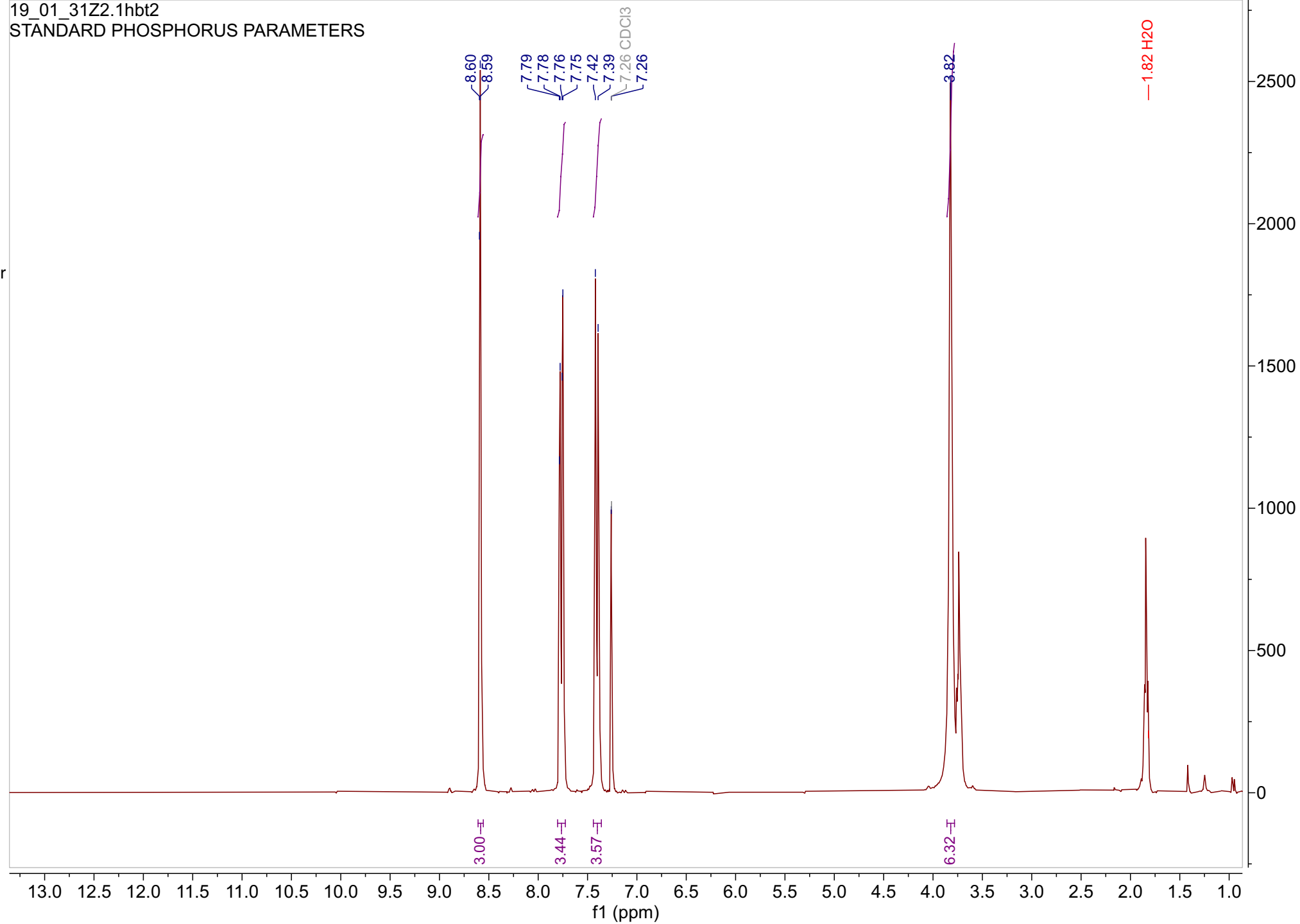
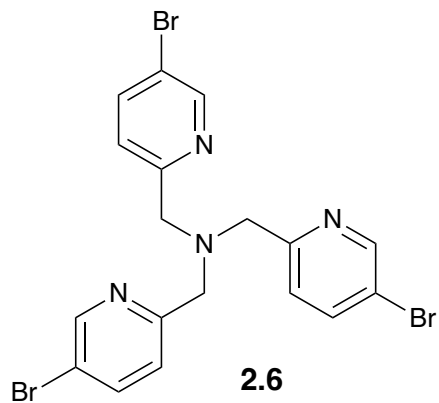


Appendix

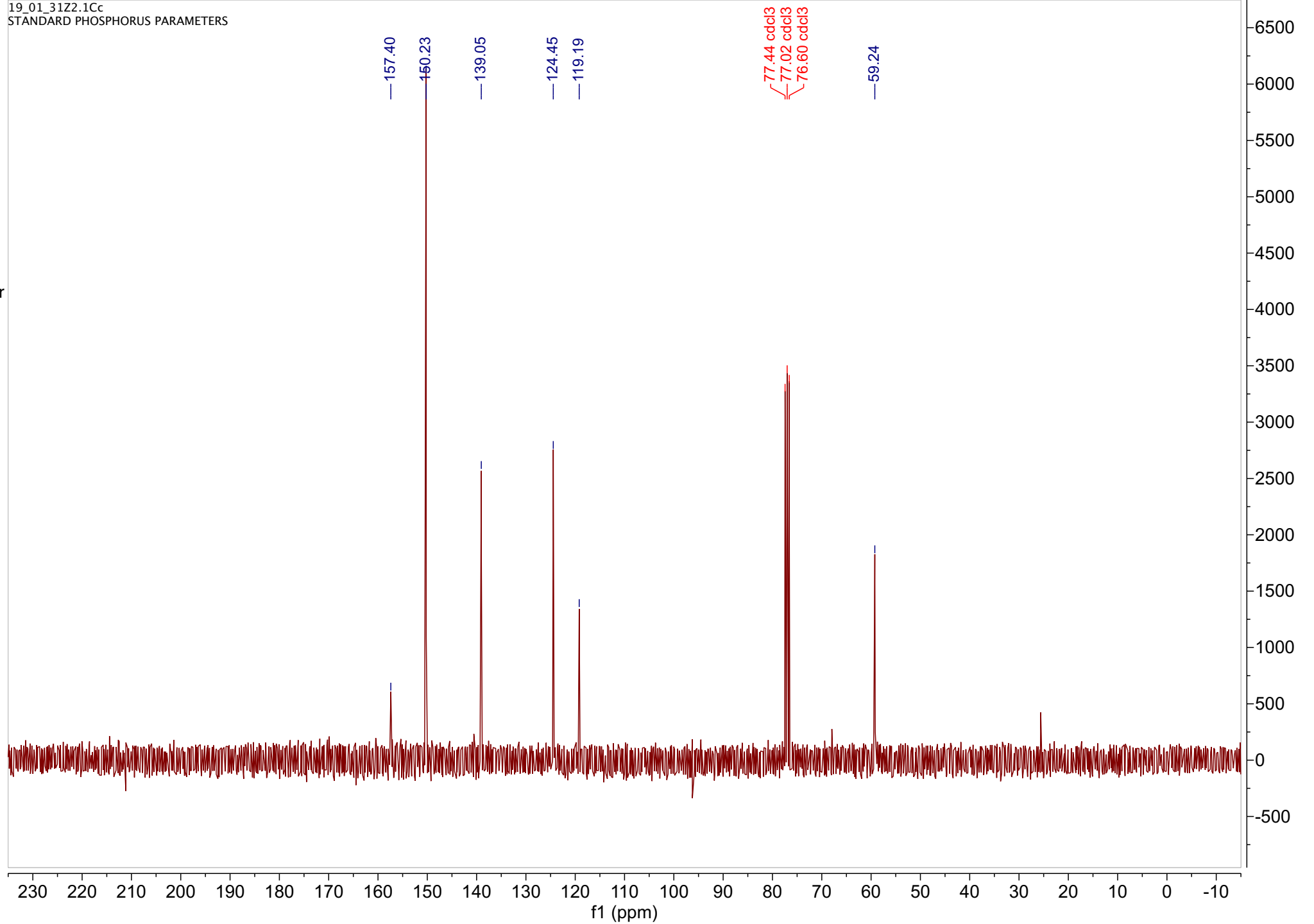
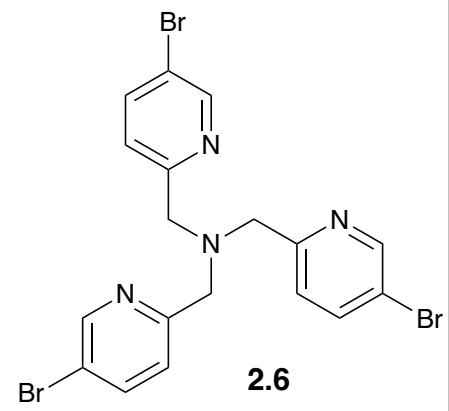
¹H NMR

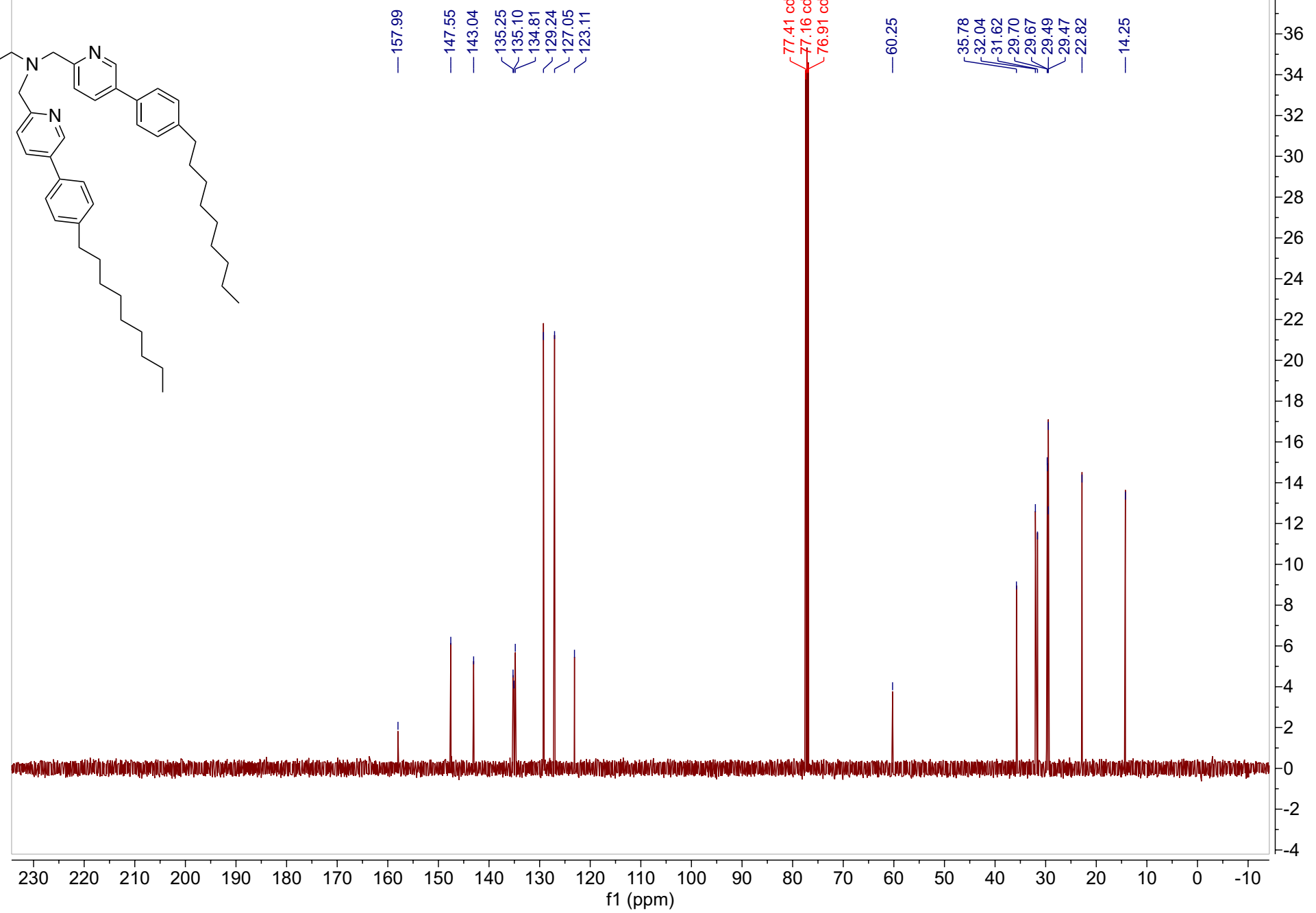
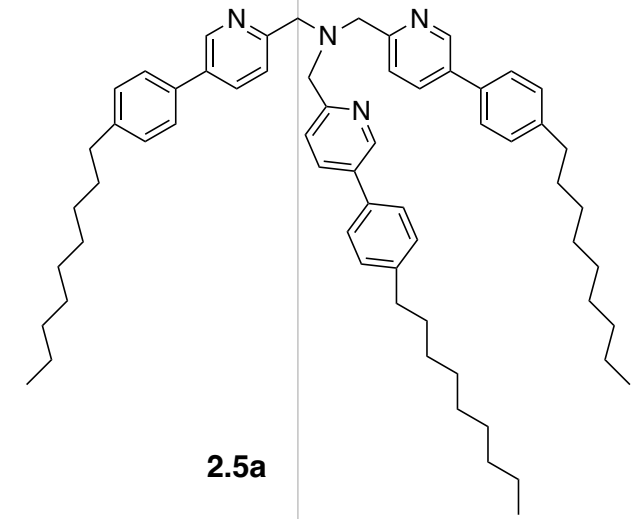
19_01_31Z2.1hbt2
STANDARD PHOSPHORUS PARAMETERS



¹³C NMR

19_01_31Z2.1Cc
STANDARD PHOSPHORUS PARAMETERS

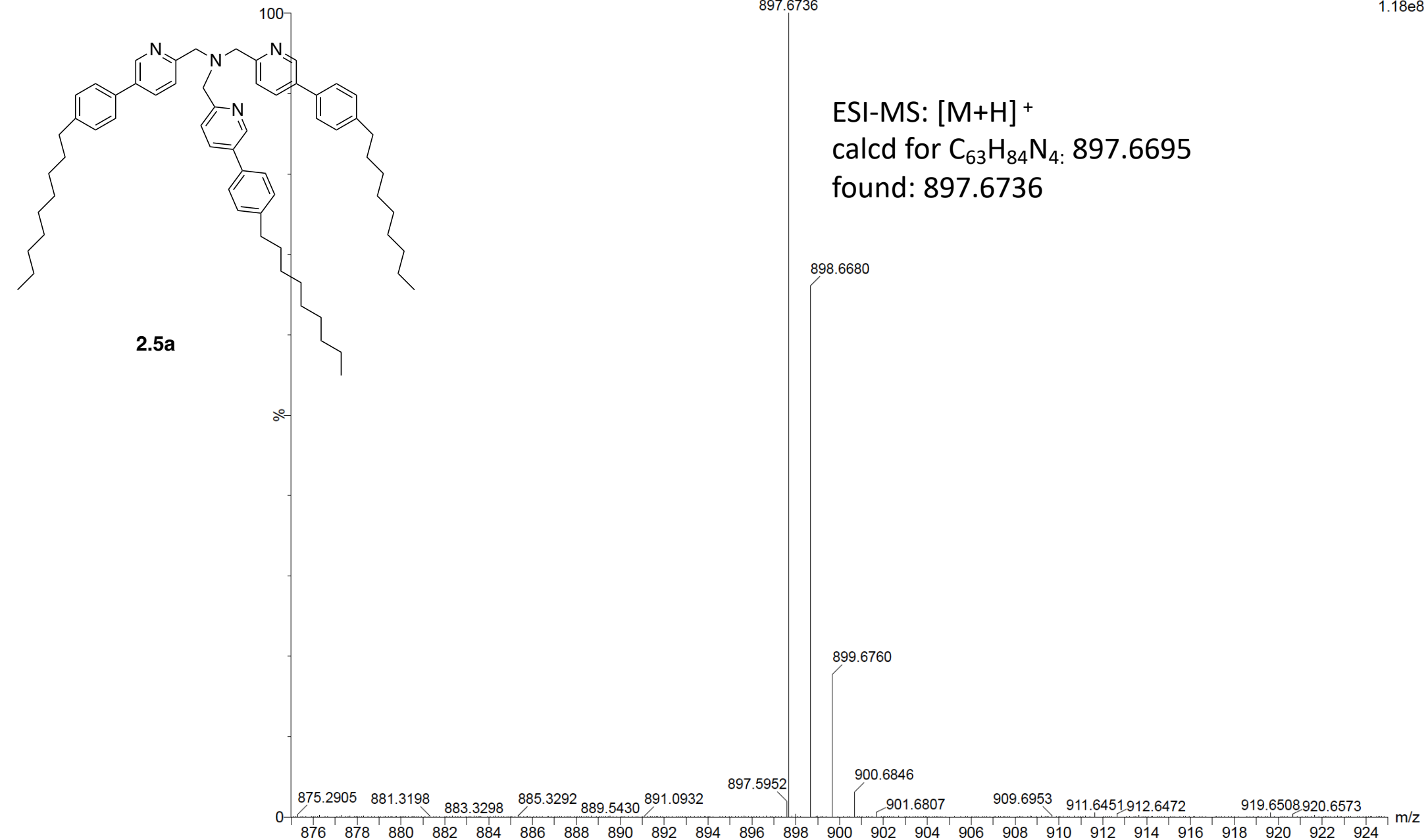




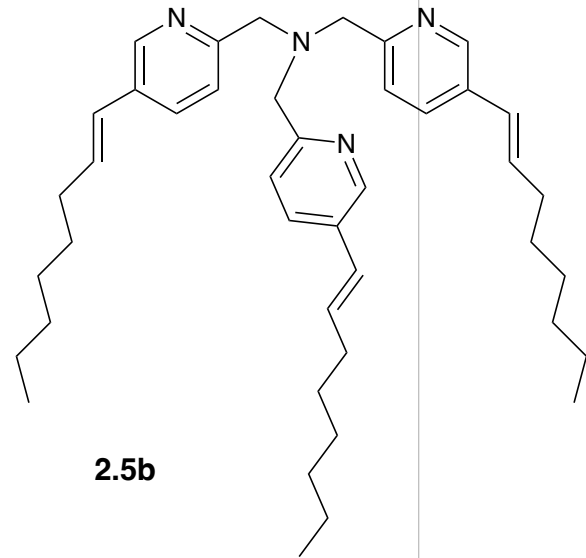
ESI-MS

2021_03_05_LOU_TPA_102_POS_2_33 (0.575) AM (Top,4, Ht,10000.0,0.00,0.70); Cm (1:117)

TOF MS ES+
1.18e8



¹H NMR



8.15
8.14
7.50
7.49
7.48
7.48
7.26
7.26 CDCl₃
7.22
7.20
6.09
6.08
6.08
6.07

3.67
2.00
1.99
1.98
1.97
1.97
1.96
1.23
1.22
1.21
1.20
1.09
1.09
1.09
1.08
1.08
1.07
1.07
1.06
1.06
1.06
1.06
1.05
1.05
1.04
1.04
1.03
1.00
0.64
0.64
0.63
0.63
0.62
-0.18

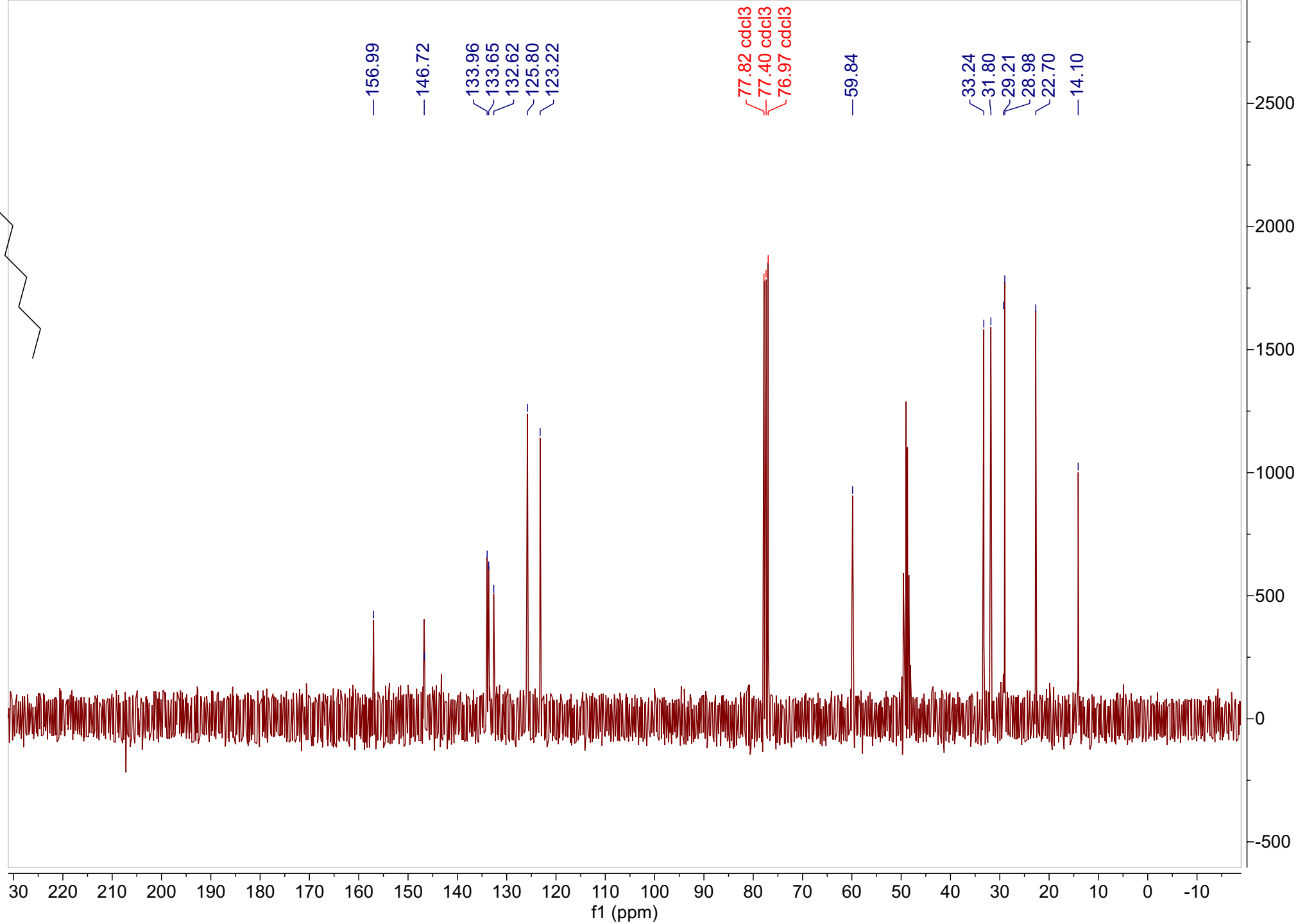
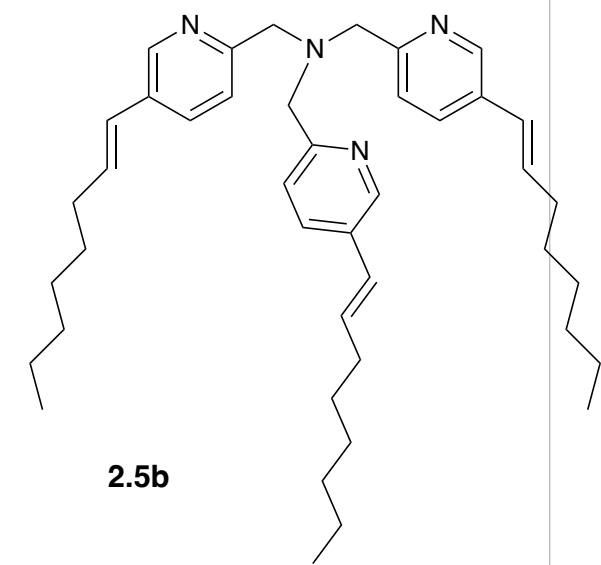


2.82
3.09
2.86
6.00
5.94
6.35
6.53
21.65
9.62

9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5
f1 (ppm)

5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
-500

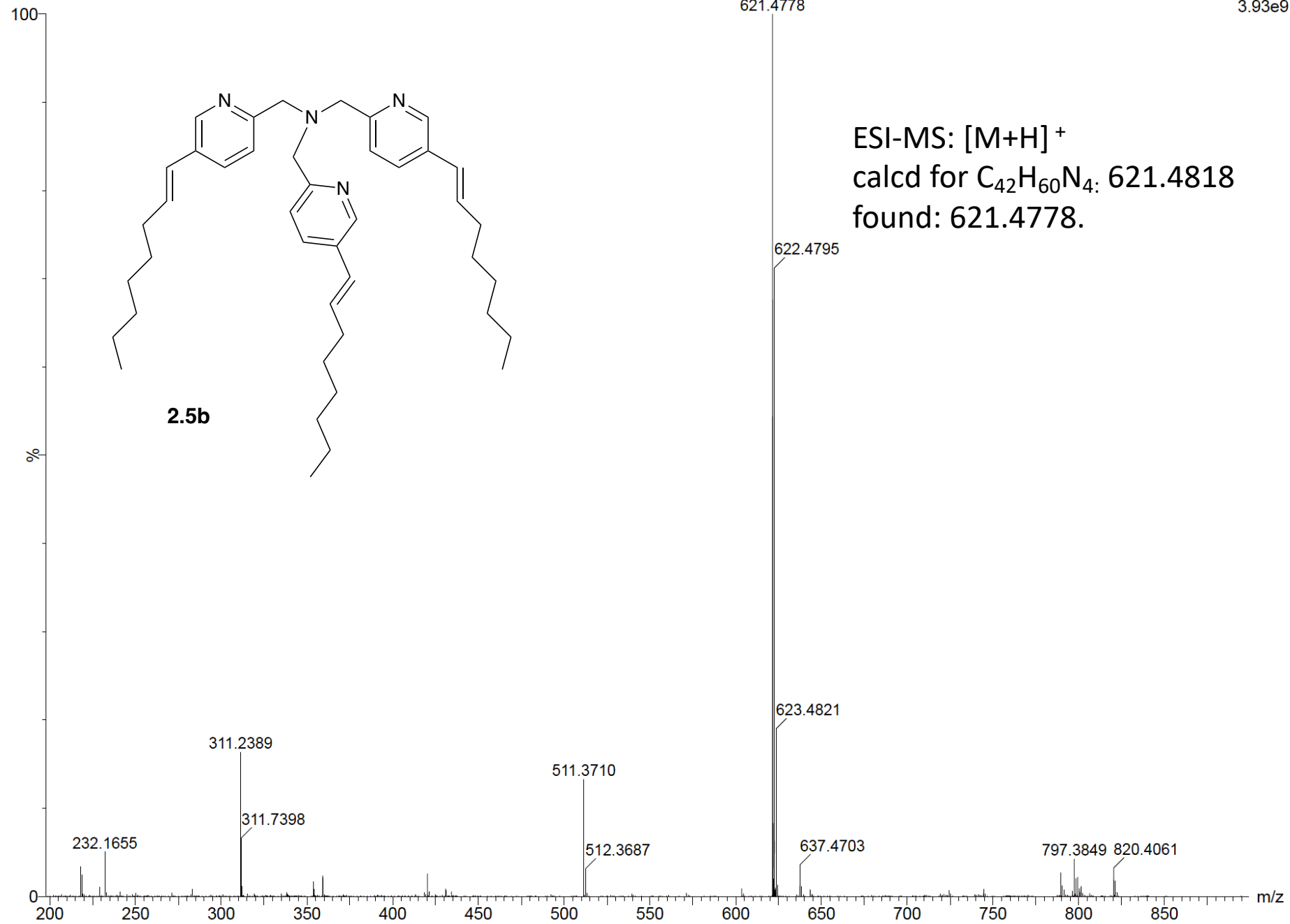
¹³C NMR



ESI-MS

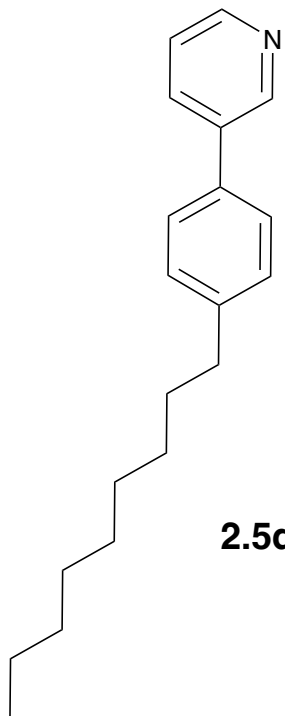
2020_03_11SAGAR_POS_SENS 4 (0.084) Cm (2:191)

