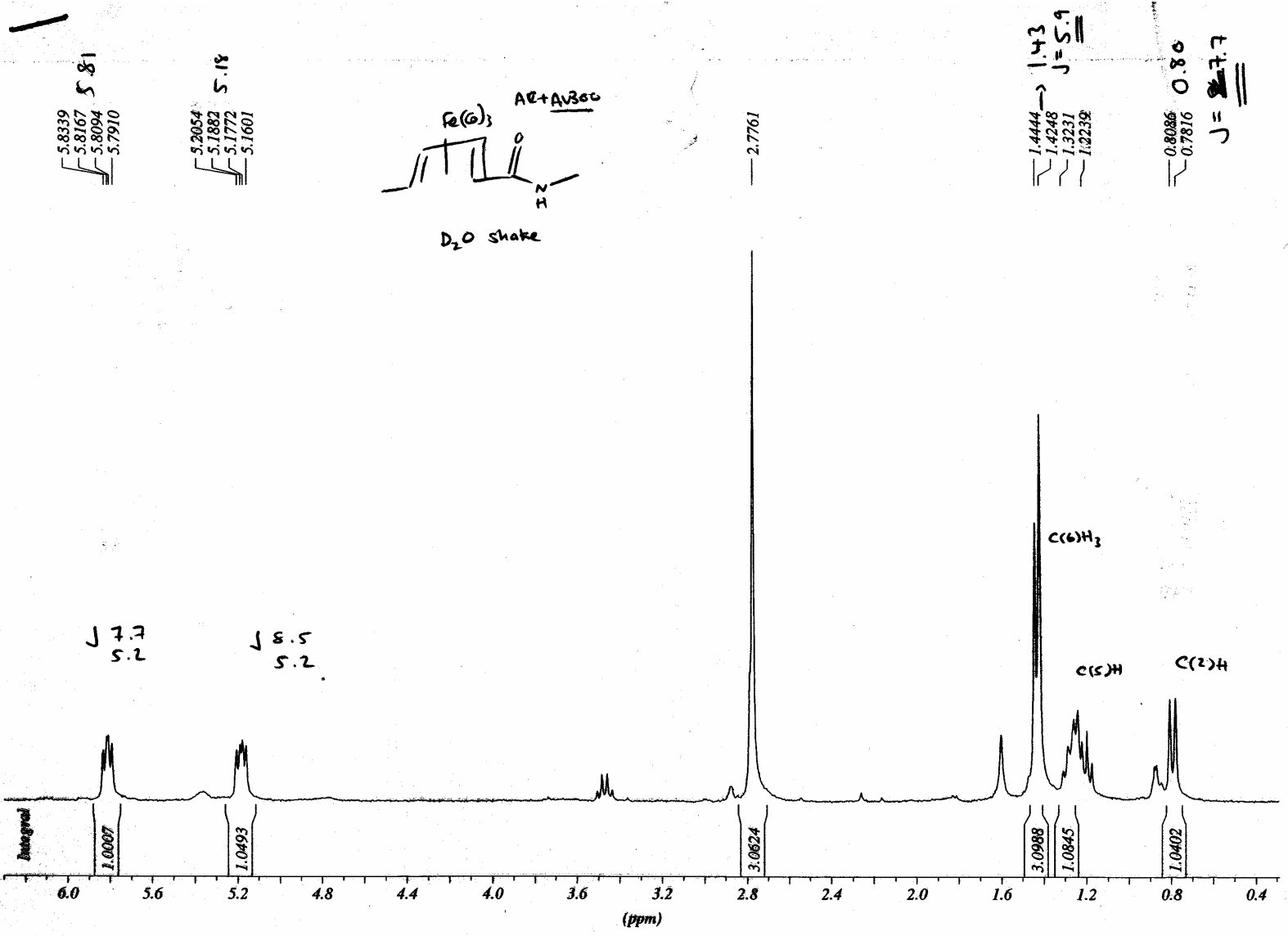
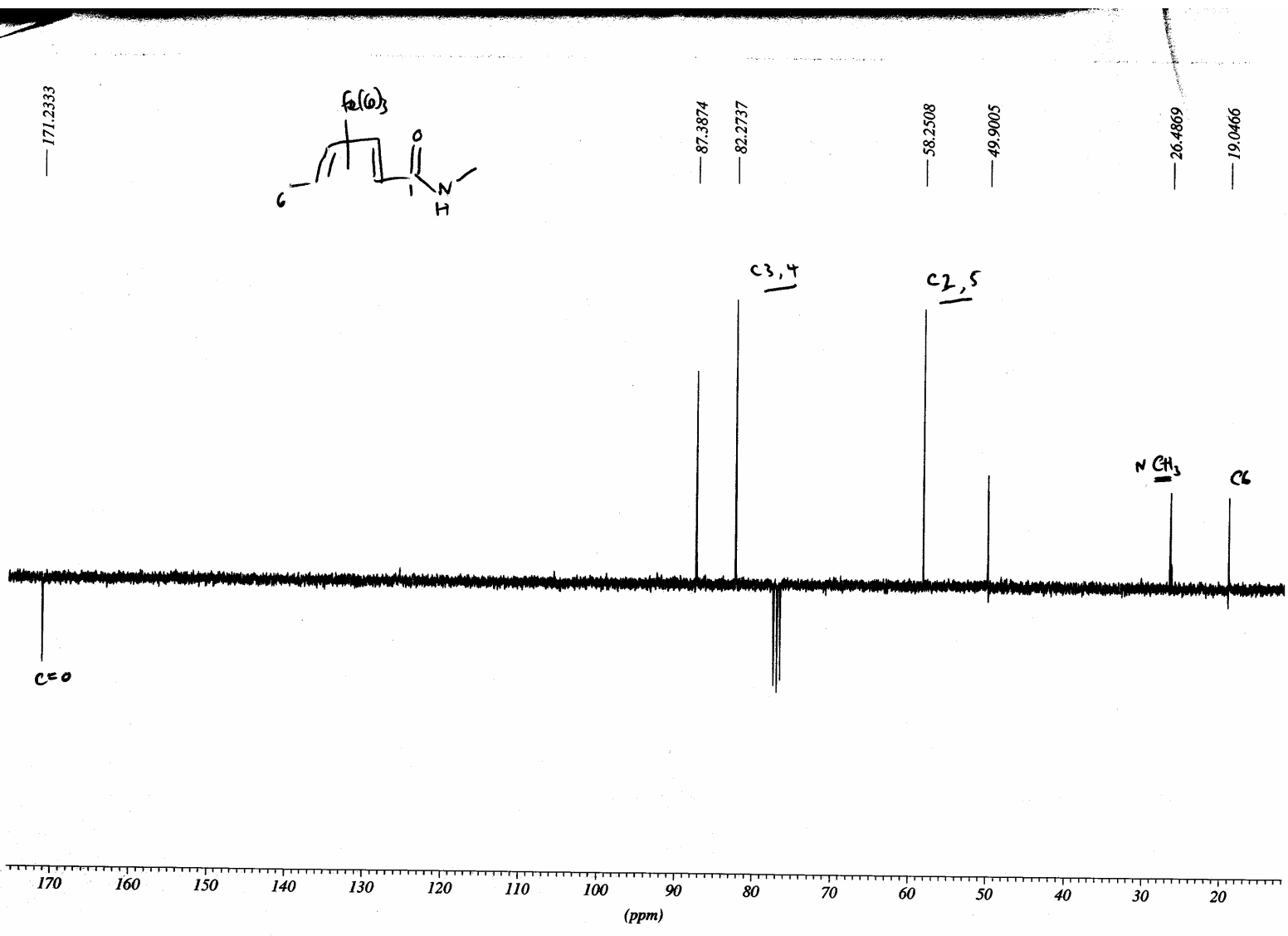


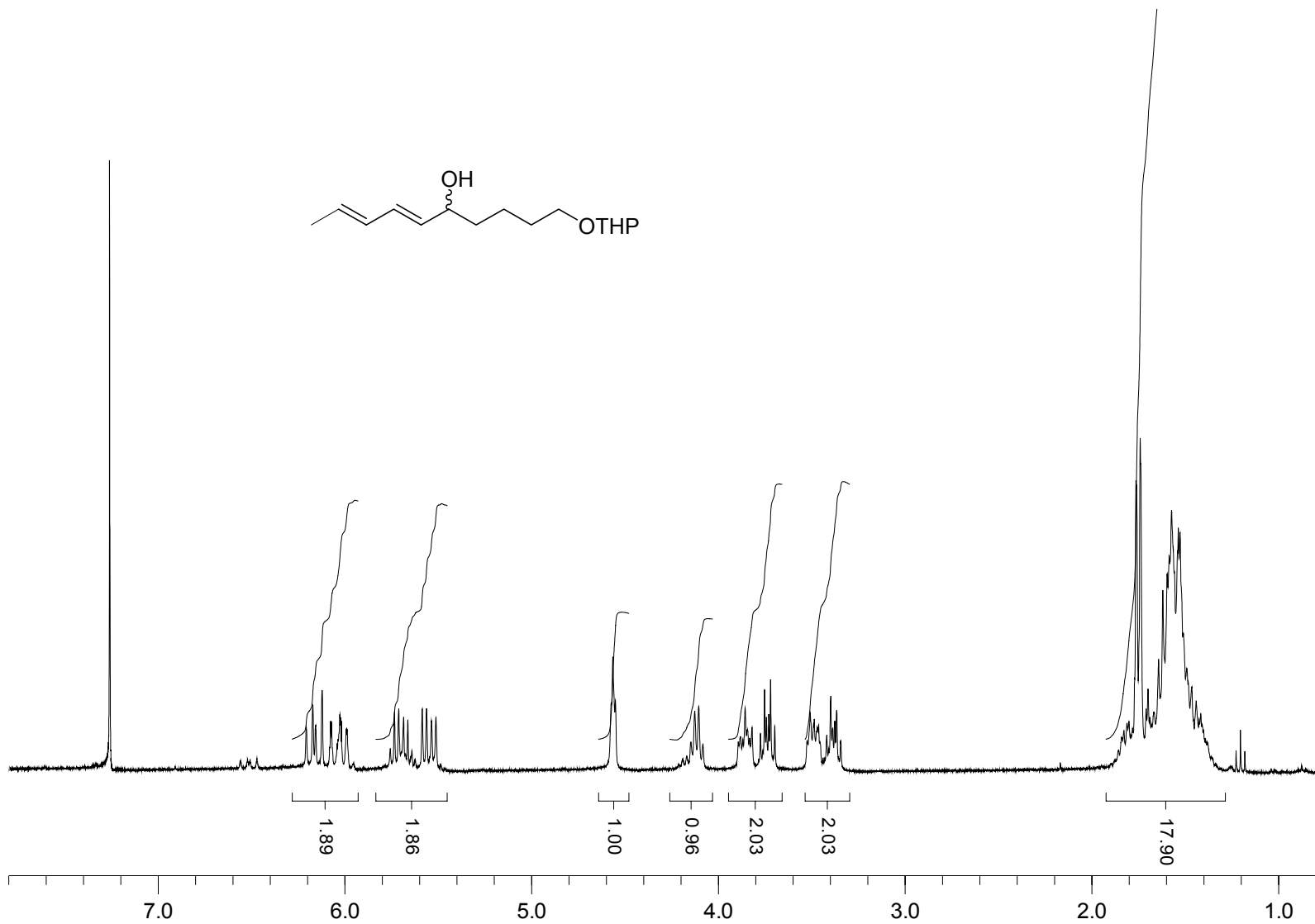
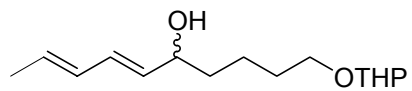
**Stereoselective Synthesis of 2-Dienyl-Substituted Piperidines using an  $\eta^4$ -  
Dienetricarbonyliron Complex as the Stereocontrolling Element in a Double Reductive  
Amination Cascade**

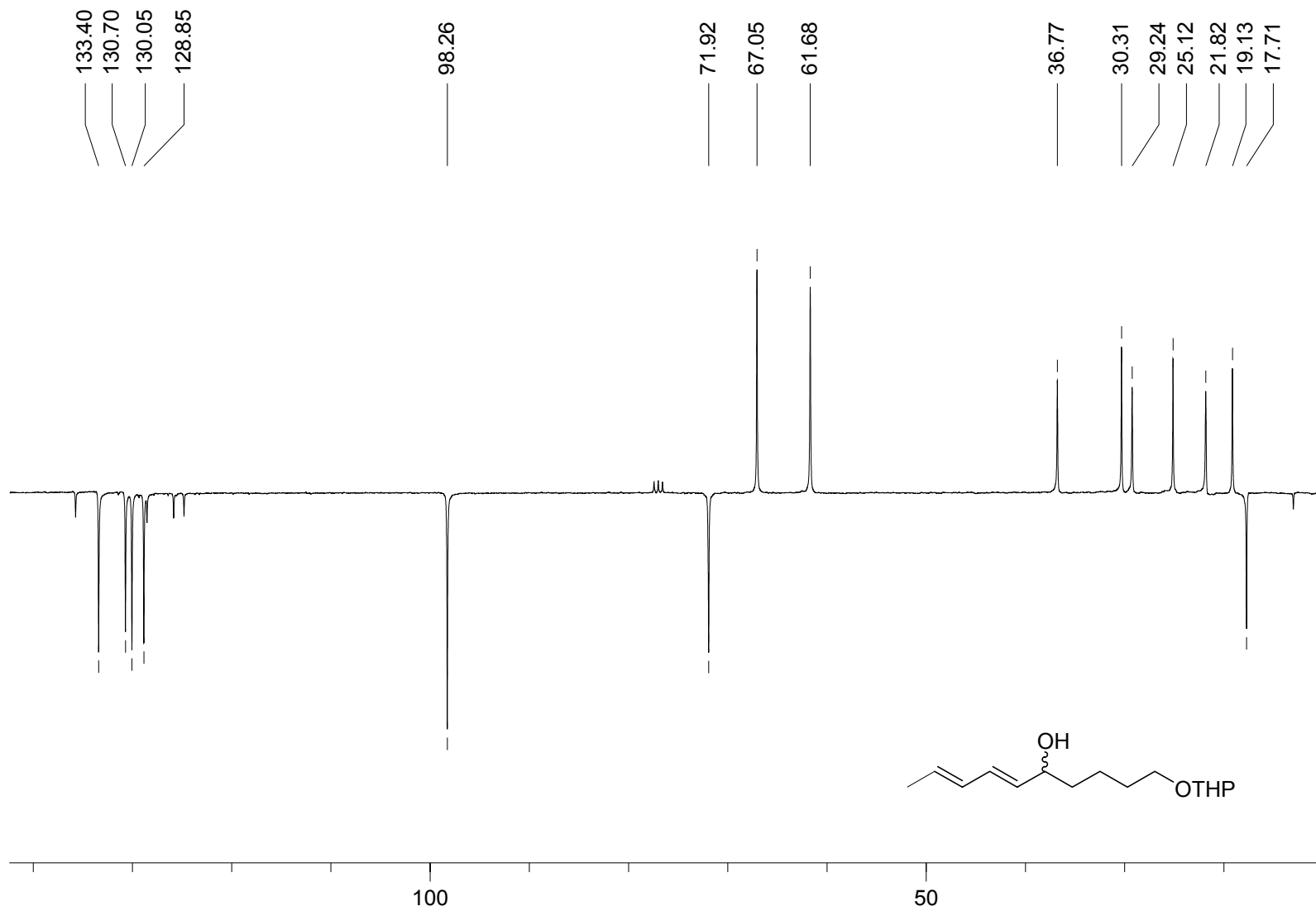
Iwan Williams, Keith Reeves, Benson M. Kariuki and Liam R. Cox

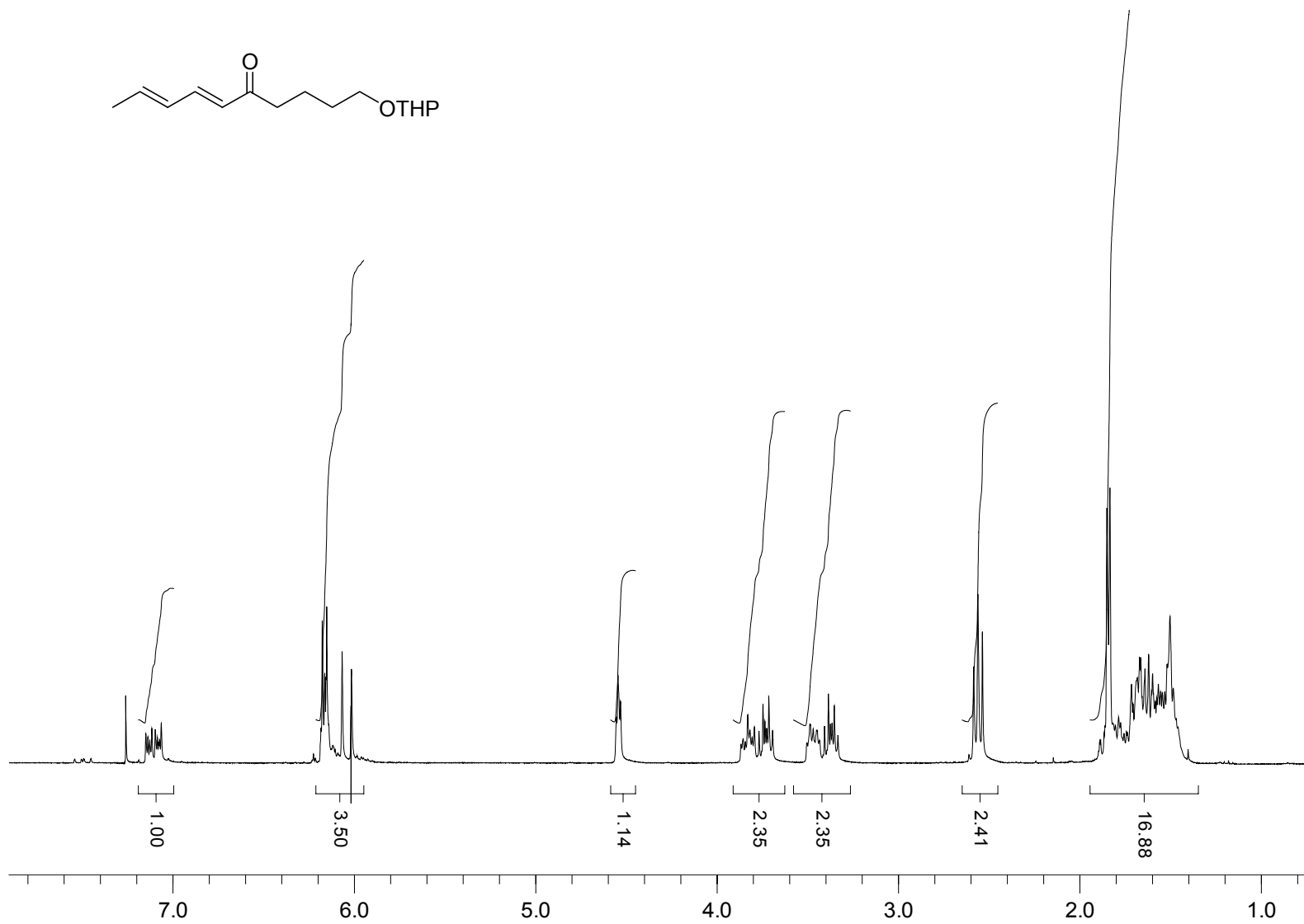
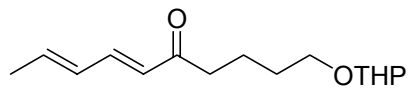
**Supporting Information:**  $^1\text{H}$ -nmr and  $^{13}\text{C}$ -nmr data

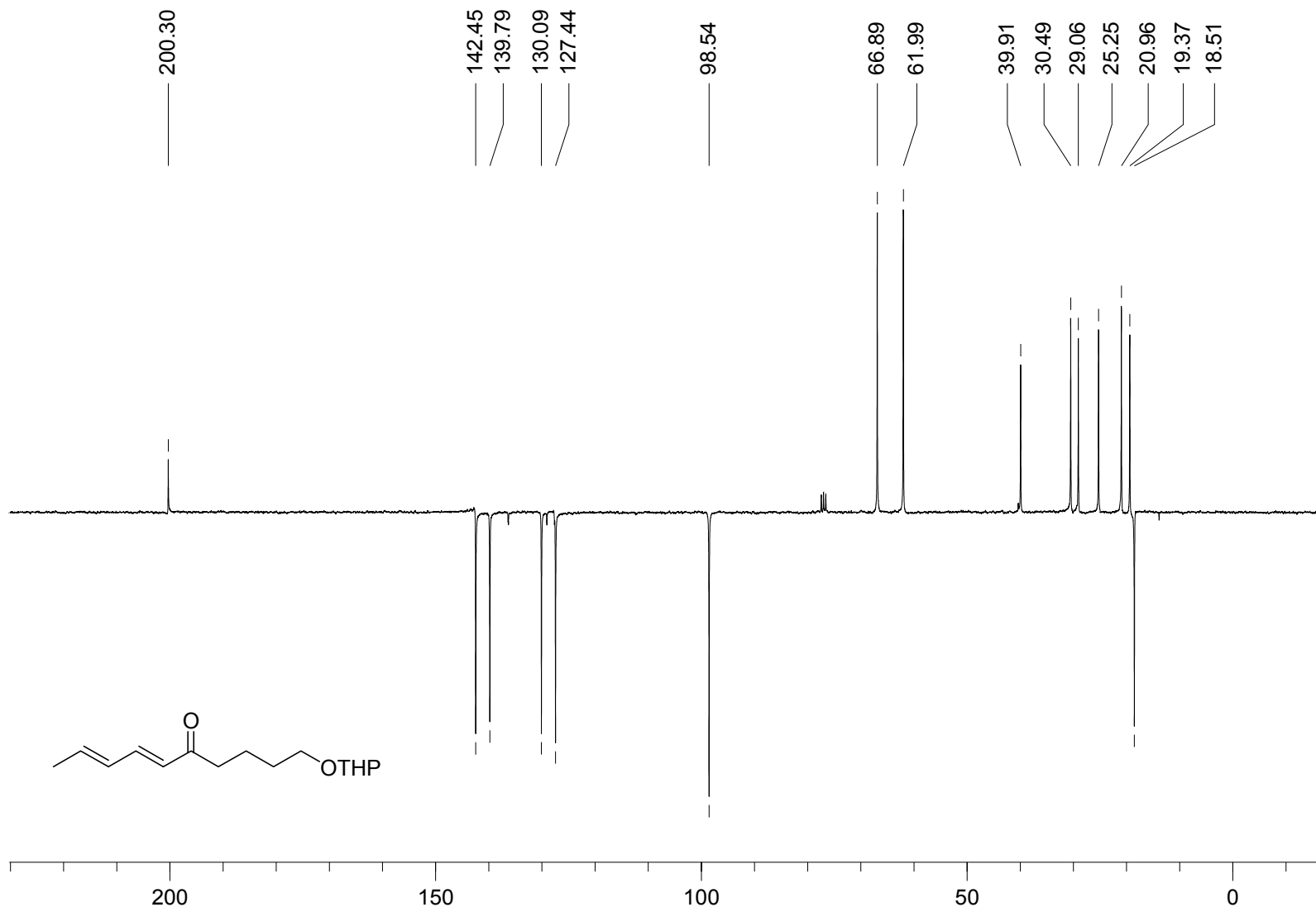


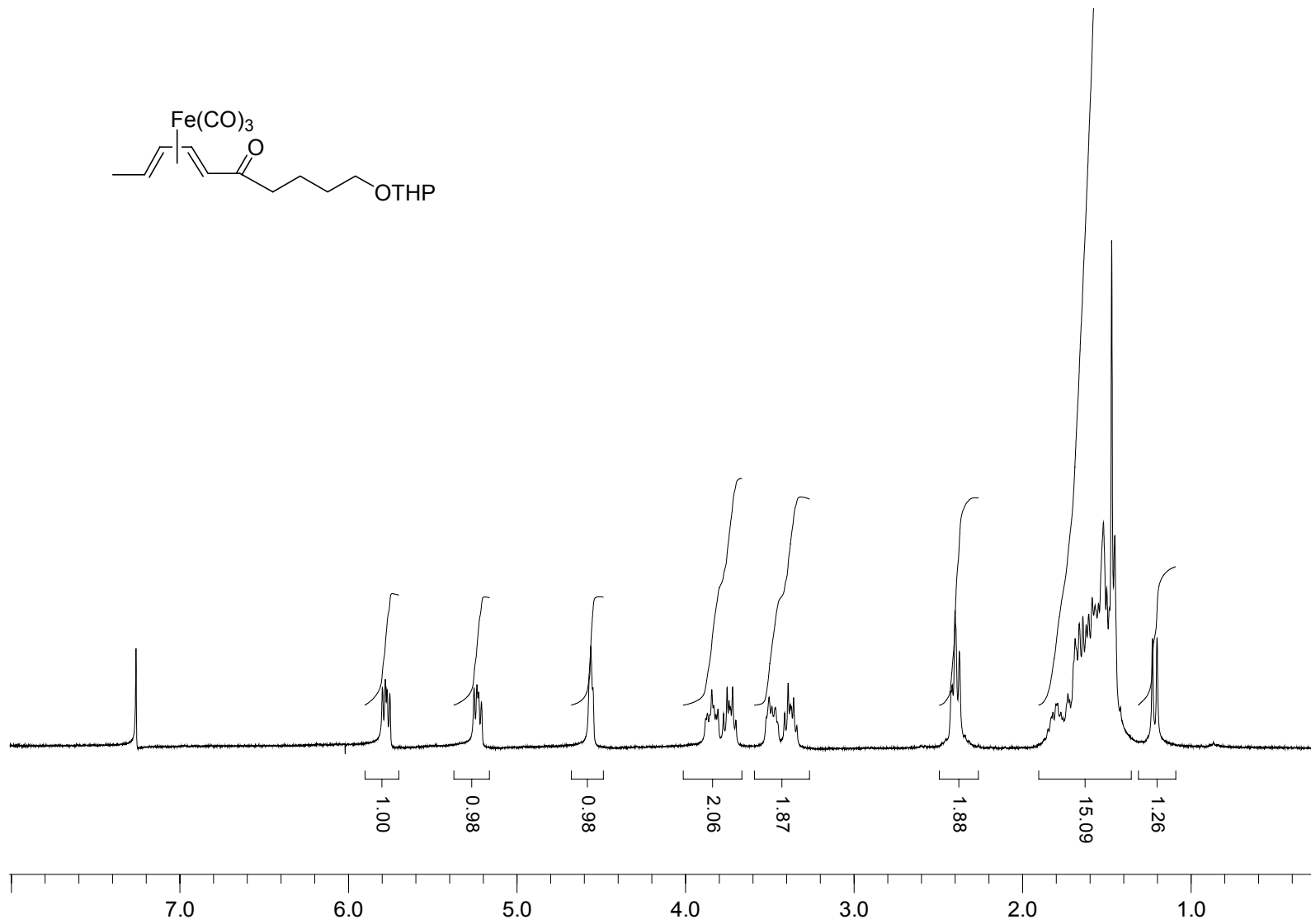
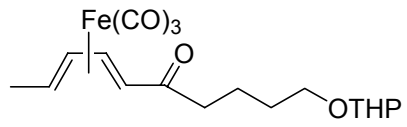






