

Asymmetric total syntheses of naturally occurring α,β -enone-containing RALs, L-783290 and L-783277 through intramolecular base-mediated macrolactonization reaction

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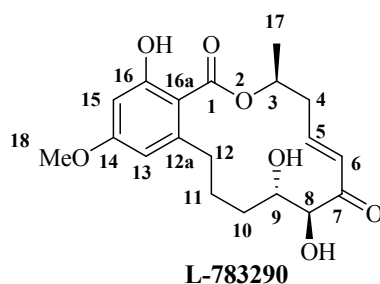
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Supporting Information

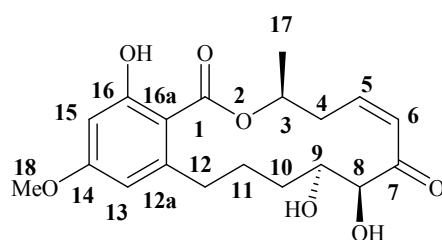
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¹ H-NMR/ ¹³ C-NMR data	4-51

NMR comparison table of literature and synthetic L-783290 (in CD₂Cl₂):



Position	Reported ¹ H δ (ppm); J (Hz)	Observed ¹ H δ (ppm); J (Hz)	$\Delta\delta$ (ppm)	Reported ¹³ C δ (ppm)	Observed ¹³ C δ (ppm)	$\Delta\delta$ (ppm)
1				171.4	171.3	0.1
3	5.6 (m)	5.6 (m)	0.0	73.3	73.3	0.0
4	2.54 (m), 3.09 (t, 12.8)	2.57 (m), 3.1 (ddd, 15.1, 11.8, 3.5)	0.03, 0.01	38.0	38.0	0.0
5	7.0 (m)	7.0 (dt, 7.4, 15.3)	0.0	143.8	143.7	0.1
6	6.37 (m)	6.37 (m)	0.00	131.5	131.5	0.0
7				199.3	199.3	0.0
8	4.68 (s)	4.69 (s)	0.01	77.4	77.3	0.1
9	3.96 (s)	3.96 (s)	0.00	71.3	71.3	0.0
10	1.3 (m), 1.62 (s)	1.3 (m), 1.65 (s)	0.0, 0.03	32.8	32.8	0.0
11	1.71 (br s), 1.71 (br s)	1.71 (m), 1.71 (m)	0.00, 0.00	26.9	26.9	0.0
12	2.54 (m), 2.84 (m)	2.57 (m), 2.85 (m)	0.03, 0.01	36.2	36.2	0.0
12a				147.7	147.7	0.0
13	6.37 (m)	6.37 (m)	0.00	109.5	109.5	0.0
14				164.7	164.7	0.0
15	6.37 (m)	6.37 (m)	0.00	99.3	99.3	0.0
16				166.3	166.2	0.1
16a				104.9	104.9	0.0
17	1.46 (d, 6.4)	1.49 (d, 6.5)	0.03	19.2	19.2	0.0
18	3.80 (s)	3.83 (s)	0.03	55.7	55.7	0.0
C16-OH	11.83 (s)	11.83 (s)	0.0			

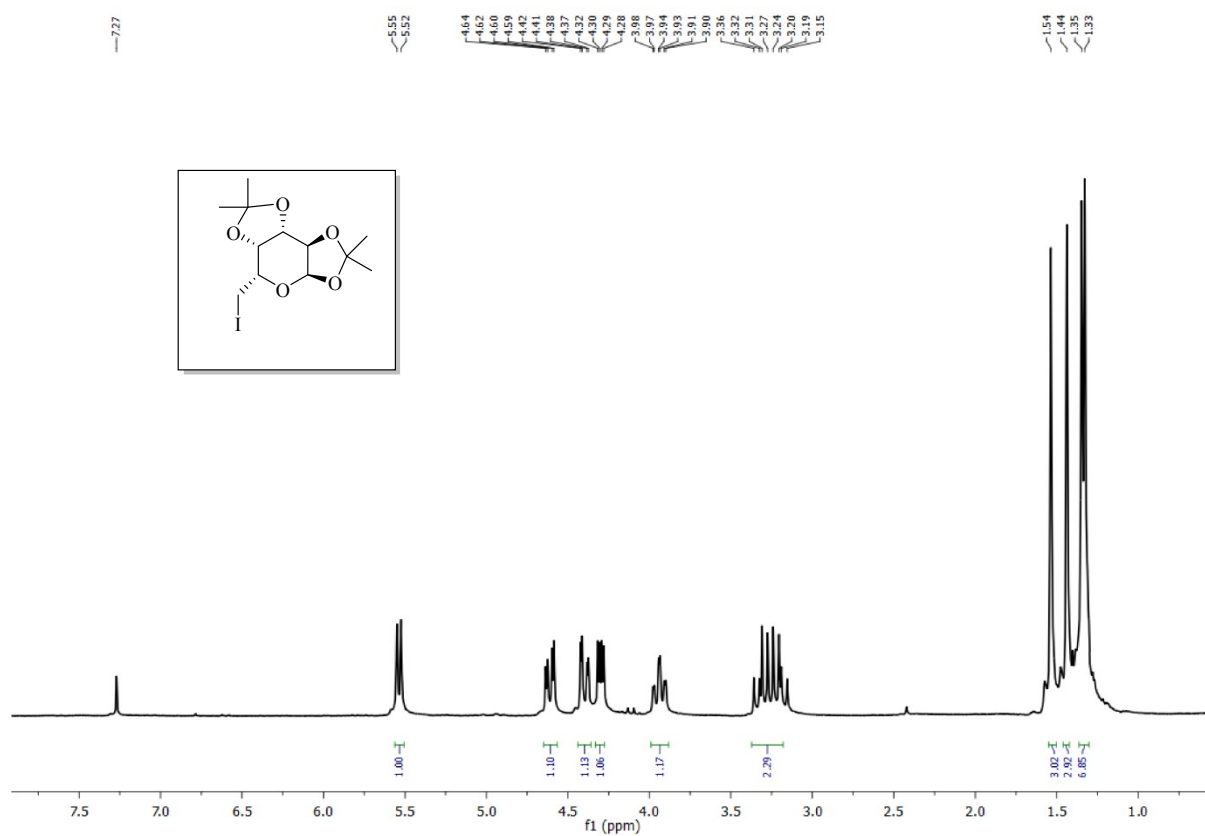
NMR comparison table of natural and synthetic L-783277 (in CD₂Cl₂):



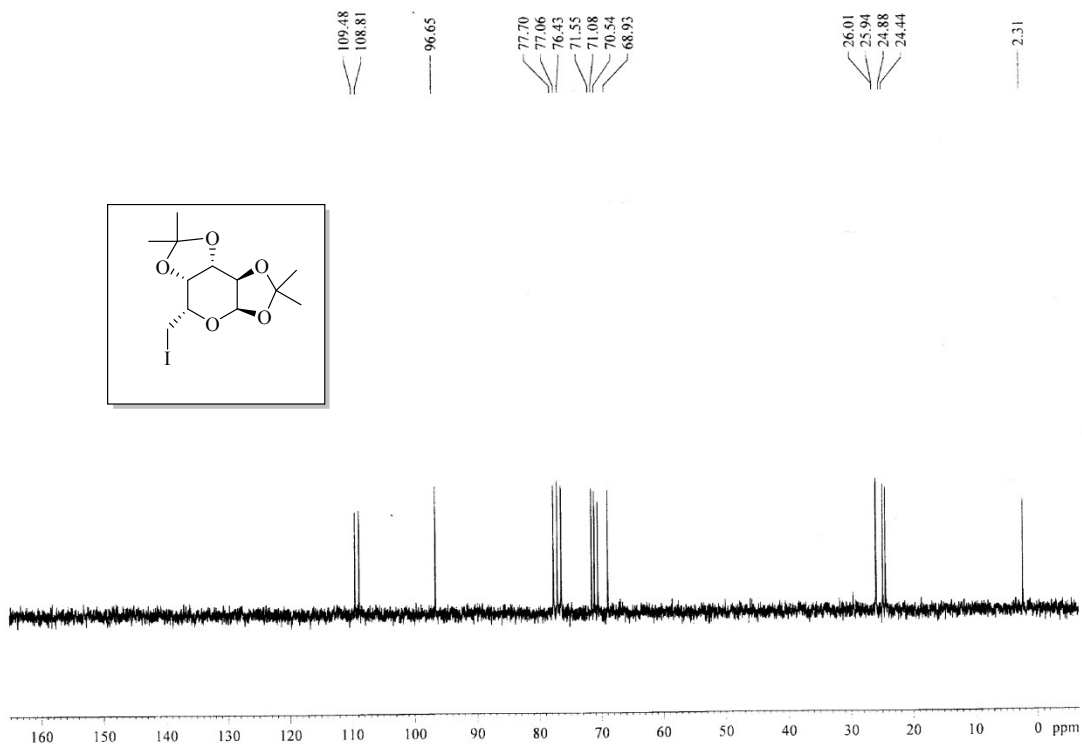
L-783277

Position	Reported ¹ H δ (ppm); <i>J</i> (Hz)	Observed ¹ H δ (ppm); <i>J</i> (Hz)	Δδ (ppm)	Reported ¹³ C δ (ppm)	Observed ¹³ C δ (ppm)	Δδ (ppm)
1				172.2	172.2	0.0
3	5.4 (m)	5.4 (m)	0.0	74.0	74.0	0.0
4	2.54 (ddt, 2.8, 17.2, 2.8), 3.32 (dt, 17.6, 11.2)	2.53 (m), 3.32 (dt, 17.3, 11.3)	0.02, 0.00	37.6	37.5	0.1
5	6.24 (dt, 2.4, 11.6)	6.24 (td, 2.5, 11.2)	0.00	146.7	146.6	0.1
6	6.37 (dd, 3.2, 11.6)	6.37 (dd, 3.1, 11.5)	0.00	126.7	126.6	0.1
7				200.3	200.3	0.0
8	4.6 (d, 2.4)	4.58 (d, 3.1)	0.02	81.5	81.5	0.0
9	3.78 (m)	3.79 (m)	0.01	73.6	73.5	0.1
10	1.1 (m), 1.48 (m)	1.1 (m), 1.46 (m)	0.0, 0.02	33.5	33.4	0.1
11	1.48 (m), 1.69 (m)	1.48 (m), 1.69 (m)	0.00, 0.00	29.4	29.4	0.0
12	2.4 (m), 2.94 (ddd, 3.2,11.2,14.8)	2.4 (m), 2.95 (ddd, 3.7,11.8, 15.3)	0.0, 0.01	37.0	37.0	0.0
12a				148.0	148.0	0.0
13	6.28 (d, 2.8)	6.28 (d, 2.5)	0.00	109.7	109.7	0.0
14				164.8	164.8	0.0
15	6.31 (d, 2.8)	6.31 (d, 2.5)	0.00	99.4	99.4	0.0
16				166.6	166.7	0.1
16a				105.0	105.0	0.0
17	1.40 (d, 6.4)	1.41 (d, 5.9)	0.01	21.2	21.1	0.1
18	3.78 (s)	3.79 (s)	0.01	55.9	55.8	0.1
C16-OH	12.4 (s)	12.22 (s)	0.18			

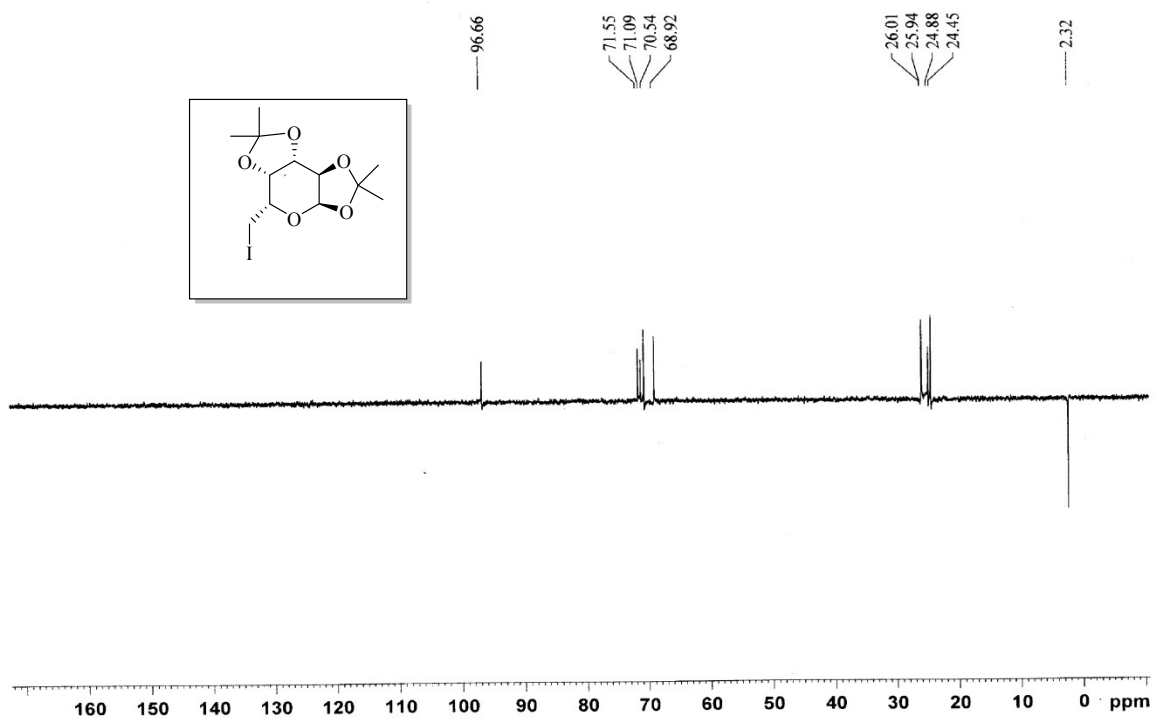
^1H NMR (200MHz) of compound 16 in CDCl_3



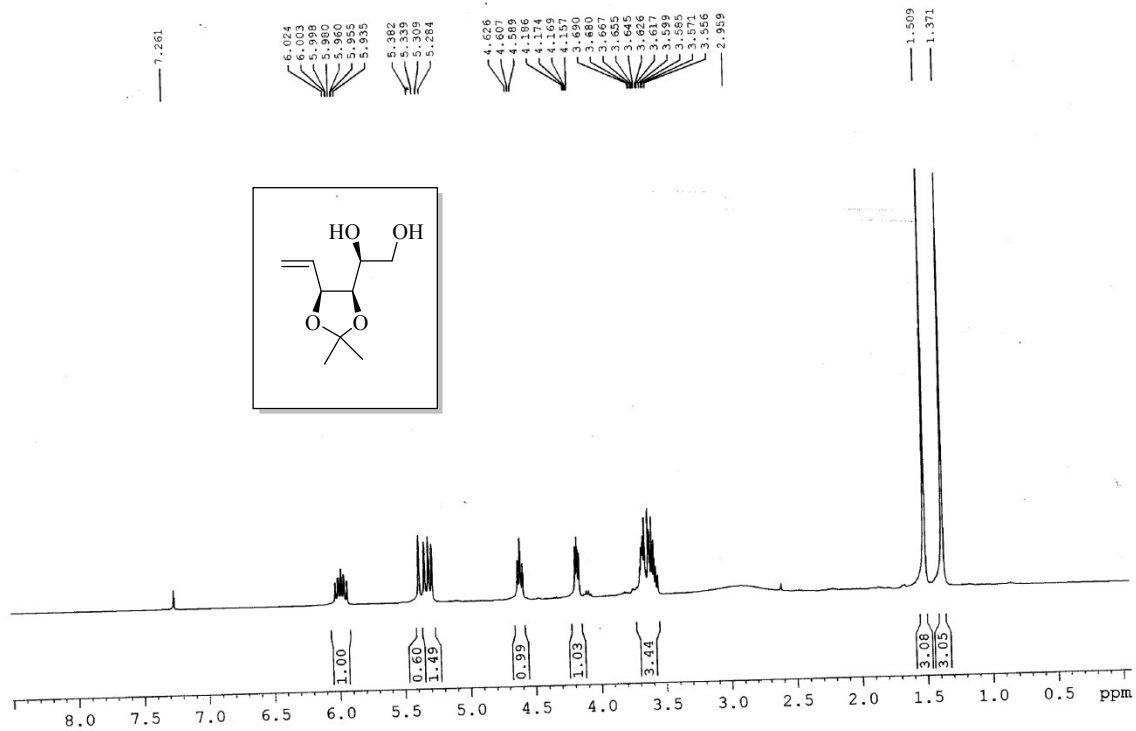
^{13}C NMR (50 MHz) of compound 16 in CDCl_3



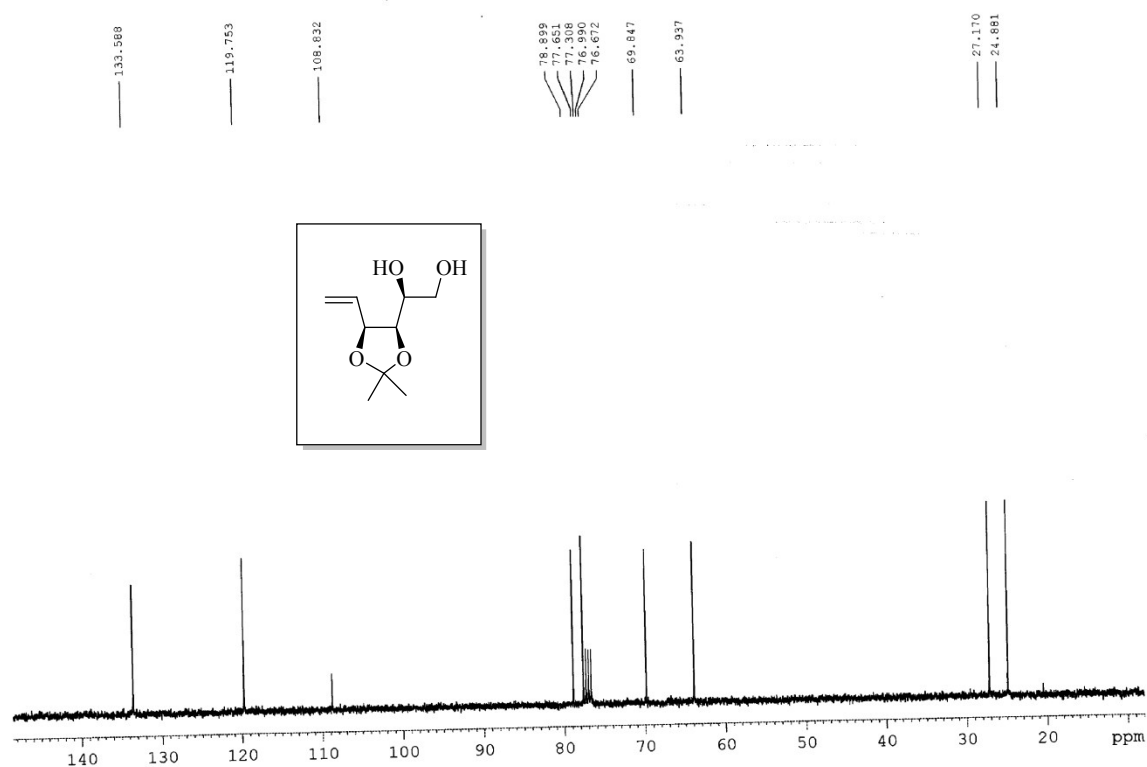
DEPT (50 MHz) NMR of compound 16 in CDCl₃



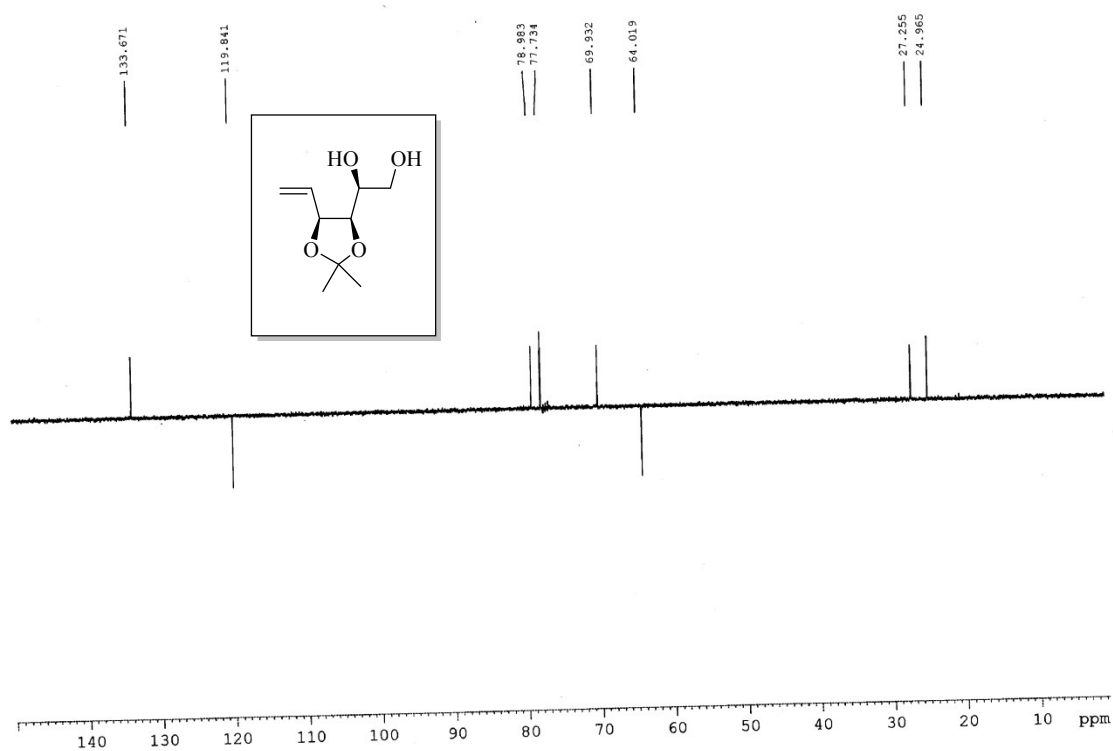
¹H NMR (200MHz) of compound 17 in CDCl₃



^{13}C NMR (50 MHz) of compound 17 in CDCl_3



DEPT (50 MHz) NMR of compound 17 in CDCl_3



Chemical structure of the OTBDPS-protected diol is shown in the top left. The structure is a 1,3-dioxolane ring with a tert-butyl group at the 2-position and a vinyl group at the 4-position. The 5-position is substituted with an OTBDPS group.

The ¹H NMR spectrum (400 MHz, CDCl₃) shows the following peaks and integrations:

Chemical Shift (ppm)	Integration
7.73, 7.71, 7.69, 7.67, 7.67	4.19
7.45, 7.43, 7.43, 7.42, 7.41, 7.40, 7.38, 7.37	6.21
5.99, 5.96, 5.94, 5.92, 5.90	1.00
5.39, 5.34, 5.34, 5.23, 5.21	1.05
4.88, 4.85, 4.85, 4.79, 4.79, 4.78, 4.26	1.01
3.73, 3.71, 3.70, 3.69, 3.68, 3.66, 3.65, 3.64	1.03
3.73	2.18
1.45, 1.38	3.19
1.38	3.27
1.38	9.47

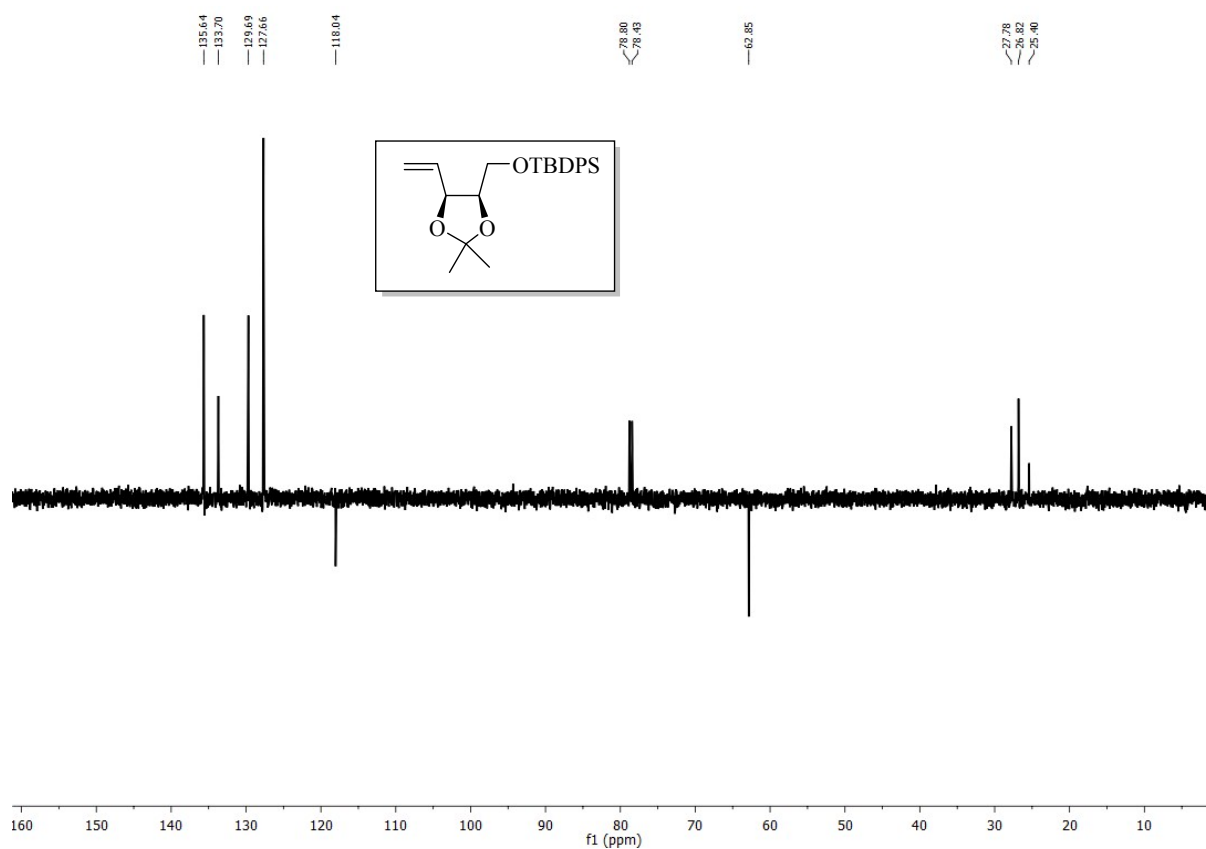
Chemical structure of 2-methylenetetrahydropyran-2-yl 2,2,4,4-tetramethyl-1,3-dioxane-5-carboxylate (OTBDPS-protected diol):

C=C1OC(C2(C)(C)C(C)(C)OC(COC3=CC=CC=C3)C2)O1

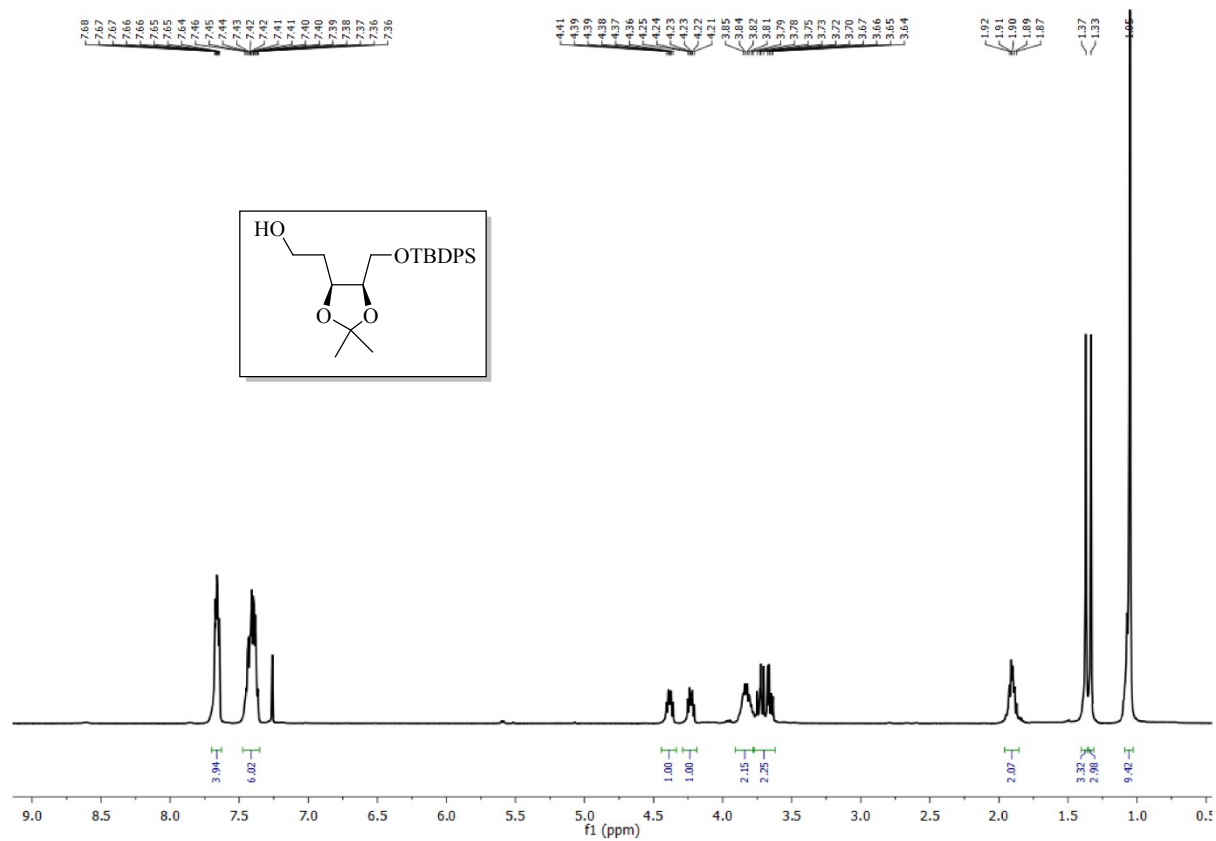
¹³C NMR peaks (ppm):

Peak (ppm)	Assignment
135.62	Alkene C=C
133.70	Aromatic C-O
133.44	Aromatic C-O
133.37	Aromatic C-O
129.68	Aromatic C-O
127.66	Aromatic C-O
118.02	Alkene C=C
108.58	Alkene C=C
78.80	CH-OH
78.43	CH-OH
62.86	CH-OH
27.28	CH ₃
26.81	CH ₃
25.59	CH ₃
19.22	CH ₃

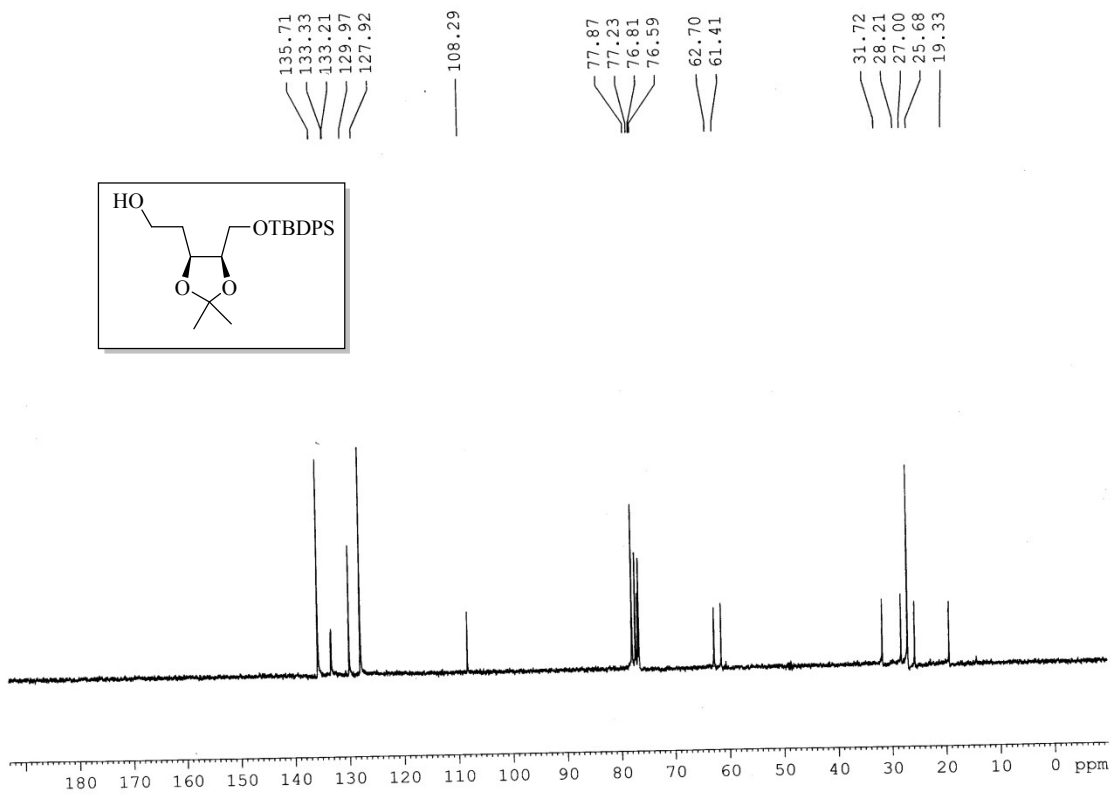
DEPT (100 MHz) NMR of compound 19 in CDCl₃



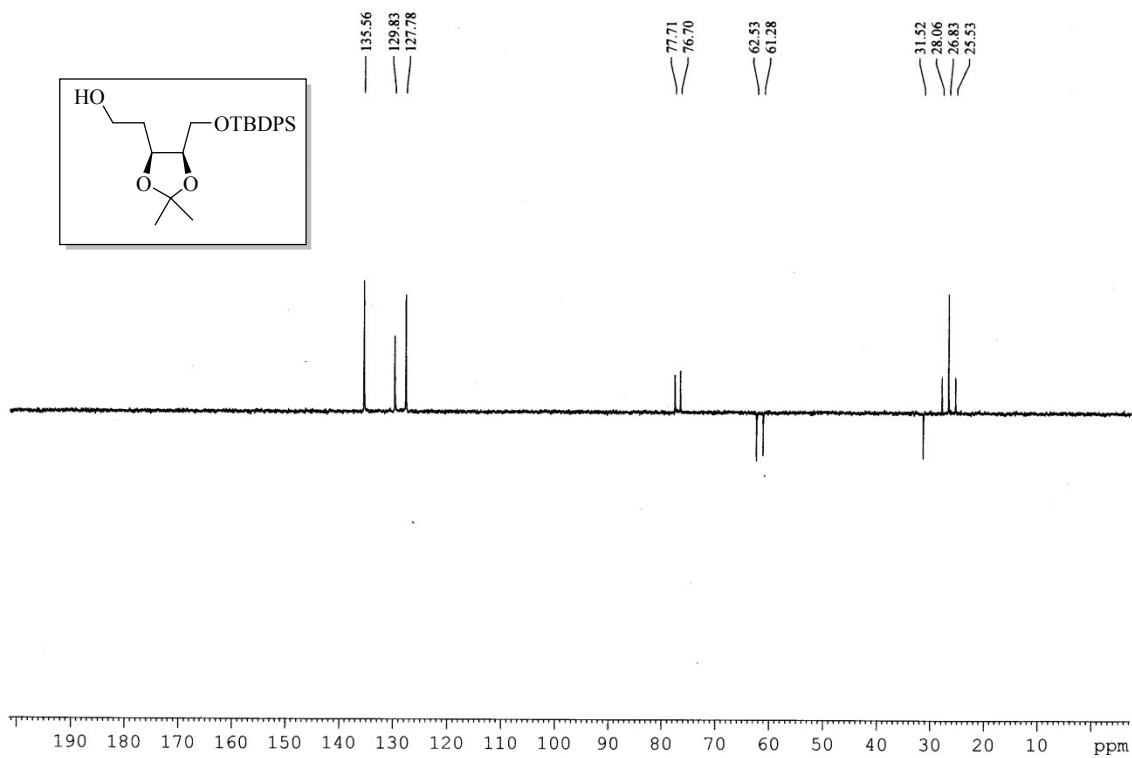
¹H NMR (400MHz) of compound 20 in CDCl₃



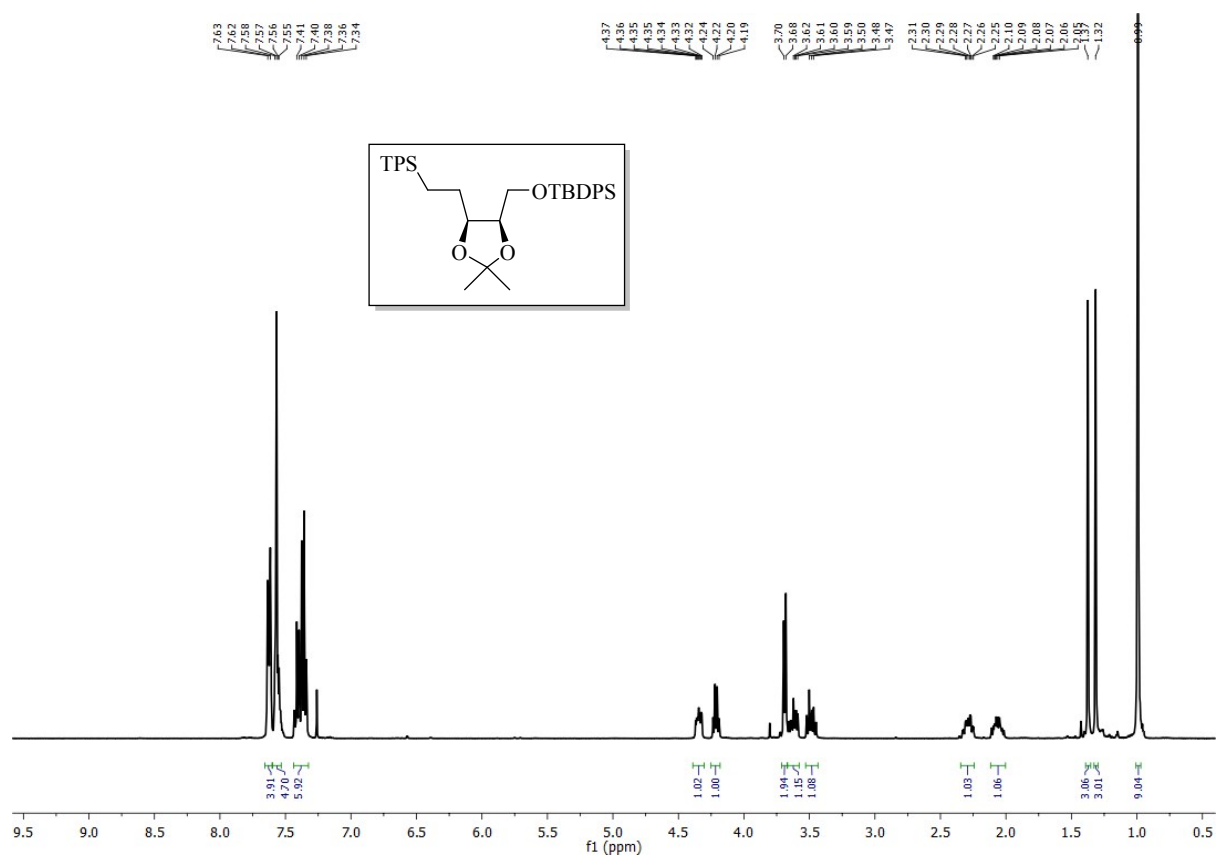
¹³C NMR (50 MHz) of compound 20 in CDCl₃



