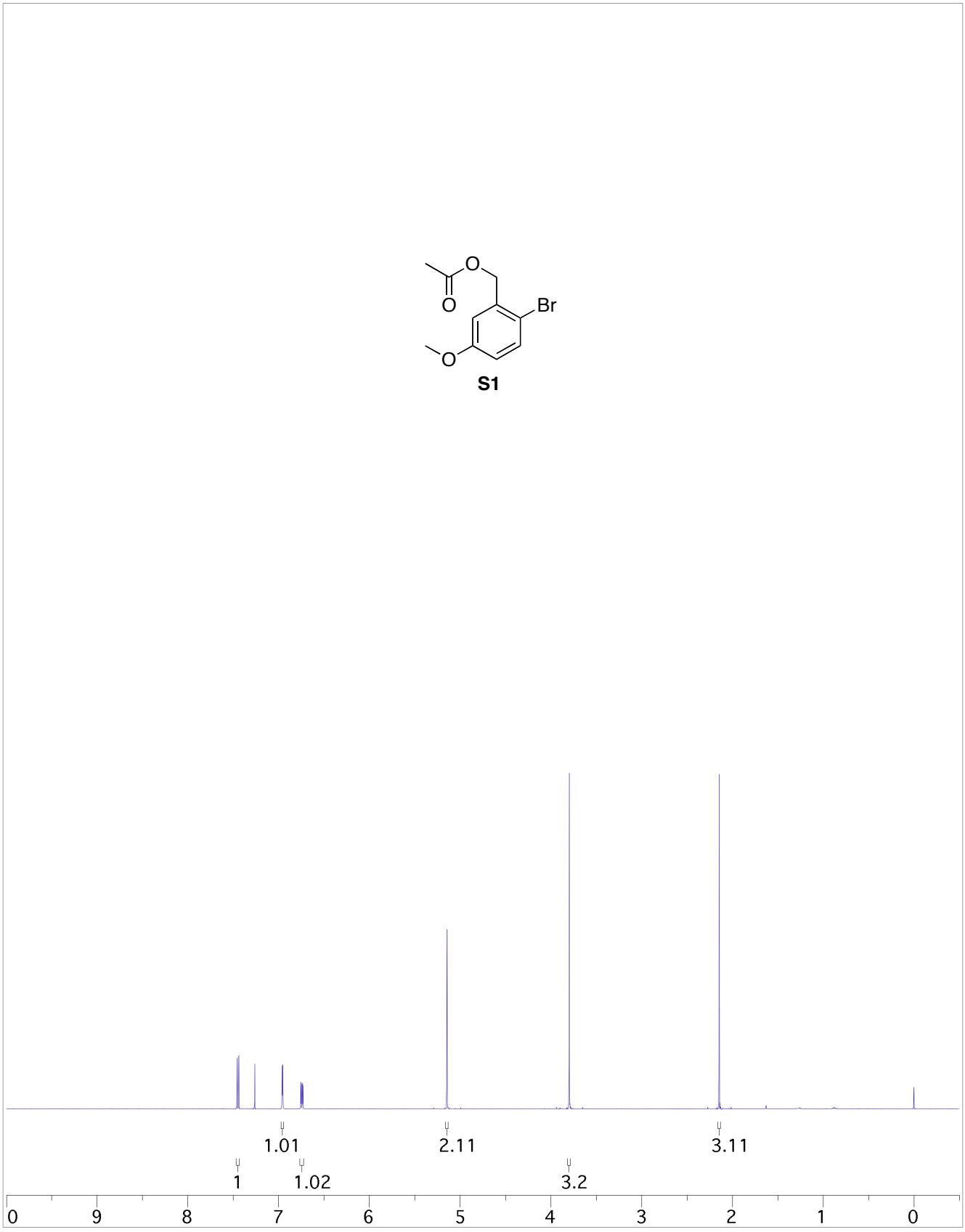
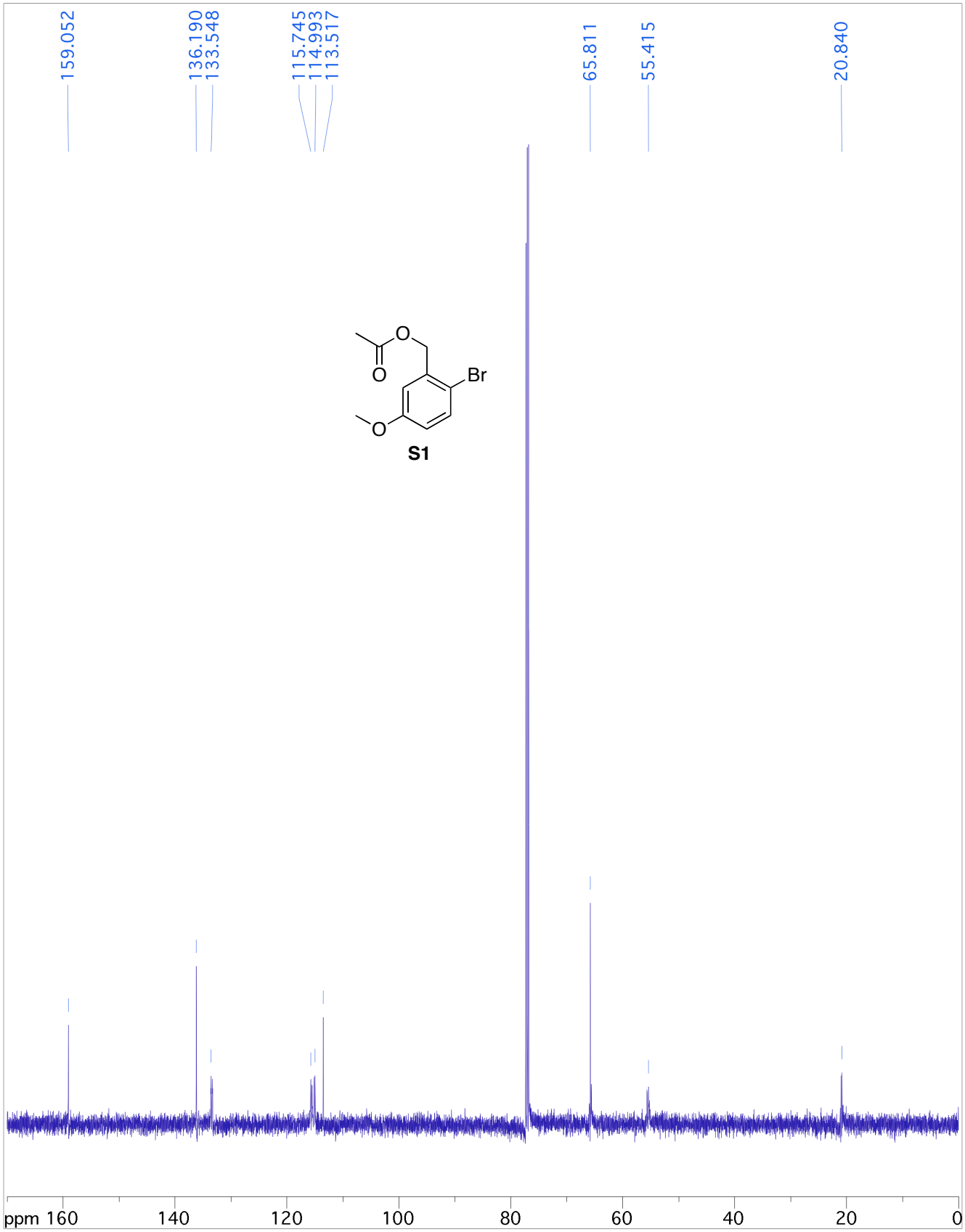
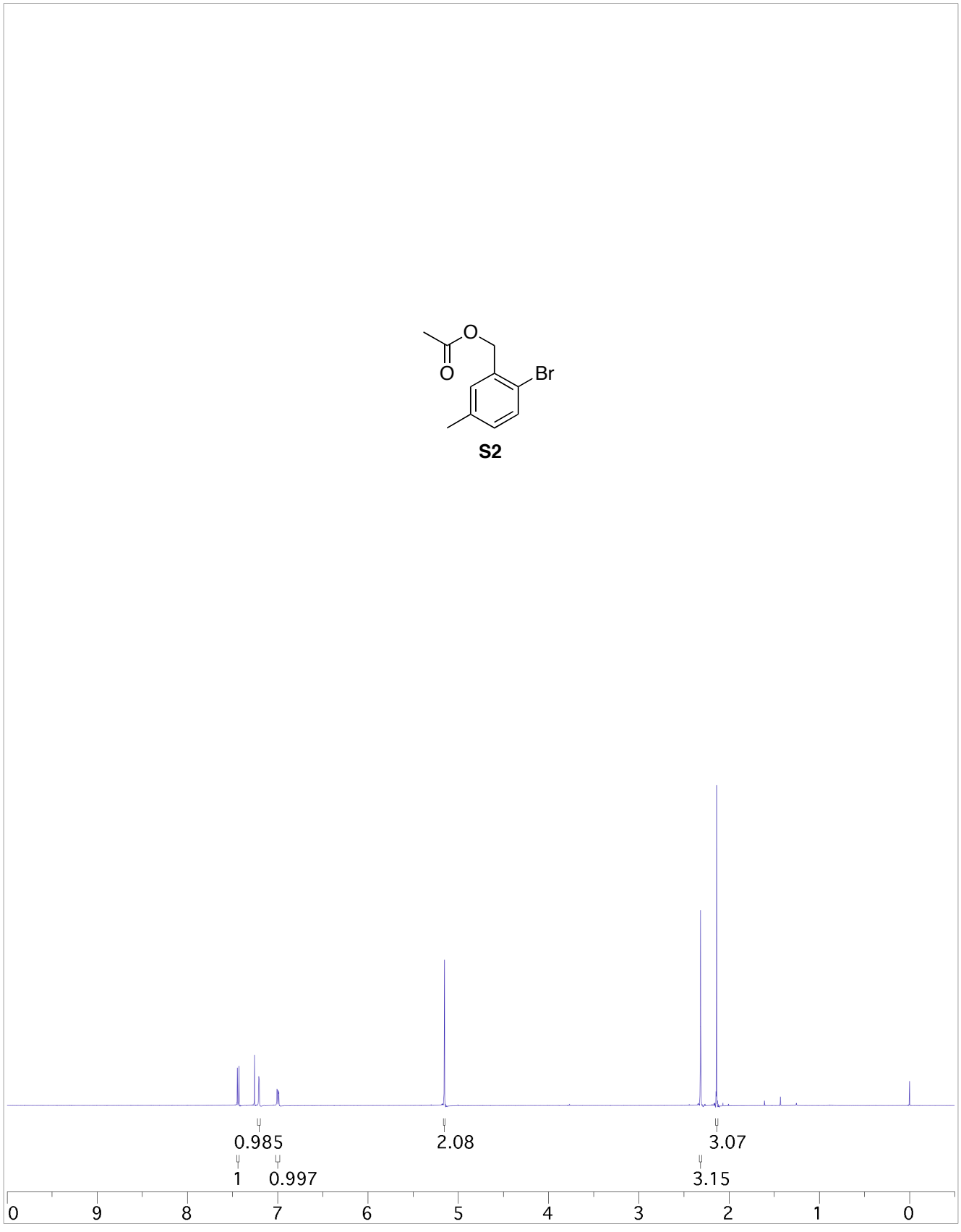
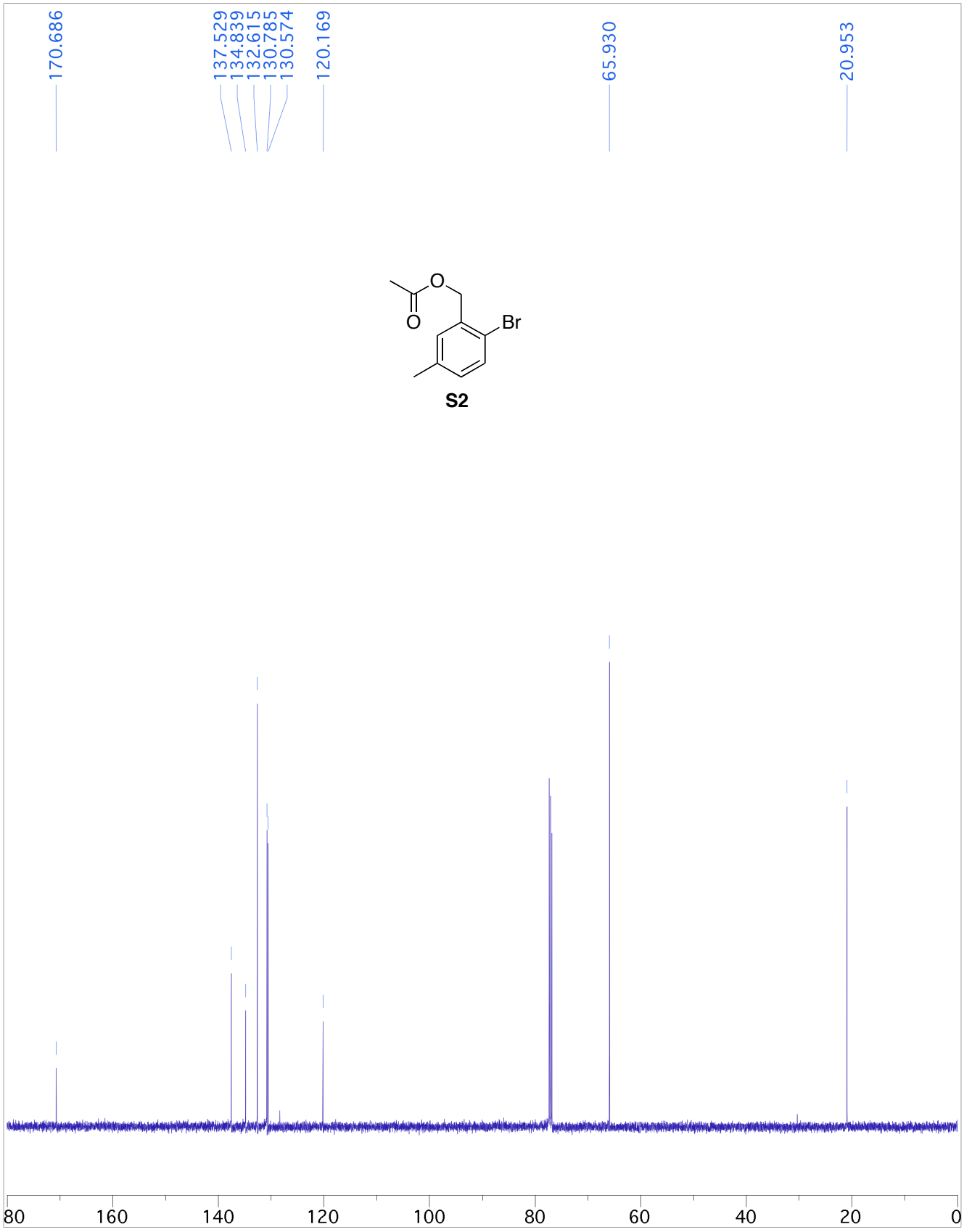
L. NMR SPECTRA OF NEW COMPOUNDS

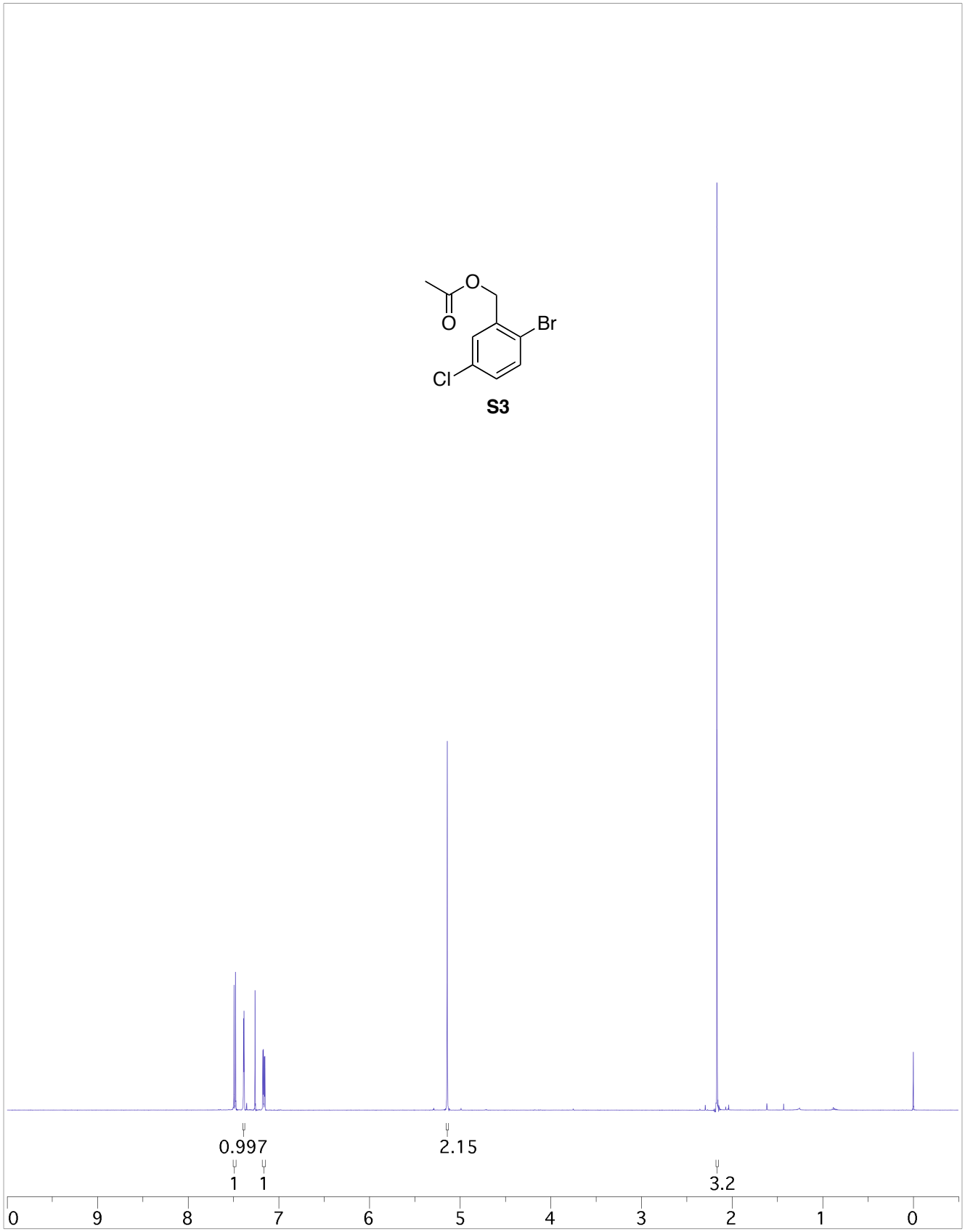


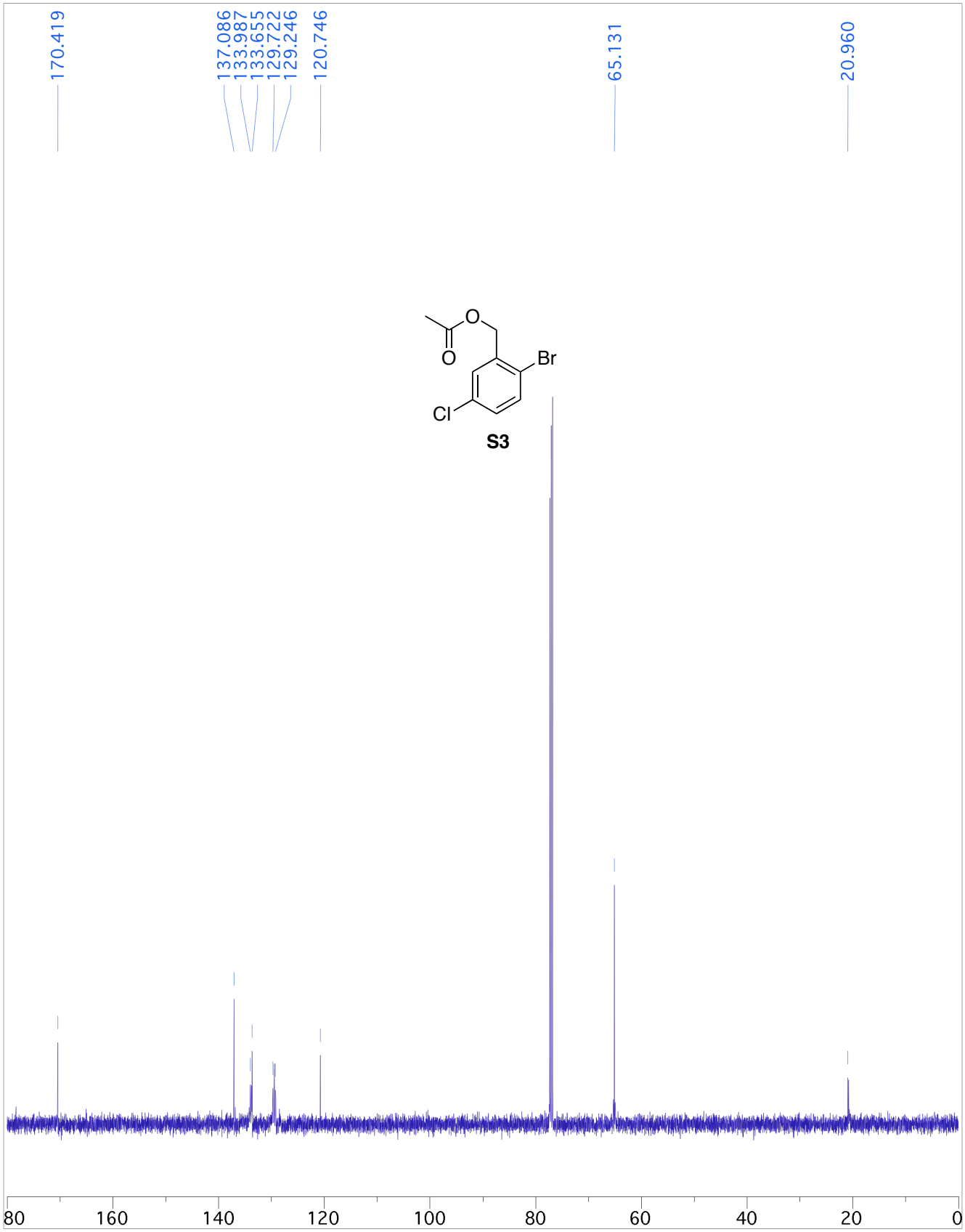
S1


159.052
136.190
133.548
115.745
114.993
113.517
65.811
55.415
20.840
O
O
Br
O
S1
ppm 160
140
120
100
80
60
40
20
0

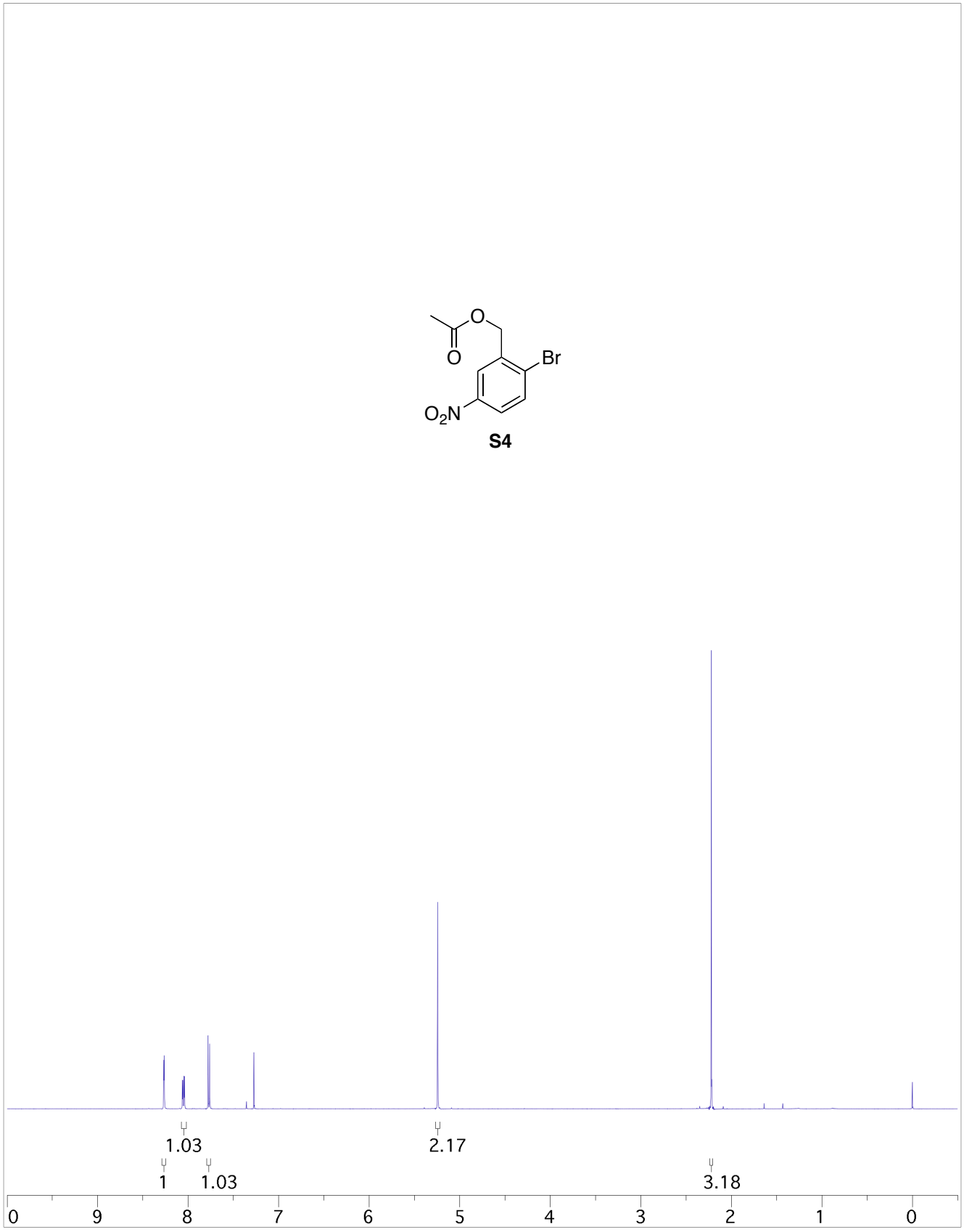

O
O
Br
S2
0.985
2.08
3.07
1
0.997
3.15
0
9
8
7
6
5
4
3
2
1
0

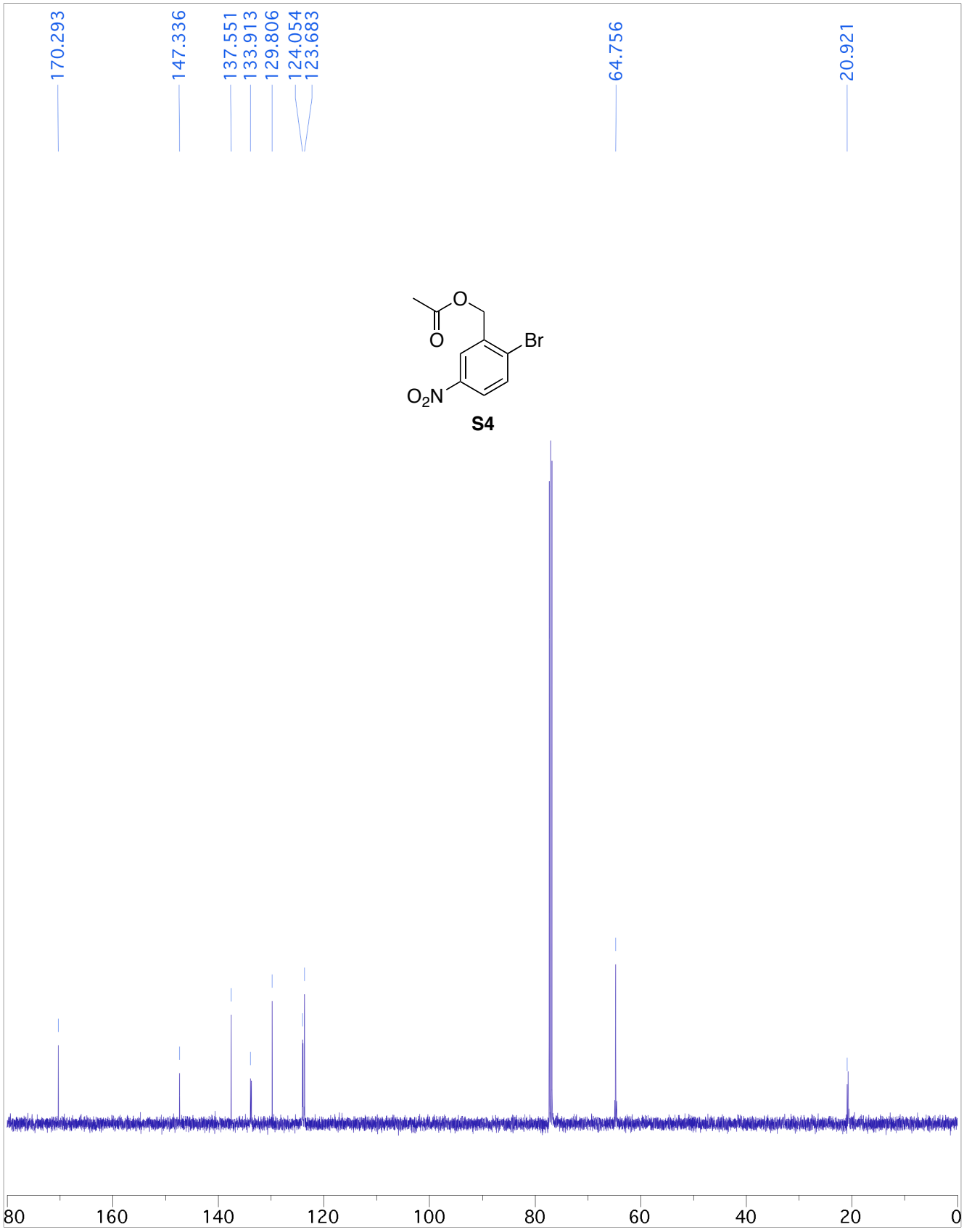

170.686
137.529
134.839
132.615
130.785
130.574
120.169
65.930
20.953
O
O
Br
S2
80
160
140
120
100
80
60
40
20
0

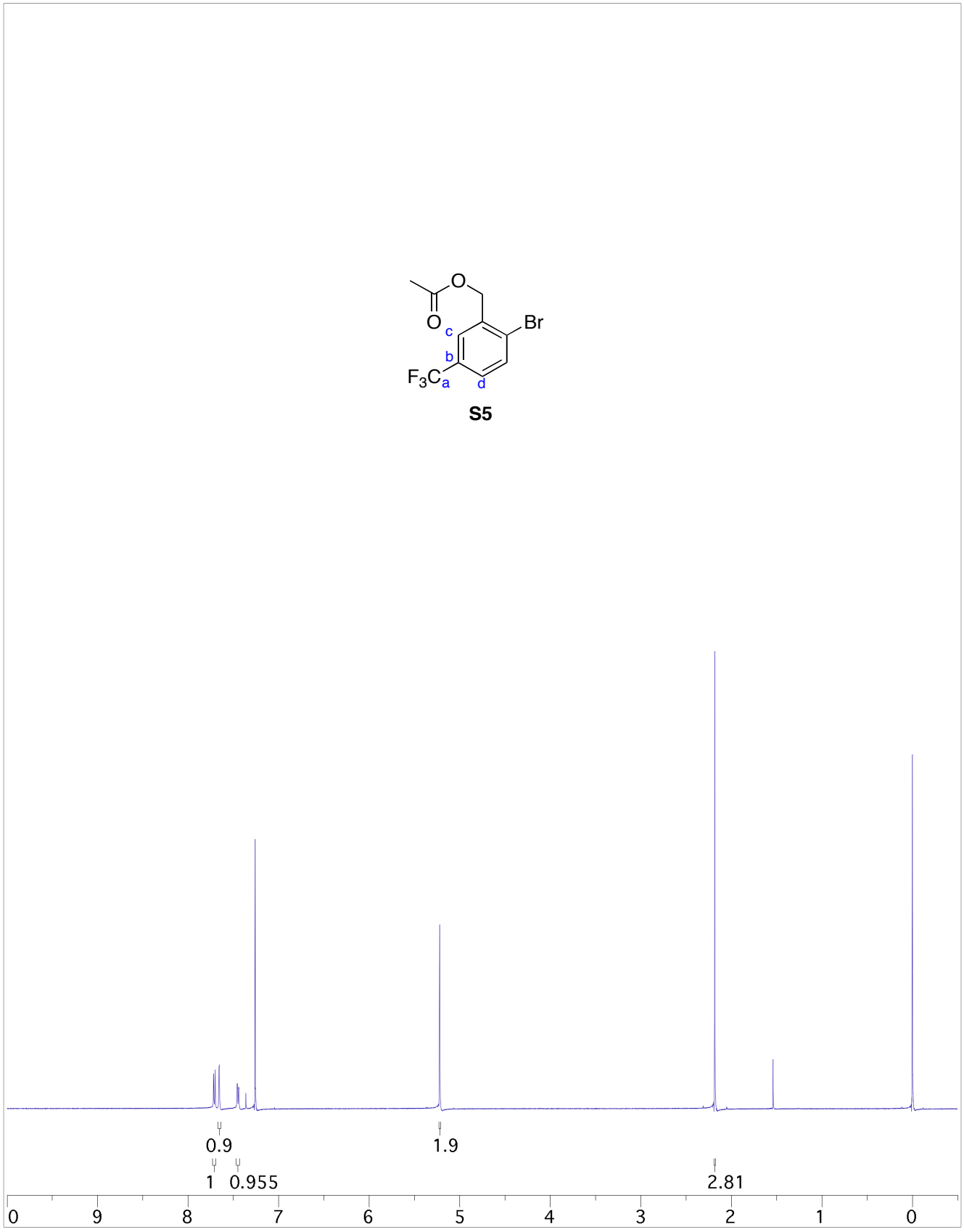

O
O
Br
Cl
S3
0.997
2.15
1
1
3.2
0
9
8
7
6
5
4
3
2
1
0

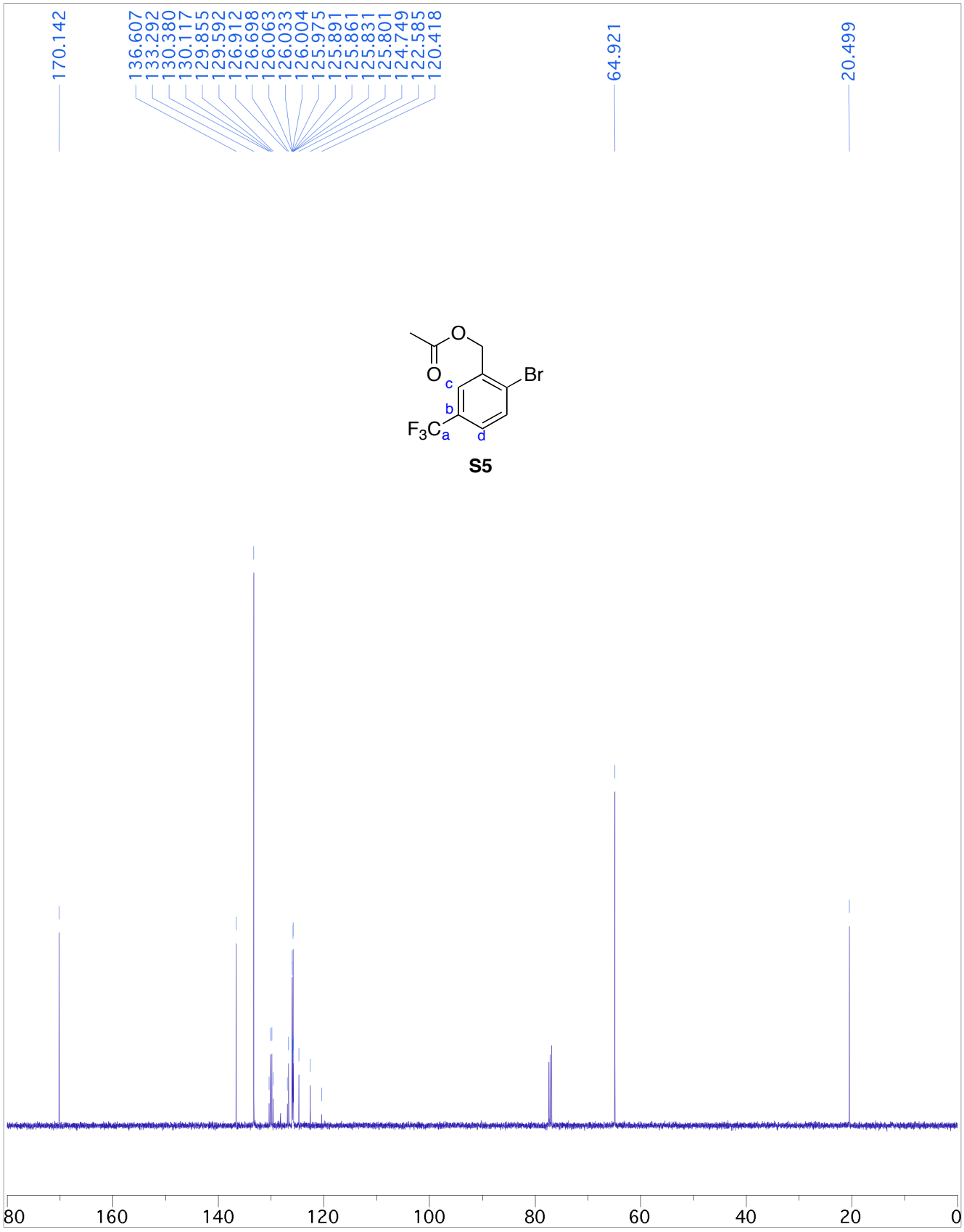

170.419
137.086
133.987
133.655
129.722
129.246
120.746
65.131
20.960
O
O
Br
Cl
S3
80
160
140
120
100
80
60
40
20
0

S4

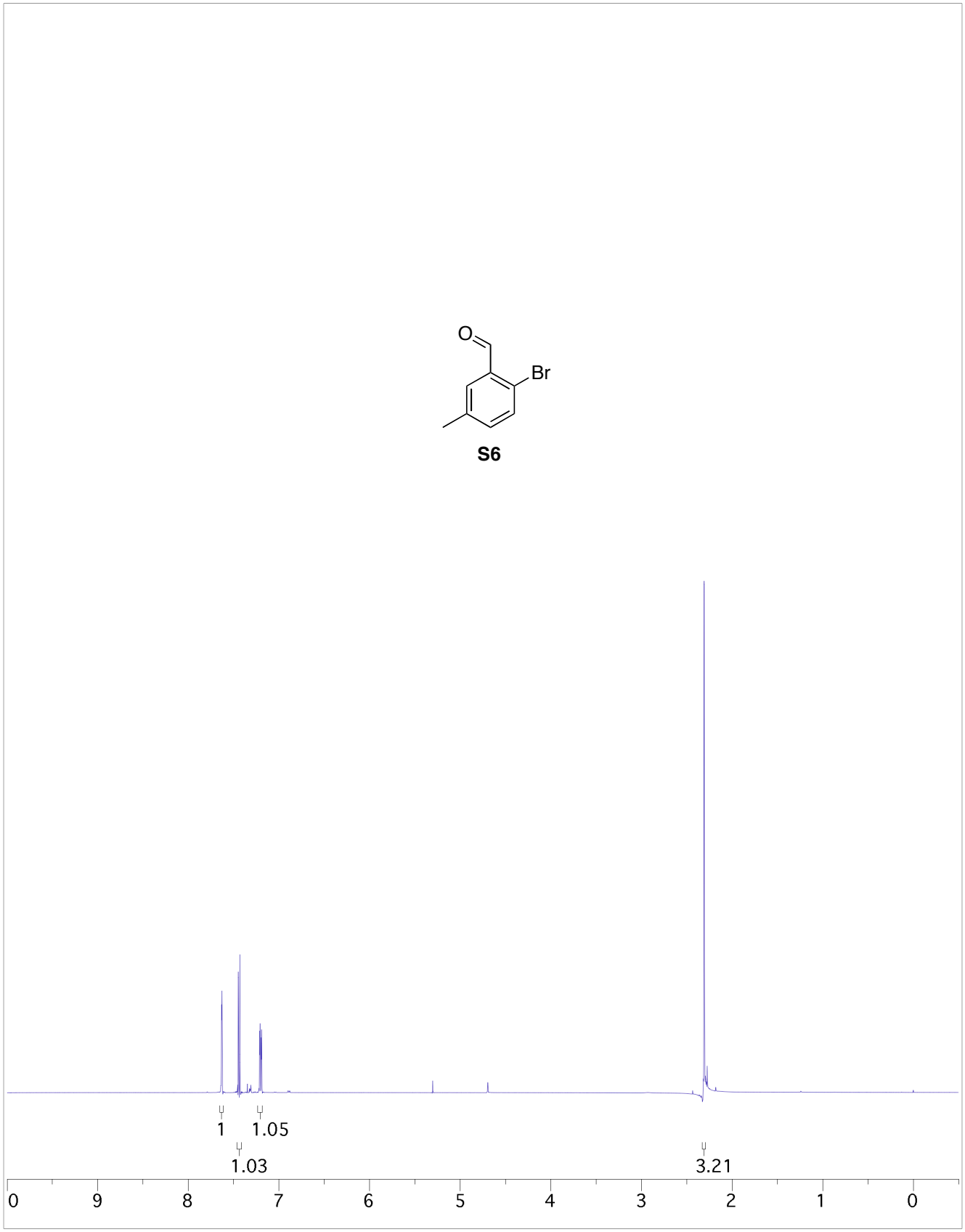



170.293
147.336
137.551
133.913
129.806
124.054
123.683
64.756
20.921
O
O
Br
O_2N
S4
80
160
140
120
100
80
60
40
20
0

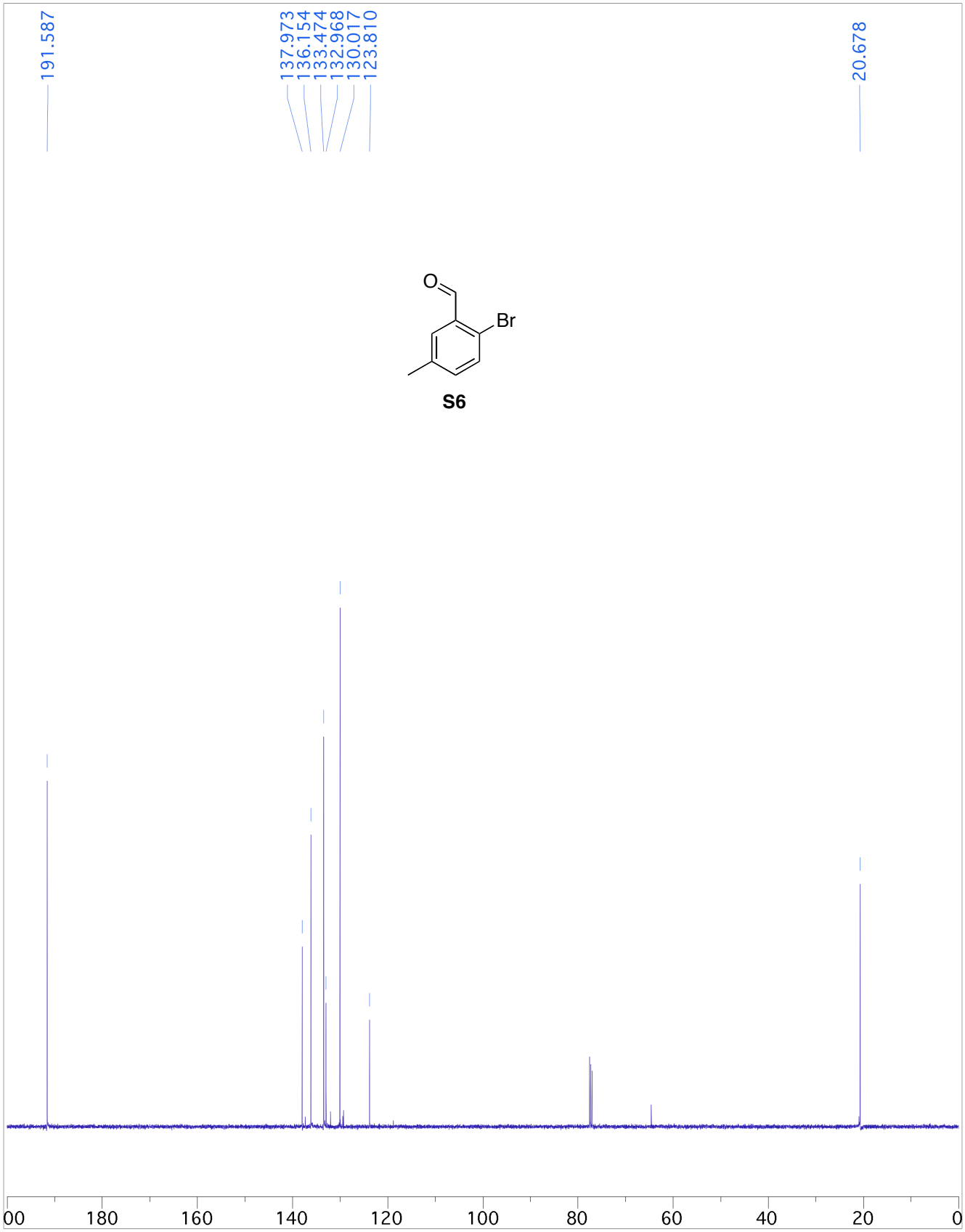

O
O
c
Br
b
F3C
a
d
S5
0.9
1.9
1
0.955
2.81
0
9
8
7
6
5
4
3
2
1
0

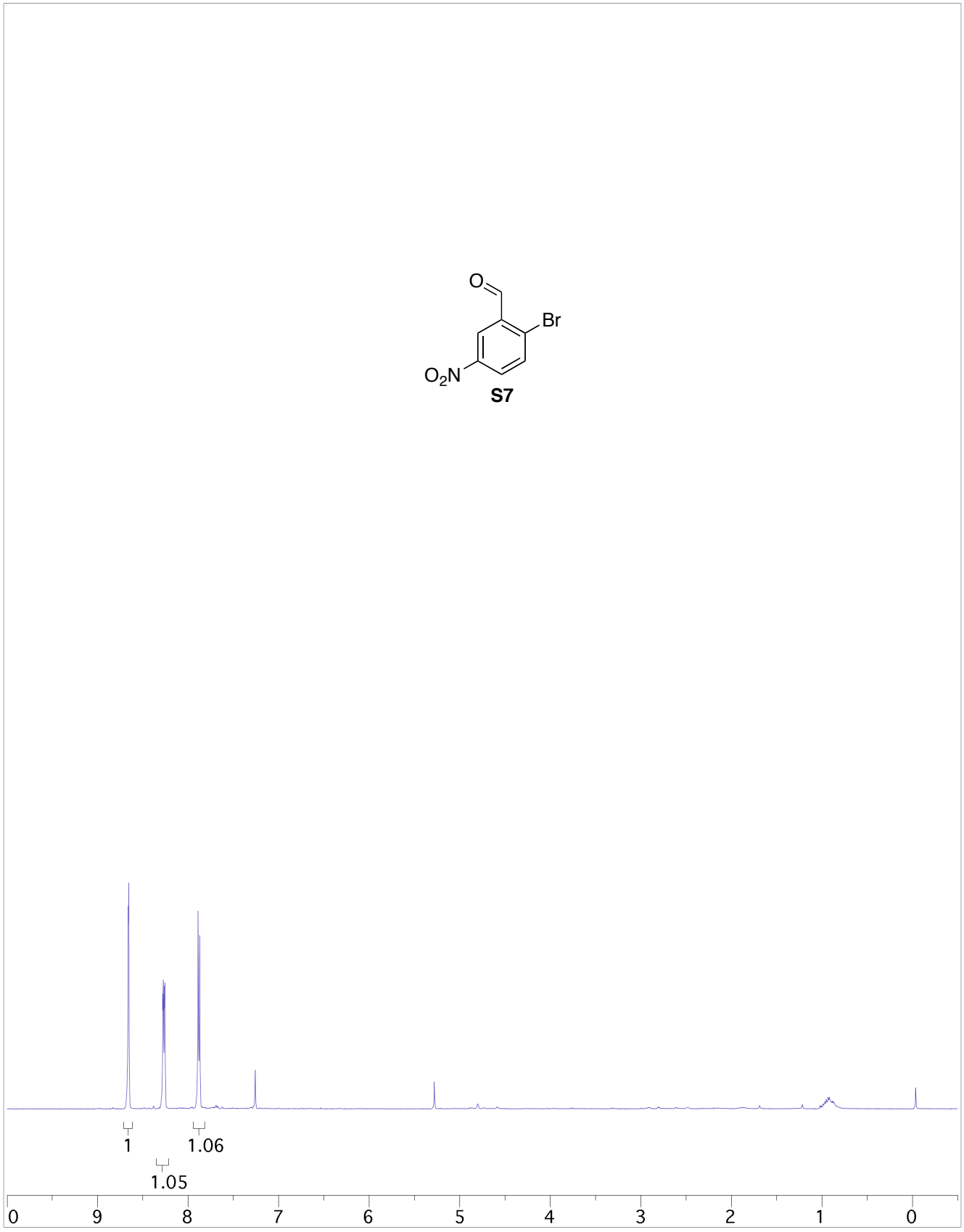

170.142
136.607
133.292
130.380
130.117
129.855
129.592
126.912
126.698
126.063
126.033
126.004
125.975
125.891
125.861
125.831
125.801
124.749
122.585
120.418
64.921
20.499
O
O
c
Br
b
F3C
a
d
80
160
140
120
100
80
60
40
20
0

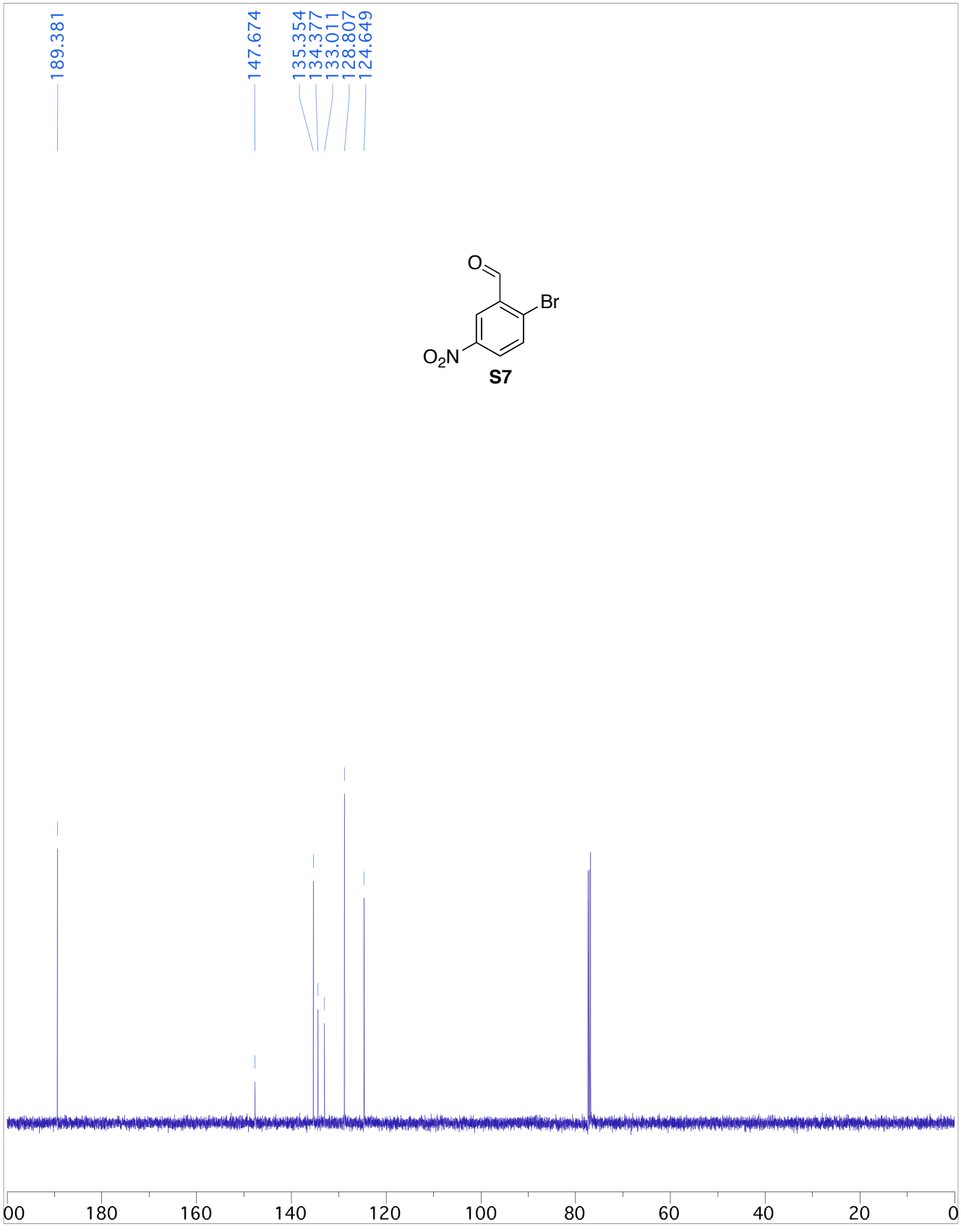
S5

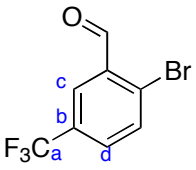


S6

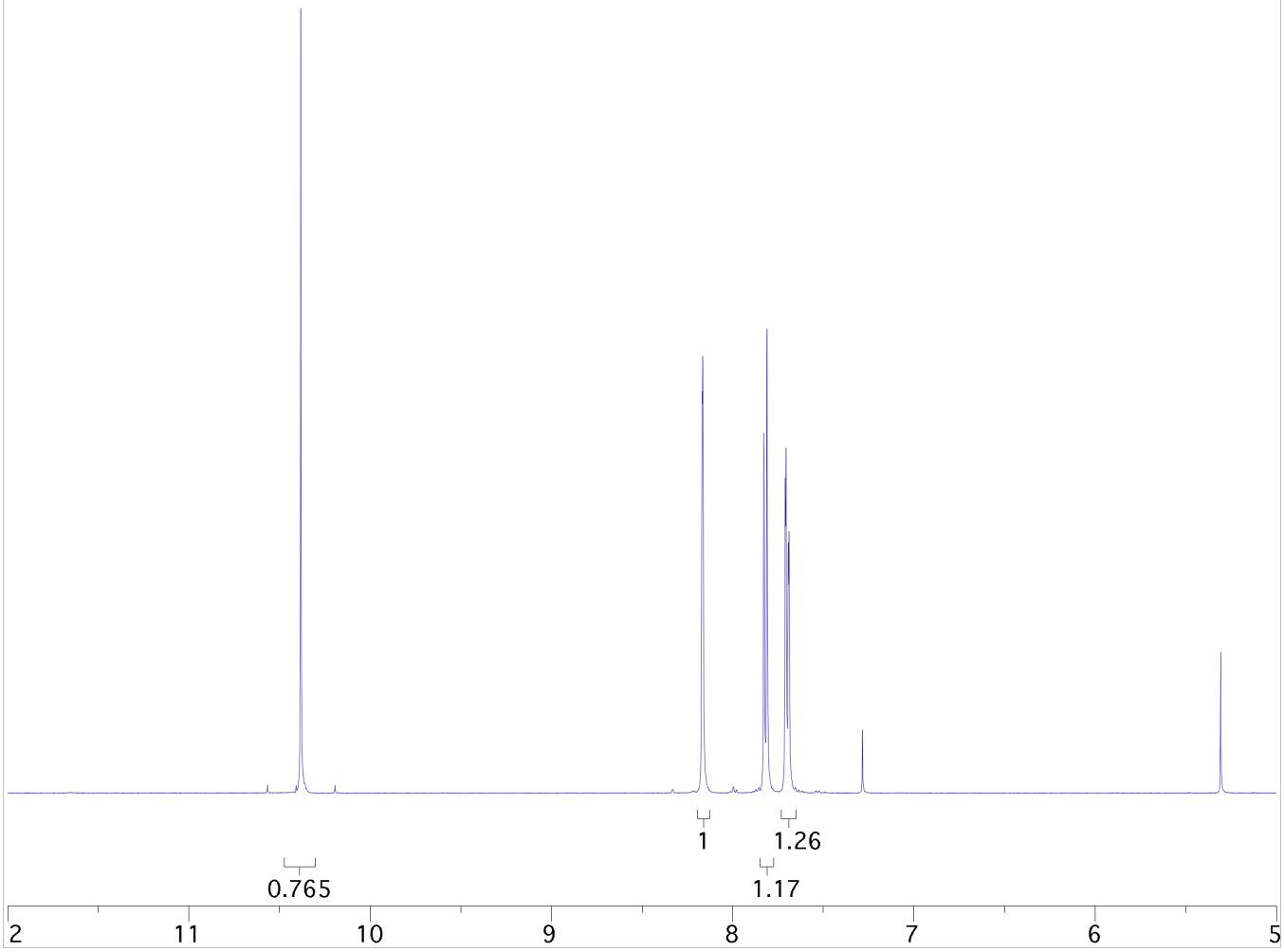

191.587
137.973
136.154
133.474
132.968
130.017
123.810
20.678
O
Br
S6
00
180
160
140
120
100
80
60
40
20
0

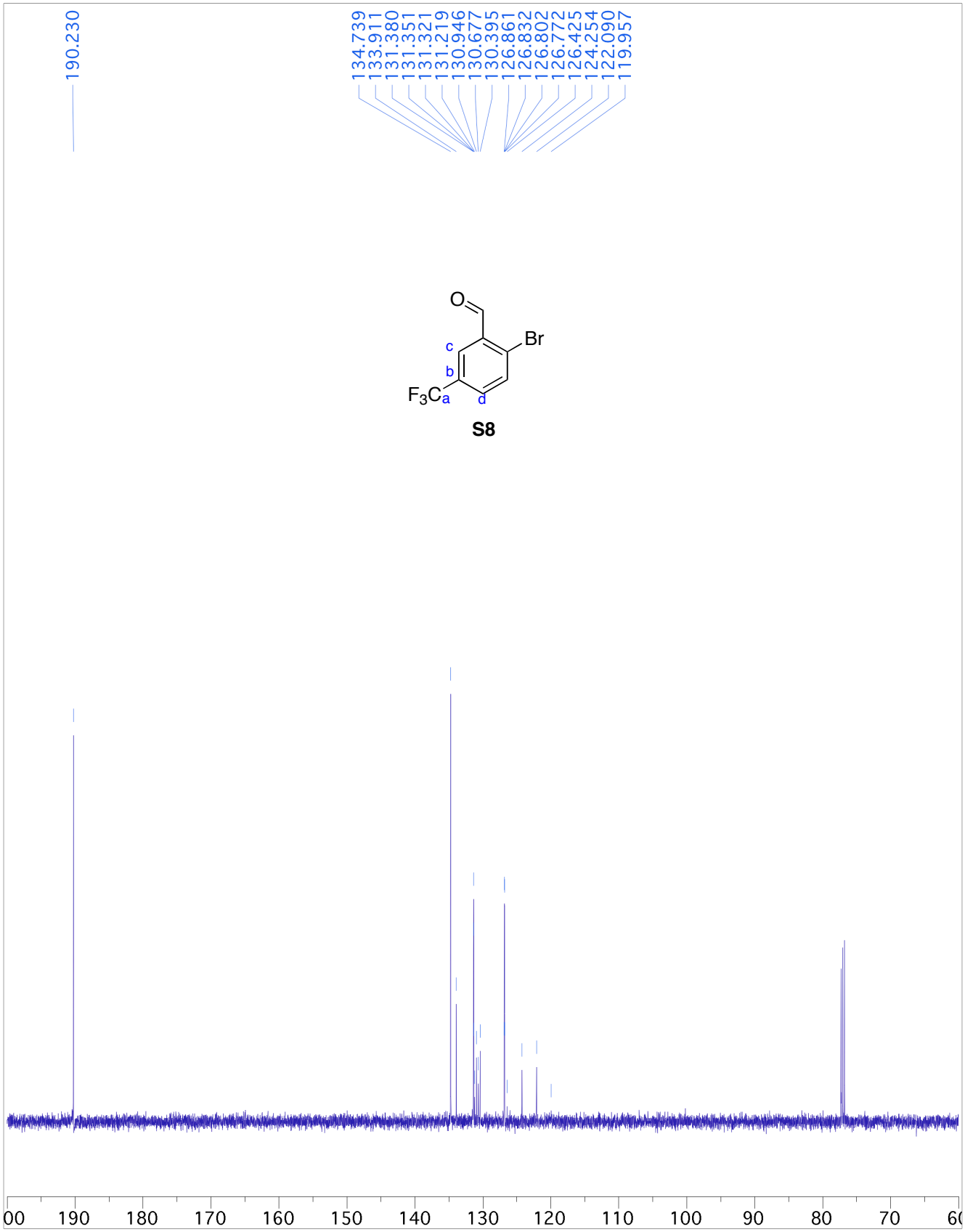

O
Br
O2N
S7
1
1.06
1.05
0
9
8
7
6
5
4
3
2
1
0

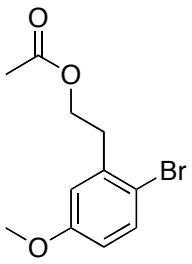

189.381
147.674
135.354
134.377
133.011
128.807
124.649
O
Br
O_2N
S7
00
180
160
140
120
100
80
60
40
20
0



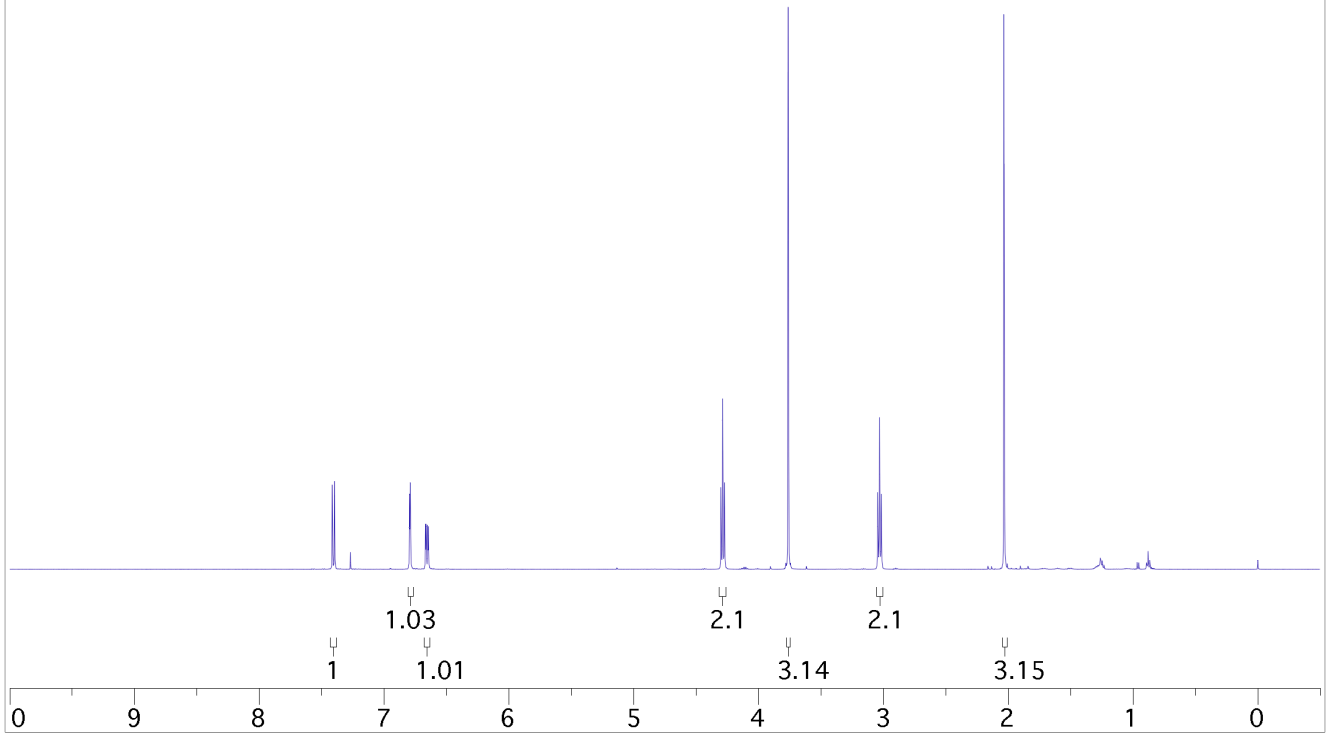
S8

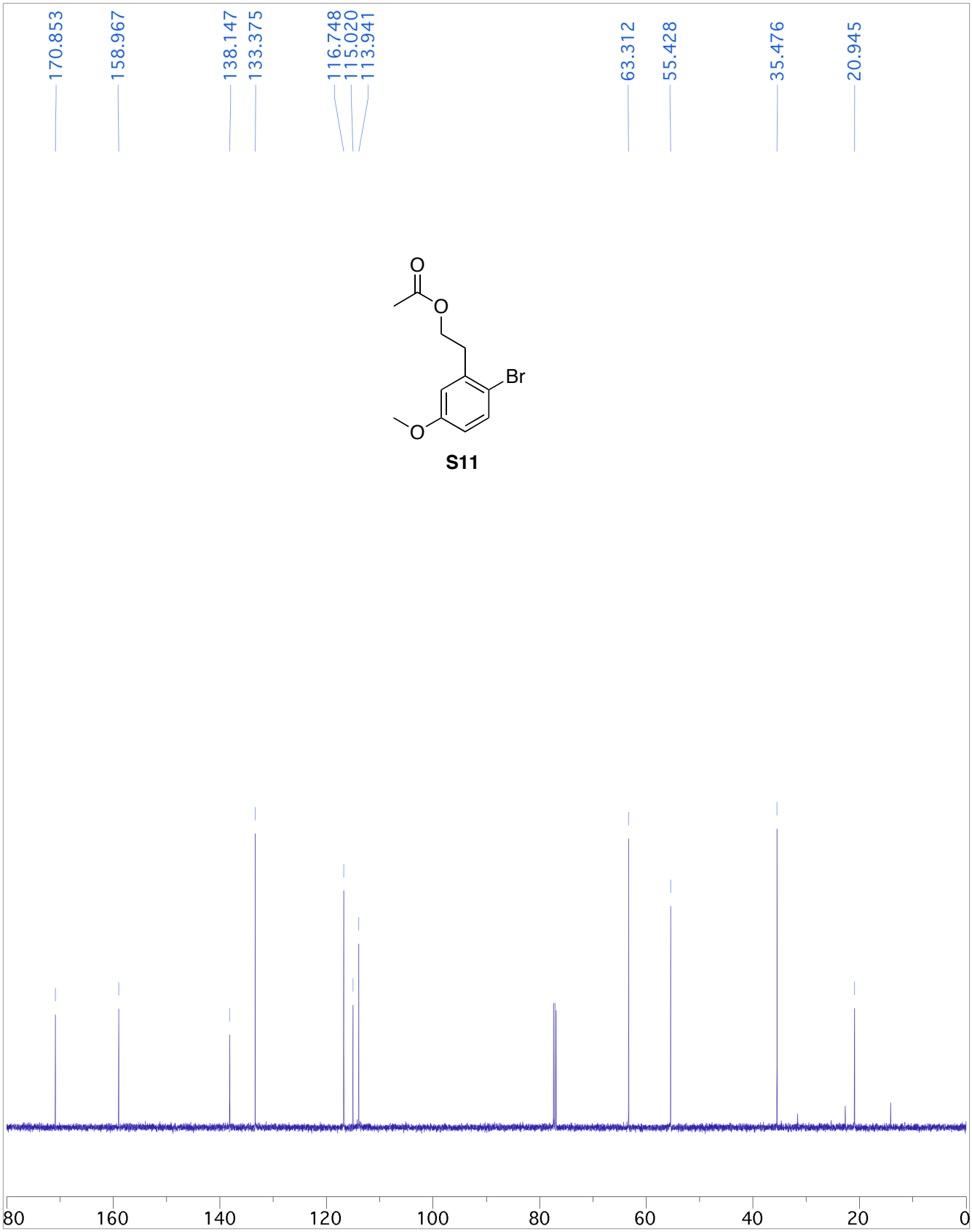



190.230
134.739
133.911
131.380
131.351
131.321
131.219
130.946
130.677
130.395
126.861
126.832
126.802
126.772
126.425
124.254
122.090
119.957
O
Br
c
b
F3Ca
d
S8
00
190
180
170
160
150
140
130
120
110
100
90
80
70
60

