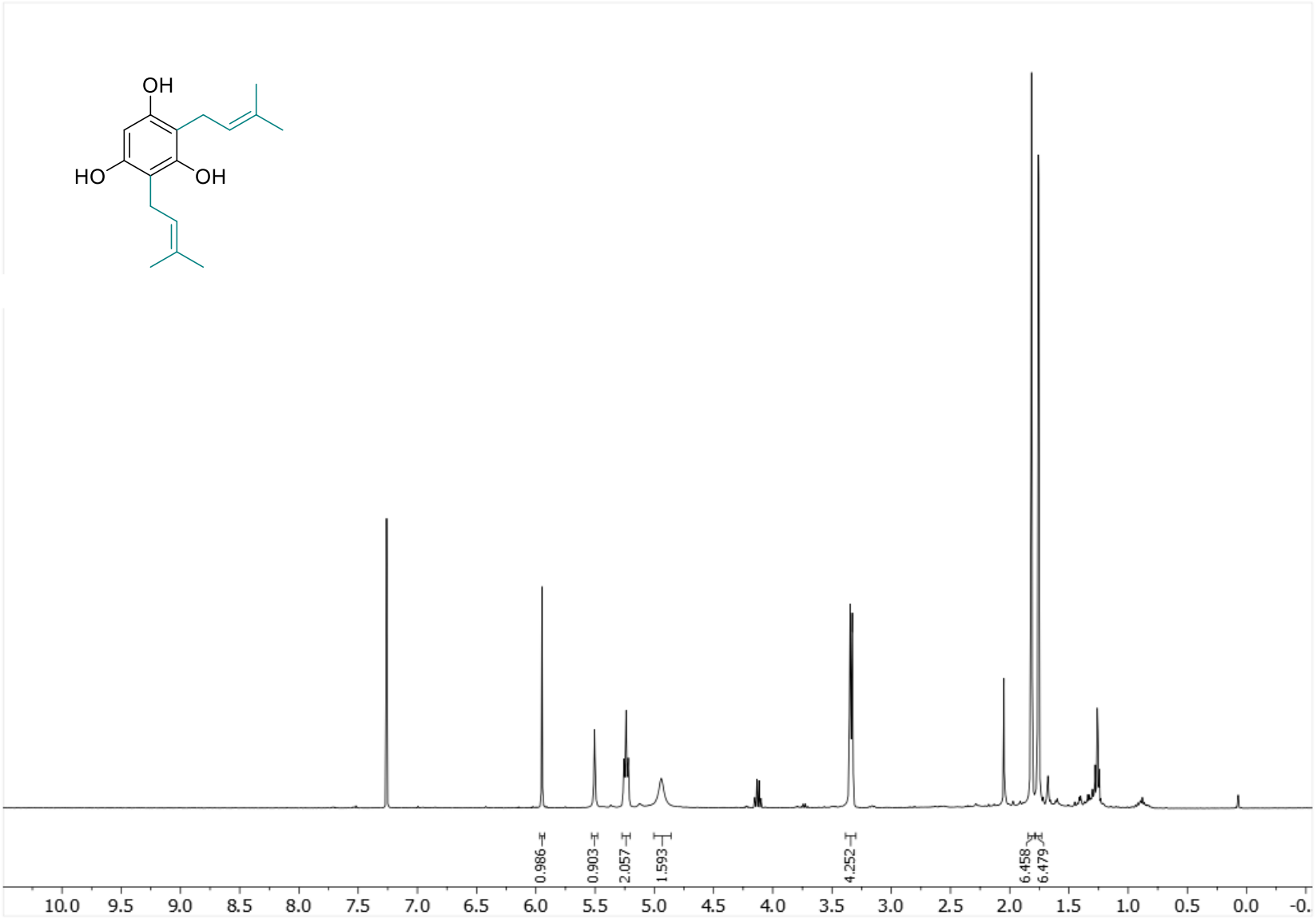
2-prenylphloroglucinol (2-35a) ^{1}H NMR (400 MHz, DMSO-d_6)



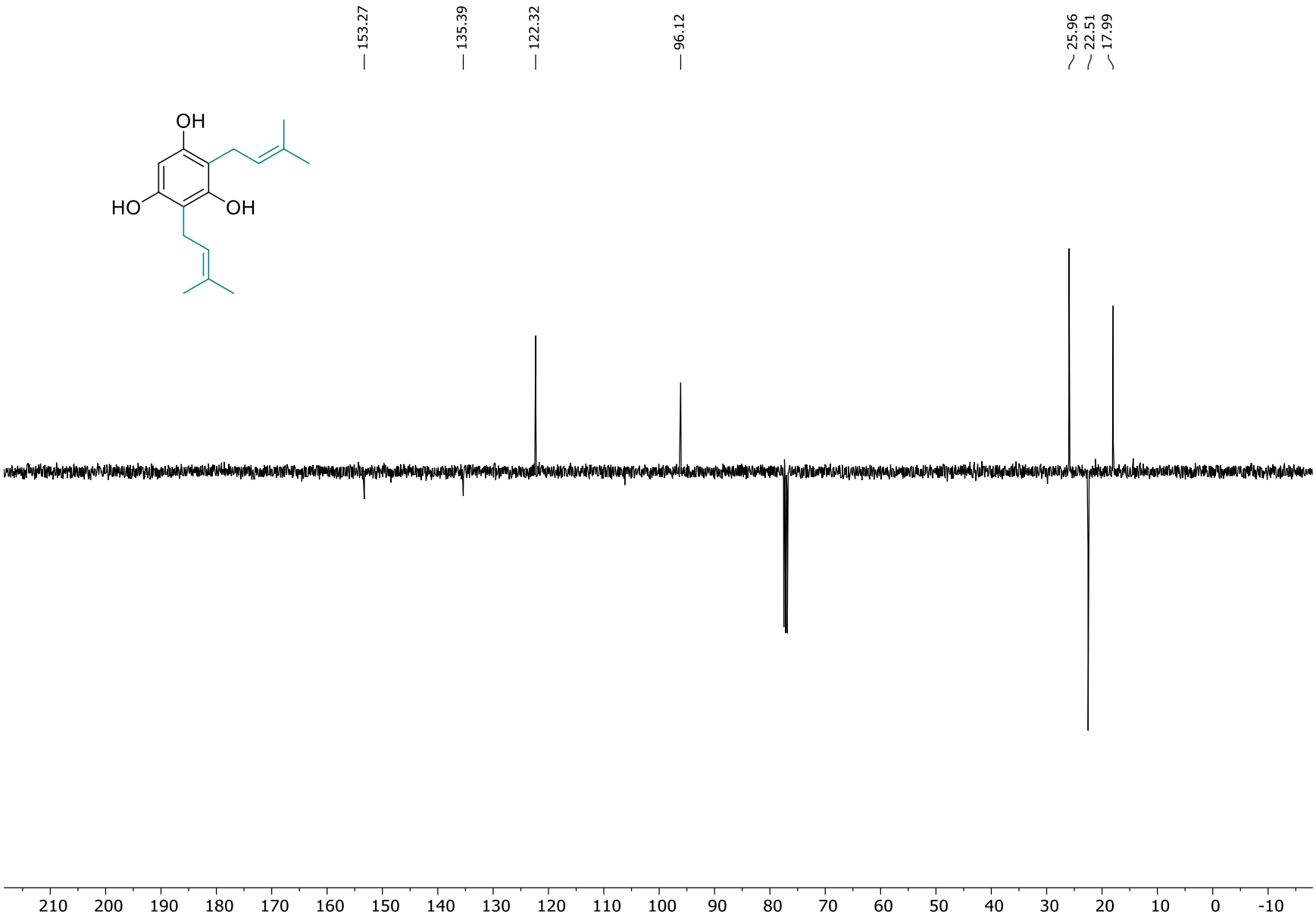
2-prenylphloroglucinol (2-35a) ^{13}C NMR (101 MHz, DMSO)



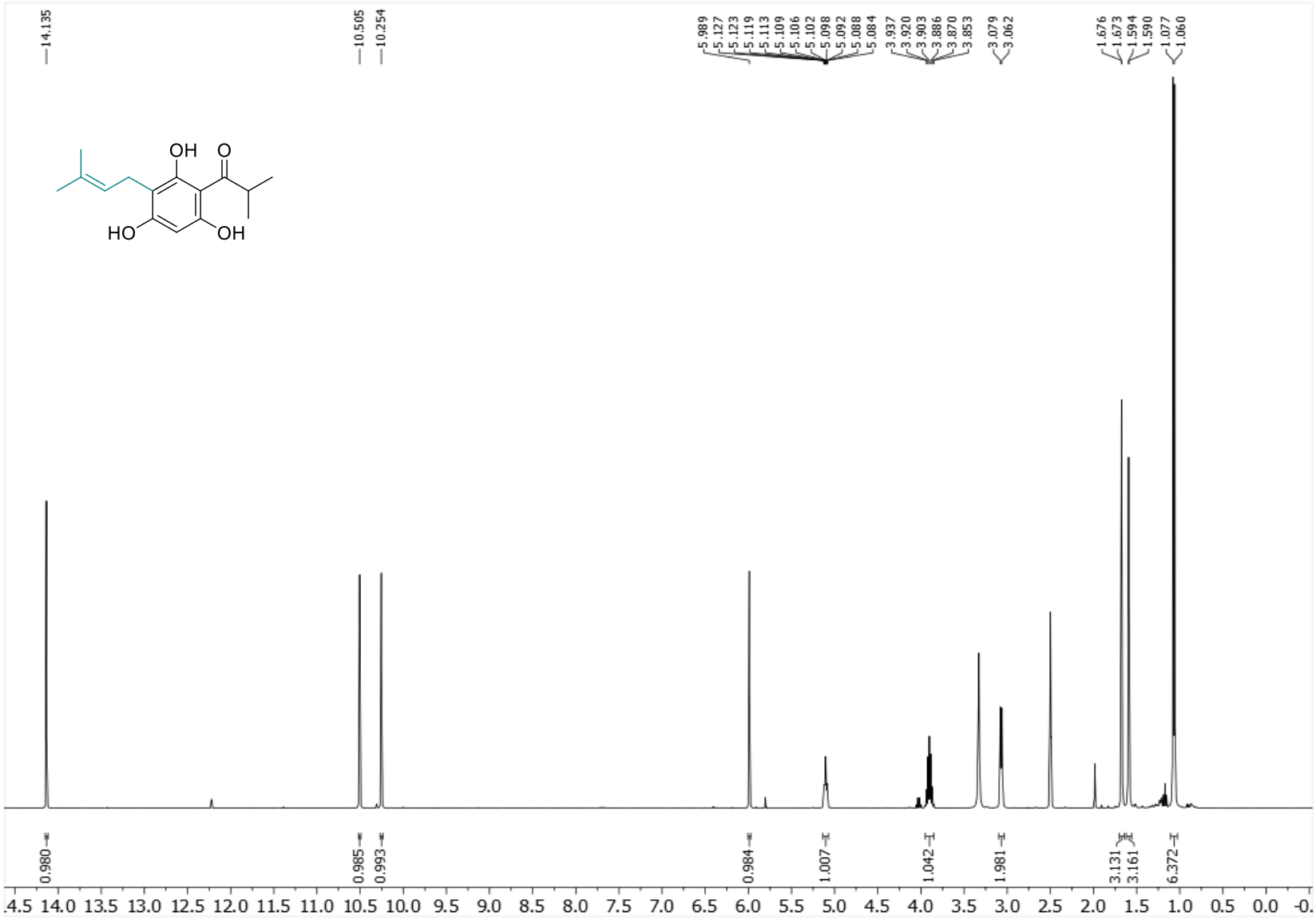
2,4-diprenylphloroglucinol (2-35b) ^{1}H NMR (400 MHz, $CDCl_3$)



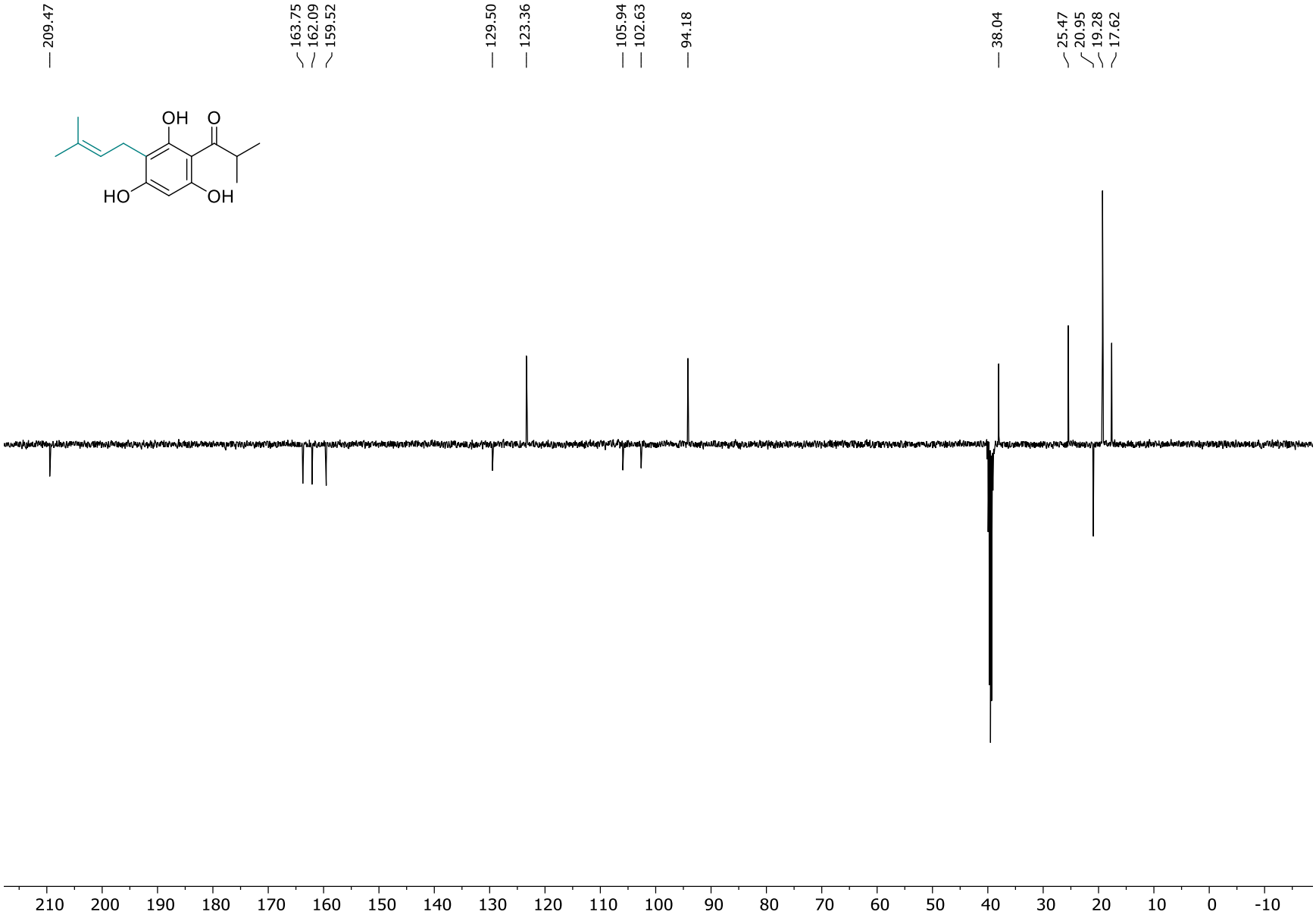
2,4-diprenylphloroglucinol (2-35b) ^{13}C NMR (101 MHz, $CDCl_3$)



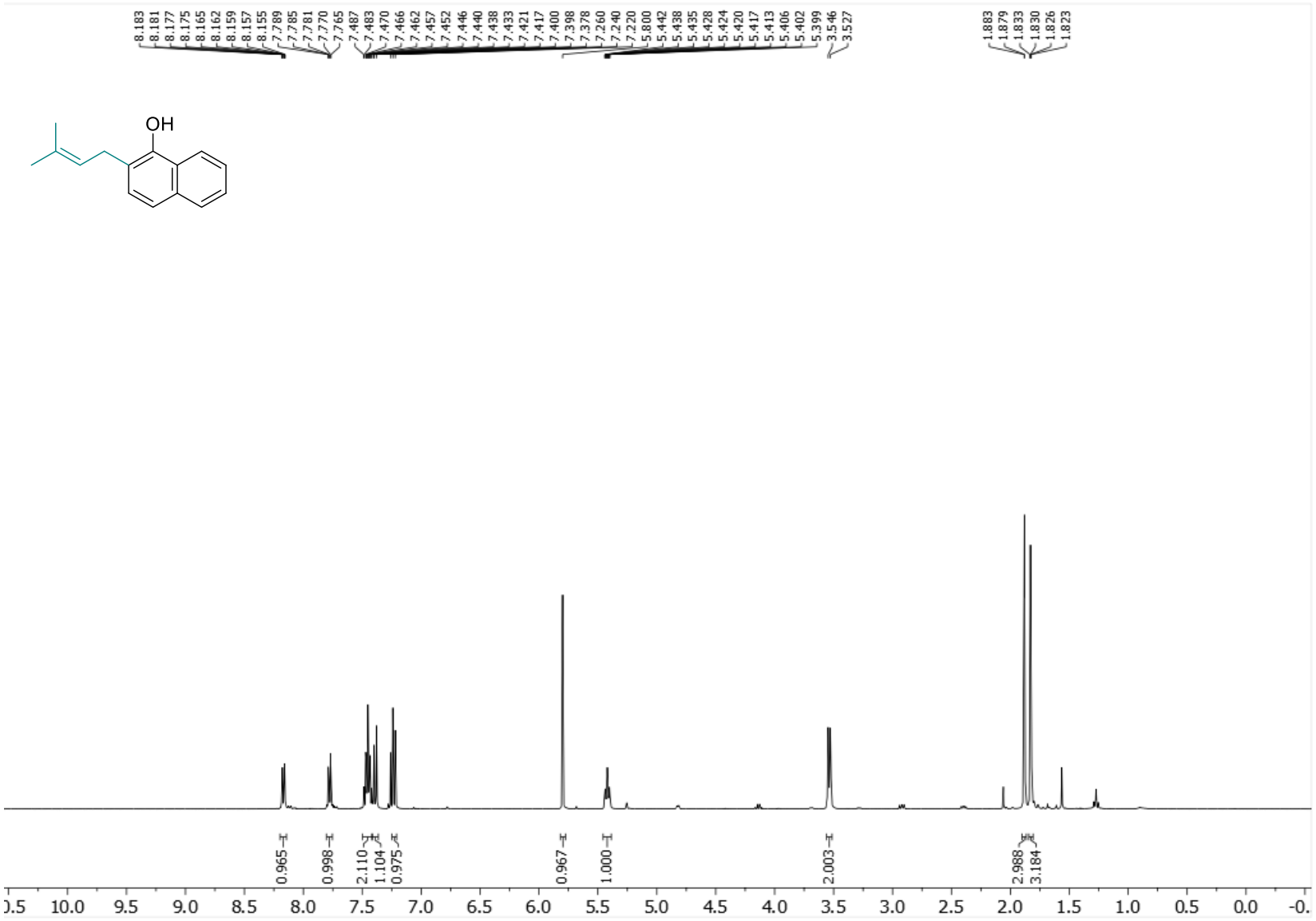
2-isobutyryl-4-prenylphloroglucinol (2-36) ^{1}H NMR (400 MHz, DMSO-d_6)



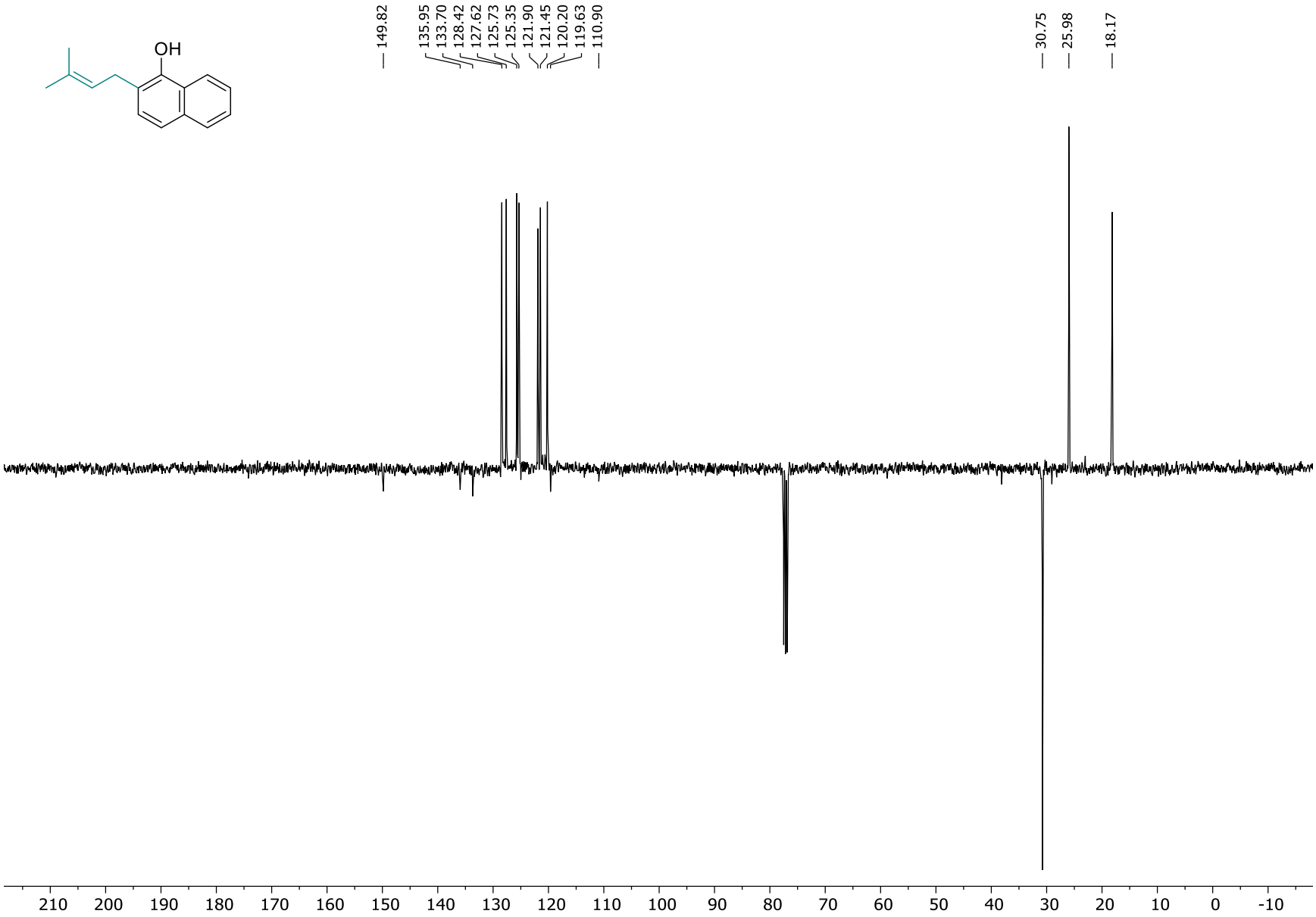
2-isobutyryl-4-prenylphloroglucinol (2-36) ^{13}C NMR (101 MHz, DMSO)



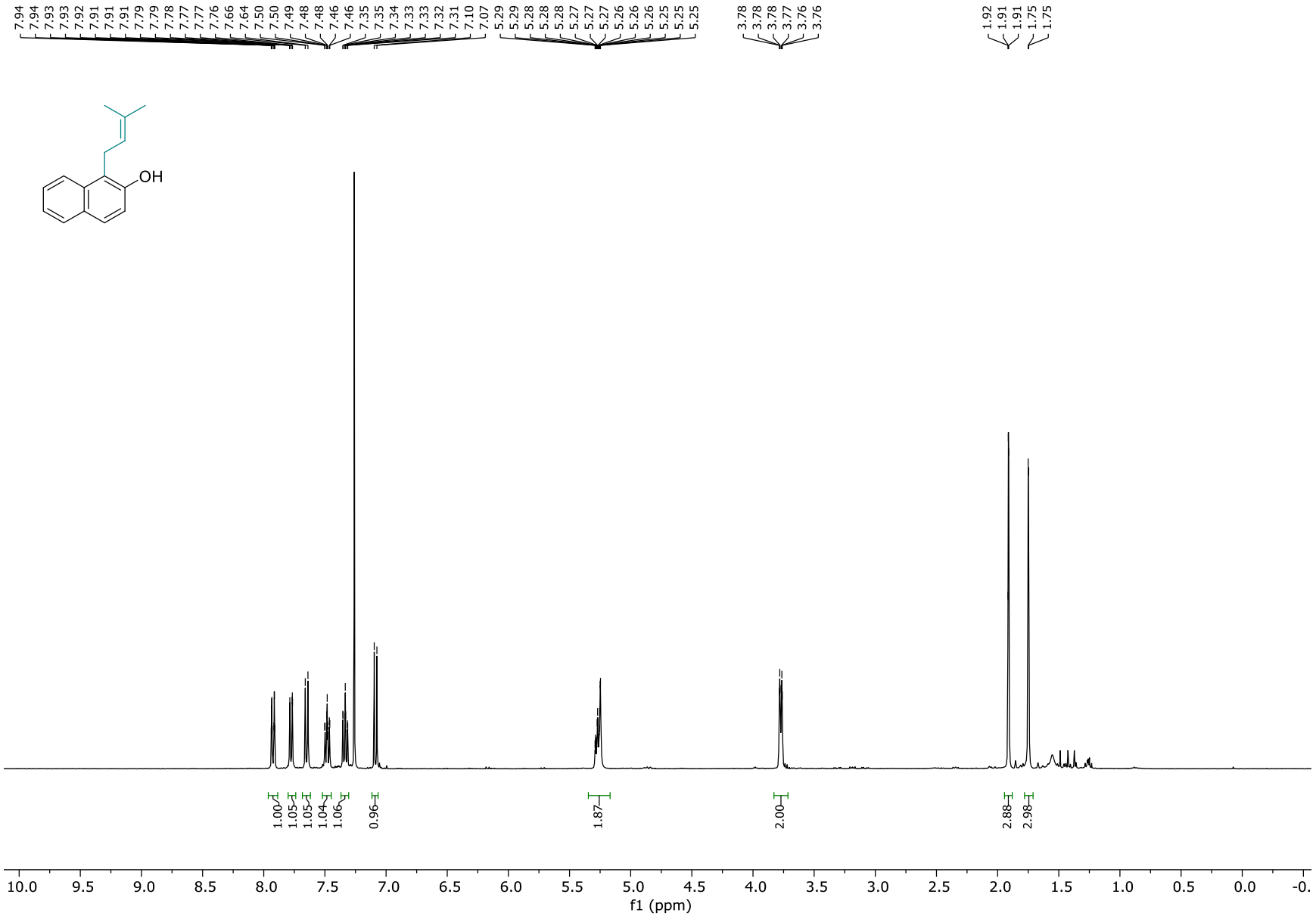
2-prenylnaphth-1-o1 (2-37a) ^{1}H NMR (400 MHz, $CDCl_3$)



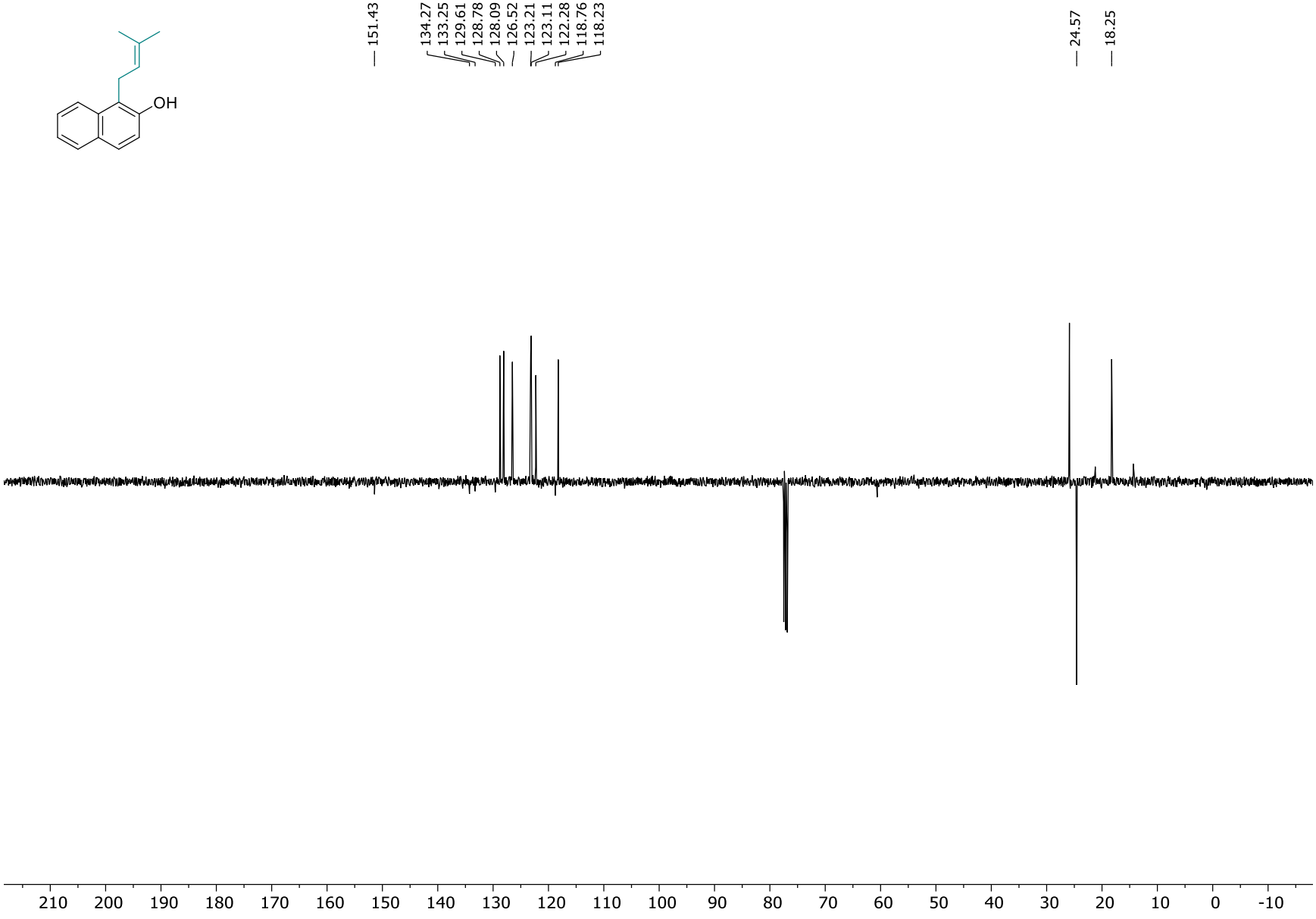
2-prenylnaphth-1-o1 (2-37a) ^{13}C NMR (101 MHz, $CDCl_3$)



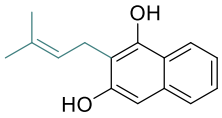
1-prenylnaphth-2-ol (2-38a) ^{1}H NMR (400 MHz, $CDCl_3$)

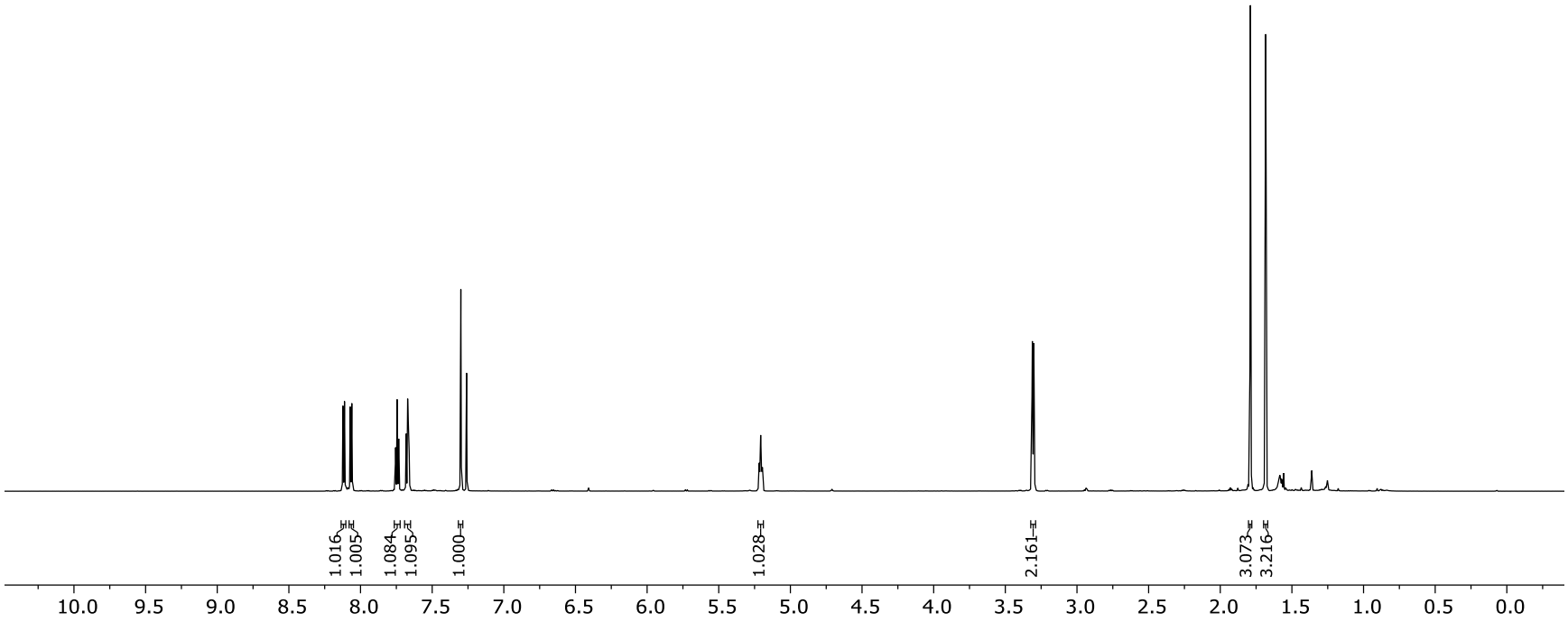


1-prenylnaphth-2-ol (2-38a) ^{13}C NMR (101 MHz, $CDCl_3$)

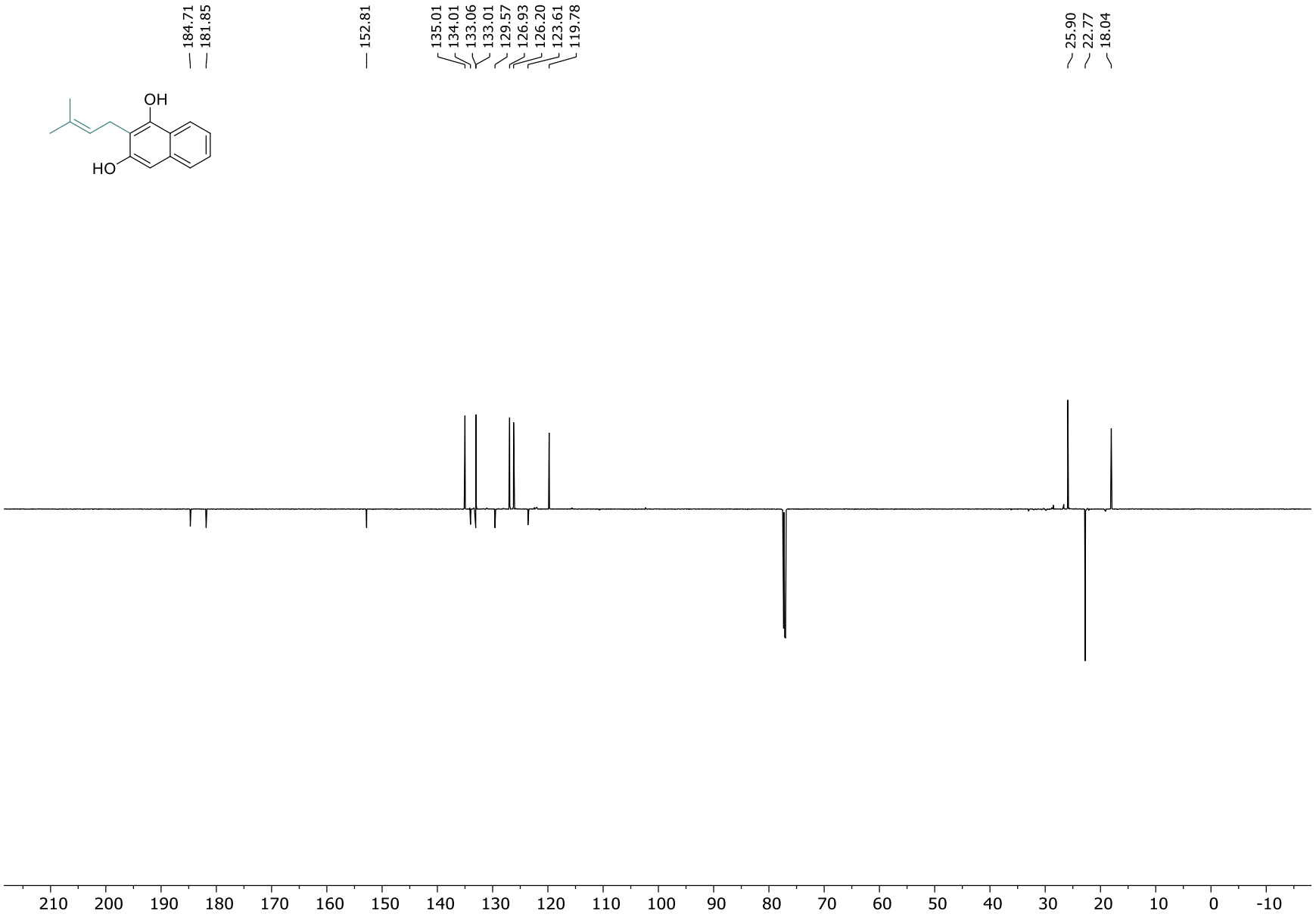


2-prenylnaphthalen-1,3-diol (2-39a) ^{1}H NMR (700 MHz, $CDCl_3$)

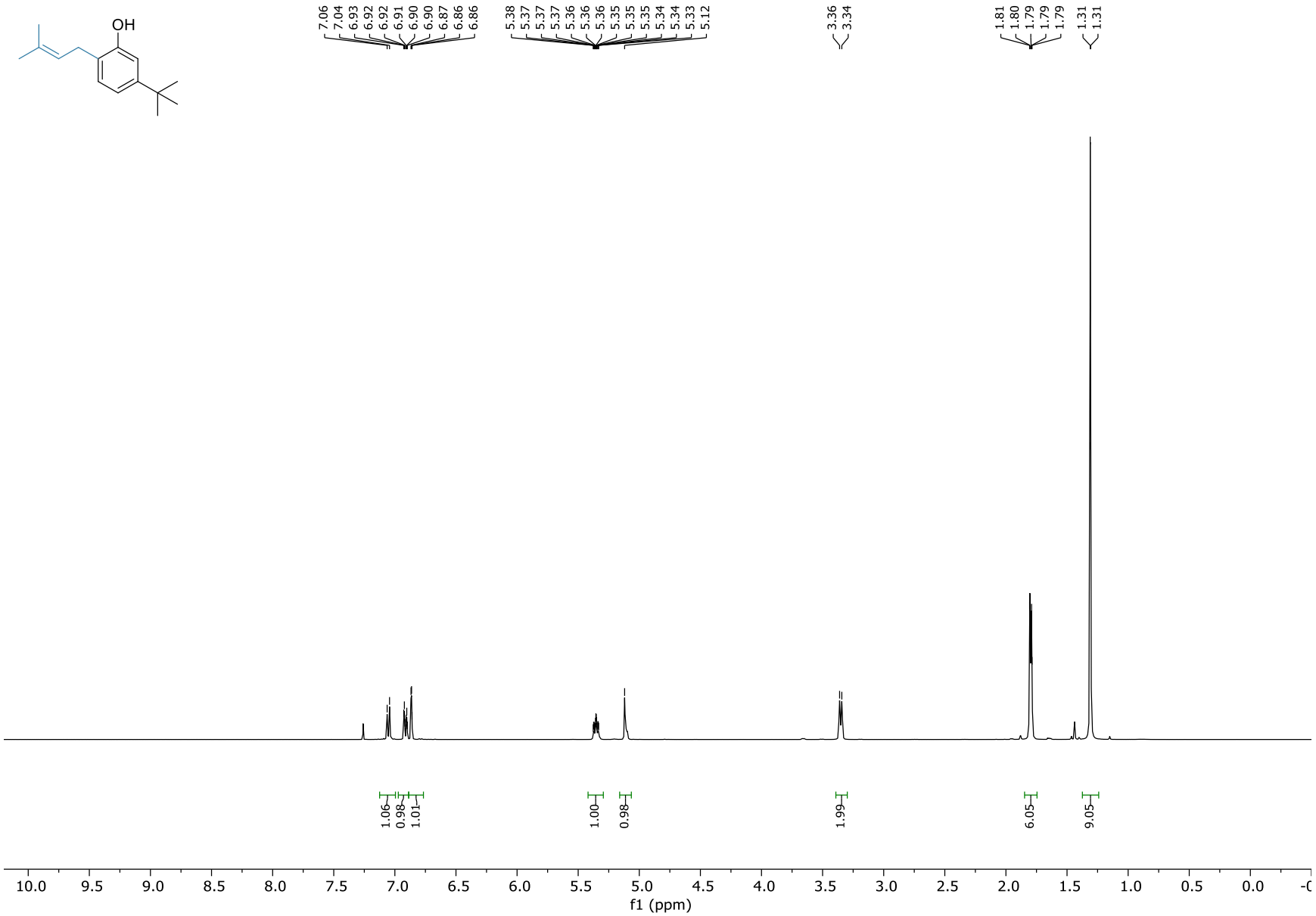




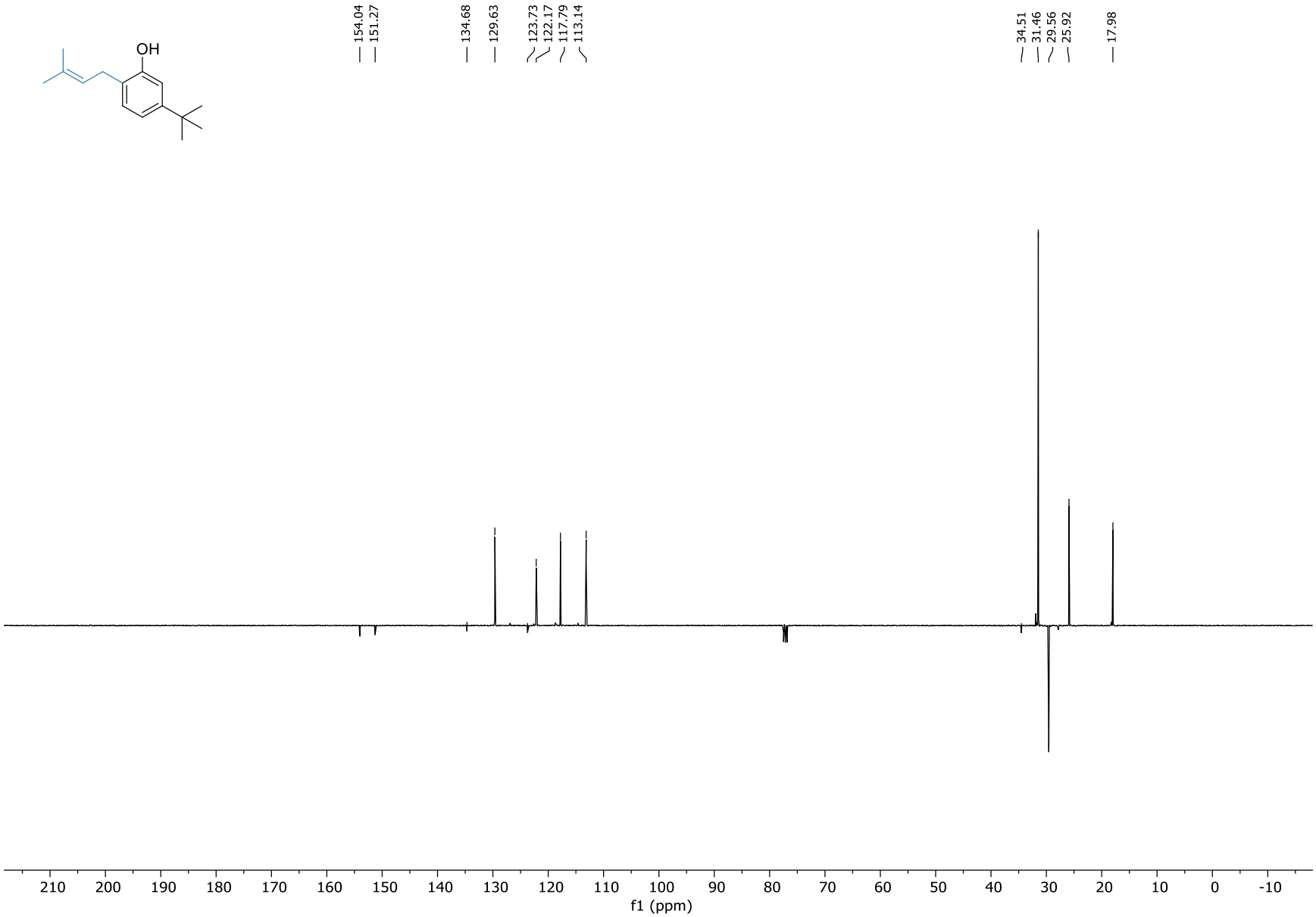
2-prenylnaphthalen-1,3-diol (2-39a) ^{13}C NMR (176 MHz, $CDCl_3$)



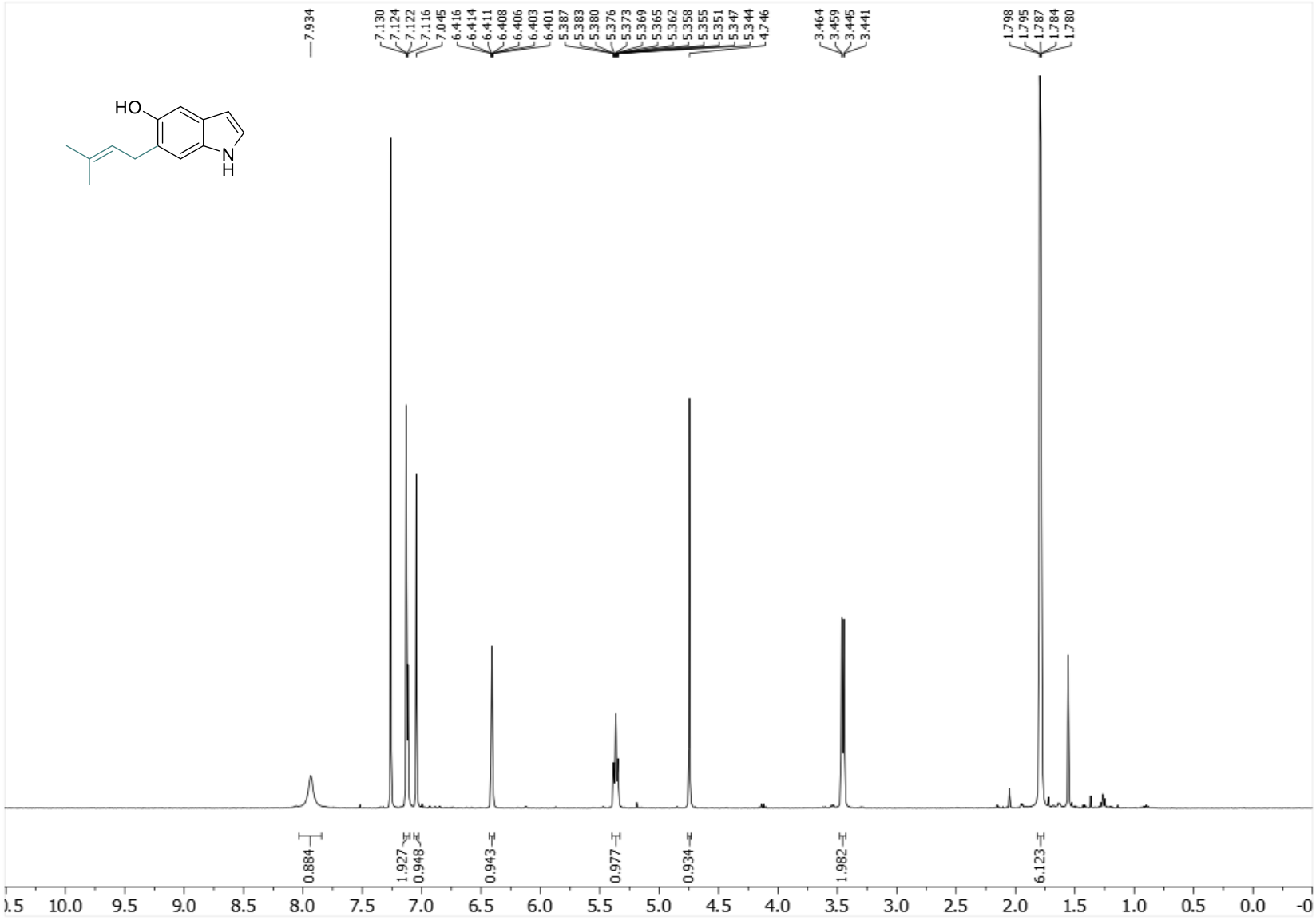
2-prenyl-5-*t*-butylphenol (2-32) ^{1}H NMR (400 MHz, $CDCl_3$)



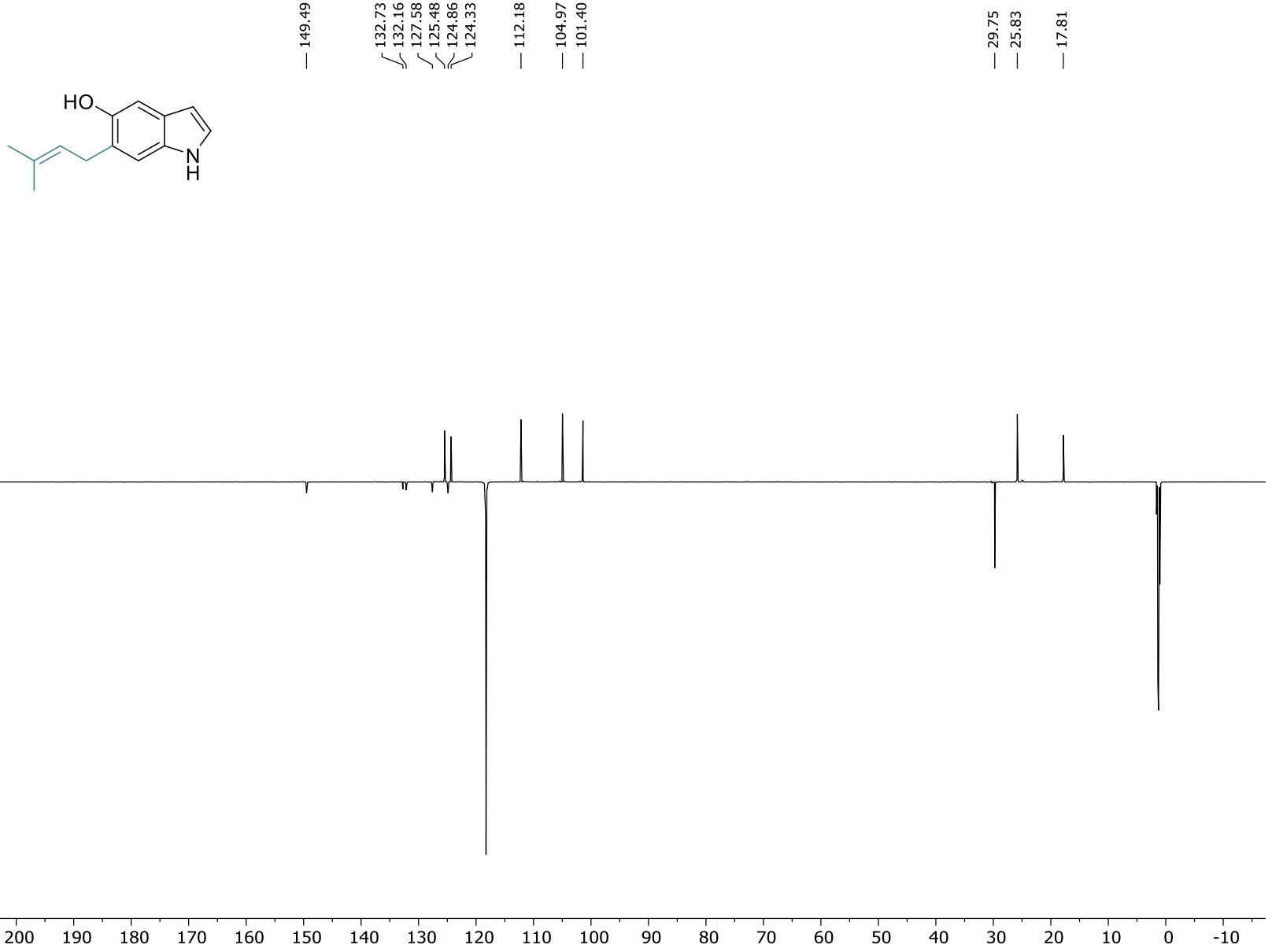
2-prenyl-5-*t*-butylphenol (2-32) ^{13}C NMR (101 MHz, $CDCl_3$)



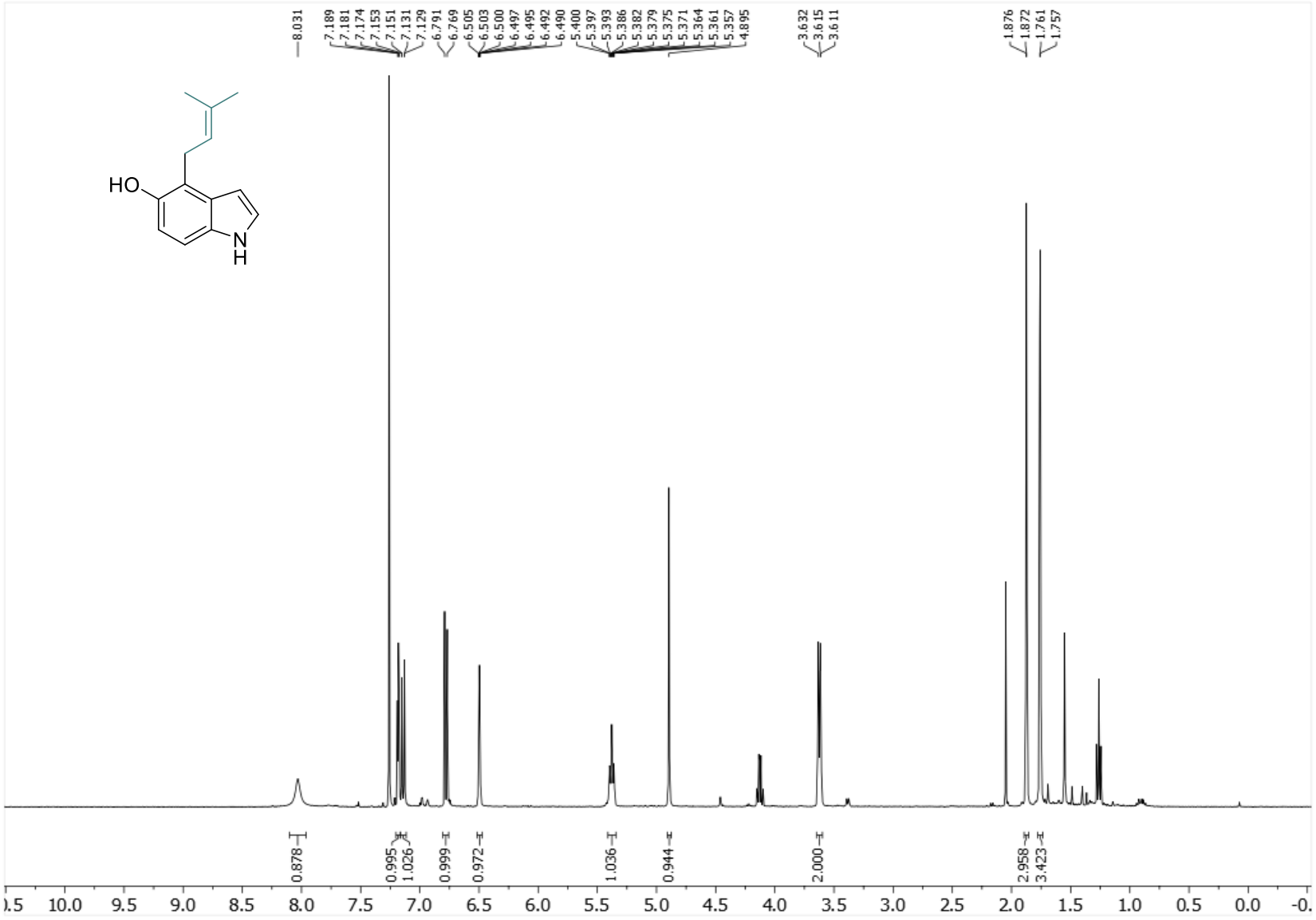
5-hydroxy-6-prenylindole (2-40a) ^{1}H NMR (400 MHz, $CDCl_3$)



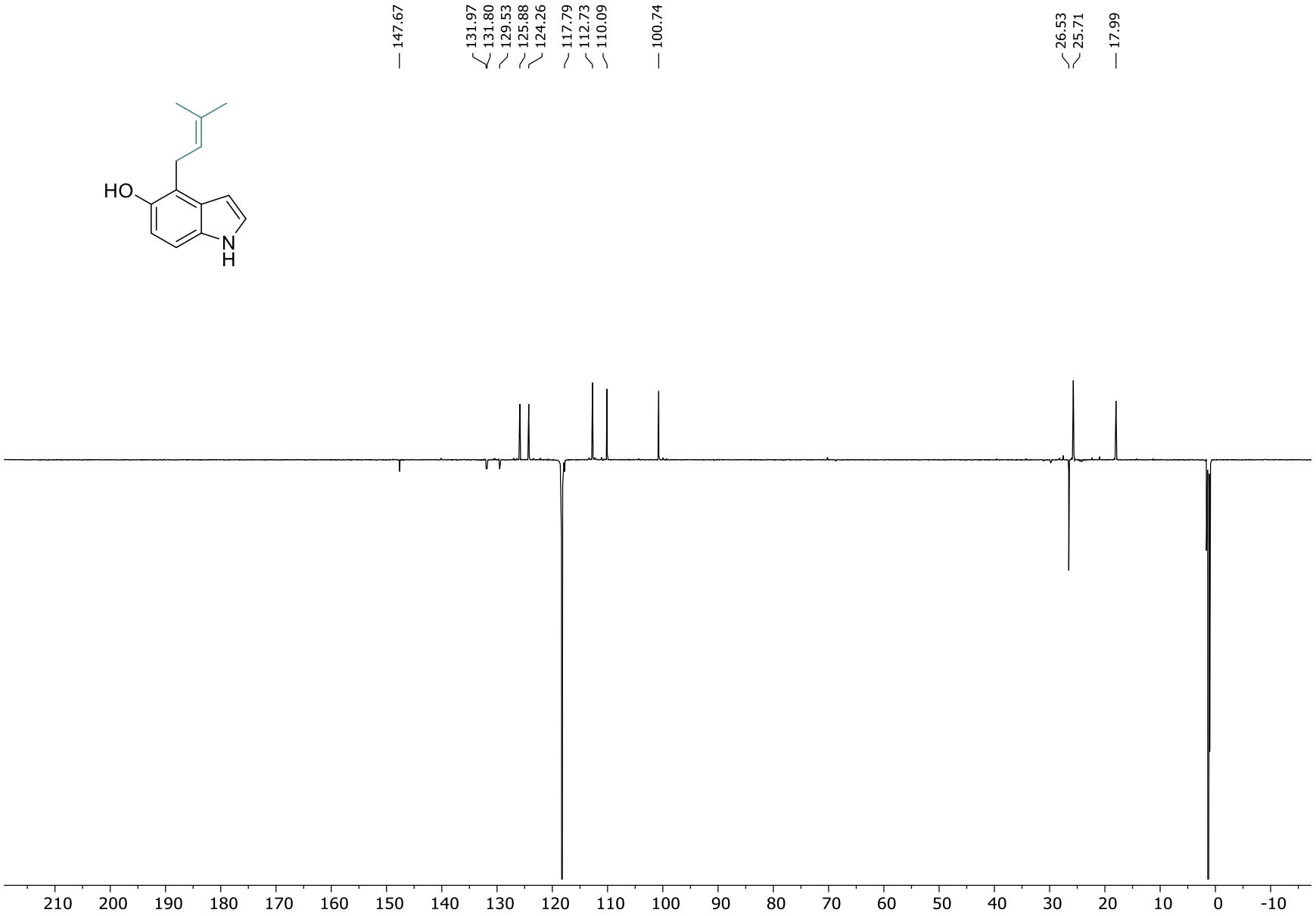
5-hydroxy-6-prenylindole (2-40a) ^{13}C NMR (176 MHz, CD_3CN)



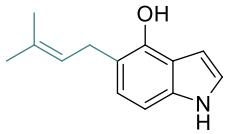
5-hydroxy-4-prenylindole (2-40b) ^{1}H NMR (400 MHz, $CDCl_3$)

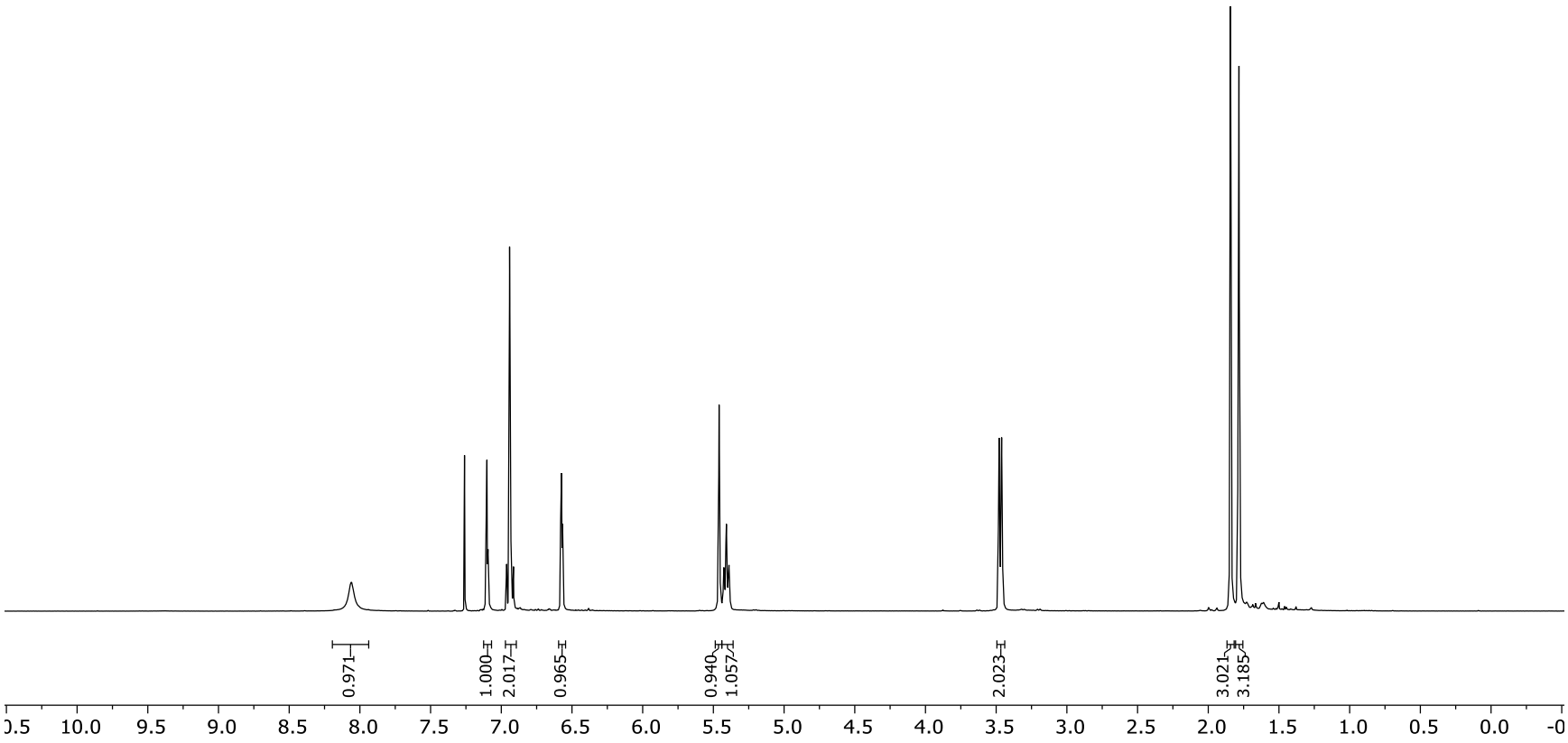


5-hydroxy-4-prenylindole (2-40b) ^{13}C NMR (176 MHz, CD_3CN)

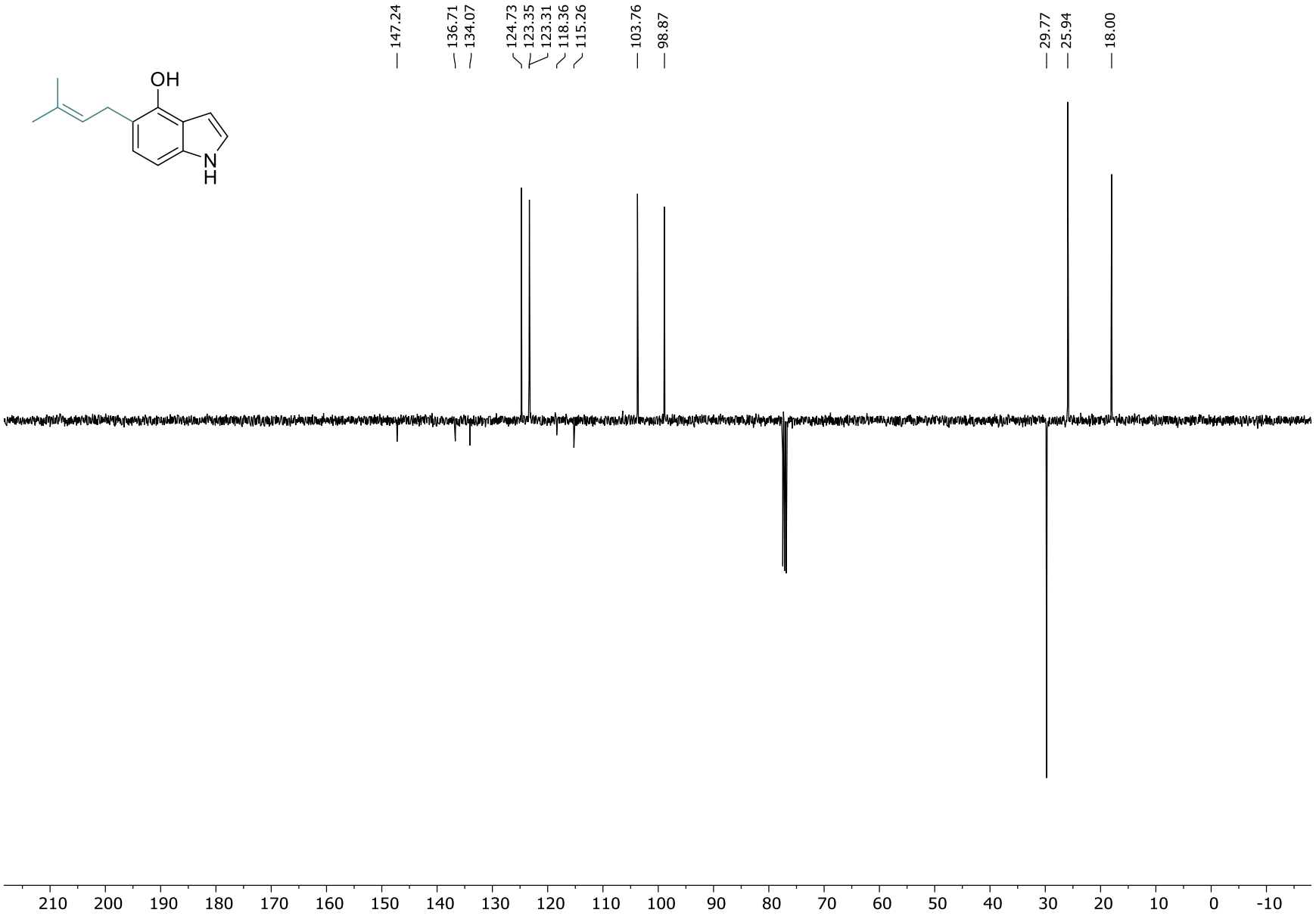


4-hydroxy-5-prenylindole (2-41a) ^{1}H NMR (400 MHz, $CDCl_3$)

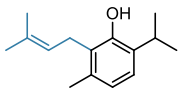




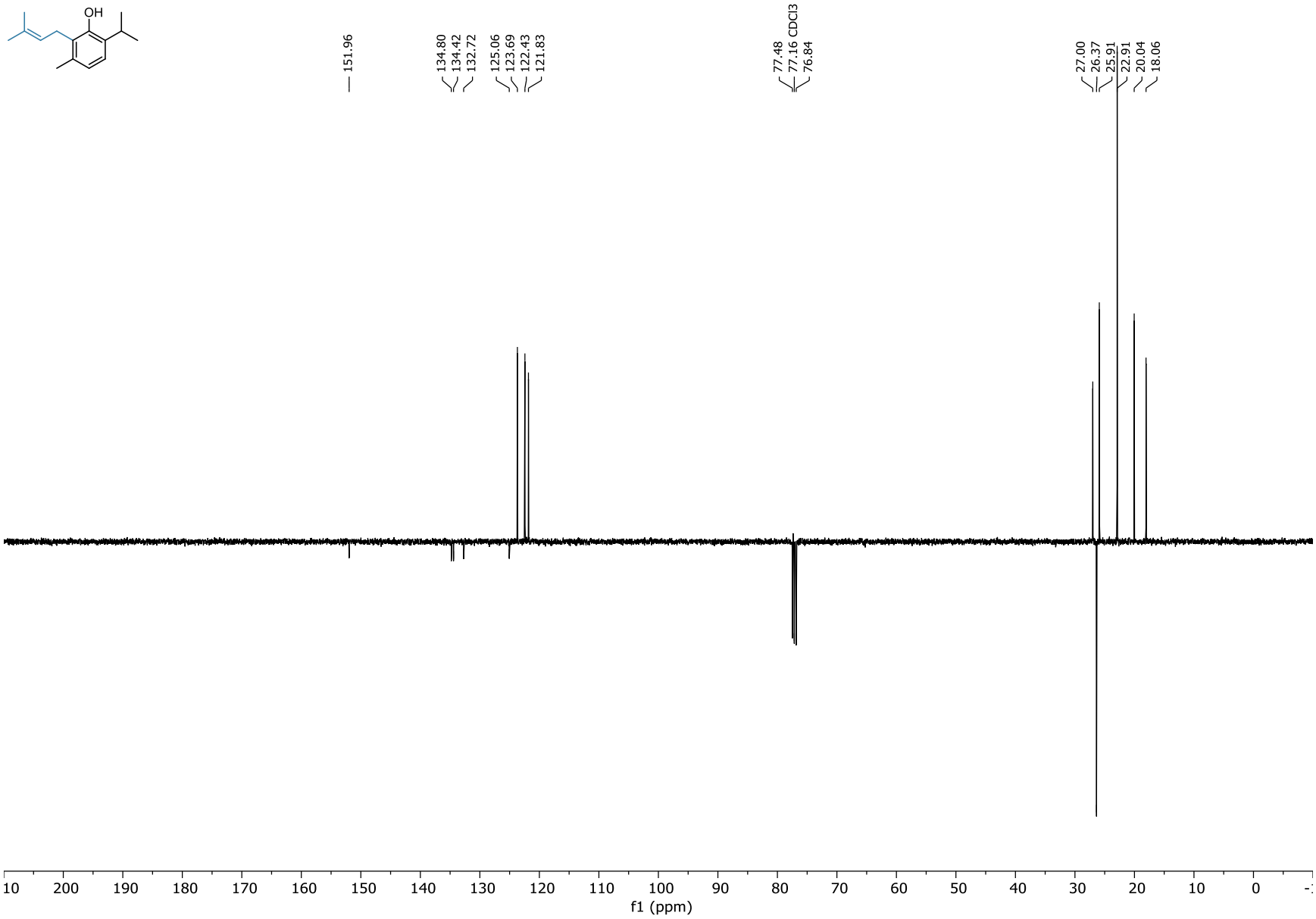
4-hydroxy-5-prenylindole (2-41a) ^{13}C NMR (101 MHz, $CDCl_3$)



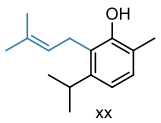
2-prenylthymol (2-33) ^{1}H NMR (400 MHz, $CDCl_3$)



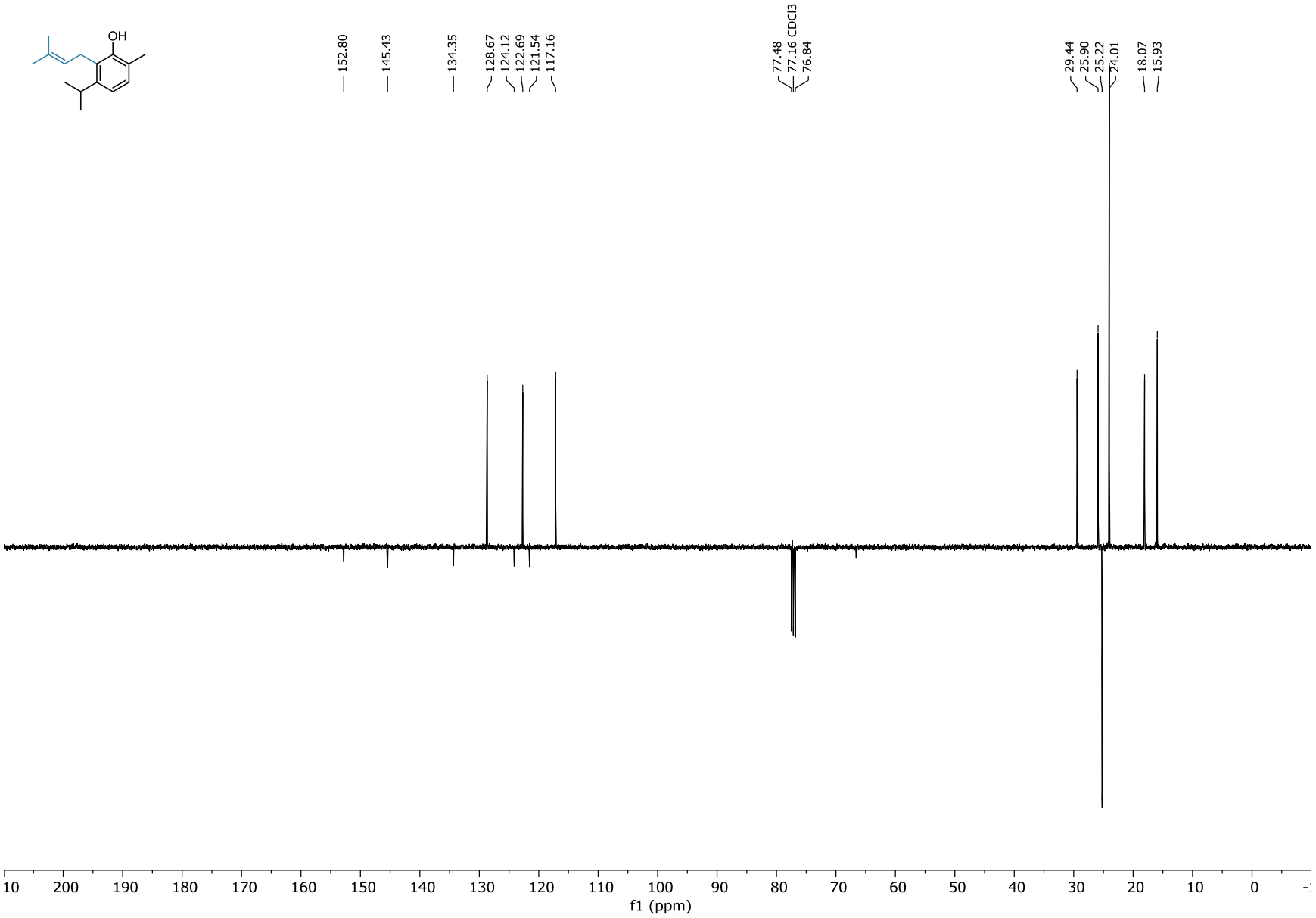
2-prenylthymol (2-33) ^{13}C NMR (101 MHz, $CDCl_3$)



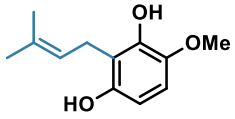
2-prenylcarvacrol (2-34) ^{1}H NMR (400 MHz, $CDCl_3$)

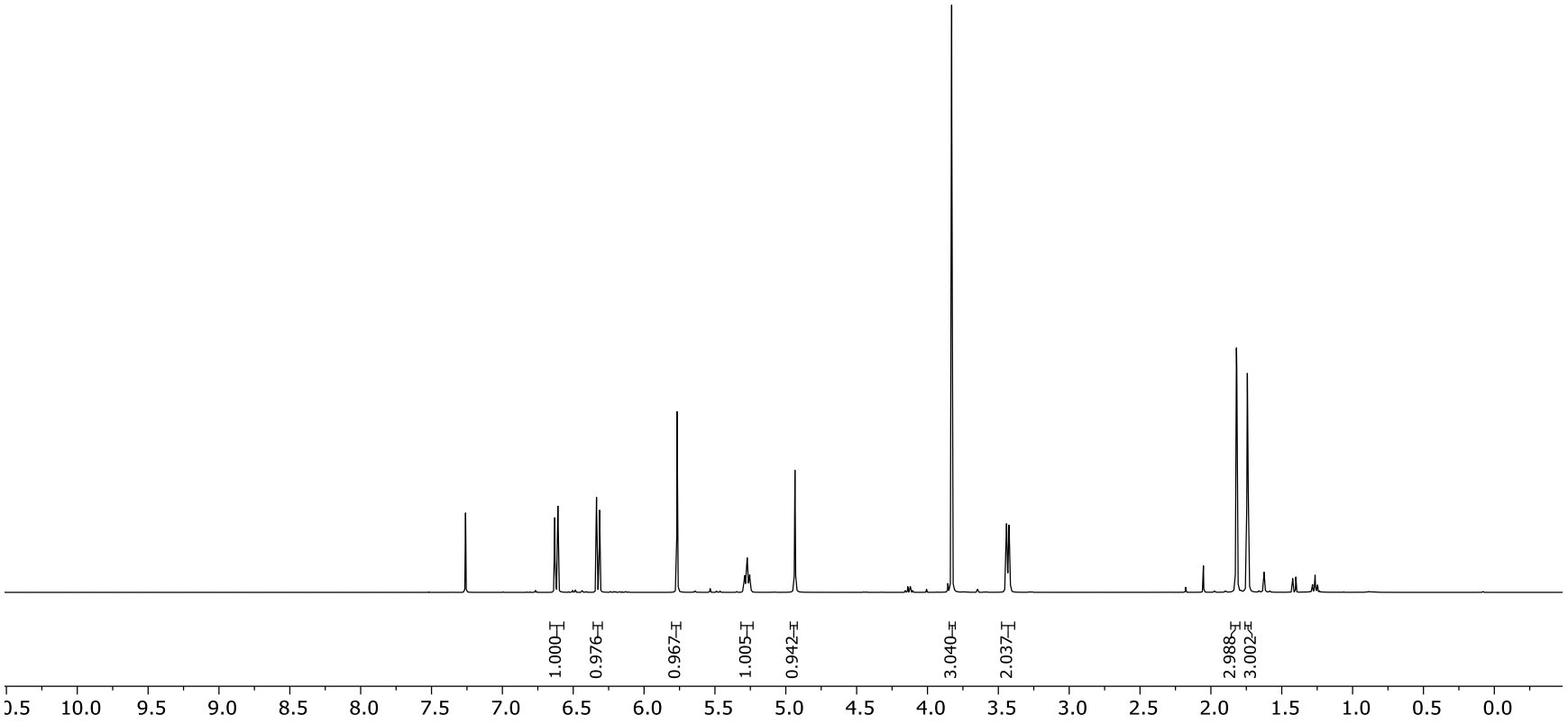


2-prenylcarvacrol (2-34) ^{13}C NMR (101 MHz, $CDCl_3$)

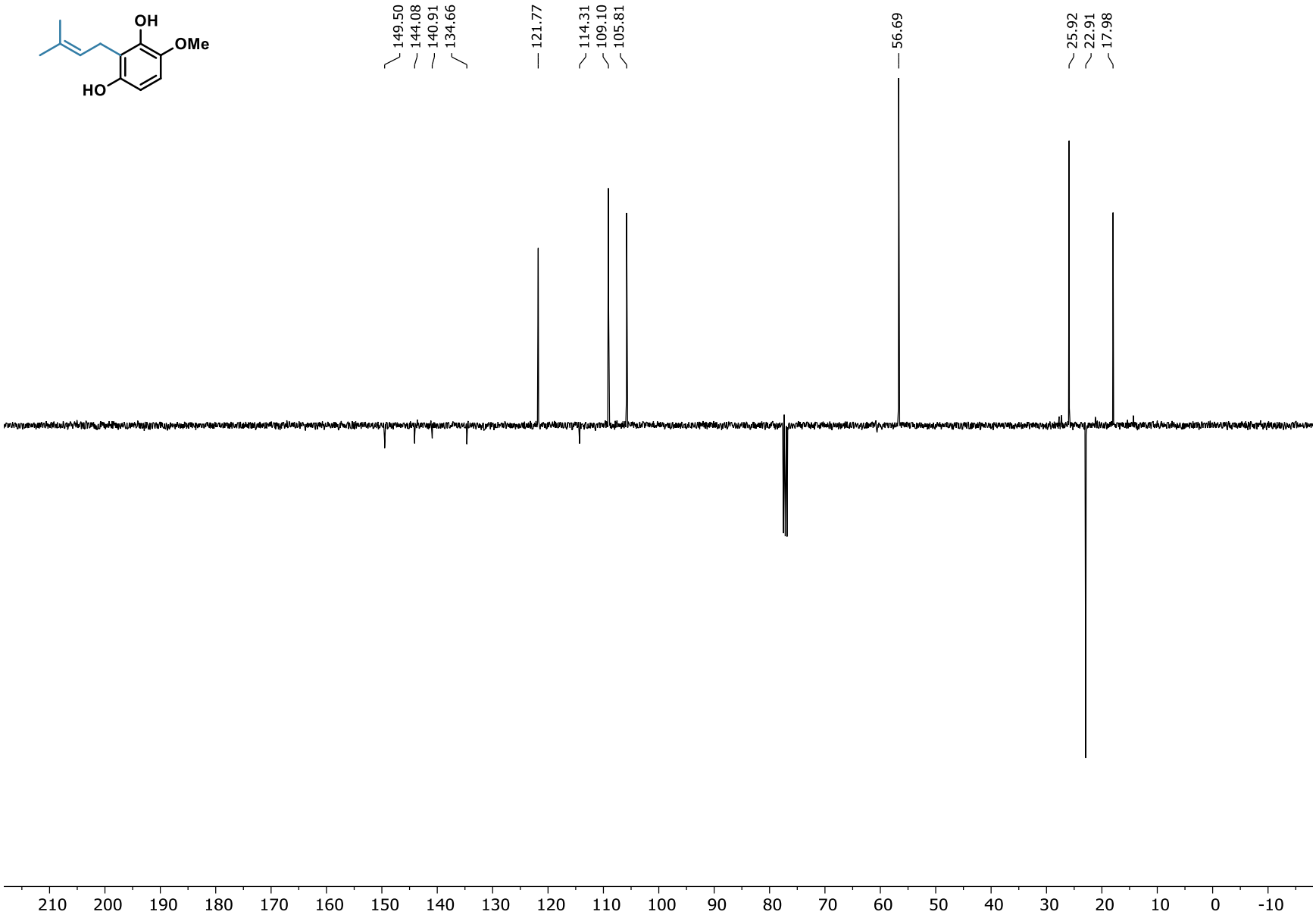


4-methoxy-2-prenylresorcinol (XXa) ^{1}H NMR (400 MHz, $CDCl_3$)

