

## Supplementary Material

### Total synthesis of prenylated acylphloroglucinols: faberiones A, B, and E

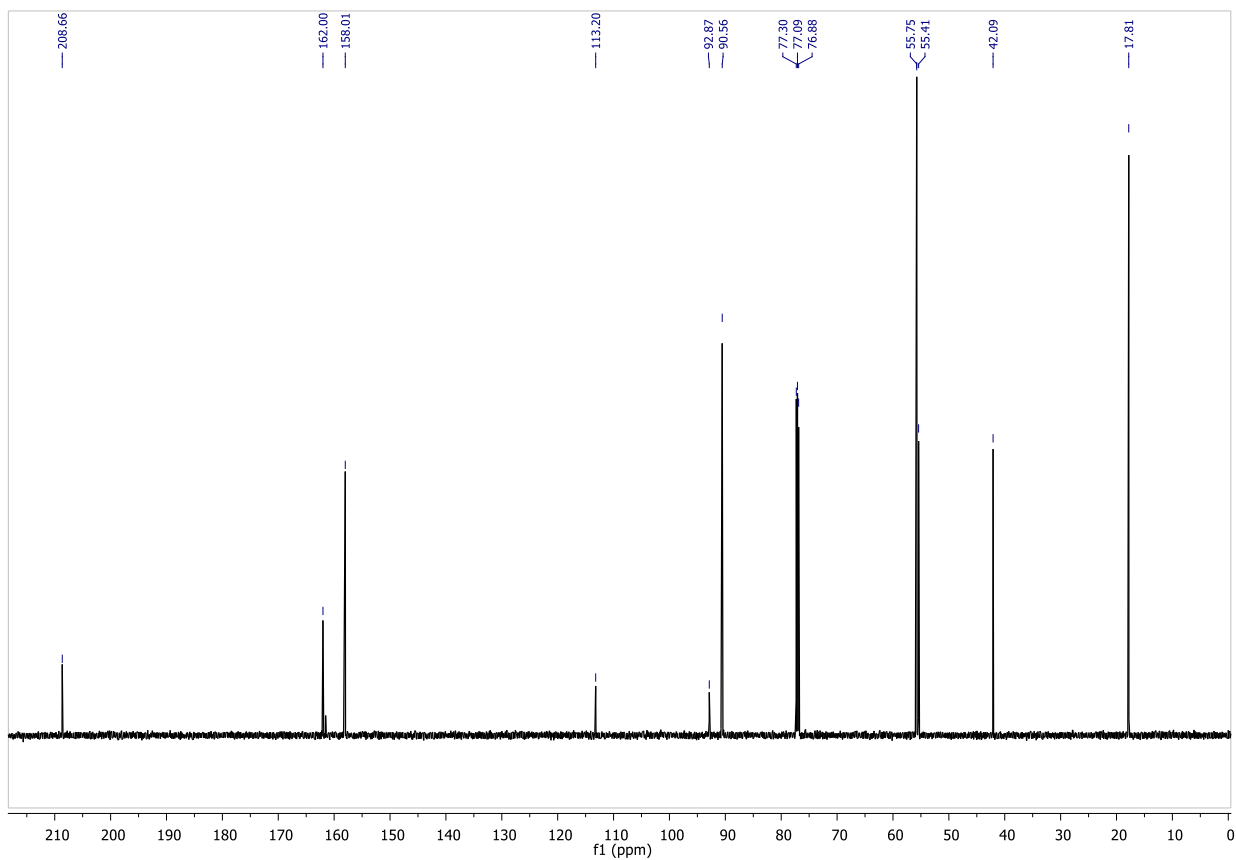
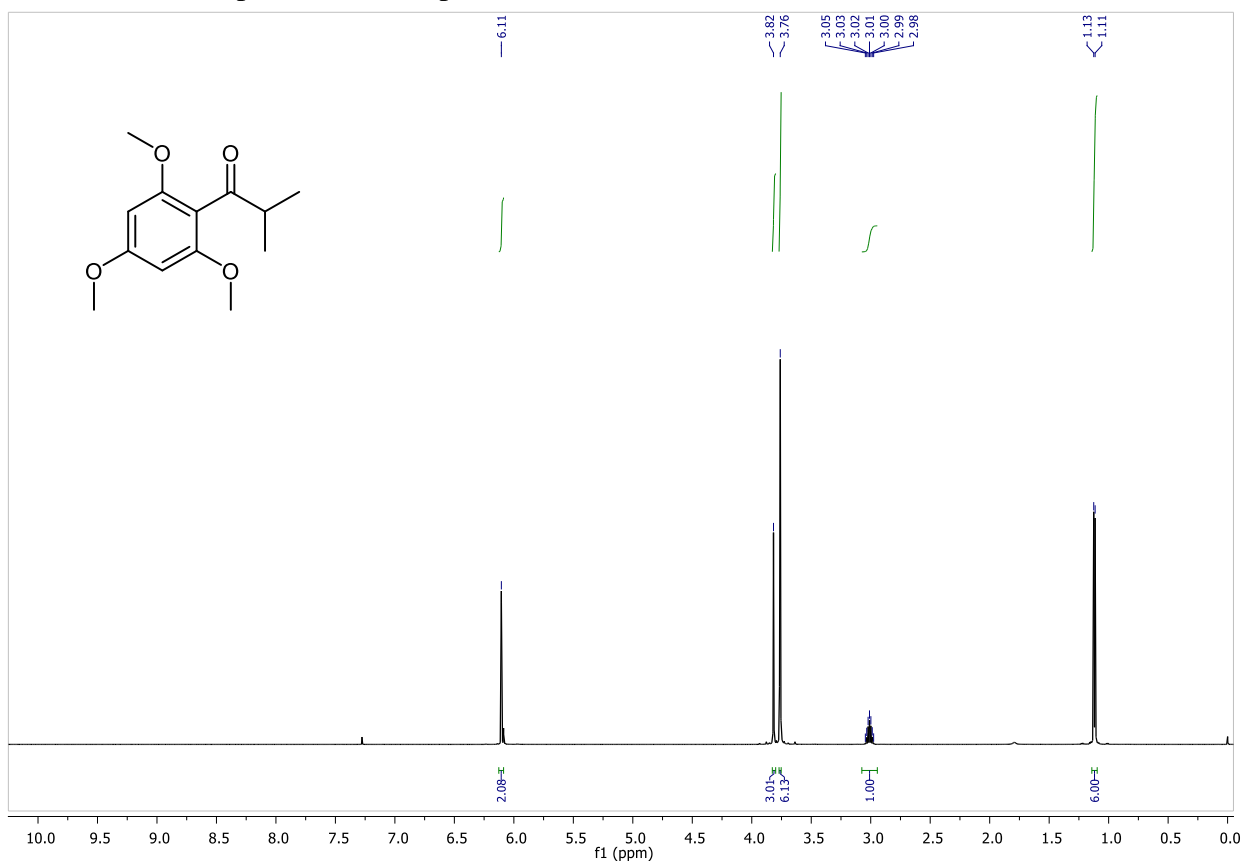
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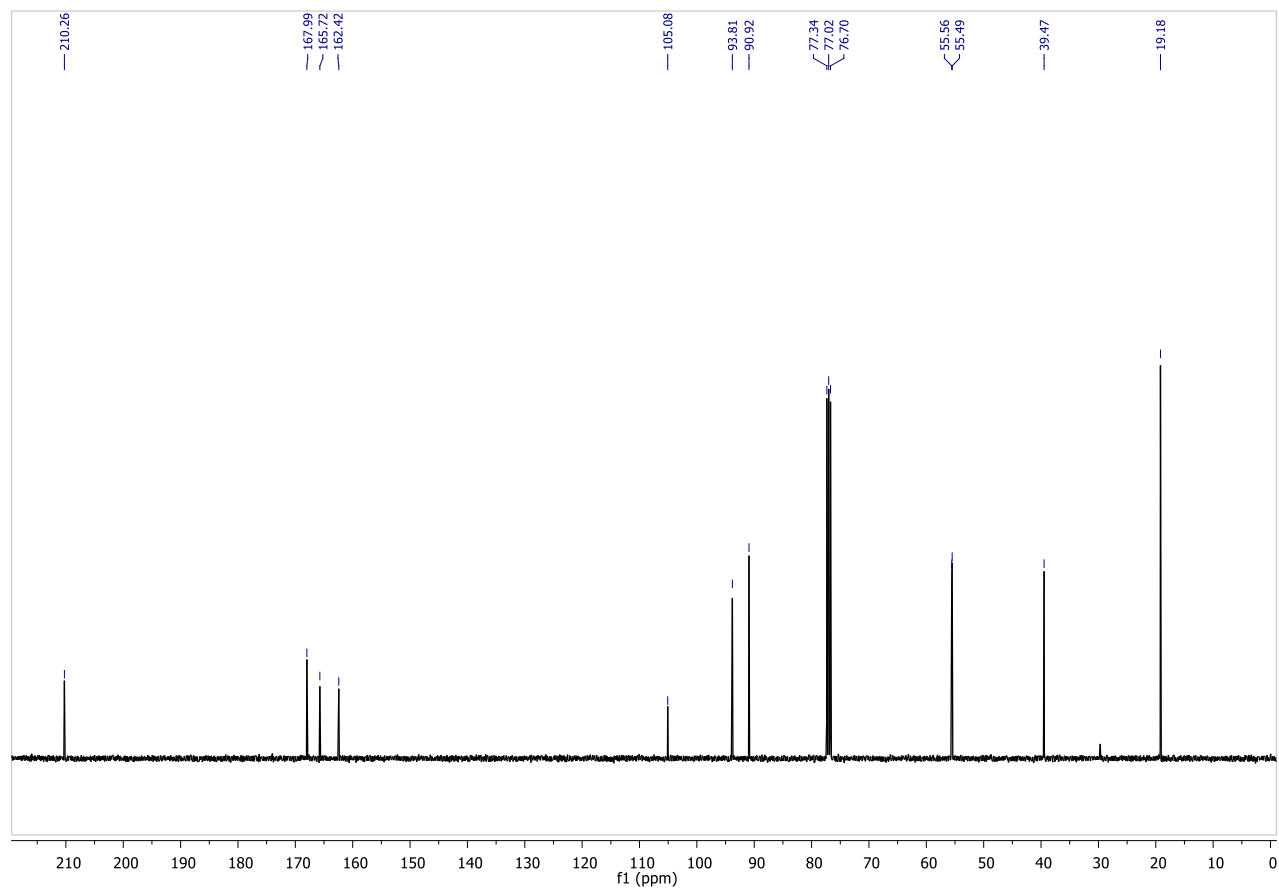
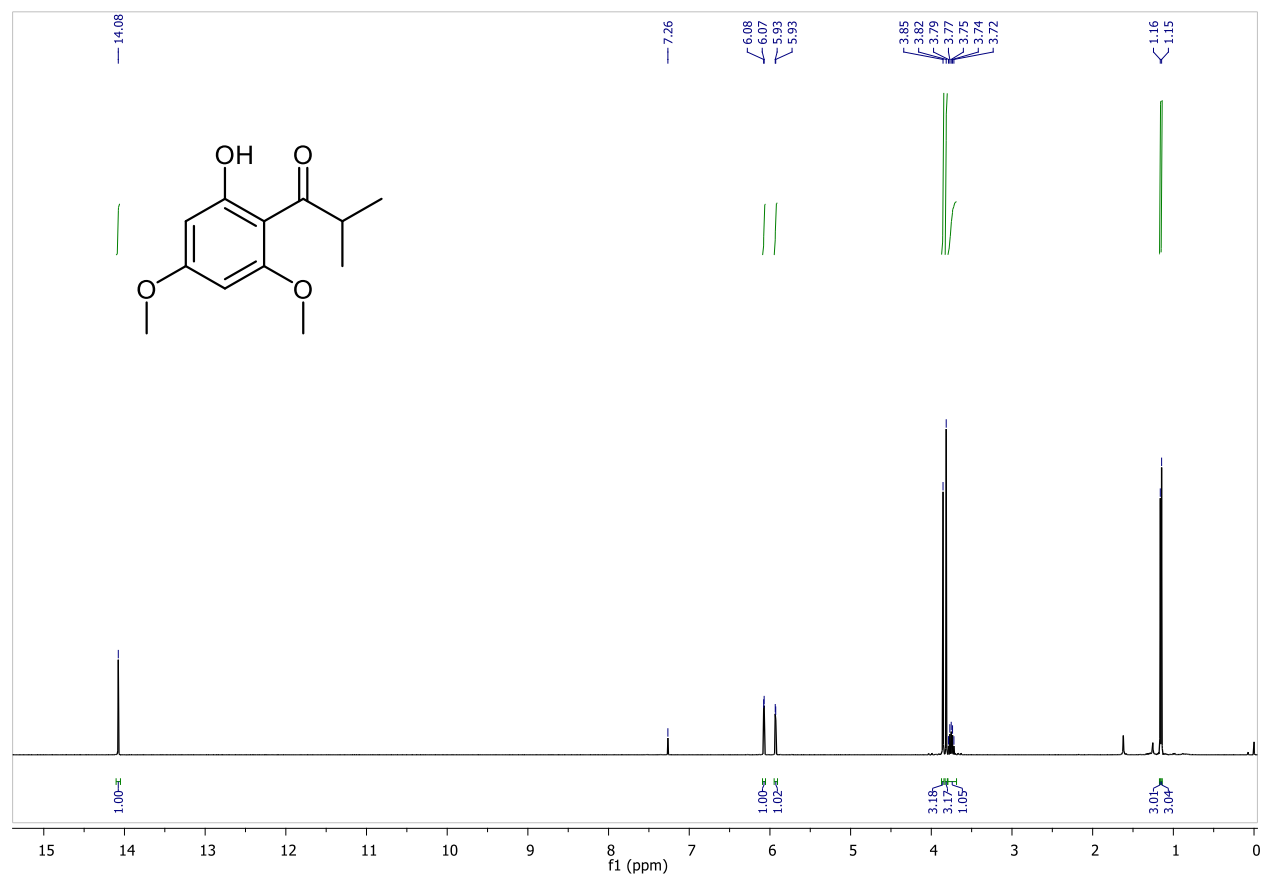
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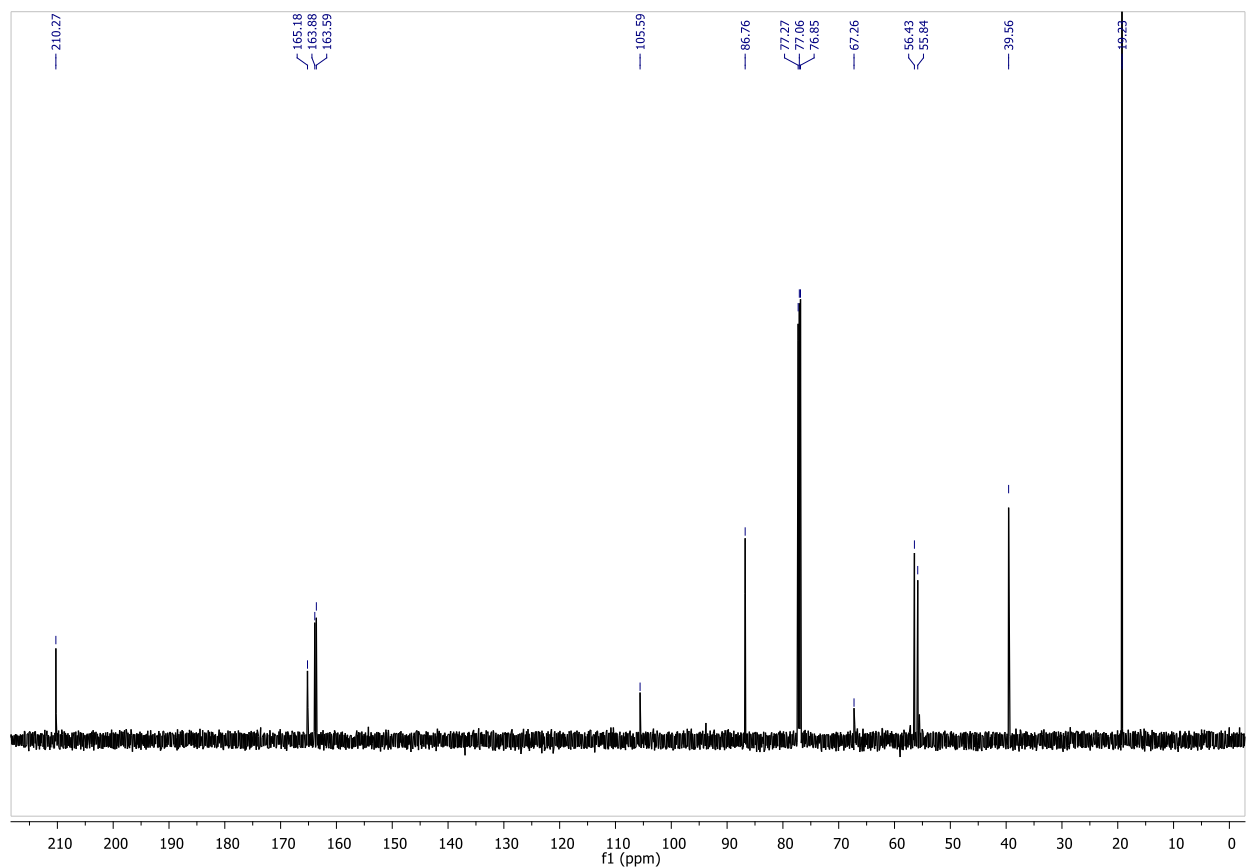
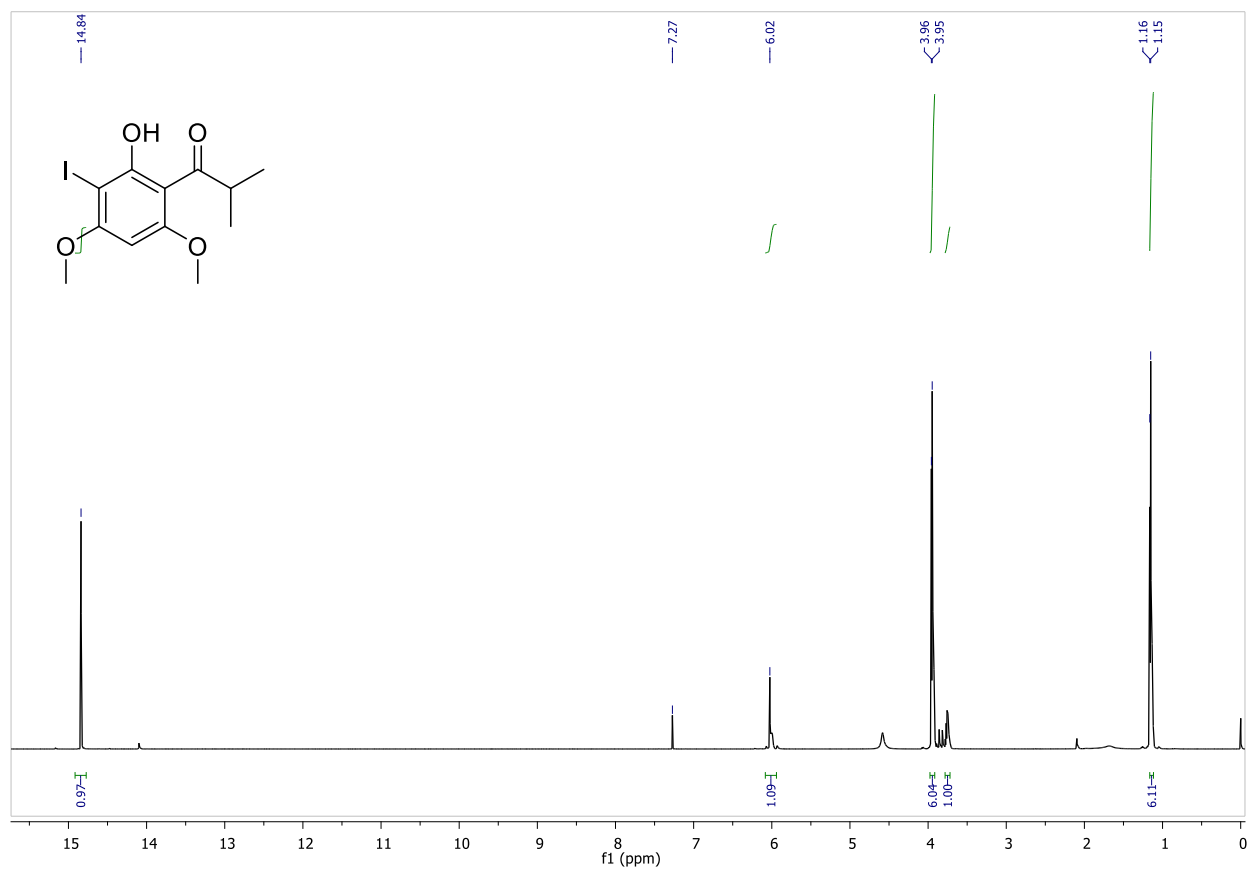
*Email: [faiz@chy.iith.ac.in](mailto:faiz@chy.iith.ac.in)*

