

Supporting Information

TMSOTf-mediated Synthesis of Skipped Dienes Through the Addition of Olefins to Imines and Semicyclic *N, O*-Acetals

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I. X-Ray Structure for compounds 3ea and 6aa

ORTEP drawing of the X-ray crystallographic structure of compound 3ea (50% probability ellipsoids, **ddz20103** is the original test number for **3ea**):

The single crystal of compound **3ea** was prepared from its solution in petroleum ether by slow evaporation of the solvent (**Table S1**)

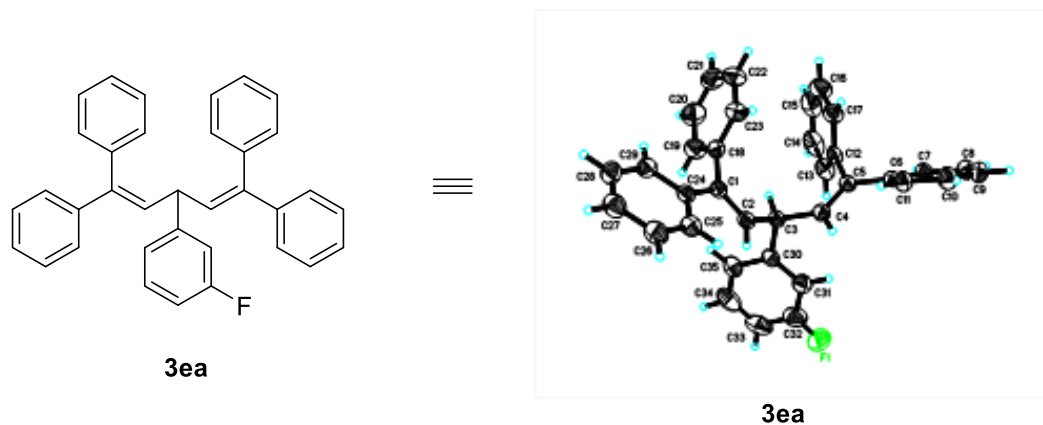


Table S1. Crystal data and structure refinement for **3ea**.

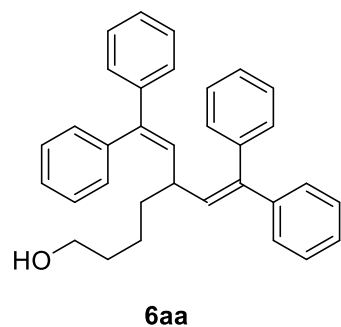
Identification code	3ea
Empirical formula	C ₃₅ H ₂₇ F
Formula weight	466.56
Temperature	293(2) K
Wavelength	0.71073 Å
Crystal system	Orthorhombic
Space group	P b c a
Unit cell dimensions	a = 18.4643(12) Å = 90°. b = 8.6875(6) Å = 90°. c = 32.046(2) Å = 90°.
Volume	5140.4(6) Å ³
Z	8
Density (calculated)	1.206 Mg/m ³
Absorption coefficient	0.073 mm ⁻¹
F(000)	1968

Crystal size	0.180 x 0.110 x 0.070 mm ³
Theta range for data collection	2.546 to 25.494 °
Index ranges	-22<=h<=22, -10<=k<=10, -38<=l<=38
Reflections collected	70059
Independent reflections	4788 [R(int) = 0.0963]
Completeness to theta = 25.242 °	99.9 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	0.7456 and 0.6846
Refinement method	Full-matrix least-squares on F ²
Data / restraints / parameters	4788 / 0 / 335
Goodness-of-fit on F ²	1.078
Final R indices [I>2sigma(I)]	R1 = 0.0524, wR2 = 0.1000
R indices (all data)	R1 = 0.1079, wR2 = 0.1268
Extinction coefficient	0.0036(3)
Largest diff. peak and hole	0.129 and -0.136 e.Å ⁻³

CCDC 2090252. For detailed crystallographic data, please refer to the Cambridge Crystallographic Data Centre at <http://ccdc.cam.ac.uk>.

ORTEP drawing of the X-ray crystallographic structure of compound 6aa (50% probability ellipsoids, **mo_dd20131_0m** is the original test number for **6aa**):

The single crystal of compound **6aa** was prepared from its solution in petroleum ether/ethylacetate (4:1) by slow evaporation of the solvent (**Table S2**)



≡

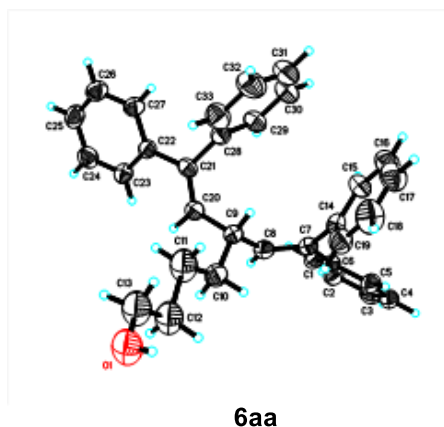


Table S2. Crystal data and structure refinement for **6aa**.

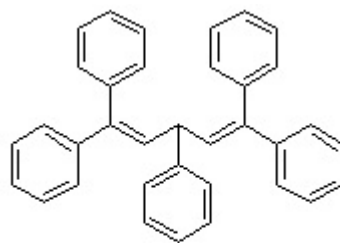
Identification code	6aa	
Empirical formula	C ₃₃ H ₃₂ O	
Formula weight	444.58	
Temperature	293.06 K	
Wavelength	0.71073 Å	
Crystal system	Orthorhombic	
Space group	P b c n	
Unit cell dimensions	a = 36.302(8) Å	a = 90 °
	b = 17.985(4) Å	b = 90 °
	c = 8.873(2) Å	g = 90 °
Volume	5793(2) Å ³	
Z	8	
Density (calculated)	1.019 Mg/m ³	
Absorption coefficient	0.060 mm ⁻¹	
F(000)	1904	
Crystal size	0.18 x 0.15 x 0.1 mm ³	

Theta range for data collection	2.028 to 24.998 °
Index ranges	-43<=h<=35, -21<=k<=21, -10<=l<=10
Reflections collected	40663
Independent reflections	5099 [R(int) = 0.1790]
Completeness to theta = 25.242 °	97.1 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	0.7456 and 0.5131
Refinement method	Full-matrix least-squares on F ²
Data / restraints / parameters	5099 / 104 / 346
Goodness-of-fit on F ²	0.995
Final R indices [I>2sigma(I)]	R1 = 0.0989, wR2 = 0.2551
R indices (all data)	R1 = 0.1704, wR2 = 0.3205
Extinction coefficient	0.018(3)
Largest diff. peak and hole	0.373 and -0.396 e.Å ⁻³

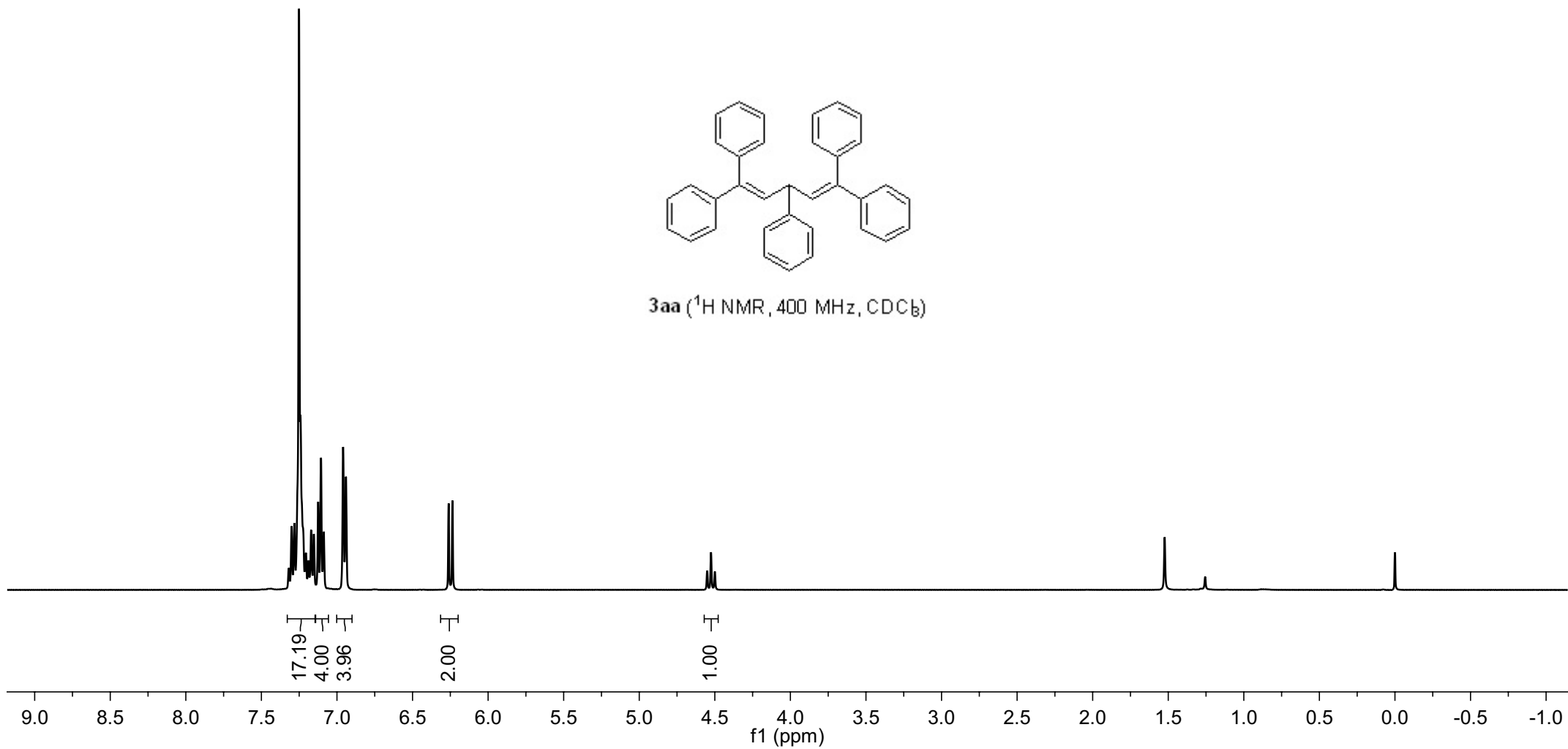
CCDC 2090251. For detailed crystallographic data, please refer to the Cambridge Crystallographic Data Centre at <http://ccdc.cam.ac.uk>.

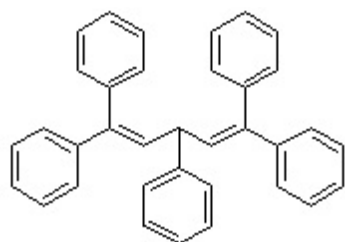
7.319
7.300
7.282
7.251
7.242
7.205
7.189
7.171
7.153
7.124
7.106
7.087
6.959
6.940
6.261
6.236

4.550
4.525
4.500

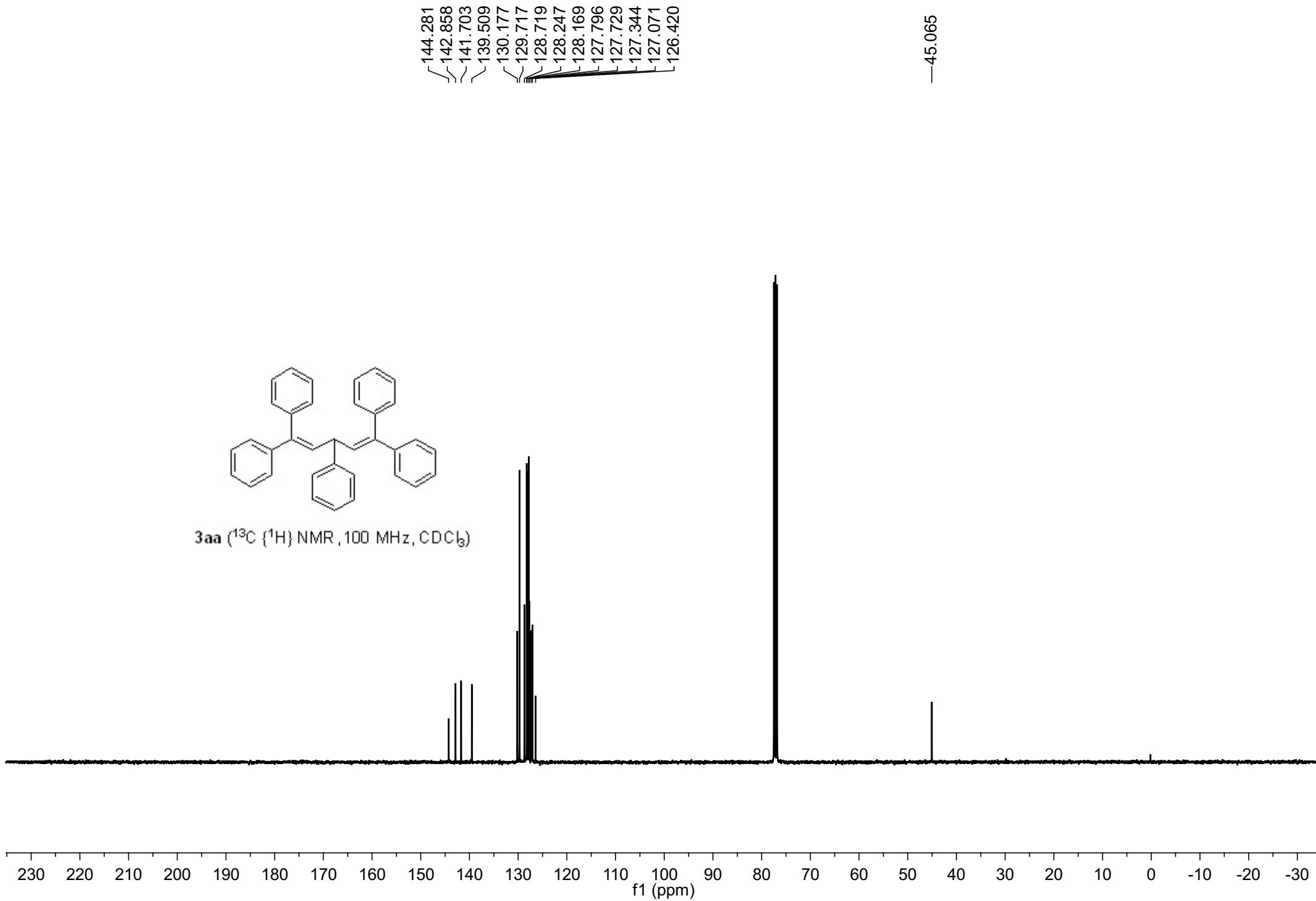


3aa (¹H NMR, 400 MHz, CDCl₃)





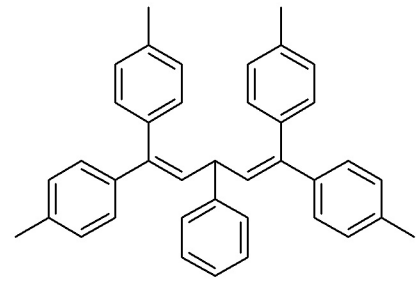
3aa (¹³C {¹H} NMR, 100 MHz, CDCl₃)



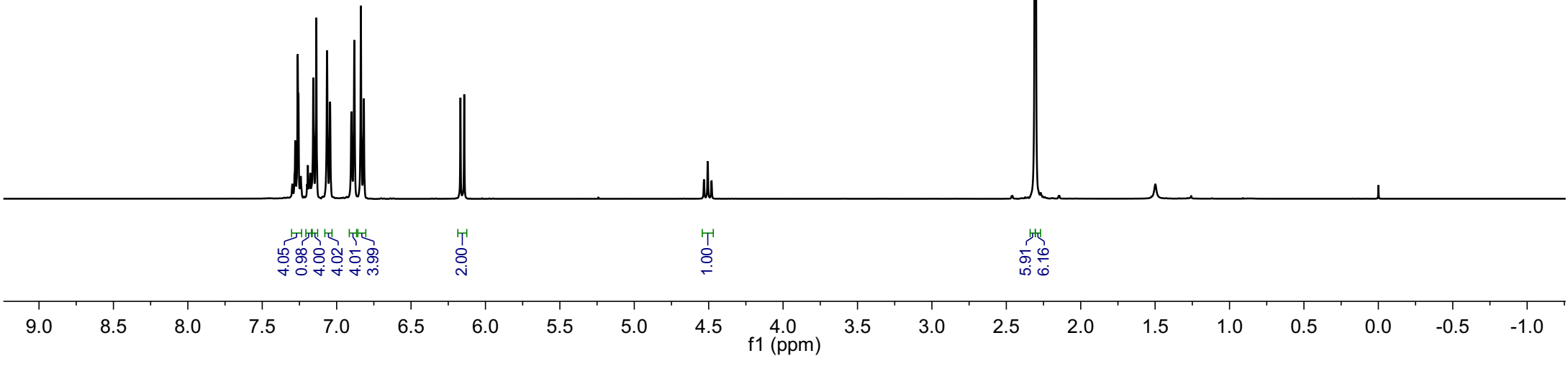
7.298
7.283
7.278
7.262
7.257
7.241
7.199
7.193
7.188
7.182
7.177
7.157
7.137
7.064
7.044
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6.881
6.837
6.817
6.168
6.143

4.532
4.506
4.481

2.308
2.303



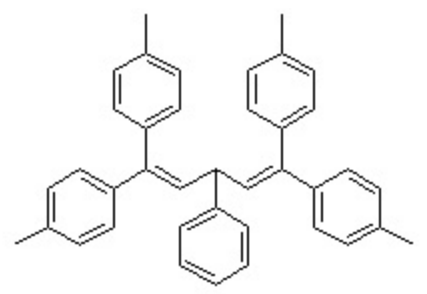
3af (¹H NMR, 400 MHz, CDCl₃)



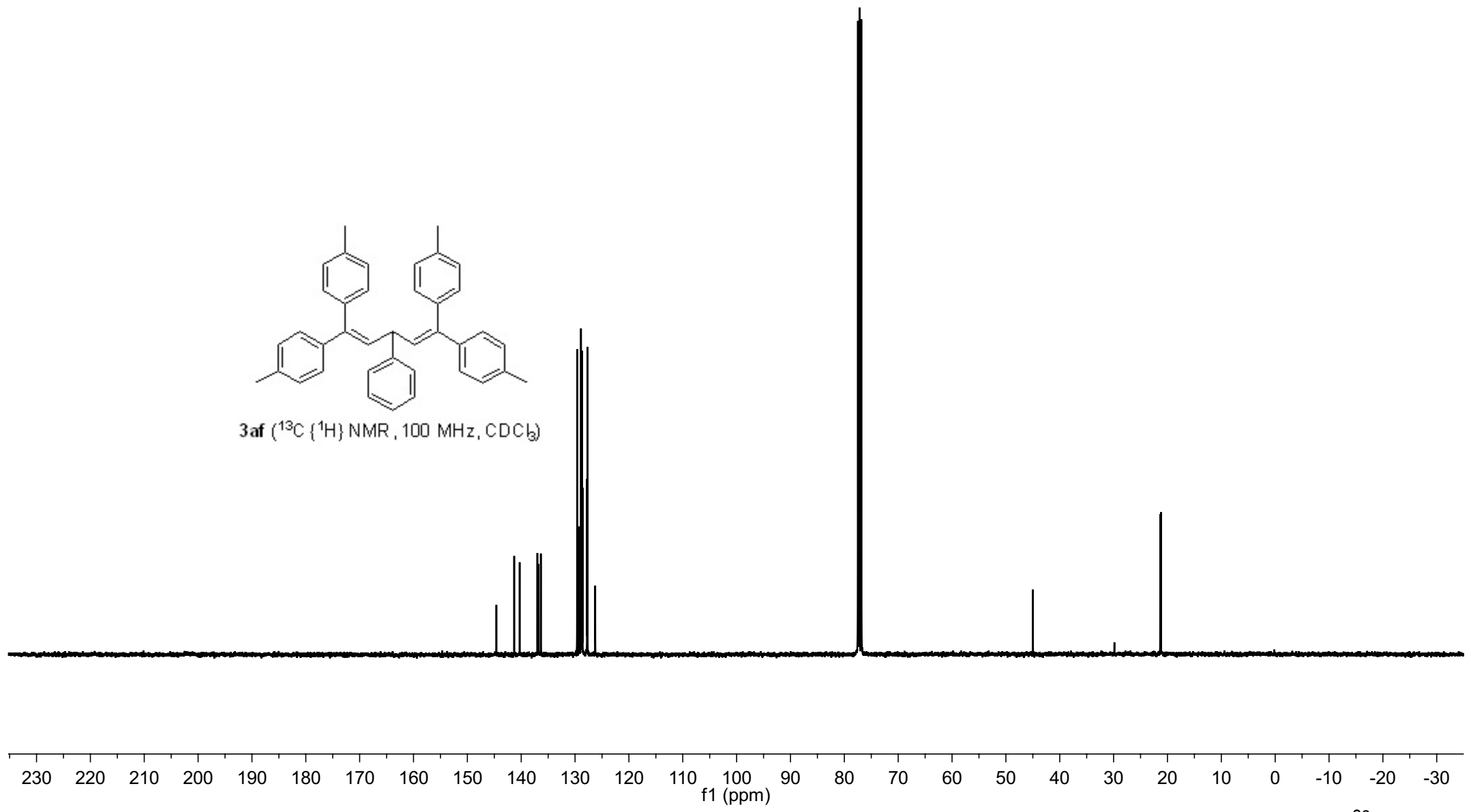
144.607
141.303
140.286
137.001
136.779
136.354
129.615
129.297
128.906
128.720
128.611
127.777
127.700
126.259

—44.994

—21.339
—21.215



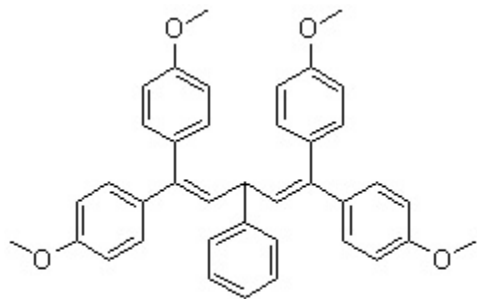
3af (¹³C {¹H} NMR, 100 MHz, CDCl₃)



7.322
7.302
7.285
7.266
7.224
7.203
7.182
6.892
6.871
6.811
6.789
6.653
6.632
6.100
6.075

4.570
4.545
4.519

3.780
3.768



3ag (¹H NMR, 400 MHz, CDCl₃)

4.03

5.08

4.01

4.02

4.00

2.00

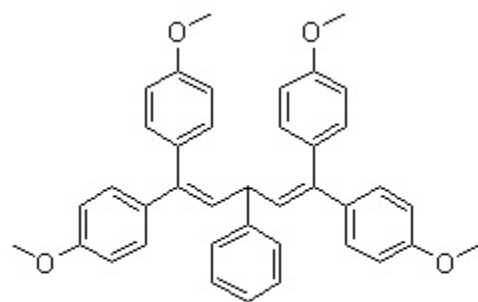
1.00

6.00

6.03

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 -1.0

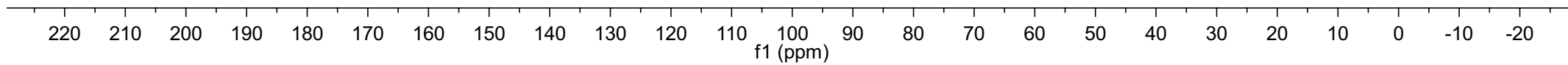
f1 (ppm)



3ag (^{13}C { ^1H } NMR, 100 MHz, CDCl_3)

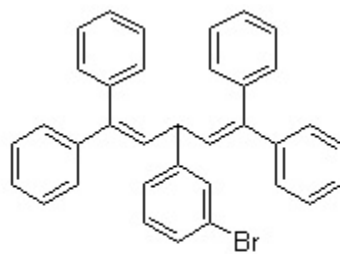
159.013
158.559
144.740
140.430
135.830
132.138
130.843
128.939
128.627
128.419
127.719
126.263
113.533
113.402

55.406
55.137
45.016

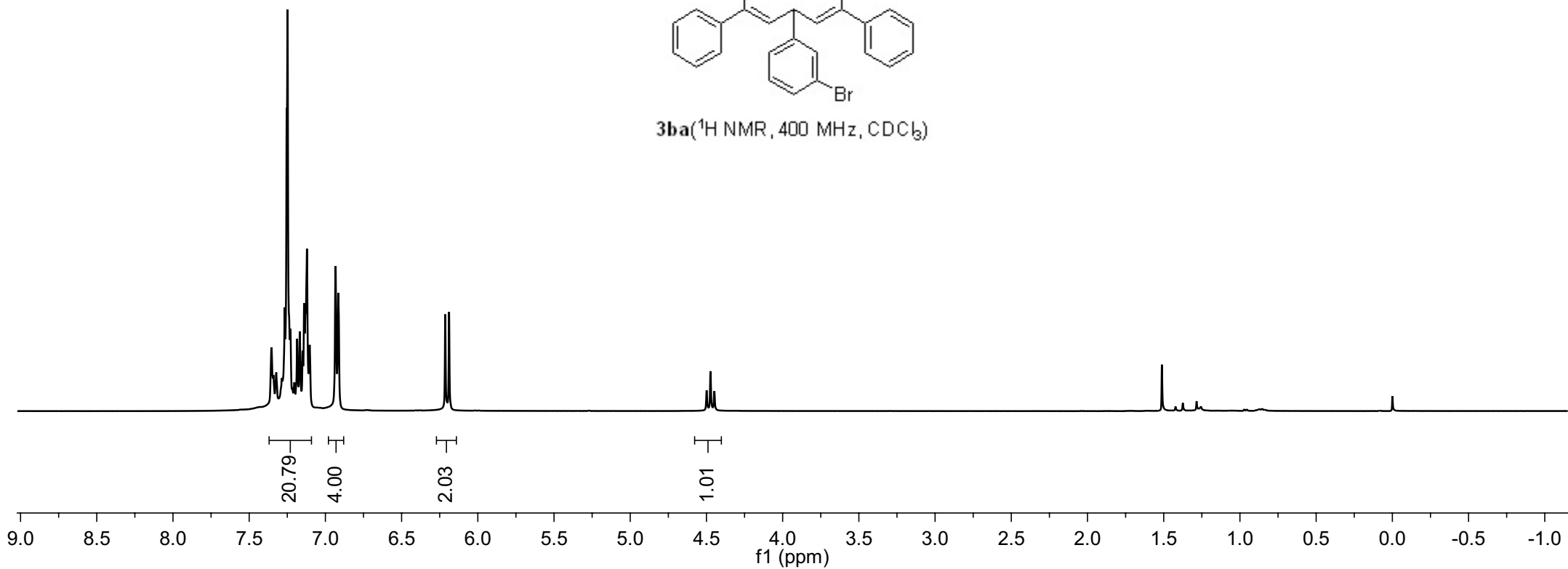


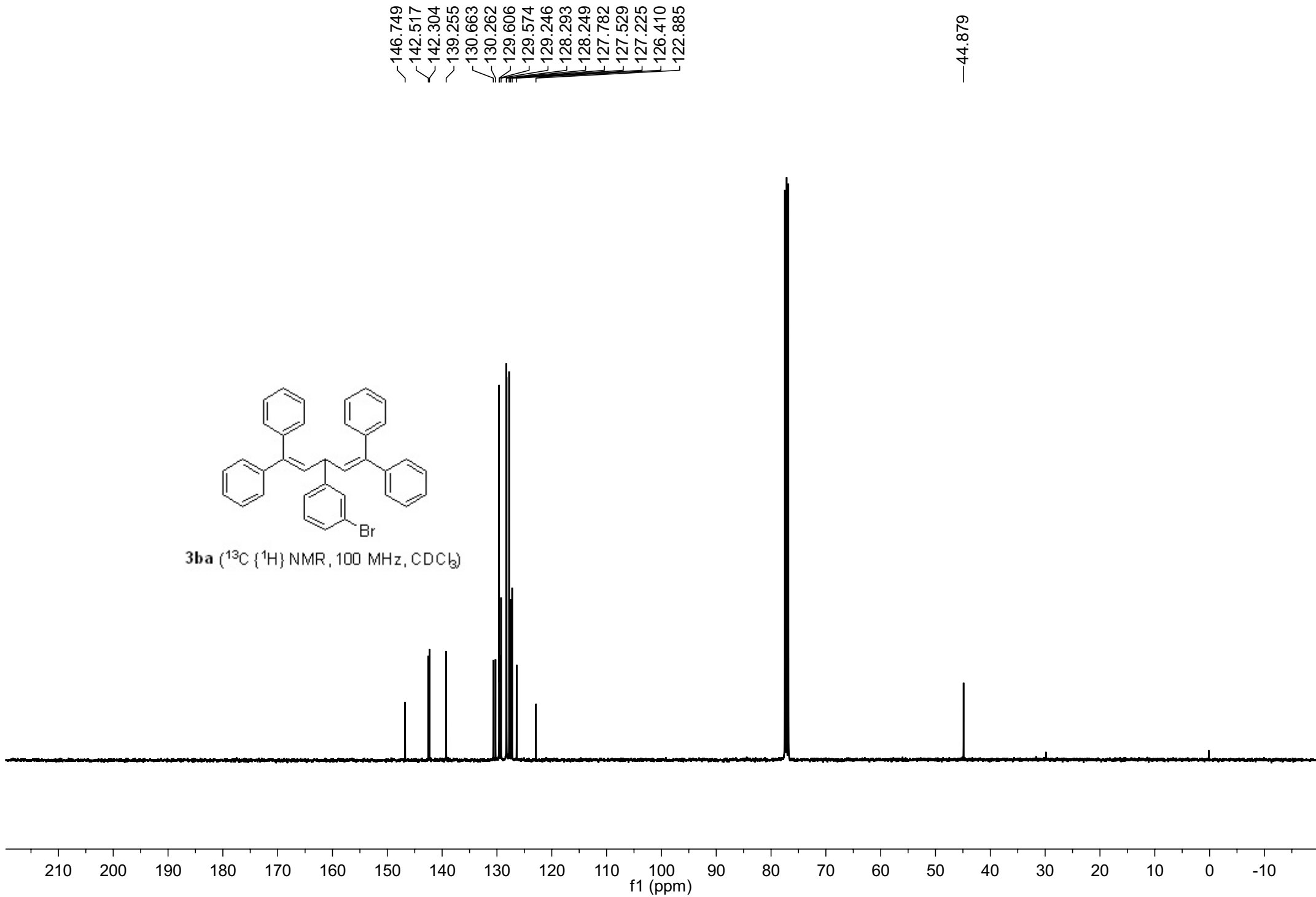
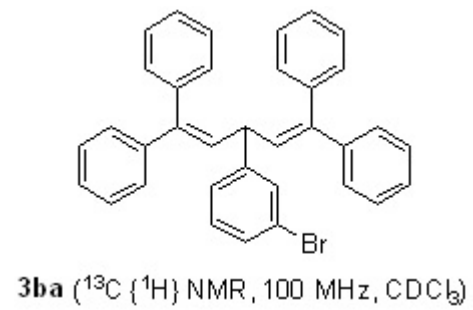
7.354
7.341
7.323
7.286
7.267
7.254
7.248
7.230
7.204
7.186
7.168
7.149
7.139
7.131
7.121
7.103
6.933
6.916
6.214
6.189