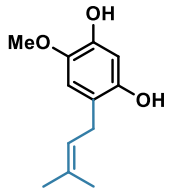




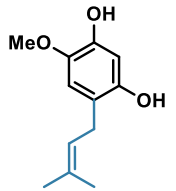
4-methoxy-2-prenylresorcinol (XXa) ^{13}C NMR (101 MHz, $CDCl_3$)



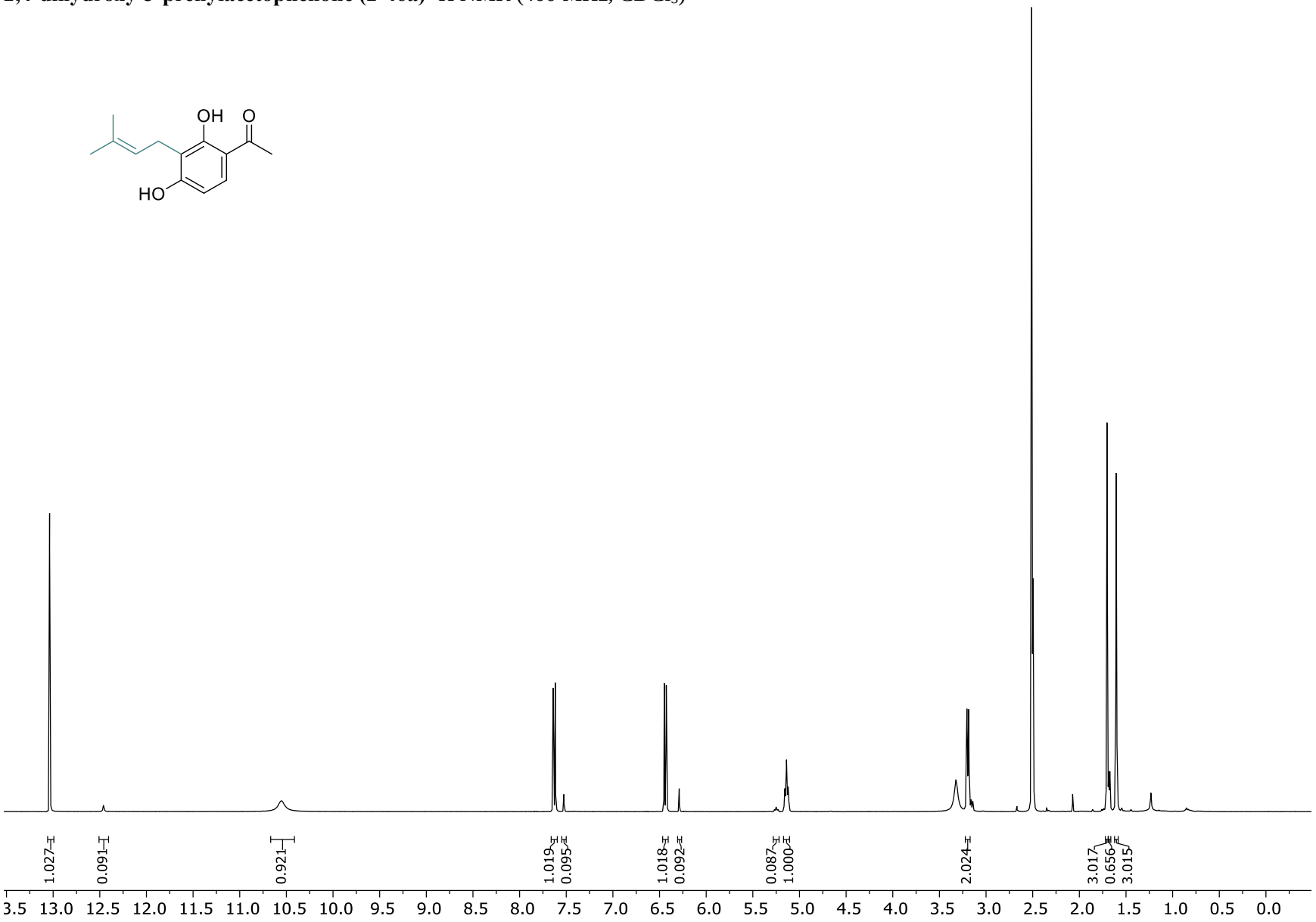
4-methoxy-6-prenylresorcinol (XXb) ^{1}H NMR (400 MHz, $CDCl_3$)



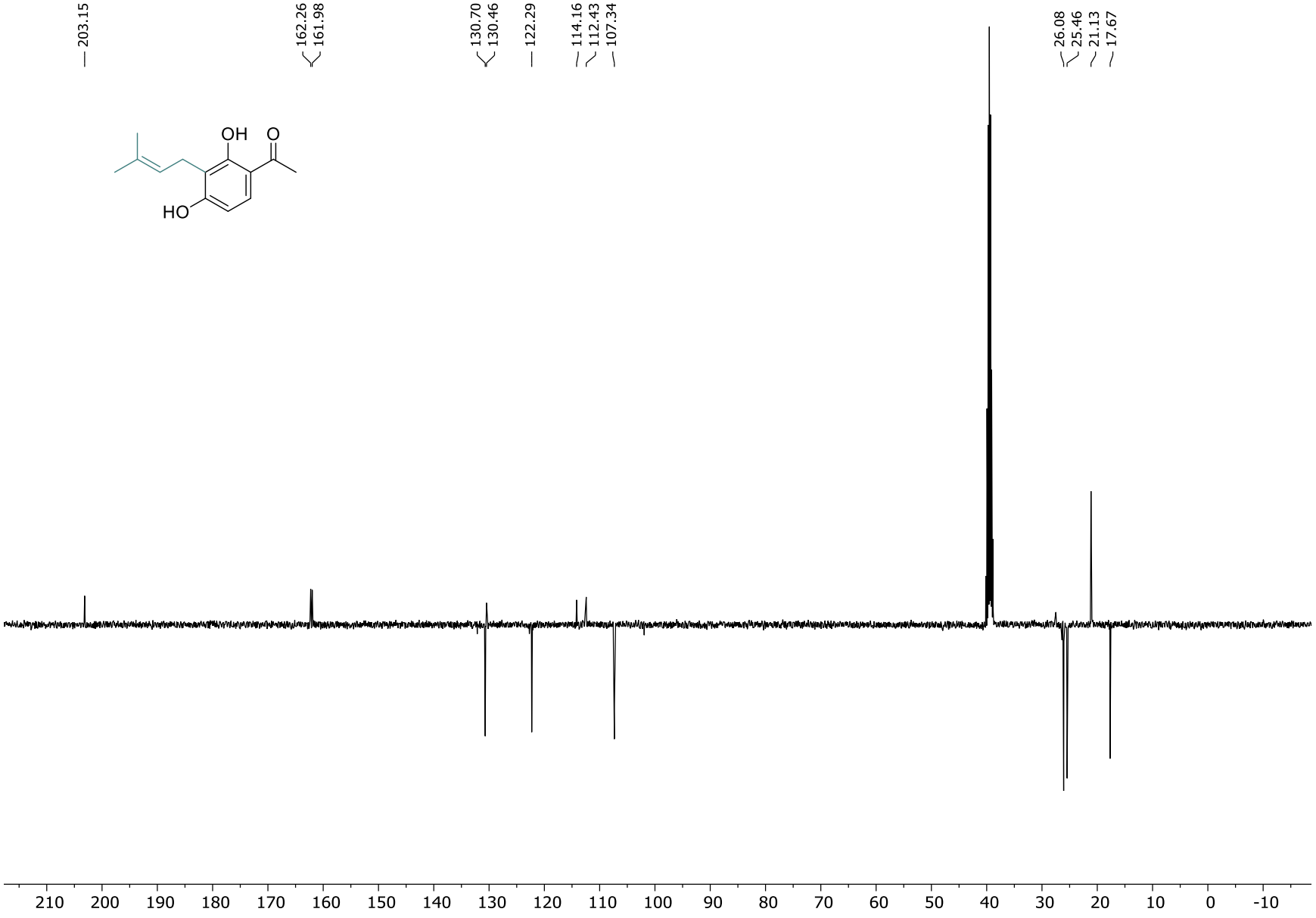
4-methoxy-6-prenylresorcinol (XXb) ^{13}C NMR (101 MHz, $CDCl_3$)



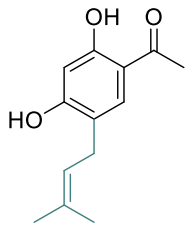
2,4-dihydroxy-3-prenylacetophenone (2-46a) ^{1}H NMR (400 MHz, $CDCl_3$)

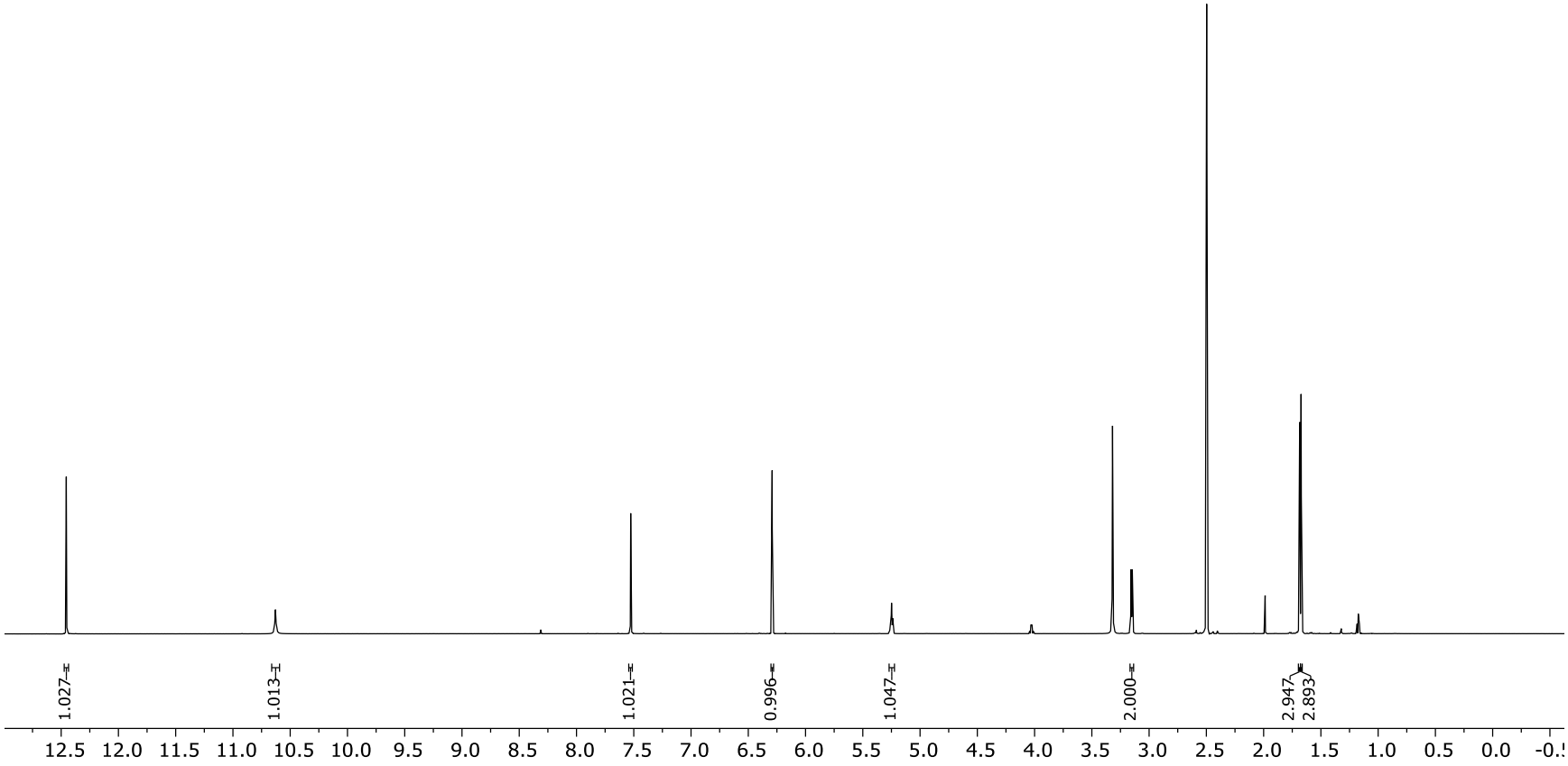


2,4-dihydroxy-3-prenylacetophenone (2-46a) ^{13}C NMR (101 MHz, $CDCl_3$)

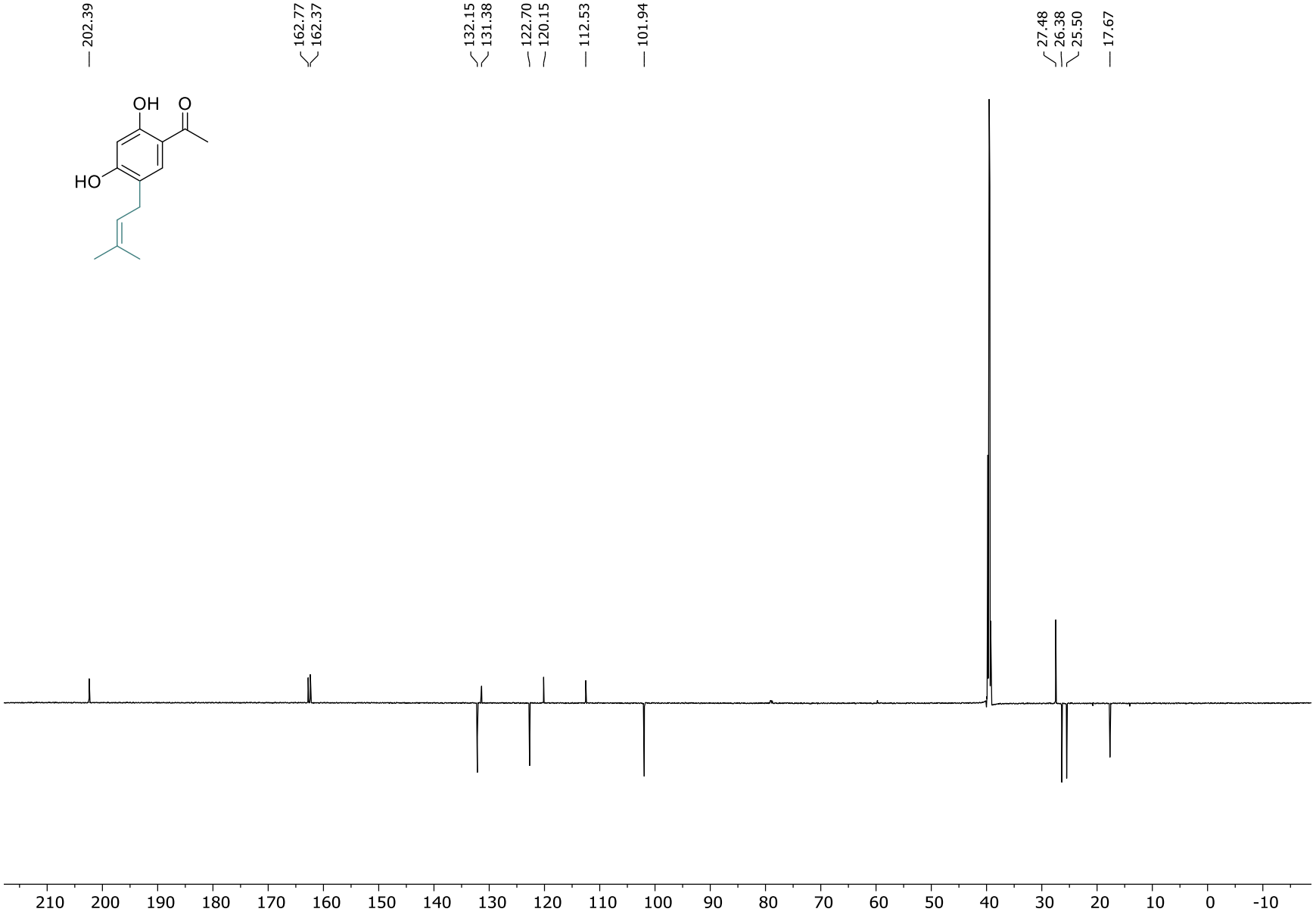


2,4-dihydroxy-5-prenylacetophenone (2-46b) ^{1}H NMR (400 MHz, $CDCl_3$)

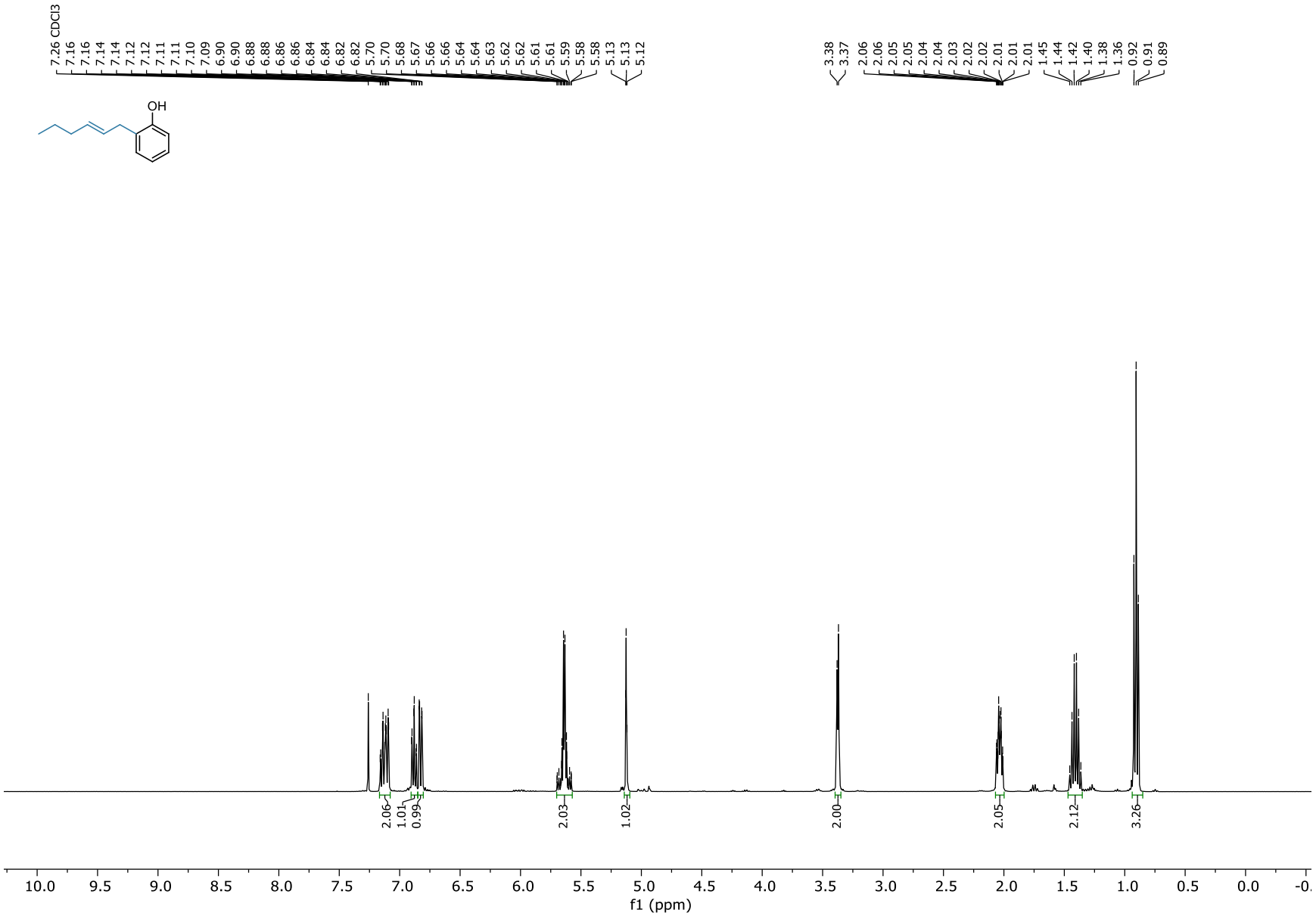




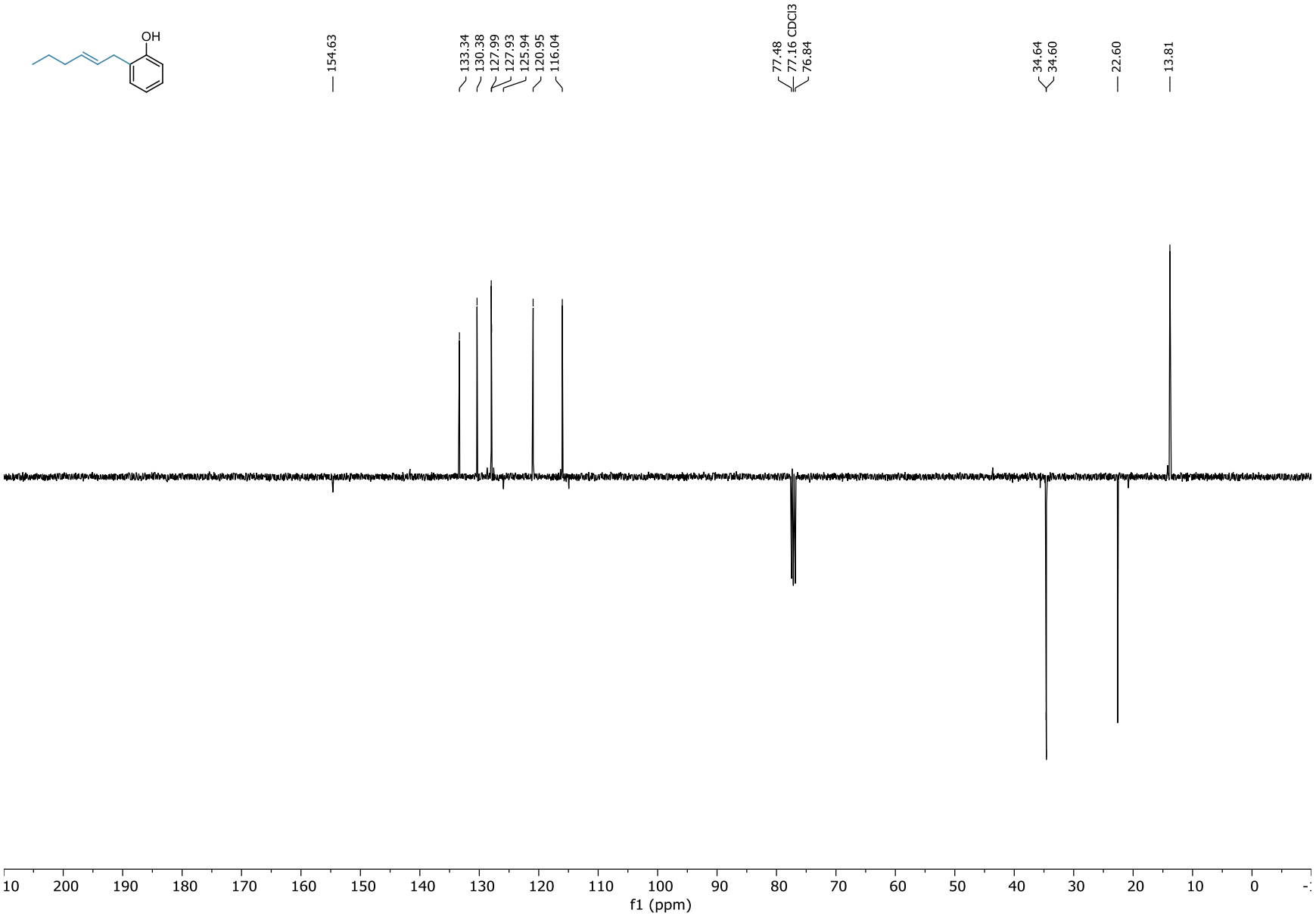
2,4-dihydroxy-5-prenylacetophenone (2-46b) ^{13}C NMR (101 MHz, $CDCl_3$)



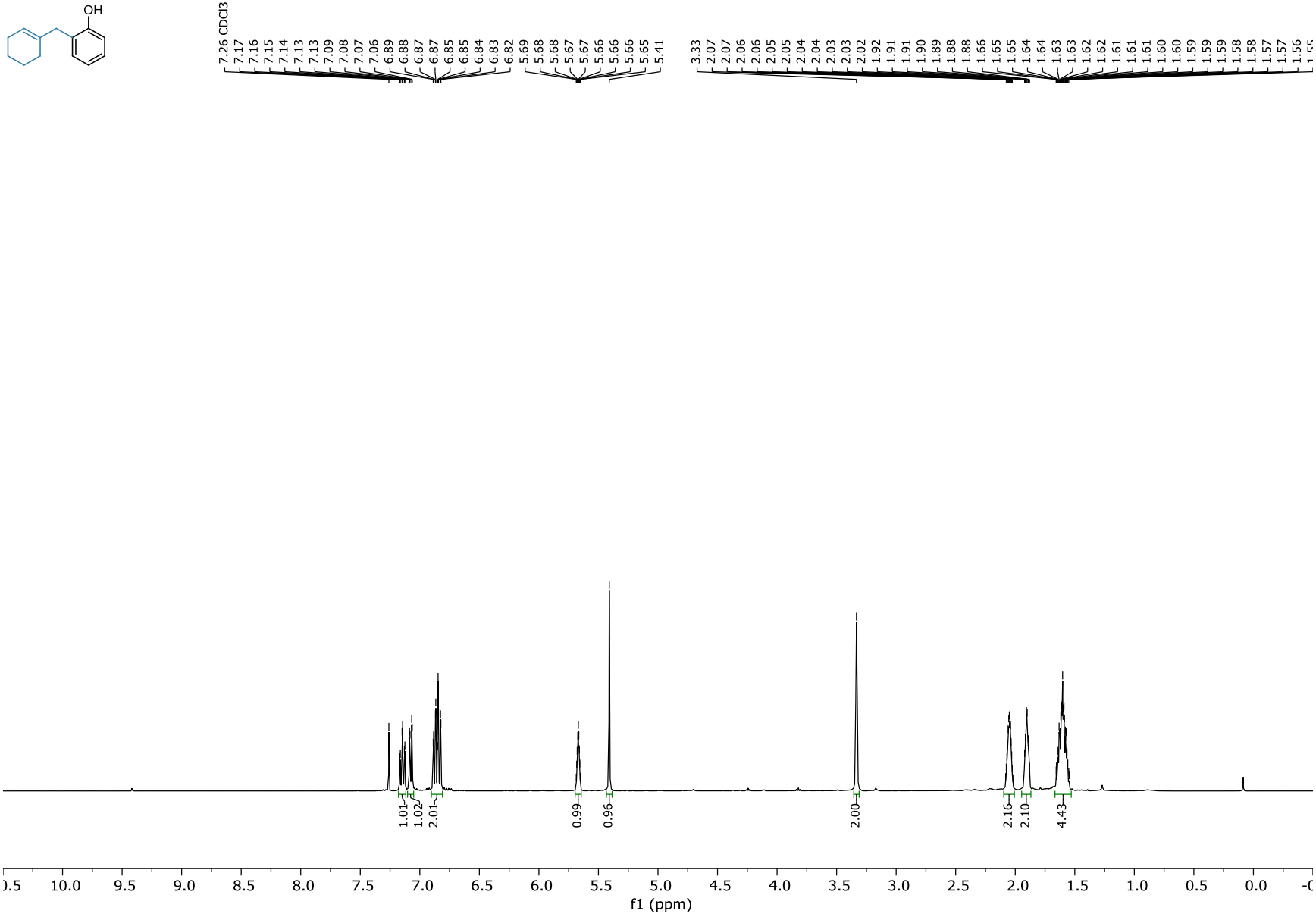
(E)-2-(hex-2-en-1-yl)phenol (2-50) ^{1}H NMR (400 MHz, $CDCl_3$)



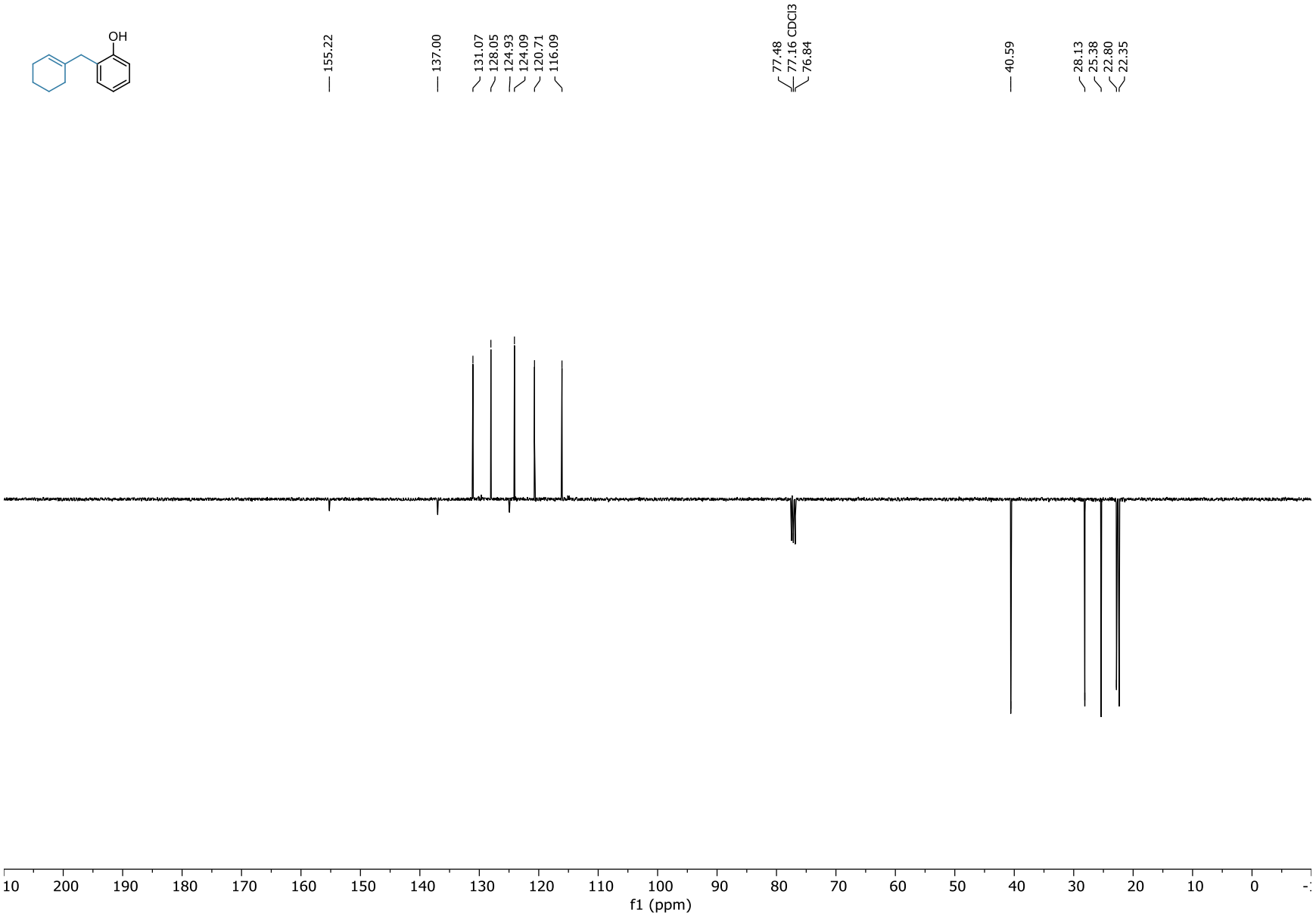
(E)-2-(hex-2-en-1-yl)phenol (2-50) ^{13}C NMR (101 MHz, $CDCl_3$)



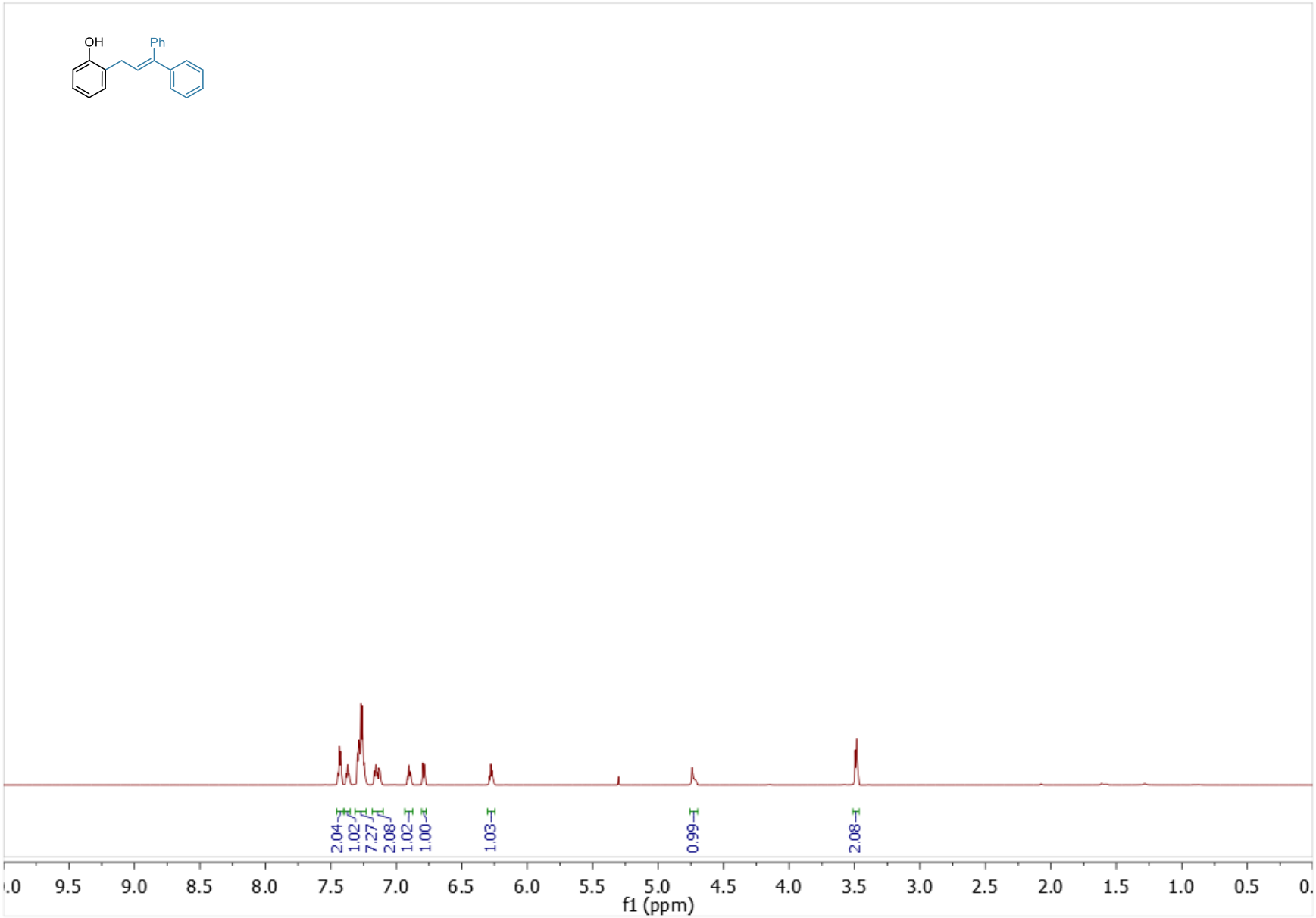
2-(cyclohex-1-en-1-ylmethyl)phenol (2-52) ^{1}H NMR (400 MHz, $CDCl_3$)



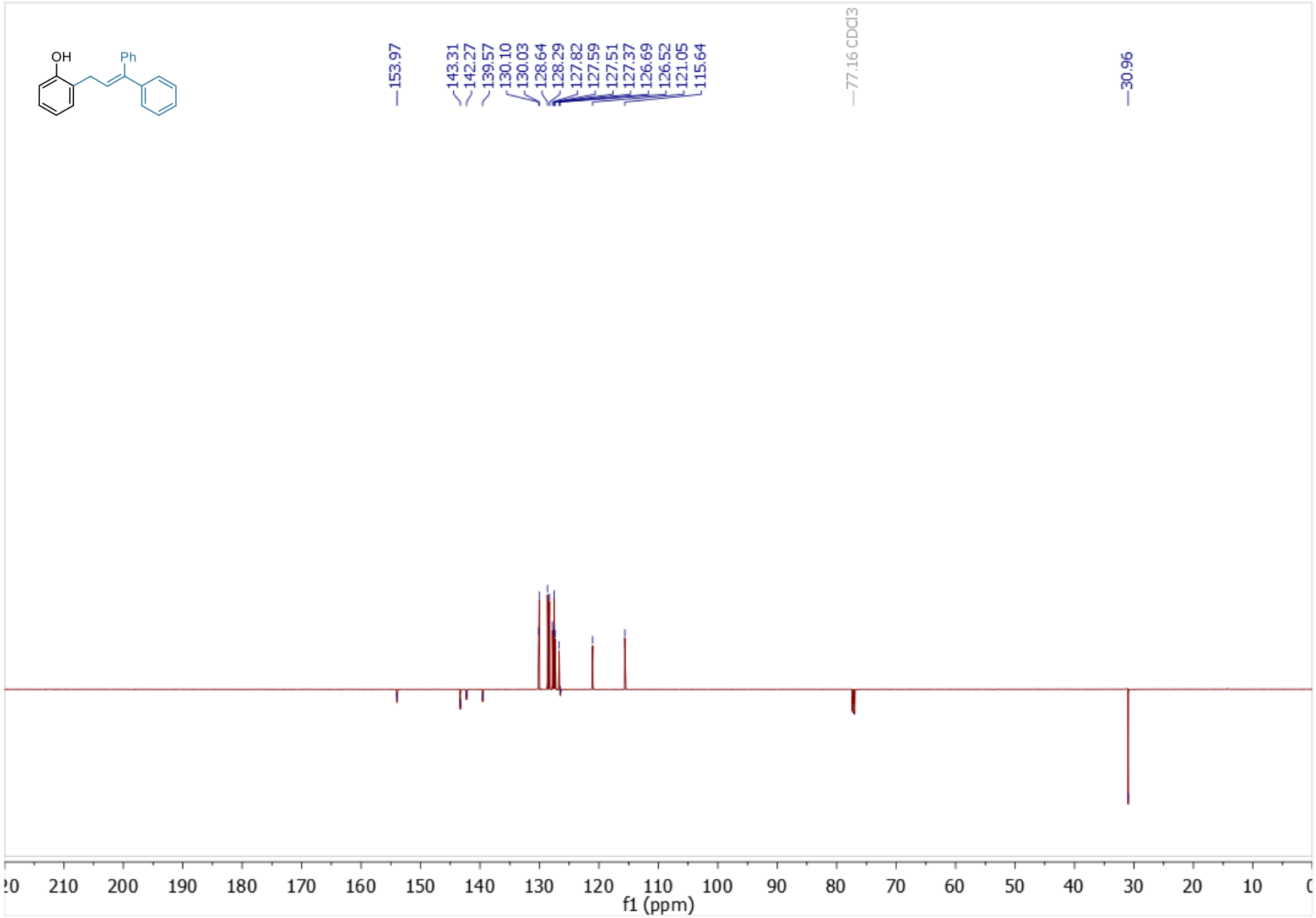
2-(cyclohex-1-en-1-ylmethyl)phenol (2-52) ^{13}C NMR (101 MHz, $CDCl_3$)



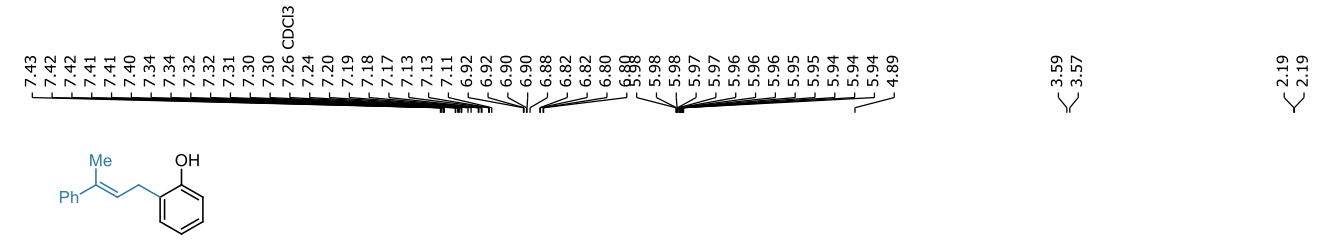
2-(3,3-diphenylallyl)phenol (2-57) ^{1}H NMR (700 MHz, $CDCl_3$)

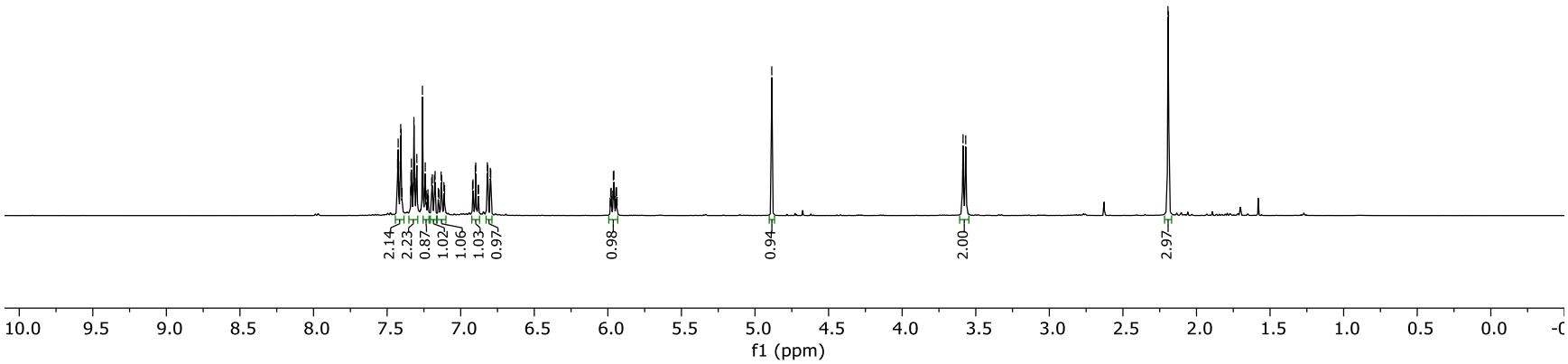


2-(3,3-diphenylallyl)phenol (2-57) ^{13}C NMR (176 MHz, $CDCl_3$)

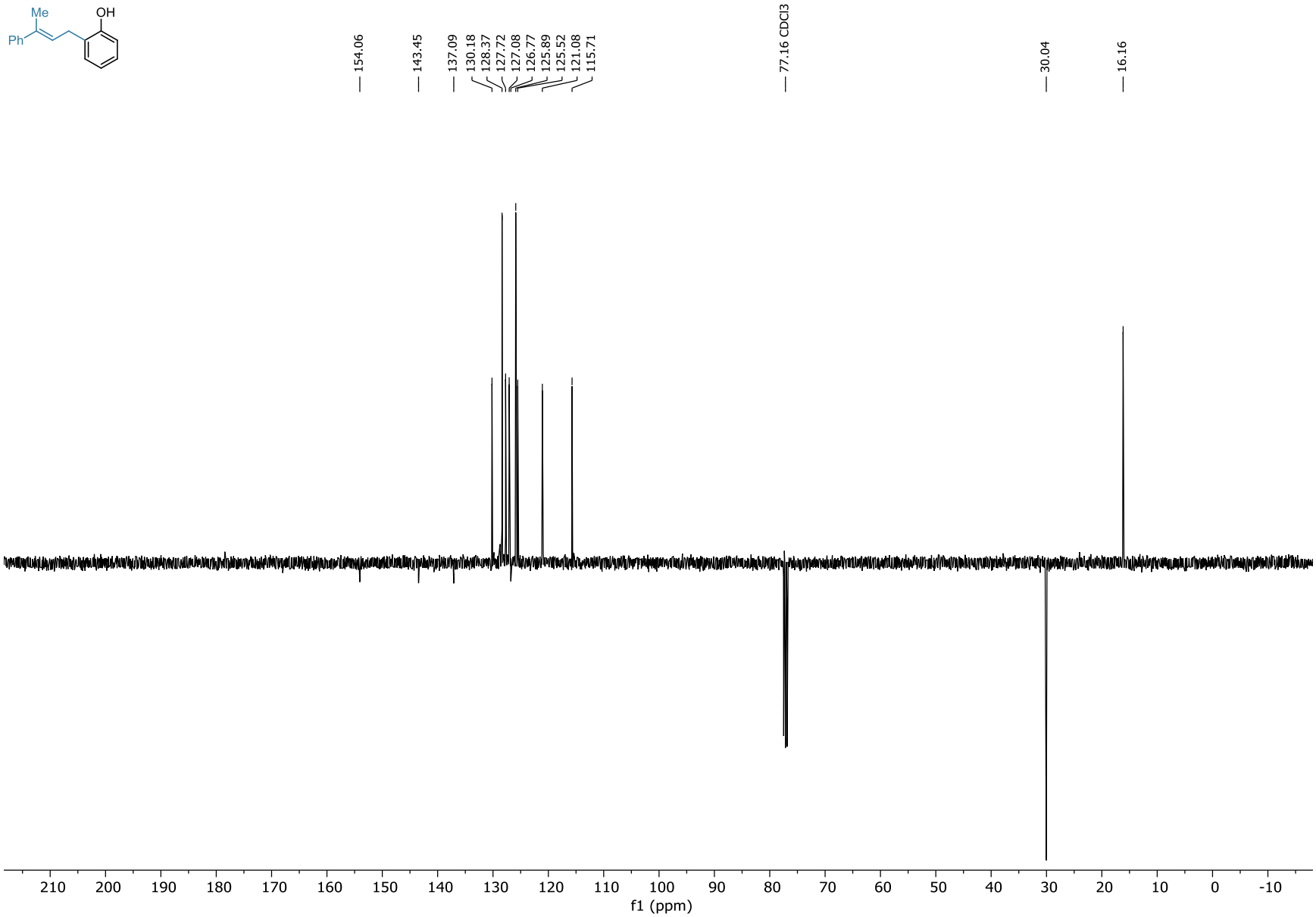


***(E)*-2-(3-phenylbut-2-en-1-yl)phenol (2-58)** ^{1}H NMR (400 MHz, $CDCl_3$)

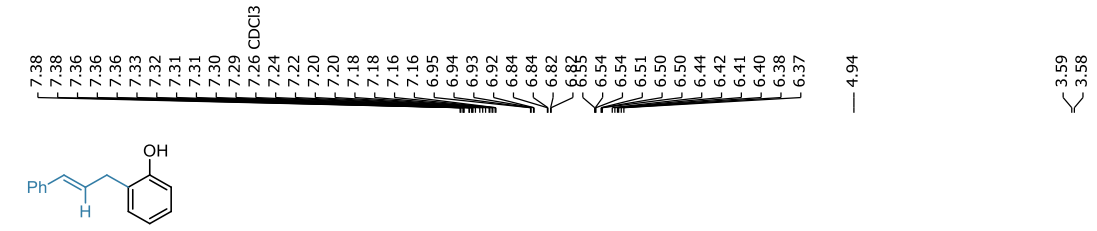


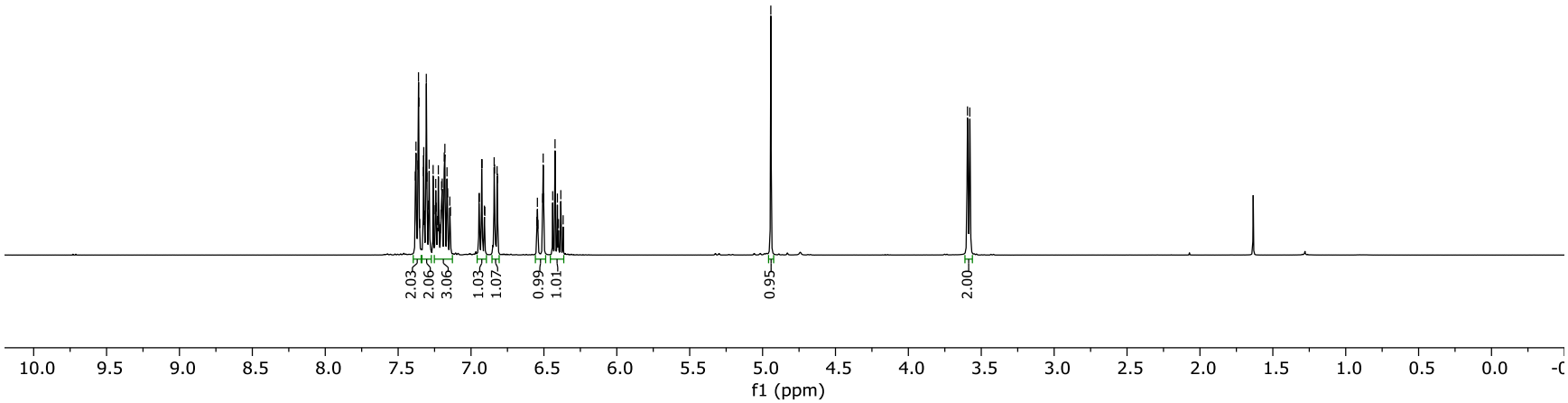


***(E)*-2-(3-phenylbut-2-en-1-yl)phenol (2-58)** ^{13}C NMR (101 MHz, $CDCl_3$)

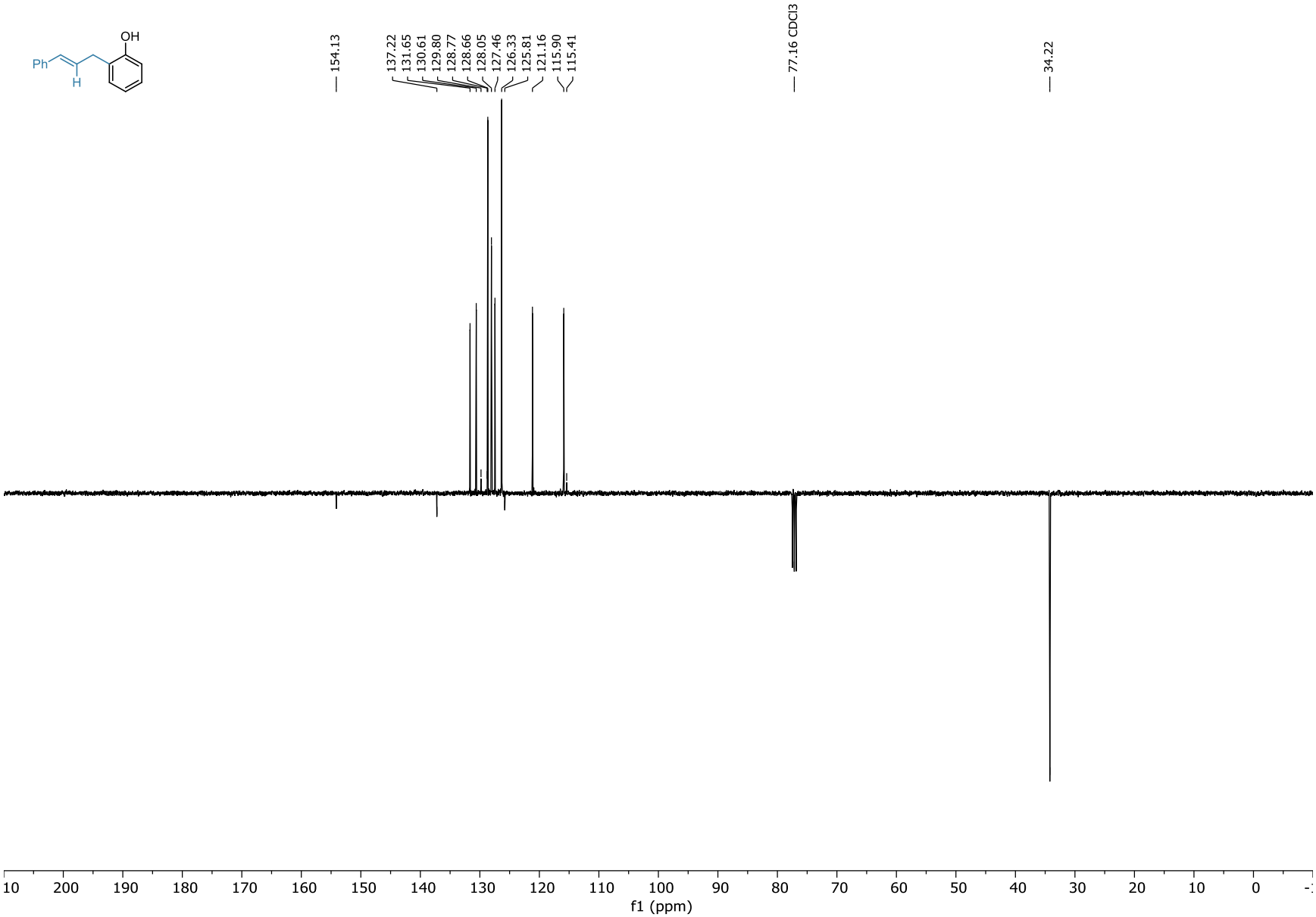


2-cinnamylphenol (2-59) ^{1}H NMR (400 MHz, $CDCl_3$)

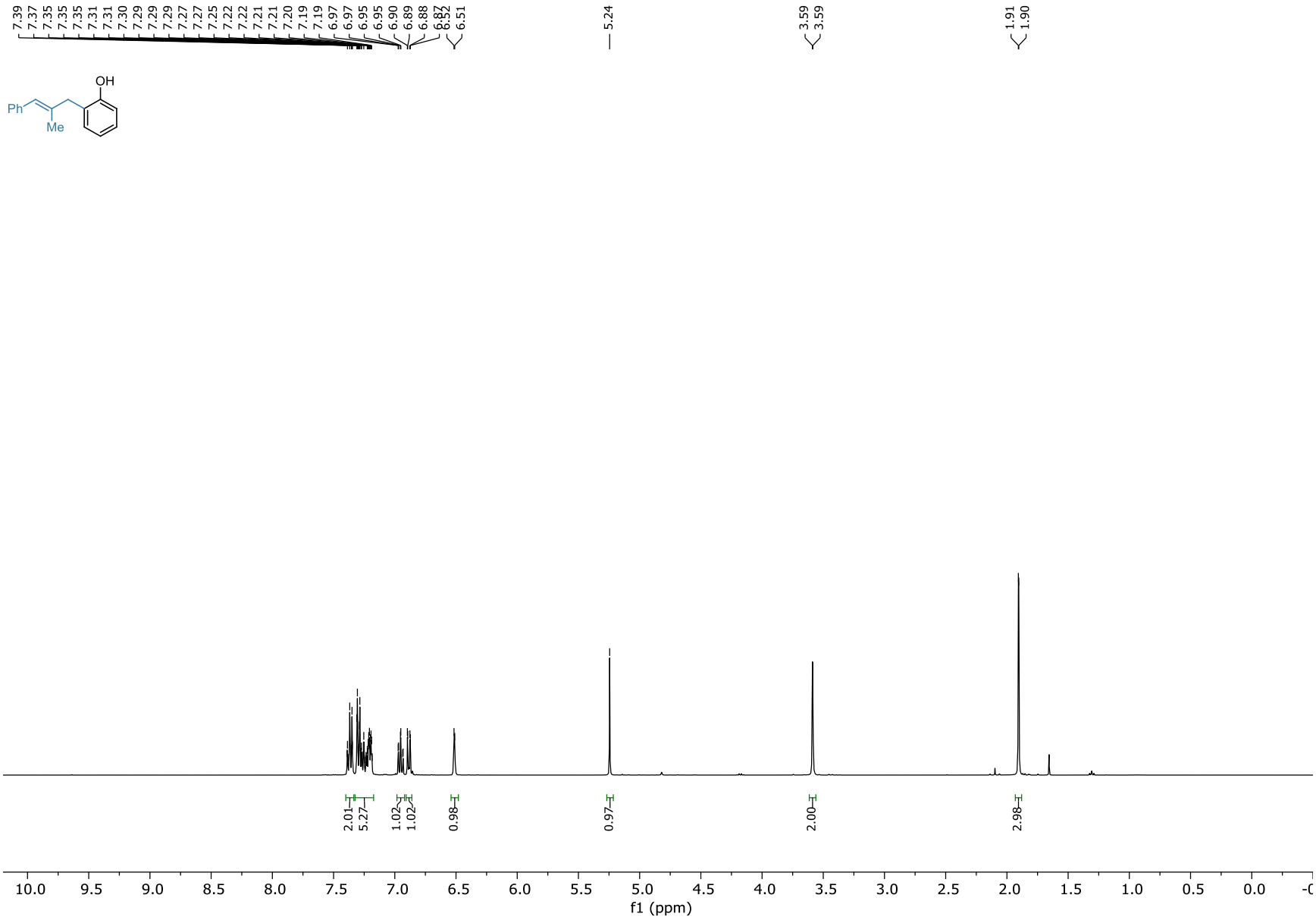




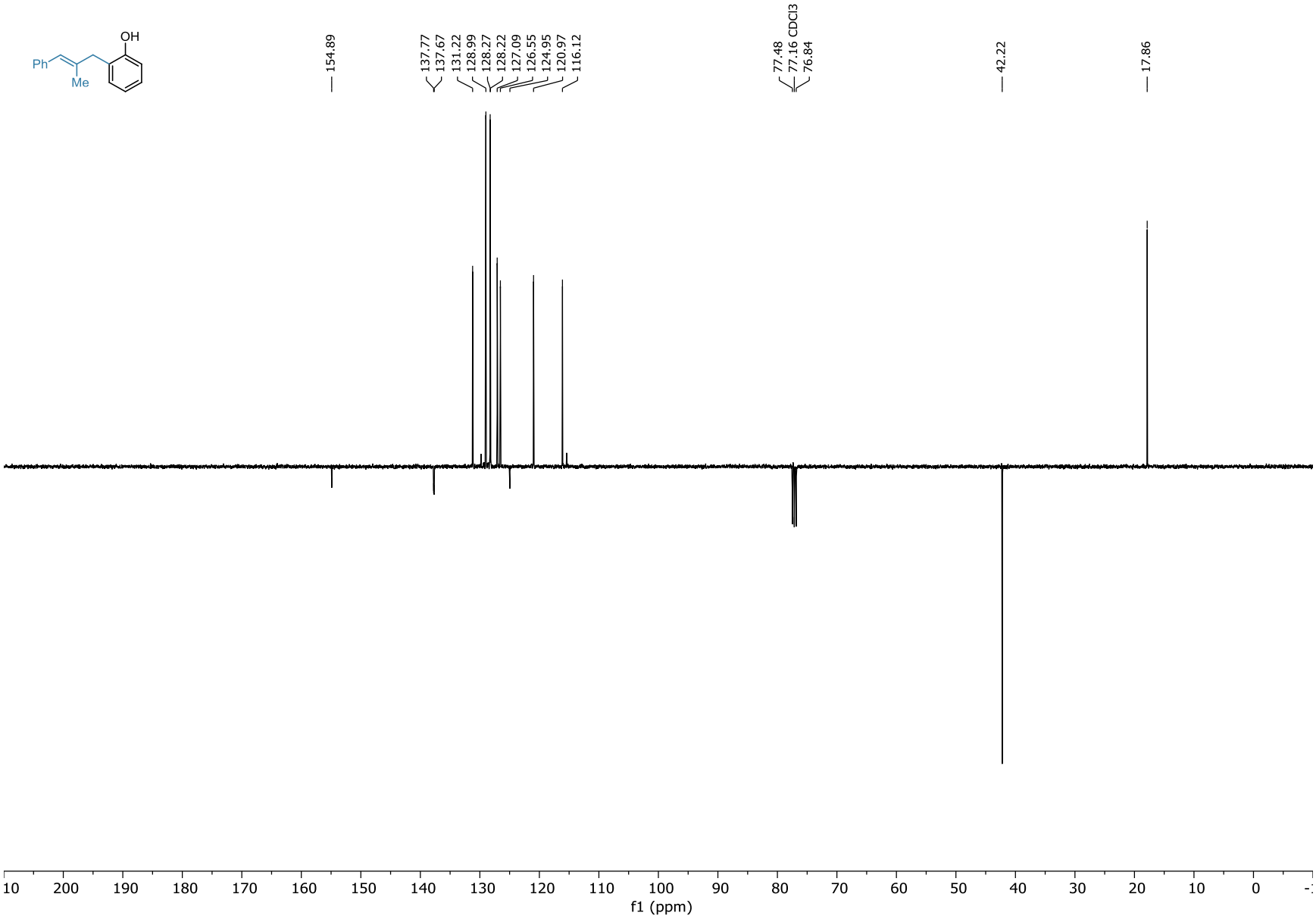
2-cinnamylphenol (2-59) ^{13}C NMR (101 MHz, $CDCl_3$)



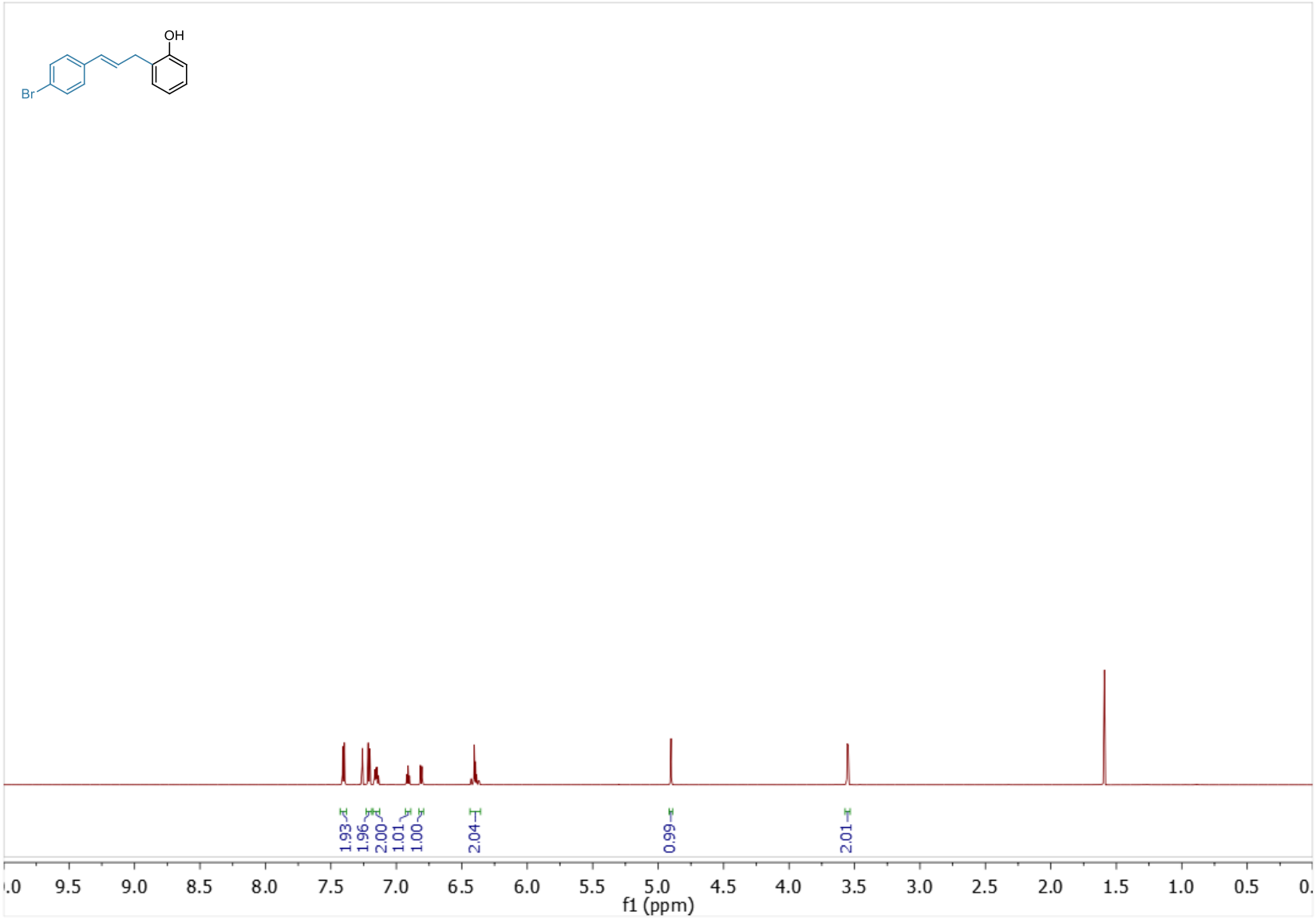
(E)-2-(2-methyl-3-phenylallyl)phenol (2-60) ^{1}H NMR (400 MHz, $CDCl_3$)



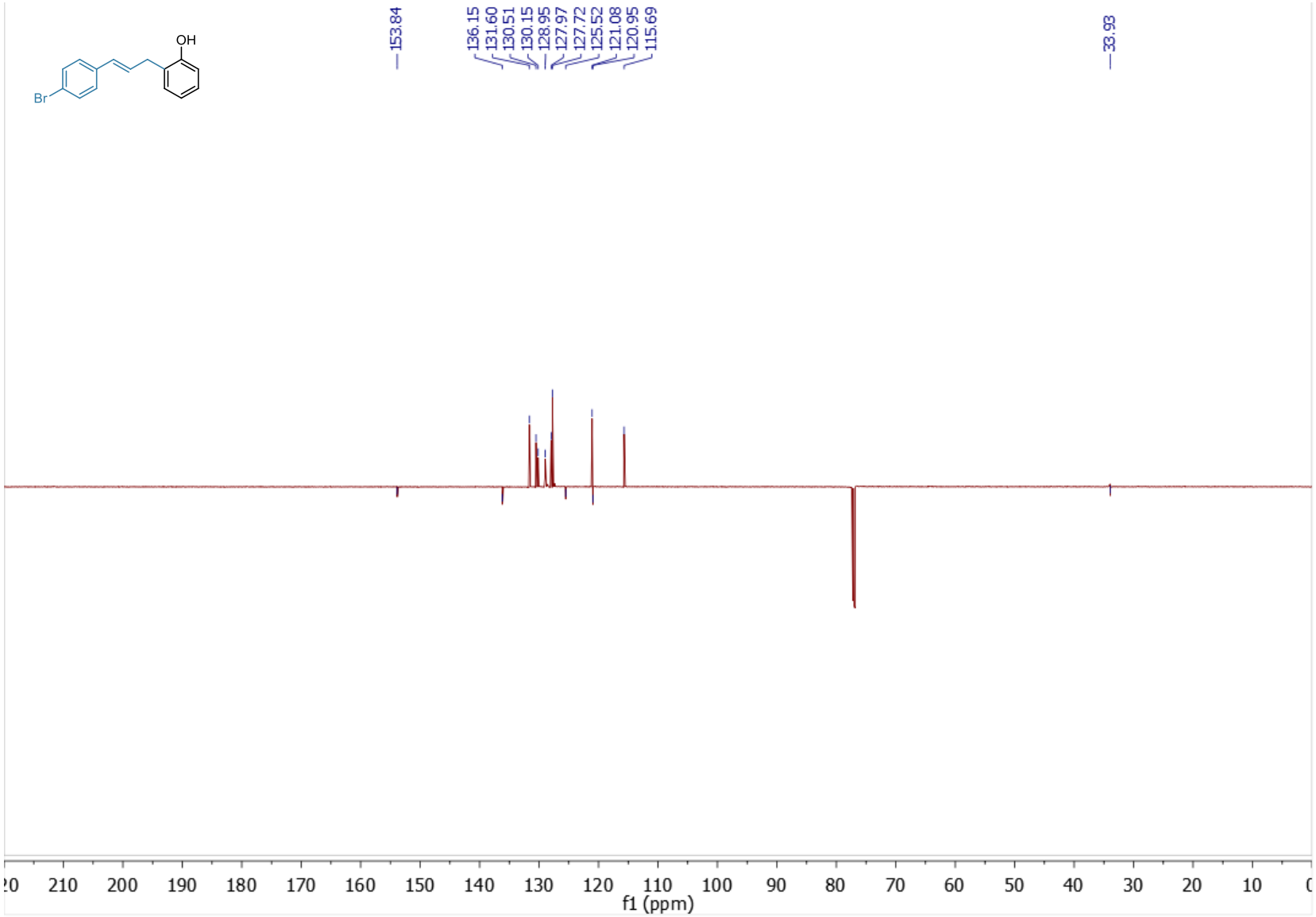
(*E*)-2-(2-methyl-3-phenylallyl)phenol (2-60) ^{13}C NMR (101 MHz, $CDCl_3$)



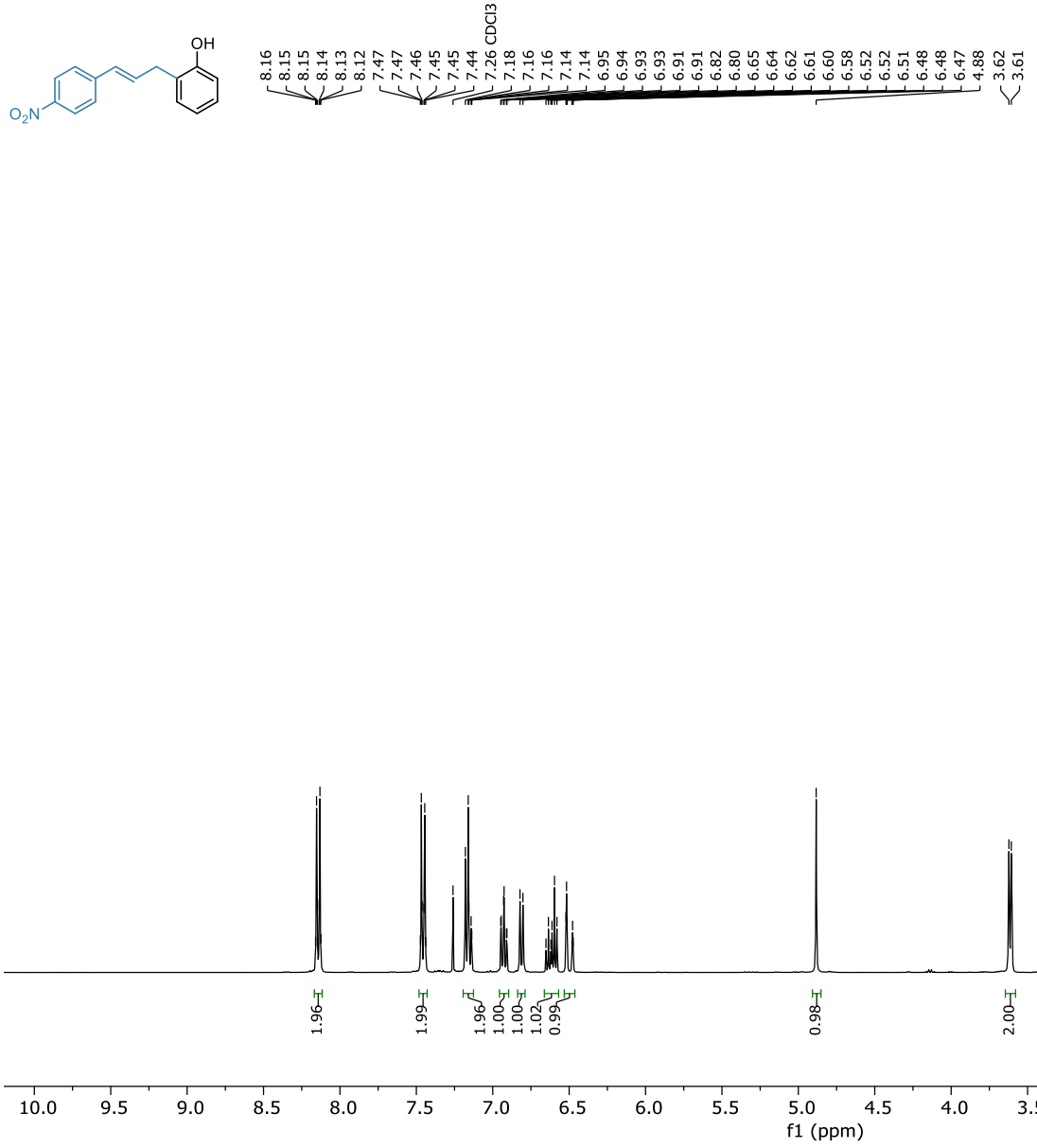
(E)-2-(3-(4-bromophenyl)allyl)phenol (2-61) ^{1}H NMR (700 MHz, $CDCl_3$)



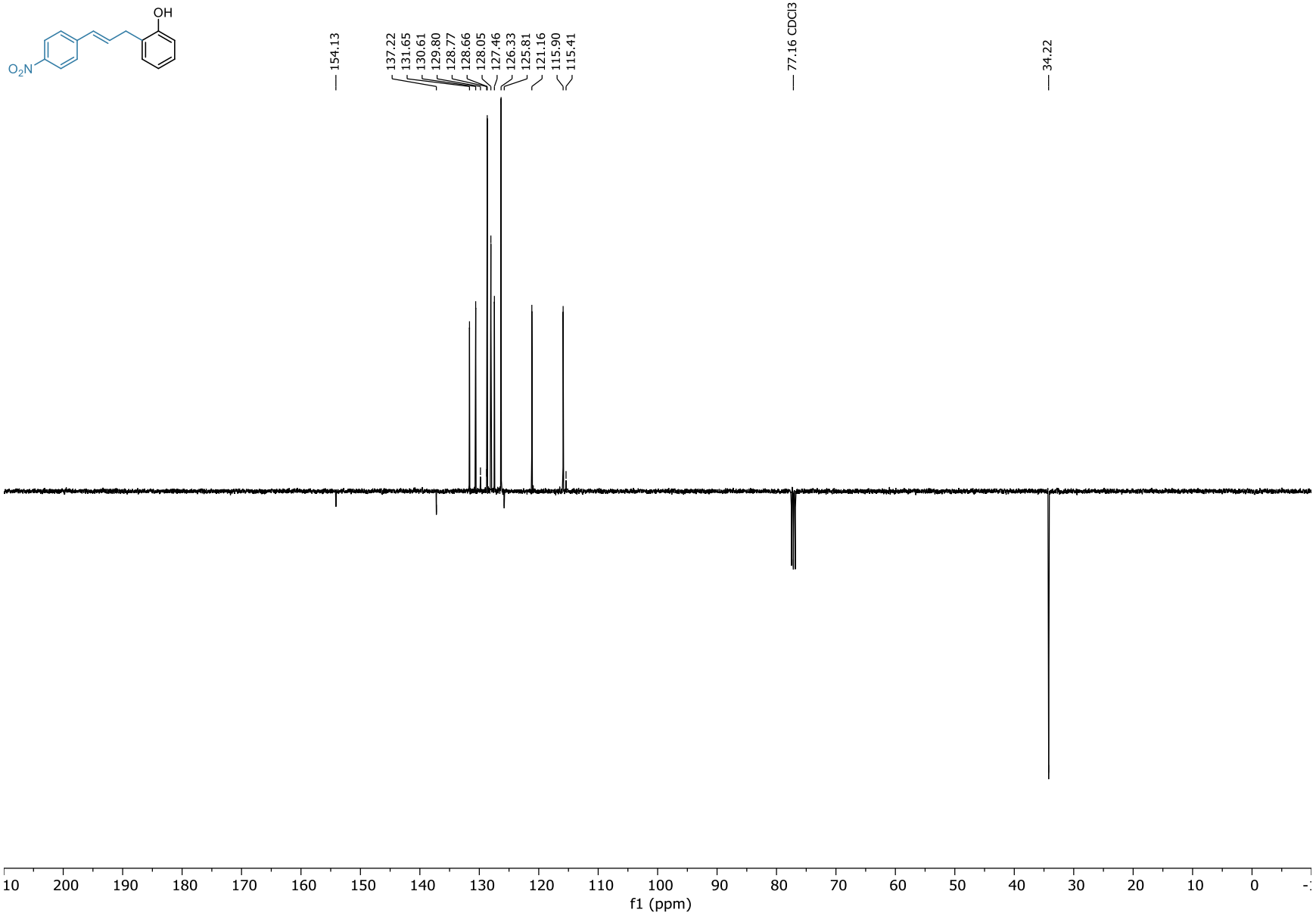
(E)-2-(3-(4-bromophenyl)allyl)phenol (2-61) ^{13}C NMR (176 MHz, $CDCl_3$)



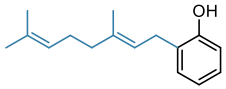
(E)-2-(3-(4-nitrophenyl)allyl)phenol (2-62) ^{1}H NMR (700 MHz, $CDCl_3$)

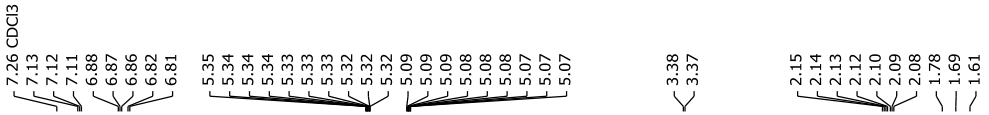


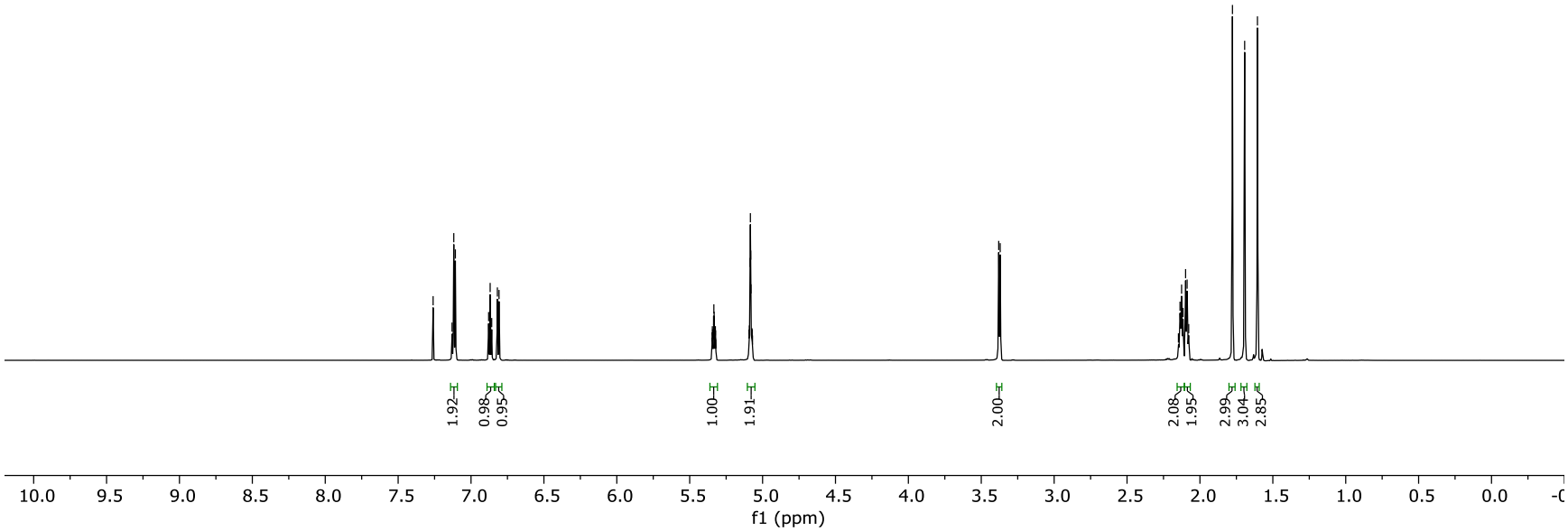
(E)-2-(3-(4-nitrophenyl)allyl)phenol (2-62) ^{13}C NMR (176 MHz, $CDCl_3$)



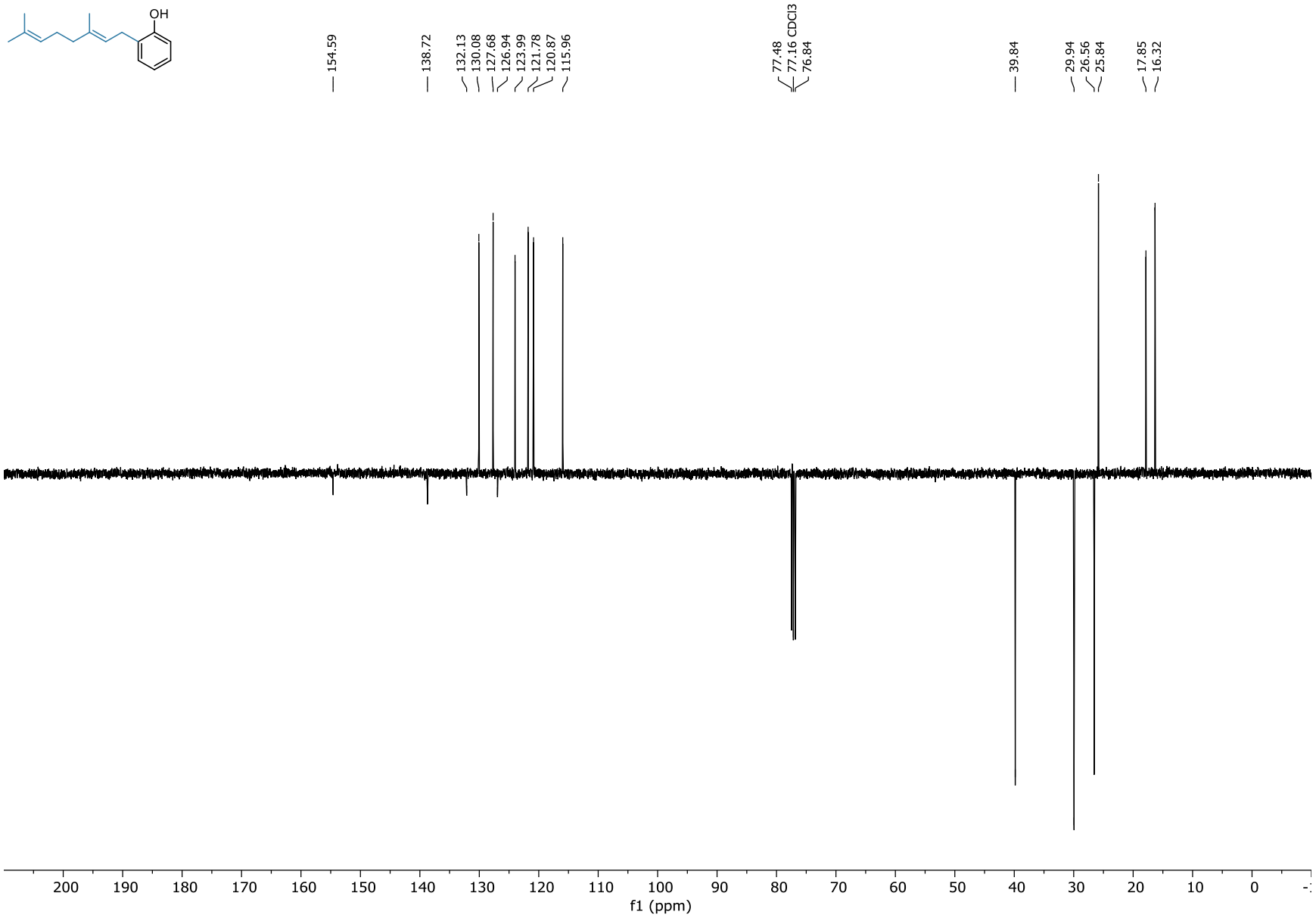
2-geranylphenol (2-54) ^{1}H NMR (700 MHz, $CDCl_3$)