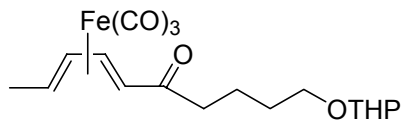








205.26



98.68

88.54

81.23

66.96

62.12

59.14

53.42

42.24

30.60

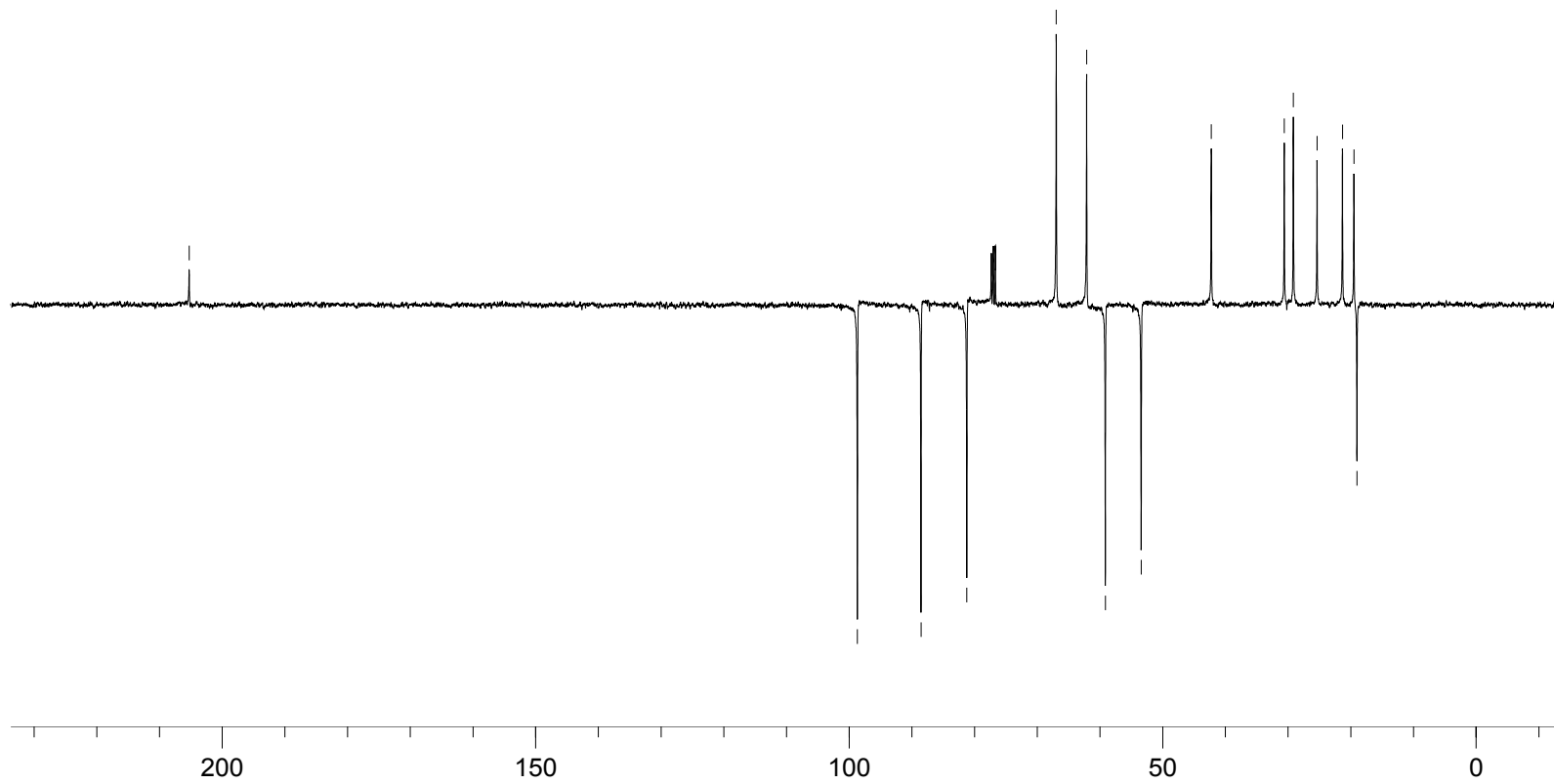
29.15

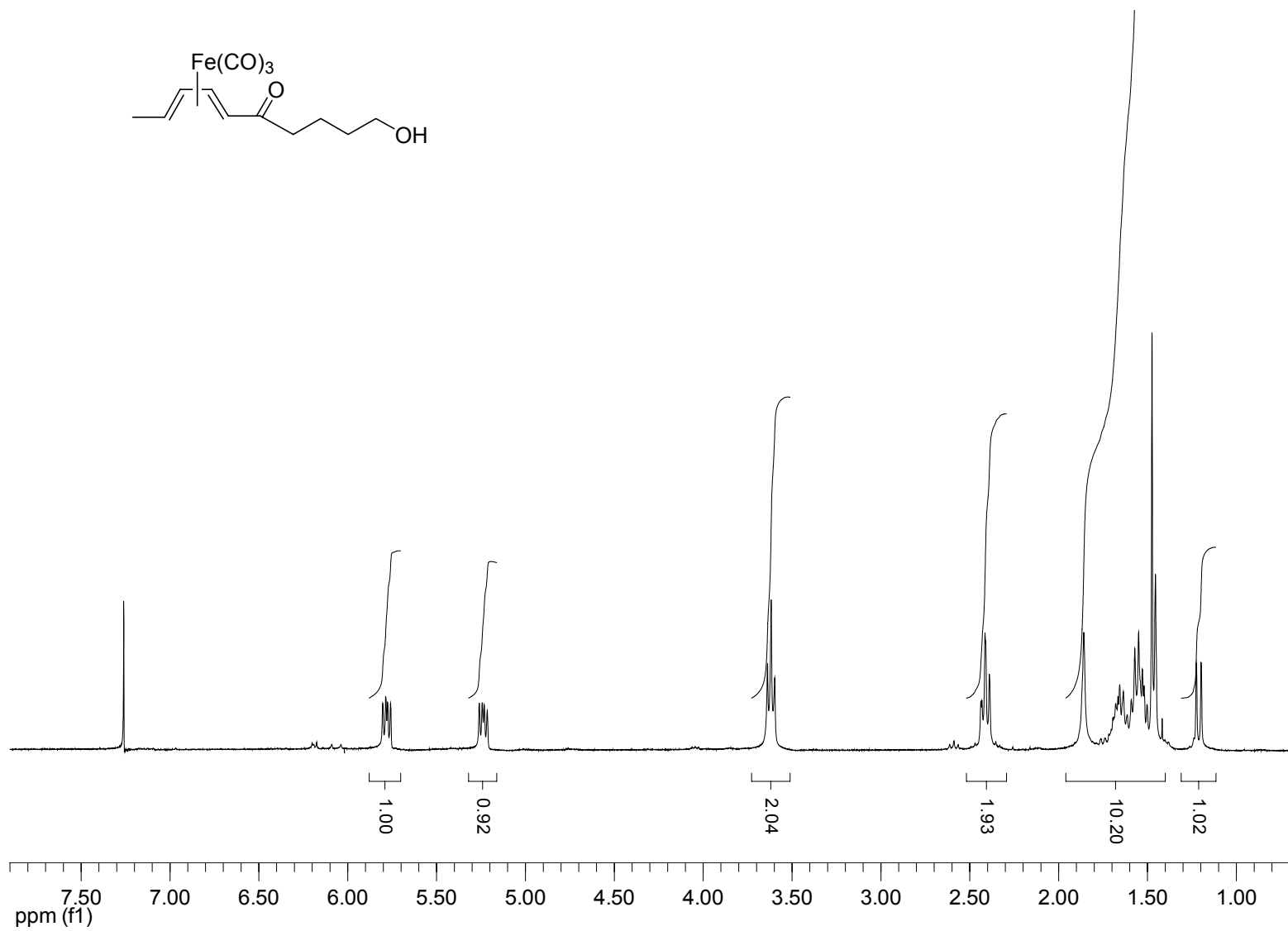
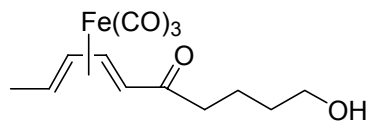
25.37

21.32

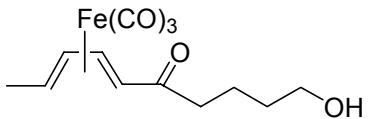
19.49

19.01





205,585



88,673

81,296

62,216

59,342

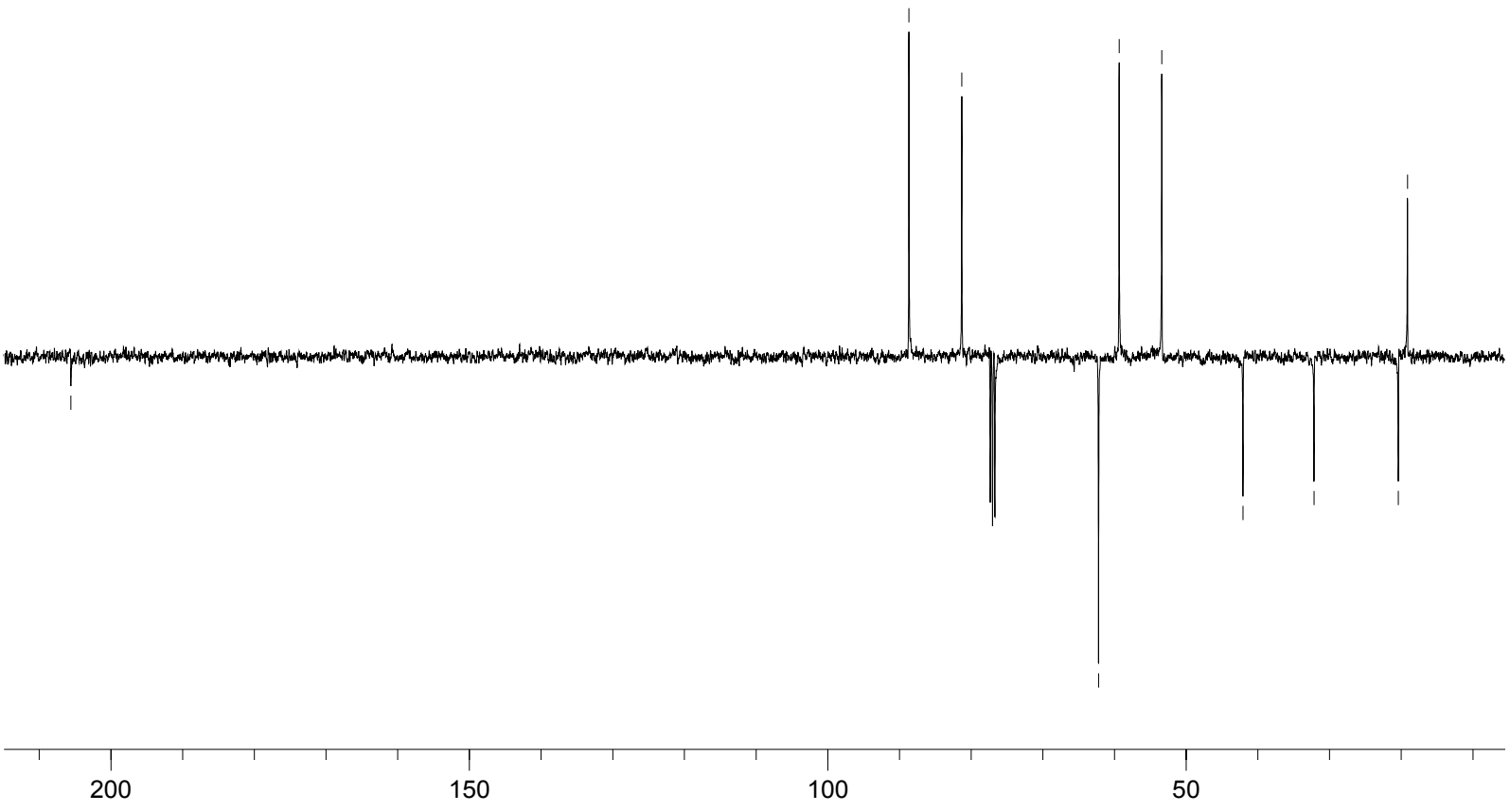
53,392

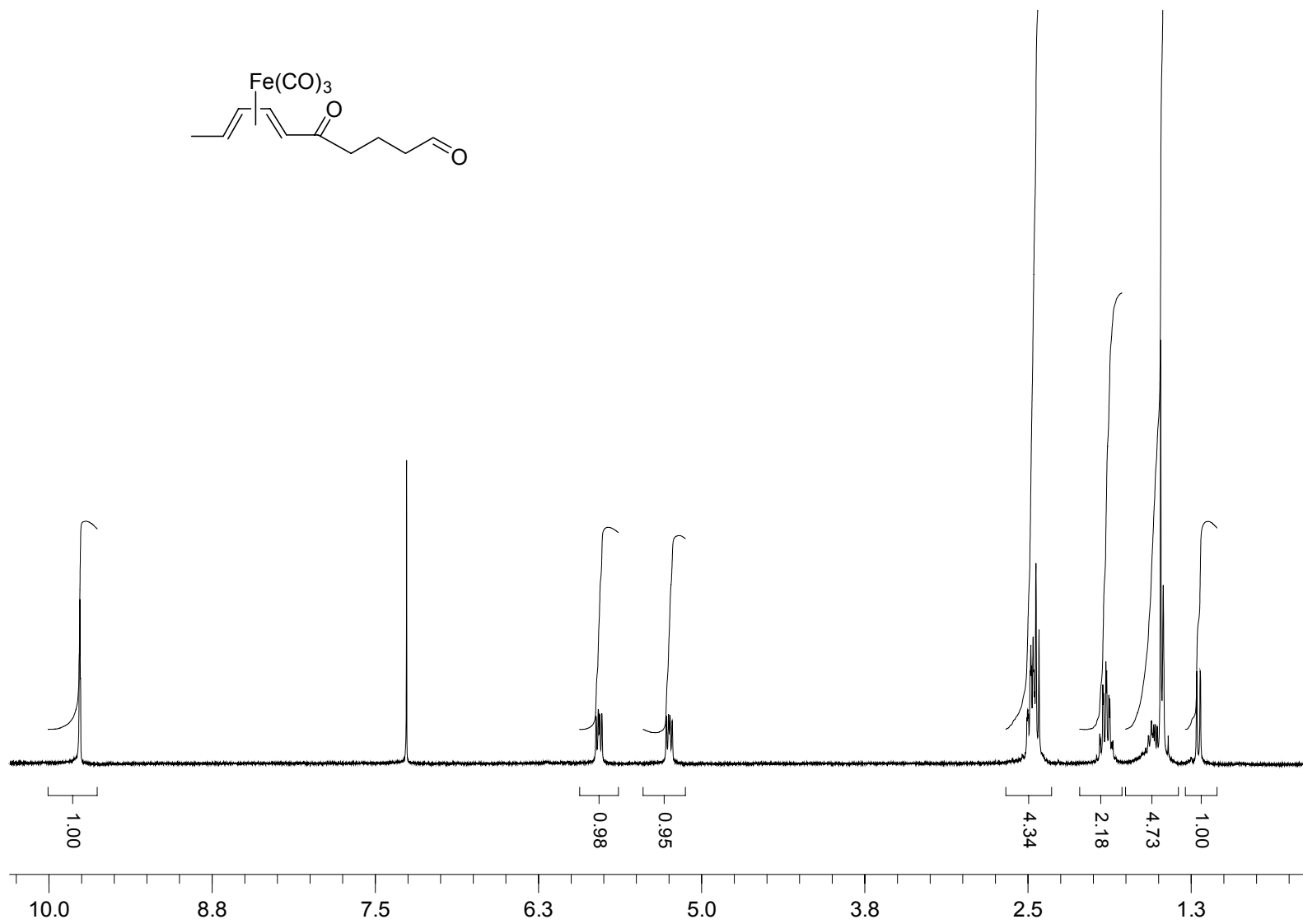
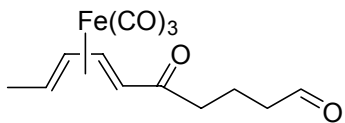
42,065

