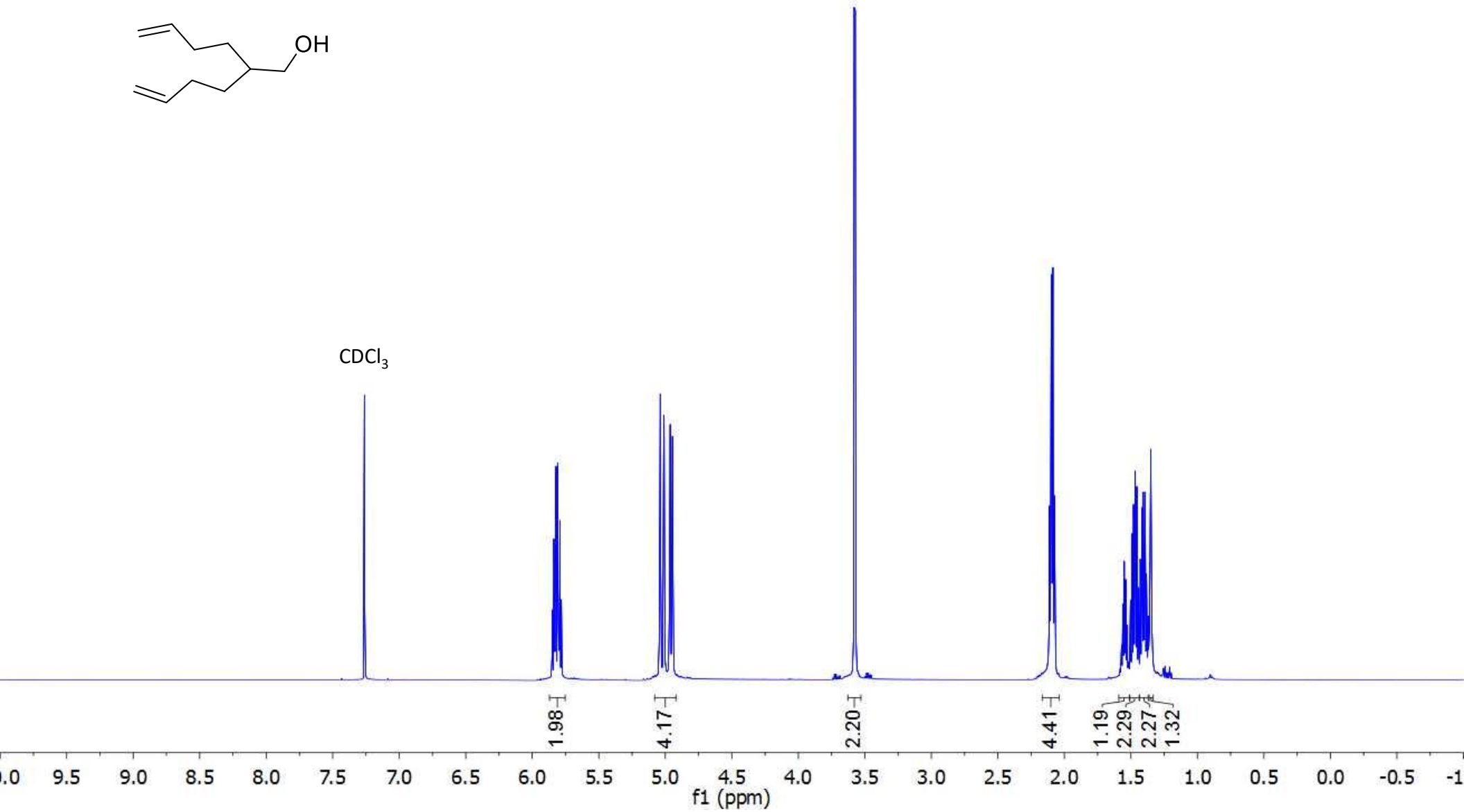
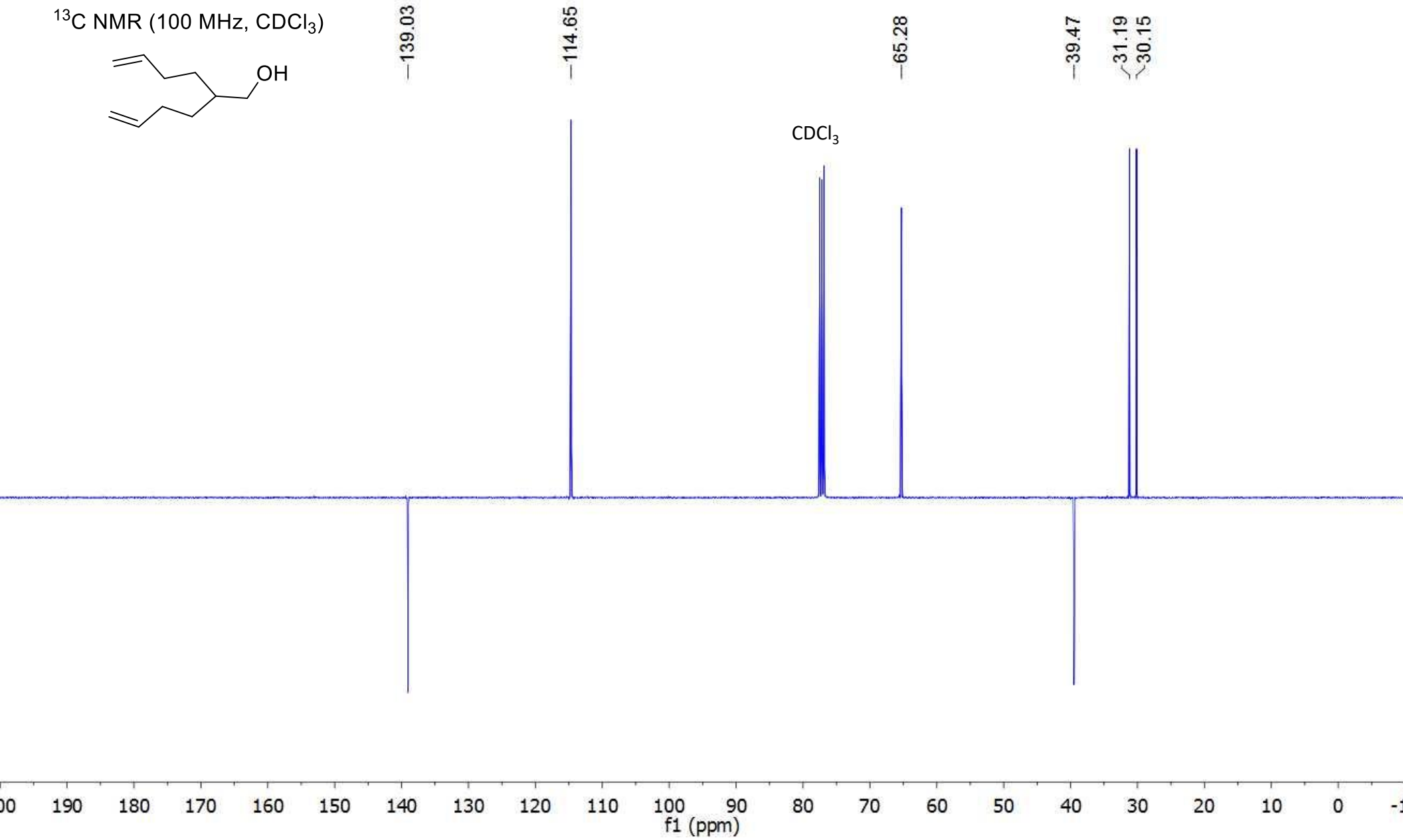
$^1$H NMR (600 MHz, $CDCl_3$)



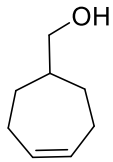



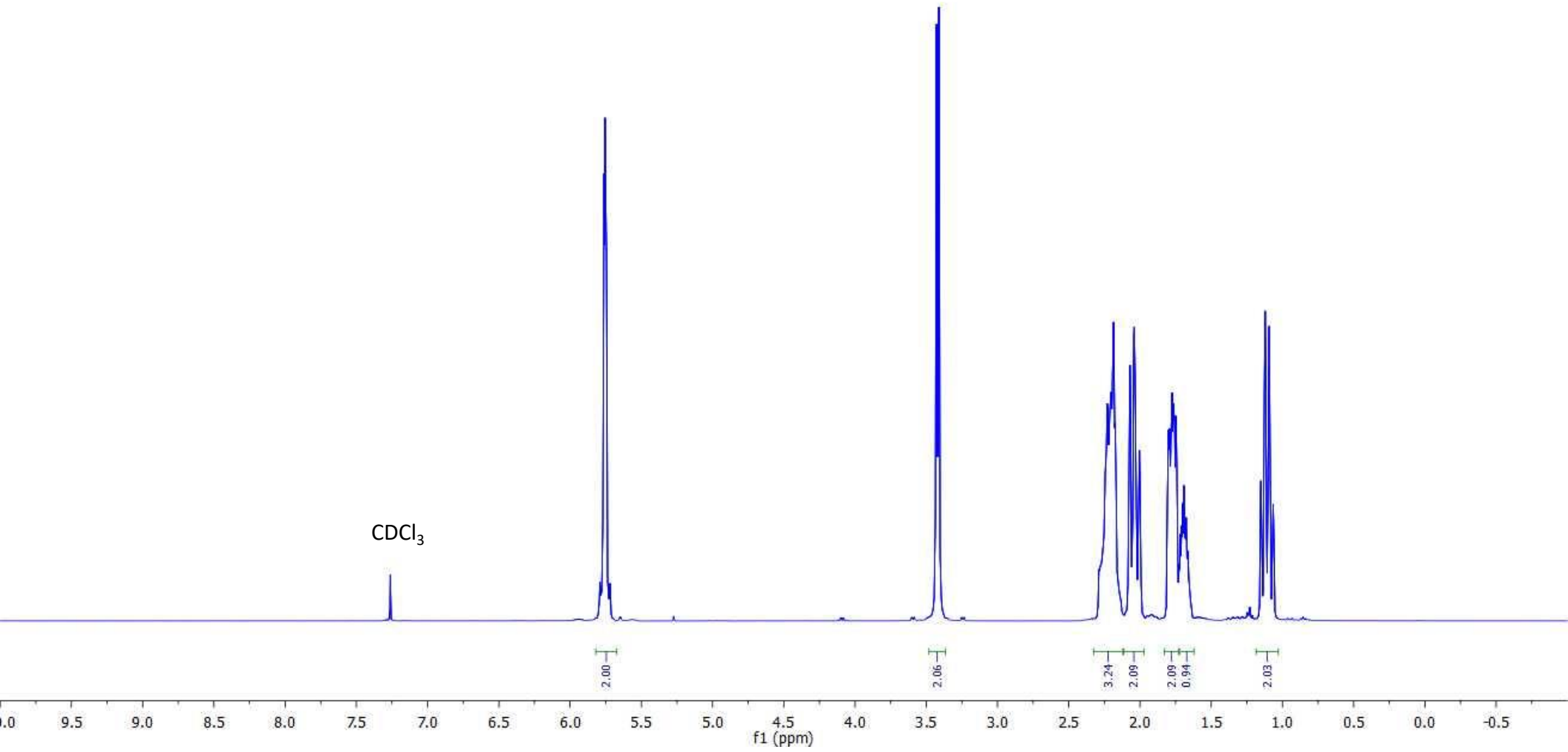
$^{13}$C NMR (100 MHz, $CDCl_3$)



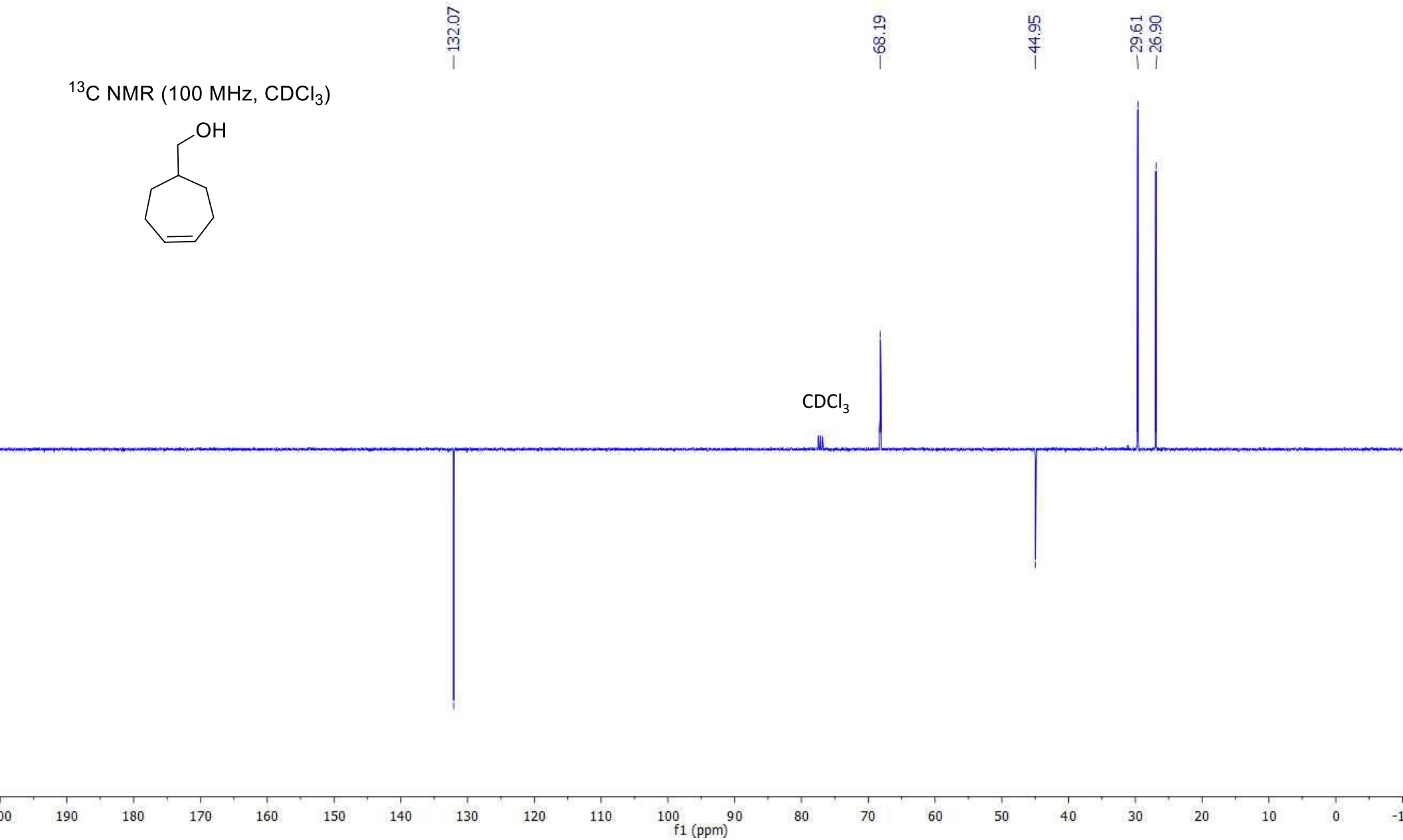
$^1$H NMR (400 MHz, $CDCl_3$)



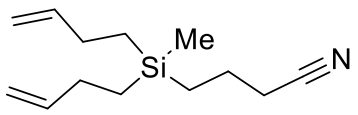



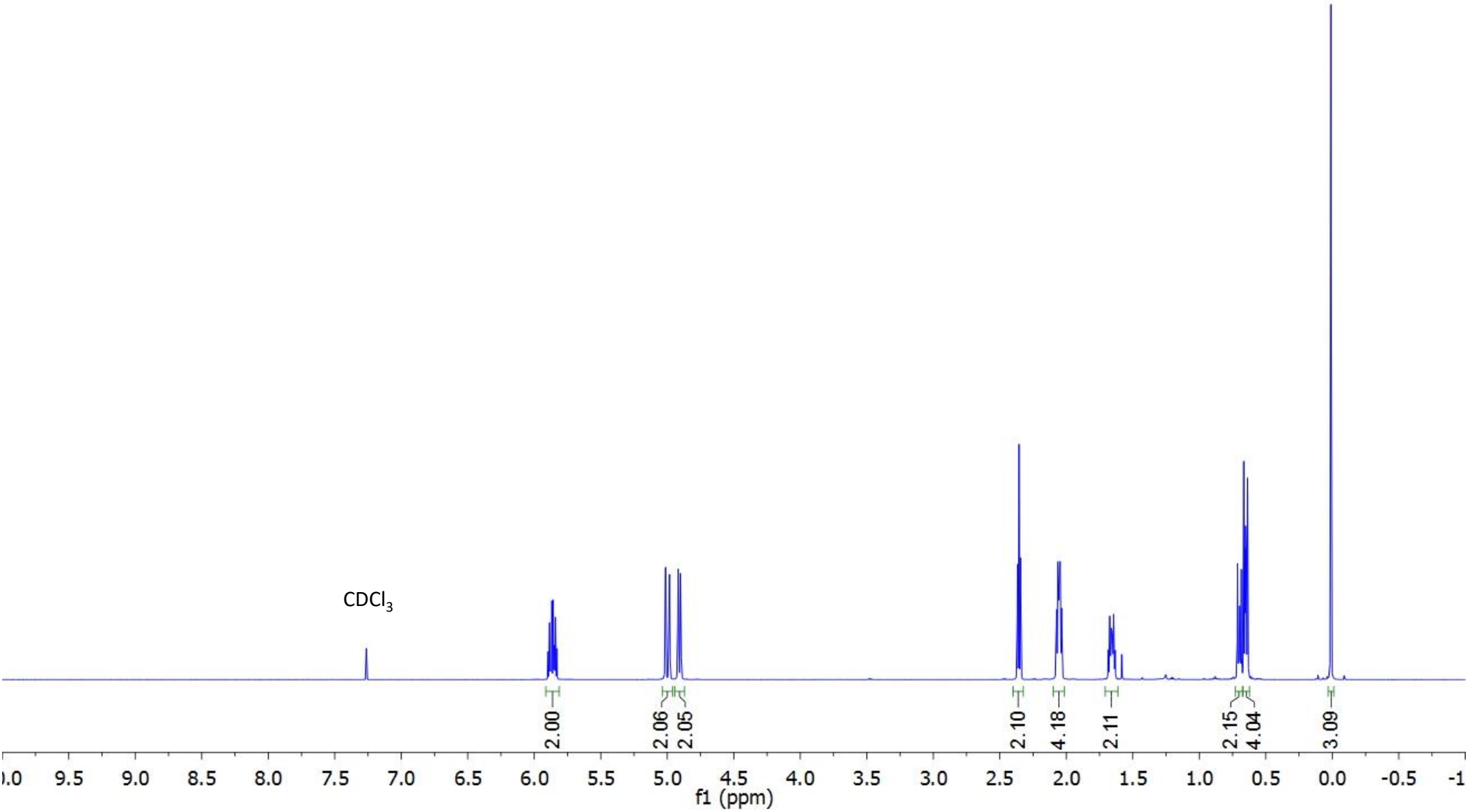
$^{13}C$ NMR (100 MHz, $CDCl_3$)



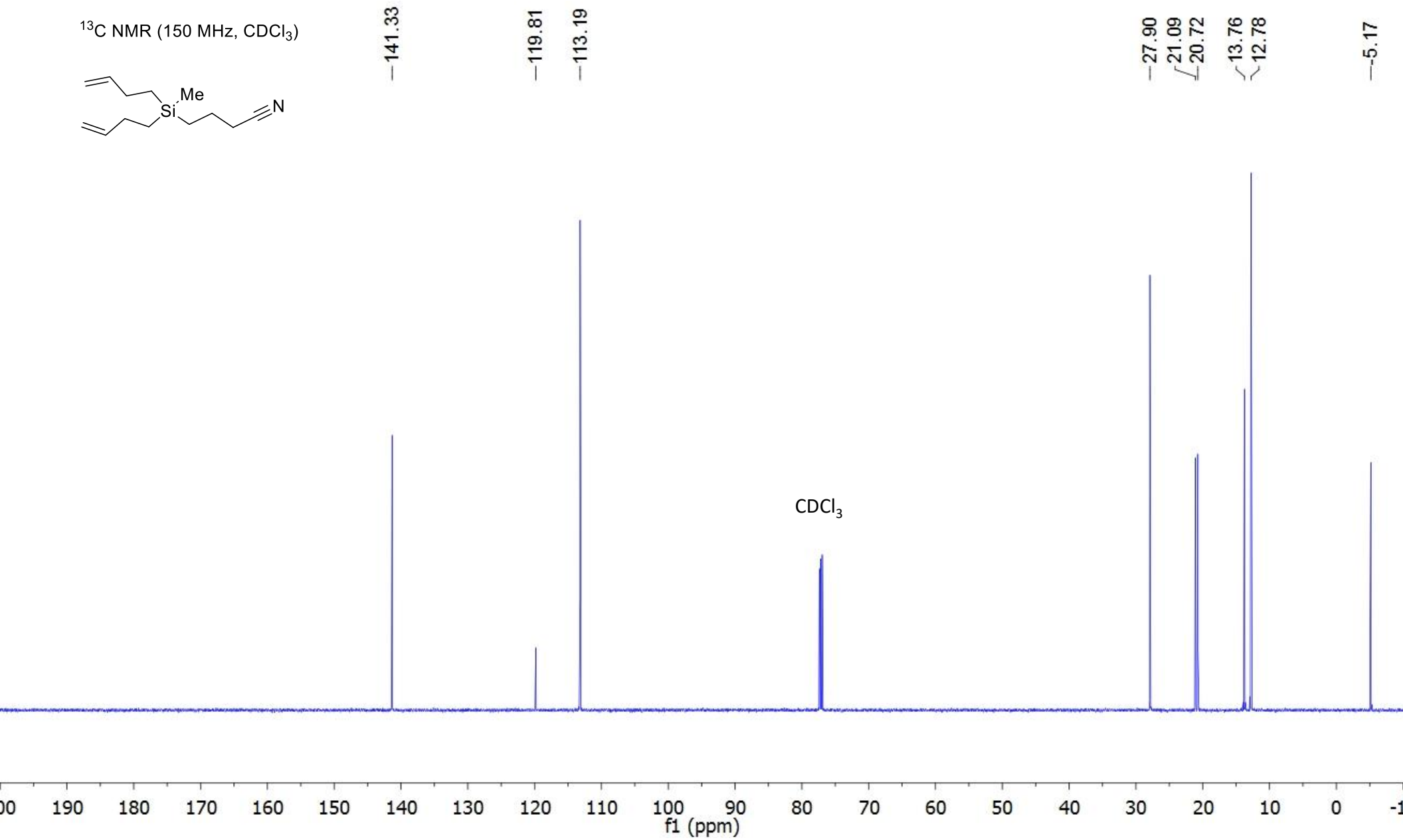
$^1$H NMR (600 MHz, $CDCl_3$)



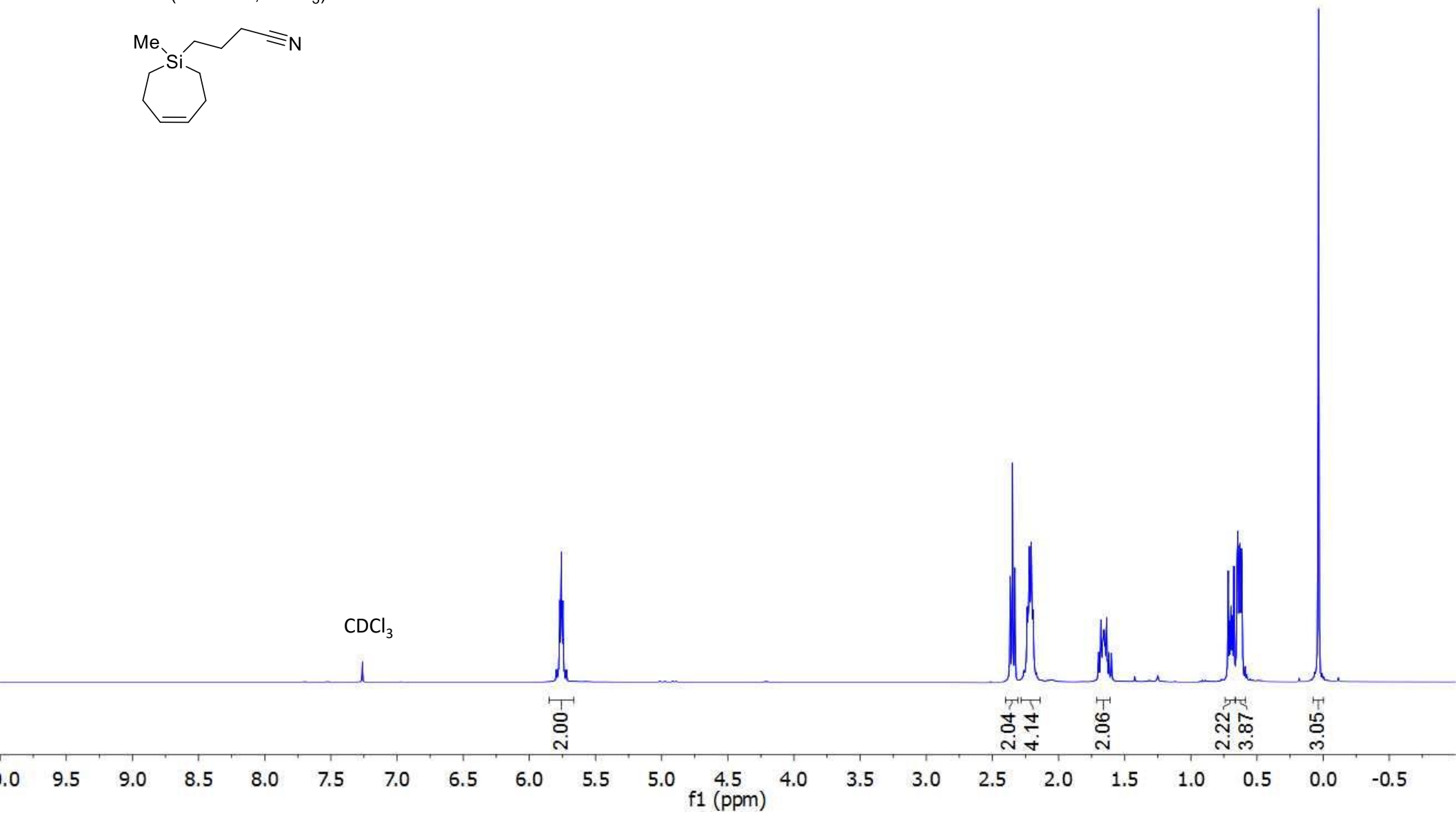
$^{13}$C NMR (150 MHz, $CDCl_3$)



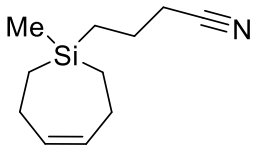



$^1$H NMR (400 MHz, $CDCl_3$)



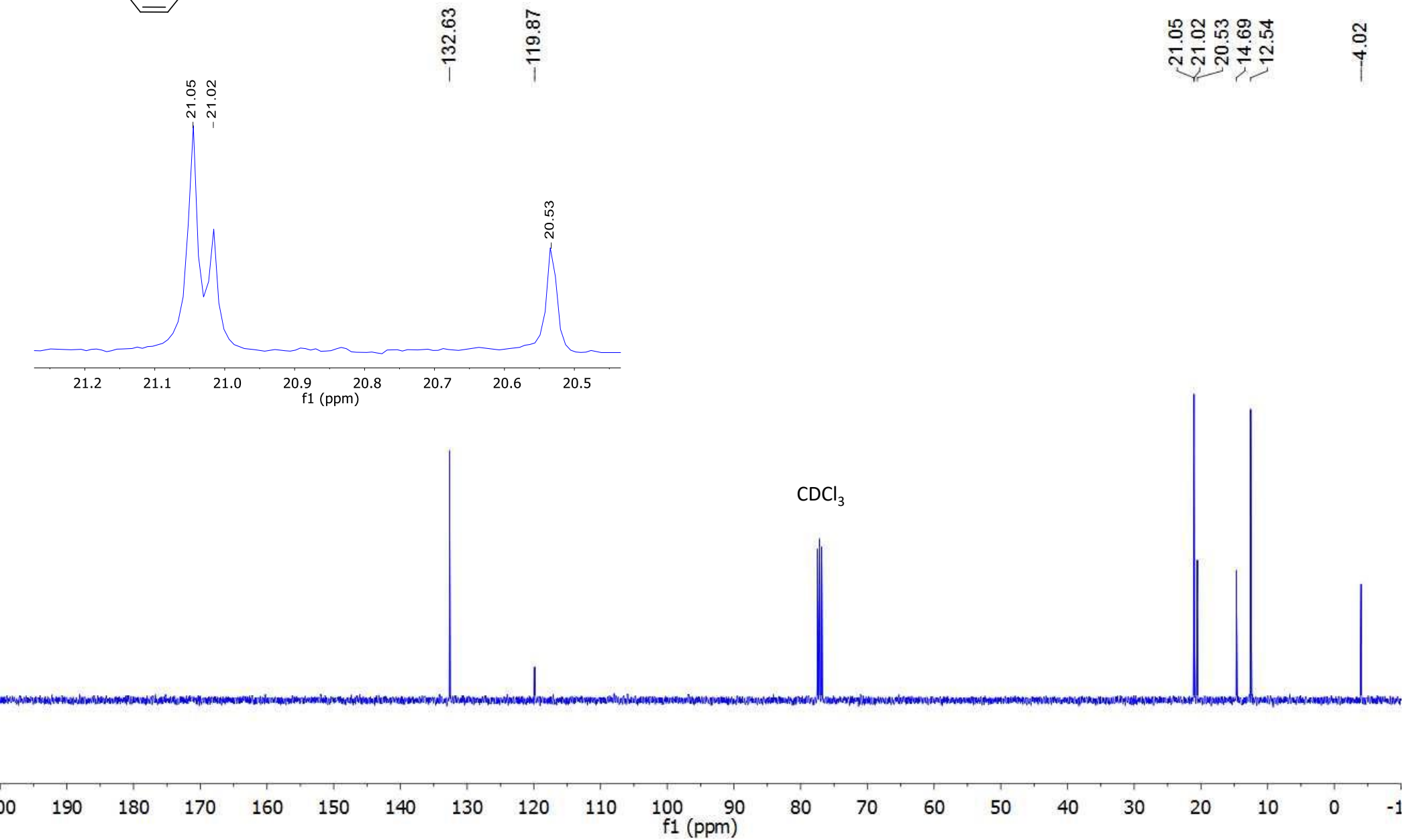



$^{13}$C NMR (100 MHz, $CDCl_3$)



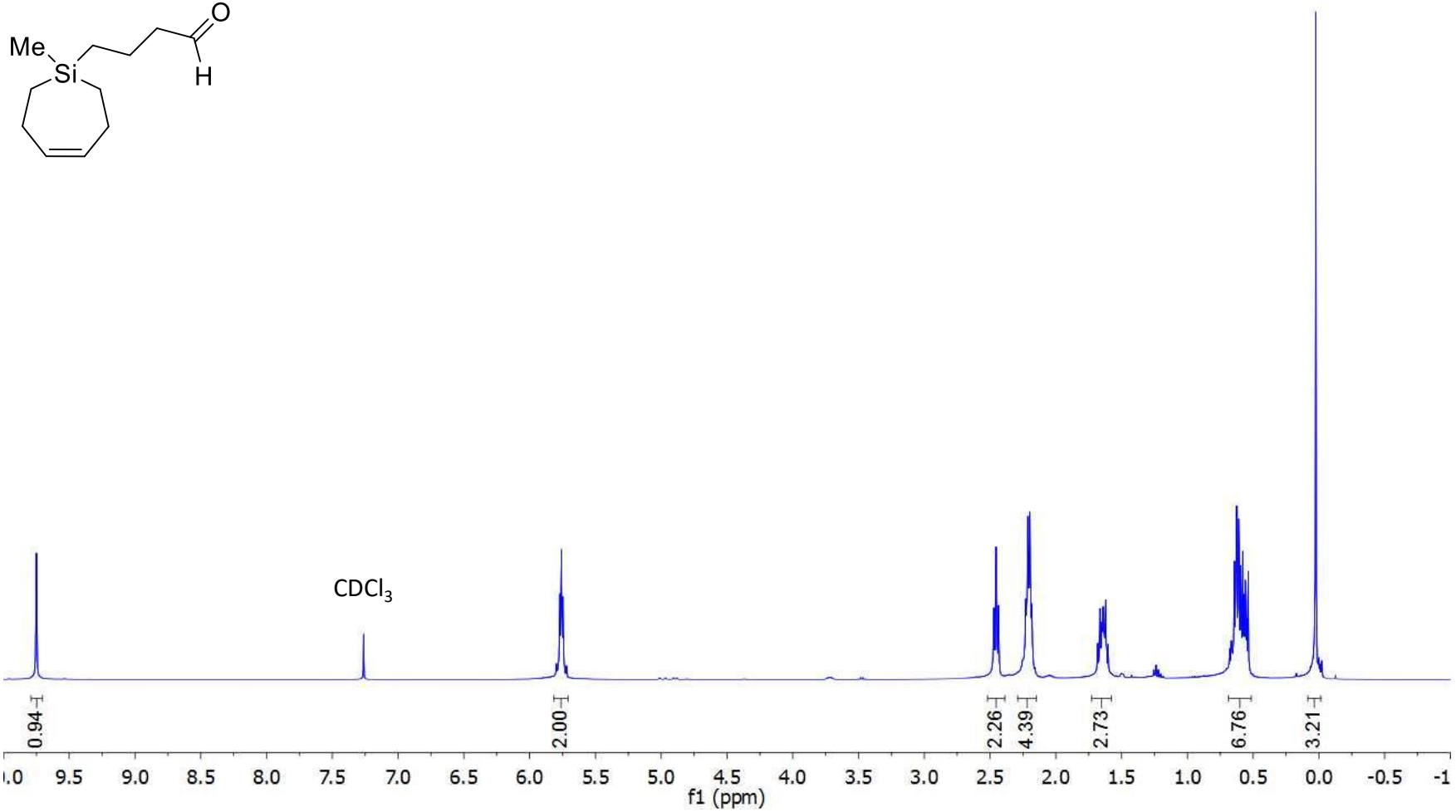






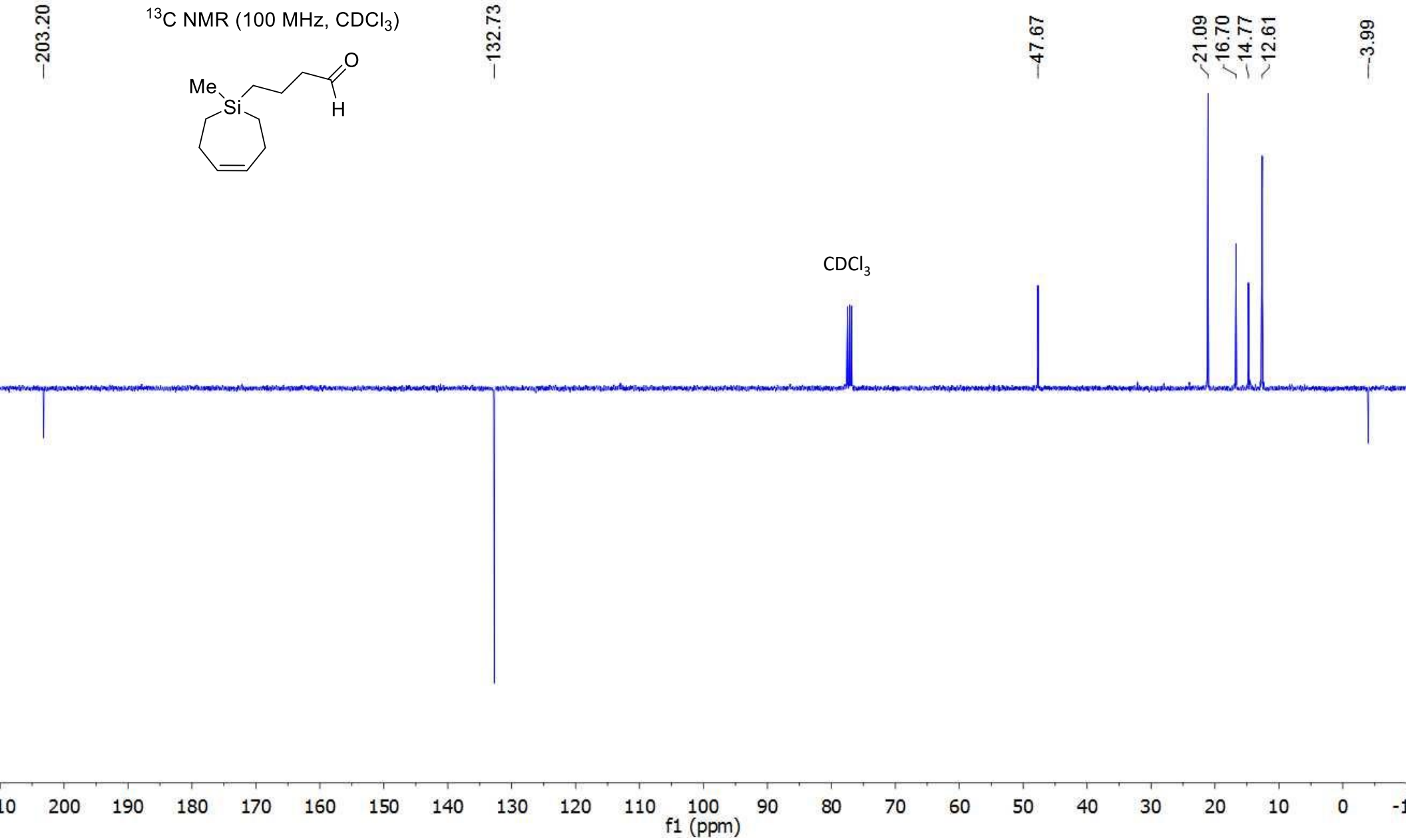
$^1$H NMR (400 MHz, $CDCl_3$)



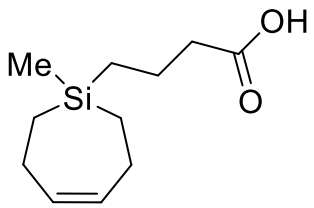



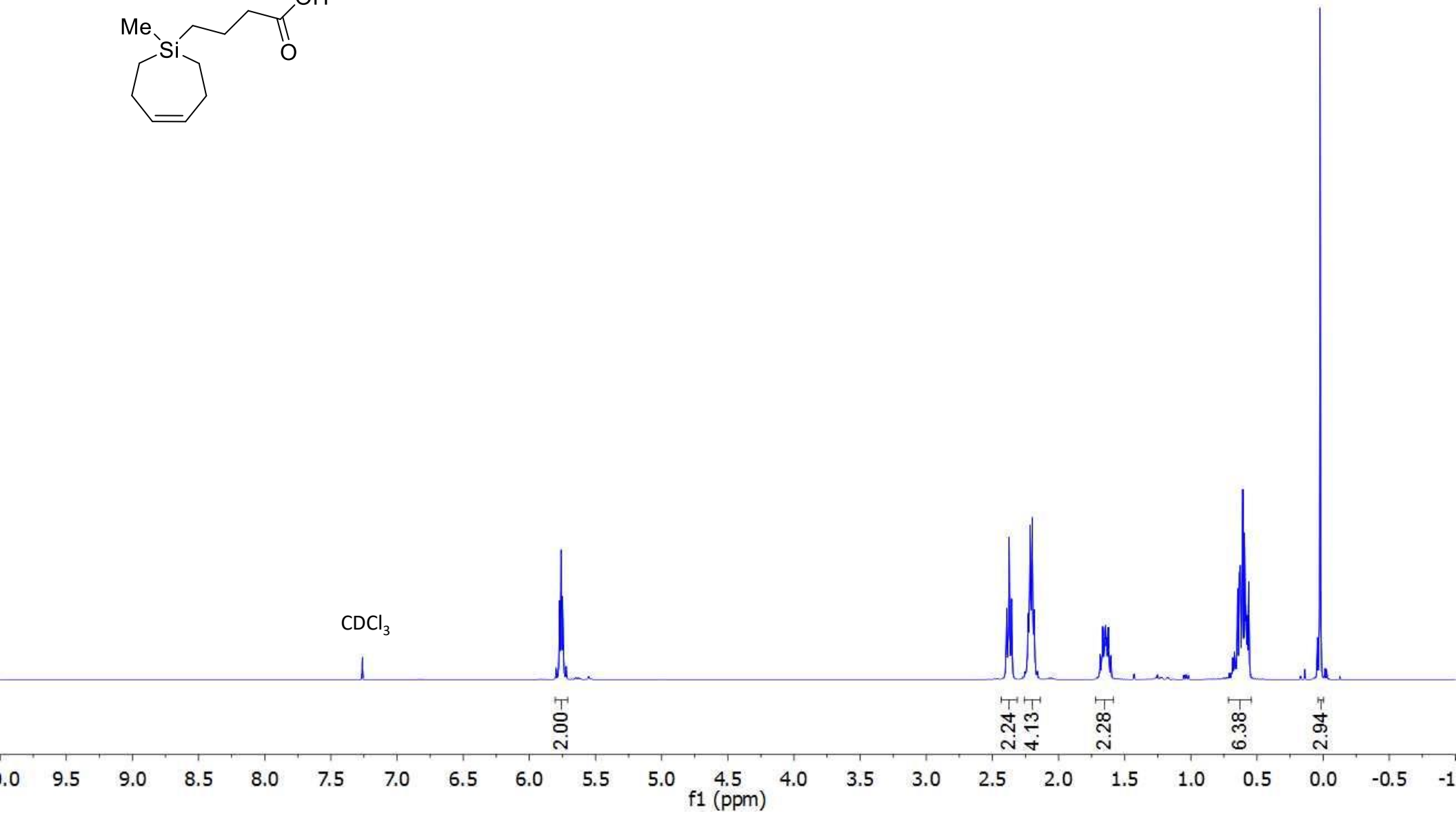
$^{13}$C NMR (100 MHz, $CDCl_3$)

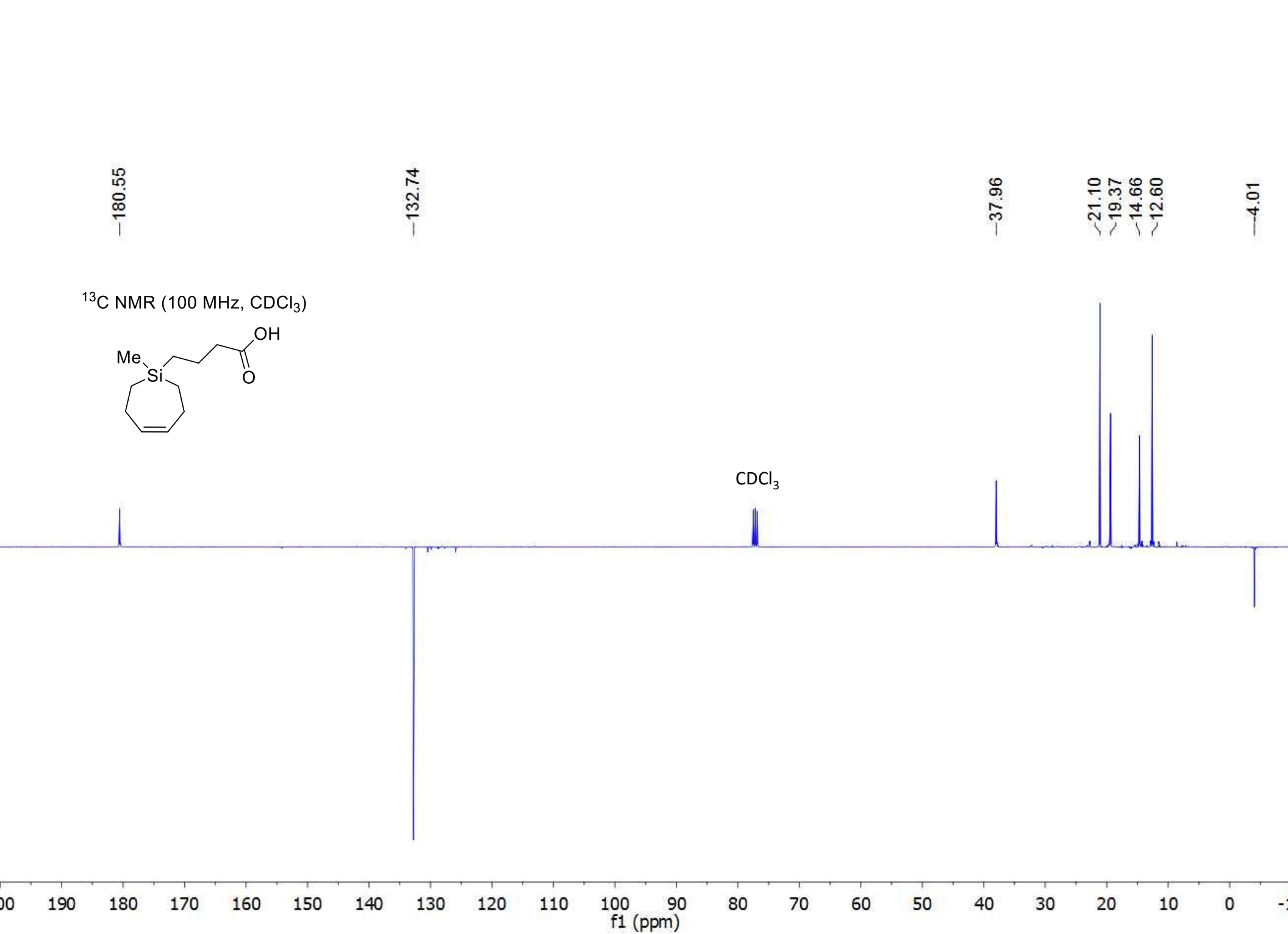


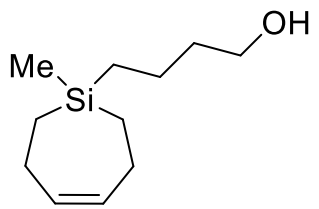
$^1$H NMR (400 MHz, $CDCl_3$)