TOF MS ES+
3.93e9

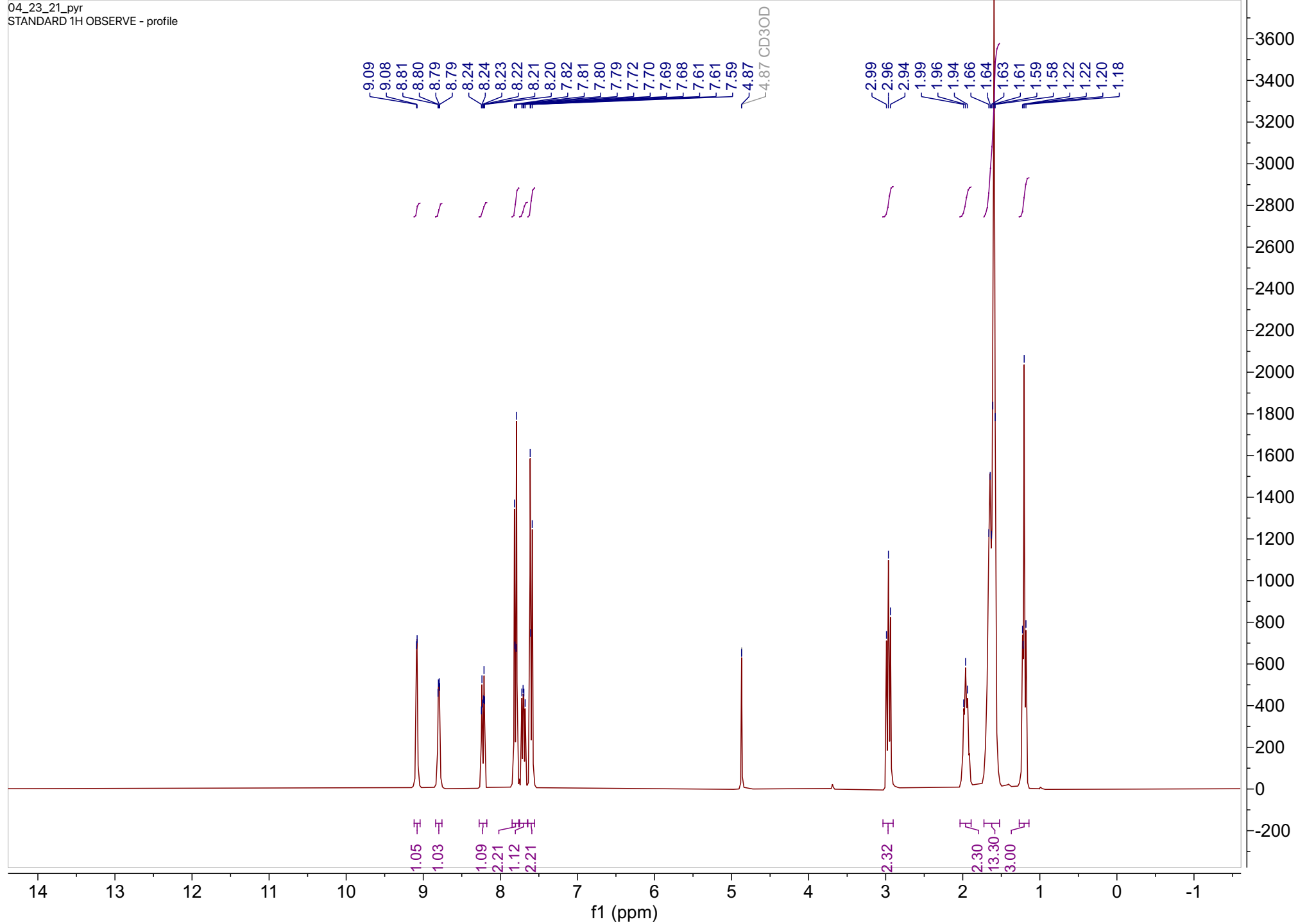


¹H NMR

04_23_21_pyr
STANDARD 1H OBSERVE - profile

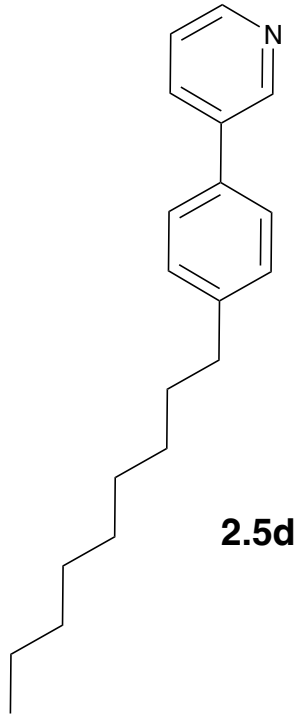


2.5d

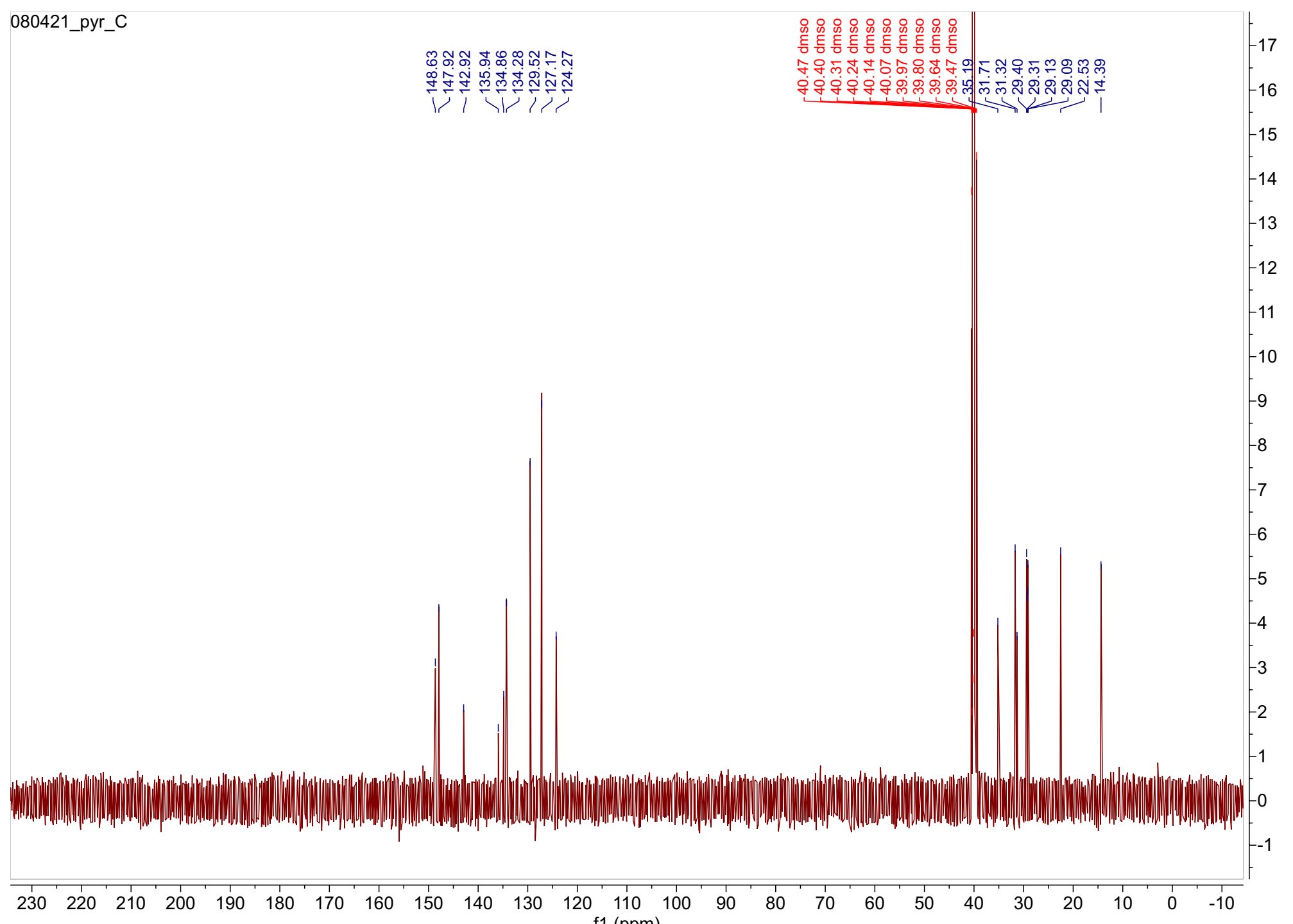


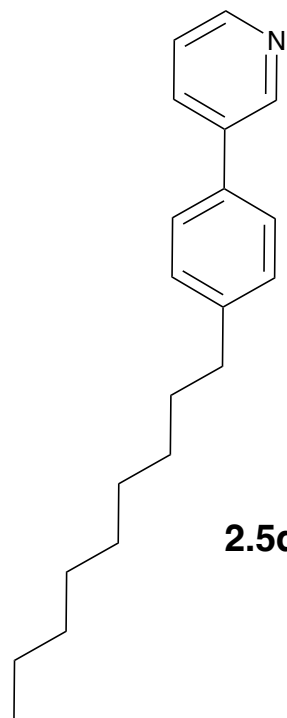
¹³C NMR

080421_pyr_C

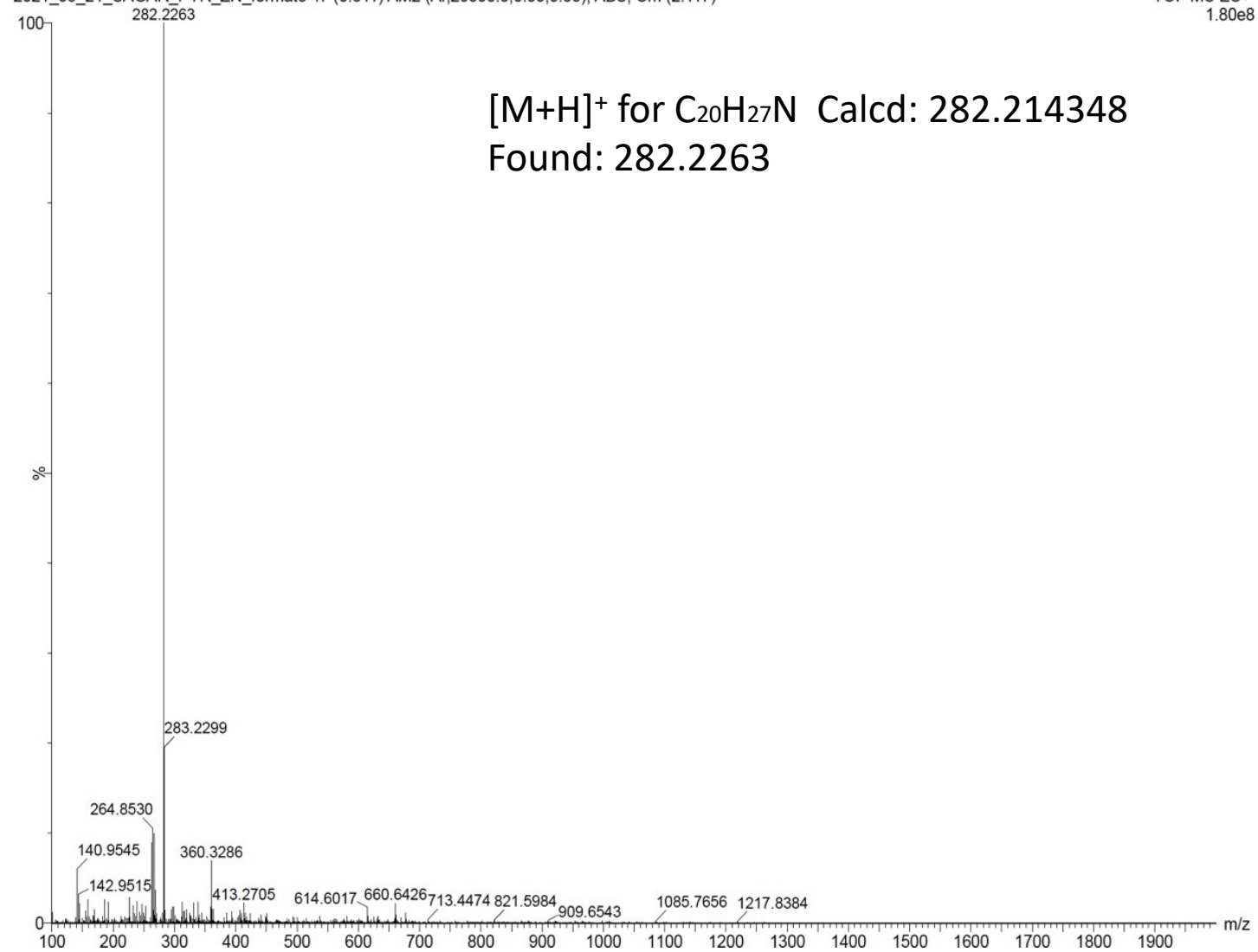


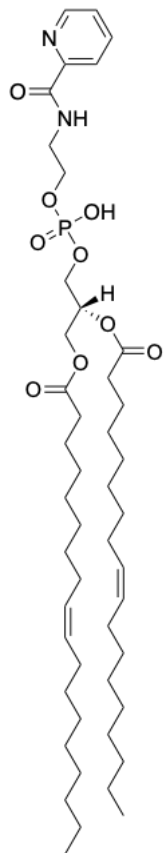
2.5d



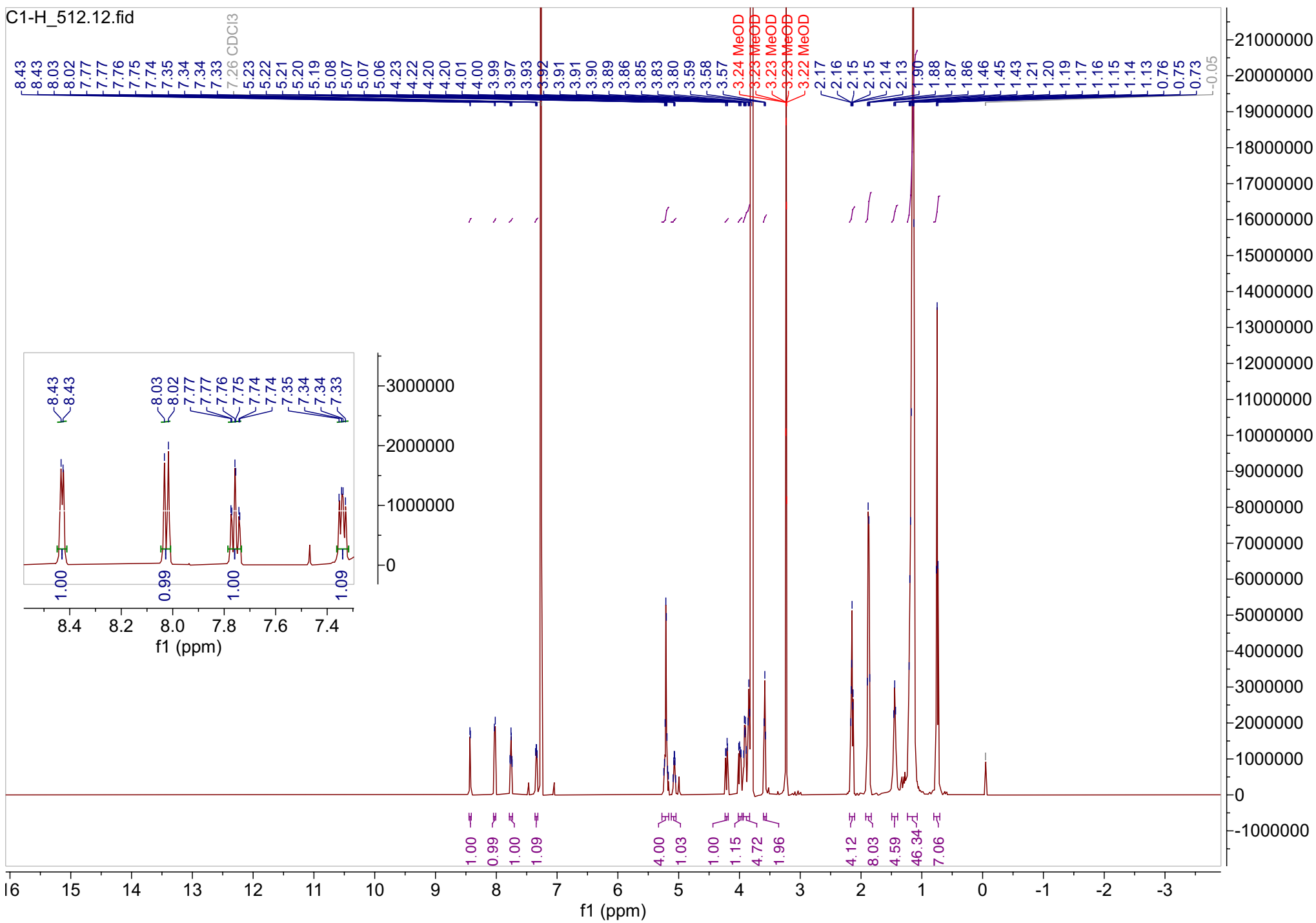
**2.5d**

2021_05_21_SAGAR_PYR_ZN_formate 47 (0.811) AM2 (Ar,20000.0,0.00,0.00); ABS; Cm (2:117)

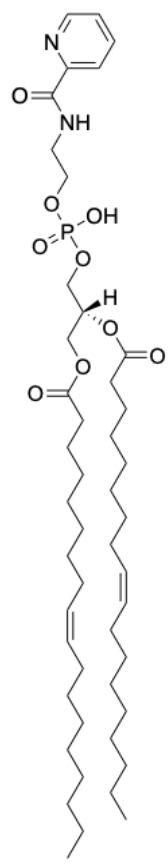
TOF MS ES+
1.80e8



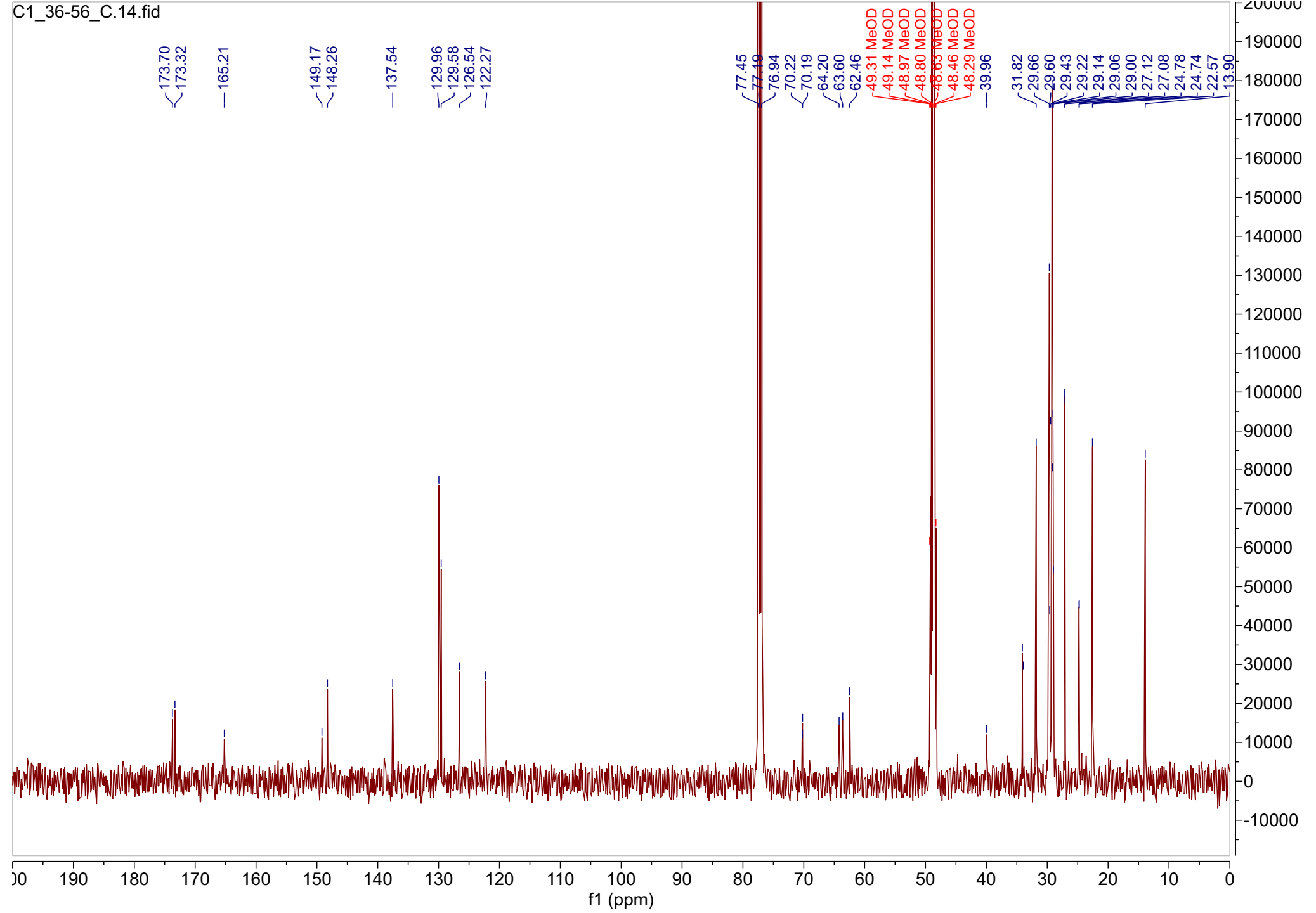
3.6a

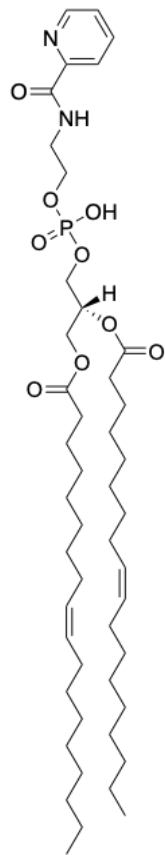


C1_36-56_C.14.fid

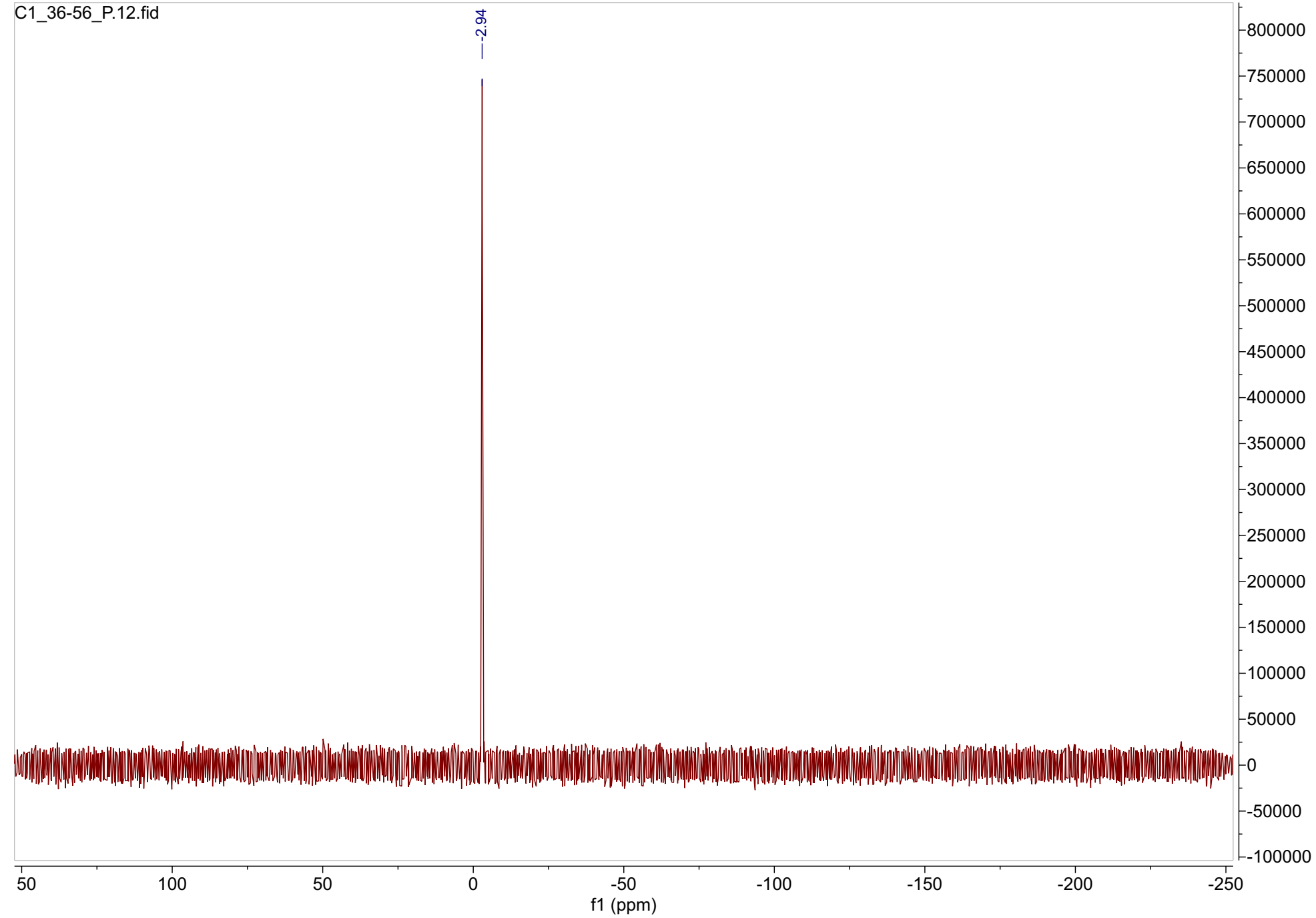


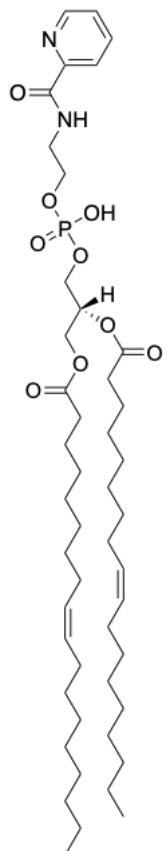
3.6a





3.6a

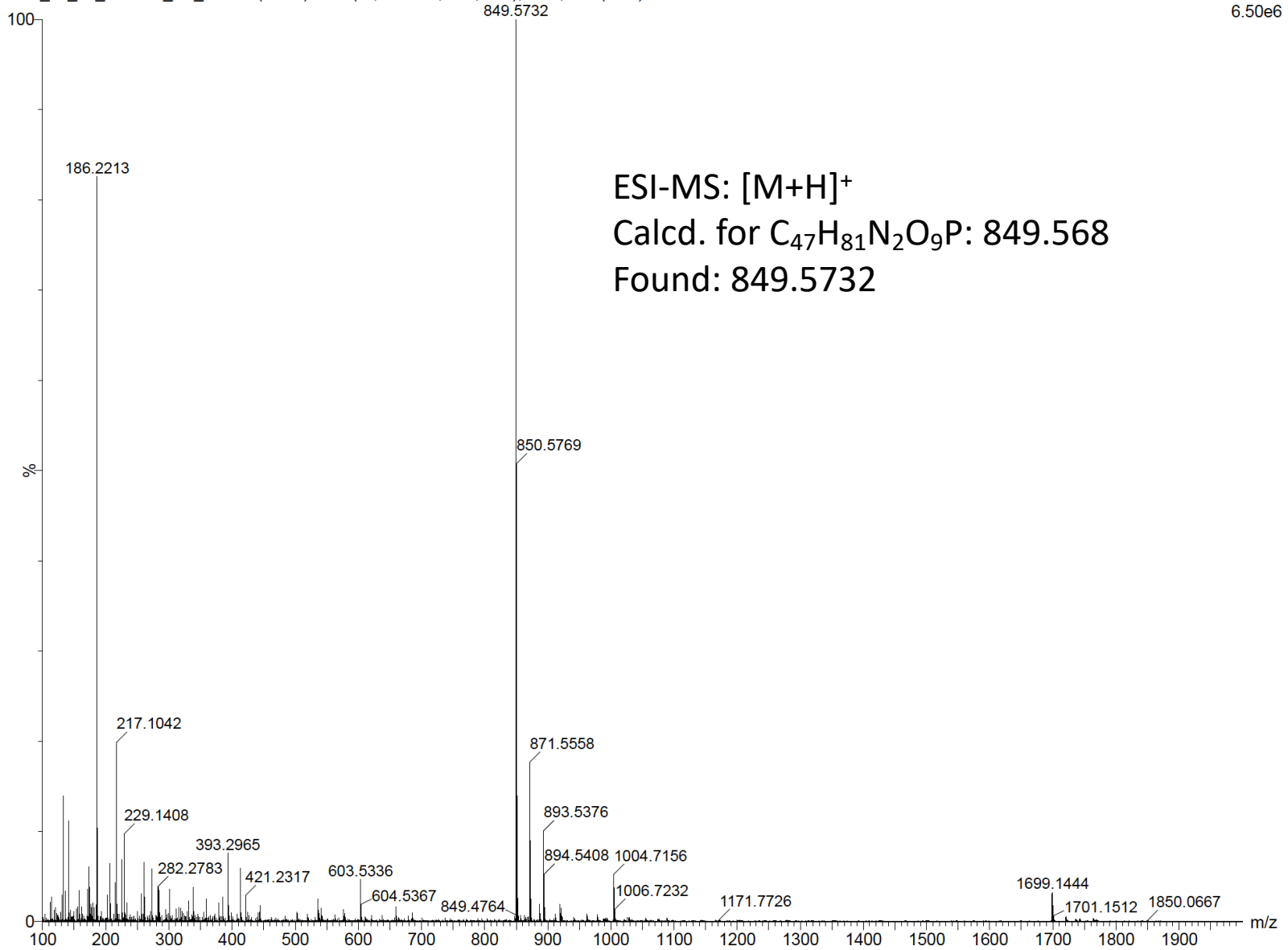


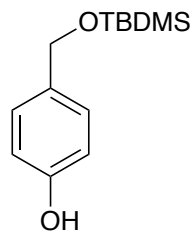


3.6a

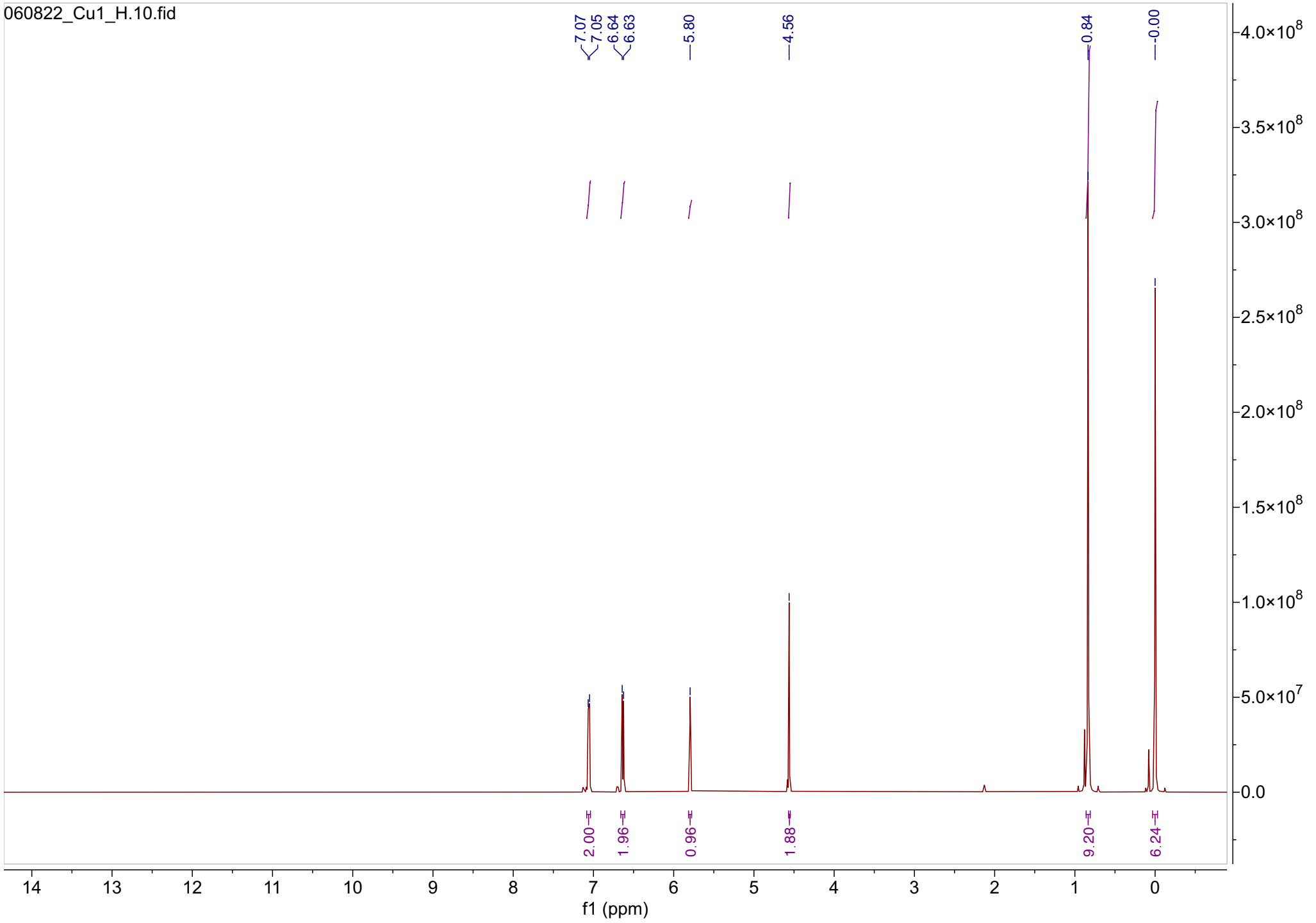
2022_09_13_SAGAR_C1_POS 6 (0.117) AM2 (Ar,20000.0,0.00,0.00); ABS; Cm (2:13)