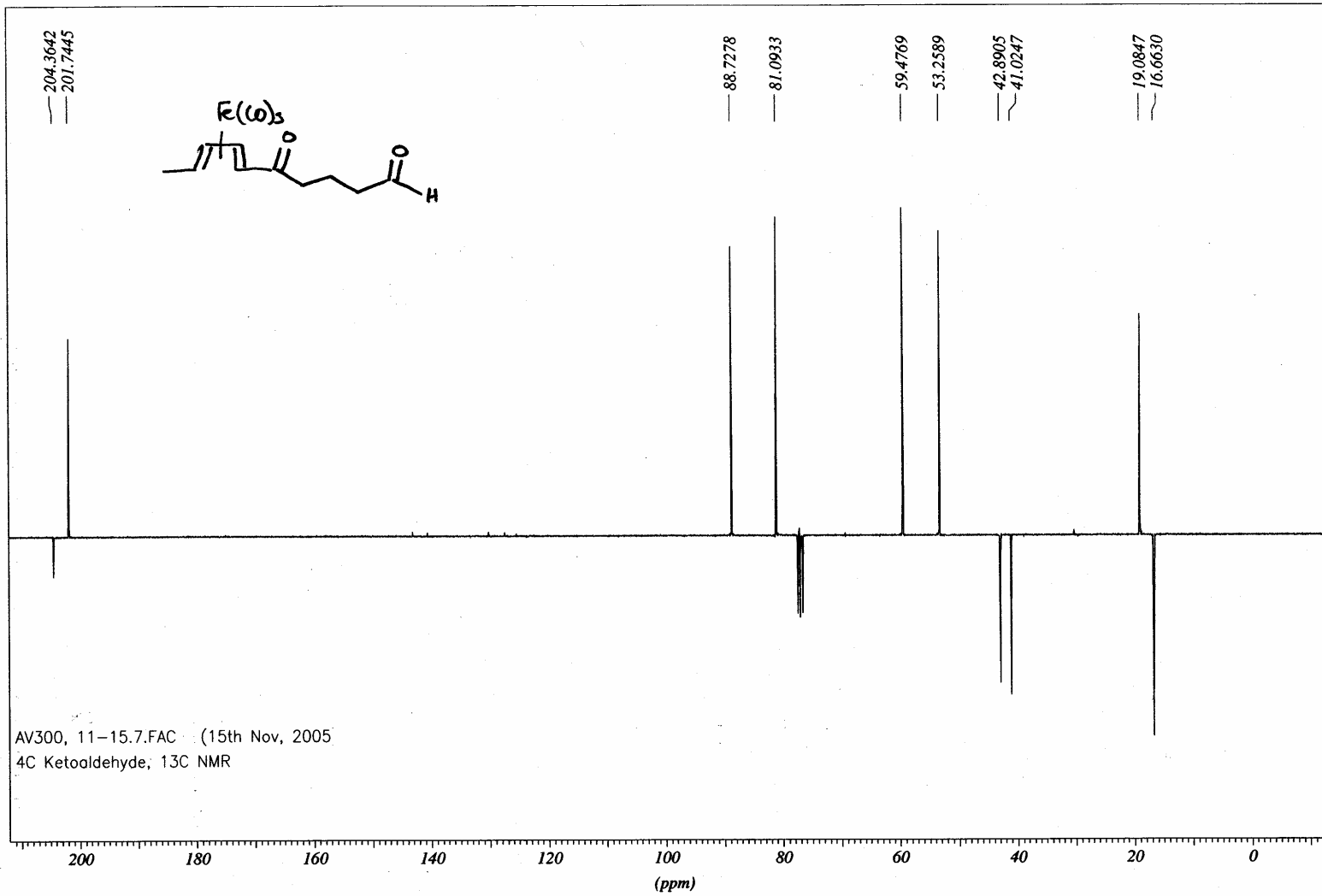
32,157

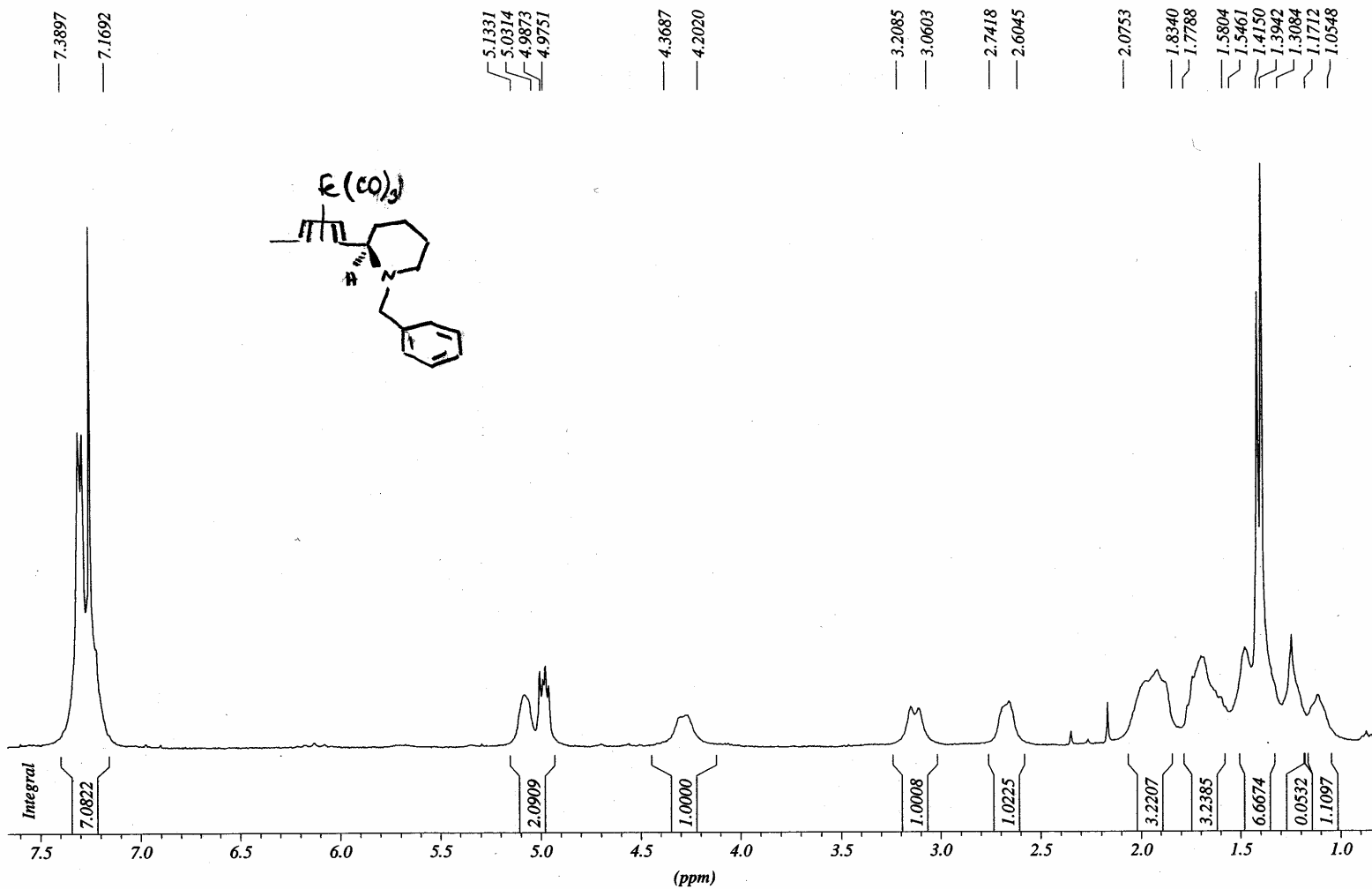
20,394

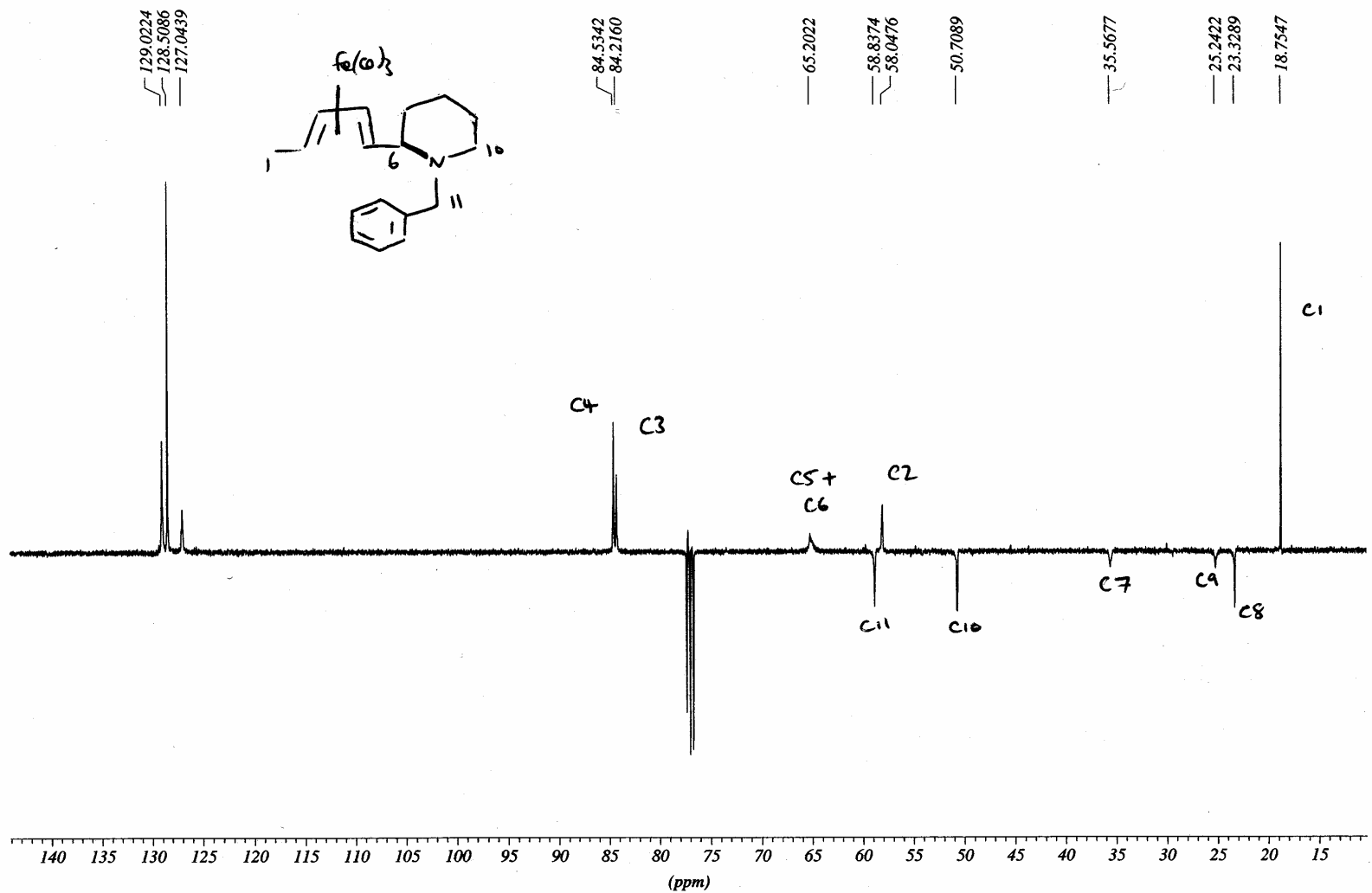
19,122

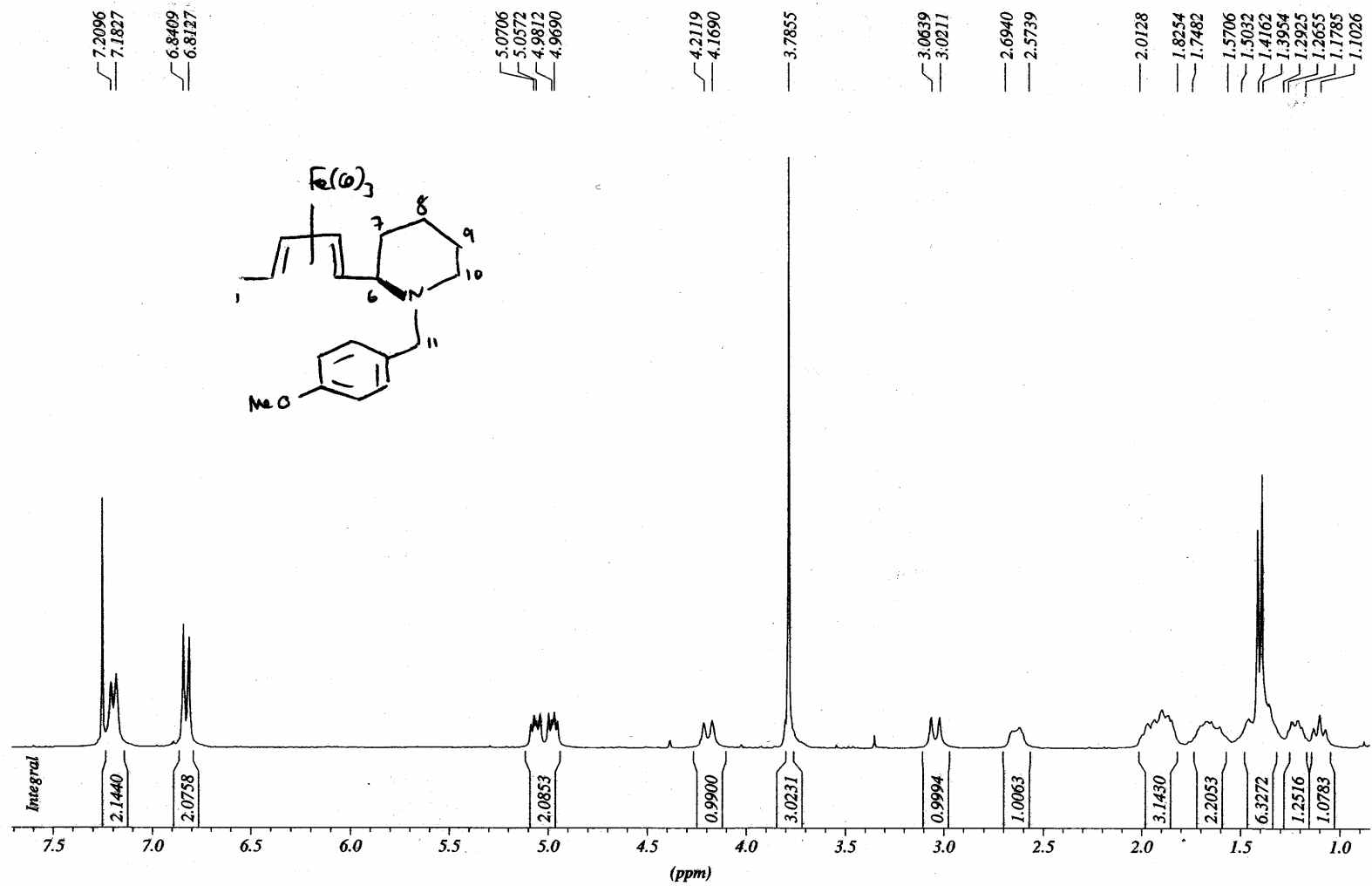




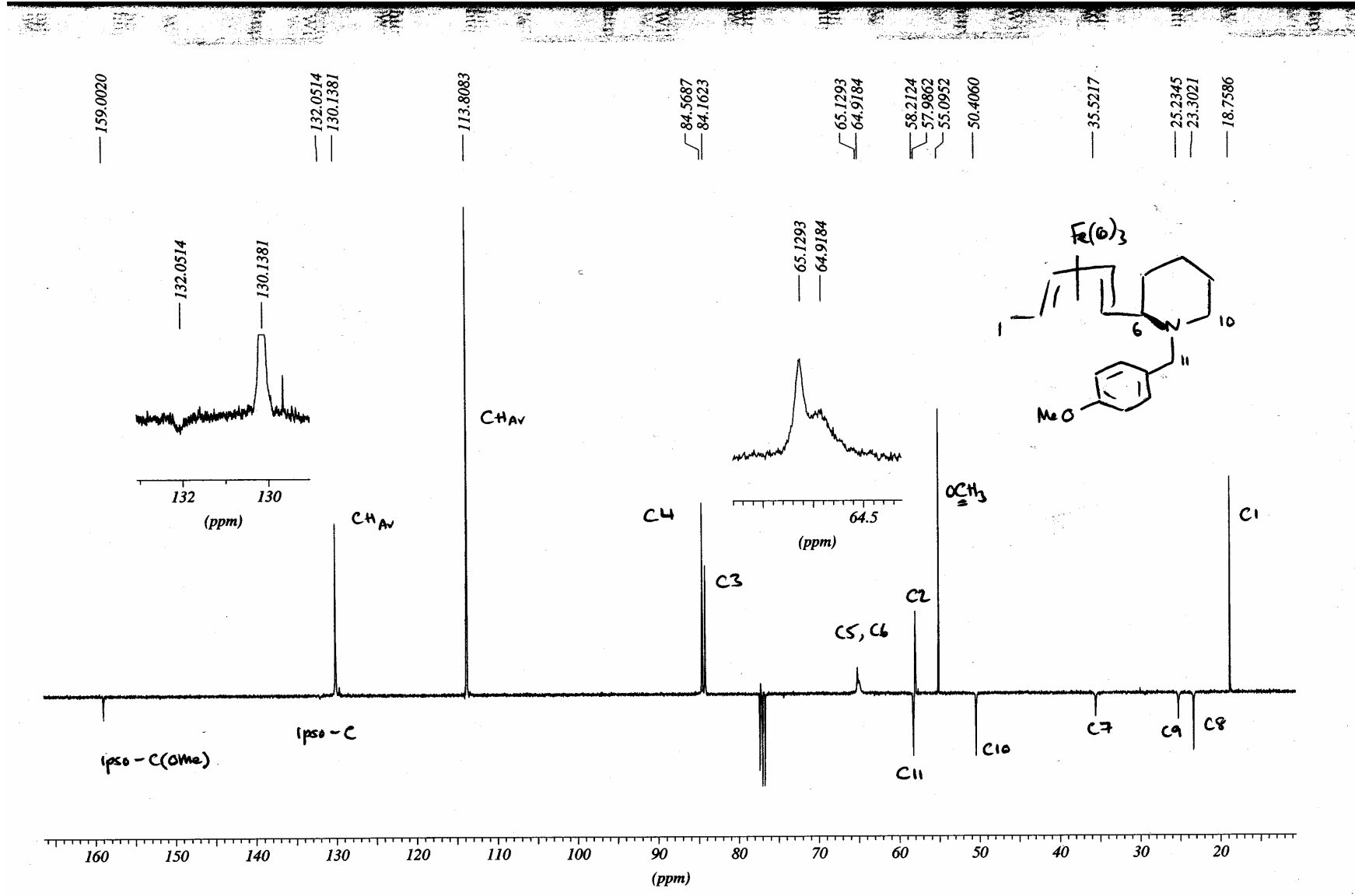












5.0486  
5.0351  
4.9690  
4.9567

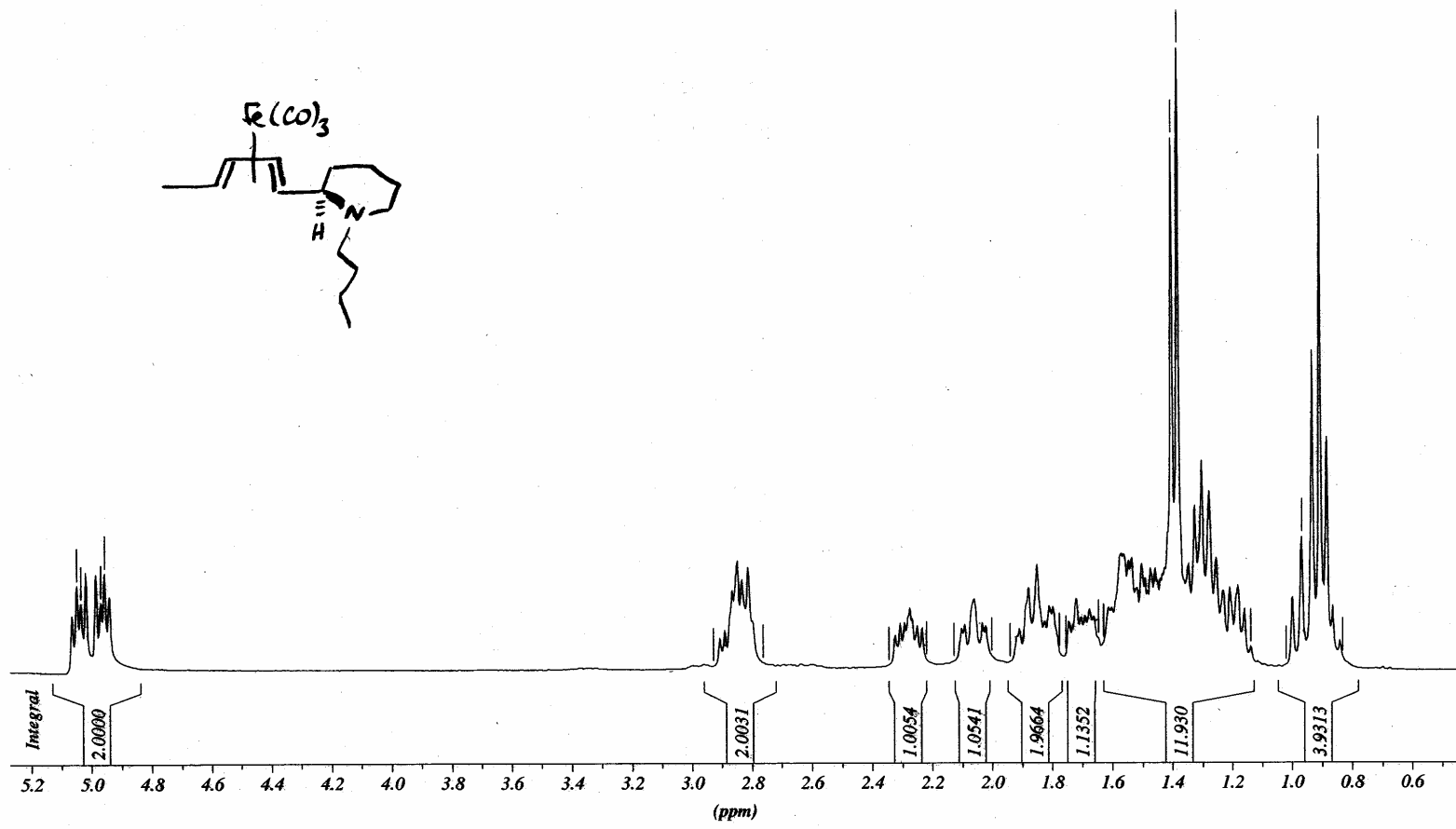
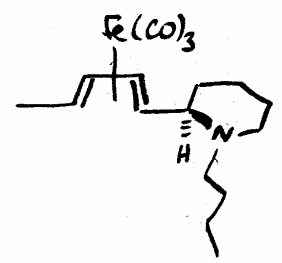
2.9280  
2.7626

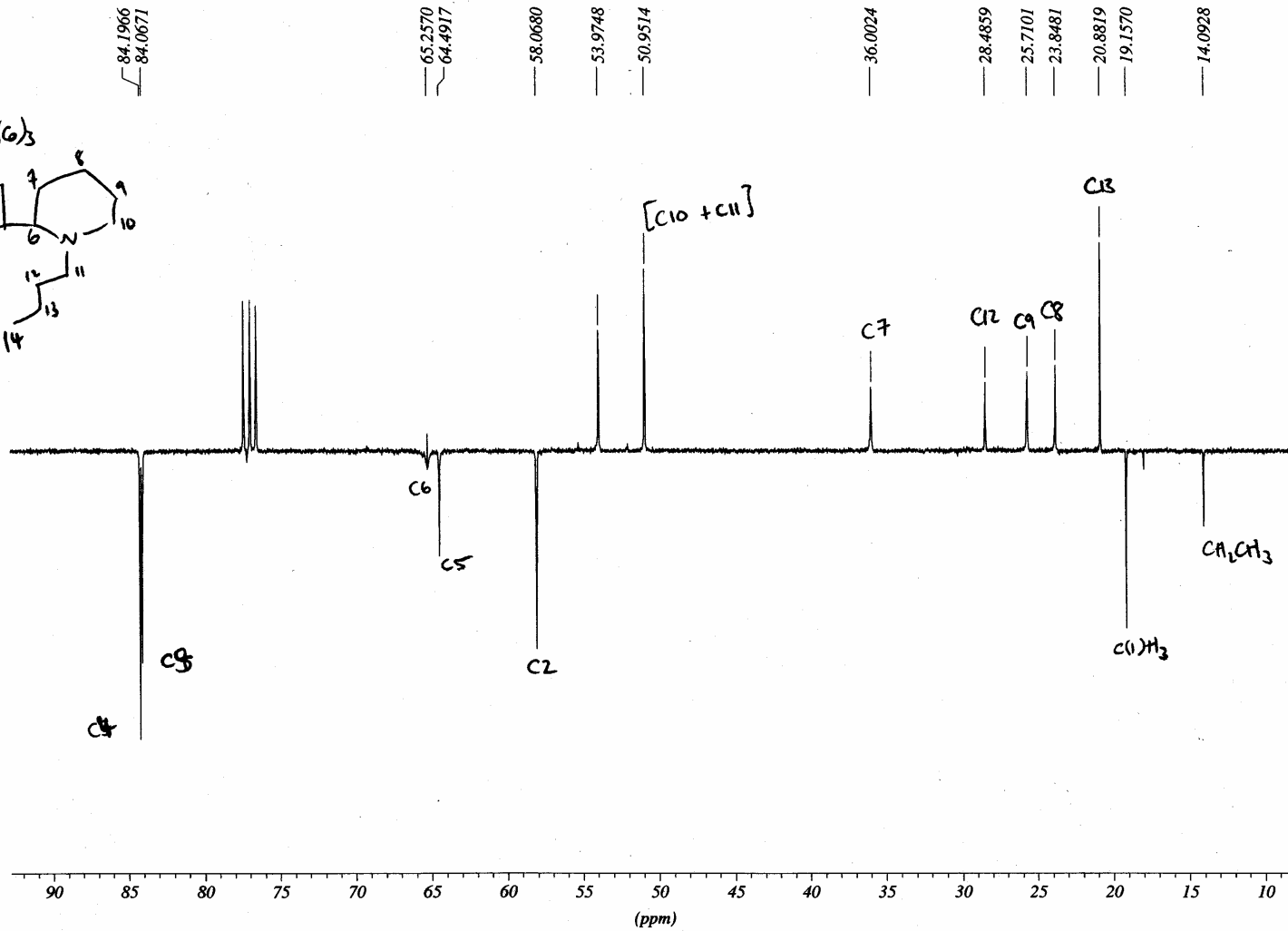
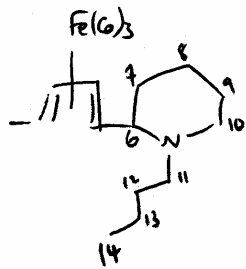
2.3460  
2.2186  
2.1268  
2.0006  
1.9393

