

Supplementary Materials for

Ni/Co-Catalyzed Homo-Coupling of Alkyl Tosylates

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Osaka

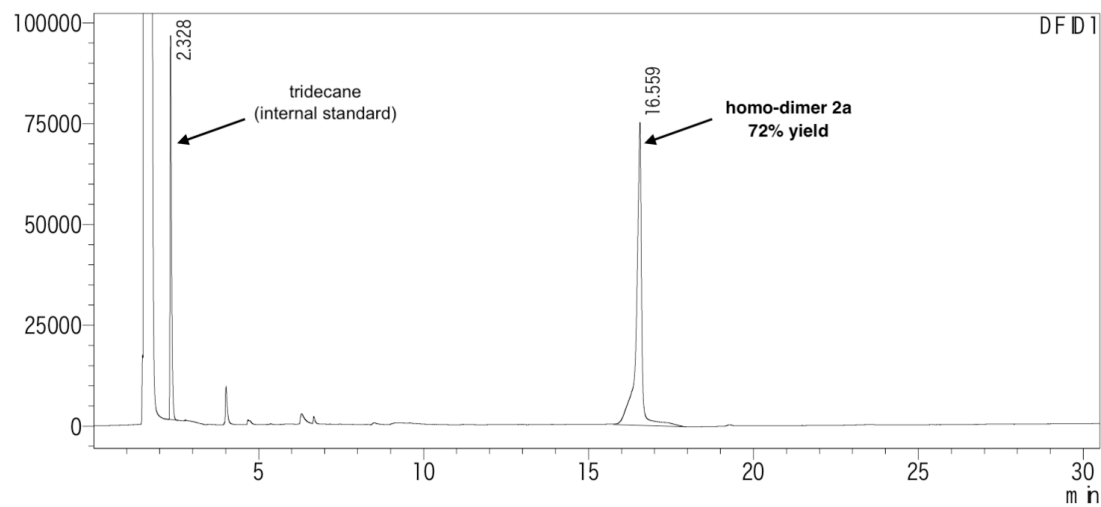
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1. A GC chart after work-up (entry 1, Table 1)
2. ^1H and ^{13}C NMR spectra of homo-coupling products

1. A GC chart after work-up (entry 1, Table 1)

File No.: 25-quench+ S.gcd Method: Normal 30 min.gcm Date: 2018/06/08 10:29:31

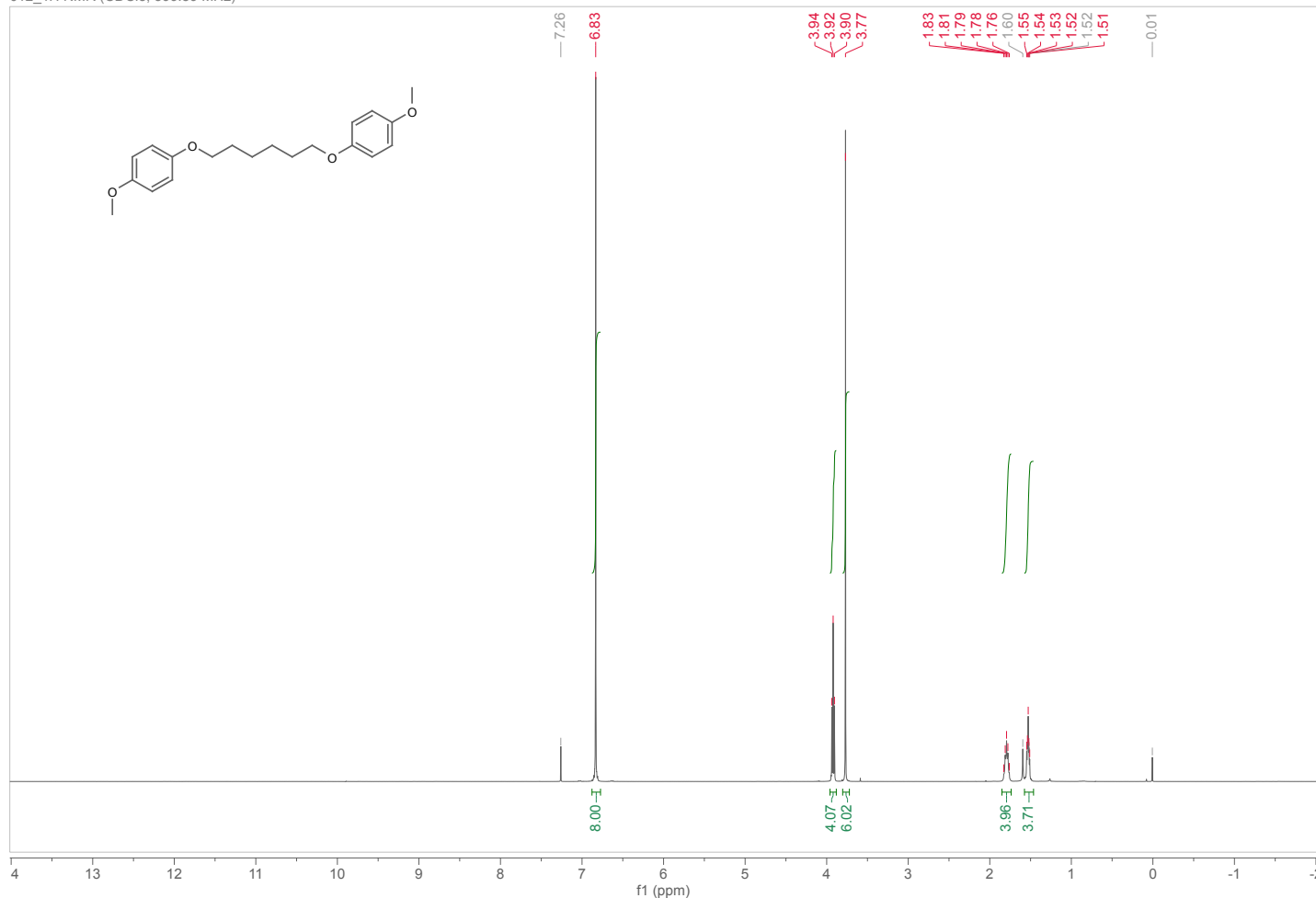


DFD1

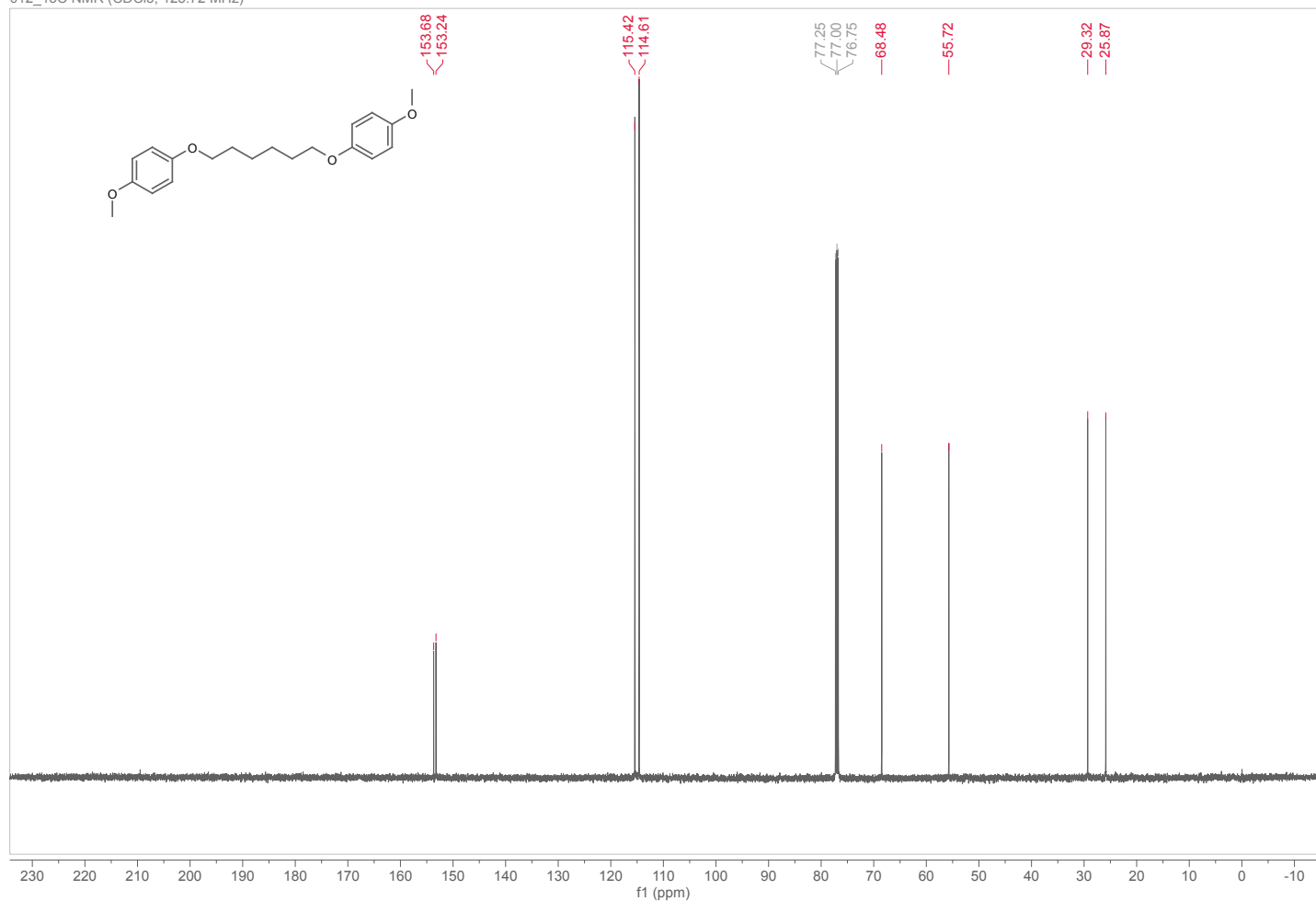
ピーク#	保持時間	面積	高さ	濃度	単位	マーク	化合物名
1	2.328	299082	94901	0.000		M	
2	16.559	836143	75056	0.000		V	
合計		1135225	169957				