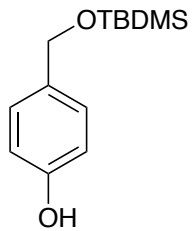
TOF MS ES+
6.50e6



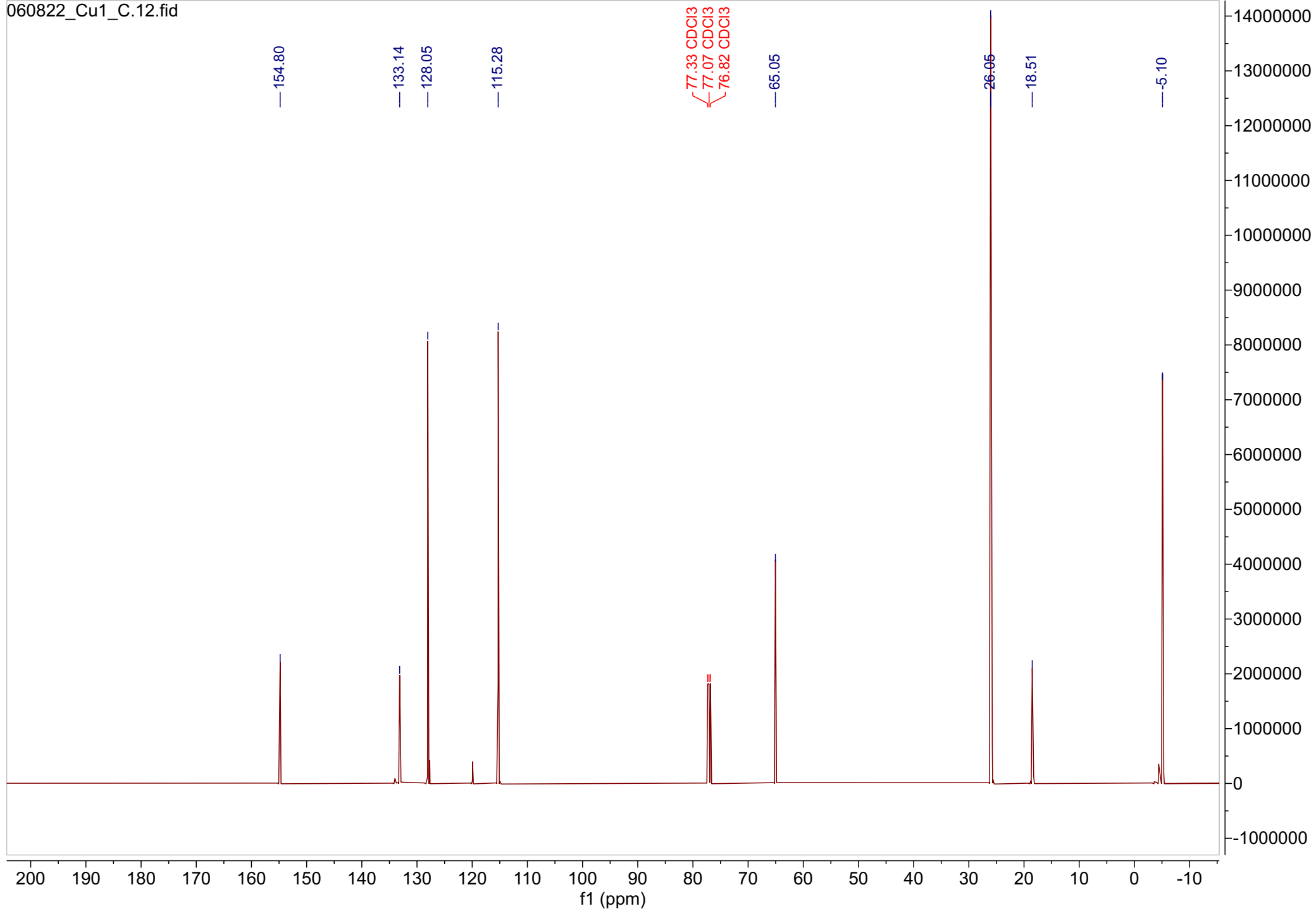


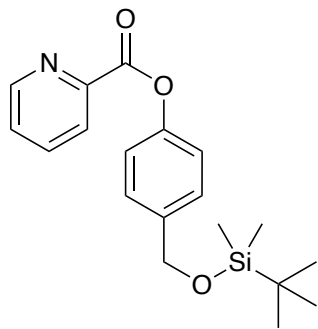
3.7



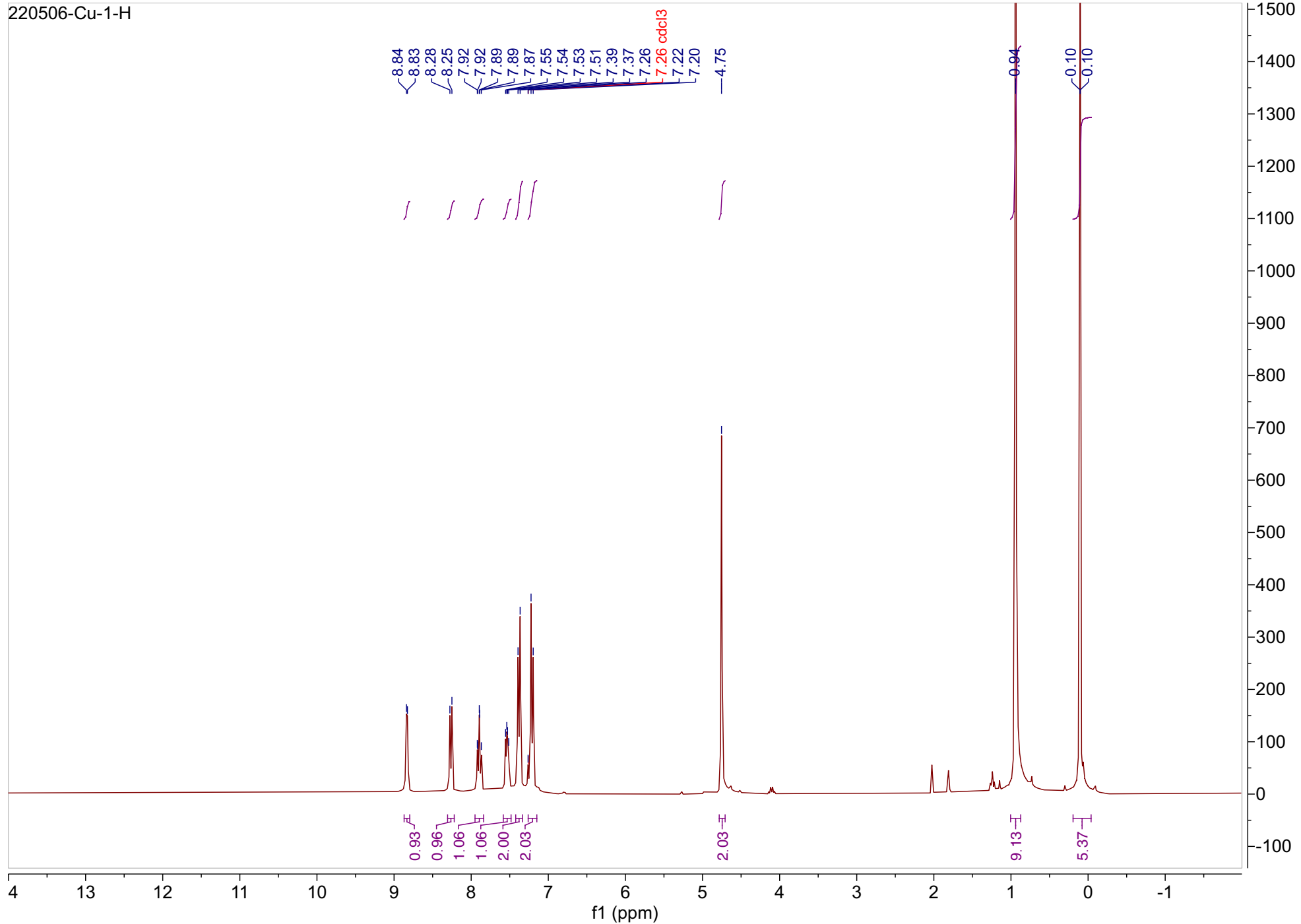


3.7

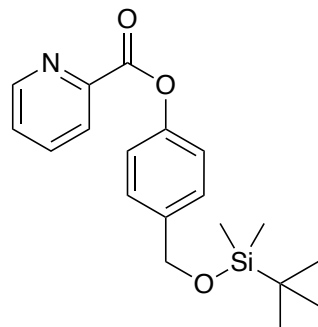




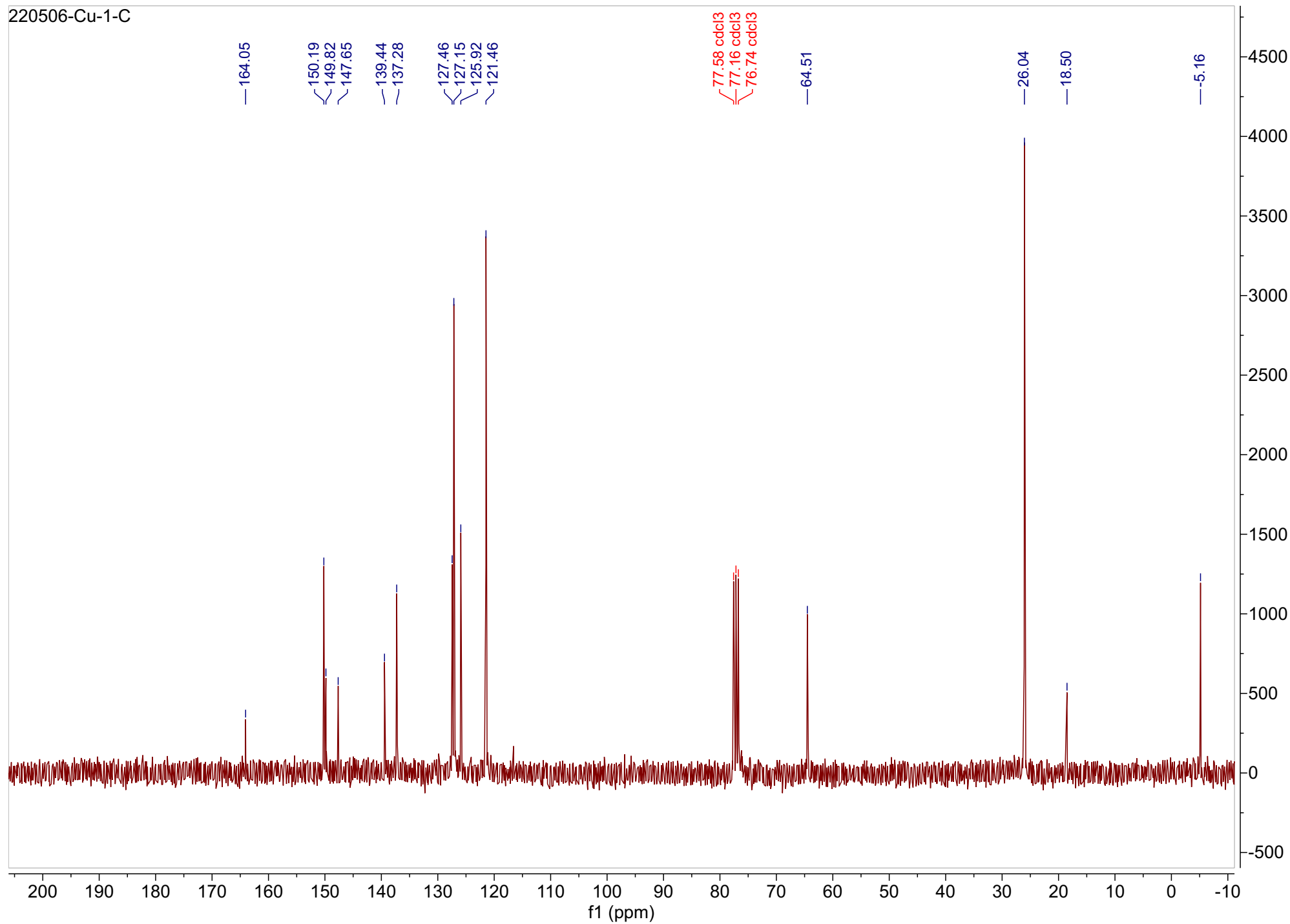
3.8

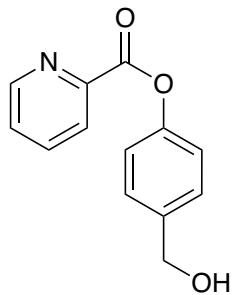
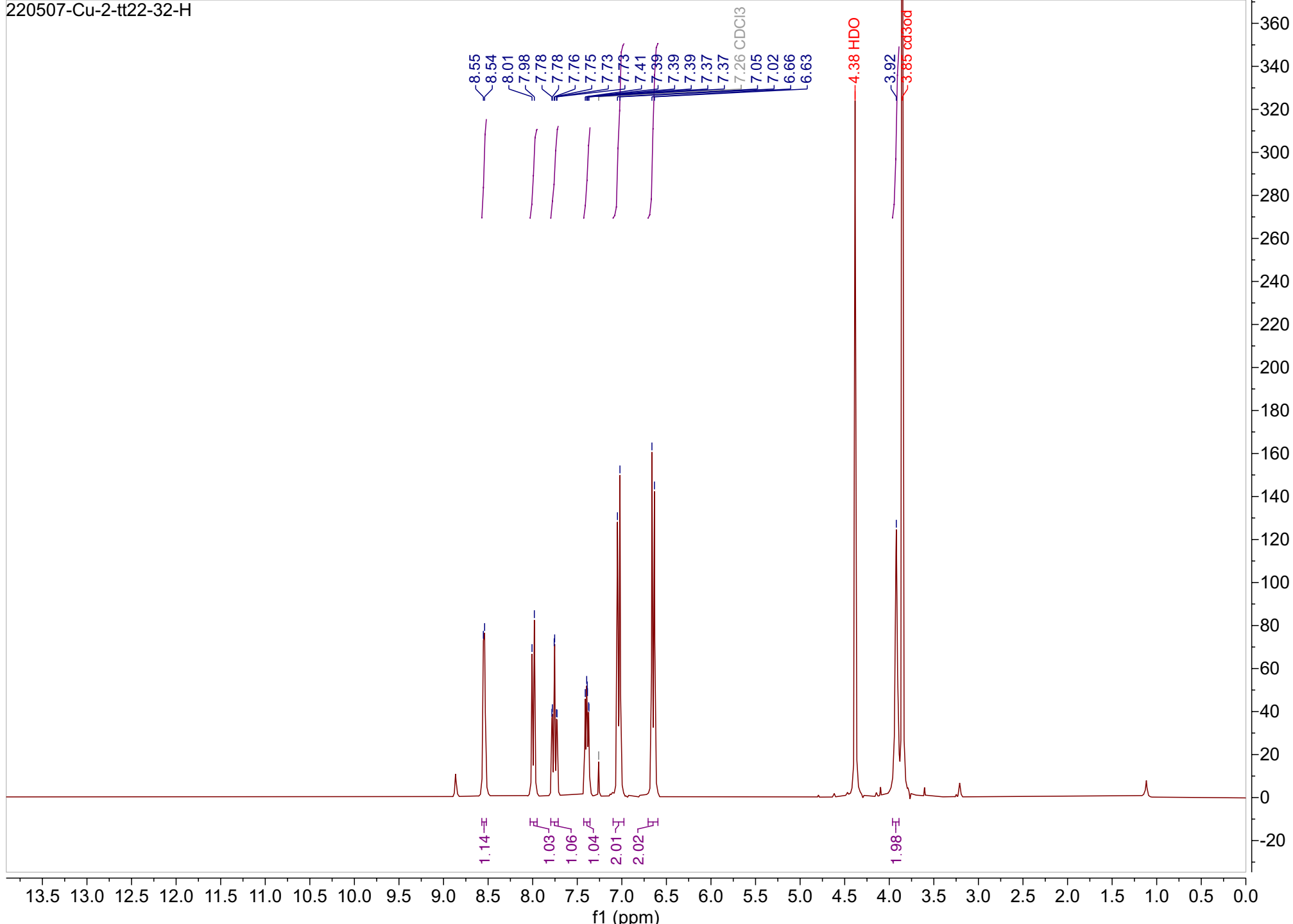


220506-Cu-1-C

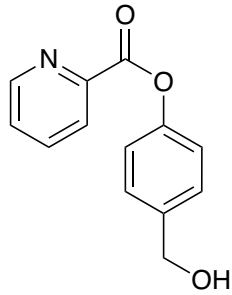


3.8

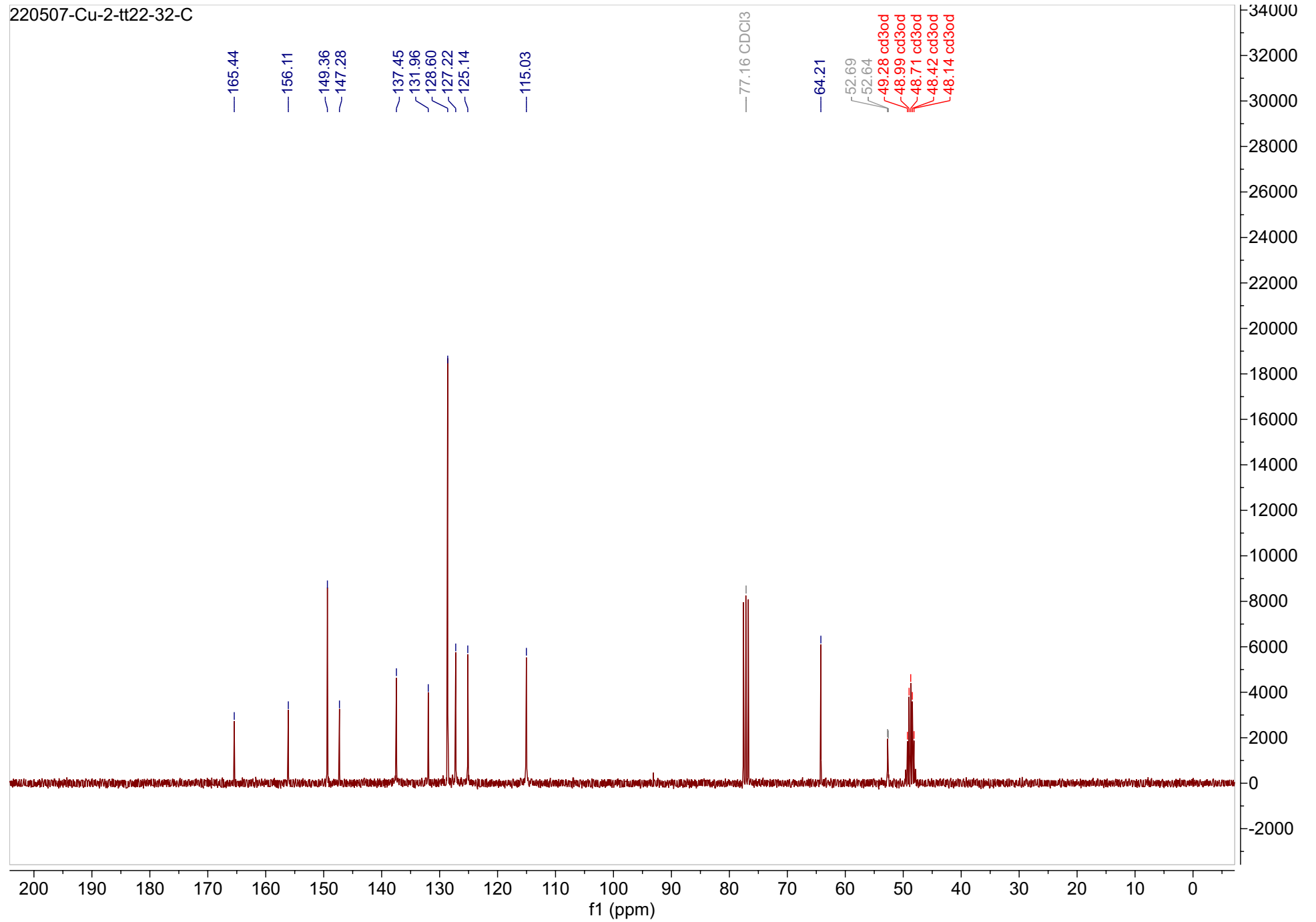


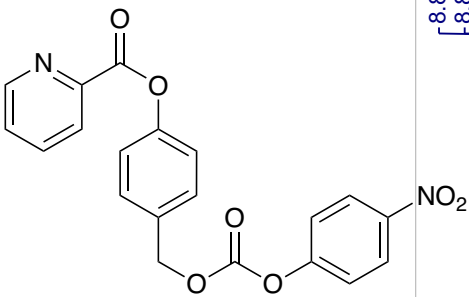
**3.9**

220507-Cu-2-tt22-32-C

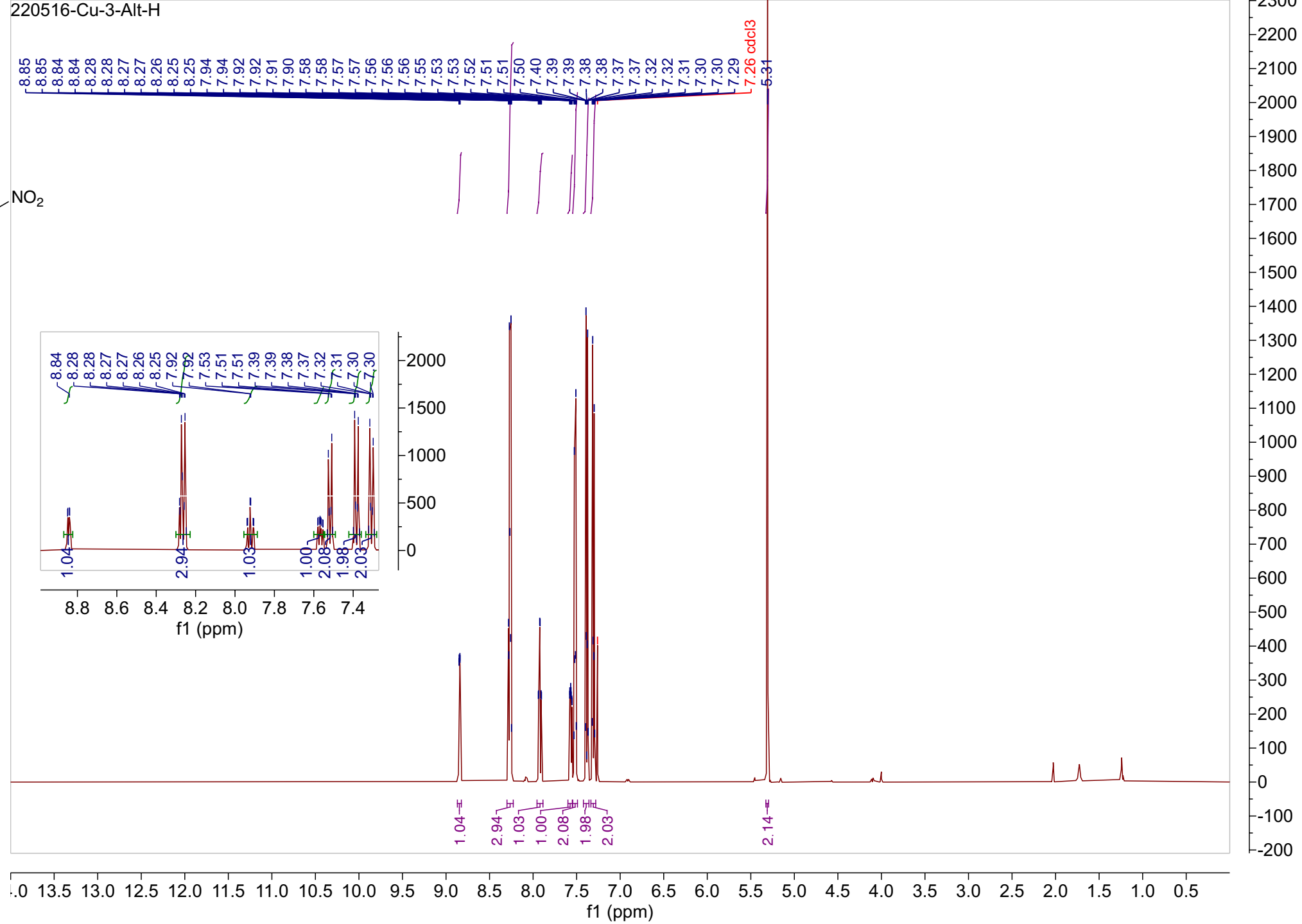


3.9

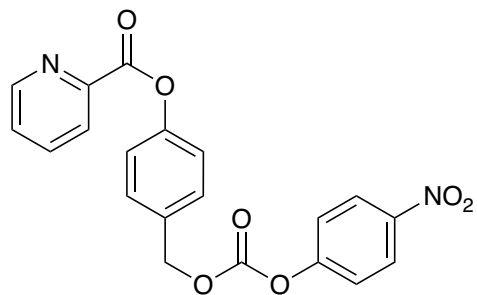




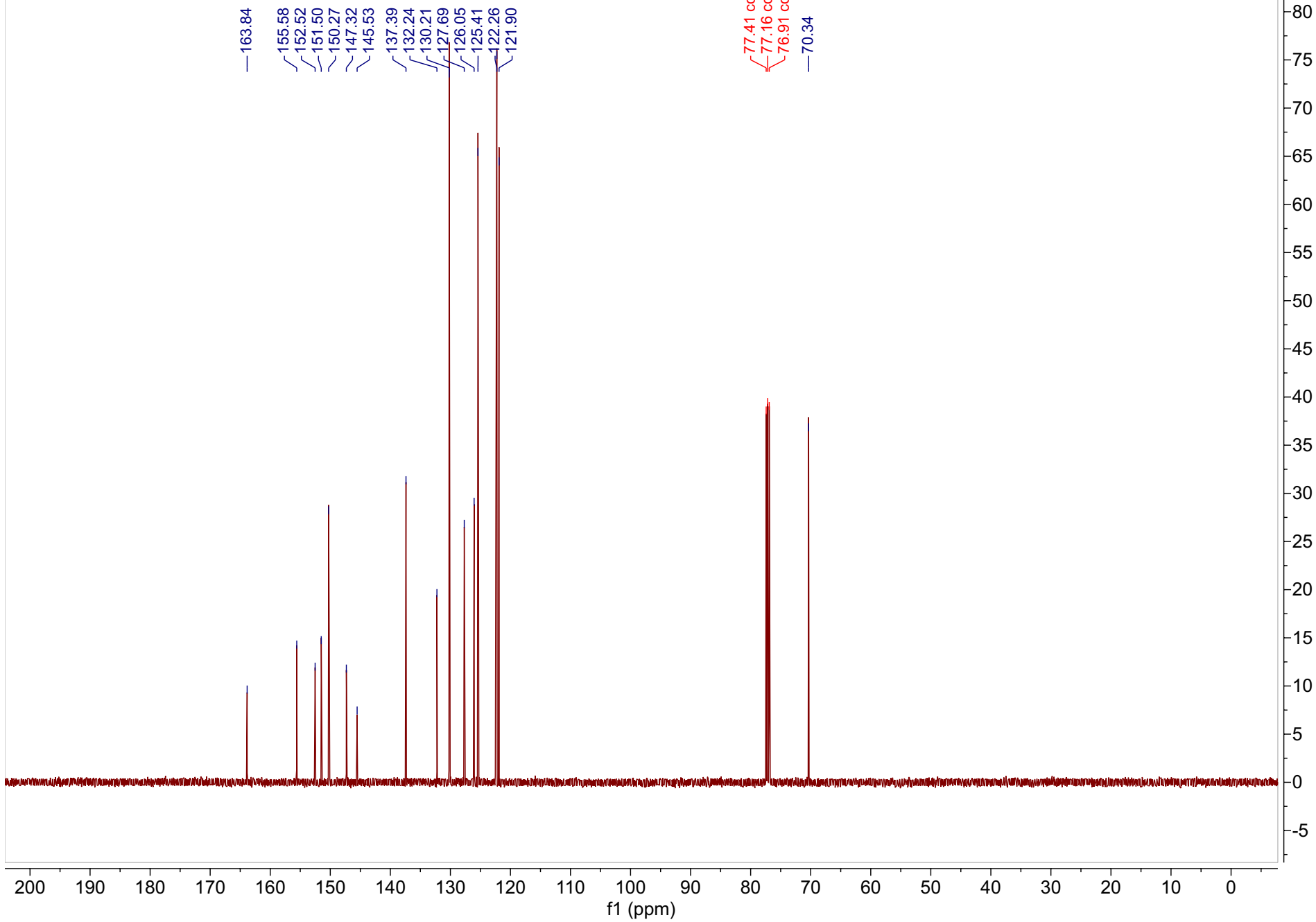
3.10

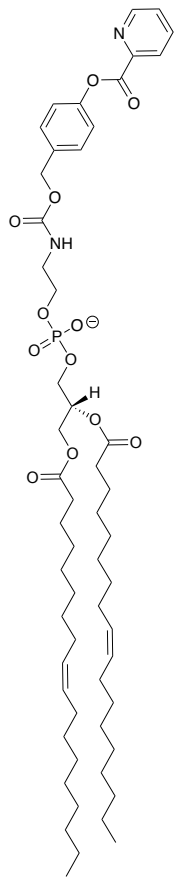


220516-Cu-3-Alt-C

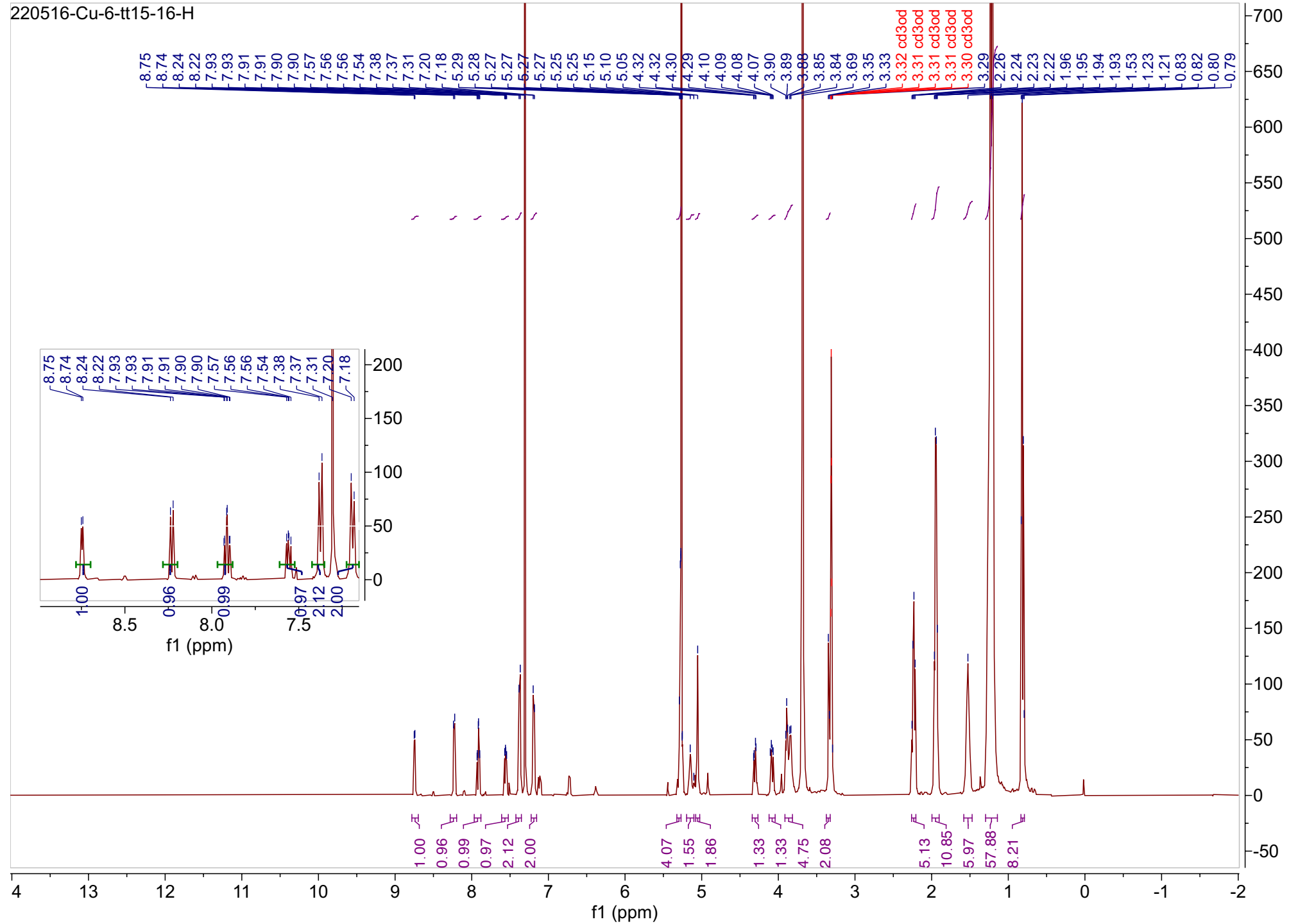


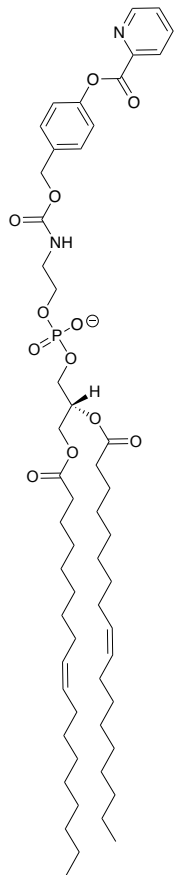
3.10



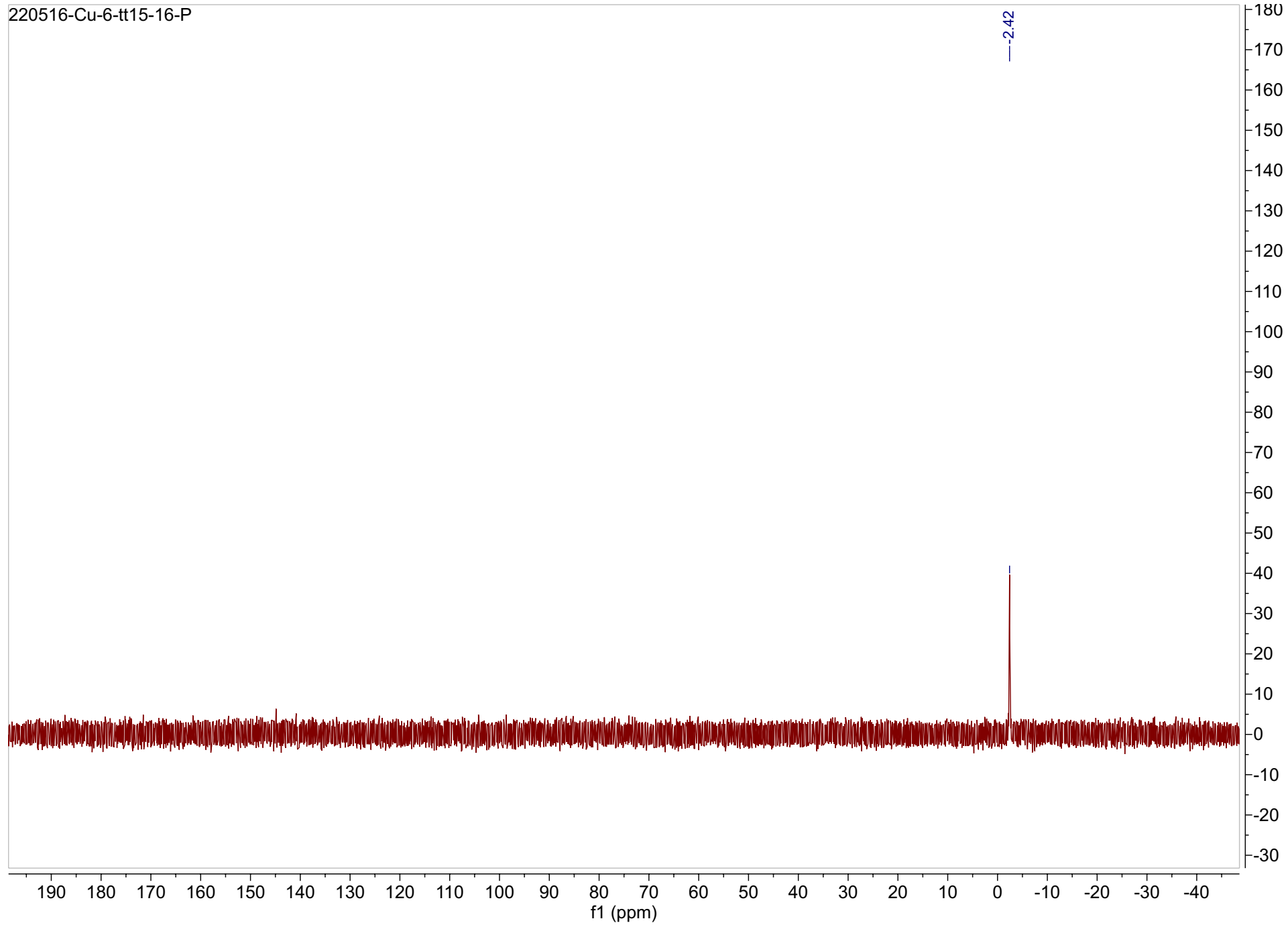


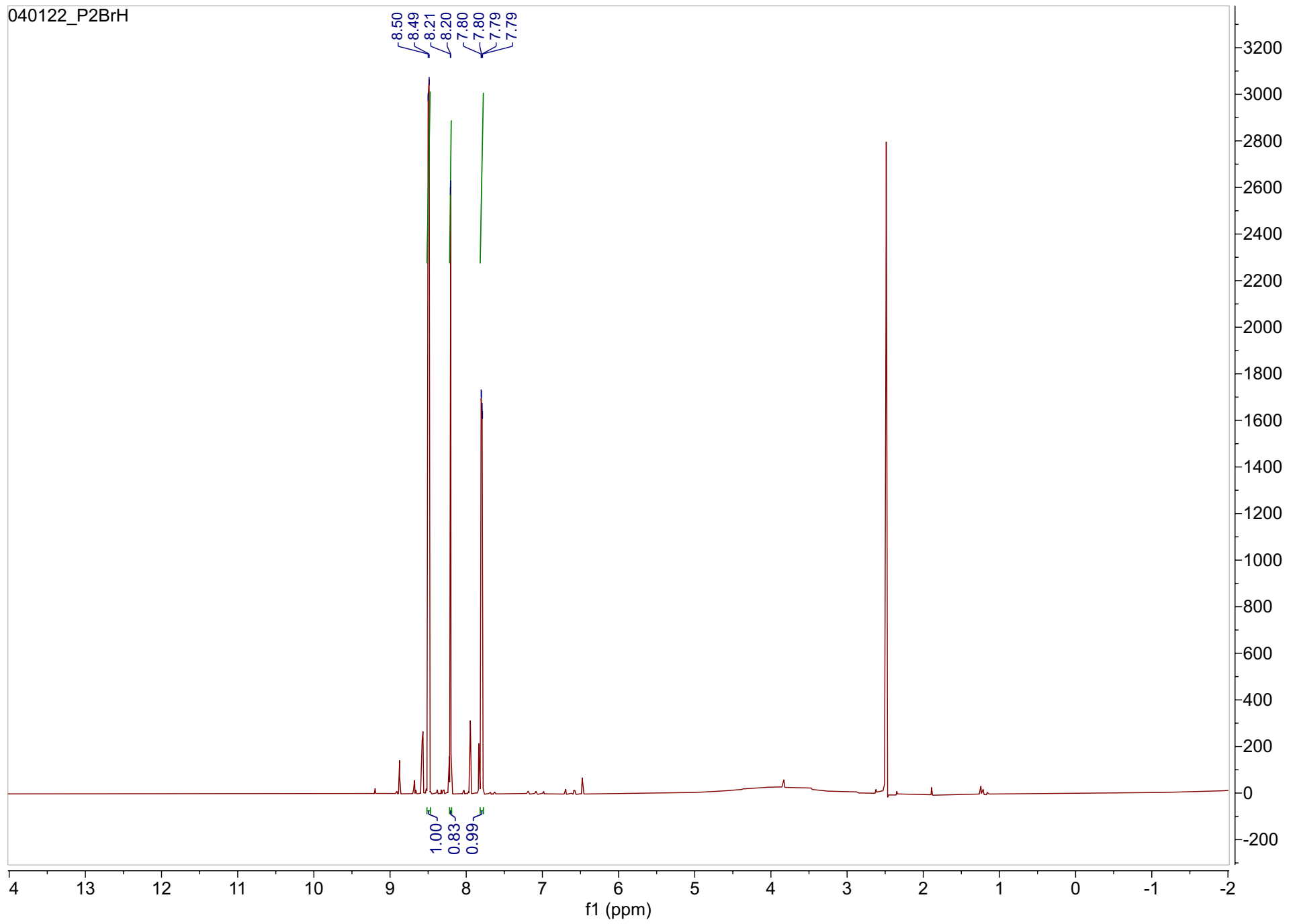
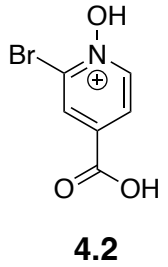
3.6b