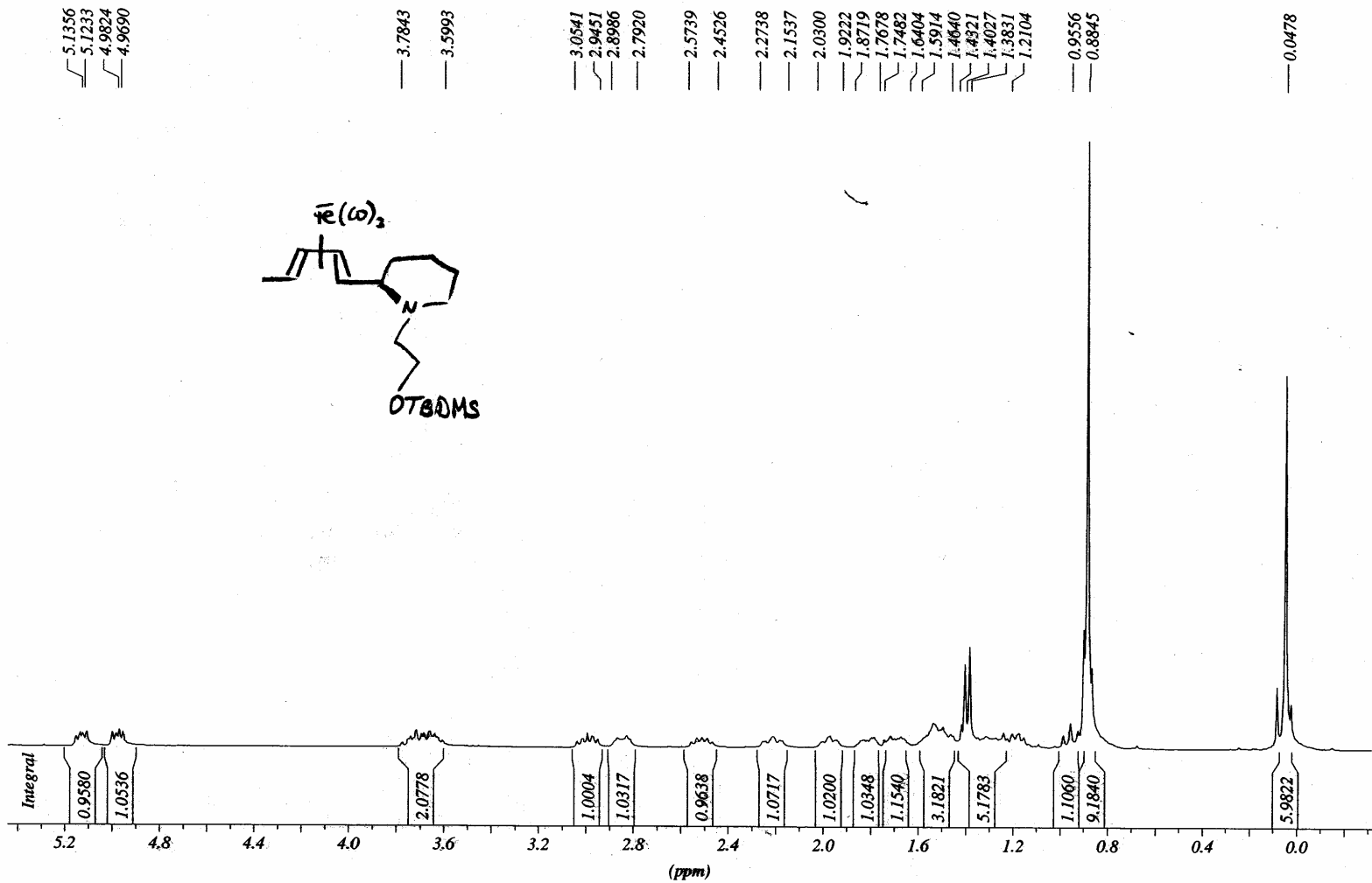
1.7752  
1.7543  
1.6465  
1.6281

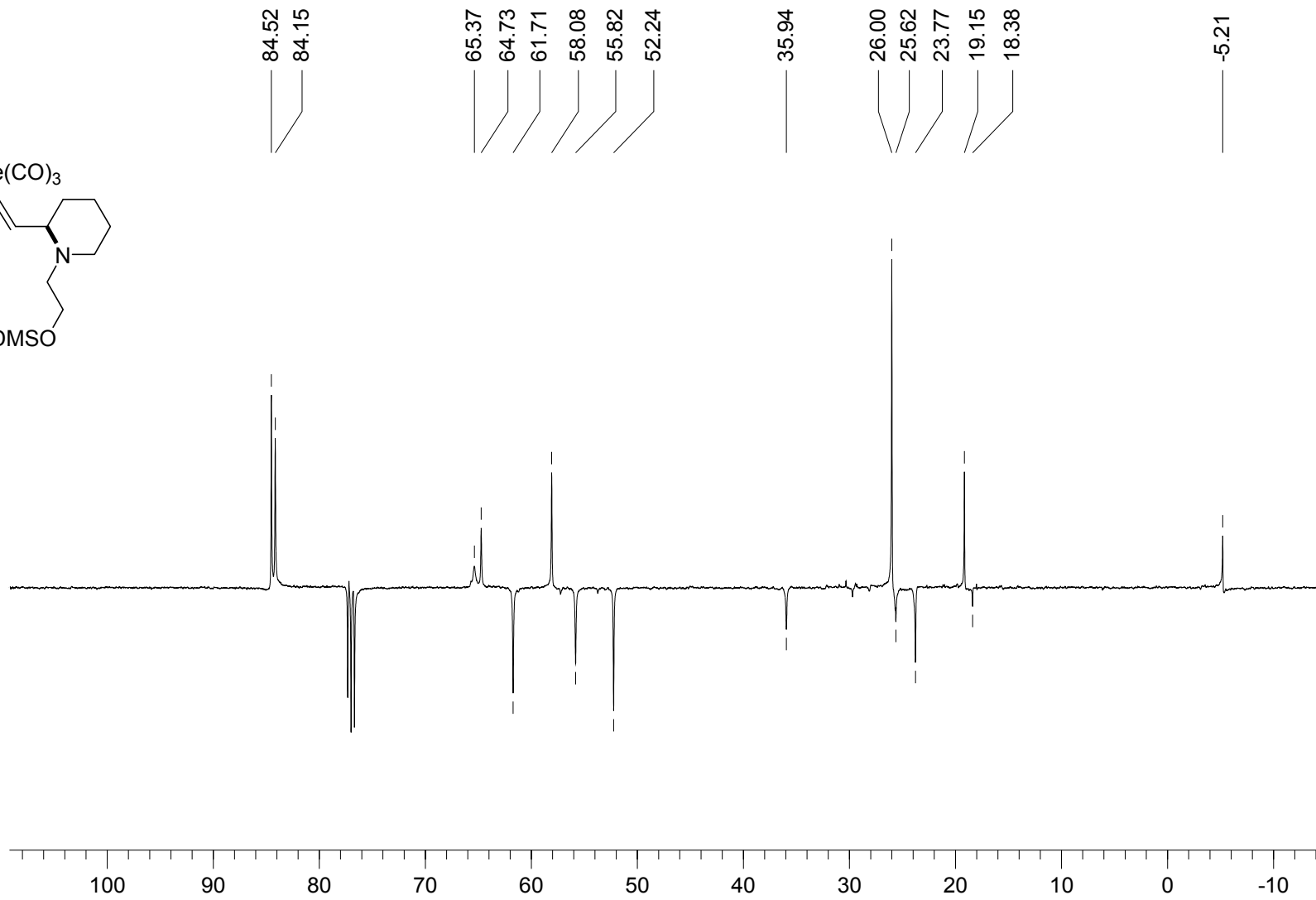
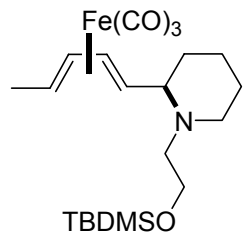
1.4027  
1.3819

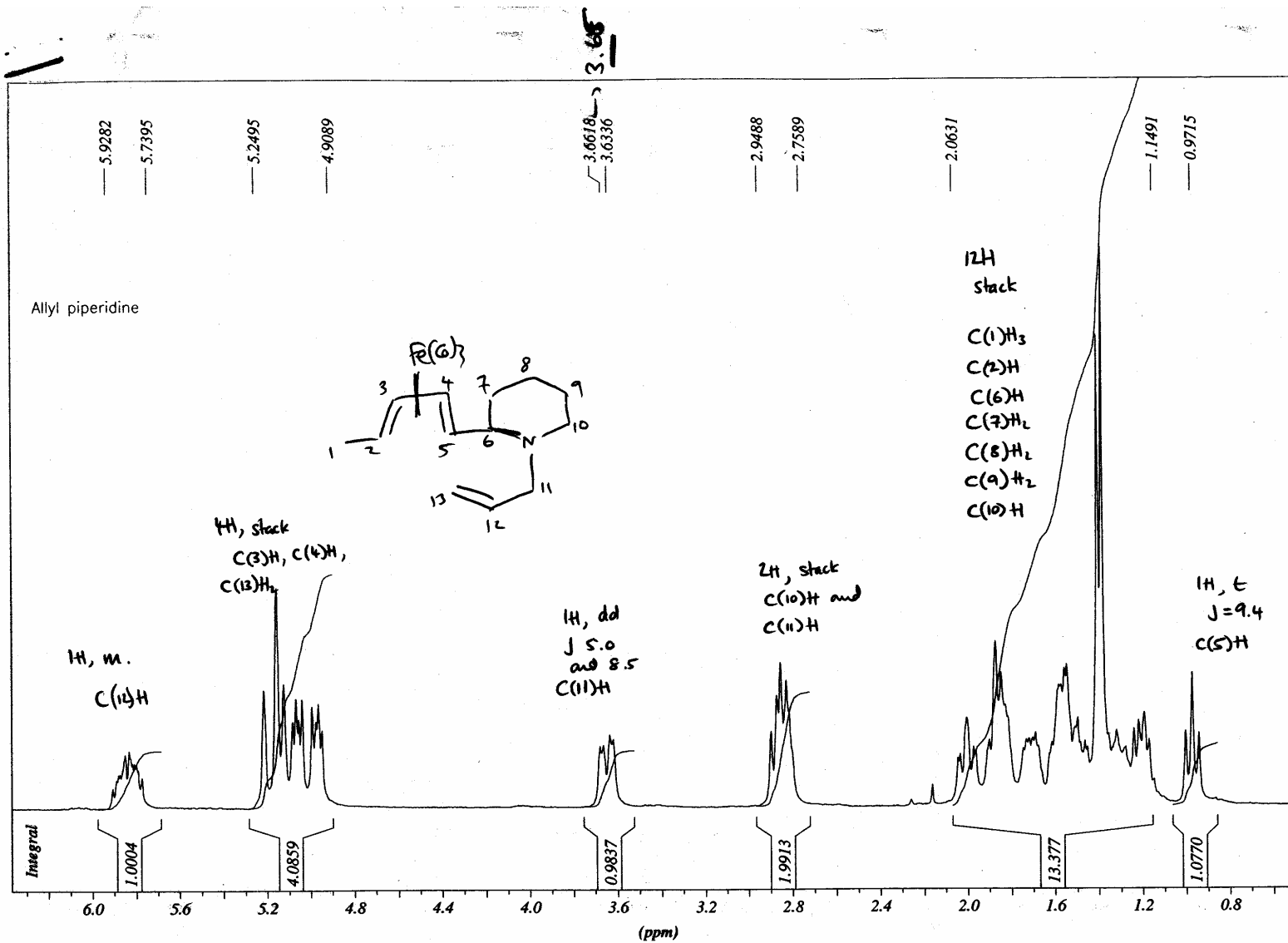
1.1393  
1.0193  
0.9678  
0.8318



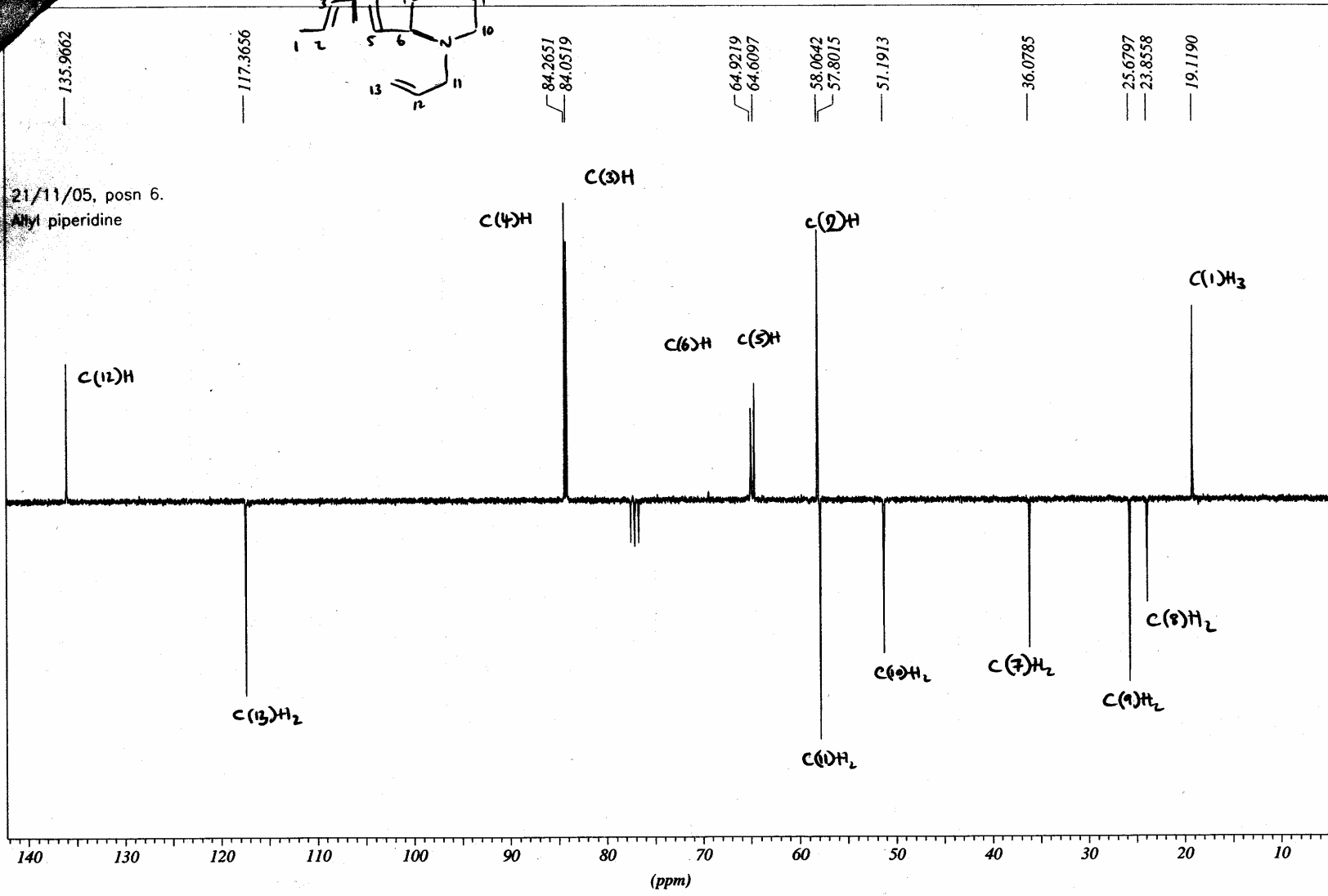
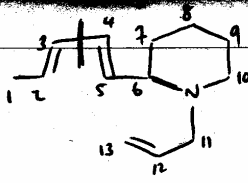