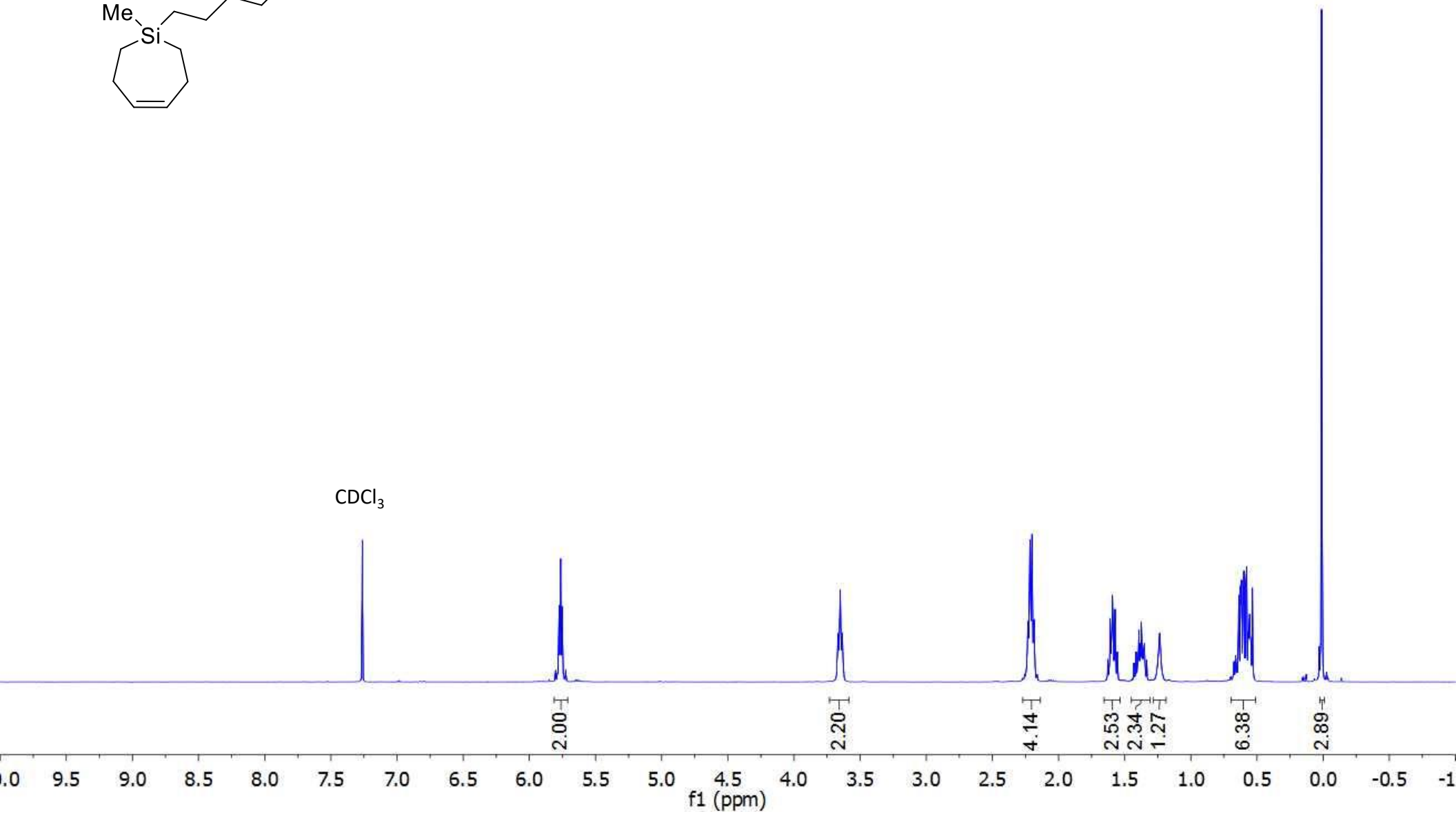



180.55
132.74
37.96
21.10
19.37
14.66
12.60
4.01
$^{13}$C NMR (100 MHz, $CDCl_3$)
OH
Me
Si
O
$CDCl_3$
f1 (ppm)

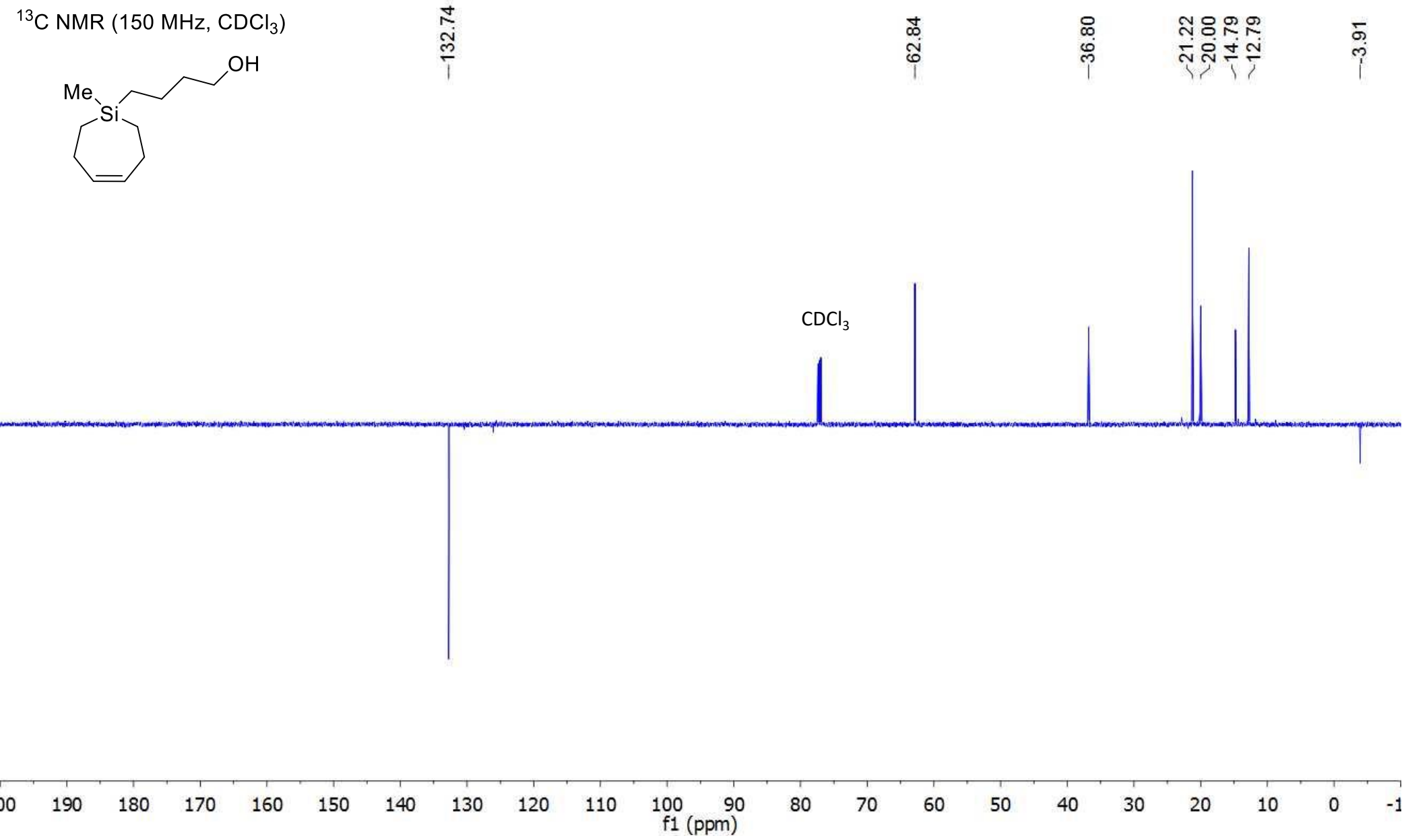
$^1$H NMR (400 MHz, $CDCl_3$)



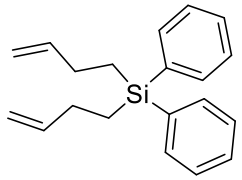



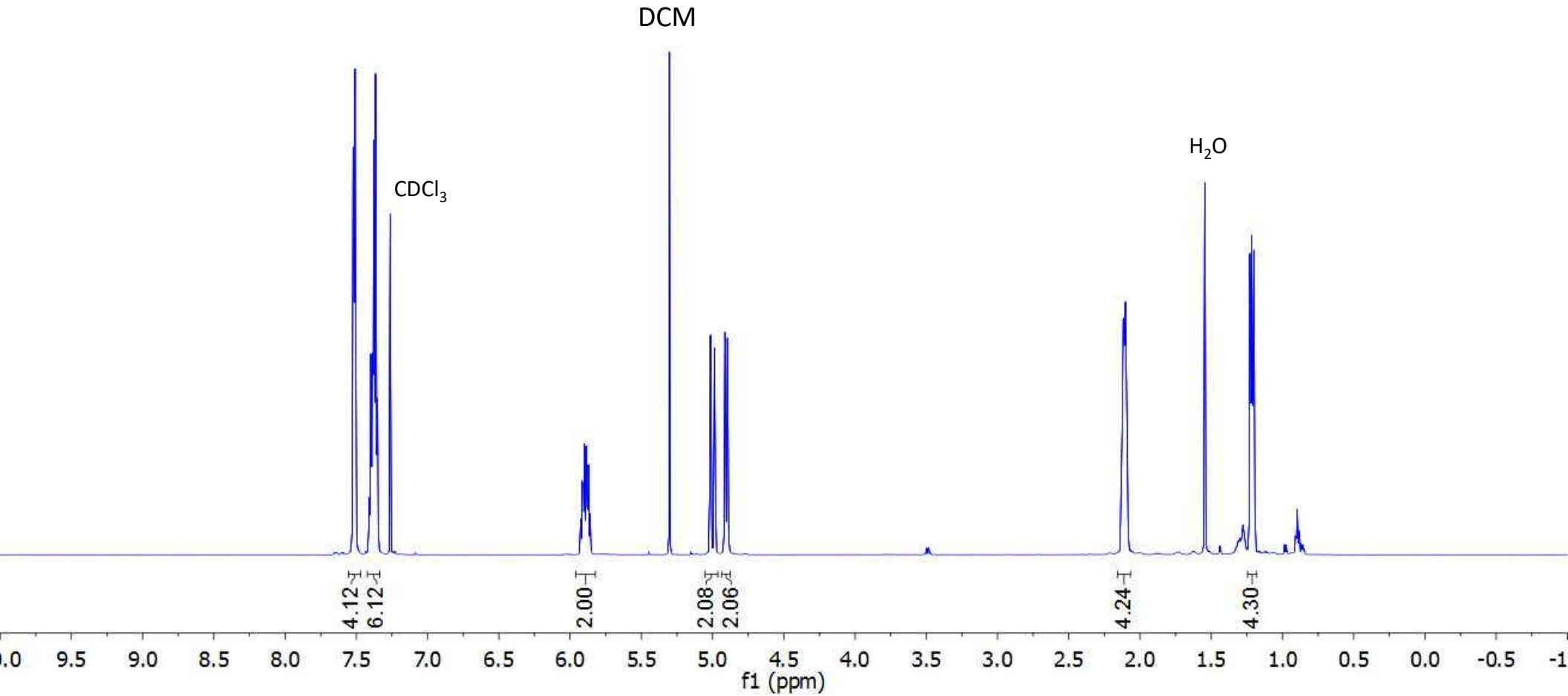
$^{13}$C NMR (150 MHz, $CDCl_3$)



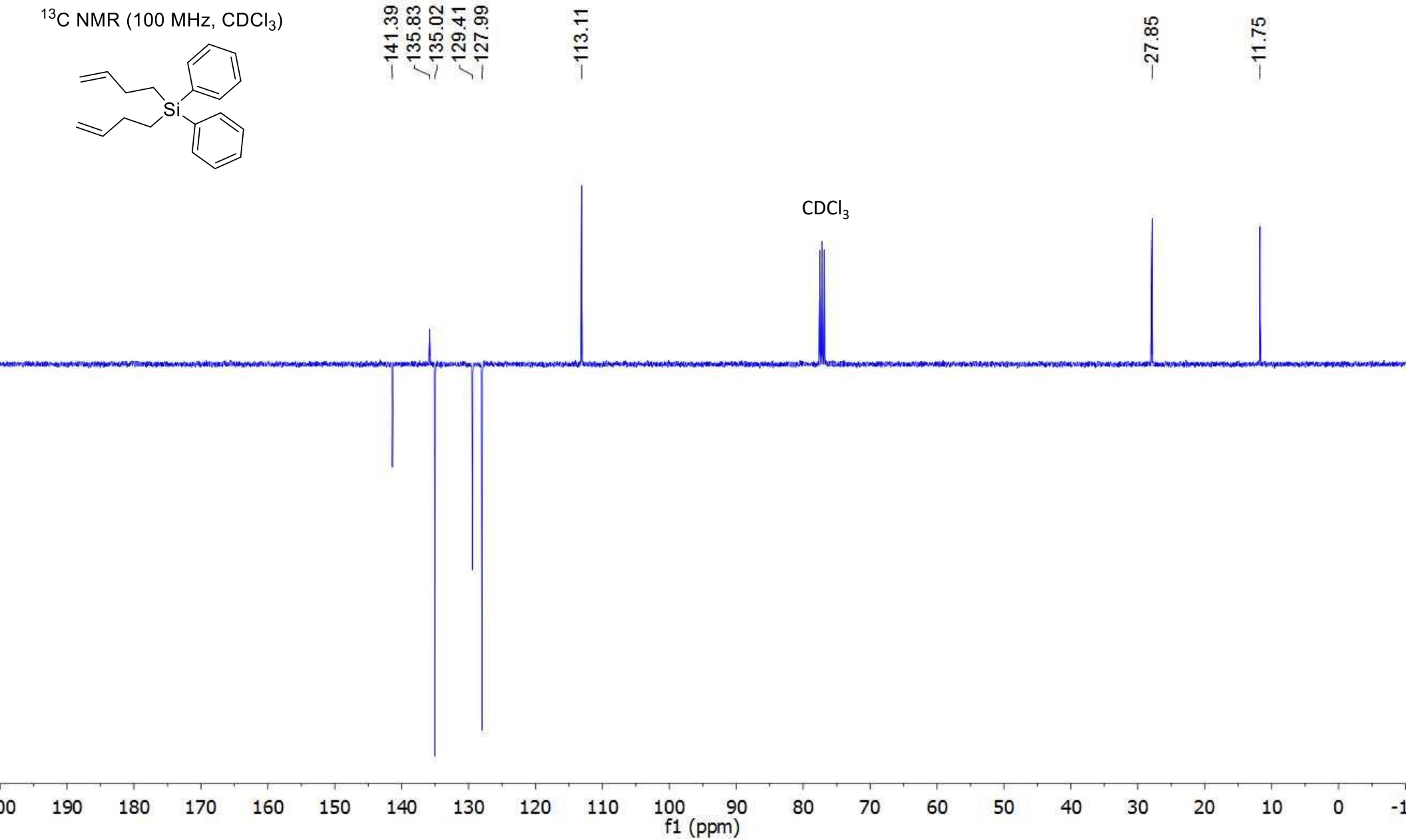
$^1$H NMR (600 MHz, $CDCl_3$)



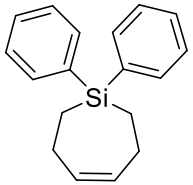



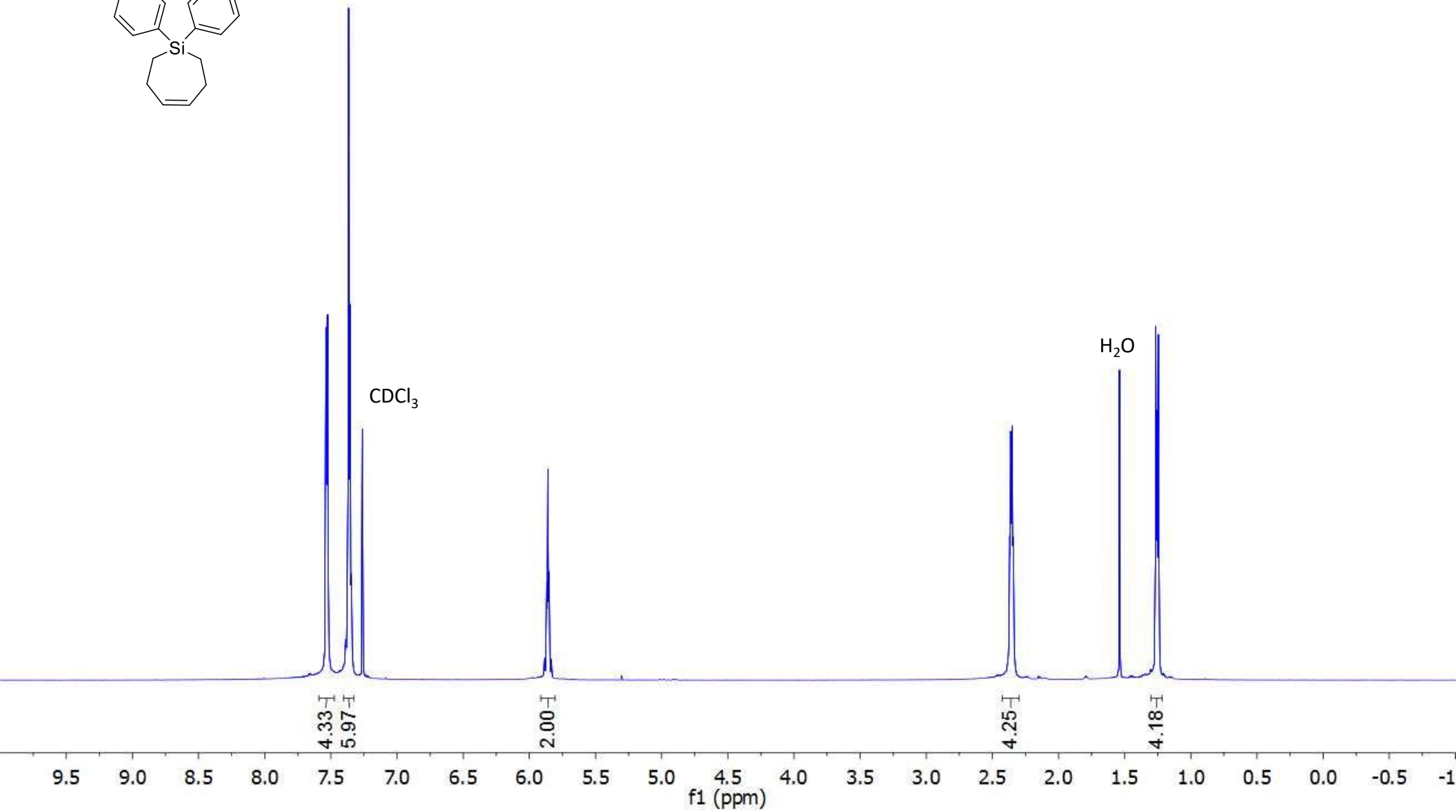
$^{13}C$ NMR (100 MHz, $CDCl_3$)



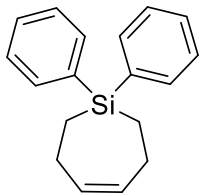



$^1$H NMR (600 MHz, $CDCl_3$)



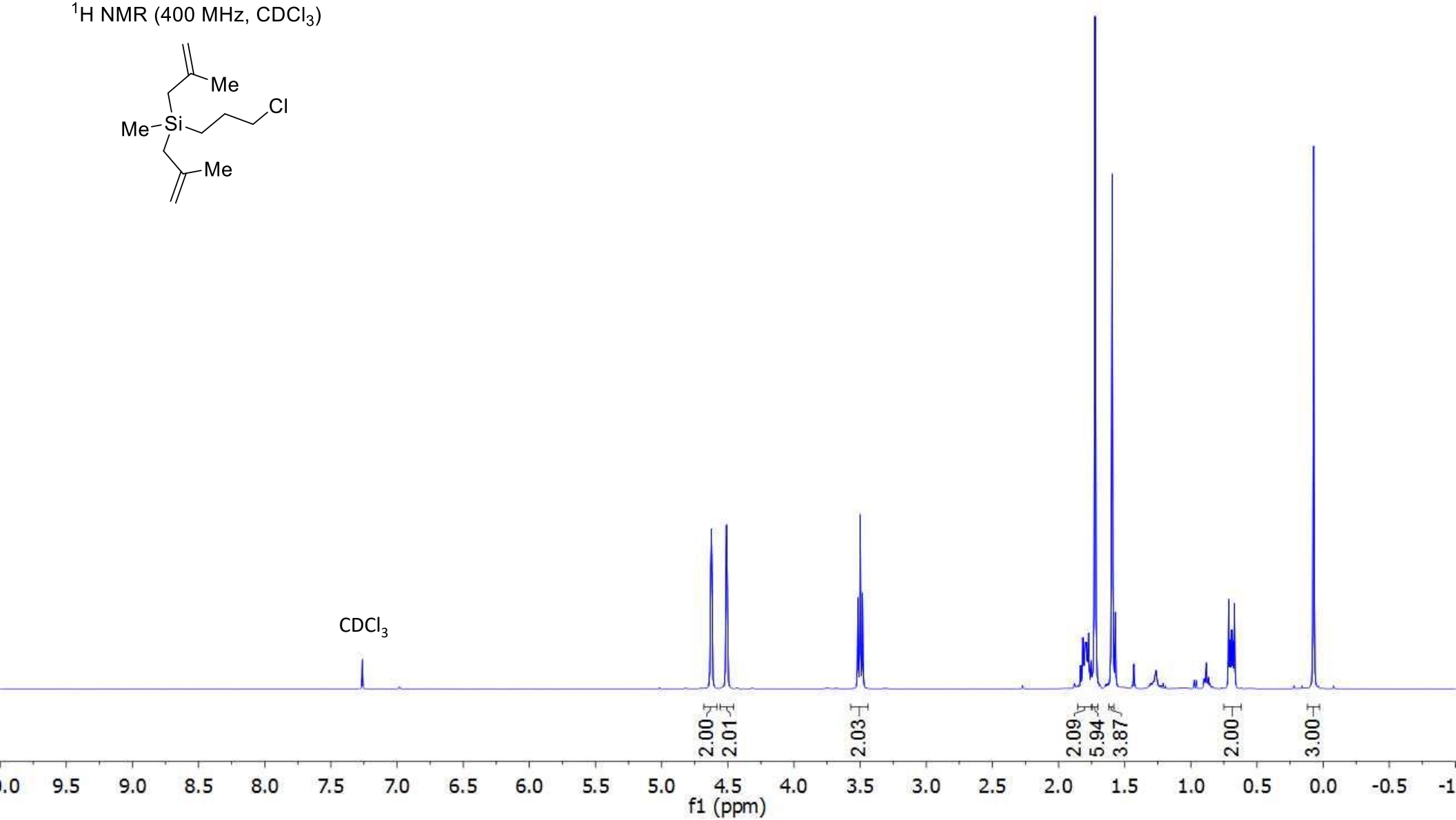
$^{13}$C NMR (100 MHz, $CDCl_3$)




137.16
134.70
132.72
129.29
128.03
21.12
11.39
$CDCl_3$
f1 (ppm)

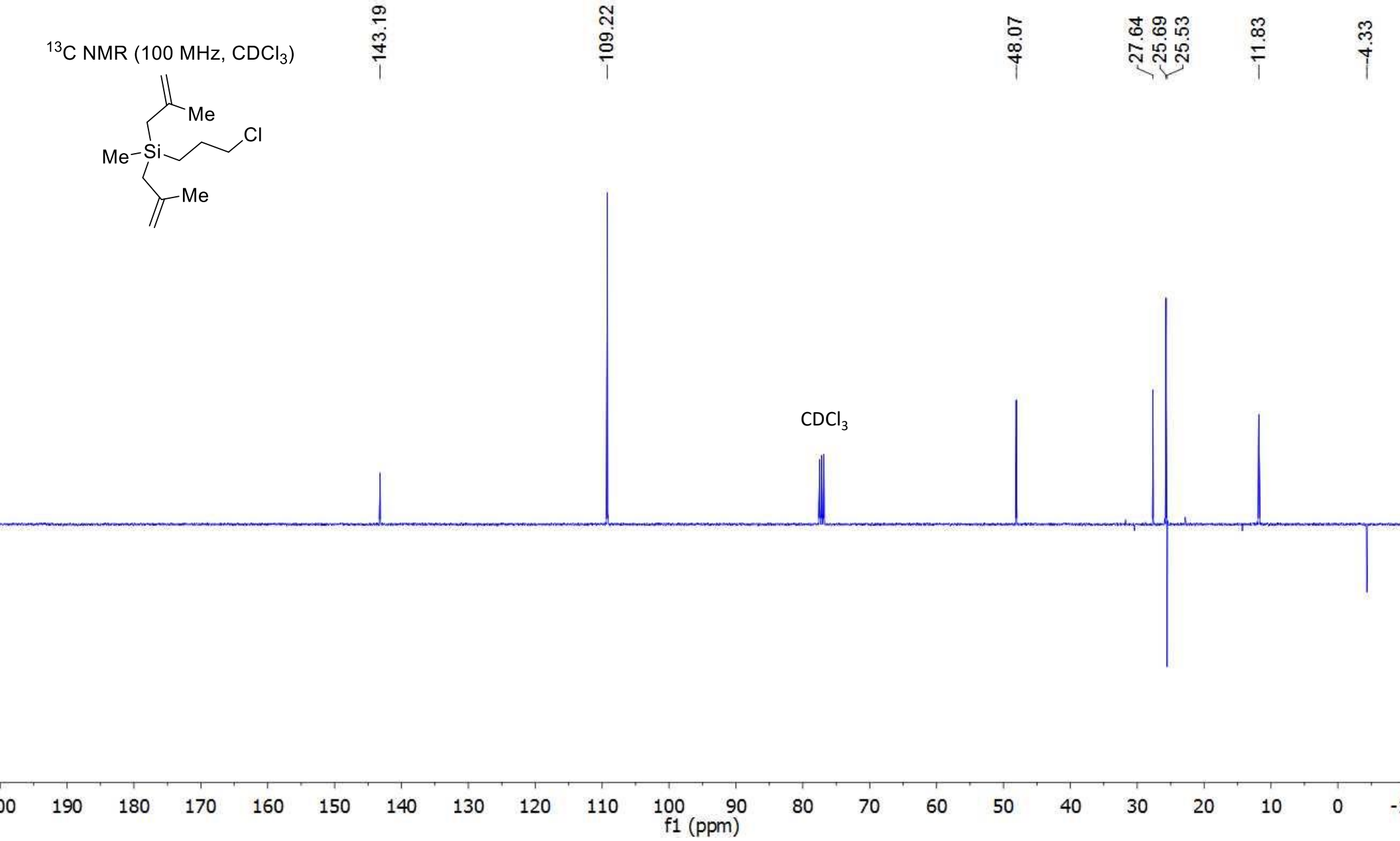
$^1$H NMR (400 MHz, $CDCl_3$)



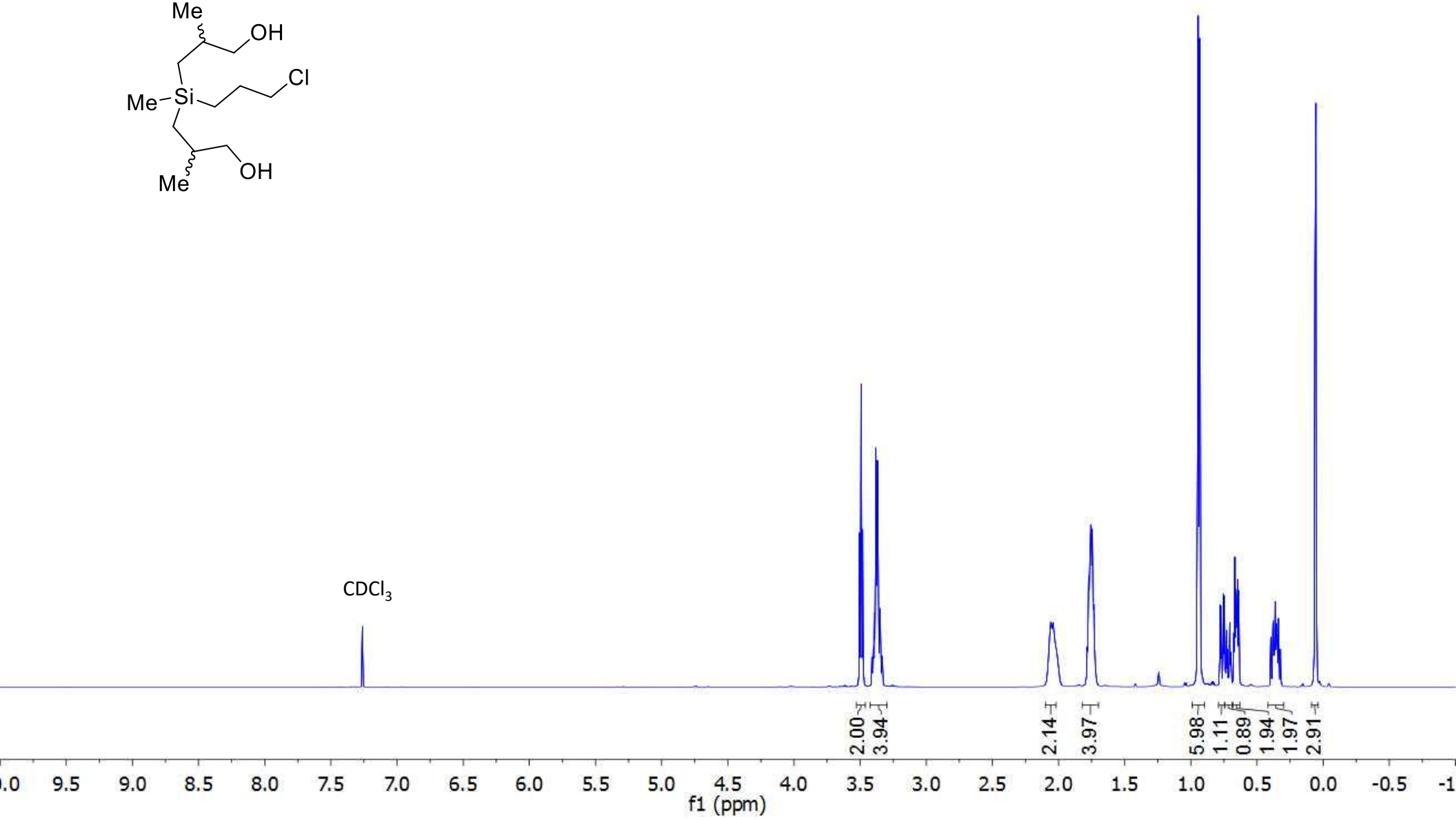
$^{13}$C NMR (100 MHz, $CDCl_3$)



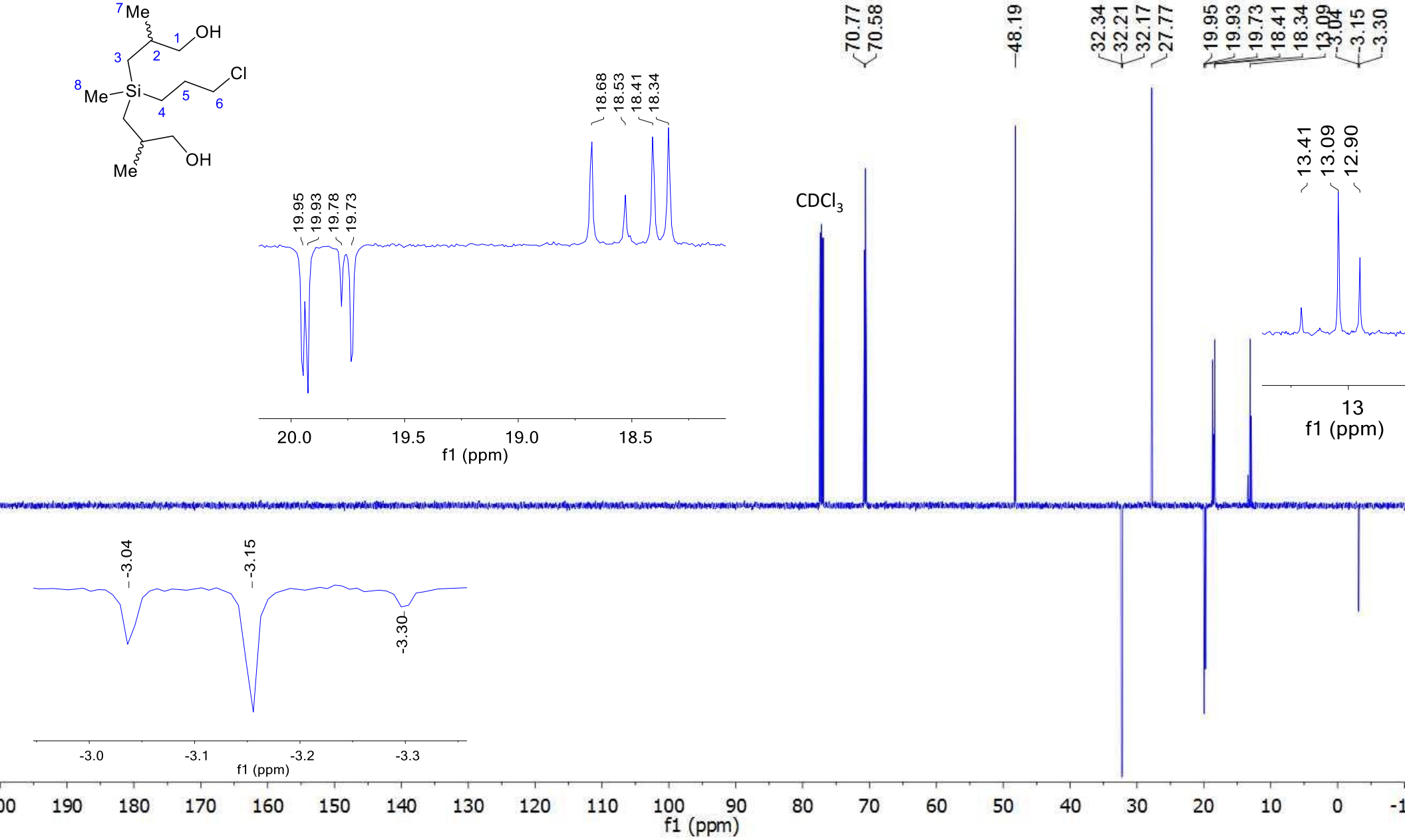
$^1$H NMR (600 MHz, $CDCl_3$)



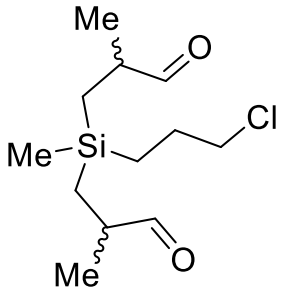



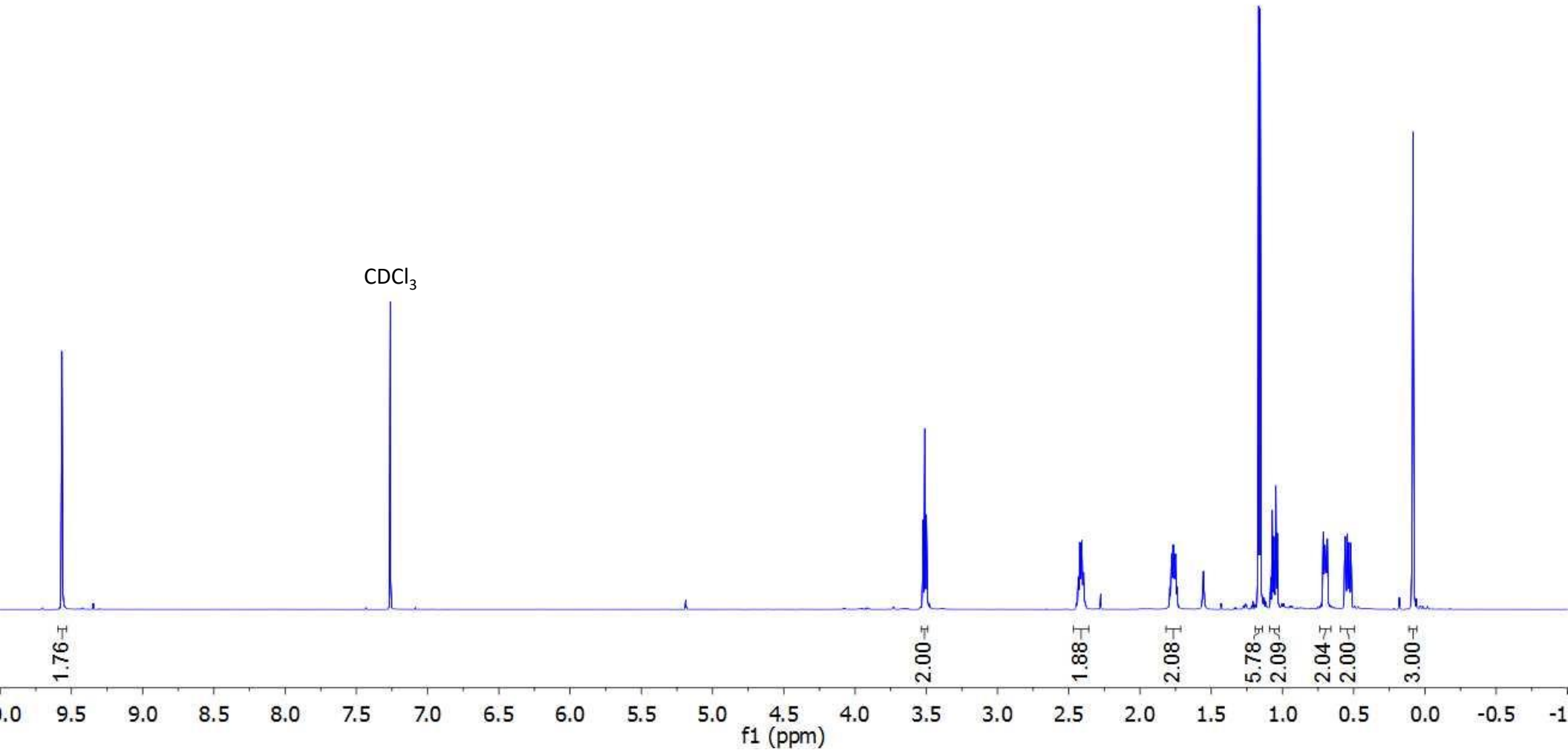
$^{13}$C NMR (150 MHz, $CDCl_3$)



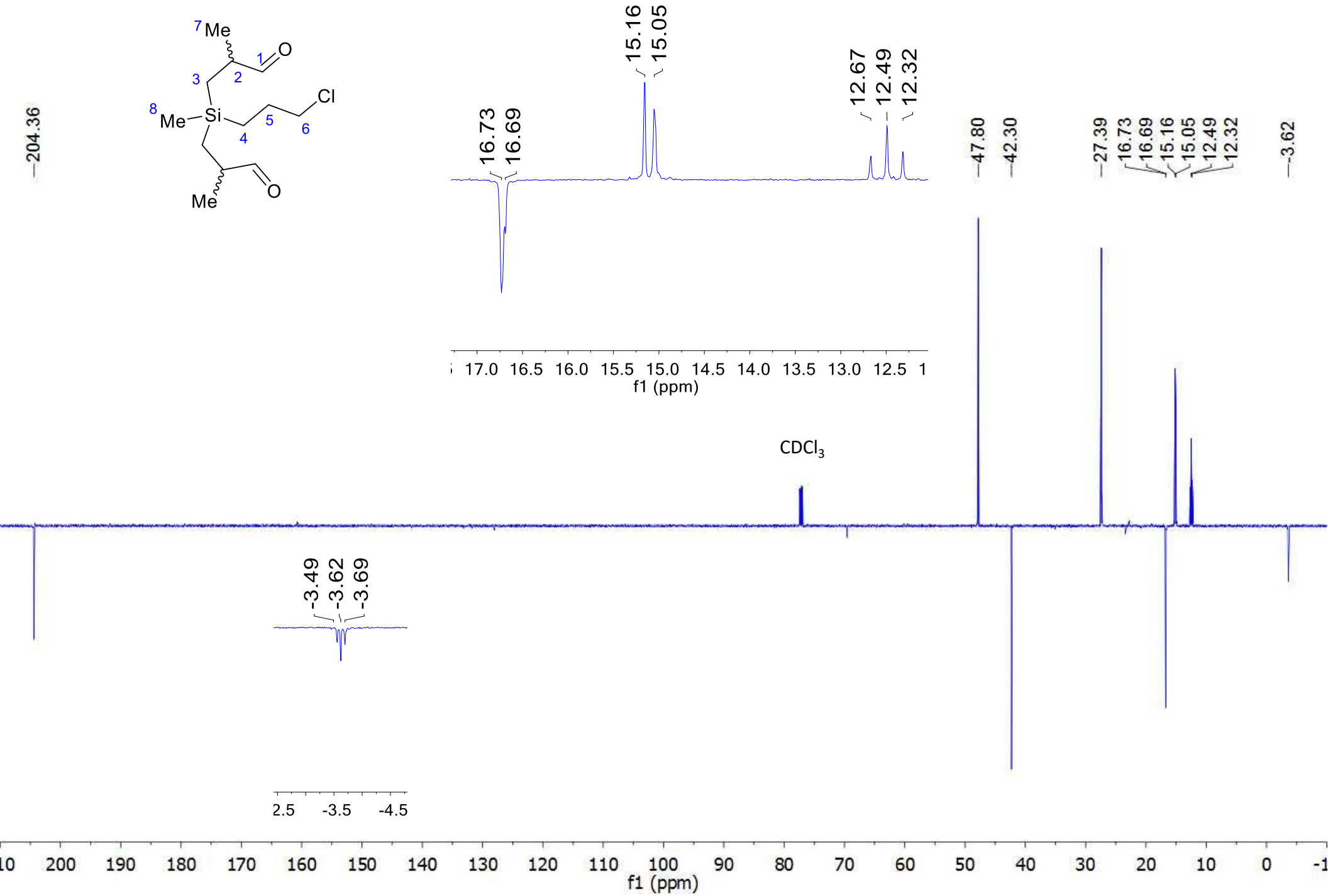
$^1$H NMR (600 MHz, $CDCl_3$)