2. ¹H and ¹³C NMR spectra of homo-coupling products

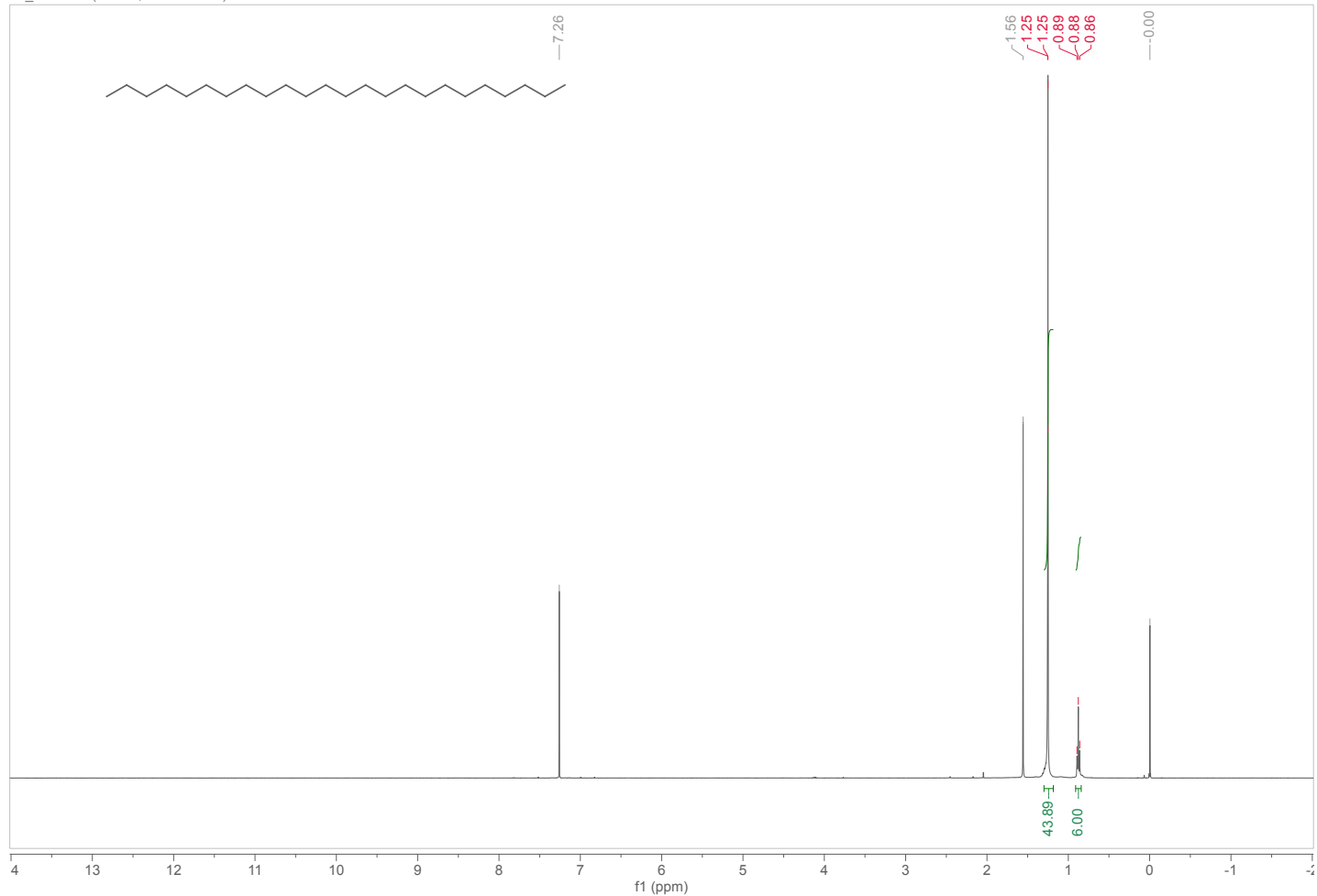
012_1H NMR (CDCl₃, 399.89 MHz)



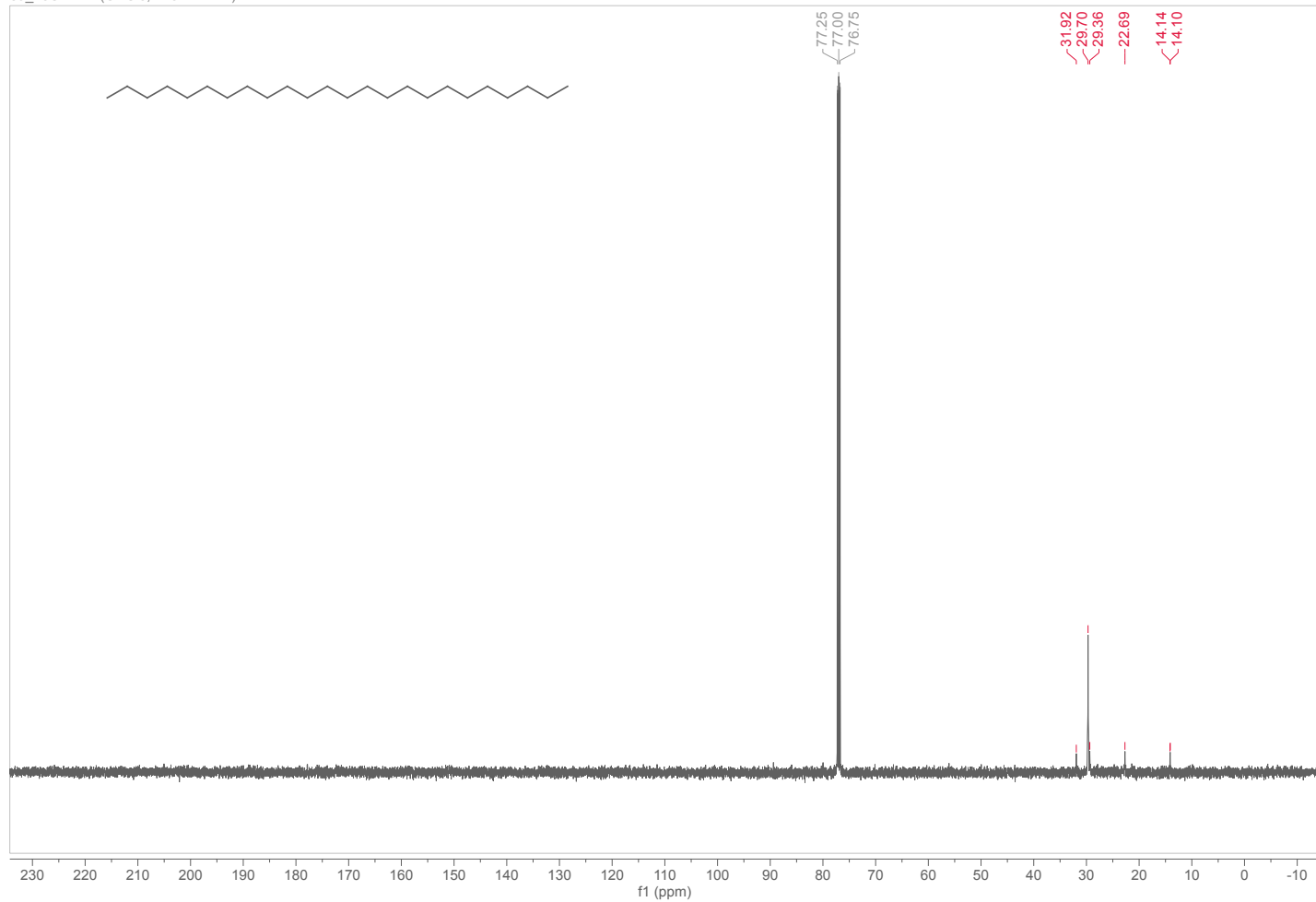
012_13C NMR (CDCl₃, 125.72 MHz)



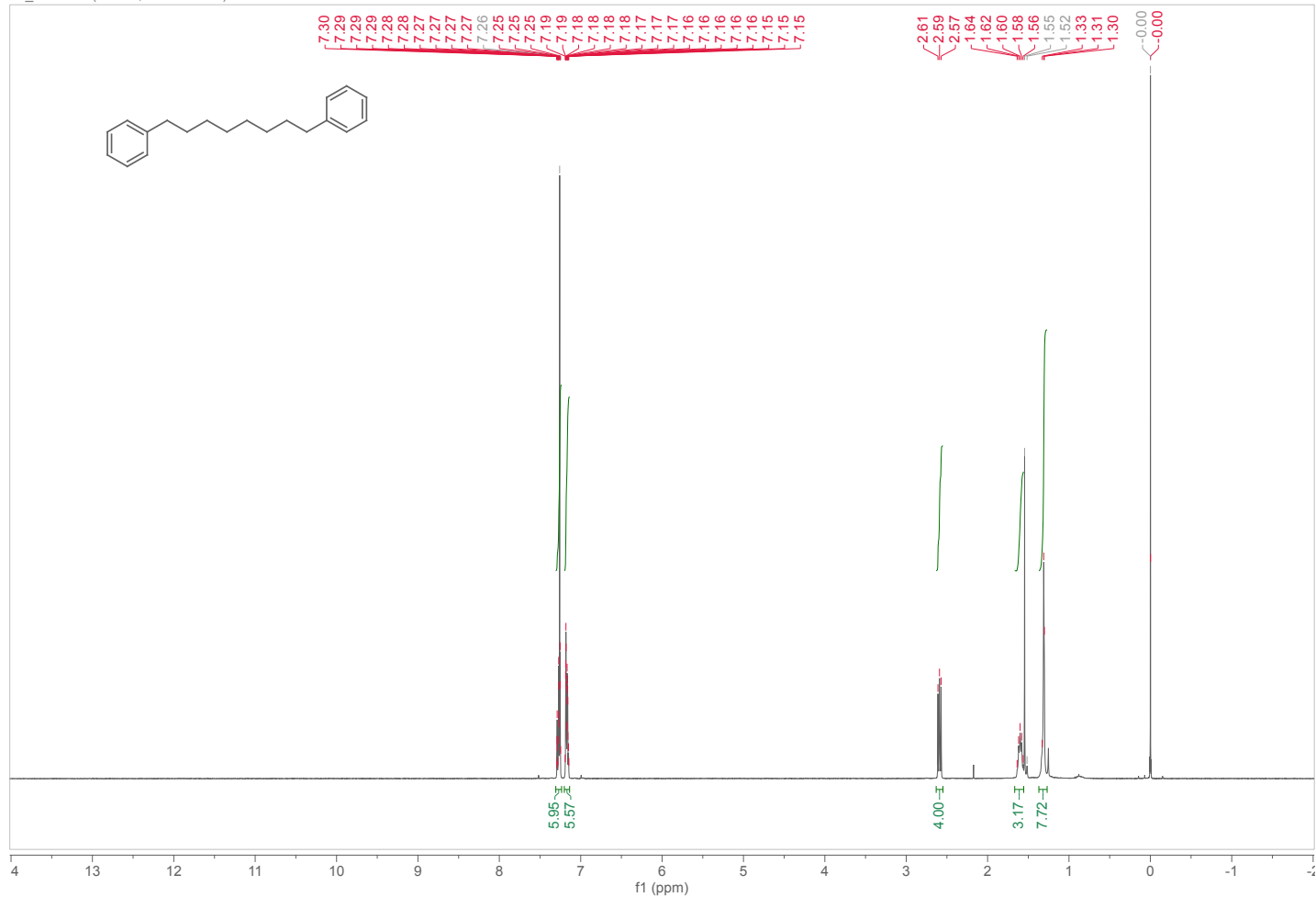
89_1H NMR (CDCl₃, 399.89 MHz)