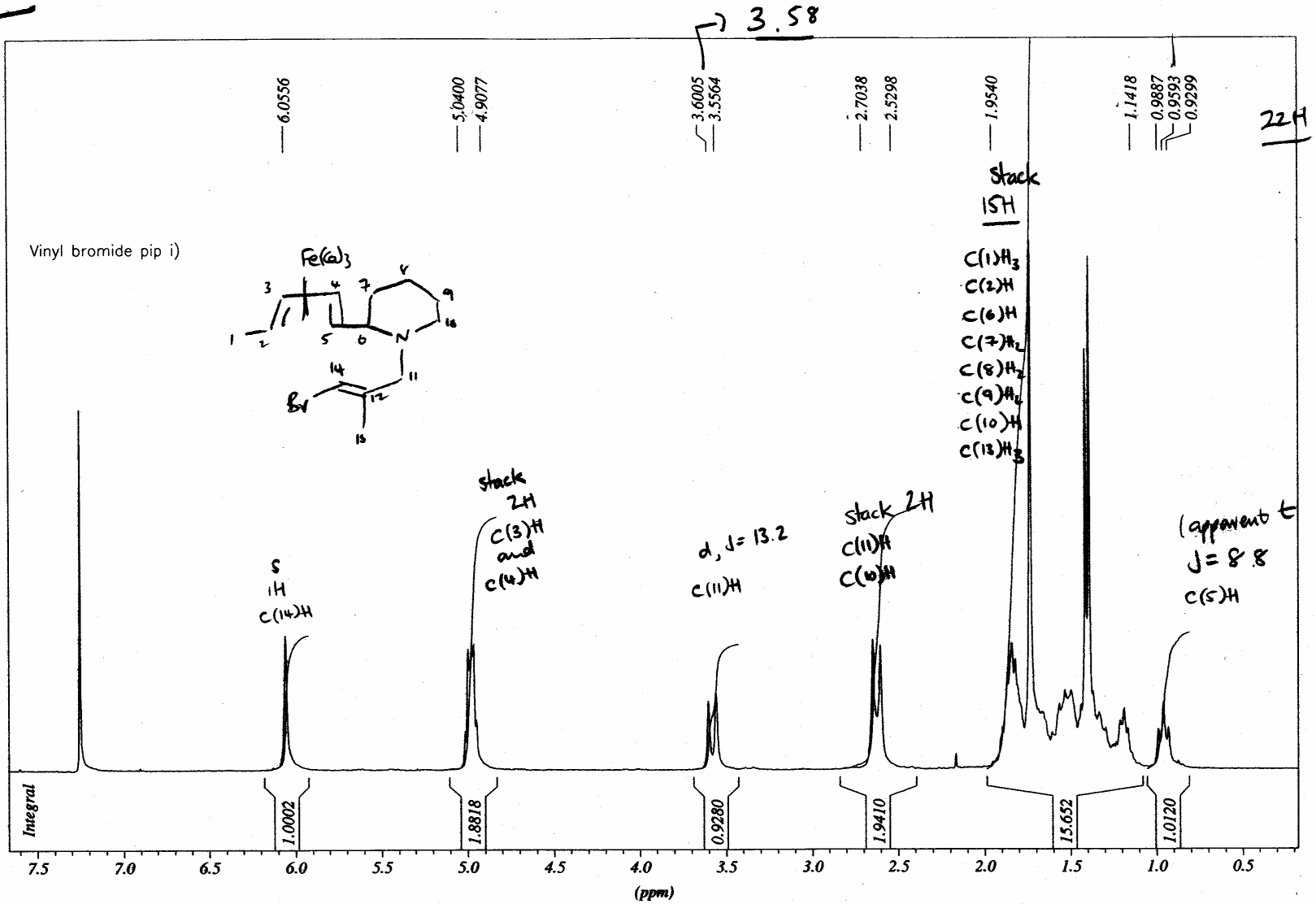




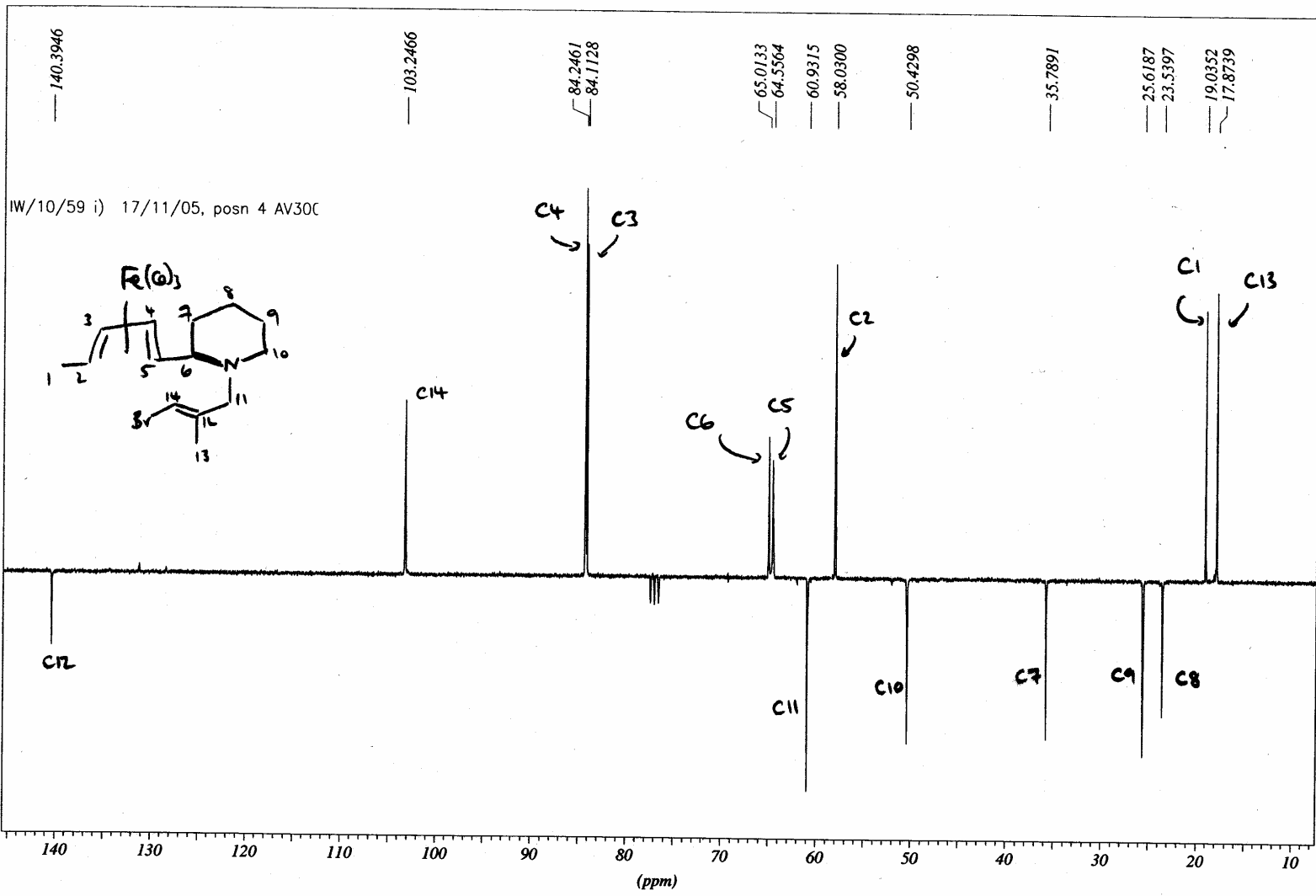


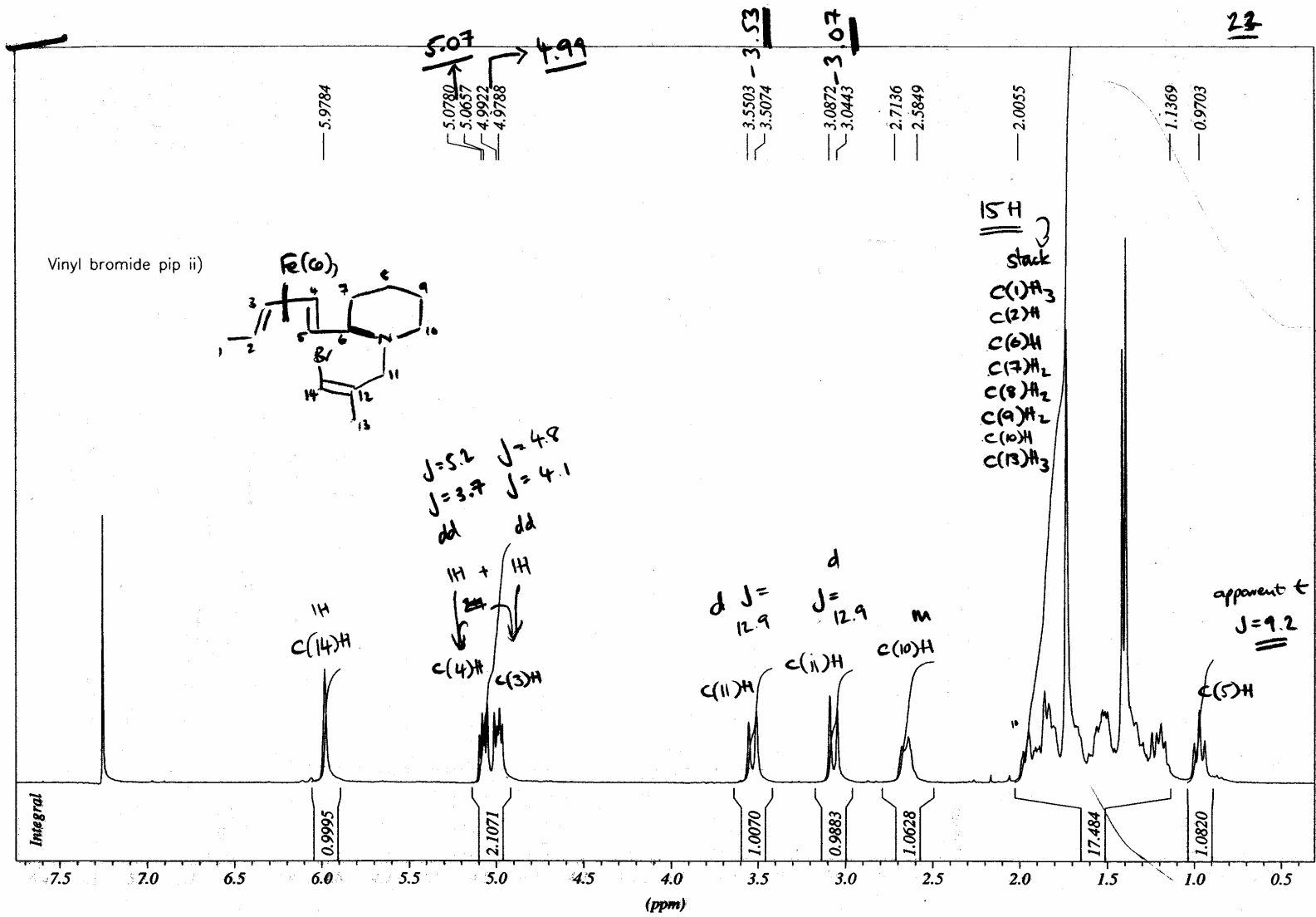
21/11/05, posn 6.  
Allyl piperidine



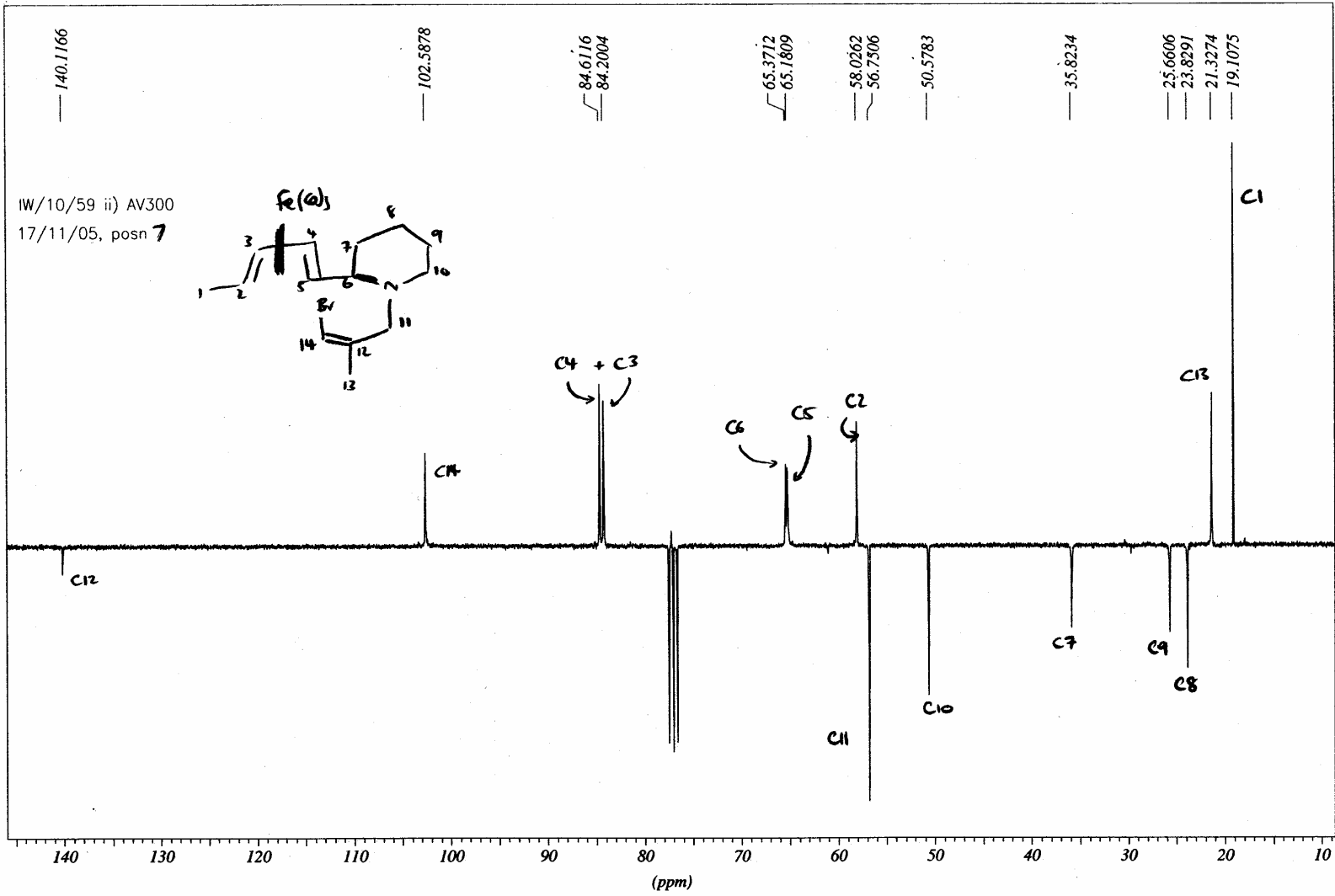


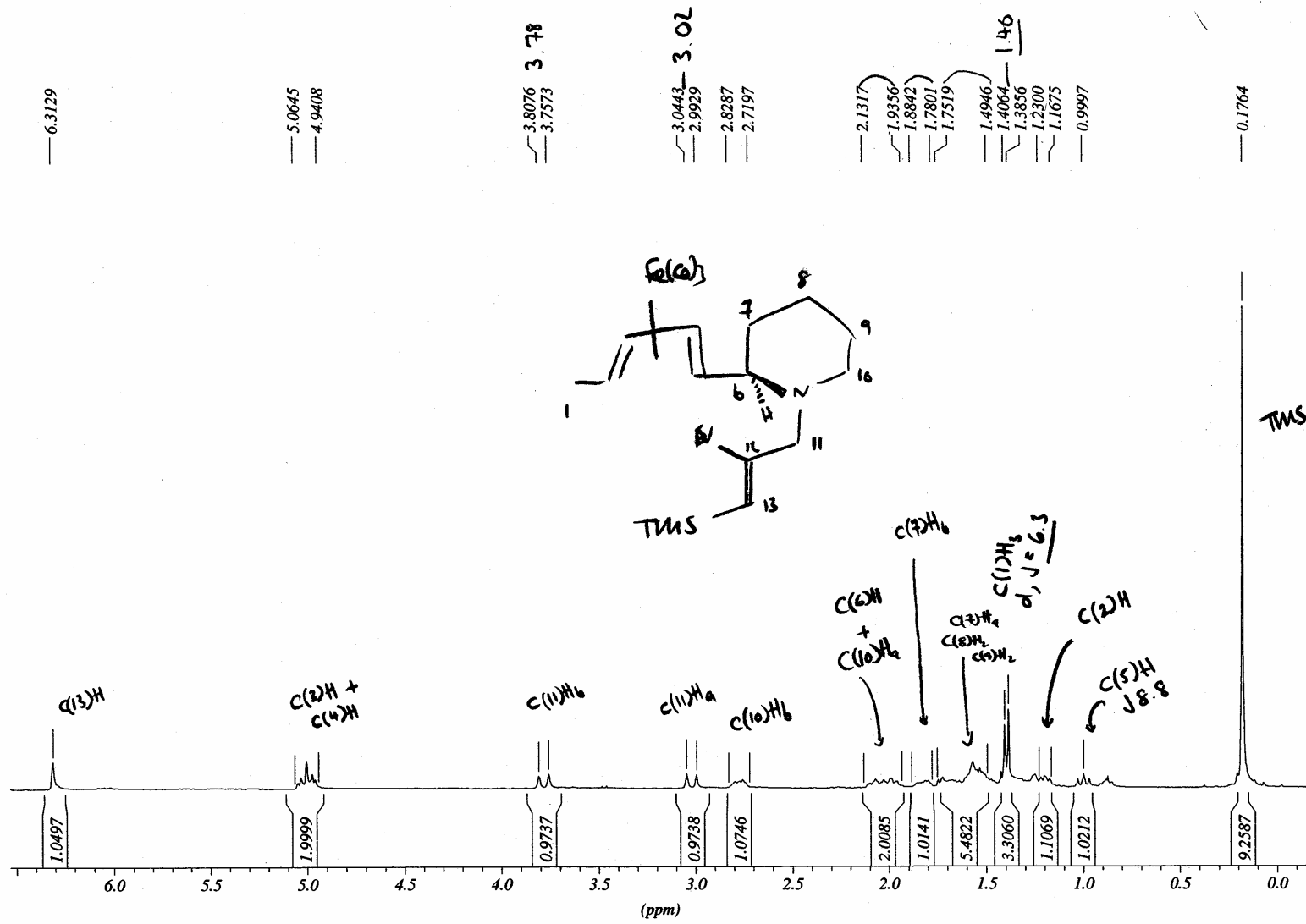


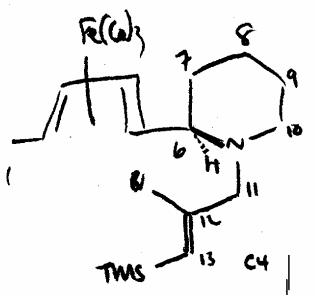
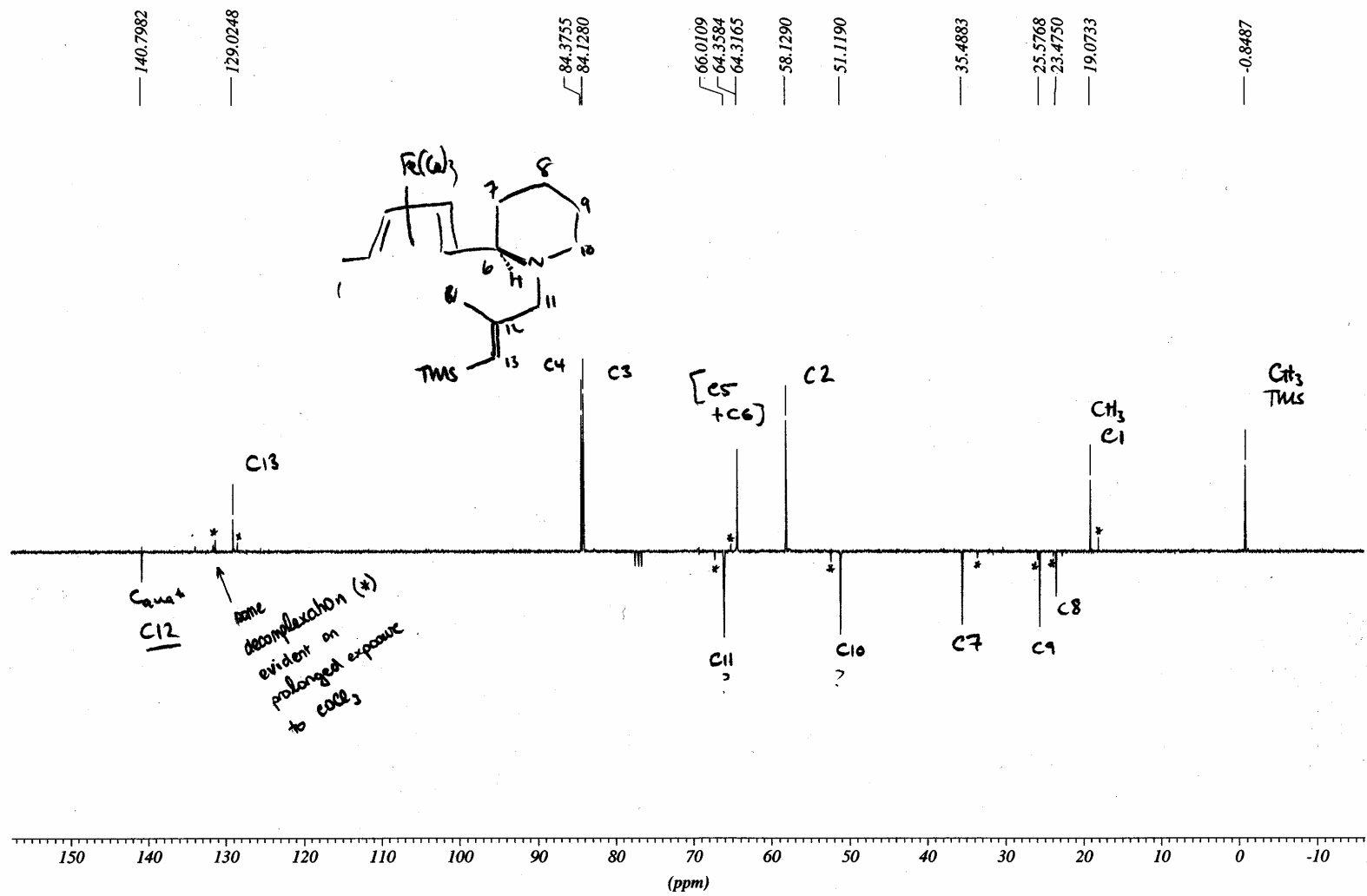




FROM 2D NMR WORK

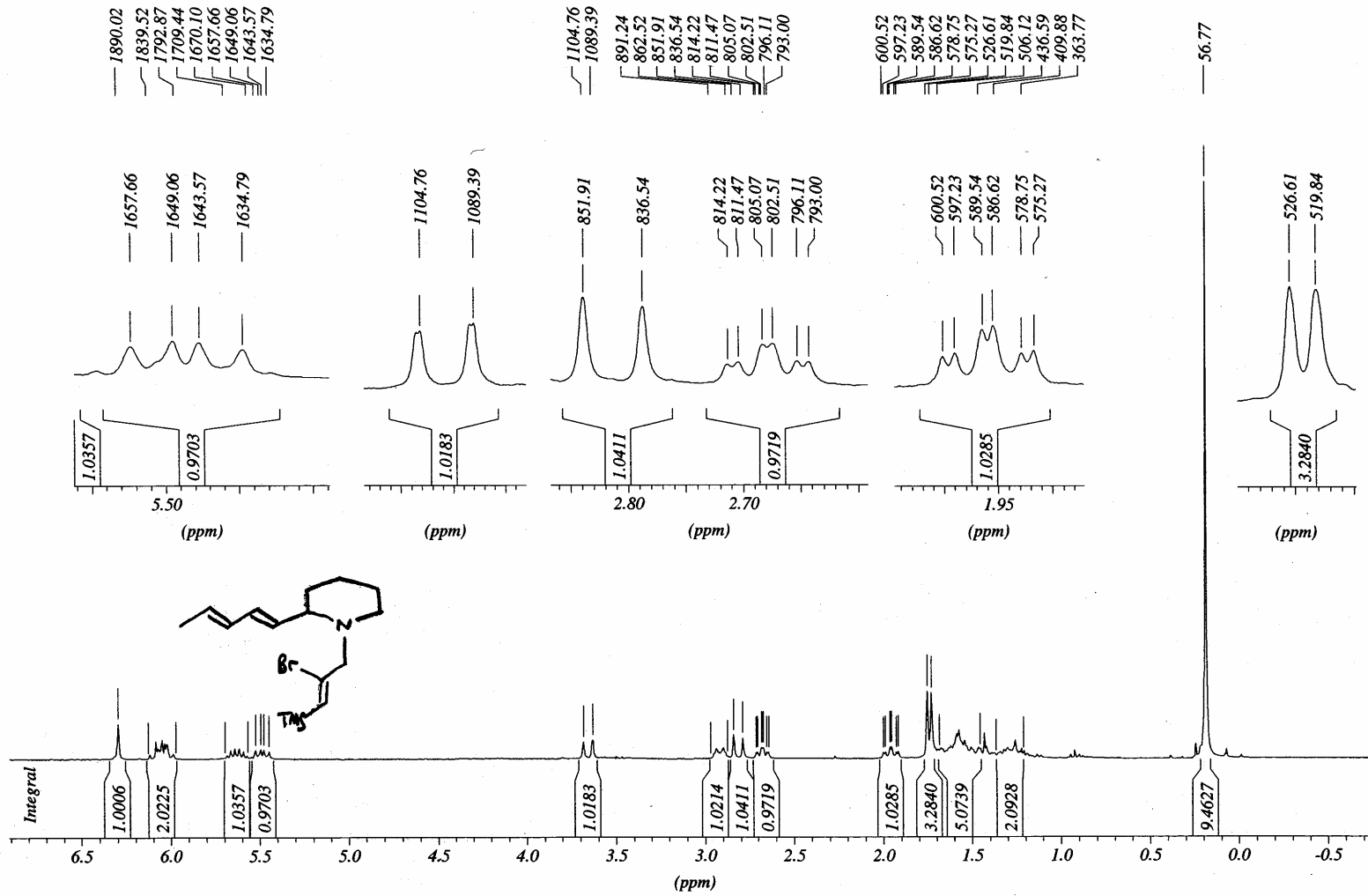


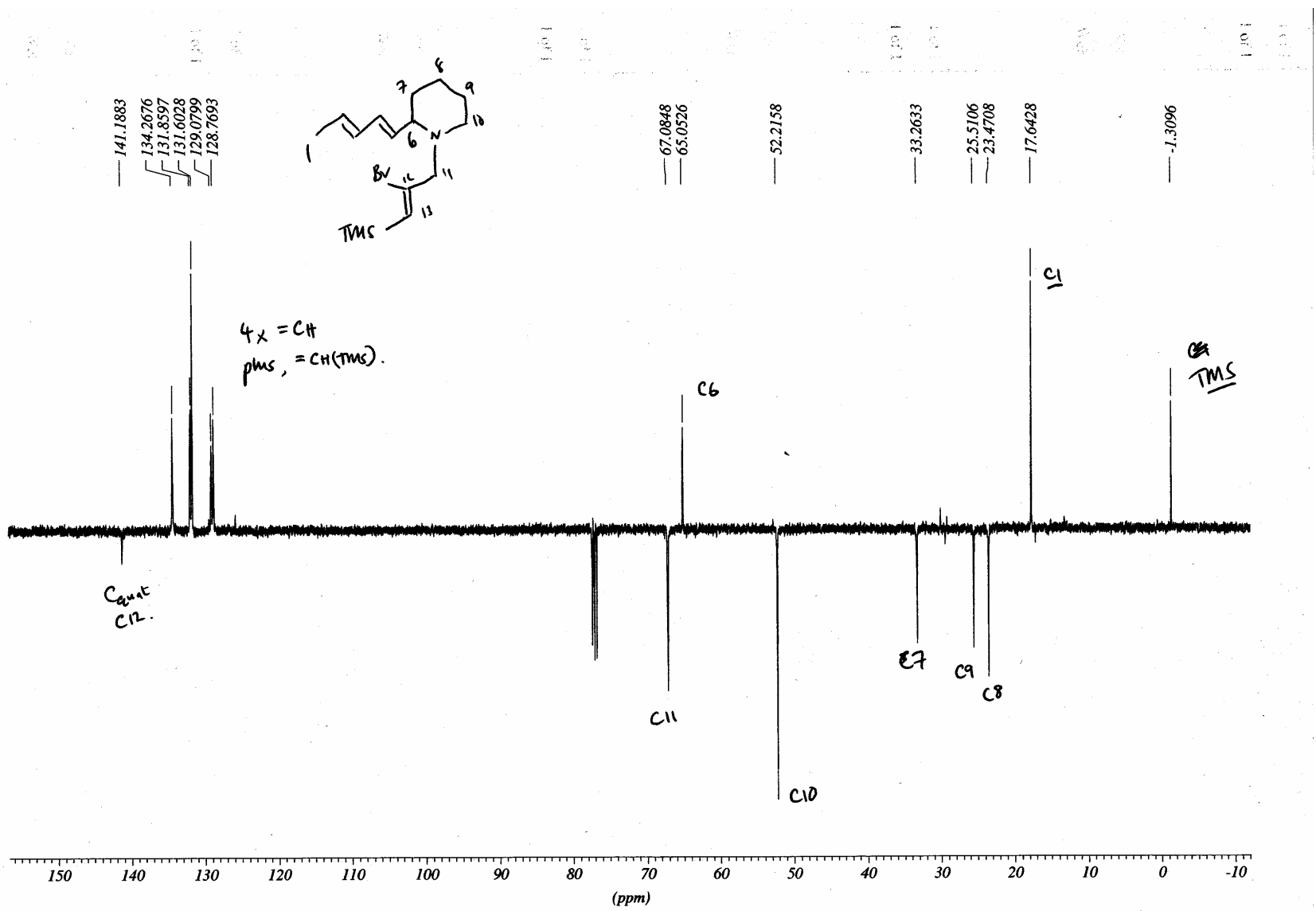


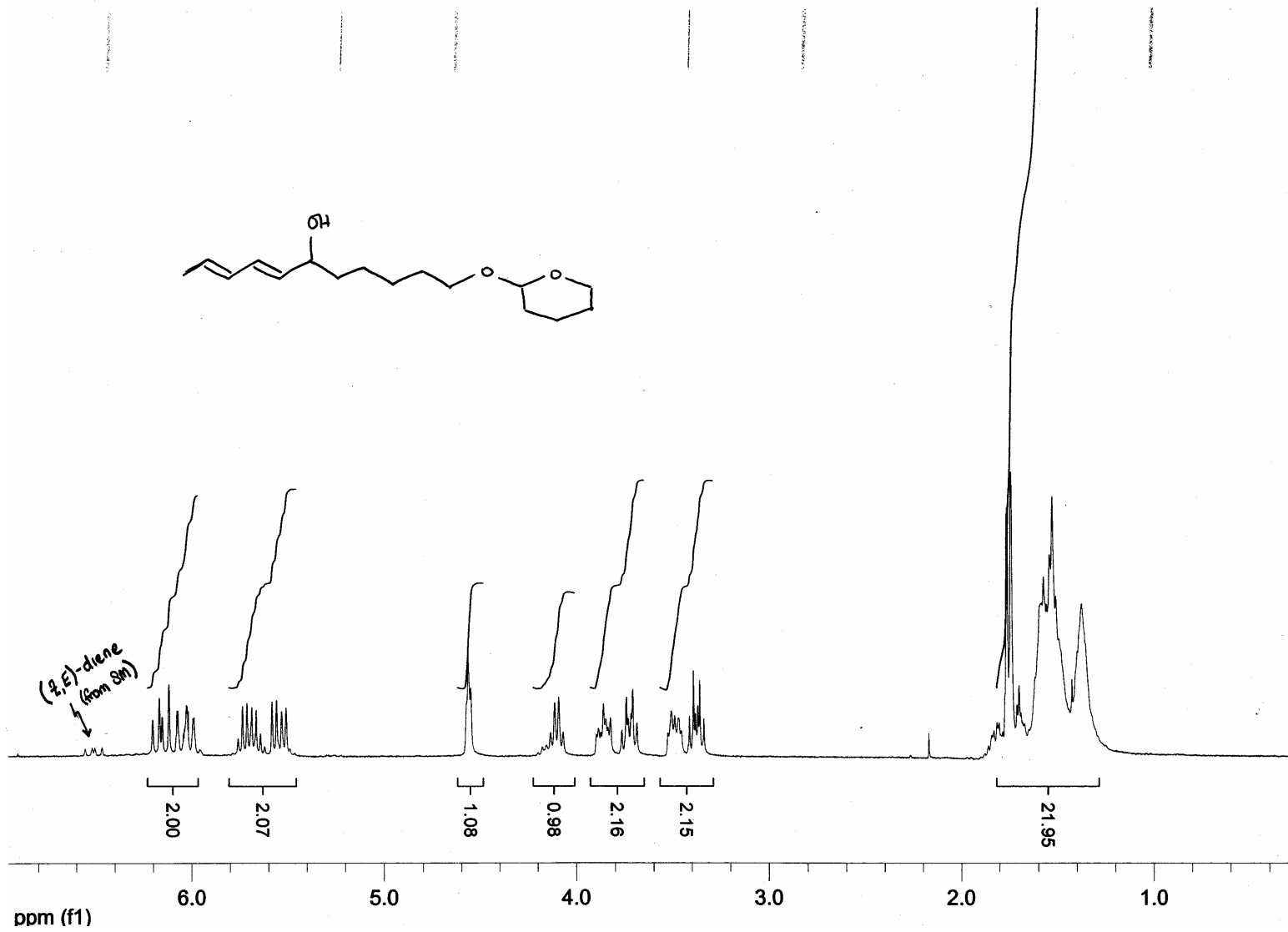


C12  
 some decoupling (\*)  
 evident on  
 prolonged exposure  
 to C13

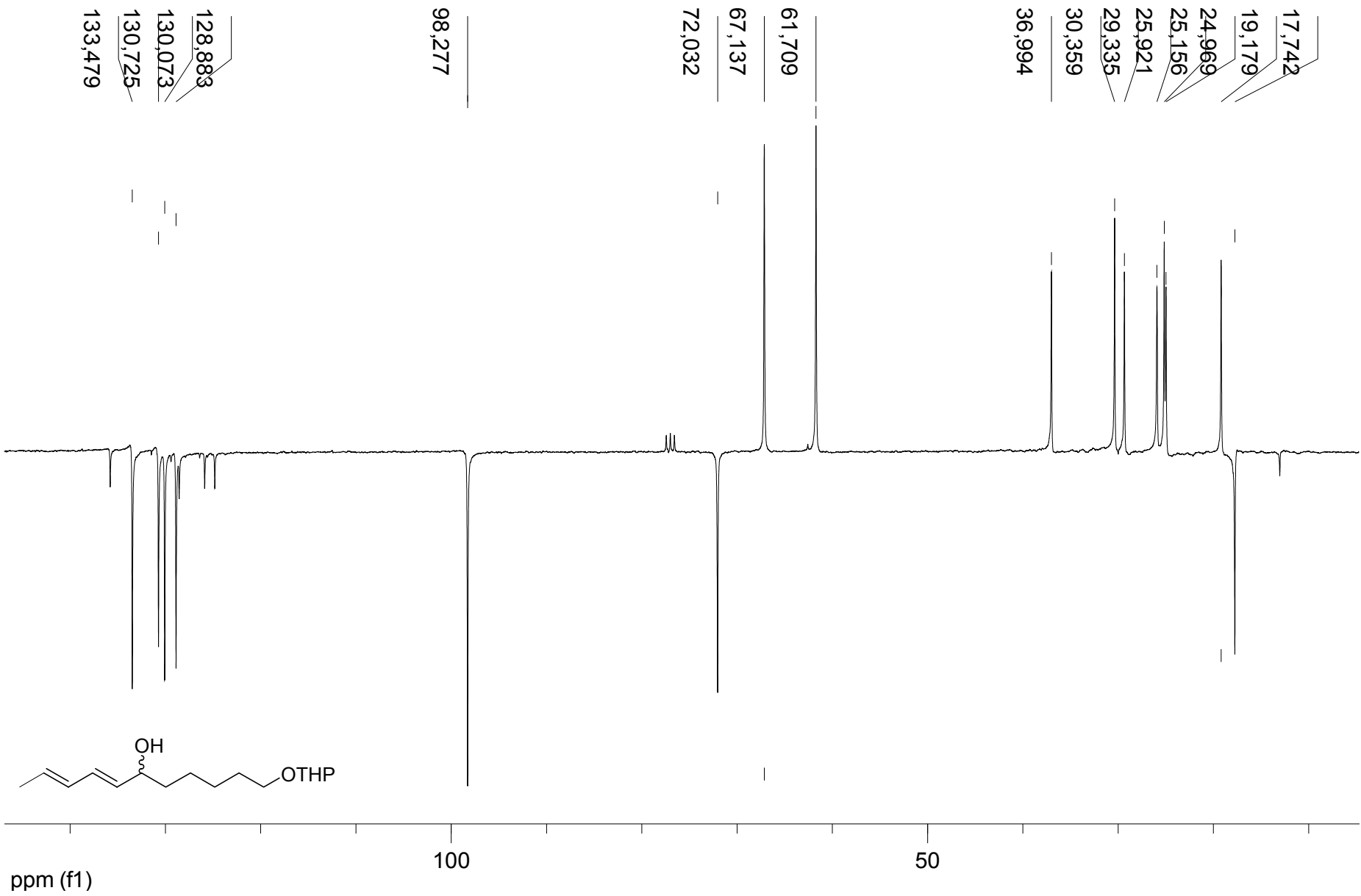
(ppm)

