



## SUPPORTING INFORMATION

### Diterpenoids from the Roots of *Croton dichogamus* Pax

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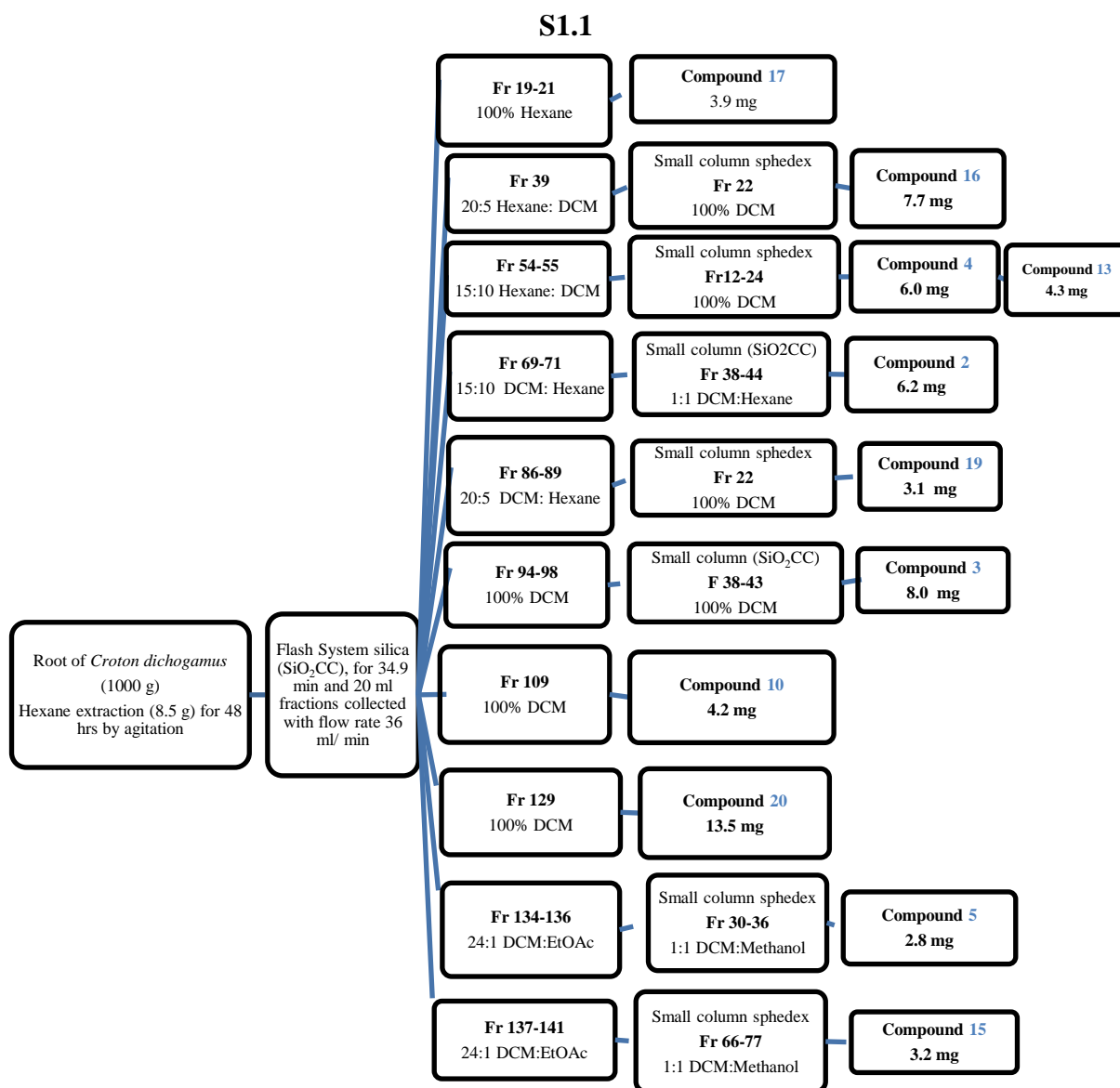
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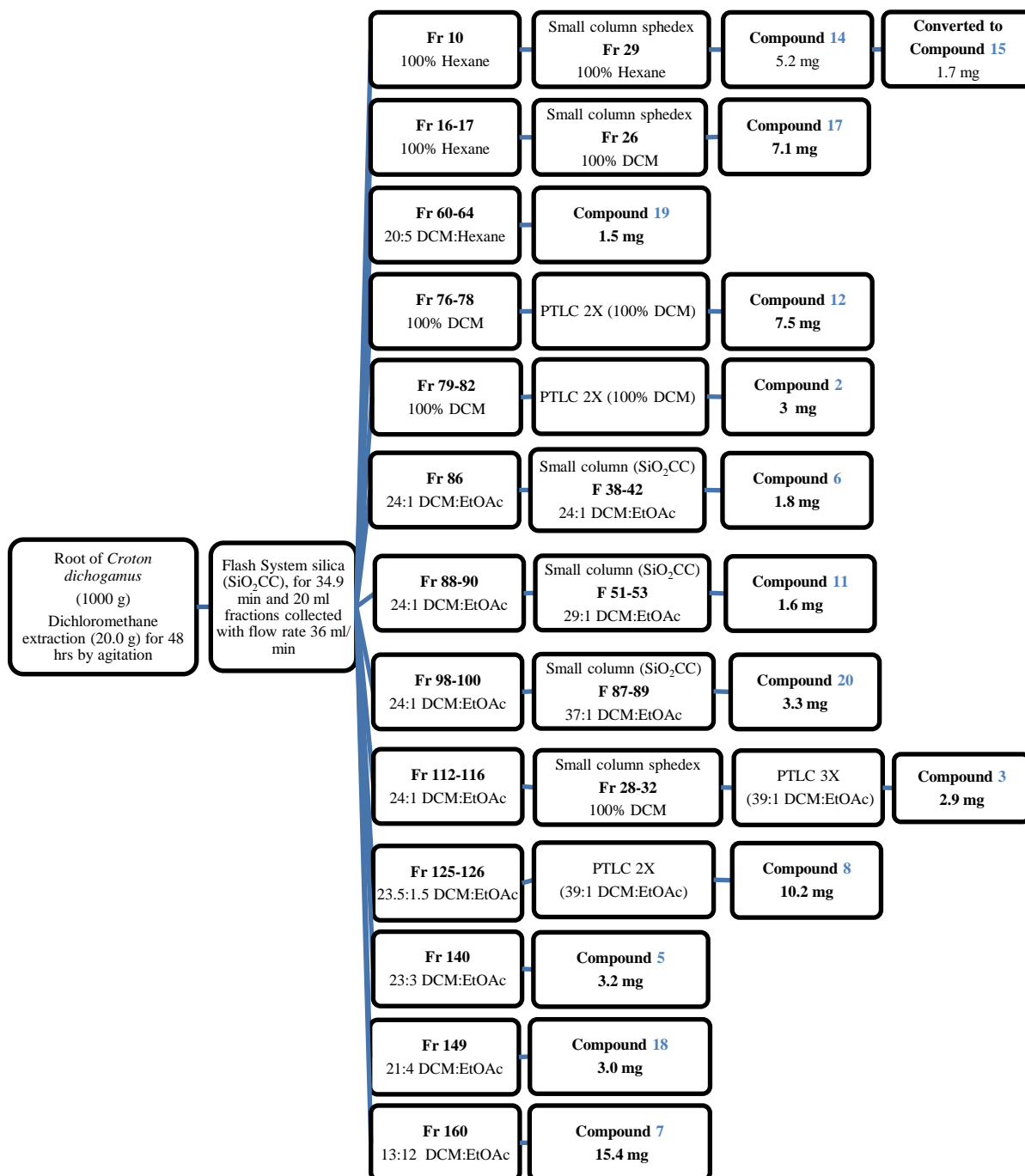
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# 1 S1. Isolation schemes

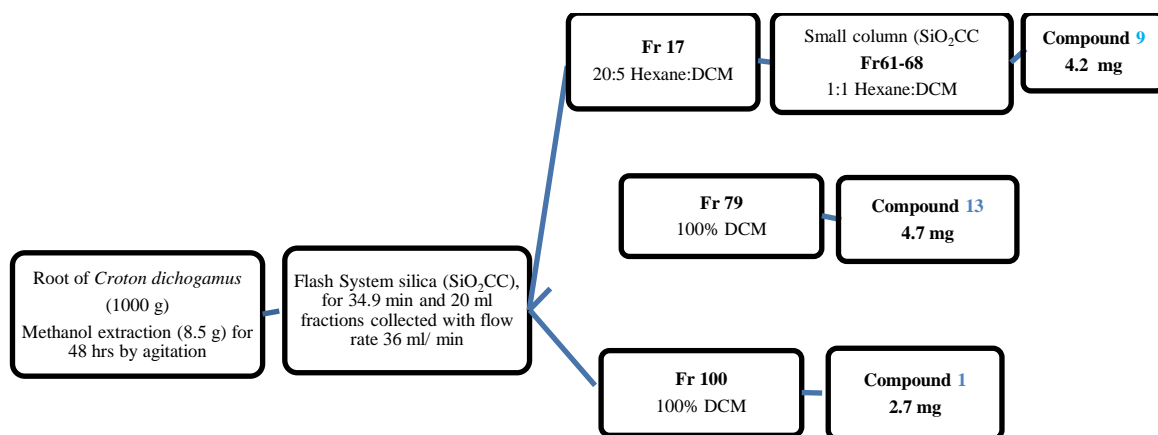


**Scheme S1.1:** A flow chart of the compounds isolated from the hexane extract of the root of *Croton dichogamus*

## S1.2



**Scheme S1.2: A flow chart of the compounds isolated from the dichloromethane extract of the root of *Croton dichogamus***



**Scheme S1.3: A flow chart of the compounds isolated from the methanol extract of the root of *Croton dichogamus***

## 2 S2. NMR spectra of isolated compounds

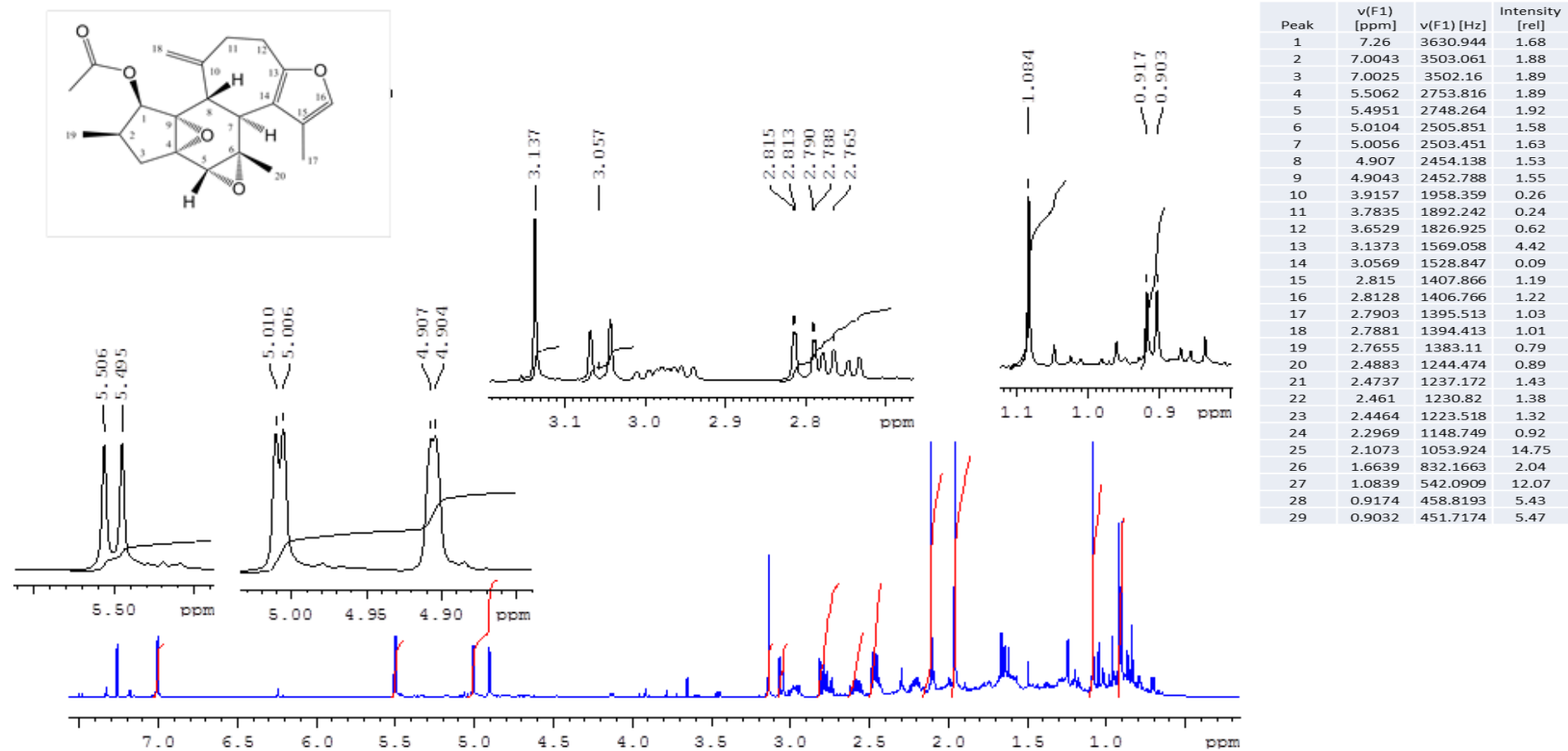


Figure S2.1:  $^1\text{H}$  NMR spectrum for compound 1 in  $\text{CDCl}_3$

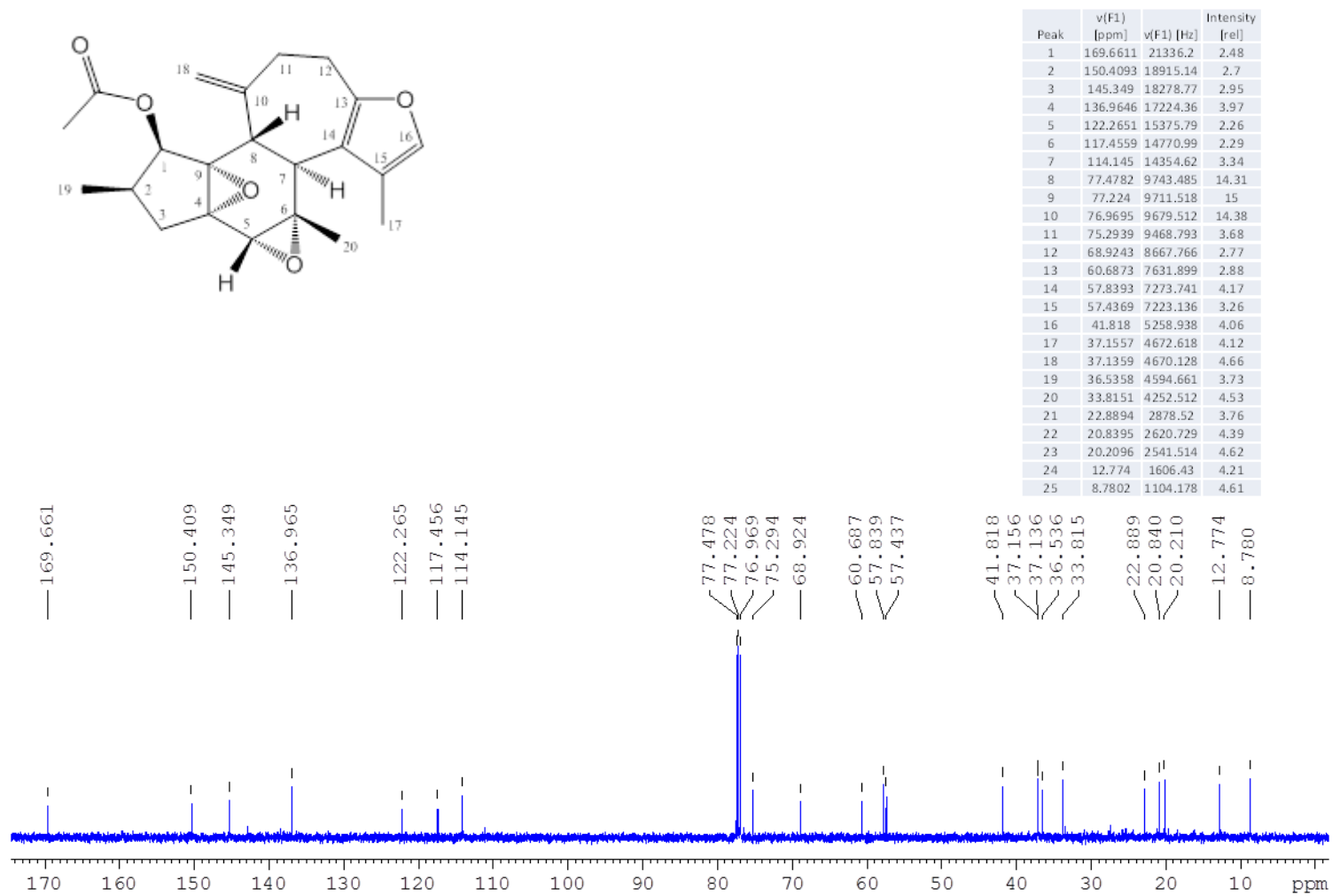
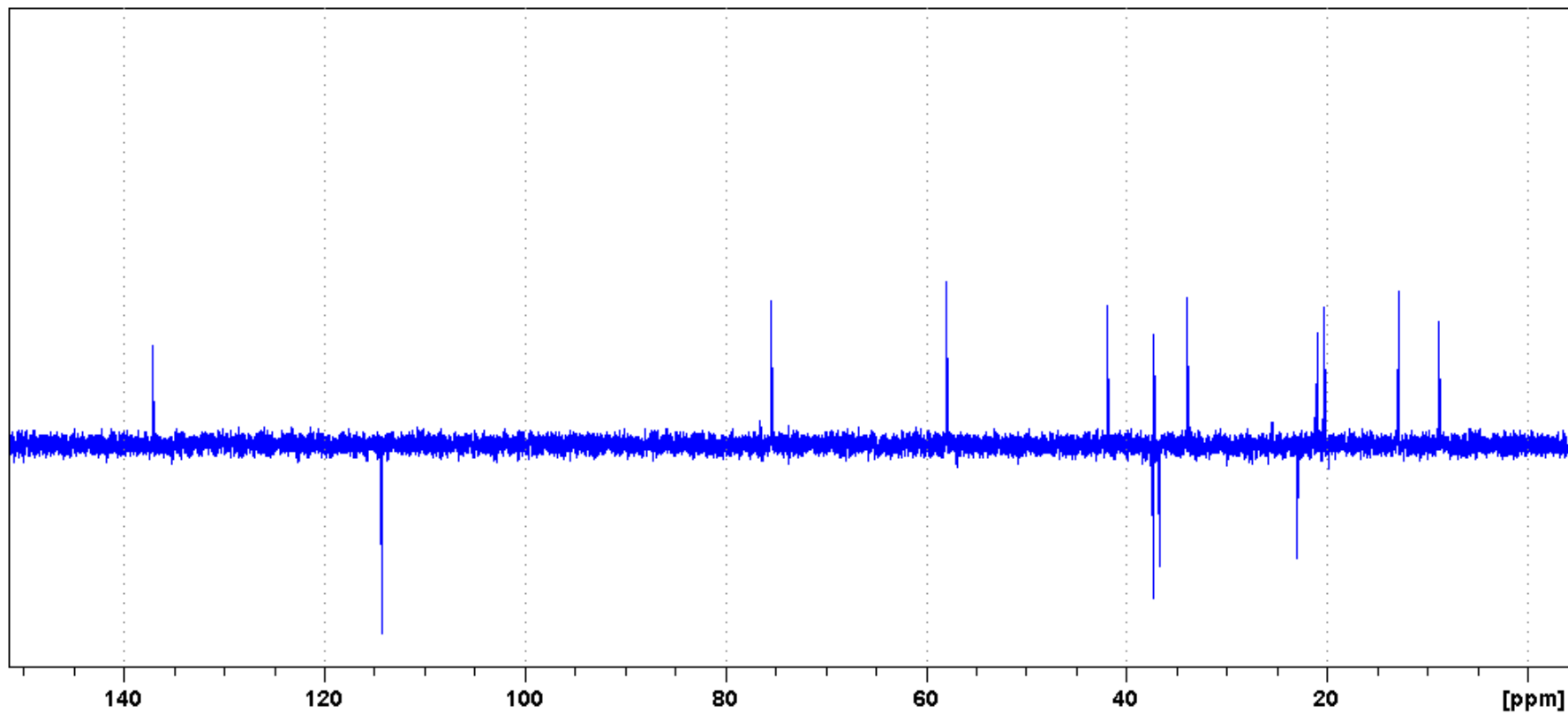


Figure S2.2: <sup>13</sup>C NMR spectrum for compound 1 in CDCl<sub>3</sub>





**Figure S2.3: DEPT spectrum for compound 1 in CDCl<sub>3</sub>**

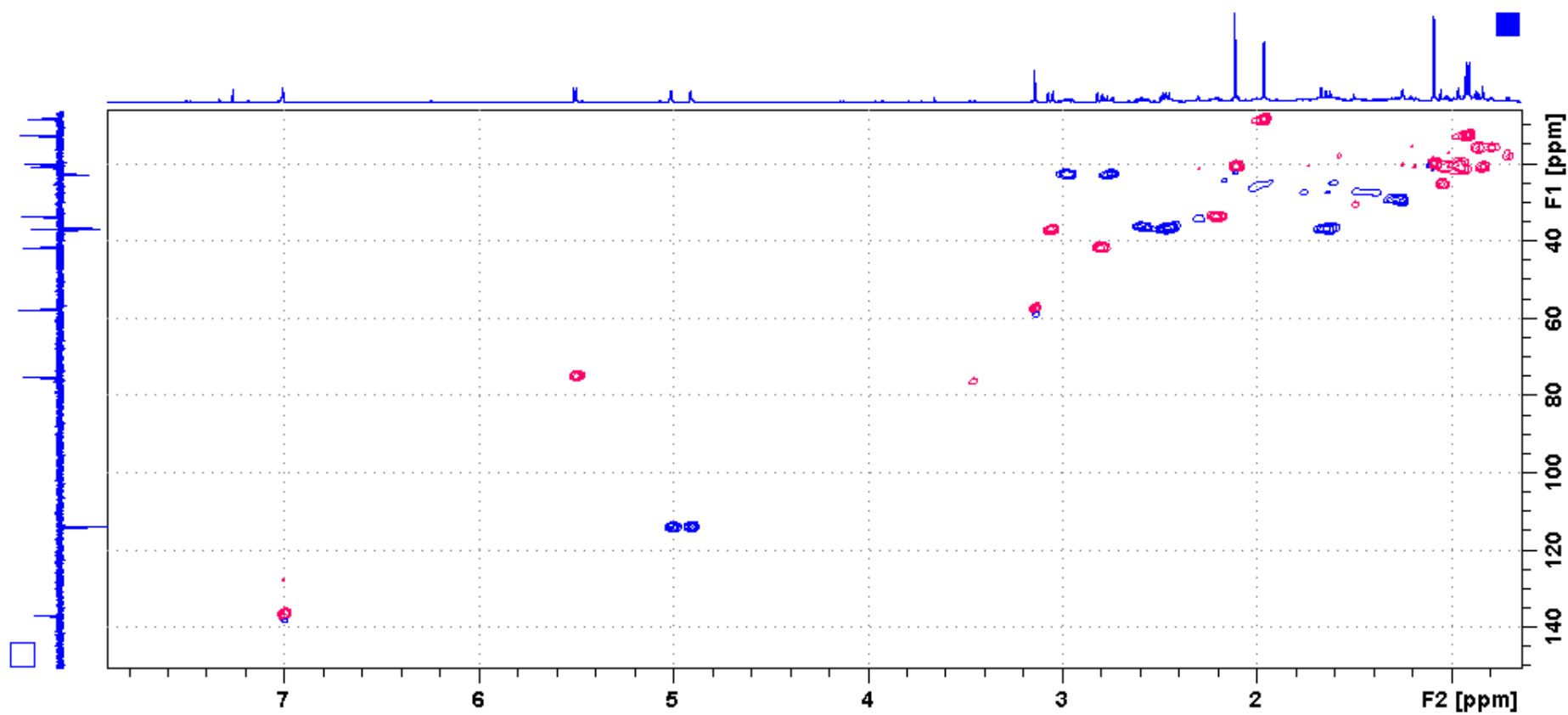


Figure S2.4: HSQCDEPT spectrum for compound 1 in CDCl<sub>3</sub>

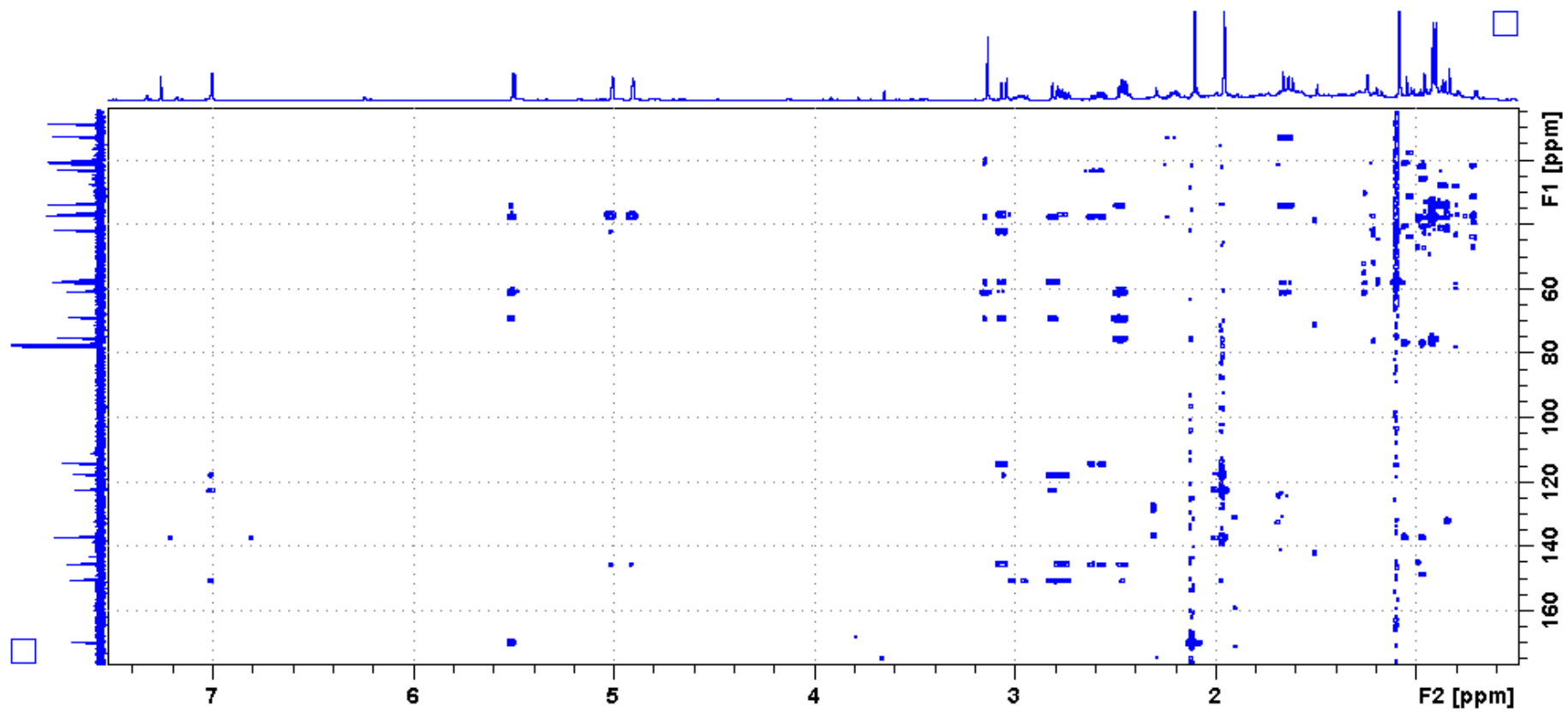


Figure S2.5: HMBC spectrum for compound 1 in CDCl<sub>3</sub>

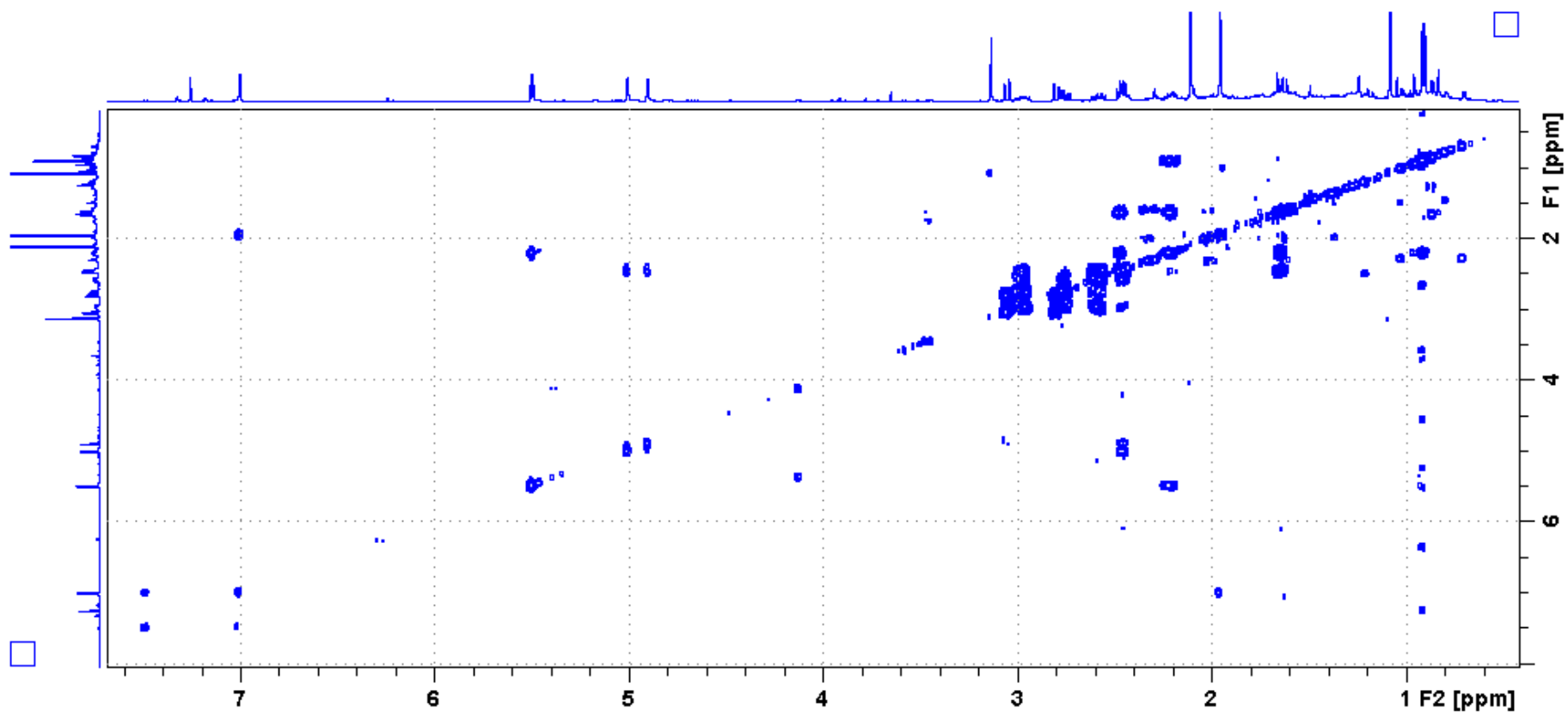
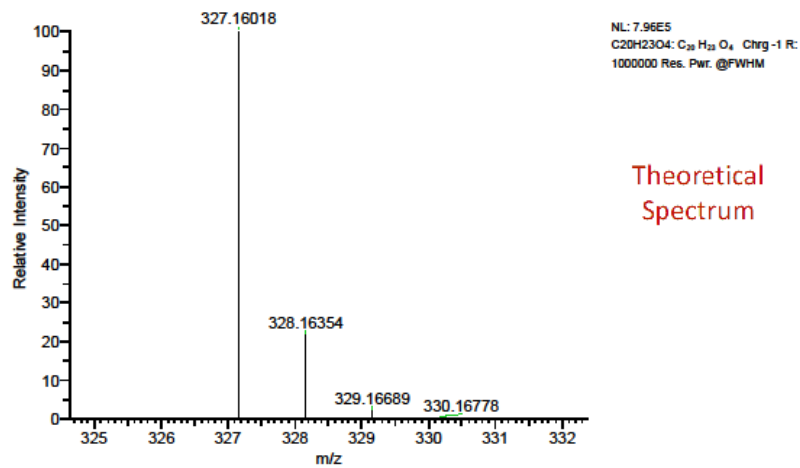
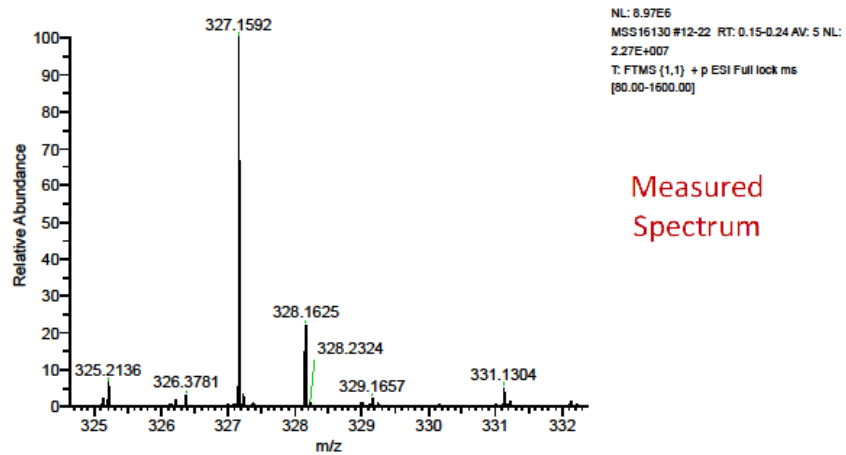
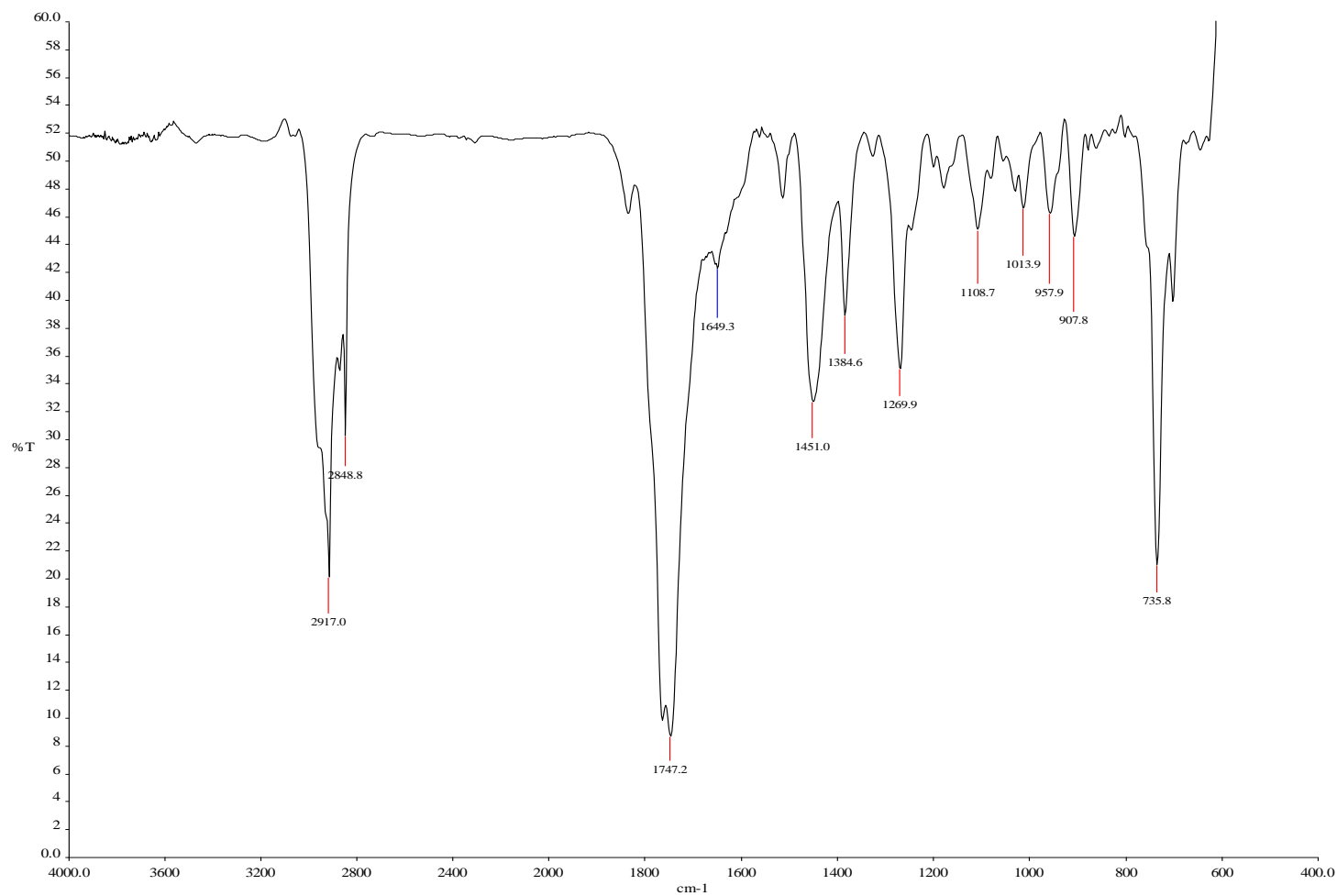


Figure S2.6: COSY spectrum for compound 1 in CDCl<sub>3</sub>



Index	m/z	Formula	Score	RDB	Delta ppm	OriginalFormula	Theo. Mass
1	327.1591	C <sub>20</sub> H <sub>23</sub> O <sub>4</sub>	99.57	9.5	-3.16	C <sub>20</sub> H <sub>23</sub> O <sub>4</sub>	327.16018

Figure S2.7: Mass spectrum for compound 2



**Figure S2.8: FTIR spectrum for compound 2**

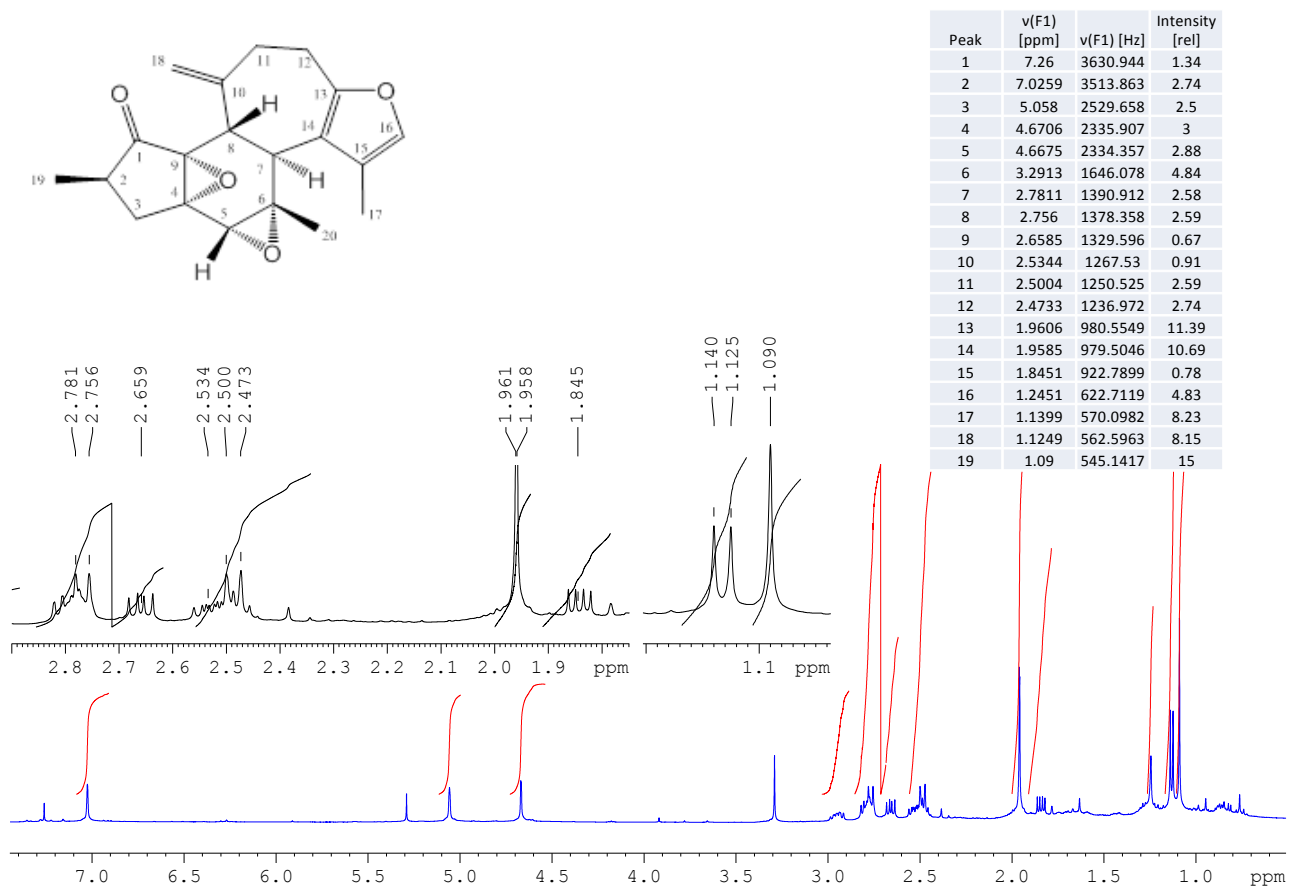
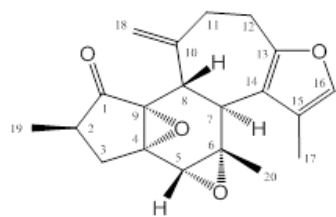


Figure S2.9: <sup>1</sup>H NMR spectrum for compound 2 in CDCl<sub>3</sub>



Peak	v(F1) [ppm]	v(F1) [Hz]	Intensity [rel]
1	206.112	25920.18	2.61
2	150.4031	18914.36	3.32
3	141.9329	17849.16	3.8
4	137.0452	17234.5	13.95
5	121.8374	15322	3.56
6	117.1007	14726.32	2.83
7	116.943	14706.49	13.95
8	77.4809	9743.825	6.62
9	77.2272	9711.92	6.86
10	76.9729	9679.94	6.88
11	66.1333	8316.776	3.46
12	65.7702	8271.114	3.9
13	61.4724	7730.632	5.06
14	56.2266	7070.932	13.08
15	49.0371	6166.796	12.59
16	39.9104	5019.043	12.3
17	38.7039	4867.316	12.87
18	37.7892	4752.285	14.89
19	31.2308	3927.516	15
20	23.0816	2902.691	14.7
21	20.2951	2552.266	13.24
22	16.0484	2018.211	13.95
23	8.8639	1114.704	7.55

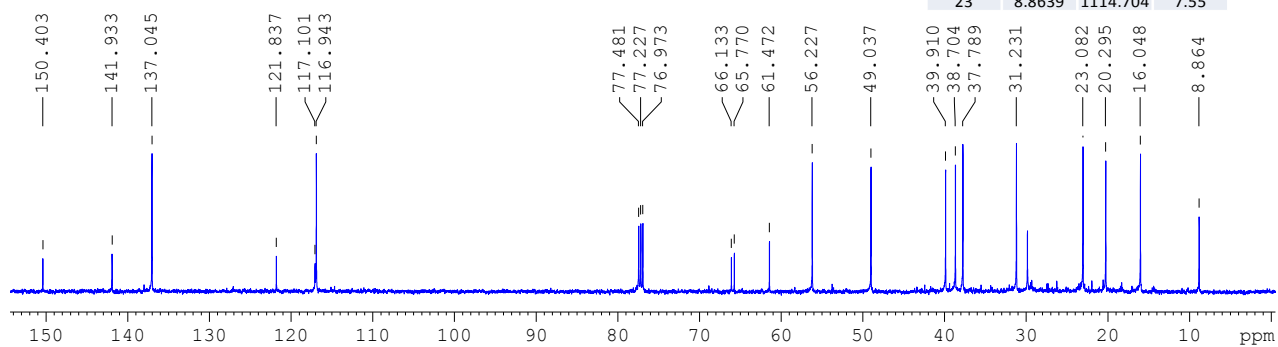


Figure S2.10:  $^{13}\text{C}$  NMR spectrum for compound 2 in  $\text{CDCl}_3$



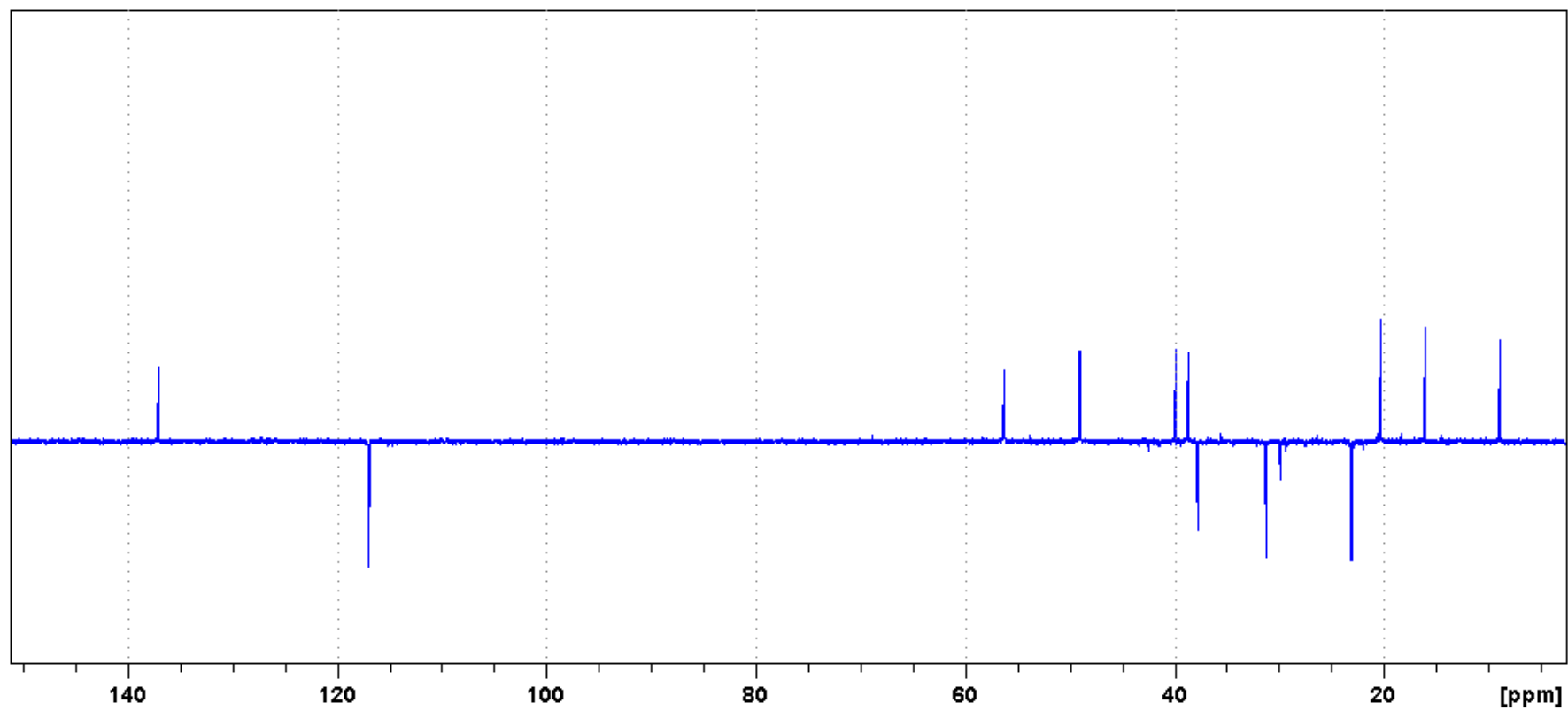


Figure S2.11: DEPT spectrum for compound 2 in CDCl<sub>3</sub>

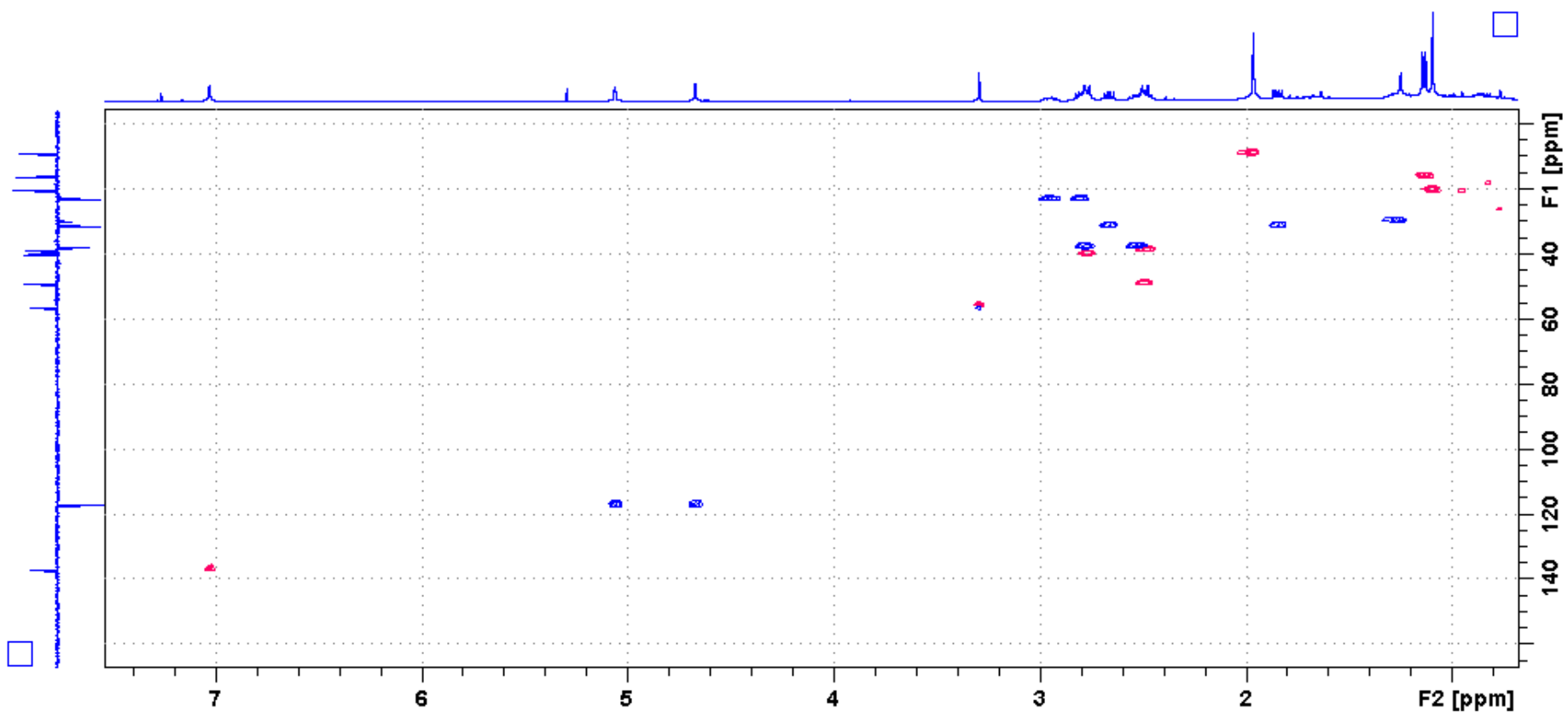


Figure S2.12: HSQCDEPT spectrum for compound 2 in CDCl<sub>3</sub>

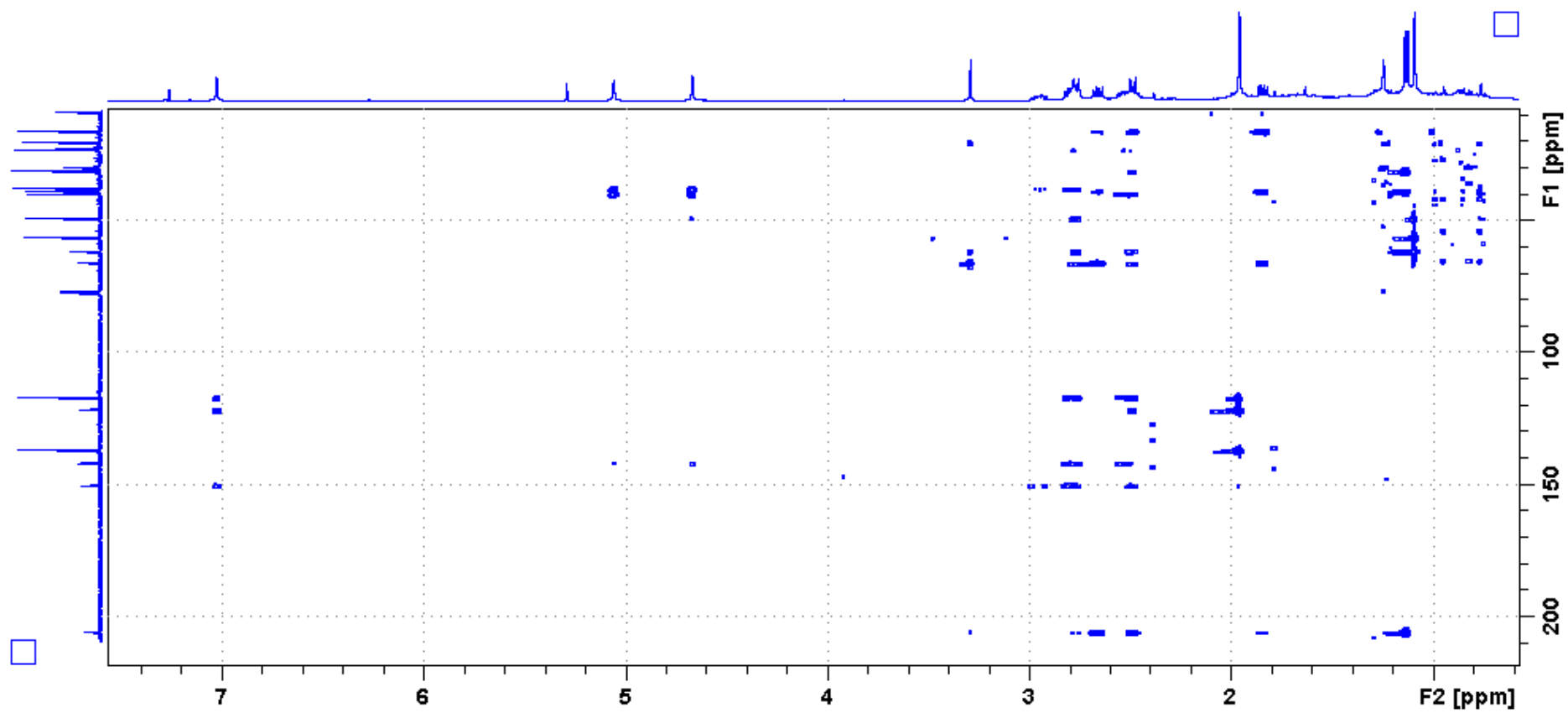


Figure S2.13: HMBC spectrum for compound 2 in CDCl<sub>3</sub>

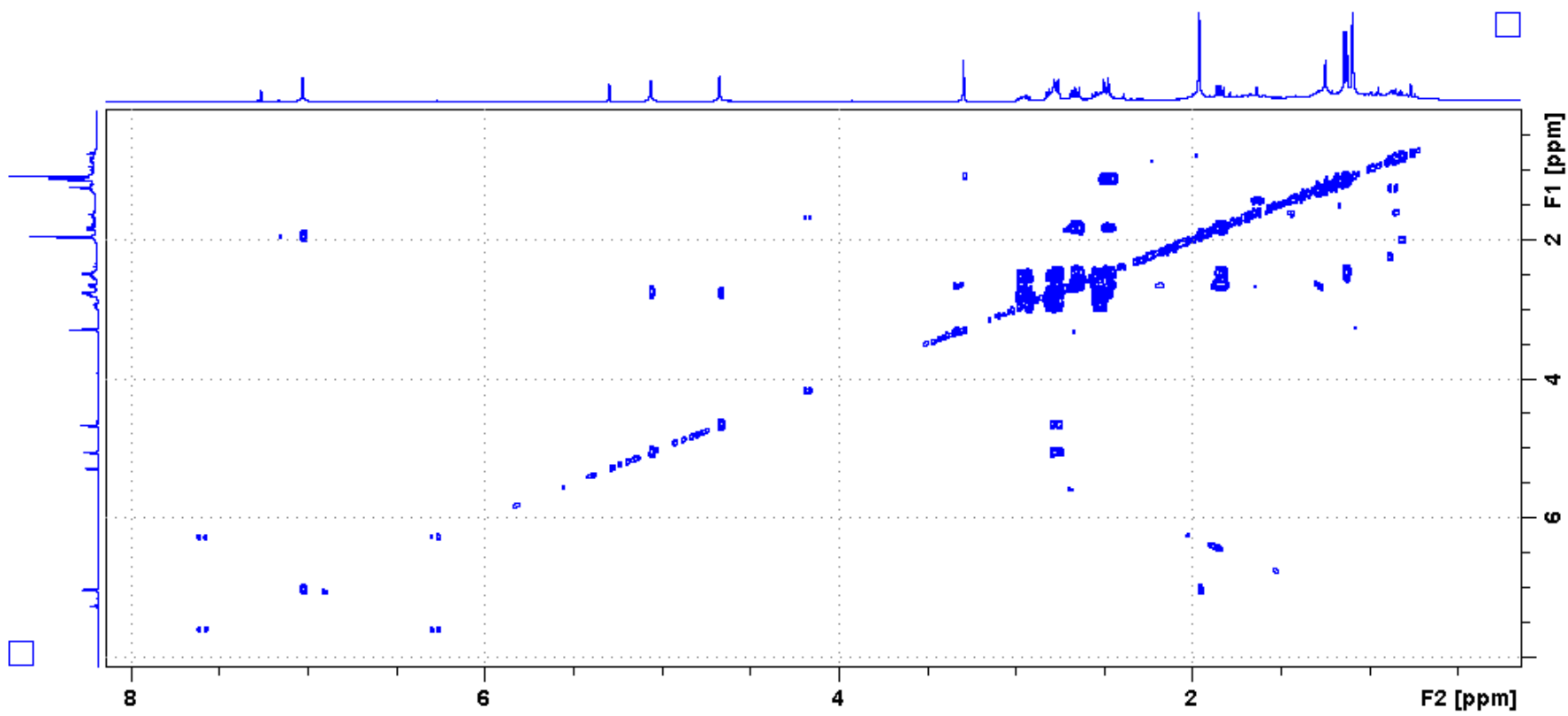


Figure S2.14: COSY spectrum for compound 2 in  $\text{CDCl}_3$

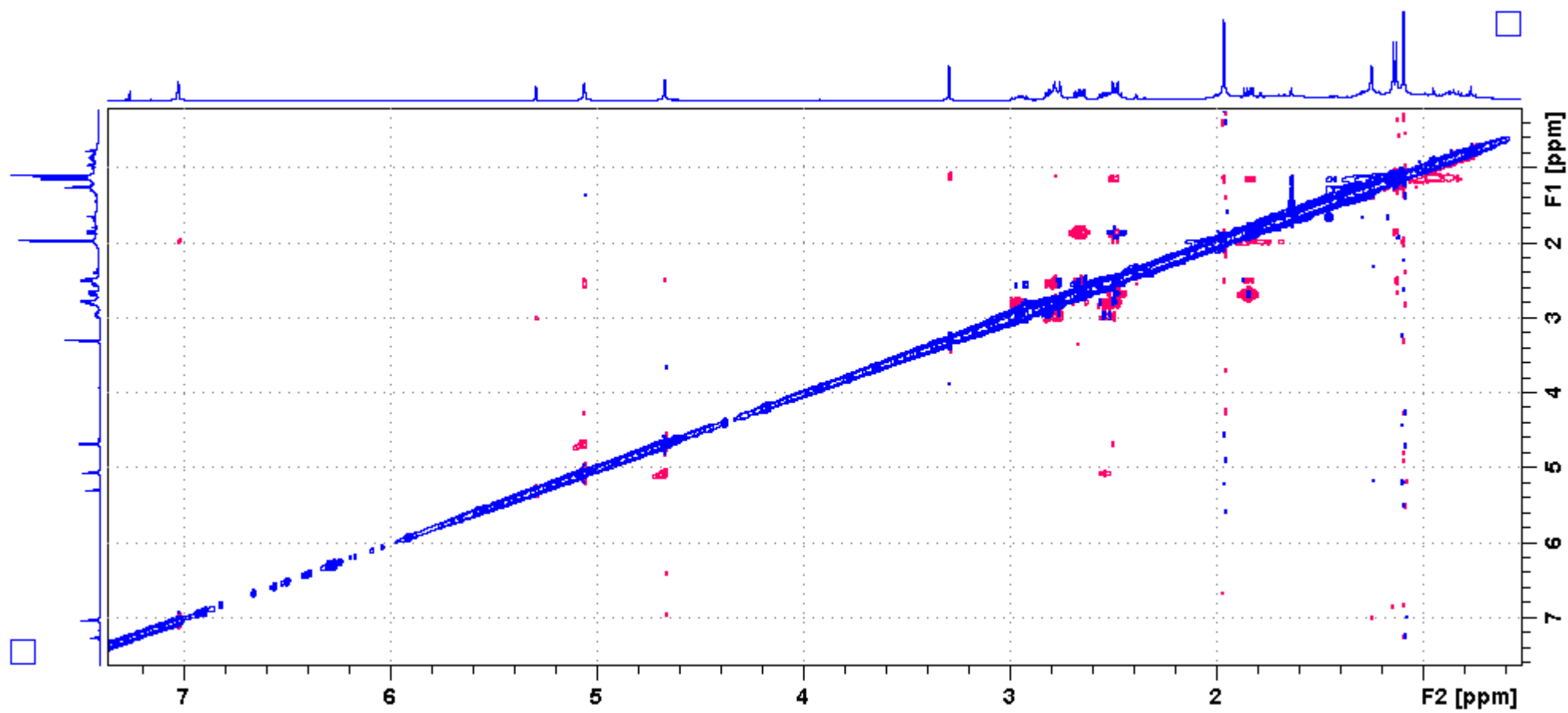
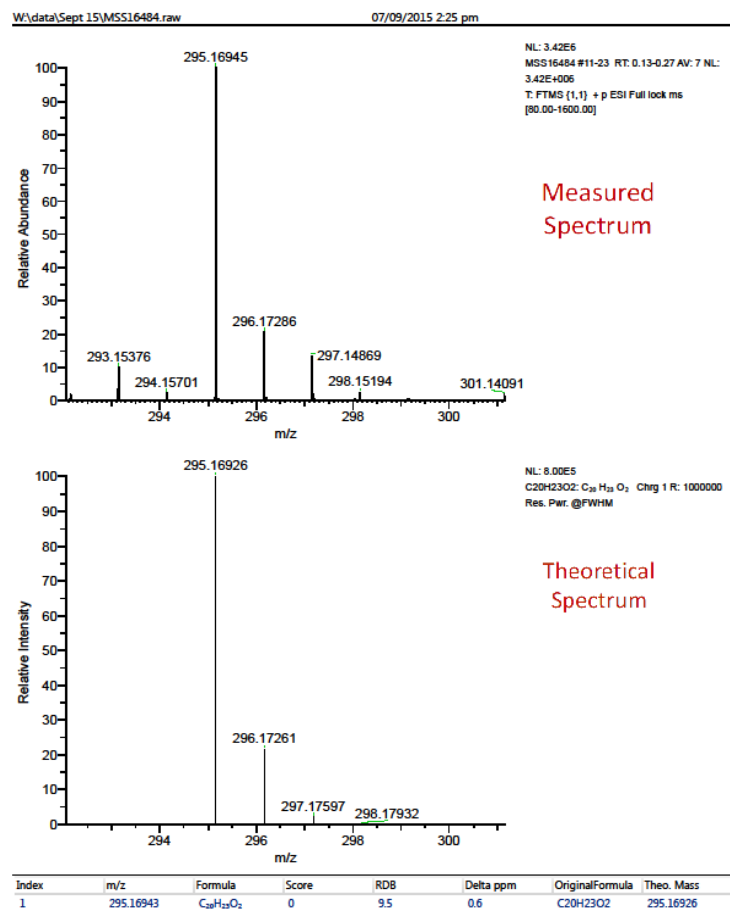
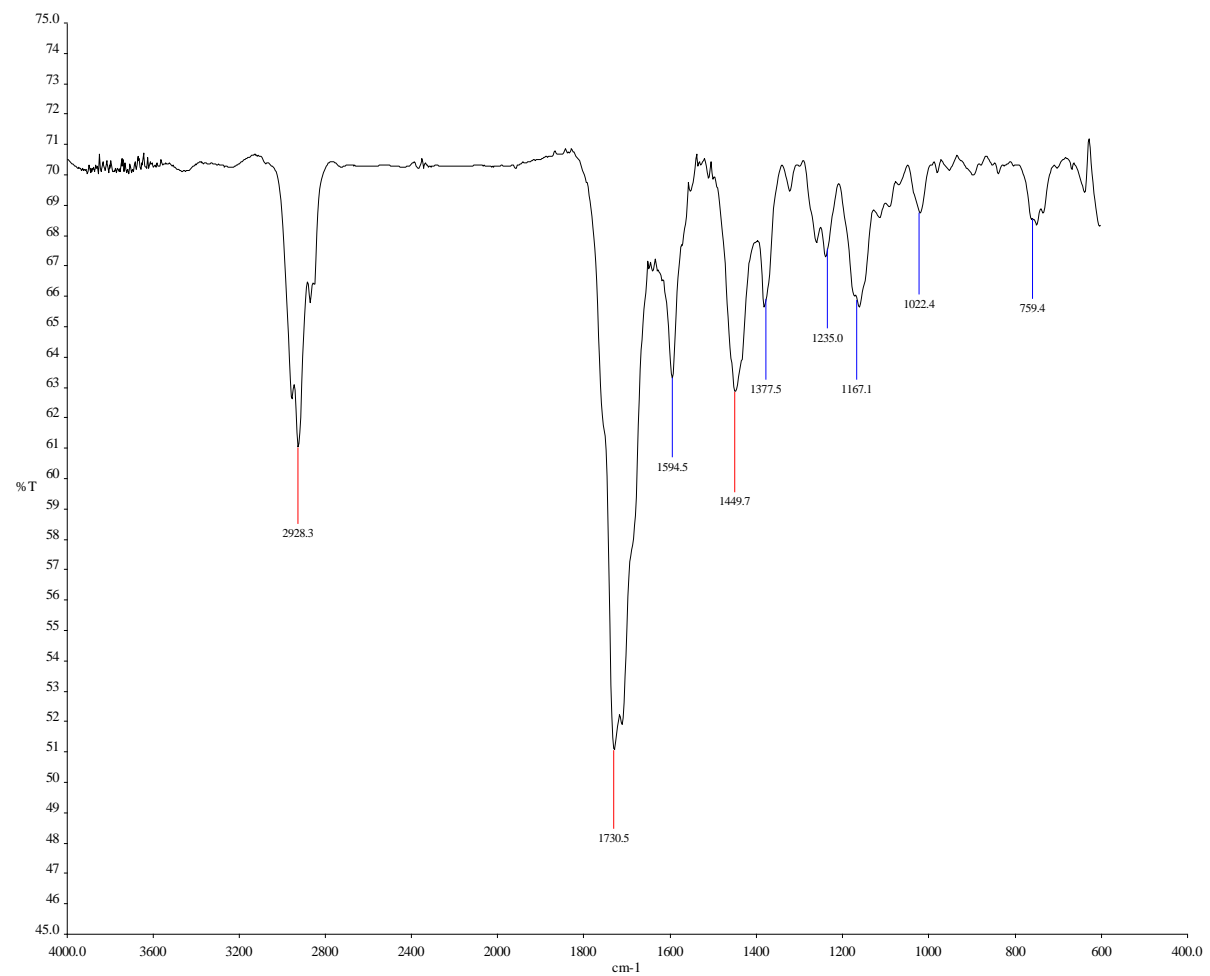