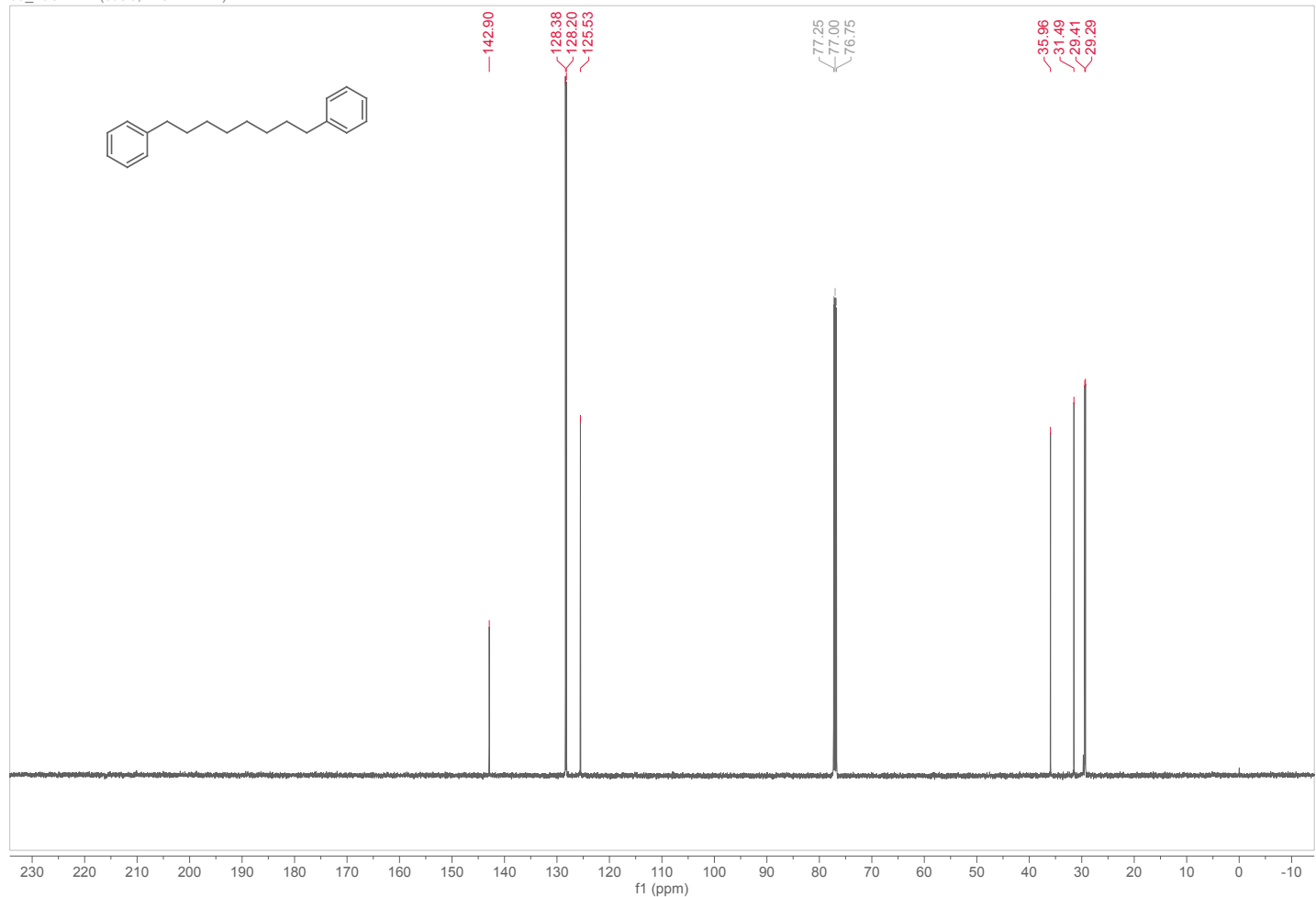
89_13C NMR (CDCl₃, 125.72 MHz)



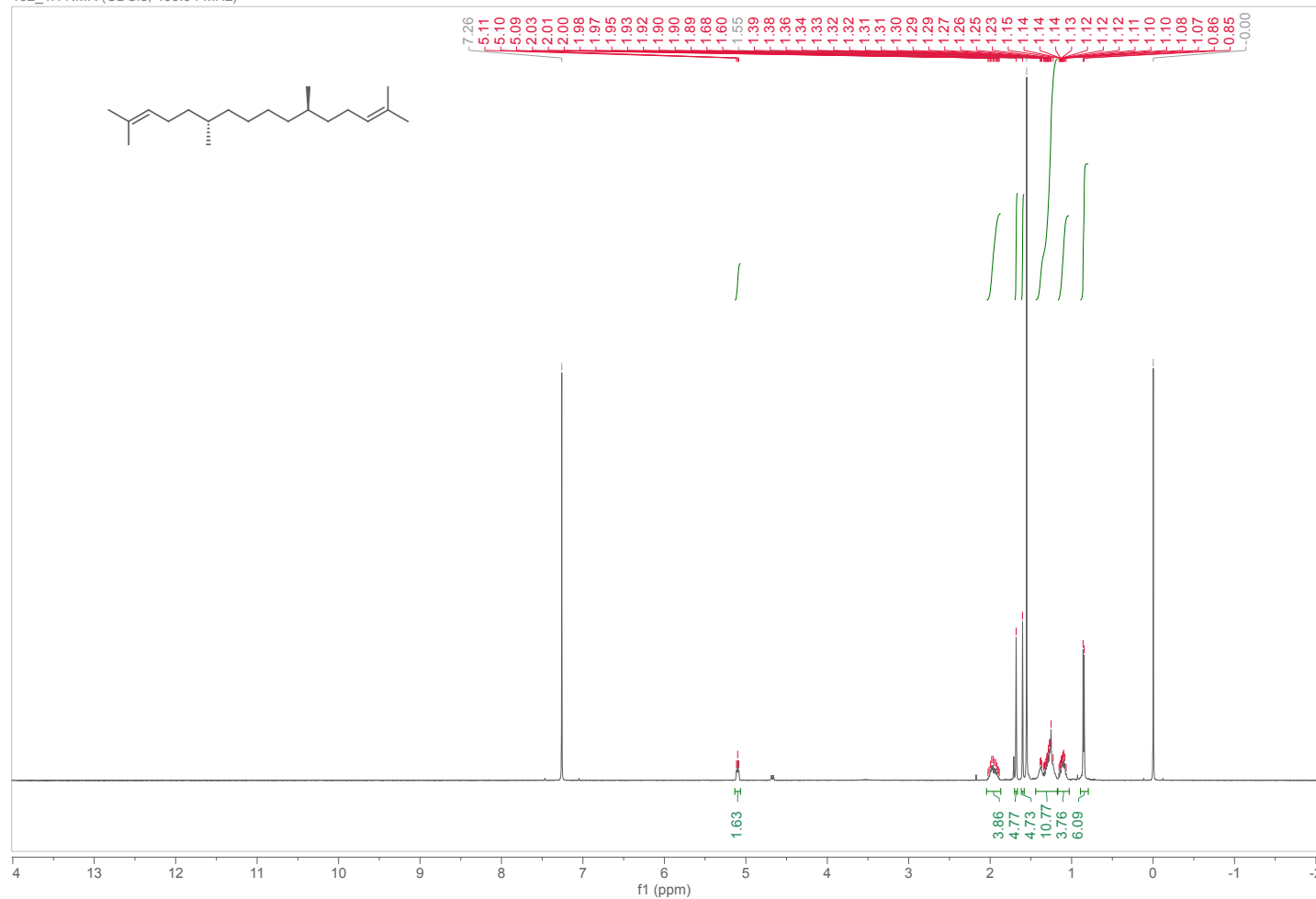
99_1H NMR (CDCl₃, 399.89 MHz)



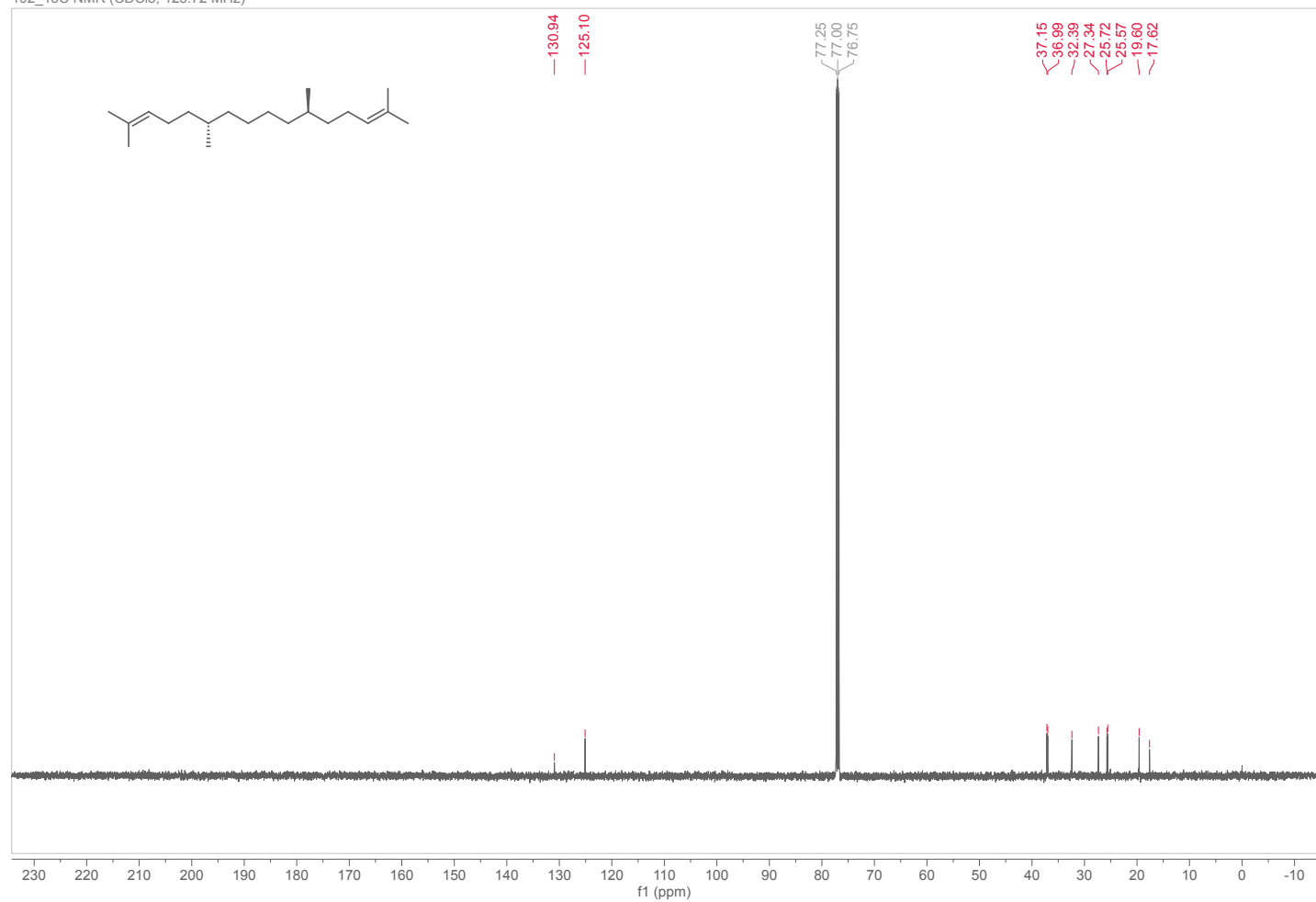
99_13C NMR (cdcl₃, 125.72 MHz)