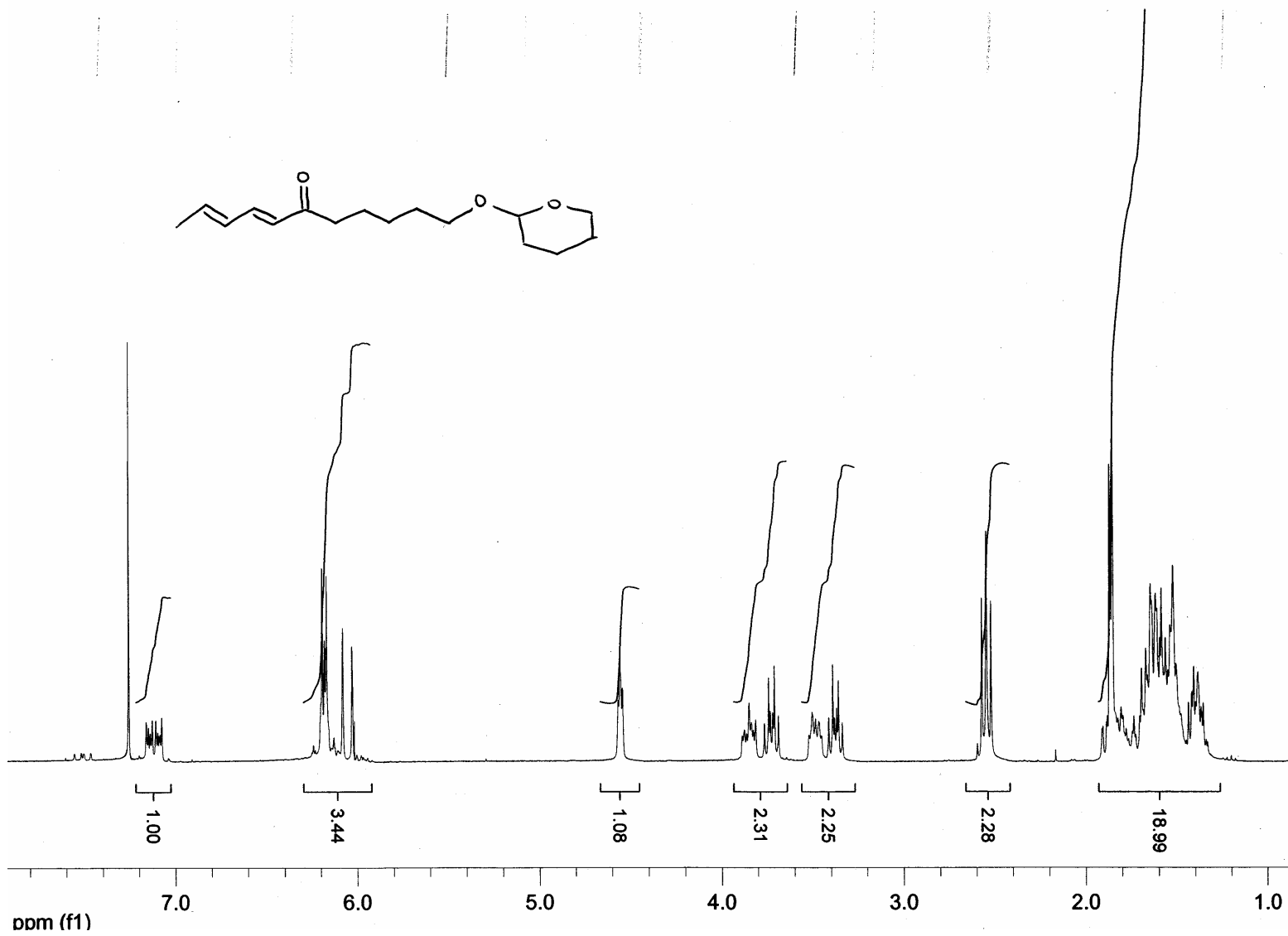
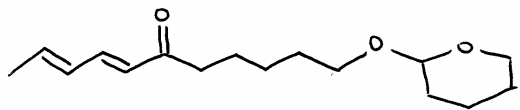


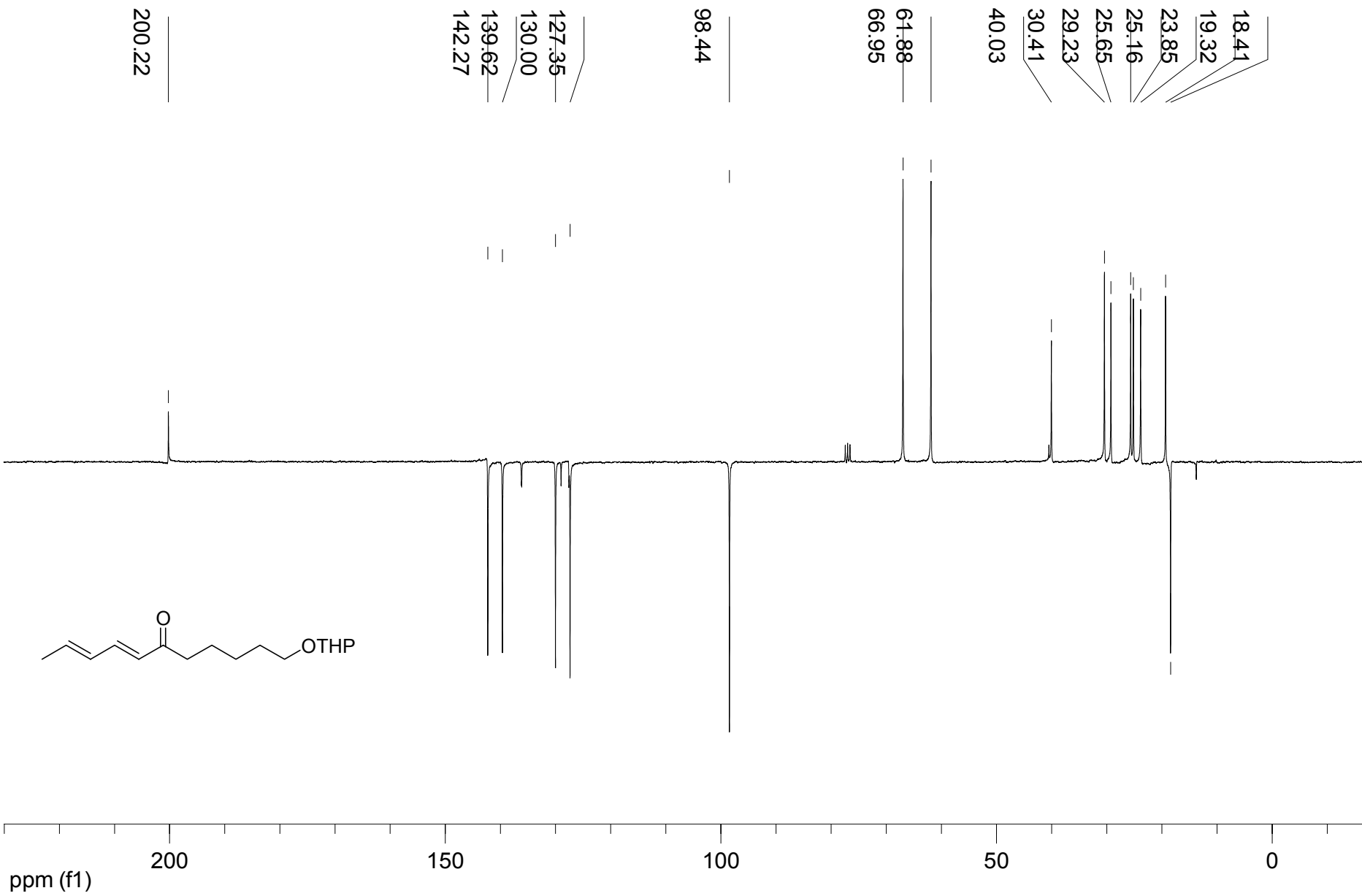


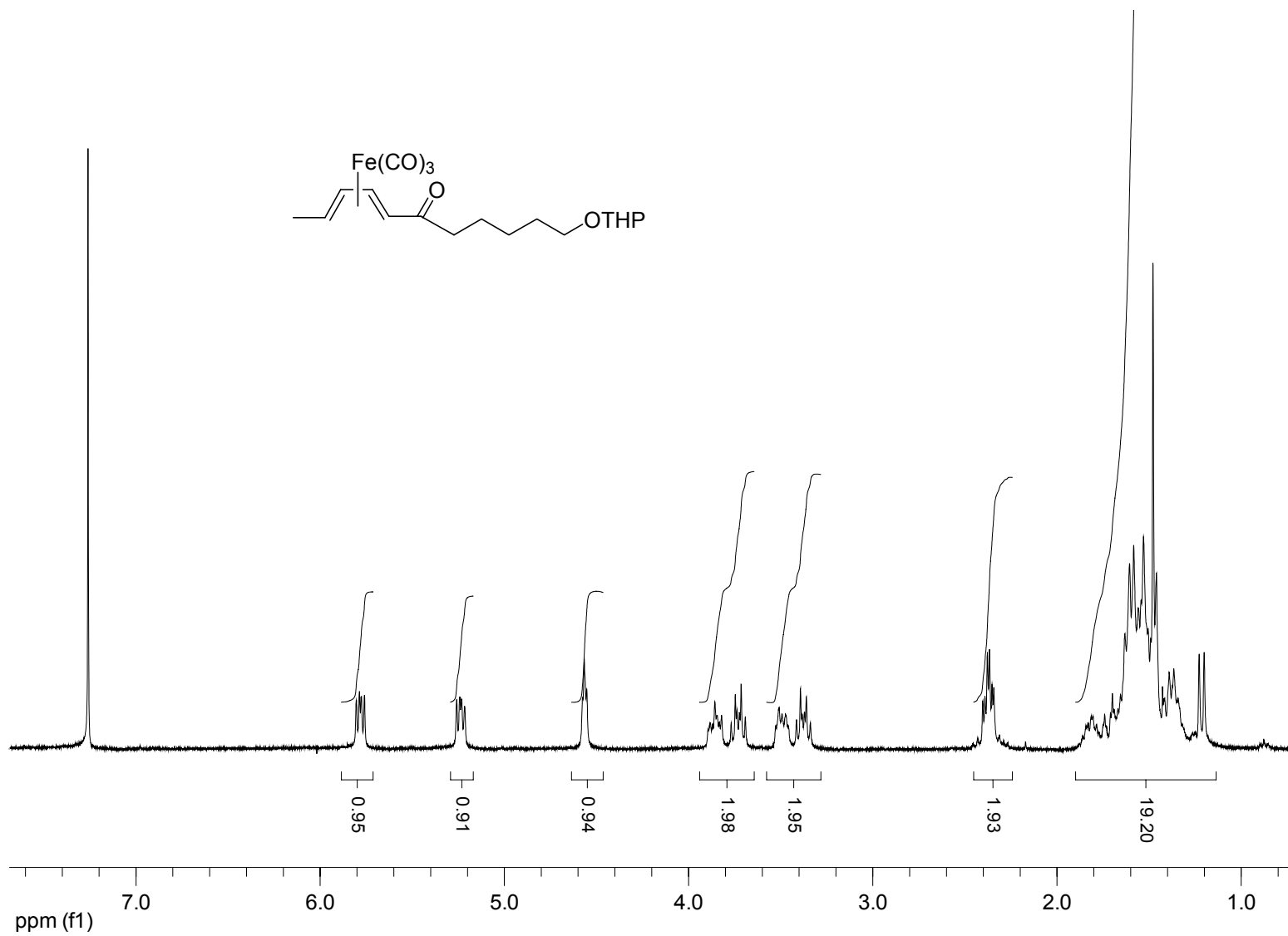
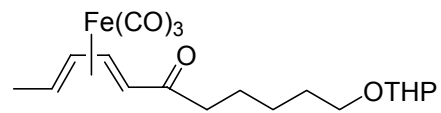


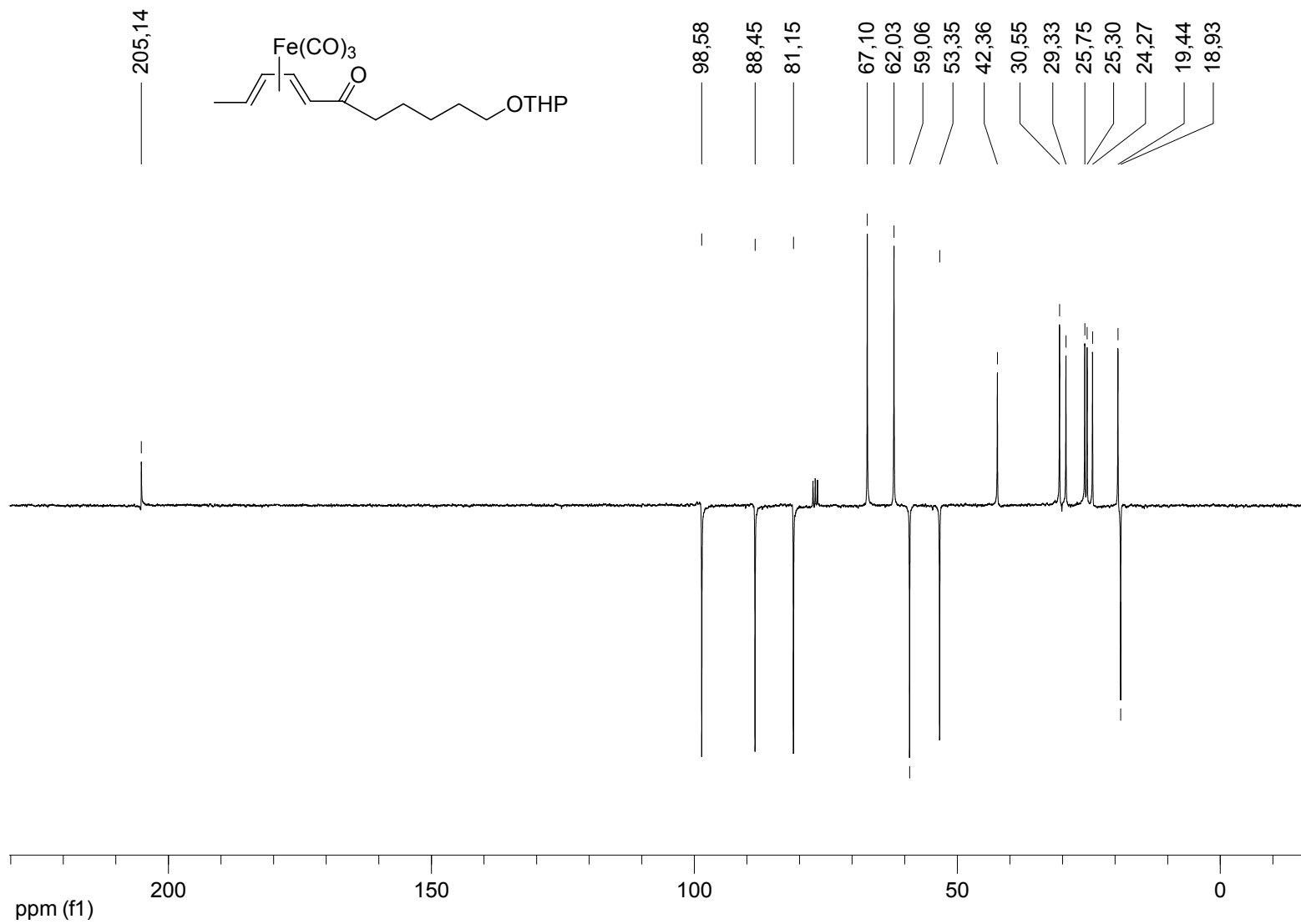


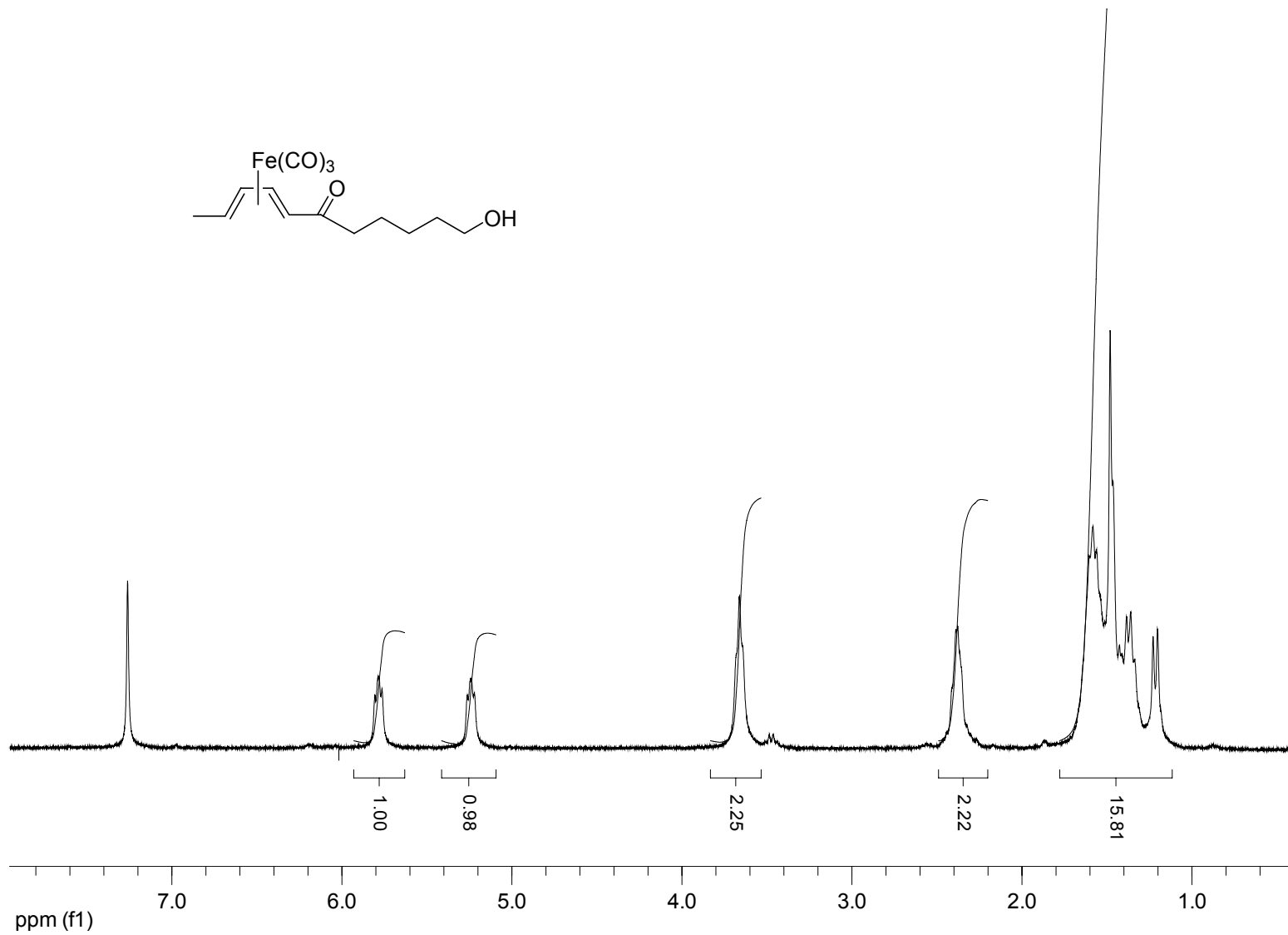
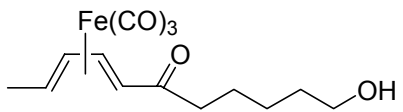


