

Total synthesis of an anticancer norsesquiterpene alkaloid isolated from the fungus *Flammulina velutipes*

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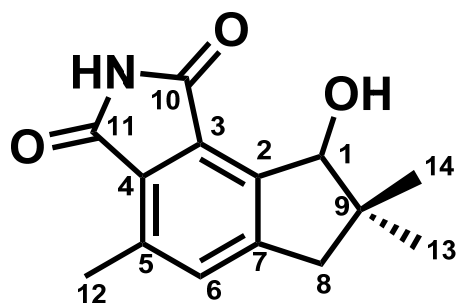
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Electronic Supplementary Information (ESI):

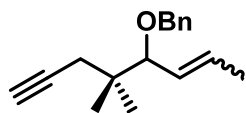
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Spectral Data Comparison of Norsesquiterpene Alkaloid

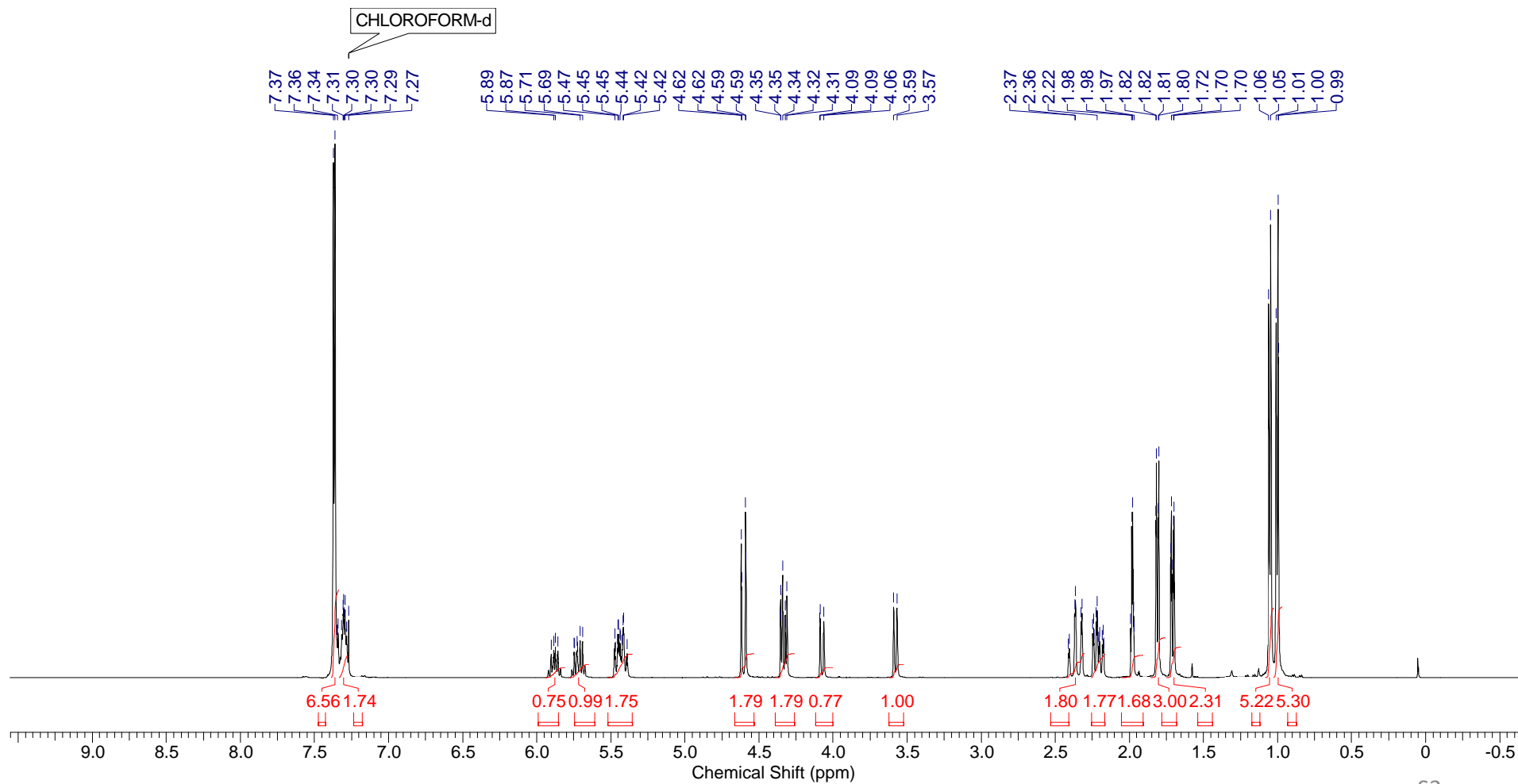


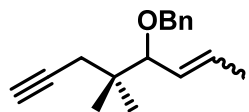
Carbon Number	Natural norsesquiterpene alkaloid (+)-1			Synthesized norsesquiterpene alkaloid (±)-1		
	δ_{H}	δ_{C}		δ_{H}	δ_{C}	
1	5.09	81.7	s, 1H	5.08	81.0	s, 1H
2		150.7			149.4	
3		129.5			128.8	
4		128.3			127.6	
5		138.9			138.3	
6	7.25	133.7	s, 1H	7.25	133.1	s, 1H
7		143.7			143.0	
8	2.78	46.6	bs, 2H	2.81-2.73	46.0	m, 2H
9		46.4			45.8	
10		169.6			169.1	
11		170.6			170.1	
12	2.65	18.4	s, 3H	2.63	17.8	s, 3H
13	0.99	22.0	s, 3H	0.98	21.4	s, 3H
14	1.33	27.0	s, 3H	1.33	26.4	s, 3H
1-OH						s, 1H
NH						brs, 1H

Copies of ^1H NMR, ^{13}C NMR spectra :

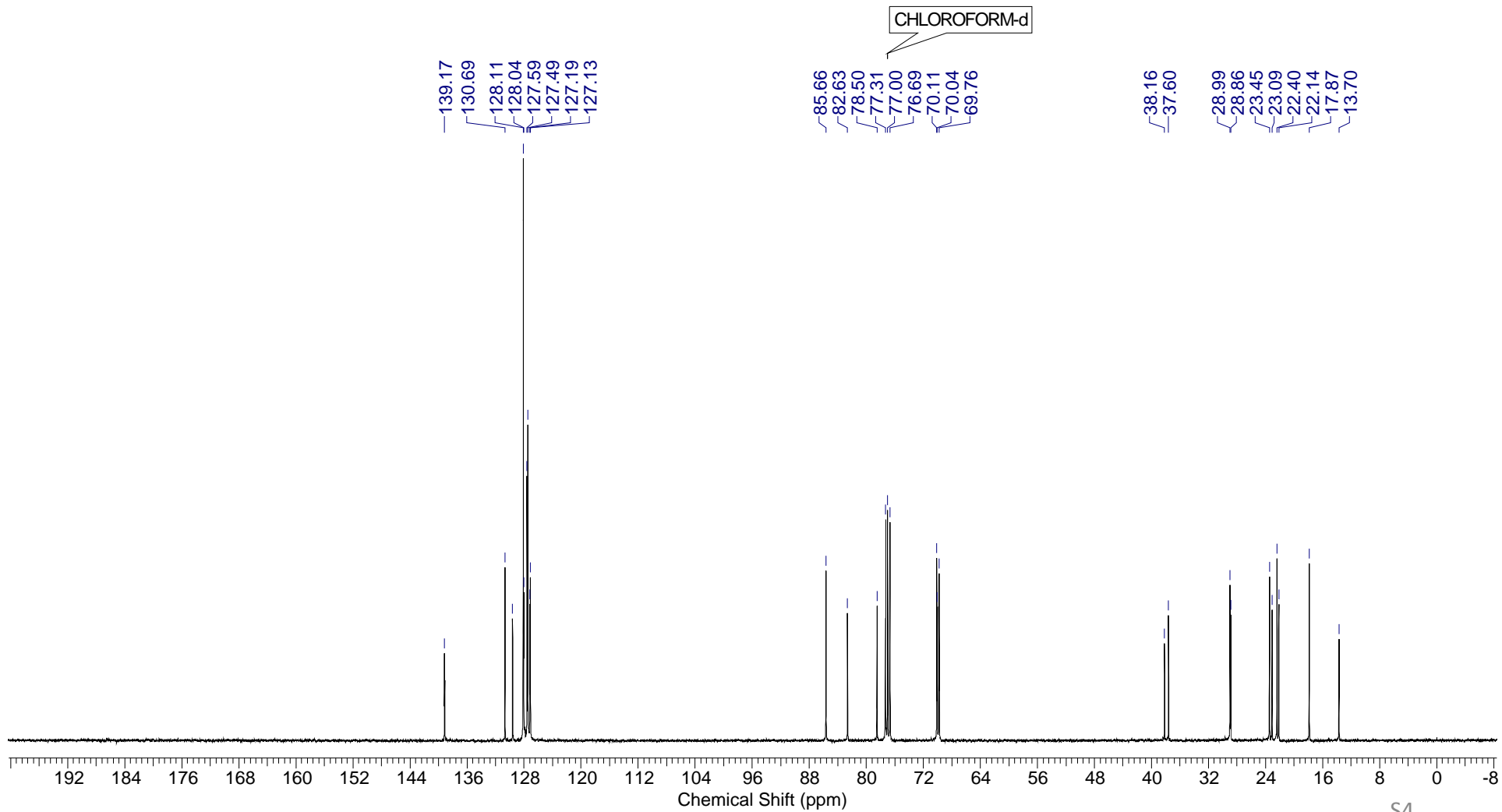


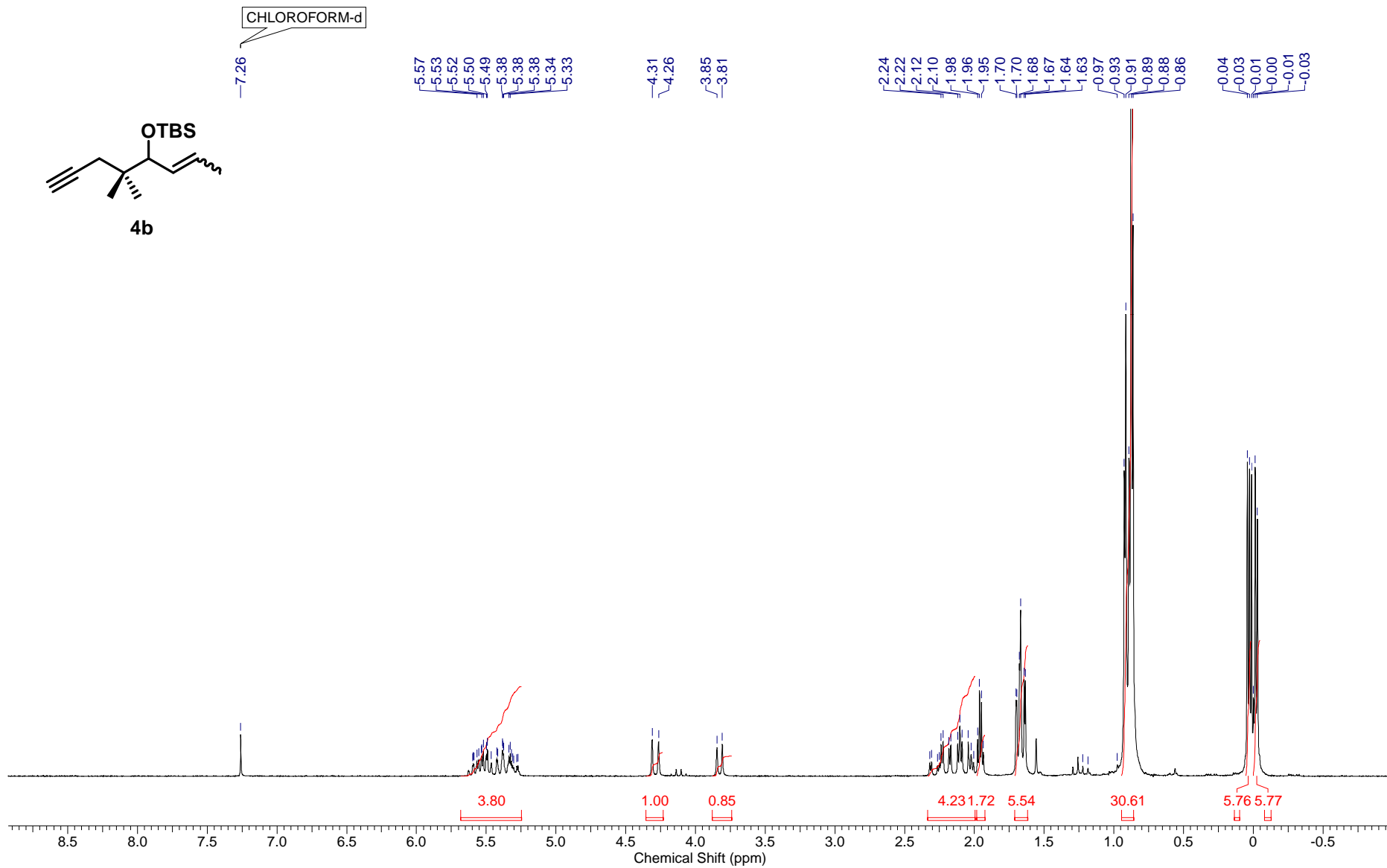
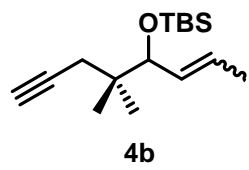
4a