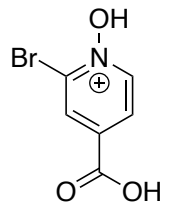




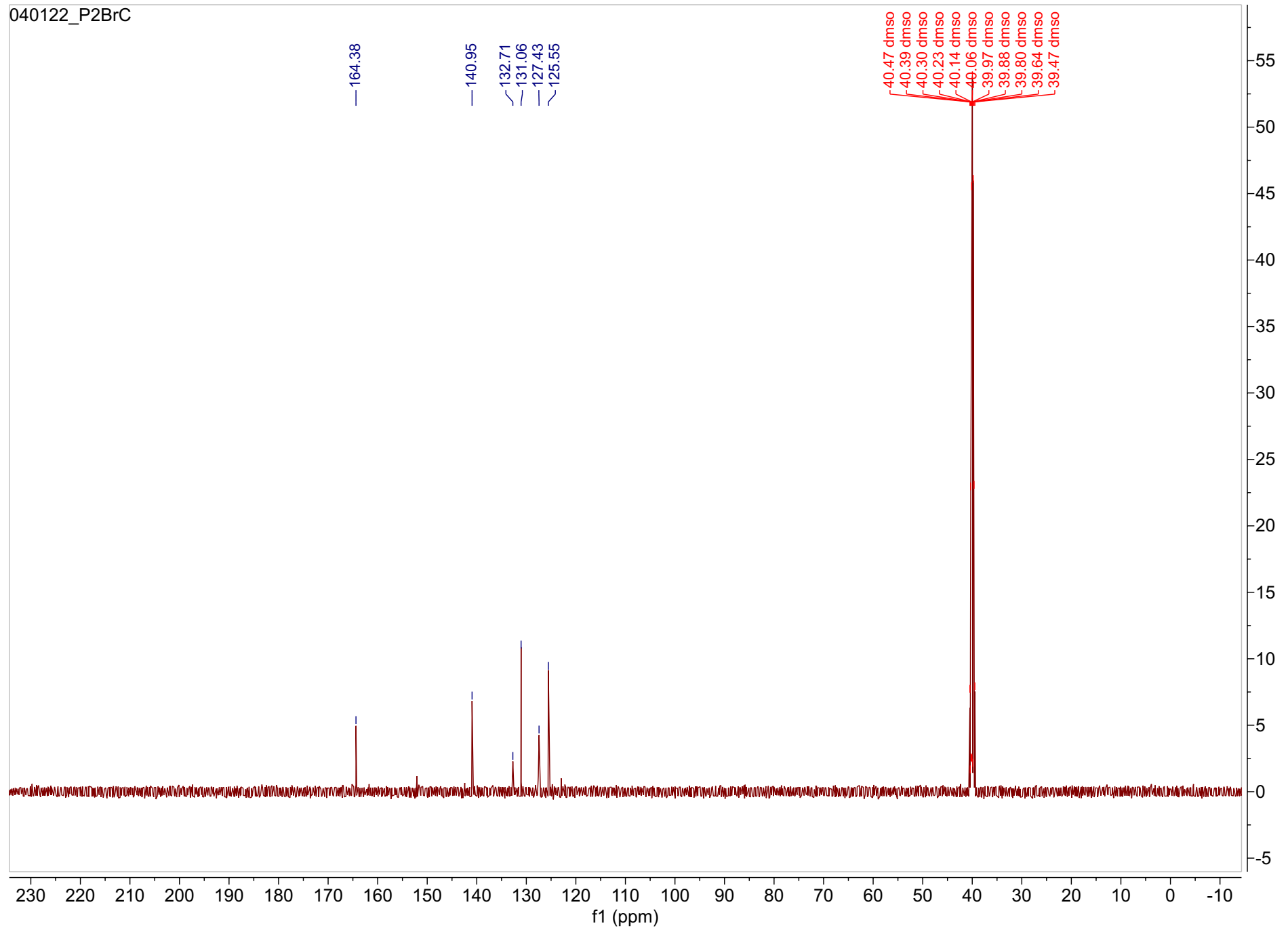
3.6b

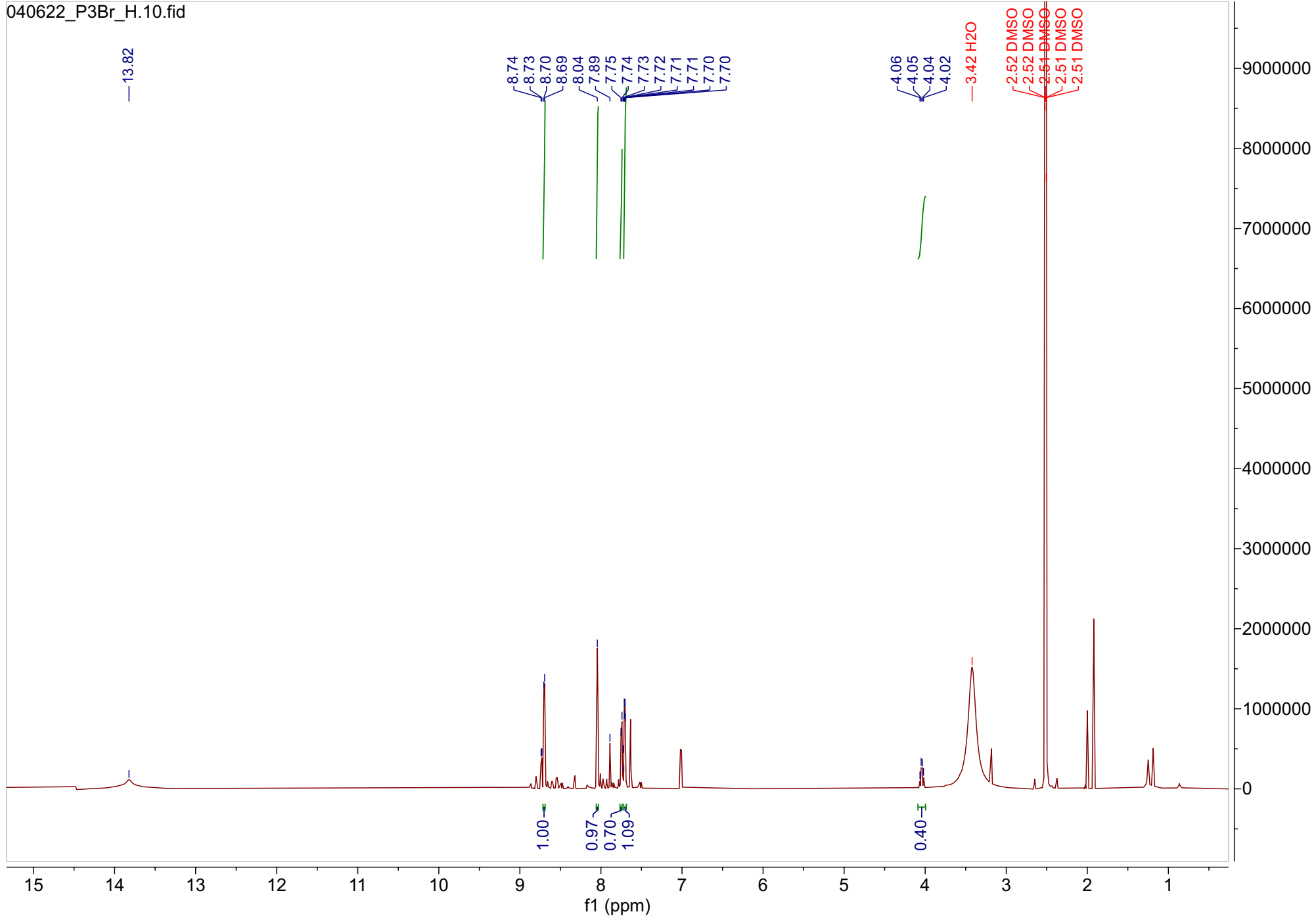
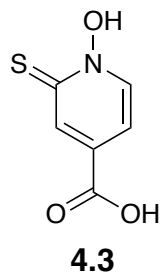


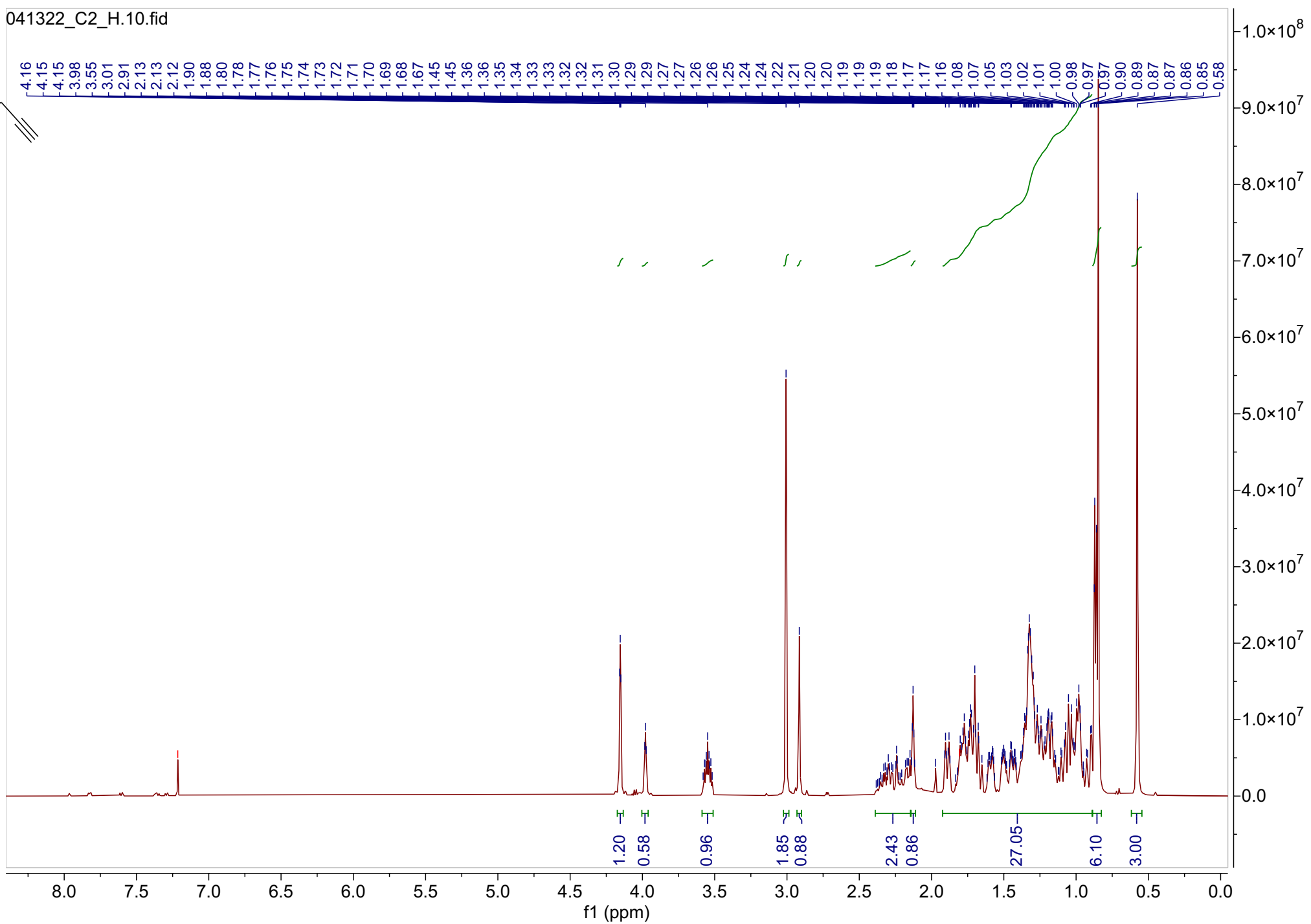
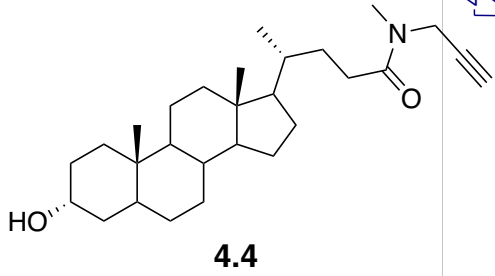


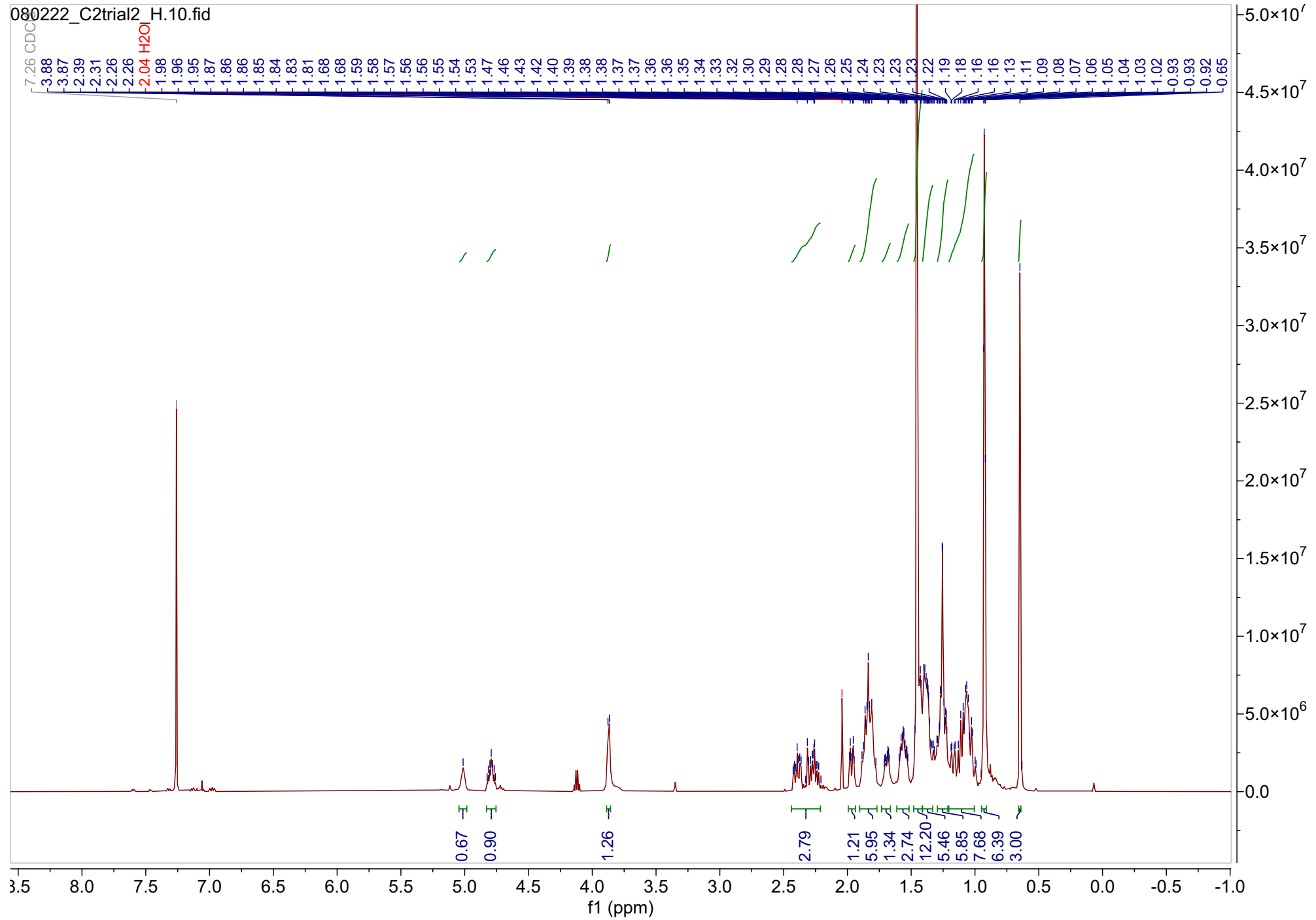
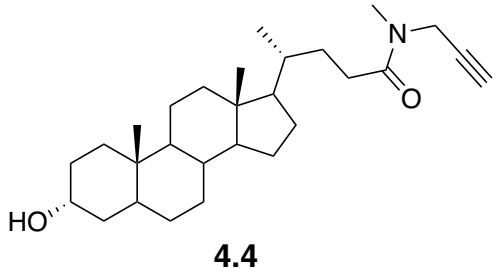


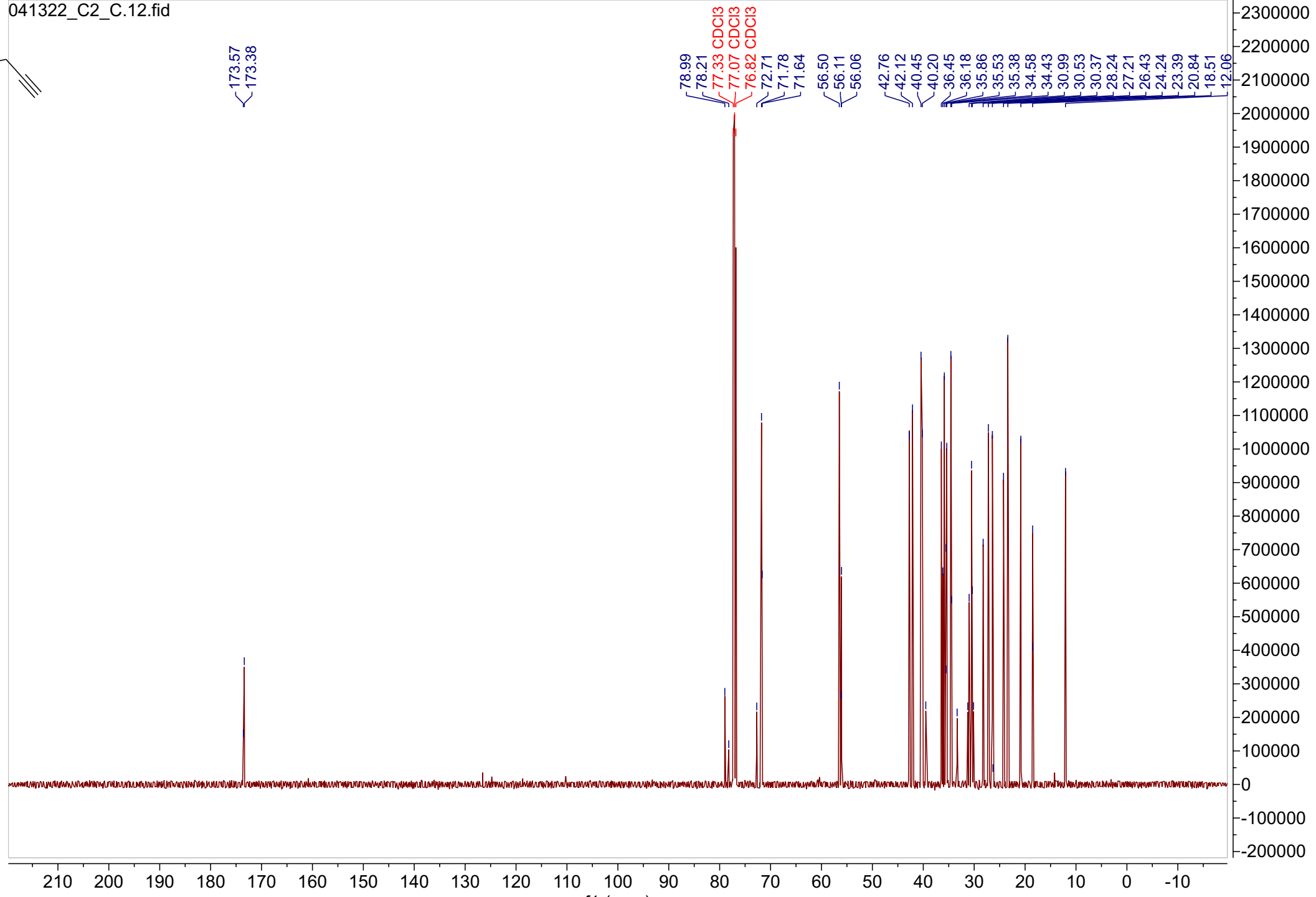
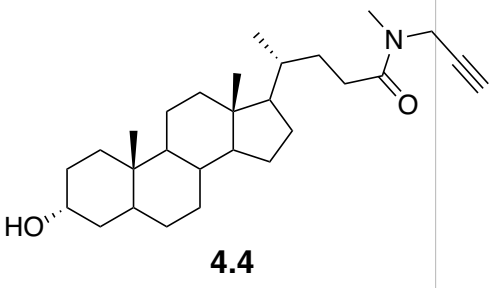
4.2

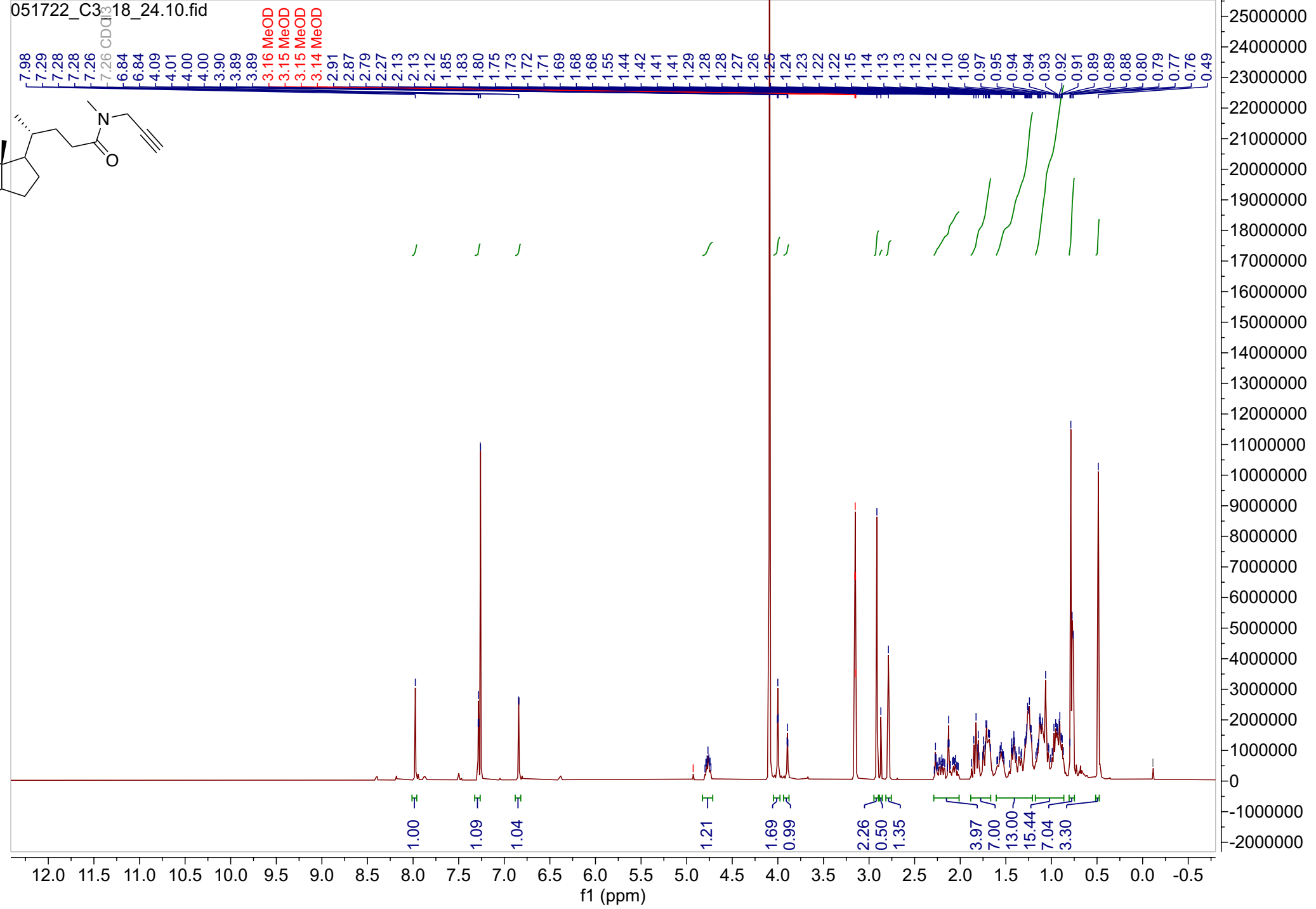
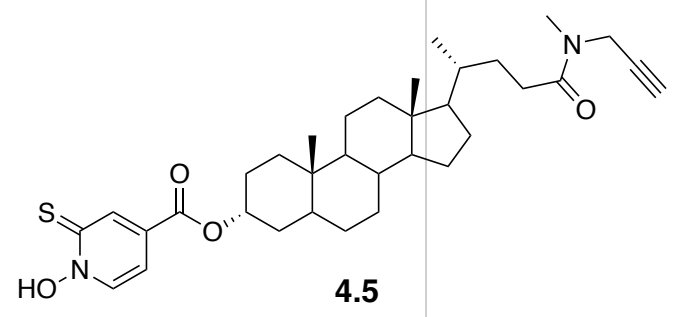


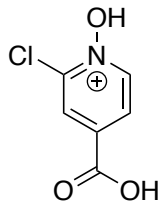




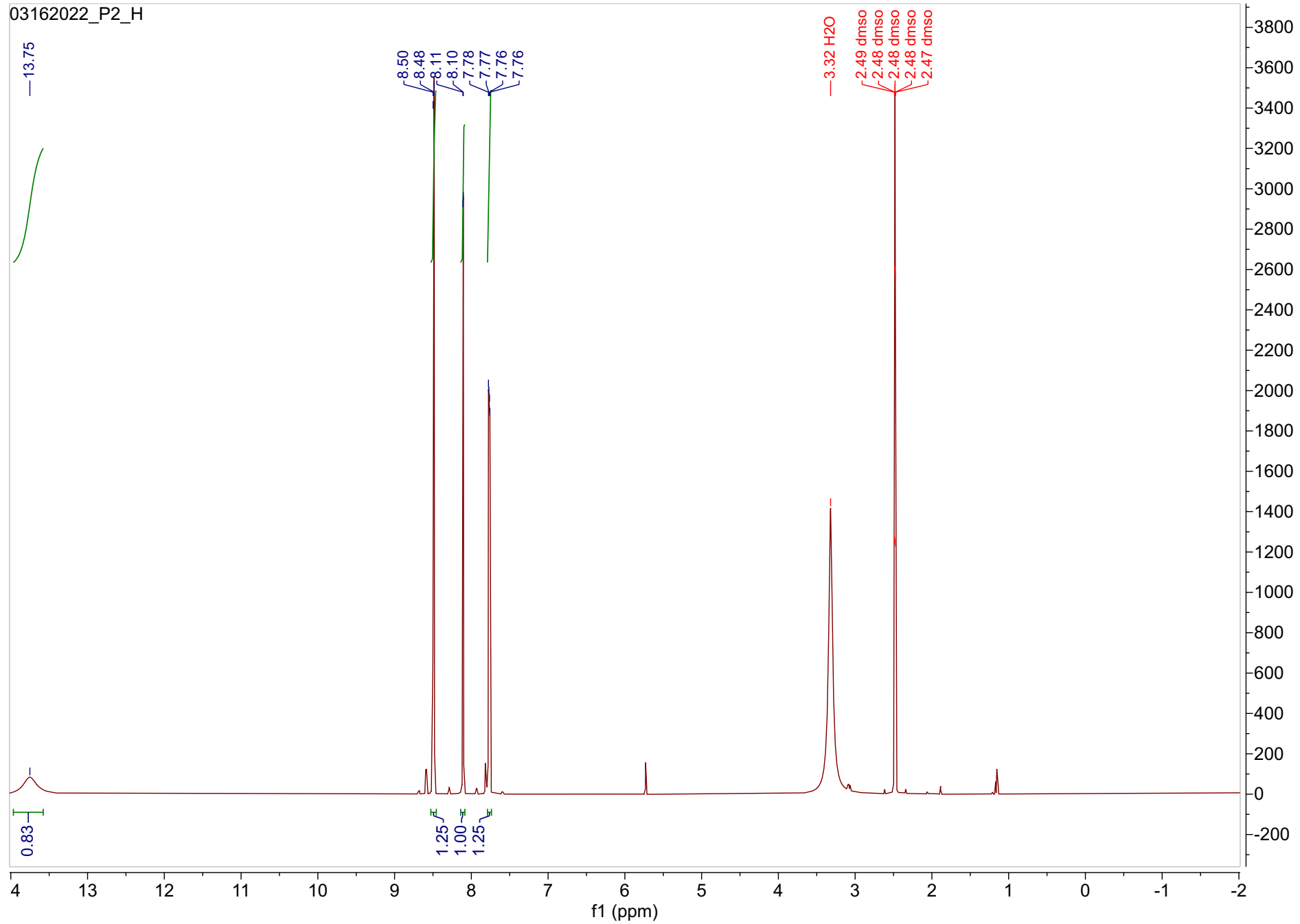


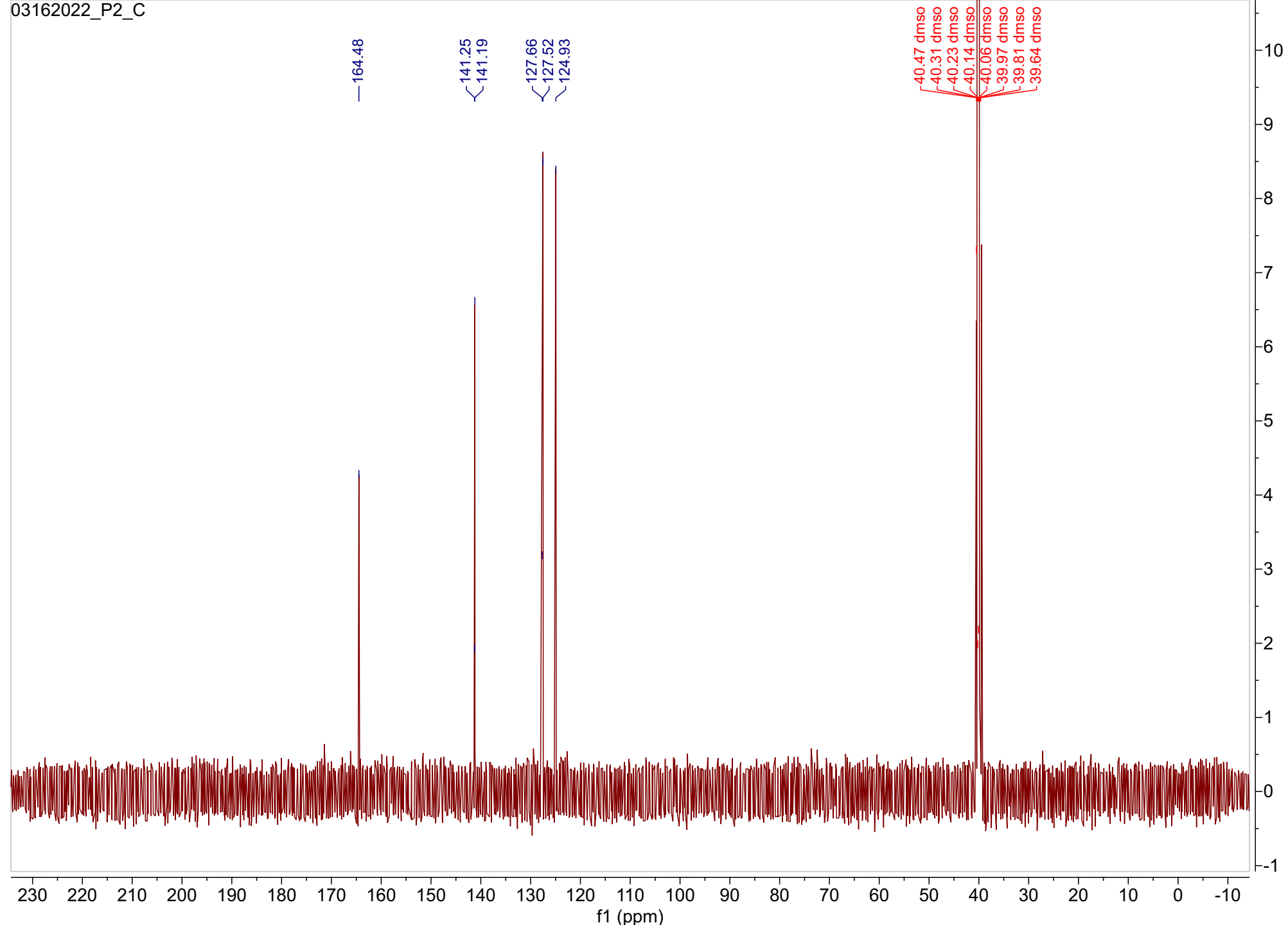
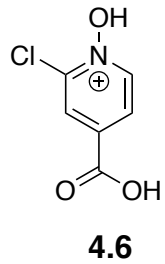