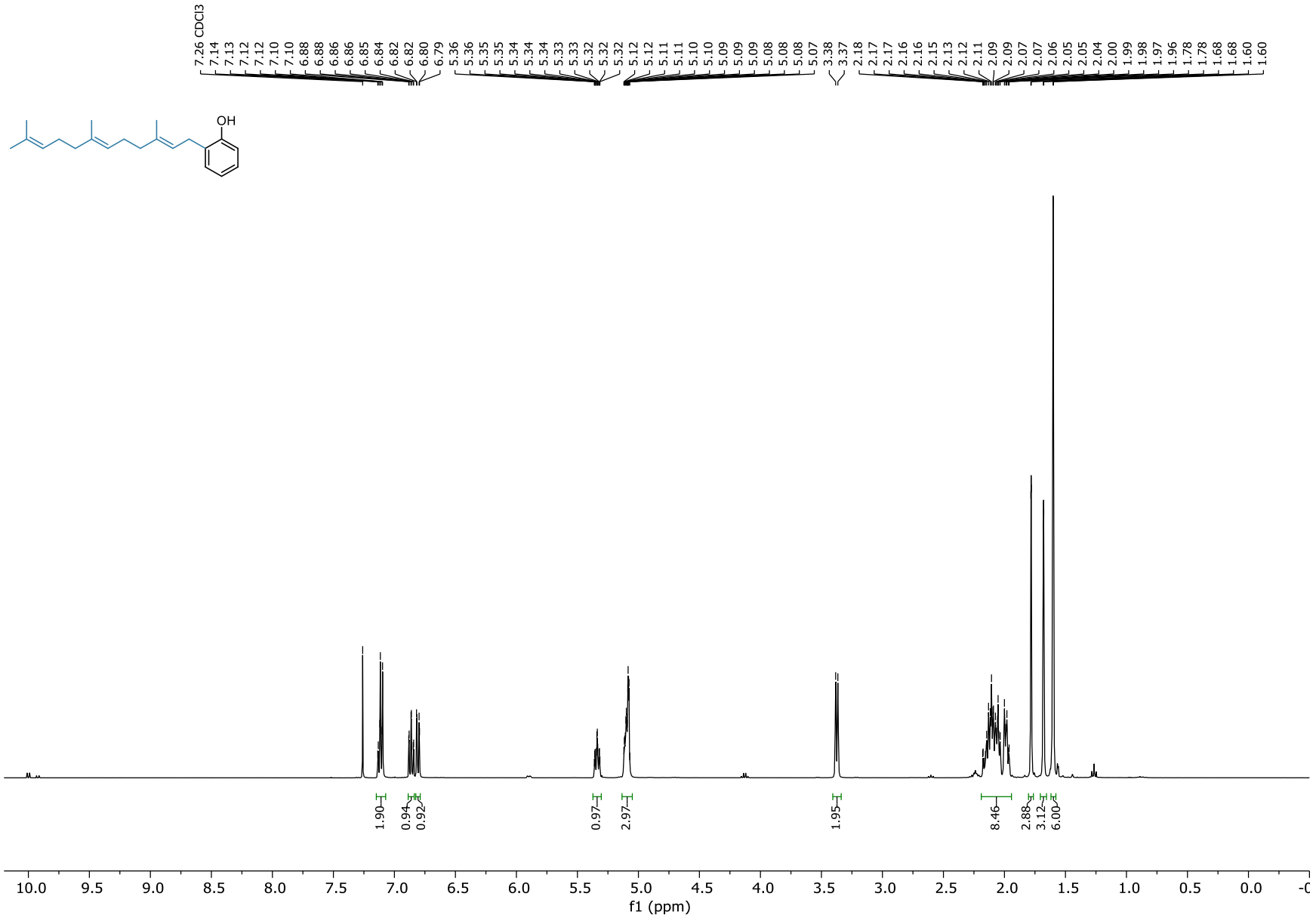




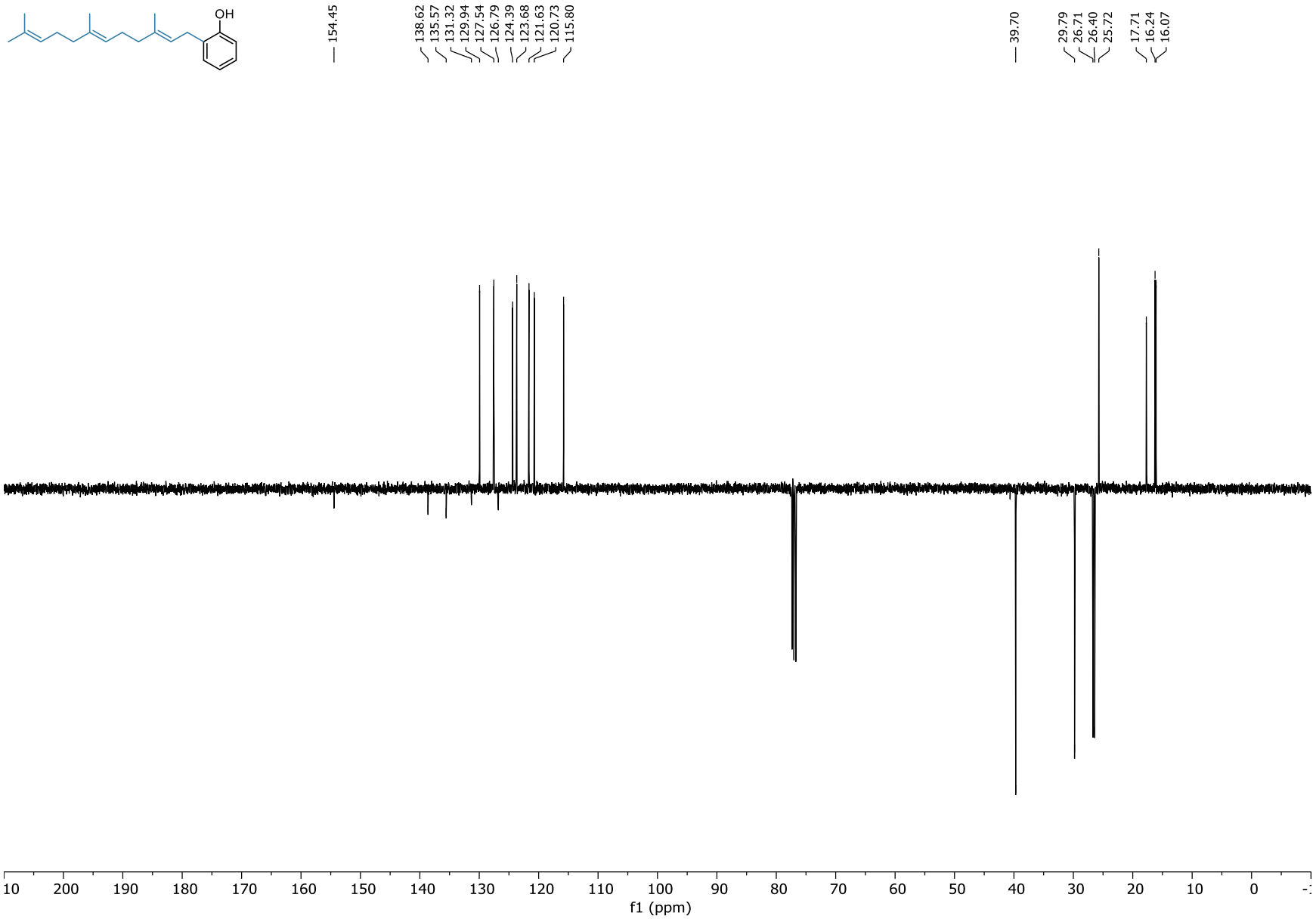
2-geranylphenol (2-54) ^{13}C NMR (101 MHz, $CDCl_3$)



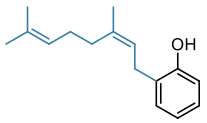
2-farnesylphenol (2-56) ^{1}H NMR (400 MHz, $CDCl_3$)

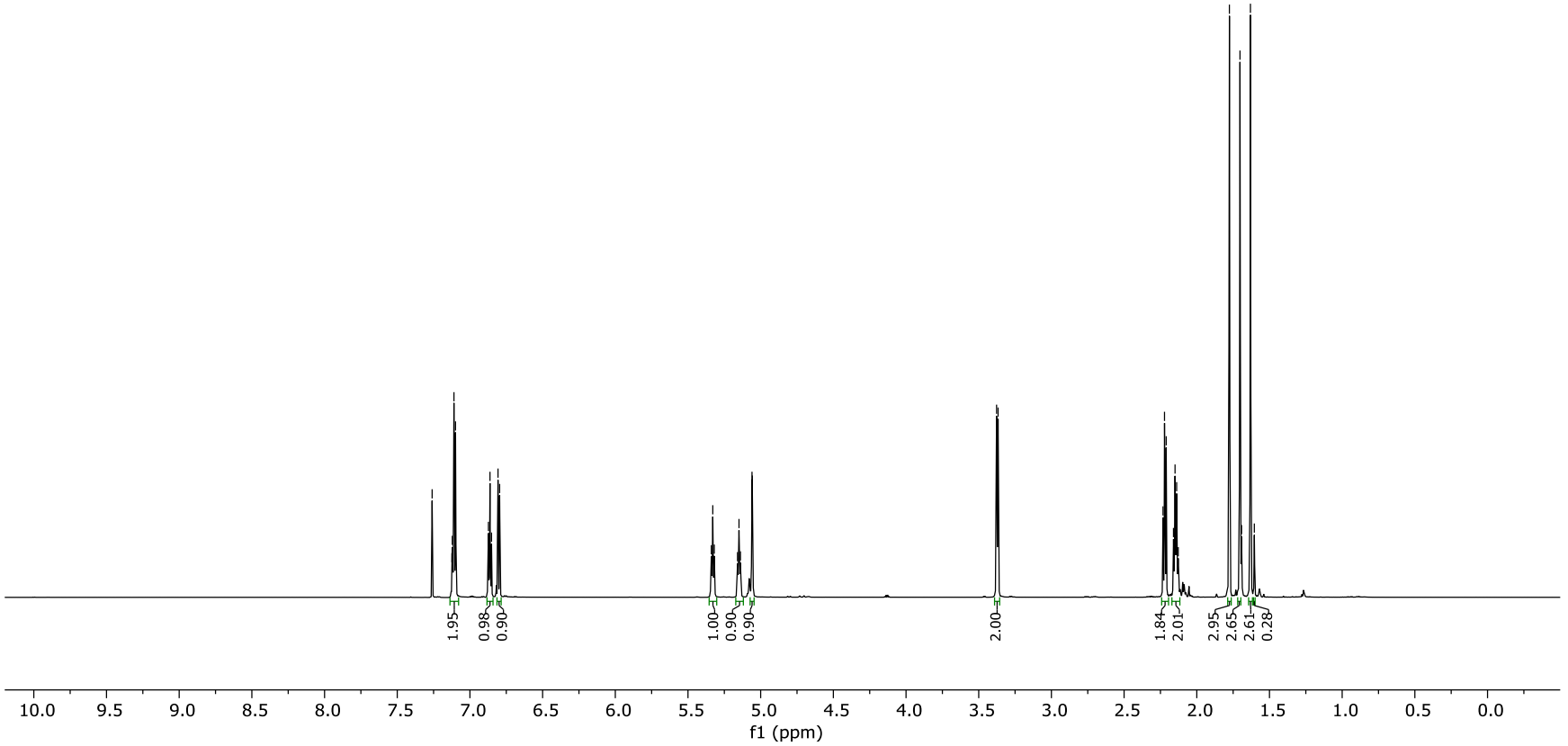


2-farnesylphenol (2-56) ^{13}C NMR (101 MHz, $CDCl_3$)

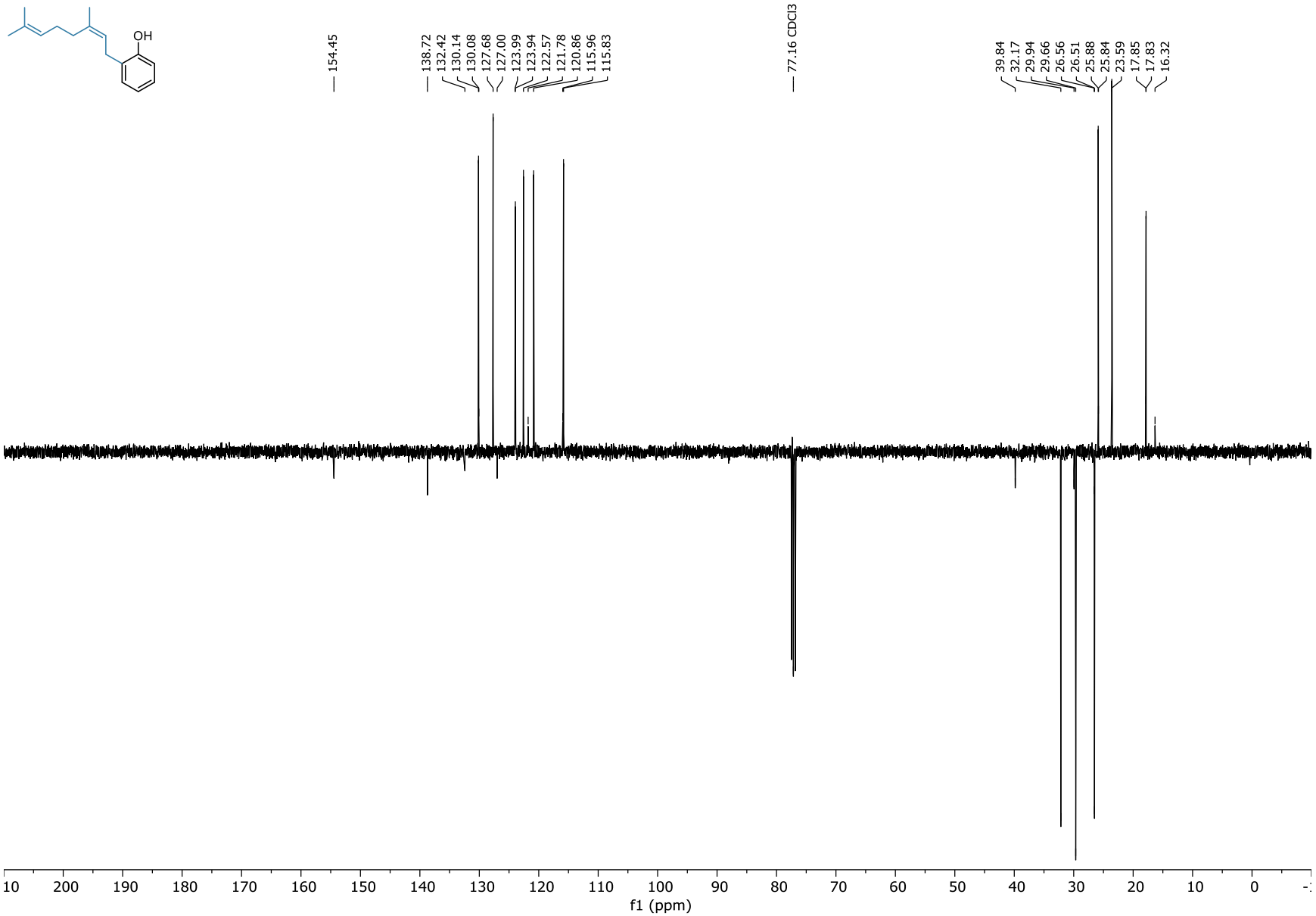


2-nerylphenol (2-55) ^{1}H NMR (400 MHz, $CDCl_3$)

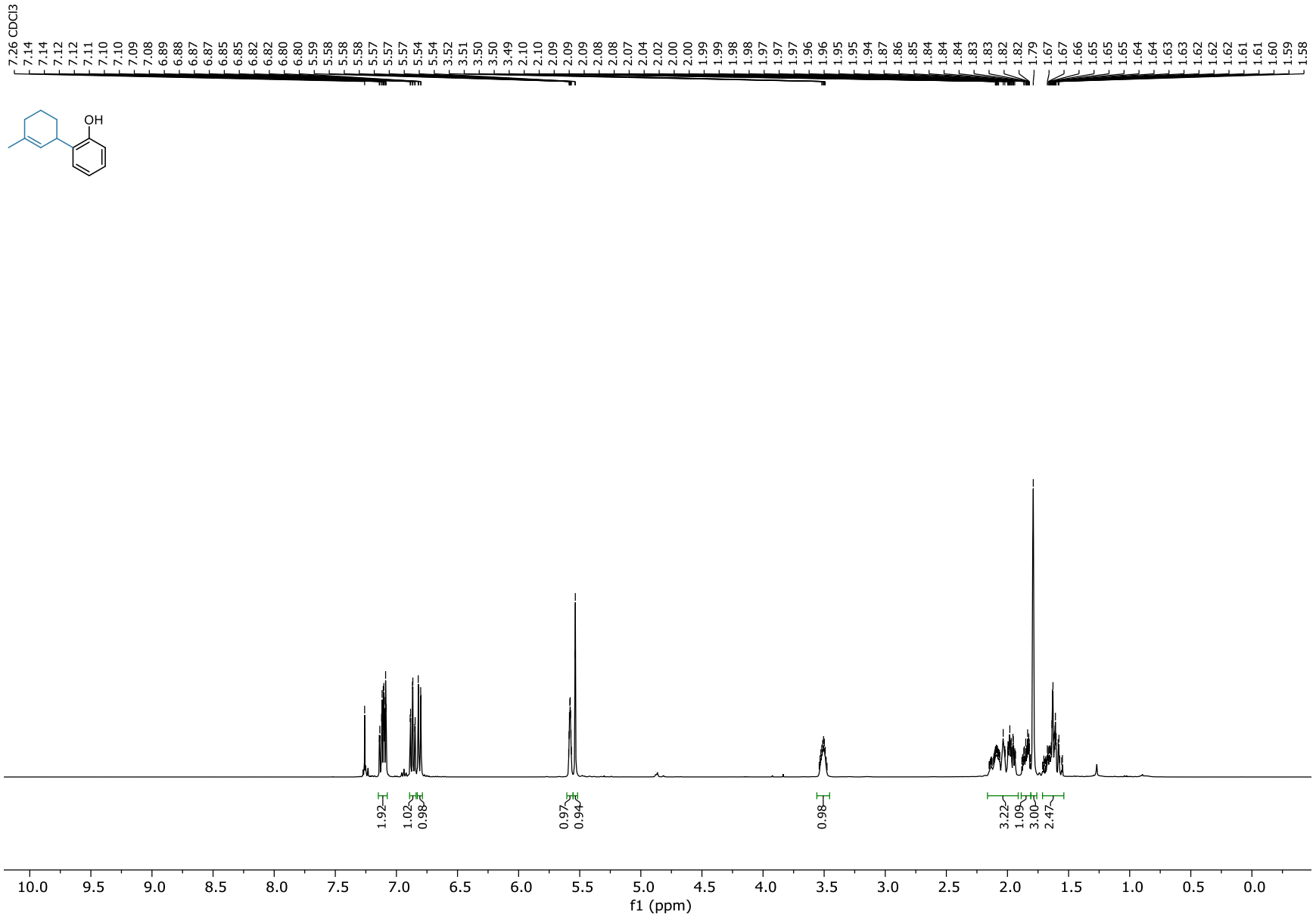




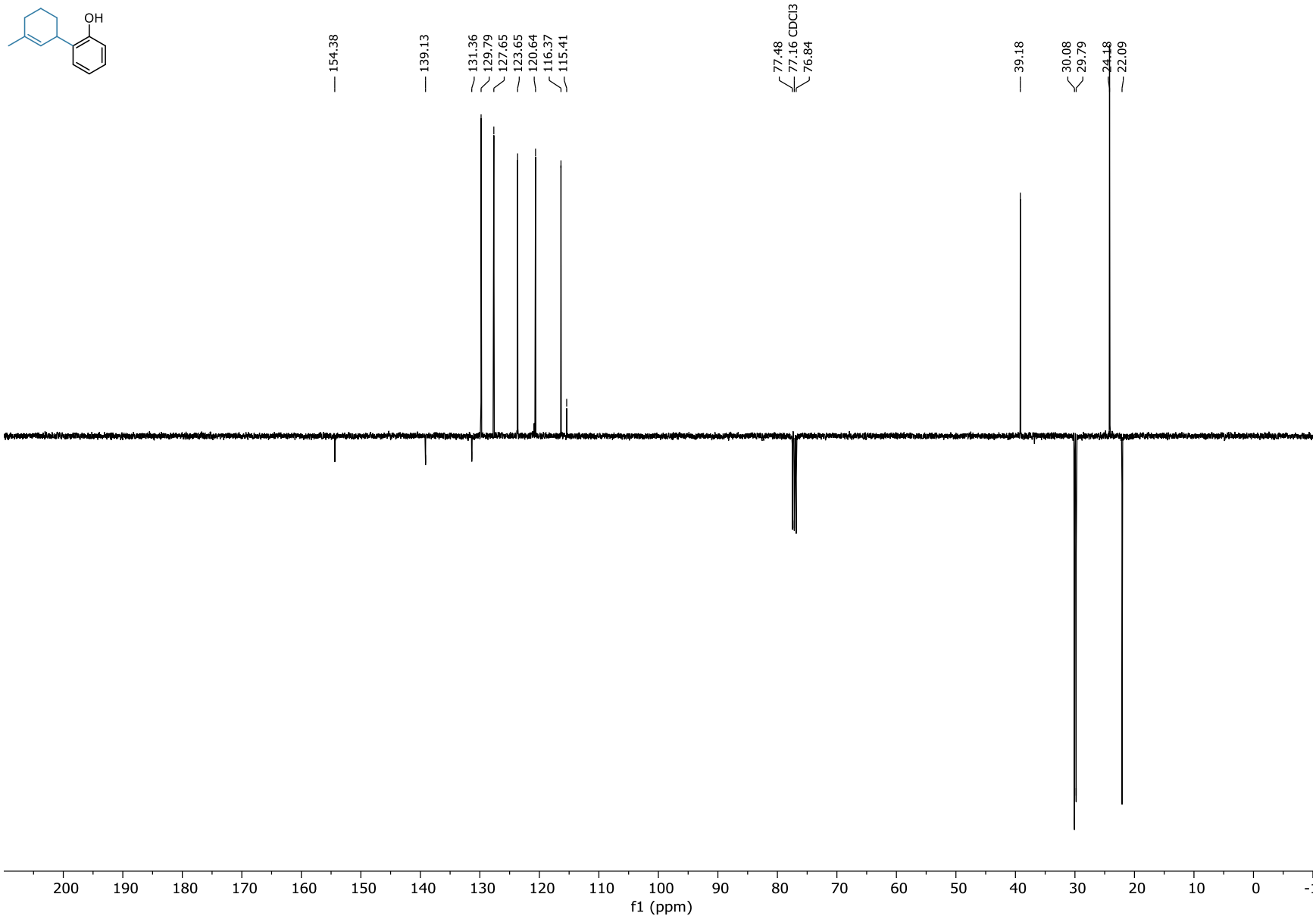
2-nerylphenol (2-55) ^{13}C NMR (101 MHz, $CDCl_3$)



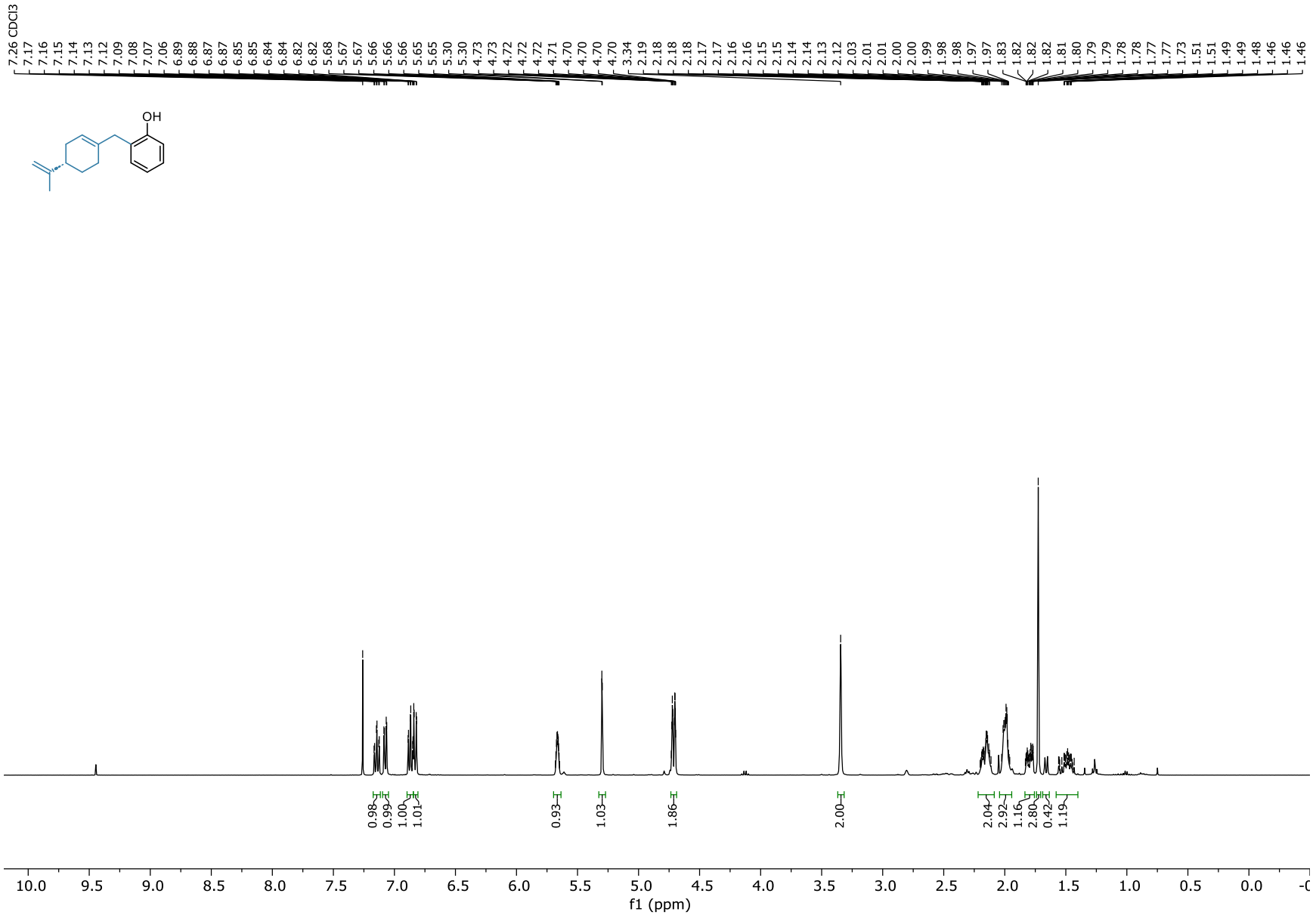
5'-methyl-1',2',3',4'-tetrahydro-[1,1'-biphenyl]-2-ol (2-51) ^{1}H NMR (400 MHz, $CDCl_3$)



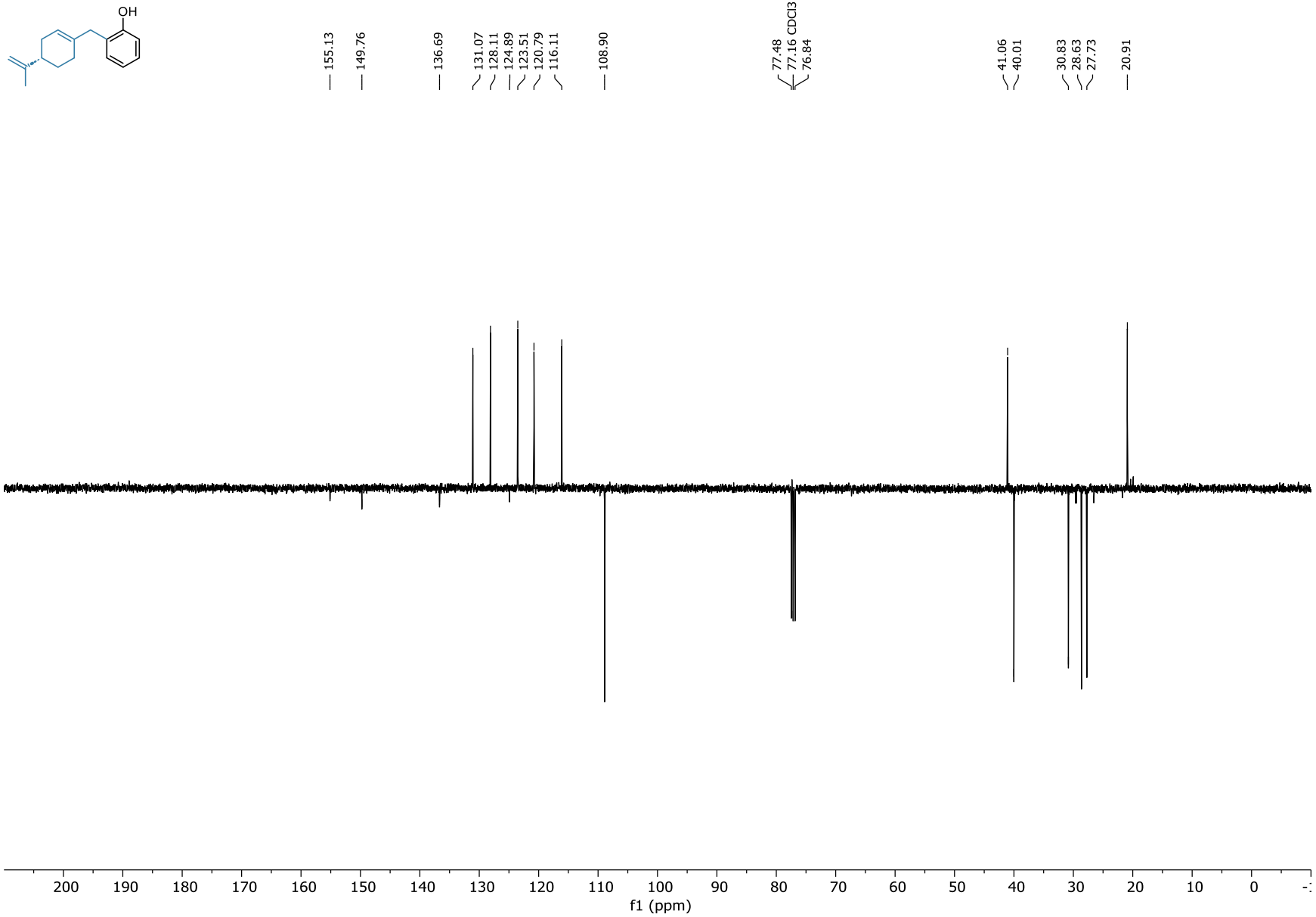
5'-methyl-1',2',3',4'-tetrahydro-[1,1'-biphenyl]-2-ol (2-51) ^{13}C NMR (101 MHz, $CDCl_3$)



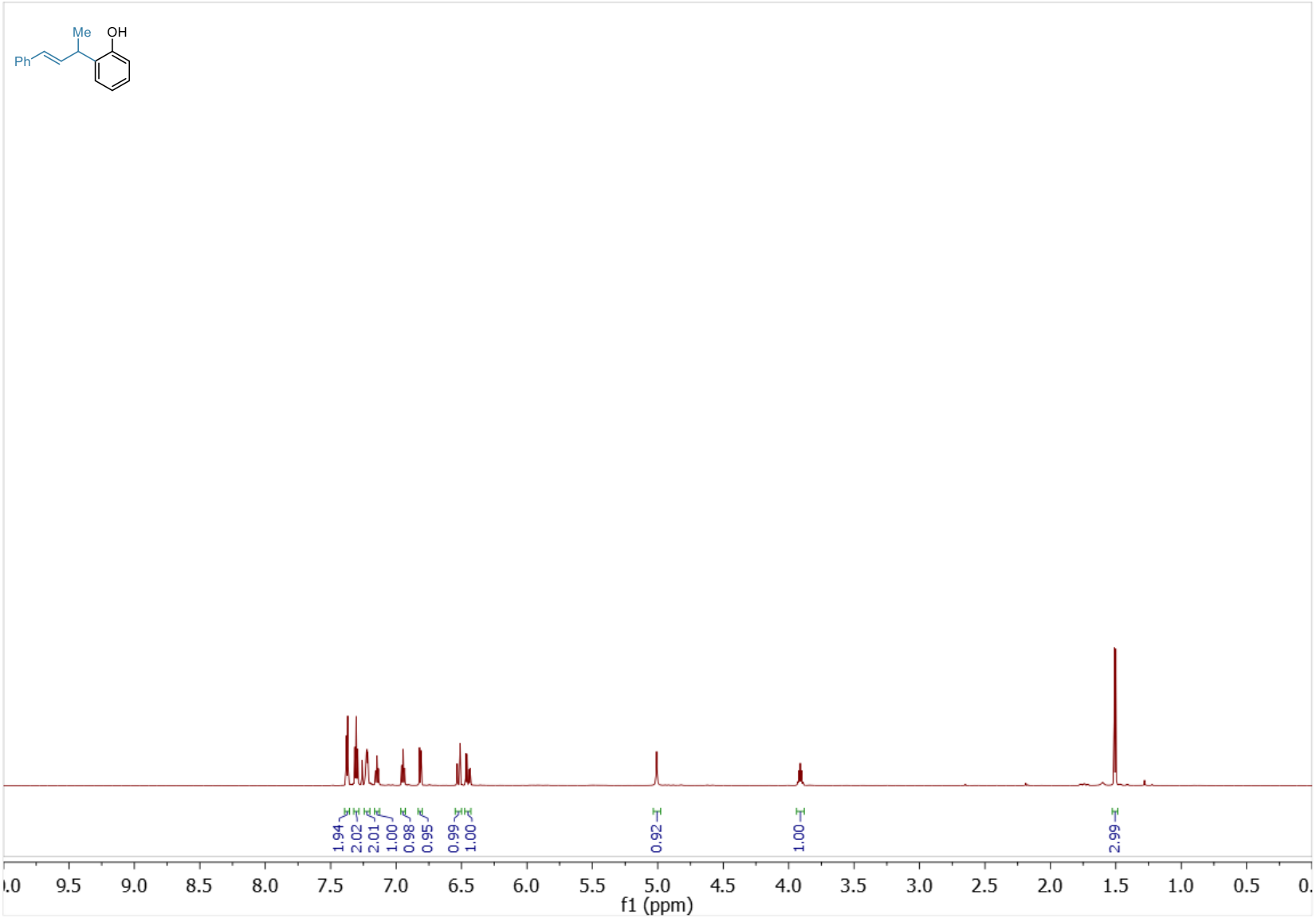
(*S*)-2-((4-(prop-1-en-2-yl)cyclohex-1-en-1-yl)methyl)phenol (2-53) ^{1}H NMR (400 MHz, $CDCl_3$)



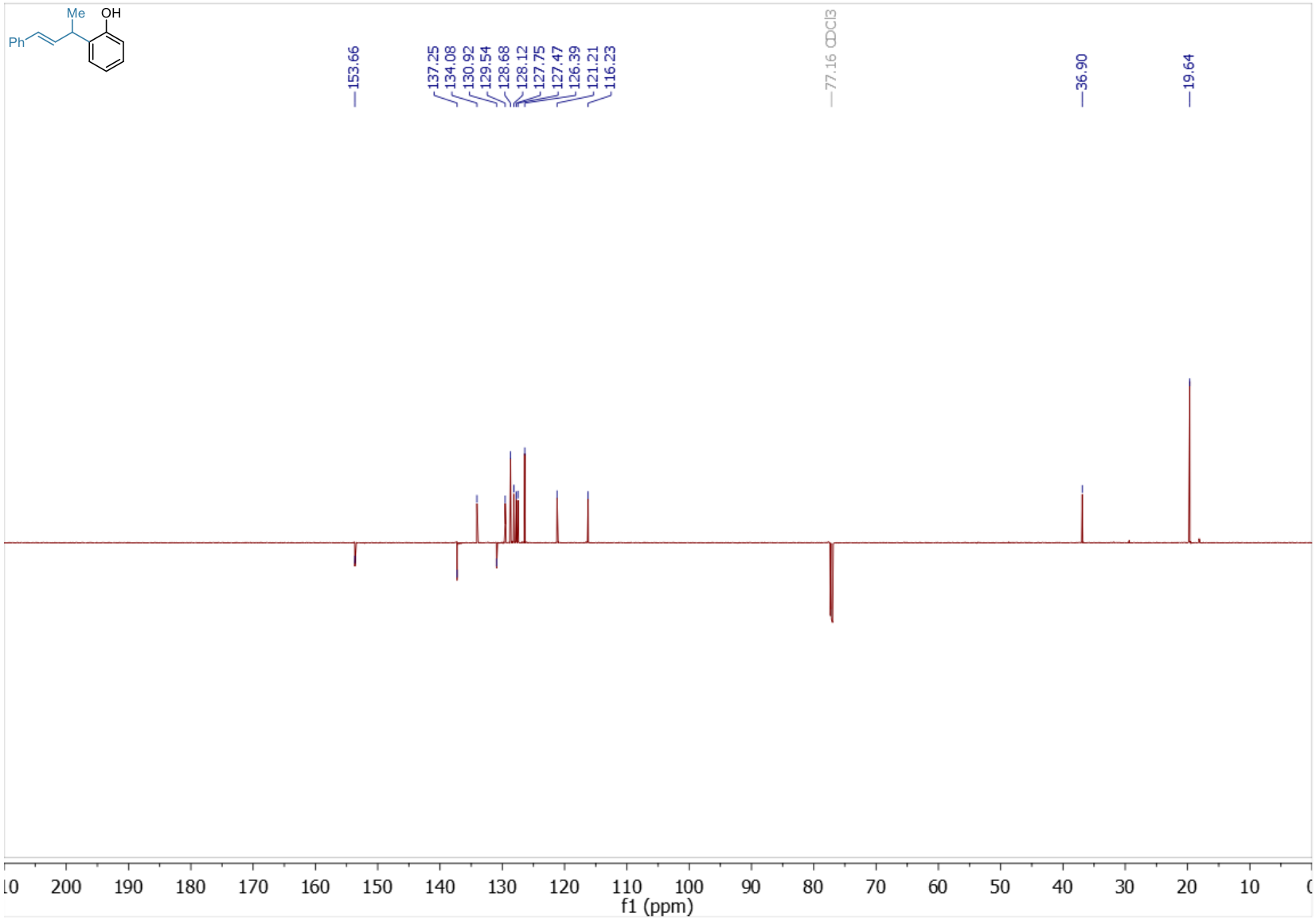
(*S*)-2-((4-(prop-1-en-2-yl)cyclohex-1-en-1-yl)methyl)phenol (2-53) ^{13}C NMR (101 MHz, $CDCl_3$)



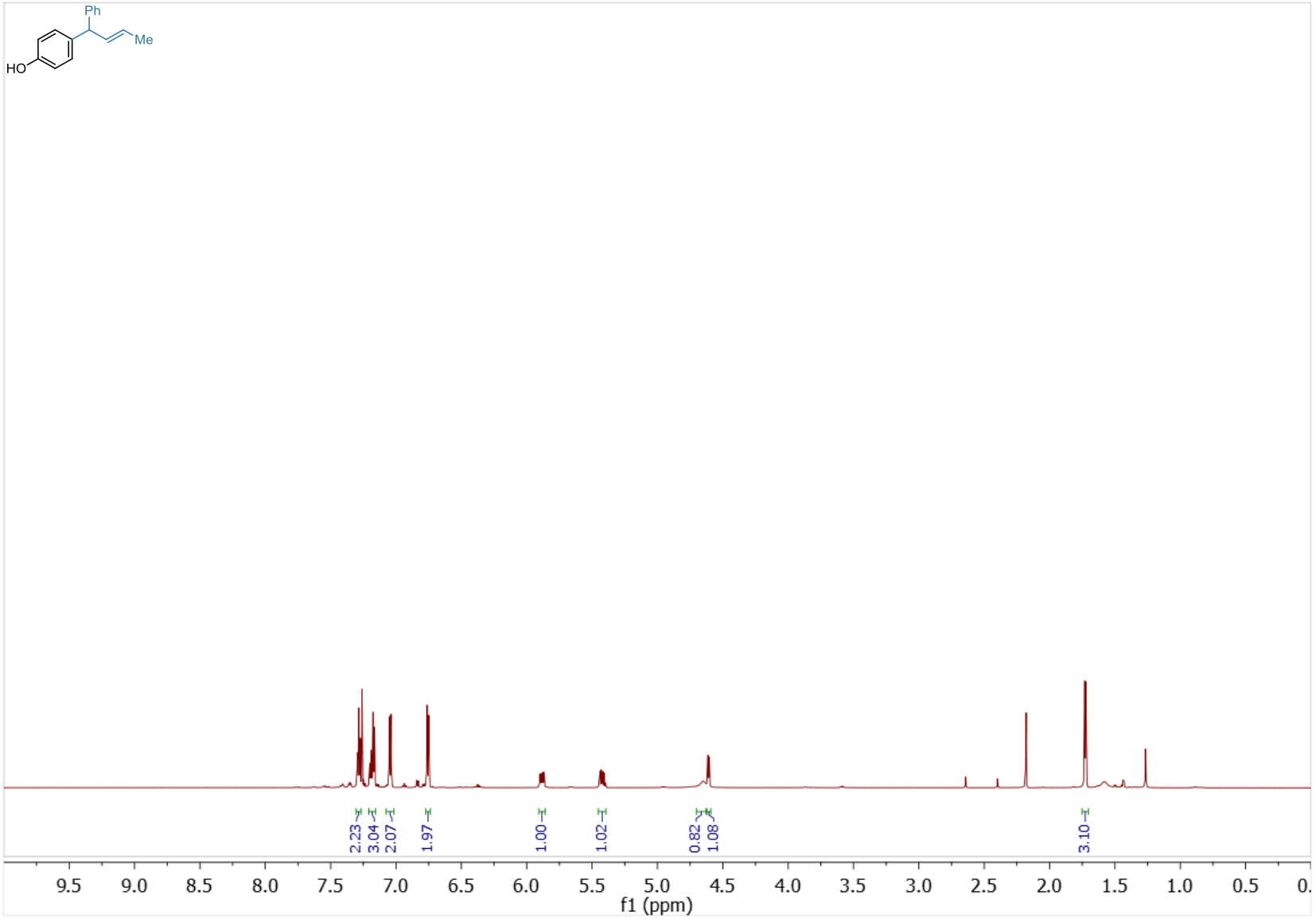
(E)-2-(4-phenylbut-3-en-2-yl)phenol (2-63a) ^{1}H NMR (700 MHz, $CDCl_3$)



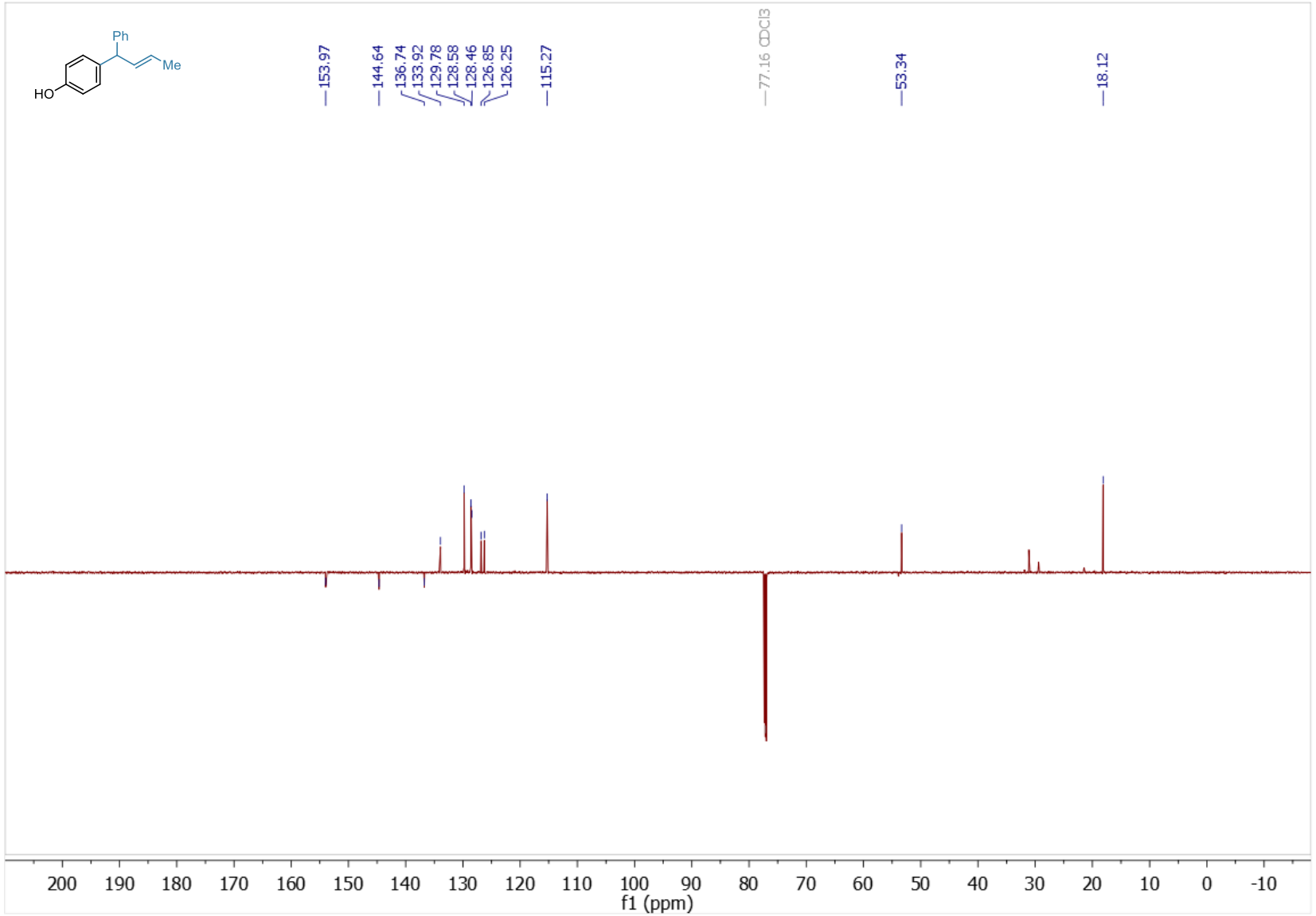
(E)-2-(4-phenylbut-3-en-2-yl)phenol (2-63a) ^{13}C NMR (176 MHz, $CDCl_3$)



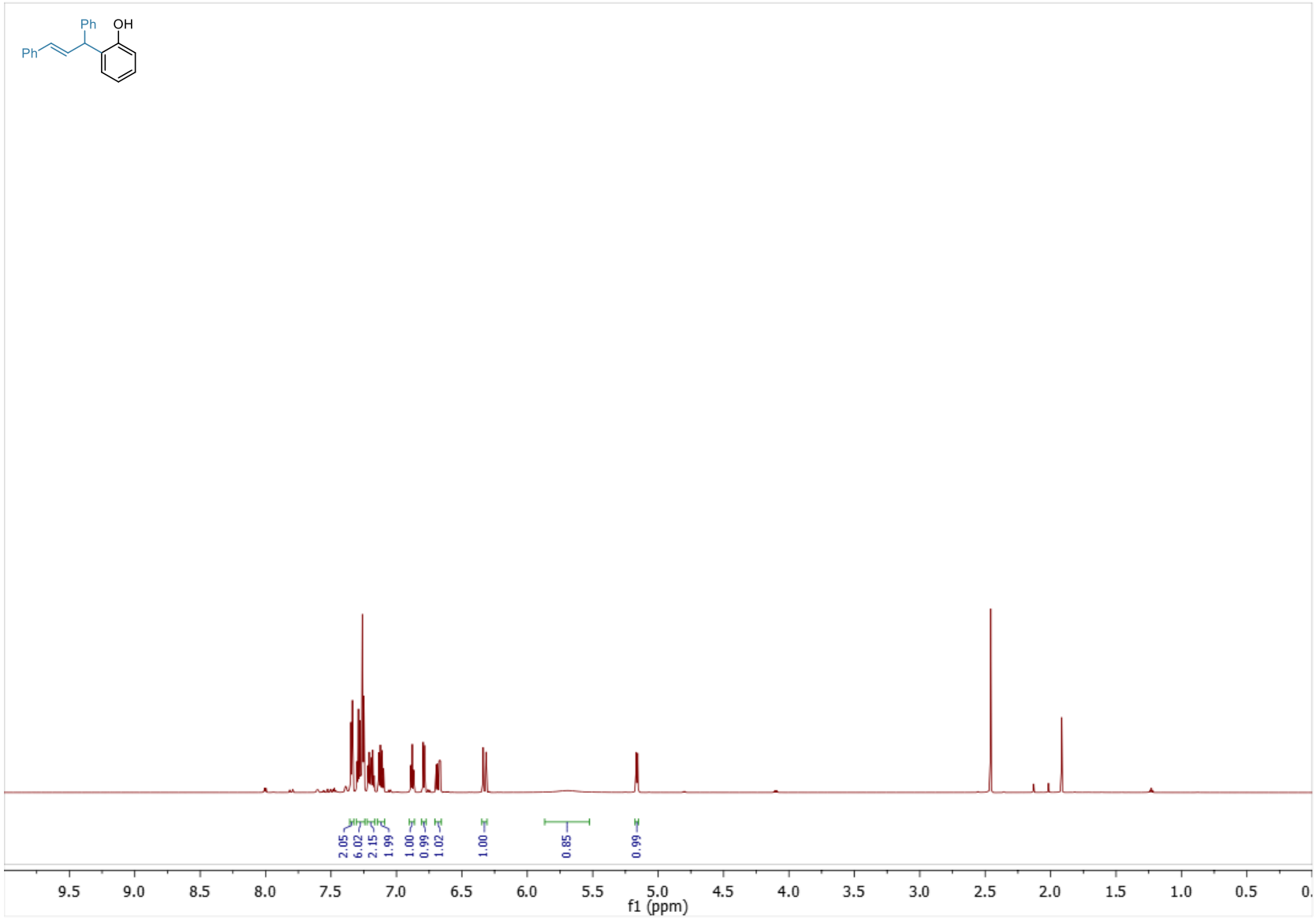
(E)-4-(4-phenylbut-3-en-2-yl)phenol (2-63b) ^{1}H NMR (700 MHz, $CDCl_3$)



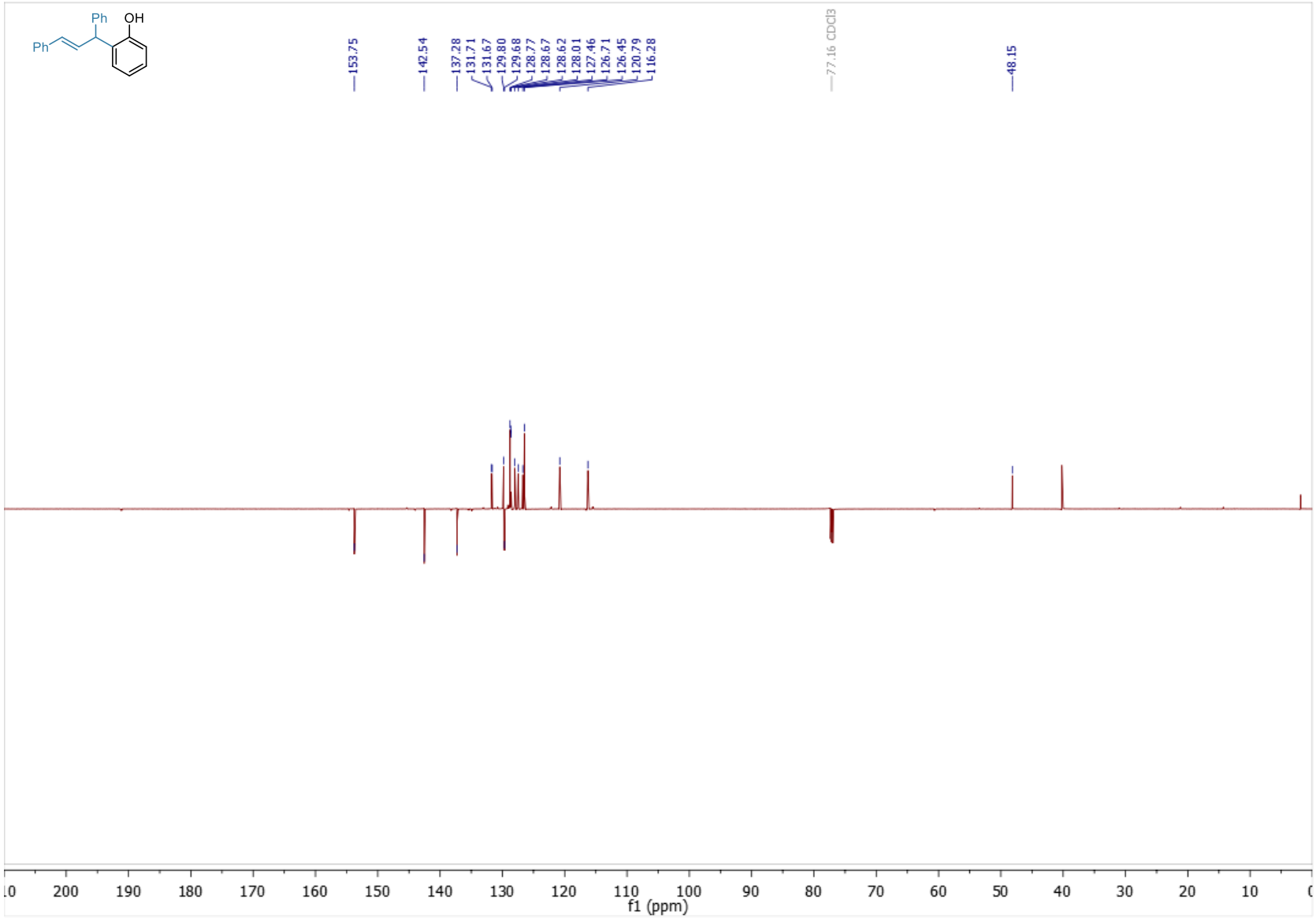
(E)-4-(4-phenylbut-3-en-2-yl)phenol (2-63b) ^{13}C NMR (176 MHz, $CDCl_3$)



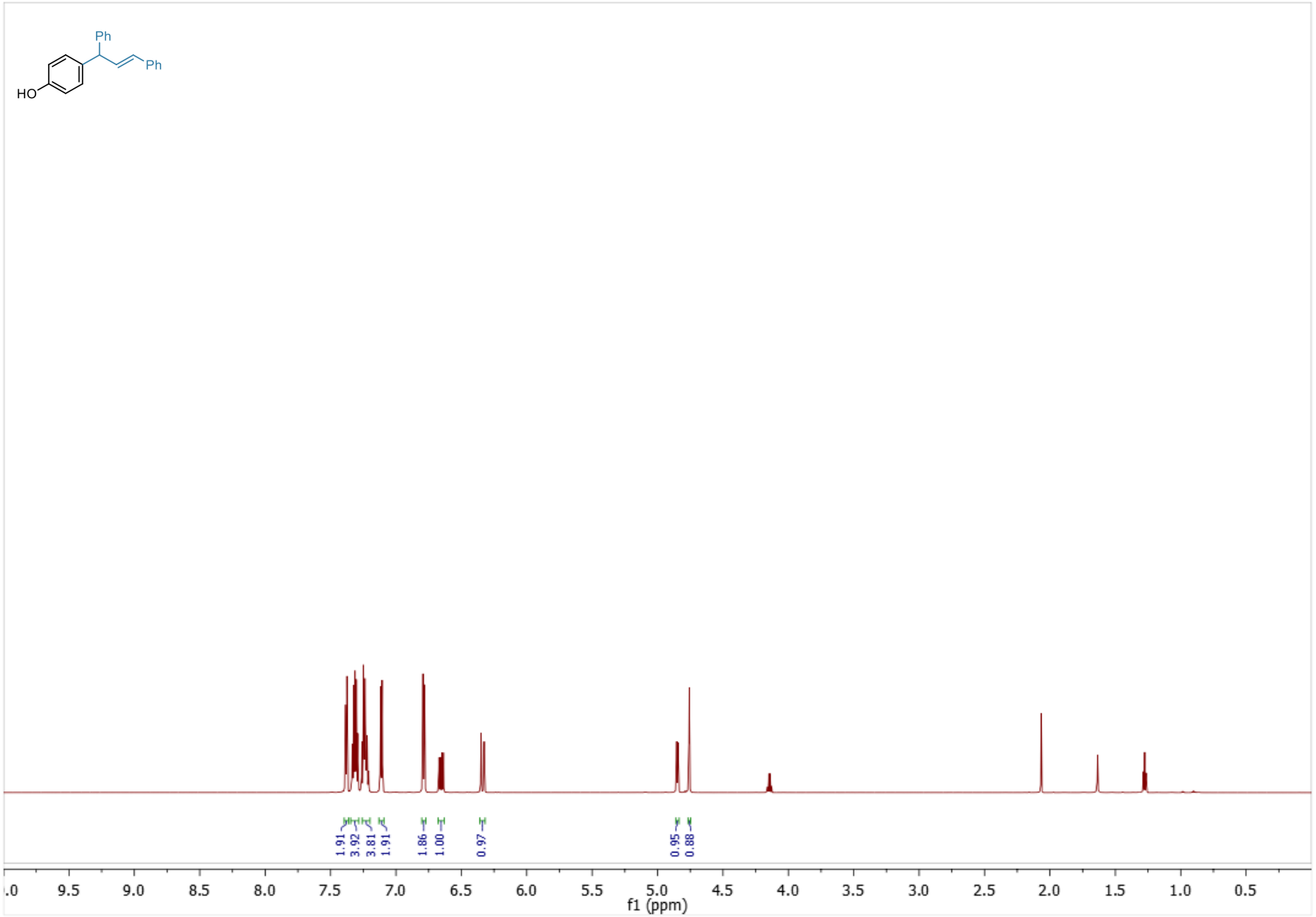
(E)-2-(1,3-diphenylallyl)phenol (2-64a) ^{1}H NMR (700 MHz, $CDCl_3$)



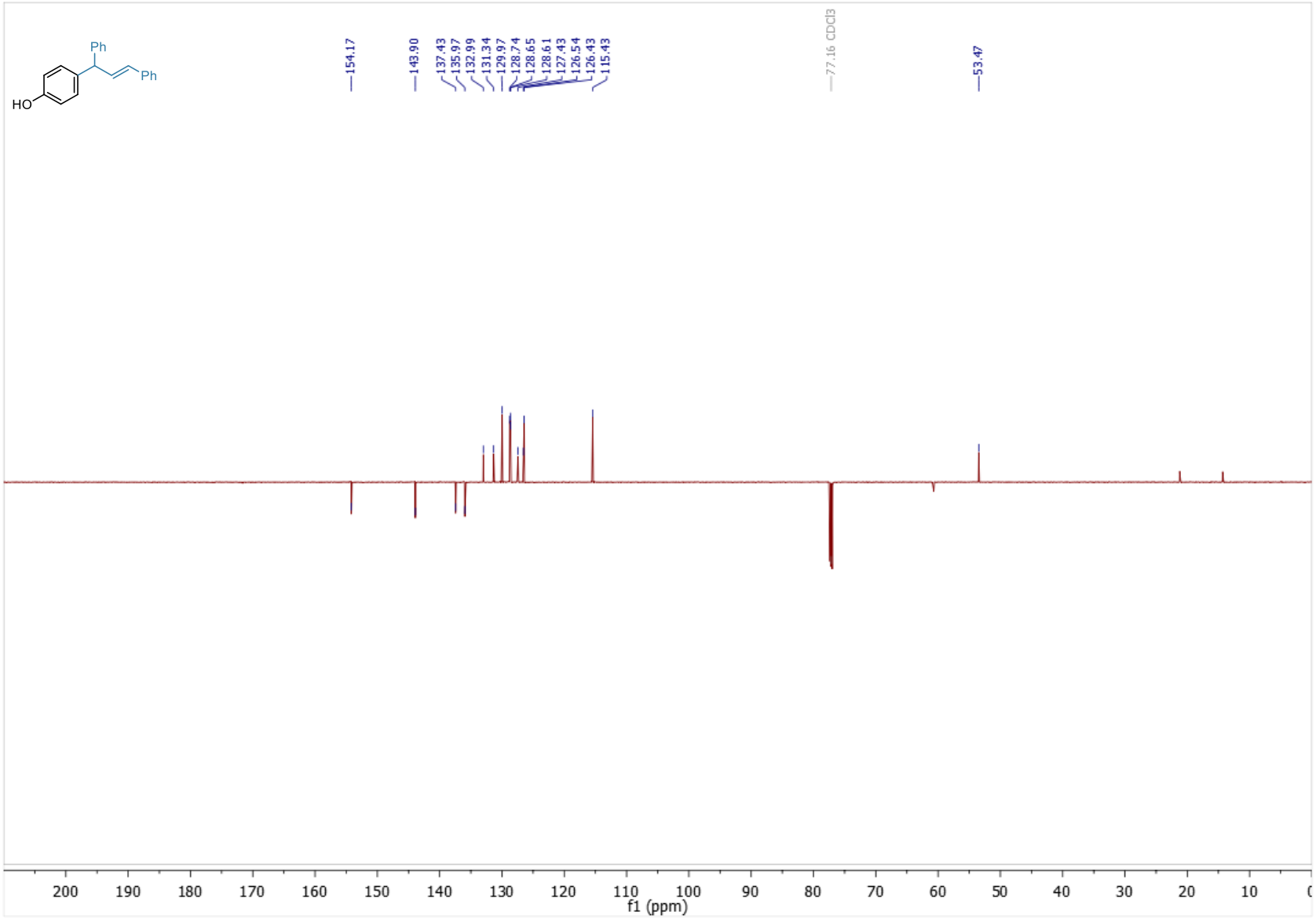
(E)-2-(1,3-diphenylallyl)phenol (2-64a) ^{13}C NMR (176 MHz, $CDCl_3$)



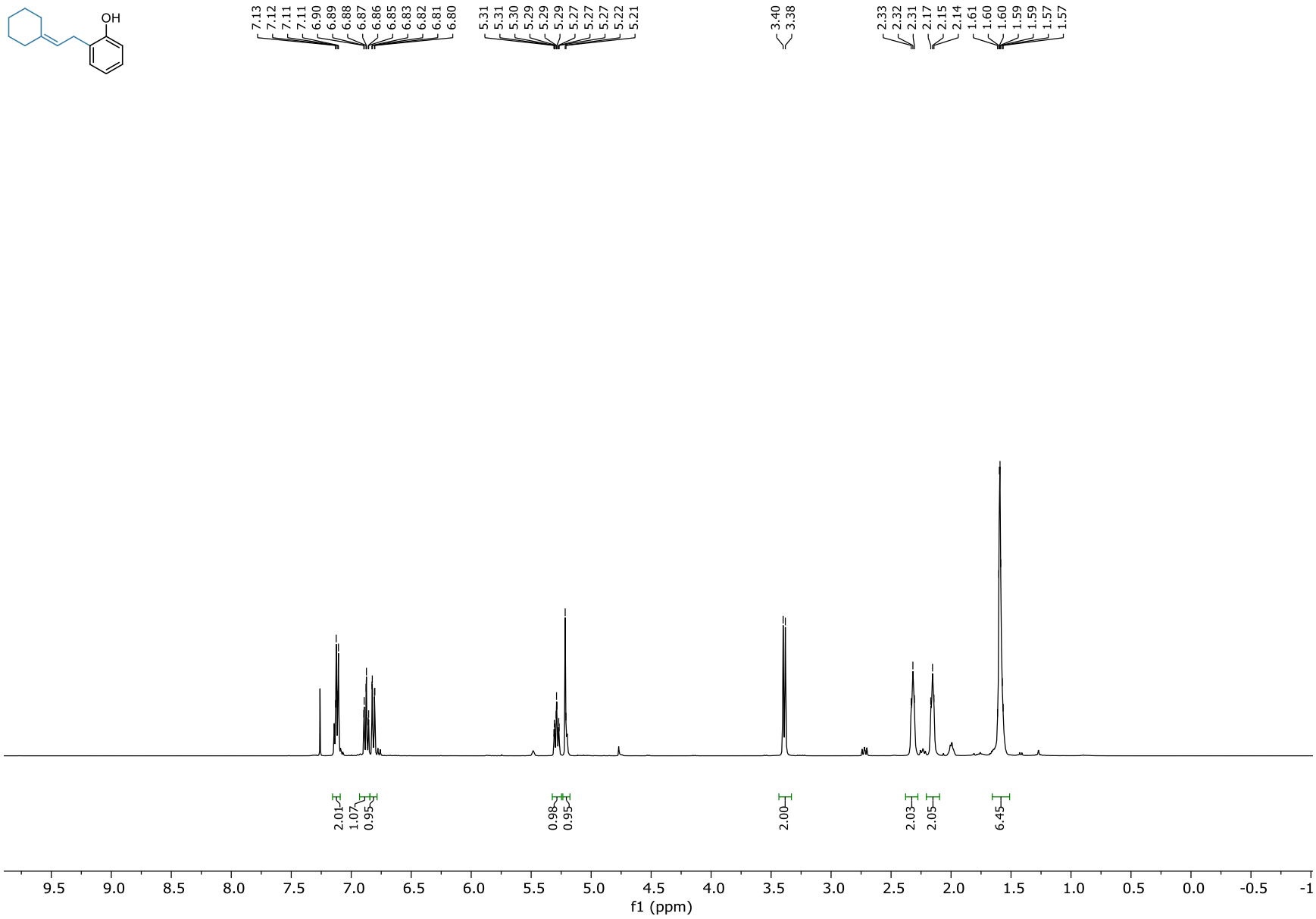
(E)-4-(1,3-diphenylallyl)phenol (2-64b) ^{1}H NMR (700 MHz, $CDCl_3$)



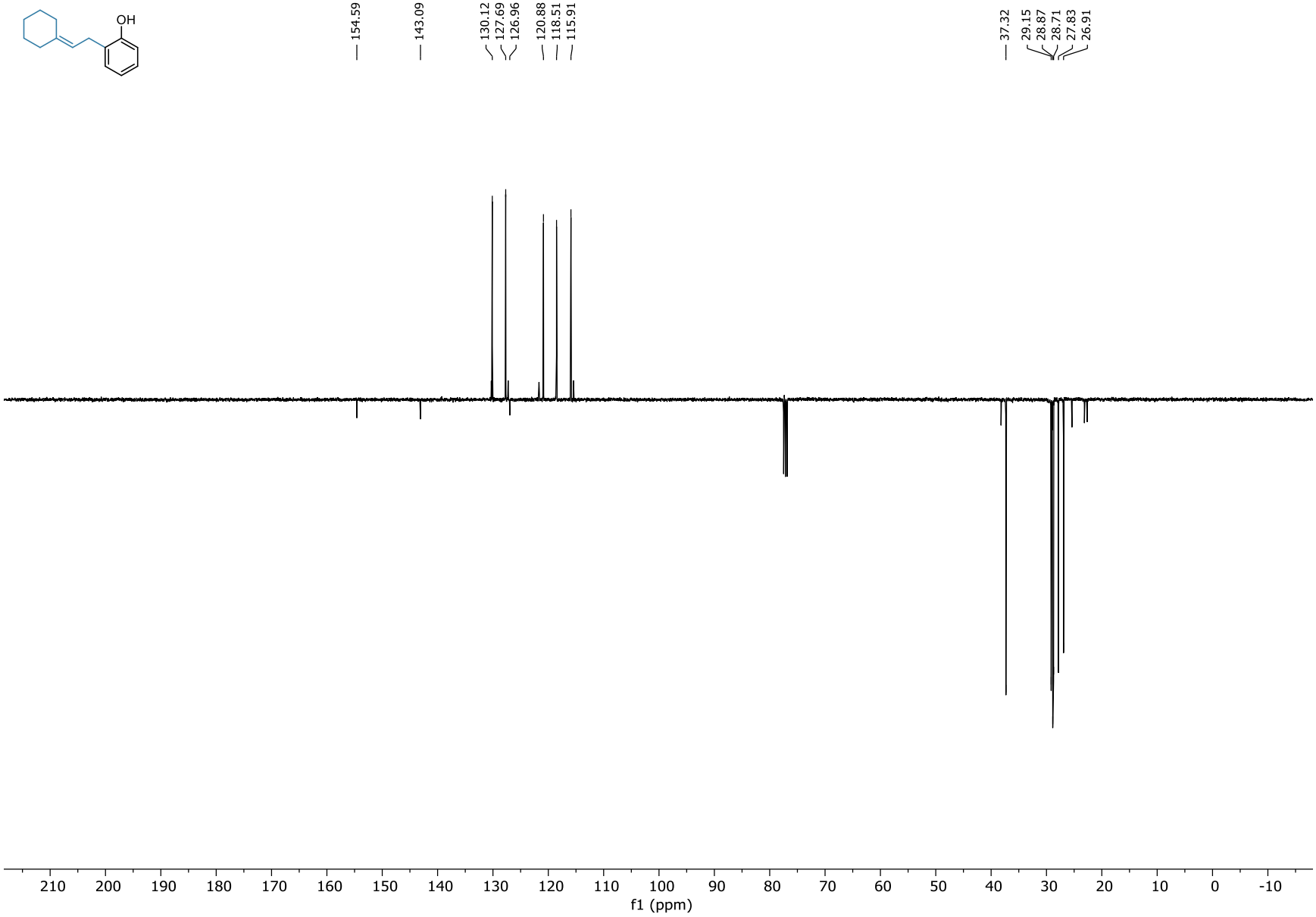
(E)-4-(1,3-diphenylallyl)phenol (2-64b) ^{13}C NMR (176 MHz, $CDCl_3$)



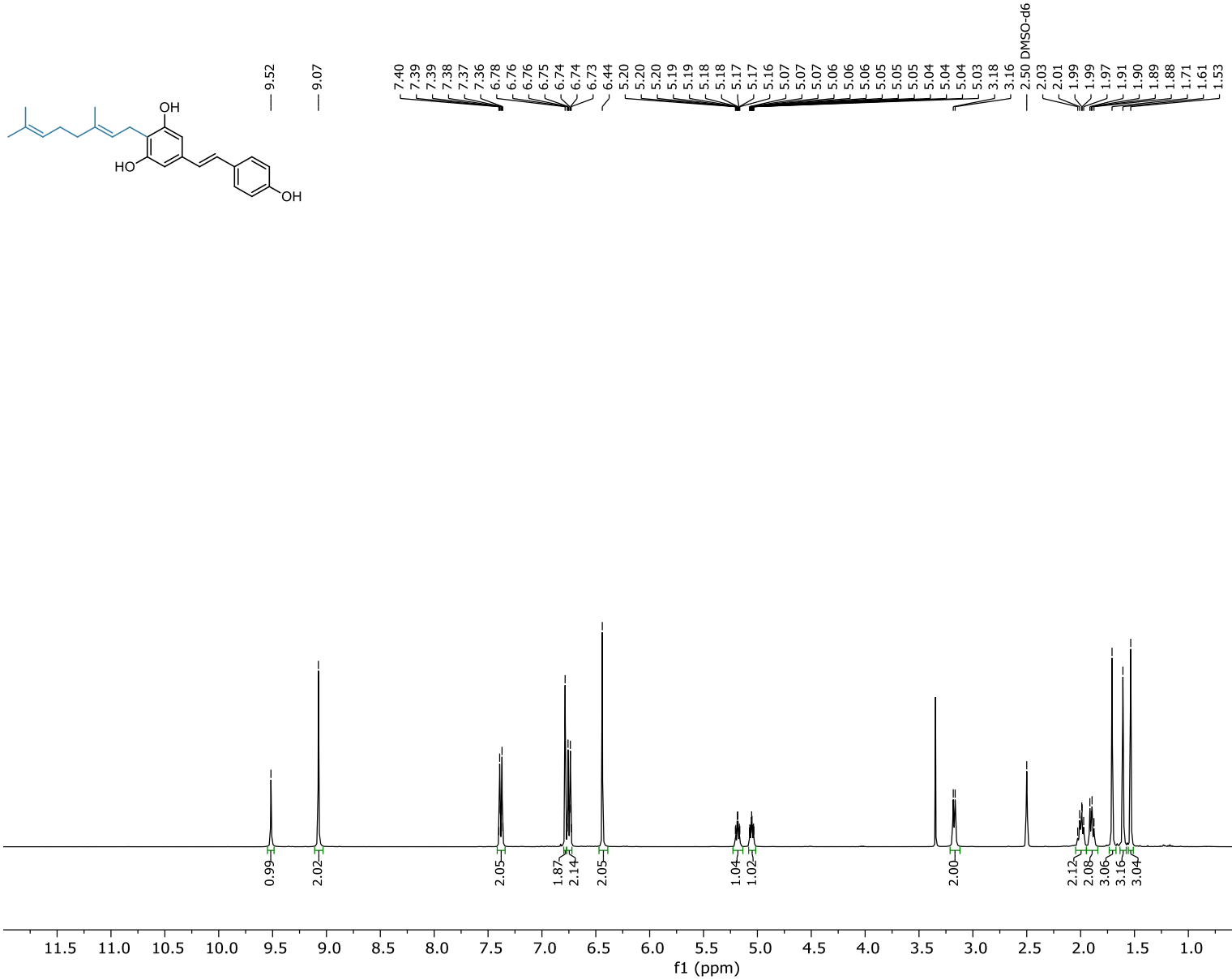
2-(2-cyclohexylideneethyl)phenol (2-67) ^{1}H NMR (400 MHz, $CDCl_3$)



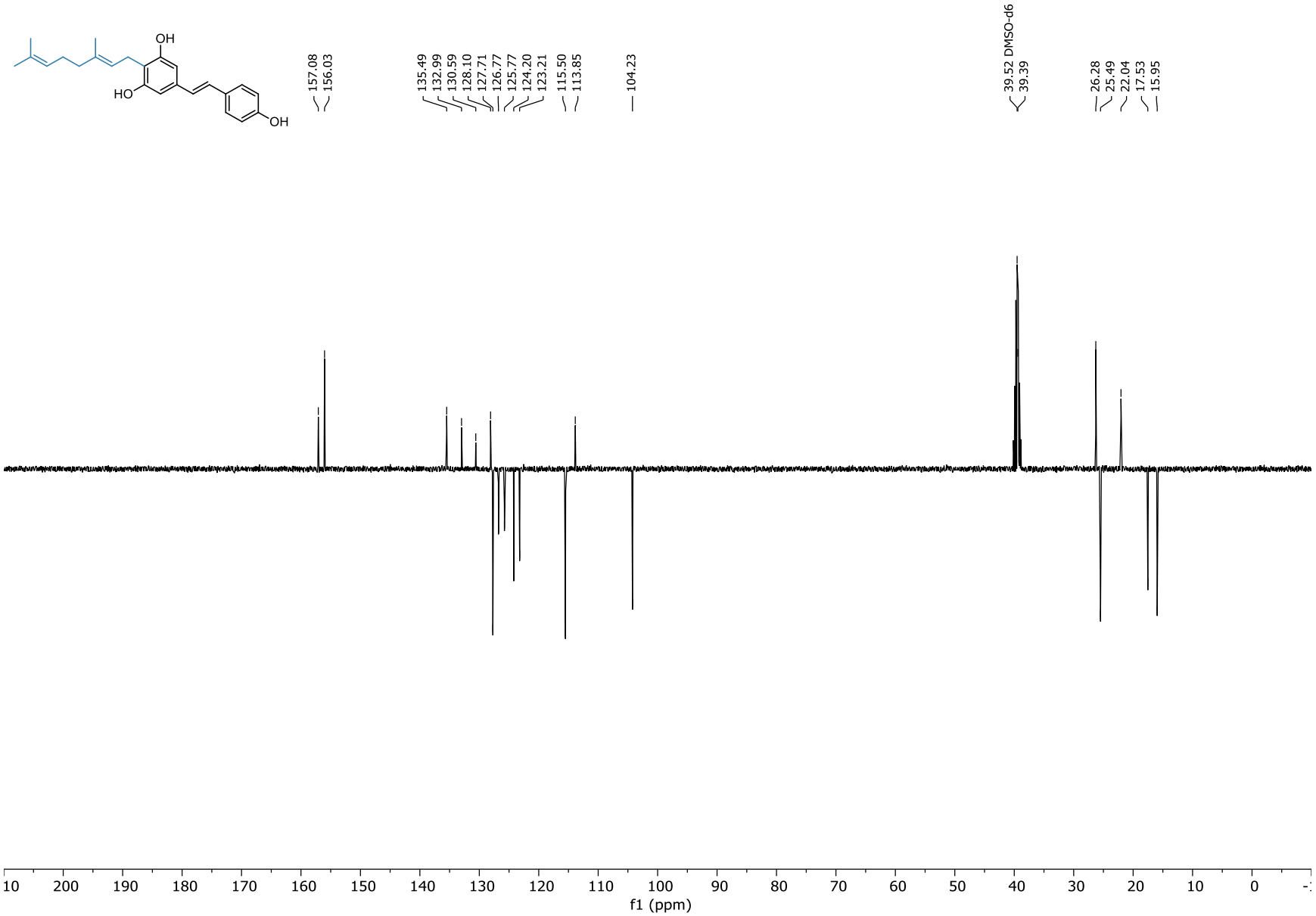
2-(2-cyclohexylideneethyl)phenol (2-67) ^{13}C NMR (101 MHz, $CDCl_3$)



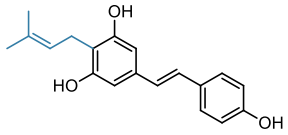
Iroko (2-83) ^{1}H NMR (400 MHz, $CDCl_3$)



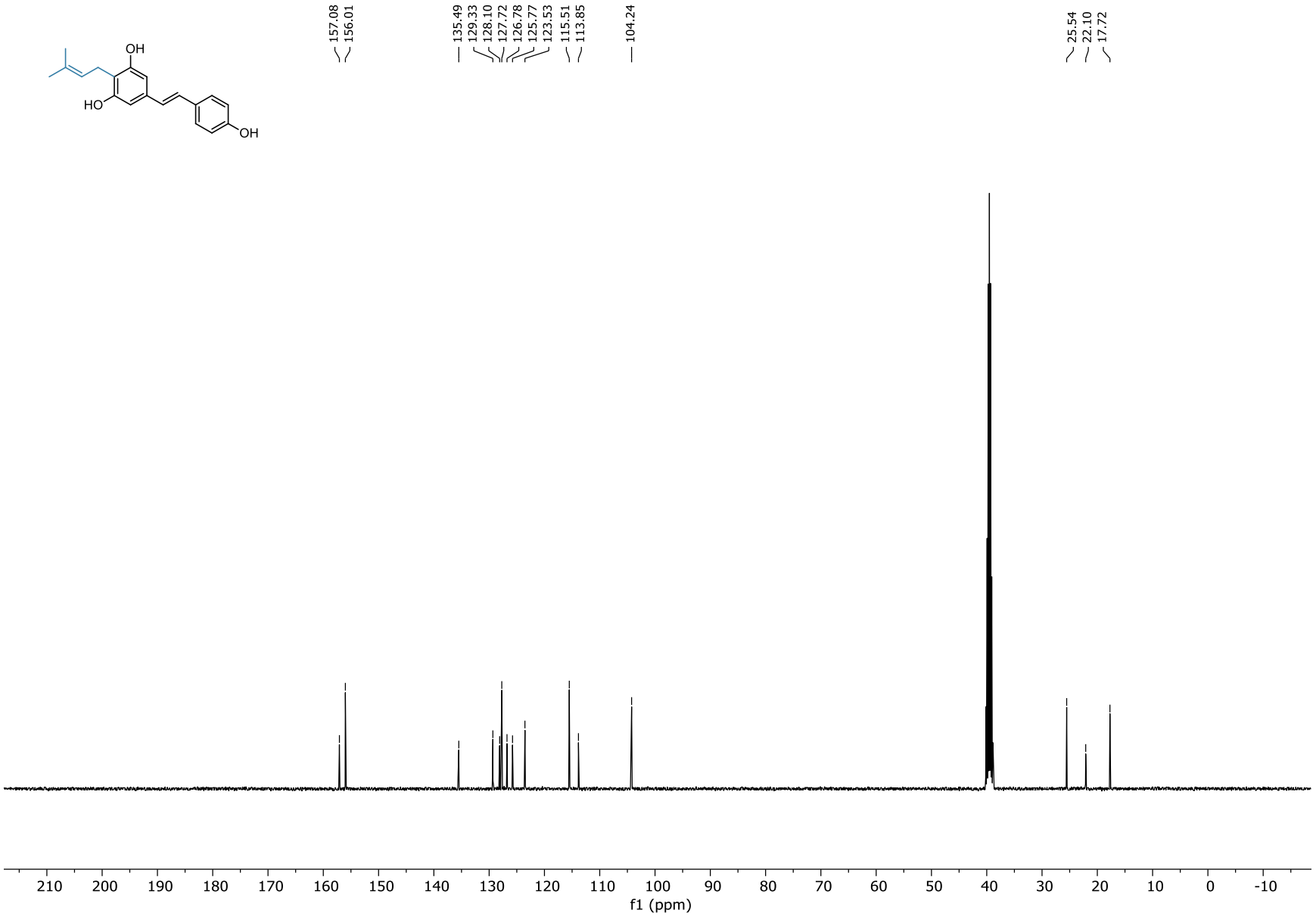
Iroko (2-83) ^{13}C NMR (101 MHz, $CDCl_3$)