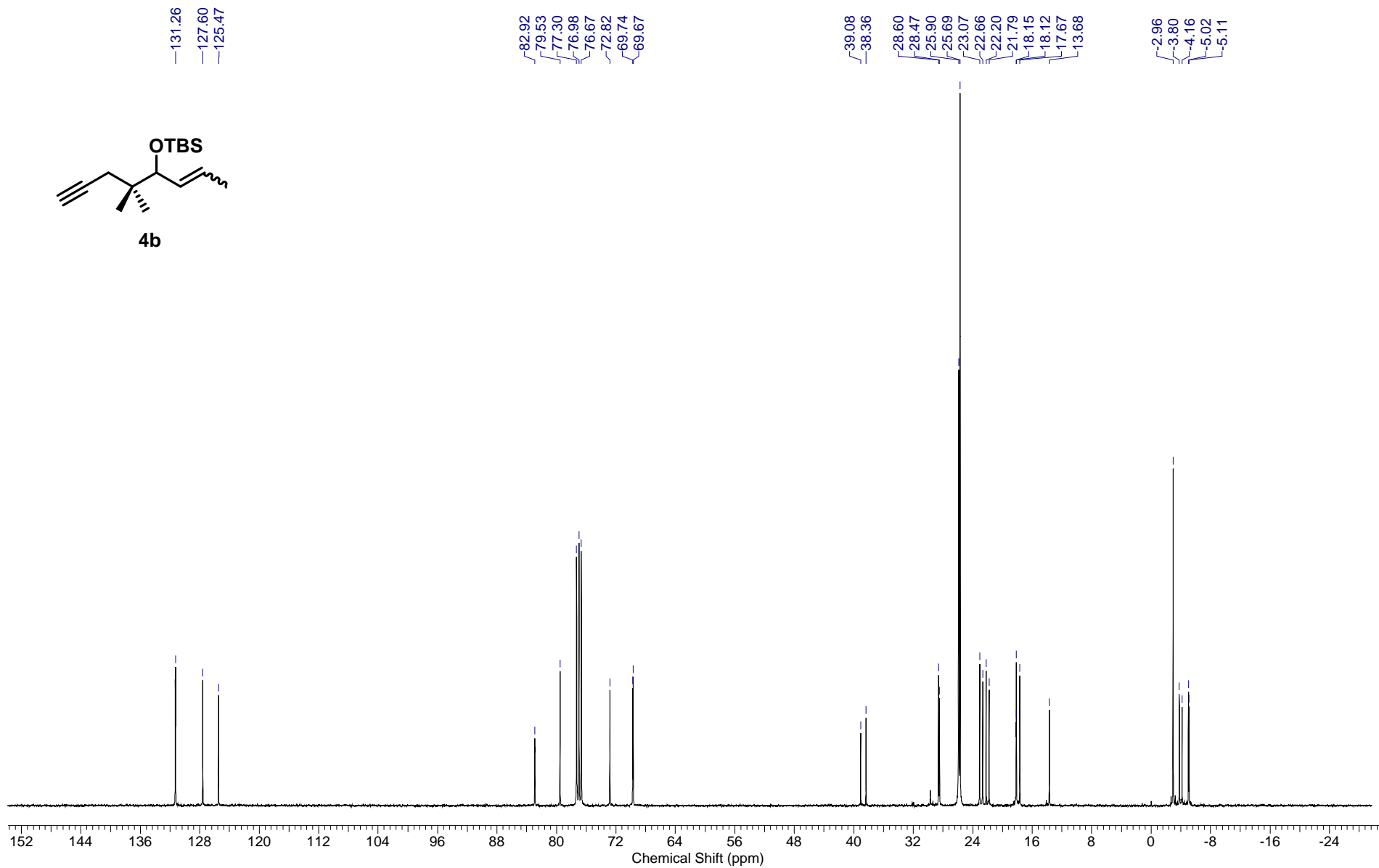
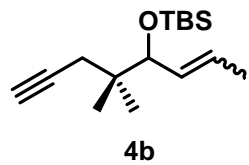


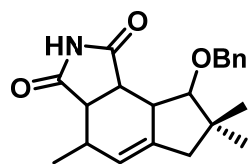


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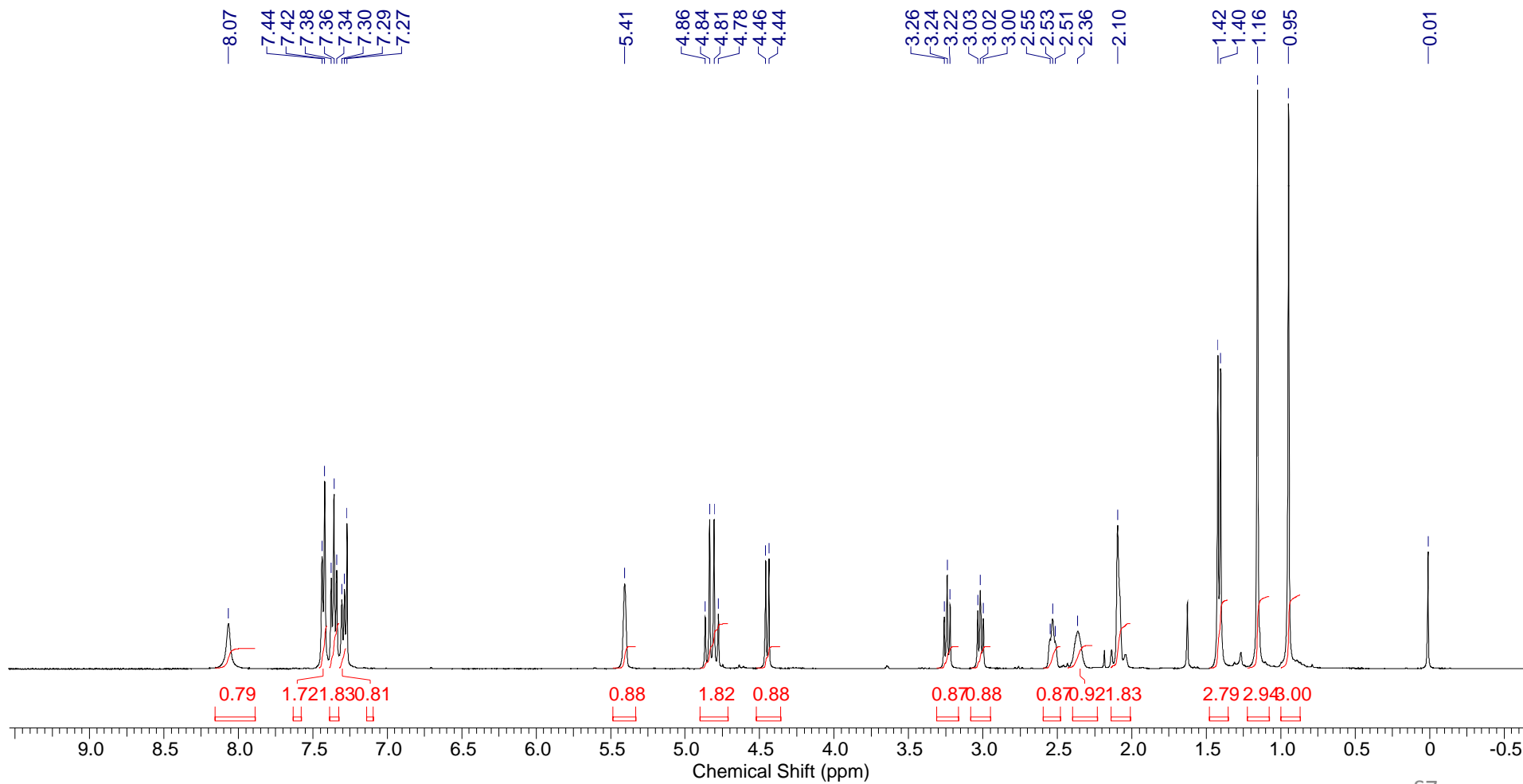