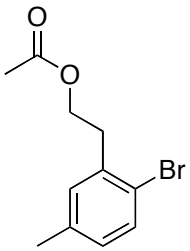


S11

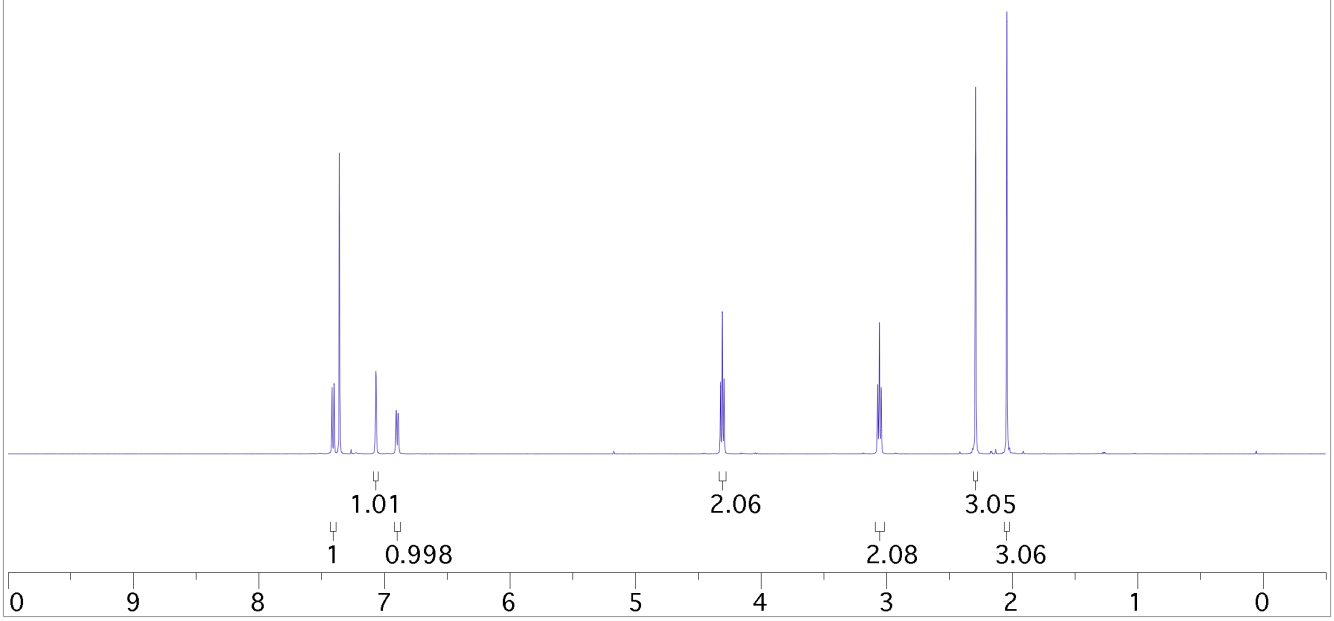


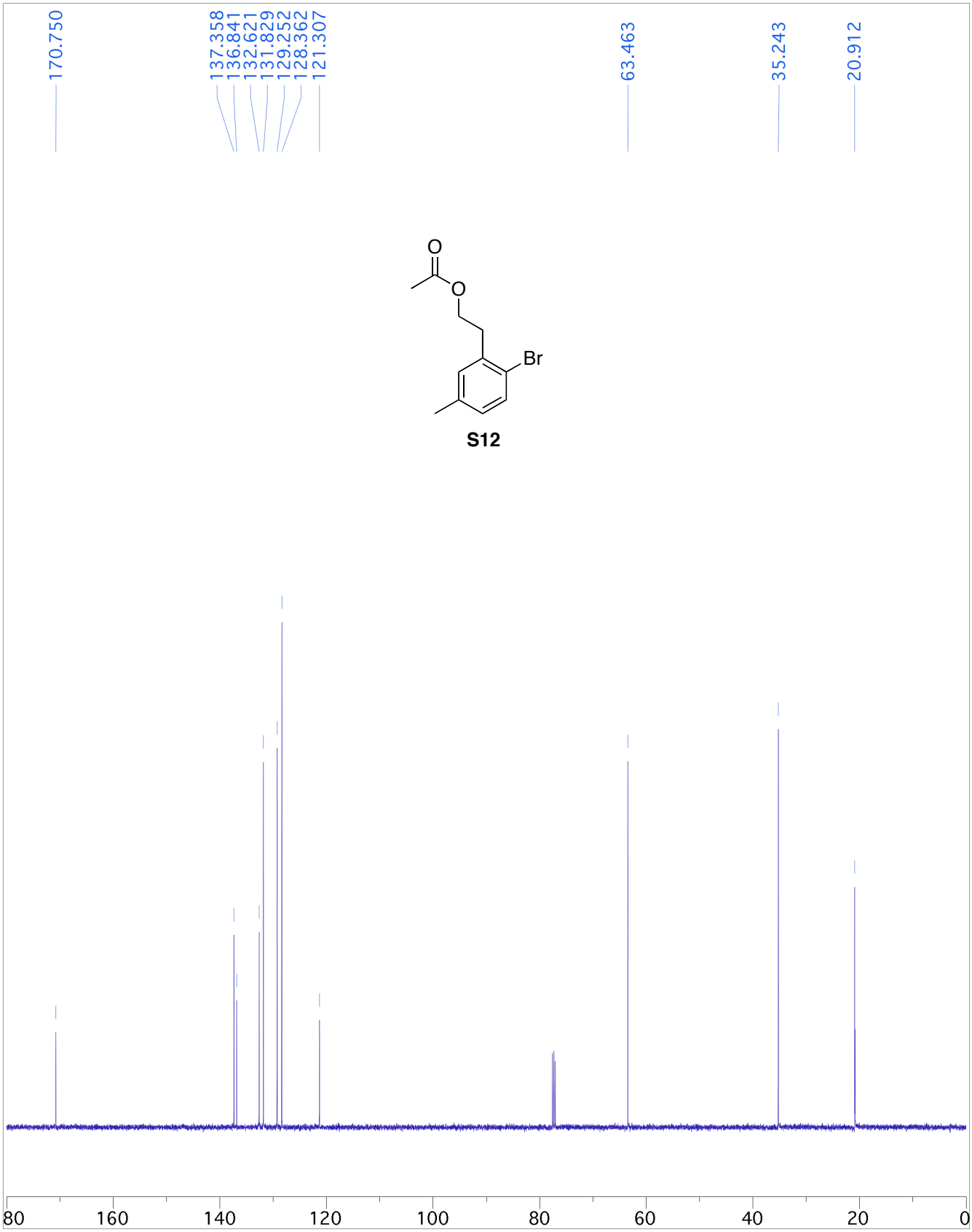

170.853
158.967
138.147
133.375
116.748
115.020
113.941
63.312
55.428
35.476
20.945
O
O
Br
O
80
160
140
120
100
80
60
40
20
0

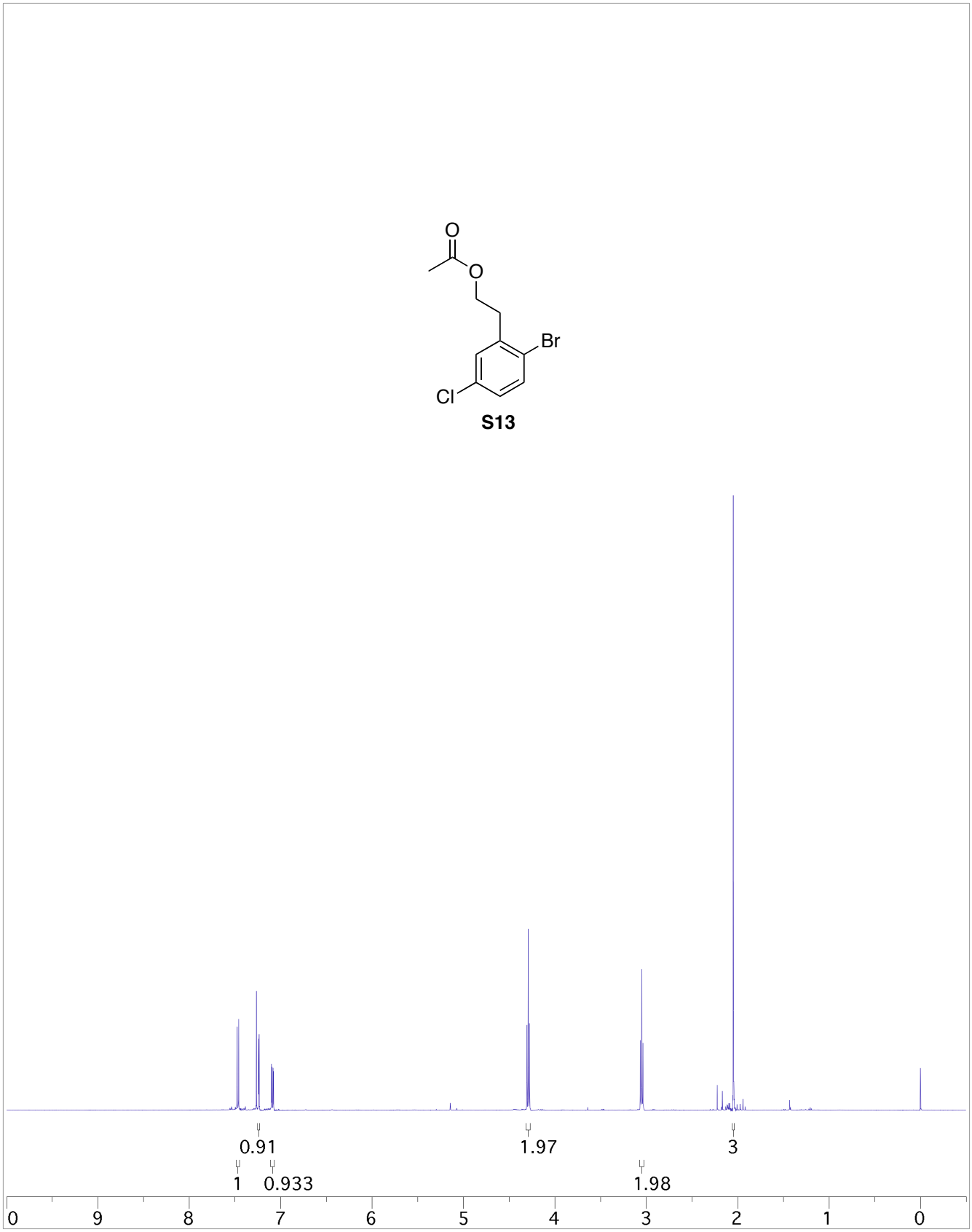
S11

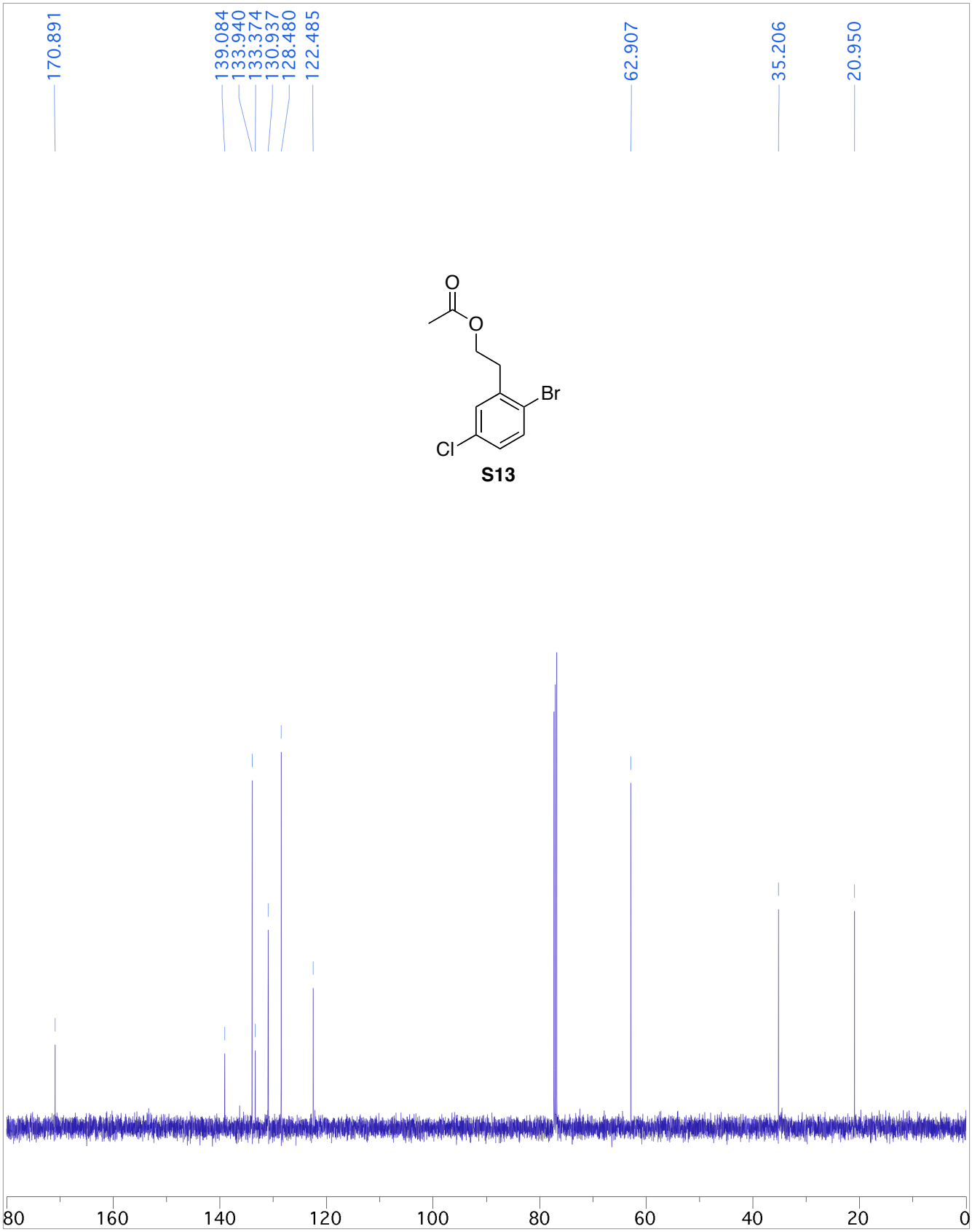


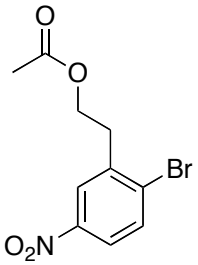
S12



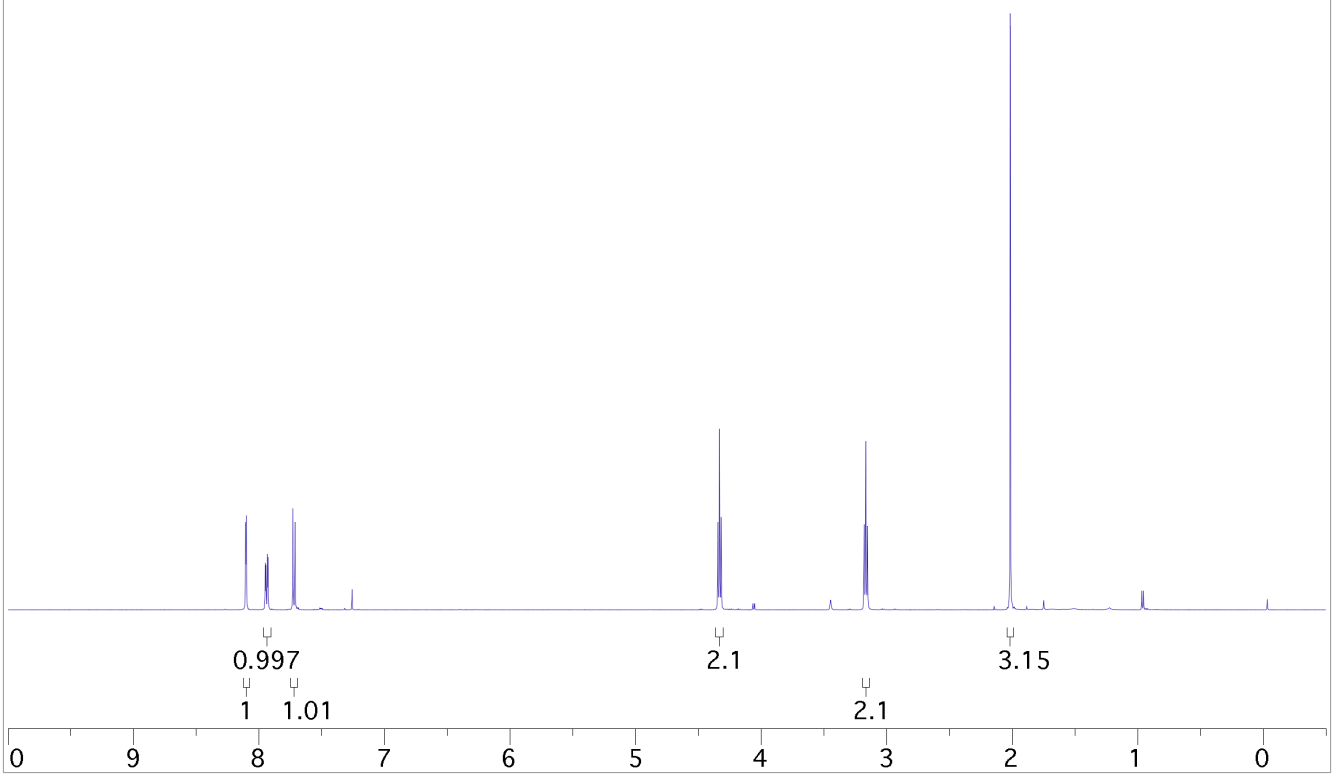

170.750
137.358
136.841
132.621
131.829
129.252
128.362
121.307
63.463
35.243
20.912
O
O
Br
S12
80
160
140
120
100
80
60
40
20
0

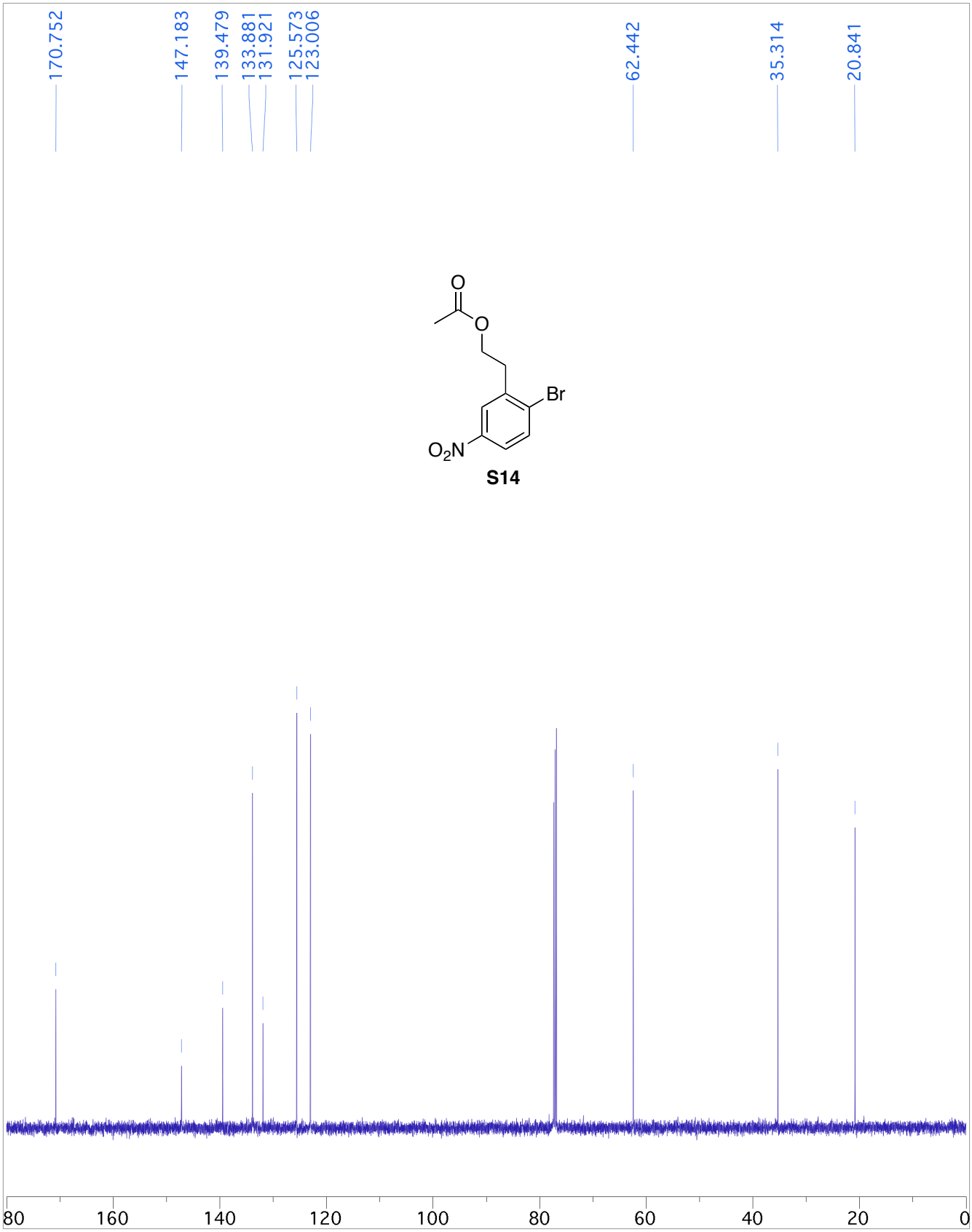

O
O
Br
Cl
S13
0.91
1
0.933
1.97
1.98
3
0
9
8
7
6
5
4
3
2
1
0

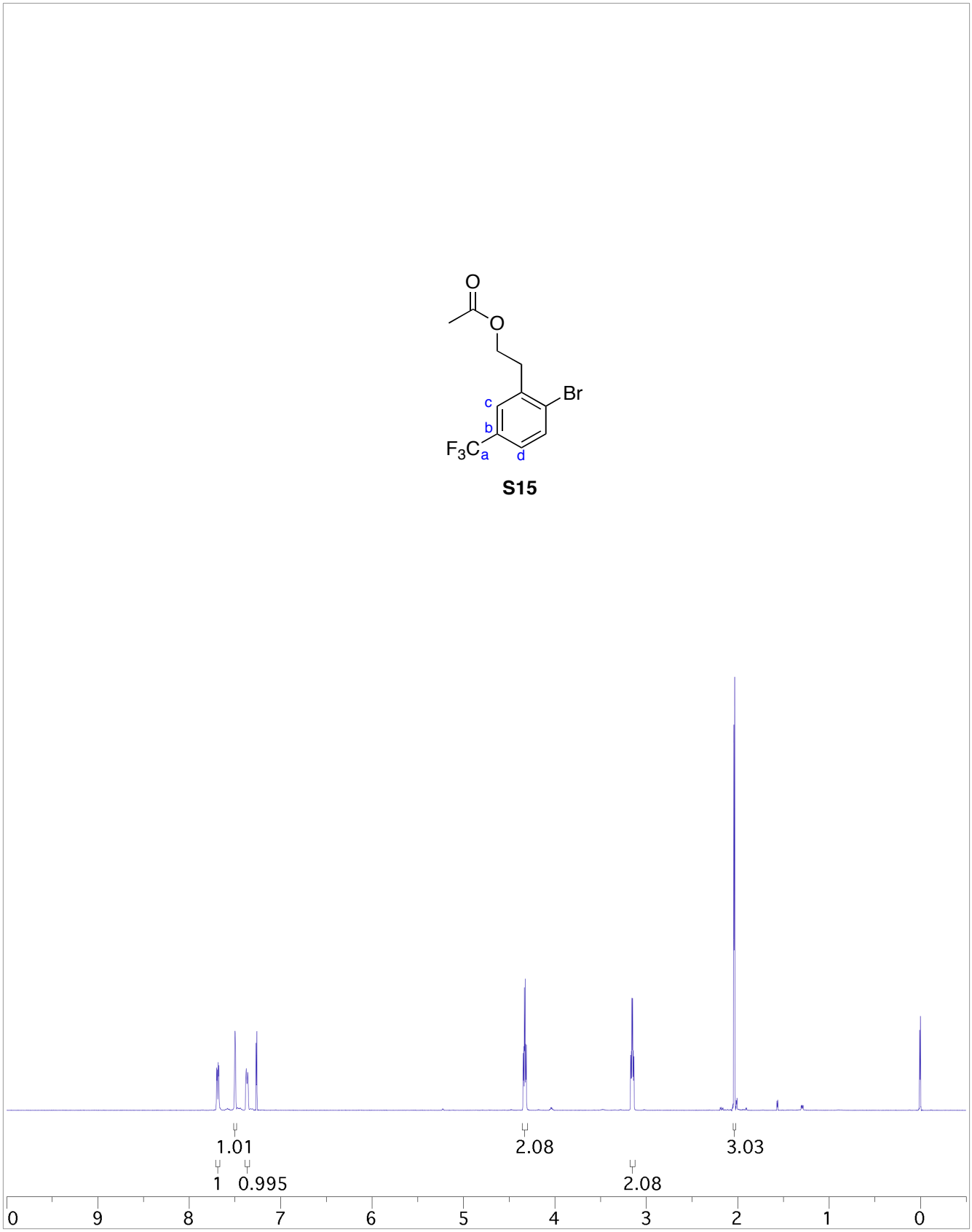

170.891
139.084
133.940
133.374
130.937
128.480
122.485
62.907
35.206
20.950
O
O
Br
Cl
S13
80
160
140
120
100
80
60
40
20
0



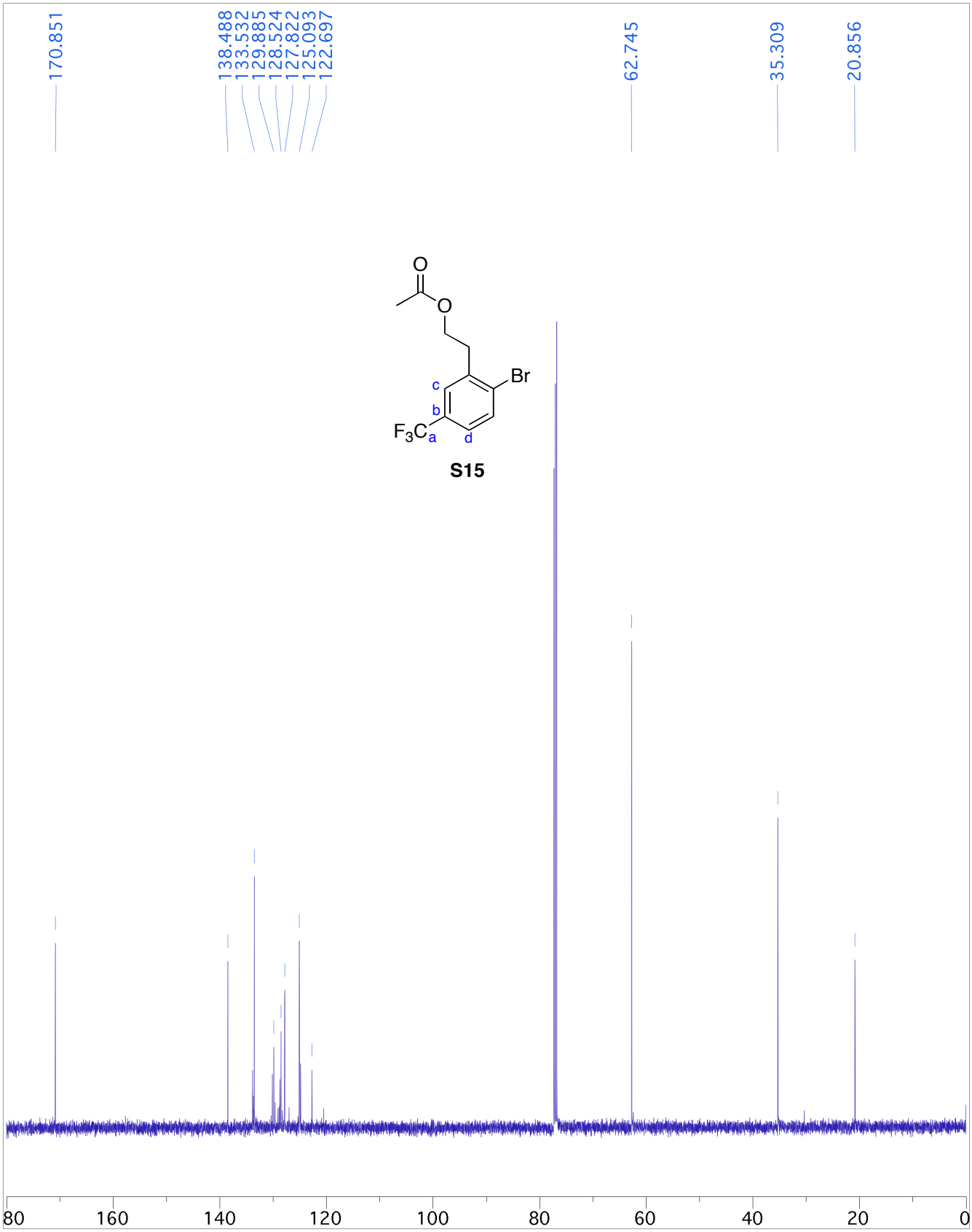
S14

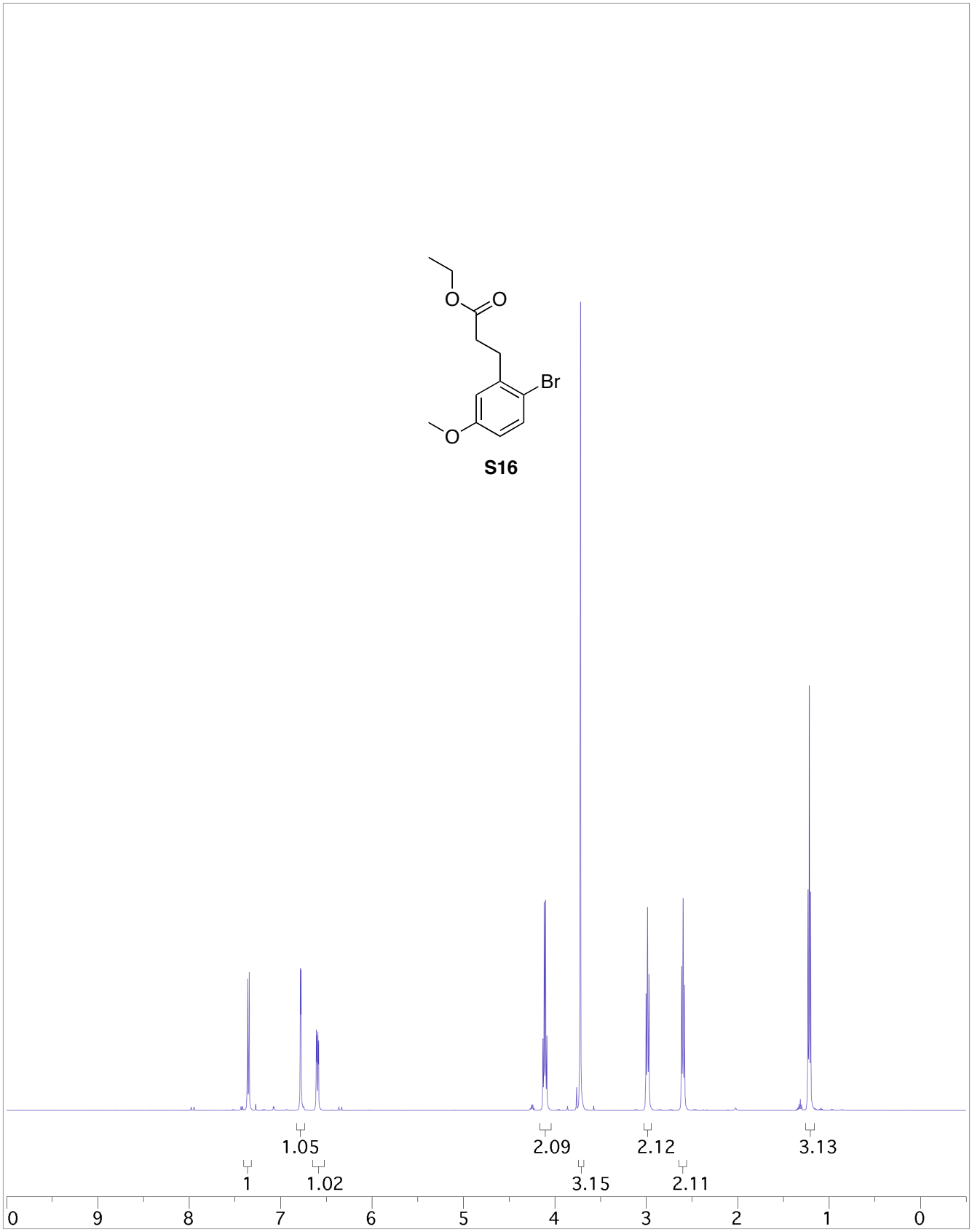


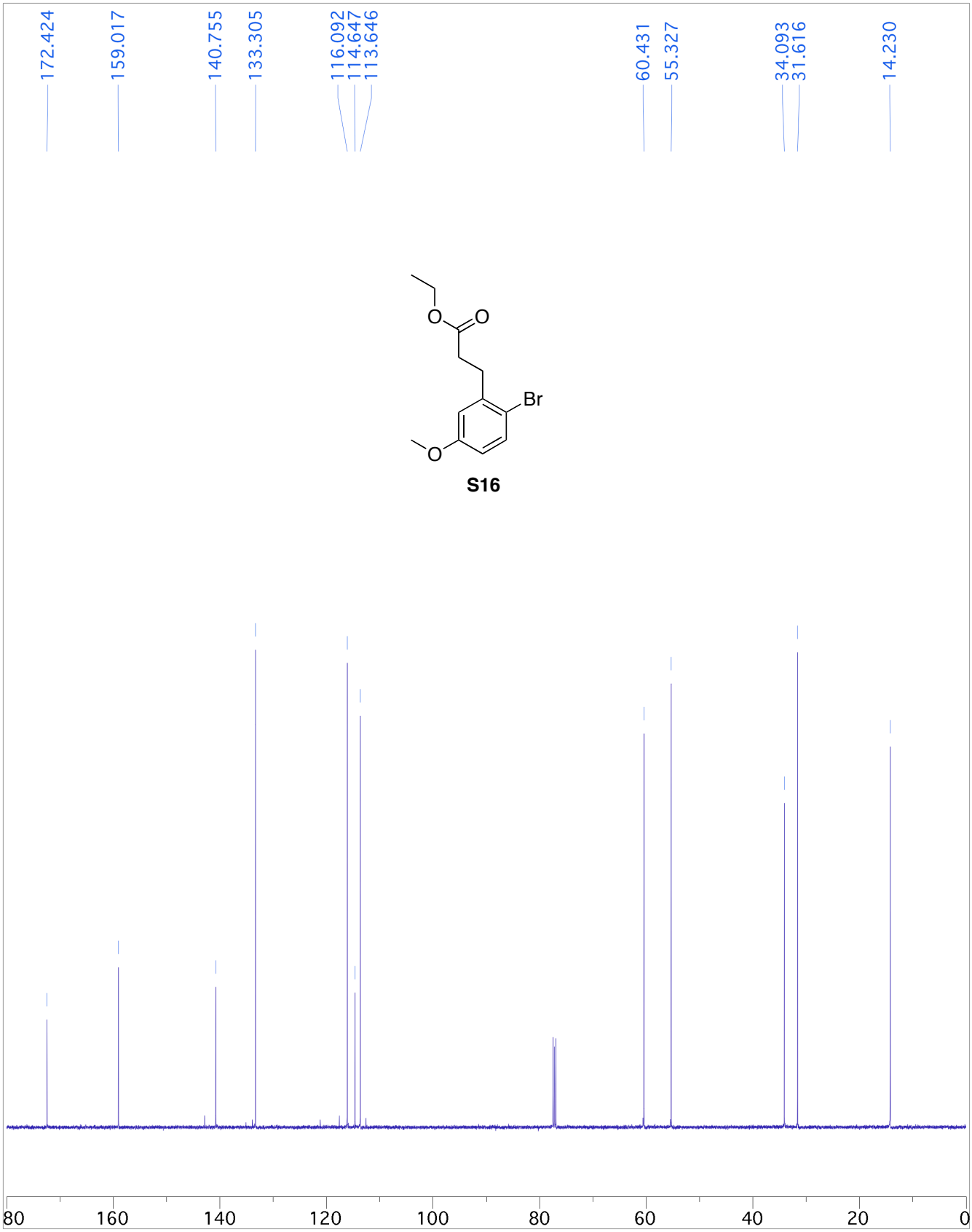

170.752
147.183
139.479
133.881
131.921
125.573
123.006
62.442
35.314
20.841
O
O
Br
O_2N
S14
80
160
140
120
100
80
60
40
20
0



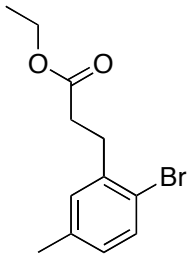
S15


170.851
138.488
133.532
129.885
128.524
127.822
125.093
122.697
62.745
35.309
20.856
O
O
Br
c
b
F3Ca
d
S15
80
160
140
120
100
80
60
40
20
0

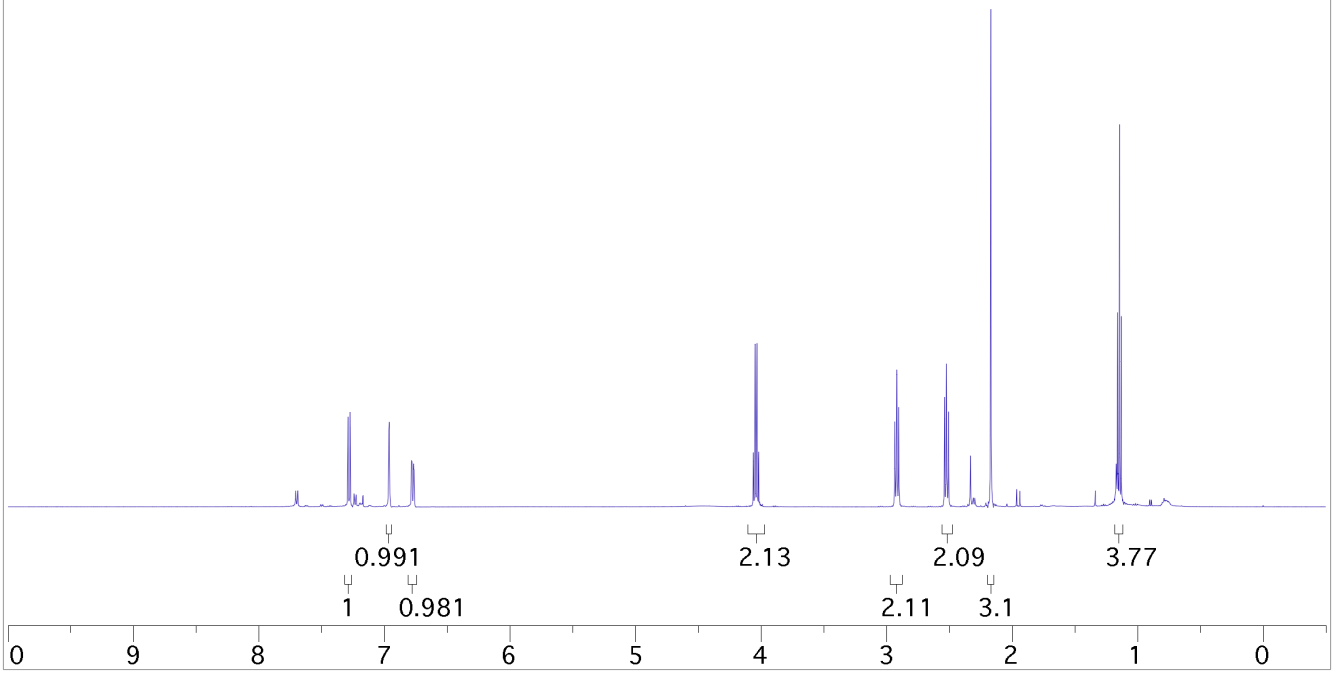

O
O
Br
O
S16
1.05
2.09
2.12
3.13
1
1.02
3.15
2.11
0
9
8
7
6
5
4
3
2
1
0

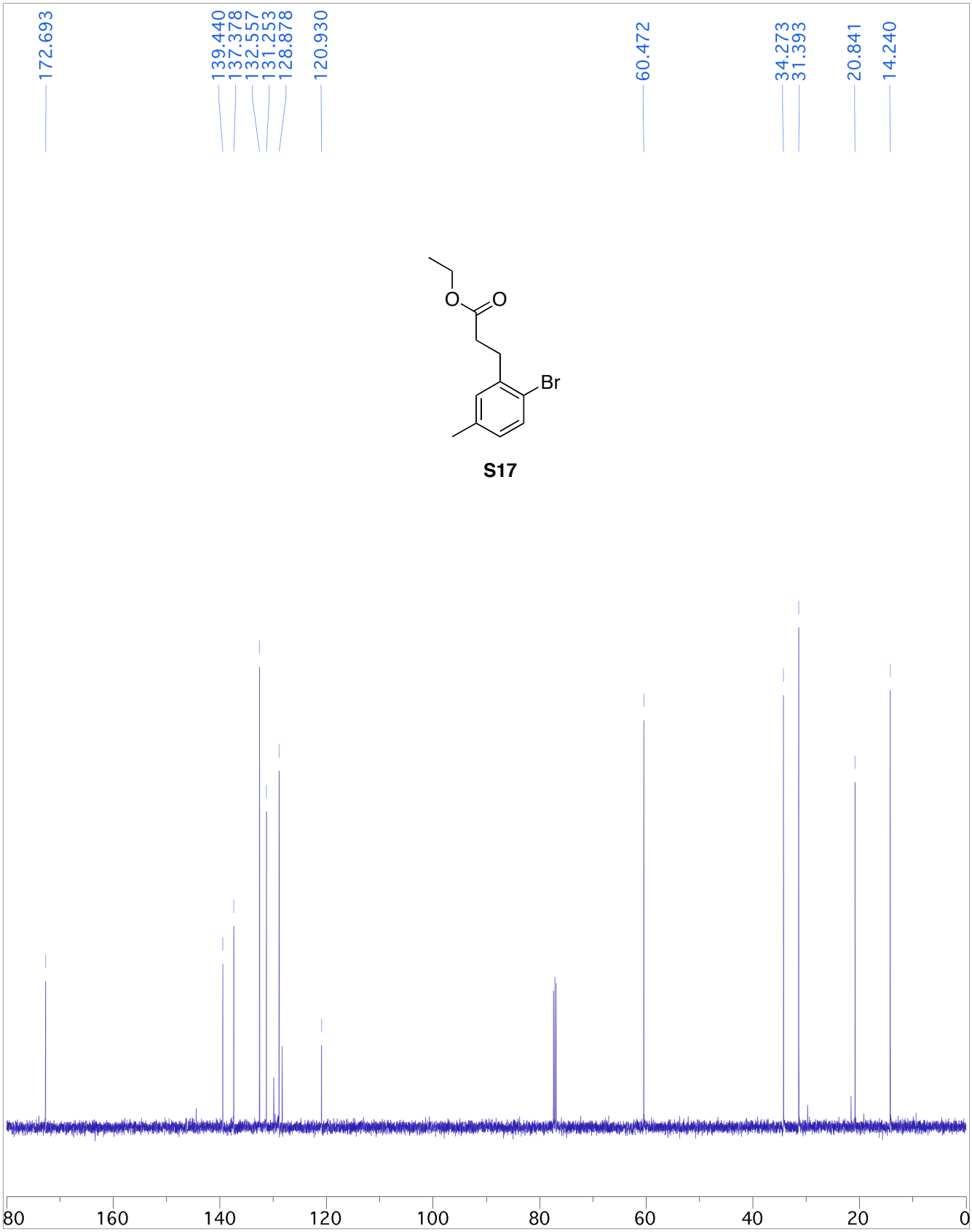

172.424
159.017
140.755
133.305
116.092
114.647
113.646
60.431
55.327
34.093
31.616
14.230
O
O
Br
O
80
160
140
120
100
80
60
40
20
0

S16

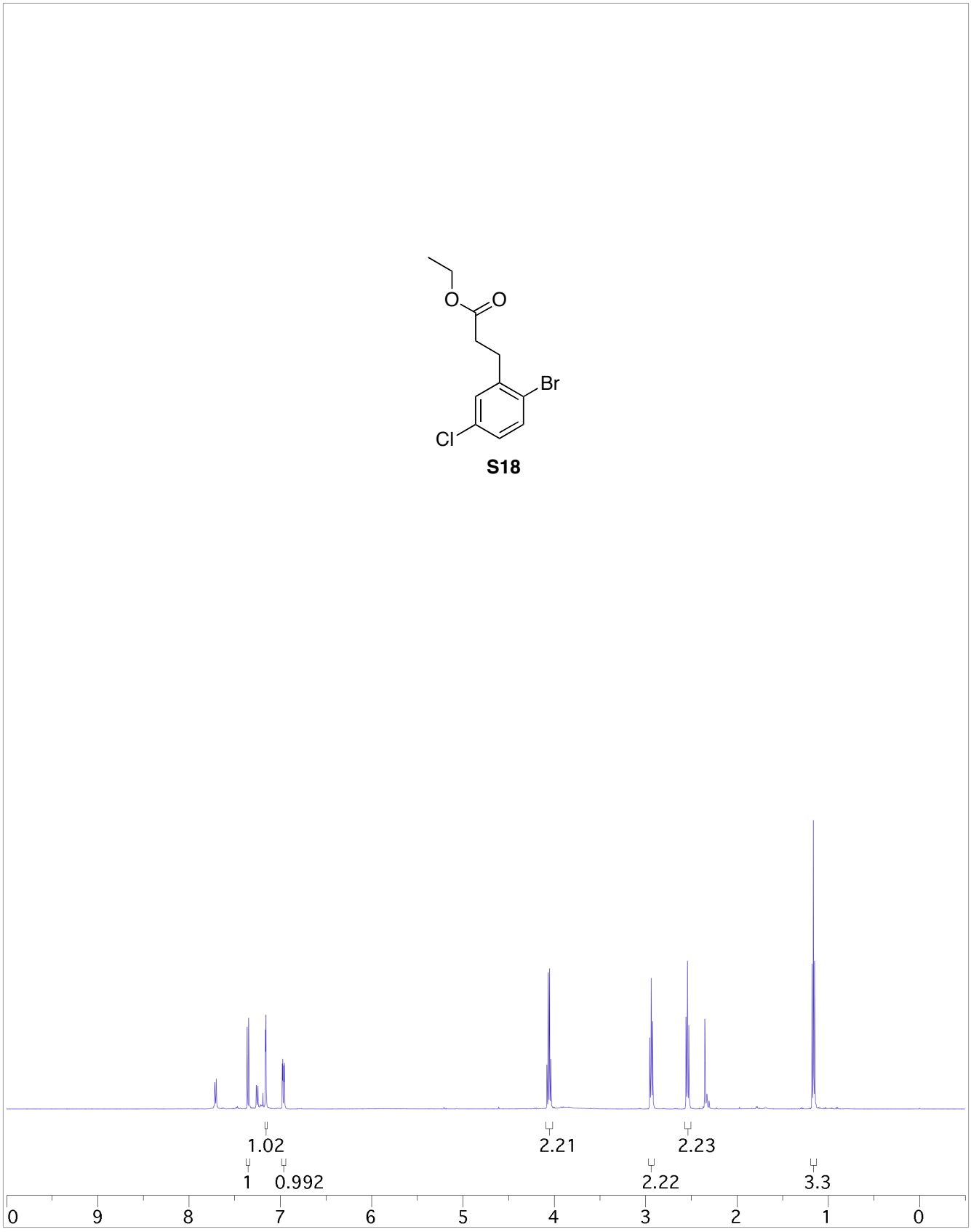


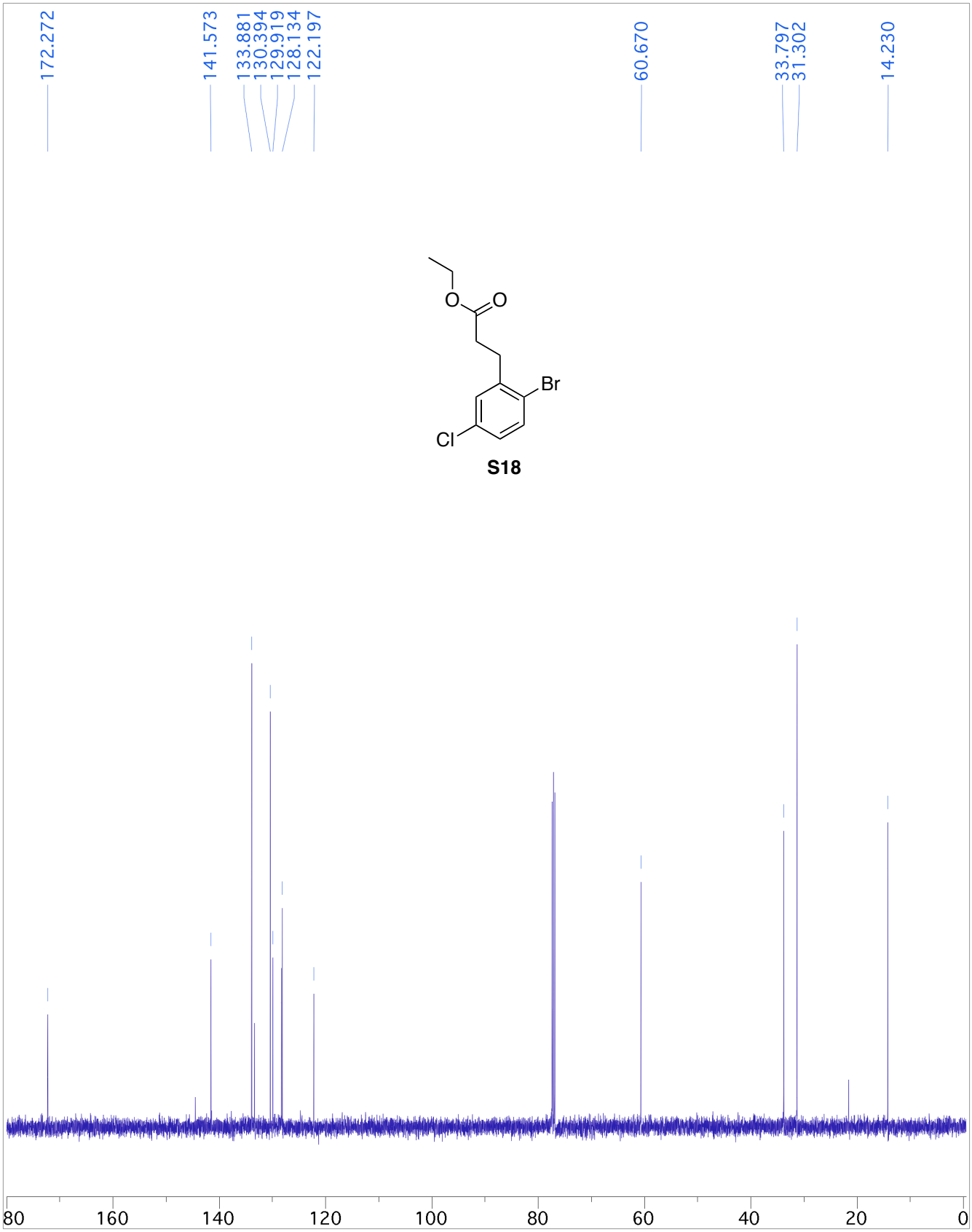
S17



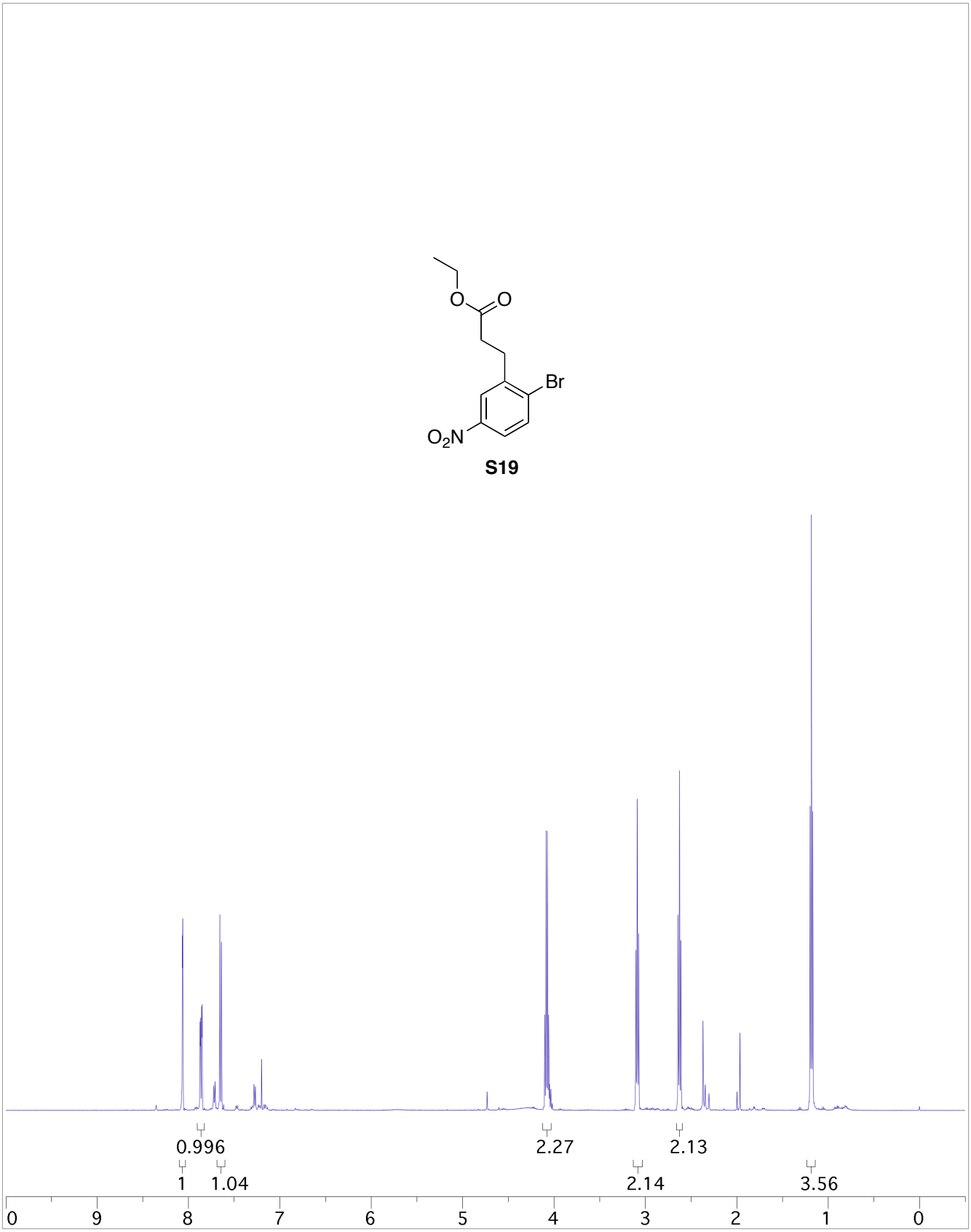

172.693
139.440
137.378
132.557
131.253
128.878
120.930
60.472
34.273
31.393
20.841
14.240
O
O
Br
80
160
140
120
100
80
60
40
20
0

S17

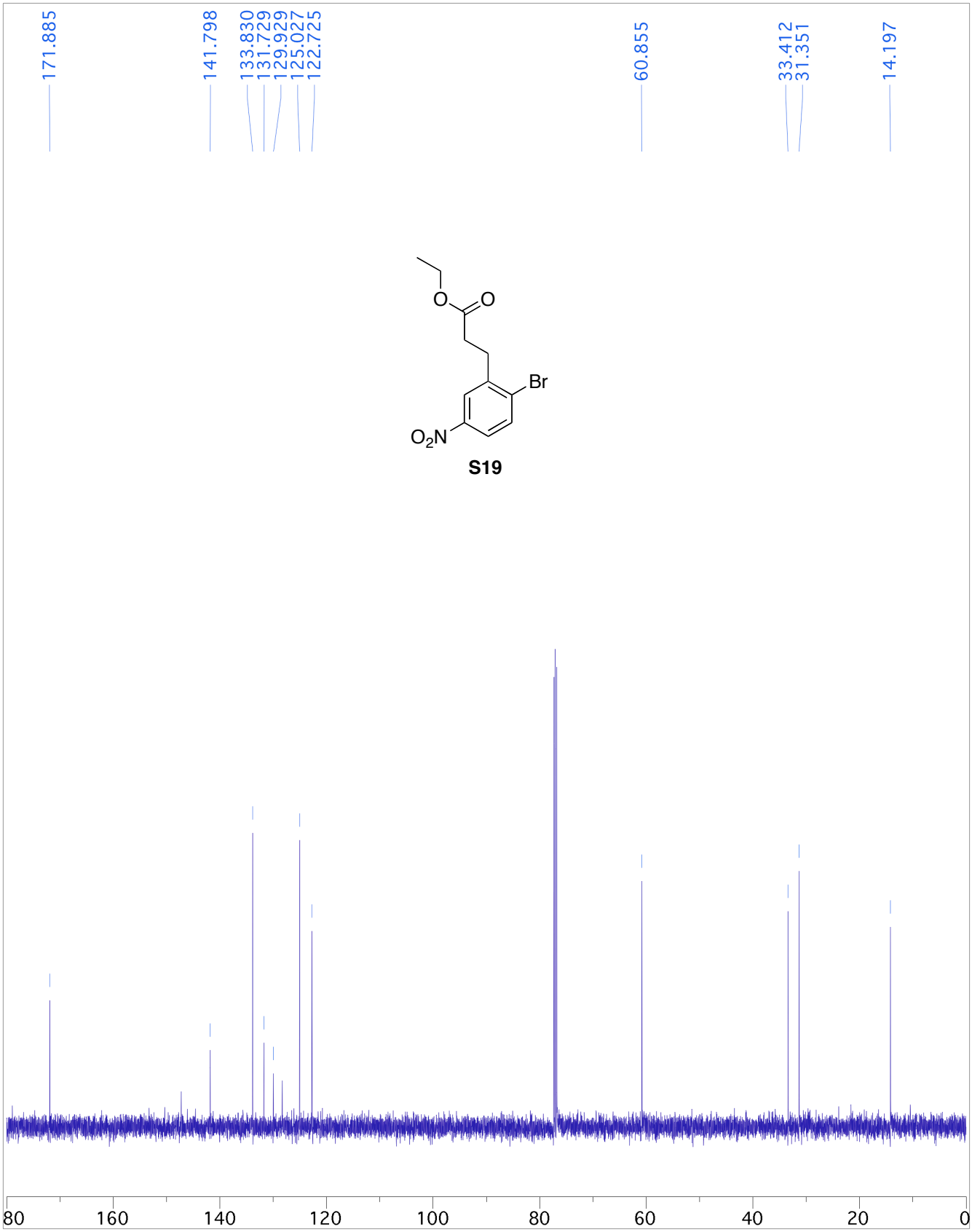

O
O
Br
Cl
S18
1.02
0.992
2.21
2.23
2.22
3.3
1
0
9
8
7
6
5
4
3
2
1
0


172.272
141.573
133.881
130.394
129.919
128.134
122.197
60.670
33.797
31.302
14.230
O
O
Br
Cl
80
160
140
120
100
80
60
40
20
0

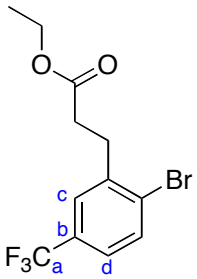
S18



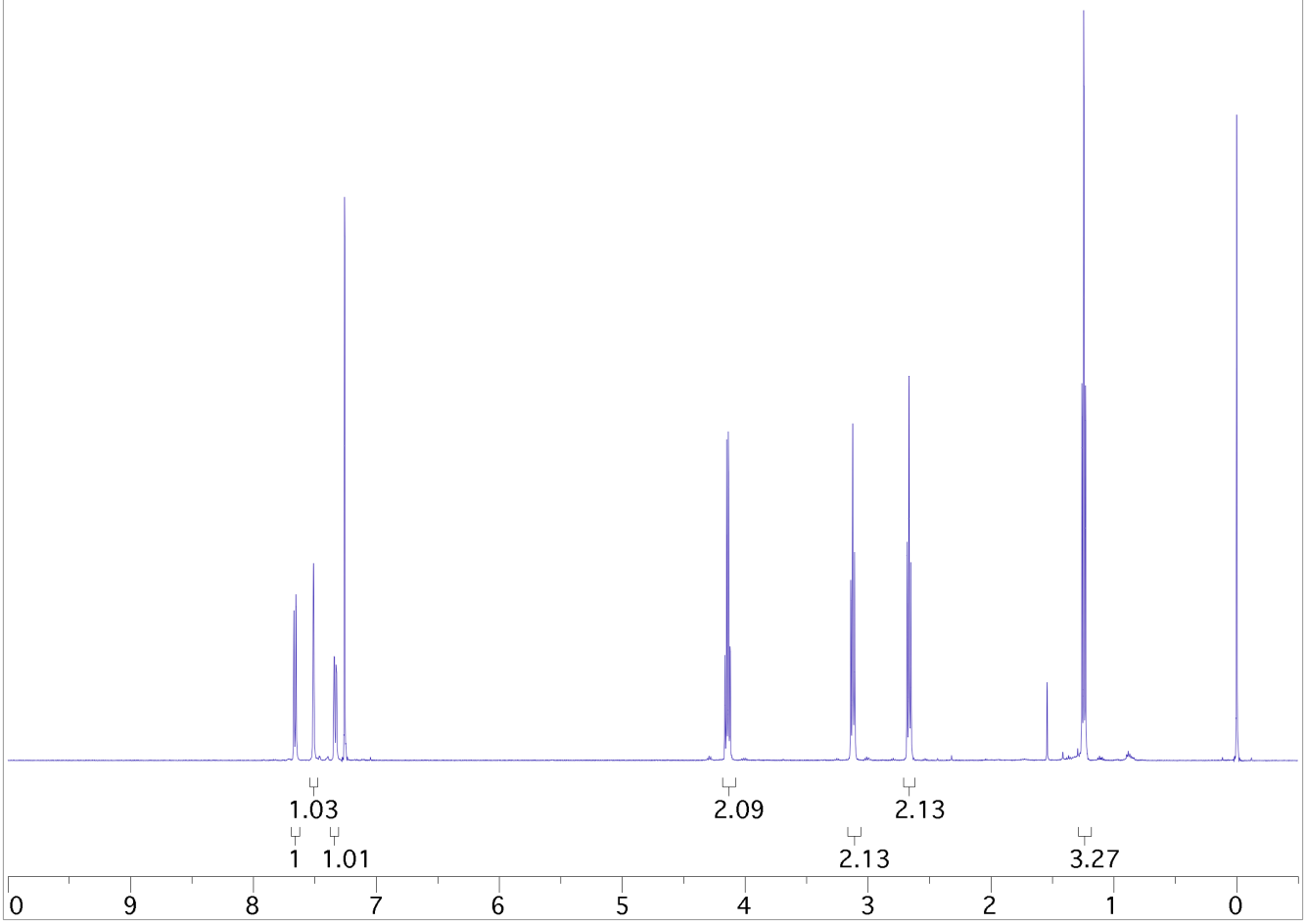
S19

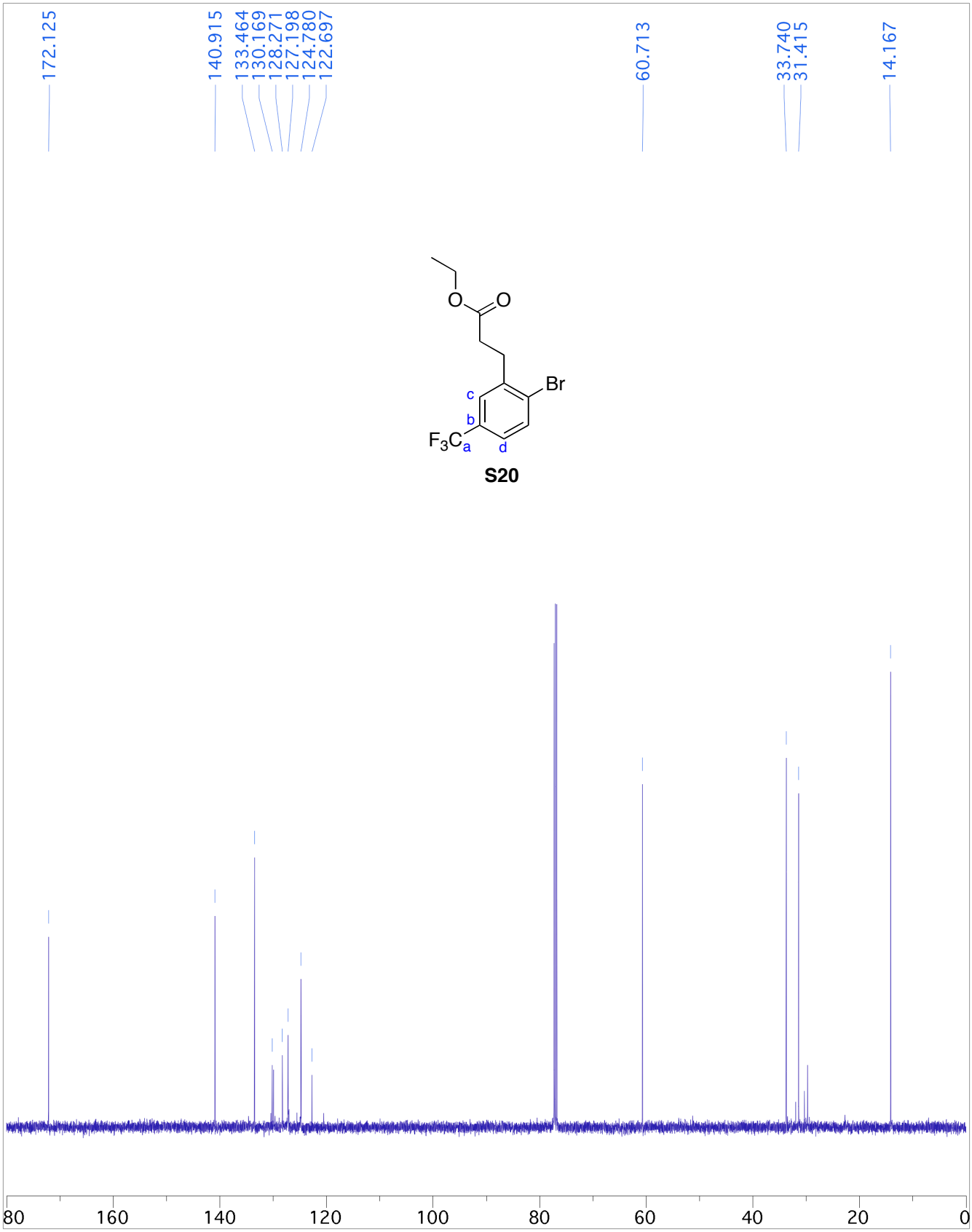

171.885
141.798
133.830
131.729
129.929
125.027
122.725
60.855
33.412
31.351
14.197
O
O
Br
O2N
80
160
140
120
100
80
60
40
20
0