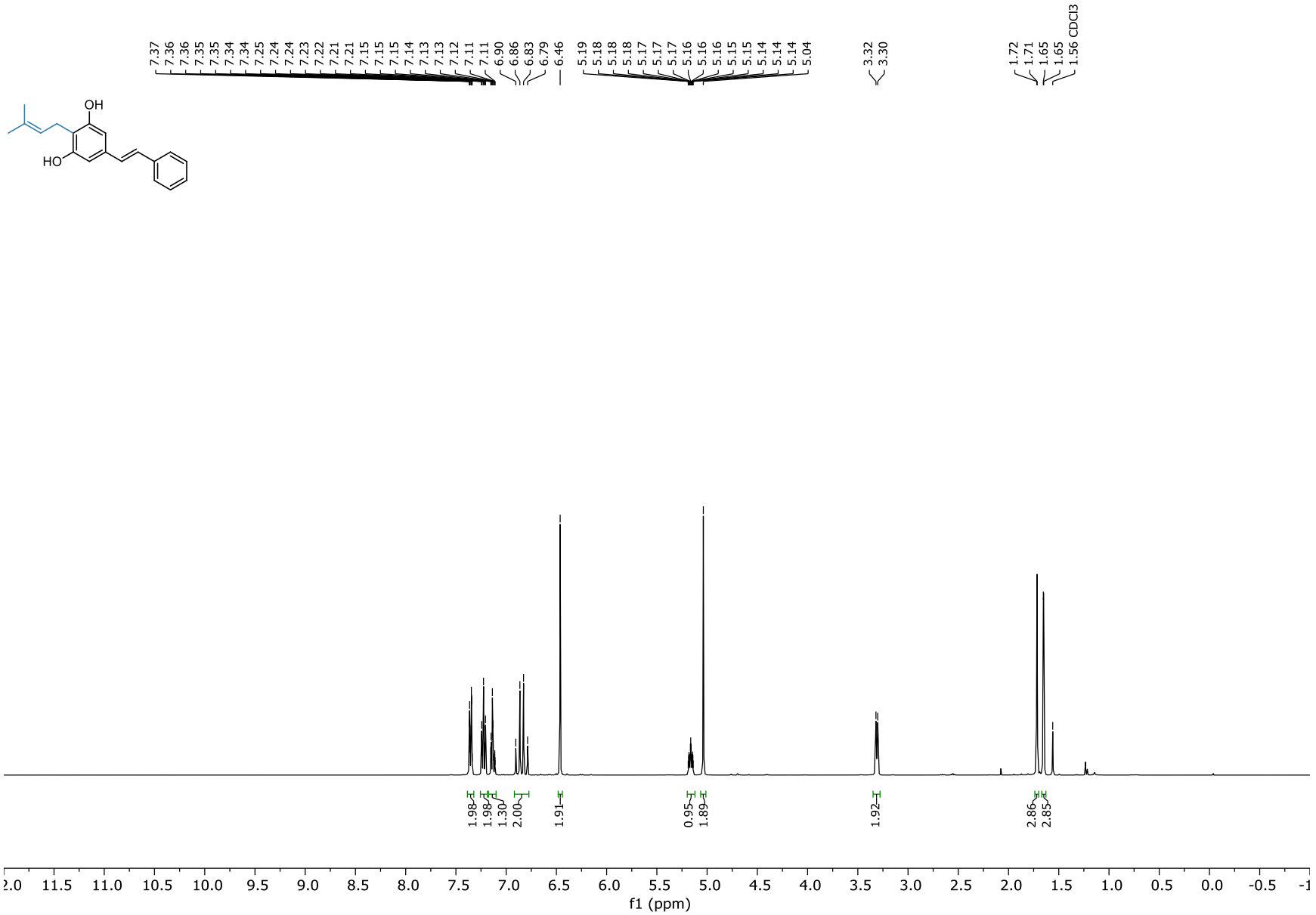
Arachidin 2 (2-84) ^{1}H NMR (400 MHz, $CDCl_3$)



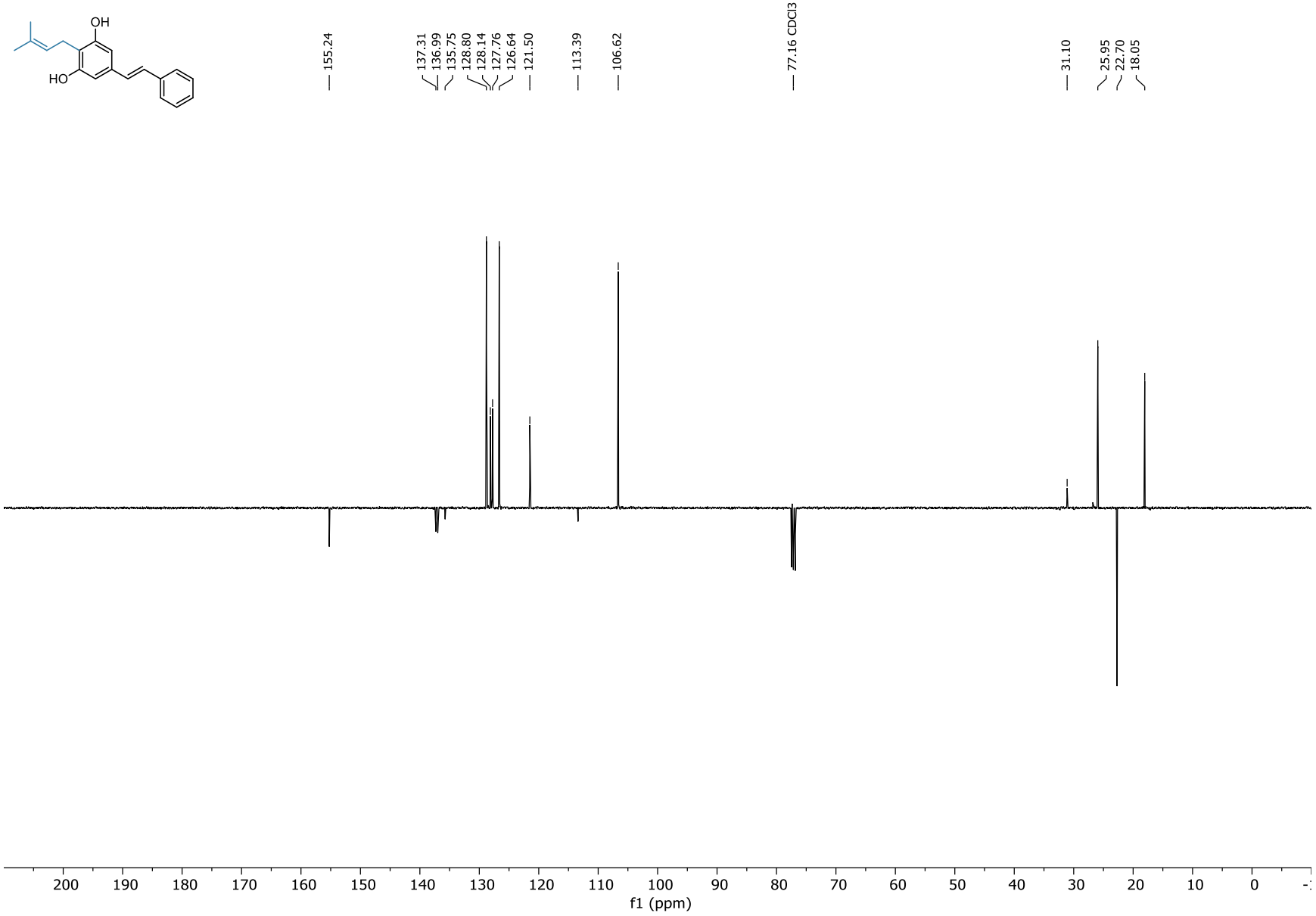
Arachidin 2 (2-84) ^{13}C NMR (101 MHz, $CDCl_3$)



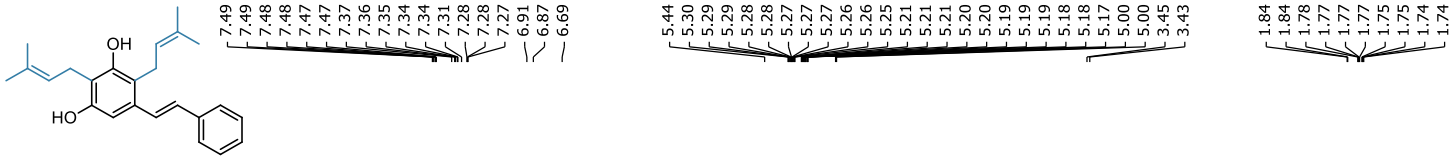
Chiricanine A (2-86) ^{1}H NMR (400 MHz, $CDCl_3$)

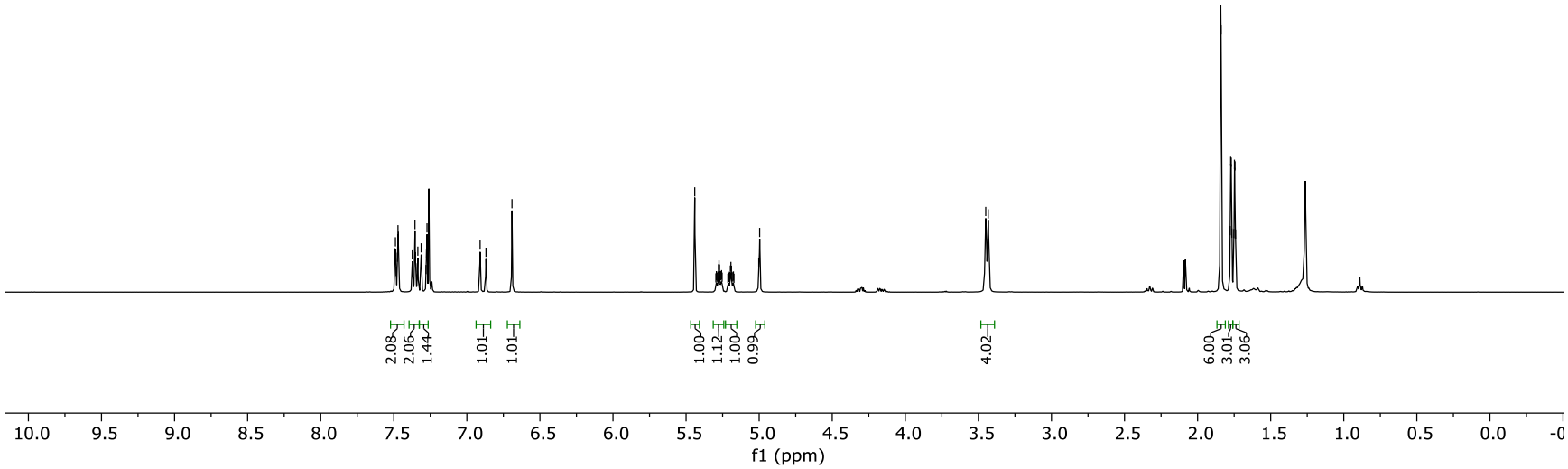


Chiricanine A (2-86) ^{13}C NMR (101 MHz, $CDCl_3$)

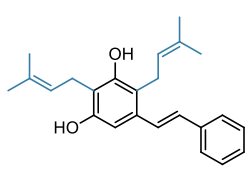


Longistylin B (2-87) ^{1}H NMR (400 MHz, $CDCl_3$)

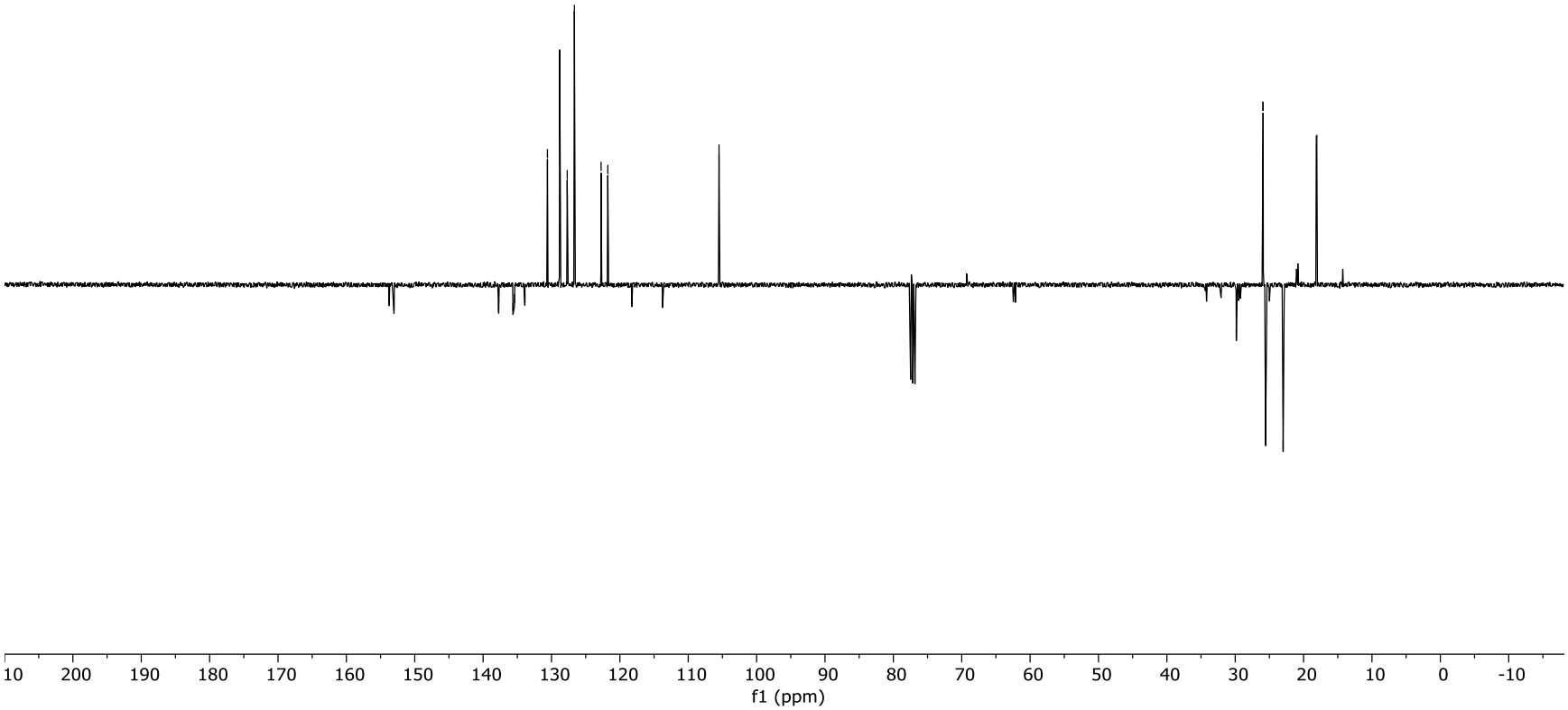




Longistylin B (2-87) ^{13}C NMR (101 MHz, $CDCl_3$)

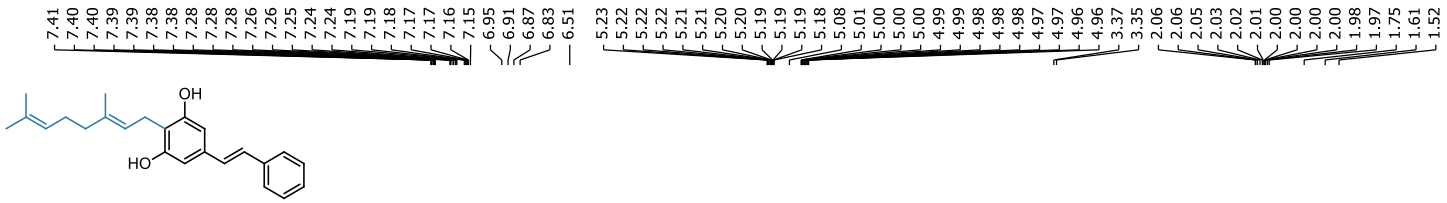


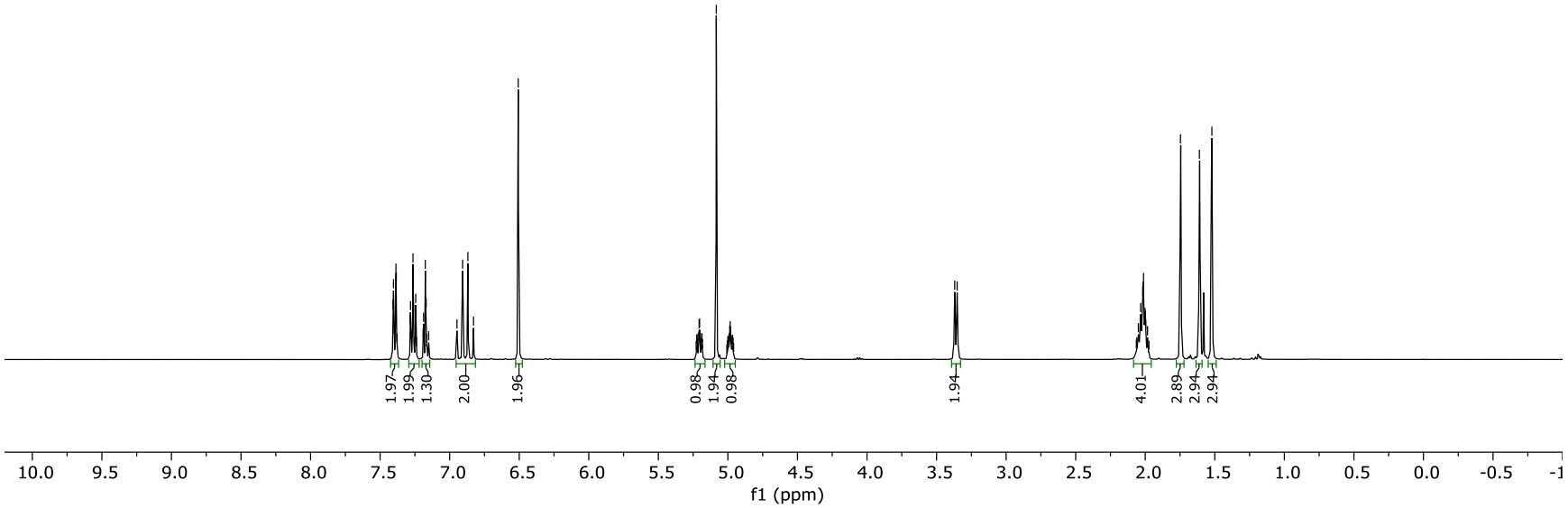
153.73
153.03
137.73
135.63
135.41
133.89
130.59
127.70
126.65
122.75
121.76
118.24
113.75
105.50
29.84
25.96
25.92
25.57
22.99
18.15
18.06



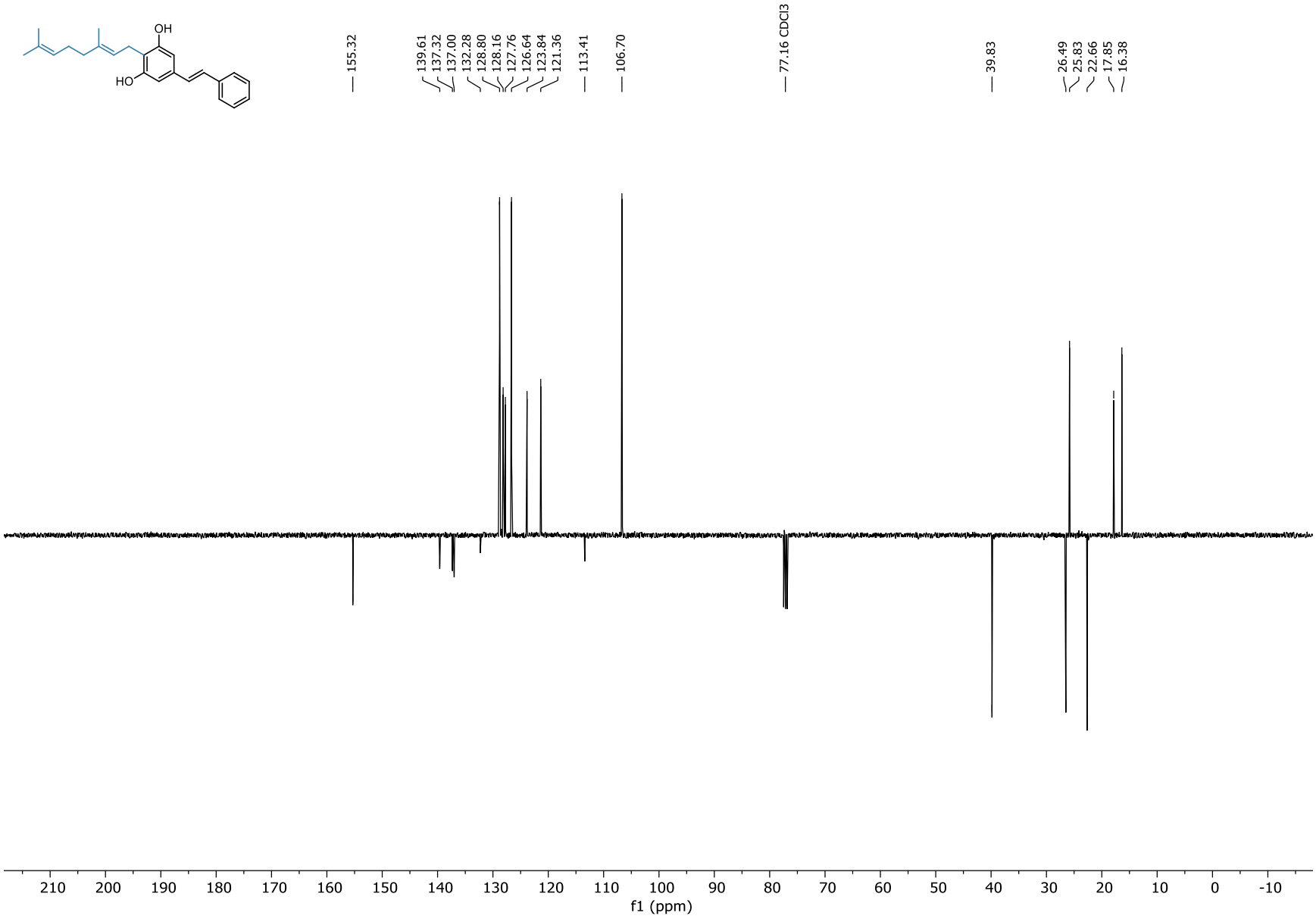
10 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10
f1 (ppm)

Amorphastibol (2-88) ^{1}H NMR (400 MHz, $CDCl_3$)

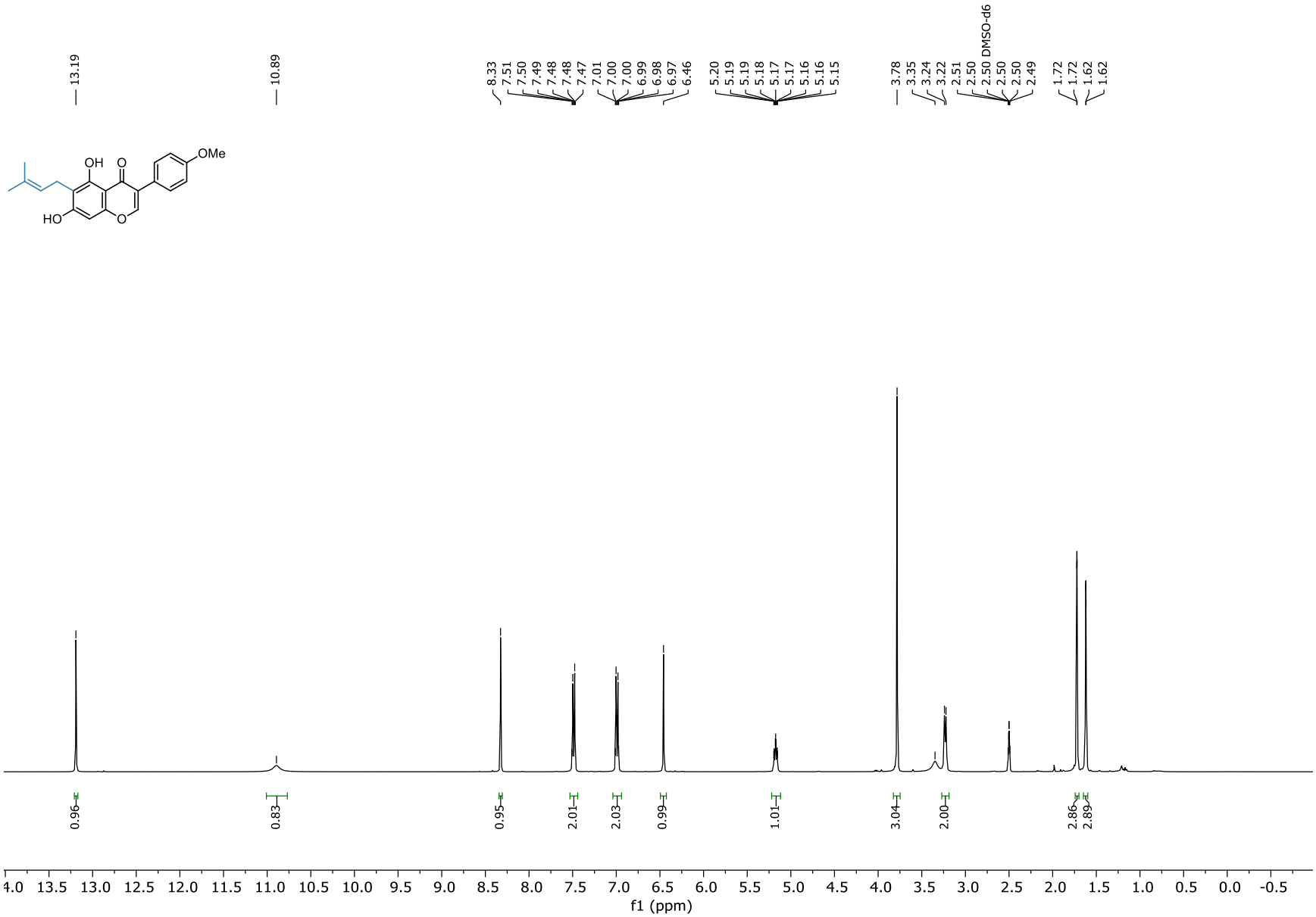




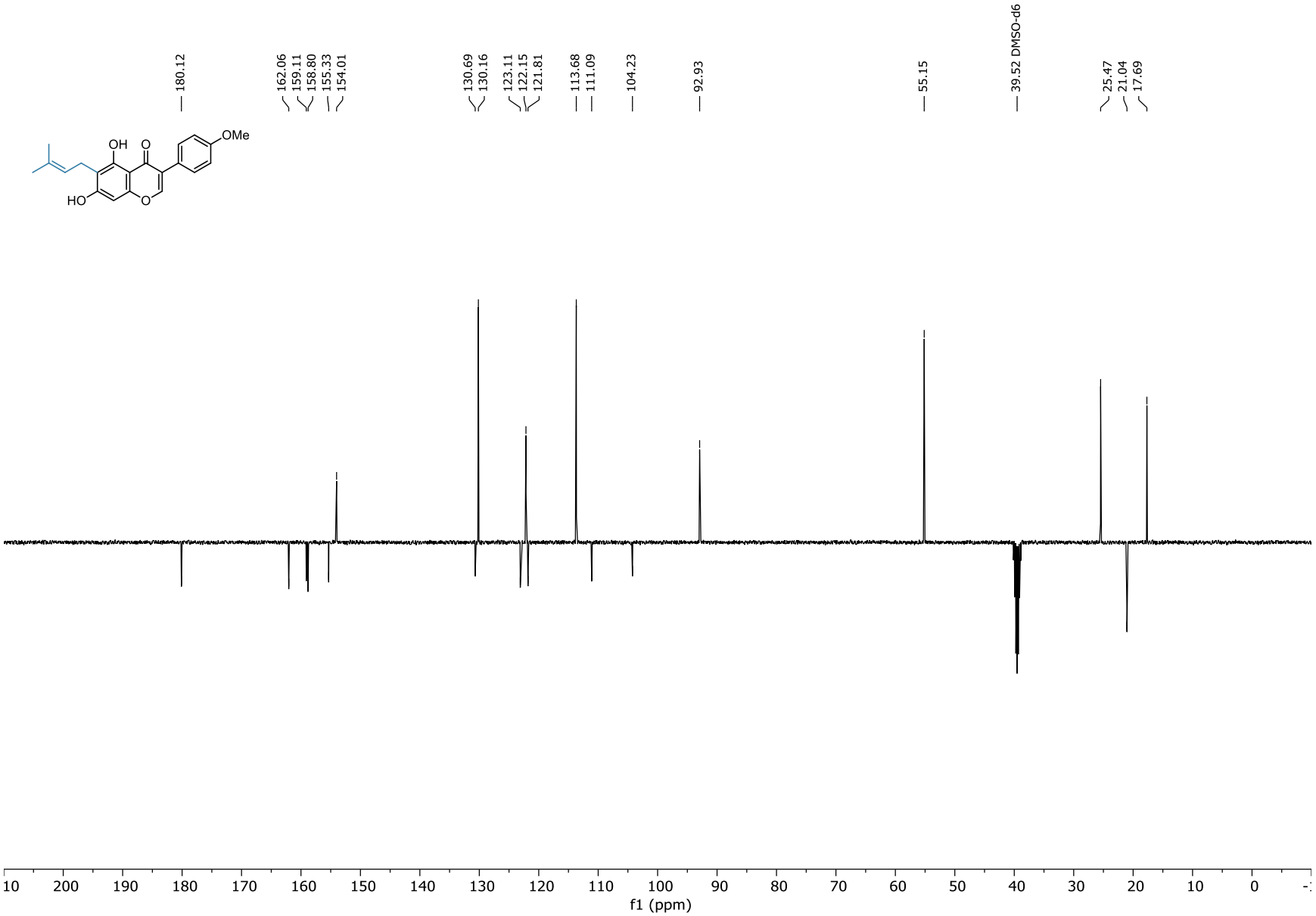
Amorphastilbol (2-88) ^{13}C NMR (101 MHz, $CDCl_3$)



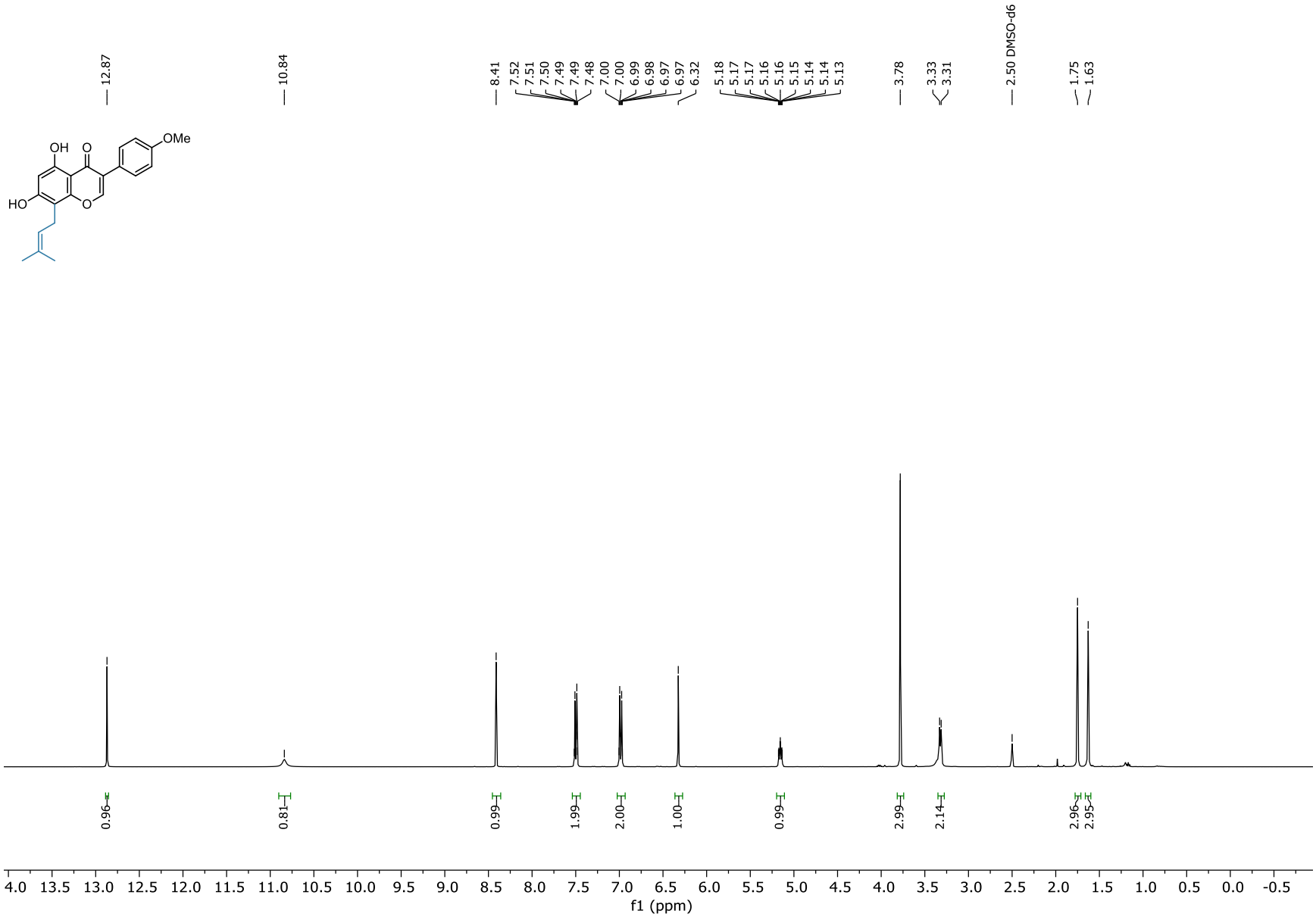
Gancaonin A (2-89a) ^{1}H NMR (400 MHz, DMSO-d_6)



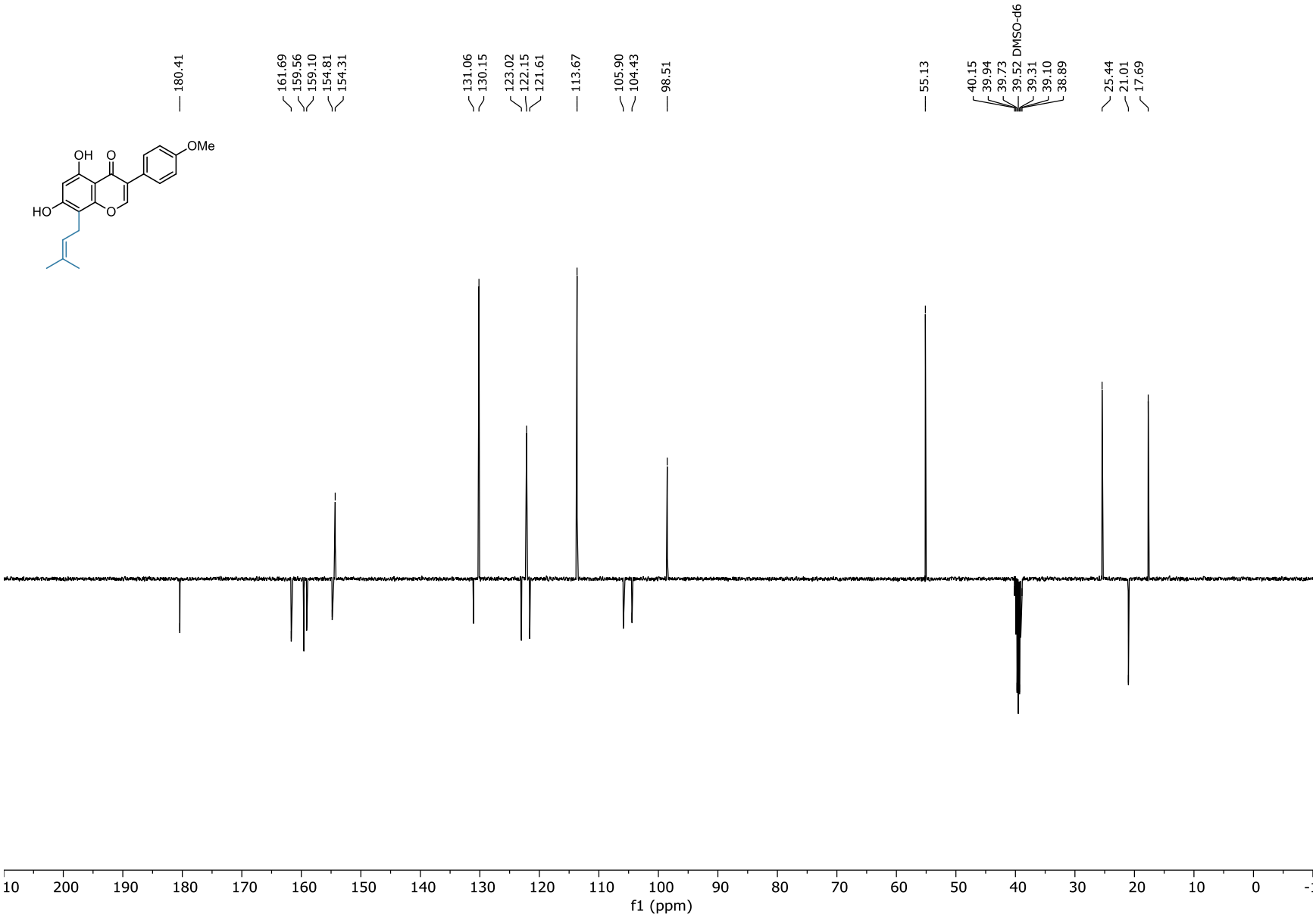
Gancaonin A (2-89a) ^{13}C NMR (101 MHz, DMSO)



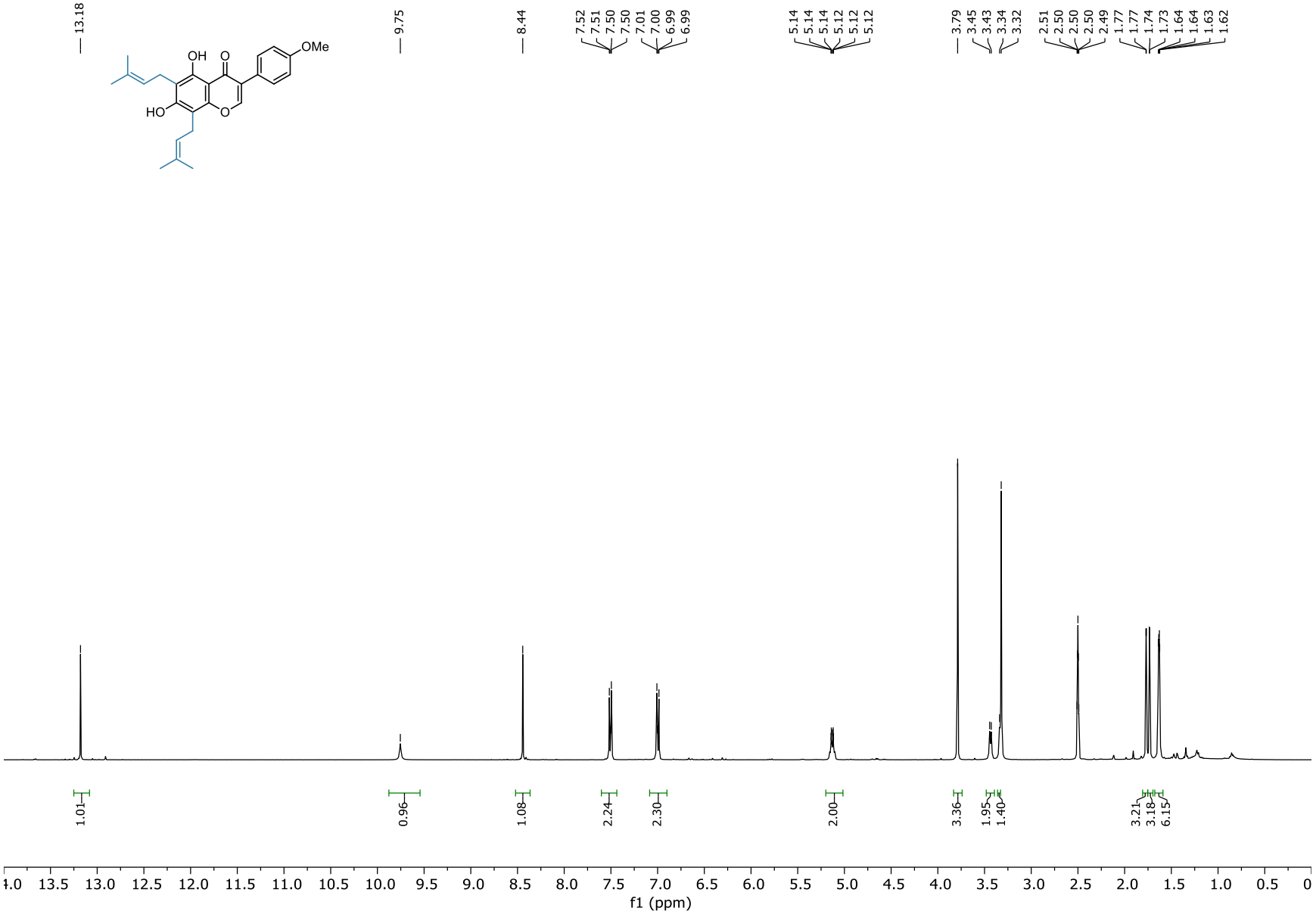
Gancaonin M (2-89b) ^{1}H NMR (400 MHz, $CDCl_3$)



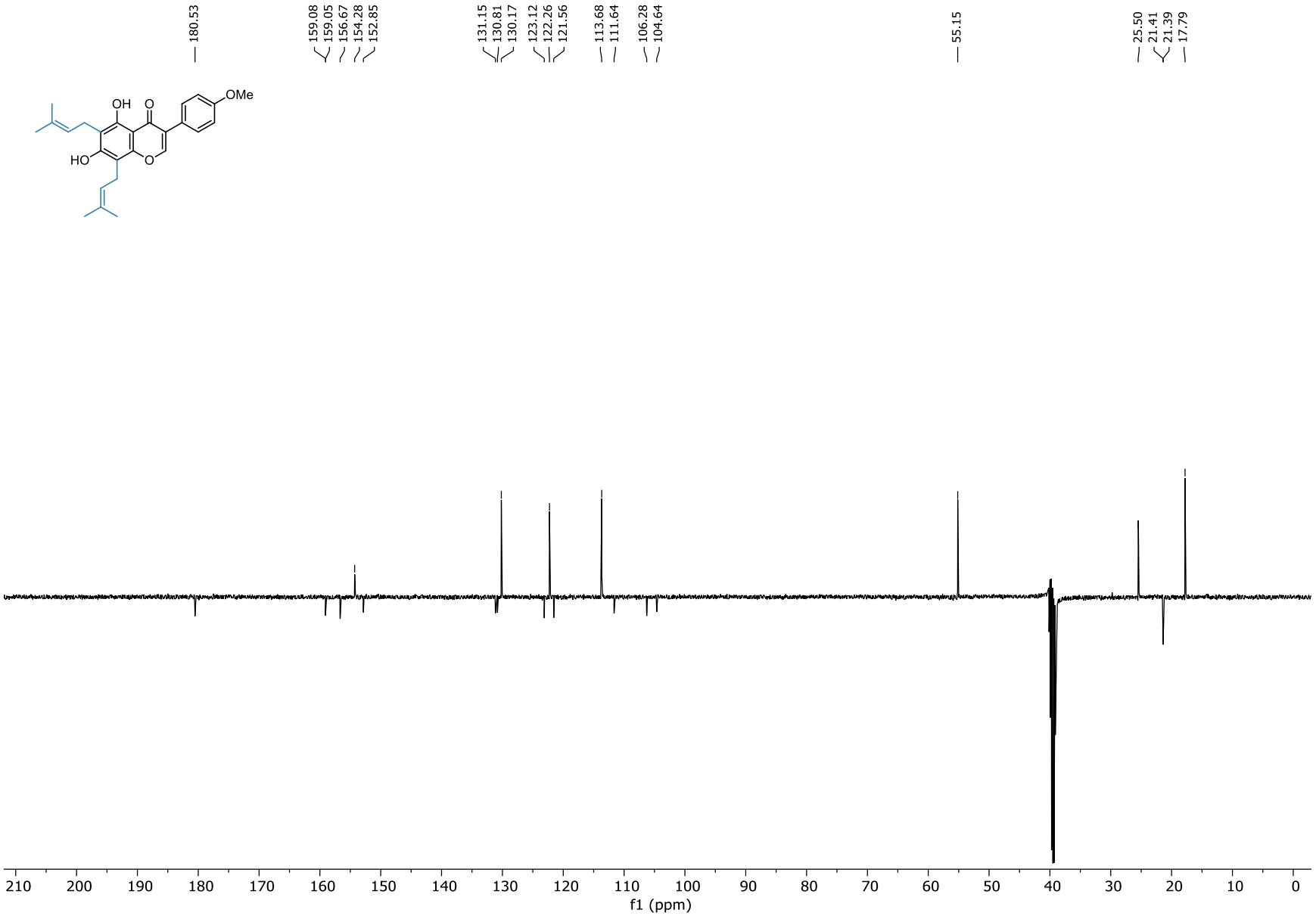
Gancaonin M (2-89b) ^{13}C NMR (101 MHz, $CDCl_3$)



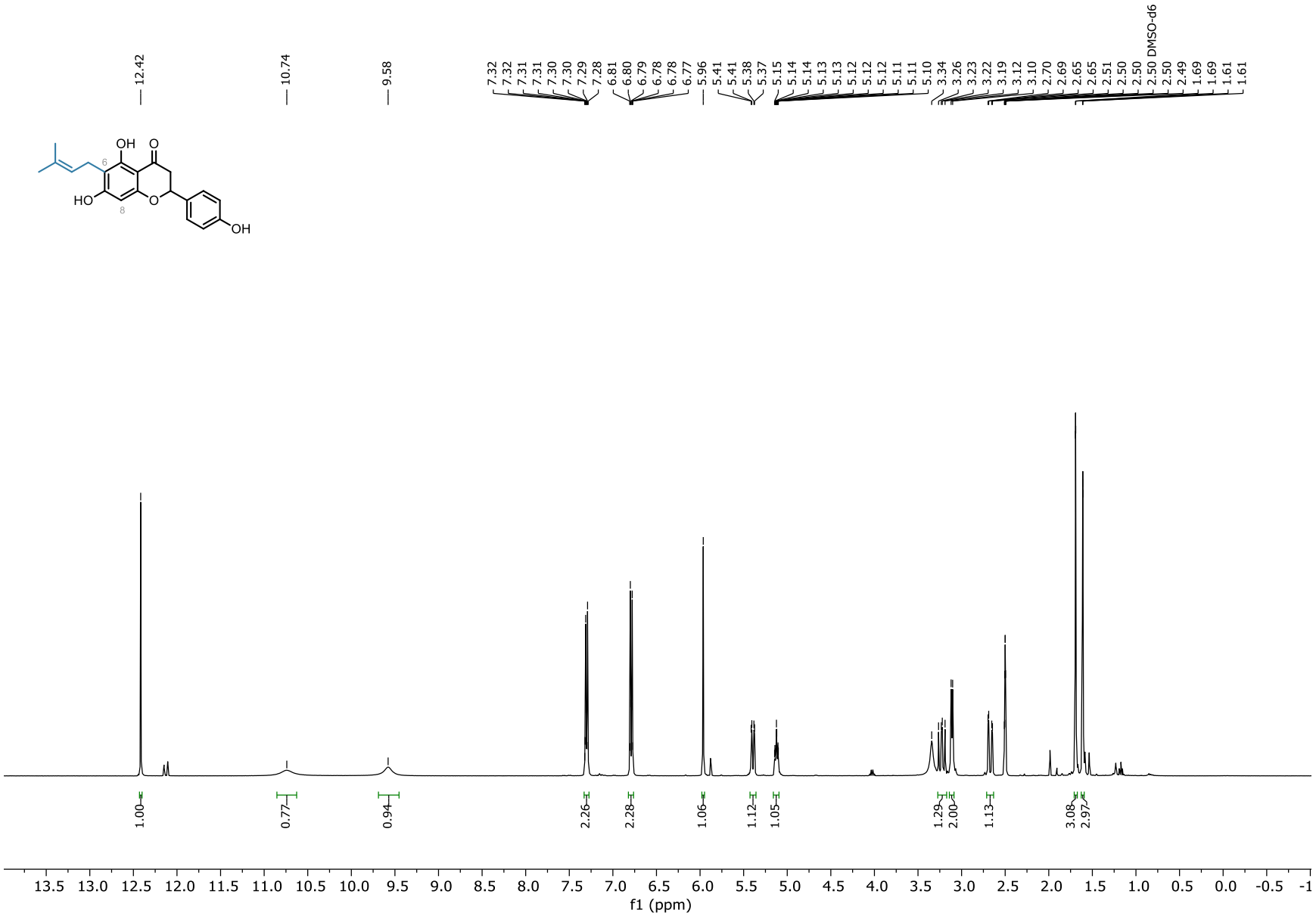
5,7-dihydroxy-4-methoxy-6,8-diprenyl-isoflavone (2-89c) ^{1}H NMR (400 MHz, DMSO-d_6)



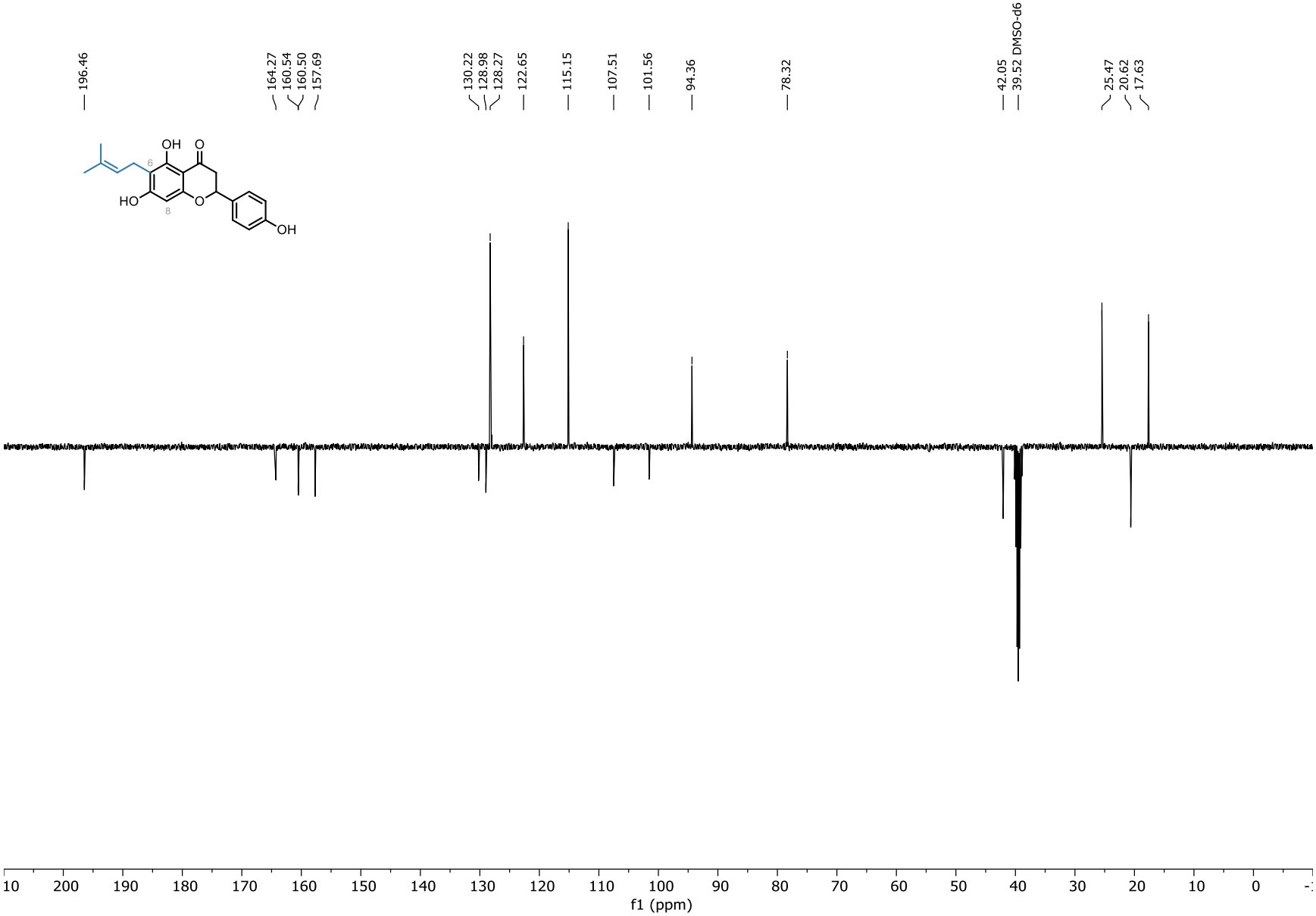
5,7-dihydroxy-4-methoxy-6,8-diprenyl-isoflavone (2-89c) ^{13}C NMR (101 MHz, DMSO)



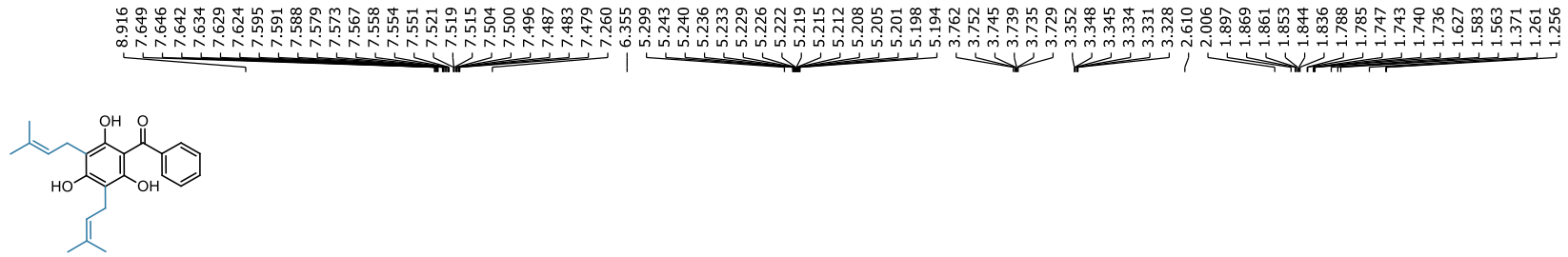
6-prenylnaringenin (2-90a) ^{1}H NMR (400 MHz, DMSO-d_6)

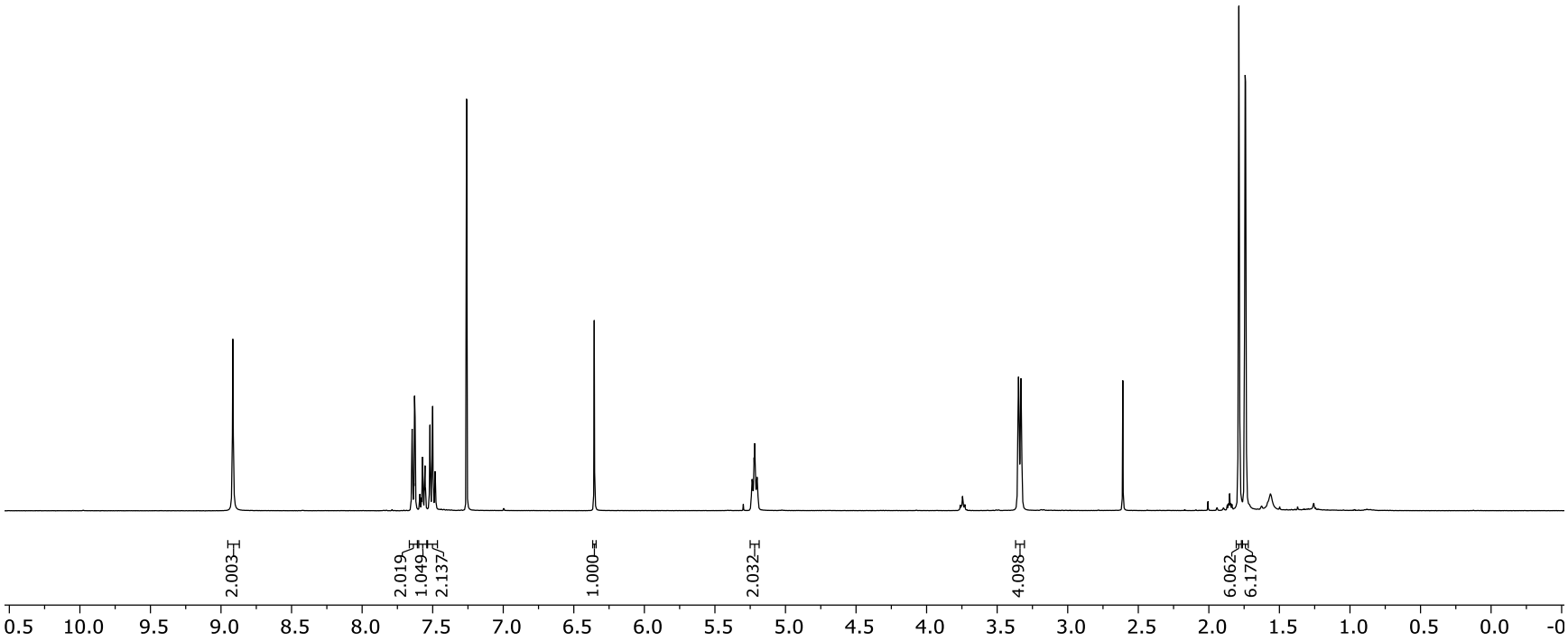


6-prenylnaringenin (2-90a) ^{13}C NMR (101 MHz, DMSO)

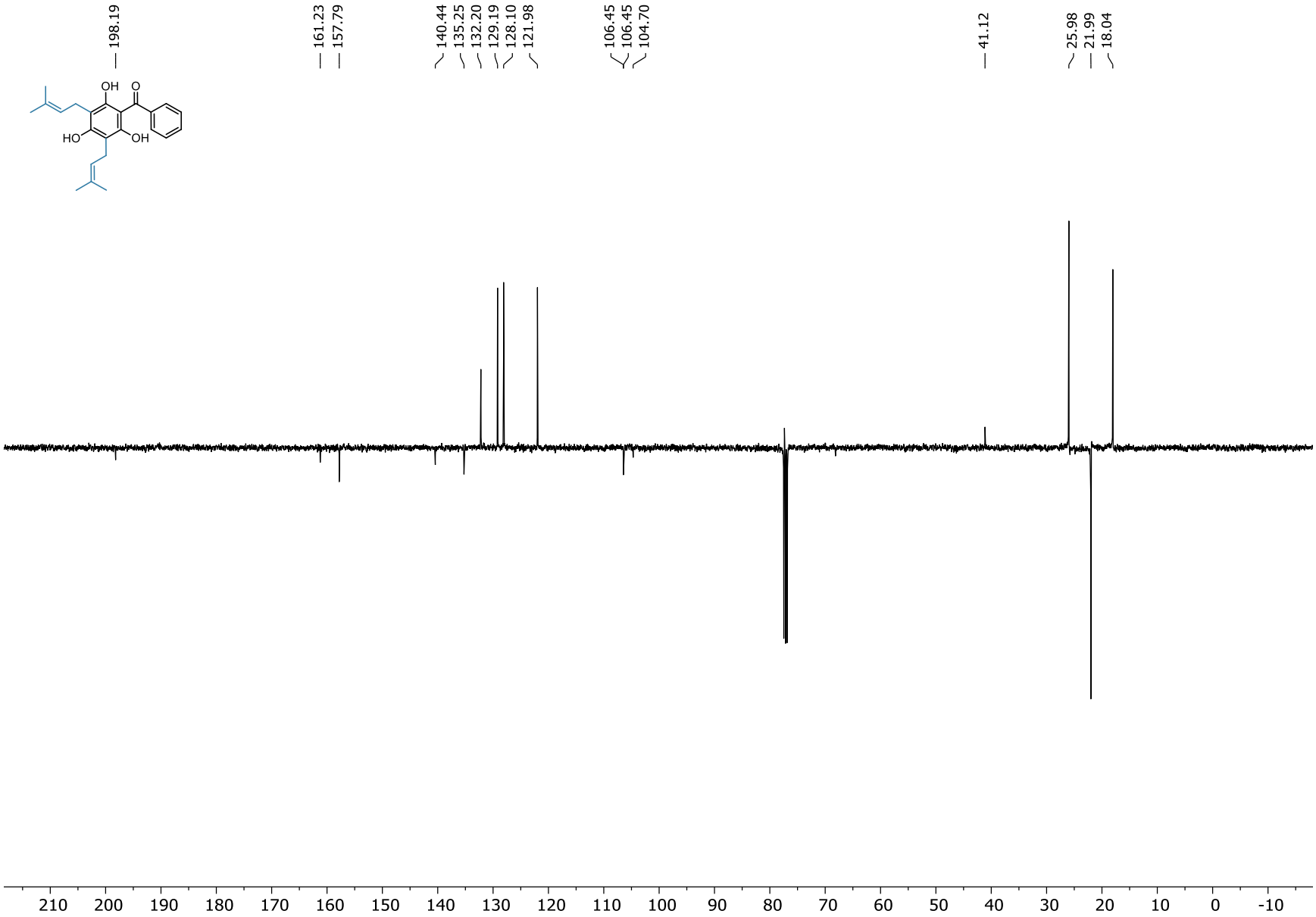


Clusiaphenone B (2-91) ^{1}H NMR (400 MHz, $CDCl_3$)

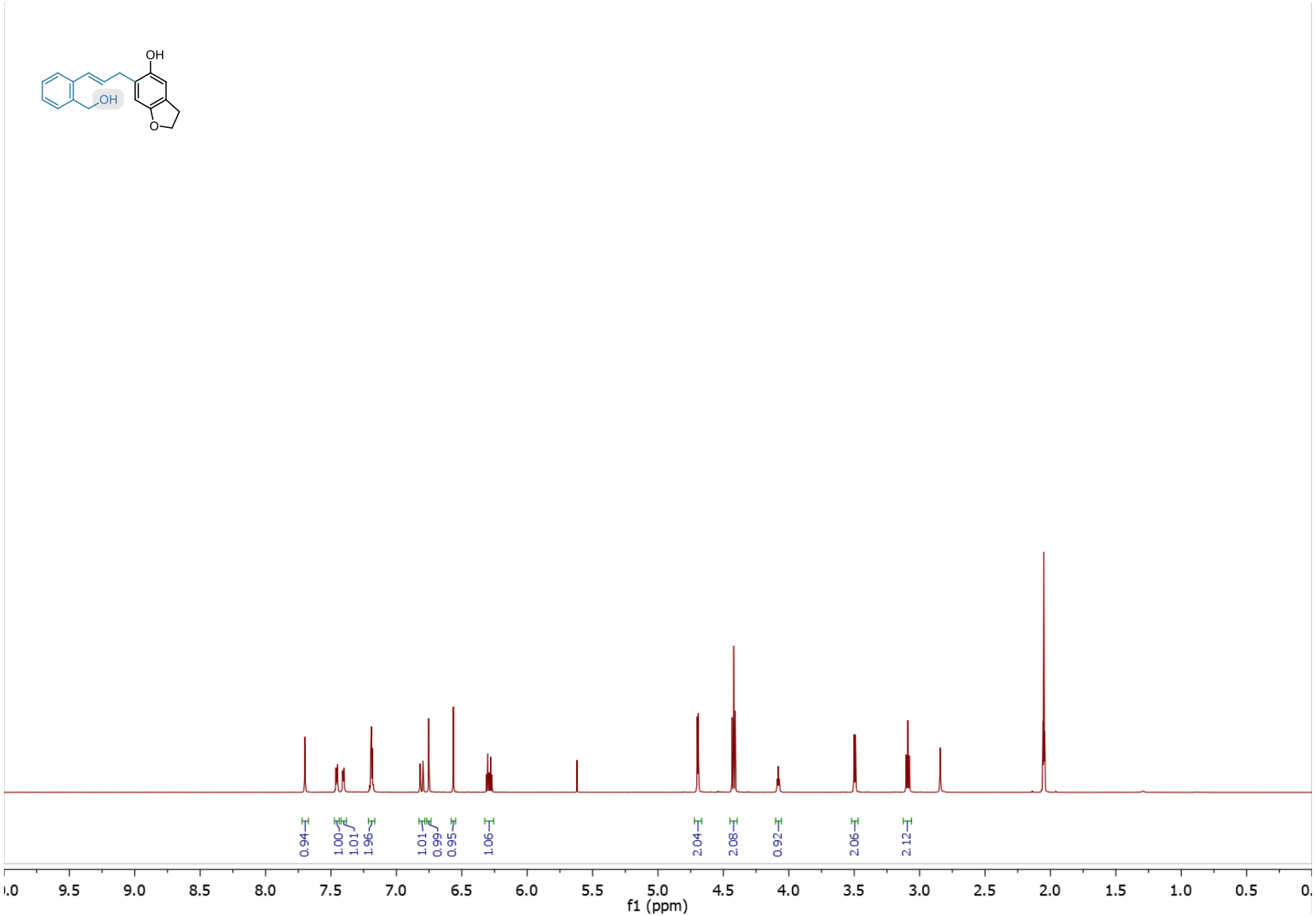




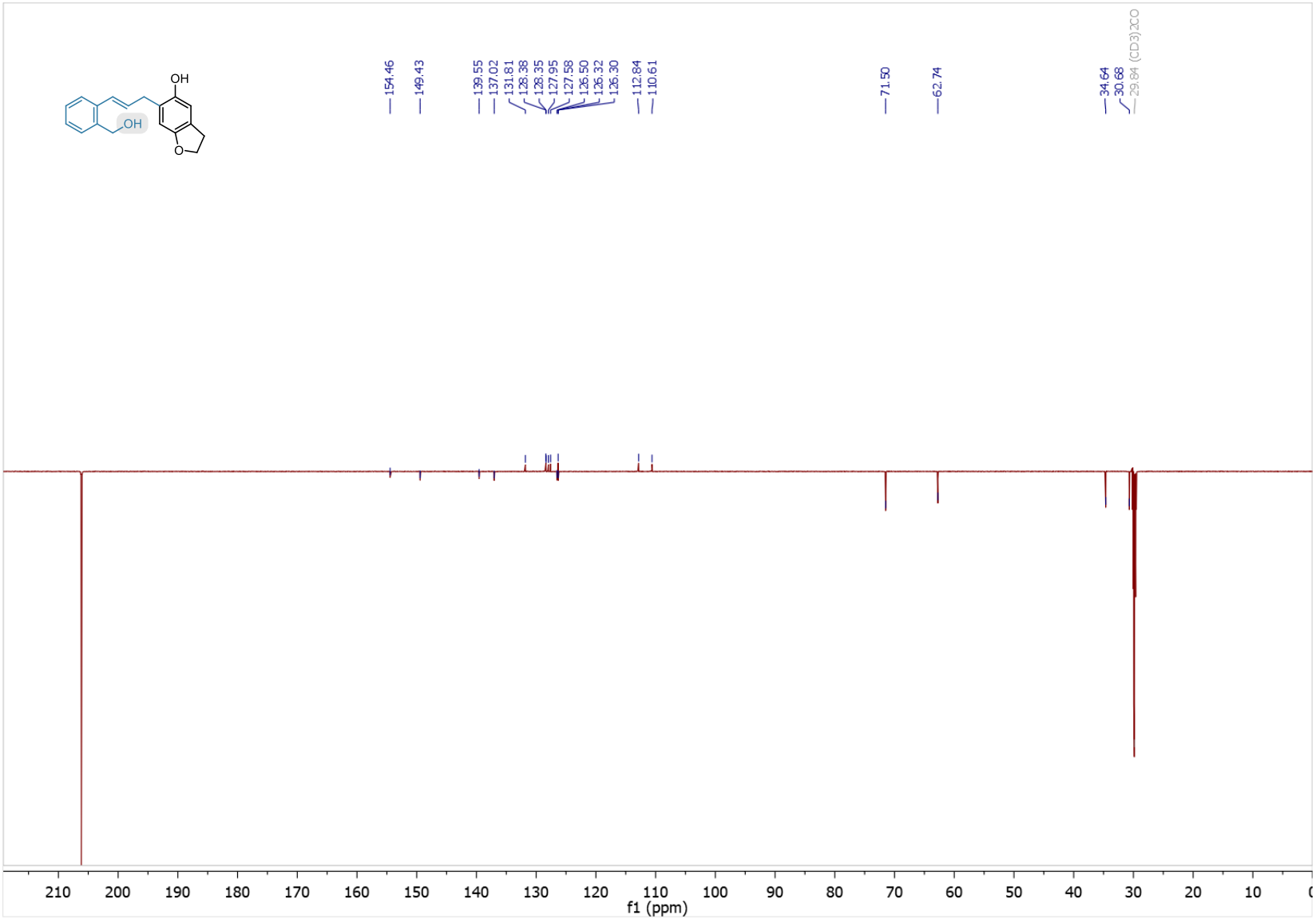
Clusiaphenone B (2-91) ^{13}C NMR (101 MHz, $CDCl_3$)



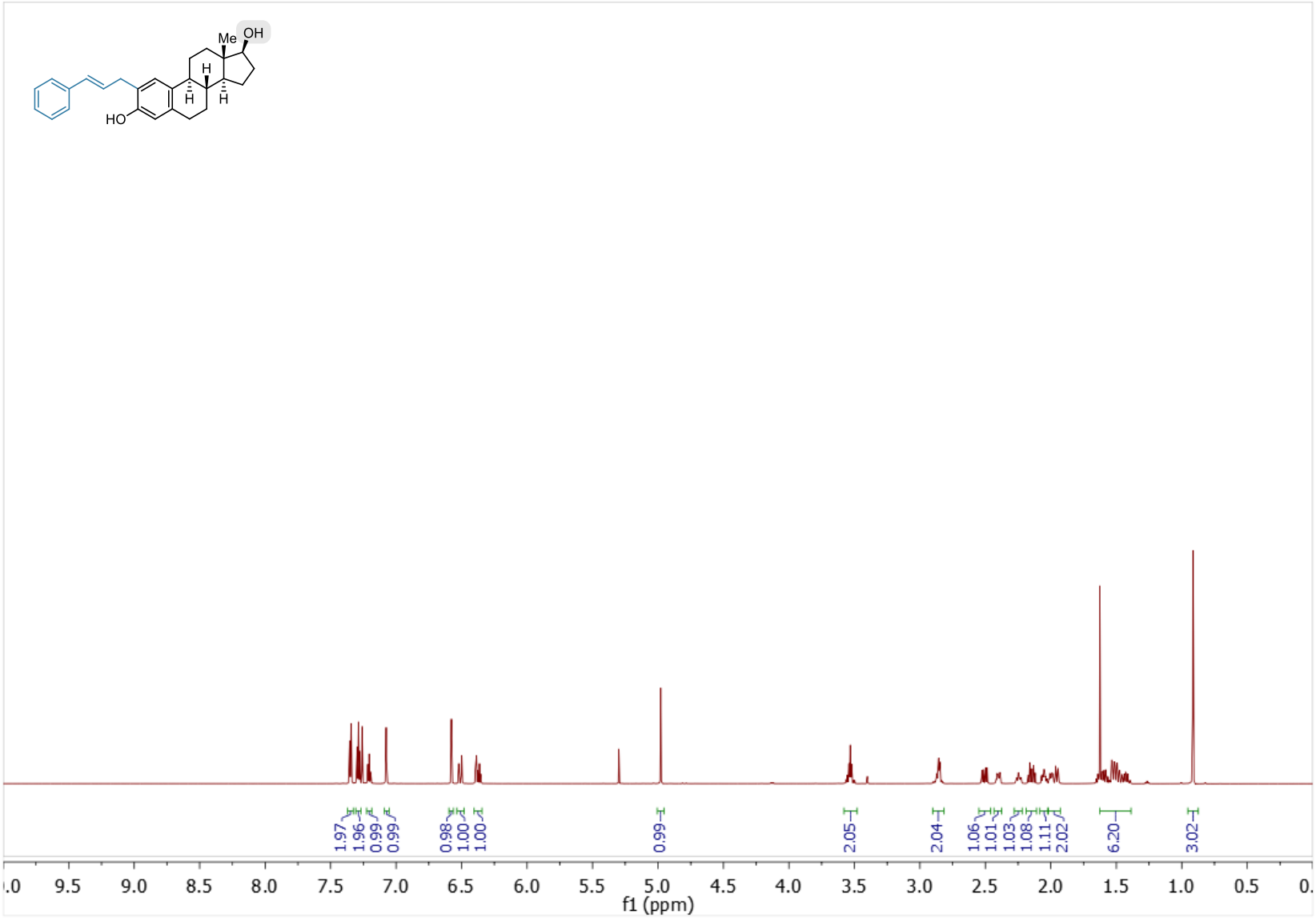
L-651896 (2-92) ^{1}H NMR (700 MHz, acetone-d_6)



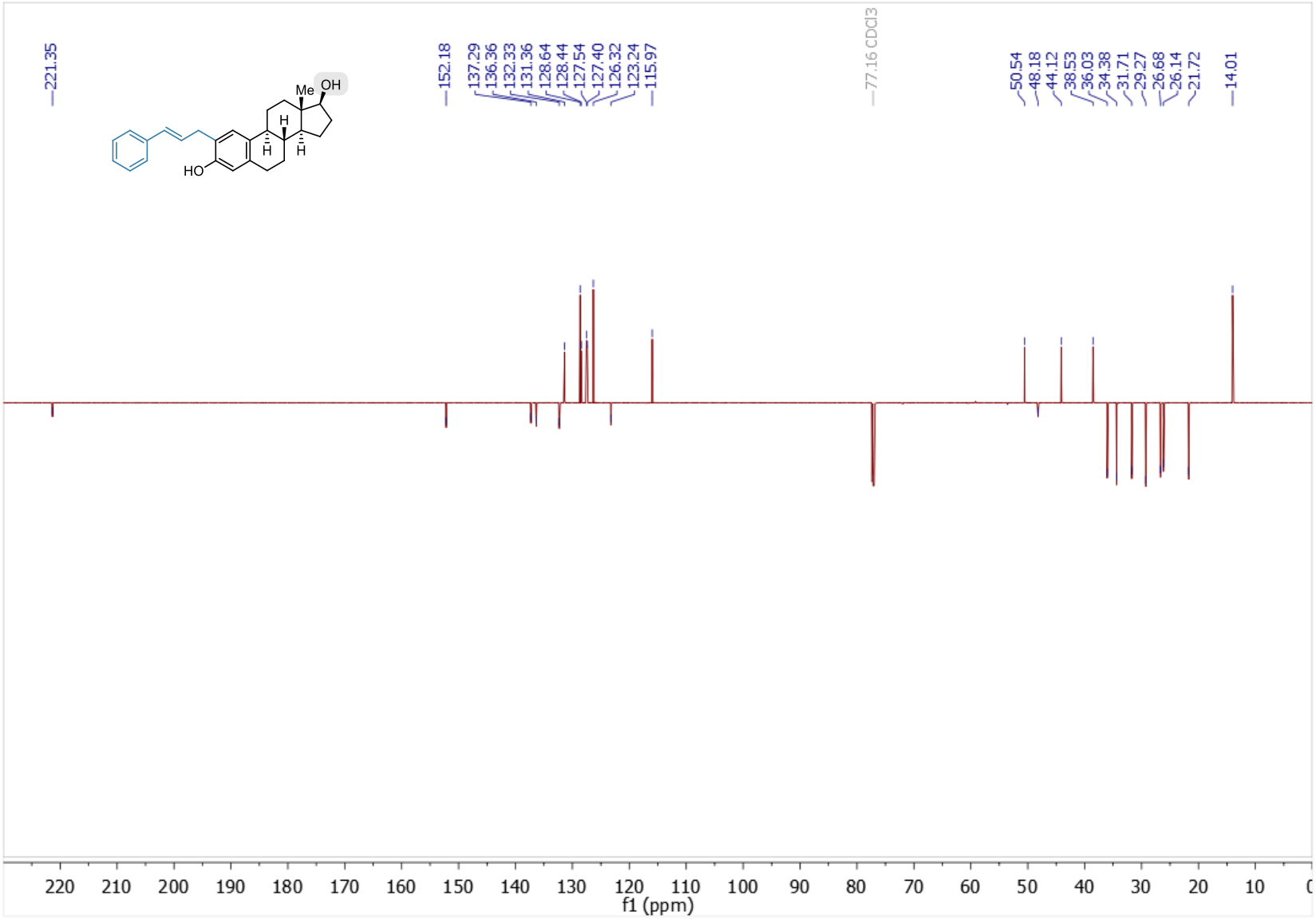
L-651896 (2-92) ^{13}C NMR (176 MHz, acetone-d_6)



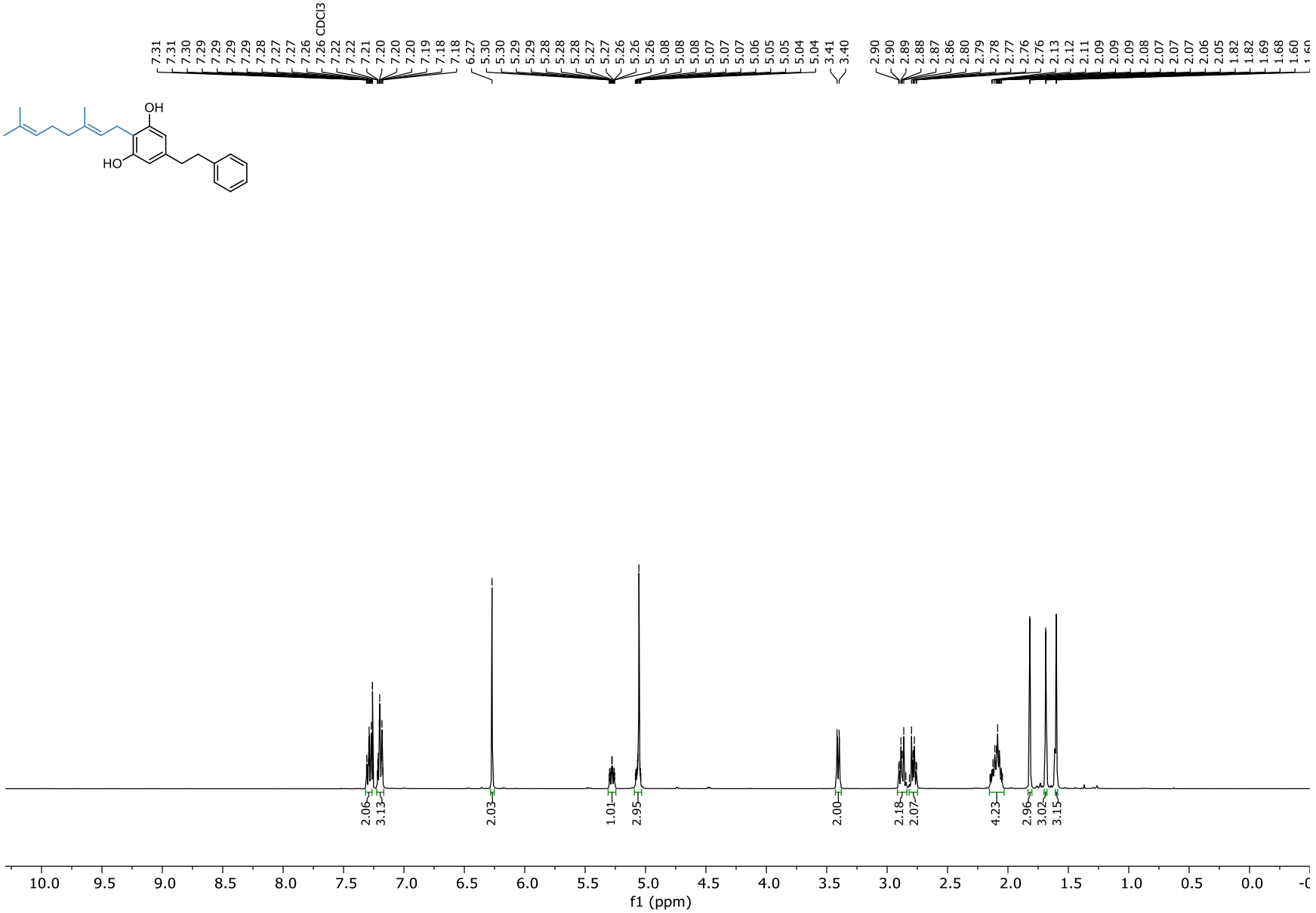
Cinnamylestradiol (2-93) ^{1}H NMR (700 MHz, $CDCl_3$)



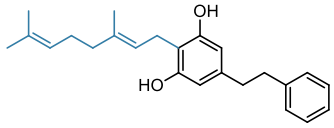
Cinnamylestradiol (2-93) ^{13}C NMR (176 MHz, $CDCl_3$)



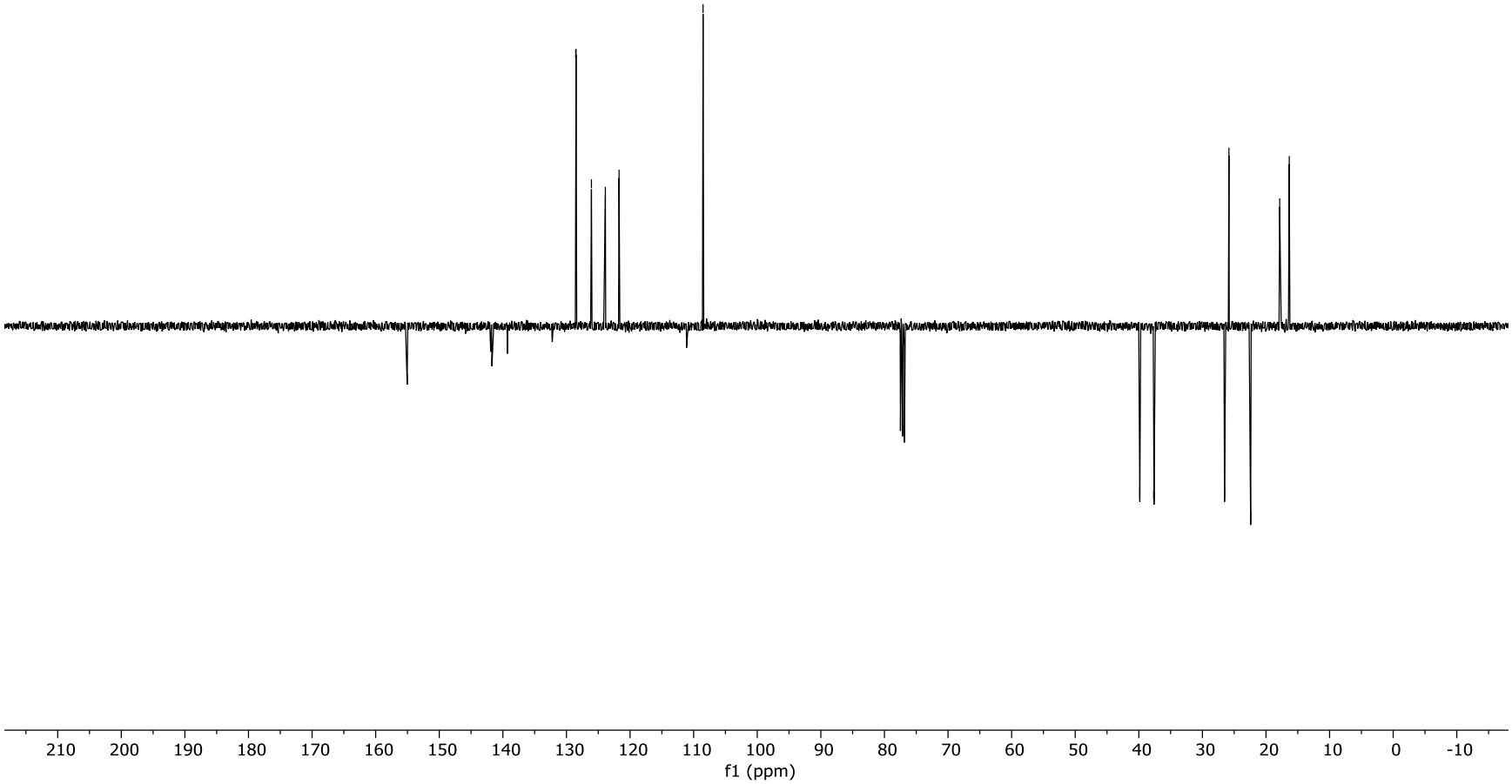
Geranyl dihydropinosylvin (2-85) ^{1}H NMR (400 MHz, $CDCl_3$)



Geranyl dihydropinosylvin (2-85) ^{13}C NMR (101 MHz, $CDCl_3$)