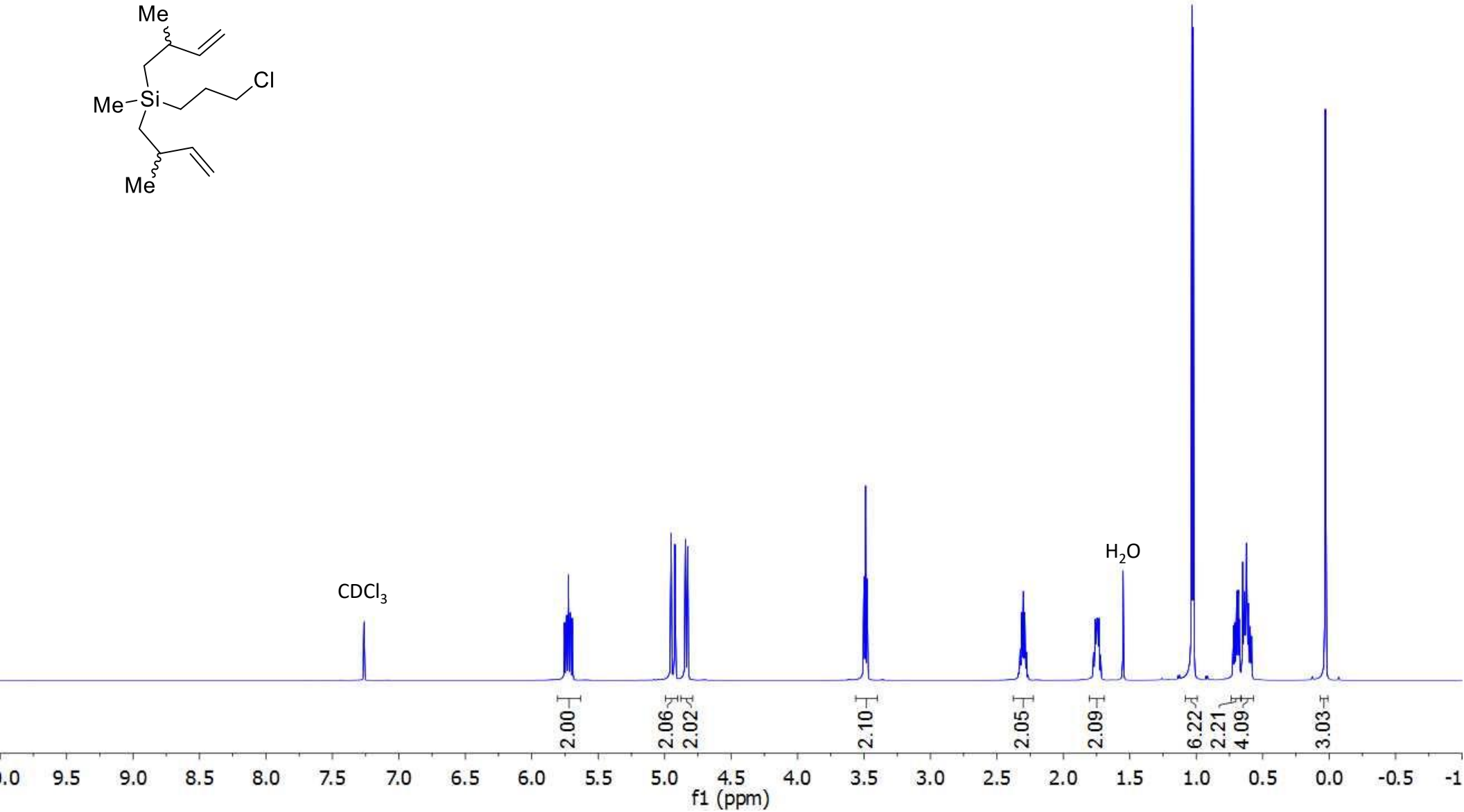
$^{13}$C NMR (150 MHz, $CDCl_3$)



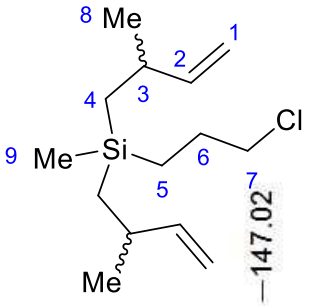



$^1$H NMR (600 MHz, $CDCl_3$)



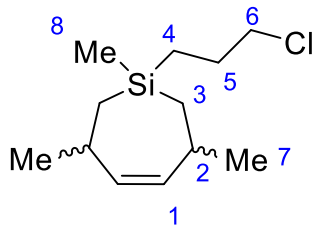



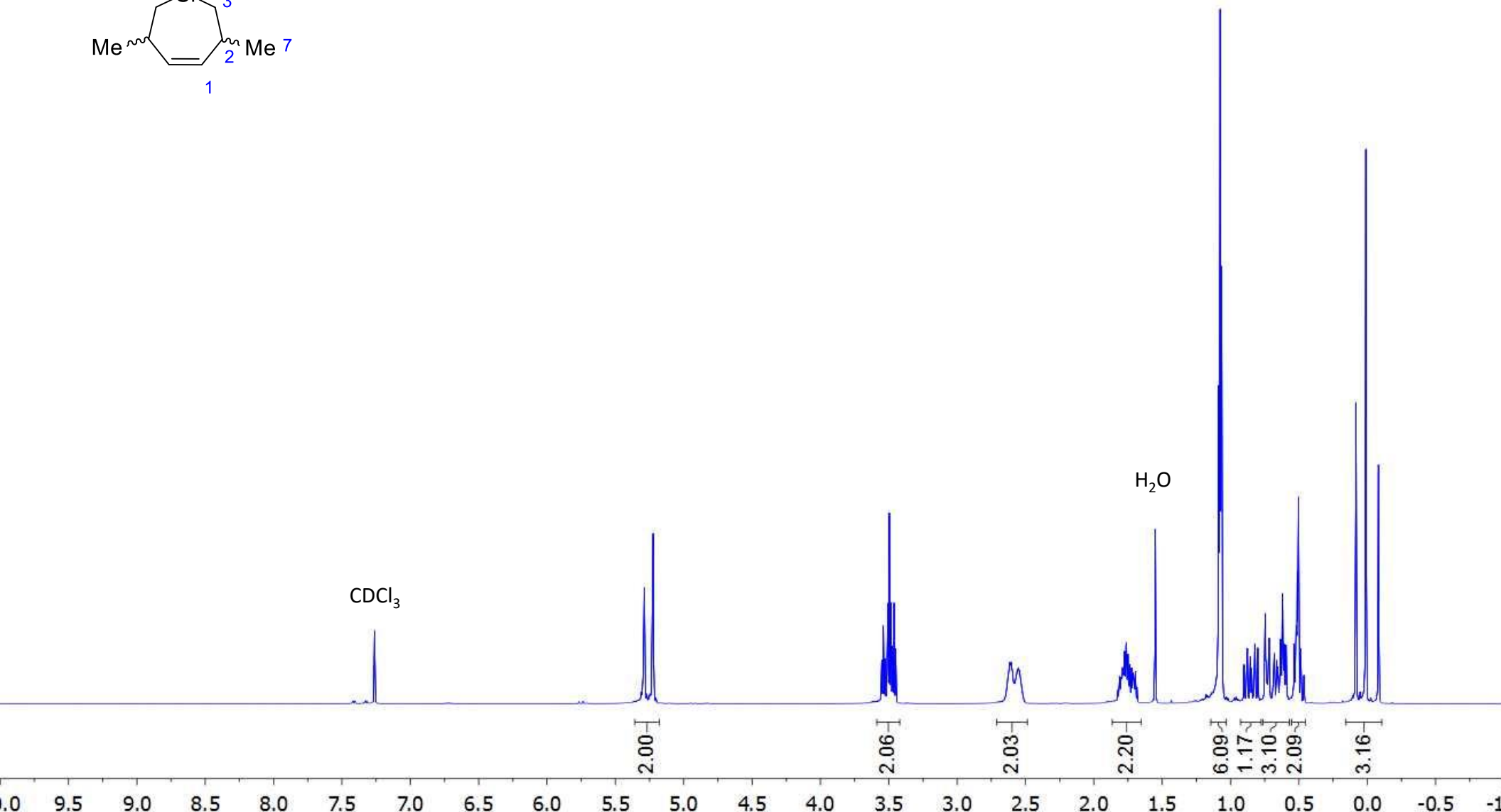
$^{13}$C NMR (150 MHz, $CDCl_3$)



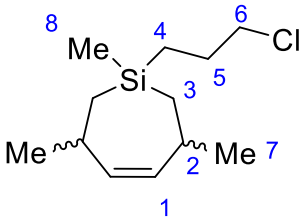

147.02
111.31
48.23
34.40
27.82
24.40
24.37
22.70
22.65
13.06
13.04
3.11
3.14
$CDCl_3$
24.40
24.37
22.70
22.68
22.65
24.5 24.3 24.1 23.9 23.7 23.5 23.3 23.1 22.9 22.7
f1 (ppm)
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0
f1 (ppm)

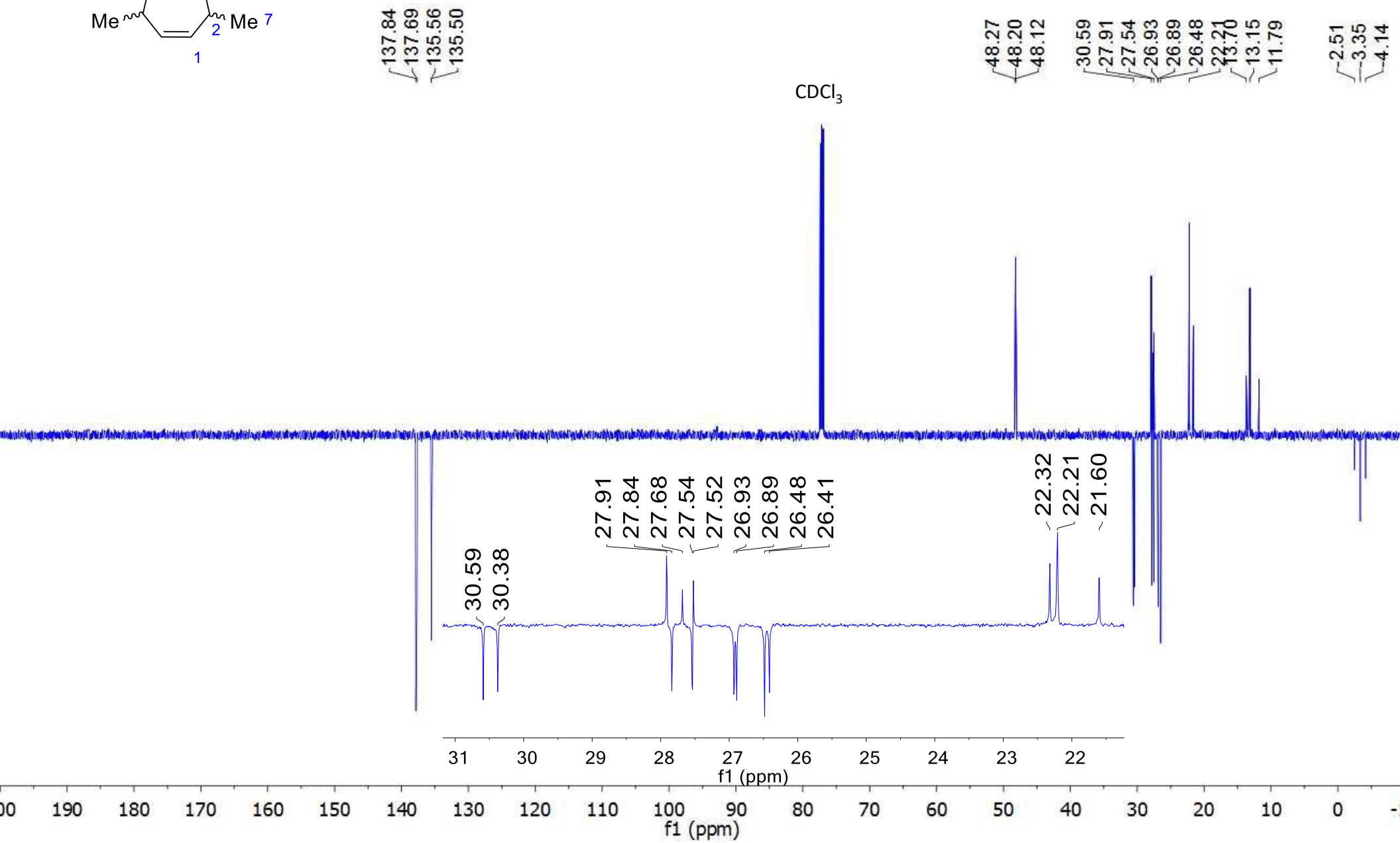
$^1$H NMR (600 MHz, $CDCl_3$)



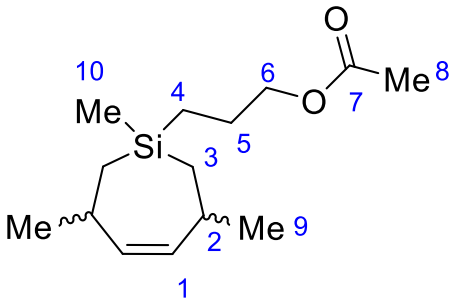



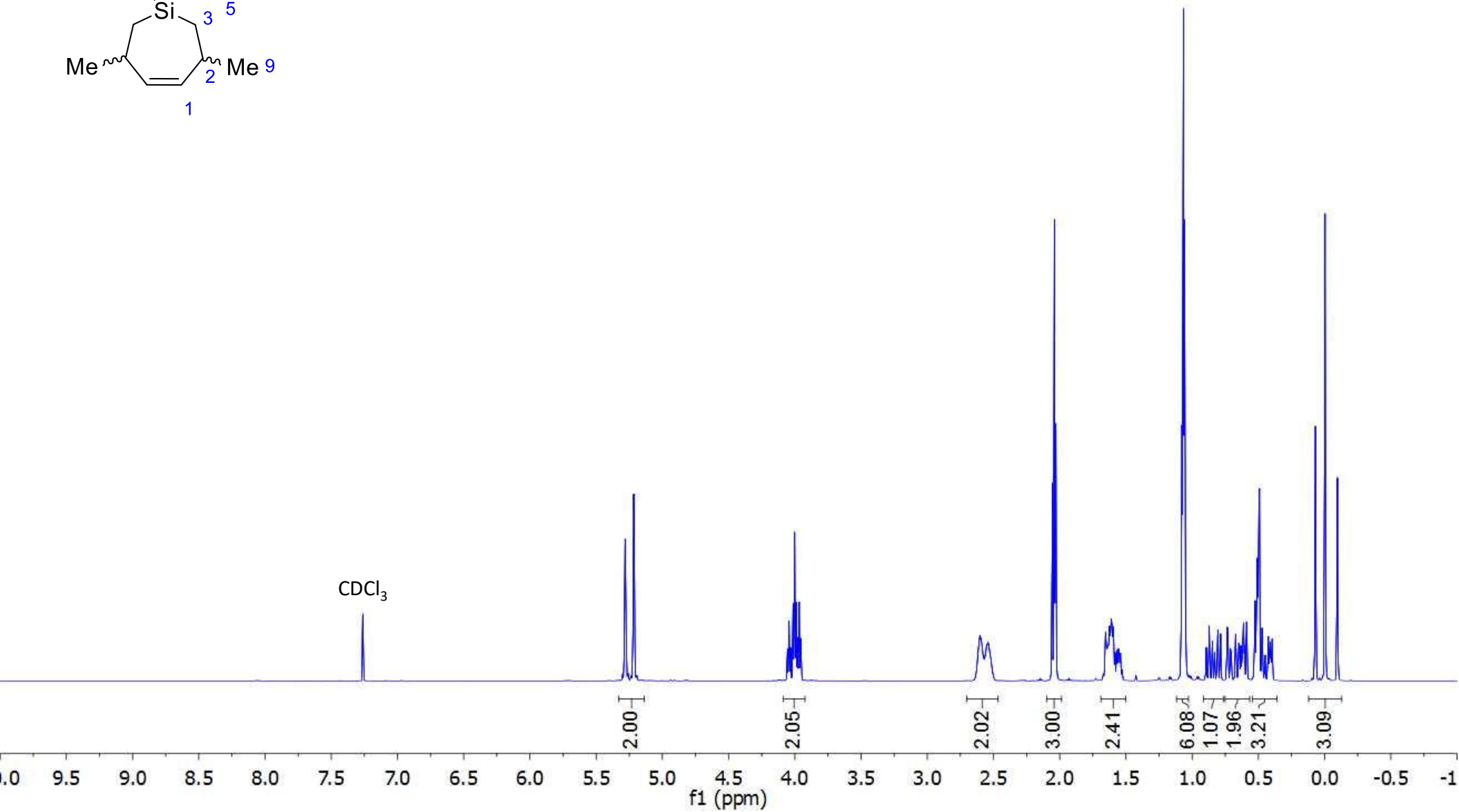
$^{13}$C NMR (150 MHz, $CDCl_3$)



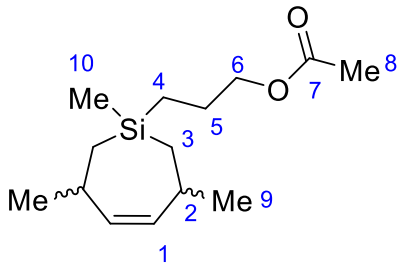



$^1$H NMR (600 MHz, $CDCl_3$)



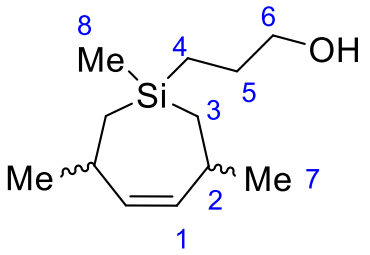



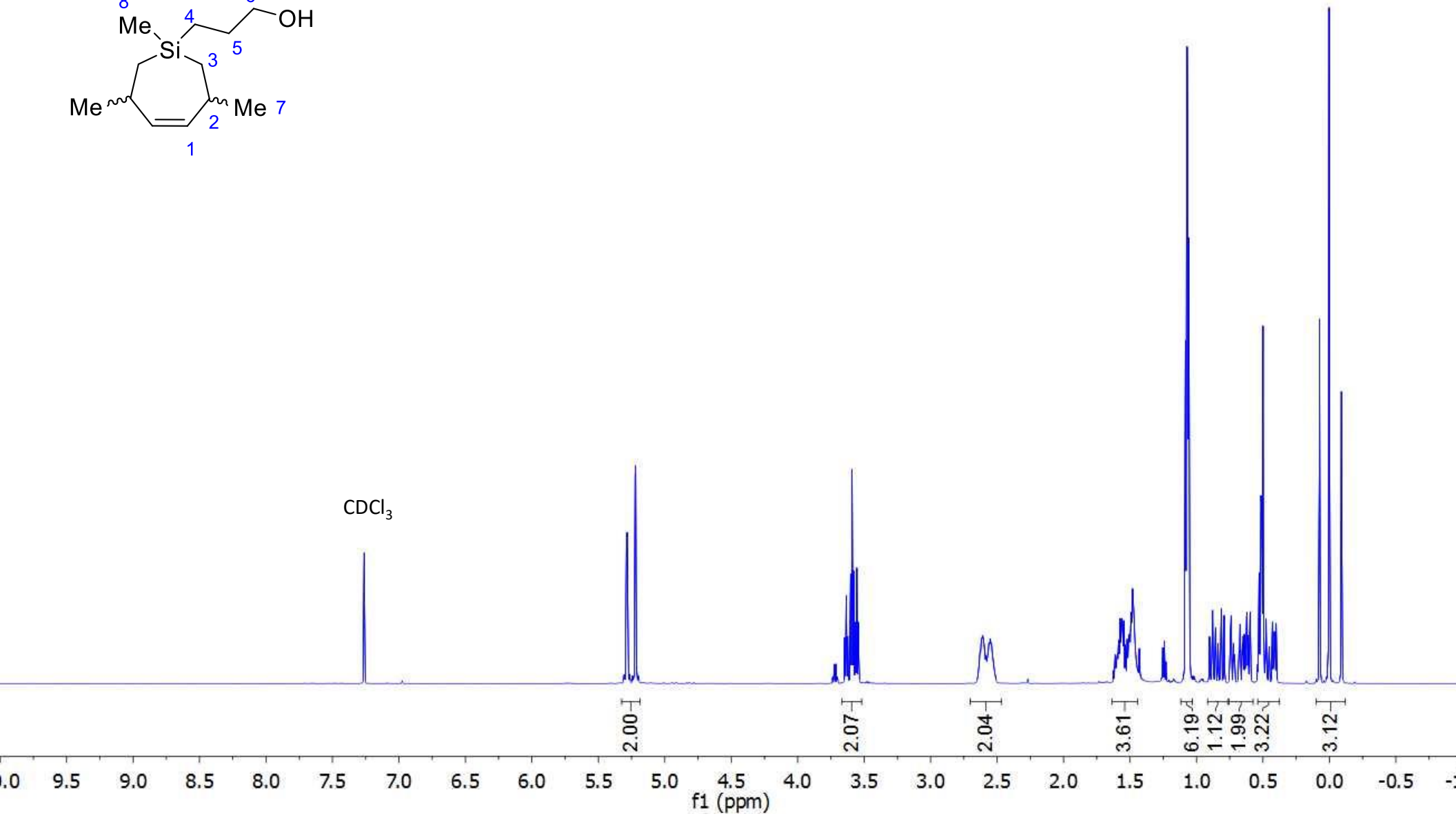
$^{13}$C NMR (150 MHz, $CDCl_3$)



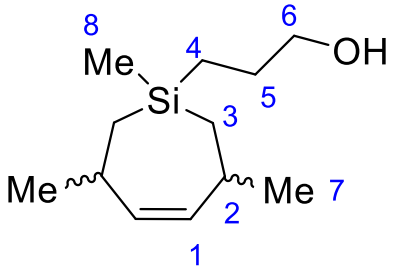

171.30
137.83
137.68
135.56
135.49
67.34
67.30
67.23
30.61
30.35
27.83
27.53
26.93
26.90
26.49
26.41
23.39
23.02
22.34
22.20
21.57
11.80
11.23
9.86
2.52
3.40
4.19
$CDCl_3$
26.93
26.90
26.41
26.41
23.39
23.17
23.02
22.34
22.20
21.57
21.16
27 26 25 24 23 22
f1 (ppm)
30.61
30.35
30.5
f1 (ppm)
27.83
27.53
26.93
26.90
27.8 27.6 27.4 27.2 27.0
f1 (ppm)
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10
f1 (ppm)

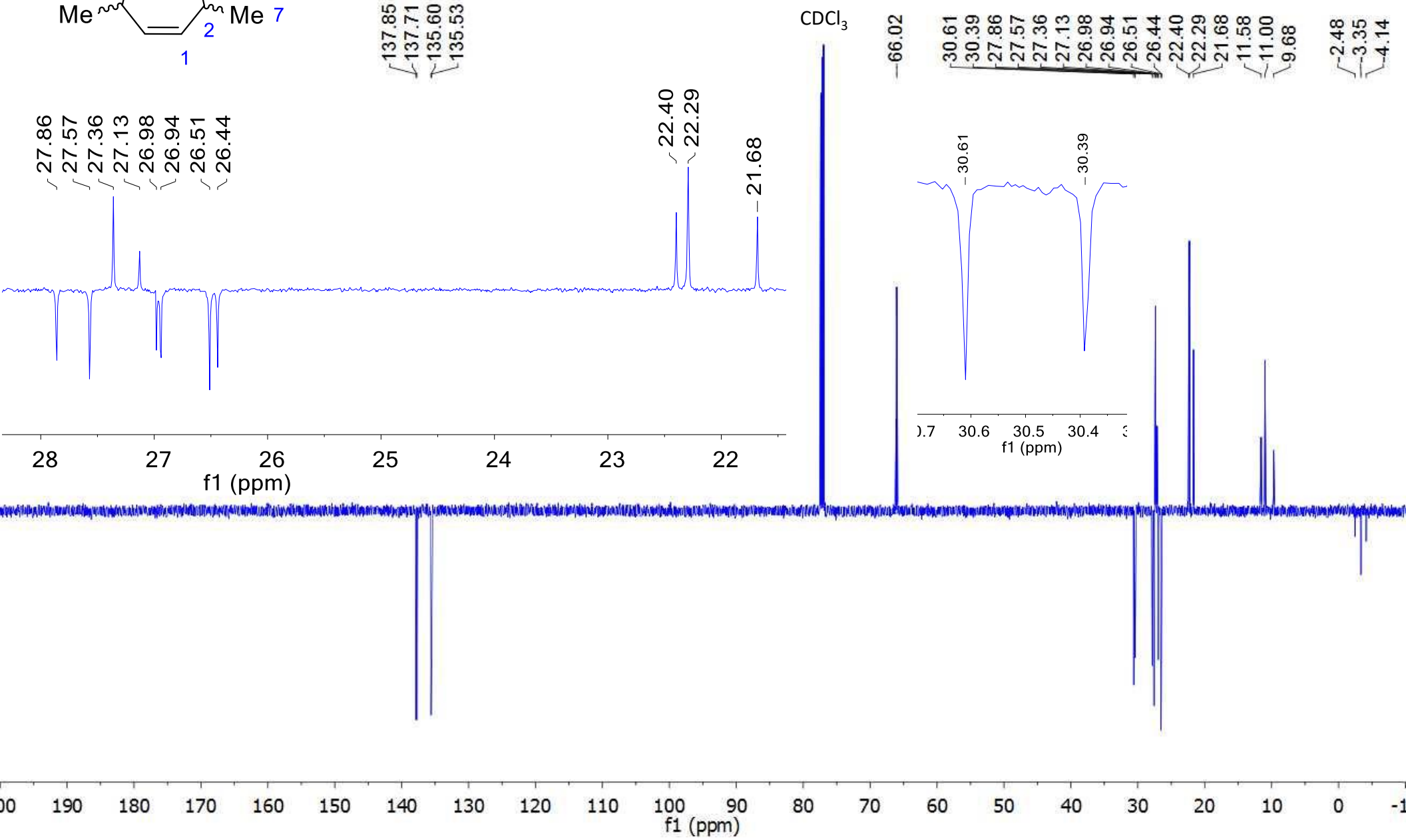
$^1$H NMR (600 MHz, $CDCl_3$)



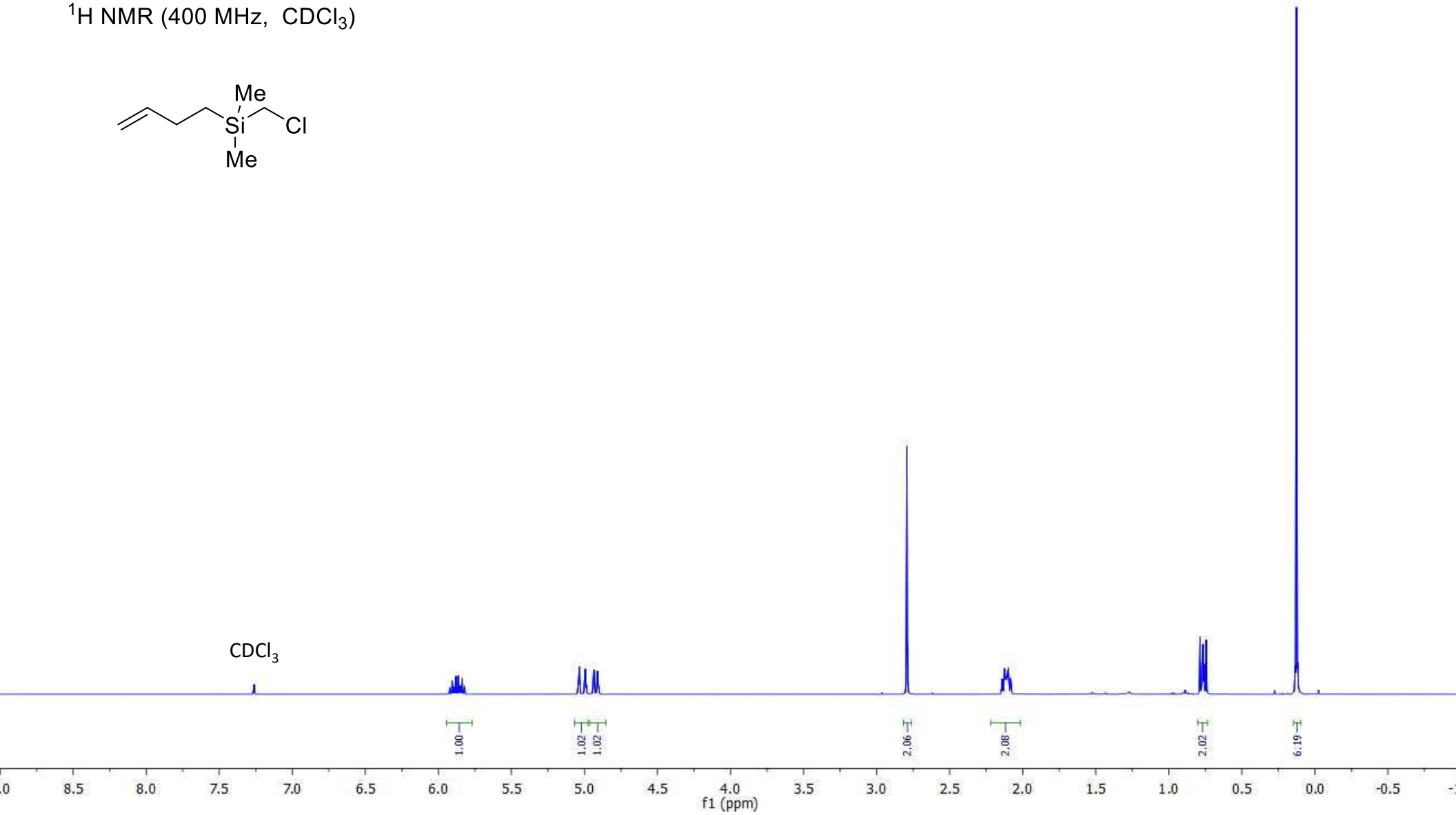
$^{13}$C NMR (150 MHz, $CDCl_3$)



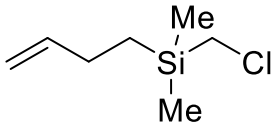



$^1$H NMR (400 MHz, $CDCl_3$)



$^{13}$C NMR (100 MHz, $CDCl_3$)

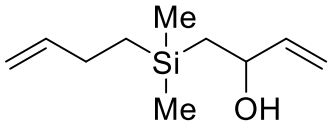


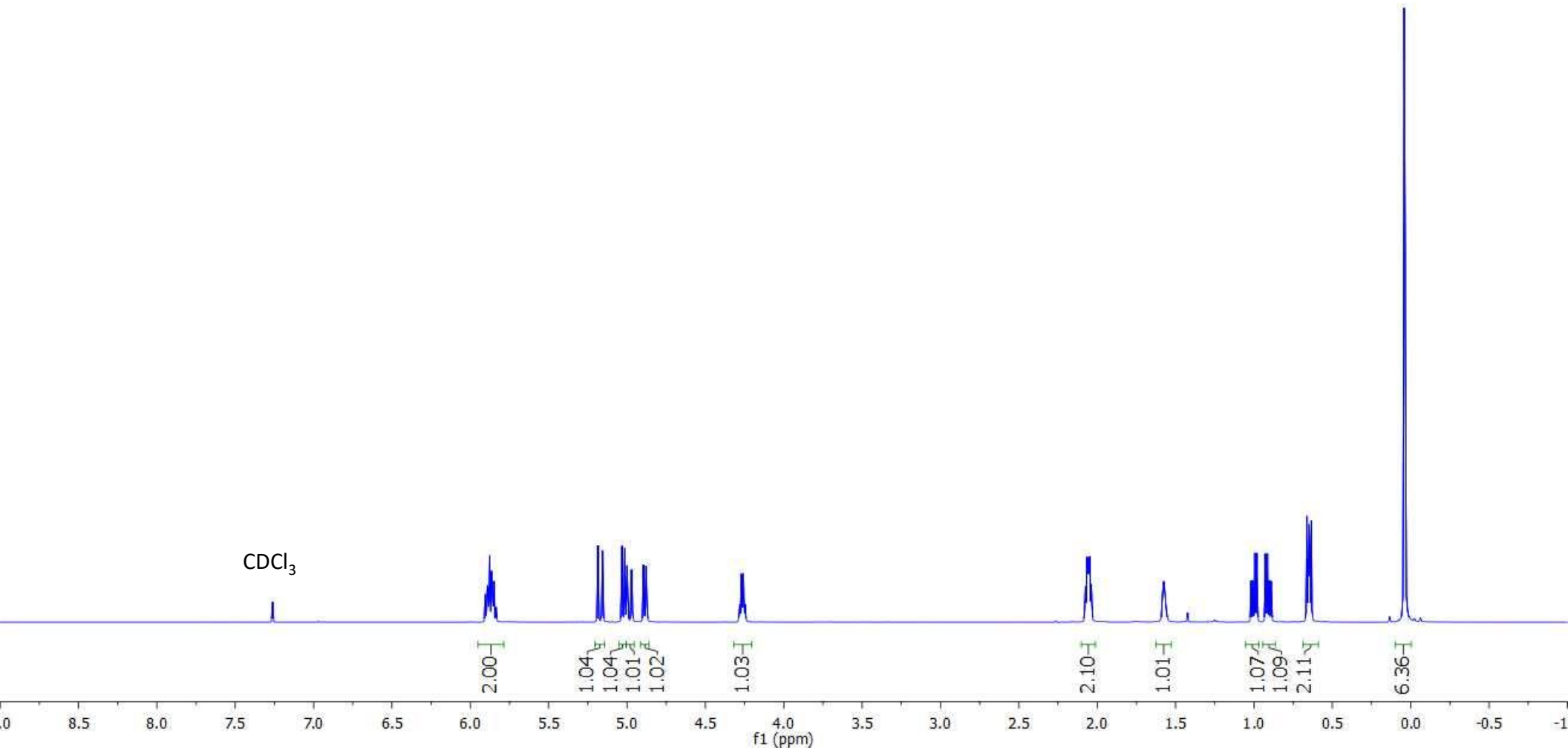

141.10
113.39
30.45
27.77
12.93
-4.39

$CDCl_3$

f1 (ppm)

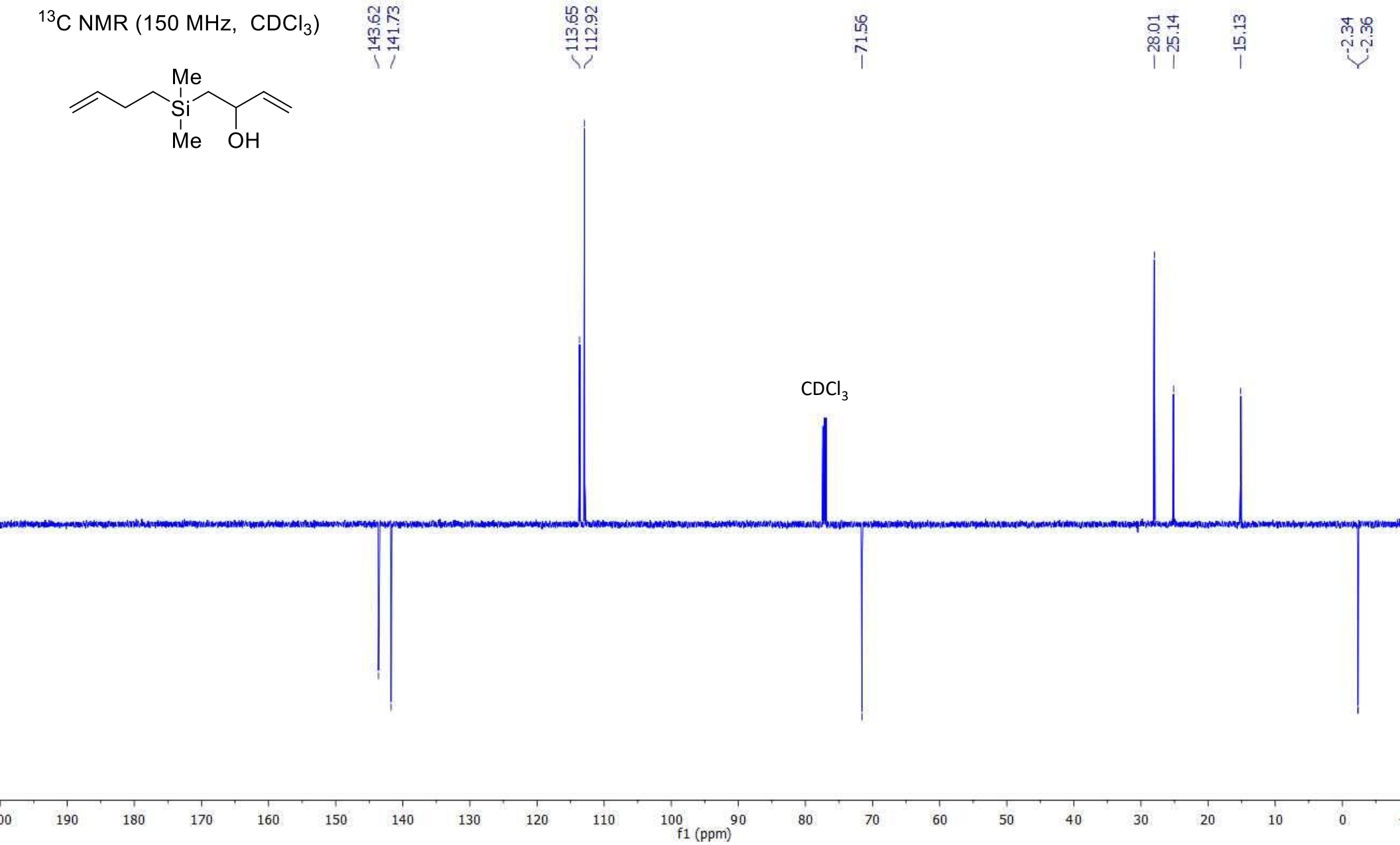
$^{1}$H NMR (600 MHz, $CDCl_3$)



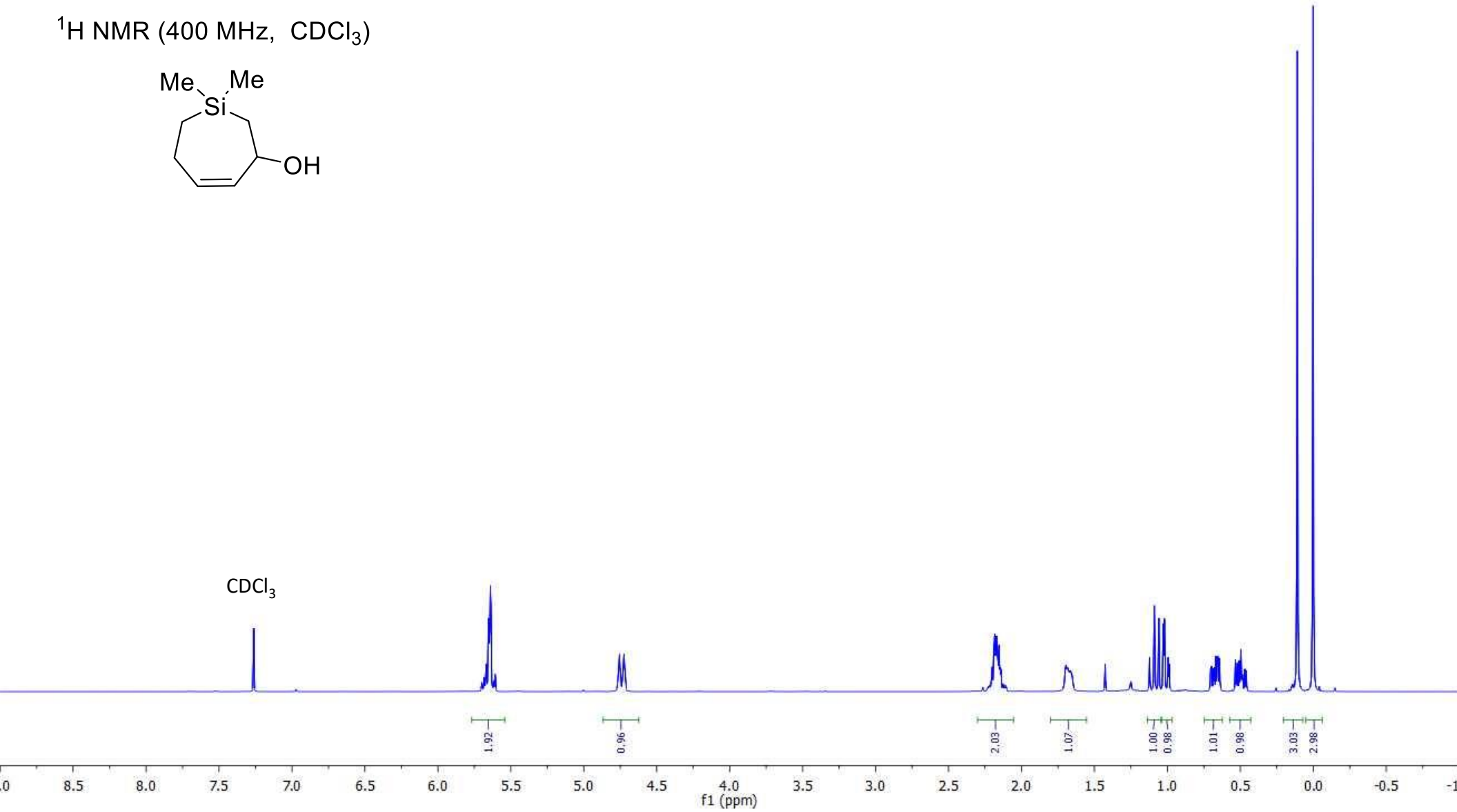
$^{13}C$ NMR (150 MHz, $CDCl_3$)



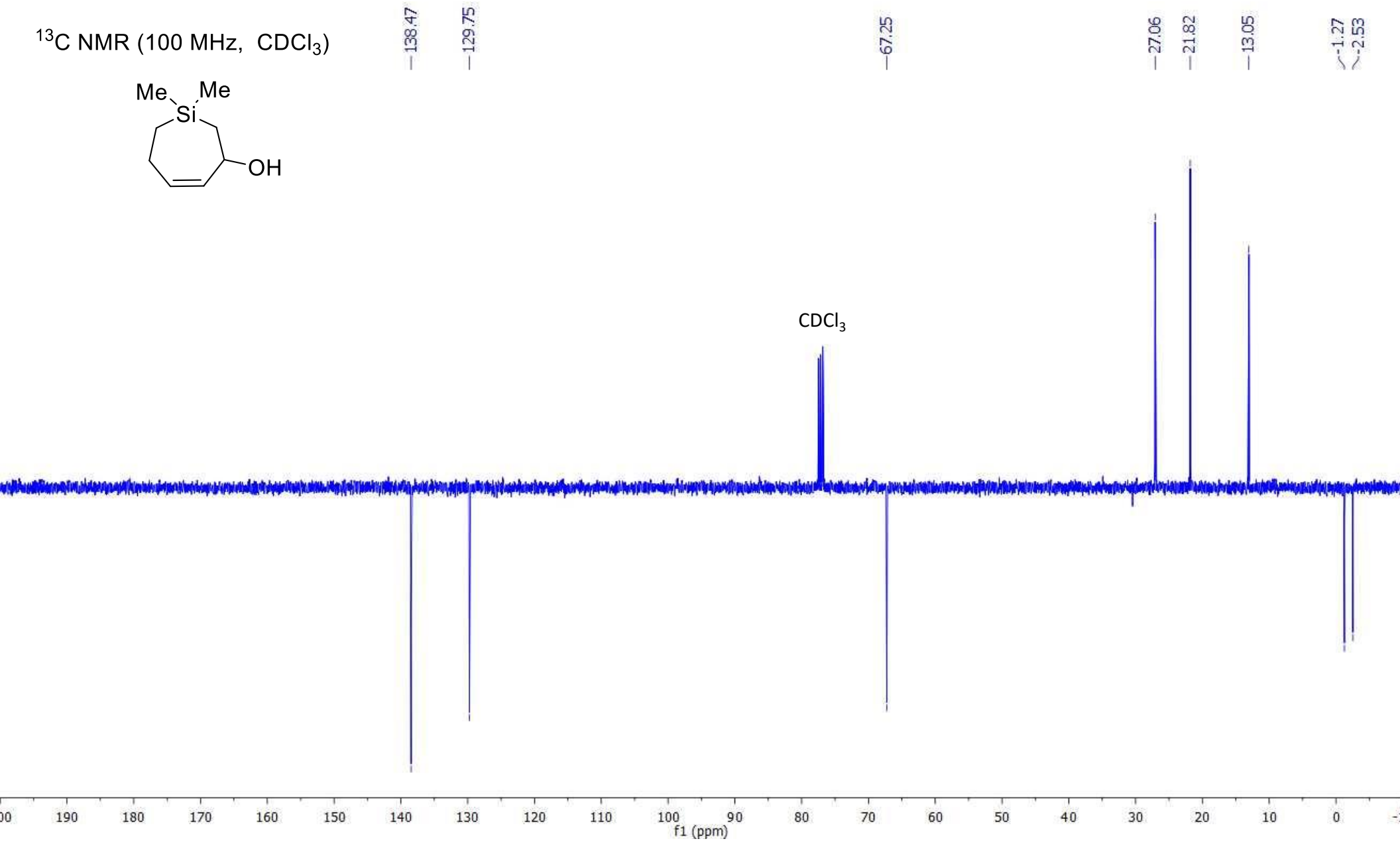
$^1$H NMR (400 MHz, $CDCl_3$)