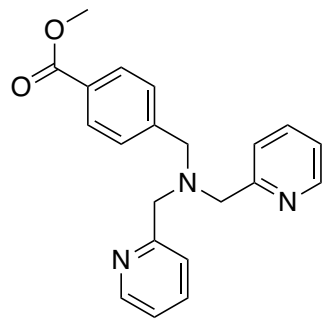




4.6

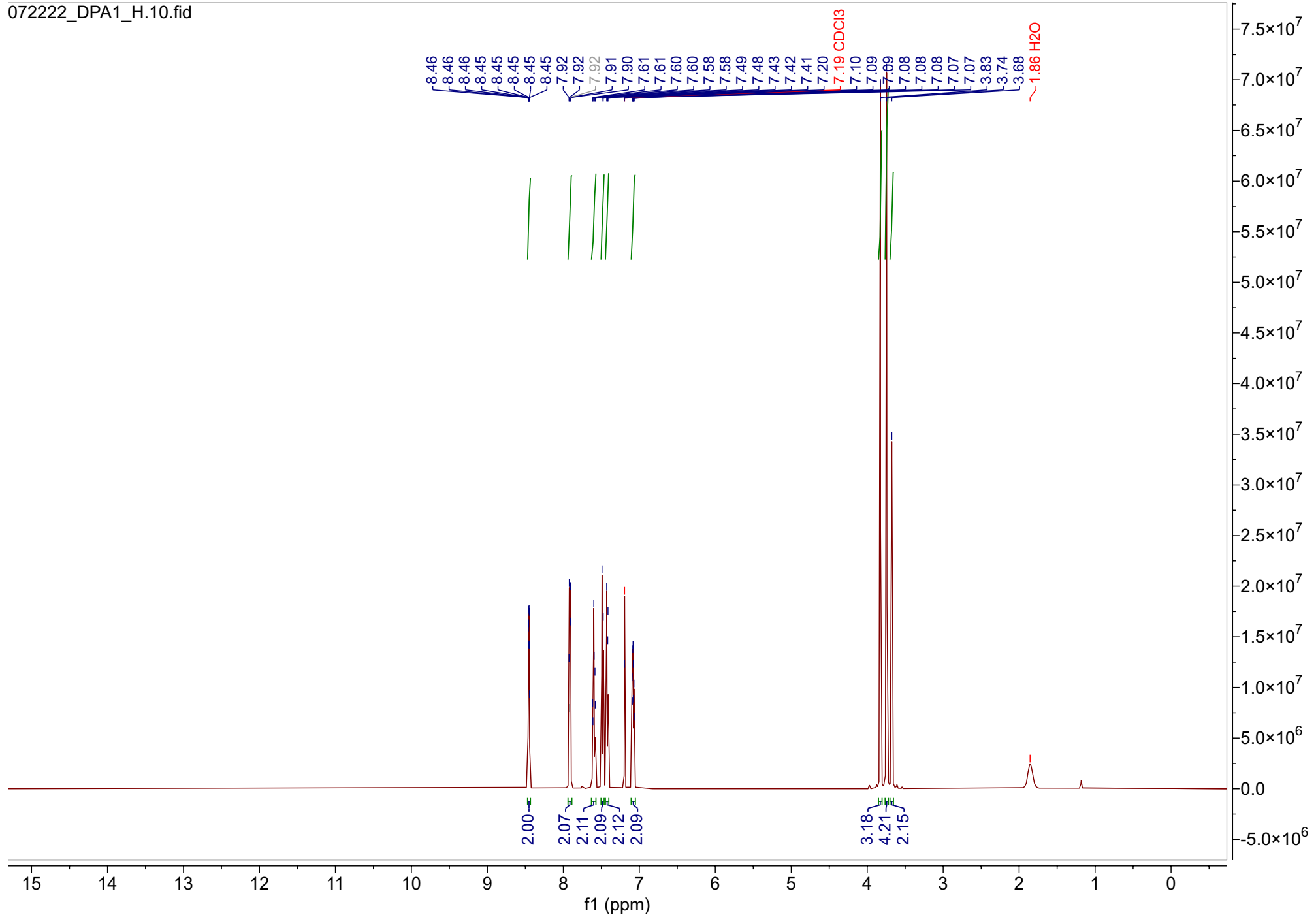


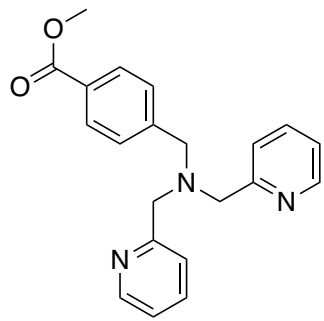




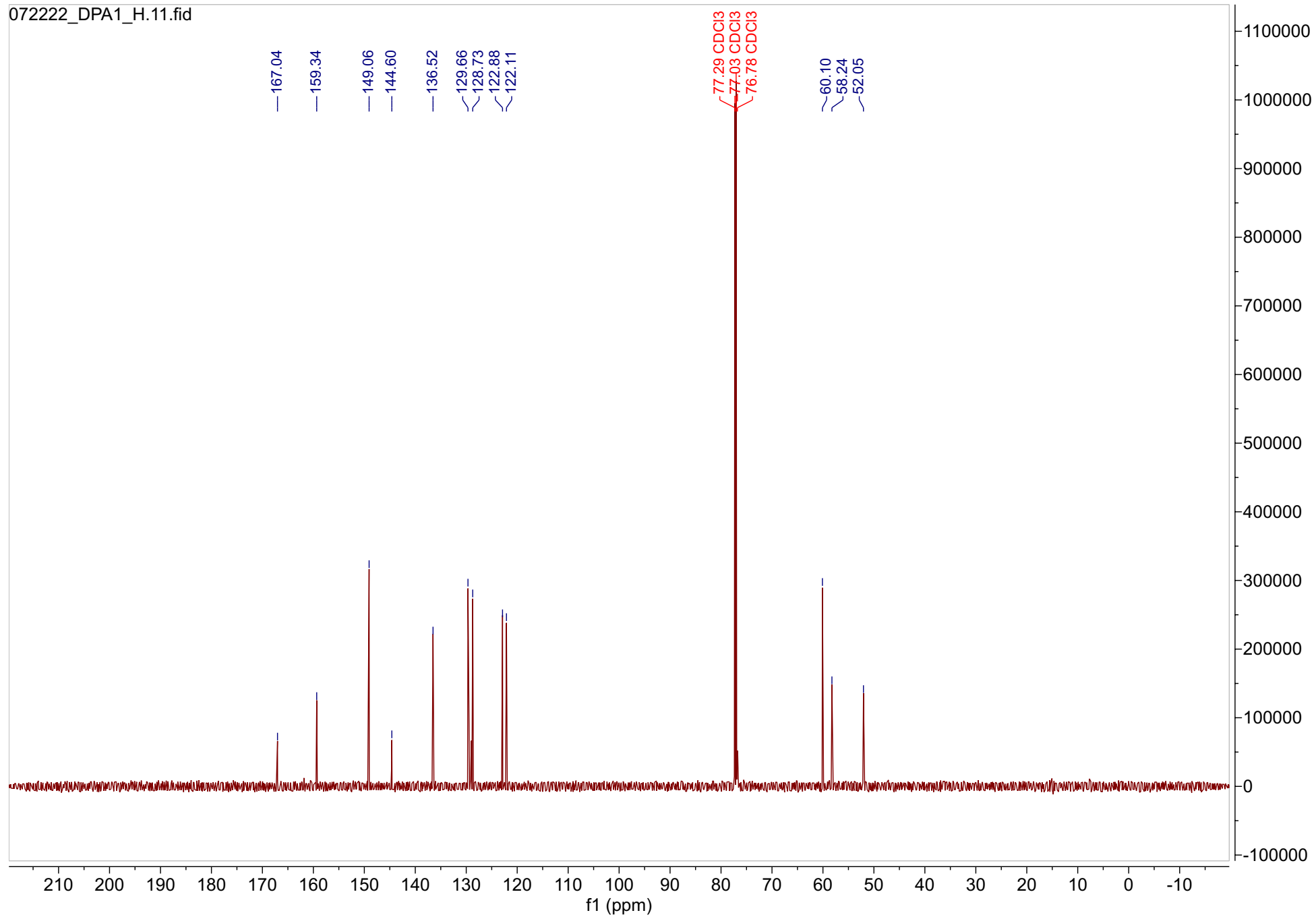
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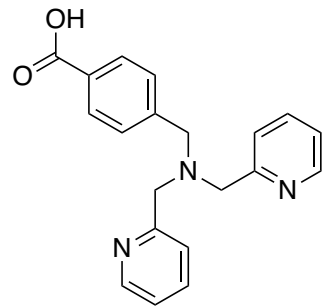
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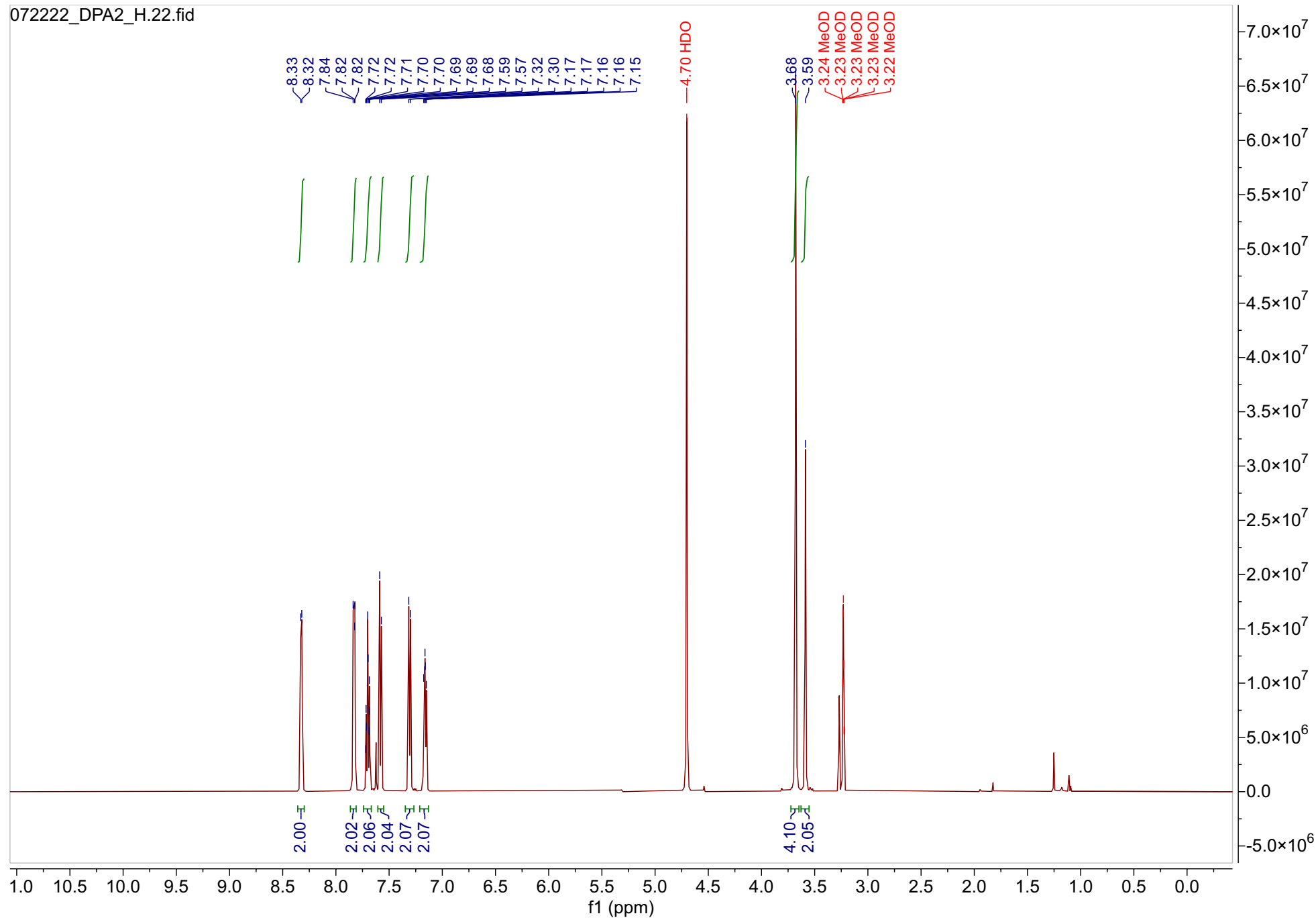


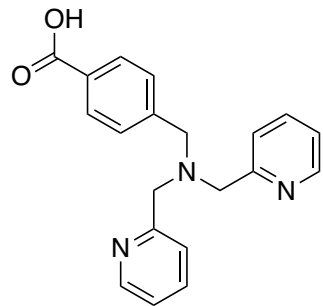
4.13



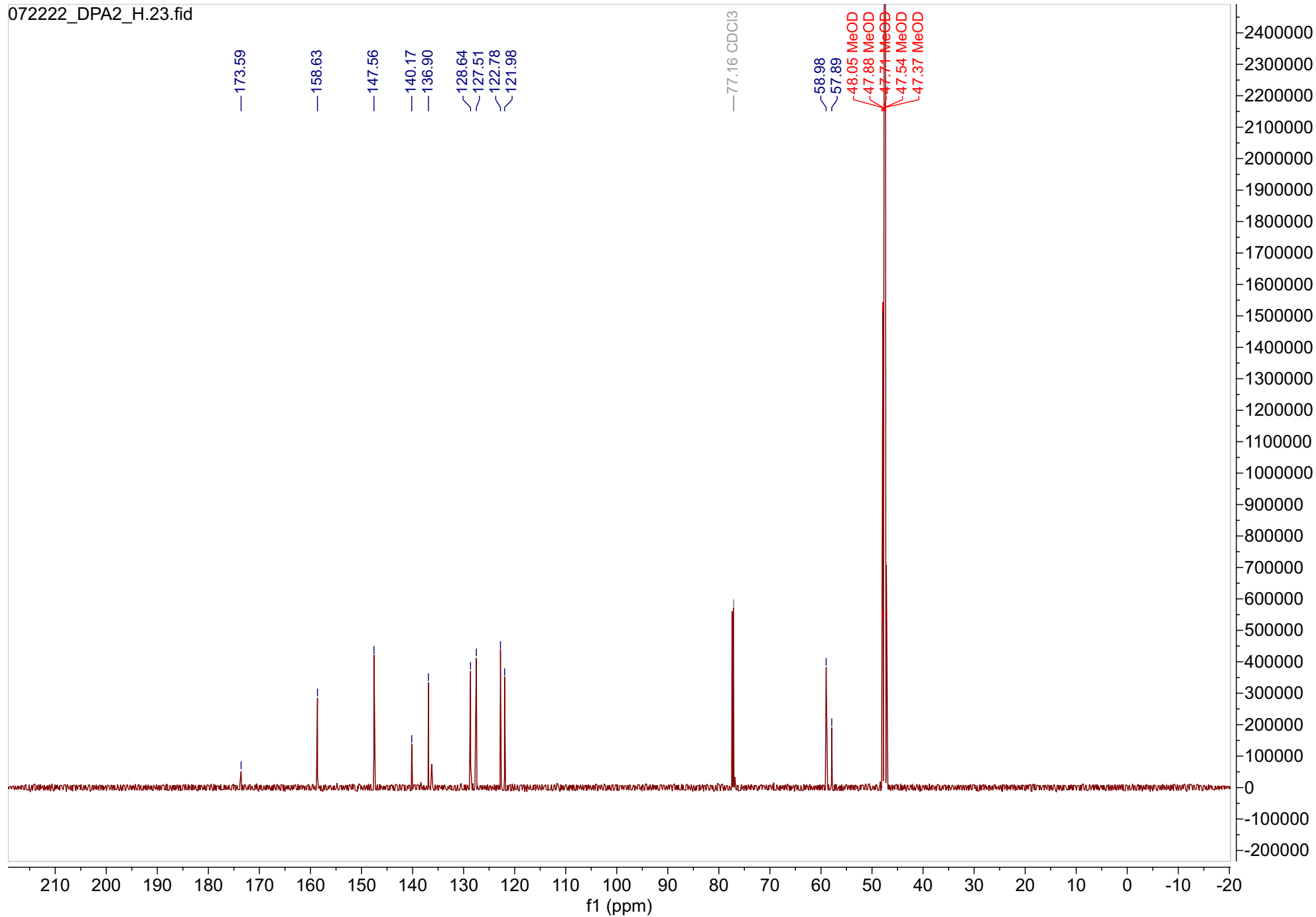


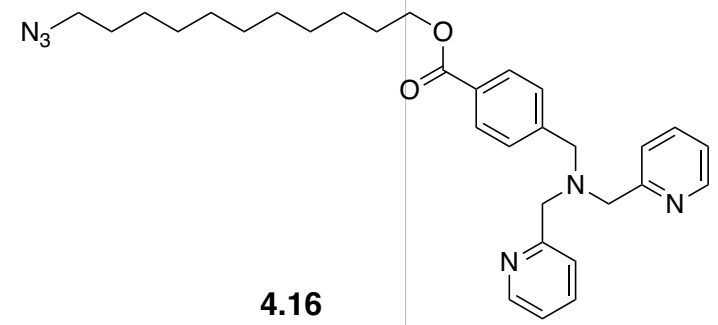
4.14



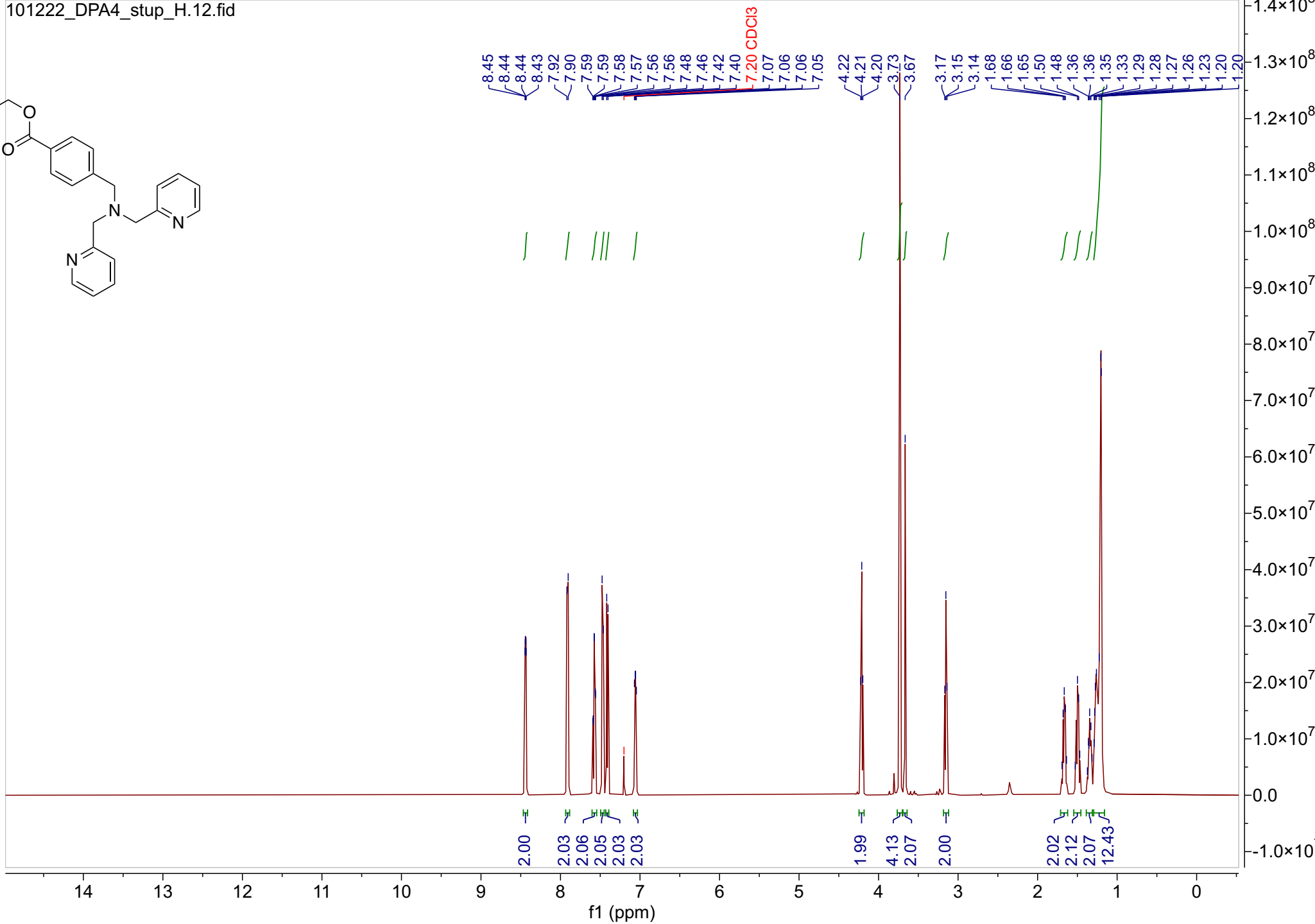


4.14

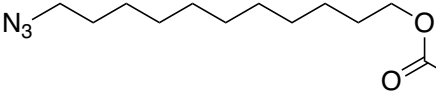




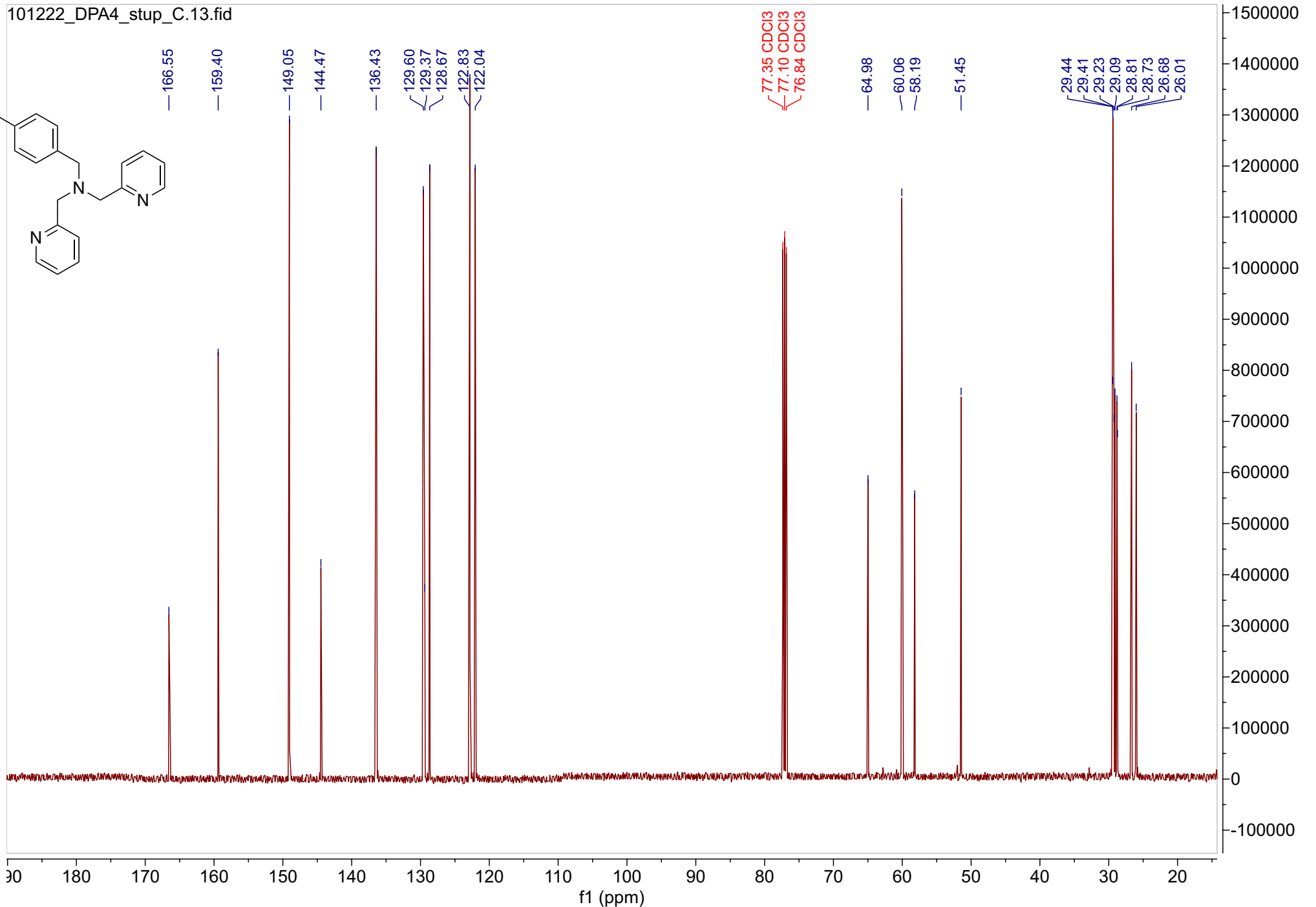
4.16

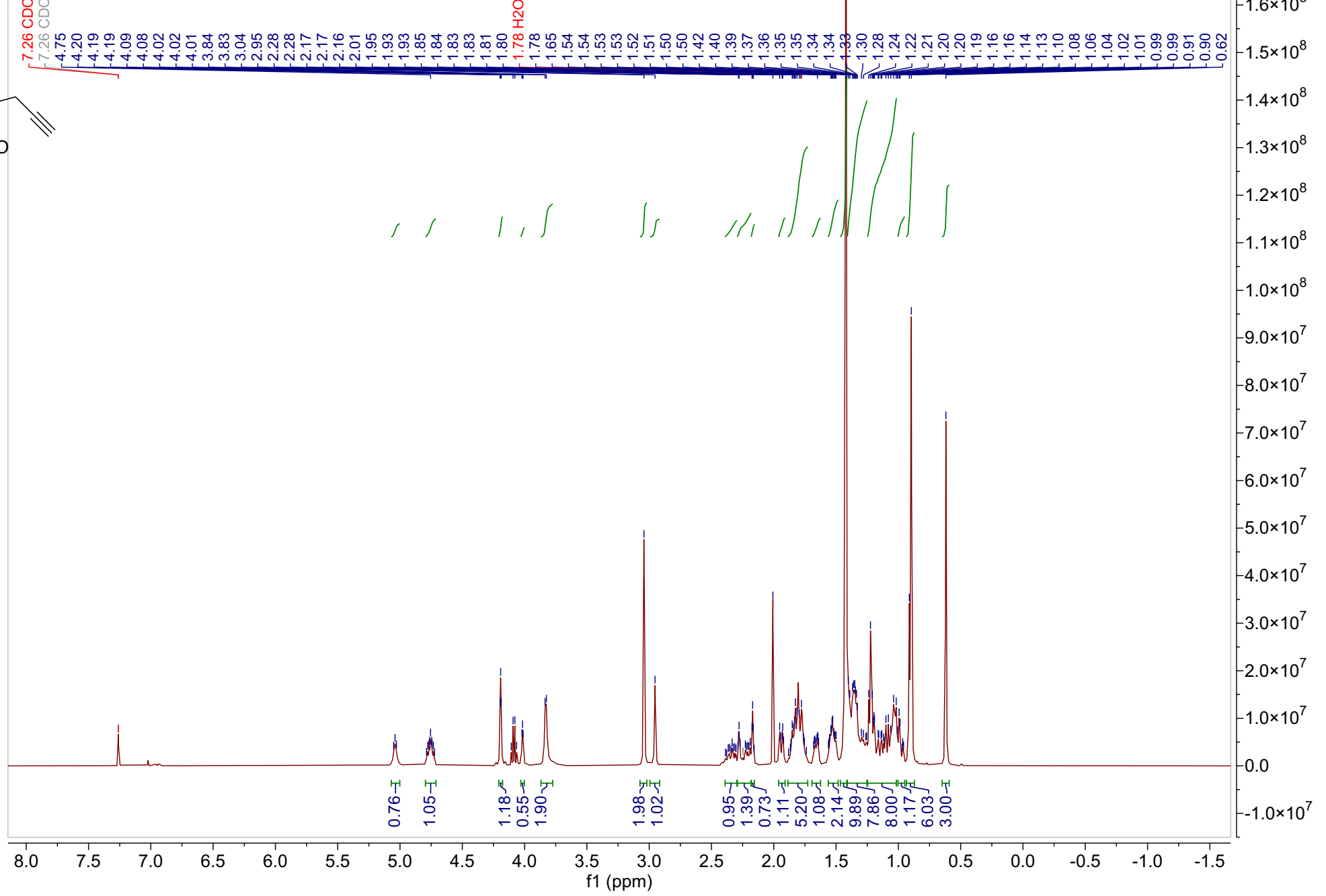
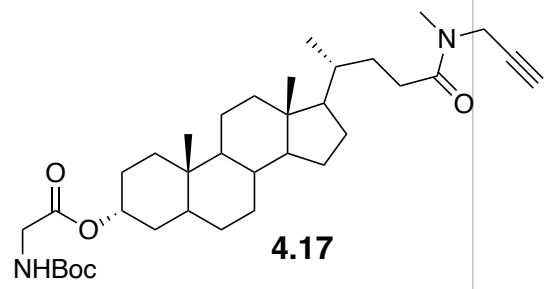


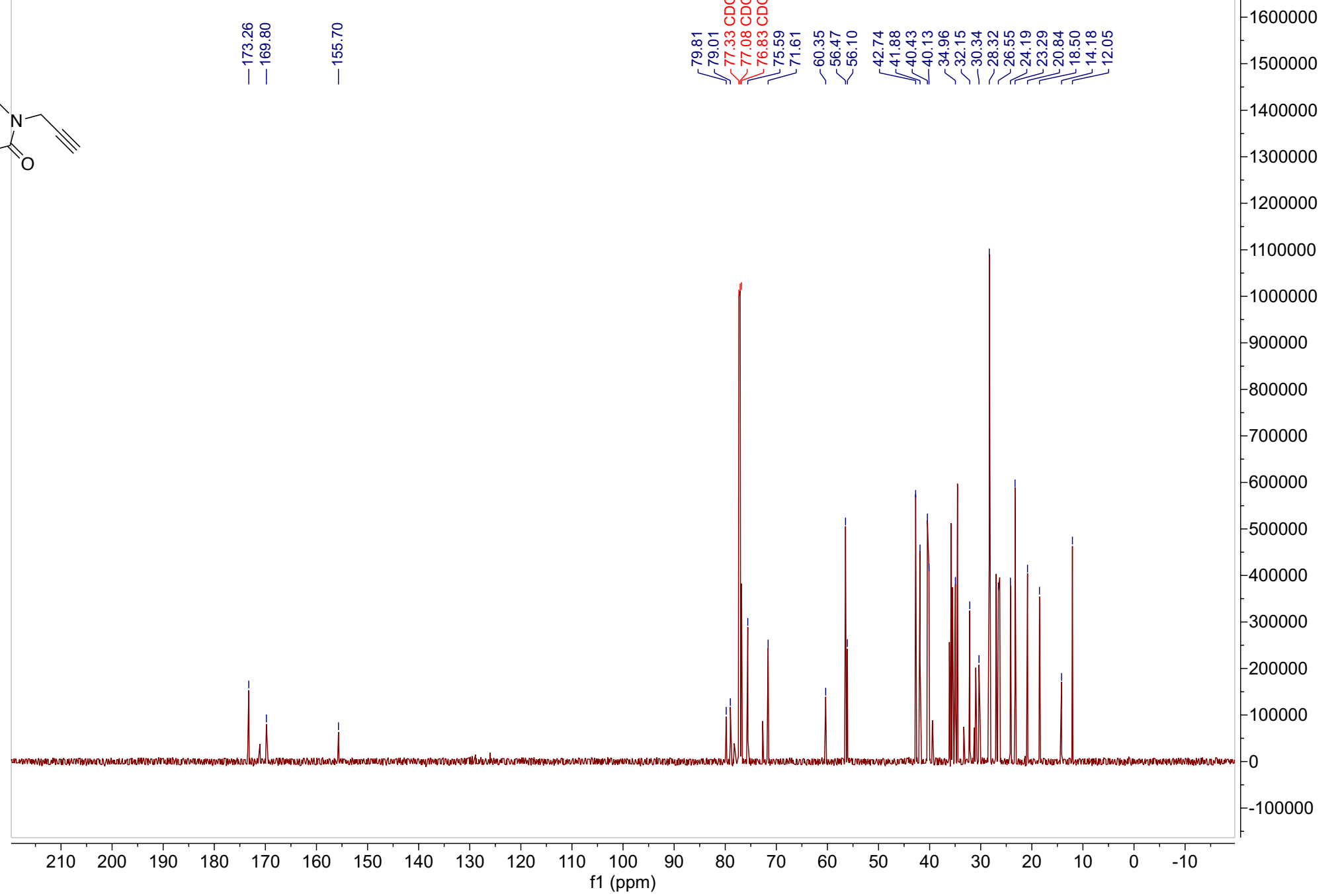
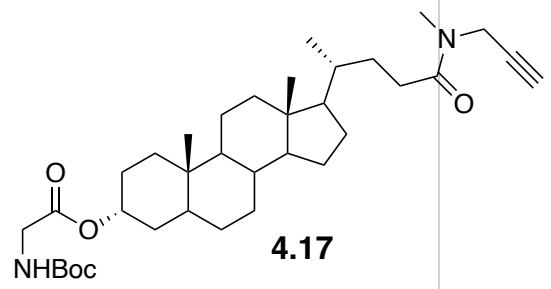
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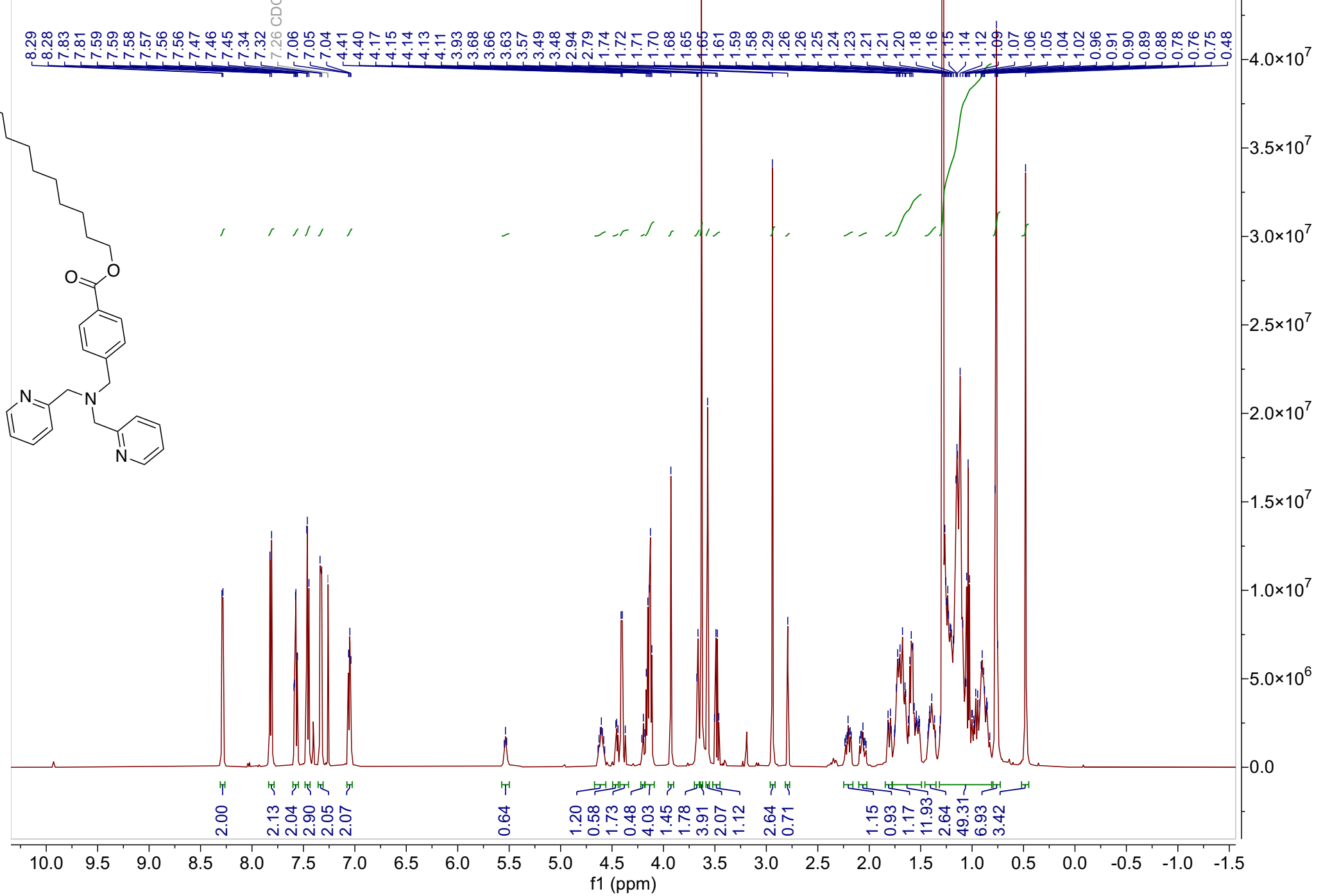
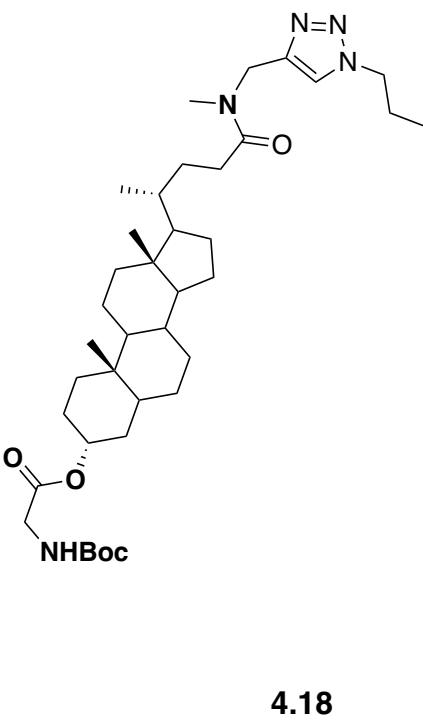