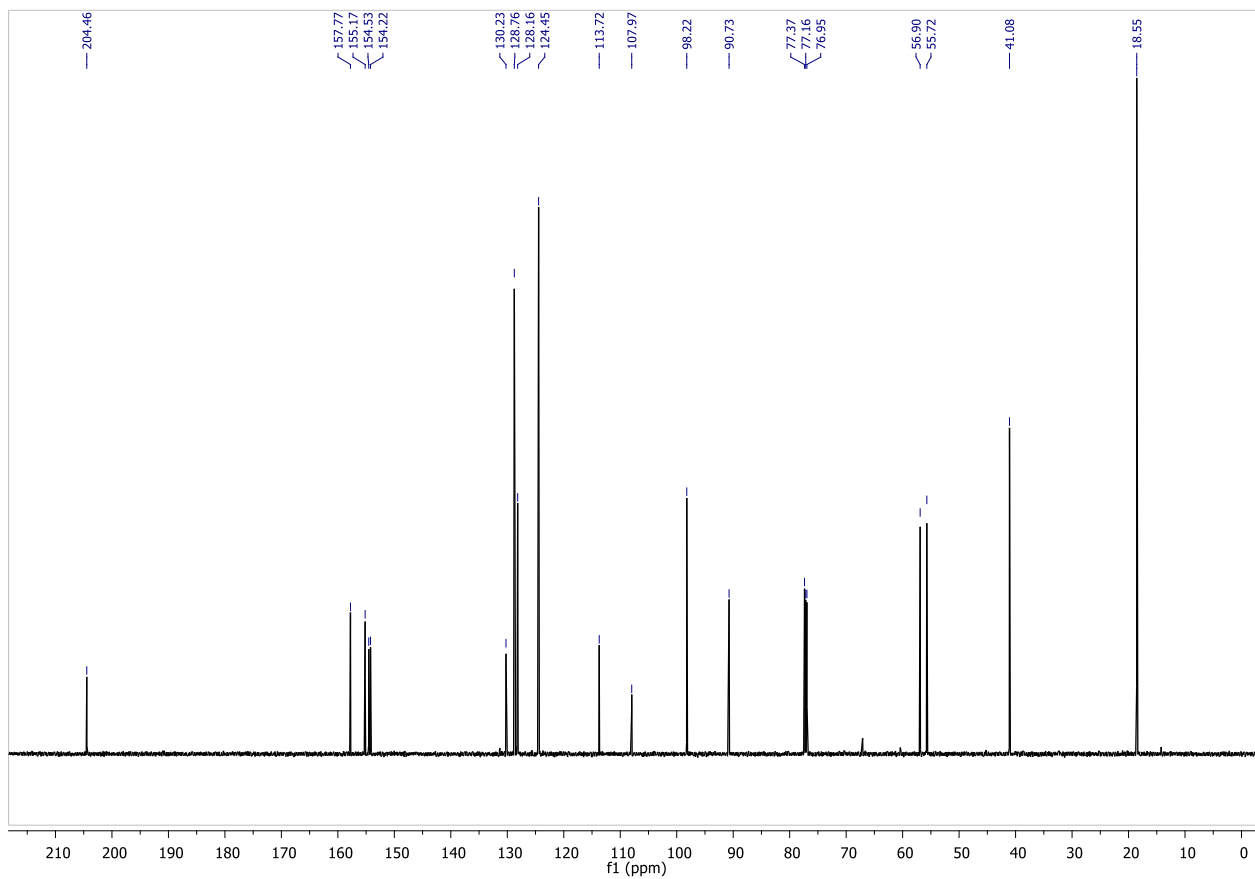
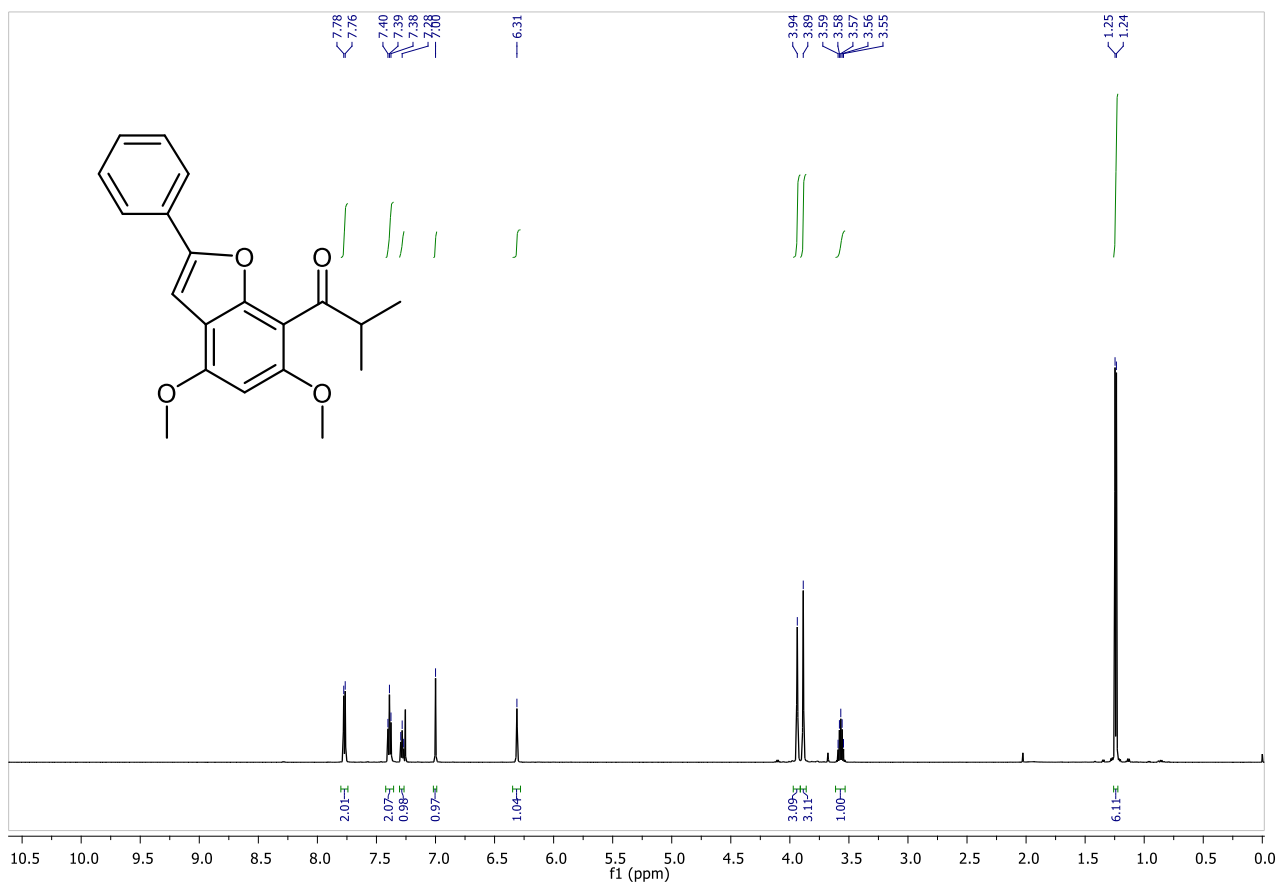
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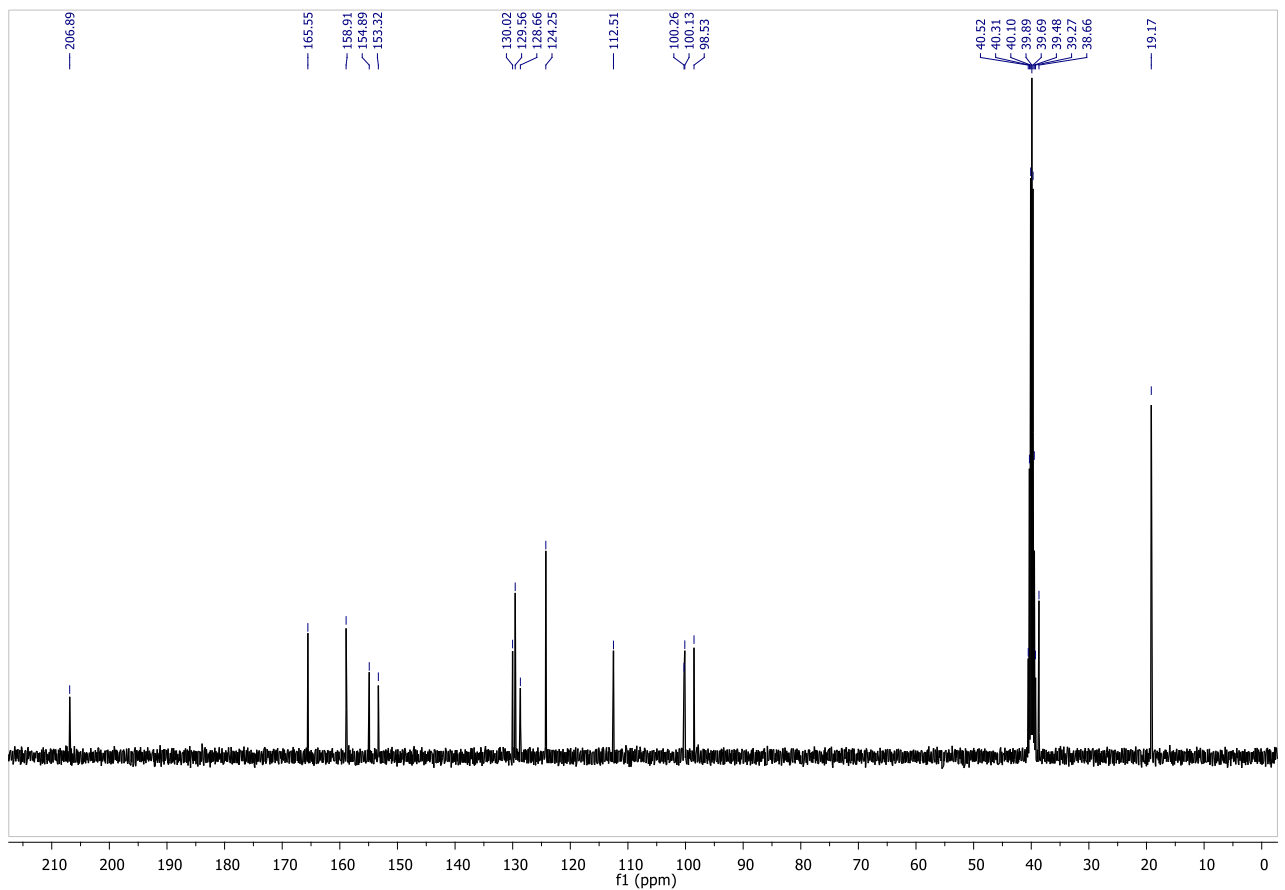
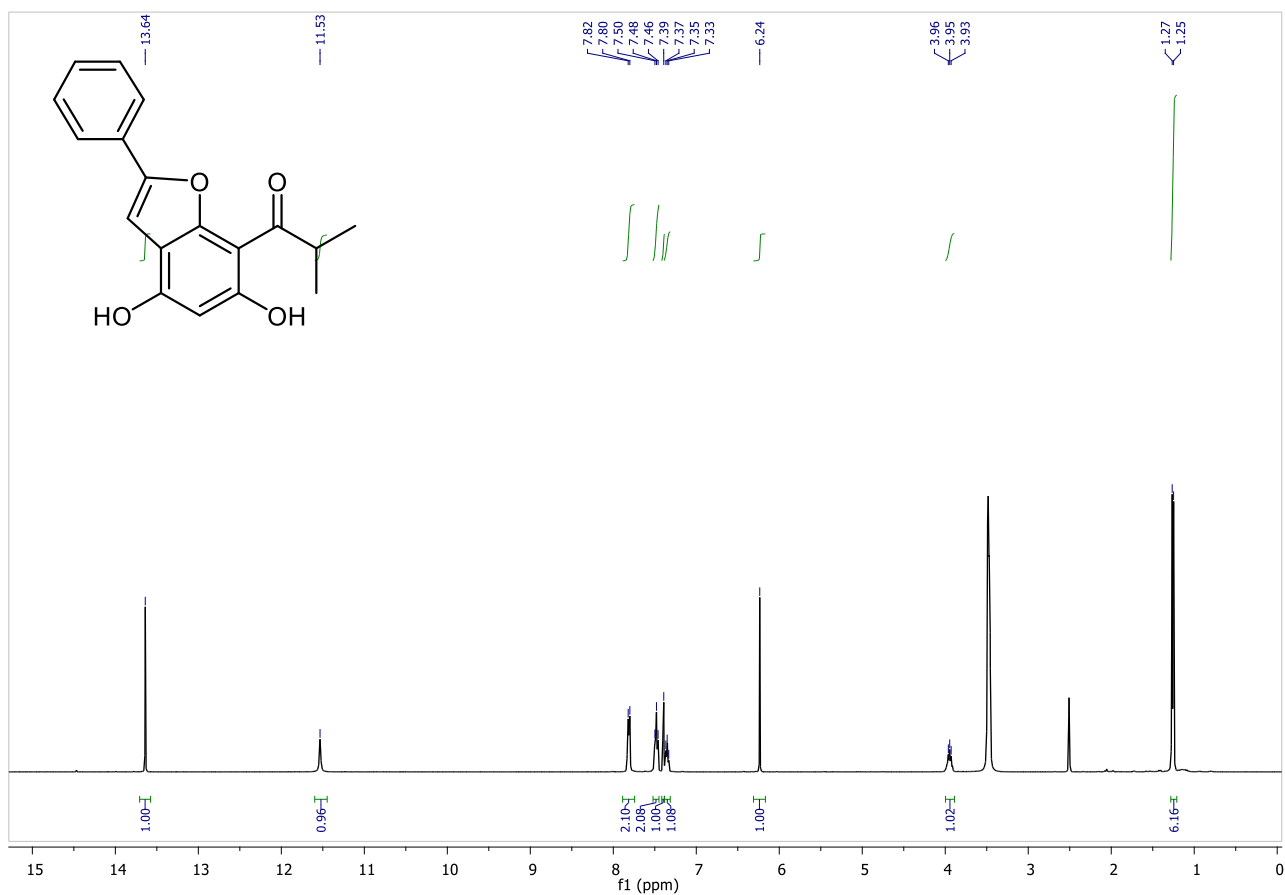
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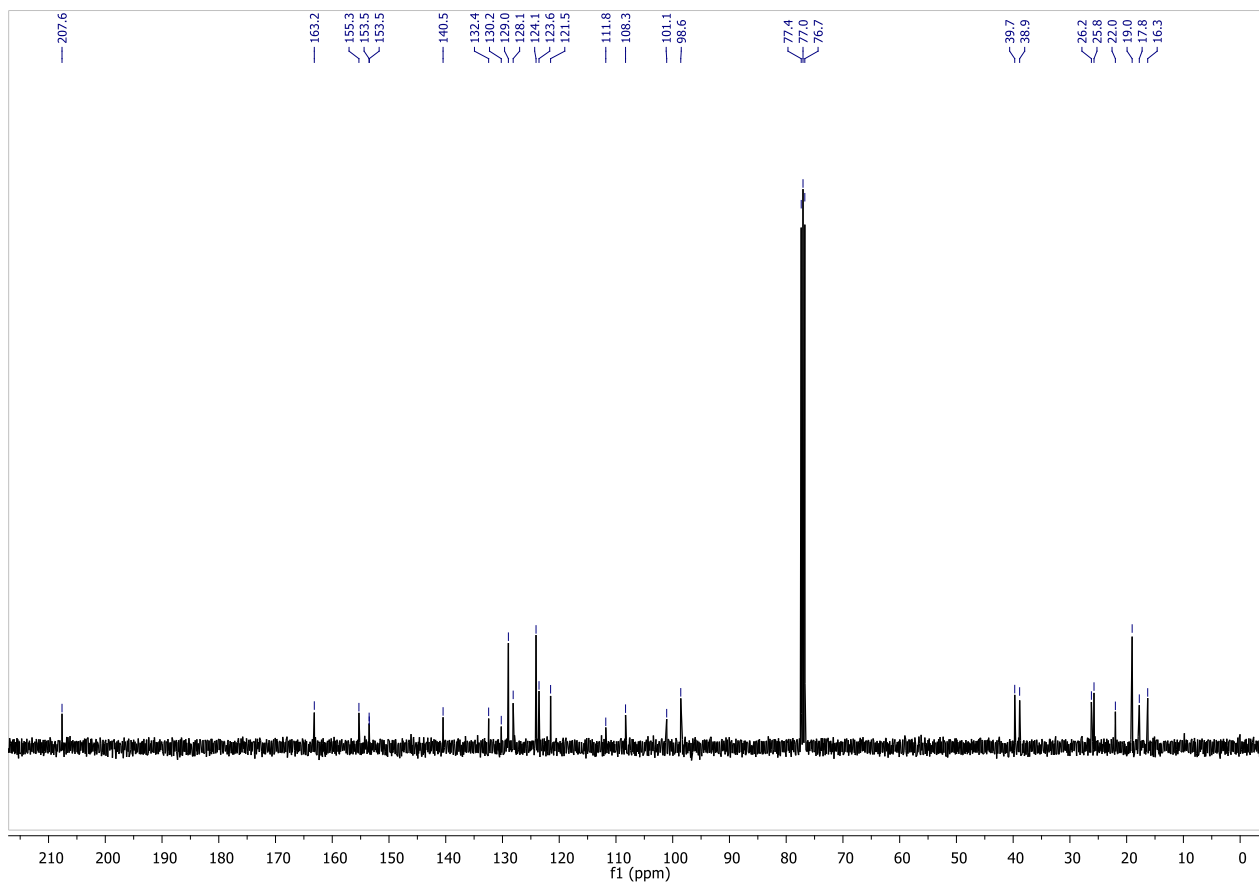
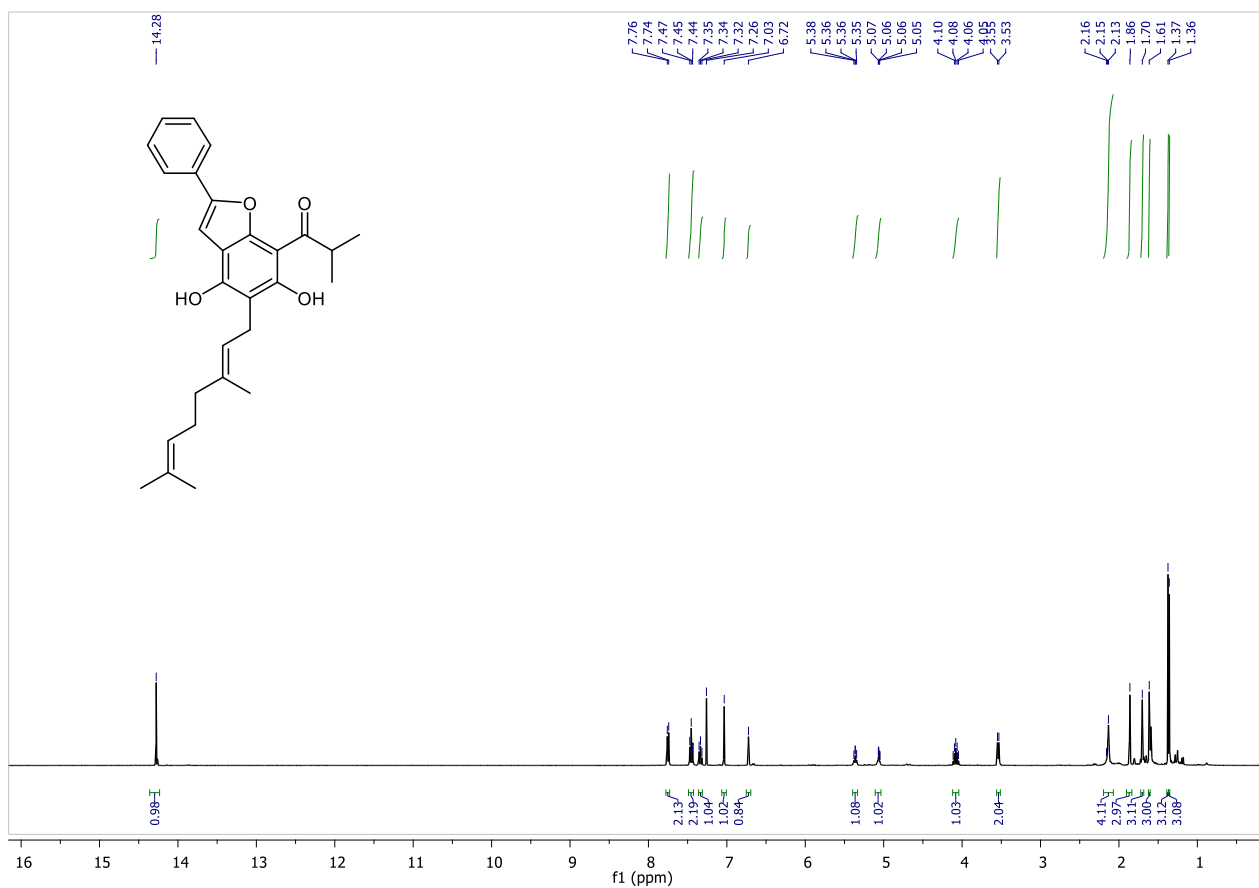
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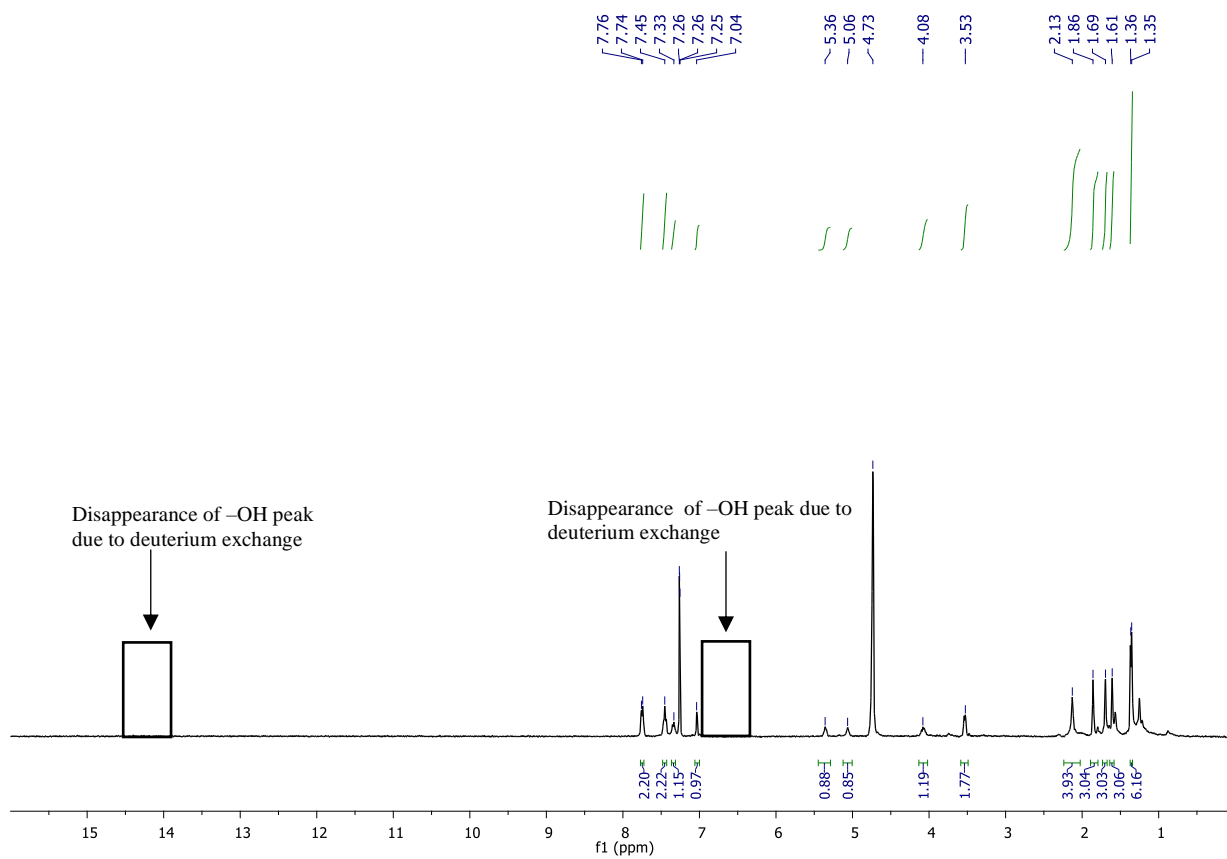
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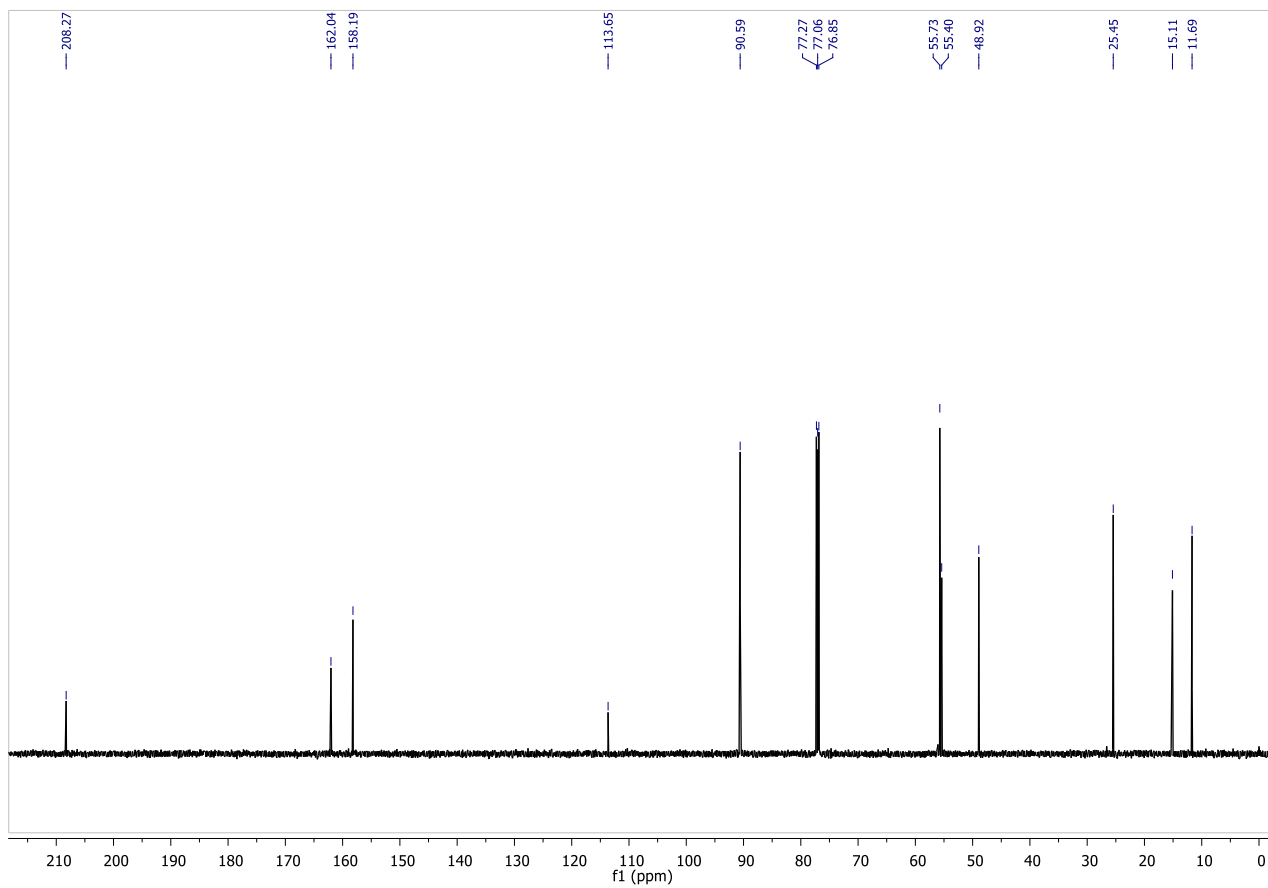
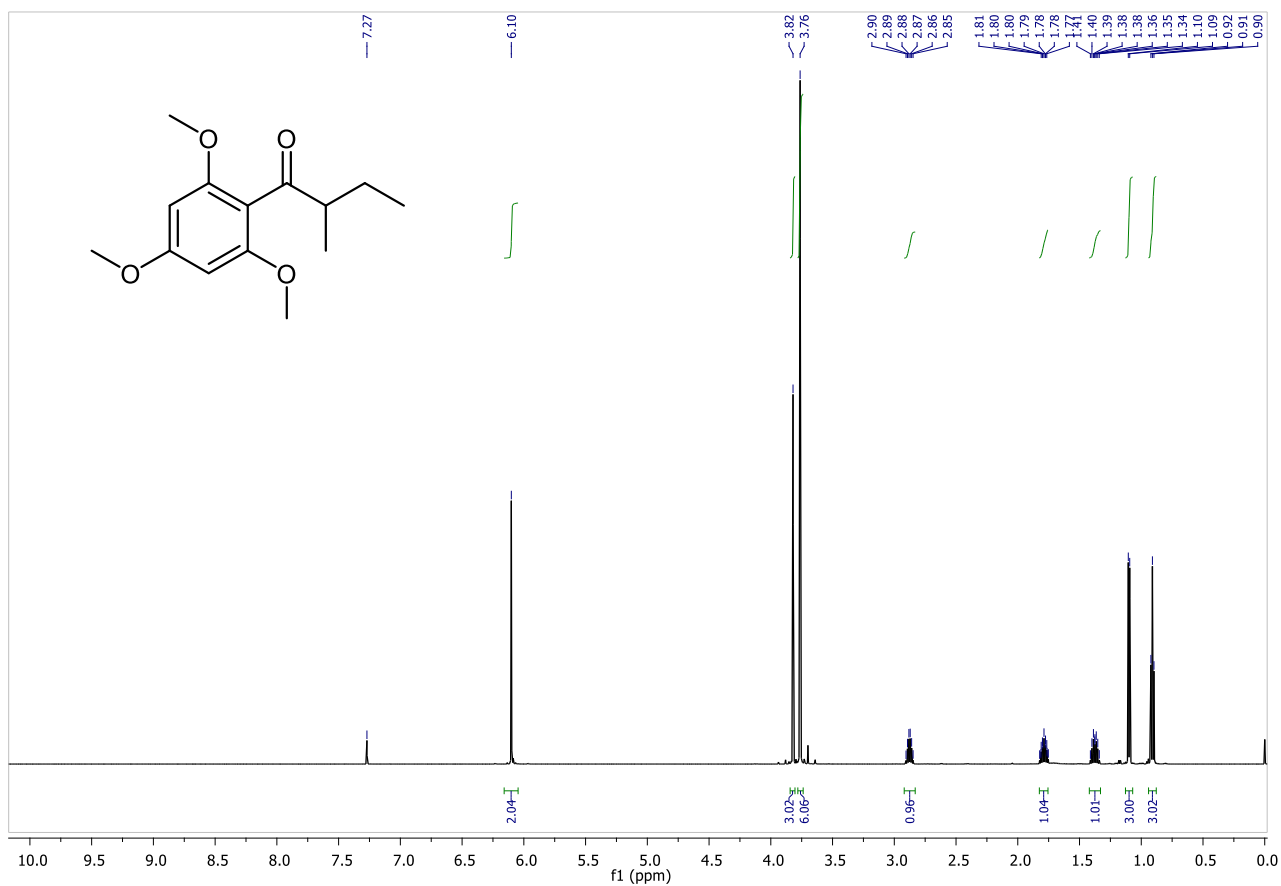
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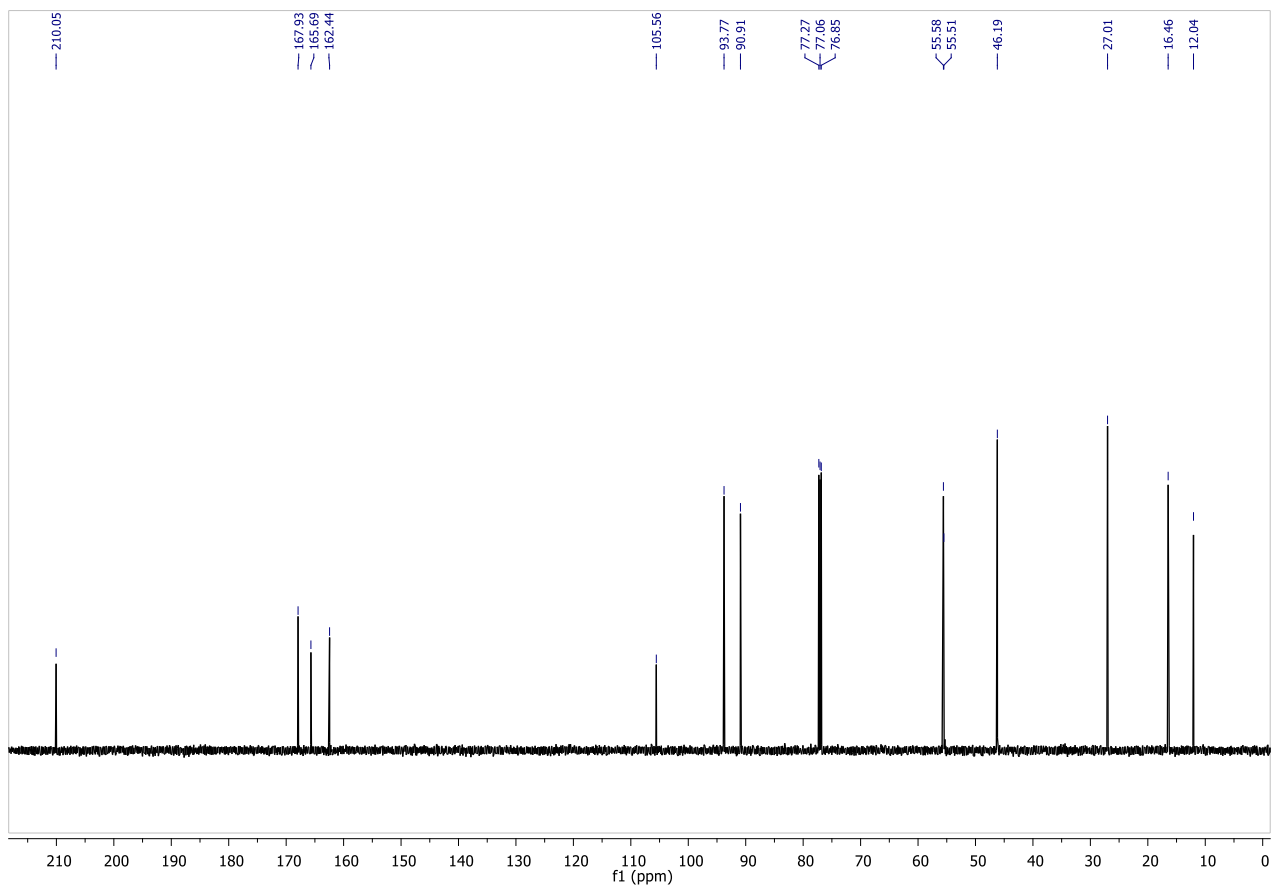
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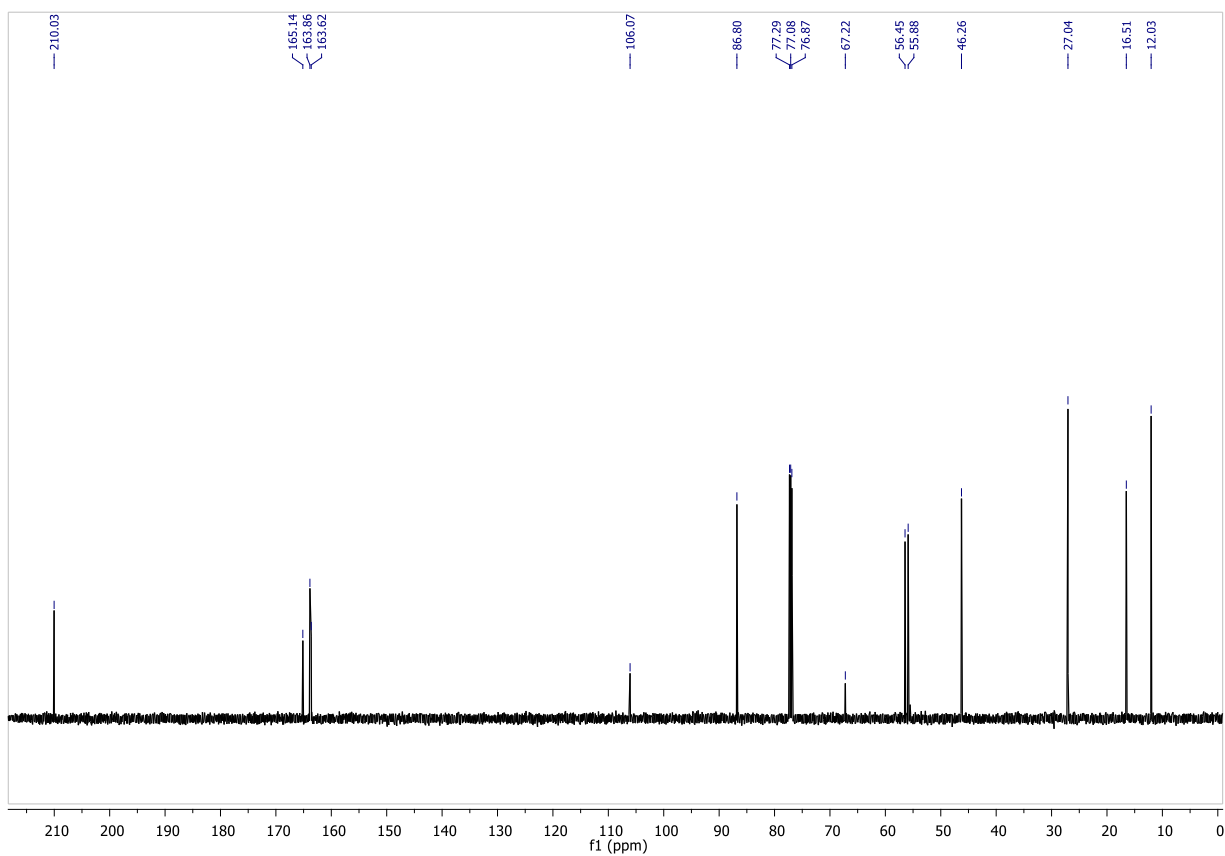
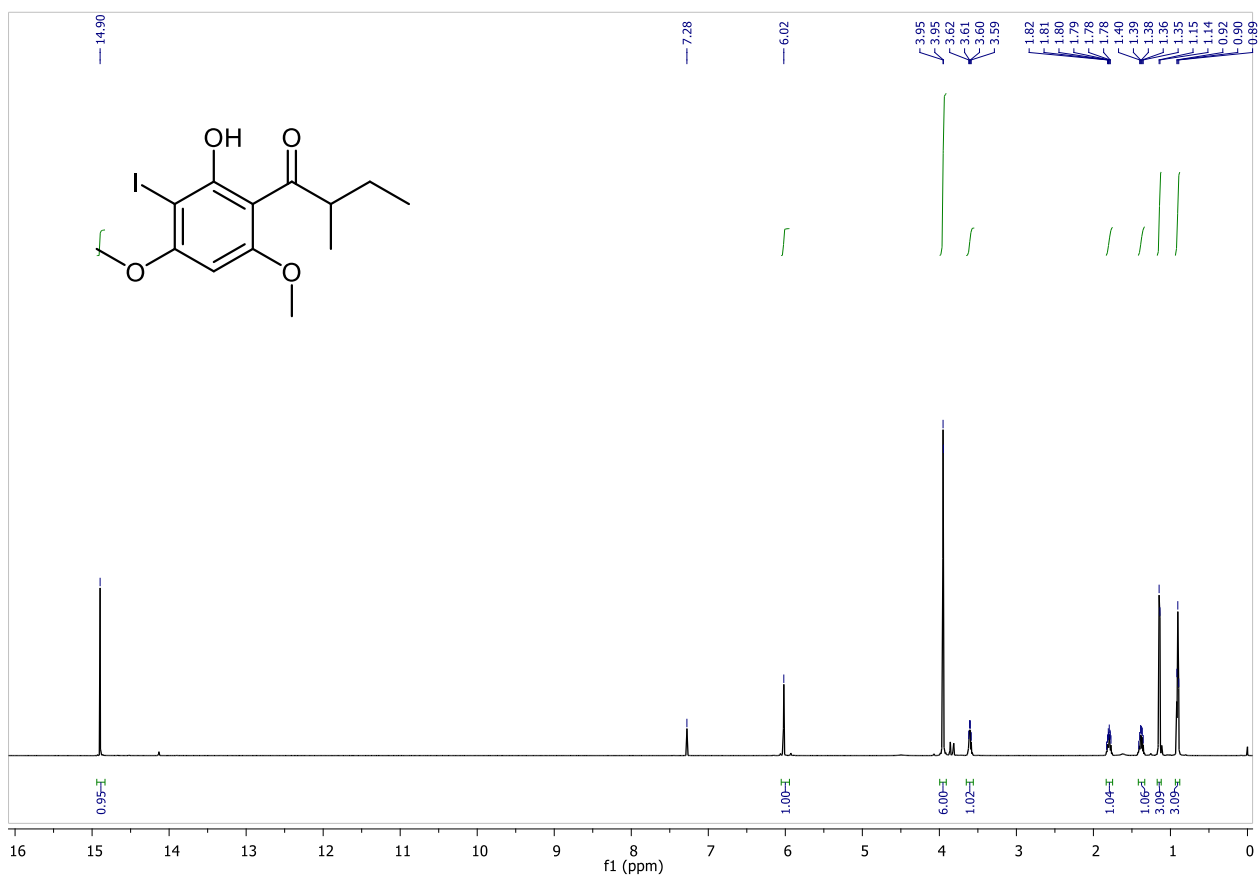
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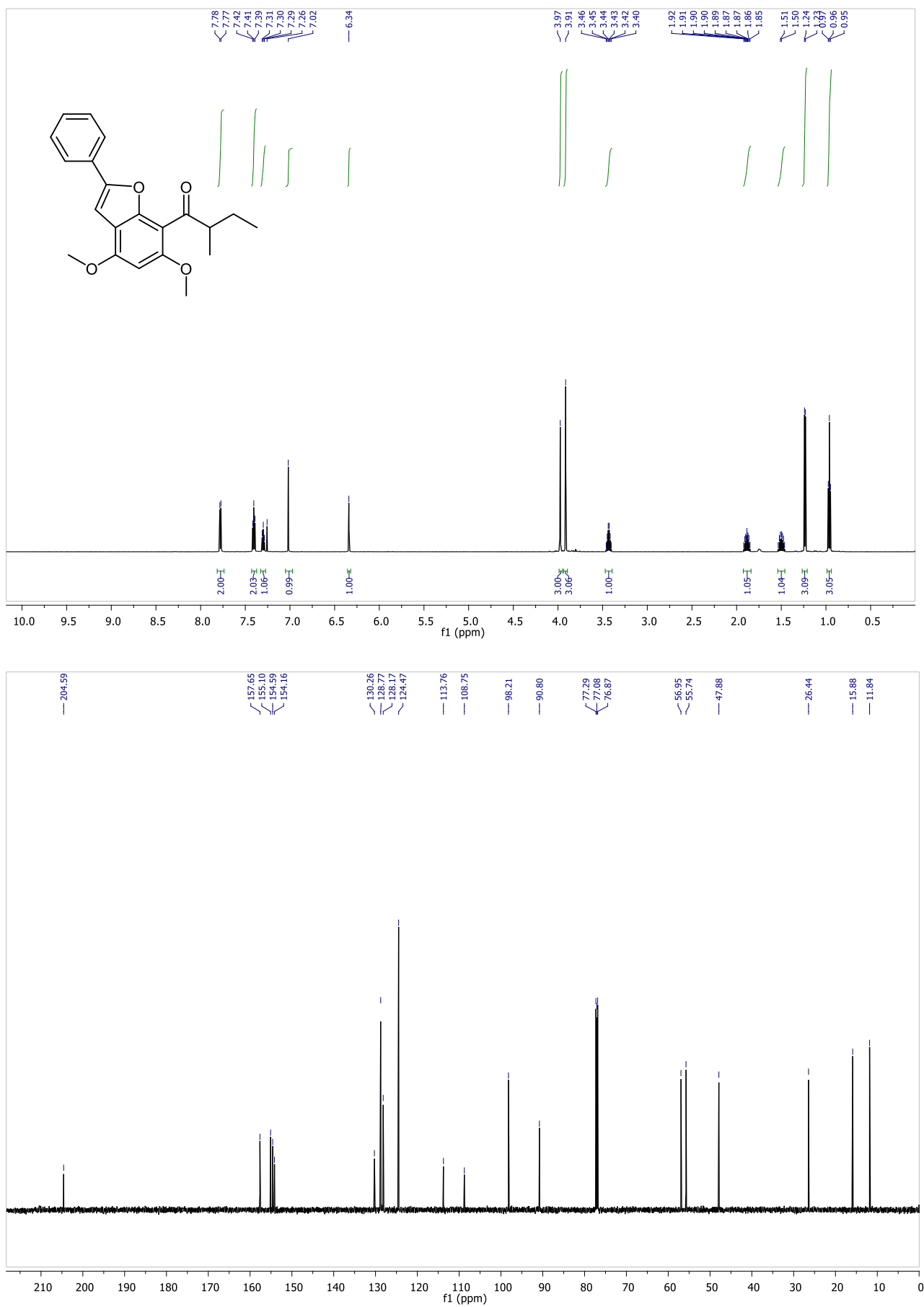
Deuterium exchange NMR of faberione A **1** in CDCl<sub>3</sub>+D<sub>2</sub>O