4.499
4.474
4.448



3ba (¹H NMR, 400 MHz, CDCl₃)

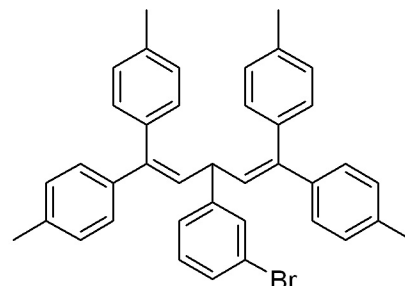




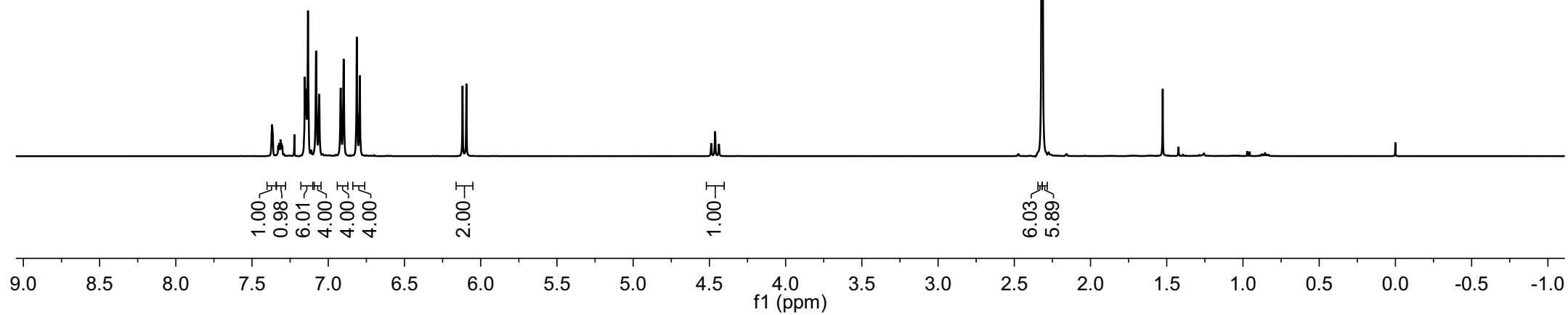
7.369
7.328
7.322
7.314
7.309
7.306
7.301
7.222
7.153
7.146
7.144
7.137
7.133
7.080
7.060
6.918
6.899
6.813
6.793
6.719
6.094

4.488
4.463
4.438

2.320
2.315



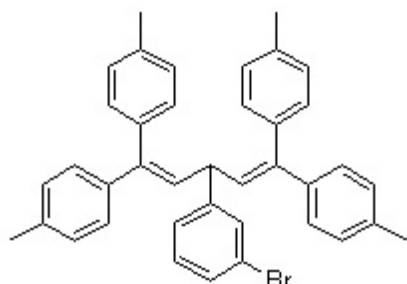
3bf (^1H NMR, 400 MHz, CDCl_3)



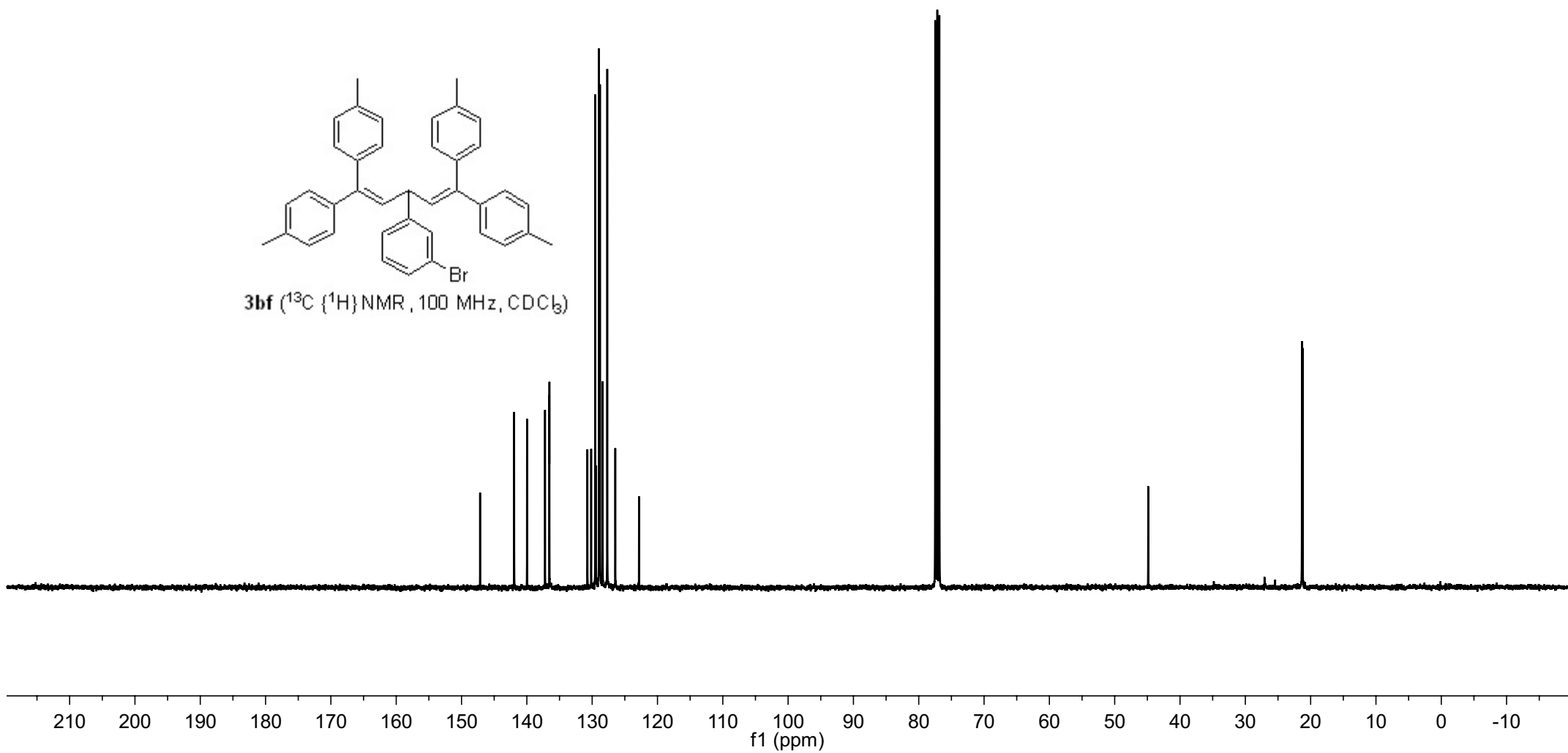
147.161
141.942
139.975
137.217
136.561
136.543
130.728
130.153
129.524
129.413
128.953
128.805
128.405
127.689
126.460
122.832

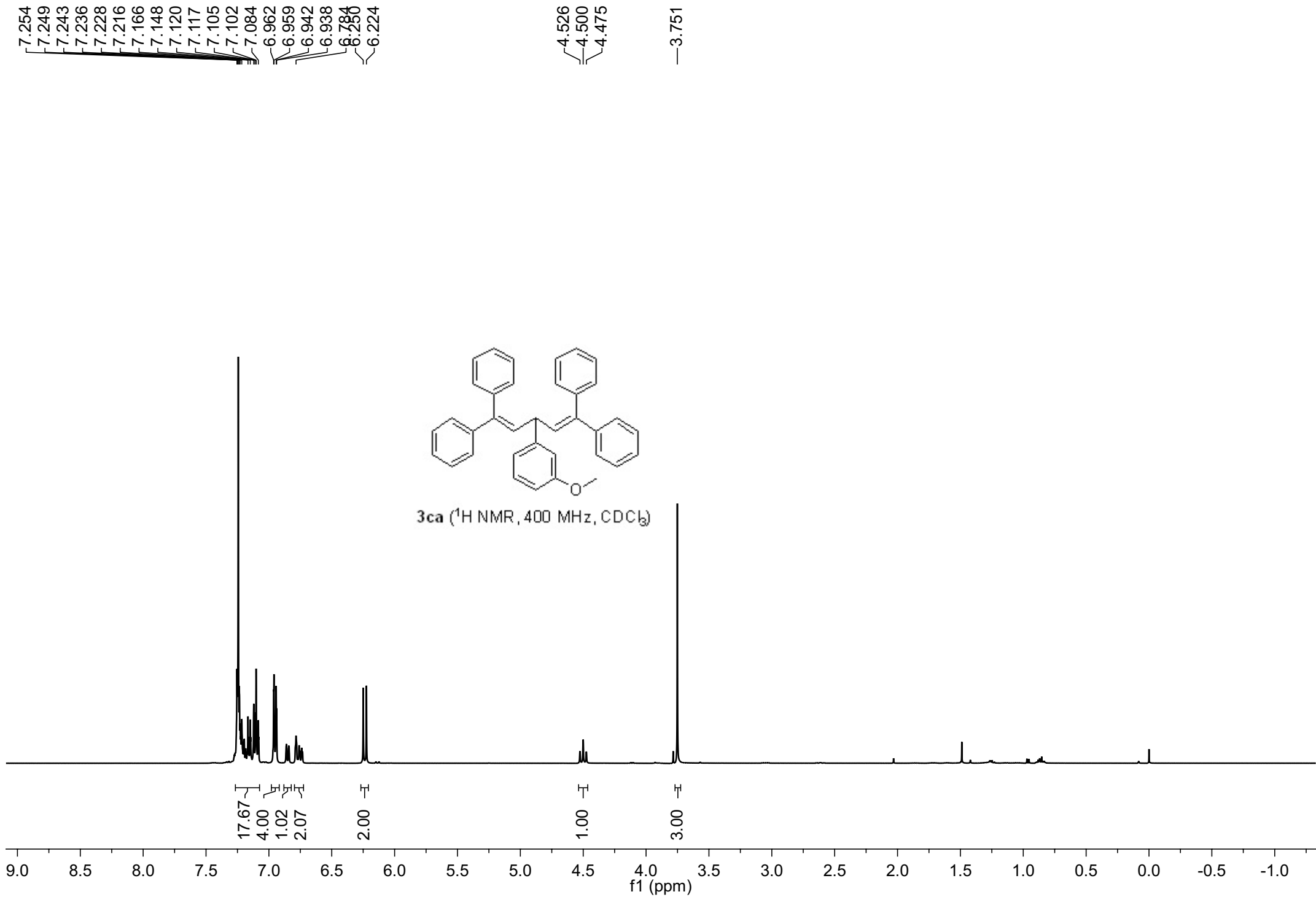
—44.871

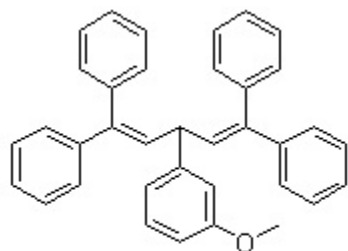
—21.340
—21.215



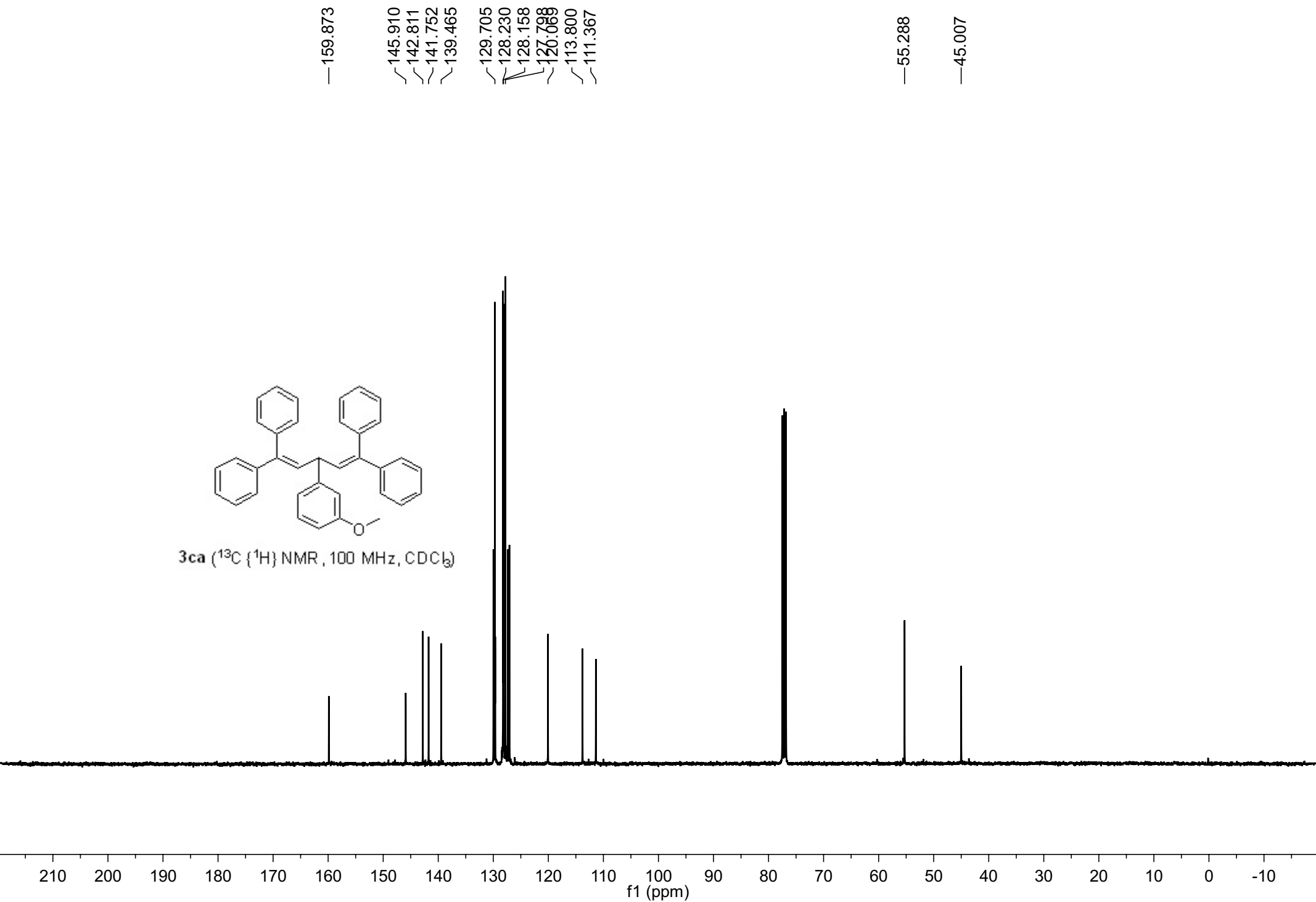
3bf (^{13}C (^1H) NMR, 100 MHz, CDCl_3)





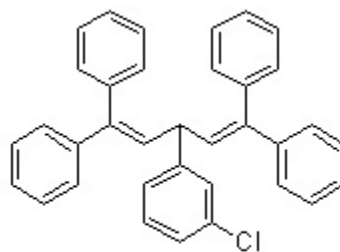


3ca (¹³C {¹H} NMR, 100 MHz, CDCl₃)

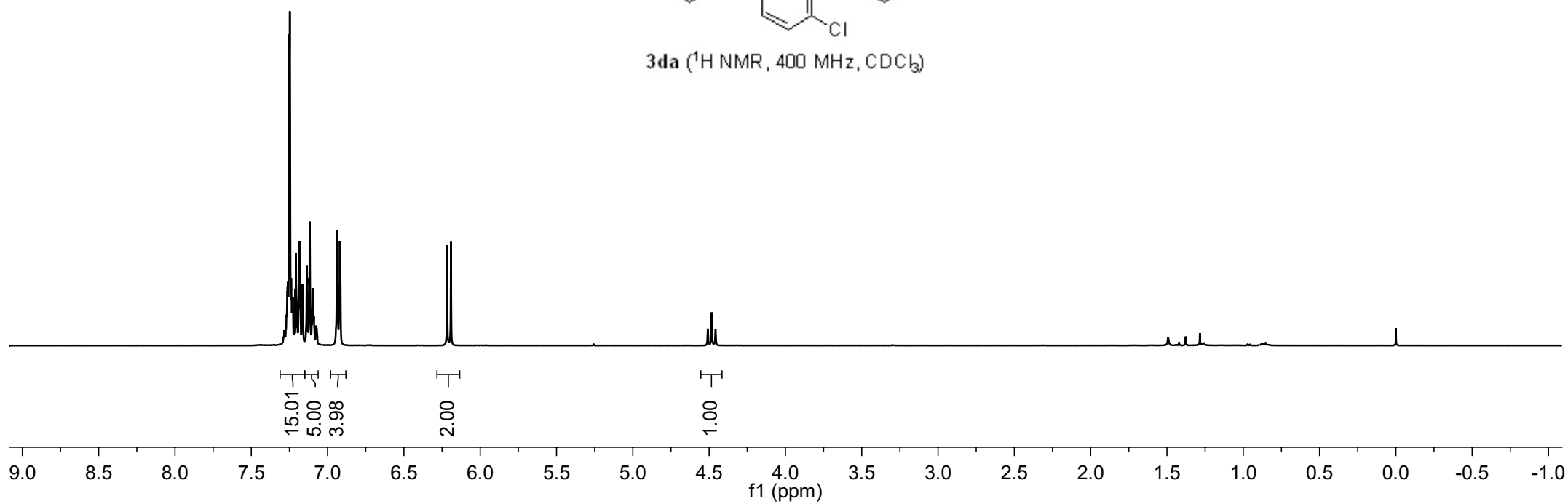


7.263
7.259
7.251
7.248
7.239
7.212
7.207
7.188
7.183
7.164
7.136
7.121
7.117
7.099
6.940
6.937
6.920
6.916
6.217
6.192

4.508
4.483
4.458

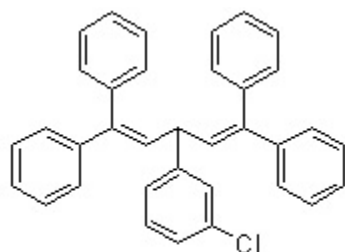


3da (¹H NMR, 400 MHz, CDCl₃)

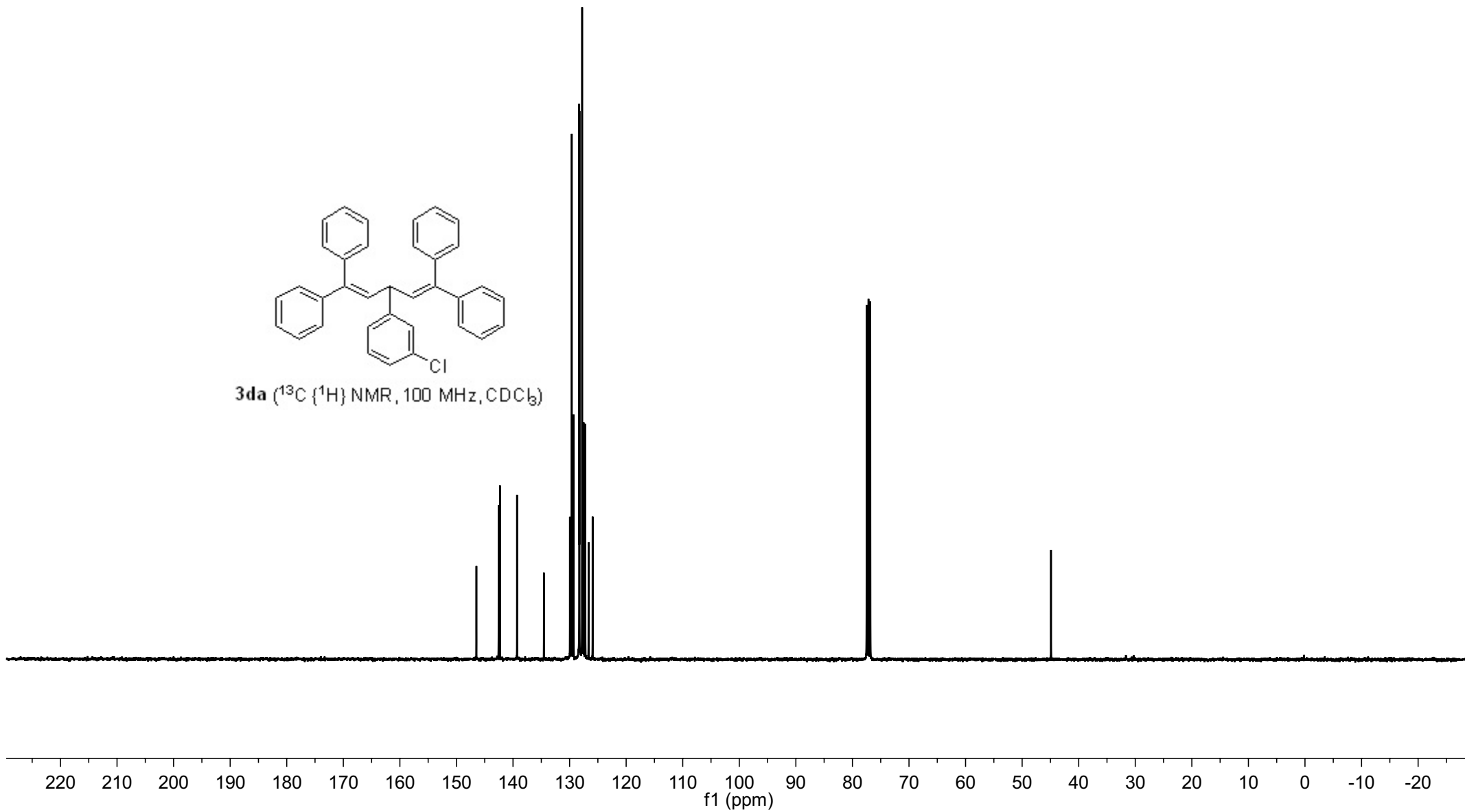


146.469
142.540
142.305
139.287
134.544
129.941
129.615
129.292
128.294
128.249
127.780
127.522
127.220
126.644
125.932

—44.898



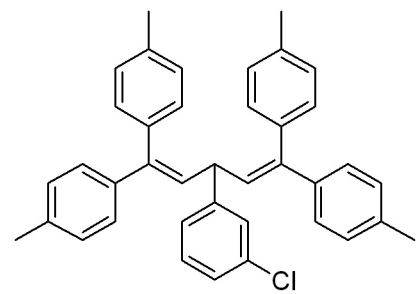
3da (^{13}C { ^1H } NMR, 100 MHz, CDCl_3)



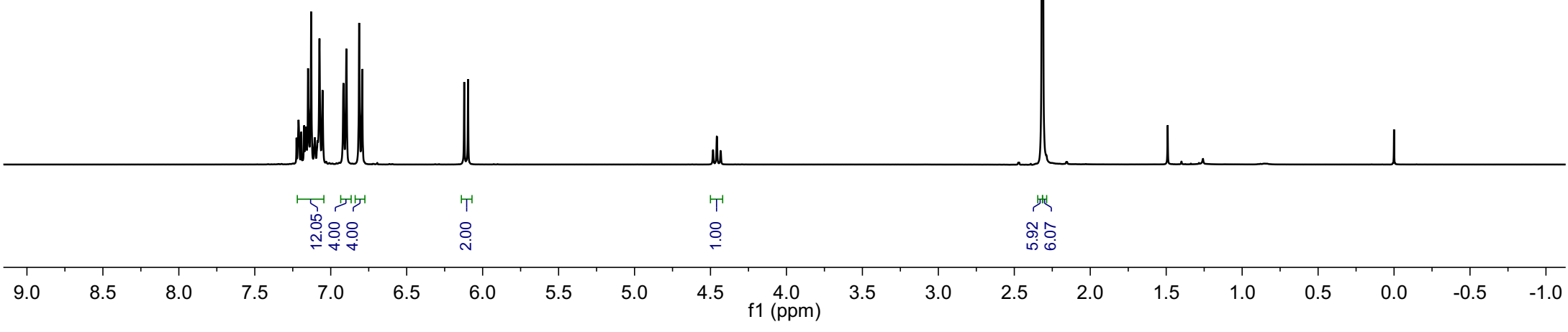
7.225
7.212
7.194
7.176
7.169
7.165
7.160
7.149
7.129
7.105
7.086
7.074
7.054
6.917
6.897
6.813
6.793
6.121
6.096

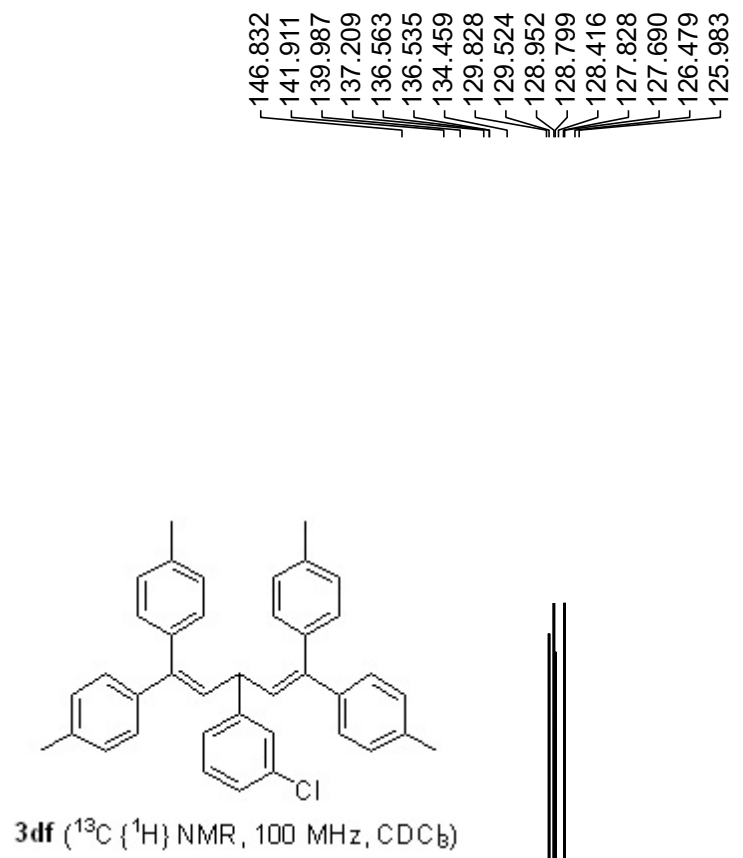
4.483
4.458
4.433

2.317
2.312



3df (¹H NMR, 400 MHz, CDCl₃)

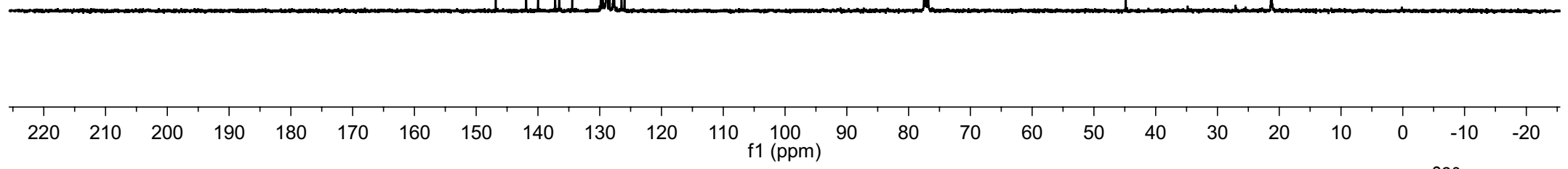




146.832
 141.911
 139.987
 137.209
 136.563
 136.535
 134.459
 129.828
 129.524
 128.952
 128.799
 128.416
 127.828
 127.690
 126.479
 125.983

—44.852

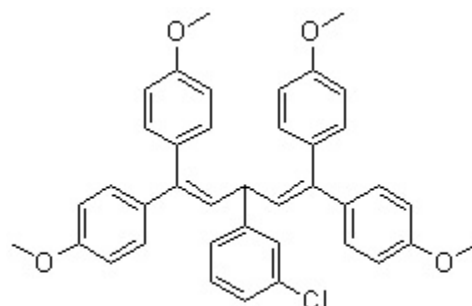
21.341
 21.218



7.243
7.238
7.218
7.197
7.176
7.130
7.112
6.868
6.847
6.819
6.798
6.666
6.645
6.052
6.027