S19

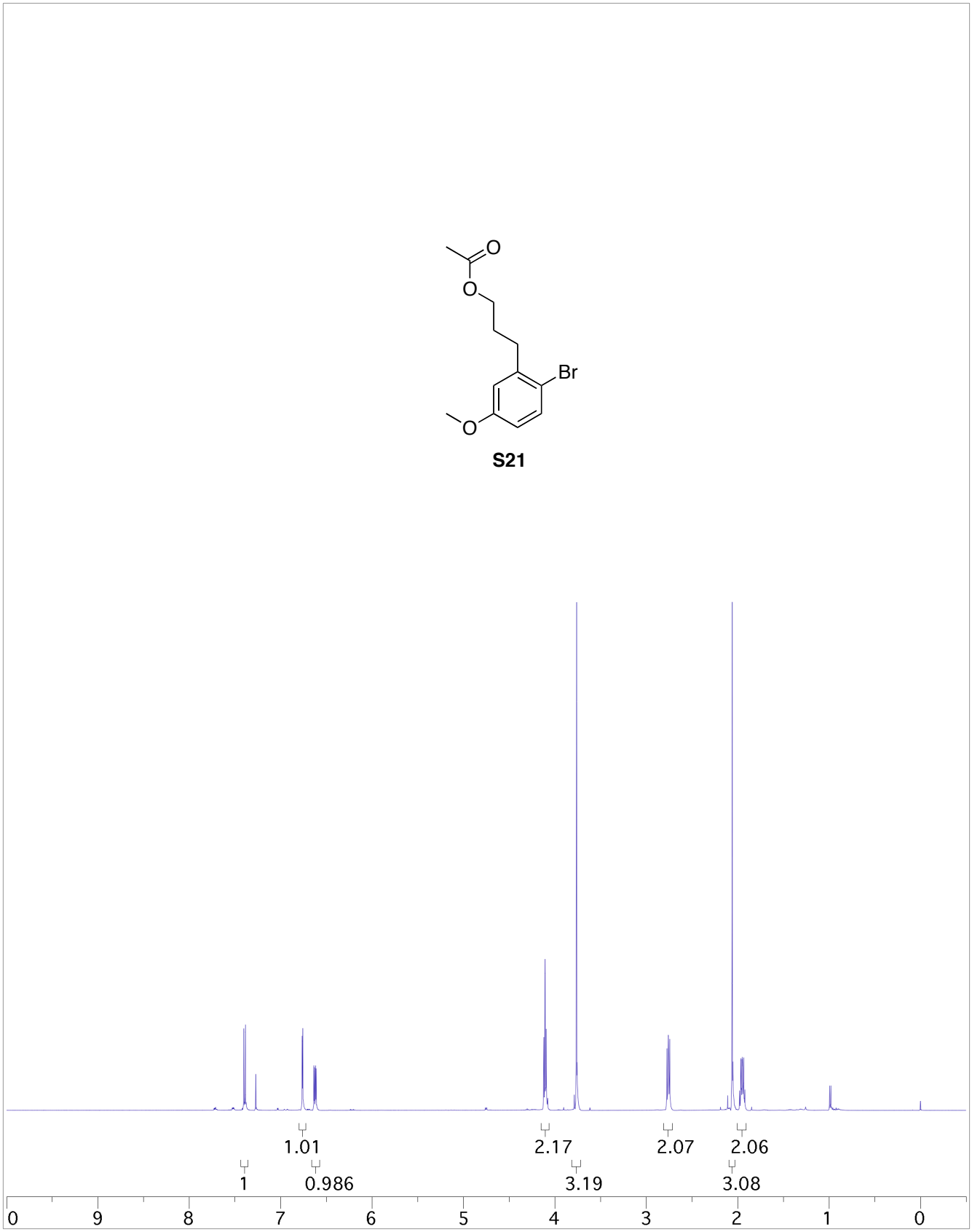


S20

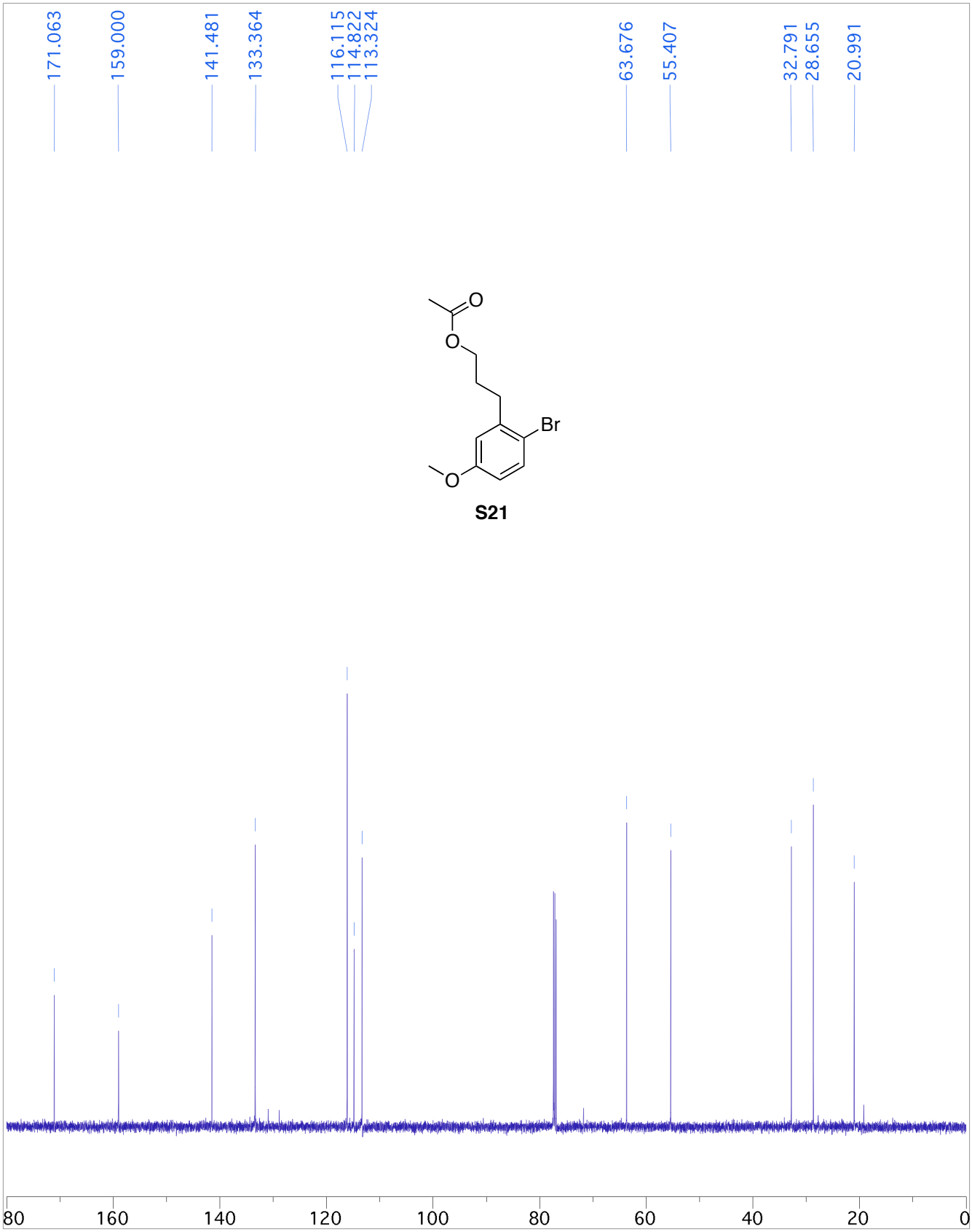



172.125
140.915
133.464
130.169
128.271
127.198
124.780
122.697
60.713
33.740
31.415
14.167
O
O
Br
c
b
F3Ca
d
80
160
140
120
100
80
60
40
20
0

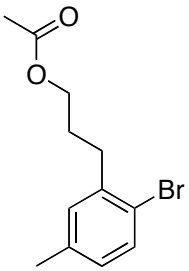
S20



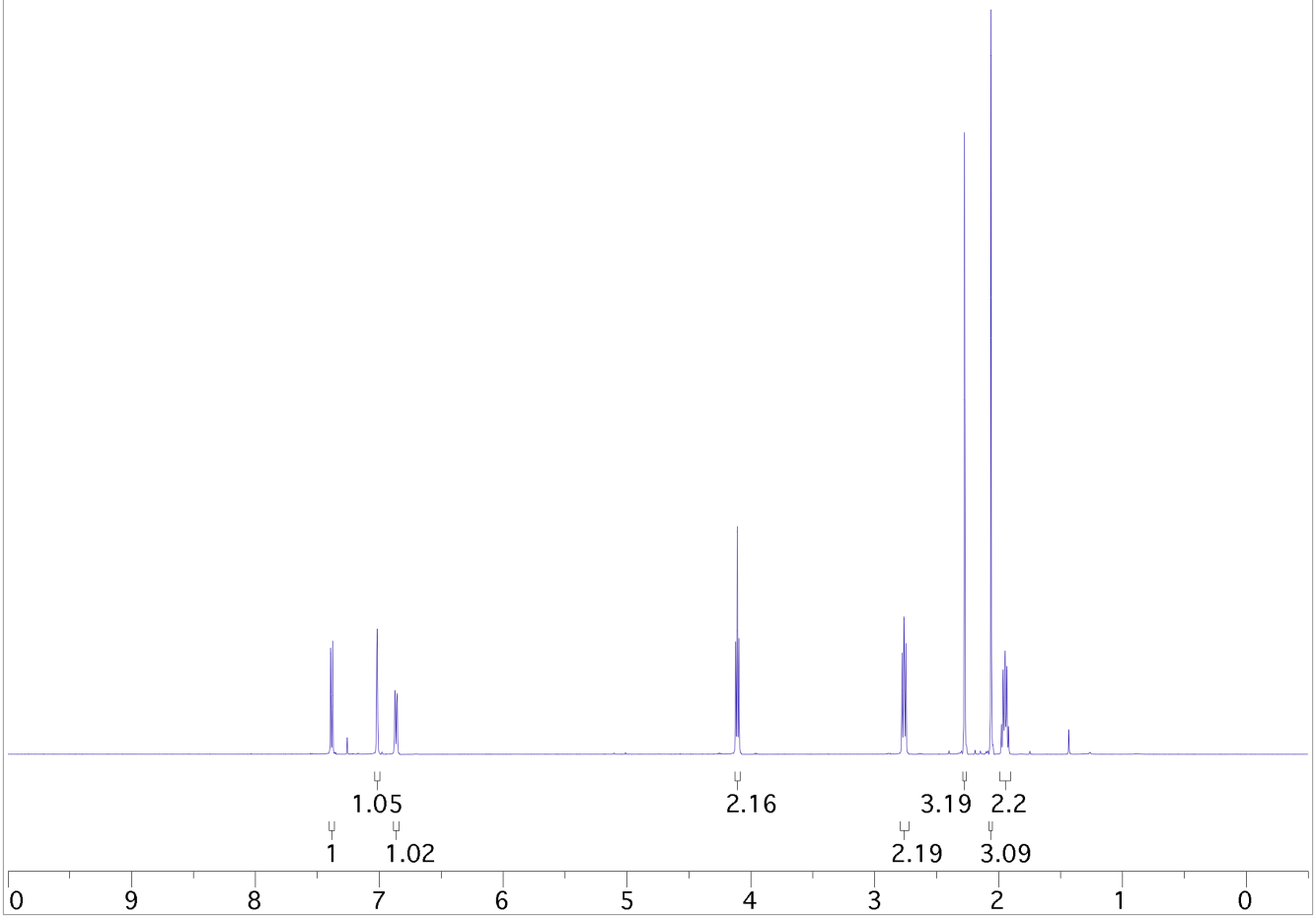
S21

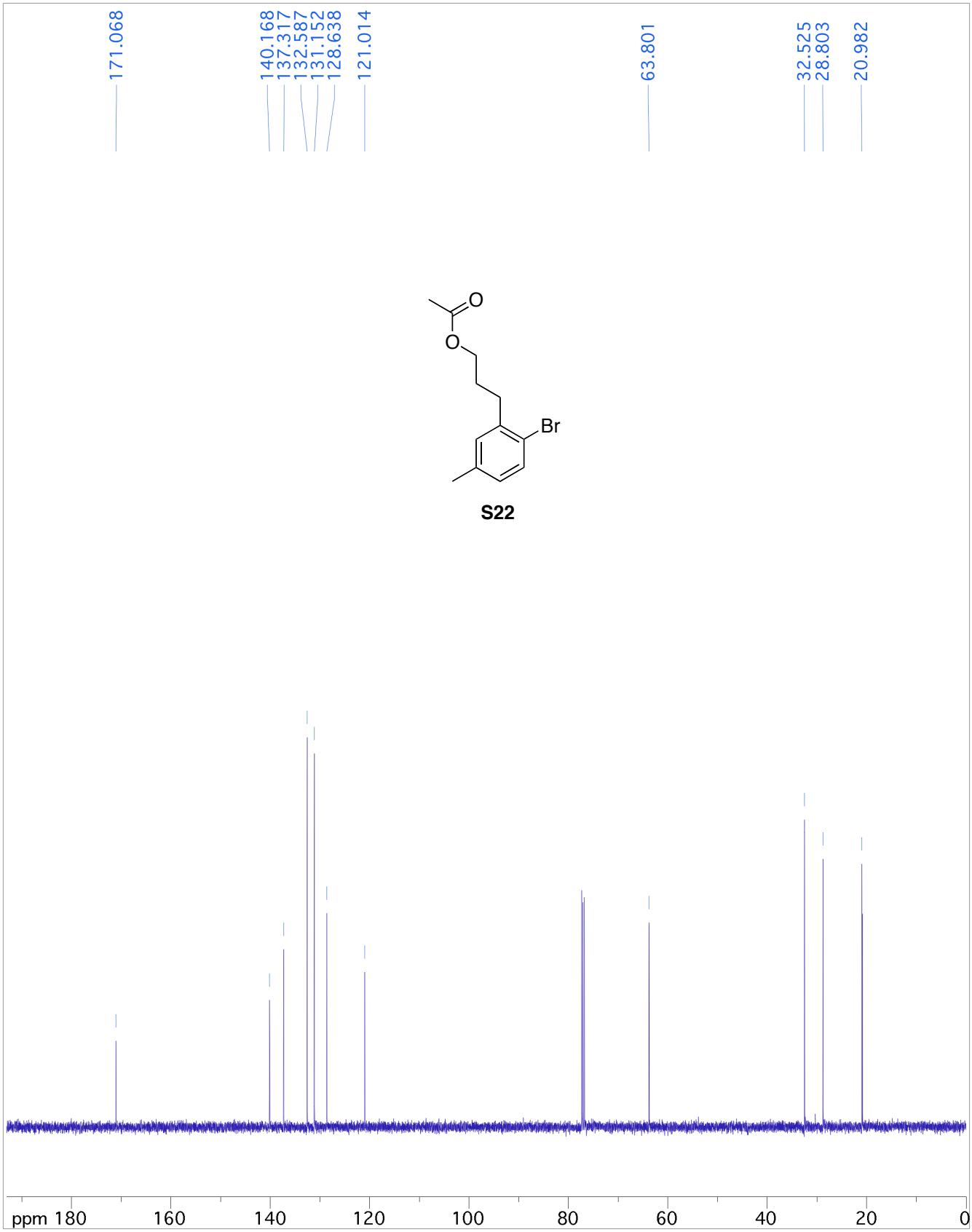

171.063
159.000
141.481
133.364
116.115
114.822
113.324
63.676
55.407
32.791
28.655
20.991
O
O
Br
O
80
160
140
120
100
80
60
40
20
0

S21

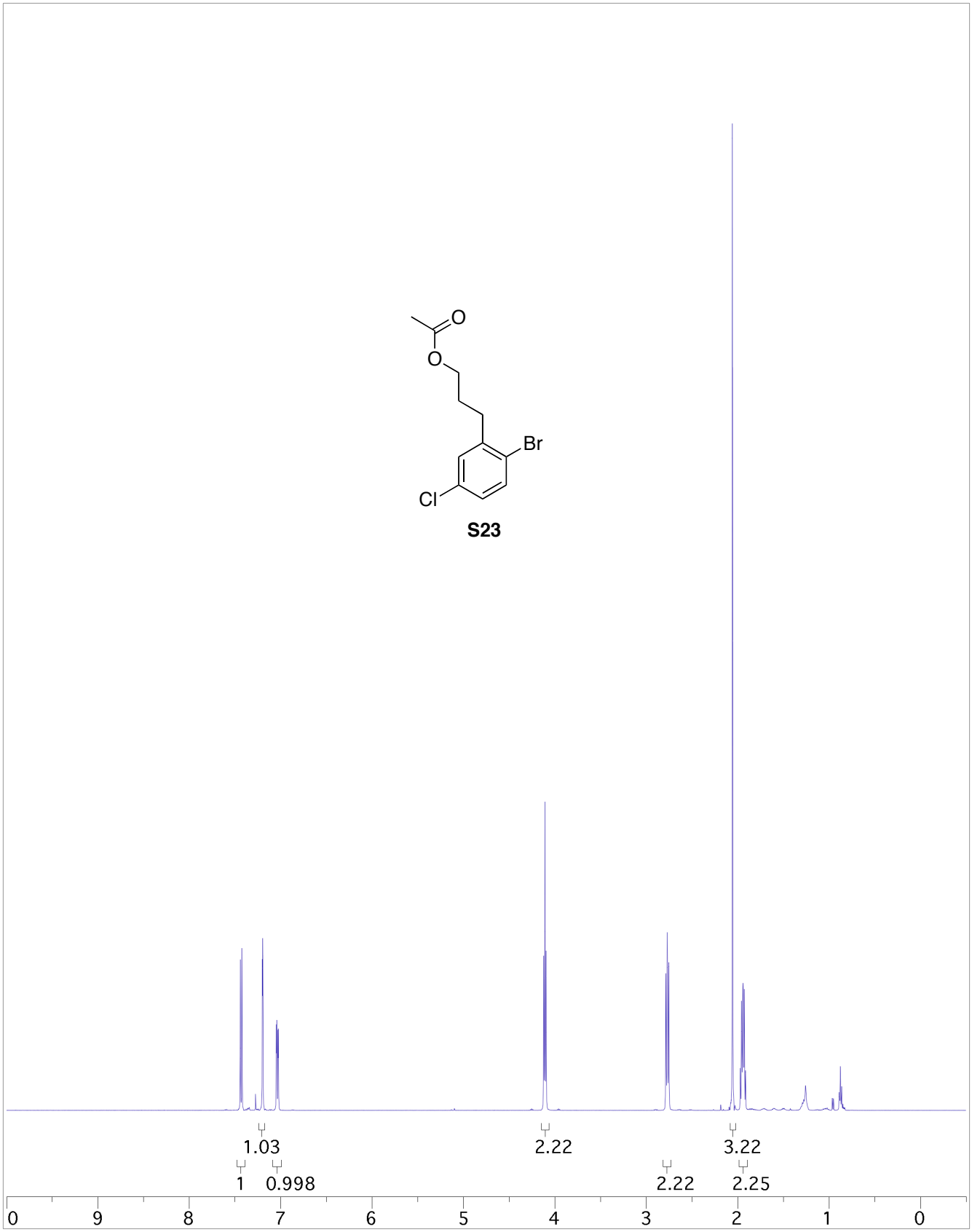


S22

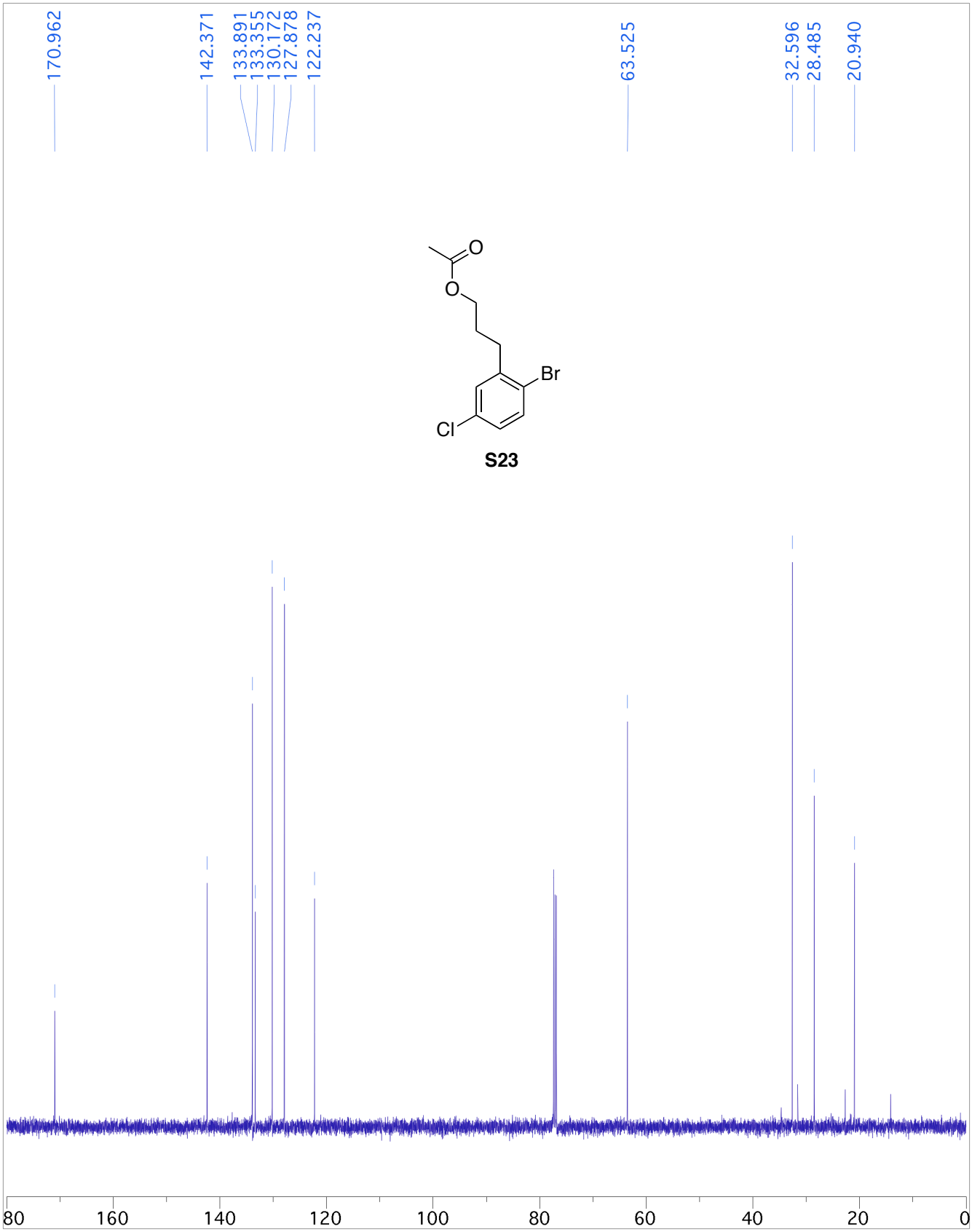



171.068
140.168
137.317
132.587
131.152
128.638
121.014
63.801
32.525
28.803
20.982
O
O
Br
ppm 180
160
140
120
100
80
60
40
20
0

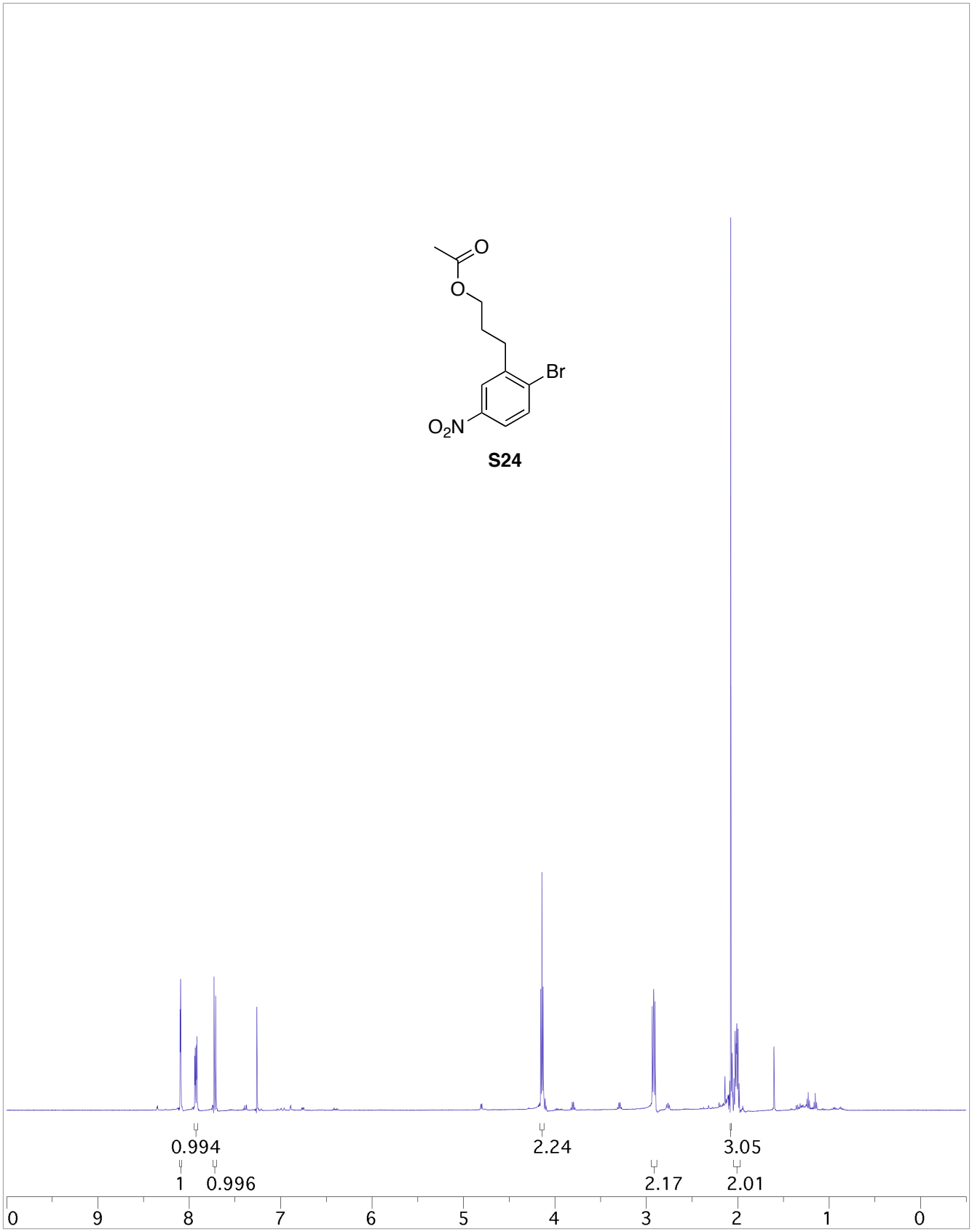
S22



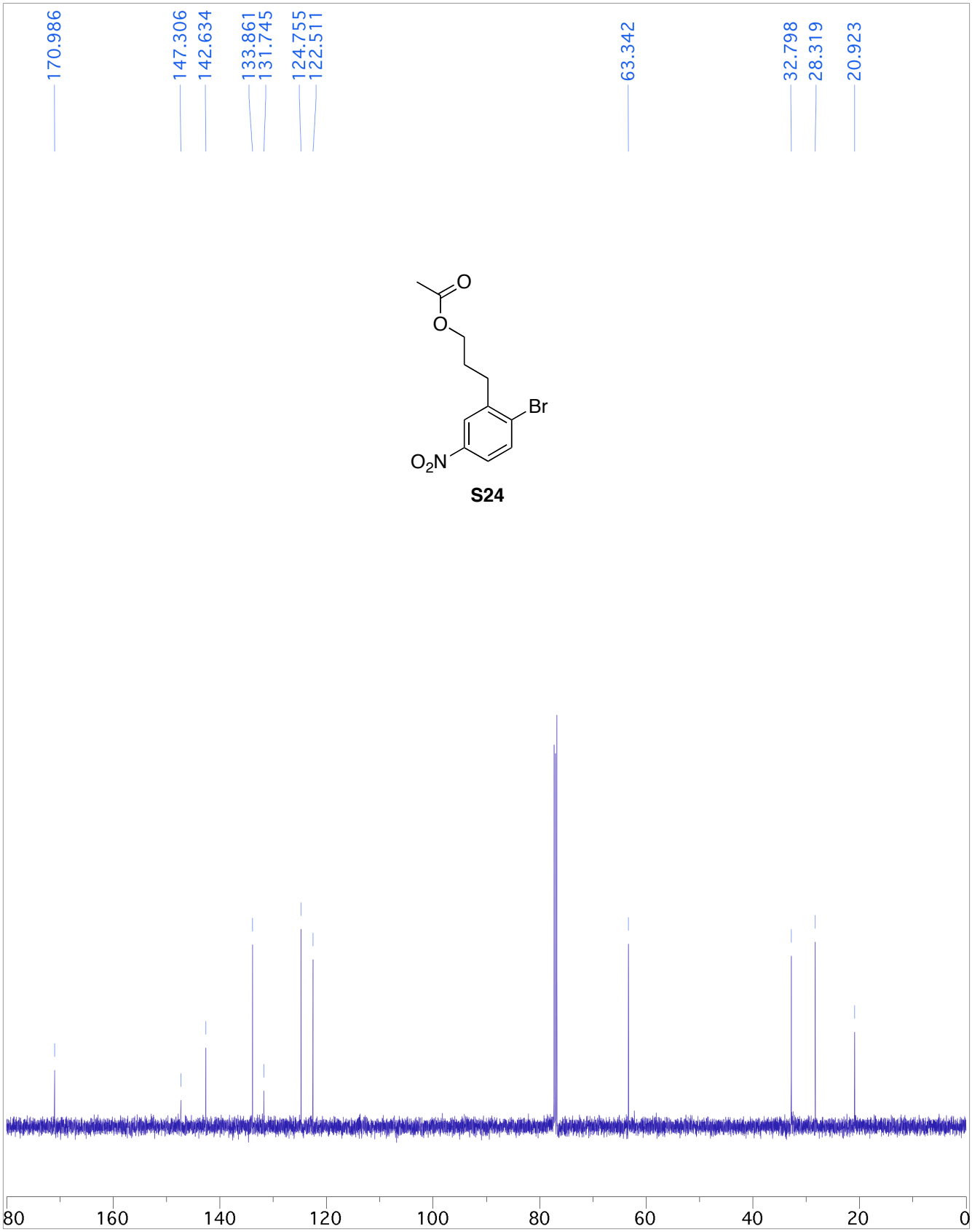
S23


170.962
142.371
133.891
133.355
130.172
127.878
122.237
63.525
32.596
28.485
20.940
O
O
Br
Cl
80
160
140
120
100
80
60
40
20
0

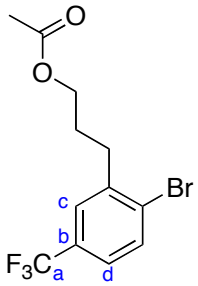
S23



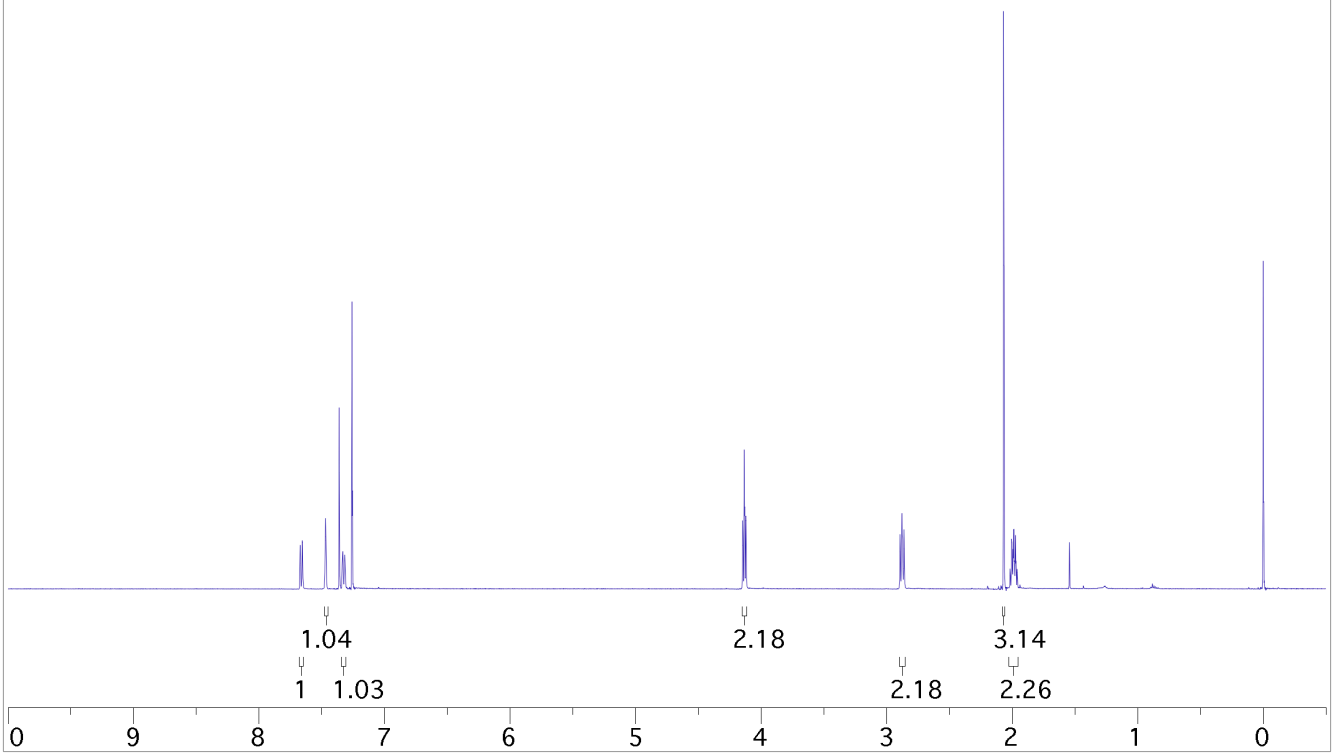
S24

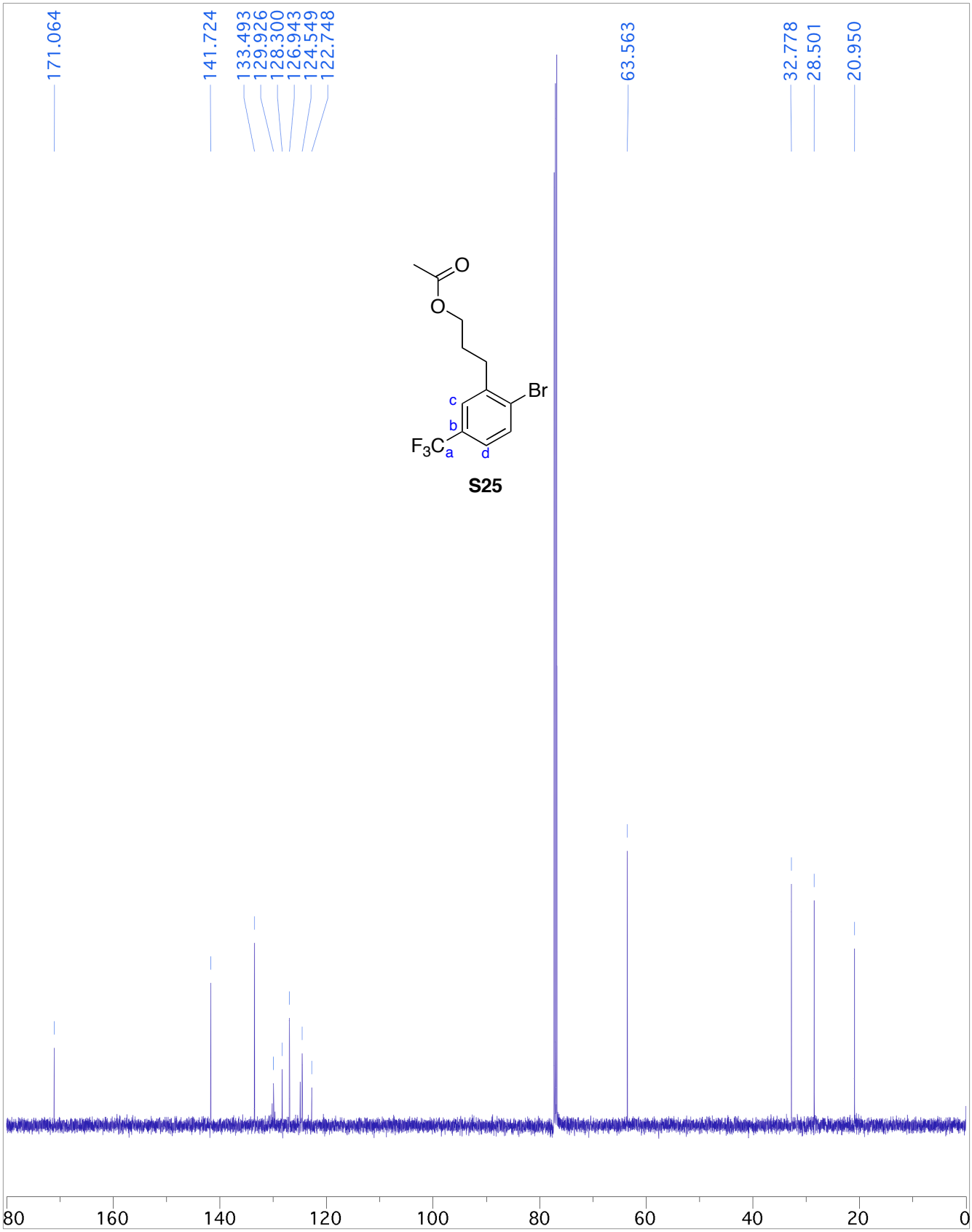

170.986
147.306
142.634
133.861
131.745
124.755
122.511
63.342
32.798
28.319
20.923
O
O
Br
O_2N
80
160
140
120
100
80
60
40
20
0

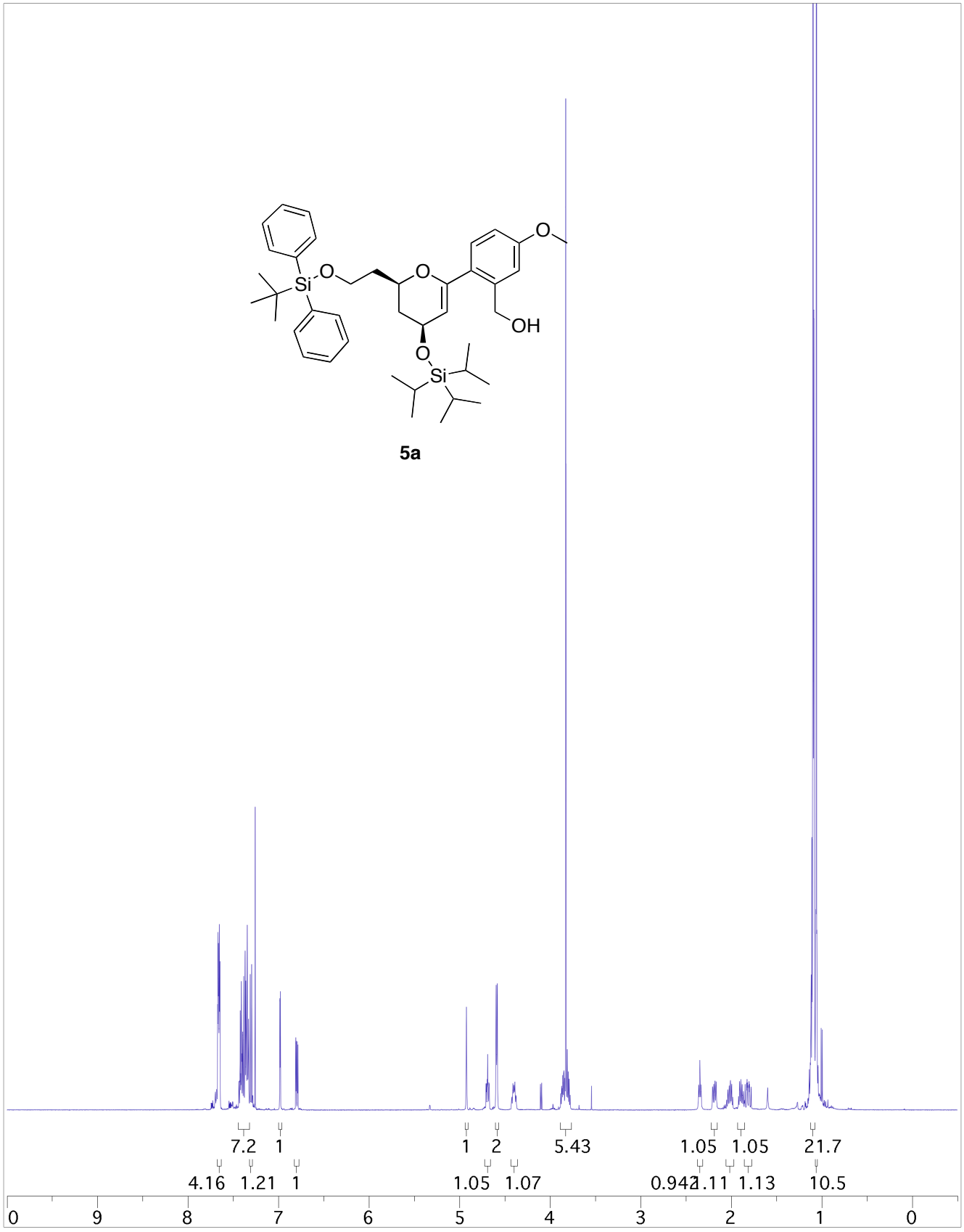
S24



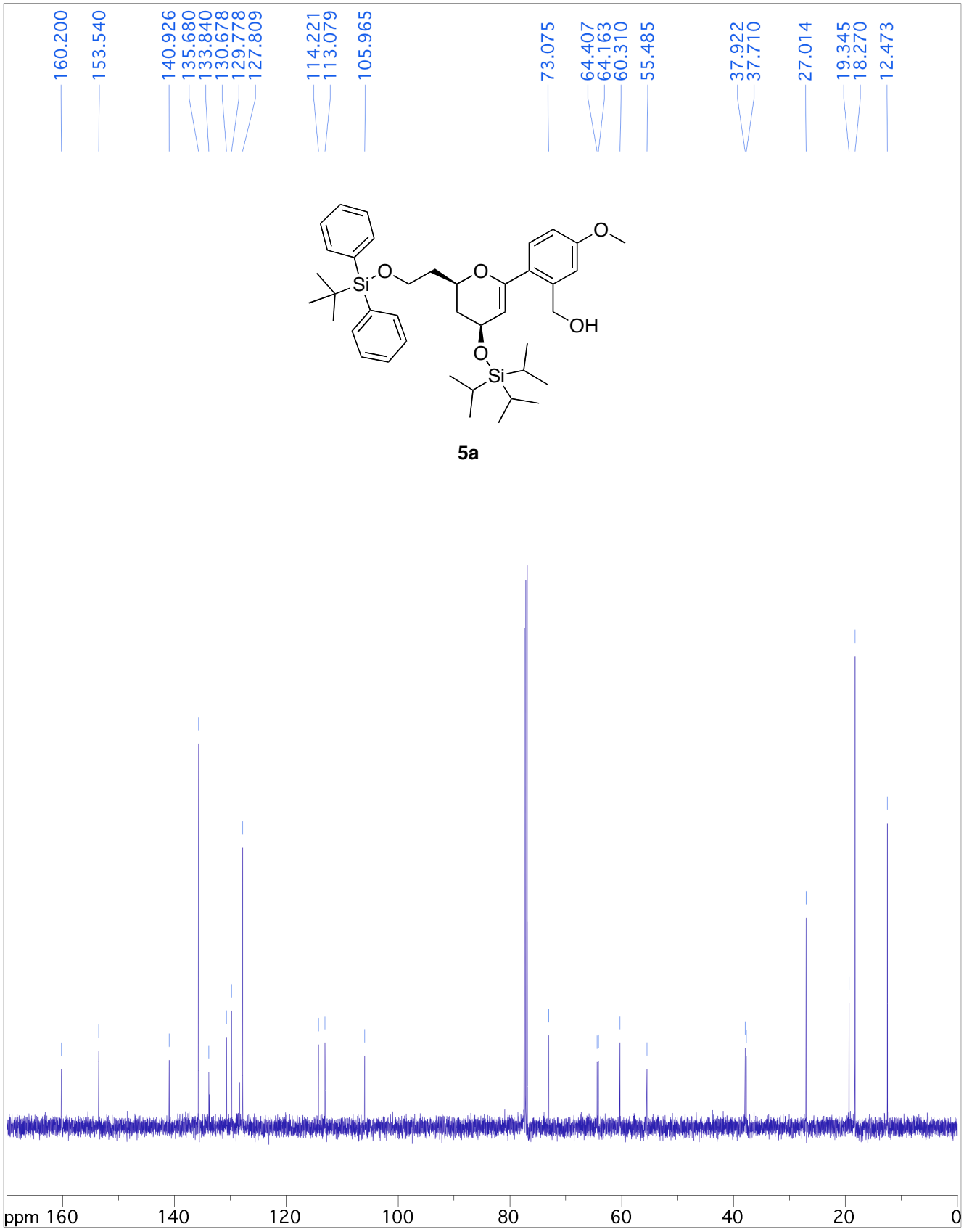
S25



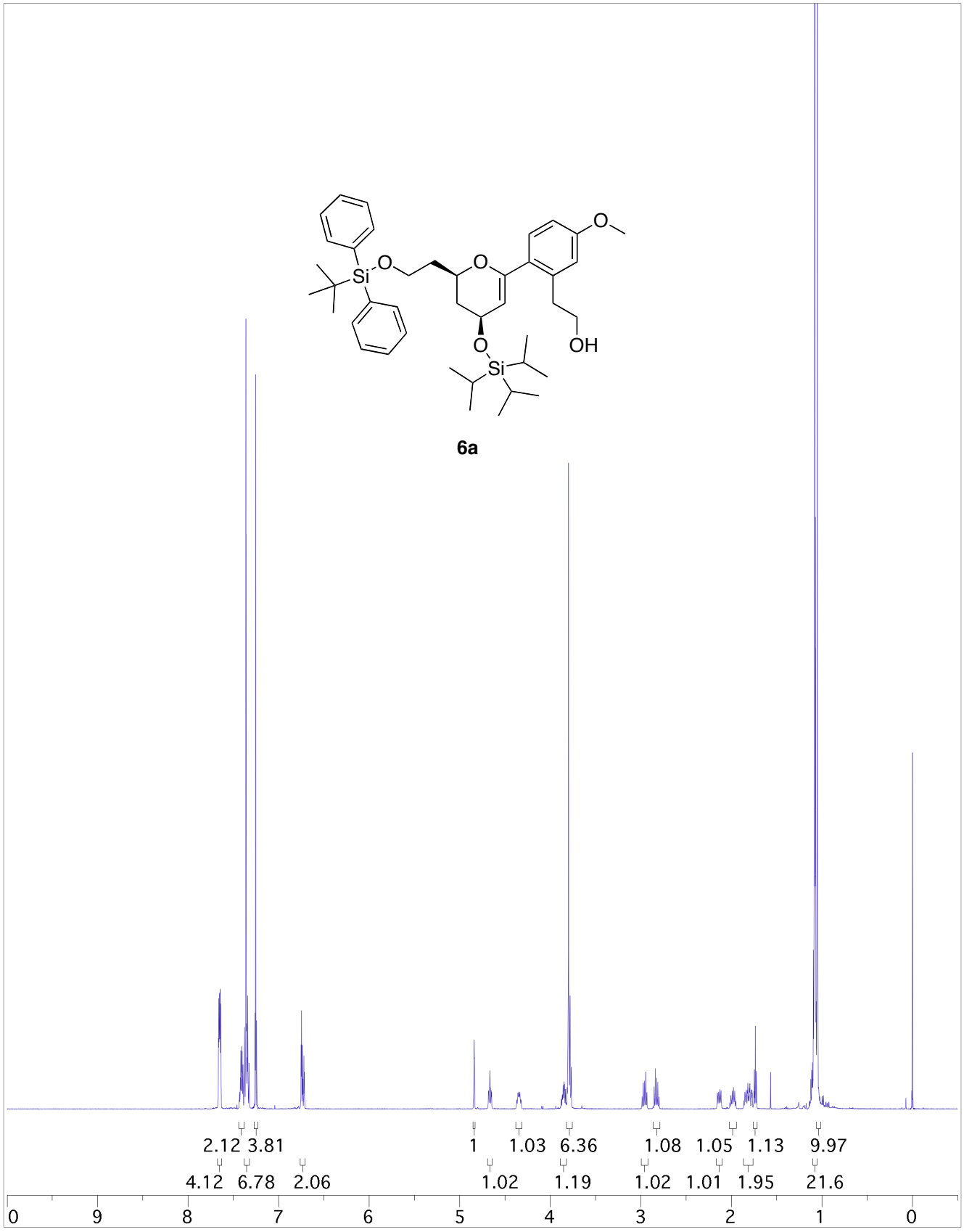

171.064
141.724
133.493
129.926
128.300
126.943
124.549
122.748
63.563
32.778
28.501
20.950
O
O
Br
c
b
F3Ca
d
S25
80
160
140
120
100
80
60
40
20
0


O
Si
O
O
OH
O
Si
7.2
1
1
2
5.43
1.05
1.05
21.7
4.16
1.21
1
1.05
1.07
0.94
1.11
1.13
10.5
0
9
8
7
6
5
4
3
2
1
0

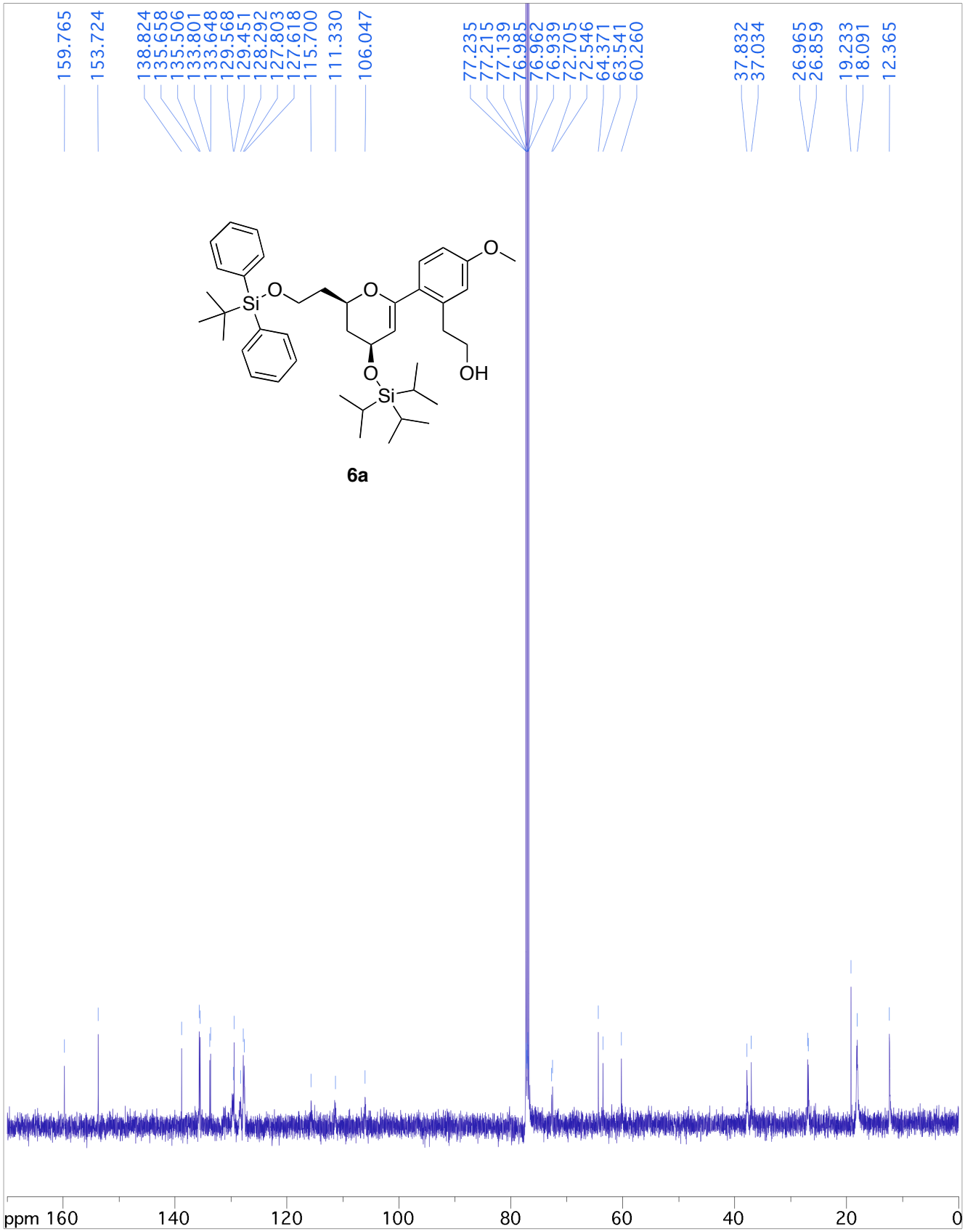
5a


160.200
153.540
140.926
135.680
133.840
130.678
129.778
127.809
114.221
113.079
105.965
73.075
64.407
64.163
60.310
55.485
37.922
37.710
27.014
19.345
18.270
12.473
Si
O
O
O
OH
O
Si
ppm 160
140
120
100
80
60
40
20
0

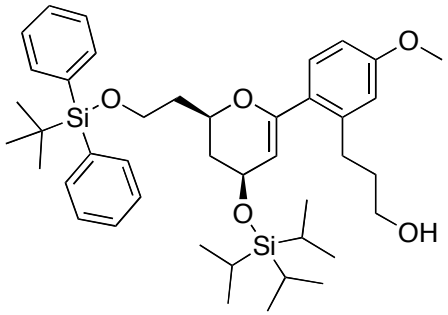
5a


O
Si
O
O
O
Si
OH
2.12
3.81
1
1.03
6.36
1.08
1.05
1.13
9.97
4.12
6.78
2.06
1.02
1.19
1.02
1.01
1.95
21.6
0
9
8
7
6
5
4
3
2
1
0

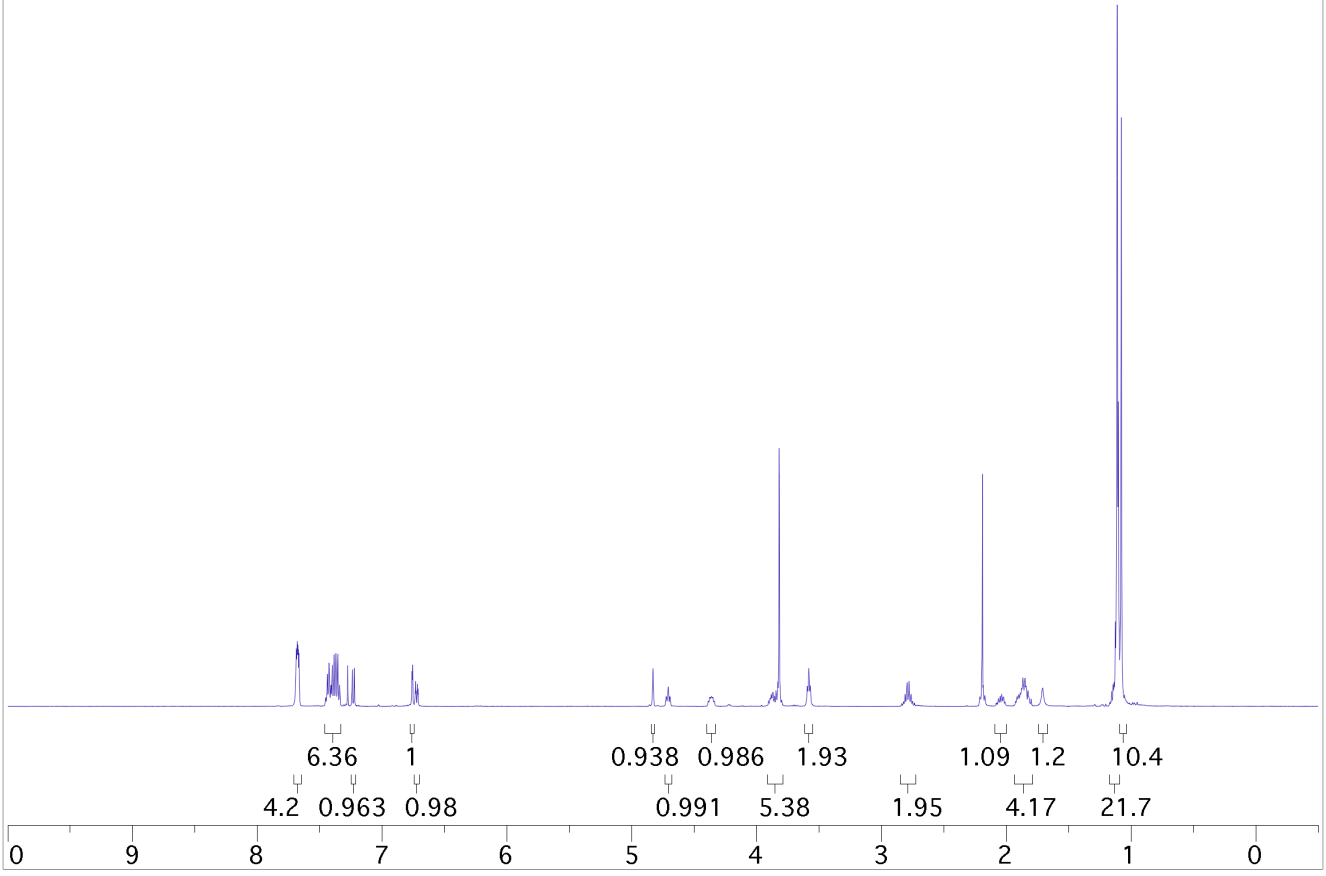
6a

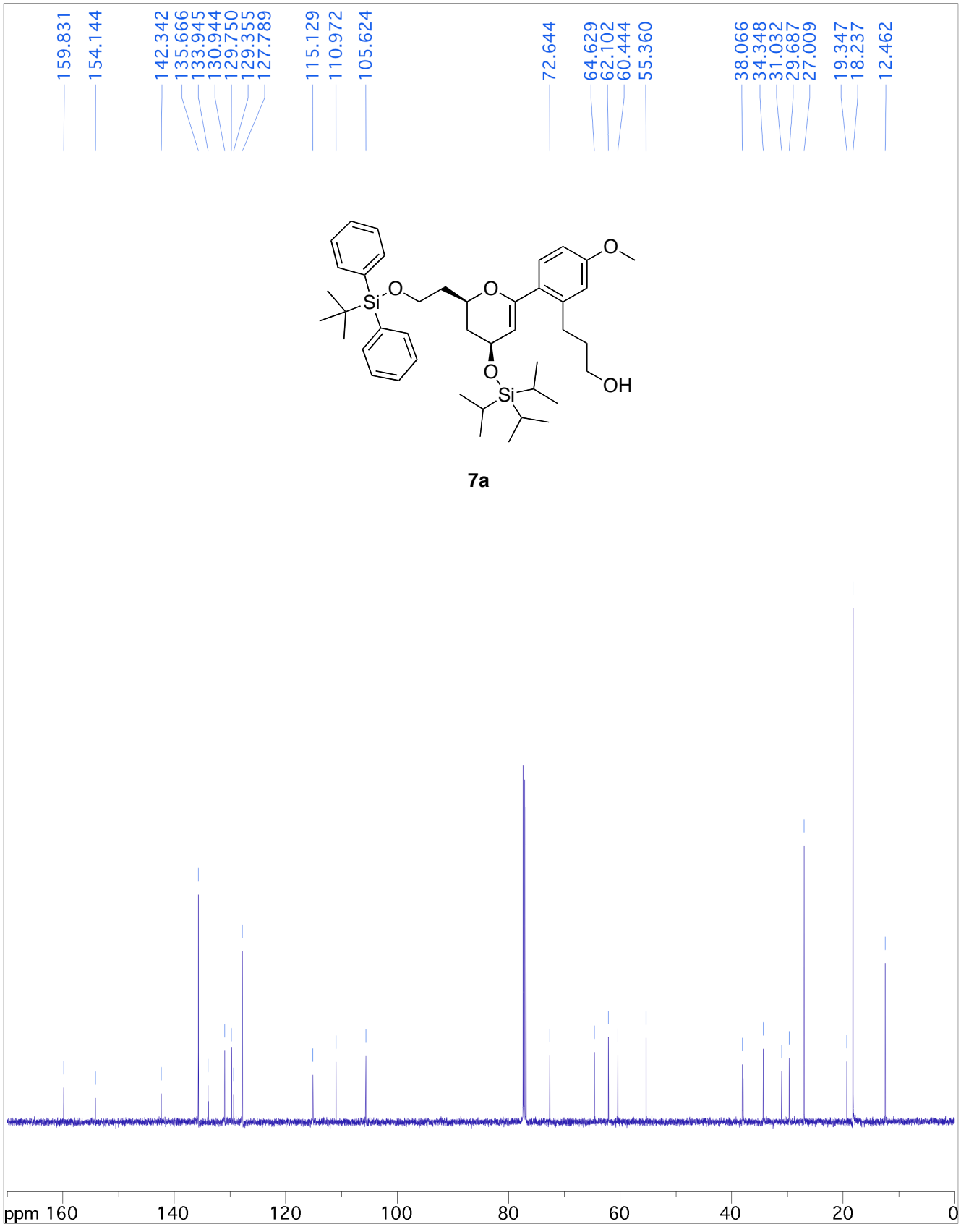

159.765
153.724
138.824
135.658
135.506
133.801
133.648
129.568
129.451
128.292
127.803
127.618
115.700
111.330
106.047
77.235
77.215
77.139
76.985
76.962
76.939
72.705
72.546
64.371
63.541
60.260
37.832
37.034
26.965
26.859
19.233
18.091
12.365
O
Si
O
O
O
Si
OH
ppm 160
140
120
100
80
60
40
20
0