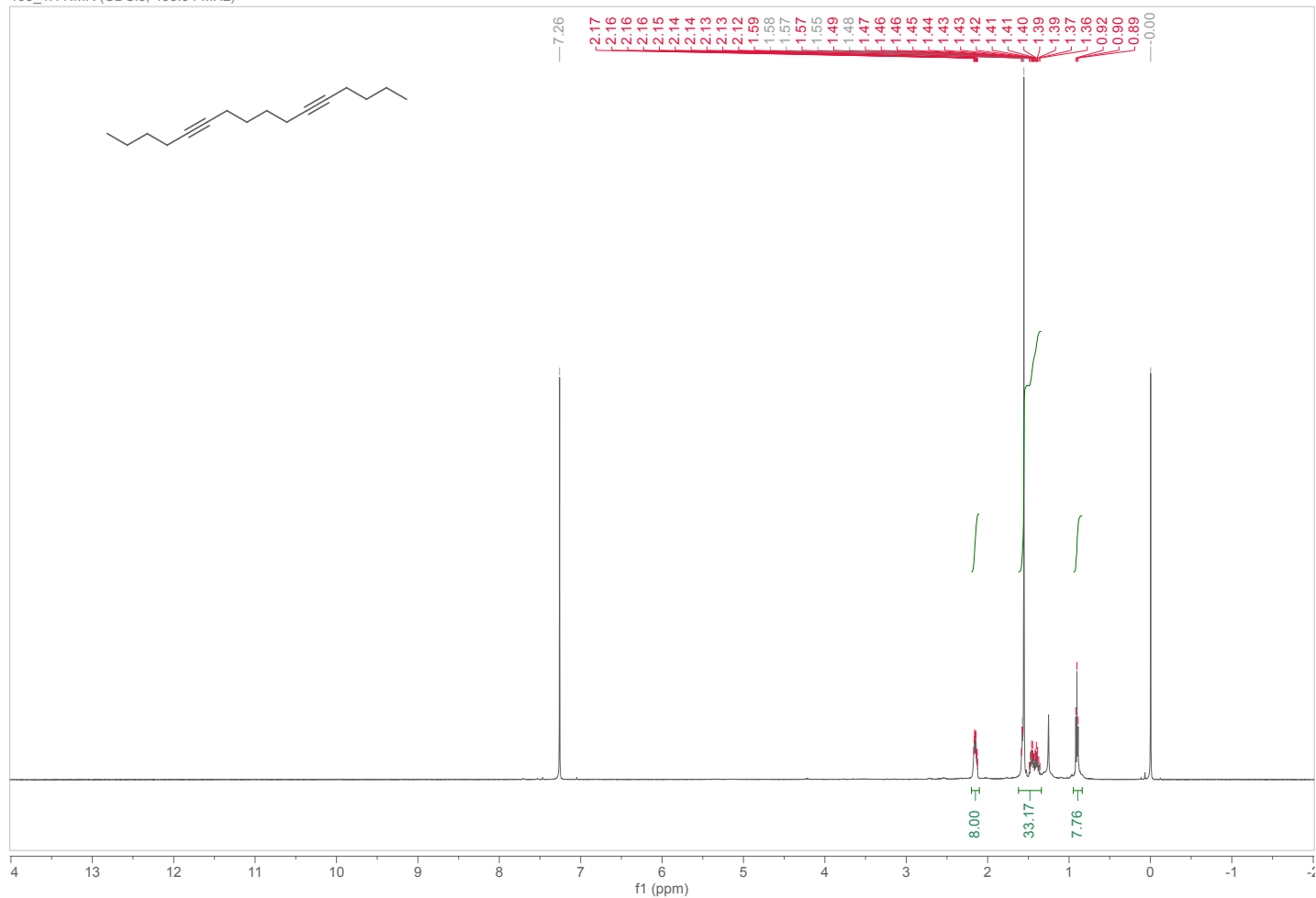
102_1H NMR (CDCl3, 499.94 MHz)



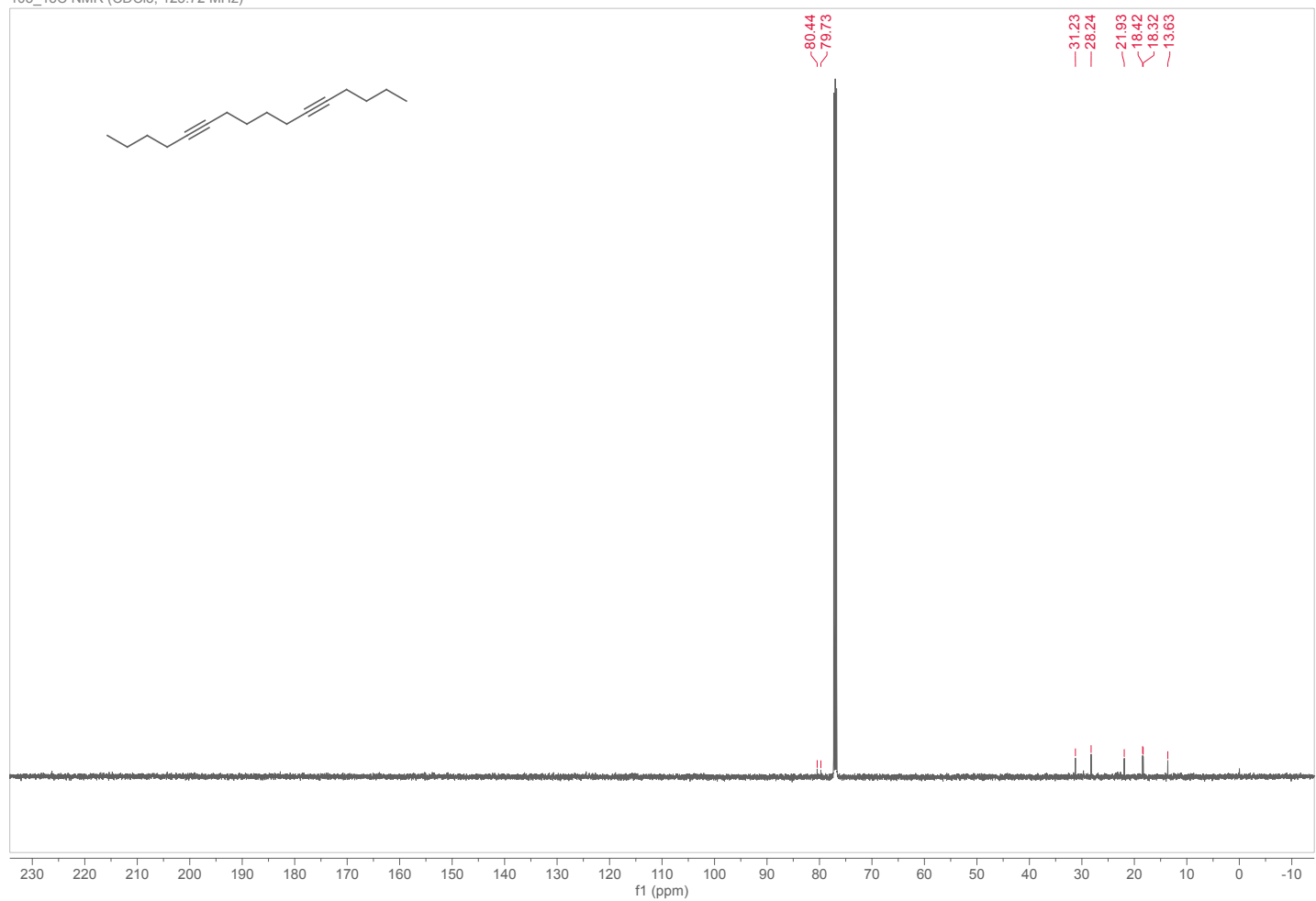
102_13C NMR (CDCl3, 125.72 MHz)



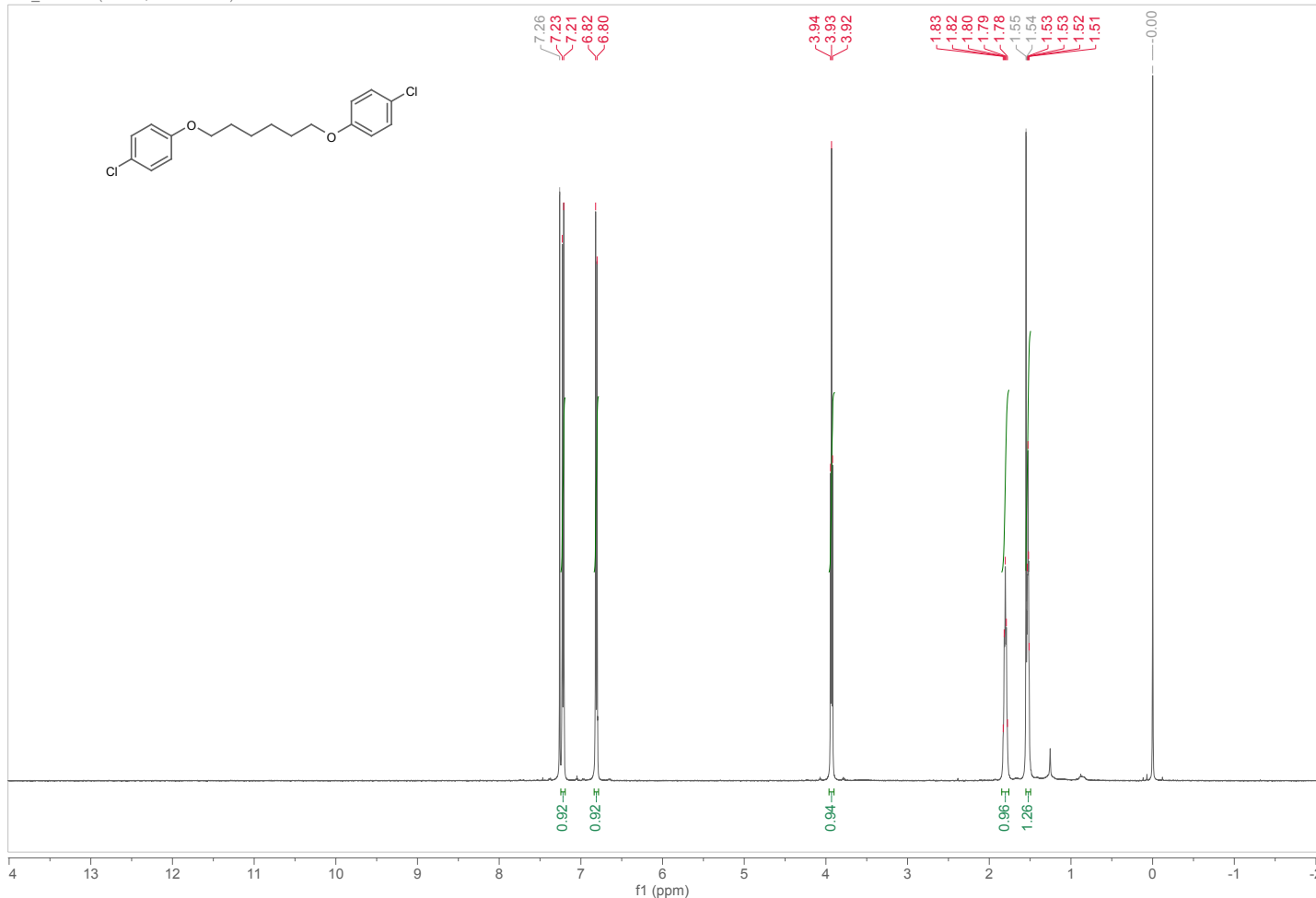
103_1H NMR (CDCl3, 499.94 MHz)