4.525
4.500
4.475

3.791
3.780



8.36

8.00

4.00

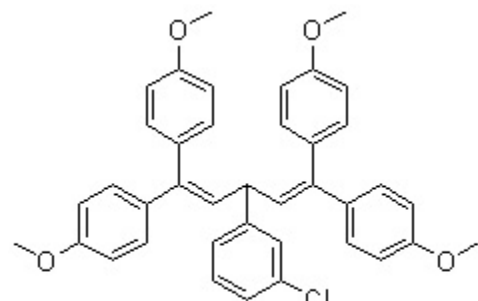
2.00

1.02

6.02

5.88

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

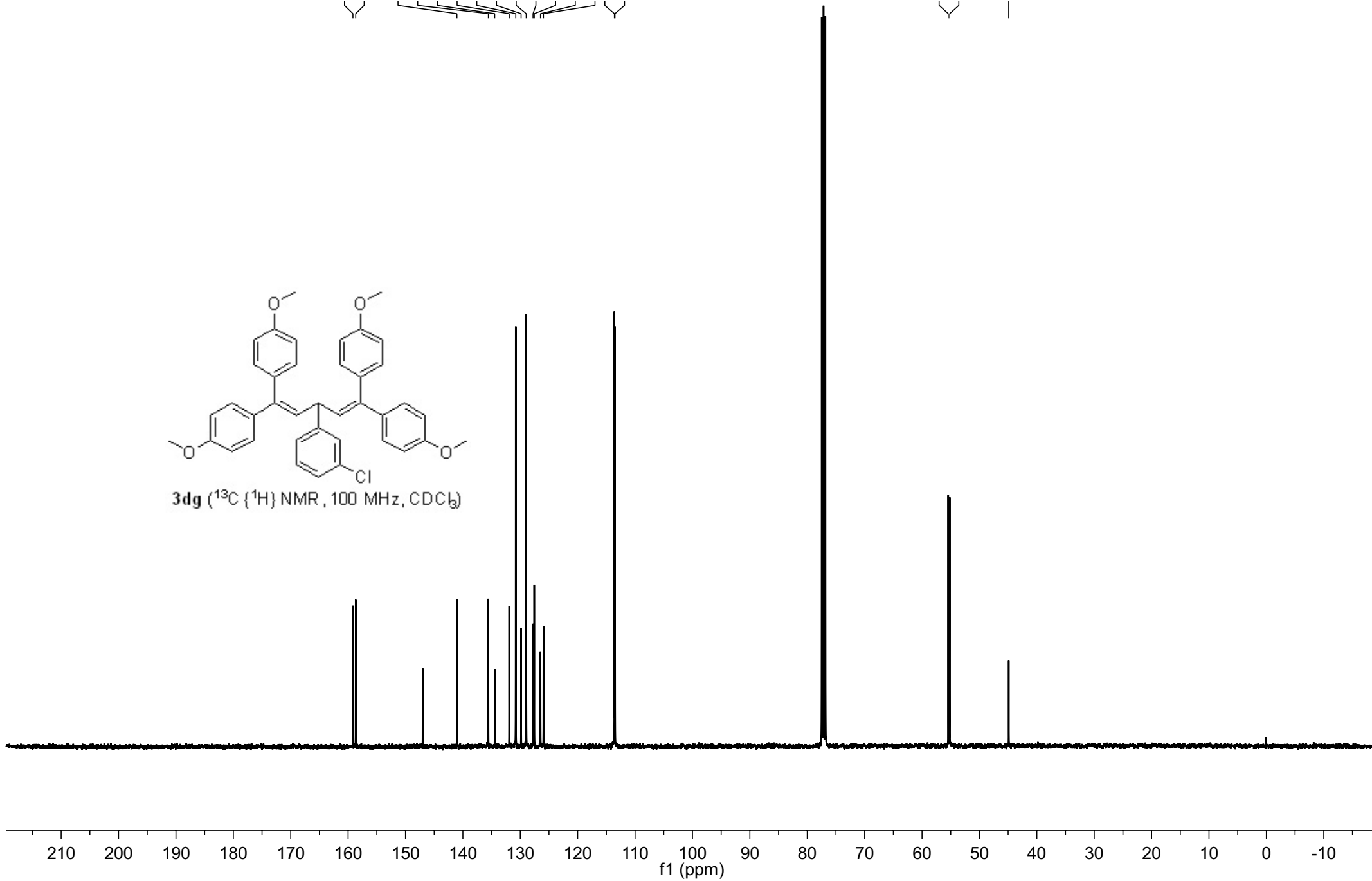


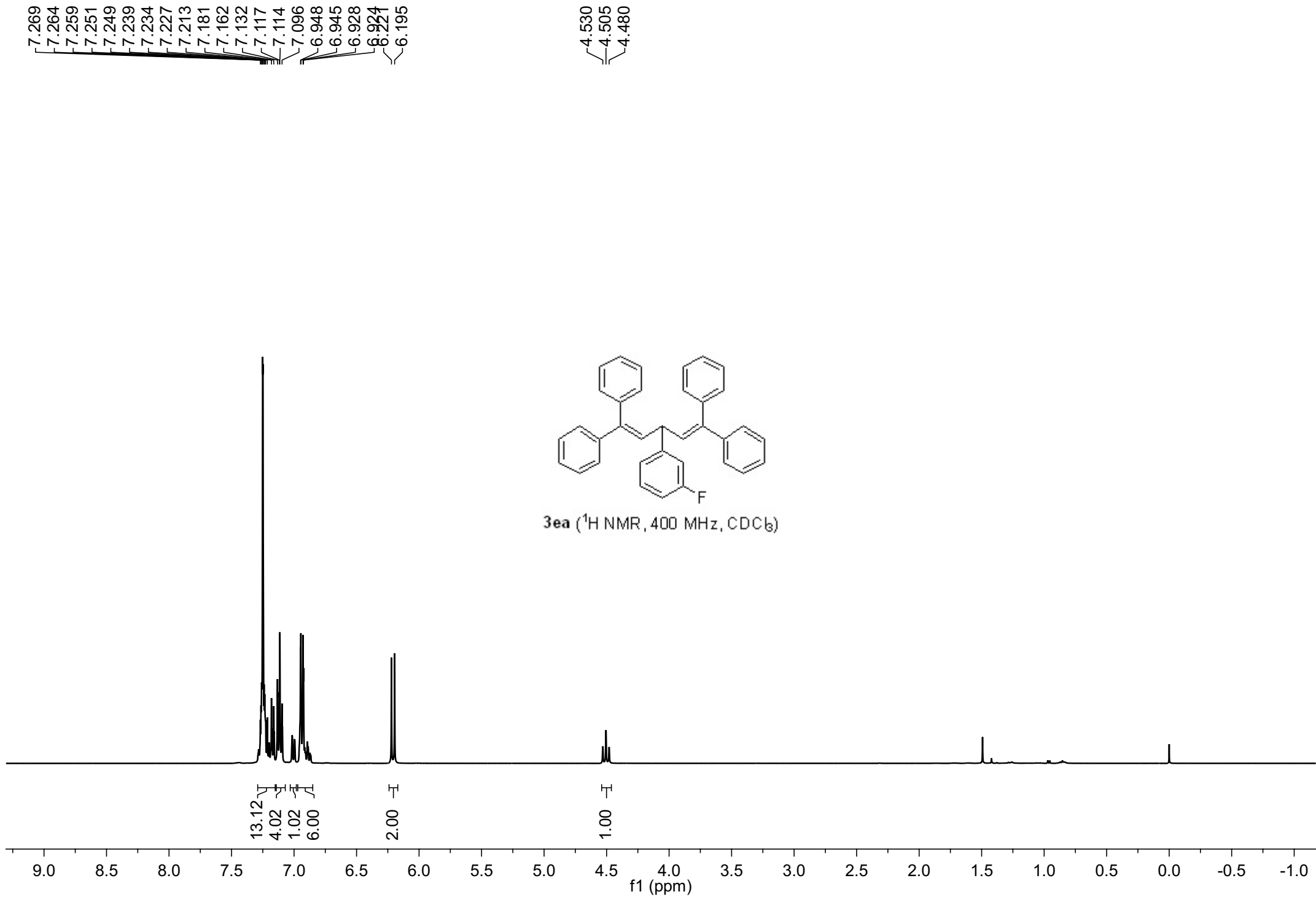
3dg (^{13}C { ^1H } NMR, 100 MHz, CDCl_3)

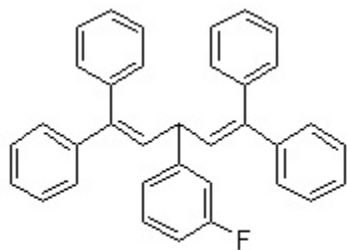
159.159
158.675
141.042
135.558
134.456
131.922
130.783
129.858
128.962
127.776
127.562
126.478
125.960
125.596
113.499

55.440
55.174

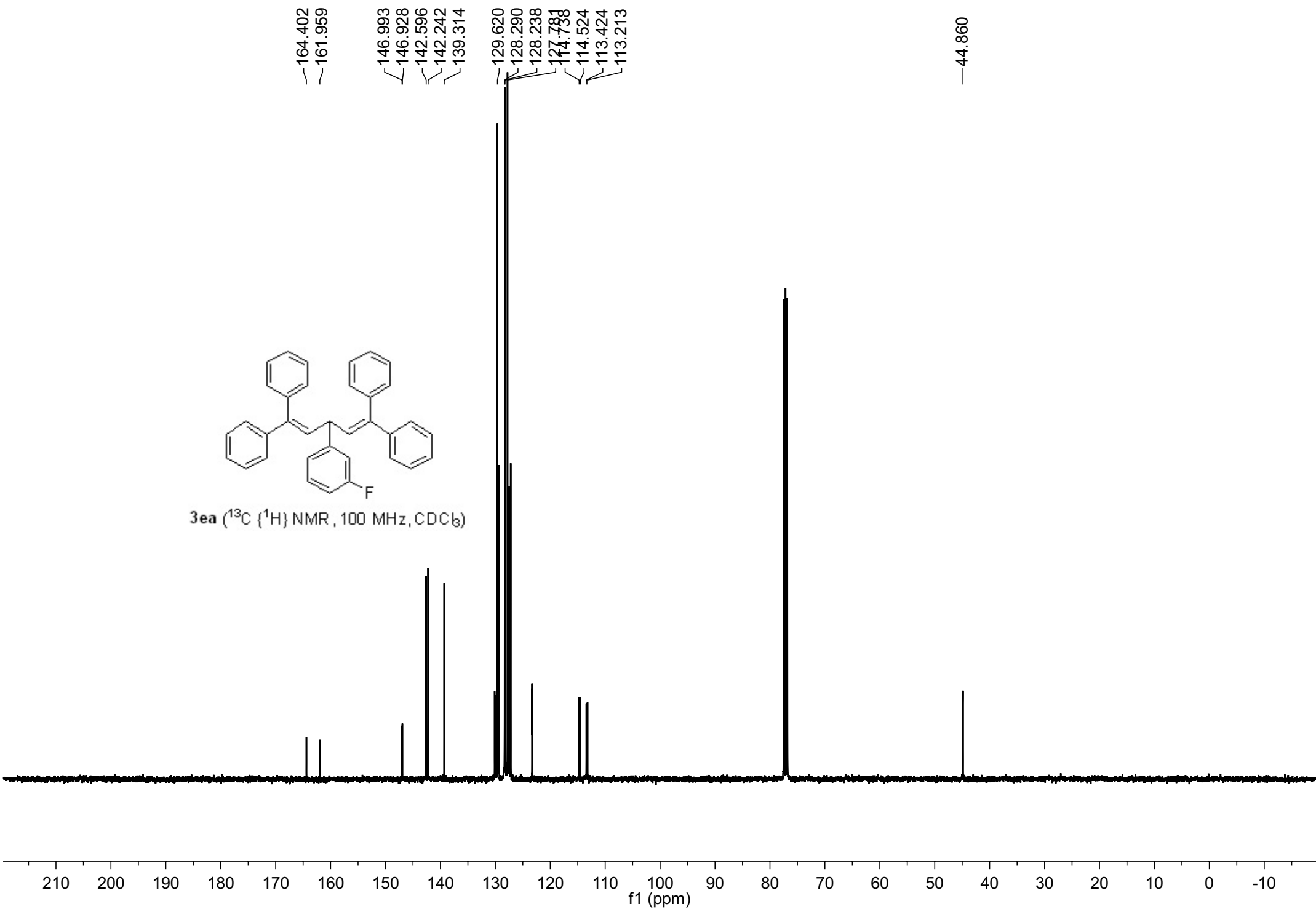
44.897

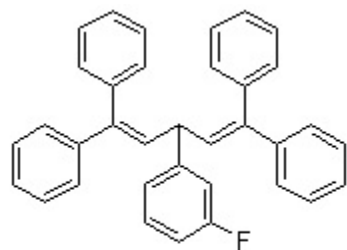






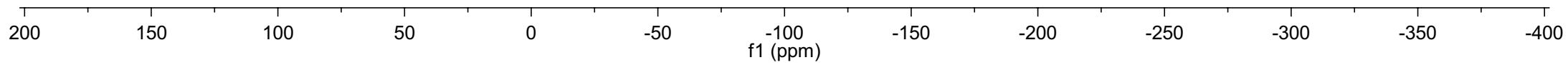
3ea (¹³C {¹H} NMR, 100 MHz, CDCl₃)

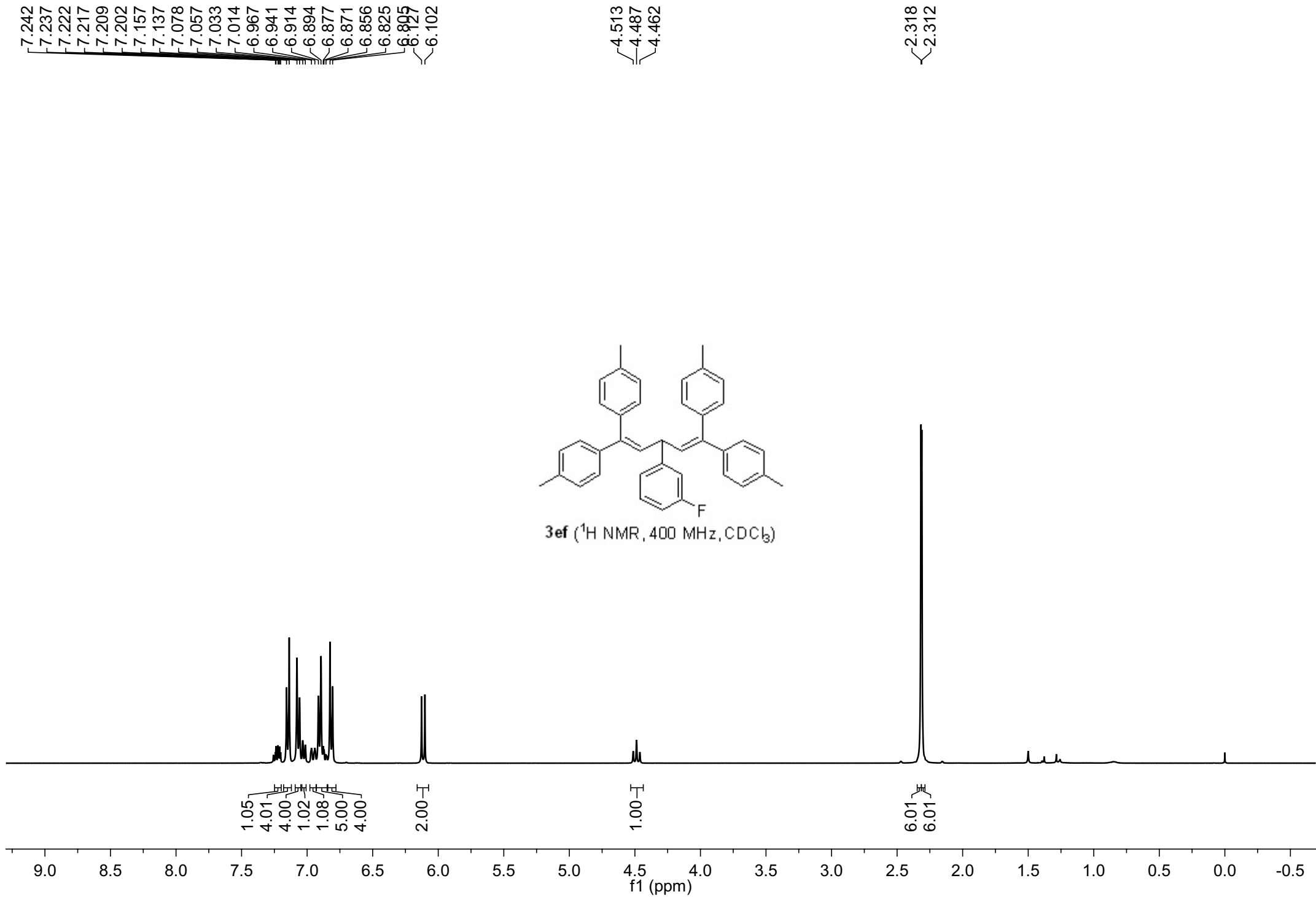




3ea (^{19}F NMR, 376 MHz, CDCl_3)

---112.732

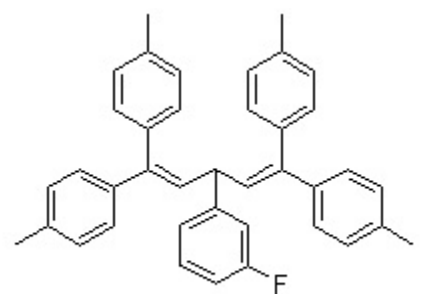




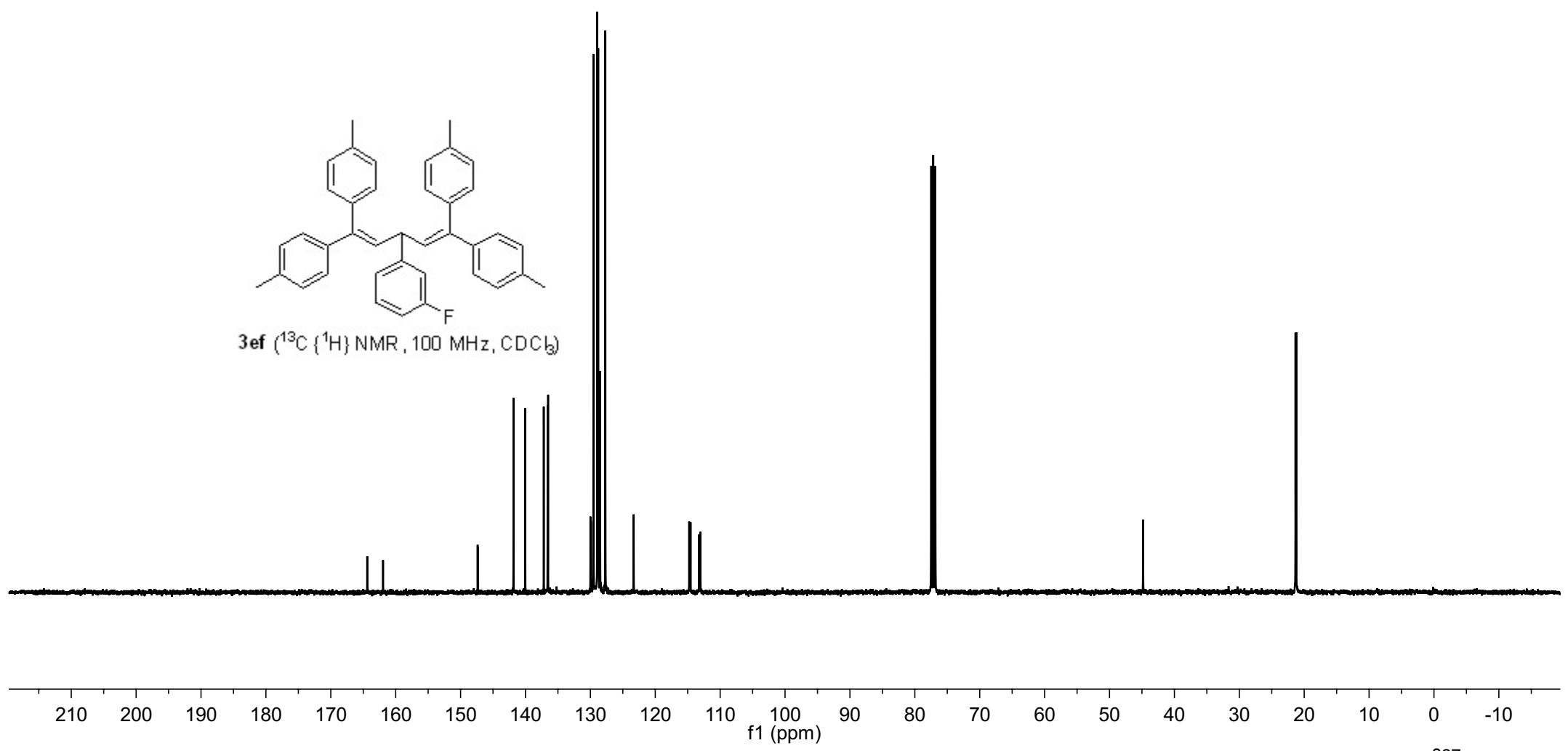
~ 164.387
 ~ 161.947
 141.849
 140.035
 137.182
 136.592
 136.513
 129.528
 128.948
 128.788
 128.500
 127.689
 123.323
 114.773
 114.559
 113.248
 113.037

— 44.833

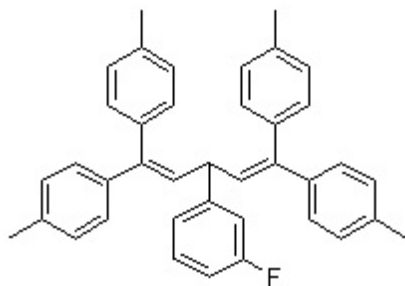
{ 21.342
 { 21.222



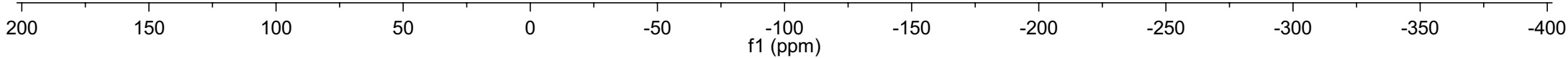
3ef (^{13}C { ^1H } NMR, 100 MHz, CDCl_3)



-112.981
-113.028

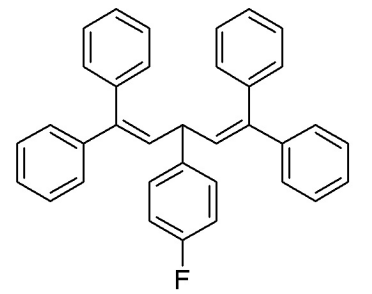


3ef (^{19}F NMR, 376 MHz, CDCl_3)

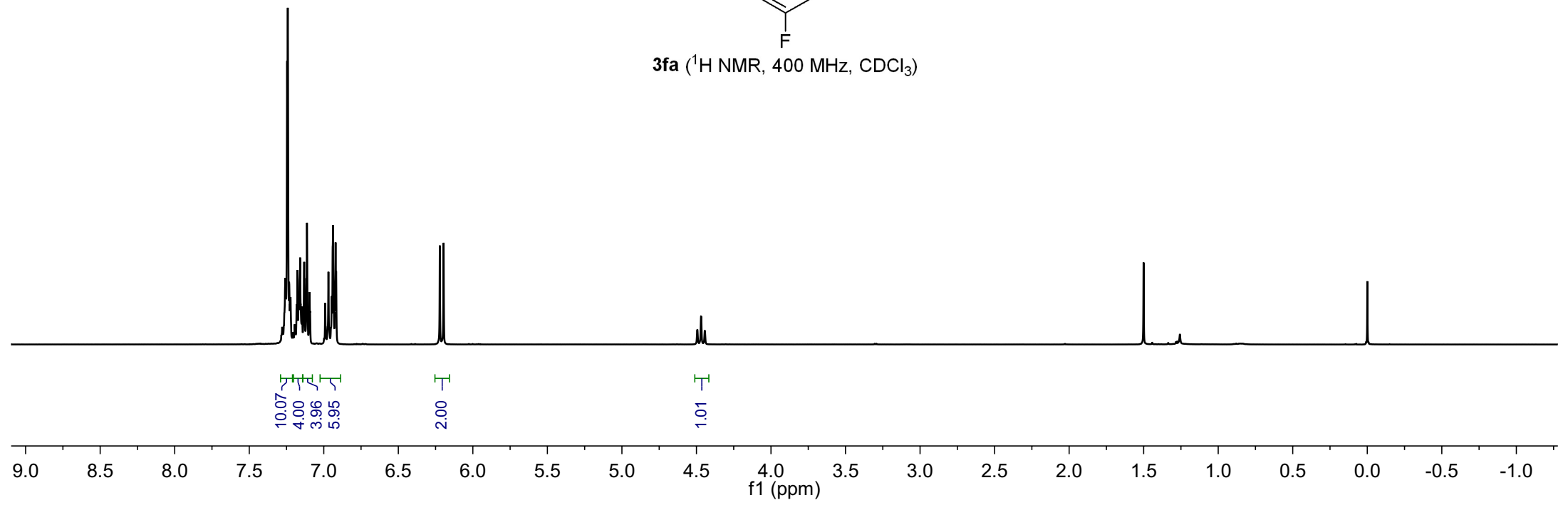


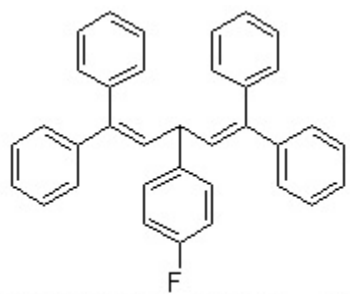
7.258
7.255
7.246
7.241
7.233
7.223
7.176
7.167
7.158
7.131
7.116
7.113
7.095
6.969
6.947
6.938
6.921
6.917
6.912
6.196

4.494
4.469
4.444



3fa (¹H NMR, 400 MHz, CDCl₃)

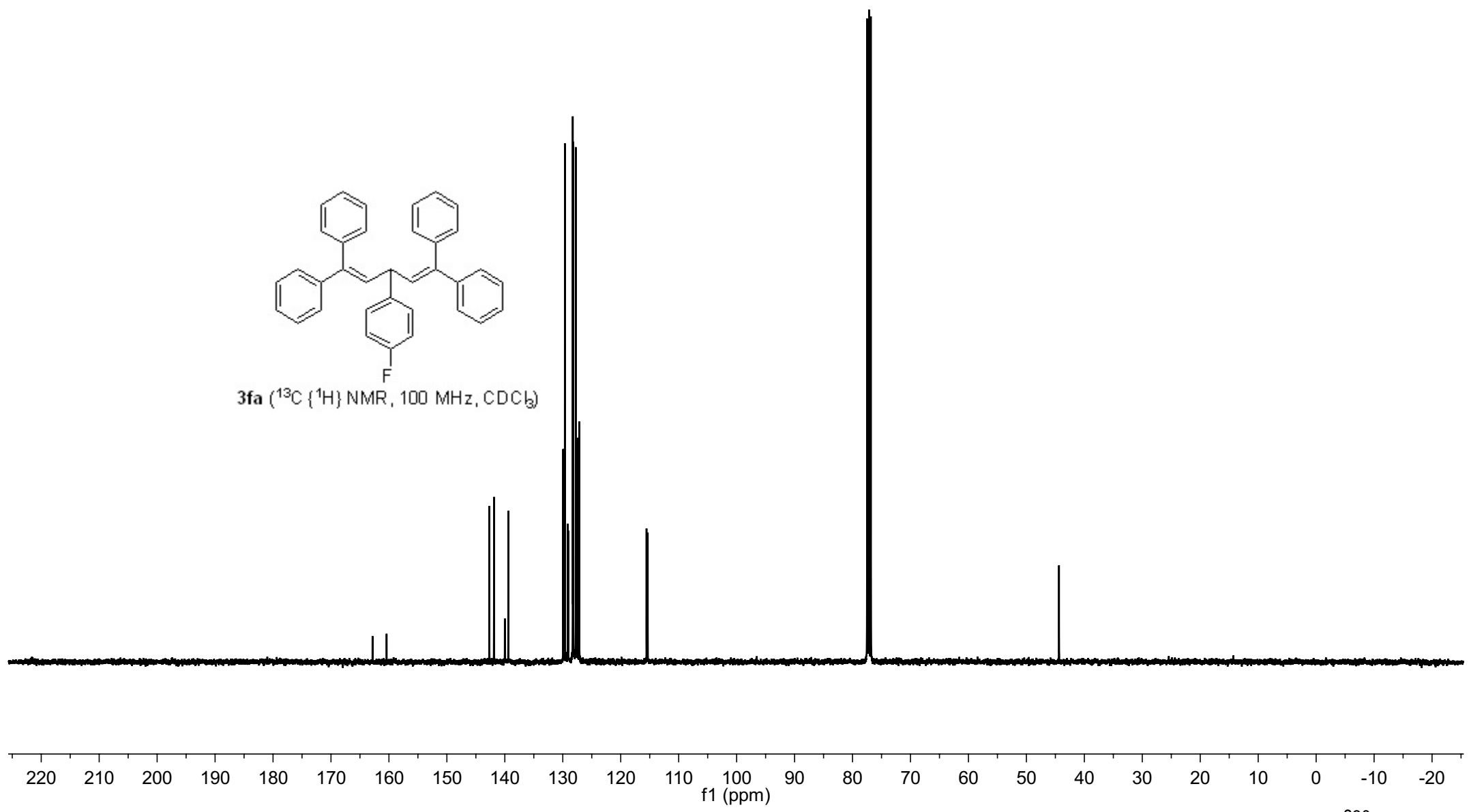


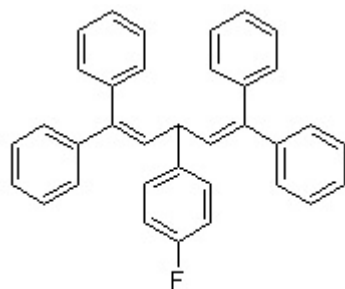


3fa (¹³C {¹H} NMR, 100 MHz, CDCl₃)

- 162.833
- 160.403
- 142.677
- 141.878
- 140.004
- 139.973
- 139.401
- 129.640
- 128.281
- 128.212
- 127.769
- 115.551
- 115.342

44.376





3fa (^{19}F NMR, 376 MHz, CDCl_3)

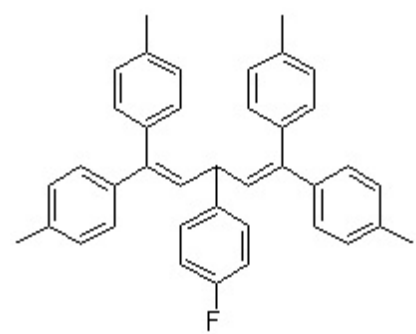
-116.884

200 150 100 50 0 -50 -100 -150 -200 -250 -300 -350 -400
f1 (ppm)

7.220
7.212
7.196
7.191
7.177
7.156
7.136
7.079
7.060
6.987
6.965
6.943
6.912
6.892
6.823
6.804
6.126
6.100

4.495
4.469
4.444

2.320
2.312



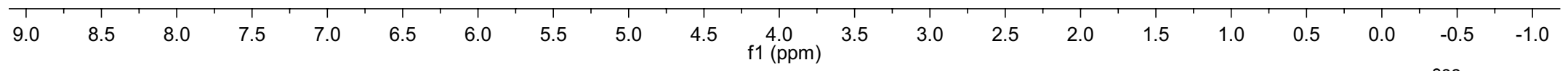
3ff (¹H NMR, 400 MHz, CDCl₃)

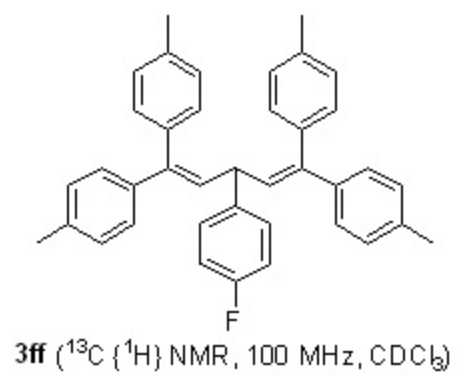
6.16
4.01
2.00
3.99
4.00

2.01

1.00

6.00
5.83

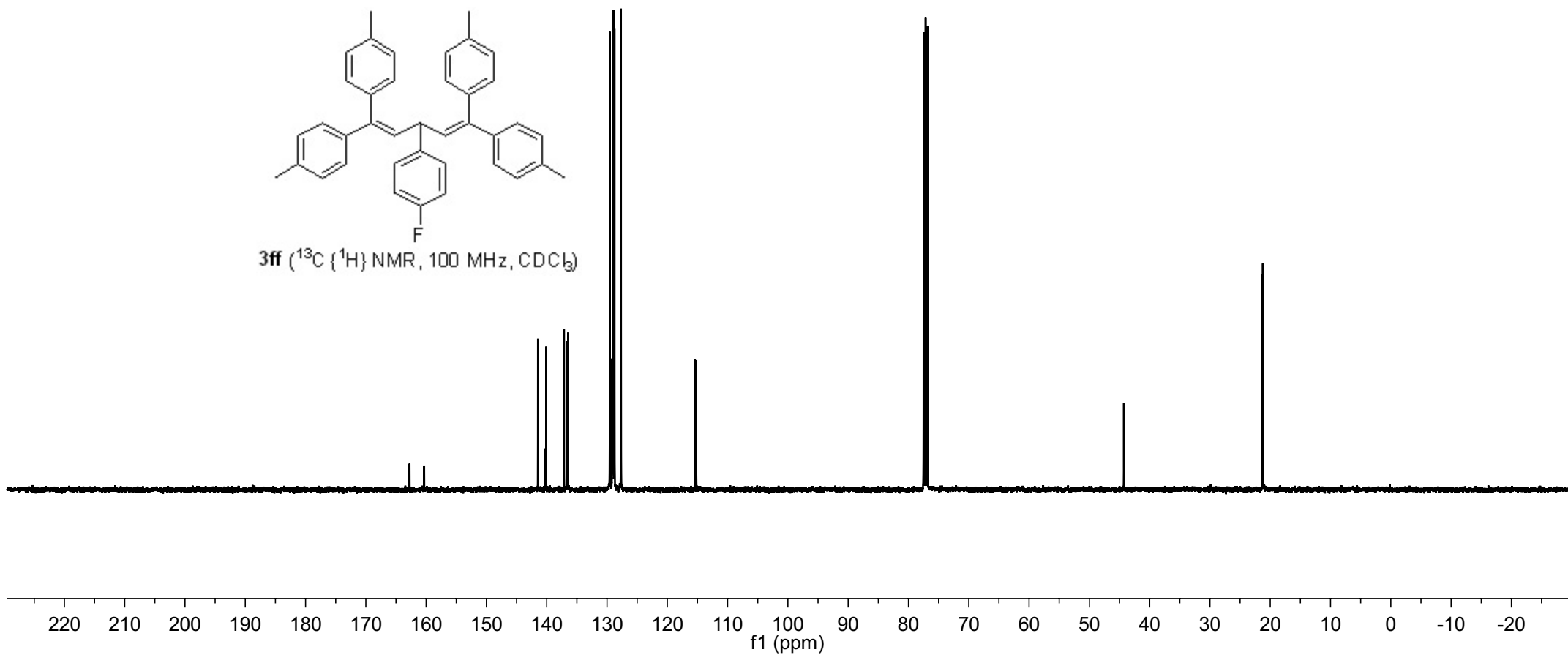


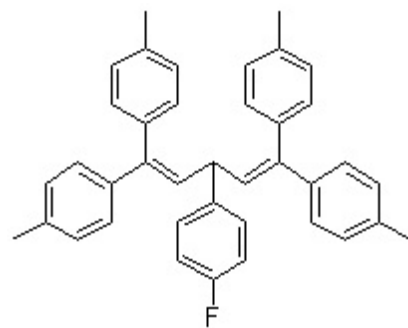


162.752
 160.324
 141.454
 140.097
 137.133
 136.636
 136.472
 129.530
 129.016
 128.935
 128.756
 127.681
 115.205