6a

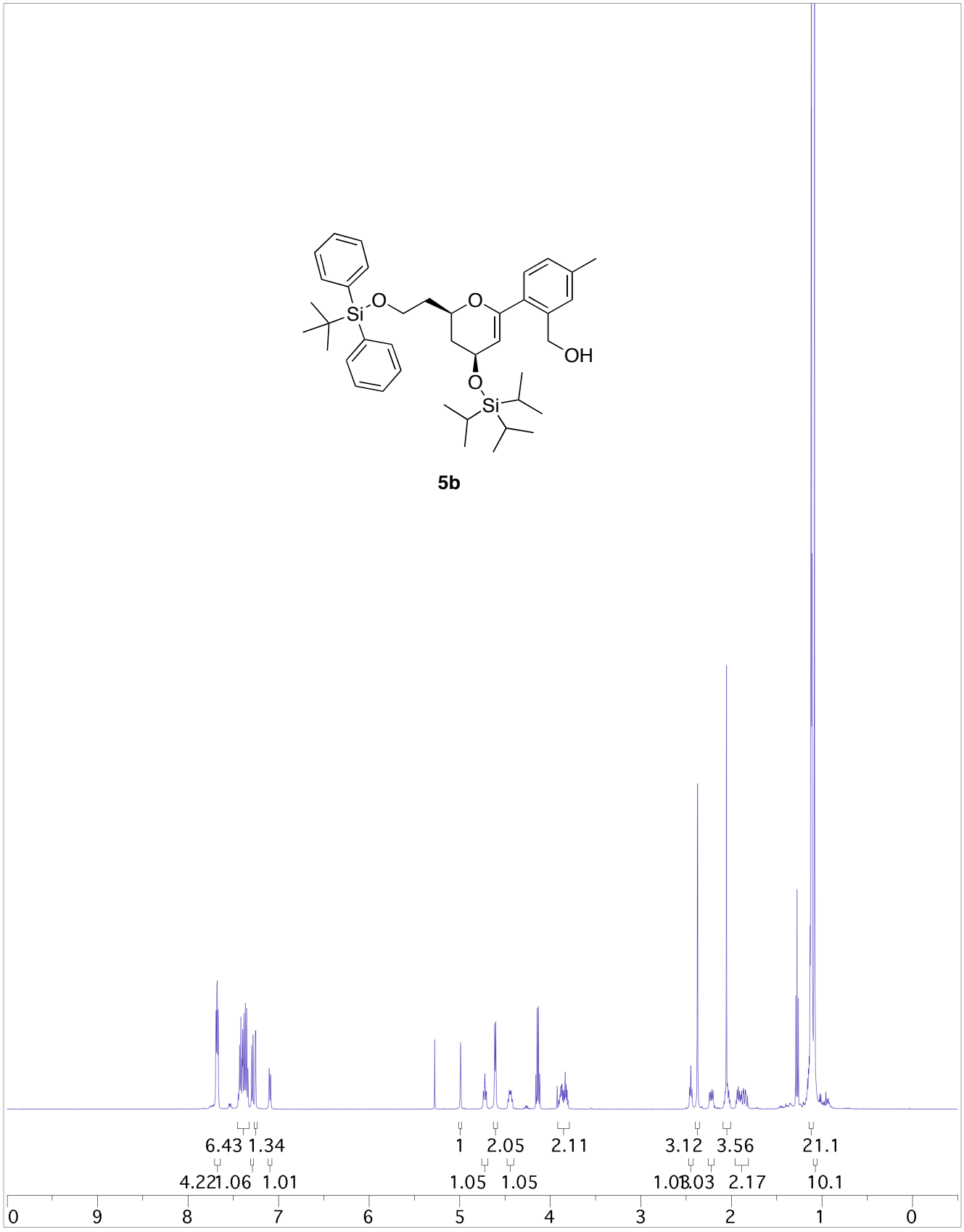

O
Si
O
O
O
Si
OH

7a

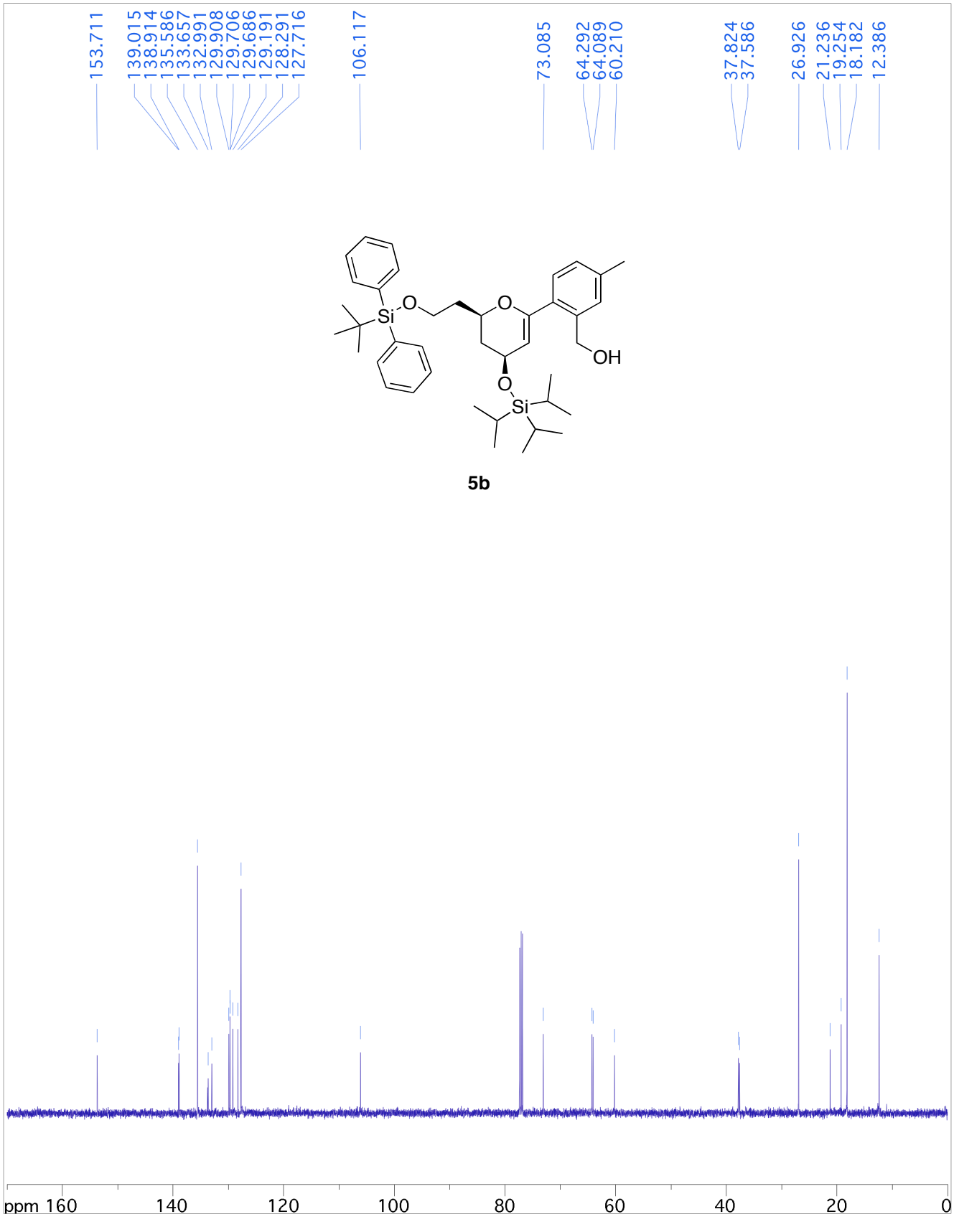

6.36
1
0.938
0.986
1.93
1.09
1.2
10.4
4.2
0.963
0.98
0.991
5.38
1.95
4.17
21.7
0
9
8
7
6
5
4
3
2
1
0


159.831
154.144
142.342
135.666
133.945
130.944
129.750
129.355
127.789
115.129
110.972
105.624
72.644
64.629
62.102
60.444
55.360
38.066
34.348
31.032
29.687
27.009
19.347
18.237
12.462
O
Si
O
O
O
Si
OH
ppm 160
140
120
100
80
60
40
20
0

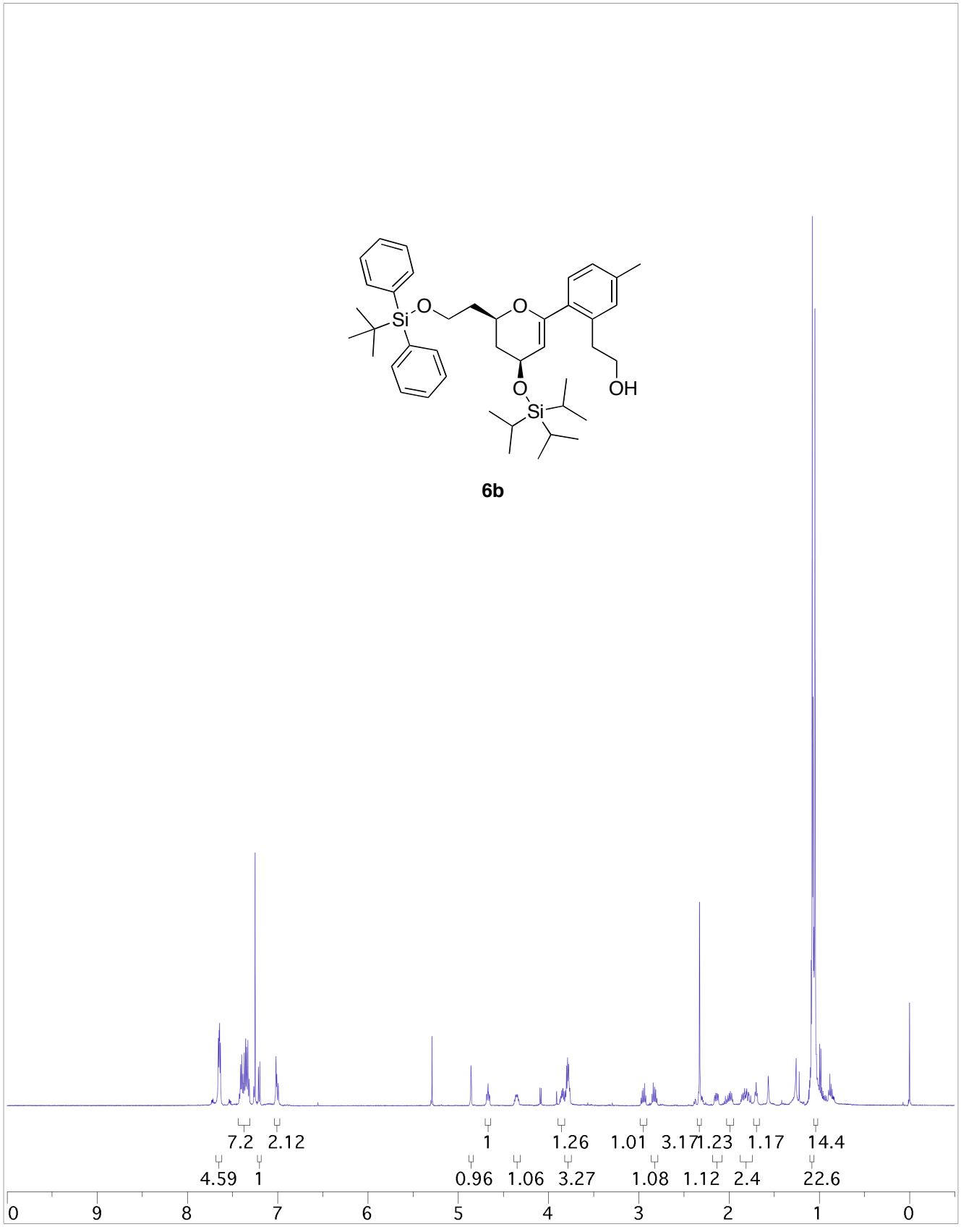
7a


Si
O
O
OH
O
Si
6.43
1.34
4.22
1.06
1.01
1
2.05
2.11
1.05
1.05
3.12
3.56
21.1
1.08
3.03
2.17
10.1
0
9
8
7
6
5
4
3
2
1
0

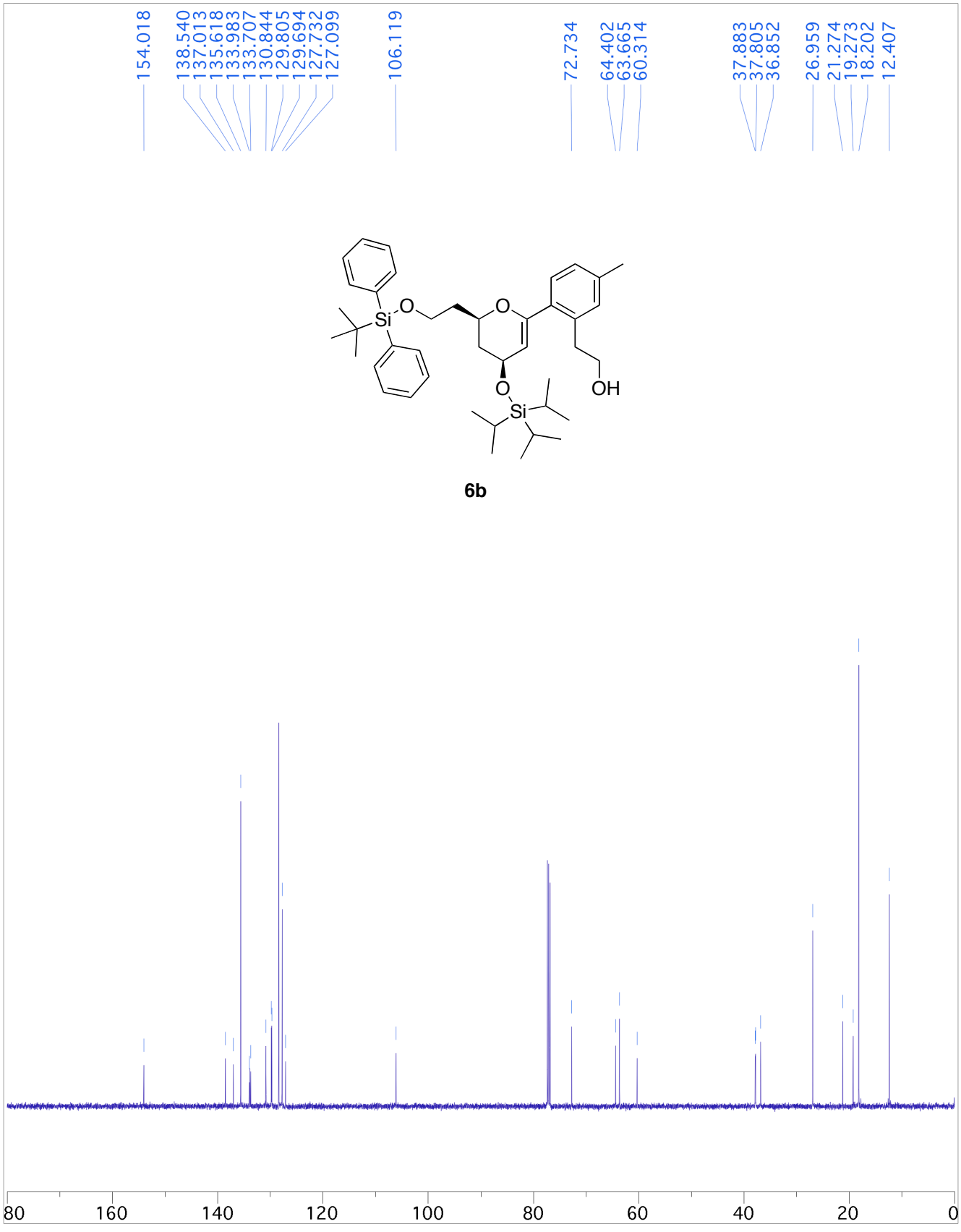
5b


153.711
139.015
138.914
135.586
133.657
132.991
129.908
129.706
129.686
129.191
128.291
127.716
106.117
73.085
64.292
64.089
60.210
37.824
37.586
26.926
21.236
19.254
18.182
12.386
Si
O
O
OH
O
Si
ppm 160
140
120
100
80
60
40
20
0

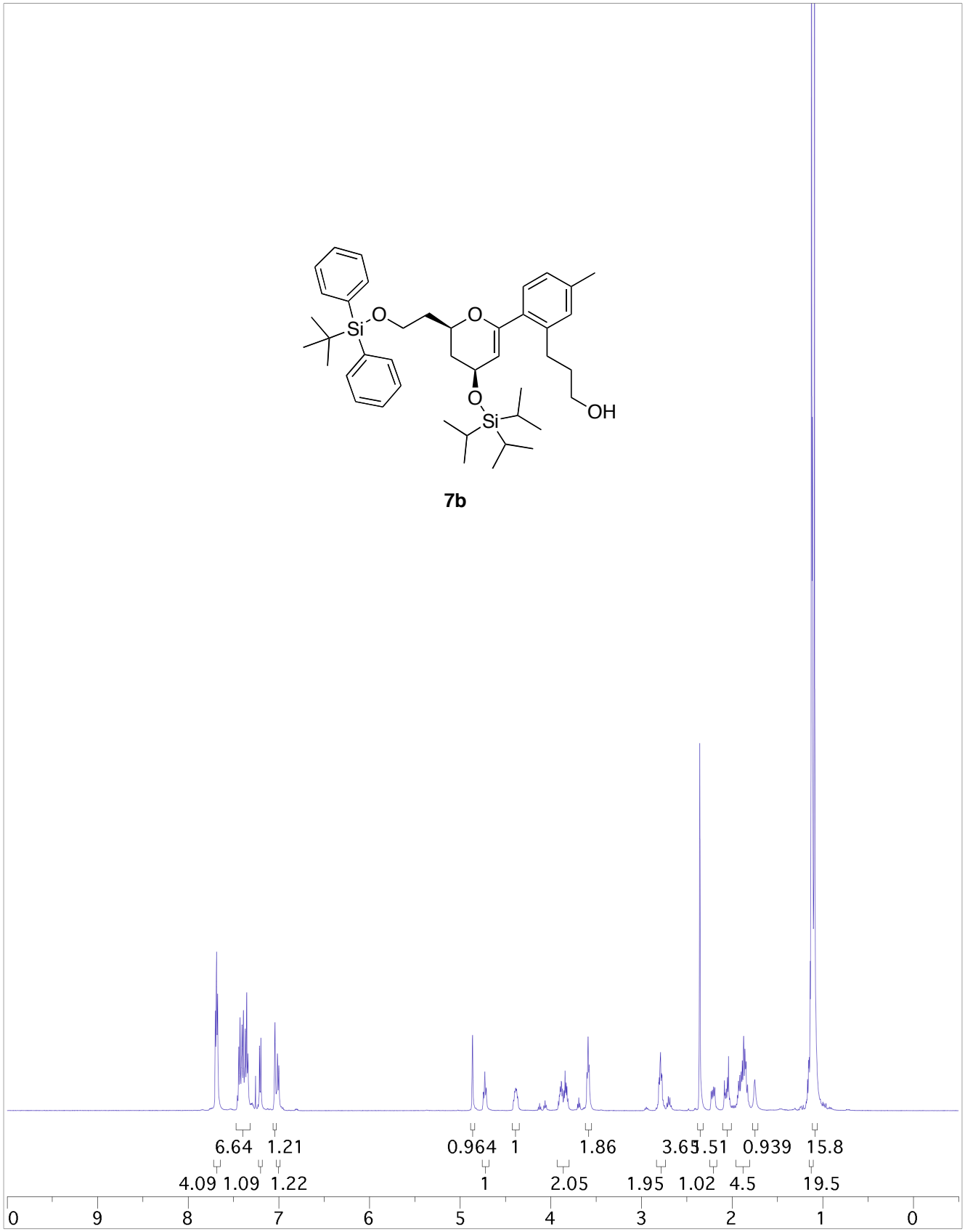
5b


Si
O
O
O
Si
OH
7.2
2.12
1
1.26
1.01
3.17
1.23
1.17
14.4
4.59
1
0.96
1.06
3.27
1.08
1.12
2.4
22.6
0
9
8
7
6
5
4
3
2
1
0

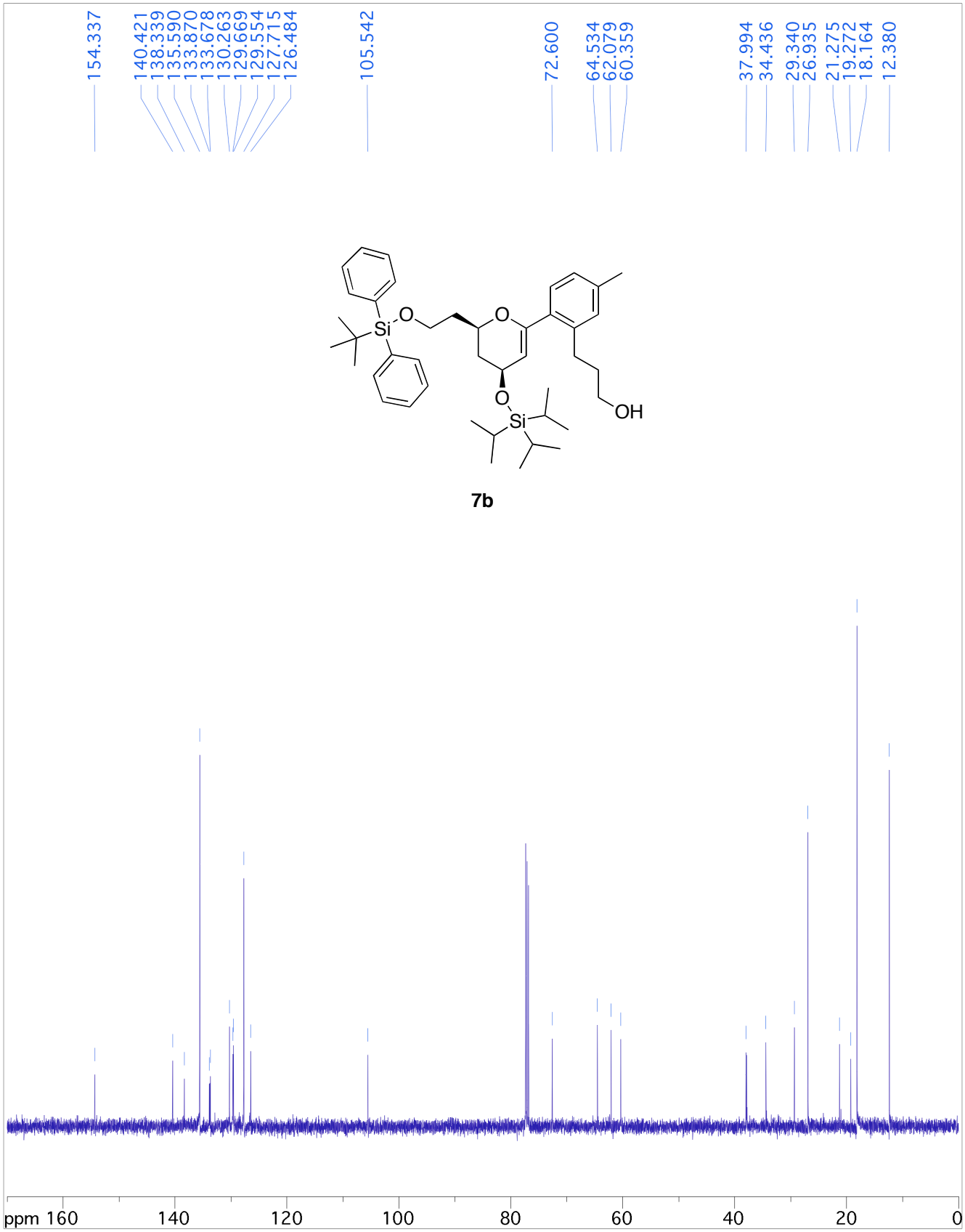
6b


154.018
138.540
137.013
135.618
133.983
133.707
130.844
129.805
129.694
127.732
127.099
106.119
72.734
64.402
63.665
60.314
37.883
37.805
36.852
26.959
21.274
19.273
18.202
12.407
Si
O
O
O
Si
OH
80
160
140
120
100
80
60
40
20
0

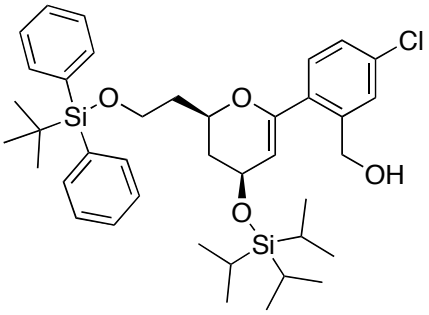
6b


Si
O
O
O
Si
OH
6.64
1.21
0.964
1
1.86
3.65
1.51
0.939
15.8
4.09
1.09
1.22
1
2.05
1.95
1.02
4.5
19.5
0
9
8
7
6
5
4
3
2
1
0

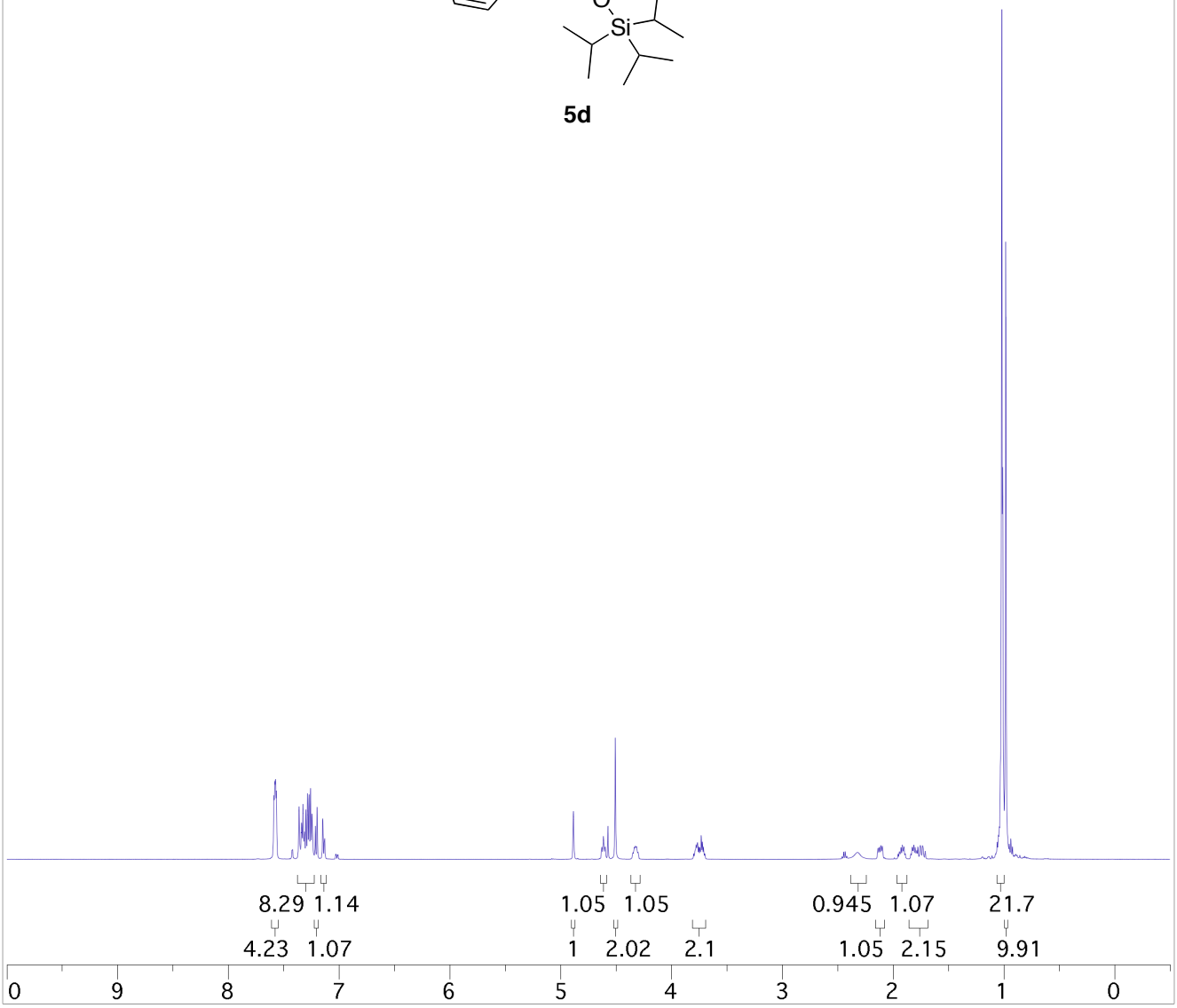
7b

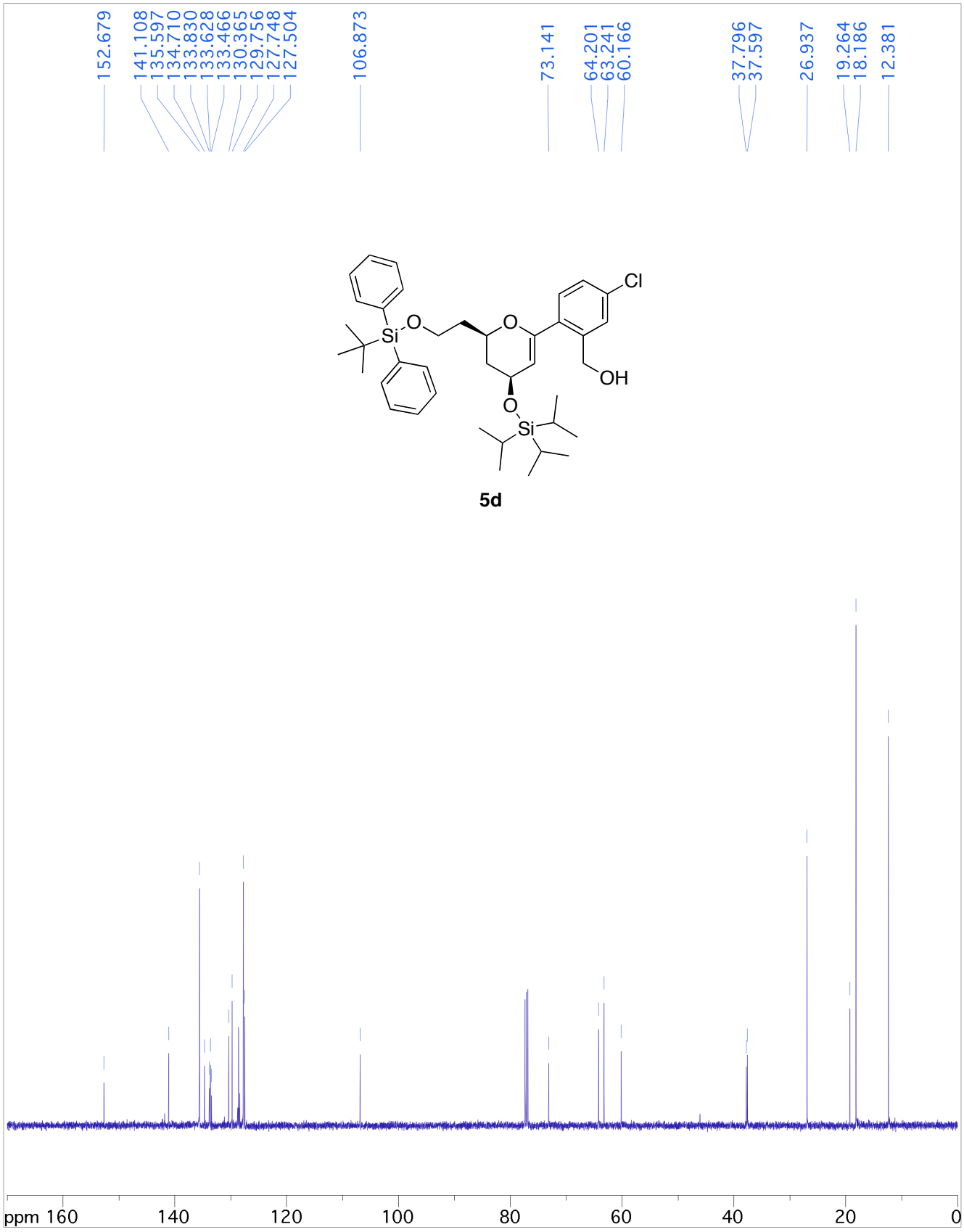

154.337
140.421
138.339
135.590
133.870
133.678
130.263
129.669
129.554
127.715
126.484
105.542
72.600
64.534
62.079
60.359
37.994
34.436
29.340
26.935
21.275
19.272
18.164
12.380
Si
O
O
O
Si
OH
ppm 160
140
120
100
80
60
40
20
0

7b

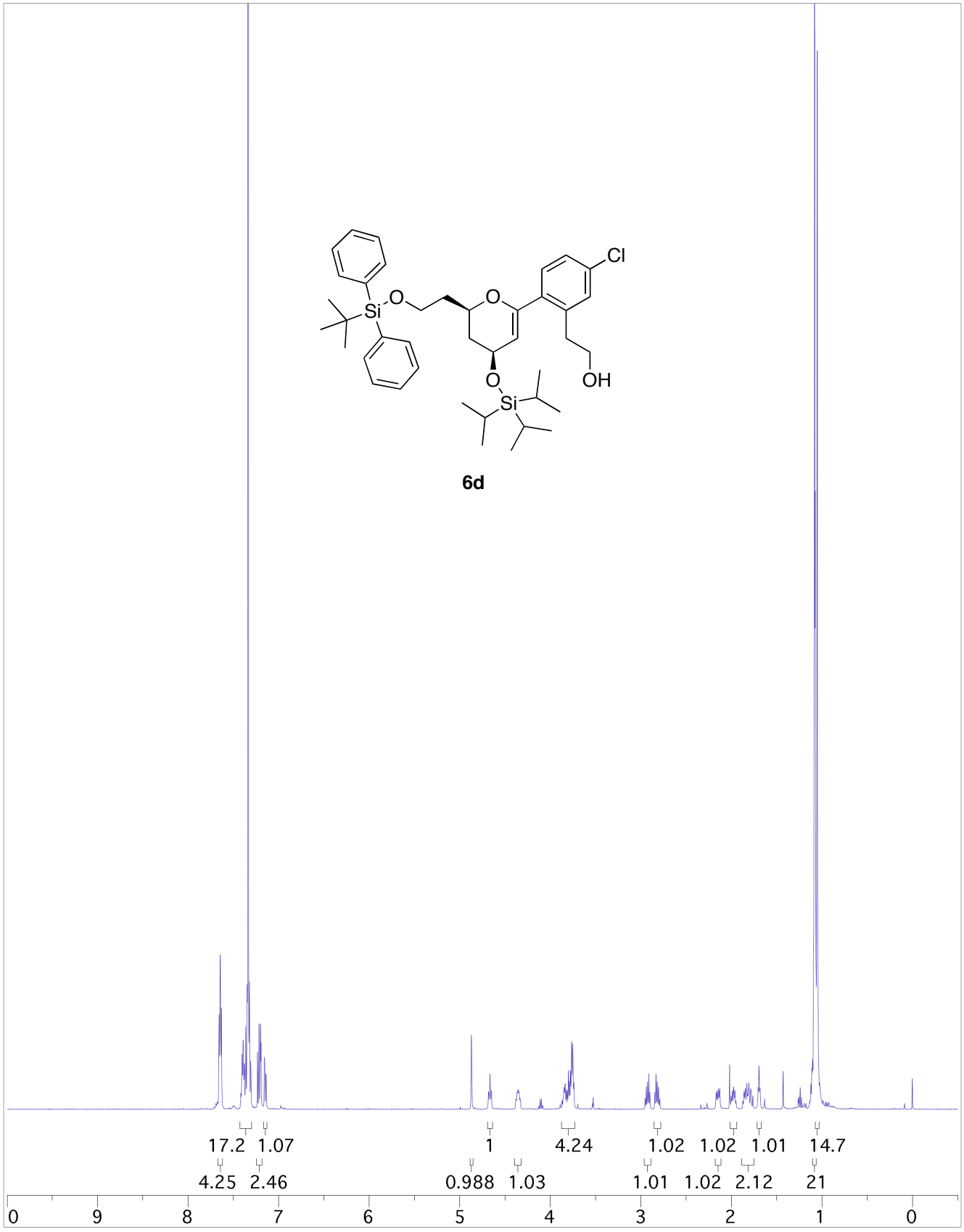

Cl
O
Si
O
O
OH
O
Si

5d

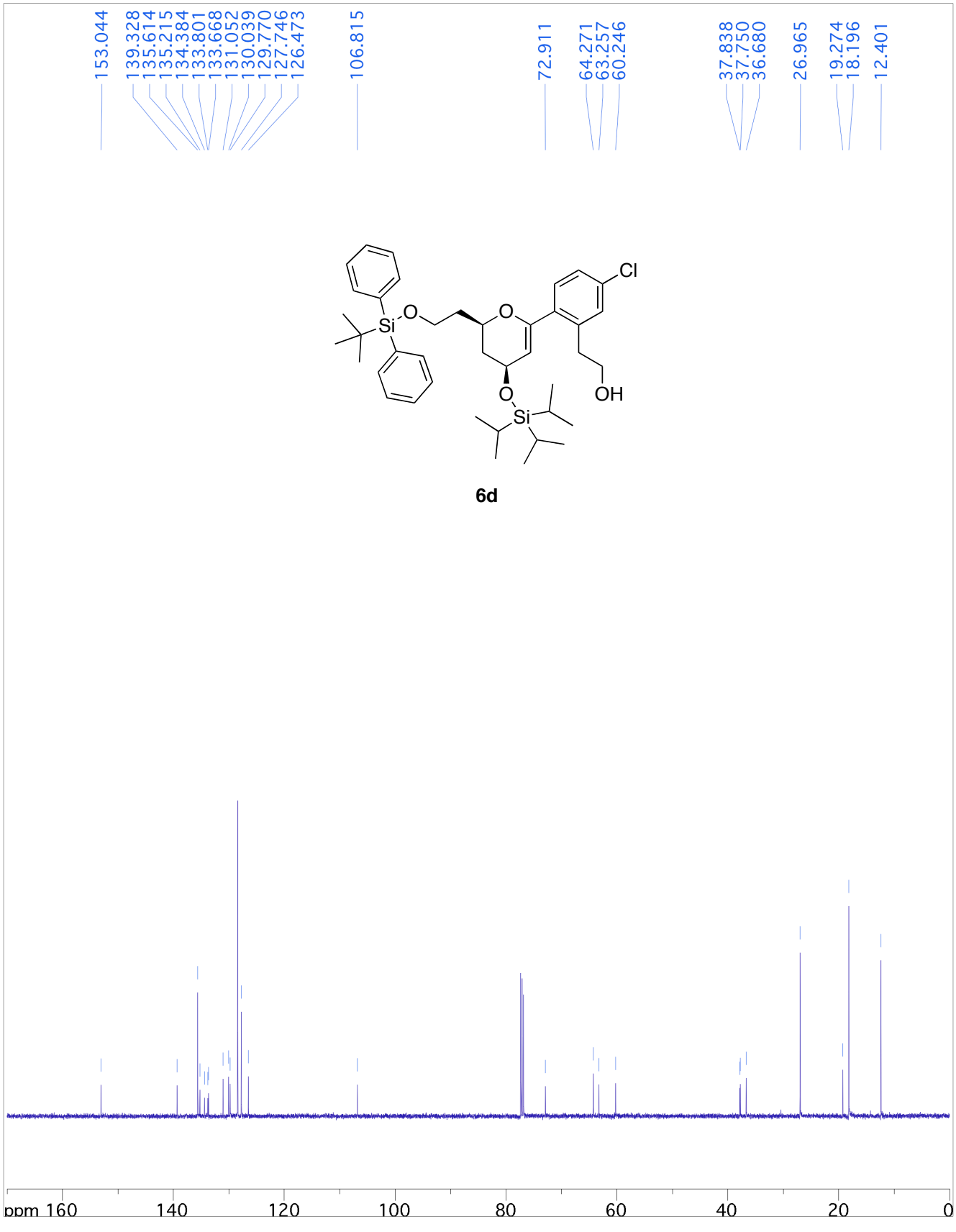

8.29
1.14
4.23
1.07
1.05
1.05
1
2.02
2.1
0.945
1.07
1.05
2.15
21.7
9.91
0
9
8
7
6
5
4
3
2
1
0


152.679
141.108
135.597
134.710
133.830
133.628
133.466
130.365
129.756
127.748
127.504
106.873
73.141
64.201
63.241
60.166
37.796
37.597
26.937
19.264
18.186
12.381
Cl
OH
O
Si
O
O
Si
ppm 160
140
120
100
80
60
40
20
0

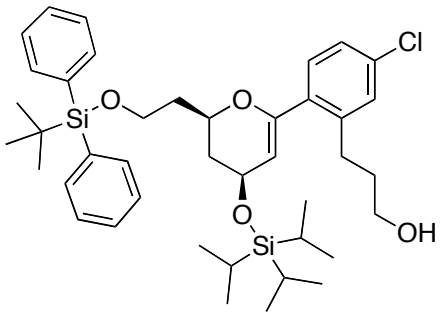
5d


Cl
O
Si
O
O
OH
O
Si
17.2
1.07
1
4.24
1.02
1.02
1.01
14.7
4.25
2.46
0.988
1.03
1.01
1.02
2.12
21
0
9
8
7
6
5
4
3
2
1
0

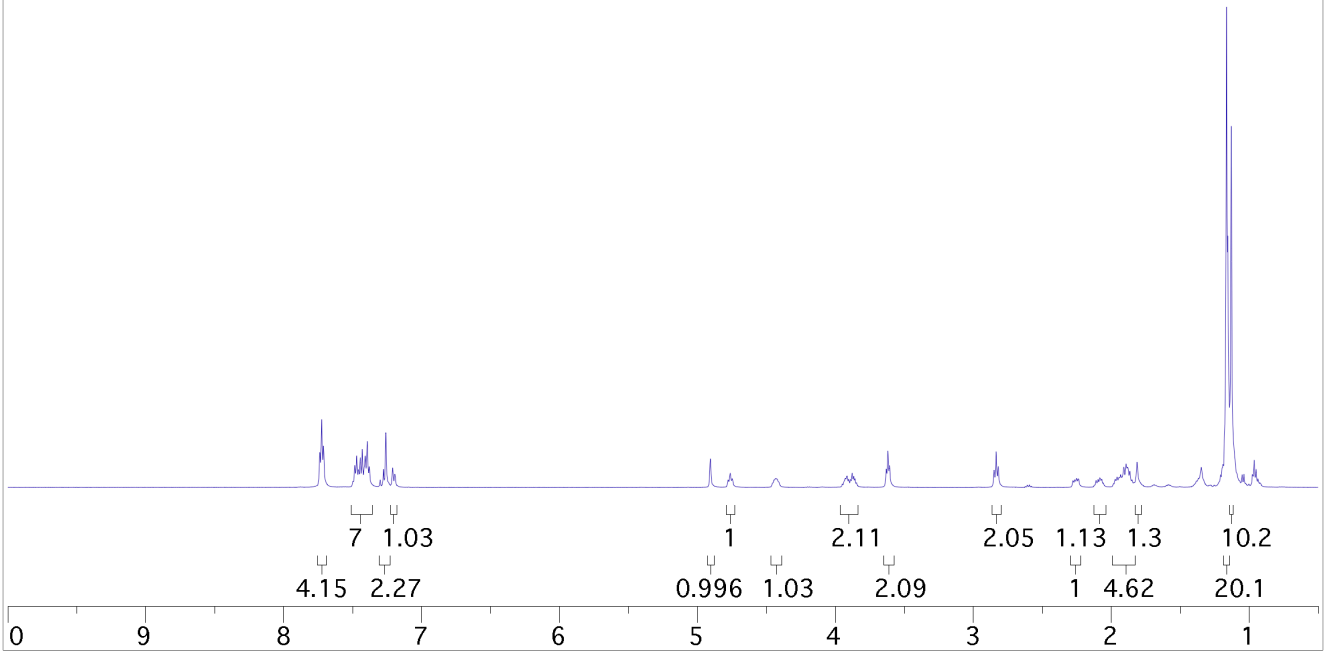
6d

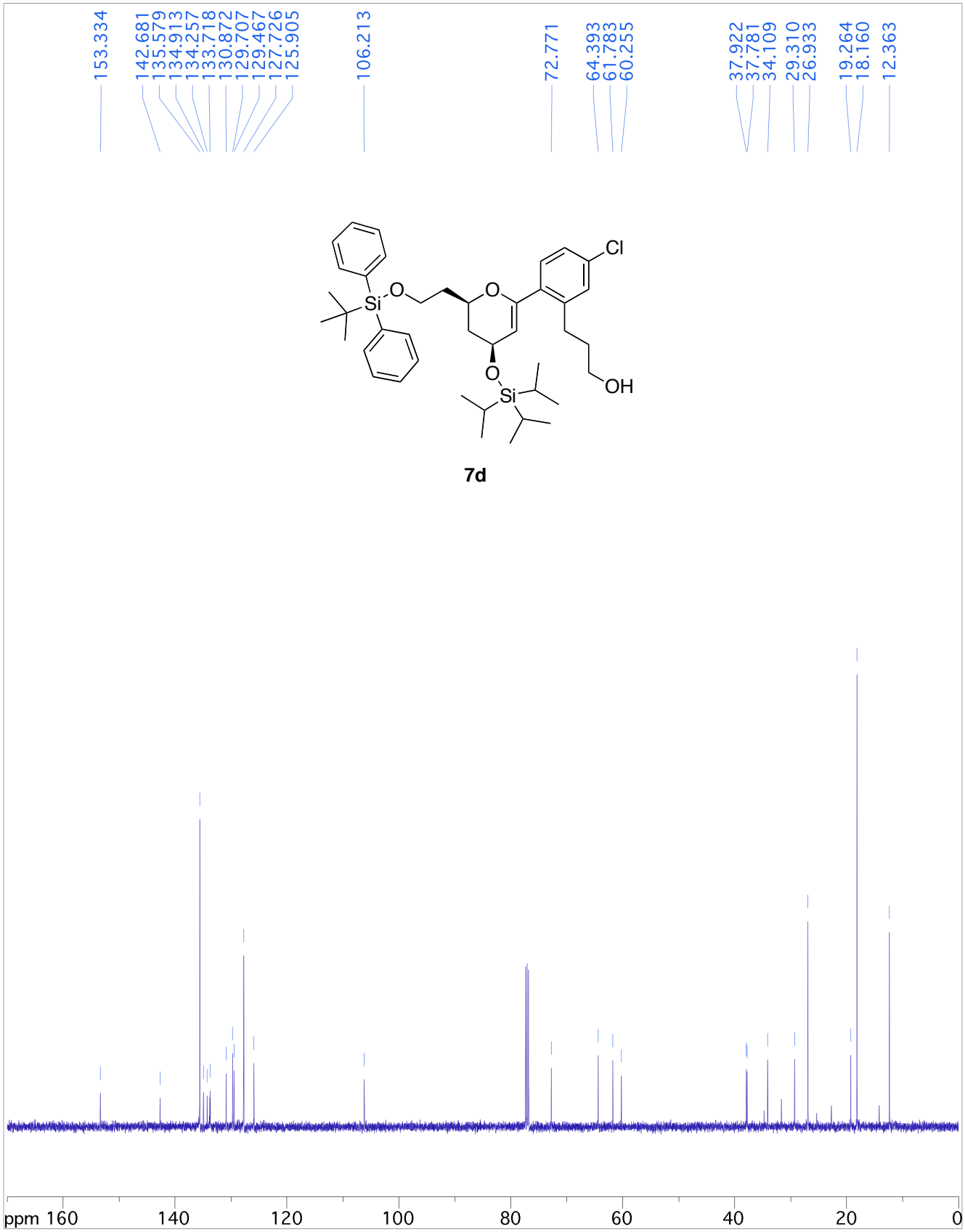

153.044
139.328
135.614
135.215
134.384
133.801
133.668
131.052
130.039
129.770
127.746
126.473
106.815
72.911
64.271
63.257
60.246
37.838
37.750
36.680
26.965
19.274
18.196
12.401
Cl
Si
O
O
O
Si
OH
ppm 160
140
120
100
80
60
40
20
0

6d


Cl
O
Si
O
O
Si
OH

7d


7
1.03
4.15
2.27
1
0.996
1.03
2.11
2.09
2.05
1.13
1
1.3
4.62
10.2
20.1
0
9
8
7
6
5
4
3
2
1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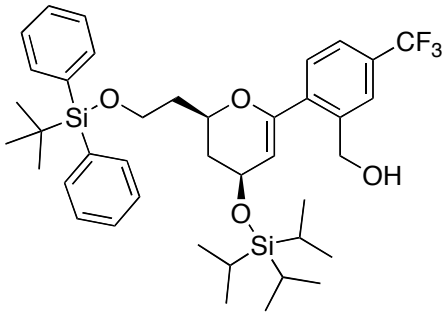
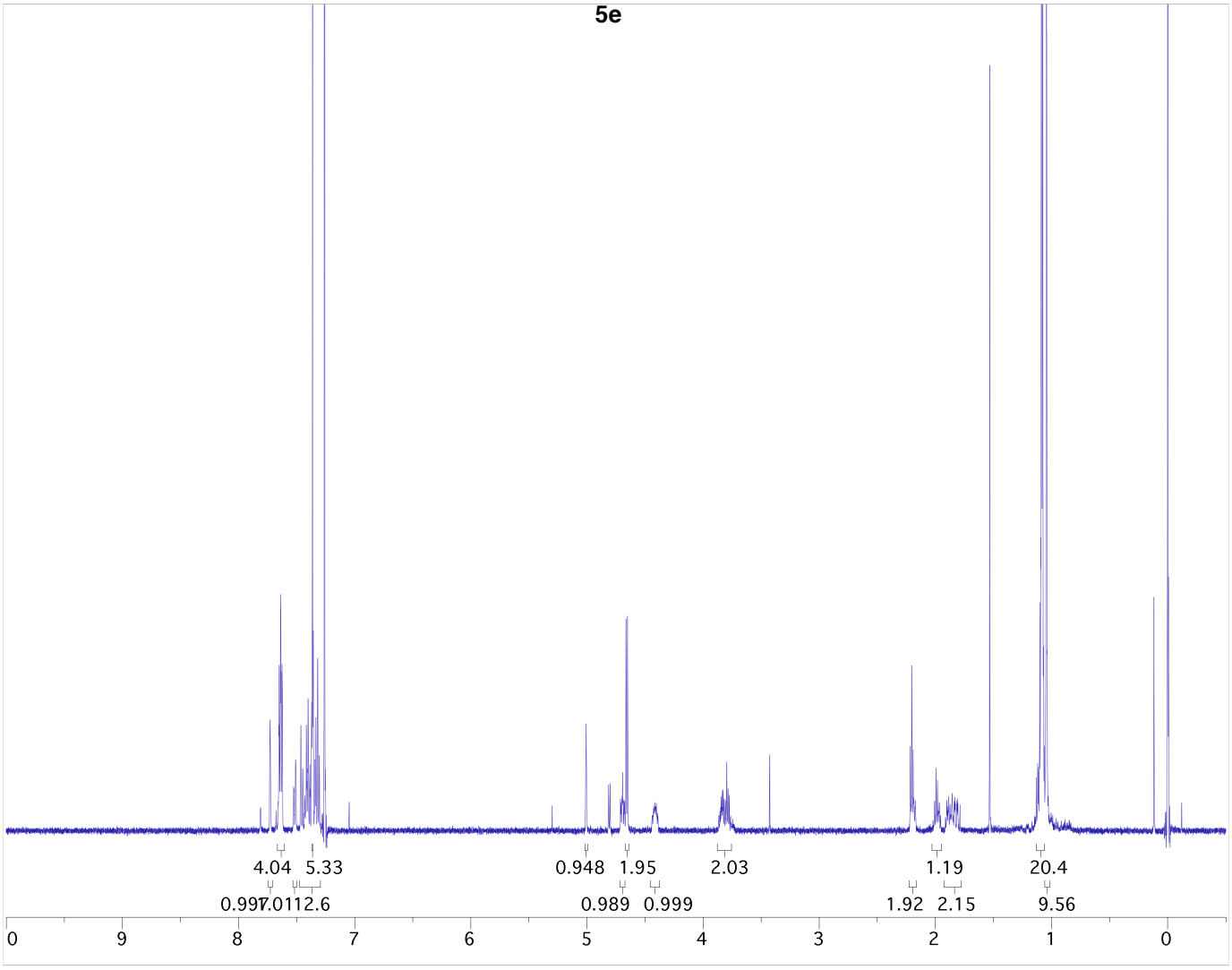
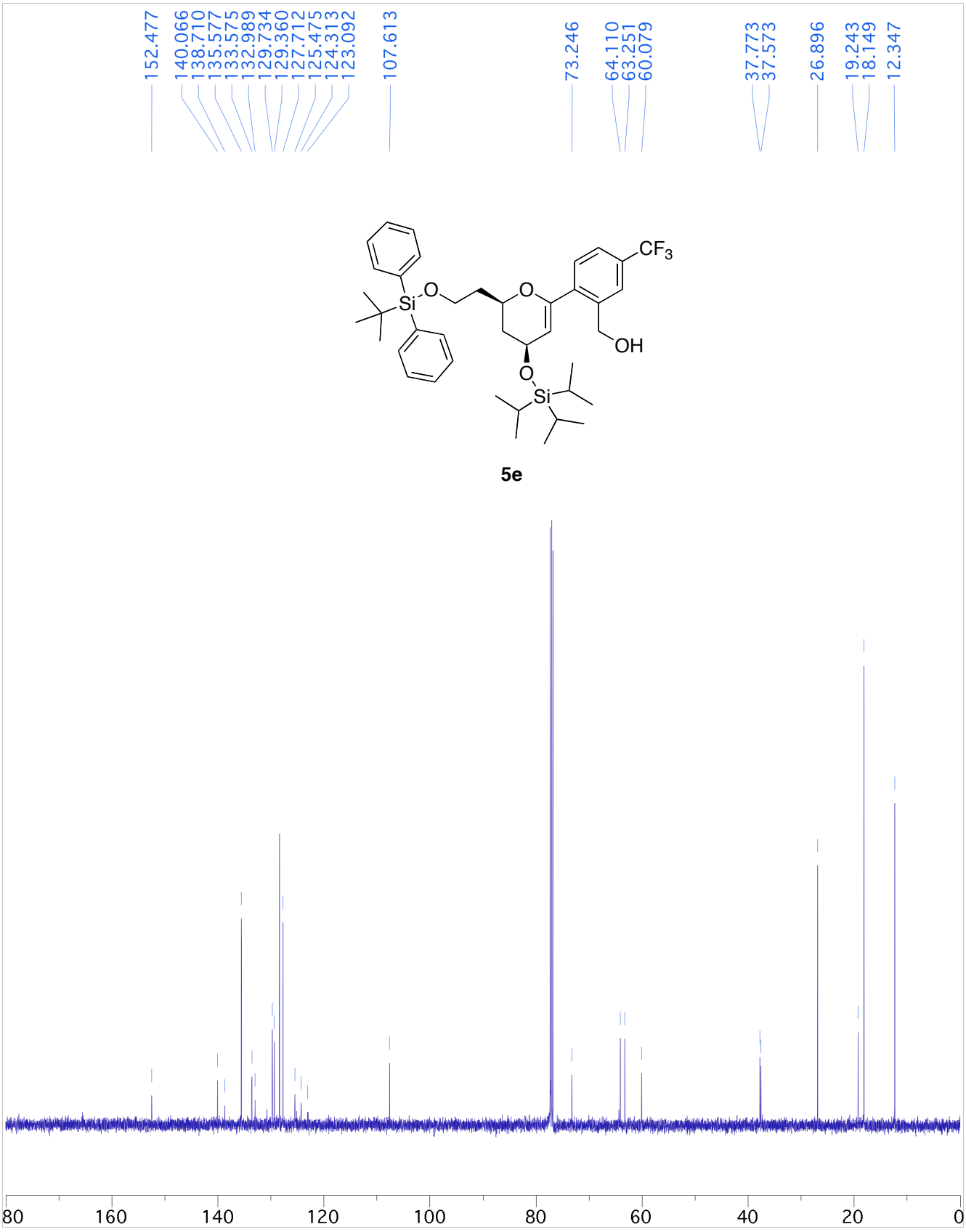
142.681
135.579
134.913
134.257
133.718
130.872
129.707
129.467
127.726
125.905
106.213
72.771
64.393
61.783
60.255
37.922
37.781
34.109
29.310
26.933
19.264
18.160
12.363
Cl
Si
O
O
O
Si
OH
ppm 160
140
120
100
80
60
40
20
0

7d

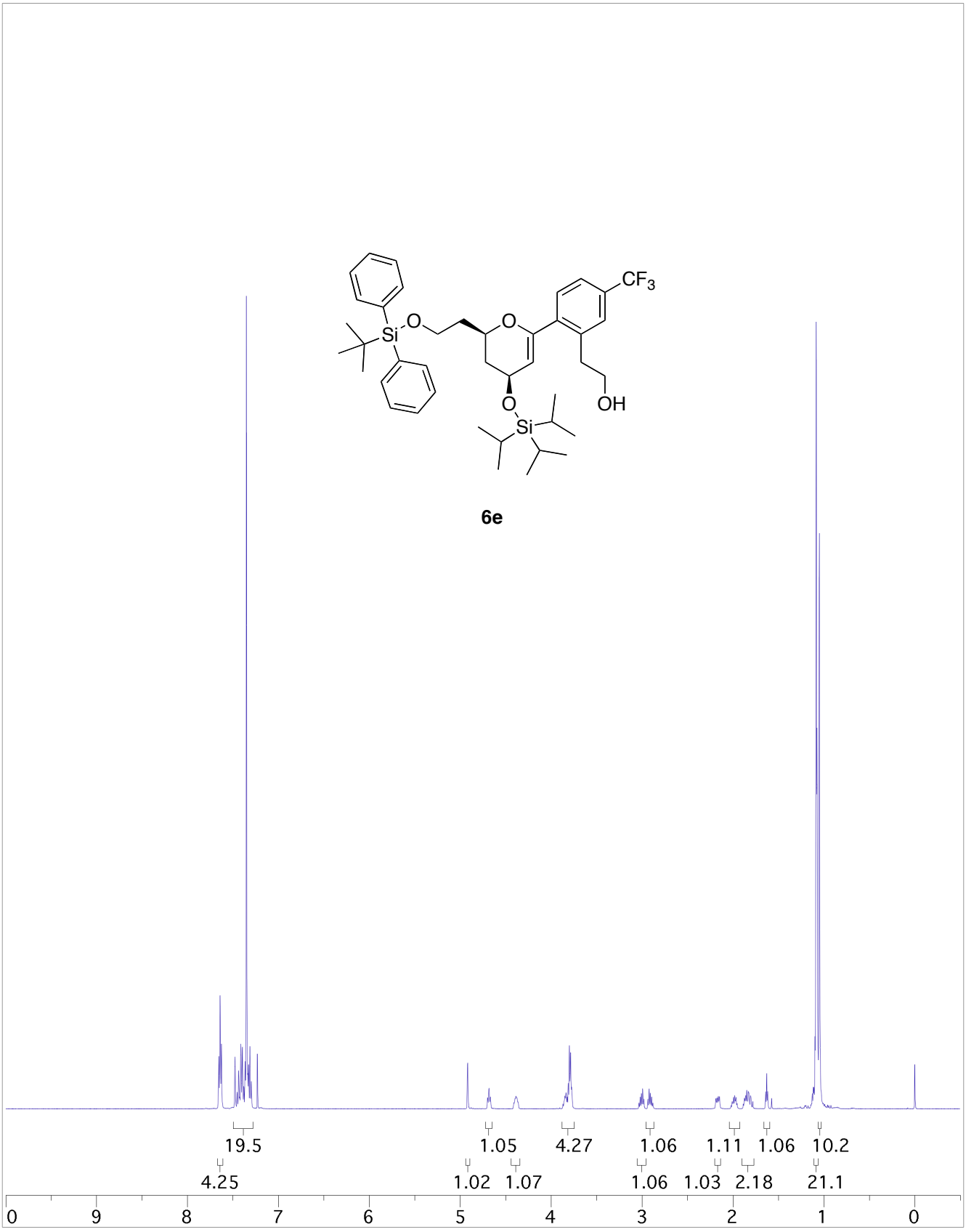

CF3
Si
O
O
OH
O
Si

5e

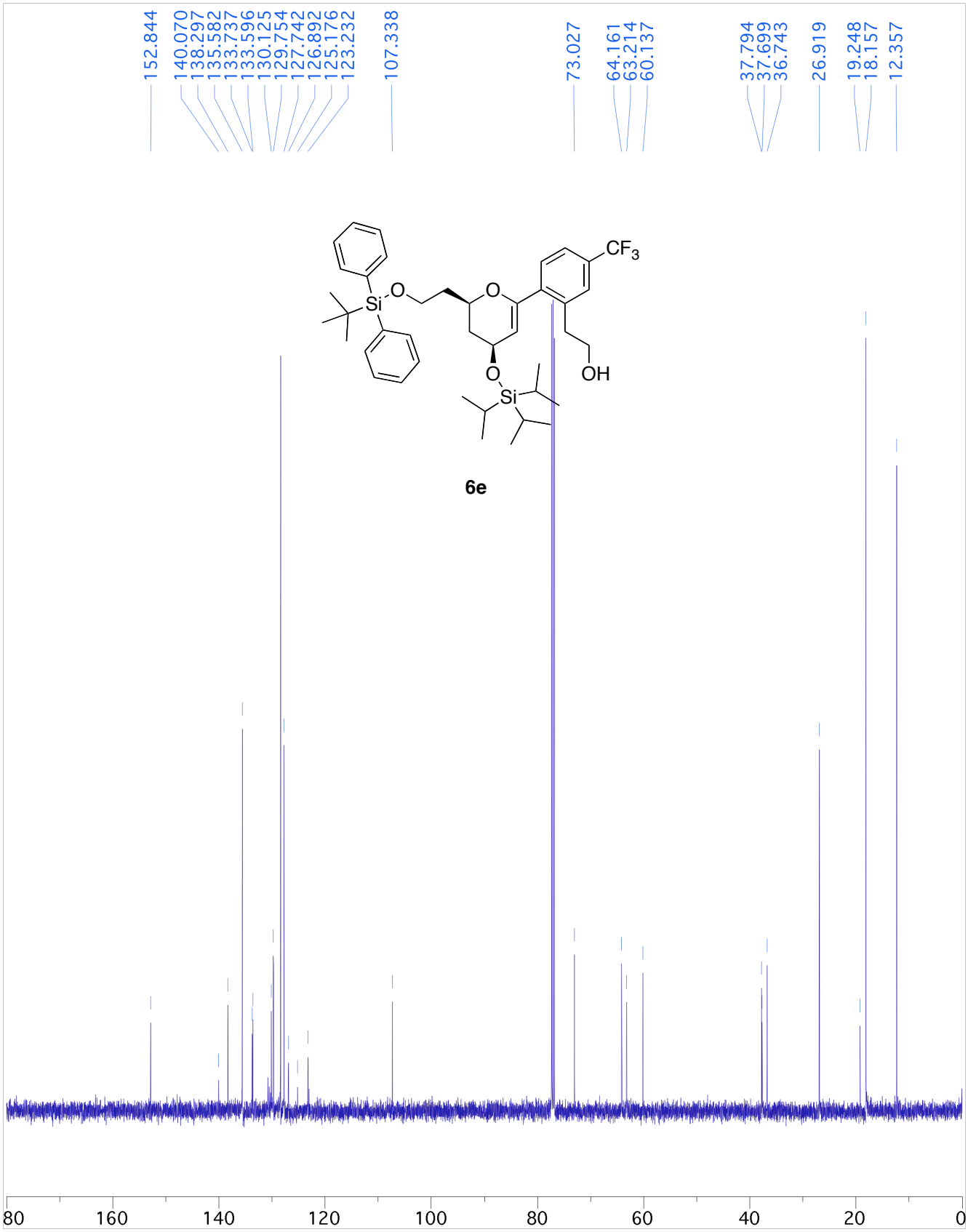

4.04
5.33
0.948
1.95
2.03
1.19
20.4
0.997
7.011
2.6
0.989
0.999
1.92
2.15
9.56
0
9
8
7
6
5
4
3
2
1
0


152.477
140.066
138.710
135.577
133.575
132.989
129.734
129.360
127.712
125.475
124.313
123.092
107.613
73.246
64.110
63.251
60.079
37.773
37.573
26.896
19.243
18.149
12.347
CF3
Si
O
O
OH
O
Si
80
160
140
120
100
80
60
40
20
0

5e


CF3
O
Si
O
O
OH
Si
19.5
4.25
1.05
1.02
1.07
4.27
1.06
1.06
1.03
1.11
2.18
1.06
21.1
10.2
0
9
8
7
6
5
4
3
2
1
0

6e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133.596
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129.754
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126.892
125.176
123.232
107.338
73.027
64.161
63.214
60.137
37.794
37.699
36.743
26.919
19.248
18.157
12.357
CF3
Si
O
O
O
Si
OH
6e
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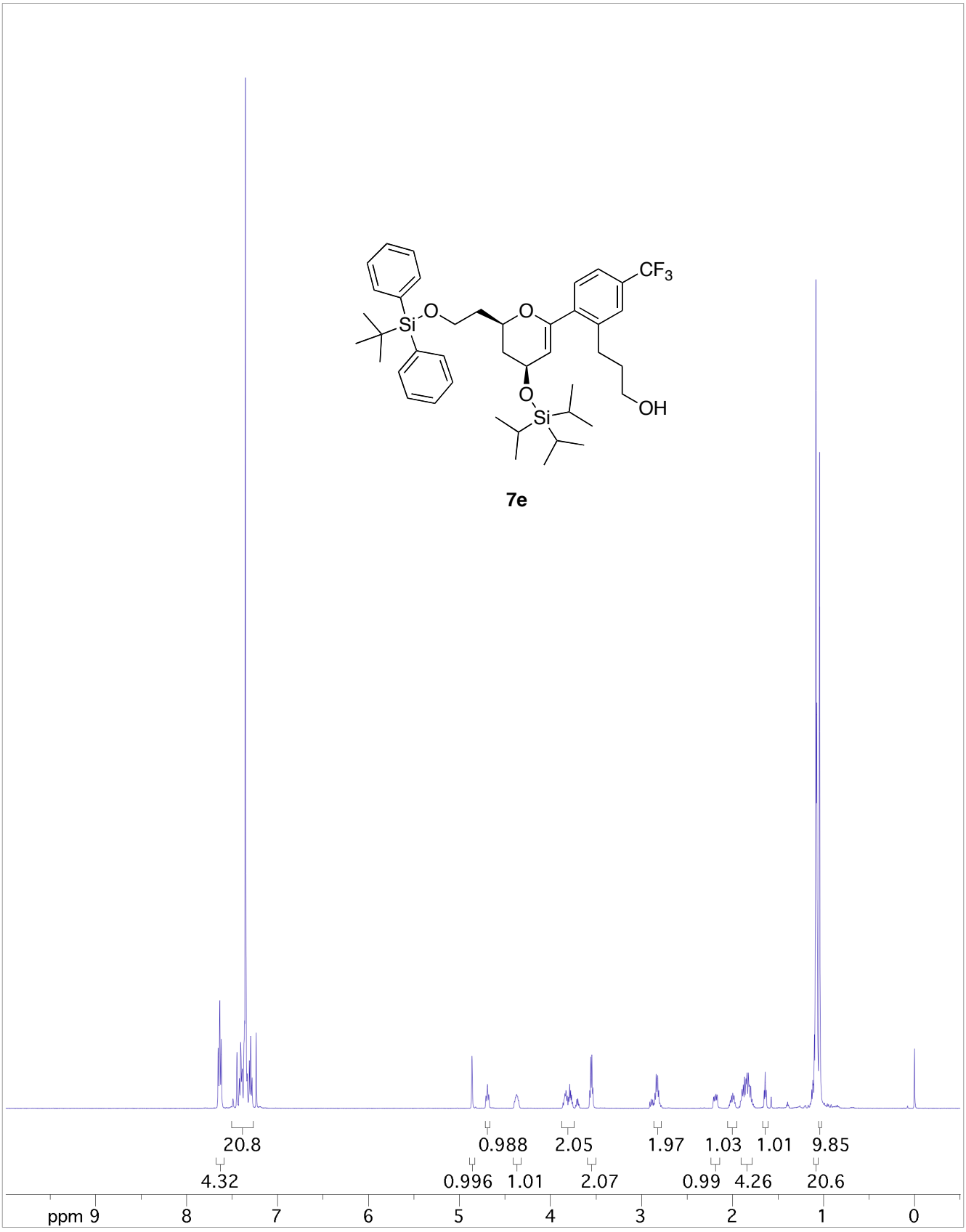
140
120
100
80
60
40
20
0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Si
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O
Si
OH
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4.32
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0.996
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2.05
2.07
1.97
1.03
0.99
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1.01
9.85
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ppm 9
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6
5
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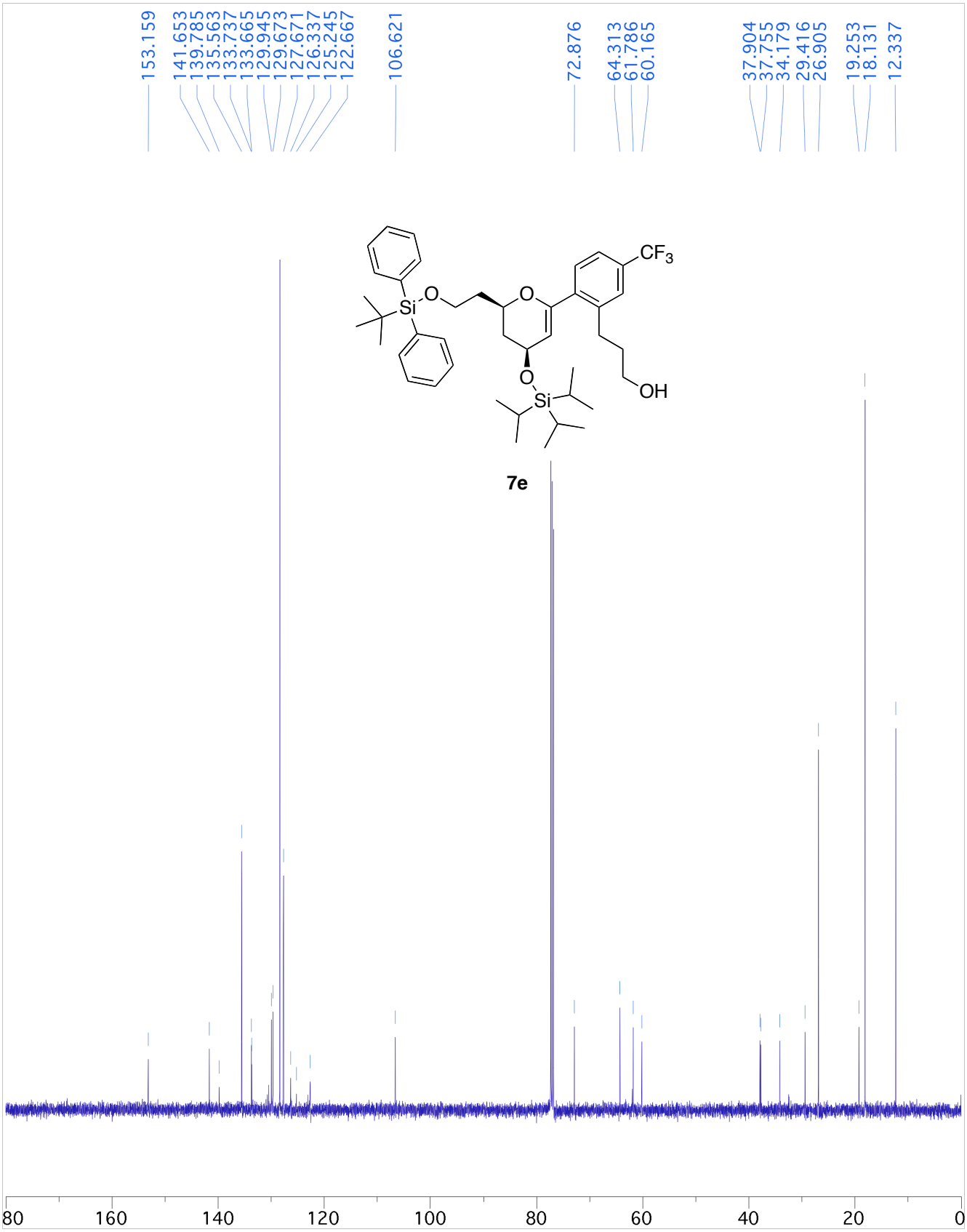
3
2
1
0