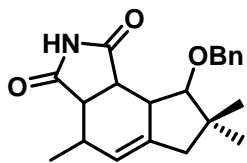




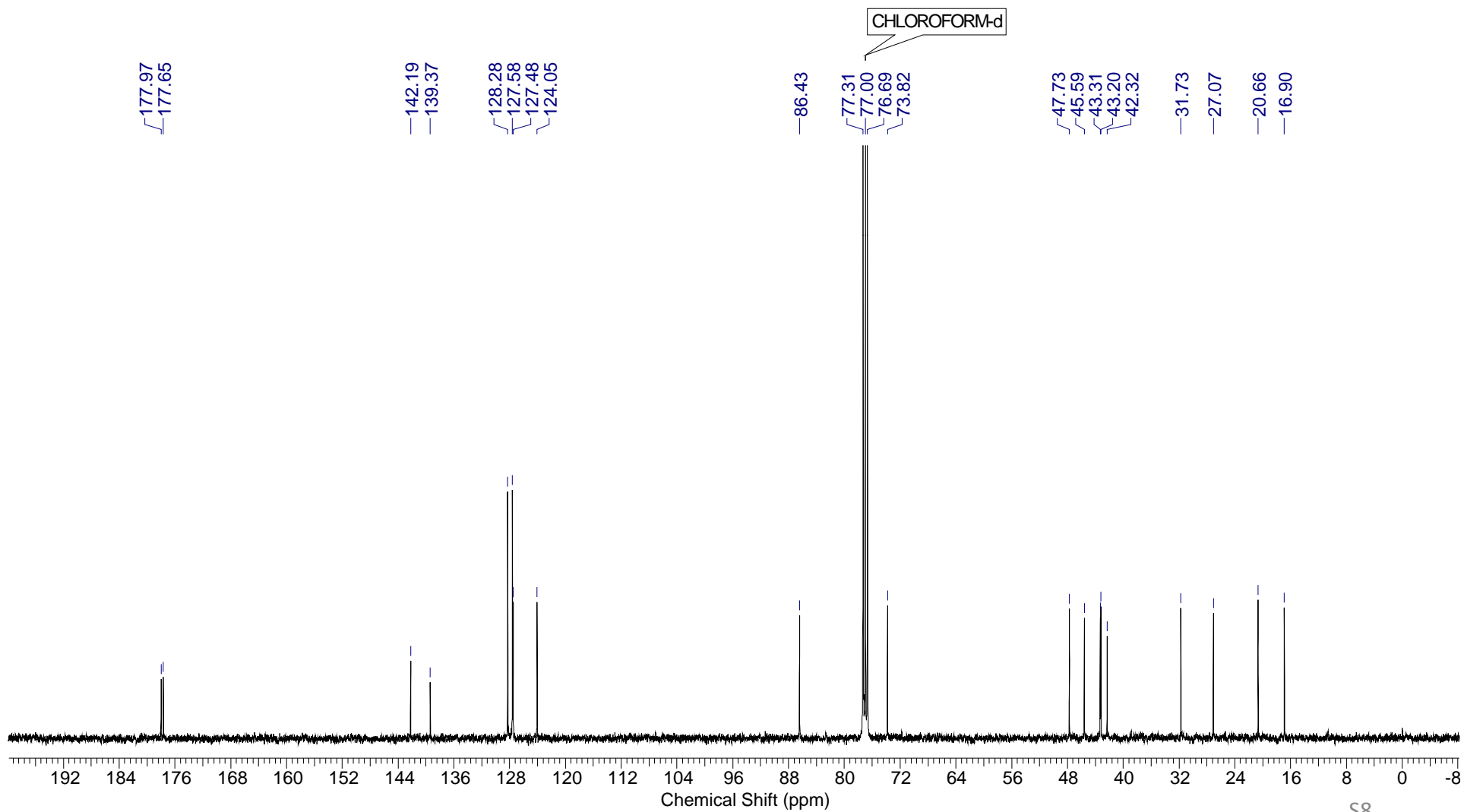
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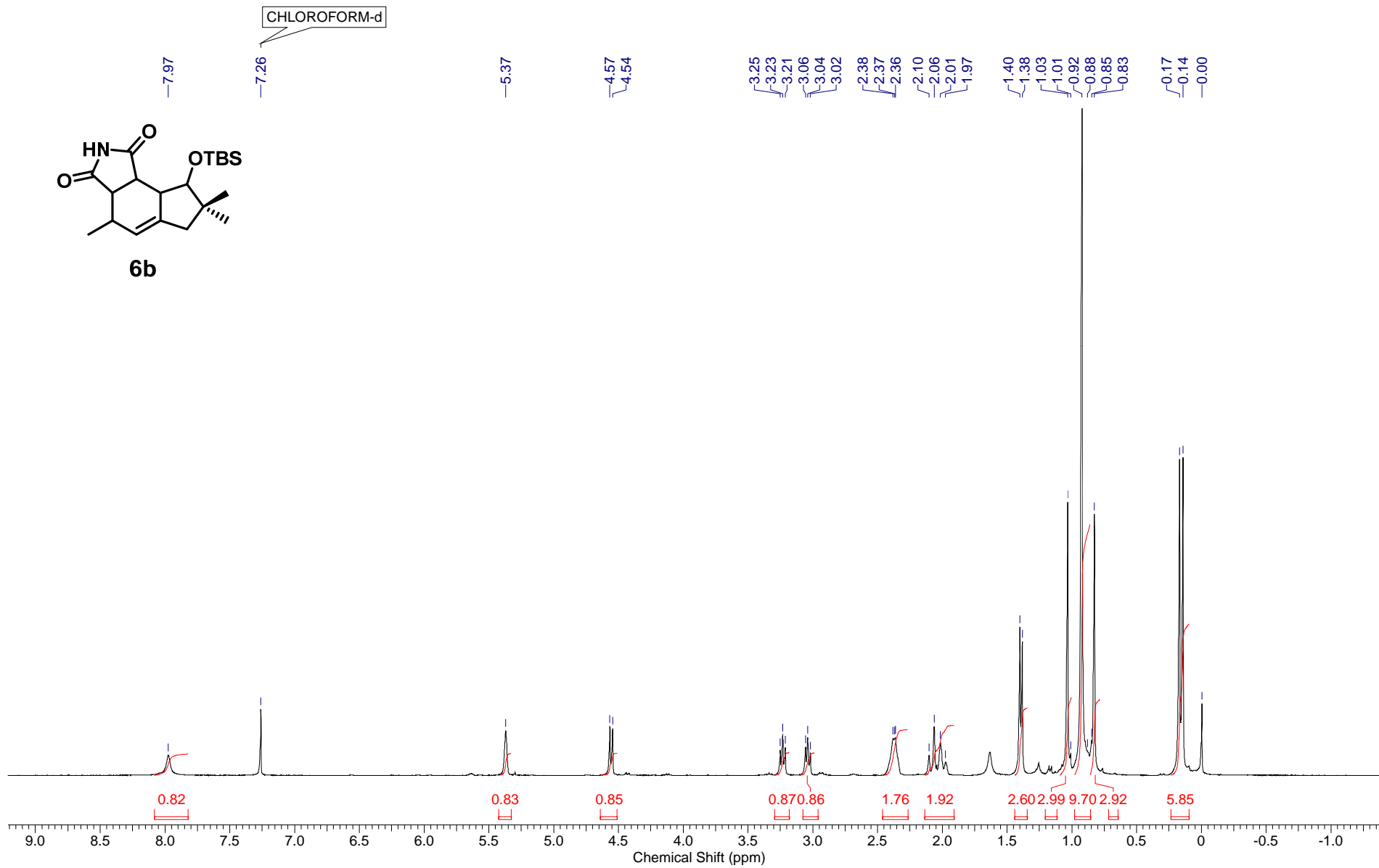
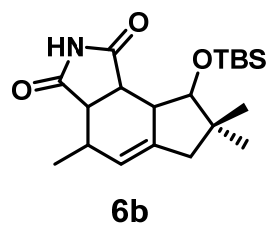
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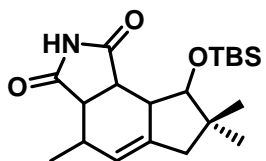




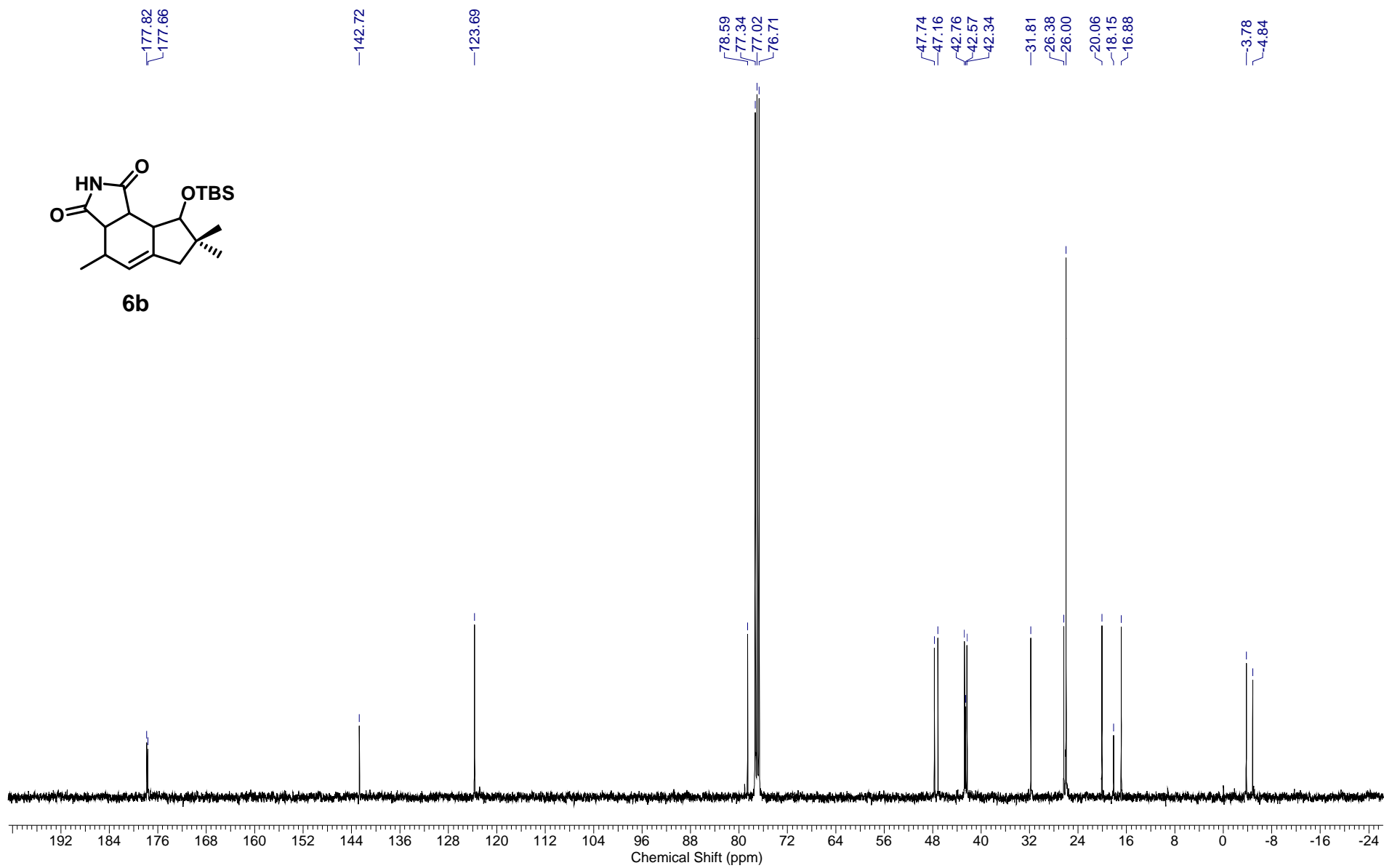
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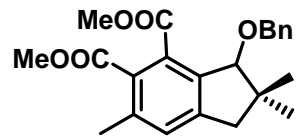