44.269

21.347
21.227





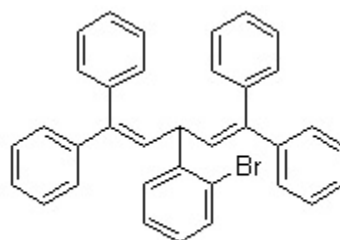
3ff (^{19}F NMR, 376 MHz, CDCl_3)

-117.183

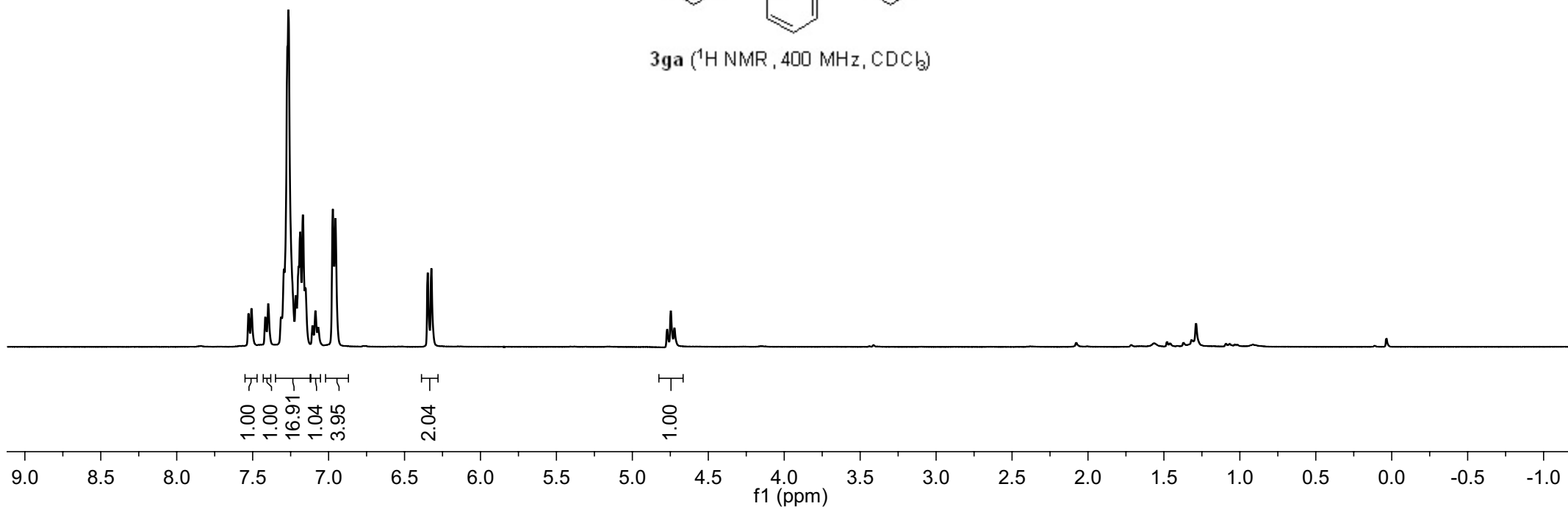
200 150 100 50 0 -50 -100 -150 -200 -250 -300 -350 -400
f1 (ppm)

7.528
7.508
7.417
7.398
7.312
7.293
7.271
7.265
7.215
7.197
7.187
7.170
7.155
7.151
7.087
6.972
6.955
6.947
6.323

4.771
4.747
4.723

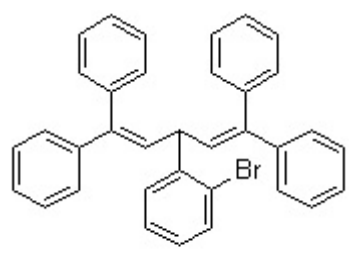


3ga ($^1\text{H NMR}$, 400 MHz, CDCl_3)

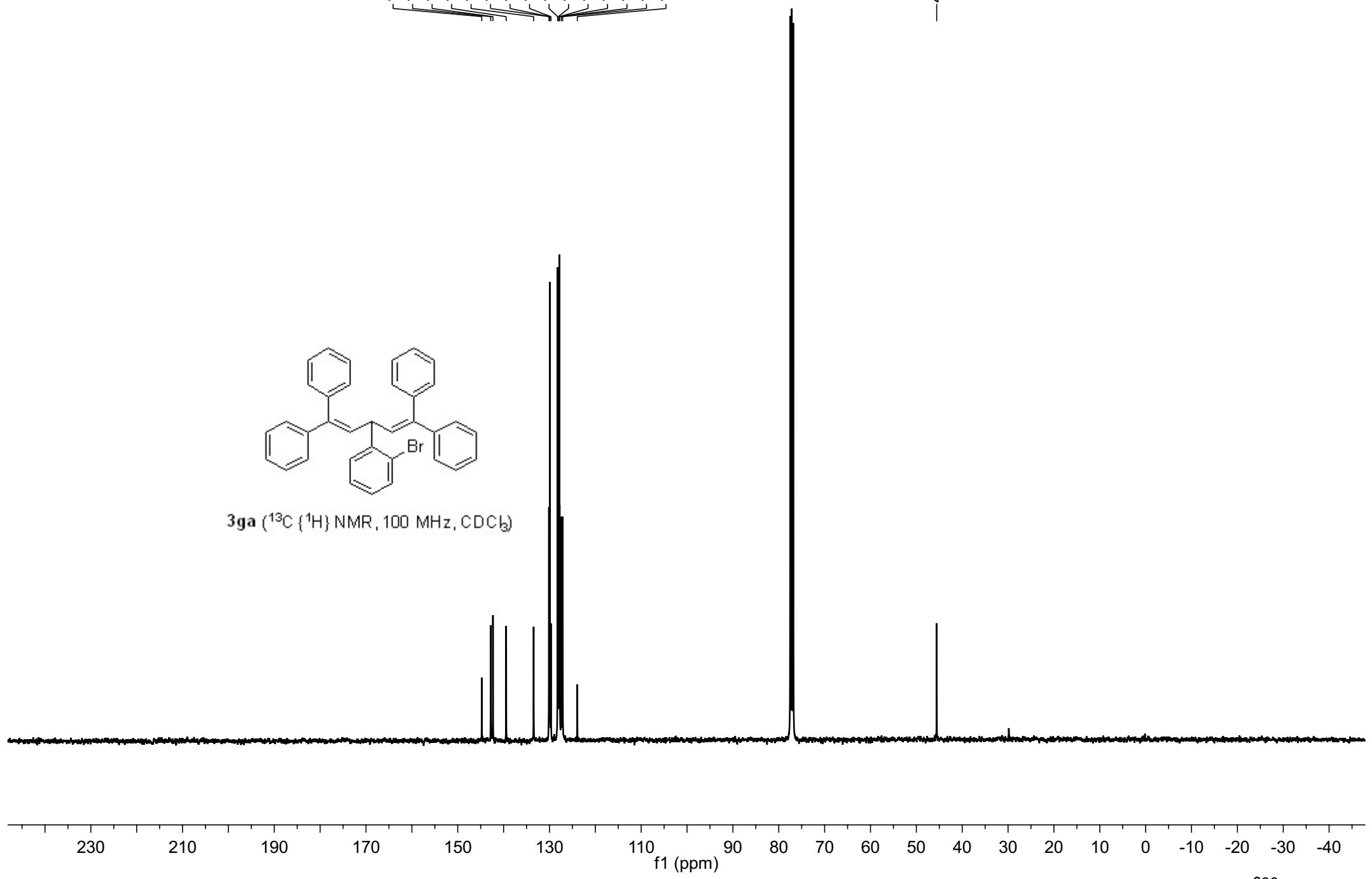


144.757
142.803
142.322
139.442
133.454
130.105
129.918
129.678
128.217
128.078
127.837
127.772
127.387
127.121
123.928

—45.562



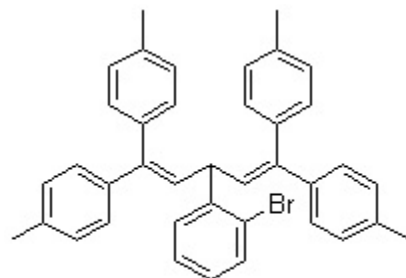
3ga (¹³C {¹H} NMR, 100 MHz, CDCl₃)



7.550
7.531
7.430
7.411
7.315
7.297
7.287
7.175
7.155
7.112
7.092
6.983
6.964
6.865
6.846
6.268
6.244

4.763
4.739
4.715

2.366
2.354



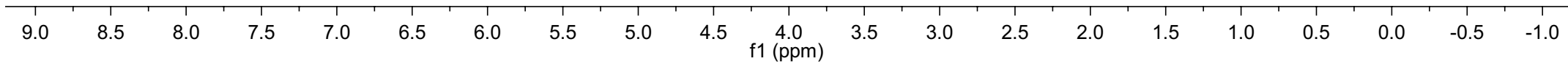
3gf (¹H NMR, 400 MHz, CDCl₃)

1.01
1.00
1.00
9.07
4.00
3.99

2.00

1.00

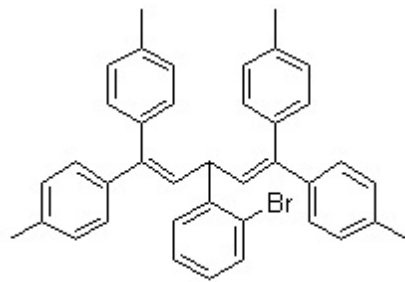
6.09
5.86



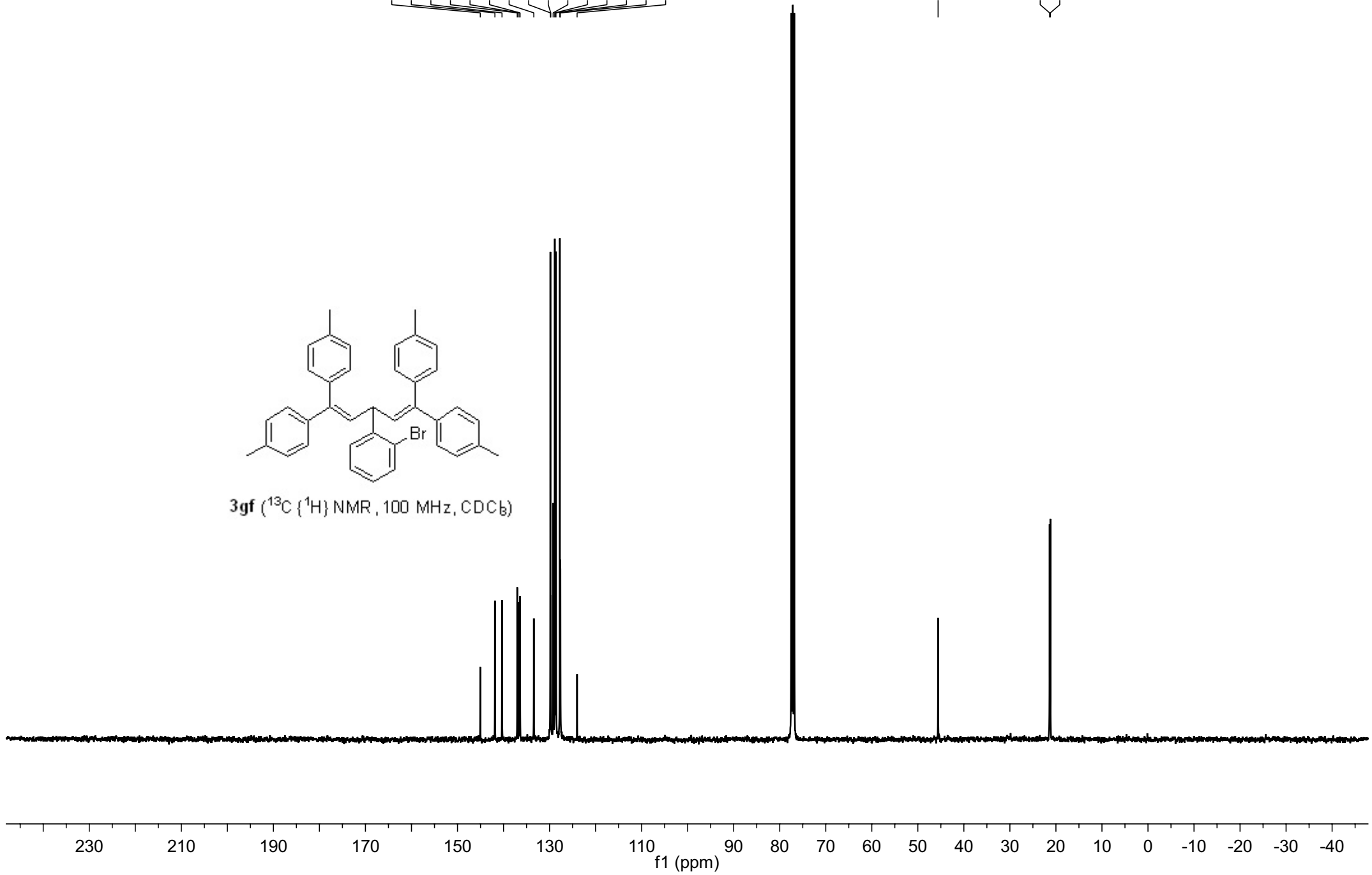
145.048
141.872
140.332
137.021
136.649
136.407
133.419
129.820
129.737
129.219
128.865
128.616
127.770
127.667
124.022

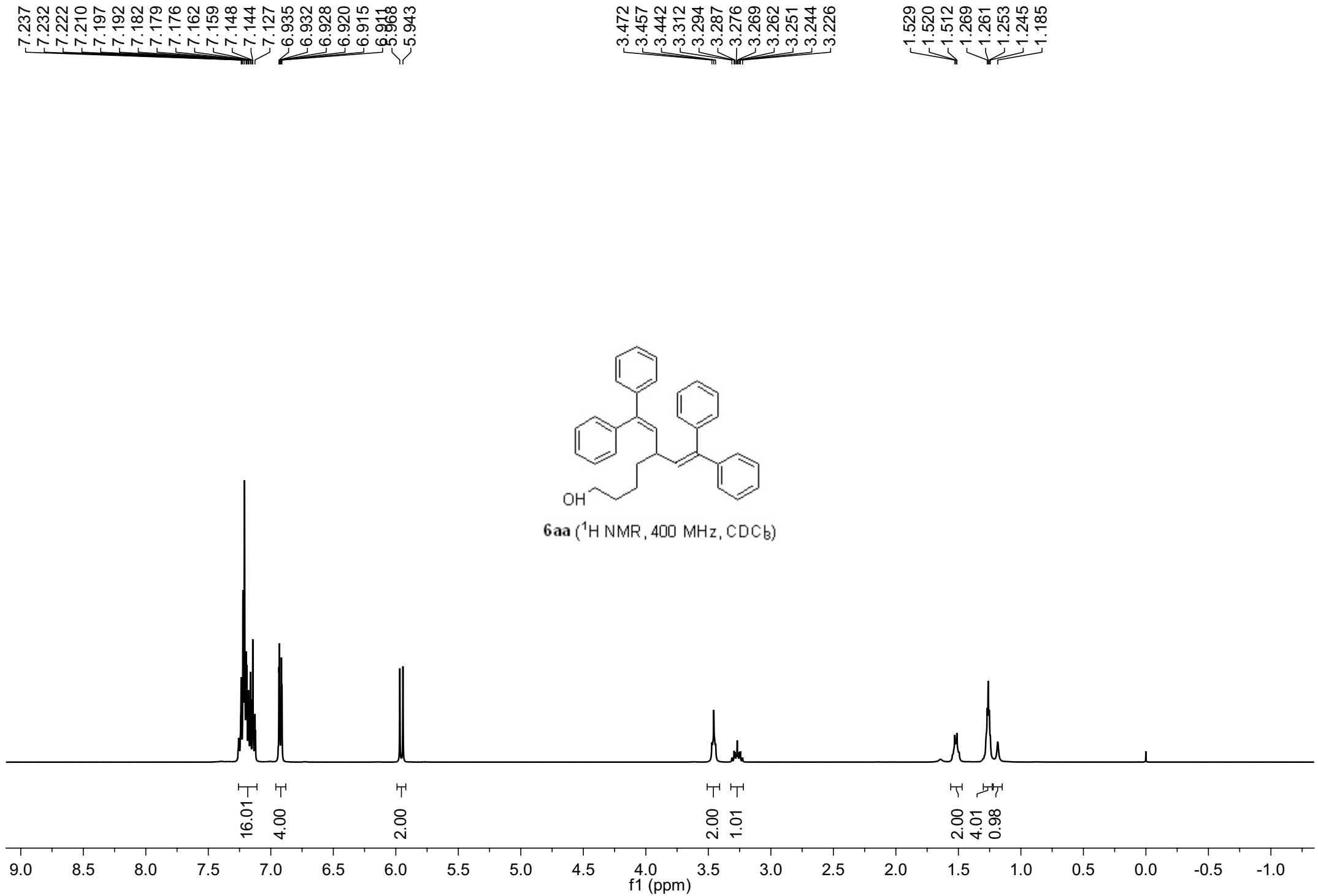
—45.597

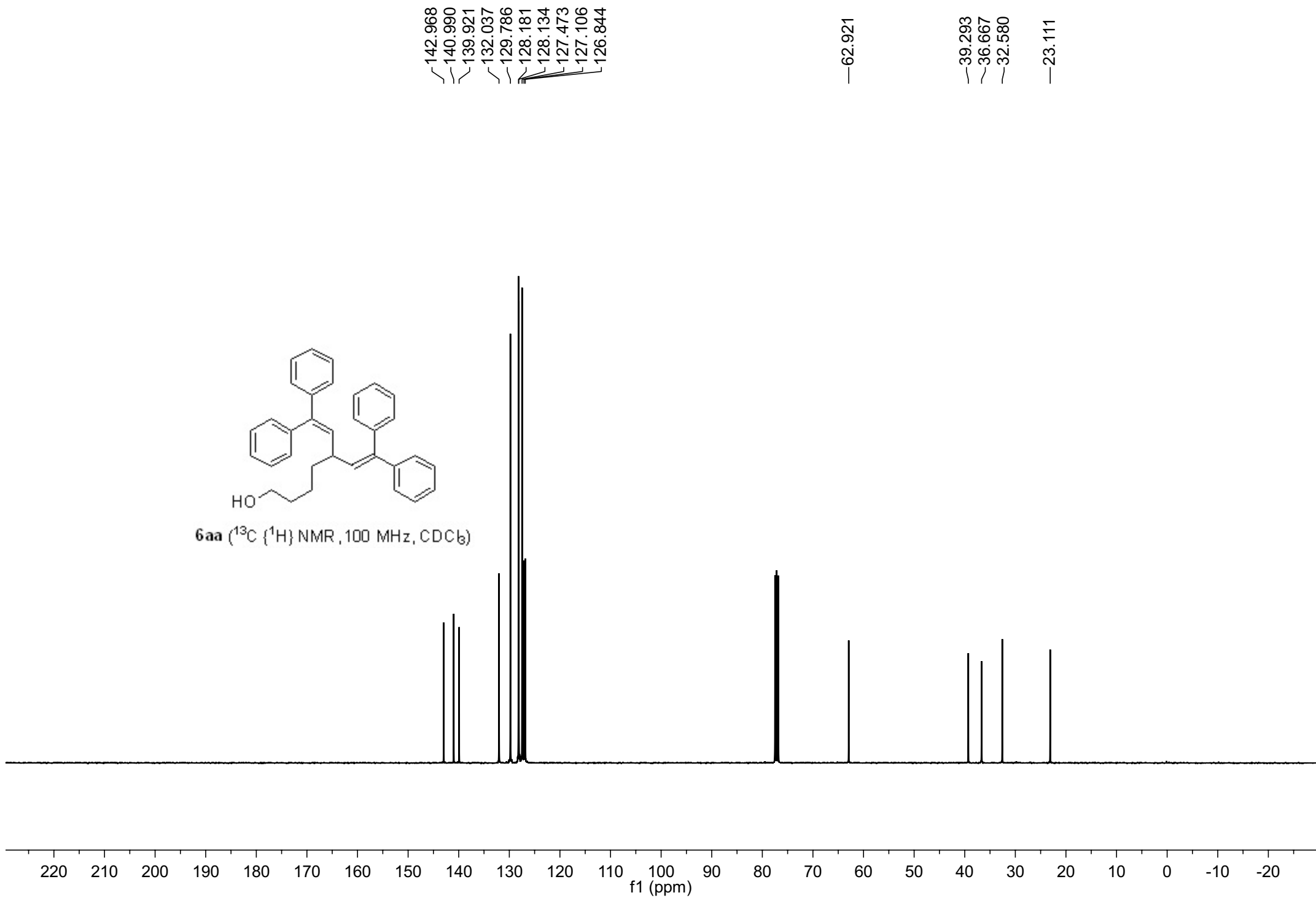
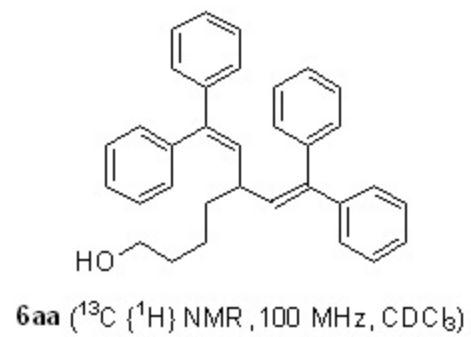
21.370
21.210



3gf (^{13}C { ^1H } NMR, 100 MHz, CDCl_3)







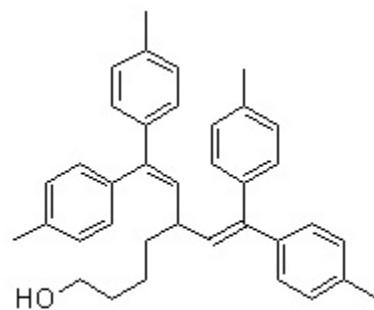
7.109
7.089
7.044
7.023
6.936
6.916
6.804
6.785

5.877
5.852

3.486
3.472
3.456
3.292
3.274
3.267
3.249
3.231
3.224
3.206

2.330
2.292

1.523
1.505
1.488
1.471
1.317
1.286
1.276
1.261
1.250
1.230



6af (¹H NMR, 400 MHz, CDCl₃)

4.02
4.00
4.00
4.00

1.99

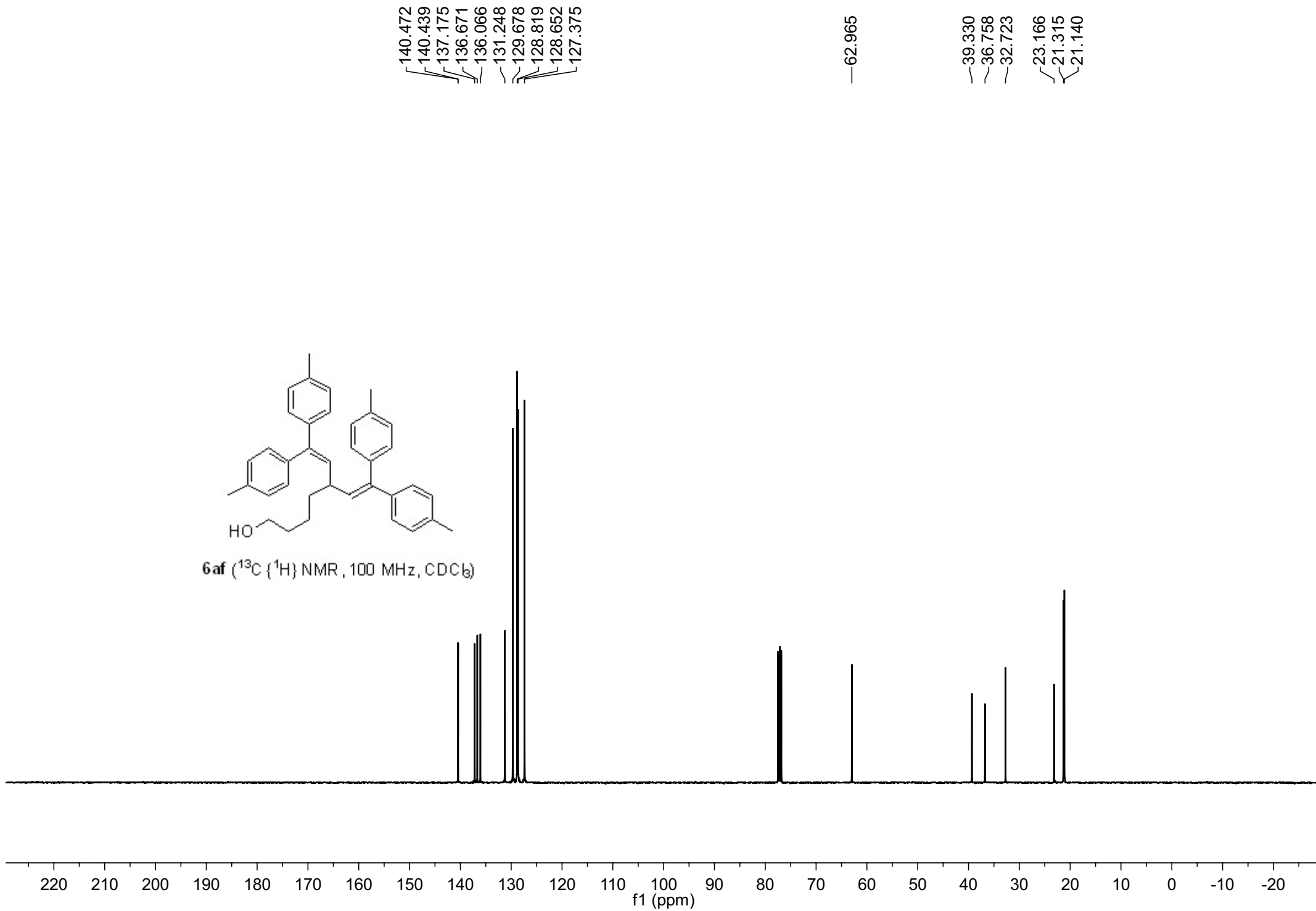
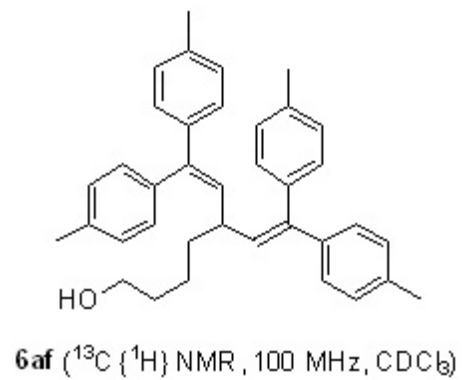
2.00
1.00

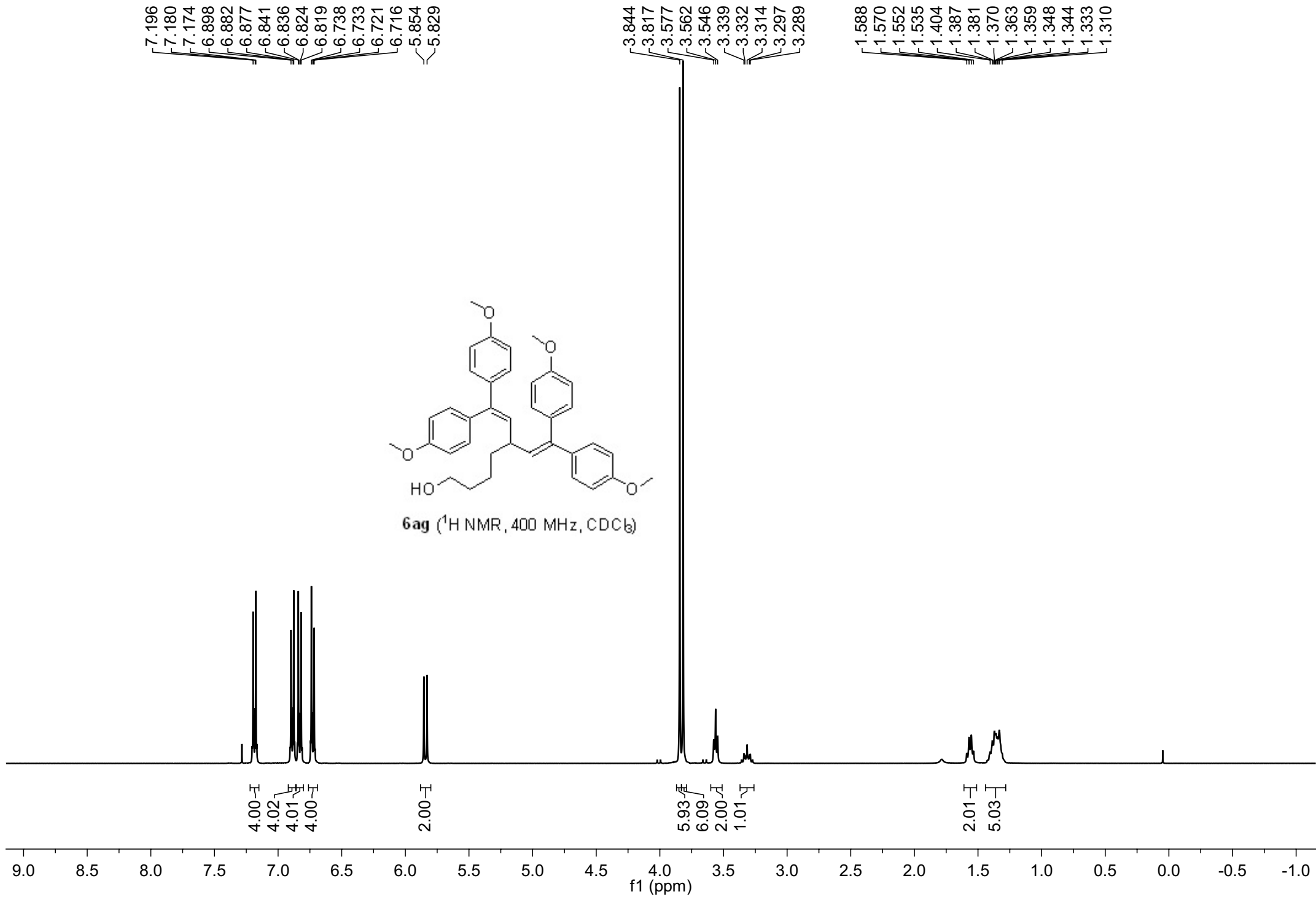
5.93
6.00

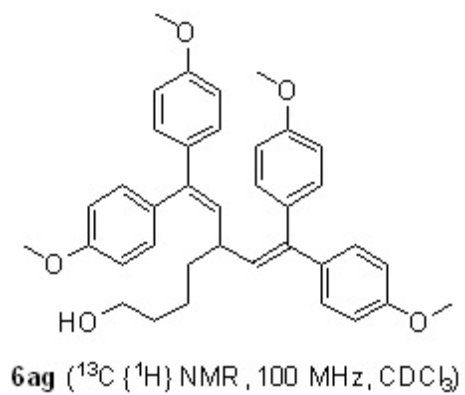
2.01
3.99
1.02

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 -1.0

f1 (ppm)