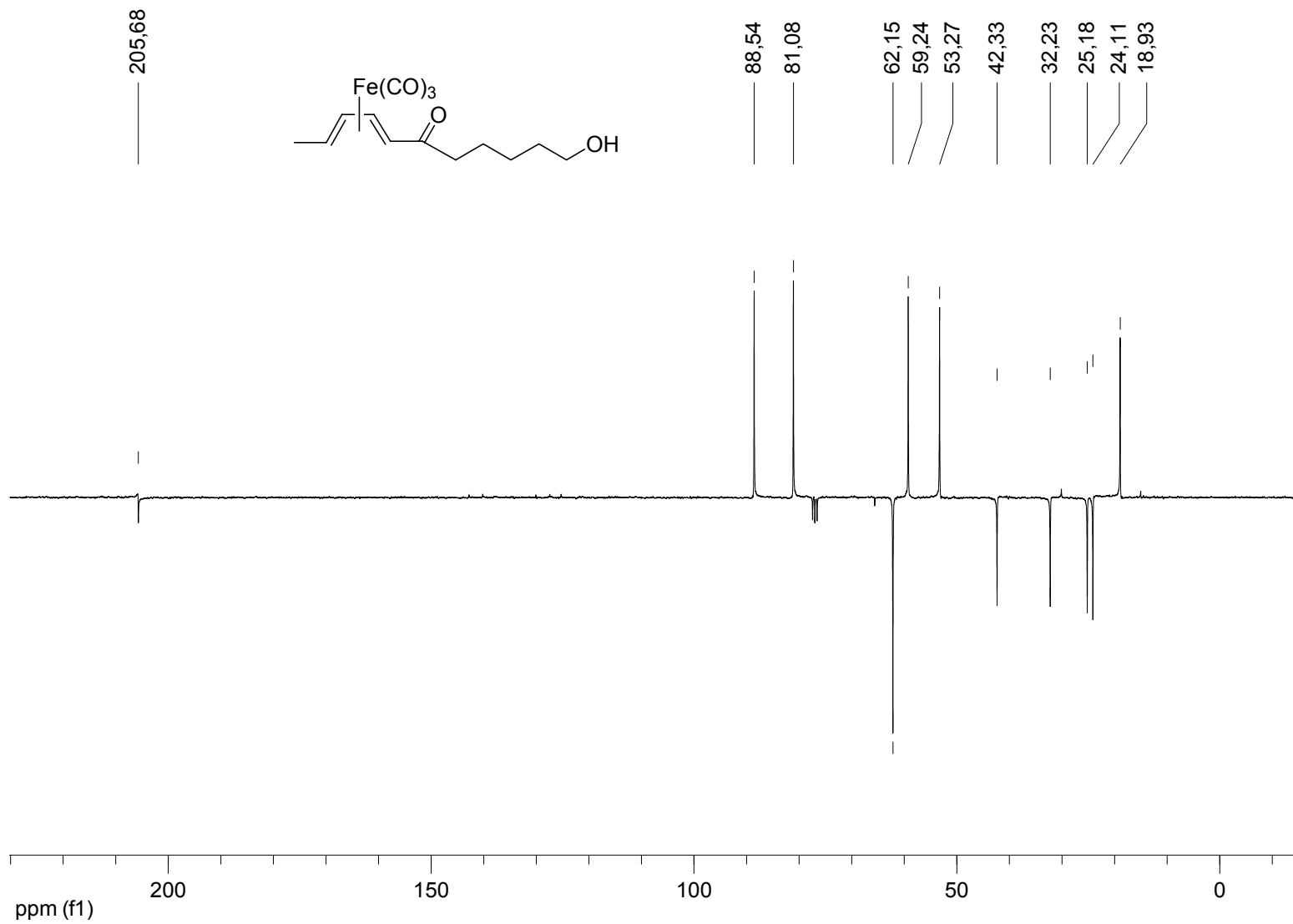


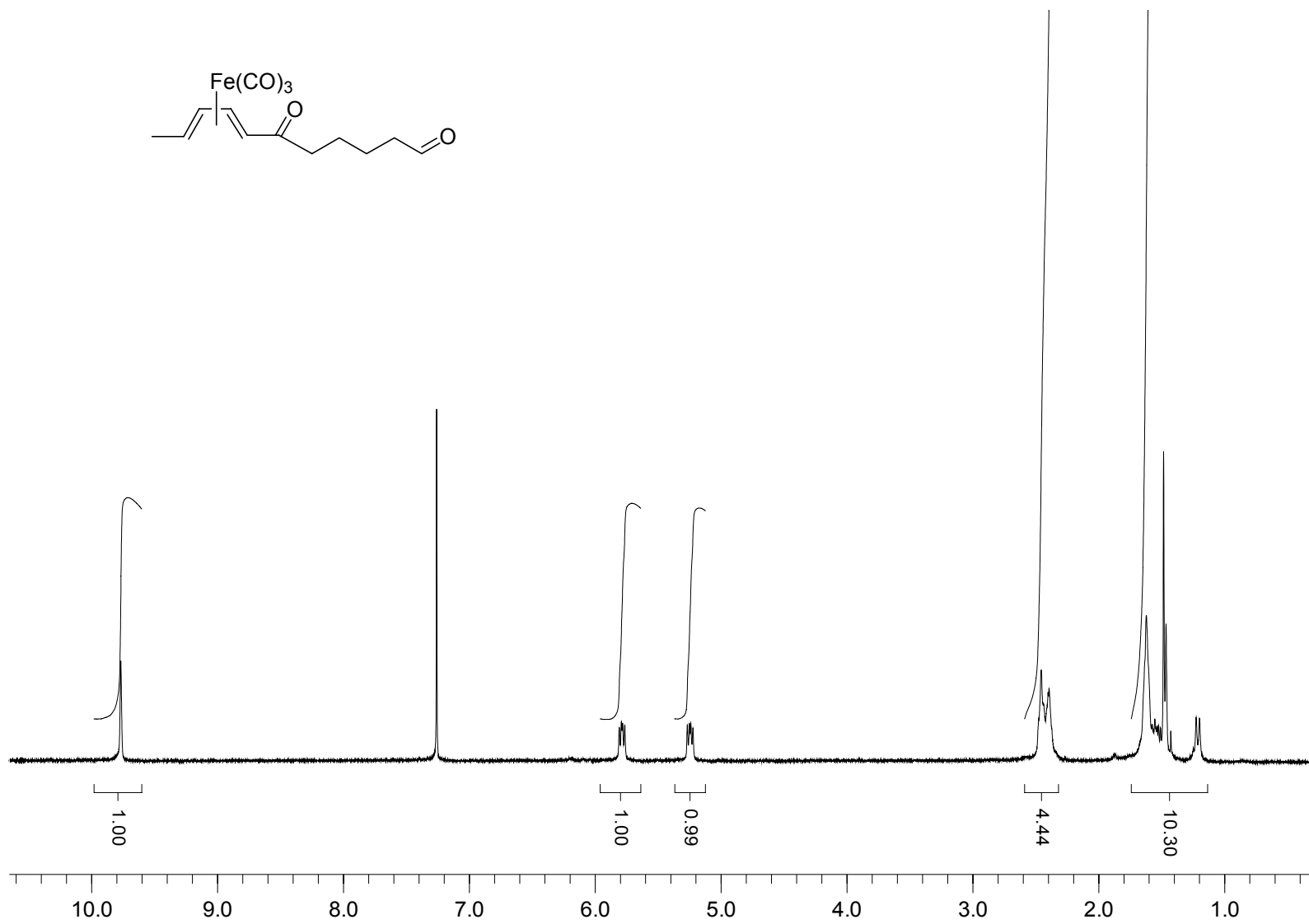
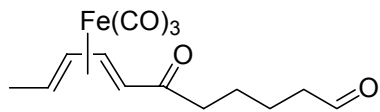






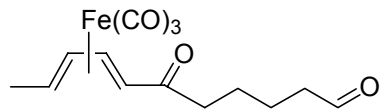








204.67  
202.01



88.58

81.07

59.32

53.22

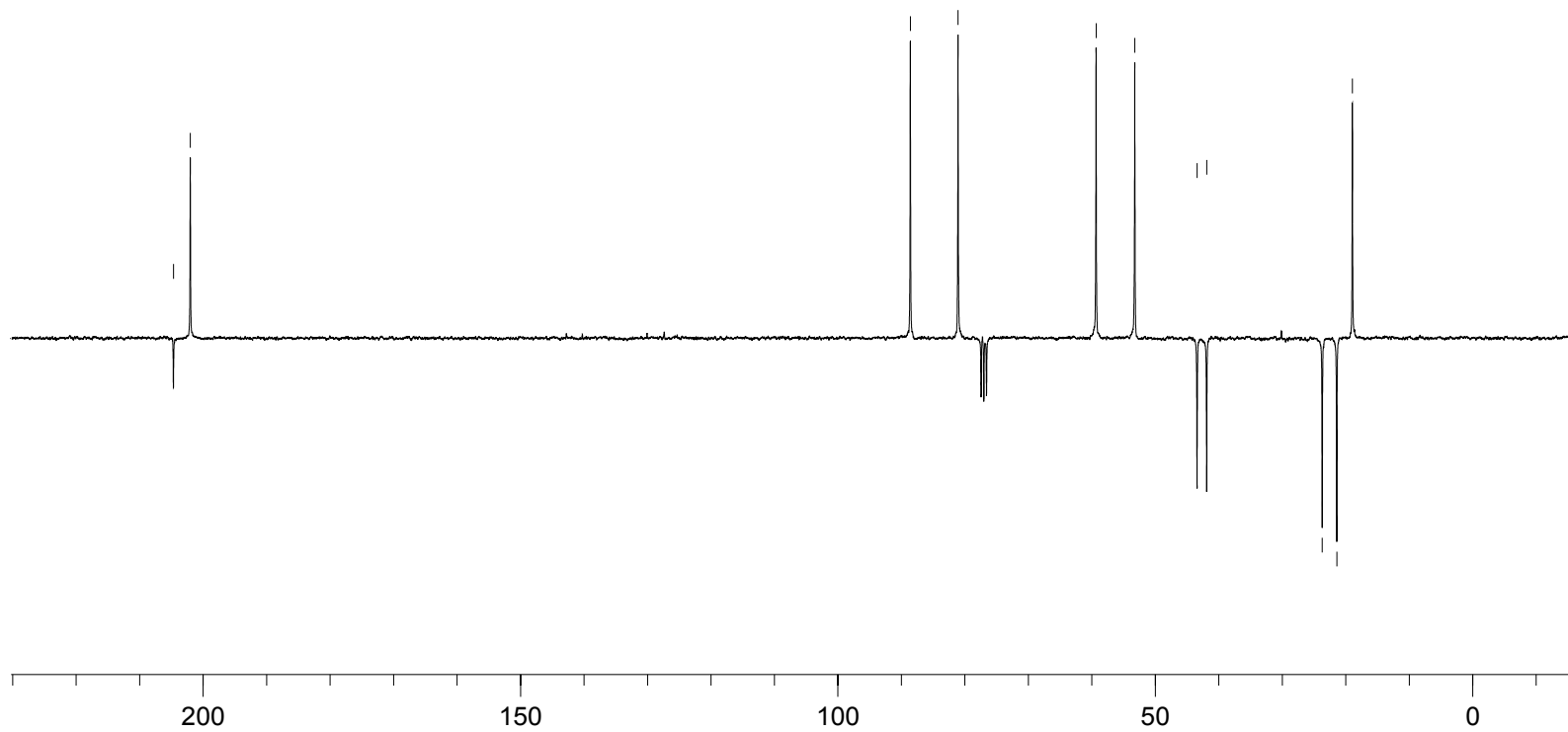
43.41

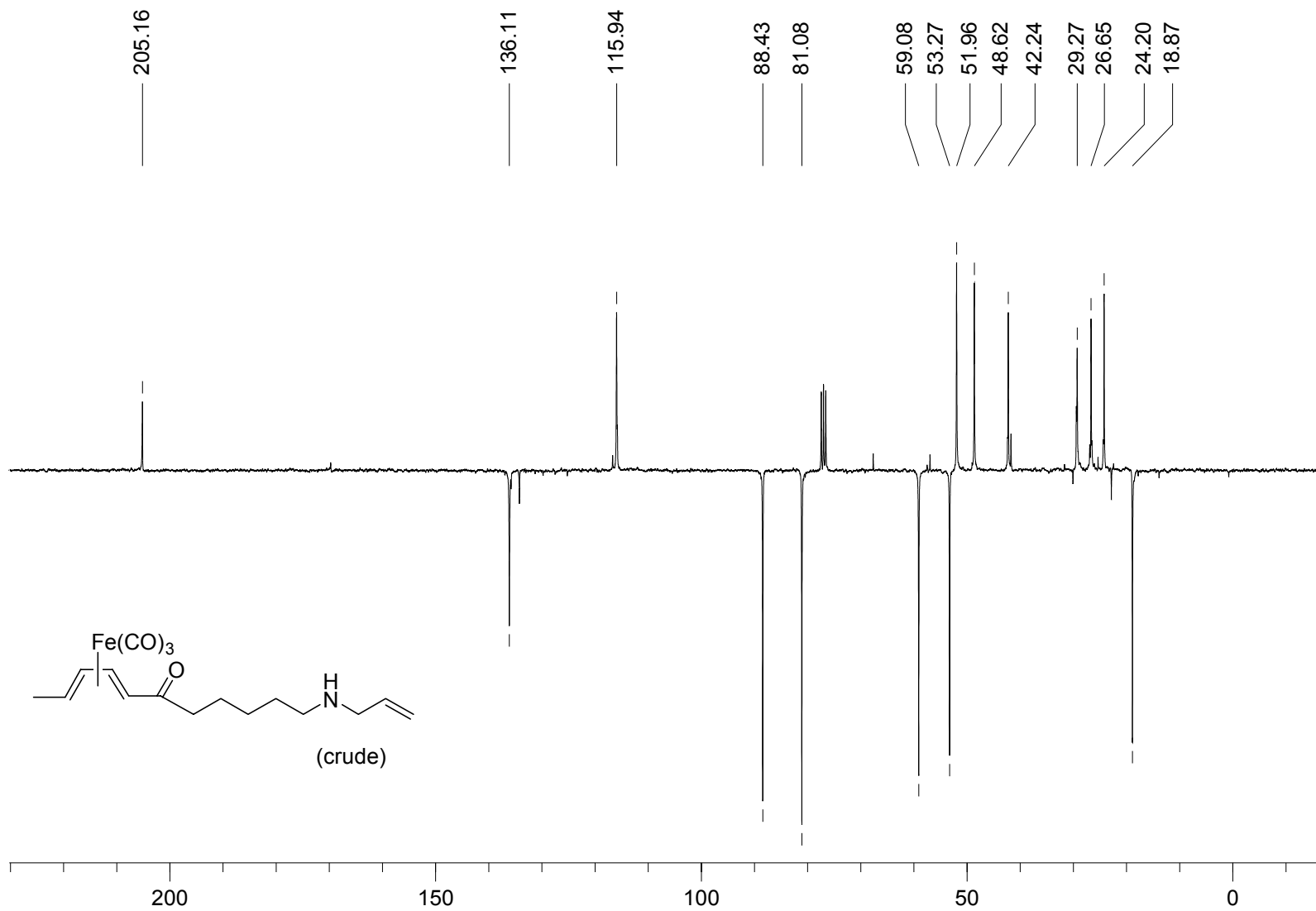
41.90

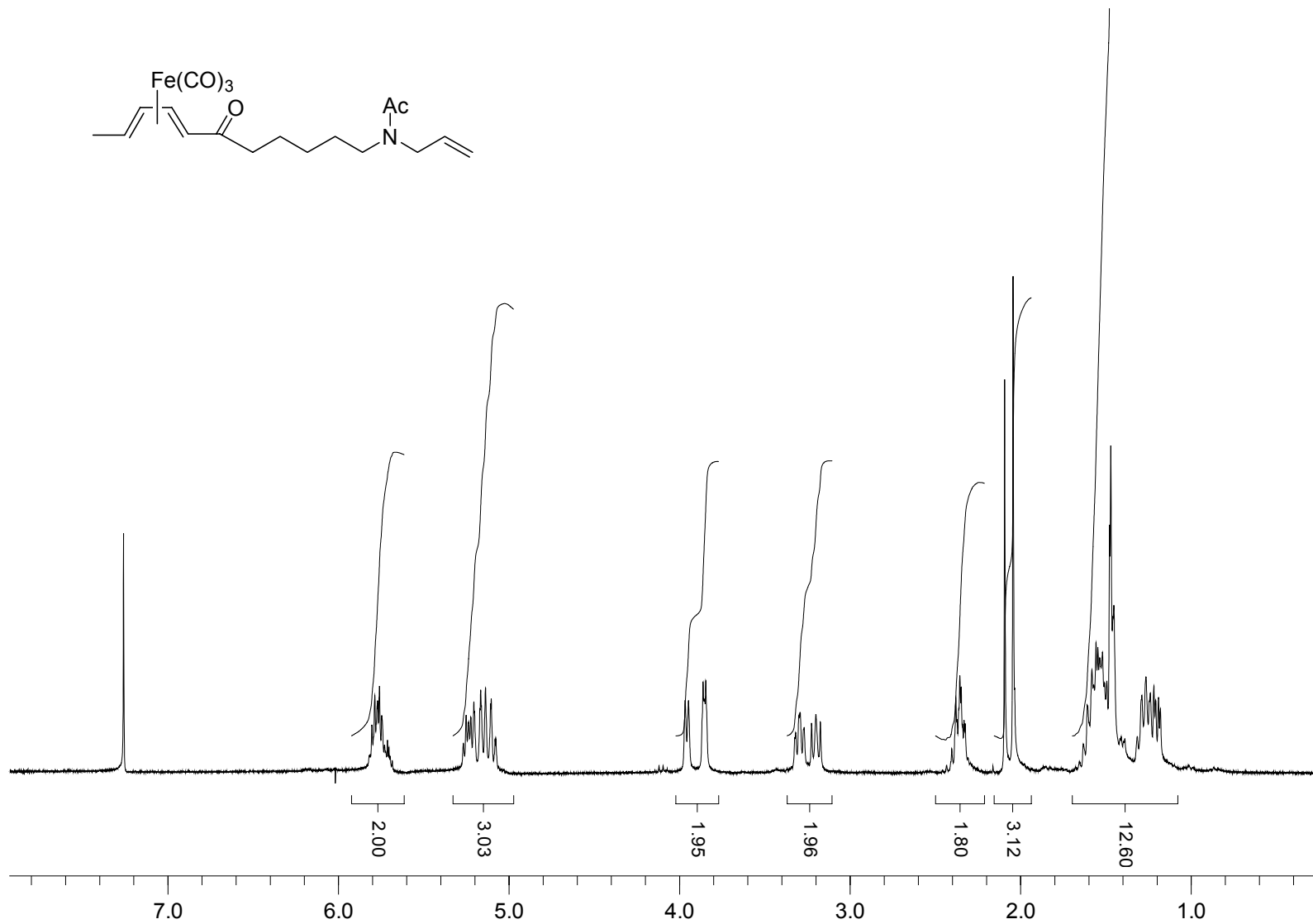
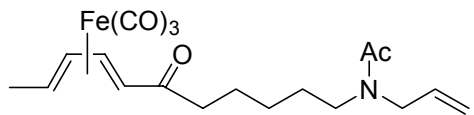
23.70

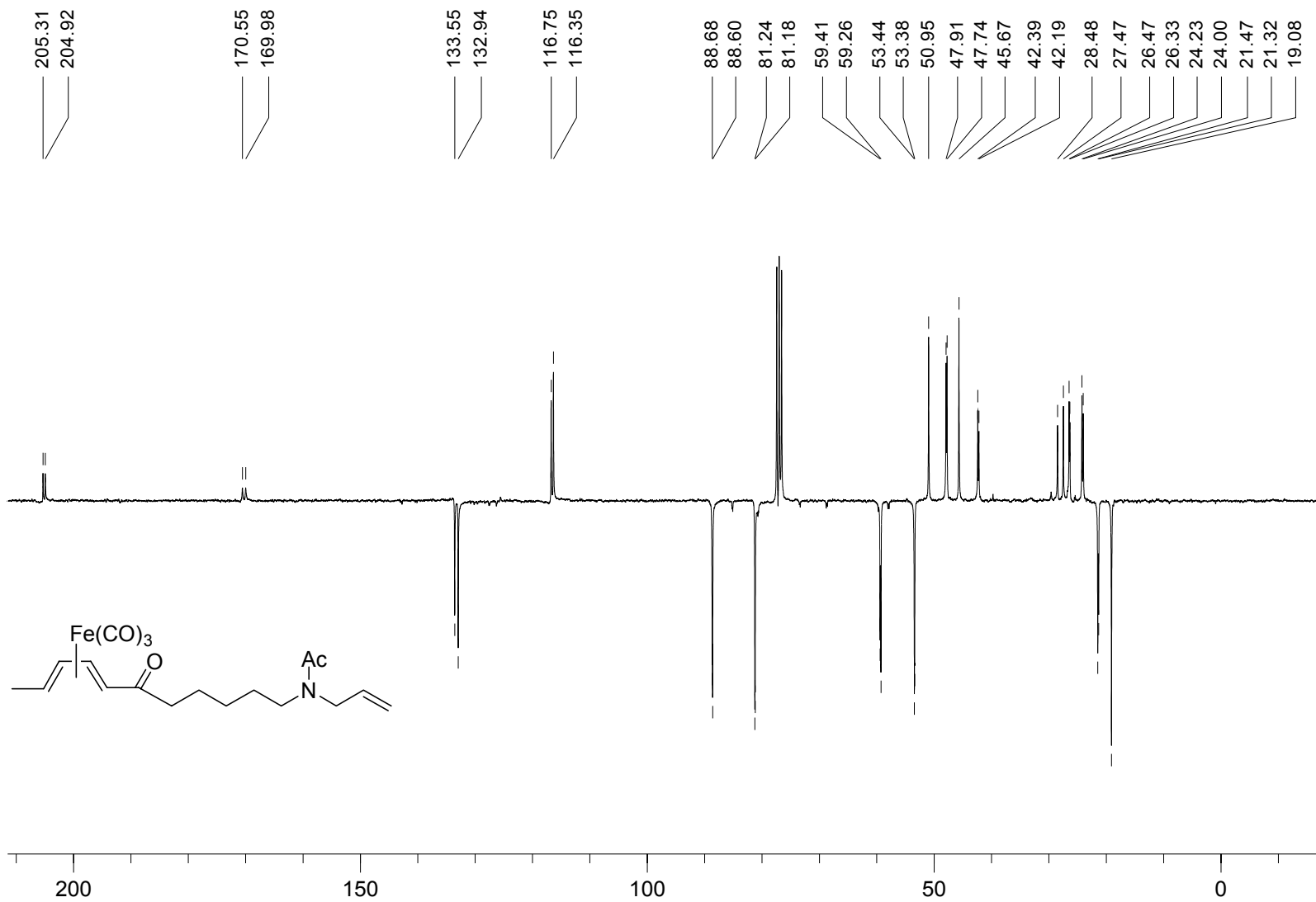
21.40

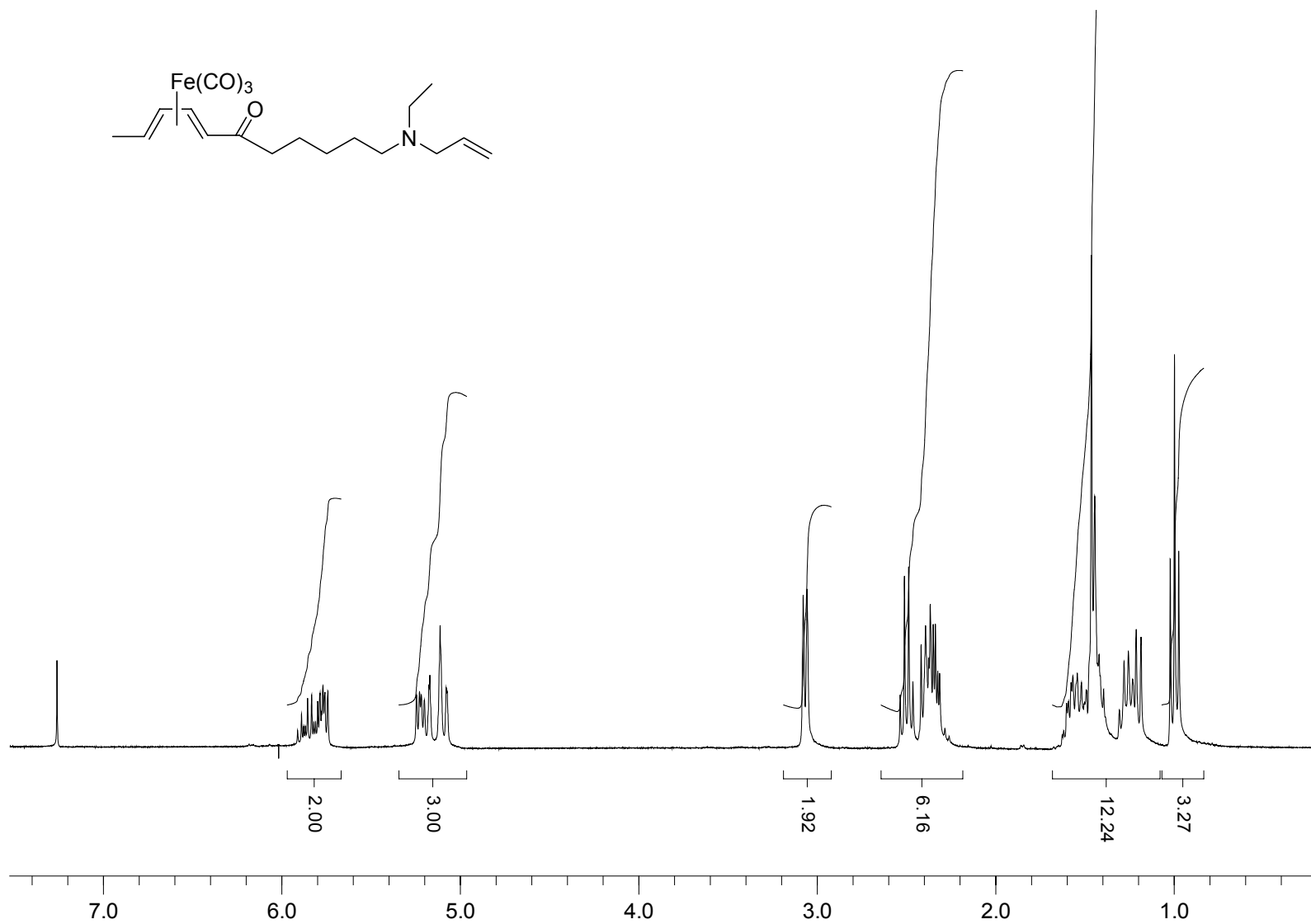
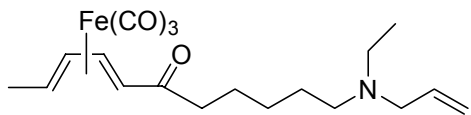
18.95