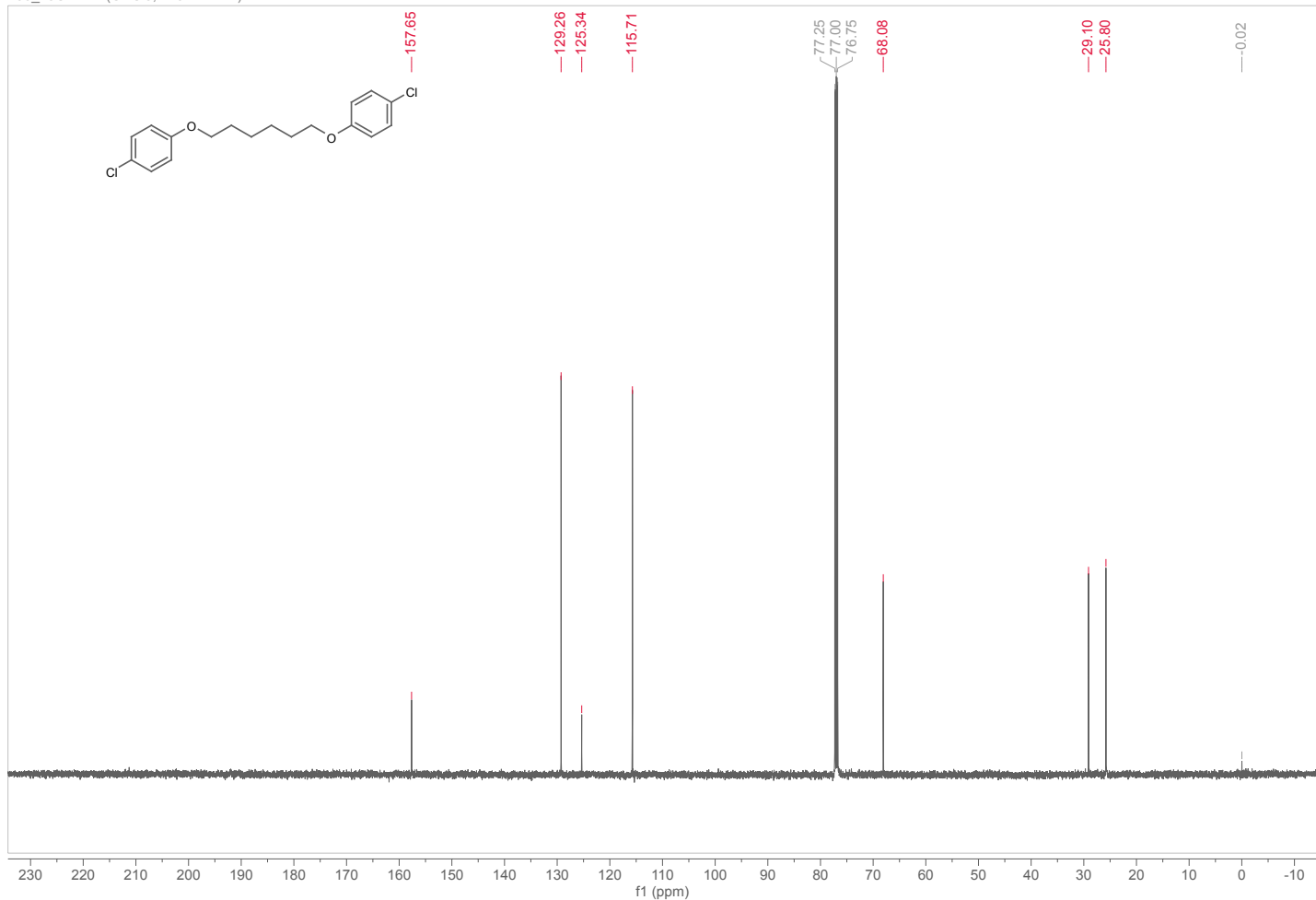
103_13C NMR (CDCl3, 125.72 MHz)



106_1H NMR (CDCl₃, 499.94 MHz)



106_13C NMR (CDCl₃, 125.72 MHz)



Chemical structure of the compound: CC1(C)OC(BOC1)c2ccc(OCCCCCCCCOc3ccc(OC4(C)C(C)(C)OC4)cc3)cc2

¹H NMR spectrum (ppm) and integrations:

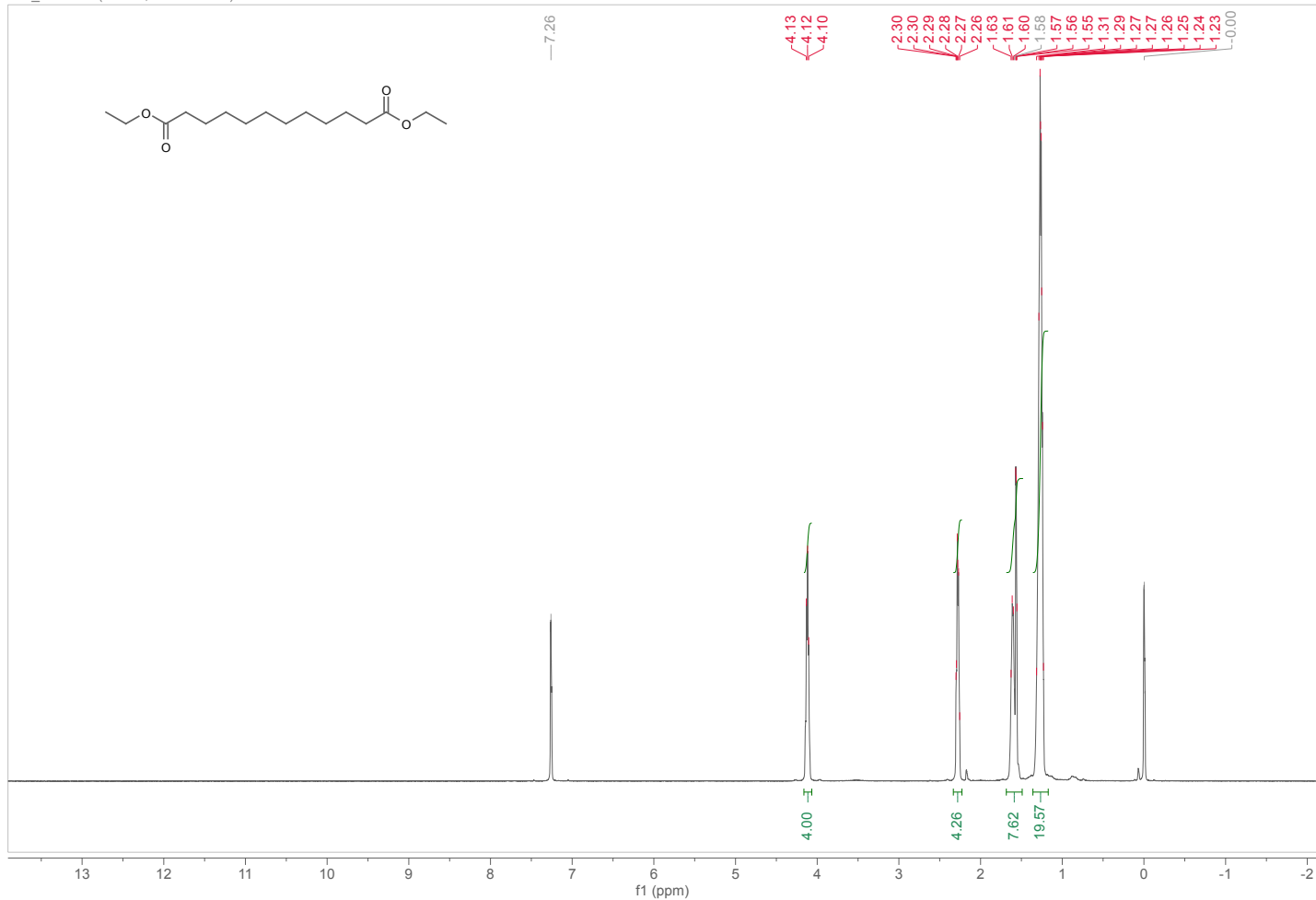
Chemical Shift (ppm)	Integration
7.76, 7.74	4.00
7.26	4.16
6.90, 6.88	4.04
4.01, 3.99, 3.98	4.16
1.85, 1.83, 1.82, 1.81, 1.80, 1.55, 1.54, 1.53, 1.52, 1.34	25.75
0.01	4.00

Chemical structure of the compound: CC1(C)OC(BOC)(C(C)(C)C)C1OC2=CC=C(OCCOCCOCCOCCOC3=CC=C(BOC(C(C)(C)C)OC(C)(C)C)C=C3)C=C2