158.832
158.391

139.606
136.077
132.594
130.897
130.484
128.618

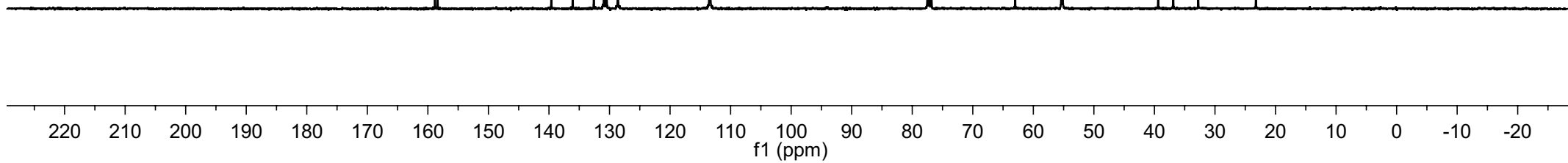
113.494
113.363

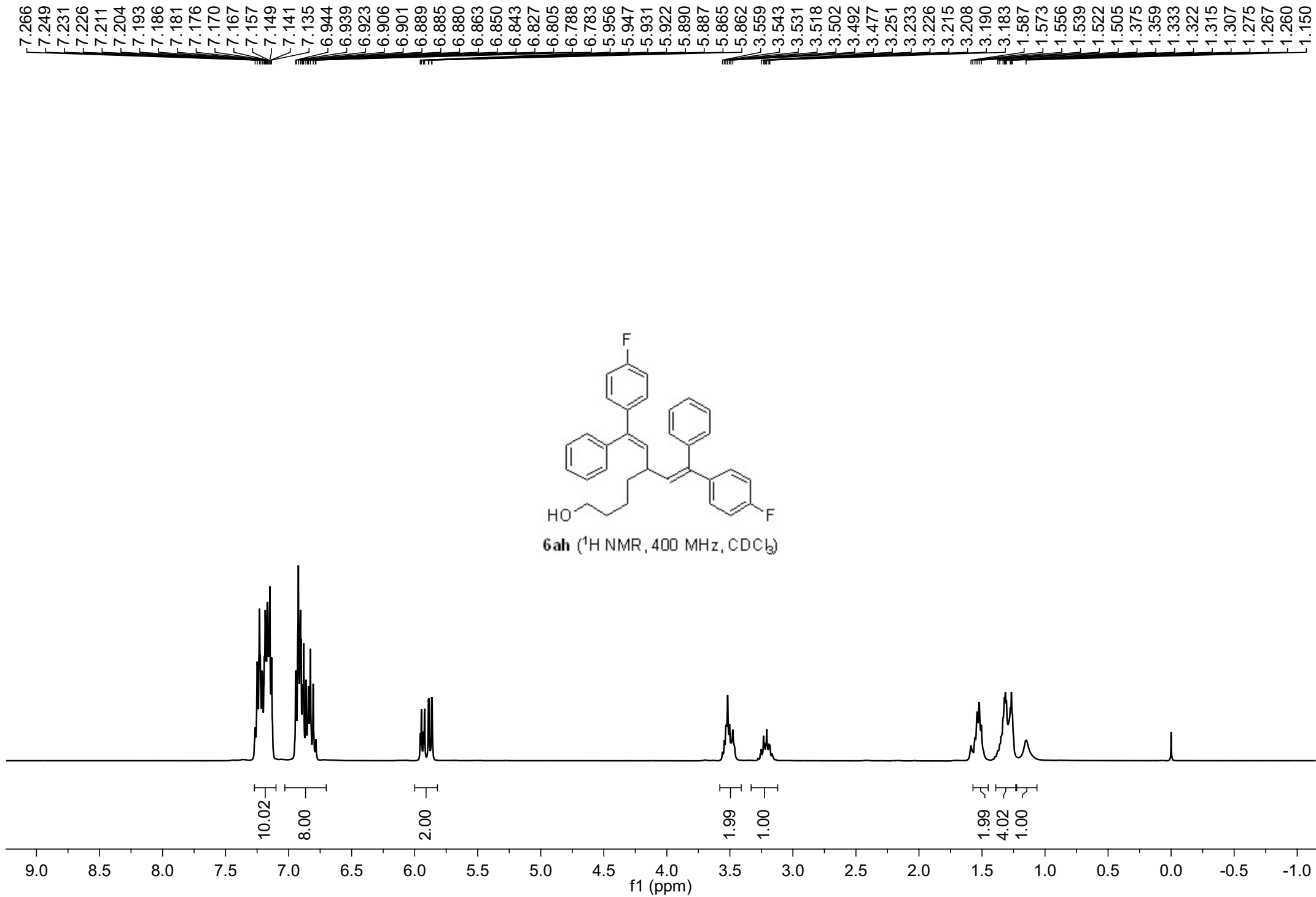
62.999

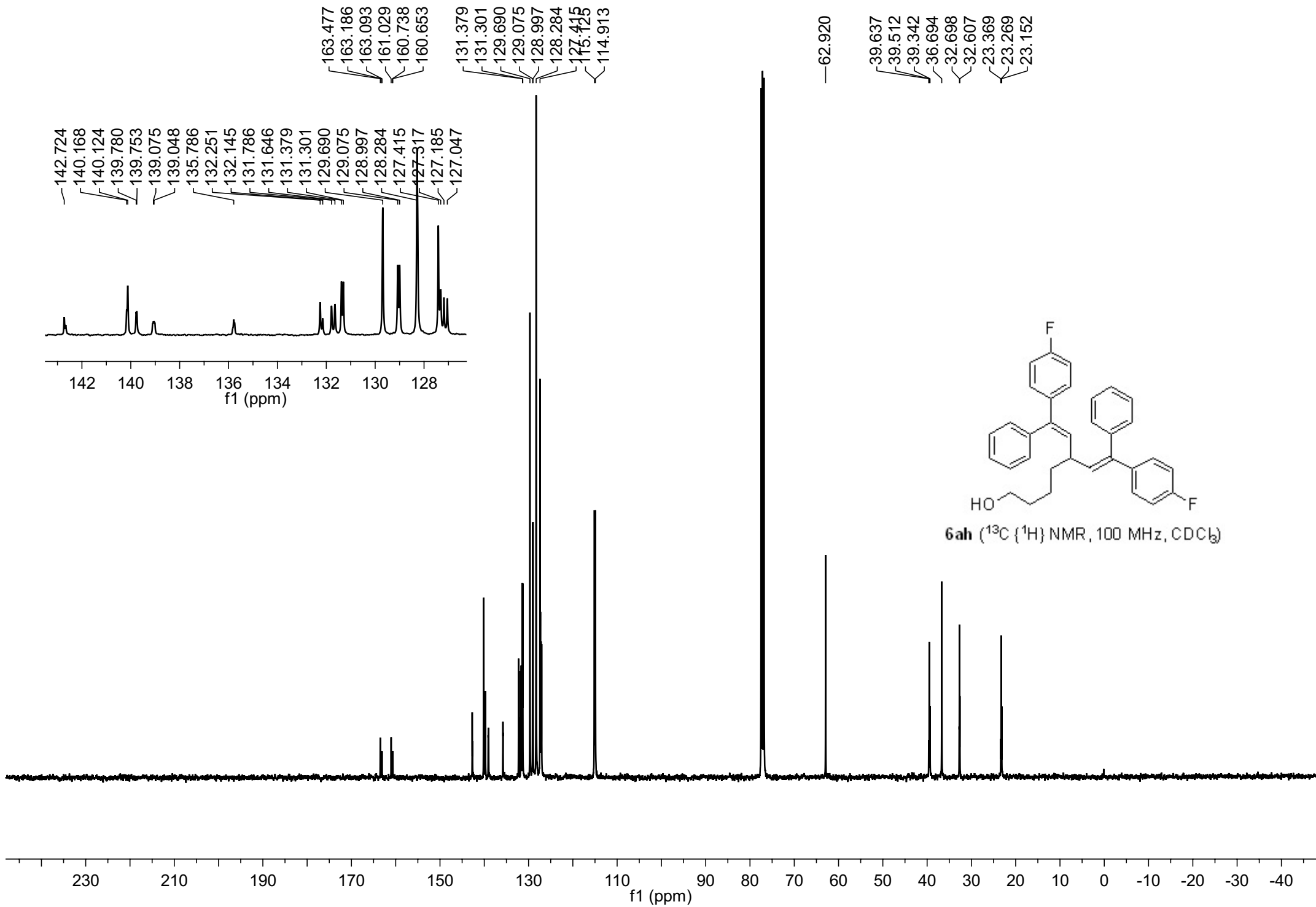
55.376
55.157

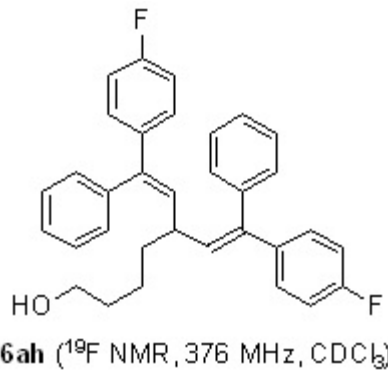
39.377
36.895
32.765

23.236

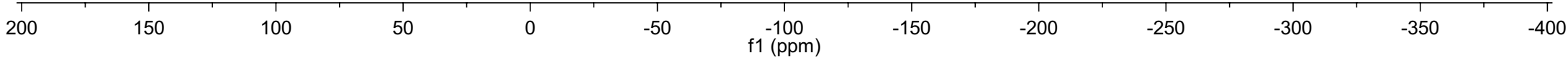


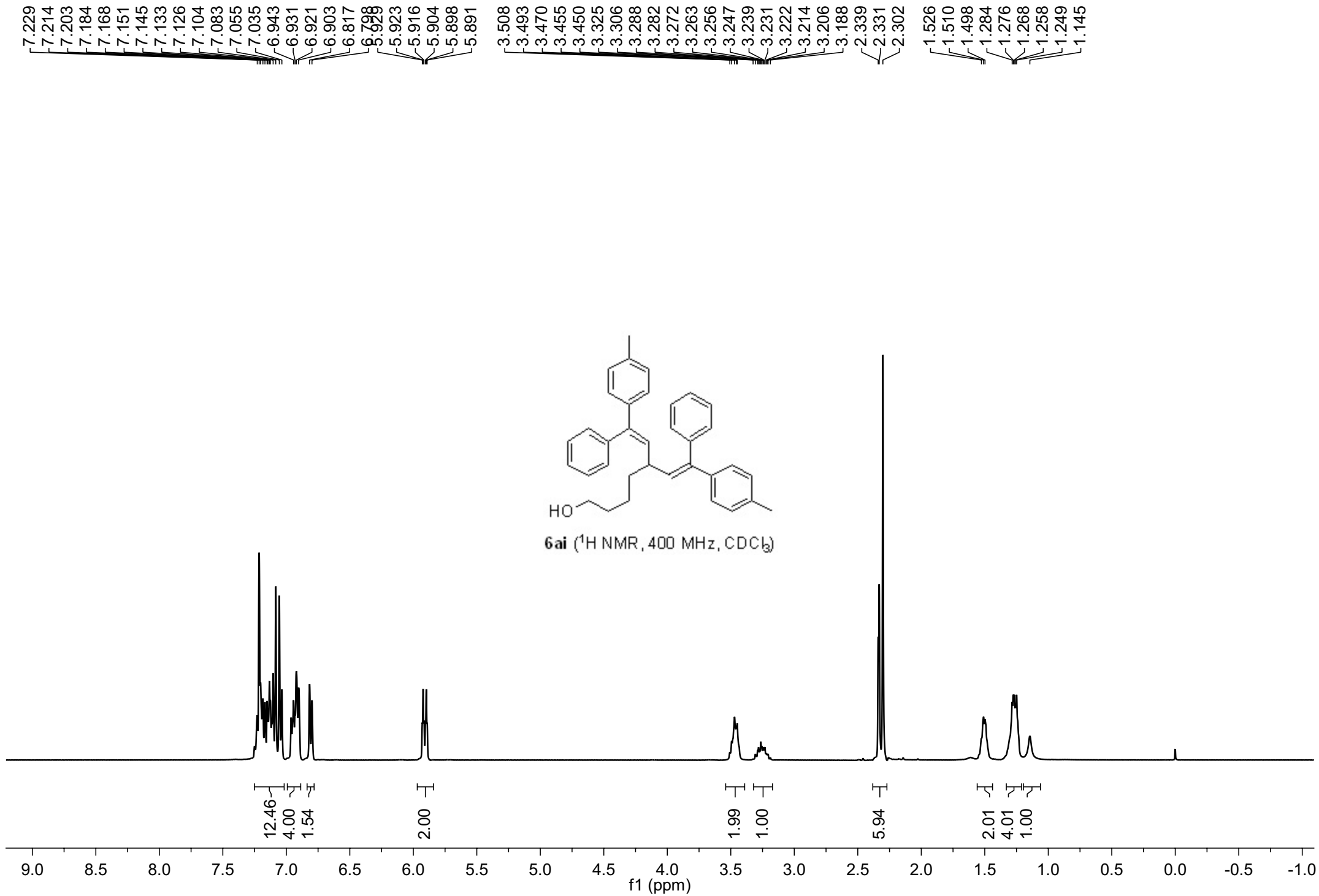


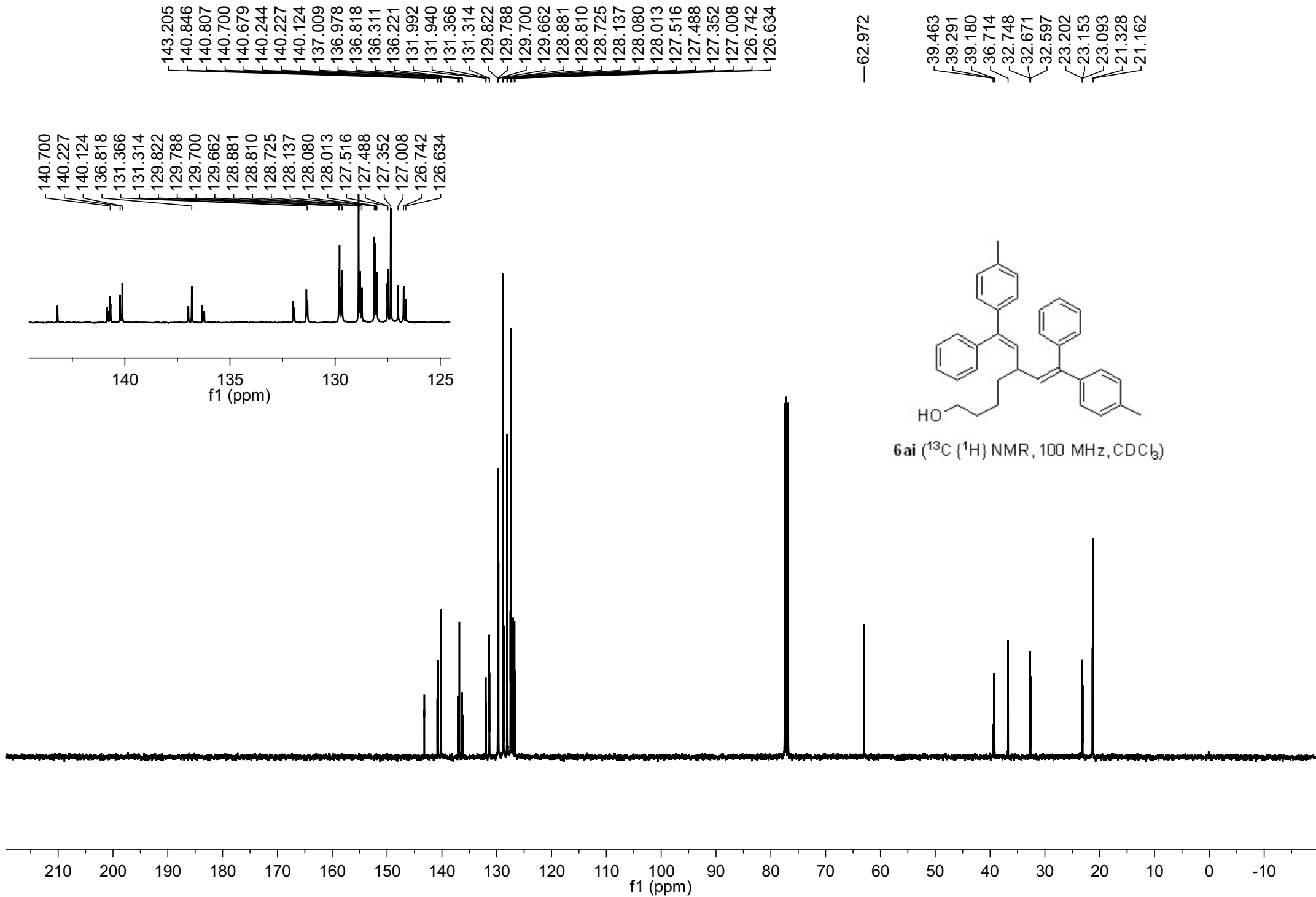


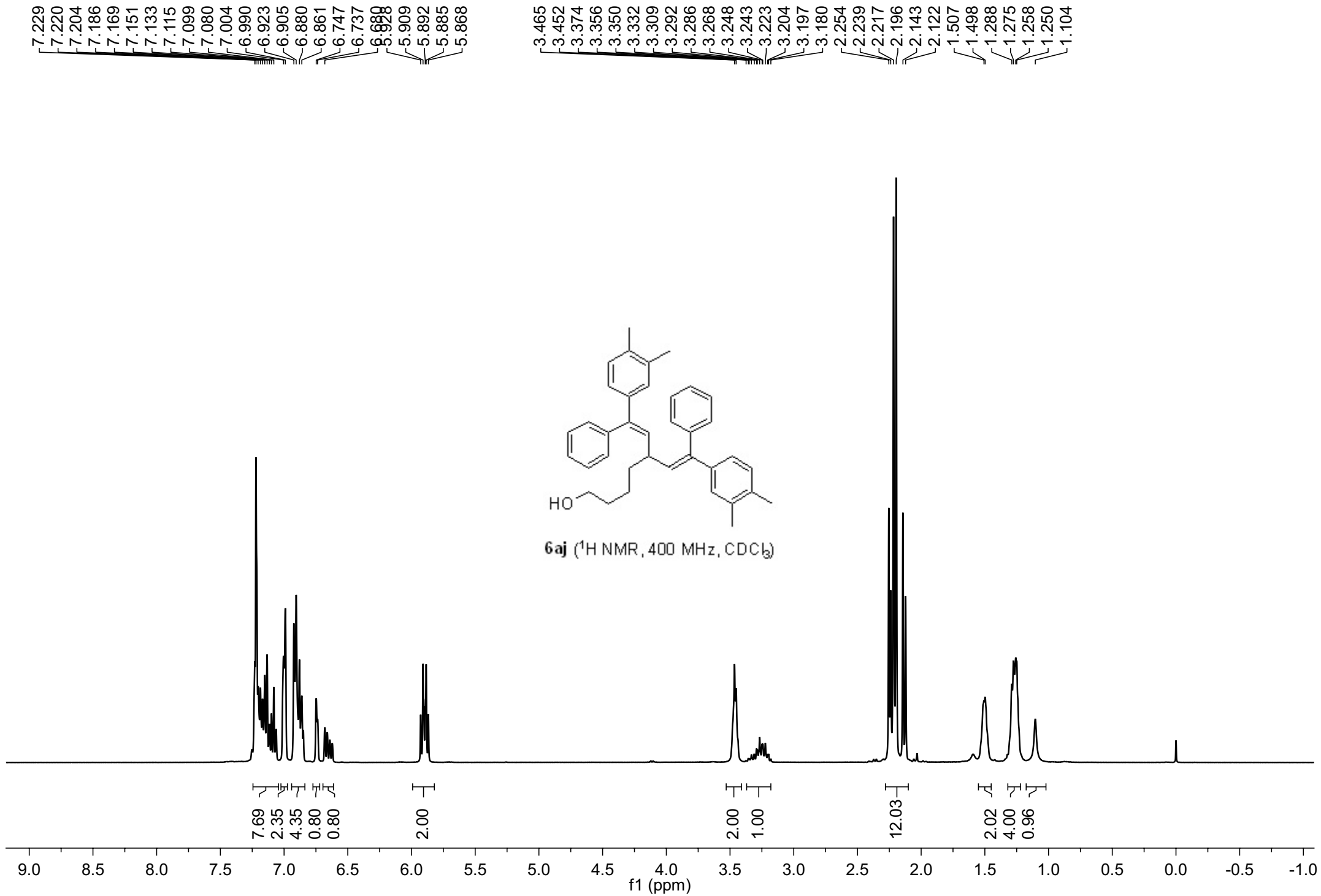


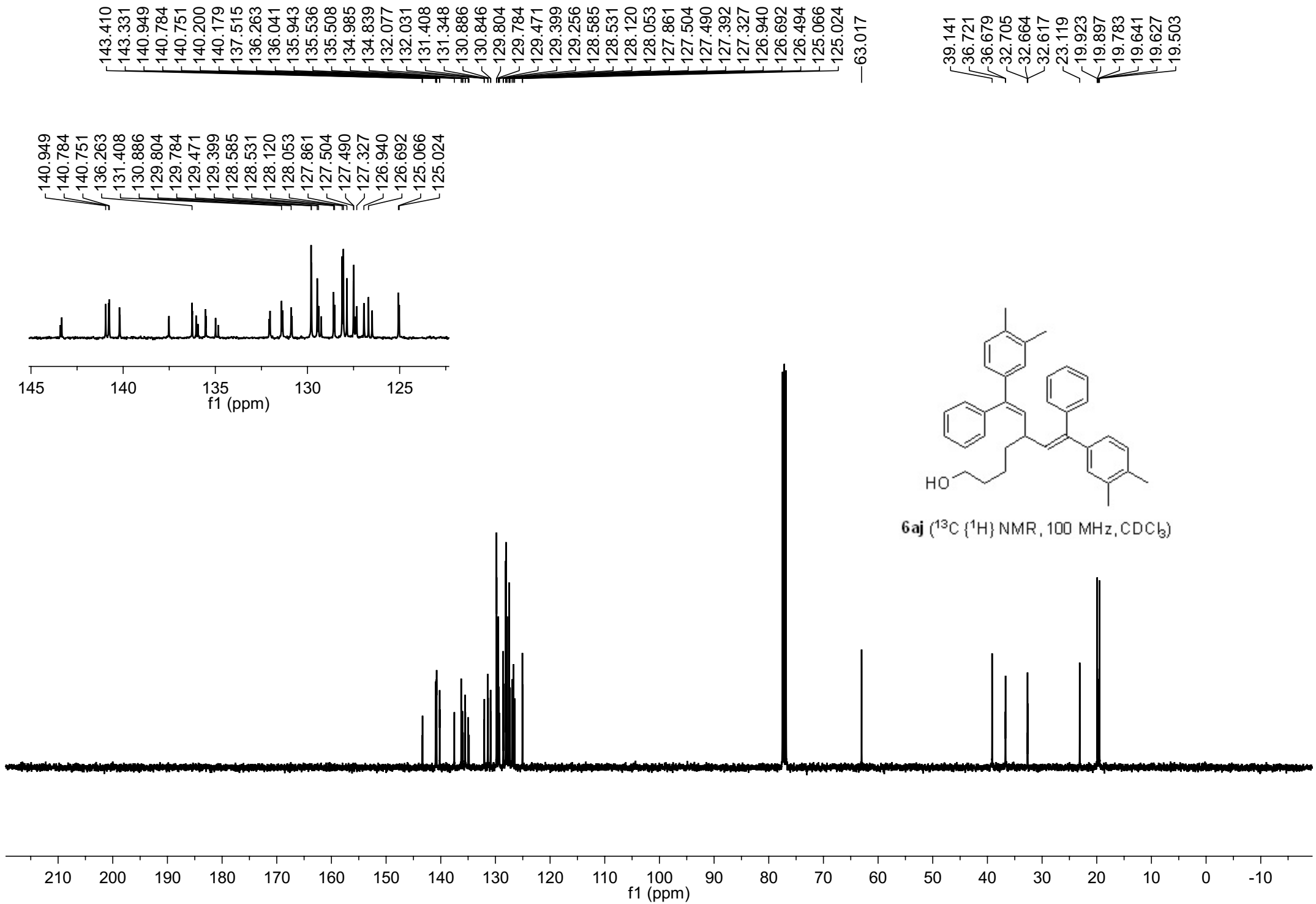
115.30
115.65
115.69
115.74

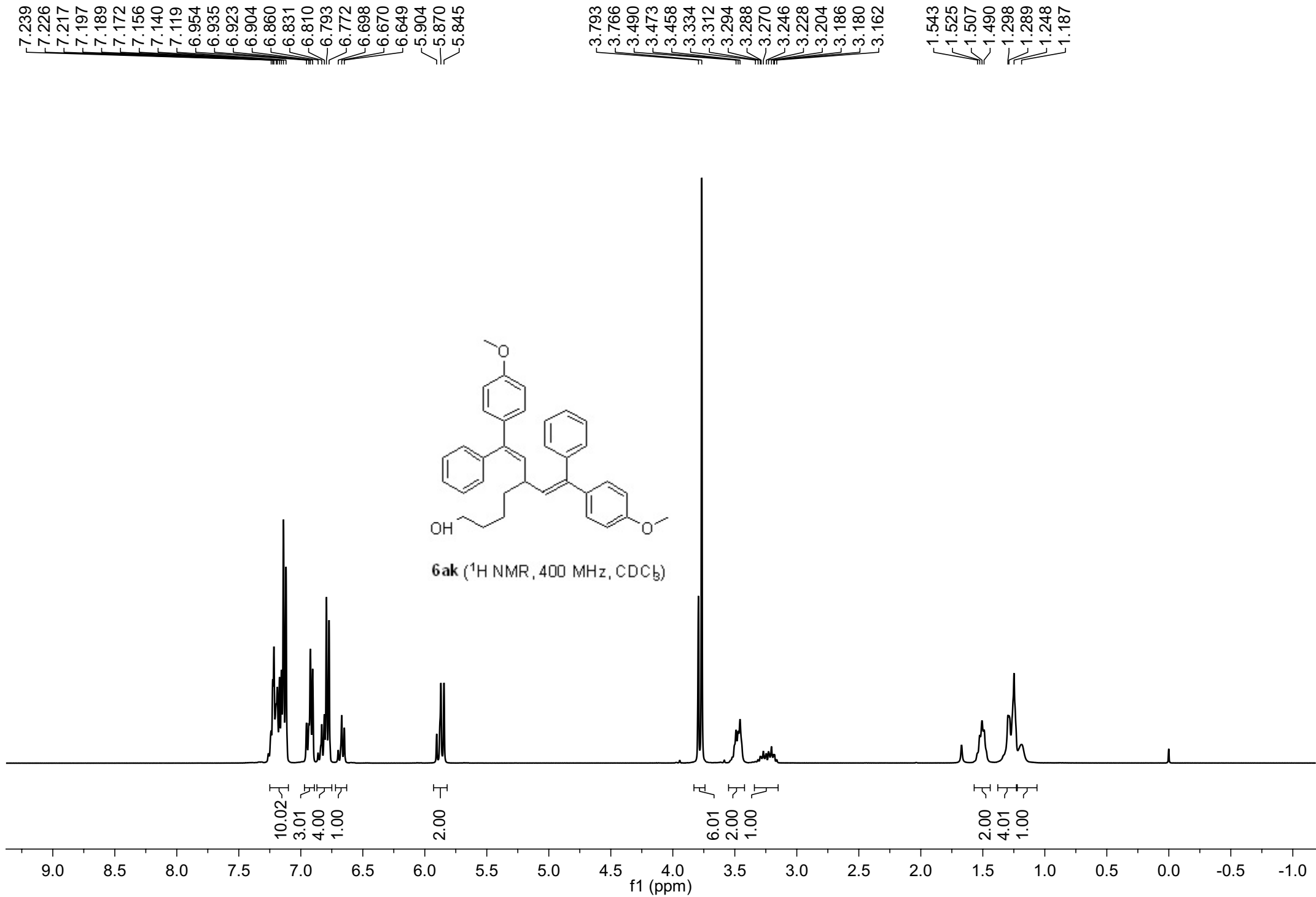






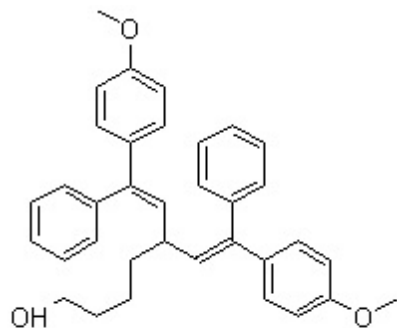




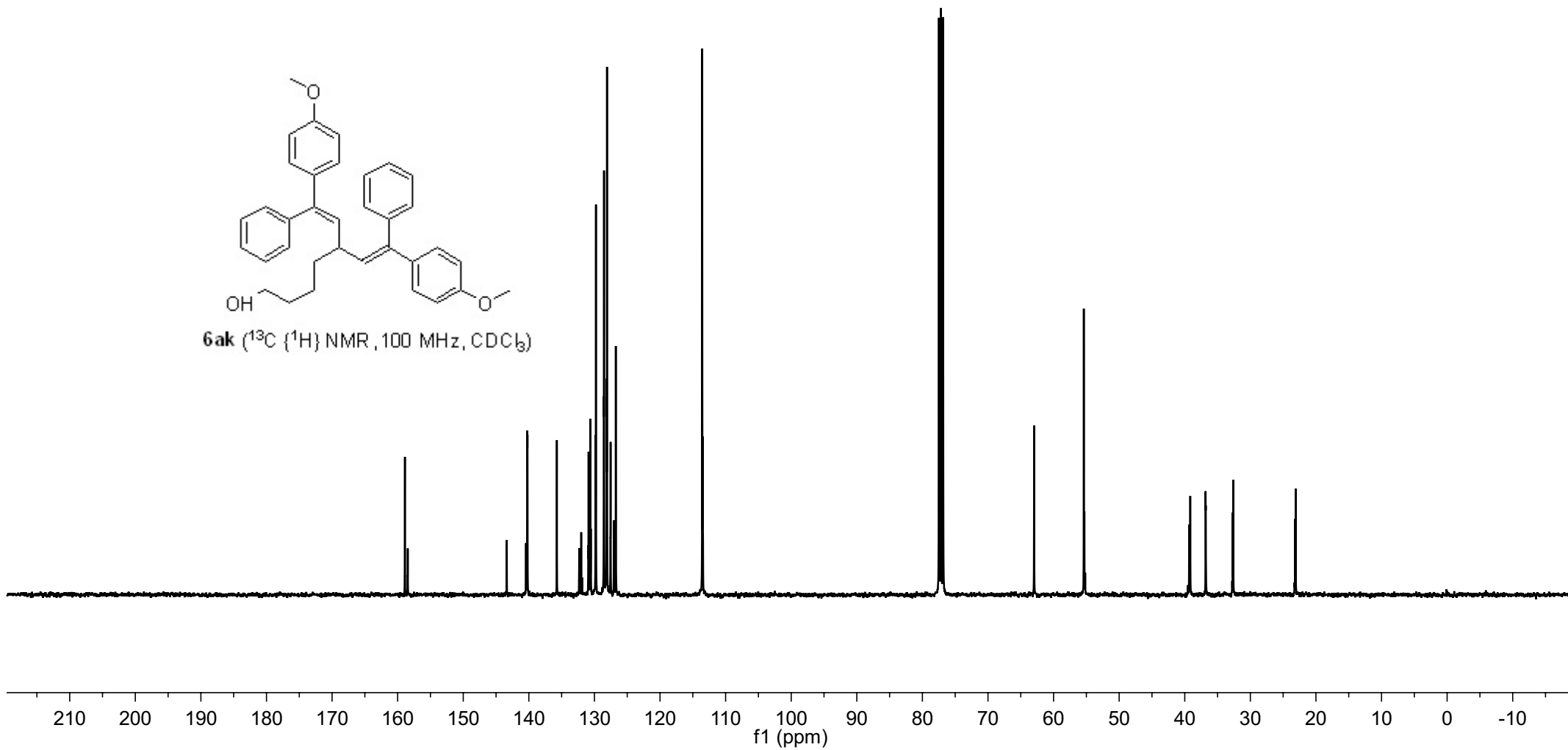


168.894
167.327
159.285
158.894
158.489
158.459
140.229
140.204
130.642
129.769
128.573
128.539
128.137
128.082
126.741
113.562
113.485