Figure S2.15: NOESY spectrum for compound 2 in  $\text{CDCl}_3$



**Figure S2.16: Mass spectrum for compound 3**



**Figure S2.17: FTIR spectrum for compound 3**

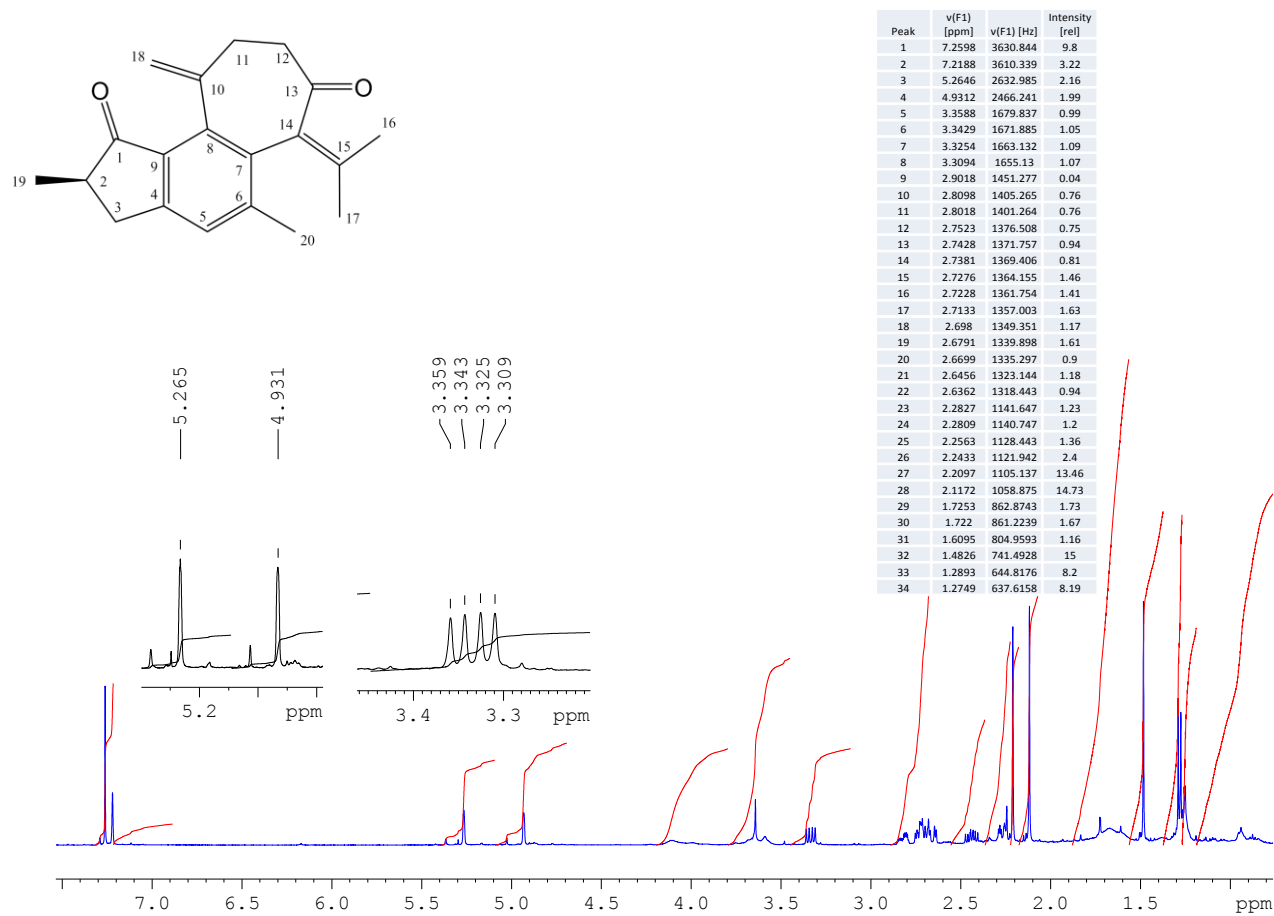


Figure S2.18:  $^1\text{H}$  NMR spectrum for compound 3 in  $\text{CDCl}_3$



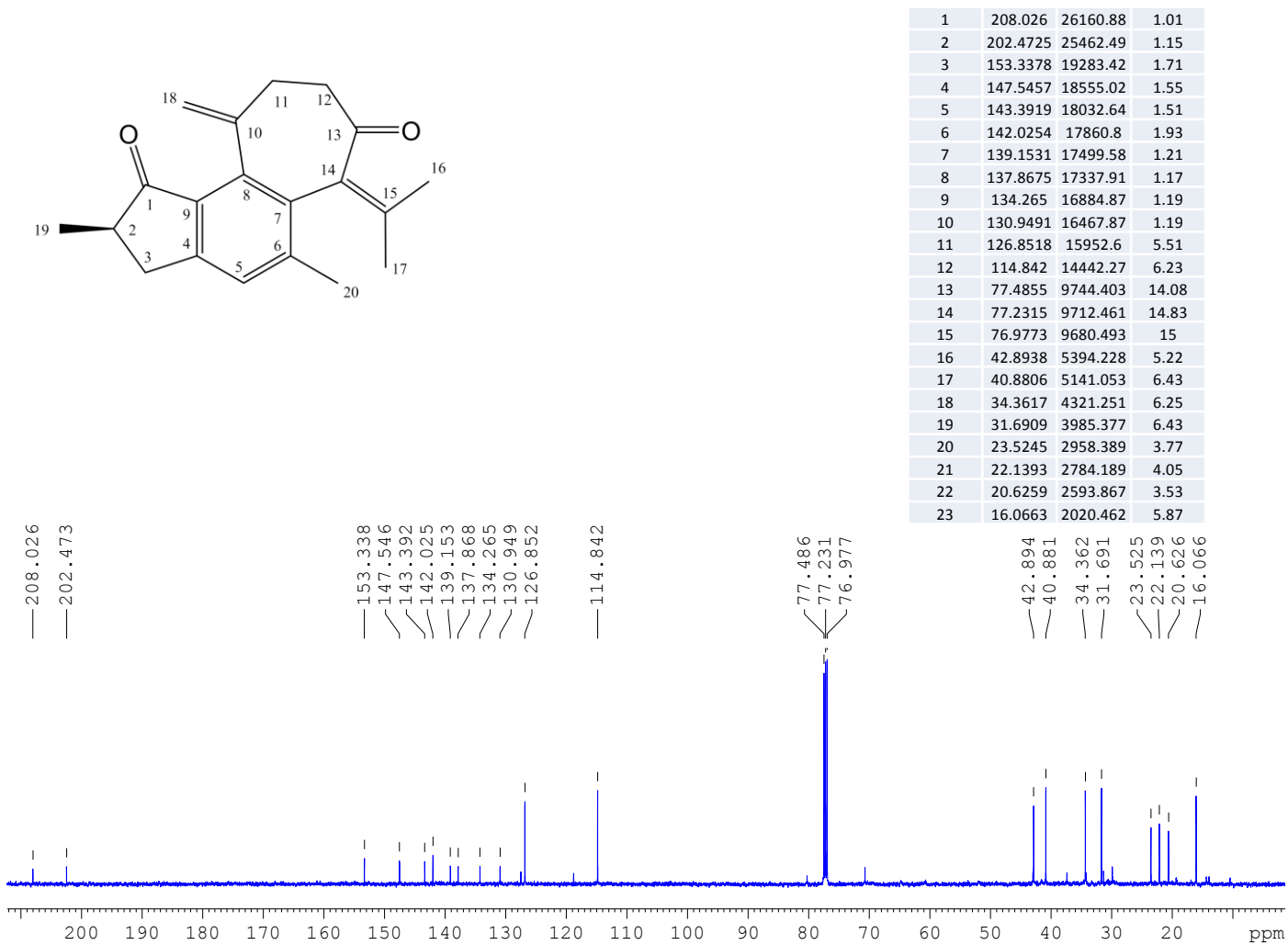


Figure S2.19:  $^{13}\text{C}$  NMR spectrum for compound 3 in  $\text{CDCl}_3$

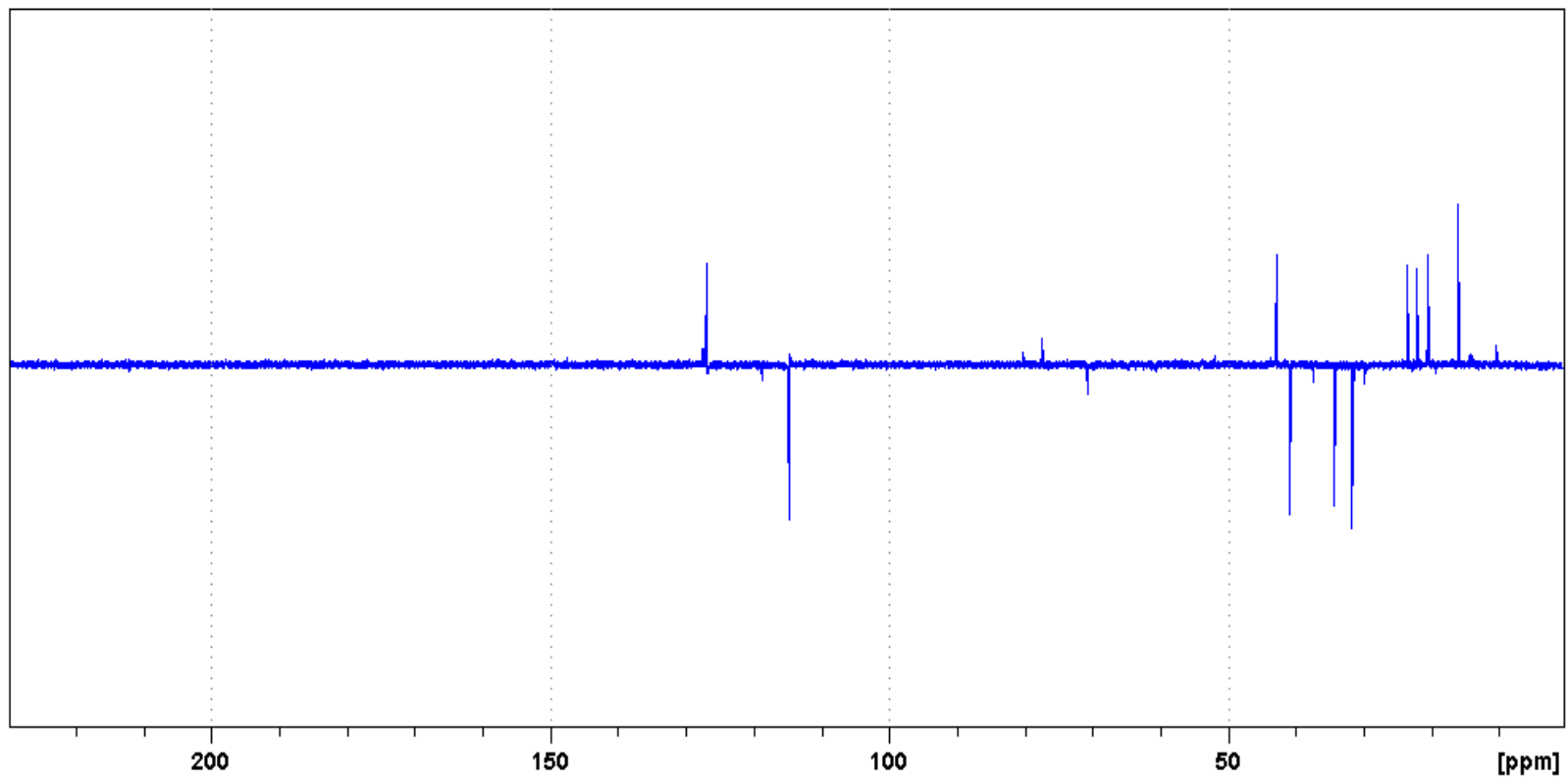


Figure S2.20: DEPT spectrum for compound 3 in CDCl<sub>3</sub>

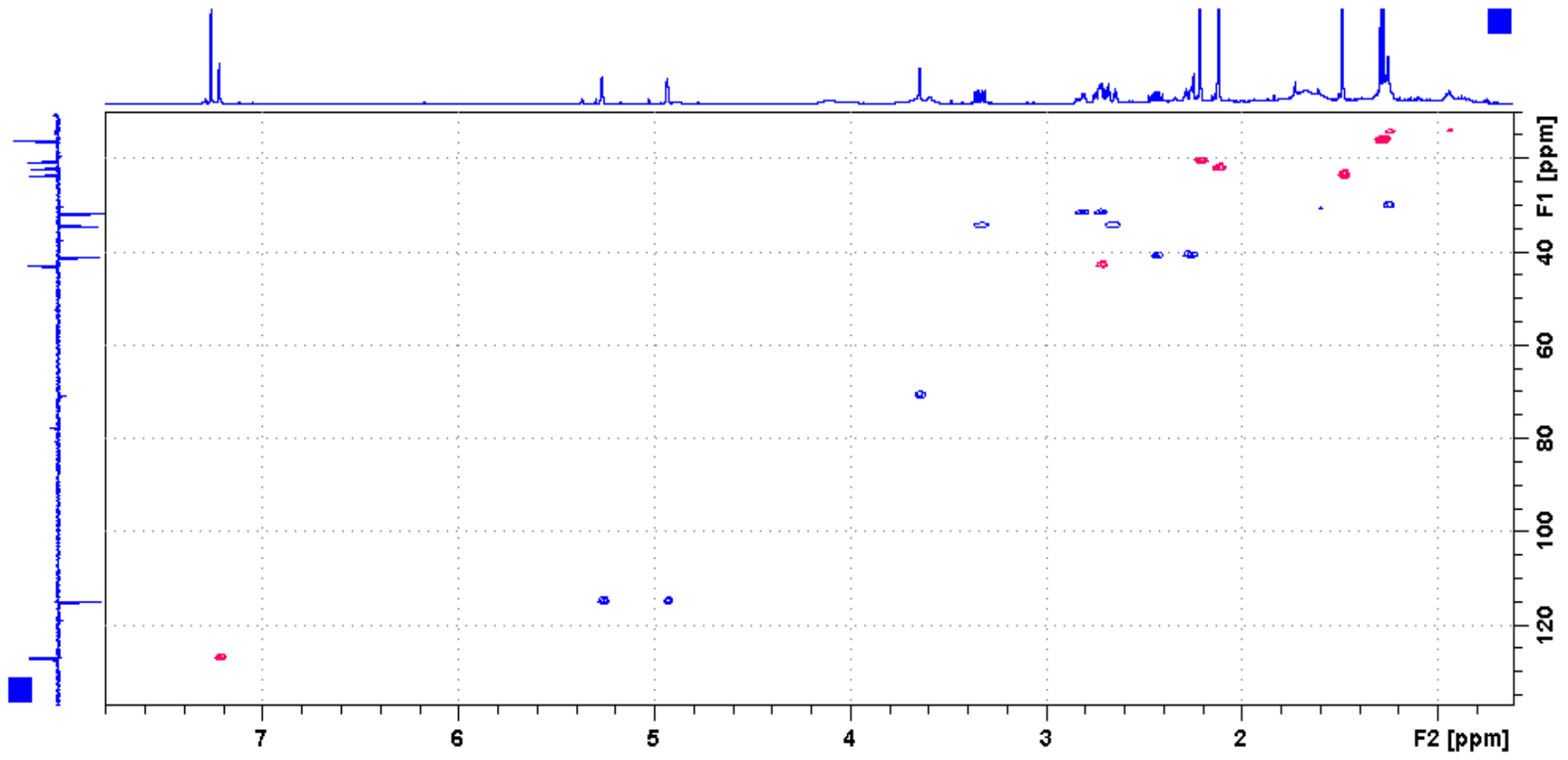


Figure S2.21: HSQCDEPT spectrum for compound 3 in CDCl<sub>3</sub>

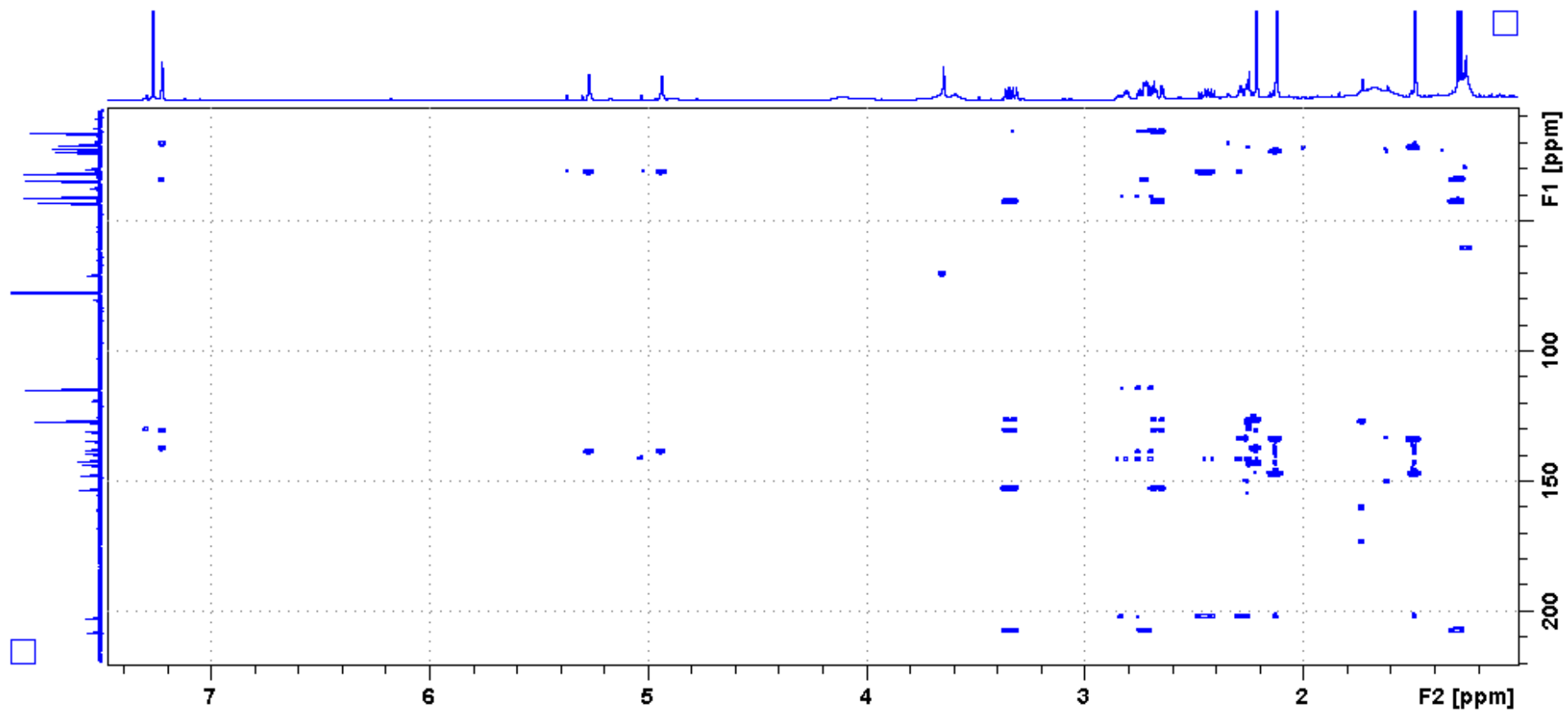


Figure S2.22: HMBC spectrum for compound 3 in CDCl<sub>3</sub>

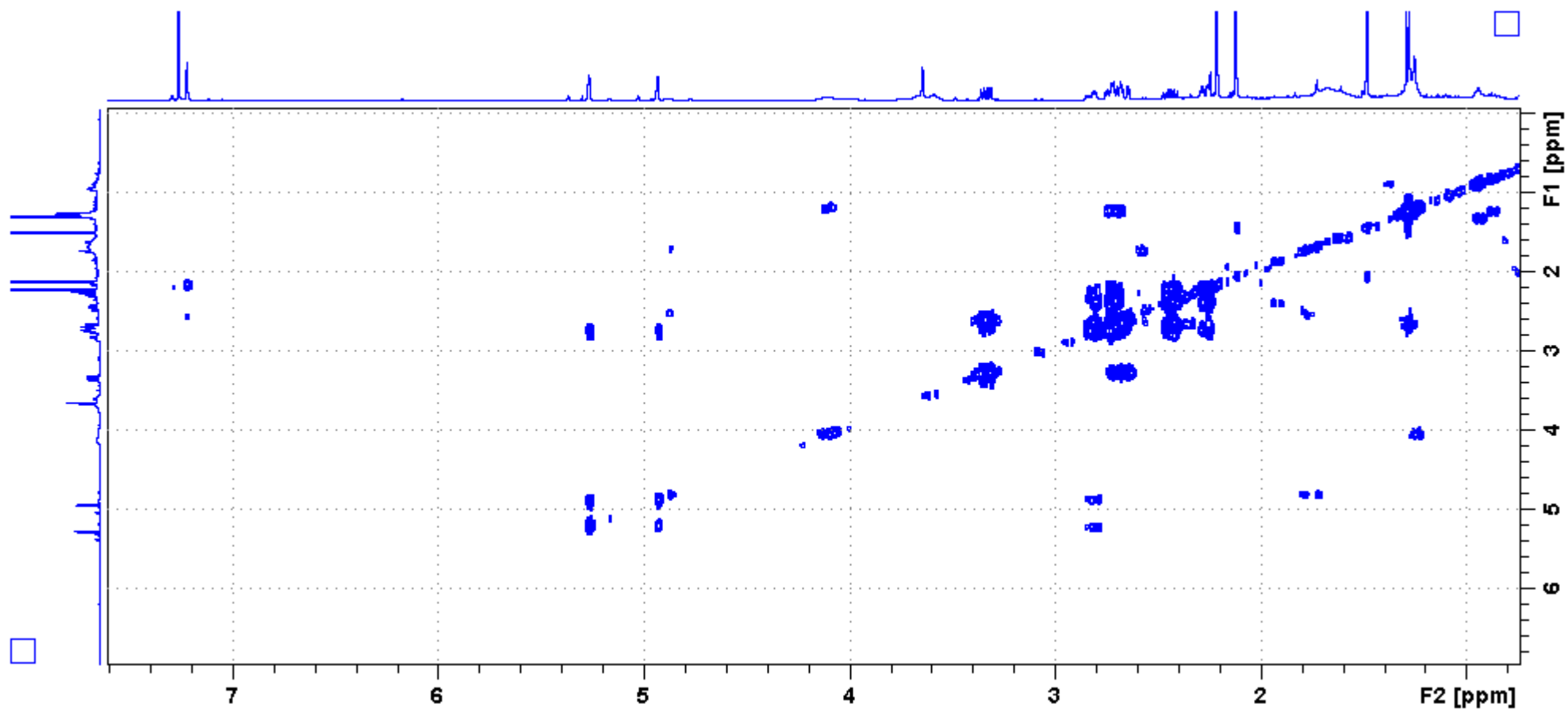


Figure S2.23: COSY spectrum for compound 3 in  $\text{CDCl}_3$

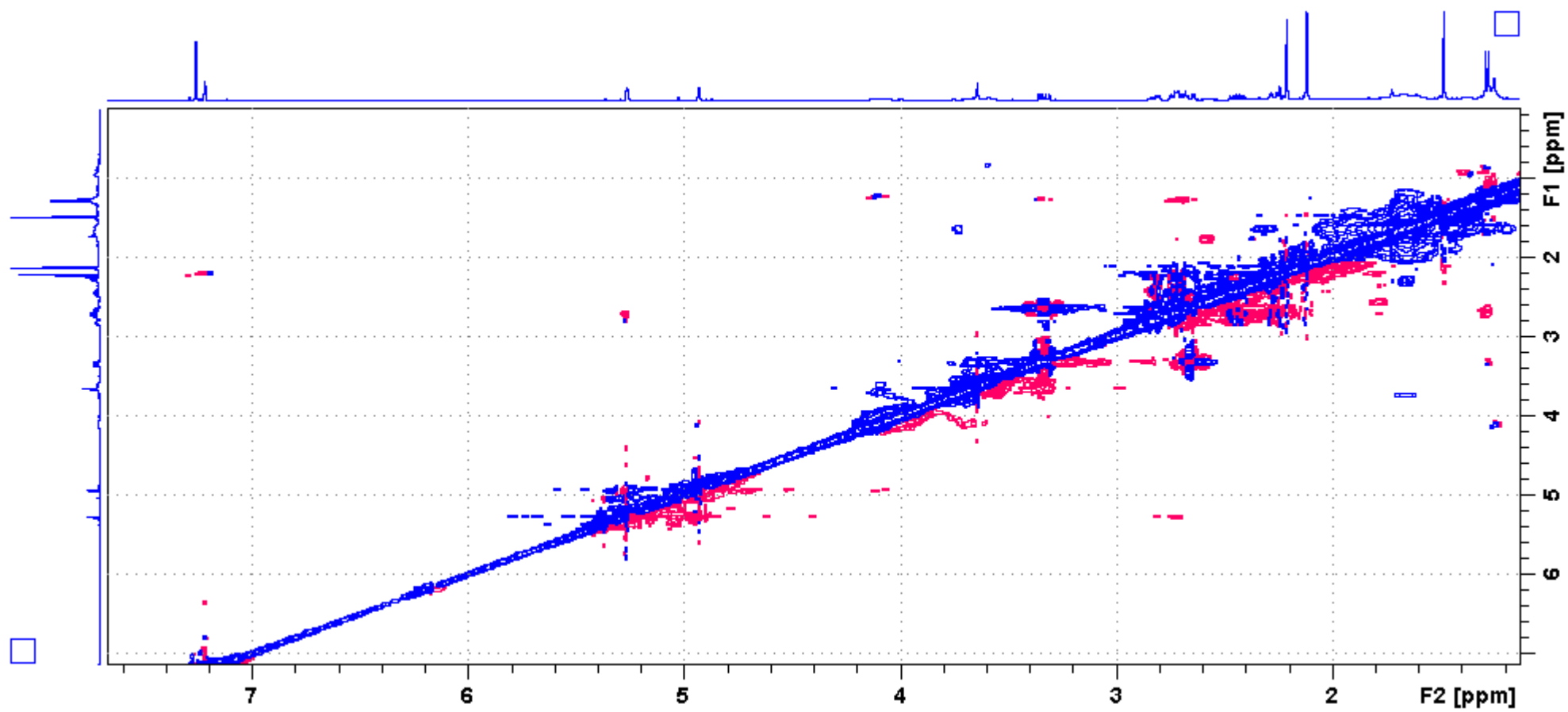
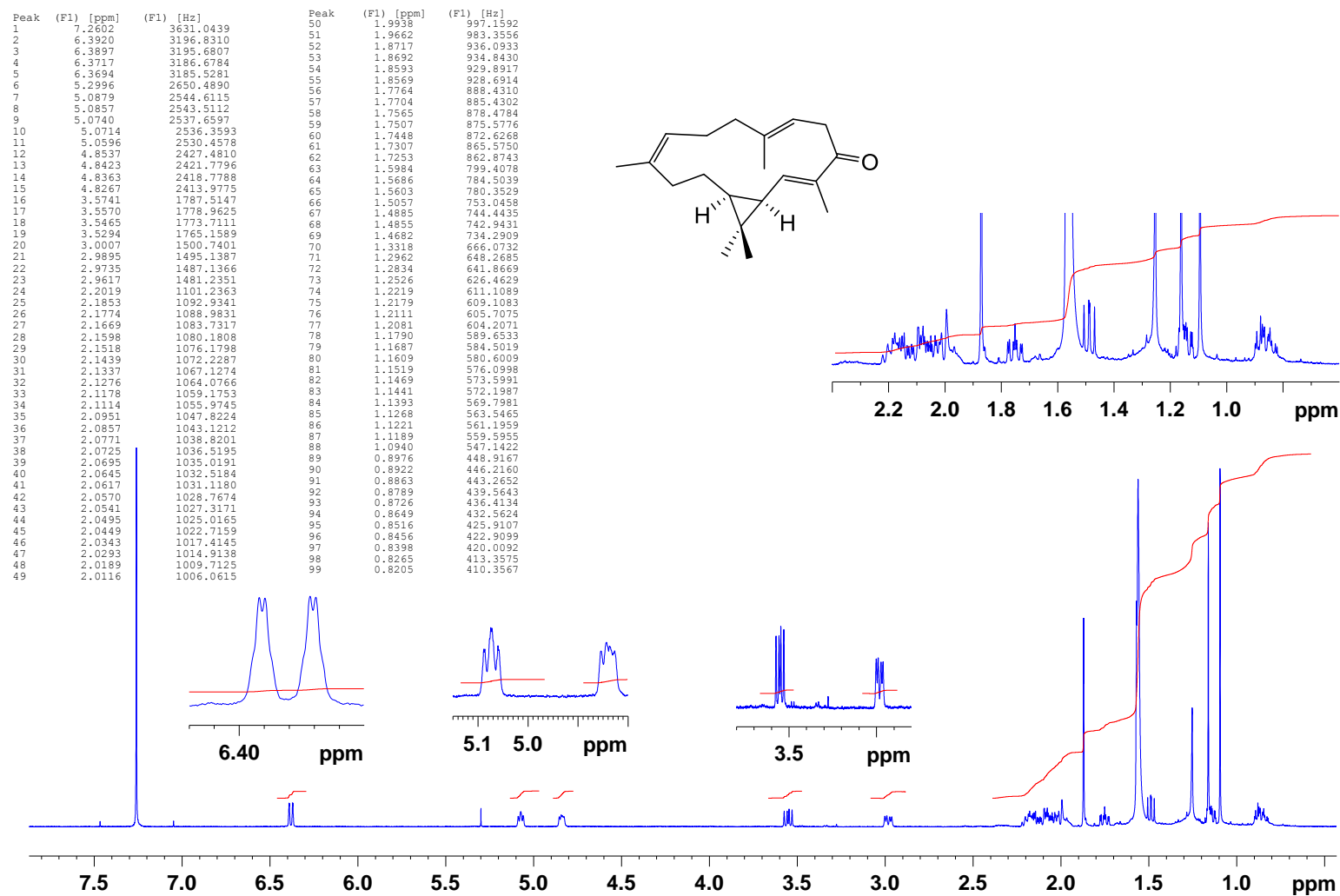
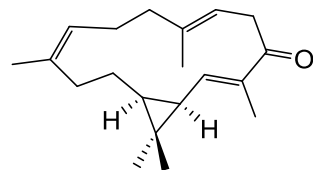


Figure S2.24: NOESY spectrum for compound 3 in  $\text{CDCl}_3$





Peak	(F1) [ppm]	(F1) [Hz]
1	200.1269	25167.5111
2	143.4223	18036.4675
3	137.3821	17276.8655
4	136.8626	17211.5343
5	136.1489	17121.7810
6	124.6215	15672.1210
7	119.6442	15046.1869
8	77.4828	9744.0635
9	77.2288	9712.1211
10	76.9748	9680.1786
11	40.1351	5047.3004
12	39.6099	4981.2524
13	39.2598	4937.2246
14	35.4750	4461.2566
15	29.9232	3763.0747
16	29.2058	3672.8561
17	27.8932	3507.7864
18	26.5225	3335.4103
19	25.6630	3227.3215
20	24.1290	3034.4090
21	16.0830	2022.5621
22	15.8509	1993.3737
23	15.5318	1953.2444
24	11.8785	1493.8136

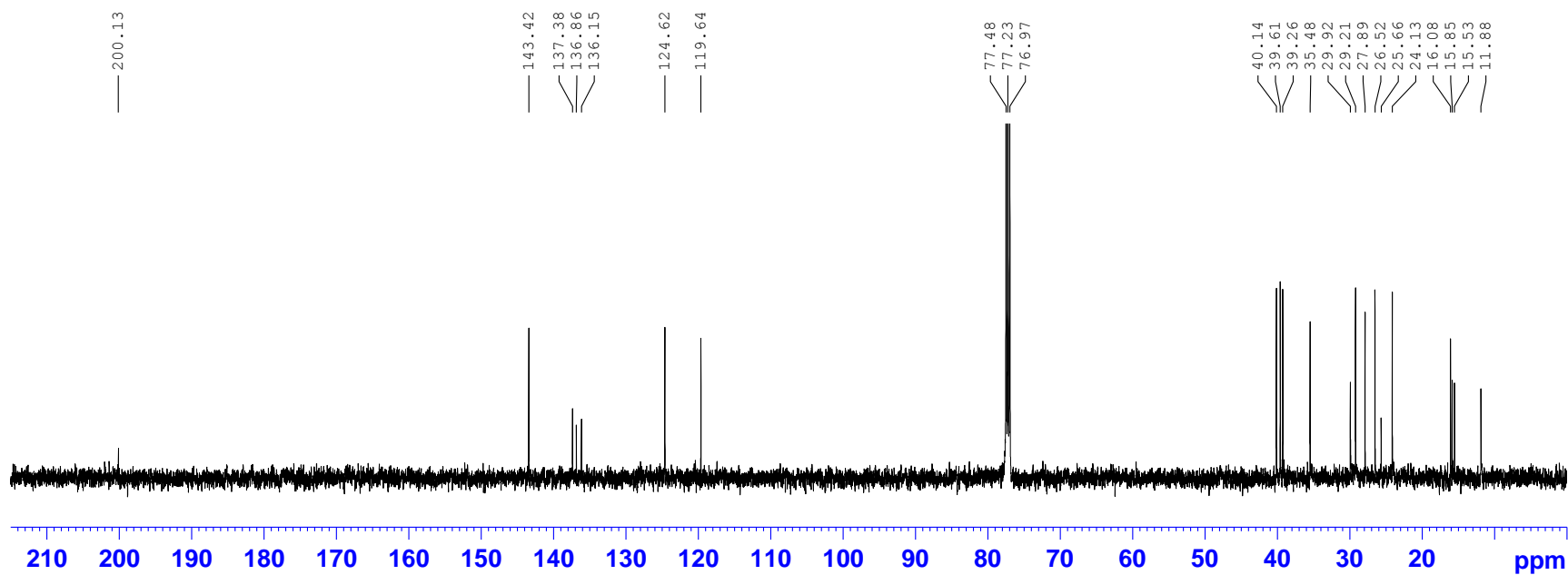


Figure S2.26:  $^{13}\text{C}$  NMR spectrum for compound 4 in  $\text{CDCl}_3$



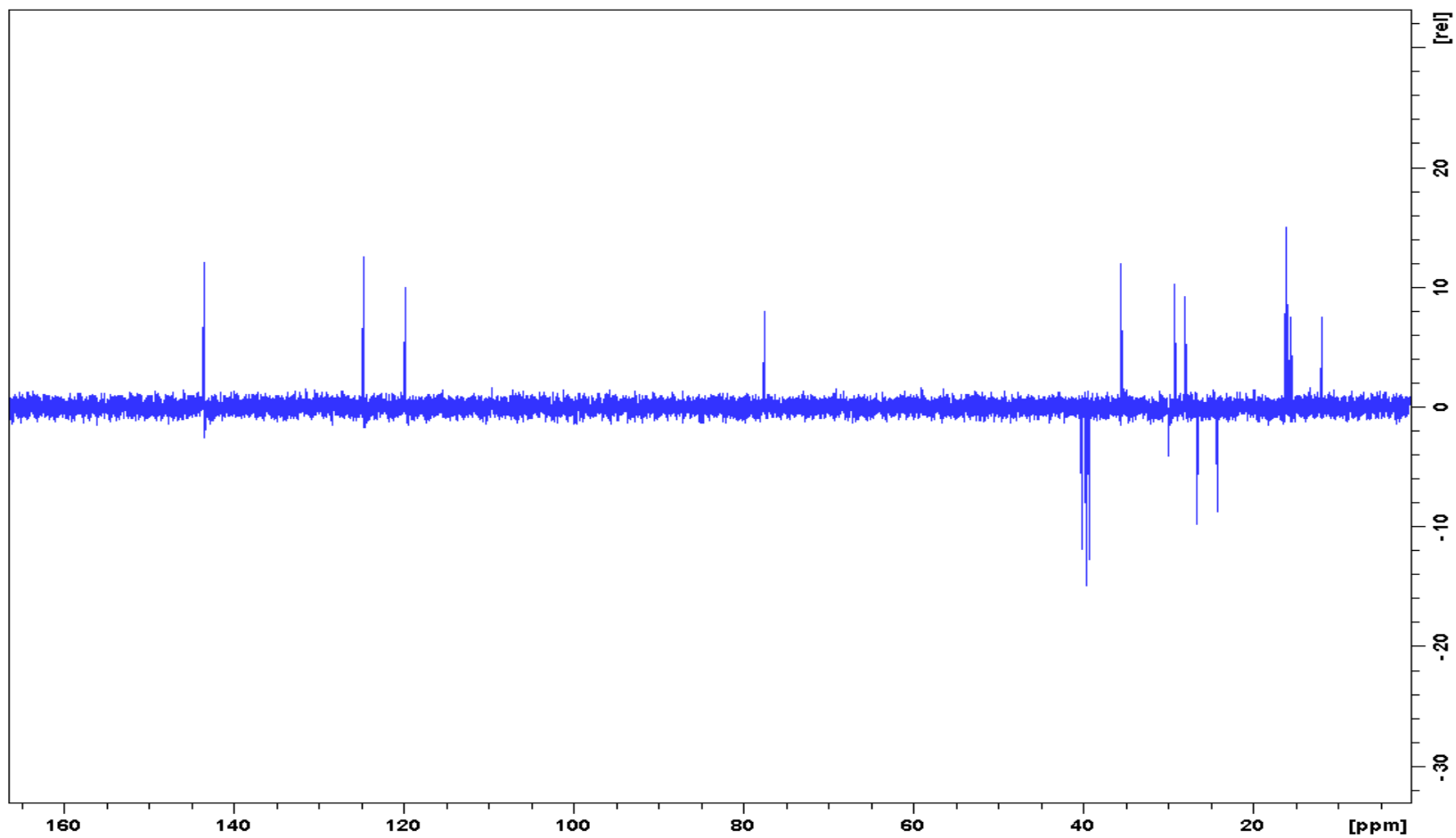


Figure S2.27: DEPT spectrum for compound 4 in CDCl<sub>3</sub>

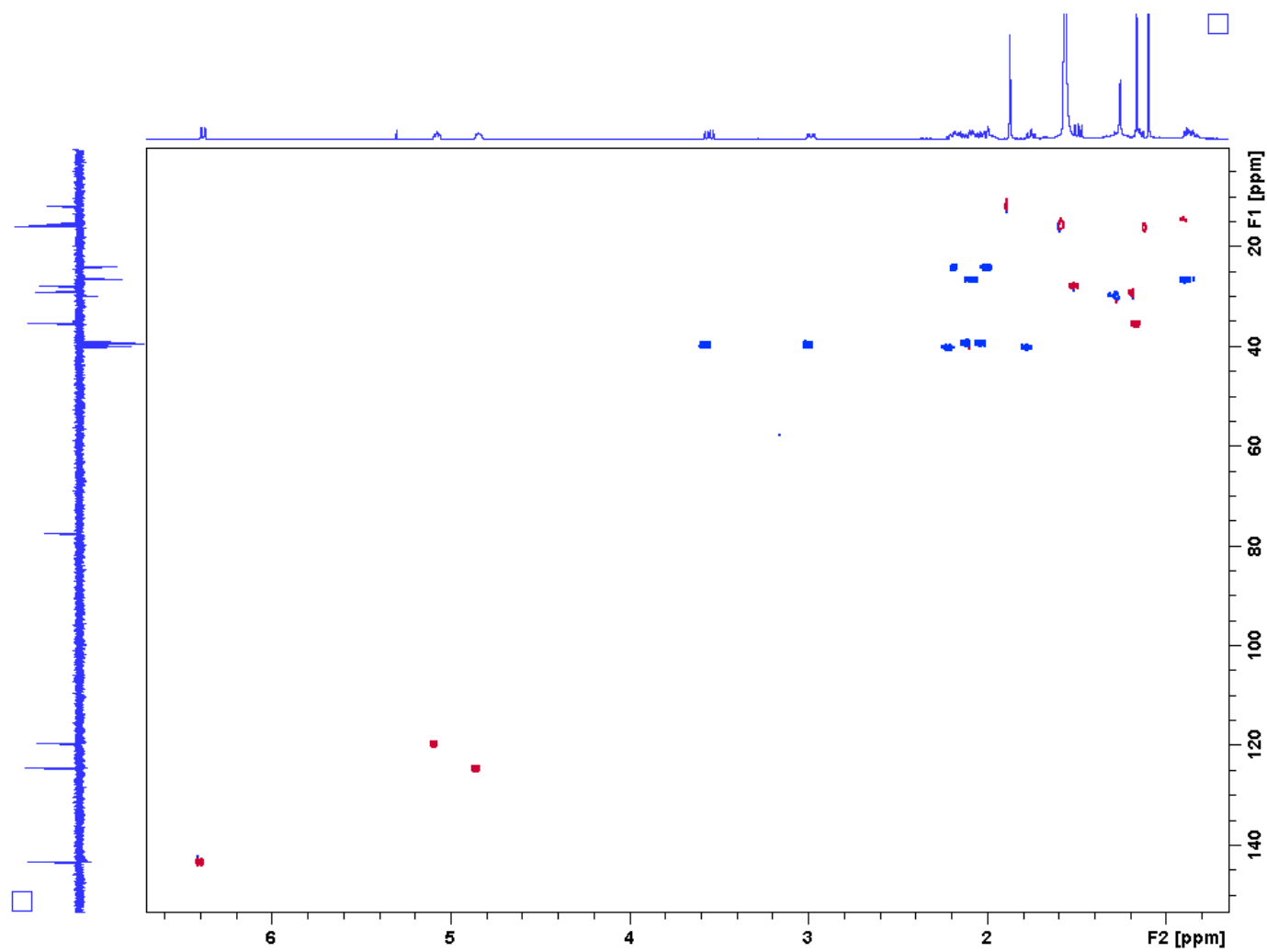


Figure S2.28: HSQCDEPT spectrum for compound 4 in CDCl<sub>3</sub>

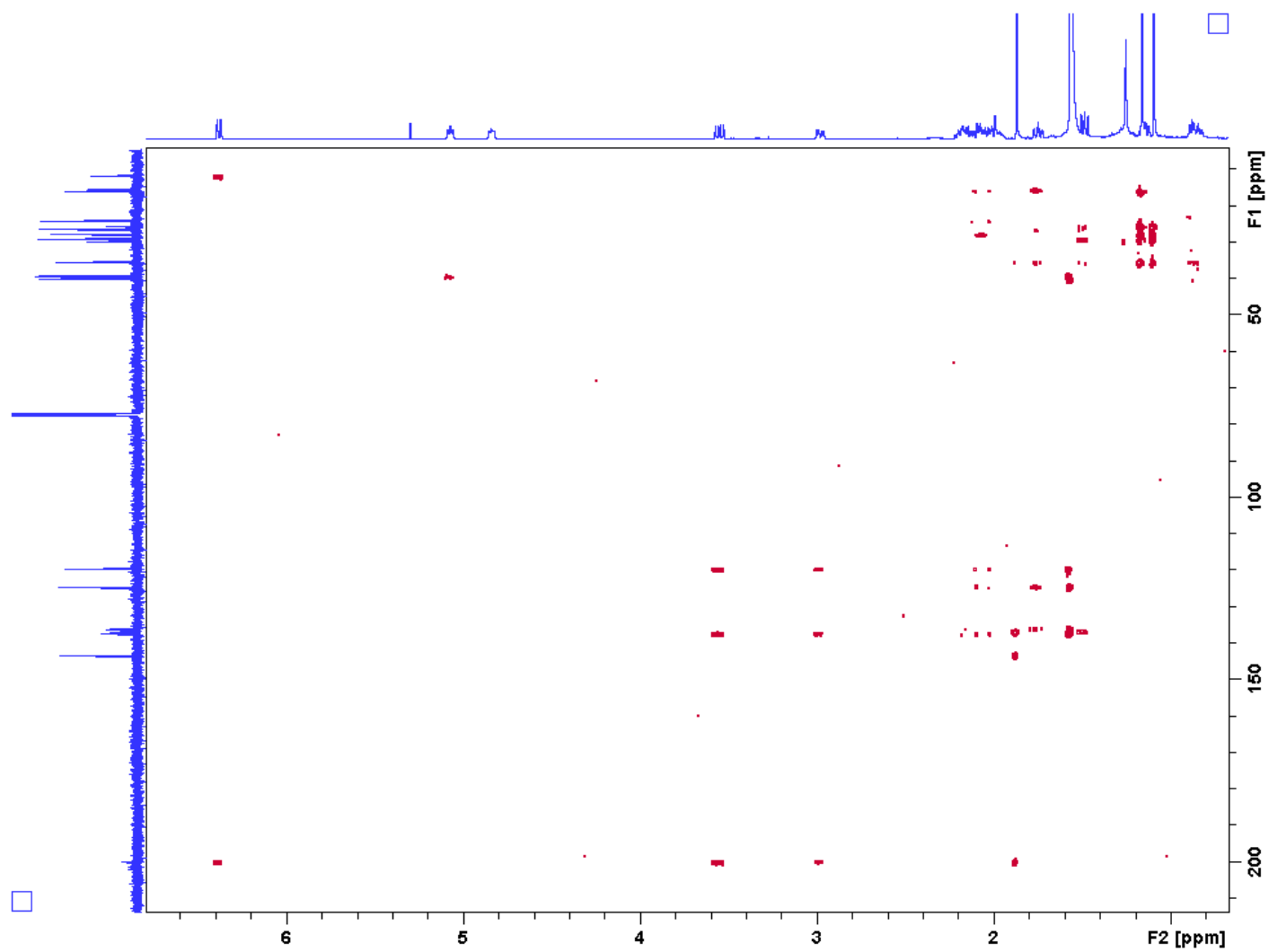


Figure S2.29: HMBC spectrum for compound 4 in CDCl<sub>3</sub>

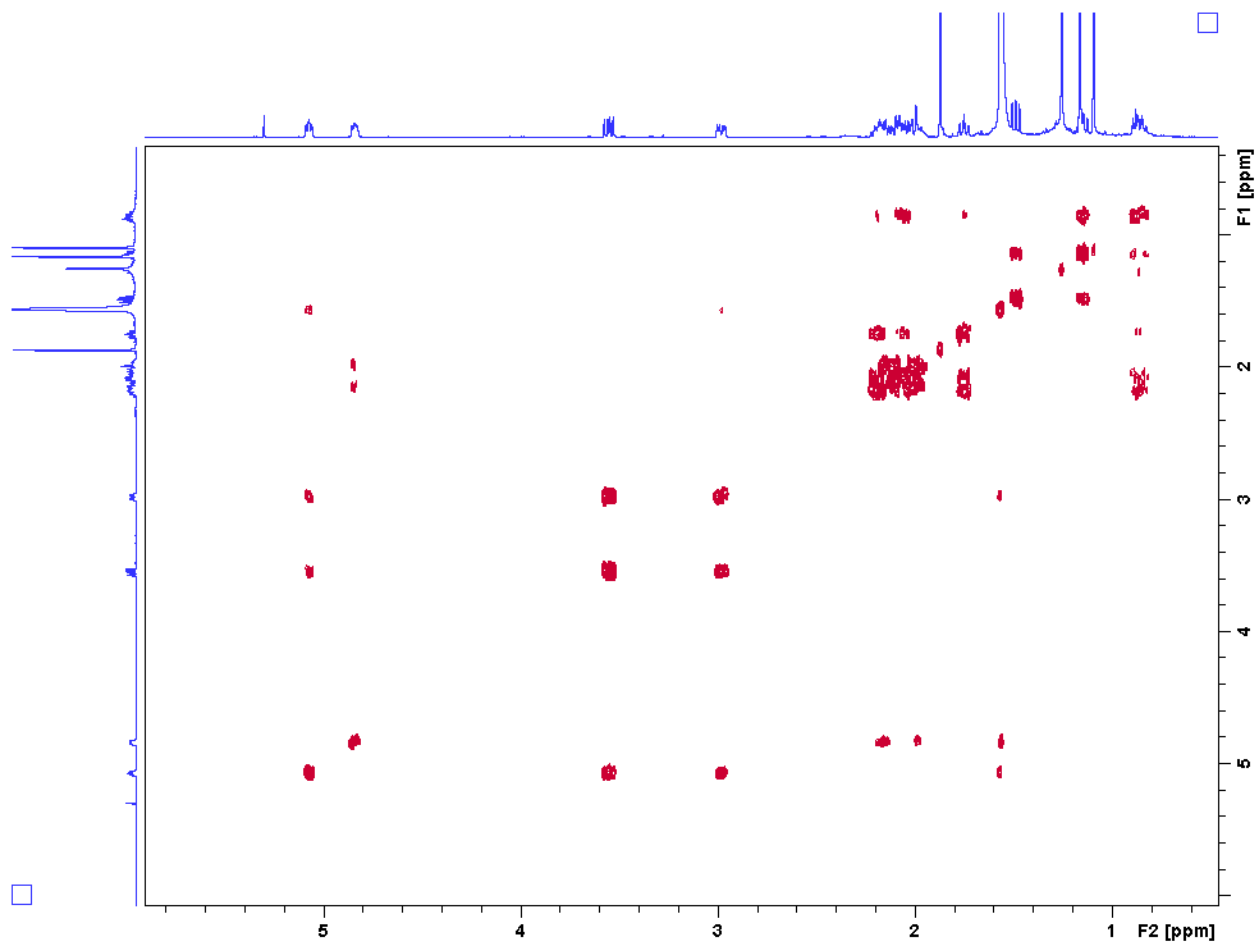


Figure S2.30: COSY spectrum for compound 4 in CDCl<sub>3</sub>

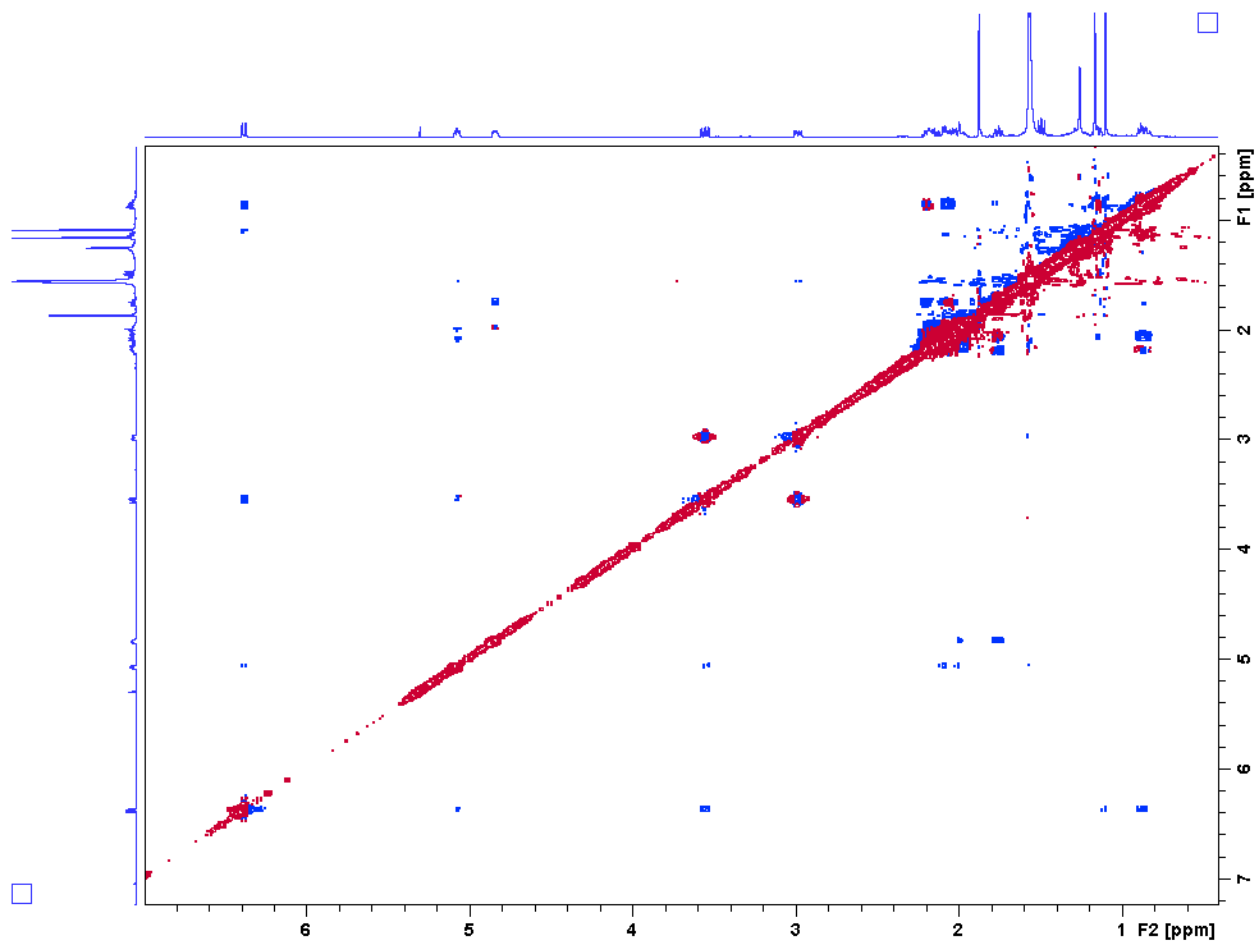


Figure S2.31: NOESY spectrum for compound 4 in CDCl<sub>3</sub>

EI MSS 15863 196 (3.251) Cm (196-2:11)

Measured Mass Spectrum TOF MS EI+  
1.03e3

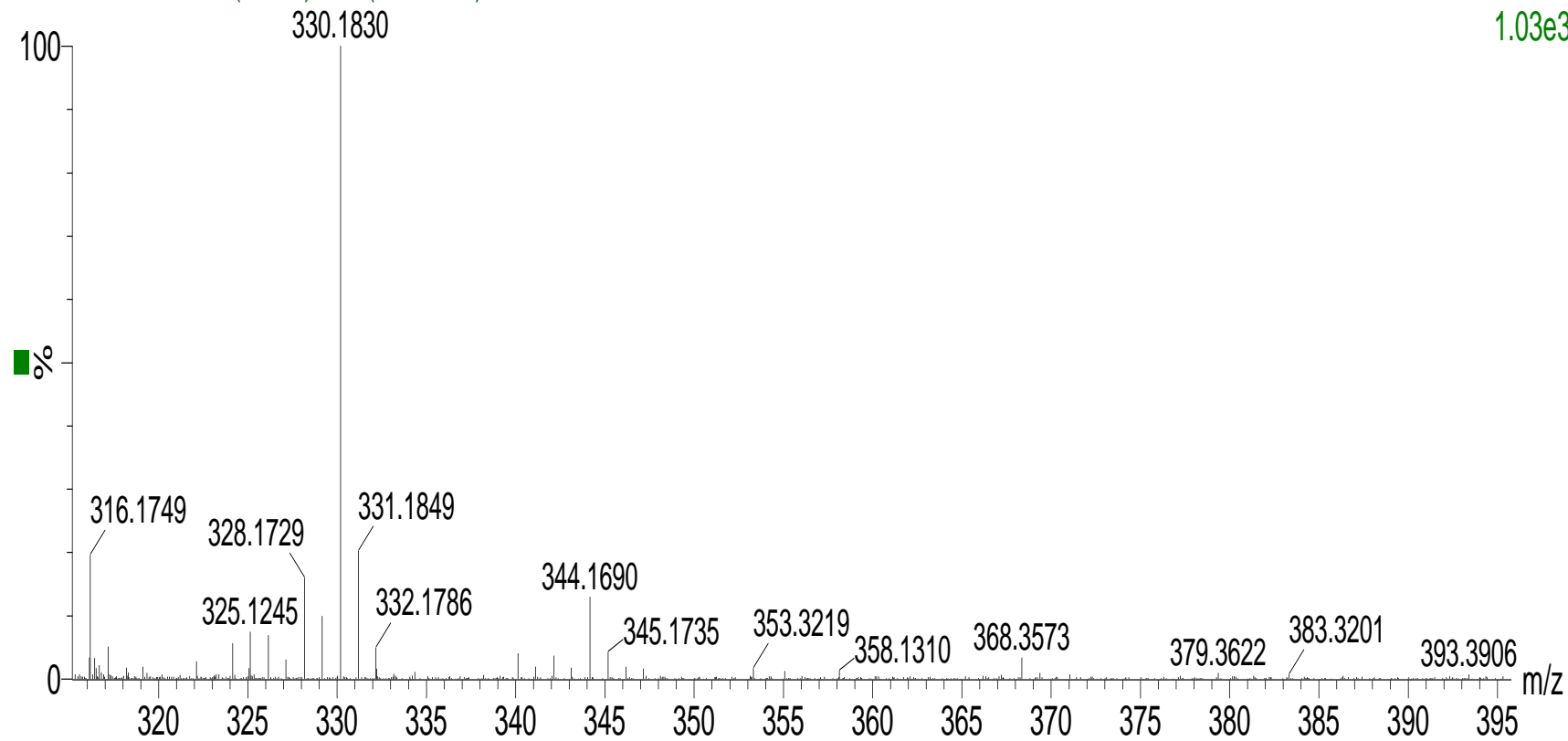
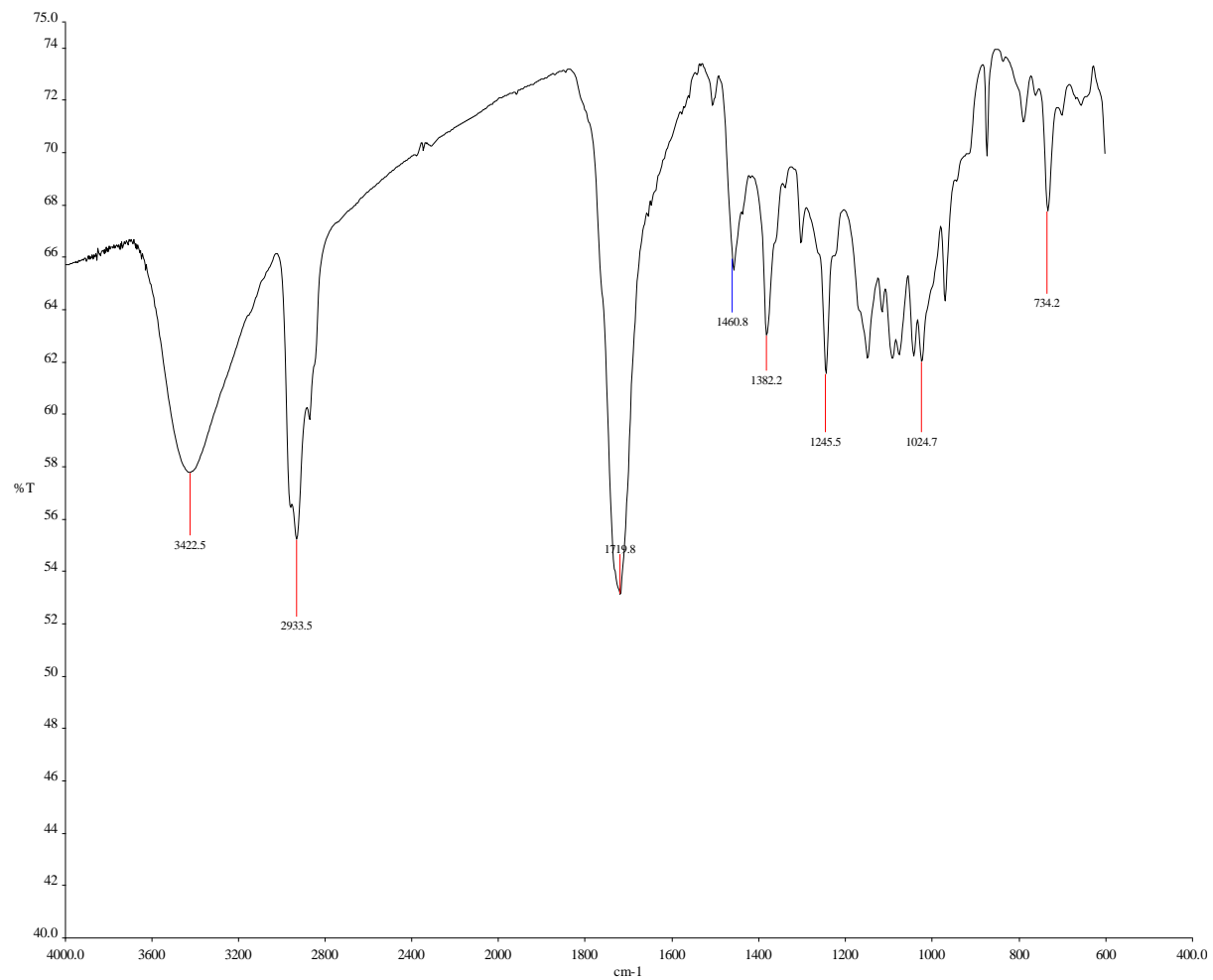


Figure S2.12: Mass spectrum for compound 5



**Figure S2.33: FTIR spectrum for compound 5**

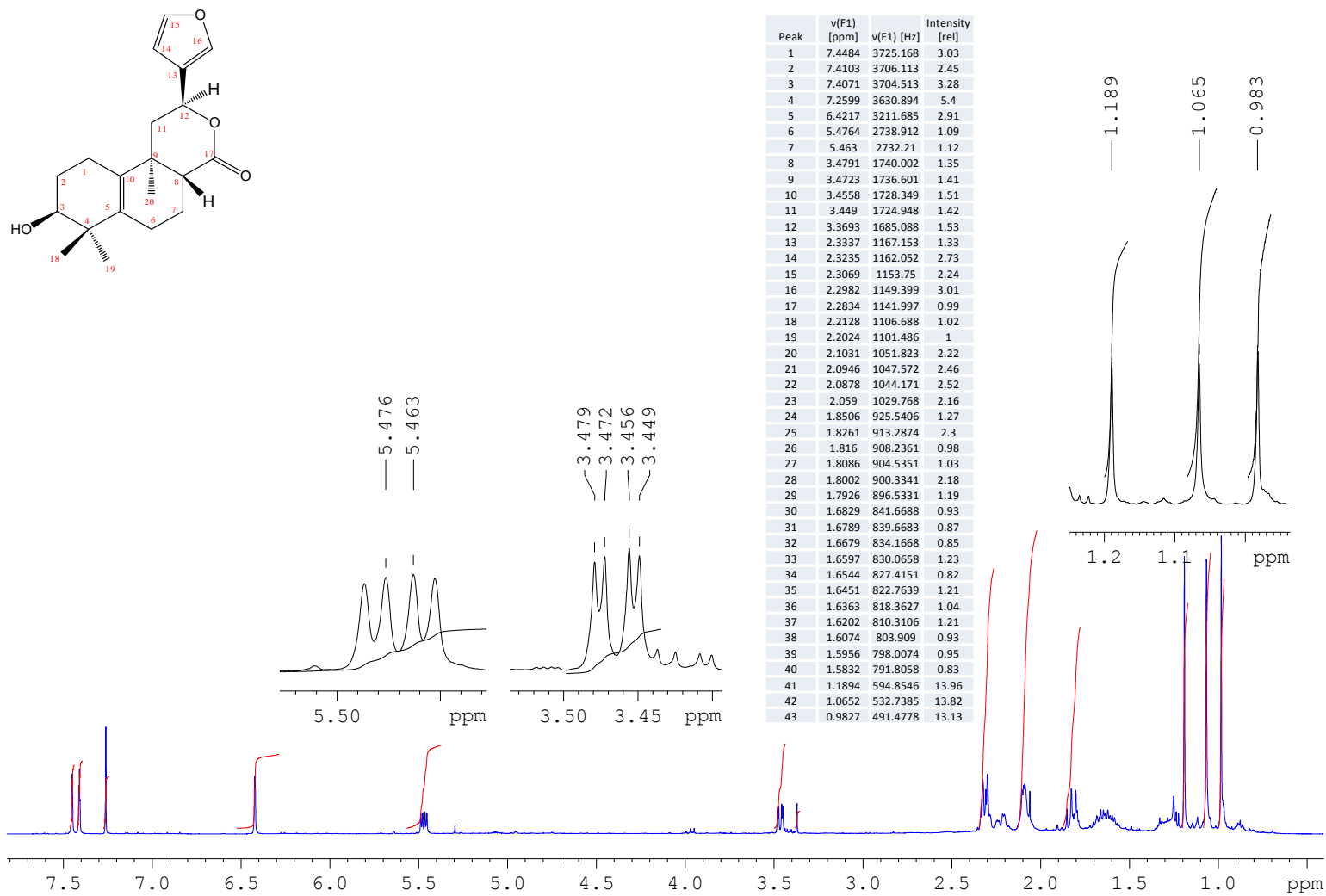
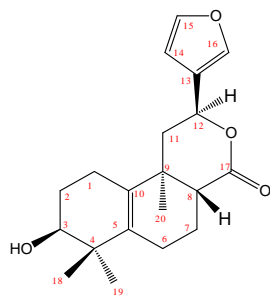


Figure S2.34:  $^1\text{H}$  NMR spectrum for compound 5 in  $\text{CDCl}_3$





Peak	v(F1) [ppm]	v(F1) [Hz]	Intensity [rel]
1	172.8281	21734.48	0.71
2	143.9198	18099.03	1.48
3	139.682	17566.1	1.45
4	135.1409	16995.02	0.8
5	132.0563	16607.11	0.73
6	125.9022	15833.18	0.78
7	108.752	13676.41	1.41
8	77.4834	9744.139	14.75
9	77.2294	9712.197	15
10	76.9753	9680.242	14.8
11	75.8698	9541.216	1.4
12	72.3768	9101.945	1.27
13	48.3476	6080.086	1.42
14	41.1239	5171.65	1.21
15	39.8084	5006.215	1.17
16	37.0166	4655.125	1.08
17	27.3114	3434.621	1.3
18	25.0405	3149.037	1.27
19	24.5046	3081.644	1.3
20	24.3439	3061.434	1.39
21	20.3986	2565.282	1.5
22	20.2906	2551.701	1.42
23	18.671	2348.023	1.26

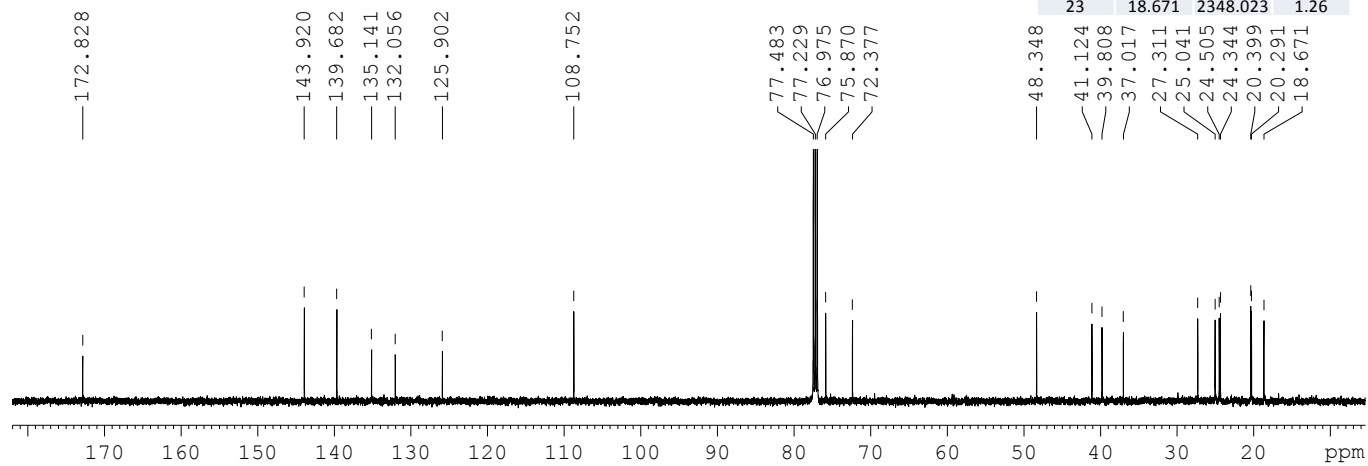


Figure S2.35:  $^{13}\text{C}$  NMR spectrum for compound 5 in  $\text{CDCl}_3$

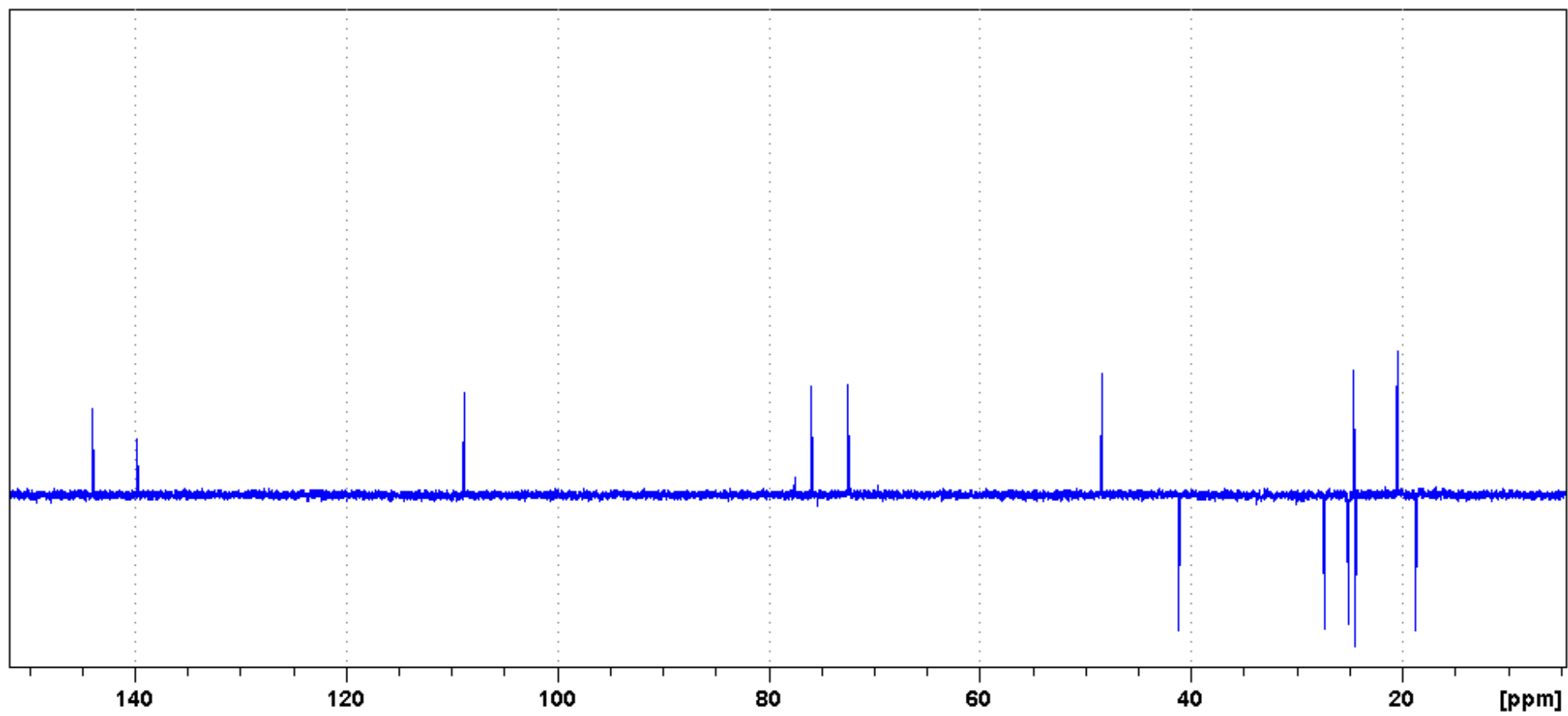


Figure S2.36: DEPT spectrum for compound 5 in CDCl<sub>3</sub>

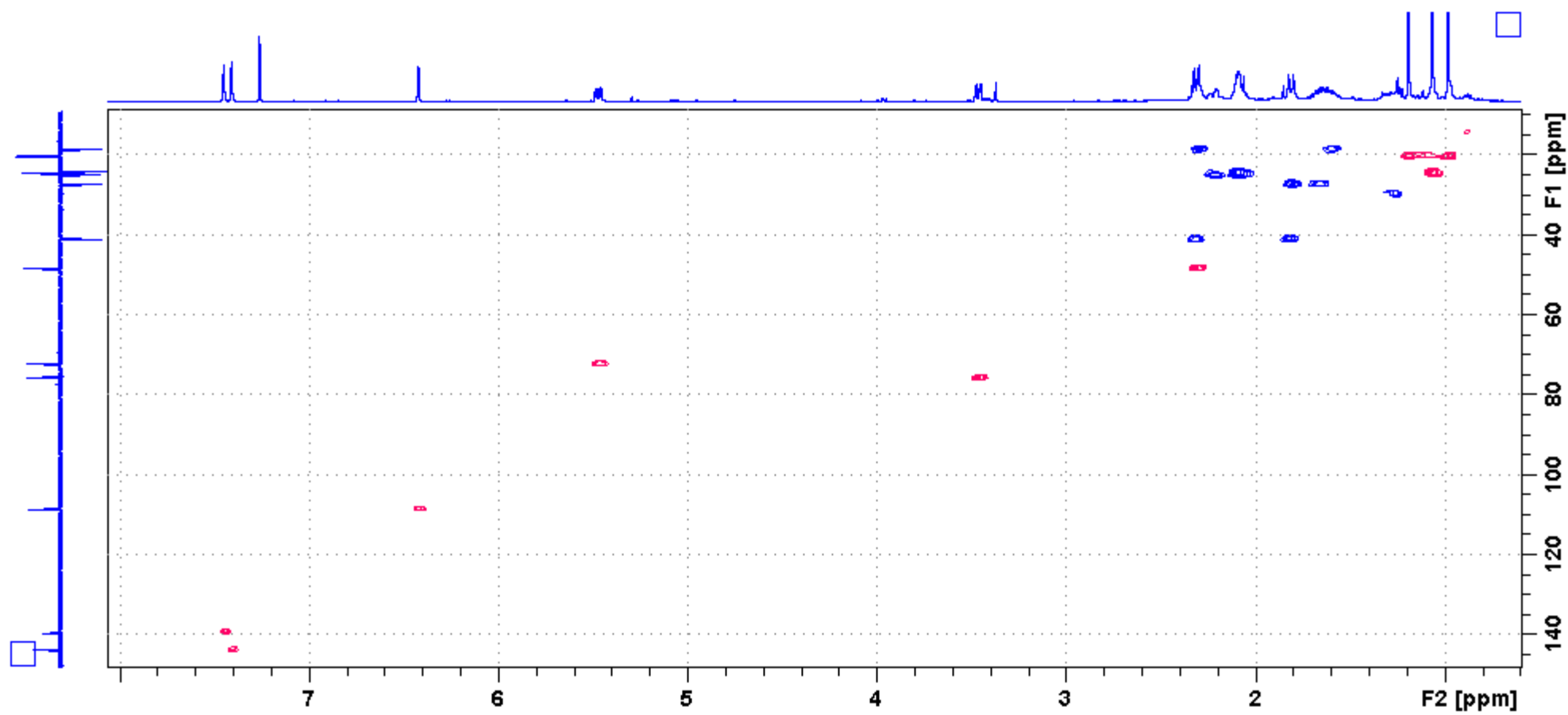


Figure S2.37: HSQCDEPT spectrum for compound 5 in CDCl<sub>3</sub>

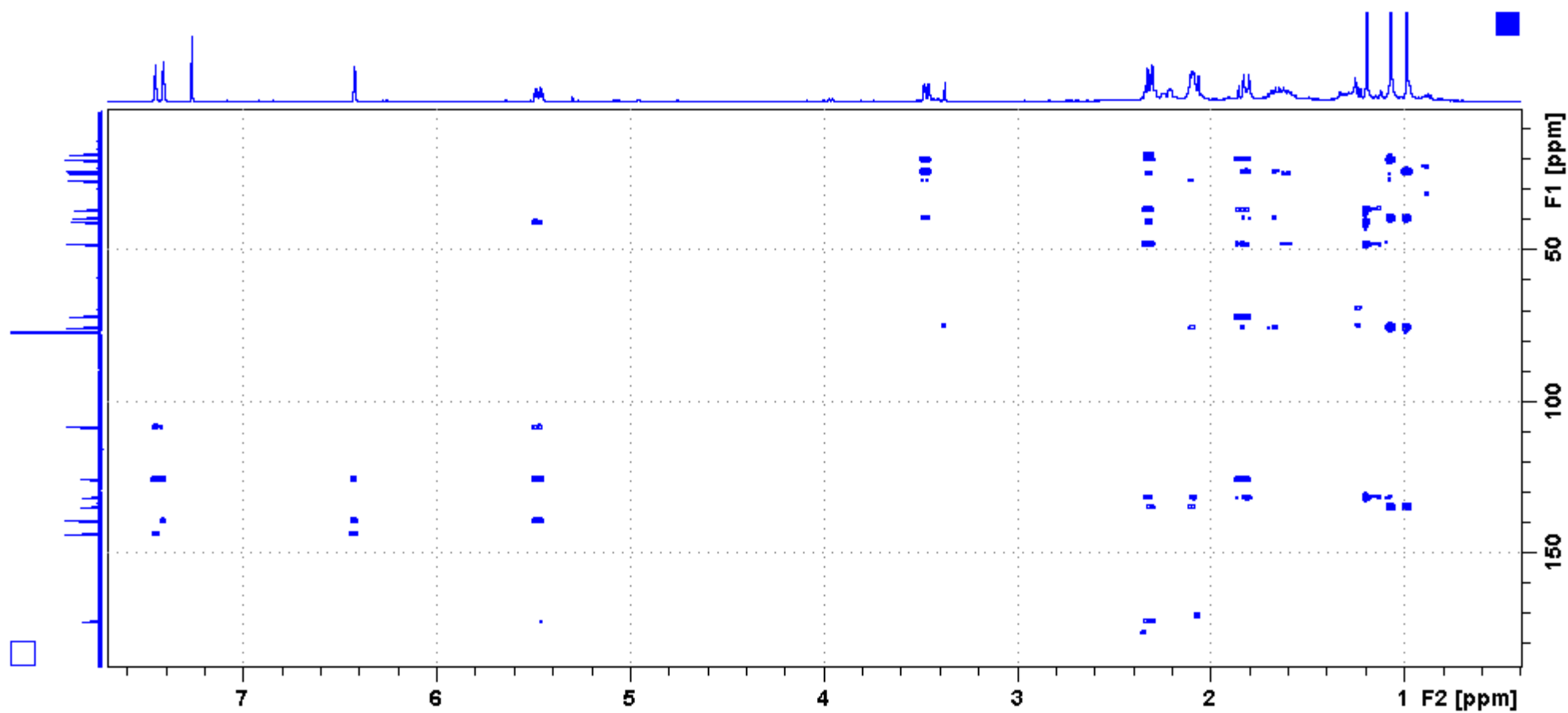


Figure S2.38: HMBC spectrum for compound 5 in CDCl<sub>3</sub>

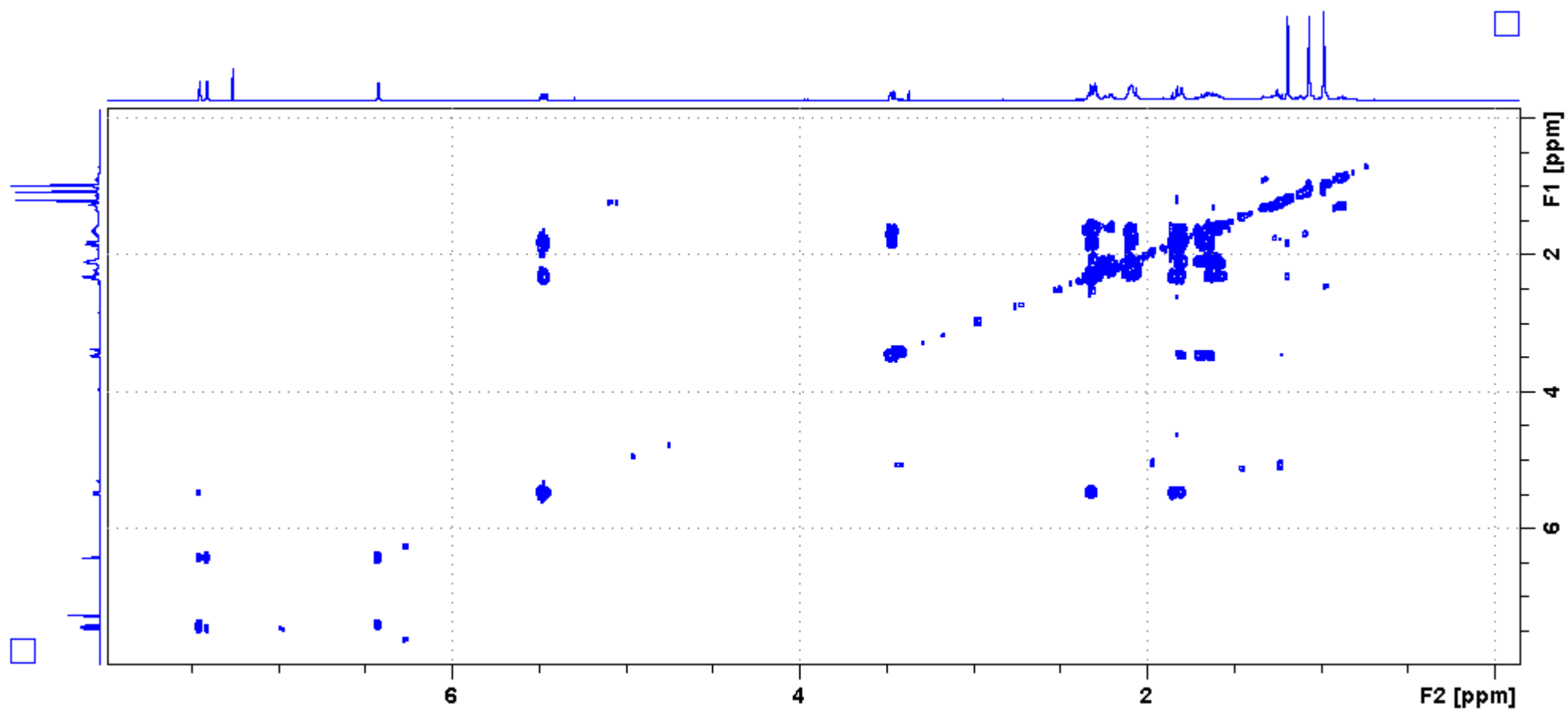


Figure S2.39: COSY spectrum for compound 5 in CDCl<sub>3</sub>

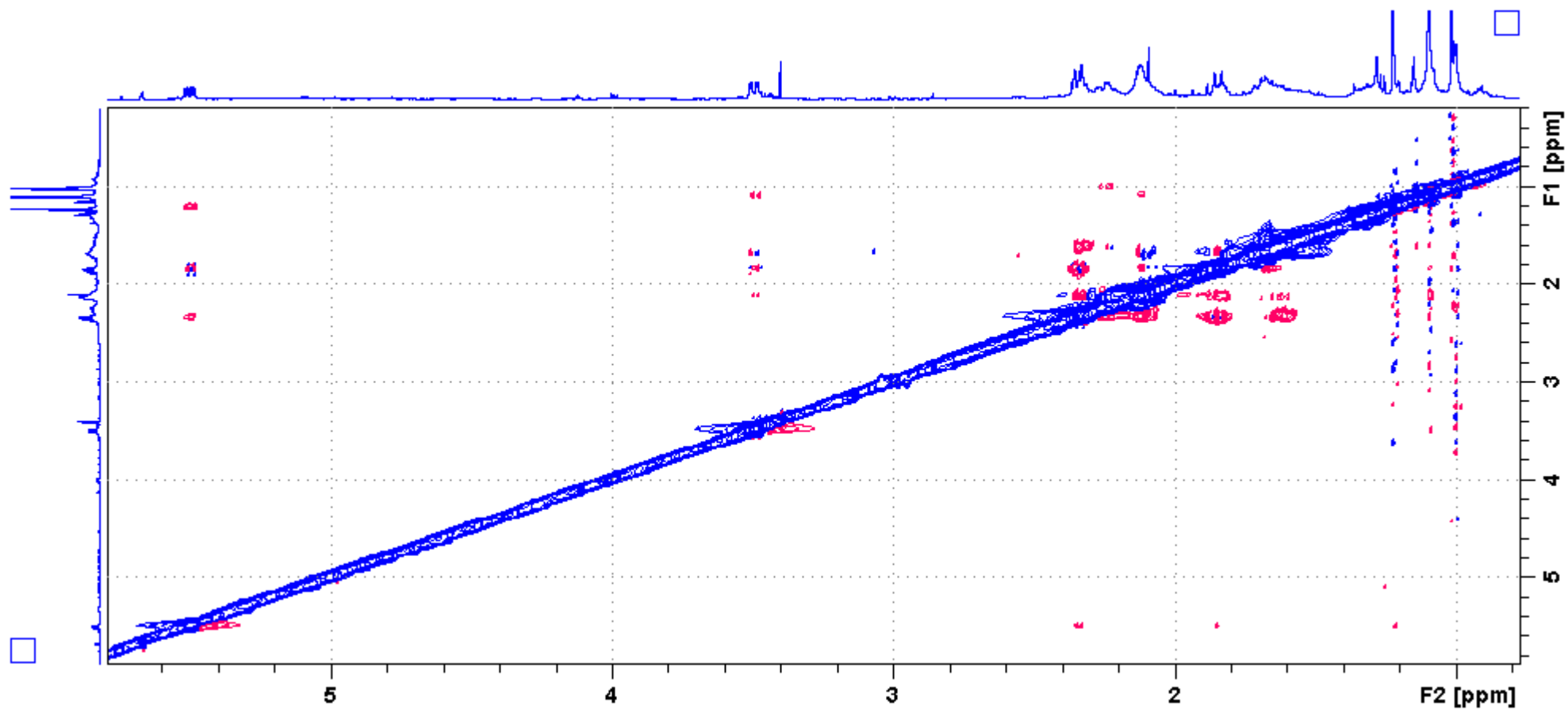


Figure S2.40: NOESY spectrum for compound 5 in CDCl<sub>3</sub>

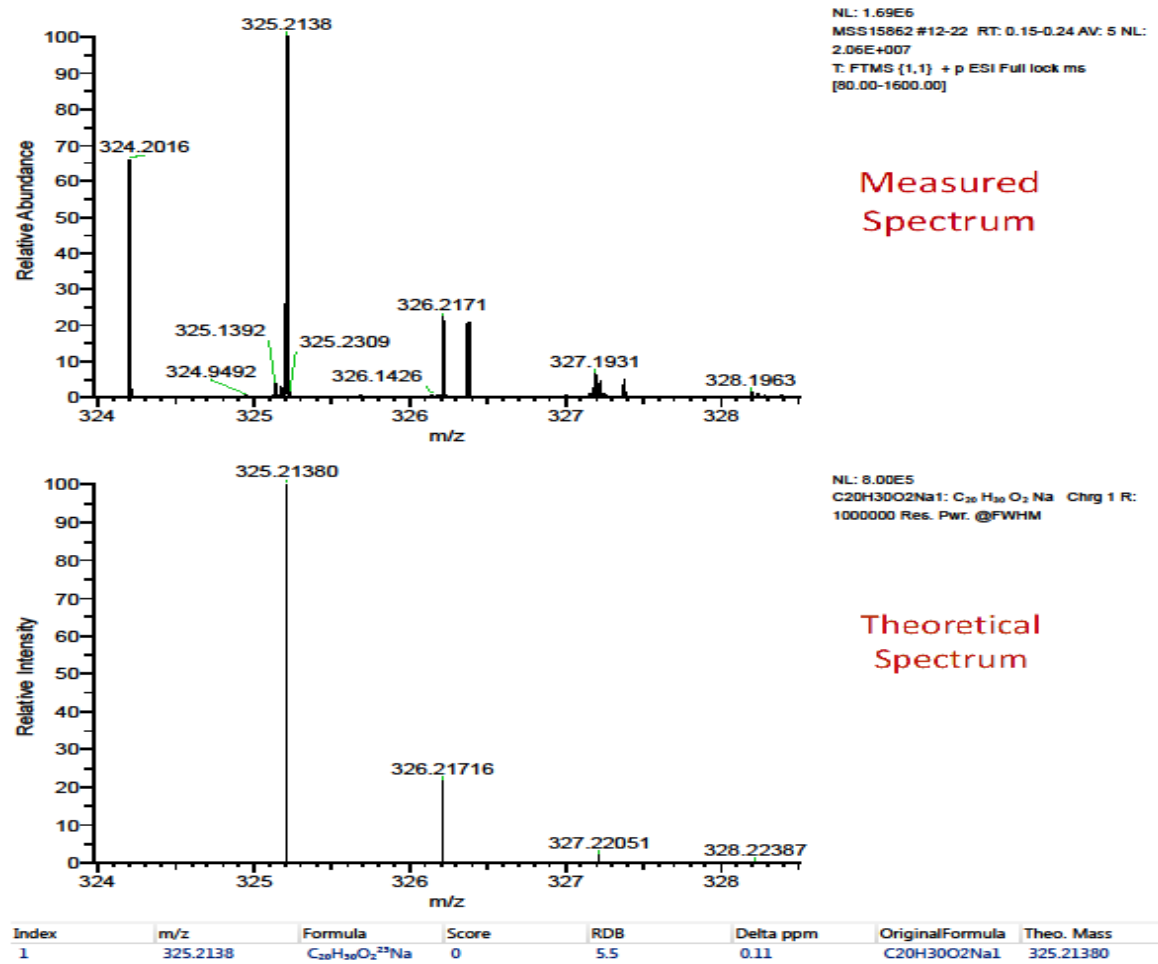
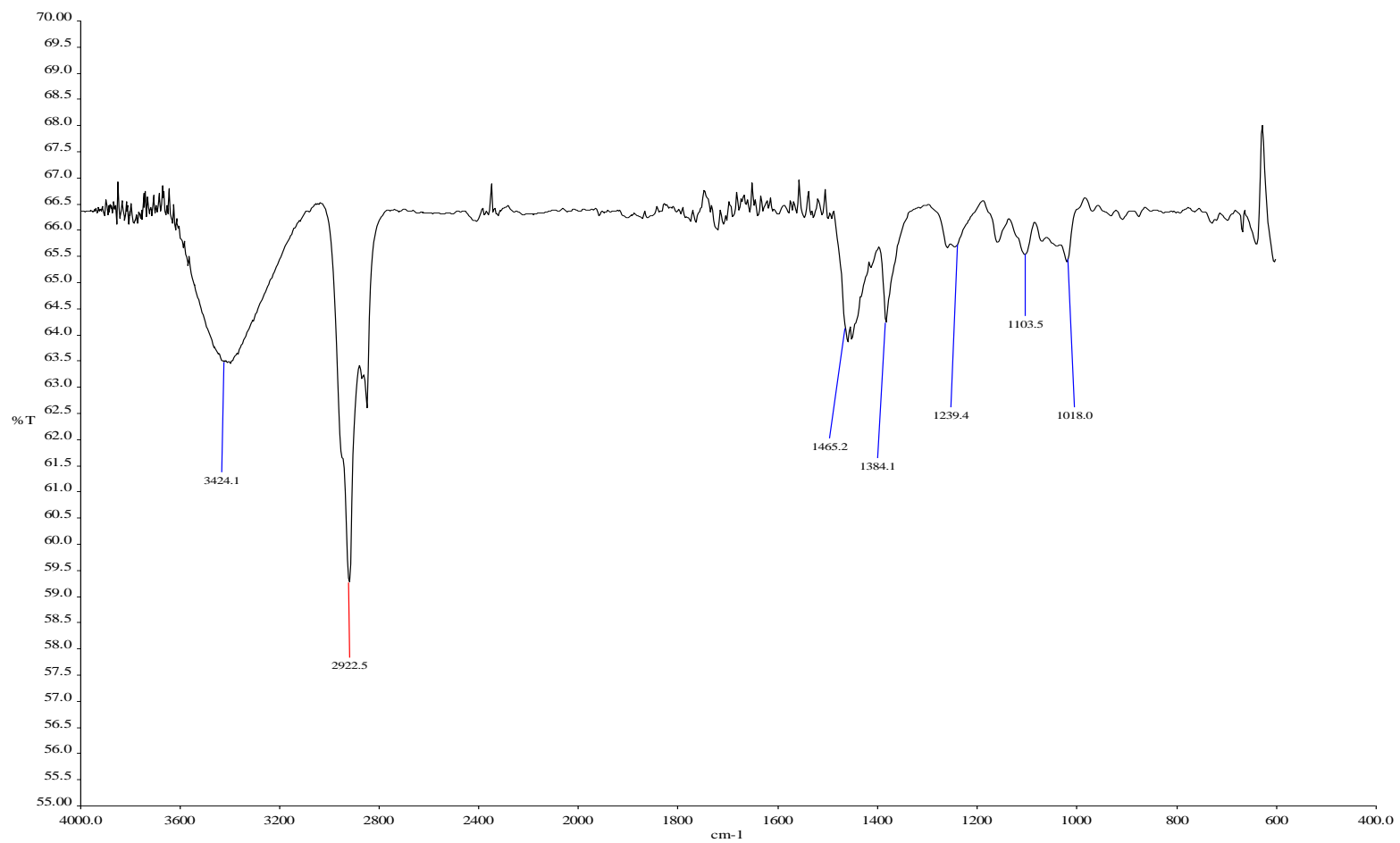