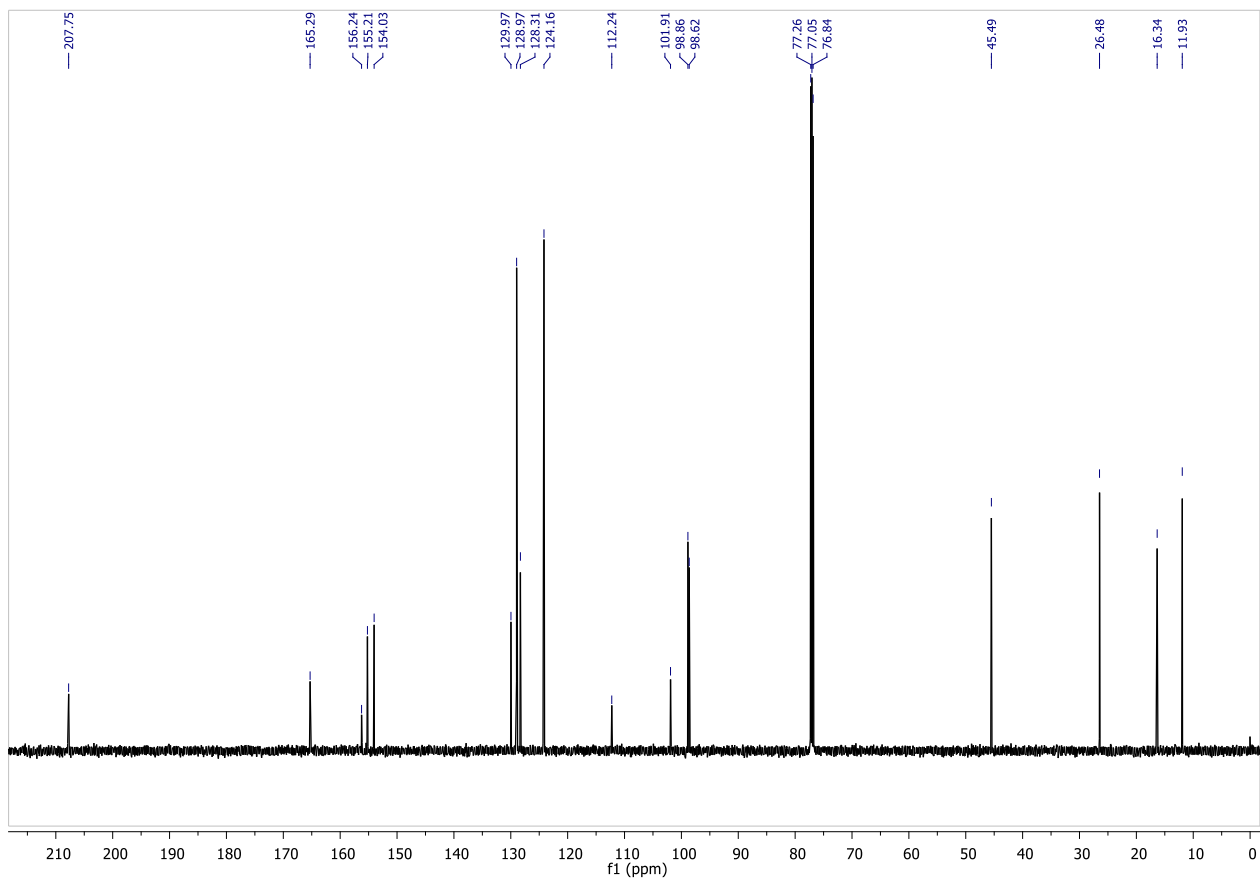
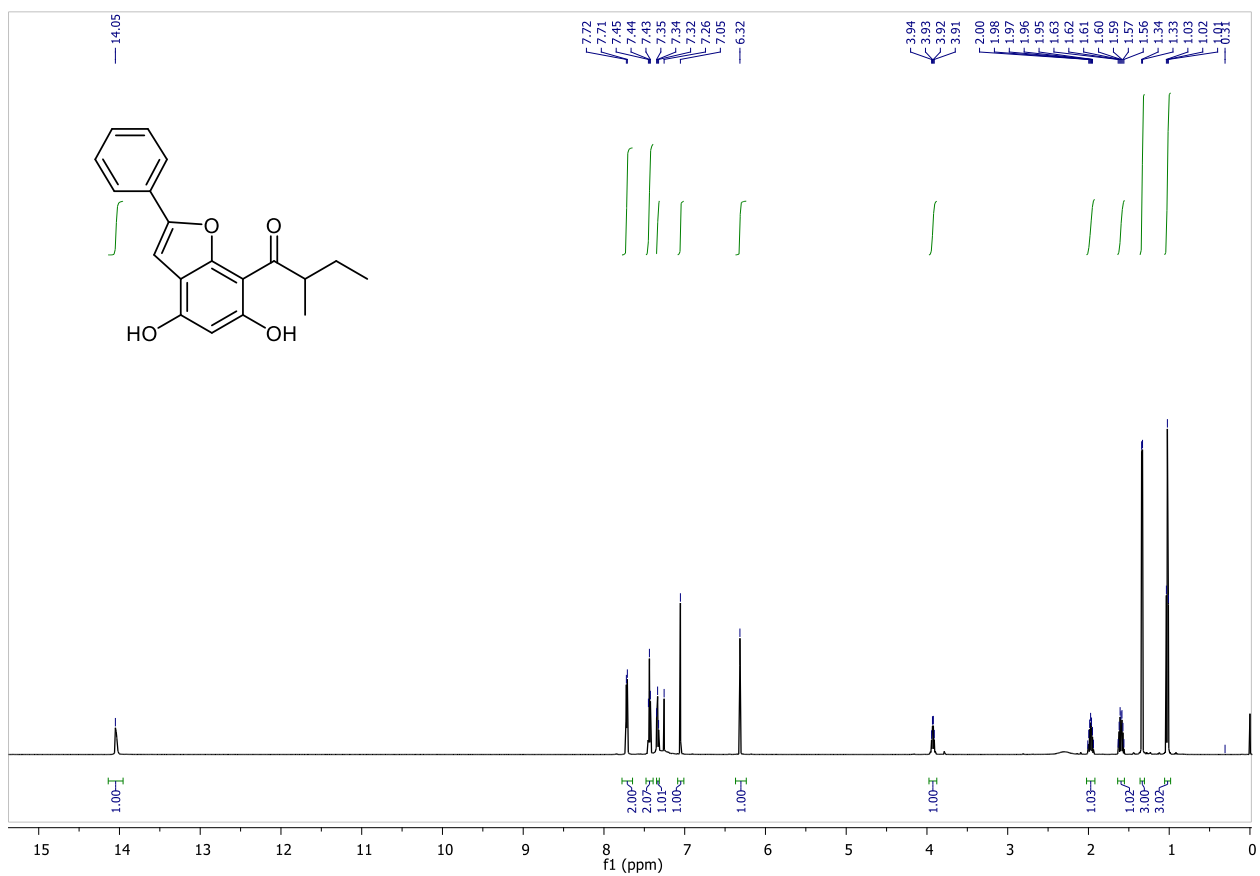