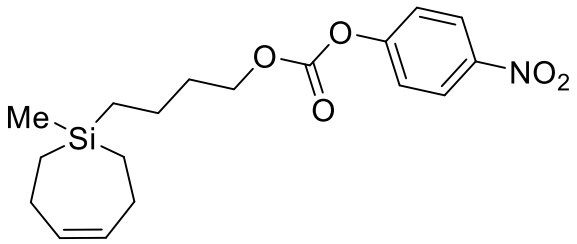



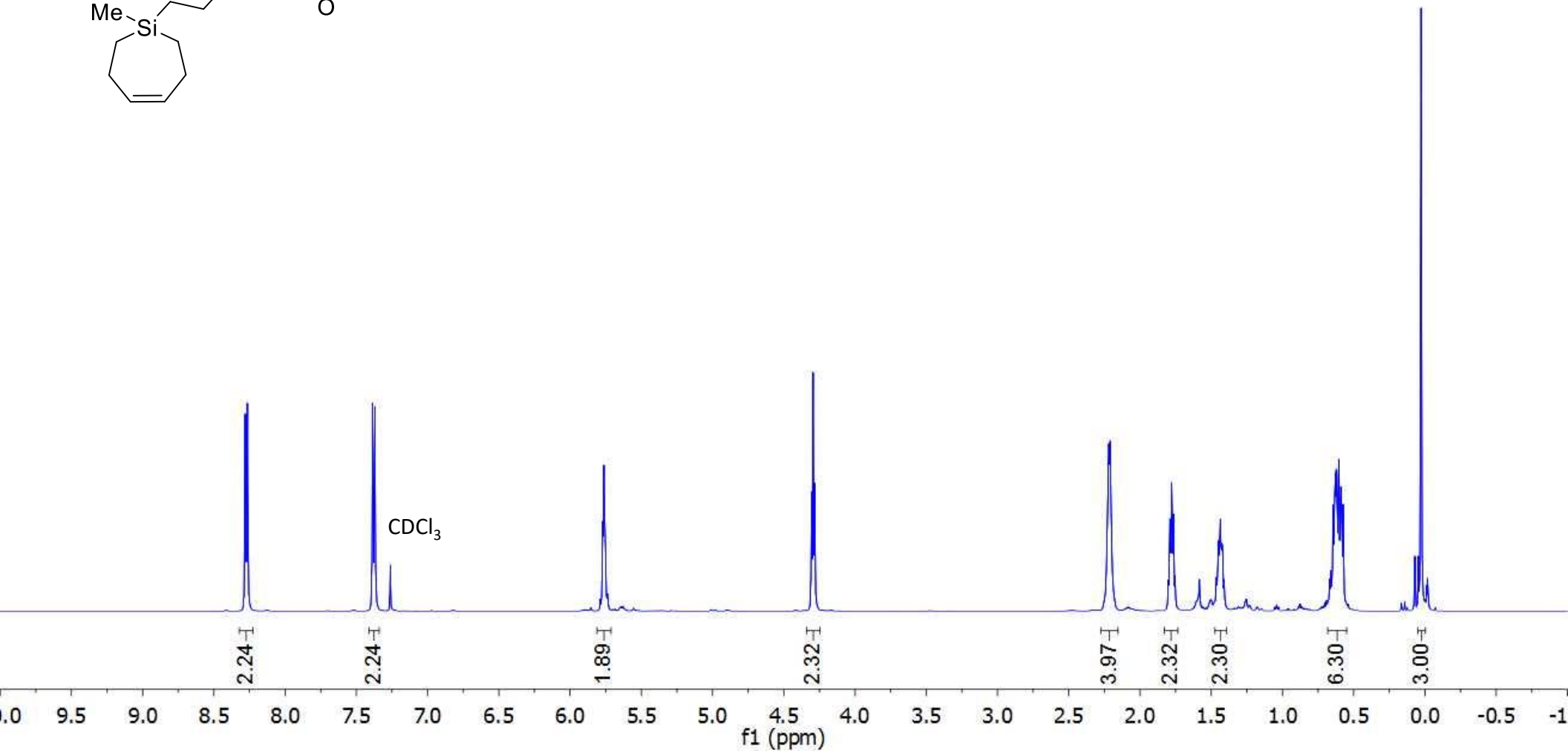
$^{13}$C NMR (100 MHz, $CDCl_3$)

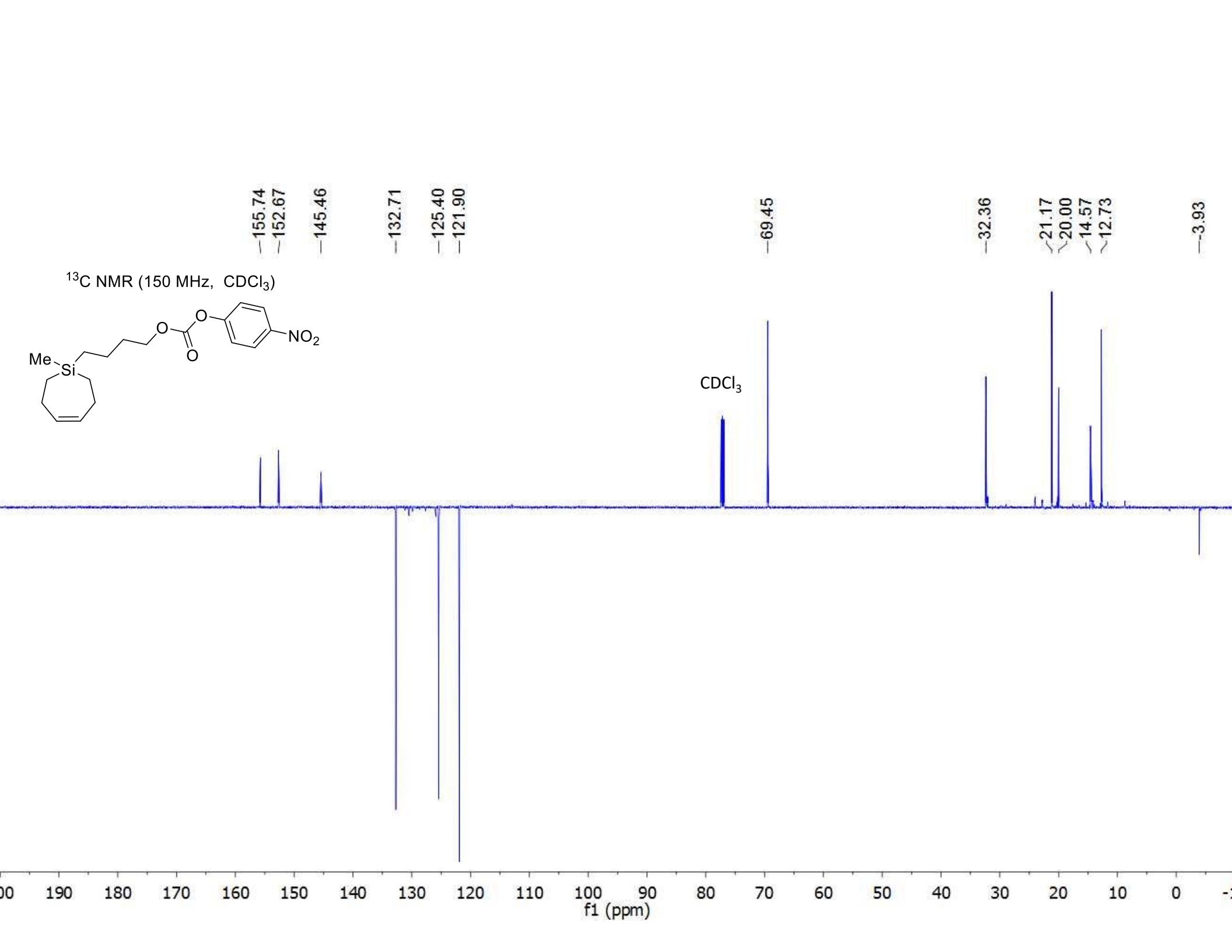


$^1$H NMR (600 MHz, $CDCl_3$)

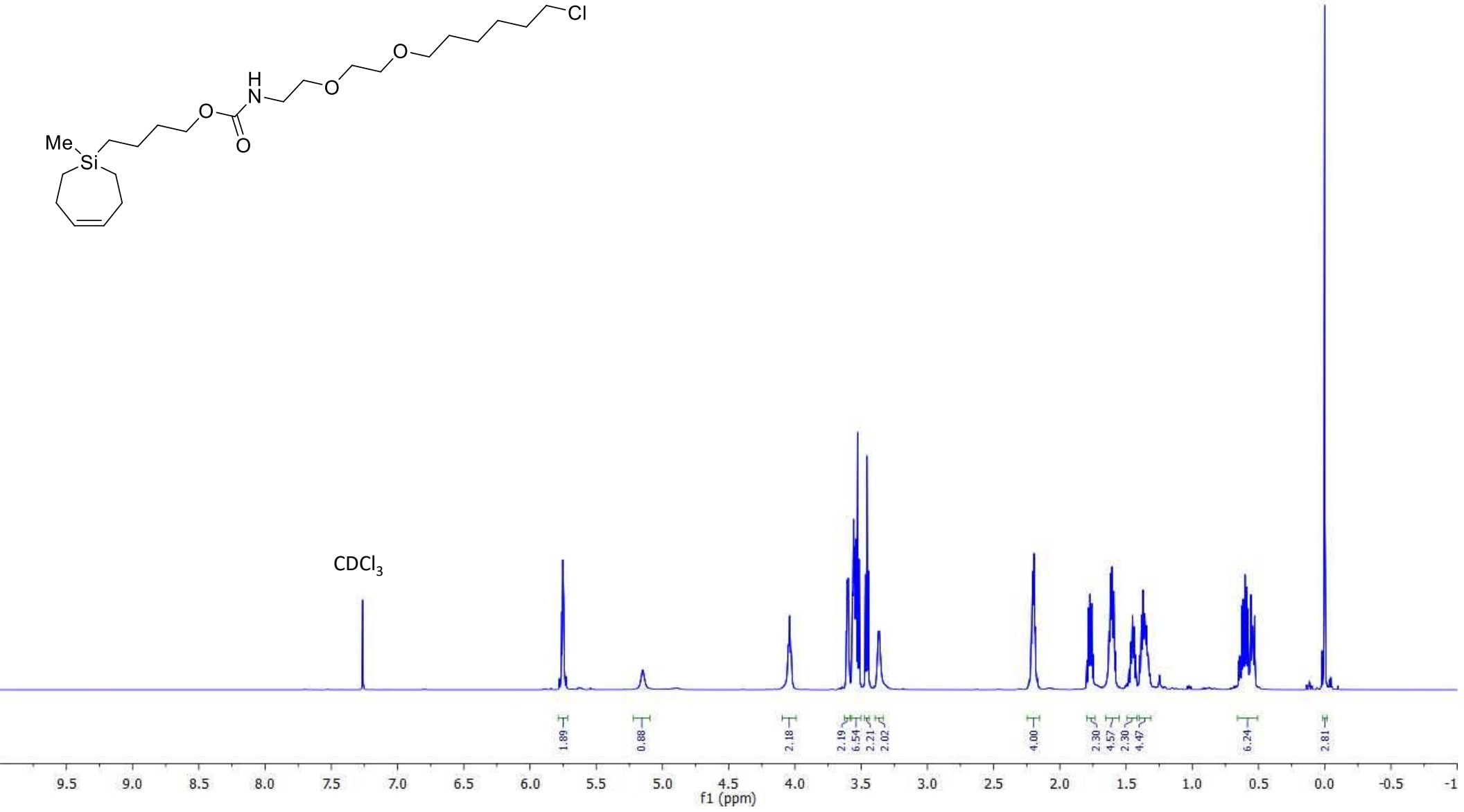


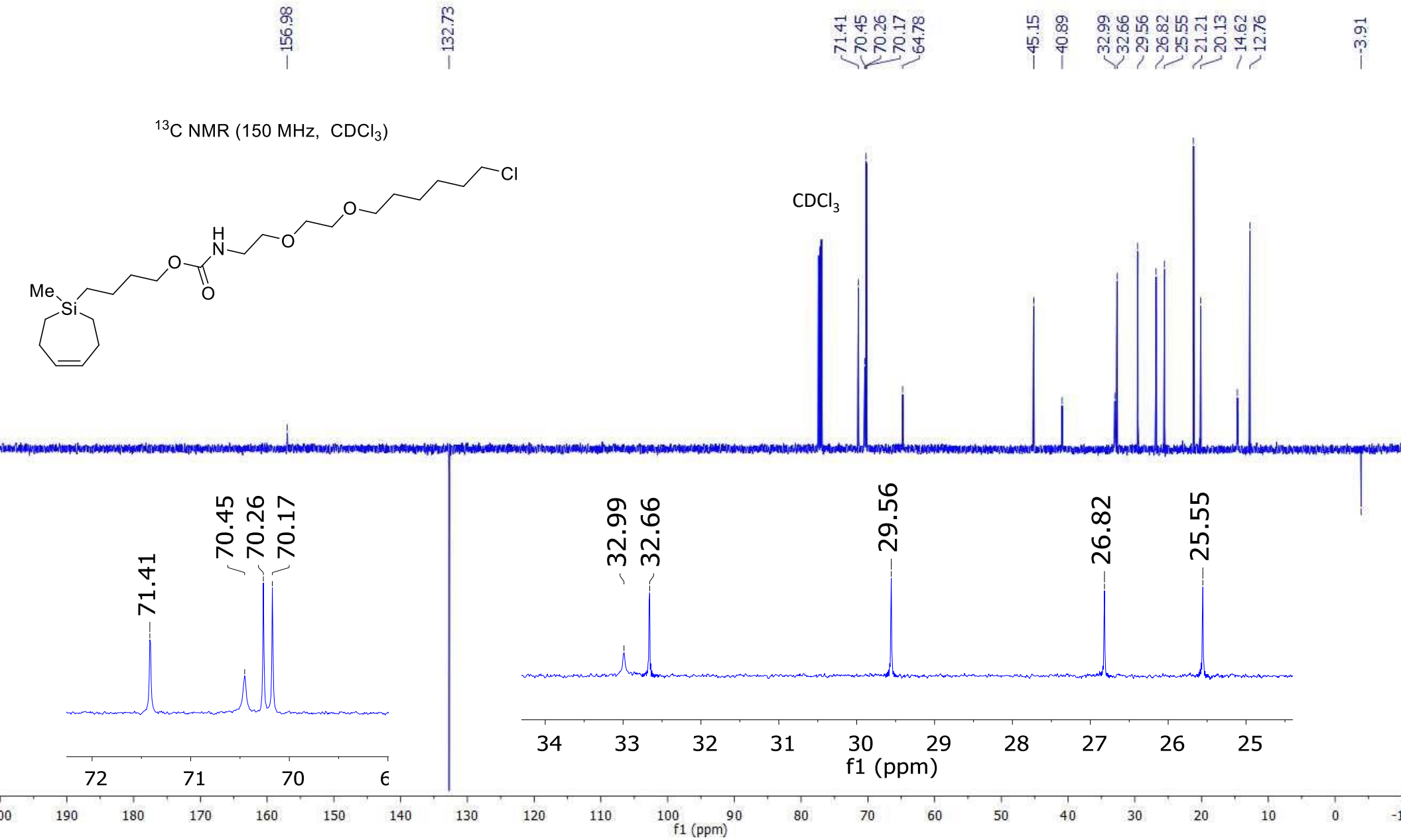




155.74
152.67
145.46
132.71
125.40
121.90
69.45
32.36
21.17
20.00
14.57
12.73
3.93
$^{13}$C NMR (150 MHz, $CDCl_3$)
Me
Si
O
O
O
$NO_2$
$CDCl_3$
f1 (ppm)

$^1$H NMR (600 MHz, $CDCl_3$)

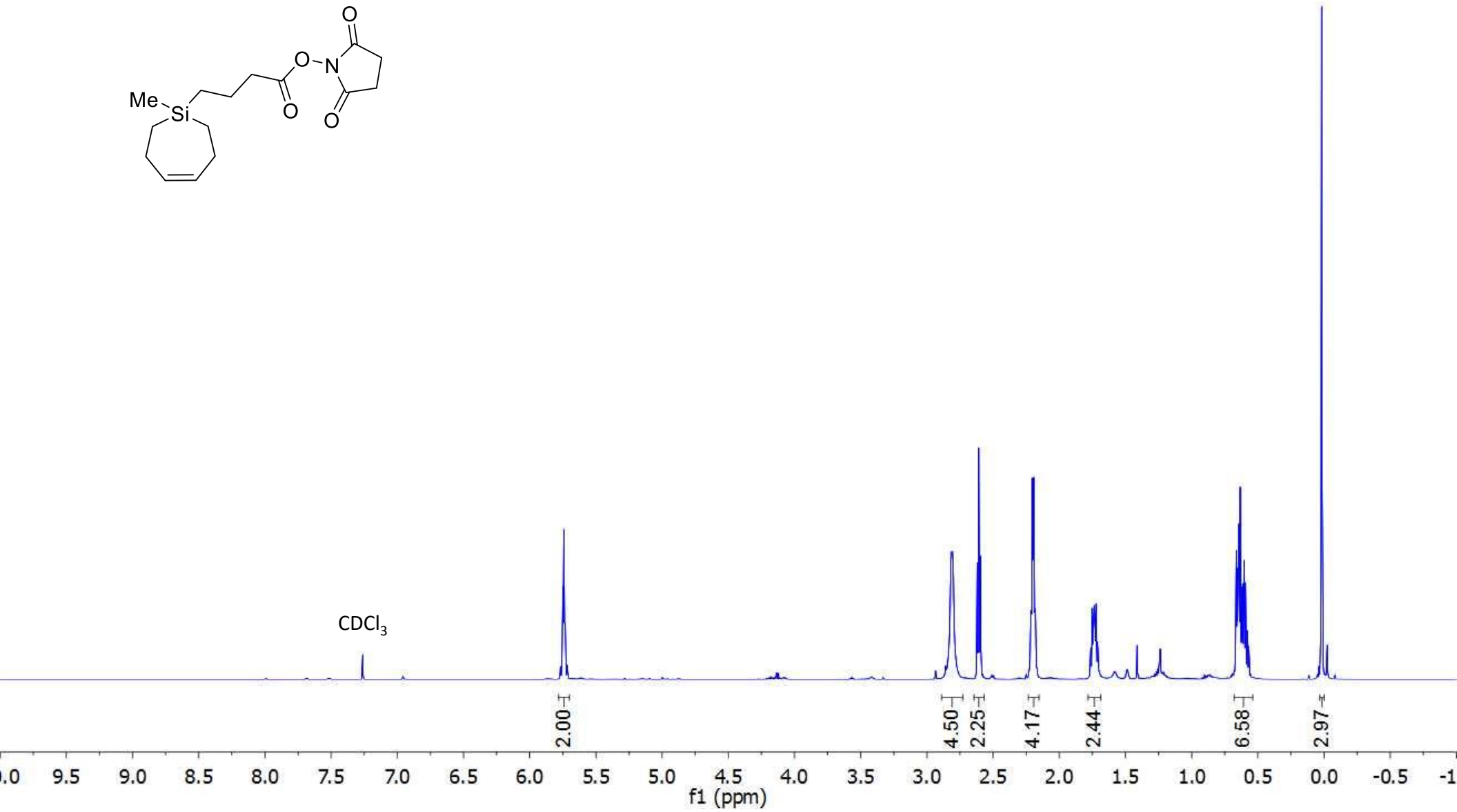


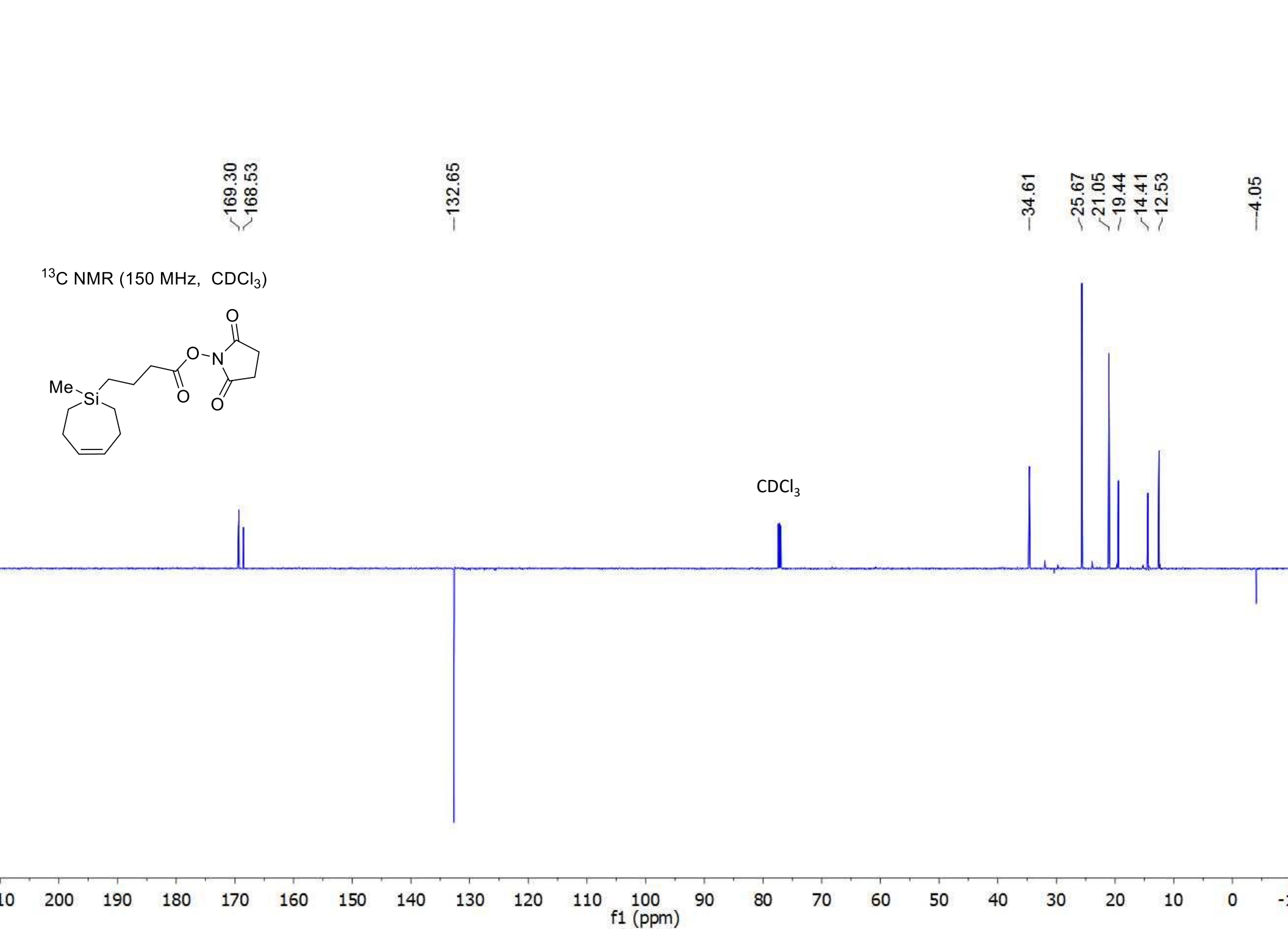




156.98
132.73
71.41
70.45
70.26
70.17
64.78
45.15
40.89
32.99
32.66
29.56
26.82
25.55
21.21
20.13
14.62
12.76
-3.91
13C NMR (150 MHz, CDCl3)
CDCl3
Me
Si
O
O
N
H
O
O
Cl
71.41
70.45
70.26
70.17
32.99
32.66
29.56
26.82
25.55
f1 (ppm)

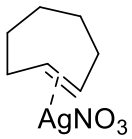
$^1$H NMR (600 MHz, $CDCl_3$)



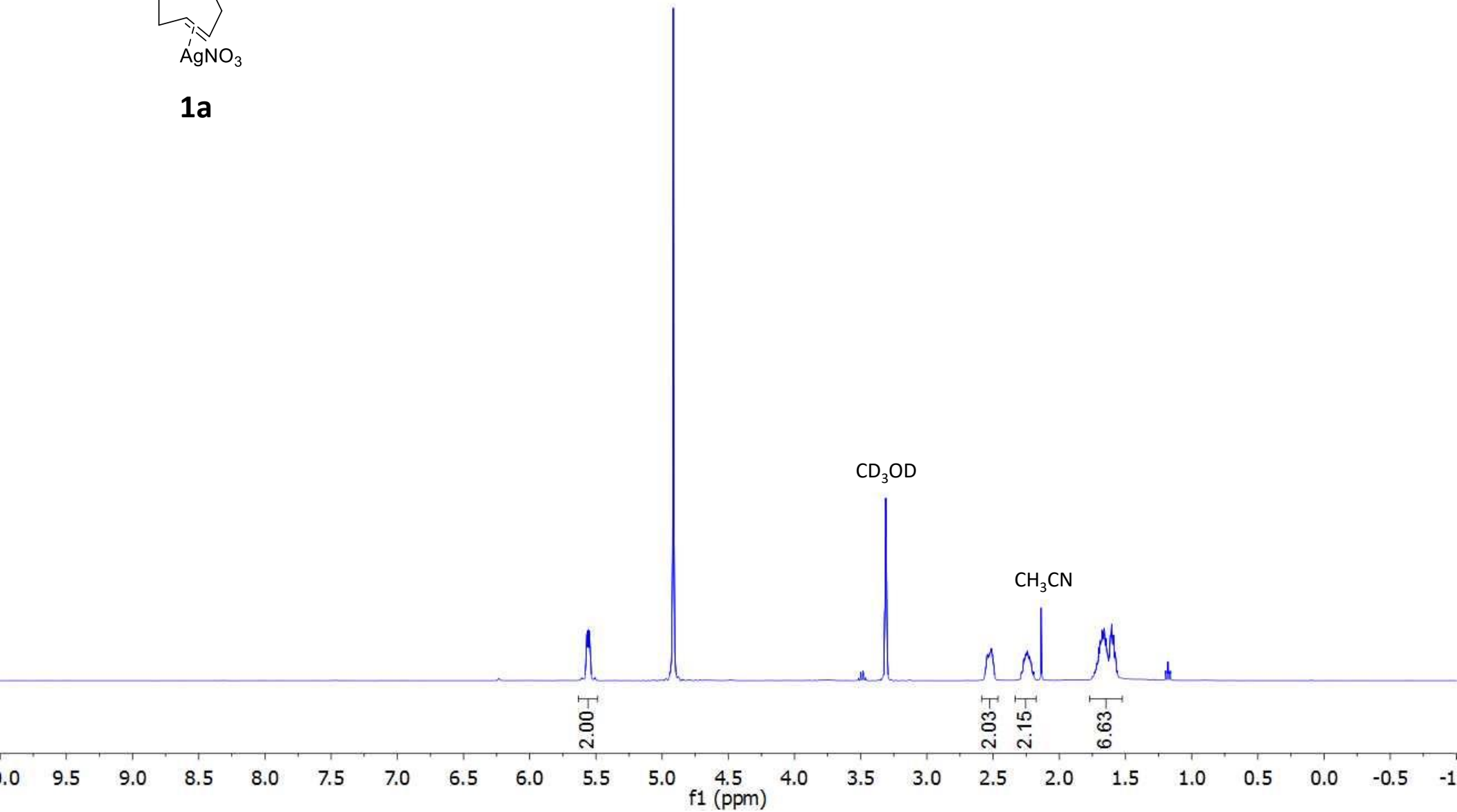




169.30
168.53
132.65
34.61
25.67
21.05
19.44
14.41
12.53
4.05
$^{13}$C NMR (150 MHz, $CDCl_3$)
Me
Si
O
N
O
O
O
$CDCl_3$
f1 (ppm)

$^1$H NMR (400 MHz, $CD_3OD$)



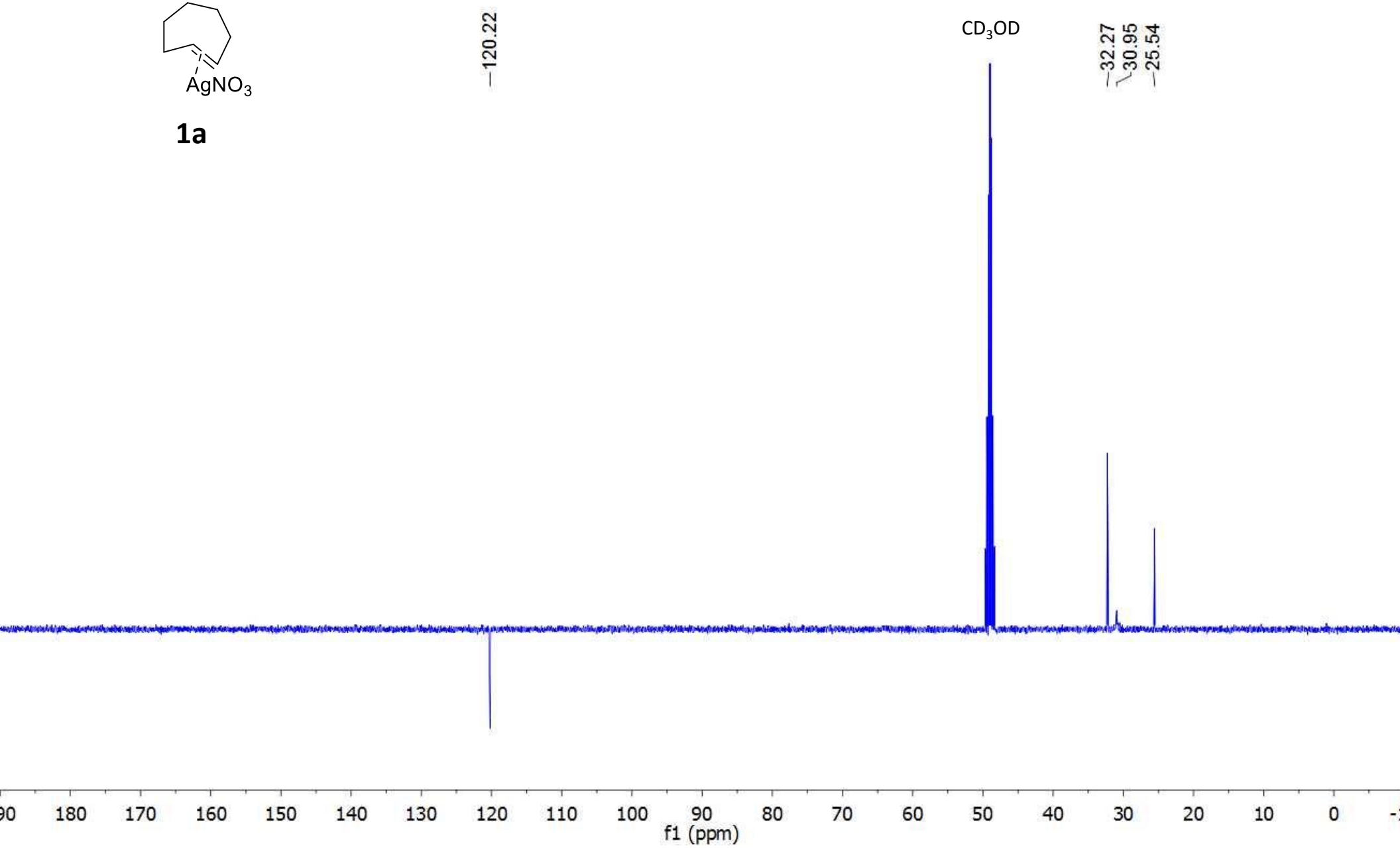

**1a**



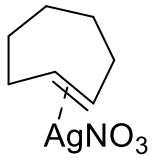
$^{13}$C NMR (100 MHz, $CD_3OD$)



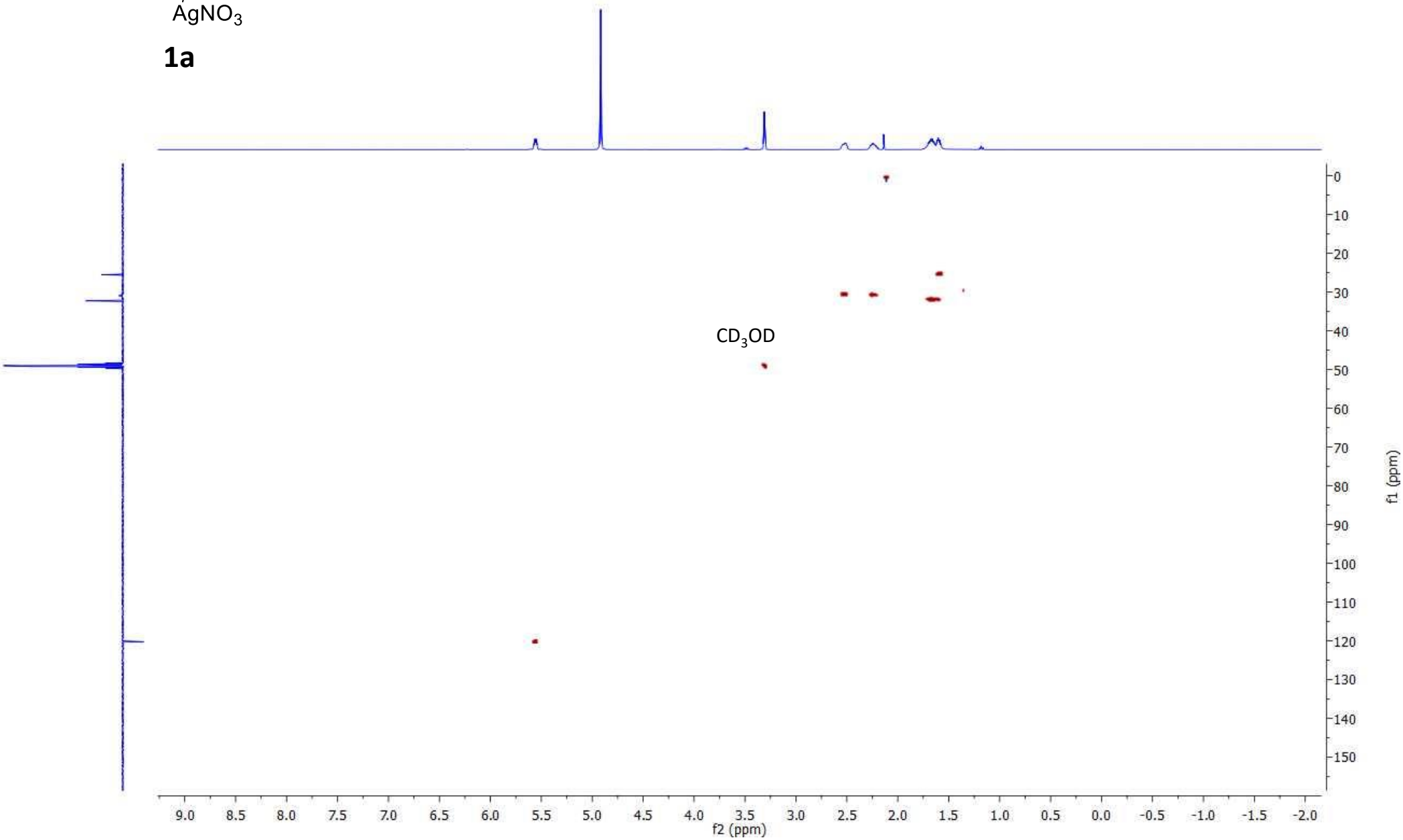

**1a**



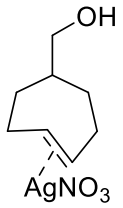
HMQC (400 MHz, $CD_3OD$)



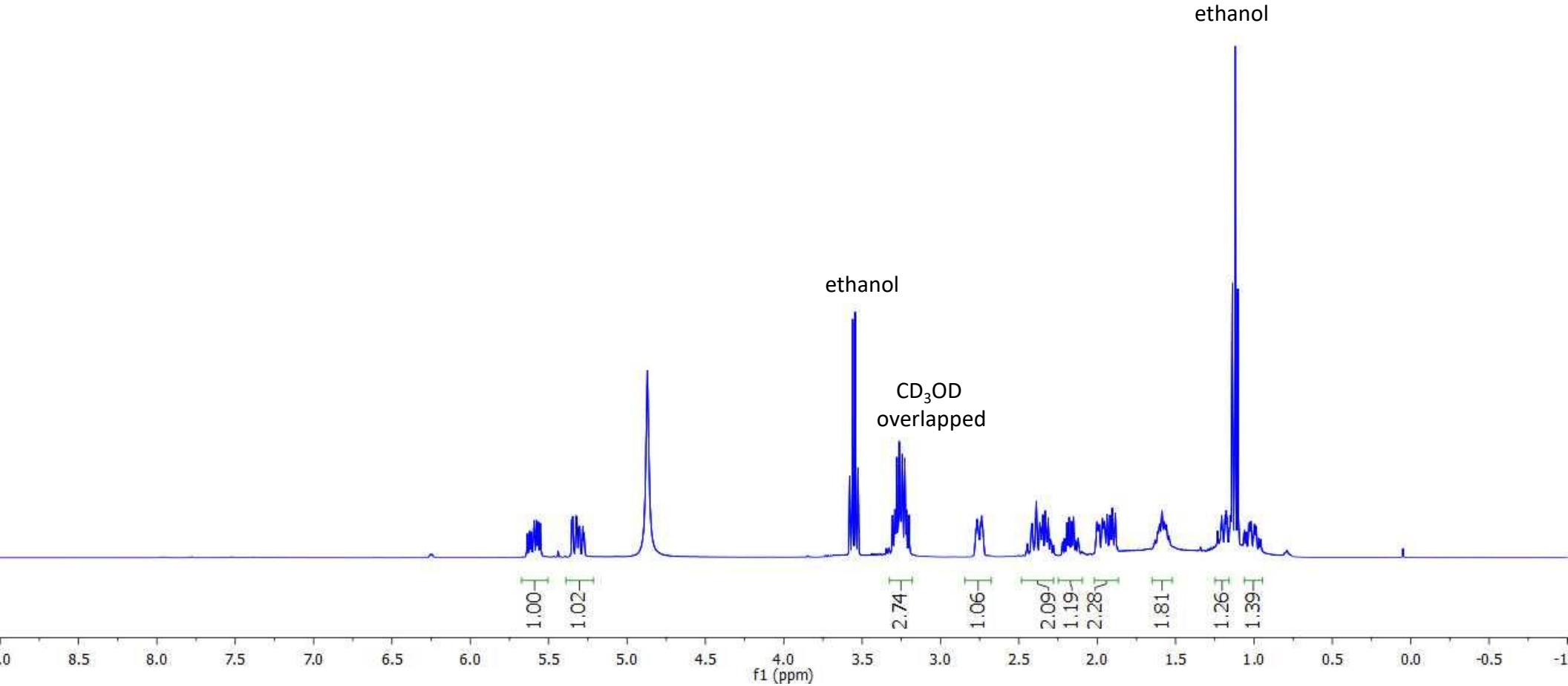

**1a**



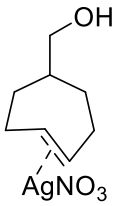
$^1$H NMR (400 MHz, $CD_3OD$)



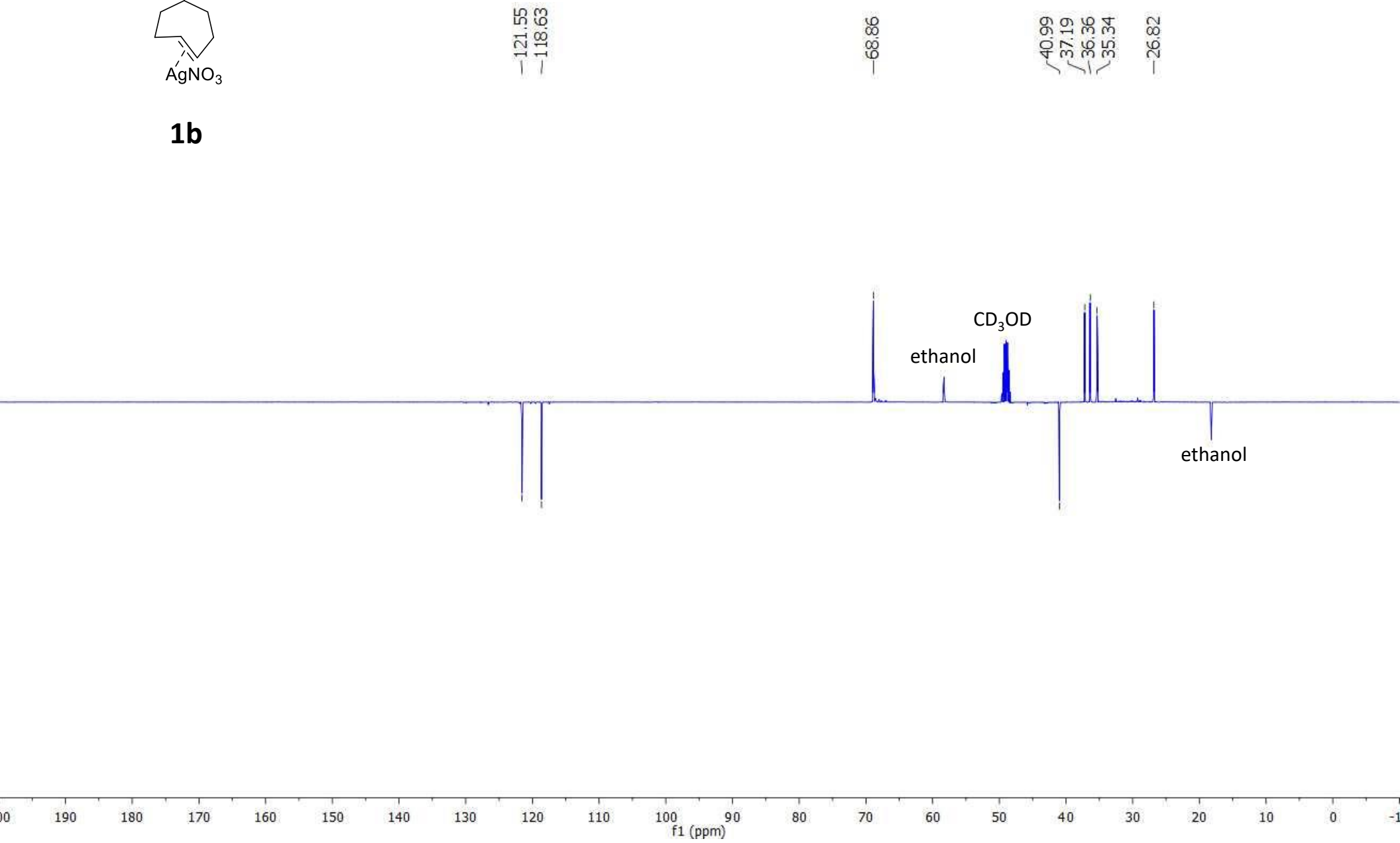

**1b**



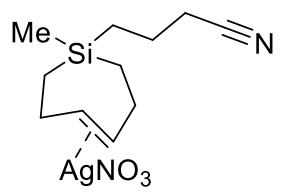
$^{13}$C NMR (100 MHz, $CD_3OD$)