7e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133.665
129.945
129.673
127.671
126.337
125.245
122.667
106.621
72.876
64.313
61.786
60.165
37.904
37.755
34.179
29.416
26.905
19.253
18.131
12.337
CF3
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Si
O
O
Si
OH
7e
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140
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40
20
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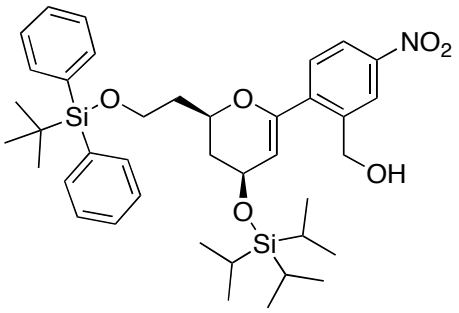
NO2
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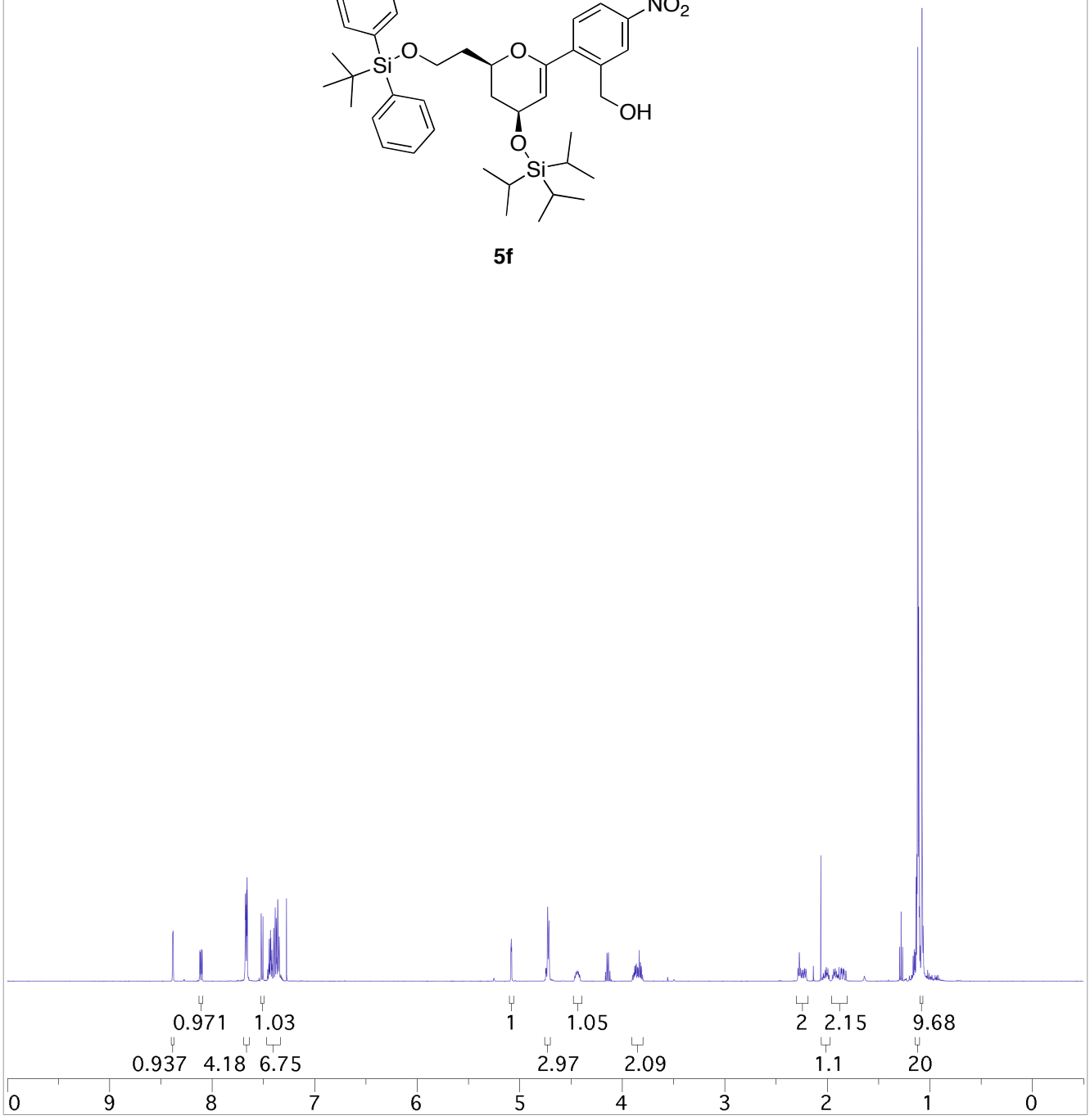
Si
O
O
OH
O
Si

5f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1
1.05
2
2.15
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0.937
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6.75
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2.09
1.1
20
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8
7
6
5
4
3
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1
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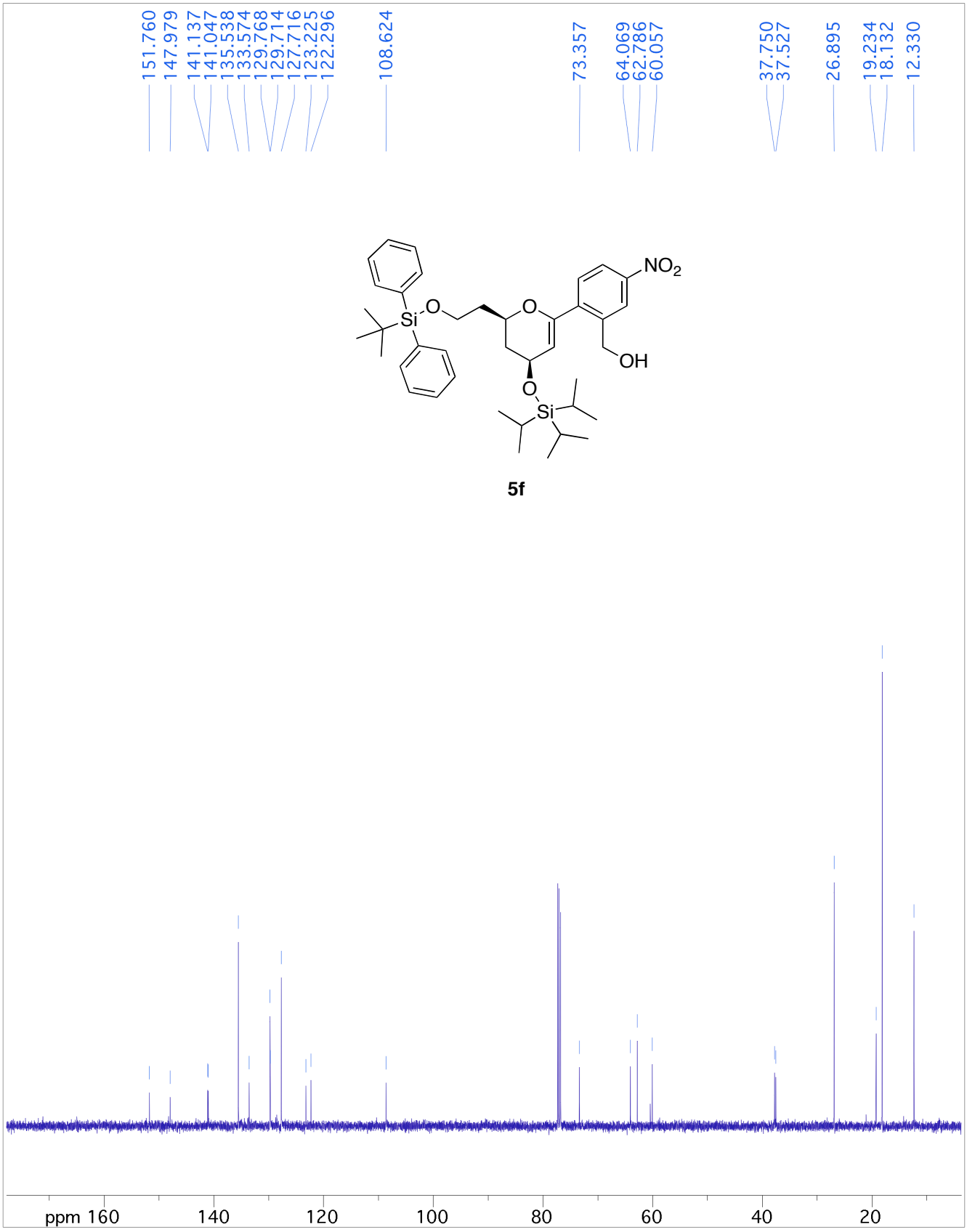
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141.047
135.538
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129.714
127.716
123.225
122.296
108.624
73.357
64.069
62.786
60.057
37.750
37.527
26.895
19.234
18.132
12.330
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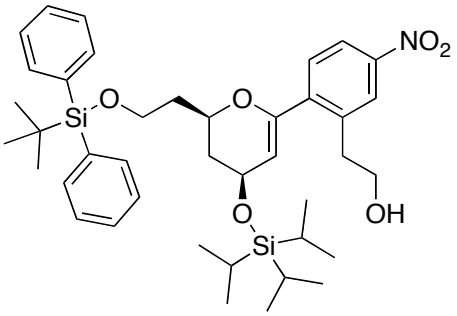
OH
Si
O
O
O
Si
ppm 160
140
120
100
80
60
40
20

5f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Si
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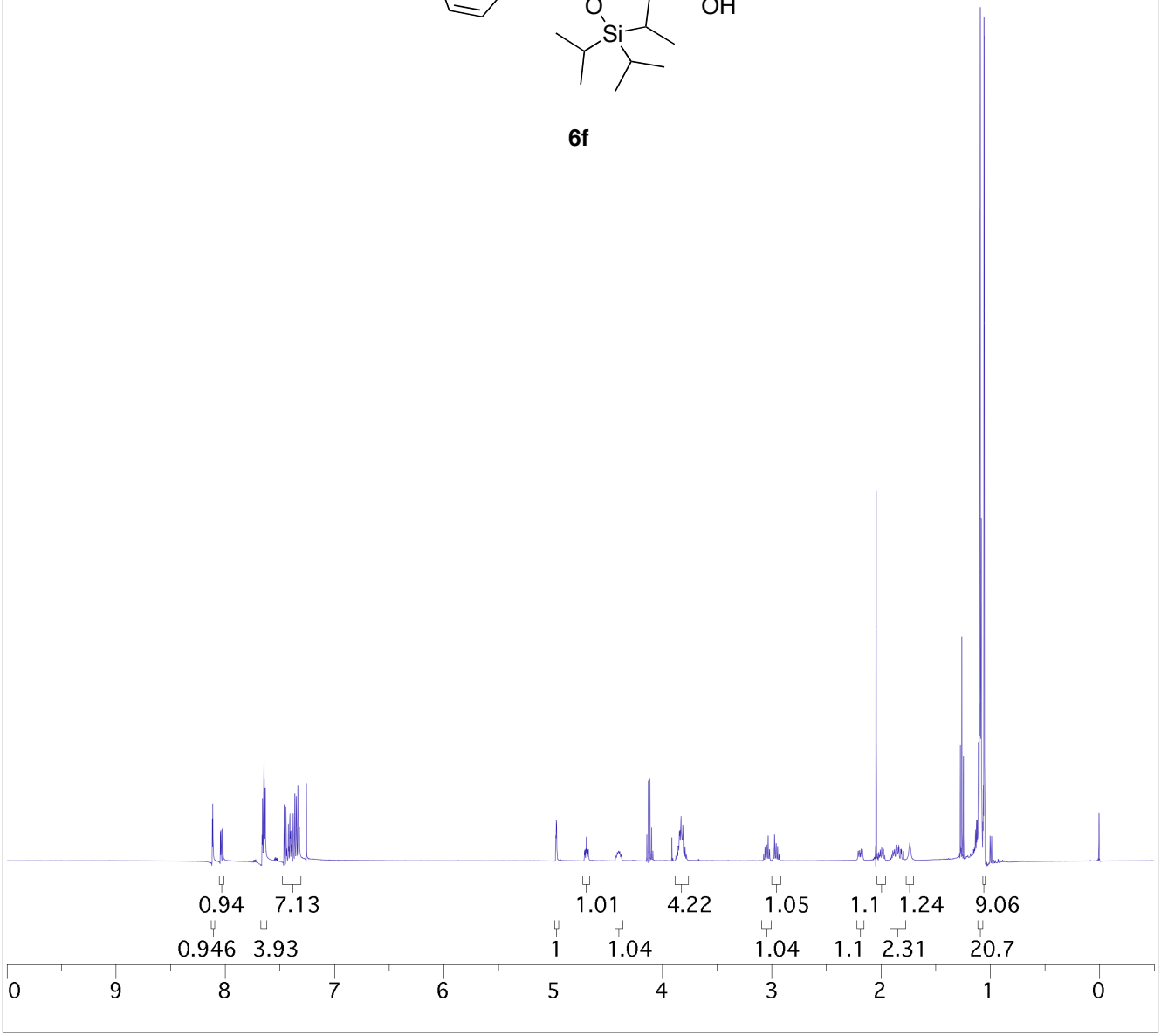
O
OH
Si

6f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7.13
1.01
4.22
1.05
1.1
1.24
9.06
0.946
3.93
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1.04
1.04
1.1
2.31
20.7
0
9
8
7
6
5
4
3
2
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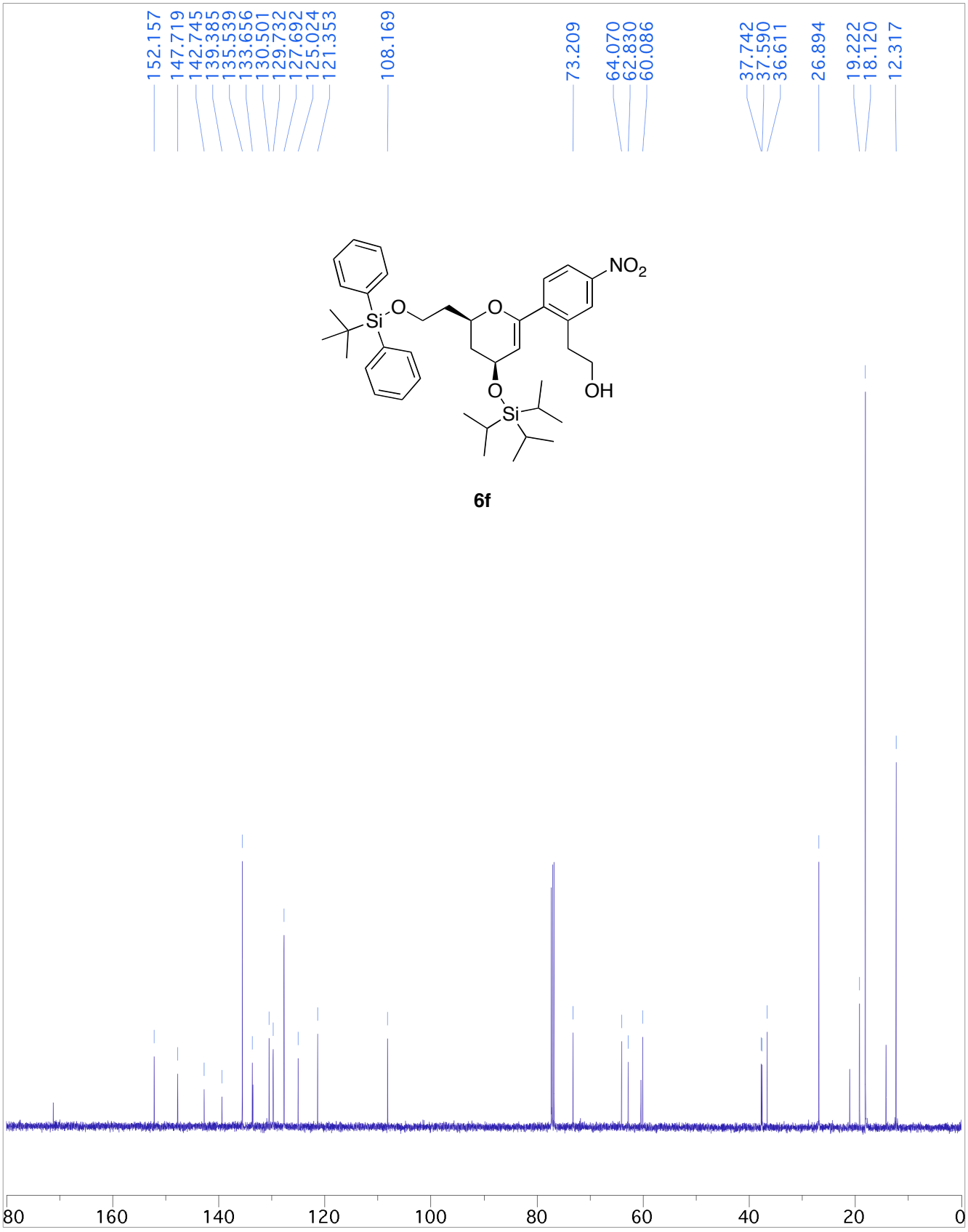
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142.745
139.385
135.539
133.656
130.501
129.732
127.692
125.024
121.353
108.169
73.209
64.070
62.830
60.086
37.742
37.590
36.611
26.894
19.222
18.120
12.317
NO2
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Si
O
O
OH
Si
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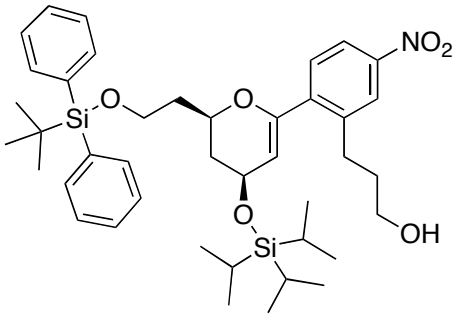
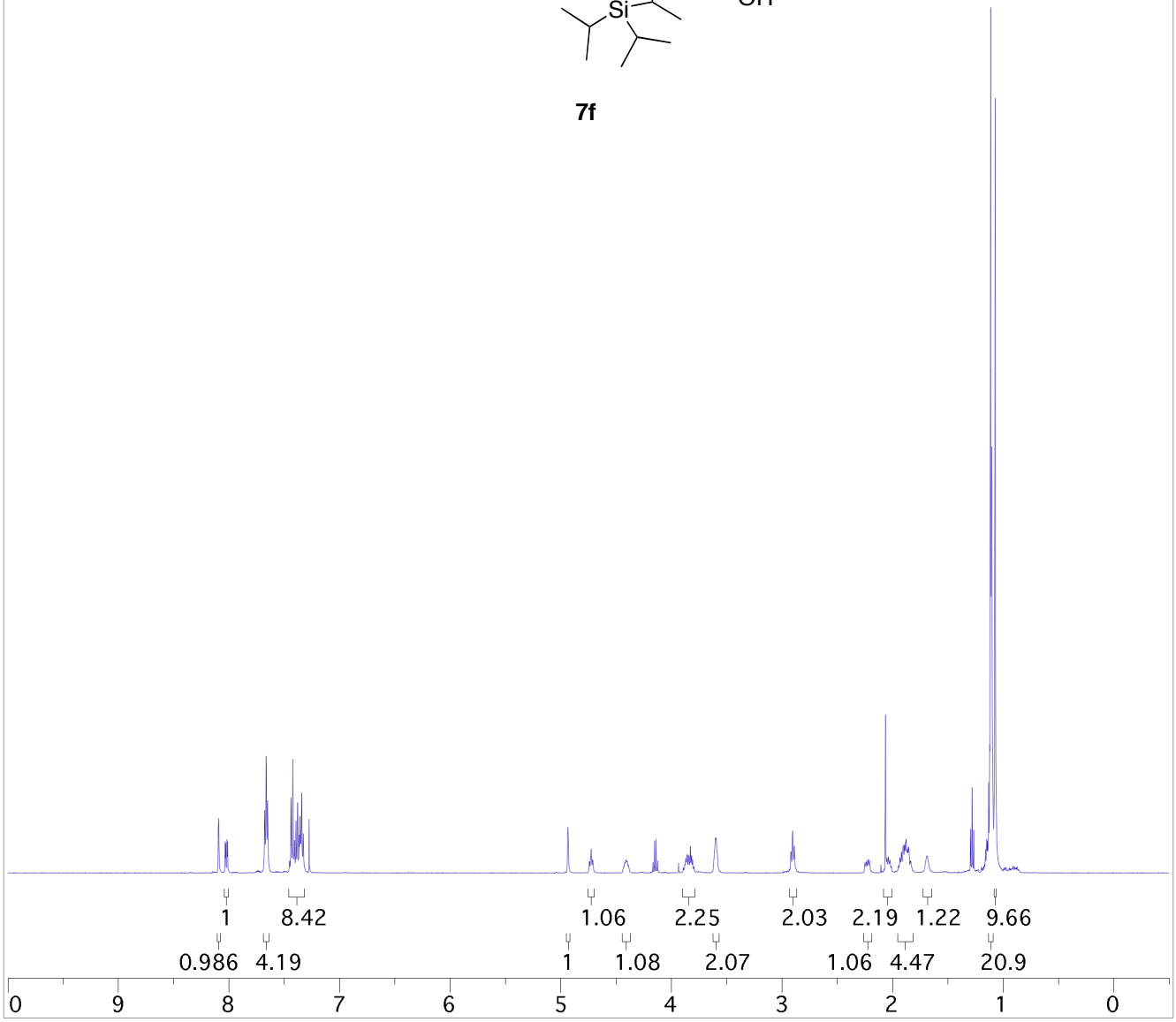
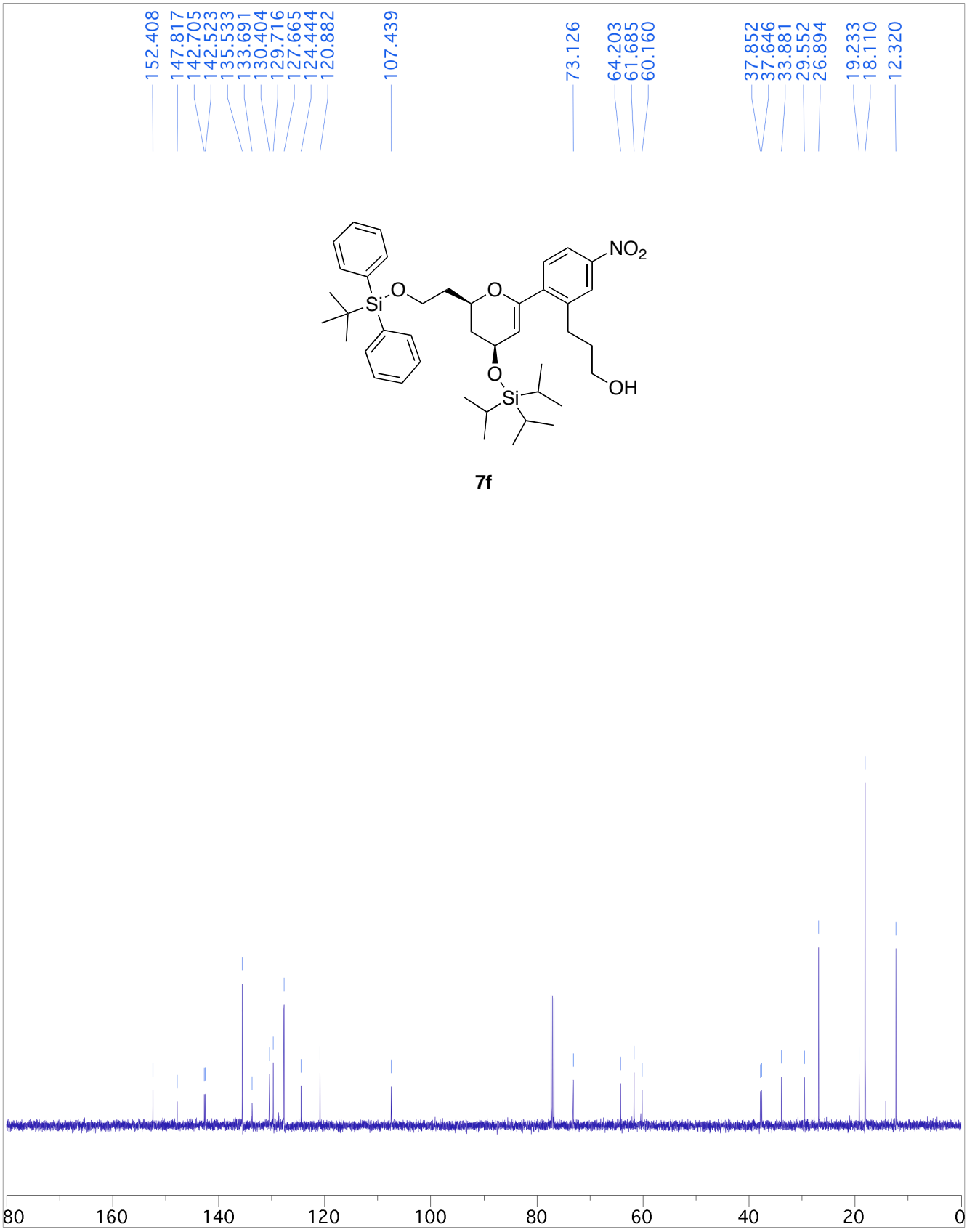
140
120
100
80
60
40
20
0

6f


NO2
O
Si
O
O
Si
OH

7f


1
8.42
1.06
2.25
2.03
2.19
1.22
9.66
0.986
4.19
1
1.08
2.07
1.06
4.47
20.9
0
9
8
7
6
5
4
3
2
1
0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142.523
135.533
133.691
130.404
129.716
127.665
124.444
120.882
107.439
73.126
64.203
61.685
60.160
37.852
37.646
33.881
29.552
26.894
19.233
18.110
12.320
NO2
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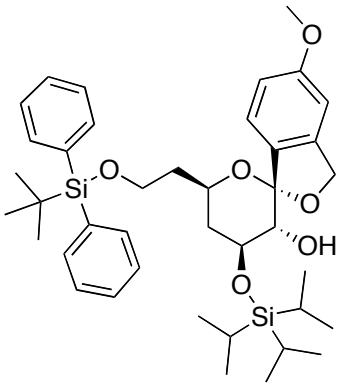
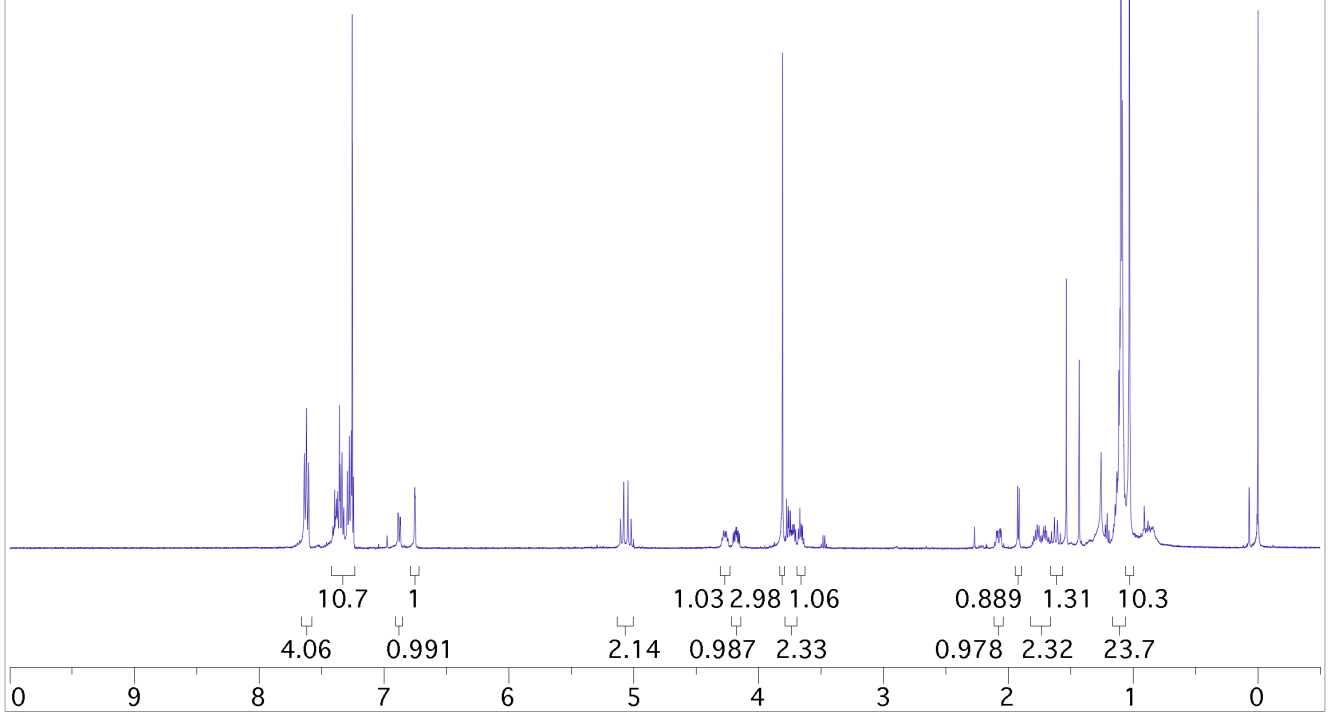
Si
O
O
Si
OH
80
160
140
120
100
80
60
40
20
0

7f


O
Si
O
O
O
OH
O
Si

11a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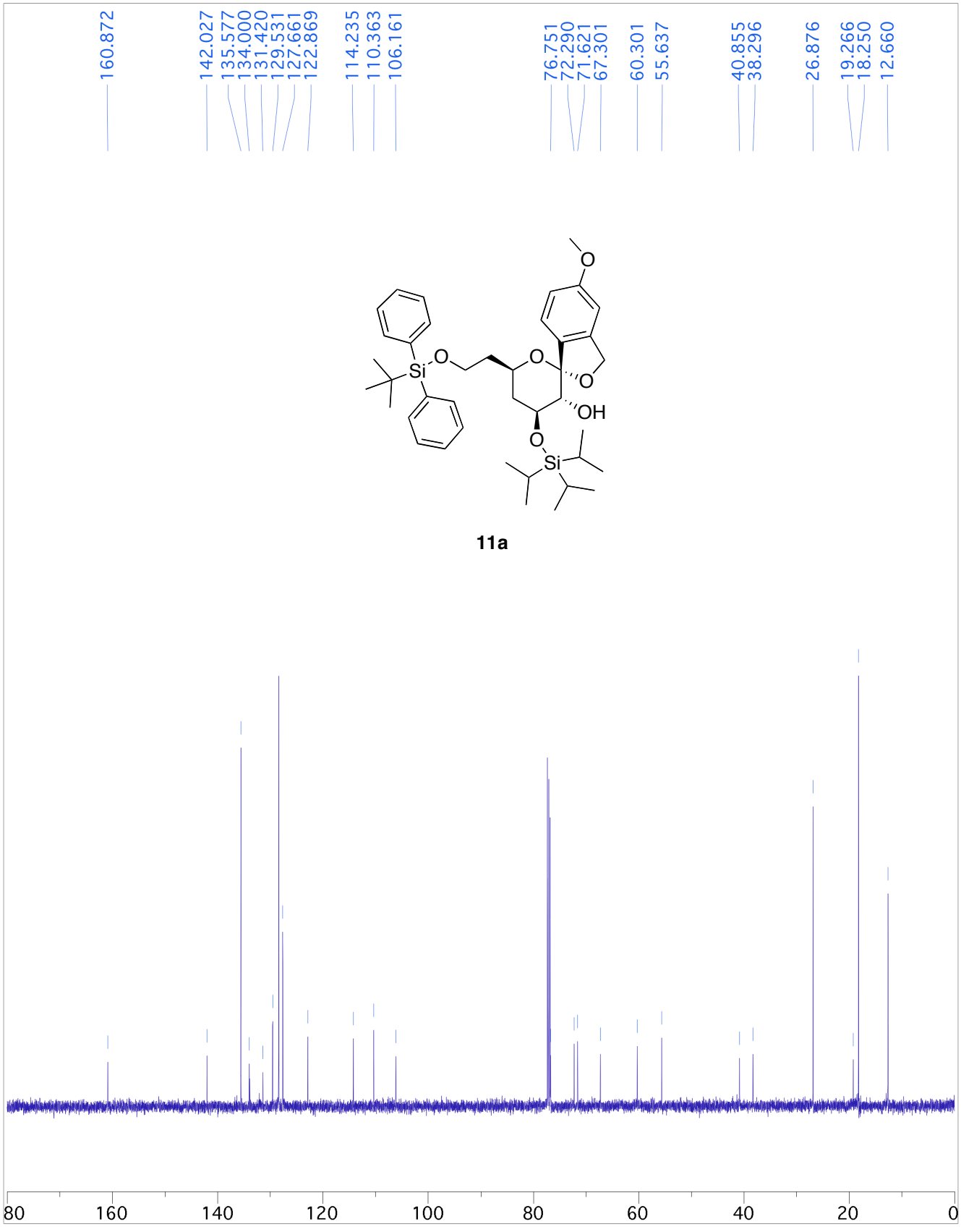
1
1.03
2.98
1.06
0.889
1.31
10.3
4.06
0.991
2.14
0.987
2.33
0.978
2.32
23.7
0
9
8
7
6
5
4
3
2
1
0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134.000
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129.531
127.661
122.869
114.235
110.363
106.161
76.751
72.290
71.621
67.301
60.301
55.637
40.855
38.296
26.876
19.266
18.250
12.660
O
O
Si
O
O
OH
O
Si
80
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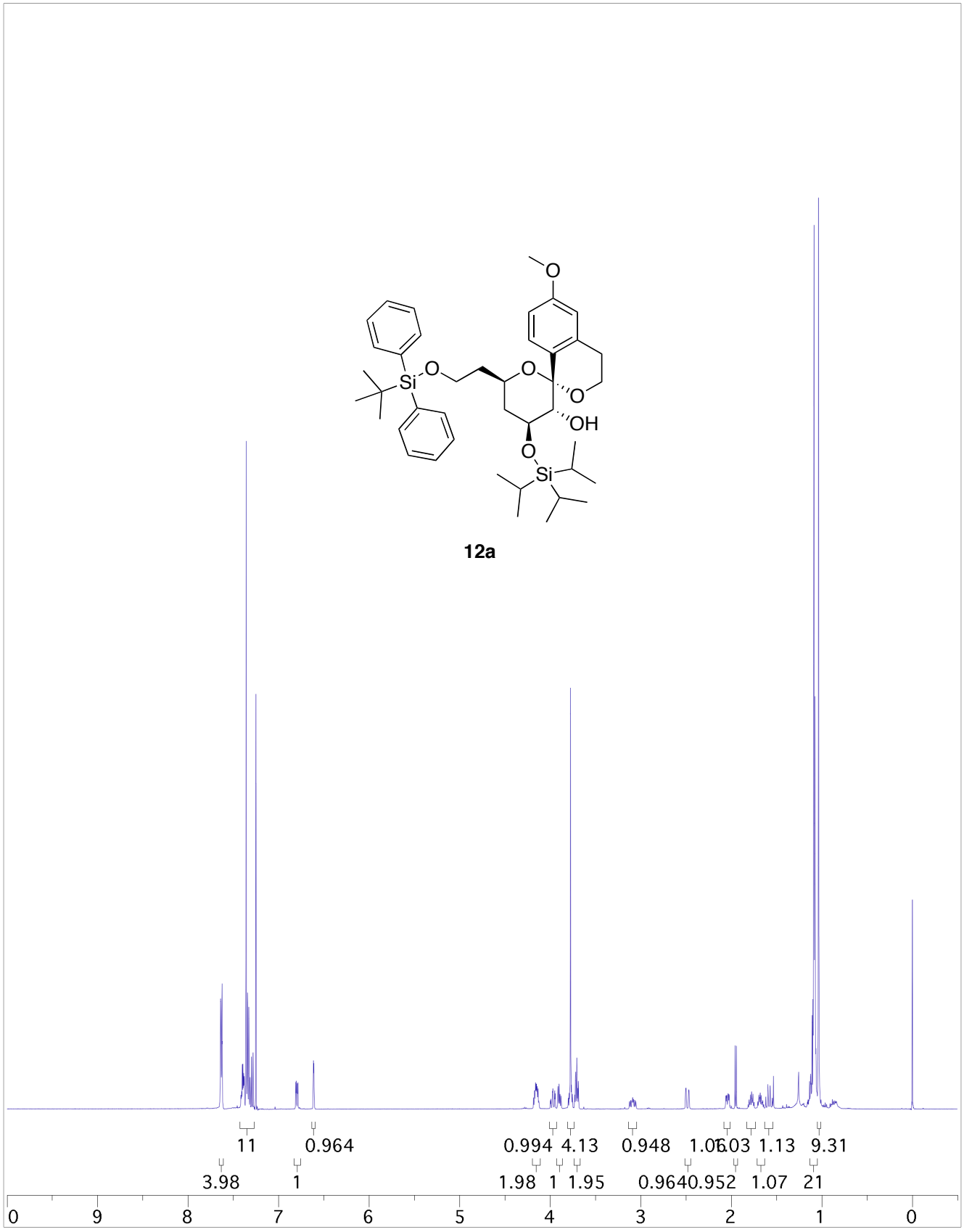
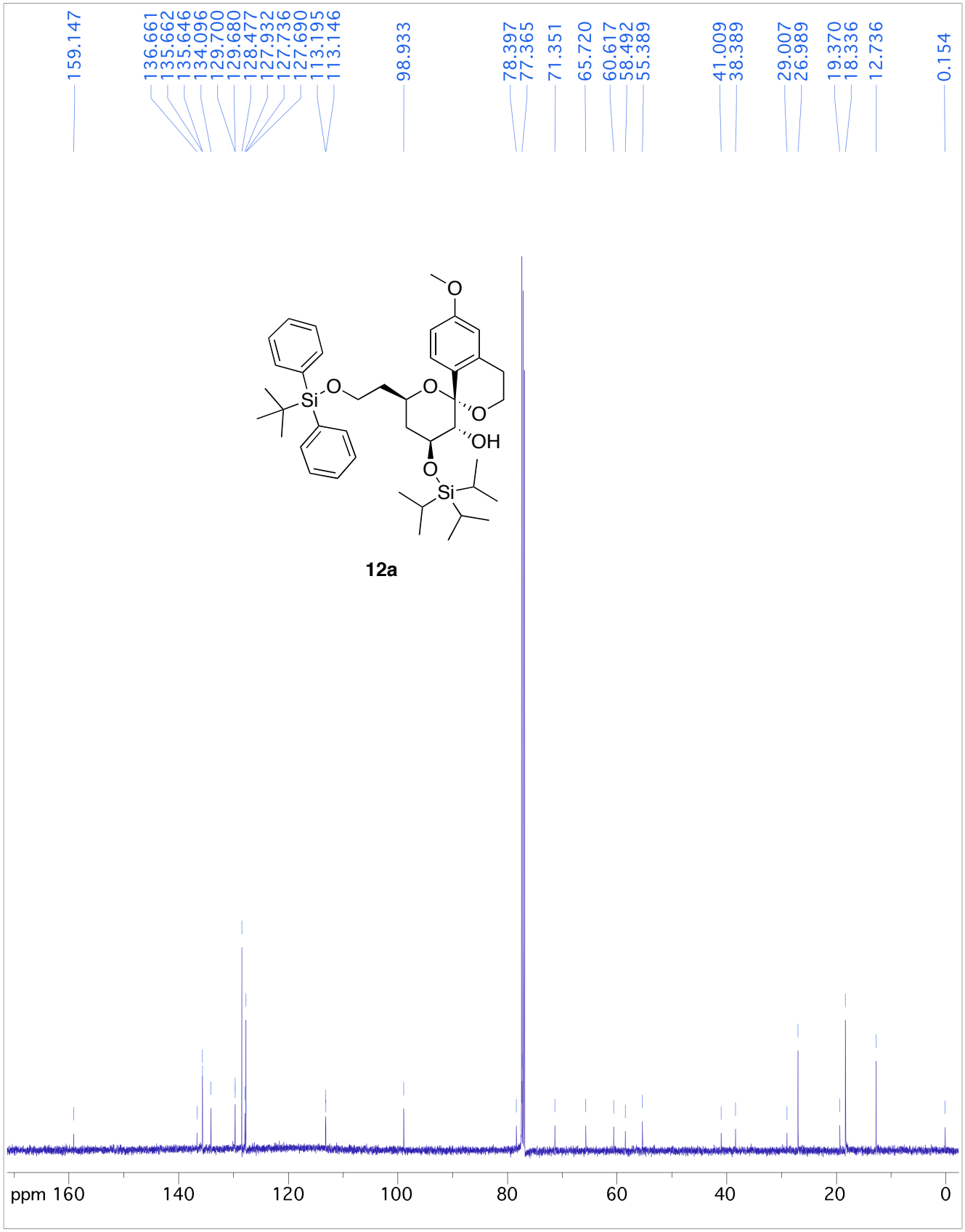
140
120
100
80
60
40
20
0

11a


O
Si
O
O
O
OH
O
Si
11
0.964
0.994
4.13
0.948
1.06
6.03
1.13
9.31
3.98
1
1.98
1
1.95
0.964
0.952
1.07
21
0
9
8
7
6
5
4
3
2
1
0

12a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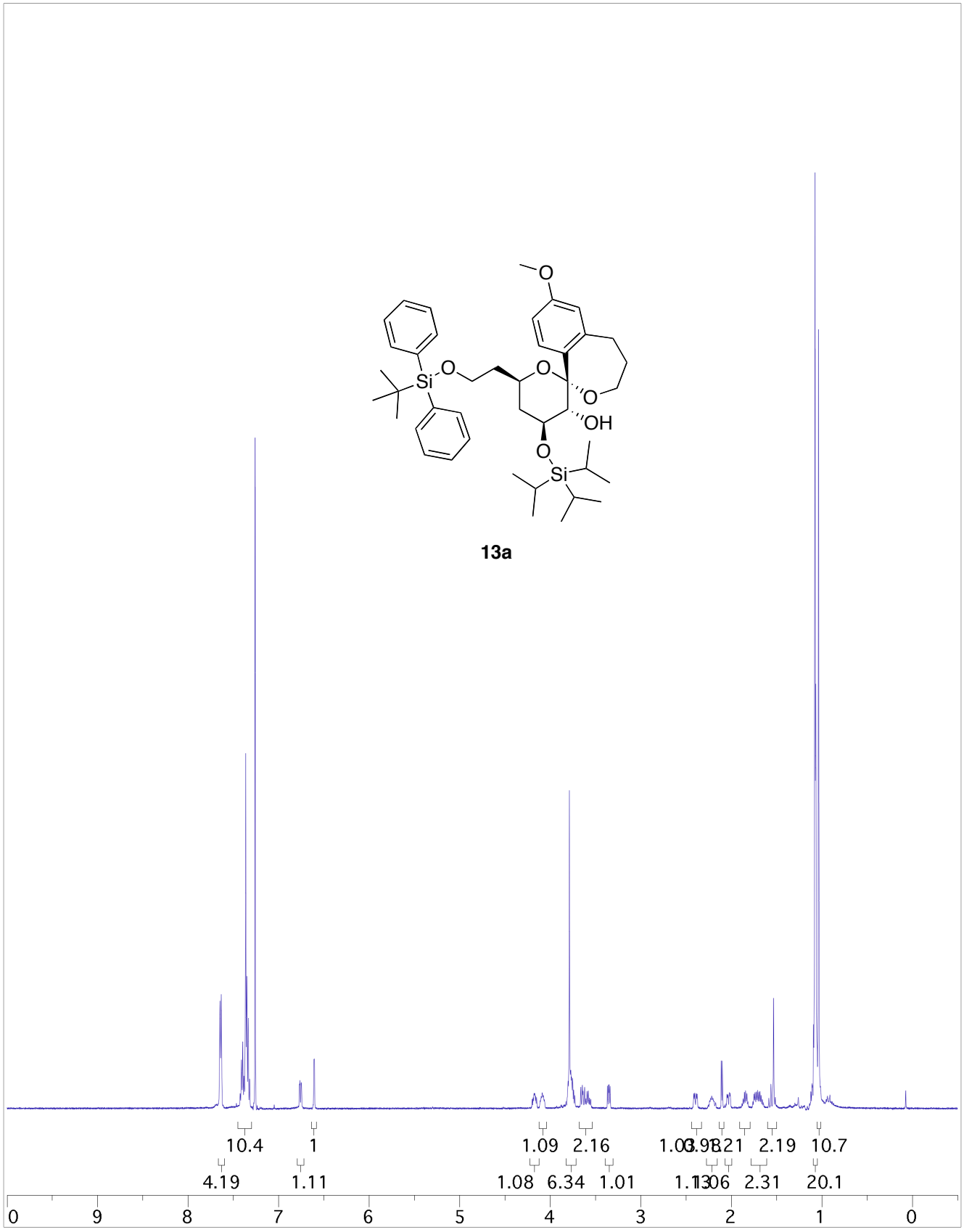
135.662
135.646
134.096
129.700
129.680
128.477
127.932
127.736
127.690
113.195
113.146
98.933
78.397
77.365
71.351
65.720
60.617
58.492
55.389
41.009
38.389
29.007
26.989
19.370
18.336
12.736
0.154
O
Si
O
O
O
OH
O
Si
ppm 160
140
120
100
80
60
40
20
0

12a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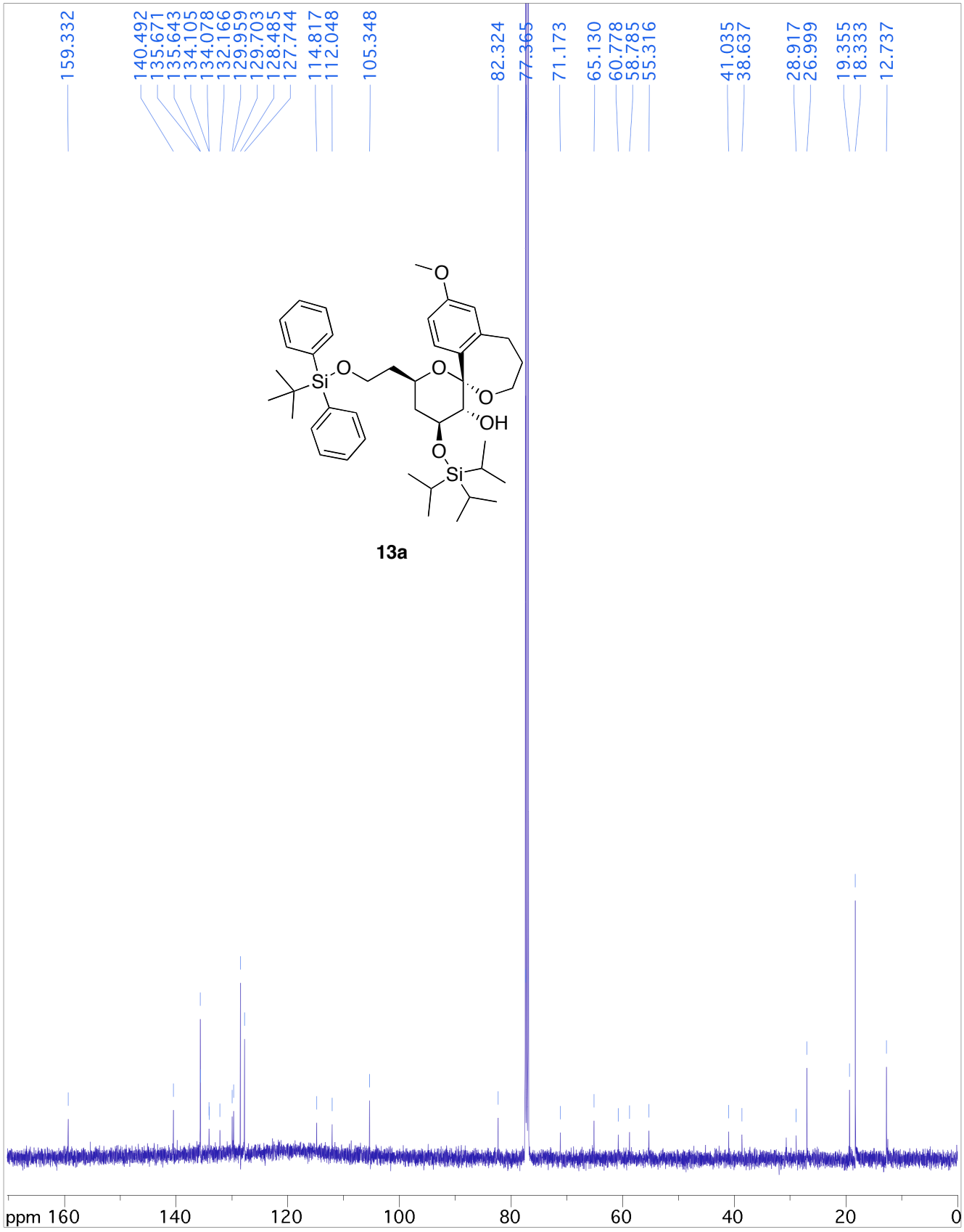
Si
O
O
O
OH
O
Si
10.4
1
1.09
2.16
2.21
2.19
10.7
4.19
1.11
1.08
6.34
1.01
2.31
20.1
0
9
8
7
6
5
4
3
2
1
0

13a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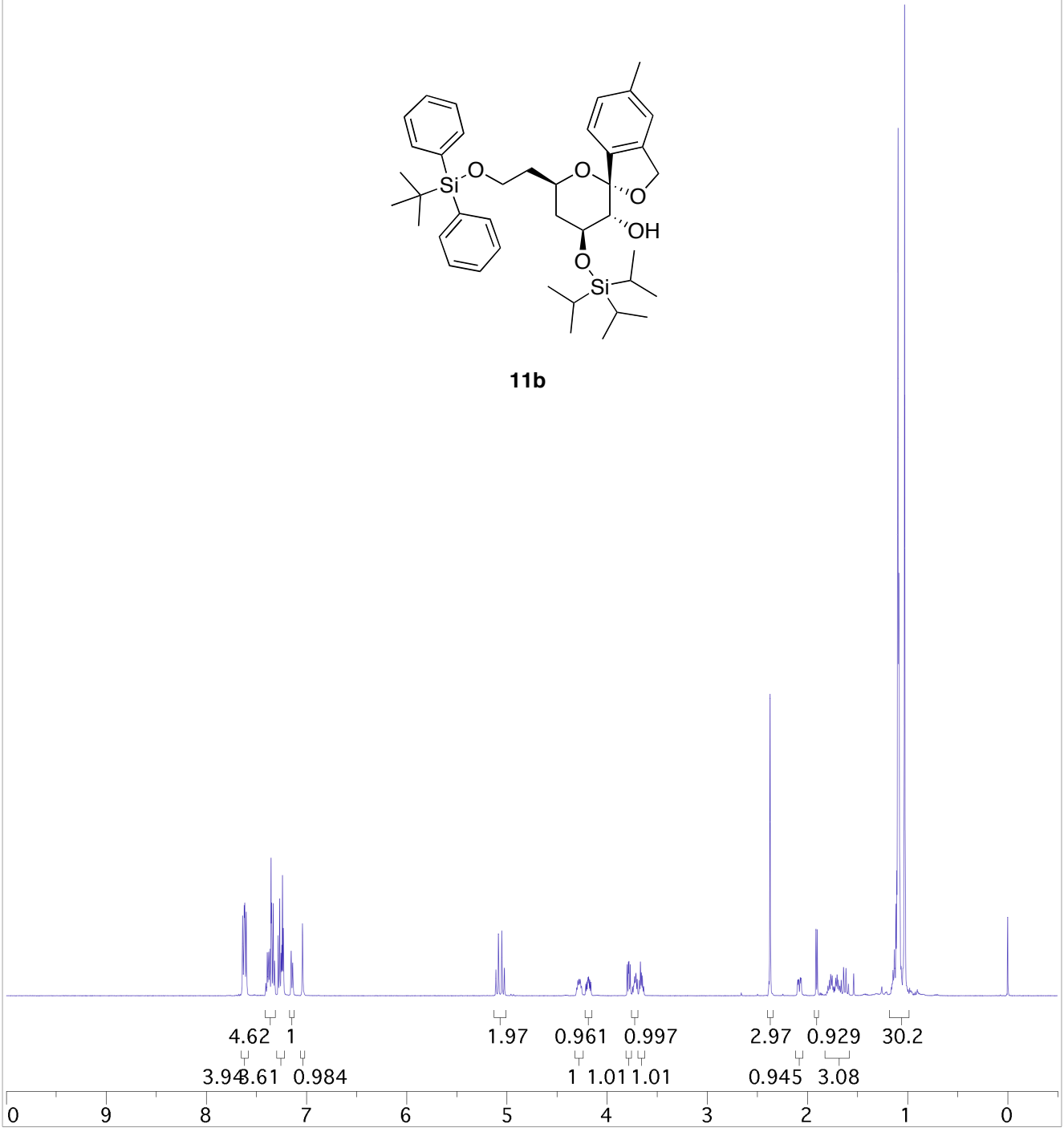
135.643
134.105
134.078
132.166
129.959
129.703
128.485
127.744
114.817
112.048
105.348
82.324
77.365
71.173
65.130
60.778
58.785
55.316
41.035
38.637
28.917
26.999
19.355
18.333
12.737
O
Si
O
O
O
OH
O
Si
ppm 160
140
120
100
80
60
40
20
0

13a

Si
O
O
O
OH
O
Si

11b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1.97
0.961
0.997
2.97
0.929
30.2
3.94
3.61
0.984
1
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1.01
0.945
3.08
0
9
8
7
6
5
4
3
2
1
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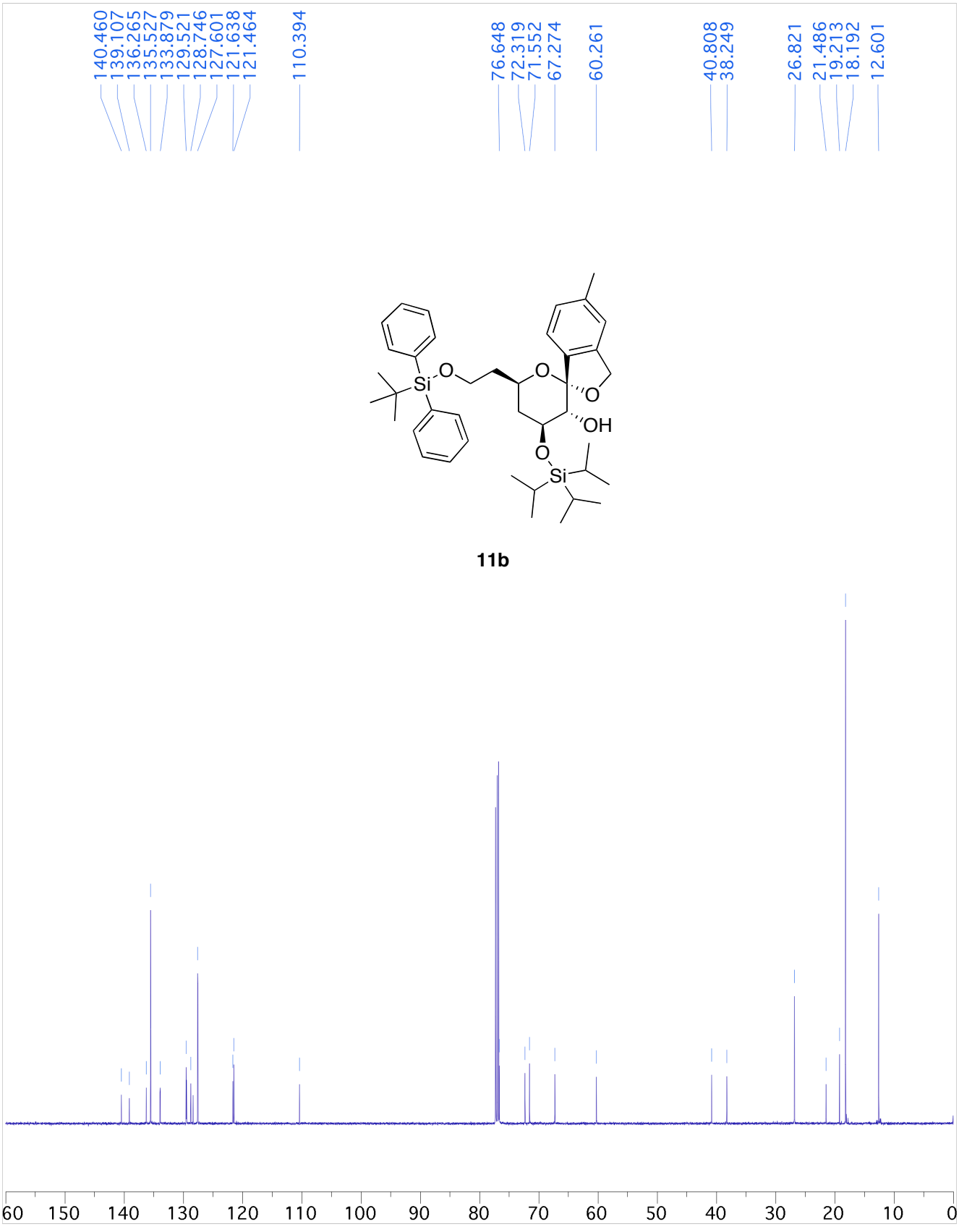
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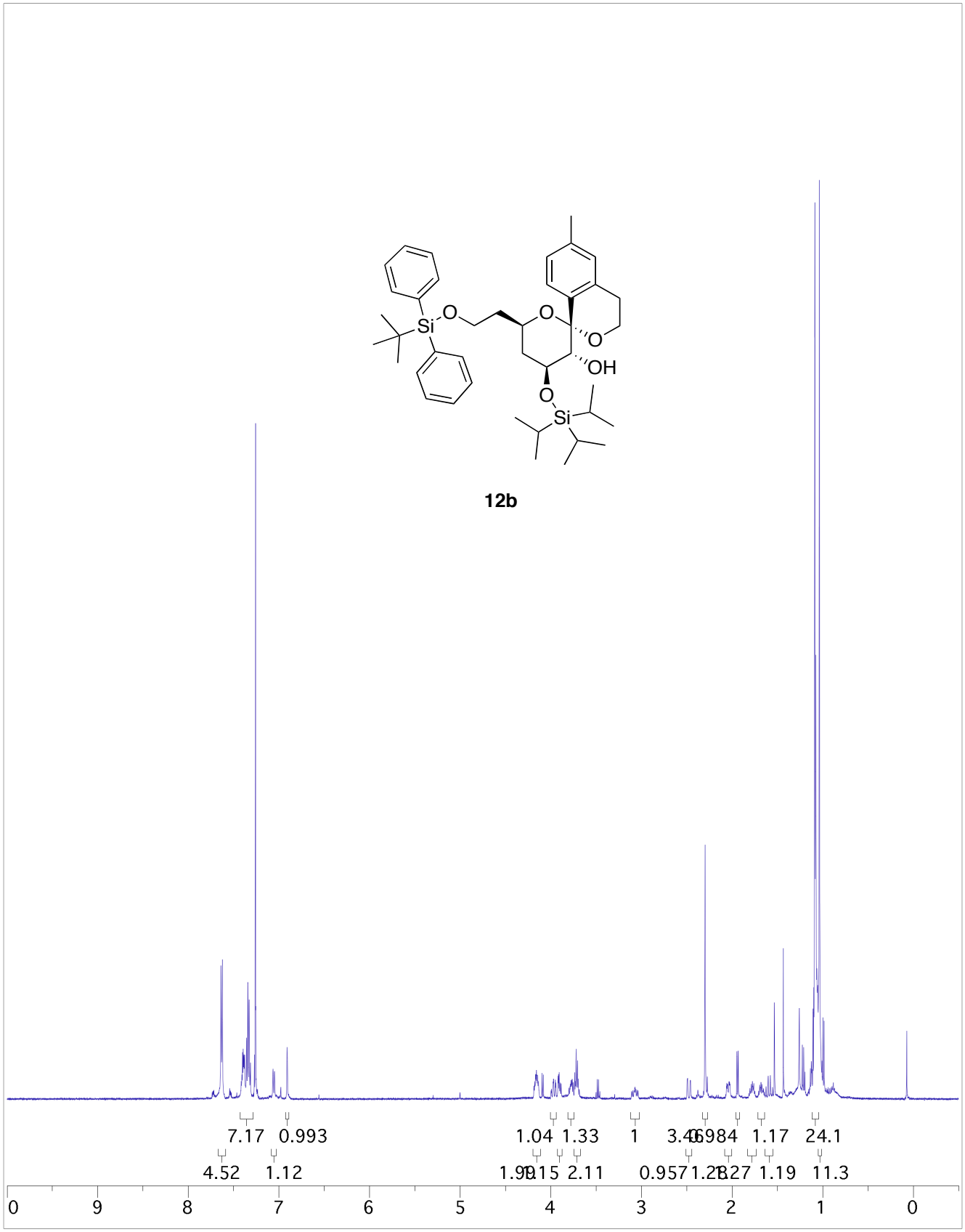
136.265
135.527
133.879
129.521
128.746
127.601
121.638
121.464
110.394
76.648
72.319
71.552
67.274
60.261
40.808
38.249
26.821
21.486
19.213
18.192
12.601
Si
O
O
O
OH
O
Si
60
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

11b


Si
O
O
O
OH
O
Si
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1.04
1.33
1
3.46
6984
1.17
24.1
4.52
1.12
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1.19
11.3
0
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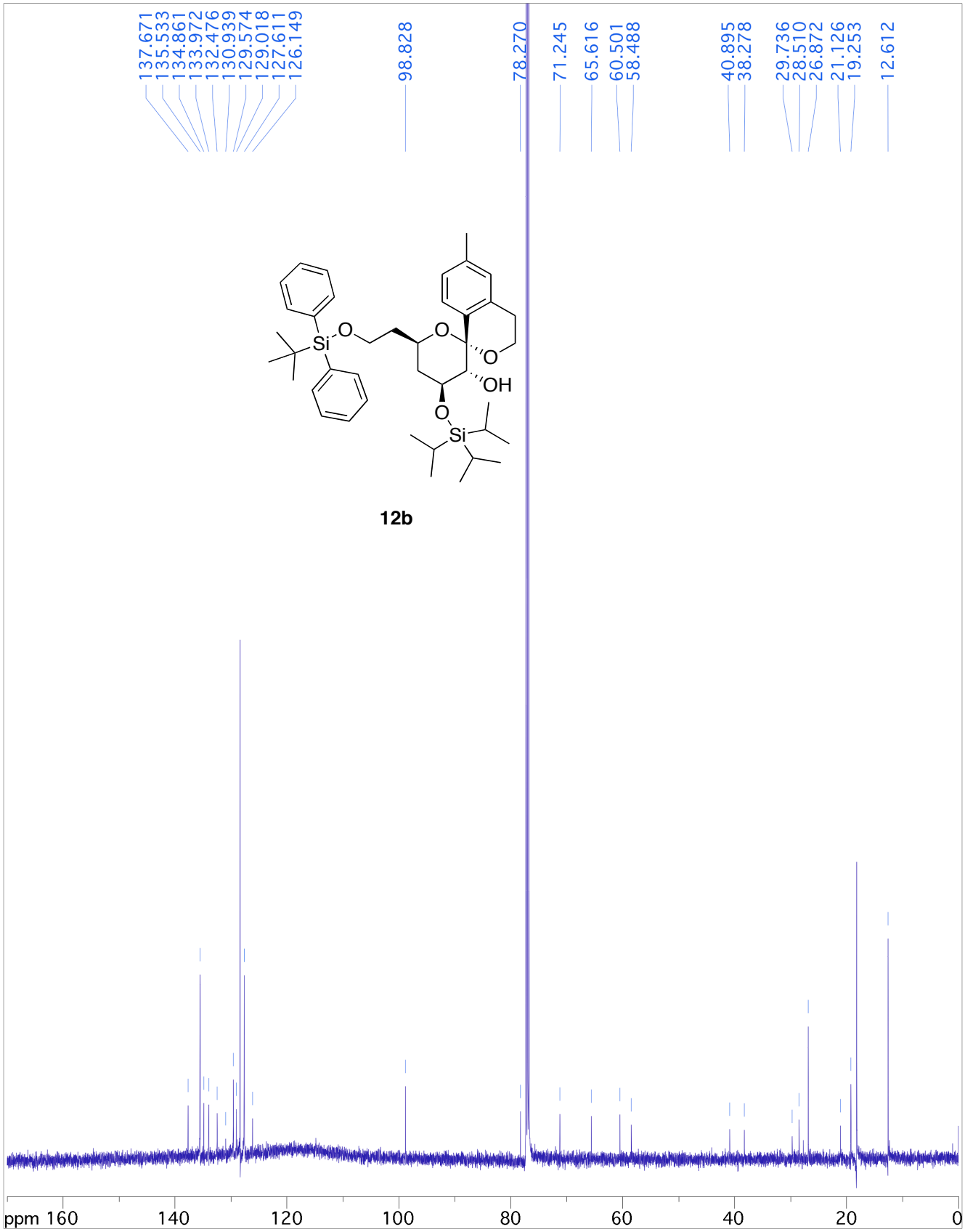
8
7
6
5
4
3
2
1
0