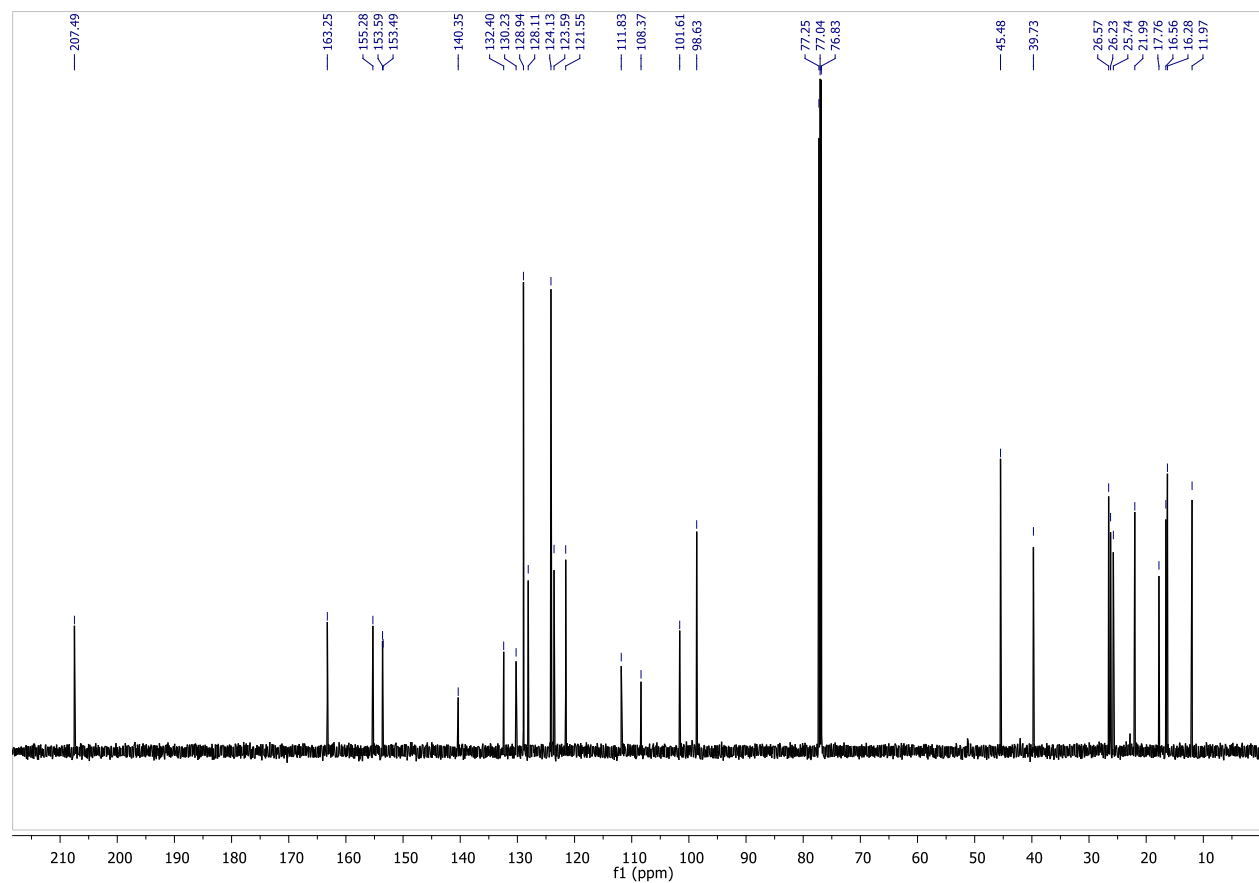
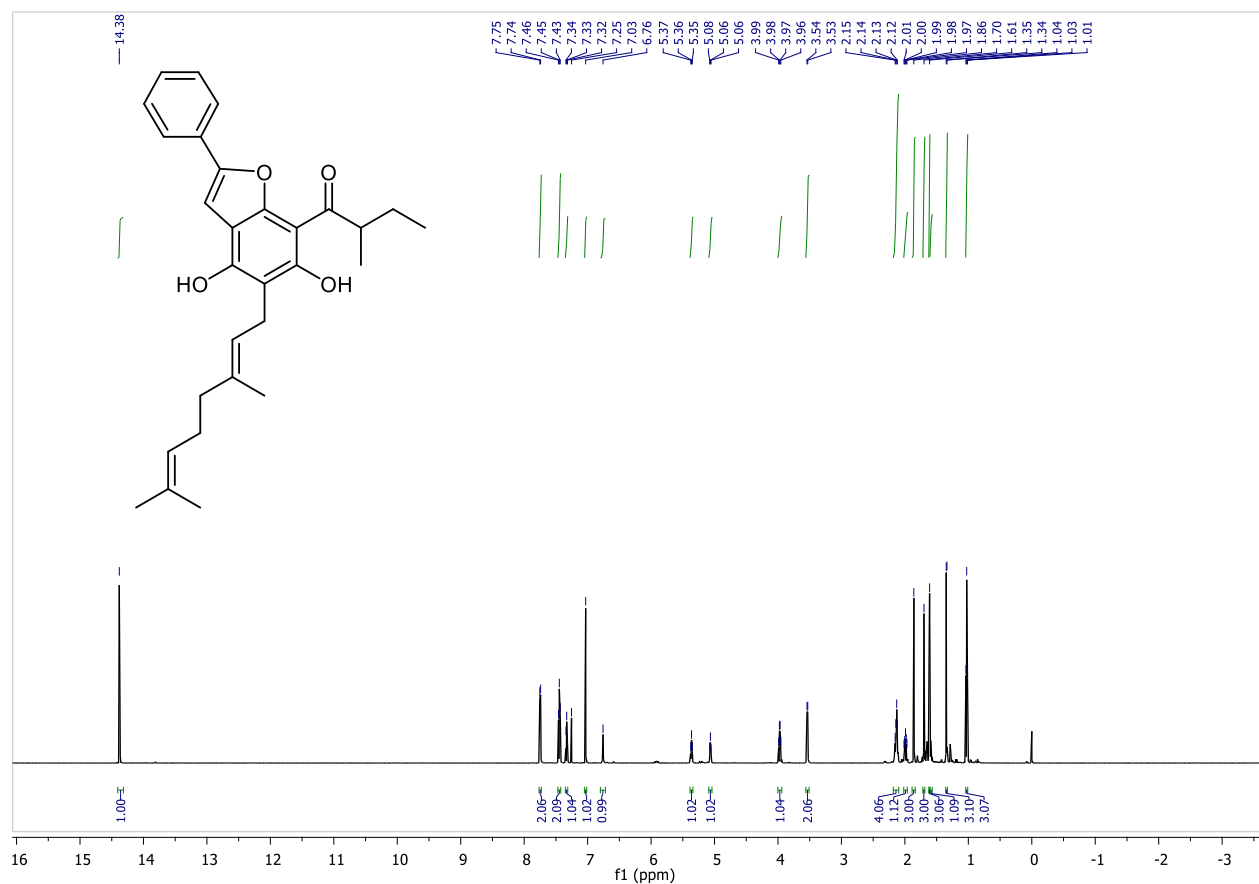
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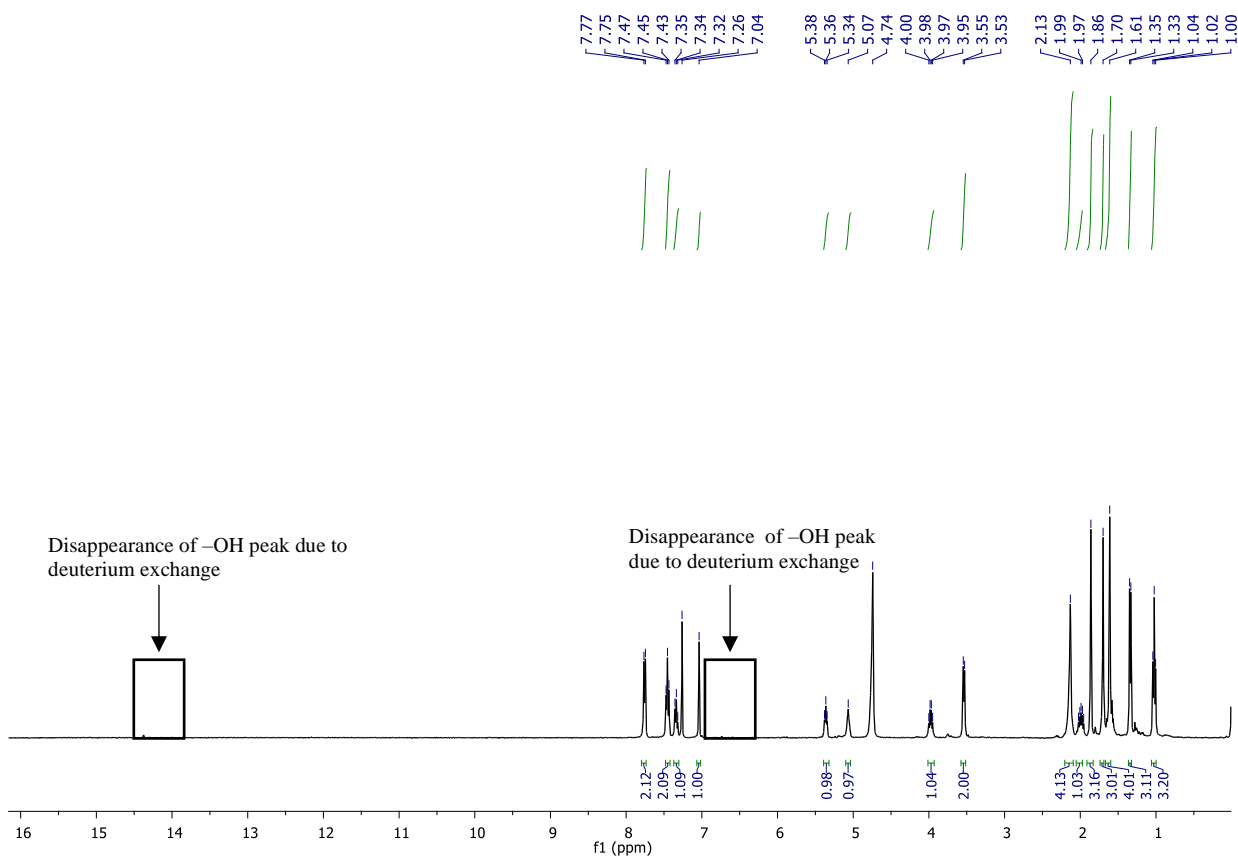
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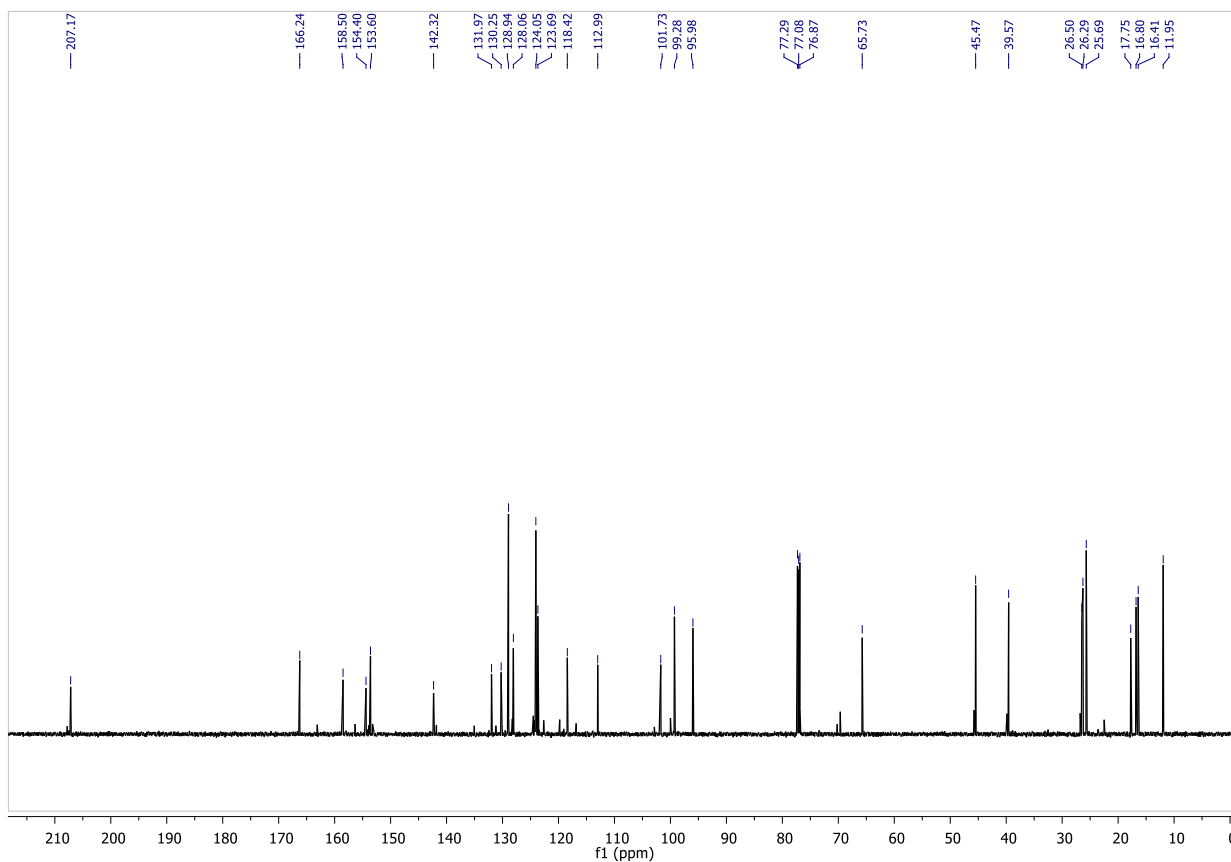
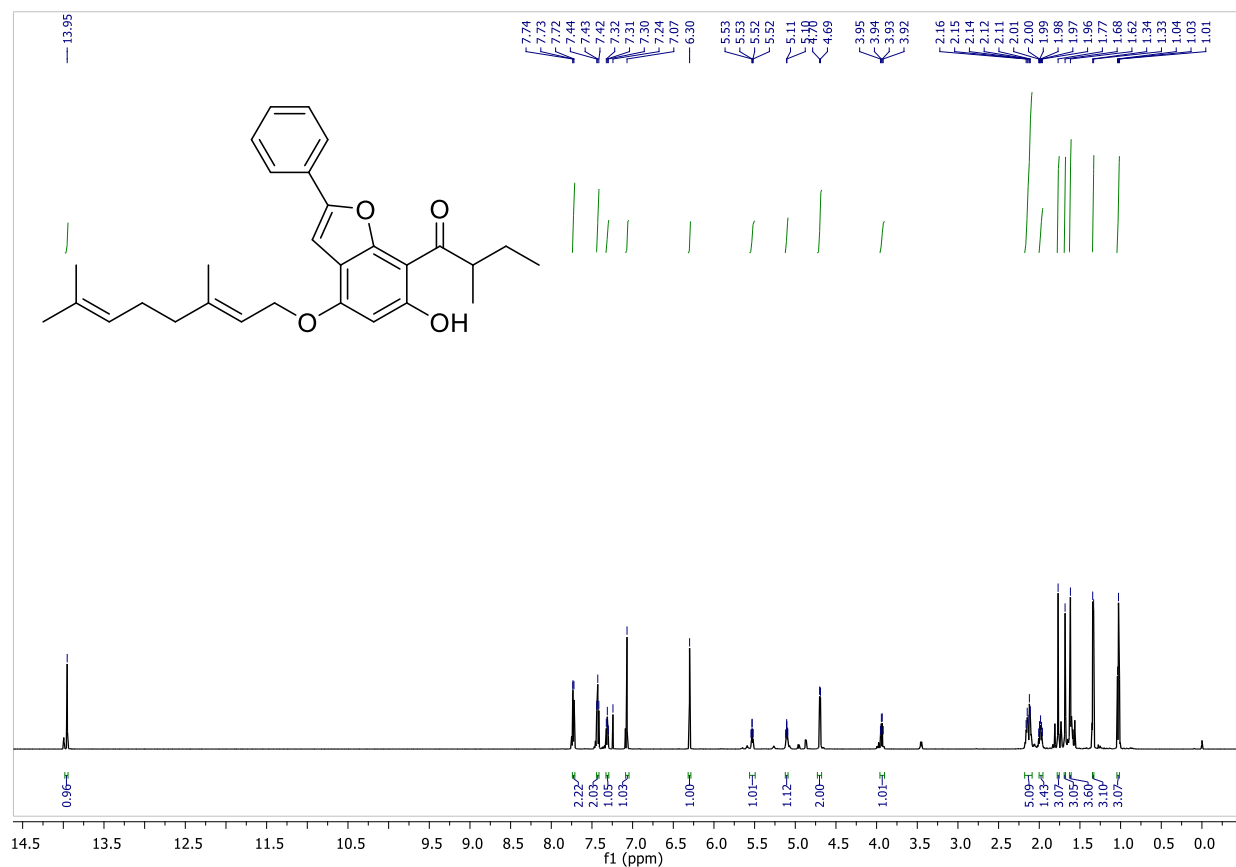
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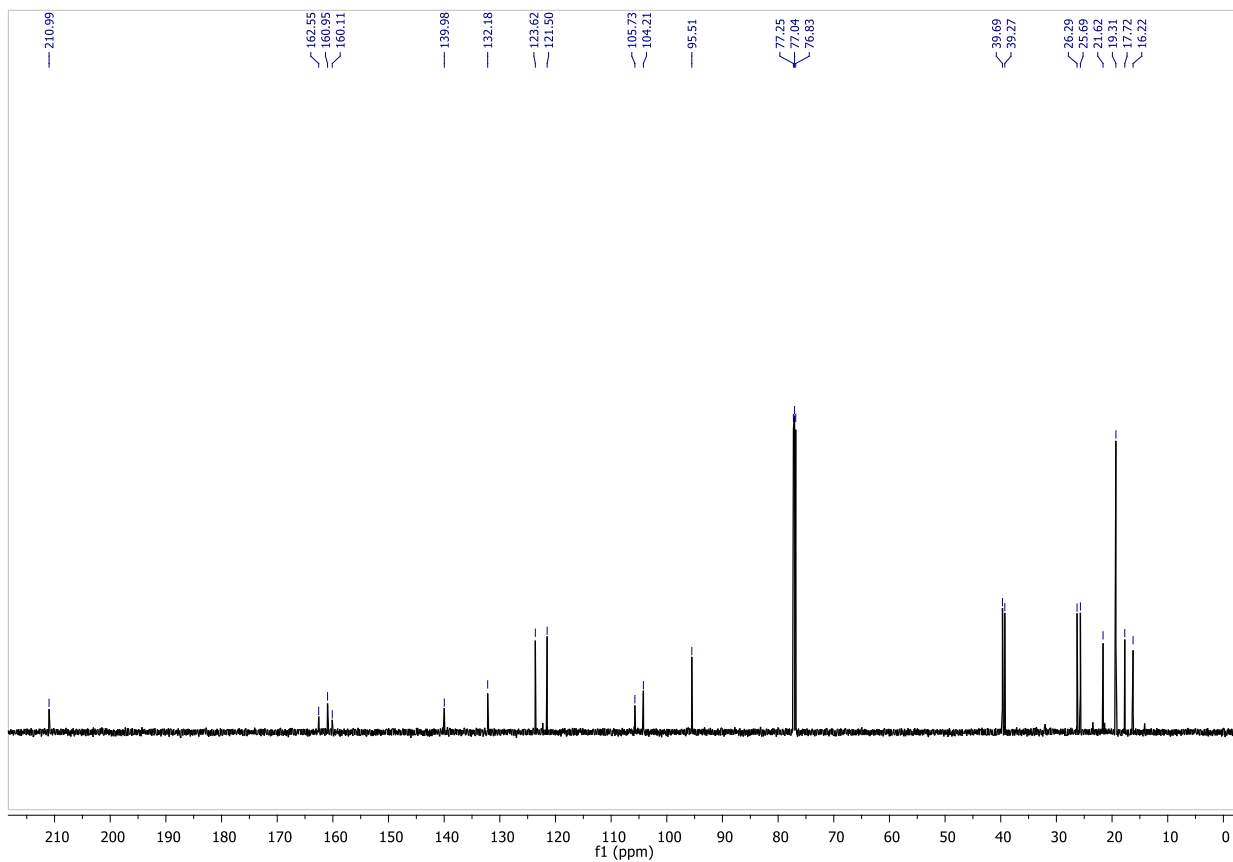
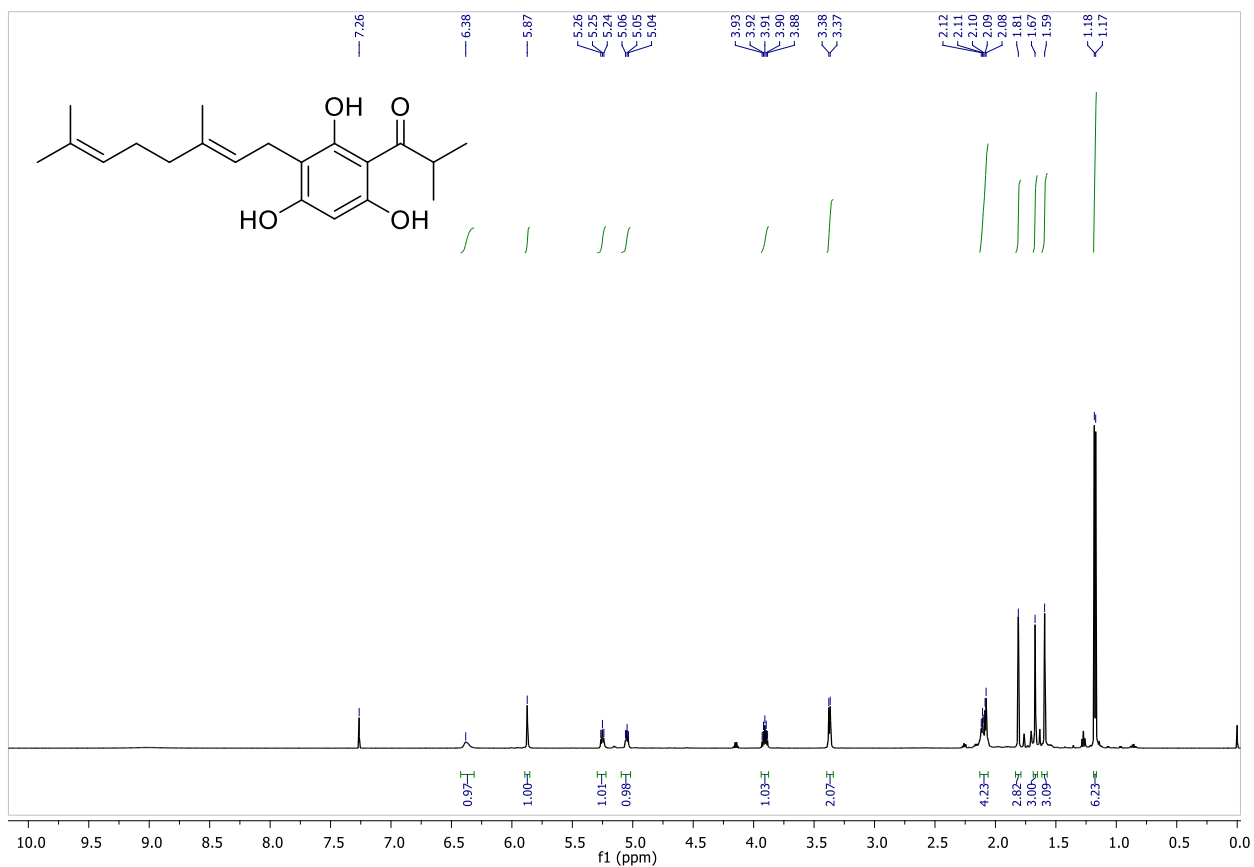
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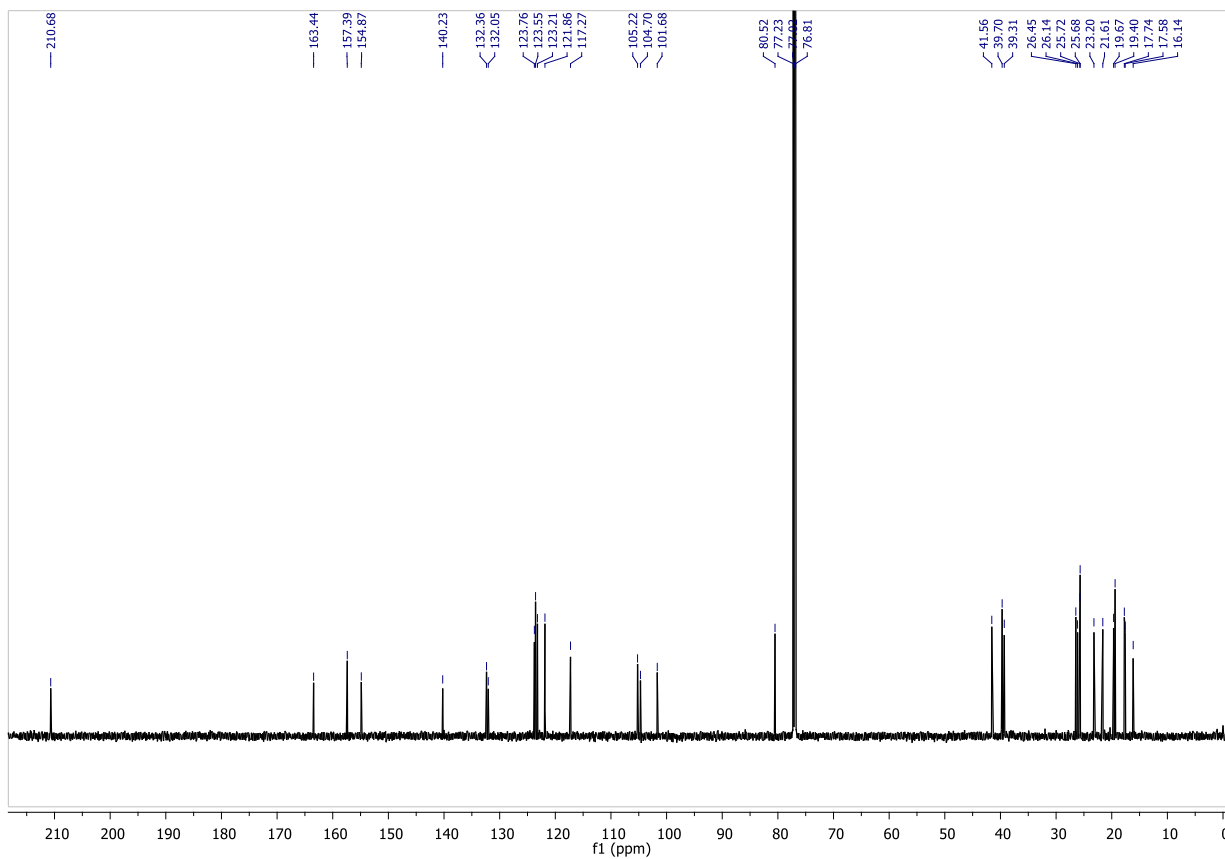
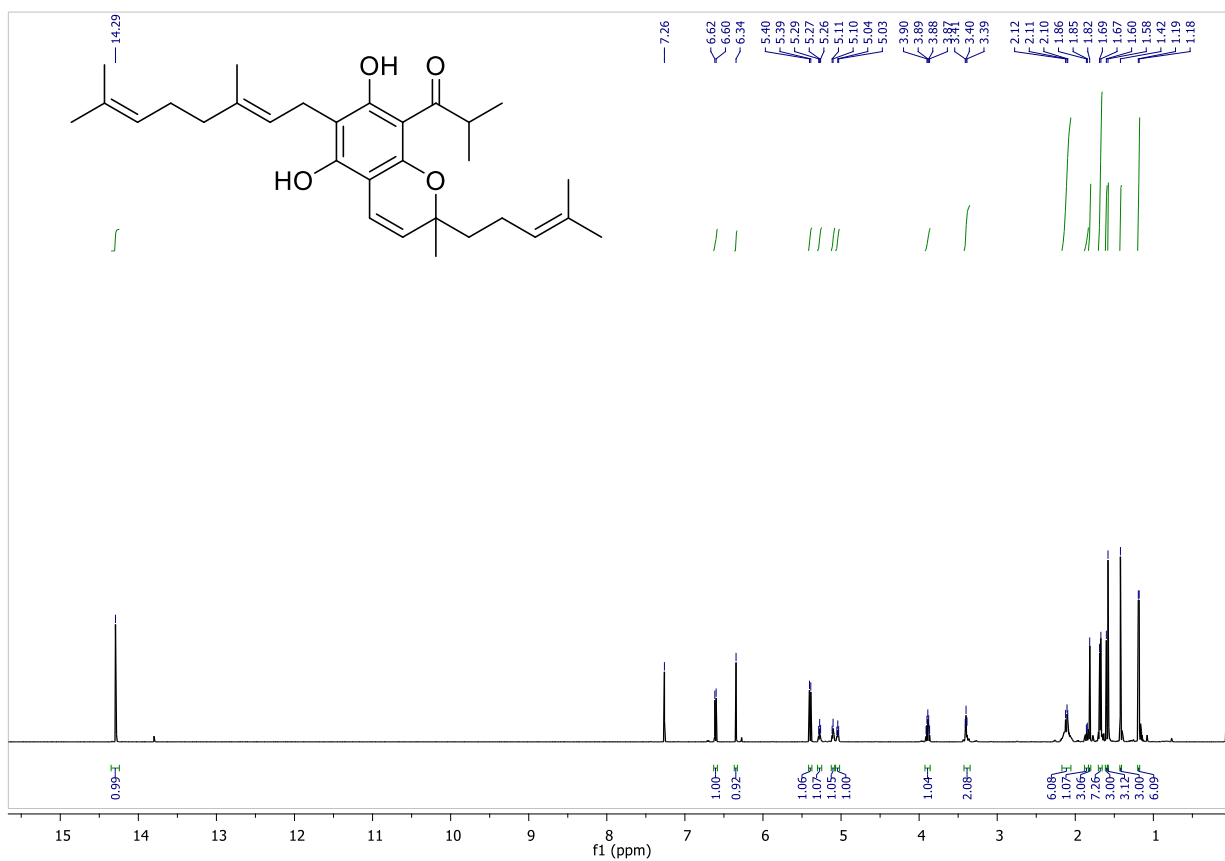
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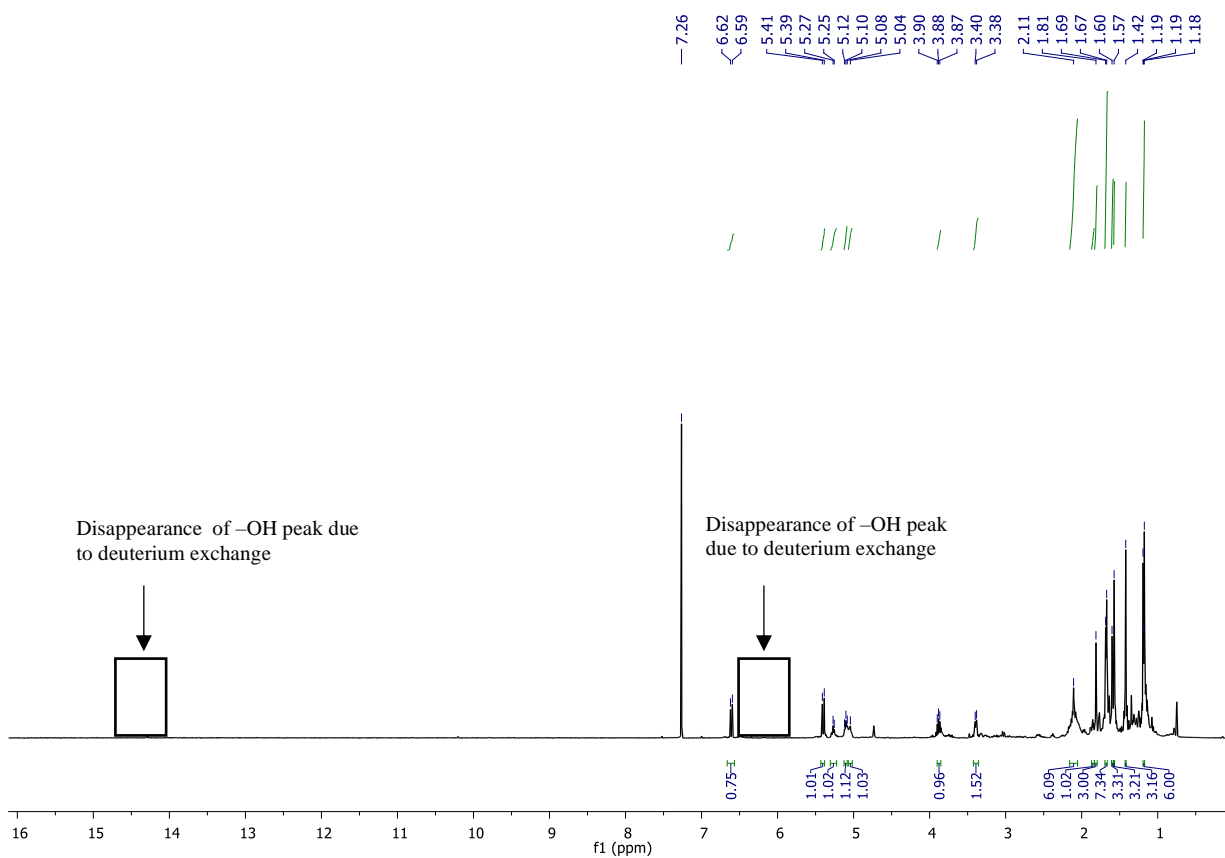
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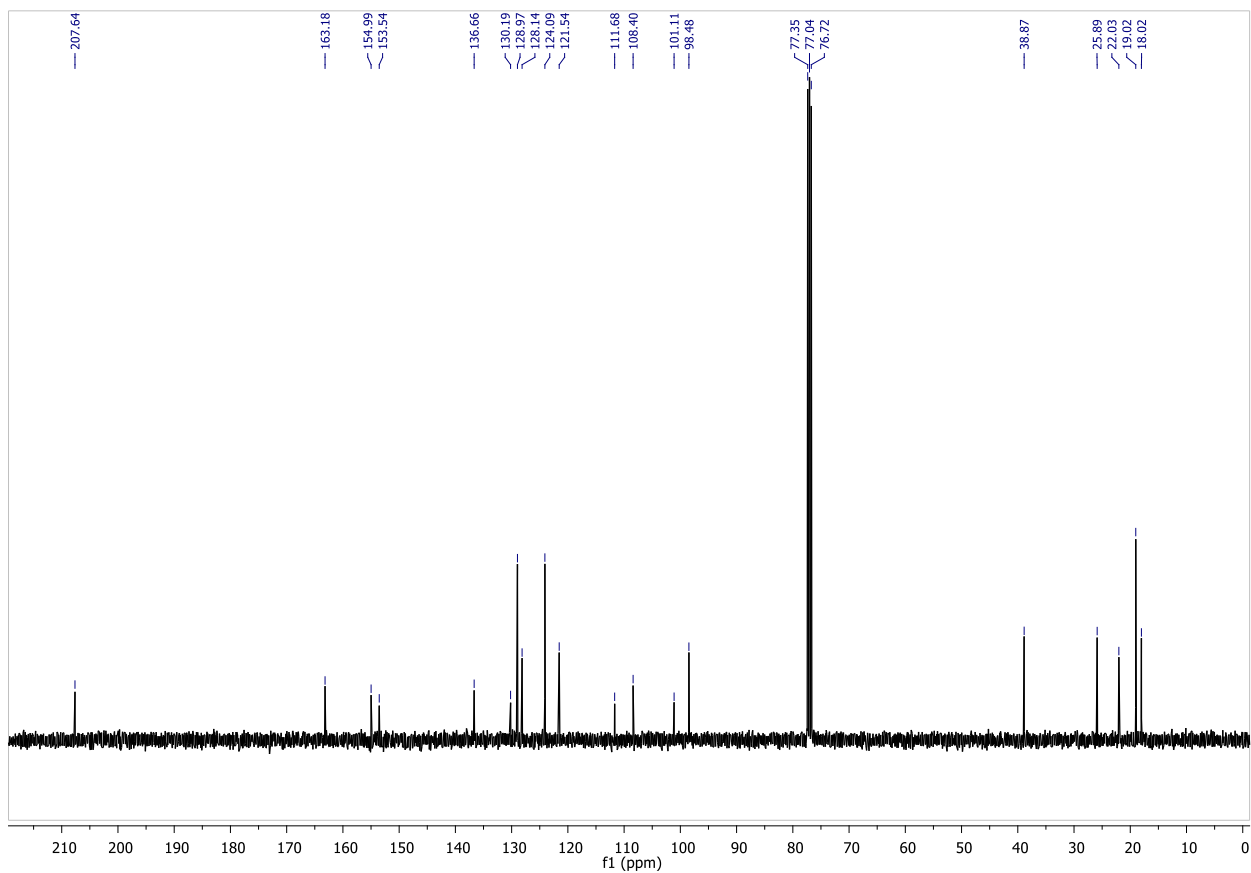
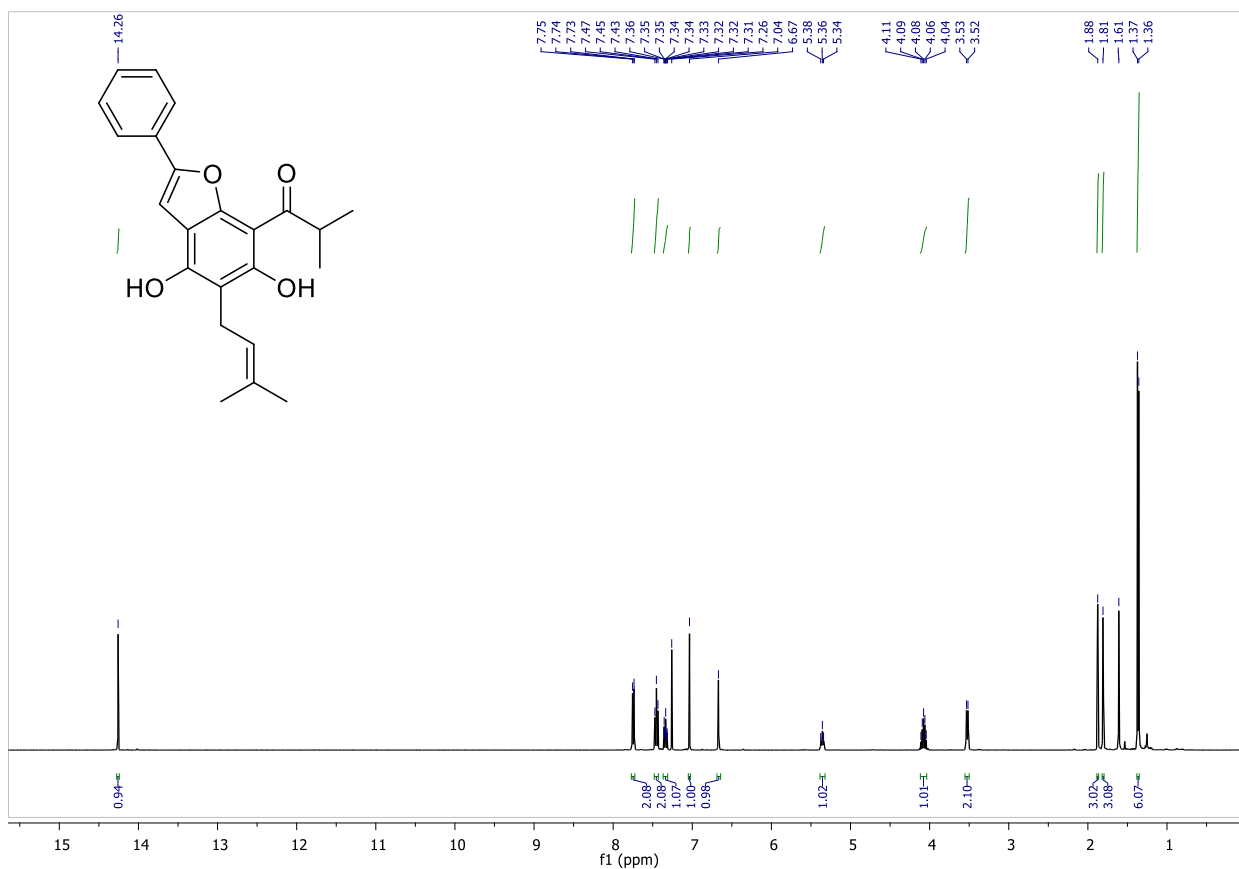
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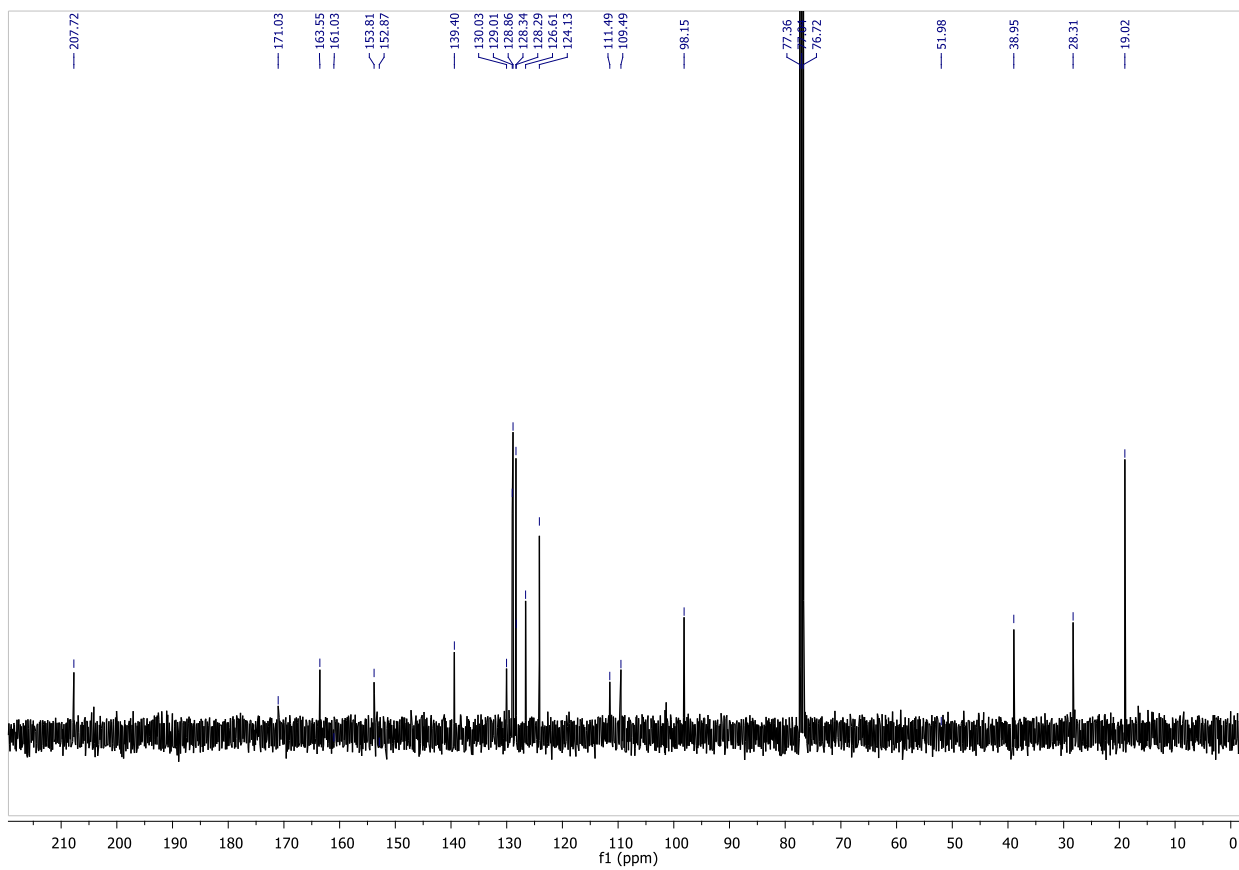
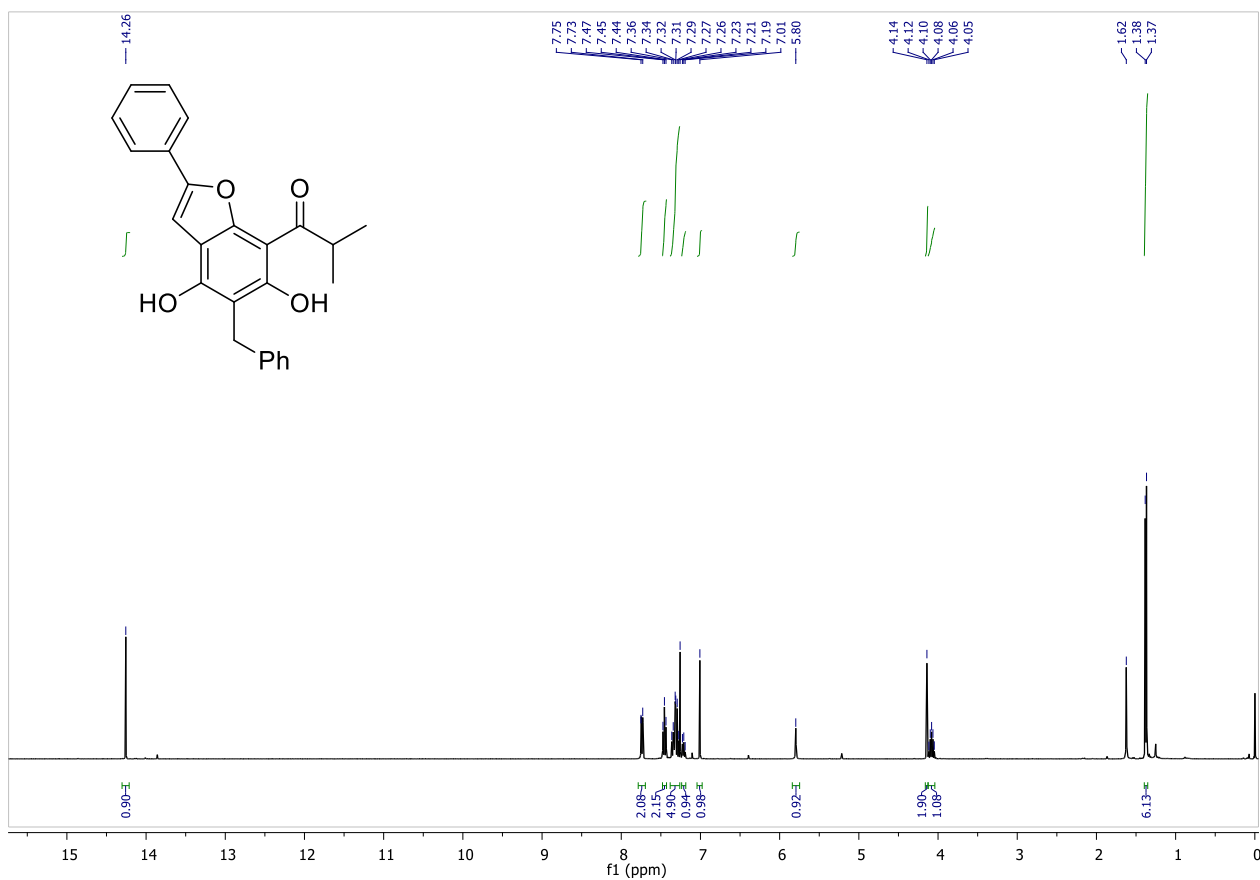