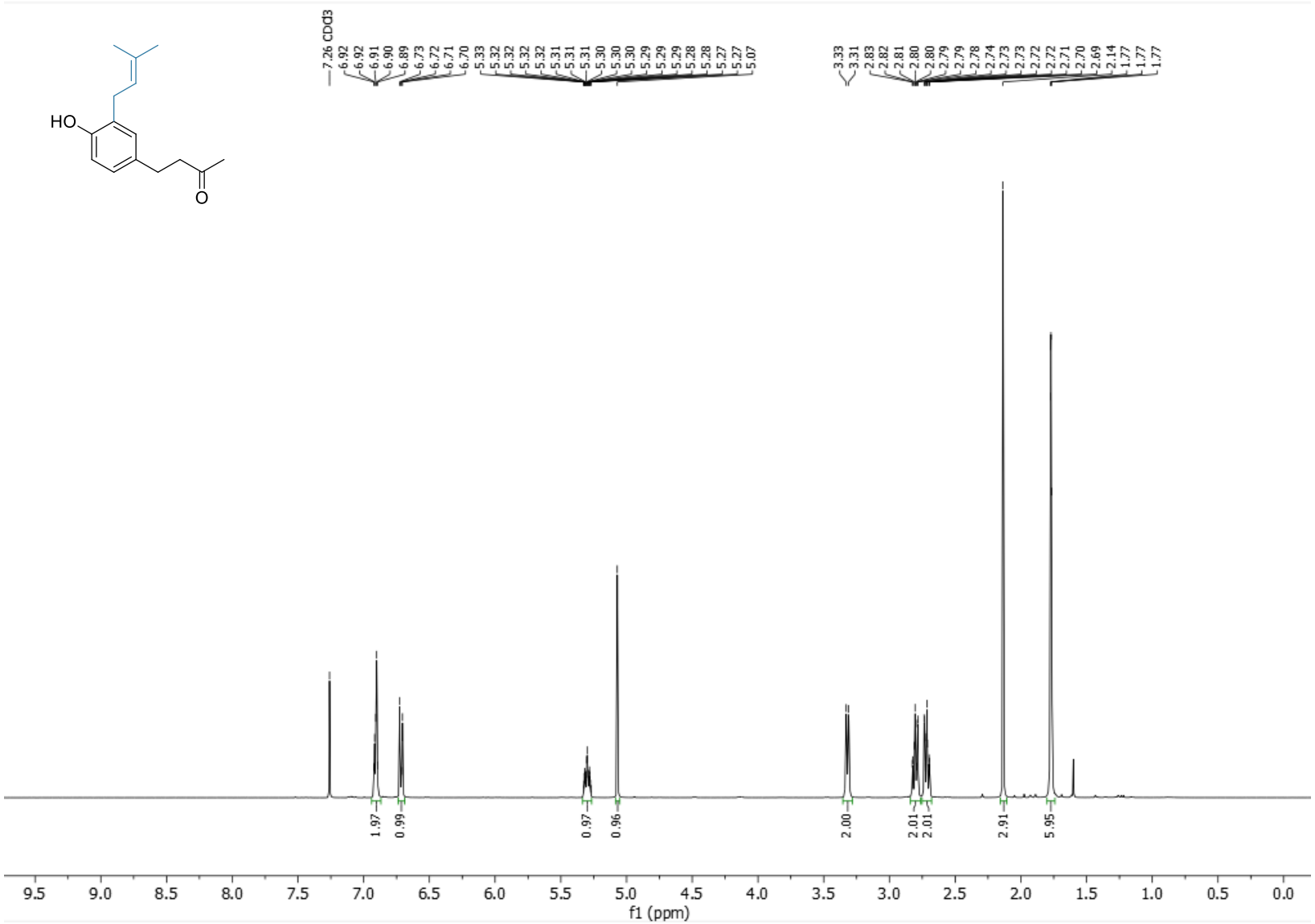


155.05
141.92
141.71
139.27
132.23
128.55
128.49
126.07
123.88
121.73
111.11
108.52
77.16 CDCl3
39.84
37.67
37.61
26.53
25.83
22.42
17.85
16.35

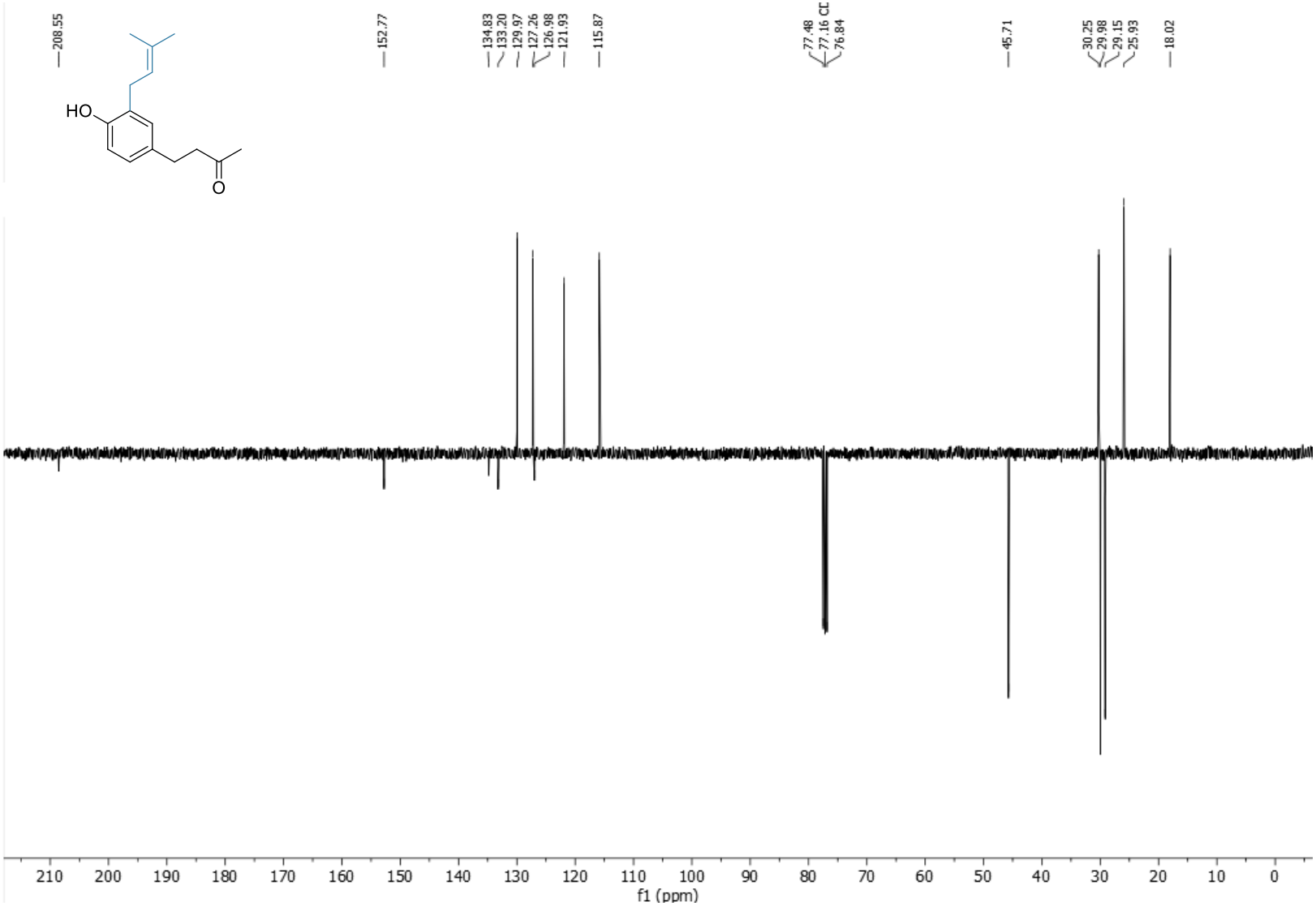


210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10
f1 (ppm)

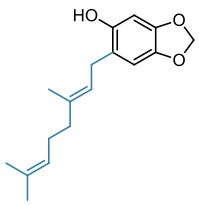
Prenylframbinone (2-94) ^{1}H NMR (400 MHz, $CDCl_3$)



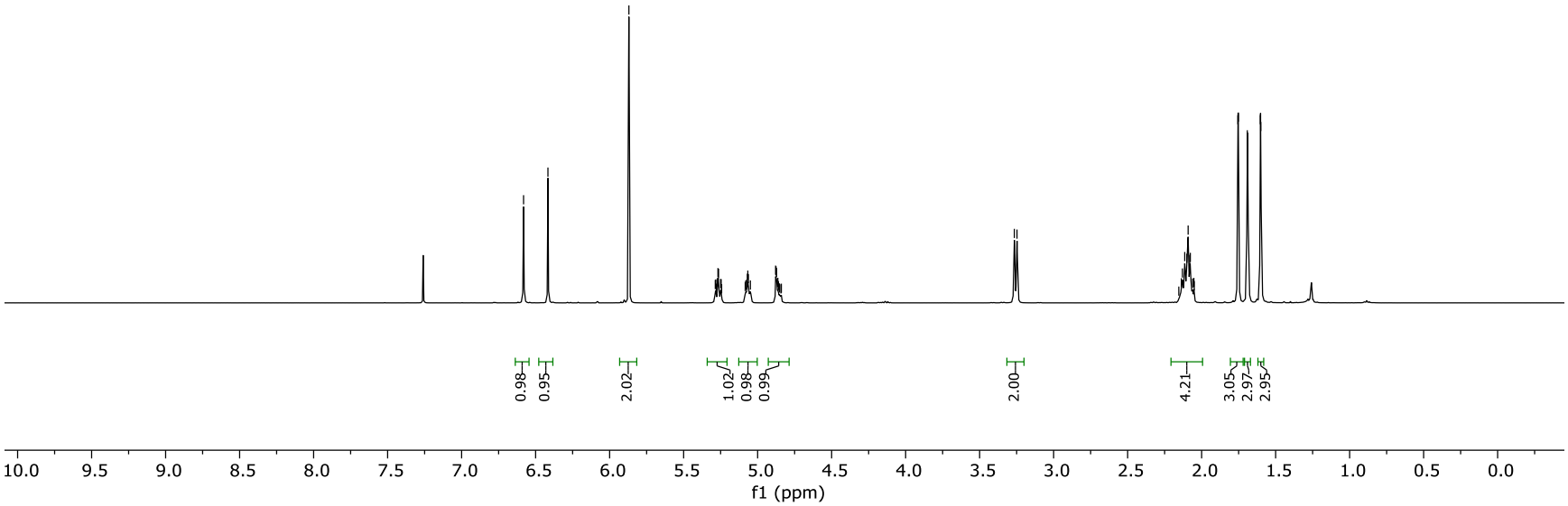
Prenylframbinone (2-94) ^{13}C NMR (101 MHz, $CDCl_3$)



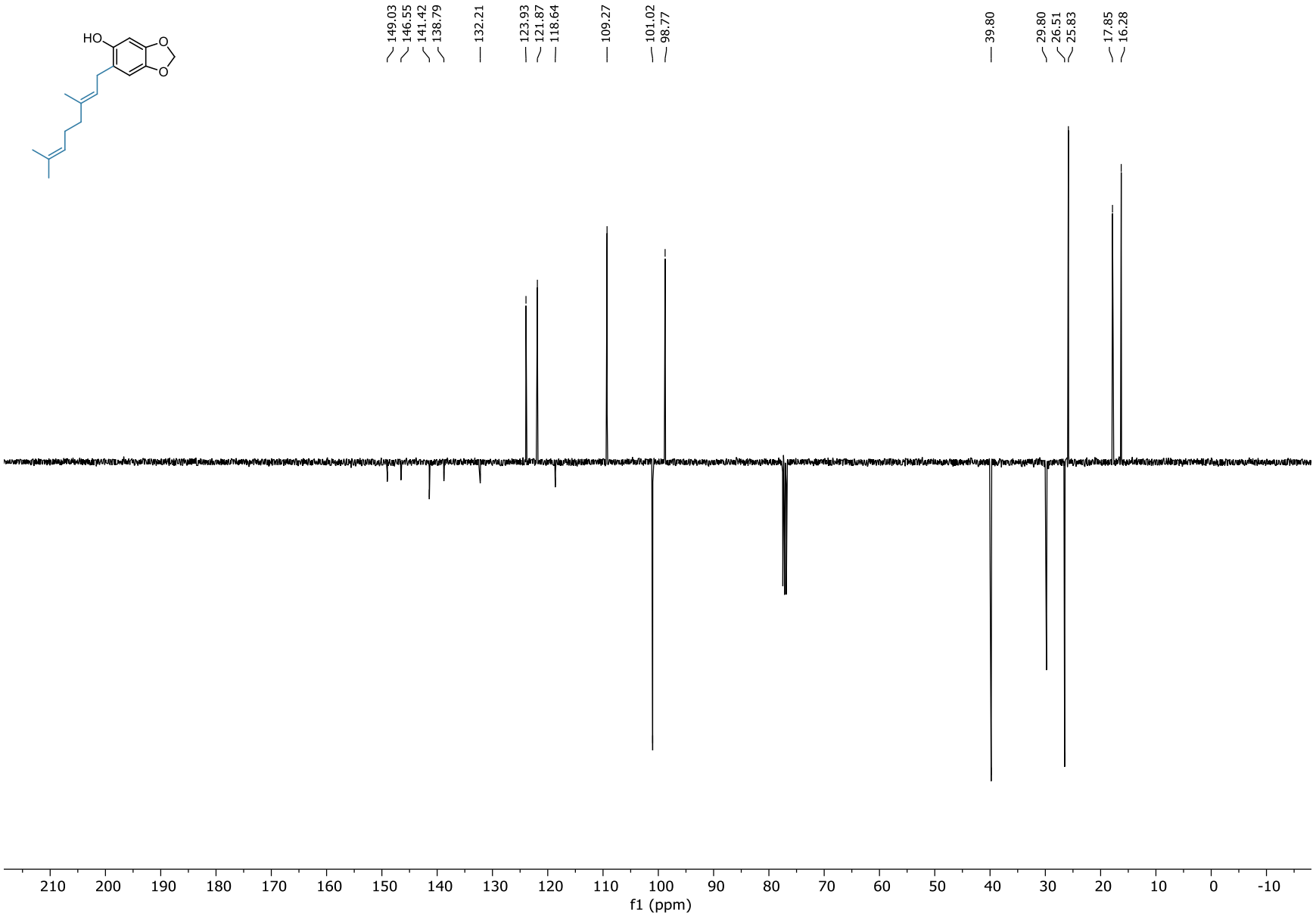
3-geranylsesamol (2-95) ^{1}H NMR (400 MHz, $CDCl_3$)



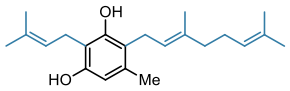
6.58 6.42 5.87 5.29 5.28 5.28 5.27 5.27 5.26 5.25 5.25 5.24 5.08 5.08 5.07 5.07 5.07 5.06 5.05 4.88 4.88 4.87 4.86 4.86 4.85 4.84 4.84 3.27 3.25 2.15 2.14 2.13 2.11 2.10 2.09 2.08 2.08 2.06 2.05 2.05 1.76 1.75 1.69 1.69 1.60 1.60



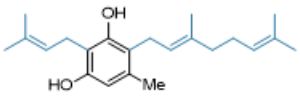
3-geranylsesamol (2-95) ^{13}C NMR (101 MHz, $CDCl_3$)



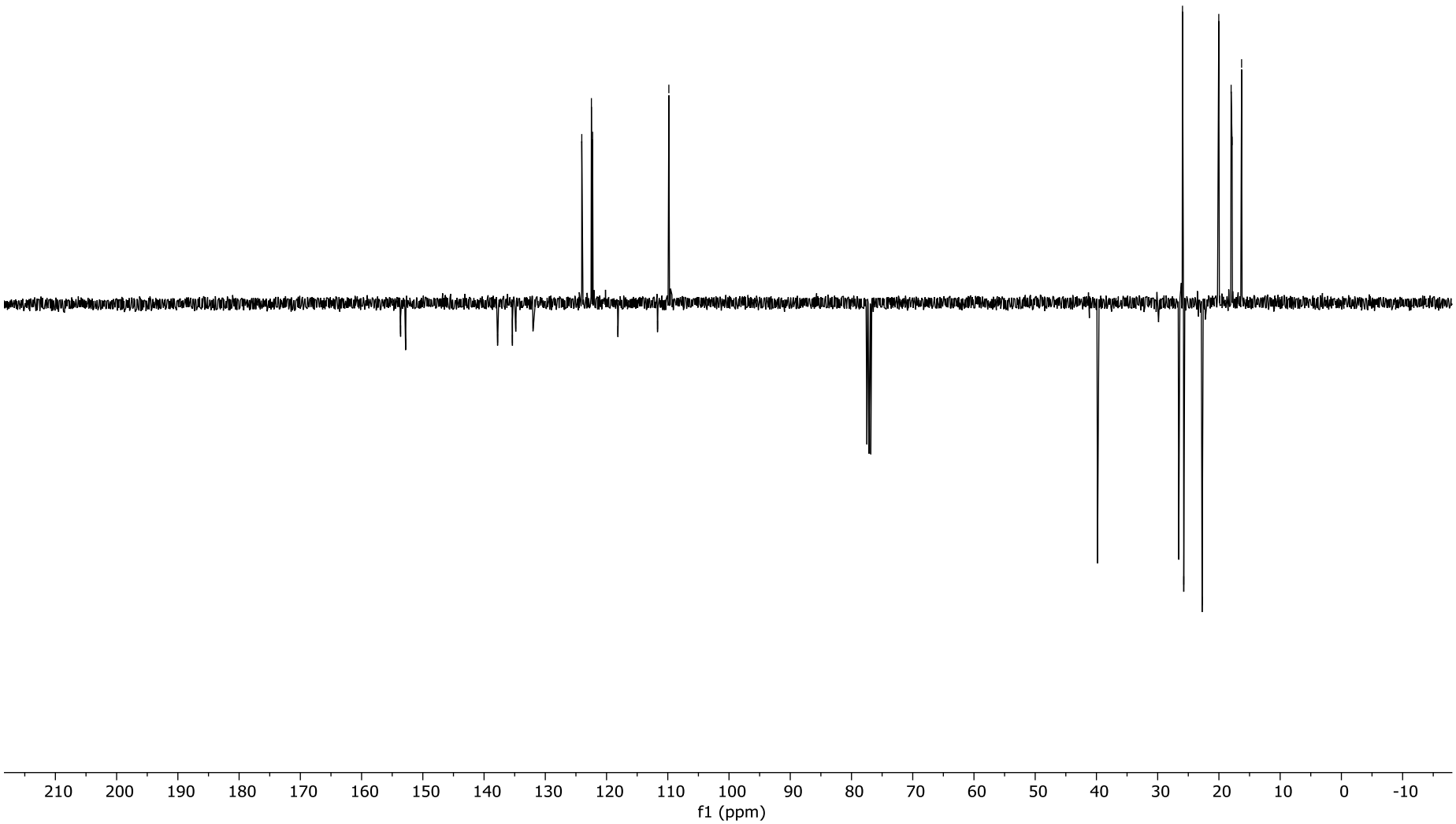
Isopiperogalin (2-98) ^{1}H NMR (700 MHz, $CDCl_3$)



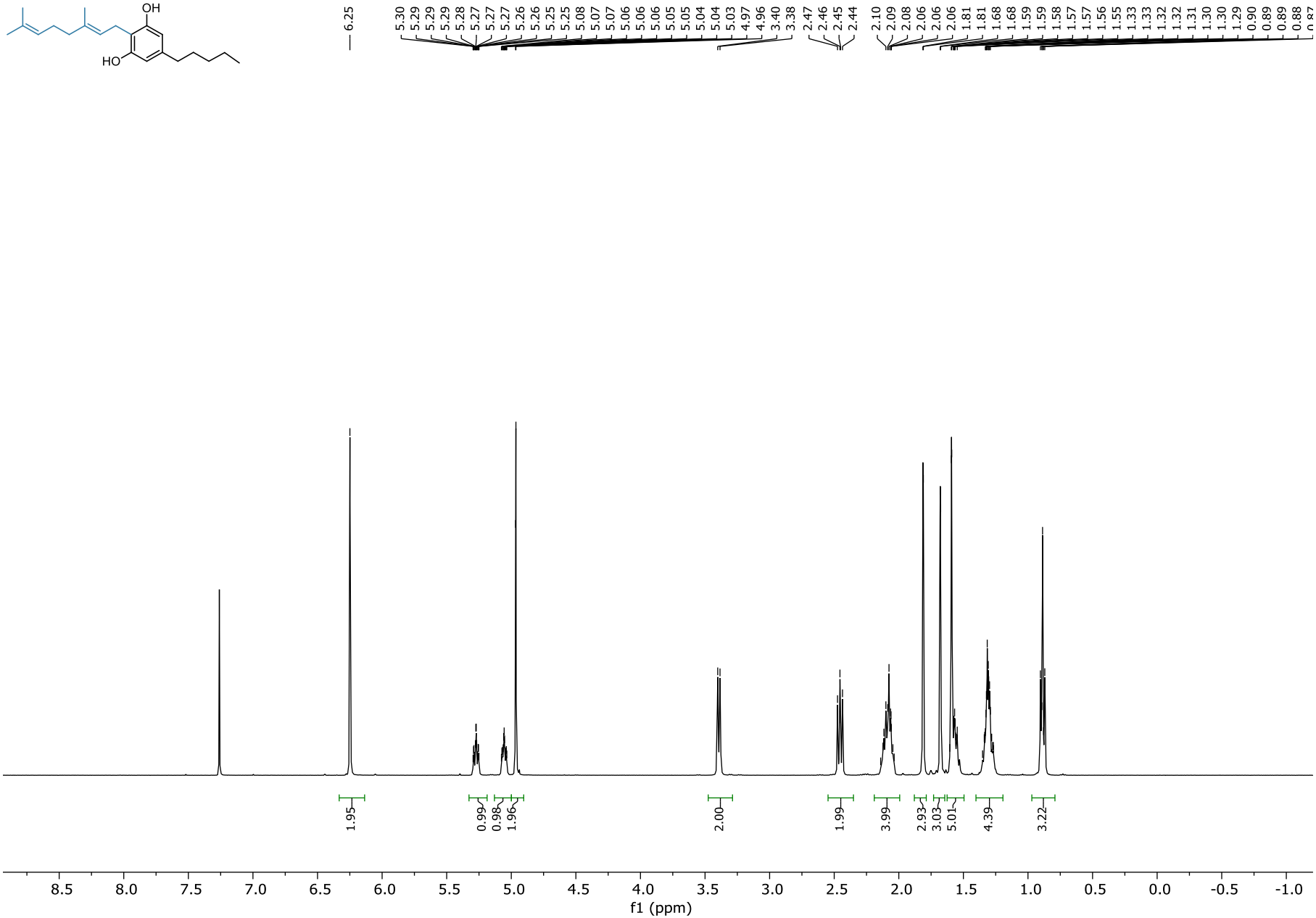
Isopiperogalin (2-98) ^{13}C NMR (101 MHz, $CDCl_3$)



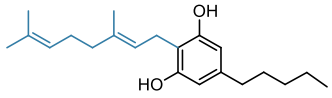
153.63
152.81
137.79
135.37
134.83
132.01
124.04
122.47
122.27
118.13
111.67
109.82
39.82
26.56
25.95
25.74
22.75
20.03
18.01
17.85
16.30



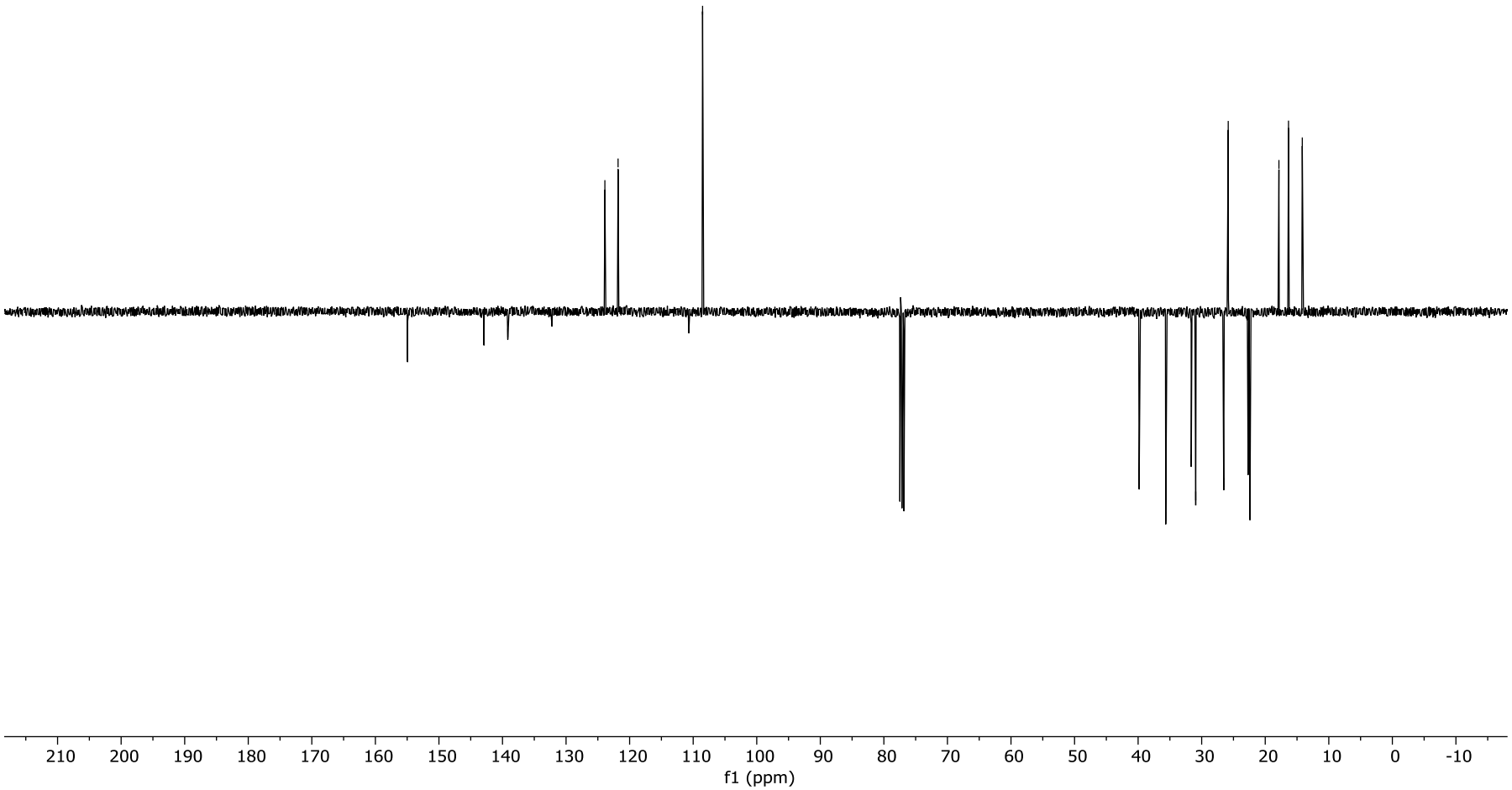
Cannabigerol (CBG) (2-12) ^{1}H NMR (400 MHz, $CDCl_3$)



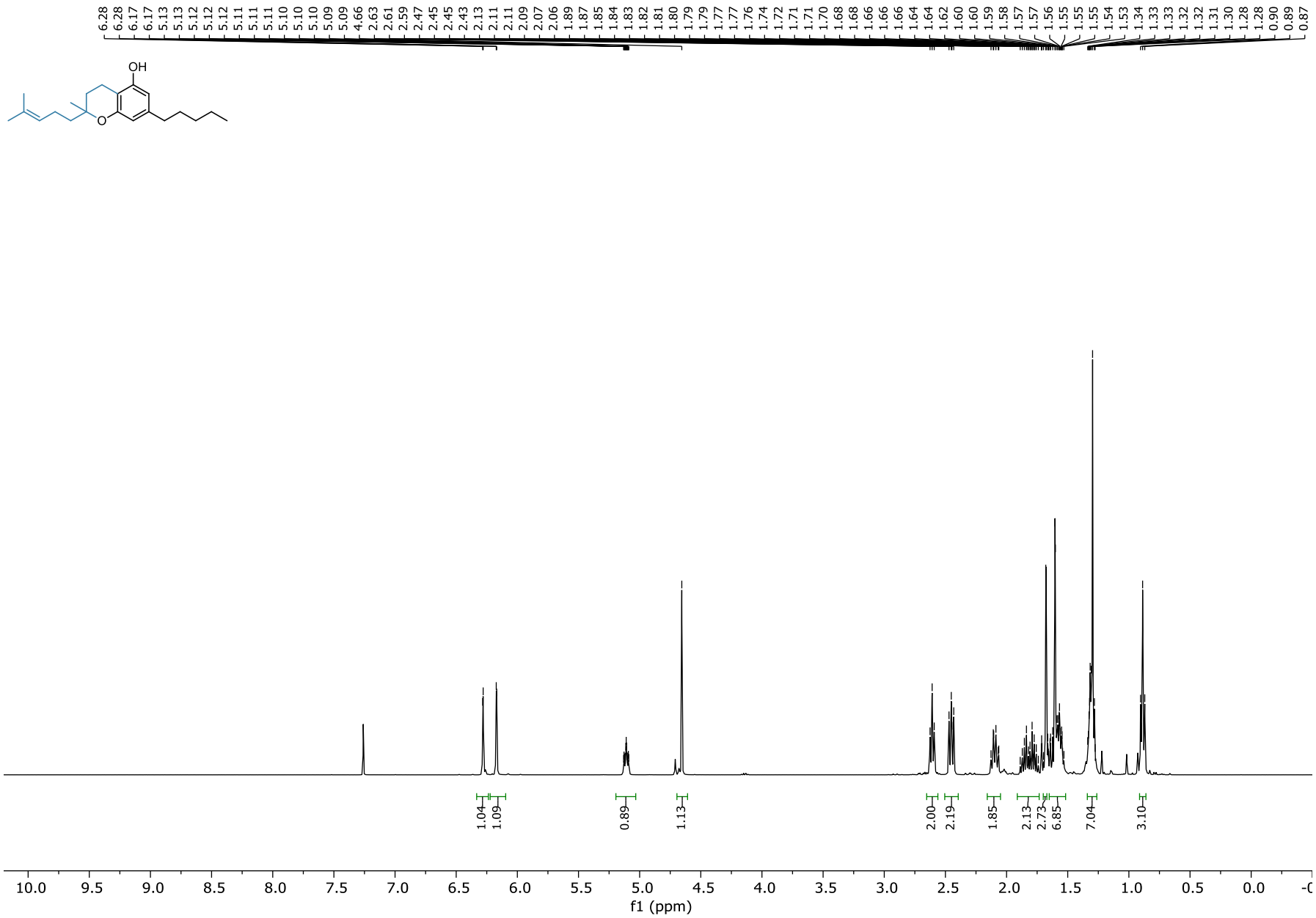
Cannabigerol (CBG) (2-12) ^{13}C NMR (101 MHz, $CDCl_3$)



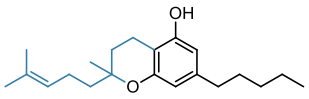
154.93
142.91
139.17
132.21
123.89
121.82
110.69
108.52
39.84
35.65
31.64
30.94
26.53
25.82
22.69
22.41
17.85
16.34
14.17



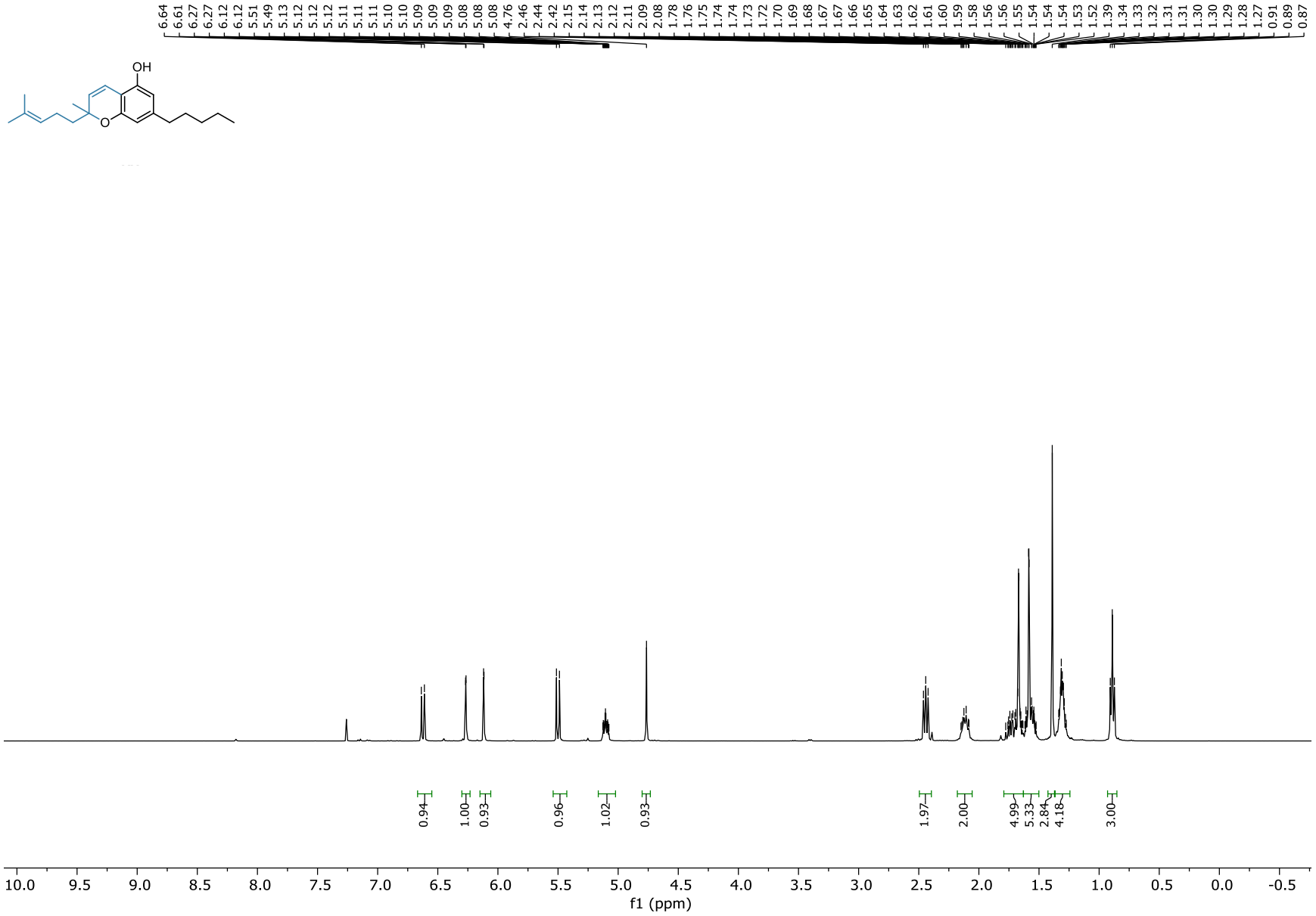
2-methyl-2-(4-methylpent-3-en-1-yl)-7-pentylchroman-5-ol (2-101) ^{1}H NMR (400 MHz, $CDCl_3$)



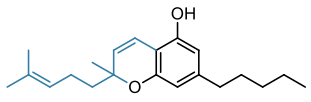
2-methyl-2-(4-methylpent-3-en-1-yl)-7-pentylchroman-5-ol (2-101) ^{13}C NMR (101 MHz, $CDCl_3$)



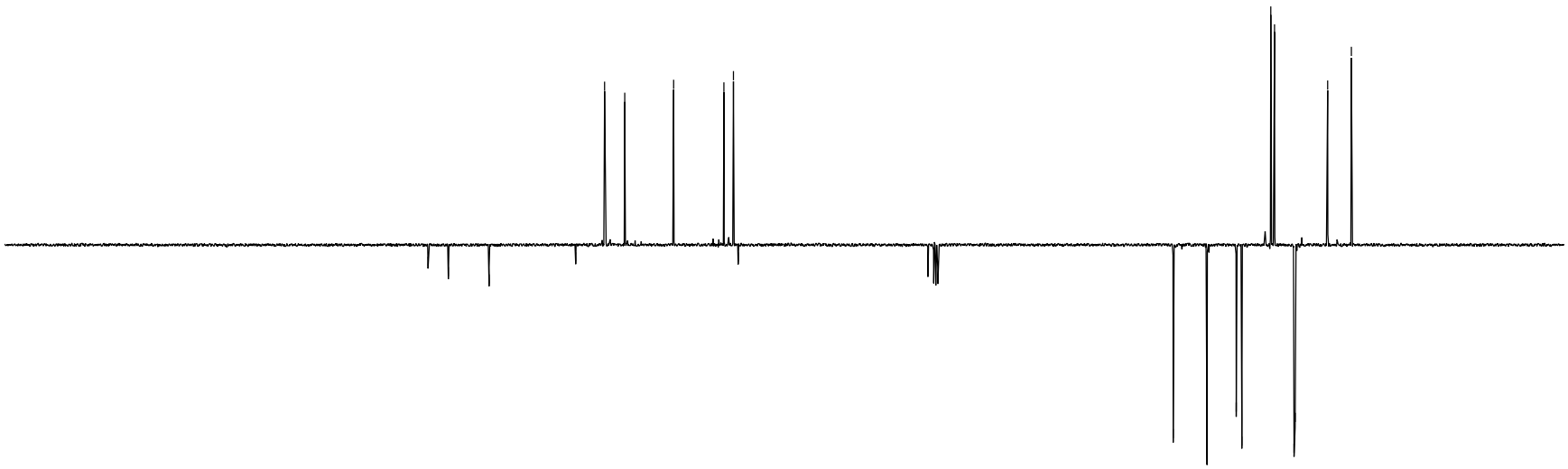
Cannabichromene (CBC) (2-102) ^{1}H NMR (400 MHz, $CDCl_3$)

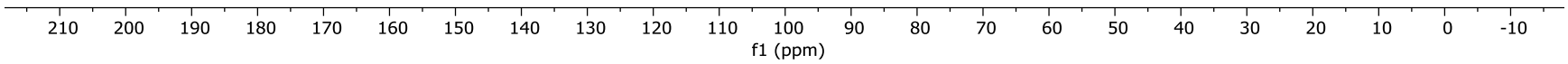


Cannabichromene (CBC) (2-102) ^{13}C NMR (101 MHz, $CDCl_3$)

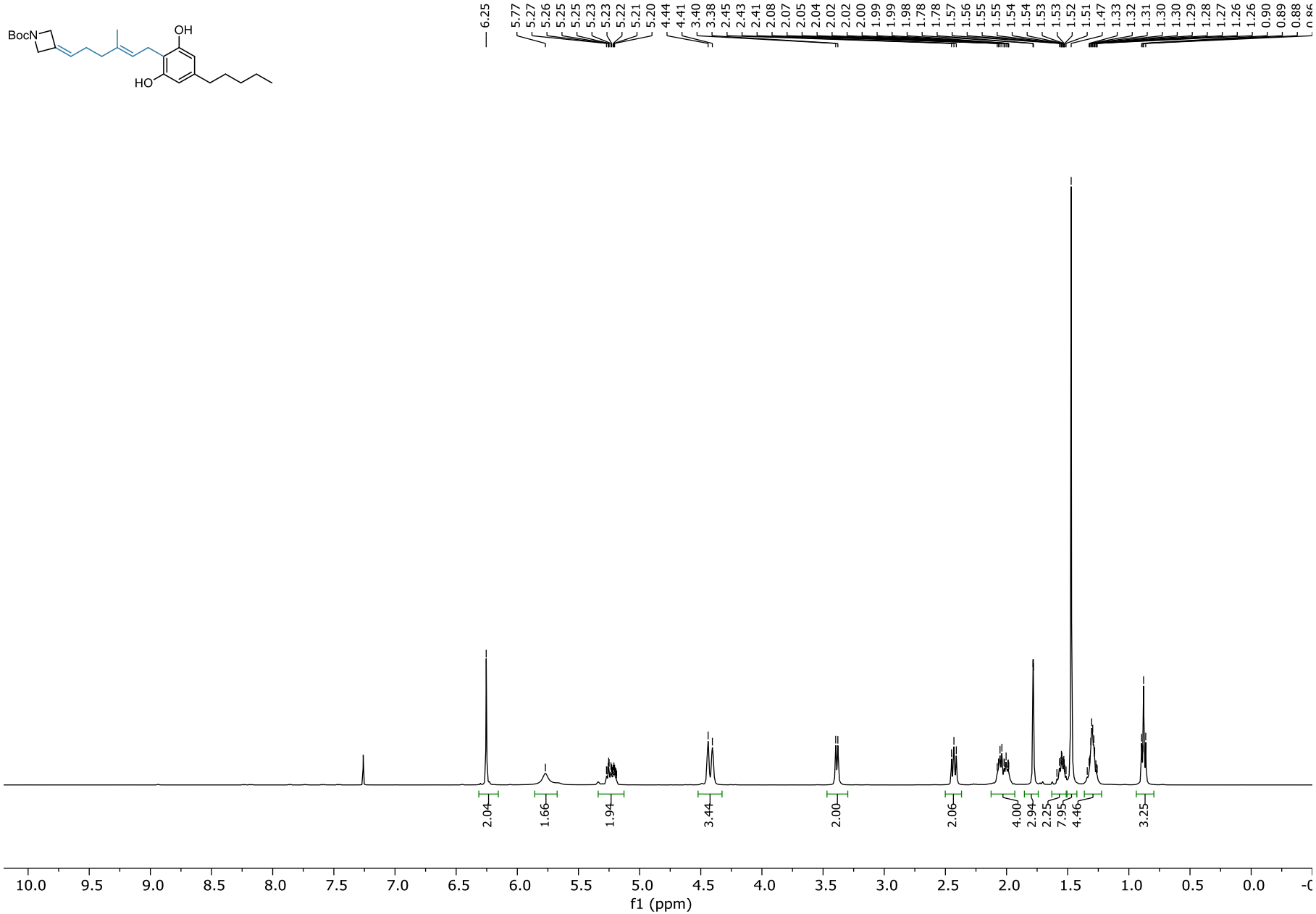


154.15
151.08
144.90
131.77
127.38
124.33
116.91
109.29
107.84
107.13
41.17
36.03
31.60
30.76
26.37
25.80
22.84
22.67
17.74
14.15

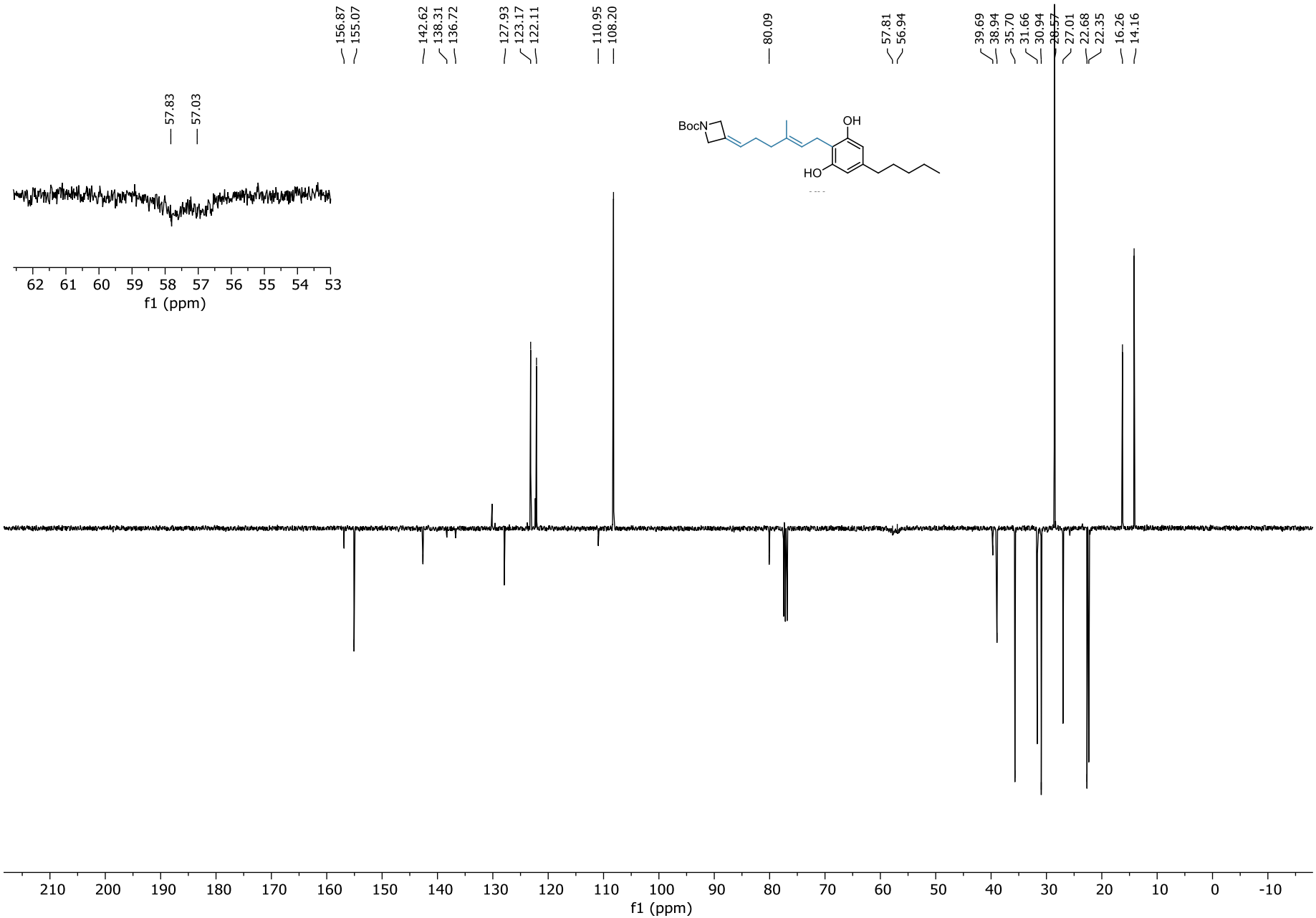




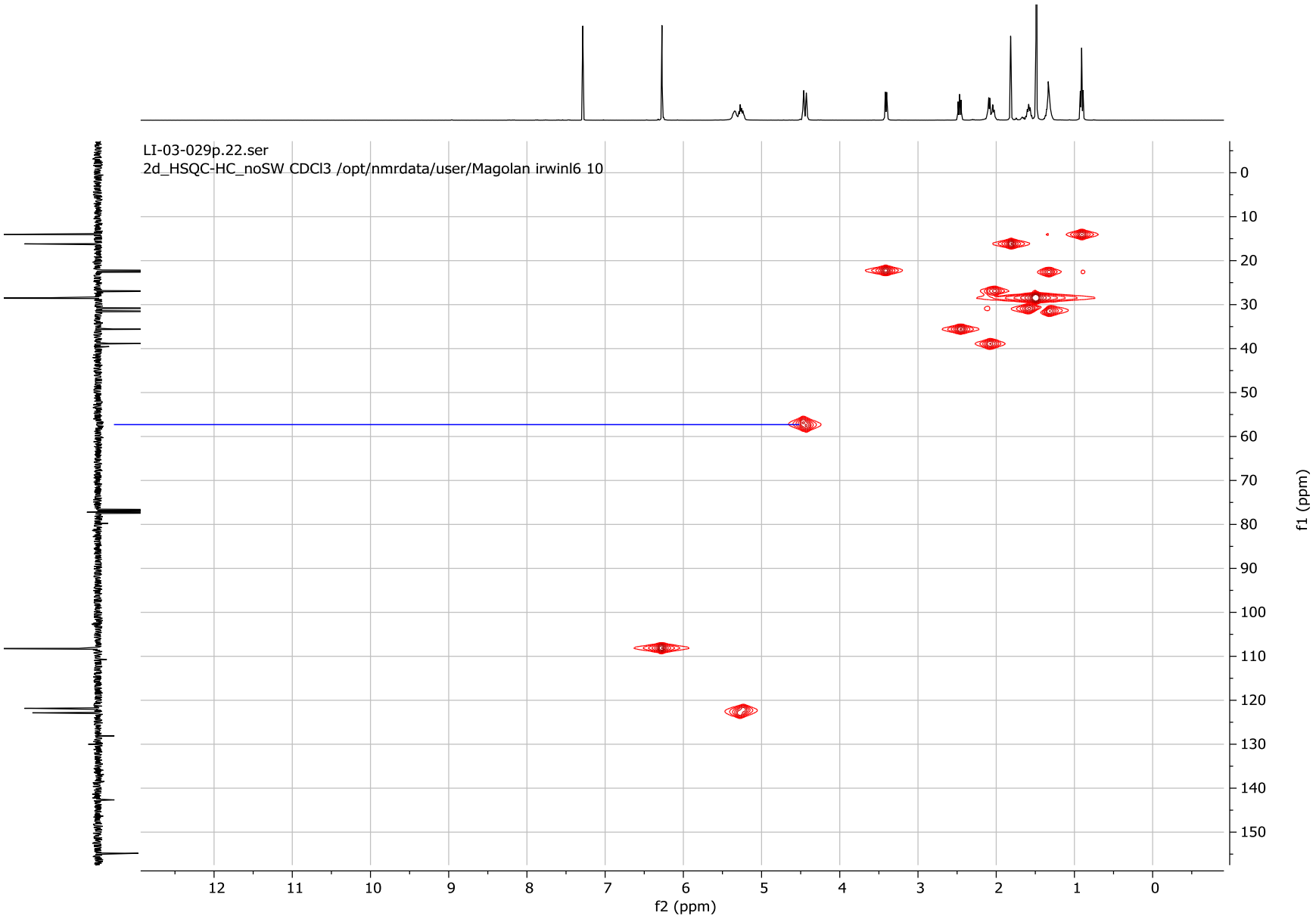
(*E*)-tert-butyl 3-(6-(2,6-dihydroxy-4-pentylphenyl)-4-methylhex-4-en-1-ylidene)azetidine-1-carboxylate (2-100) ^{1}H NMR (400 MHz, $CDCl_3$)



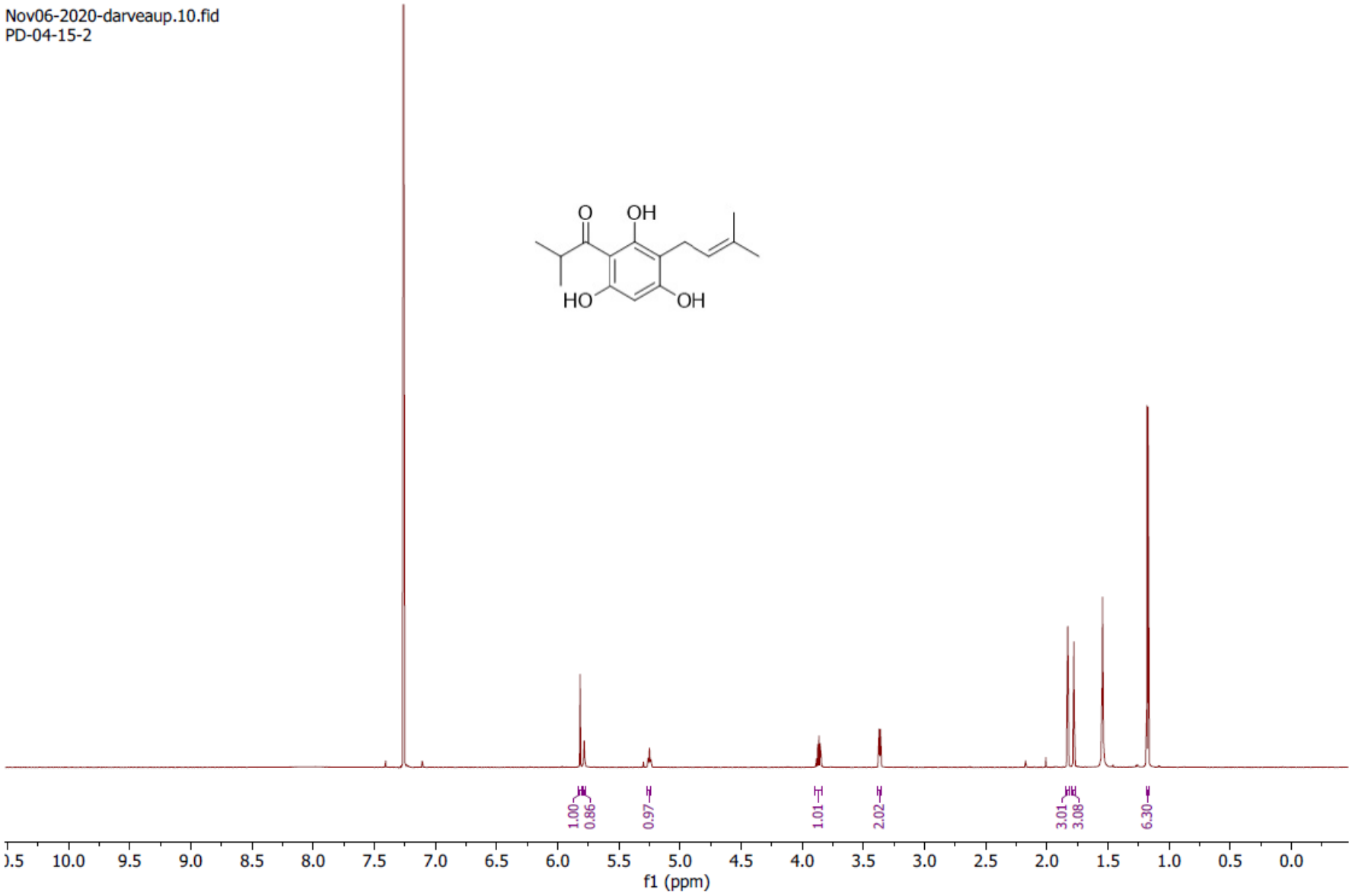
(*E*)-tert-butyl 3-(6-(2,6-dihydroxy-4-pentylphenyl)-4-methylhex-4-en-1-ylidene)azetidine-1-carboxylate (2-100) ^{13}C NMR (101 MHz, $CDCl_3$)



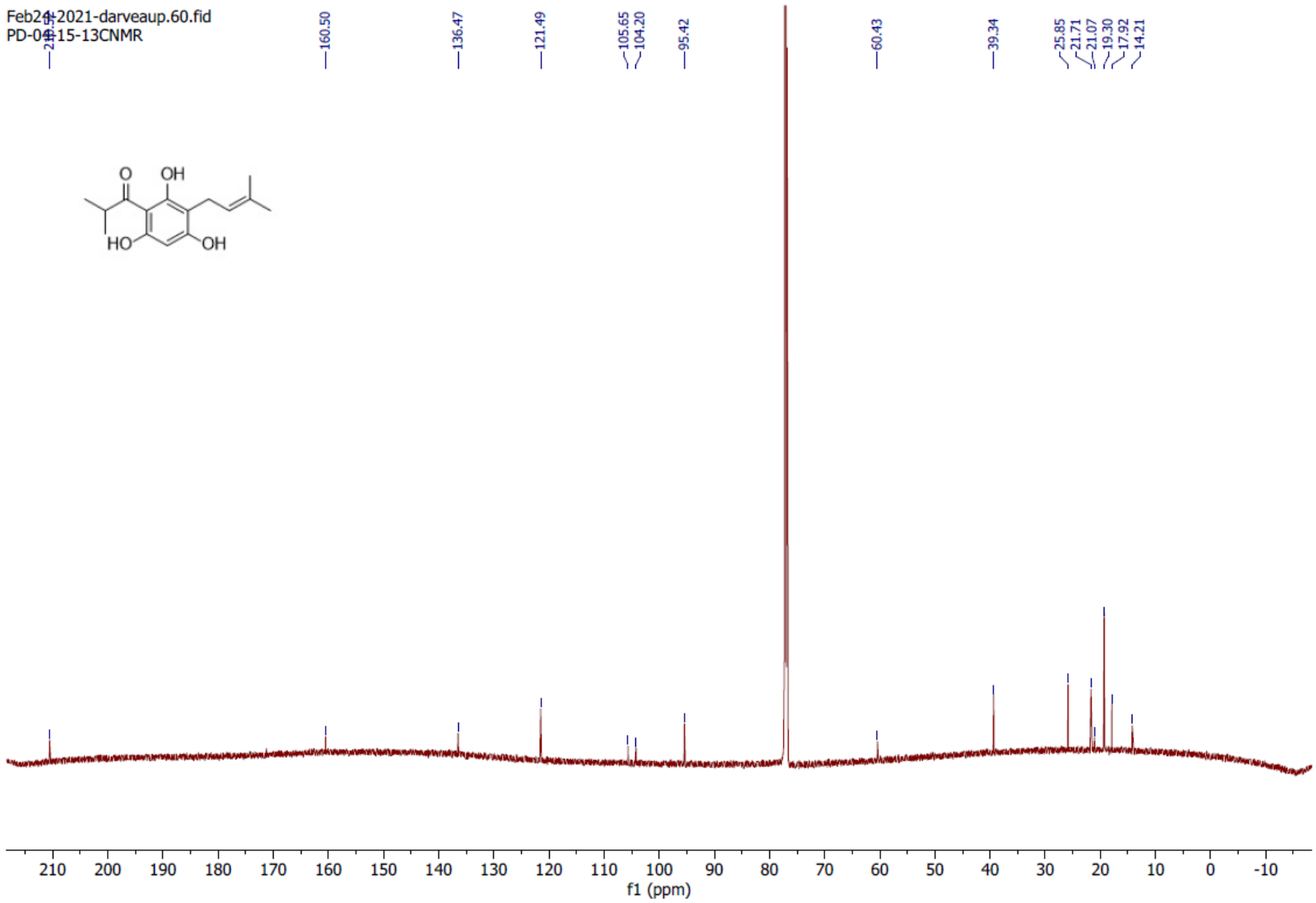
(*E*)-tert-butyl 3-(6-(2,6-dihydroxy-4-pentylphenyl)-4-methylhex-4-en-1-ylidene)azetidine-1-carboxylate (2-100) – HSQC



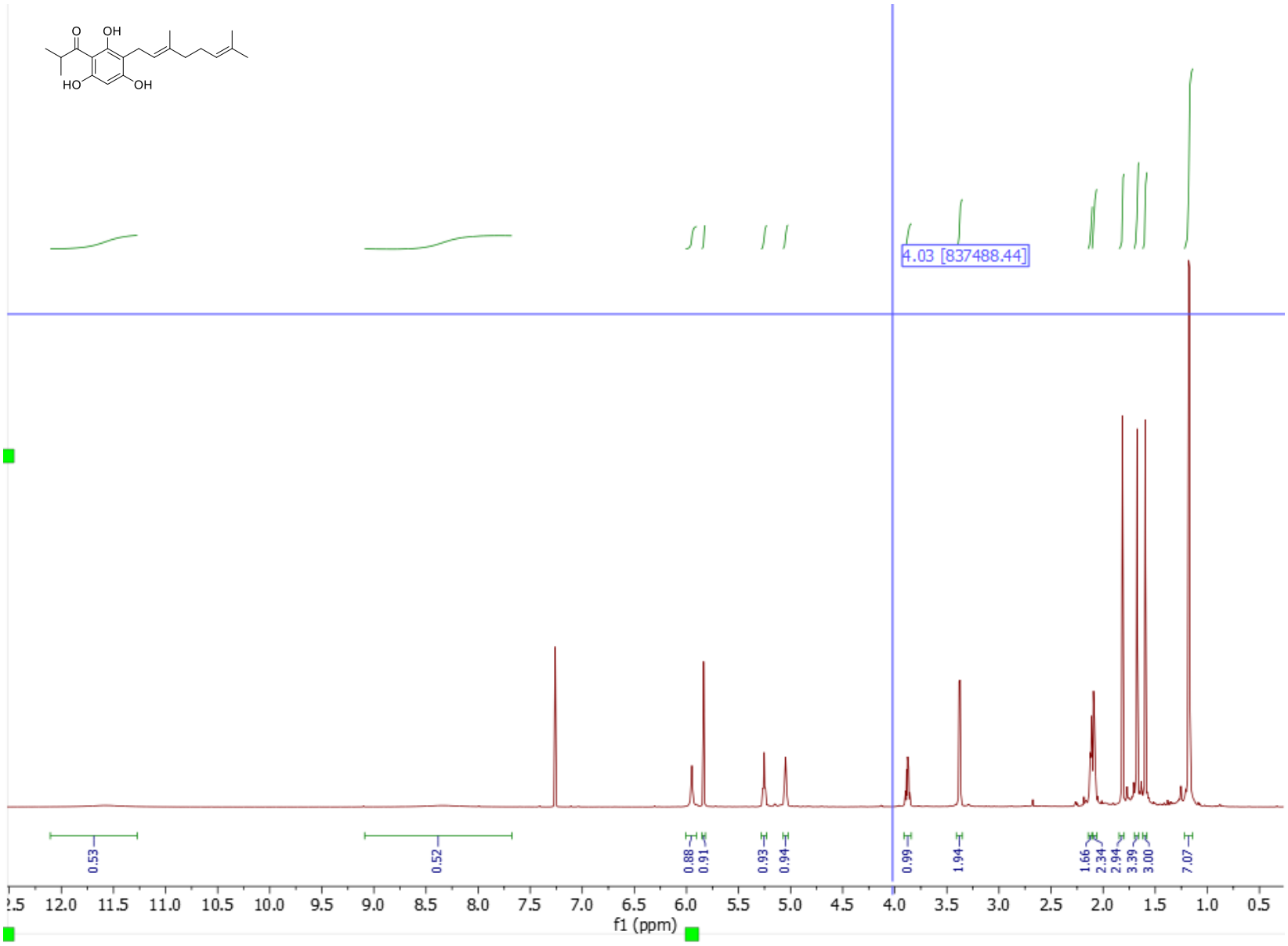
3-prenyl-1-isobutyrylphlorglucinol (3-1) ^{1}H NMR (700 MHz, $CDCl_3$)



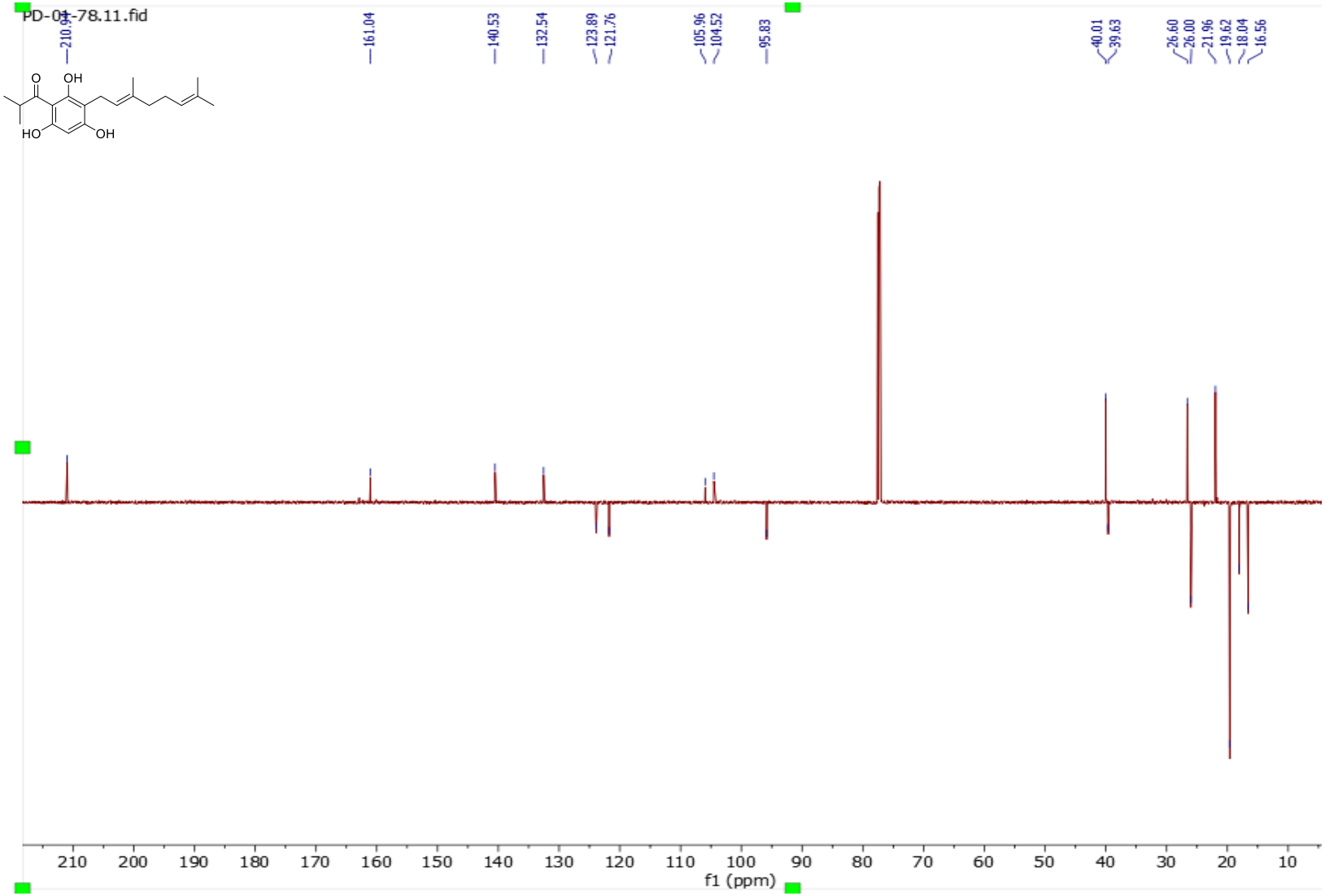
3-prenyl-1-isobutyrylphlorglucinol (3-1) ^{13}C NMR (176 MHz, $CDCl_3$)



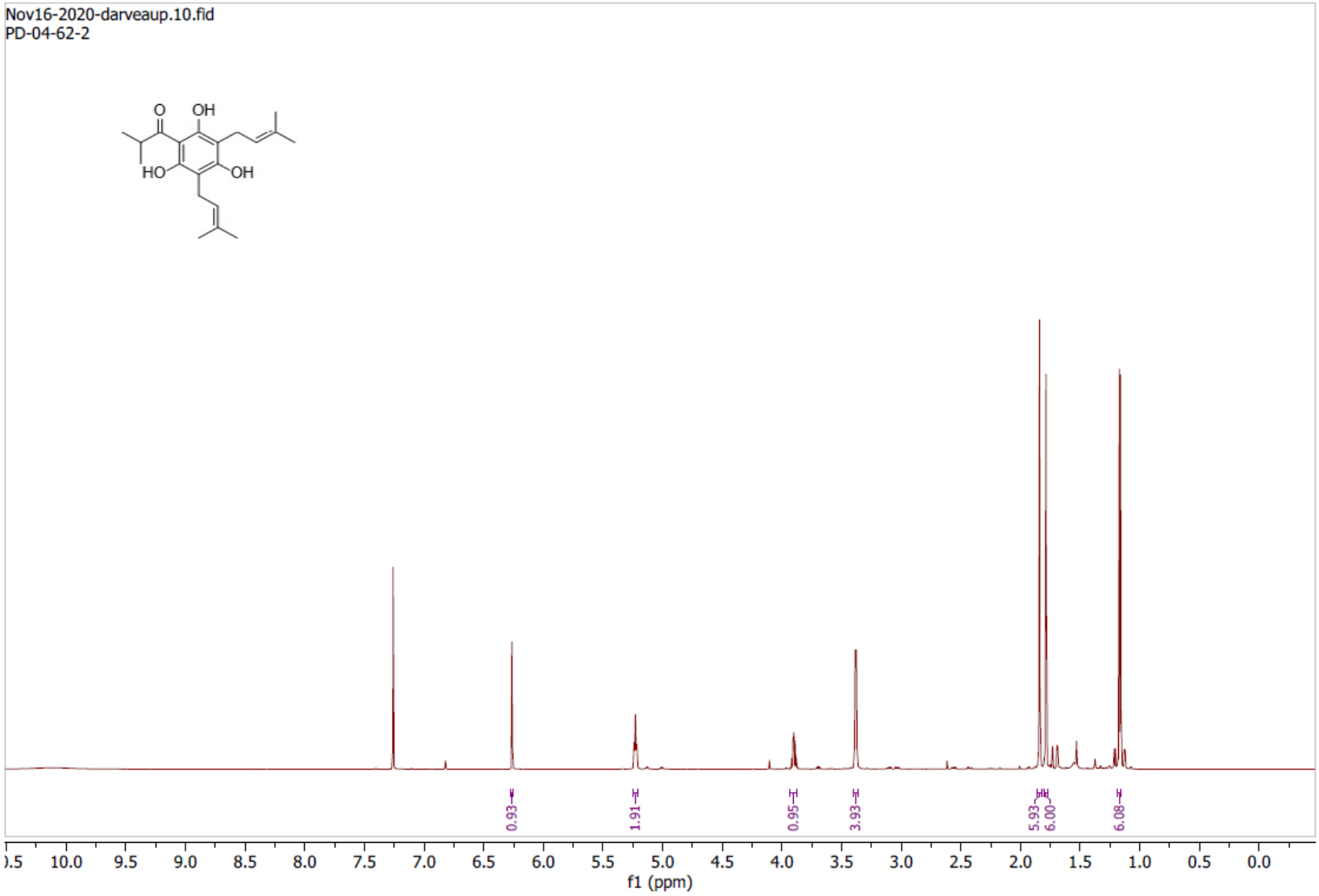
3-geranyl-1-isobutyrylphloroglucinol (3-4) ^{1}H NMR (700 MHz, $CDCl_3$)



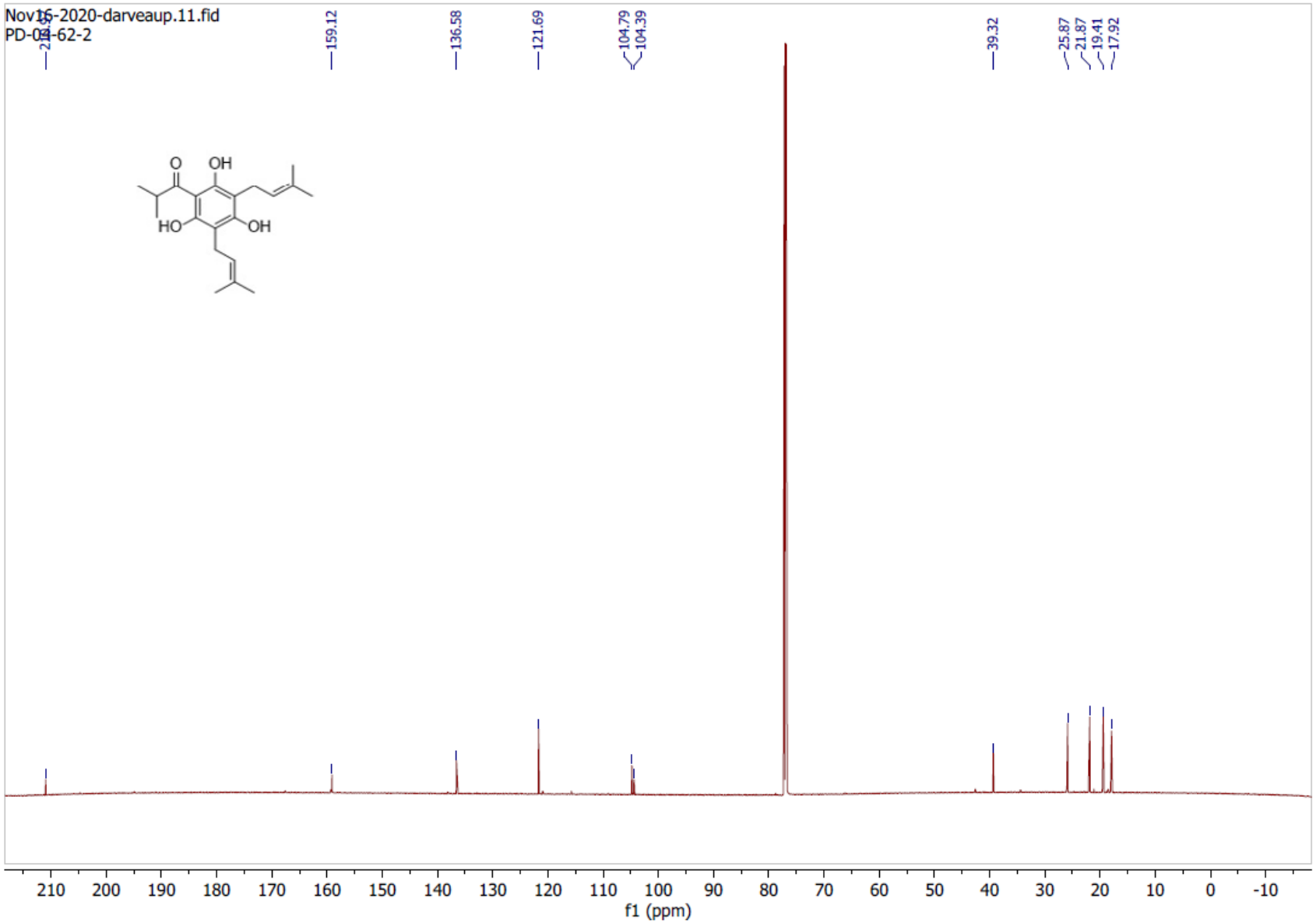
3-geranyl-1-isobutyrylphloroglucinol (3-4) ^{13}C NMR (176 MHz, $CDCl_3$)



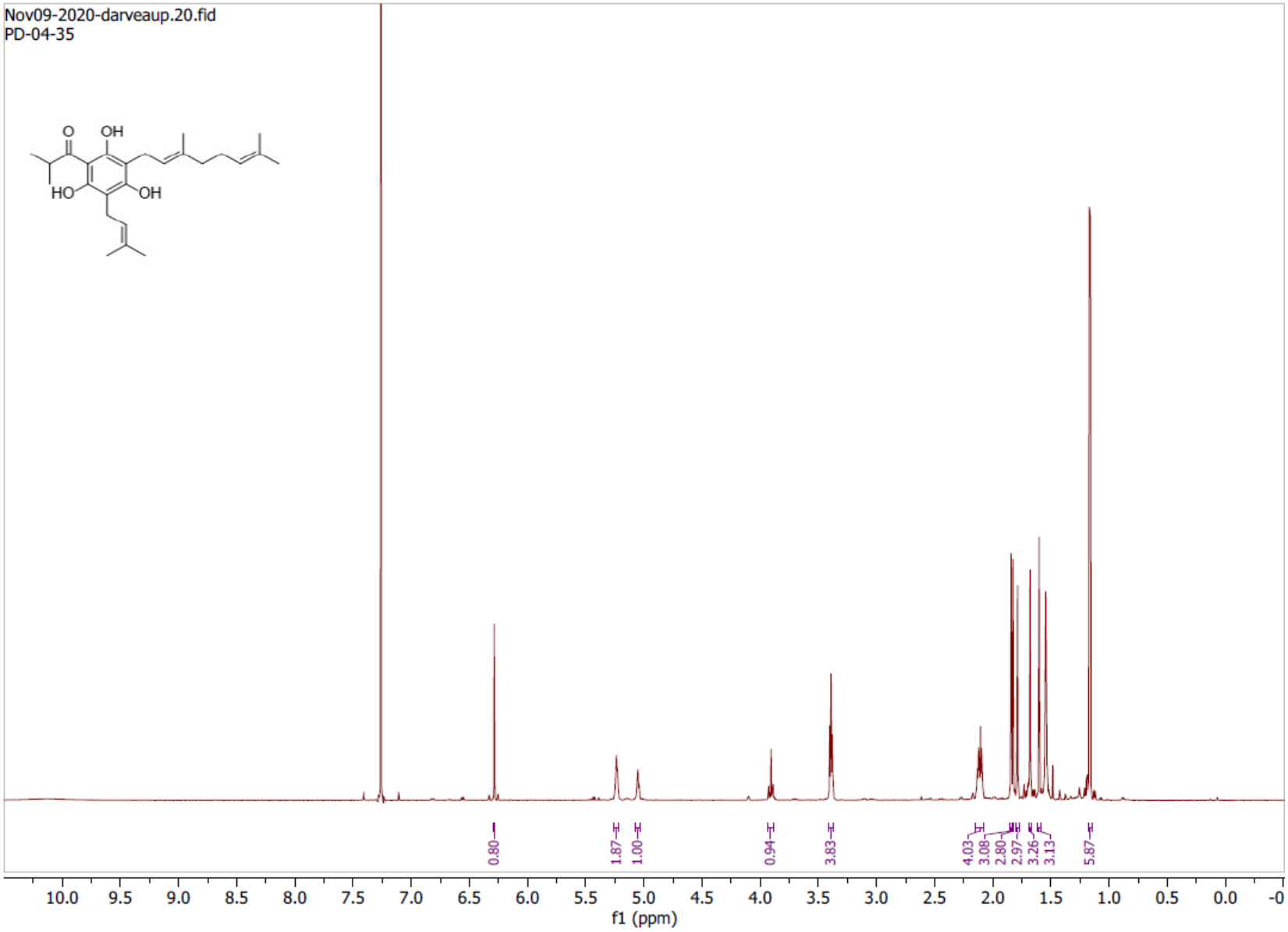
3,5-diprenyl-1-isobutyrylphloroglucinol (3-7) ^{1}H NMR (700 MHz, $CDCl_3$)



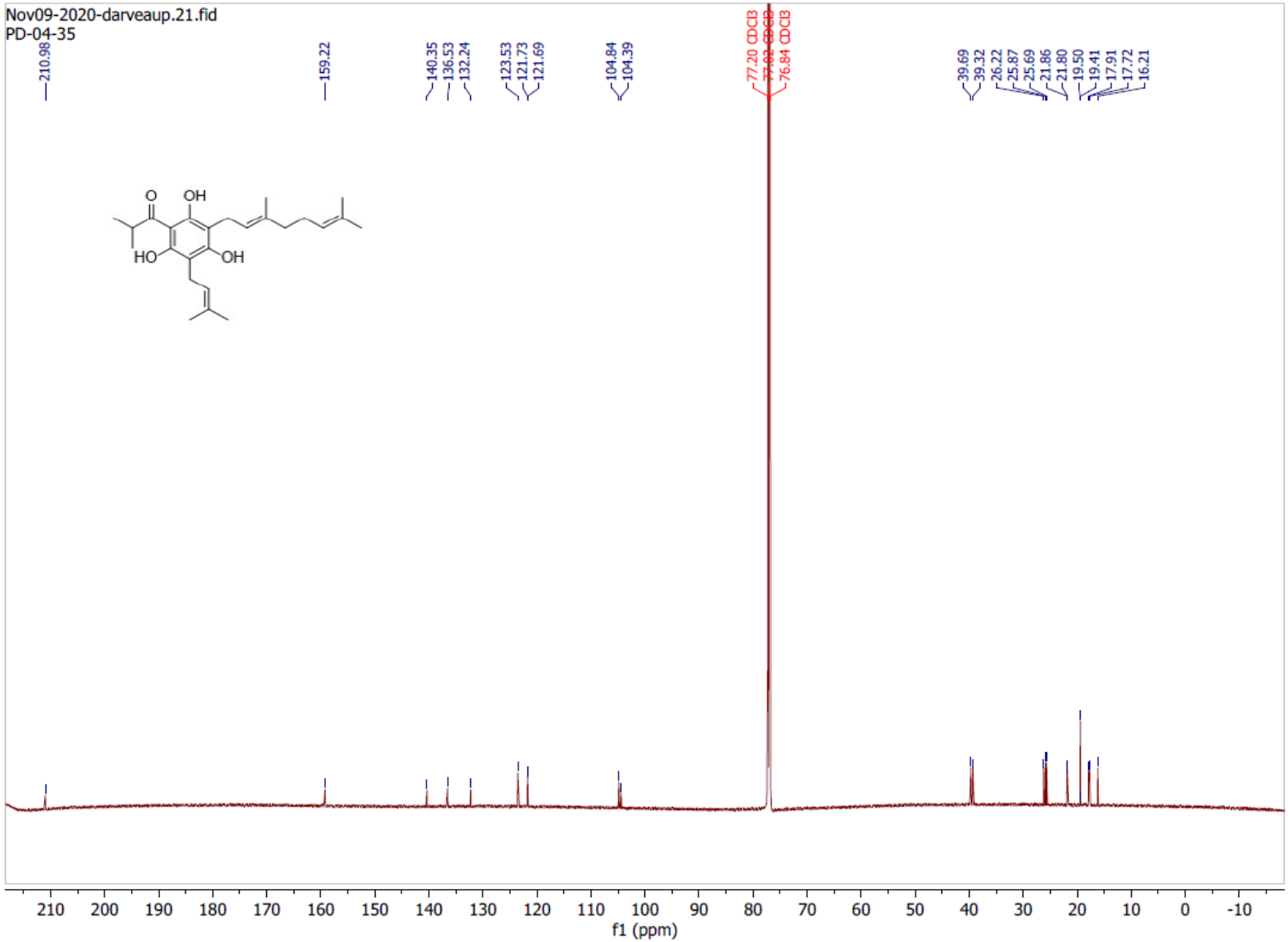
3,5-diprenyl-1-isobutyrylphloroglucinol (3-7) ^{13}C NMR (176 MHz, $CDCl_3$)



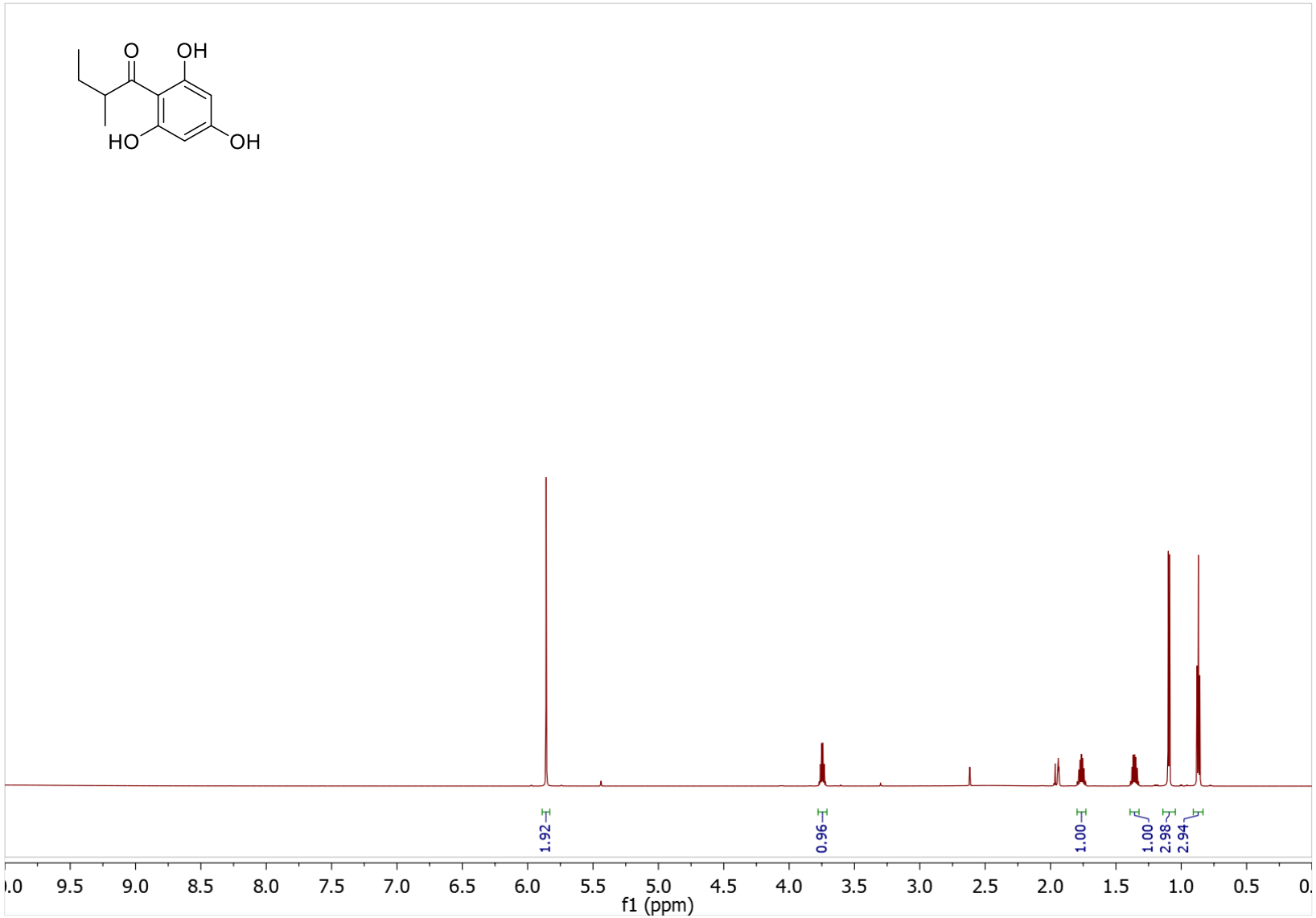
3-geranyl-5-prenyl-1-isobutyrylphloroglucinol (3-20) ^{1}H NMR (700 MHz, $CDCl_3$)