12b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134.861
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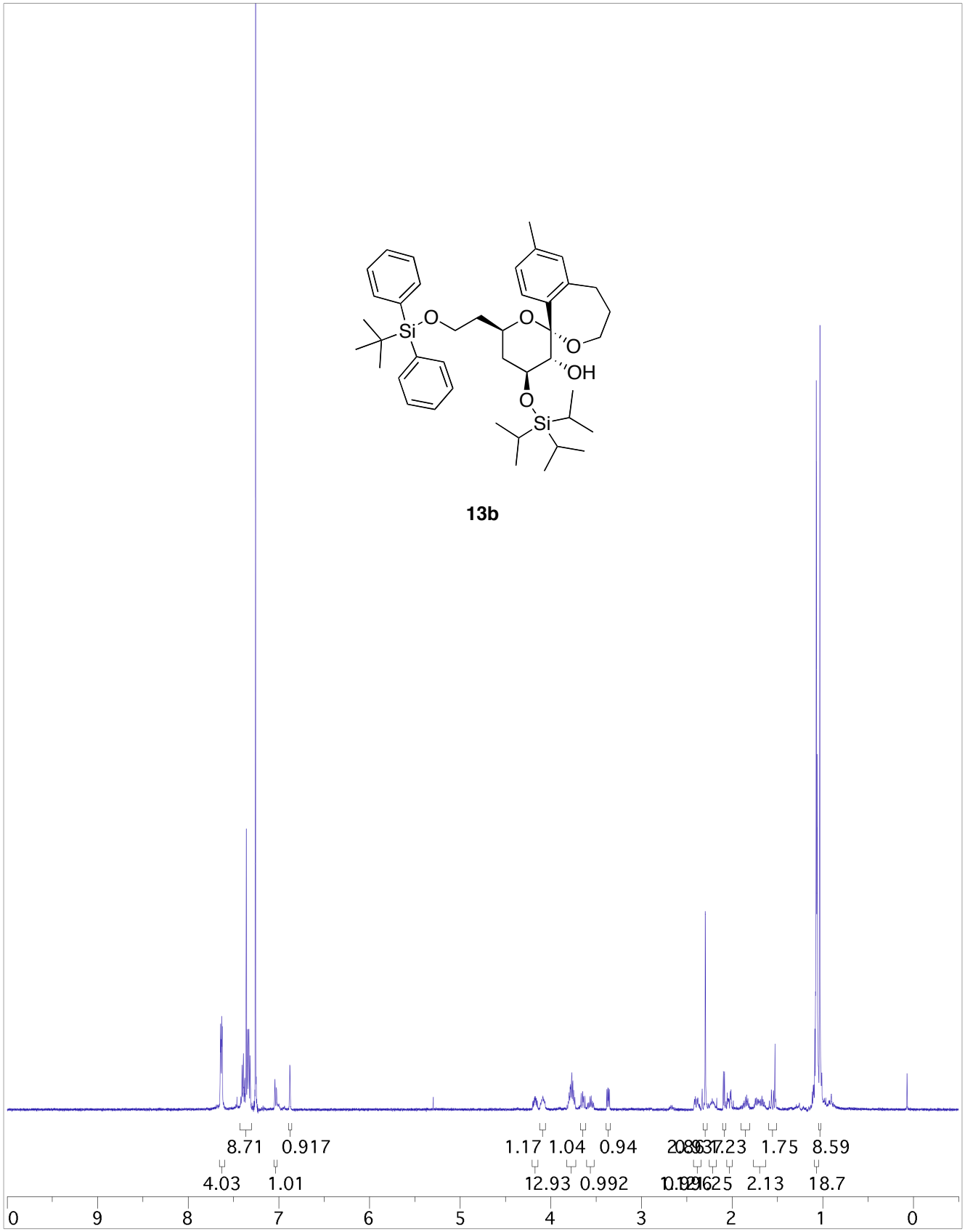
132.476
130.939
129.574
129.018
127.611
126.149
98.828
78.270
71.245
65.616
60.501
58.488
40.895
38.278
29.736
28.510
26.872
21.126
19.253
12.612
Si
O
O
O
OH
O
Si
ppm 160
140
120
100
80
60
40
20
0

12b


Si
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O
O
OH
O
Si
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1.17
1.04
0.94
7.23
1.75
8.59
4.03
1.01
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2.13
18.7
0
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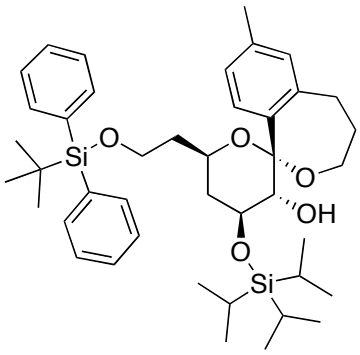
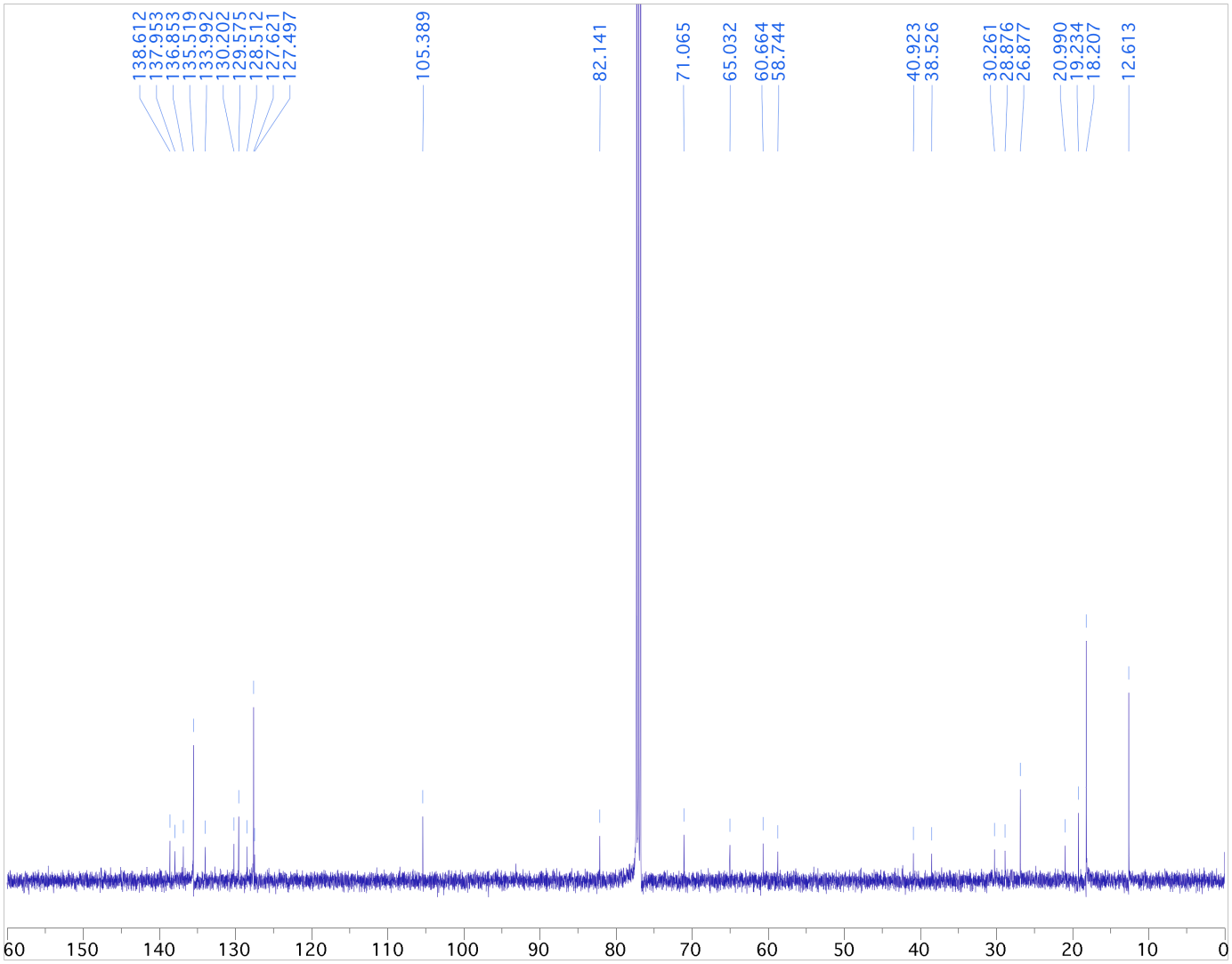
8
7
6
5
4
3
2
1
0

13b


Si
O
O
O
OH
O
Si

13b


138.612
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136.853
135.519
133.992
130.202
129.575
128.512
127.621
127.497
105.389
82.141
71.065
65.032
60.664
58.744
40.923
38.526
30.261
28.876
26.877
20.990
19.234
18.207
12.613
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110
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90
80
70
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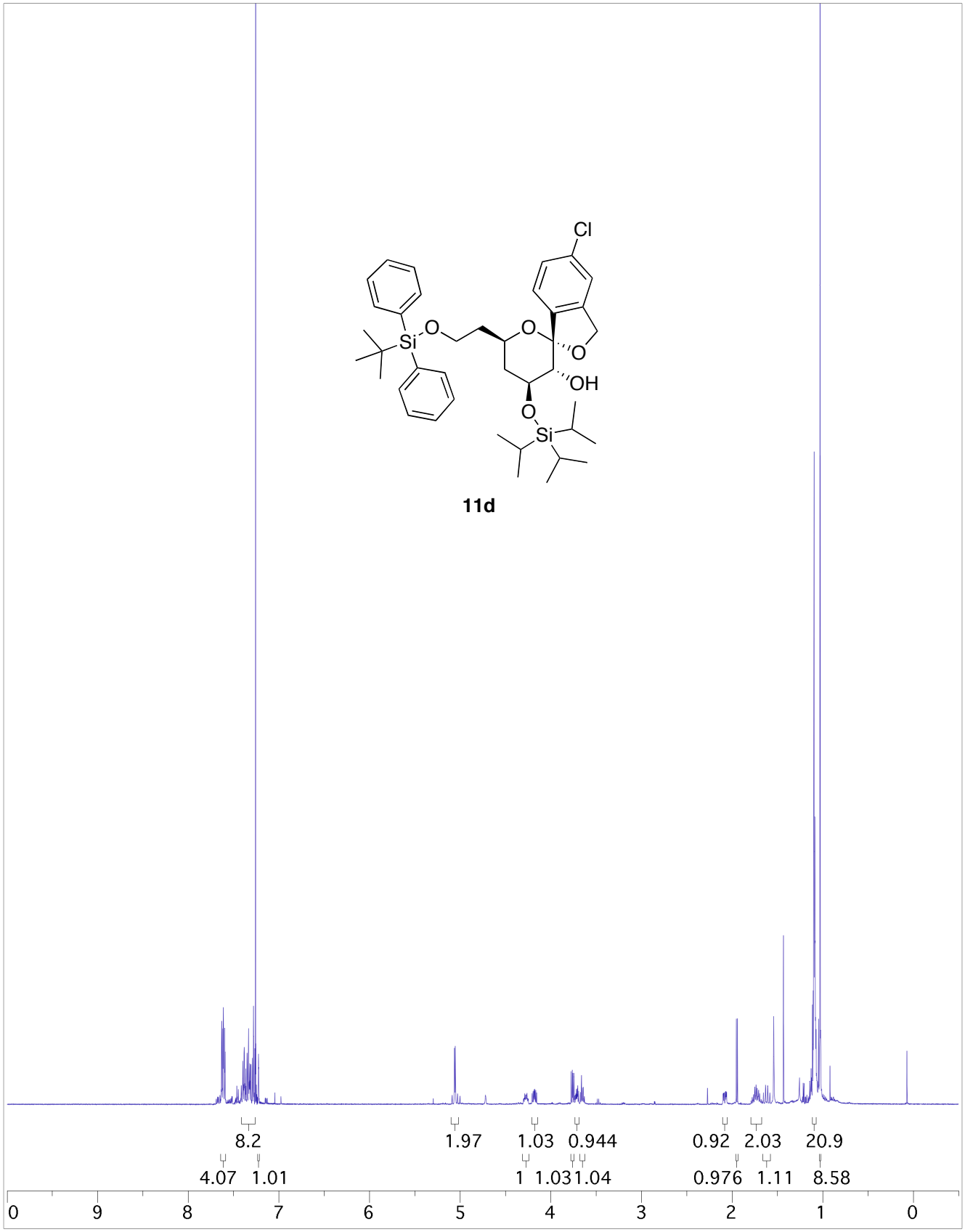
50
40
30
20
10
0


Cl
O
Si
O
O
OH
O
Si
8.2
4.07
1.01
1.97
1.03
1
1.03
0.944
1.04
0.92
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1.11
20.9
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0
9
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7
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5
4
3
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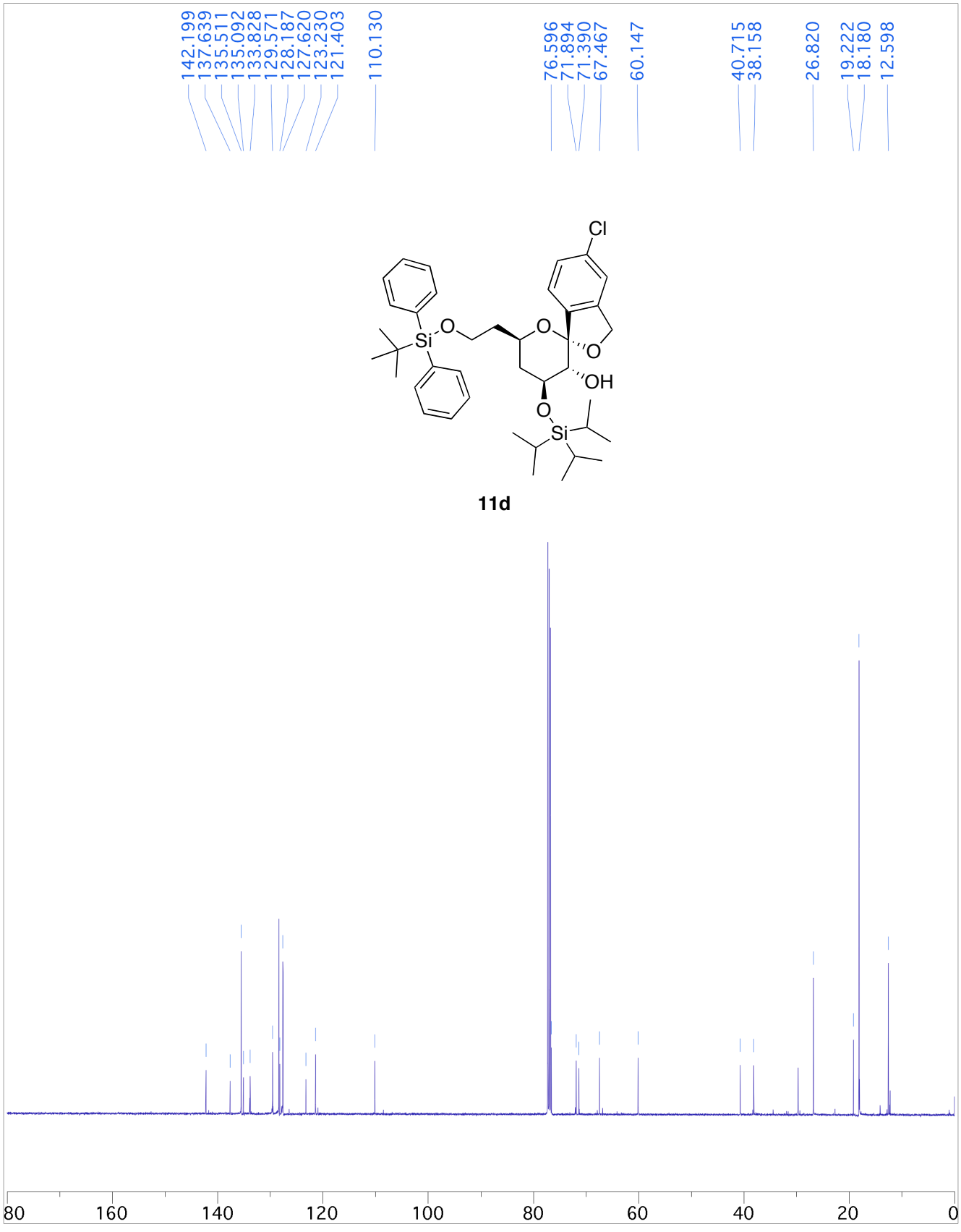
11d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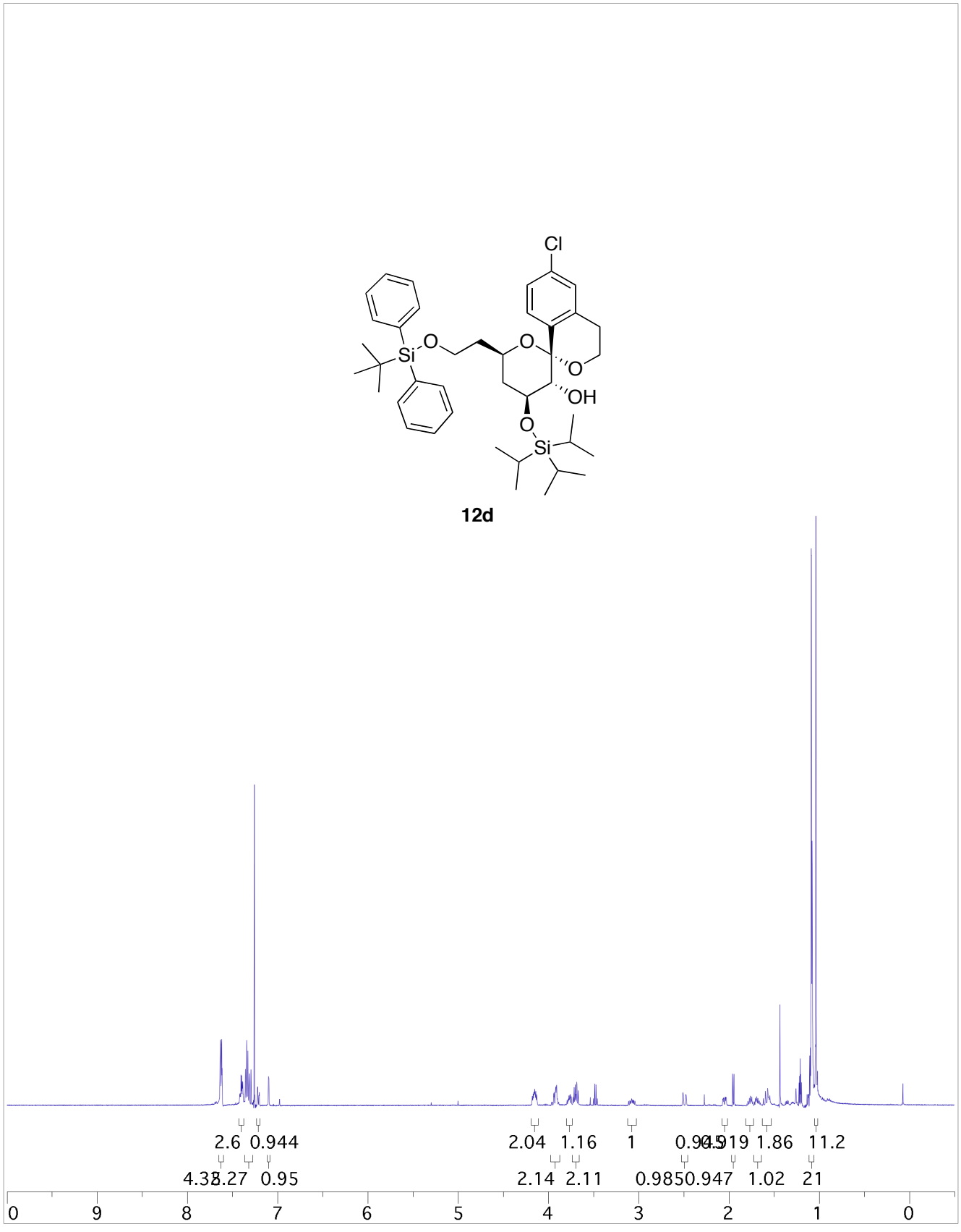
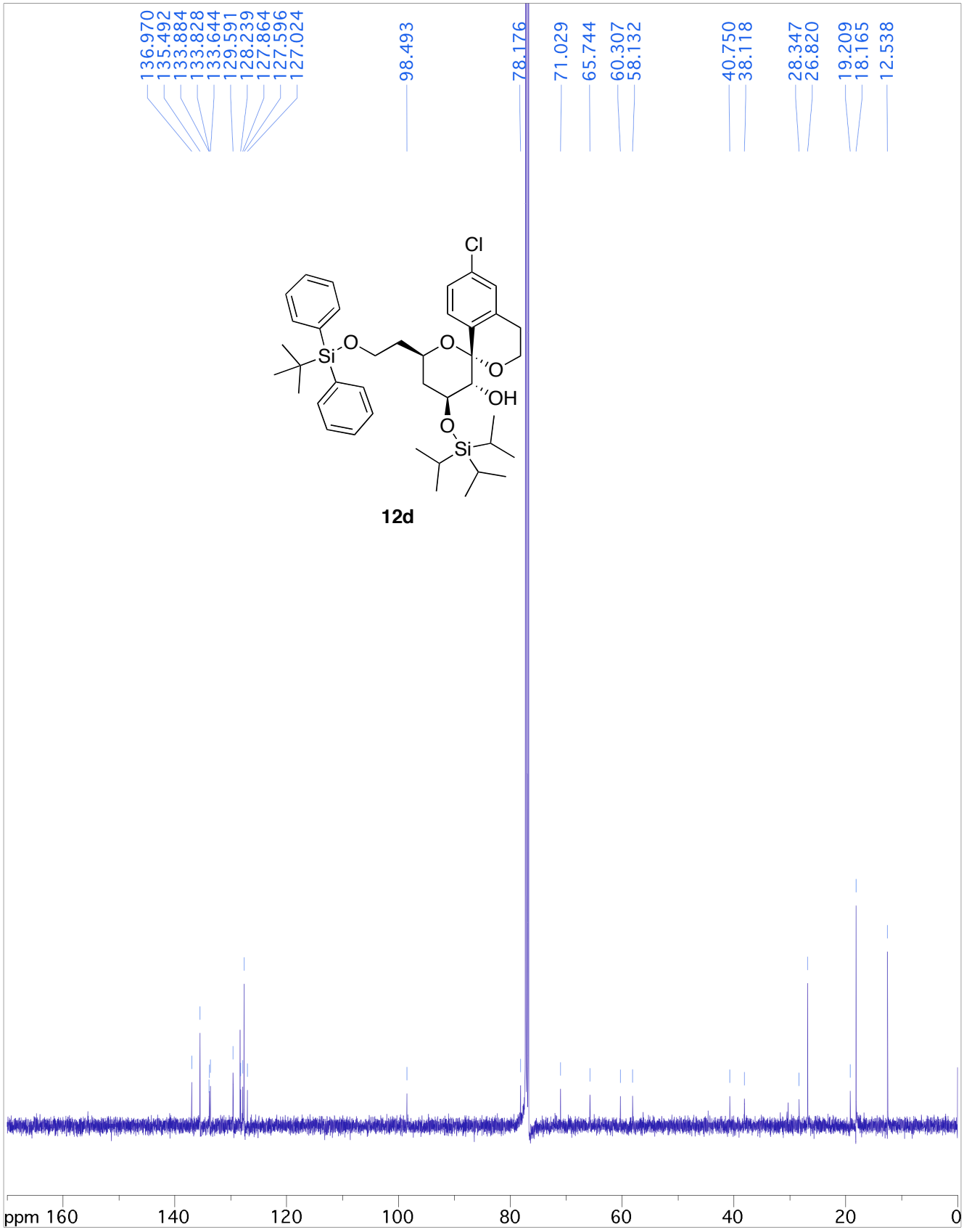
135.511
135.092
133.828
129.571
128.187
127.620
123.230
121.403
110.130
76.596
71.894
71.390
67.467
60.147
40.715
38.158
26.820
19.222
18.180
12.598
Cl
Si
O
O
O
OH
O
Si
80
160
140
120
100
80
60
40
20
0

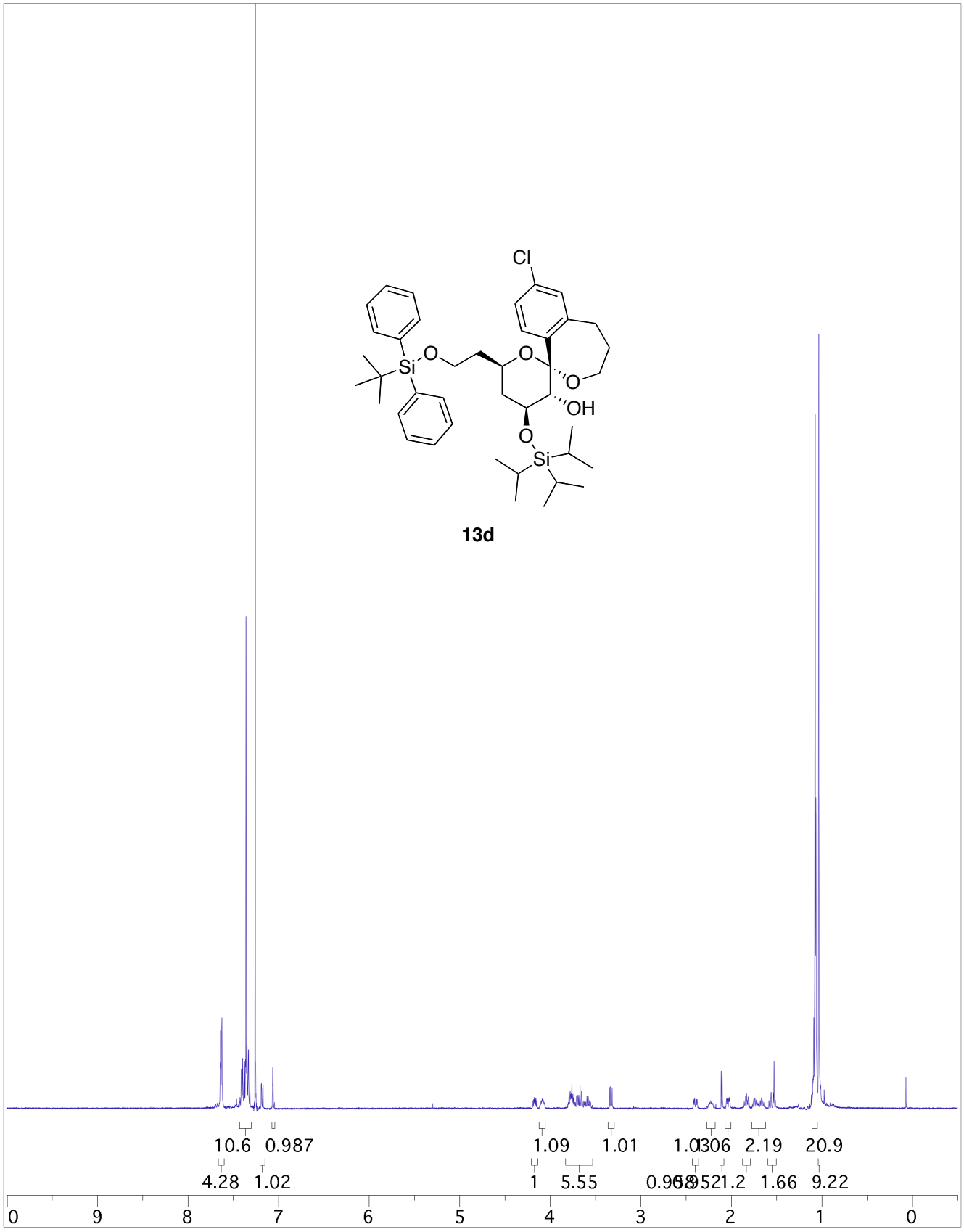
11d


Cl
Si
O
O
O
OH
O
Si
2.6
0.944
4.38
3.27
0.95
2.04
1.16
1
2.14
2.11
0.985
0.947
1.02
1.86
11.2
21
0
9
8
7
6
5
4
3
2
1
0

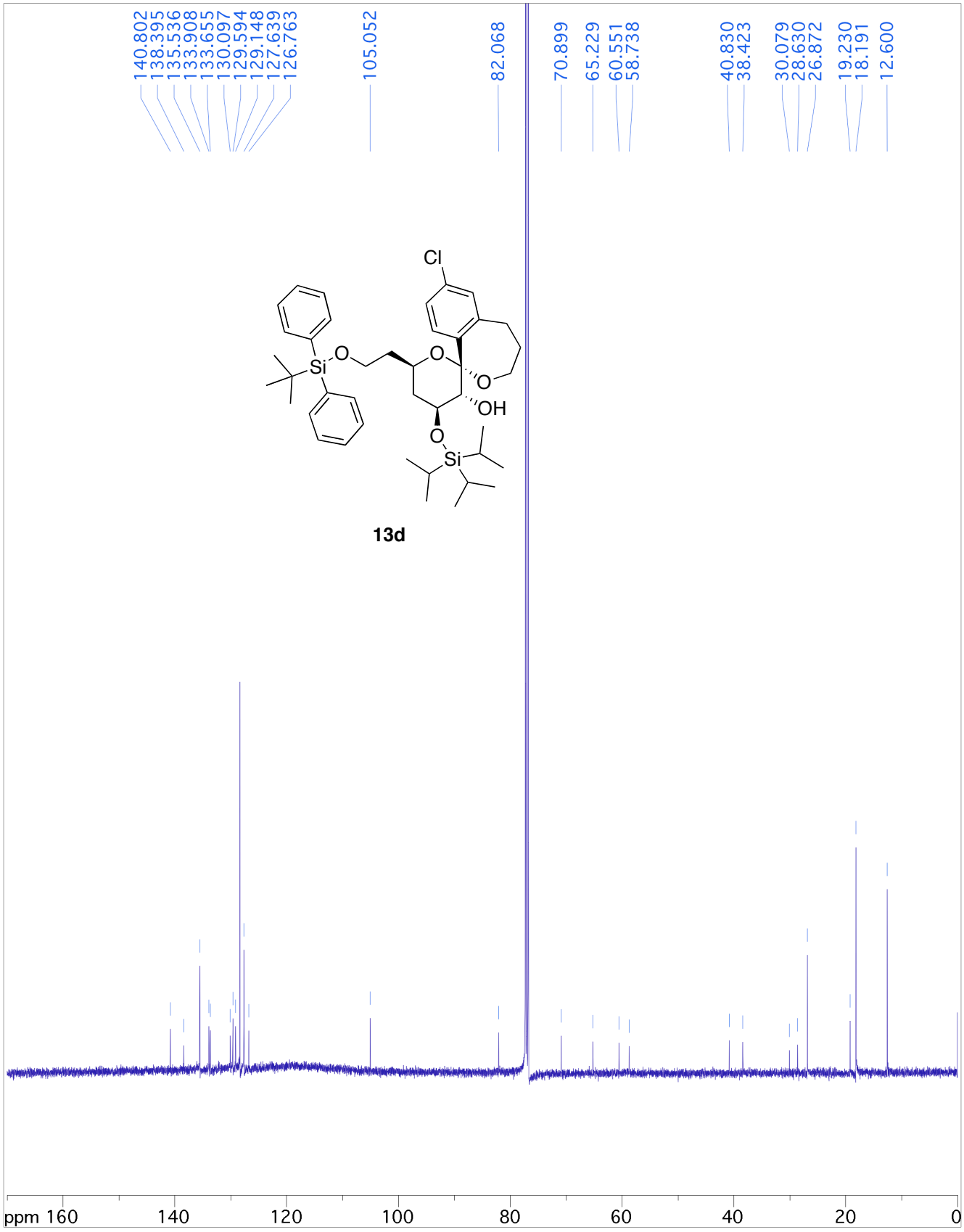
12d


136.970
135.492
133.884
133.828
133.644
129.591
128.239
127.864
127.596
127.024
98.493
78.176
71.029
65.744
60.307
58.132
40.750
38.118
28.347
26.820
19.209
18.165
12.538
Cl
Si
O
O
O
OH
O
Si
ppm 160
140
120
100
80
60
40
20
0

12d


Cl
Si
O
O
O
OH
O
Si
10.6
0.987
1.09
1.01
2.19
20.9
4.28
1.02
1
5.55
1.66
9.22
0
9
8
7
6
5
4
3
2
1
0

13d


140.802
138.395
135.536
133.908
133.655
130.097
129.594
129.148
127.639
126.763
105.052
82.068
70.899
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40.830
38.423
30.079
28.630
26.872
19.230
18.191
12.600
Cl
O
Si
O
O
O
OH
O
Si
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60
40
20
0

13d

CF3
Si
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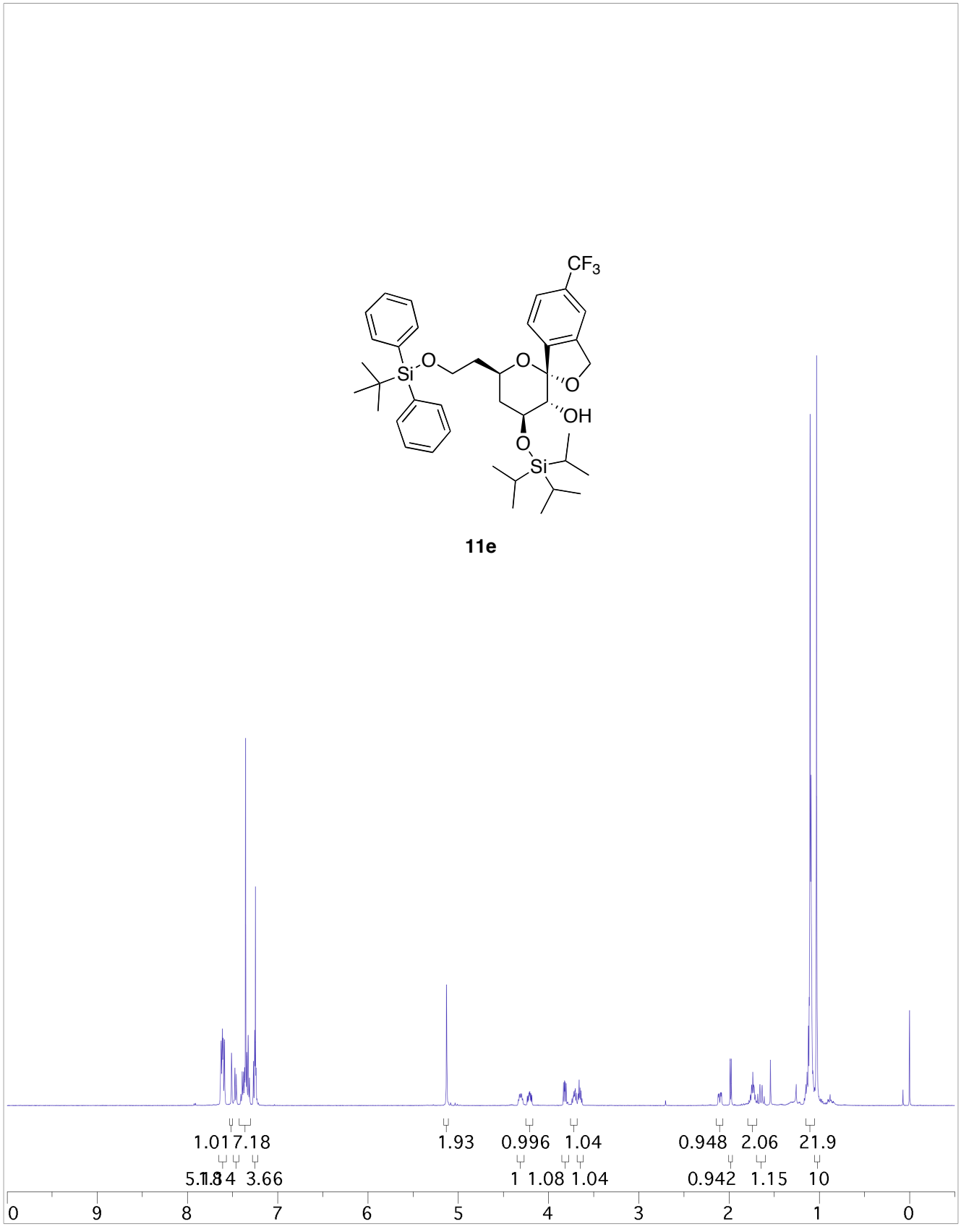
O
O
OH
O
Si

11e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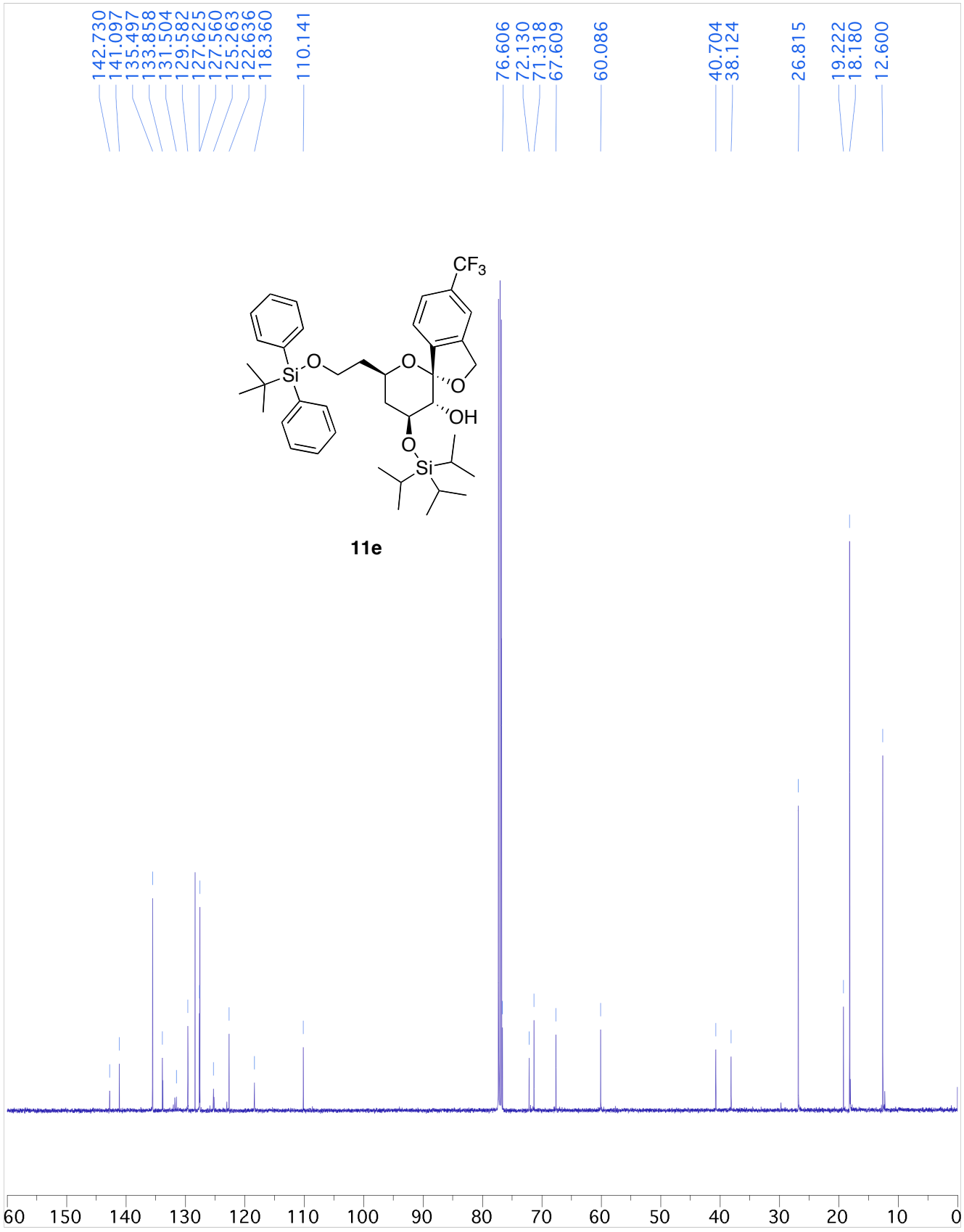
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72.130
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40.704
38.124
26.815
19.222
18.180
12.600
CF3
O
Si
O
O
O
OH
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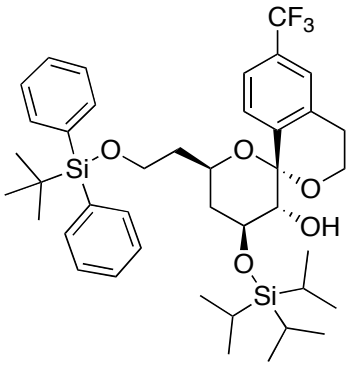
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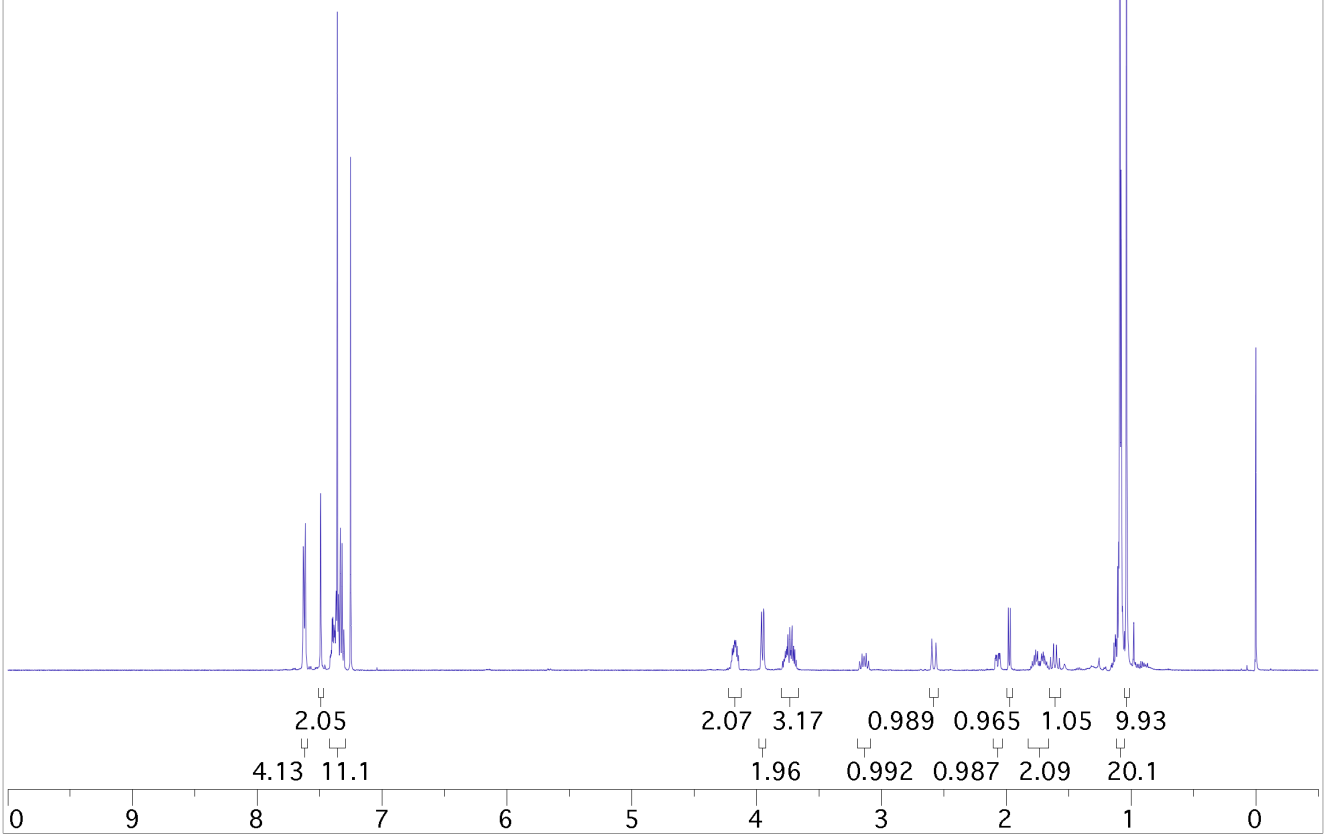
Si

12e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2.09
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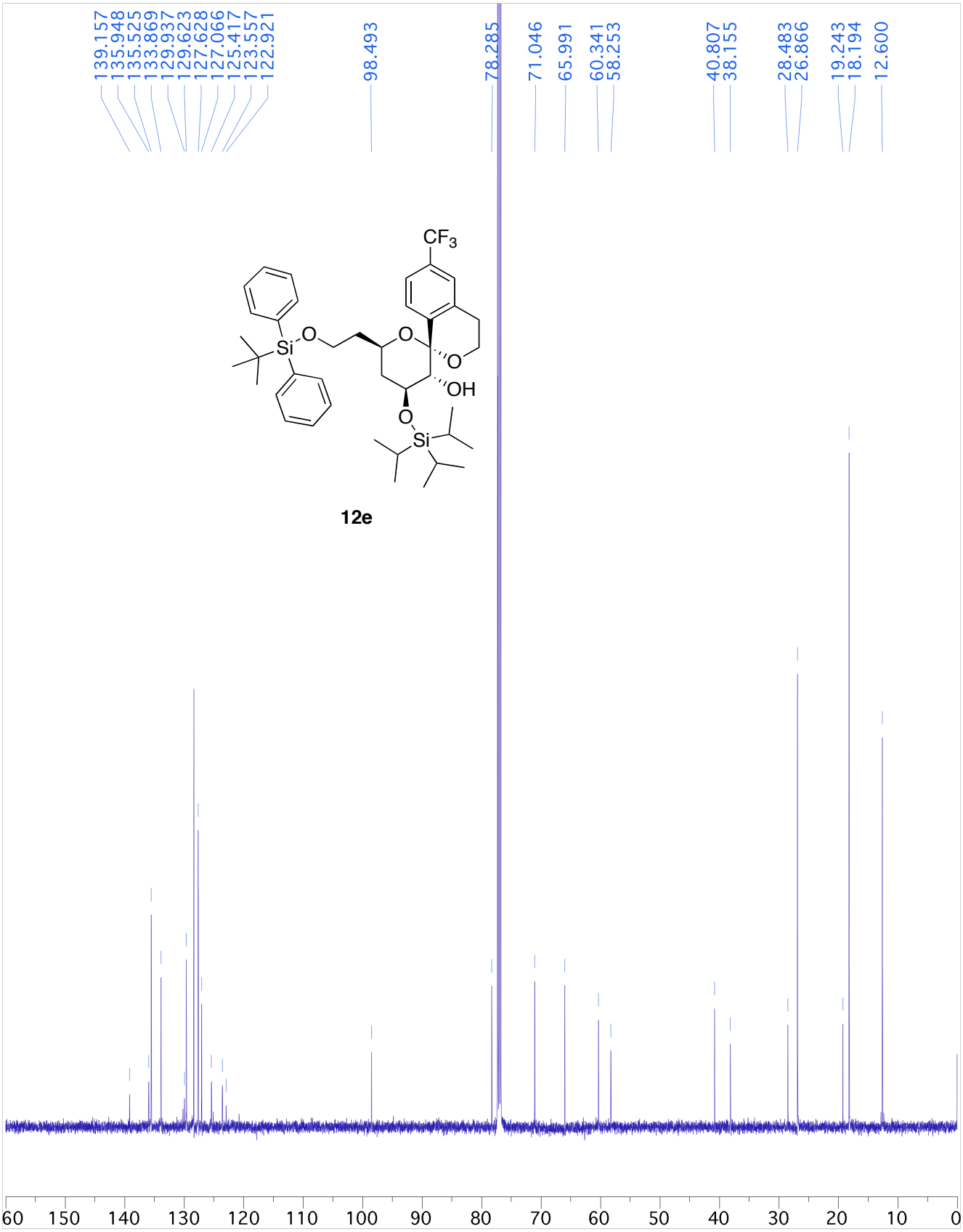
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127.066
125.417
123.557
122.921
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71.046
65.991
60.341
58.253
40.807
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28.483
26.866
19.243
18.194
12.600
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O
O
OH
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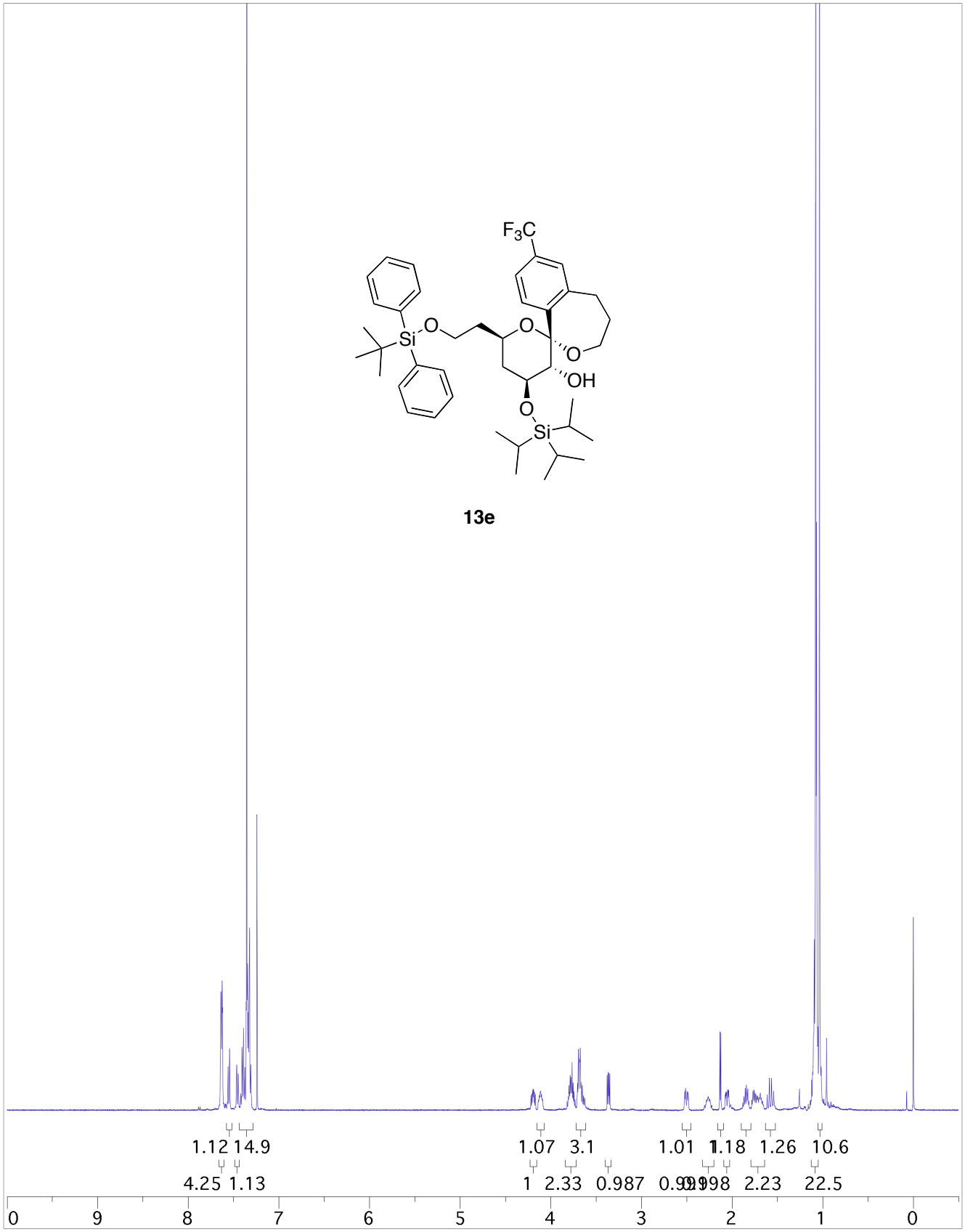
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OH
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1.07
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1.18
1.26
10.6
4.25
1.13
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2.23
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5
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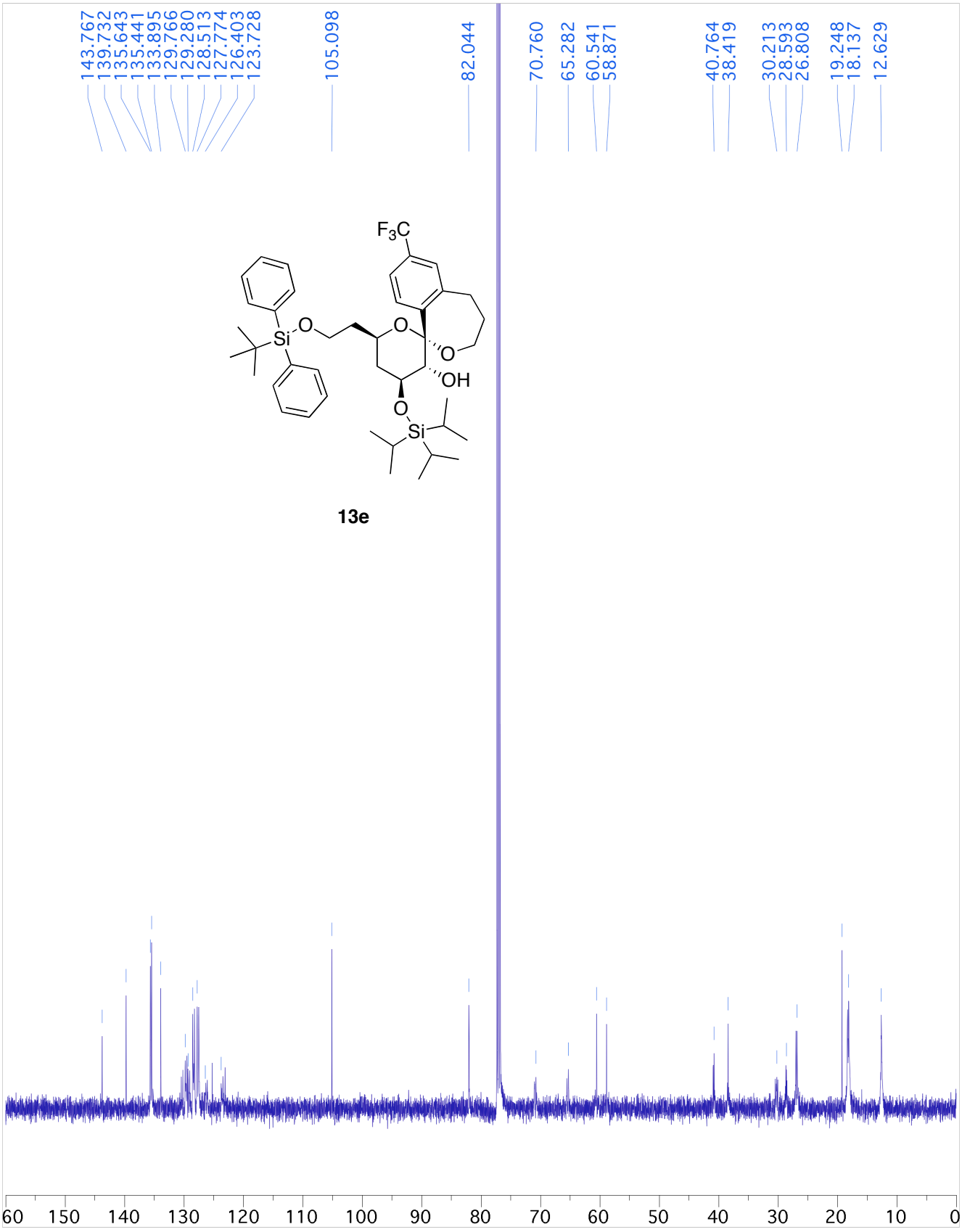
2
1
0

13e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123.728
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65.282
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58.871
40.764
38.419
30.213
28.593
26.808
19.248
18.137
12.629
F3C
O
Si
O
O
OH
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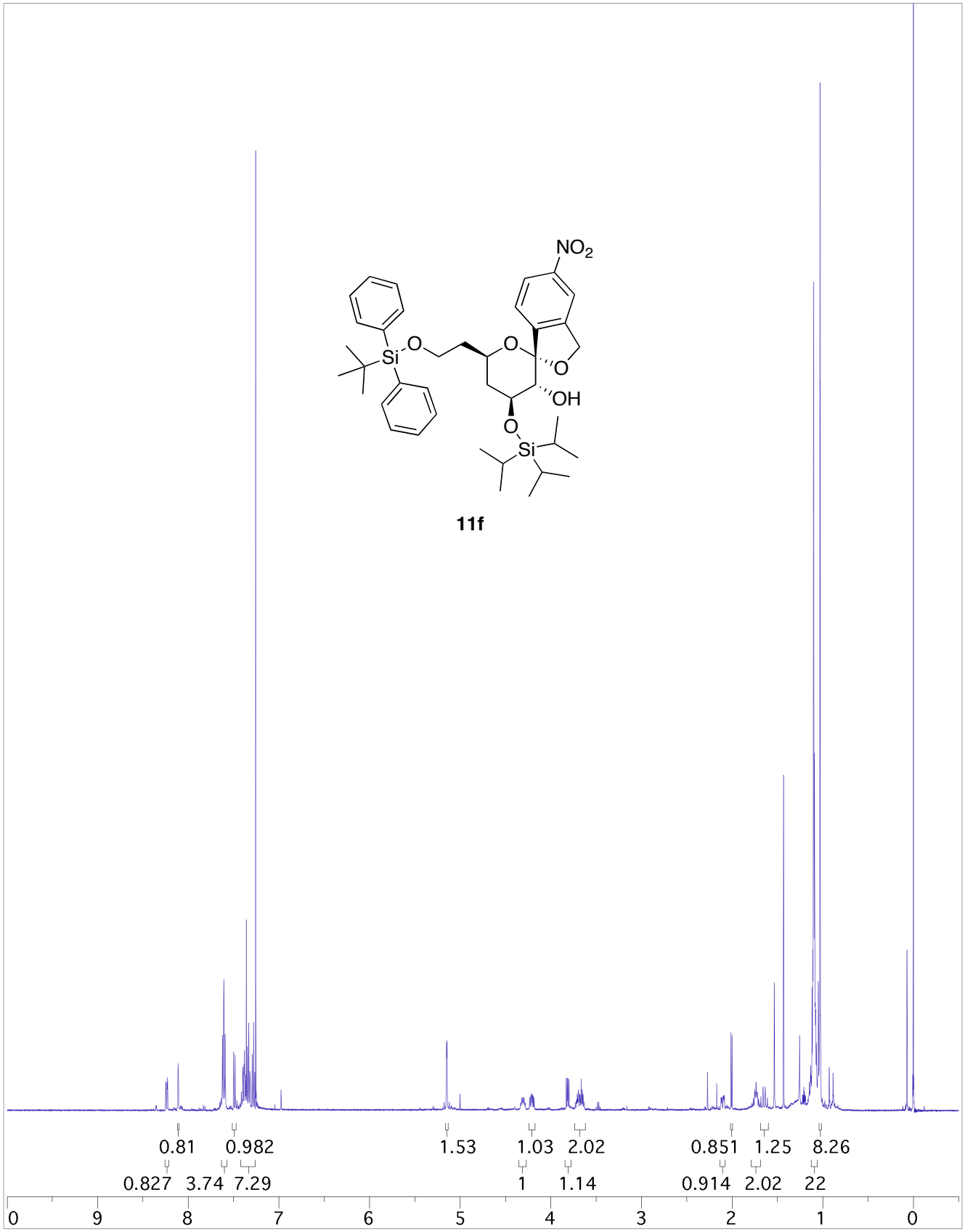
13e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Si
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1.03
2.02
0.851
1.25
8.26
0.827
3.74
7.29
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1.14
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2.02
22
0
9
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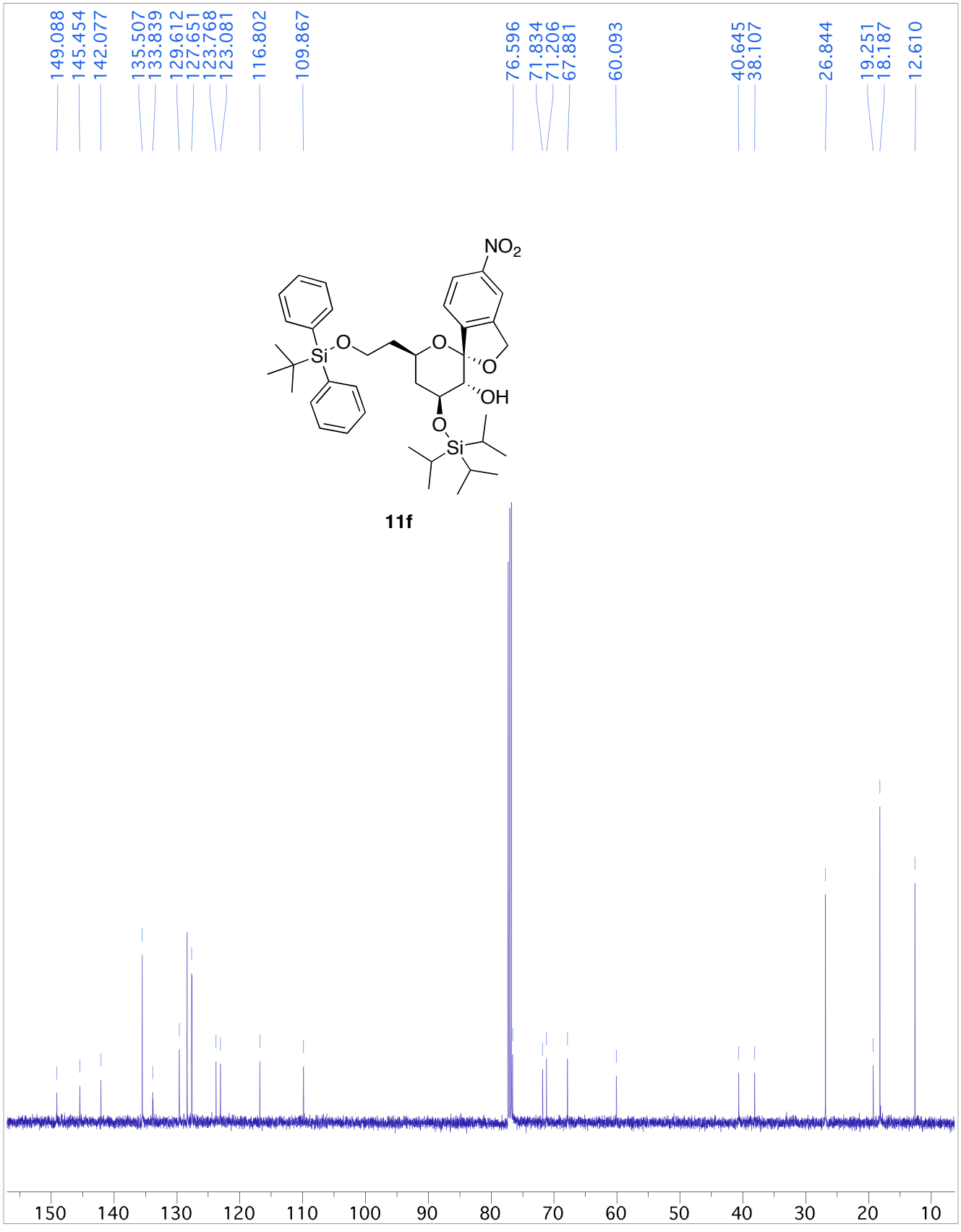
7
6
5
4
3
2
1
0

11f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142.077
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129.612
127.651
123.768
123.081
116.802
109.867
76.596
71.834
71.206
67.881
60.093
40.645
38.107
26.844
19.251
18.187
12.610
NO2
Si
O
O
O
OH
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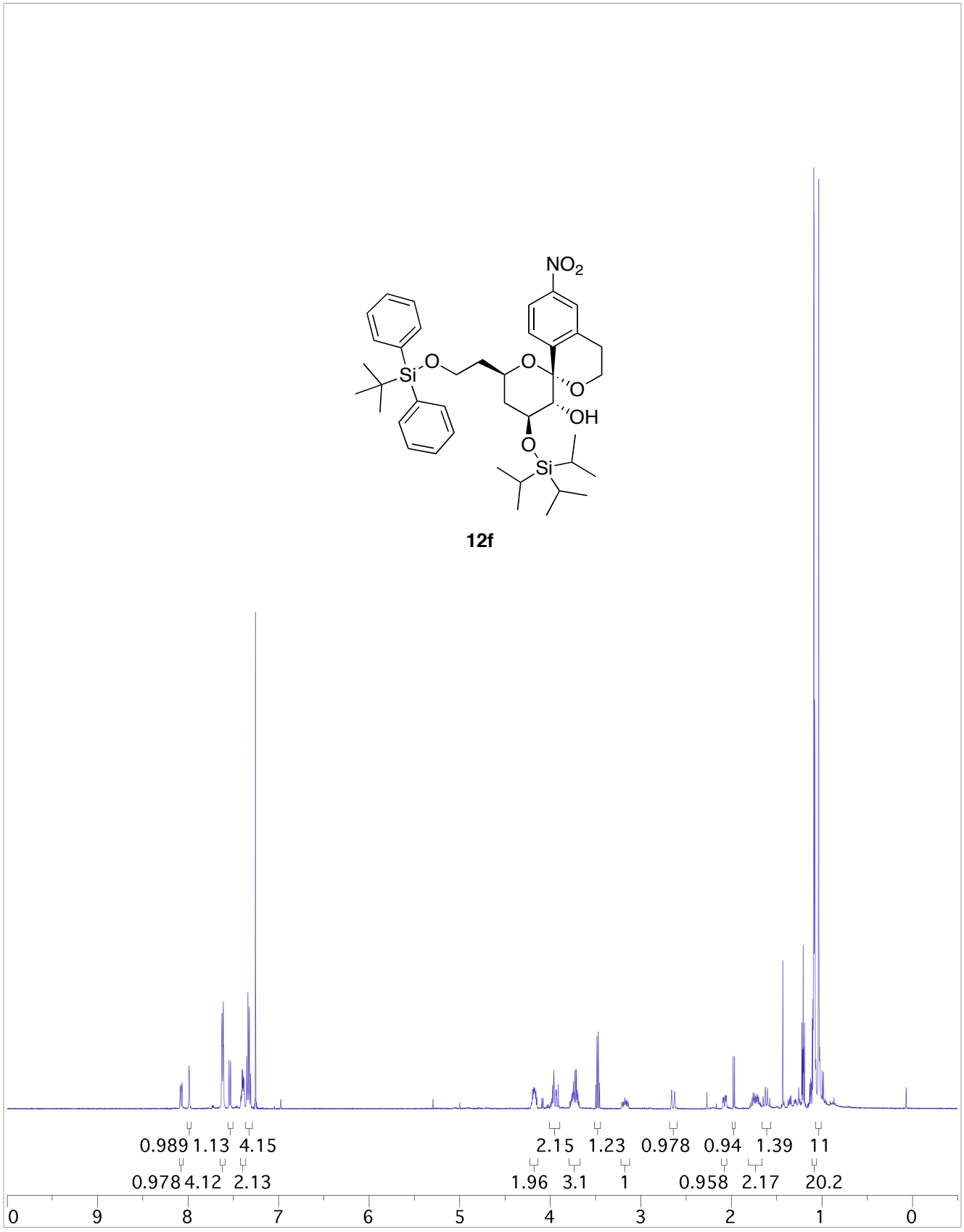
30
20
10