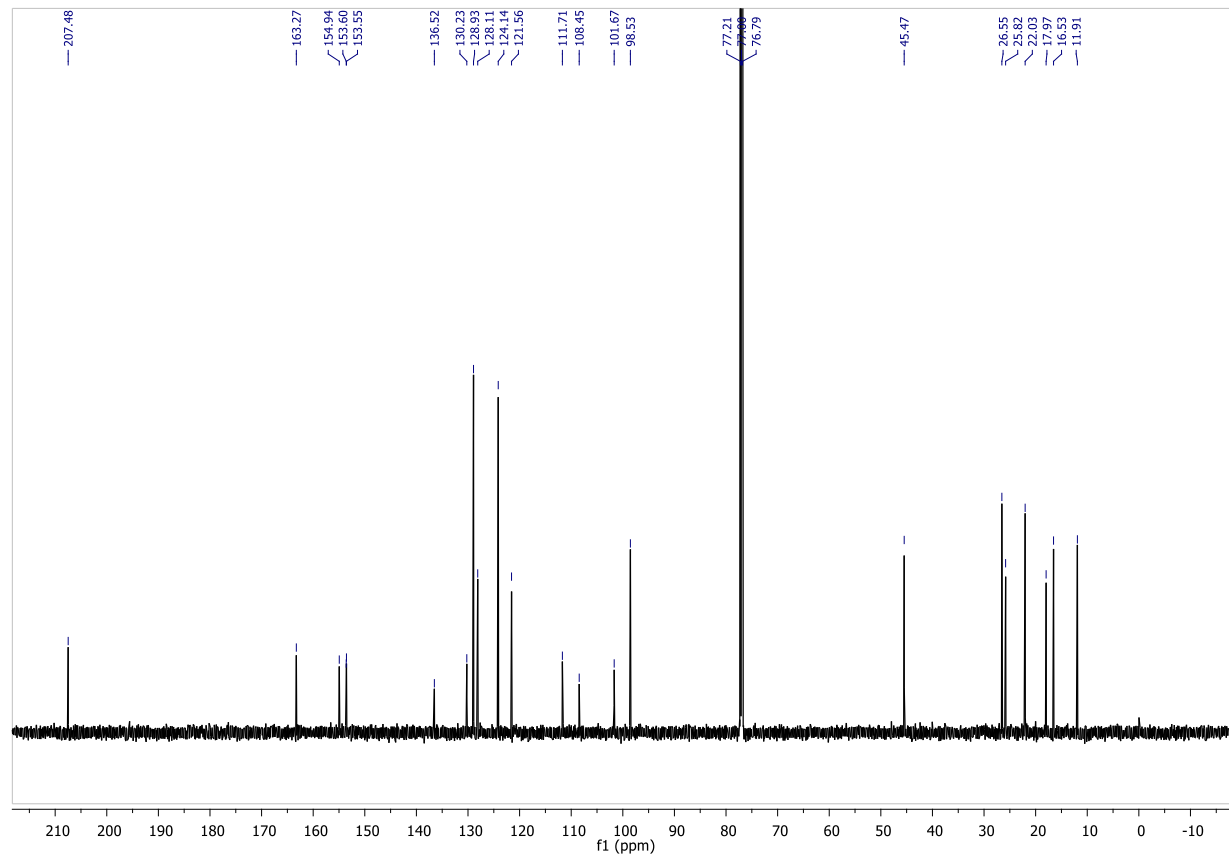
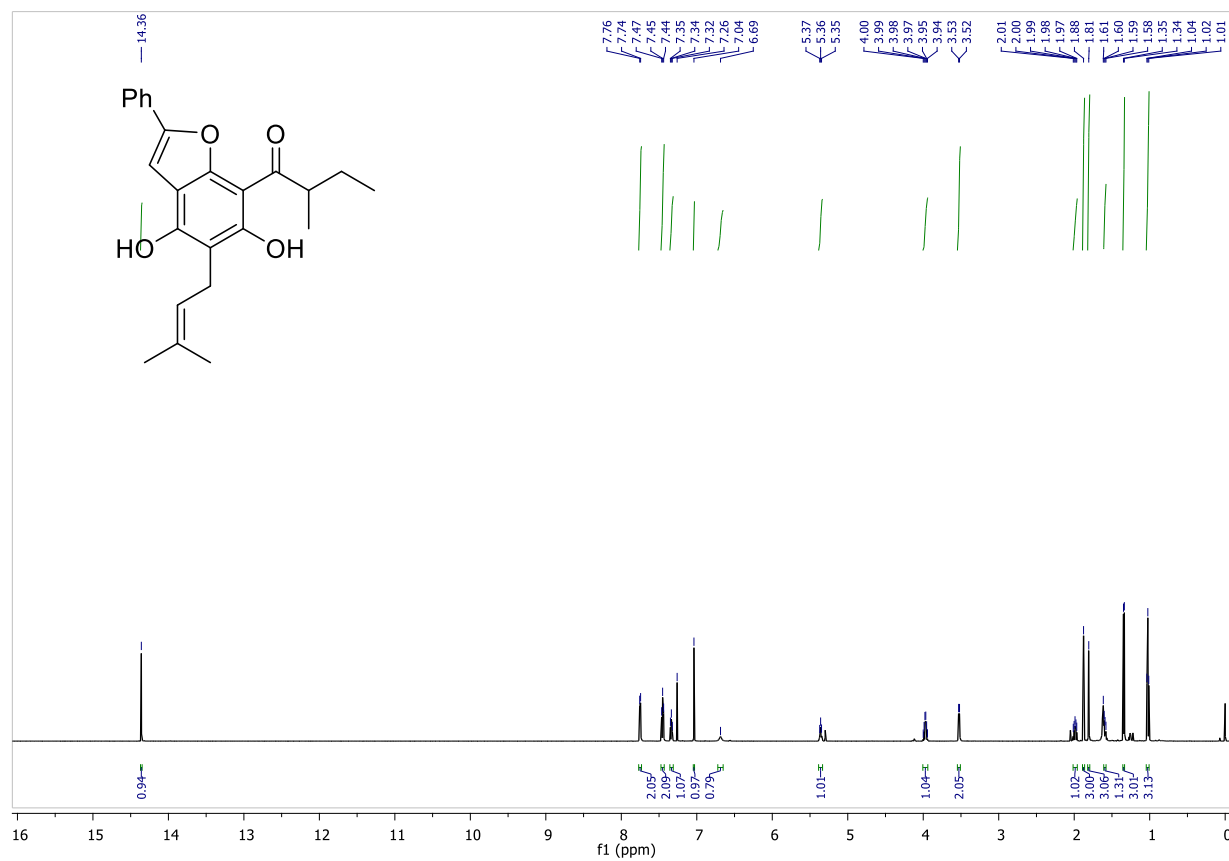
$^1\text{H}$  and  $^{13}\text{C}$  NMR spectrum of compound **13** in  $\text{CDCl}_3$ 