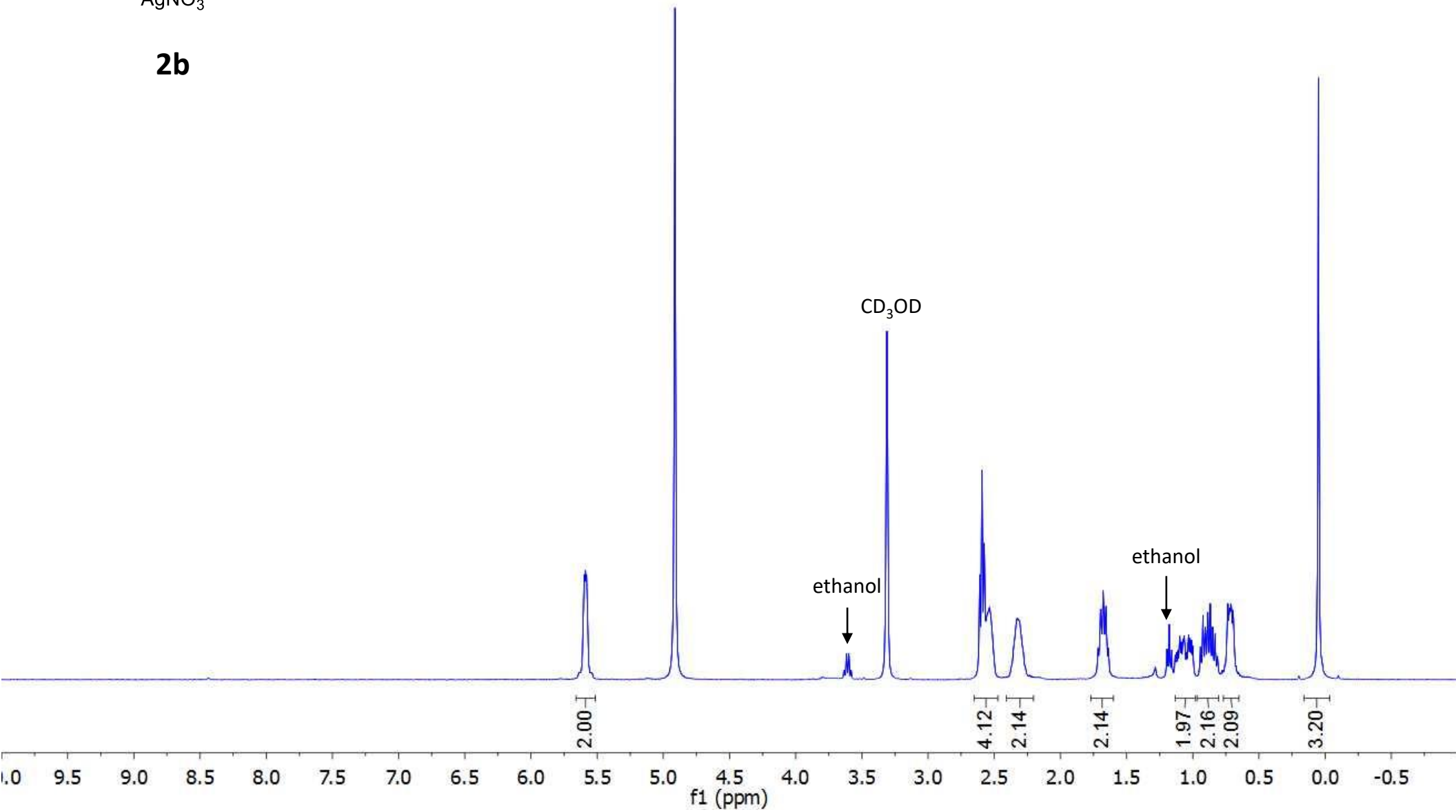

**1b**



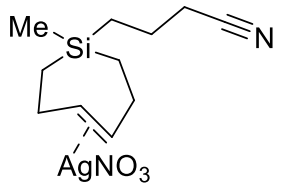
$^1$H NMR (400 MHz, $CD_3OD$)



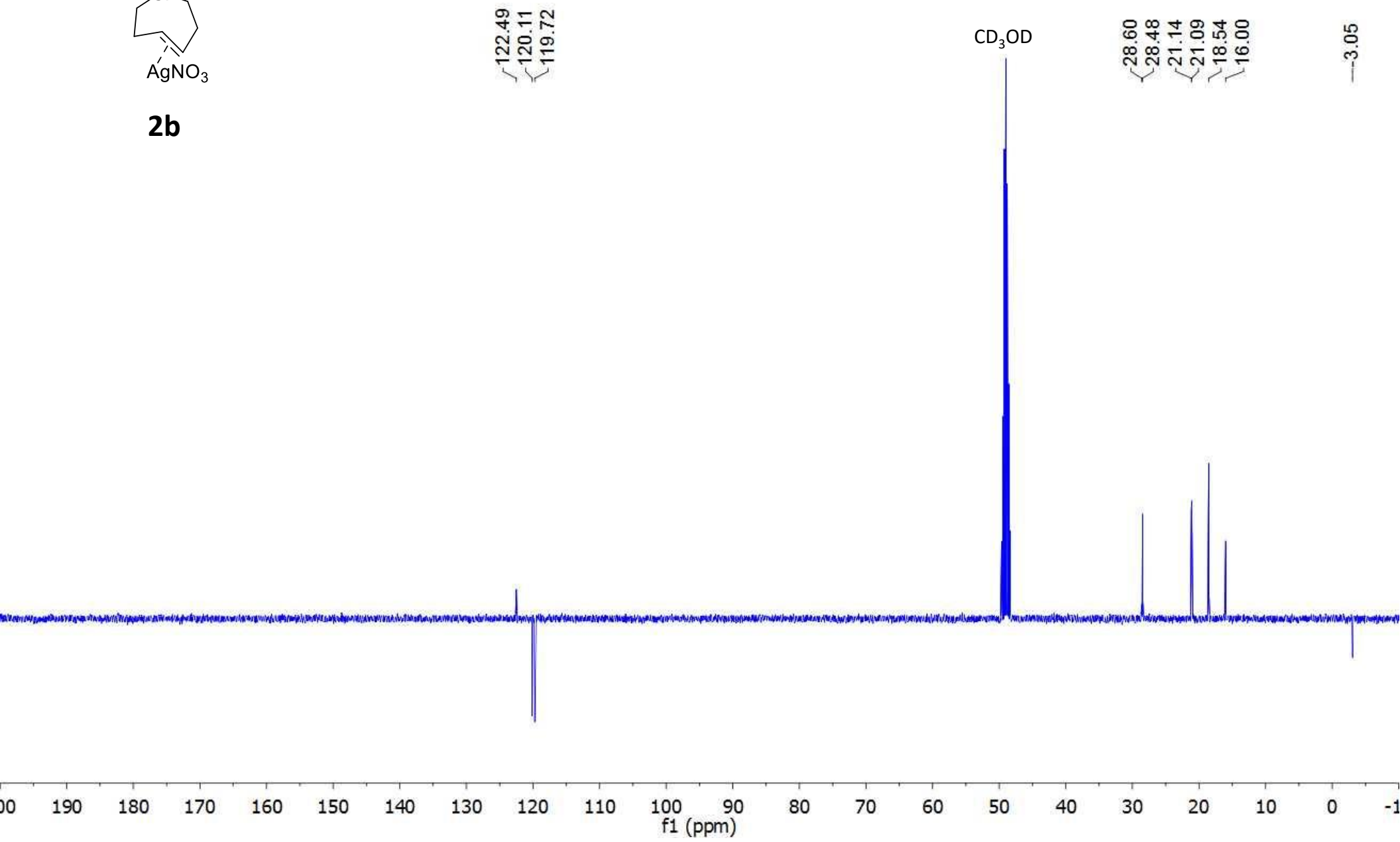

**2b**



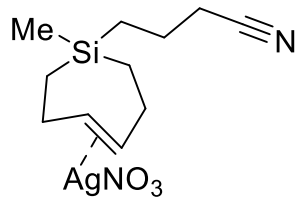
$^{13}$C NMR (100 MHz, $CD_3OD$)



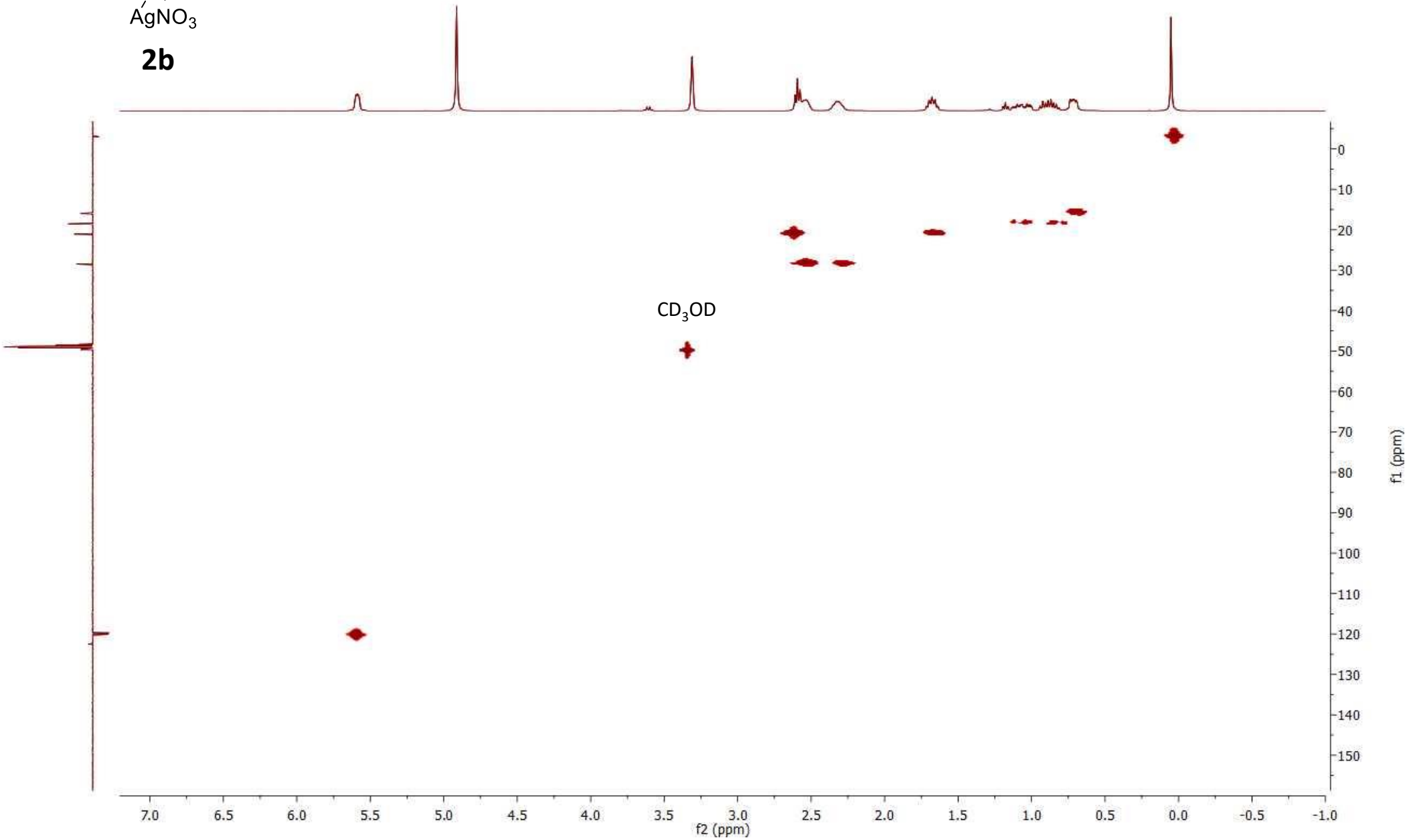

**2b**



HMQC (400 MHz, $CD_3OD$)



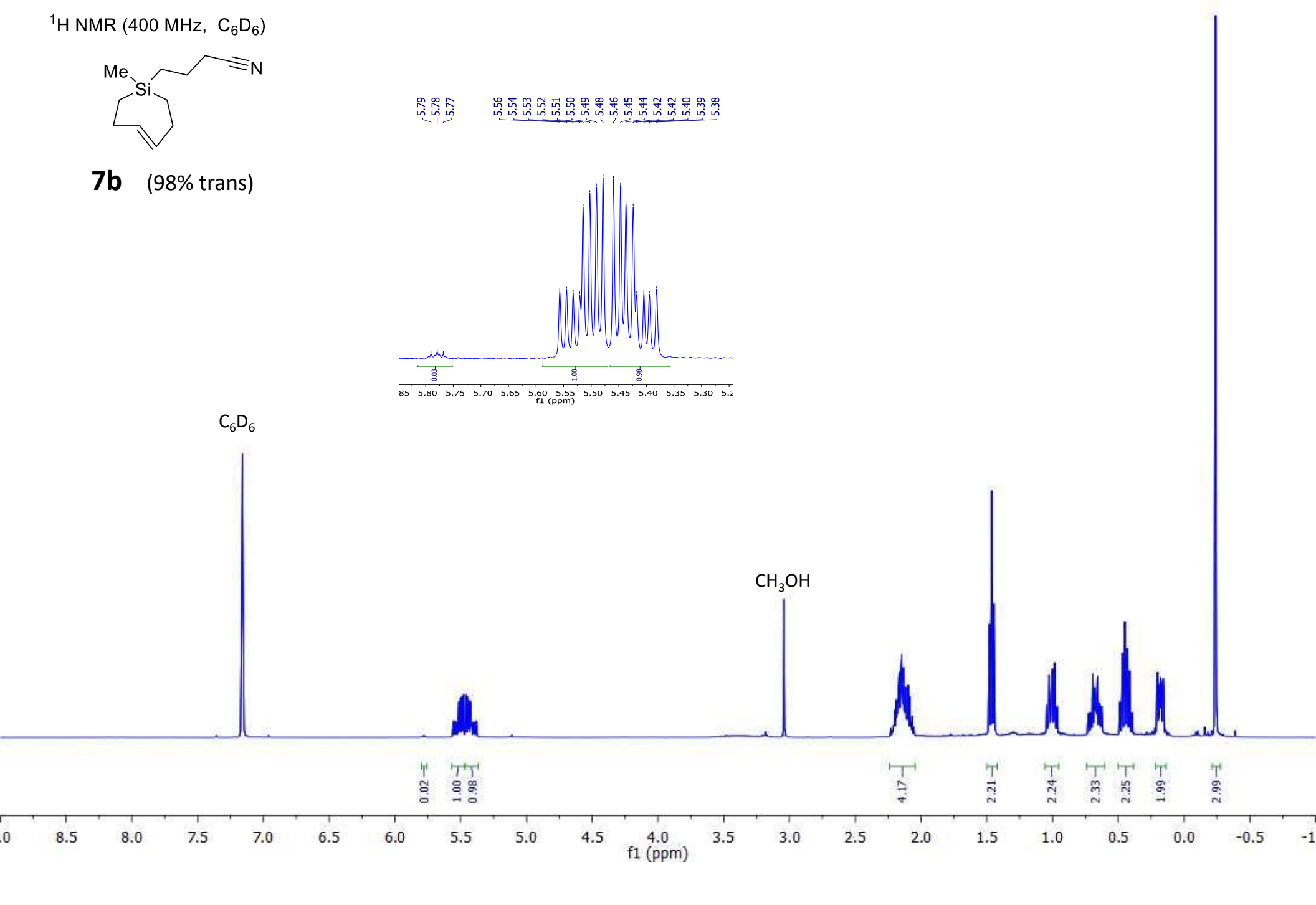

**2b**



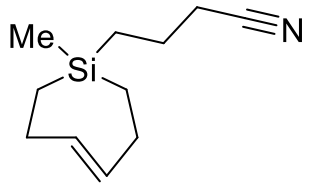
$^1$H NMR (400 MHz, $C_6D_6$)



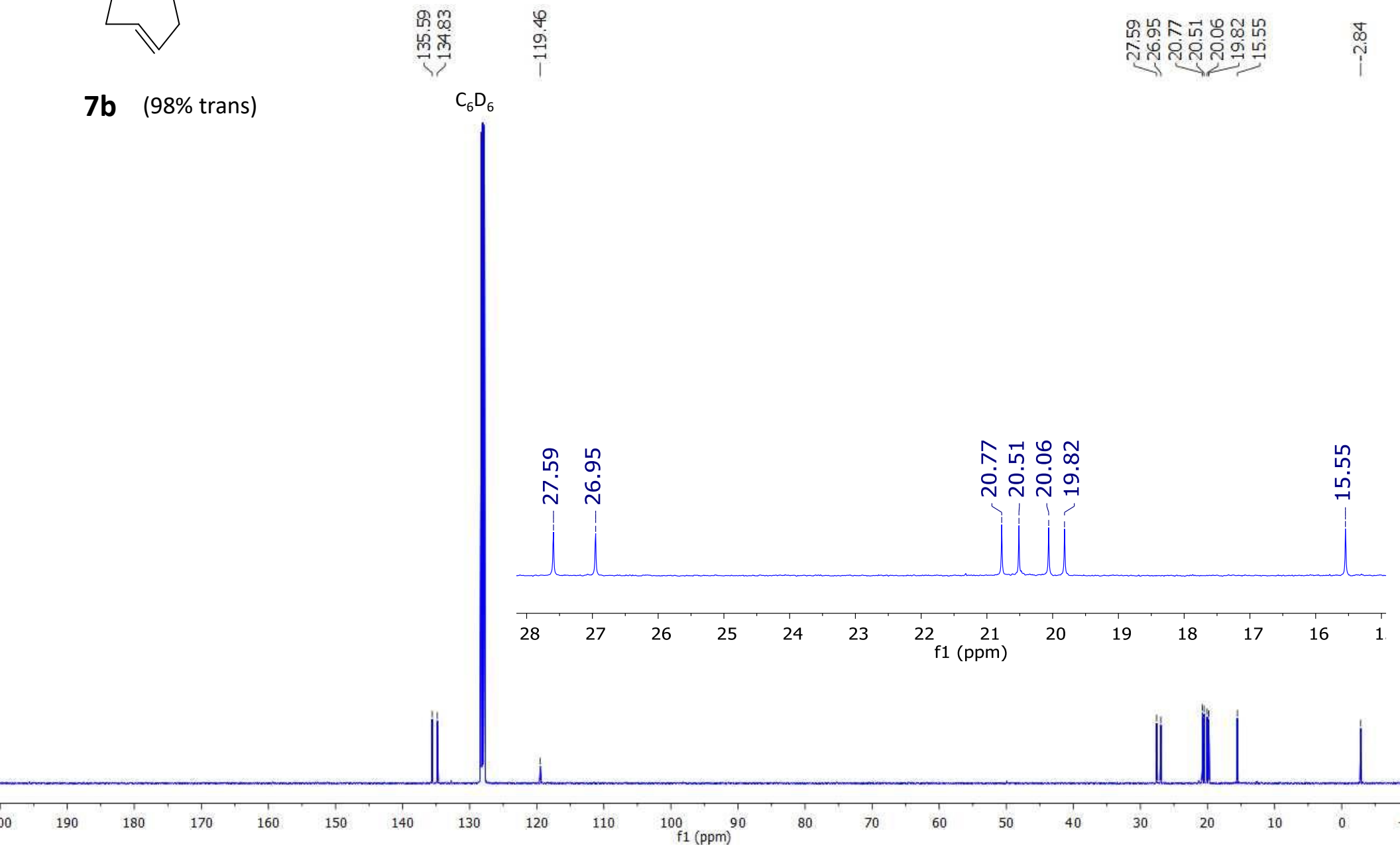

**7b** (98% trans)



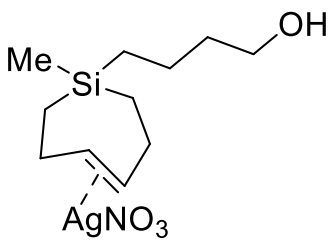
$^{13}C$ NMR (100 MHz, $C_6D_6$)



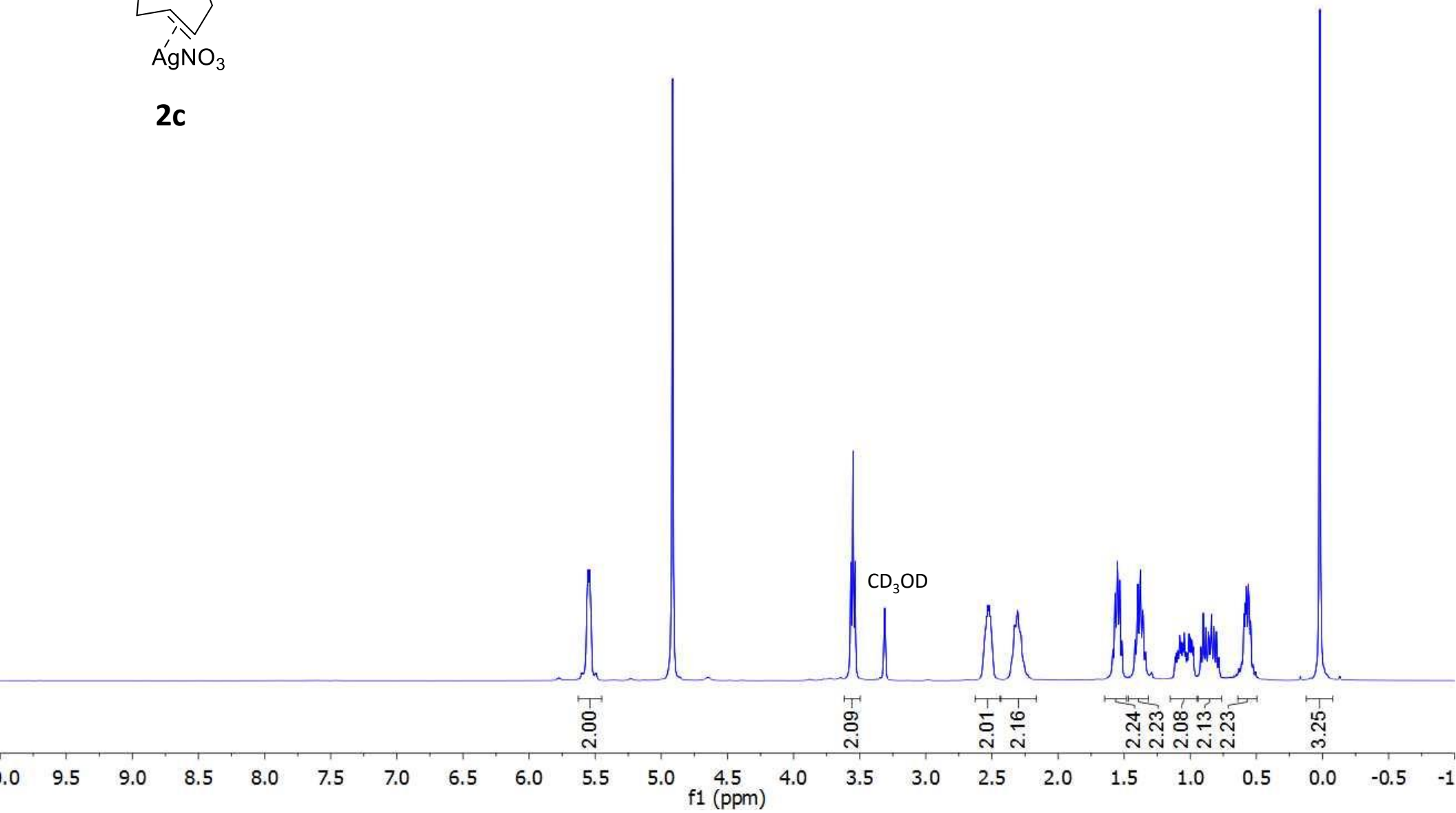

**7b** (98% trans)



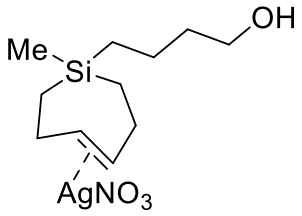
$^1$H NMR (400 MHz, $CD_3OD$)



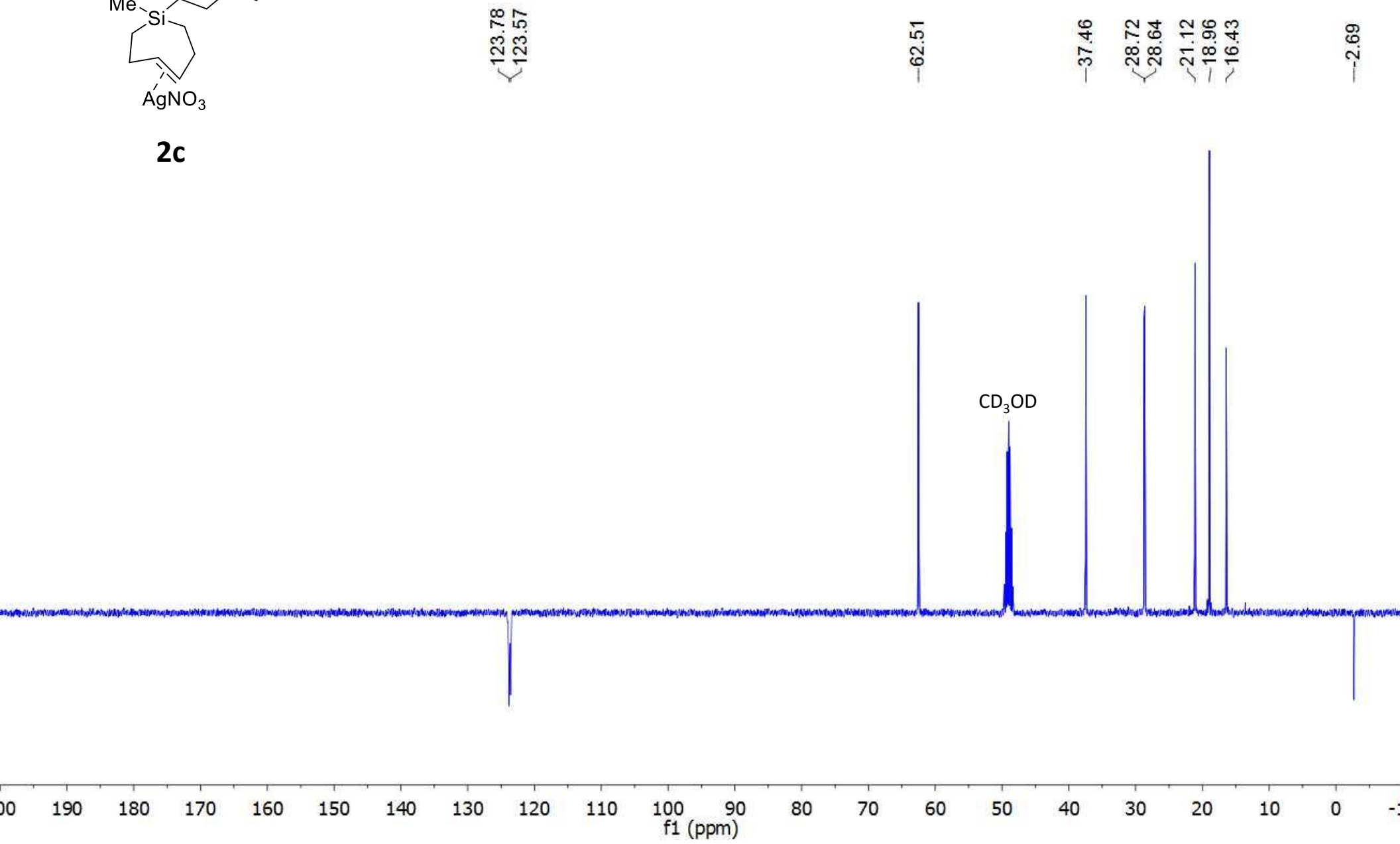

**2c**



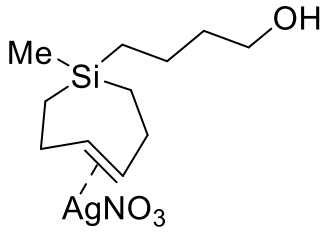
$^{13}$C NMR (100 MHz, $CD_3OD$)



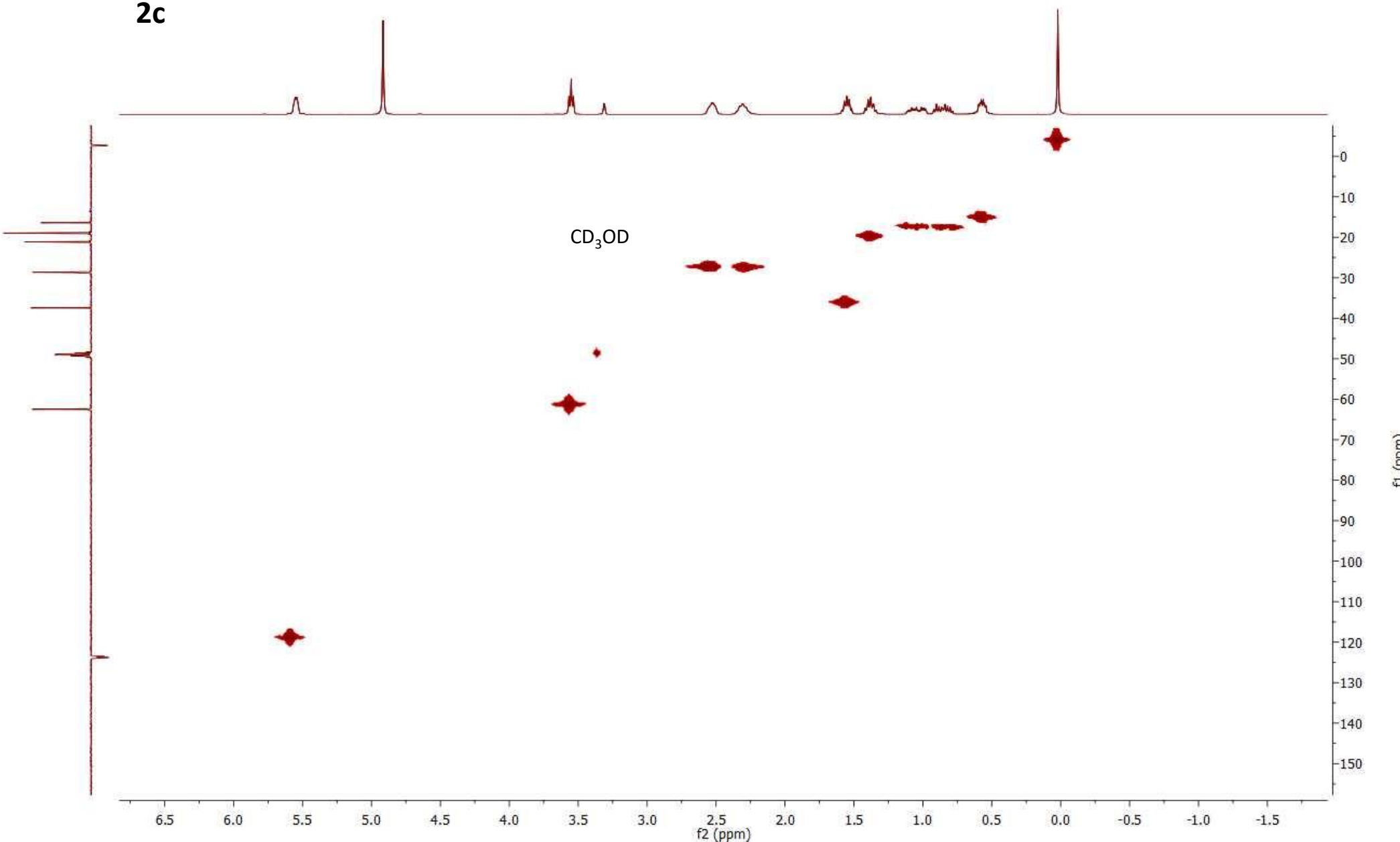

**2c**



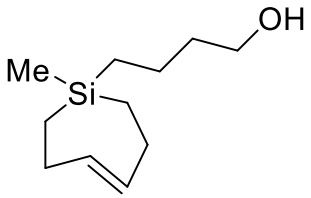
HMQC (400 MHz, $CD_3OD$)



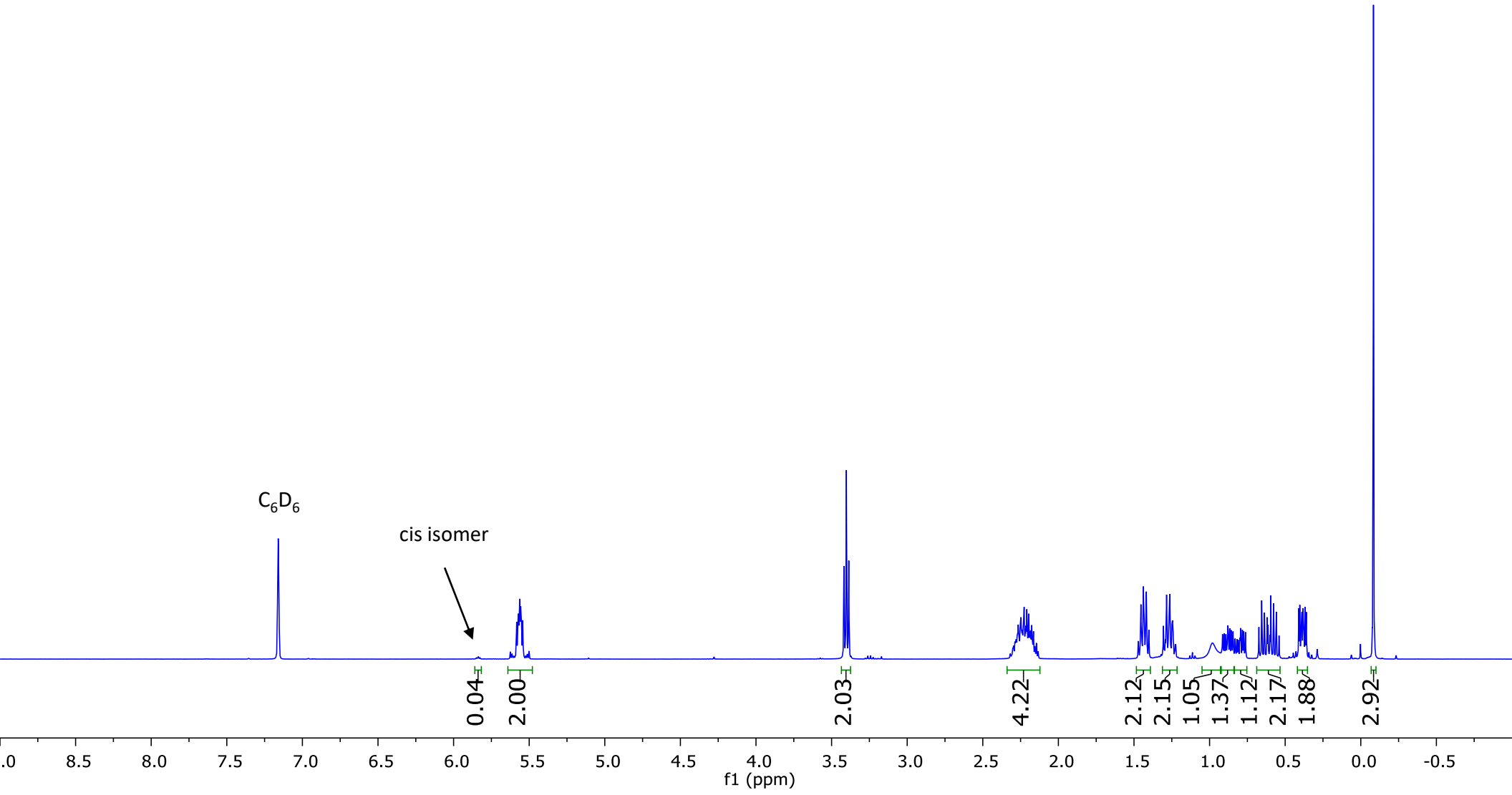

**2c**



$^1$H NMR (400 MHz, $C_6D_6$)



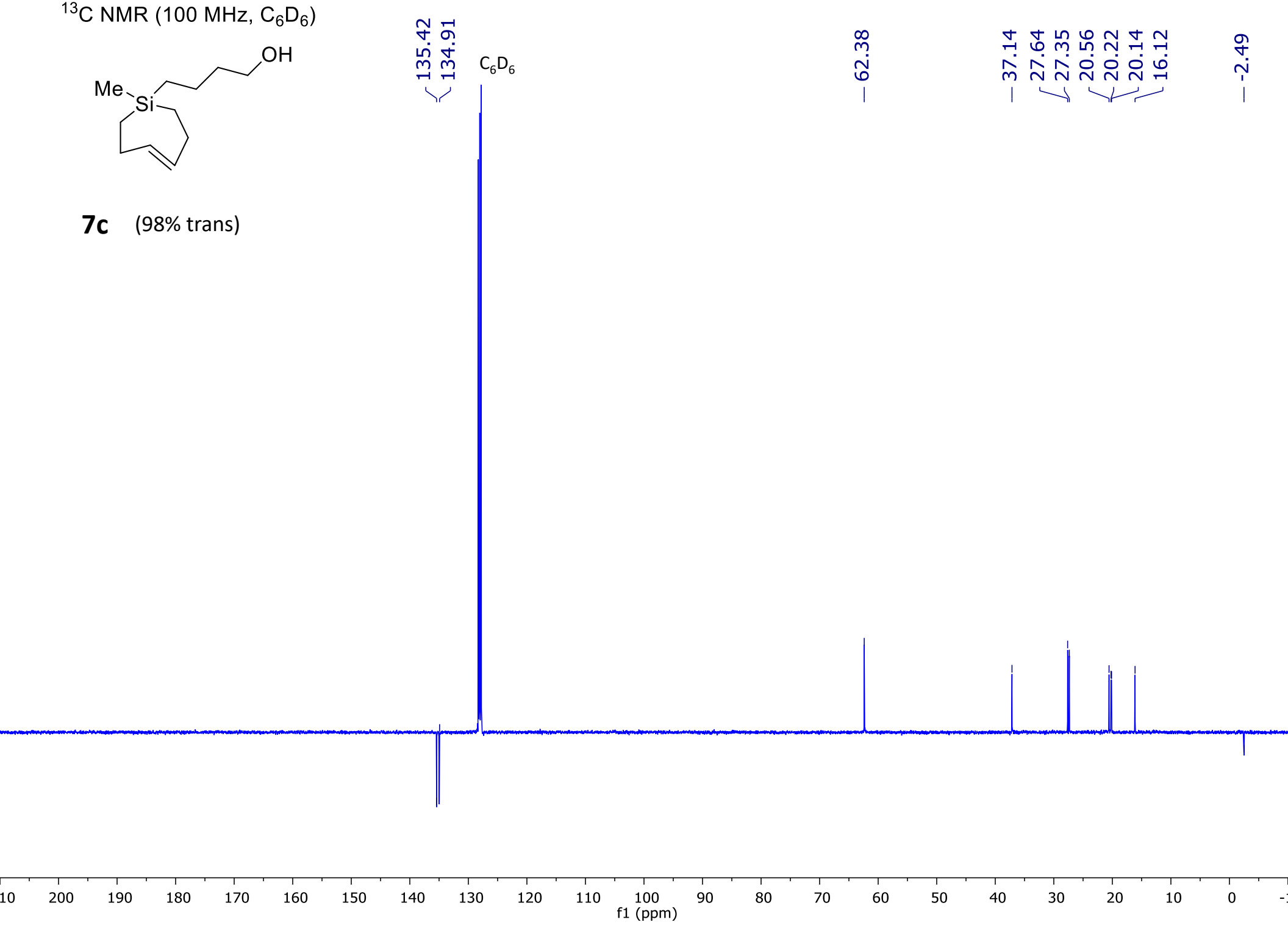

**7c** (98% trans)



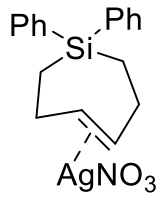
$^{13}$C NMR (100 MHz, $C_6D_6$)



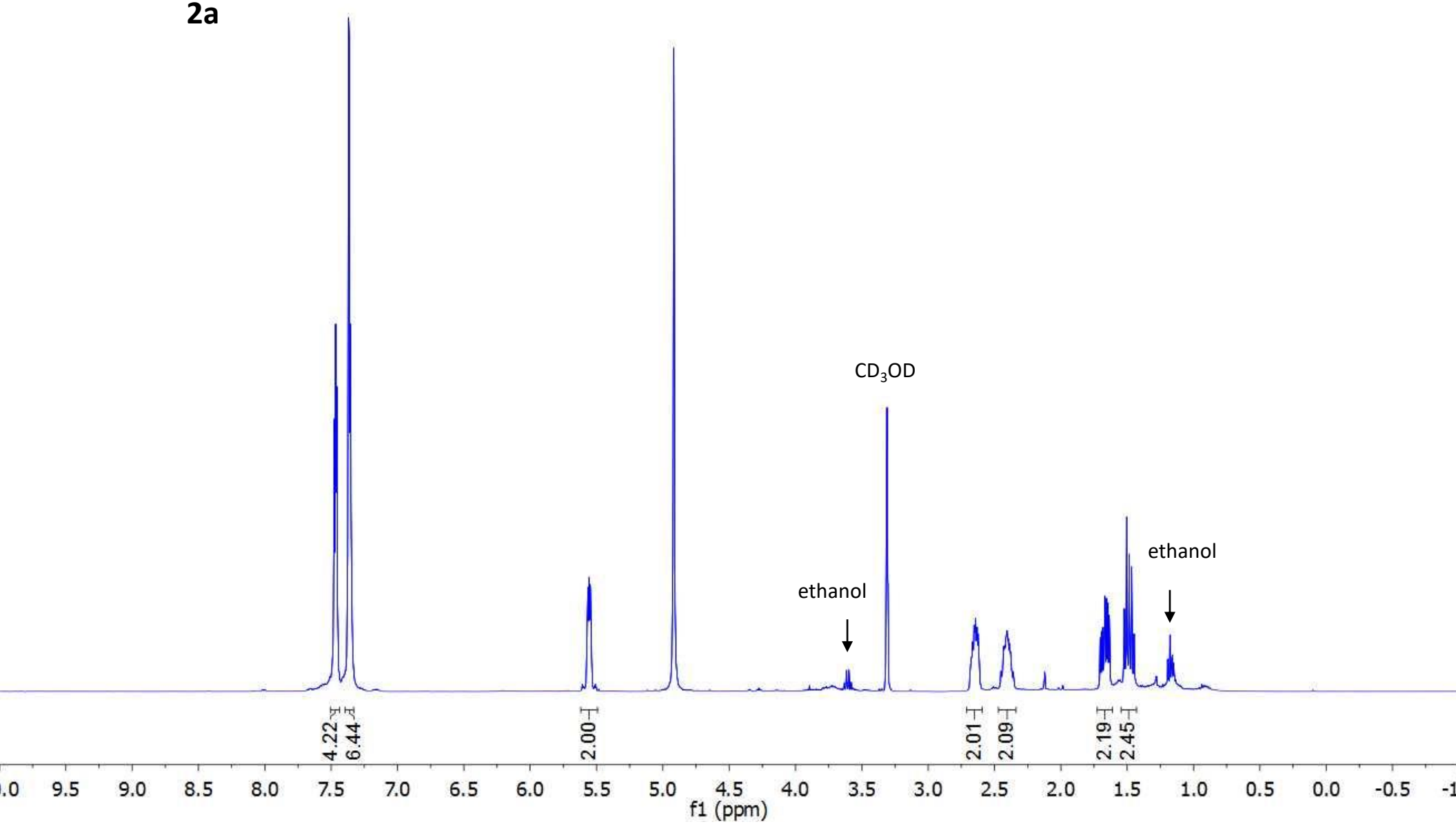

**7c** (98% trans)



$^1$H NMR (400 MHz, $CD_3OD$)



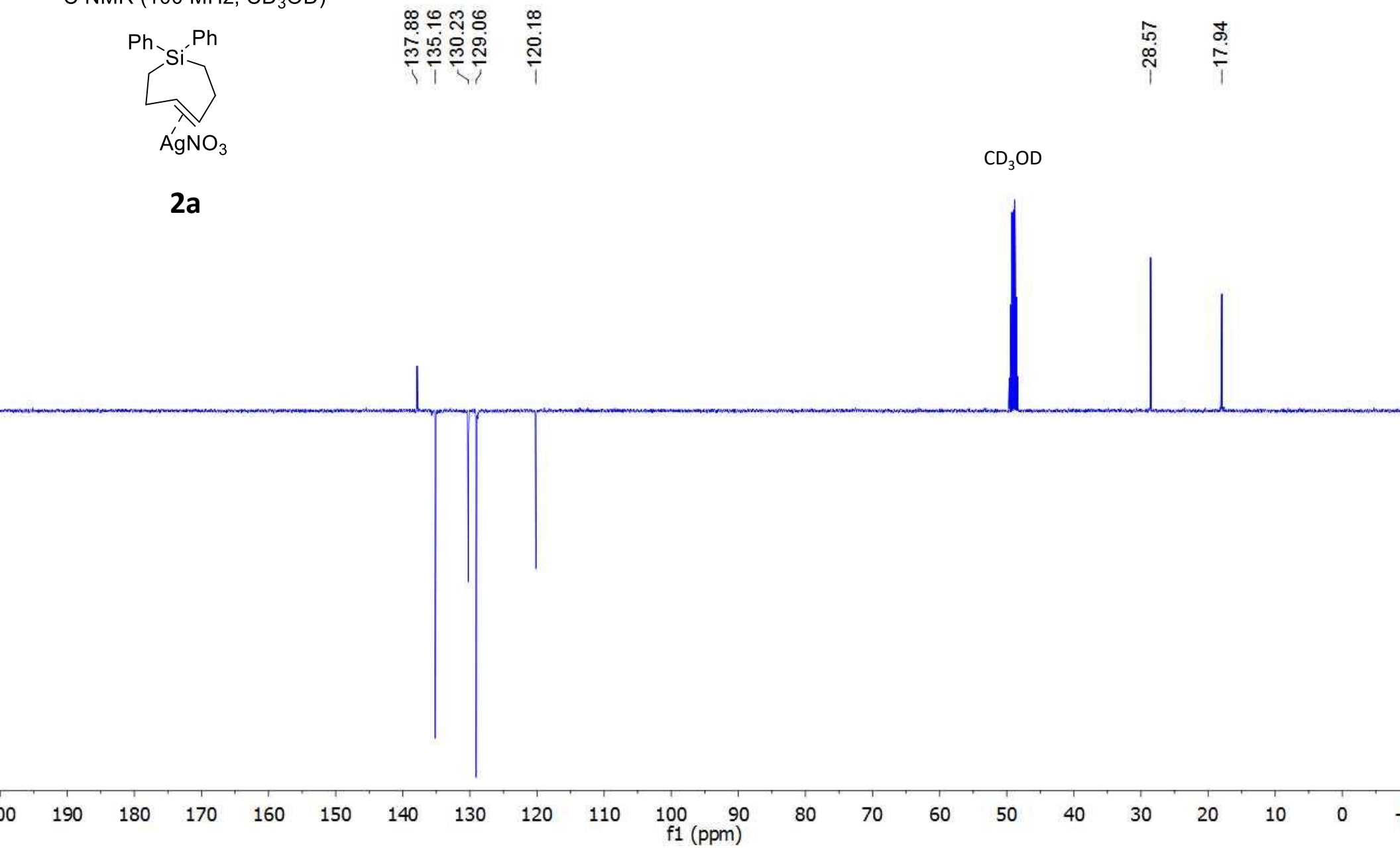

**2a**



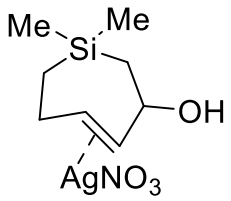
$^{13}$C NMR (100 MHz, $CD_3OD$)