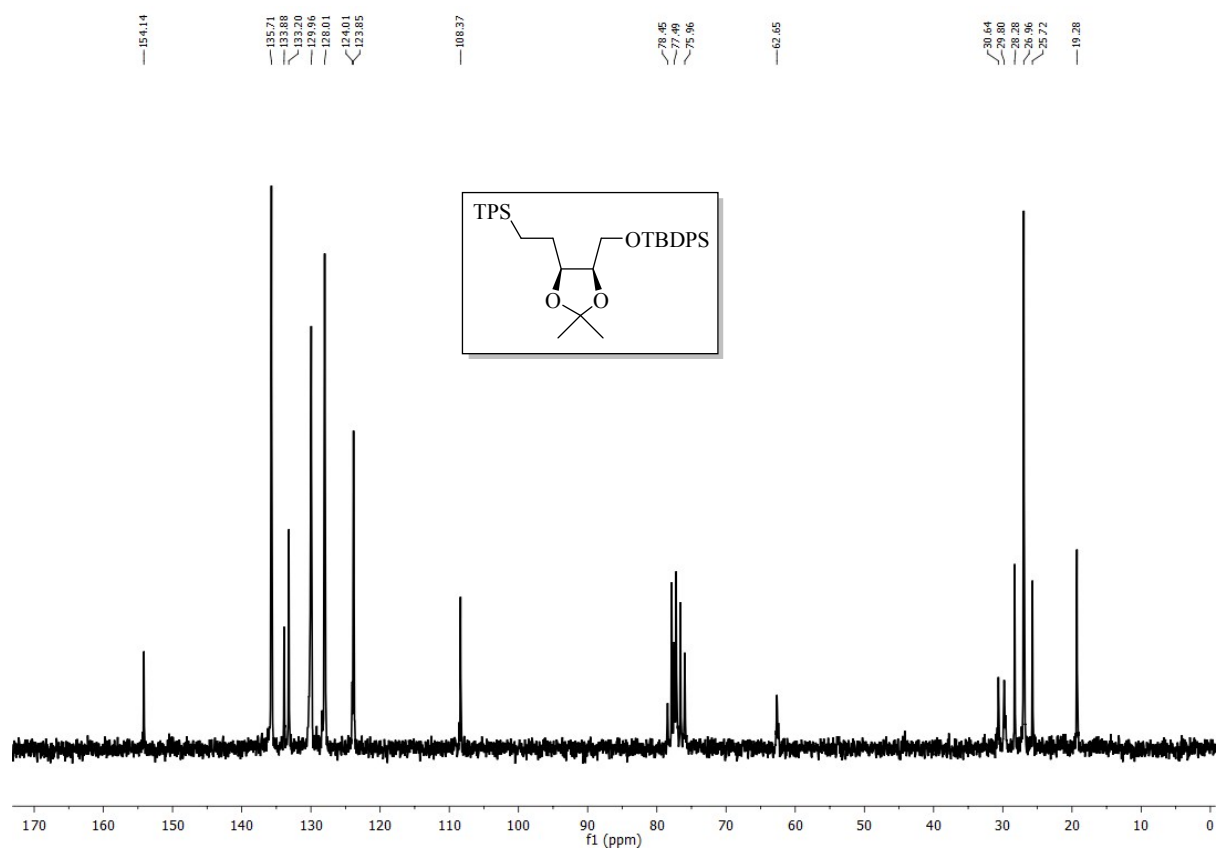
DEPT (50 MHz) NMR of compound 20 in CDCl₃



^1H NMR (400MHz) of compound 21 in CDCl_3



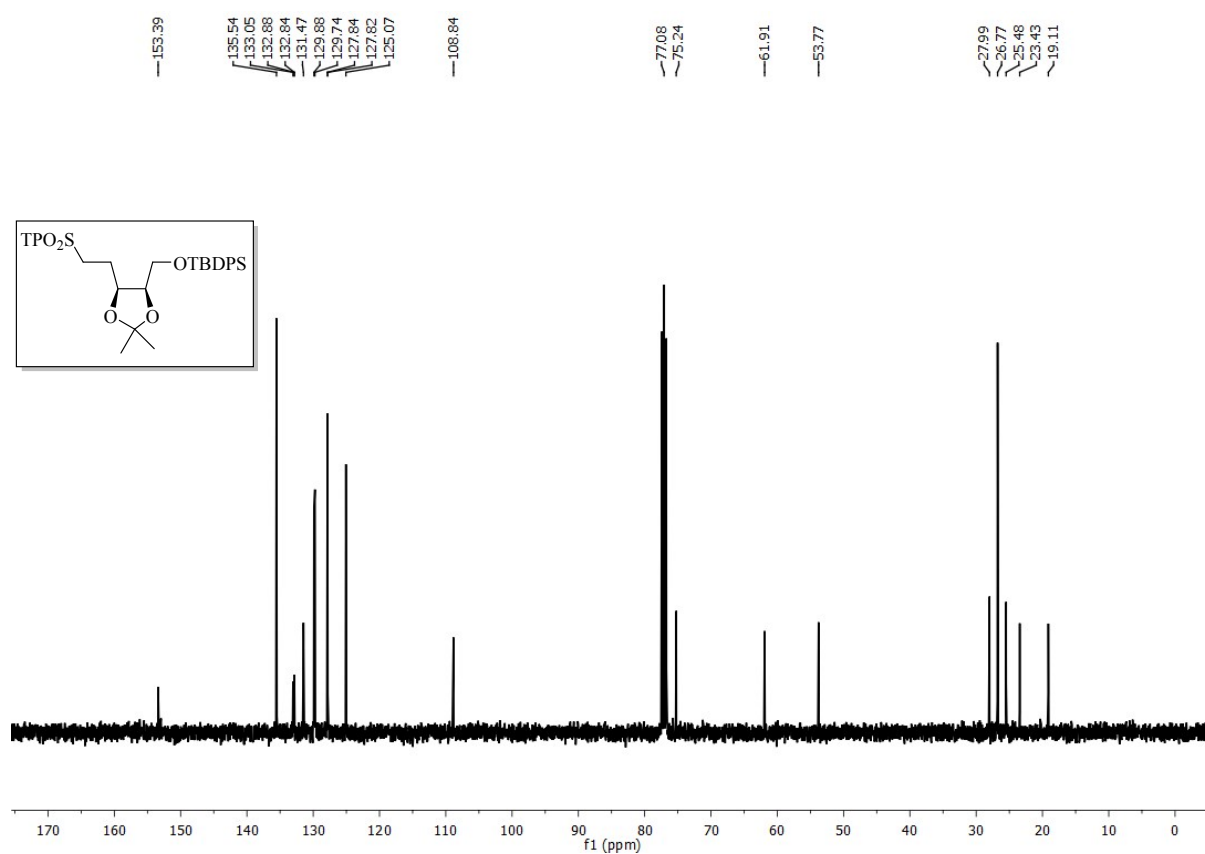
^{13}C NMR (50 MHz) of compound 21 in CDCl_3



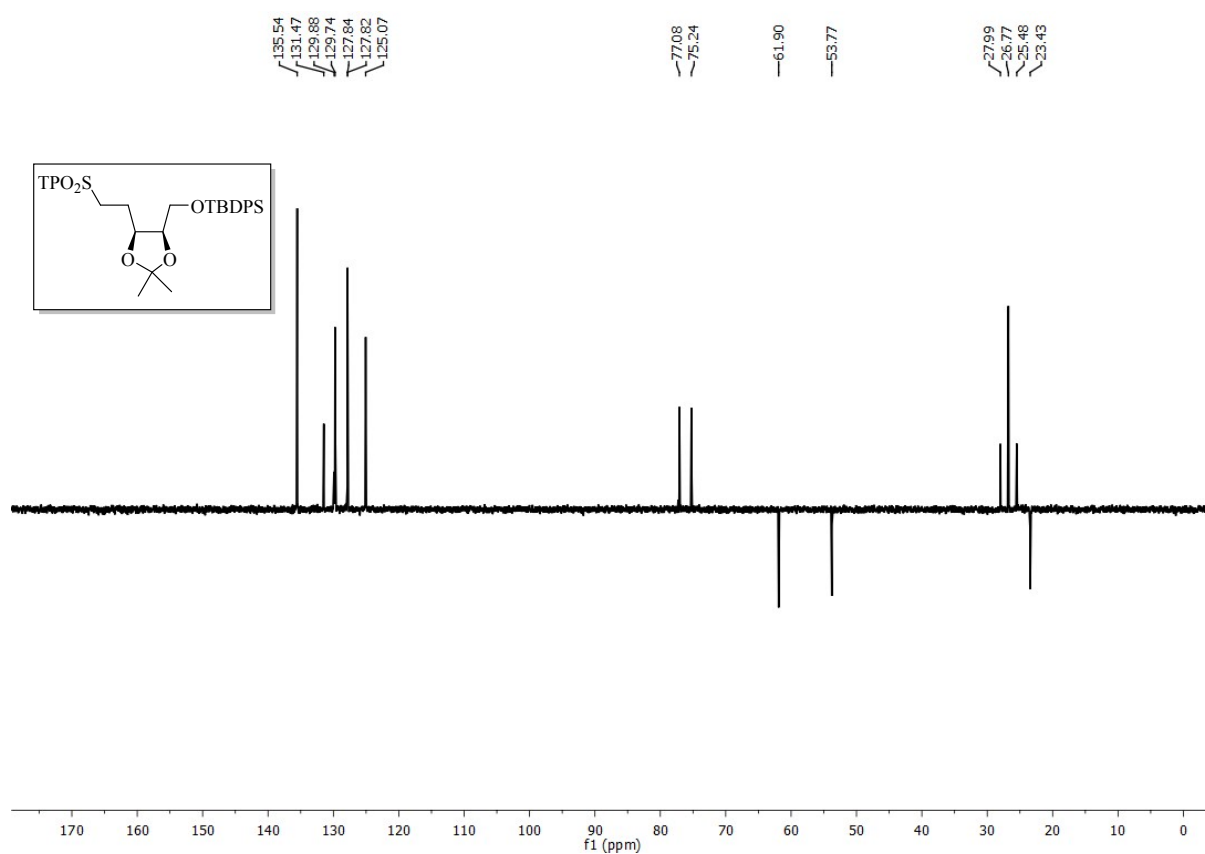
Chemical structure of the monomer is shown in the inset: CC(C)(C)OC1OC(COP(=O)(O)OCC2=CC=CC=C2)OC1. The ¹³C NMR spectrum (CDCl₃) shows peaks at 135.55, 130.10, 129.80, 127.76, 123.81, 77.28, 75.80, 62.25, 30.42, 29.38, 28.09, 26.74, and 25.54 ppm.

[illegible]

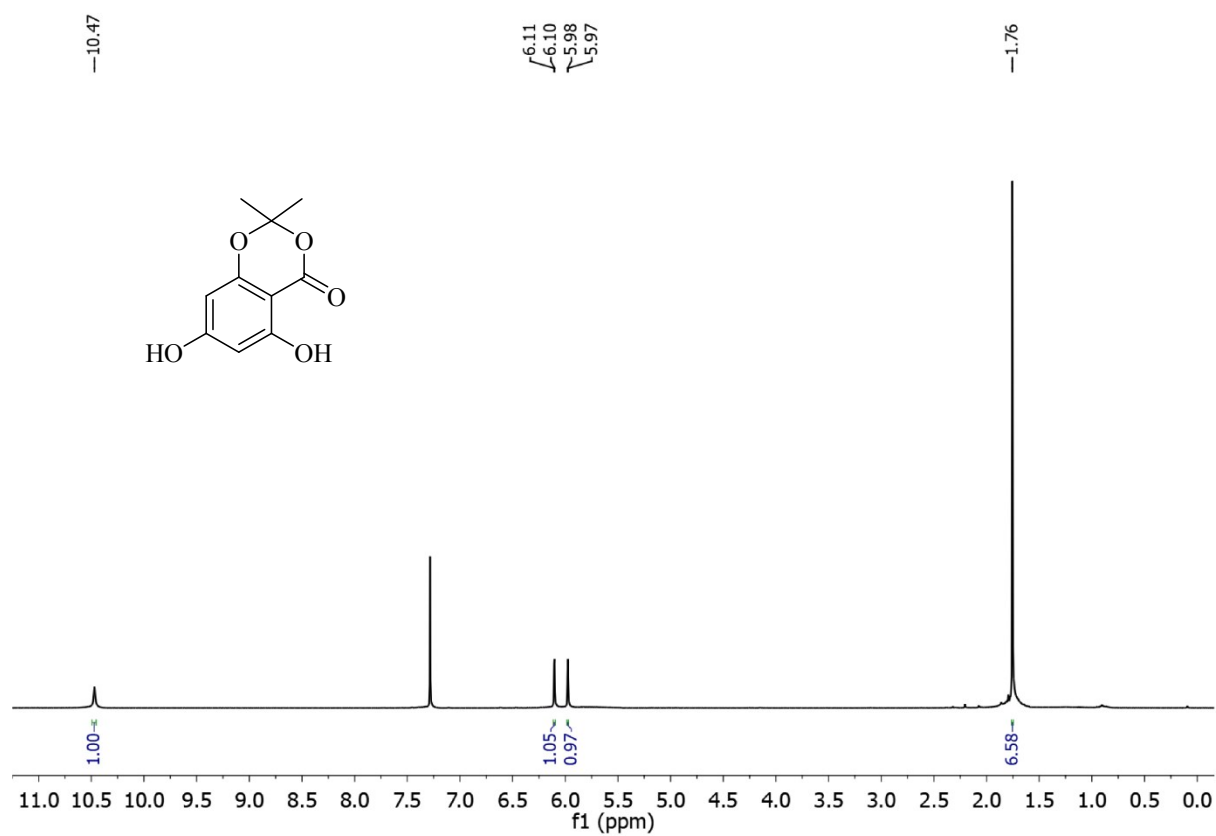
^{13}C NMR (100 MHz) of compound 14 in CDCl_3



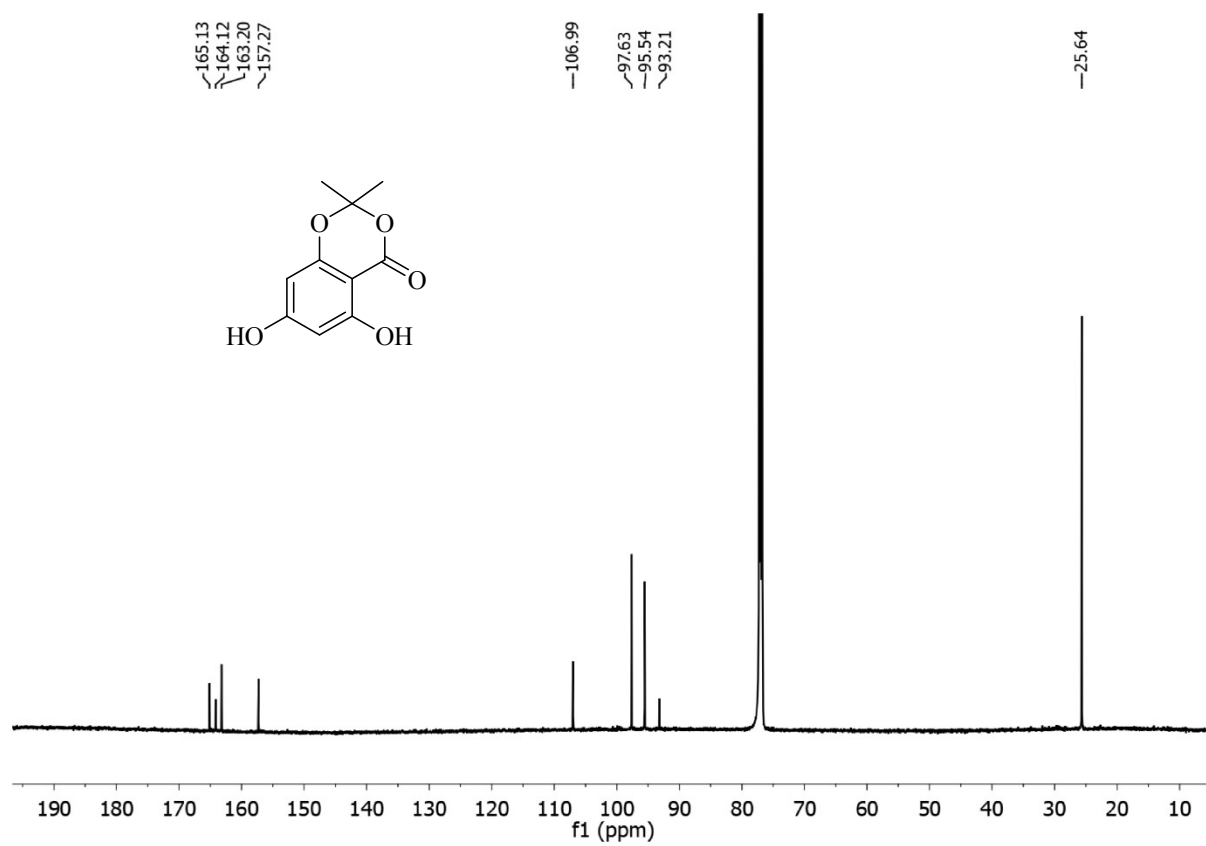
DEPT (100 MHz) NMR of compound 14 in CDCl_3



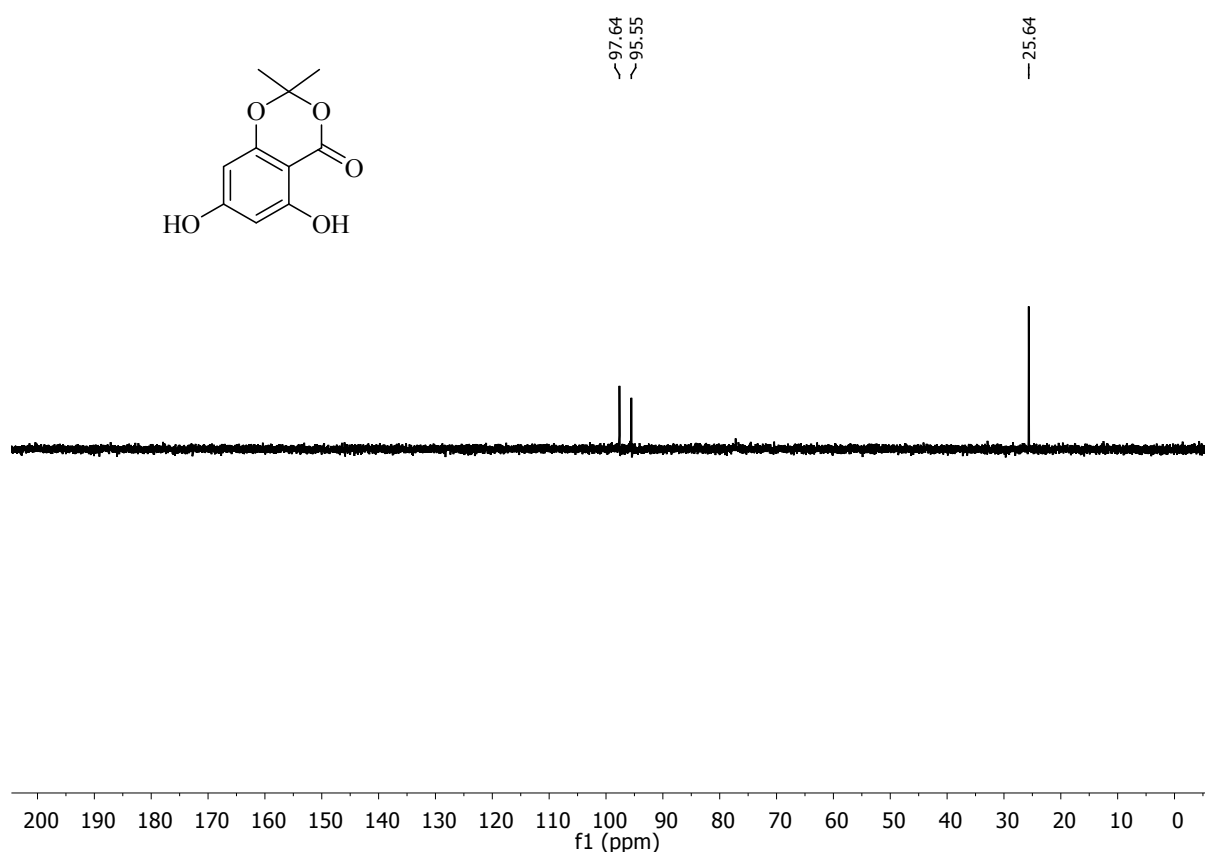
¹H NMR of compound 22 (600 MHz, CDCl₃)



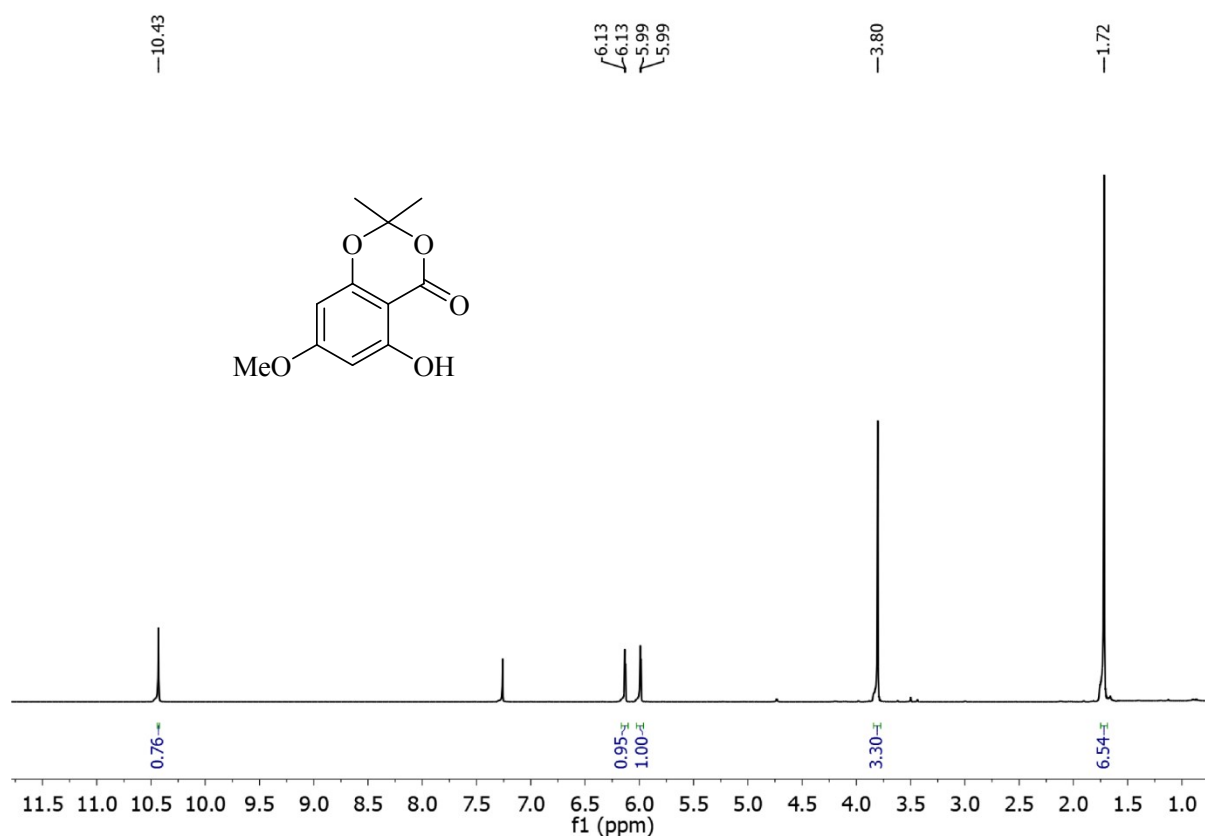
¹³C NMR of compound 22 (150 MHz, CDCl₃)



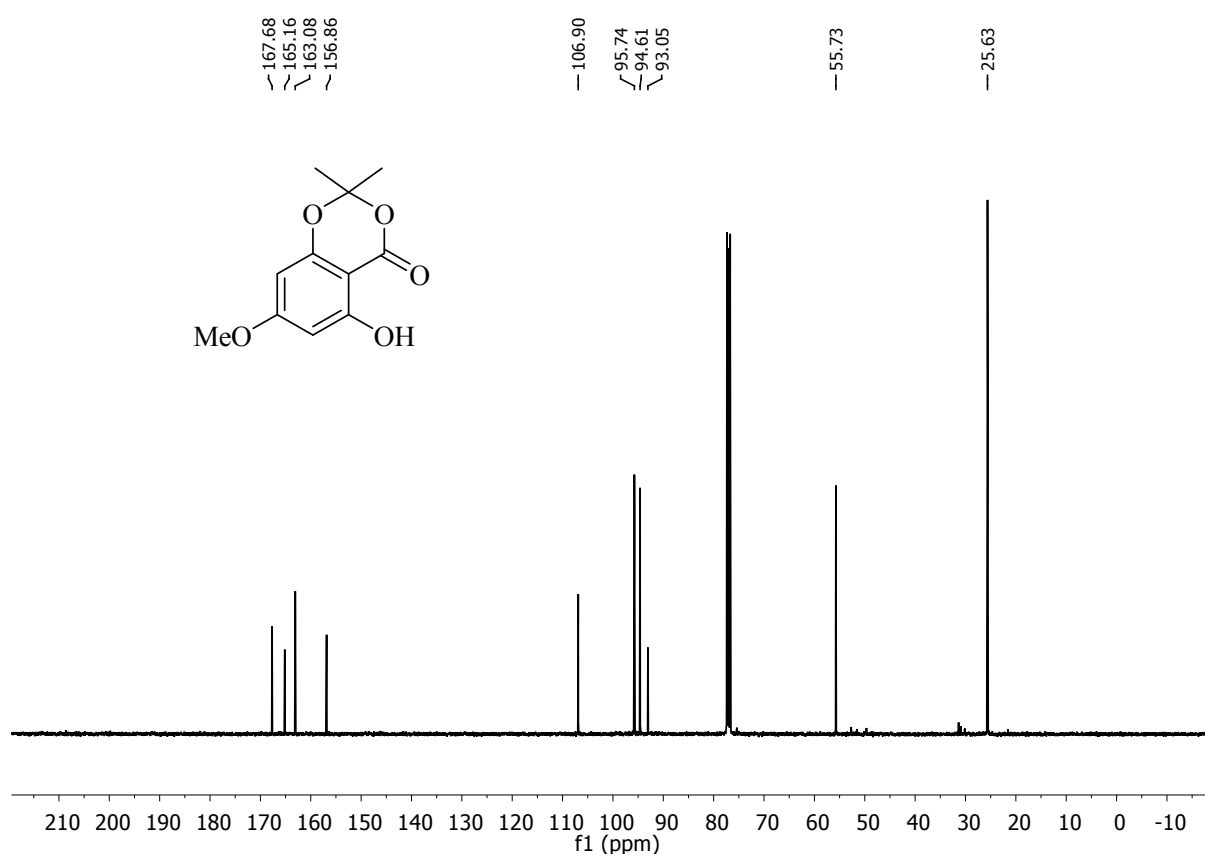
DEPT-135 of compound 22 (150 MHz, CDCl₃)



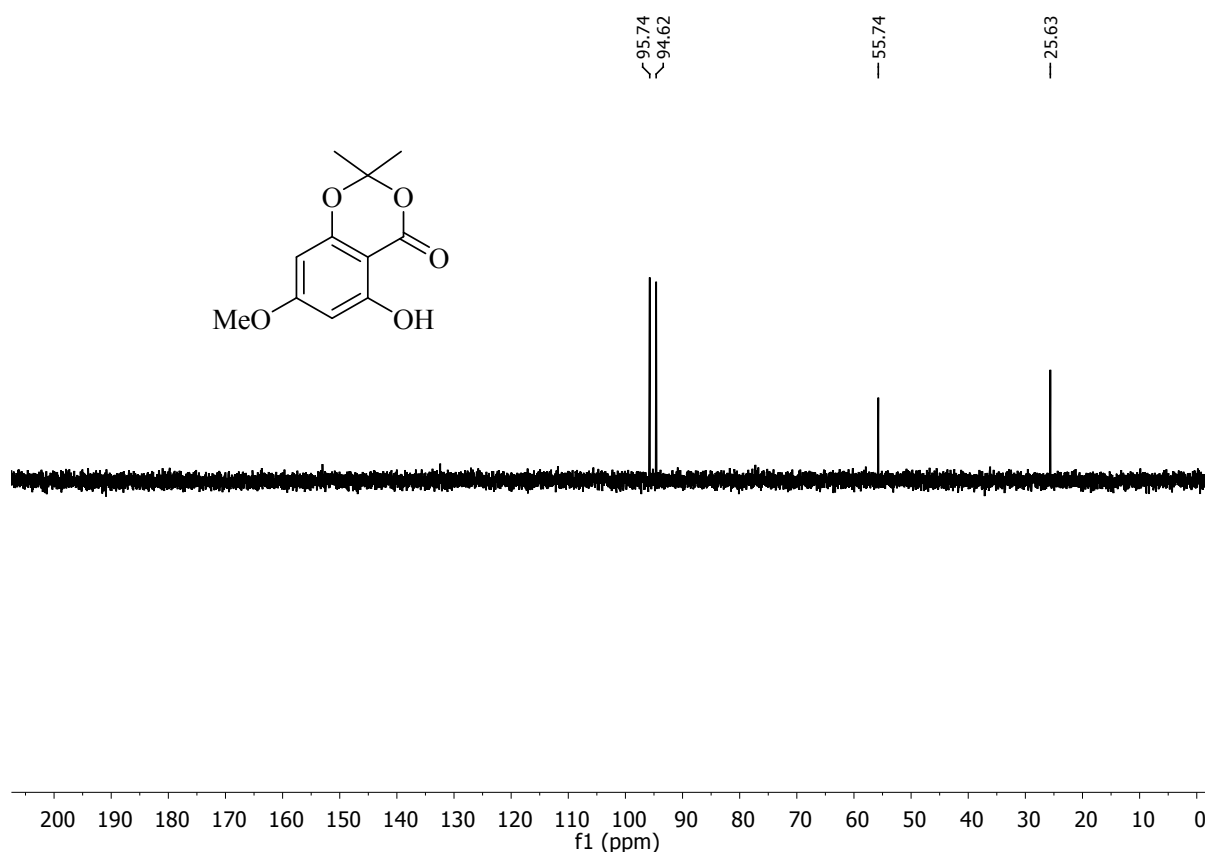
¹H NMR of compound 23 (400 MHz, CDCl₃)



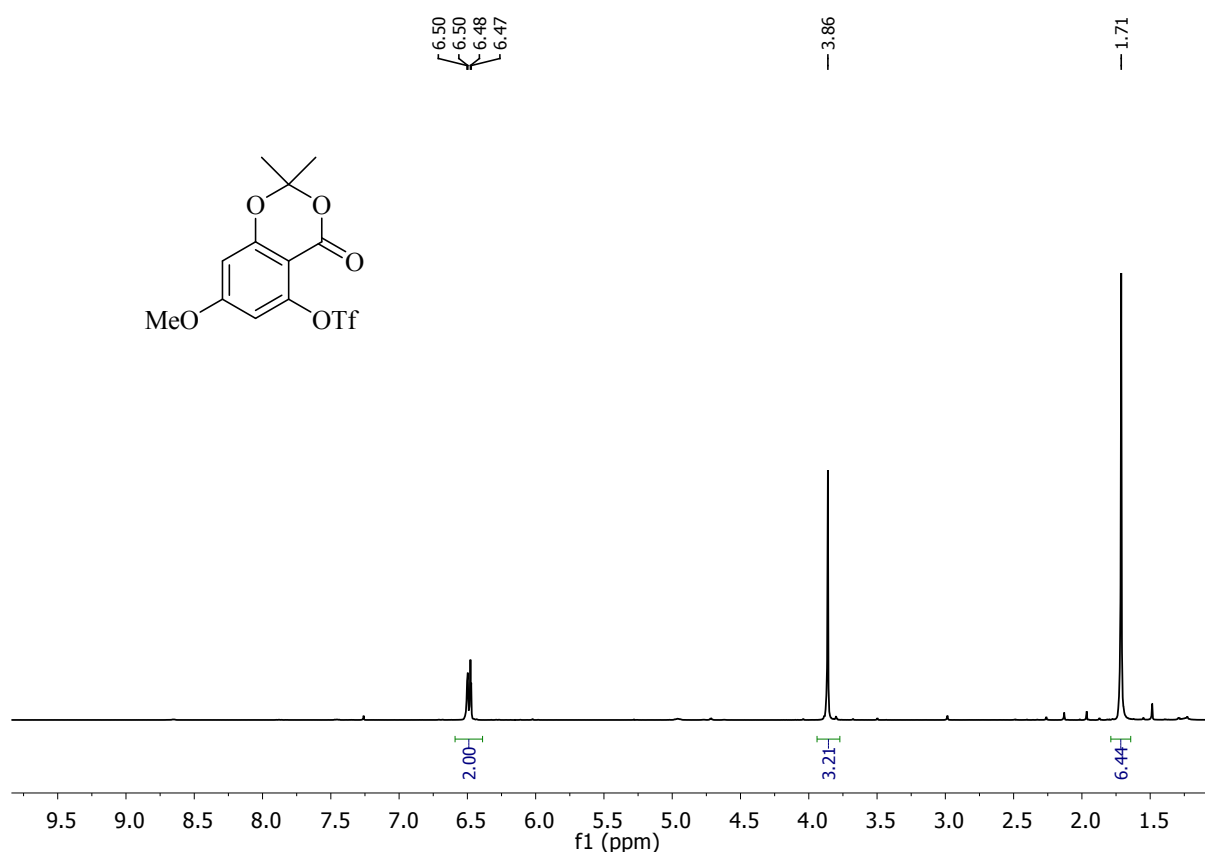
^{13}C NMR of compound 23 (100 MHz, CDCl_3)