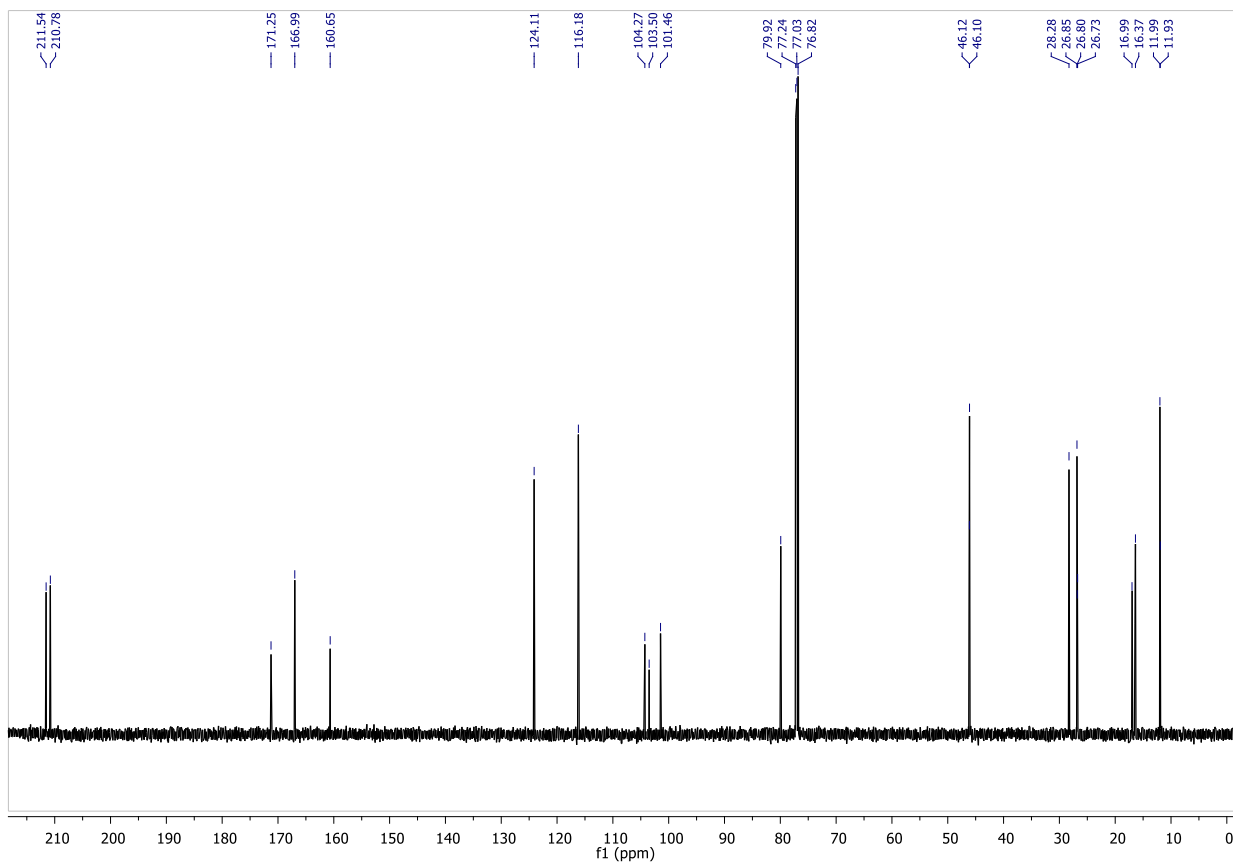
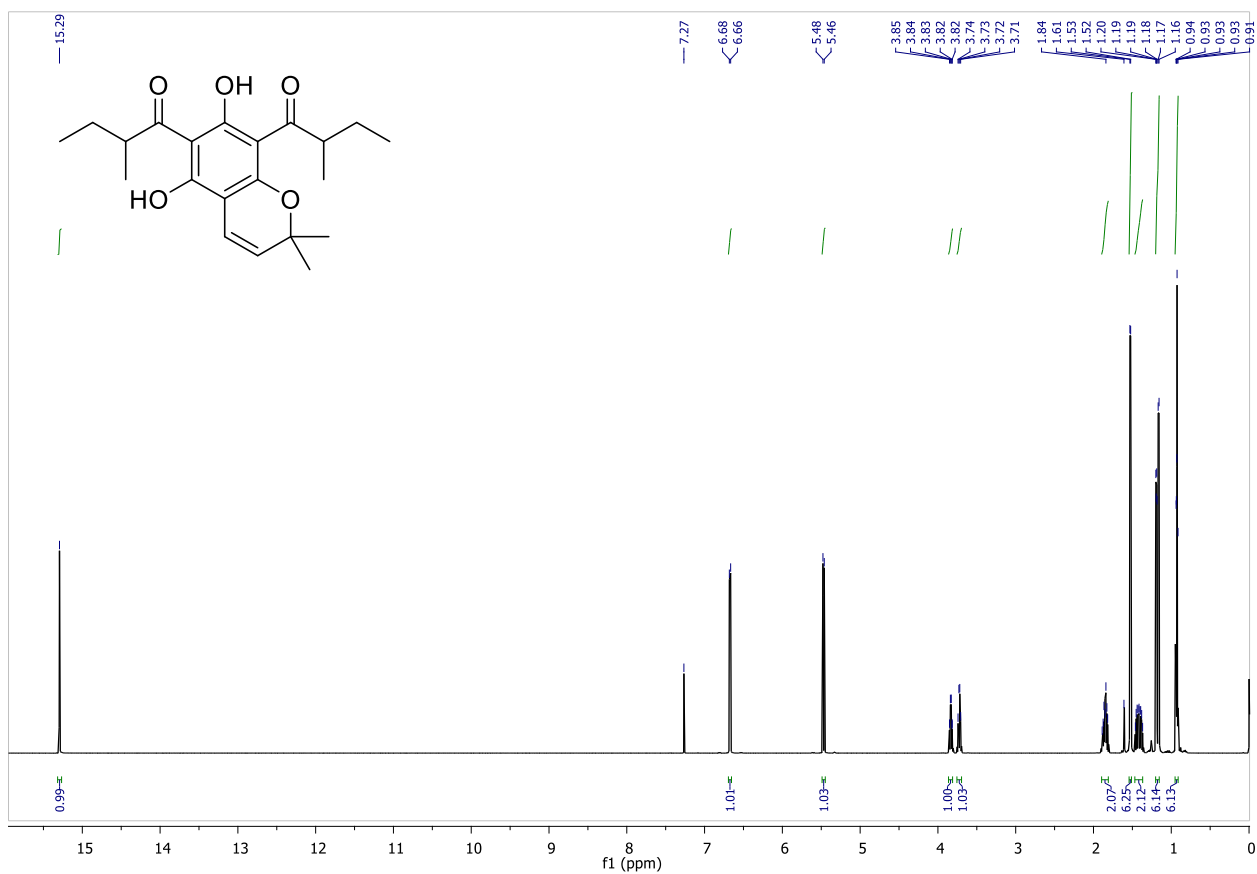
$^1\text{H}$  and  $^{13}\text{C}$  NMR spectrum of faberione E **3** in  $\text{CDCl}_3$ 