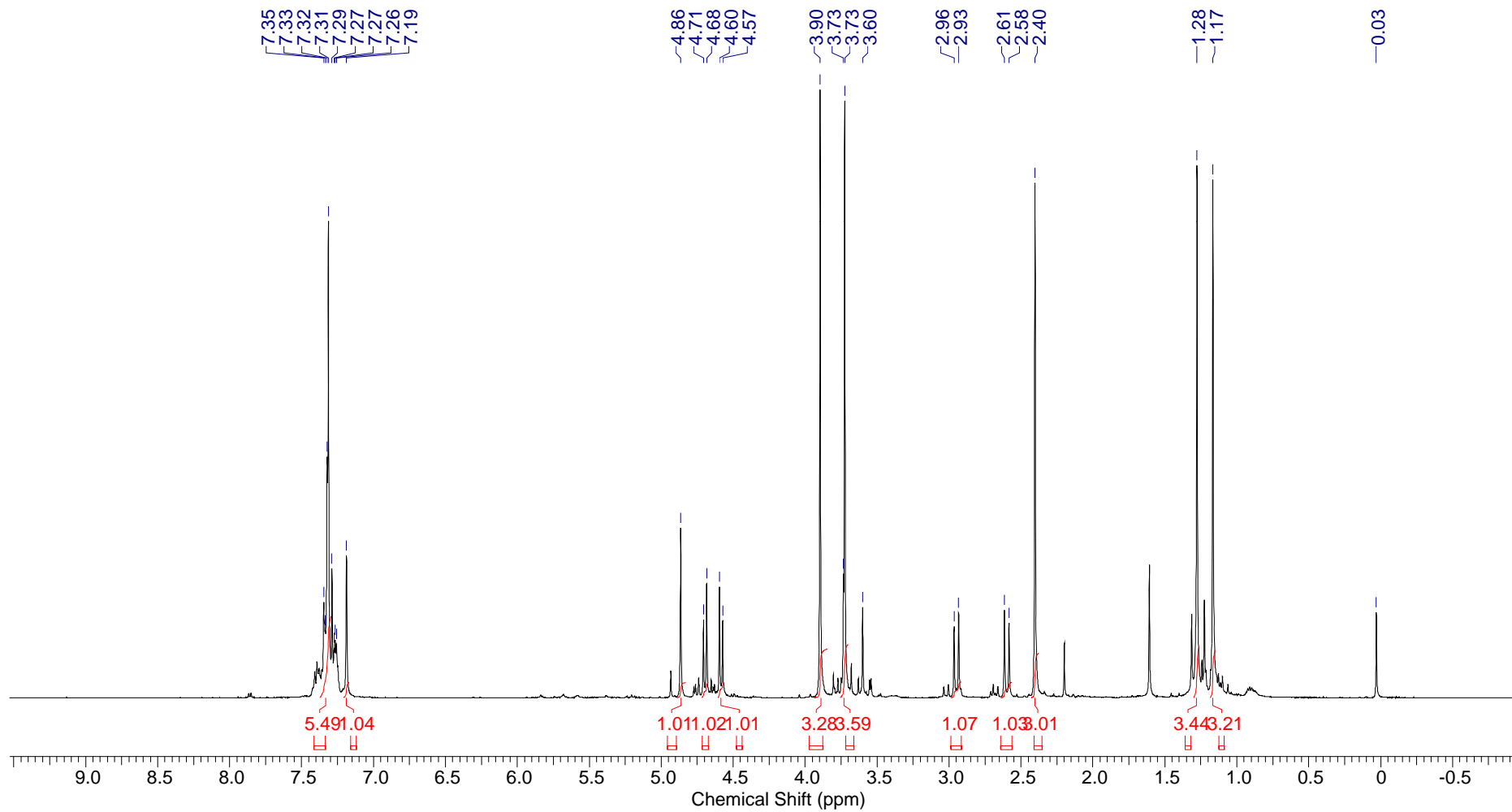


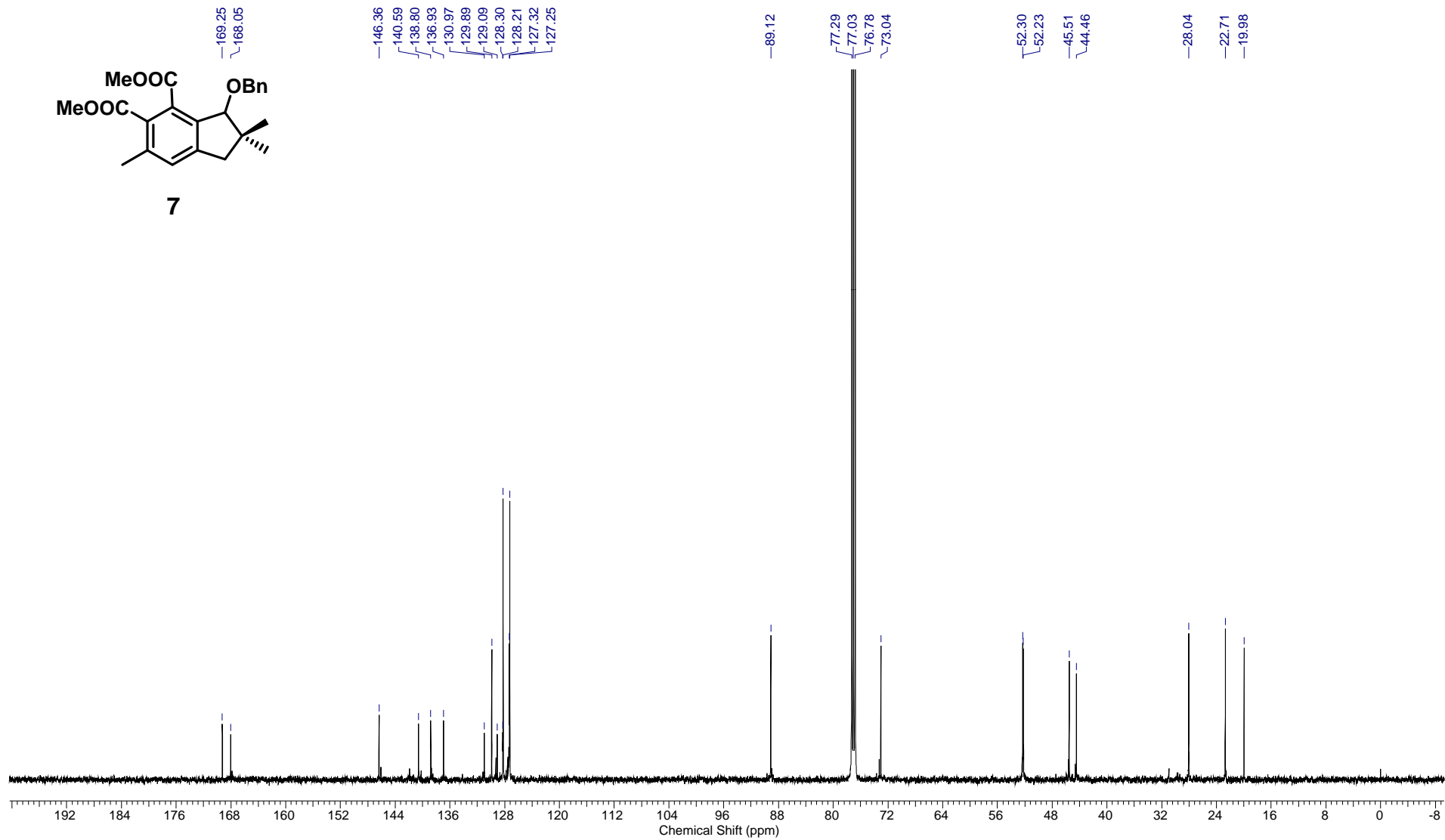
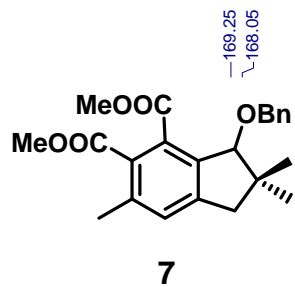
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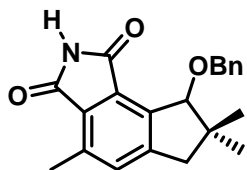