Figure S2.41: Mass spectrum for compound 6



**Figure S2.42: FTIR spectrum for compound 6**



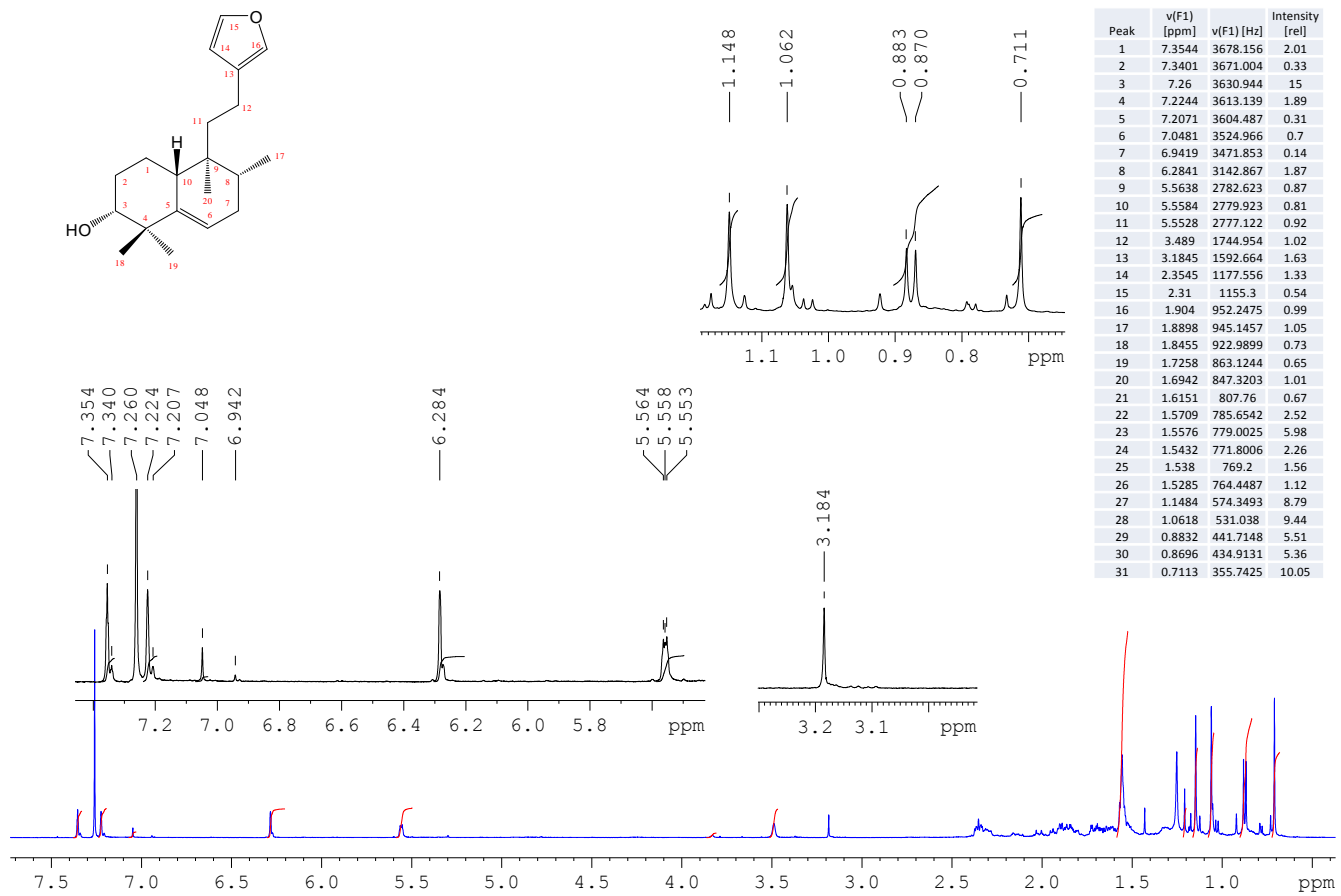


Figure S2.43:  $^1\text{H}$  NMR spectrum for compound 6 in  $\text{CDCl}_3$

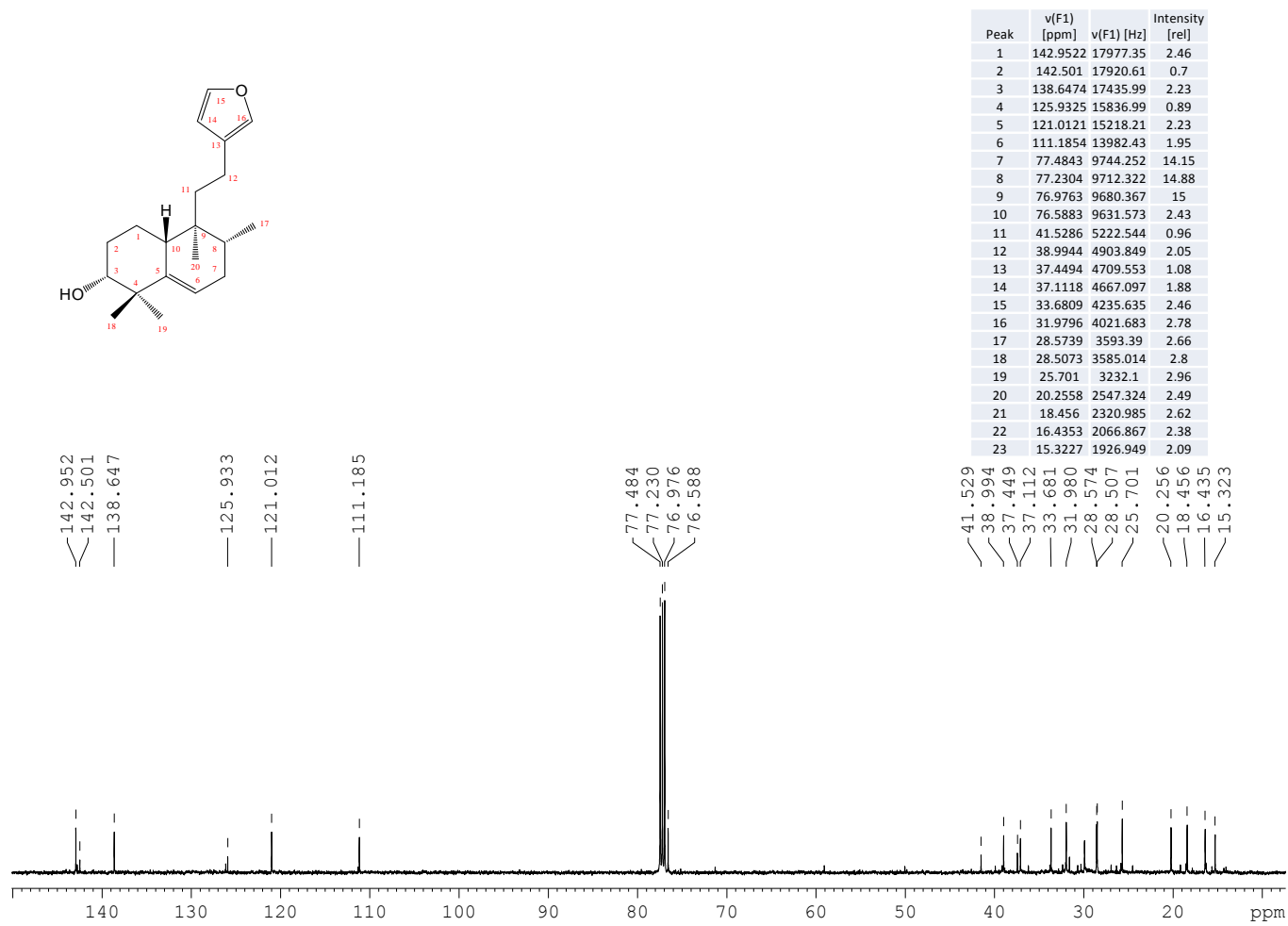


Figure S2.44:  $^{13}\text{C}$  NMR spectrum for compound 6 in  $\text{CDCl}_3$

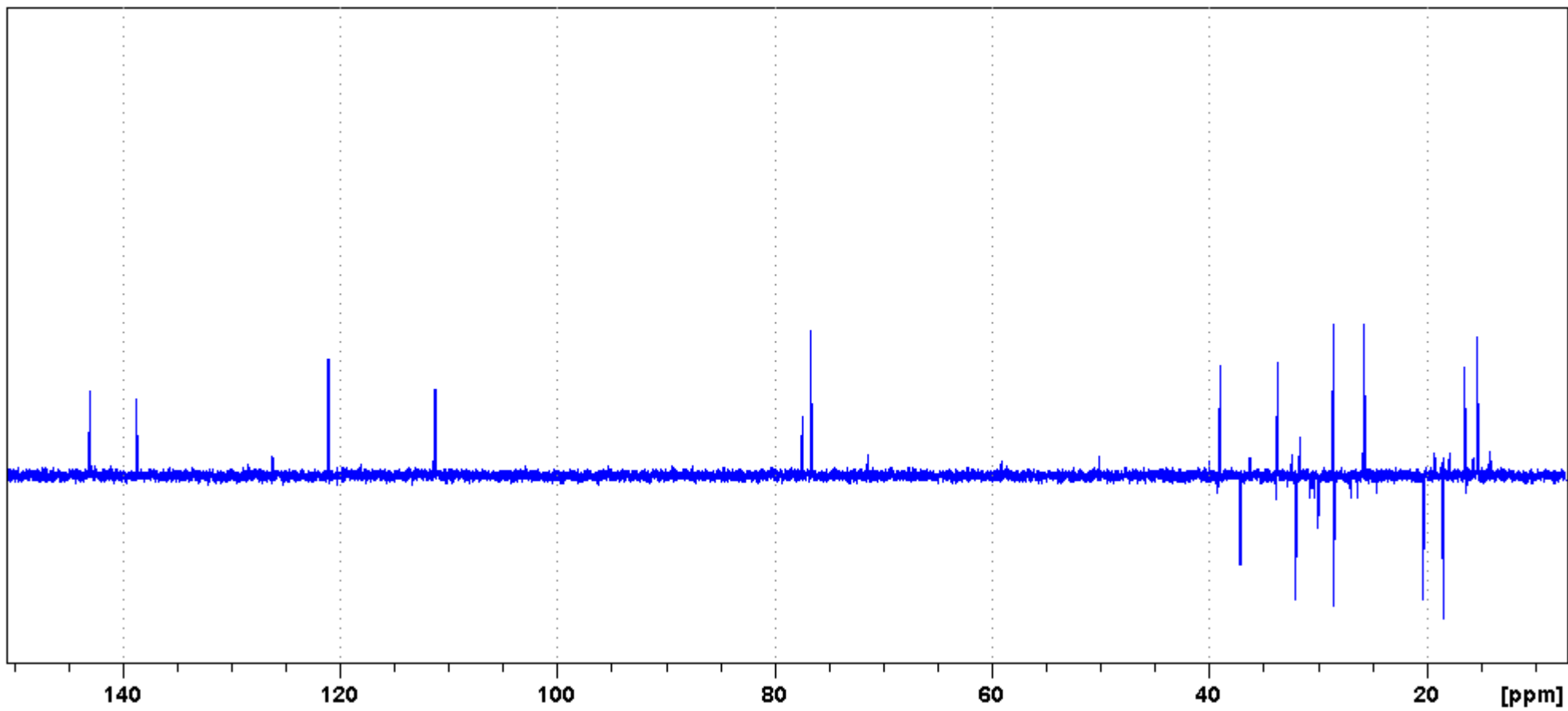


Figure S2.45: DEPT spectrum for compound 6 in CDCl<sub>3</sub>

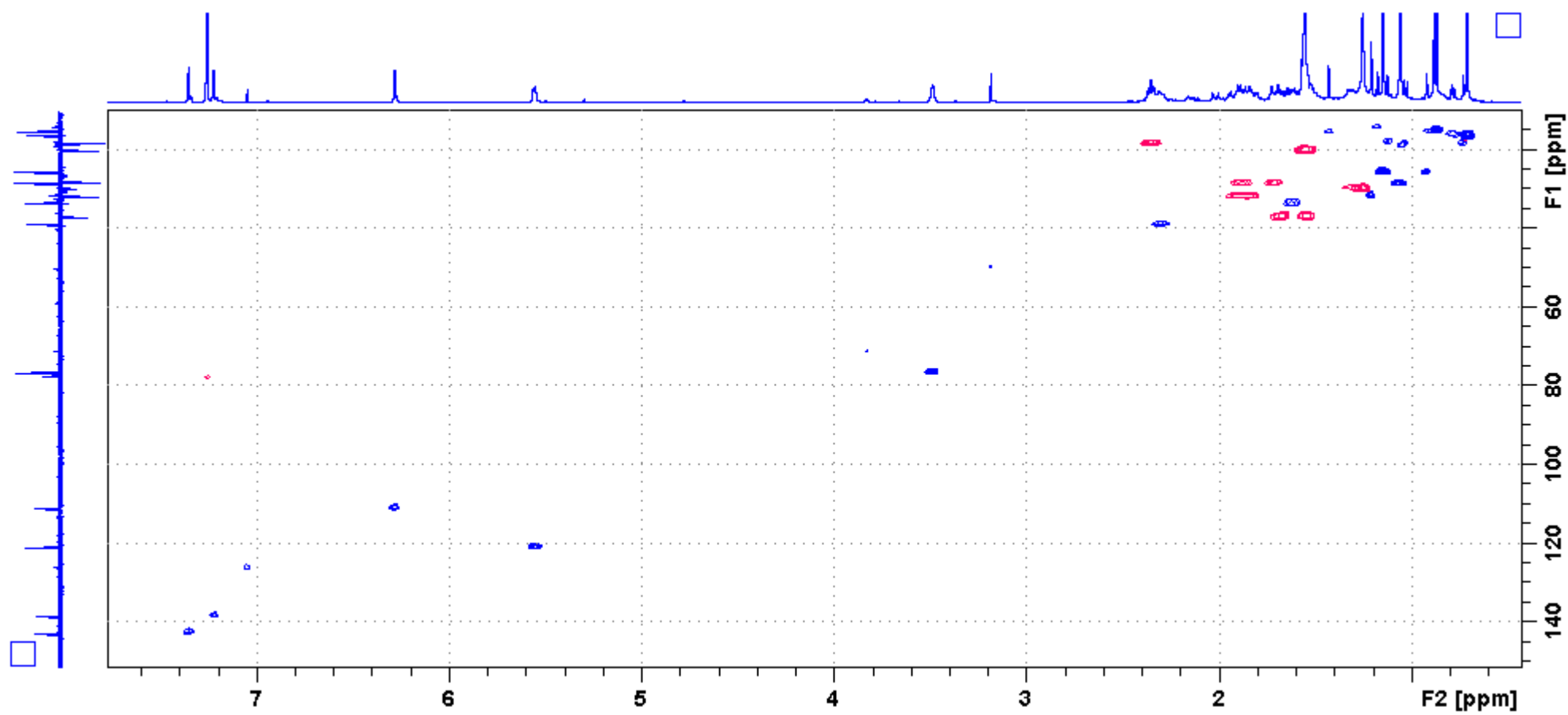


Figure S2.46: HSQCDEPT spectrum for compound 6 in CDCl<sub>3</sub>

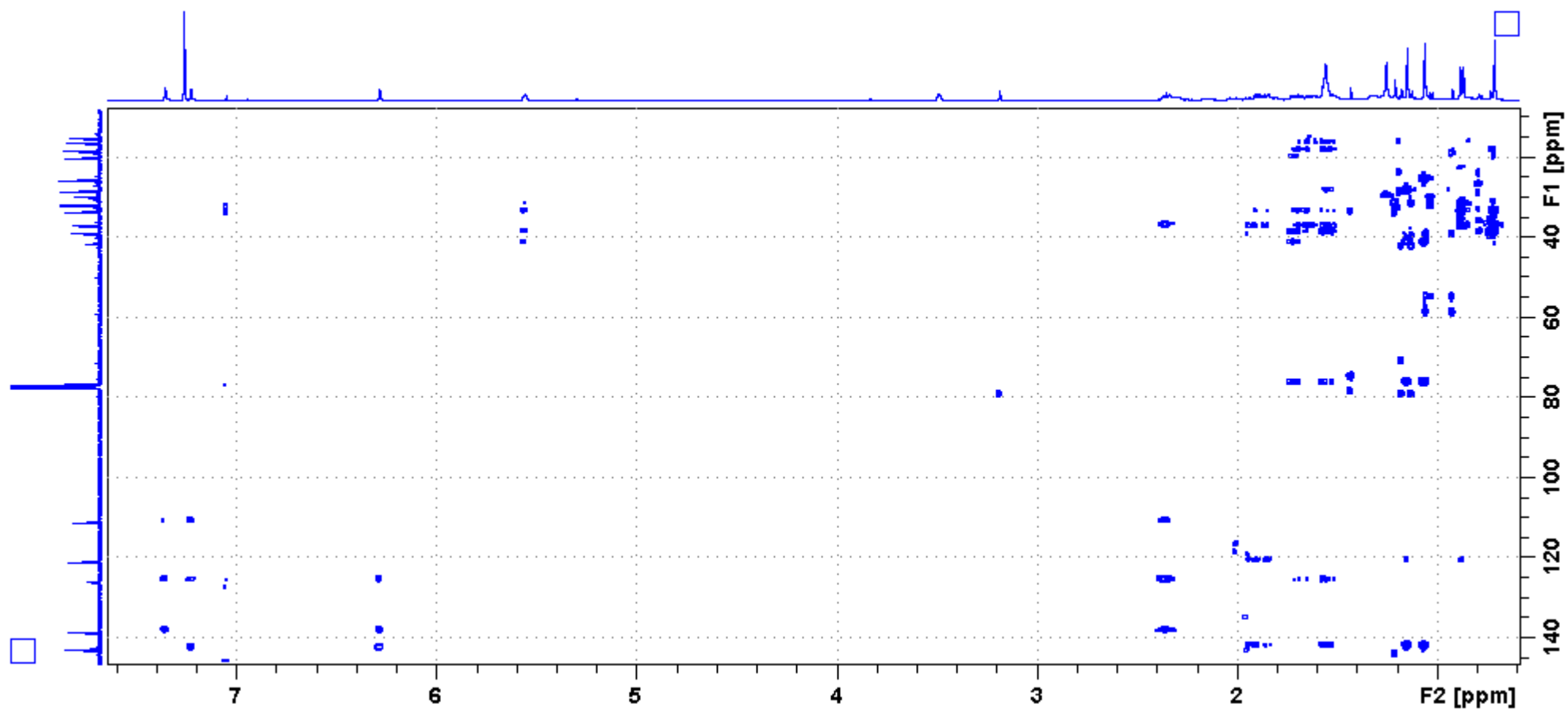


Figure S2.47: HMBC spectrum for compound 6 in CDCl<sub>3</sub>

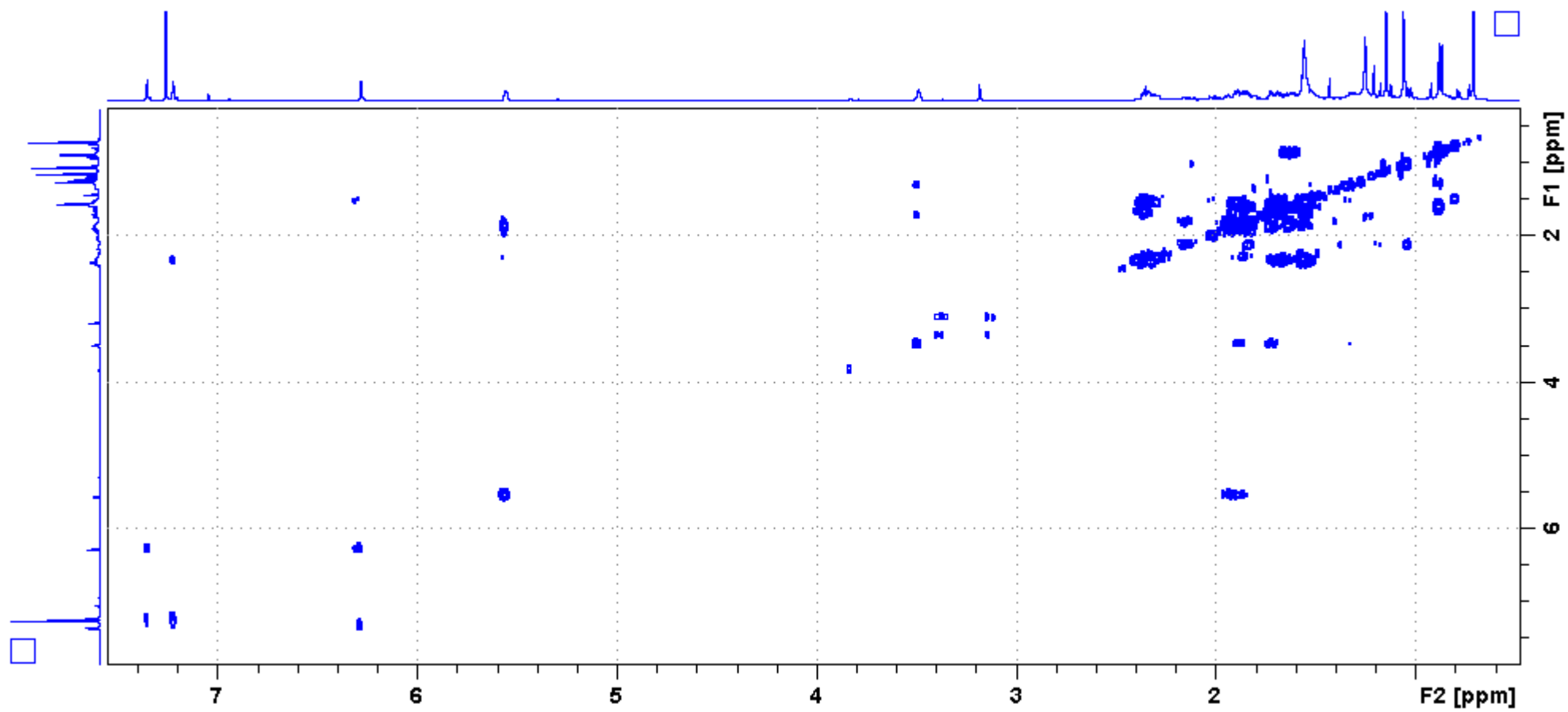


Figure S2.48: COSY spectrum for compound 6 in  $\text{CDCl}_3$

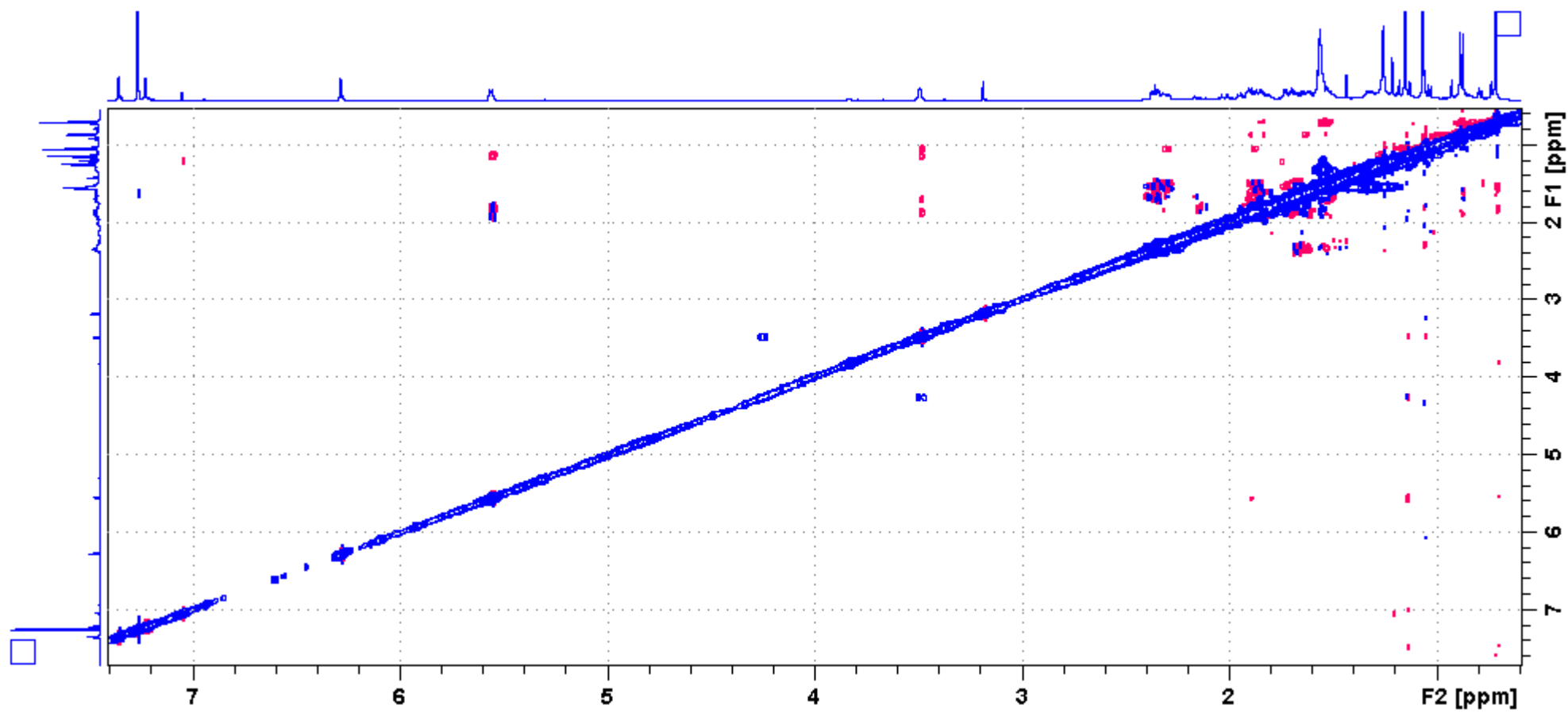


Figure S2.49: NOESY spectrum for compound 6 in  $\text{CDCl}_3$

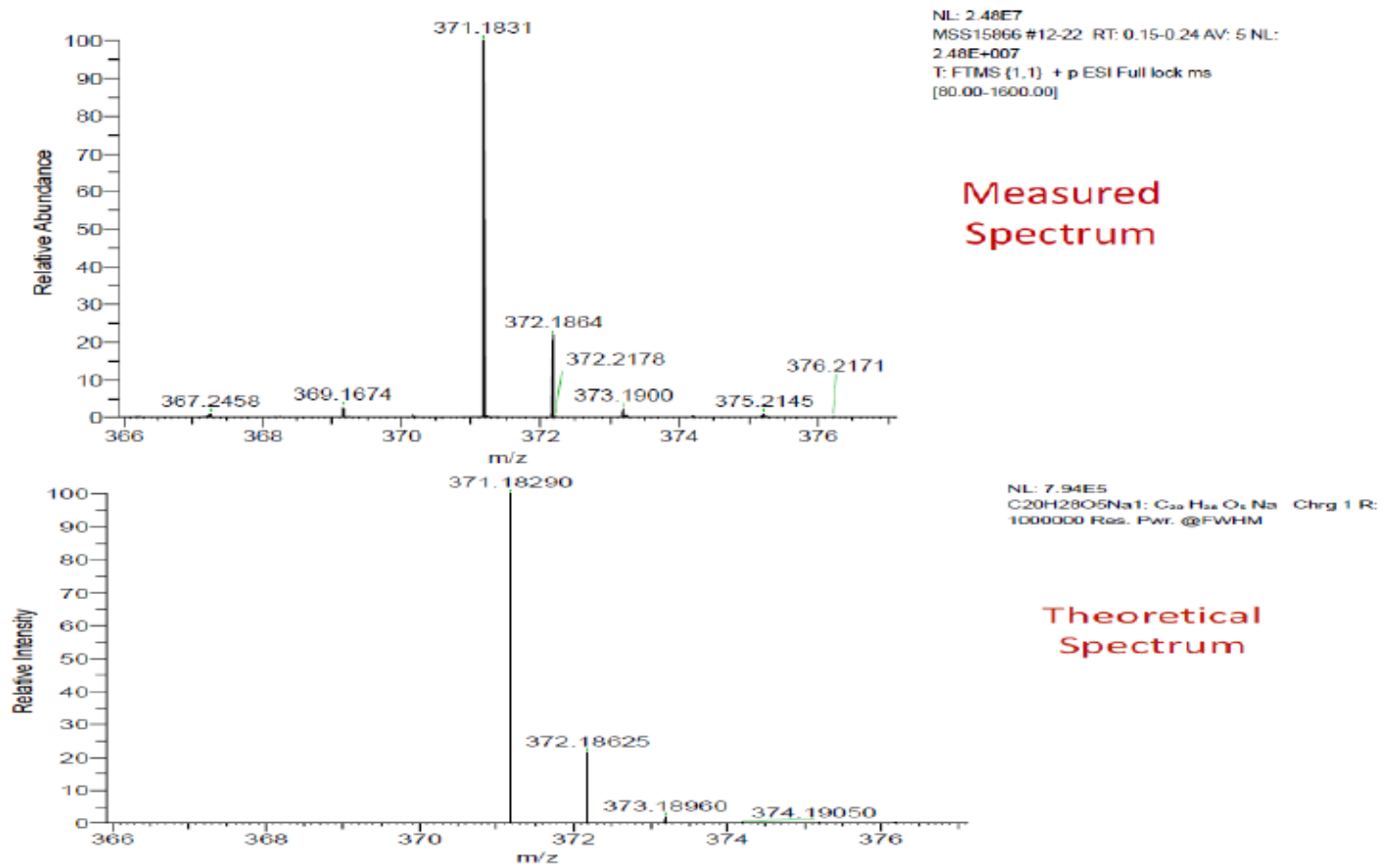
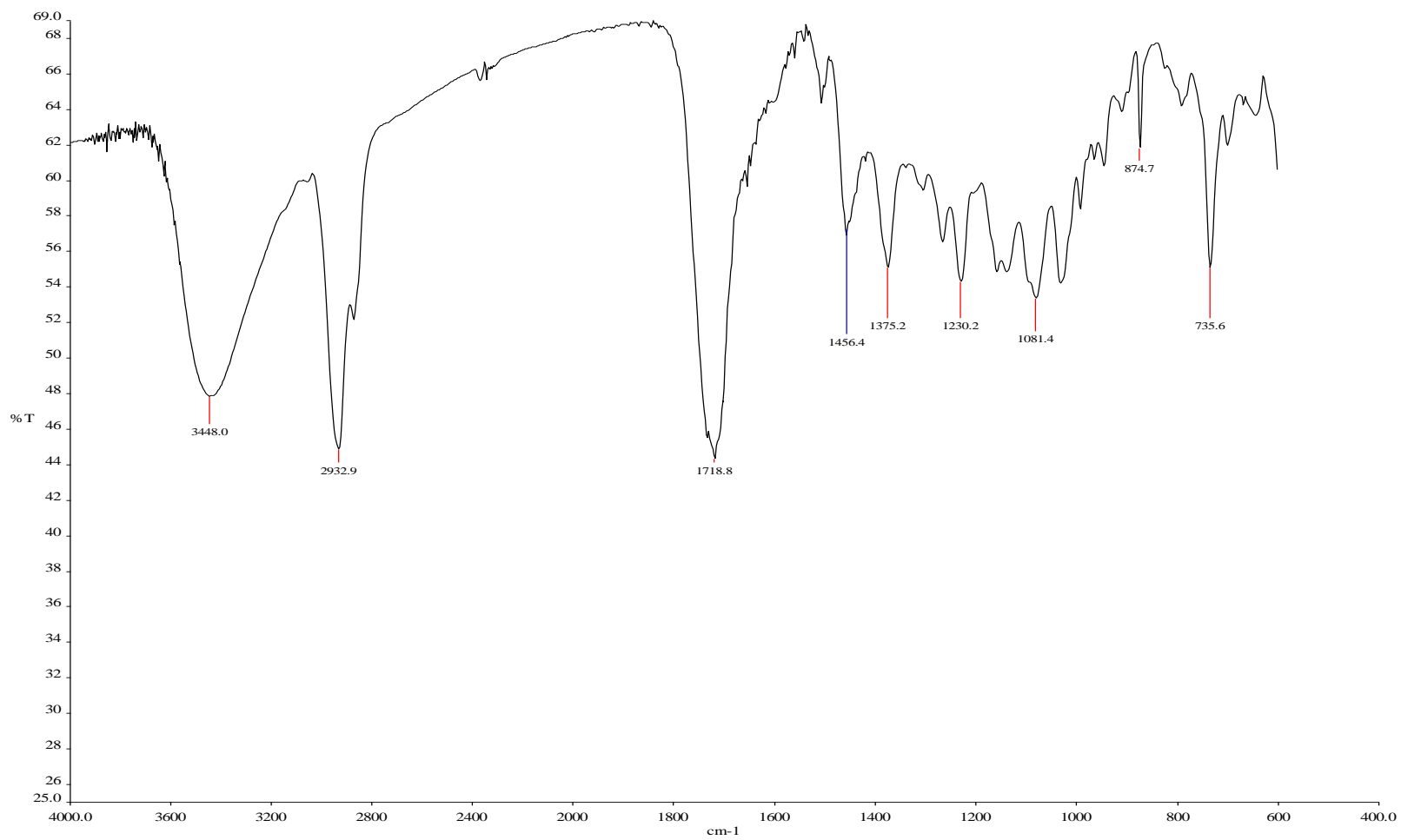


Figure S2.50: Mass spectrum for compound 7





**Figure S2.51: FTIR spectrum for compound 7**

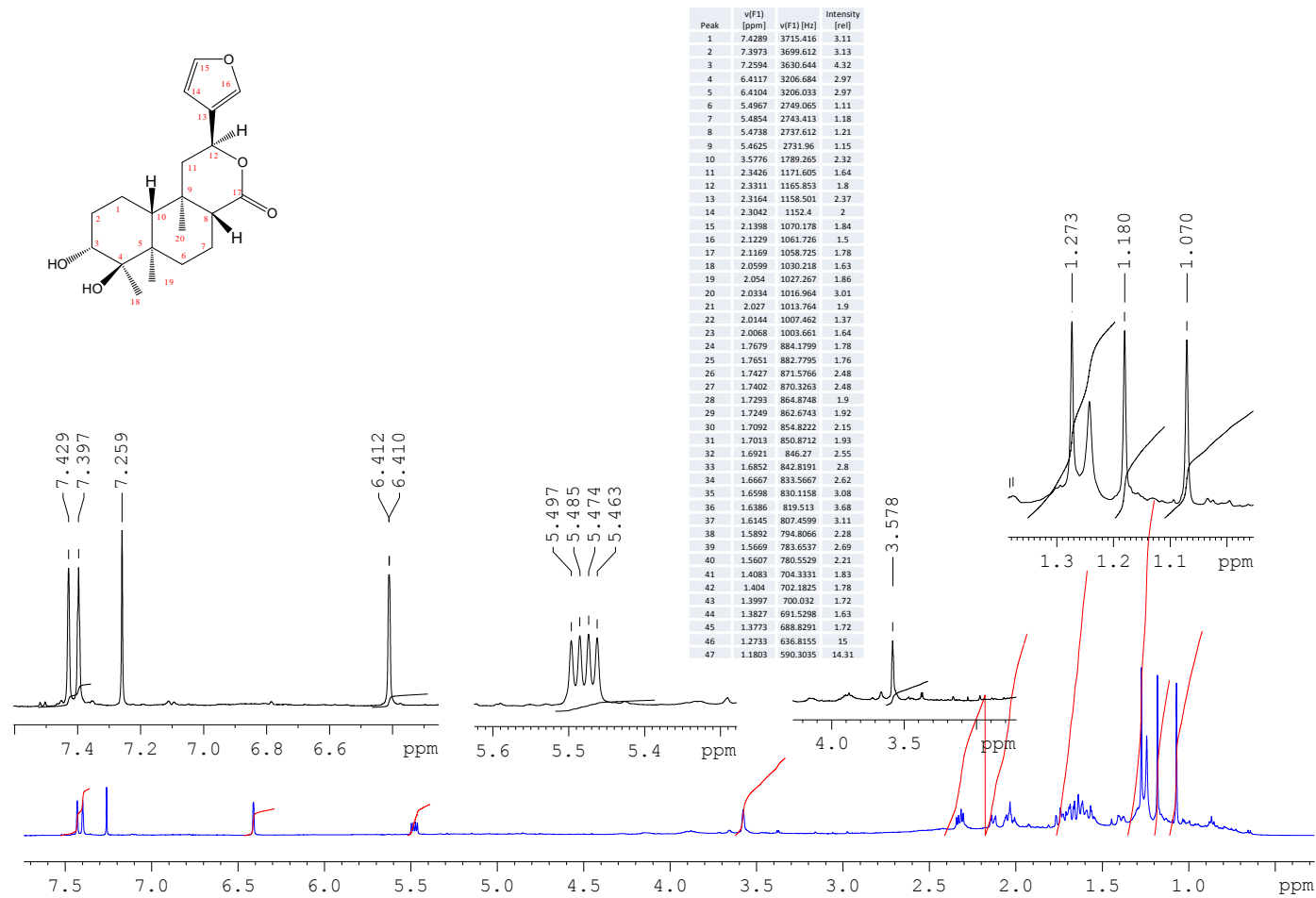


Figure S2.52:  $^1\text{H}$  NMR spectrum for compound 7 in  $\text{CDCl}_3$

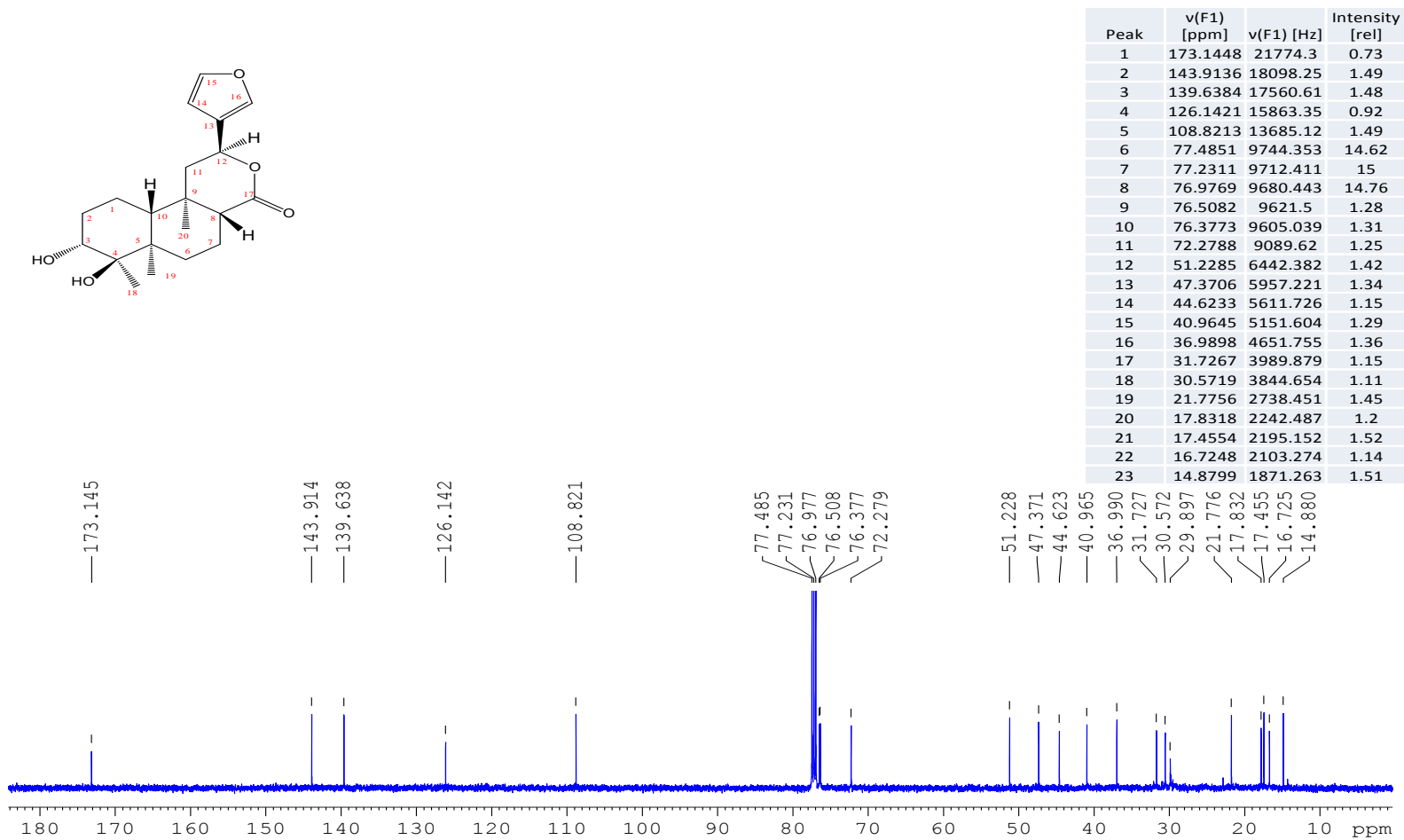


Figure S2.53:  $^{13}\text{C}$  NMR spectrum for compound 7 in  $\text{CDCl}_3$

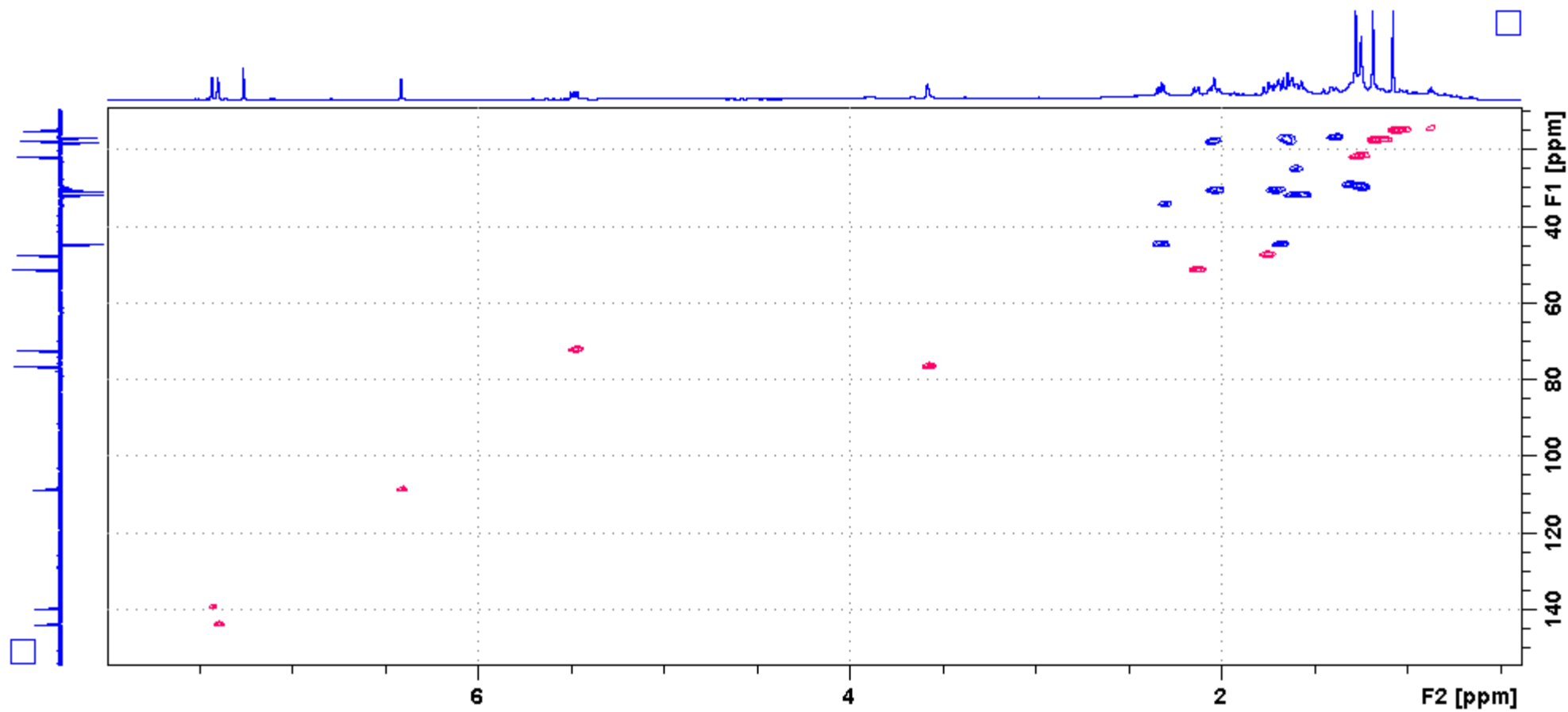


Figure S2.54: HSQCDEPT spectrum for compound 7 in CDCl<sub>3</sub>

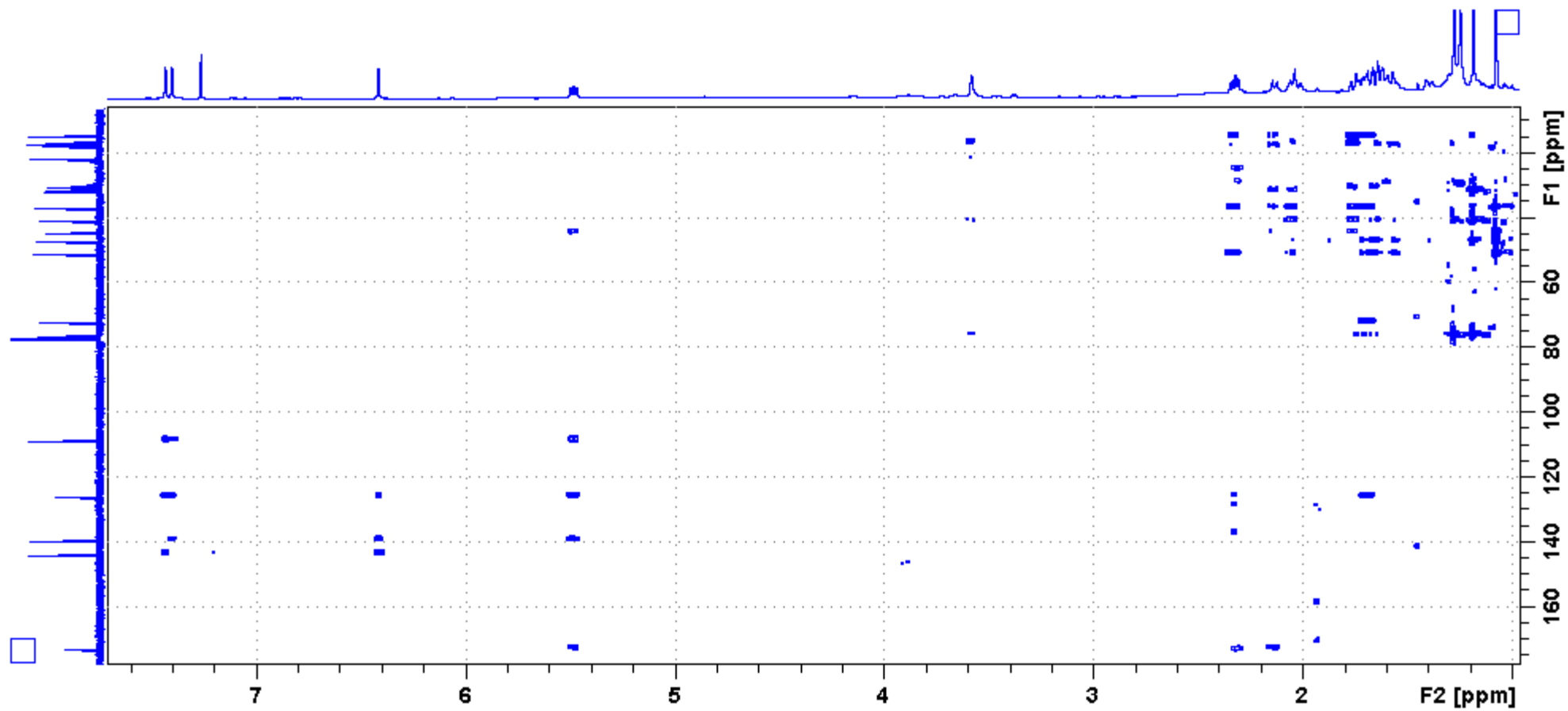


Figure S2.55: HMBC spectrum for compound 7 in CDCl<sub>3</sub>

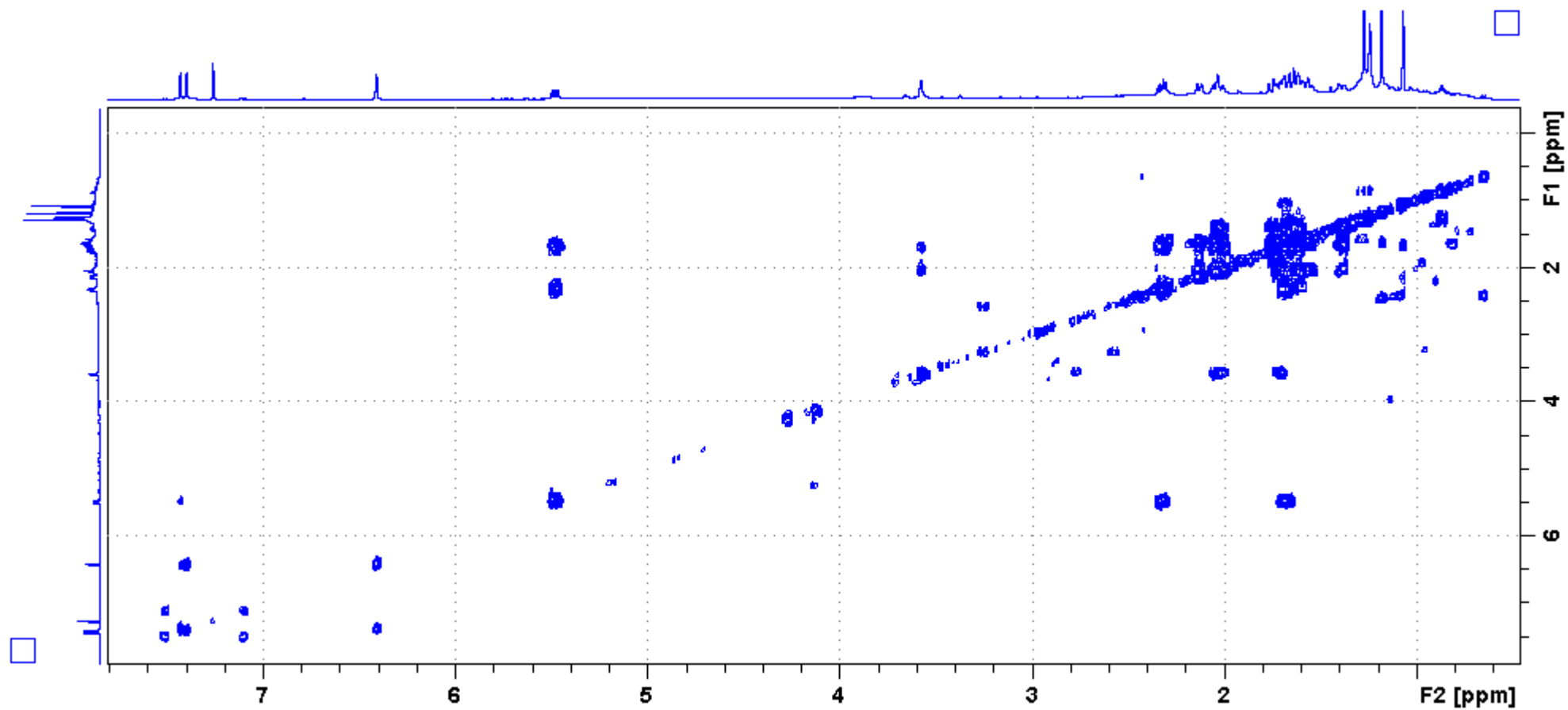


Figure S2.56: COSY spectrum for compound 7 in  $\text{CDCl}_3$

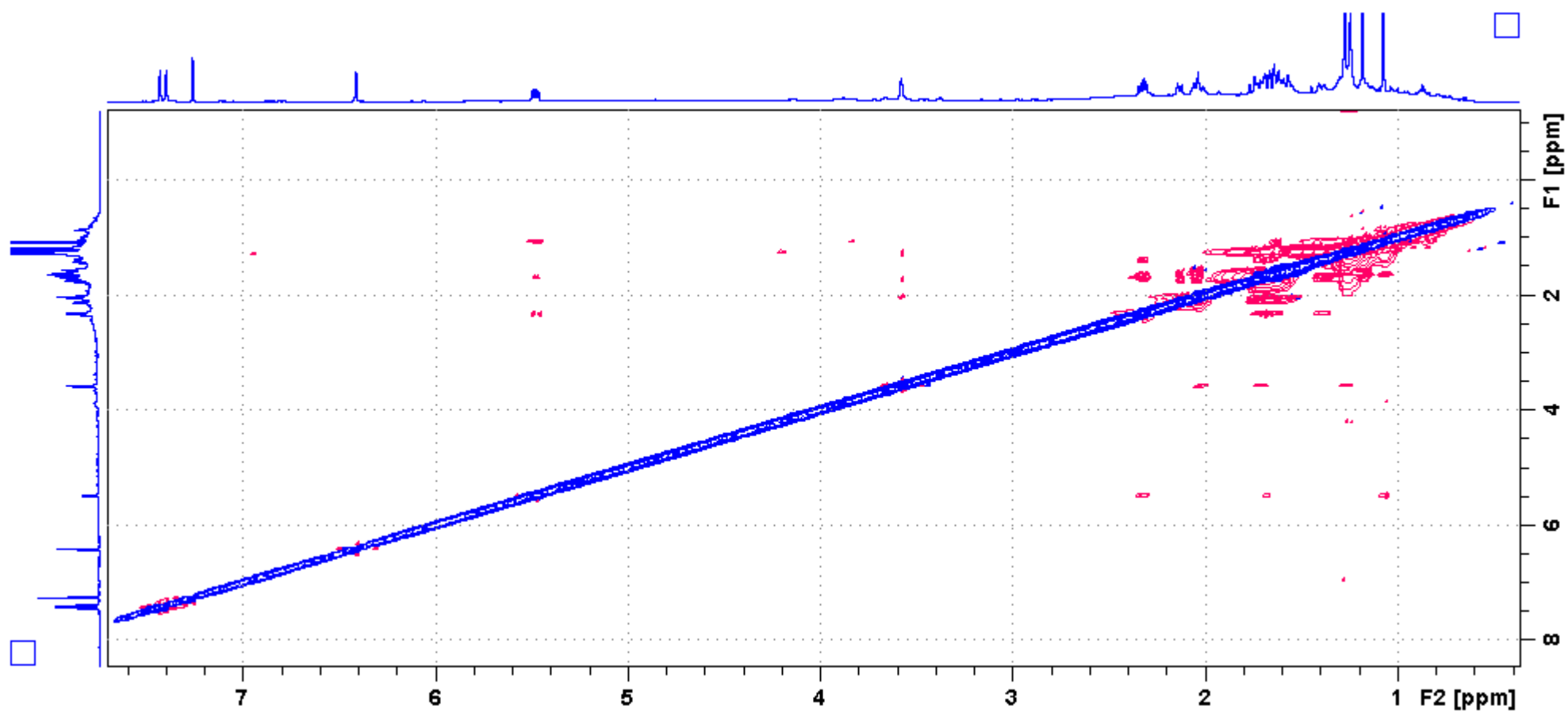


Figure S2.57: NOESY spectrum for compound 7 in CDCl<sub>3</sub>

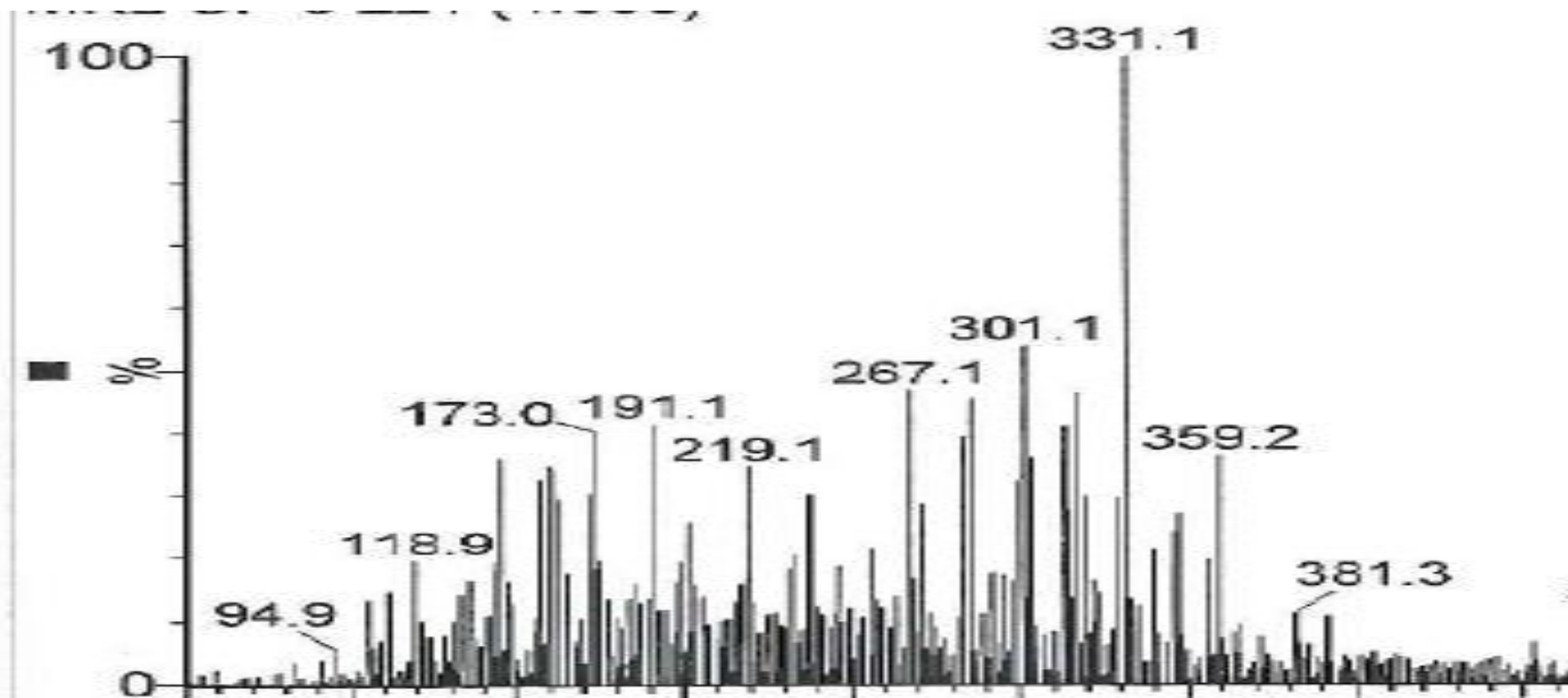
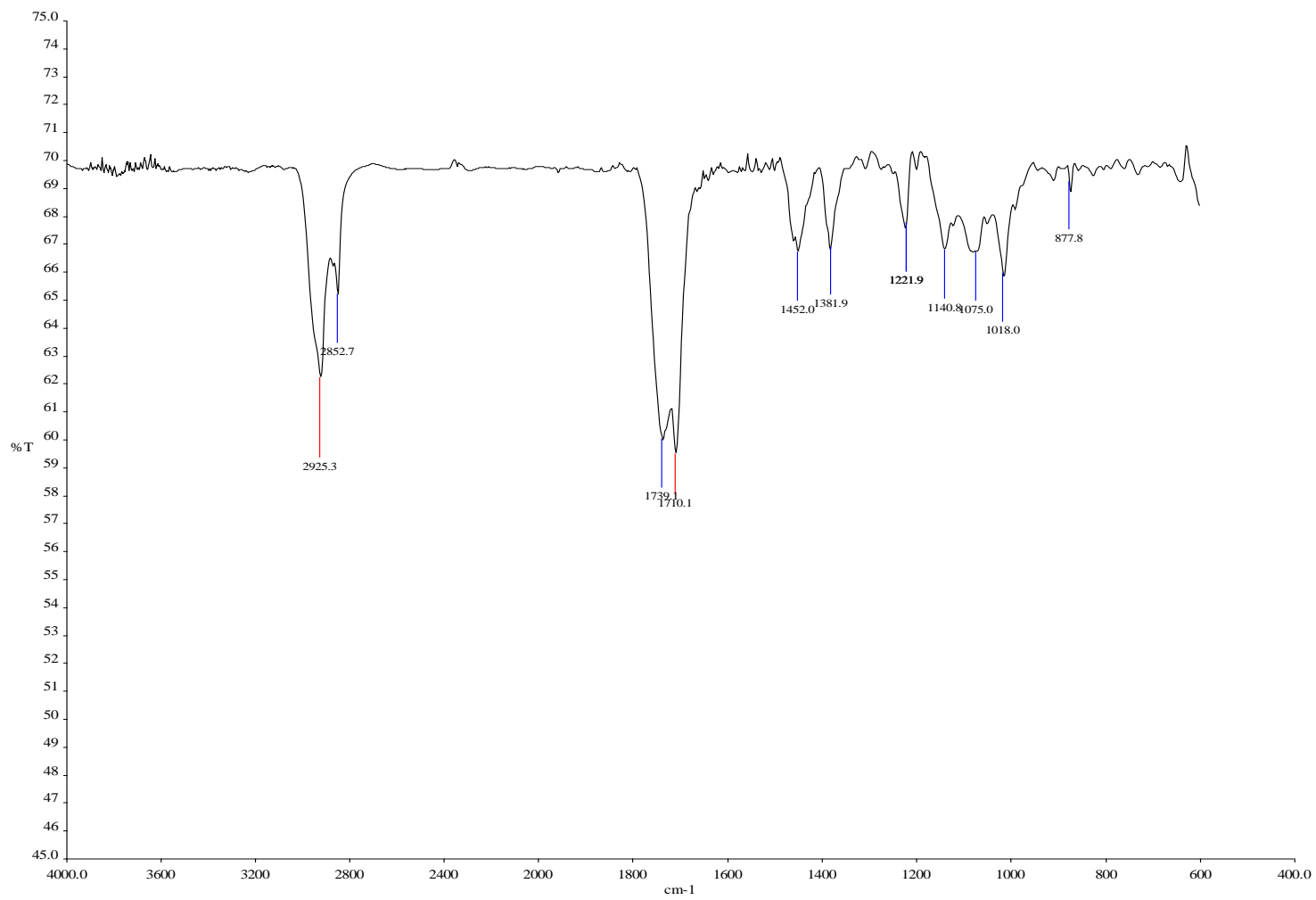


Figure S2.58: Mass spectrum for compound 8





**Figure S2.59: FTIR spectrum for compound 8**

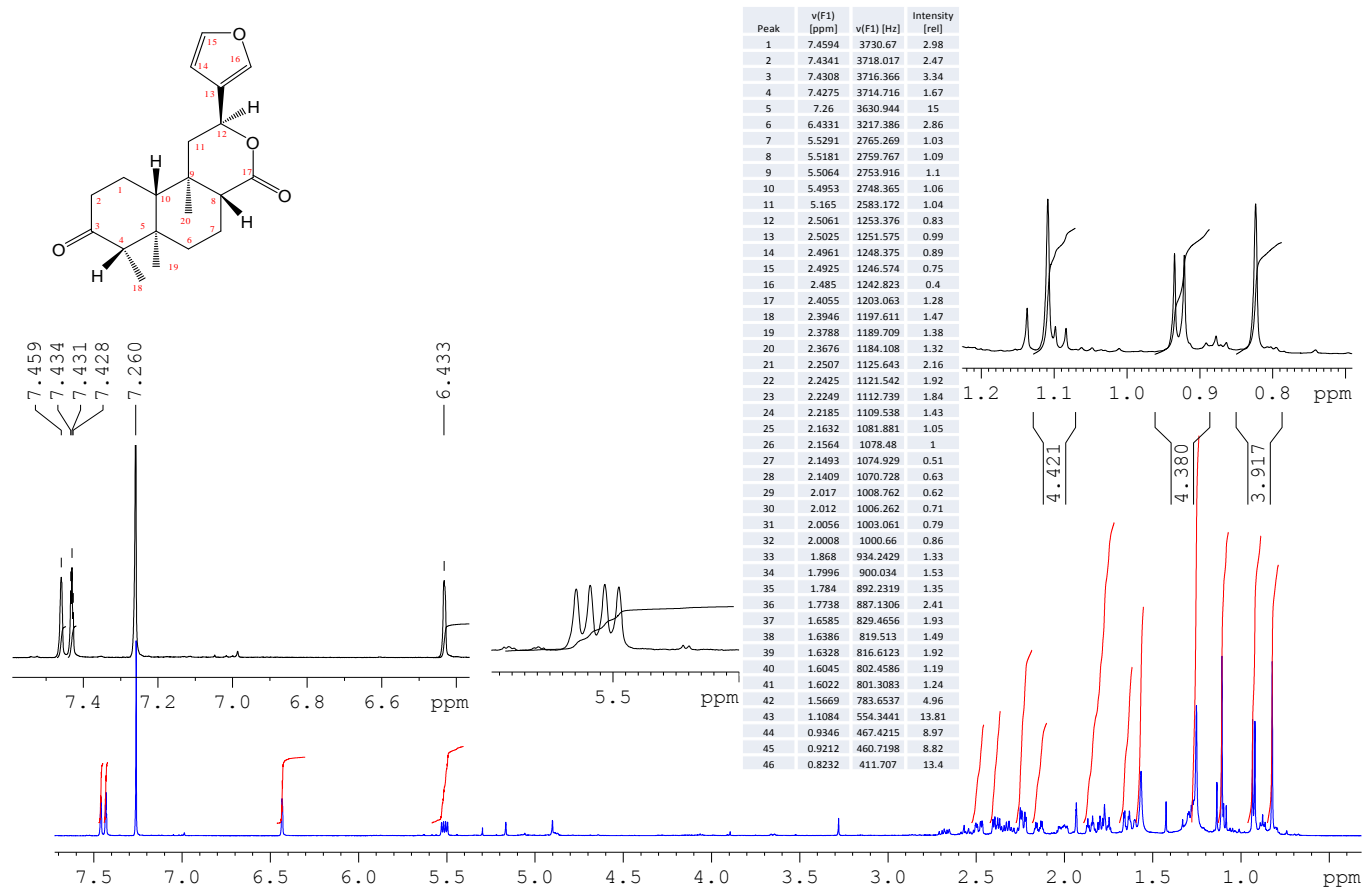
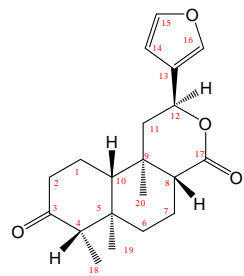


Figure S2.60:  $^1\text{H}$  NMR spectrum for compound 8 in  $\text{CDCl}_3$



Peak	$\nu$ (F1) [ppm]	$\nu$ (F1) [Hz]	Intensity [rel]
1	211.4152	26587.11	1.21
2	172.206	21656.25	1.01
3	144.0734	18118.35	4.12
4	139.5892	17554.43	3.26
5	125.9858	15843.7	1.67
6	108.6676	13665.8	3.43
7	77.484	9744.217	14.03
8	77.2299	9712.262	14.79
9	76.9759	9680.319	15
10	71.9852	9052.7	3.61
11	58.1196	7308.992	4.03
12	55.2311	6945.741	4.21
13	51.6581	6496.408	4.15
14	44.6861	5619.625	4.63
15	41.1915	5180.152	4.69
16	41.0478	5162.081	1.78
17	38.145	4797.031	4.94
18	37.3603	4698.349	1.84
19	22.7963	2866.812	5.02
20	18.6824	2349.457	4.93
21	15.168	1907.494	3.23
22	14.5512	1829.927	3.55
23	7.0037	880.7698	4.01