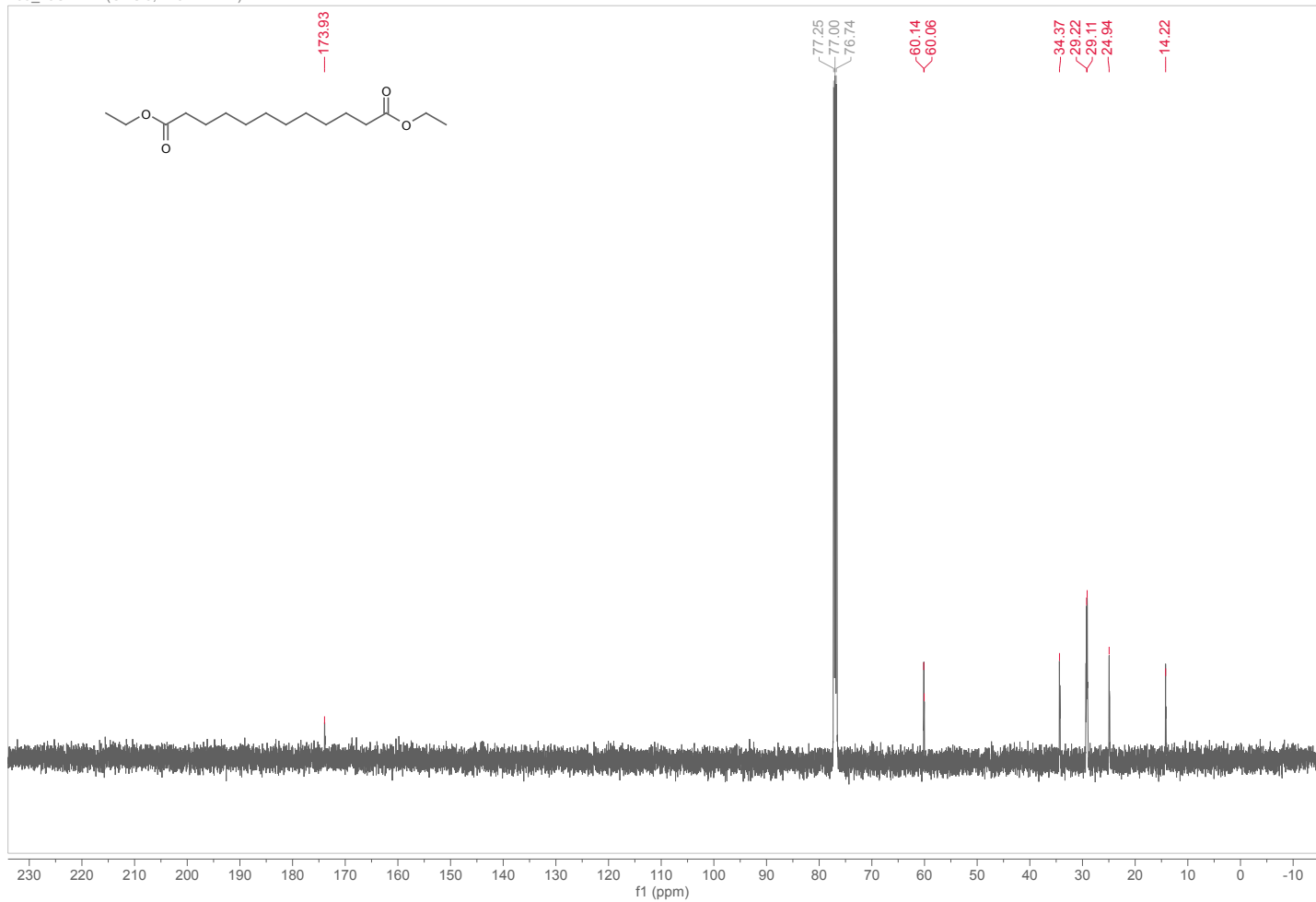
¹³C NMR spectrum (ppm):

- 161.64
- 136.45
- 113.81
- 83.47
- 77.25
- 77.00
- 76.75
- 67.54
- 29.11
- 25.81
- 24.82

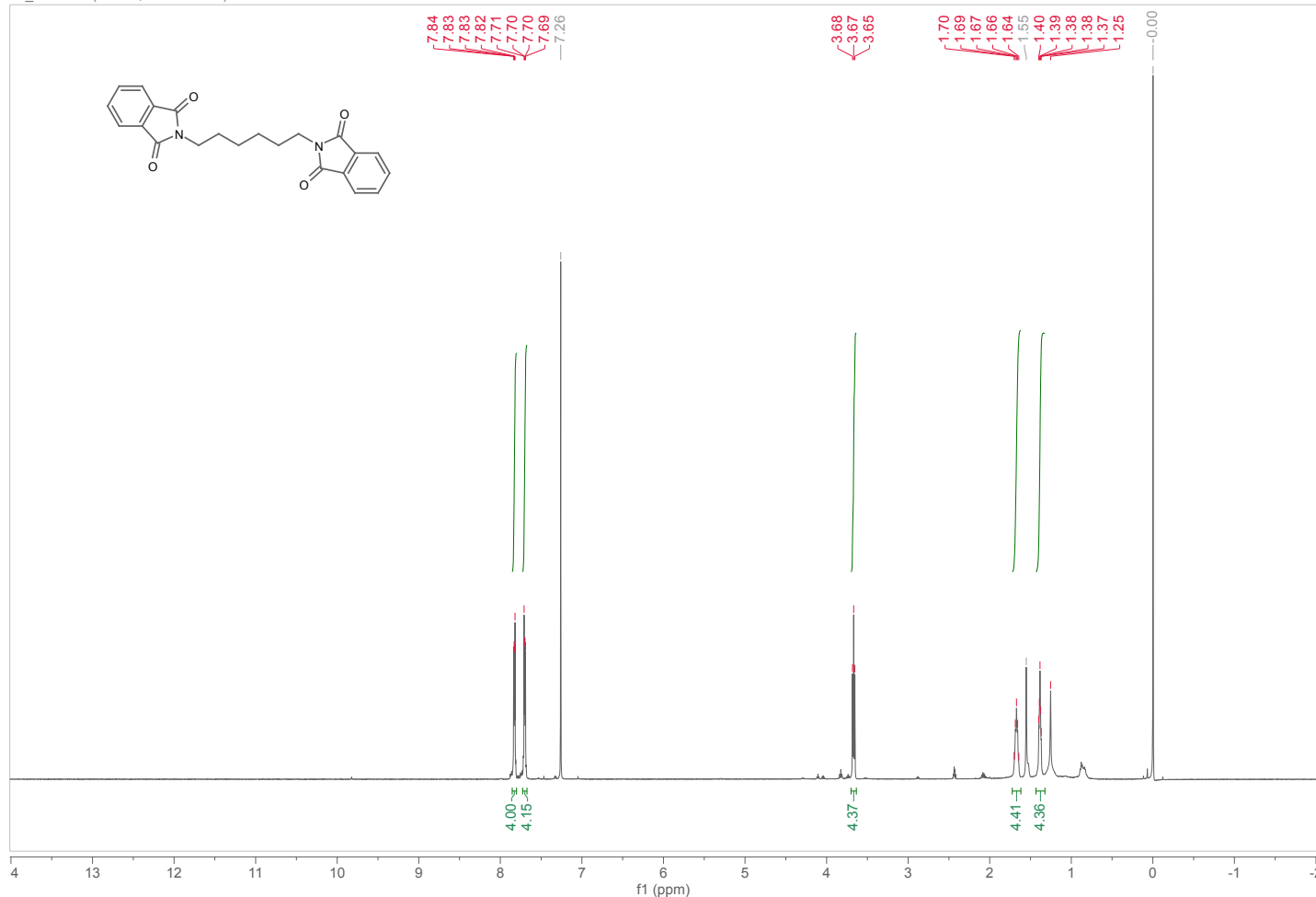
109_1H NMR (CDCl3, 499.94 MHz)



109_13C NMR (CDCl3, 125.72 MHz)



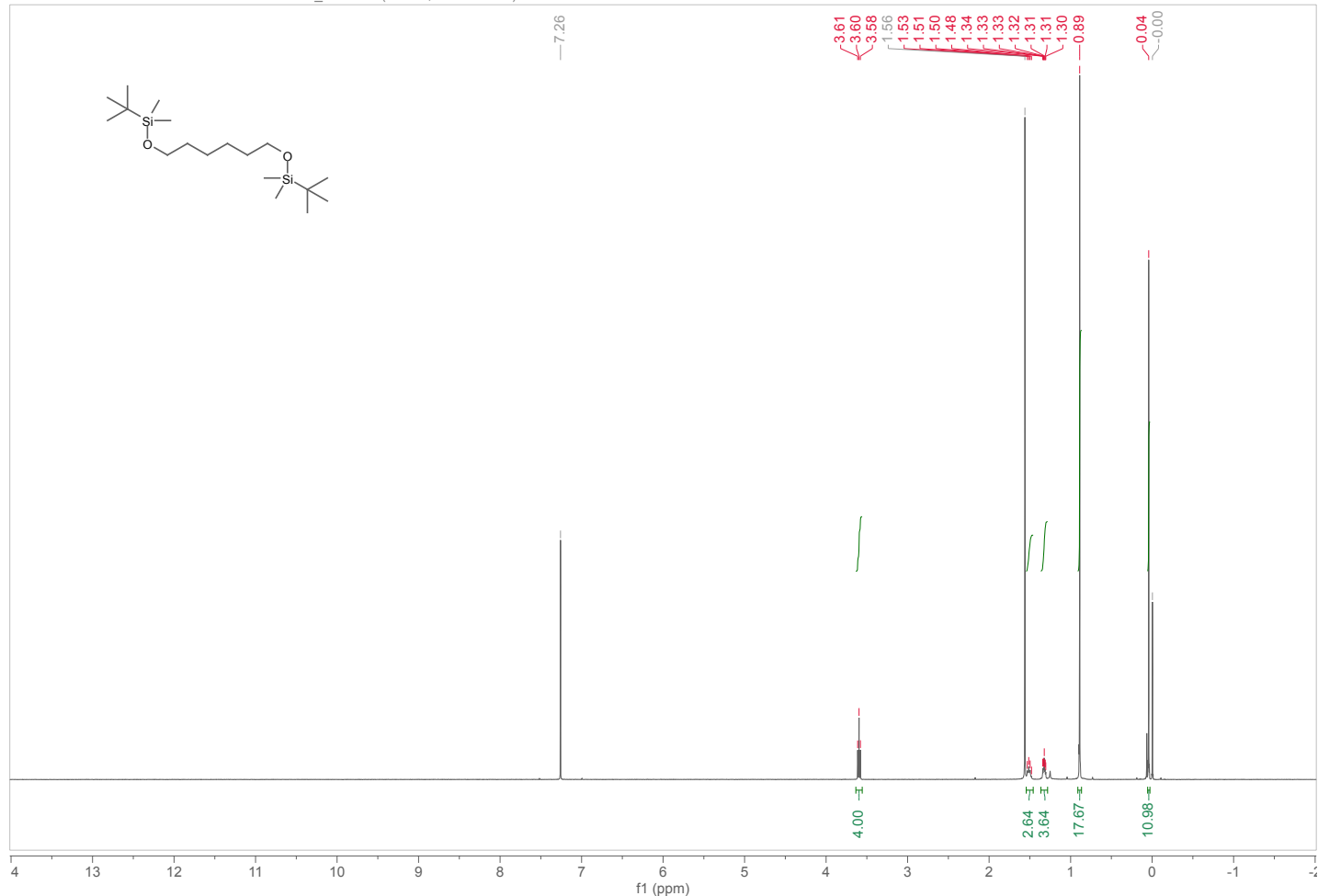
95_1H NMR (CDCl₃, 499.94 MHz)