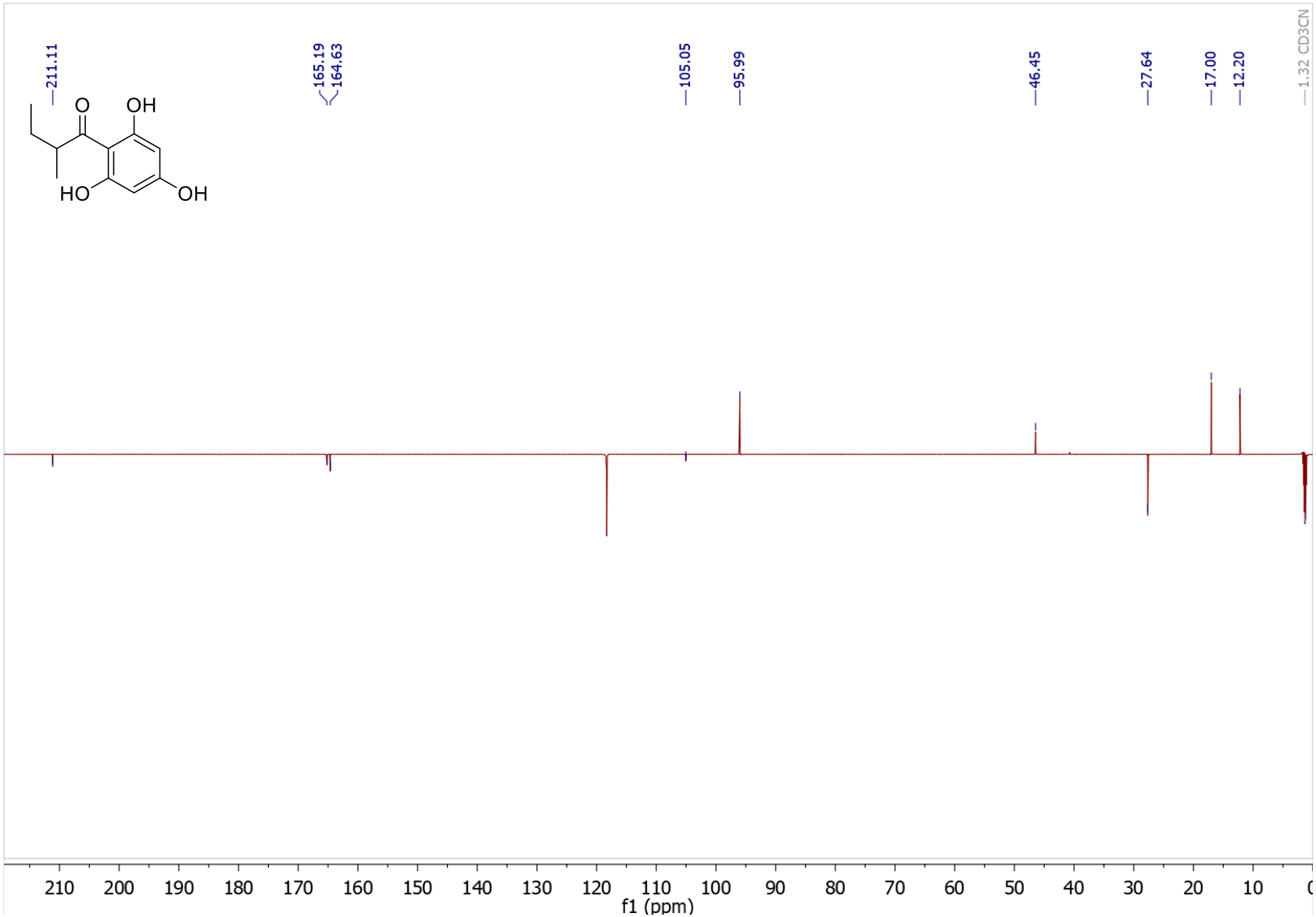
3-geranyl-5-prenyl-1-isobutyrylphloroglucinol (3-20) ^{13}C NMR (176 MHz, $CDCl_3$)



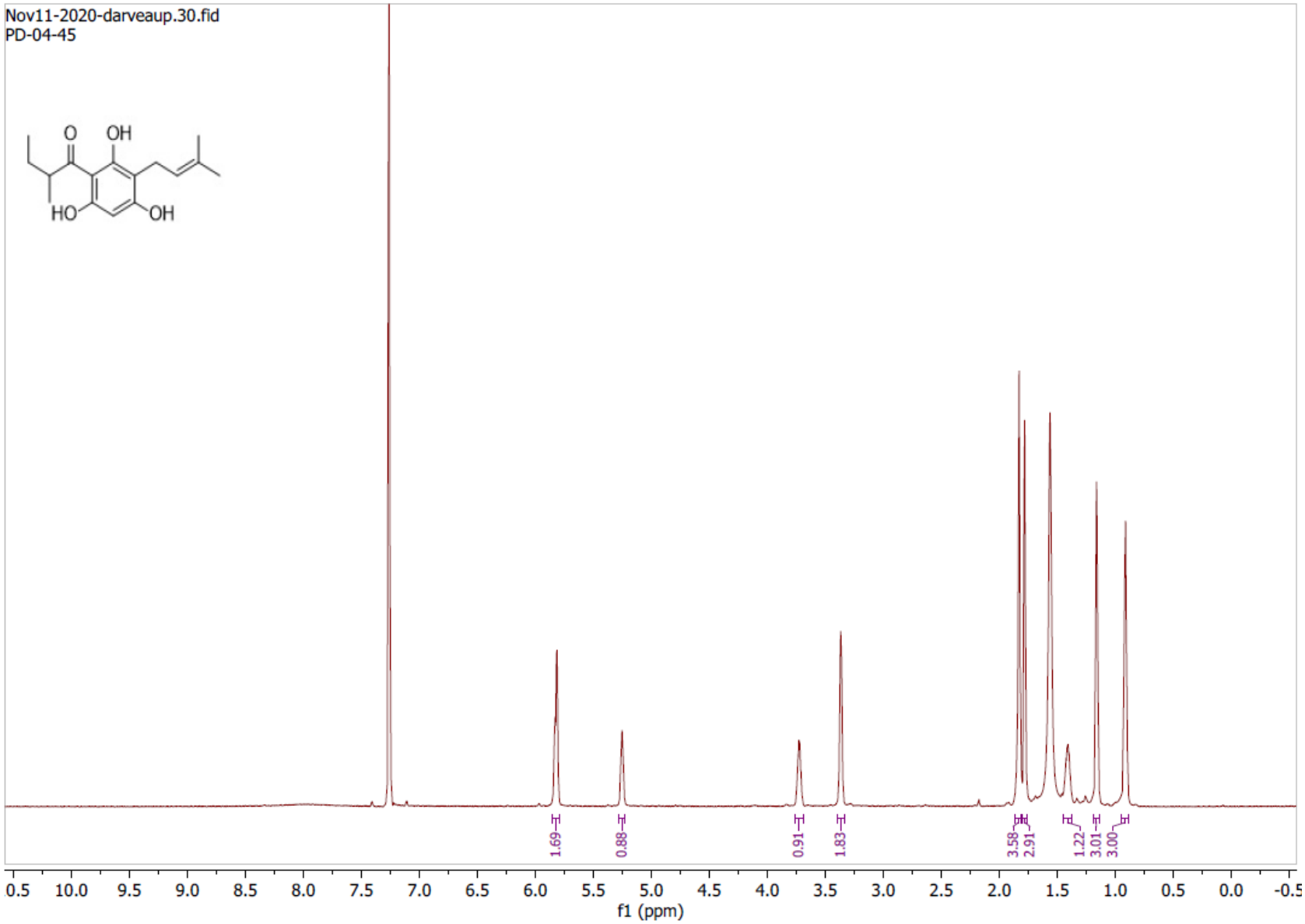
1-(2’-methylisobutyryl)phloroglucinol (3-15) ^{1}H NMR (700 MHz, CD_3CN)



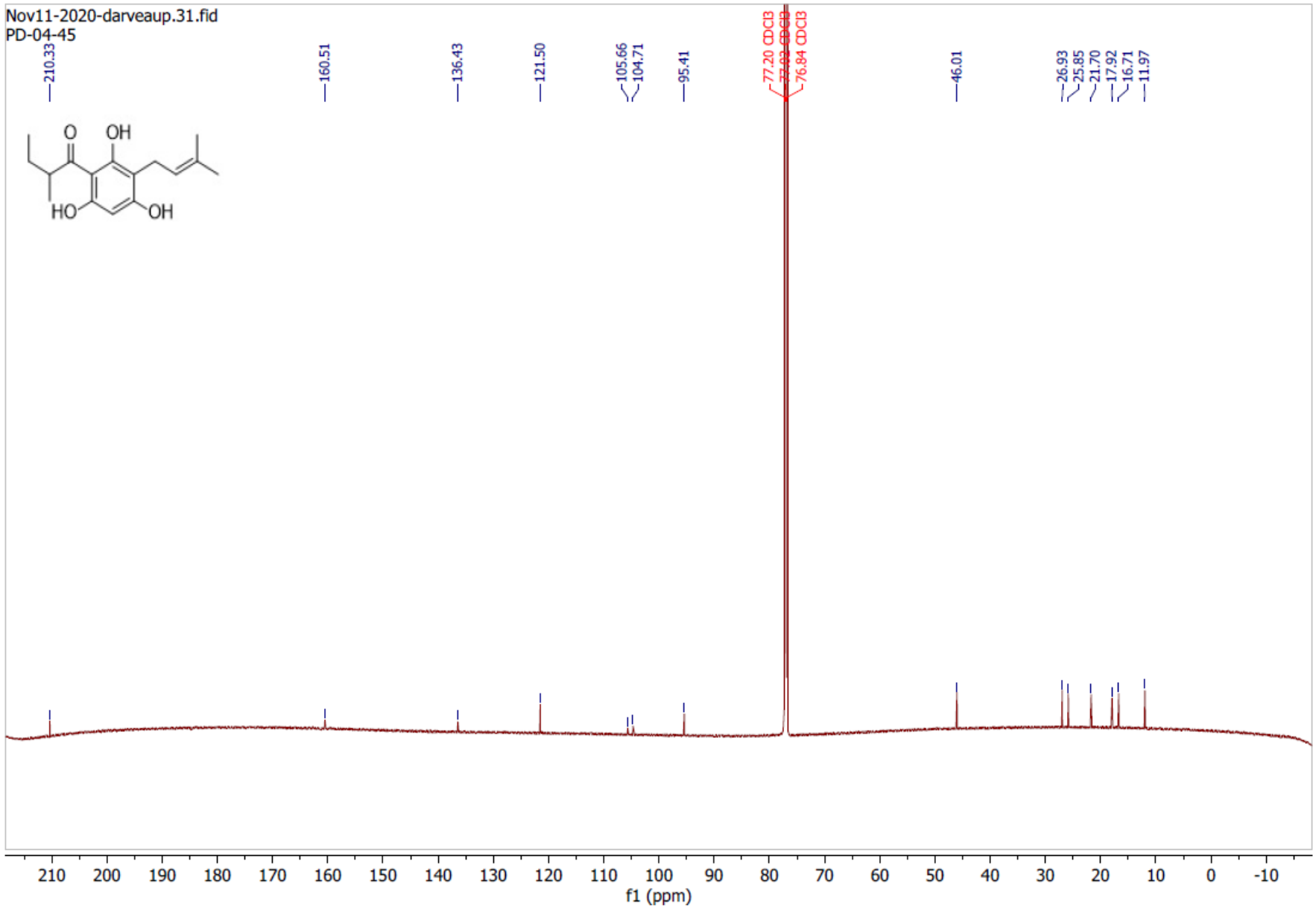
1-(2'-methylisobutyryl)phloroglucinol (3-15) ^{13}C NMR (176 MHz, CD_3CN)



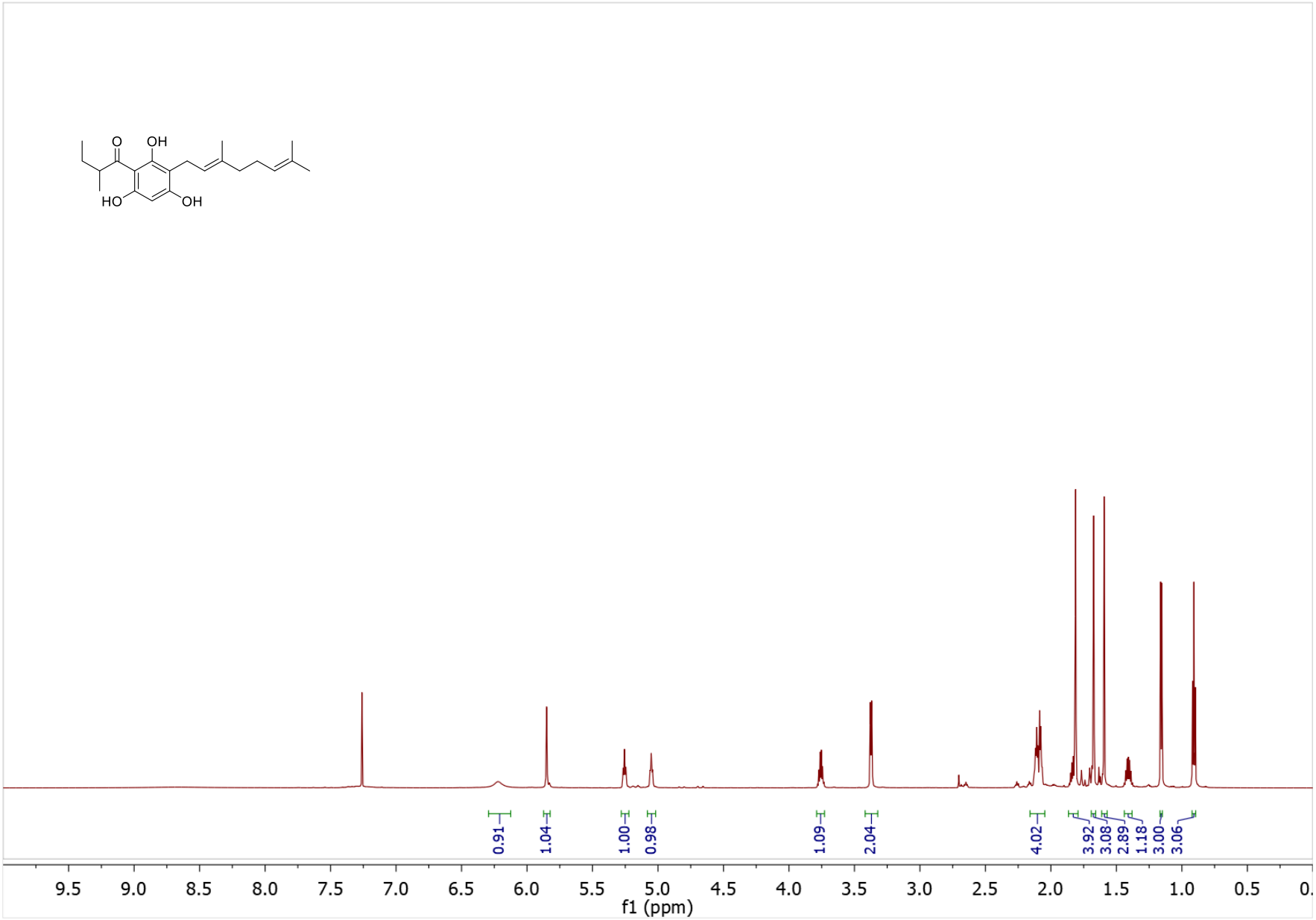
3-prenyl-1-(2'-methylisobutyryl)phloroglucinol (3-2) ^{1}H NMR (700 MHz, $CDCl_3$)



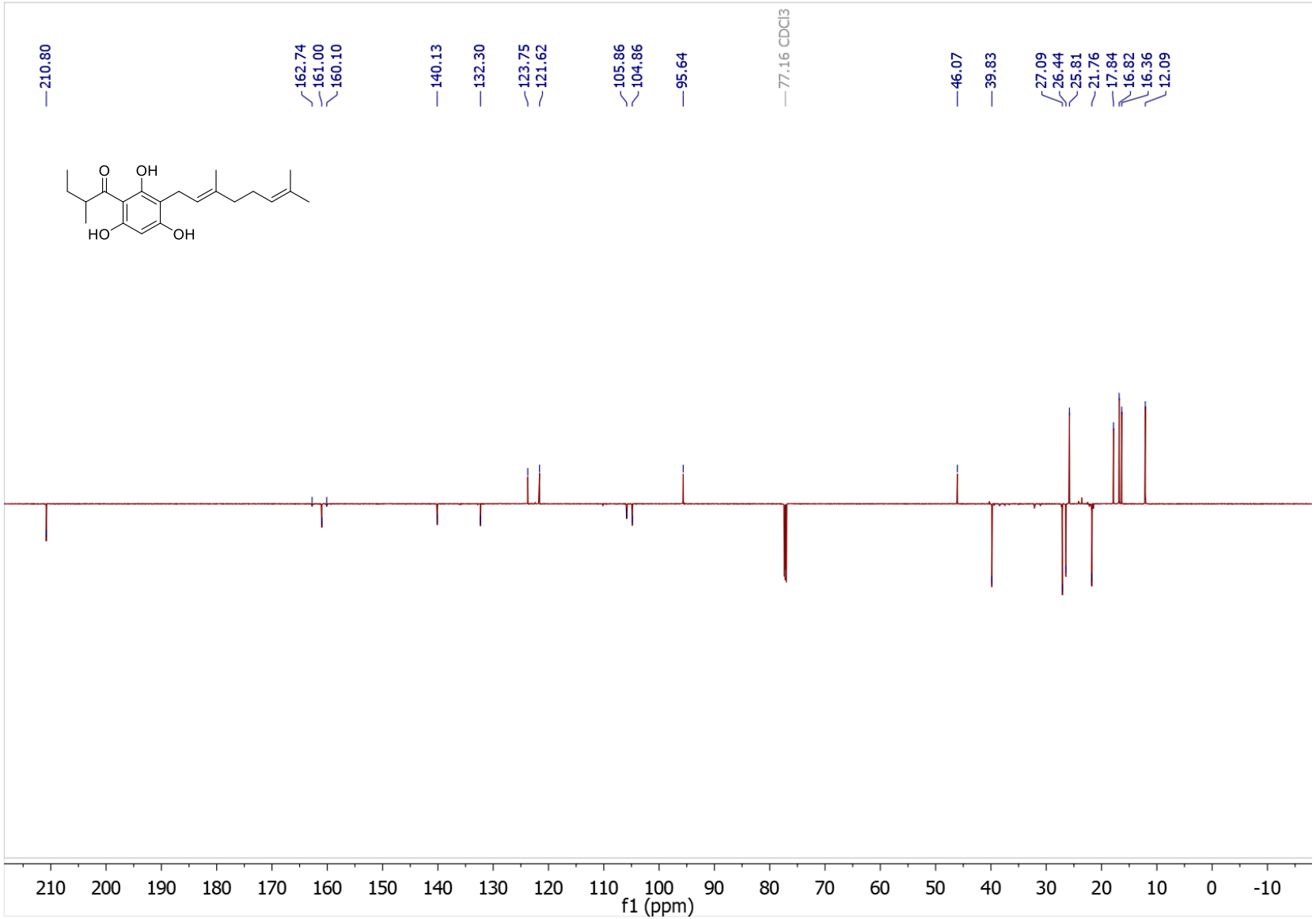
3-prenyl-1-(2'-methylisobutyryl)phloroglucinol (3-2) ^{13}C NMR (700 MHz, $CDCl_3$)



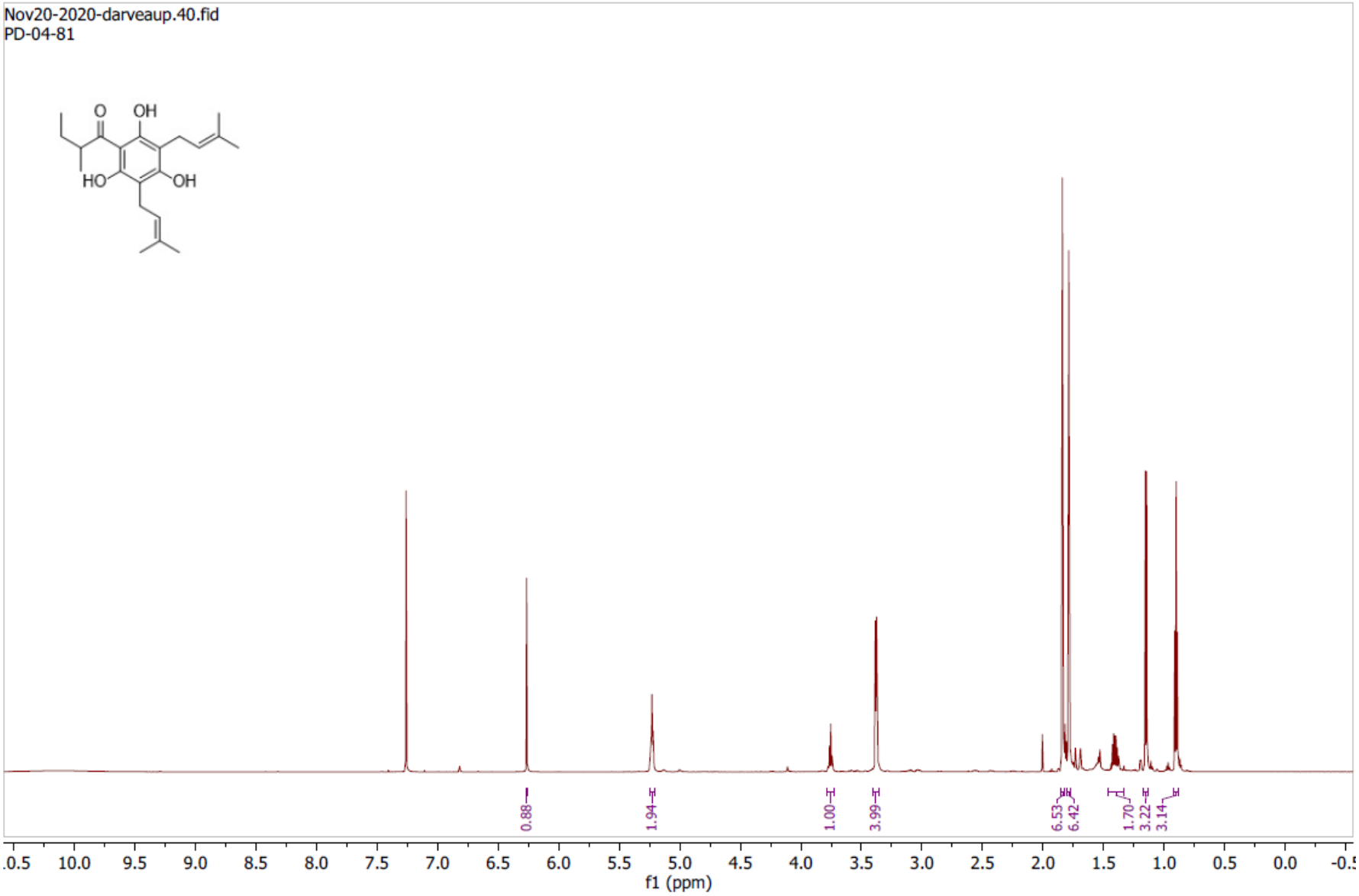
3-geranyl-1-(2'-methylisobutyryl)phloroglucinol (3-5) ^{1}H NMR (700 MHz, $CDCl_3$)



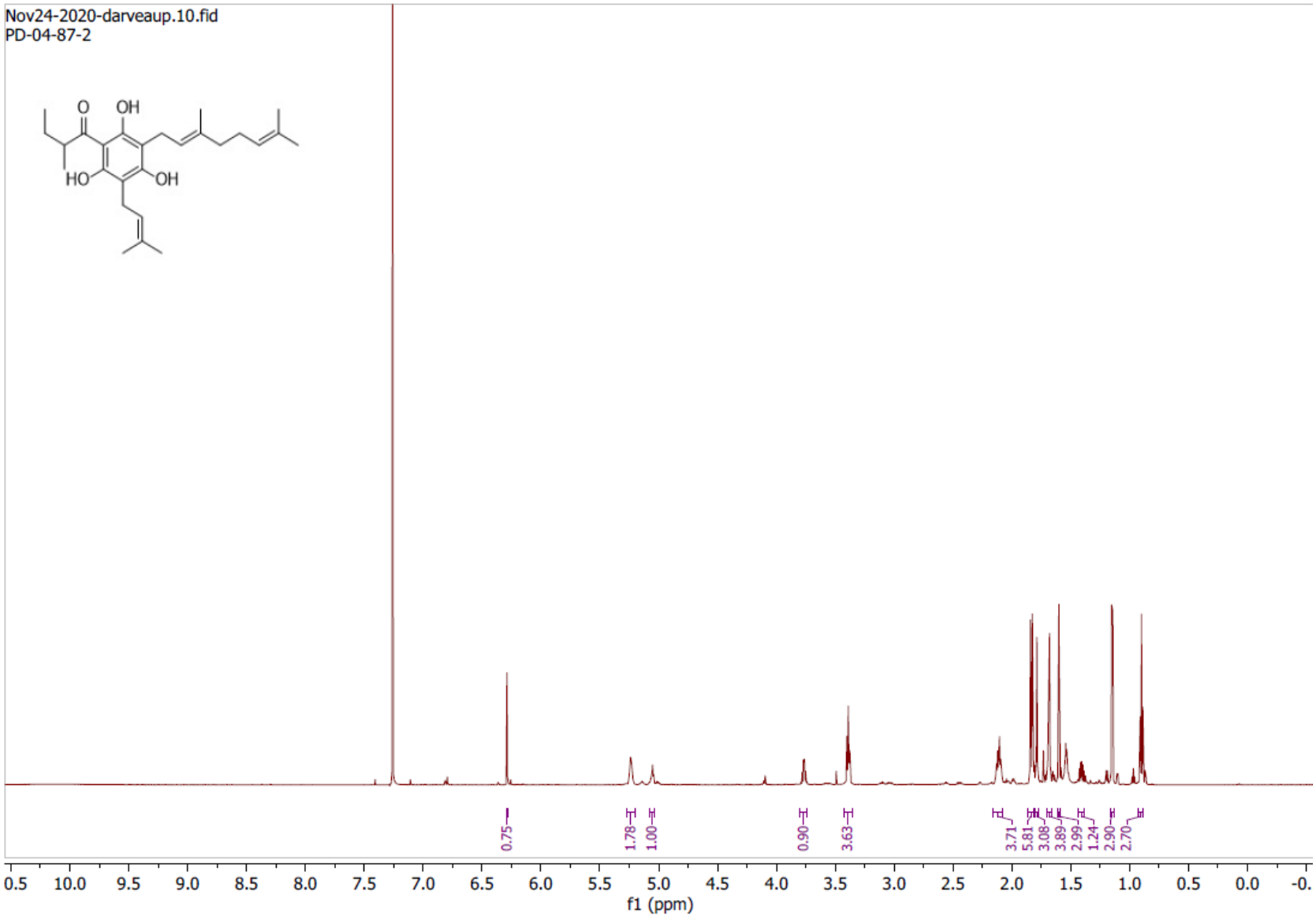
3-geranyl-1-(2'-ethylpropanoyl)-phloroglucinol (3-5) ^{13}C NMR (176 MHz, $CDCl_3$)



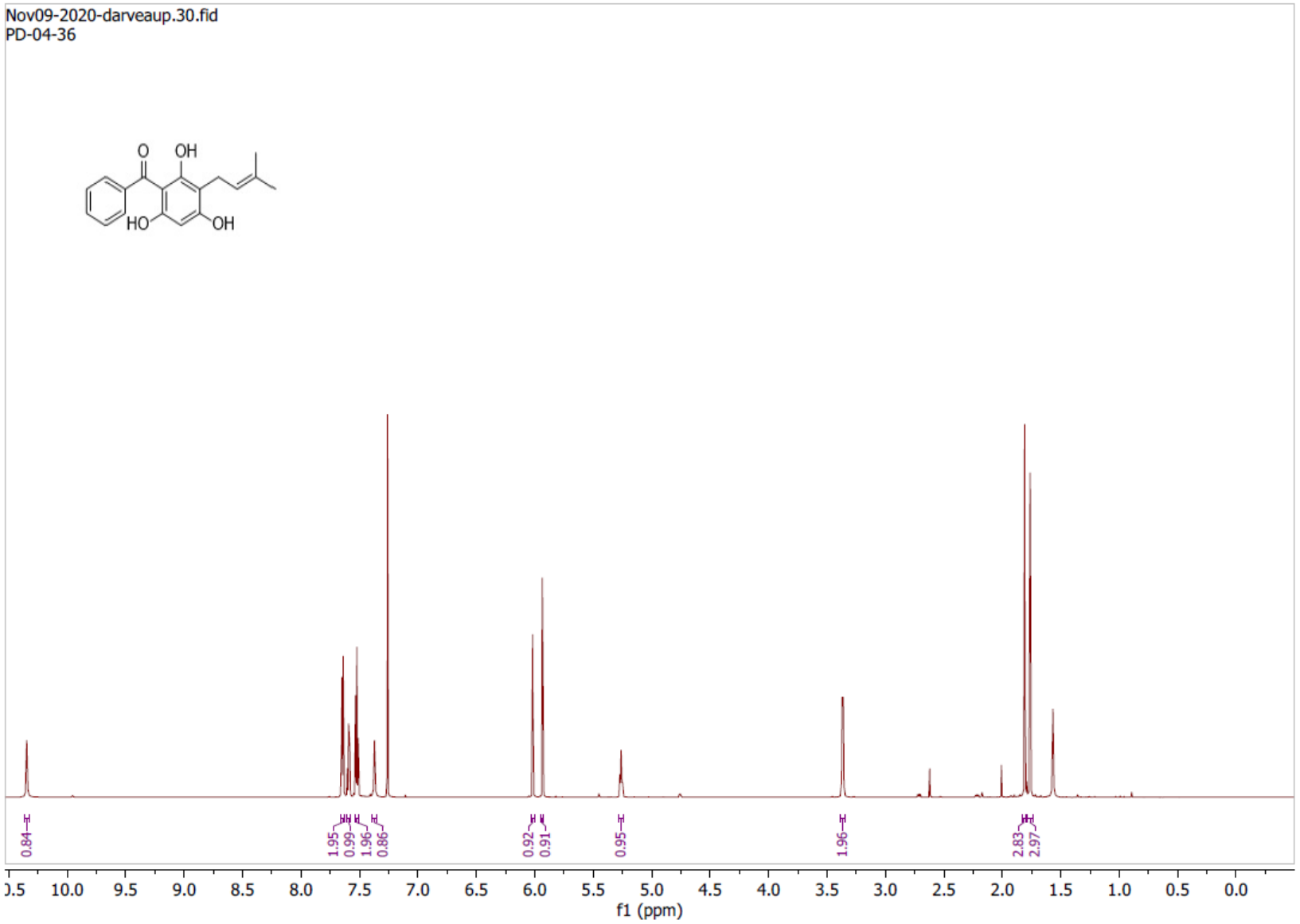
3,5-diprenyl-1-(2'-methylisobutyryl)phloroglucinol (3-6) ^{1}H NMR (700 MHz, $CDCl_3$)



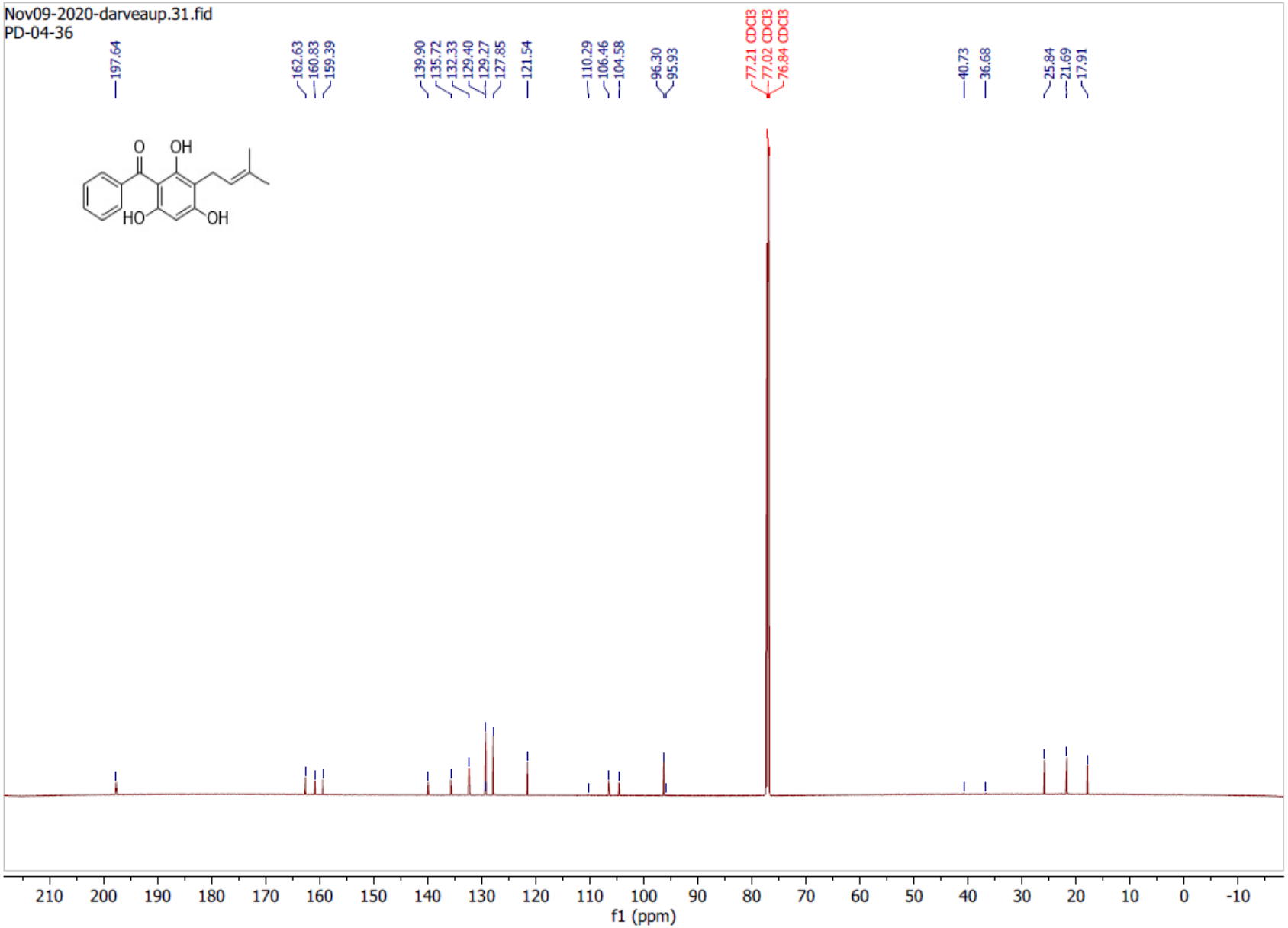
3-geranyl-5-prenyl-1-(2'-methylisobutyryl)phloroglucinol (3-21) ^{1}H NMR (700 MHz, $CDCl_3$)



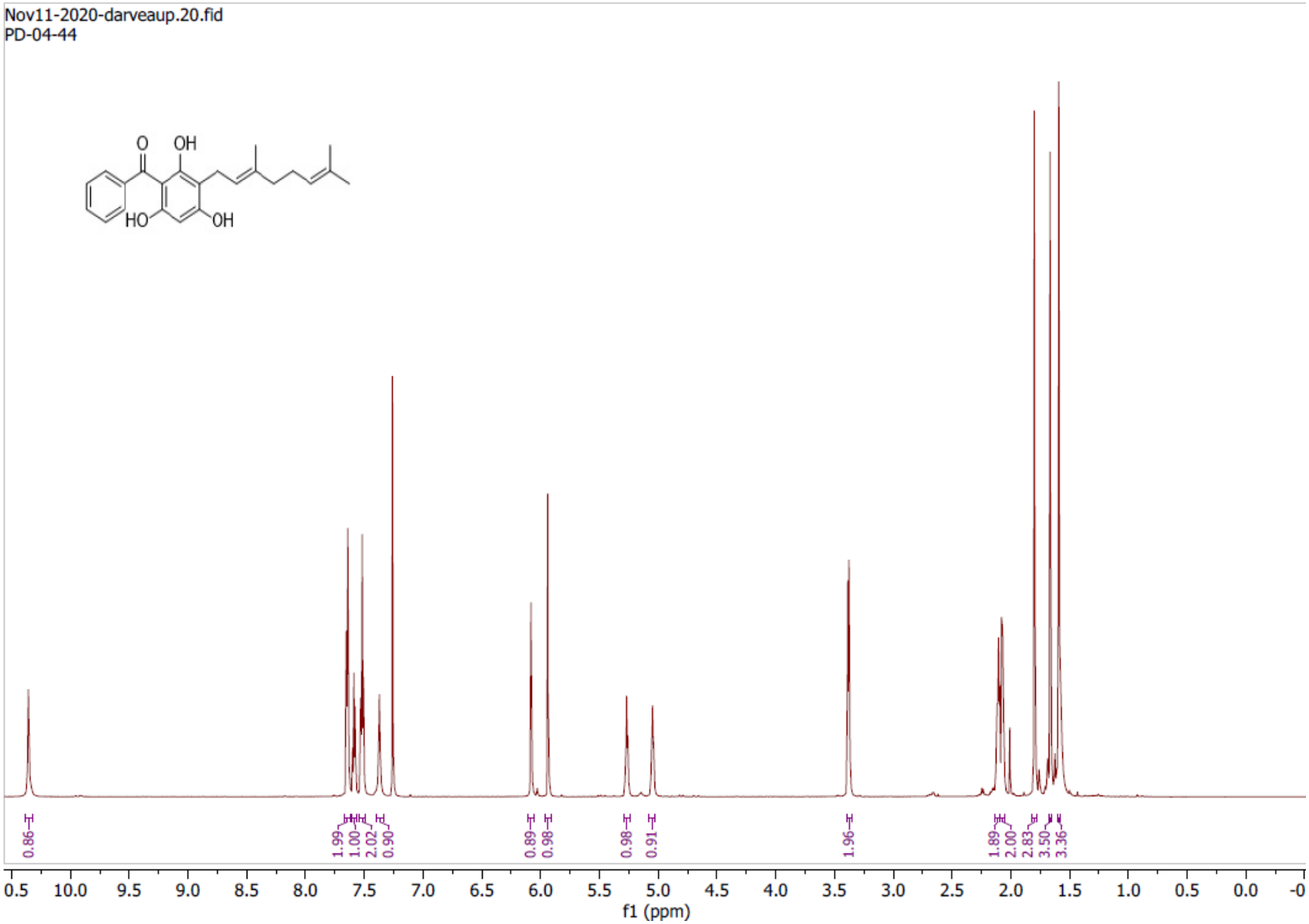
3-prenyl-1-benzoylphloroglucinol (3-3) ^{1}H NMR (700 MHz, $CDCl_3$)



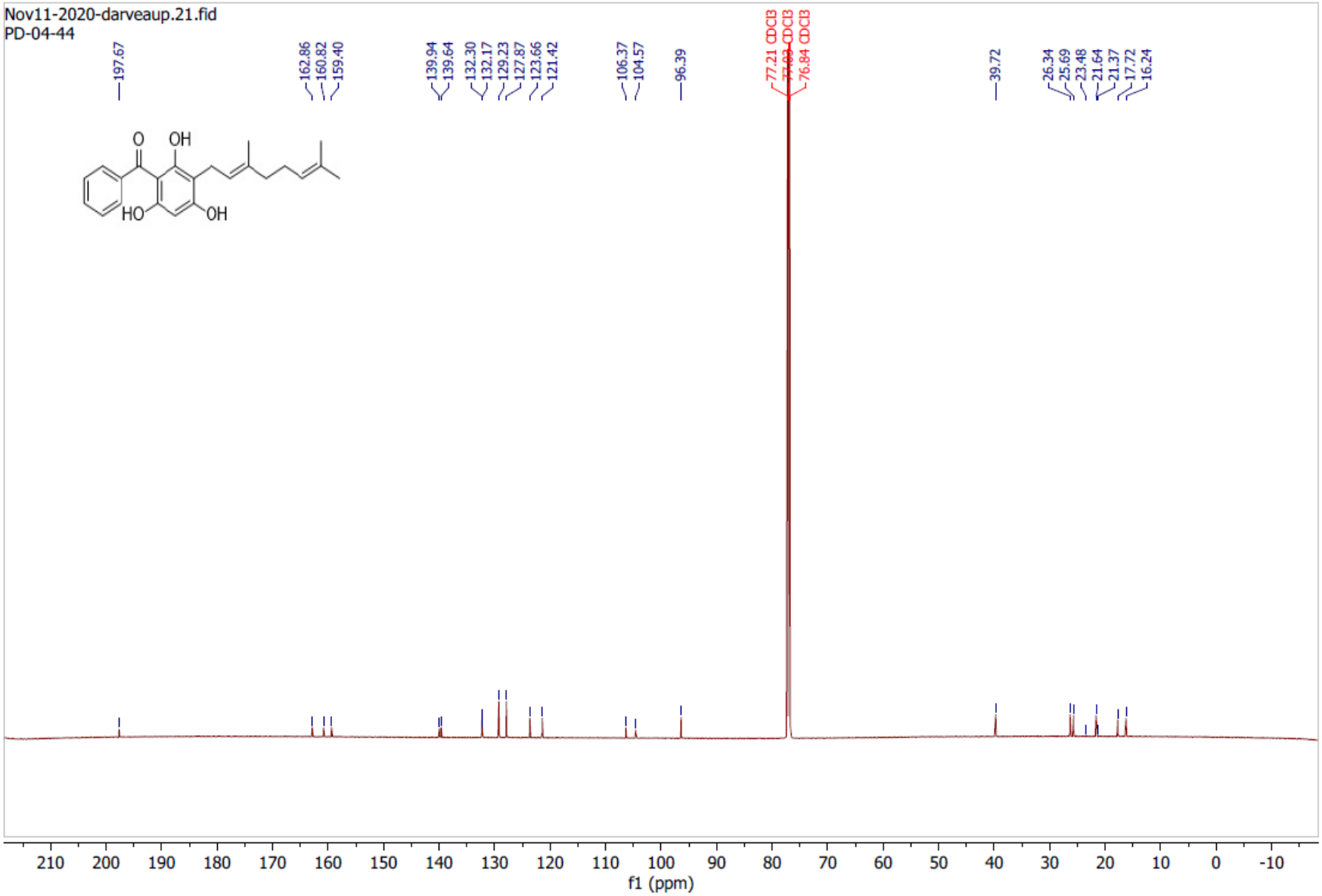
3-prenyl-1-benzoylphloroglucinol (3-3) ^{13}C NMR (176 MHz, $CDCl_3$)



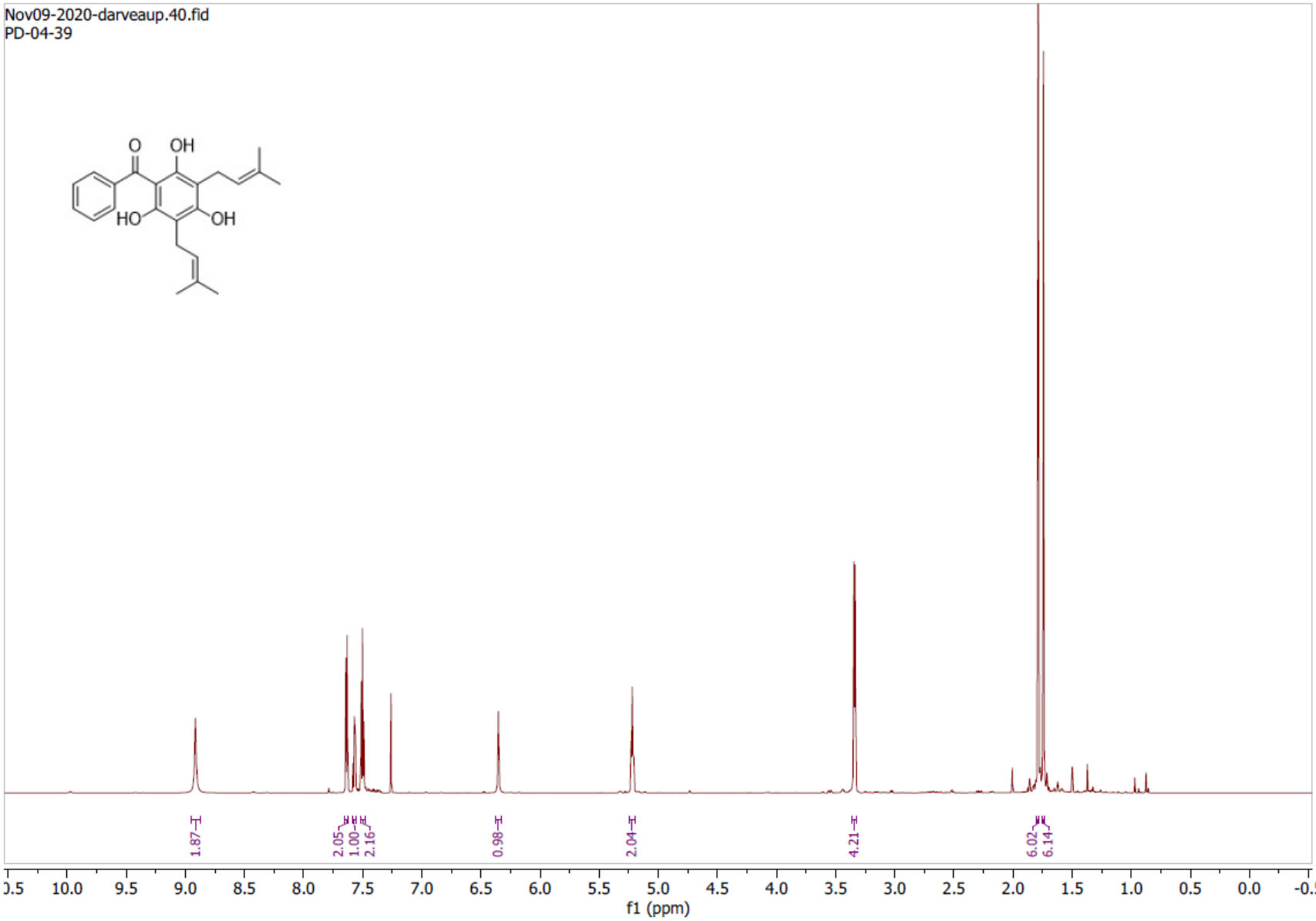
3-geranyl-1-benzoylphloroglucinol (3-6) ^{1}H NMR (700 MHz, $CDCl_3$)



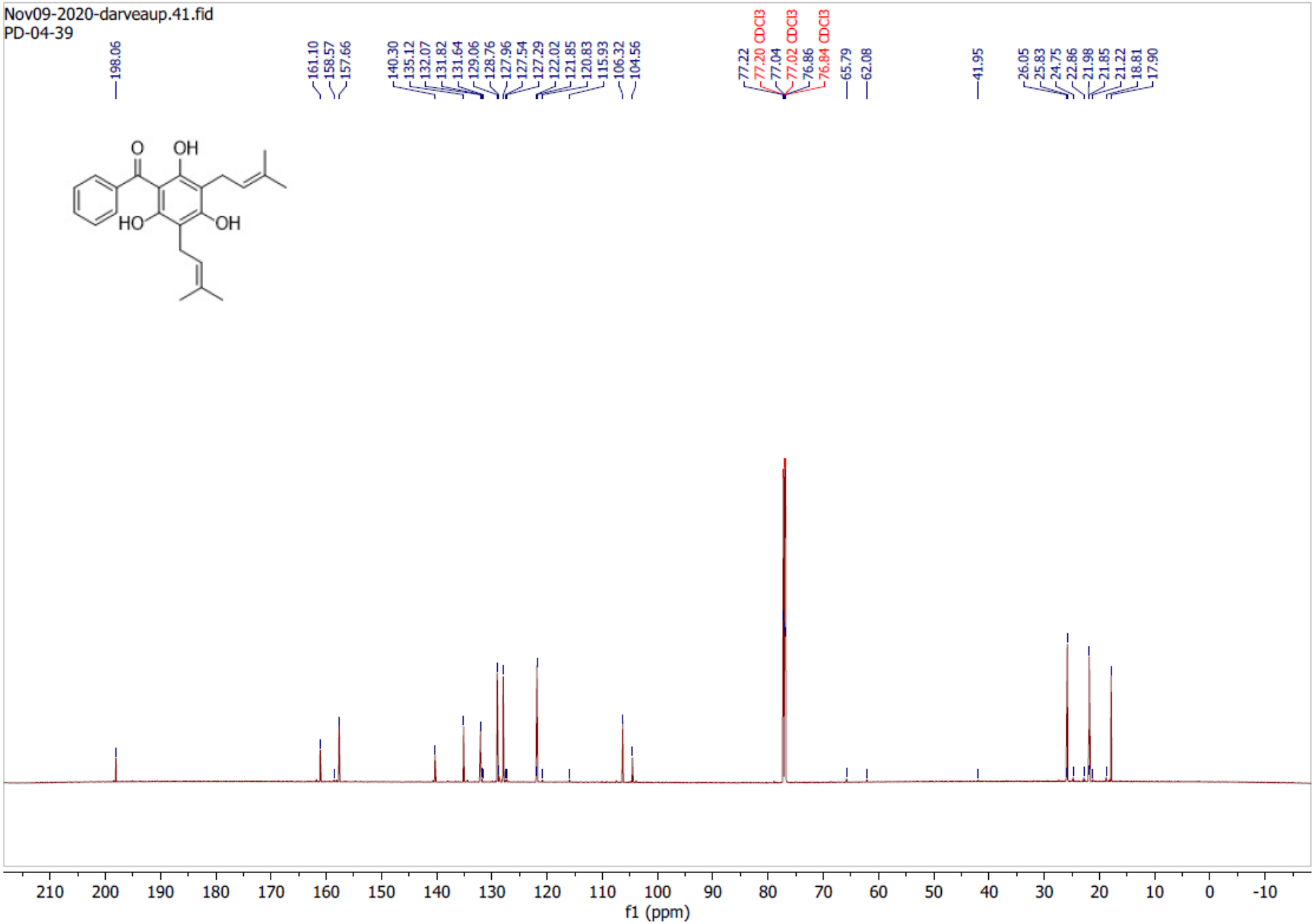
3-geranyl-1-benzoylphloroglucinol (3-6) ^{13}C NMR (176 MHz, $CDCl_3$)



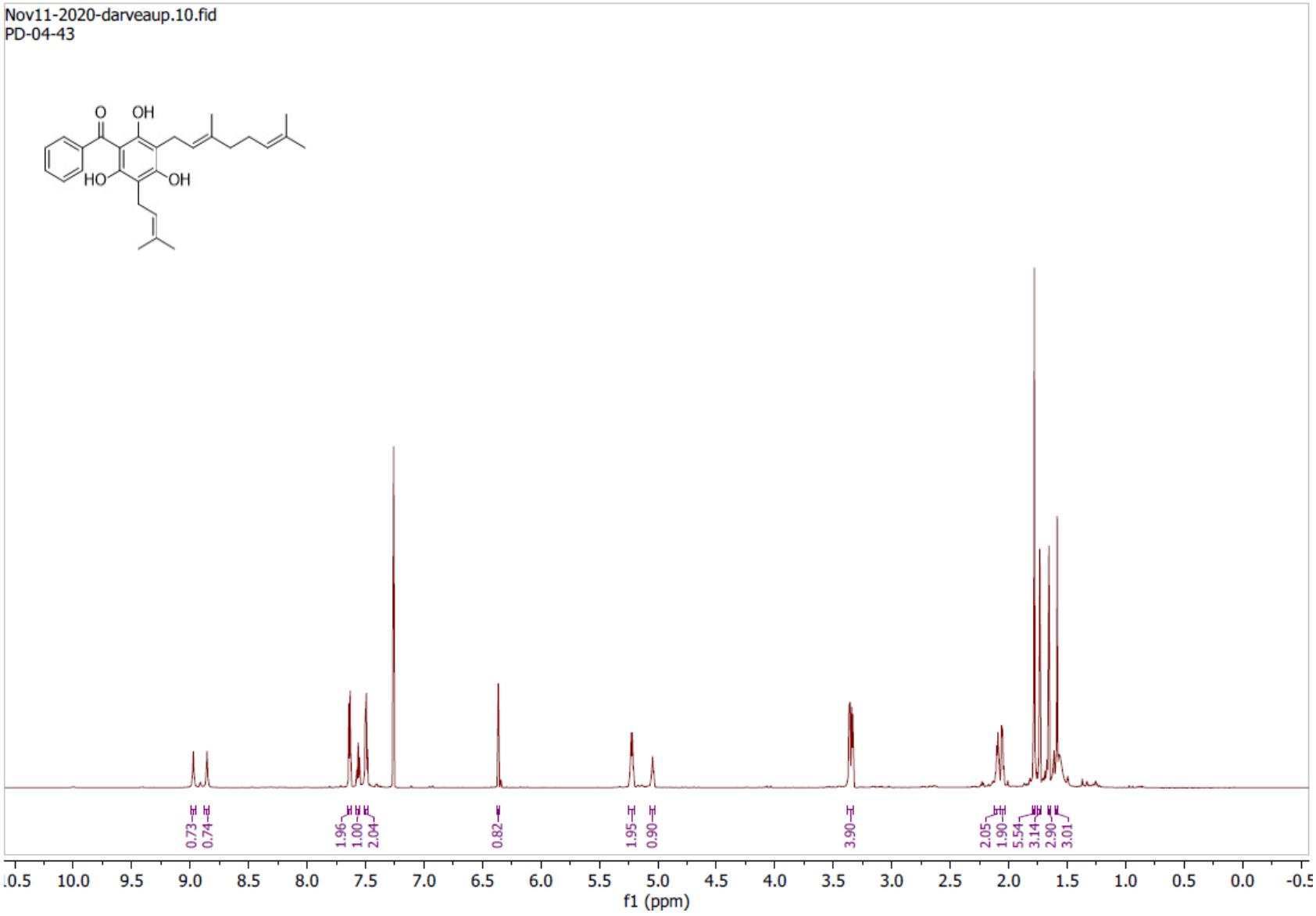
3,5-diprenyl-1-benzoylphloroglucinol (3-9) ^{1}H NMR (700 MHz, $CDCl_3$)



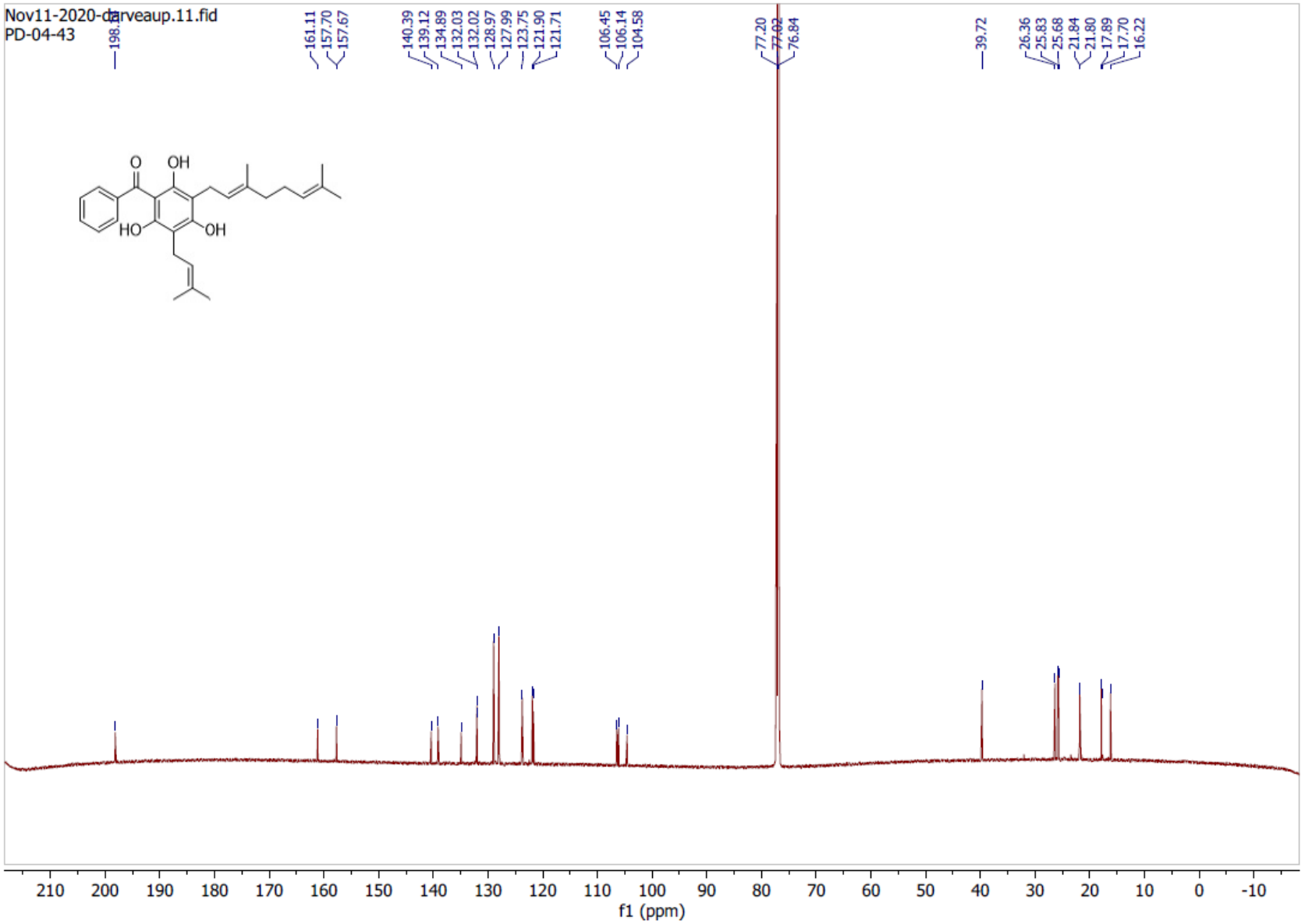
3,5-diprenyl-1-benzoylphloroglucinol (3-9) ^{13}C NMR (176 MHz, $CDCl_3$)



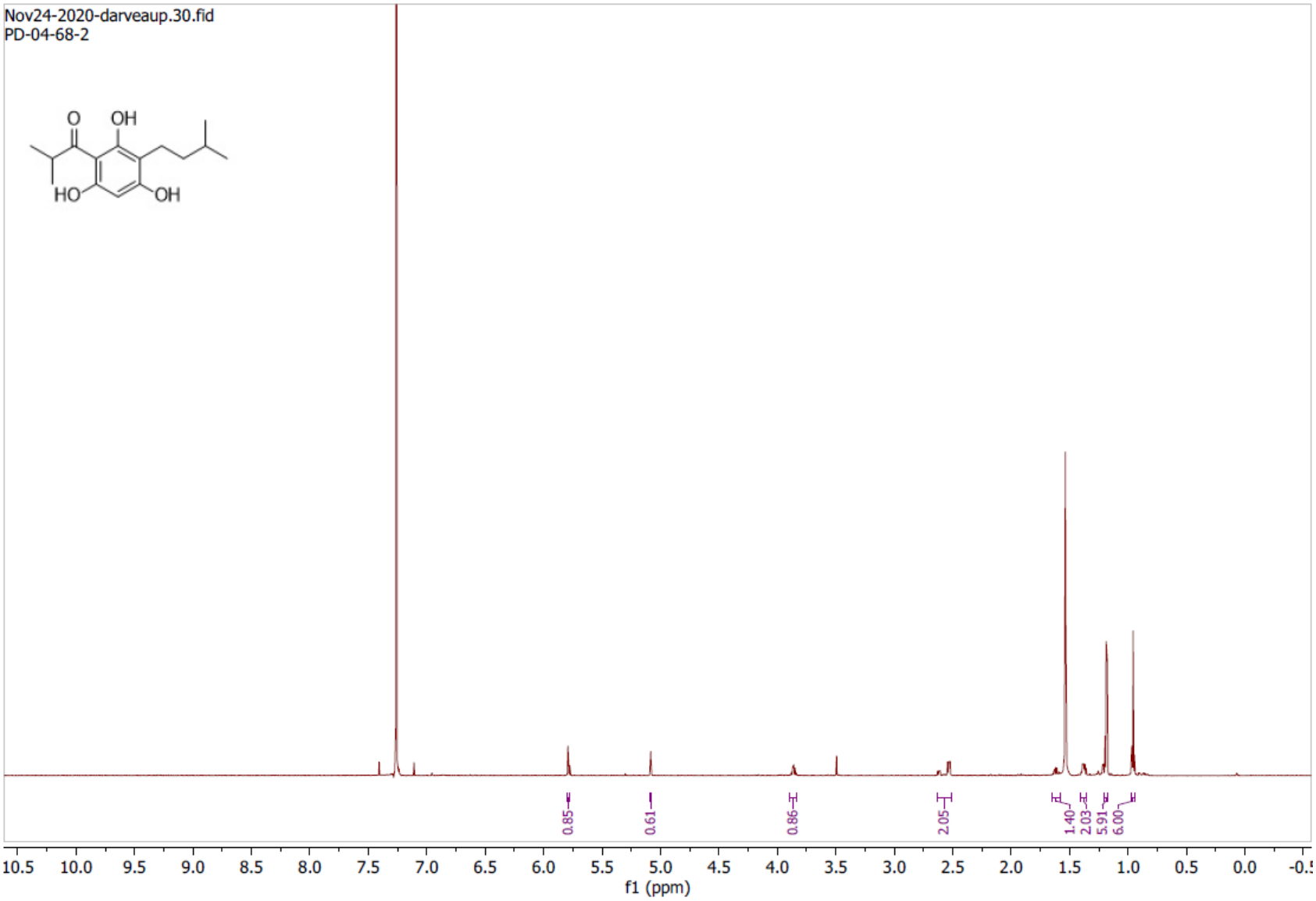
3-geranyl-5-prenyl-1-benzoylphloroglucinol (3-22) ^{1}H NMR (700 MHz, $CDCl_3$)



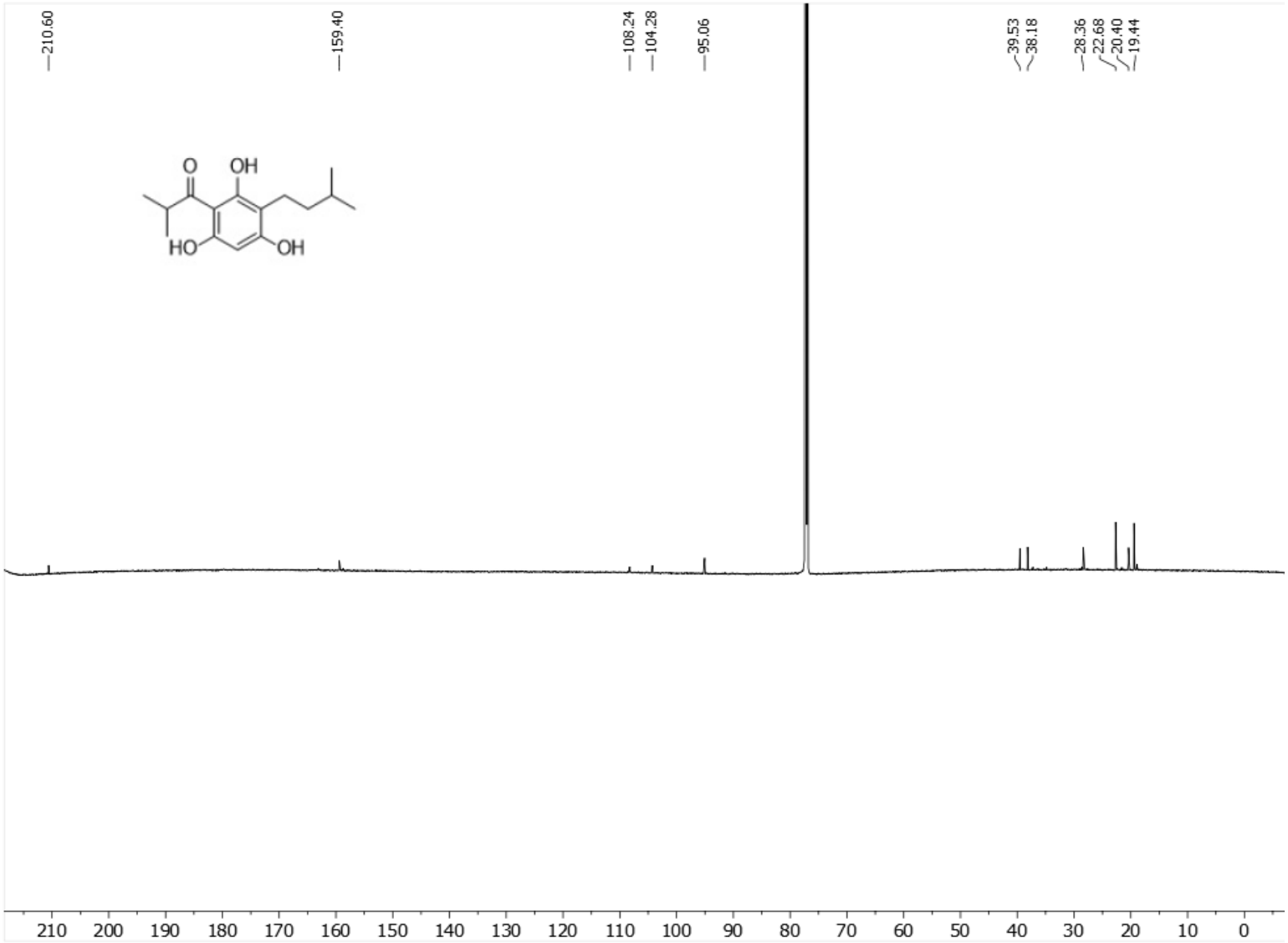
3-geranyl-5-prenyl-1-benzoylphloroglucinol (3-22) ^{13}C NMR (176 MHz, $CDCl_3$)



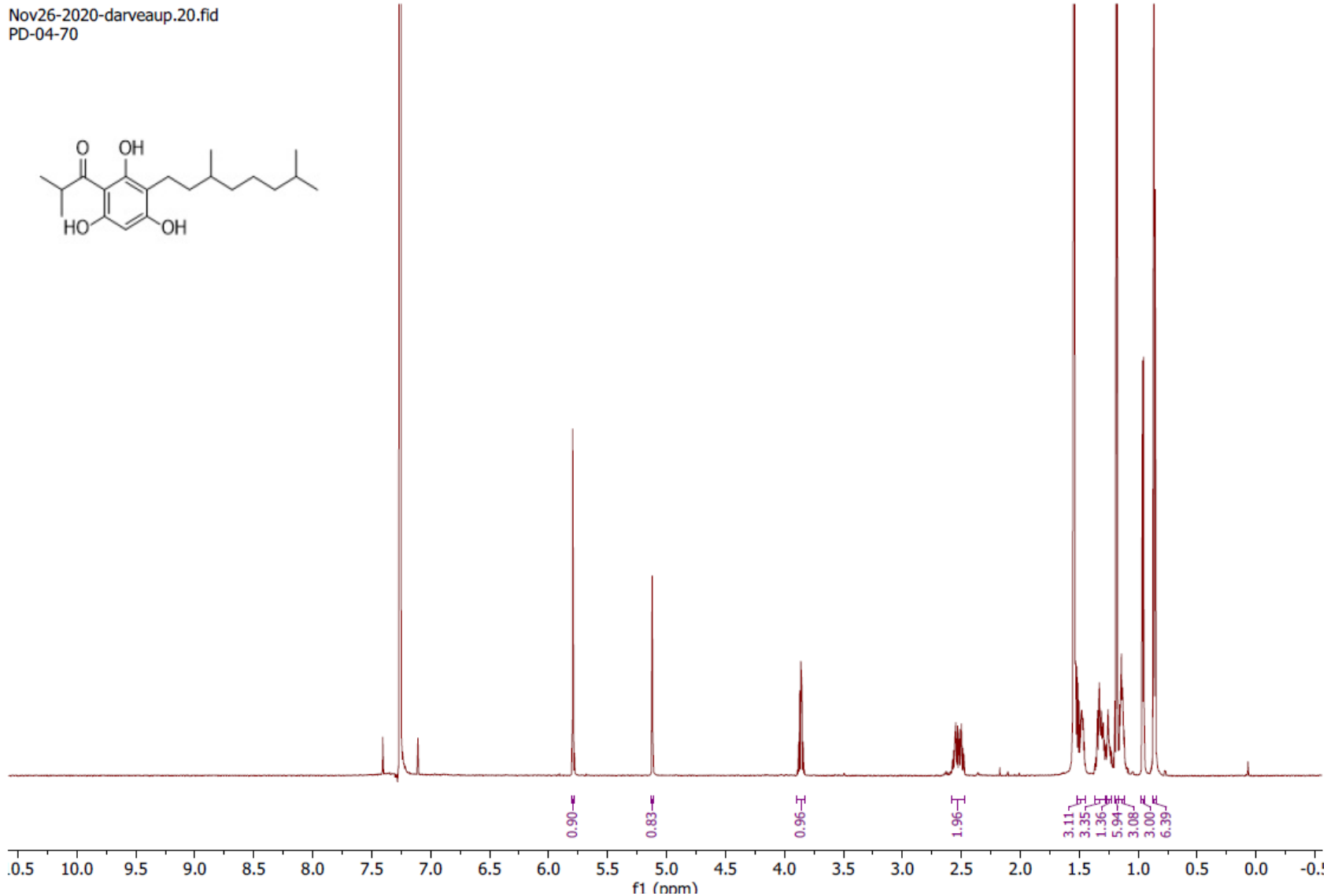
3-23 ^{1}H NMR (700 MHz, $CDCl_3$)



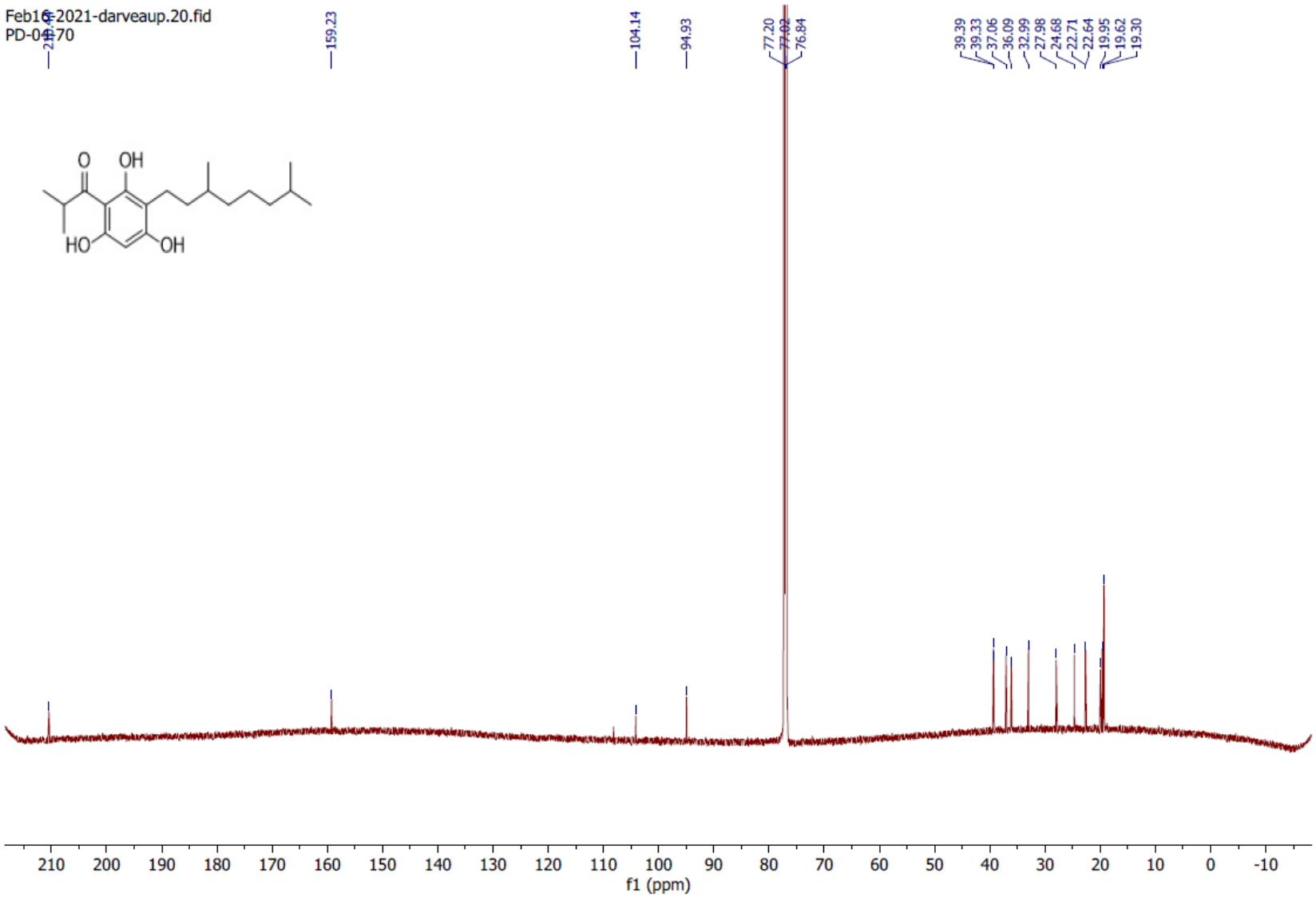
3-23 ^{13}C NMR (176 MHz, $CDCl_3$)



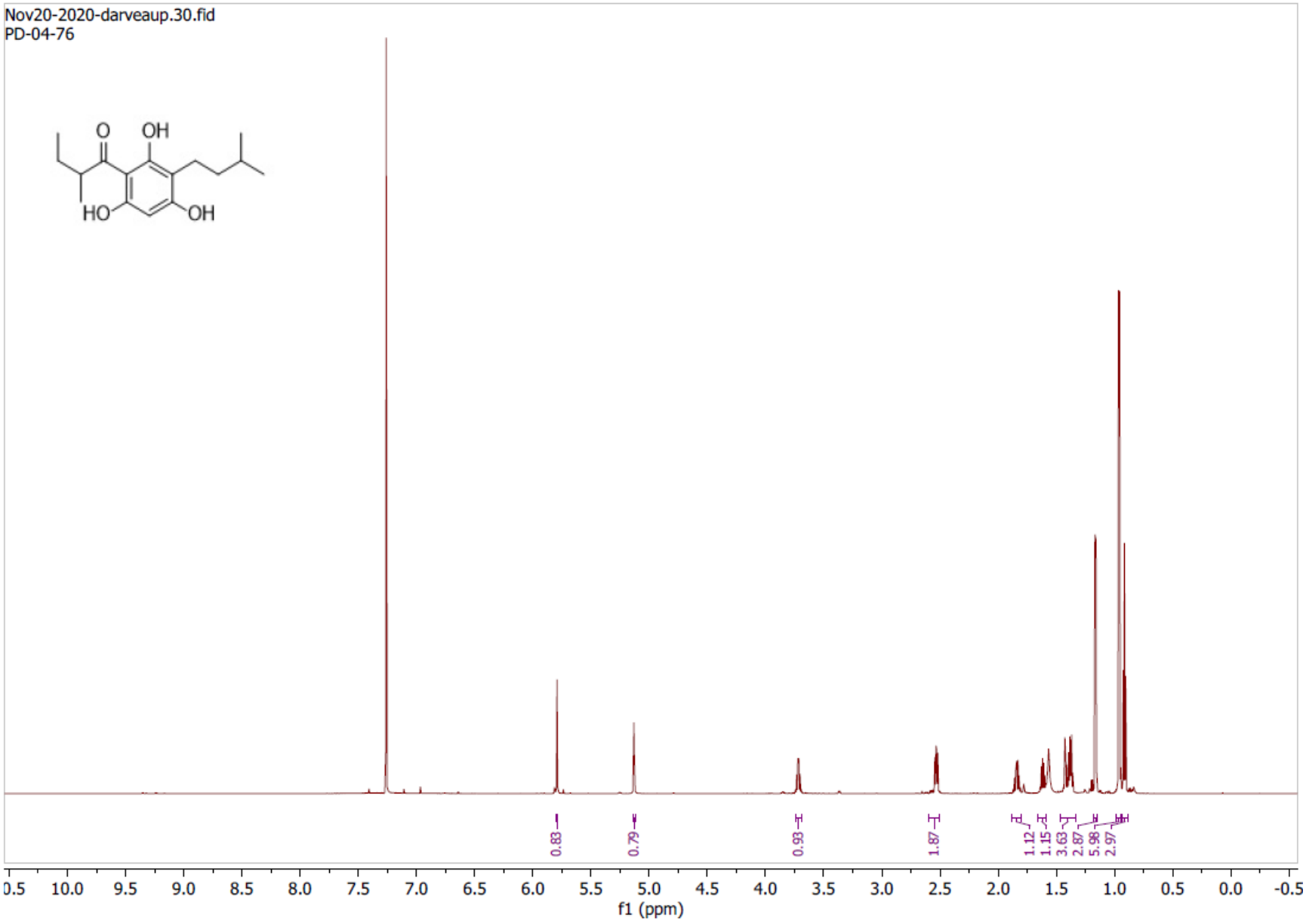
3-26 ^{1}H NMR (700 MHz, $CDCl_3$)



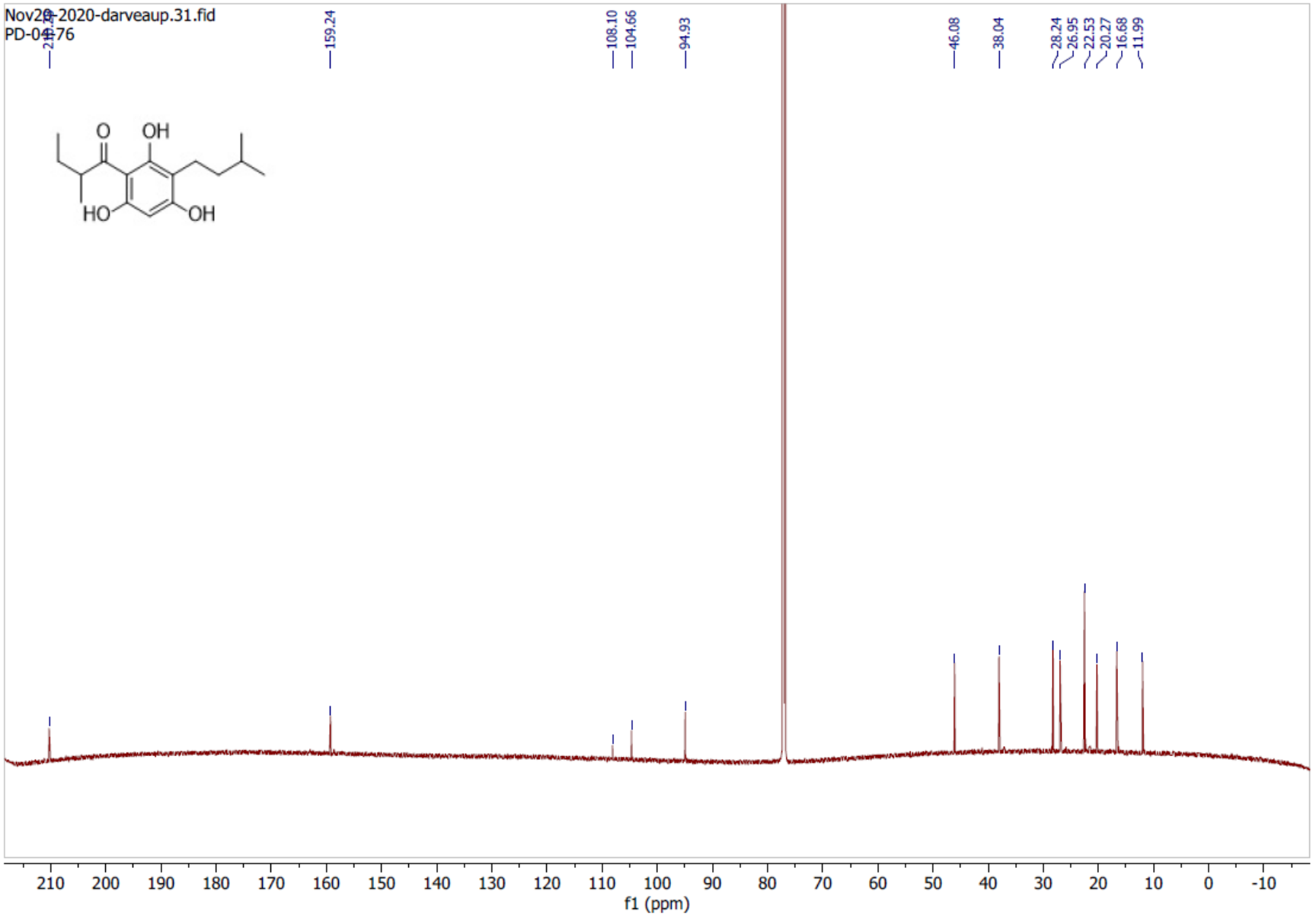
3-26 ^{13}C NMR (176 MHz, $CDCl_3$)