11f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Si
O
O
O
OH
O
Si
12f
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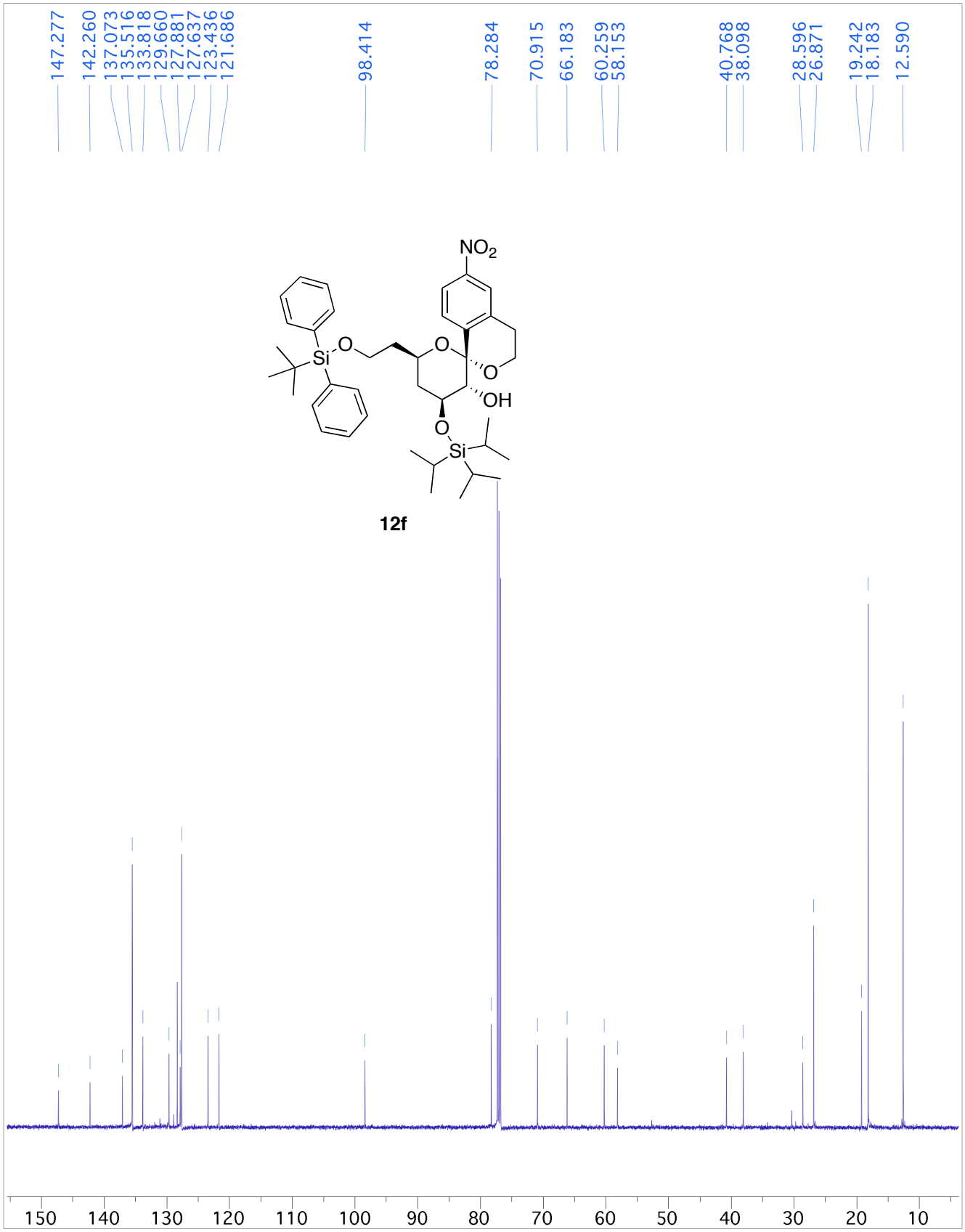
0.978 4.12 2.13
2.15 1.23 0.978 0.94 1.39 11
1.96 3.1 1 0.958 2.17 20.2
0 9 8 7 6 5 4 3 2 1 0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129.660
127.881
127.637
123.436
121.686
98.414
78.284
70.915
66.183
60.259
58.153
40.768
38.098
28.596
26.871
19.242
18.183
12.590
NO2
Si
O
O
O
OH
O
Si
150
140
130
120
110
100
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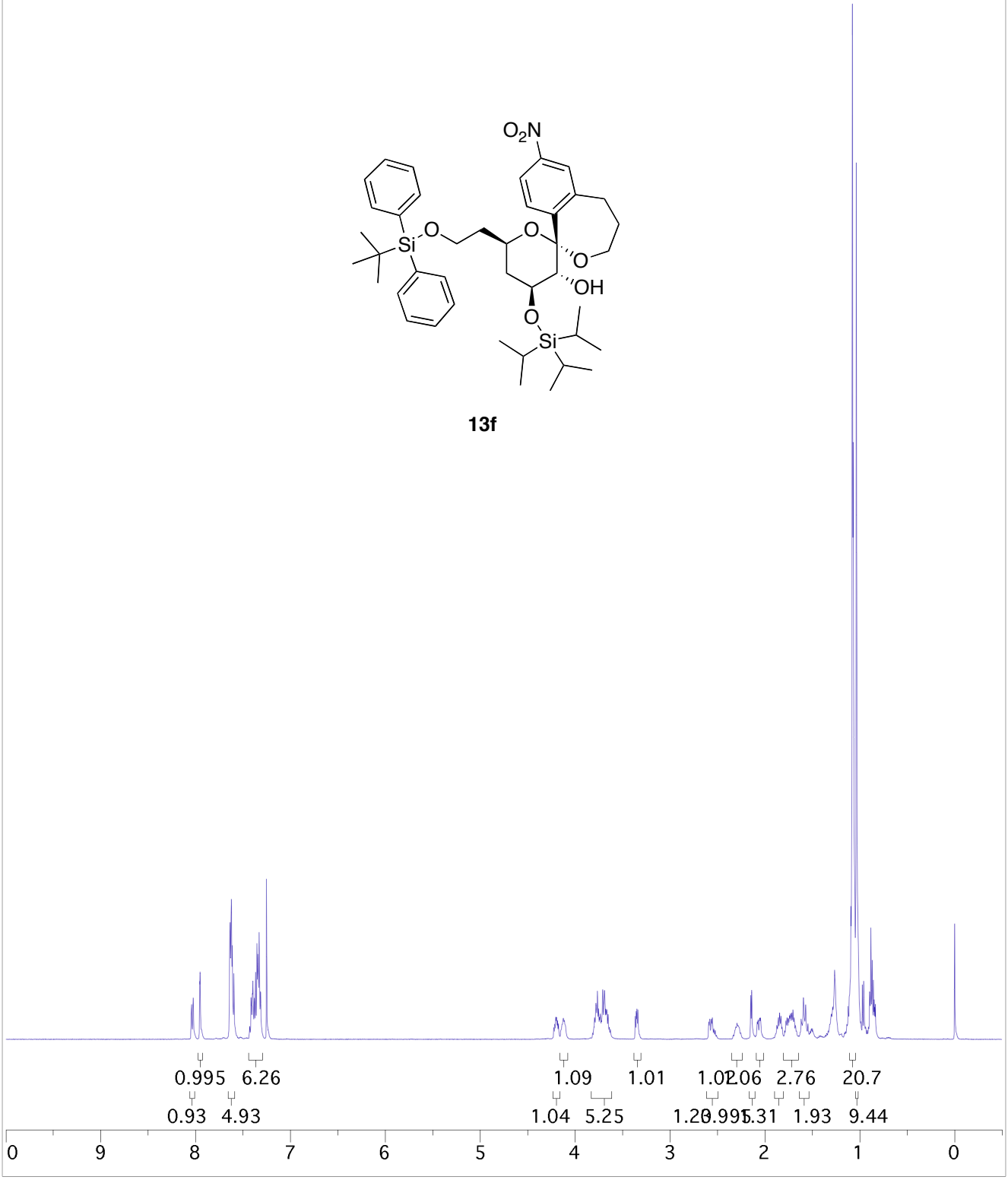
50
40
30
20
10

12f

O2N
Si
O
O
O
OH
O
Si

13f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1.09
1.01
2.06
2.76
20.7
0.93
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5.31
1.93
9.44
0
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7
6
5
4
3
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1
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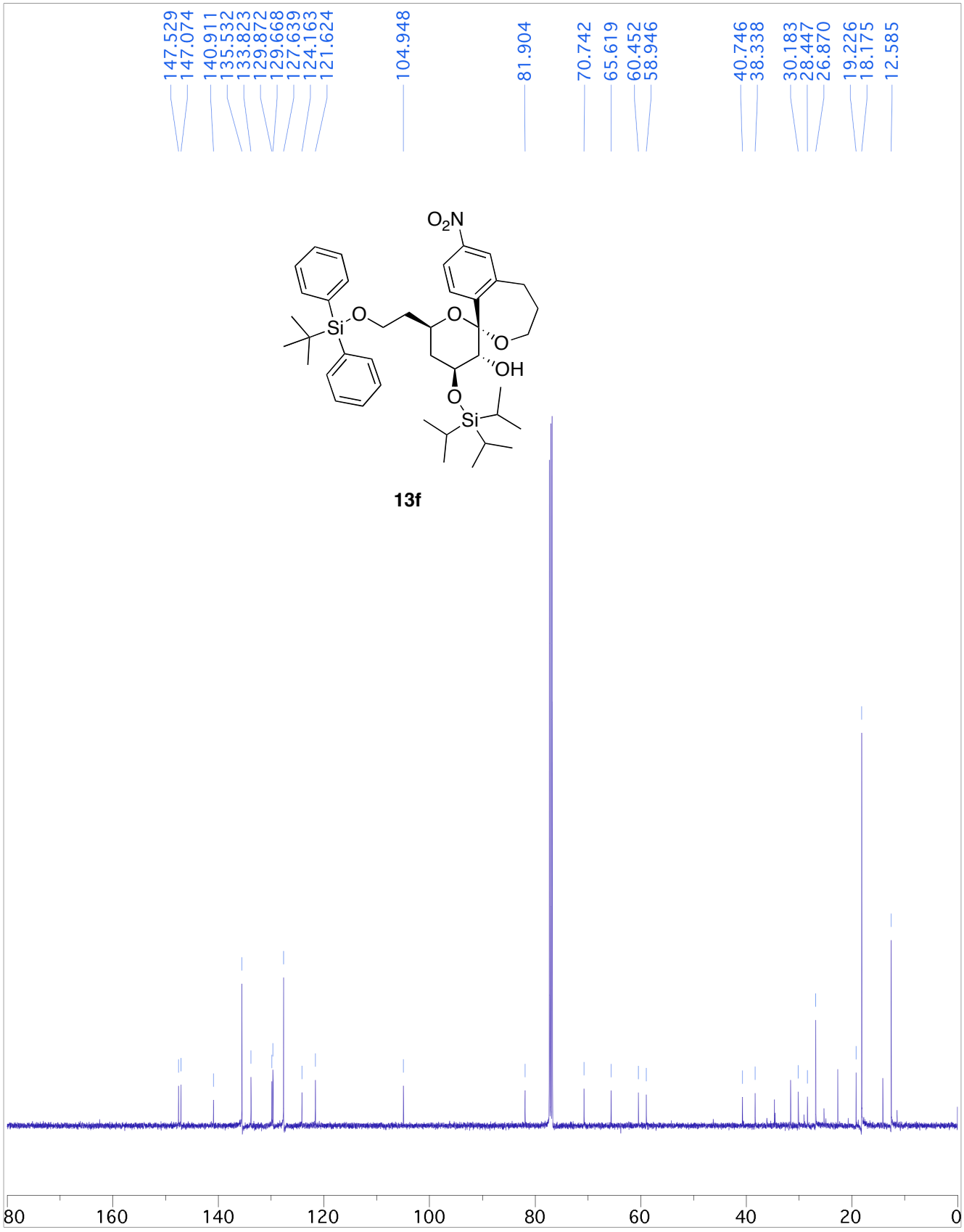
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127.639
124.163
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81.904
70.742
65.619
60.452
58.946
40.746
38.338
30.183
28.447
26.870
19.226
18.175
12.585
O2N
Si
O
O
O
OH
O
Si
13f
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140
120
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80
60
40
20
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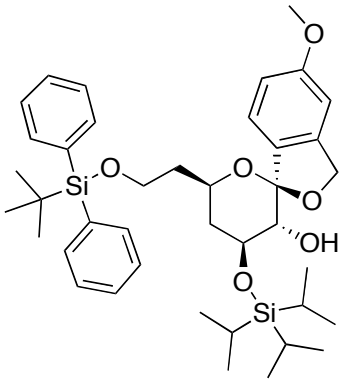
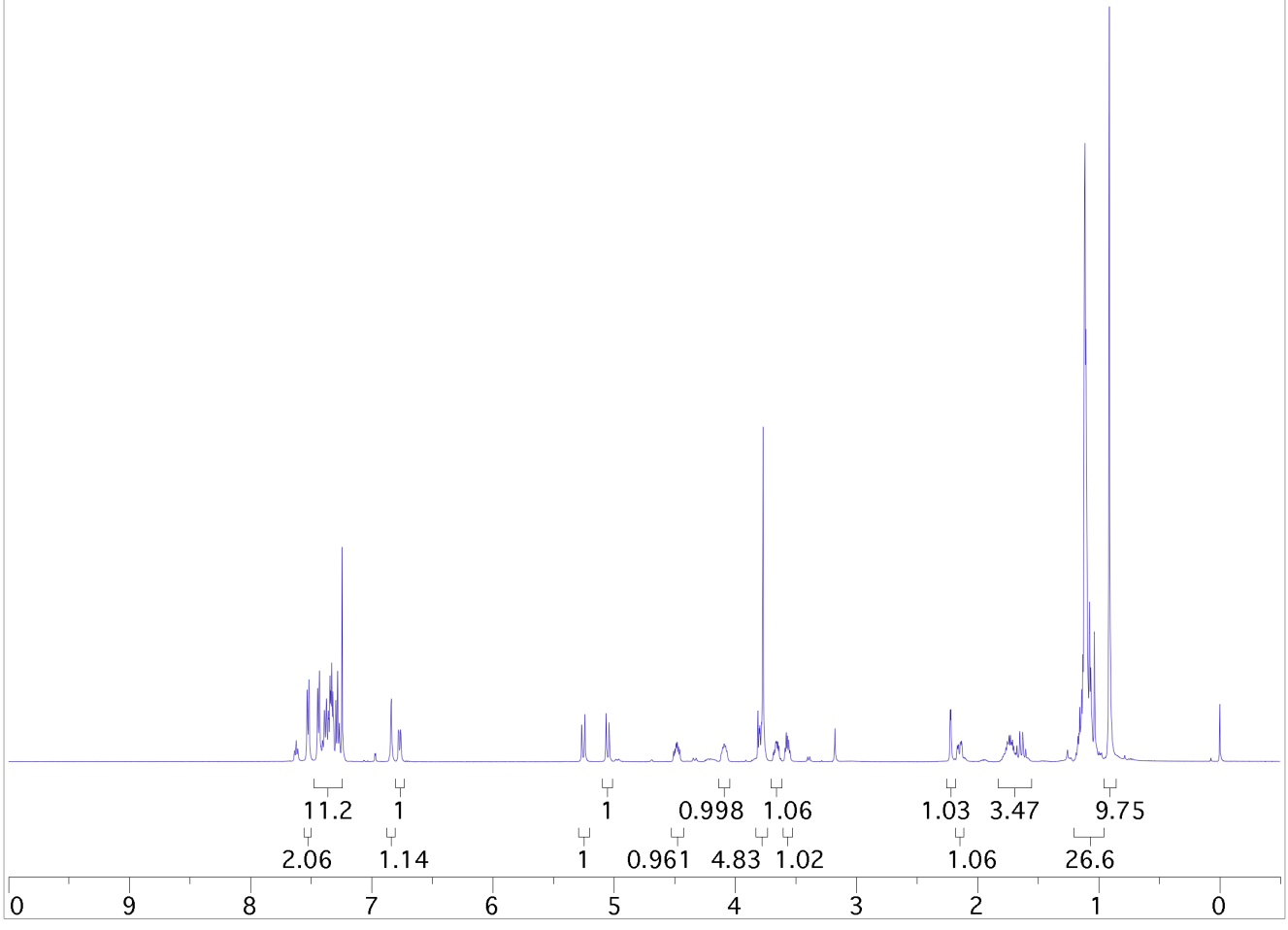

O
Si
O
O
O
OH
O
Si

8a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1
0.998
1.06
1.03
3.47
9.75
2.06
1.14
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1.02
1.06
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7
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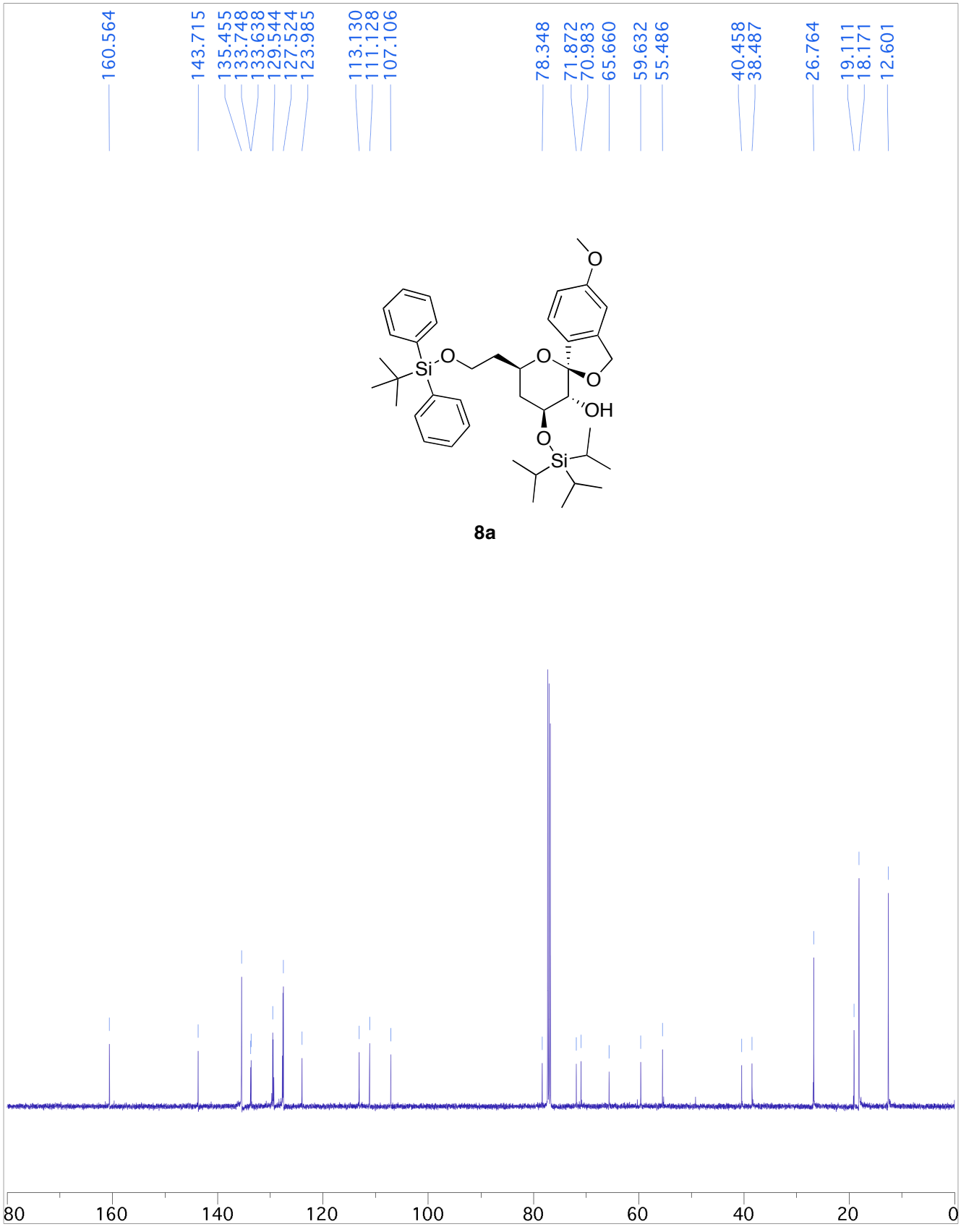
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123.985
113.130
111.128
107.106
78.348
71.872
70.983
65.660
59.632
55.486
40.458
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26.764
19.111
18.171
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Si
O
O
O
OH
O
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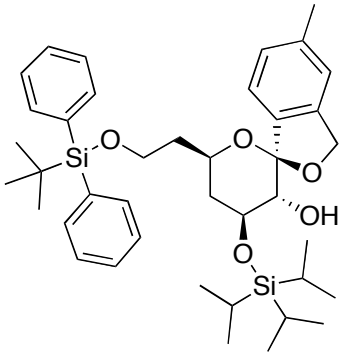
120
100
80
60
40
20
0

8a


Si
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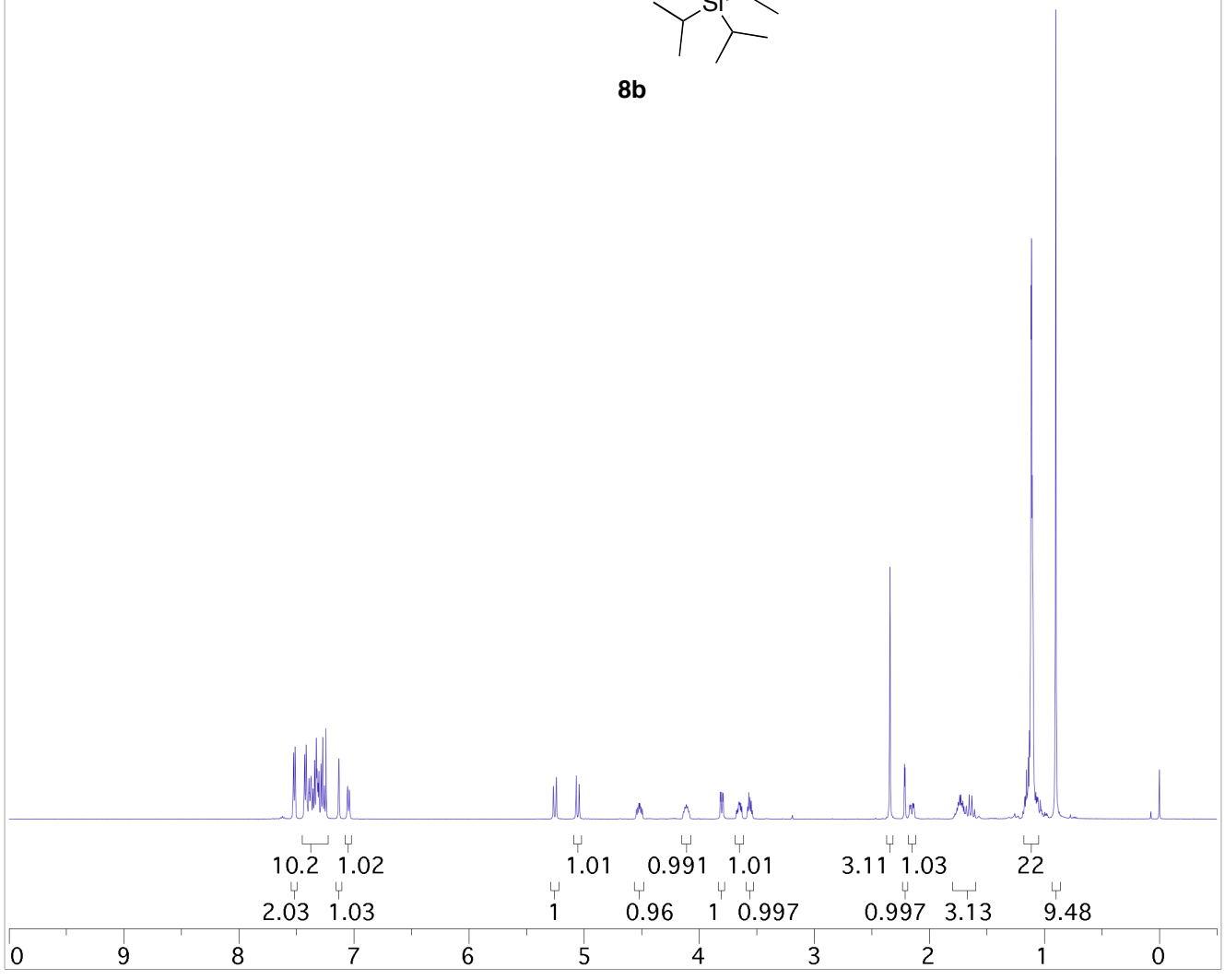
O
O
OH
O
Si

8b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1.01
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1.01
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1.03
22
2.03
1.03
1
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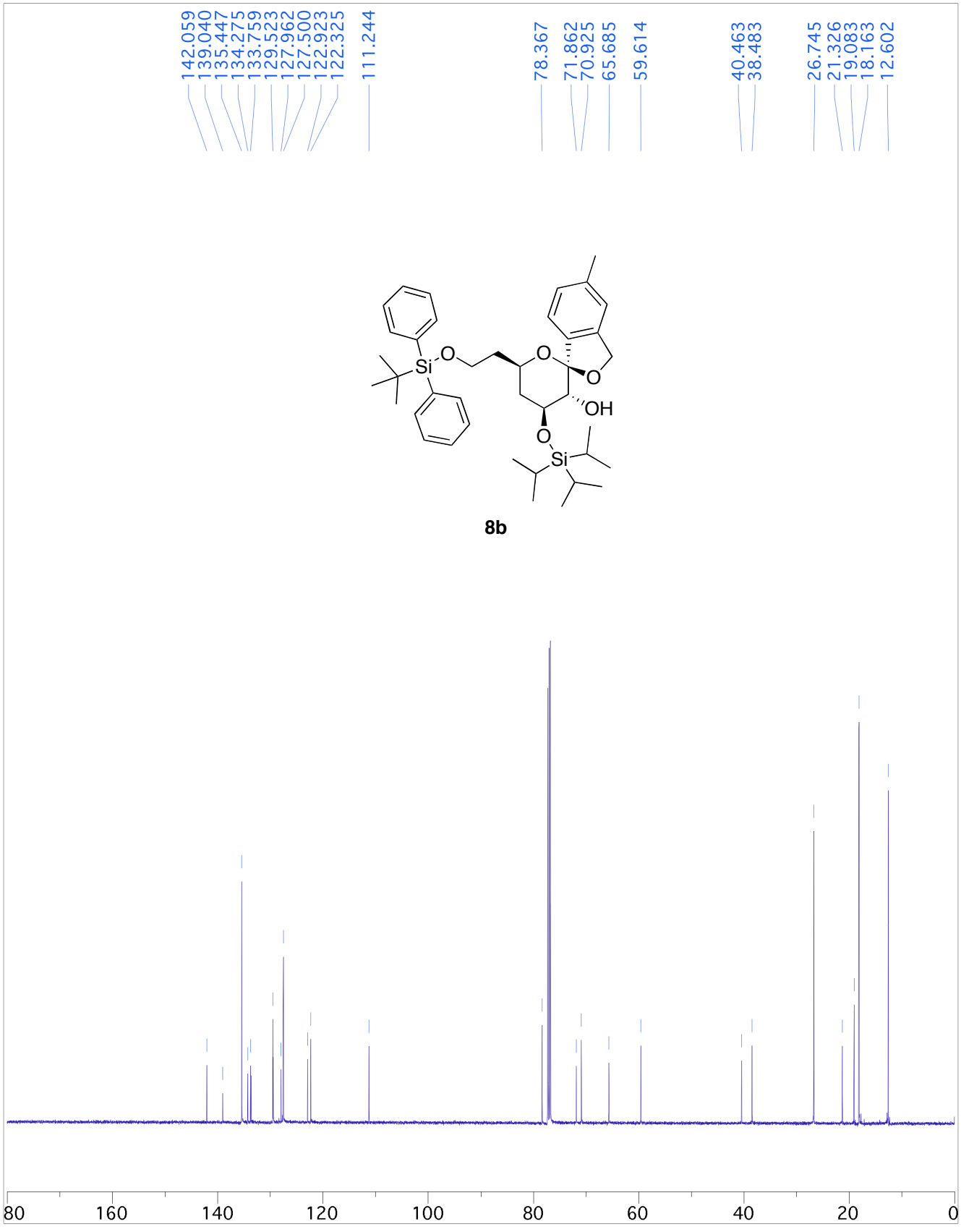
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127.500
122.923
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71.862
70.925
65.685
59.614
40.463
38.483
26.745
21.326
19.083
18.163
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O
O
OH
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120
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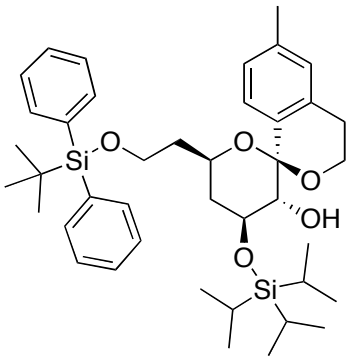
80
60
40
20
0

8b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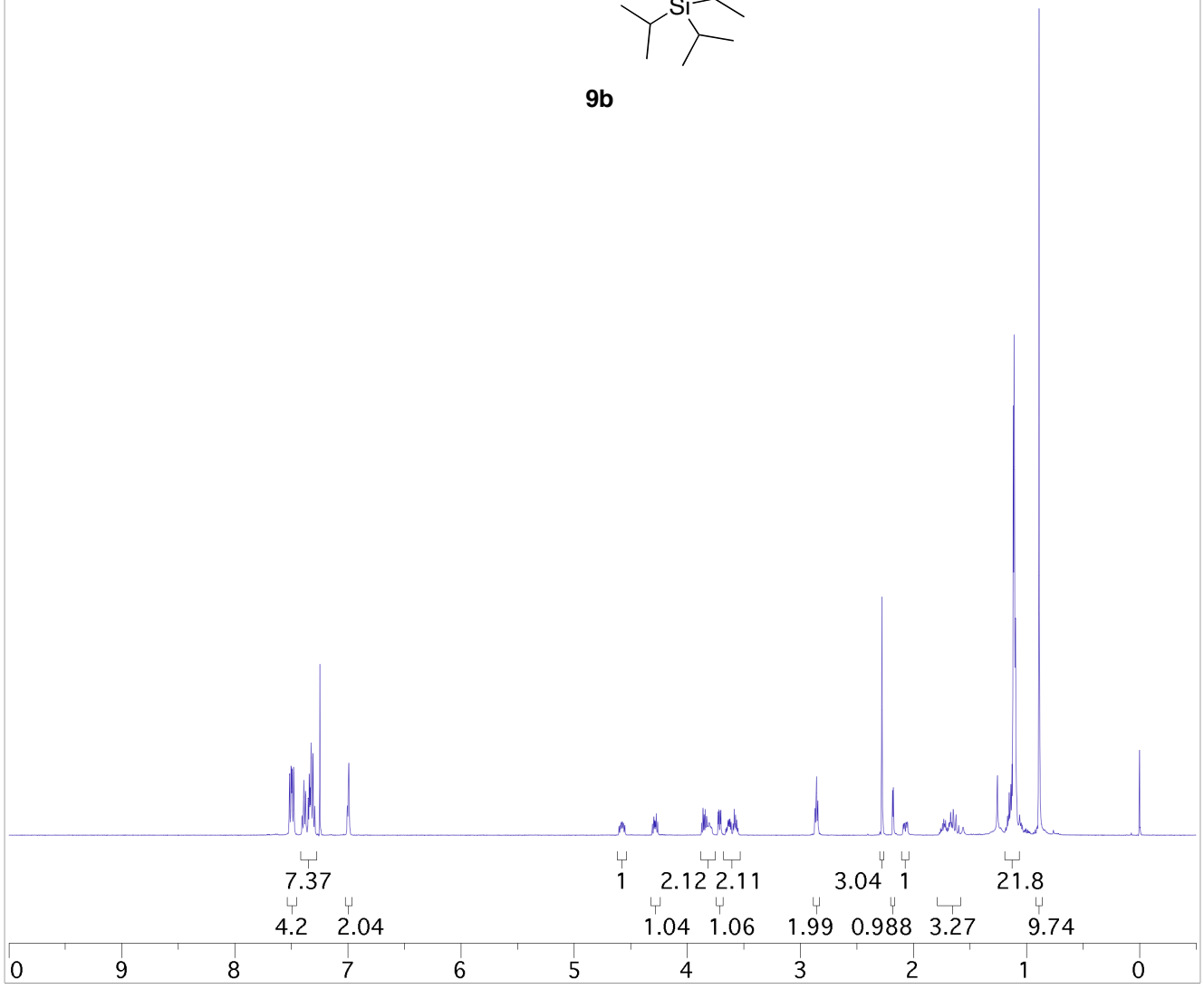
O
O
OH
O
Si

9b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7
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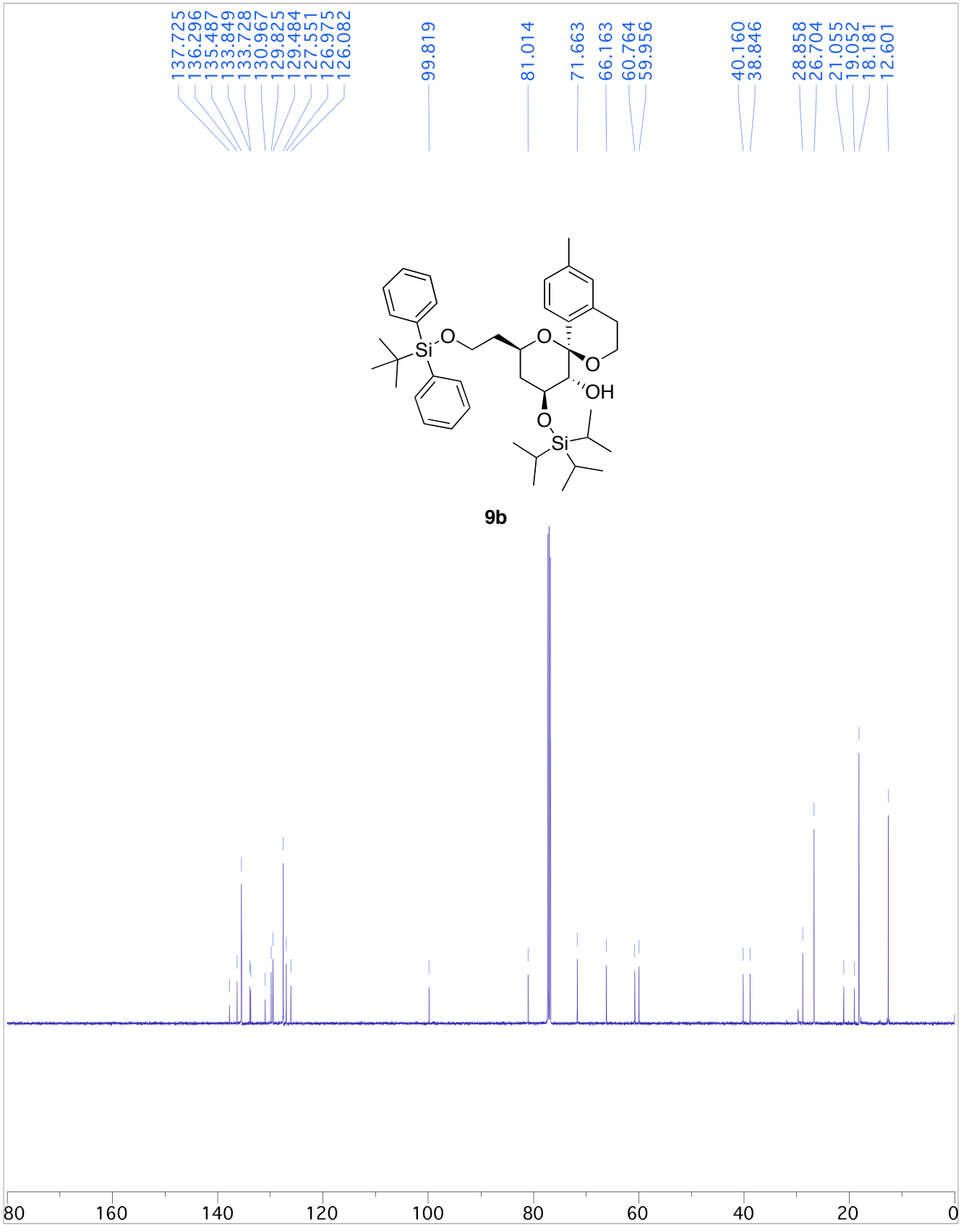
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126.082
99.819
81.014
71.663
66.163
60.764
59.956
40.160
38.846
28.858
26.704
21.055
19.052
18.181
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O
O
OH
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Si
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40
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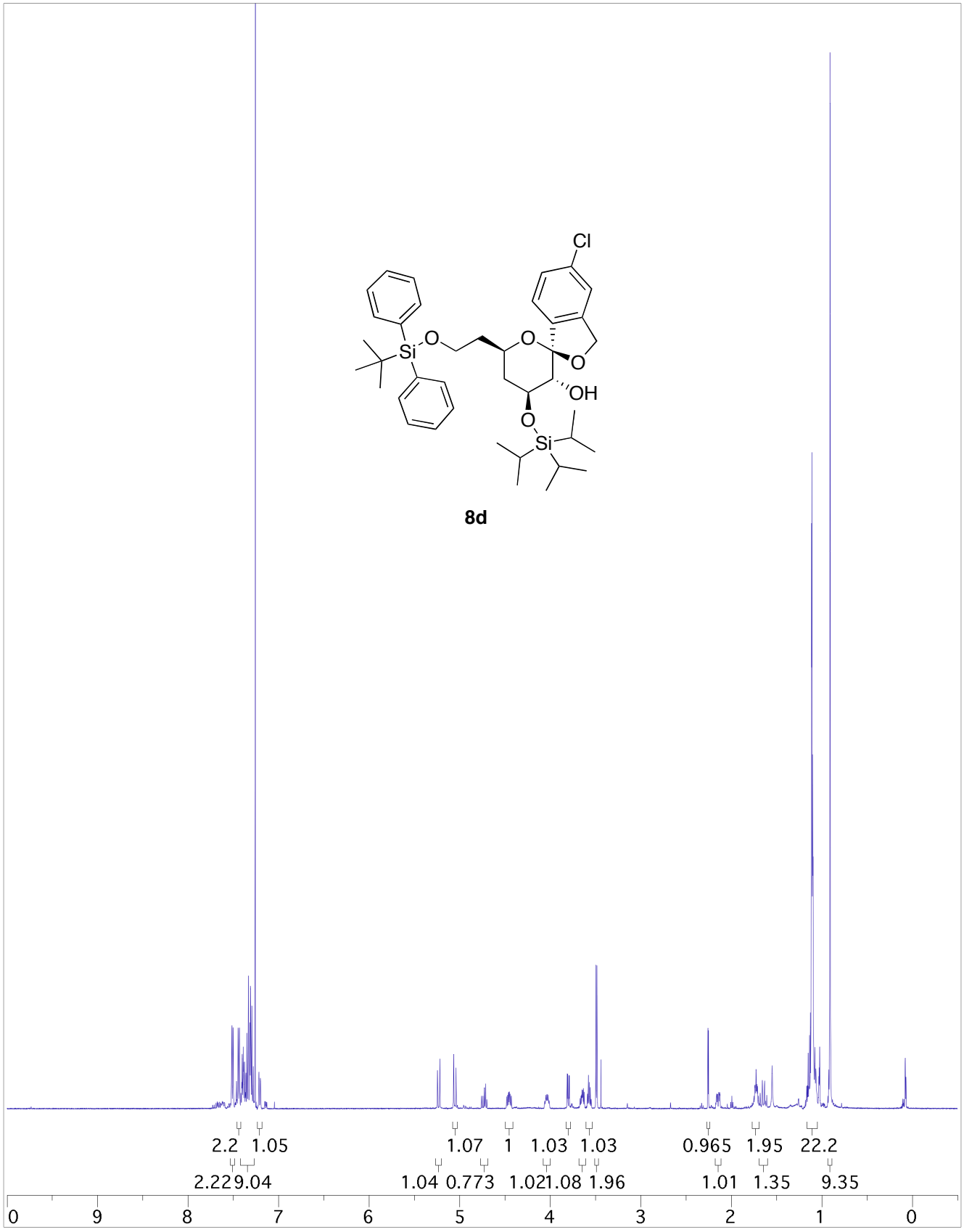
0

9b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O
O
OH
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1.03
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1.95
22.2
2.22
9.04
1.04
0.773
1.02
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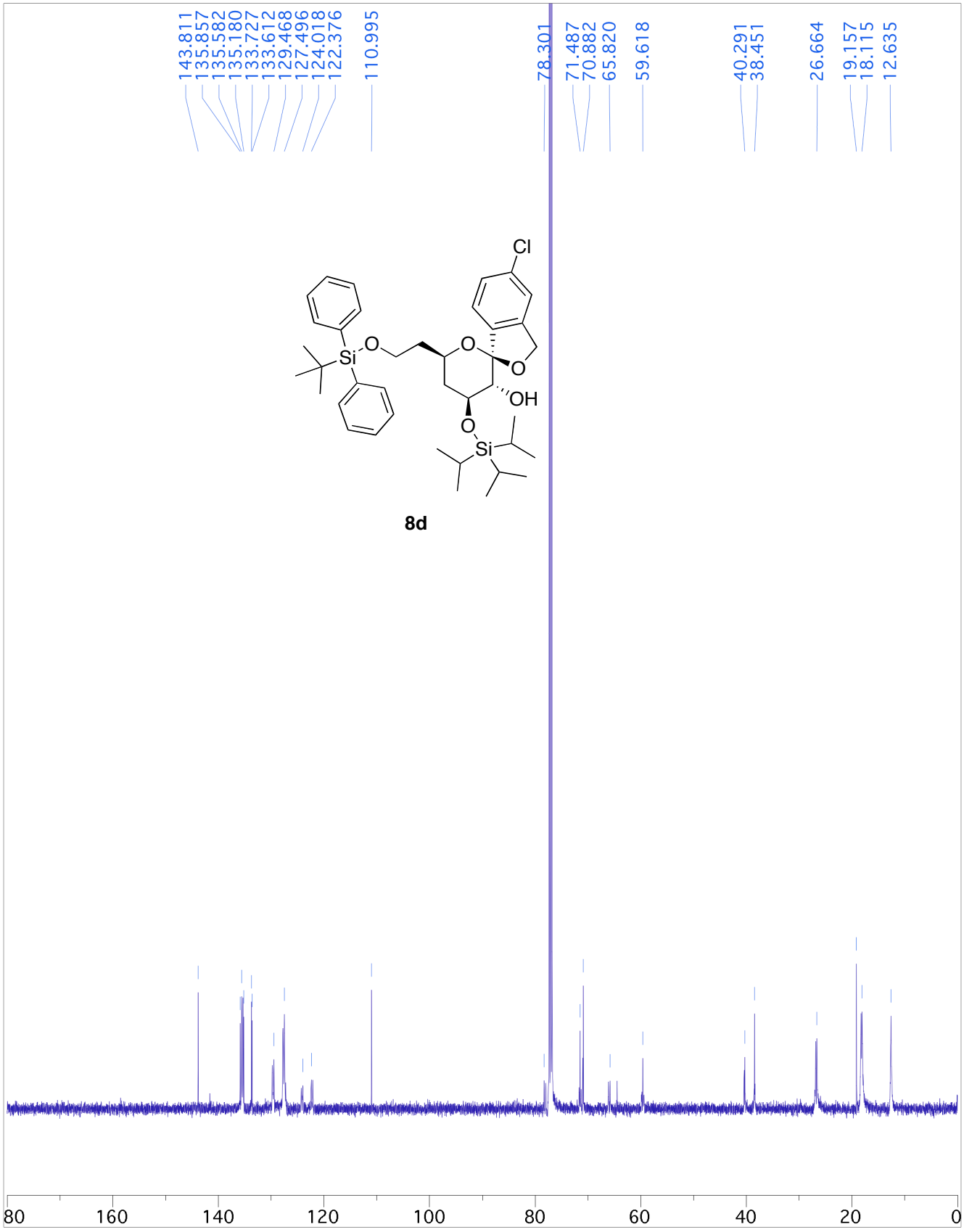
0

8d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71.487
70.882
65.820
59.618
40.291
38.451
26.664
19.157
18.115
12.635
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O
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OH
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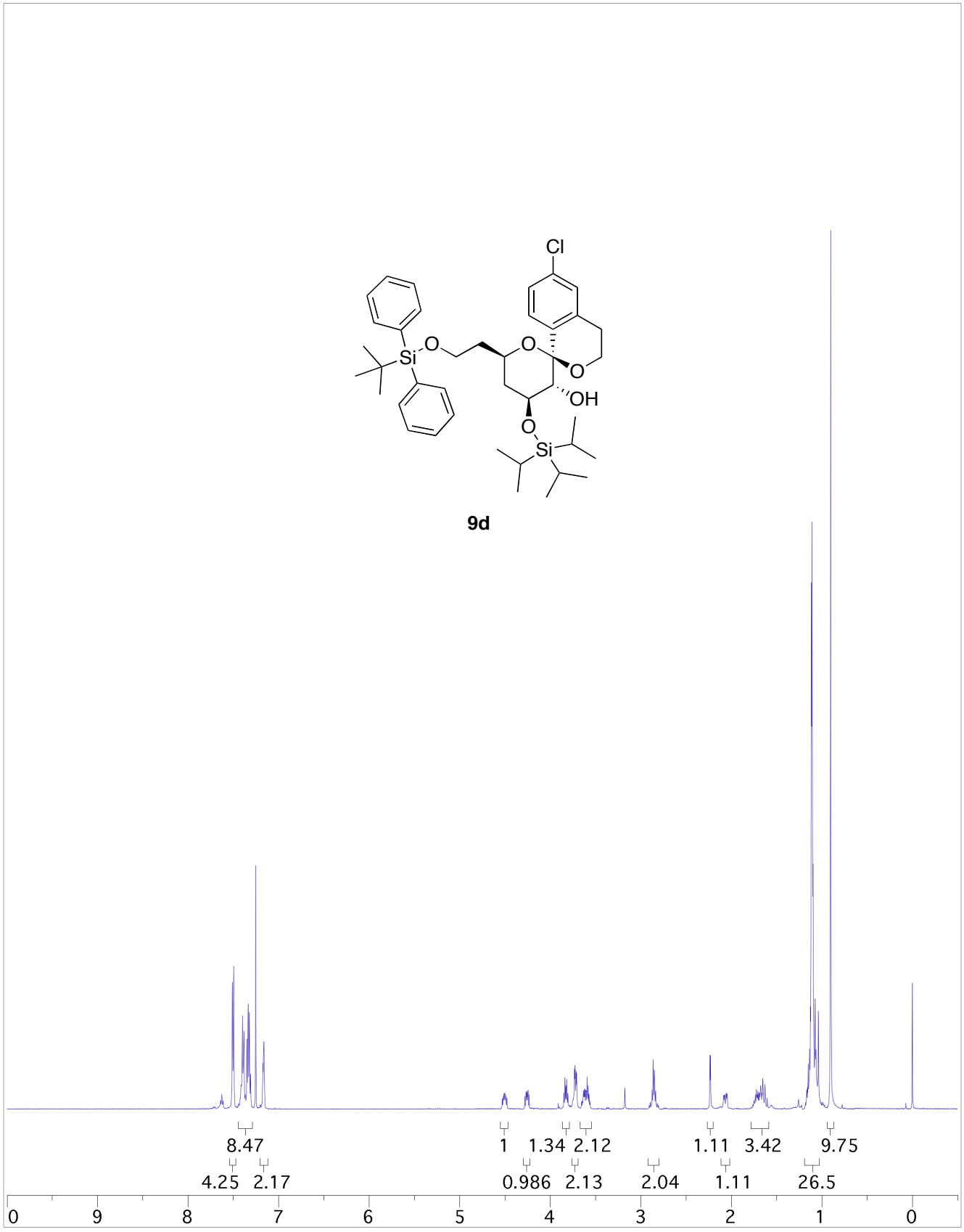
8d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2.04
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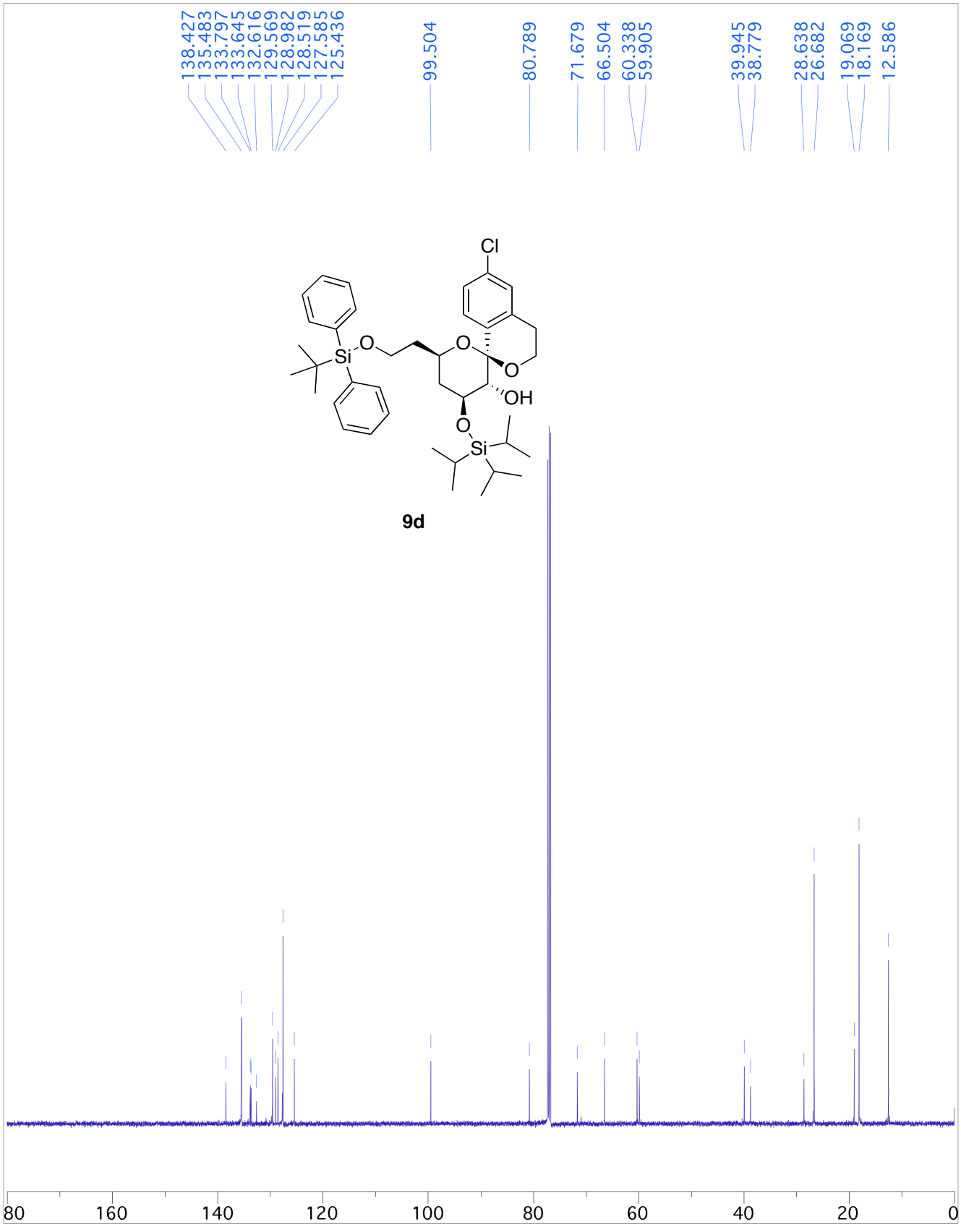
0

9d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128.519
127.585
125.436
99.504
80.789
71.679
66.504
60.338
59.905
39.945
38.779
28.638
26.682
19.069
18.169
12.586
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OH
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Si
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20
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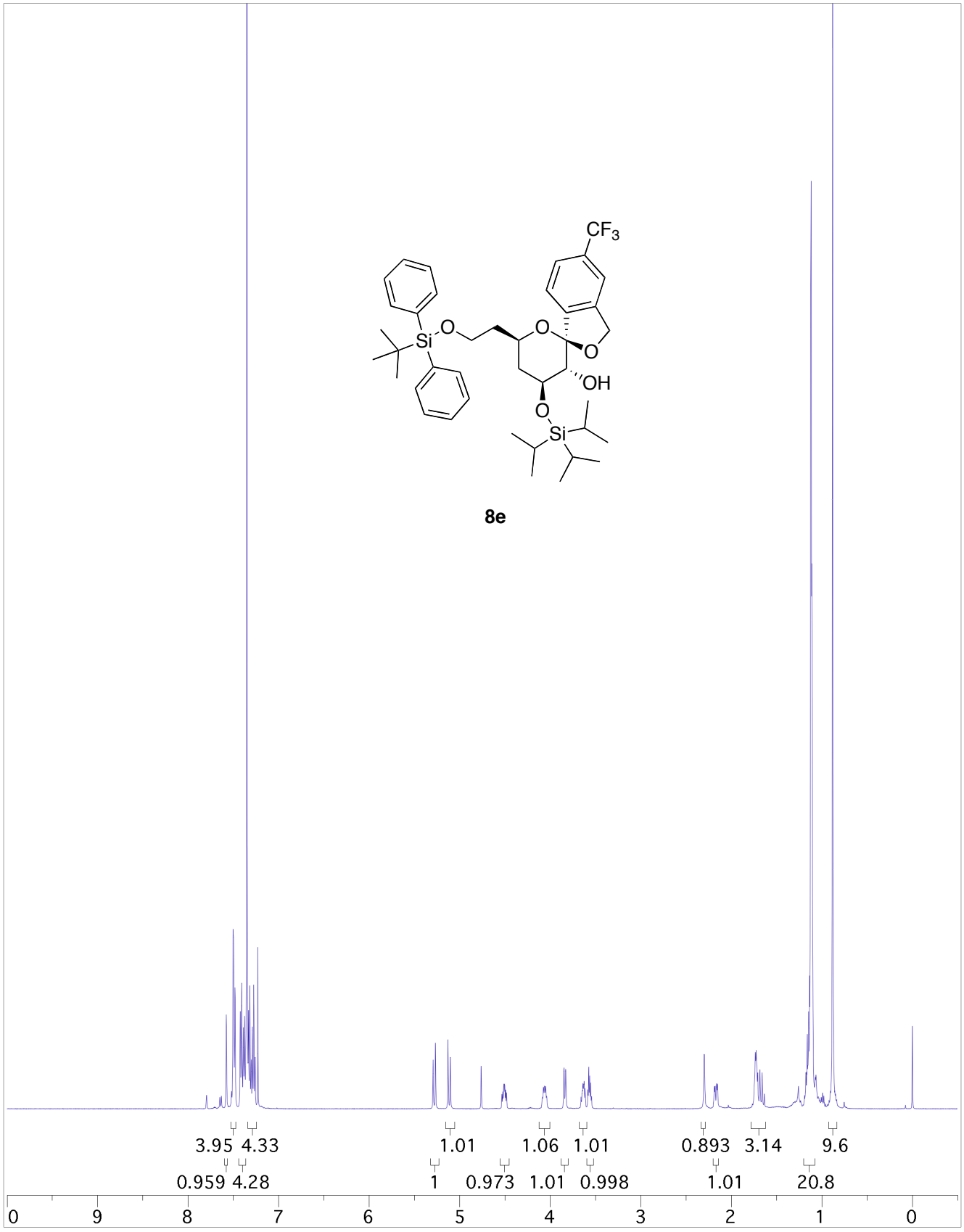
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Si
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1.06 1.01
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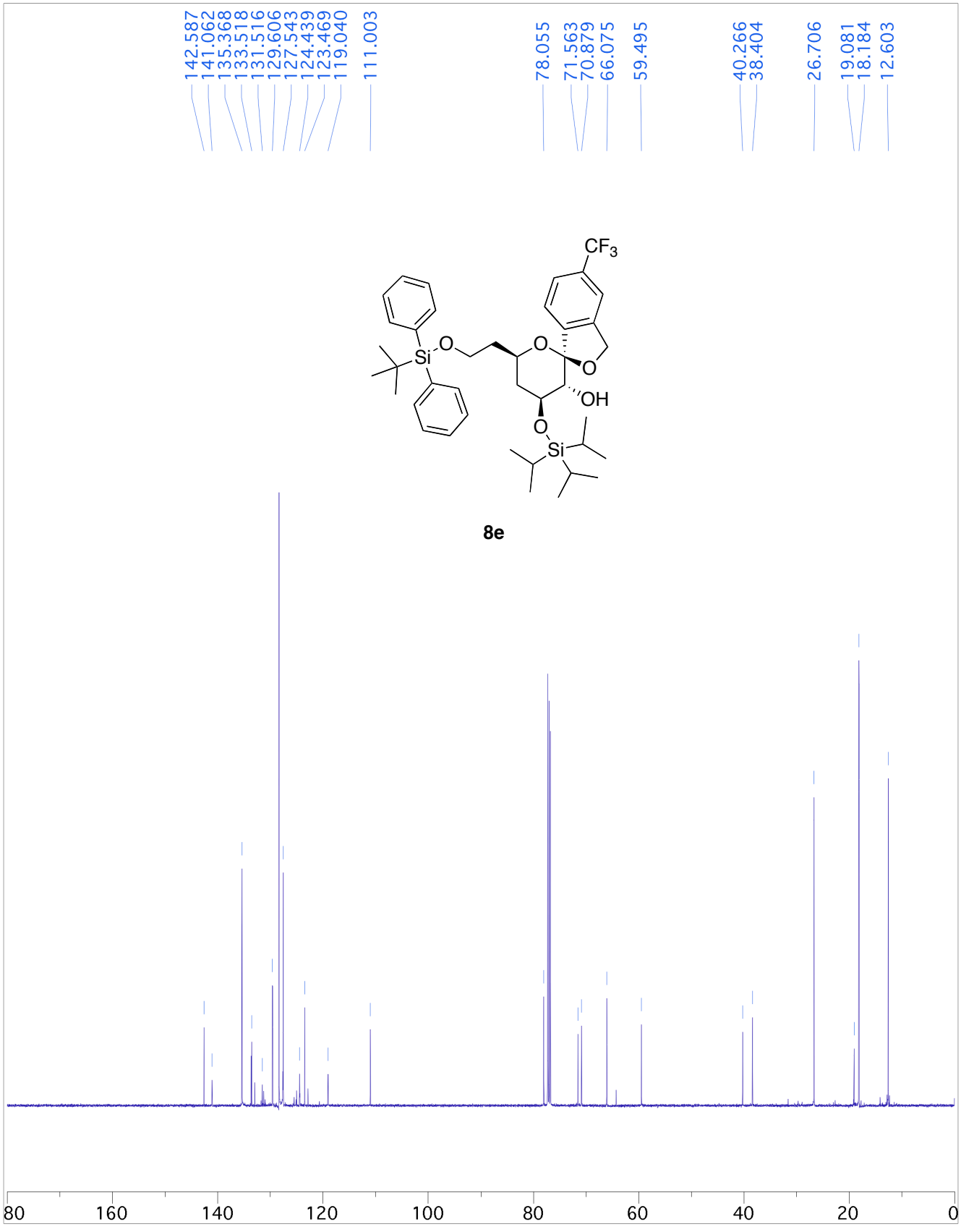
8e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133.518
131.516
129.606
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123.469
119.040
111.003
78.055
71.563
70.879
66.075
59.495
40.266
38.404
26.706
19.081
18.184
12.603
CF3
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O
O
OH
O
Si
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140
120
100
80
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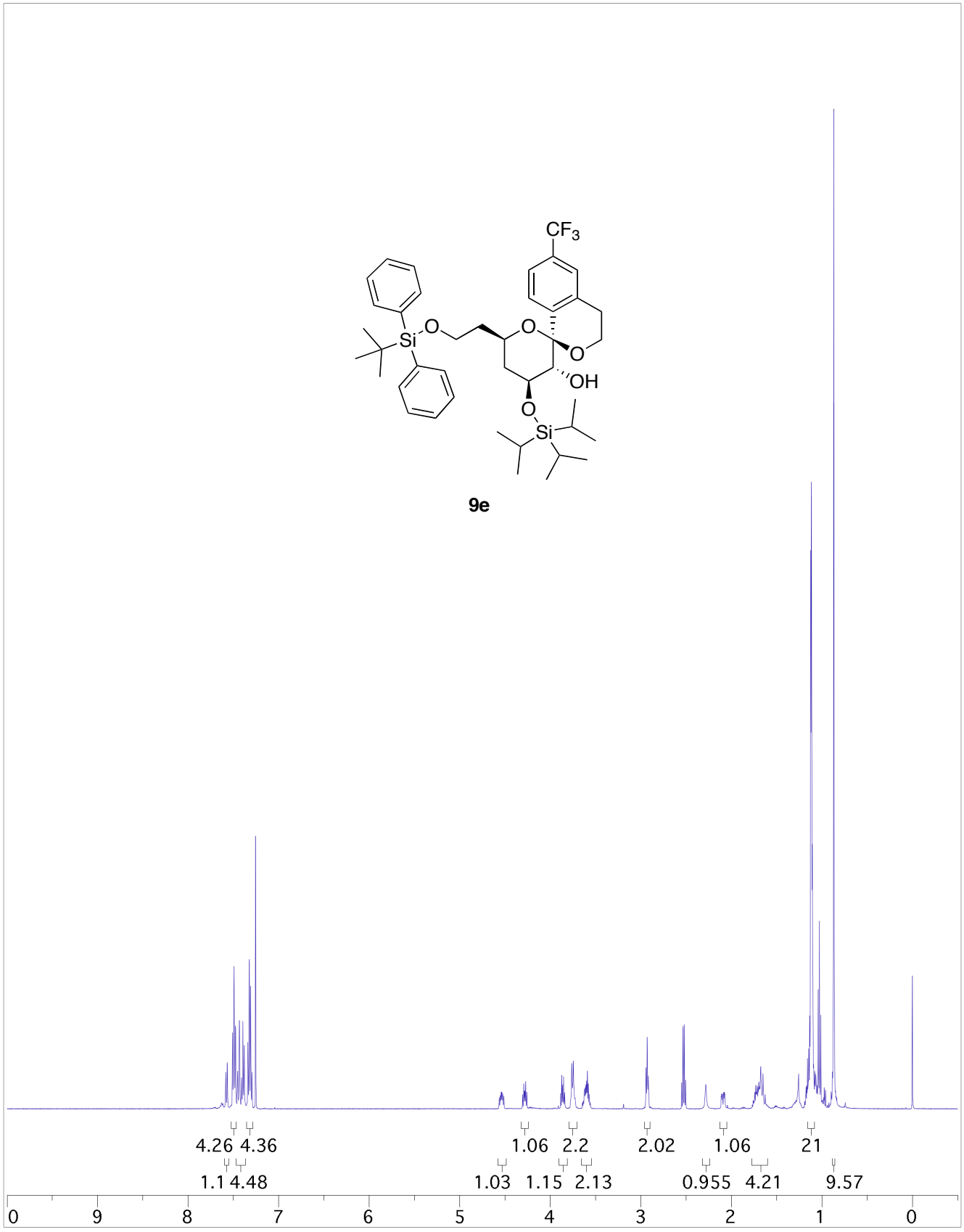
40
20
0