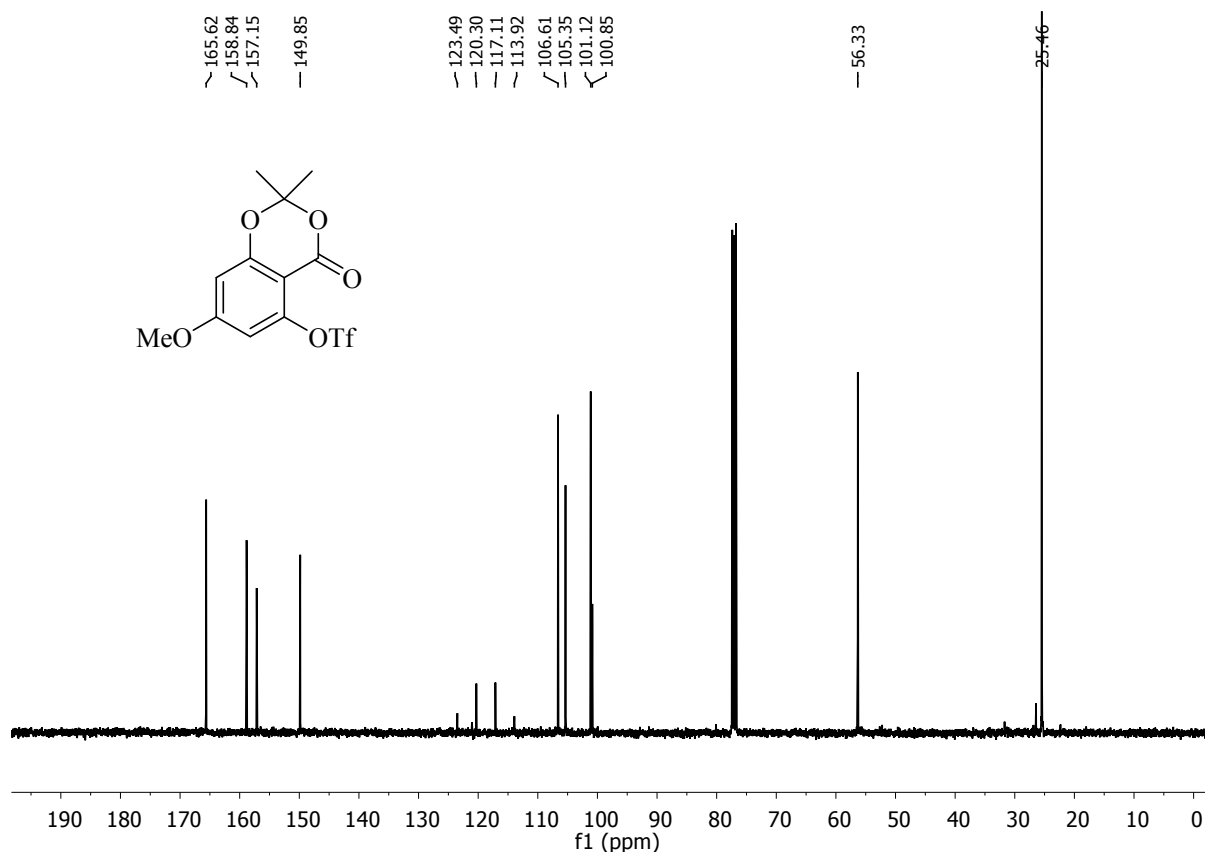
DEPT-135 of compound 23 (100 MHz, CDCl_3)



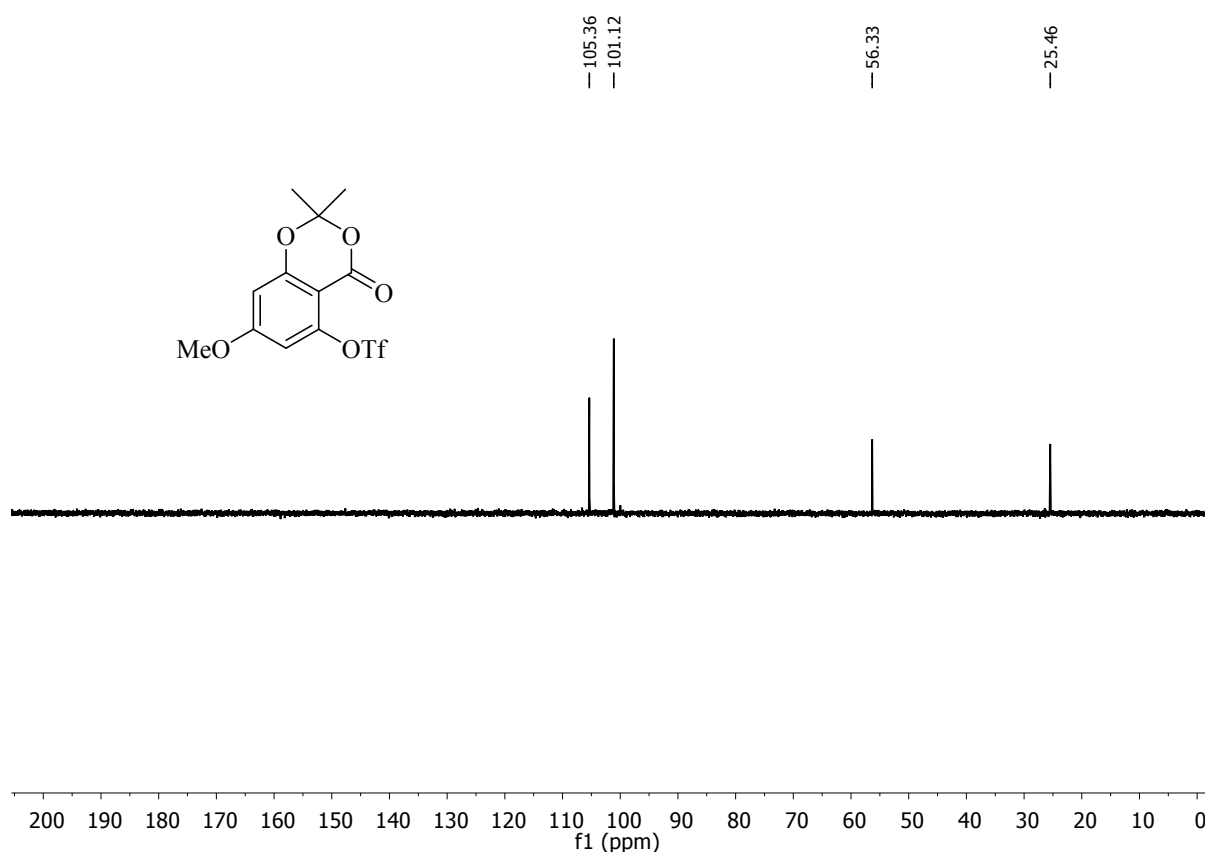
¹H NMR of compound 24 (400 MHz, CDCl₃)



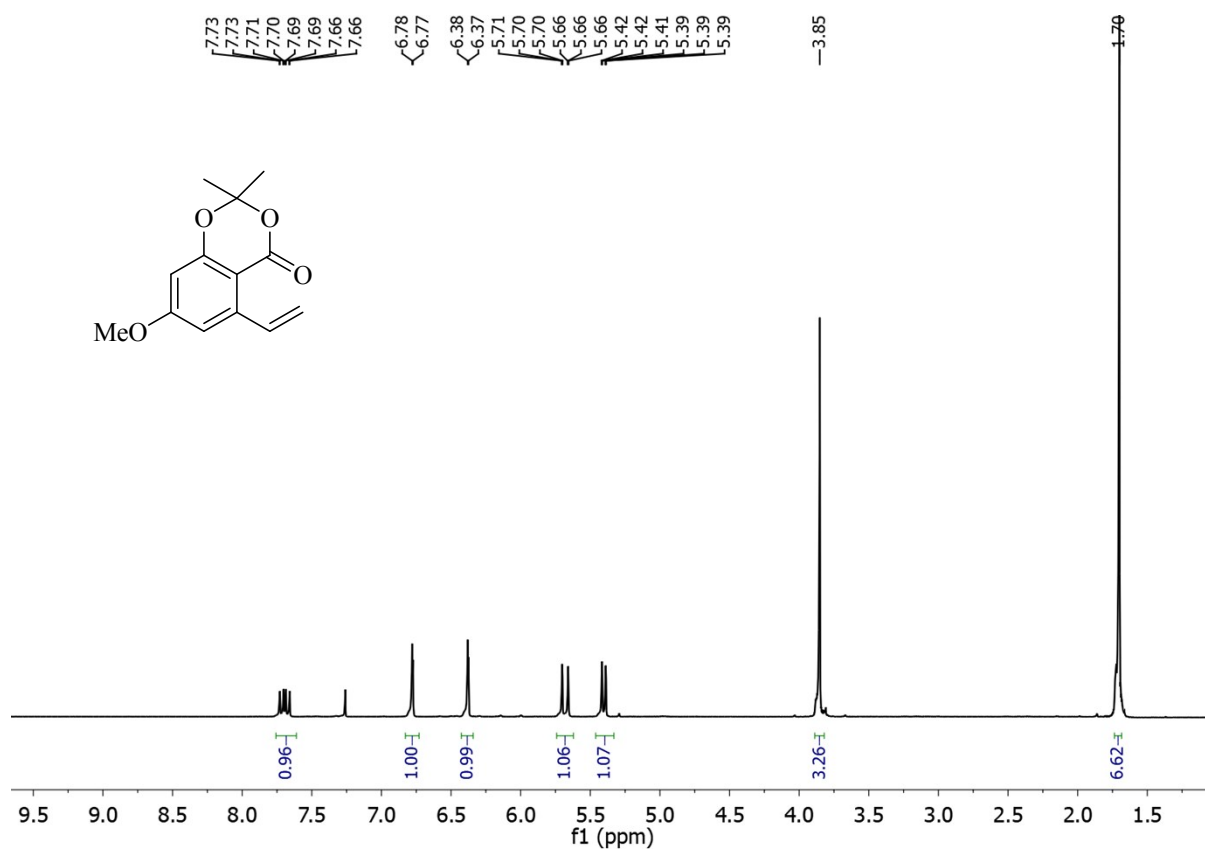
¹³C NMR of compound 24 (100 MHz, CDCl₃)



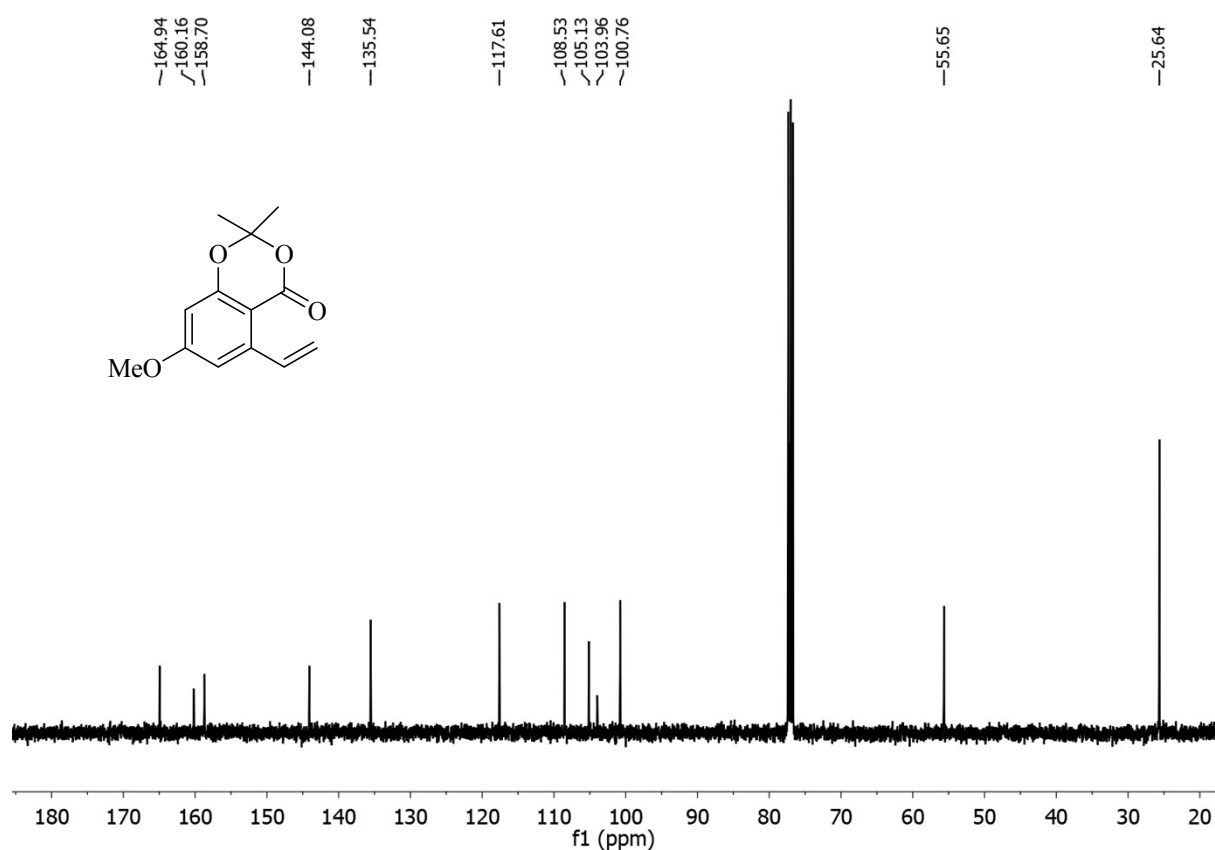
DEPT-135 of compound 24 (100 MHz, CDCl₃)



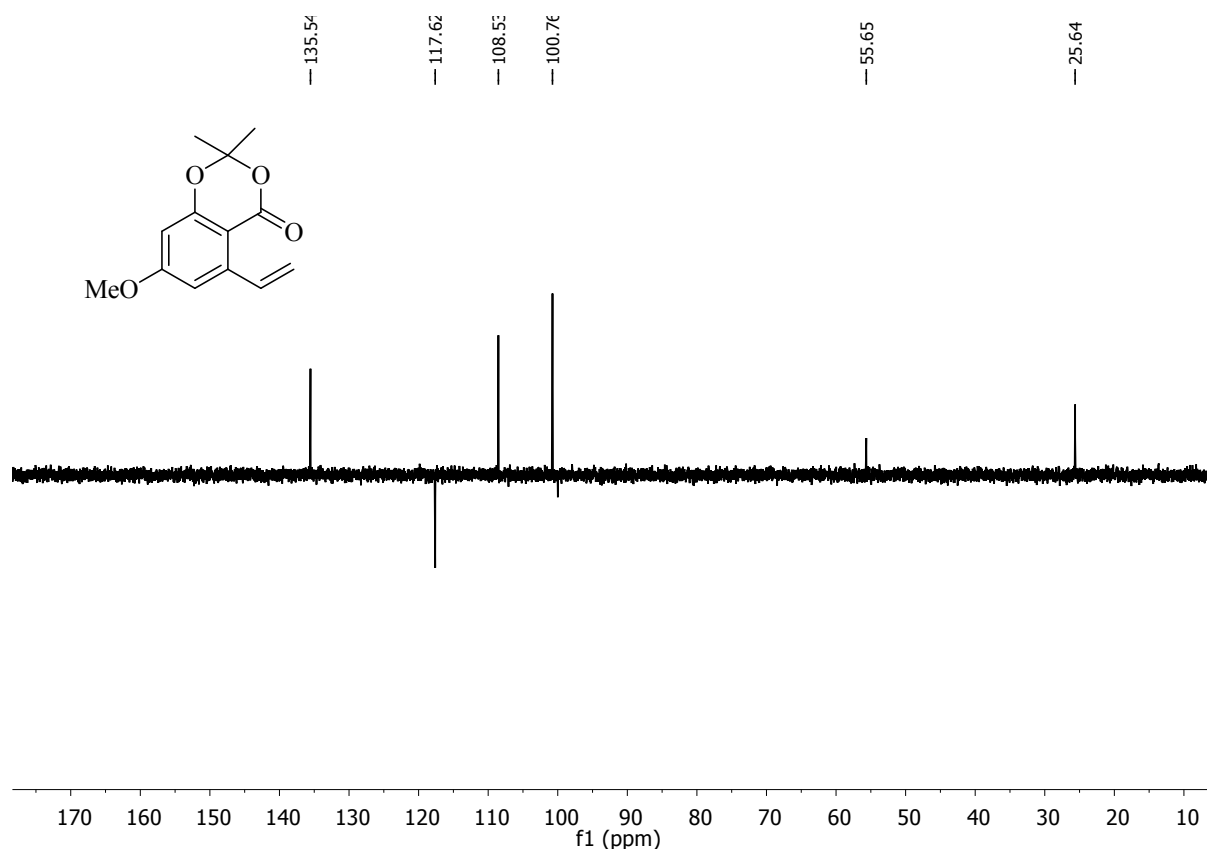
¹H NMR of compound 25 (400 MHz, CDCl₃)



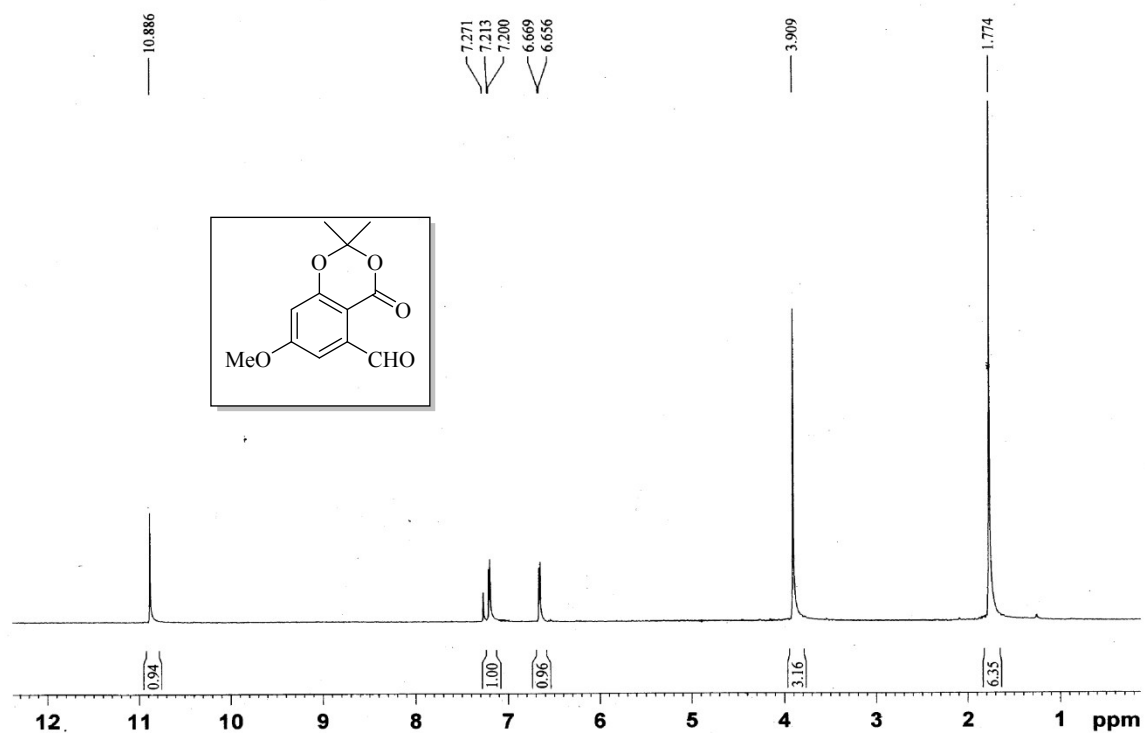
^{13}C NMR of compound 25 (100 MHz, CDCl_3)



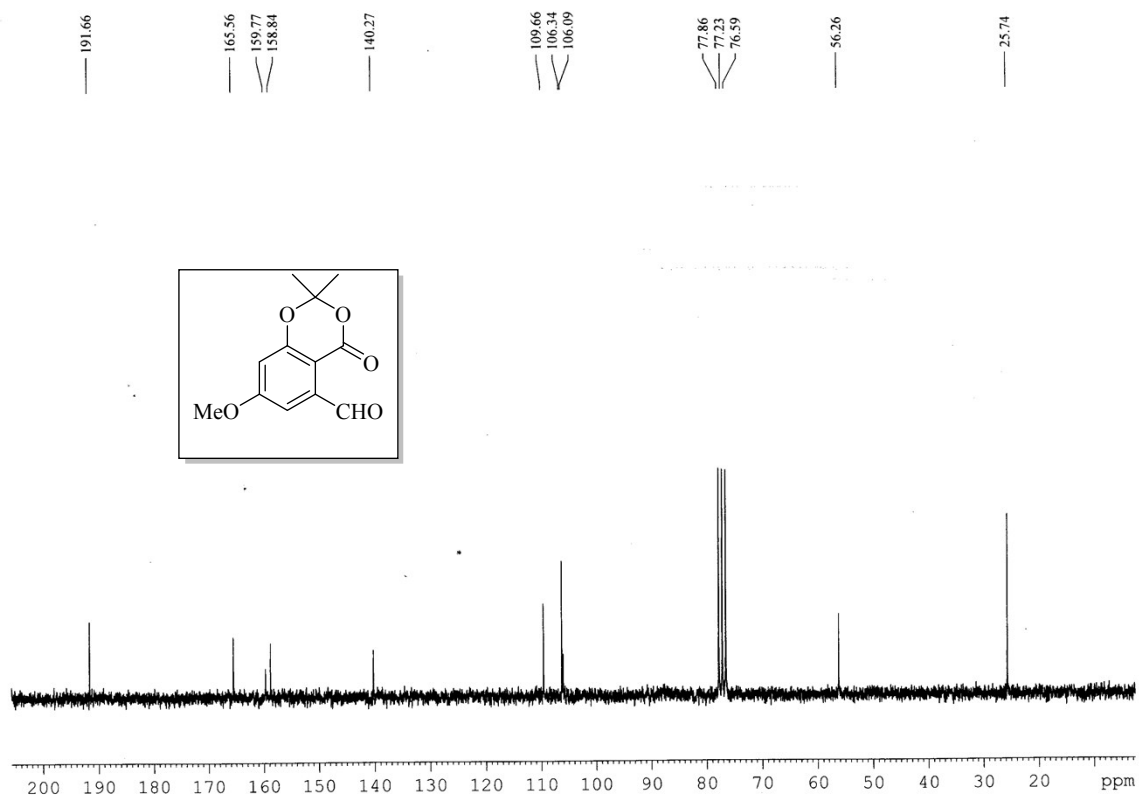
DEPT-135 of compound 25 (100 MHz, CDCl_3)



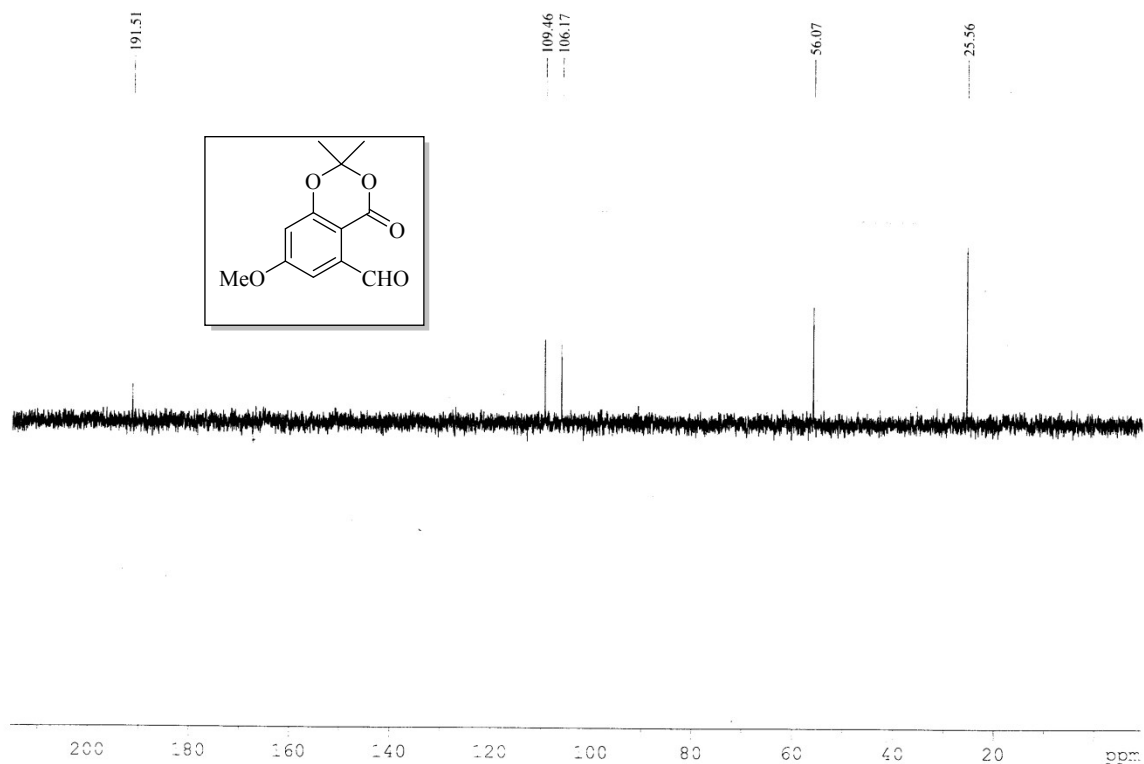
^1H NMR (200MHz) of compound 15 in CDCl_3



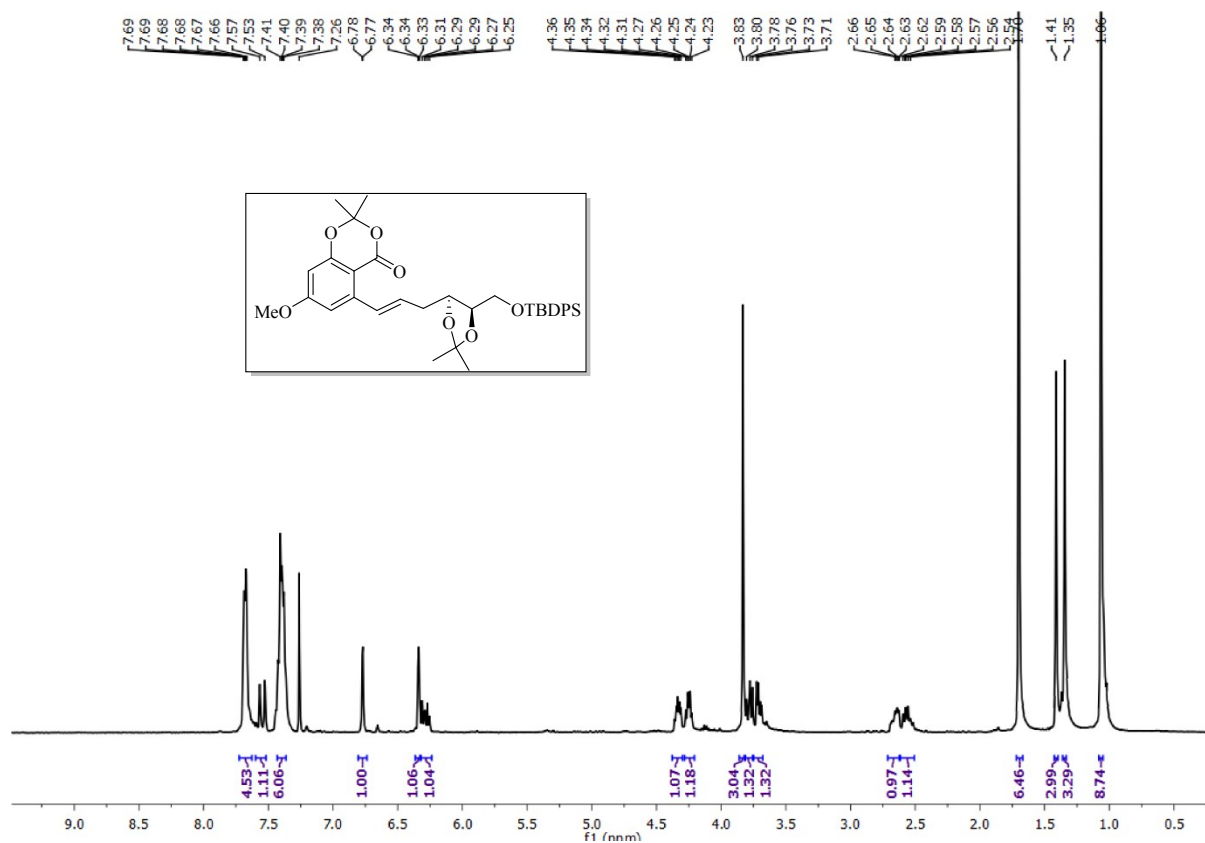
^{13}C NMR (50 MHz) of compound 15 in CDCl_3



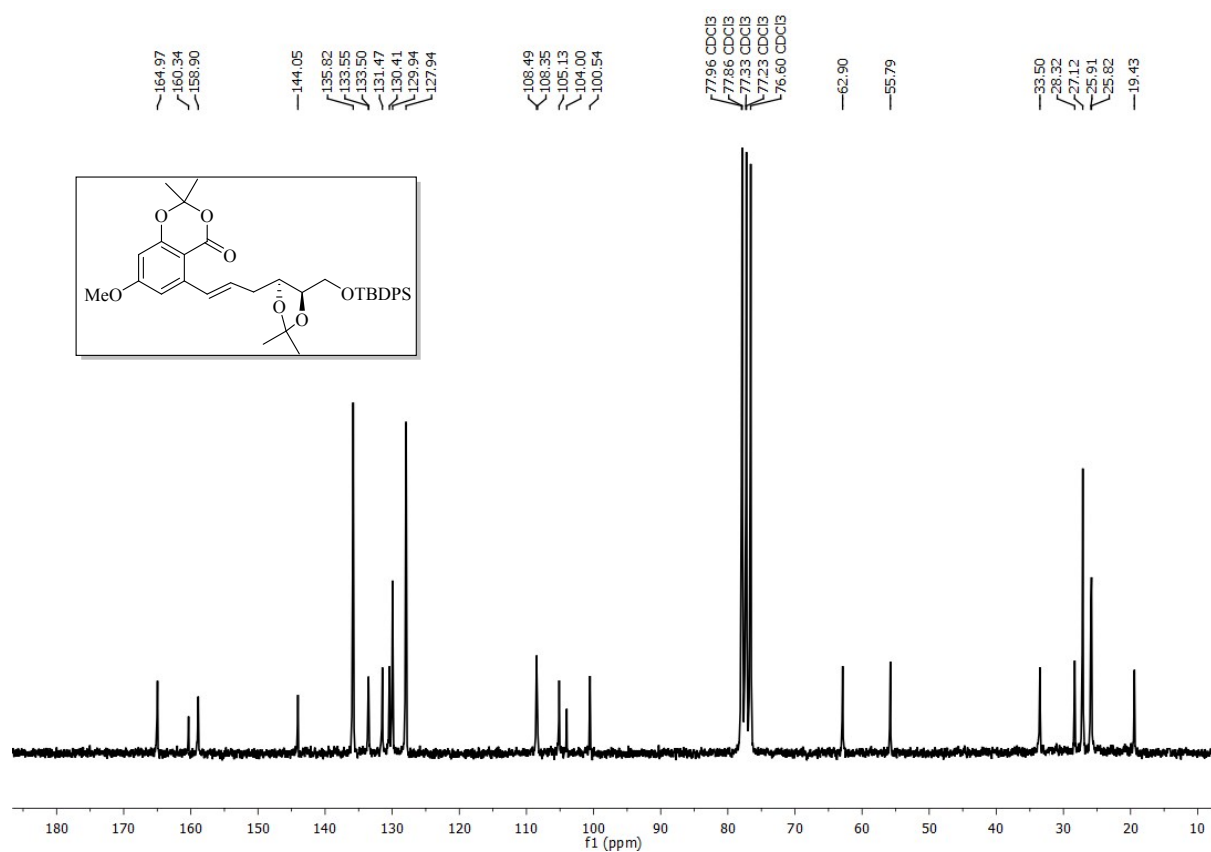
DEPT (50 MHz) NMR of compound 15 in CDCl₃



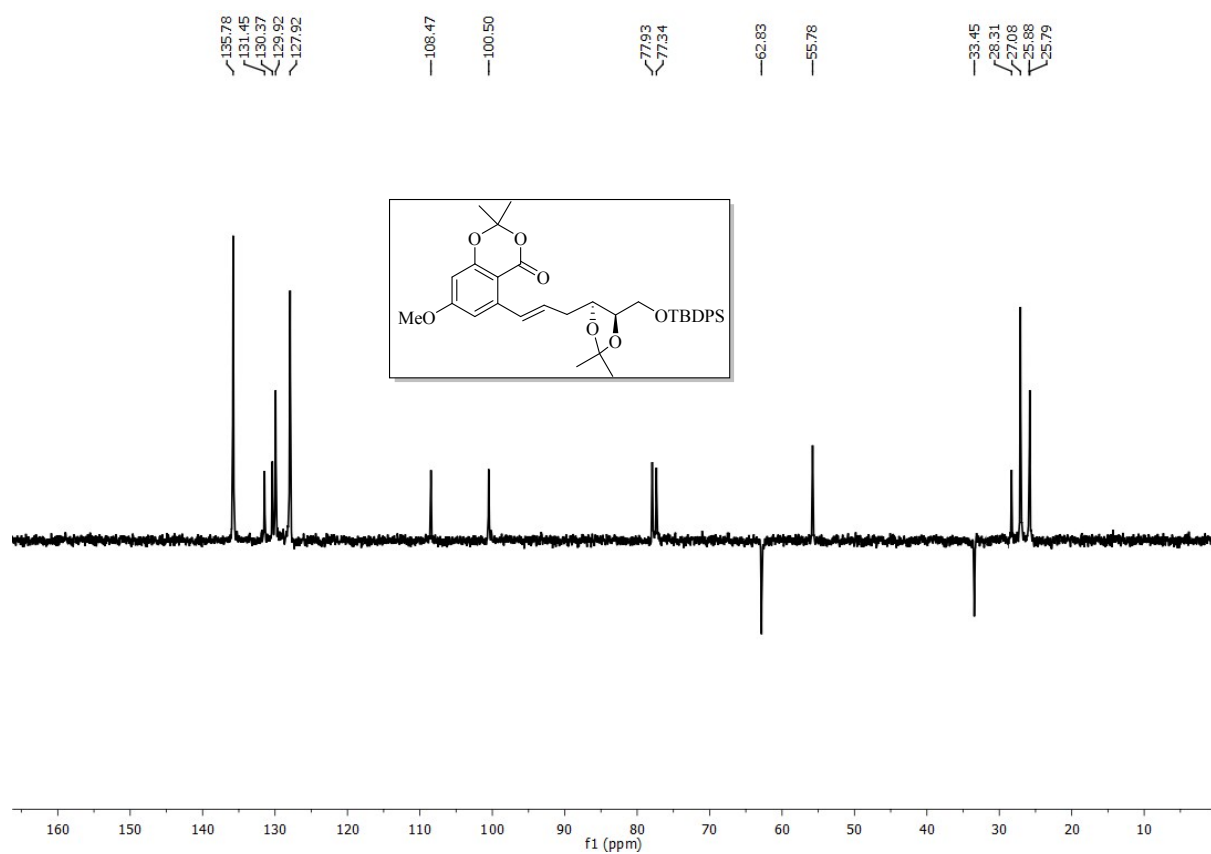
¹H NMR (400MHz) of compound 26 in CDCl₃



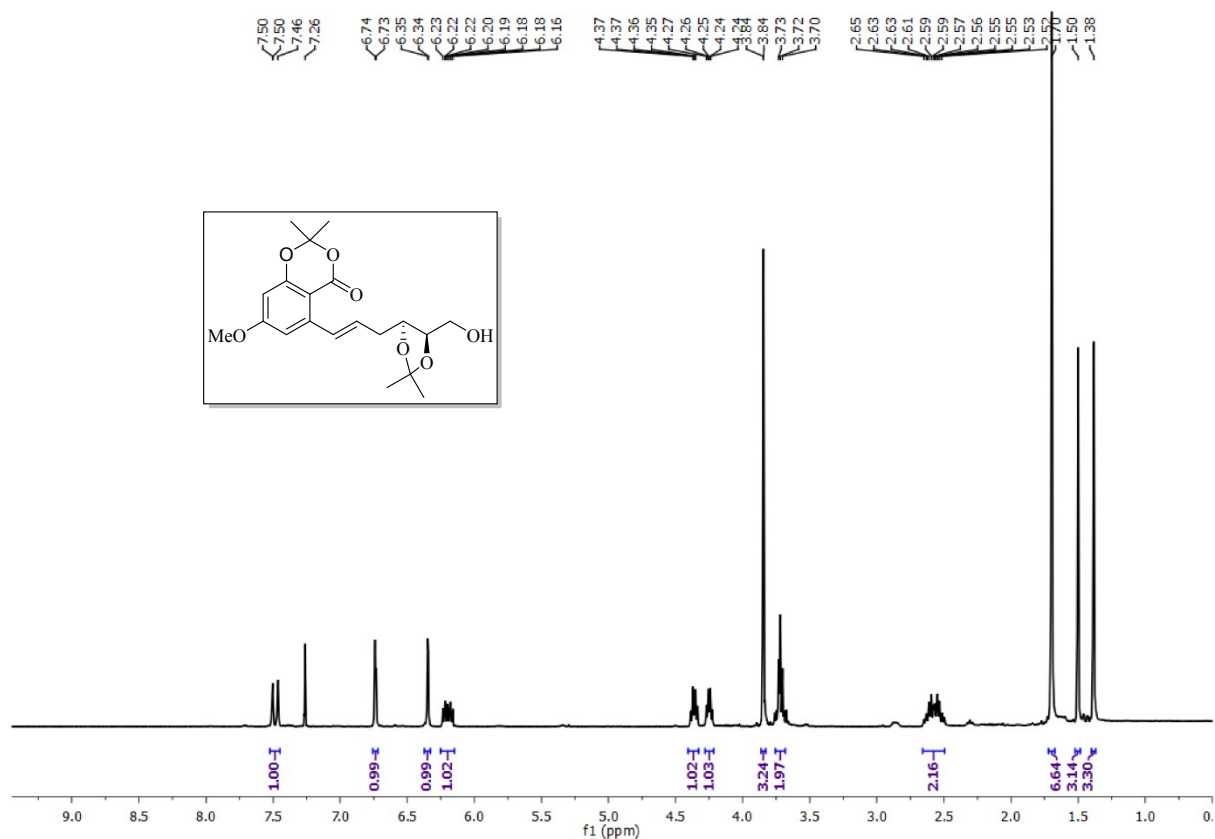
^{13}C NMR (50 MHz) of compound 26 in CDCl_3