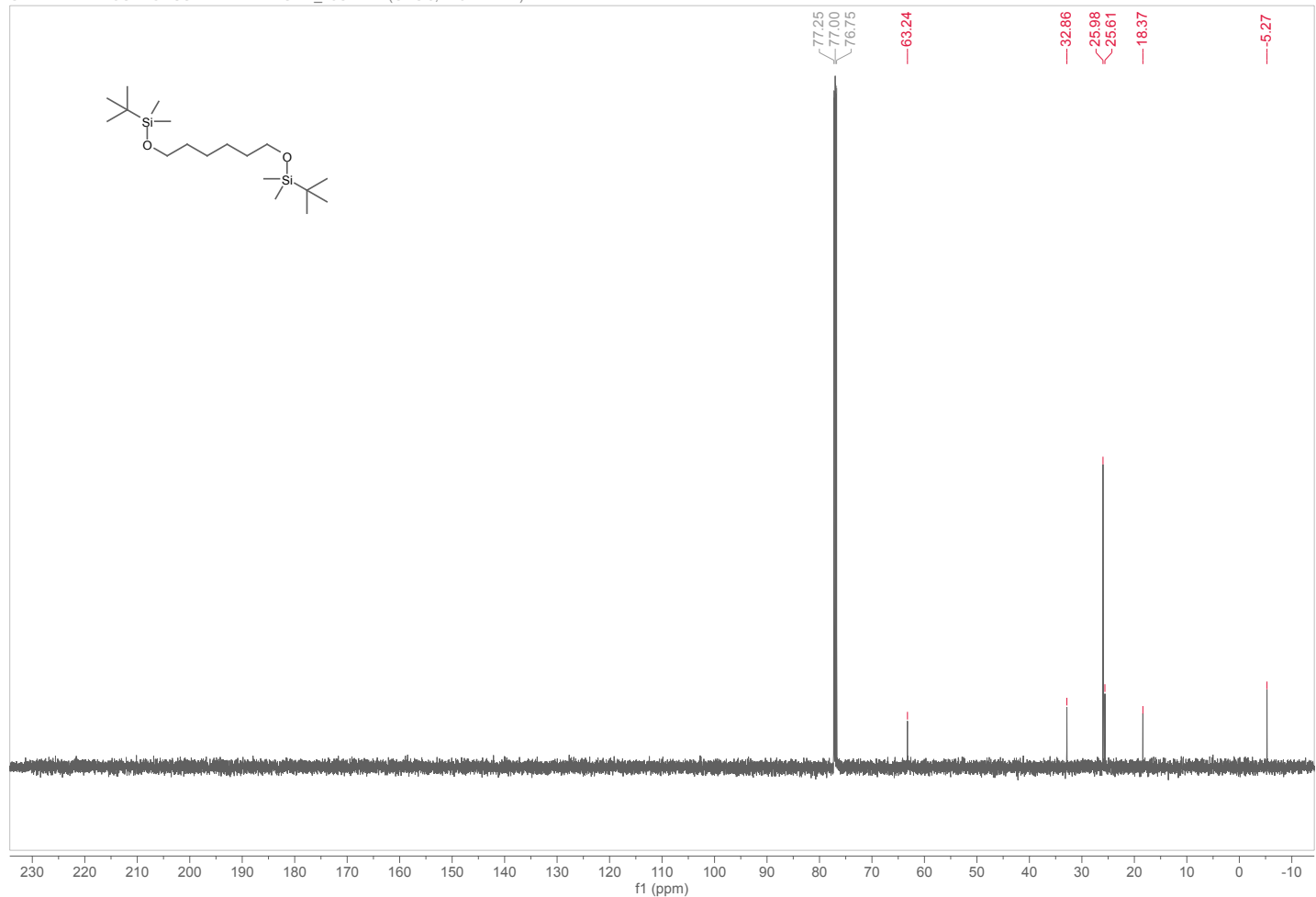
95_13C NMR (CDCl₃, 125.72 MHz)



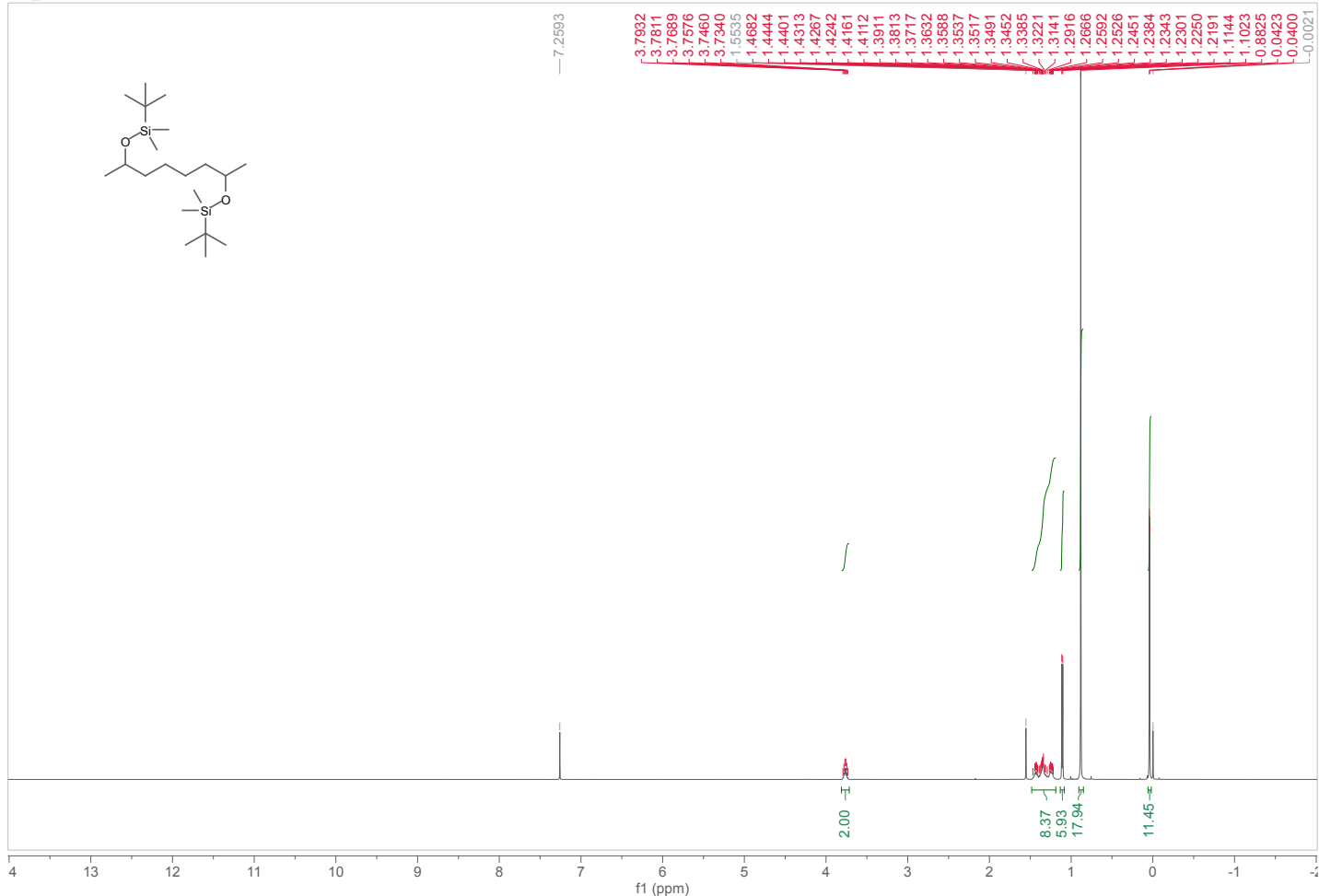
STANDARD PHOSPHORUS PARAMETERS — ¹H NMR (CDCl₃, 399.89 MHz)



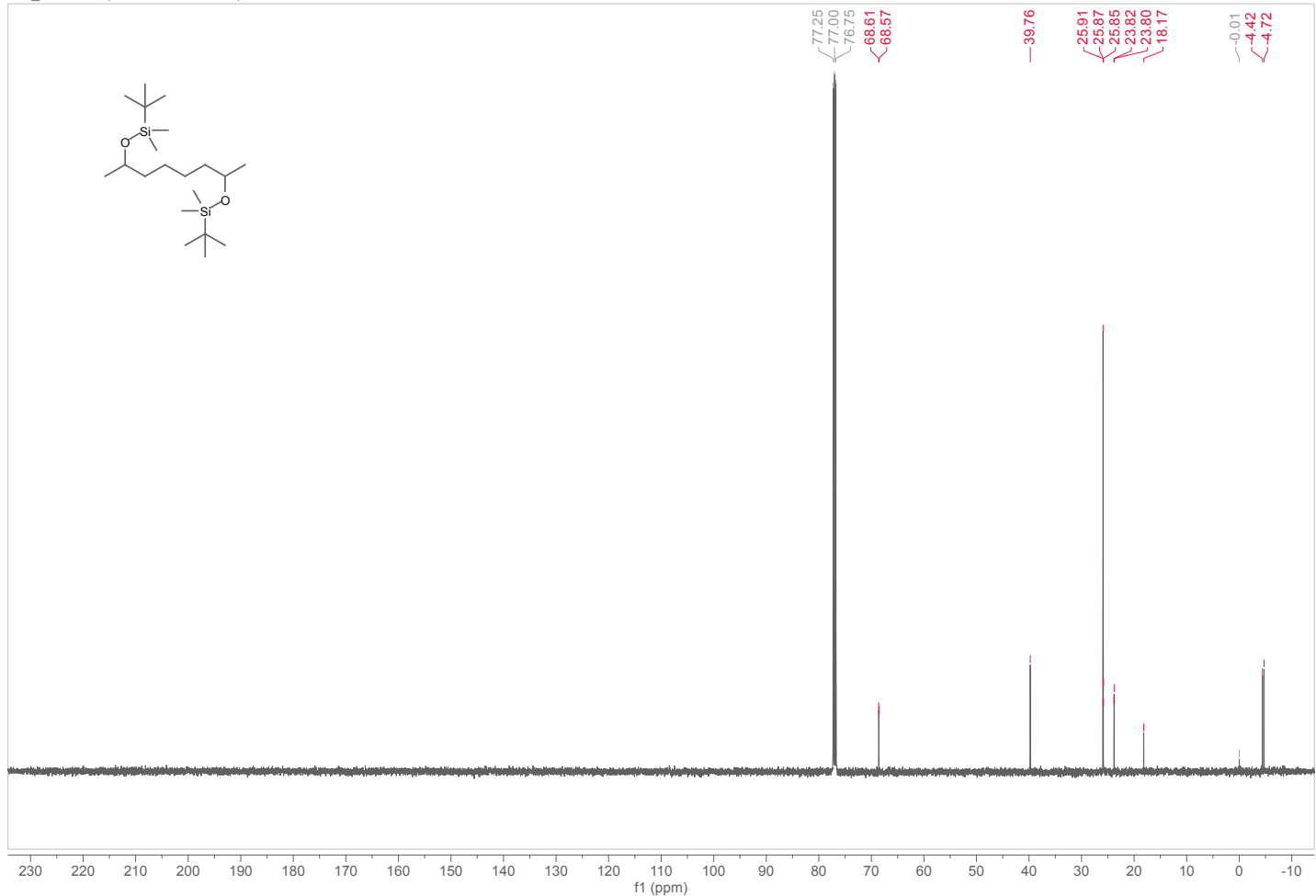
STANDARD PHOSPHORUS PARAMETERS — ¹³C NMR (CDCl₃, 125.72 MHz)