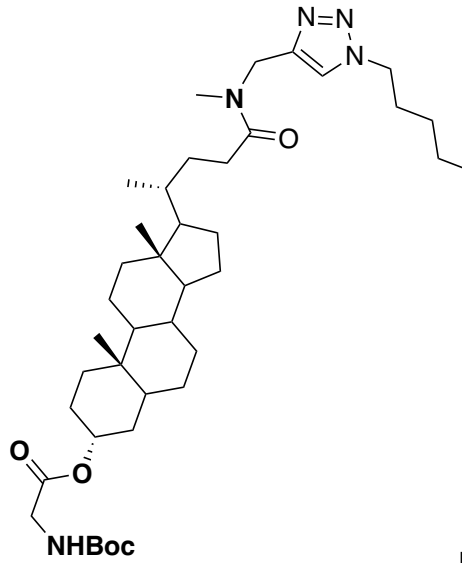
4.16



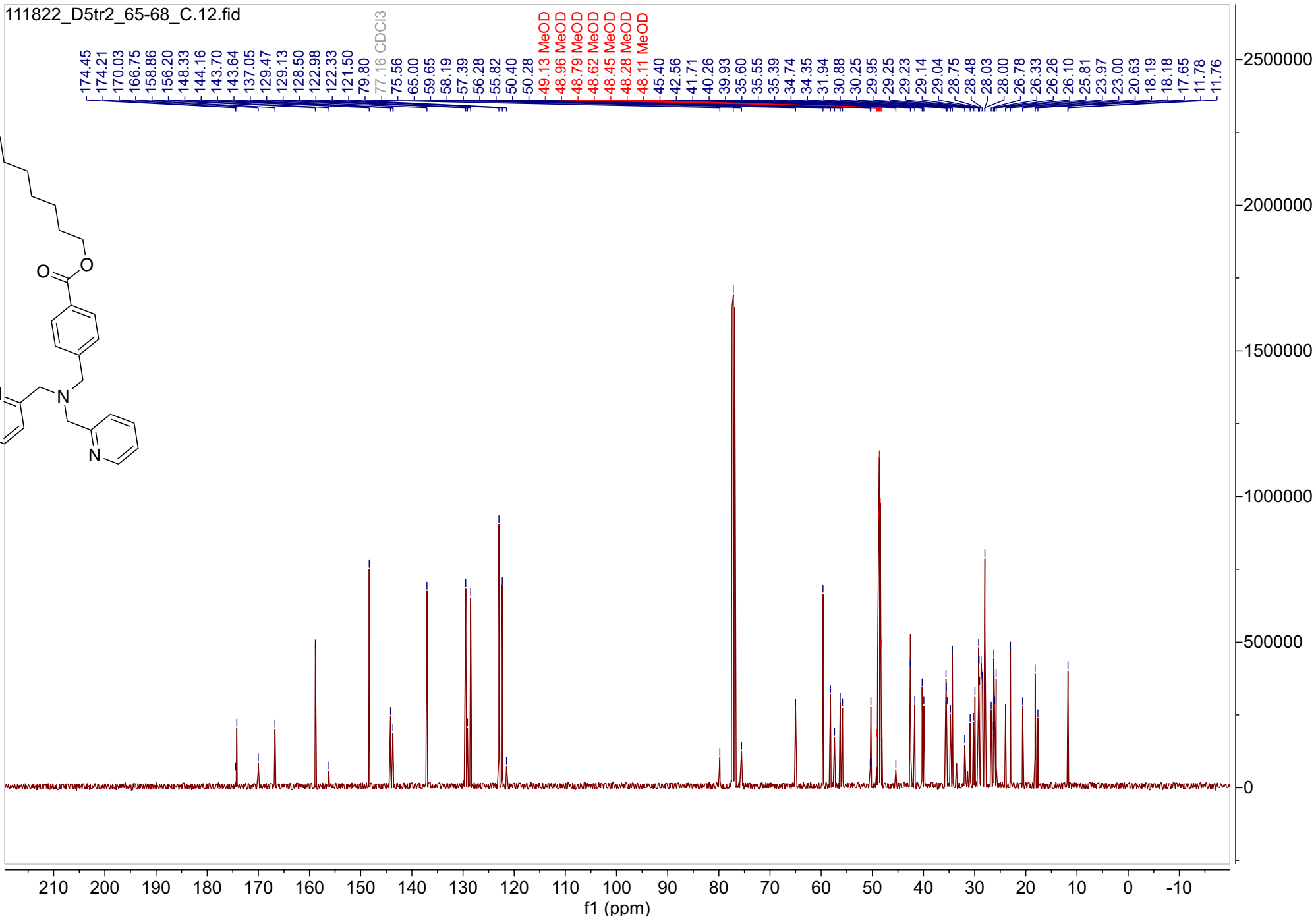
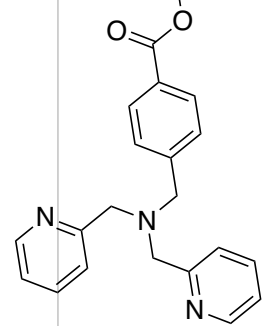


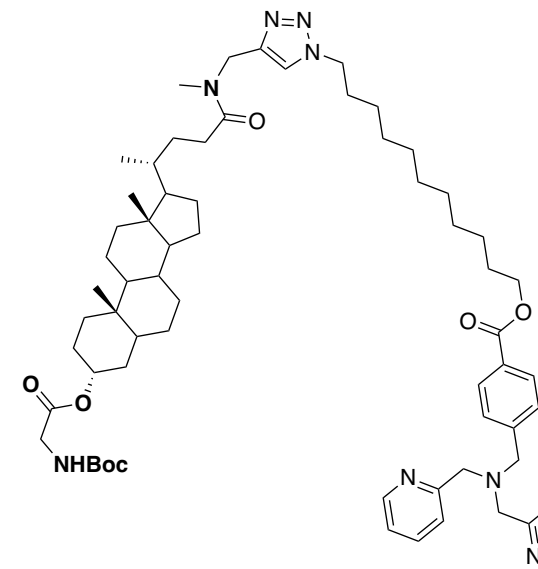




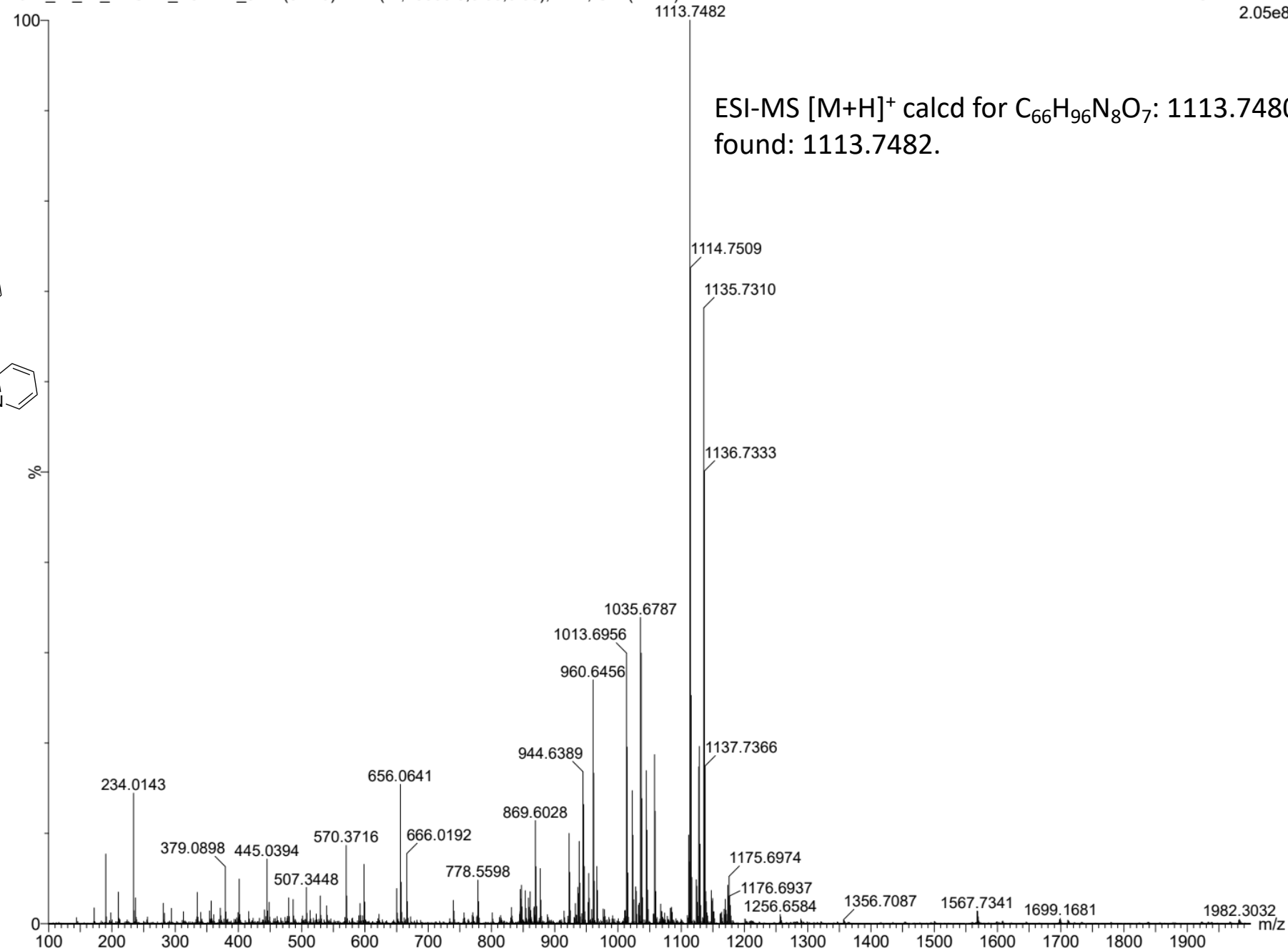


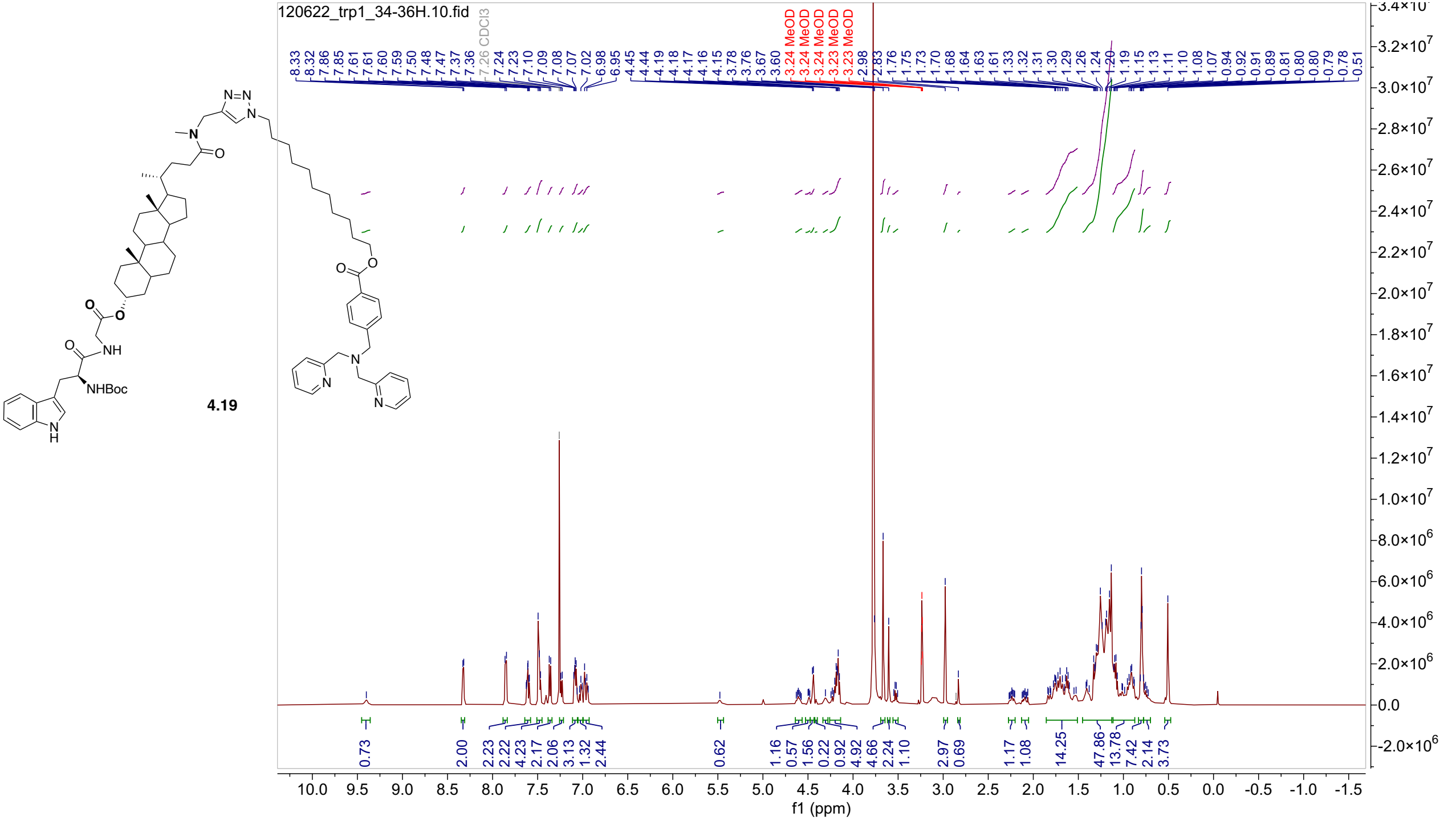
4.18

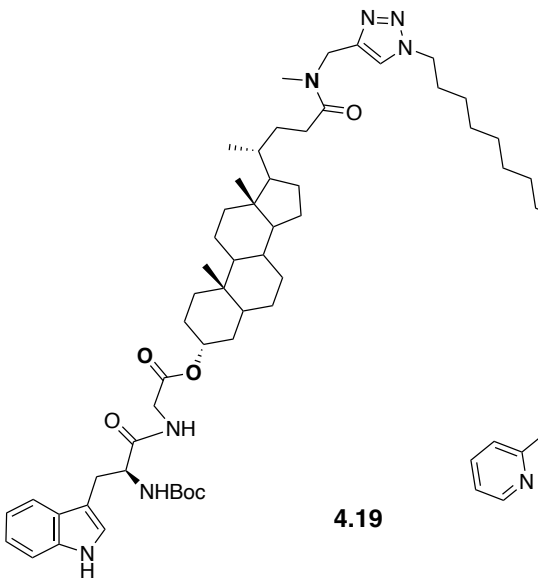




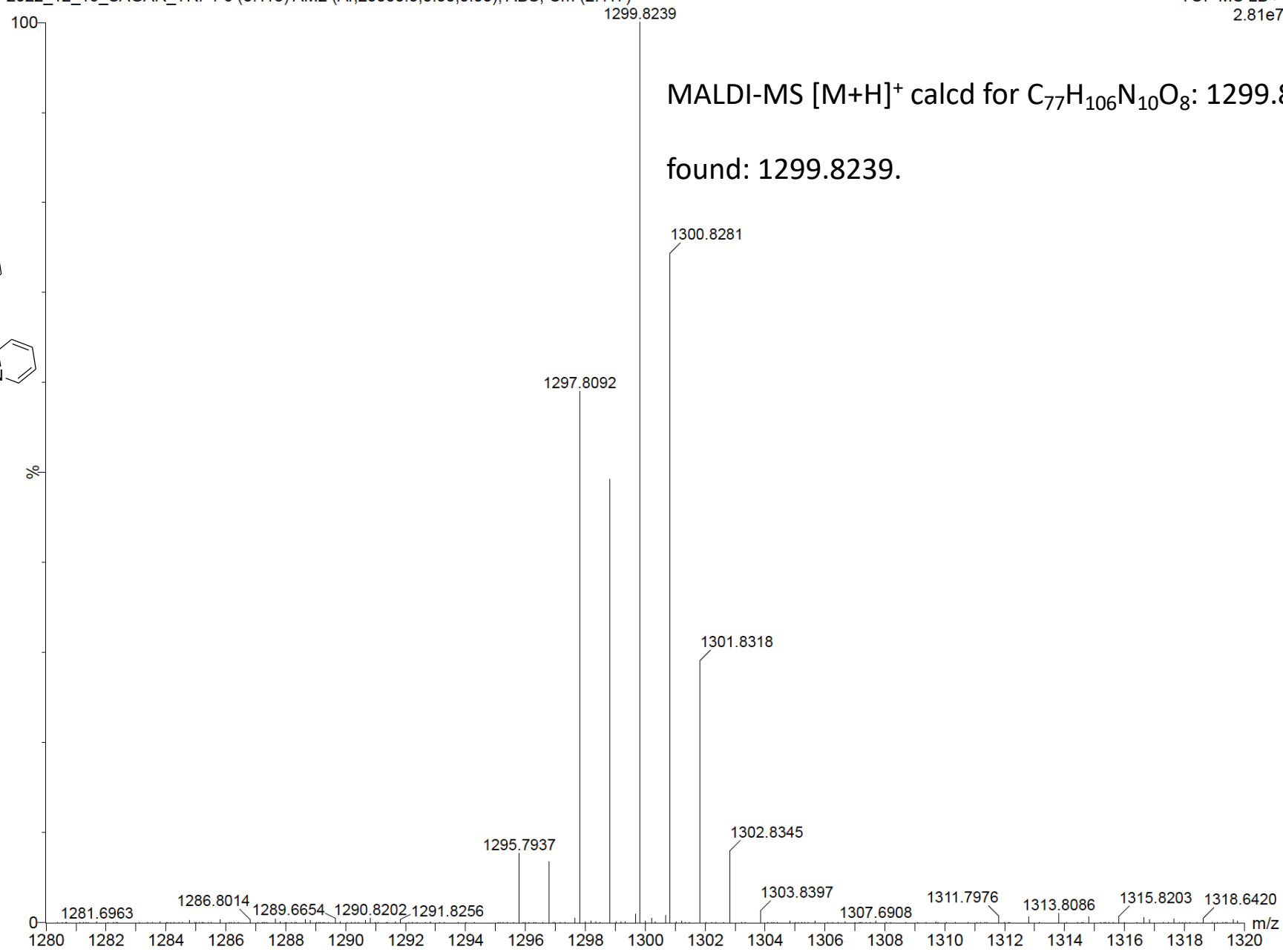
4.18

ESI-MS [M+H]⁺ calcd for C₆₆H₉₆N₈O₇: 1113.7480,
found: 1113.7482.

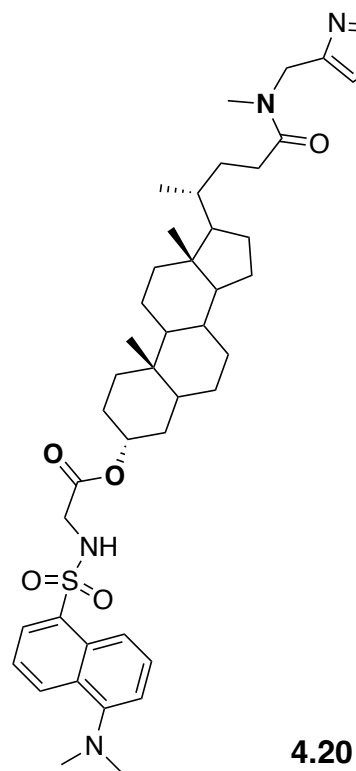




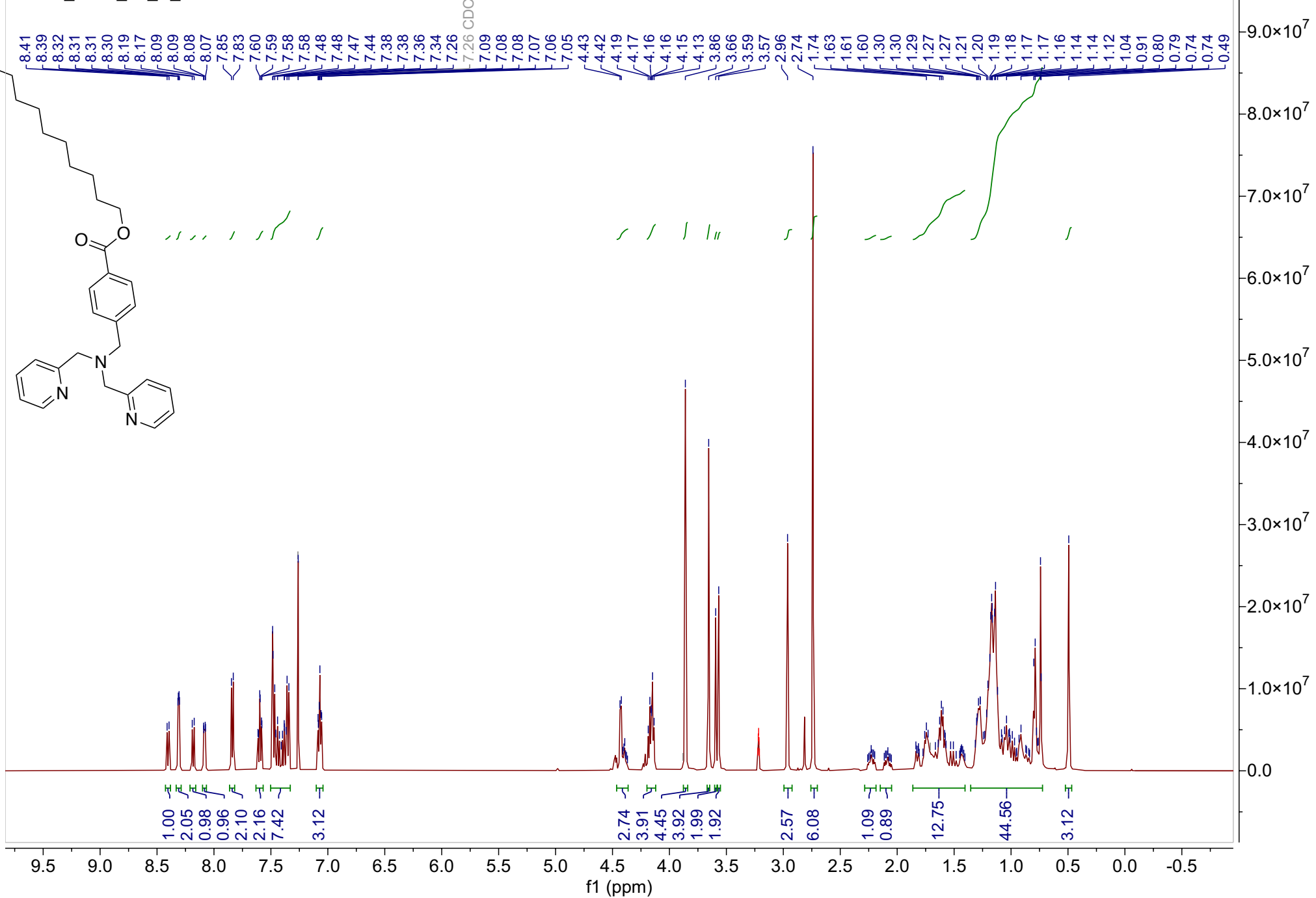
4.19

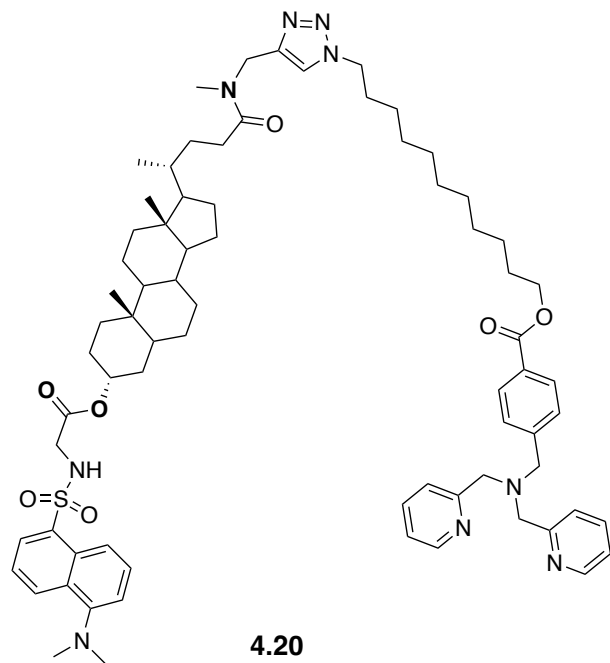


MALDI-MS [M+H]⁺ calcd for C₇₇H₁₀₆N₁₀O₈: 1299.8273,
found: 1299.8239.

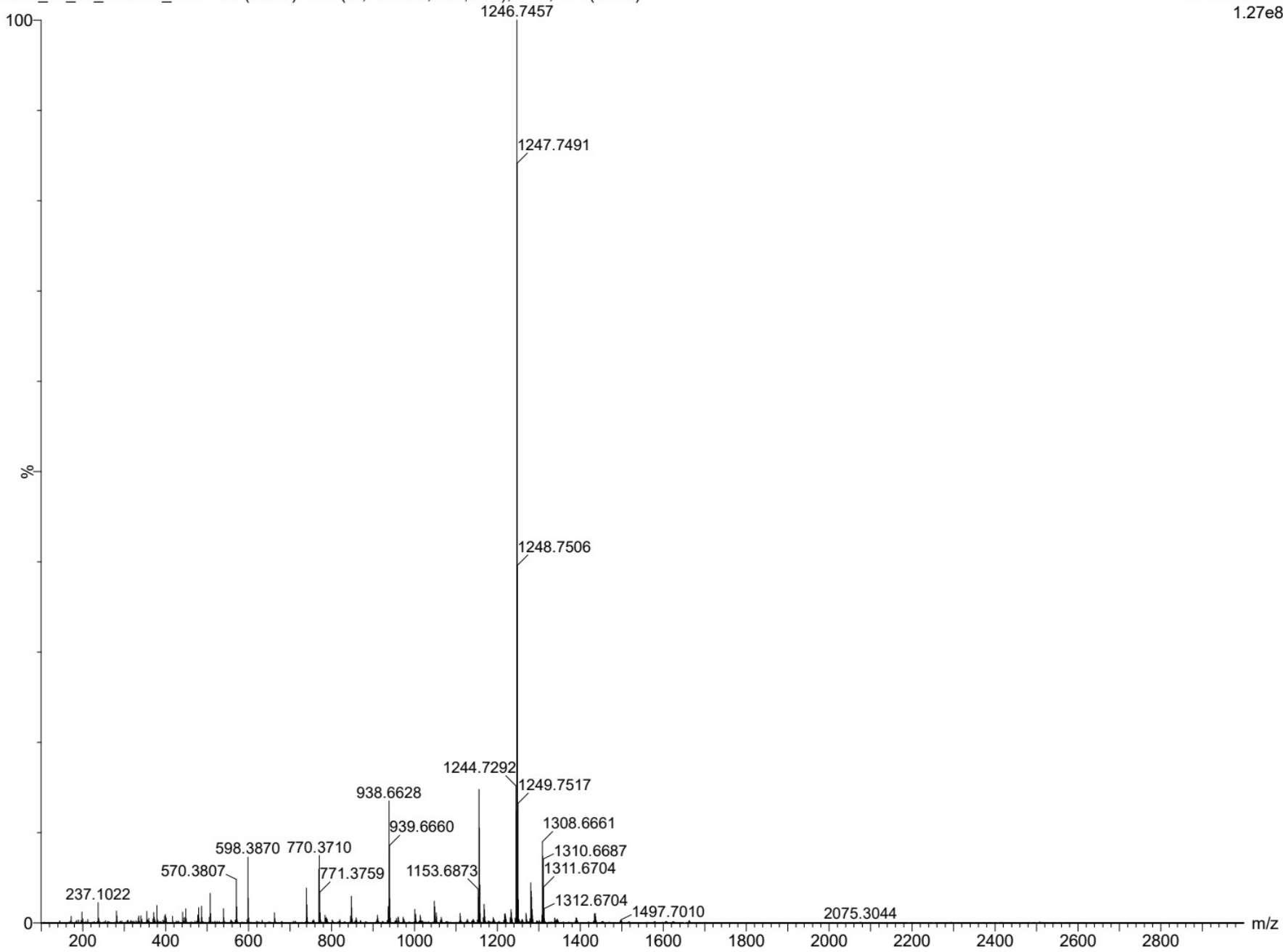


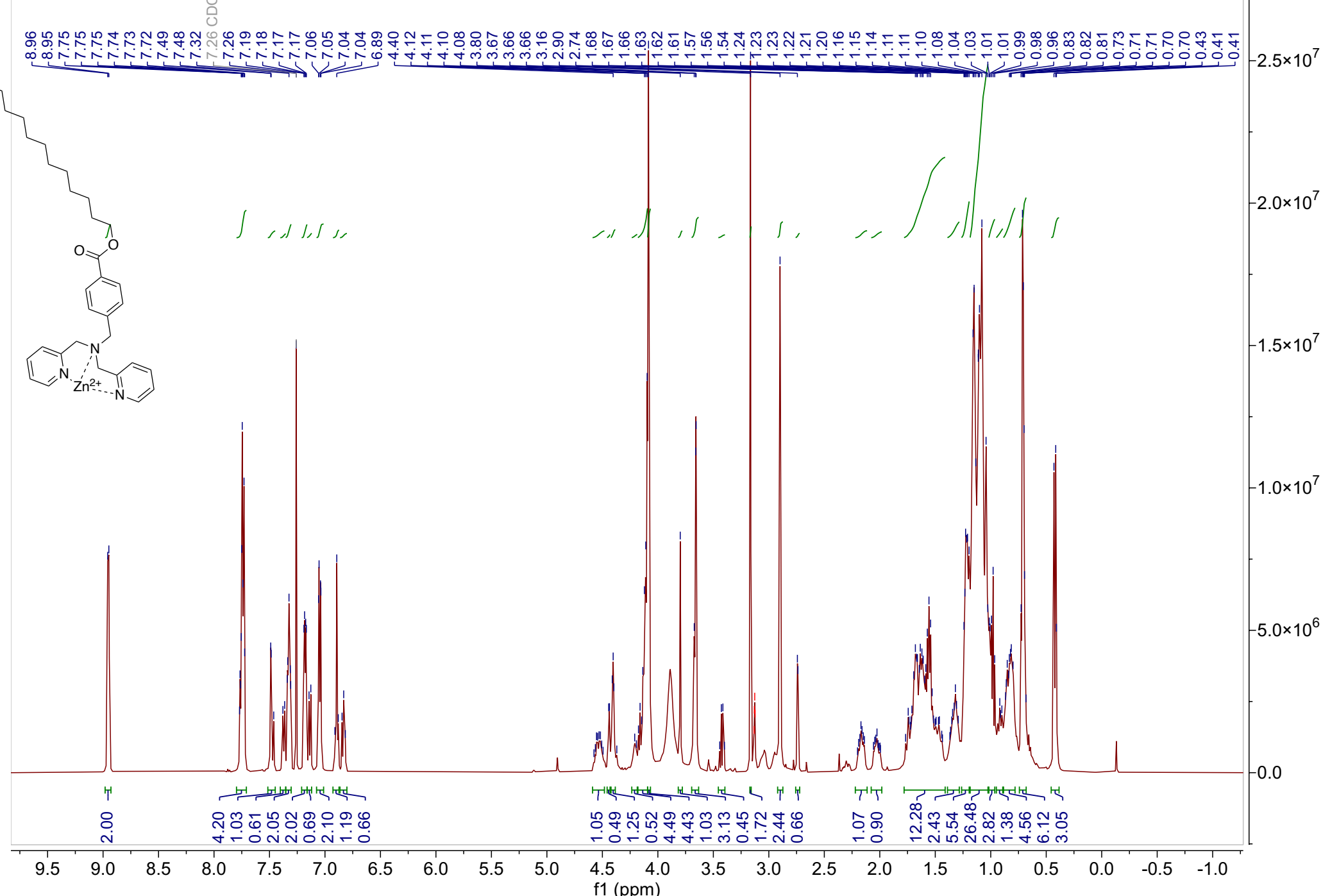
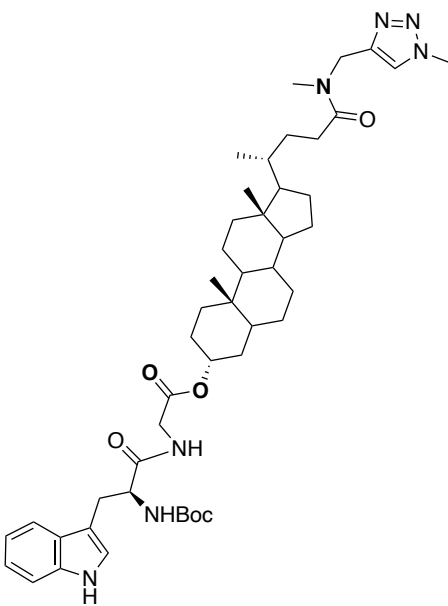
4.20