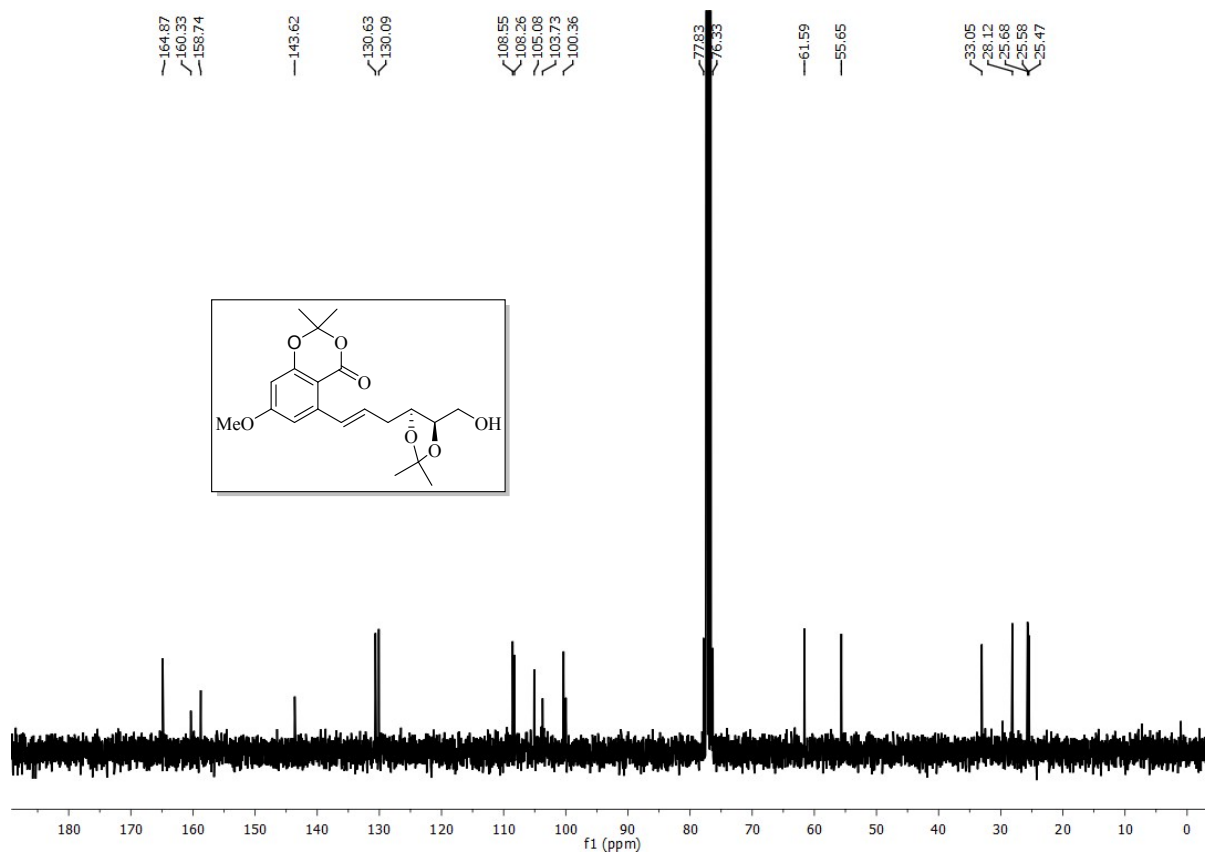
DEPT (50 MHz) NMR of compound 26 in CDCl_3



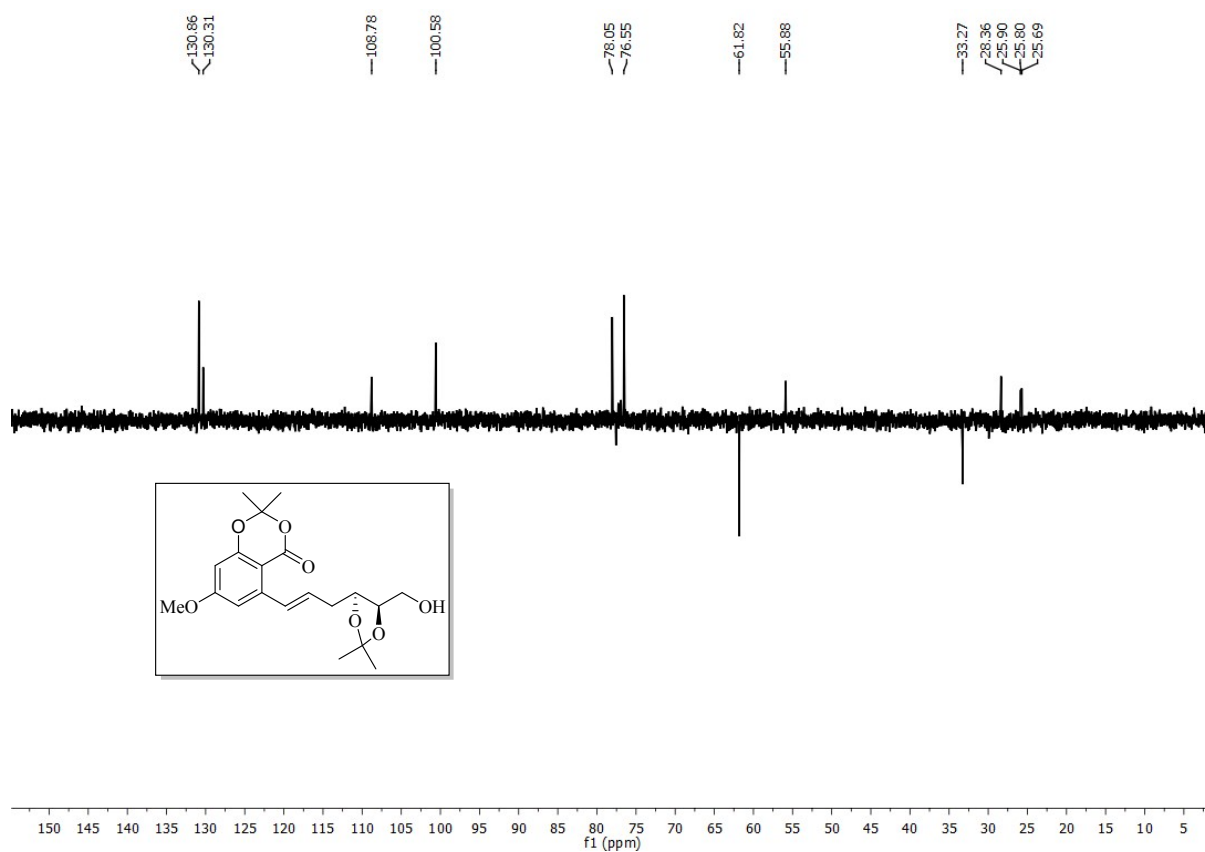
¹H NMR (400MHz) of compound 27 in CDCl₃



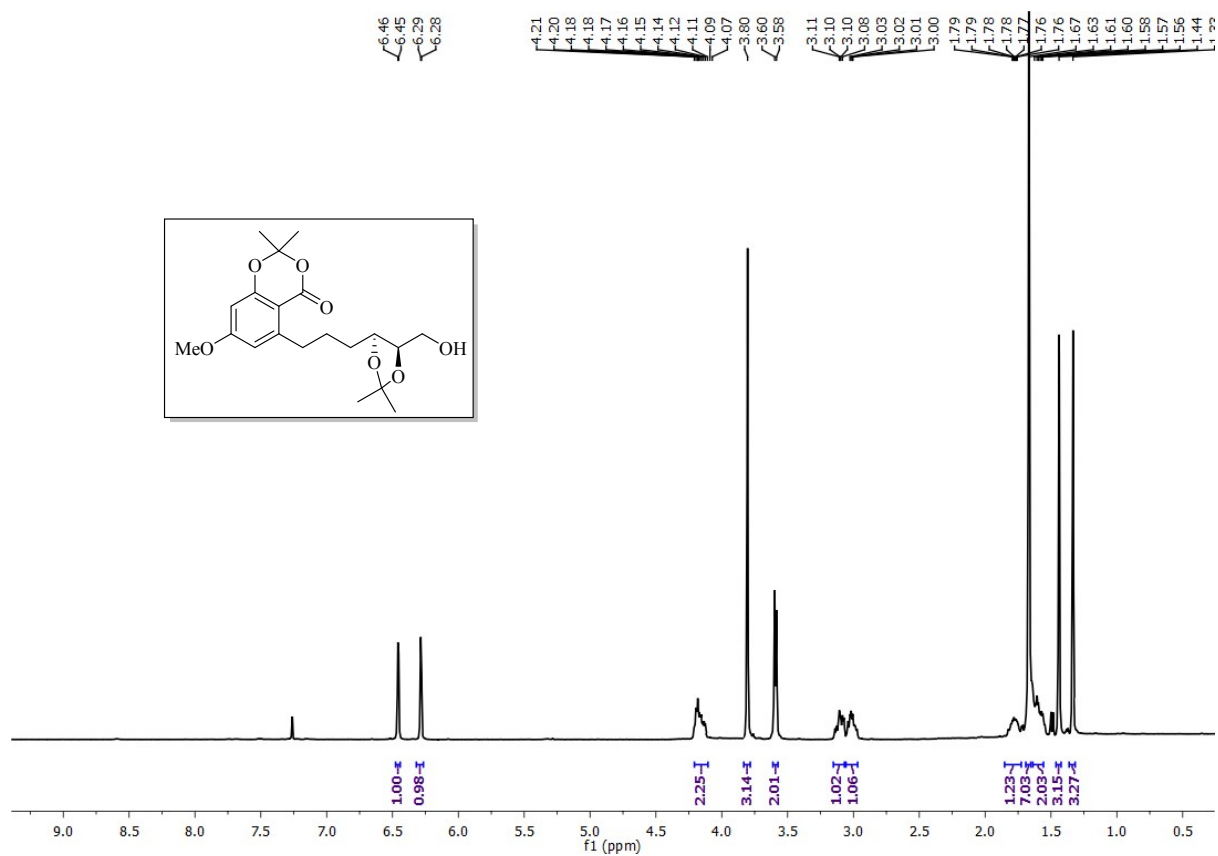
¹³C NMR (100 MHz) of compound 27 in CDCl₃



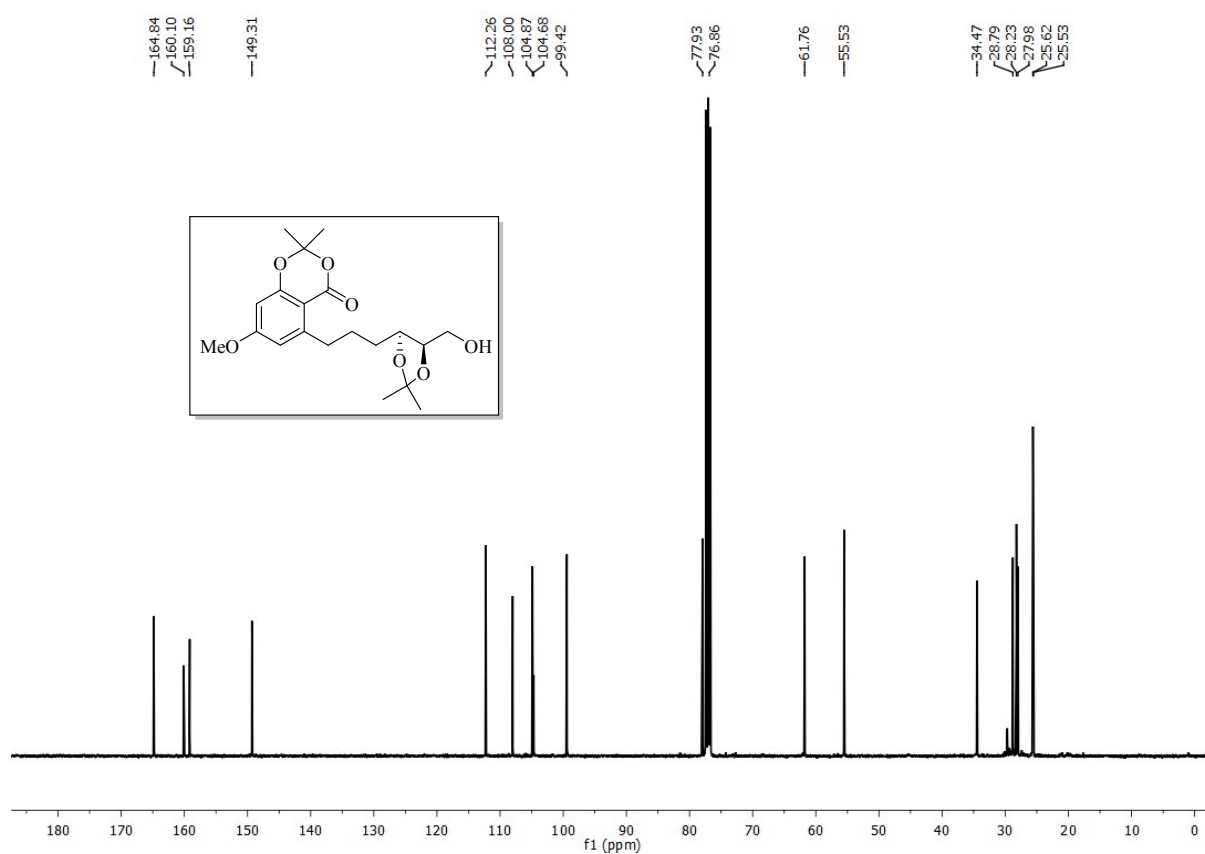
DEPT (100 MHz) NMR of compound 27 in CDCl₃



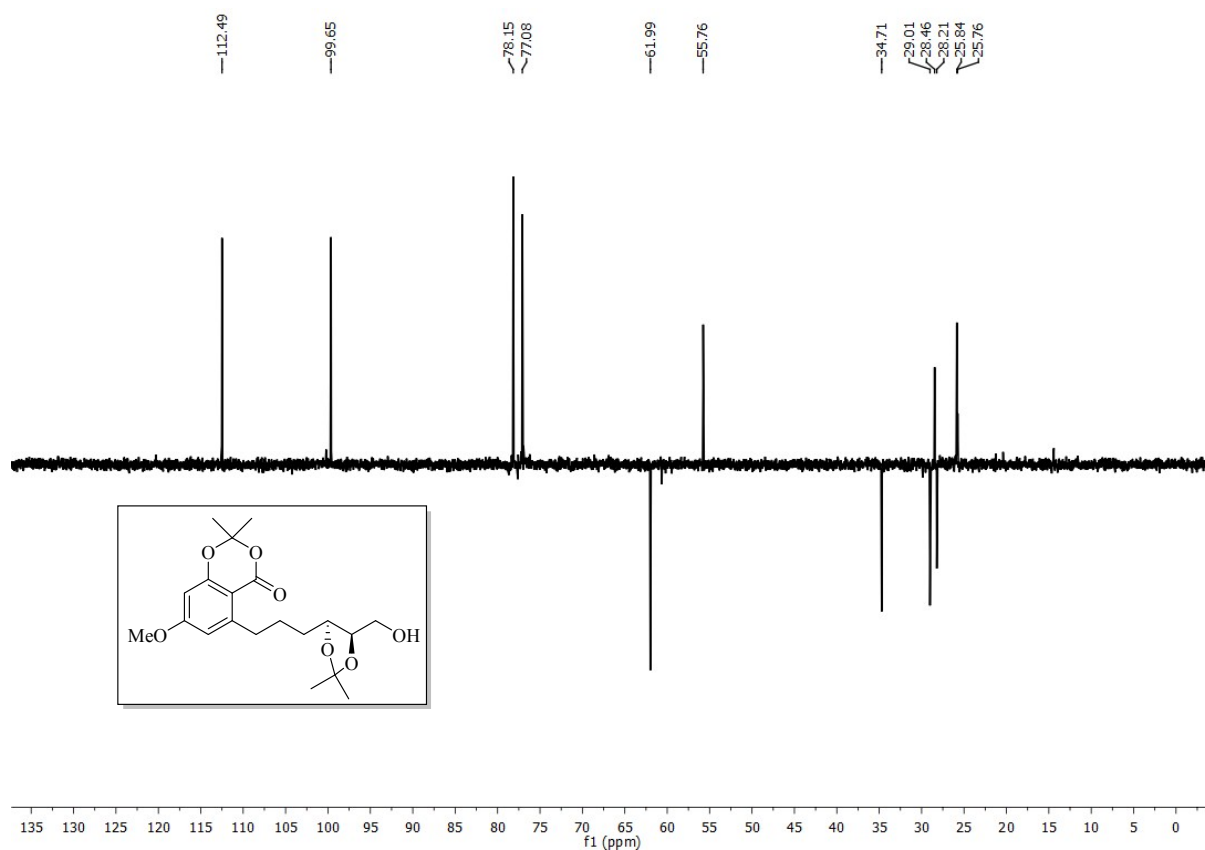
¹H NMR (400MHz) of compound 12 in CDCl₃



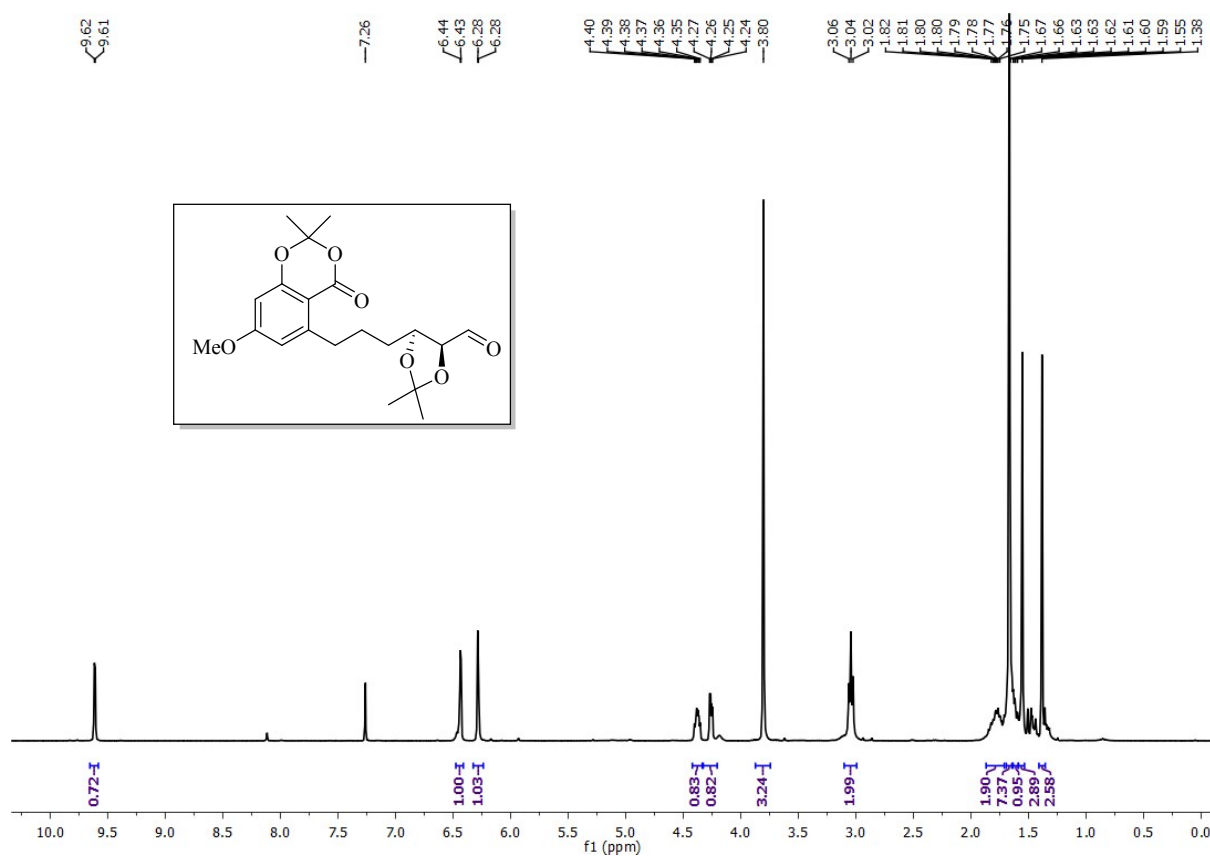
^{13}C NMR (100 MHz) of compound 12 in CDCl_3



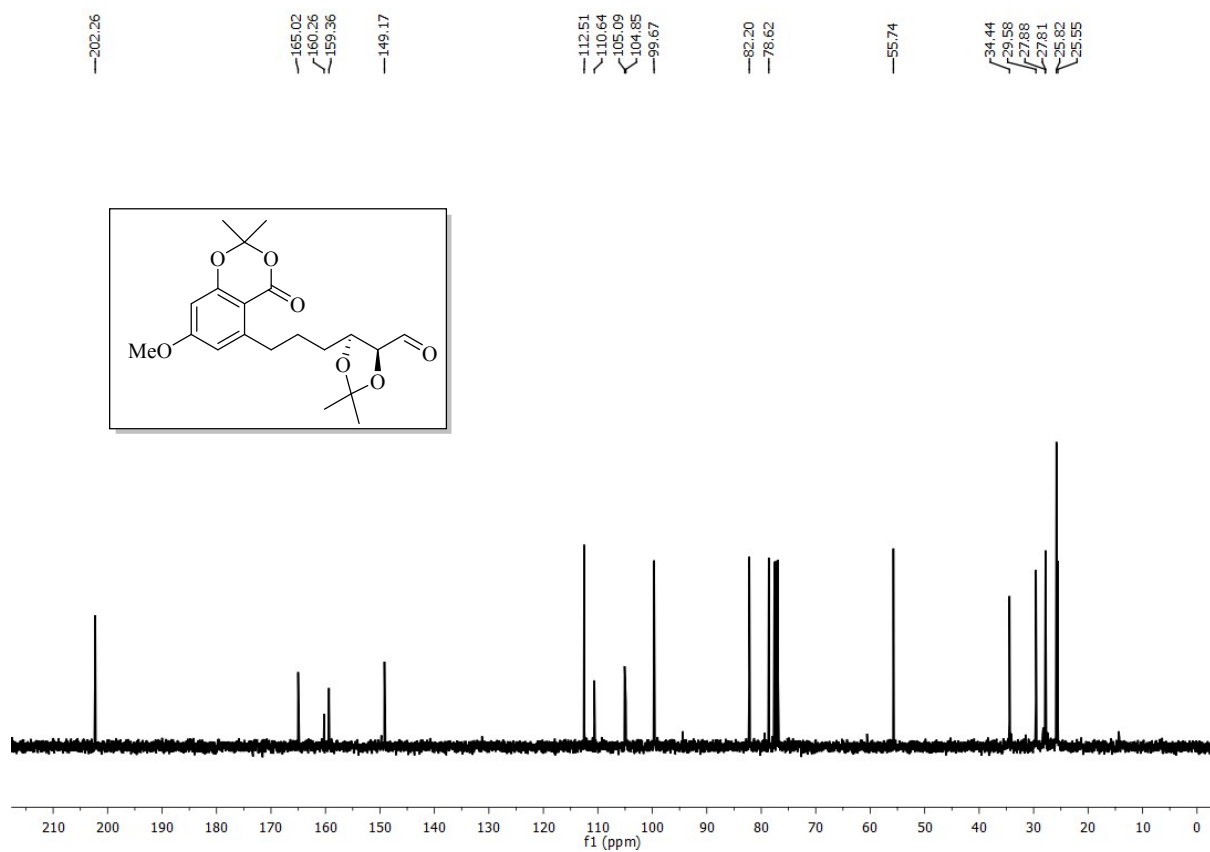
DEPT (100 MHz) NMR of compound 12 in CDCl_3



^1H NMR (400MHz) of compound 28 in CDCl_3



^{13}C NMR (100 MHz) of compound 28 in CDCl_3



Chemical structure of the compound is shown in the inset:

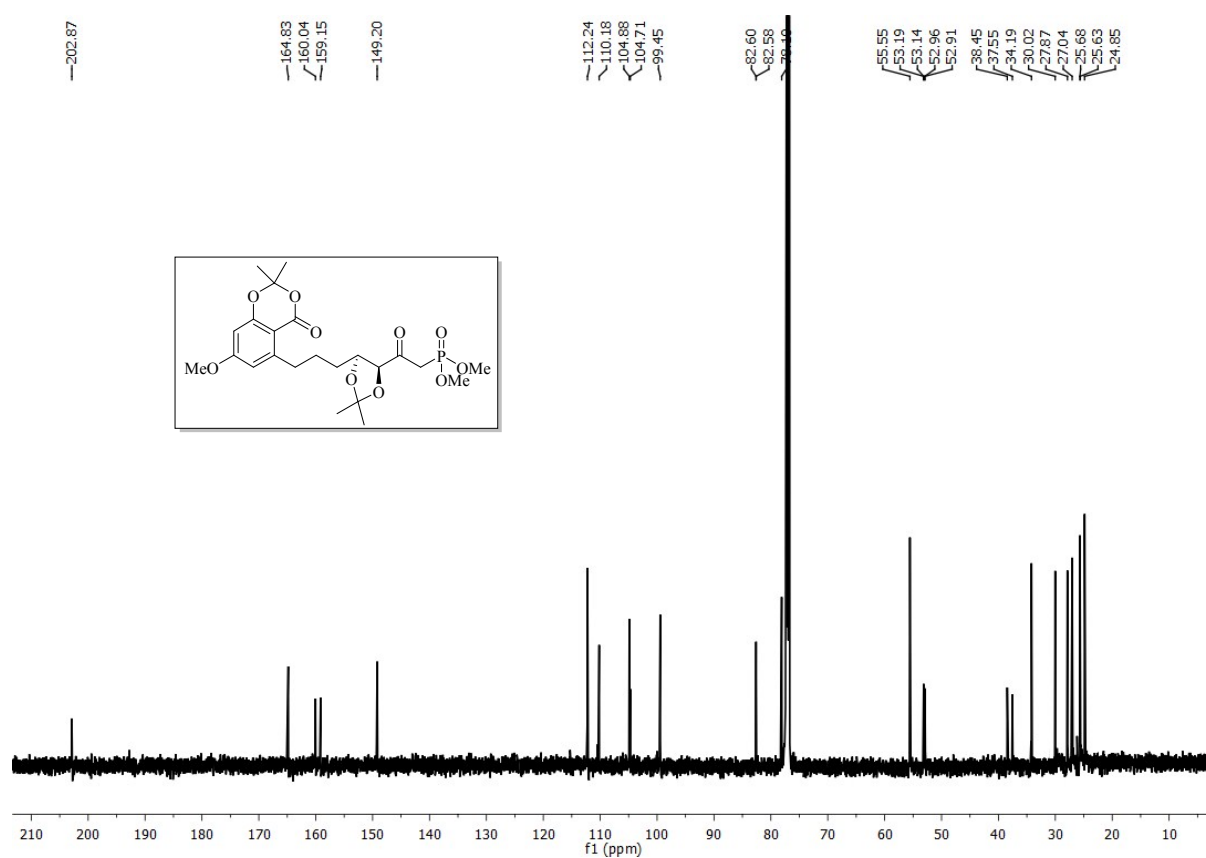
CC1(C)OC(=O)c2cc(OC)ccc2C1CC[C@H](OC(C)(C)C)C=O

¹³C NMR spectrum (f1 (ppm)) showing peaks at:

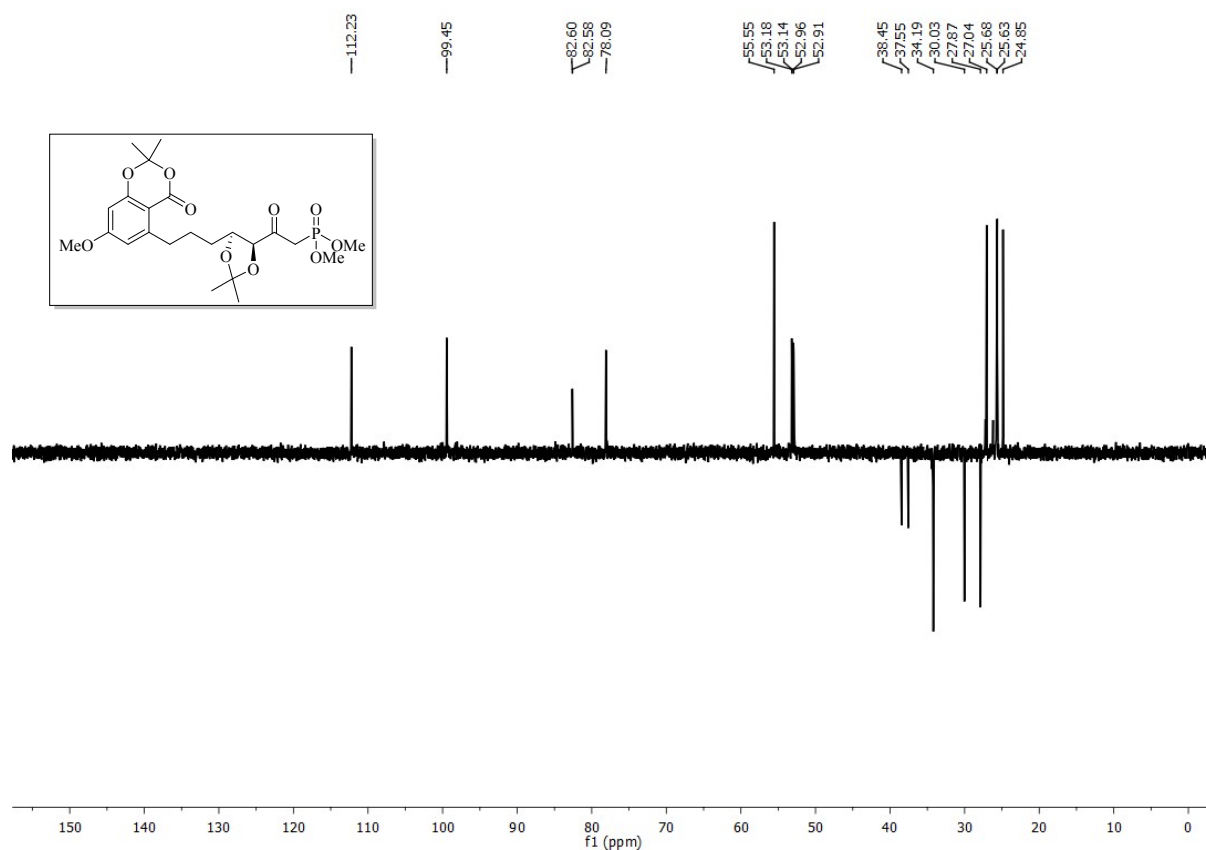
- 202.29
- 112.54
- 99.70
- 82.23
- 78.65
- 55.77
- 34.47
- 29.61
- 27.91
- 27.84
- 25.85
- 25.58

Chemical structure of compound 10 is shown in the inset. The structure is a substituted benzodioxane derivative. The 1H NMR spectrum (CDCl₃) shows peaks at 7.28, 6.48, 6.32, 6.31, 4.49, 4.48, 4.45, 4.44, 4.43, 4.42, 4.41, 3.84, 3.83, 3.81, 3.50, 3.49, 3.46, 3.10, 3.08, 3.07, 3.06, 3.04, 1.82, 1.81, 1.80, 1.79, 1.71, 1.69, 1.65, 1.63, 1.61, 1.59, 1.57, 1.55, 1.53, 1.51, 1.49, 1.47, 1.45, 1.43, 1.41, 1.39, 1.37, 1.35, 1.33, 1.31, 1.29, 1.27, 1.25, 1.23, 1.21, 1.19, 1.17, 1.15, 1.13, 1.11, 1.09, 1.07, 1.05, 1.03, 1.01, 0.99, 0.97, 0.95, 0.93, 0.91, 0.89, 0.87, 0.85, 0.83, 0.81, 0.79, 0.77, 0.75, 0.73, 0.71, 0.69, 0.67, 0.65, 0.63, 0.61, 0.59, 0.57, 0.55, 0.53, 0.51, 0.49, 0.47, 0.45, 0.43, 0.41, 0.39, 0.37, 0.35, 0.33, 0.31, 0.29, 0.27, 0.25, 0.23, 0.21, 0.19, 0.17, 0.15, 0.13, 0.11, 0.09, 0.07, 0.05, 0.03, 0.01, 0.00.