7







8

8.03
7.37
7.35
7.33
7.31
7.29
7.29
7.27
7.25

4.84
4.81
4.81
4.74
4.71

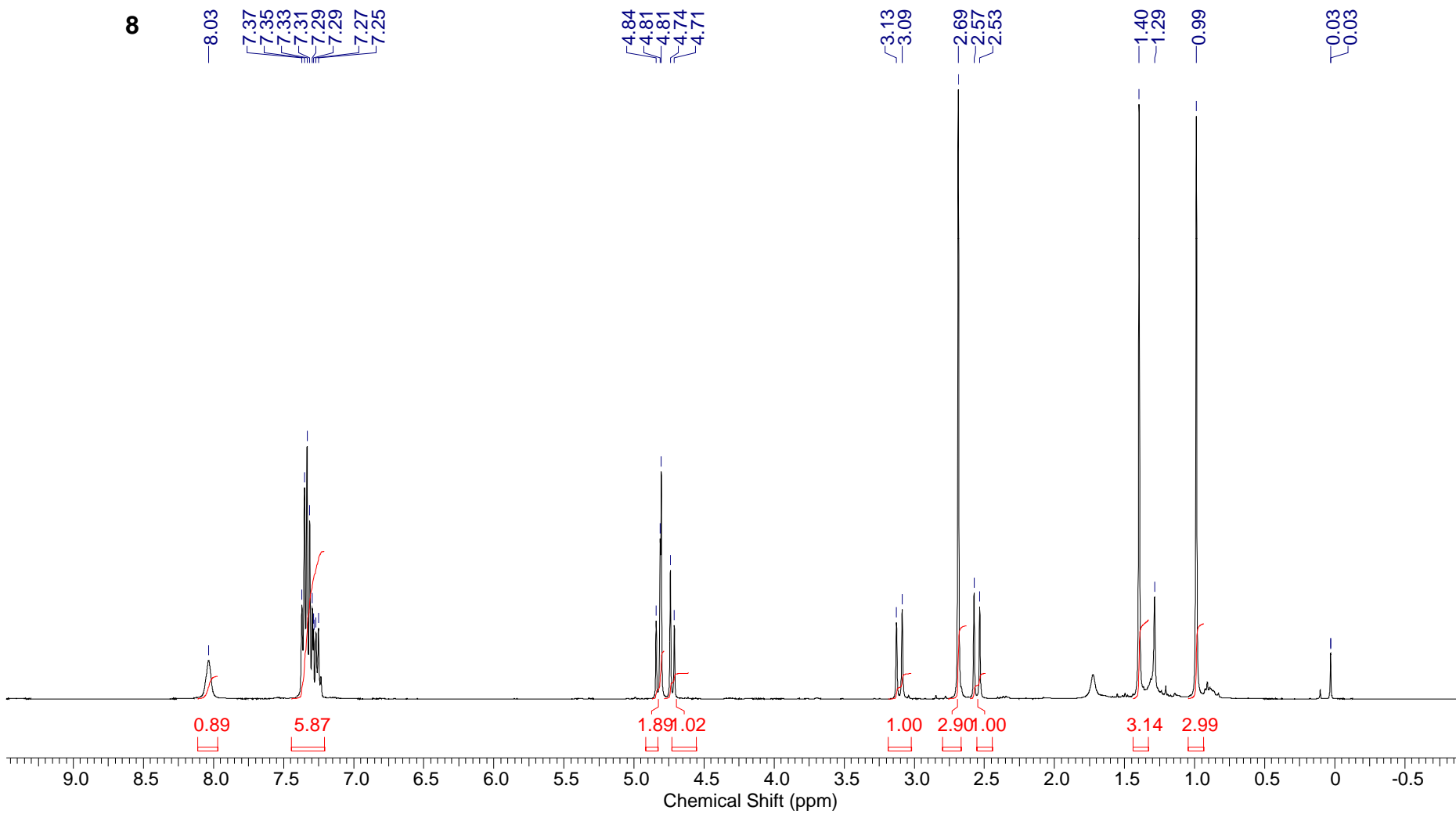
3.13
3.09

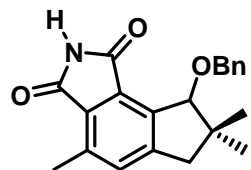
2.69
2.57
2.53

1.40
1.29

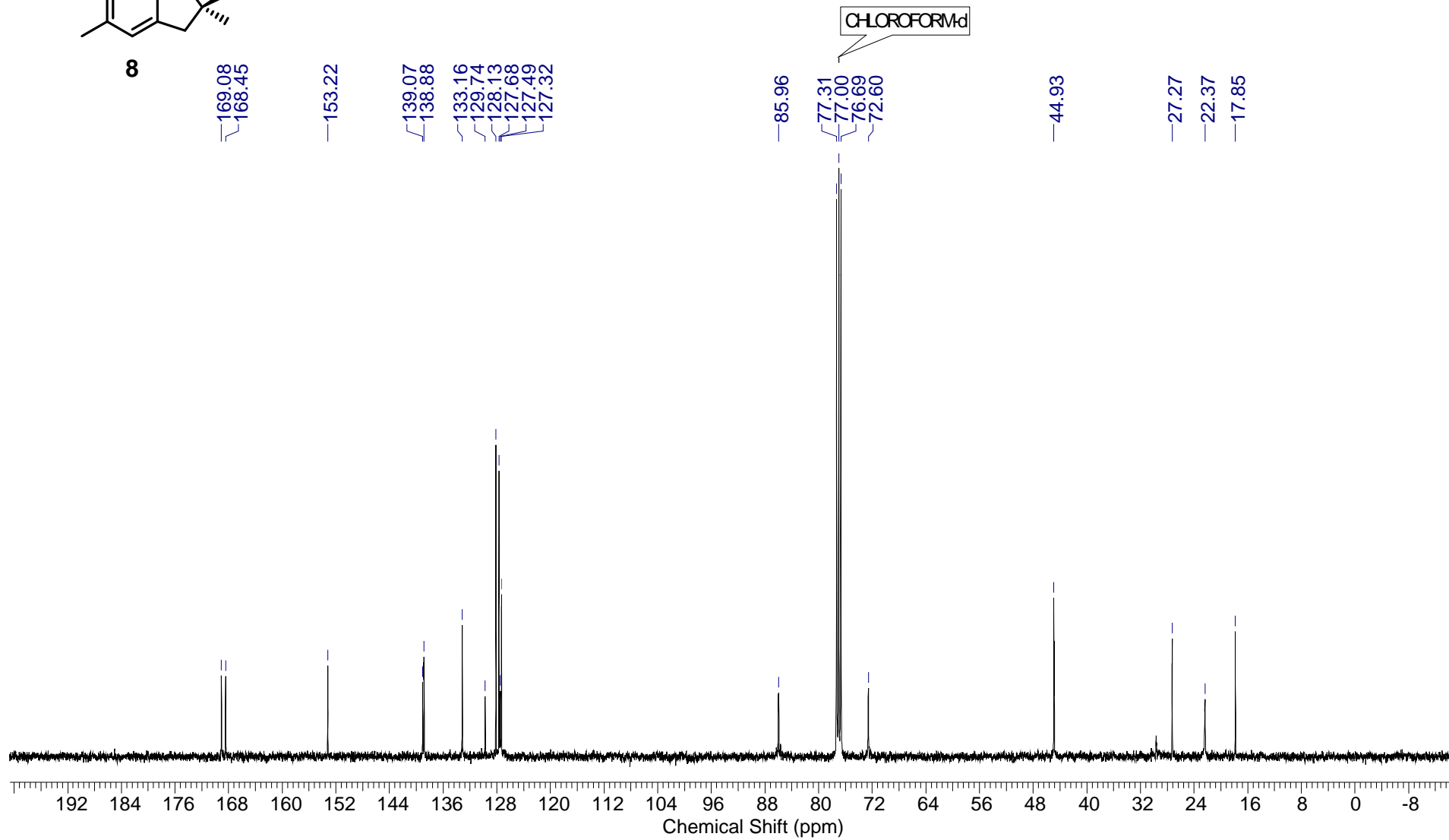
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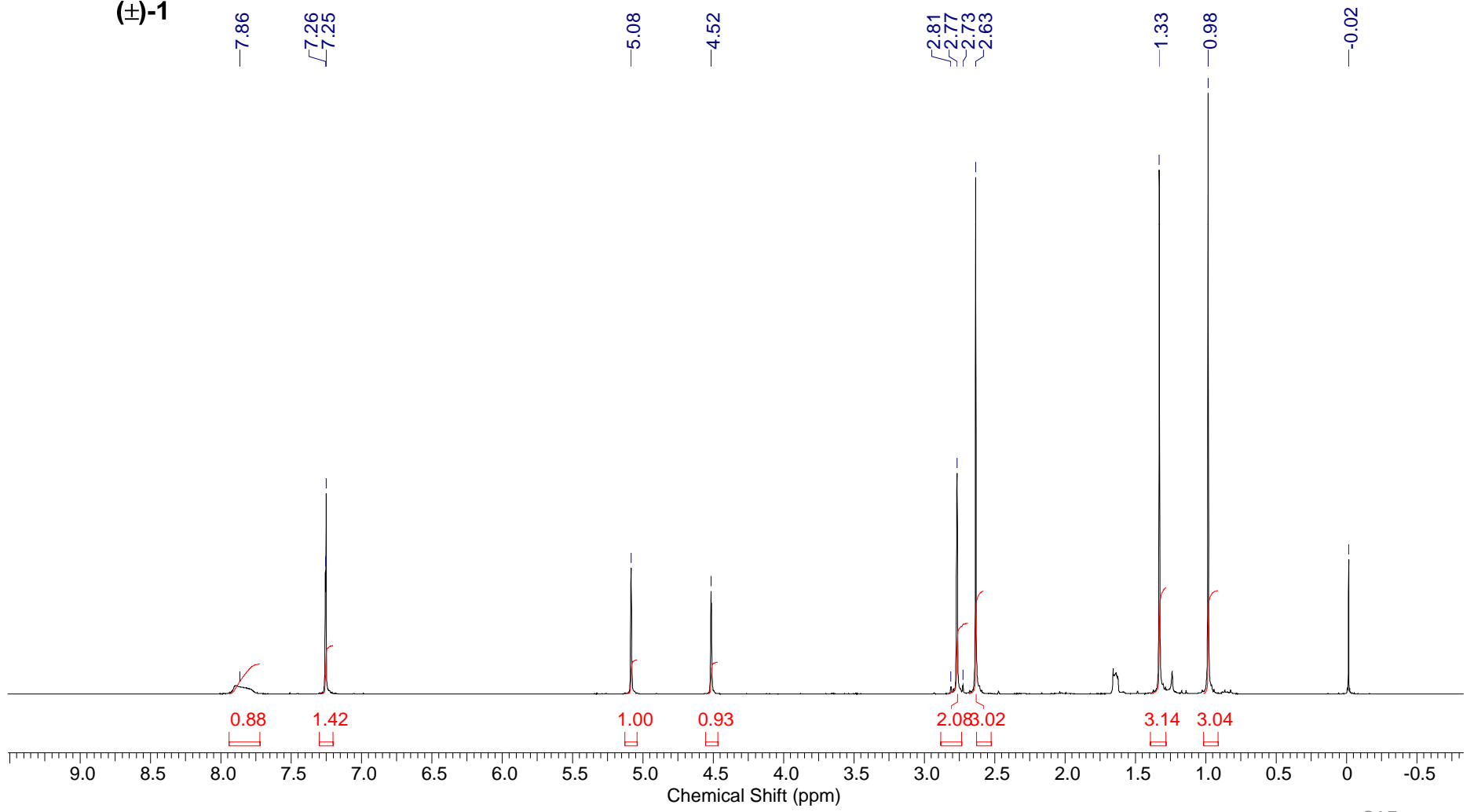
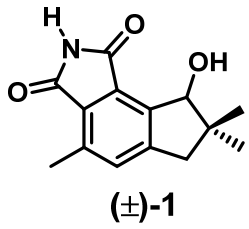
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0.03