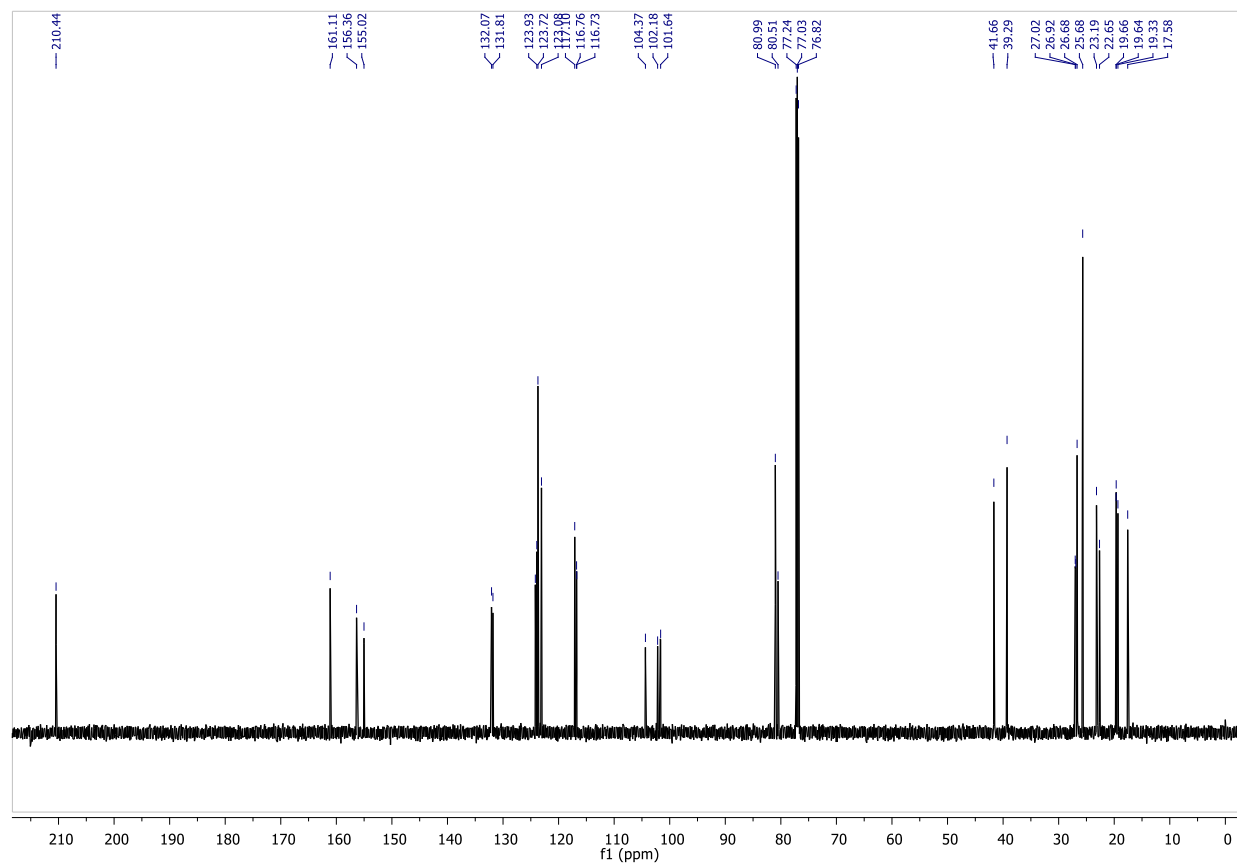
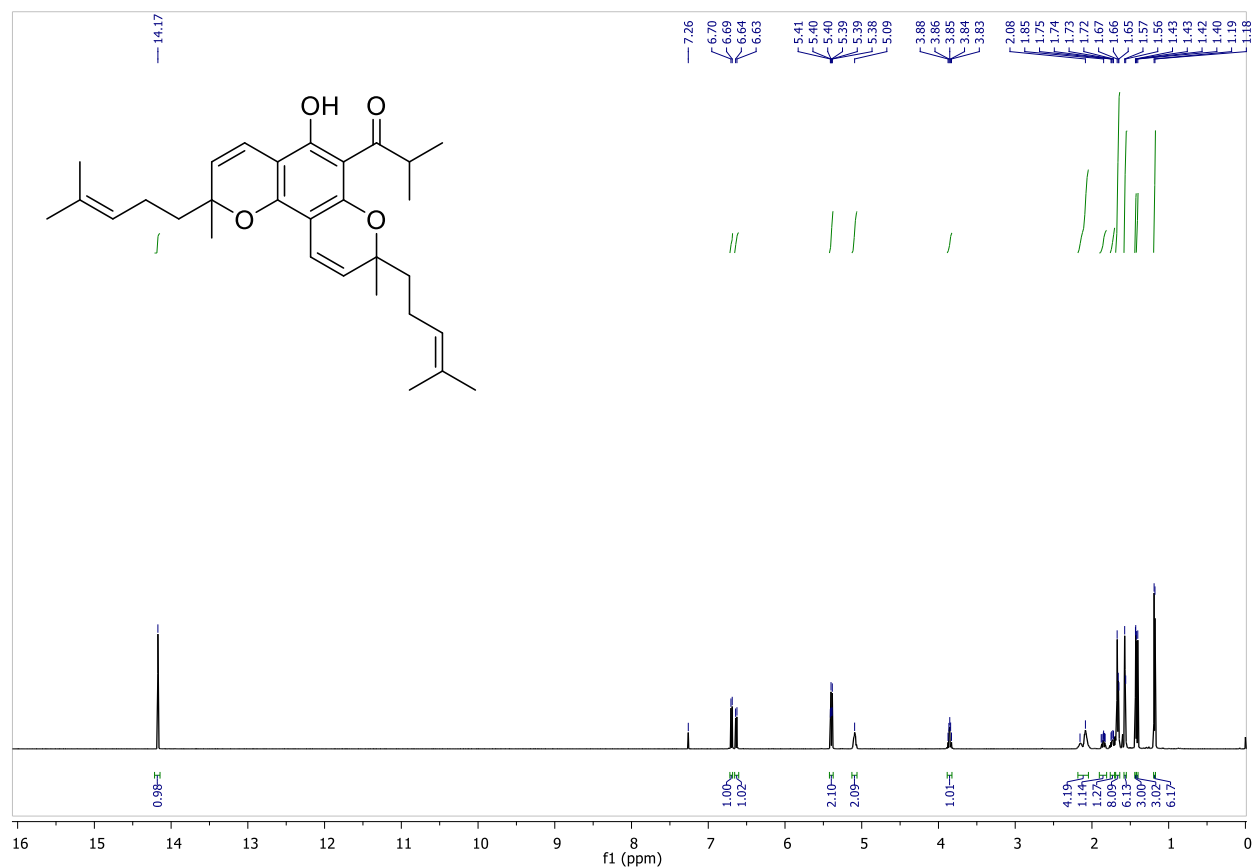
Deuterium exchange NMR of faberione E 3 in  $\text{CDCl}_3 + \text{D}_2\text{O}$ 