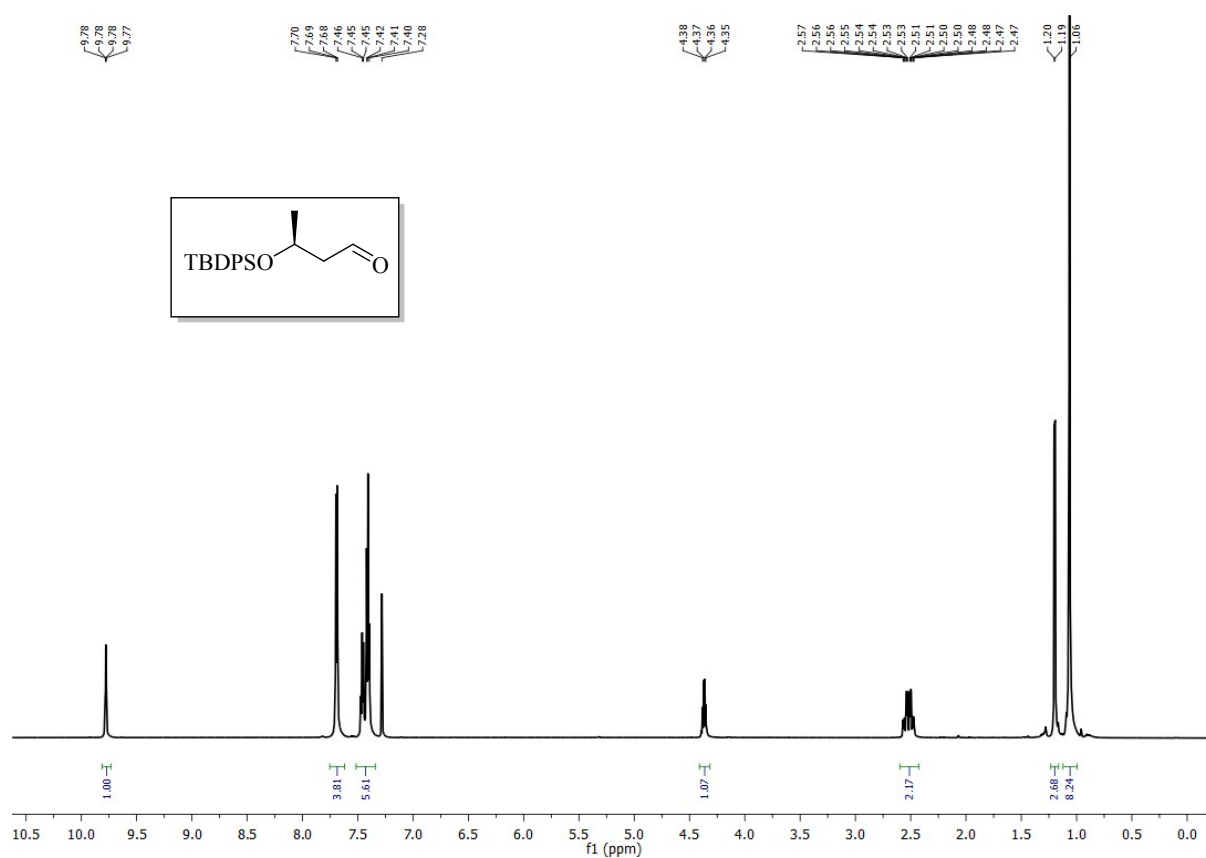
^{13}C NMR (150 MHz) of compound 11 in CDCl_3



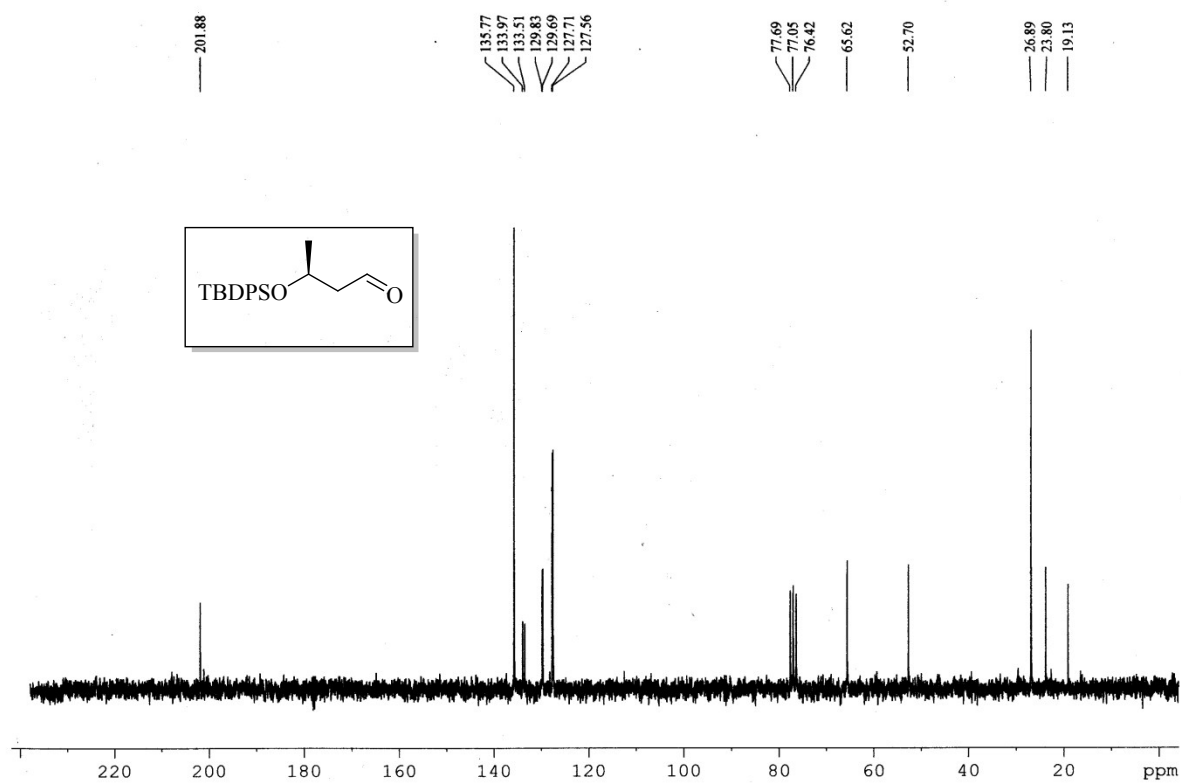
DEPT (150 MHz) NMR of compound 11 in CDCl_3



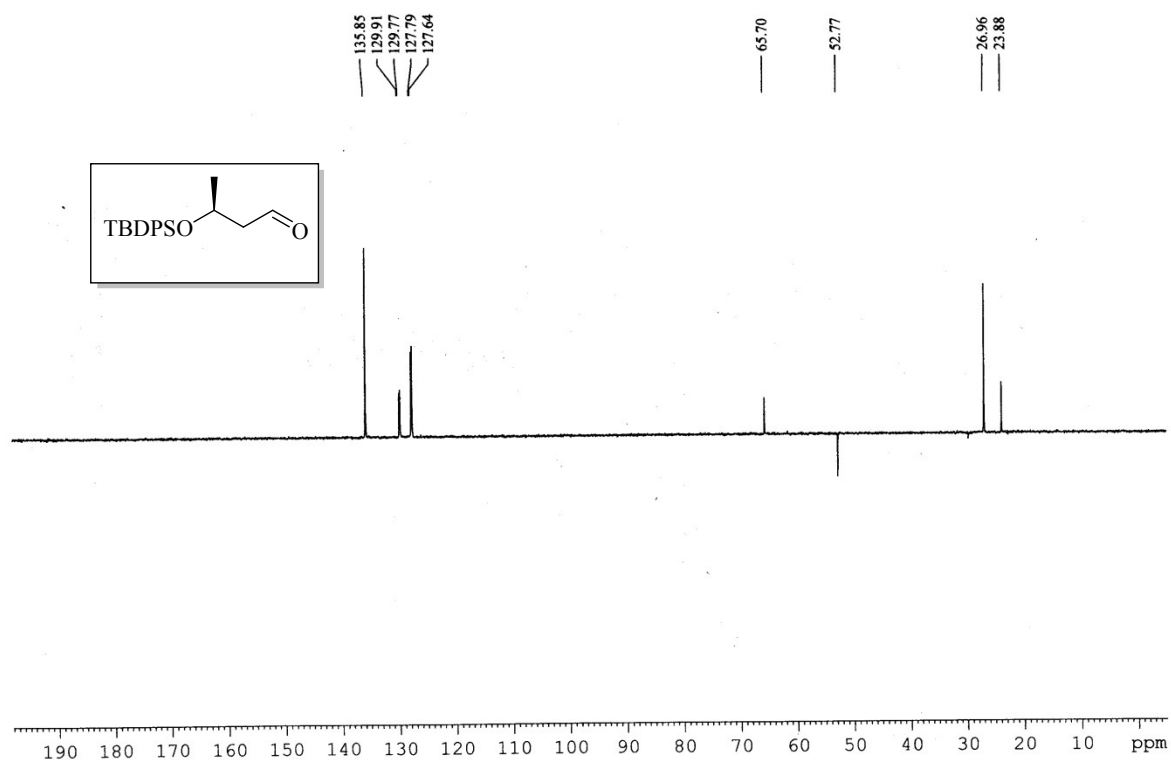
^1H NMR (600MHz) of compound 29 in CDCl_3



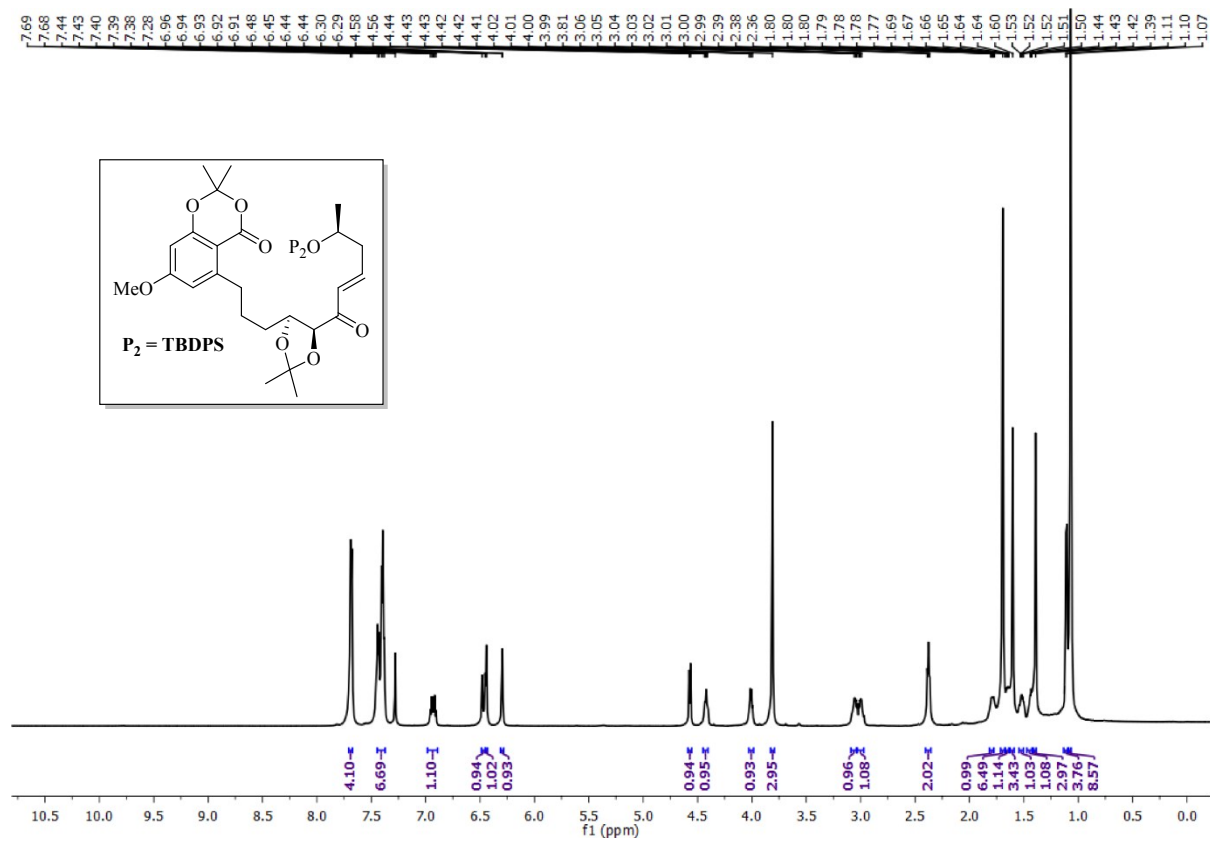
^{13}C NMR (100 MHz) of compound 29 in CDCl_3



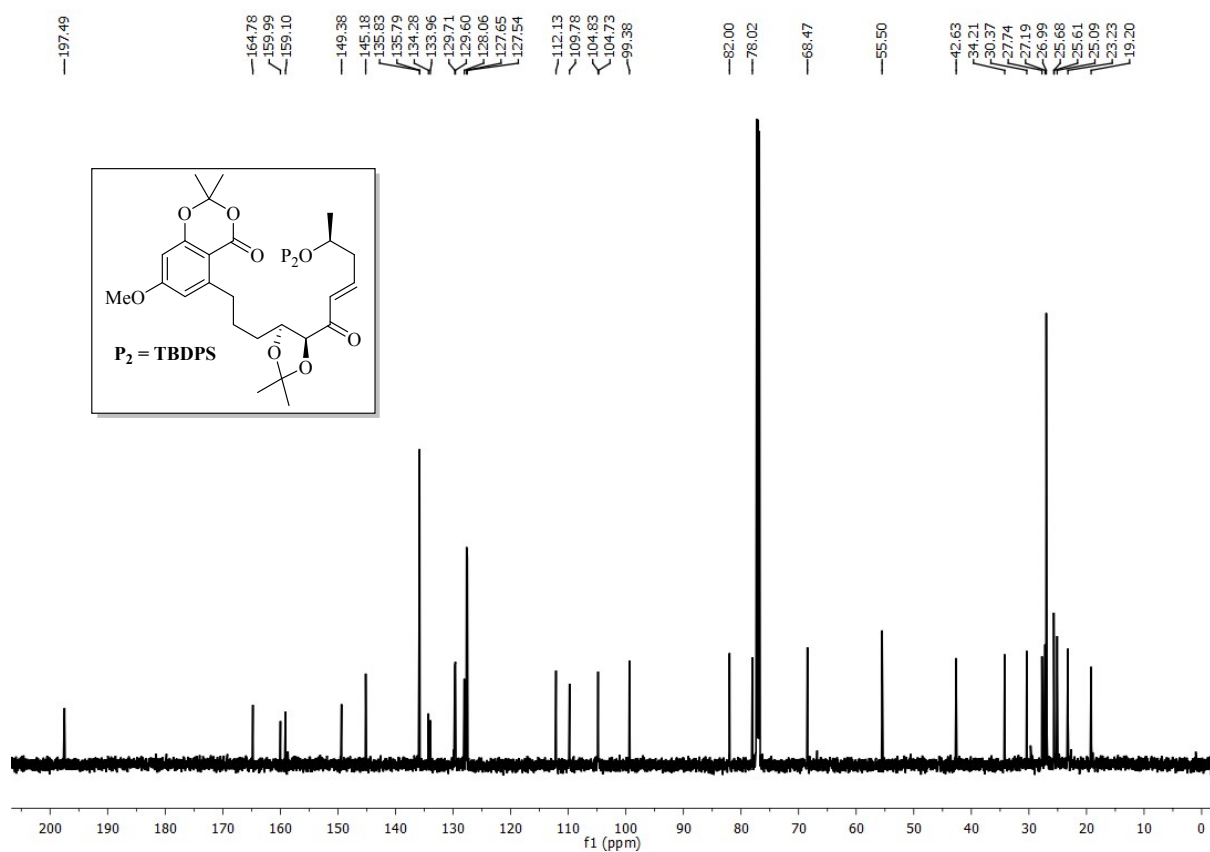
DEPT (100 MHz) NMR of compound 29 in CDCl₃



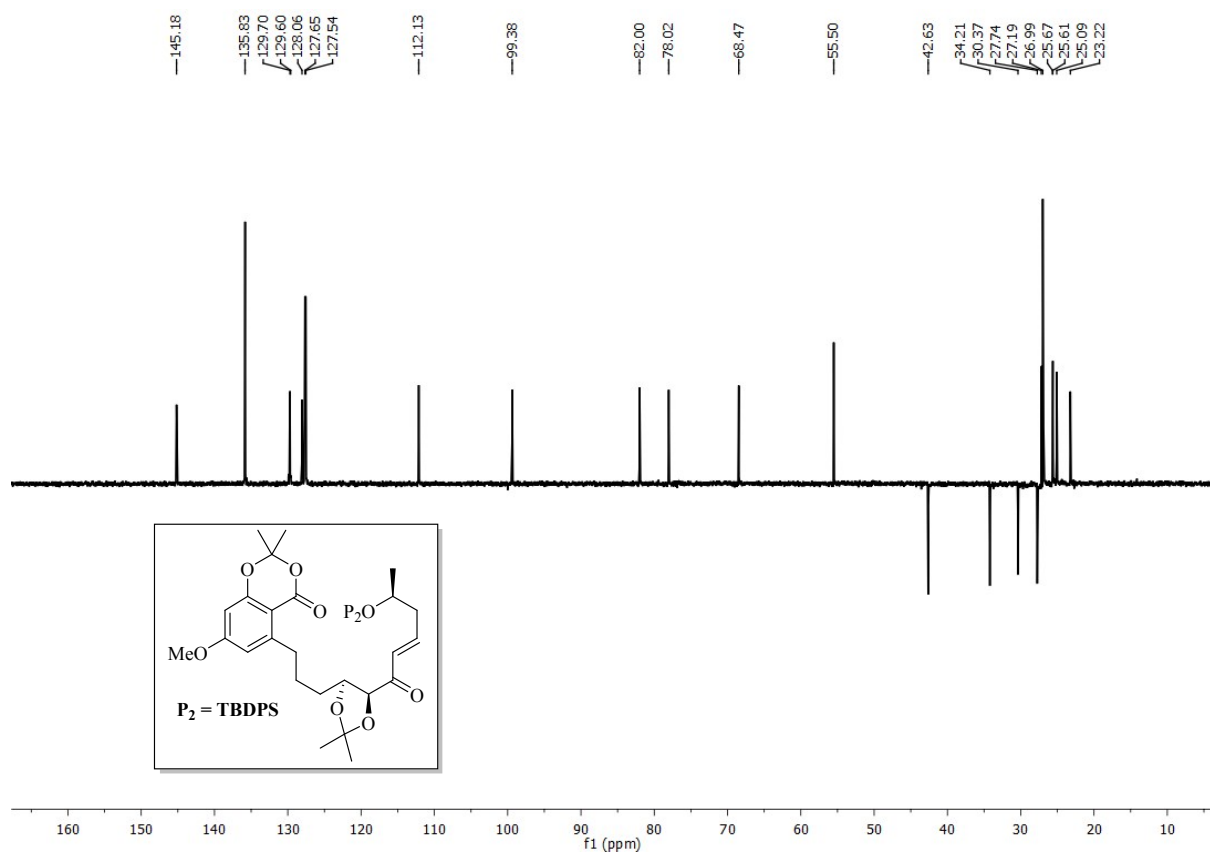
¹H NMR (600MHz) of compound 10 in CDCl₃



^{13}C NMR (150 MHz) of compound 10 in CDCl_3



DEPT (150 MHz) NMR of compound 10 in CDCl_3



Chemical structure of compound 10 is shown in the inset. The structure is a substituted chromane derivative. The chromane core has a methoxy group (MeO) at position 7 and a TBDPS group (P₂) at position 2. The chromane core is linked via a propyl chain to a MOM group (OMOM) at position 1. The structure is labeled with P₂ = TBDPS and OMOM.

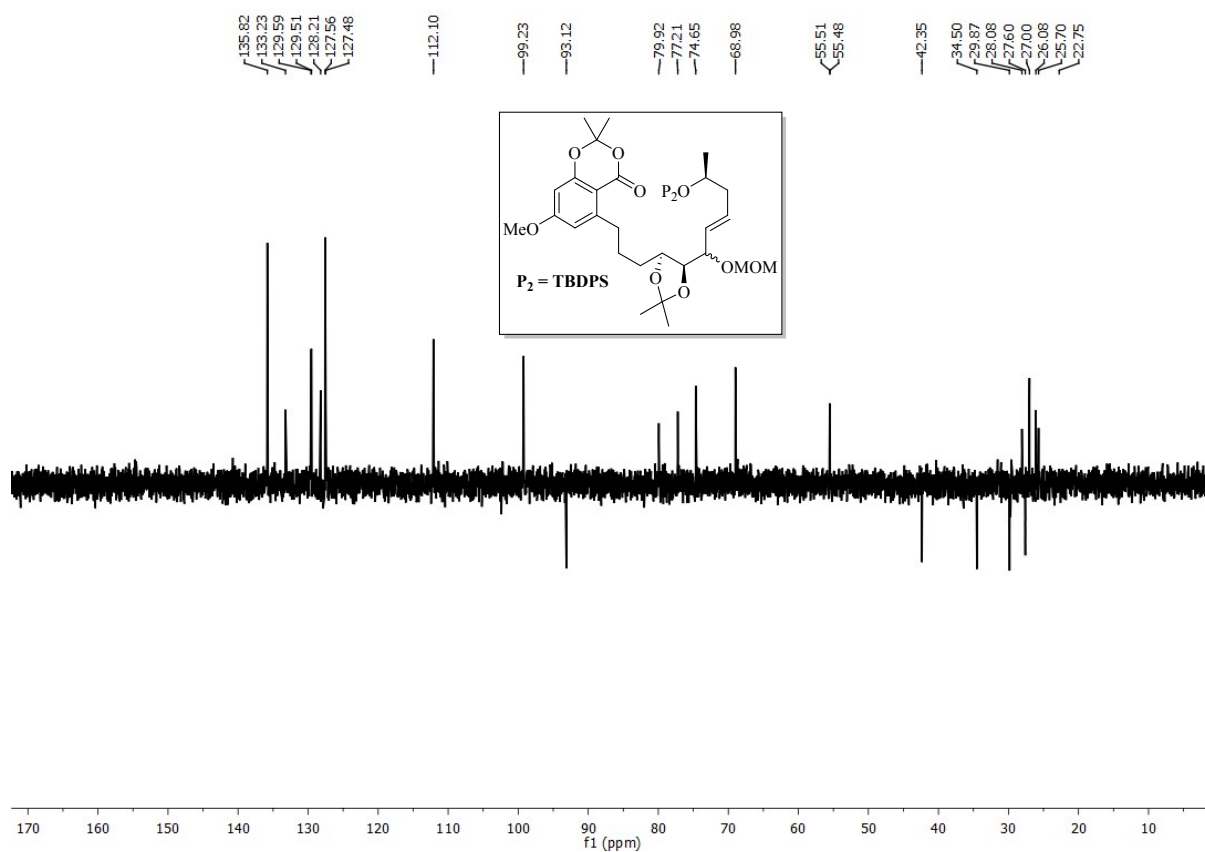
¹H NMR spectrum (CDCl₃) of compound 10. The spectrum shows peaks from 0.5 to 9.0 ppm. The chemical shift values (ppm) are listed below the peaks, and the integration values are listed above the peaks.

Chemical Shift (ppm)	Integration
7.68, 7.67, 7.66, 7.65	4.42
7.38, 7.37, 7.36, 7.35, 7.29, 7.24	6.47
6.46, 6.29, 6.24	1.00
5.77, 5.75, 5.73, 5.71, 5.28, 5.26, 5.24	1.04
4.72, 4.70, 4.58, 4.56	1.01
4.06, 4.05, 4.04, 4.03, 4.02, 3.90, 3.87, 3.06, 3.04, 3.03, 3.02, 3.00, 2.23, 2.21, 2.20	0.98
1.68, 1.57, 1.56, 1.55, 1.44, 1.35, 1.05	0.91
0.96, 0.95, 0.89, 0.87, 0.85, 0.84, 0.83, 0.82, 0.81, 0.80, 0.79, 0.78, 0.77, 0.76, 0.75, 0.74, 0.73, 0.72, 0.71, 0.70, 0.69, 0.68, 0.67, 0.66, 0.65, 0.64, 0.63, 0.62, 0.61, 0.60, 0.59, 0.58, 0.57, 0.56, 0.55, 0.54, 0.53, 0.52, 0.51, 0.50, 0.49, 0.48, 0.47, 0.46, 0.45, 0.44, 0.43, 0.42, 0.41, 0.40, 0.39, 0.38, 0.37, 0.36, 0.35, 0.34, 0.33, 0.32, 0.31, 0.30, 0.29, 0.28, 0.27, 0.26, 0.25, 0.24, 0.23, 0.22, 0.21, 0.20, 0.19, 0.18, 0.17, 0.16, 0.15, 0.14, 0.13, 0.12, 0.11, 0.10, 0.09, 0.08, 0.07, 0.06, 0.05, 0.04, 0.03, 0.02, 0.01	0.94
3.01, 1.11, 3.34	3.01
3.14	1.11
2.03	3.34
2.05	3.14
0.96, 0.95, 0.89, 0.87, 0.85, 0.84, 0.83, 0.82, 0.81, 0.80, 0.79, 0.78, 0.77, 0.76, 0.75, 0.74, 0.73, 0.72, 0.71, 0.70, 0.69, 0.68, 0.67, 0.66, 0.65, 0.64, 0.63, 0.62, 0.61, 0.60, 0.59, 0.58, 0.57, 0.56, 0.55, 0.54, 0.53, 0.52, 0.51, 0.50, 0.49, 0.48, 0.47, 0.46, 0.45, 0.44, 0.43, 0.42, 0.41, 0.40, 0.39, 0.38, 0.37, 0.36, 0.35, 0.34, 0.33, 0.32, 0.31, 0.30, 0.29, 0.28, 0.27, 0.26, 0.25, 0.24, 0.23, 0.22, 0.21, 0.20, 0.19, 0.18, 0.17, 0.16, 0.15, 0.14, 0.13, 0.12, 0.11, 0.10, 0.09, 0.08, 0.07, 0.06, 0.05, 0.04, 0.03, 0.02, 0.01	2.03
0.96, 0.95, 0.89, 0.87, 0.85, 0.84, 0.83, 0.82, 0.81, 0.80, 0.79, 0.78, 0.77, 0.76, 0.75, 0.74, 0.73, 0.72, 0.71, 0.70, 0.69, 0.68, 0.67, 0.66, 0.65, 0.64, 0.63, 0.62, 0.61, 0.60, 0.59, 0.58, 0.57, 0.56, 0.55, 0.54, 0.53, 0.52, 0.51, 0.50, 0.49, 0.48, 0.47, 0.46, 0.45, 0.44, 0.43, 0.42, 0.41, 0.40, 0.39, 0.38, 0.37, 0.36, 0.35, 0.34, 0.33, 0.32, 0.31, 0.30, 0.29, 0.28, 0.27, 0.26, 0.25, 0.24, 0.23, 0.22, 0.21, 0.20, 0.19, 0.18, 0.17, 0.16, 0.15, 0.14, 0.13, 0.12, 0.11, 0.10, 0.09, 0.08, 0.07, 0.06, 0.05, 0.04, 0.03, 0.02, 0.01	2.05
0.96, 0.95, 0.89, 0.87, 0.85, 0.84, 0.83, 0.82, 0.81, 0.80, 0.79, 0.78, 0.77, 0.76, 0.75, 0.74, 0.73, 0.72, 0.71, 0.70, 0.69, 0.68, 0.67, 0.66, 0.65, 0.64, 0.63, 0.62, 0.61, 0.60, 0.59, 0.58, 0.57, 0.56, 0.55, 0.54, 0.53, 0.52, 0.51, 0.50, 0.49, 0.48, 0.47, 0.46, 0.45, 0.44, 0.43, 0.42, 0.41, 0.40, 0.39, 0.38, 0.37, 0.36, 0.35, 0.34, 0.33, 0.32, 0.31, 0.30, 0.29, 0.28, 0.27, 0.26, 0.25, 0.24, 0.23, 0.22, 0.21, 0.20, 0.19, 0.18, 0.17, 0.16, 0.15, 0.14, 0.13, 0.12, 0.11, 0.10, 0.09, 0.08, 0.07, 0.06, 0.05, 0.04, 0.03, 0.02, 0.01	0.96
0.95, 0.89, 0.87, 0.85, 0.84, 0.83, 0.82, 0.81, 0.80, 0.79, 0.78, 0.77, 0.76, 0.75, 0.74, 0.73, 0.72, 0.71, 0.70, 0.69, 0.68, 0.67, 0.66, 0.65, 0.64, 0.63, 0.62, 0.61, 0.60, 0.59, 0.58, 0.57, 0.56, 0.55, 0.54, 0.53, 0.52, 0.51, 0.50, 0.49, 0.48, 0.47, 0.46, 0.45, 0.44, 0.43, 0.42, 0.41, 0.40, 0.39, 0.38, 0.37, 0.36, 0.35, 0.34, 0.33, 0.32, 0.31, 0.30, 0.29, 0.28, 0.27, 0.26, 0.25, 0.24, 0.23, 0.22, 0.21, 0.20, 0.19, 0.18, 0.17, 0.16, 0.15, 0.14, 0.13, 0.12, 0.11, 0.10, 0.09, 0.08, 0.07, 0.06, 0.05, 0.04, 0.03, 0.02, 0.01	5.95
0.89, 0.87, 0.85, 0.84, 0.83, 0.82, 0.81, 0.80, 0.79, 0.78, 0.77, 0.76, 0.75, 0.74, 0.73, 0.72, 0.71, 0.70, 0.69, 0.68, 0.67, 0.66, 0.65, 0.64, 0.63, 0.62, 0.61, 0.60, 0.59, 0.58, 0.57, 0.56, 0.55, 0.54, 0.53, 0.52, 0.51, 0.50, 0.49, 0.48, 0.47, 0.46, 0.45, 0.44, 0.43, 0.42, 0.41, 0.40, 0.39, 0.38, 0.37, 0.36, 0.35, 0.34, 0.33, 0.32, 0.31, 0.30, 0.29, 0.28, 0.27, 0.26, 0.25, 0.24, 0.23, 0.22, 0.21, 0.20, 0.19, 0.18, 0.17, 0.16, 0.15, 0.14, 0.13, 0.12, 0.11, 0.	

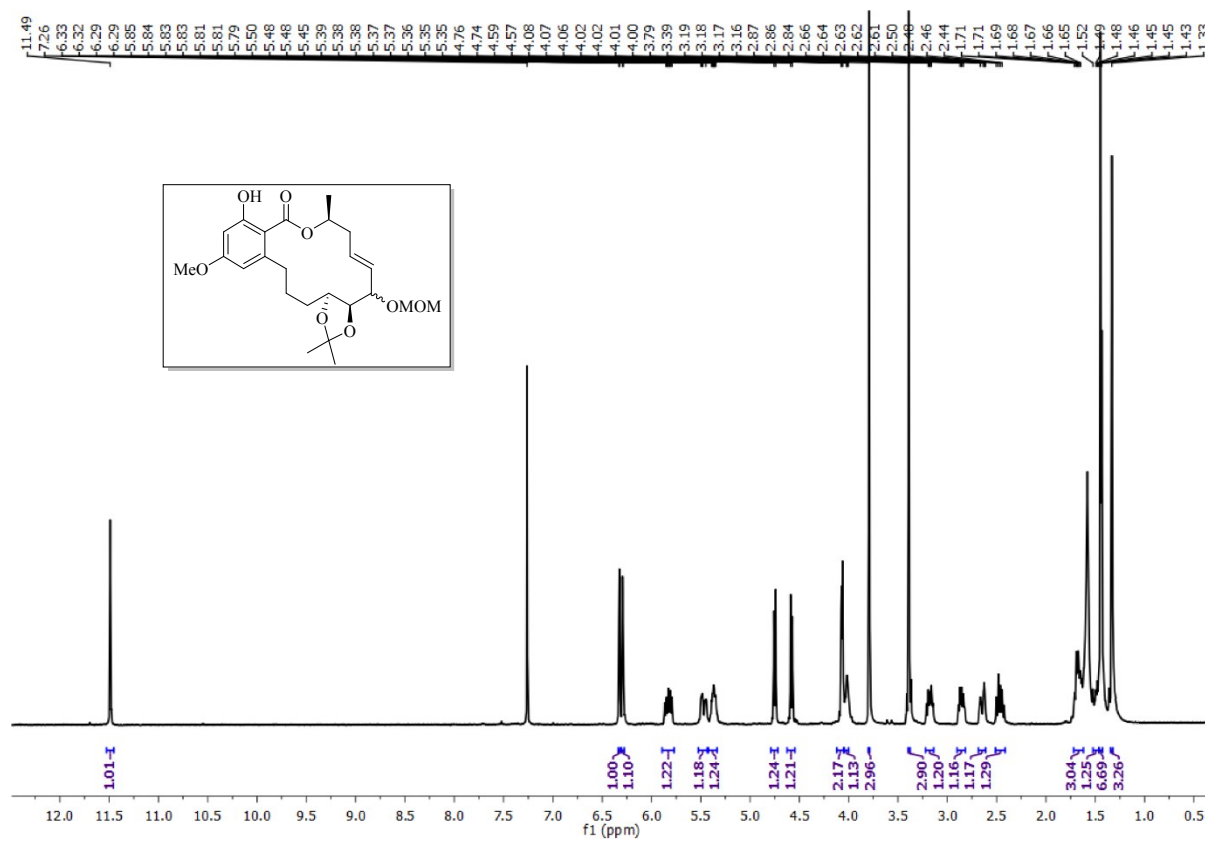
Chemical structure of the compound is shown in the inset. The structure is a complex molecule featuring a central benzene ring substituted with a methoxy group (MeO), a tert-butylidene acetal (TBDPS), and a side chain containing a dihydropyran ring and a vinyl group. The side chain is protected with a P₂O group and an OMOM group. The chemical structure is labeled with P₂ = TBDPS.

The ¹³C NMR spectrum (f1 (ppm)) shows the following chemical shifts (ppm): 164.91, 160.08, 159.26, 149.79, 135.96, 134.61, 134.43, 133.35, 129.73, 129.65, 128.36, 127.70, 127.62, 112.24, 108.38, 104.94, 104.89, 99.37, 93.35, 80.06, 74.80, 69.12, 55.65, 55.61, 42.49, 34.64, 29.98, 28.21, 27.74, 27.14, 26.22, 25.72, 22.90, 19.34.

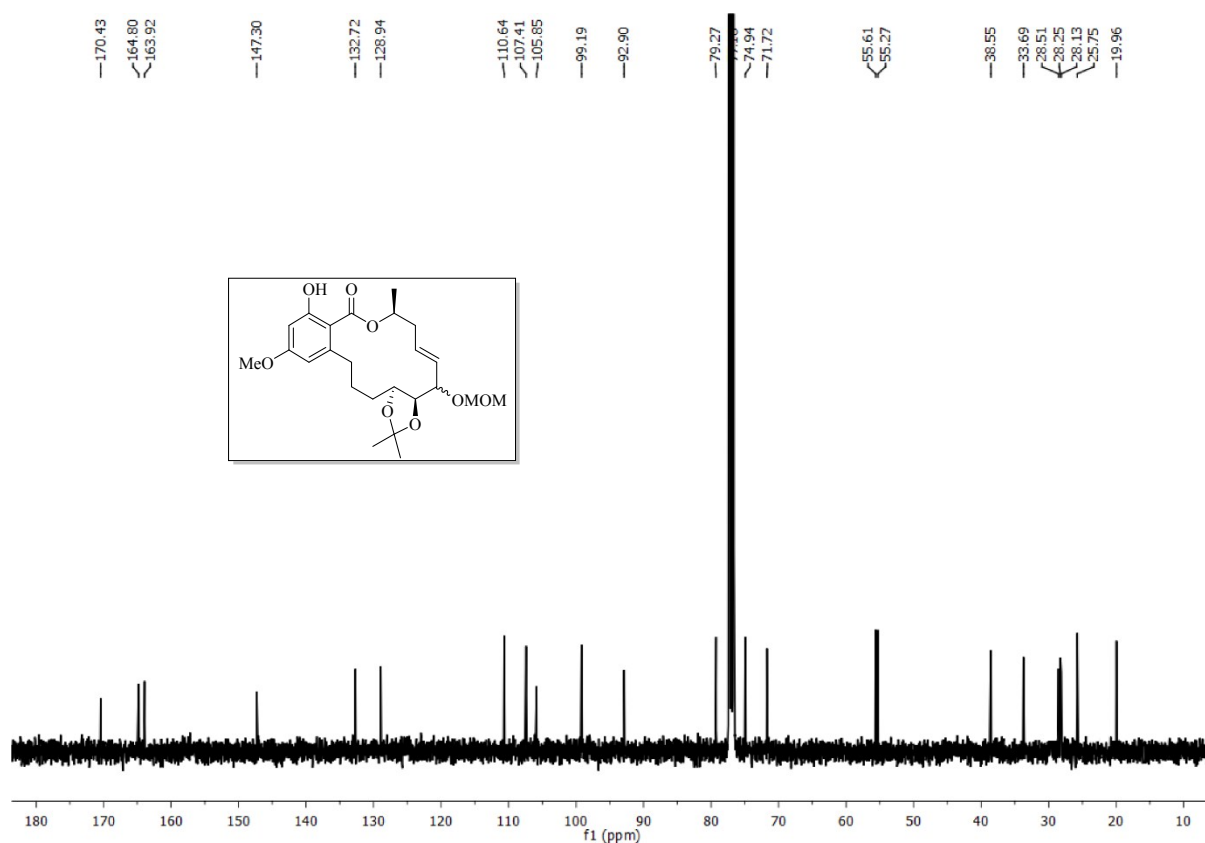
DEPT (100 MHz) NMR of compound 31 in CDCl₃



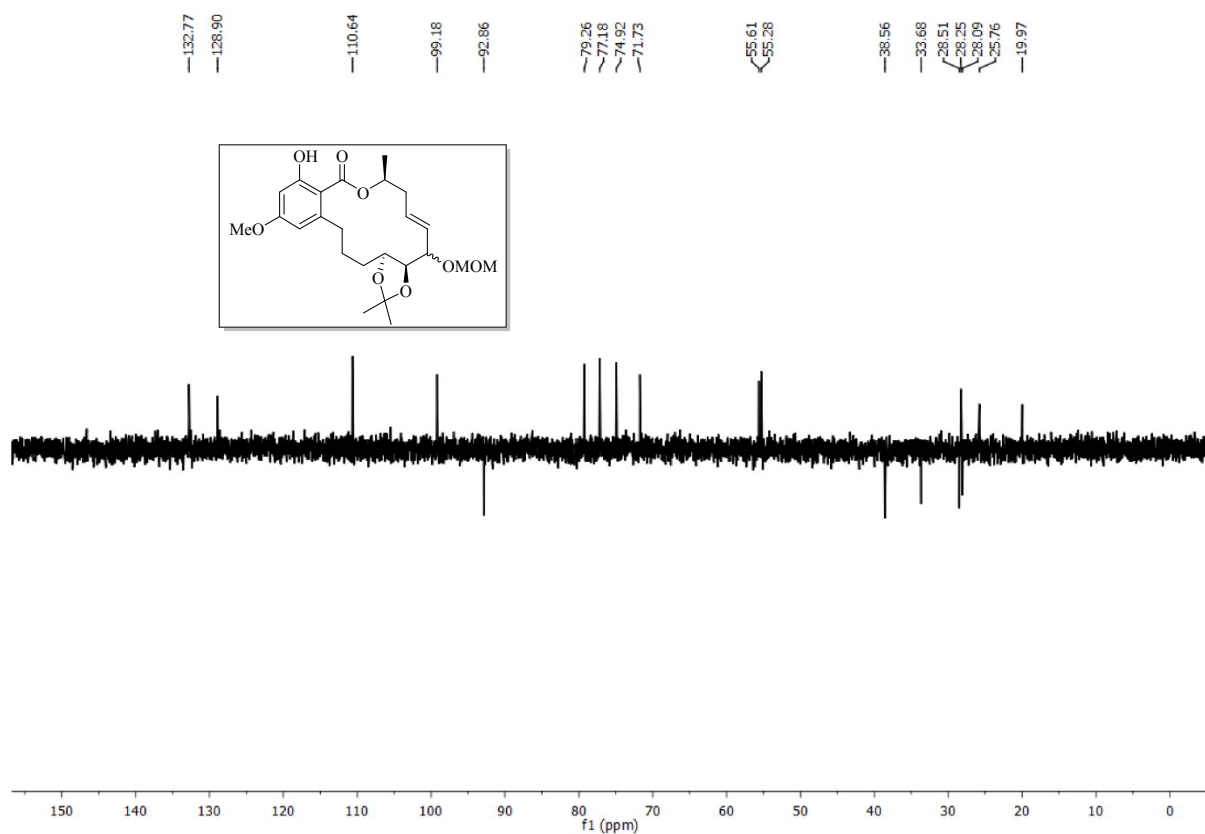
¹H NMR (400MHz) of compound 33 in CDCl₃



^{13}C NMR (100 MHz) of compound 33 in CDCl_3



DEPT (100 MHz) NMR of compound 33 in CDCl_3



Chemical structure of compound 10b is shown in the inset:

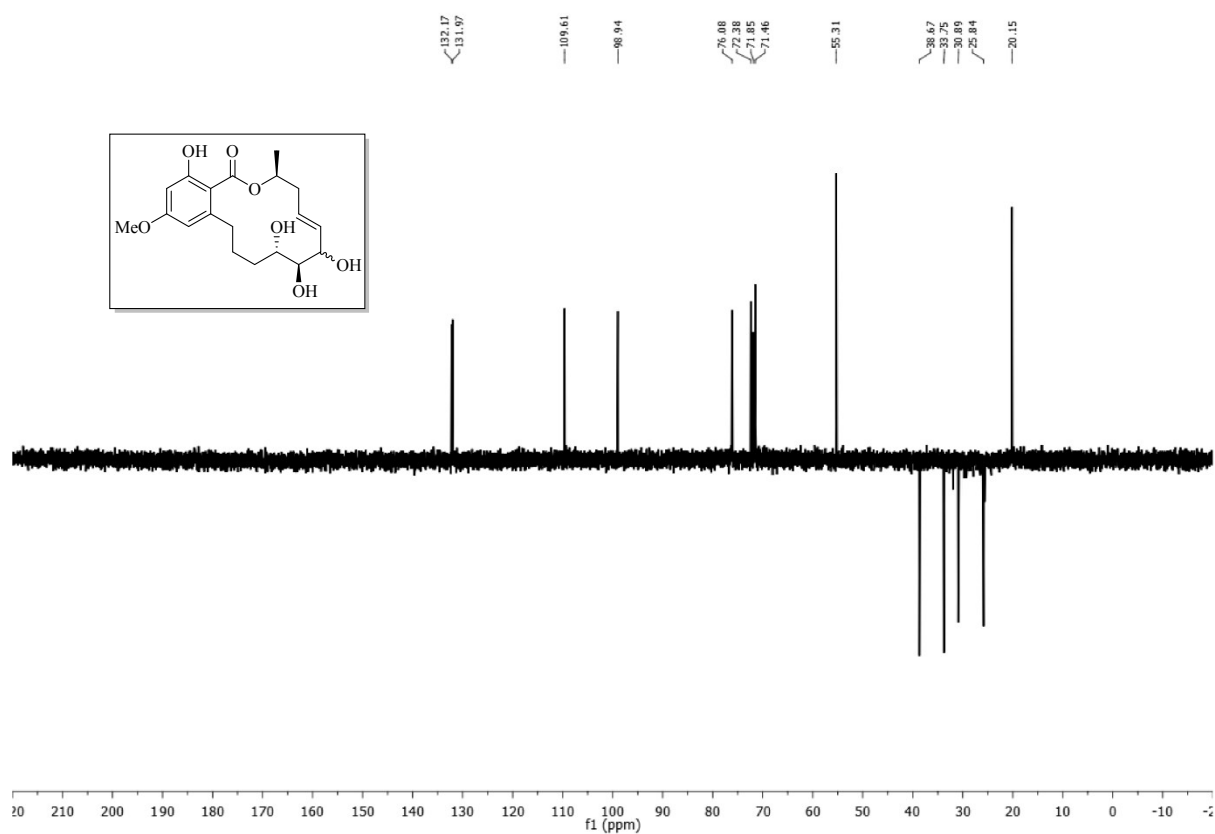
CC(C(C(C(C(=O)OC1=CC=C(OC)C=C1)O)O)O)O

¹H NMR spectrum (CDCl₃) of compound 10b. The spectrum displays peaks corresponding to the structure, with integration values indicated below the baseline and chemical shift values (ppm) indicated above the peaks.