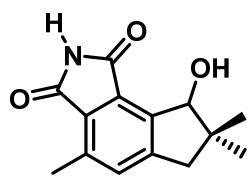




8







(±)-1

170.09
169.11

149.41

143.01

138.33

133.11

128.85

127.65

81.04

77.43

77.11

76.80

45.97

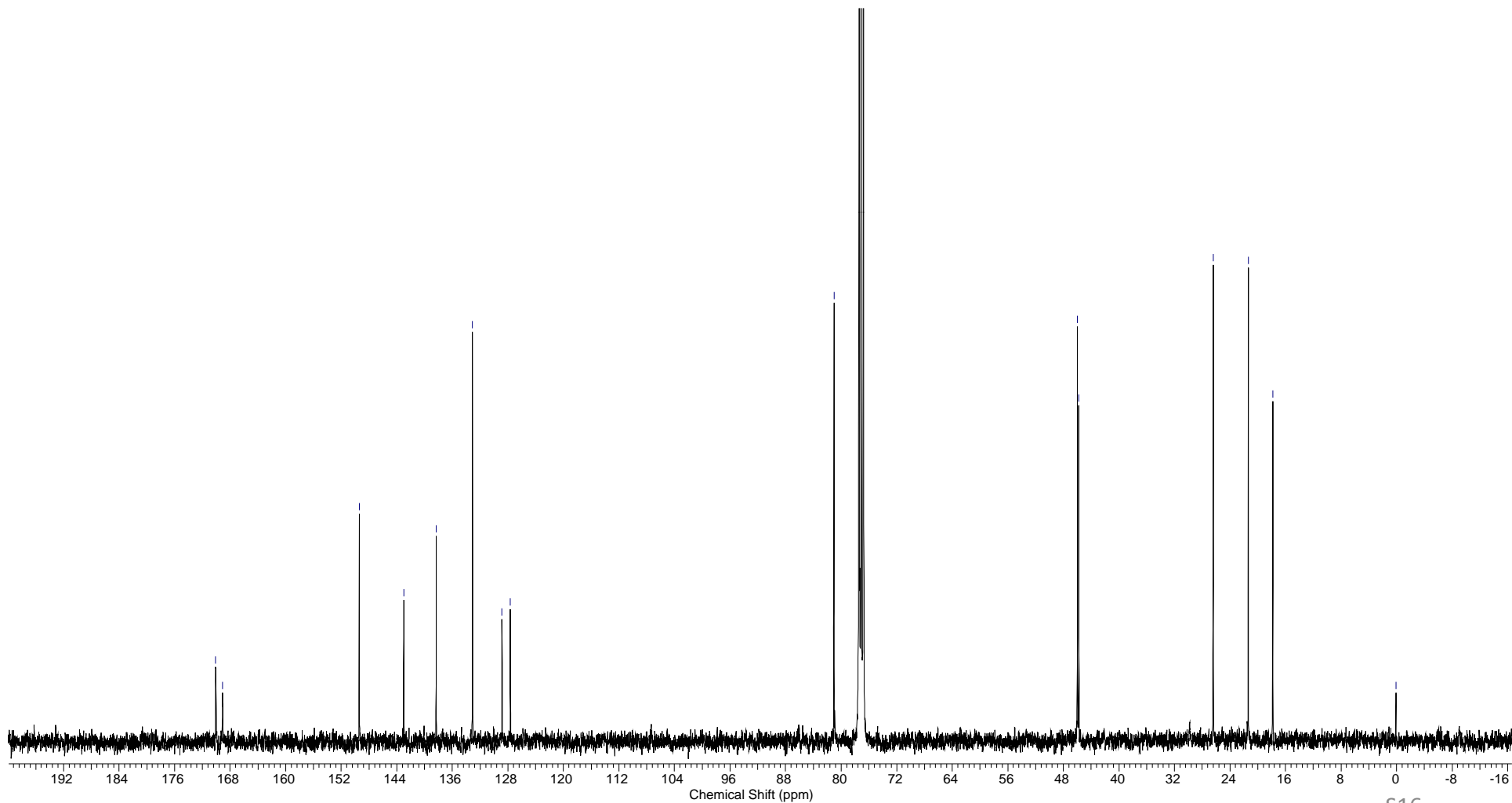
45.76

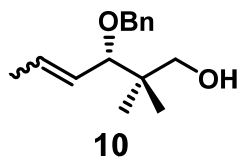
26.41

21.36

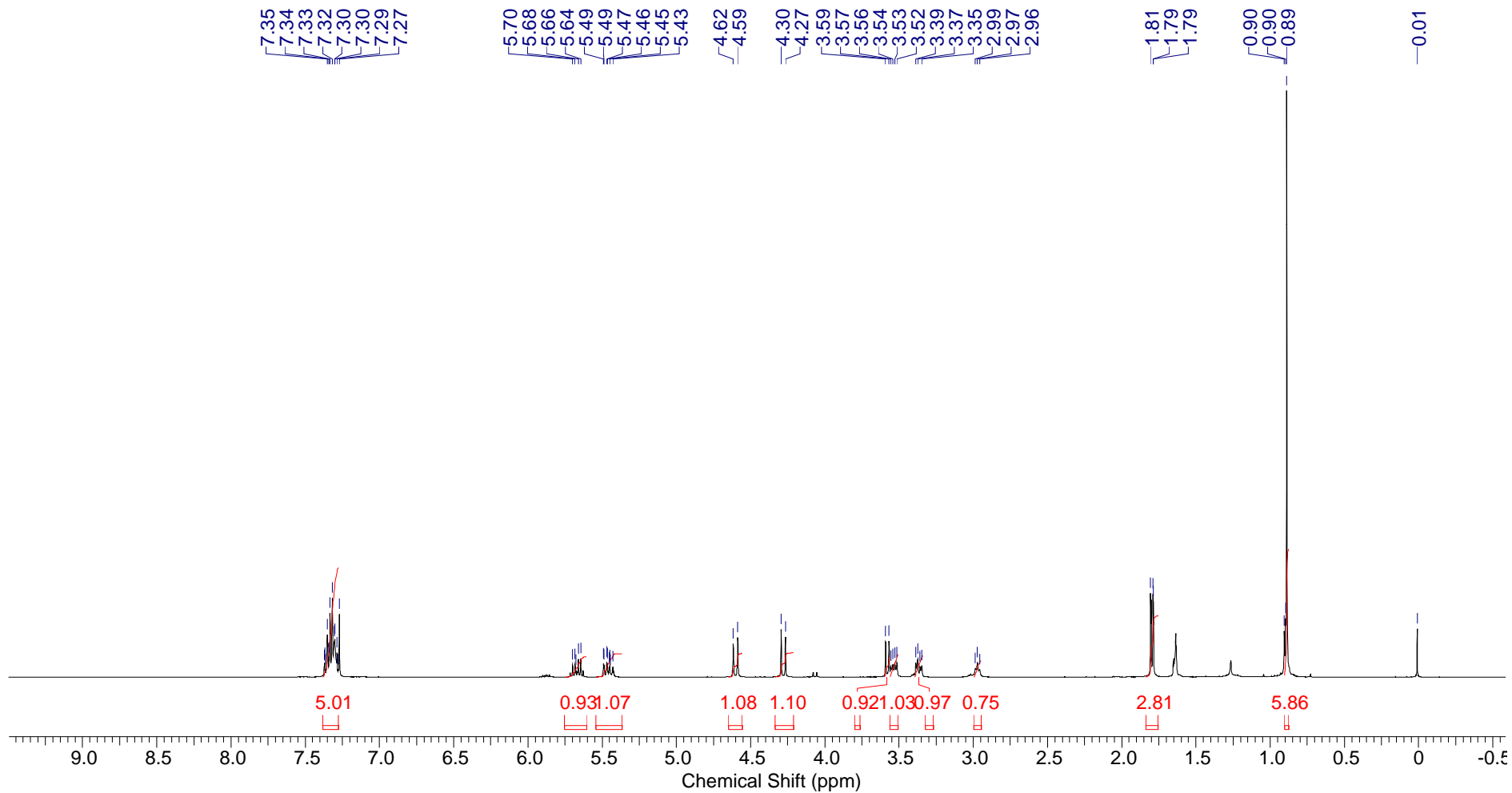
17.84

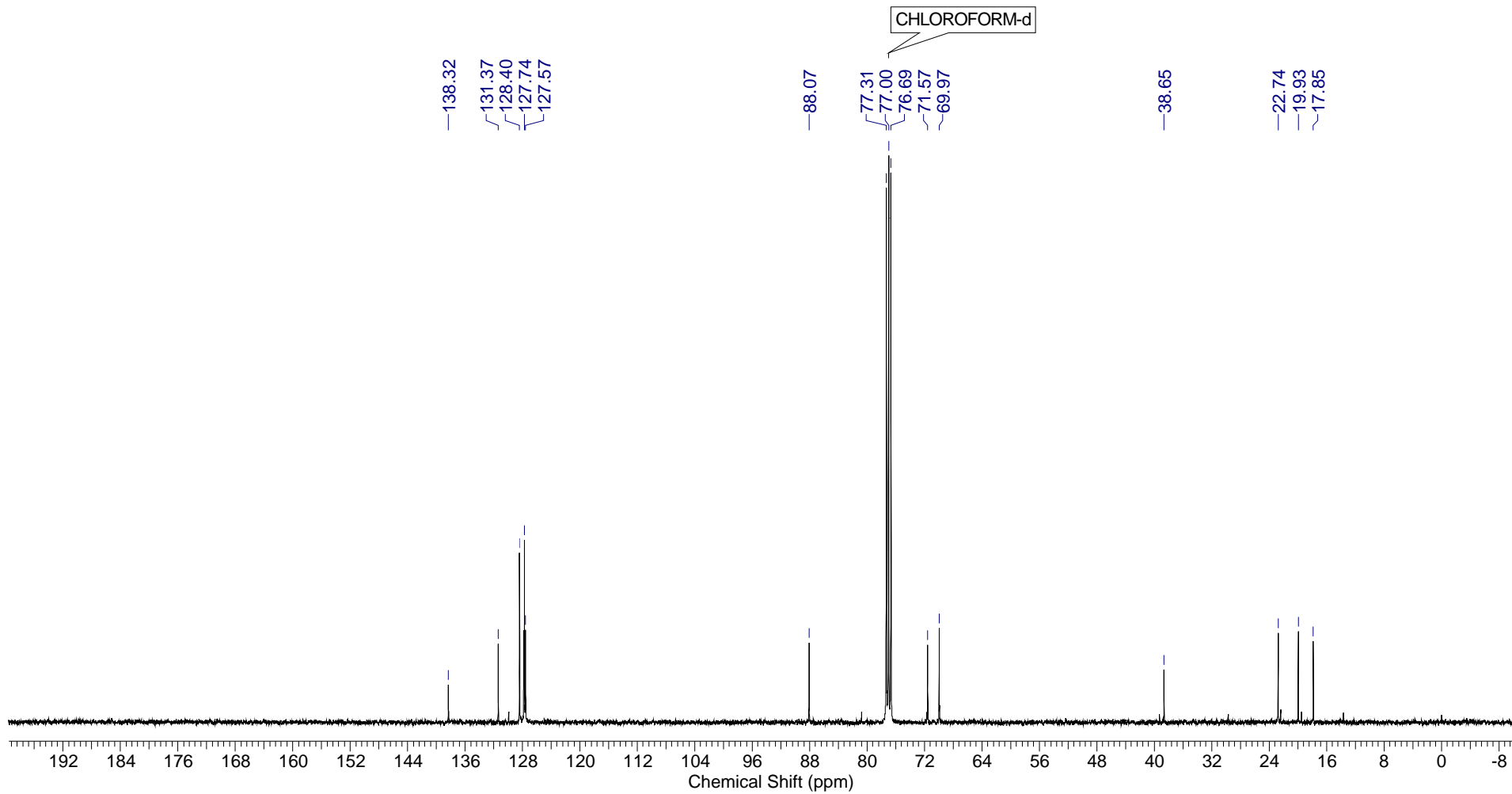
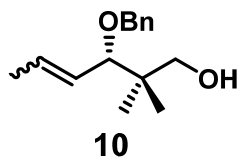
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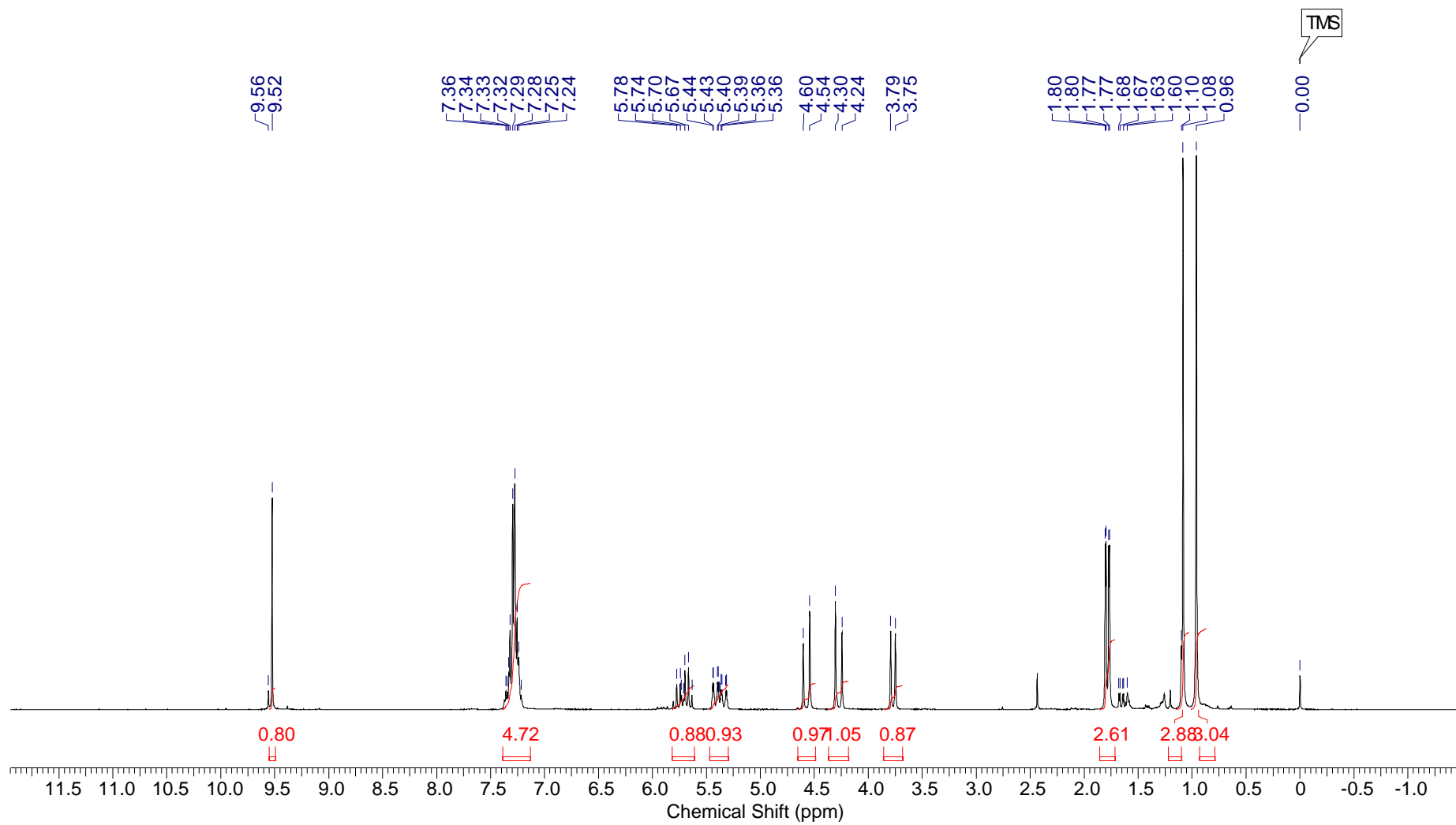
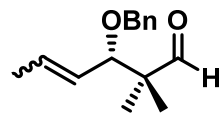