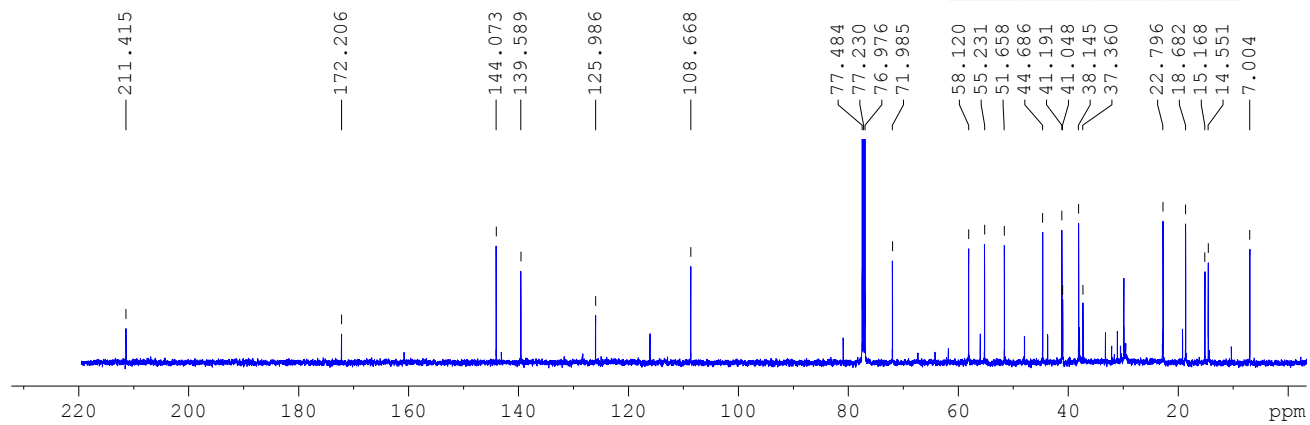


Figure S2.61:  $^{13}\text{C}$  NMR spectrum for compound 8 in  $\text{CDCl}_3$

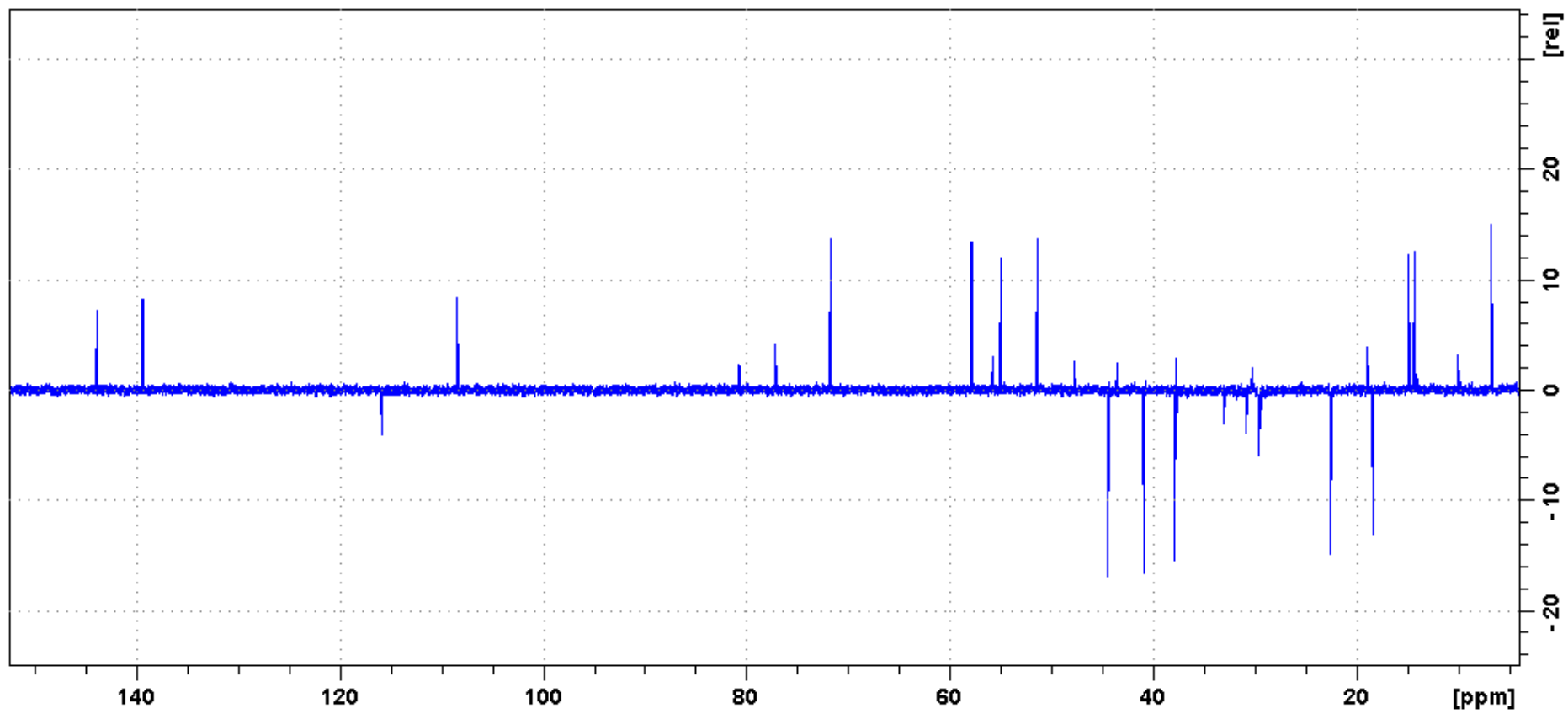


Figure S2.62: DEPT spectrum for compound CD.8 in CDCl<sub>3</sub>

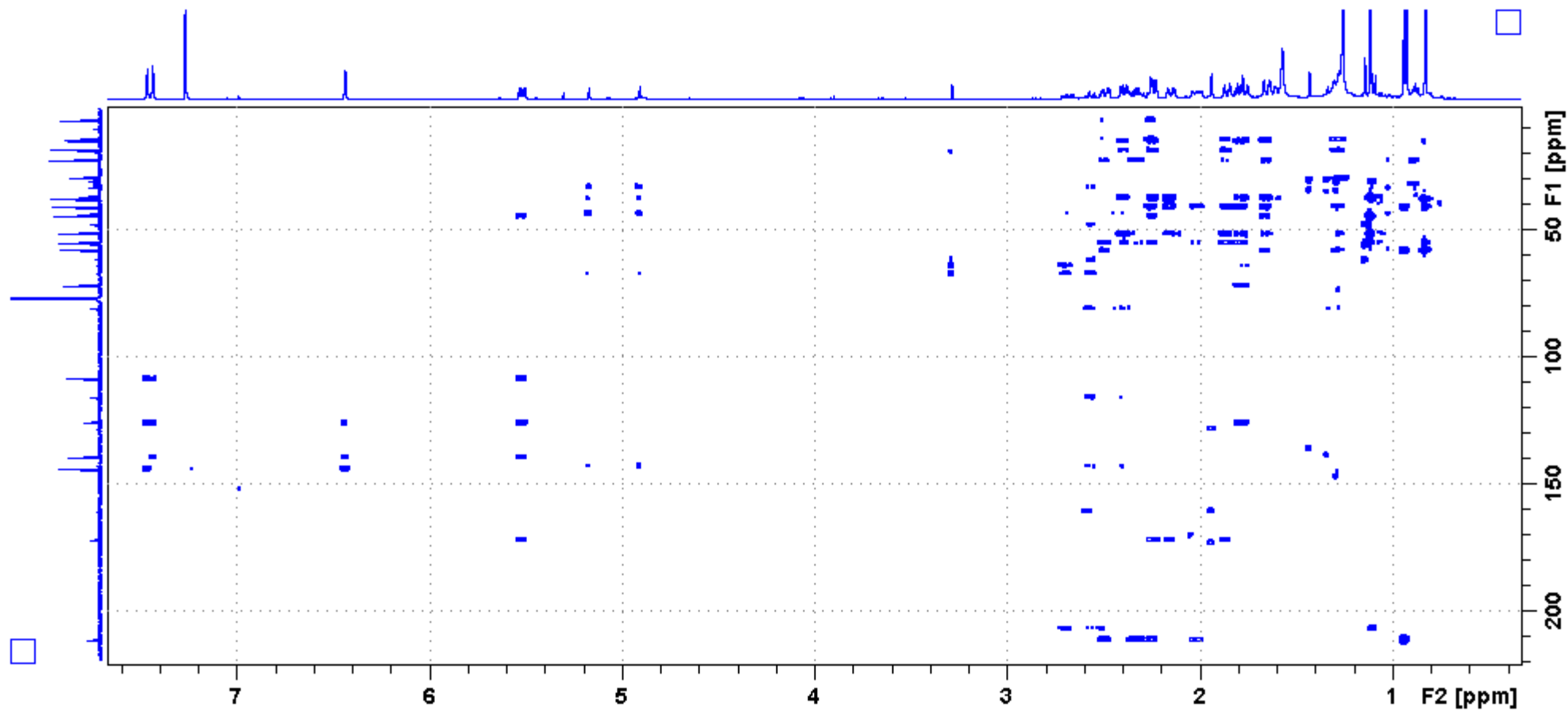


Figure S2.63: HMBC spectrum for compound 8 in CDCl<sub>3</sub>

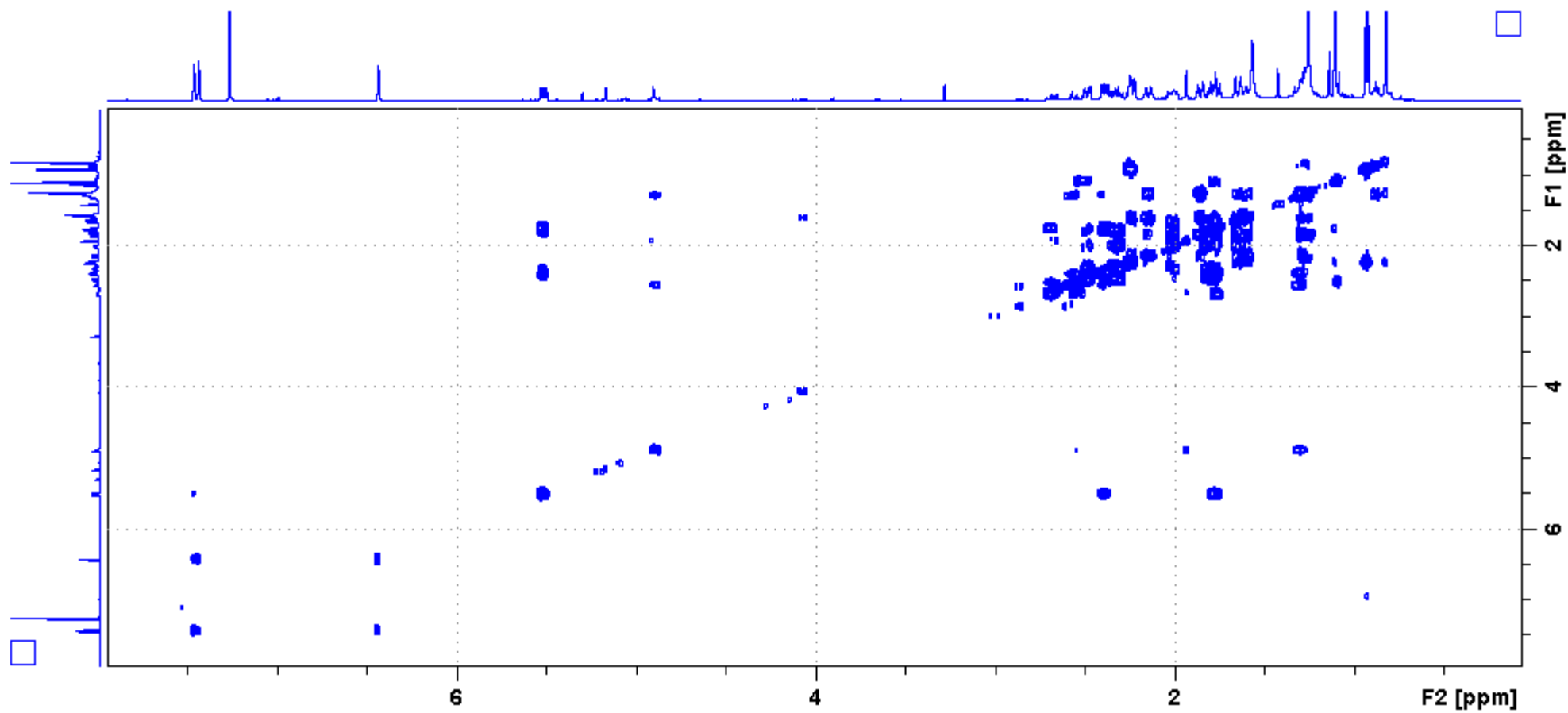


Figure S2.64: COSY spectrum for compound 8 in CDCl<sub>3</sub>

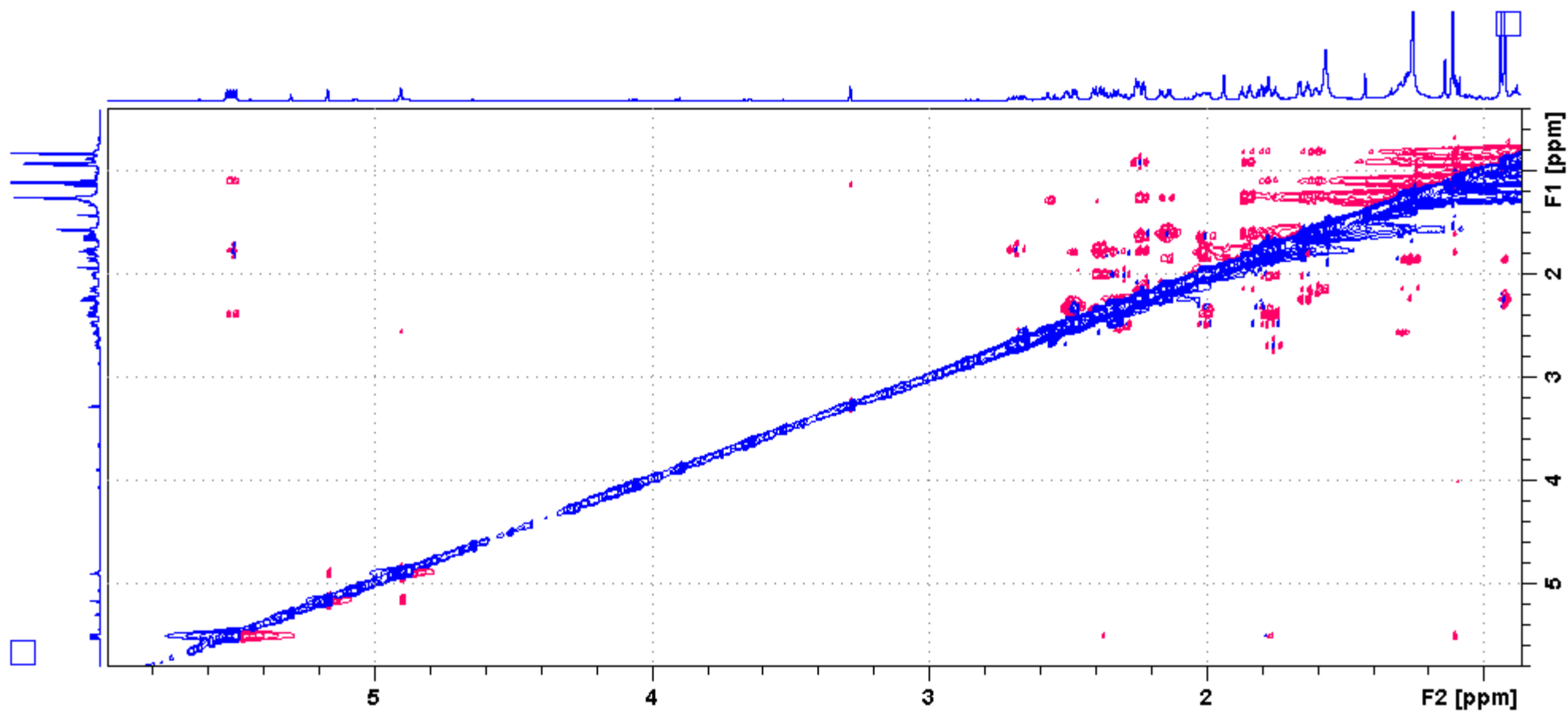


Figure S2.65: NOESY spectrum for compound 8 in CDCl<sub>3</sub>

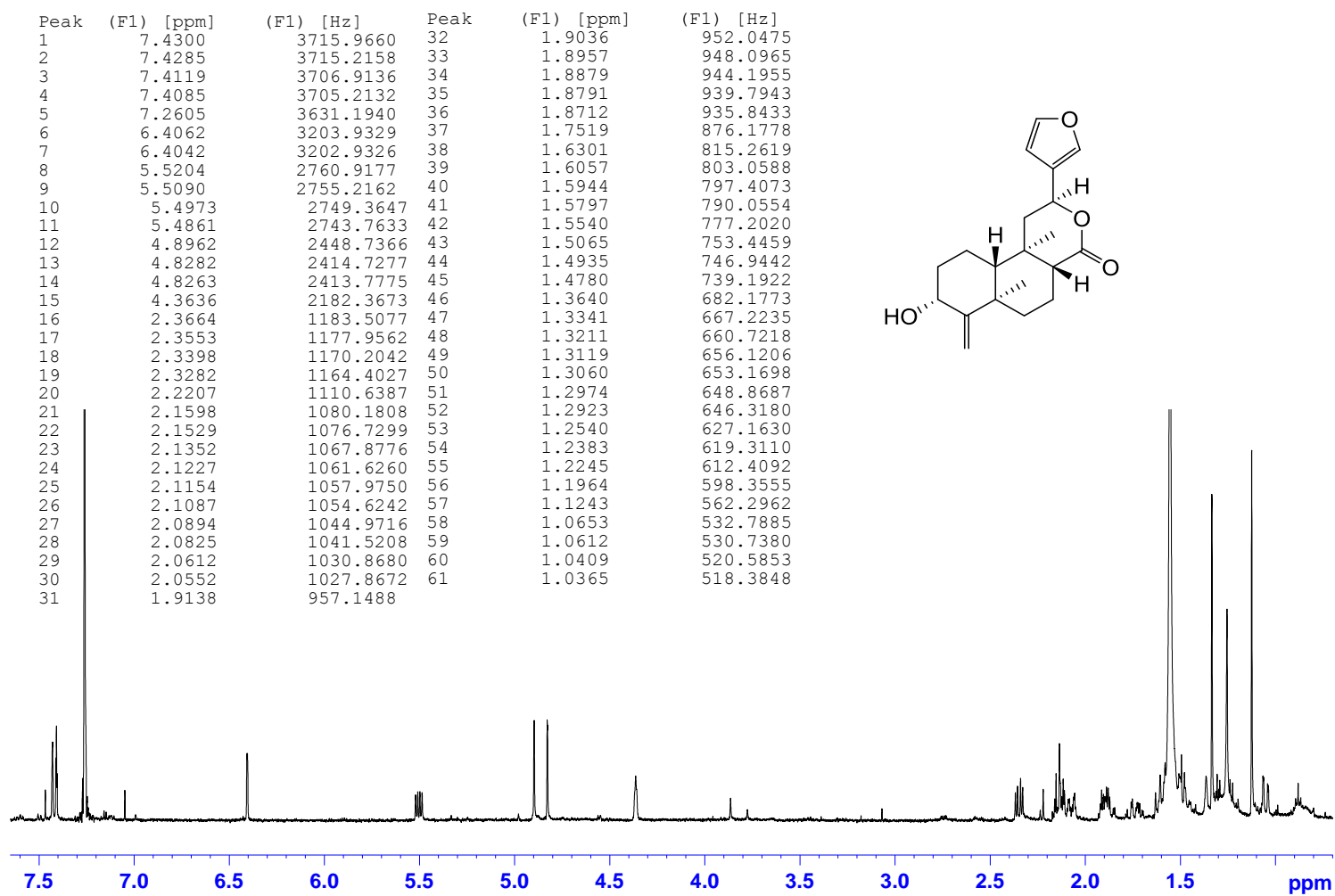


Figure S2.66: <sup>1</sup>H NMR spectrum for compound 9 in CDCl<sub>3</sub>



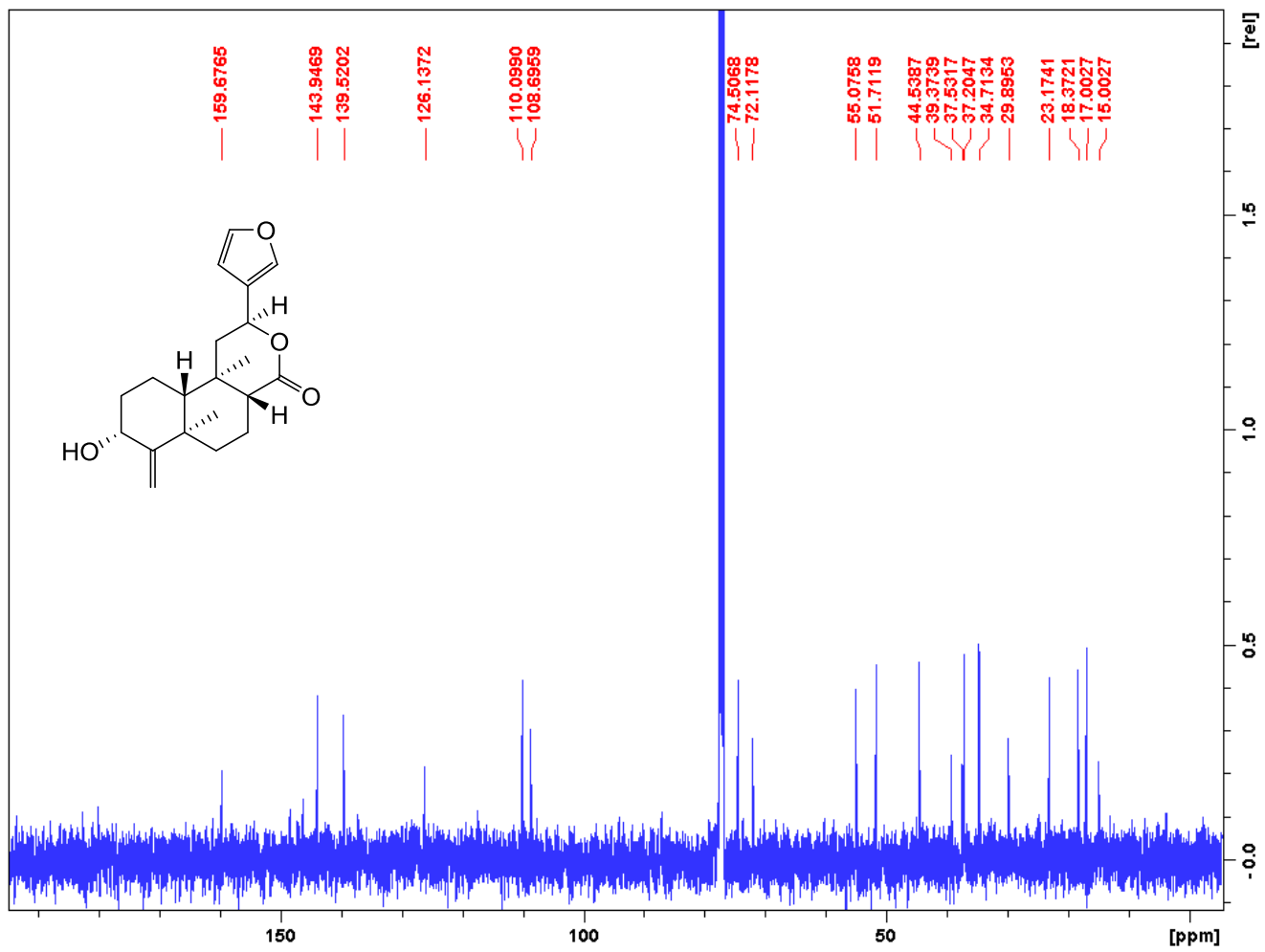


Figure S2.67: <sup>13</sup>C NMR spectrum for compound 9 in CDCl<sub>3</sub>

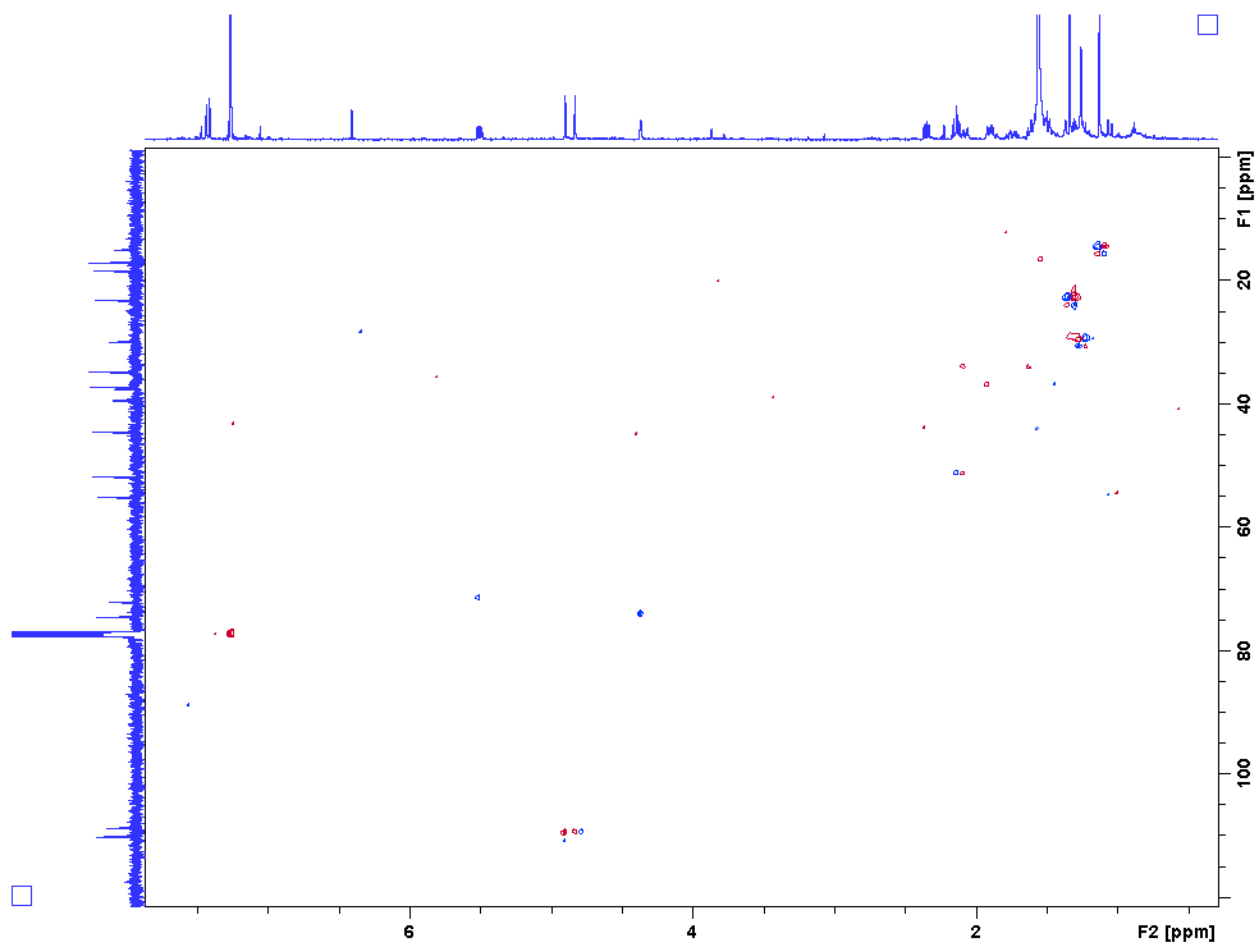


Figure S2.68: HSQCDEPT spectrum for compound 9 in CDCl<sub>3</sub>

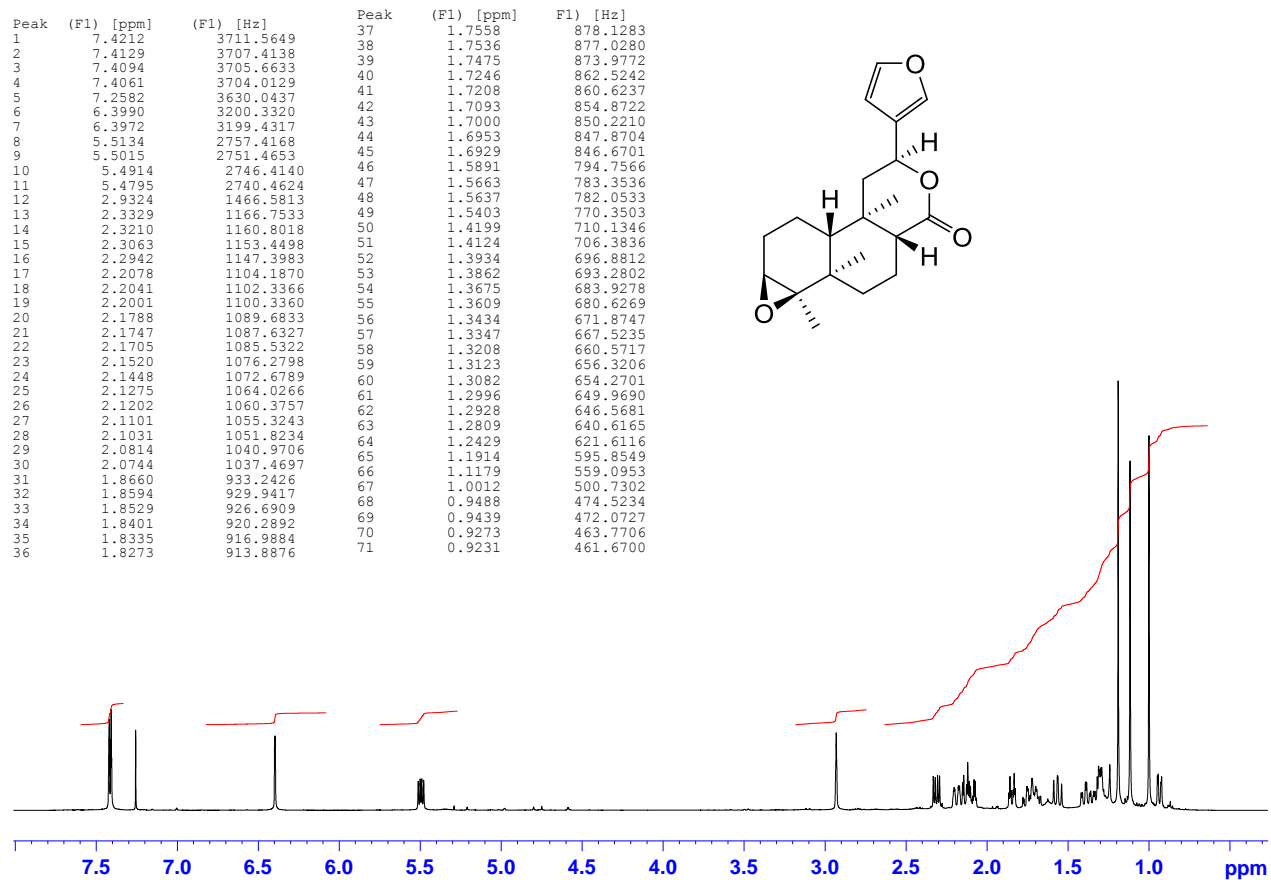
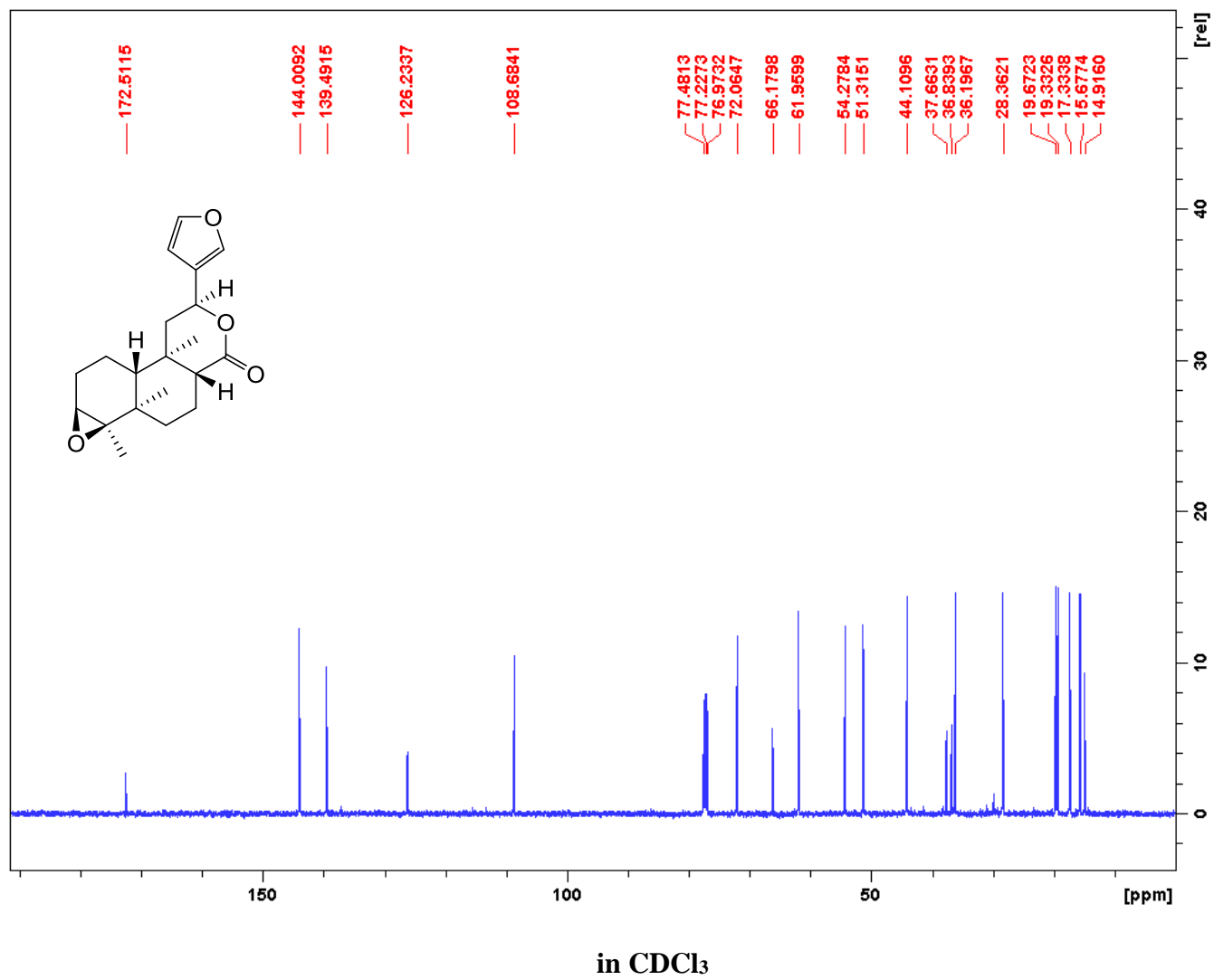


Figure S2.69:  $^1\text{H}$  NMR spectrum for compound 10 in  $\text{CDCl}_3$

Figure spectrum



S2.70:  $^{13}\text{C}$  NMR for compound 10

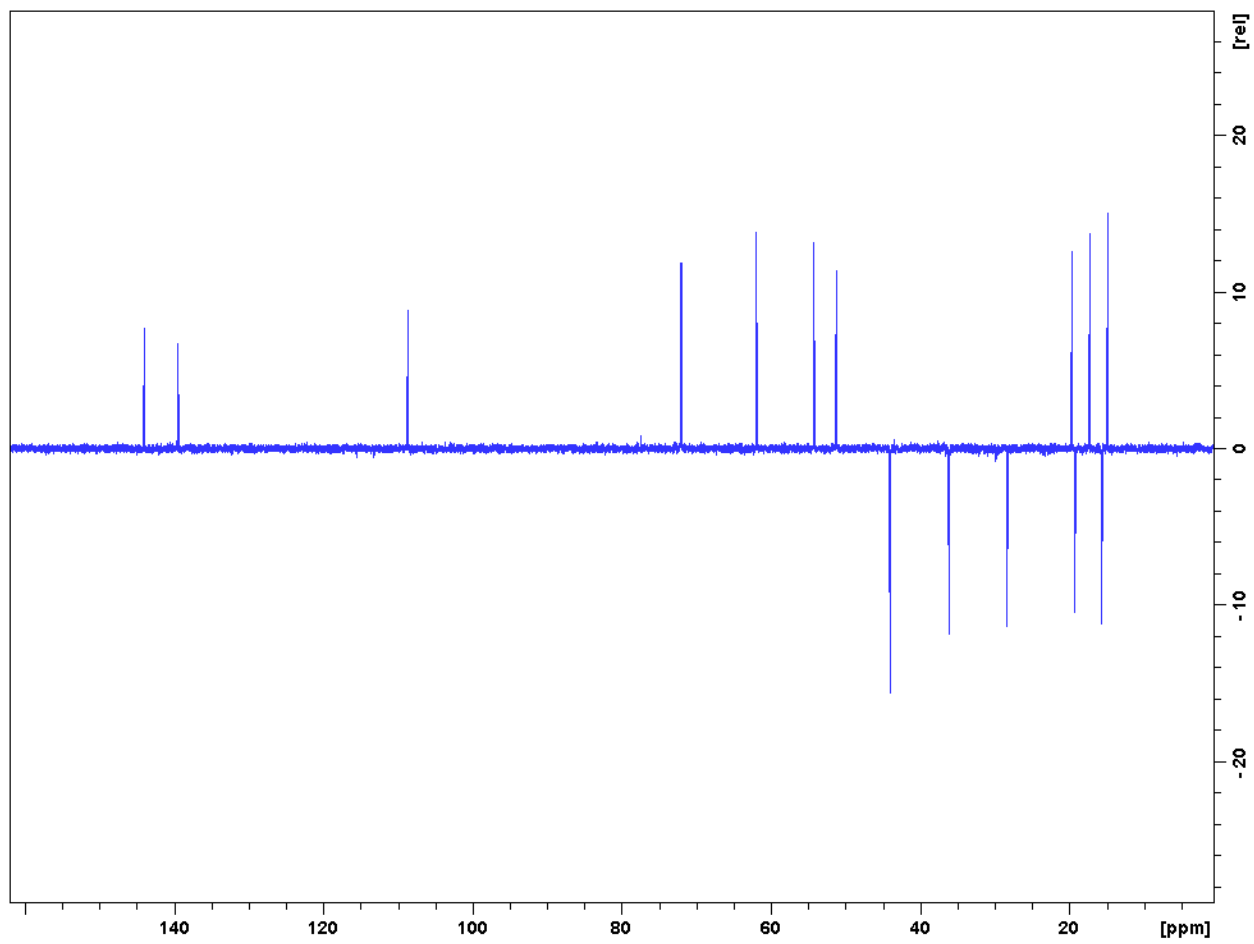


Figure S2.71: DEPT spectrum for compound 10 in CDCl<sub>3</sub>

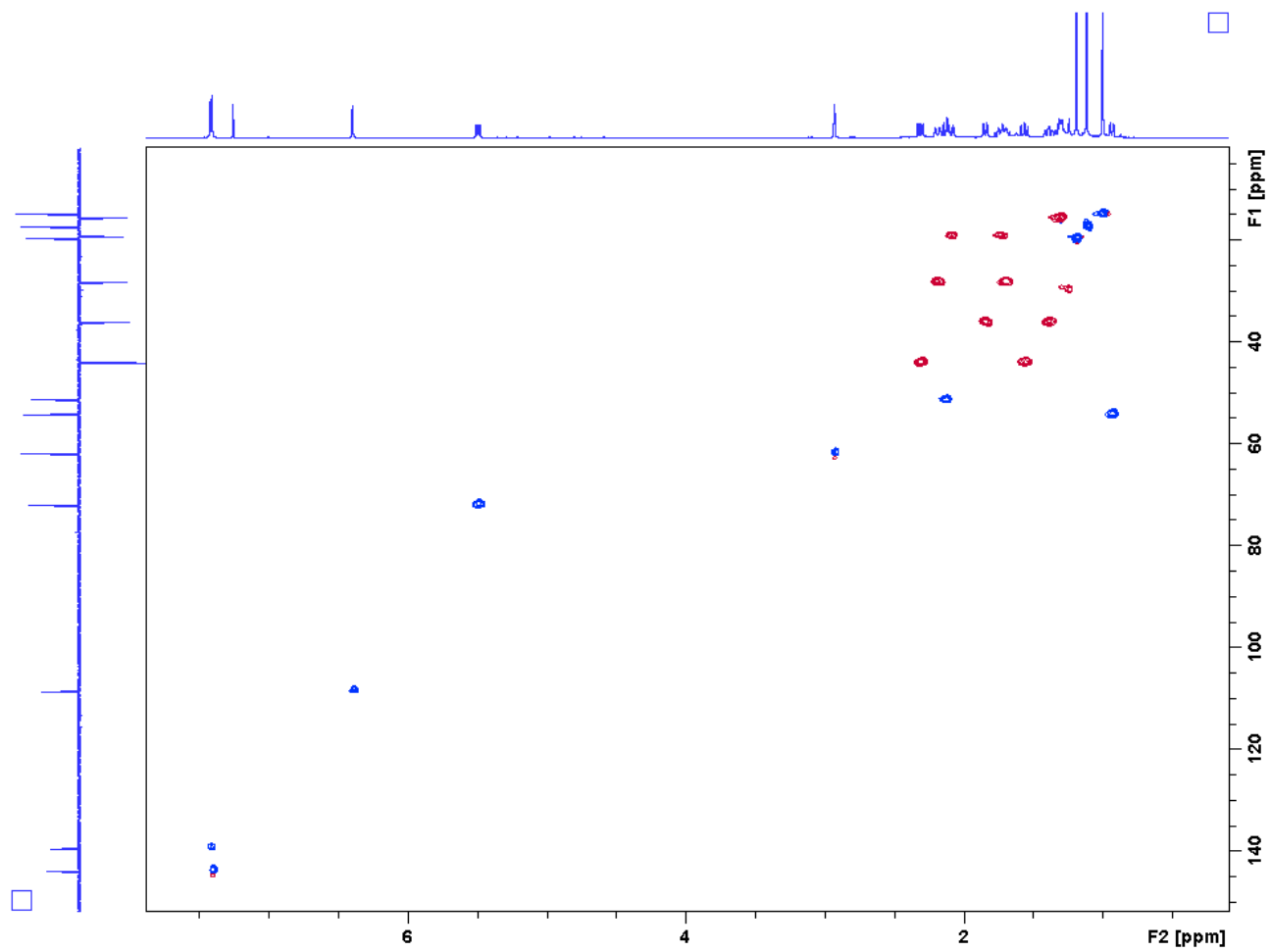


Figure S2.72: HSQCDEPT spectrum for compound 10 in  $\text{CDCl}_3$

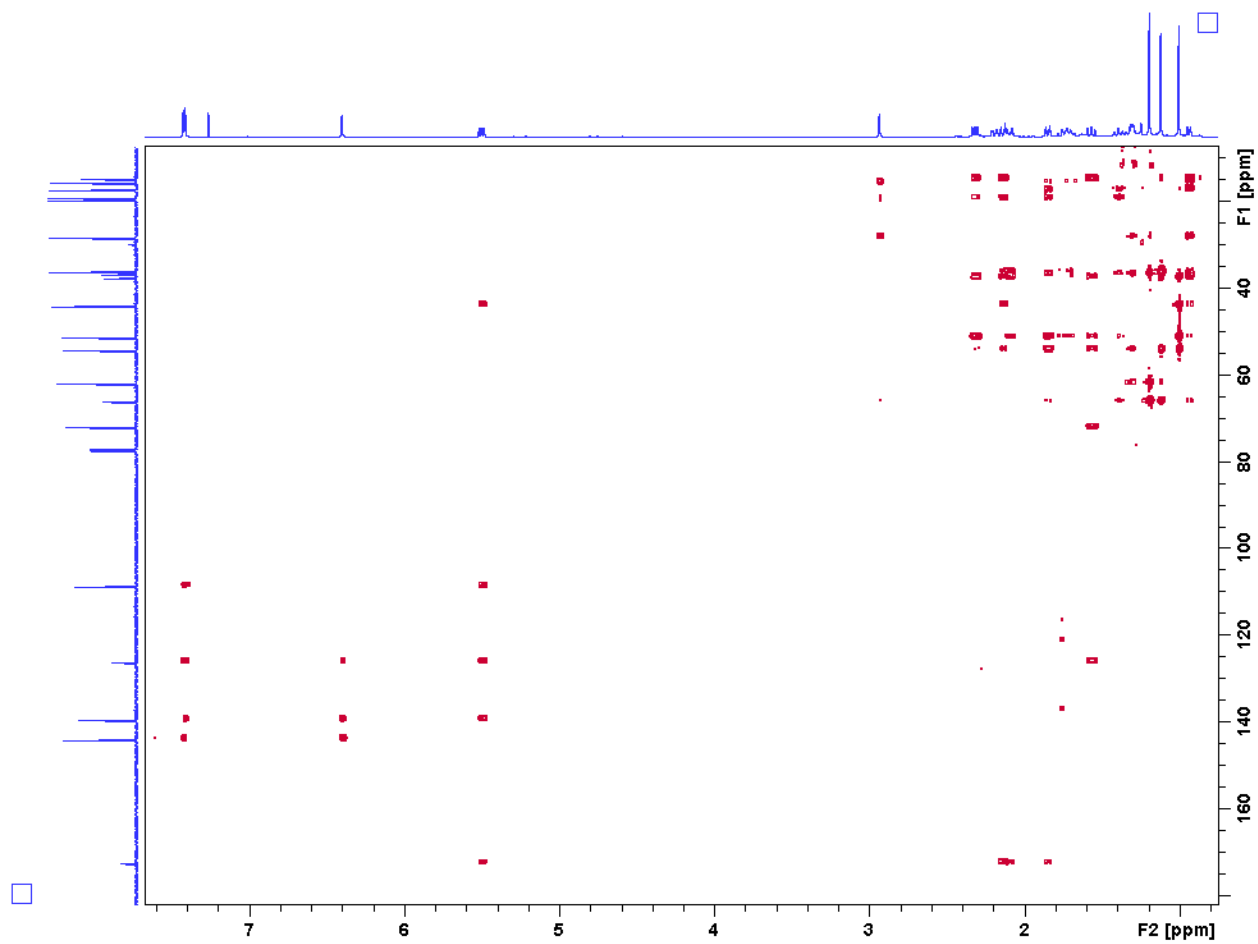


Figure S2.73: HMBC spectrum for compound 10 in CDCl<sub>3</sub>

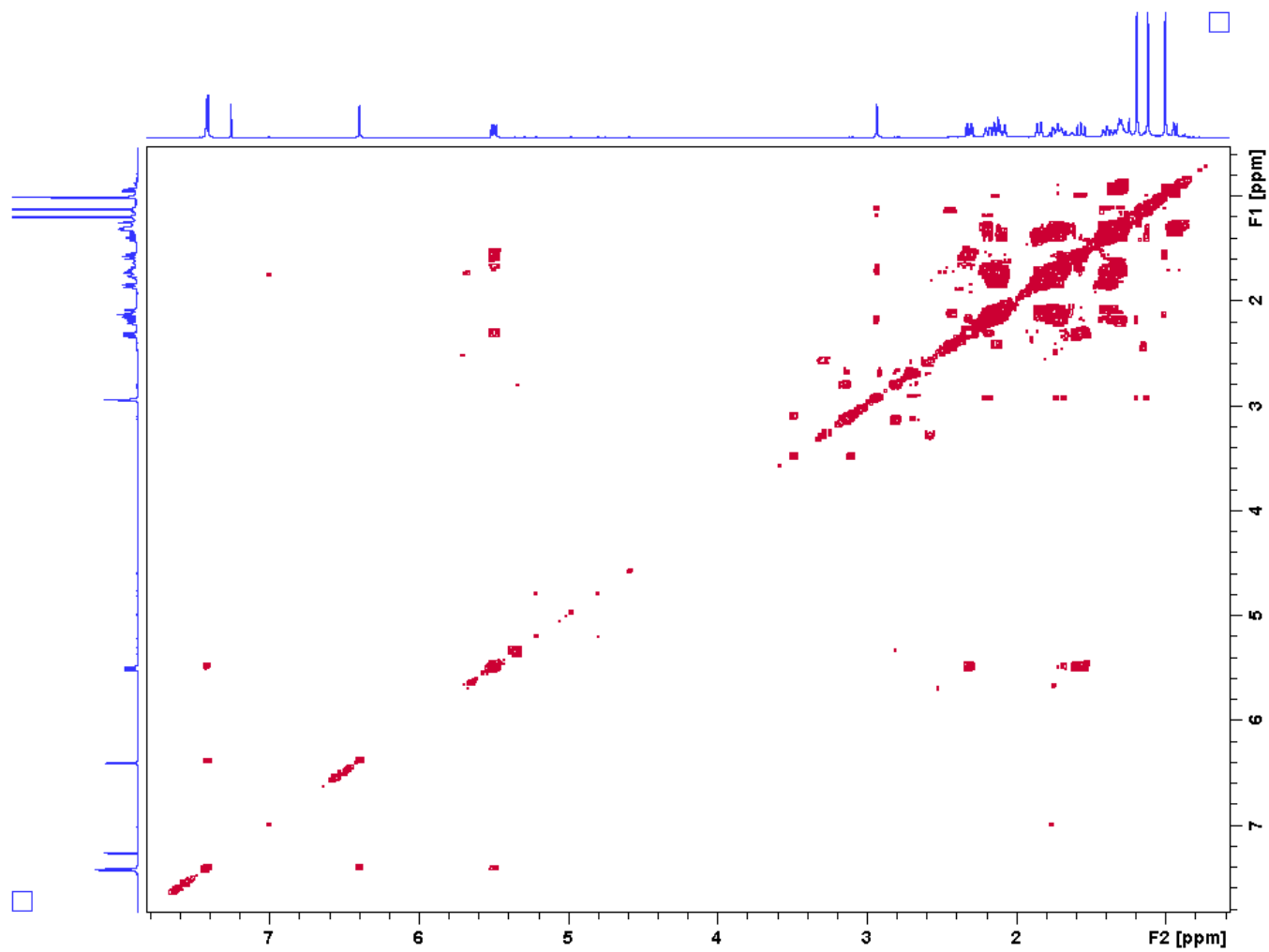


Figure S2.74: COSY spectrum for compound 10 in  $\text{CDCl}_3$



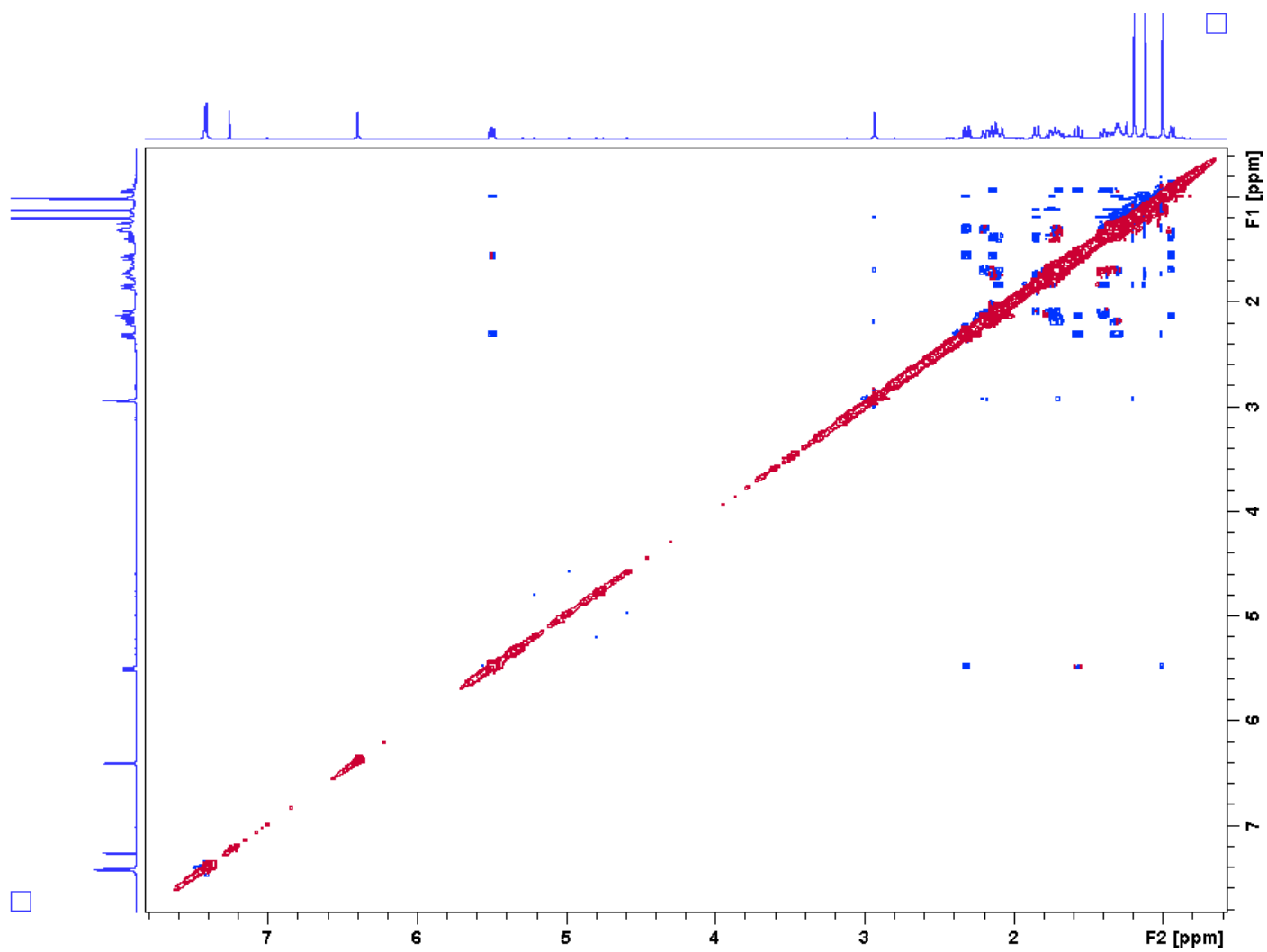


Figure S2.75: NOESY spectrum for compound 10 in CDCl<sub>3</sub>

Abundance

Scan 3582 (23.583 min): CDRD 88-90 SLI 51-53.D\data.ms

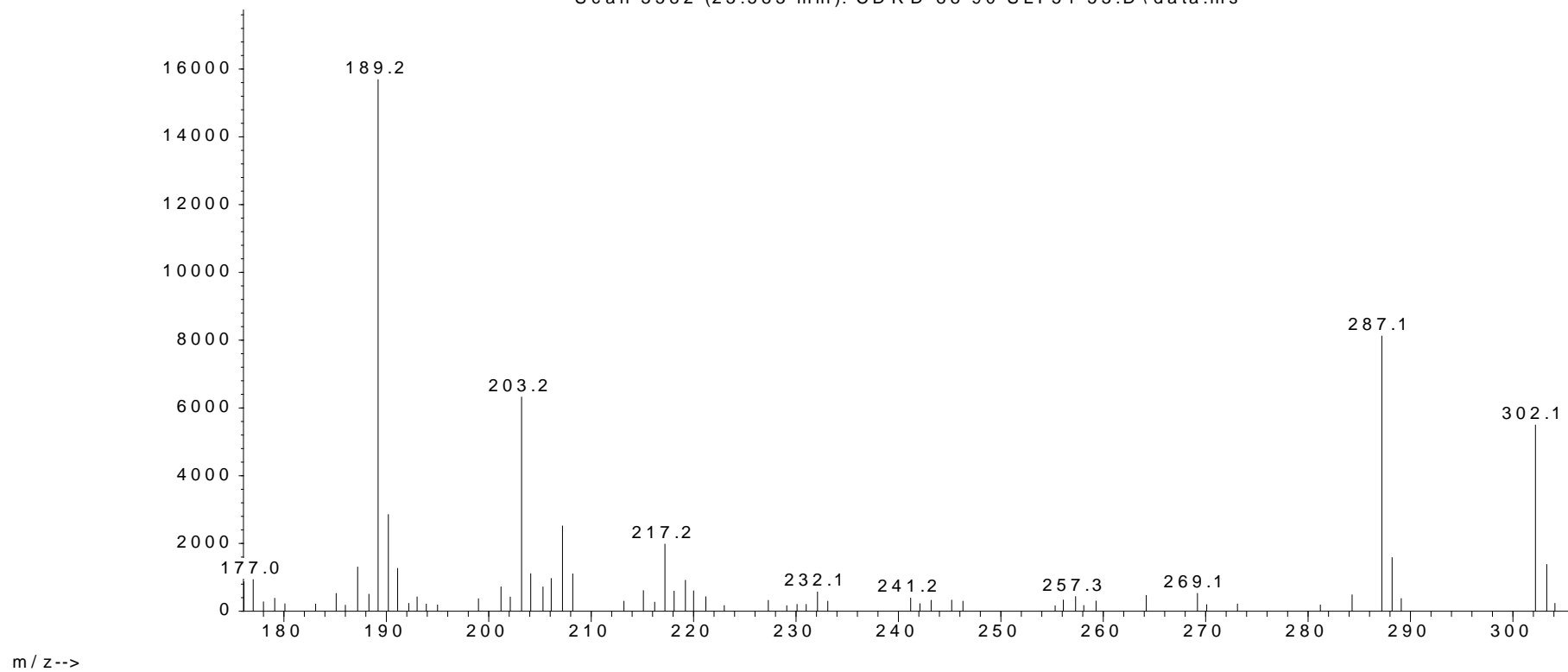
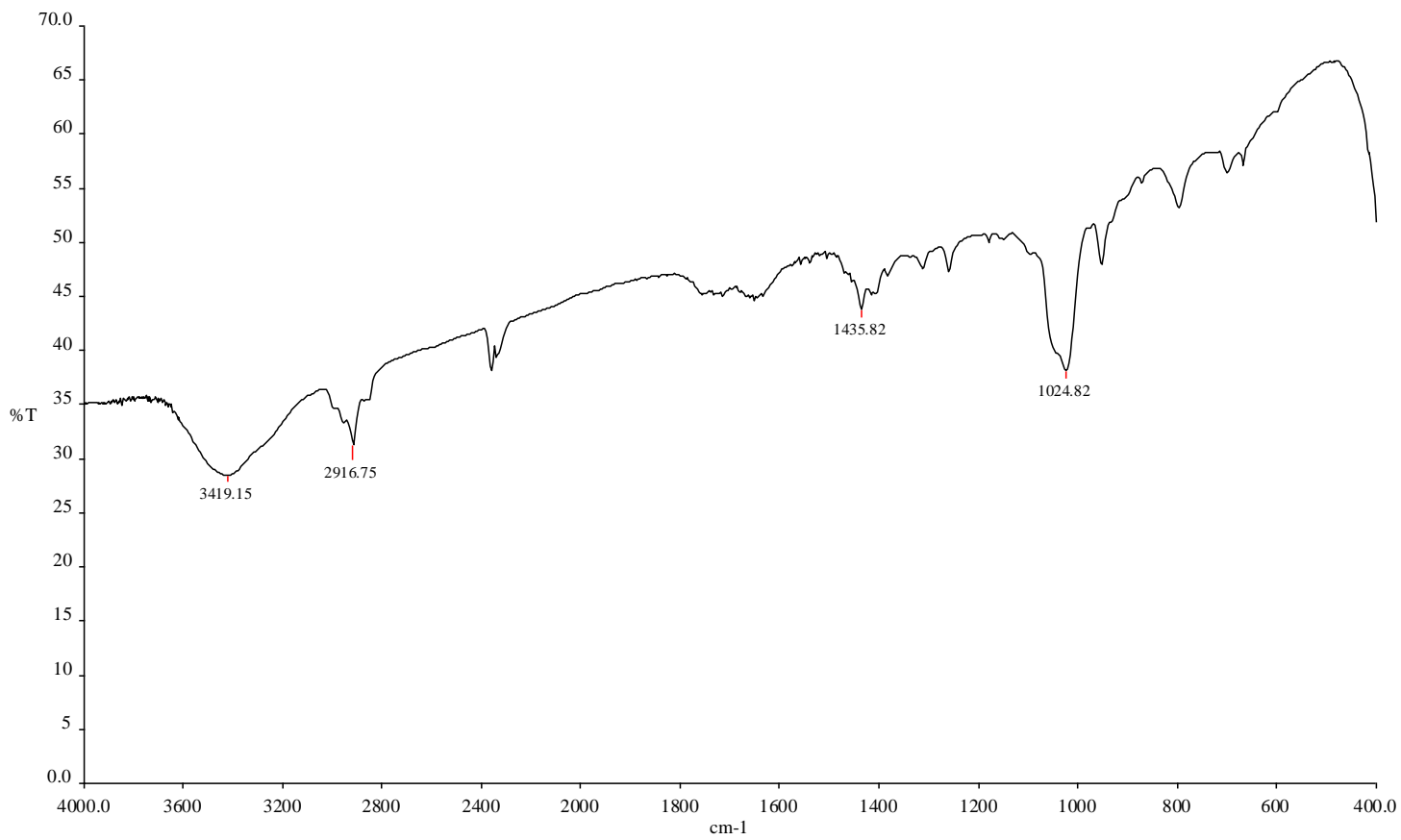


Figure S2.76: Mass spectrum for compound 11



**Figure S2.77: FTIR spectrum for compound 11**

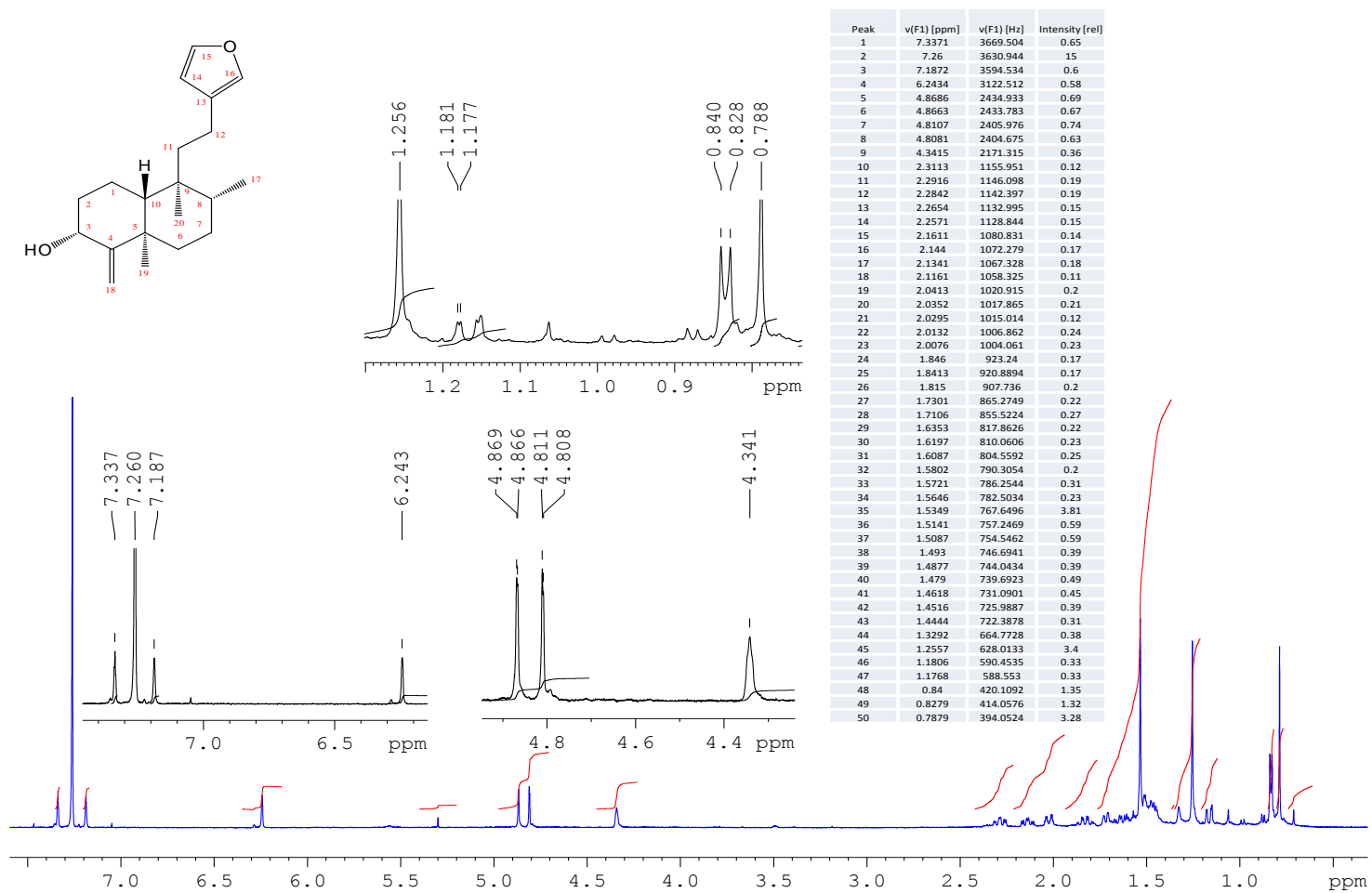


Figure S2.78:  $^1\text{H}$  NMR spectrum for compound 11 in  $\text{CDCl}_3$

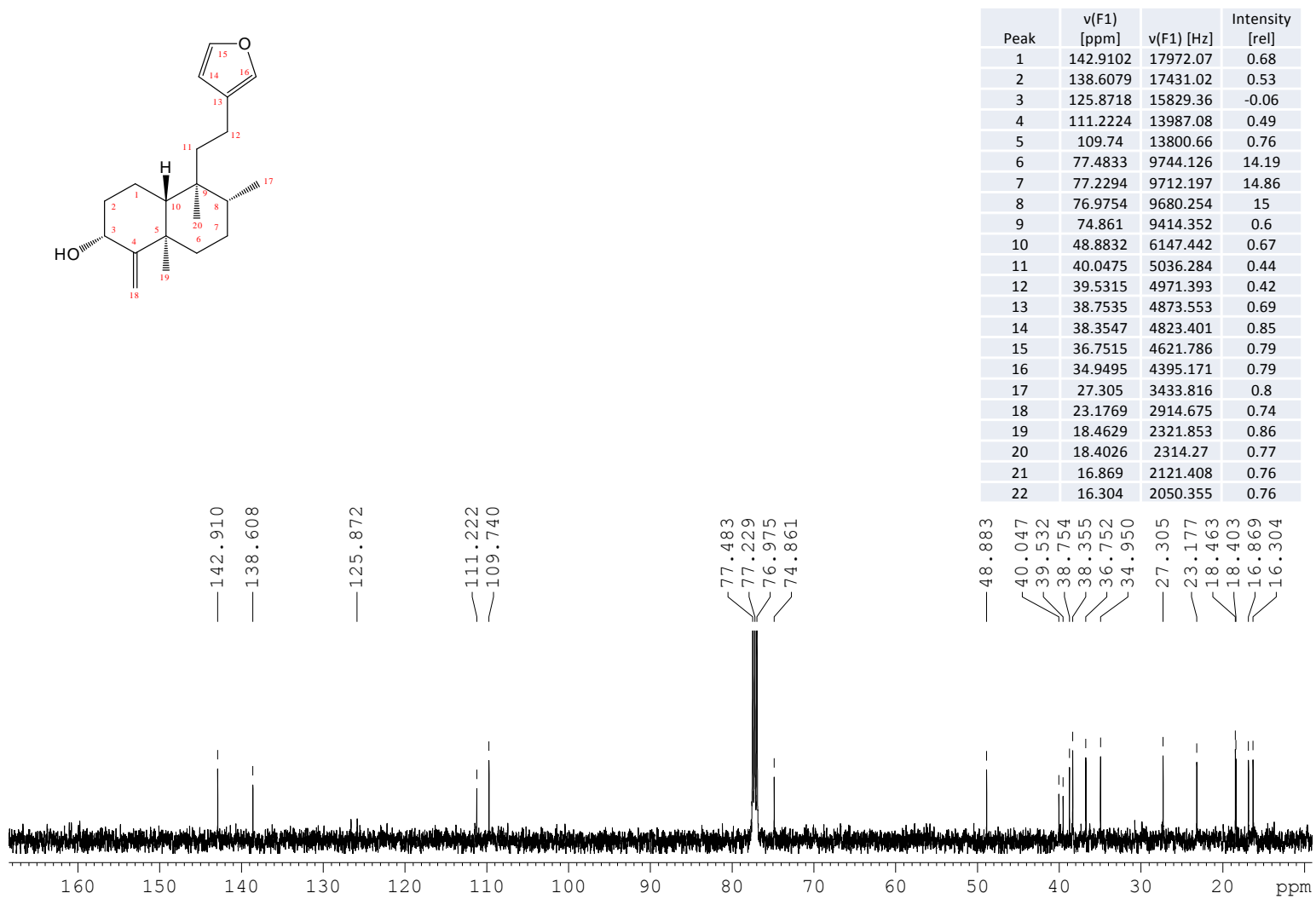


Figure S2.79:  $^{13}\text{C}$  NMR spectrum for compound 11 in  $\text{CDCl}_3$

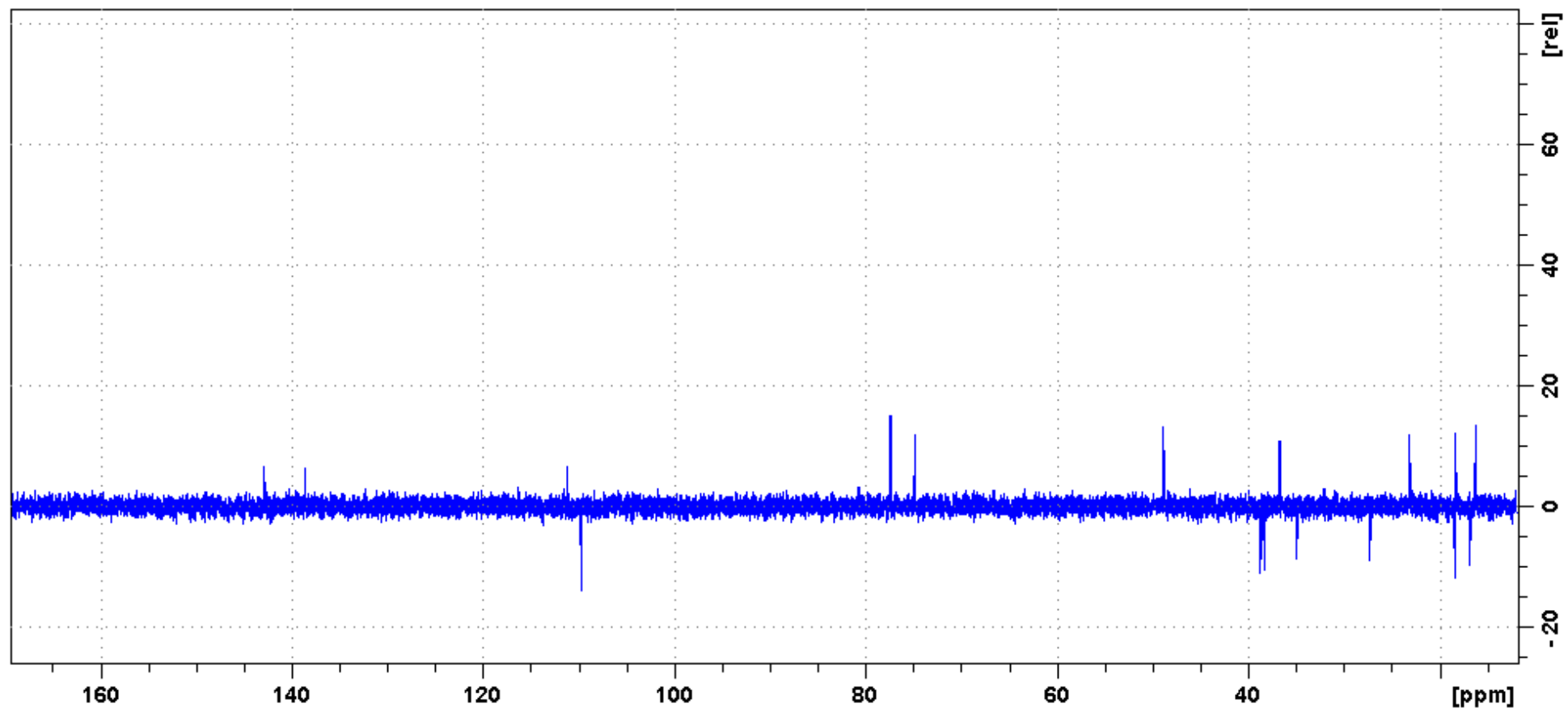


Figure S2.80: DEPT spectrum for compound 11 in CDCl<sub>3</sub>

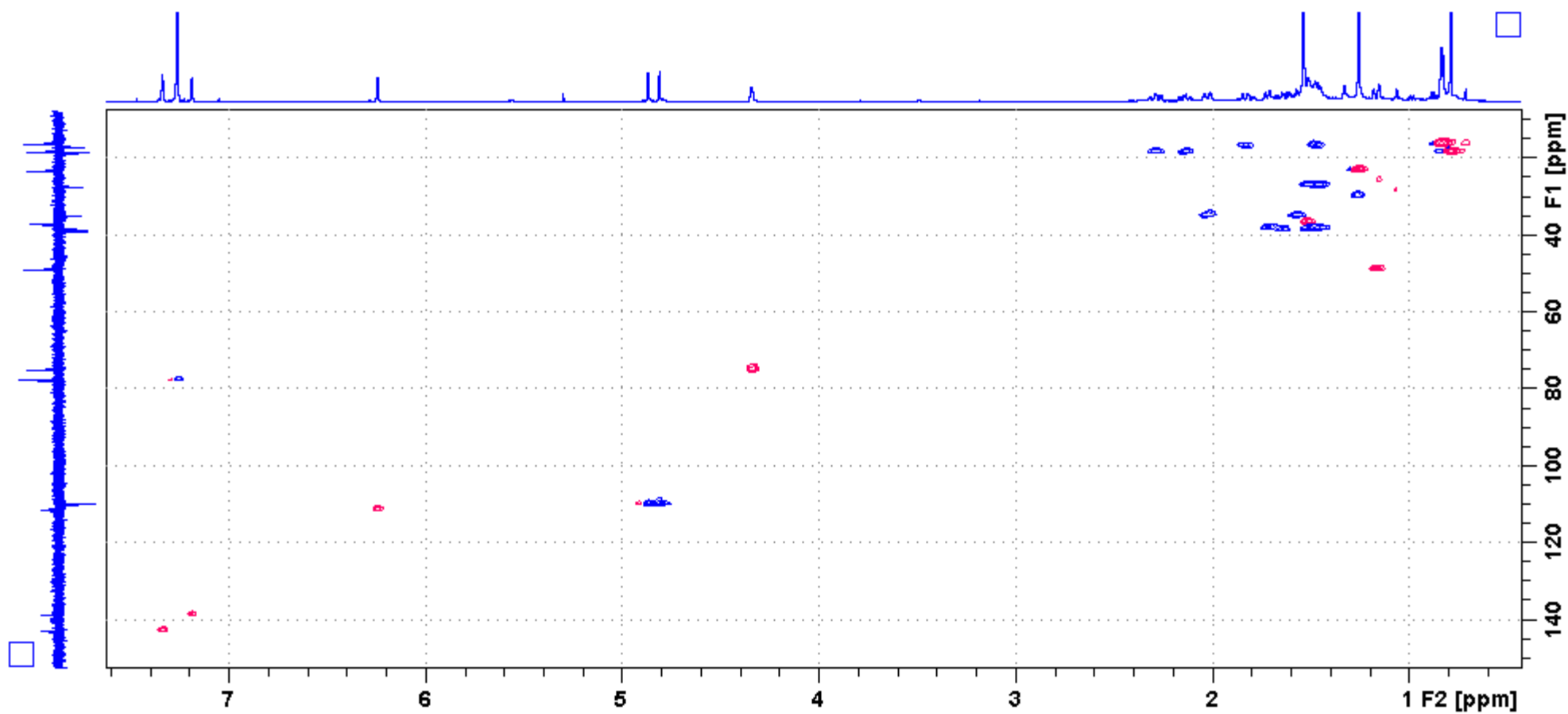


Figure S2.81: HSQCDEPT spectrum for compound 11 in CDCl<sub>3</sub>

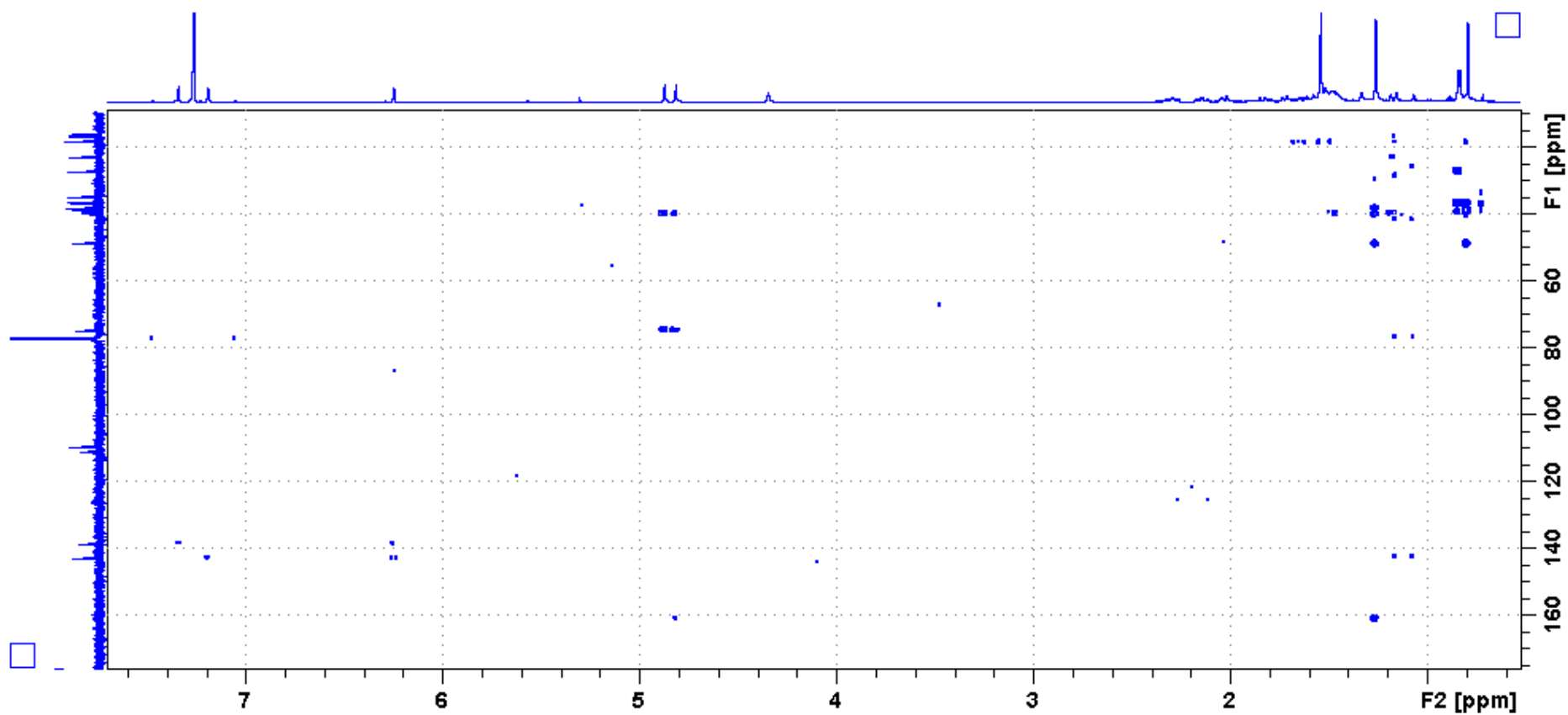


Figure S2.82: HMBC spectrum for compound 11 in CDCl<sub>3</sub>



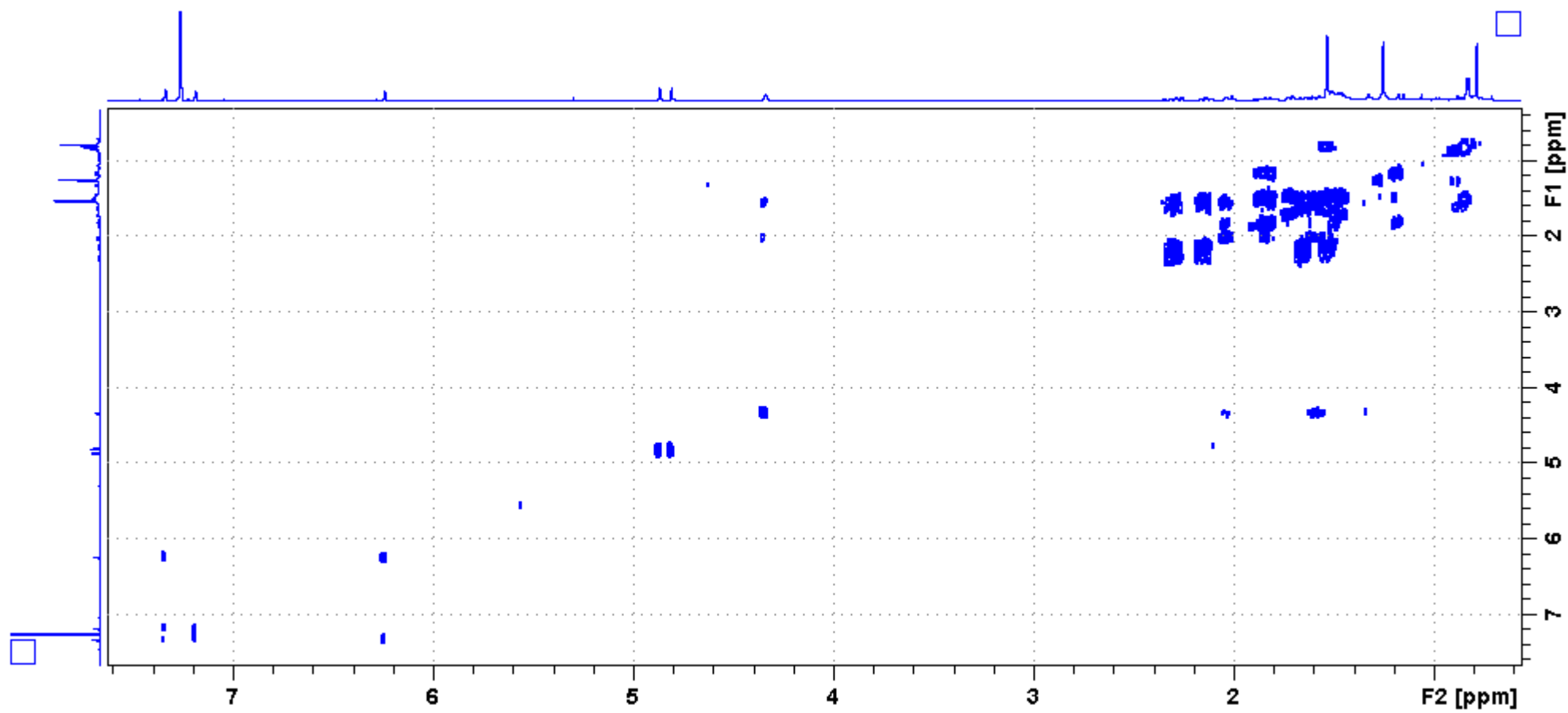


Figure S2.83: COSY spectrum for compound 11 in CDCl<sub>3</sub>

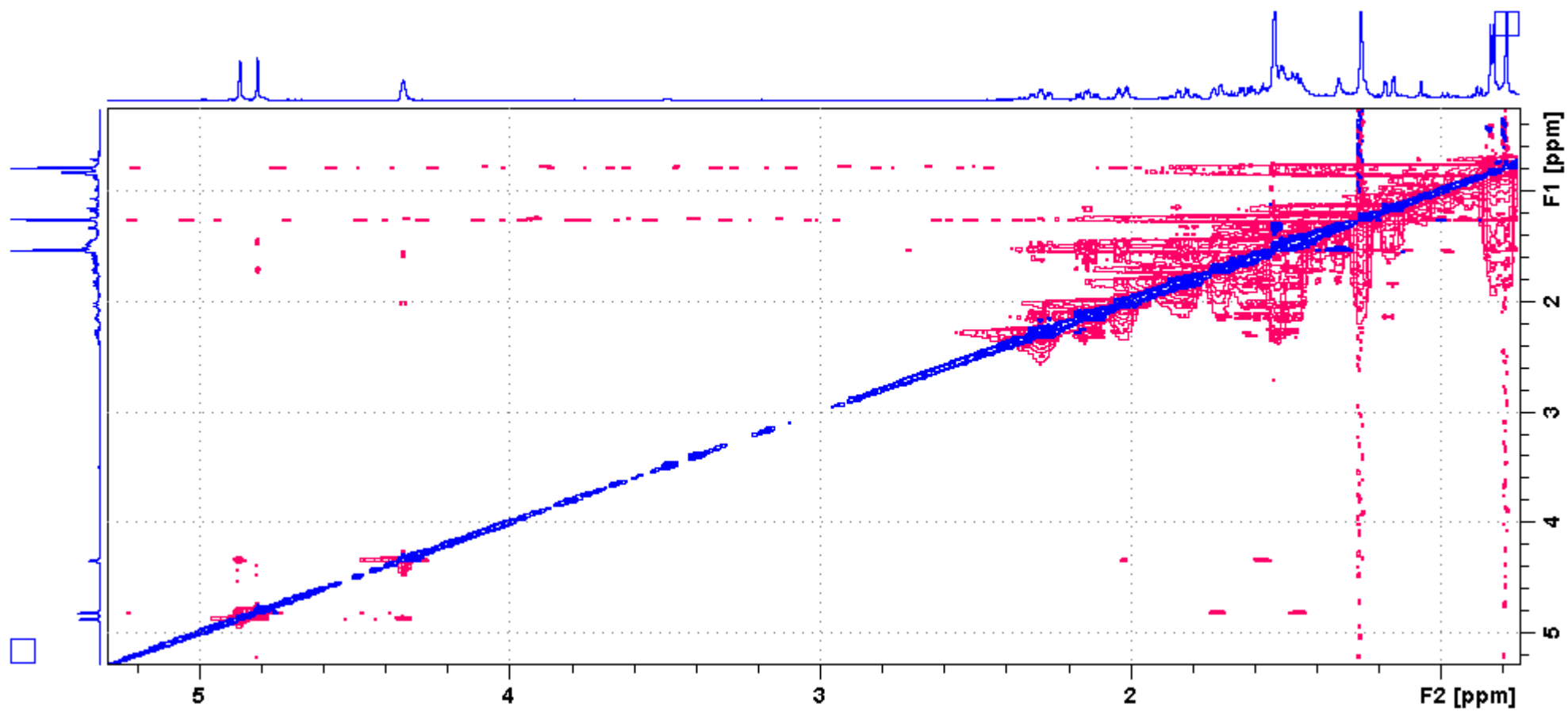
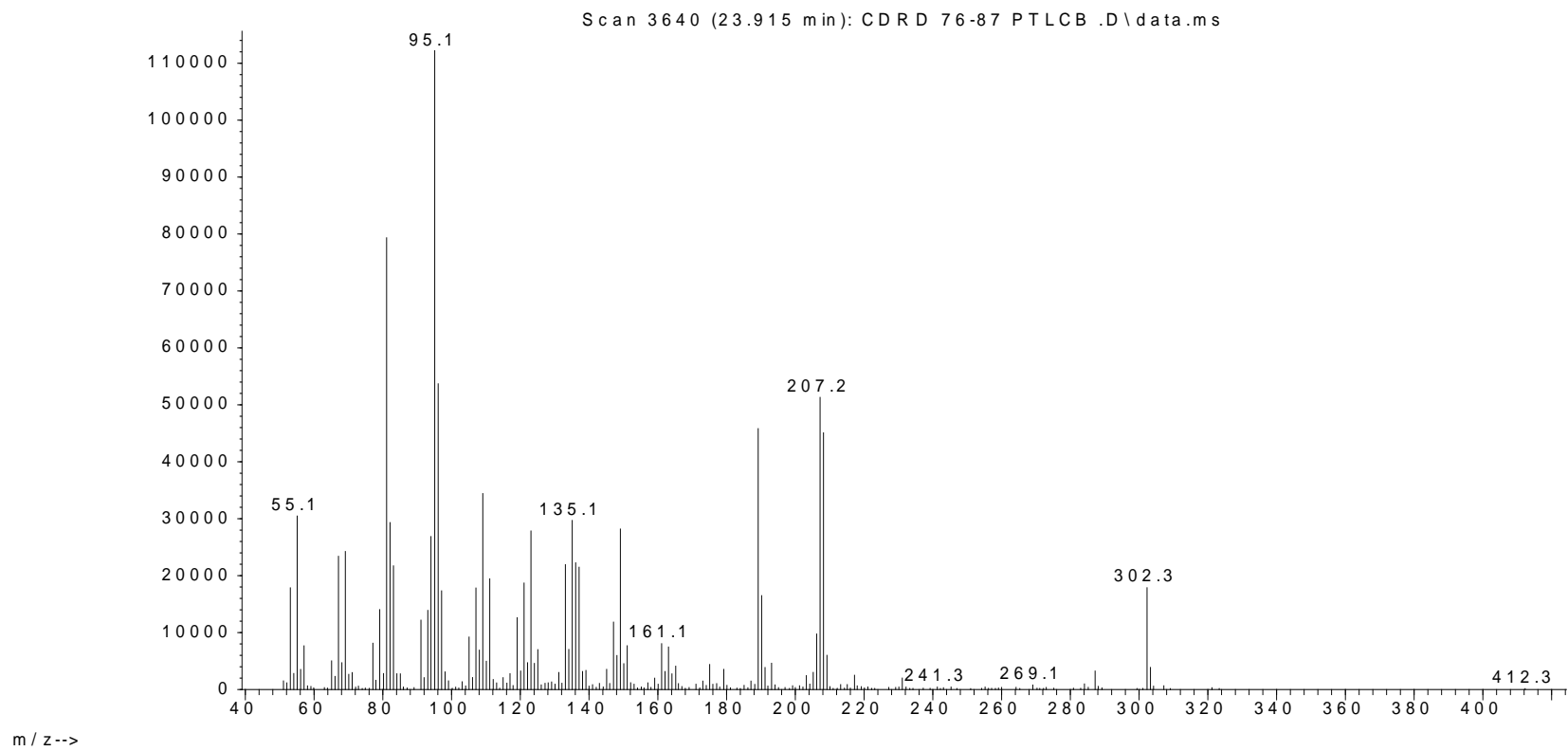