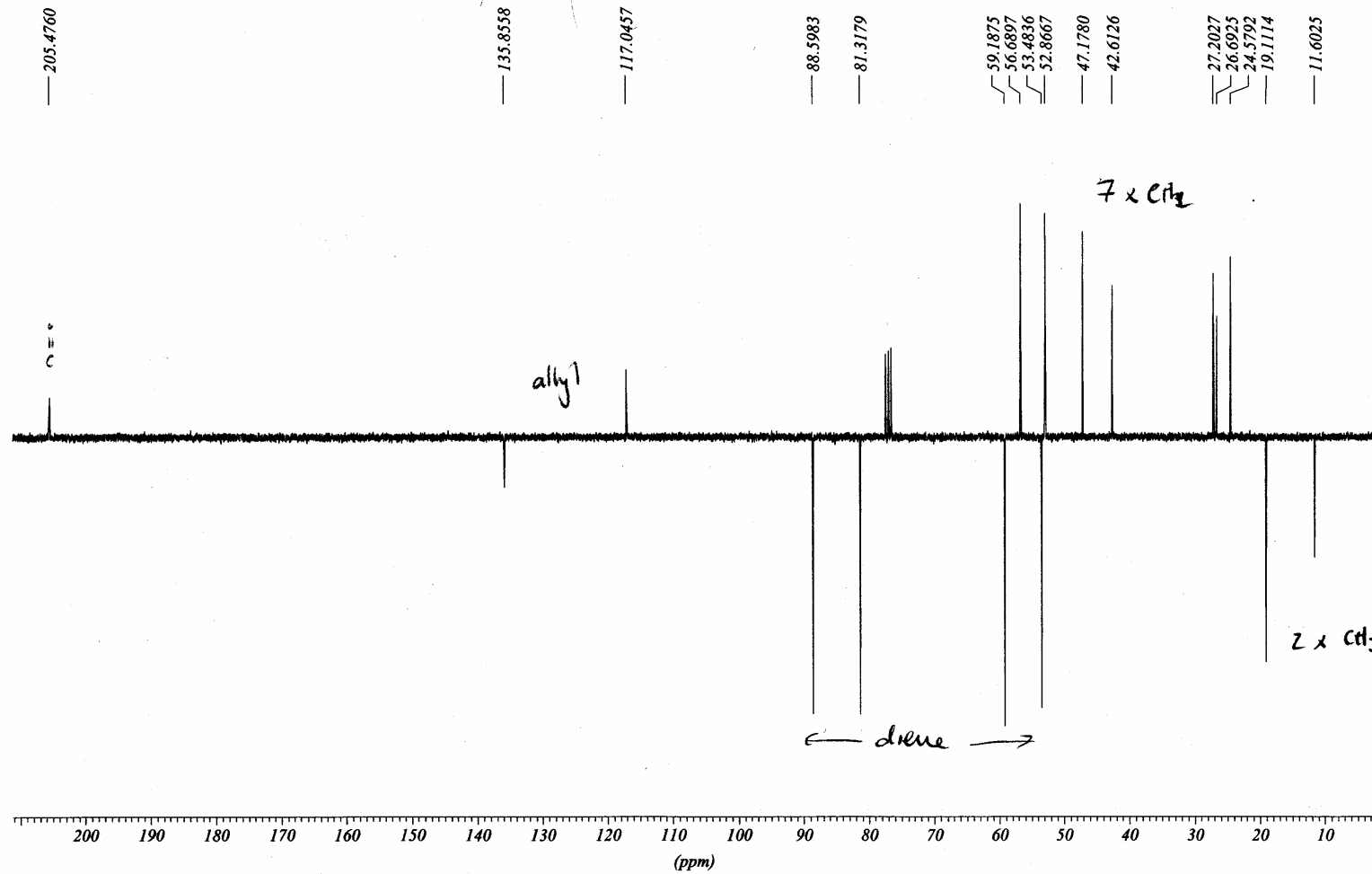
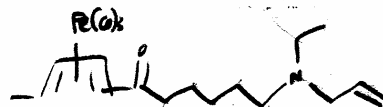




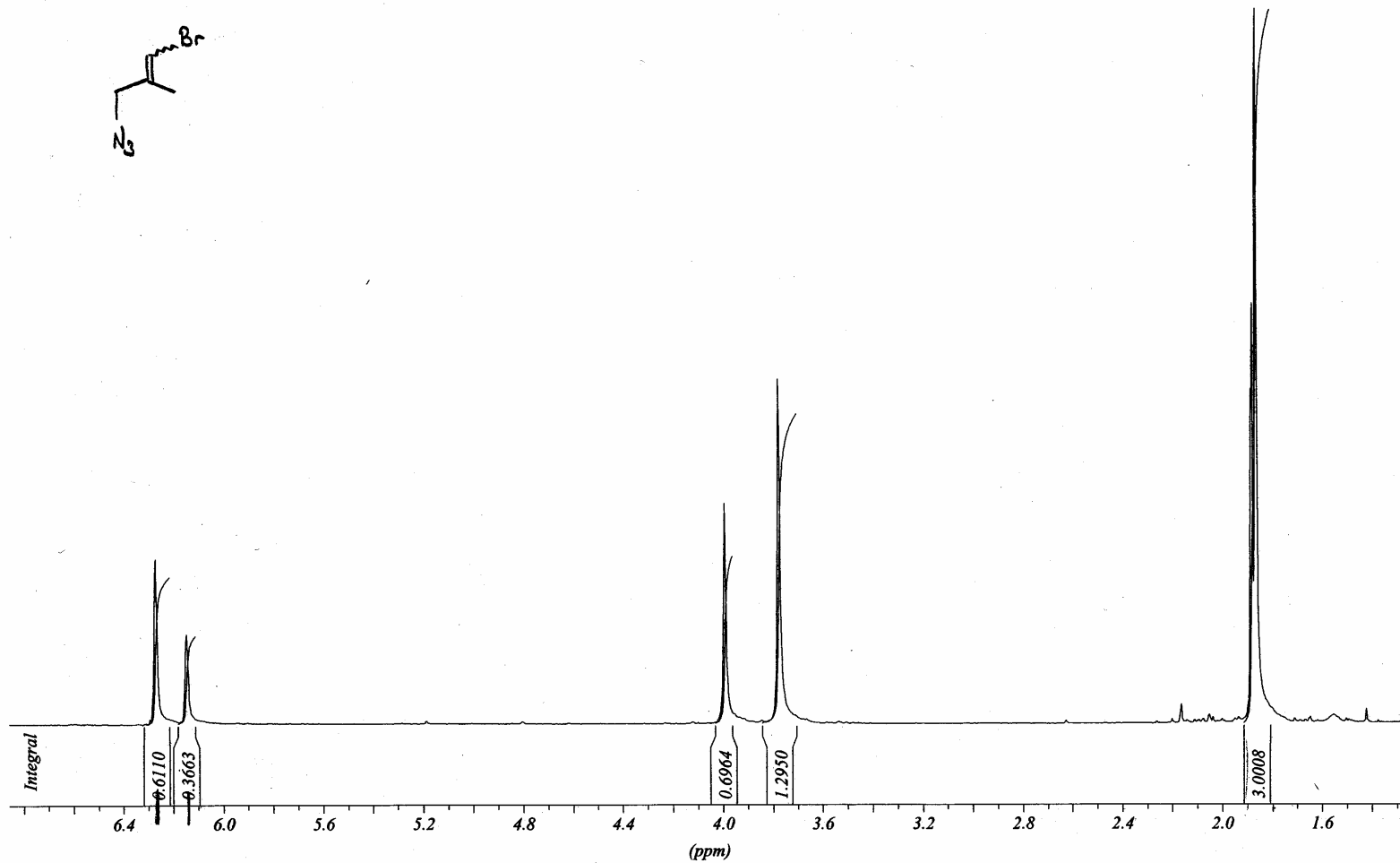
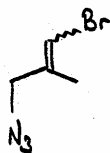




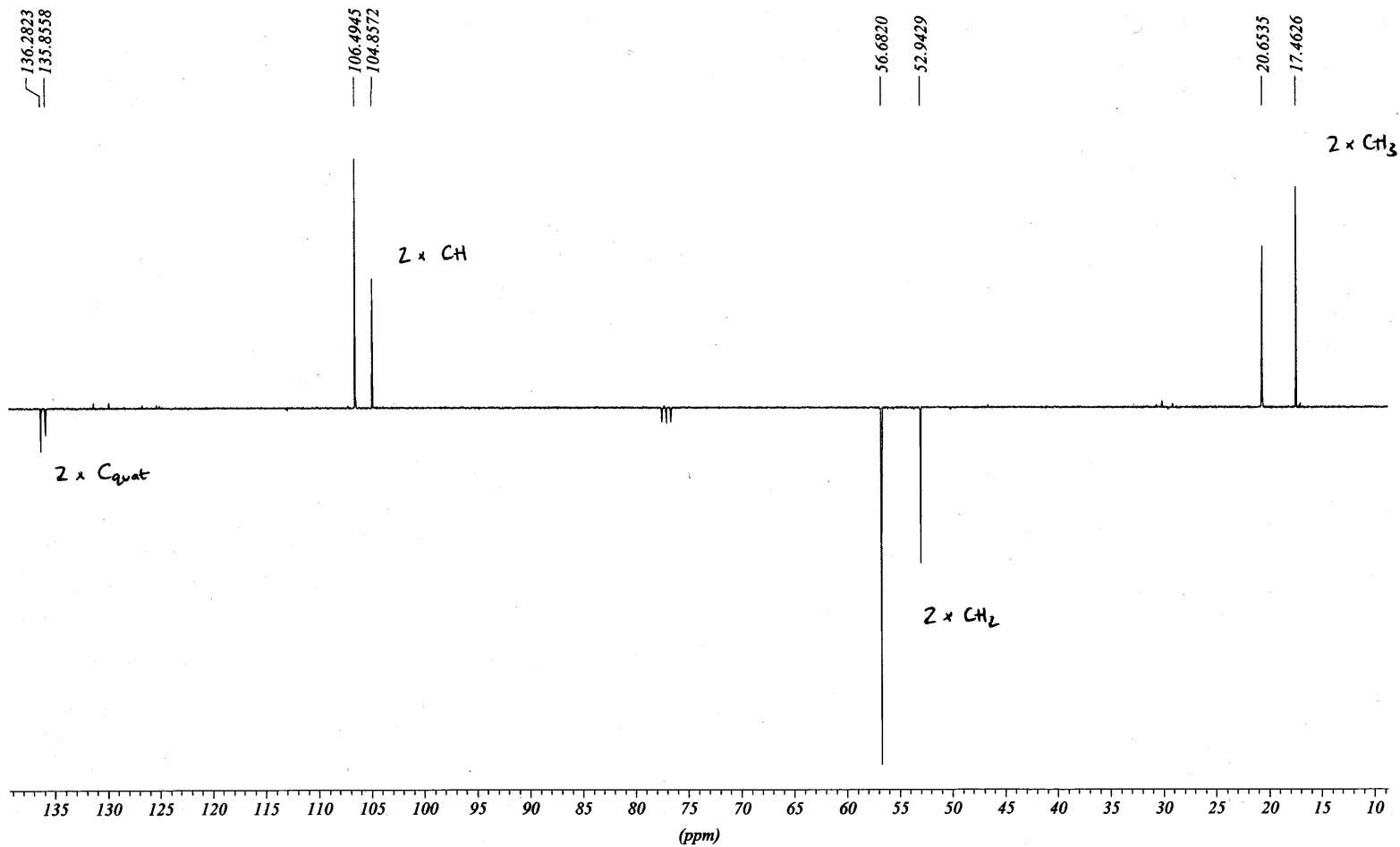
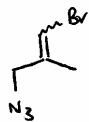
W/9/21 Bottom spot



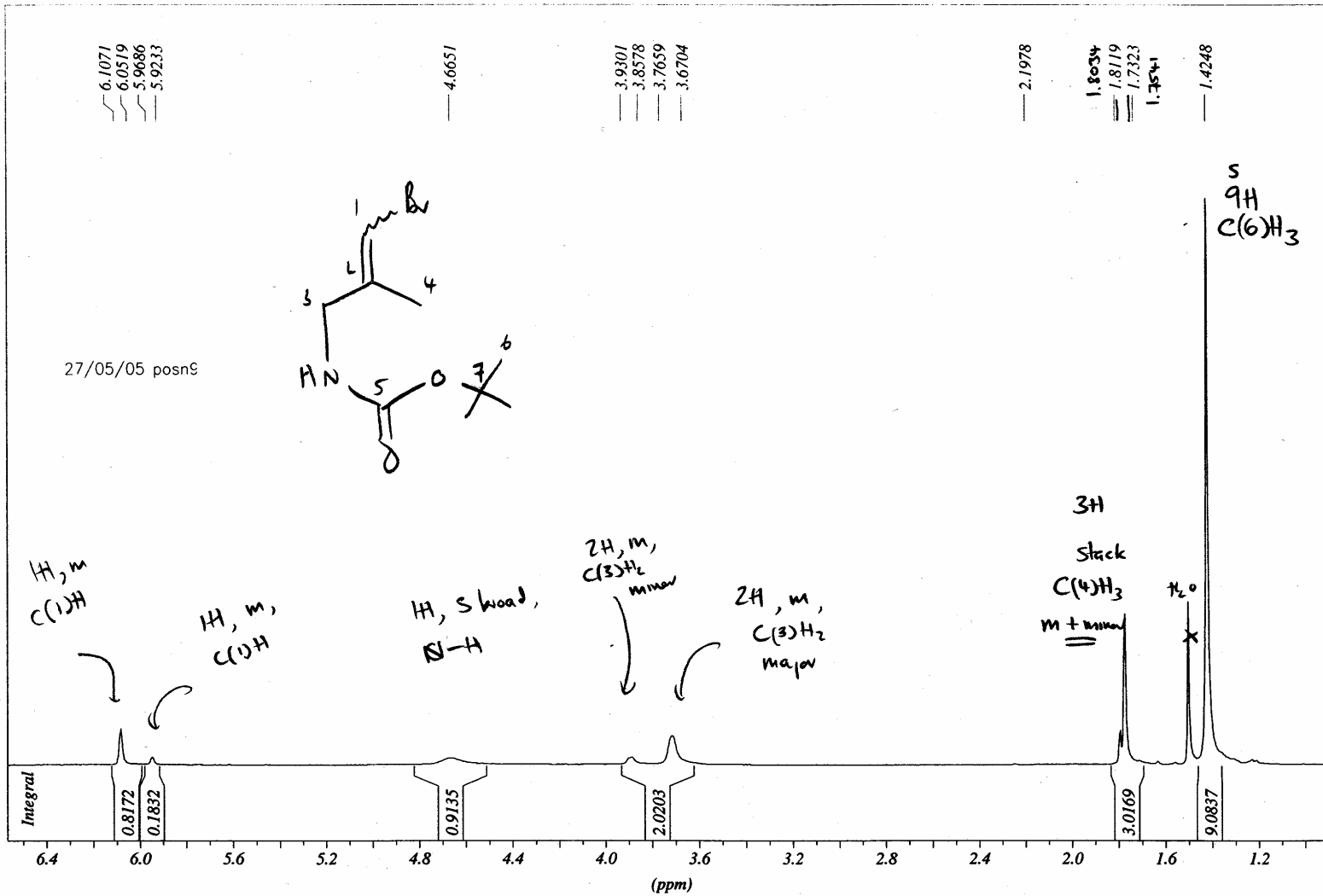
INW - IWAN WILLIAMS IW/9/33 (CRUDE) (MAY 18<sup>th</sup>, pas<sup>m</sup> no 22)

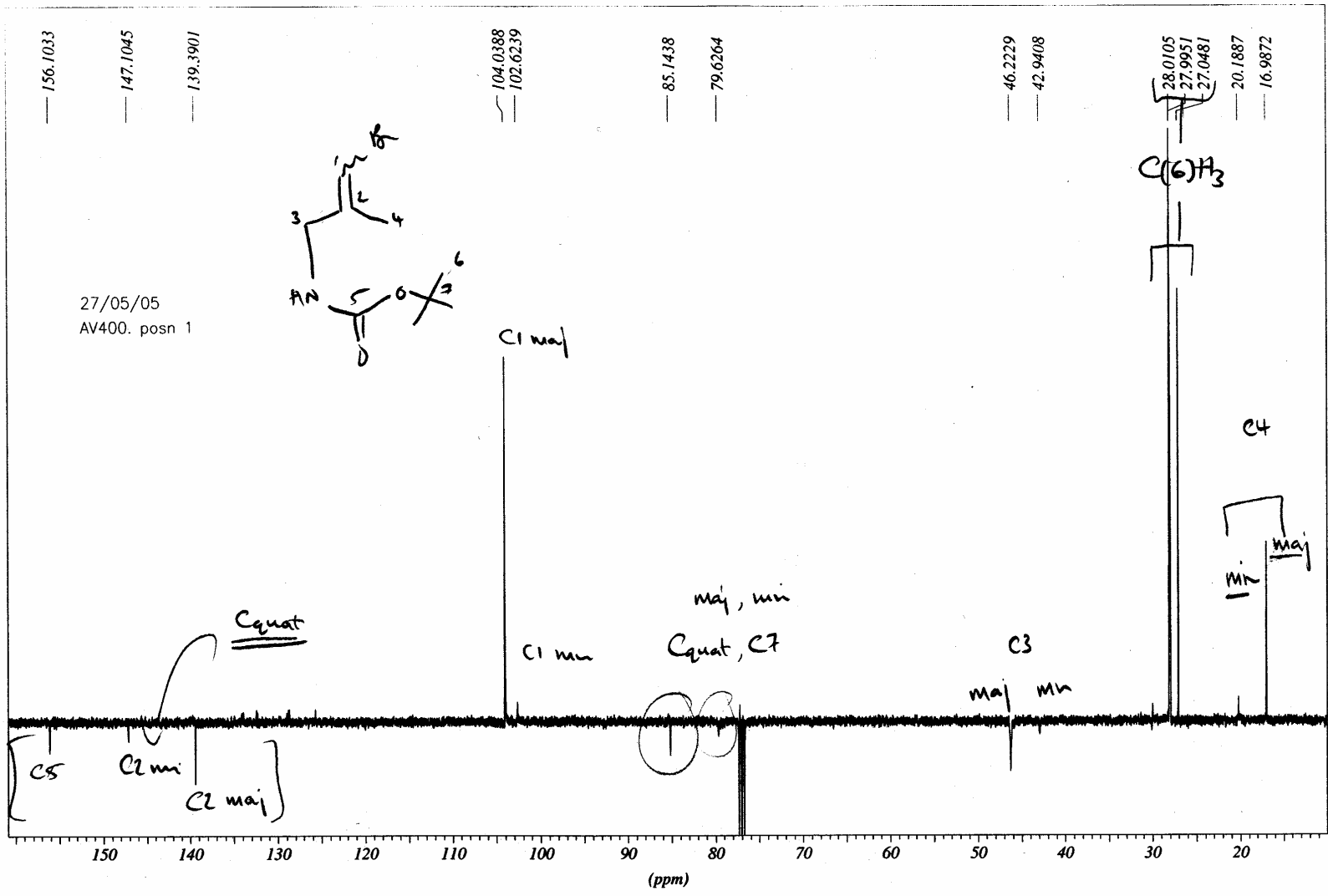


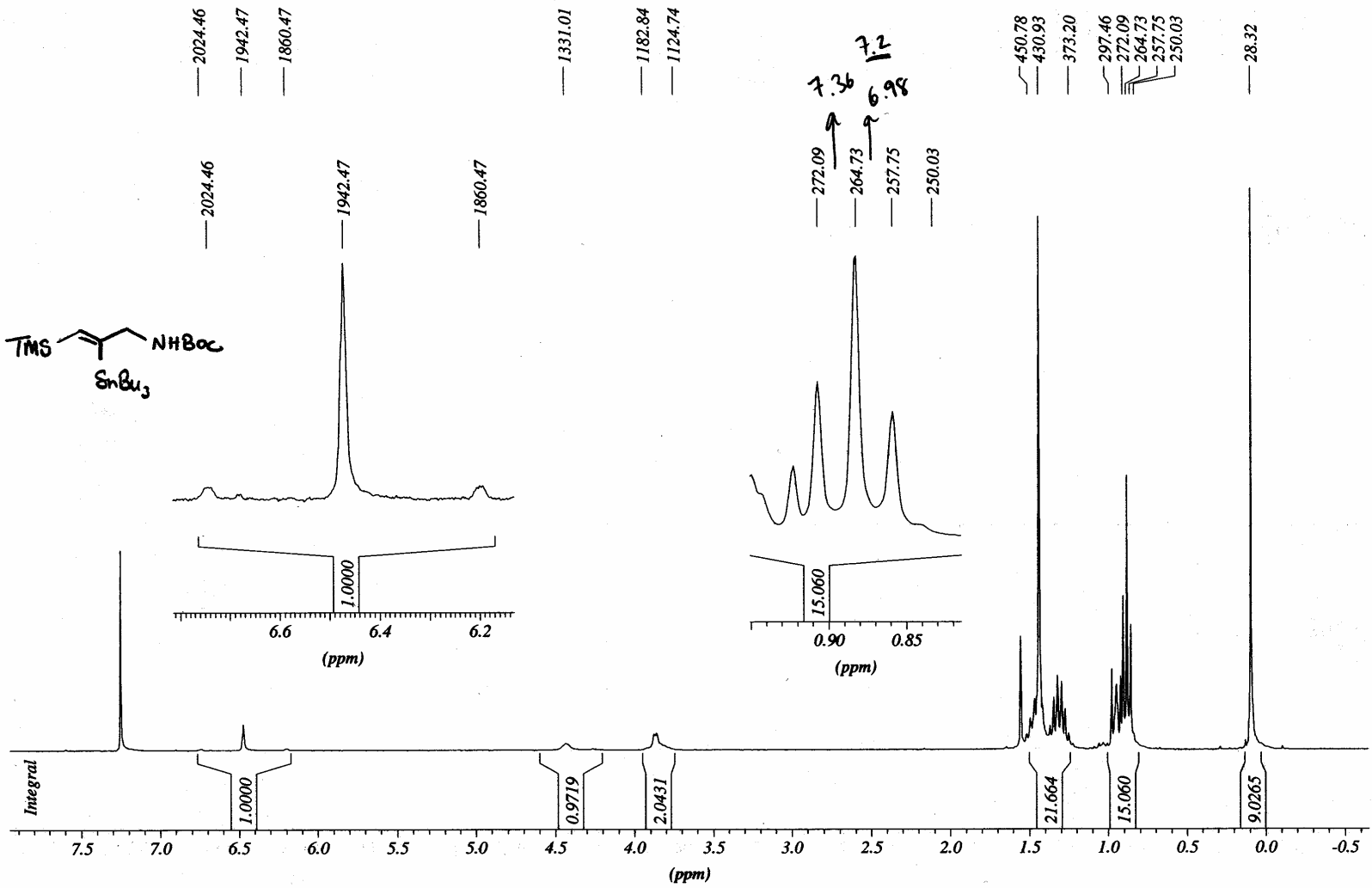
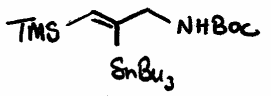
1W/9/33 crude (18 may, spec 3)





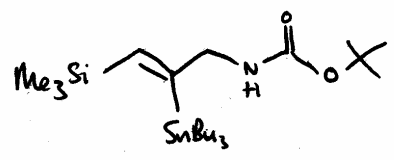






160.3683  
155.3246  
142.9496

16/9/05  
pos 2  
AV300



79.0219

54.0166

29.1294  
28.3603  
27.3627

13.6016  
10.8715

0.0880

quat vinyl  
plus C=O

quat Boc

CH<sub>2</sub>N

3 2

1

1 2 3  
Si(CH<sub>3</sub>)<sub>3</sub>

CH vinyl

Si(CH<sub>3</sub>)<sub>3</sub>

CH<sub>3</sub> Boc

Si(CH<sub>3</sub>)<sub>3</sub>