**2a**

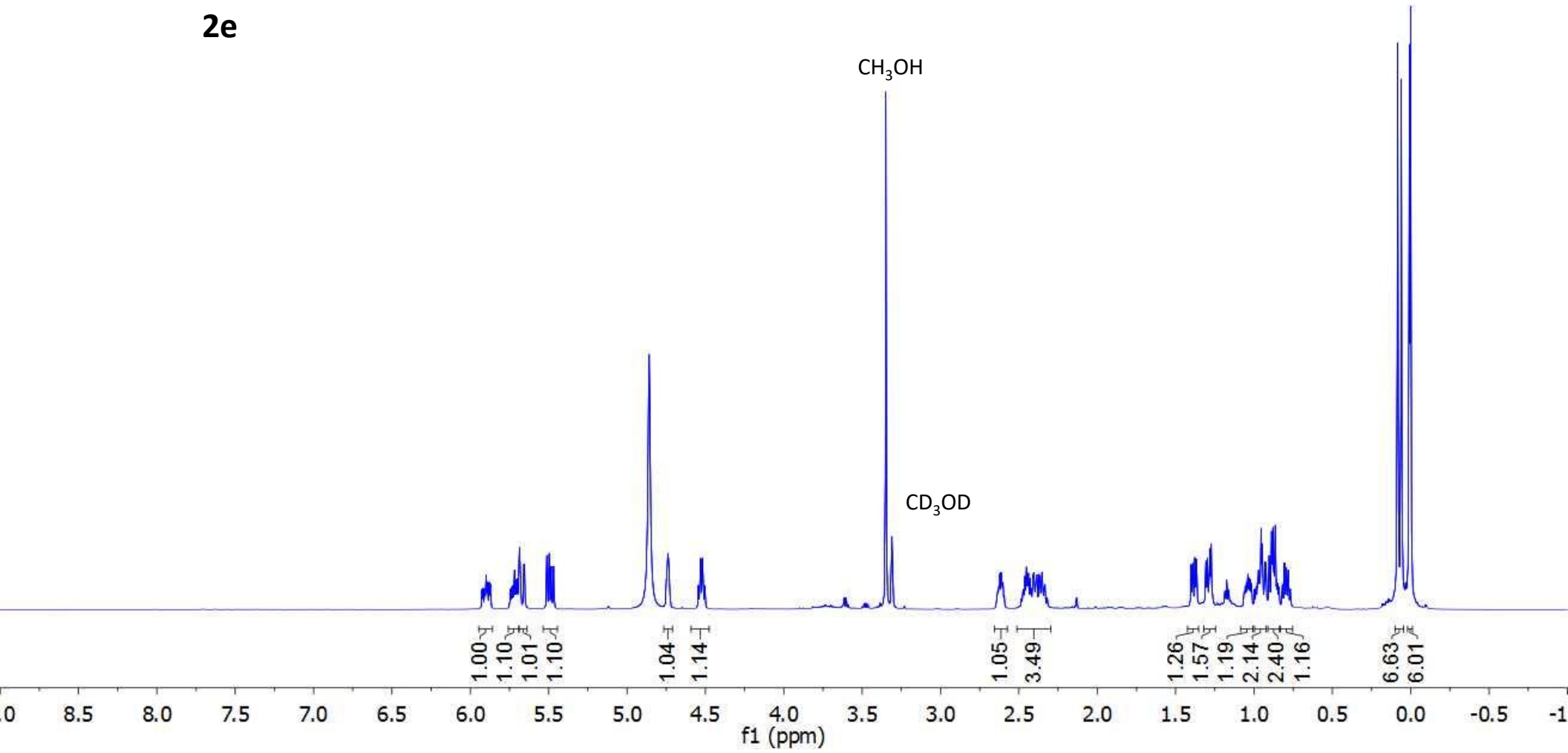


$^1$H NMR (600 MHz, $CD_3OD$)




1.1: 1 dr

**2e**

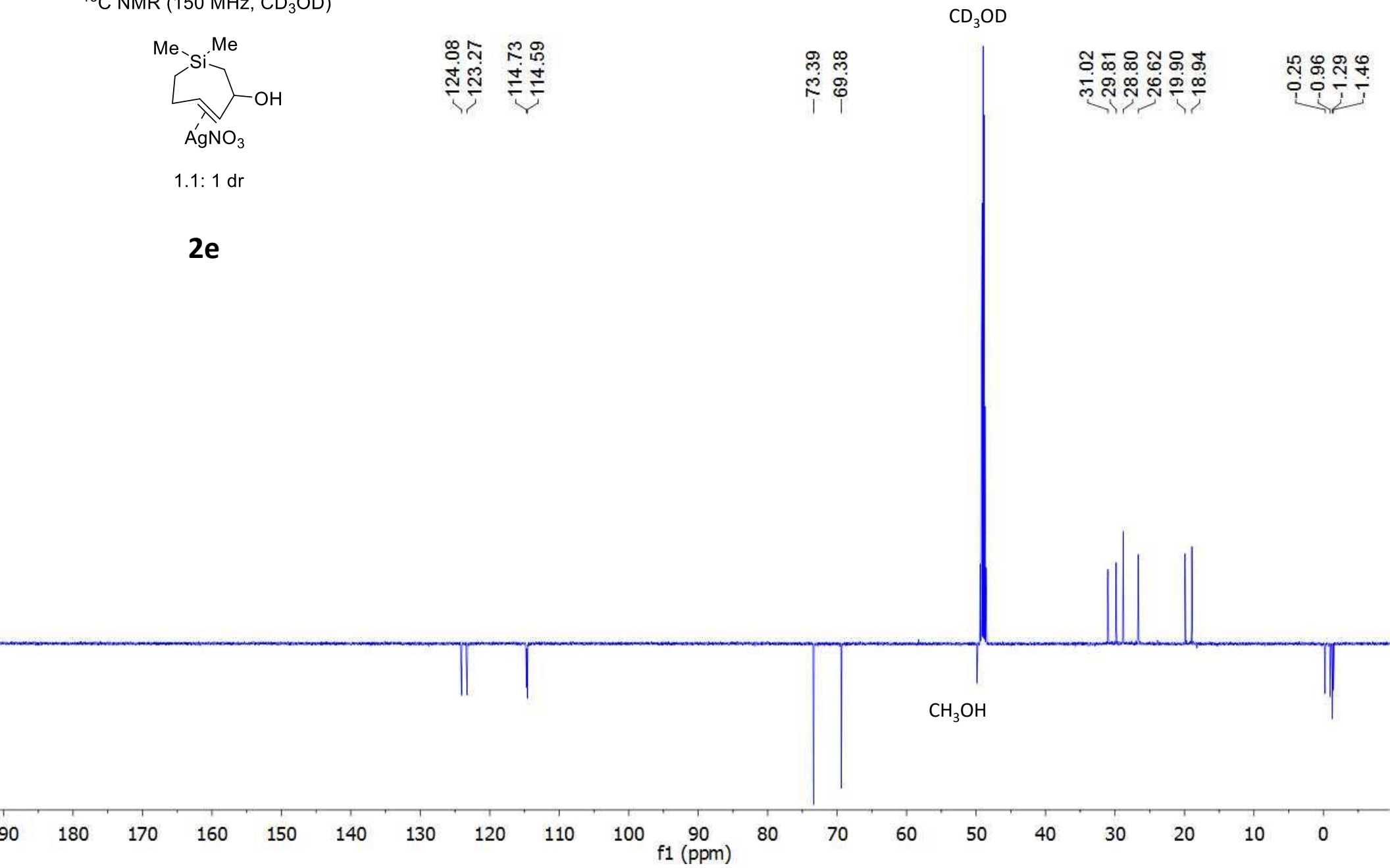


$^{13}$C NMR (150 MHz, $CD_3OD$)

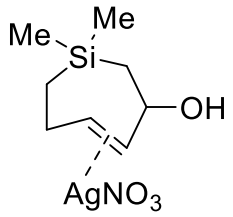



1.1: 1 dr

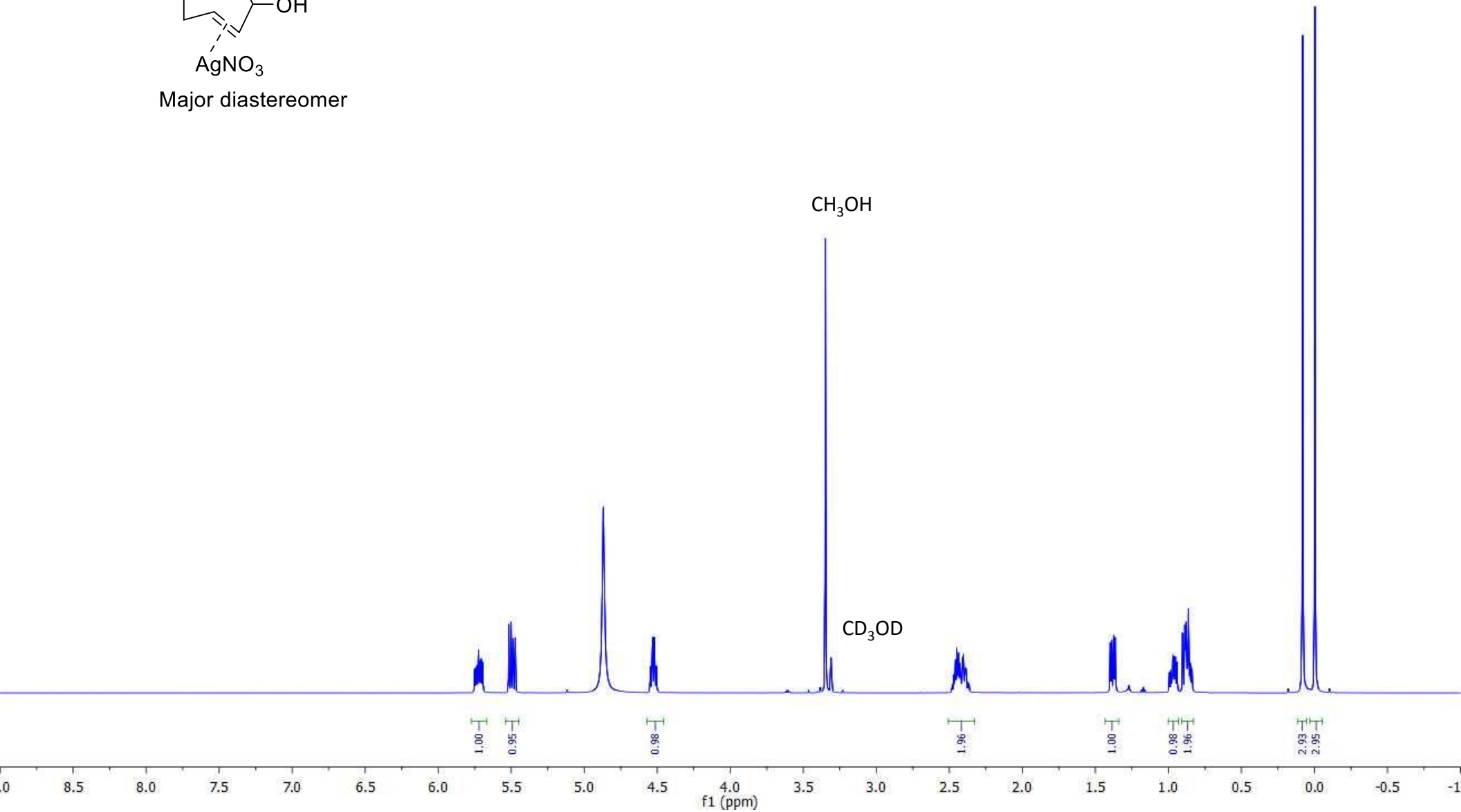
**2e**



$^1$H NMR (600 MHz, $CD_3OD$)



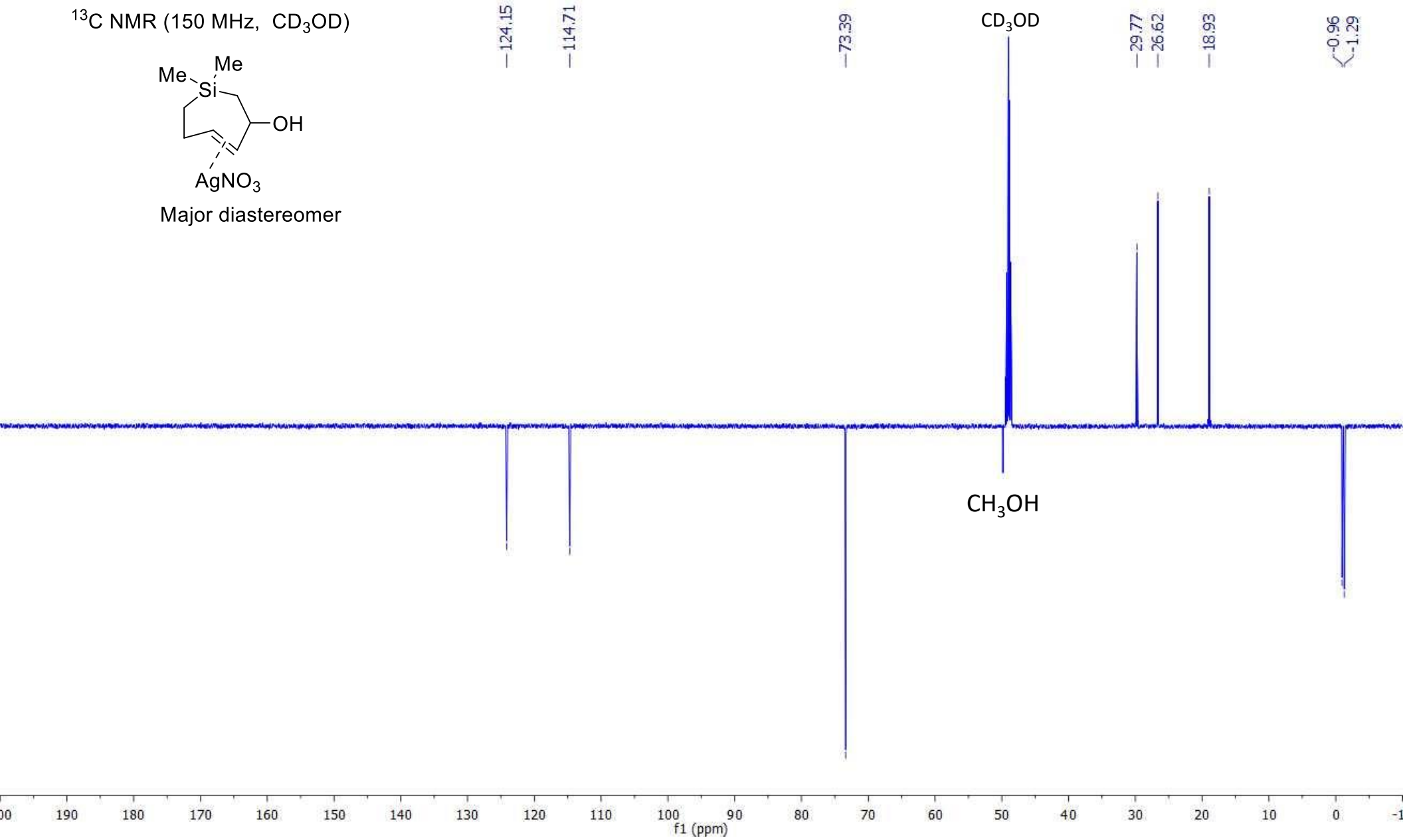

Major diastereomer



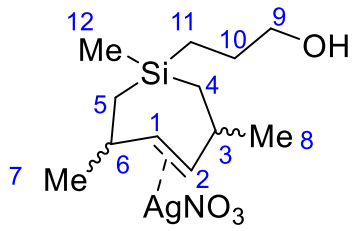
$^{13}$C NMR (150 MHz, $CD_3OD$)



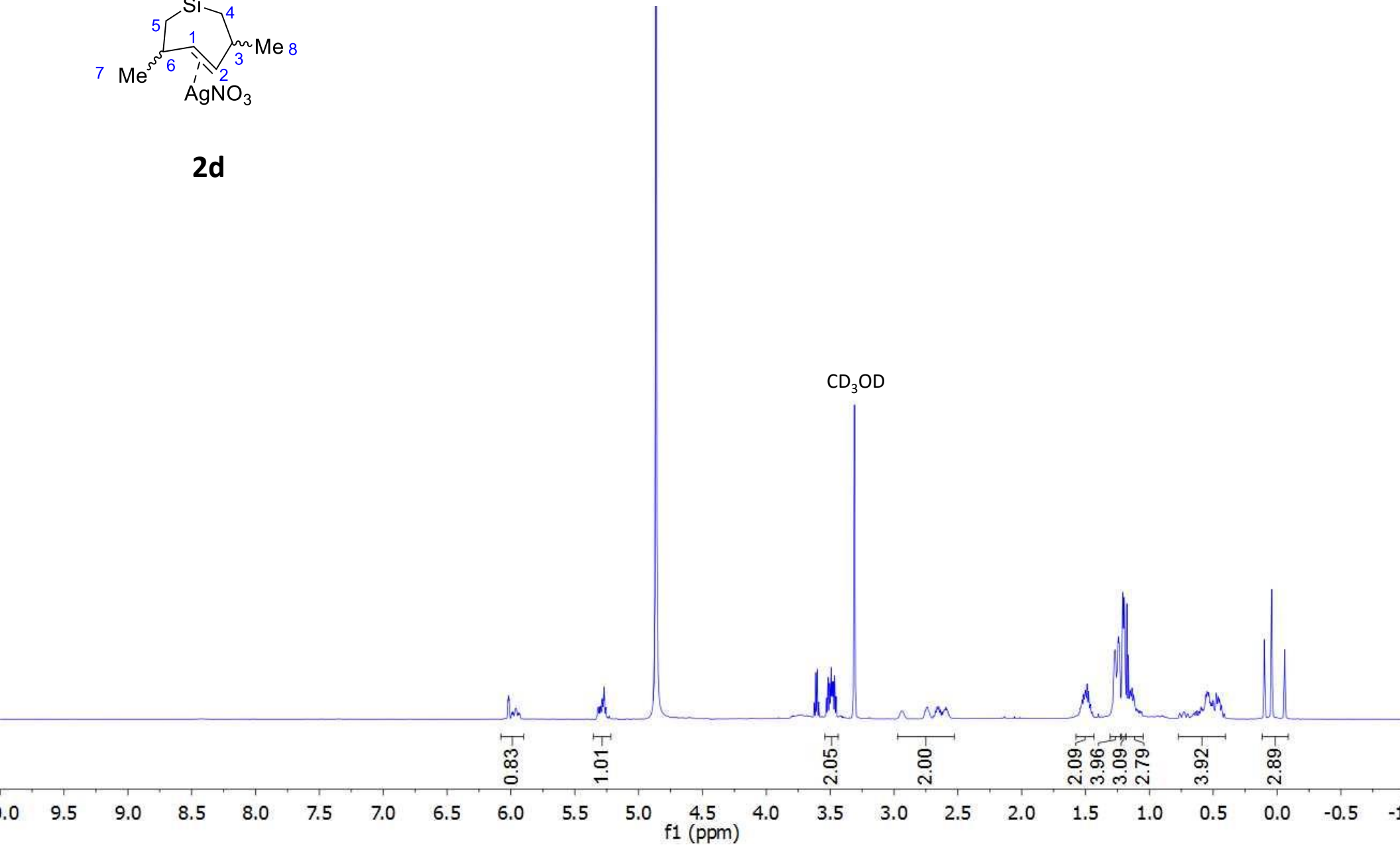

Major diastereomer



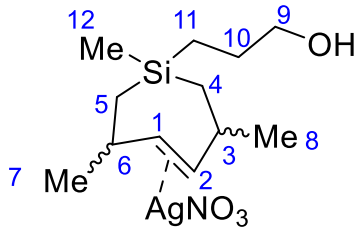
$^1$H NMR (600 MHz, $CD_3OD$)



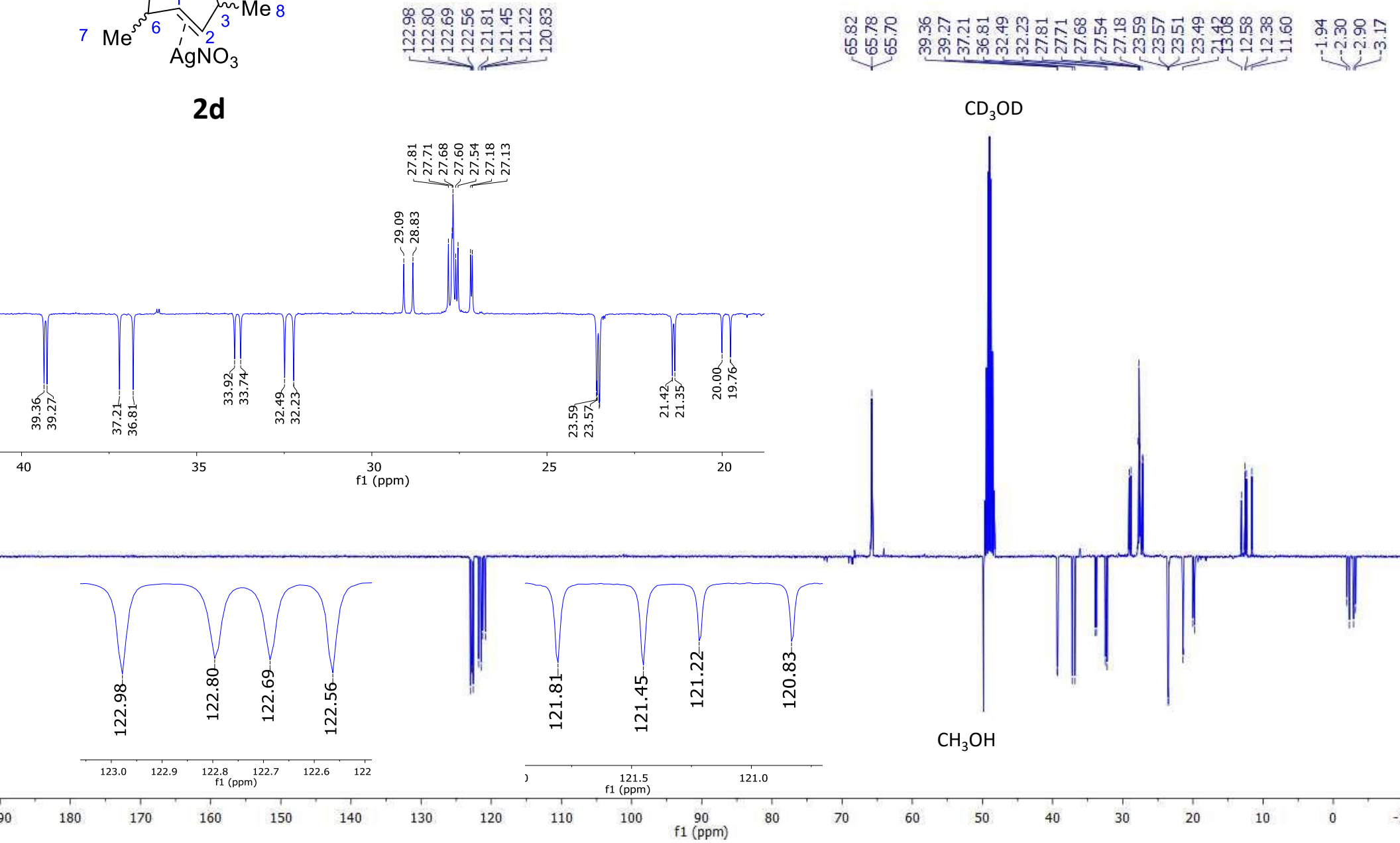

**2d**



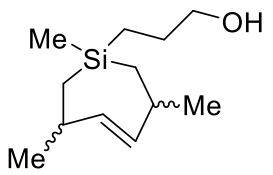
$^{13}$C NMR (100 MHz, $CD_3OD$)



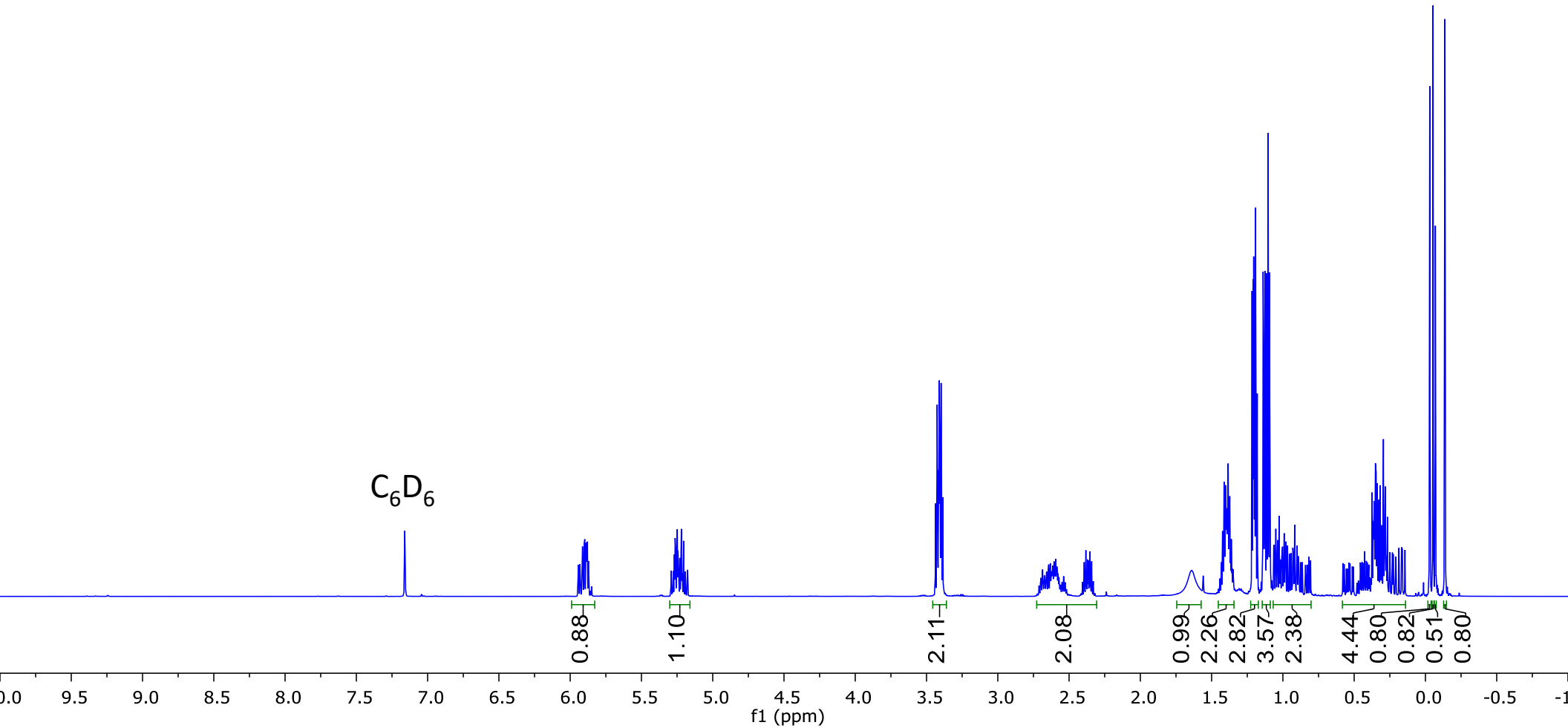

**2d**



$^1$H NMR (600 MHz, $C_6D_6$)




**7d**



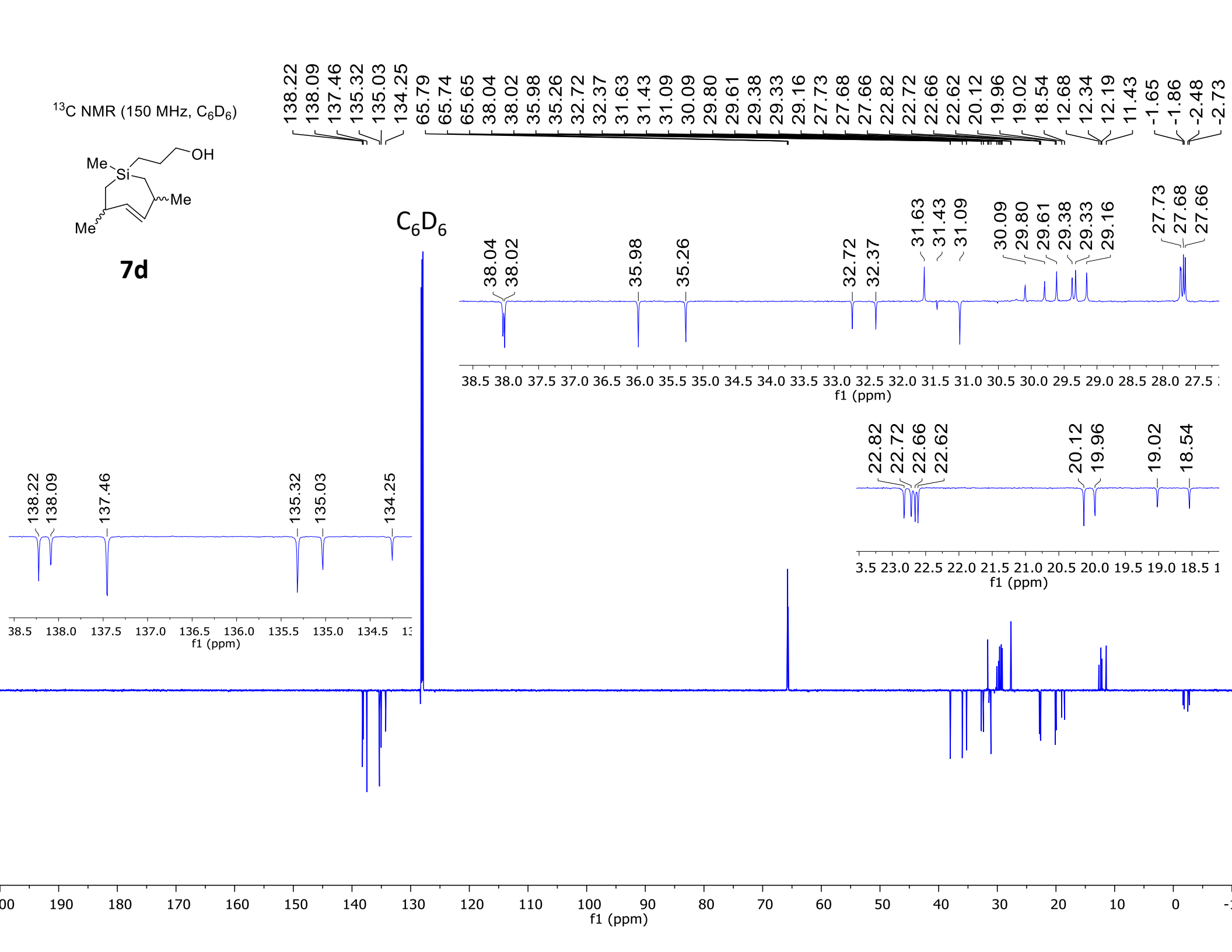
$^{13}$C NMR (150 MHz, $C_6D_6$)



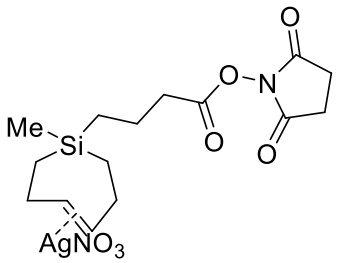

**7d**

138.22 138.09 137.46 135.32 135.03 134.25 65.79 65.74 65.65 38.04 38.02 35.98 35.26 32.72 32.37 31.63 31.43 31.09 30.09 29.80 29.61 29.38 29.33 29.16 27.73 27.68 27.66 22.82 22.72 22.66 22.62 20.12 19.96 19.02 18.54 12.68 12.34 12.19 11.43 -1.65 -1.86 -2.48 -2.73

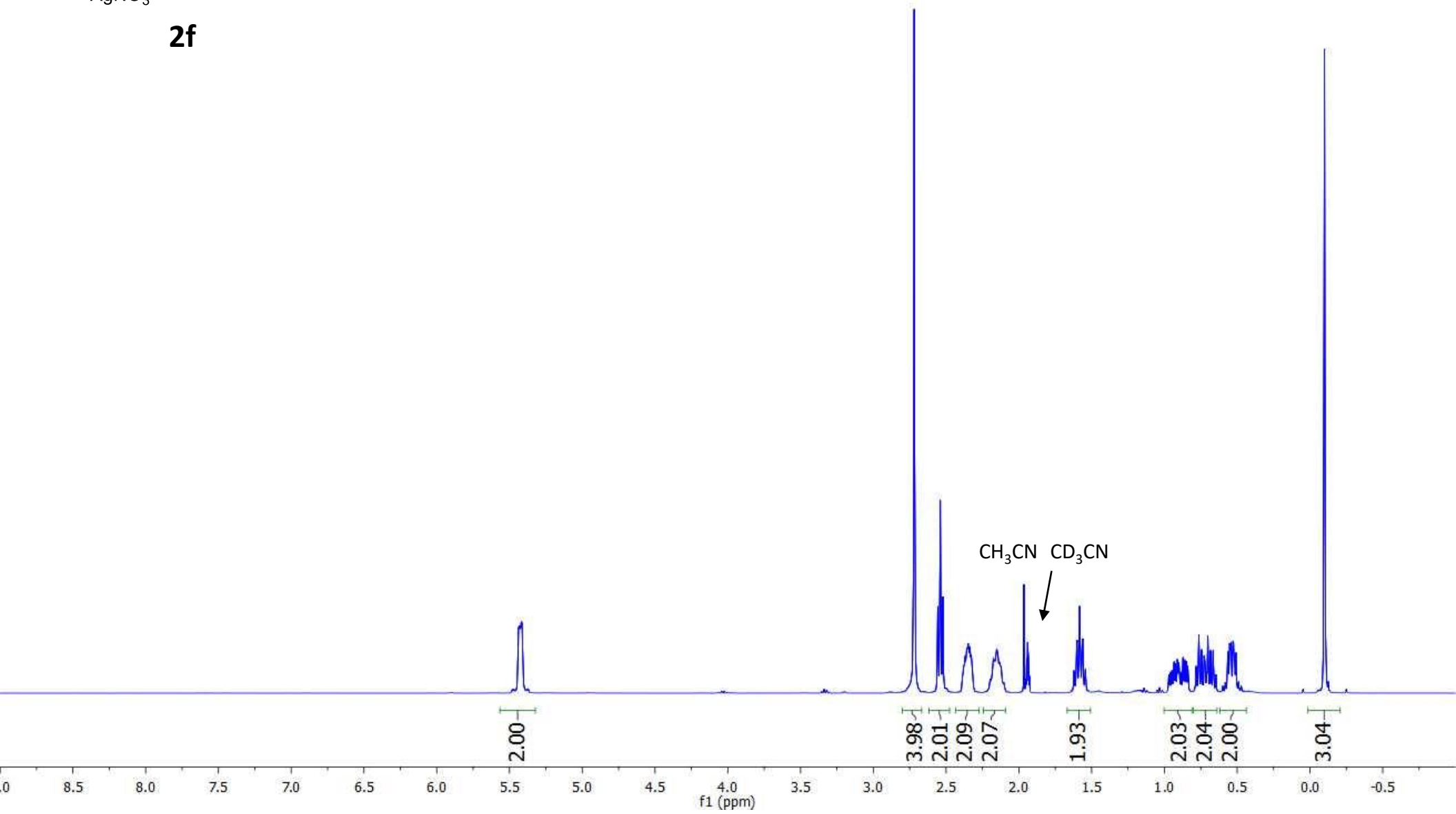
$C_6D_6$



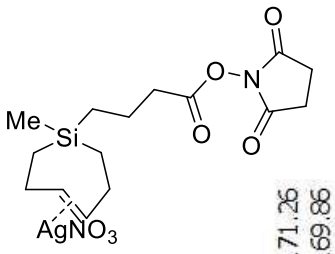
$^1$H NMR (400 MHz, $CD_3CN$)




**2f**



$^{13}$C NMR (100 MHz, $CD_3CN$)




**2f**

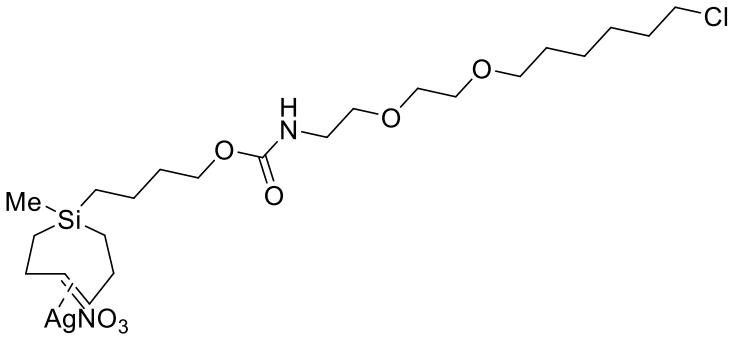
171.26
169.86
120.86
120.73
34.75
28.27
28.18
26.27
20.11
18.22
18.18
15.31
-2.91

$CD_3CN$

$CD_3CN$

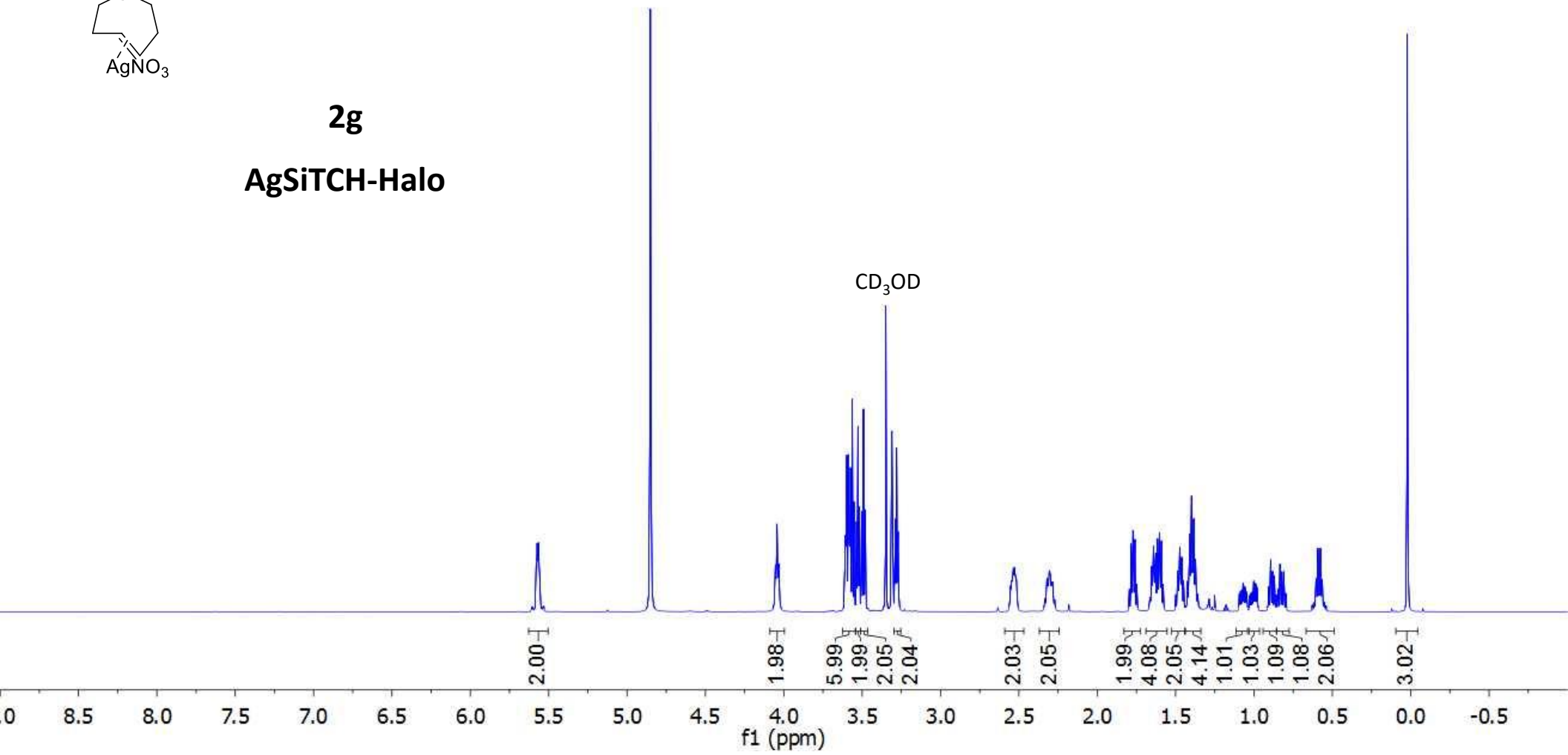
f1 (ppm)

$^1$H NMR (600 MHz, $CD_3OD$)

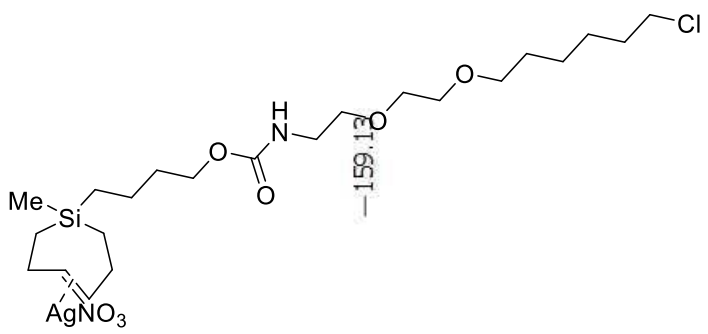



**2g**

**AgSiTCH-Halo**

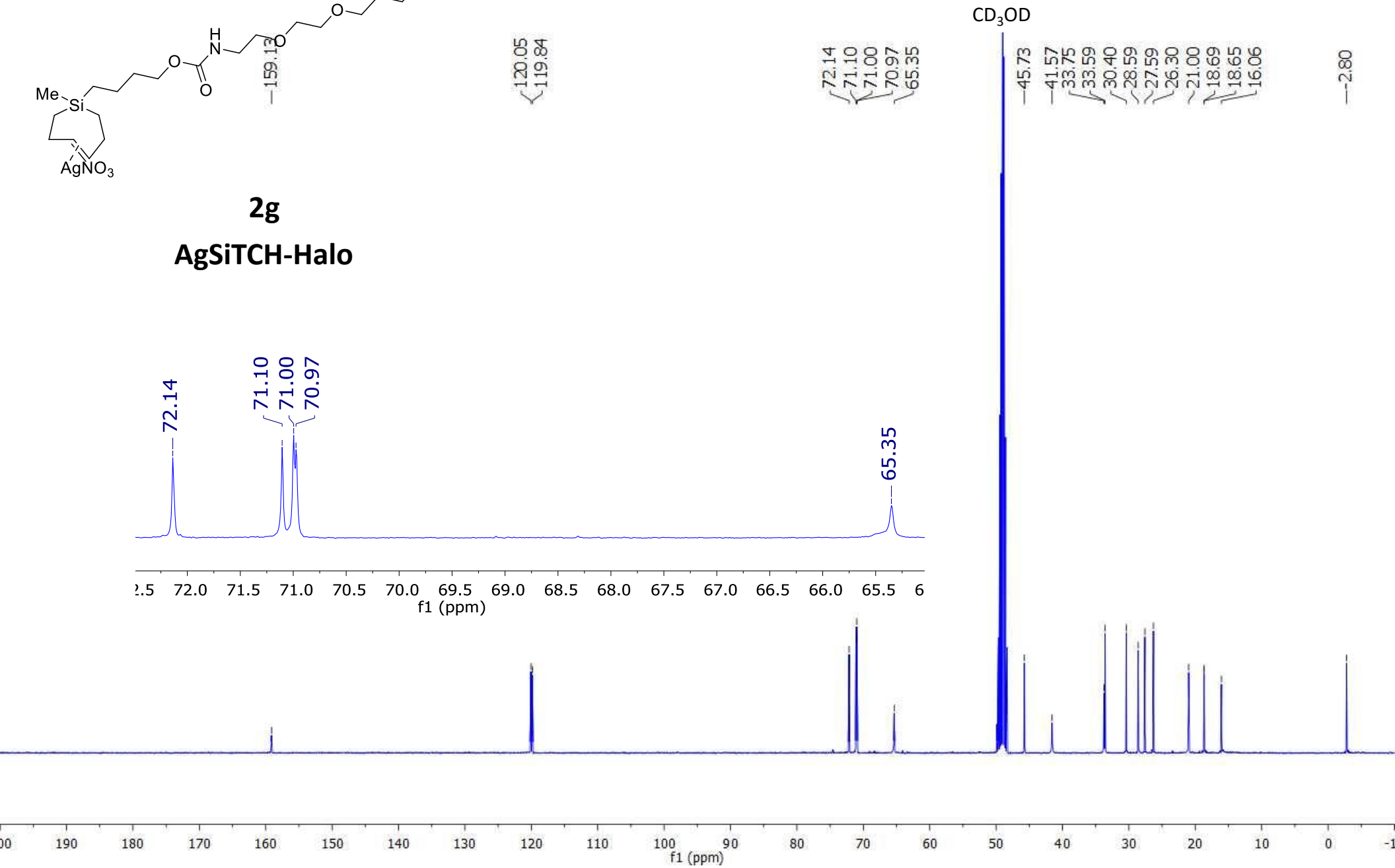


$^{13}$C NMR (100 MHz, $CD_3OD$)