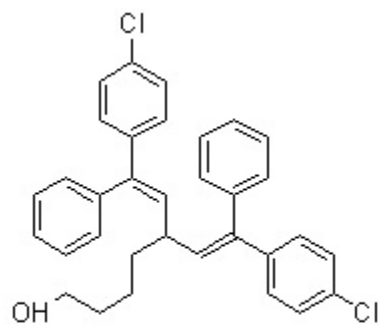
62.965
55.389
55.301
55.178
39.330
39.161
36.823
36.798
32.688
23.695
23.182
23.090



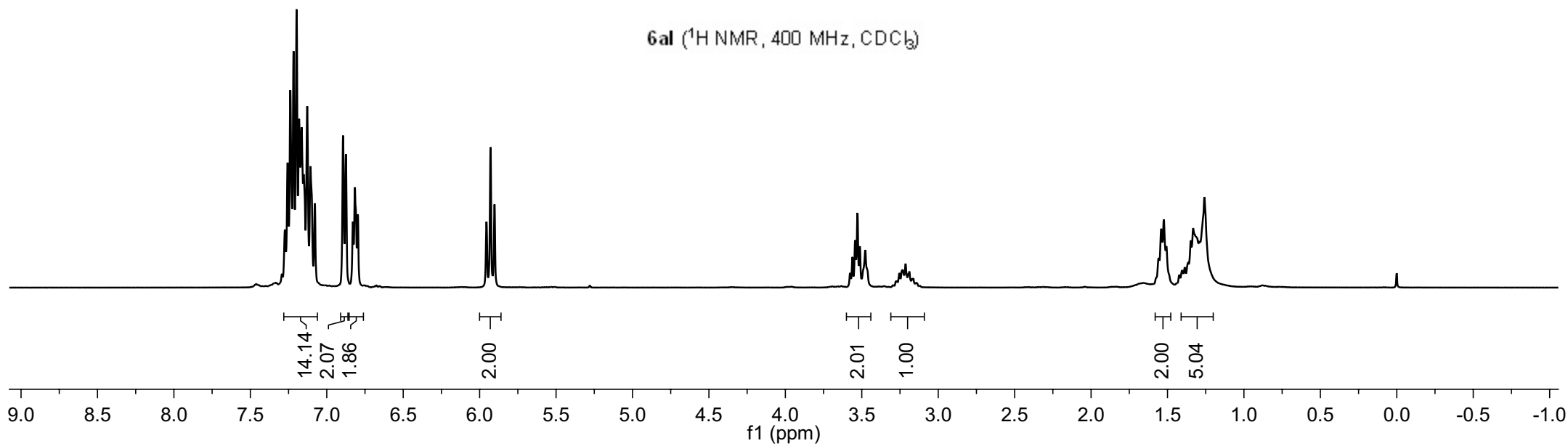
6ak (^{13}C { ^1H } NMR, 100 MHz, CDCl_3)

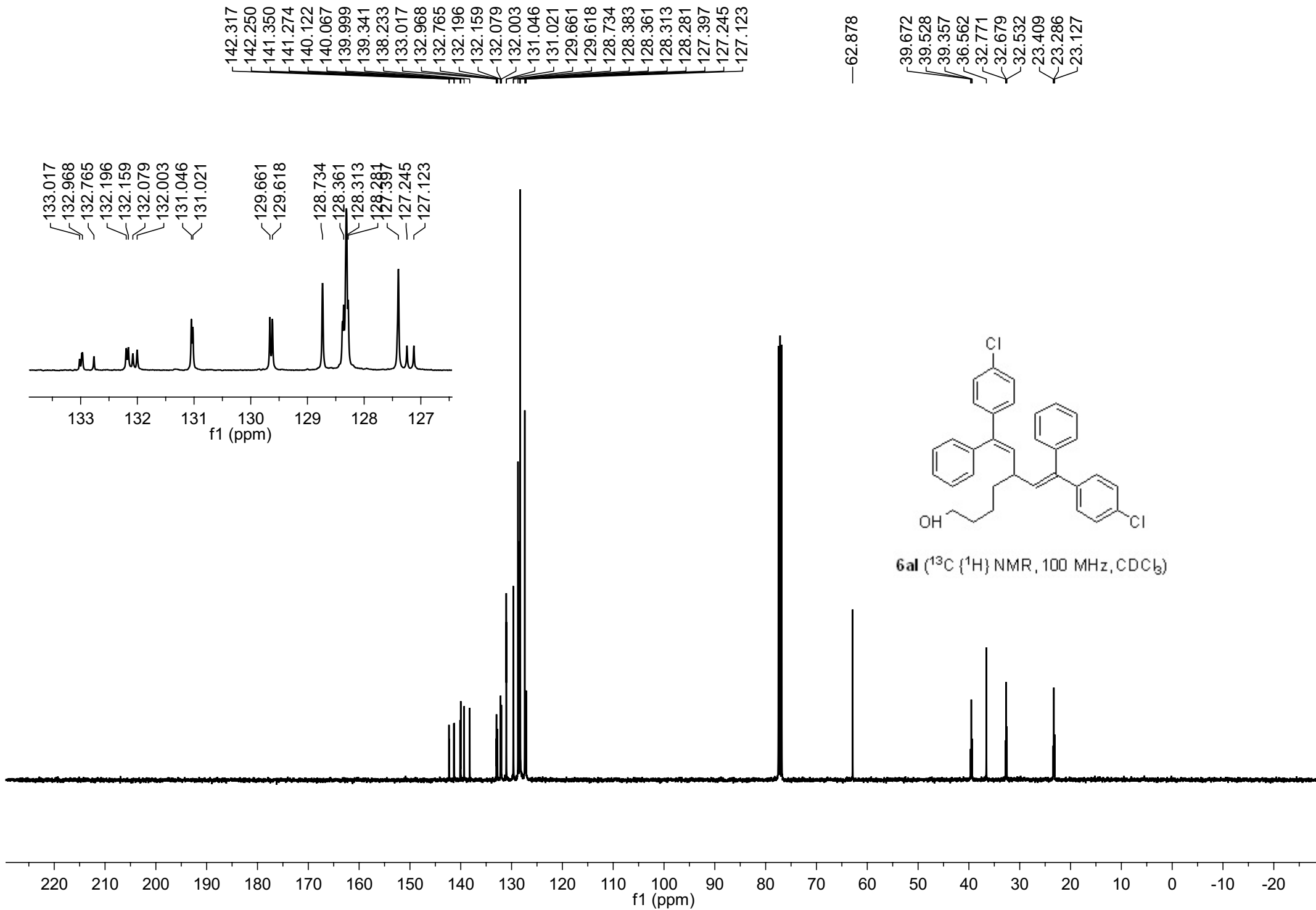


7.274
7.256
7.238
7.217
7.197
7.181
7.164
7.151
7.128
7.106
7.078
6.894
6.875
6.829
6.816
6.797
5.955
5.929
5.903
3.661
3.648
3.633
3.615
3.577
3.561
3.544
3.528
3.512
3.477
3.383
3.351
3.295
3.277
3.270
3.253
3.232
3.213
3.189
3.170
3.163
3.145
3.120
1.574
1.558
1.541
1.524
1.507
1.423
1.404
1.387
1.365
1.348
1.332
1.291
1.258



6al ($^1\text{H NMR}$, 400 MHz, CDCl_3)

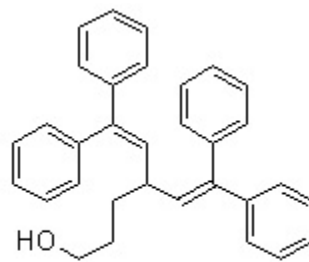




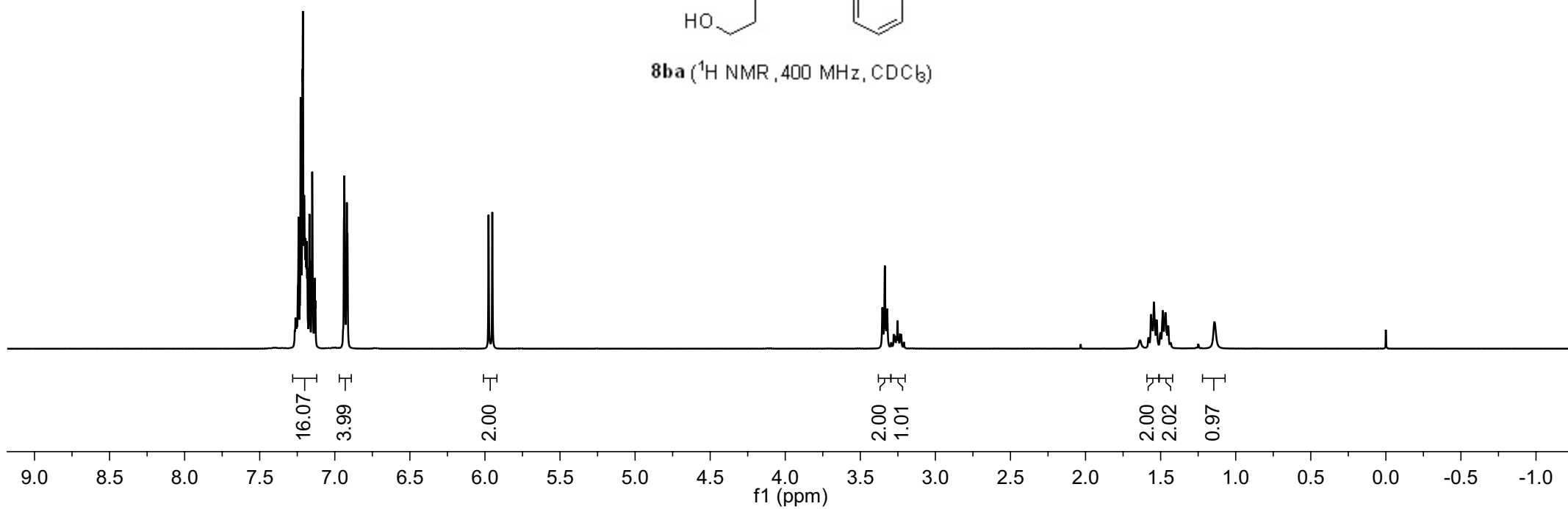
7.262
7.241
7.233
7.227
7.216
7.213
7.204
7.199
7.195
7.190
7.187
7.183
7.169
7.154
7.150
7.133
7.129
6.937
6.920
6.916
5.951

3.353
3.337
3.321
3.295
3.277
3.270
3.260
3.252
3.245
3.235
3.227
3.210

1.564
1.556
1.544
1.527
1.486
1.474
1.469



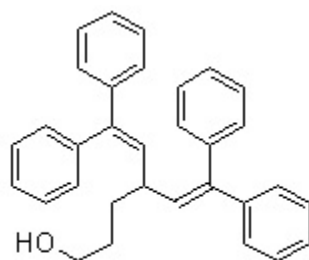
8ba ($^1\text{H NMR}$, 400 MHz, CDCl_3)



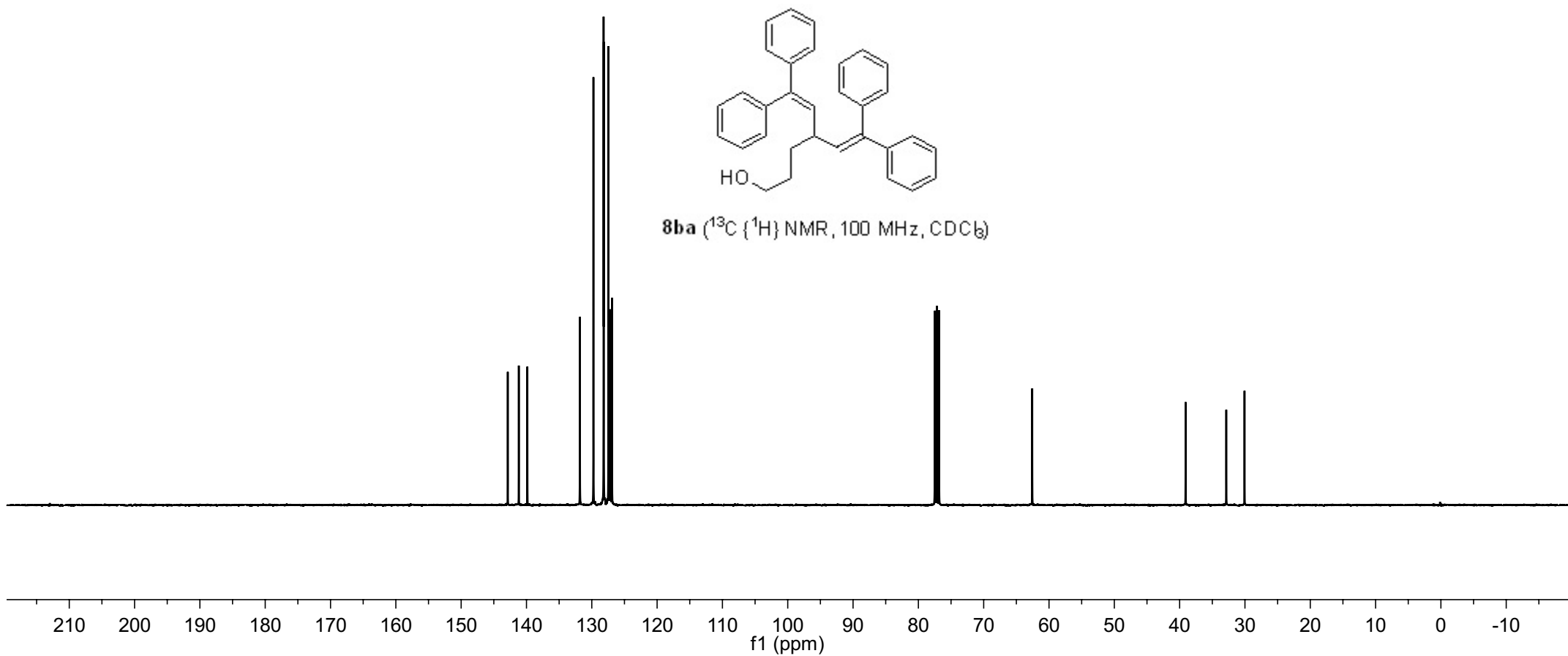
142.864
141.173
139.862
131.821
129.748
128.193
128.163
127.460
127.151
126.902

62.566

39.085
32.860
30.065



8ba (^{13}C { ^1H } NMR, 100 MHz, CDCl_3)

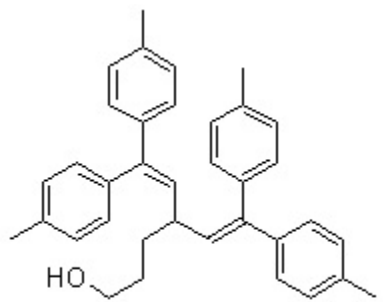


7.142
7.122
7.088
7.067
6.977
6.958
6.840
6.820

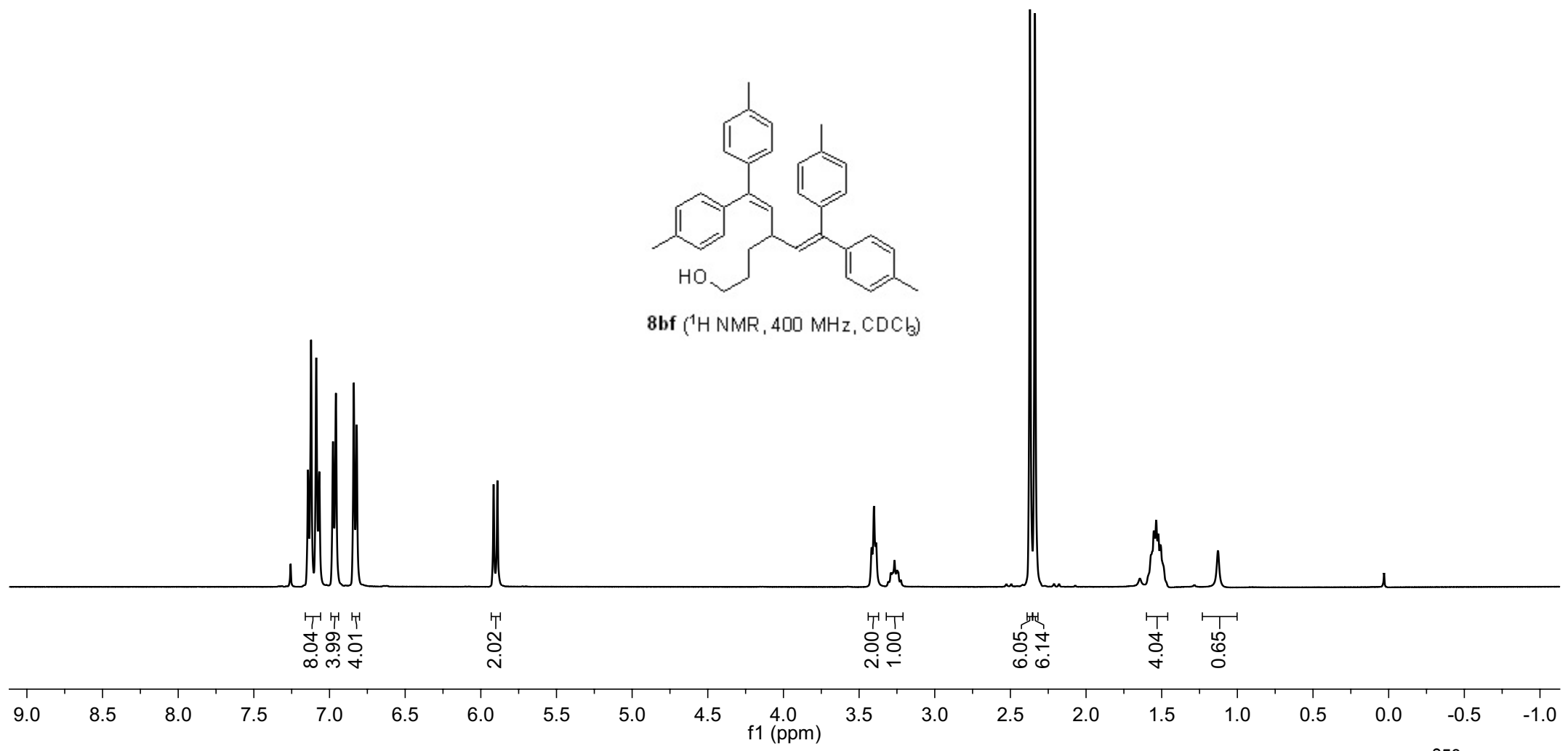
5.915
5.890

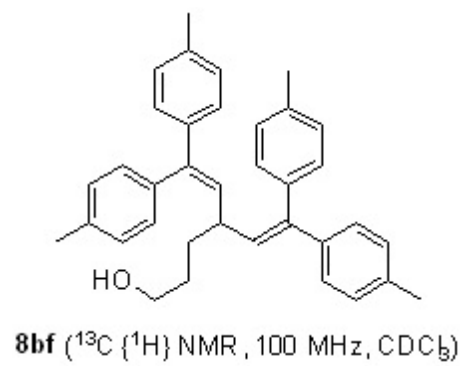
3.417
3.402
3.388
3.307
3.290
3.282
3.266
3.249
3.241
3.224
2.370
2.338

1.552
1.536
1.522
1.509
1.128



8bf (¹H NMR, 400 MHz, CDCl₃)



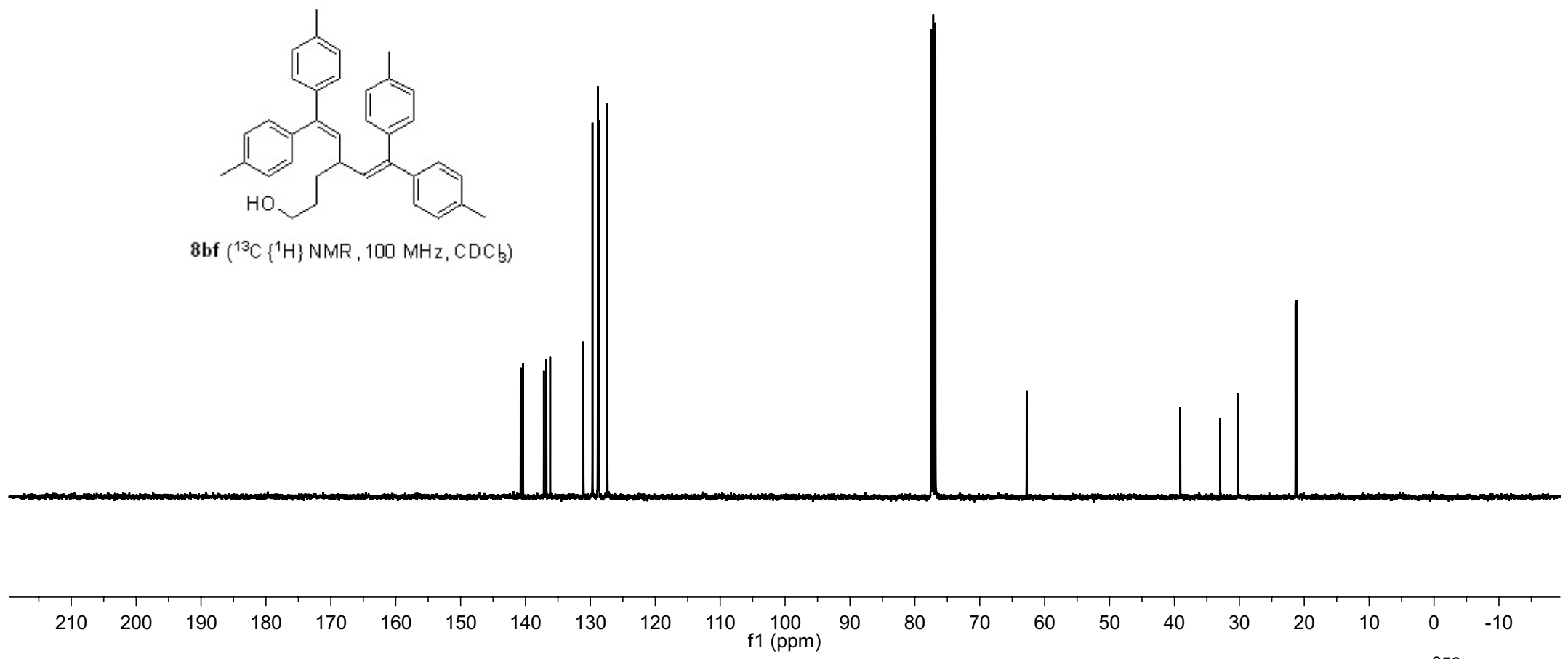


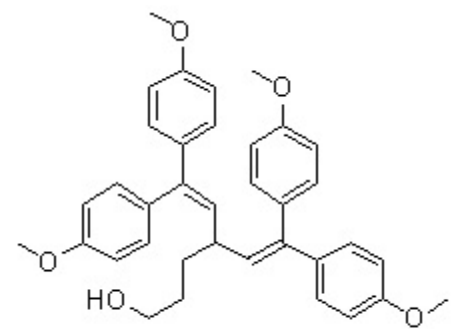
140.742
140.375
137.170
136.774
136.190
131.074
129.678
128.862
128.719
127.392

—62.779

~39.097
~32.954
~30.191

~21.344
~21.172

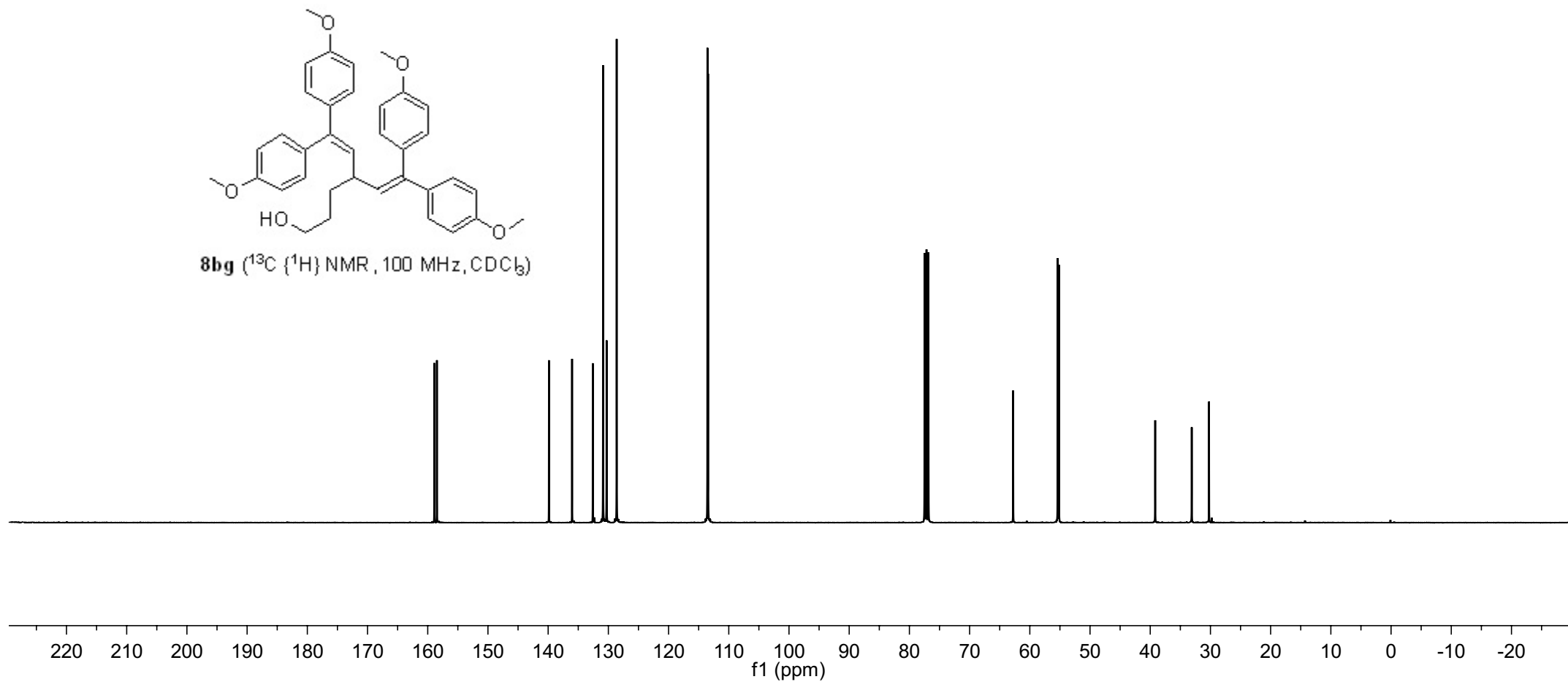


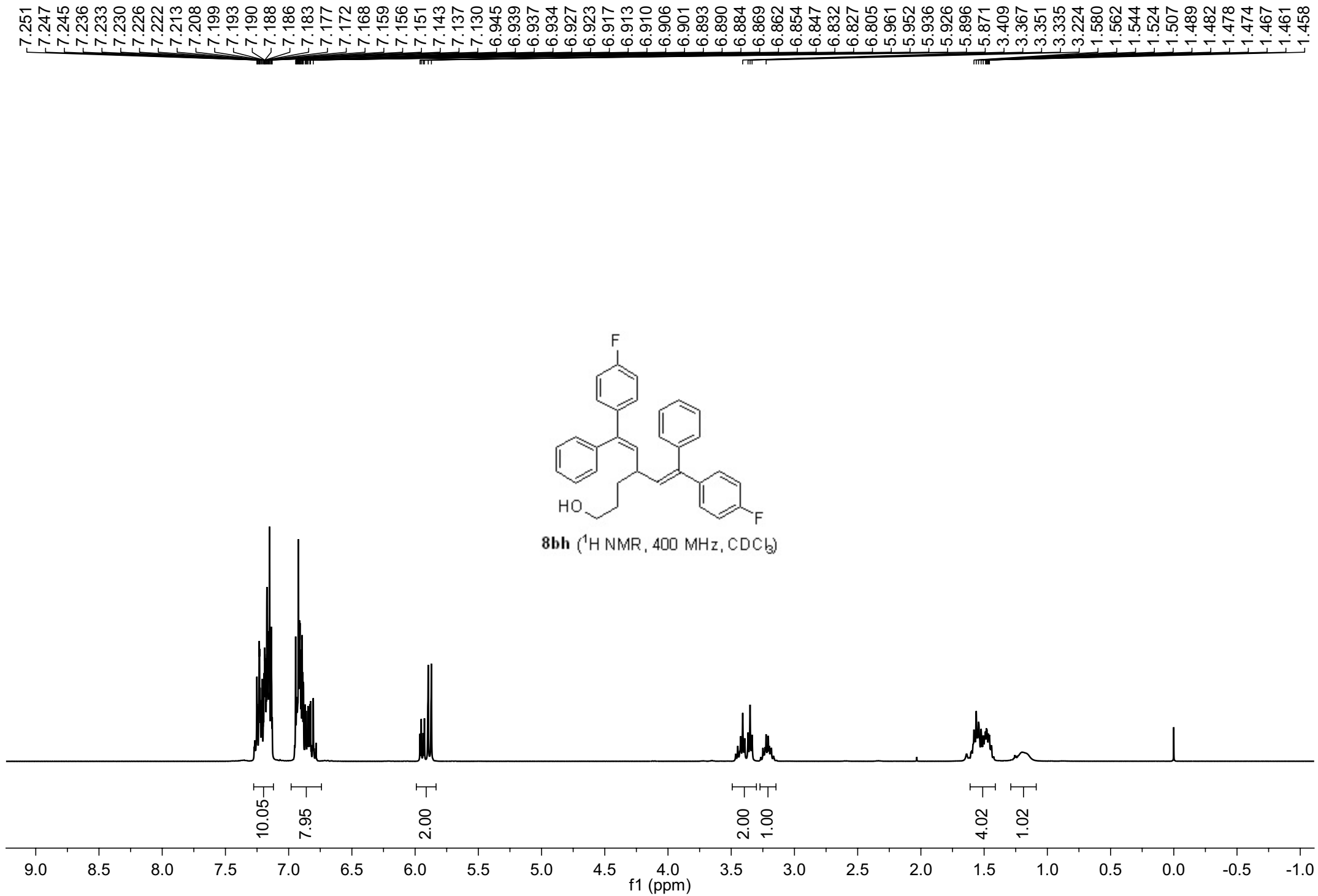


8bg (^{13}C $\{^1\text{H}\}$ NMR, 100 MHz, CDCl_3)