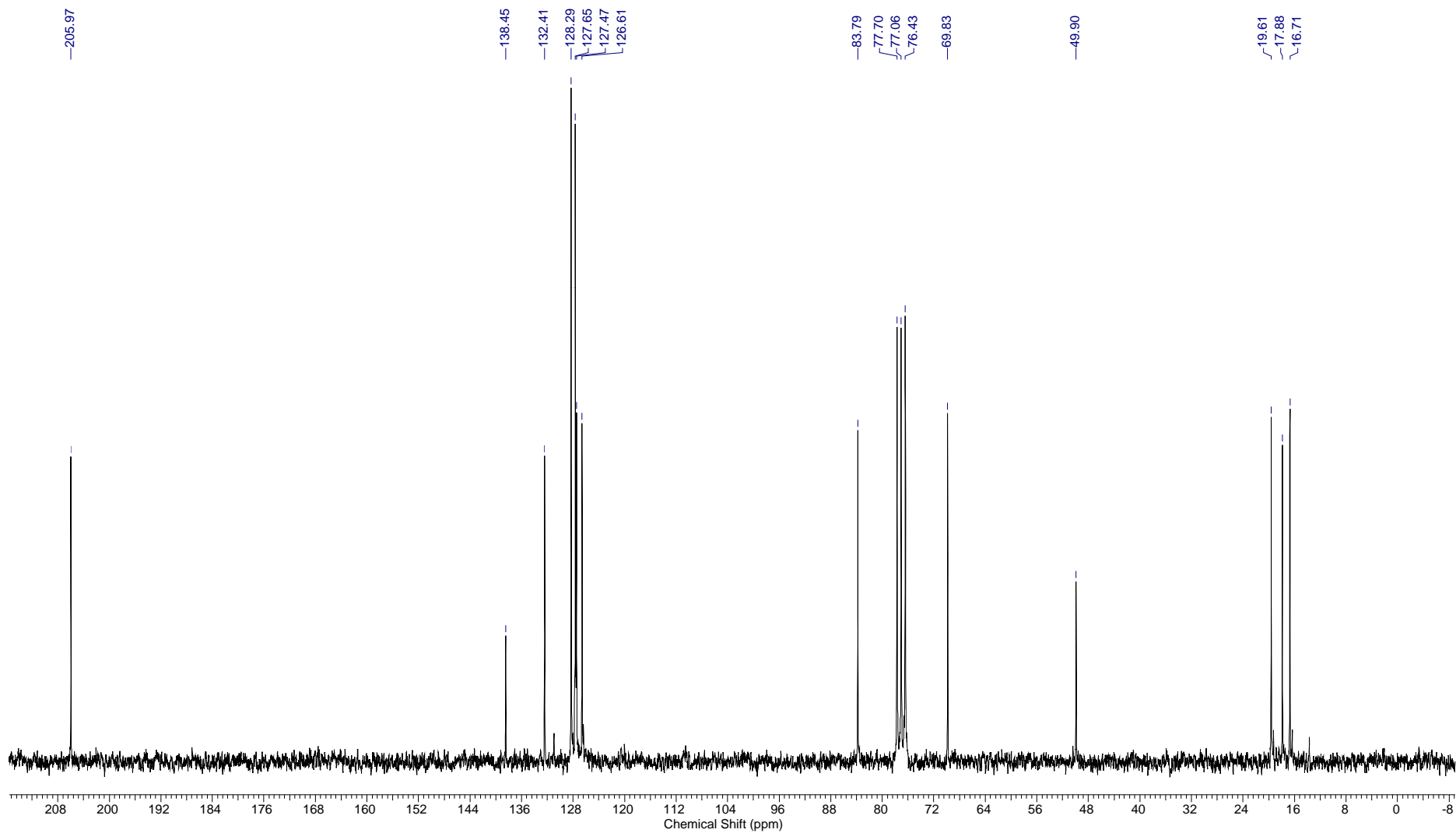
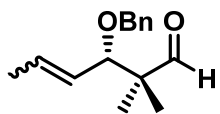


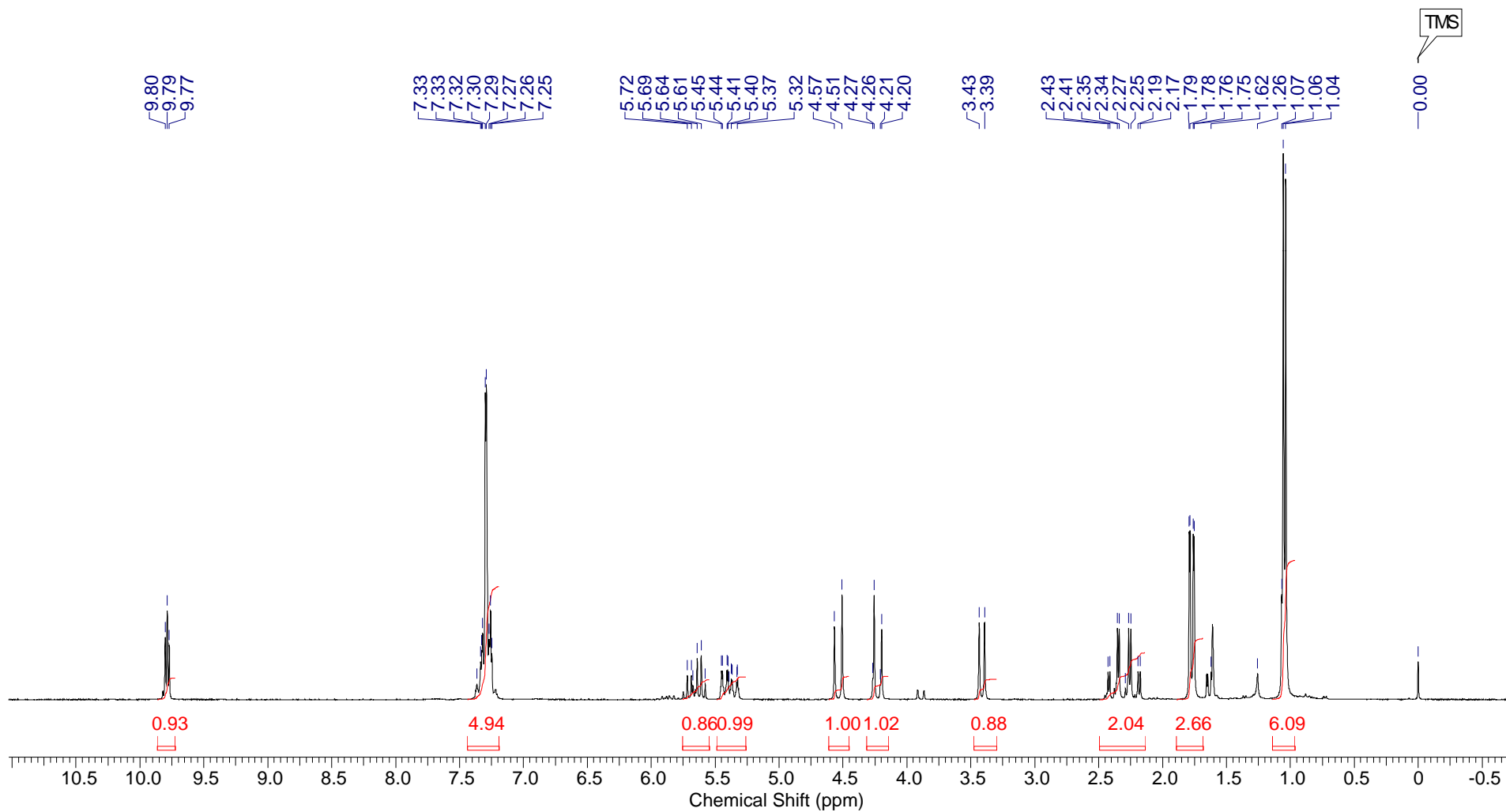
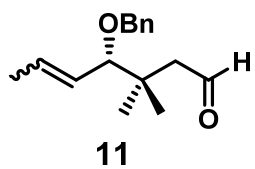
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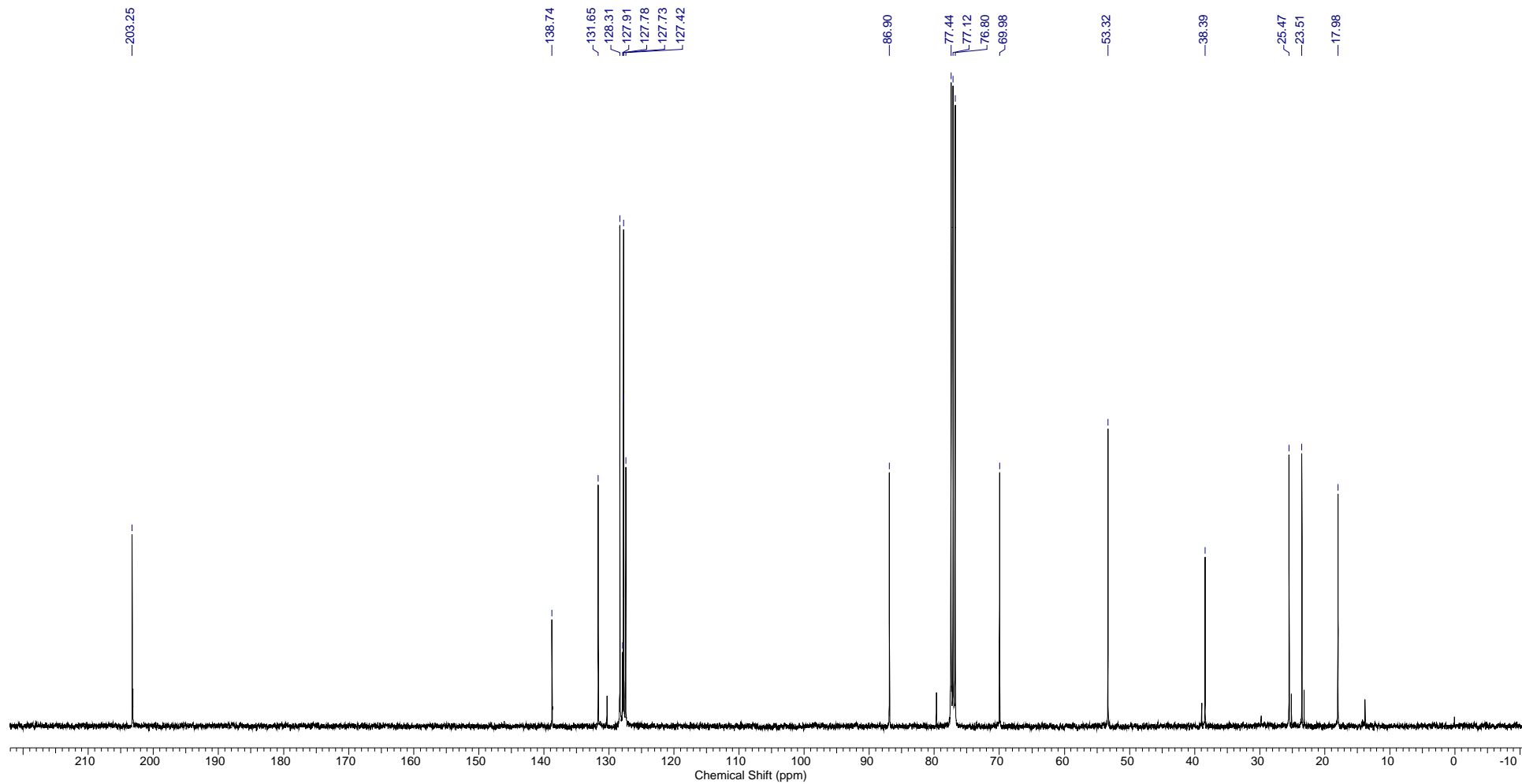
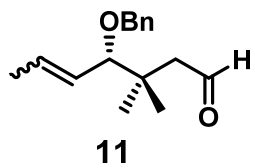