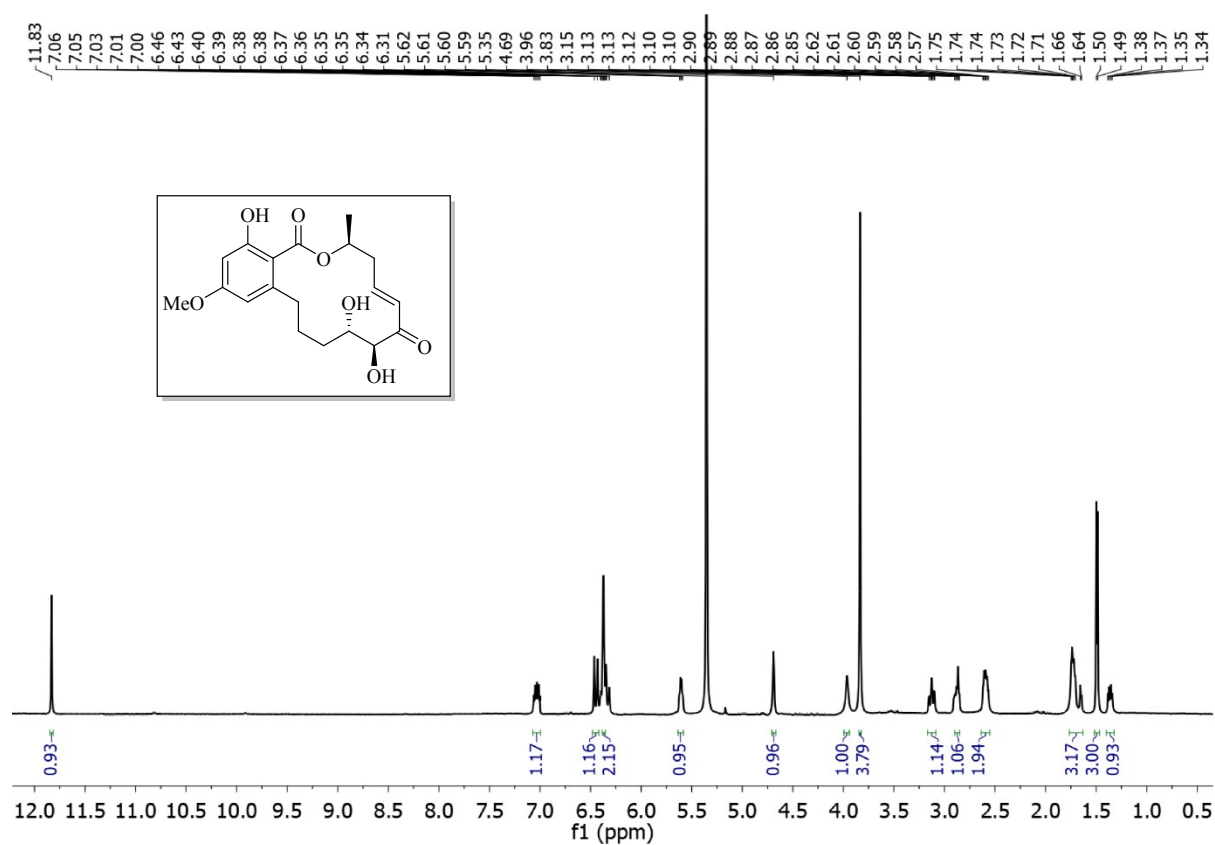
Chemical Shift (ppm)	Integration
~1.5	1.01
~1.6	1.67
~1.7	3.49
~2.5	1.24
~2.6	1.27
~2.9	1.37
~3.0	1.36
~3.8	1.08
~3.9	3.68
~4.1	1.16
~5.2	1.00
~5.4	1.05
~5.6	1.15
~6.2	1.82
~7.2	0.95

Chemical structure of **1** is shown in the inset. The structure is a complex molecule featuring a central carbon atom bonded to a methoxy group (MeO), a hydroxyl group (OH), and two other groups. The molecule is labeled with various carbon atoms (C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123, C124, C125, C126, C127, C128, C129, C130, C131, C132, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C149, C150, C151, C152, C153, C154, C155, C156, C157, C158, C159, C160, C161, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178, C179, C180, C181, C182, C183, C184, C185, C186, C187, C188, C189, C190, C191, C192, C193, C194, C195, C196, C197, C198, C199, C200, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C233, C234, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C247, C248, C249, C250, C251, C252, C253, C254, C255, C256, C257, C258, C259, C260, C261, C262, C263, C264, C265, C266, C267, C268, C269, C270, C271, C272, C273, C274, C275, C276, C277, C278, C279, C280, C281, C282, C283, C284, C285, C286, C287, C288, C289, C290, C291, C292, C293, C294, C295, C296, C297, C298, C299, C300, C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C312, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C327, C328, C329, C330, C331, C332, C333, C334, C335, C336, C337, C338, C339, C340, C341, C342, C343, C344, C345, C346, C347, C348, C349, C350, C351, C352, C353, C354, C355, C356, C357, C358, C359, C360, C361, C362, C363, C364, C365, C366, C367, C368, C369, C370, C371, C372, C373, C374, C375, C376, C377, C378, C379, C380, C381, C382, C383, C384, C385, C386, C387, C388, C389, C390, C391, C392, C393, C394, C395, C396, C397, C398, C399, C400, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413, C414, C415, C416, C417, C418, C419, C420, C421, C422, C423, C424, C425, C426, C427, C428, C429, C430, C431, C432, C433, C434, C435, C436, C437, C438, C439, C440, C441, C442, C443, C444, C445, C446, C447, C448, C449, C450, C451, C452, C453, C454, C455, C456, C457, C458, C459, C460, C461, C462, C463, C464, C465, C466, C467, C468, C469, C470, C471, C472, C473, C474, C475, C476, C477, C478, C479, C480, C481, C482, C483, C484, C485, C486, C487, C488, C489, C490, C491, C492, C493, C494, C495, C496, C497, C498, C499, C500, C501, C502, C503, C504, C505, C506, C507, C508, C509, C510, C511, C512, C513, C514, C515, C516, C517, C518, C519, C520, C521, C522, C523, C524, C525, C526, C527, C528, C529, C530, C531, C532, C533, C534, C535, C536, C537, C538, C539, C540, C541, C542, C543, C544, C545, C546, C547, C548, C549, C550, C551, C552, C553, C554, C555, C556, C557, C558, C559, C560, C561, C562, C563, C564, C565, C566, C567, C568, C569, C570, C571, C572, C573, C574, C575, C576, C577, C578, C579, C580, C581, C582, C583, C584, C585, C586, C587, C588, C589, C590, C591, C592, C593, C594, C595, C596, C597, C598, C599, C600, C601, C602, C603, C604, C605, C606, C607, C608, C609, C610, C611, C612, C613, C614, C615, C616, C617, C618, C619, C620, C621, C622, C623, C624, C625, C626, C627, C628, C629, C630, C631, C632, C633, C634, C635, C636, C637, C638, C639, C640, C641, C642, C643, C644, C645, C646, C647, C648, C649, C650, C651, C652, C653, C654, C655, C656, C657, C658, C659, C660, C661, C662, C663, C664, C665, C666, C667, C668, C669, C670, C671, C672, C673, C674, C675, C676, C677, C678, C679, C680, C681, C682, C683, C684, C685, C686, C687, C688, C689, C690, C691, C692, C693, C694, C695, C696, C697, C698, C699, C700, C701, C702, C703, C704, C705, C706, C707, C708, C709, C710, C711, C712, C713, C714, C715, C716, C717, C718, C719, C720, C721, C722, C723, C724, C725, C726, C727, C728, C729, C730, C731, C732, C733, C734, C735, C736, C737, C738, C739, C740, C741, C742, C743, C744, C745, C746, C747, C748, C749, C750, C751, C752, C753, C754, C755, C756, C757, C758, C759, C760, C761, C762, C763, C764, C765, C766, C767, C768, C769, C770, C771, C772, C773, C774, C775, C776, C777, C778, C779, C780, C781, C782, C783, C784, C785, C786, C787, C788, C789, C790, C791, C792, C793, C794, C795, C796, C797, C798, C799, C800, C801, C802, C803, C804, C805, C806, C807, C808, C809, C810, C811, C812, C813, C814, C815, C816, C817, C818, C819, C820, C821, C822, C823, C824, C825, C826, C827, C828, C8

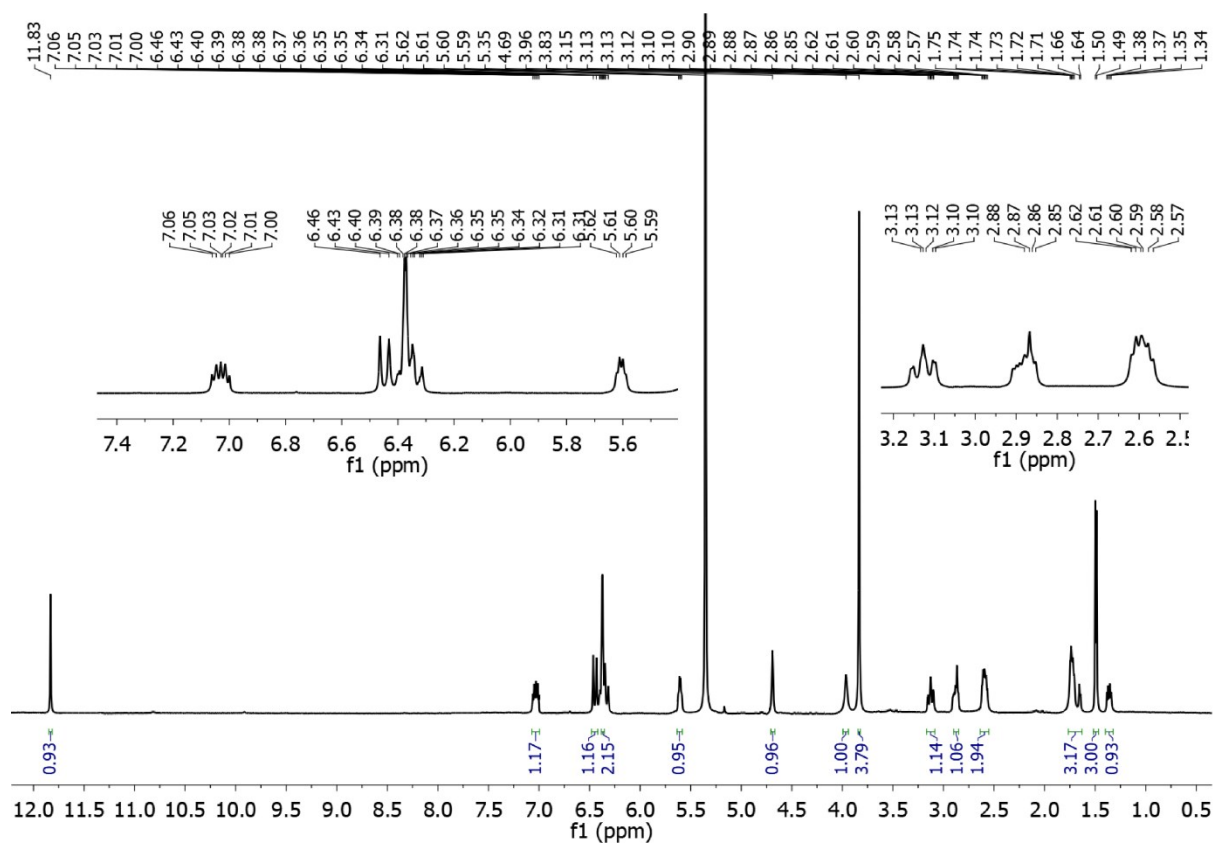
DEPT (150 MHz) NMR of compound 34 in CDCl₃



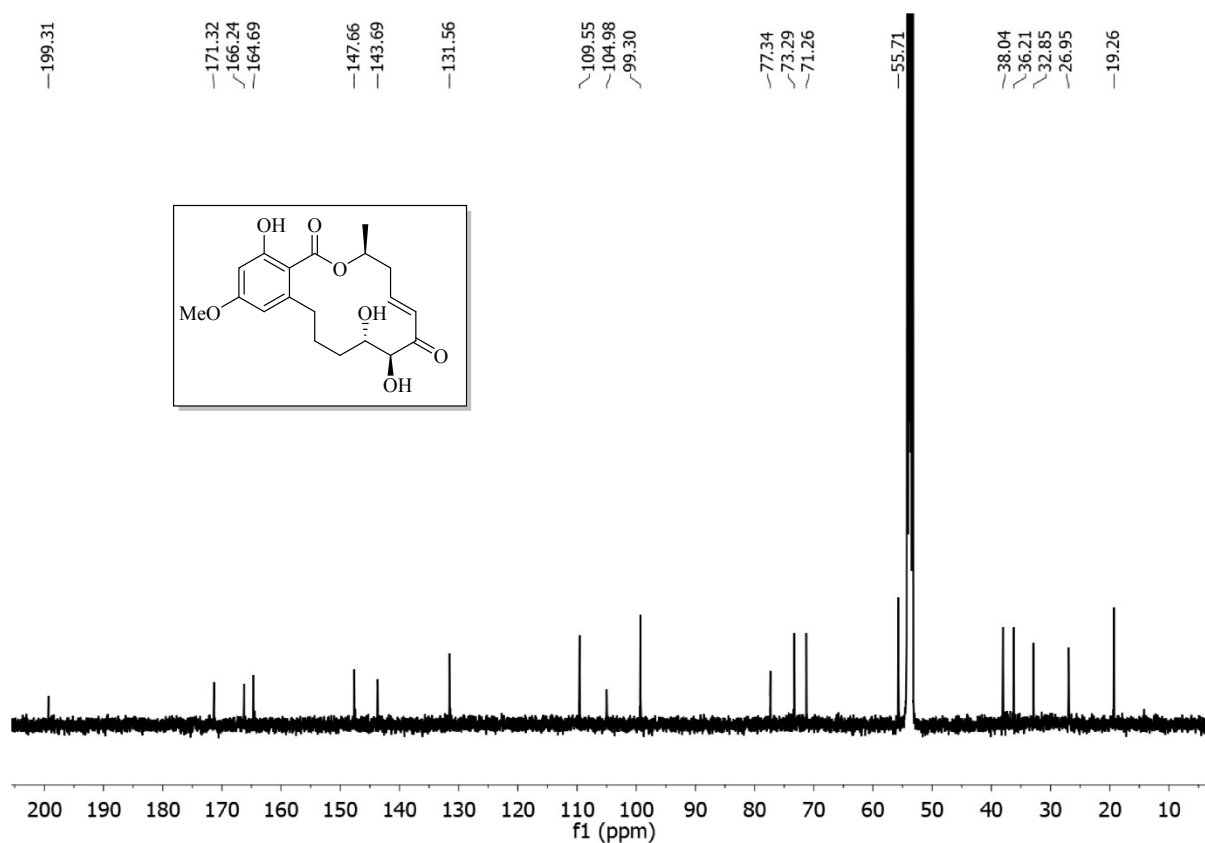
¹H NMR (500MHz) of L-783290 in CD₂Cl₂



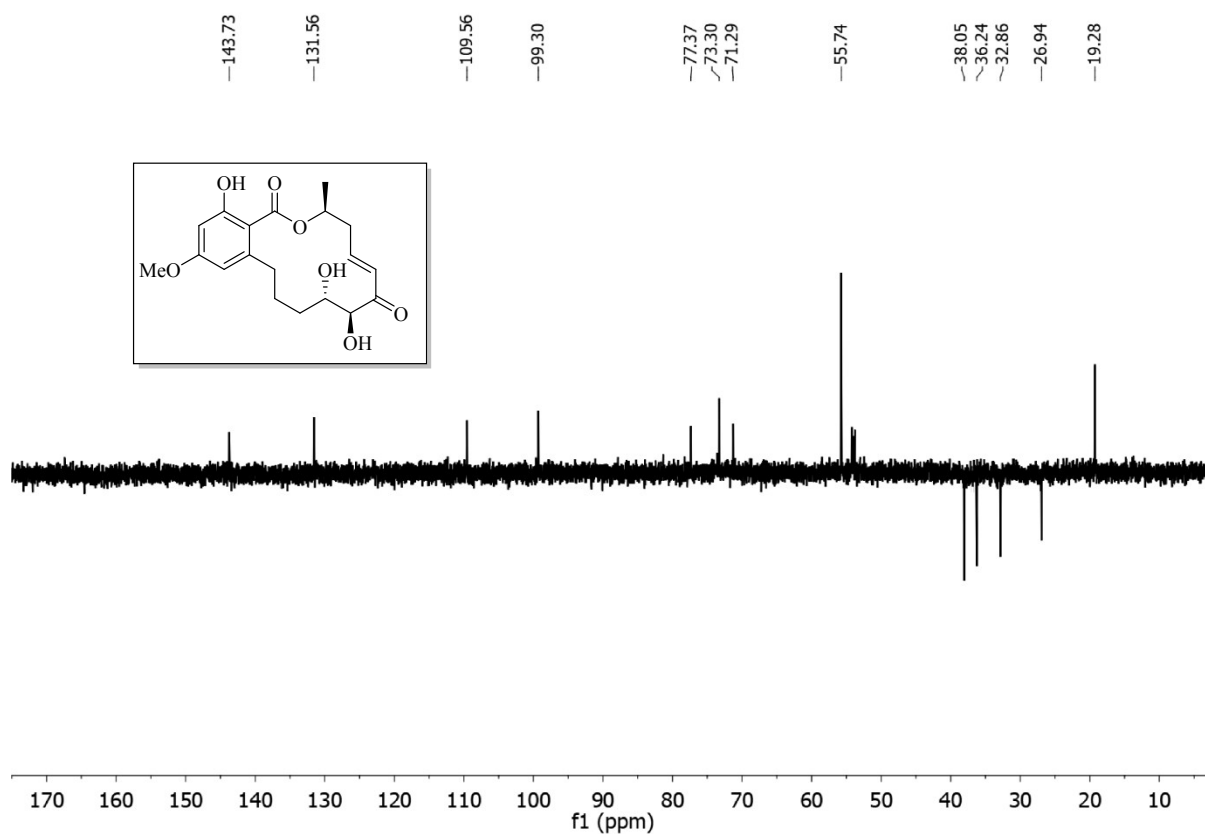
¹H NMR (500MHz) of L-783290 in CD₂Cl₂ (expanded)



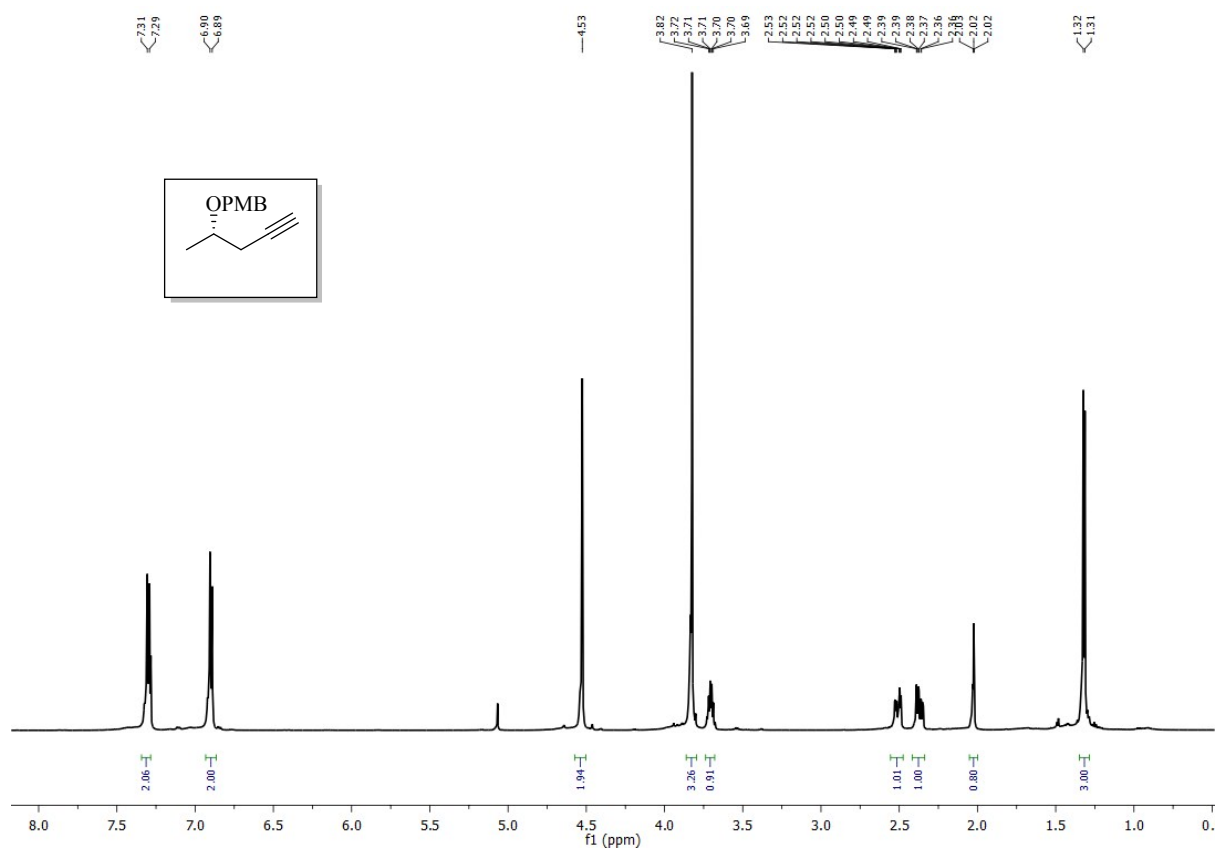
¹³C NMR (125 MHz) of L-783290 in CD₂Cl₂



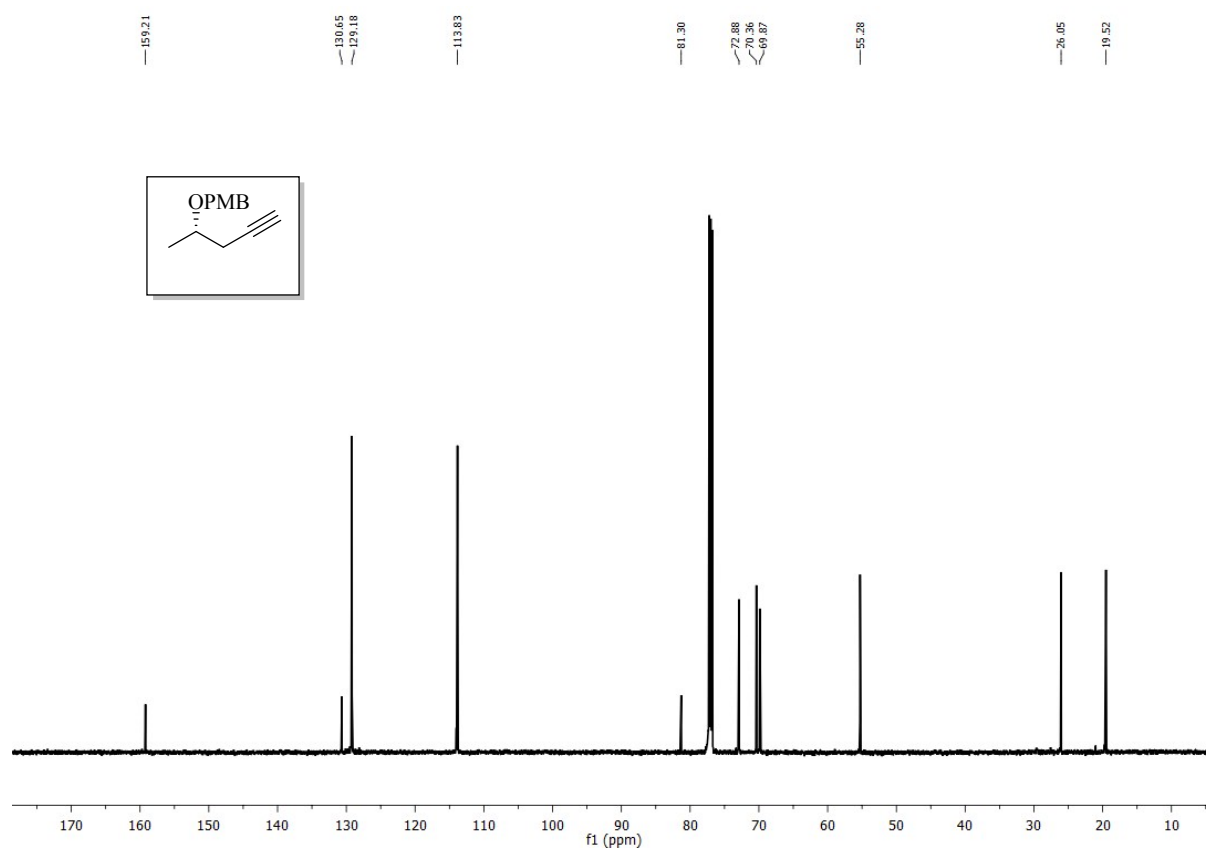
DEPT (125 MHz) NMR of L-783290 in CD₂Cl₂



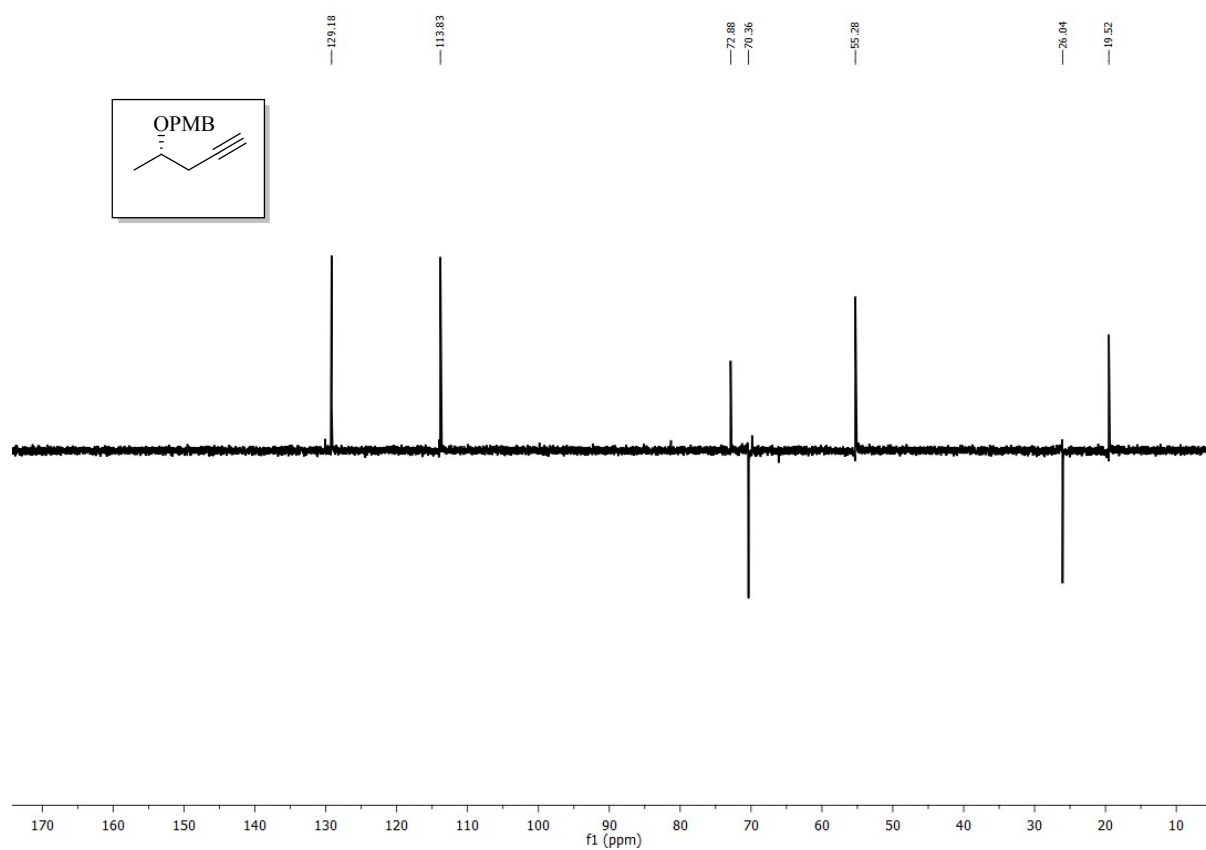
¹H NMR (600MHz) of compound 35 in CDCl₃



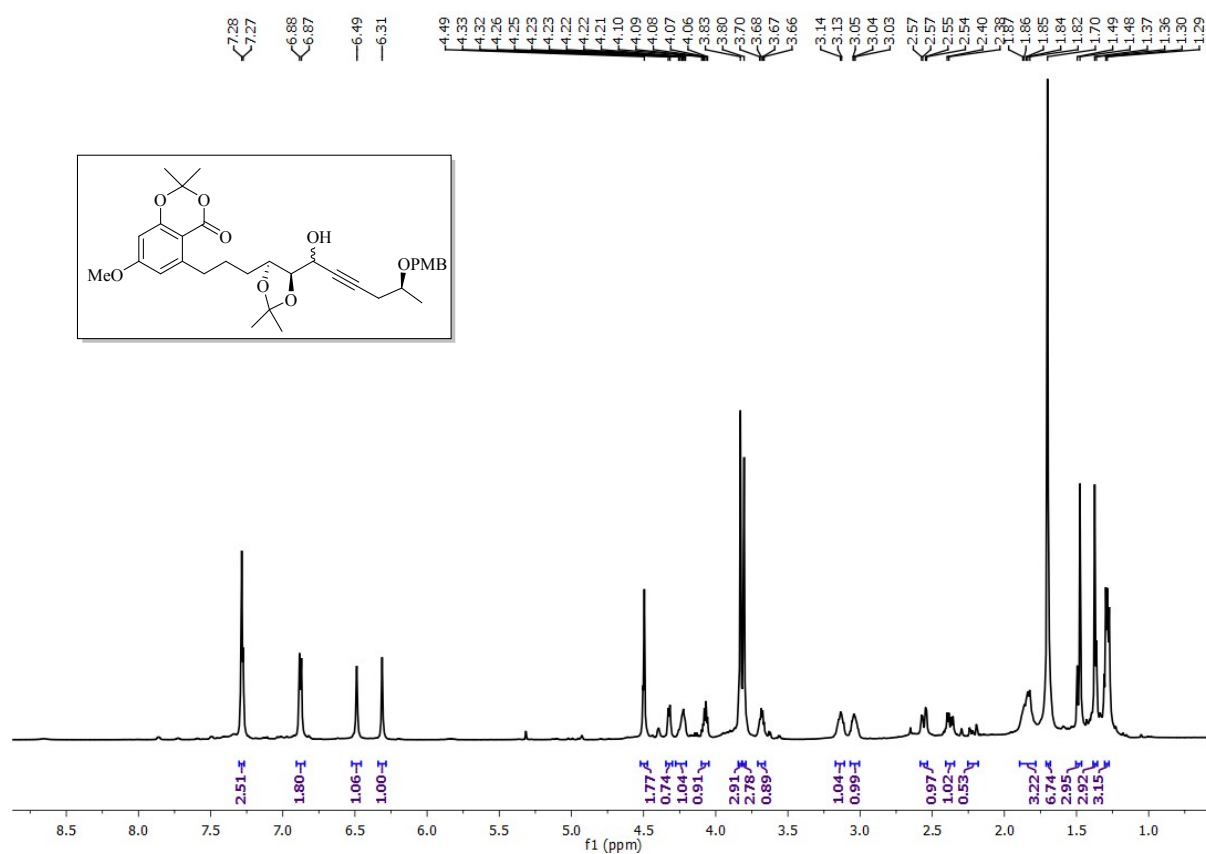
^{13}C NMR (150 MHz) of compound 35 in CDCl_3