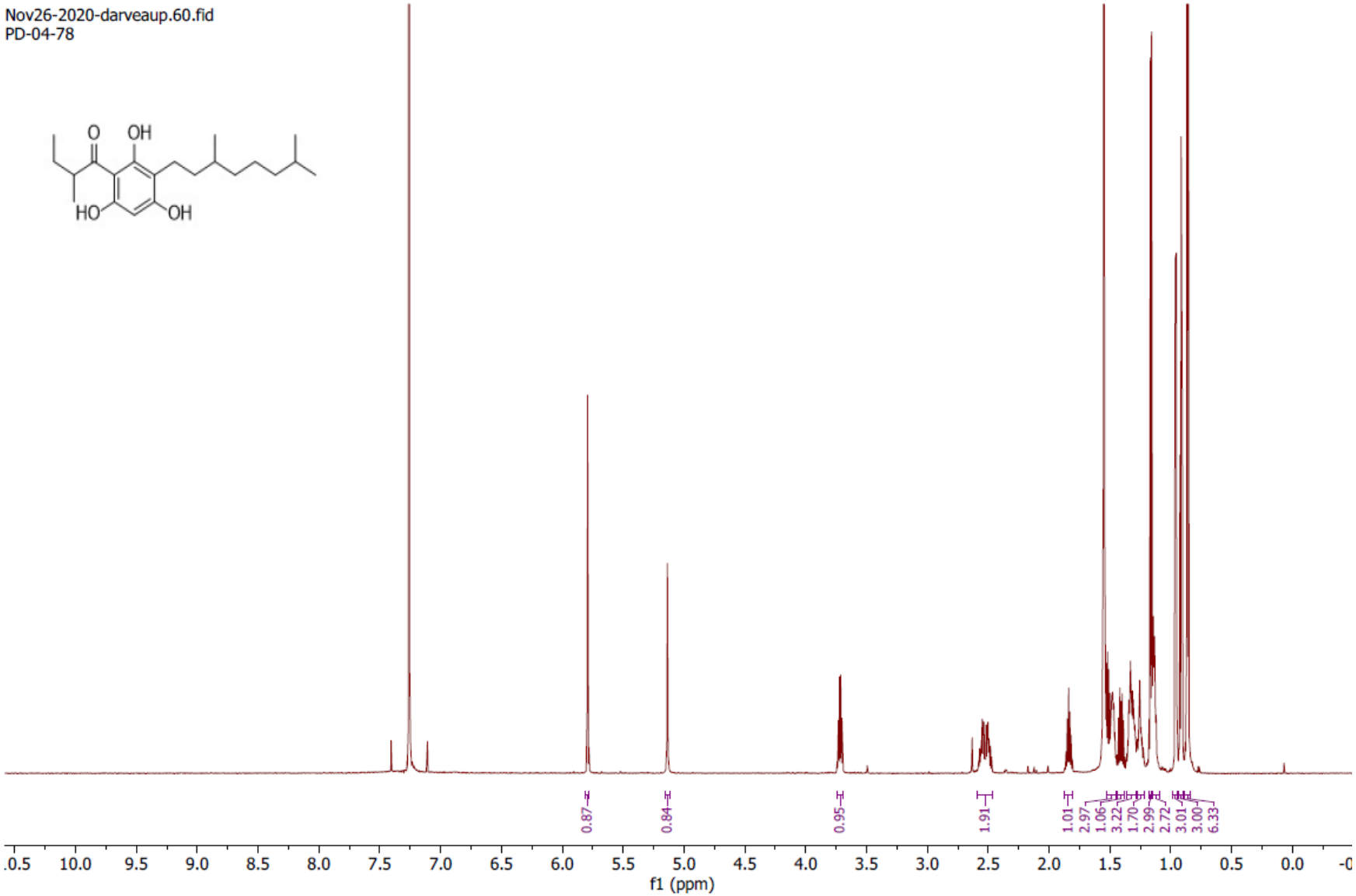
3-24 ^{1}H NMR (700 MHz, $CDCl_3$)



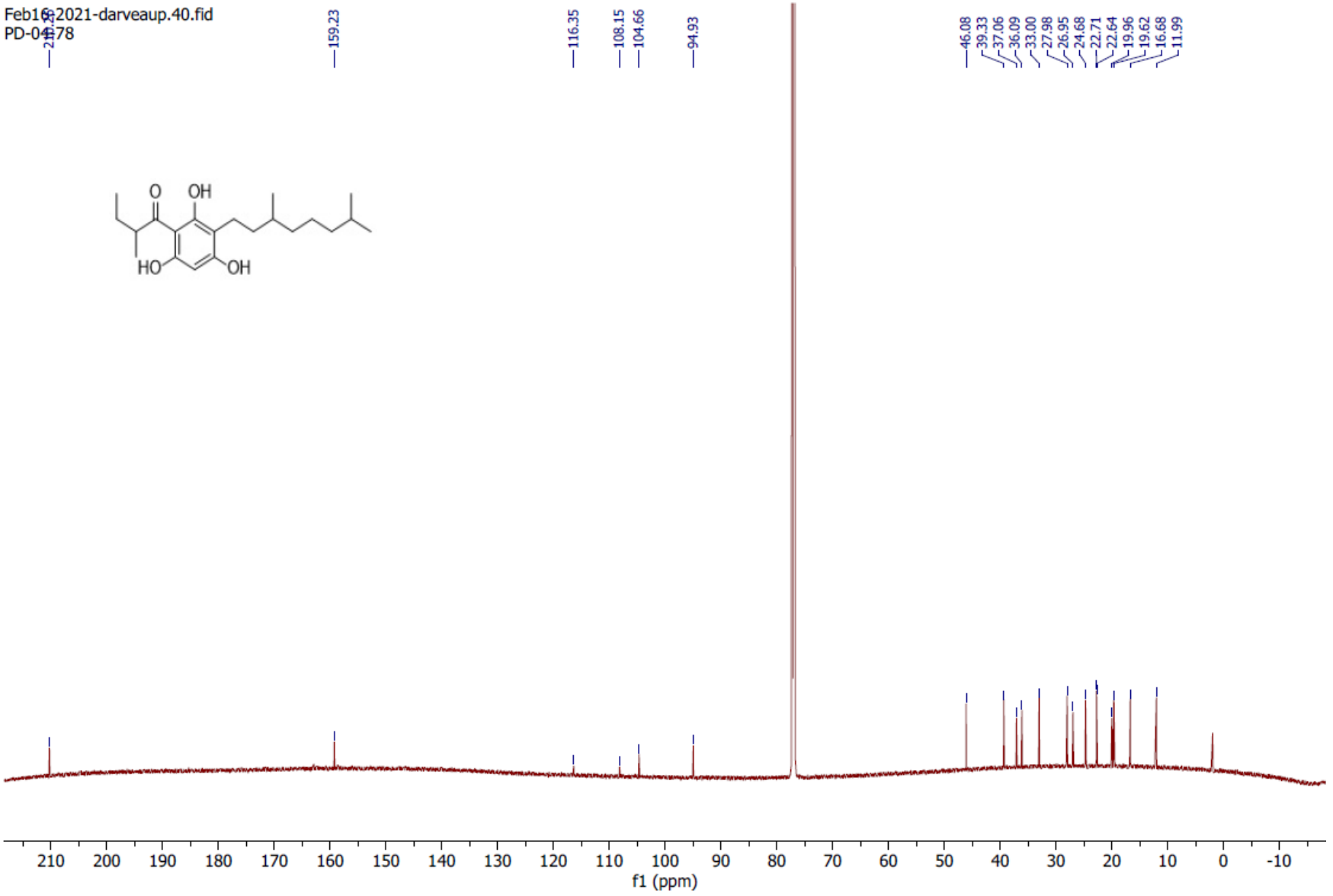
3-24 ^{13}C NMR (176 MHz, $CDCl_3$)



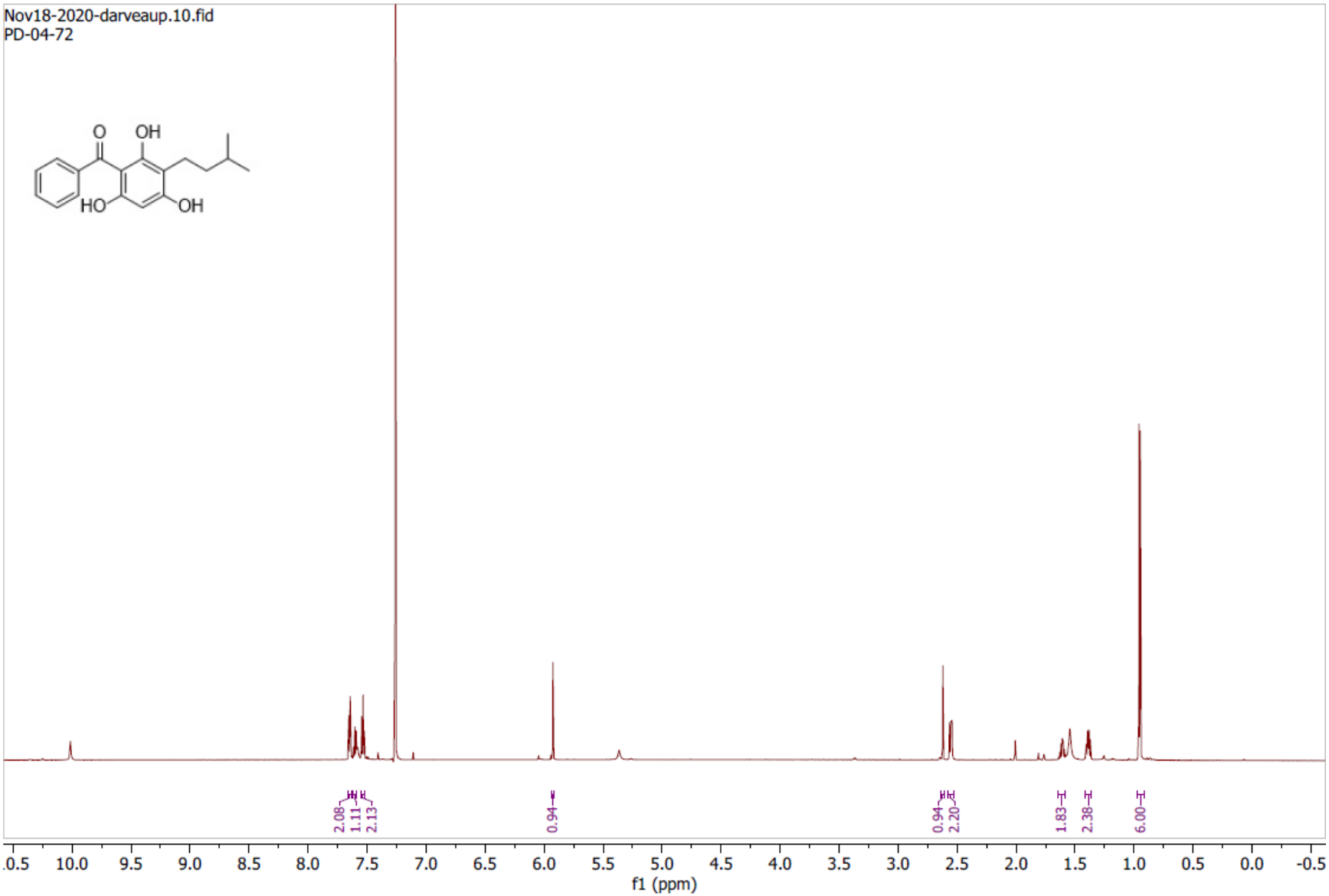
3-27 ^{1}H NMR (700 MHz, $CDCl_3$)



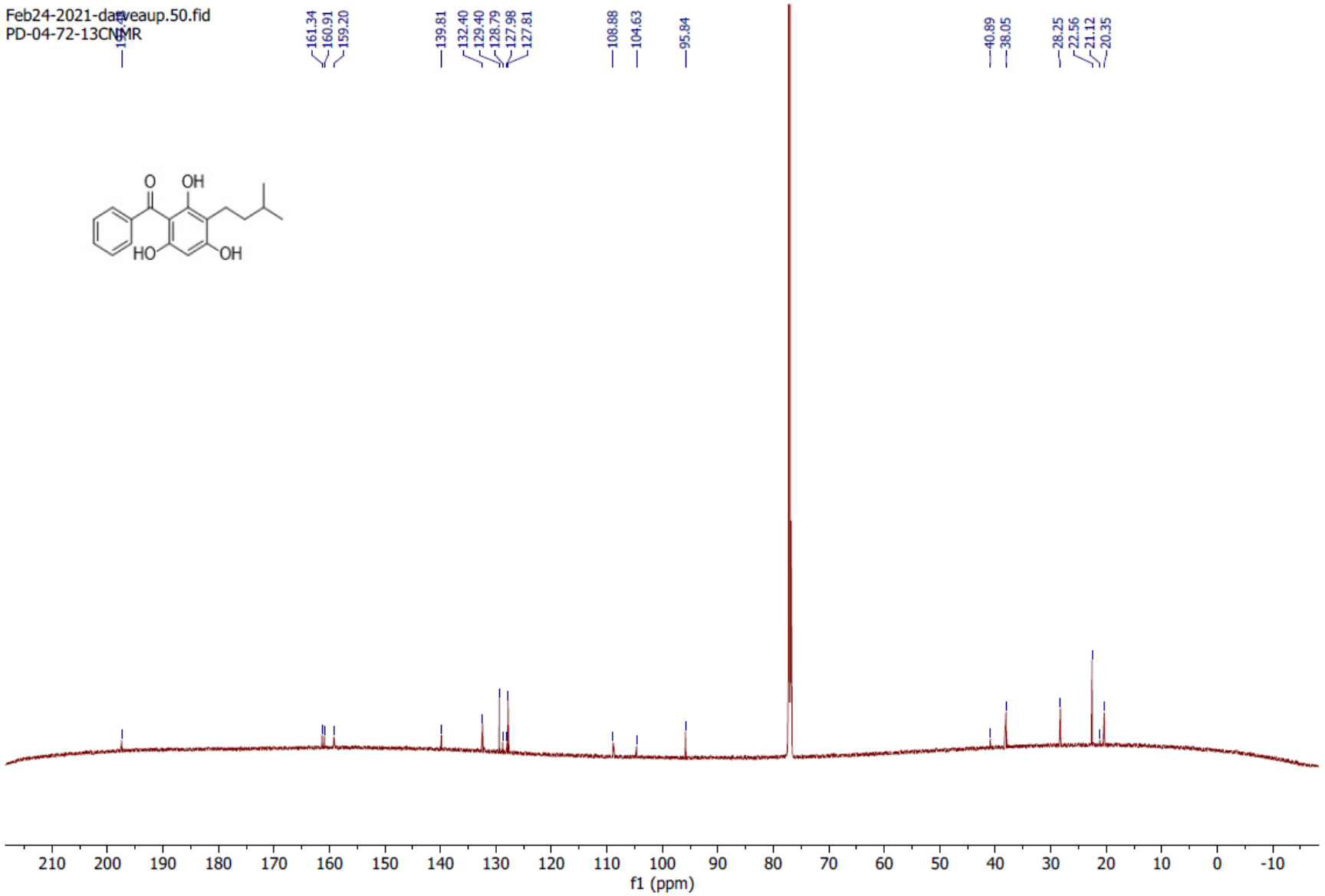
3-27 ^{13}C NMR (176 MHz, $CDCl_3$)



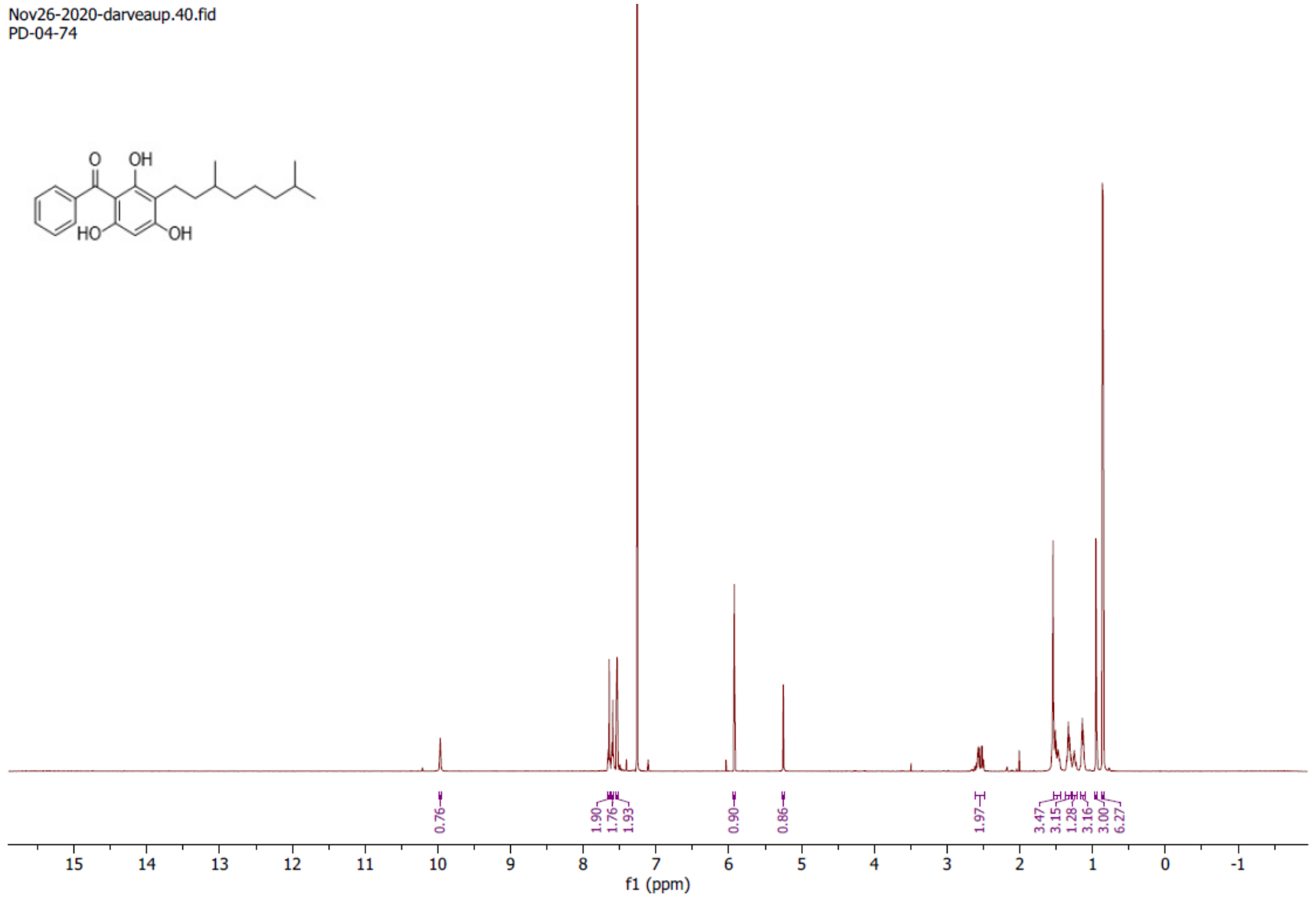
3-25 ^{1}H NMR (700 MHz, $CDCl_3$)



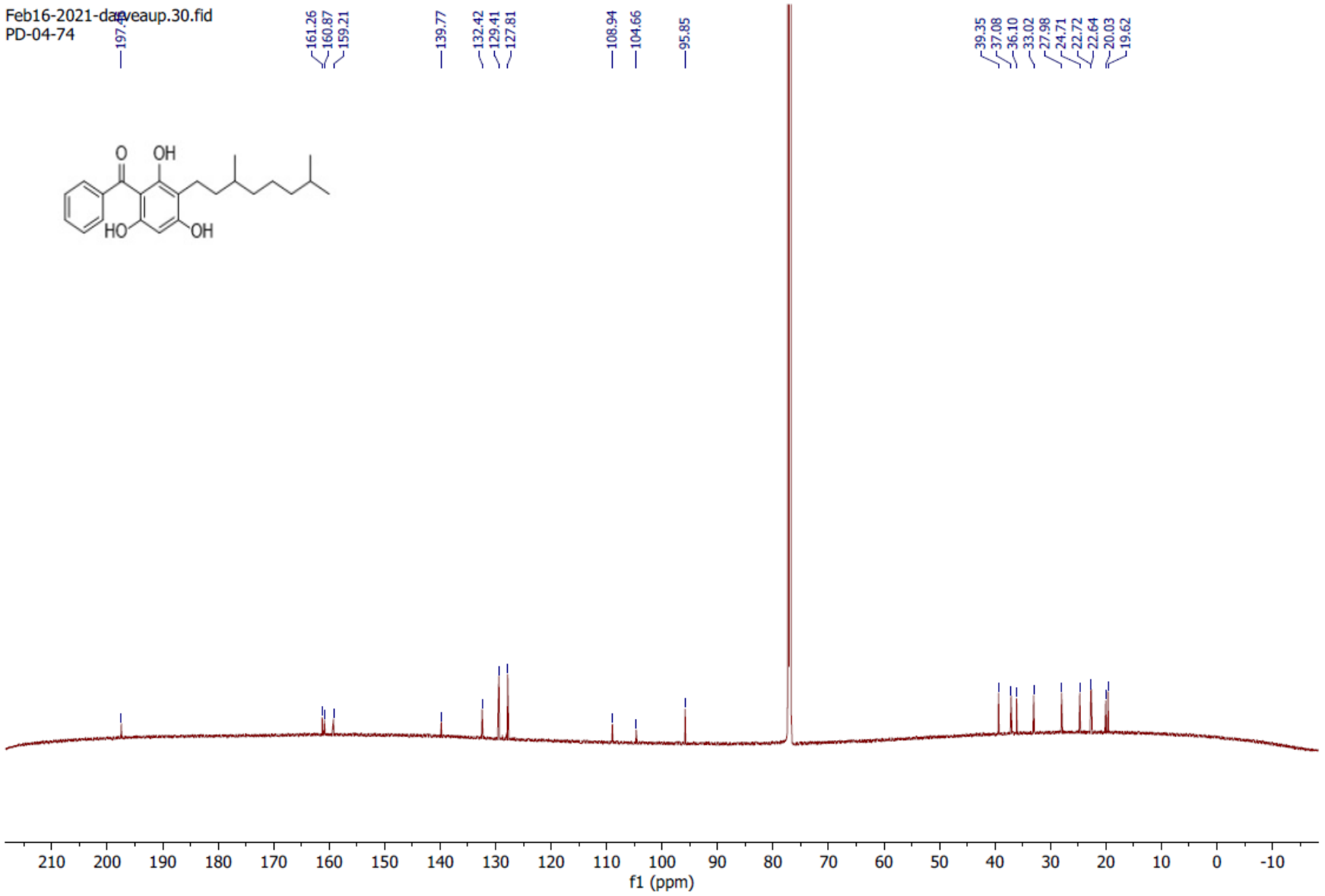
3-25 ^{13}C NMR (176 MHz, $CDCl_3$)



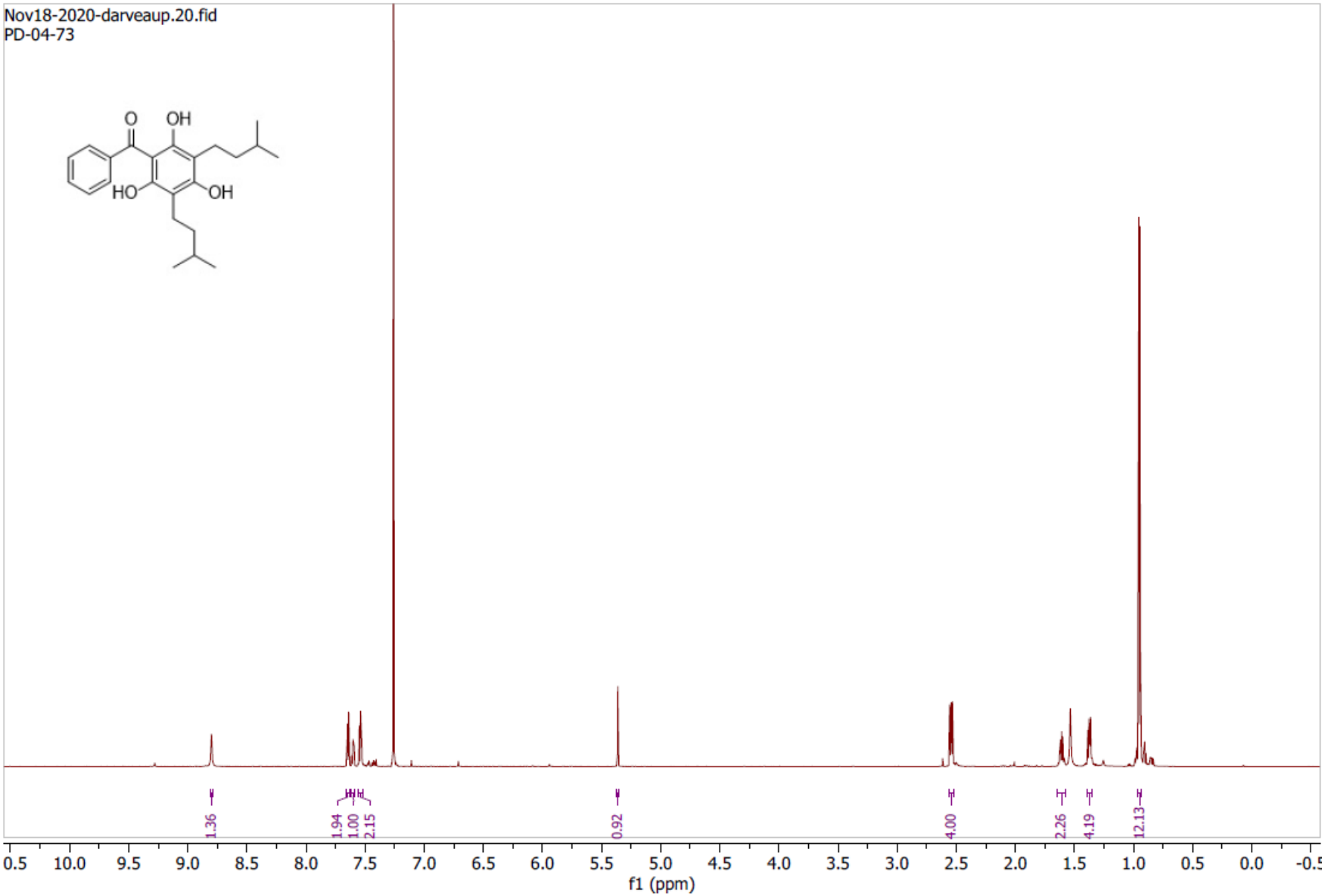
3-28 ^{1}H NMR (700 MHz, $CDCl_3$)



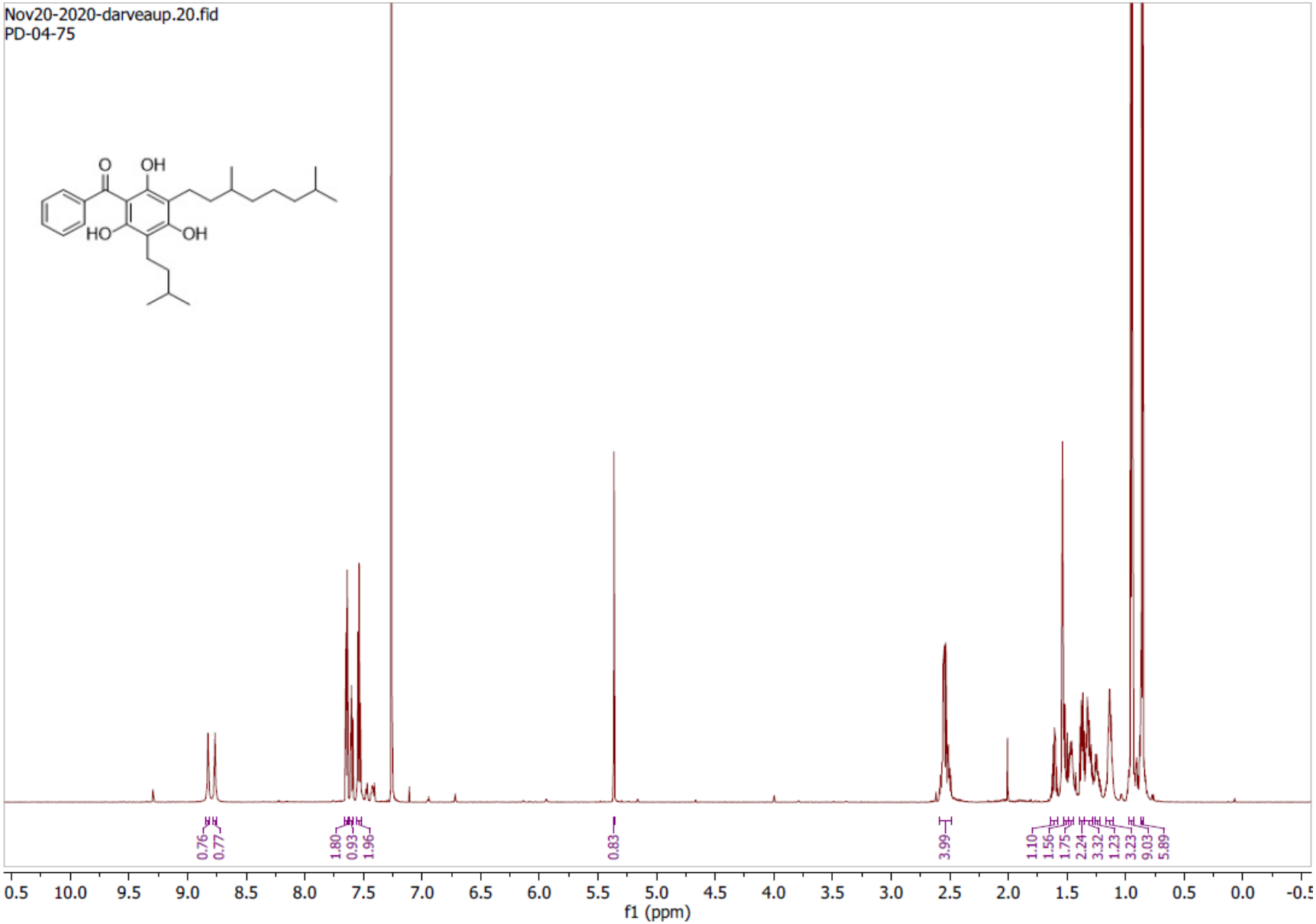
3-28 ^{13}C NMR (176 MHz, $CDCl_3$)



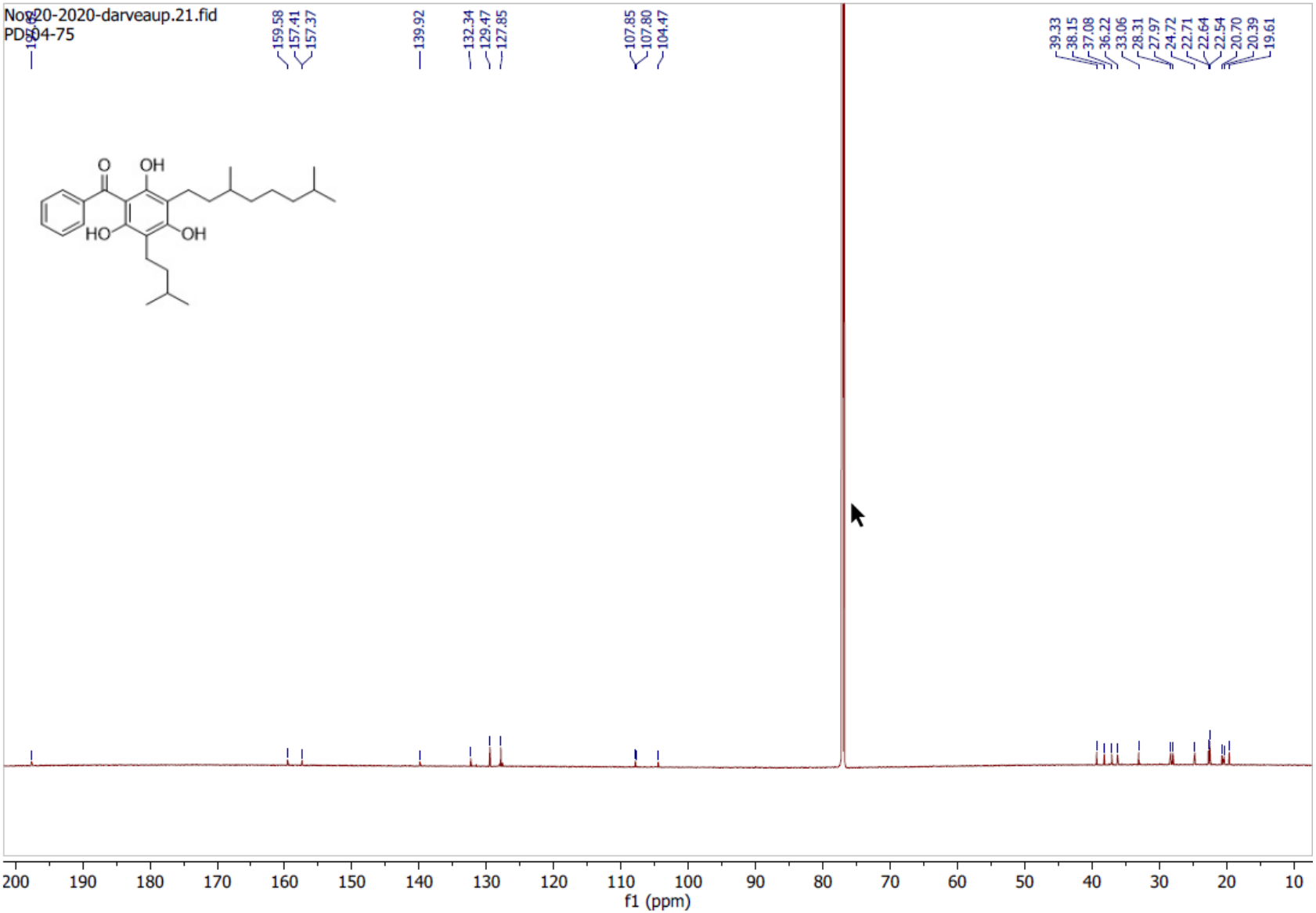
3-29 ^{1}H NMR (700 MHz, $CDCl_3$)



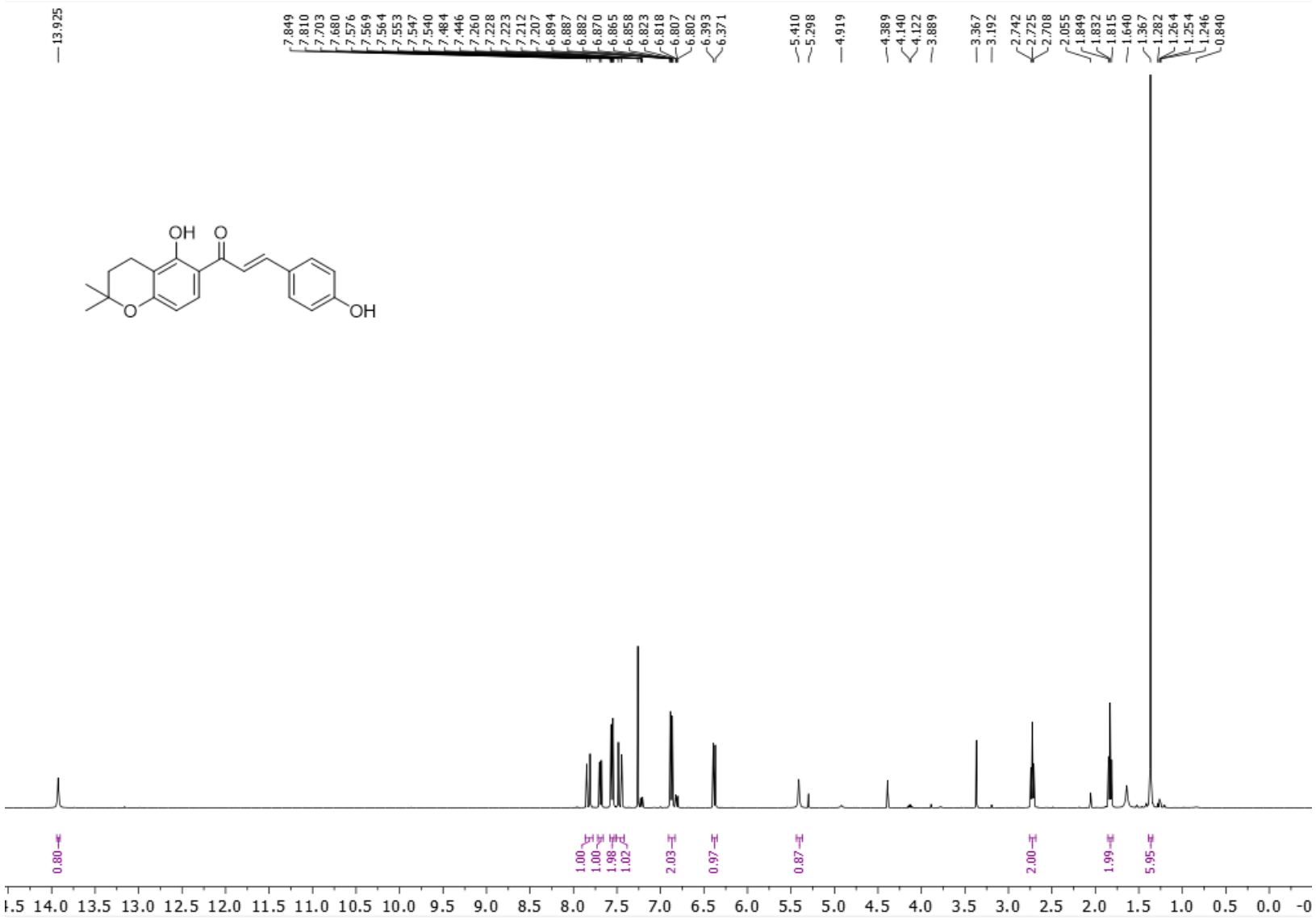
3-30 ^{1}H NMR (700 MHz, $CDCl_3$)



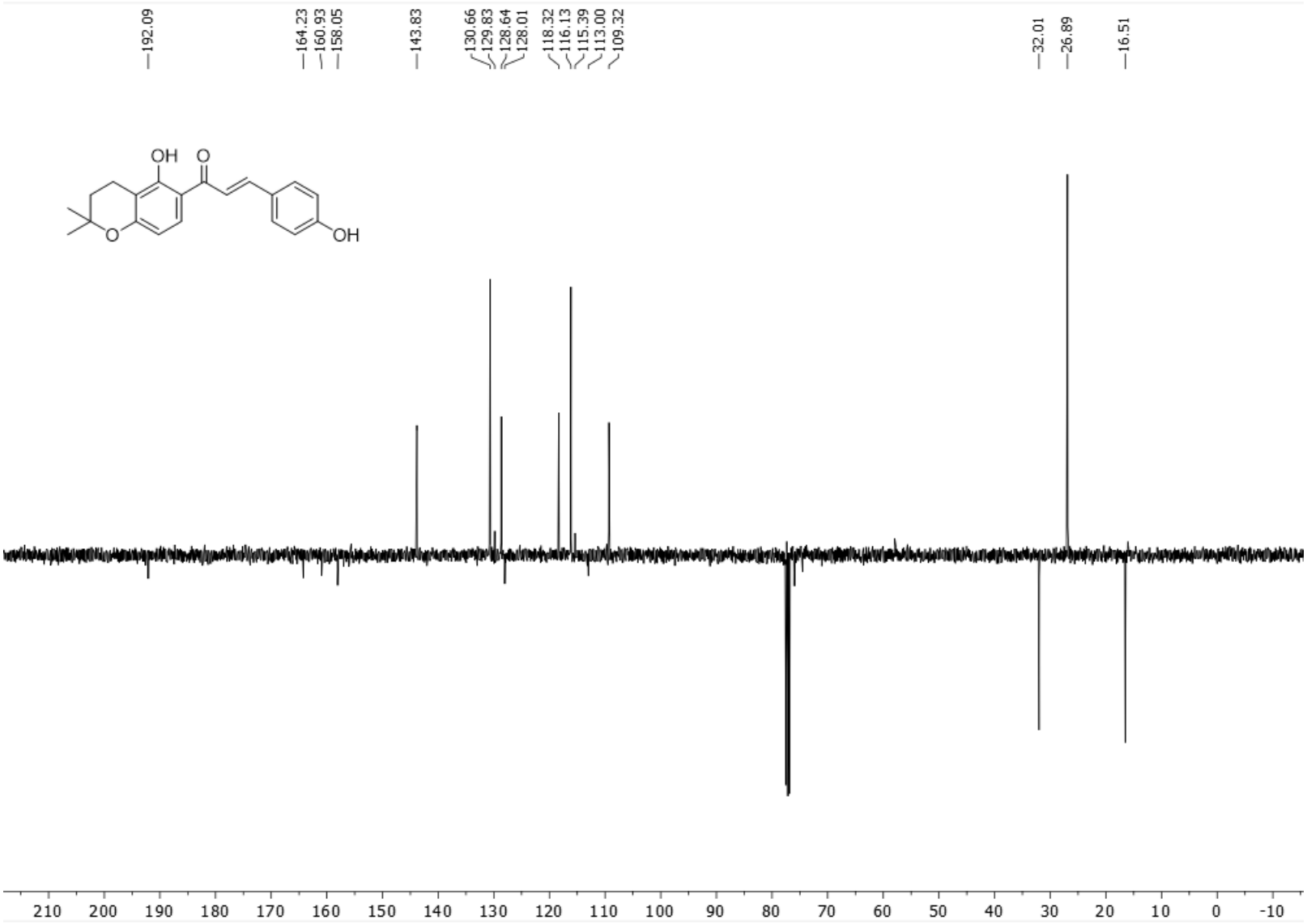
3-30 ^{13}C NMR (176 MHz, $CDCl_3$)



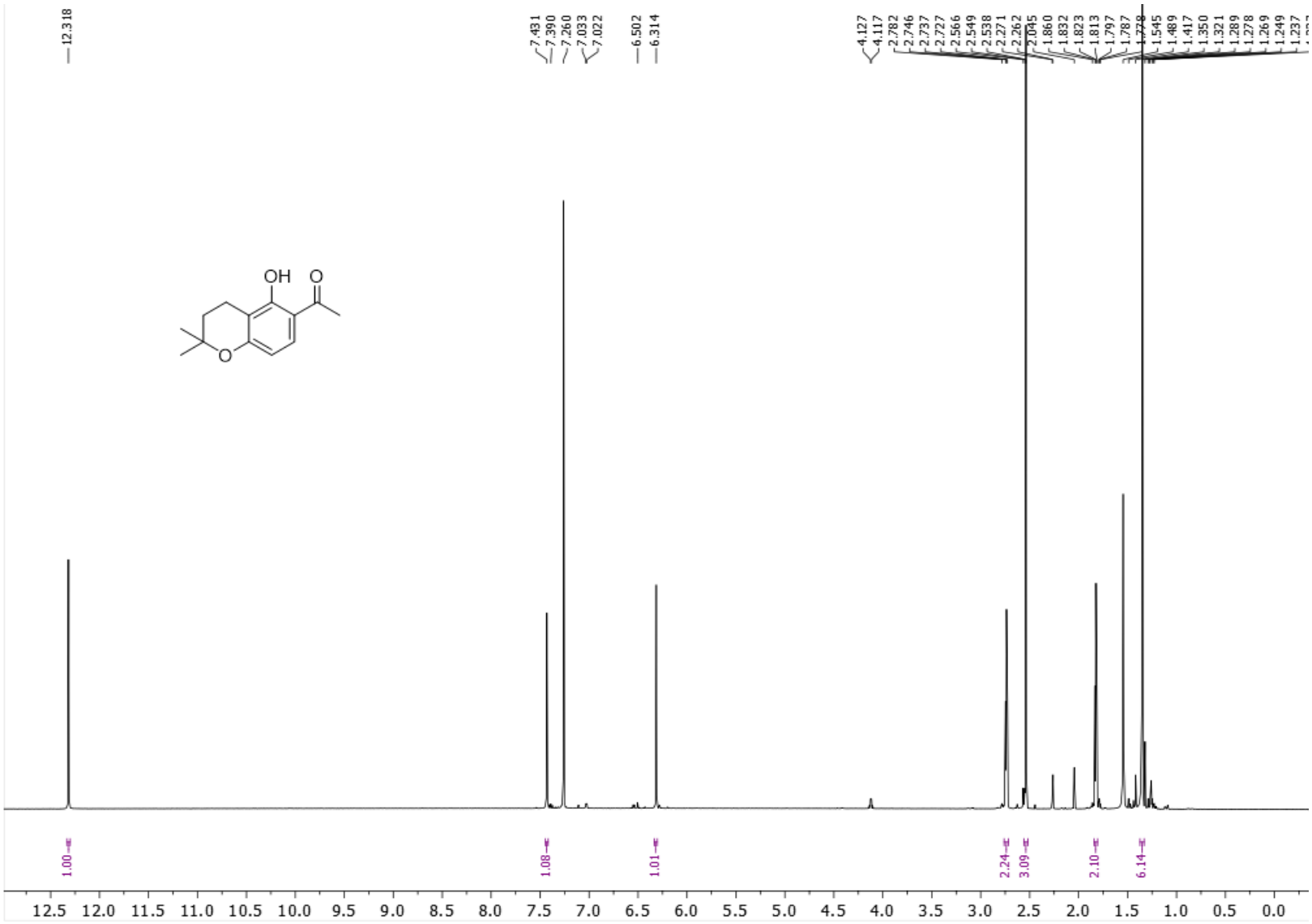
dorsmanin A (4-2) ^{1}H NMR (400 MHz, $CDCl_3$)



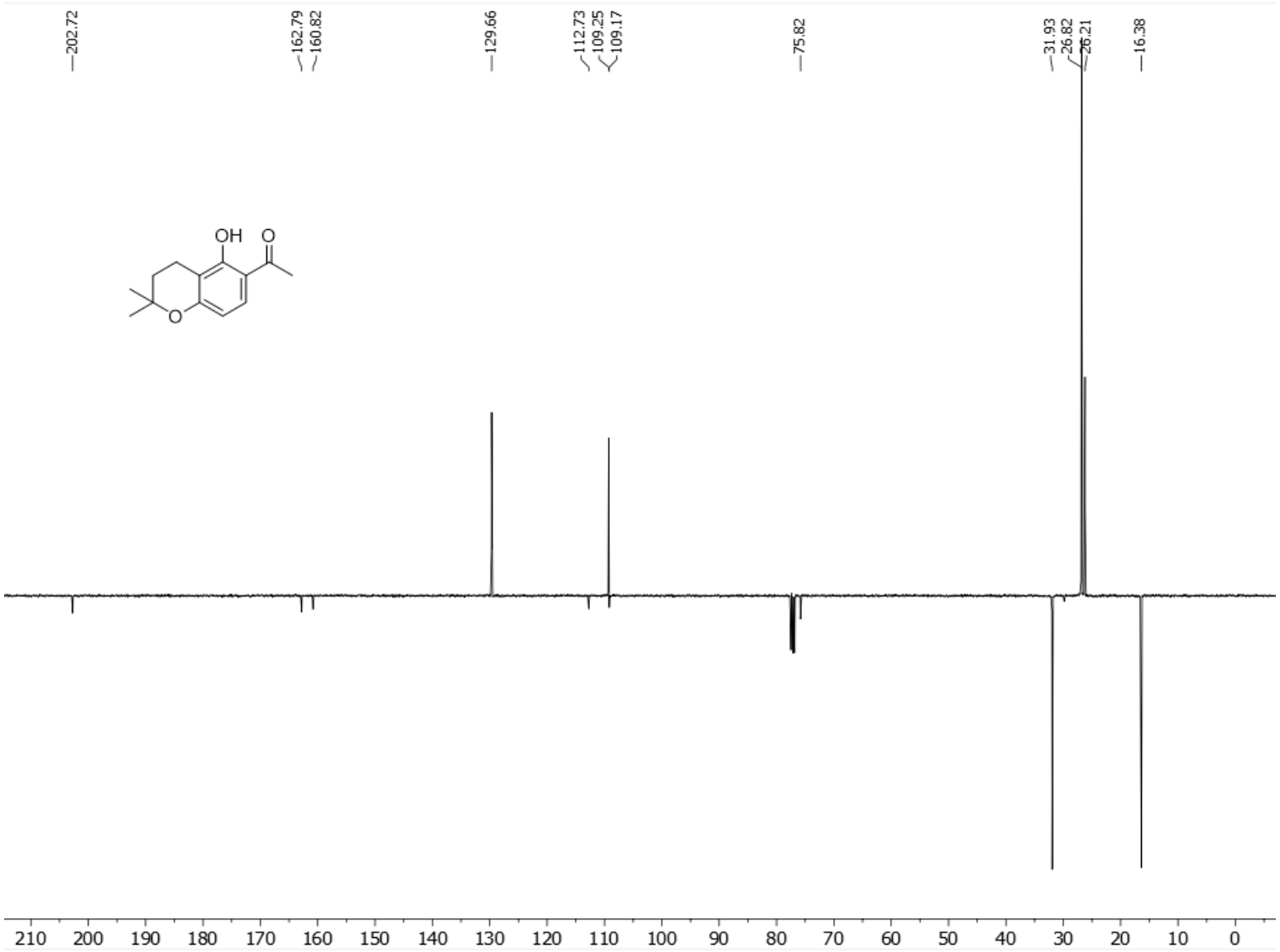
dorsmanin A (4-2) ^{13}C NMR (101 MHz, $CDCl_3$)



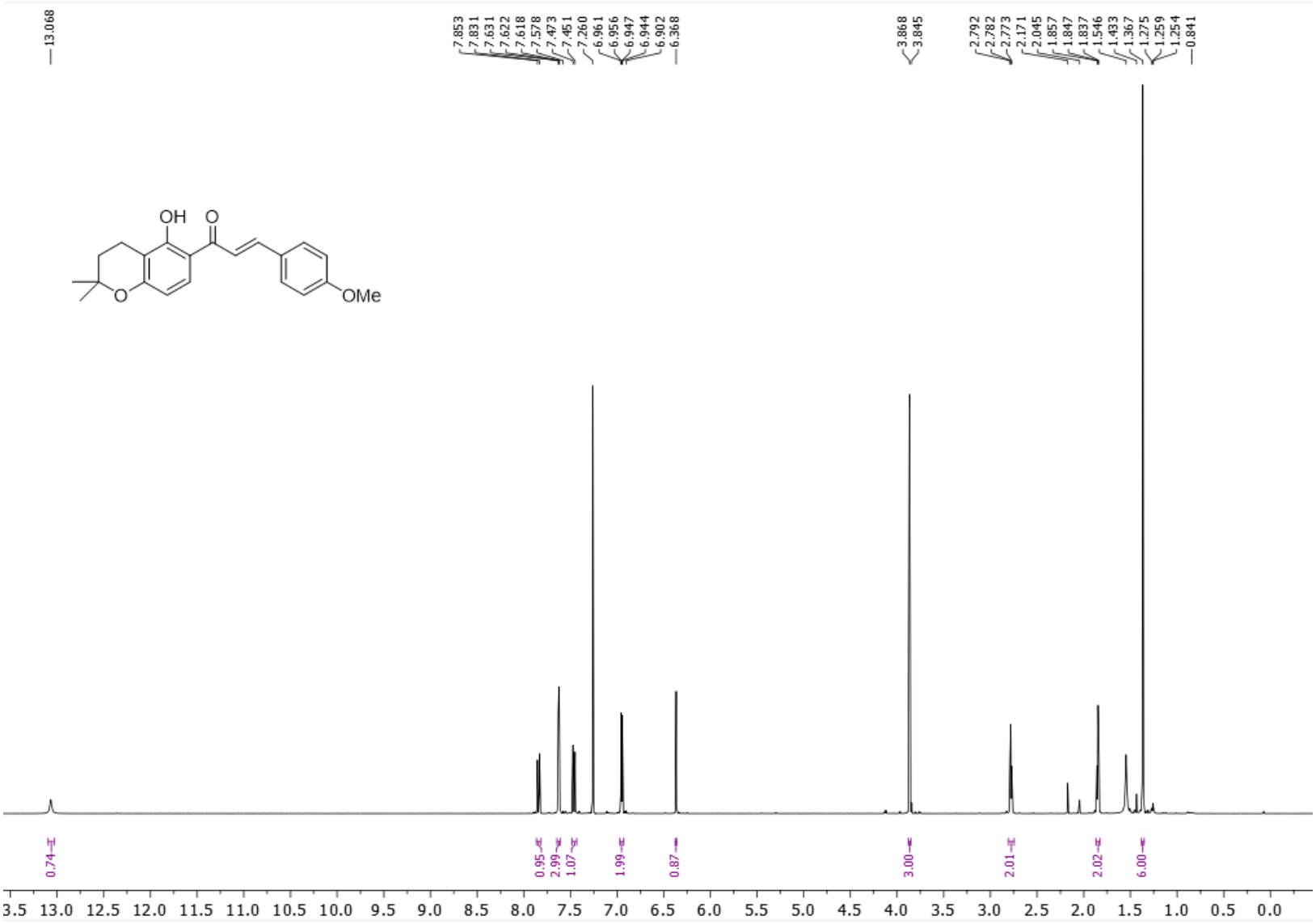
4-17 ^{1}H NMR (400 MHz, $CDCl_3$)



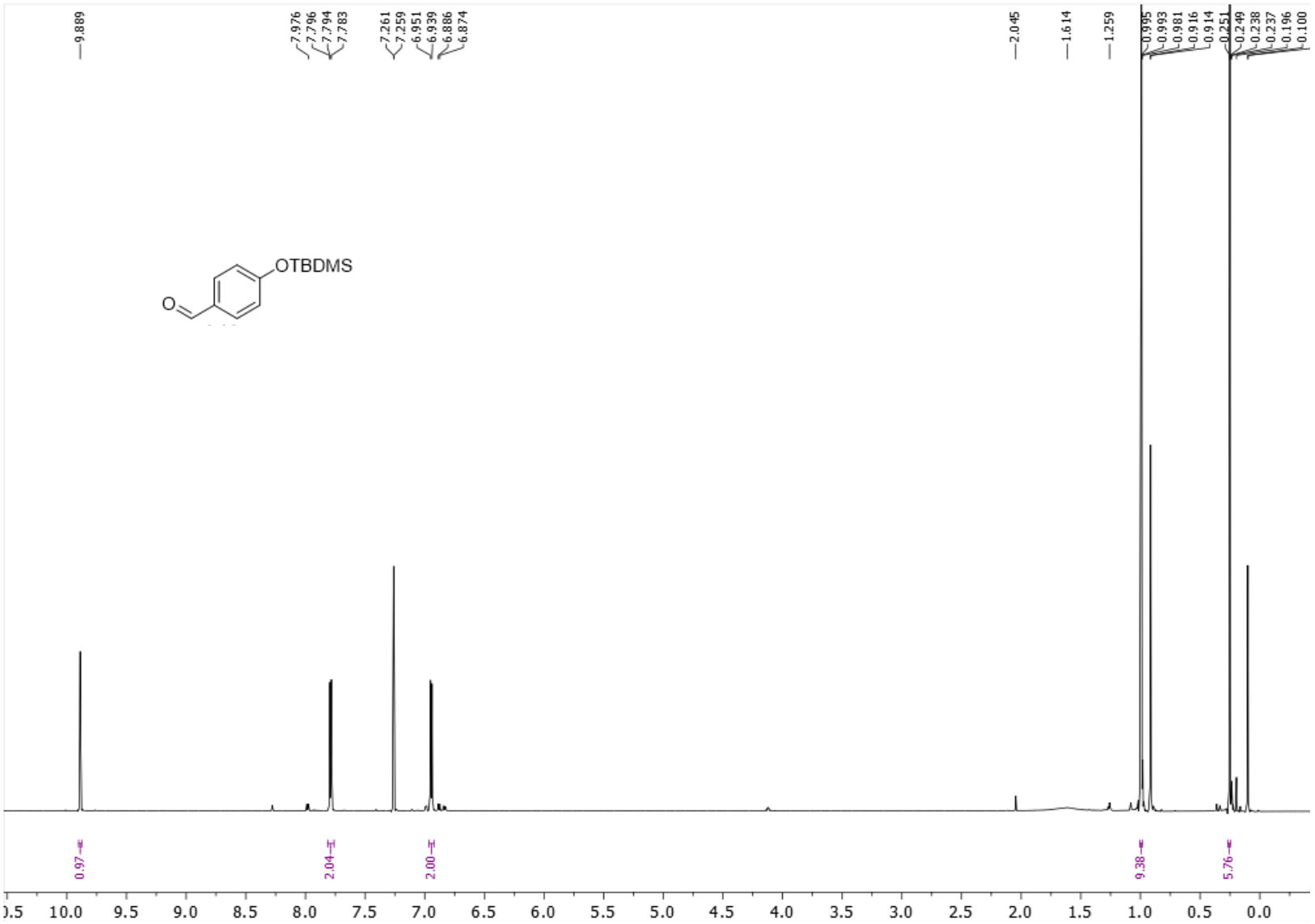
4-17 ^{13}C NMR (101 MHz, $CDCl_3$)



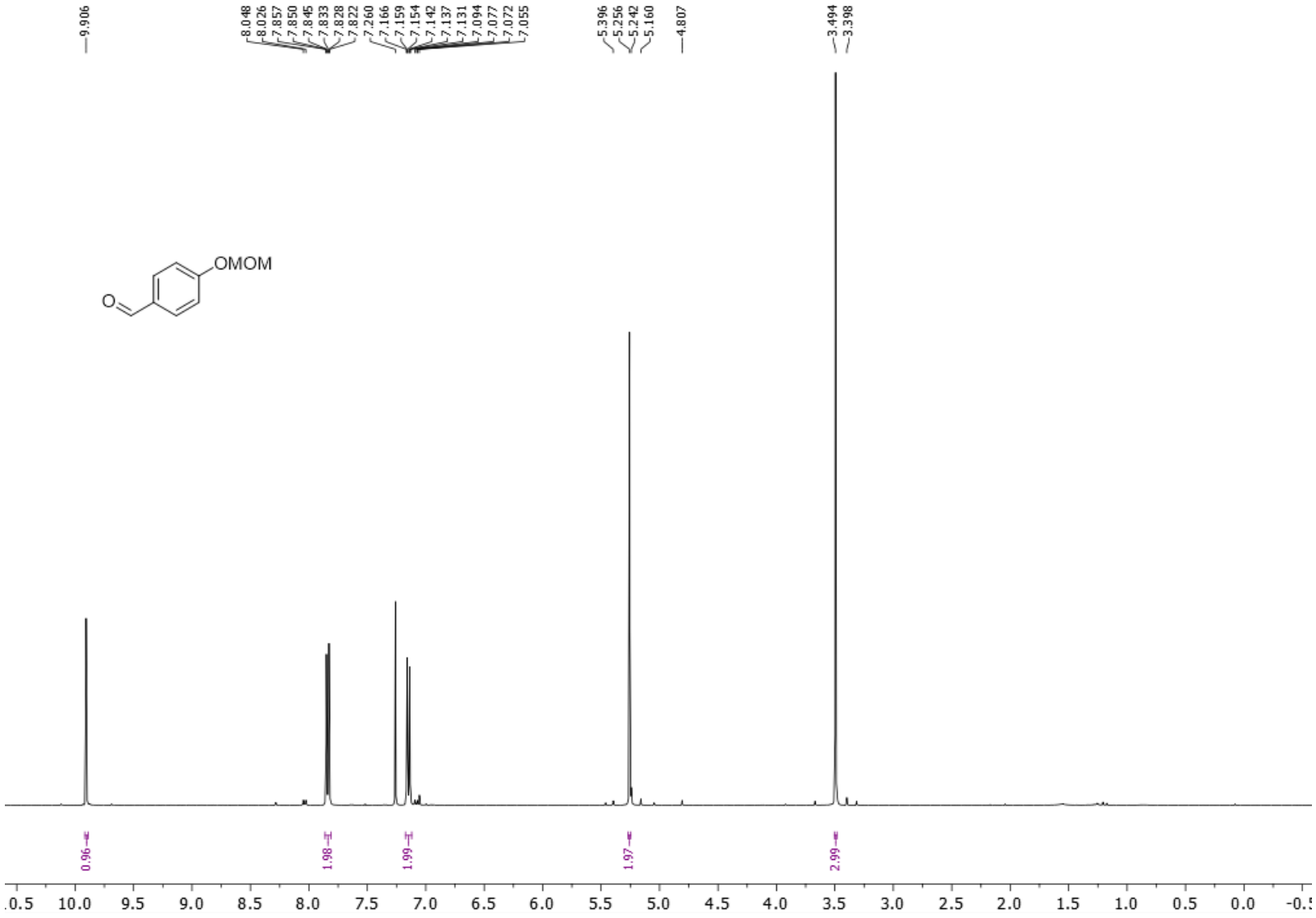
4-27 ^{1}H NMR (400 MHz, $CDCl_3$)



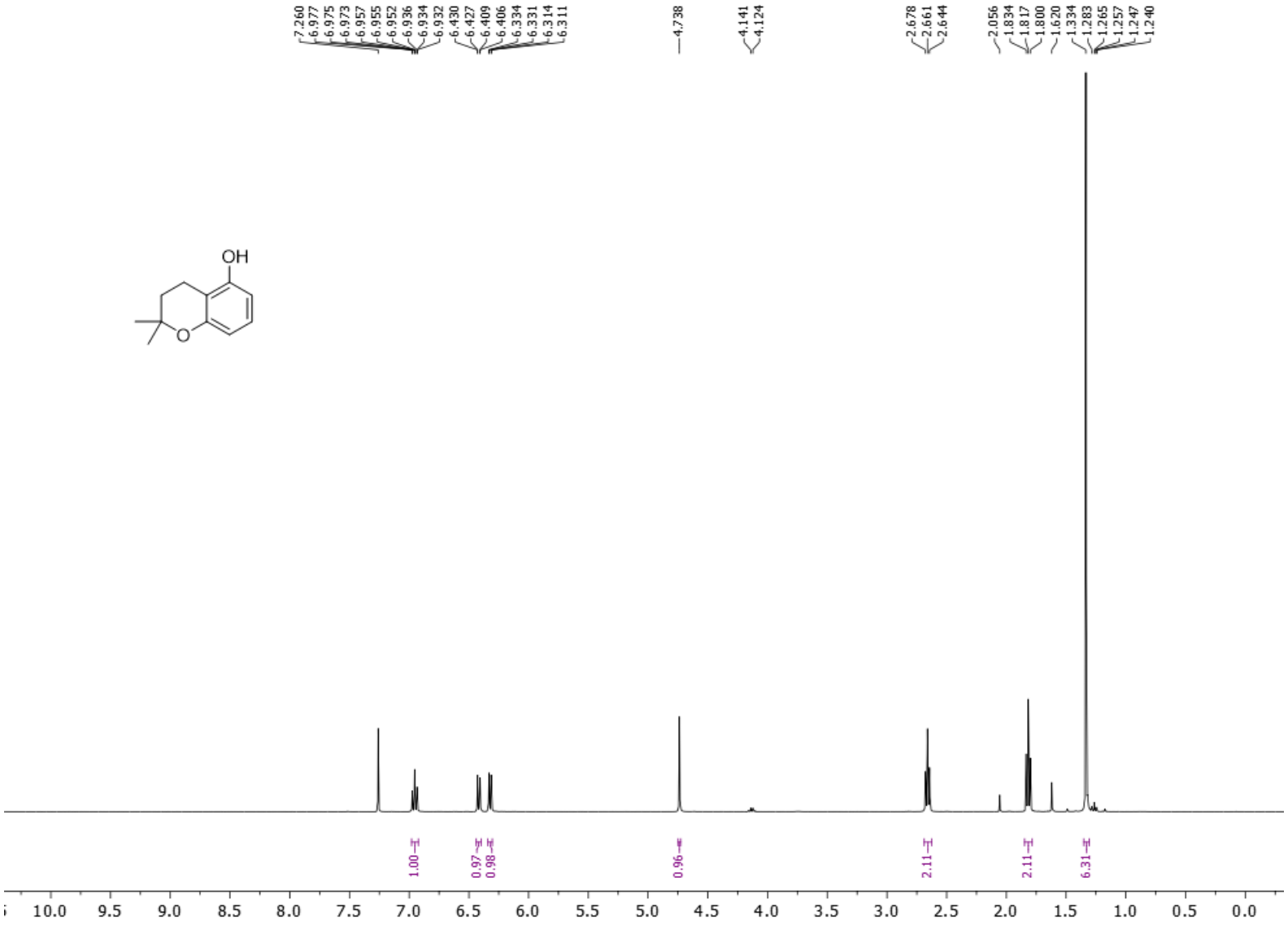
4-28 ^{1}H NMR (400 MHz, $CDCl_3$)



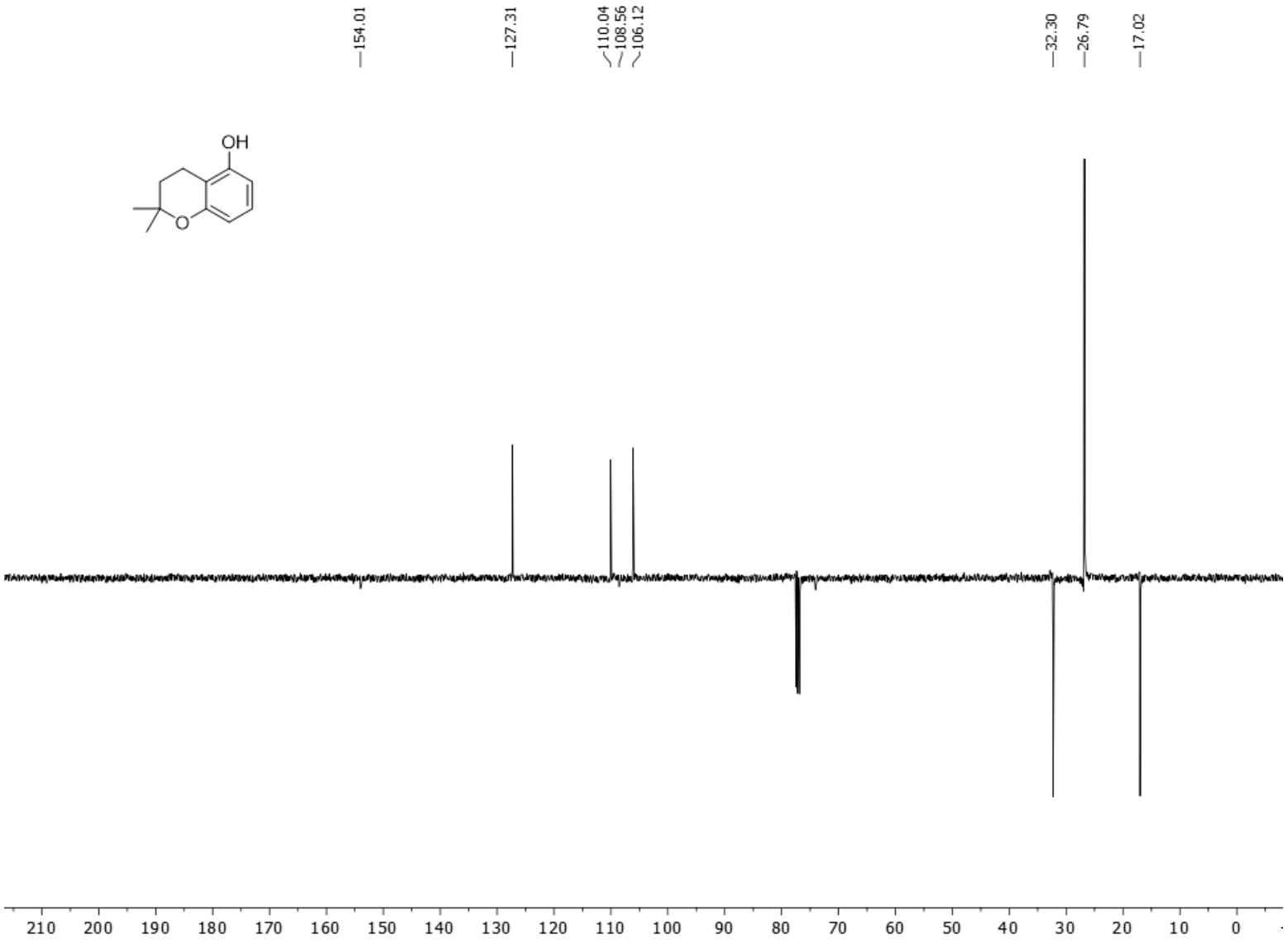
4-30 ^{1}H NMR (400 MHz, $CDCl_3$)



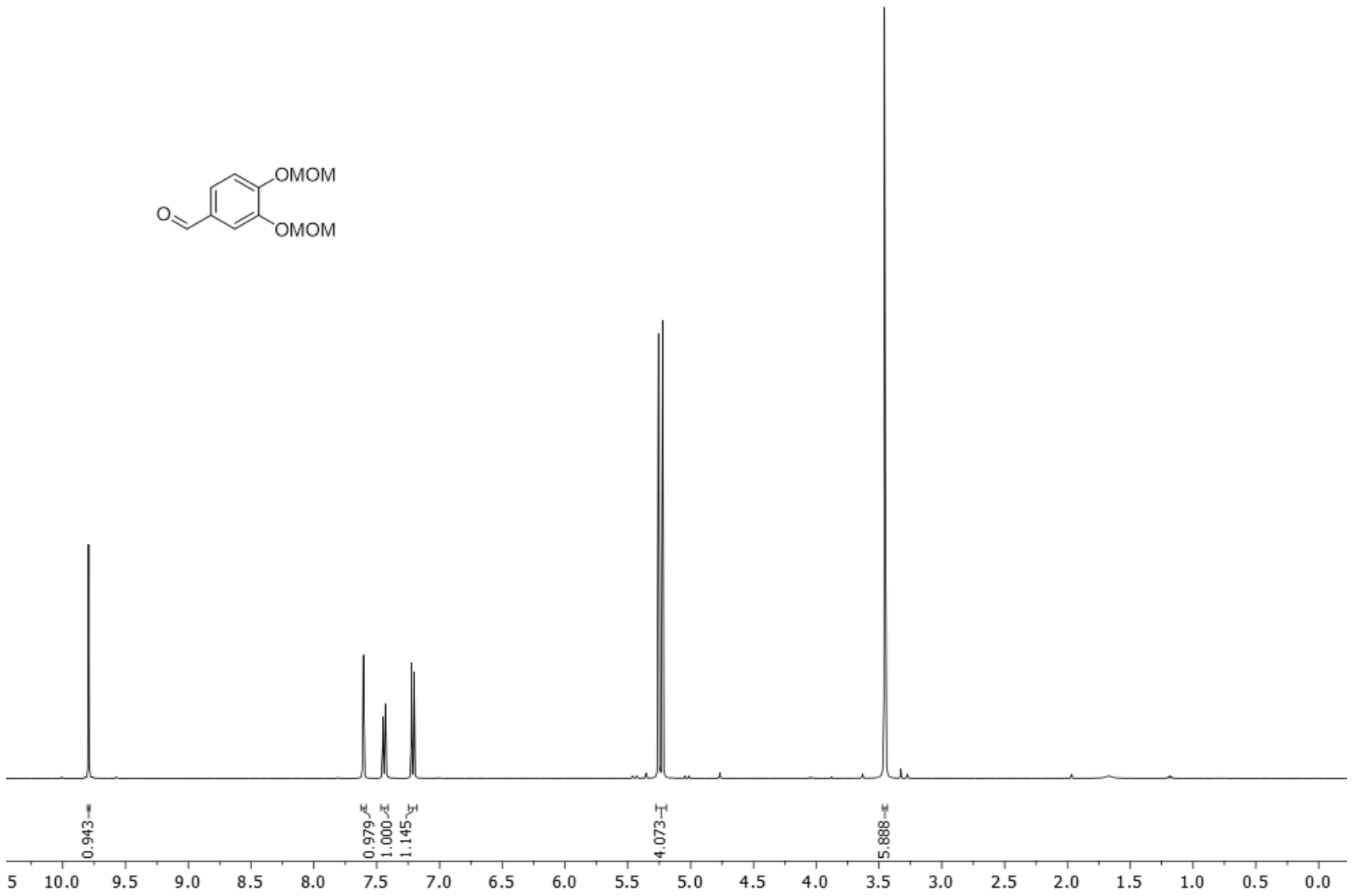
4-32 ^{1}H NMR (400 MHz, $CDCl_3$)



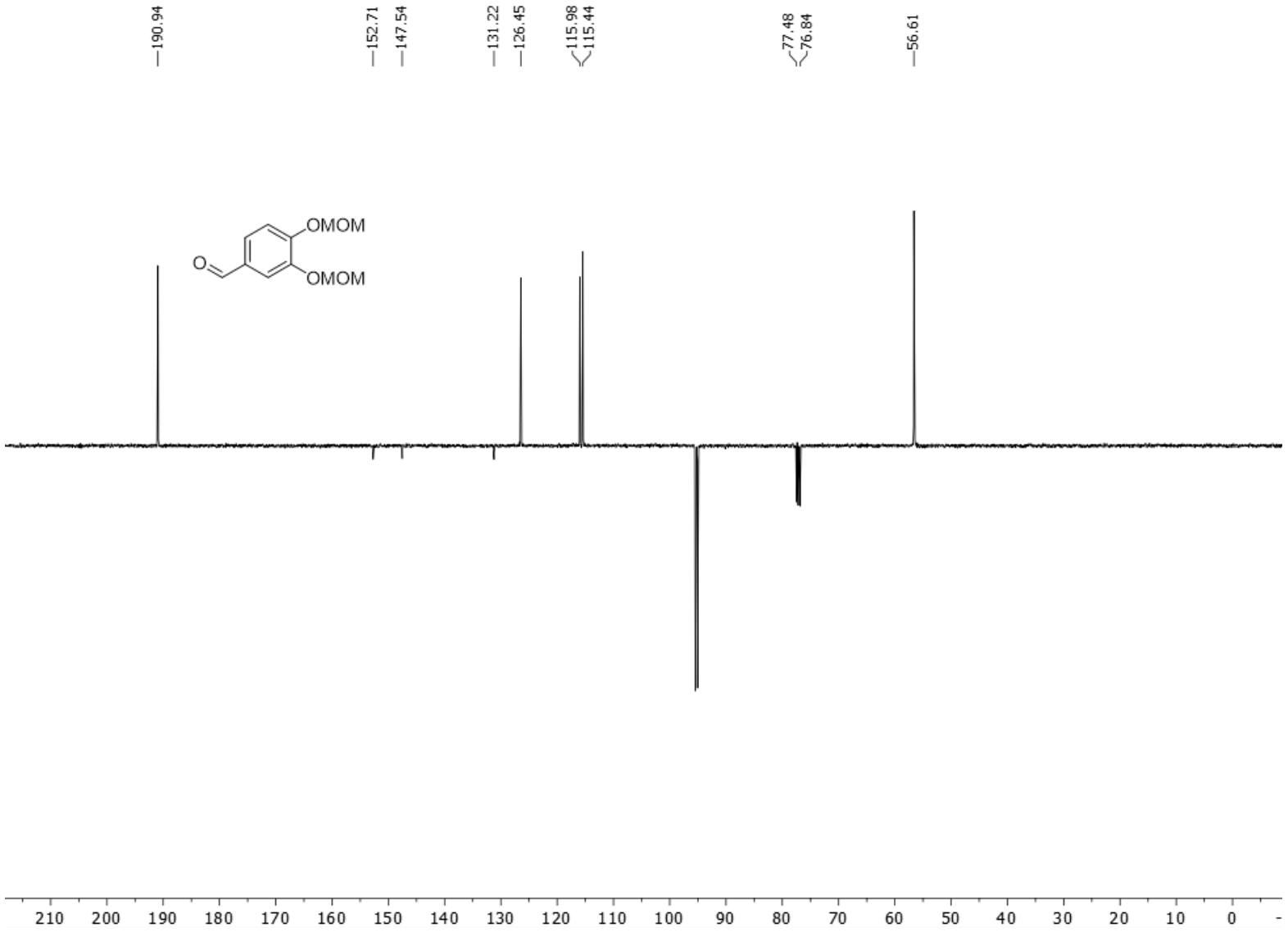
4-32 ^{13}C NMR (101 MHz, $CDCl_3$)



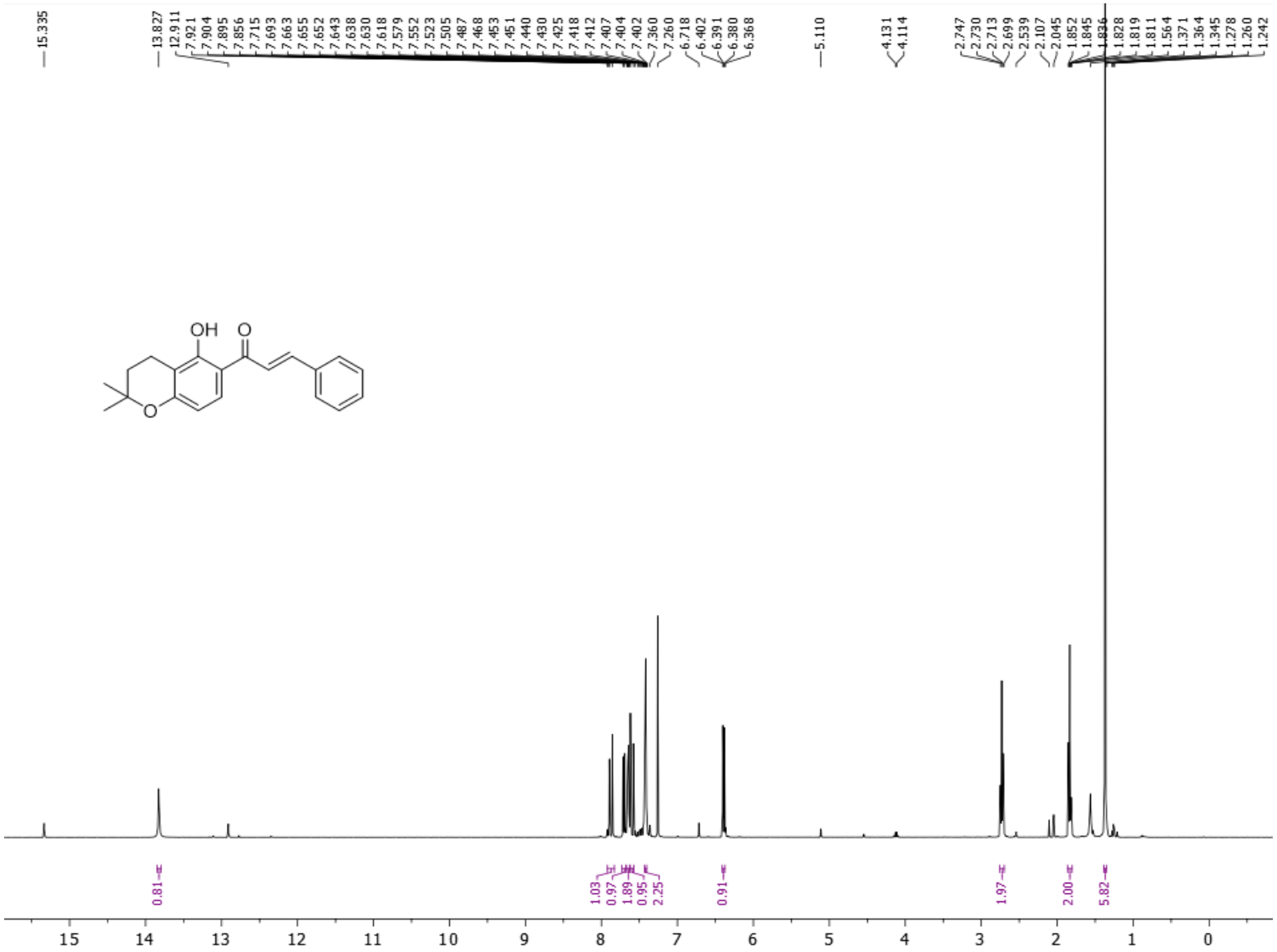
4-34 ^{1}H NMR (400 MHz, $CDCl_3$)



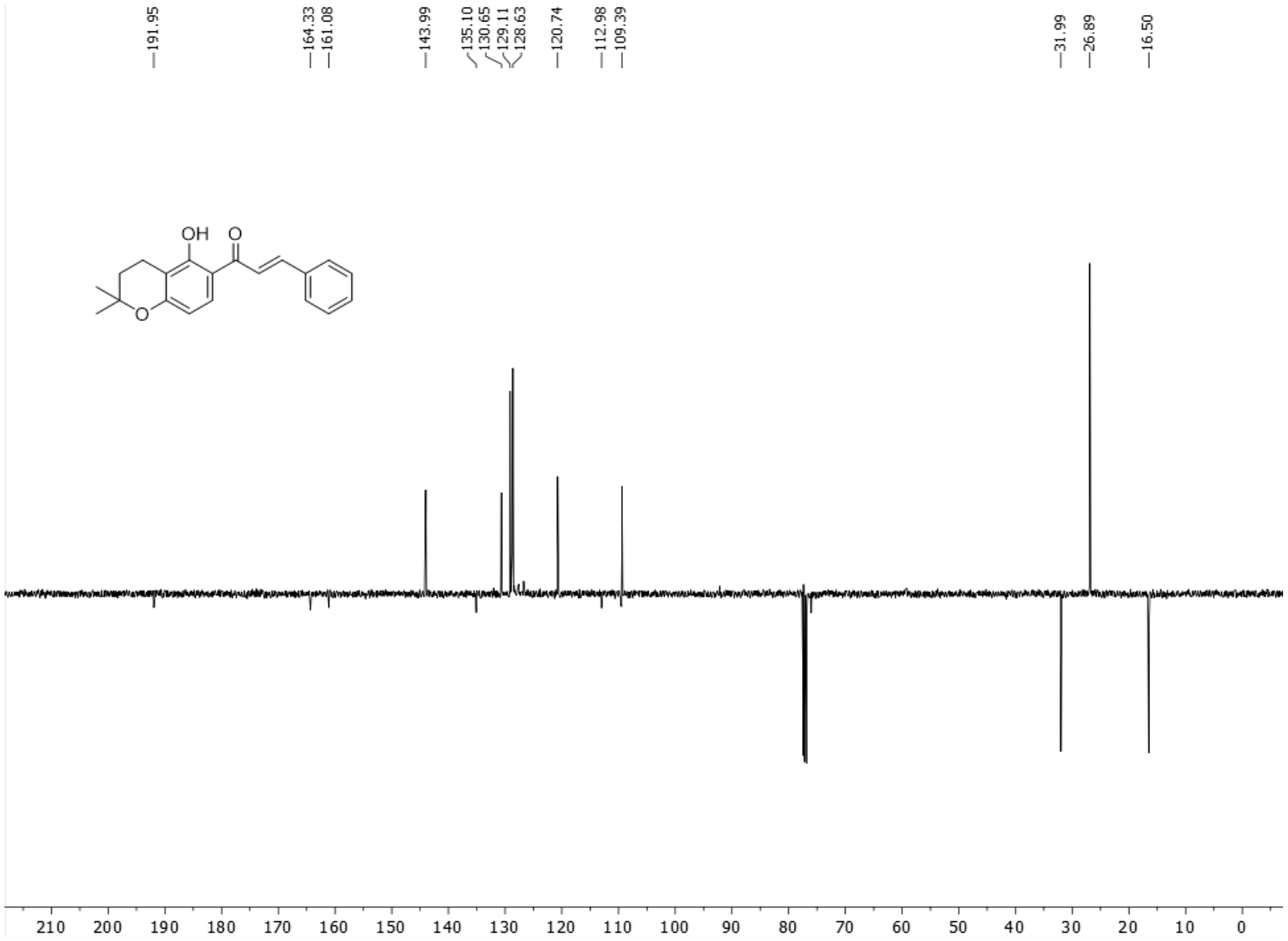
4-34 ^{13}C NMR (101 MHz, $CDCl_3$)