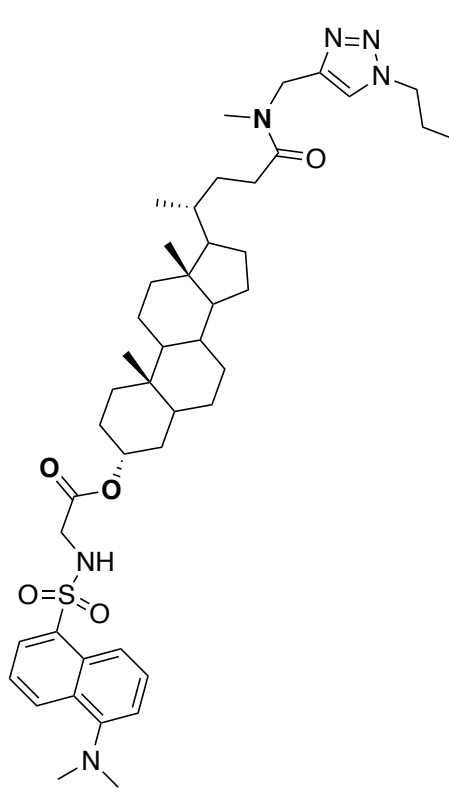




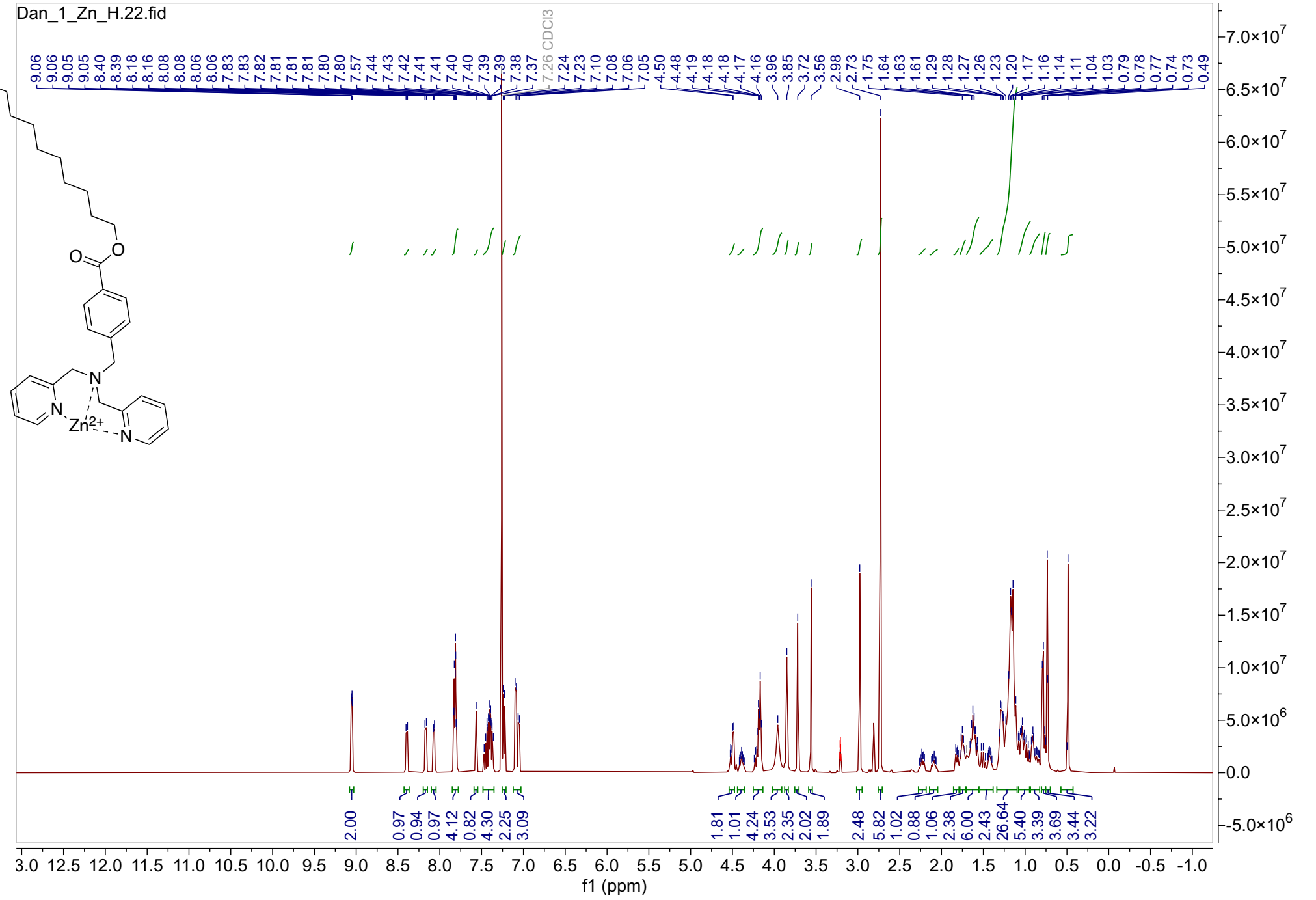
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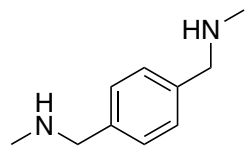




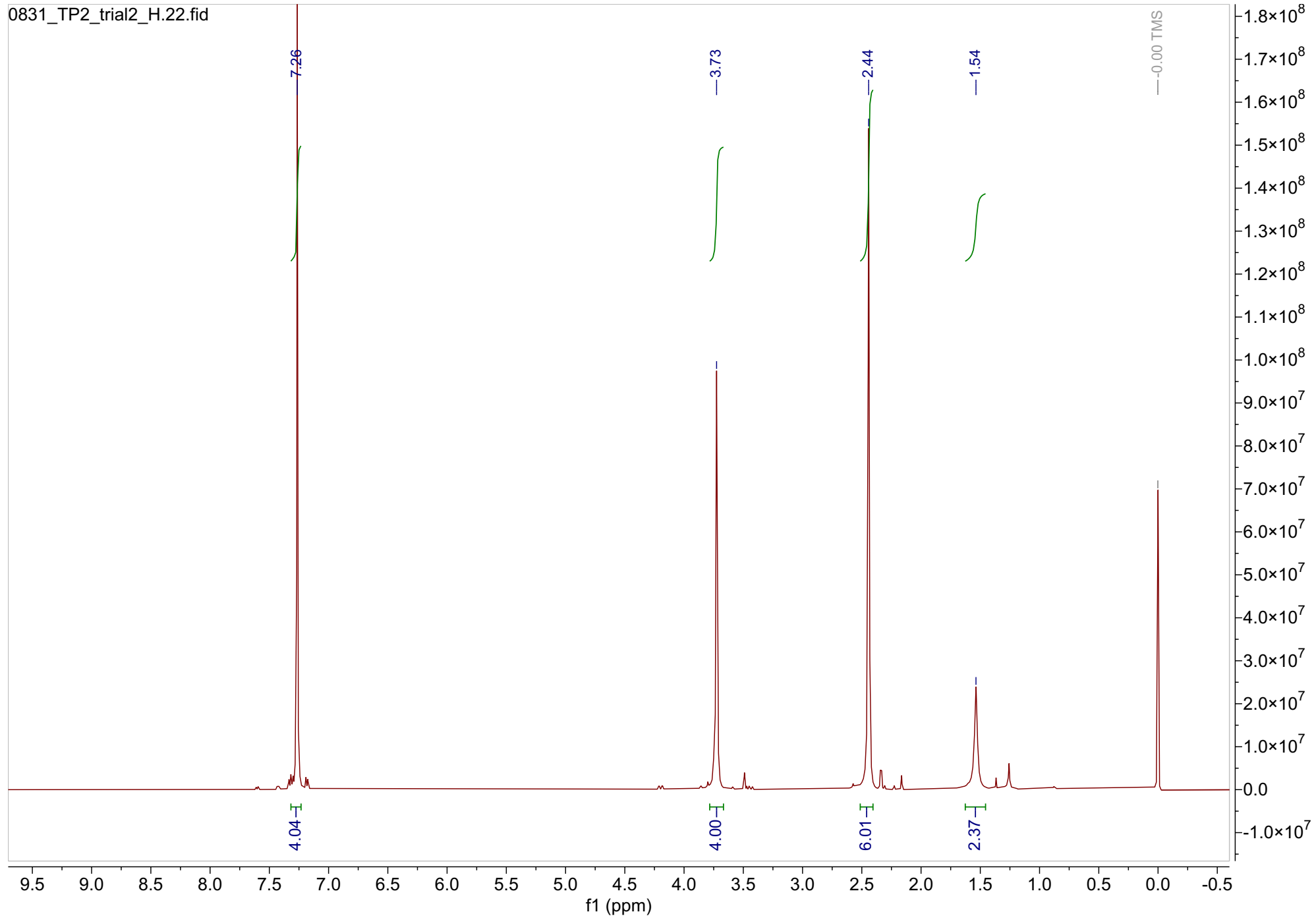


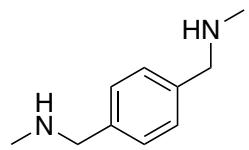
4.2d



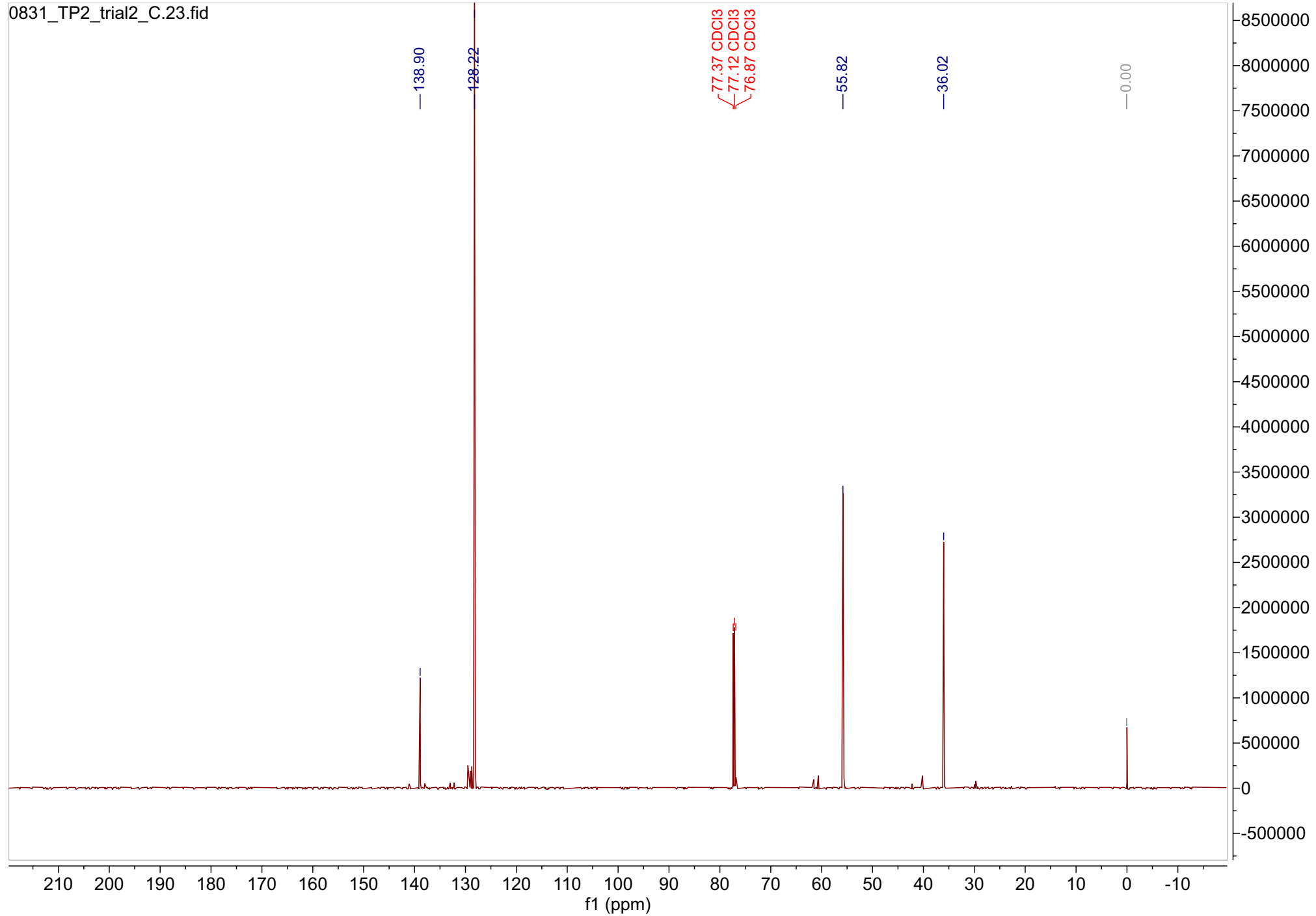


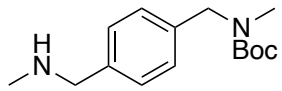
4.23



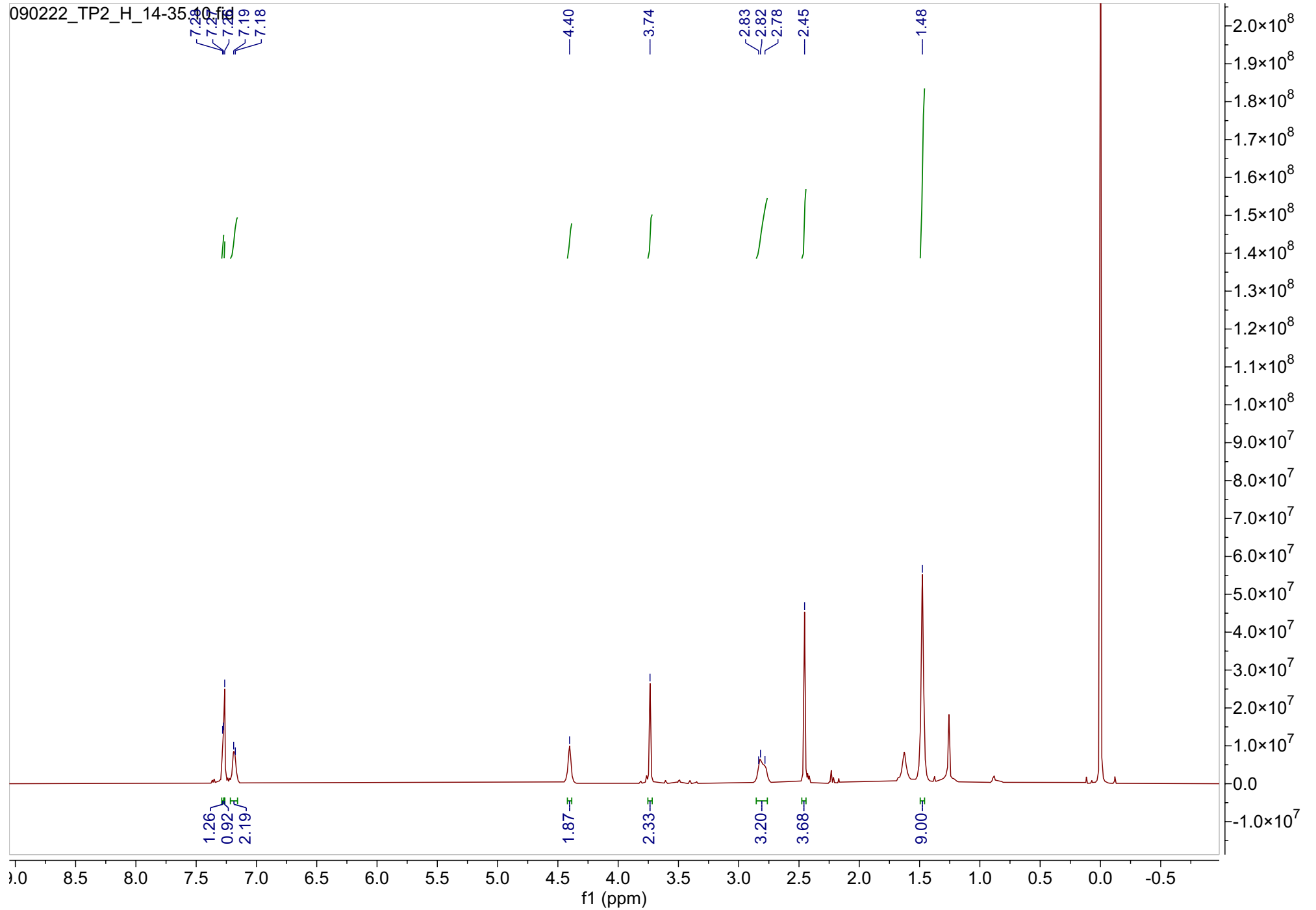


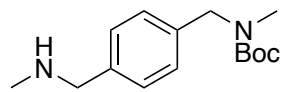
4.23



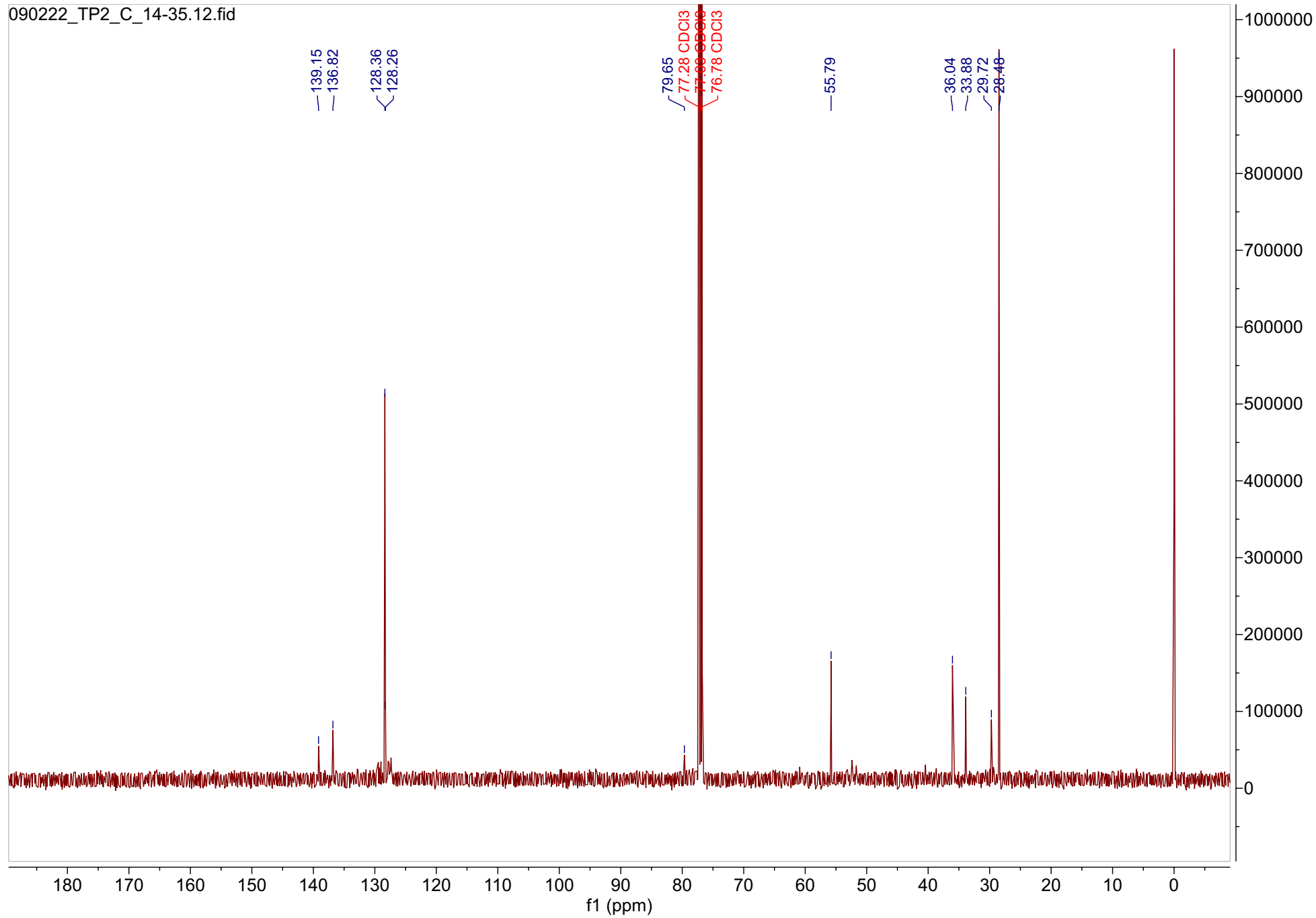


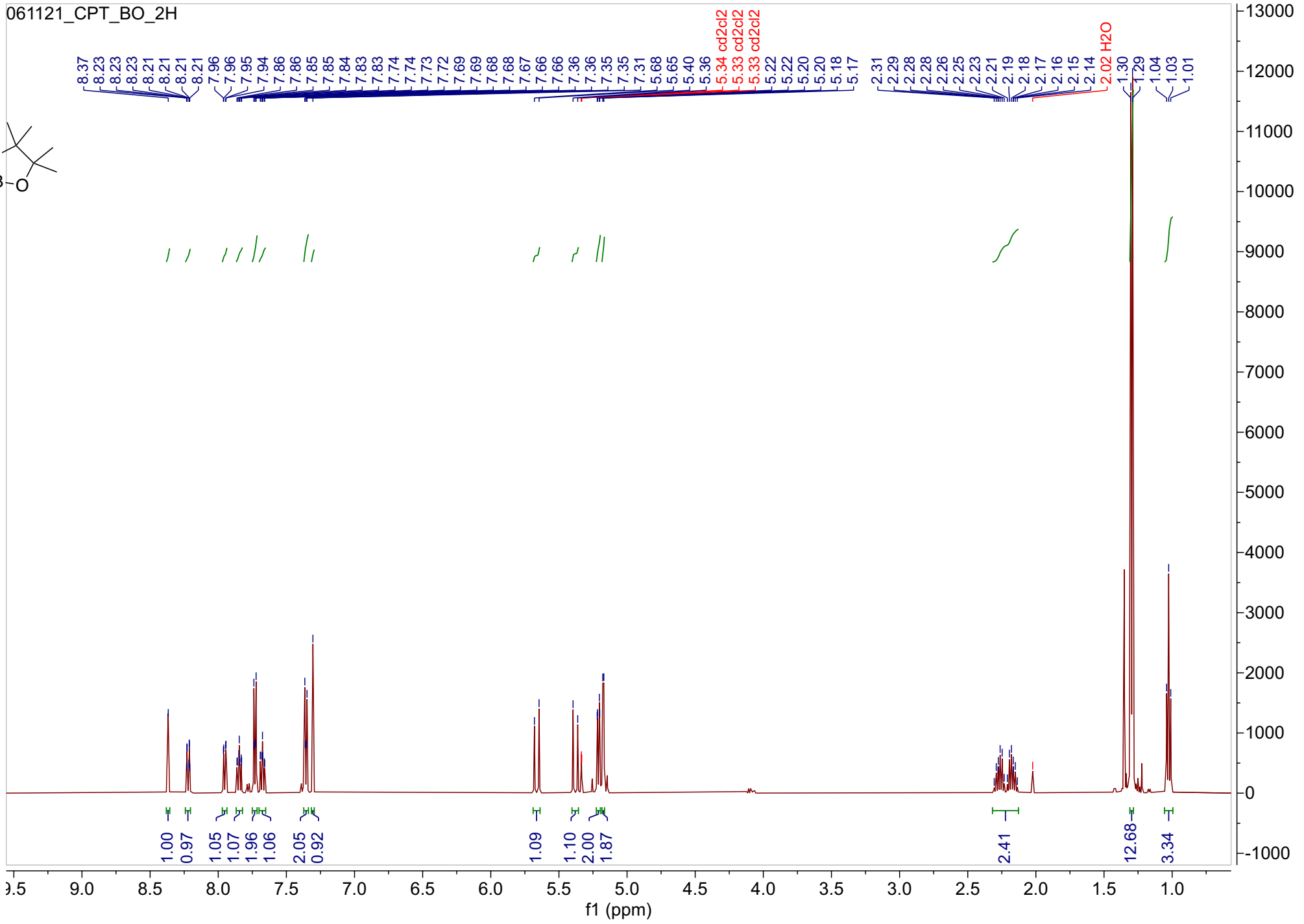
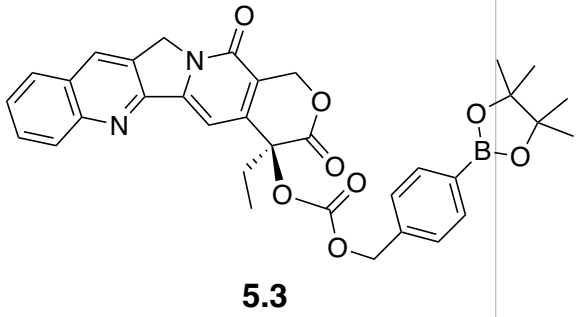
4.24