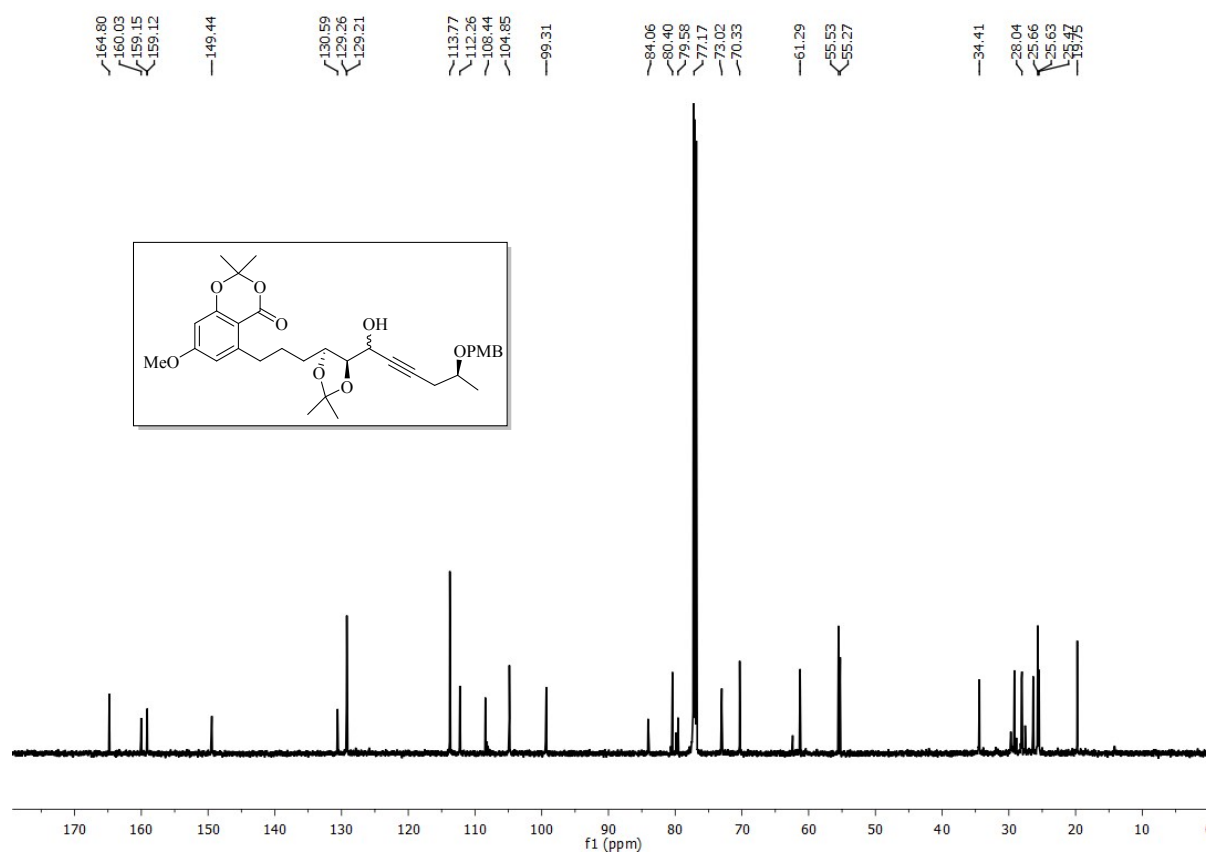
DEPT (150 MHz) NMR of compound 35 in CDCl_3



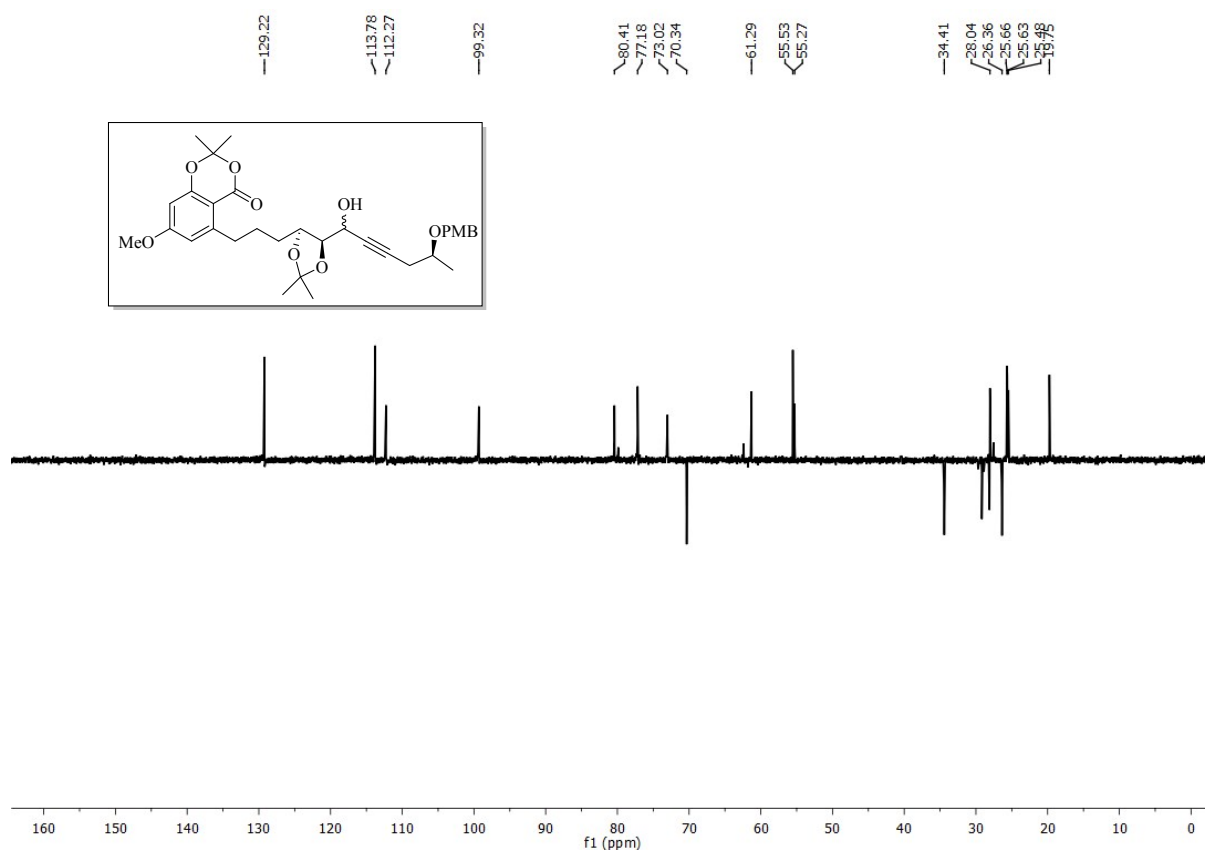
¹H NMR (600MHz) of compound 13 in CDCl₃



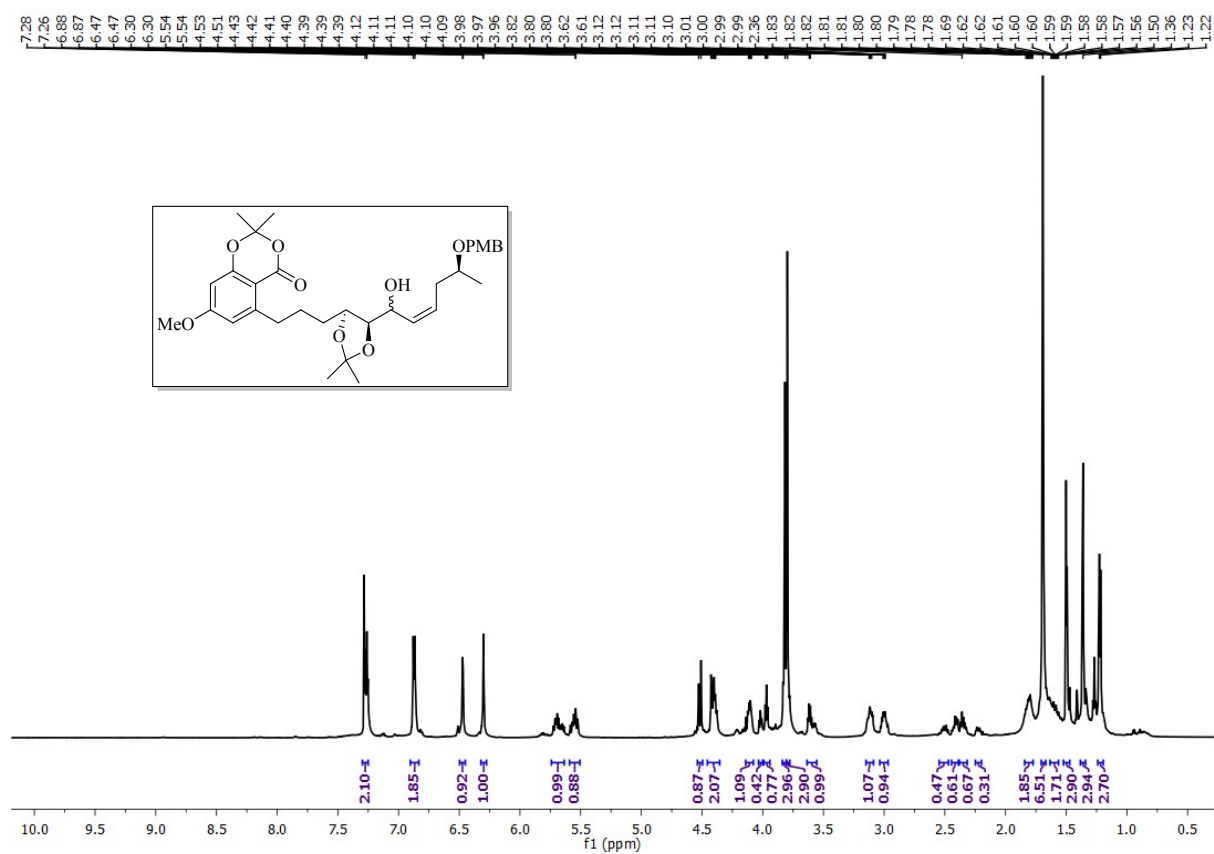
¹³C NMR (150 MHz) of compound 13 in CDCl₃



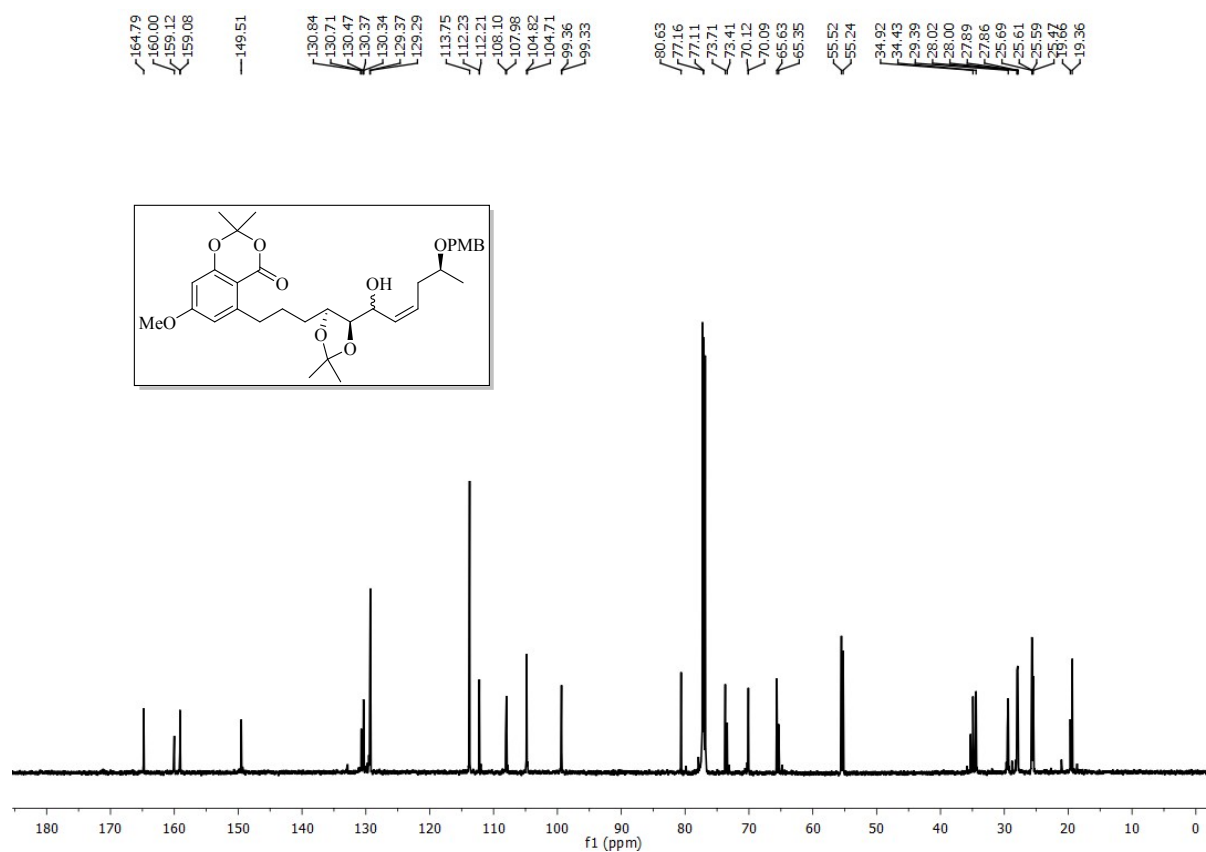
DEPT (150 MHz) NMR of compound 13 in CDCl₃



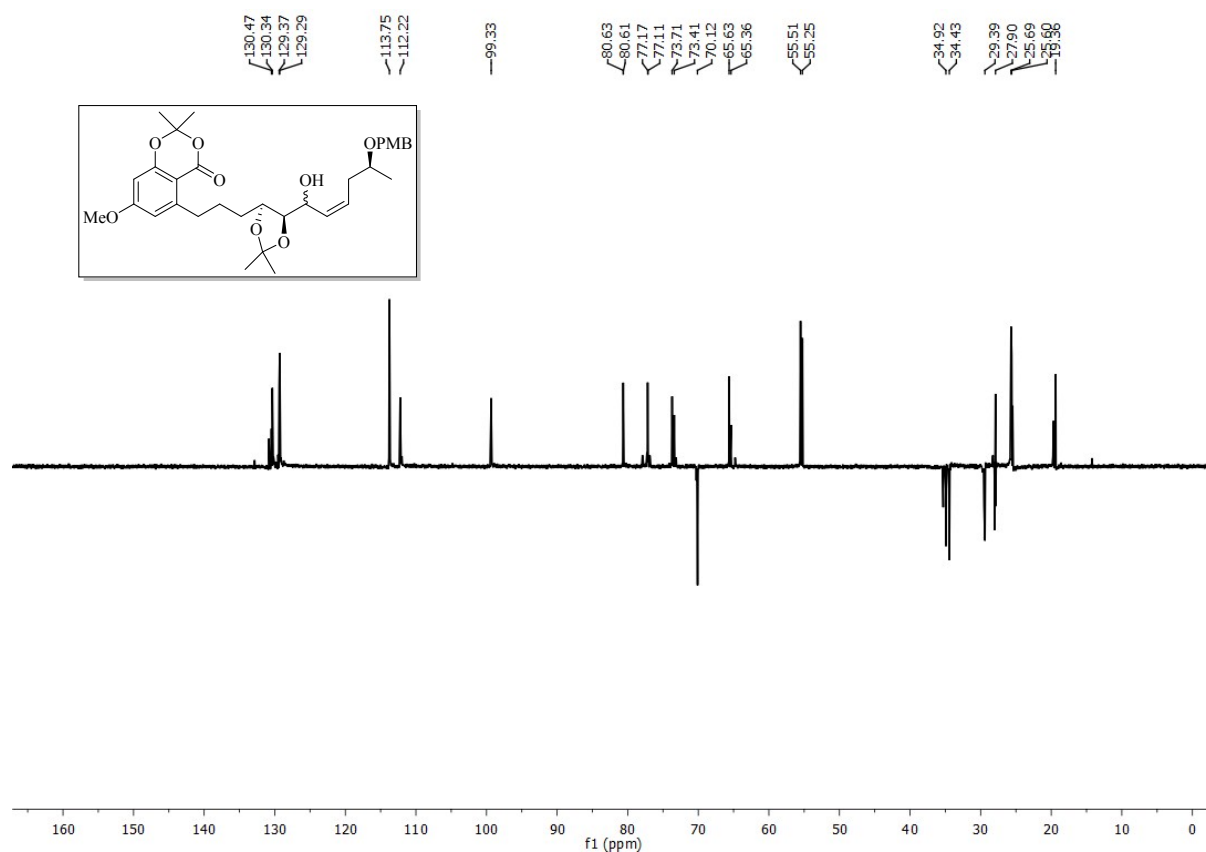
¹H NMR (600MHz) of compound 36 in CDCl₃



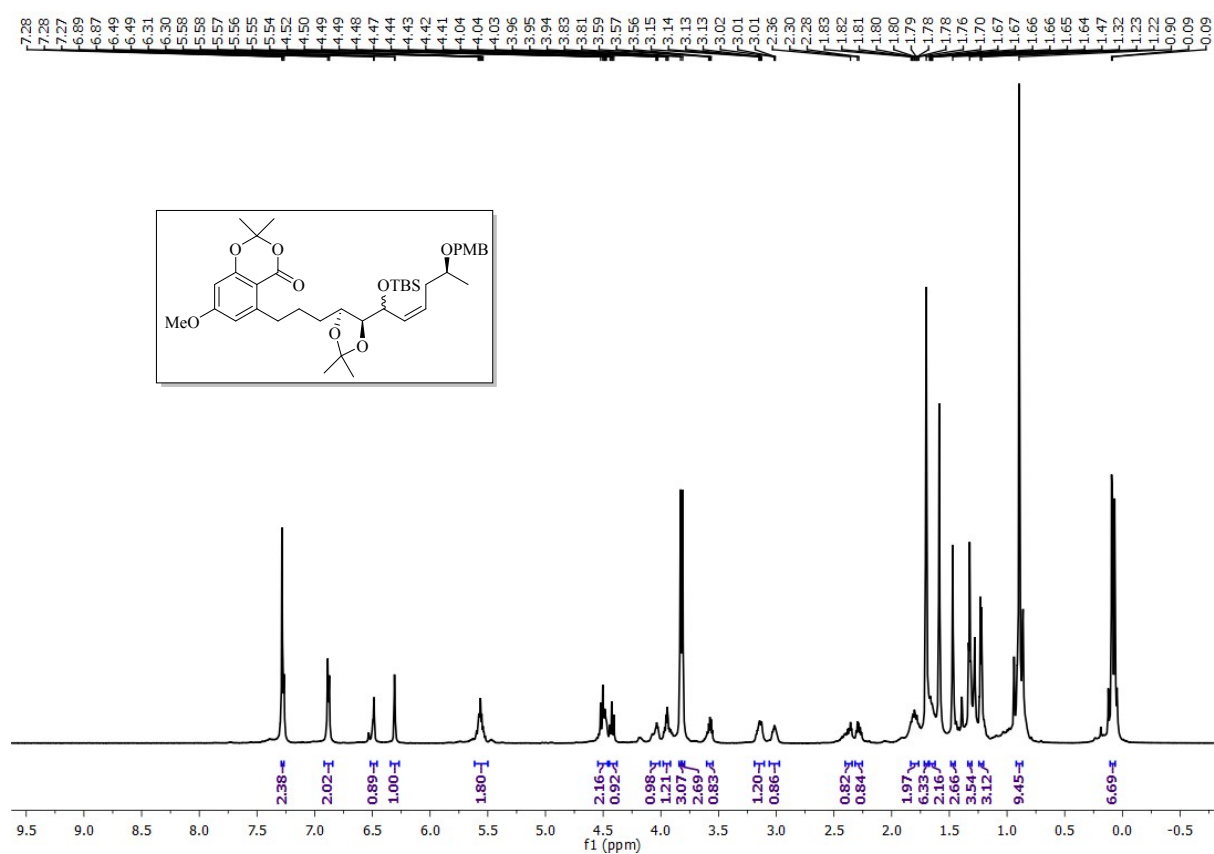
^{13}C NMR (150 MHz) of compound 36 in CDCl_3



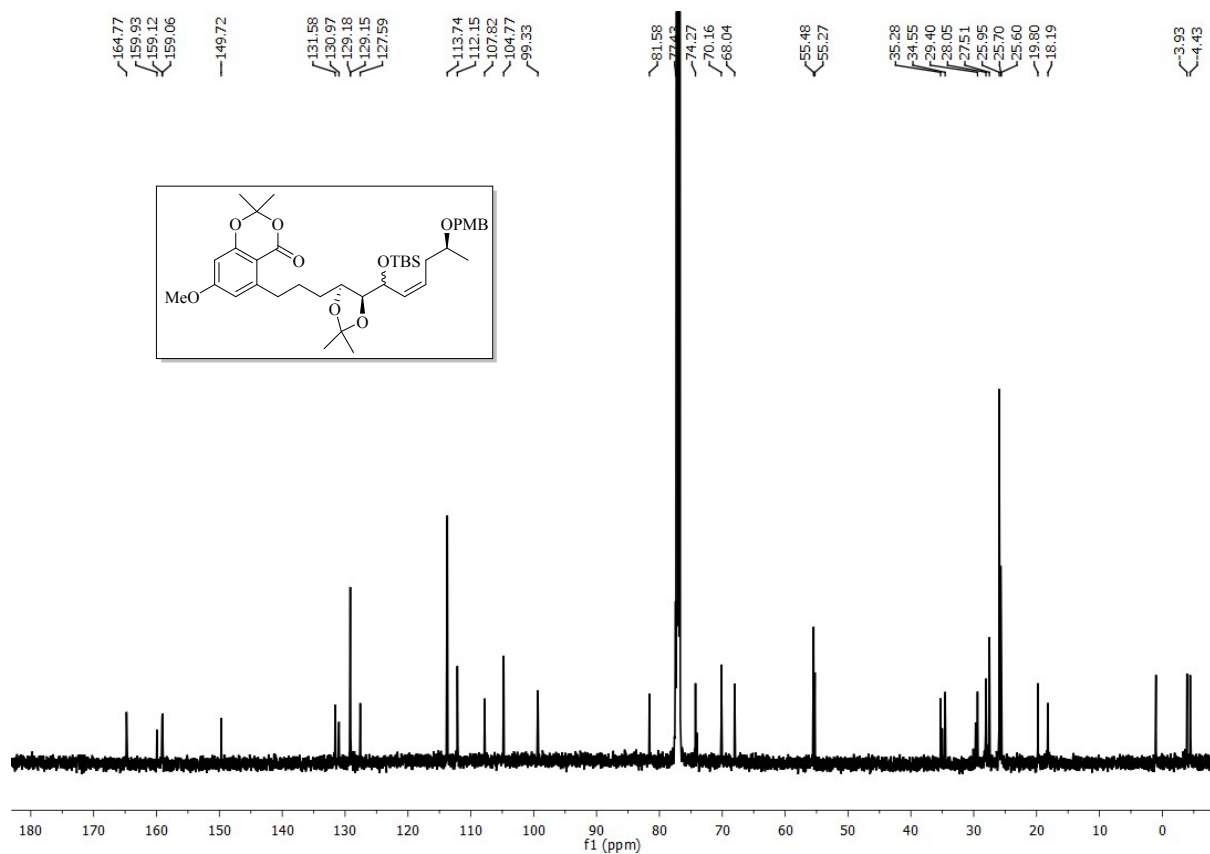
DEPT (150 MHz) NMR of compound 36 in CDCl_3



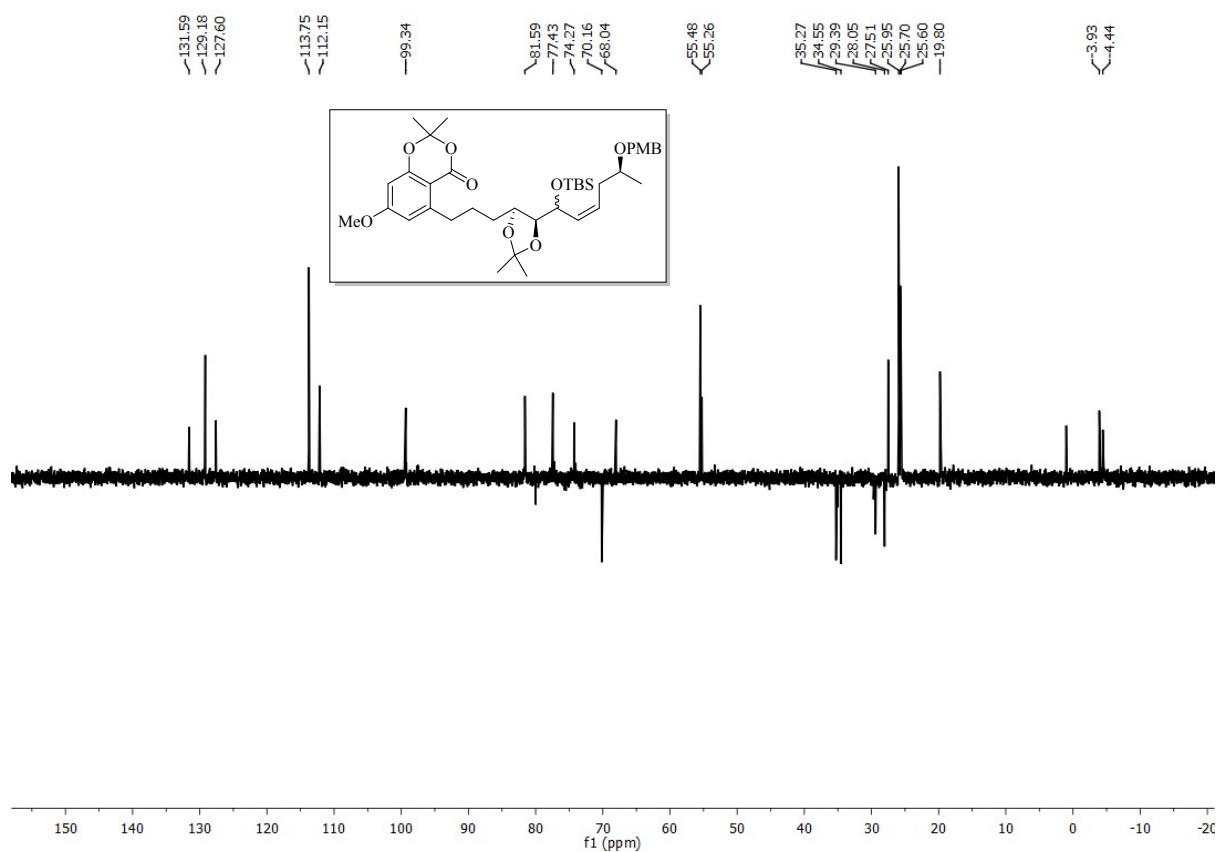
^1H NMR (600MHz) of compound 37 in CDCl_3



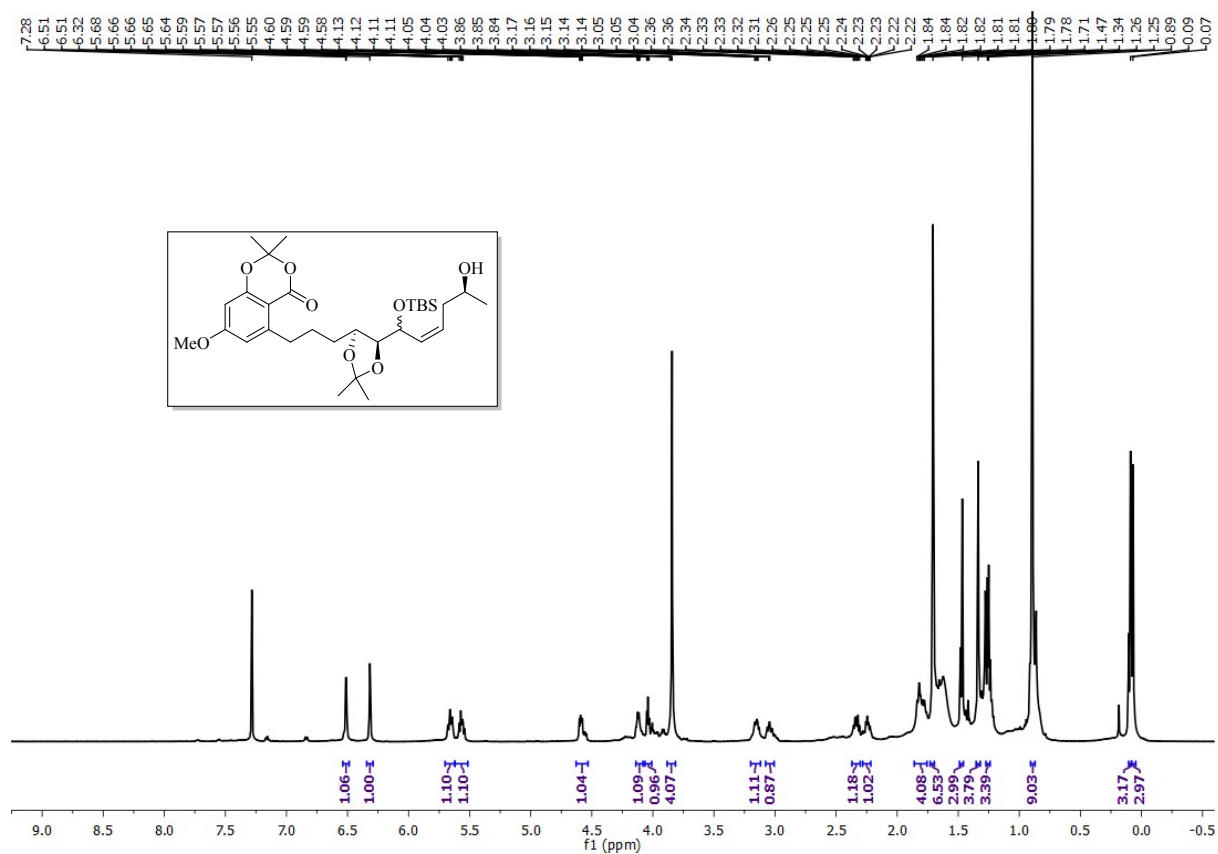
^{13}C NMR (150 MHz) of compound 37 in CDCl_3



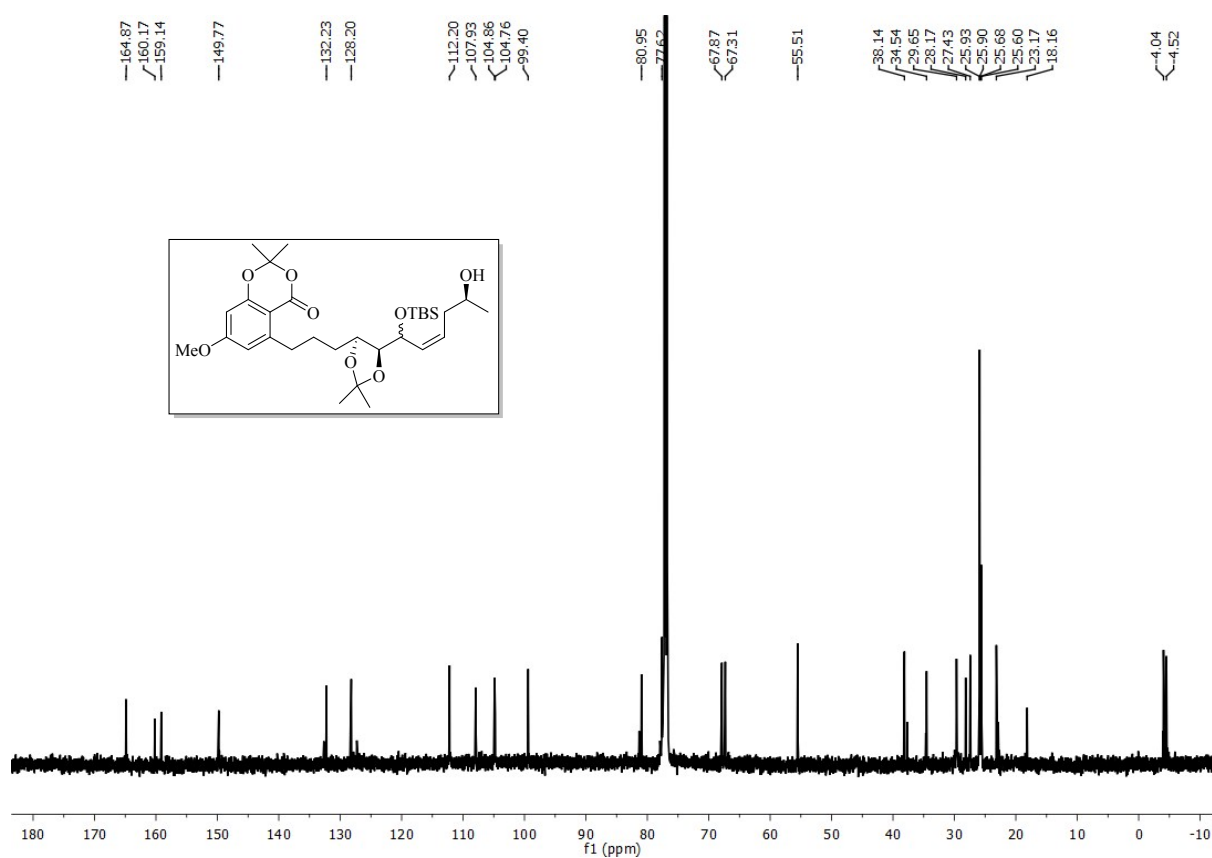
DEPT (150 MHz) NMR of compound 37 in CDCl₃



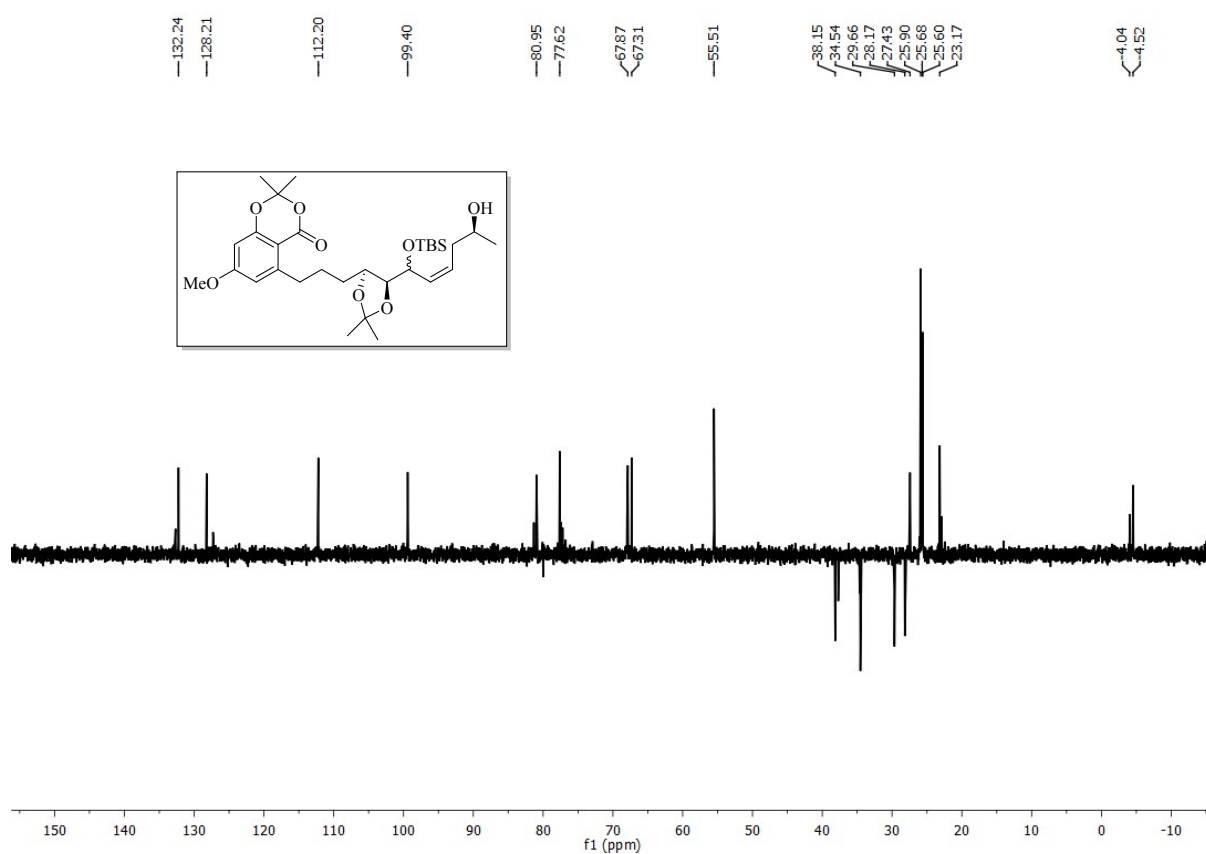
¹H NMR (600MHz) of compound 38 in CDCl₃



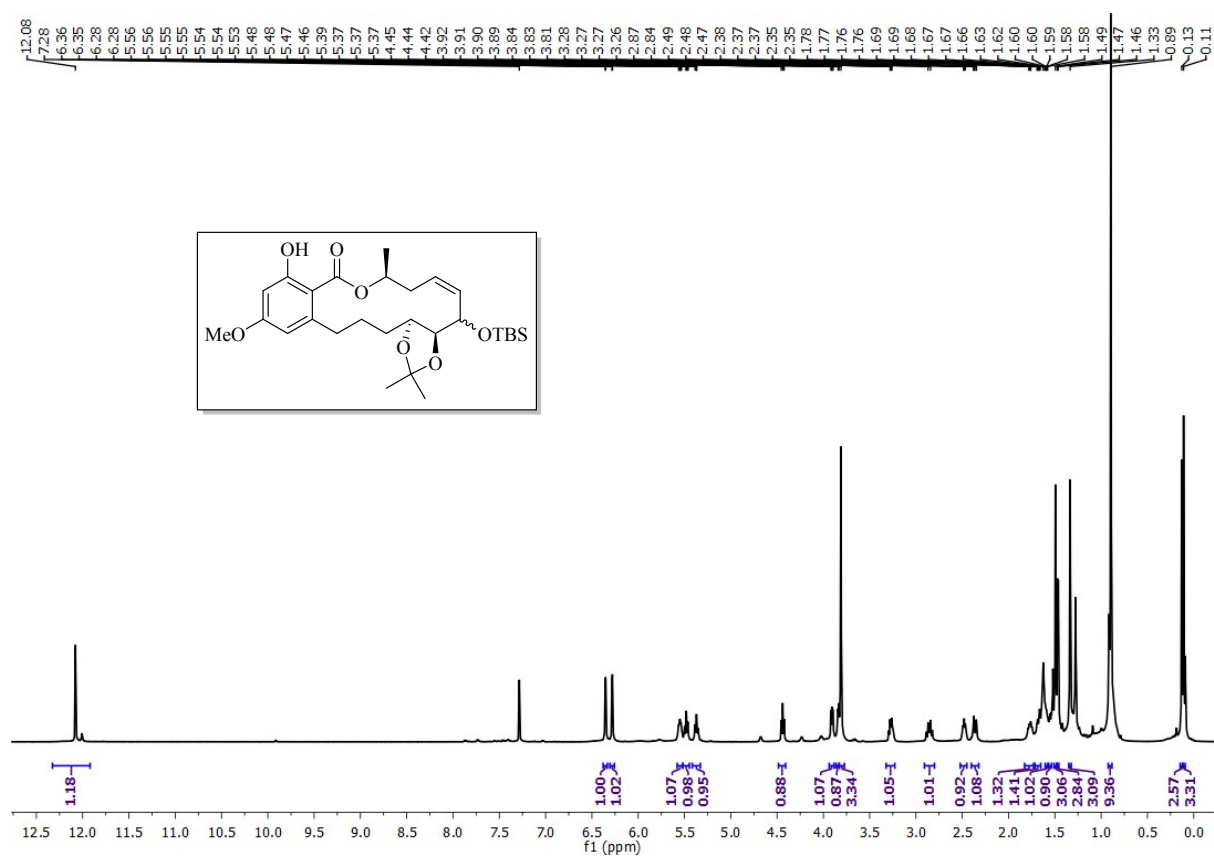
^{13}C NMR (150 MHz) of compound 38 in CDCl_3