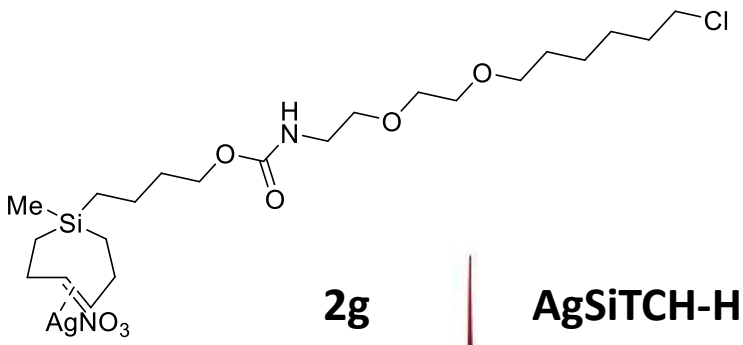



**2g**

**AgSiTCH-Halo**

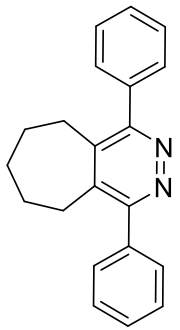


HMQC (400 MHz, $CD_3OD$)




**2g** **AgSiTCH-Halo**

$^1$H NMR (600 MHz, $CDCl_3$)



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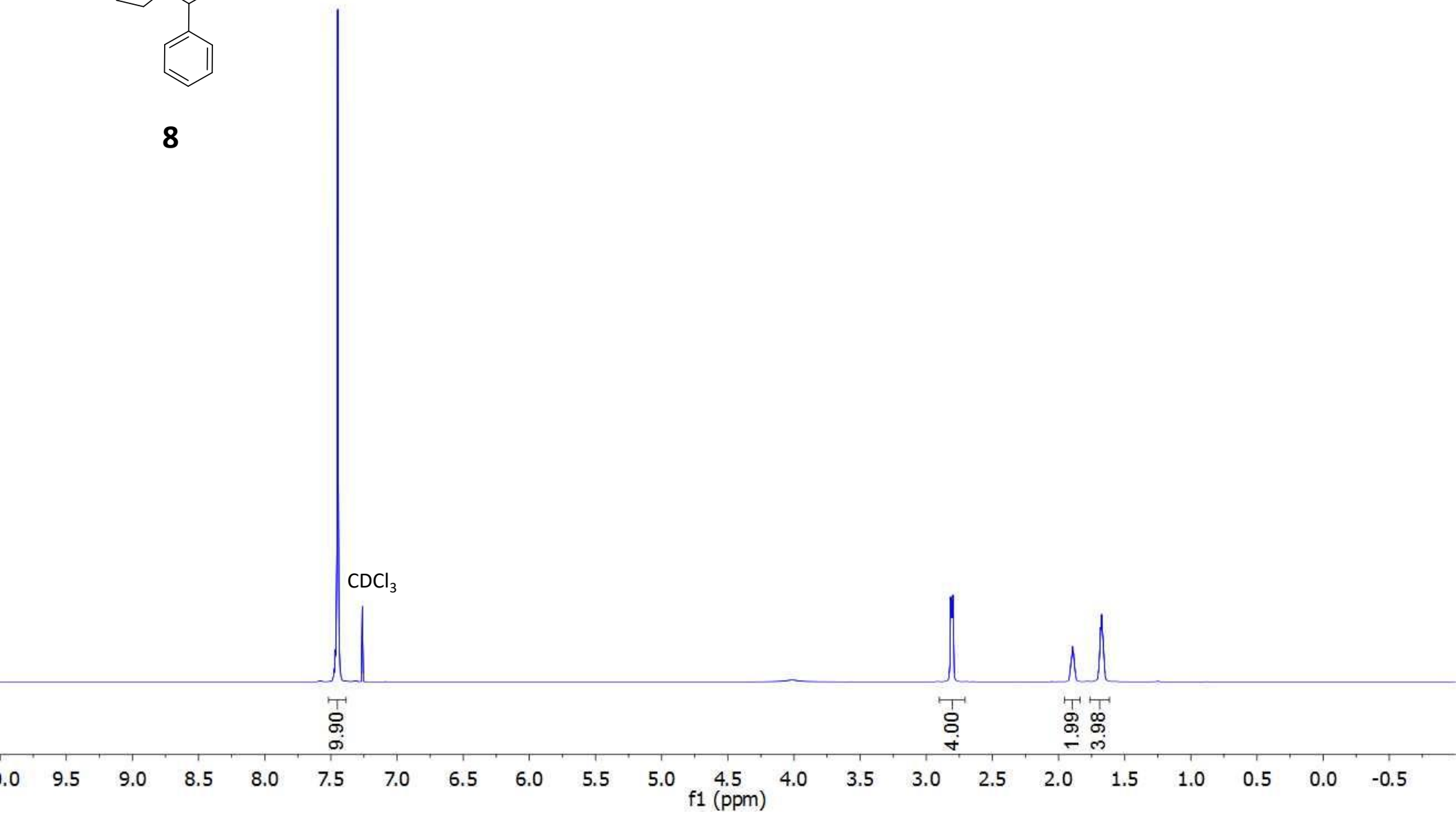
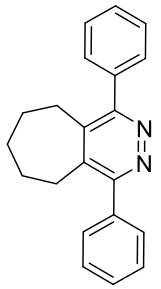
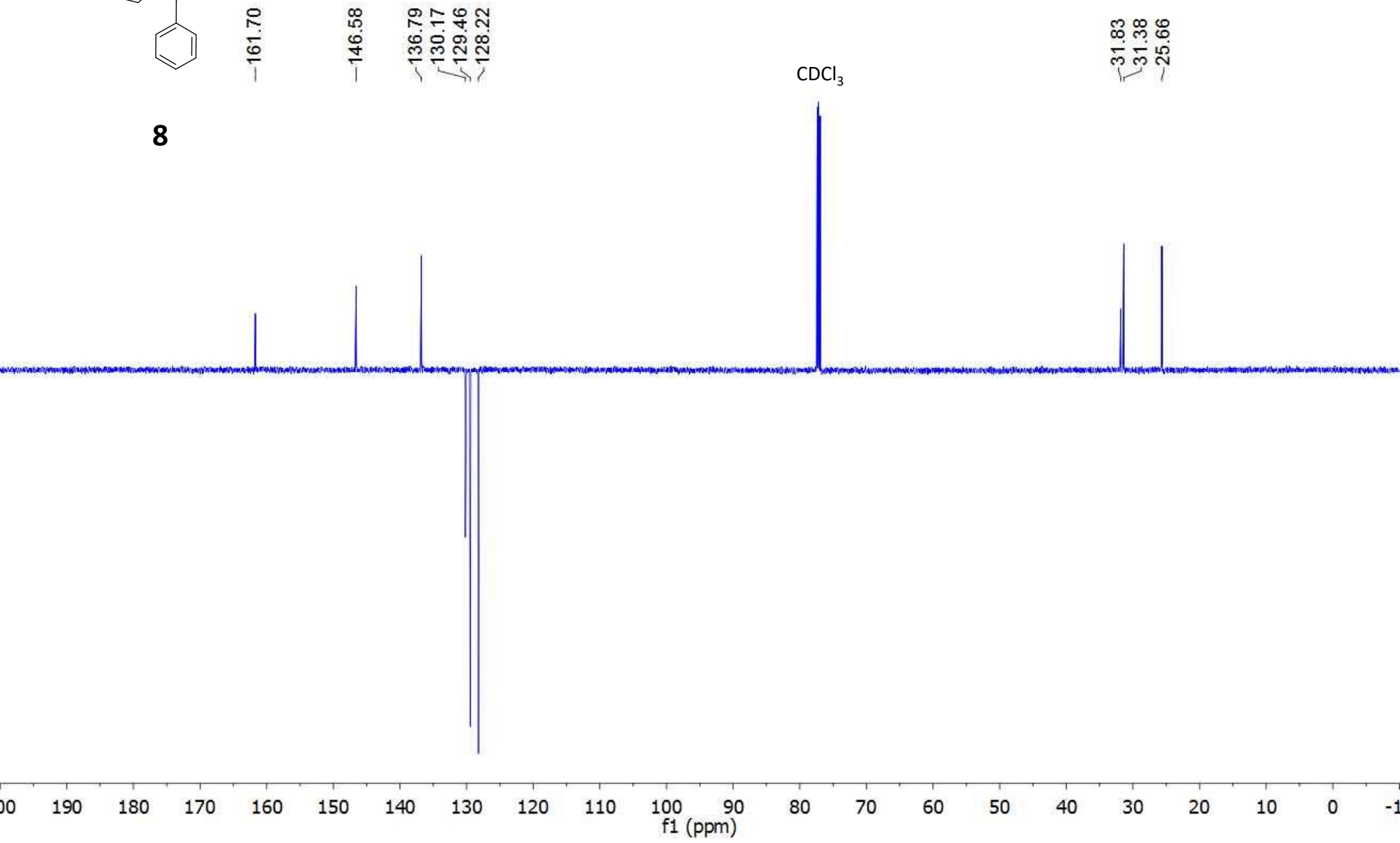


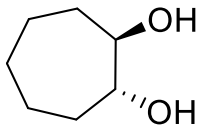
$^{13}$C NMR (150 MHz, $CDCl_3$)



**8**



$^1$H NMR (600 MHz, $CDCl_3$)

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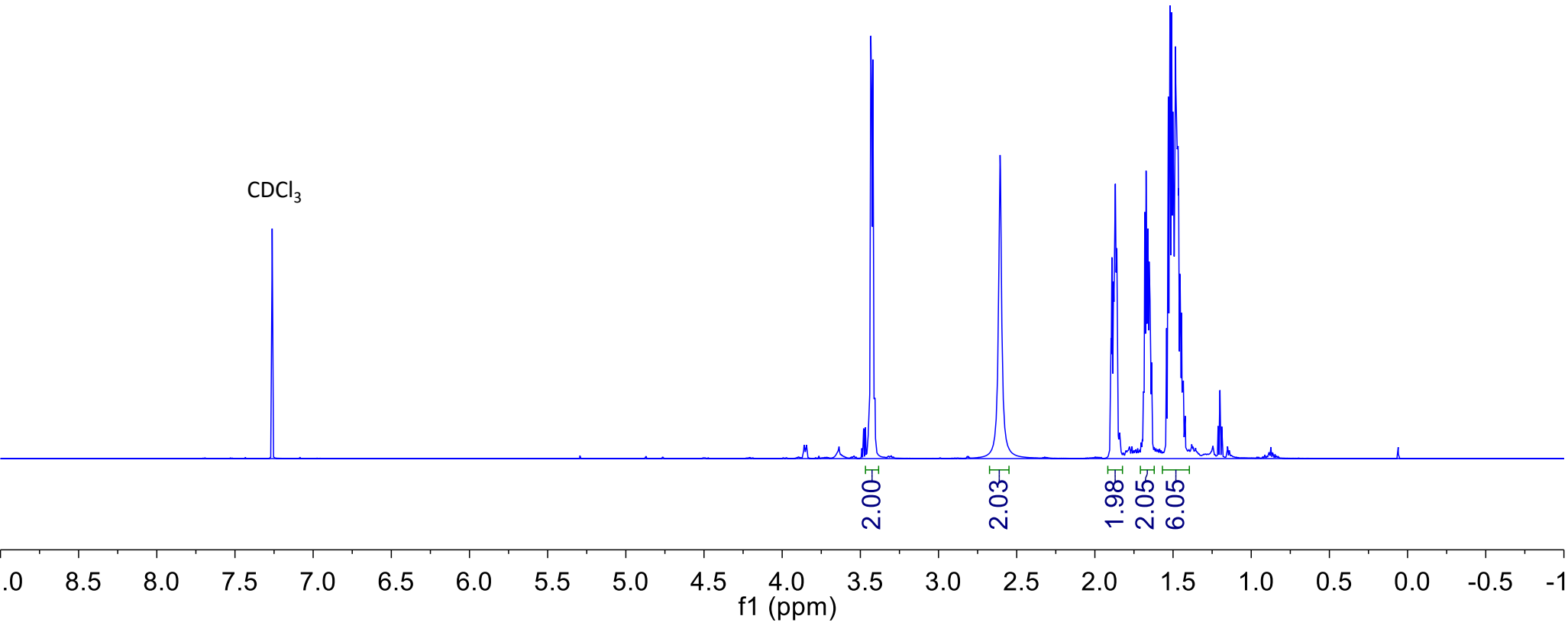
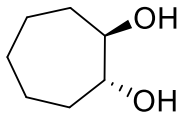
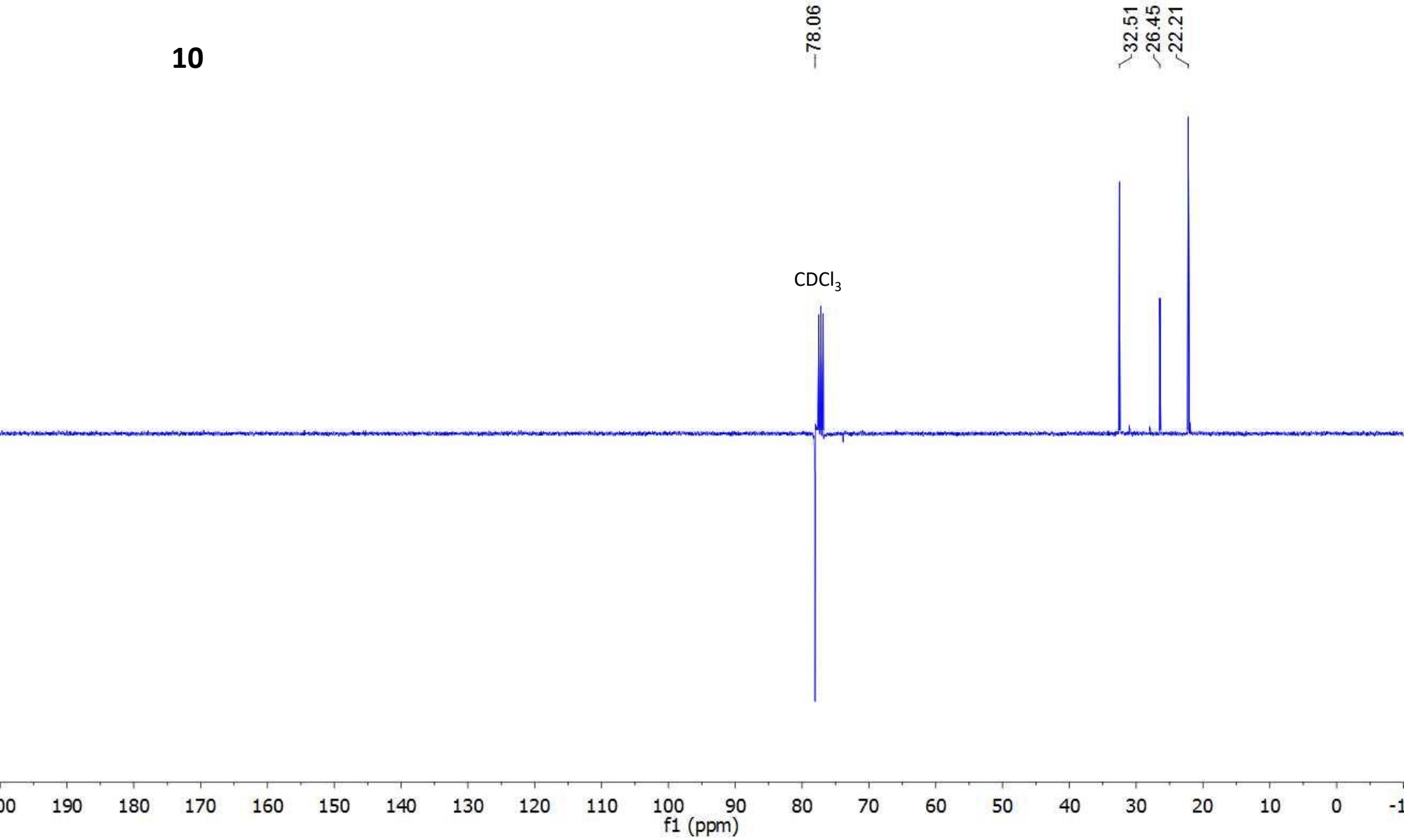


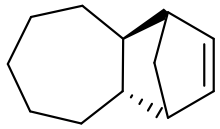
$^{13}C$ NMR (100 MHz, $CDCl_3$)




**10**



$^1$H NMR (400 MHz, $CDCl_3$)



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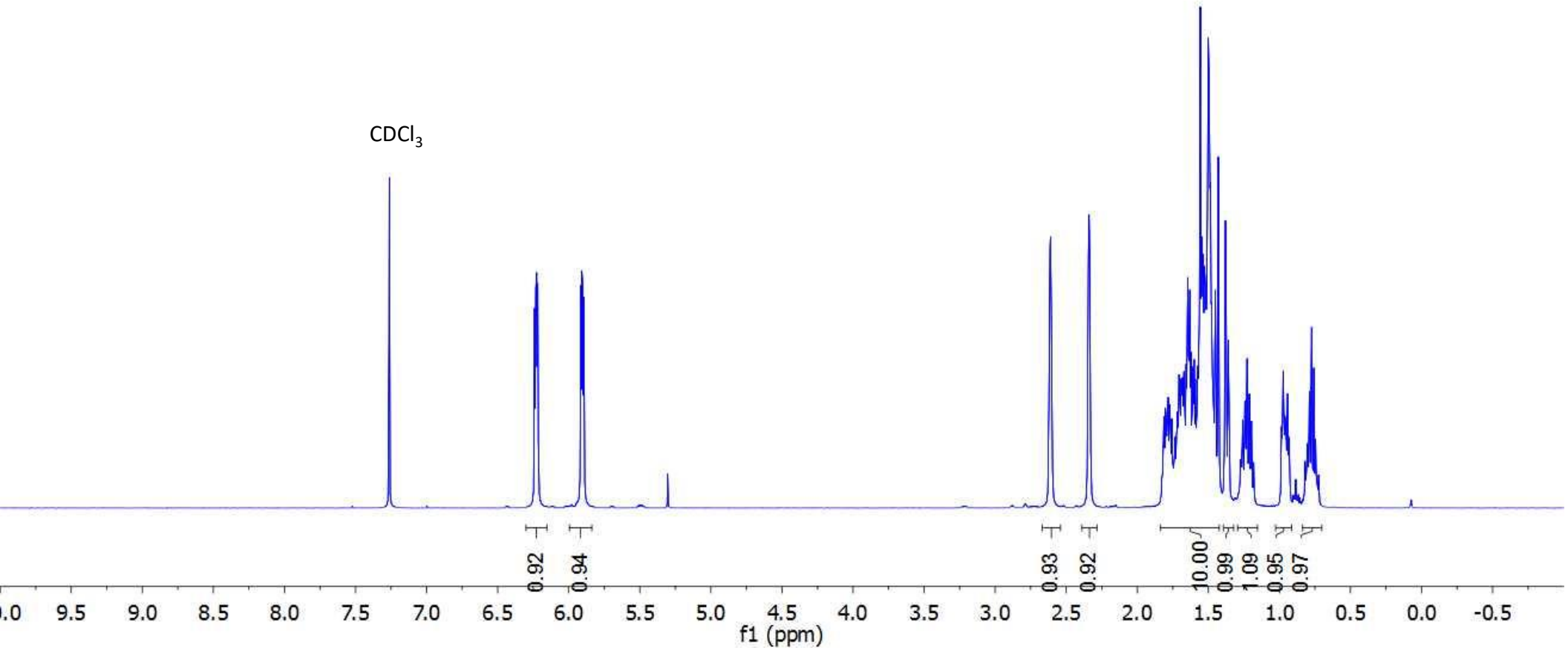
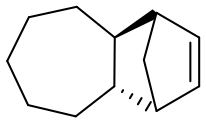
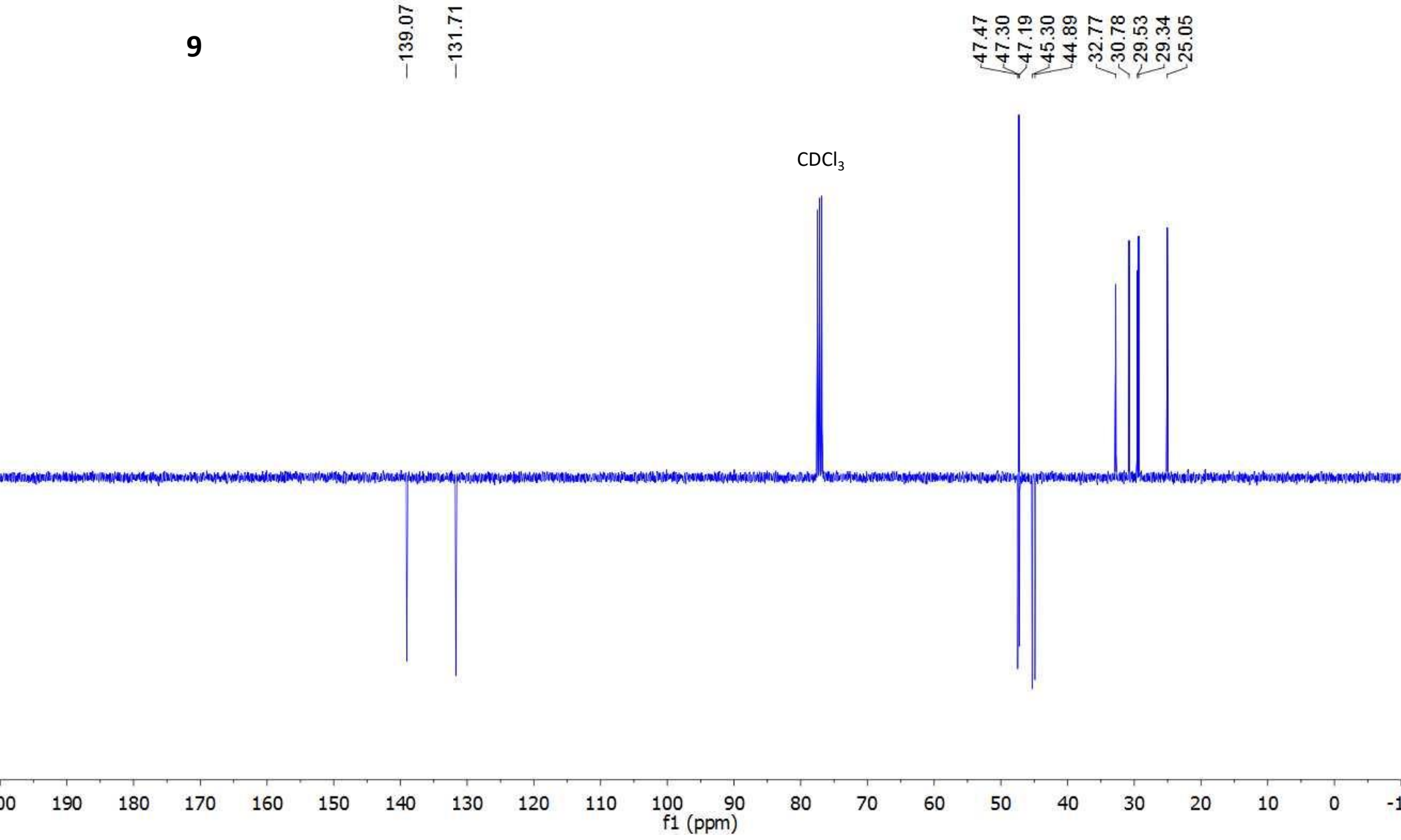


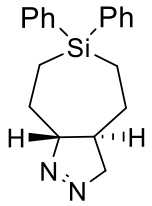
$^{13}$C NMR (100 MHz, $CDCl_3$)



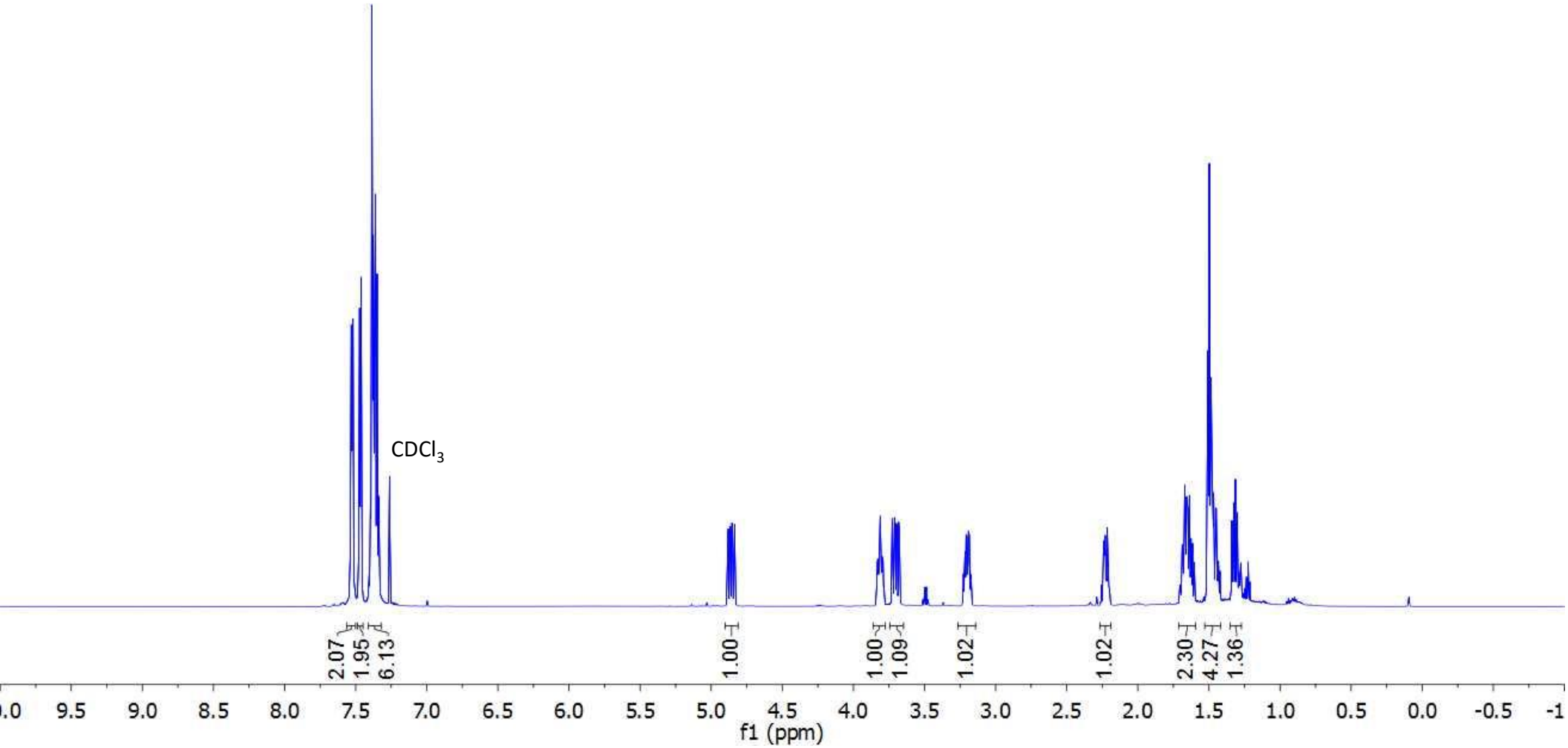
**9**



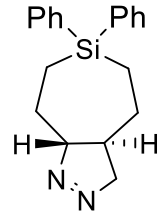
$^1$H NMR (600 MHz, $CDCl_3$)



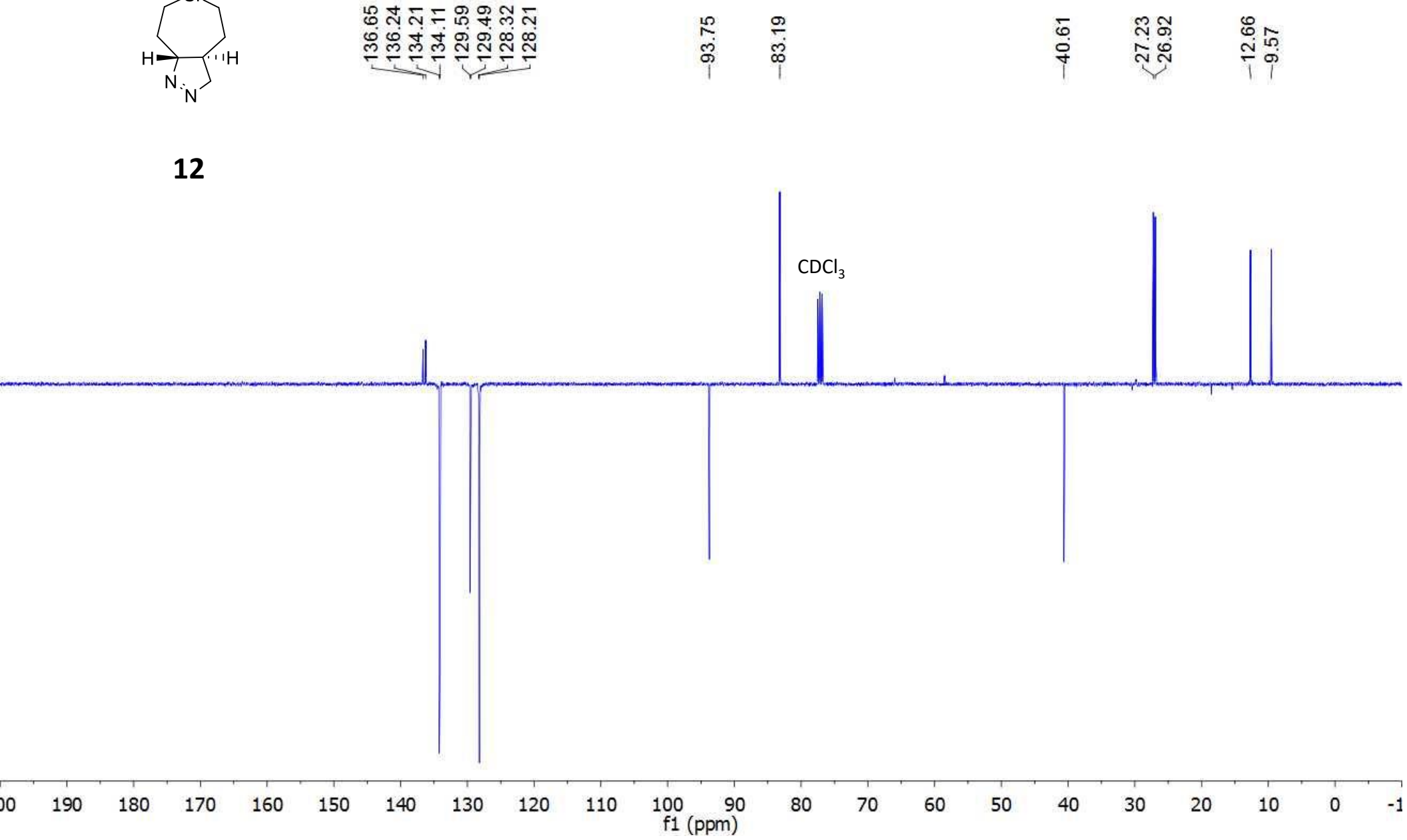

**12**



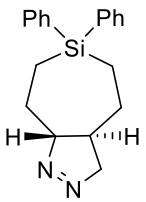
$^{13}$C NMR (100 MHz, $CDCl_3$)



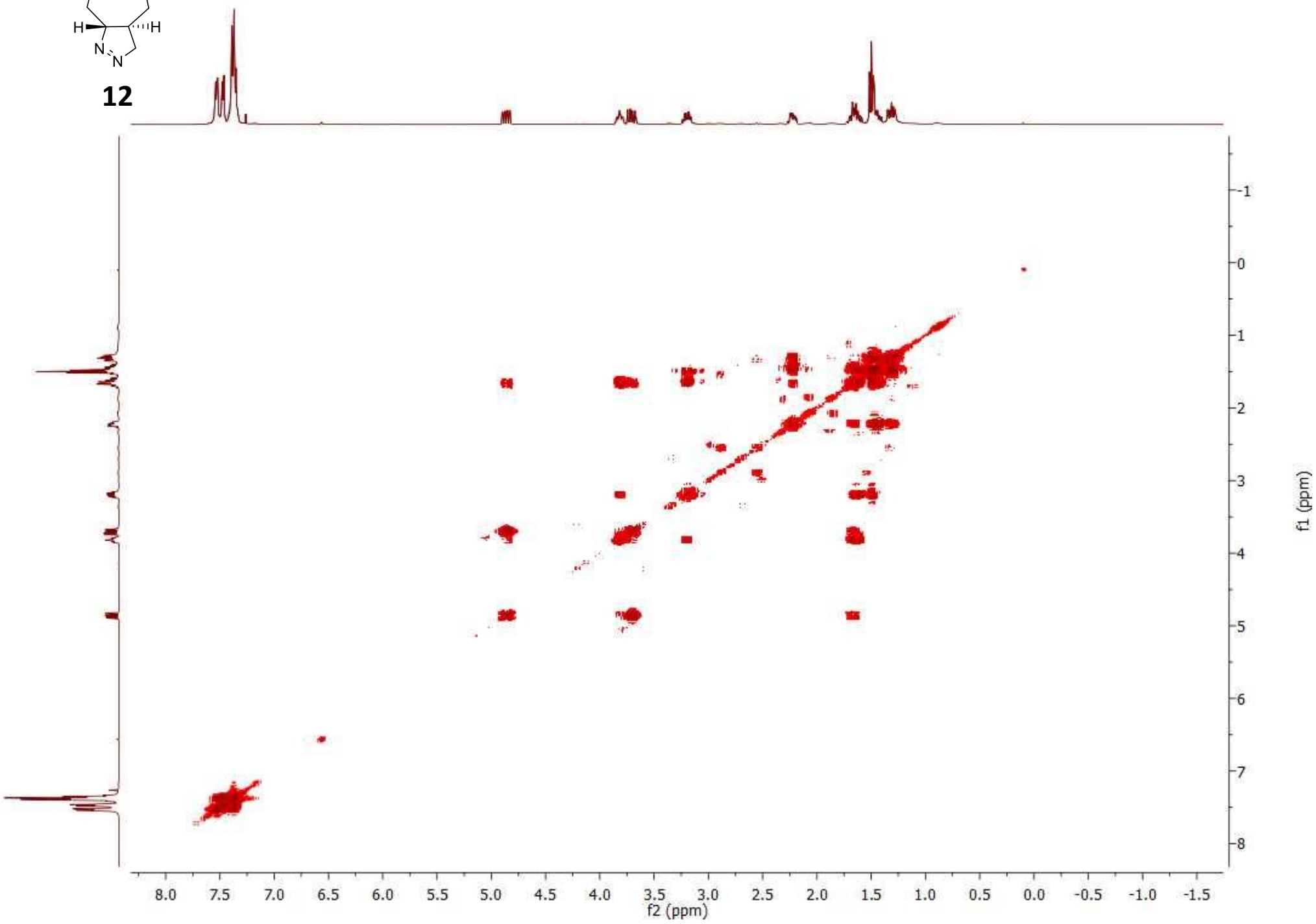

**12**



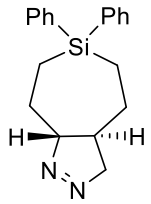
COSY (400 MHz, $CDCl_3$)



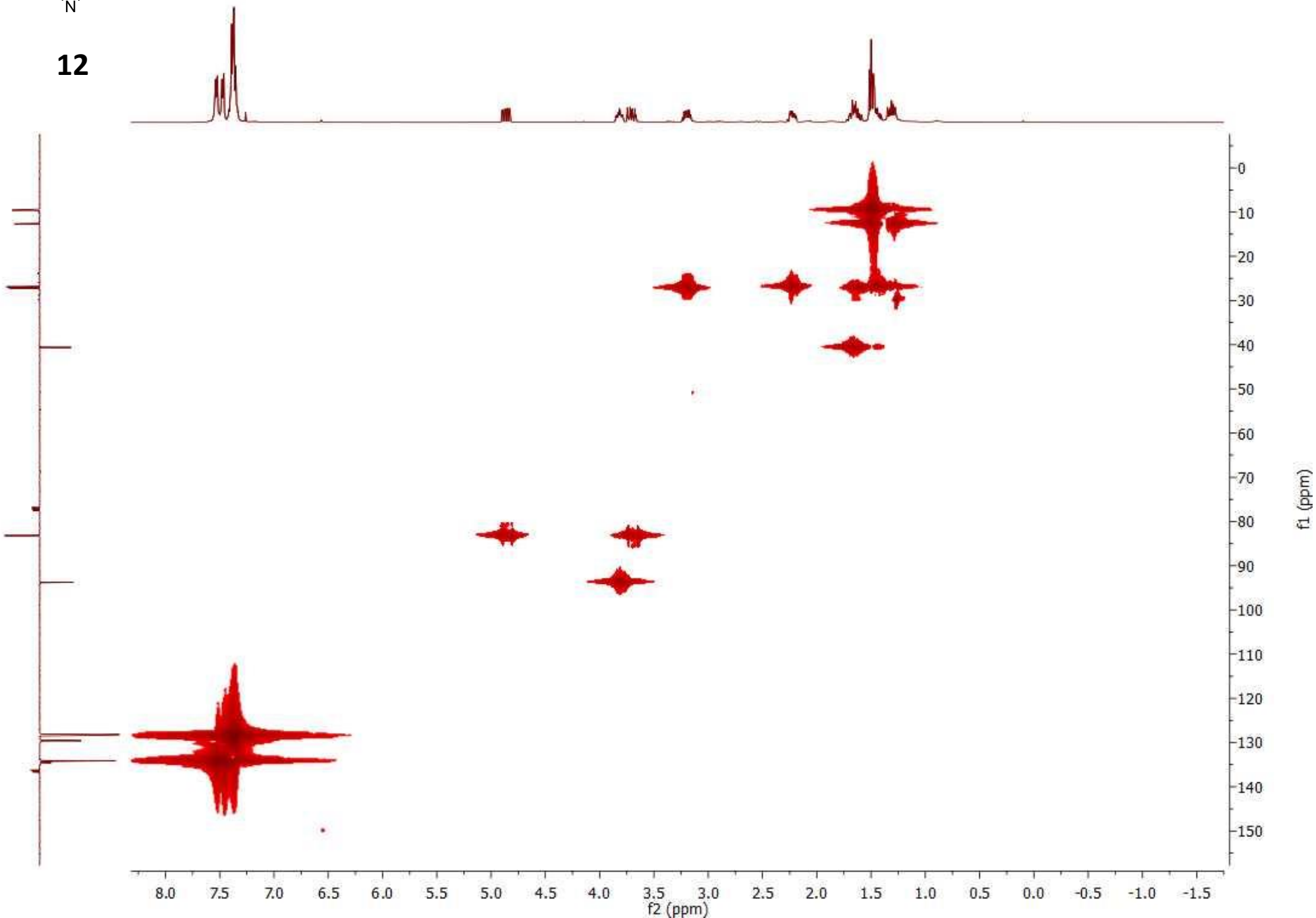

**12**



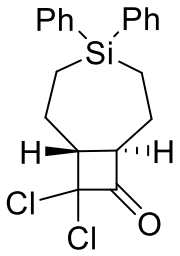
HMQC (400 MHz, $CDCl_3$)



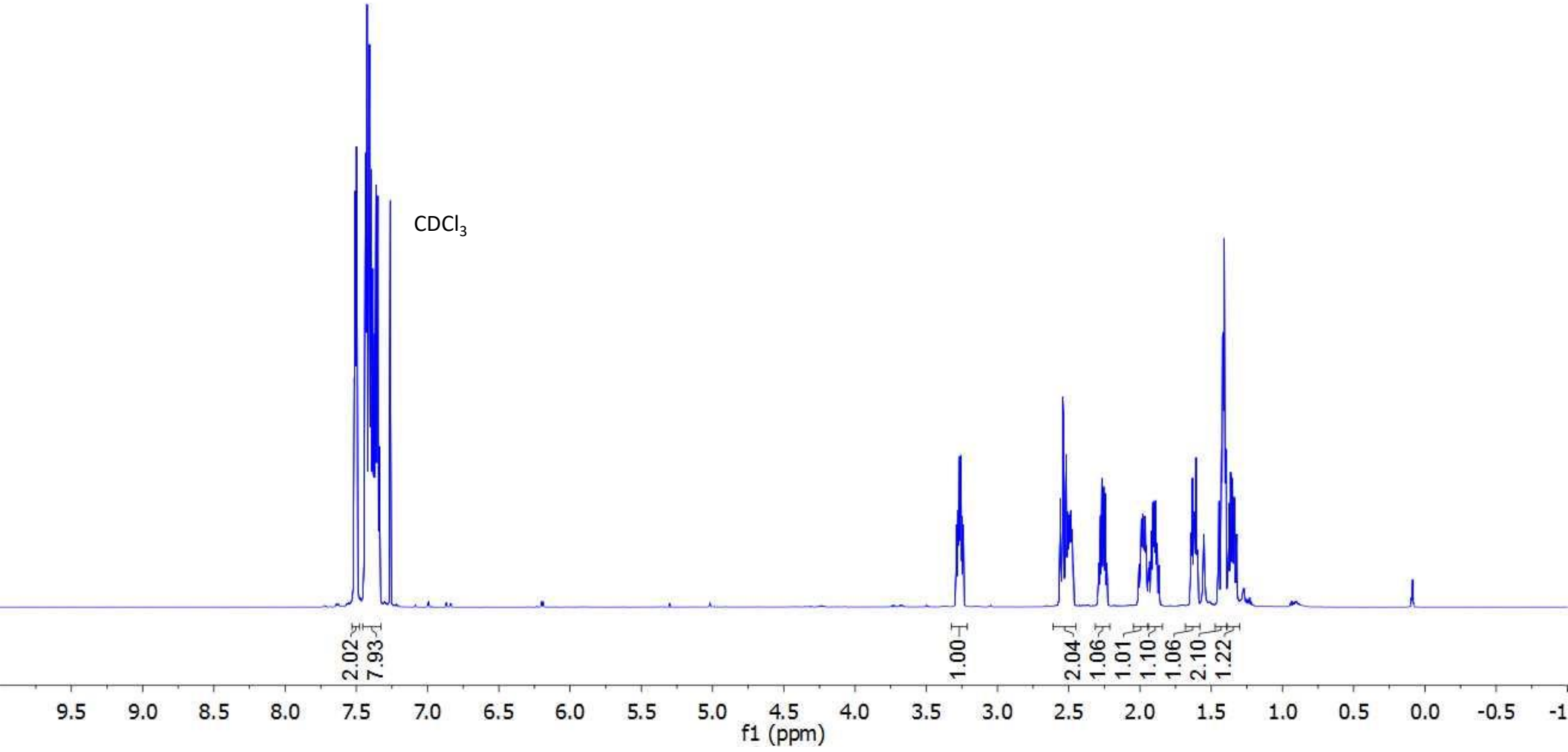

**12**



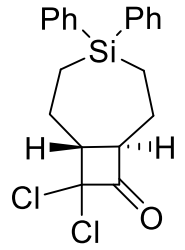
$^{1}$H NMR (600 MHz, $CDCl_3$)