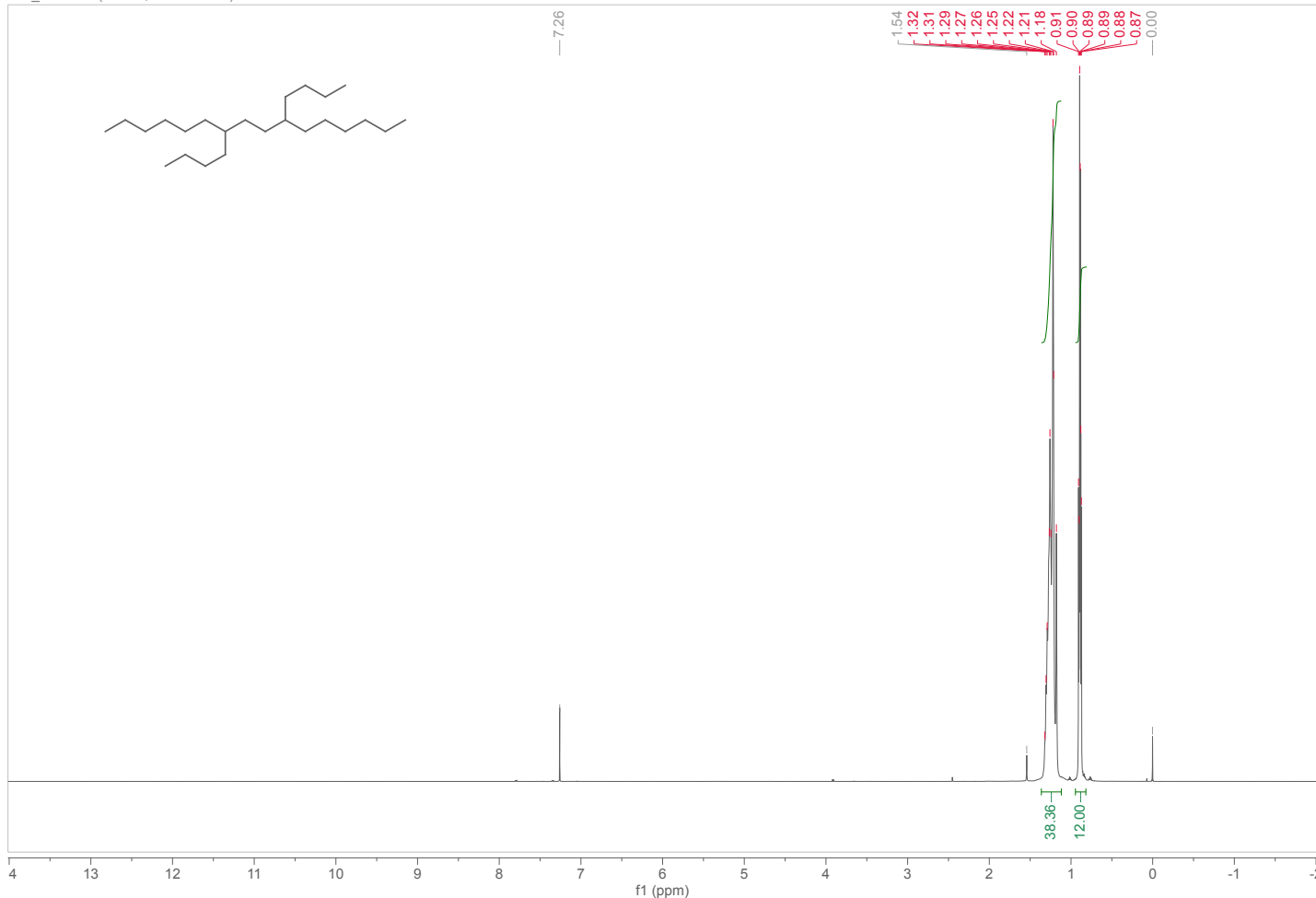
165_1H NMR (CDCl3, 499.94 MHz)



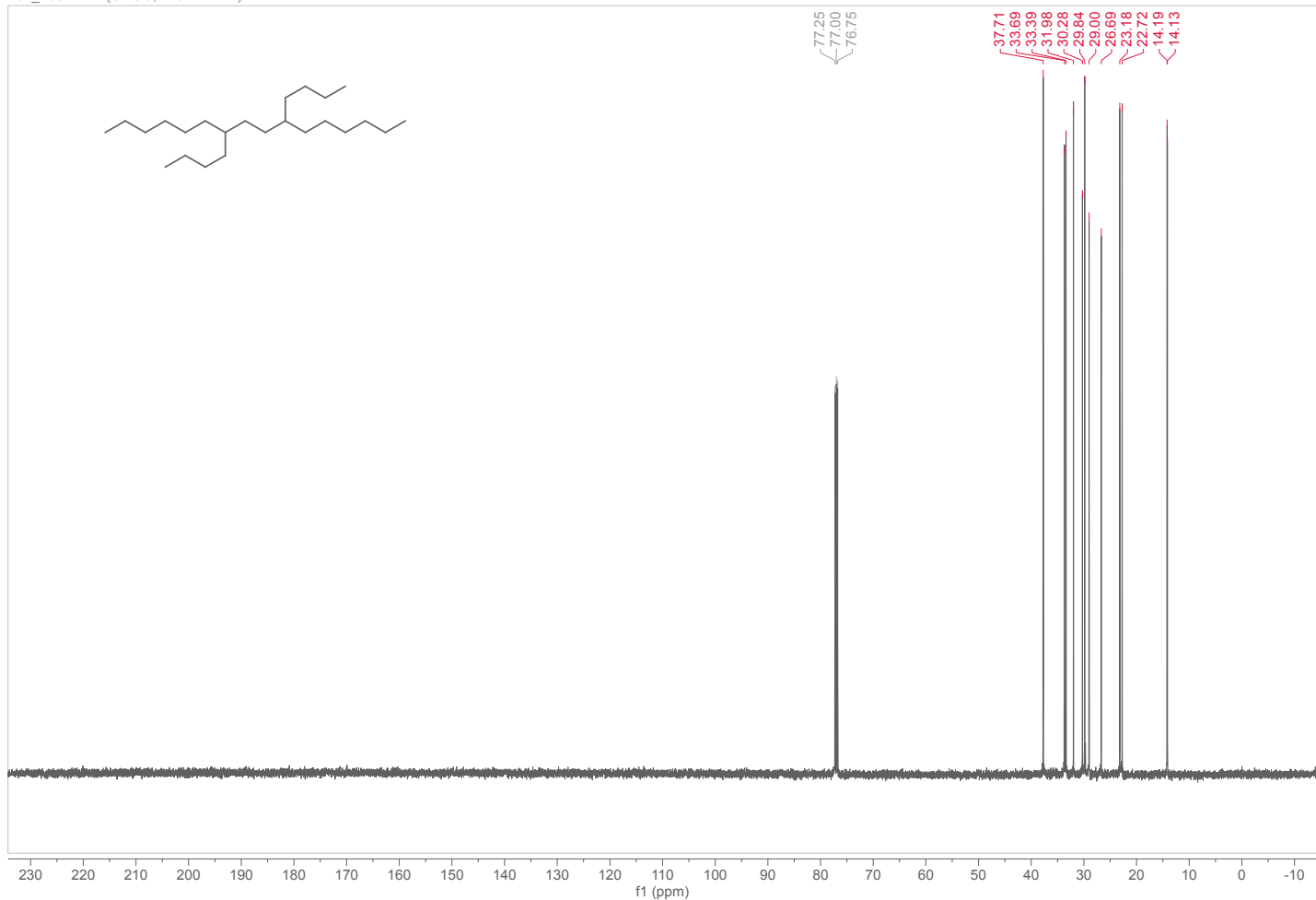
165_13C NMR (CDCl3, 125.72 MHz)



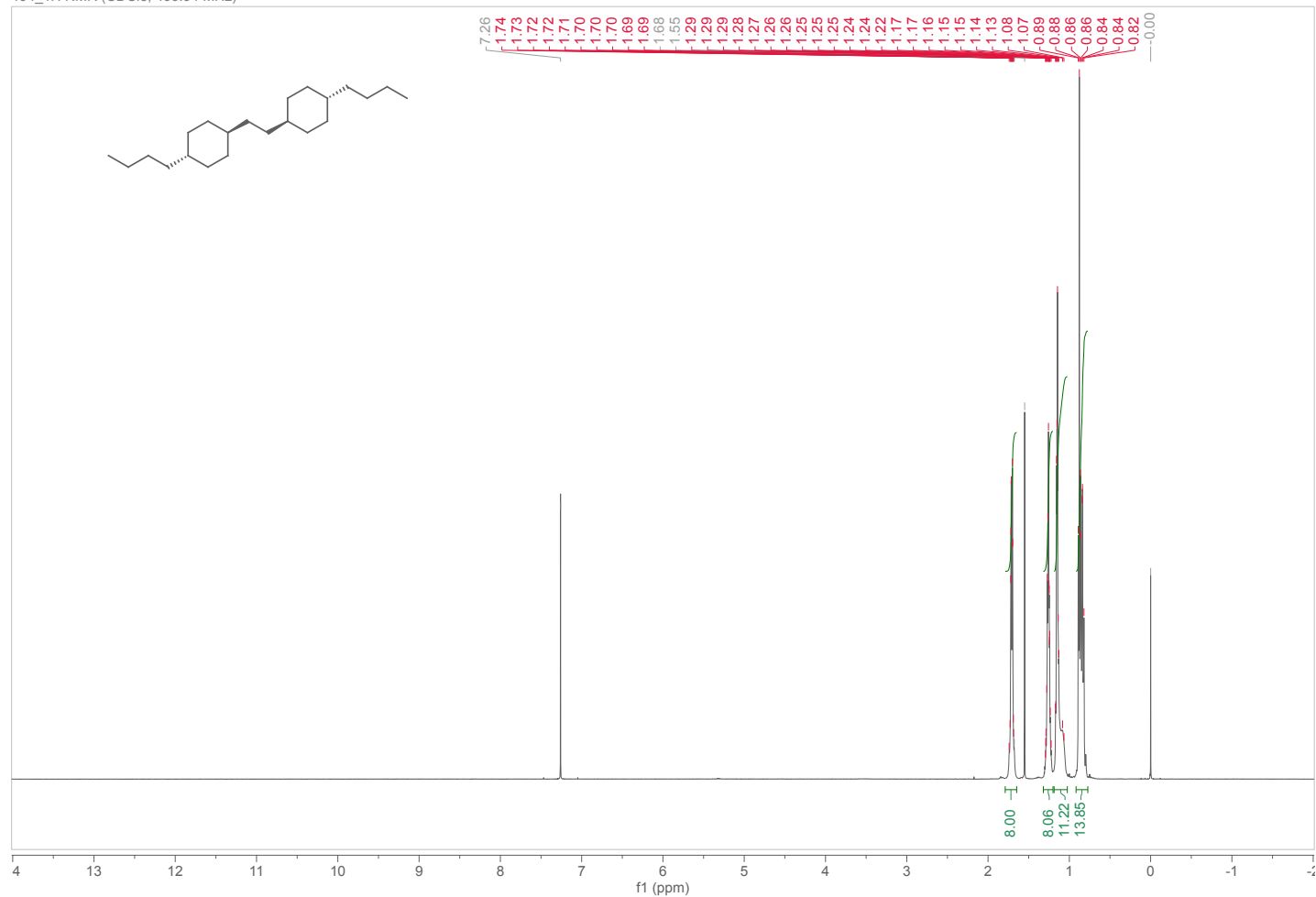
187_1H NMR (CDCl₃, 499.94 MHz)



187_13C NMR (CDCl₃, 125.72 MHz)



194_1H NMR (CDCl3, 499.94 MHz)



194_13C NMR (CDCl3, 125.72 MHz)