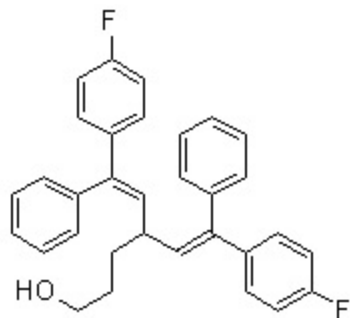
158.907
158.473
139.868
136.026
132.584
130.879
130.293
128.617
113.543
113.437

62.767
55.379
55.165
39.177
33.104
30.237

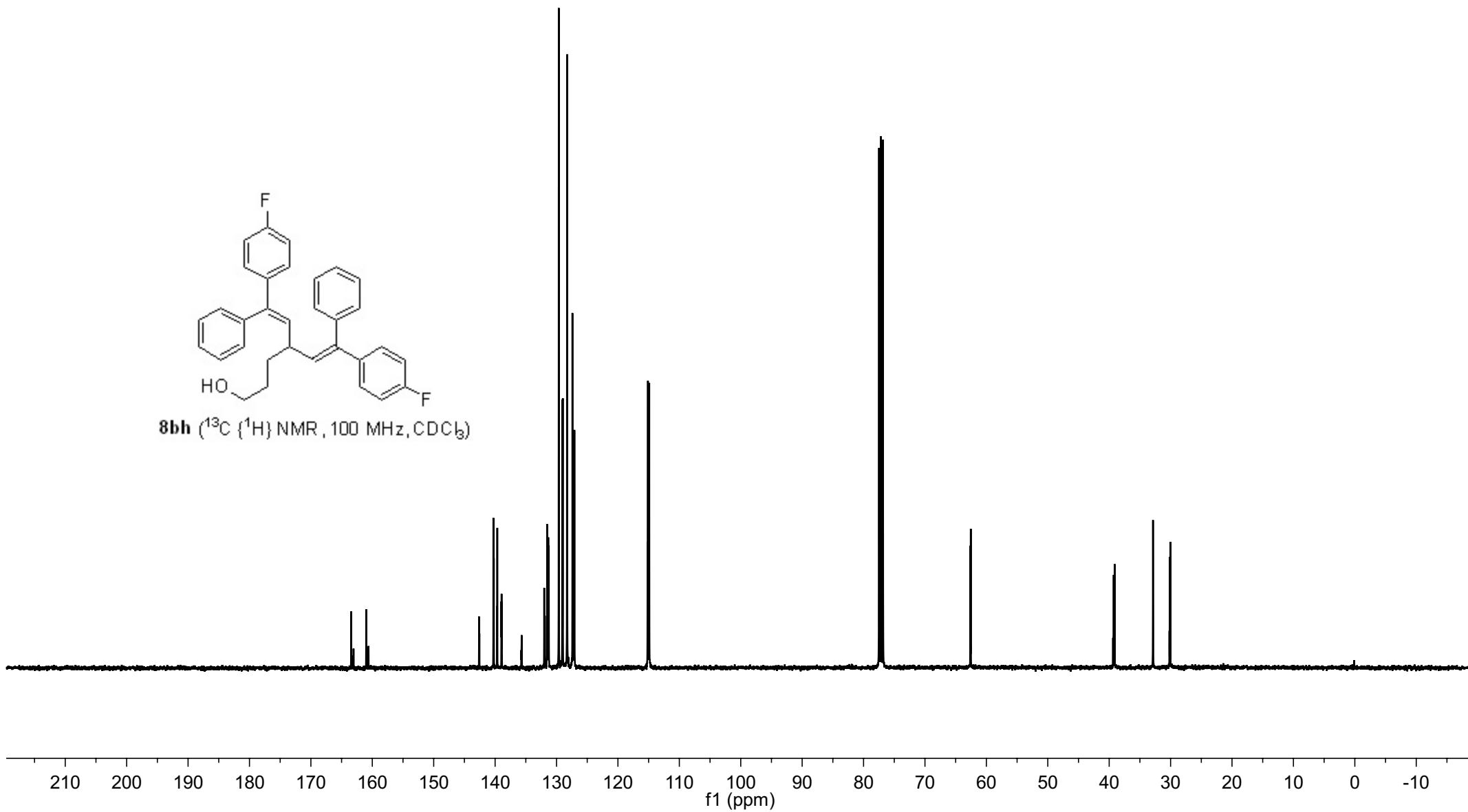




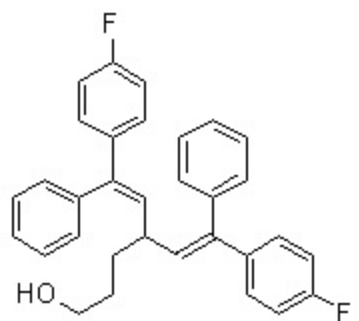
163.437
163.143
163.050
160.989
160.697
160.608
140.279
131.527
129.636
129.055
128.976
128.267
127.408
127.083
117.180
115.154
115.111
114.968
114.942
114.899
62.610
62.541
39.376
39.270
39.107
32.865
30.189
30.129
30.045



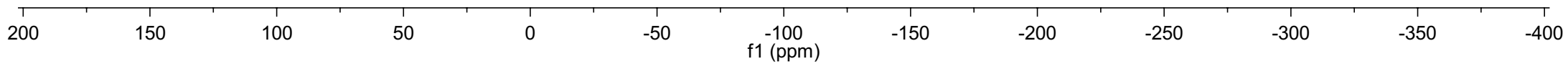
8bh (^{13}C { ^1H } NMR, 100 MHz, CDCl_3)



115.174
115.181
115.522
115.532
115.551
115.563
115.593
115.604

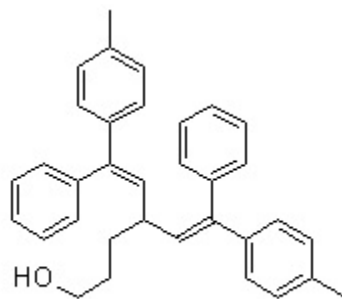


8bh (^{19}F NMR, 376 MHz, CDCl_3)

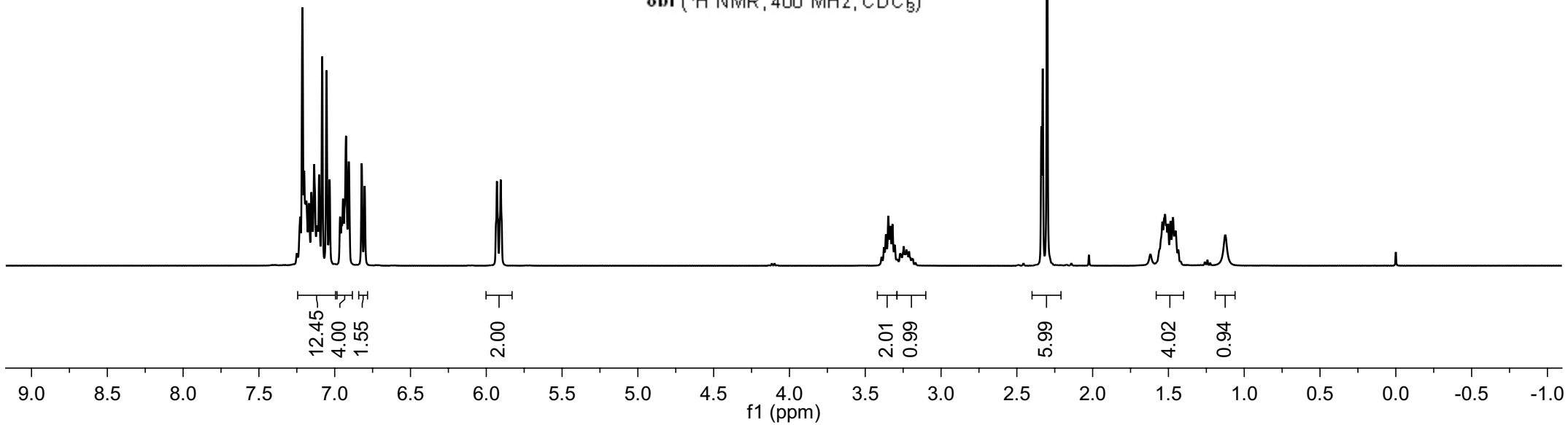


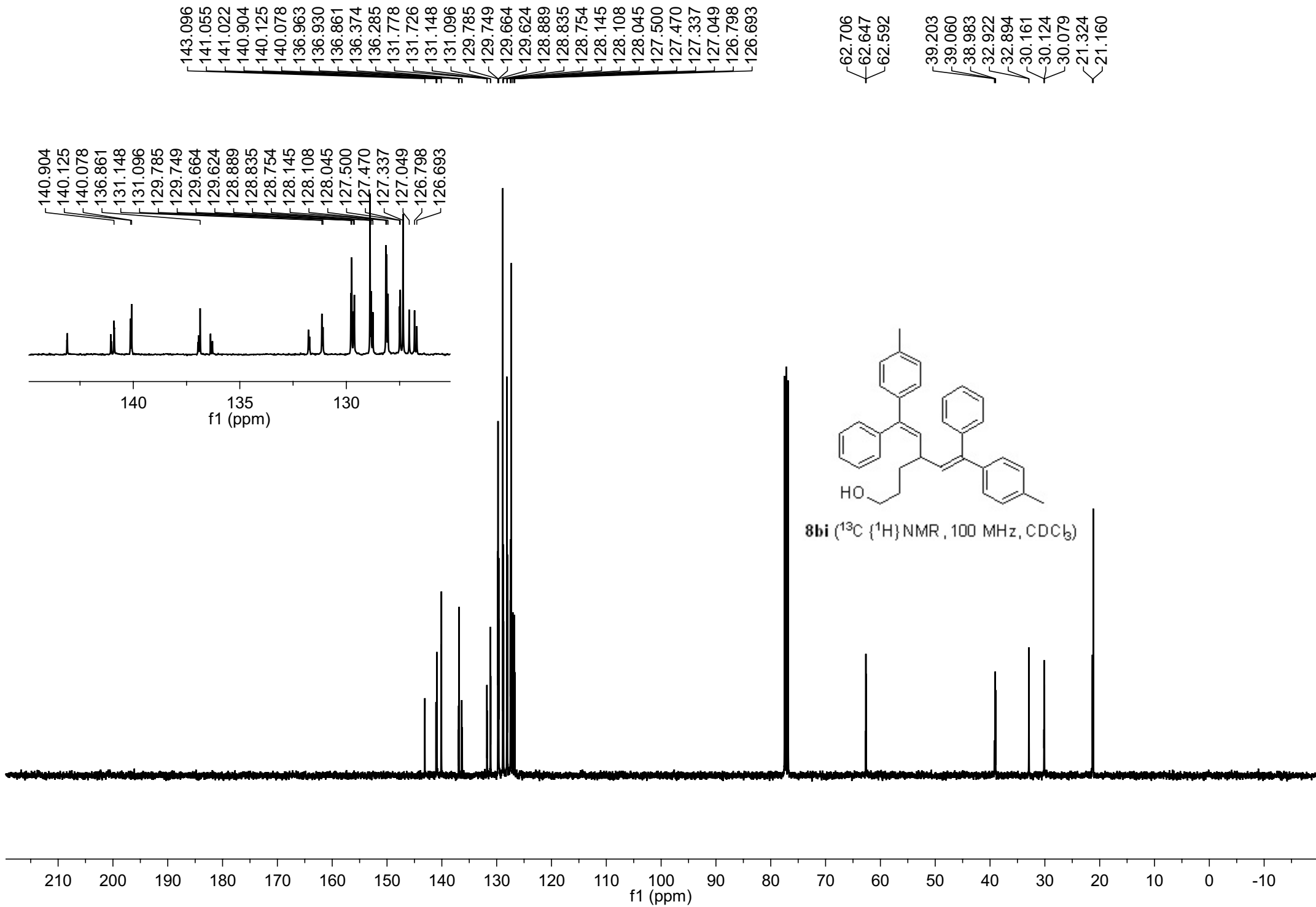
7.227
7.213
7.201
7.193
7.187
7.170
7.154
7.136
7.118
7.114
7.103
7.083
7.054
7.034
6.964
6.954
6.945
6.925
6.907
6.822
6.802
5.930
5.905

3.392
3.376
3.364
3.348
3.335
3.320
3.305
3.287
3.270
3.246
3.236
3.228
3.221
3.211
3.204
3.194
3.186
3.169
2.338
2.329
2.300
1.540
1.522
1.513
1.502
1.486
1.475



8bi (¹H NMR, 400 MHz, CDCl₃)

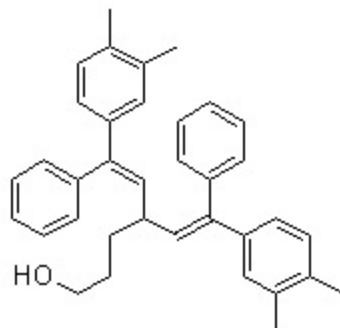




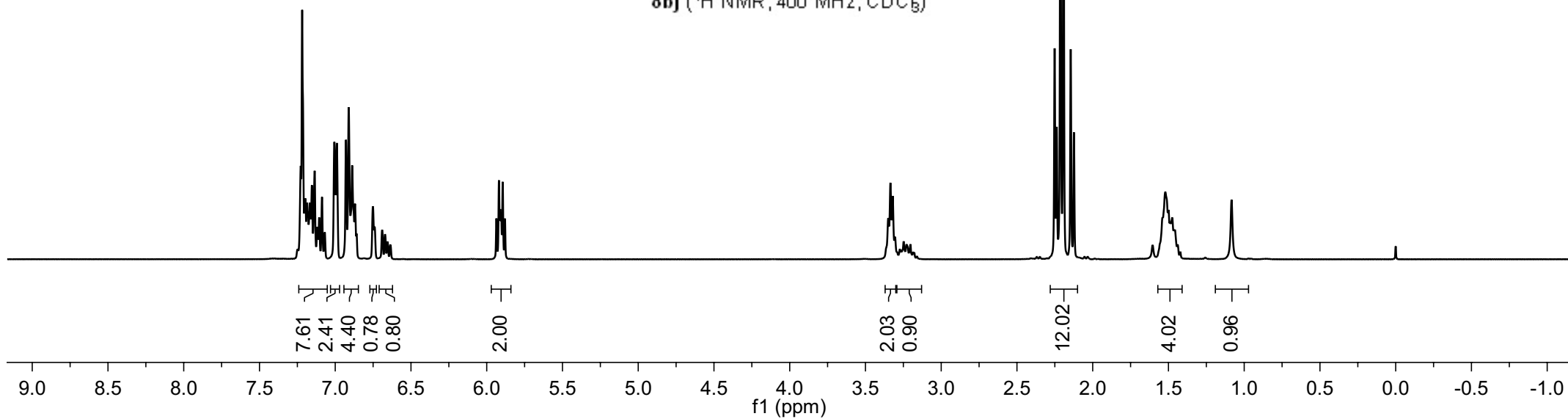
7.228
7.218
7.196
7.187
7.180
7.168
7.154
7.136
7.118
7.106
7.087
7.006
6.989
6.929
6.911
6.888
6.869
6.751
6.740
5.919
5.911
5.905
5.894
5.880

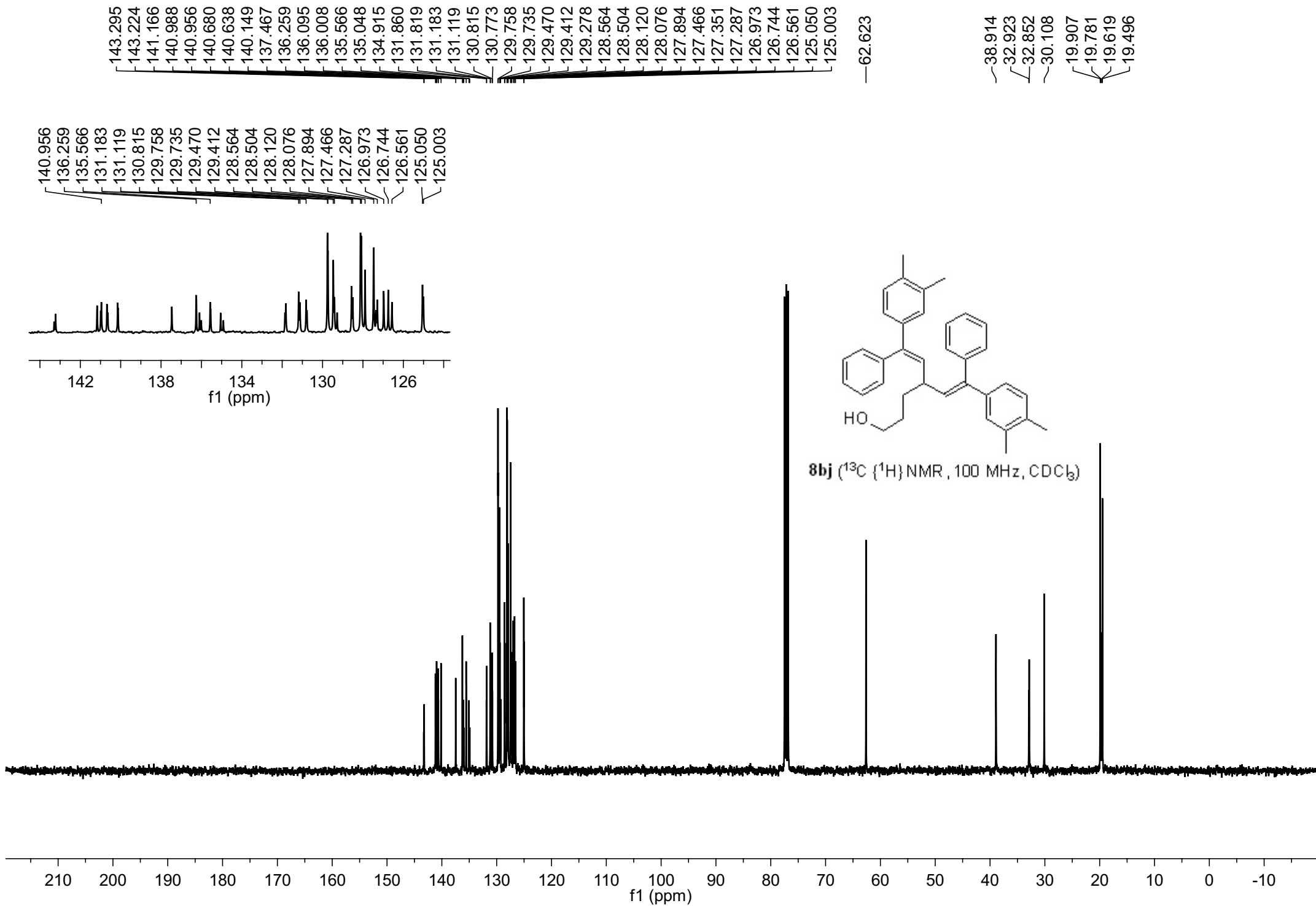
3.350
3.335
3.320
3.305
3.291
3.273
3.265
3.248
3.229
3.203
3.185
3.178
3.160

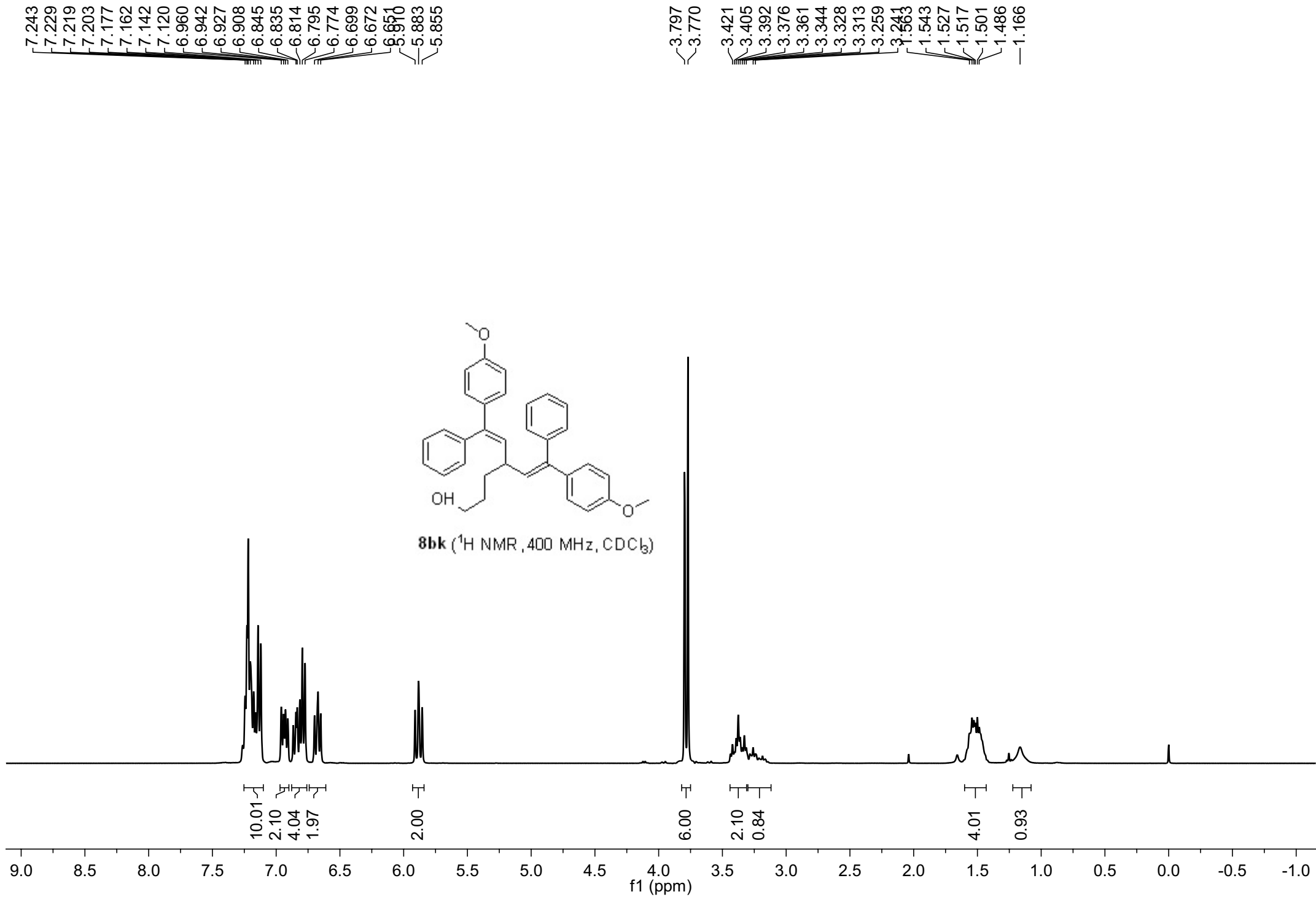
2.251
2.238
2.213
2.193
2.145
1.539
1.521
1.500
1.475



8bj (¹H NMR, 400 MHz, CDCl₃)

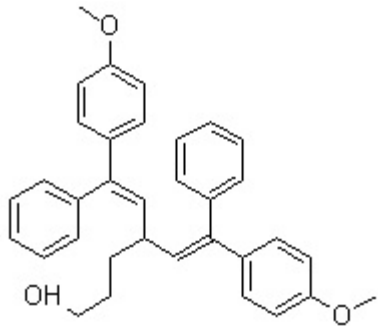




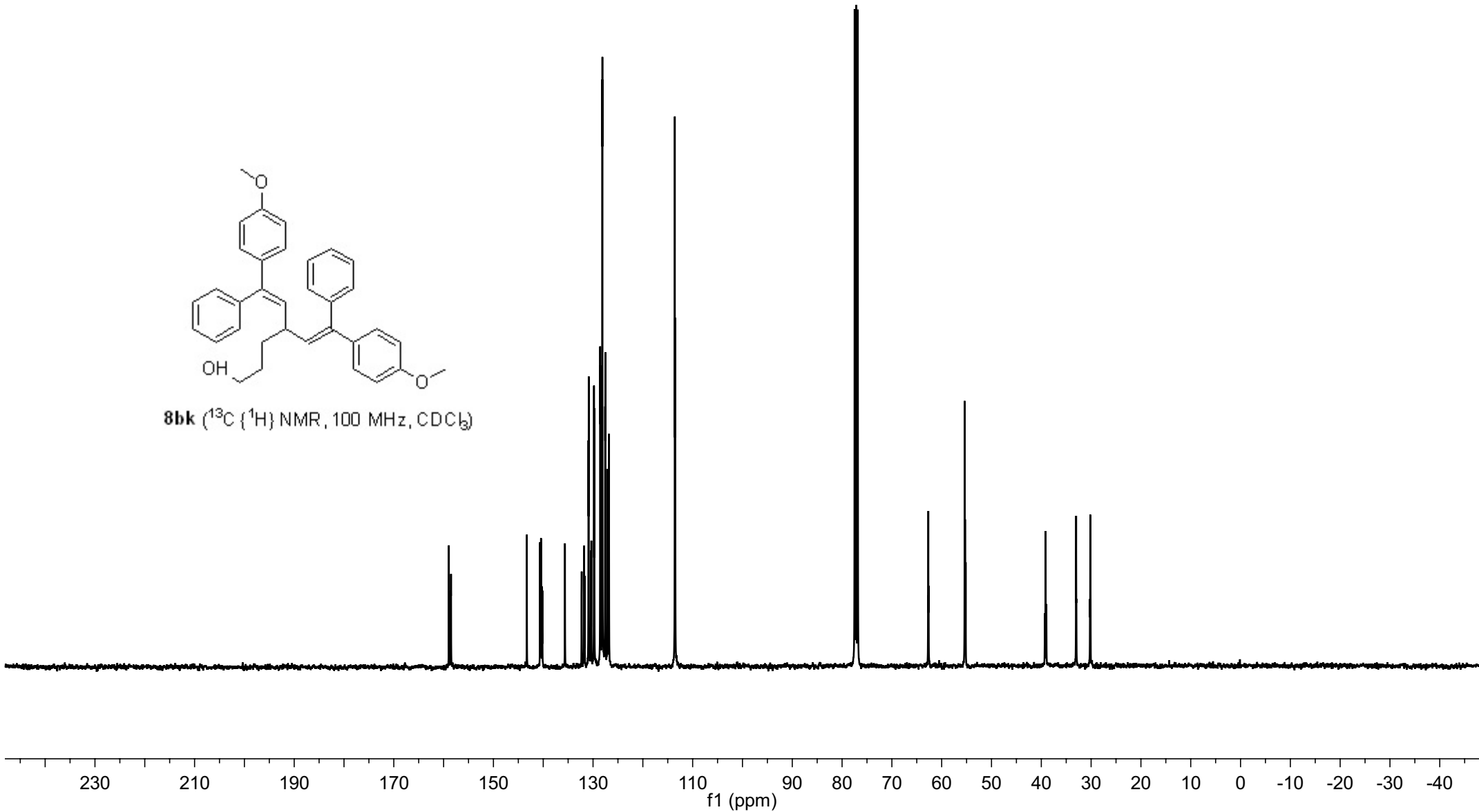


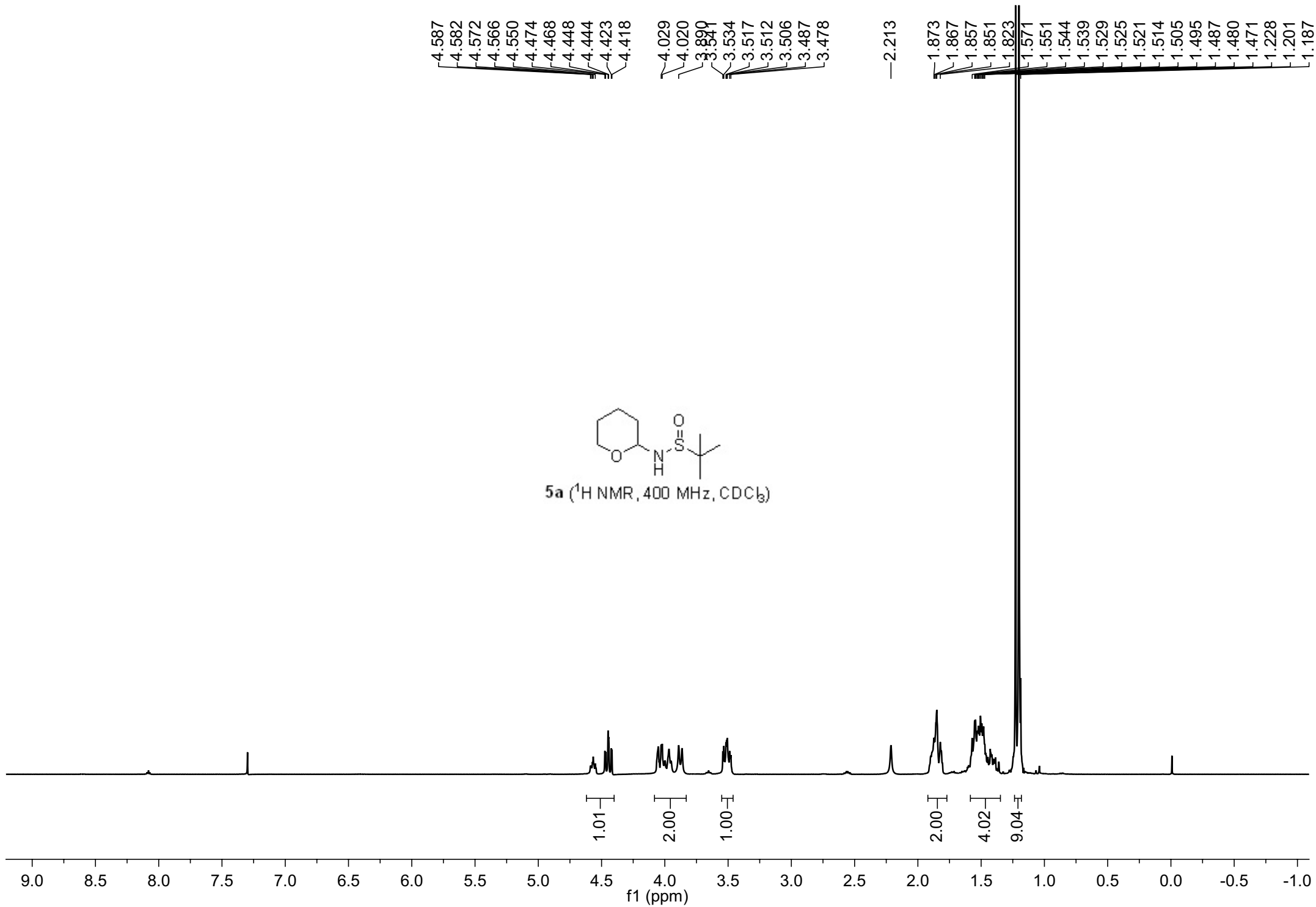
158.944
158.536
158.507
130.867
129.807
128.568
128.531
128.147
128.116
117.533
113.584
113.525
113.486