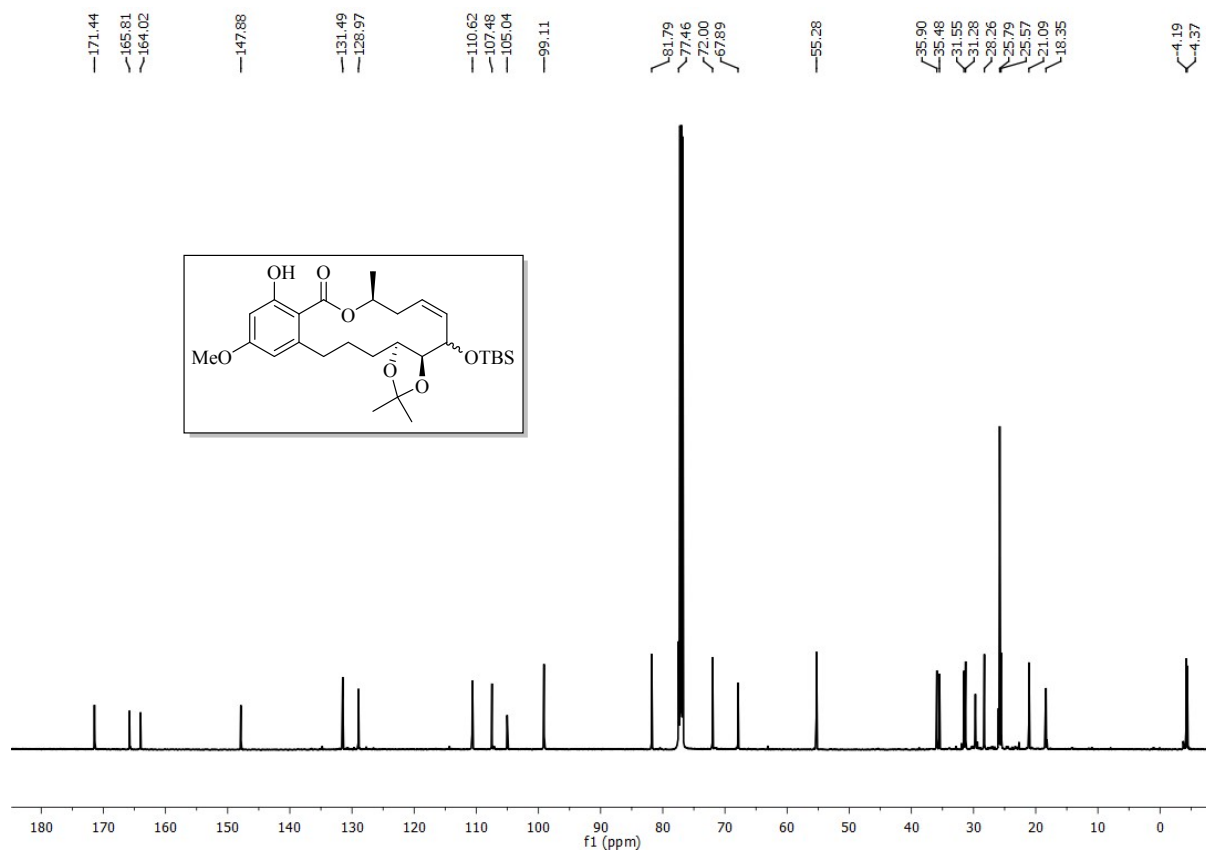
DEPT (150 MHz) NMR of compound 38 in CDCl_3



^1H NMR (600MHz) of compound 39 in CDCl_3



^{13}C NMR (150 MHz) of compound 39 in CDCl_3



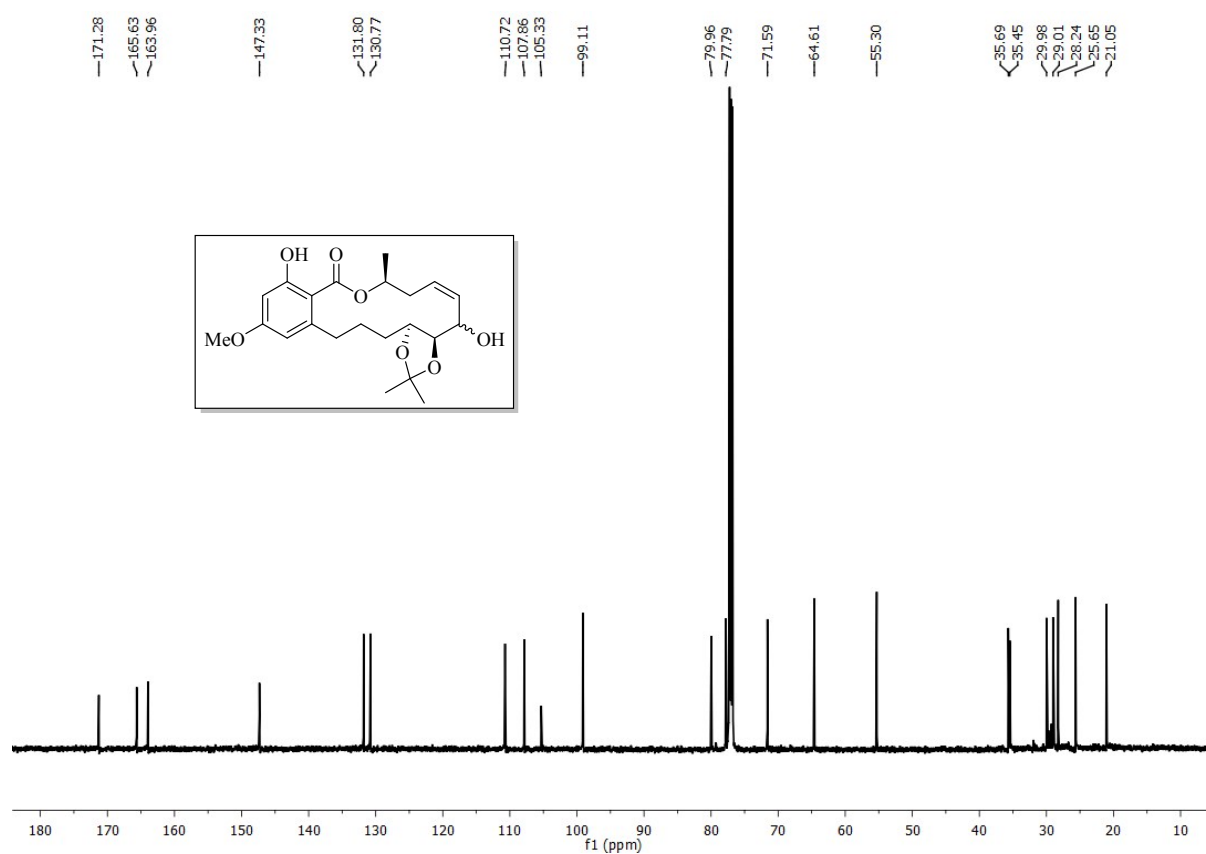
Chemical structure of the compound is shown in the inset. The structure is a complex molecule featuring a substituted benzene ring with a methoxy group (MeO) and a hydroxyl group (OH). It is linked via an ester group to a side chain containing a double bond, a methyl group, and a silyl ether group (OTBS). The molecule also contains a cyclic acetal or ether structure.

The ¹³C NMR spectrum (f1 (ppm)) shows the following chemical shifts (ppm):

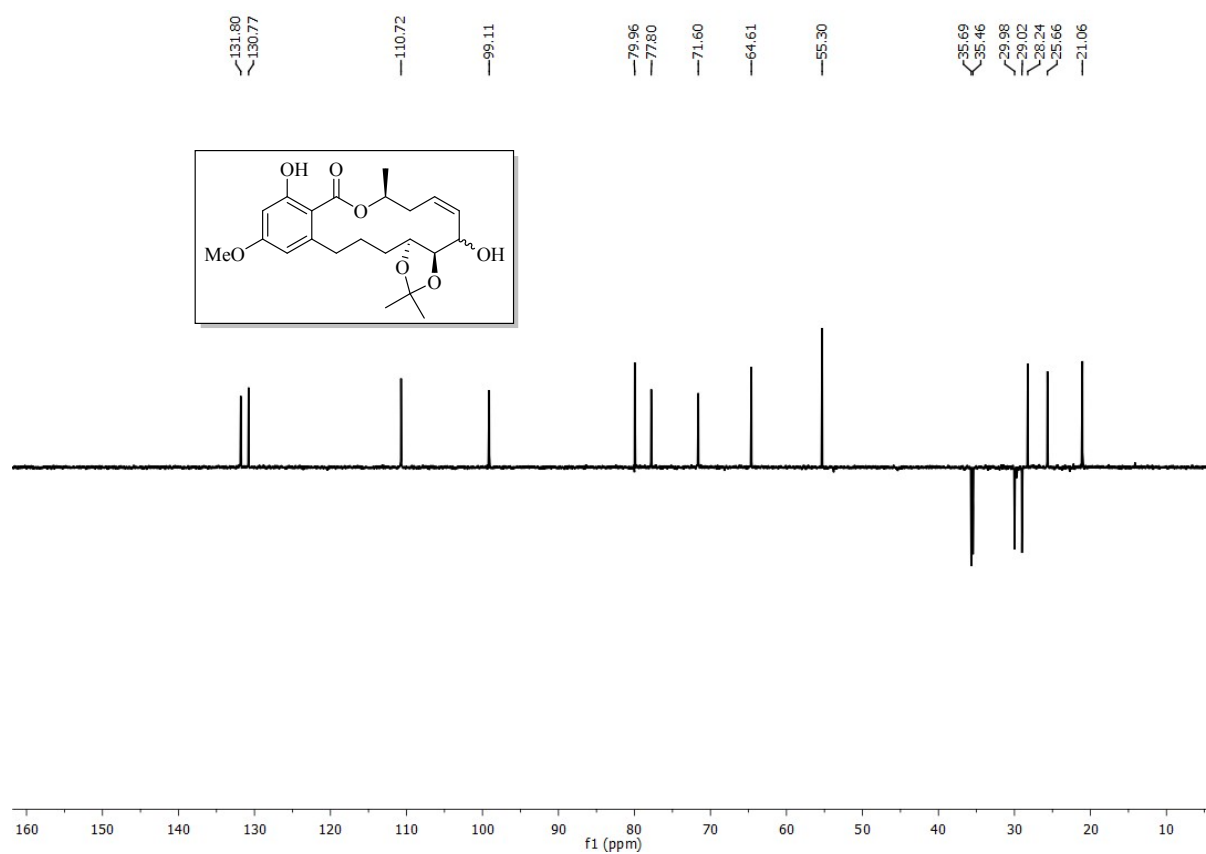
- 131.49
- 128.96
- 110.61
- 99.11
- 81.79
- 77.46
- 71.99
- 67.89
- 55.28
- 35.90
- 35.48
- 31.55
- 31.28
- 28.26
- 25.80
- 25.57
- 21.09
- 4.18
- 4.37

The ¹H NMR spectrum (400 MHz, CDCl₃) of compound 10 is shown. The chemical structure of compound 10 is an inset in the top left. The structure is a complex molecule featuring a benzene ring with a methoxy group (MeO) and a hydroxyl group (OH). It is connected via a ketone group (C=O) to a side chain that includes a quaternary carbon with two methyl groups, an ether oxygen, and a terminal hydroxyl group. The spectrum displays peaks from 0.5 to 12.5 ppm. Key peaks are labeled with their chemical shifts and integrations: 0.90 (3H, s), 1.00 (3H, s), 1.91 (1H, s), 0.84 (1H, s), 0.86 (1H, s), 0.85 (1H, s), 2.98 (1H, s), 1.02 (1H, s), 0.92 (1H, s), 1.27 (1H, s), 0.82 (1H, s), 0.94 (1H, s), 1.05 (1H, s), 1.16 (1H, s), 2.00 (1H, s), 3.06 (1H, s), 3.28 (1H, s), and 2.96 (1H, s). The x-axis is labeled 'f1 (ppm)' and ranges from 12.5 to 0.5. The y-axis represents intensity, with a scale from 0 to 11.99.

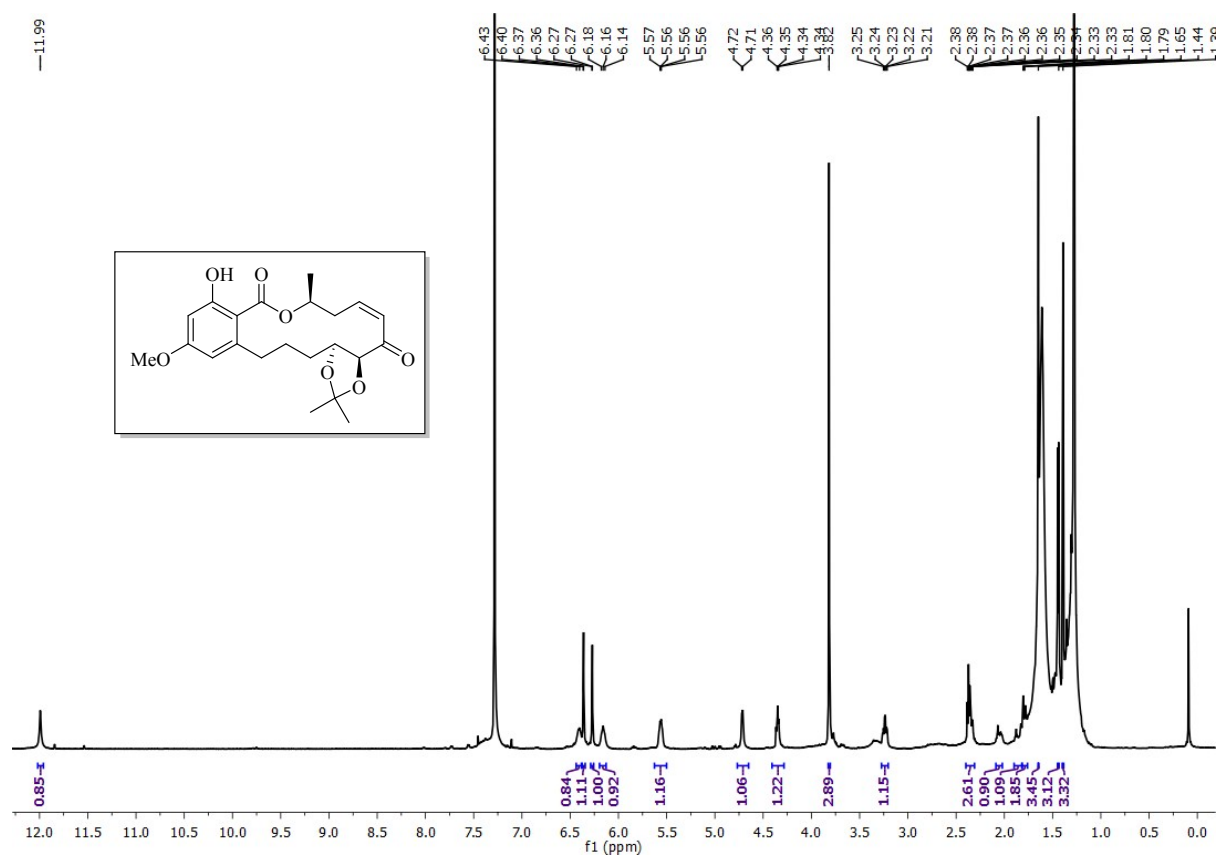
^{13}C NMR (150 MHz) of compound 40 in CDCl_3



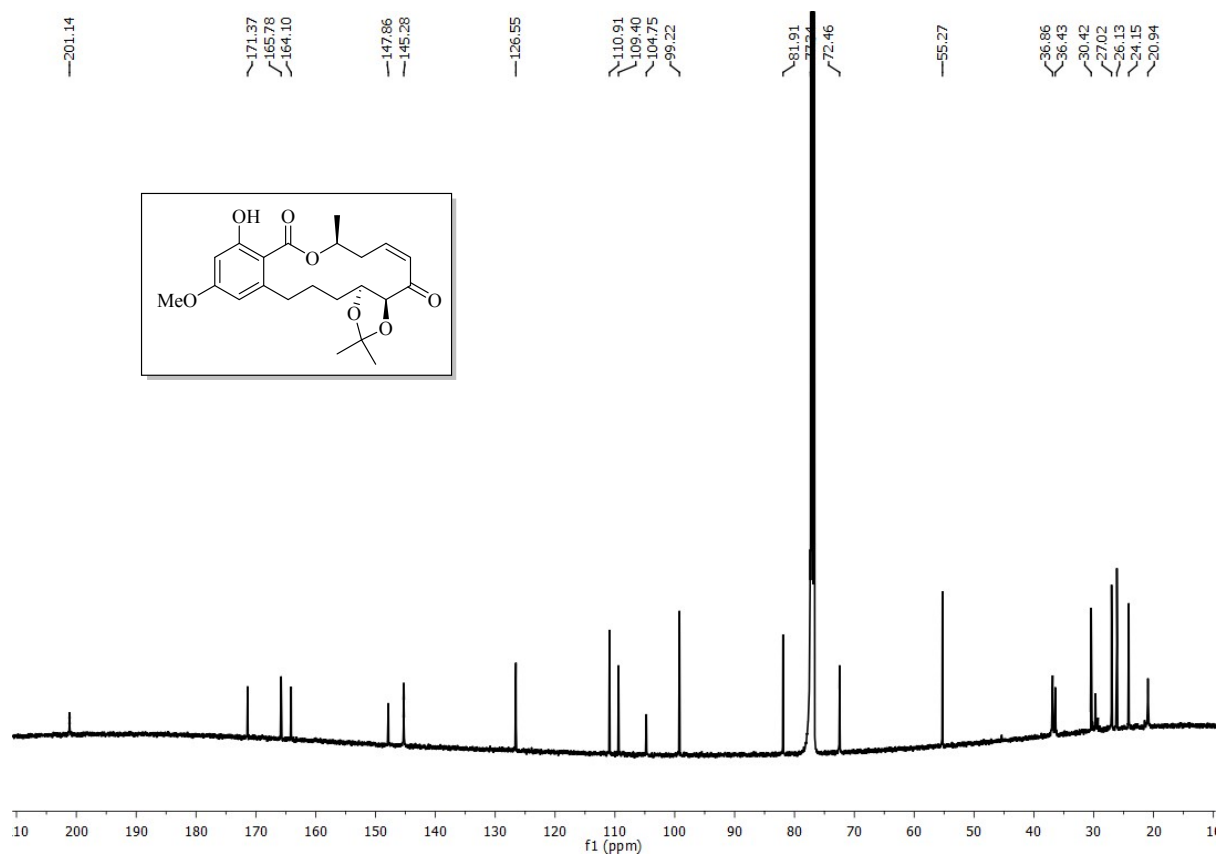
DEPT (150 MHz) NMR of compound 40 in CDCl_3



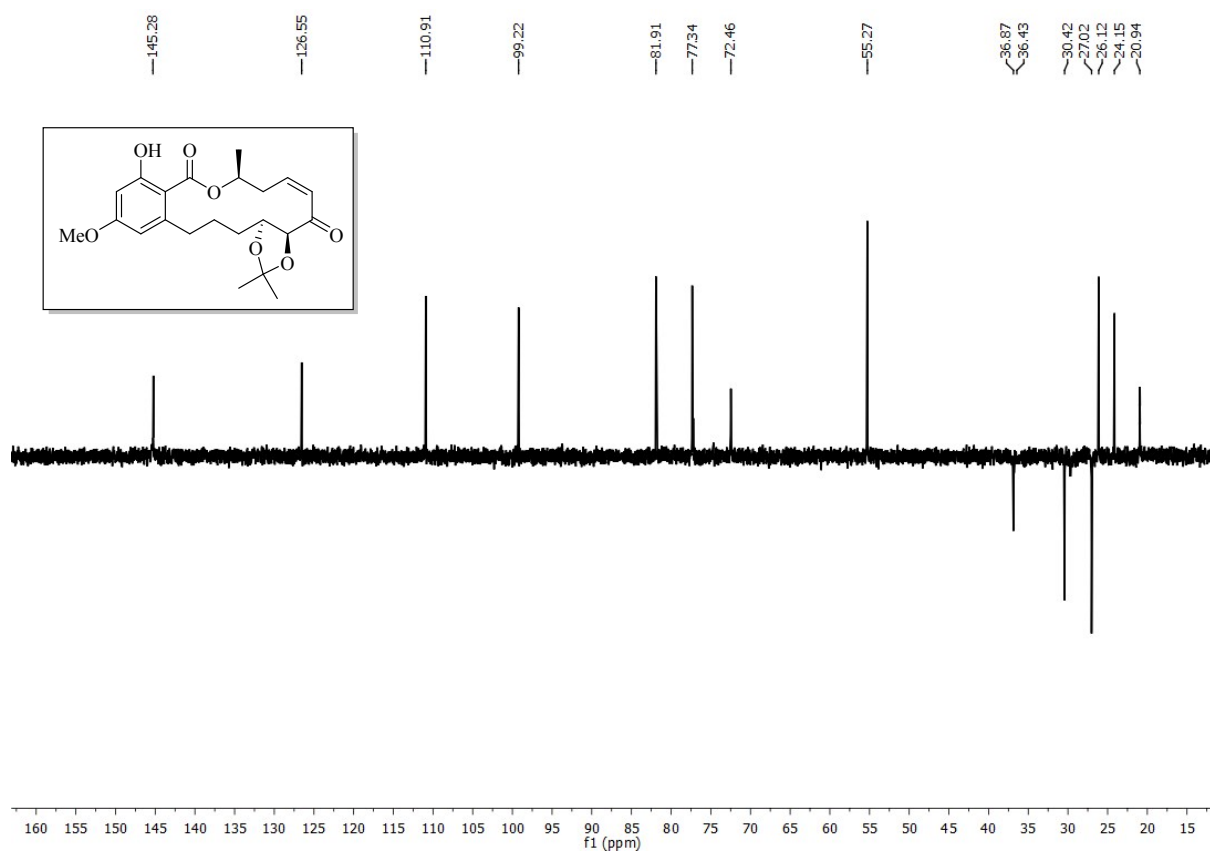
¹H NMR (600MHz) of compound 41 in CDCl₃



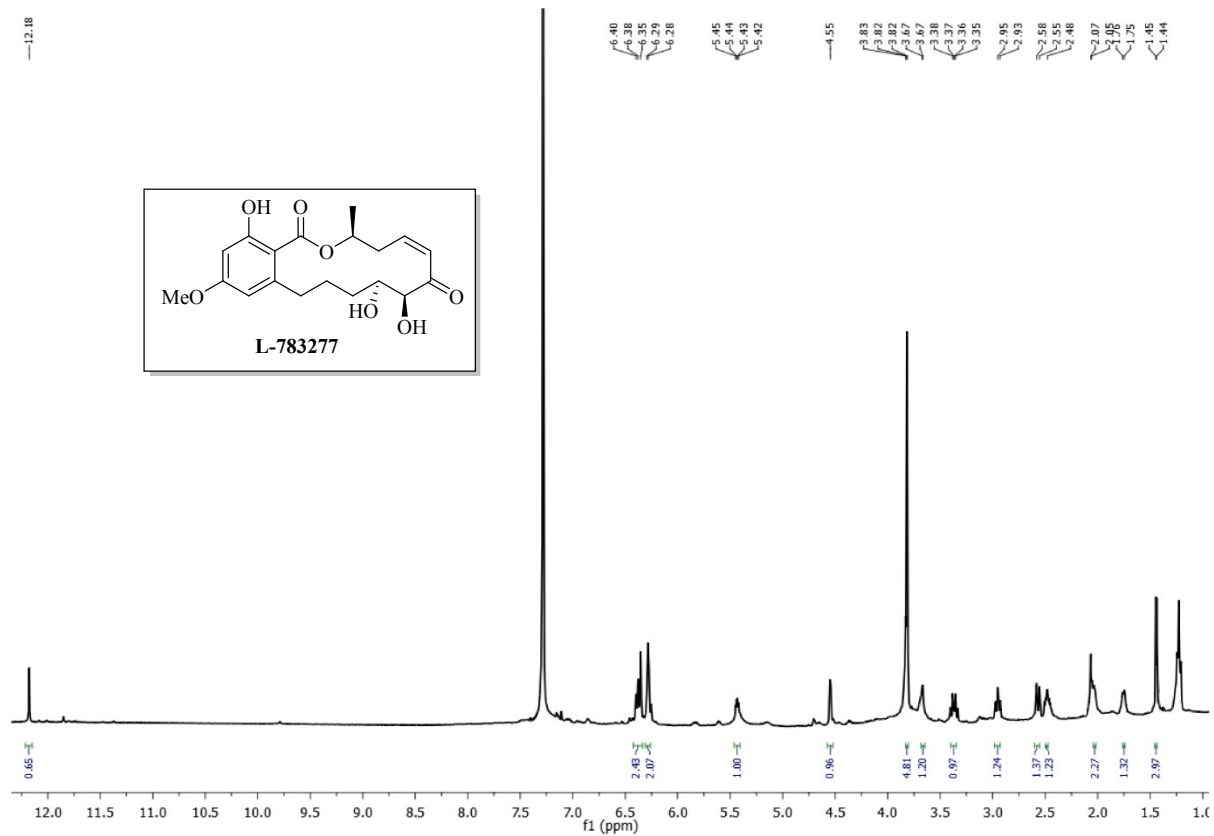
¹³C NMR (150 MHz) of compound 41 in CDCl₃



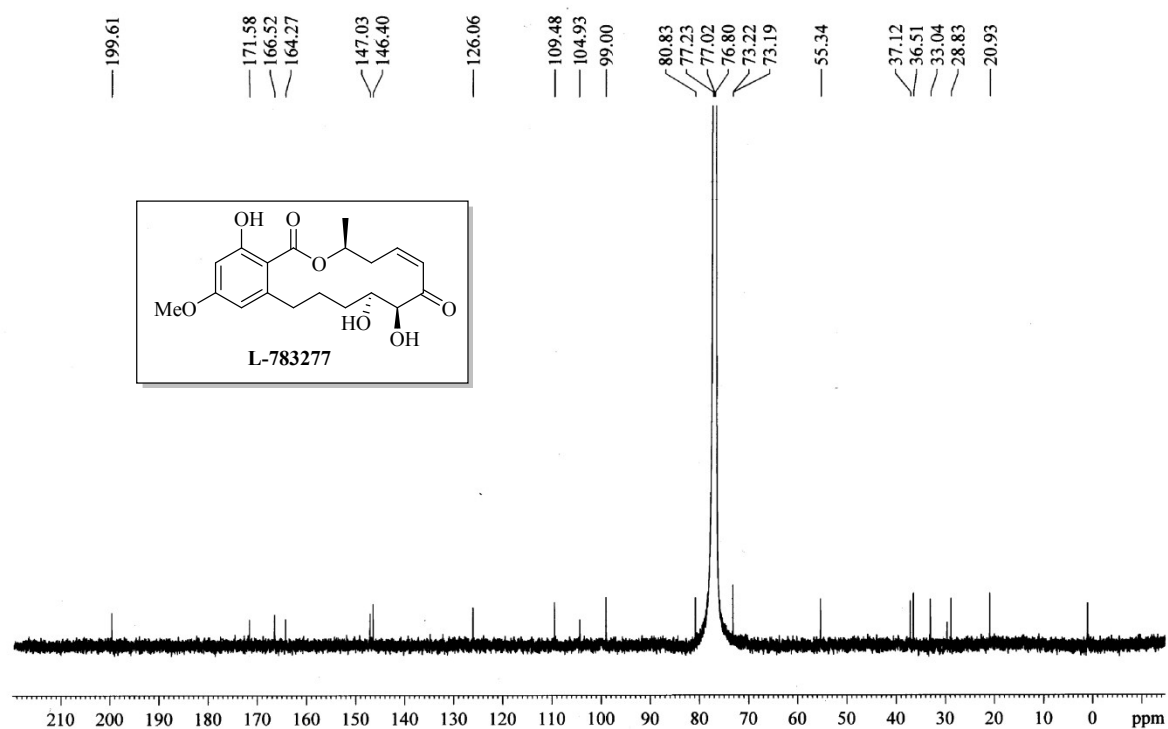
DEPT (150 MHz) NMR of compound 41 in CDCl₃



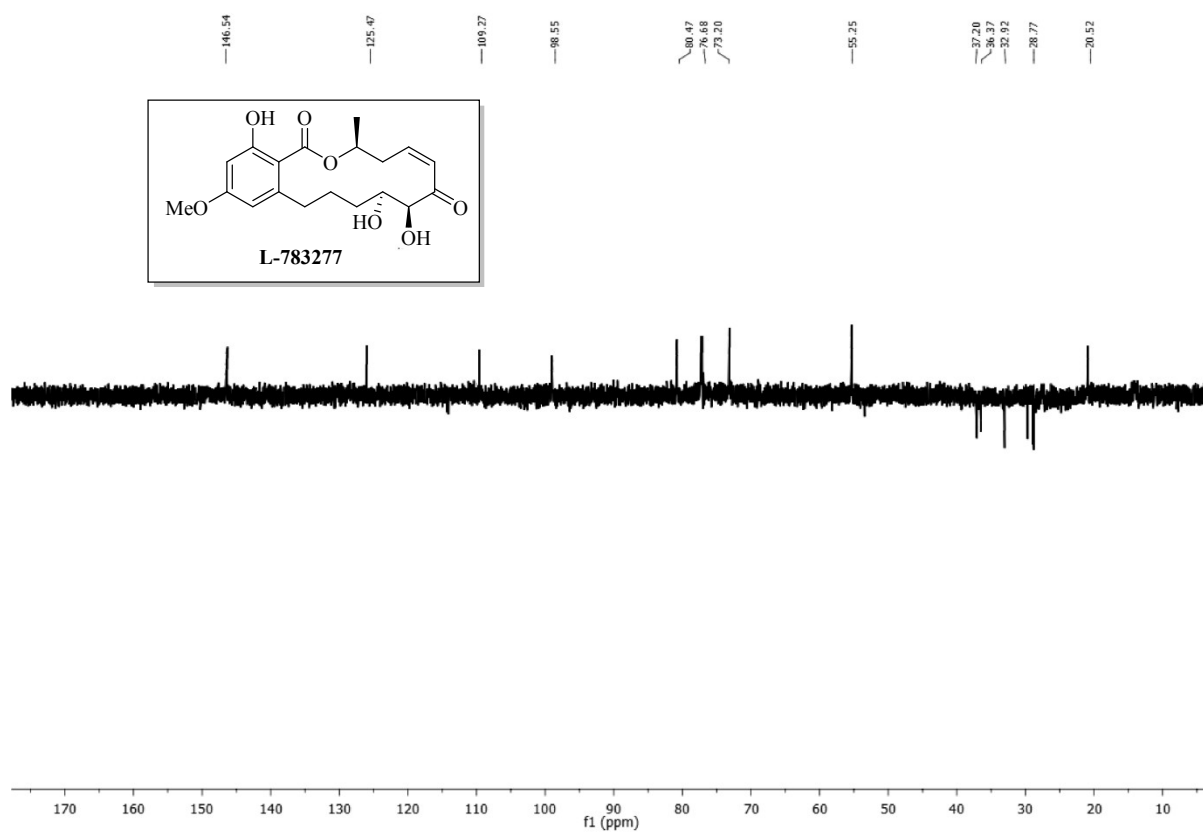
¹H NMR (600MHz) of L-783277 in CDCl₃



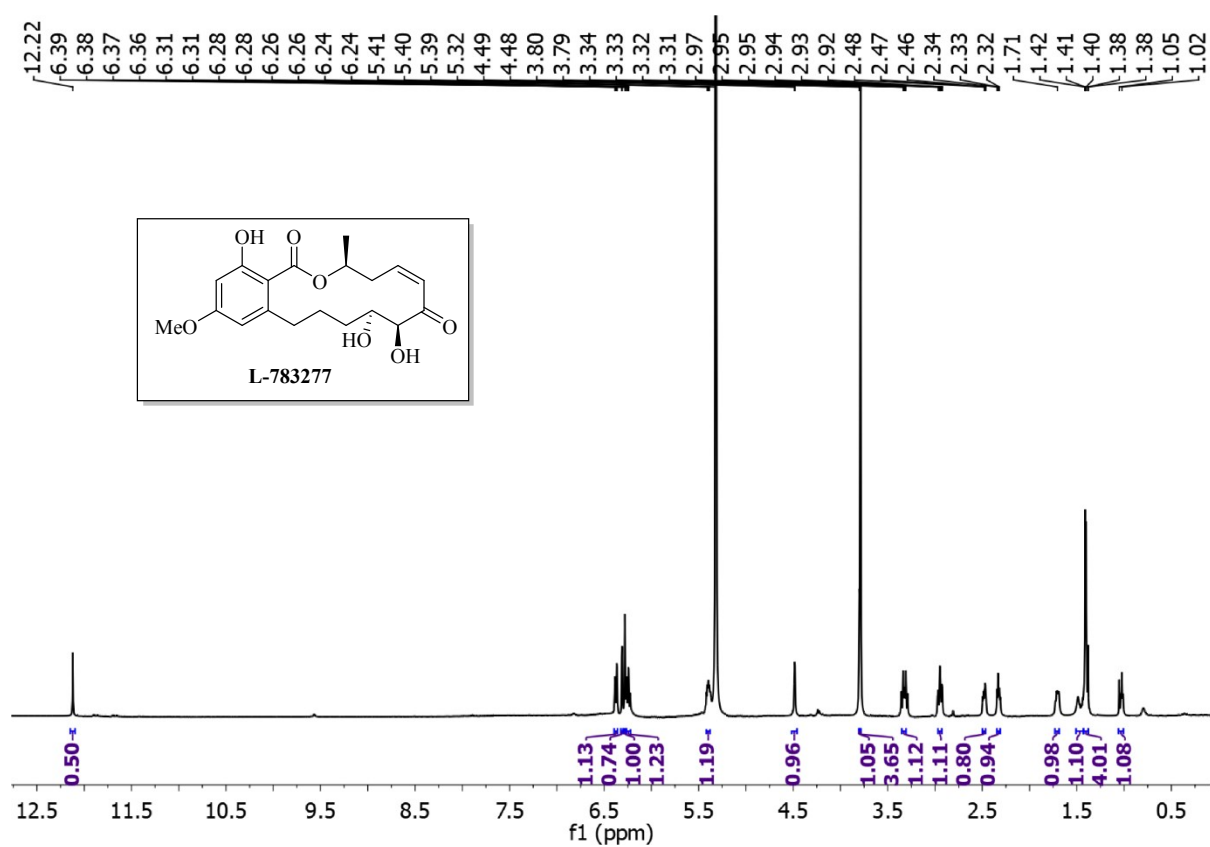
^{13}C NMR (150 MHz) of L-783277 in CDCl_3



DEPT (150 MHz) NMR of L-783277 in CDCl_3



^1H NMR (600MHz) of L-783277 in CD_2Cl_2



^{13}C NMR (150 MHz) of L-783277 in CD_2Cl_2