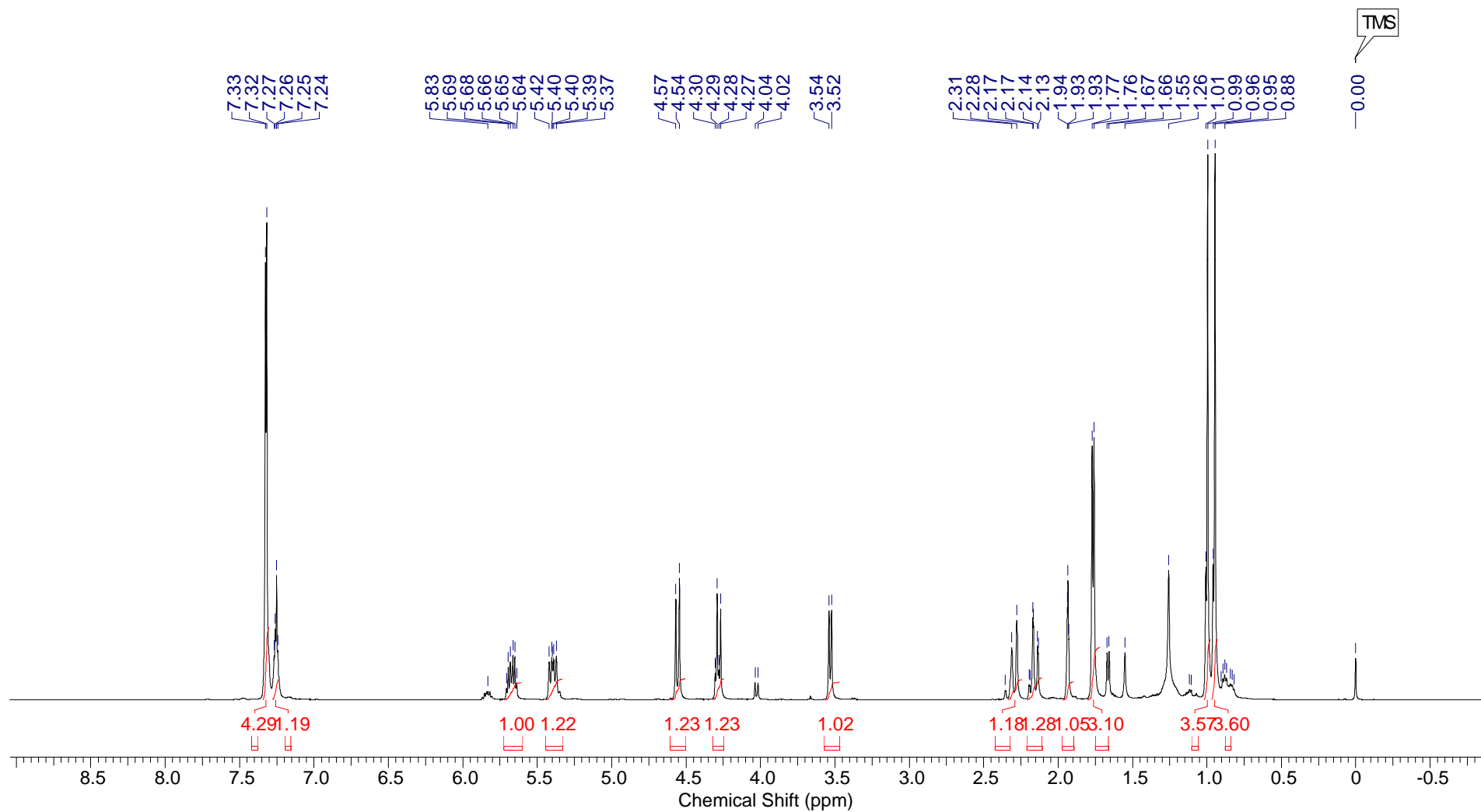
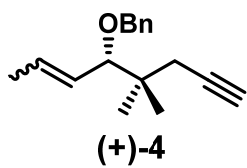


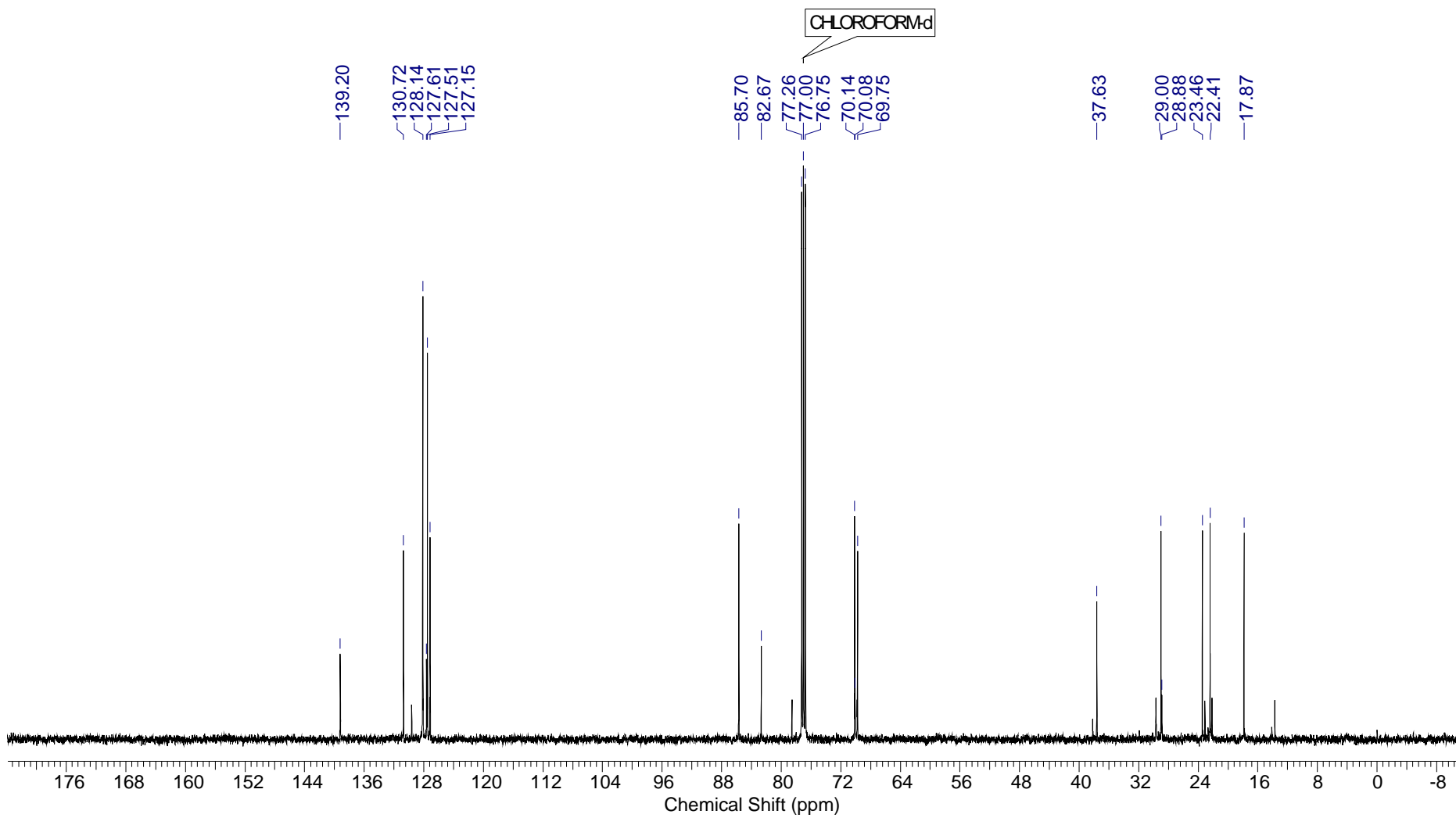
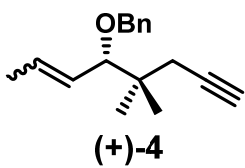


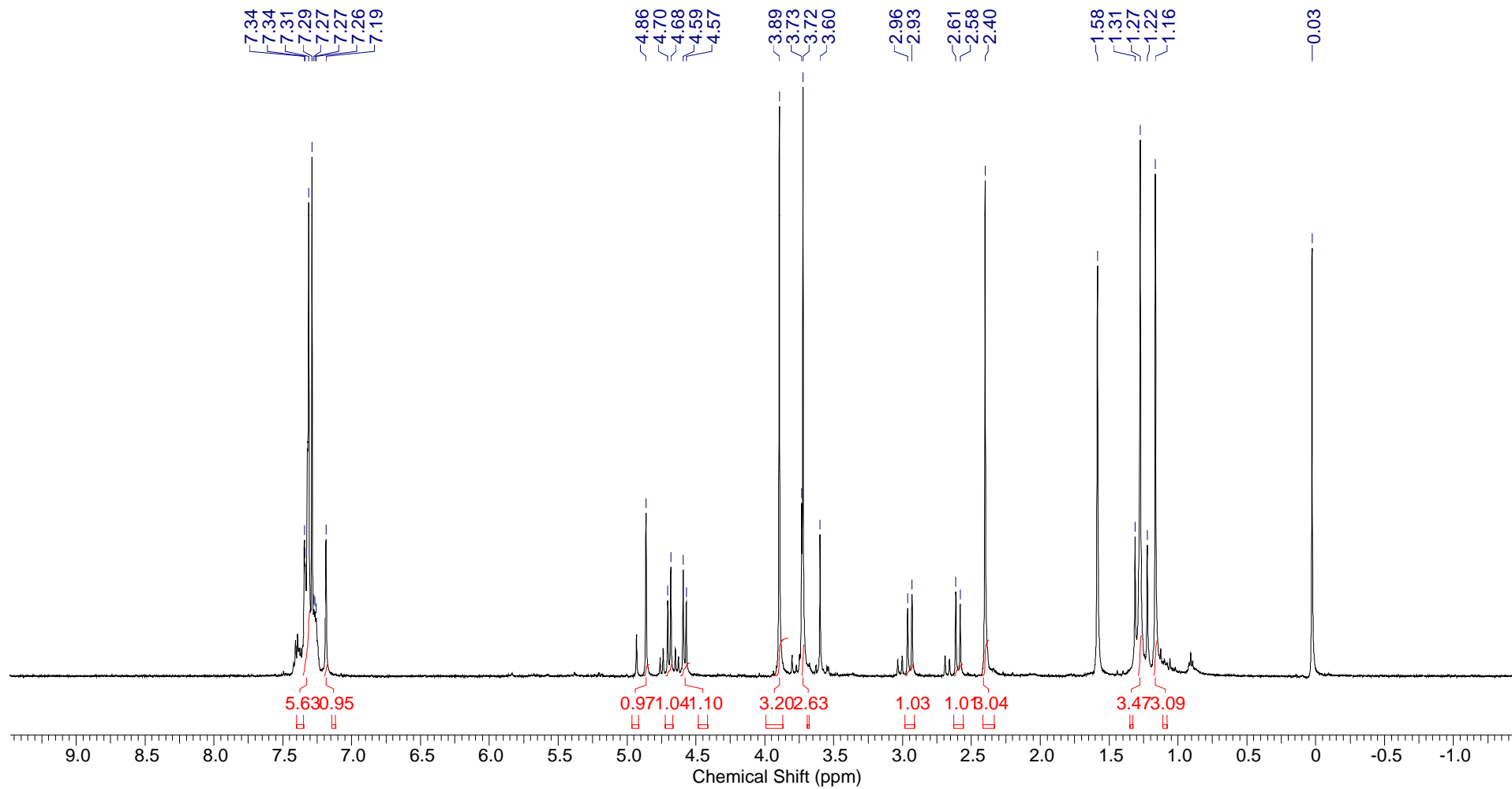
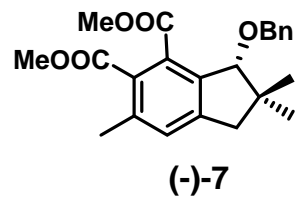


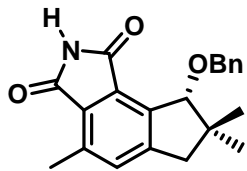












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