Figure S2.84: ROESY spectrum for compound 11 in  $\text{CDCl}_3$

Abundance



**Figure S2.85: Mass spectrum for compound 12**

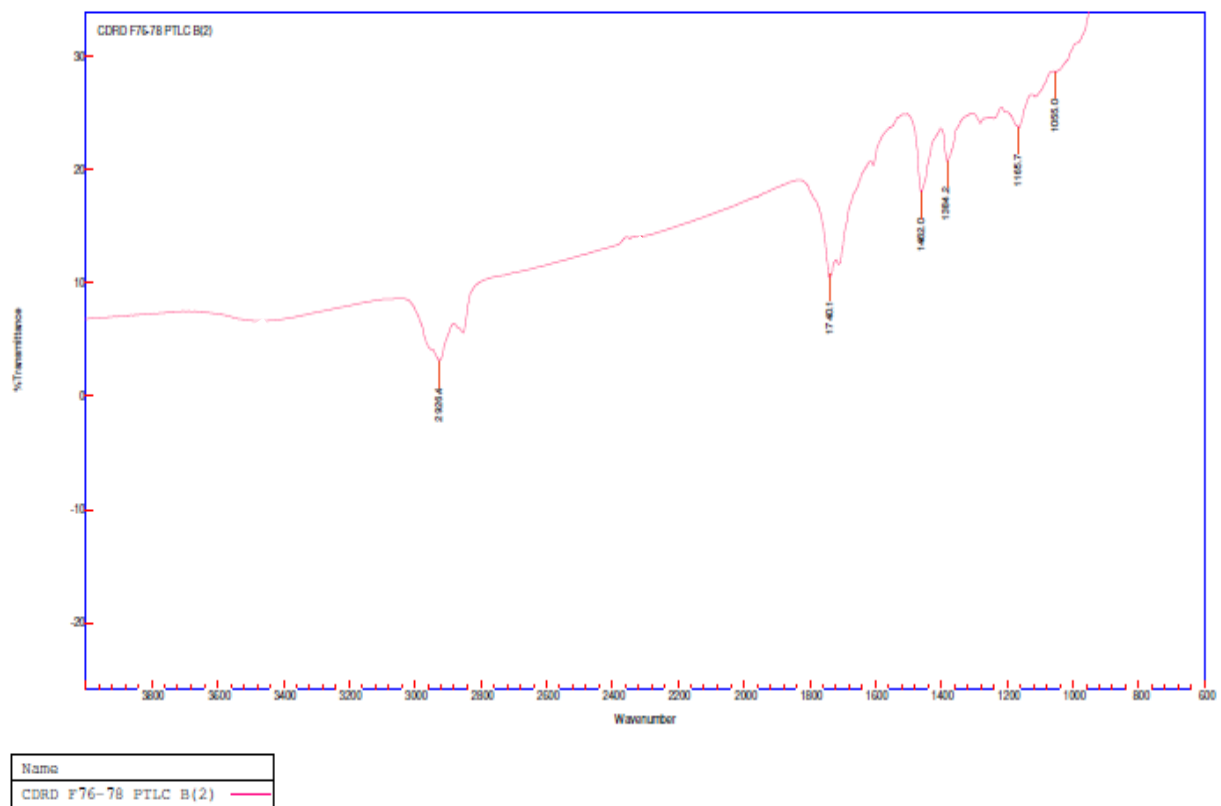


Figure S2.86: FTIR spectrum for compound 12

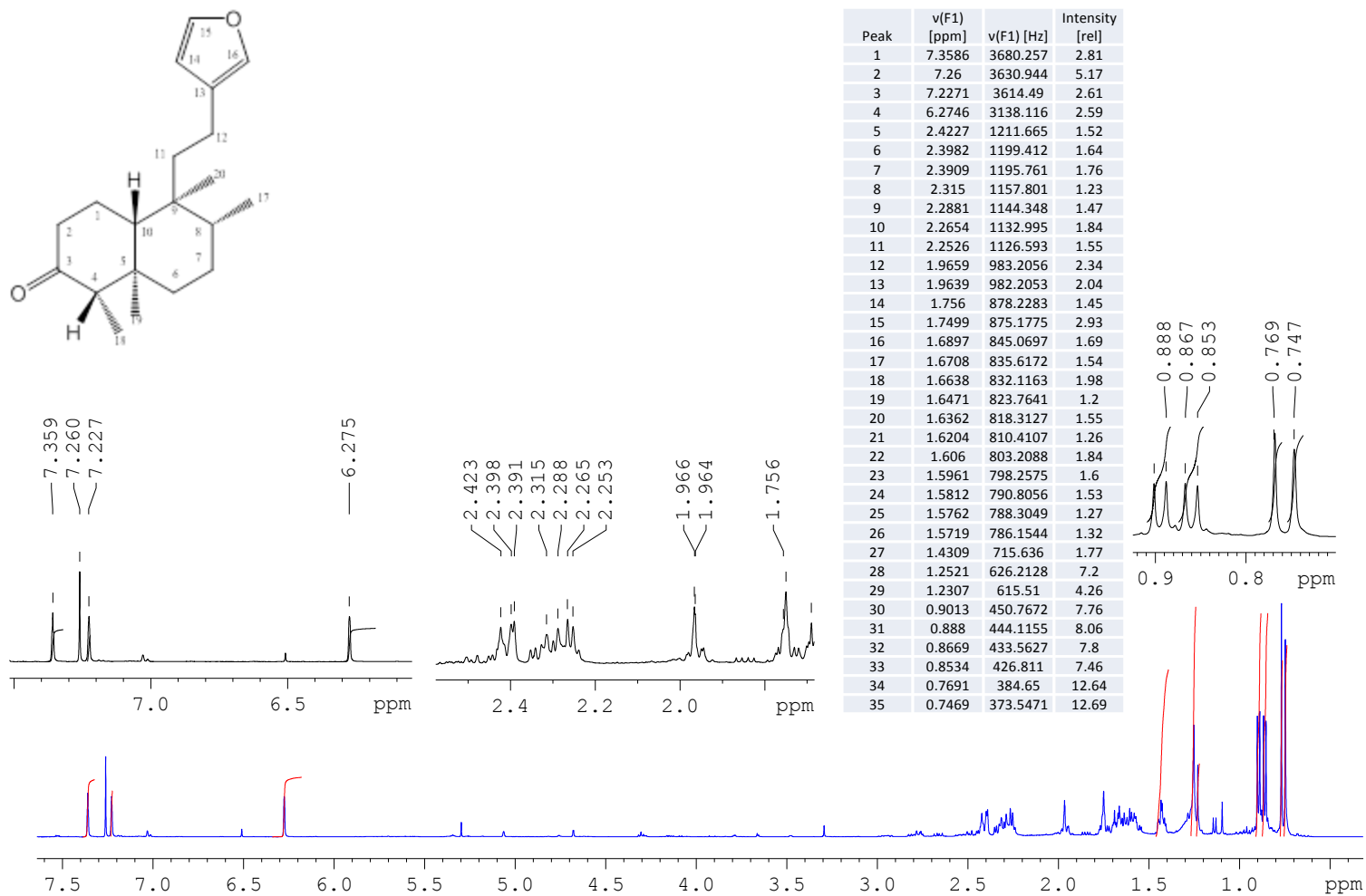


Figure S2.87:  $^1\text{H}$  NMR spectrum for compound 12 in  $\text{CDCl}_3$

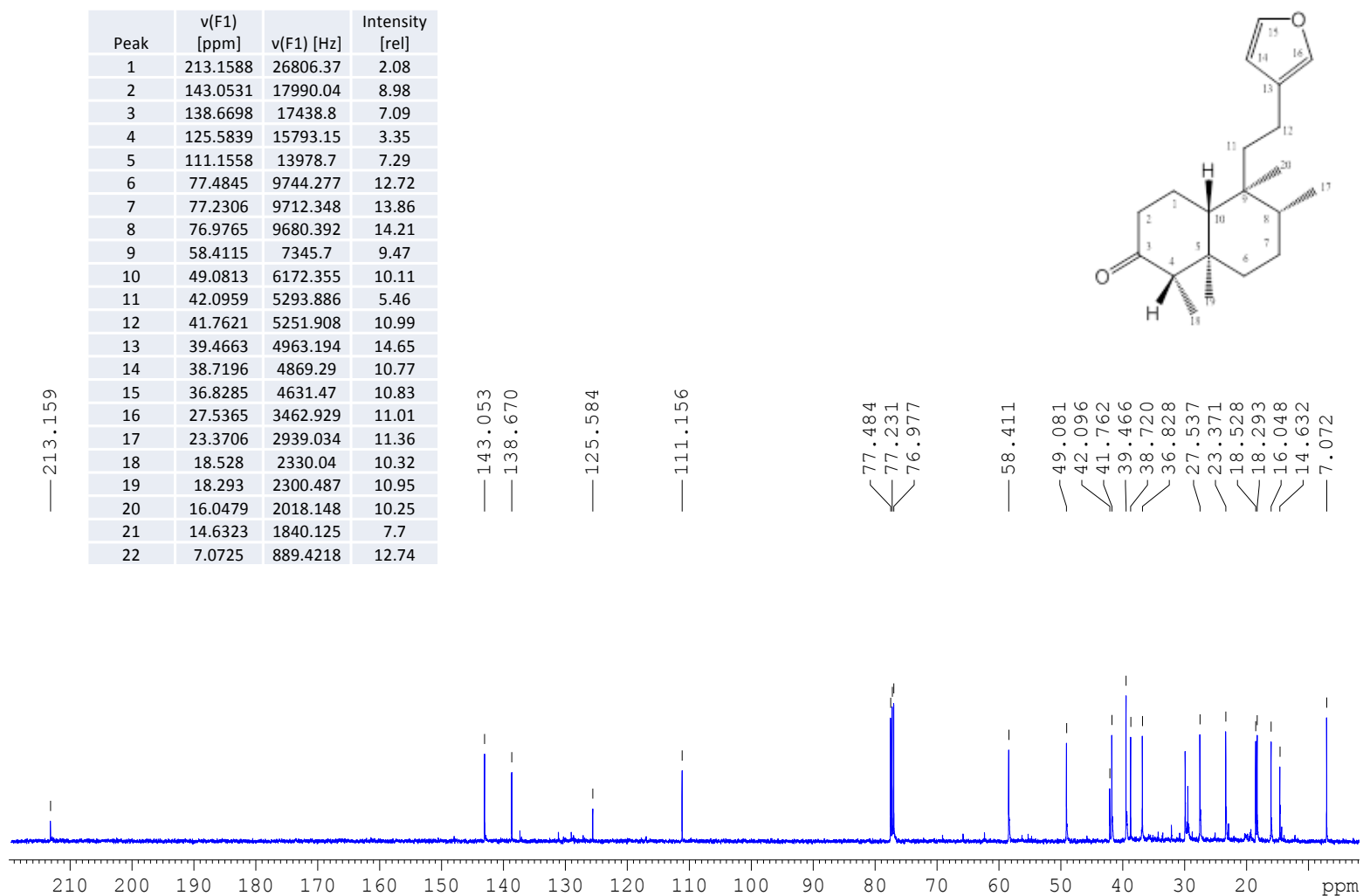


Figure S2.88:  $^{13}\text{C}$  NMR spectrum for compound 12 in  $\text{CDCl}_3$

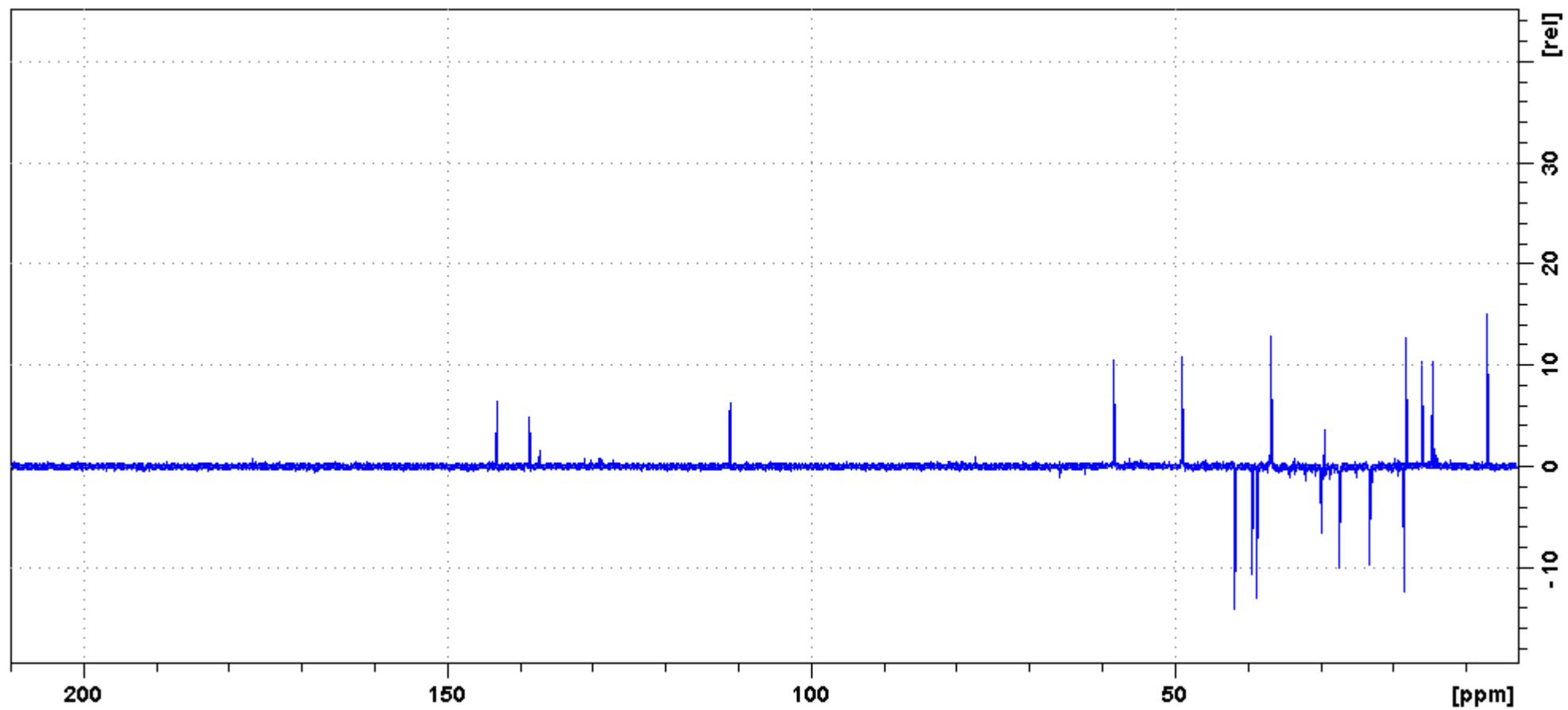
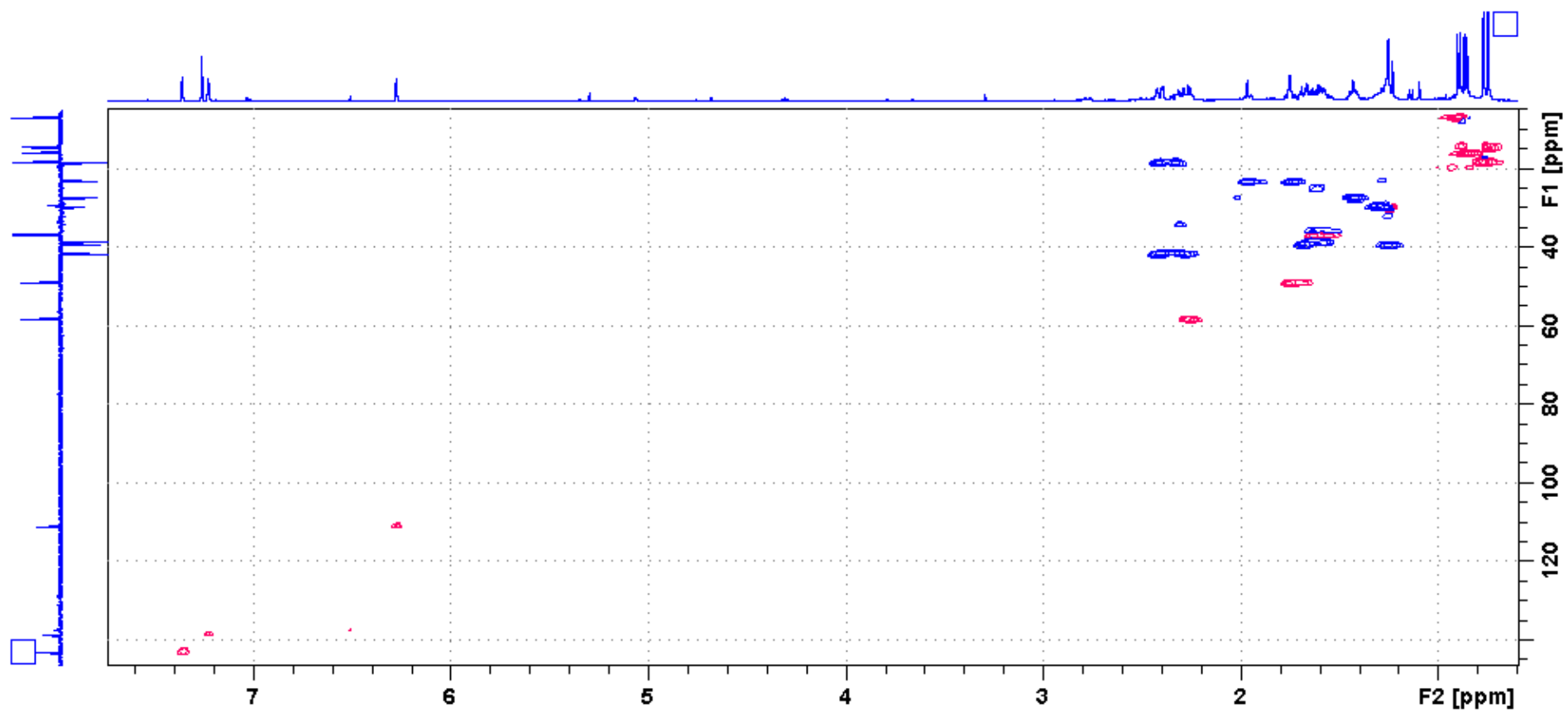


Figure S2.89: DEPT spectrum for compound 12 in CDCl<sub>3</sub>



3

Figure S2.90: HSQCDEPT spectrum for compound 12 in  $\text{CDCl}_3$



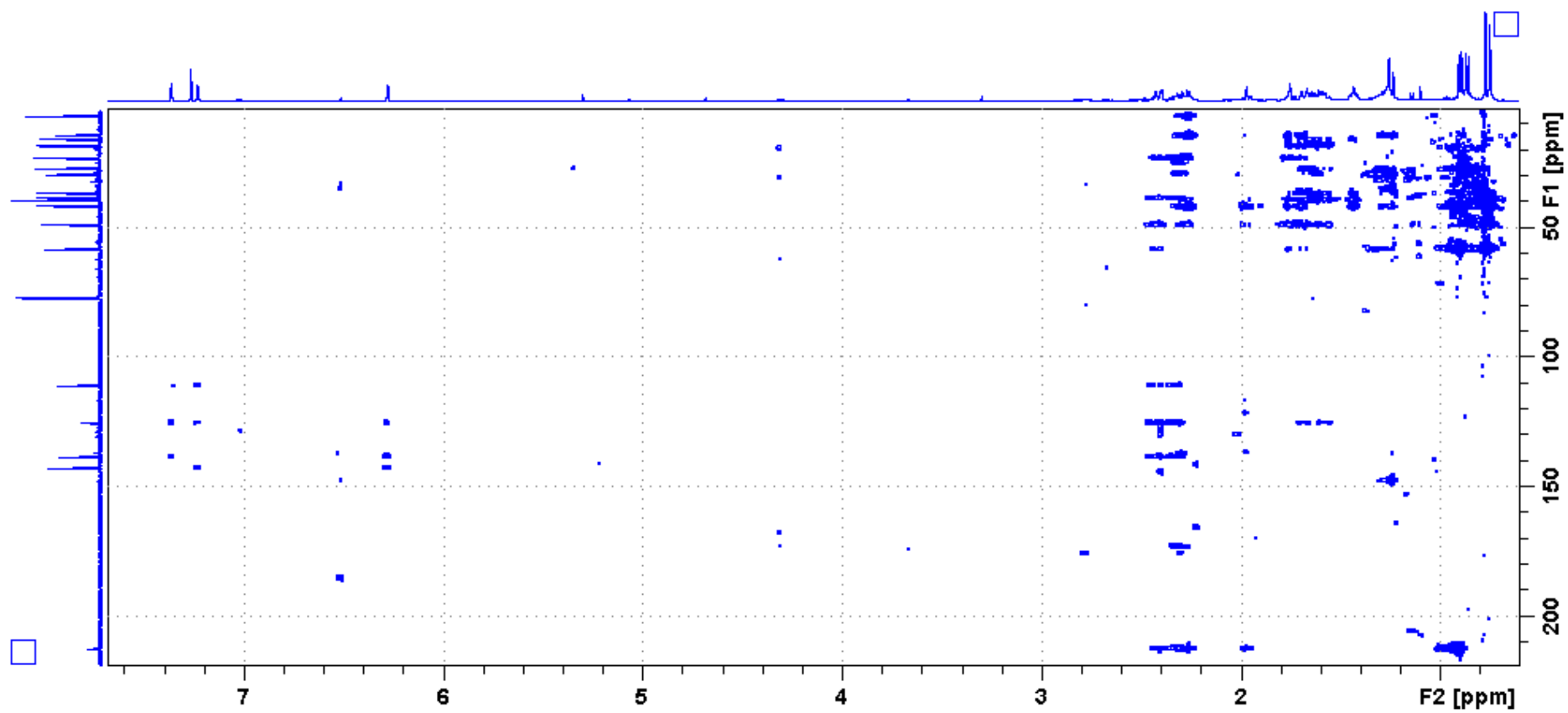


Figure S2.91: HMBC spectrum for compound 12 in CDCl<sub>3</sub>

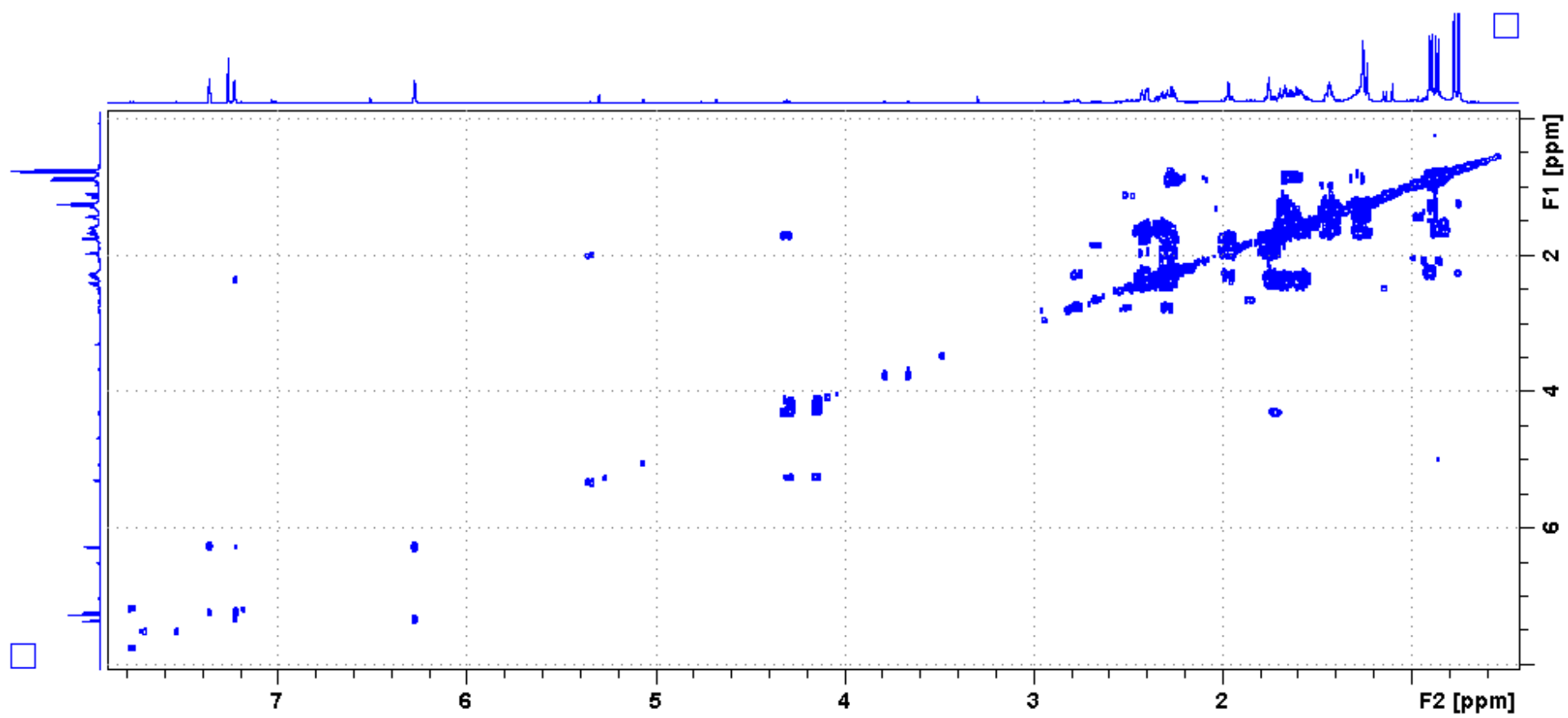


Figure S2.92: COSY spectrum for compound 12 in CDCl<sub>3</sub>

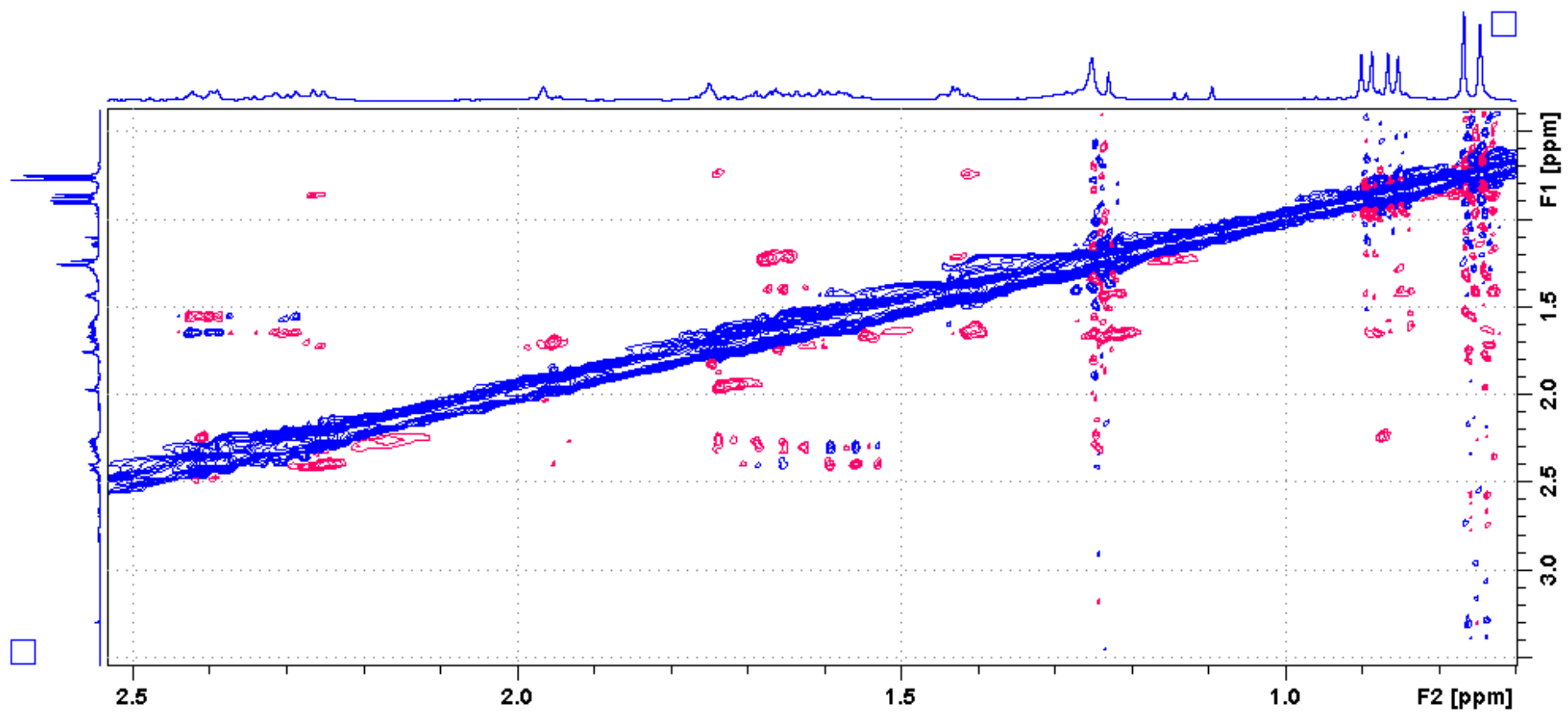


Figure S2.93: NOESY spectrum for compound 12 in CDCl<sub>3</sub>

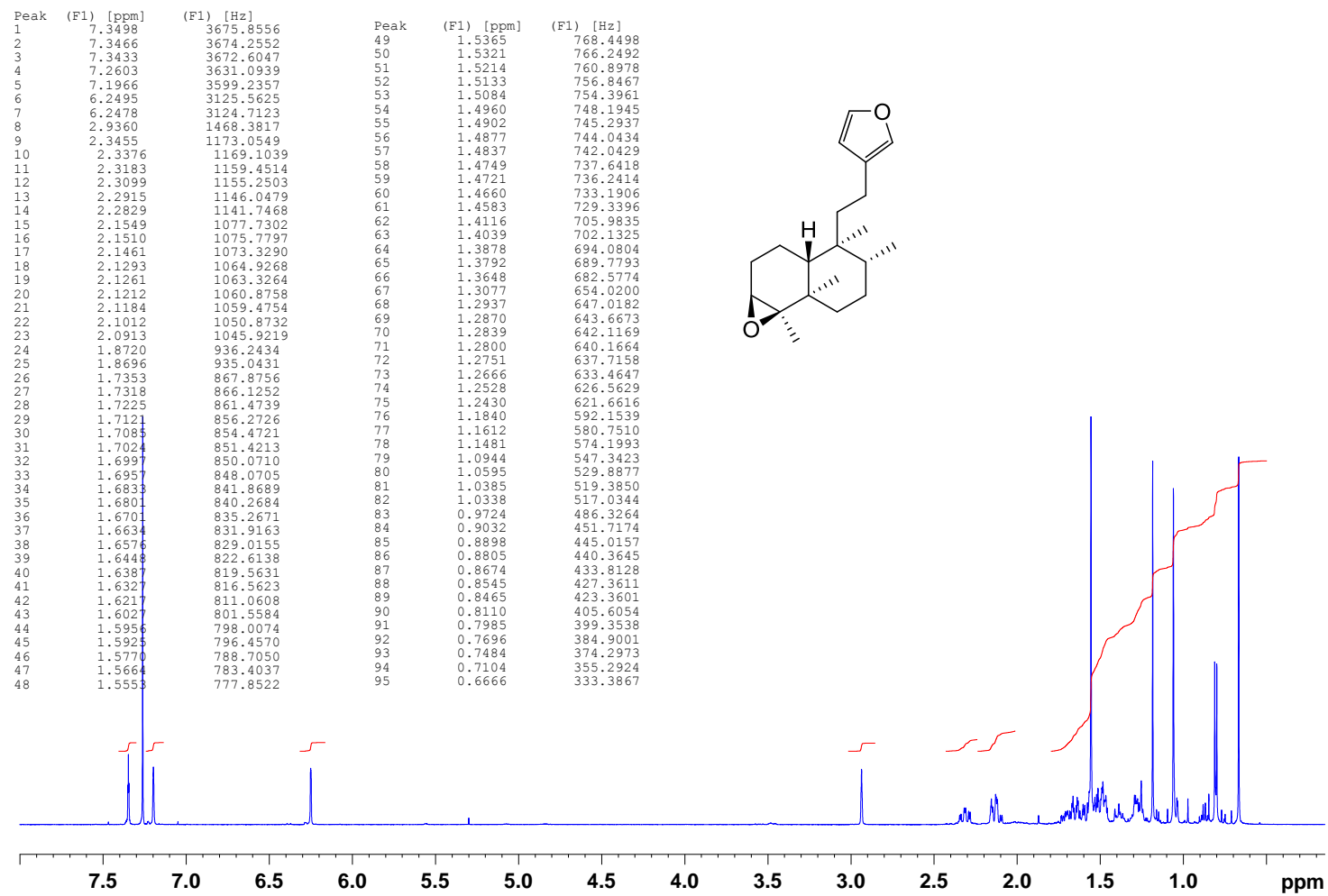
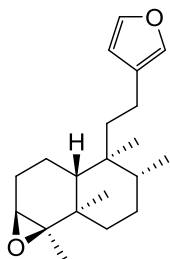
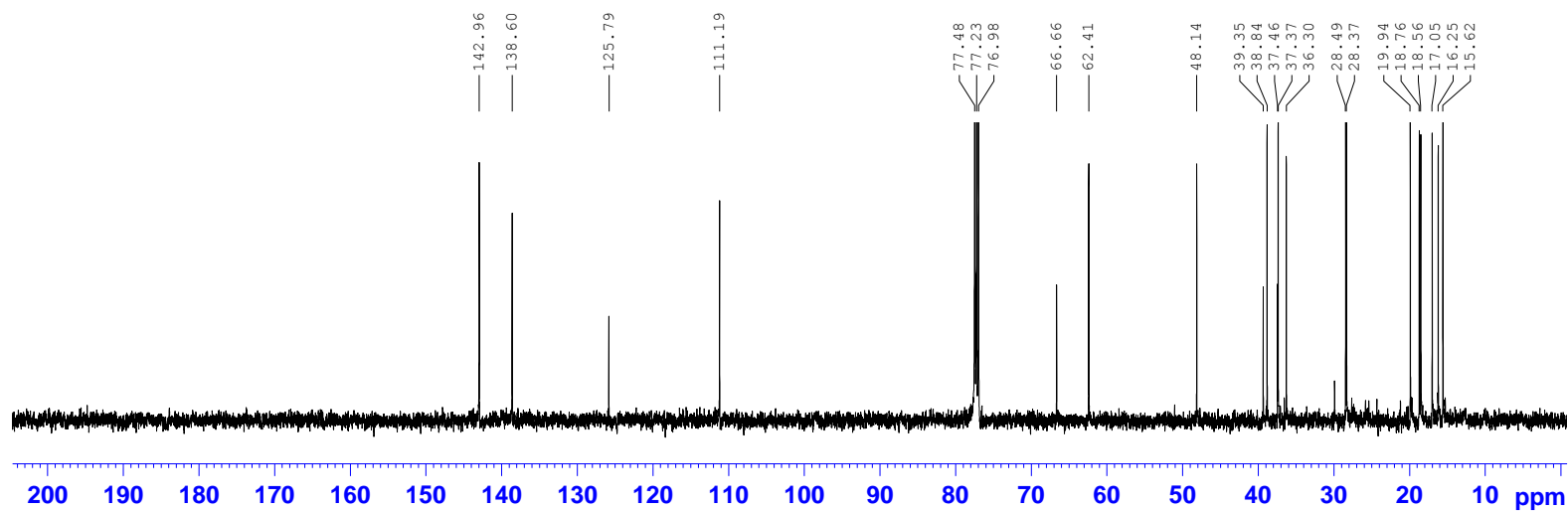


Figure S2.94: <sup>1</sup>H NMR spectrum for compound 13 in CDCl<sub>3</sub>

Figure S2.95:  $^{13}\text{C}$  NMR spectrum for compound 13 in  $\text{CDCl}_3$



Peak	(F1) [ppm]	(F1) [Hz]
1	142.9624	17978.6316
2	138.6047	17430.6170
3	125.7910	15819.1947
4	111.1899	13982.9931
5	77.4846	9744.2899
6	77.2306	9712.3475
7	76.9766	9680.4050
8	66.6590	8382.8867
9	62.4085	7848.3533
10	48.1377	6053.6895
11	39.3519	4948.8069
12	38.8415	4884.6201
13	37.4575	4710.5714
14	37.3744	4700.1209
15	36.3016	4565.2080
16	28.4946	3583.4171
17	28.3711	3567.8861
18	19.9443	2508.1505
19	18.7594	2359.1402
20	18.5581	2333.8251
21	17.0536	2144.6226
22	16.2532	2043.9661
23	15.6222	1964.6129



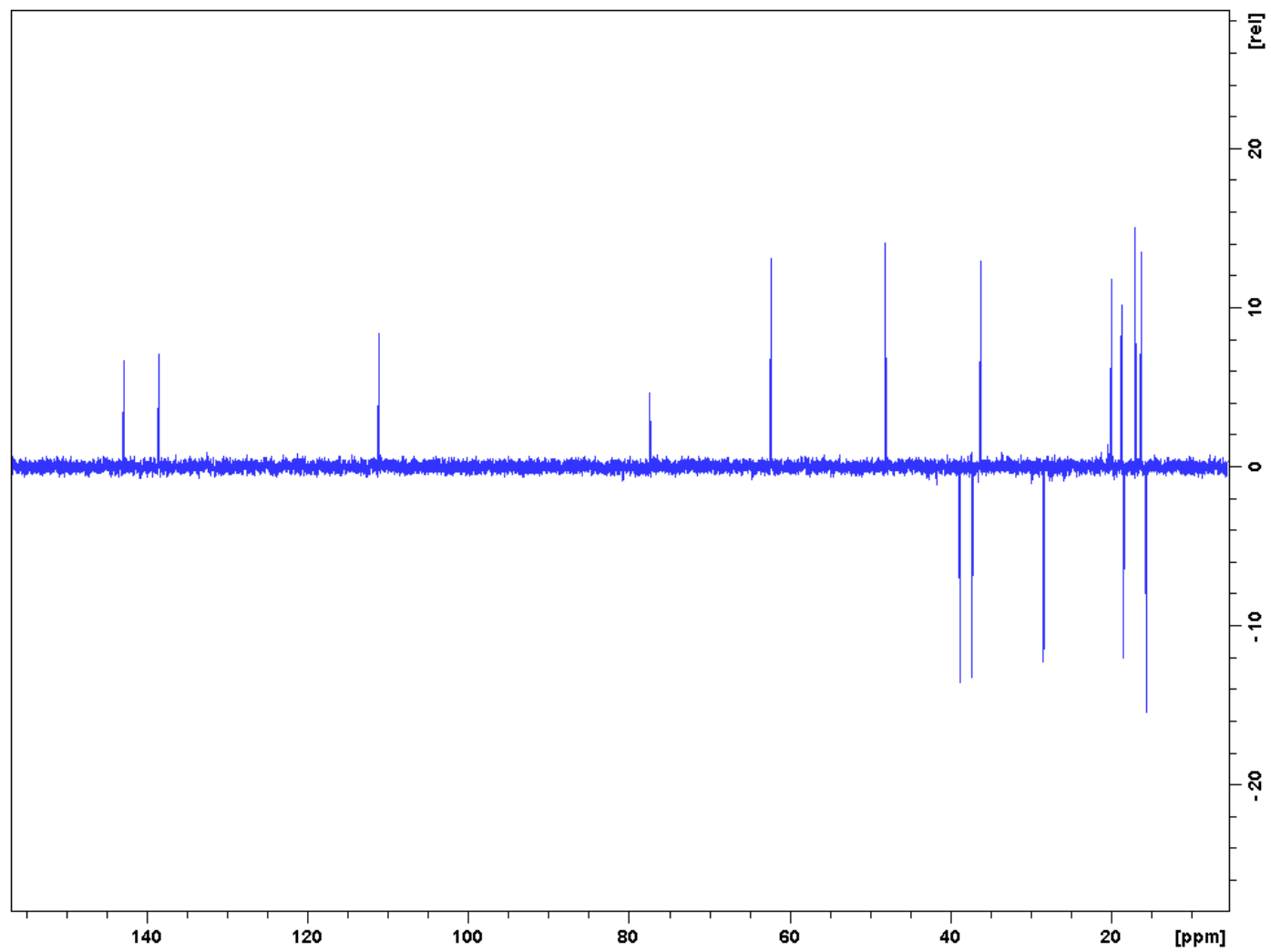
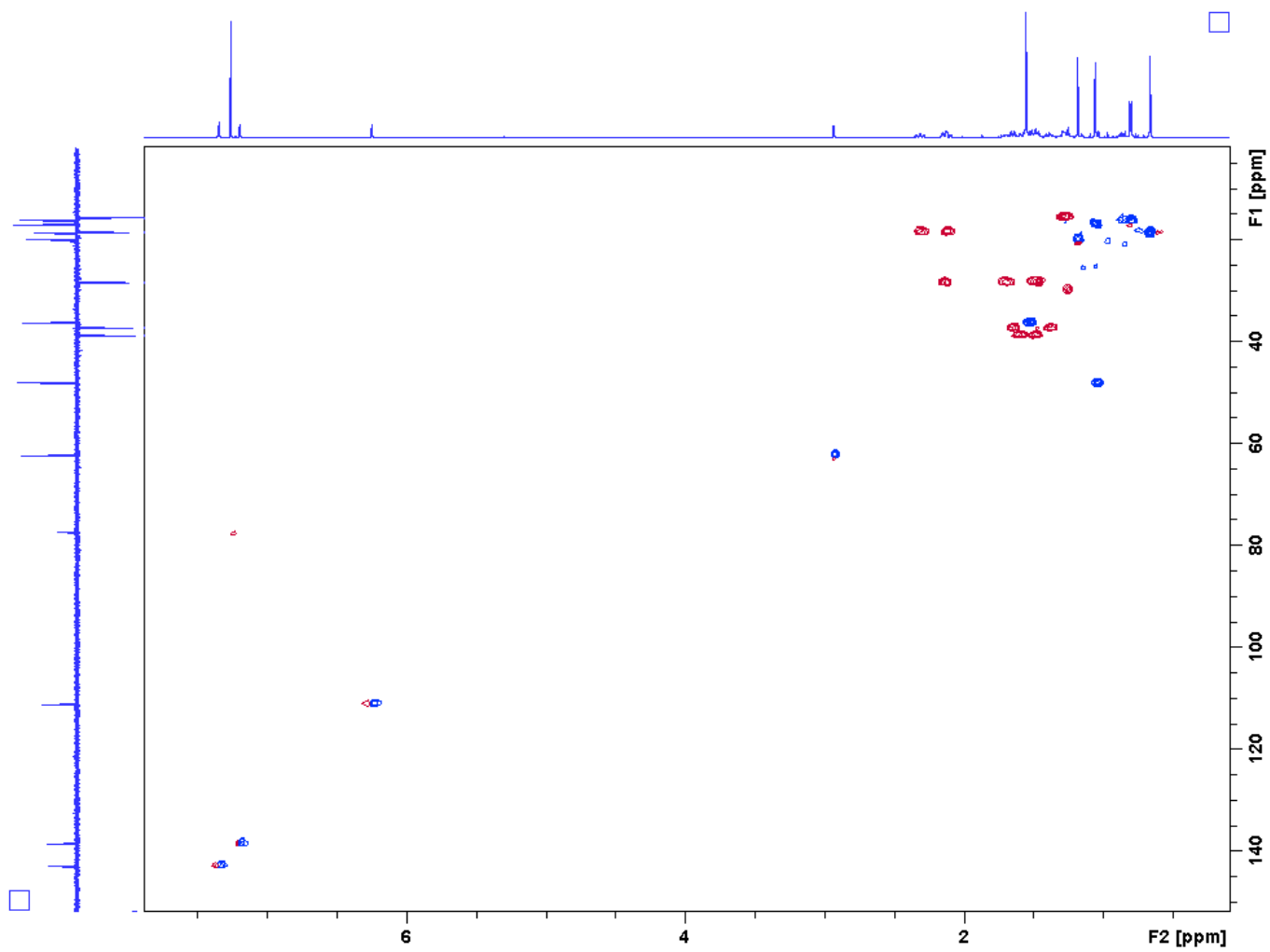


Figure S2.96: DEPT spectrum for compound 13 in CDCl<sub>3</sub>



**Figure S2.97: HSQCDEPT spectrum for compound 13 in CDCl<sub>3</sub>**

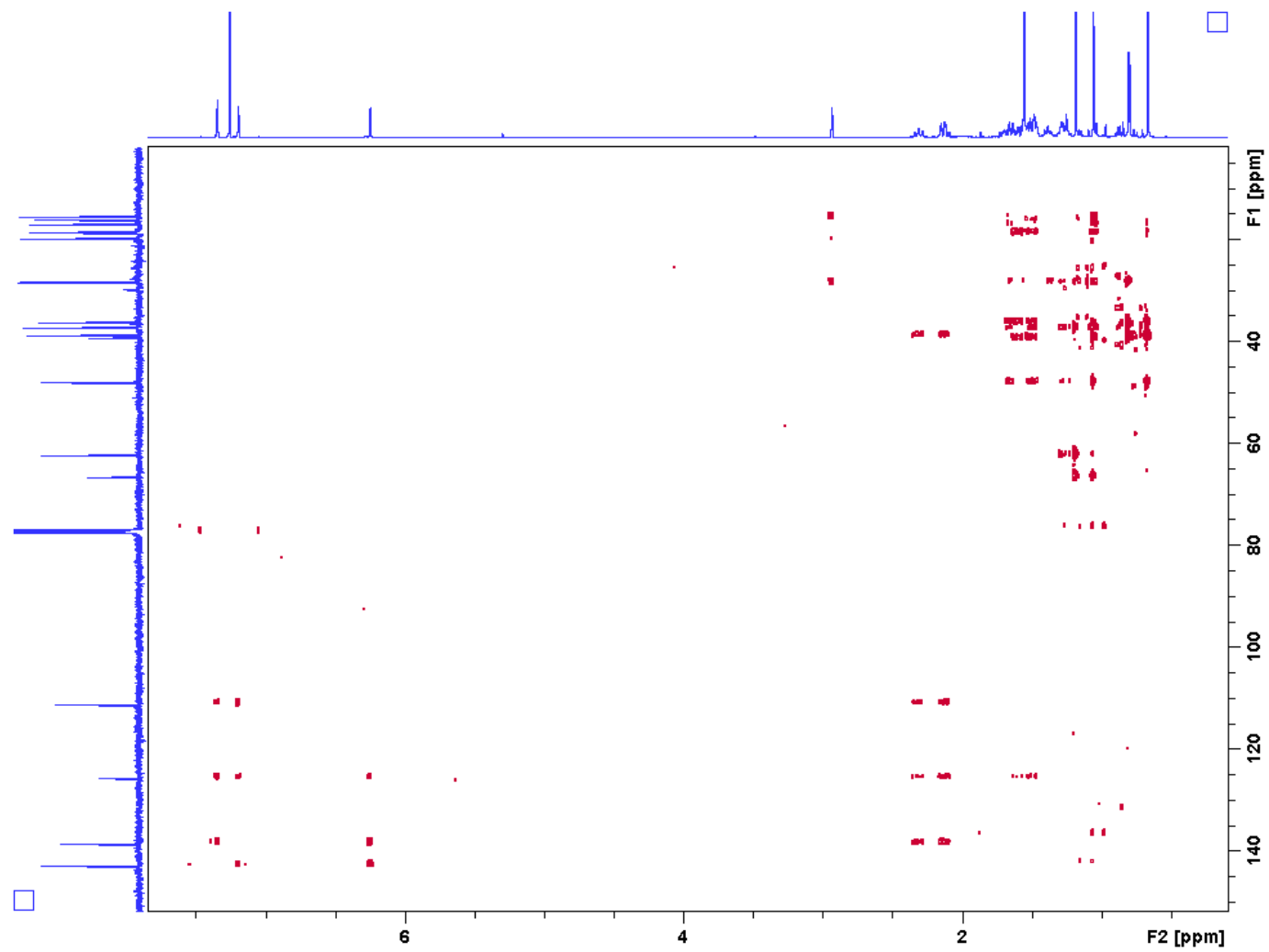


Figure S2.98: HMBC spectrum for compound 13 in CDCl<sub>3</sub>



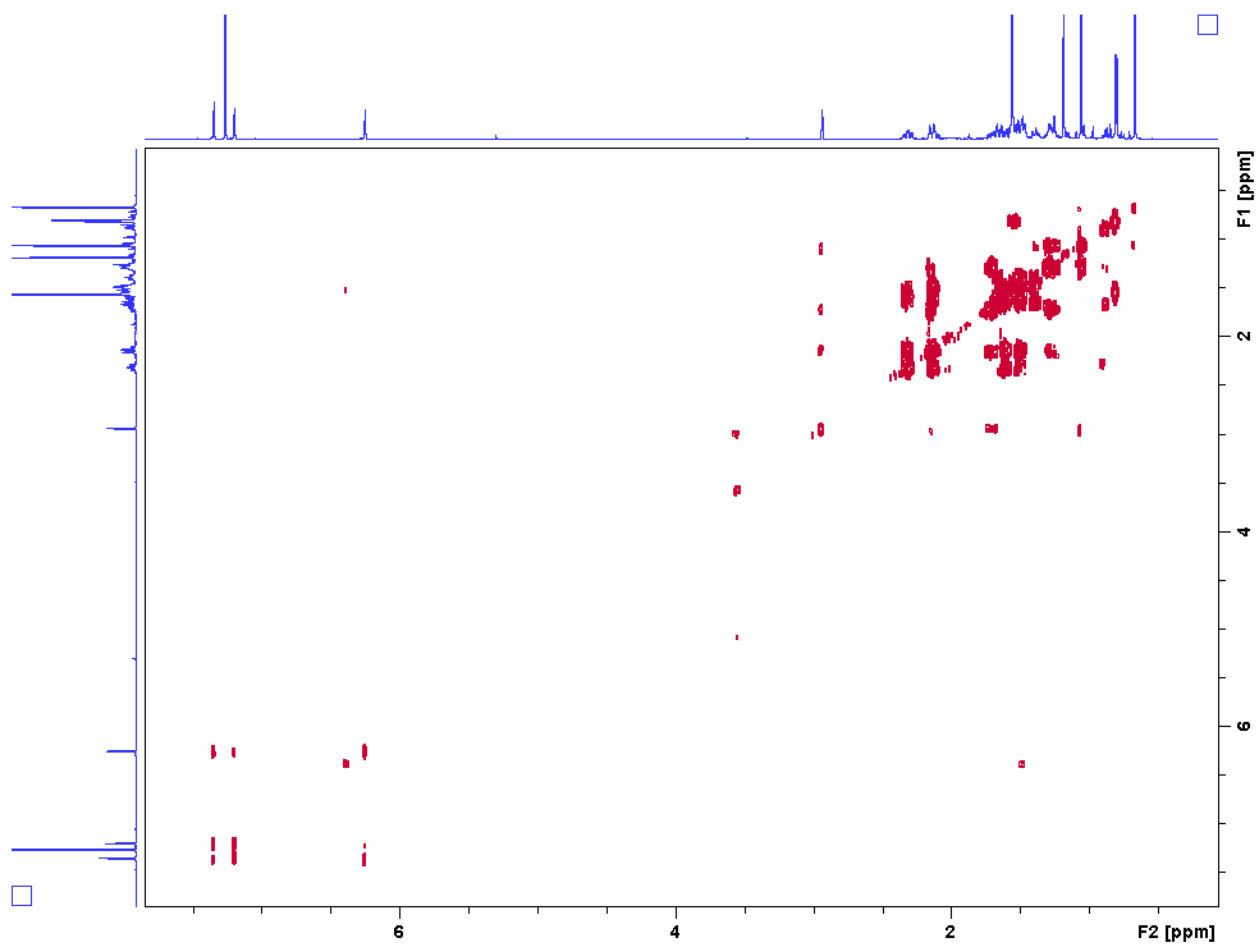


Figure S2.99: COSY spectrum for compound 13 in CDCl<sub>3</sub>

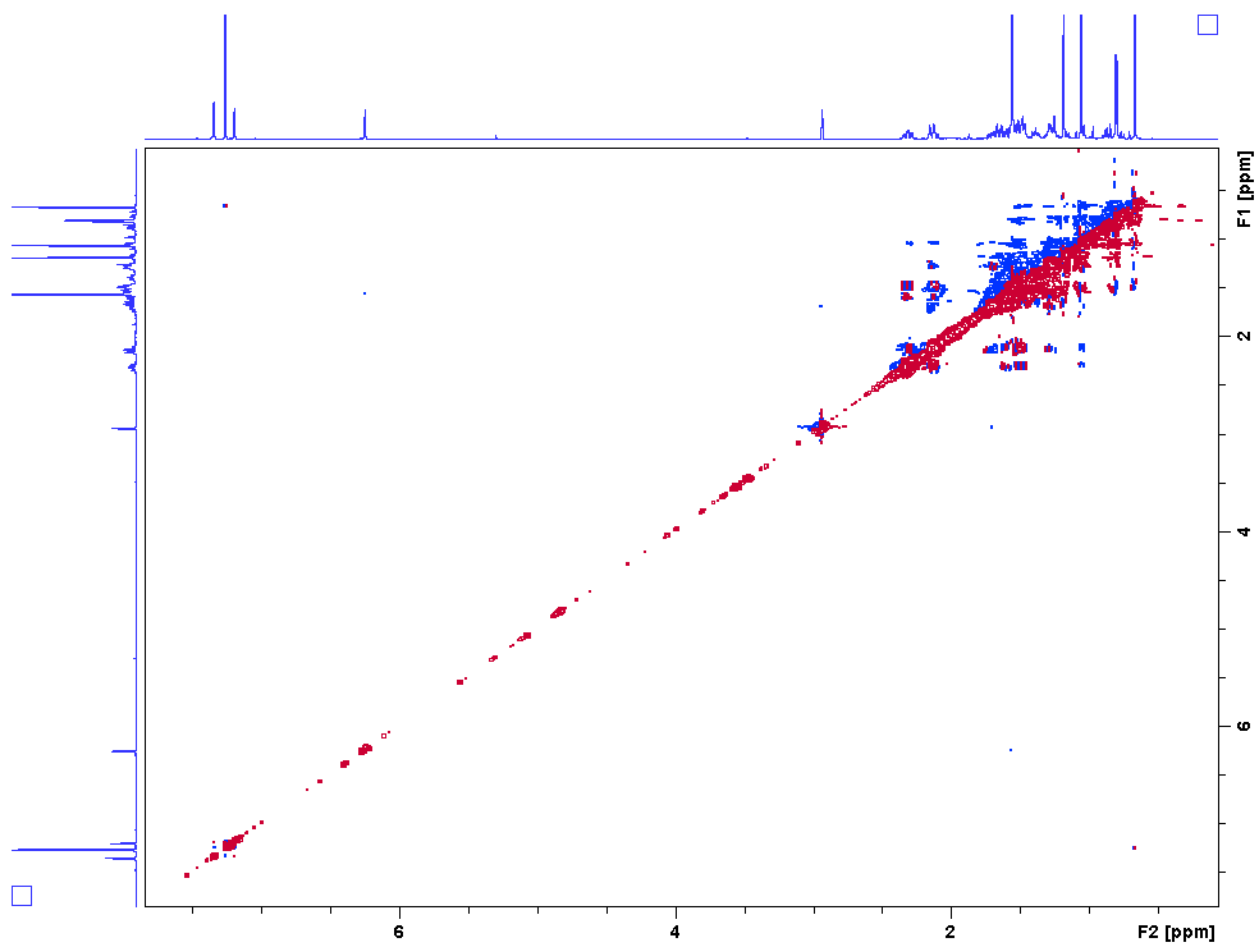


Figure S2.100: NOESY spectrum for compound 13 in CDCl<sub>3</sub>

A b u n d a n c e

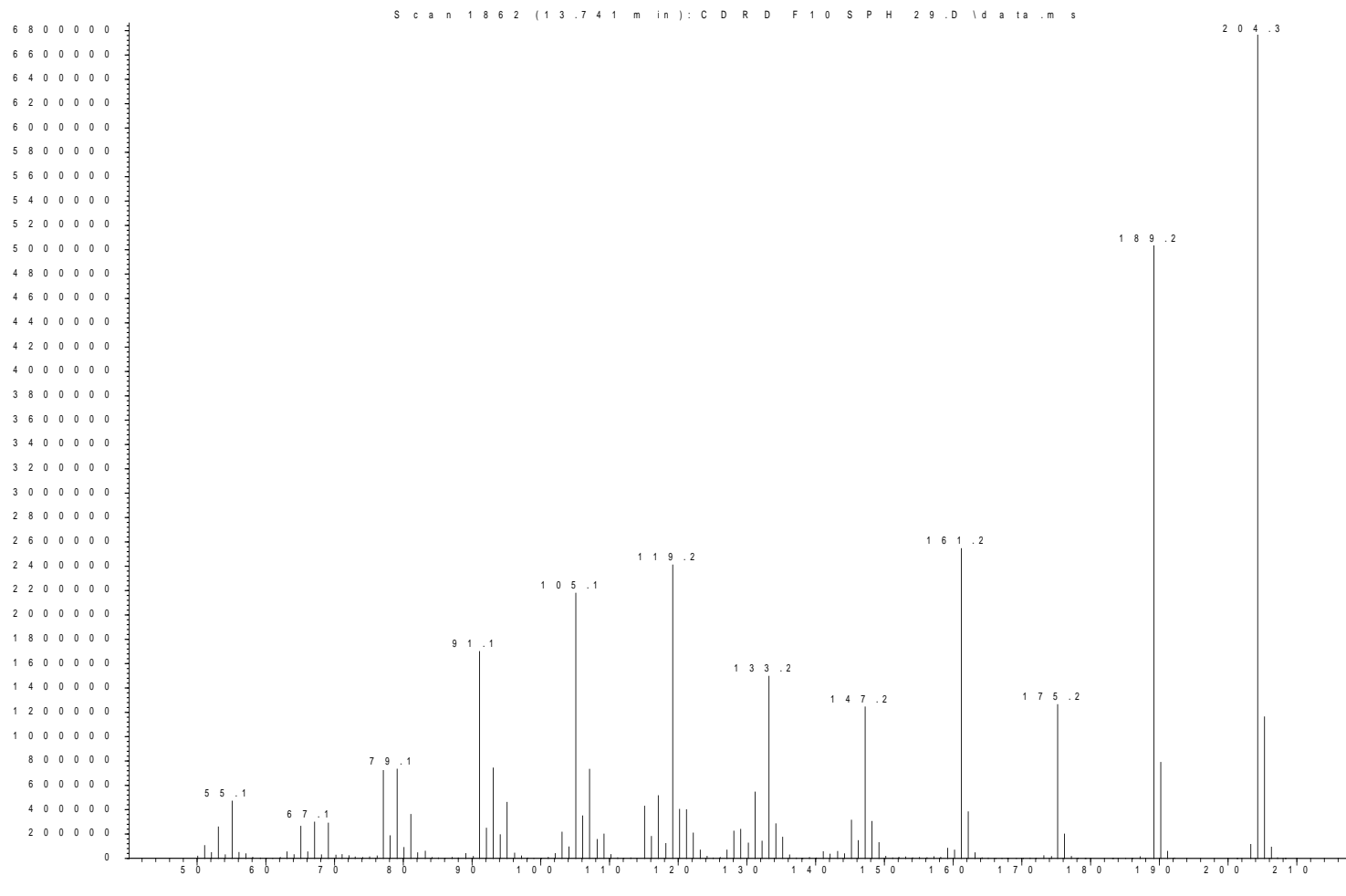
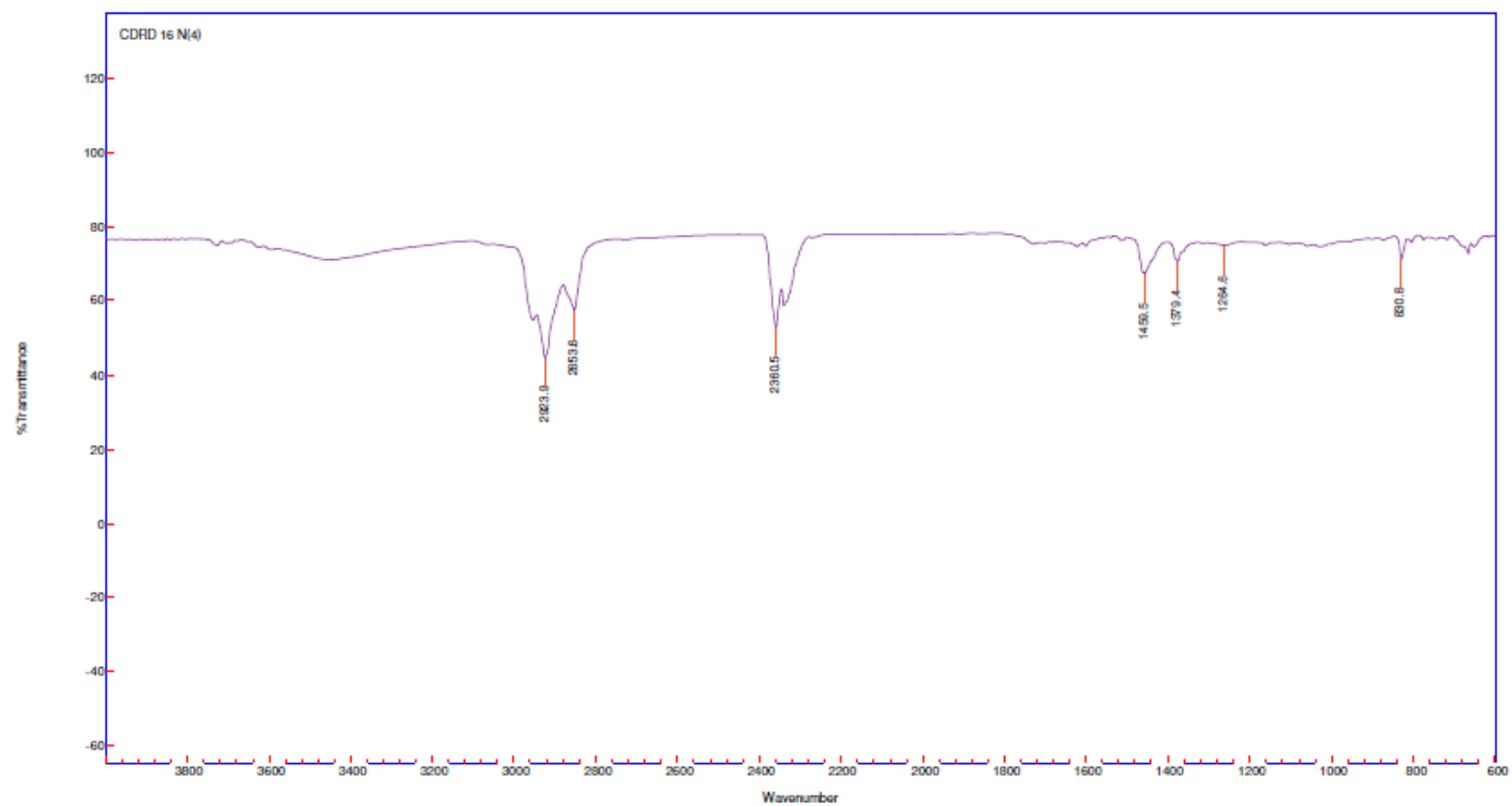


Figure S2.101: Mass spectrum for compound 14

Agilent Resolutions Pro



Name
CDRD 16 N(4)

Figure S2.102: FTIR spectrum for compound 14

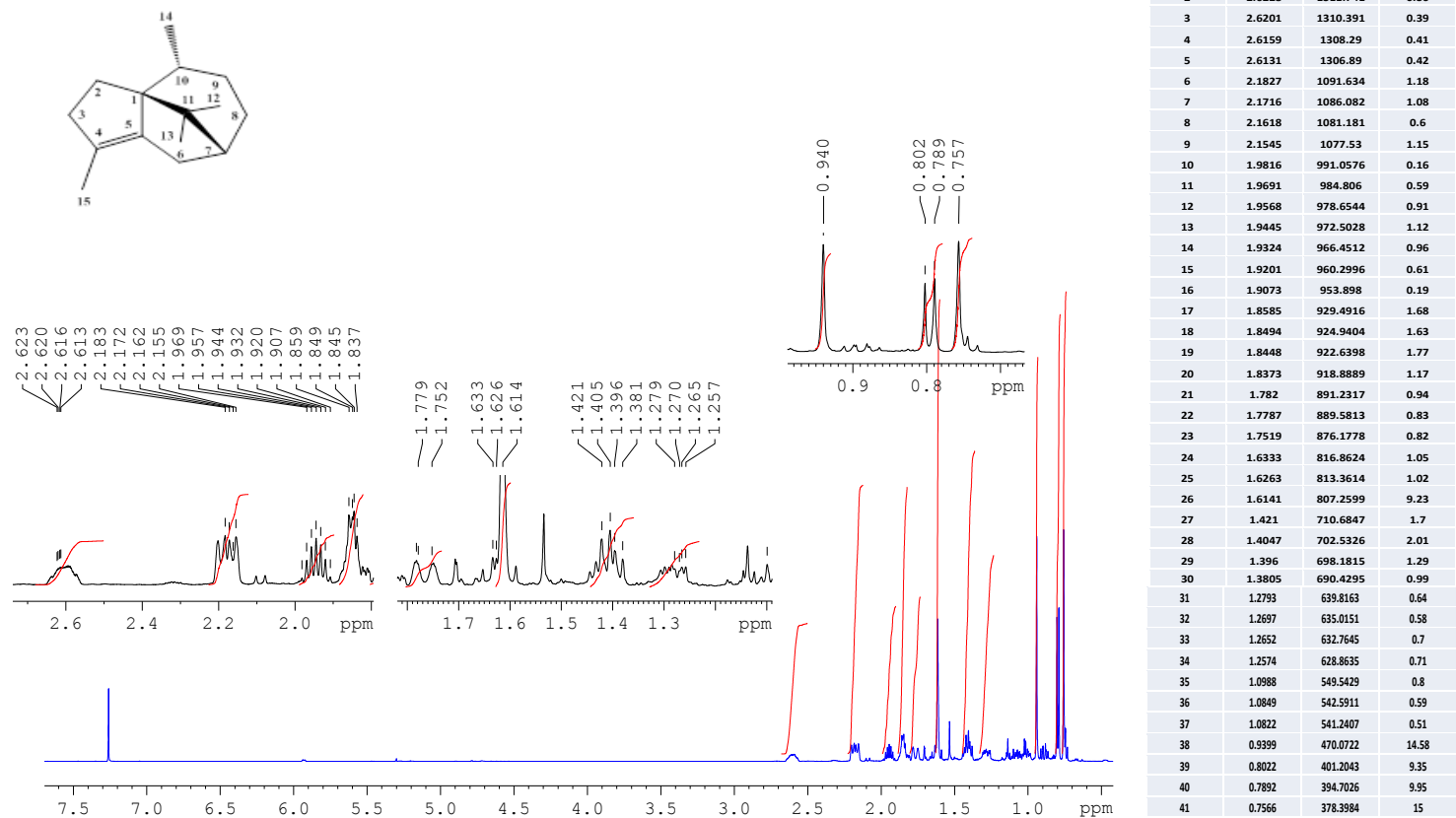


Figure S2.103:  $^1\text{H}$  NMR spectrum for compound 14 in  $\text{CDCl}_3$

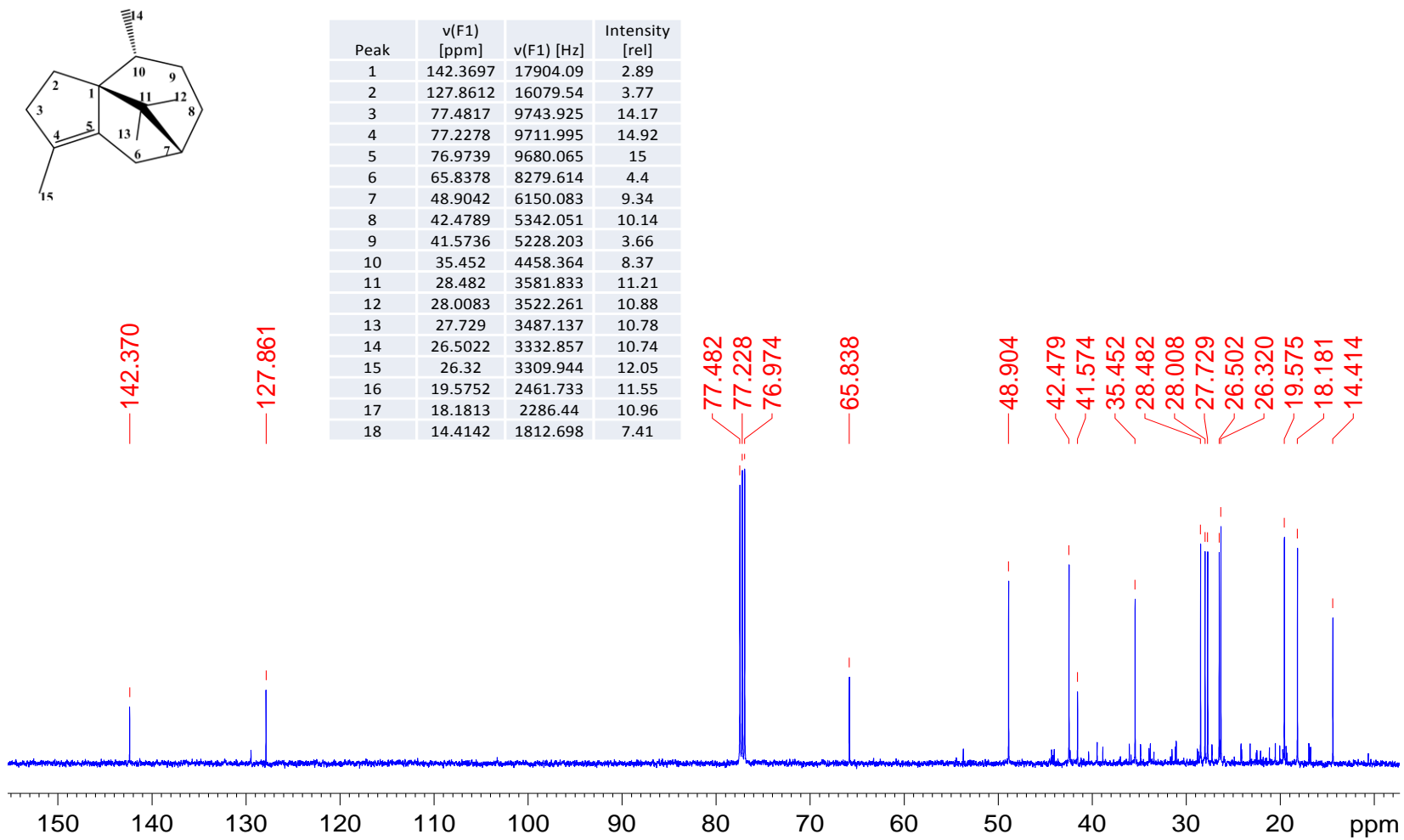
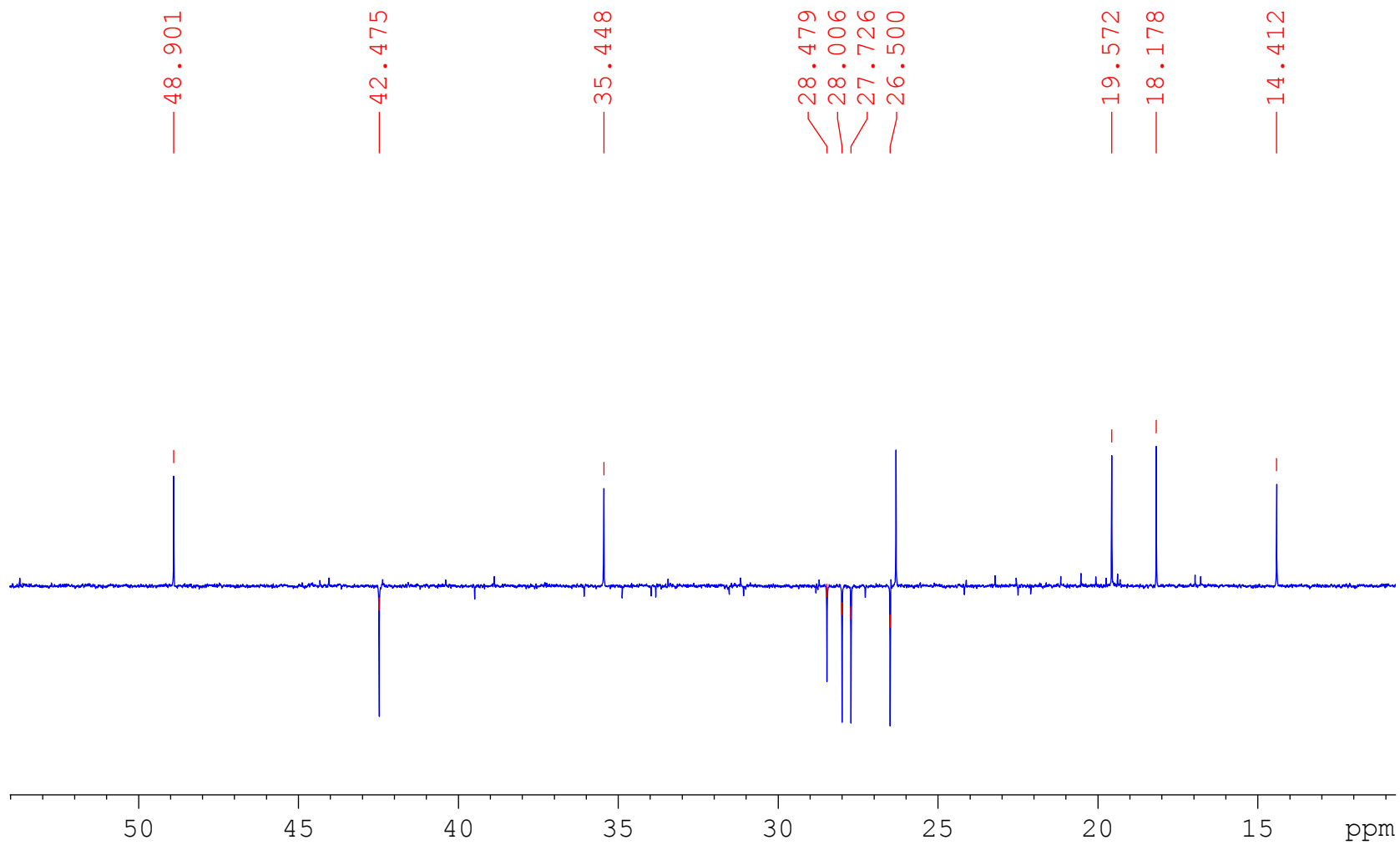