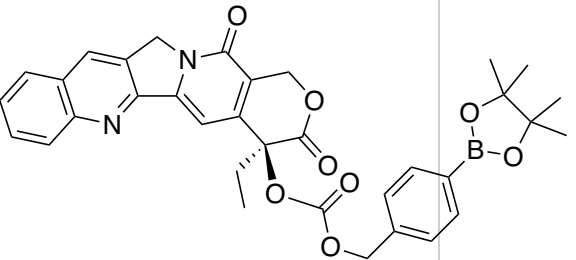
4.24



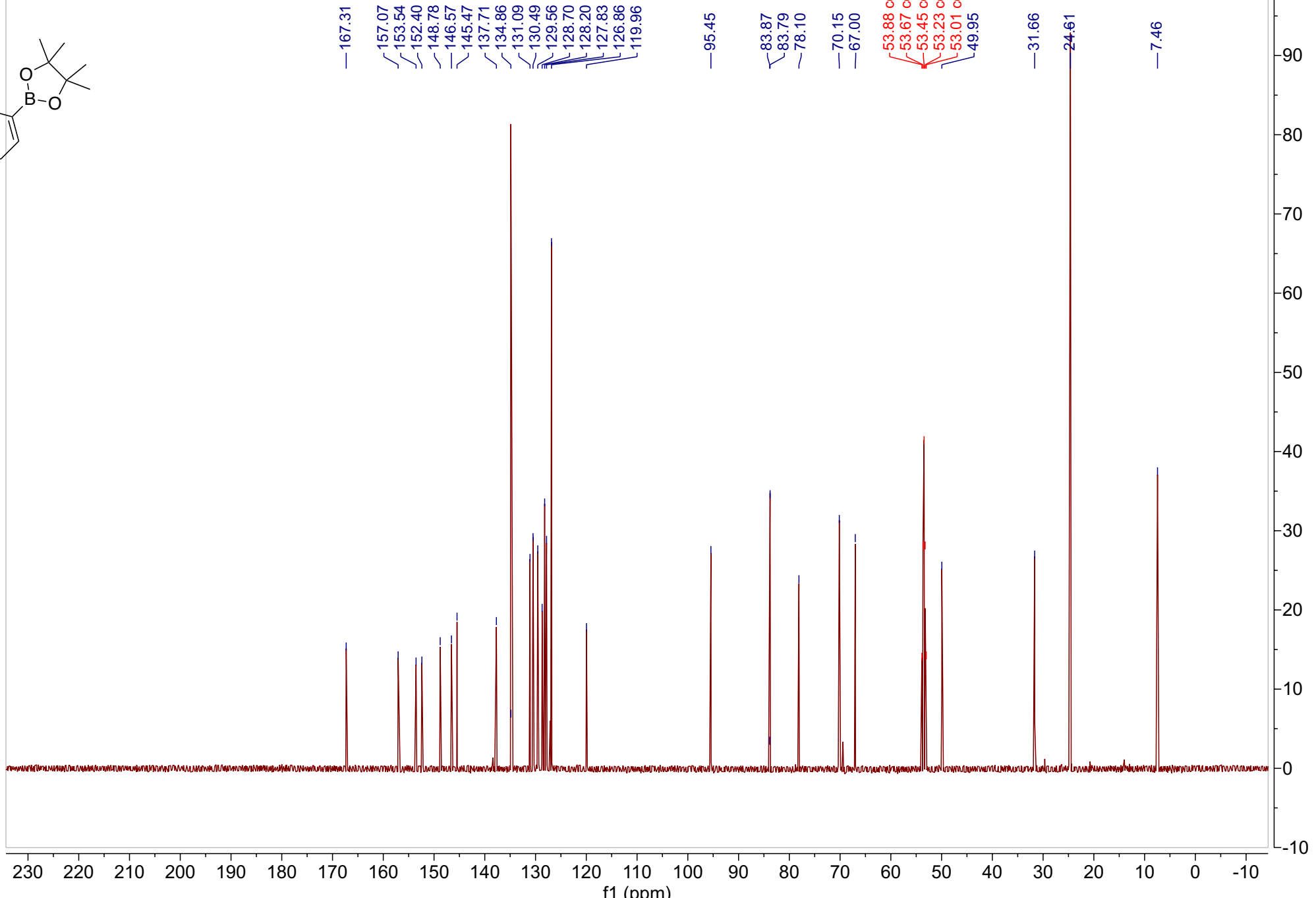


061121_CPT_BO_2C

STANDARD PHOSPHORUS PARAMETERS

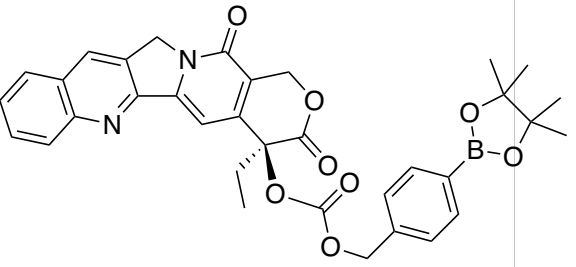


5.3

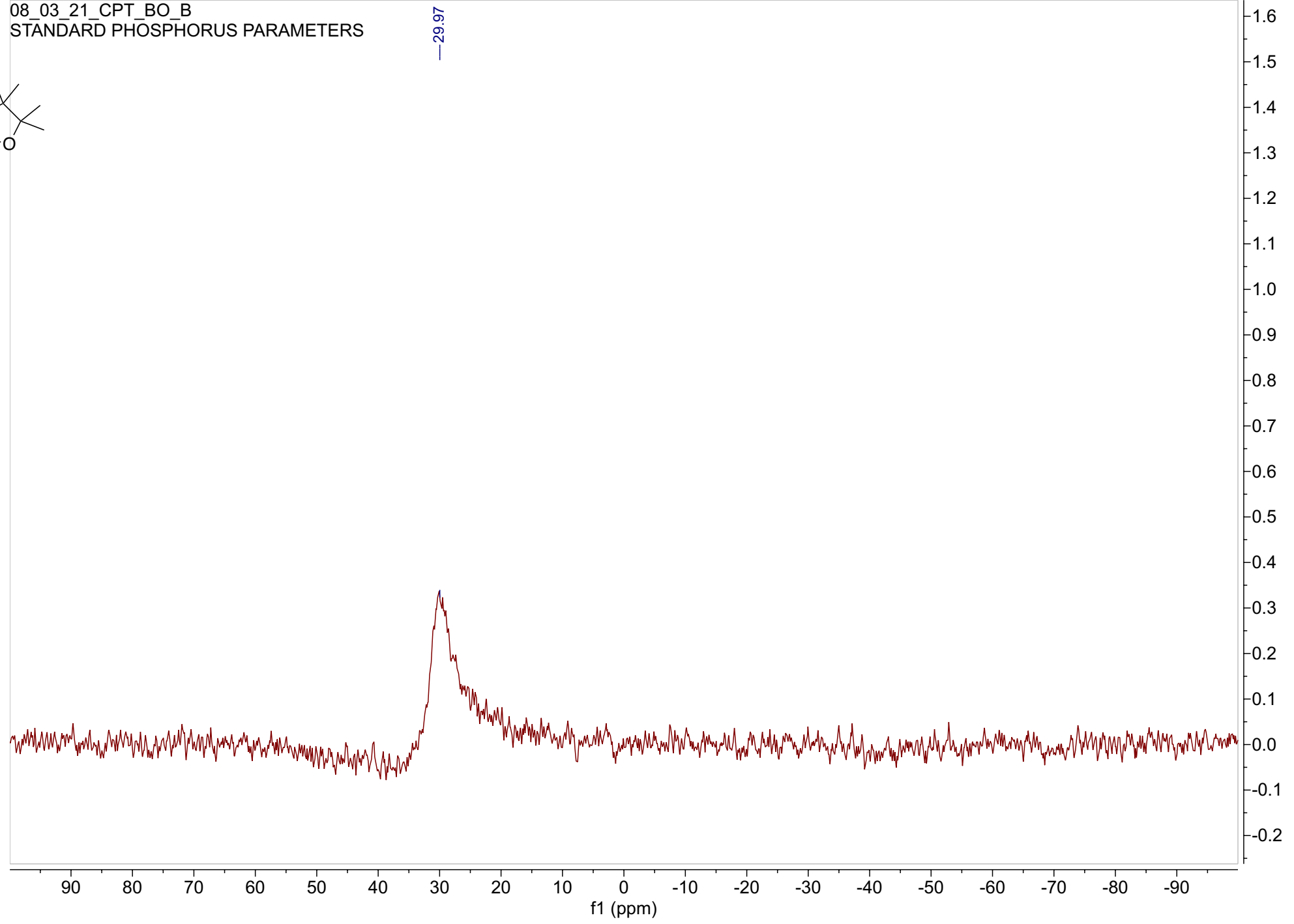


08_03_21_CPT_BO_B
STANDARD PHOSPHORUS PARAMETERS

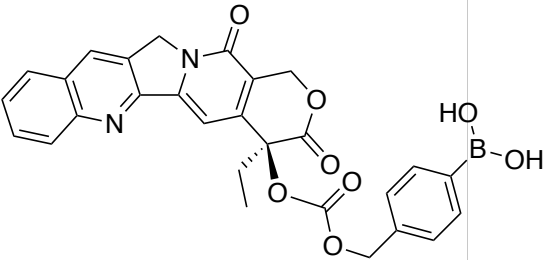
—29.97



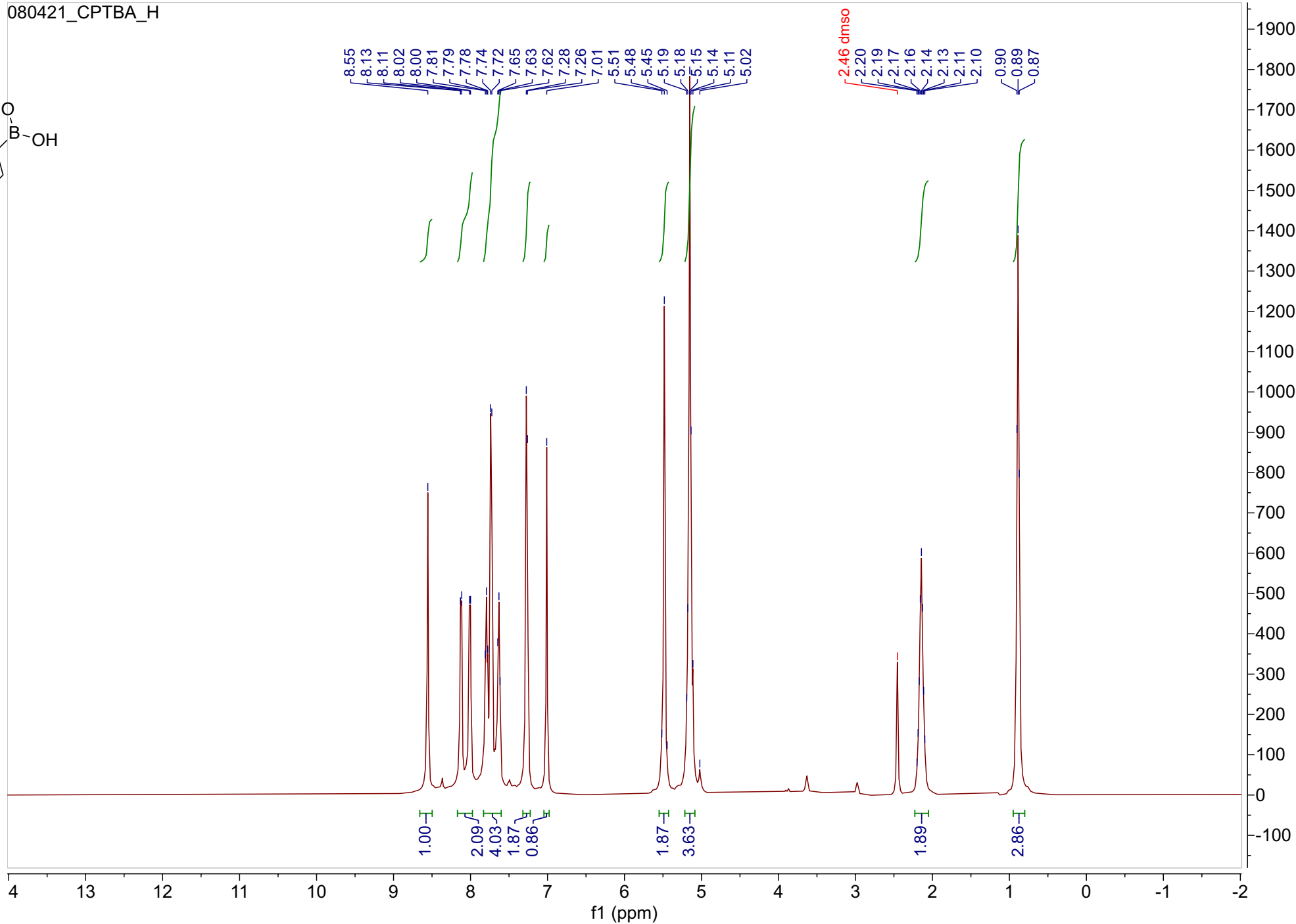
5.3



080421_CPTBA_H

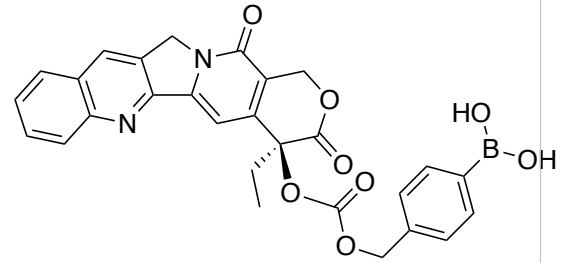


5.4

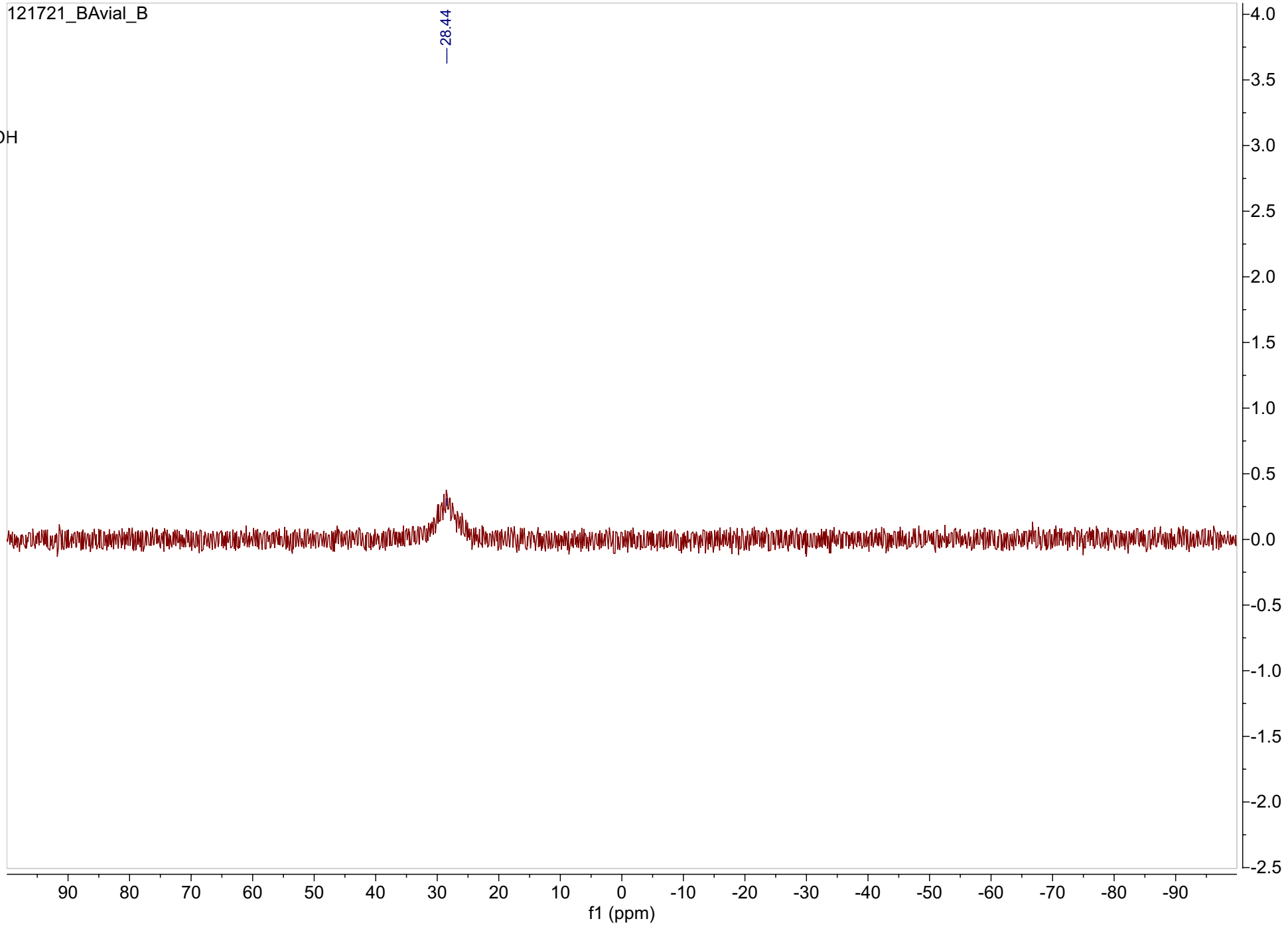


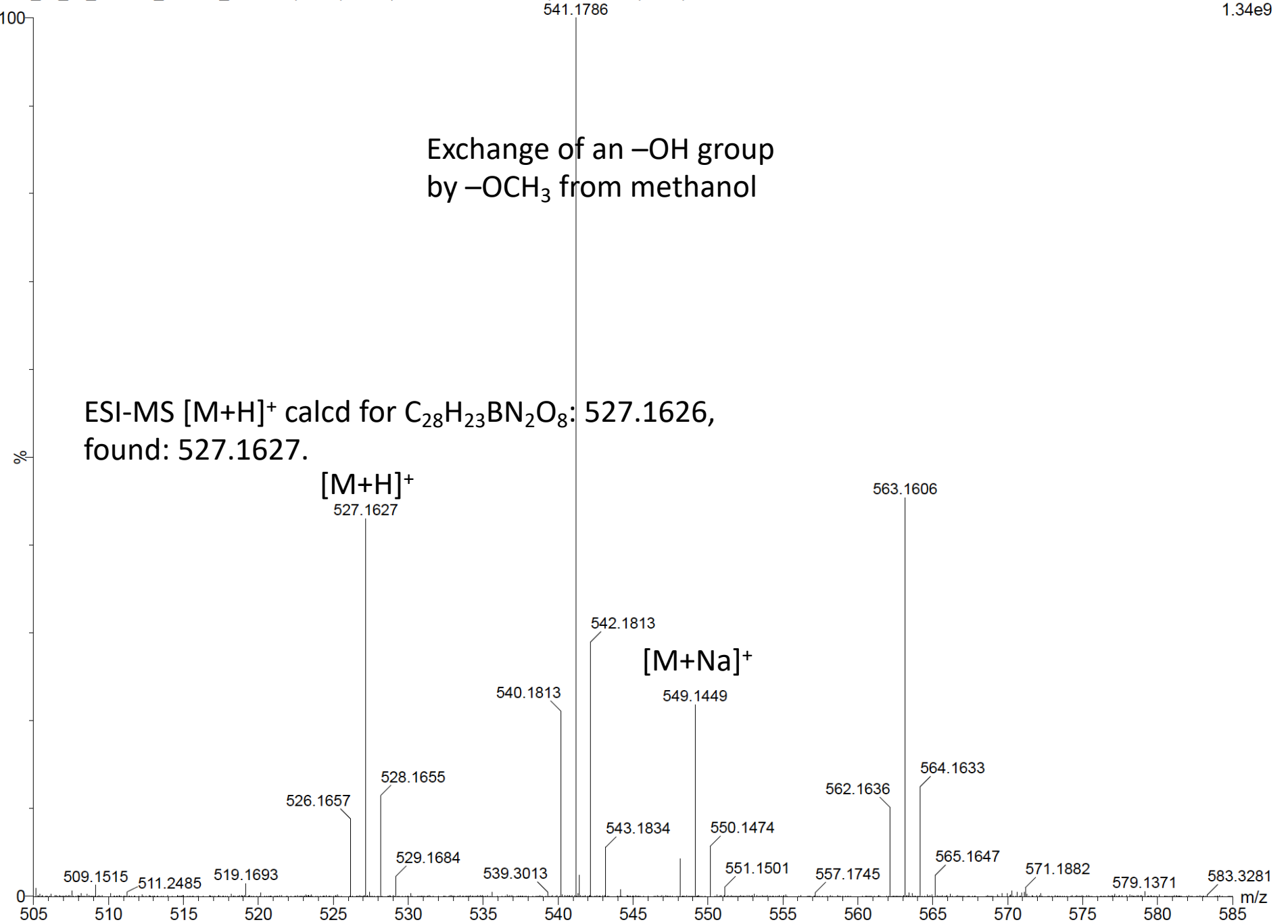
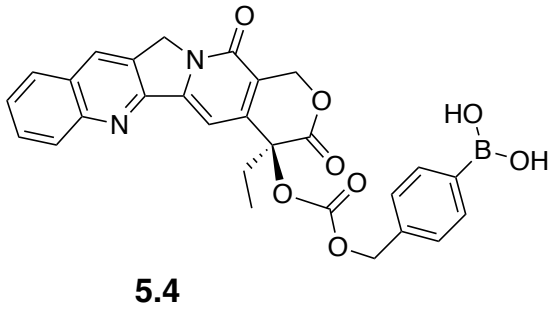
121721_BAvial_B

— 28.44

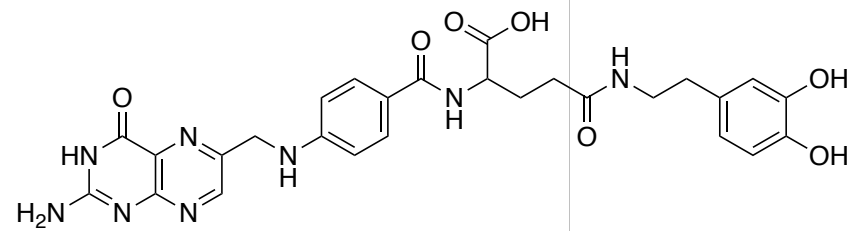


5.4

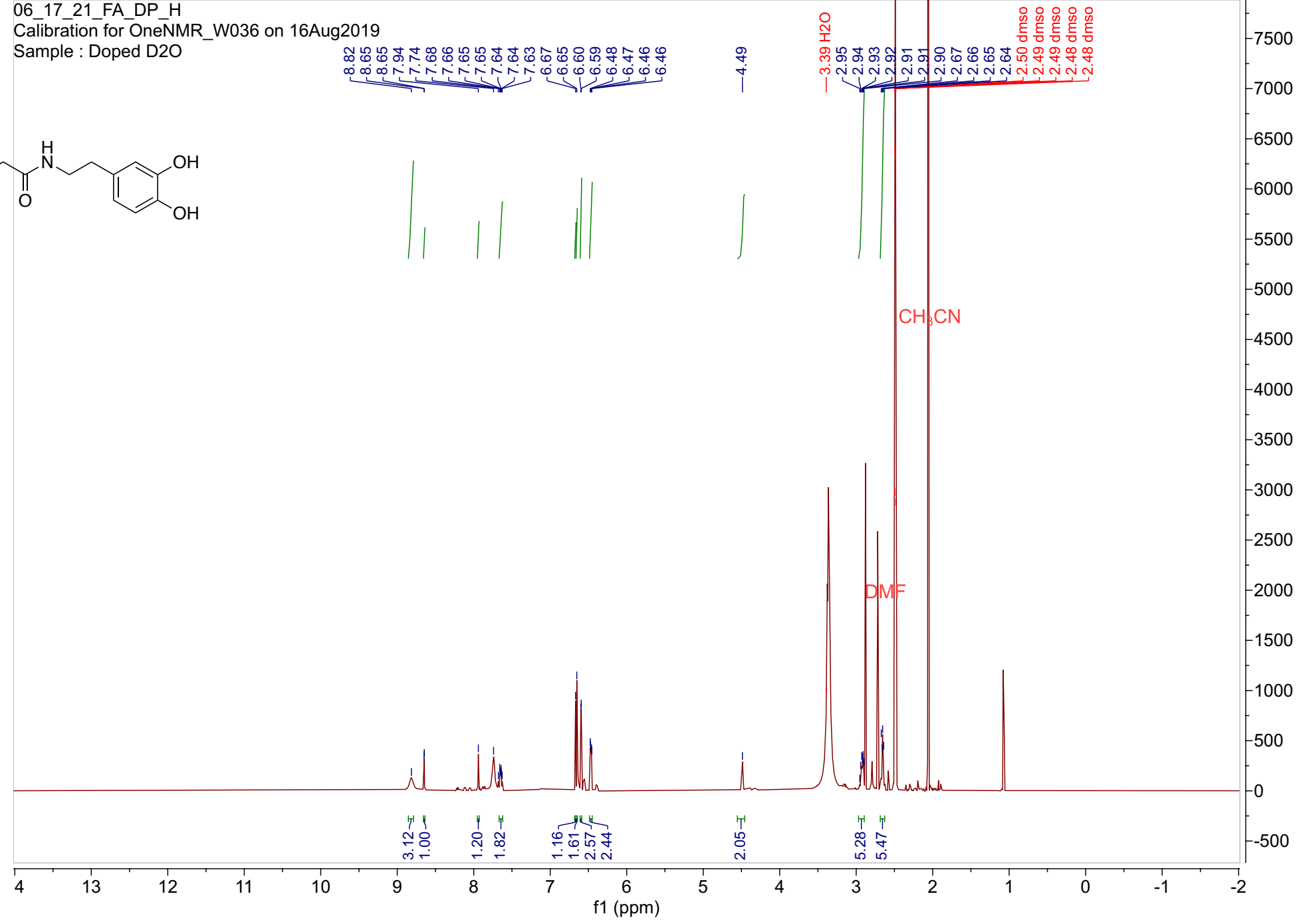


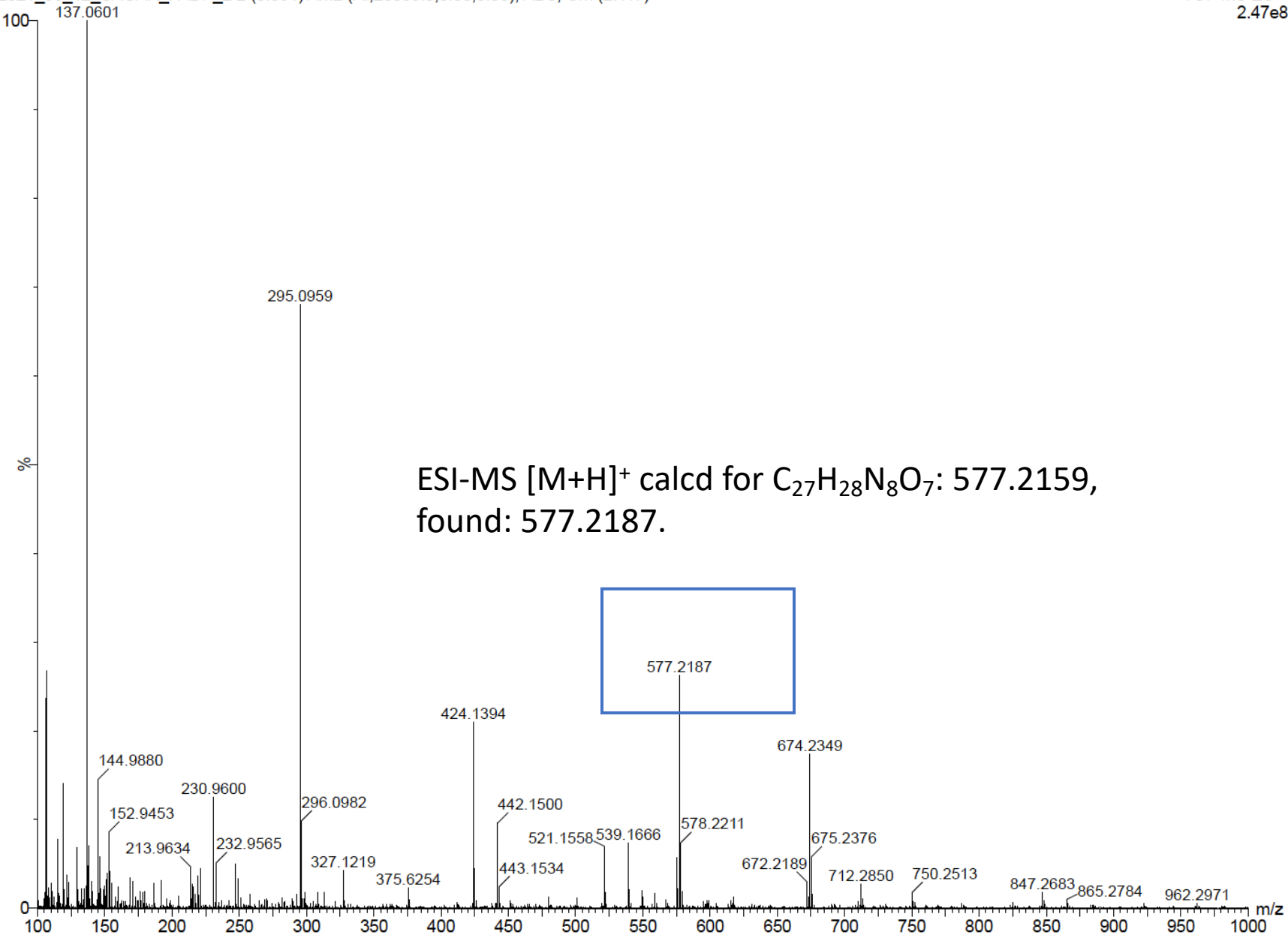


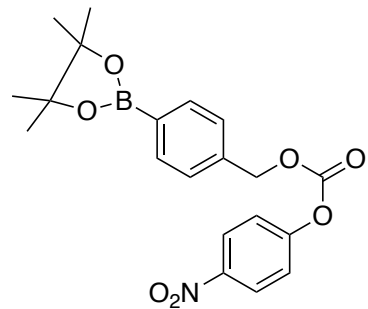
06_17_21_FA_DP_H
Calibration for OneNMR_W036 on 16Aug2019
Sample : Doped D2O



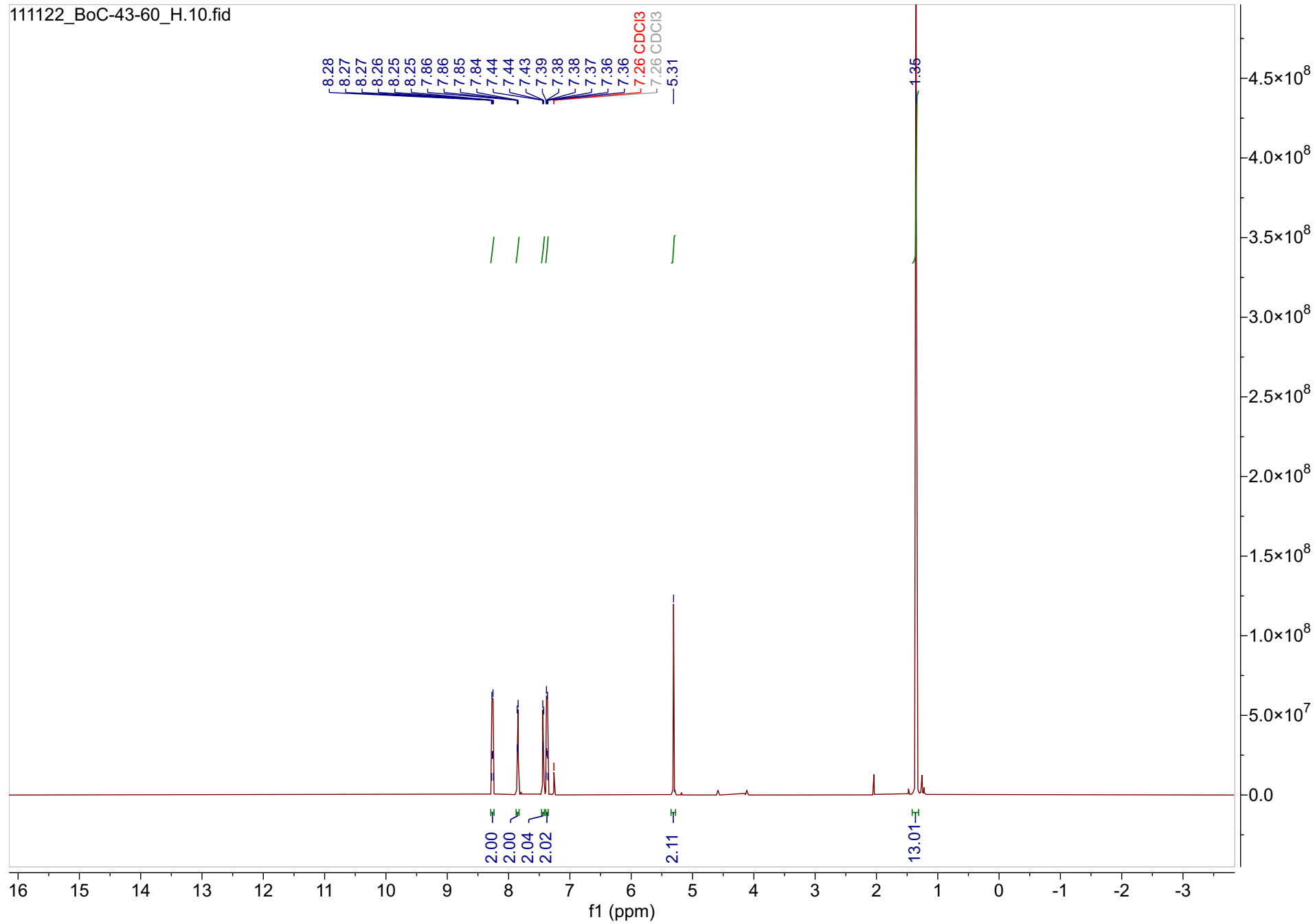
5.5

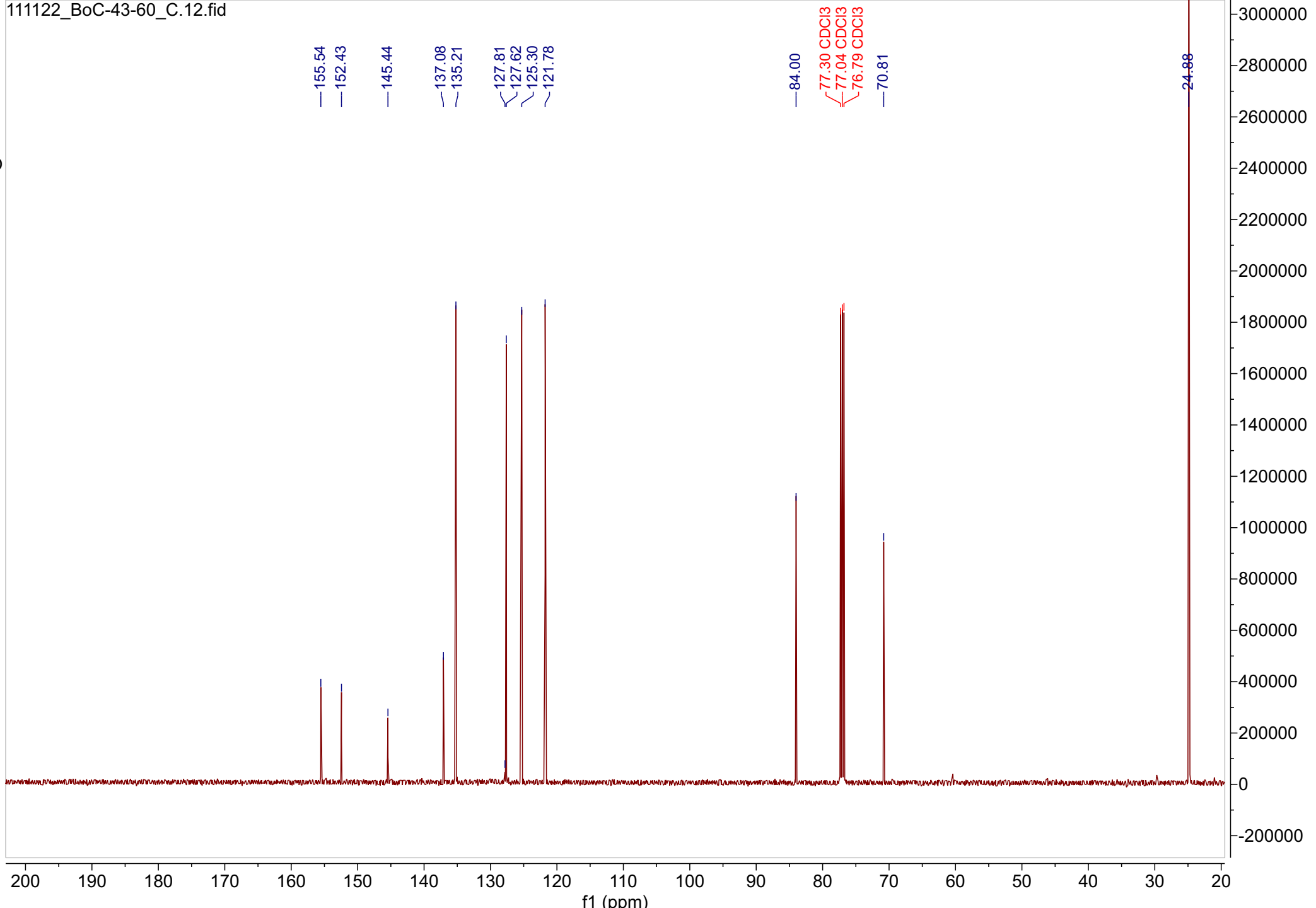
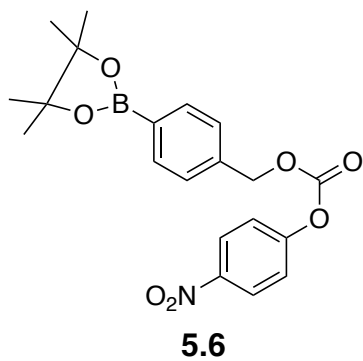


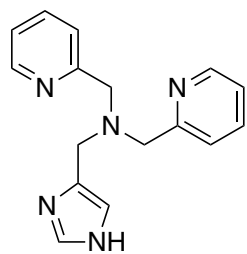




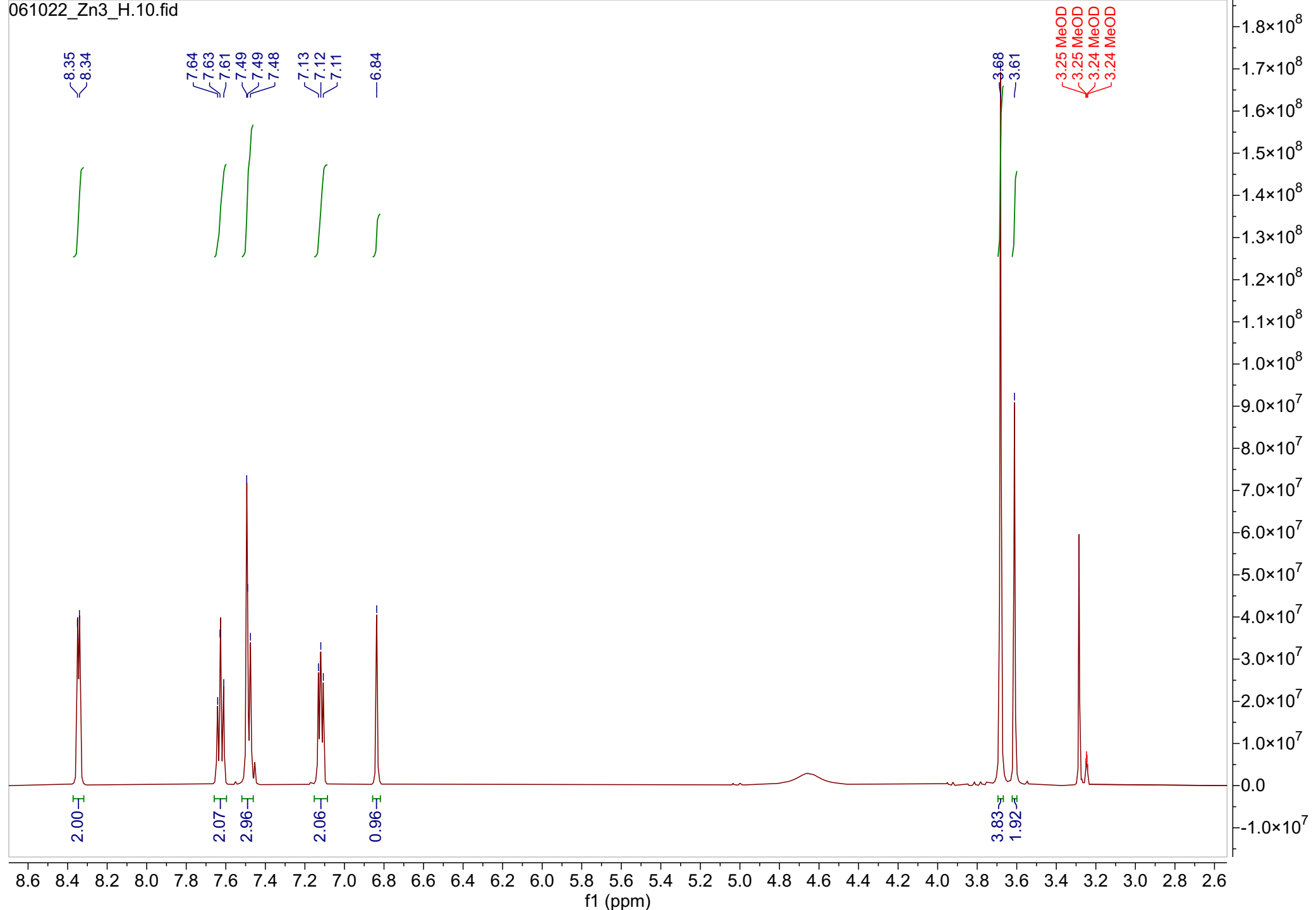
5.6

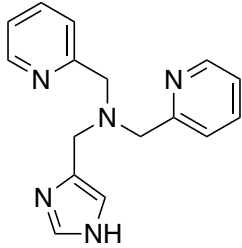




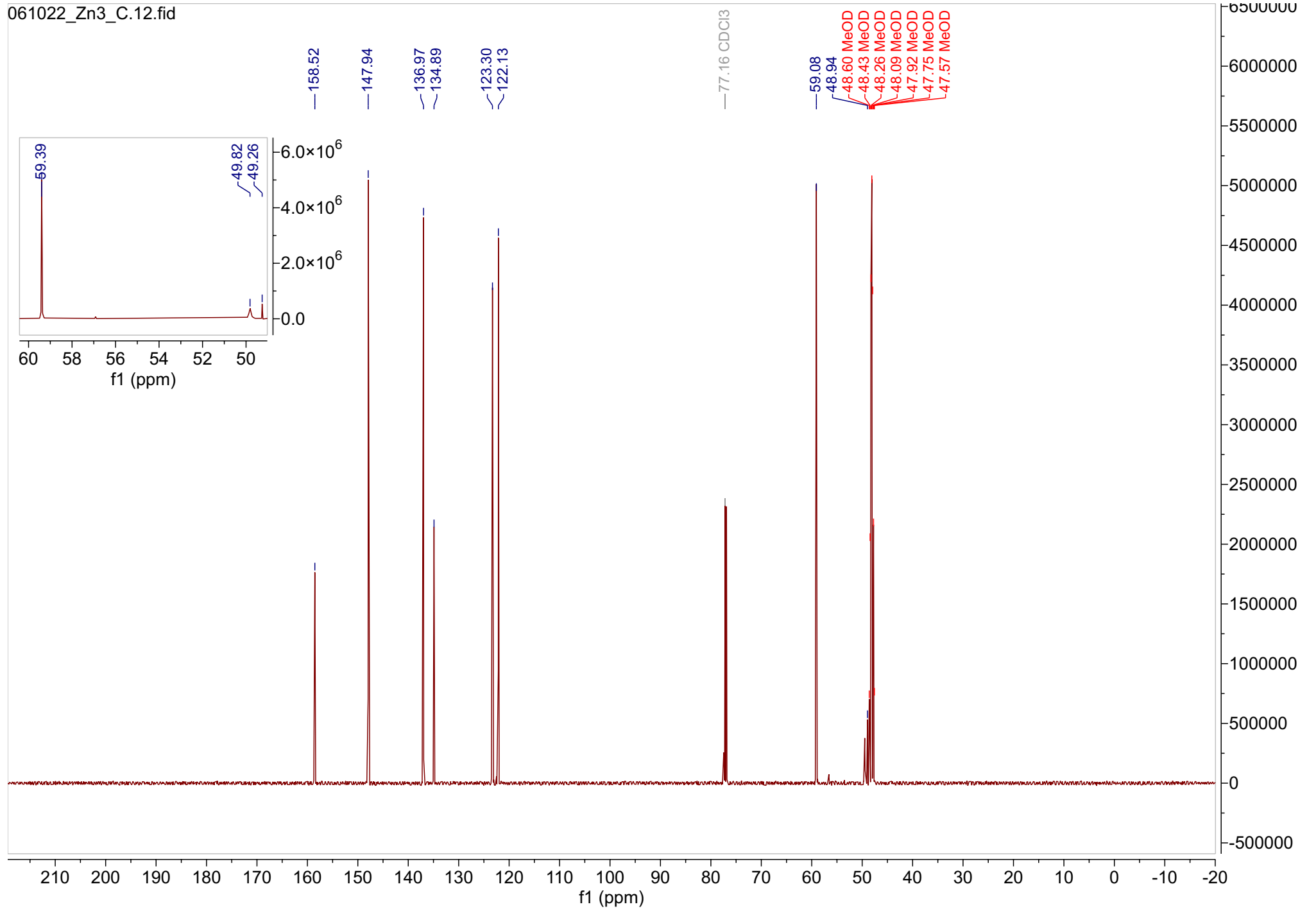


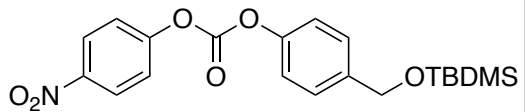
7.8





7.8





7.10