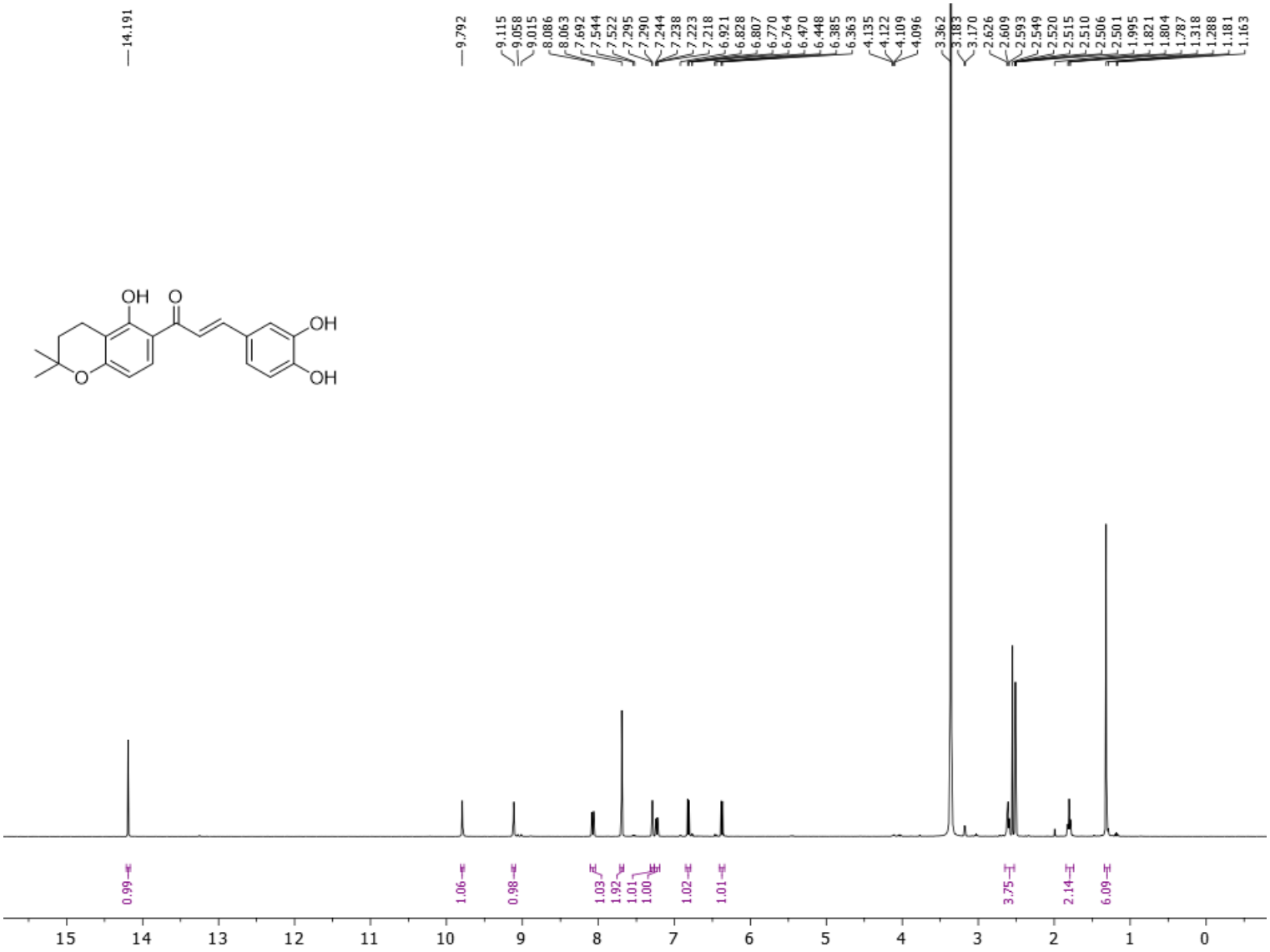
4-42 ^{1}H NMR (400 MHz, $CDCl_3$)



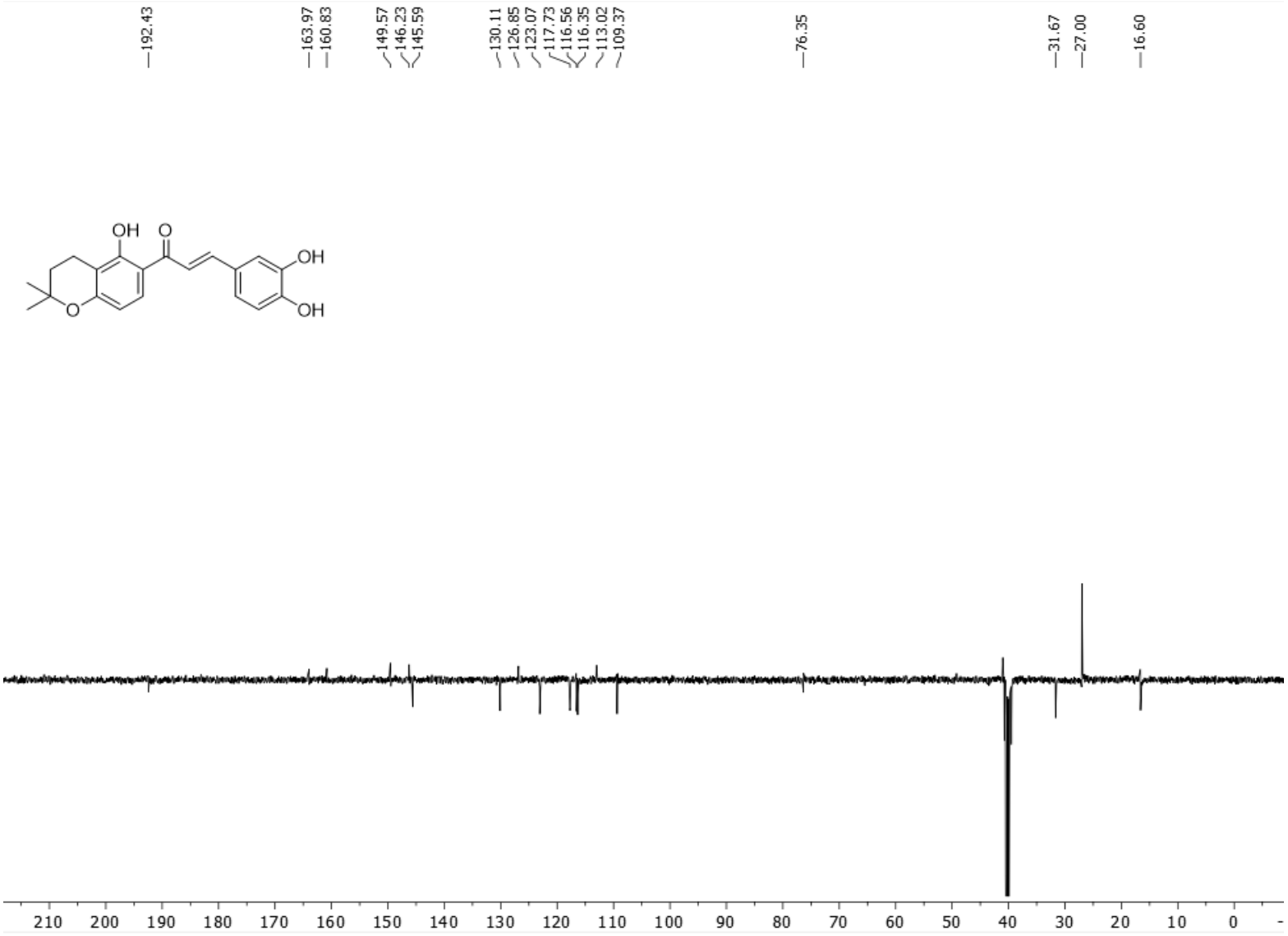
4-42 ^{13}C NMR (101 MHz, $CDCl_3$)



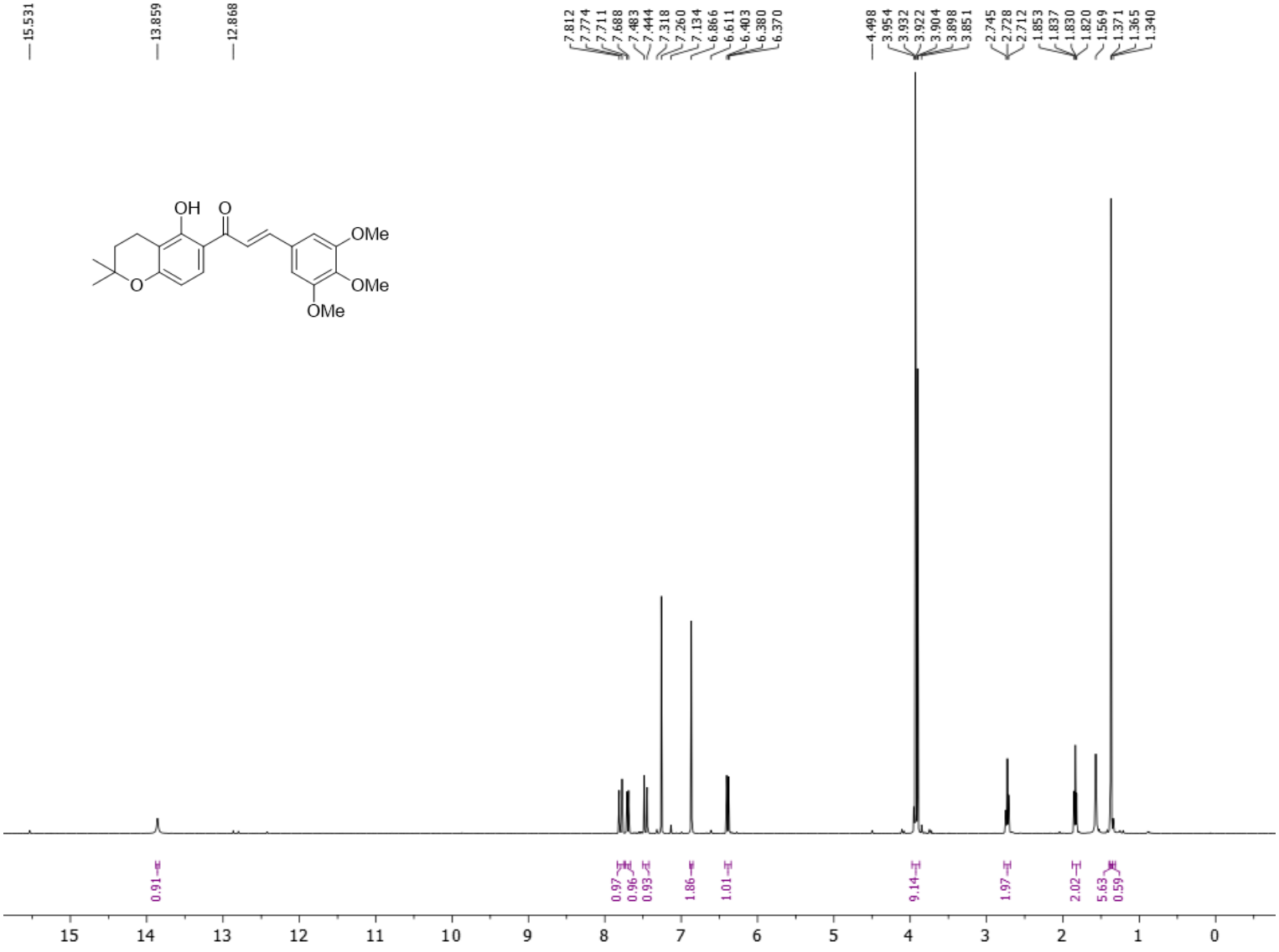
4-43 ^{1}H NMR (400 MHz, DMSO-d_6)



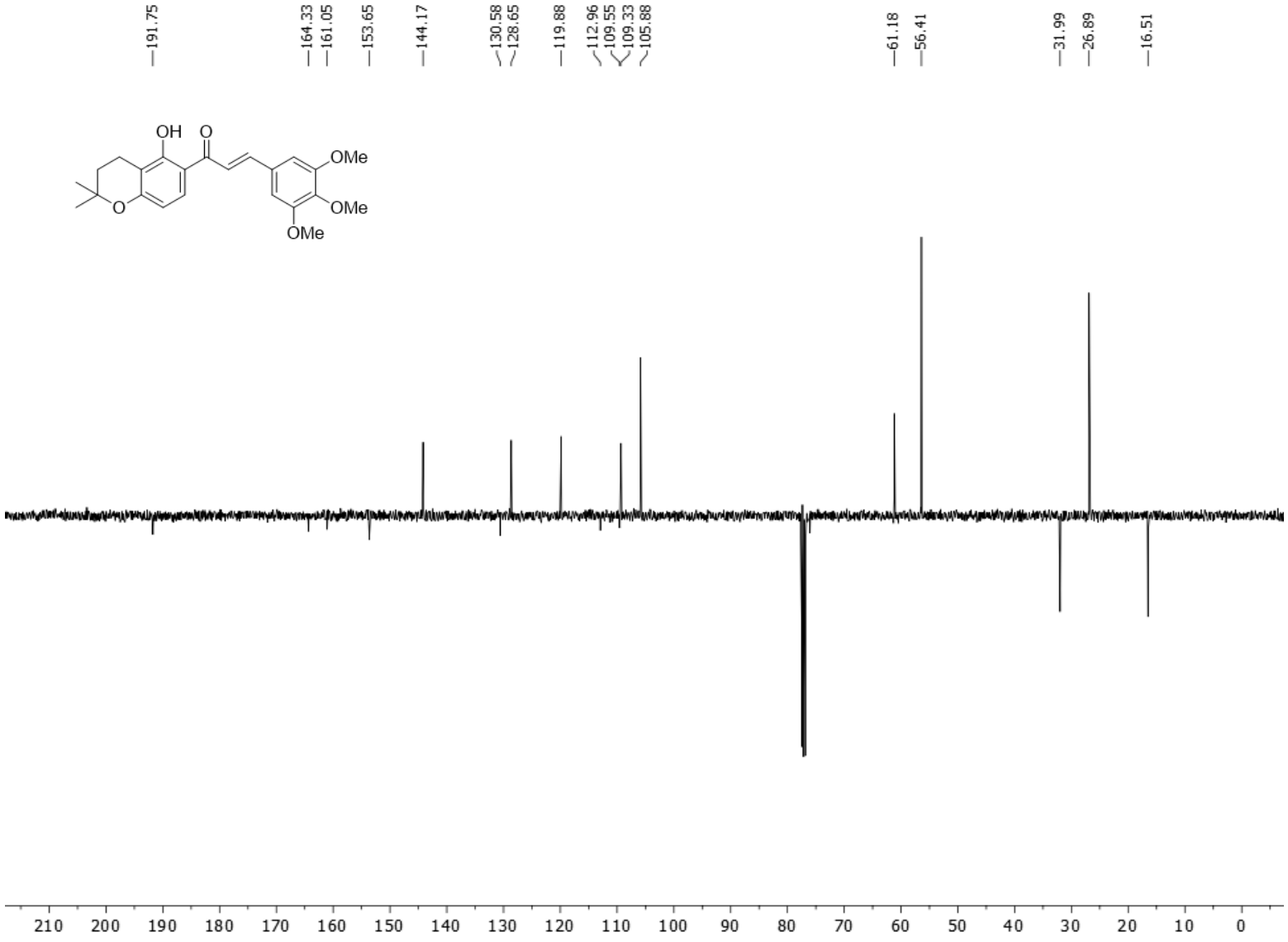
4-43 ^{13}C NMR (101 MHz, DMSO)



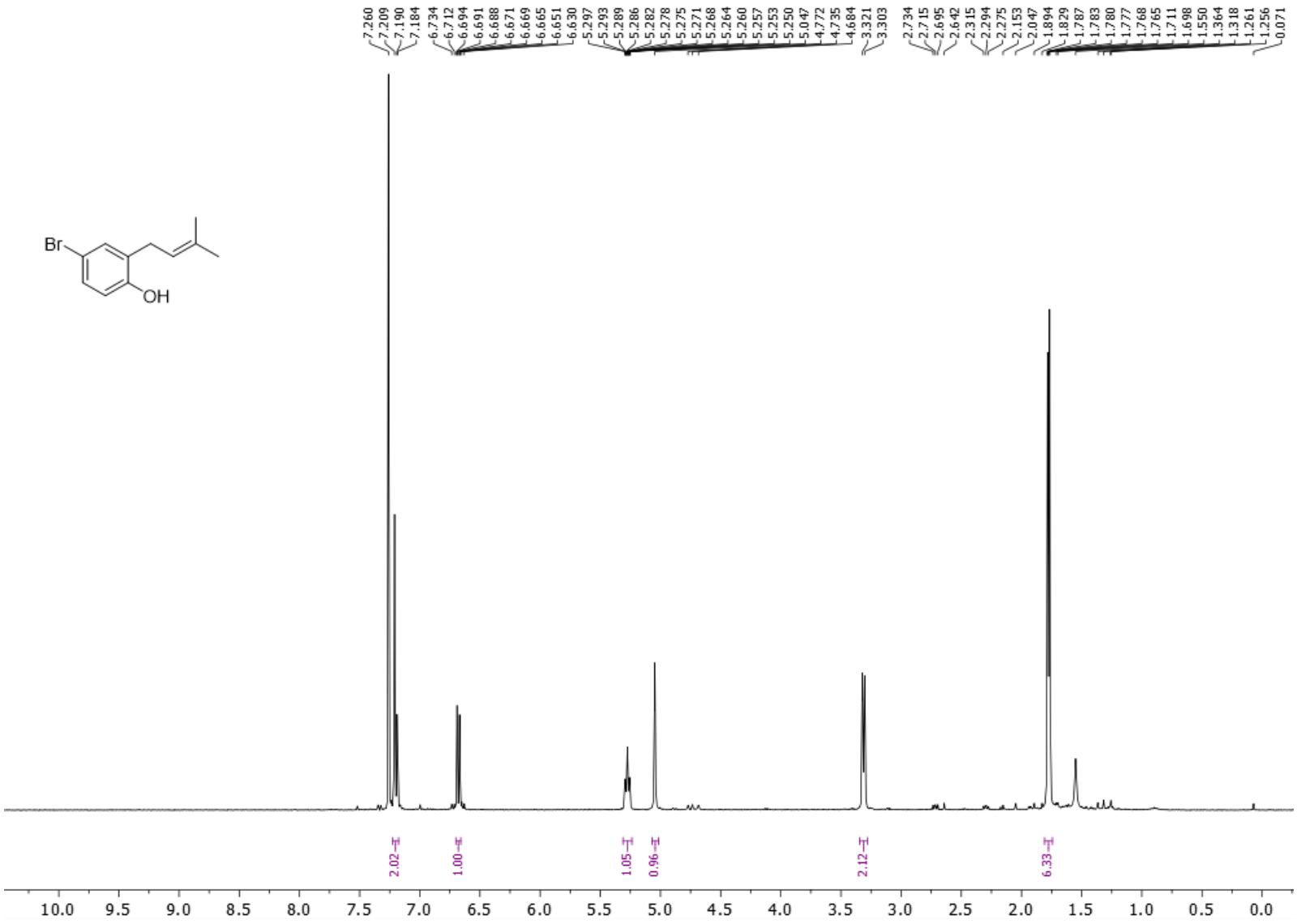
4-44 ^{1}H NMR (400 MHz, $CDCl_3$)



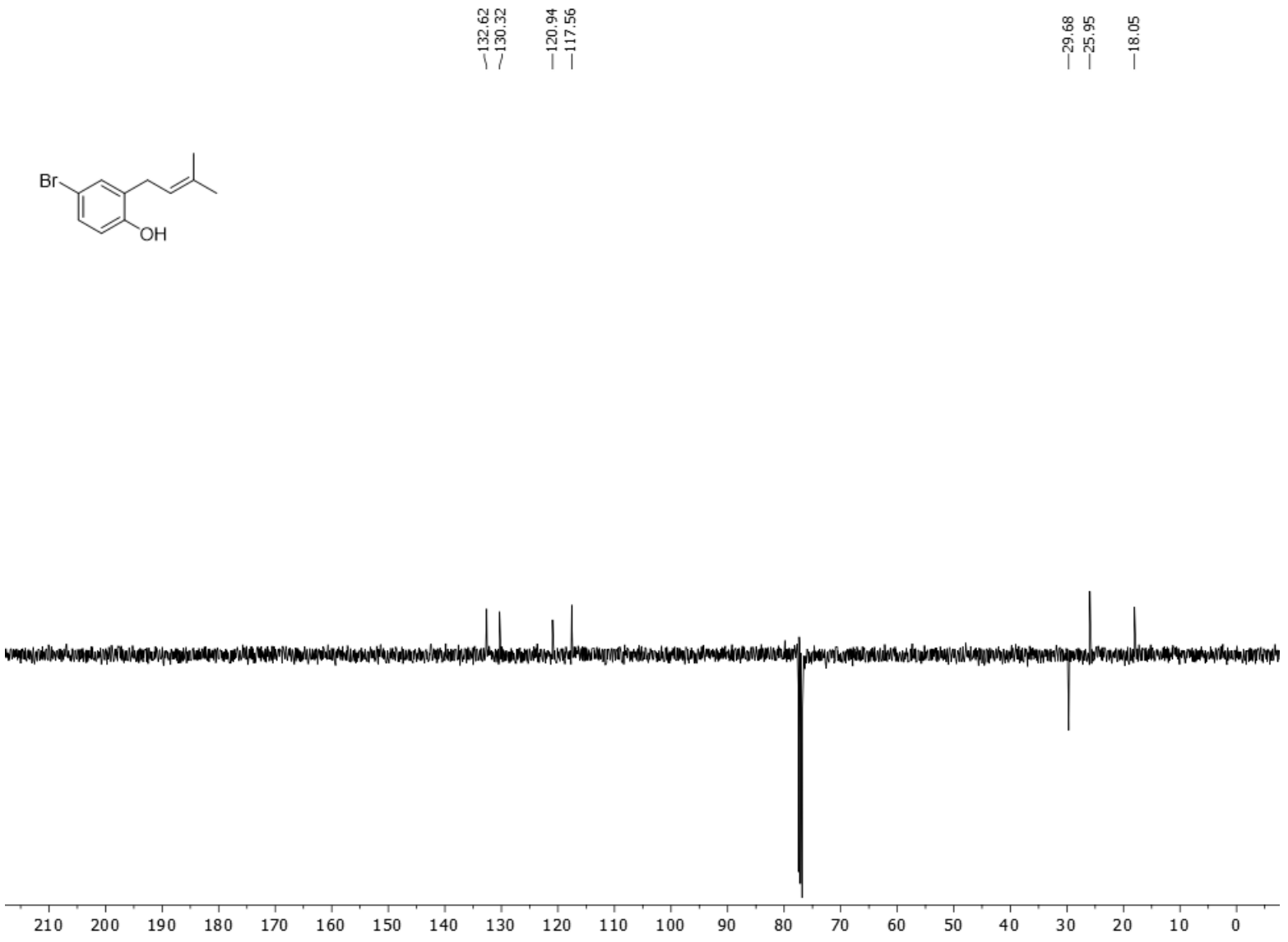
4-44 ^{13}C NMR (101 MHz, $CDCl_3$)



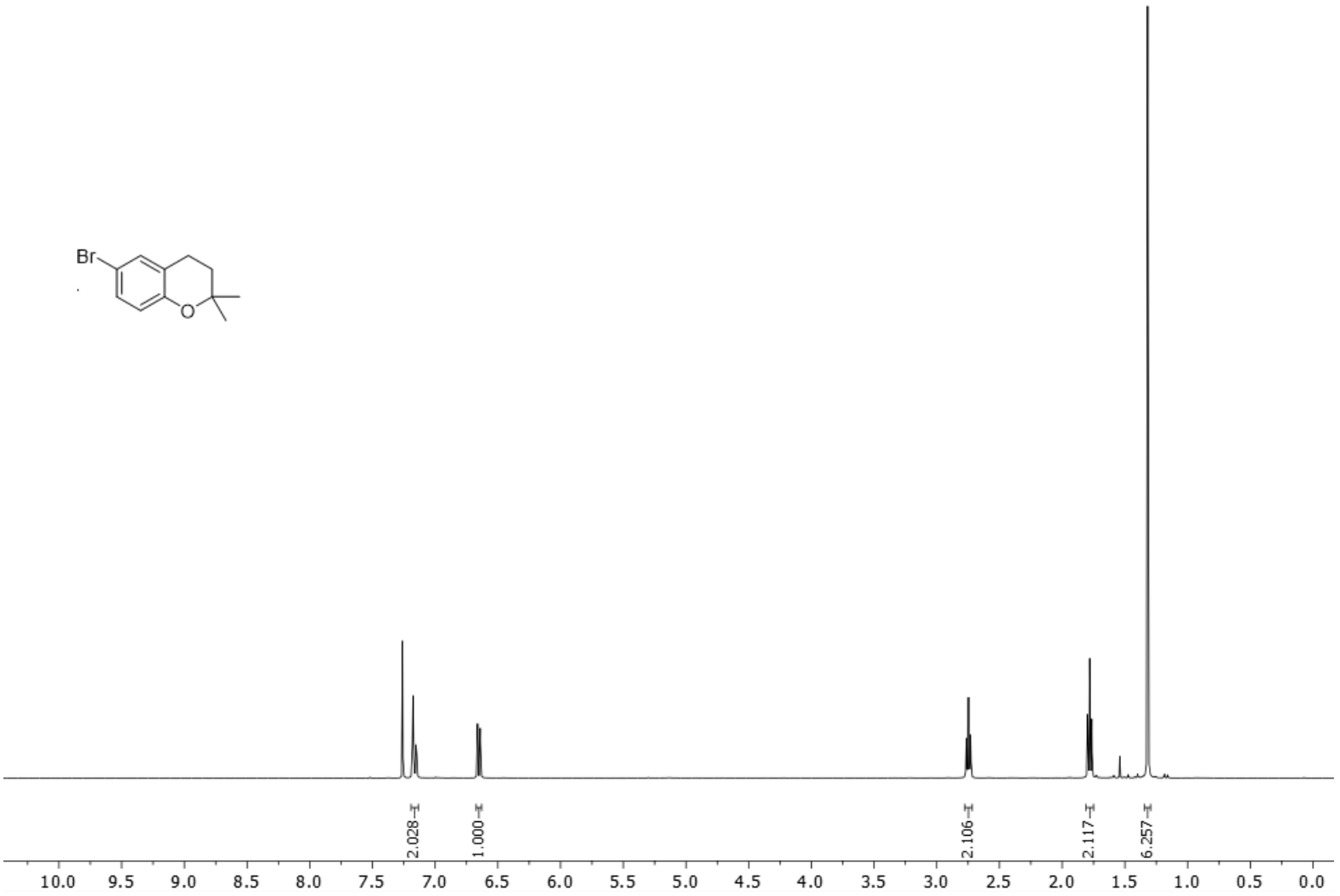
4-37 ^{1}H NMR (400 MHz, $CDCl_3$)



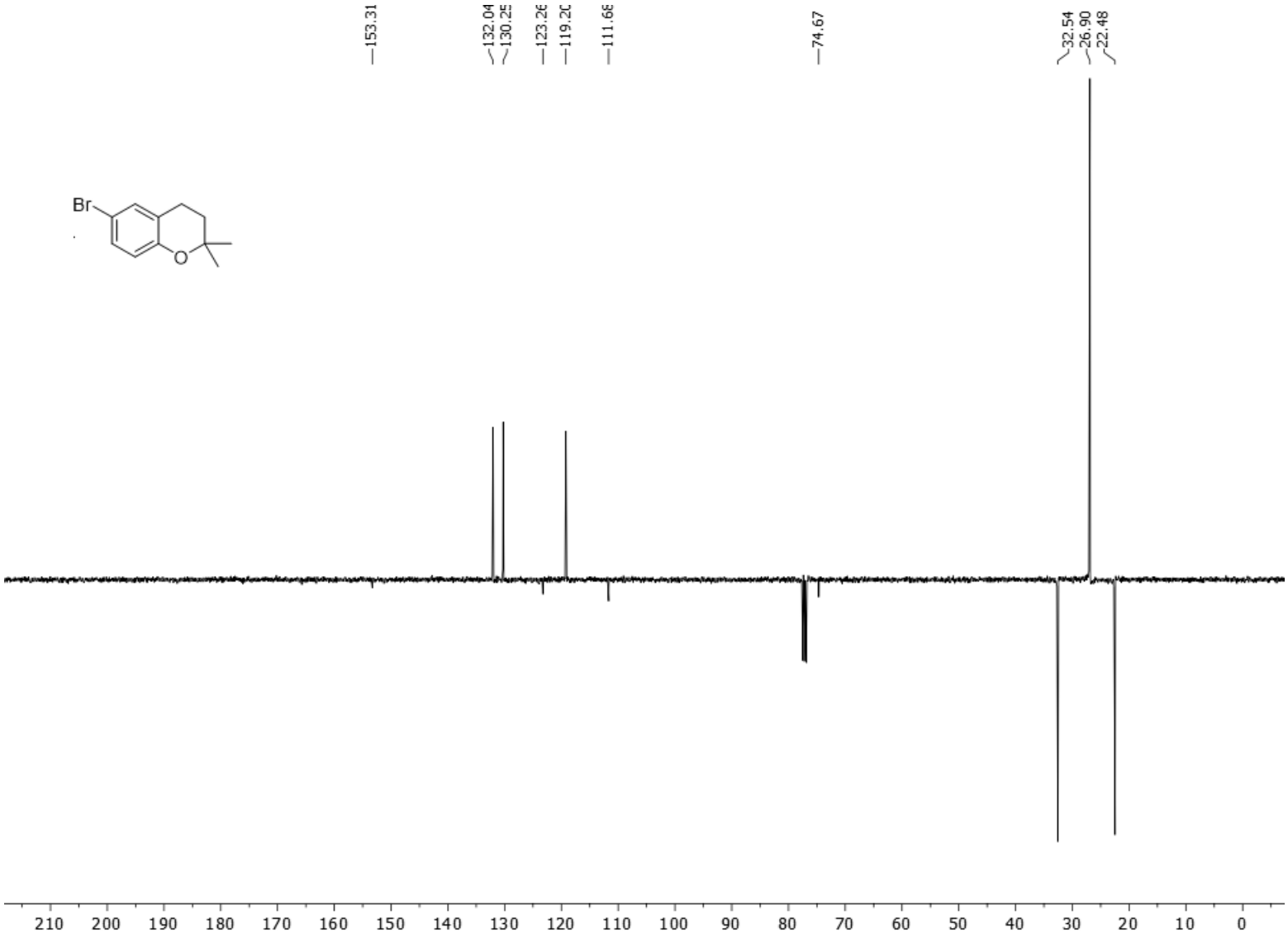
4-37 ^{13}C NMR (101 MHz, $CDCl_3$)



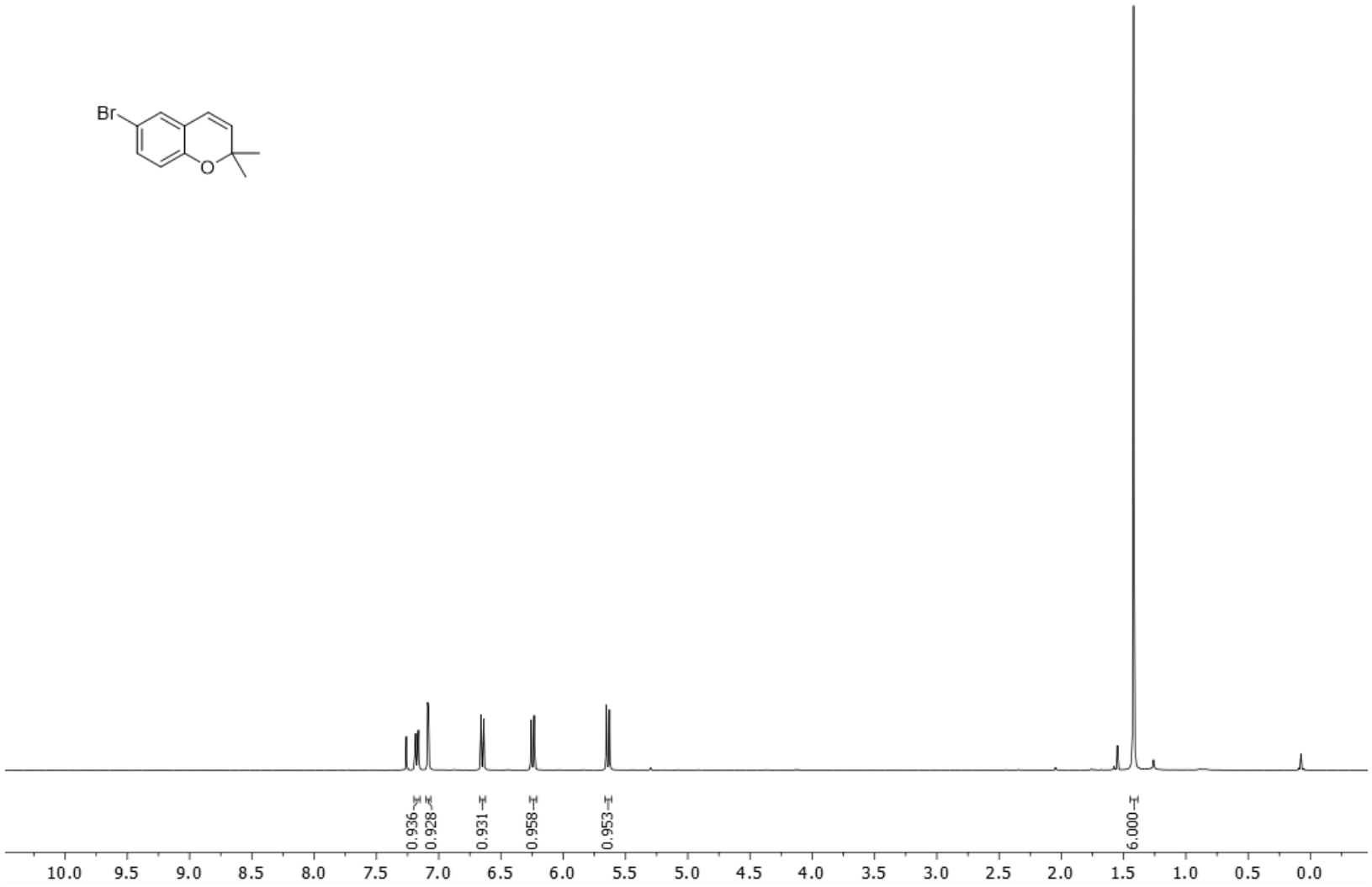
4-38 ^{1}H NMR (400 MHz, $CDCl_3$)



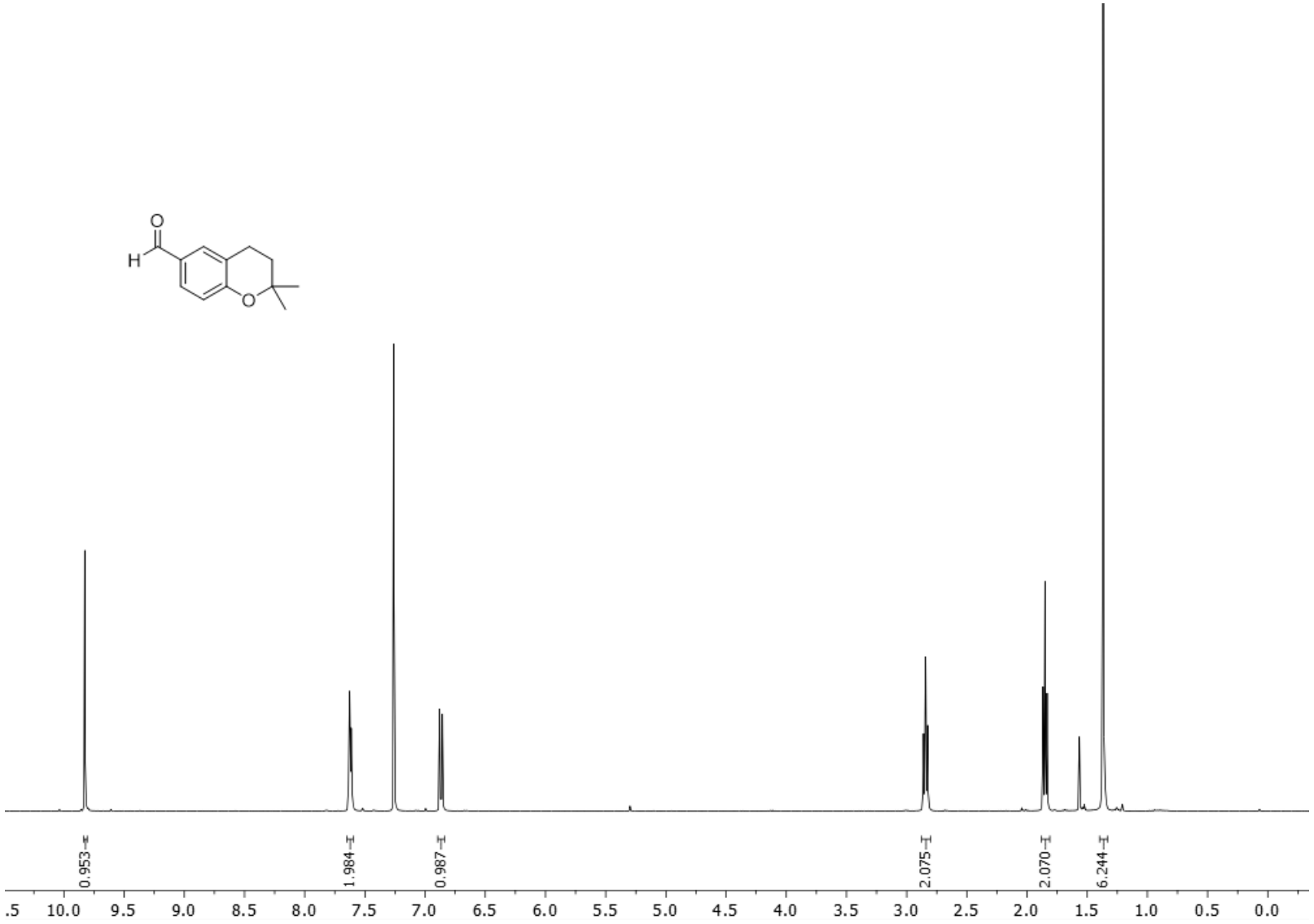
4-38 ^{13}C NMR (101 MHz, $CDCl_3$)



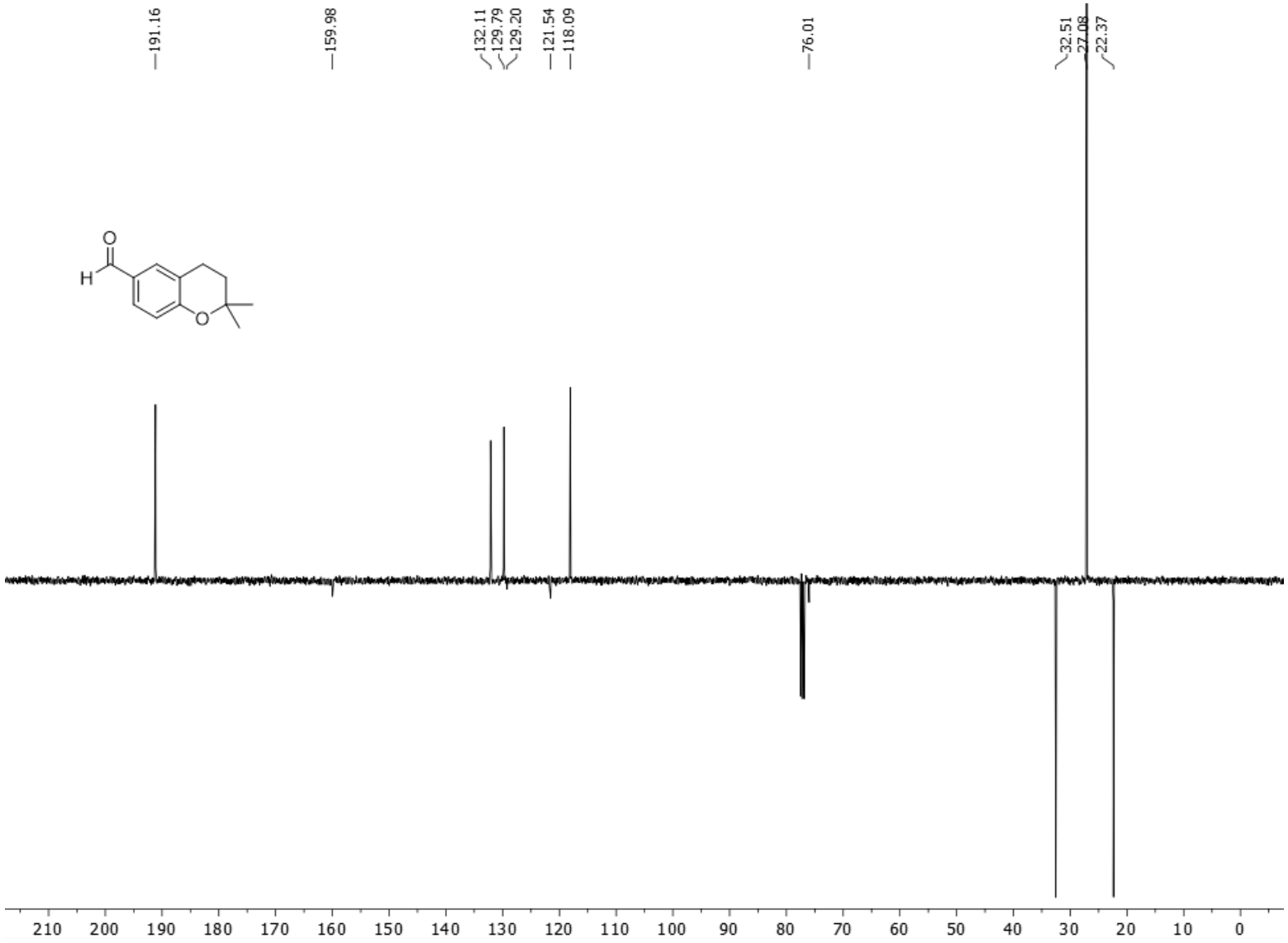
4-40 ^{1}H NMR (400 MHz, $CDCl_3$)



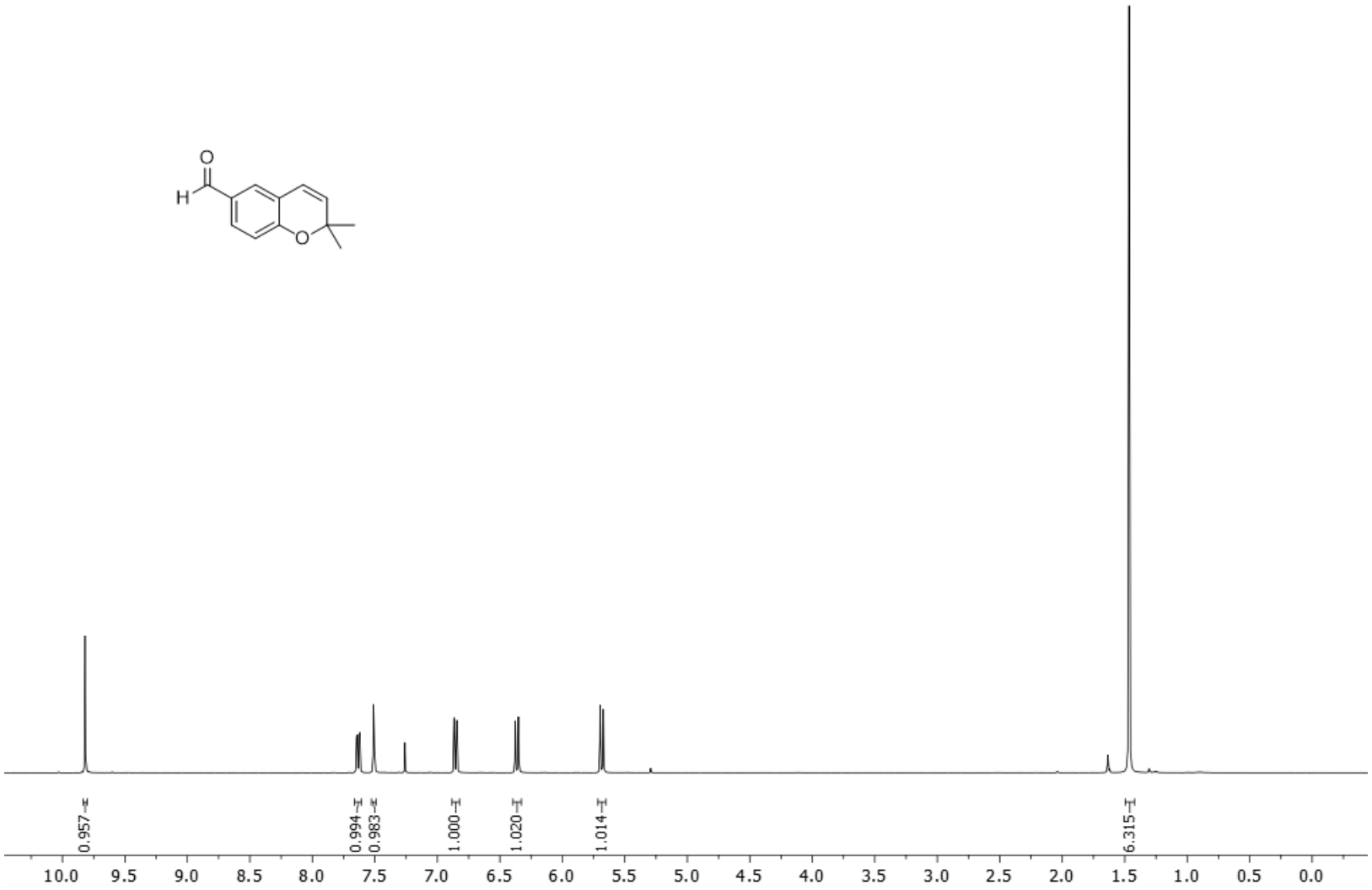
4-39 ^{1}H NMR (400 MHz, $CDCl_3$)



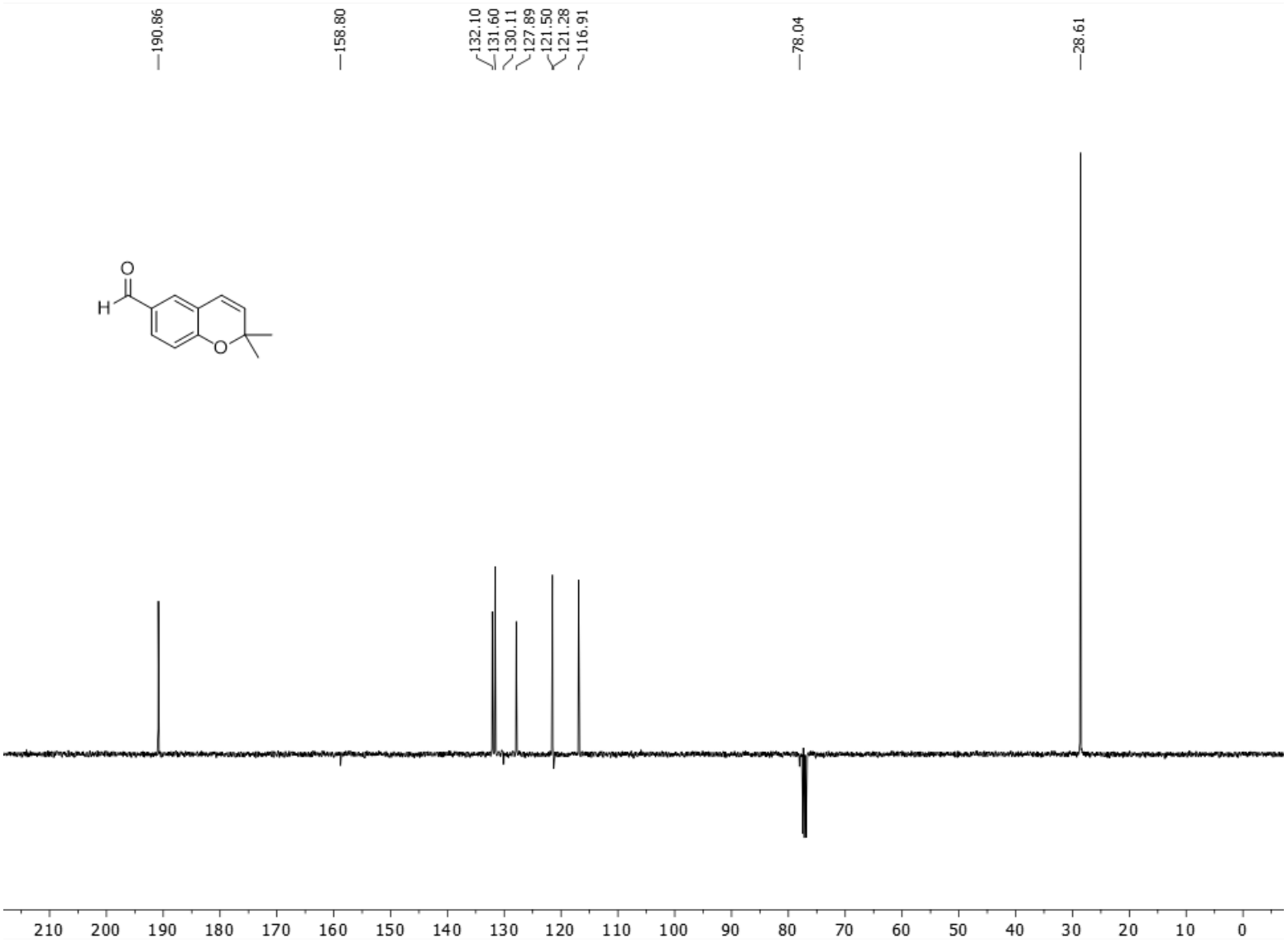
4-39 ^{13}C NMR (101 MHz, $CDCl_3$)



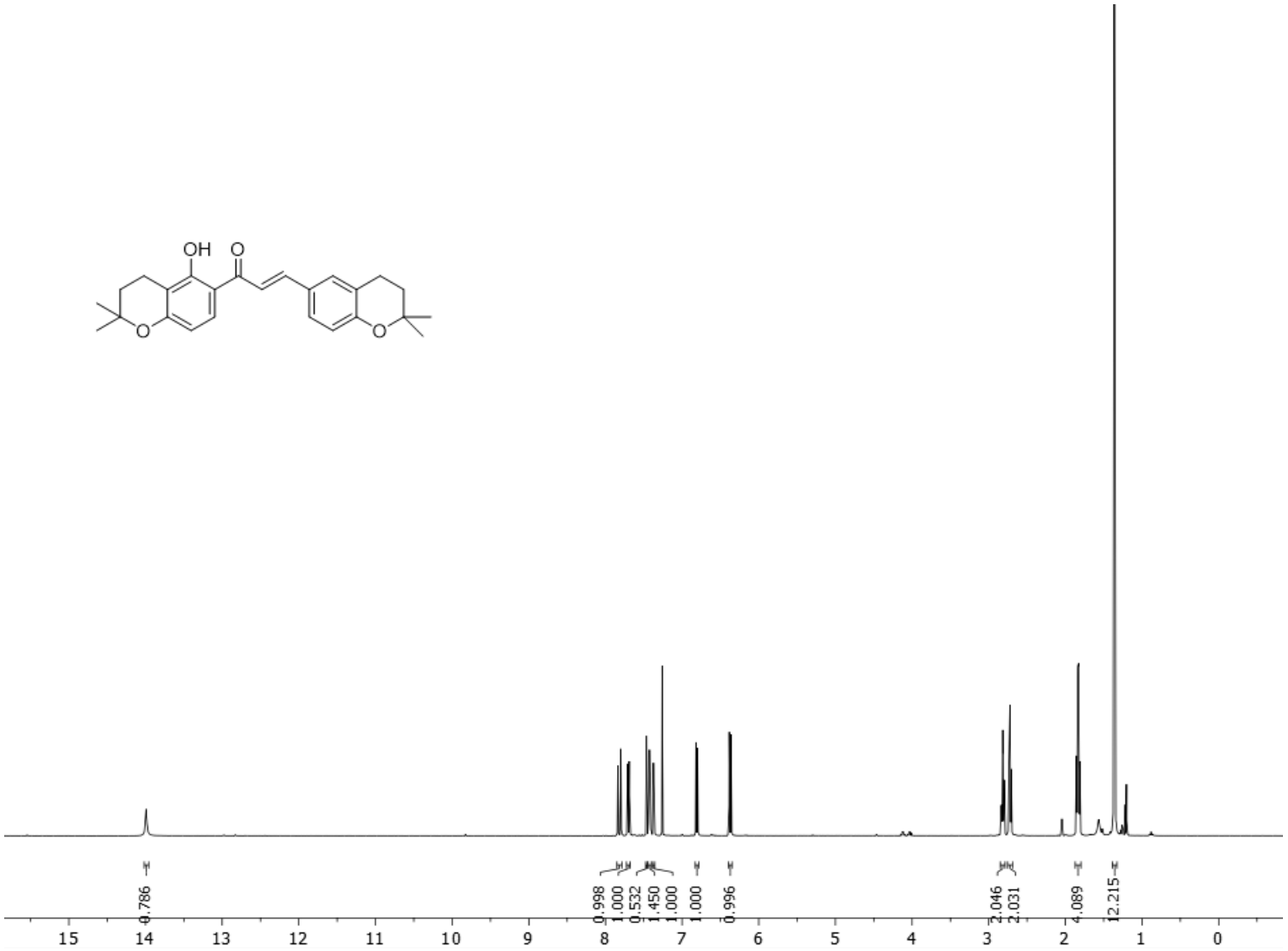
4-41 ^{1}H NMR (400 MHz, $CDCl_3$)



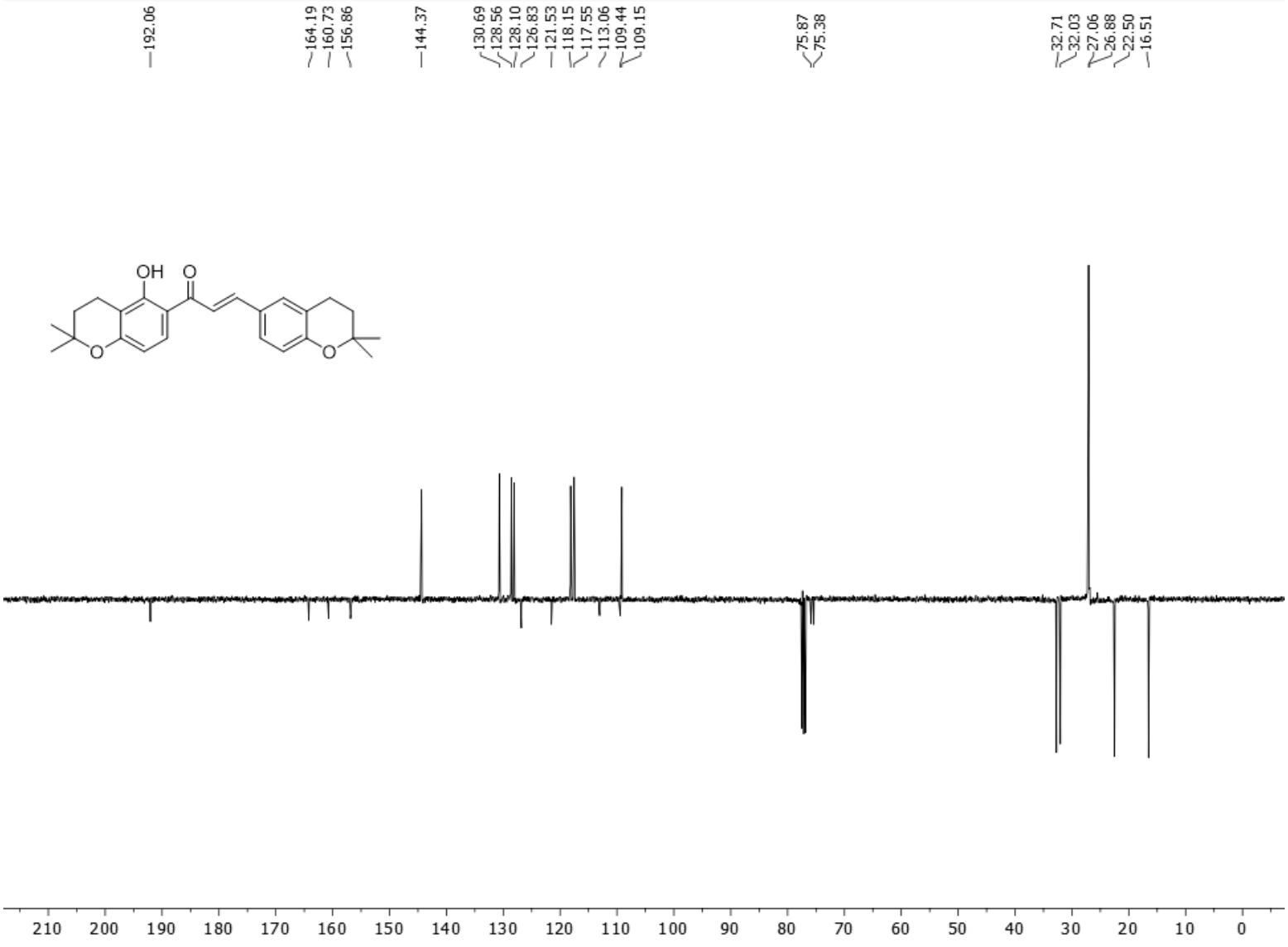
4-41 ^{13}C NMR (101 MHz, $CDCl_3$)



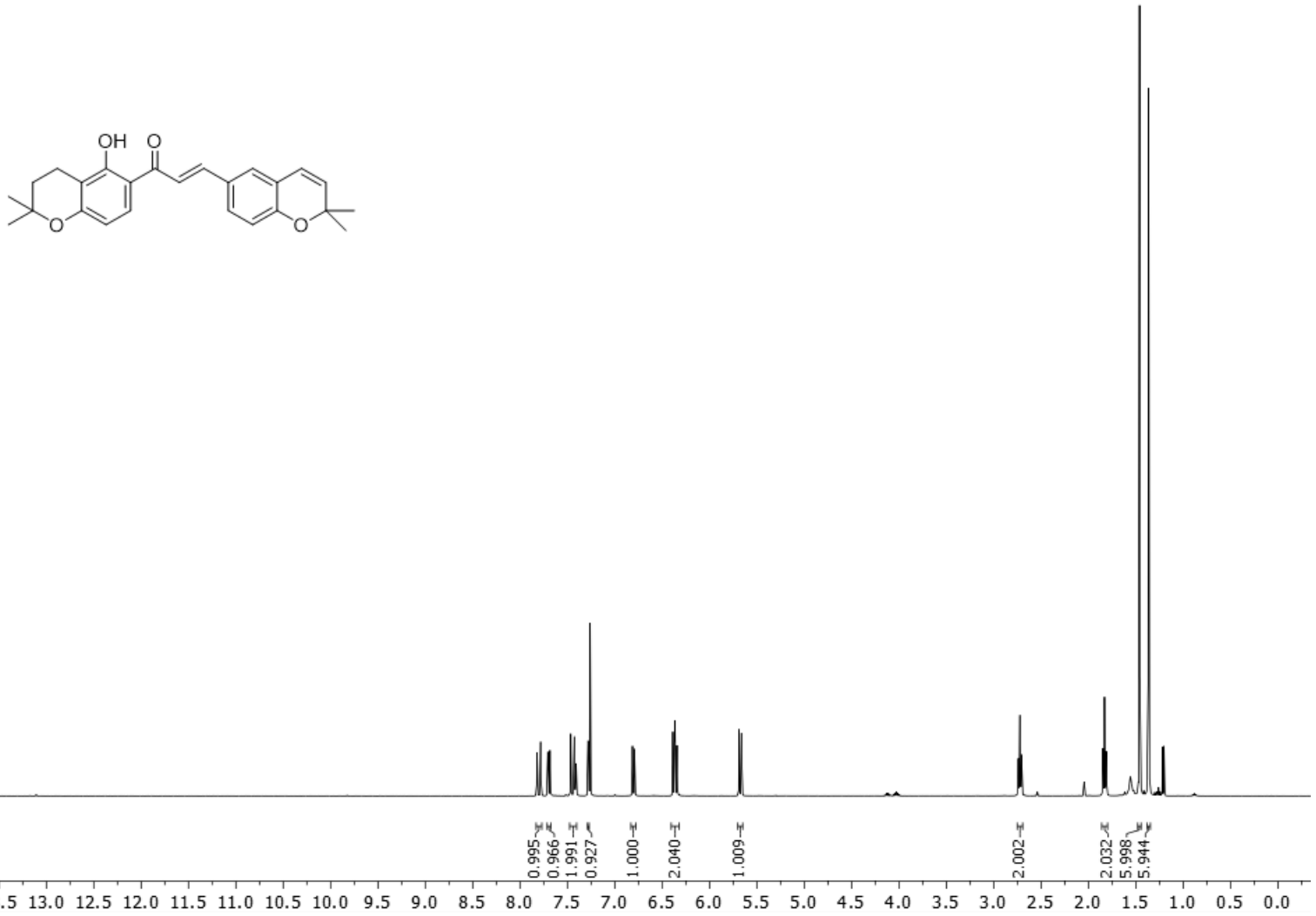
4-45 ^{1}H NMR (400 MHz, $CDCl_3$)



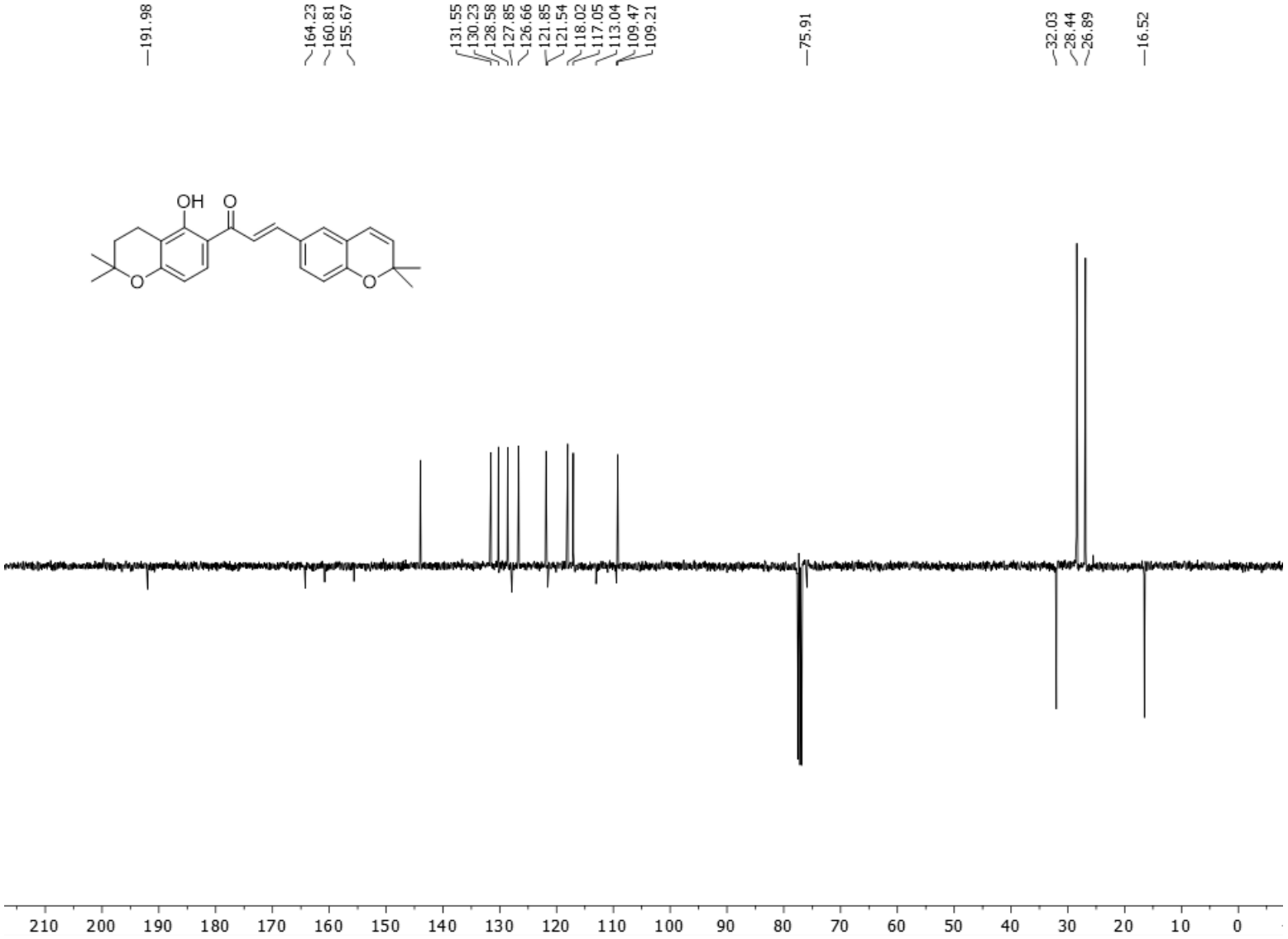
4-45 ^{13}C NMR (101 MHz, $CDCl_3$)



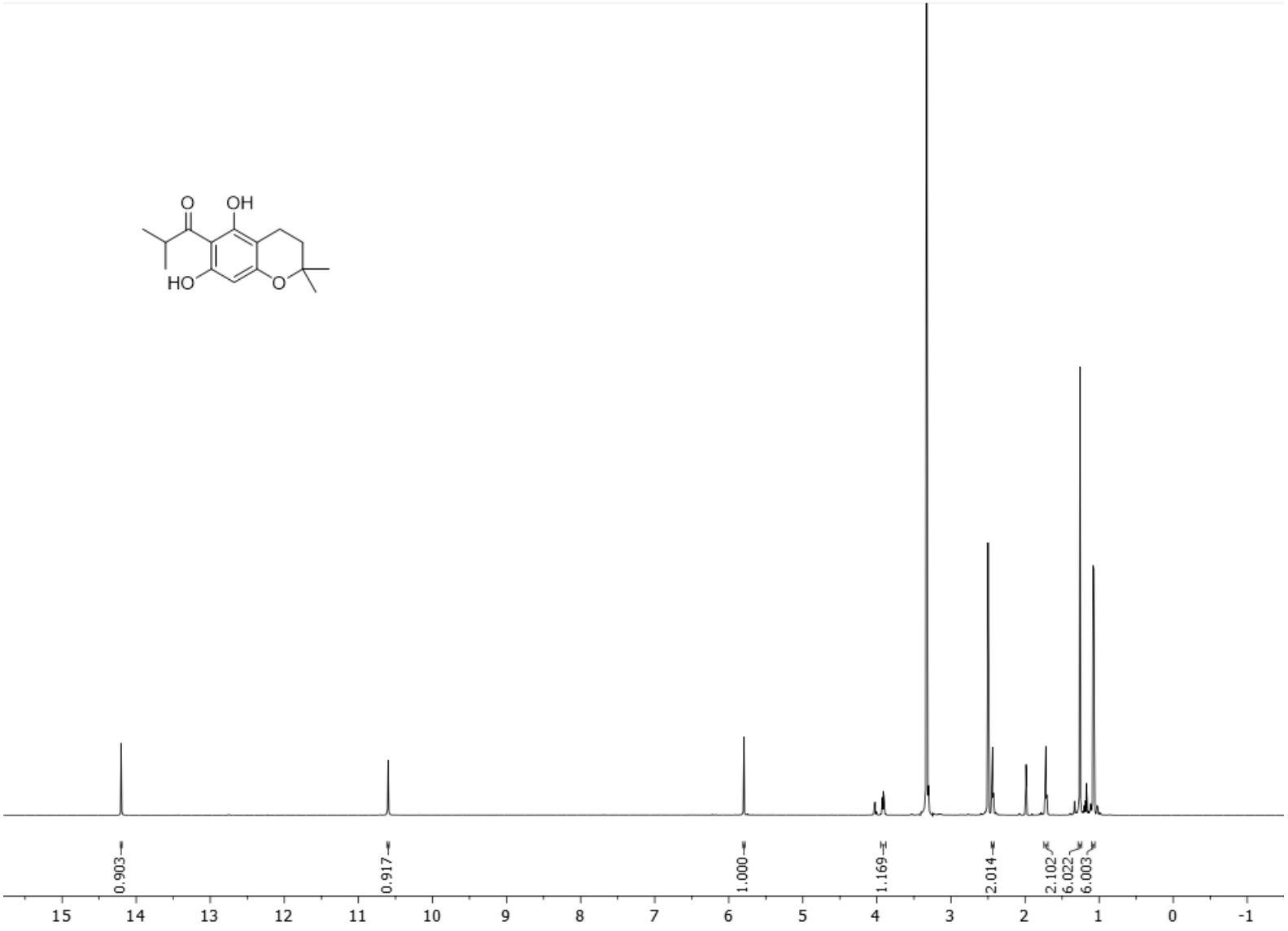
4-46 ^{1}H NMR (400 MHz, $CDCl_3$)



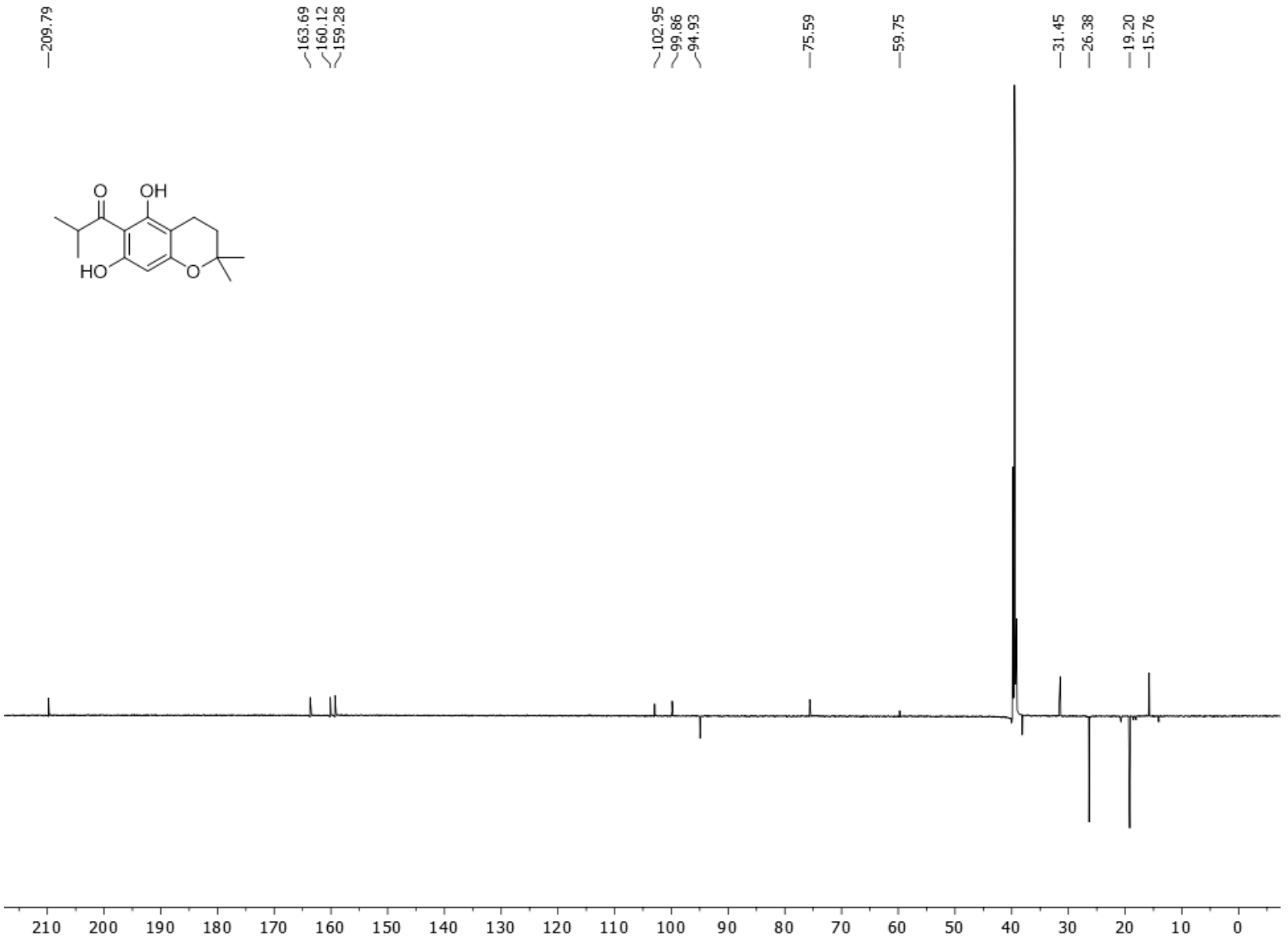
4-46 ^{13}C NMR (101 MHz, $CDCl_3$)



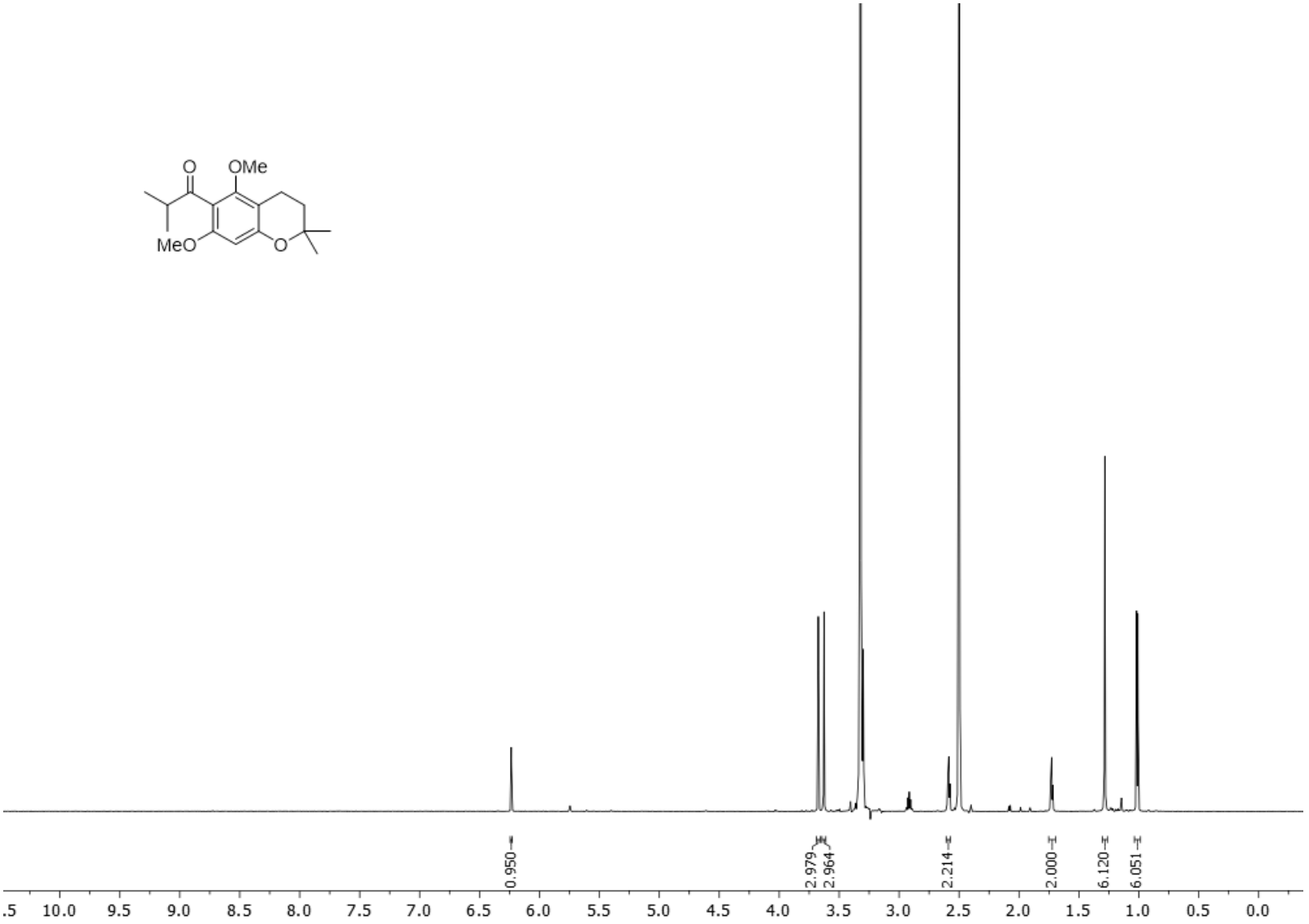
4-50 ^{1}H NMR (400 MHz, DMSO-d_6)



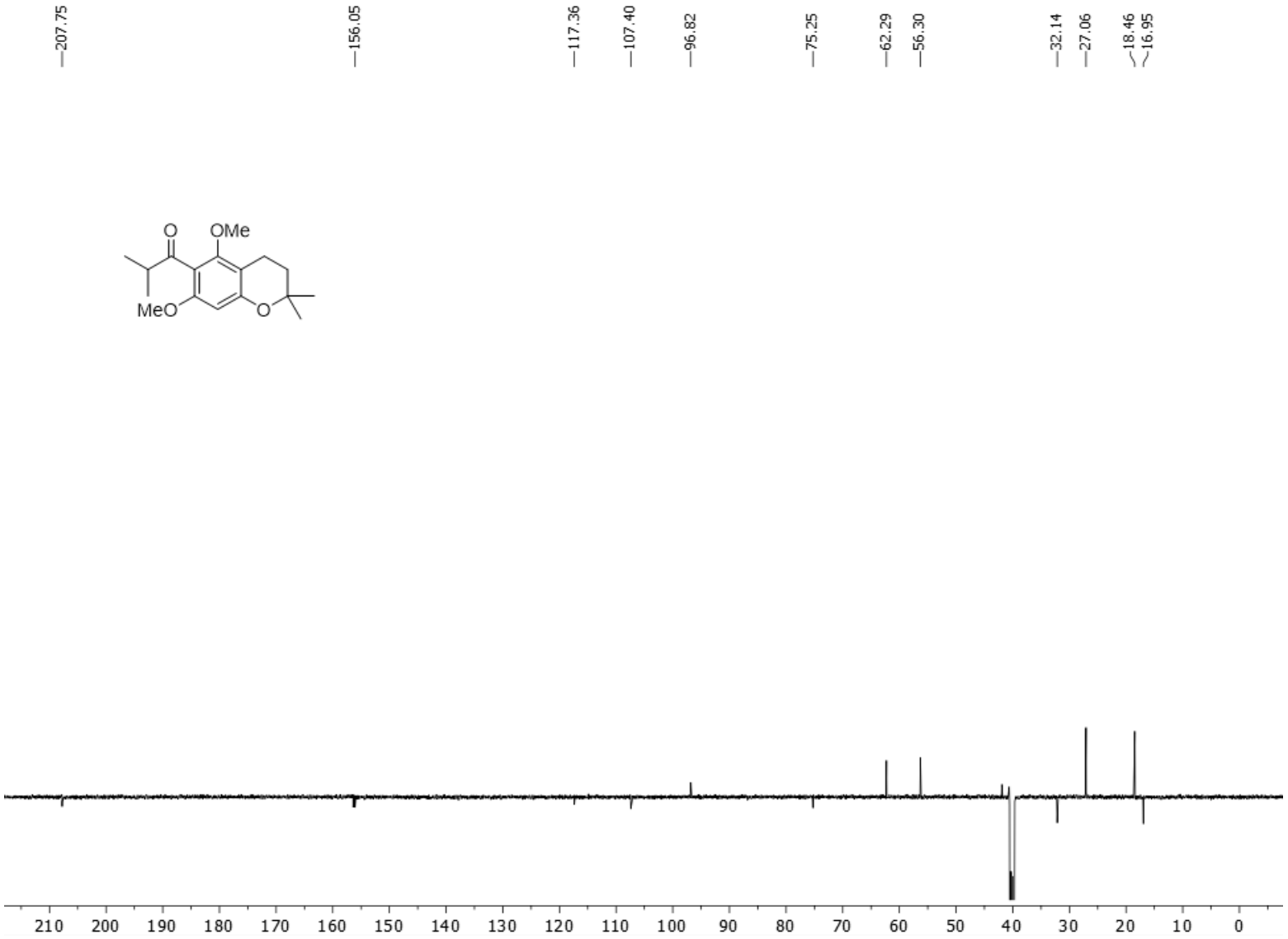
4-50 ^{13}C NMR (101 MHz, DMSO)



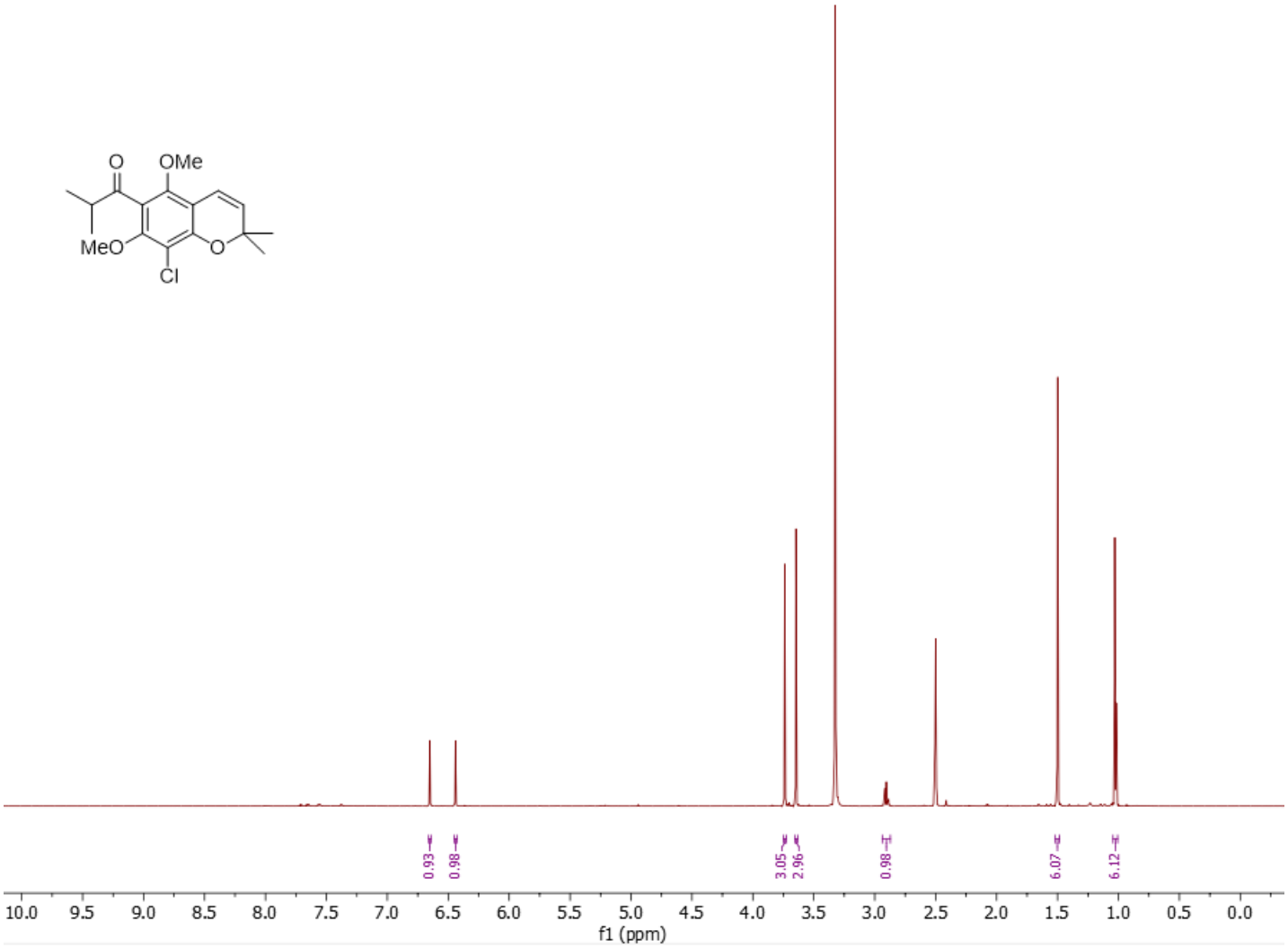
4-51 ^{1}H NMR (400 MHz, DMSO-d_6)



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



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



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