Figure S2.104: <sup>13</sup>C NMR spectrum for compound 14 in CDCl<sub>3</sub>



**Figure S2.105: DEPT spectrum for compound 14 in CDCl<sub>3</sub>**

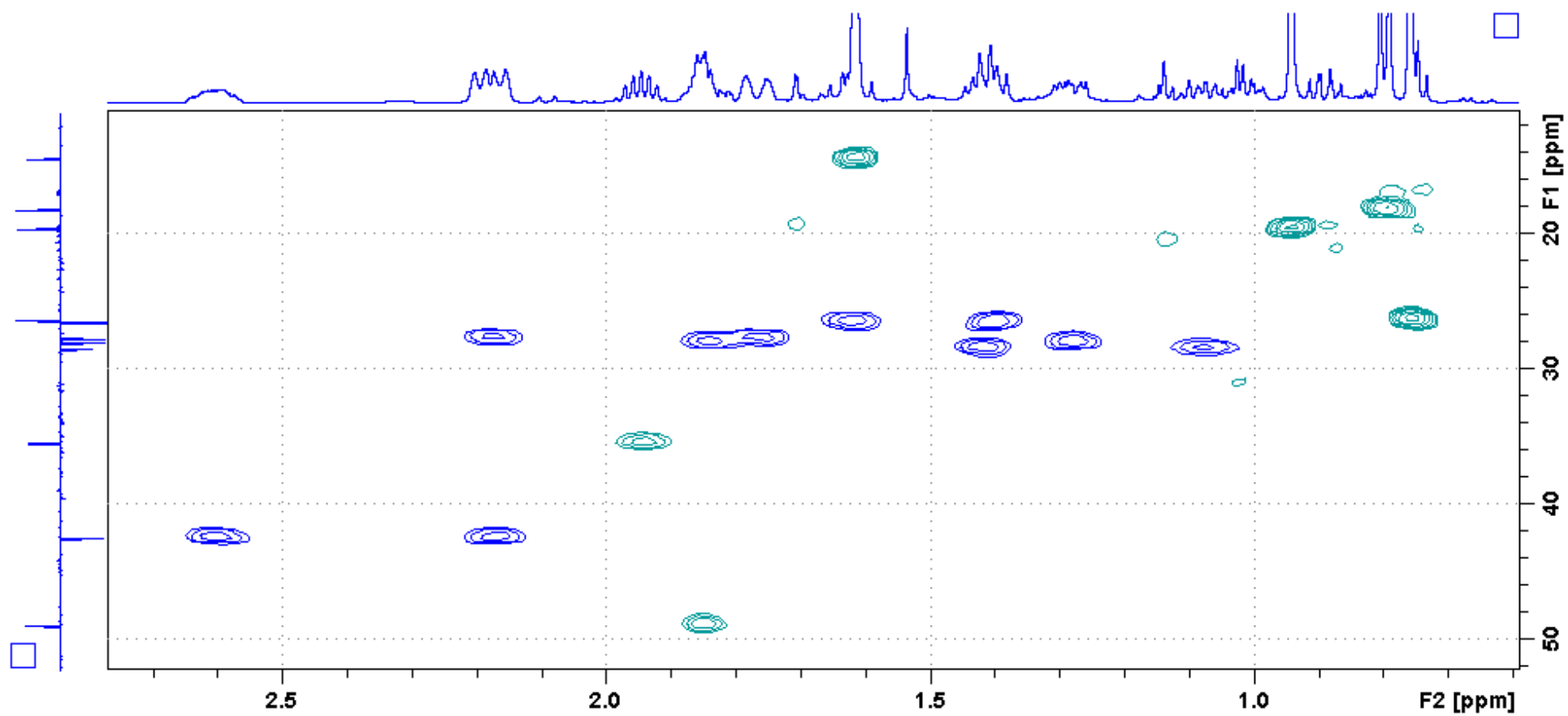


Figure S2.106: HSQCDEPT spectrum for compound 14 in CDCl<sub>3</sub>



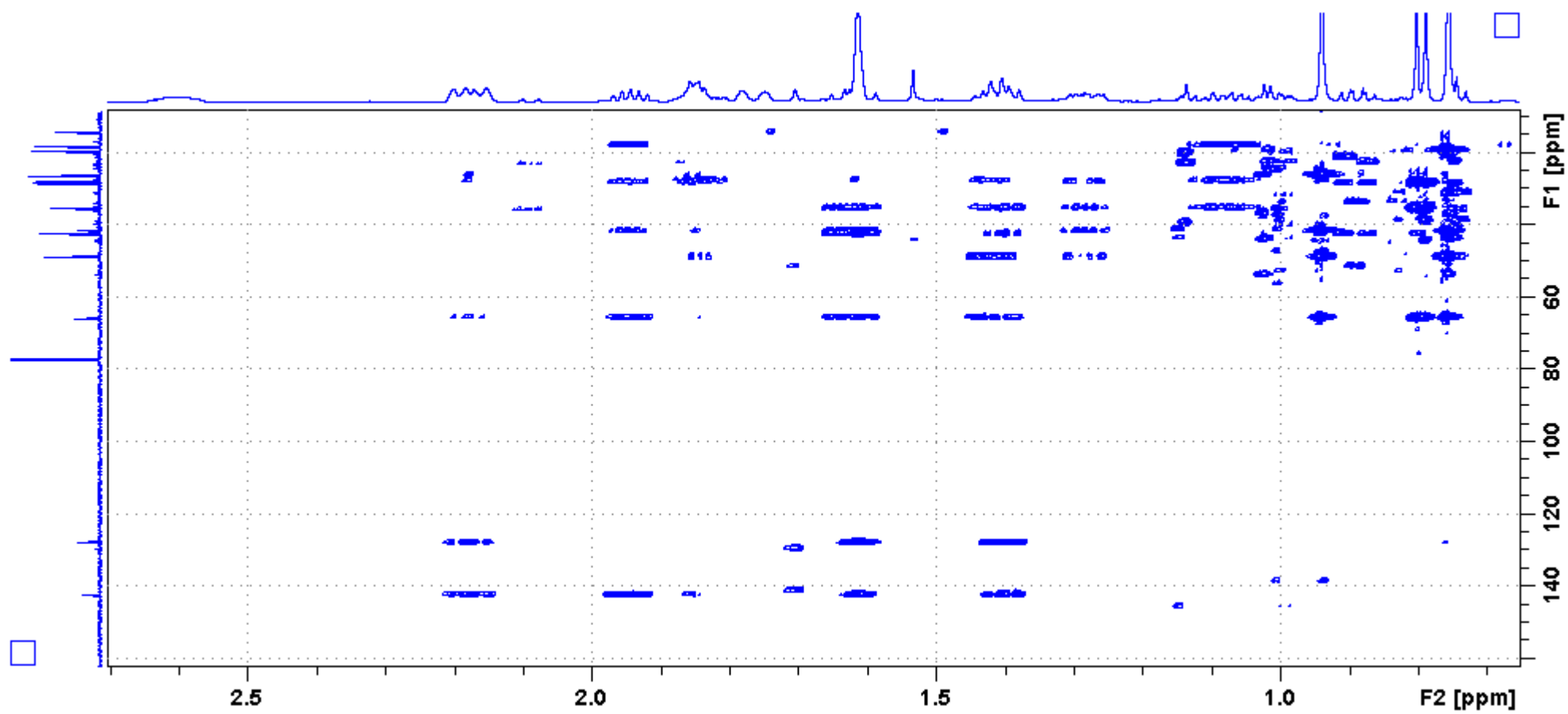


Figure S2.107: HMBC spectrum for compound 14 in CDCl<sub>3</sub>

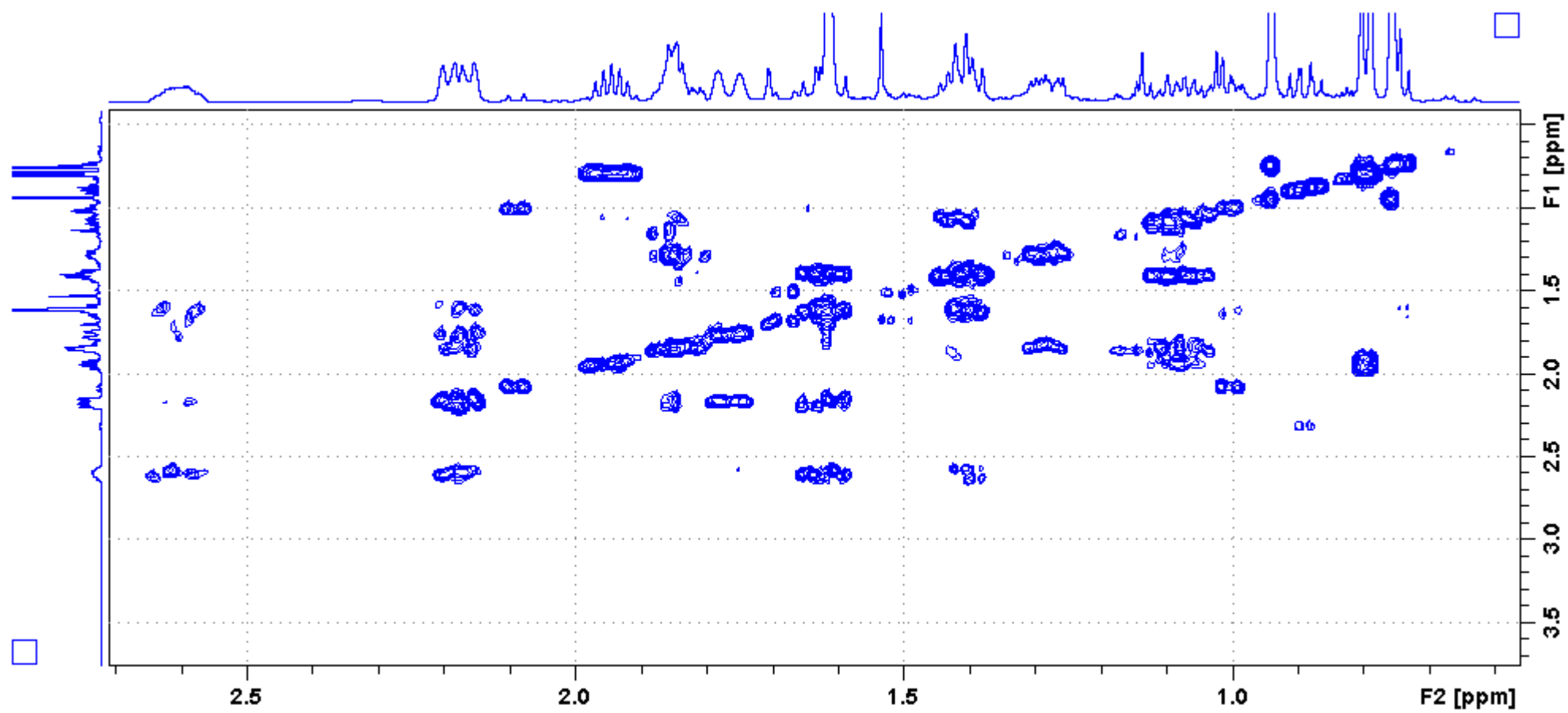


Figure S2.108: COSY spectrum for compound 14 in CDCl<sub>3</sub>

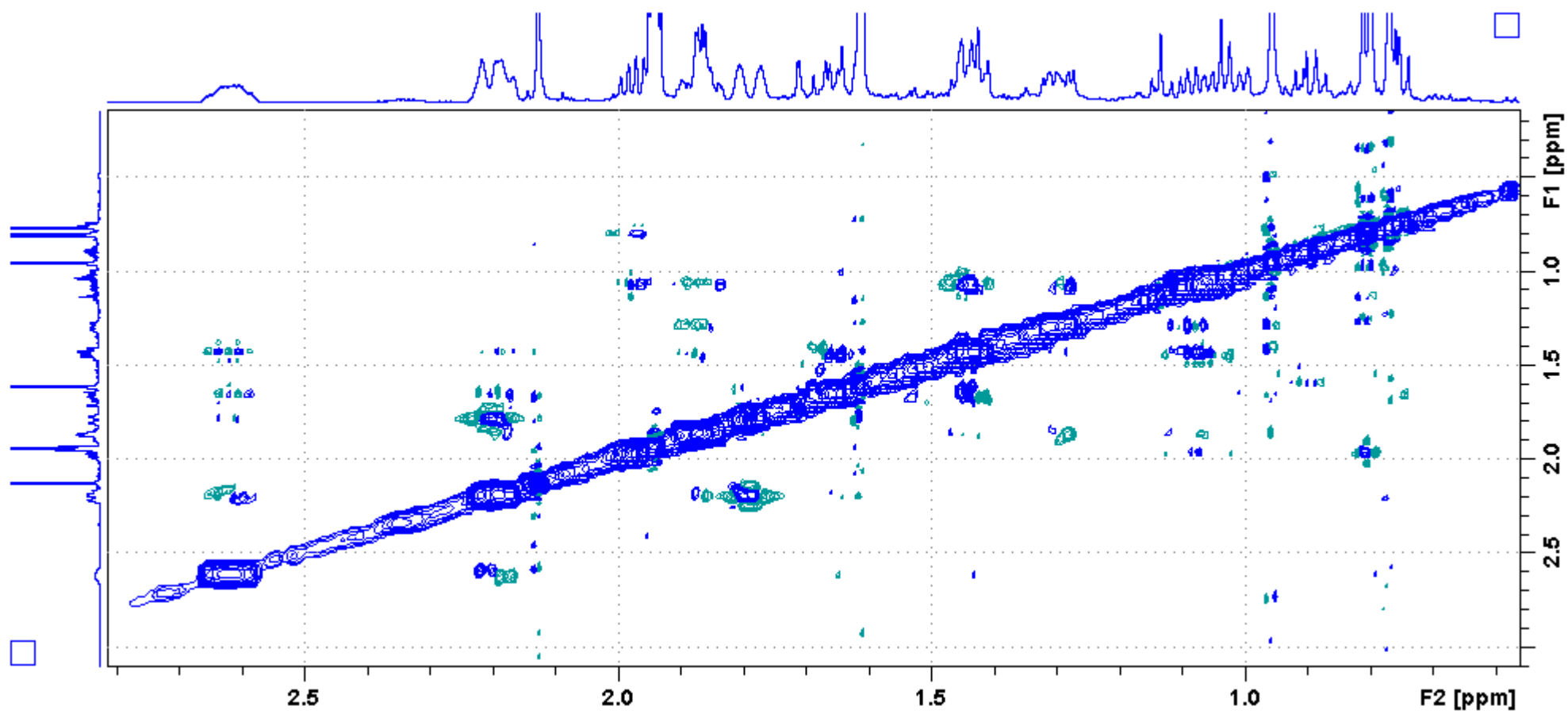


Figure S2.109: NOESY spectrum for compound 14 in CD<sub>3</sub>CN

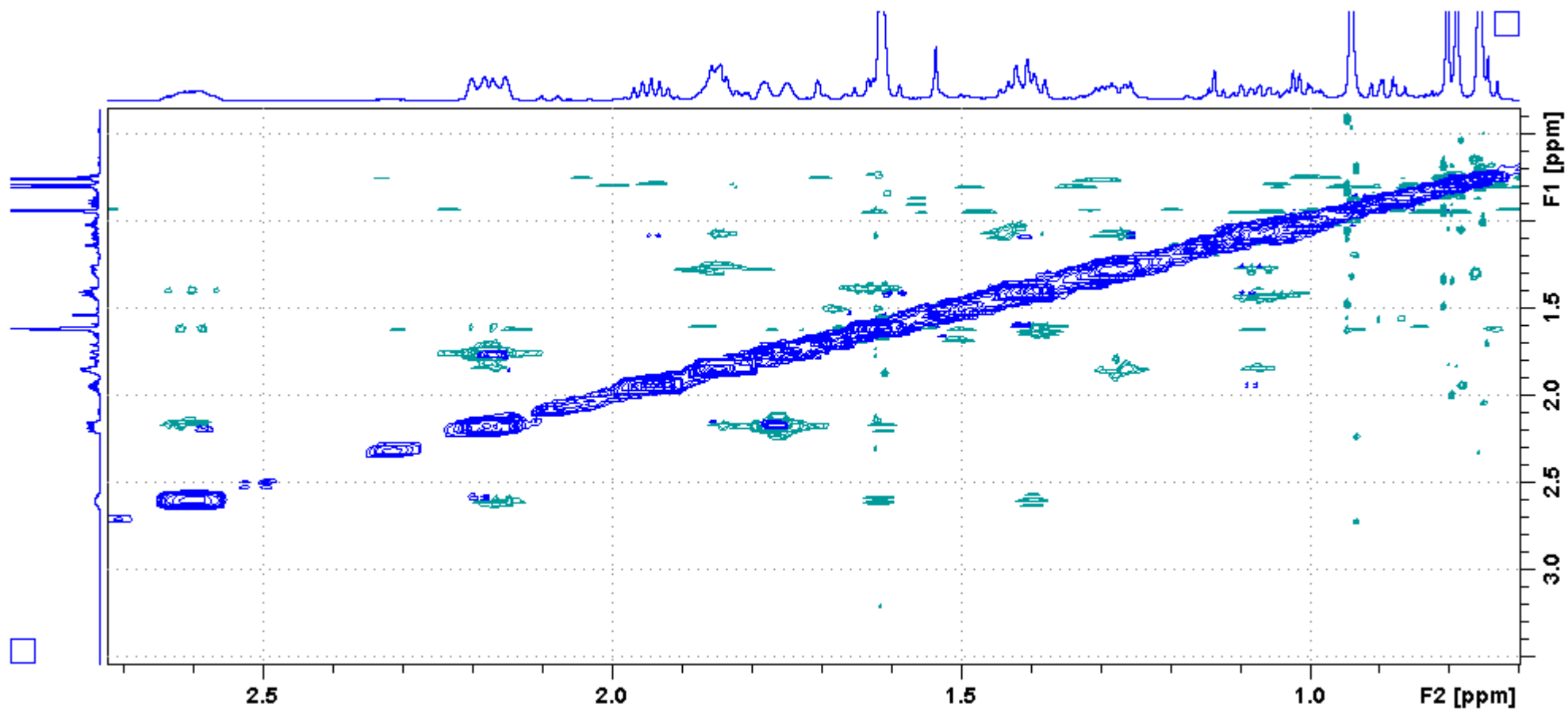
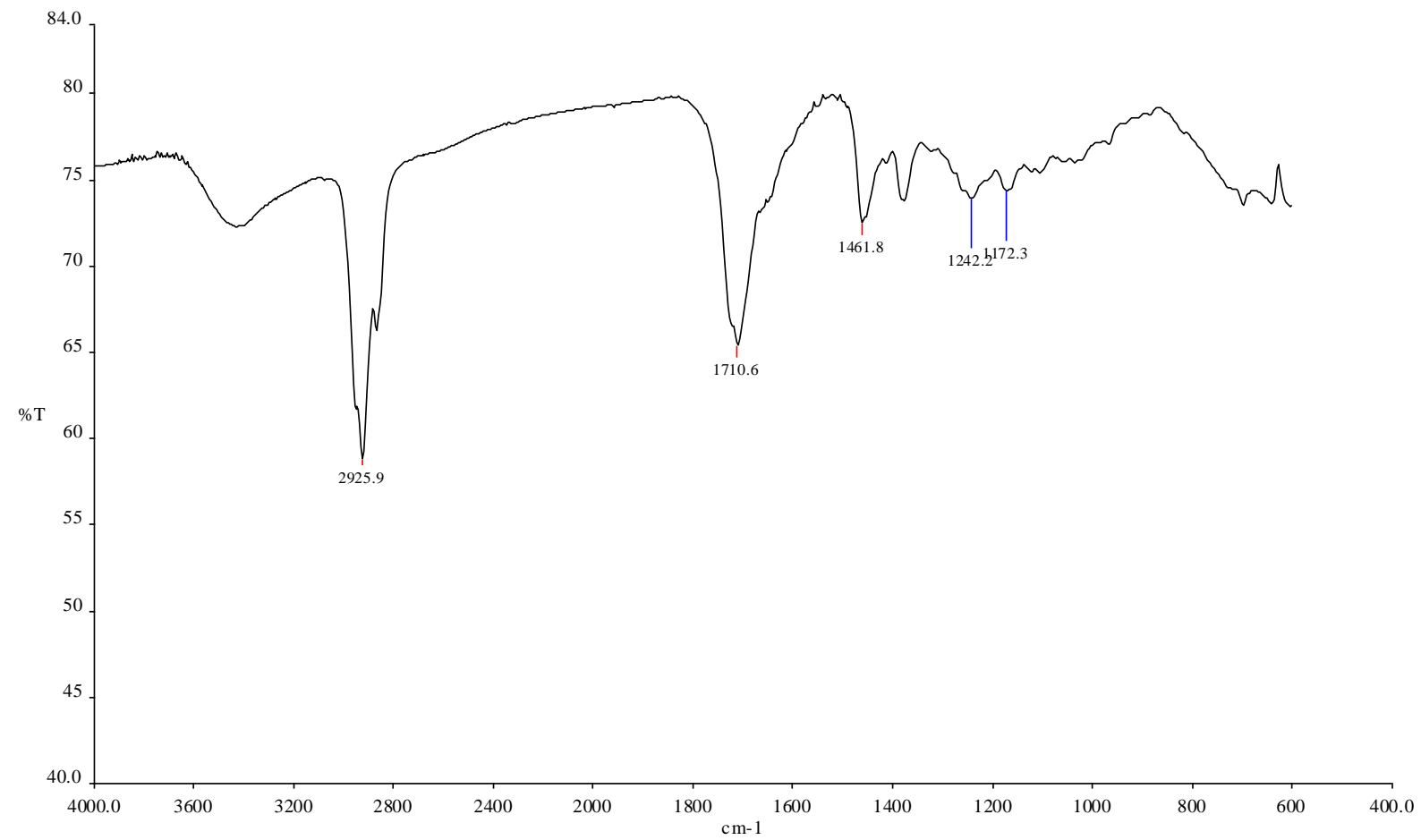


Figure S2.110: NOESY spectrum for compound 14 in CDCl<sub>3</sub>



**Figure S2.111: FTIR spectrum for compound 15**

Peak	$\nu(F1)$ [ppm]	$\nu(F1)$ [Hz]	Intensity [rel]
1	7.26	3630.944	10.26
2	2.5787	1289.685	0.76
3	2.5658	1283.234	0.77
4	2.3196	1160.102	2.03
5	2.3056	1153.1	1.2
6	2.2902	1145.398	0.82
7	2.281	1140.797	1.36
8	2.1891	1094.835	1.14
9	2.1766	1088.583	1.26
10	2.1647	1082.631	2.57
11	2.1304	1065.477	2.76
12	2.0261	1013.313	2.65
13	1.9914	995.9589	1.91
14	1.9635	982.0053	1.62
15	1.9602	980.3549	1.49
16	1.9537	977.104	1.96
17	1.949	974.7534	1.84
18	1.7228	861.624	11.09
19	1.6199	810.1606	1.19
20	1.6082	804.3091	1.77
21	1.5869	793.6563	4.68
22	1.5666	783.5037	0.96
23	1.4144	707.3839	0.83
24	1.4086	704.4831	0.8
25	1.3953	697.8314	0.85
26	1.1016	550.9432	15
27	1.058	529.1376	1.36
28	1.0508	525.5366	0.86
29	1.0475	523.8862	1.12
30	1.0332	516.7343	1.05
31	1.0225	511.3829	0.77
32	1.019	509.6325	0.8
33	0.8899	445.0657	1.45
34	0.8764	438.3139	2.79
35	0.7392	369.6961	14.99
36	0.618	309.0803	9.25
37	0.6051	302.6287	9.14

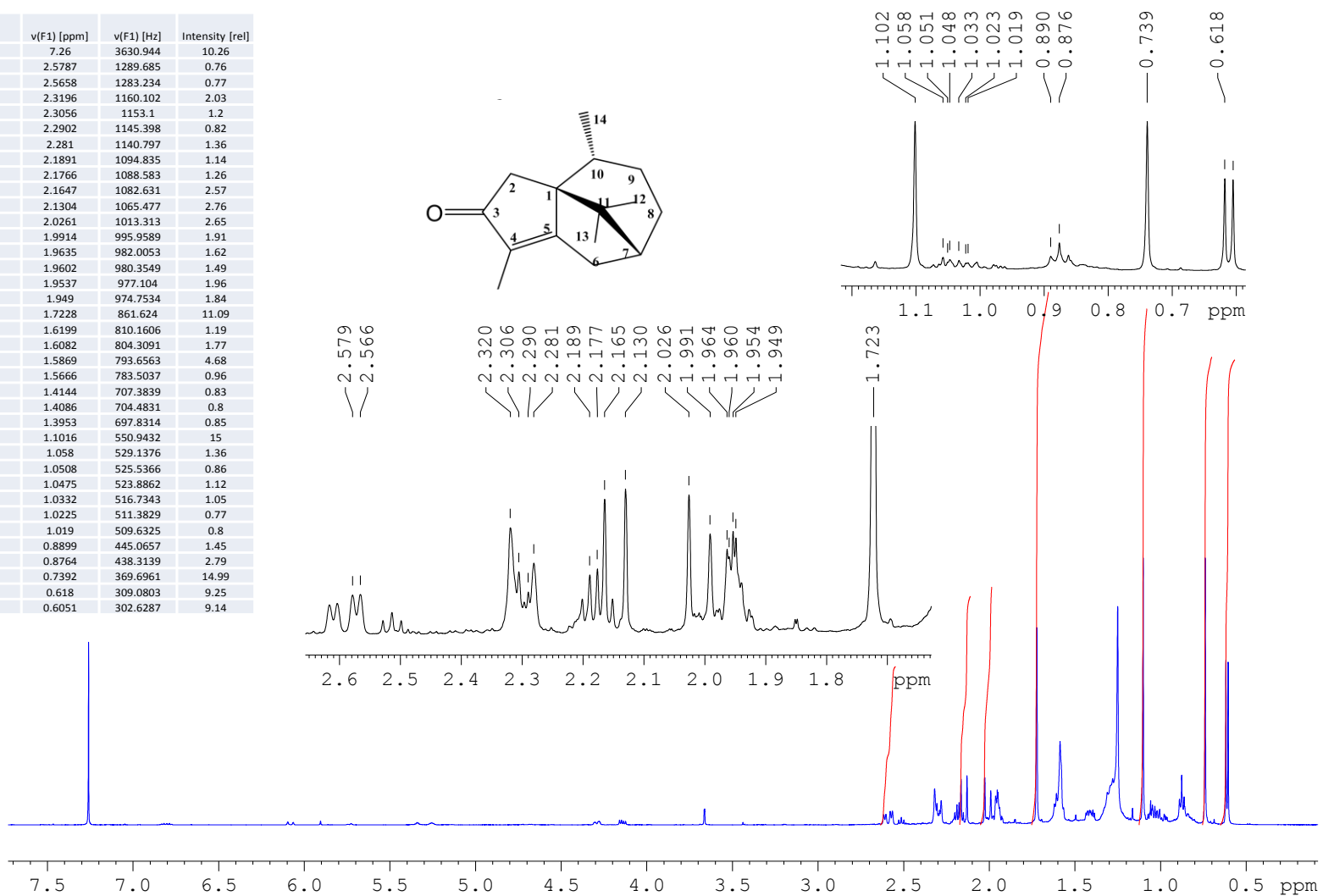
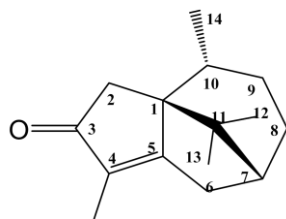


Figure S2.111:  $^1\text{H}$  NMR spectrum for compound 15 in  $\text{CDCl}_3$

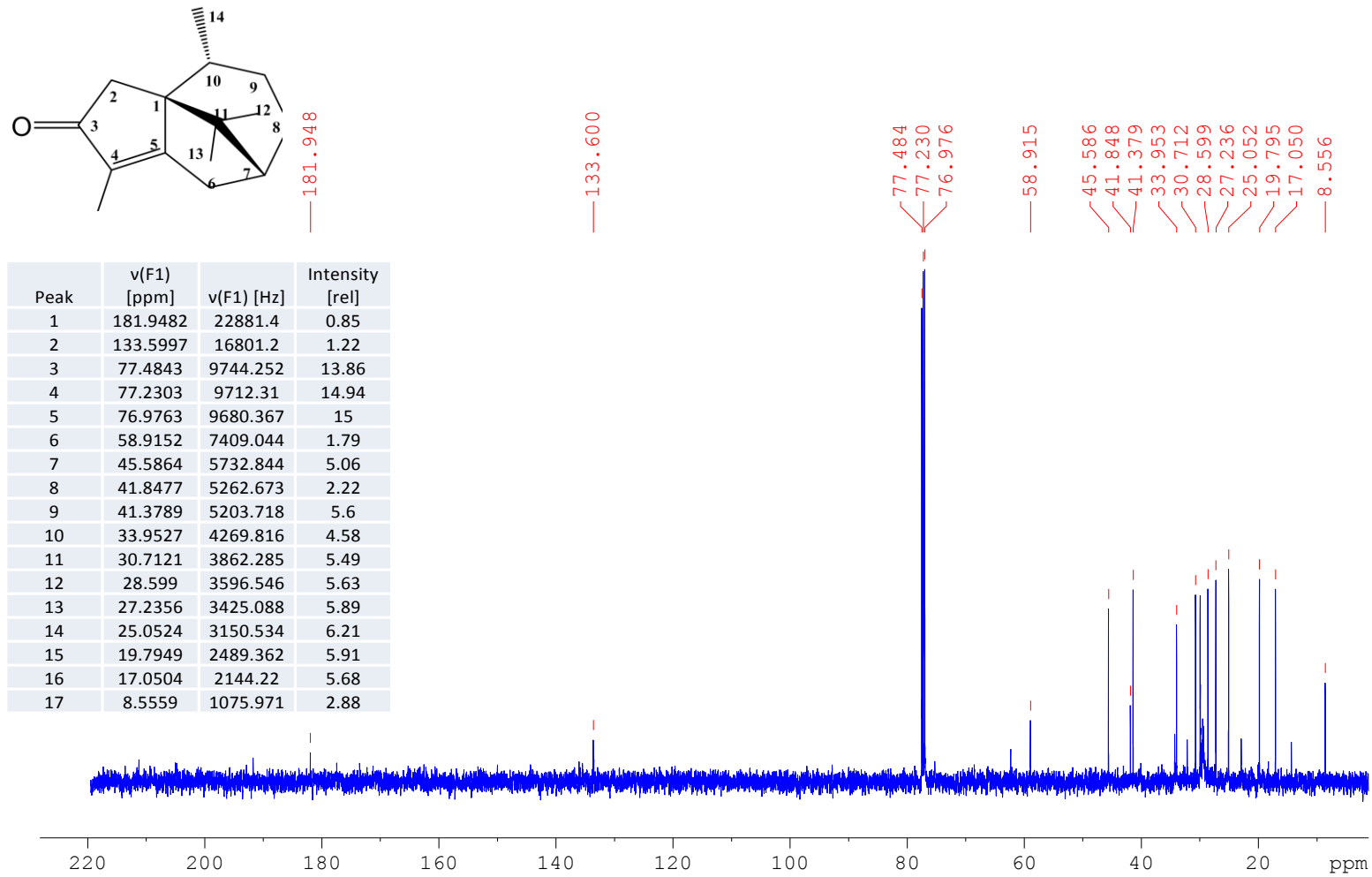


Figure S2.112:  $^{13}\text{C}$  NMR spectrum for compound 15 in  $\text{CDCl}_3$

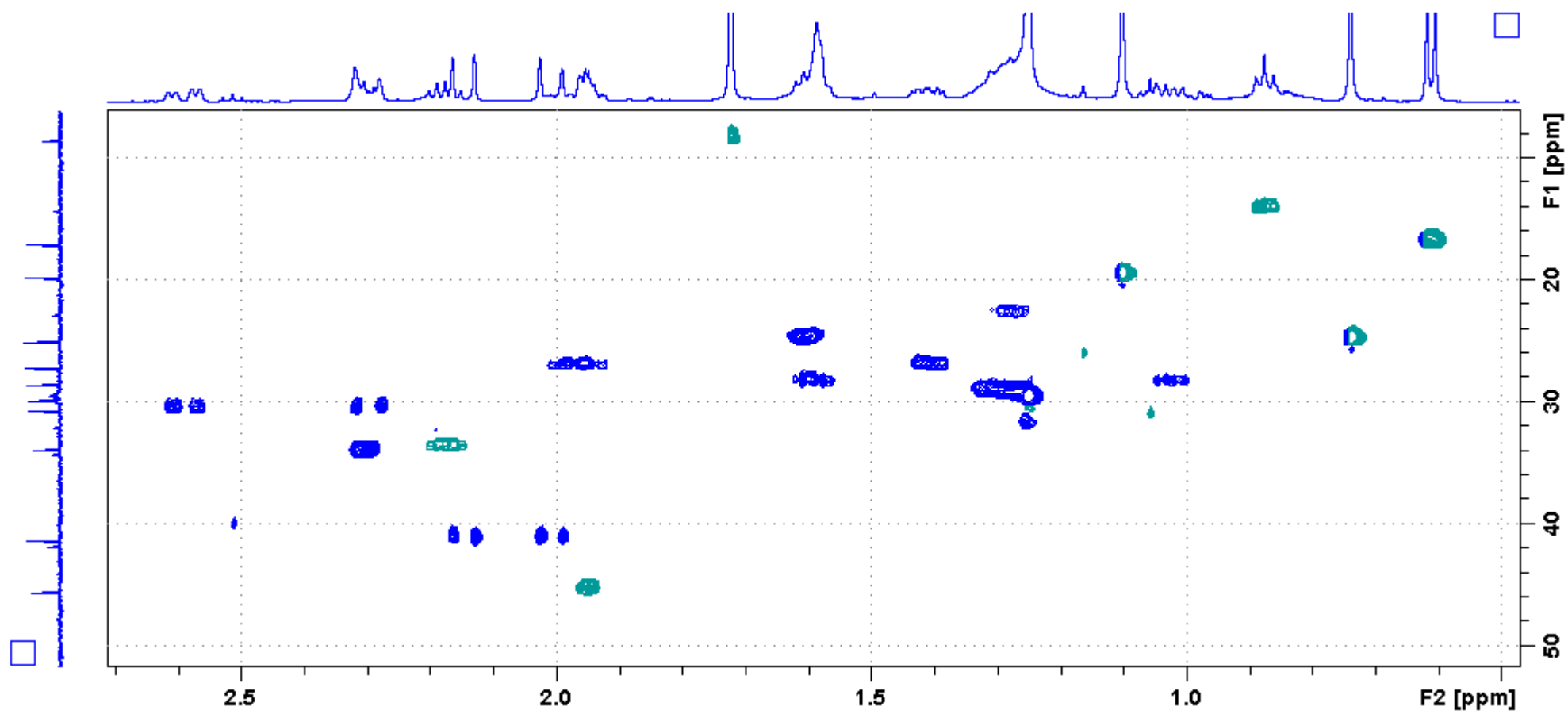


Figure S2.113: HSQCDEPT spectrum for compound 15 in CDCl<sub>3</sub>



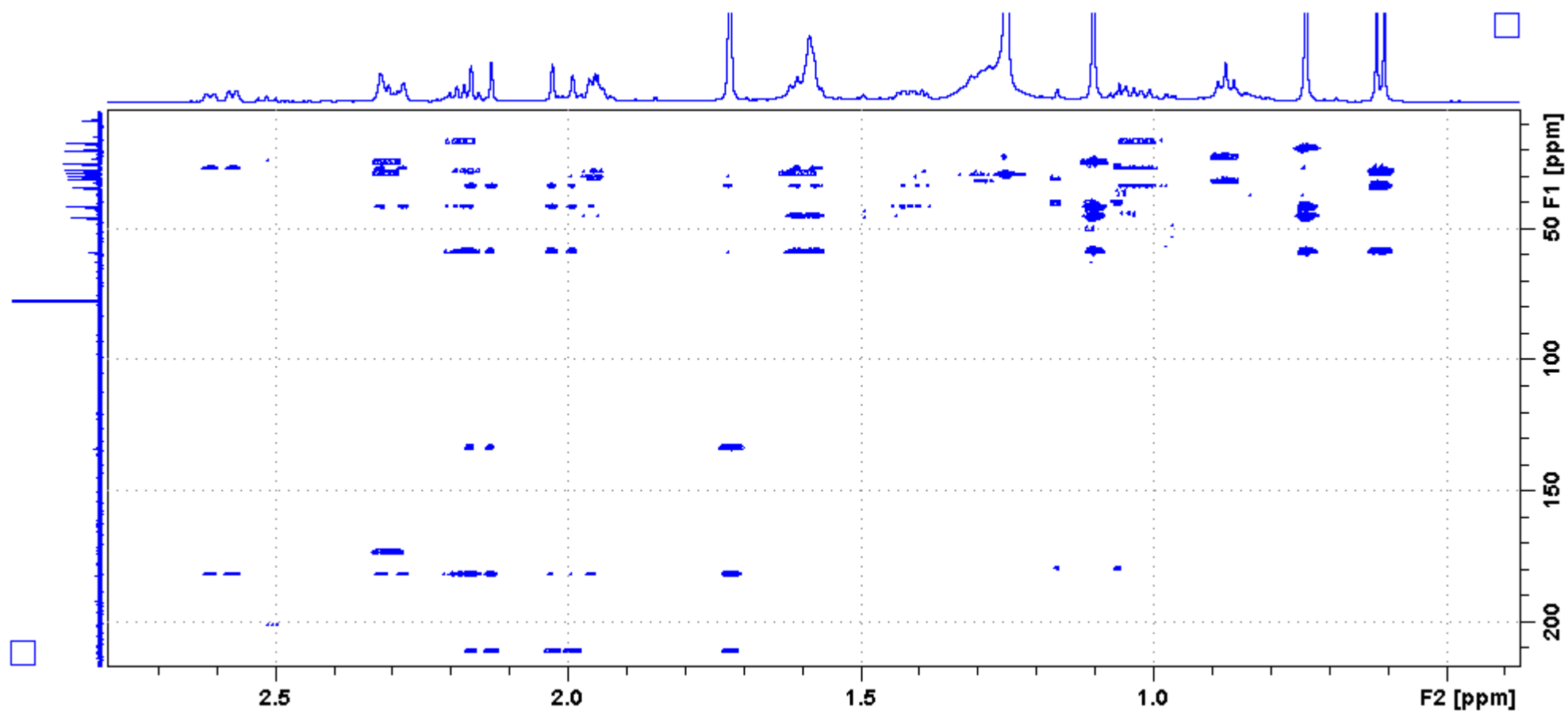


Figure S2.114: HMBC spectrum for compound 15 in CDCl<sub>3</sub>

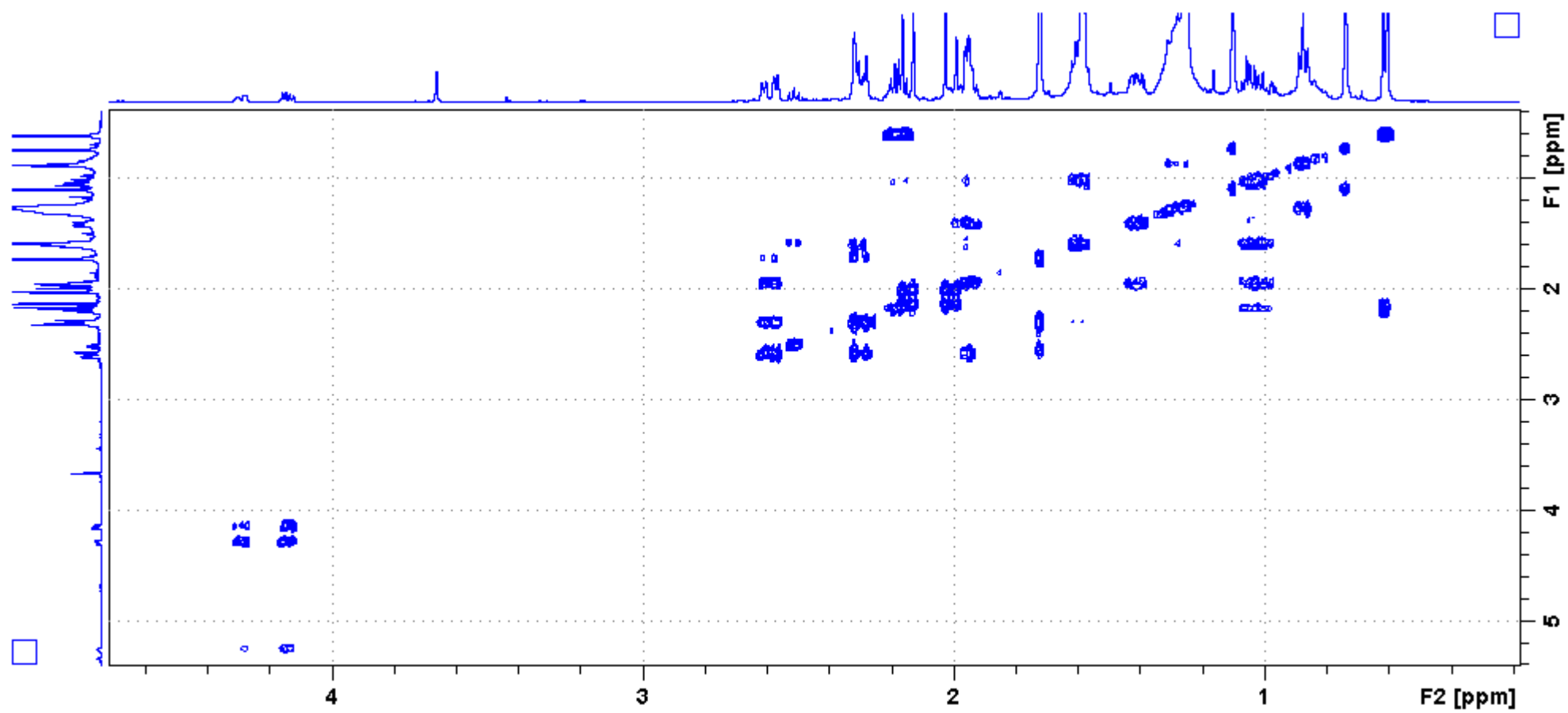


Figure S2.115: COSY spectrum for compound 15 in CDCl<sub>3</sub>

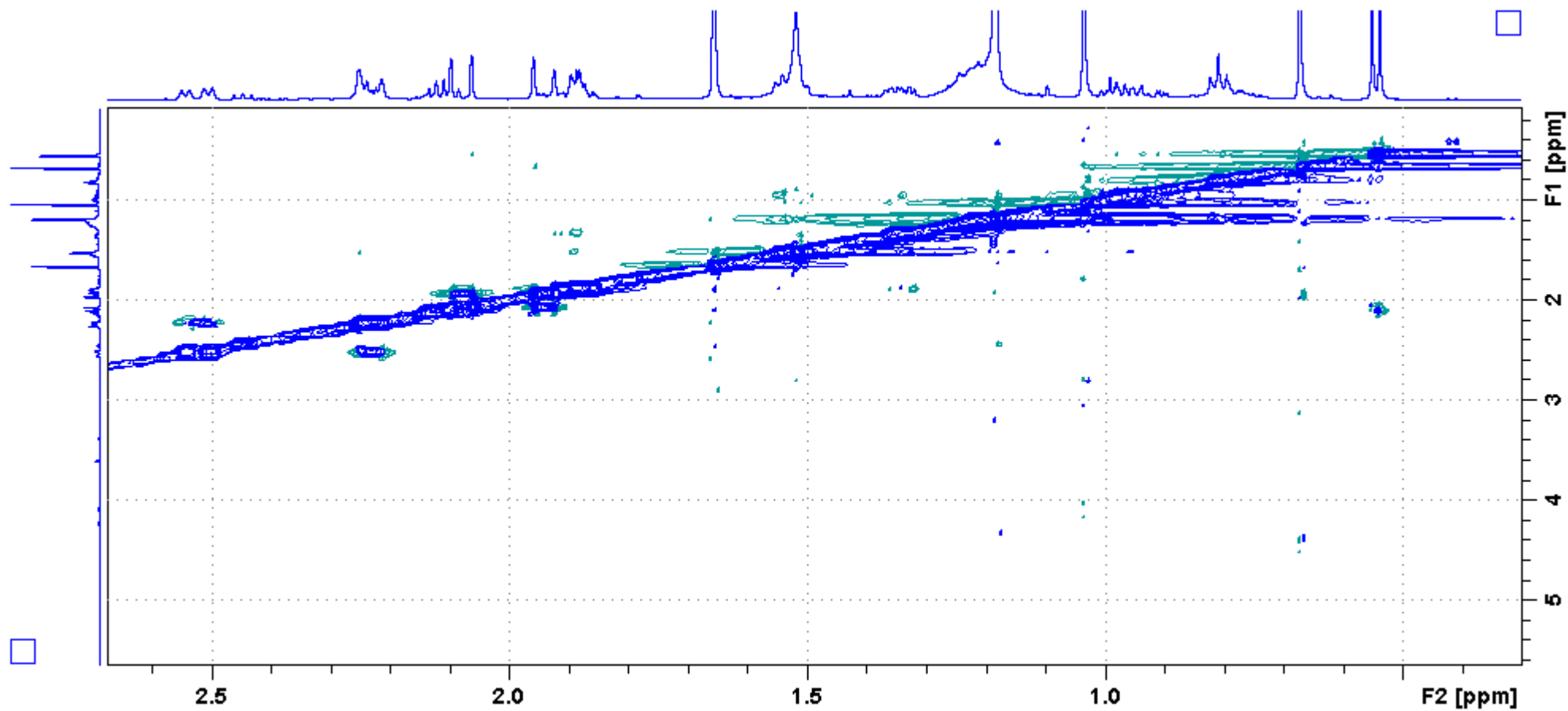


Figure S2.116: NOESY spectrum for compound 15 in CDCl<sub>3</sub>

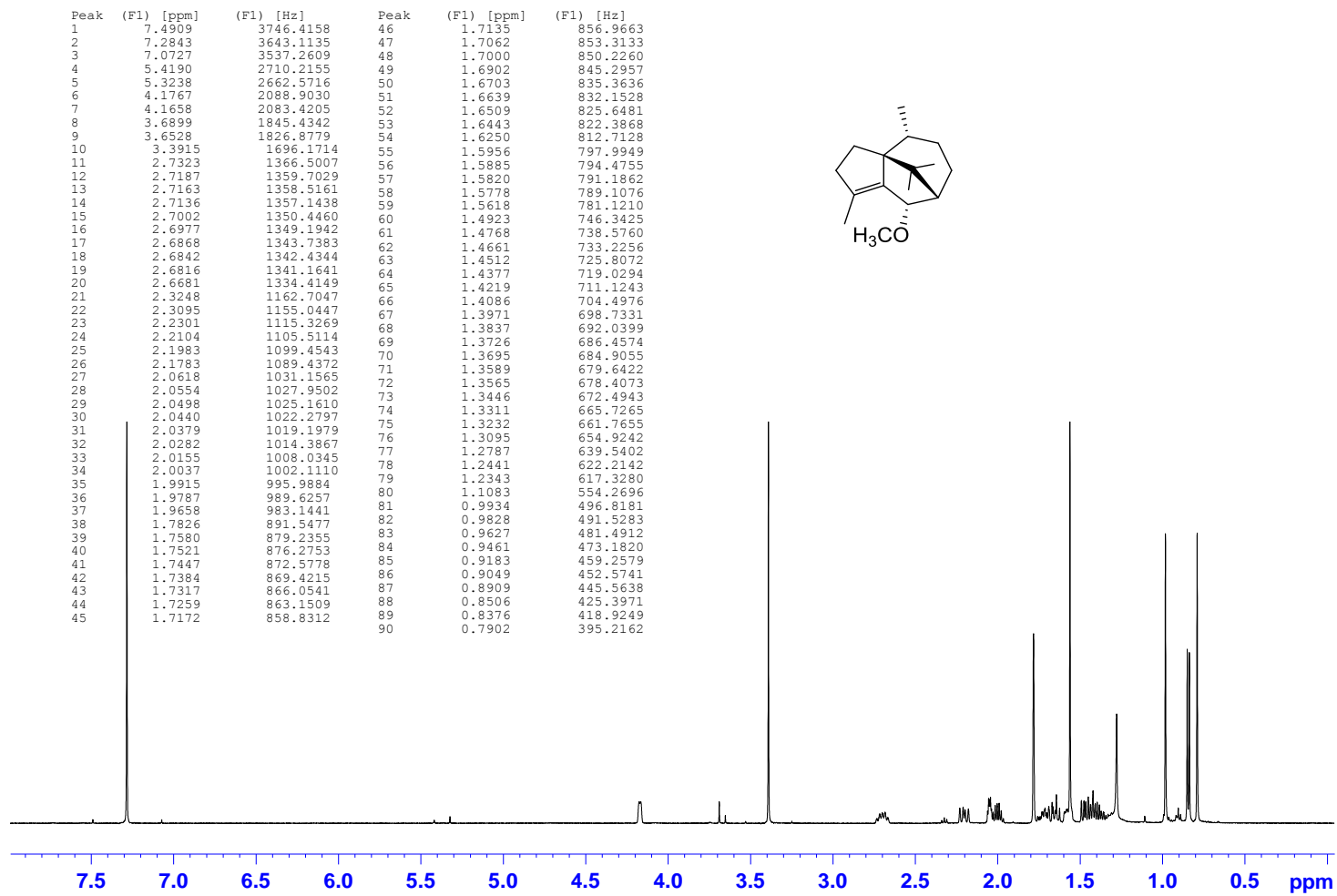


Figure S2.117:  $^1\text{H}$  NMR spectrum for compound 16 in  $\text{CDCl}_3$

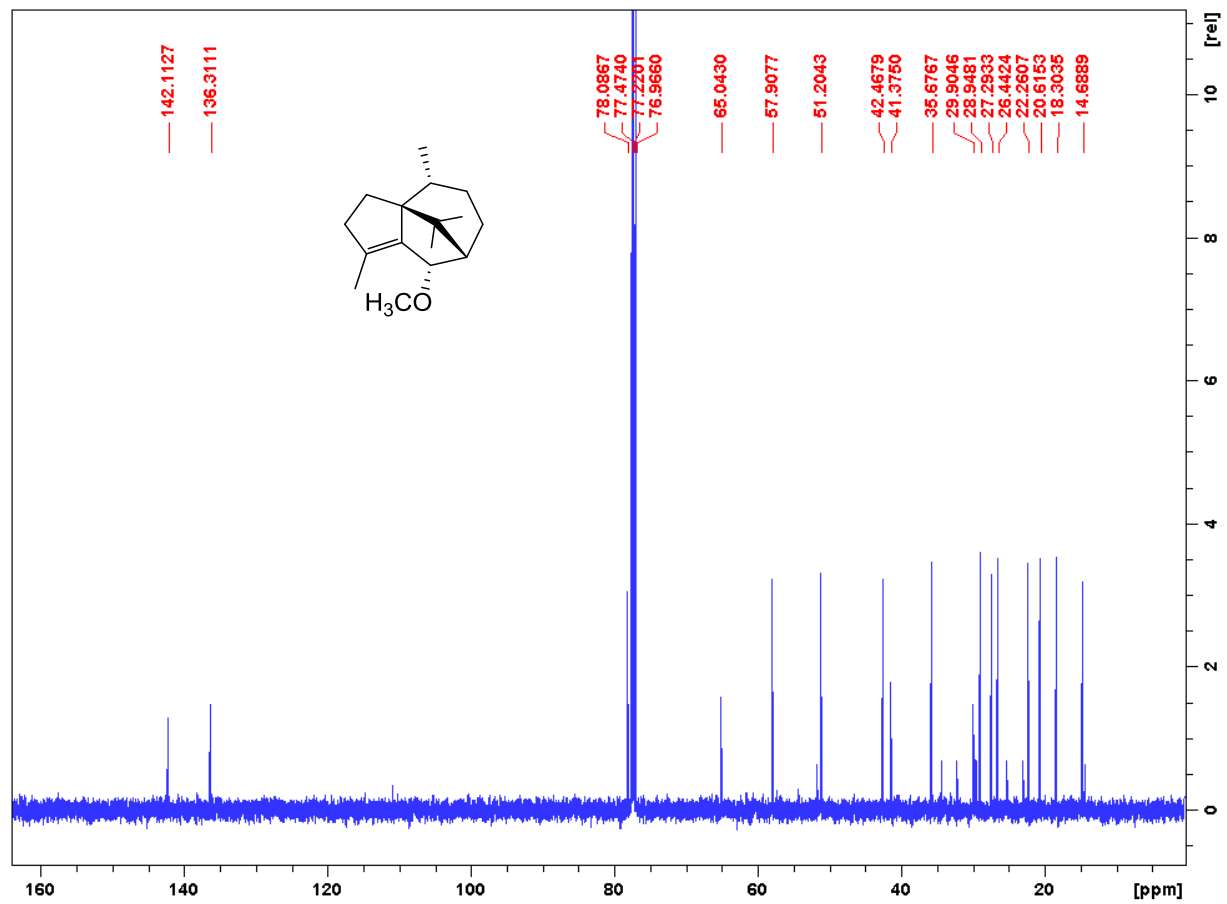


Figure S2.118:  $^{13}\text{C}$  NMR spectrum for compound 16 in  $\text{CDCl}_3$

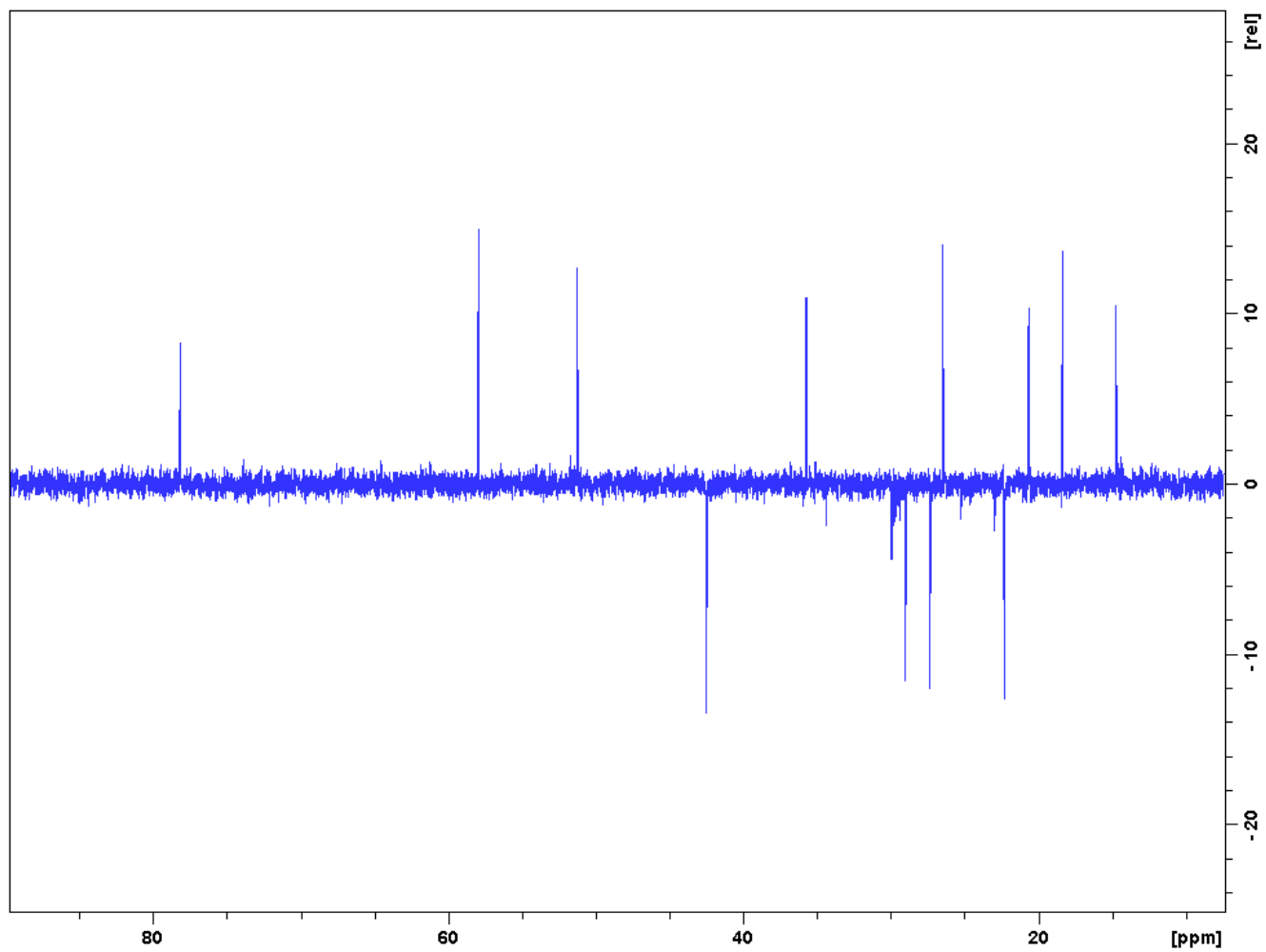


Figure S2.119: DEPT spectrum for compound 16 in CDCl<sub>3</sub>

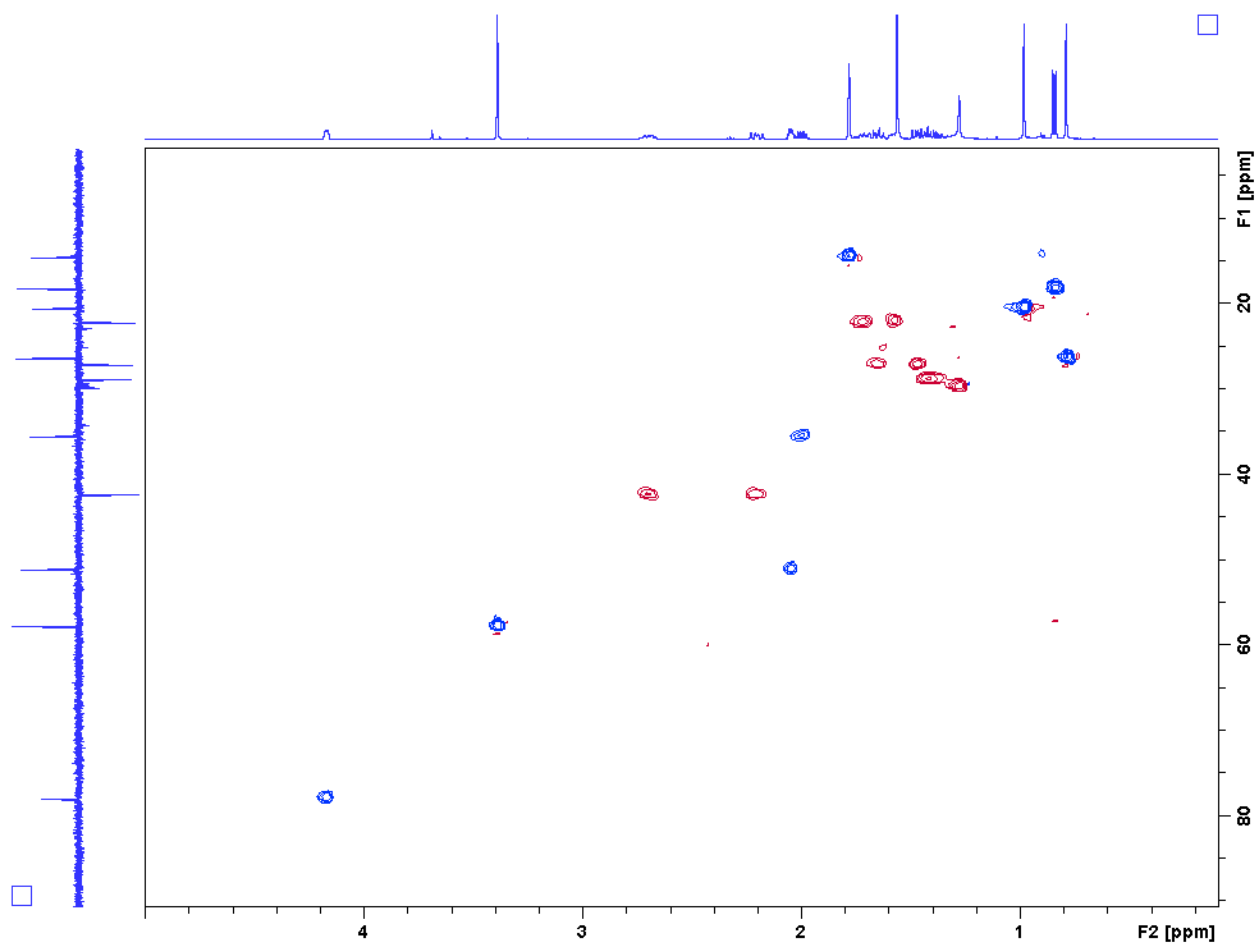


Figure S2.120: HSQCDEPT spectrum for compound 16 in CDCl<sub>3</sub>

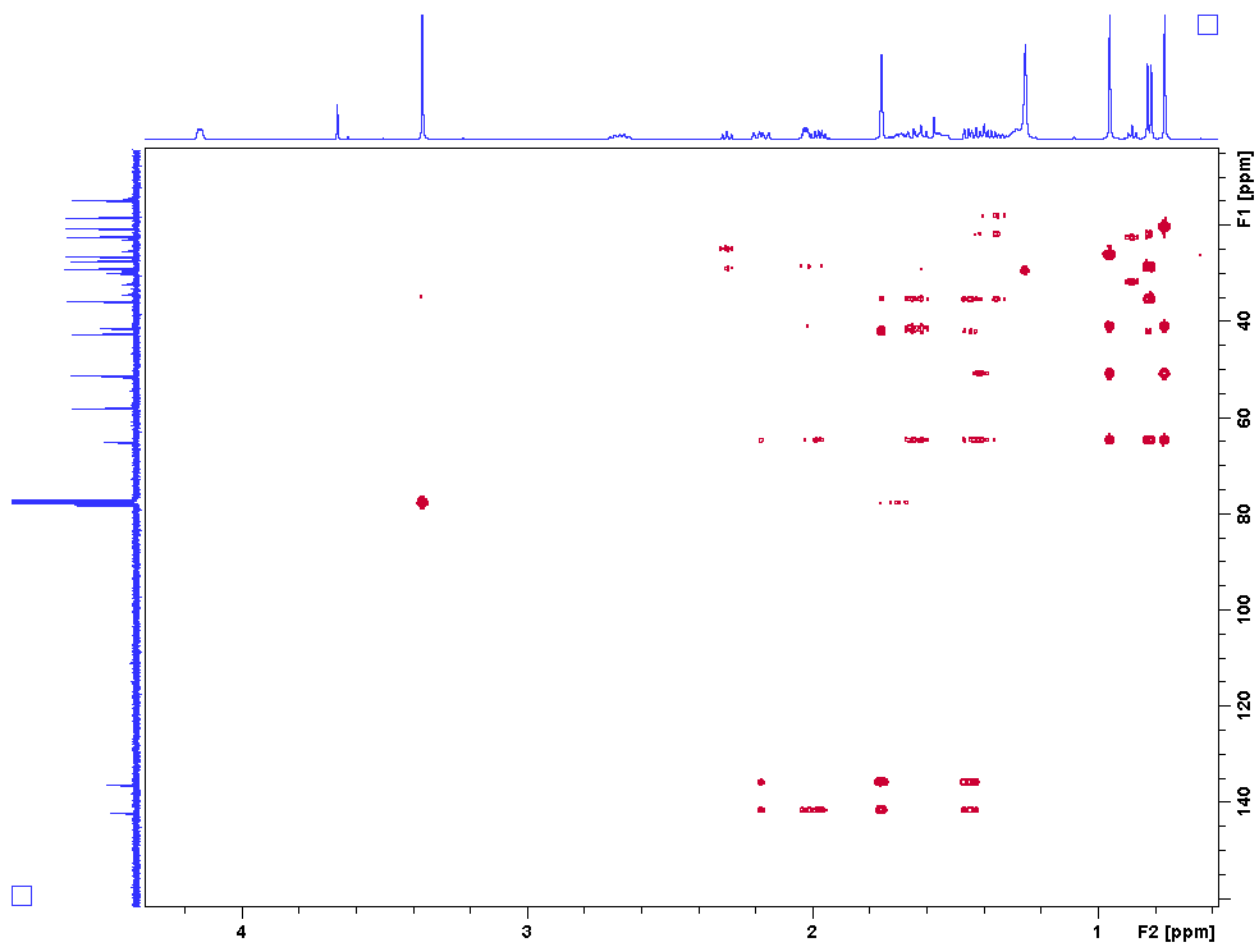


Figure S2.121: HMBC spectrum for compound 16 in CDCl<sub>3</sub>



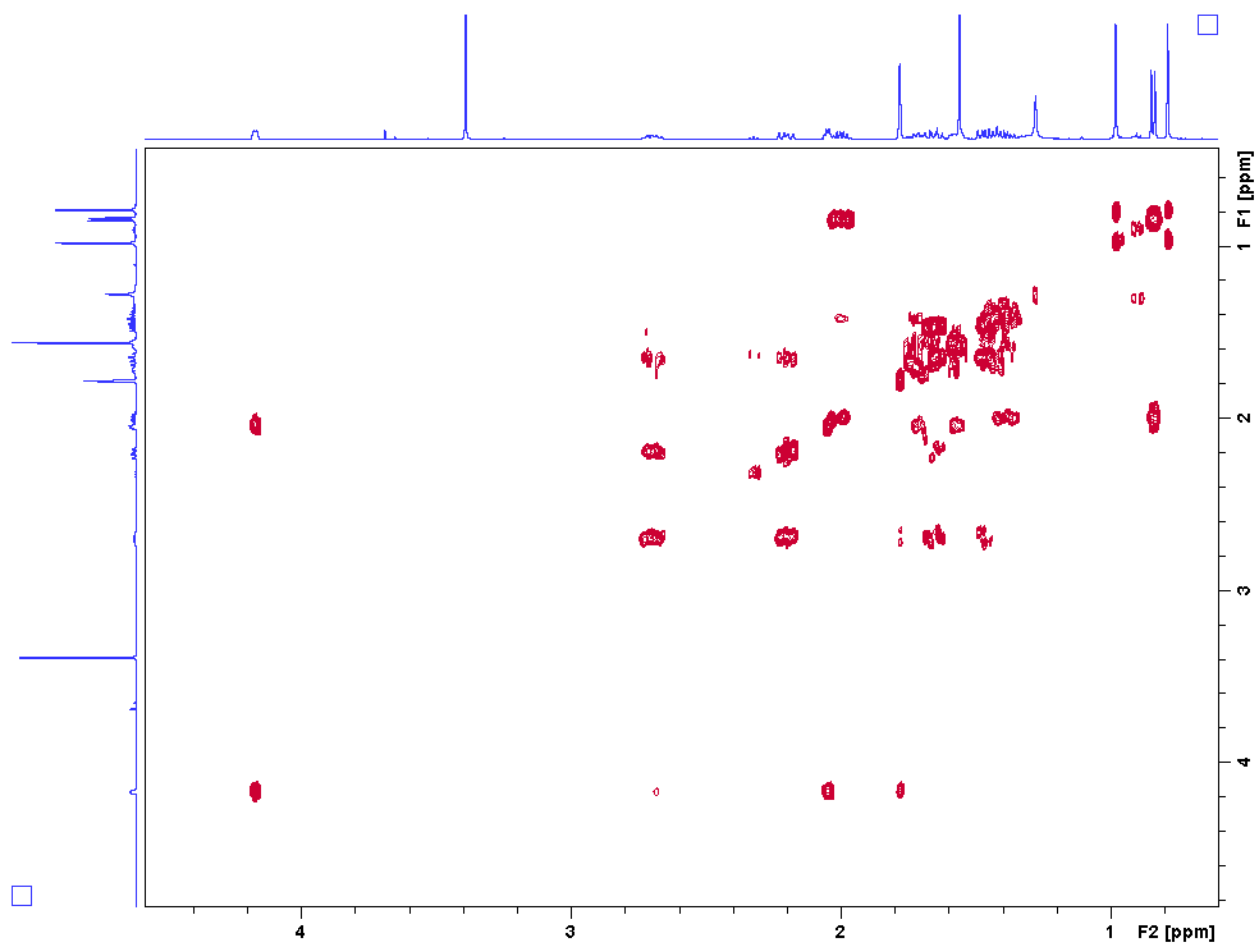


Figure S2.122: COSY spectrum for compound 16 in  $\text{CDCl}_3$

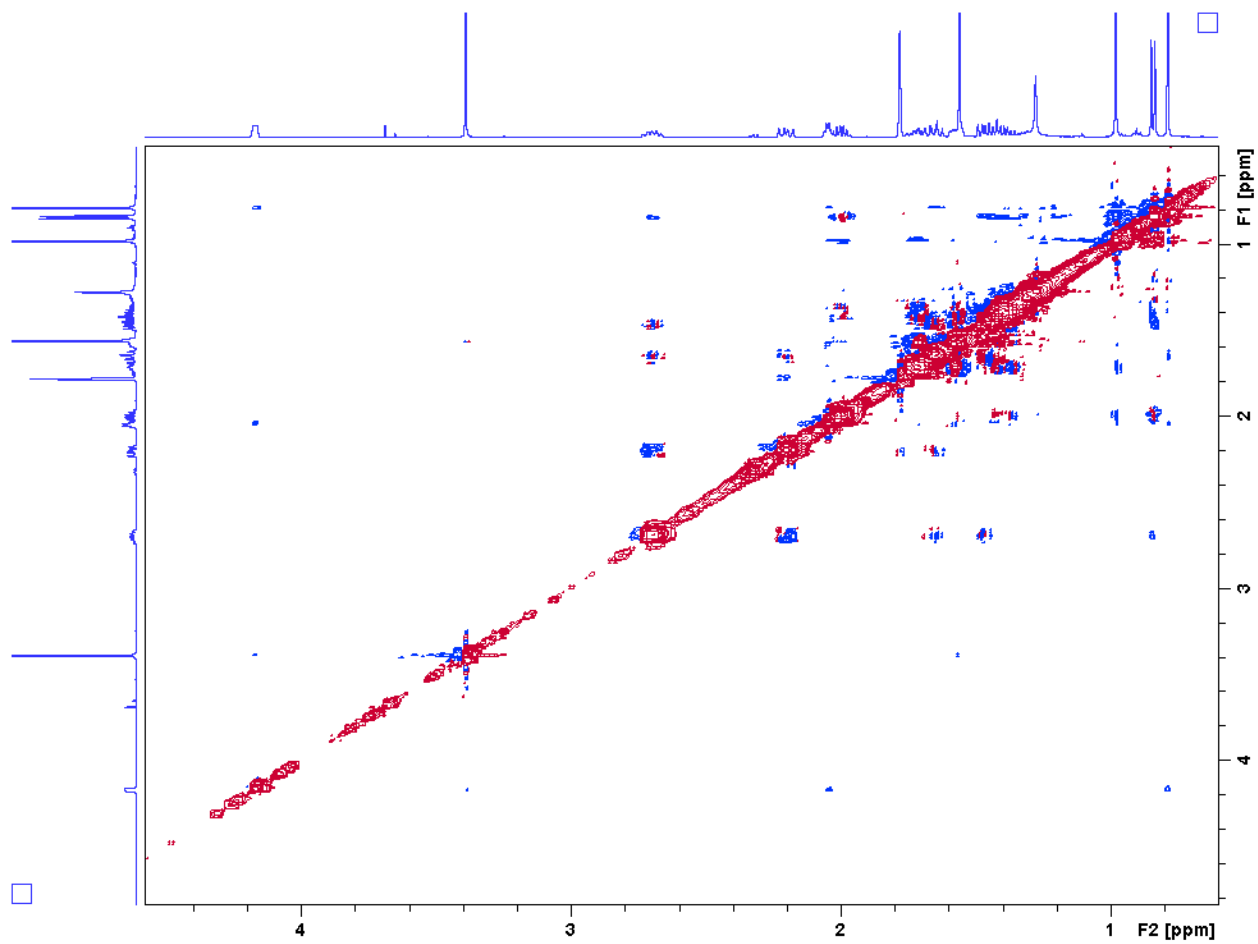


Figure S2.123: NOESY spectrum for compound 16 in CDCl<sub>3</sub>

Abundance

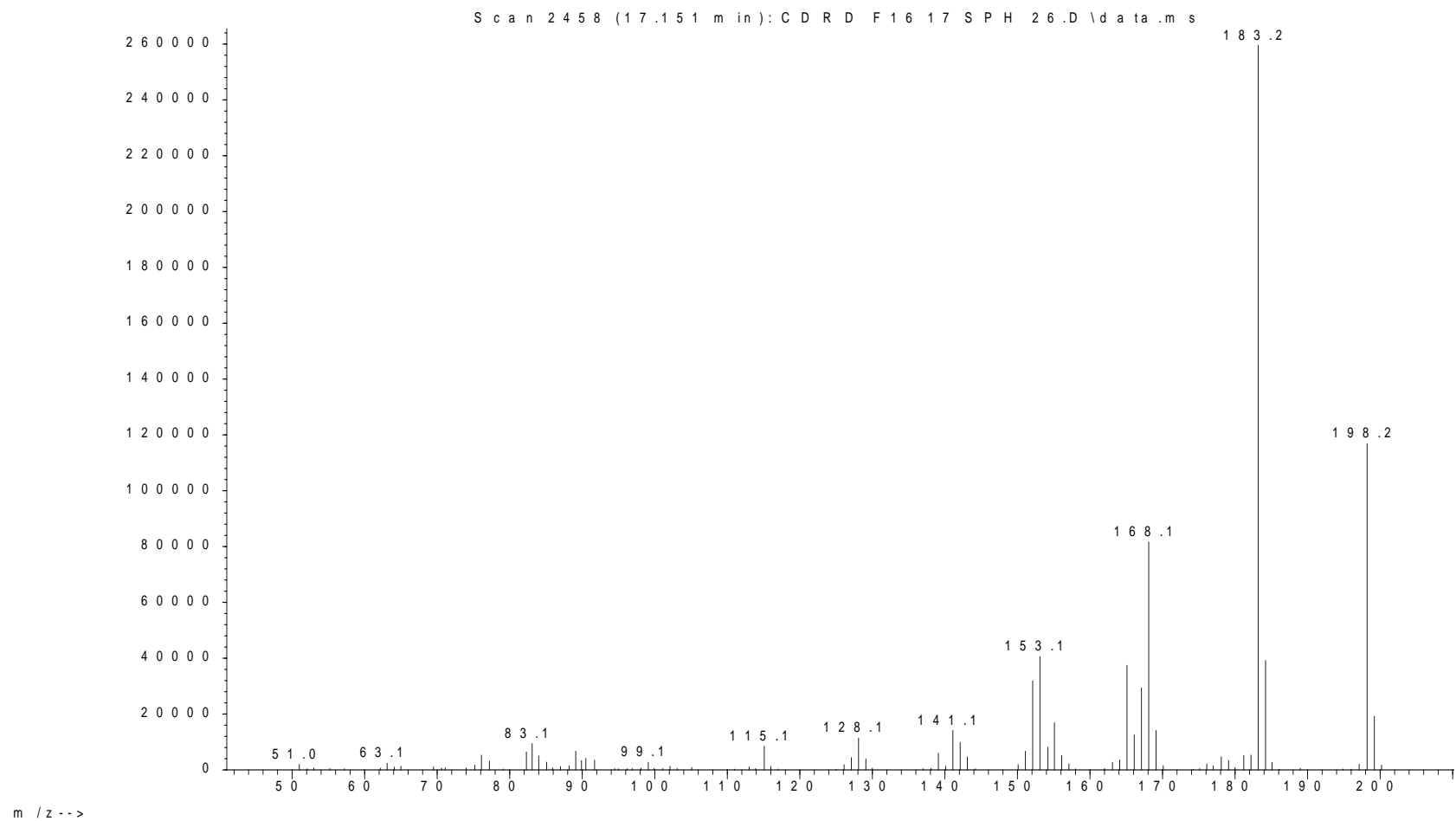
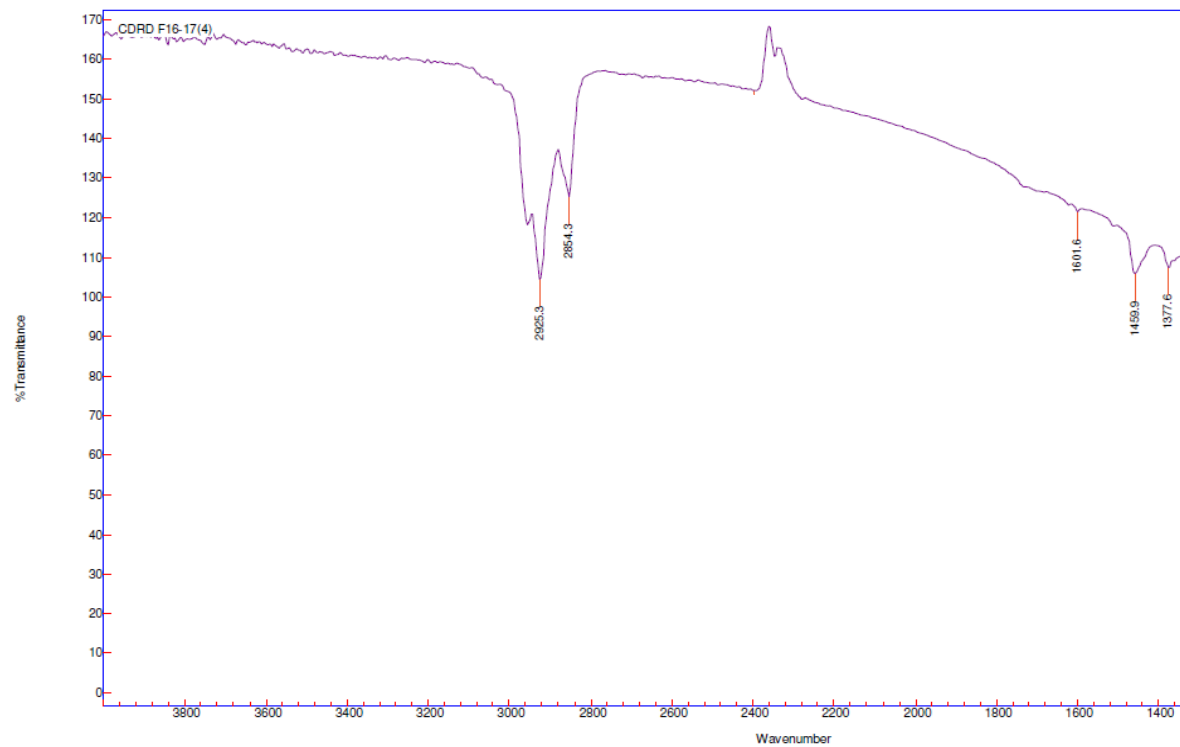