62.737
62.684
62.622
55.390
55.300
55.179
39.296
39.127
38.977
33.005
32.955
30.230
30.169
30.105



8bk (¹³C {¹H} NMR, 100 MHz, CDCl₃)



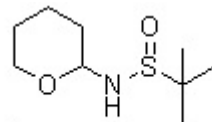


86.193
84.885

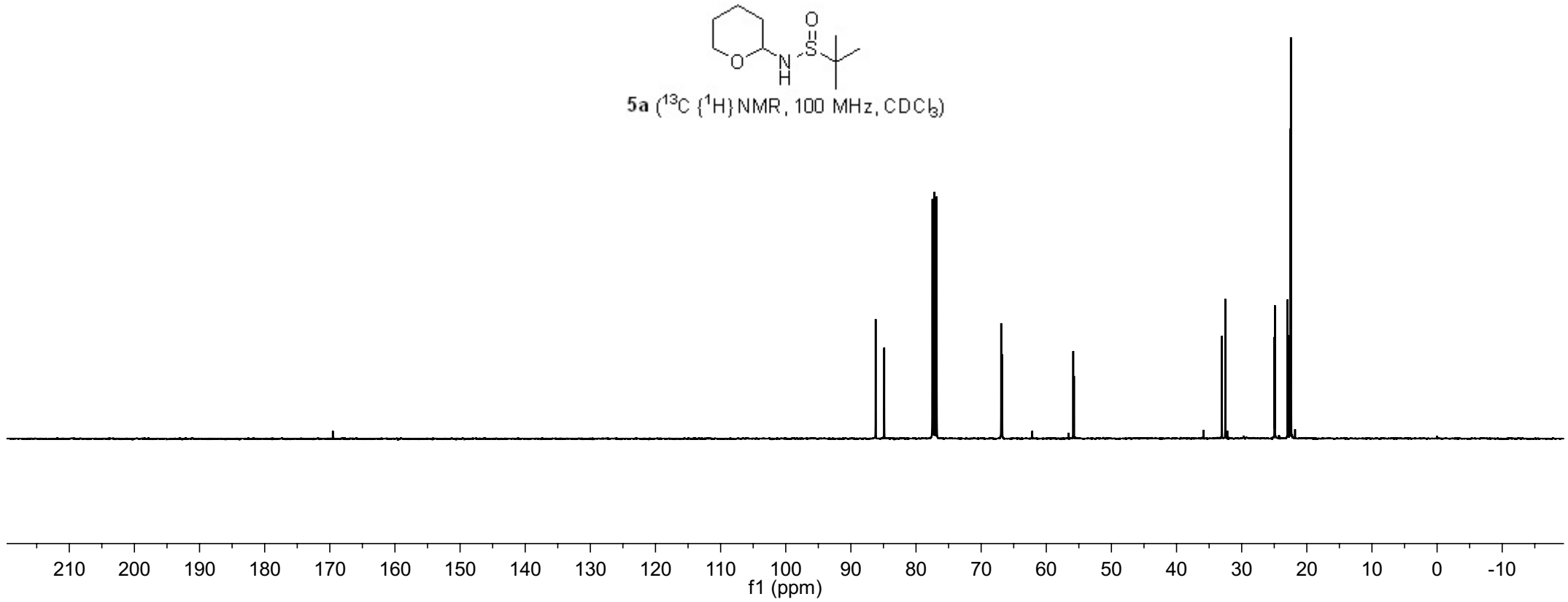
66.924
66.770

55.862
55.743

33.047
32.511
24.968
24.900
22.948
22.868
22.529
22.450



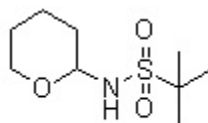
5a (¹³C {¹H} NMR, 100 MHz, CDCl₃)



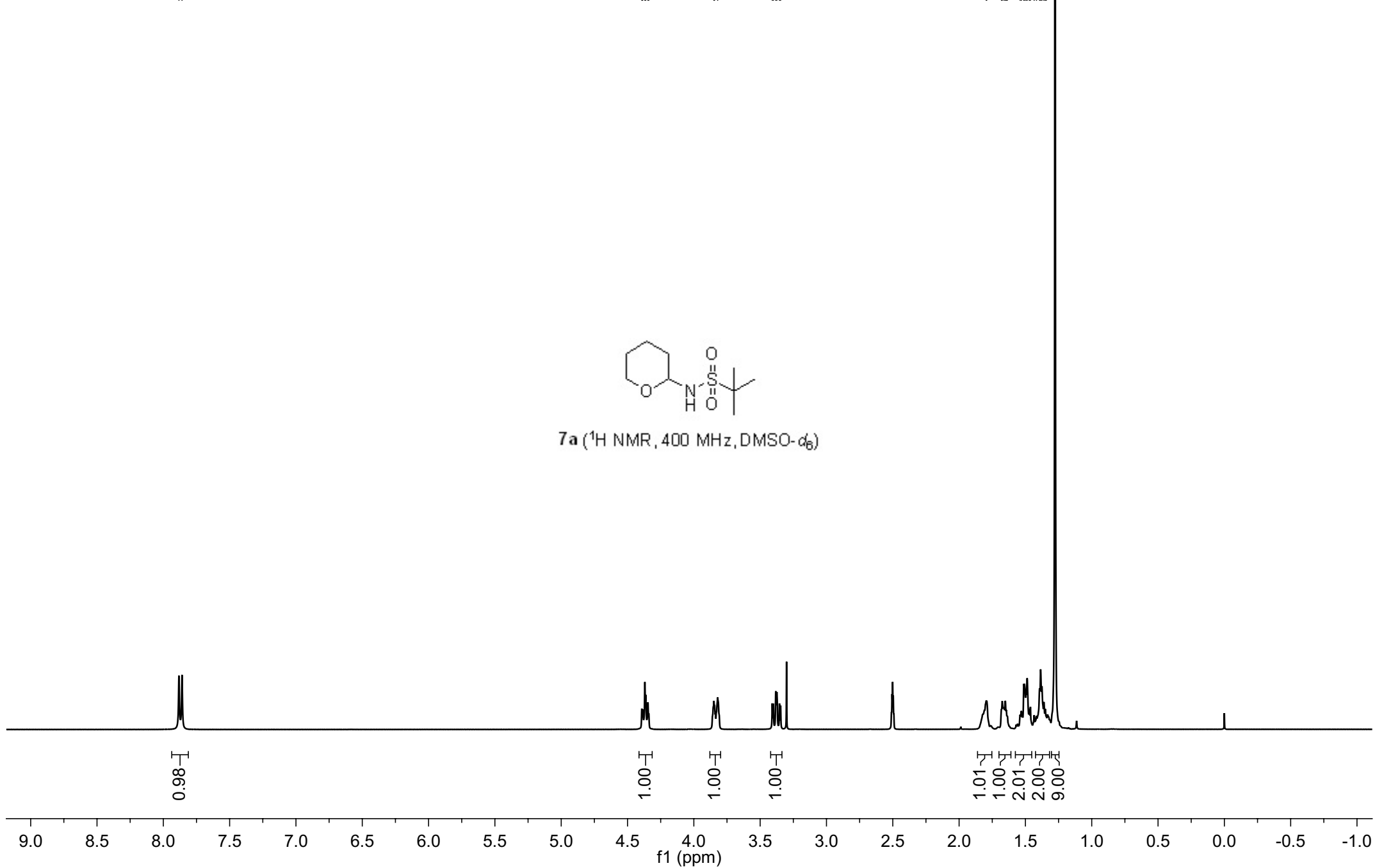
7.882
7.859

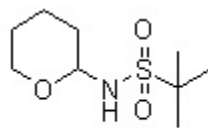
4.392
4.386
4.369
4.363
4.346
4.340
3.849
3.844
3.829
3.809
3.401
3.382
3.374
3.354
3.346

1.795
1.792
1.681
1.675
1.661
1.652
1.644
1.637
1.540
1.531
1.512
1.507
1.496
1.487
1.471
1.462
1.434
1.416
1.393
1.385
1.376
1.361
1.350
1.343
1.277



7a (¹H NMR, 400 MHz, DMSO-d₆)





7a (^{13}C { ^1H } NMR, 100 MHz, DMSO- d_6)

—81.698

—65.771

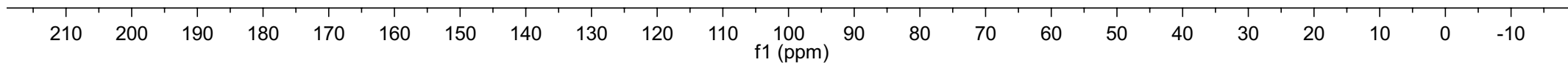
—58.161

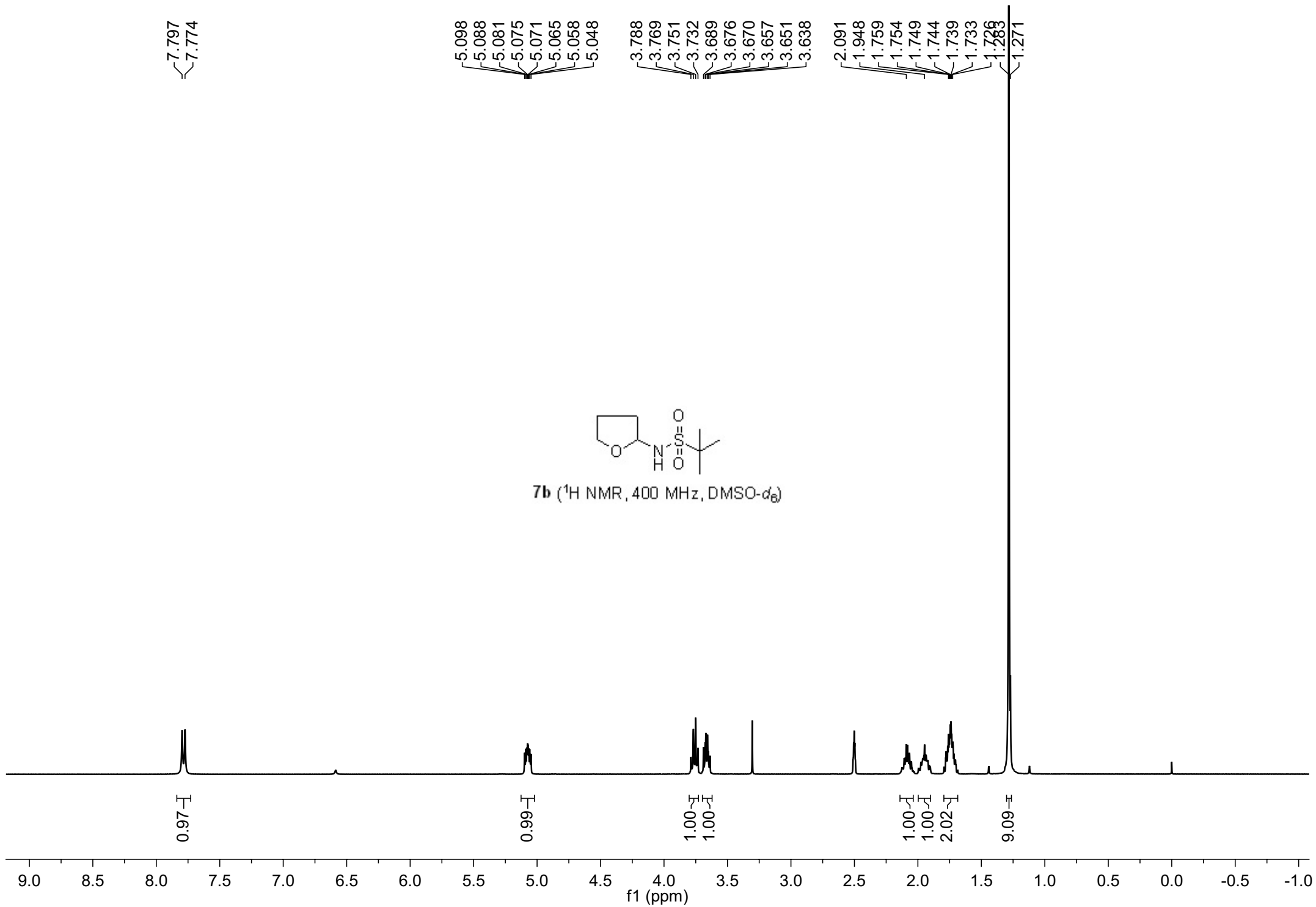
—31.801

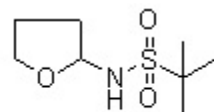
—24.550

—23.719

—22.422







7b (^{13}C { ^1H } NMR, 100 MHz, $\text{DMSO-}d_6$)

—84.497

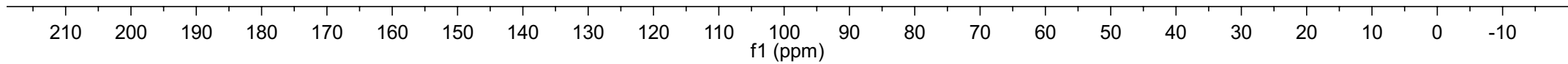
—66.012

—57.992

—31.694

—24.035

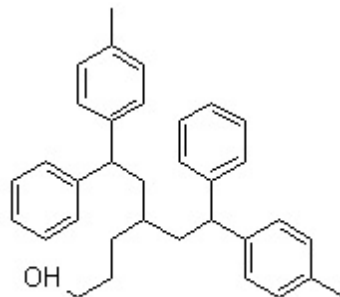
—23.774



7.240
7.224
7.206
7.188
7.173
7.142
7.124
7.107
7.086
7.066
7.039
7.020
7.004
6.990
6.970

3.925
3.906
3.887
3.426
3.411
3.401

2.285
2.055
2.038
2.022
2.006
1.985
1.965
1.947
1.930
1.913
1.897
1.419
1.404
1.363
1.348
1.328
1.312
1.293
1.272
1.254
1.235
1.217
1.072



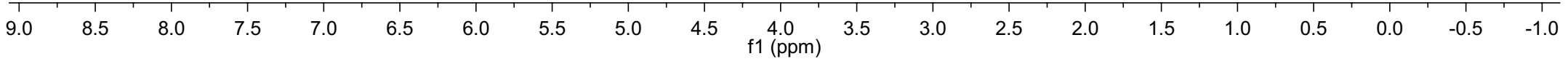
9 (¹H NMR, 400 MHz, CDCl₃)

4.03
6.00
7.93

2.00
2.00

6.04
4.02

2.00
2.00
1.17
0.91



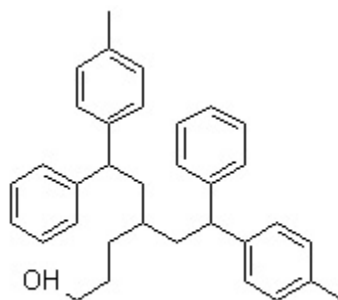
145.351
145.052
145.028
142.122
141.869
141.836
135.498
129.099
128.385
128.367
127.878
127.797
127.771
125.971

—63.036

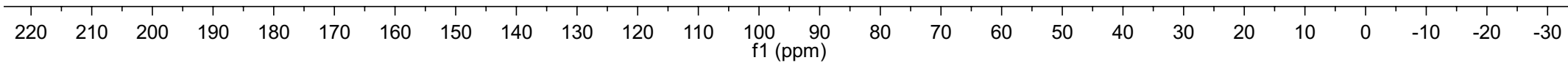
—48.172

40.575
40.511

32.095
29.263
28.991
28.995



9 (¹³C {¹H} NMR, 100 MHz, CDCl₃)

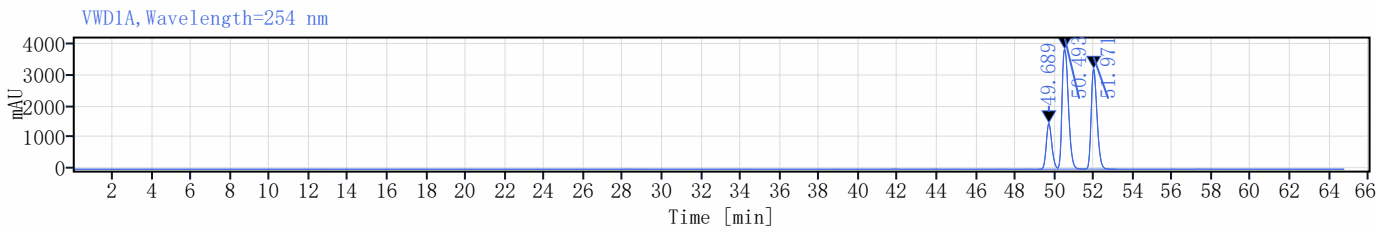


Single Injection Report



Agilent Technologies

Data file: FD_HPLC_012-2021-01-07 19-16-03+08-00. dx
Inj. volume: 5.000
Sequence Name: Single Sample
Sample name: 6aj
Instrument: FD_HPLC_012
Processing method: Method 1. pmx
Location: P1-A3



Signal: VWD1A, Wavelength=254 nm

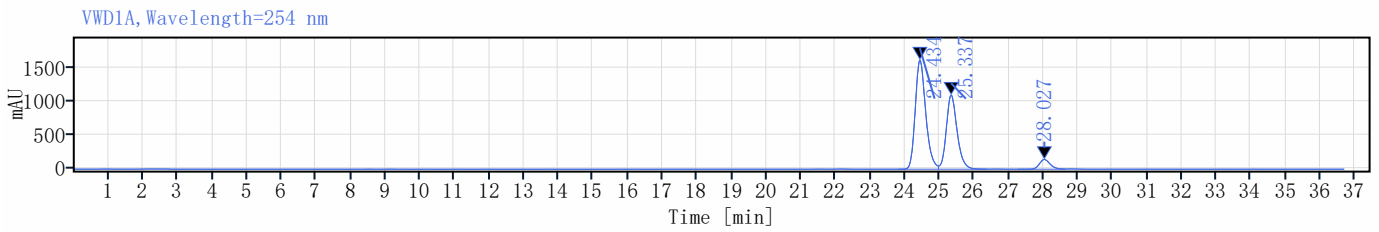
RT[min]	Type	Width[min]	Area	Height	Area%
49.689	BV	0.98	28955.91	1465.71	15.93
50.493	VB	1.38	86601.74	3838.79	47.64
51.971	BB	1.61	66217.99	3212.39	36.43
	Sum		181775.64		

Single Injection Report



Agilent Technologies

Data file: FD_HPLC_010-2021-01-11 16-20-53+08-00. dx
Inj. volume: 2.000
Sequence Name: Single Sample
Sample name: 6ak
Instrument: FD_HPLC_010
Processing method: Method 1. pmx
Location: P1-A1



Signal: VWD1A, Wavelength=254 nm

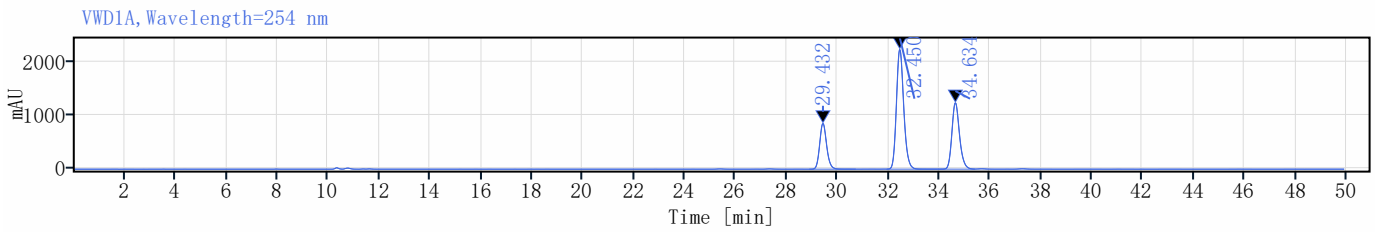
RT[min]	Type	Width[min]	Area	Height	Area%
24.434	BV	1.16	34085.54	1619.52	55.79
25.337	VV	1.40	23881.28	1099.14	39.09
28.027	BV	1.37	3124.86	144.43	5.12
	Sum		61091.68		

Single Injection Report



Agilent Technologies

Data file: FD_HPLC_012-2021-01-08 12-34-18+08-00. dx
Inj. volume: 5.000
Sequence Name: Single Sample
Sample name: 6a1
Instrument: FD_HPLC_012
Processing method: Method 1. pmx
Location: P1-A7



Signal: VWD1A, Wavelength=254 nm

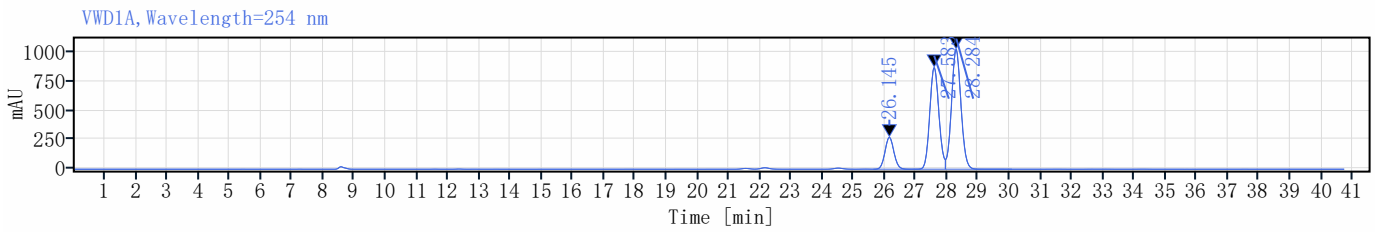
RT[min]	Type	Width[min]	Area	Height	Area%
29.432	BB	1.83	16058.57	847.26	18.76
32.450	VB	1.99	43979.51	2221.47	51.38
34.634	BV	1.48	25550.45	1230.71	29.85
	Sum		85588.53		

Single Injection Report



Agilent Technologies

Data file: FD_HPLC_010-2021-01-11 17-39-47+08-00. dx
Inj. volume: 2.000
Sequence Name: Single Sample
Sample name: 8bh
Instrument: FD_HPLC_010
Processing method: Method 1. pmx
Location: P1-A3



Signal: VWD1A, Wavelength=254 nm

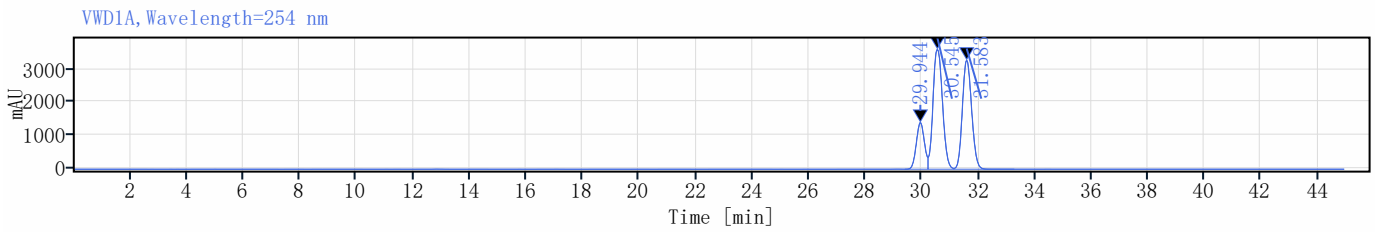
RT[min]	Type	Width[min]	Area	Height	Area%
26.145	VB	1.21	5418.12	270.91	12.14
27.583	BV	1.10	17684.43	865.86	39.62
28.284	VB	2.13	21536.93	1020.37	48.25
	Sum		44639.48		

Single Injection Report



Agilent Technologies

Data file: FD_HPLC_010-2021-01-11 20-02-28+08-00. dx
Inj. volume: 5.000
Sequence Name: Single Sample
Sample name: 8bi
Instrument: FD_HPLC_010
Processing method: Method 1. pmx
Location: P1-A5



Signal: VWD1A, Wavelength=254 nm

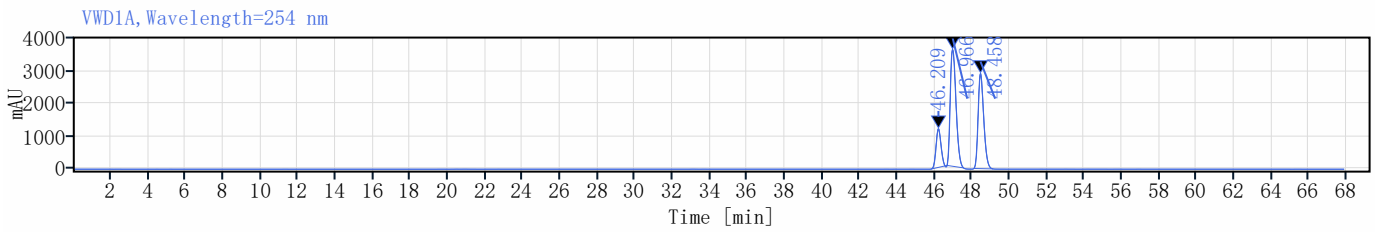
RT[min]	Type	Width[min]	Area	Height	Area%
29.944	BV	0.82	27946.27	1397.99	15.01
30.545	VV	0.91	83885.05	3591.13	45.06
31.583	VB	2.14	74342.66	3264.77	39.93
	Sum		186173.98		

Single Injection Report



Agilent Technologies

Data file: FD_HPLC_012-2021-01-07 18-12-28+08-00. dx
Inj. volume: 5.000
Sequence Name: Single Sample
Sample name: 8bj
Instrument: FD_HPLC_012
Processing method: Method 1. pmx
Location: P1-A2



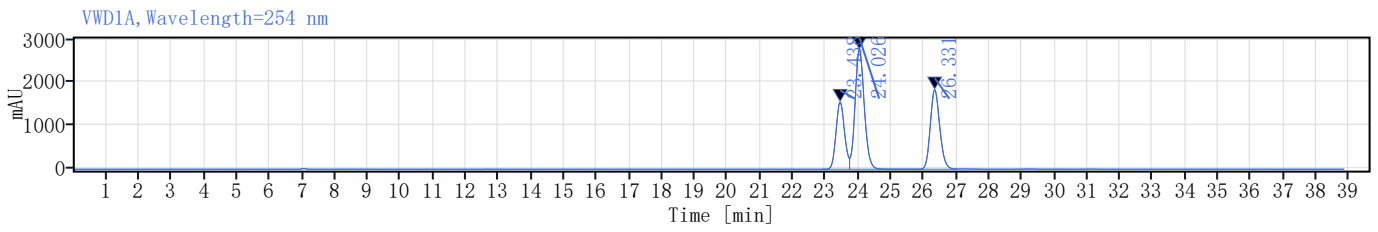
Signal: VWD1A, Wavelength=254 nm

RT[min]	Type	Width[min]	Area	Height	Area%
46.209	MM m	0.83	21618.30	1189.40	13.57
46.966	MM m	0.88	76876.80	3589.03	48.25
48.458	MM m	1.02	60833.05	2927.07	38.18
		Sum	159328.15		

Single Injection Report



Data file: FD_HPLC_010-2021-01-11 16-58-59+08-00. dx
Inj. volume: 0.700
Sequence Name: Single Sample
Sample name: 8bk
Instrument: FD_HPLC_010
Processing method: Method 1. pmx
Location: P1-A2



Signal: VWD1A, Wavelength=254 nm

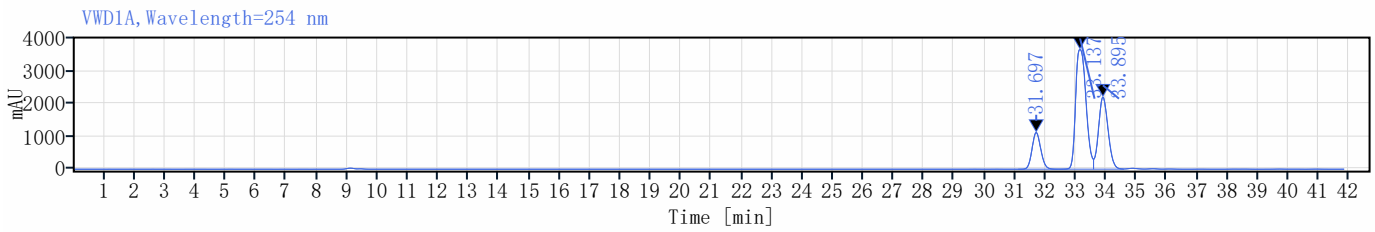
RT[min]	Type	Width[min]	Area	Height	Area%
23.438	BV	0.85	28179.94	1552.03	23.59
24.026	VB	2.03	54345.32	2769.35	45.49
26.331	BV	1.26	36942.33	1836.68	30.92
	Sum		119467.59		

Single Injection Report



Agilent Technologies

Data file: FD_HPLC_010-2021-01-11 21-25-40+08-00. dx
Inj. volume: 5.000
Sequence Name: Single Sample
Sample name: 6ah
Instrument: FD_HPLC_010
Processing method: Method 1. pmx
Location: P1-A6



Signal: VWD1A, Wavelength=254 nm

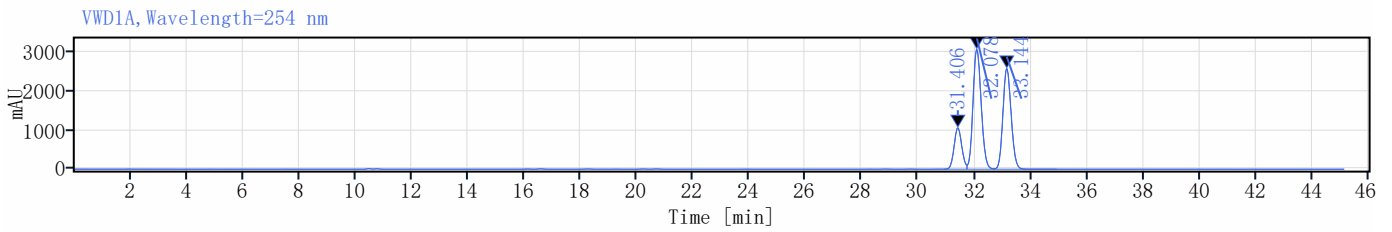
RT[min]	Type	Width[min]	Area	Height	Area%
31.697	BB	1.33	22689.41	1129.91	14.29
33.137	BV	1.15	87256.84	3683.78	54.96
33.895	VV	0.99	48817.07	2217.64	30.75
	Sum		158763.32		

Single Injection Report



Agilent Technologies

Data file: FD_HPLC_010-2021-01-11 19-15-20+08-00. dx
Inj. volume: 5.000
Sequence Name: Single Sample
Sample name: 6ai
Instrument: FD_HPLC_010
Processing method: Method 1. pmx
Location: P1-A4



Signal: VWD1A, Wavelength=254 nm

RT[min]	Type	Width[min]	Area	Height	Area%
31.406	BV	0.83	20310.43	1067.21	14.90
32.078	VV	0.96	63020.27	3095.30	46.25
33.144	VB	2.23	52938.48	2601.55	38.85
	Sum		136269.18		