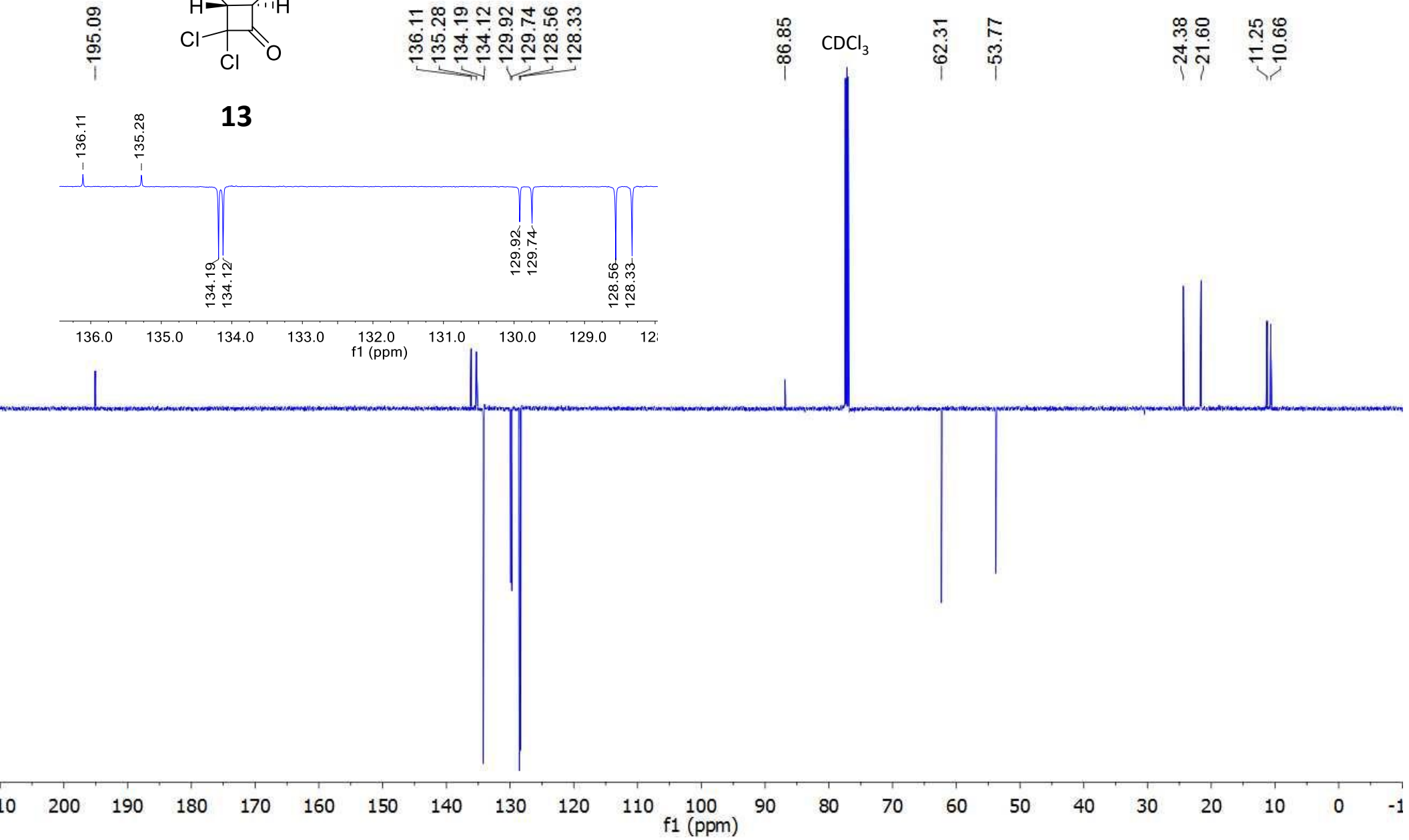

**13**



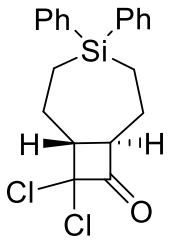
$^{13}$C NMR (150 MHz, $CDCl_3$)



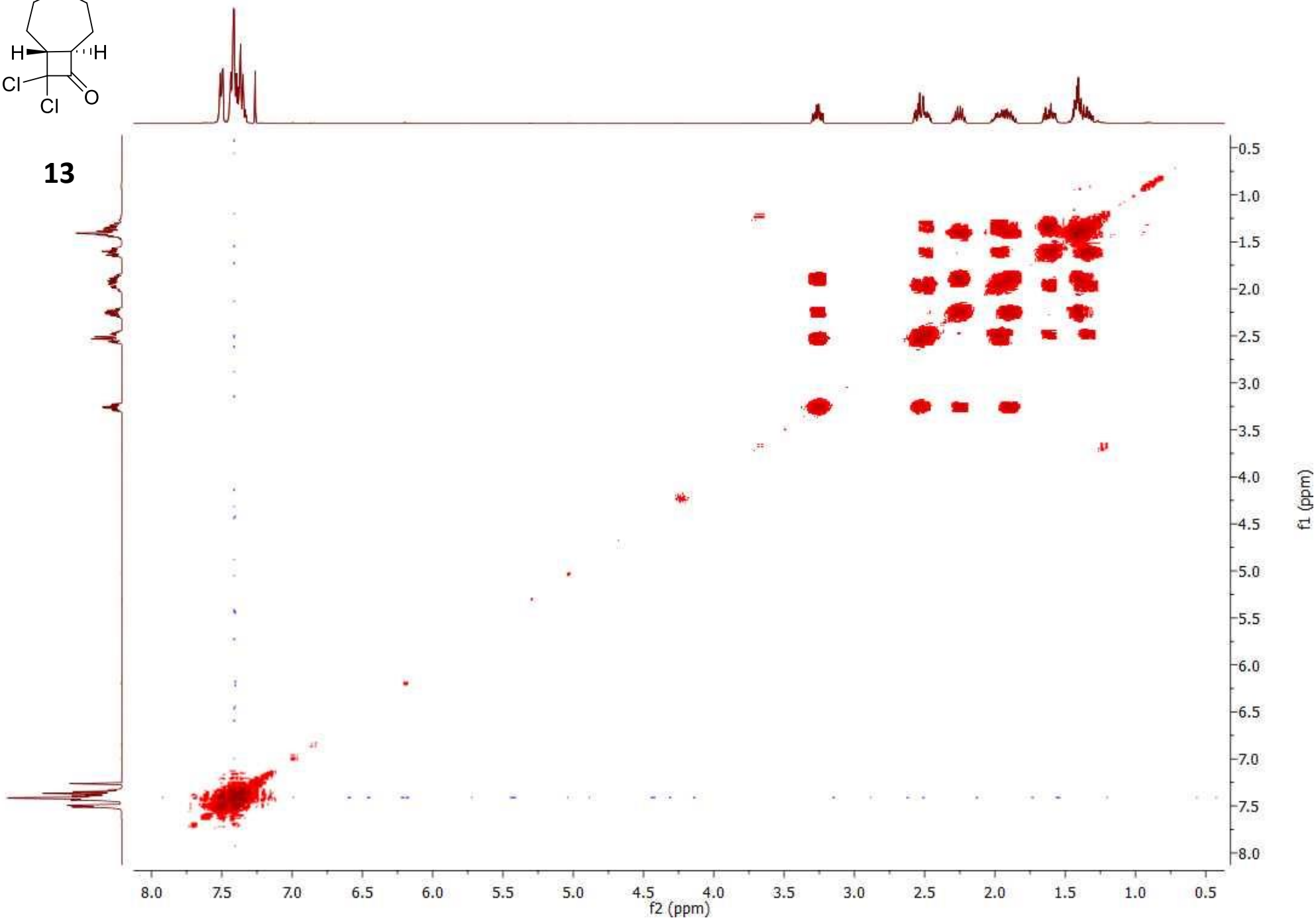

**13**



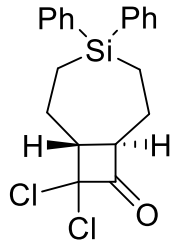
COSY (400 MHz, $CDCl_3$)



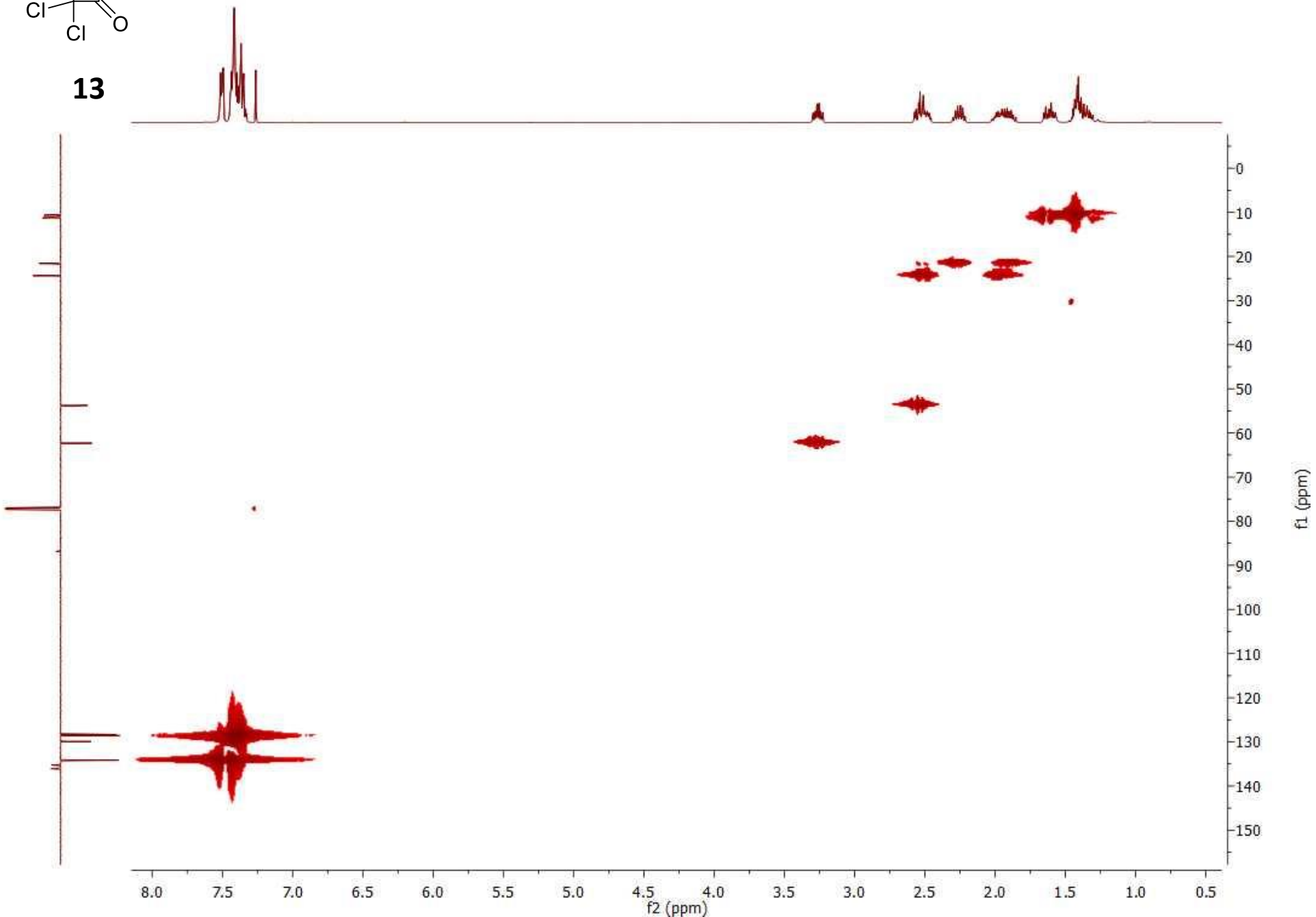

**13**



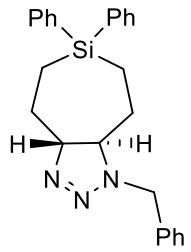
HMQC (400 MHz, $CDCl_3$)



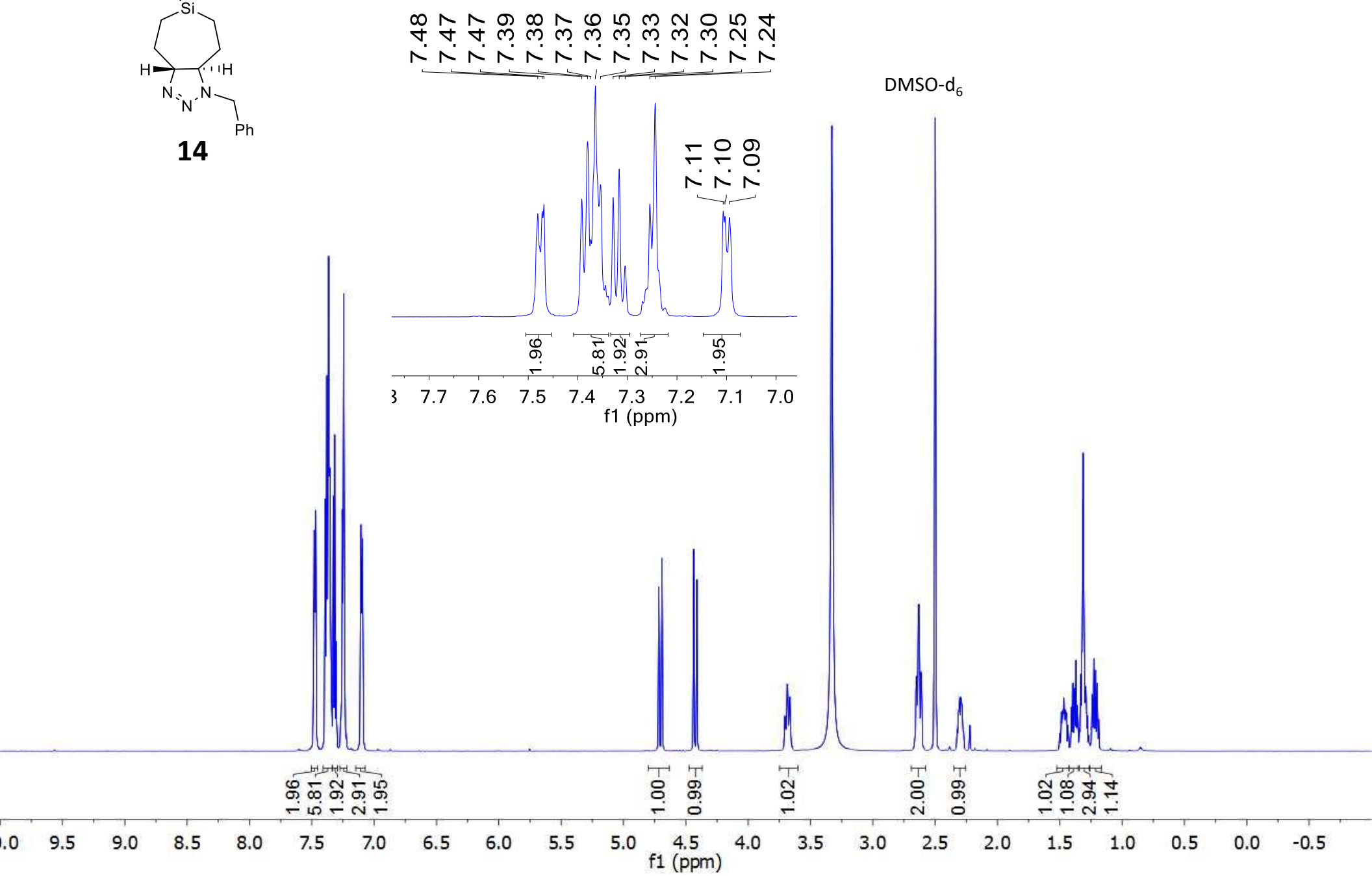

**13**



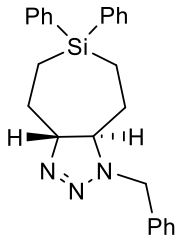
$^1$H NMR (600 MHz, DMSO-$d_6$)




**14**



$^{13}$C NMR (150 MHz, DMSO-$d_6$)



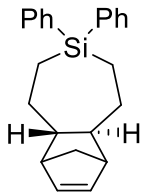

**14**

136.48
136.06
135.99
133.79
133.68
129.32
129.27
128.44
128.37
128.09
128.05
127.38
83.84
64.32
52.21
DMSO-$d_6$
27.11
25.62
8.06
8.01

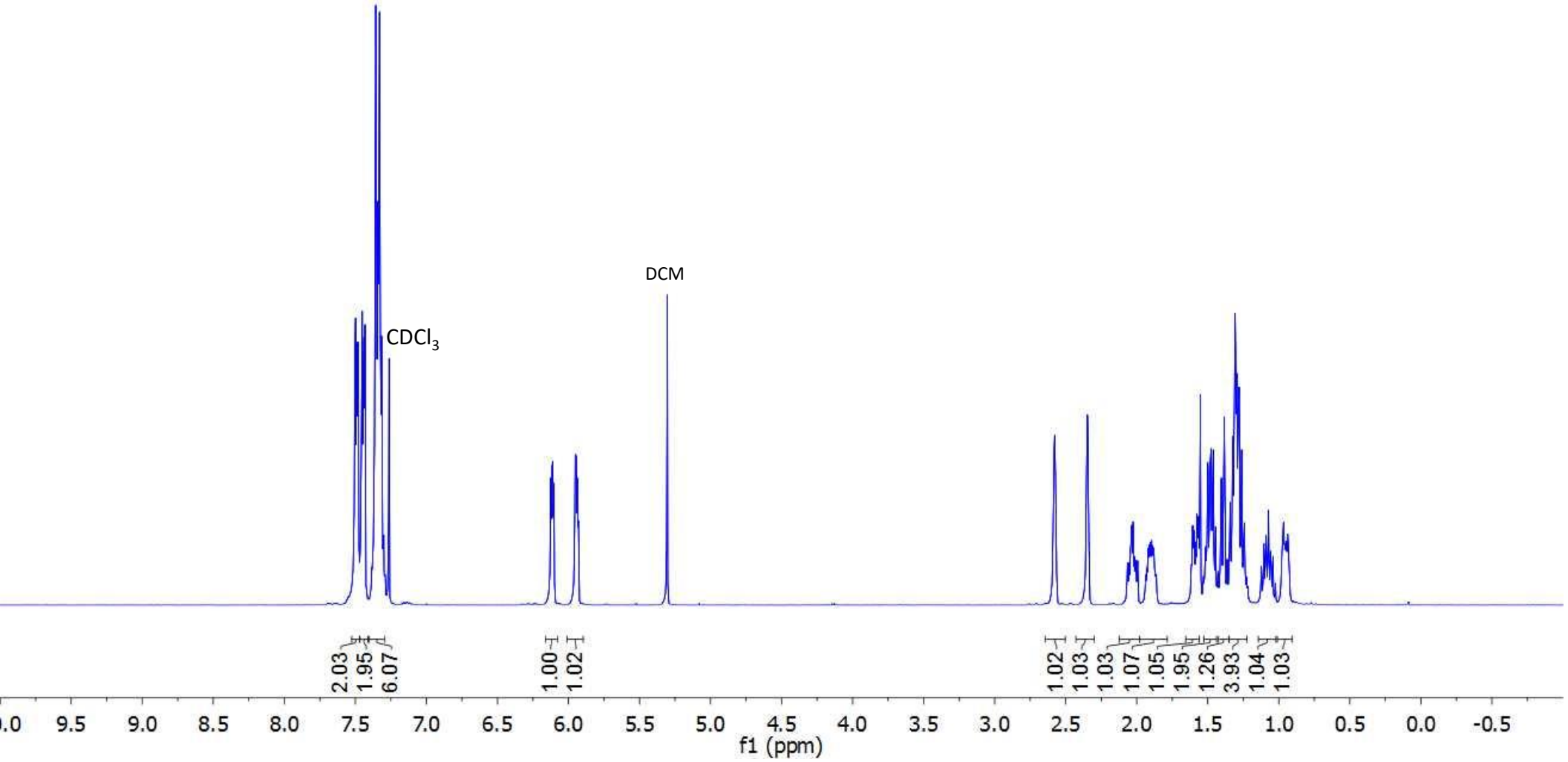
f1 (ppm)

f1 (ppm)

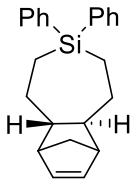
$^1$H NMR (400 MHz, $CDCl_3$)



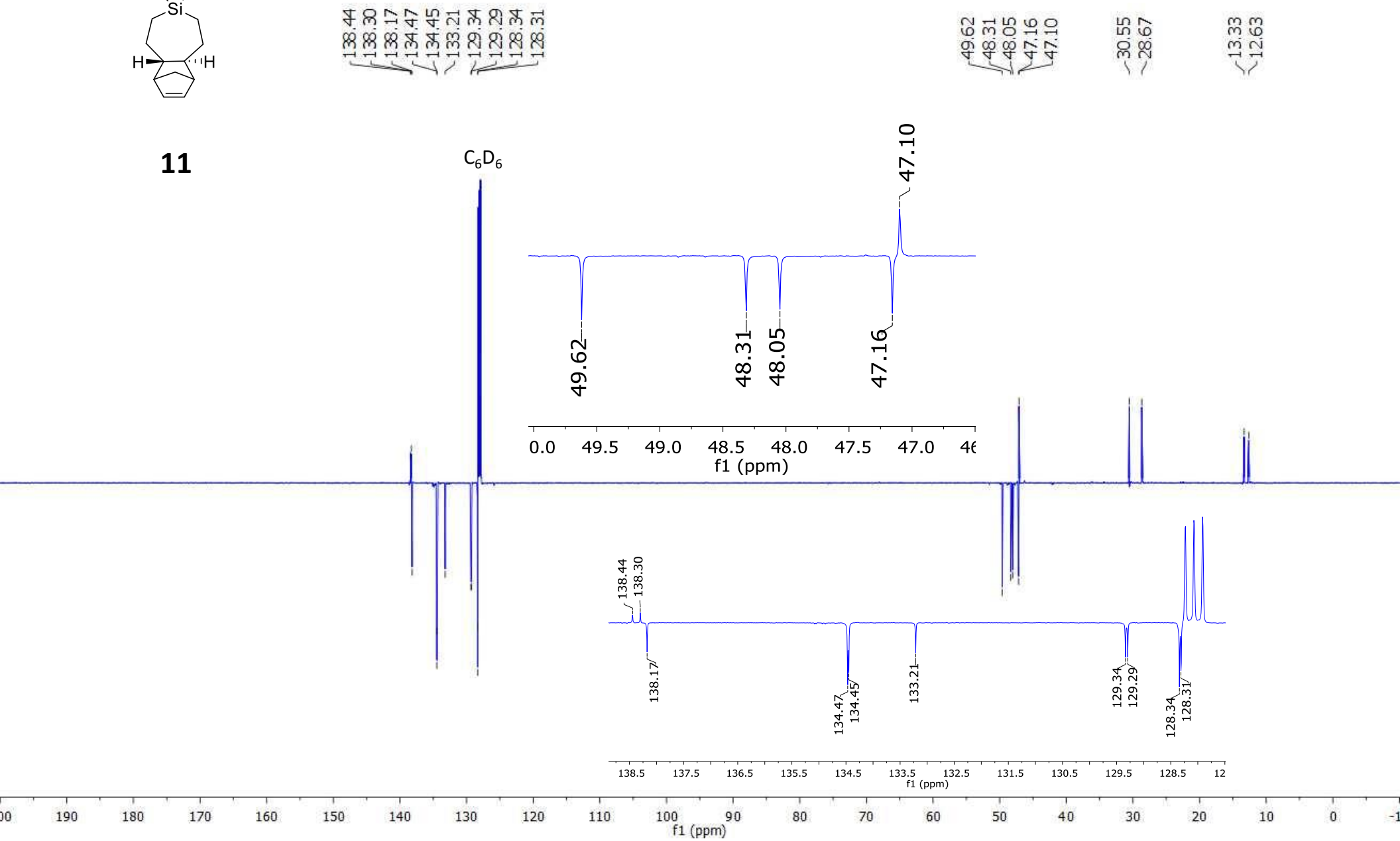

**11**



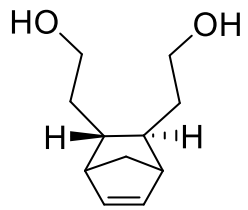
$^{13}$C NMR (150 MHz, $C_6D_6$)



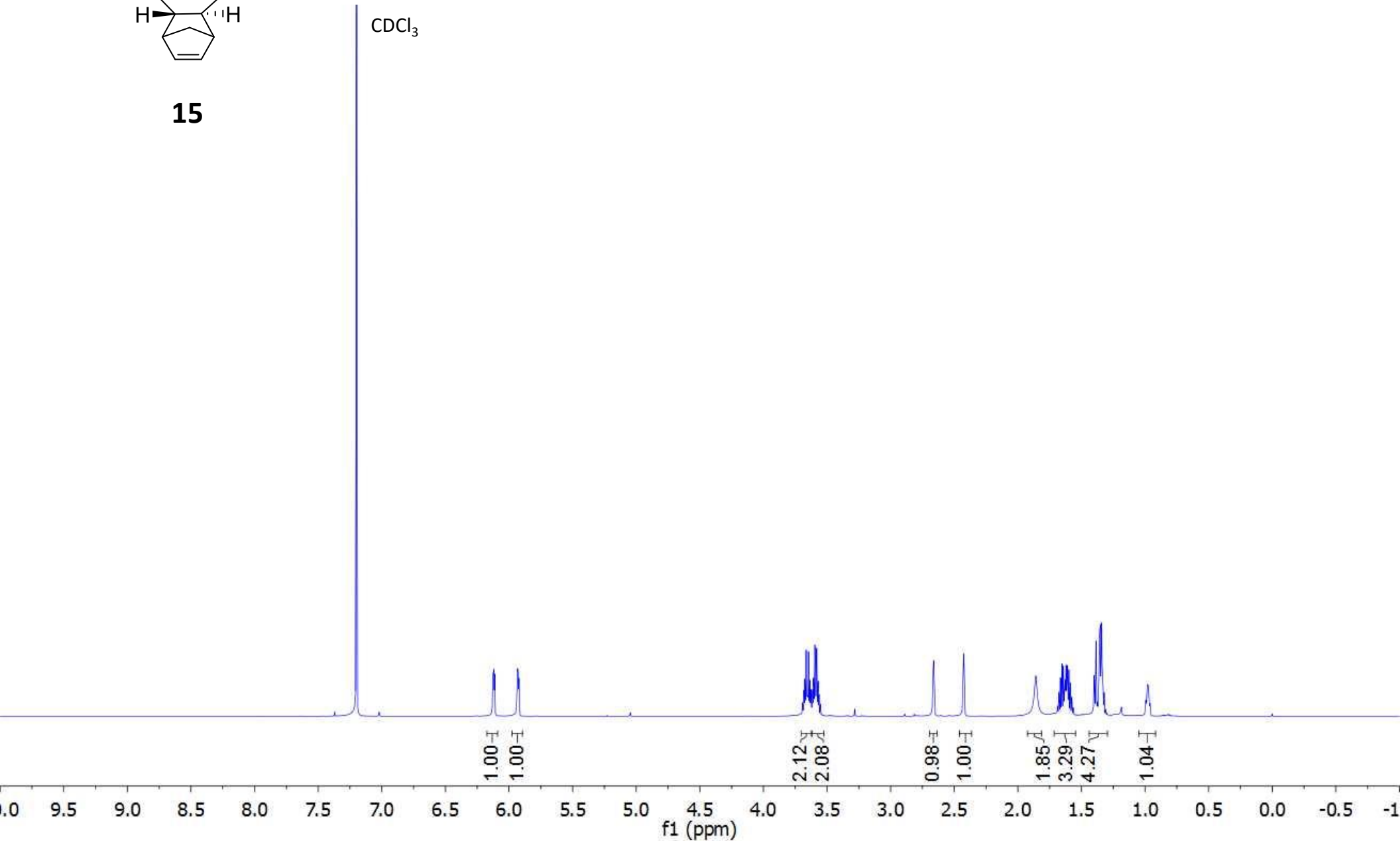

**11**



$^{1}$H NMR (600 MHz, $CDCl_3$)



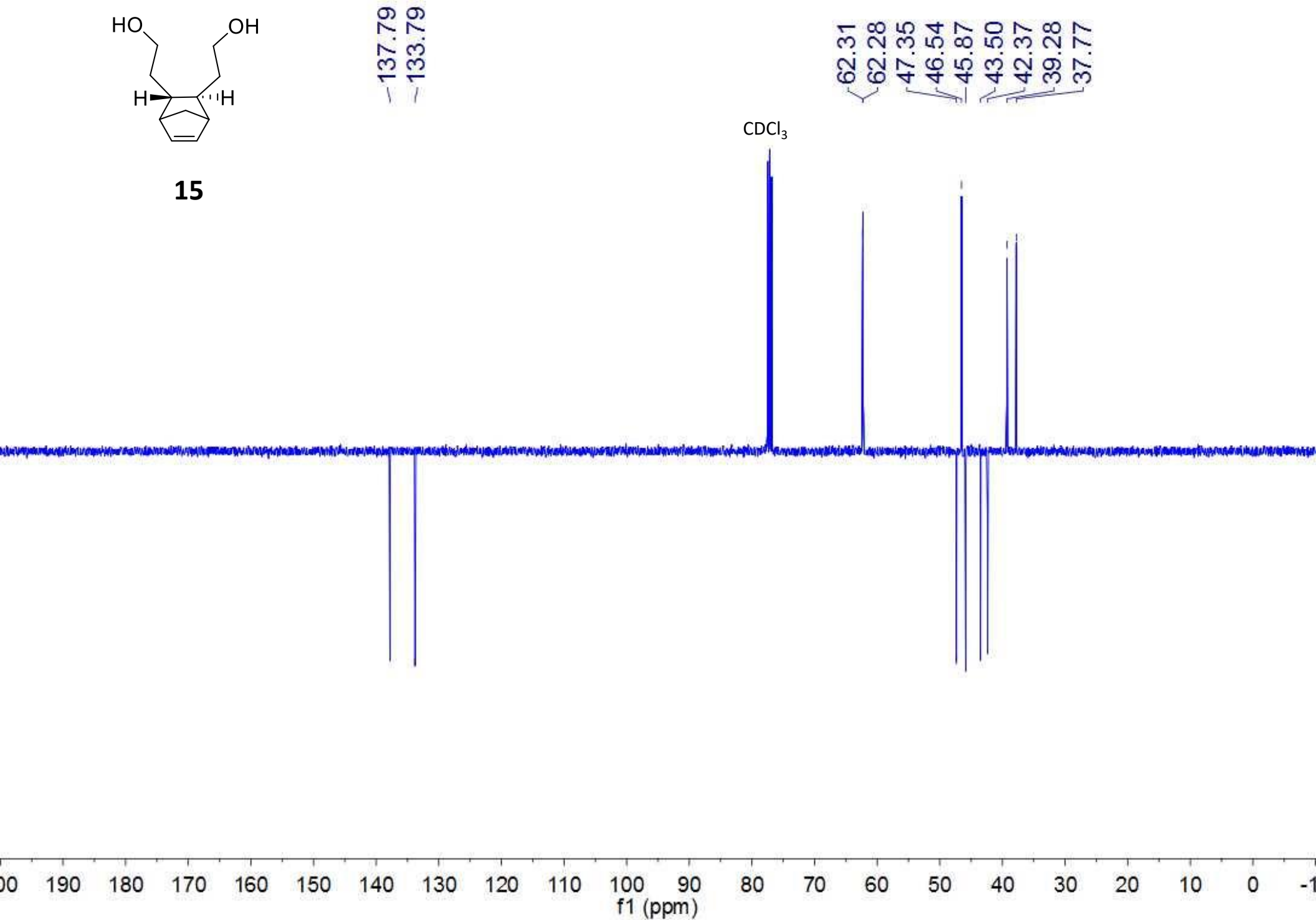

**15**



$^{13}$C NMR (100 MHz, $CDCl_3$)



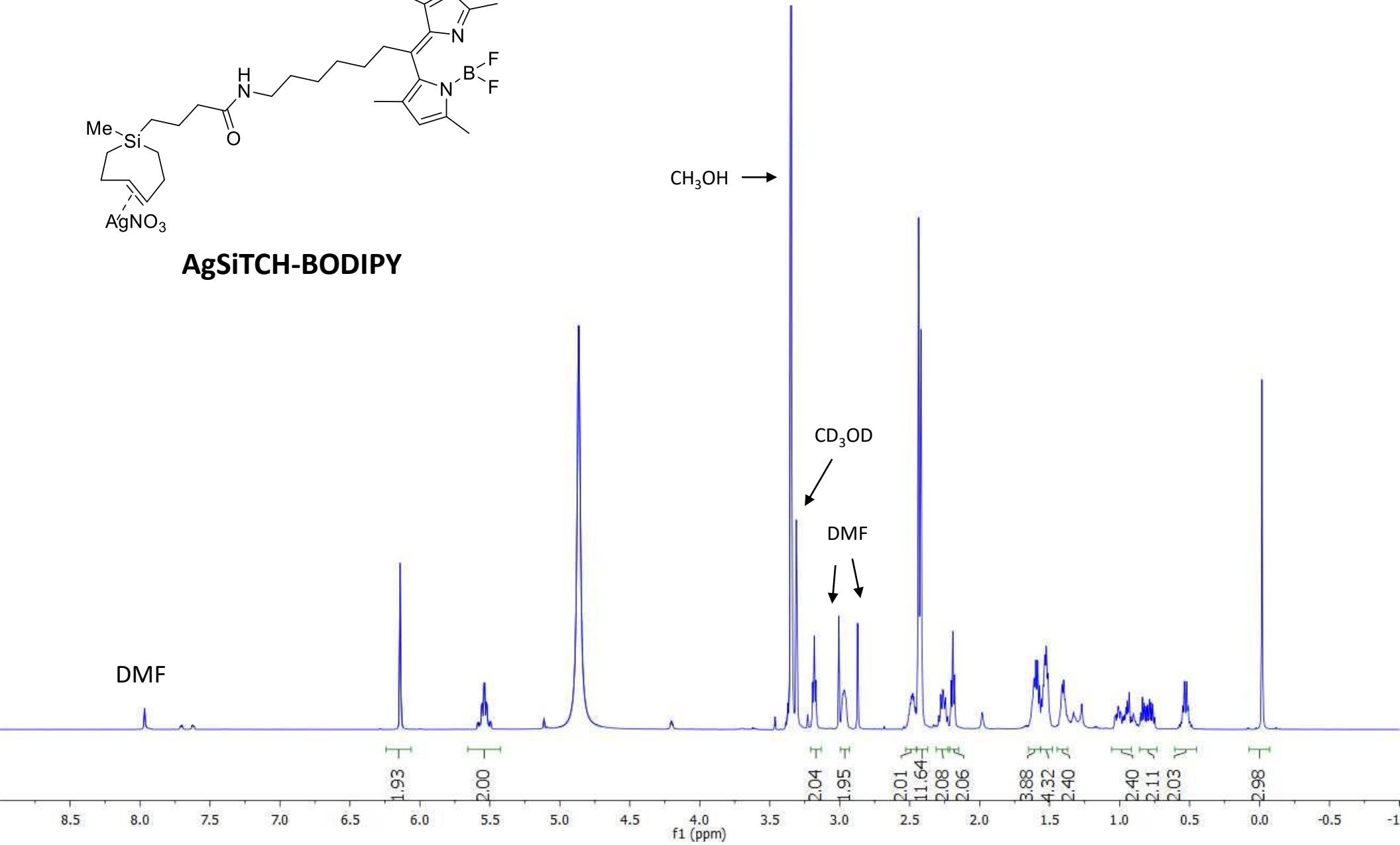

**15**

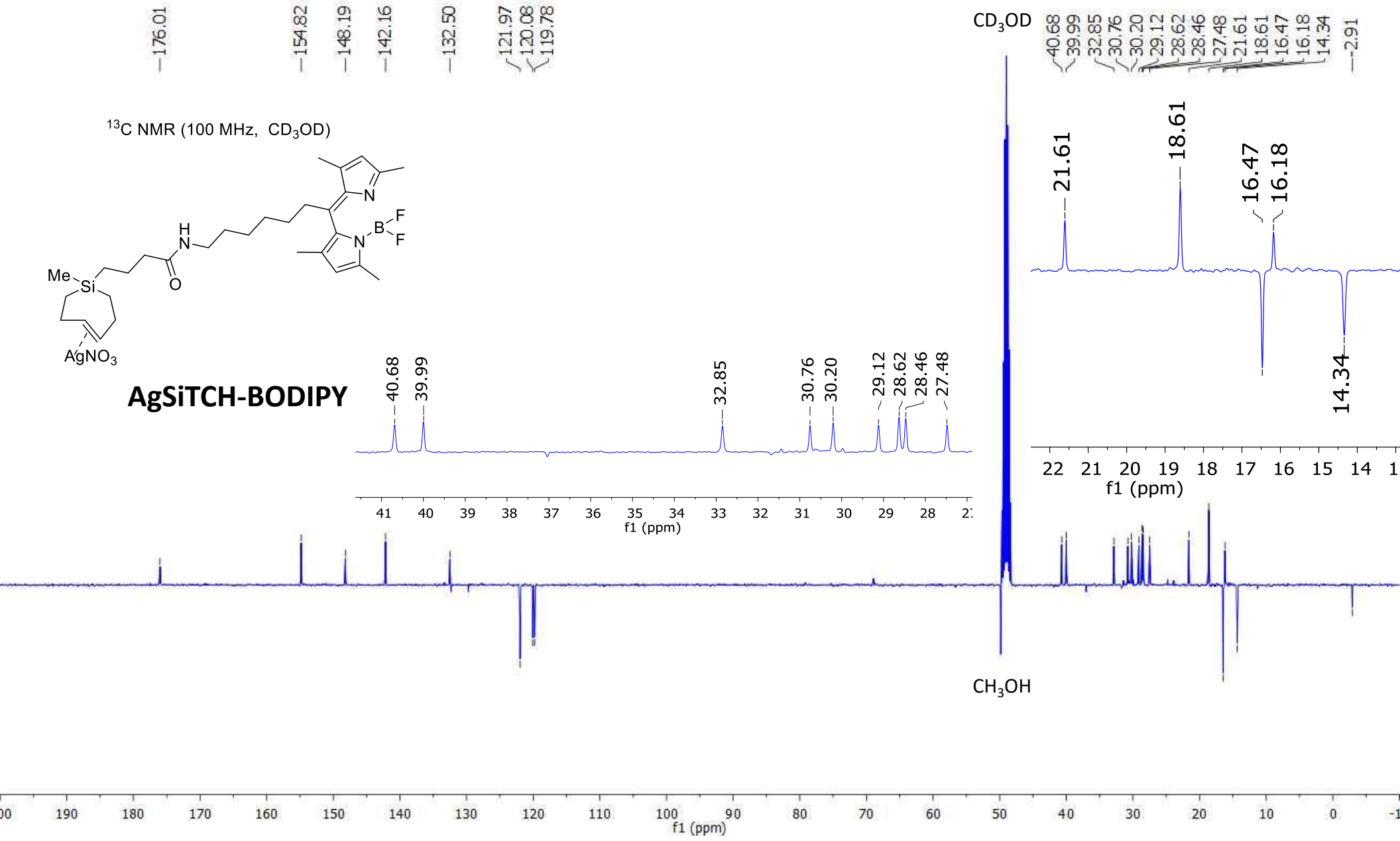


$^1$H NMR (600 MHz, $CD_3OD$)

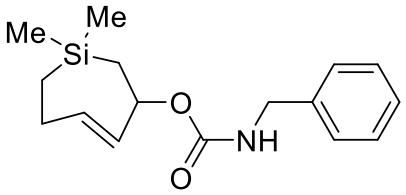



**AgSiTCH-BODIPY**

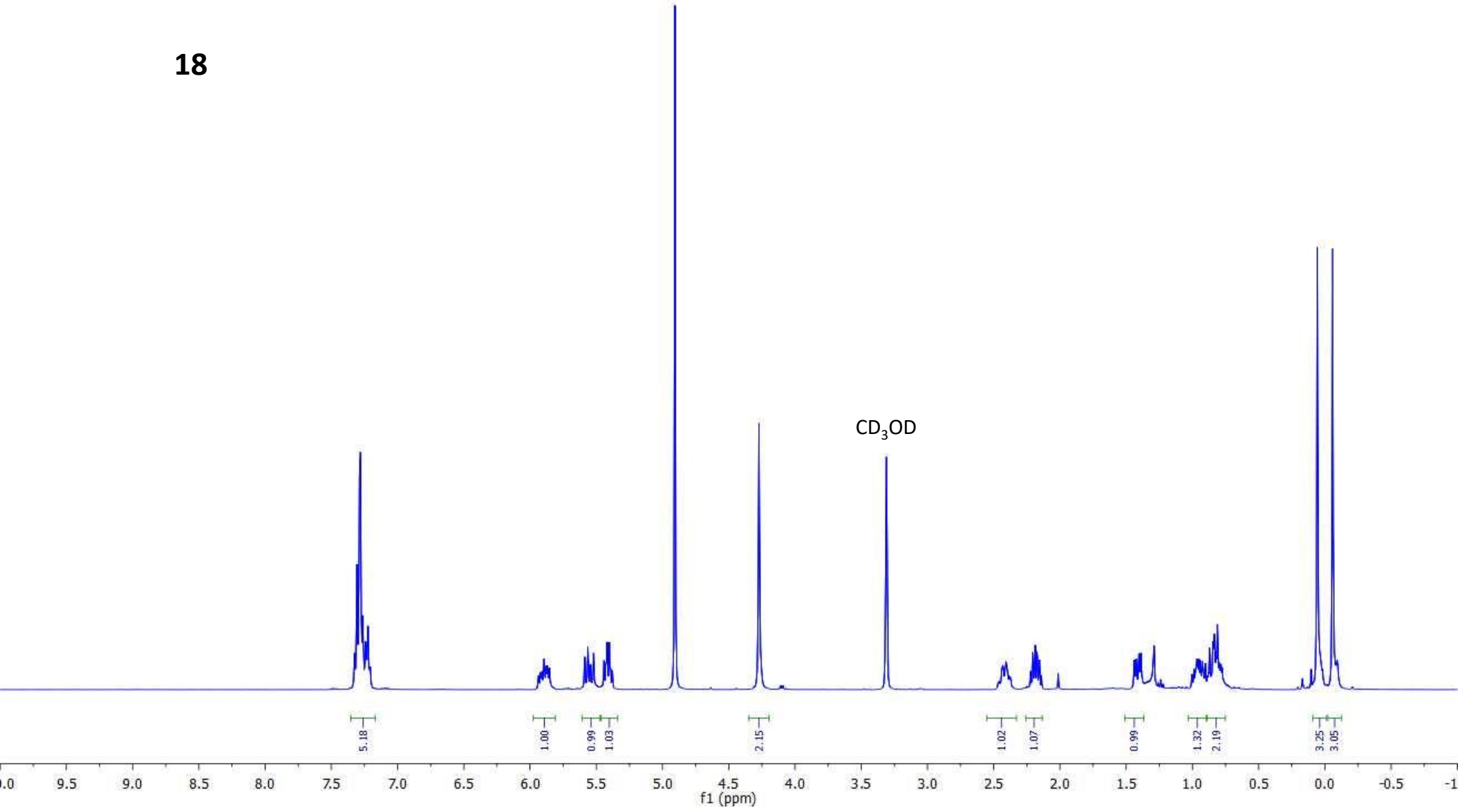



$^{13}$C NMR (100 MHz, $CD_3OD$)
AgSiTCH-BODIPY
$CD_3OD$
$CH_3OH$
f1 (ppm)

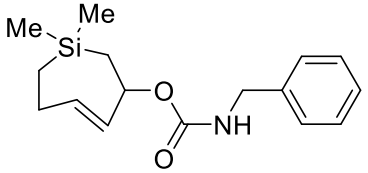
$^1$H NMR (400 MHz, $CD_3OD$)




**18**



$^{13}$C NMR (100 MHz, $CD_3OD$)




**18**