Figure S2.124: Mass spectrum for compound 17

Agilent Resolutions Pro



Name
CDRD F16-17 (4)

Figure S2.125: FTIR spectrum for compound 17

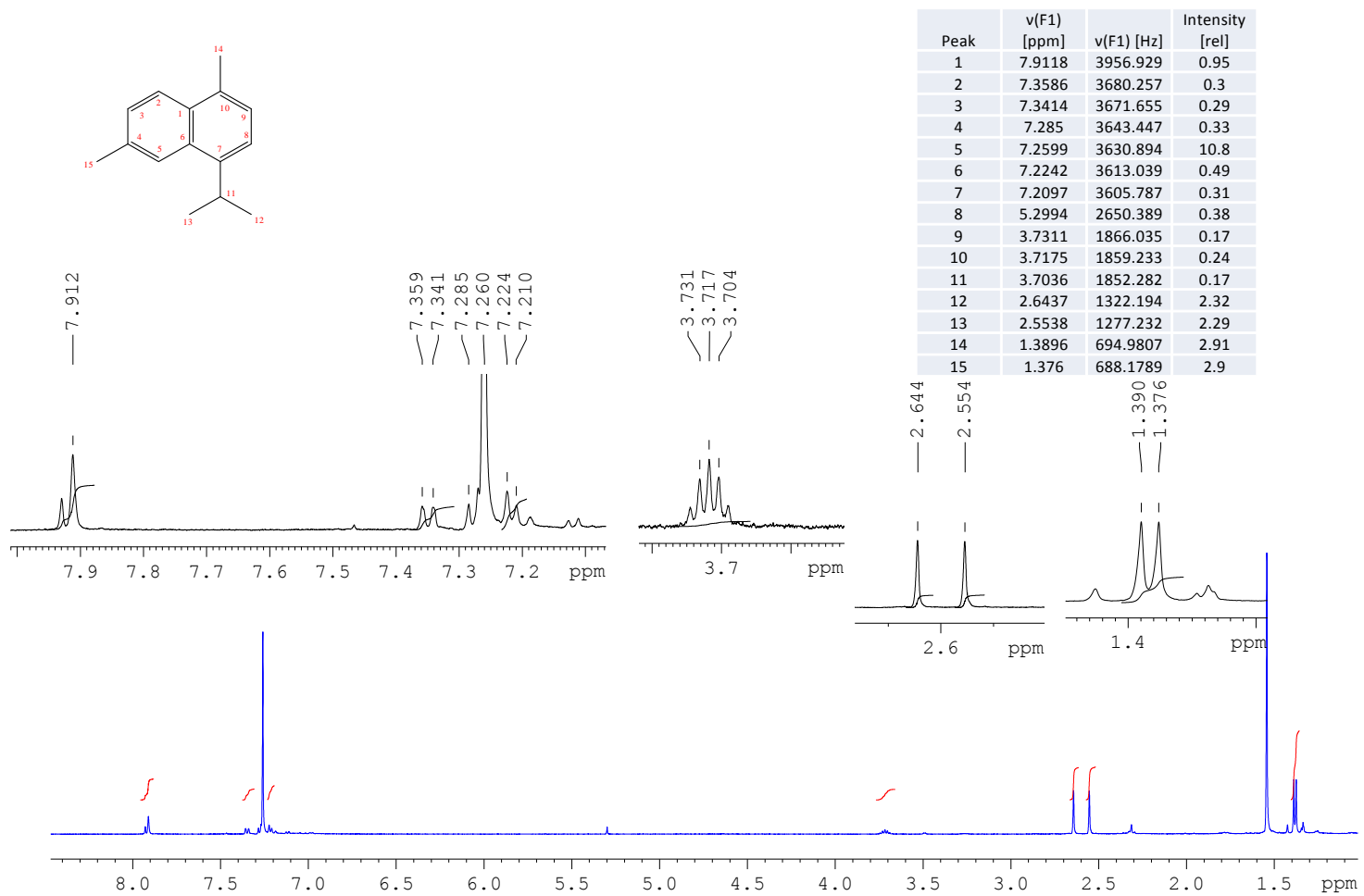


Figure S2.126: <sup>1</sup>H NMR spectrum for compound 17 in CDCl<sub>3</sub>

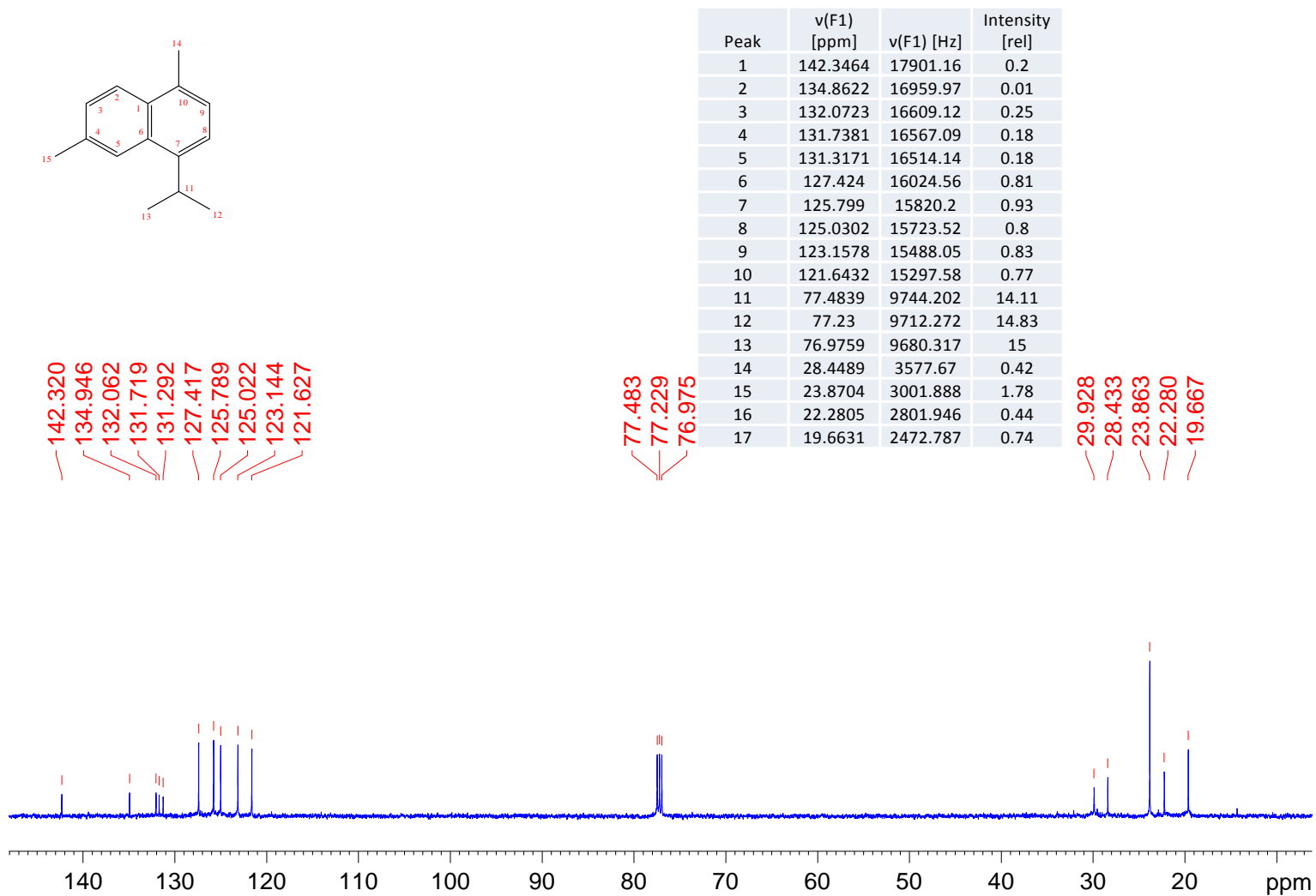
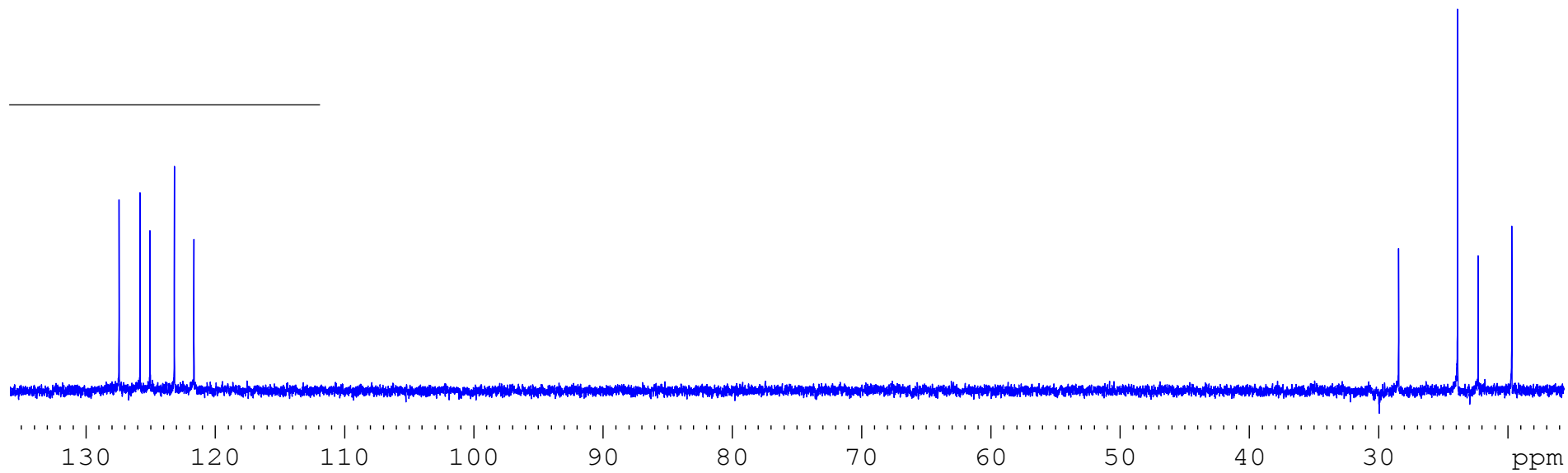


Figure S2.127:  $^{13}\text{C}$  NMR spectrum for compound 17 in  $\text{CDCl}_3$



**Figure S2.128: DEPT spectrum for compound 17 in CDCl<sub>3</sub>**

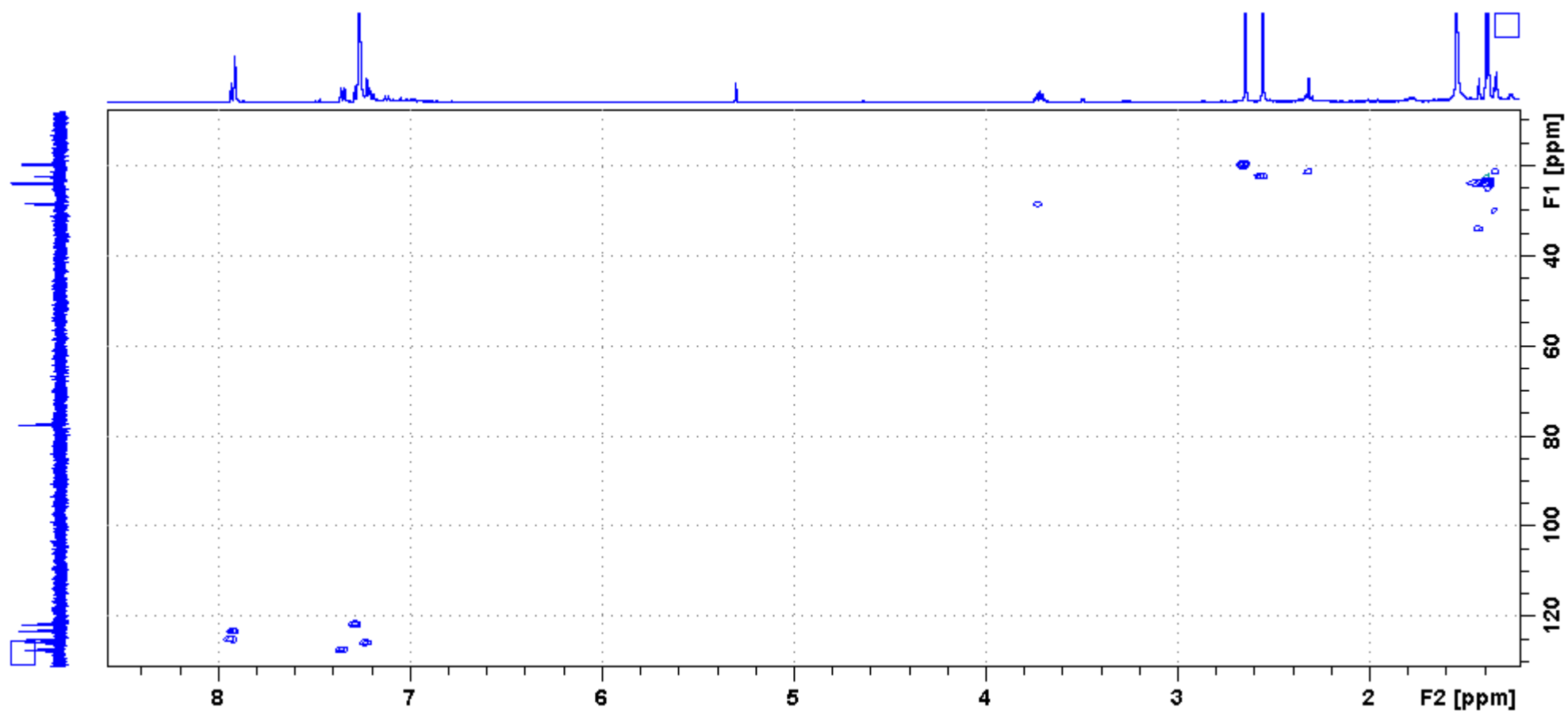


Figure S2.129: HSQCDEPT spectrum for compound 17 in CDCl<sub>3</sub>



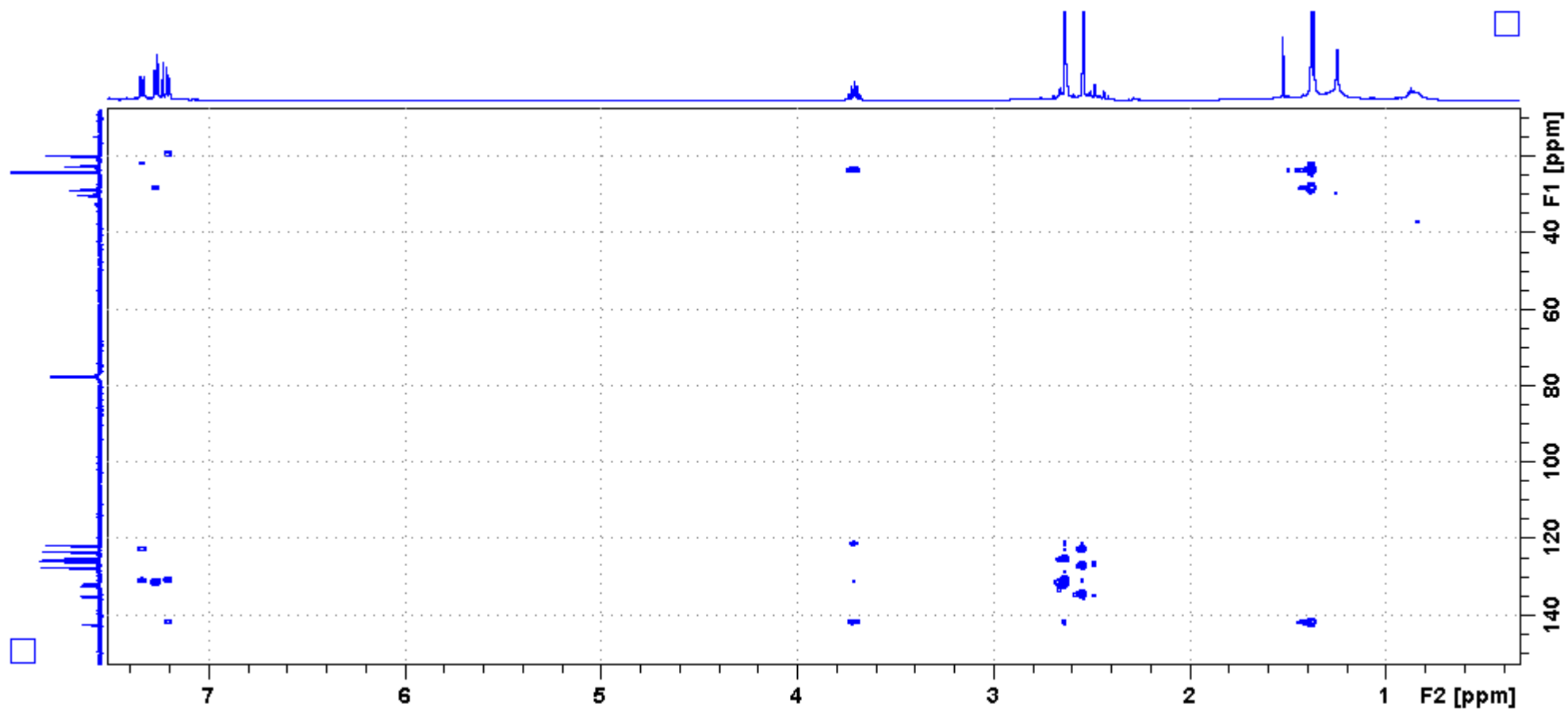


Figure S2.130: HMBC spectrum for compound 17 in CDCl<sub>3</sub>

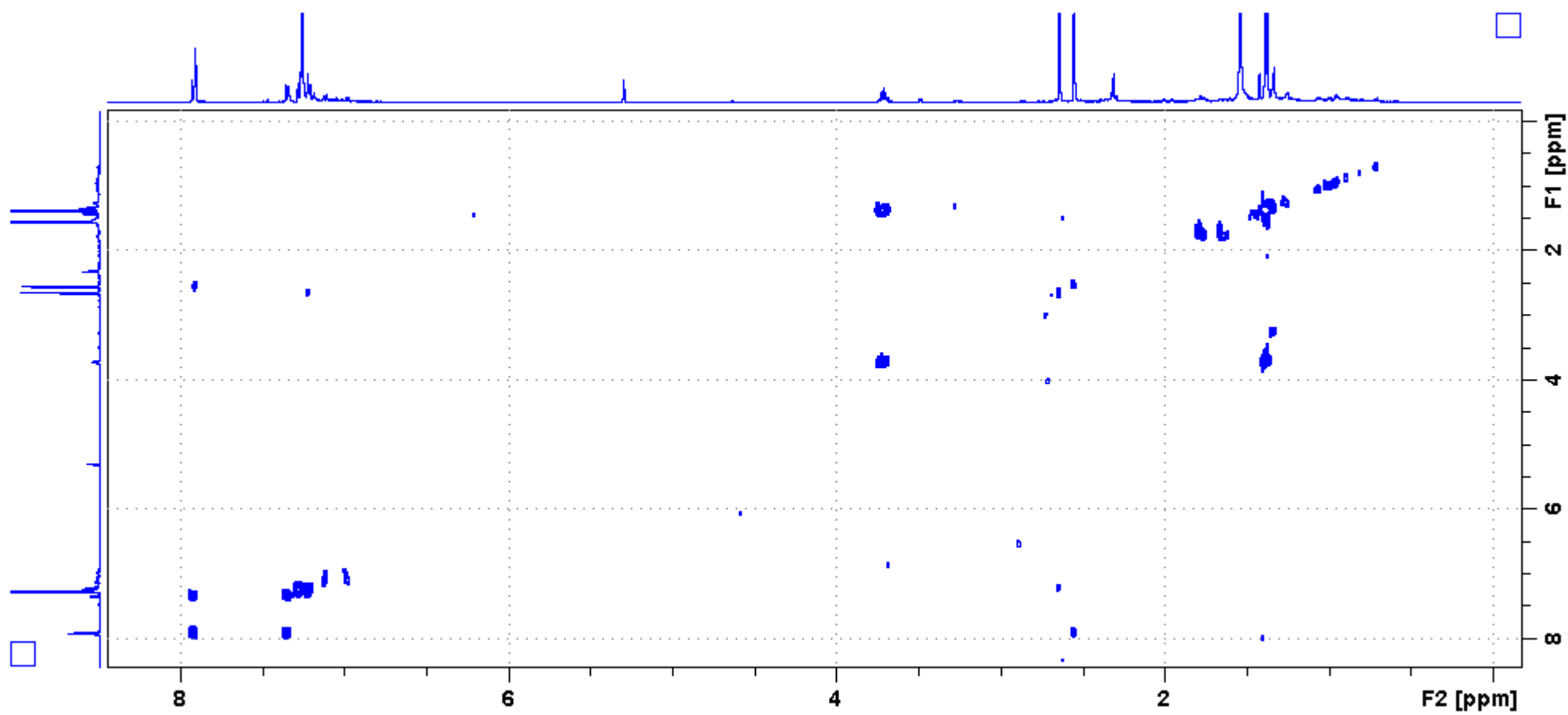


Figure S2.131: COSY spectrum for compound 17 in CDCl<sub>3</sub>

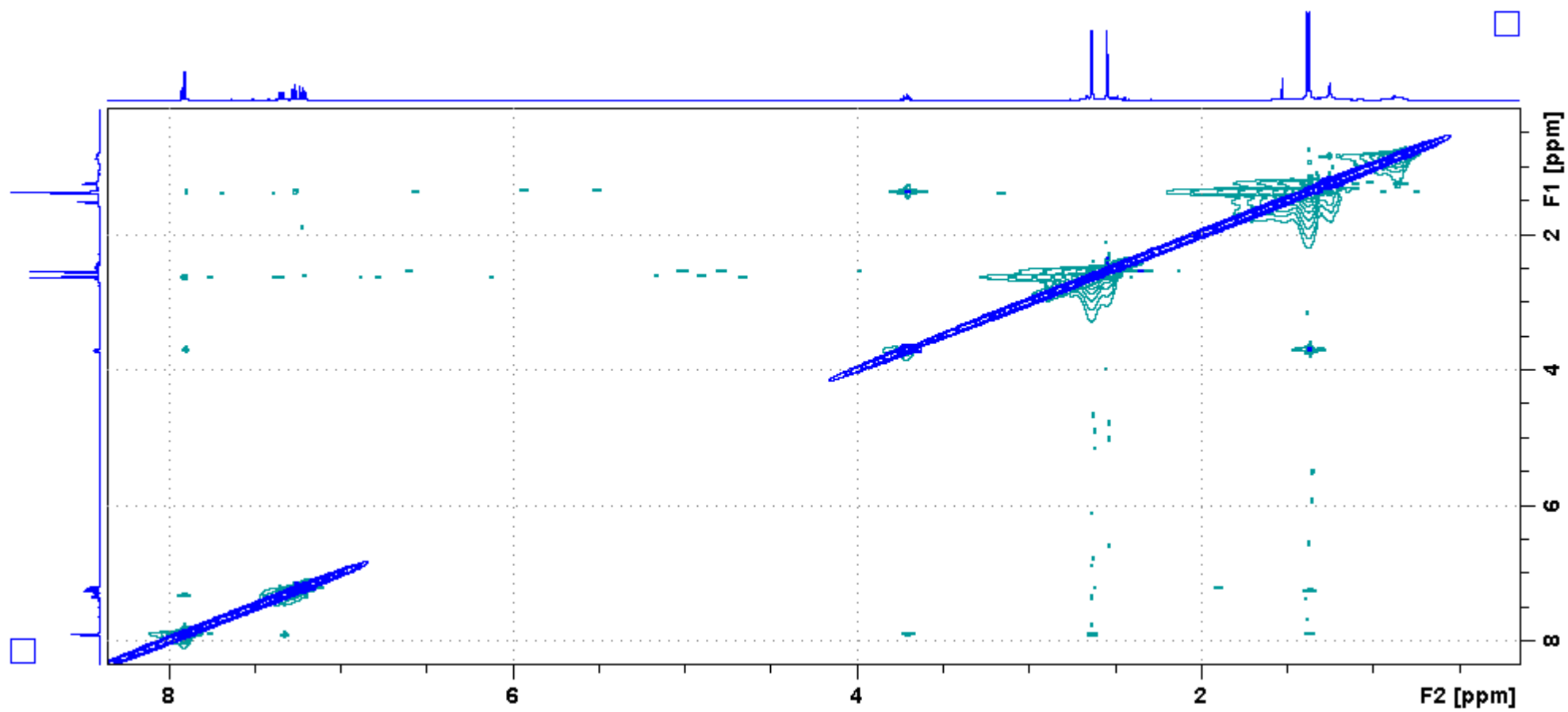
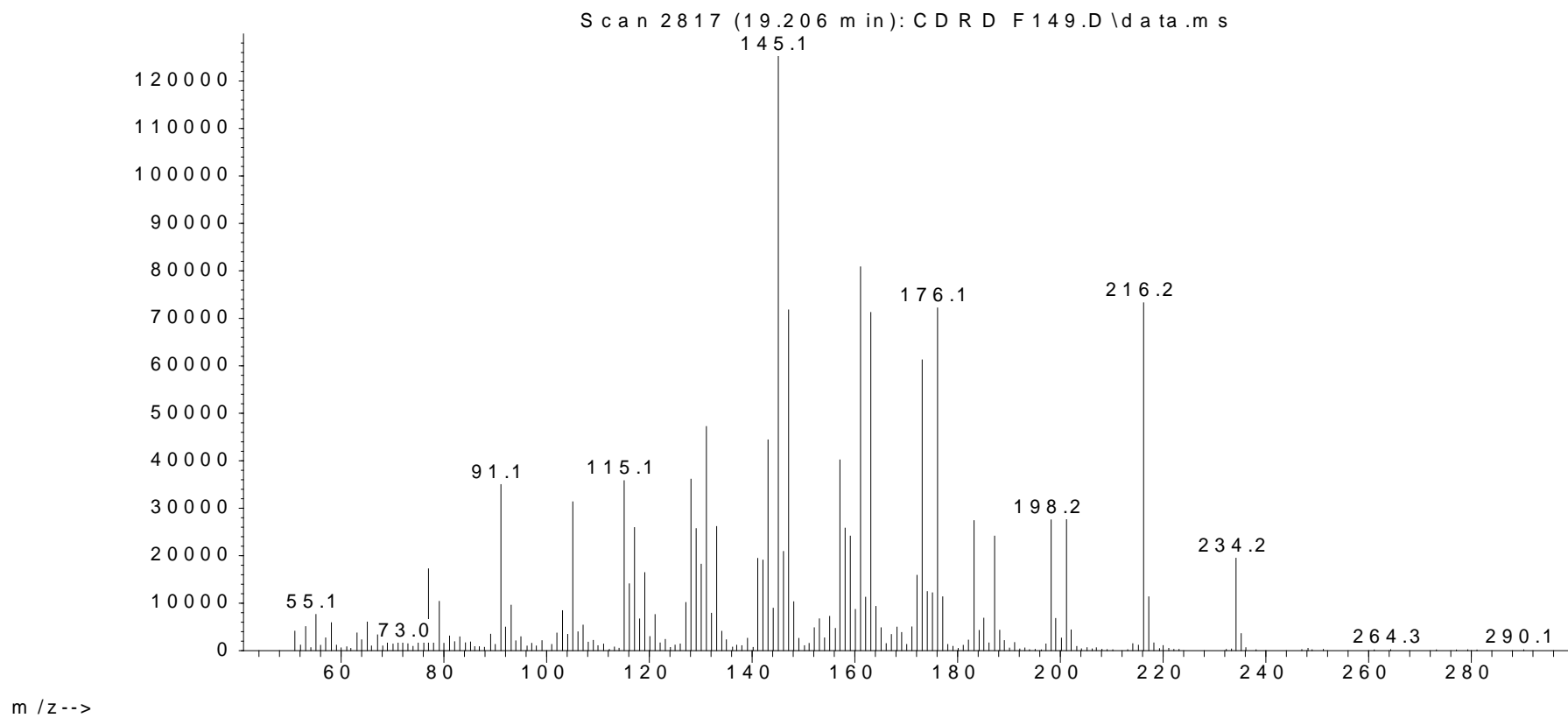
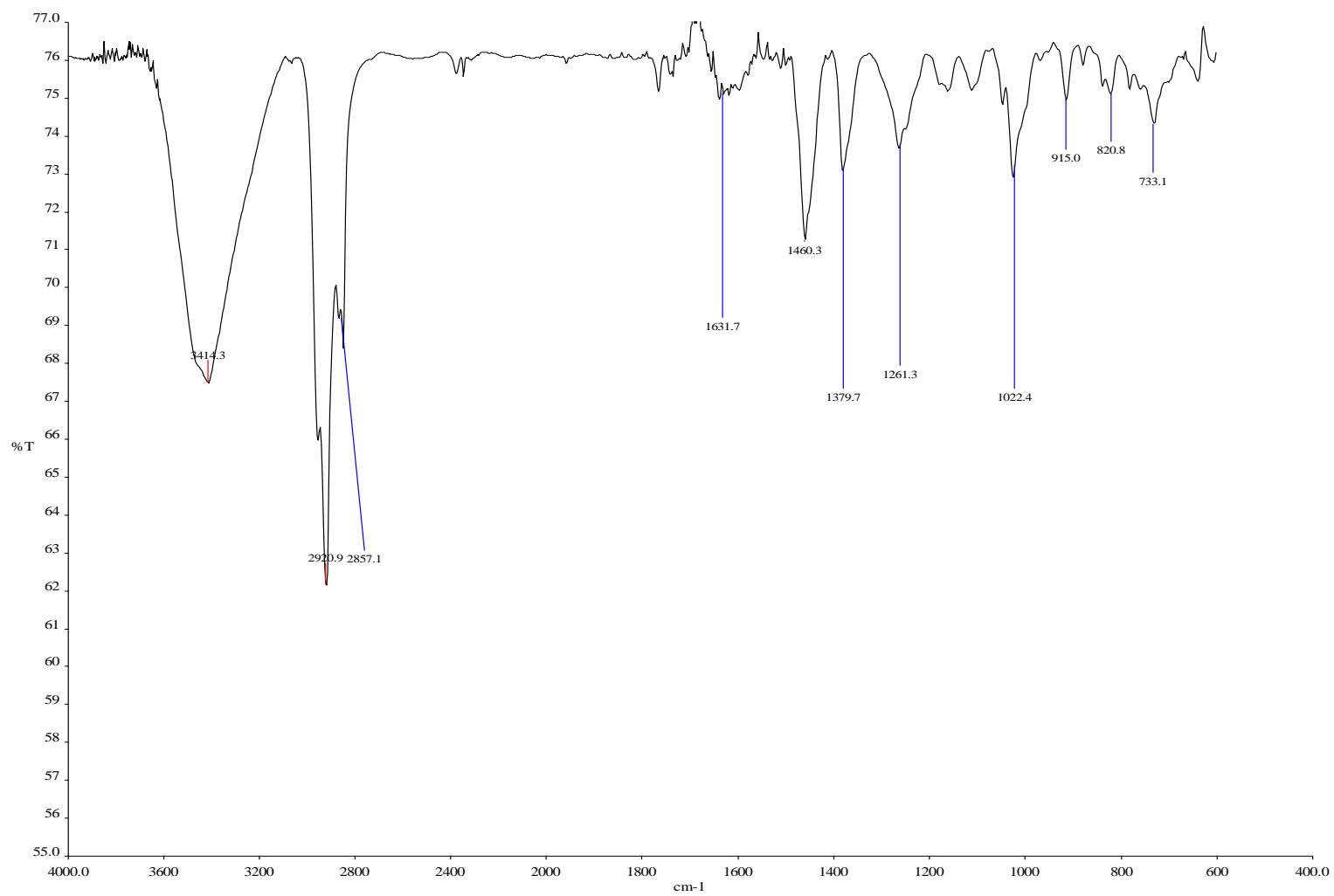


Figure S2.132: NOESY spectrum for compound 17 in CDCl<sub>3</sub>

Abundance



**Figure S2.133: Mass spectrum for compound 18**



**Figure S2.134: FTIR spectrum for compound 18**

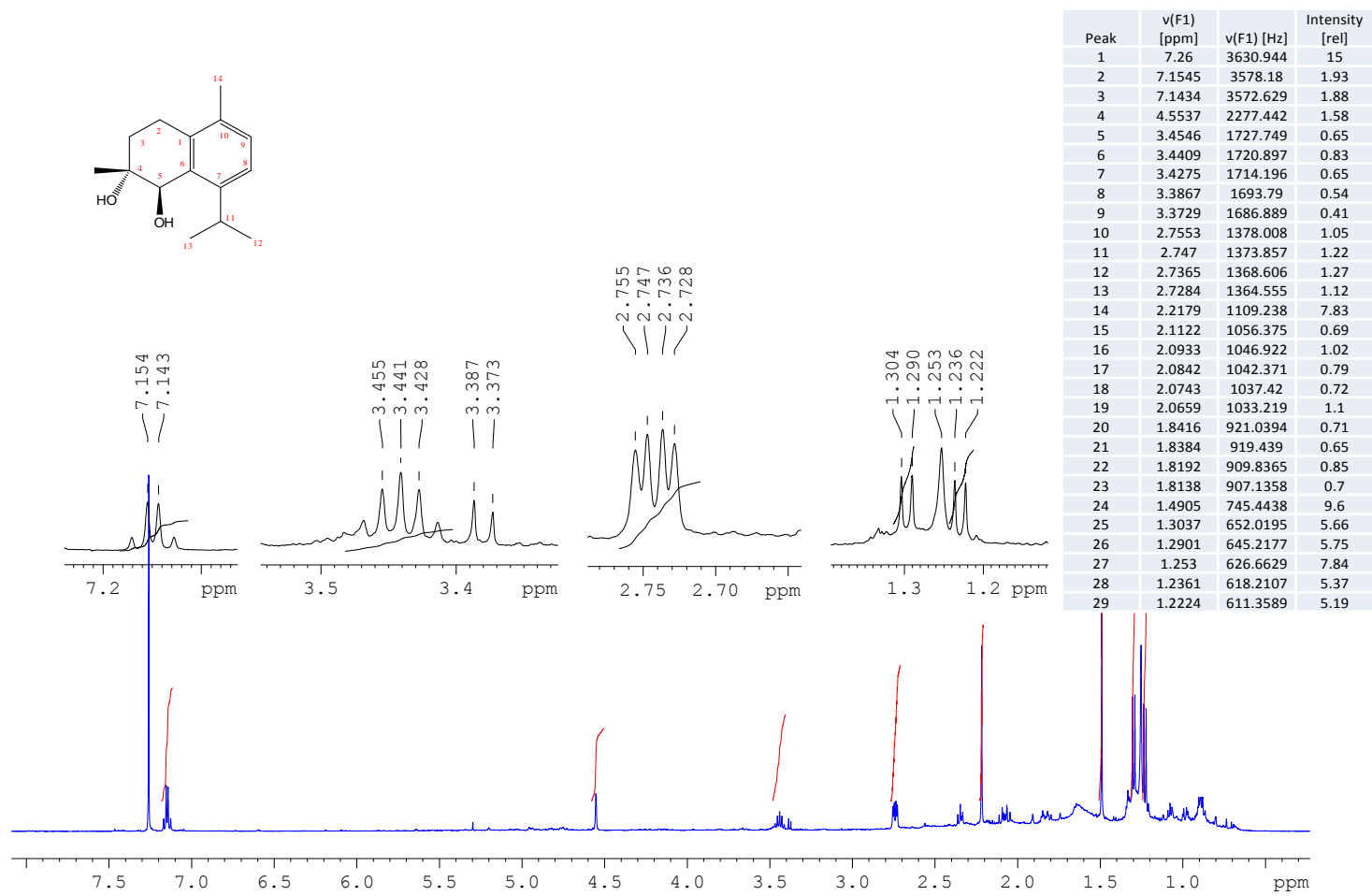


Figure S2.135:  $^1\text{H}$  NMR spectrum for compound 18 in  $\text{CDCl}_3$

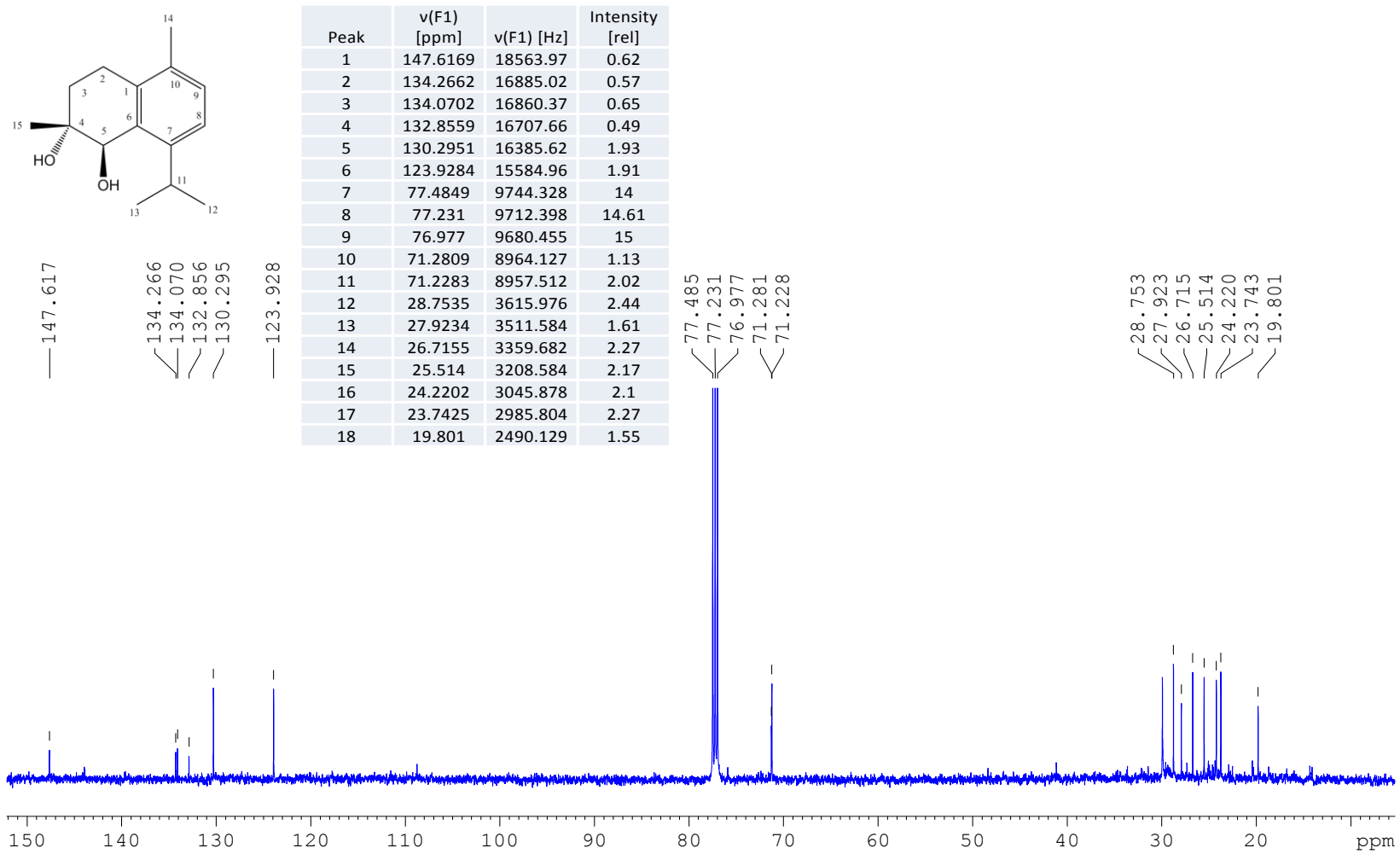
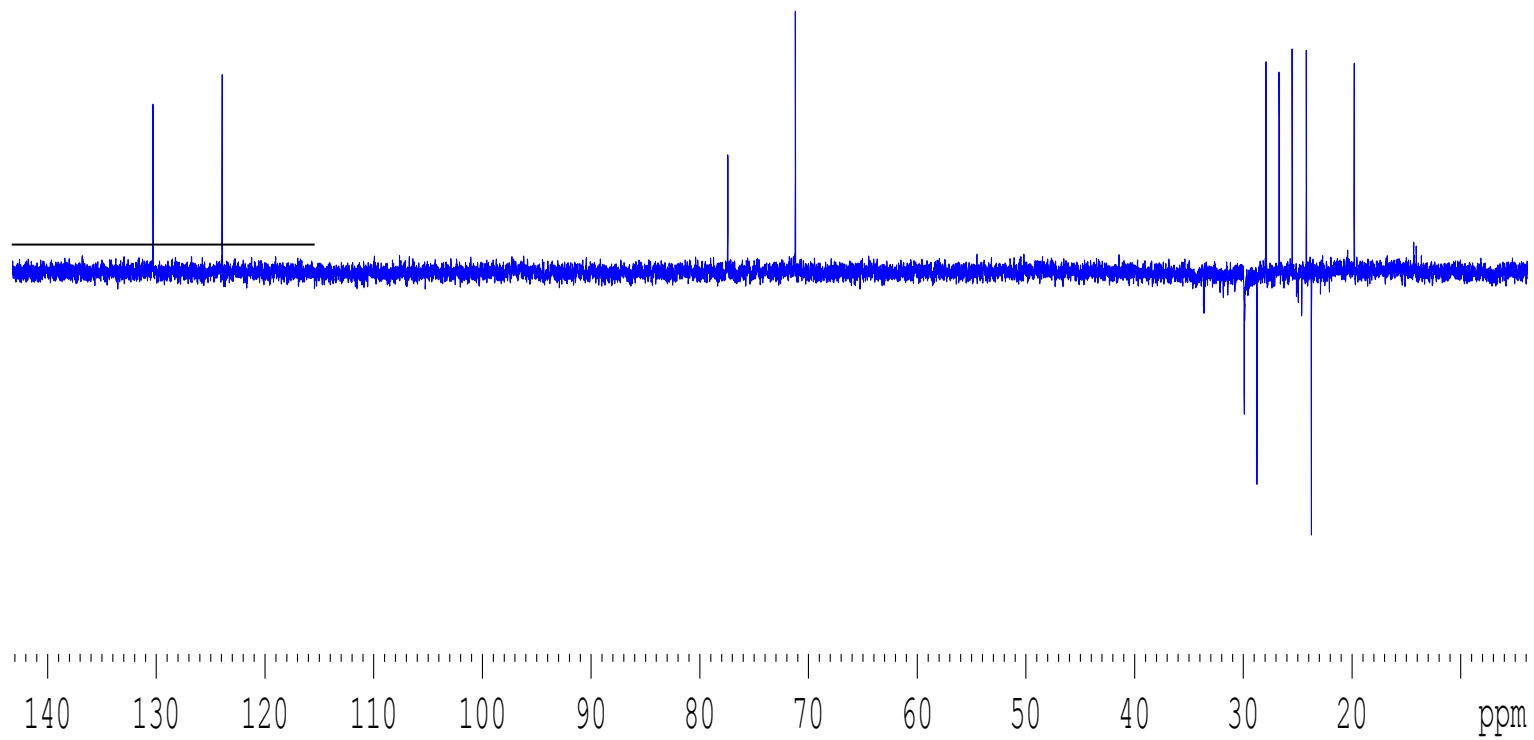


Figure S2.136:  $^{13}\text{C}$  NMR spectrum for compound 18 in  $\text{CDCl}_3$



**Figure S2.137: DEPT spectrum for compound 18 in CDCl<sub>3</sub>**



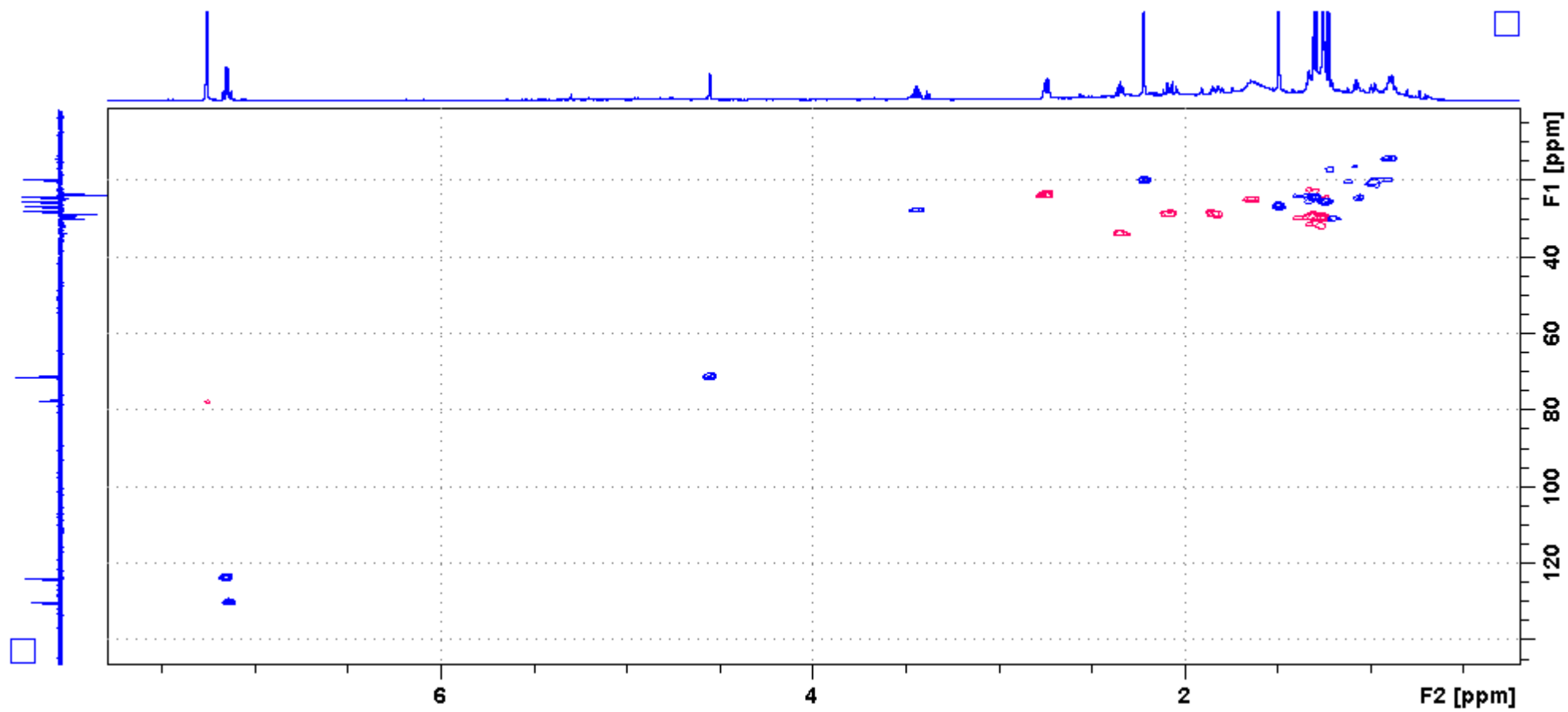


Figure S2.138: HSQCDEPT spectrum for compound 18 in CDCl<sub>3</sub>

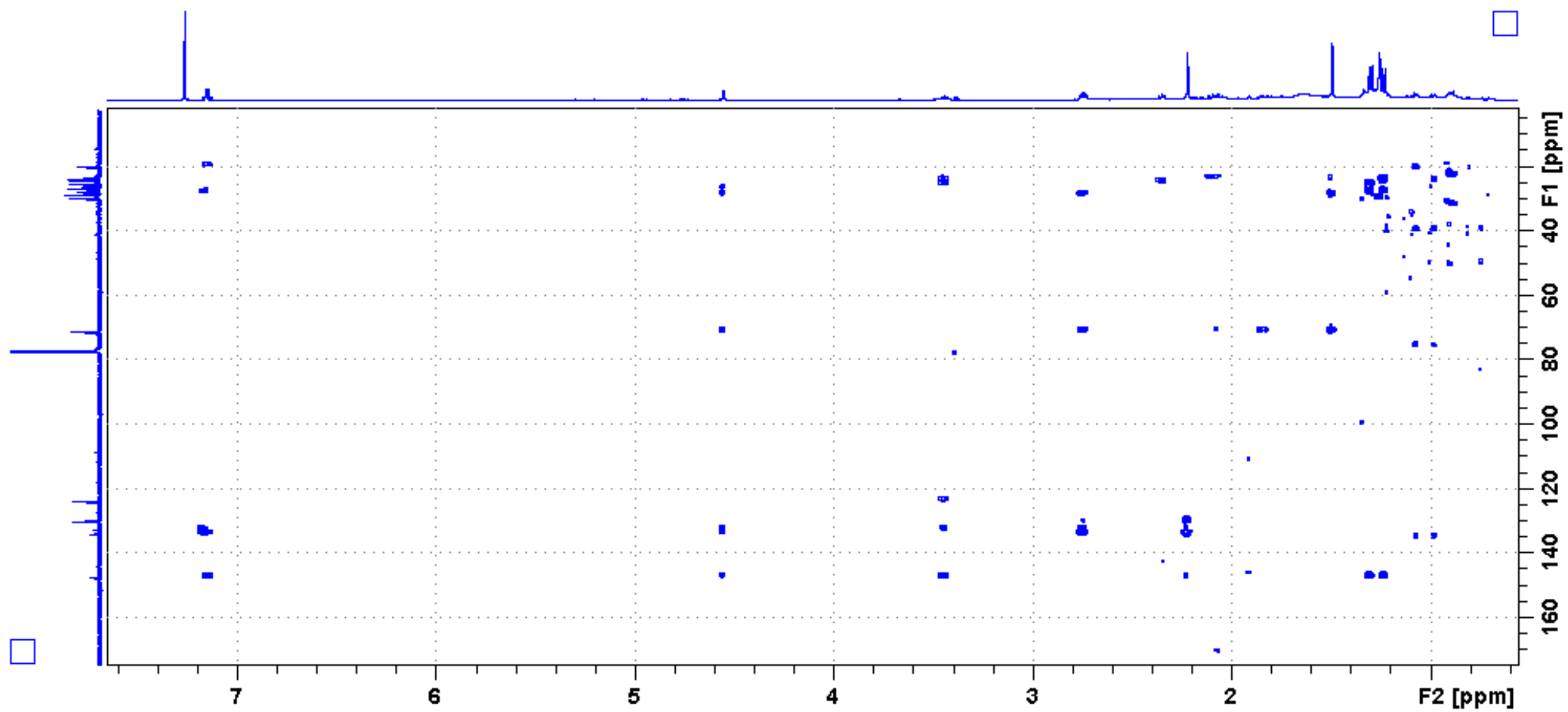


Figure S2.139: HMBC spectrum for compound 18 in CDCl<sub>3</sub>

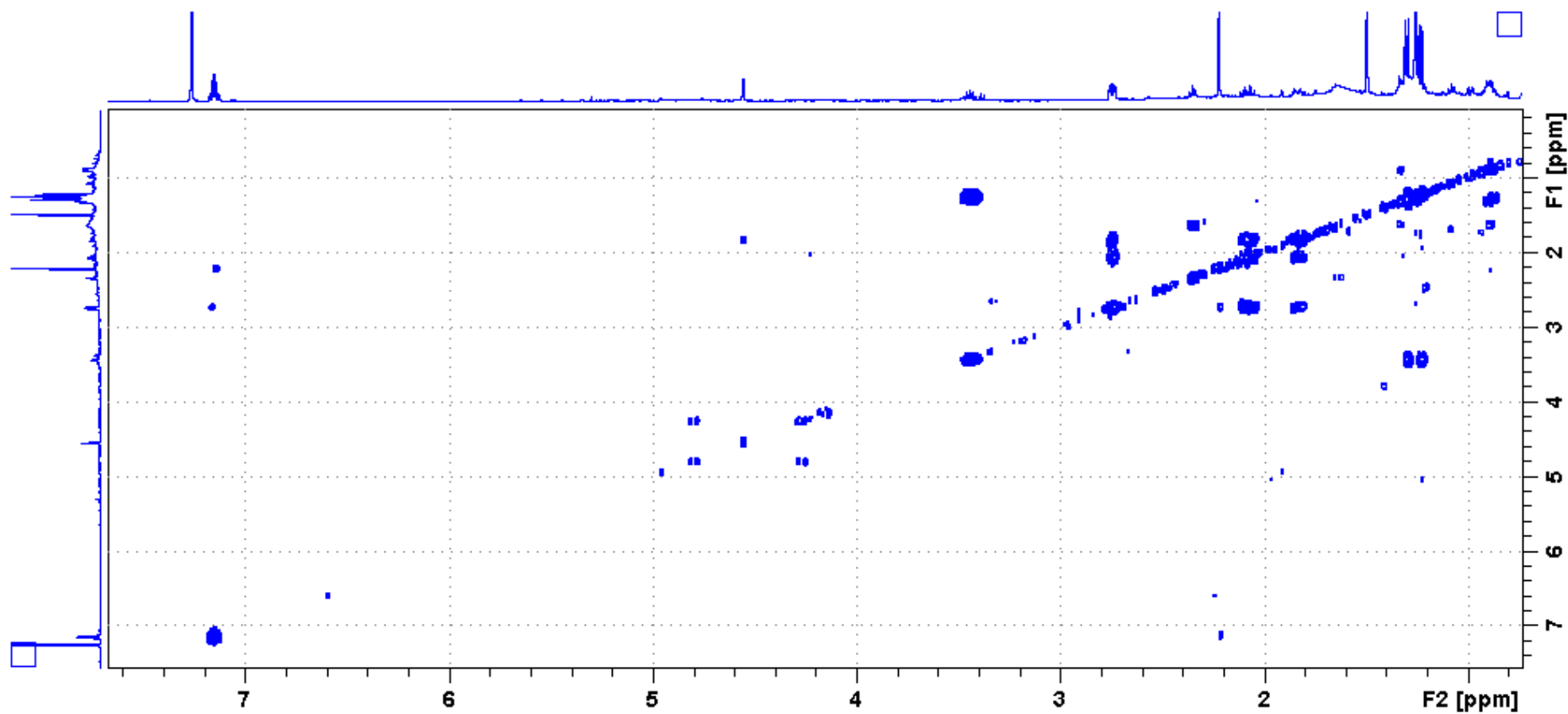


Figure S2.140: COSY spectrum for compound 18 in CDCl<sub>3</sub>

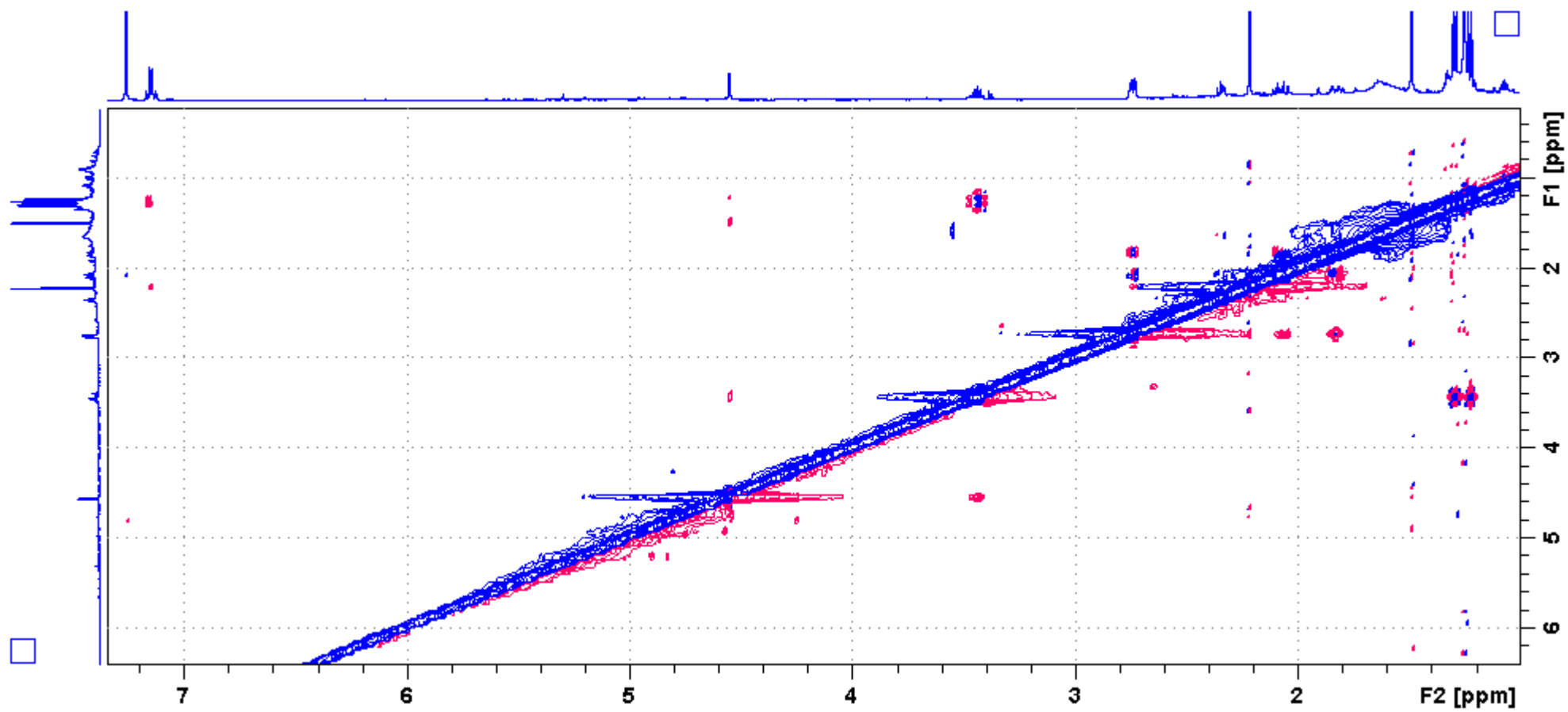


Figure S2.141: NOESY spectrum for compound 18 in CDCl<sub>3</sub>

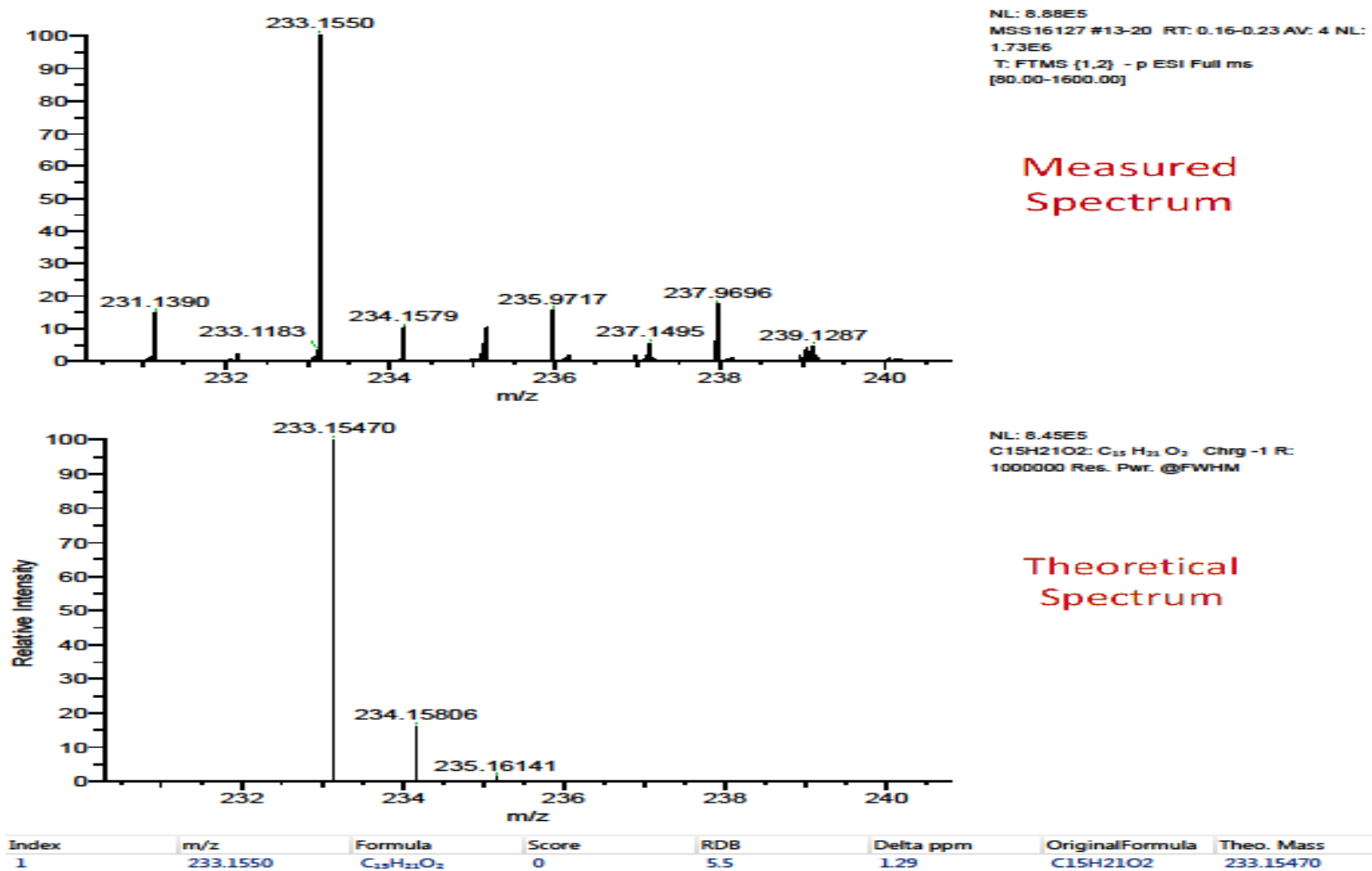
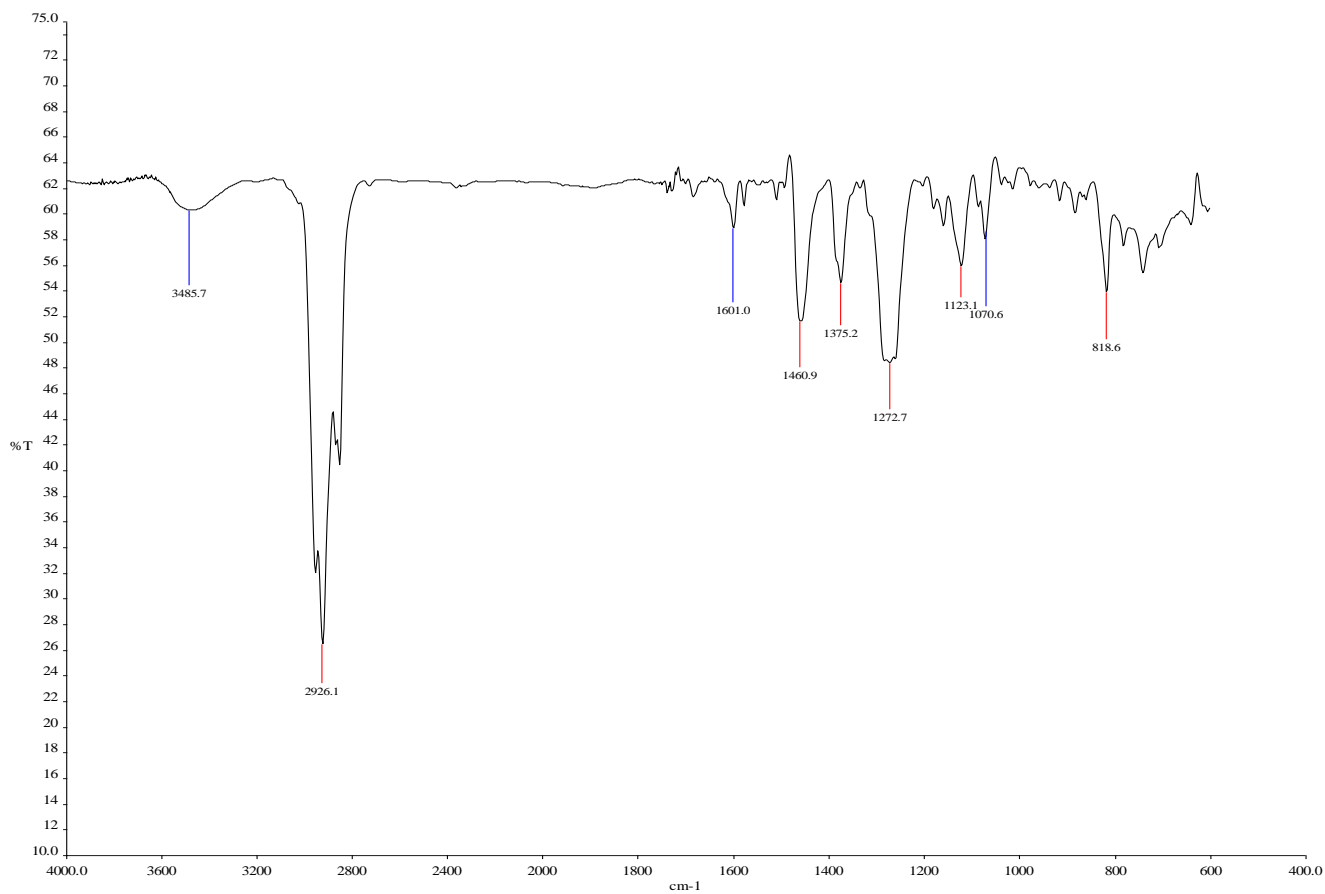


Figure S2.142: Mass spectrum for compound 19



**Figure S2.143: FTIR spectrum for compound 19**

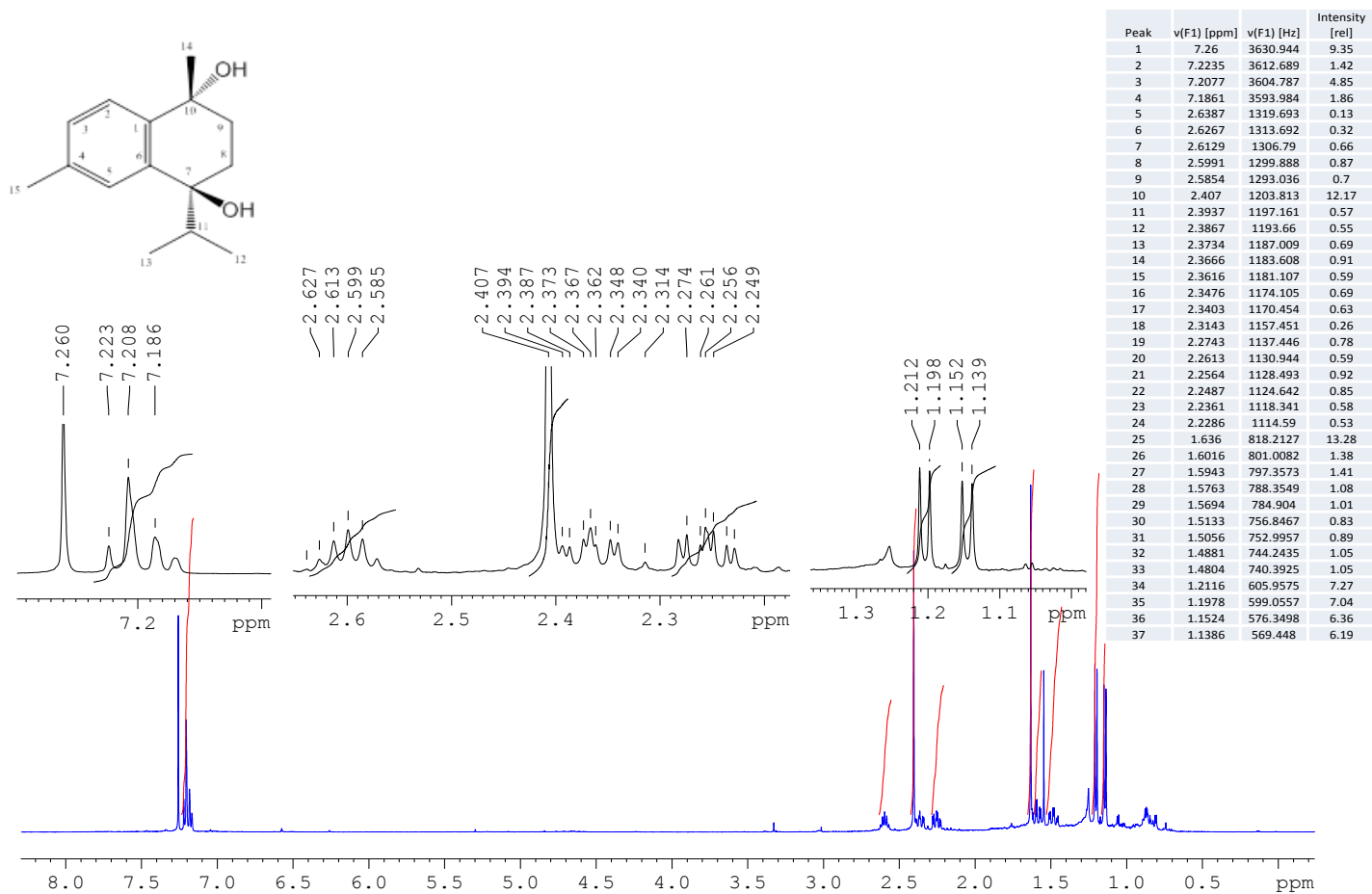
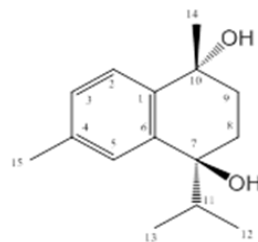


Figure S2.144:  $^1\text{H}$  NMR spectrum for compound 19 in  $\text{CDCl}_3$



Peak	v(F1) [ppm]	v(F1) [Hz]	Intensity [rel]
1	138.9223	17470.56	0.2
2	137.6094	17305.45	0.59
3	137.4627	17287	0.73
4	128.1781	16119.39	3.68
5	122.5494	15411.54	2.61
6	120.8954	15203.54	3.24
7	80.207	10086.65	0.04
8	77.4825	9744.026	14.63
9	77.2286	9712.096	15
10	76.9746	9680.154	14.78
11	75.946	9550.799	1.7
12	30.6228	3851.055	1.41
13	30.5353	3840.051	5.13
14	24.3923	3067.521	0.99
15	21.9205	2756.673	2.09
16	19.3262	2430.42	4.79
17	18.7476	2357.656	3.59
18	17.079	2147.817	3.23

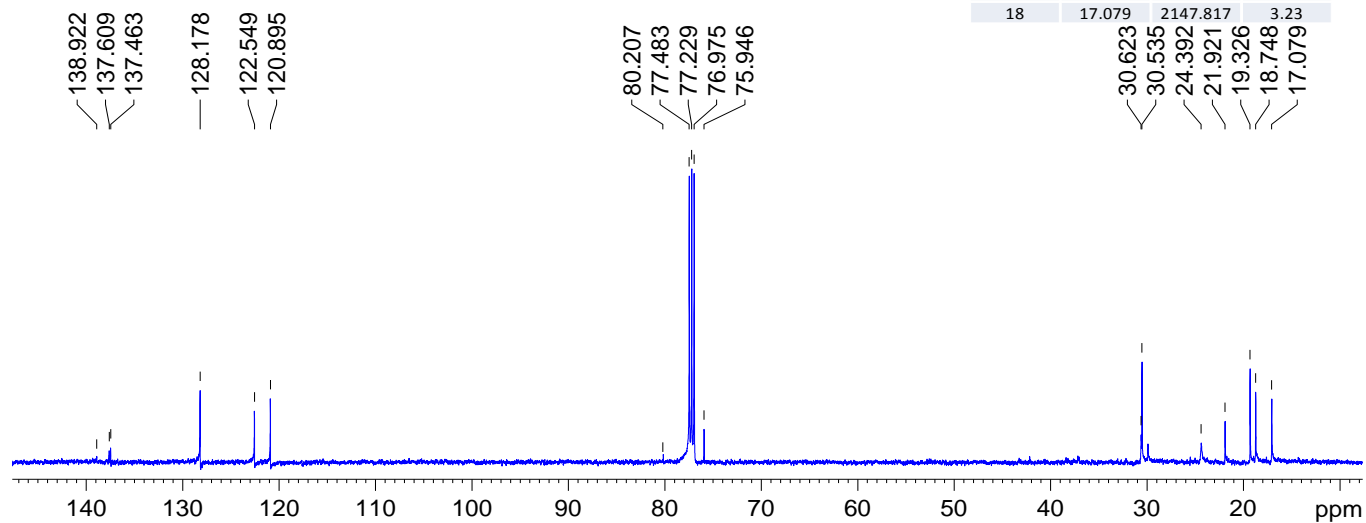


Figure S2.145:  $^{13}\text{C}$  NMR spectrum for compound 19 in  $\text{CDCl}_3$