$^1\text{H}$  and  $^{13}\text{C}$  NMR spectrum of compound **1a** in  $\text{CDCl}_3$ 

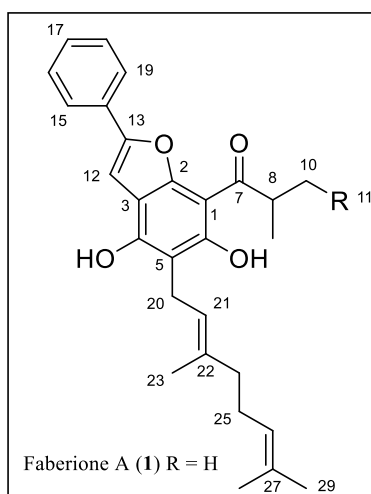
$^1\text{H}$  and  $^{13}\text{C}$  NMR spectrum of compound **1b** in  $\text{CDCl}_3$ 

$^1\text{H}$  and  $^{13}\text{C}$  NMR spectrum of compound **2a** in  $\text{CDCl}_3$ 

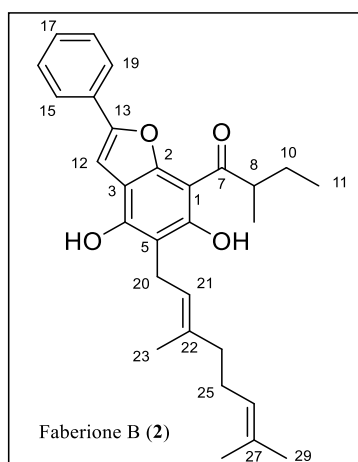
$^1\text{H}$  and  $^{13}\text{C}$  NMR spectrum of compound **3a** in  $\text{CDCl}_3$ 

$^1\text{H}$  and  $^{13}\text{C}$  NMR spectrum of compound **3b** in  $\text{CDCl}_3$ 

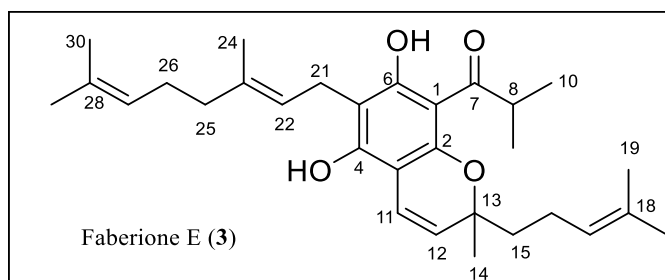


**Table 1.**  $^1\text{H}$  and  $^{13}\text{C}$  NMR data comparison of isolated faberione A (1) with synthetic faberione A data in  $\text{CDCl}_3$ 

Position	Faberione A (Isolated)		Faberione A (Synthetic)	
	$\delta_{\text{H}}$ (mult. J/Hz) 600 MHz	$\delta_{\text{C}}$ 150 MHz	$\delta_{\text{H}}$ (mult. J/Hz) 400 MHz	$\delta_{\text{C}}$ 100 MHz
1		101.1, C		101.1, C
2		153.5, C		153.5, C
3		111.8, C		111.8, C
4		155.3, C		155.3, C
5		108.3, C		108.3, C
6		163.2, C		163.2, C
7		207.6, C		207.6, C
8	4.06 (sept, $J = 6.8$ , 1H)	38.9, CH	4.04-4.12 (m, 1H)	38.9, CH
9	1.35 (d, $J=6.8$ , 3H)	19.0, $\text{CH}_3$	1.37 (d, $J=6.8$ , 3H)	19.0, $\text{CH}_3$
10	1.35 (d, $J=6.8$ , 3H)	19.0, $\text{CH}_3$	1.37 (d, $J=6.8$ , 3H)	19.0, $\text{CH}_3$
12	7.01 (s, 1H)	98.6, CH	7.03 (s, 1H)	98.6, CH
13		153.4, C		153.5, C
14		130.2, C		130.2, C
15, 19	7.73 (d, $J=7.6$ , 2H)	124.1, CH	7.75 (d, $J=7.4$ , 2H)	124.1, CH
16, 18	7.43 (t, $J=7.6$ , 2H)	129.0, CH	7.45 (t, $J=7$ , 2H)	129.0, CH
17	7.32 (t, $J=7.6$ , 1H)	128.1, CH	7.34 (t, $J=7.4$ , 1H)	128.1, CH
20	3.52 (brd, $J=7.2$ , 2H)	22.0, $\text{CH}_2$	3.54 (brd, $J=7.2$ , 2H)	22.0, $\text{CH}_2$
21	5.34 (t, $J= 7.2$ , 1H)	121.5, CH	5.36 (t, $J=7.5$ , 1H)	121.5, CH
22		140.5, C		140.5, C
23	1.84 (s, 3H)	16.3, $\text{CH}_3$	1.86 (s, 3H)	16.3, $\text{CH}_3$
24	2.11 overlap	39.7, $\text{CH}_2$	2.13-2.16 (m, 2H) overlap	39.7, $\text{CH}_2$
25	2.13, m	26.2, $\text{CH}_2$	2.13-2.16 (m, 2H) overlap	26.2, $\text{CH}_2$
26	5.04 (t, $J= 6.1$ , 1H)	123.6, CH	5.06 (t, $J= 5.4$ , 1H)	123.6, CH
27		132.5, C		132.4, C
28	1.68 (s, 3H)	25.8, $\text{CH}_3$	1.70 (s, 3H)	25.8, $\text{CH}_3$
29	1.59 (s, 3H)	17.8, $\text{CH}_3$	1.61 (s, 3H)	17.8, $\text{CH}_3$
30	14.26 (s, 1H) (OH-6)		14.28 (s, 1H) (OH-6)	
31	6.68 (brs, 1H) (OH-4)		6.72 (brs, 1H) (OH-4)	

**Table 2.**  $^1\text{H}$  and  $^{13}\text{C}$  NMR data comparison of isolated faberione B (2) with synthetic faberione B data in  $\text{CDCl}_3$ 

Position	Faberione B (Isolated)		Faberione B (Synthetic)	
	$\delta_{\text{H}}$ (mult. J/Hz) 600 MHz	$\delta_{\text{C}}$ 150 MHz	$\delta_{\text{H}}$ (mult. J/Hz) 600s MHz	$\delta_{\text{C}}$ 150 MHz
1		101.6, C		101.6, C
2		153.5, C		153.5, C
3		111.8, C		111.8, C
4		155.3, C		155.3, C
5		108.3, C		108.4, C
6		163.2, C		163.2, C
7		207.5, C		207.5, C
8	3.95 (m, 1H)	45.5, CH	3.96-3.99 (m, 1H)	45.5, CH
9	1.32 (d, $J=6.8$ , 3H)	16.6, $\text{CH}_3$	1.34 (d, $J=6.8$ , 3H)	16.6, $\text{CH}_3$
10	1.97 (m, 1H), 1.57 (m, 1H)	26.6, $\text{CH}_2$	1.96-2.02 (m, 1H), 1.57-1.61 (m, 1H)	26.6, $\text{CH}_2$
11	1.00 (t, $J=7.2$ , 3H)	12.0, $\text{CH}_3$	1.03 (t, $J=7.2$ , 3H)	12.0, $\text{CH}_3$
12	7.01 (s, 1H)	98.6, CH	7.03 (s, 1H)	98.6, CH
13		153.5, C		153.6, C
14		130.2, C		130.2, C
15, 19	7.74 (d, $J=7.6$ , 2H)	124.1, CH	7.75 (d, $J=7.2$ , 2H)	124.1, CH
16, 18	7.43 (t, $J=7.6$ , 2H)	129.0, CH	7.45 (t, $J=7.2$ , 2H)	128.94, CH
17	7.32 (t, $J=7.6$ , 1H)	128.1, CH	7.33 (t, $J=7.4$ , 1H)	128.1, CH
20	3.52 (brd, $J=7.2$ , 2H)	22.0, $\text{CH}_2$	3.54 (brd, $J=7.2$ , 2H)	22.0, $\text{CH}_2$
21	5.35 (t, $J=7.2$ , 1H)	121.5, CH	5.36 (t, $J=7.2$ , 1H)	121.5, CH
22		140.5, C		140.4, C
23	1.84 (s, 3H)	16.3, $\text{CH}_3$	1.86 (s, 3H)	16.3, $\text{CH}_3$
24	2.11 (m, 2H) overlap	39.7, $\text{CH}_2$	2.12-2.15 (m, 2H) overlap	39.7, $\text{CH}_2$
25	2.14 (m, 2H)	26.2, $\text{CH}_2$	2.12-2.15 (m, 2H) overlap	26.2, $\text{CH}_2$
26	5.04 (t, $J=6.7$ , 1H)	123.5, CH	5.07 (t, $J=6.2$ , 1H)	123.6, CH
27		132.5, C		132.4, C
28	1.68 (s, 3H)	25.8, $\text{CH}_3$	1.70 (s, 3H)	25.7, $\text{CH}_3$
29	1.61 (s, 3H)	17.8, $\text{CH}_3$	1.61 (s, 3H)	17.8, $\text{CH}_3$
30	14.37 (s, 1H)		14.38 (s, 1H)	
31	6.69 (brs, 1H)		6.76 (brs, 1H)	

**Table 3.**  $^1\text{H}$  and  $^{13}\text{C}$  NMR data comparison of isolated faberione E (3) with synthetic faberione E data in  $\text{CDCl}_3$ 

Position	Faberione E (Isolated)		Faberione E (Synthetic)	
	$\delta\text{H}$ (mult. J/Hz) 600 MHz	$\delta\text{C}$ 150 MHz	$\delta\text{H}$ (mult. J/Hz) 600 MHz	$\delta\text{C}$ 150 MHz
1		104.7, C		104.7, C
2		154.9, C		154.9, C
3		101.7, C		101.7, C
4		157.4, C		157.4, C
5		105.2, C		105.2, C
6		163.4, C		163.4, C
7		210.7, C		210.7, C
8	3.86 (sept, $J= 6.8$ , 1H)	39.3, CH	3.89 (sept, $J= 6.7$ , 1H)	39.3, CH
9	1.17 (d, $J= 6.8$ , 3H)	19.4, $\text{CH}_3$	1.19 (d, $J= 6.8$ , 3H)	19.4, $\text{CH}_3$
10	1.16 (d, $J= 6.8$ , 3H)	19.7, $\text{CH}_3$	1.18 (d, $J= 6.8$ , 3H)	19.7, $\text{CH}_3$
11	6.58 (d, $J= 10.0$ , 1H)	117.3, CH	6.61 (d, $J= 10.0$ , 1H)	117.3, CH
12	5.37 (d, $J= 10.0$ , 1H)	123.2, CH	5.40 (d, $J= 10.0$ , 1H)	123.2, CH
13		80.5, C		80.5, C
14	1.65-1.85 (m, 2H) overlape	41.6, $\text{CH}_2$	1.68-1.85 (m, 2H) overlape	41.6, $\text{CH}_2$
15	1.40 (s, 3H)	26.5, $\text{CH}_3$	1.42 (s, 3H)	26.5, $\text{CH}_3$
16	2.04-2.12 (m, 2H)	23.2, $\text{CH}_2$	2.06-2.17 (m, 2H)	23.2, $\text{CH}_2$
17	5.08 (t, $J= 7.1$ , 1H)	123.8, CH	5.11 (t, $J= 7.1$ , 1H)	123.8, CH
18		132.1, C		132.1, C
19	1.65 (s, 3H)	25.8, $\text{CH}_3$	1.68 (s, 3H)	25.7, $\text{CH}_3$
20	1.55 (s, 3H)	17.6, $\text{CH}_3$	1.58 (s, 3H)	17.6, $\text{CH}_3$
21	3.39 (m, 2H)	21.6, $\text{CH}_2$	3.39-3.41 (m, 2H)	21.6, $\text{CH}_2$
22	5.25 (t, $J= 6.9$ , 1H)	121.9, CH	5.27 (t, $J= 6.9$ , 1H)	121.9, CH
23		140.3, C		140.2, C
24	1.79 (s, 3H)	16.2, $\text{CH}_3$	1.82 (s, 3H)	16.1, $\text{CH}_3$
25	2.07 (m, 2H) overlape	39.7, $\text{CH}_2$	2.07-2.17 (m, 2H) overlape	39.7, $\text{CH}_2$
26	2.10 (m, 2H) overlape	26.1, $\text{CH}_2$	2.07-2.17 (m, 2H) overlape	26.1, $\text{CH}_2$
27	5.02 (t, $J= 6.3$ , 1H)	123.5, CH	5.04 (t, $J= 6.8$ , 1H)	123.5, CH
28		132.4, C		132.4, C
29	1.67 (s, 3H)	25.7, $\text{CH}_3$	1.68 (s, 3H)	25.7, $\text{CH}_3$
30	1.58 (s, 3H)	17.8, $\text{CH}_3$	1.60 (s, 3H)	17.7, $\text{CH}_3$
31	14.28 (s, 1H)	OH-6	14.29 (s, 1H)	
32	6.33 (brs, 1H)	OH-4	6.34 (brs, 1H)	