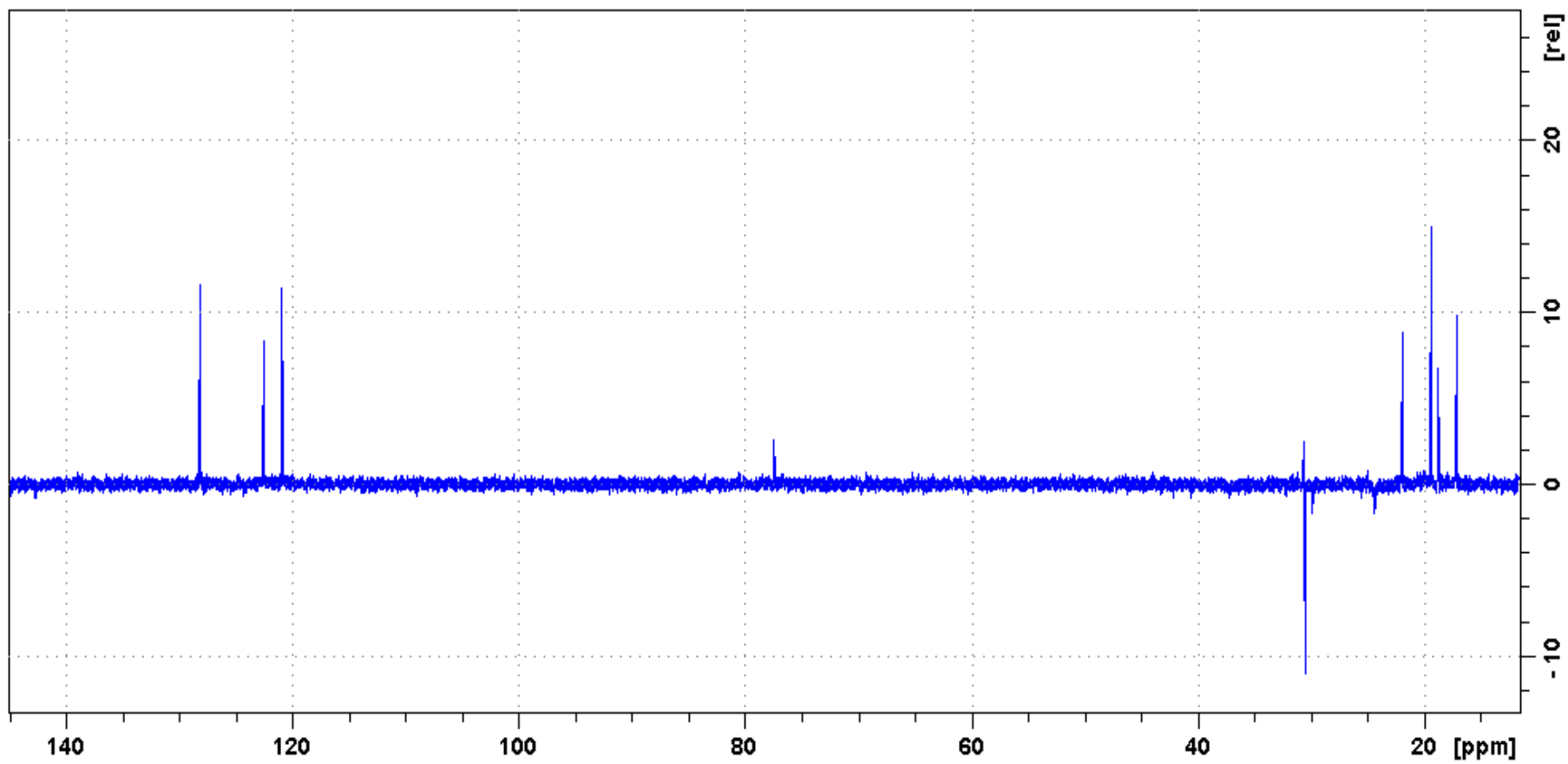


Figure S2.146: DEPT spectrum for compound 19 in CDCl<sub>3</sub>

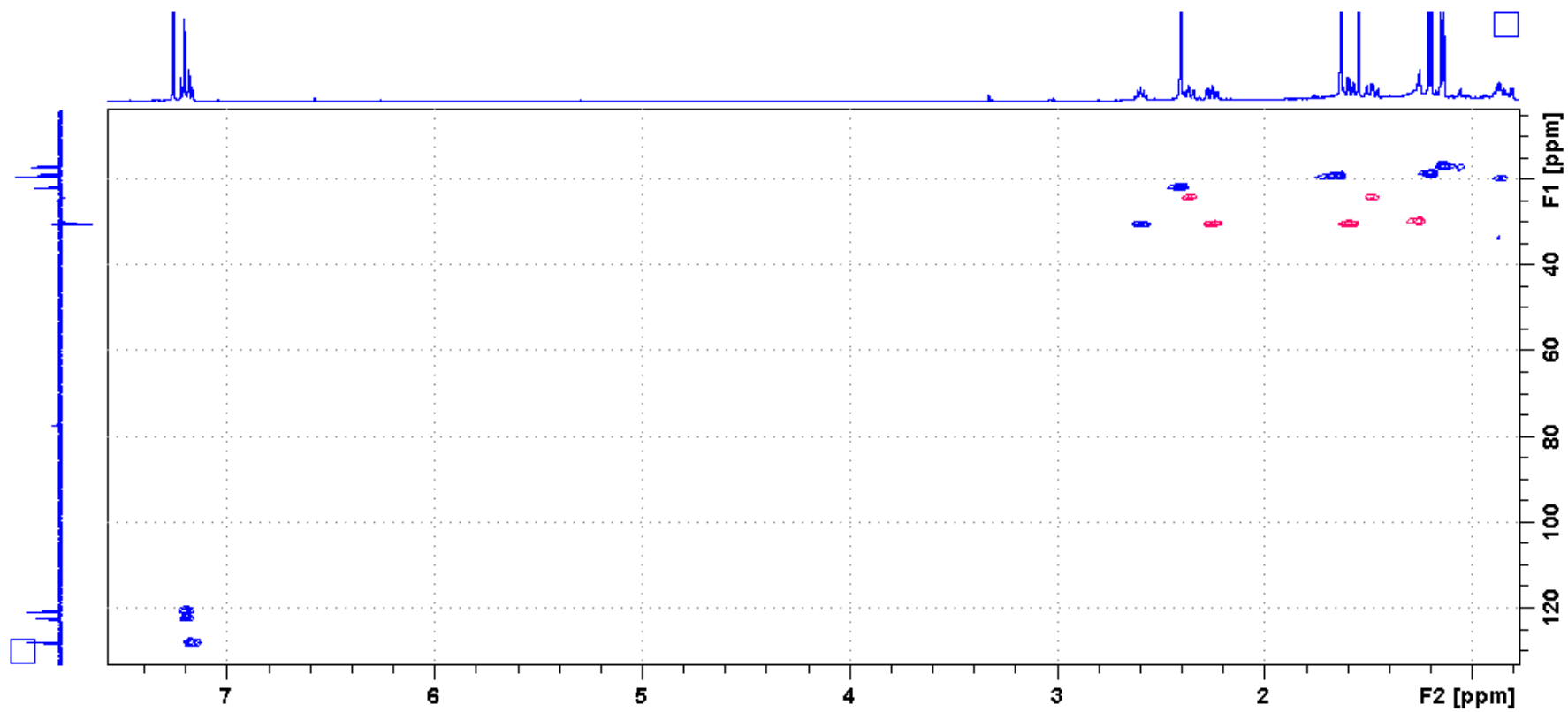


Figure S2.147: HSQCDEPT spectrum for compound 19 in CDCl<sub>3</sub>

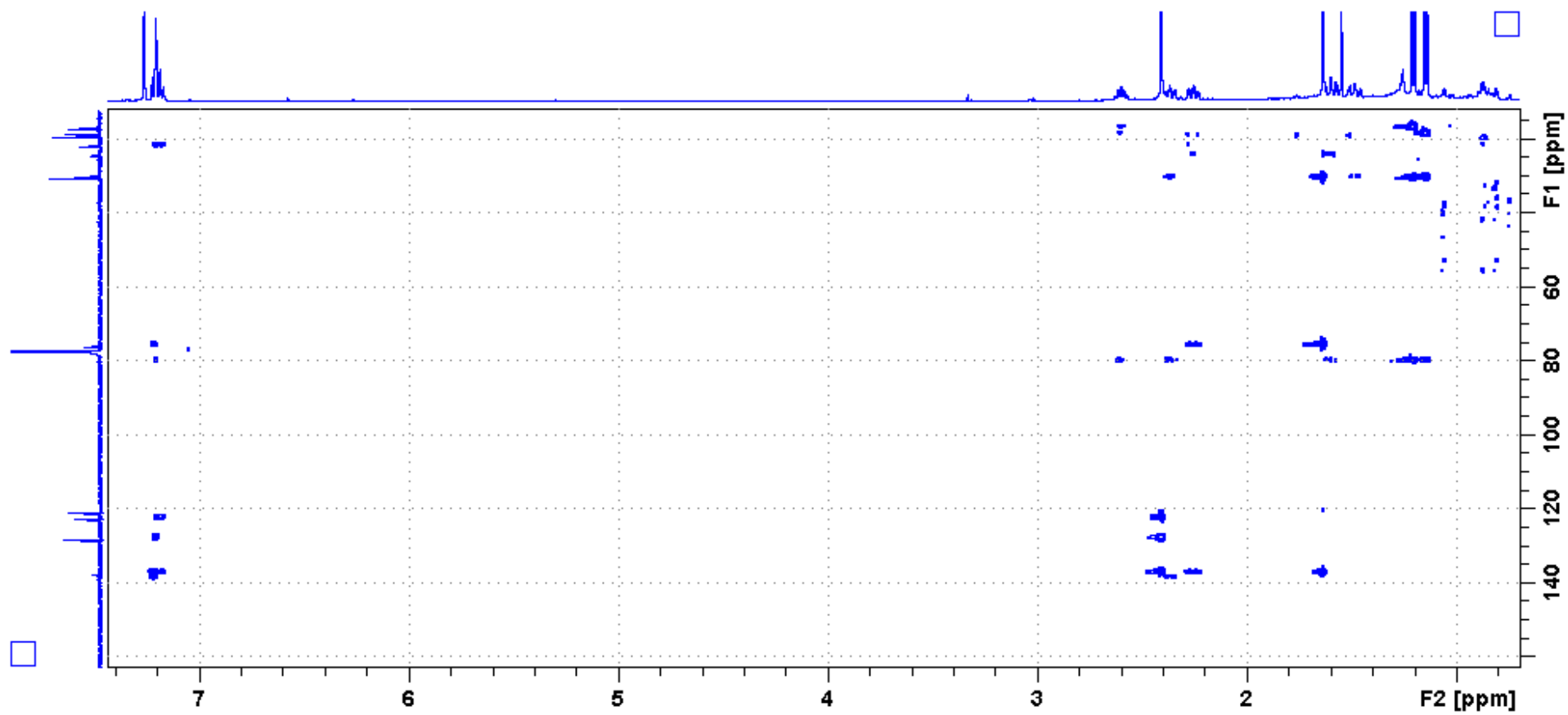


Figure S2.148: HMBC spectrum for compound 19 in CDCl<sub>3</sub>

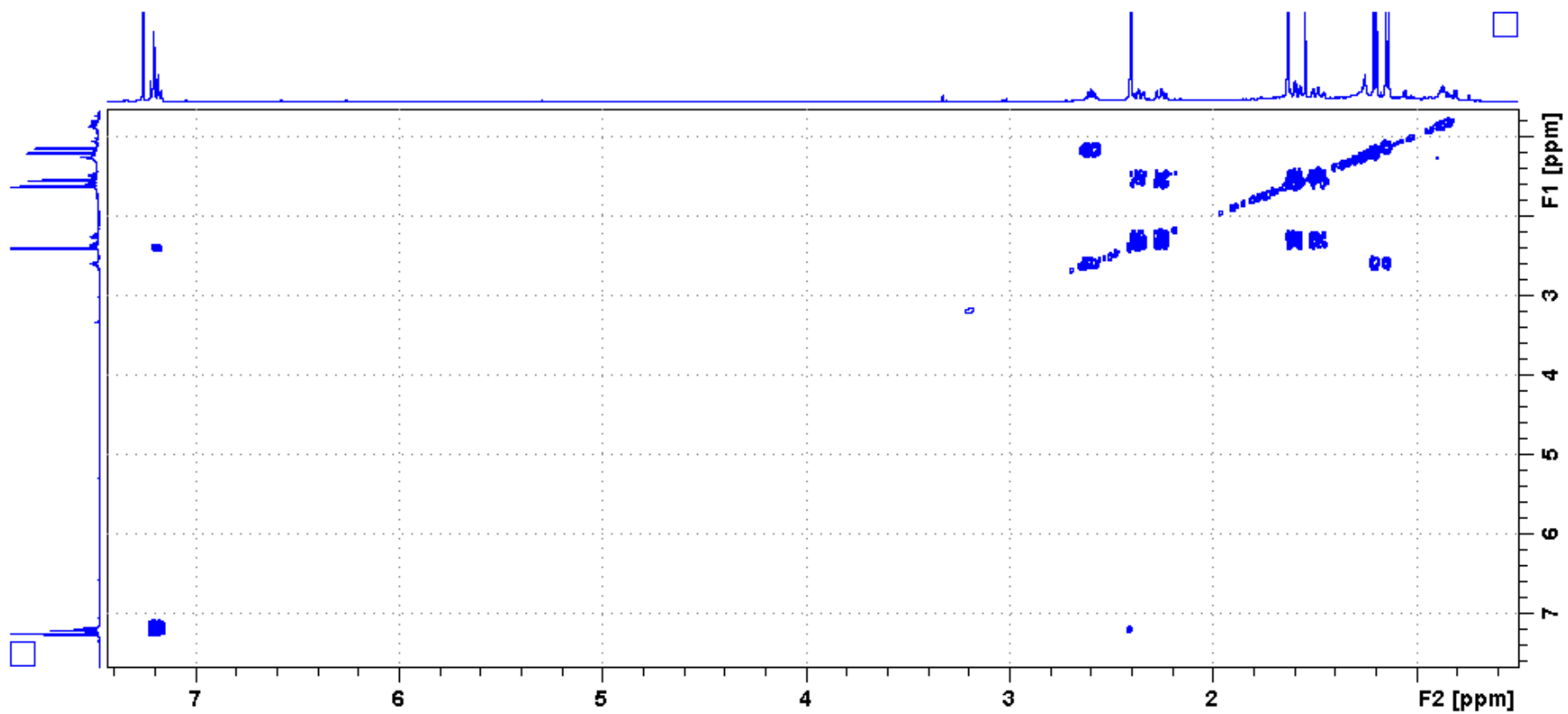


Figure S2.149: COSY spectrum for compound 19 in CDCl<sub>3</sub>

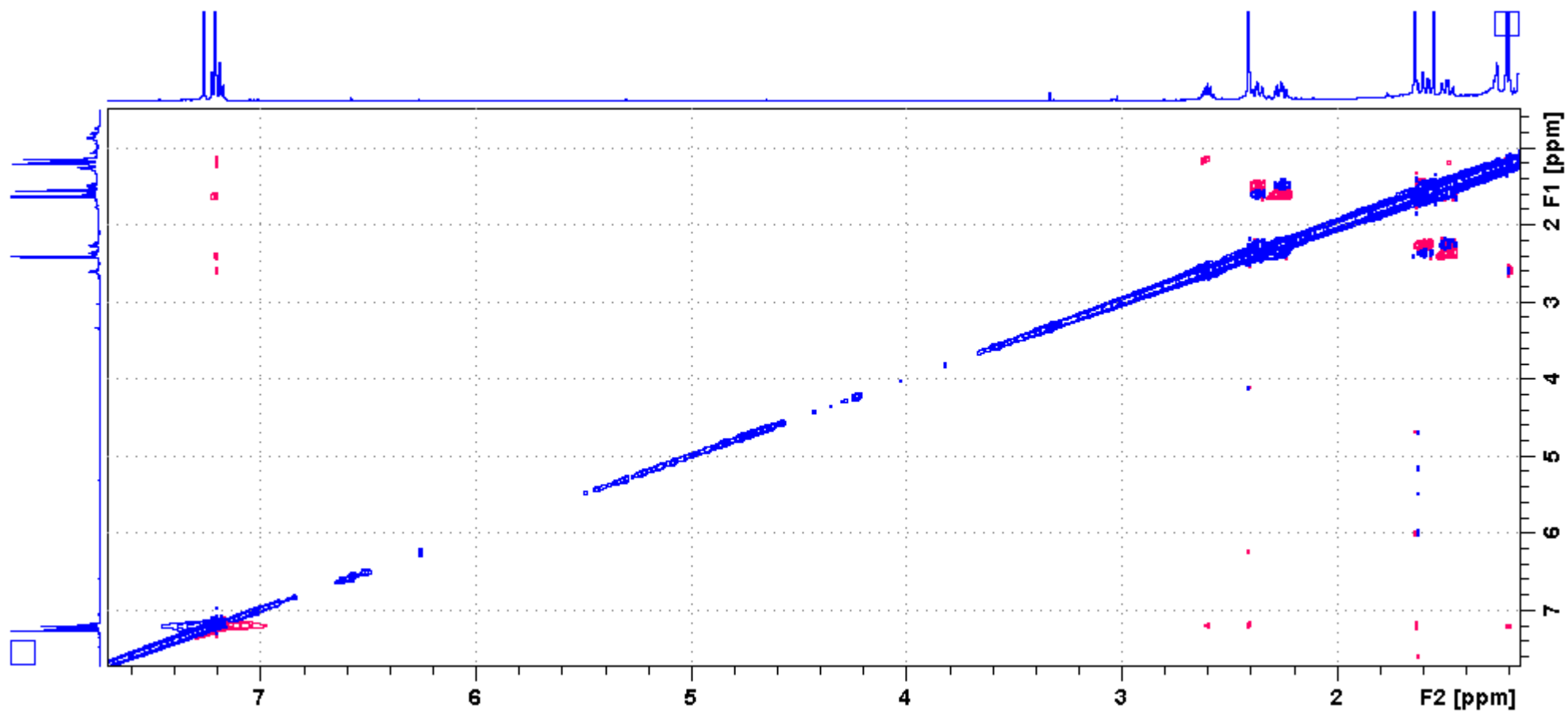


Figure S2.150: NOESY spectrum for compound 19 in CDCl<sub>3</sub>

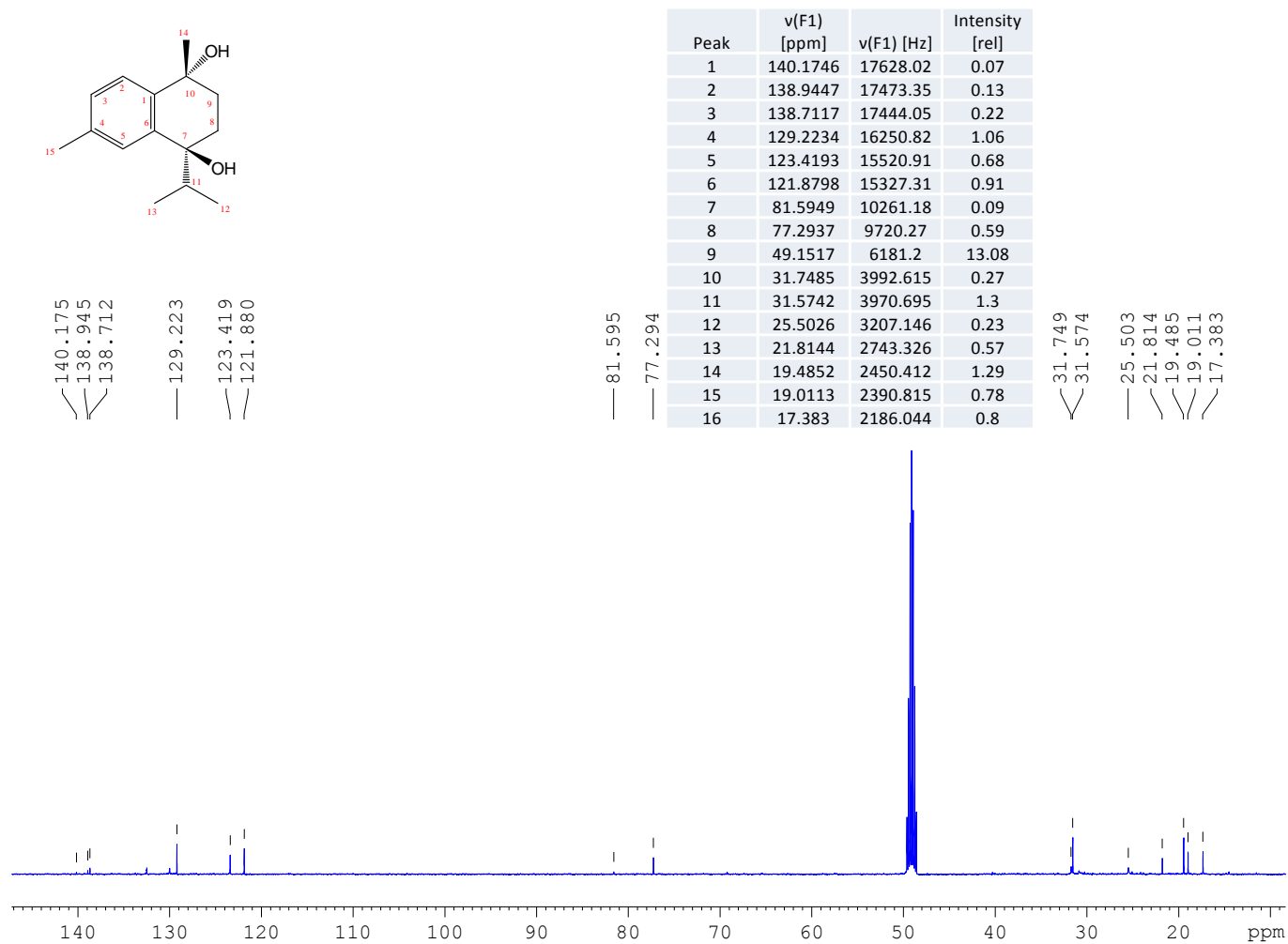
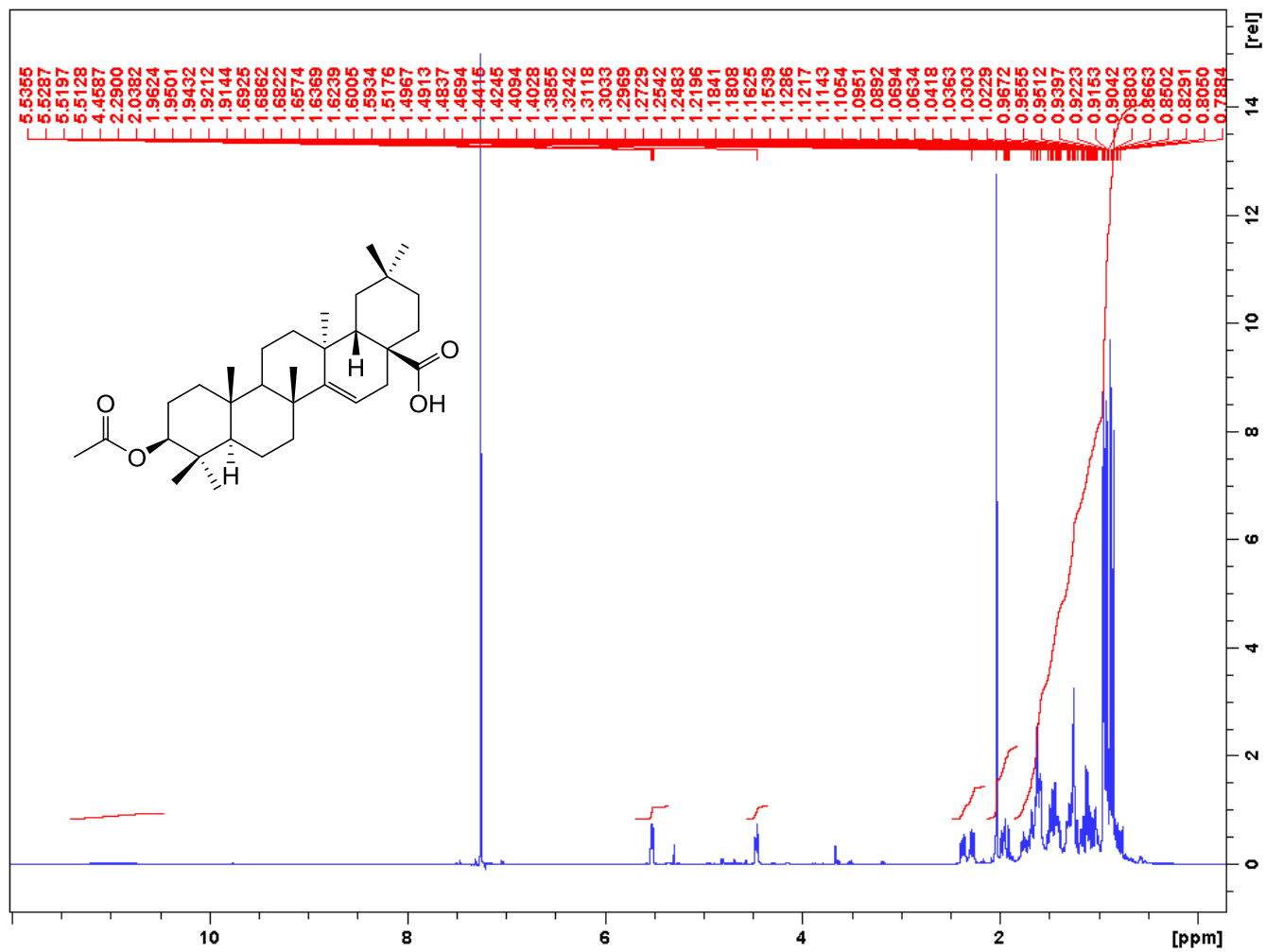


Figure S2.151:  $^{13}\text{C}$  NMR spectrum for compound 19 in  $\text{CD}_3\text{OD}$

Figure S2.152:  $^1\text{H}$  NMR spectrum for compound 20 in  $\text{CDCl}_3$



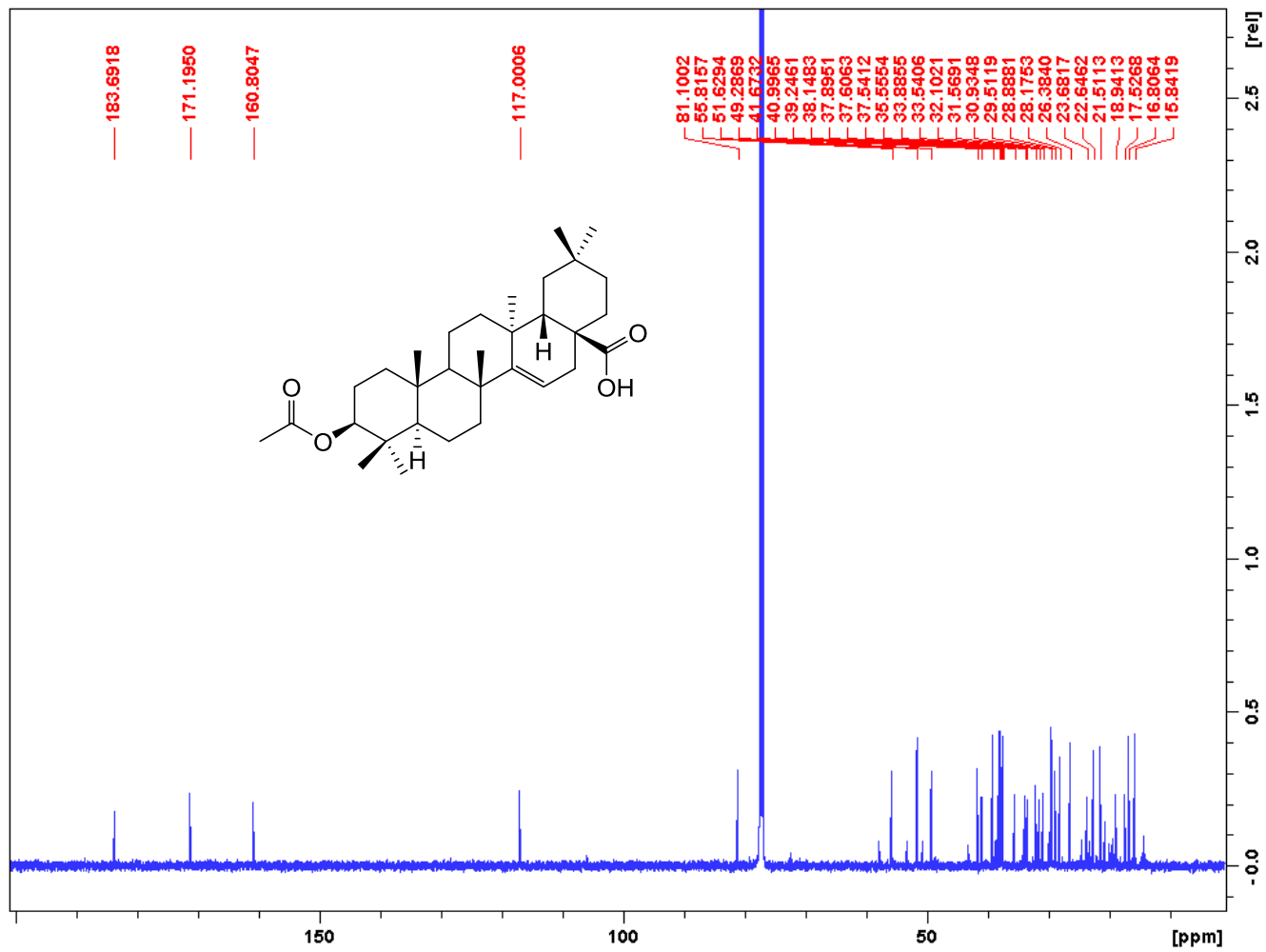


Figure S2.153:  $^{13}\text{C}$  NMR spectrum for compound 20 in  $\text{CDCl}_3$



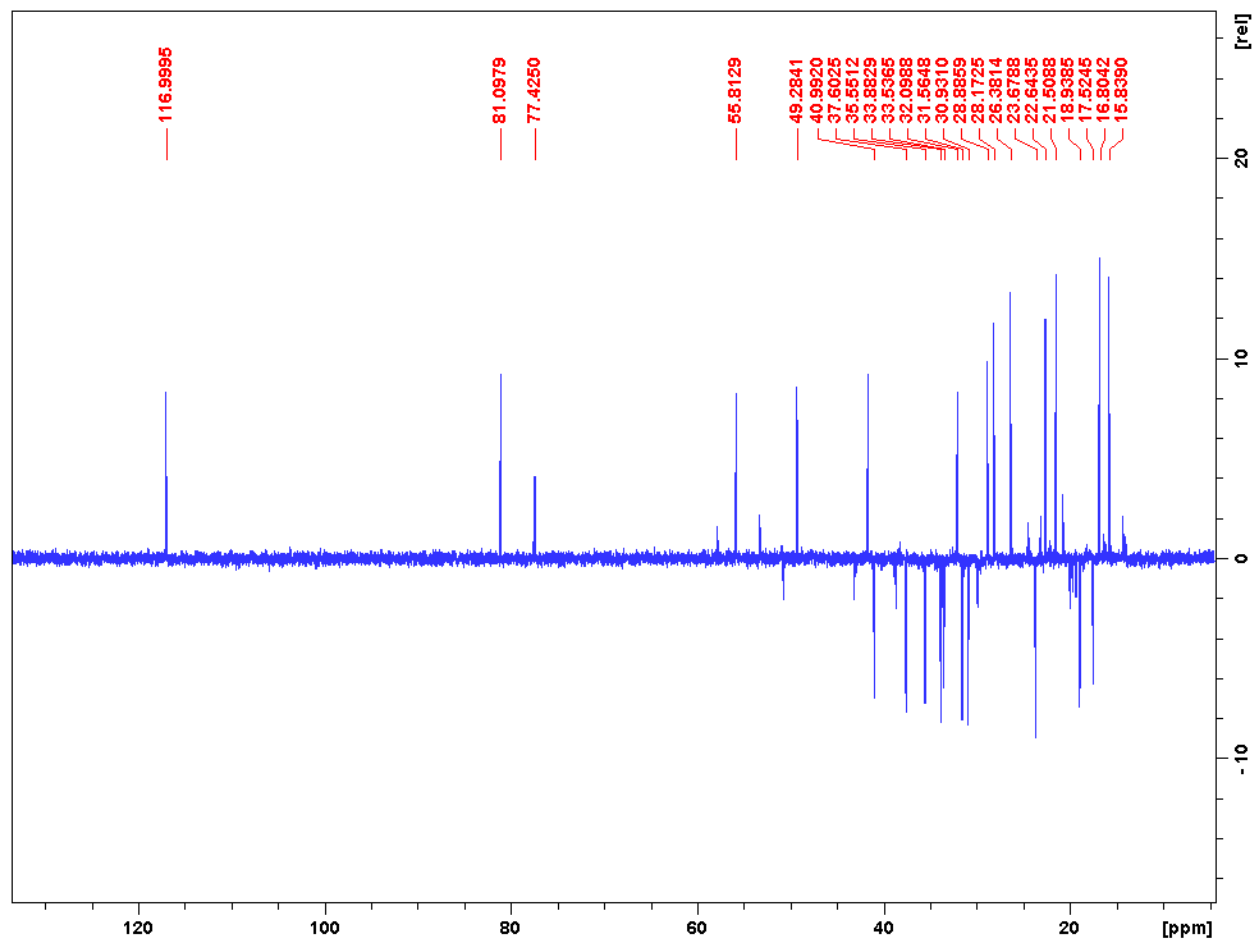


Figure S2.154: DEPT spectrum for compound 20 in CDCl<sub>3</sub>

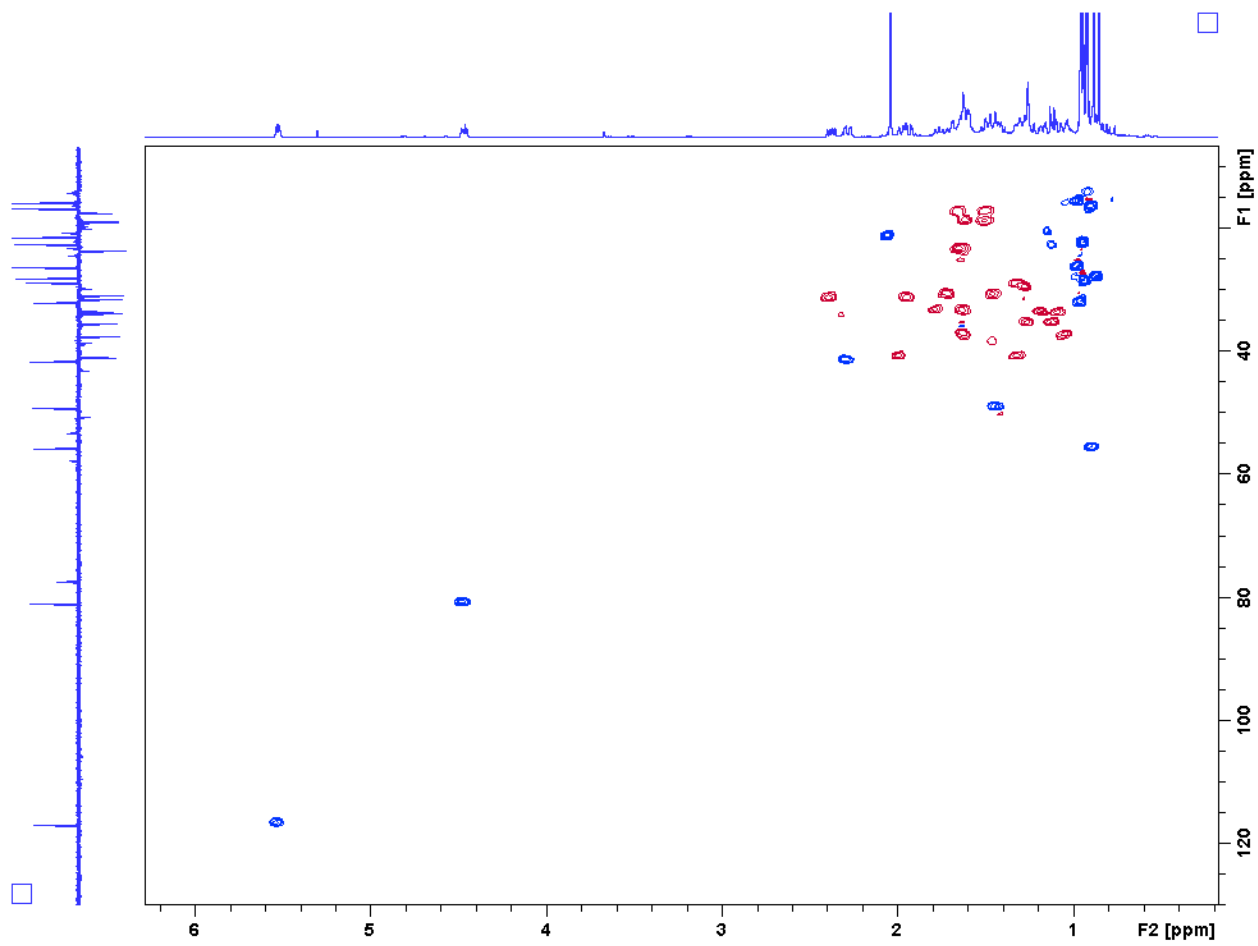


Figure S2.155: HSQCDEPT spectrum for compound 20 in CDCl<sub>3</sub>

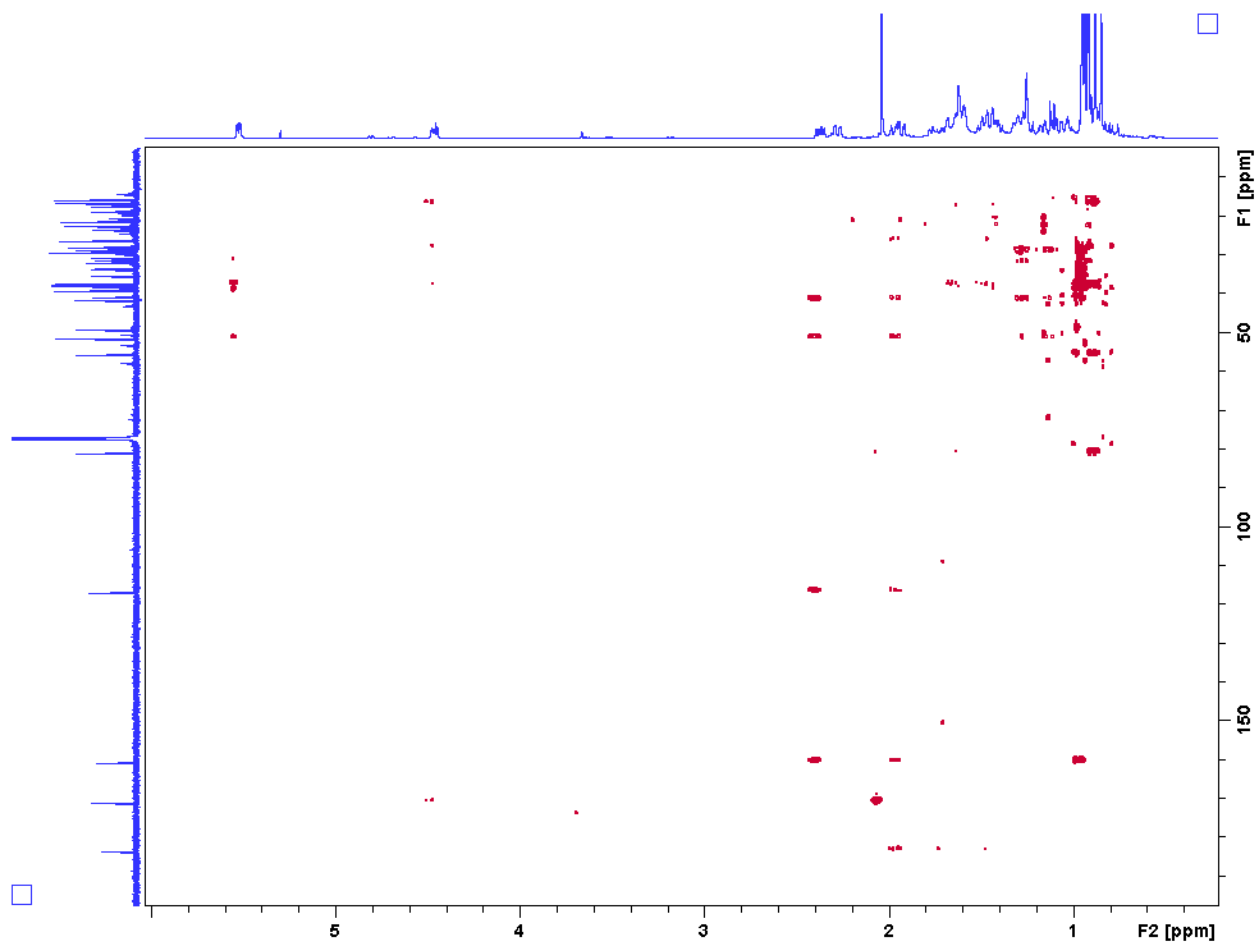


Figure S2.156: HMBC spectrum for compound 20 in CDCl<sub>3</sub>

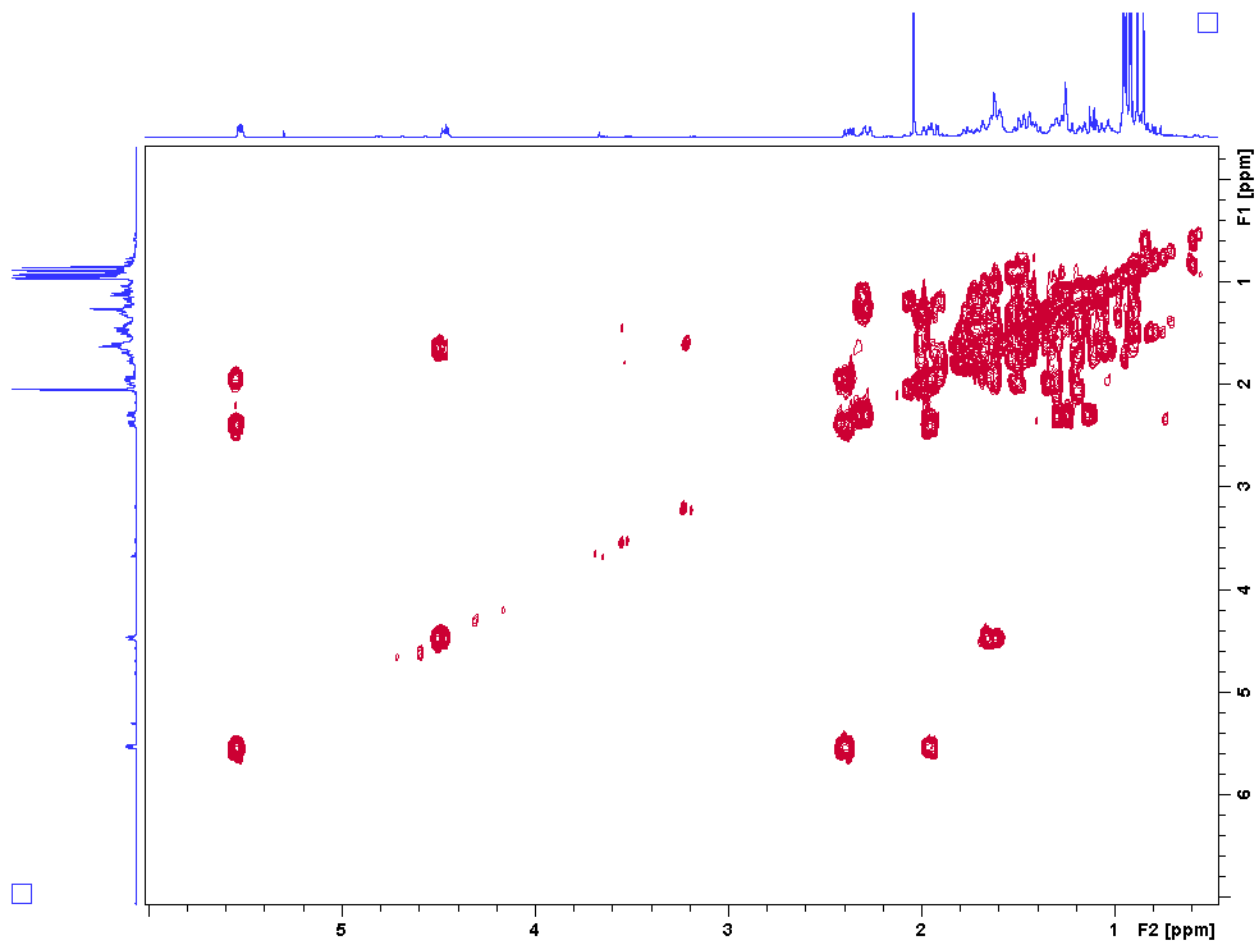


Figure S2.157: COSY spectrum for compound 20 in  $\text{CDCl}_3$

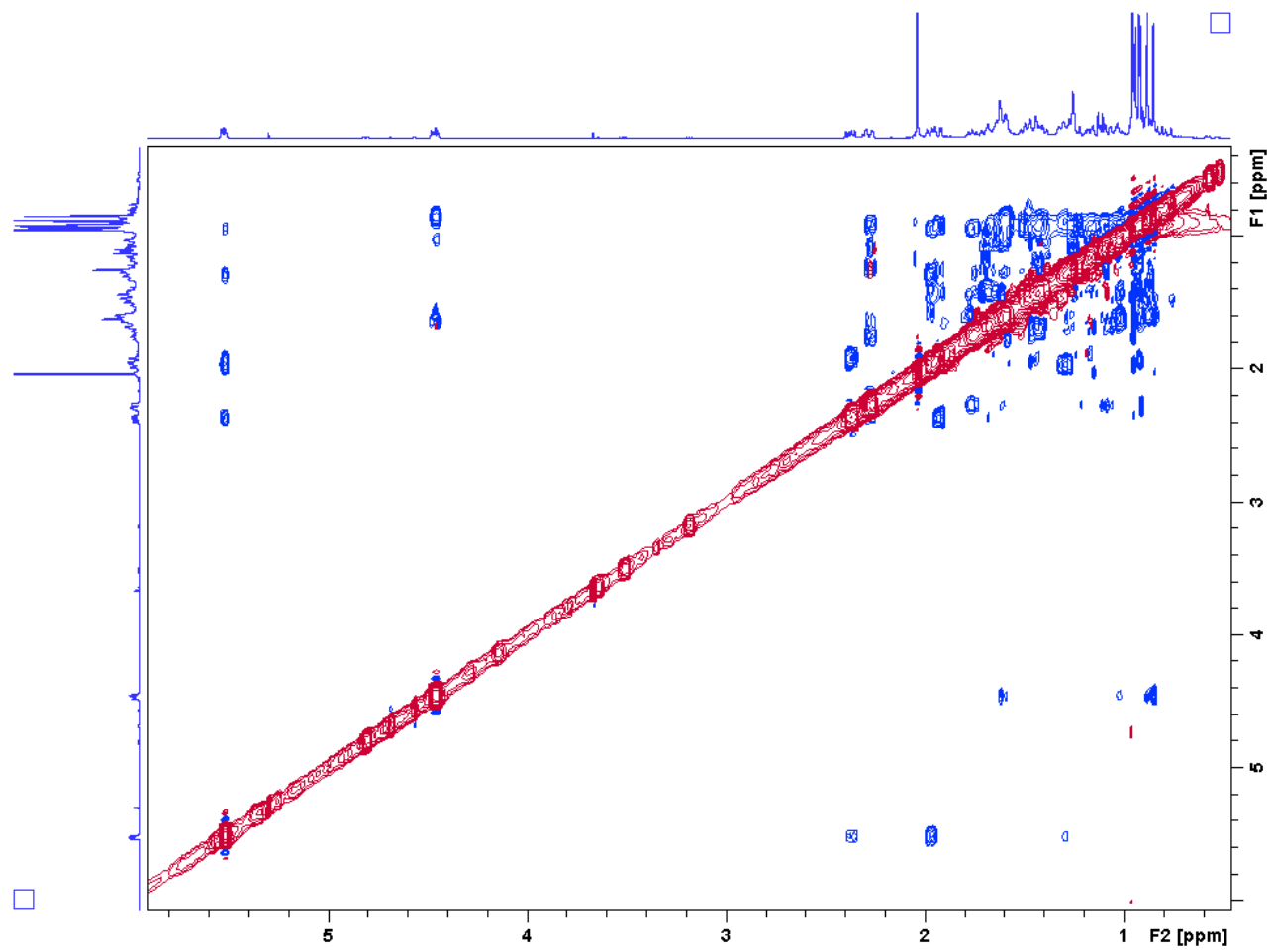


Figure S2.158: NOESY spectrum for compound 20 in CDCl<sub>3</sub>

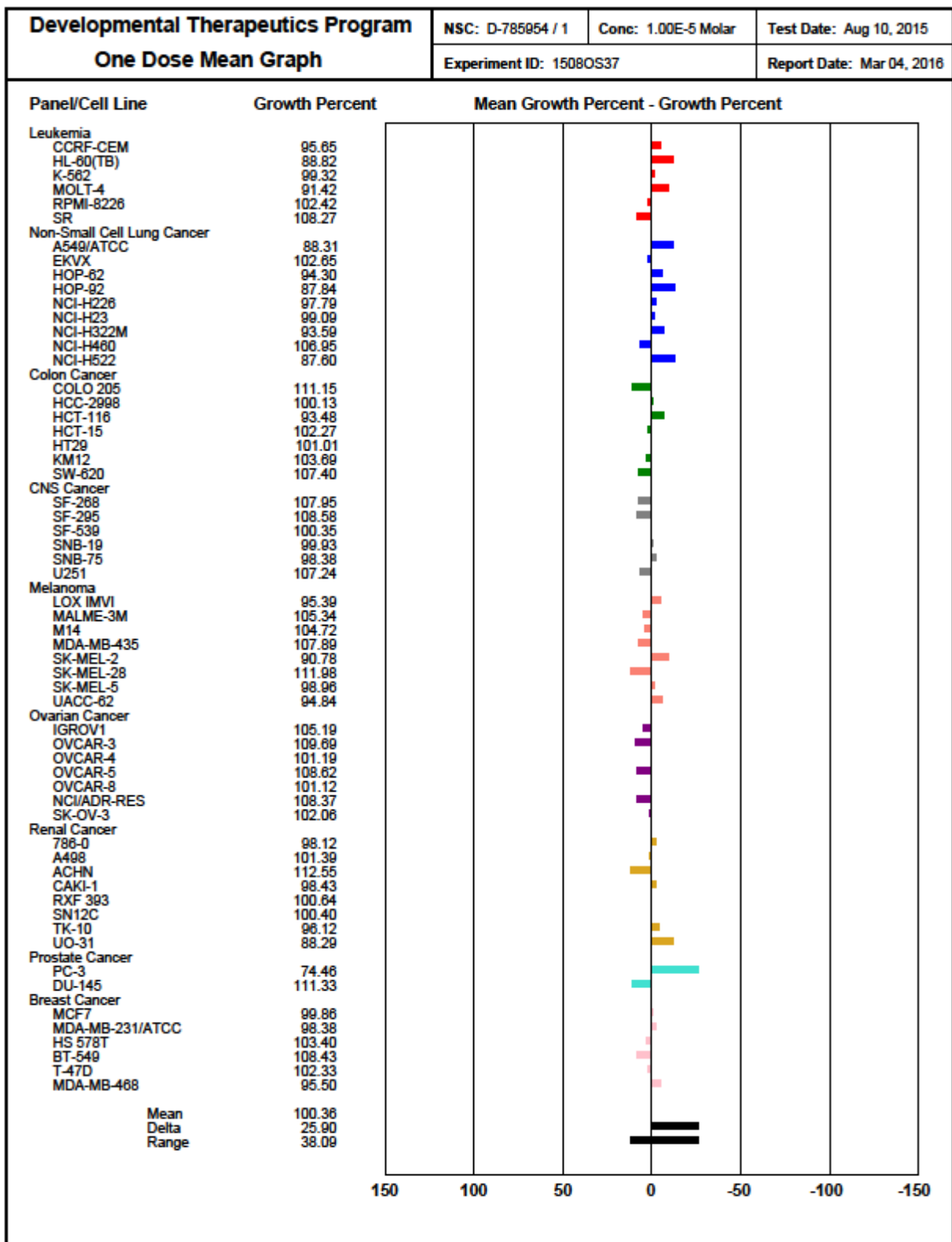


Figure S3.159: One dose mean graph for compound 2 against NCI59 cancer cell panel

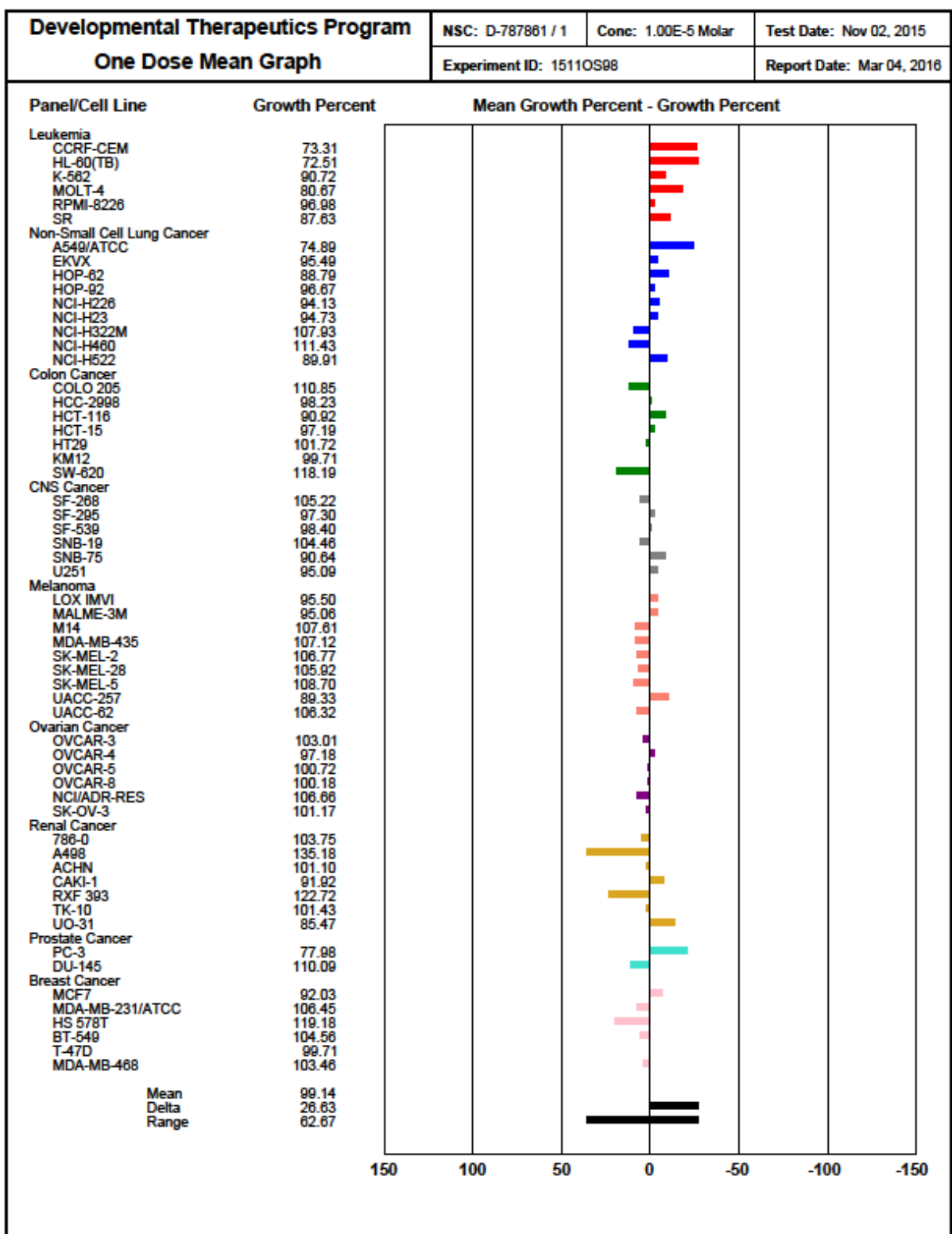


Figure S3.160: One dose mean graph for compound 3 against NCI59 cancer cell panel

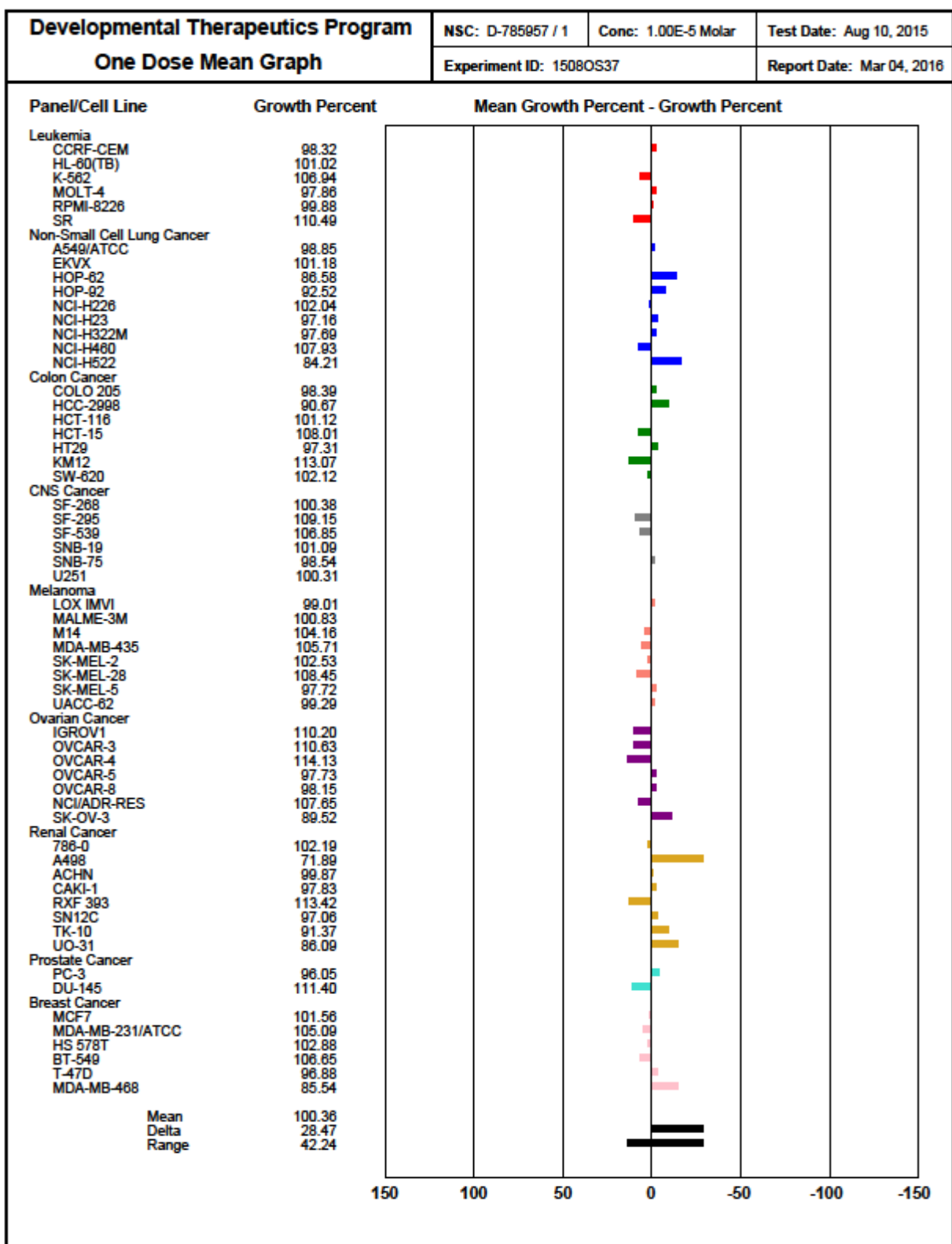


Figure S3.161: One dose mean graph for compound 5 against NCI59 cancer cell panel



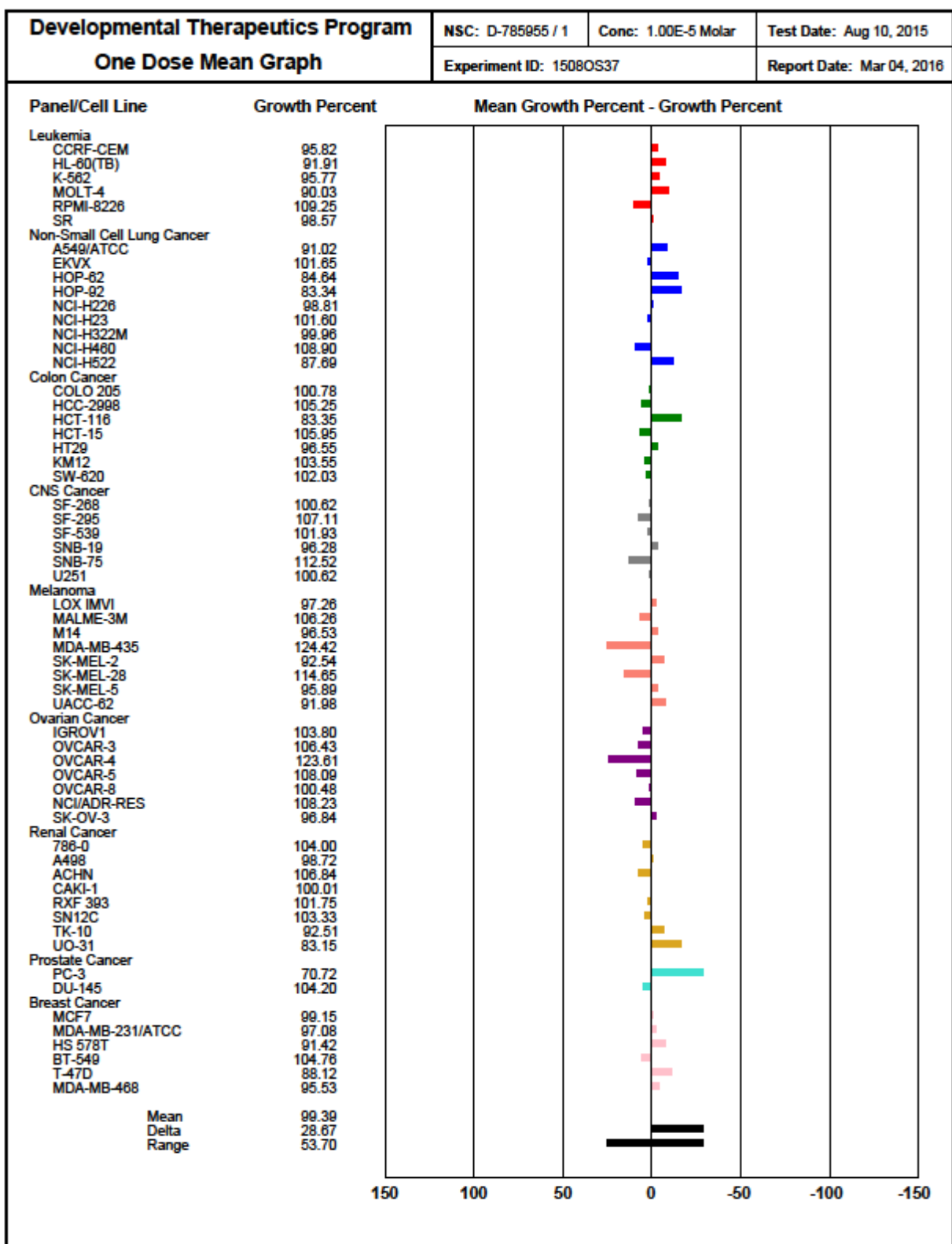


Figure S3.162: One dose mean graph for compound 6 against NCI59 cancer cell panel

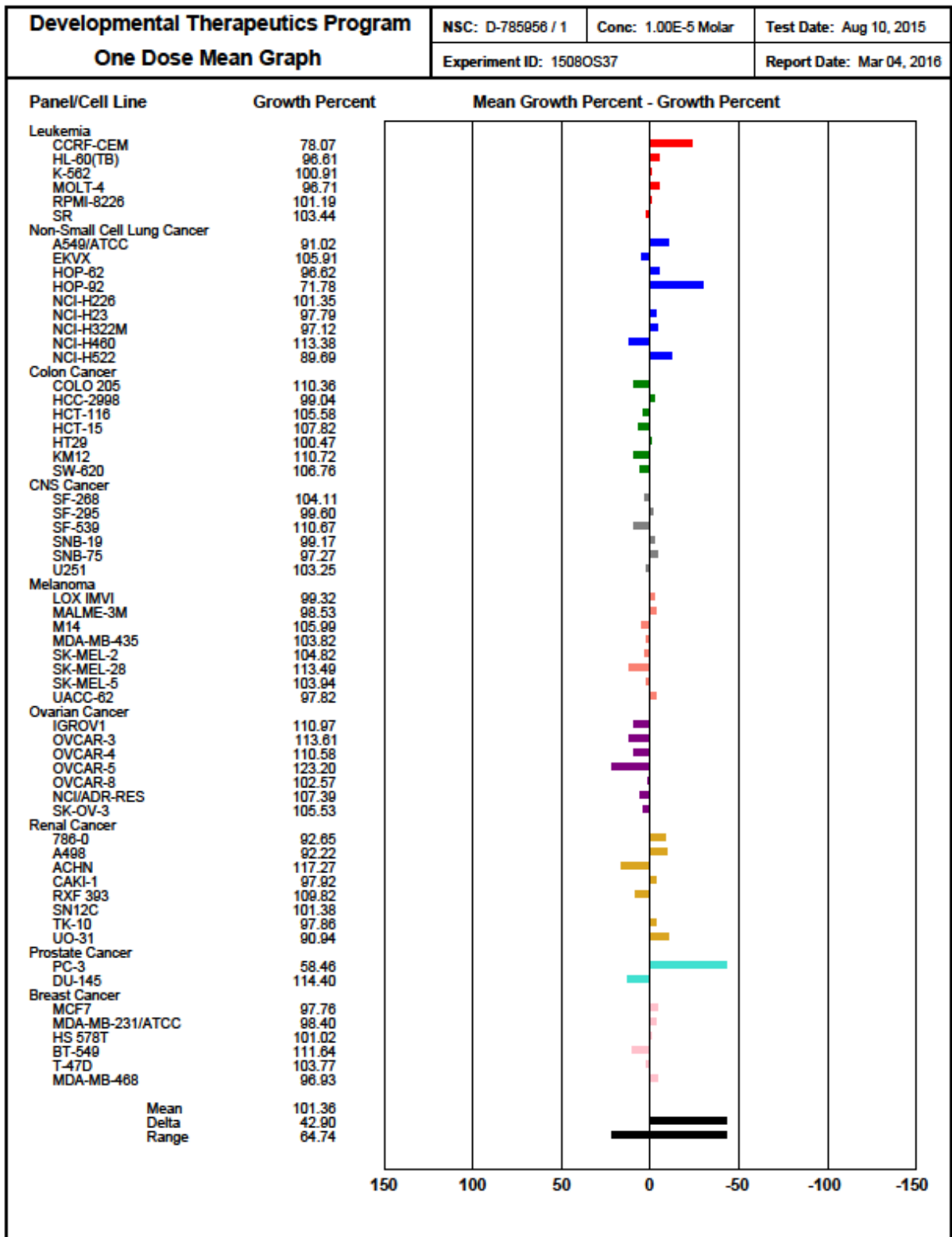


Figure S3.163: One dose mean graph for compound 11 against NCI59 cancer cell panel

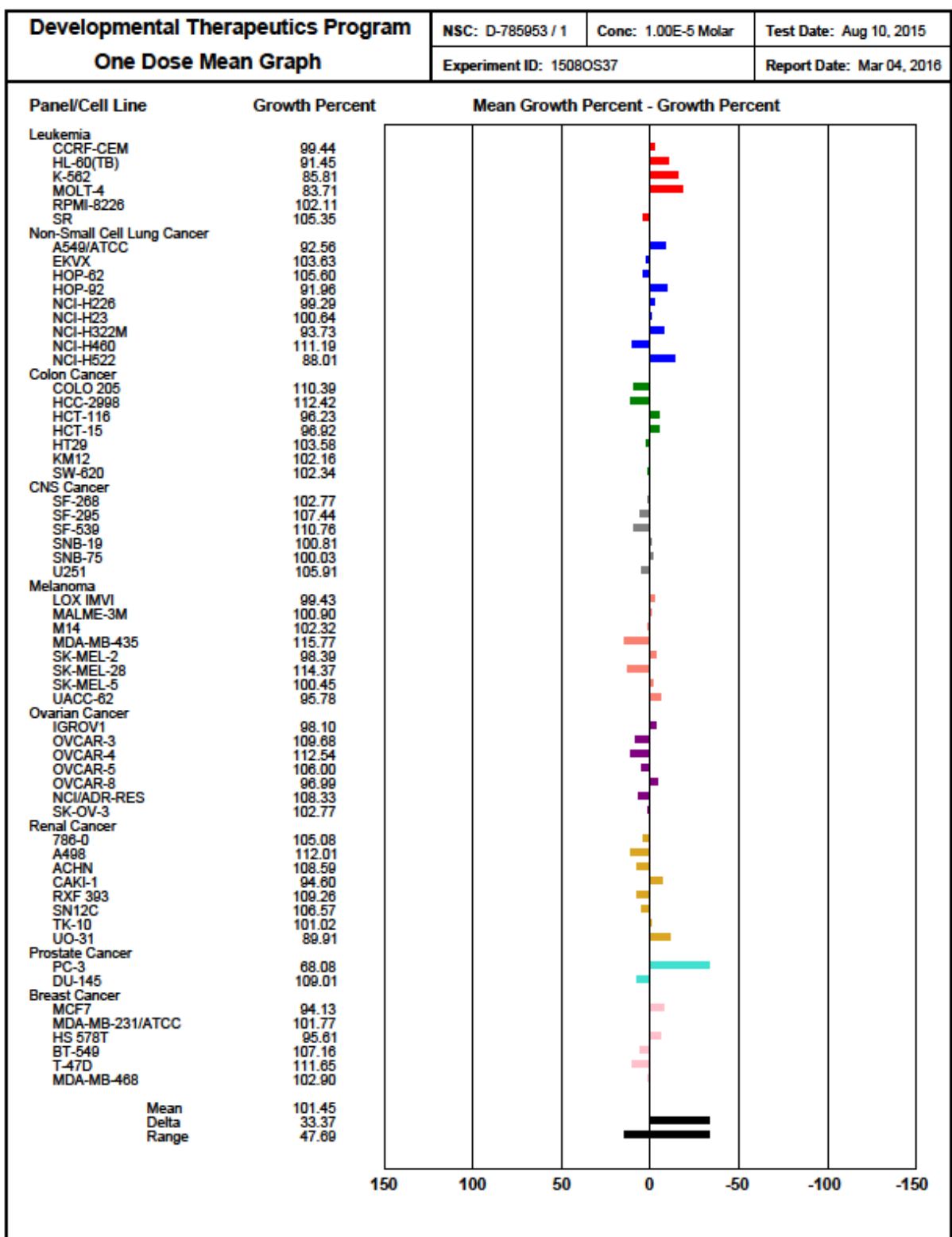


Figure S3.164: One dose mean graph for compound 12 against NCI59 cancer cell panel

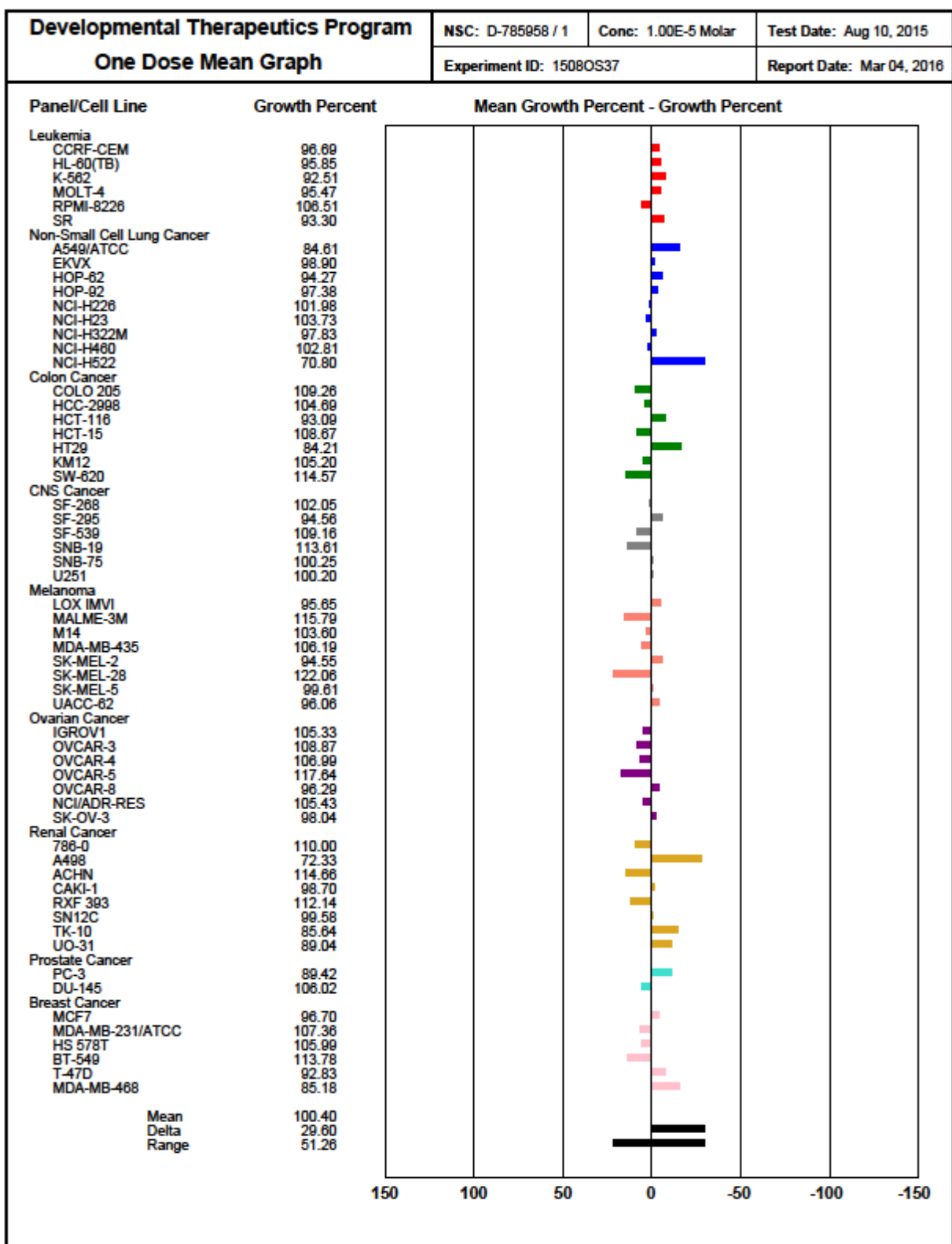


Figure S3.165: One dose mean graph for compound 18 against NCI59 cancer cell panel

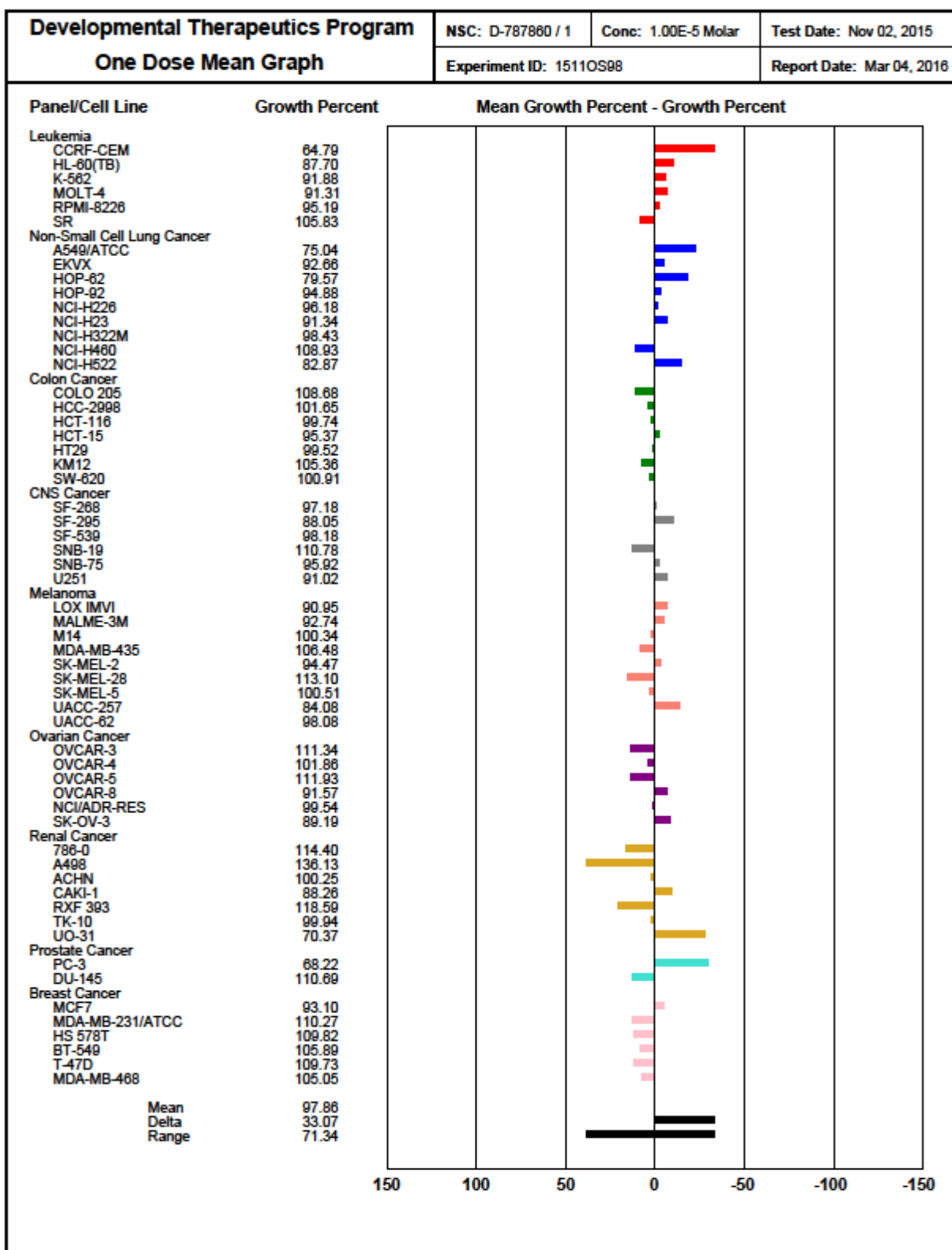
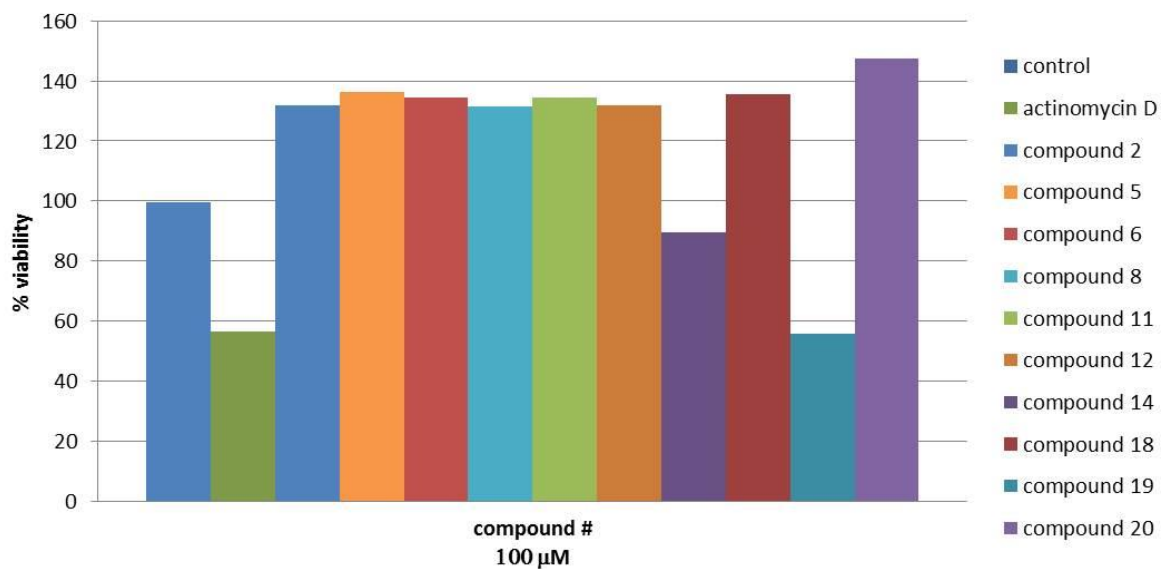


Figure S3.166: One dose mean graph for compound 19 against NCI59 cancer cell panel



**Figure S4.: Screening of compounds at 100 μM on Caco-2 cell viability after 48 hours (n=1). Viability relative to vehicle (0.1% DMSO)-treated cells is shown. Actinomycin D (10 μg/ml) was used as the positive cytotoxic control.**