8e


CF3
Si
O
O
O
OH
O
Si
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4.48
1.06
2.2
1.03
1.15
2.13
2.02
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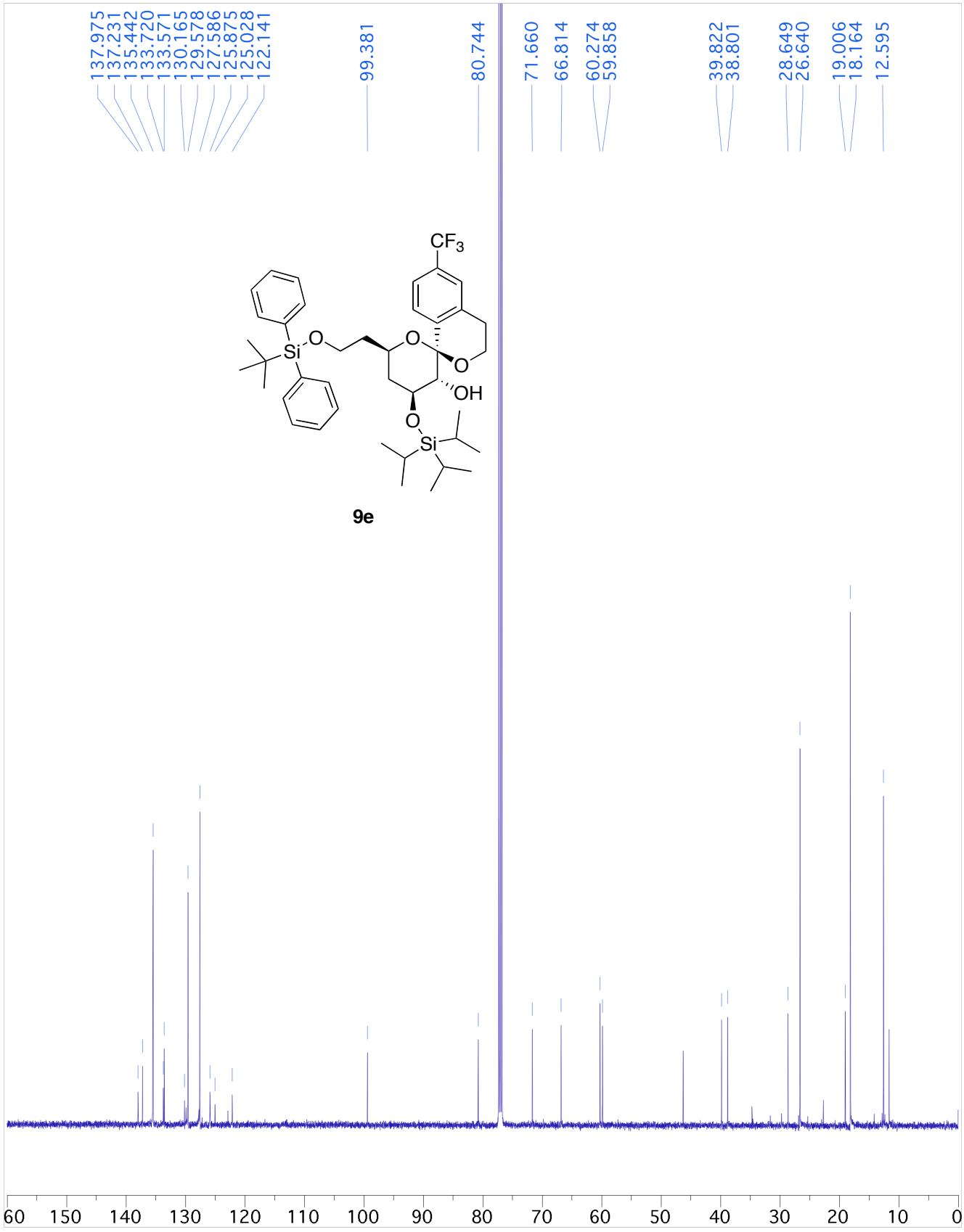
9e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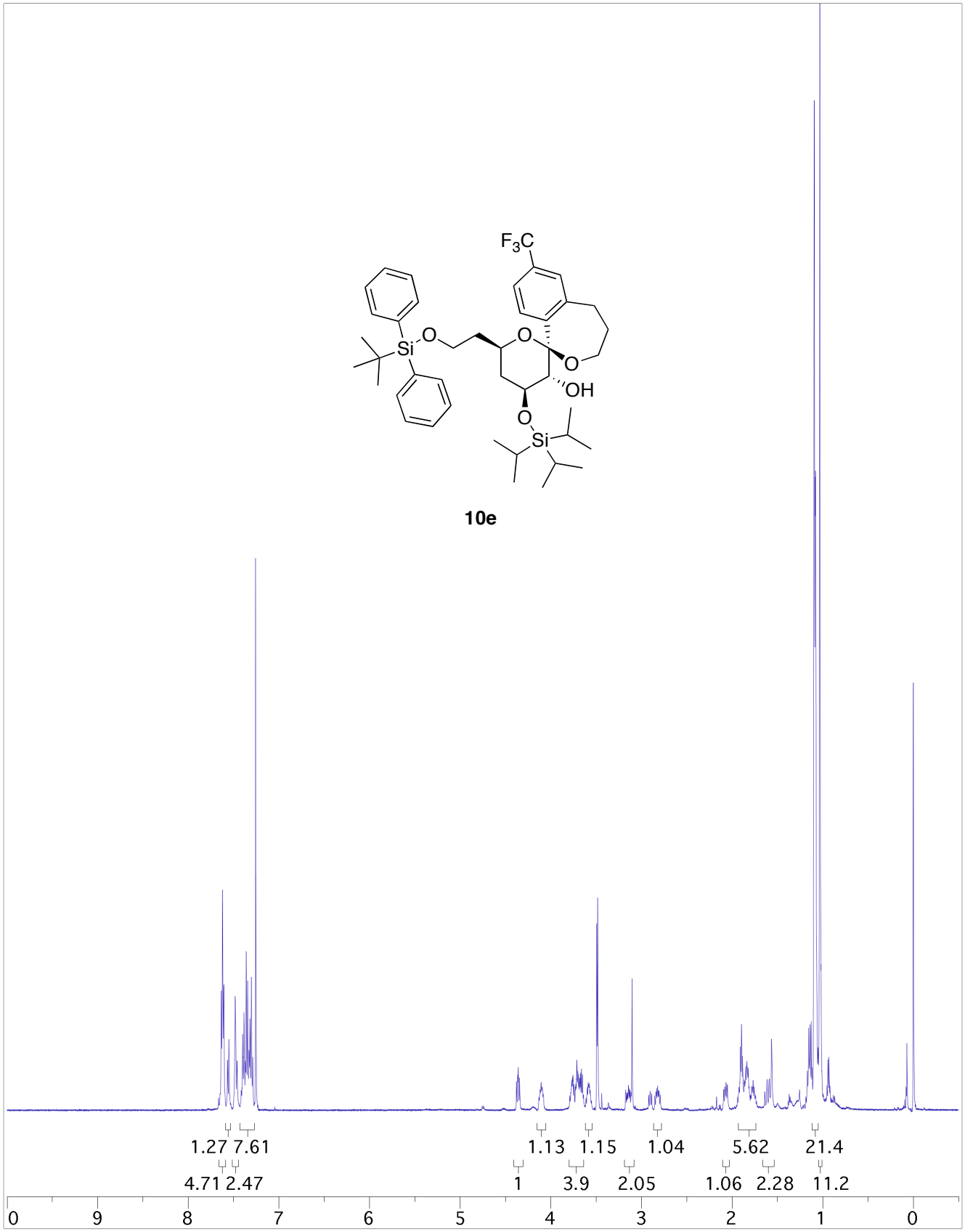
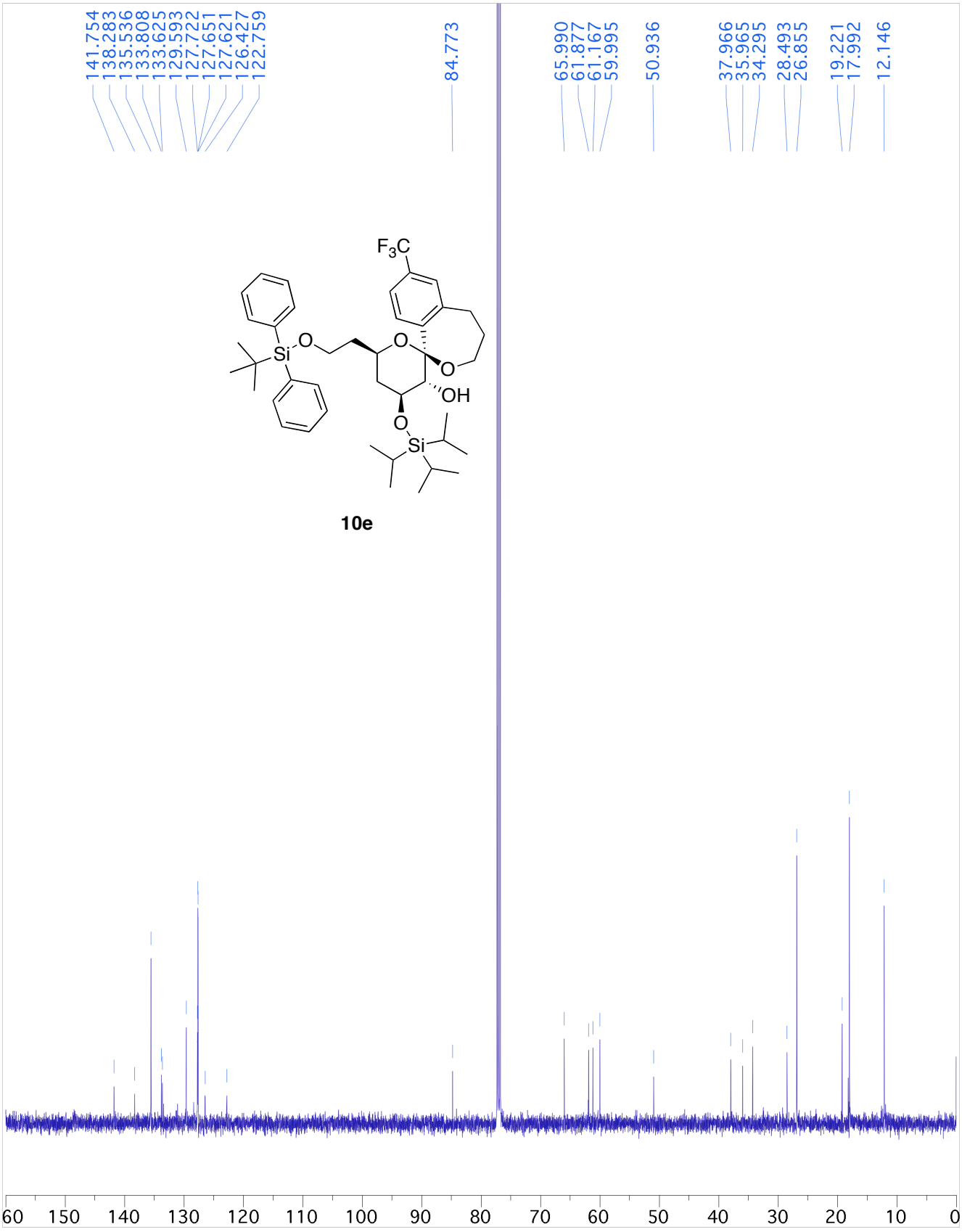
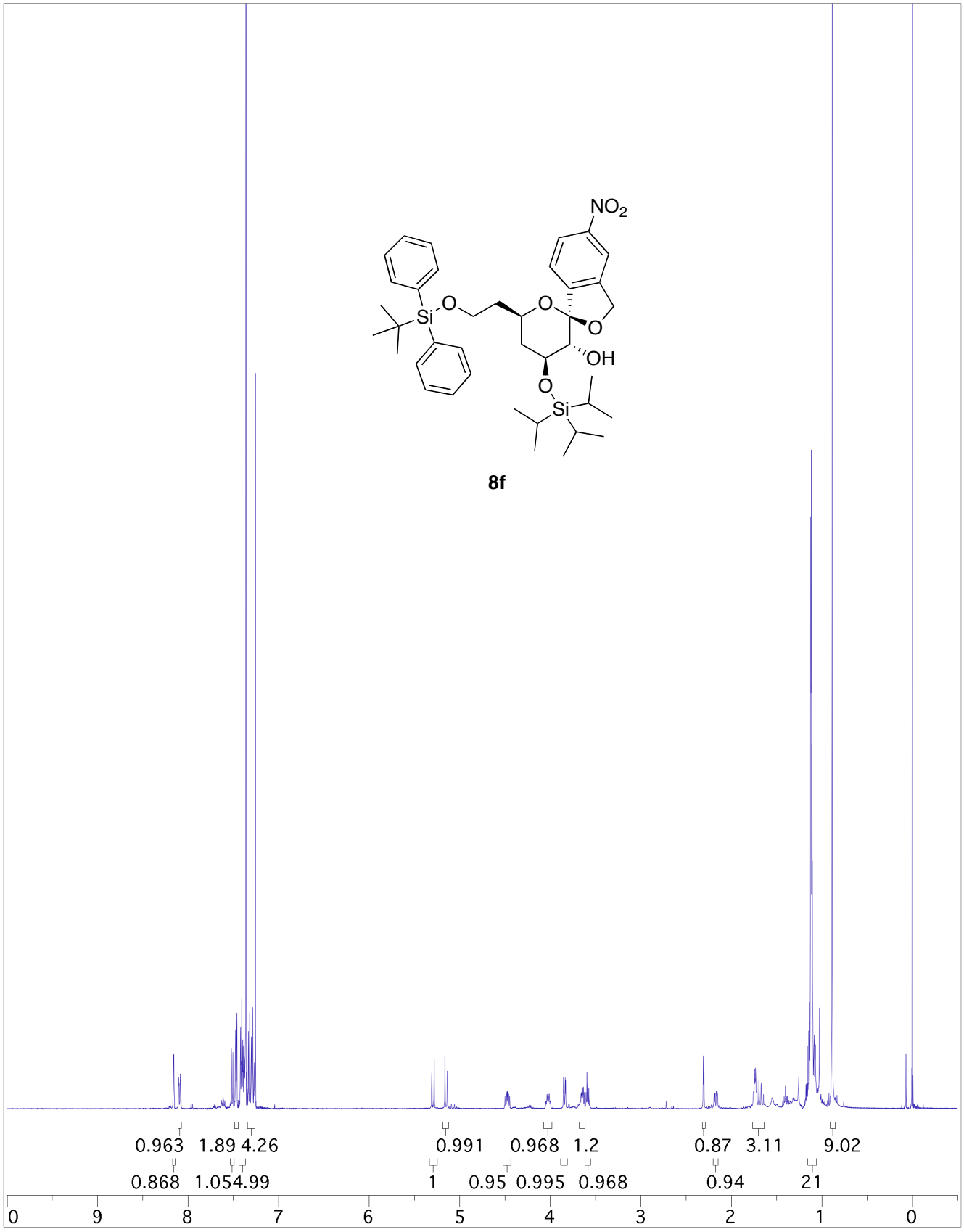
125.028
122.141
99.381
80.744
71.660
66.814
60.274
59.858
39.822
38.801
28.649
26.640
19.006
18.164
12.595
CF3
O
Si
O
O
O
OH
O
Si
9e
60
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

F3C
Si
O
O
O
OH
O
Si

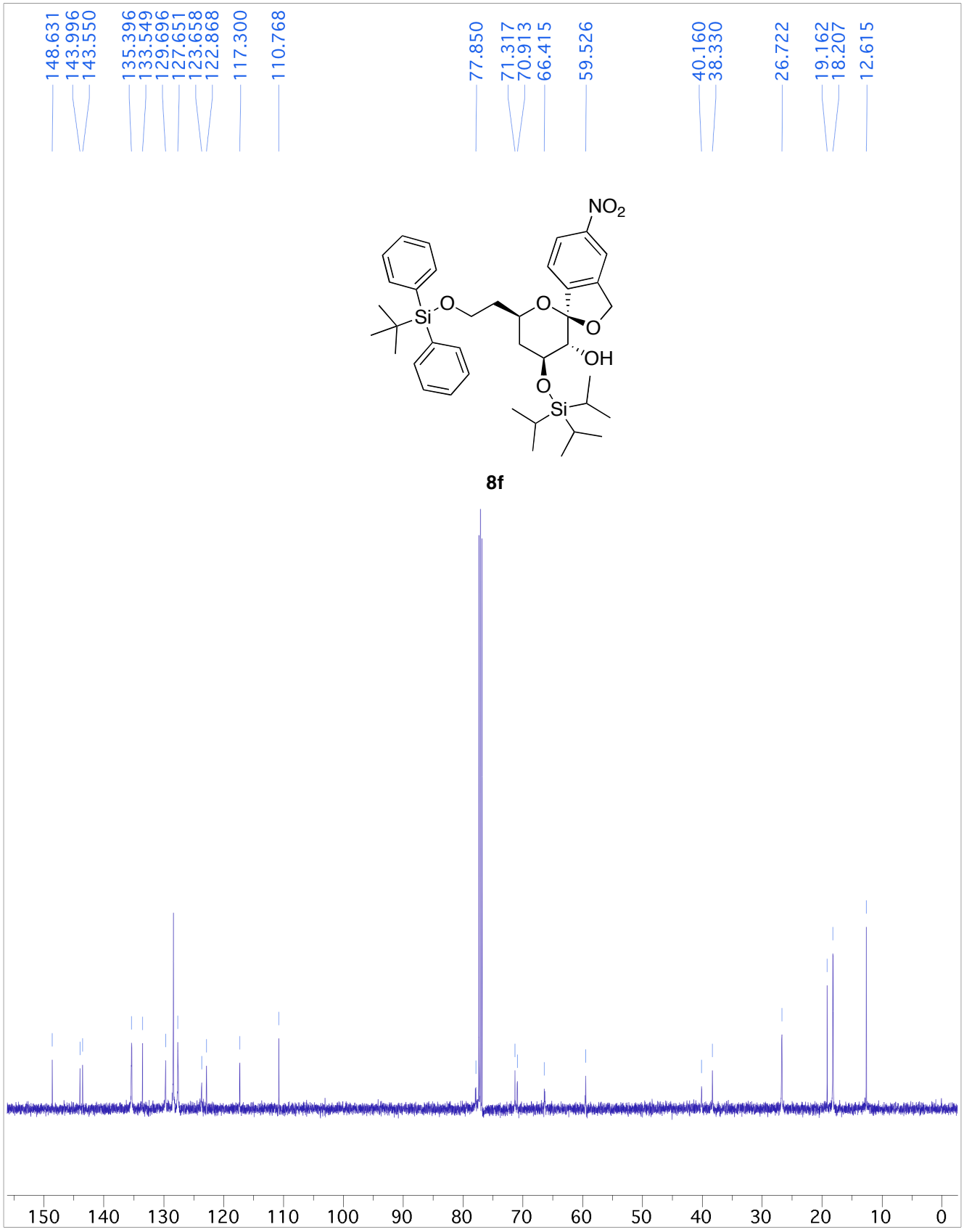
10e


1.27
7.61
1.13
1.15
1.04
5.62
21.4
4.71
2.47
1
3.9
2.05
1.06
2.28
11.2
0
9
8
7
6
5
4
3
2
1
0


141.754
138.283
135.536
133.808
133.625
129.593
127.722
127.651
127.621
126.427
122.759
84.773
65.990
61.877
61.167
59.995
50.936
37.966
35.965
34.295
28.493
26.855
19.221
17.992
12.146
F3C
O
Si
O
O
O
OH
O
Si
10e
60
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0


NO2
Si
O
O
O
OH
O
Si
0.963 1.89 4.26 0.991 0.968 1.2 0.87 3.11 9.02
0.868 1.054.99 1 0.95 0.995 0.968 0.94 21
0 9 8 7 6 5 4 3 2 1 0

8f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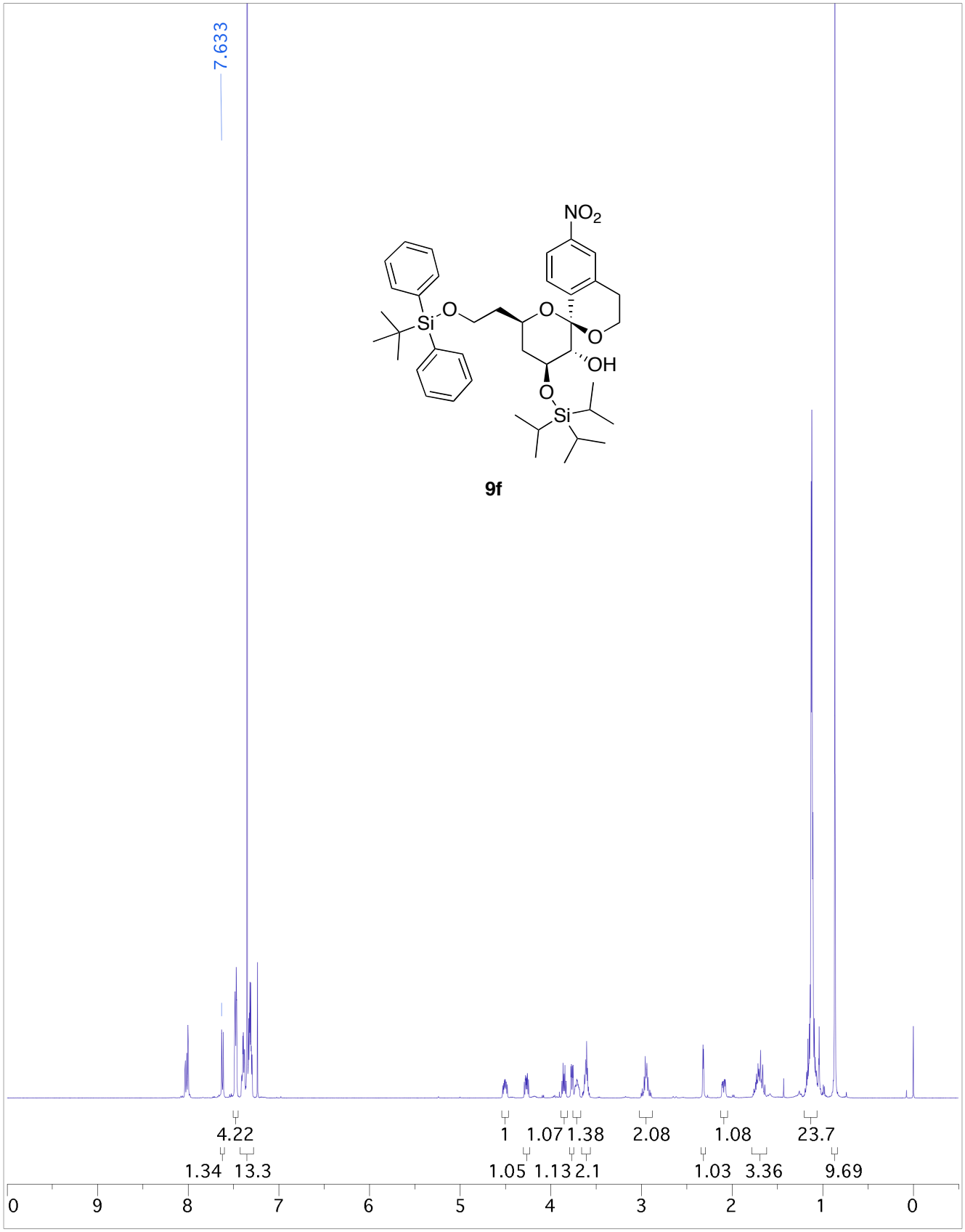
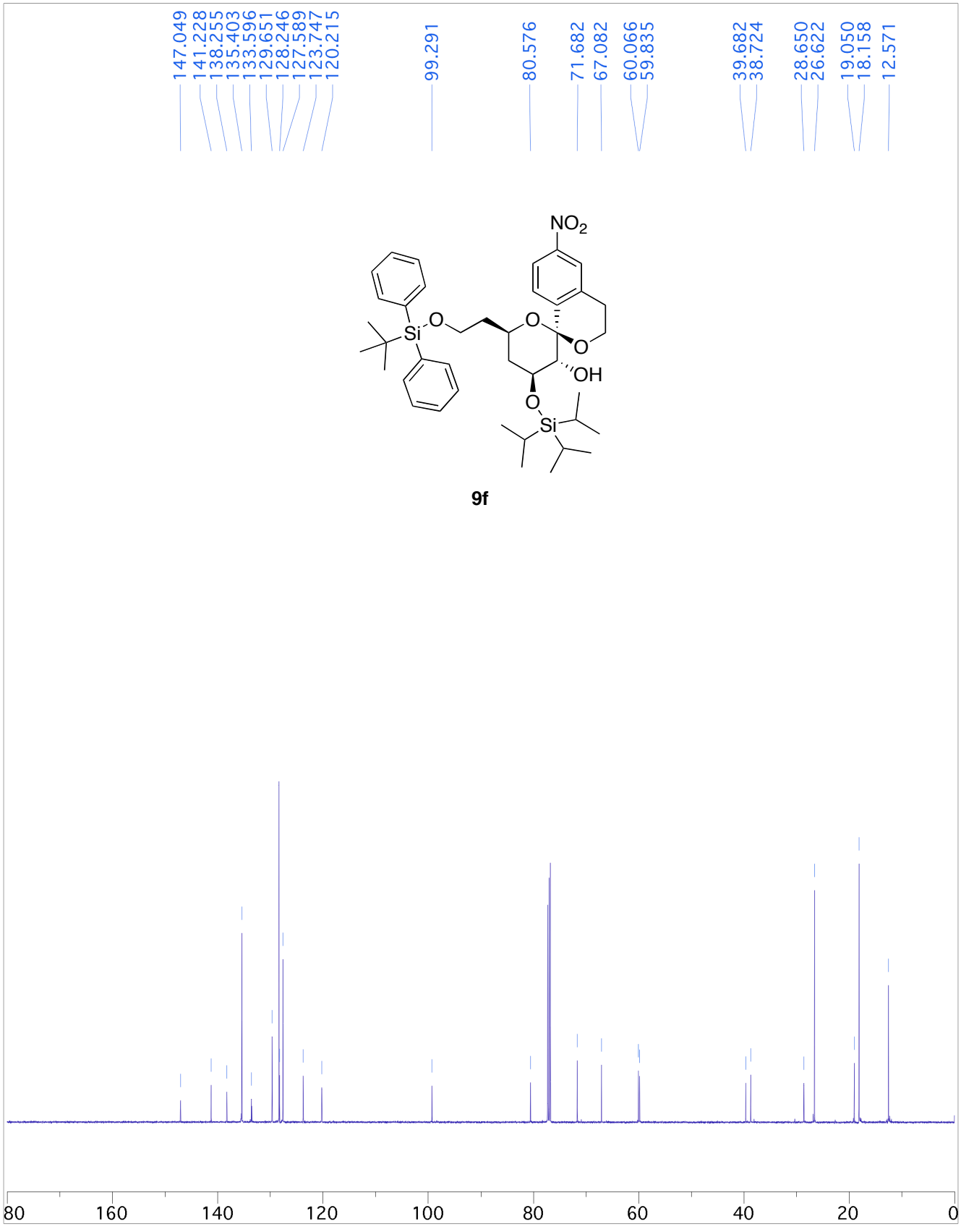
143.996
143.550
135.396
133.549
129.696
127.651
123.658
122.868
117.300
110.768
77.850
71.317
70.913
66.415
59.526
40.160
38.330
26.722
19.162
18.207
12.615
NO2
Si
O
O
O
OH
O
Si
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

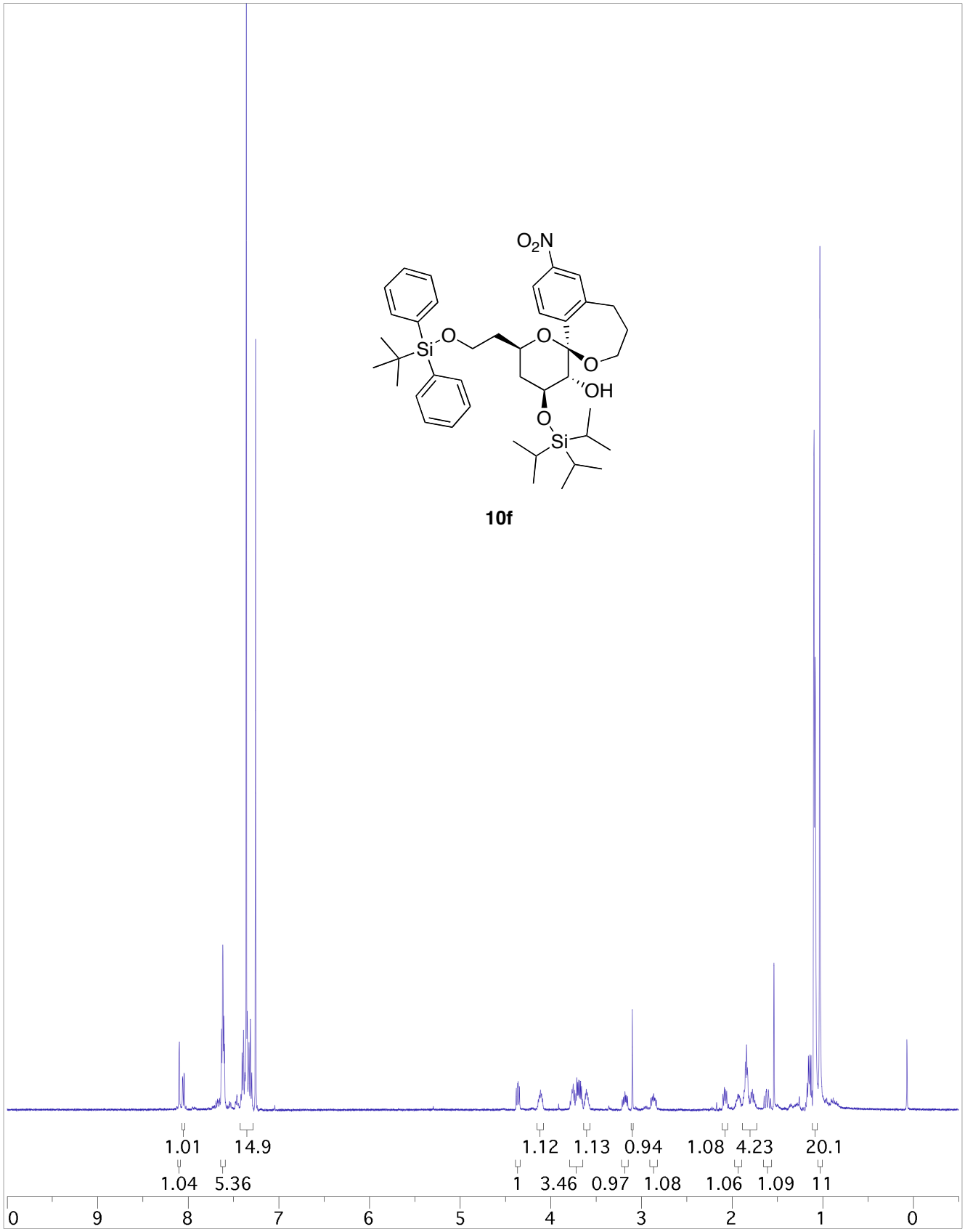
8f


7.633
NO2
Si
O
O
O
OH
O
Si
4.22
1.34
13.3
1
1.05
1.07
1.13
1.38
2.1
2.08
1.08
1.03
3.36
23.7
9.69
0
9
8
7
6
5
4
3
2
1
0

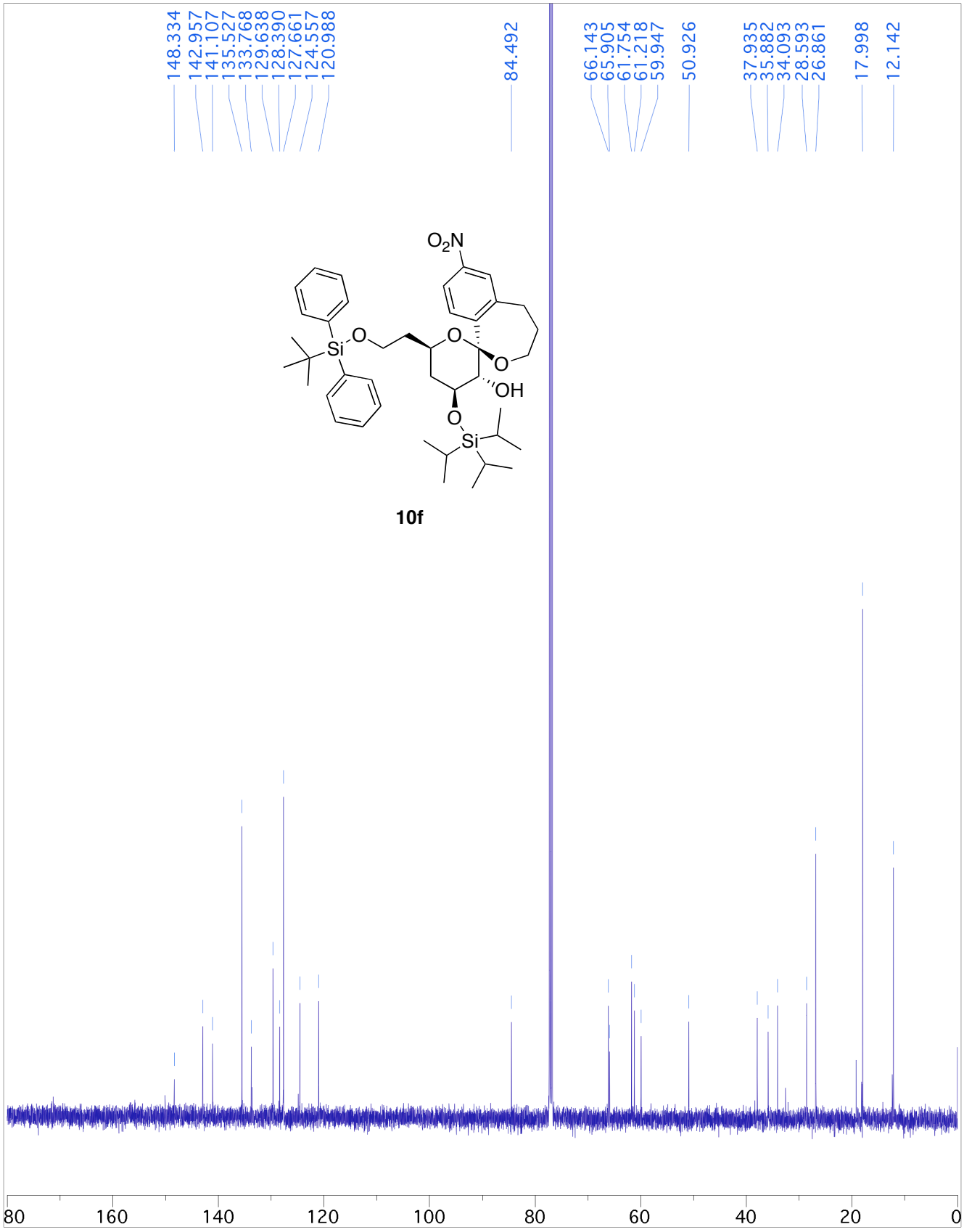
9f

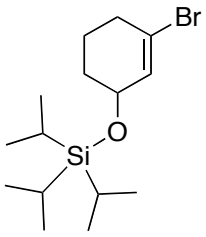

147.049
141.228
138.255
135.403
133.596
129.651
128.246
127.589
123.747
120.215
99.291
80.576
71.682
67.082
60.066
59.835
39.682
38.724
28.650
26.622
19.050
18.158
12.571
NO2
O
Si
O
O
OH
O
Si
80
160
140
120
100
80
60
40
20
0

9f

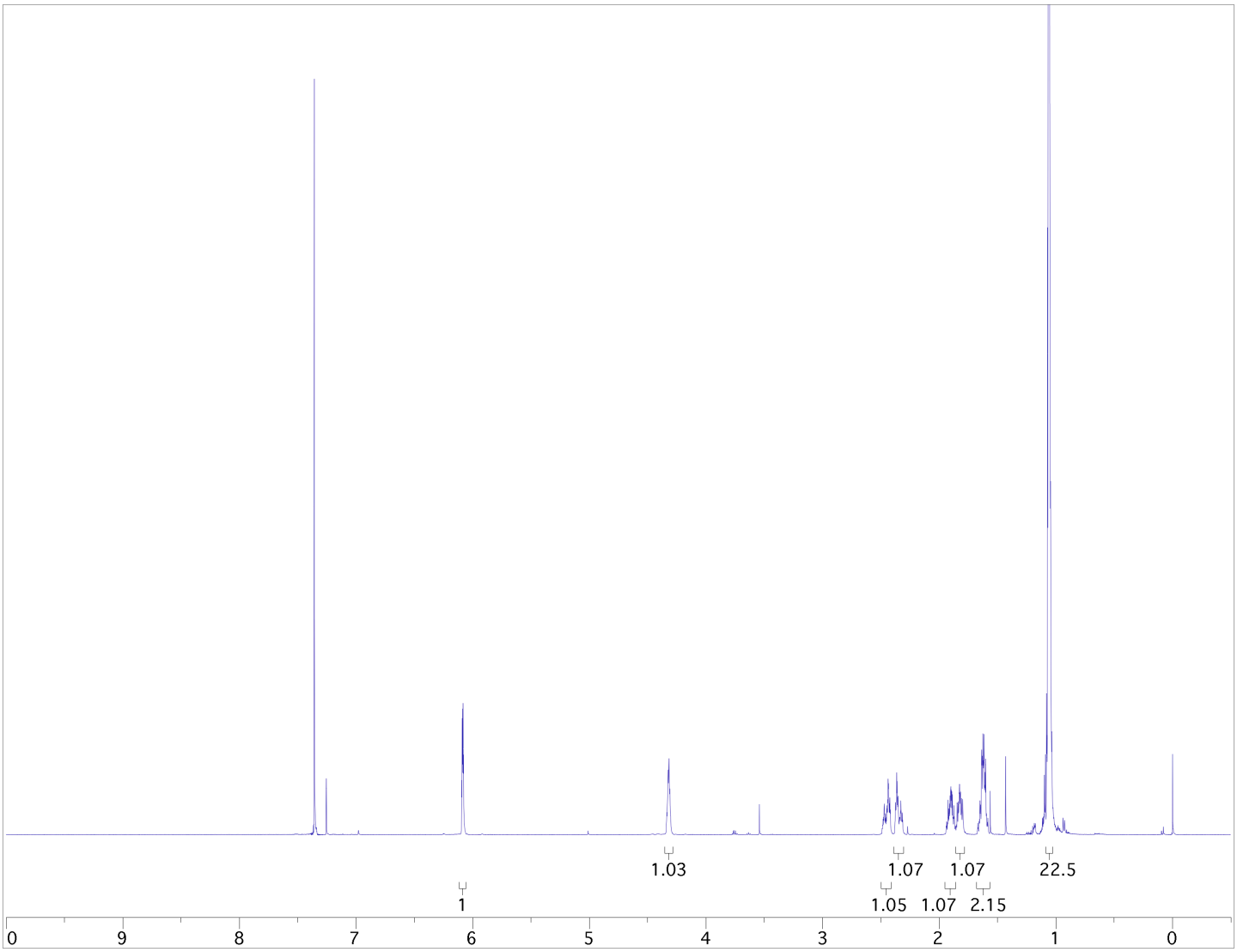

O2N
Si
O
O
O
OH
O
Si
1.01
14.9
1.12
1.13
0.94
1.08
4.23
20.1
1.04
5.36
1
3.46
0.97
1.08
1.06
1.09
11
0
9
8
7
6
5
4
3
2
1
0

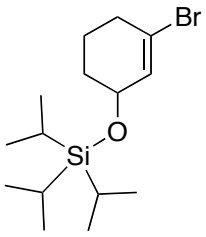
10f


148.334
142.957
141.107
135.527
133.768
129.638
128.390
127.661
124.557
120.988
84.492
66.143
65.905
61.754
61.218
59.947
50.926
37.935
35.882
34.093
28.593
26.861
17.998
12.142
O2N
Si
O
O
O
OH
O
Si
10f
80
160
140
120
100
80
60
40
20
0

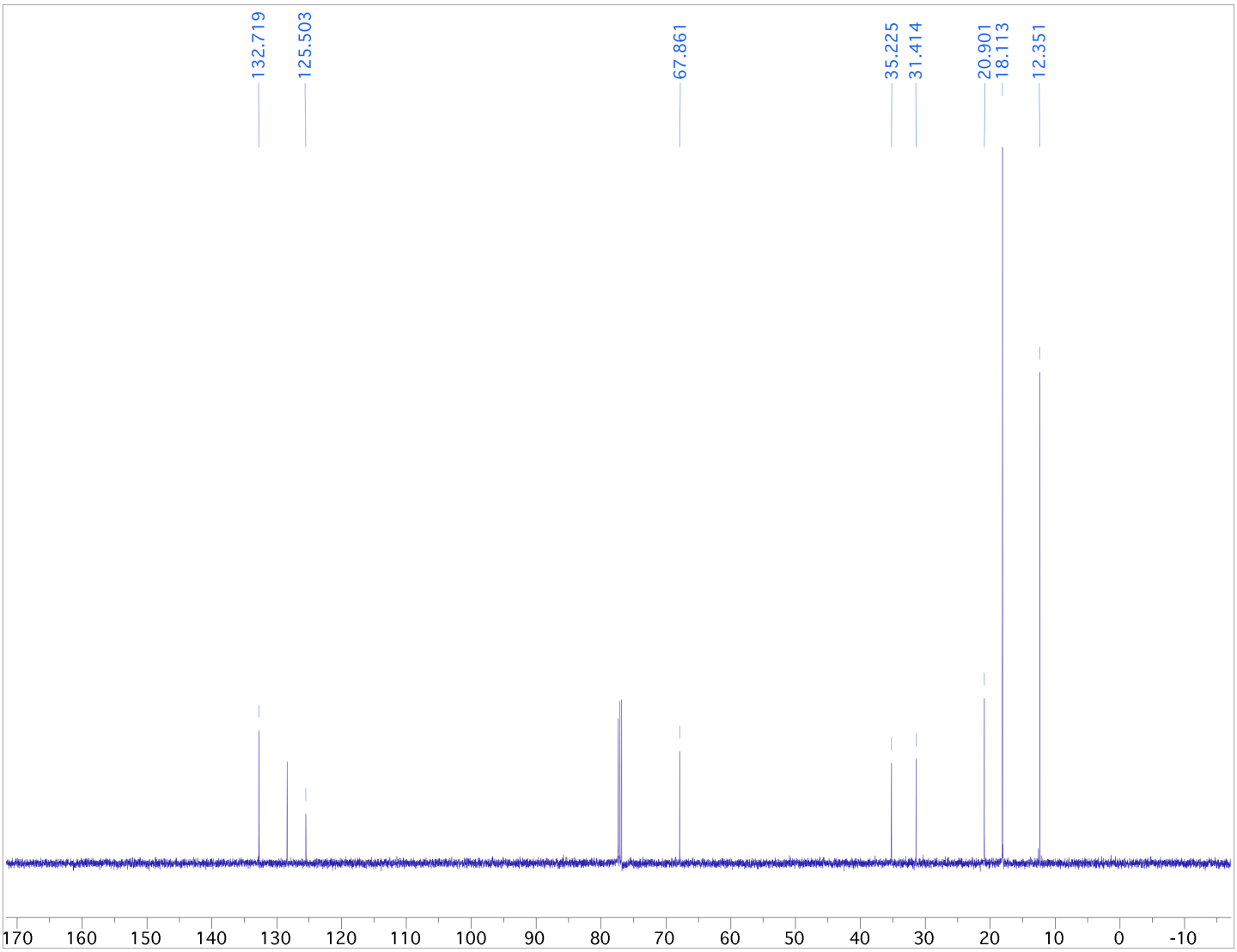


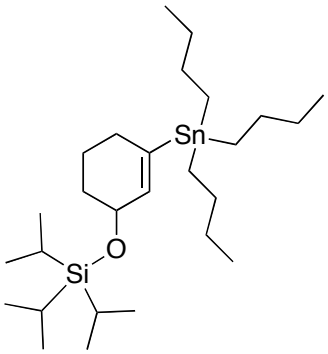
S29



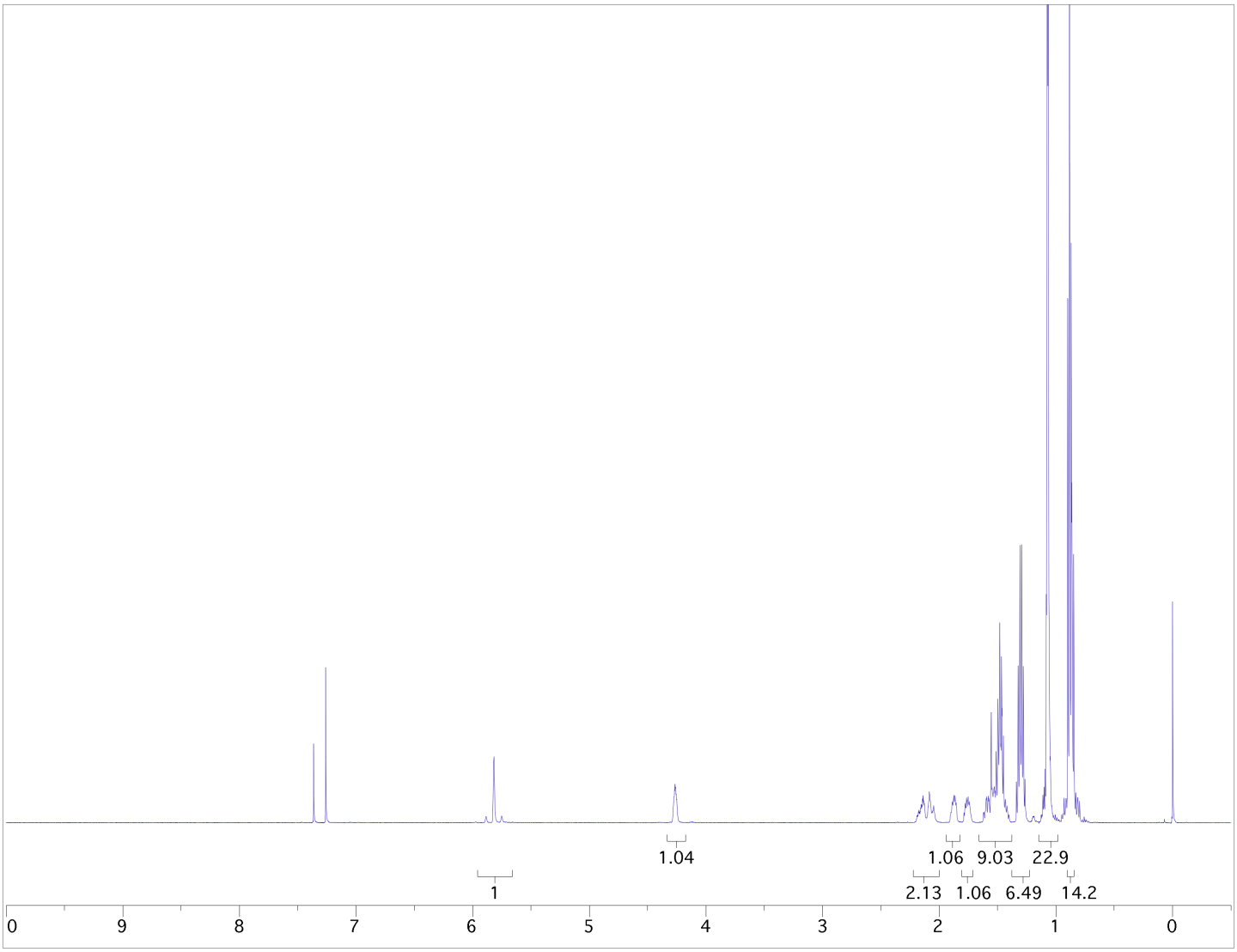

Br
O
Si

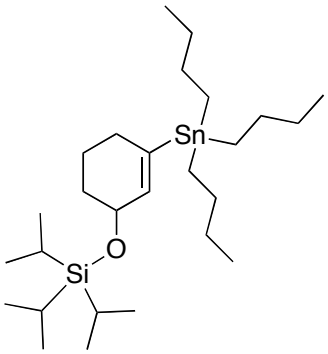
S29


132.719
125.503
67.861
35.225
31.414
20.901
18.113
12.351
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10

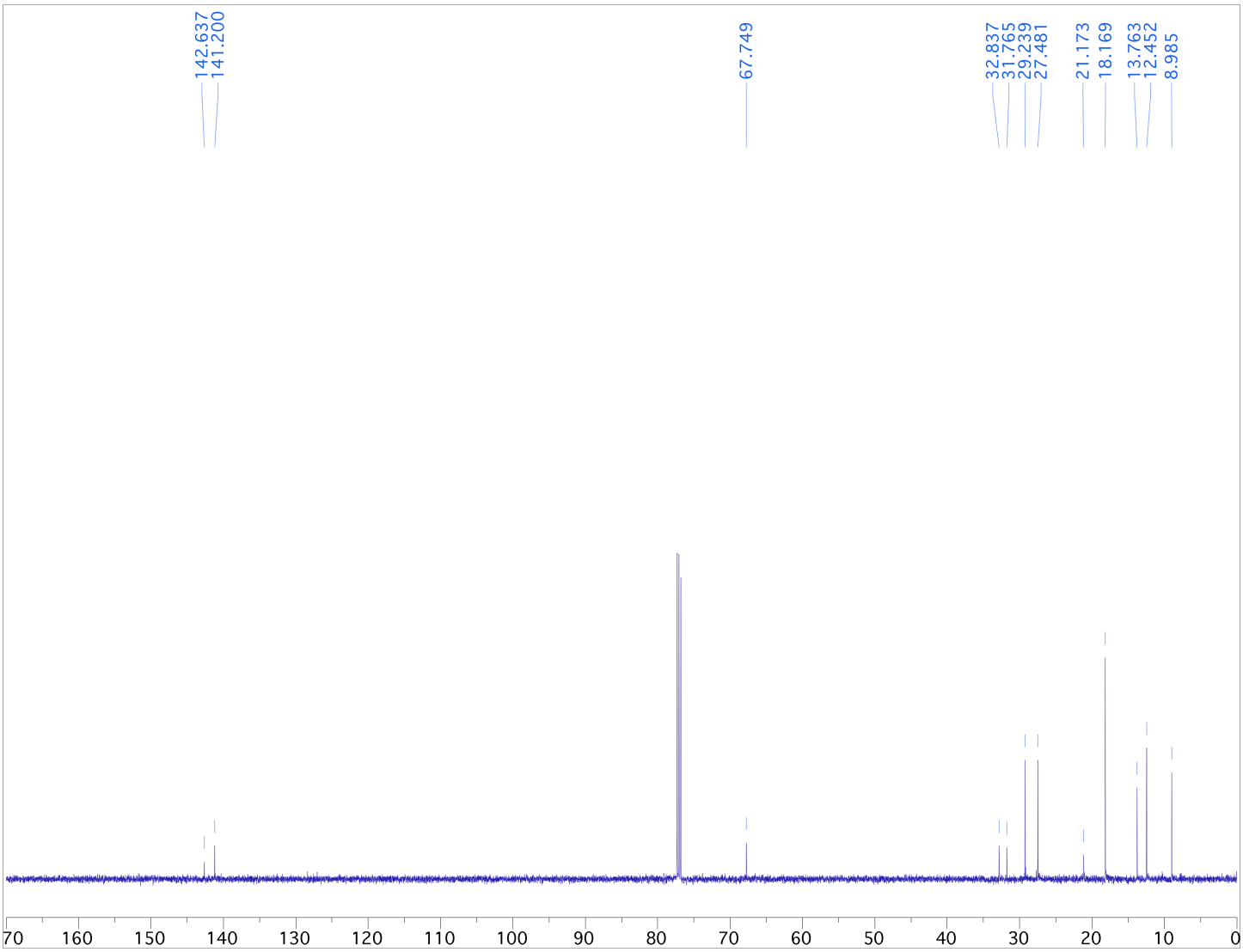


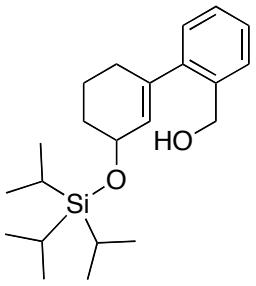
S30



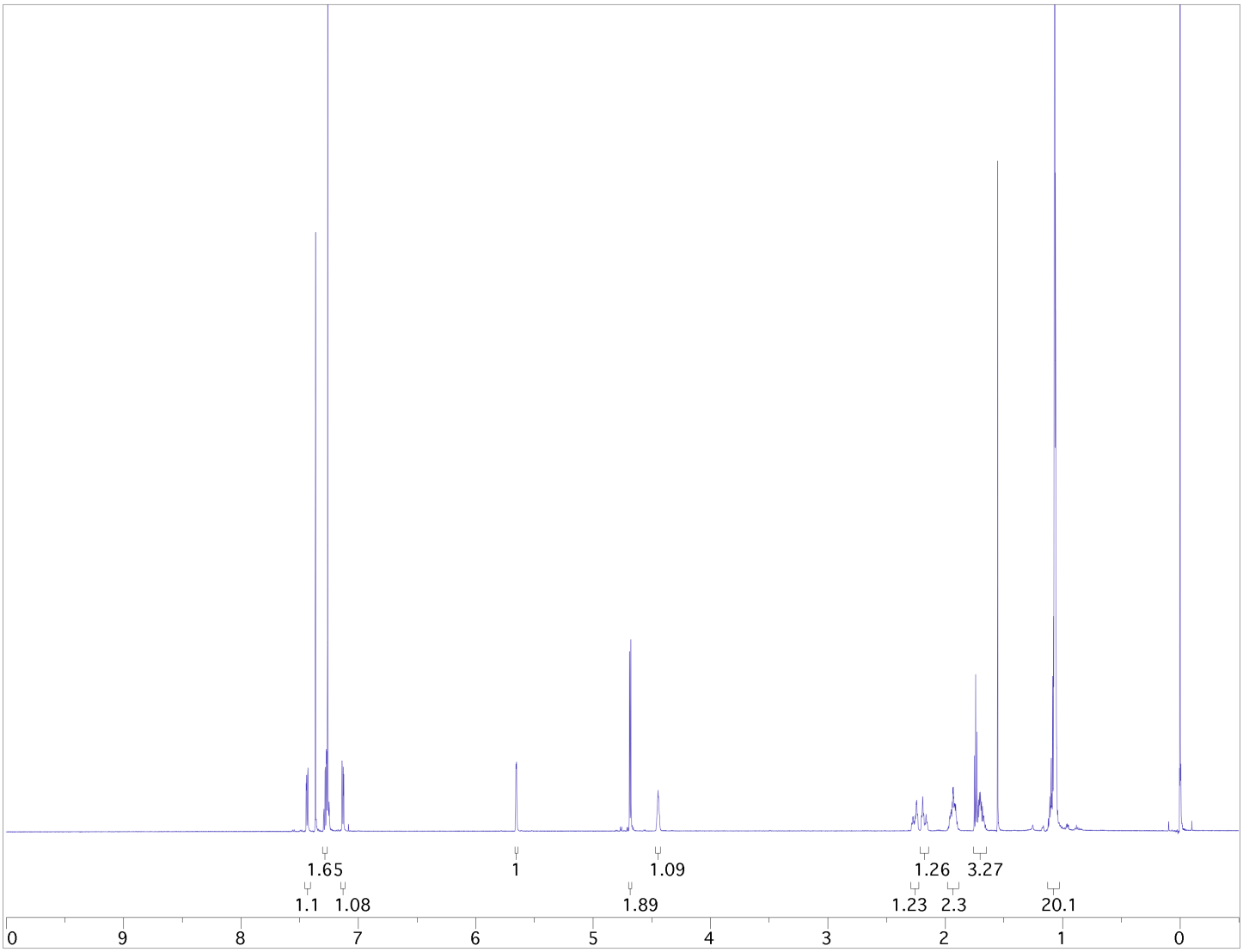

Sn
O
Si

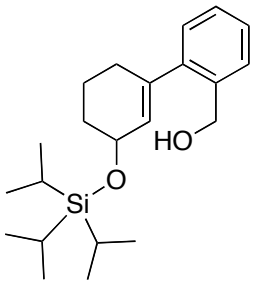
S30


142.637
141.200
67.749
32.837
31.765
29.239
27.481
21.173
18.169
13.763
12.452
8.985
70
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

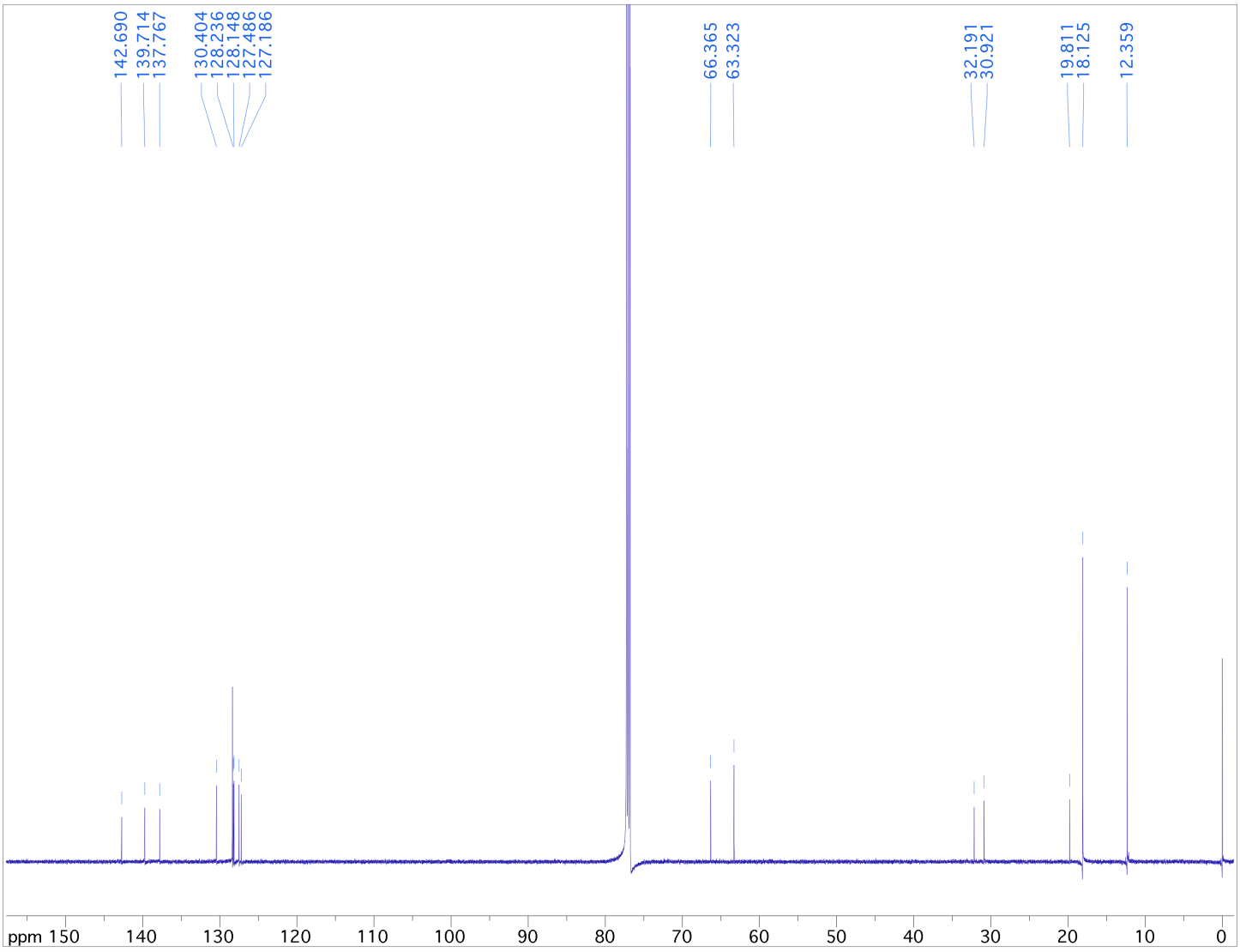


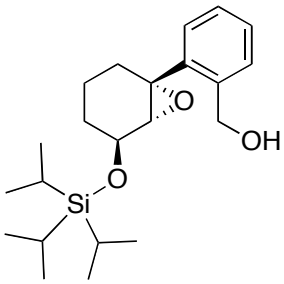
26



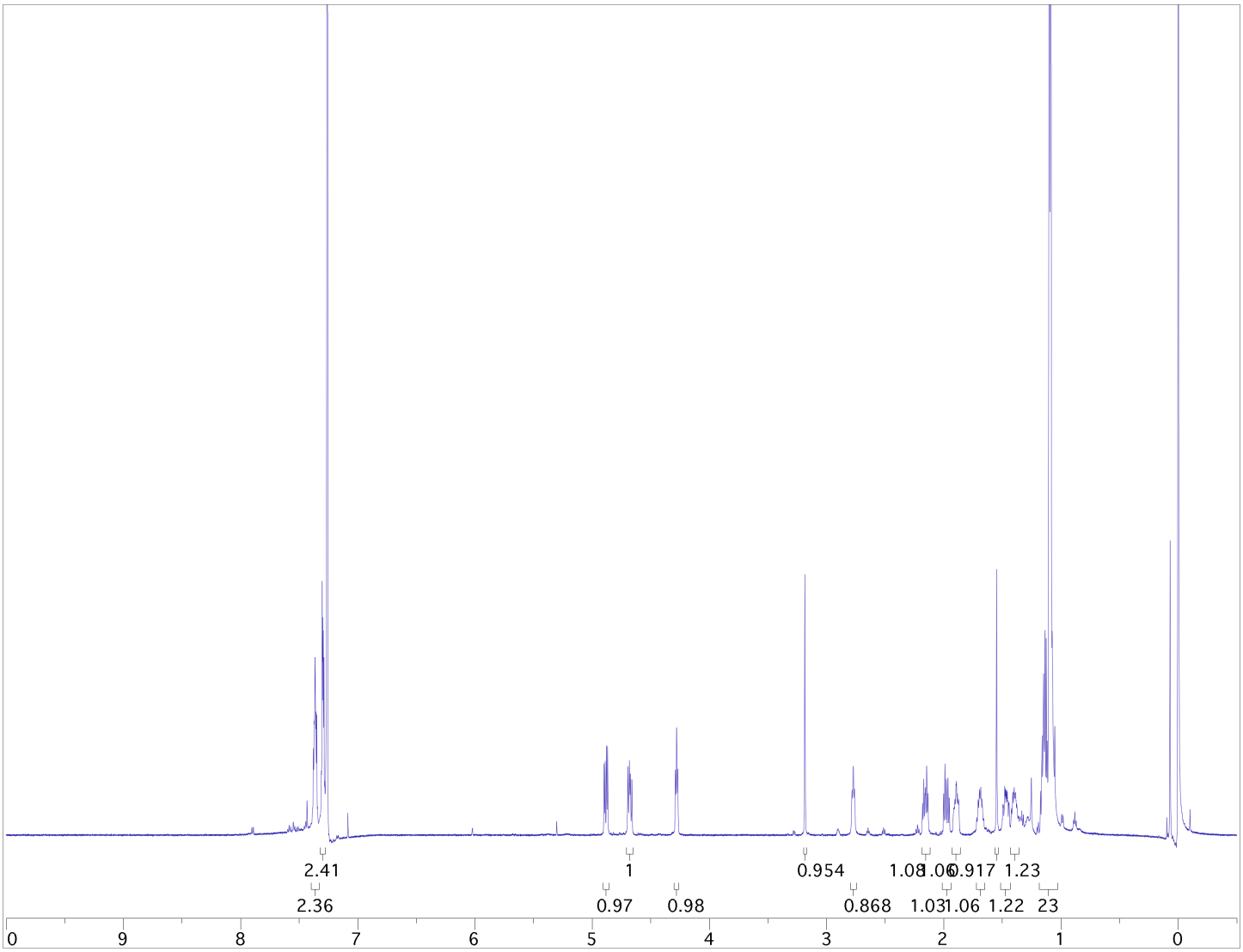

HO
O
Si

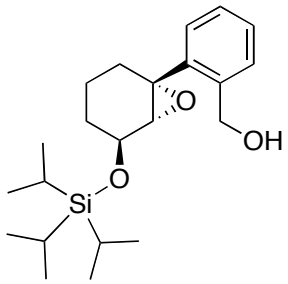
26


142.690
139.714
137.767
130.404
128.236
128.148
127.486
127.186
66.365
63.323
32.191
30.921
19.811
18.125
12.359
ppm 150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

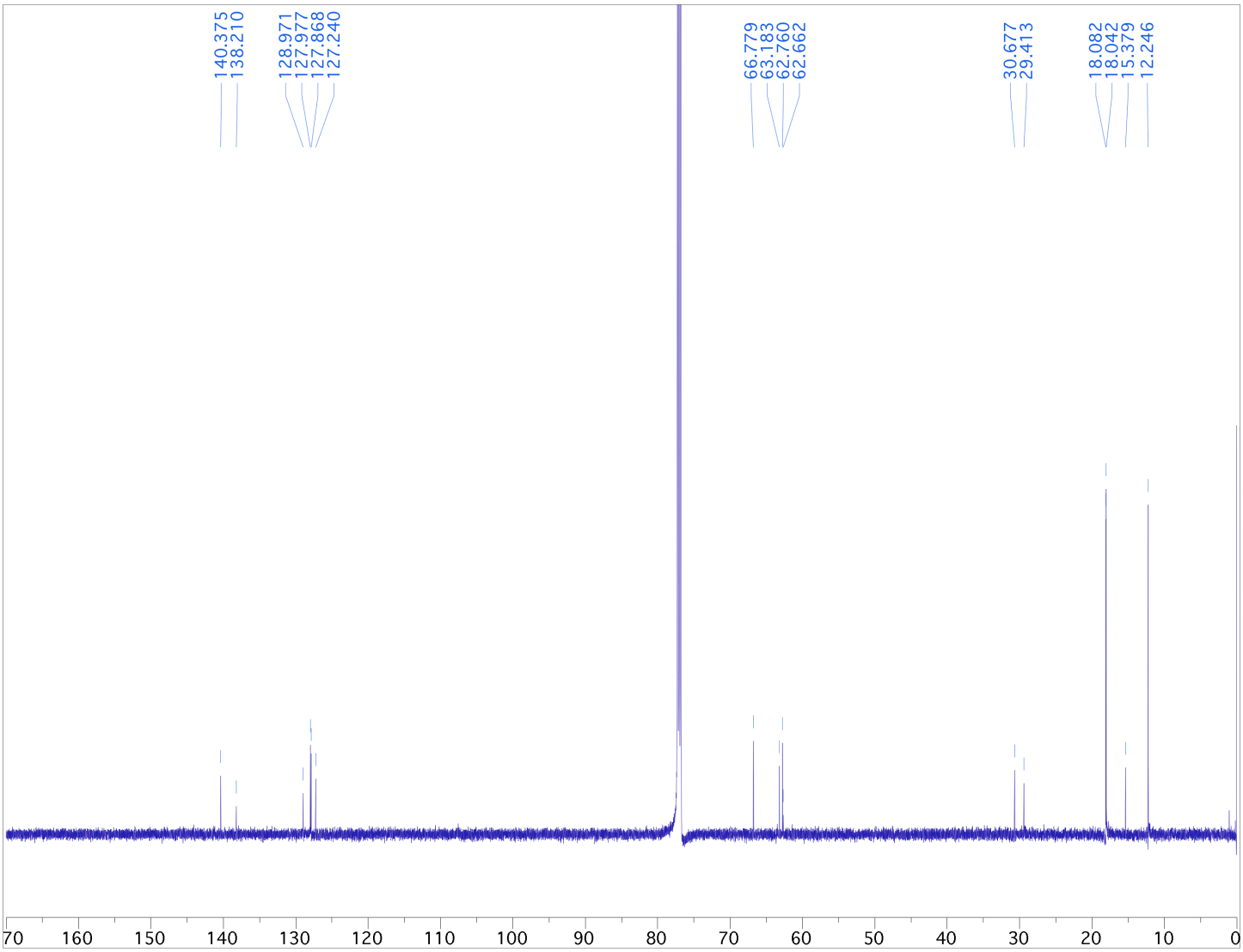

O
OH
O
Si

27


2.41
2.36
1
0.97
0.98
0.954
0.868
1.08
1.03
1.06
0.917
1.06
1.23
1.22
23
0
9
8
7
6
5
4
3
2
1
0


O
OH
O
Si

27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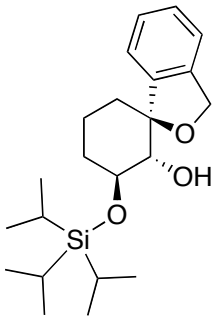
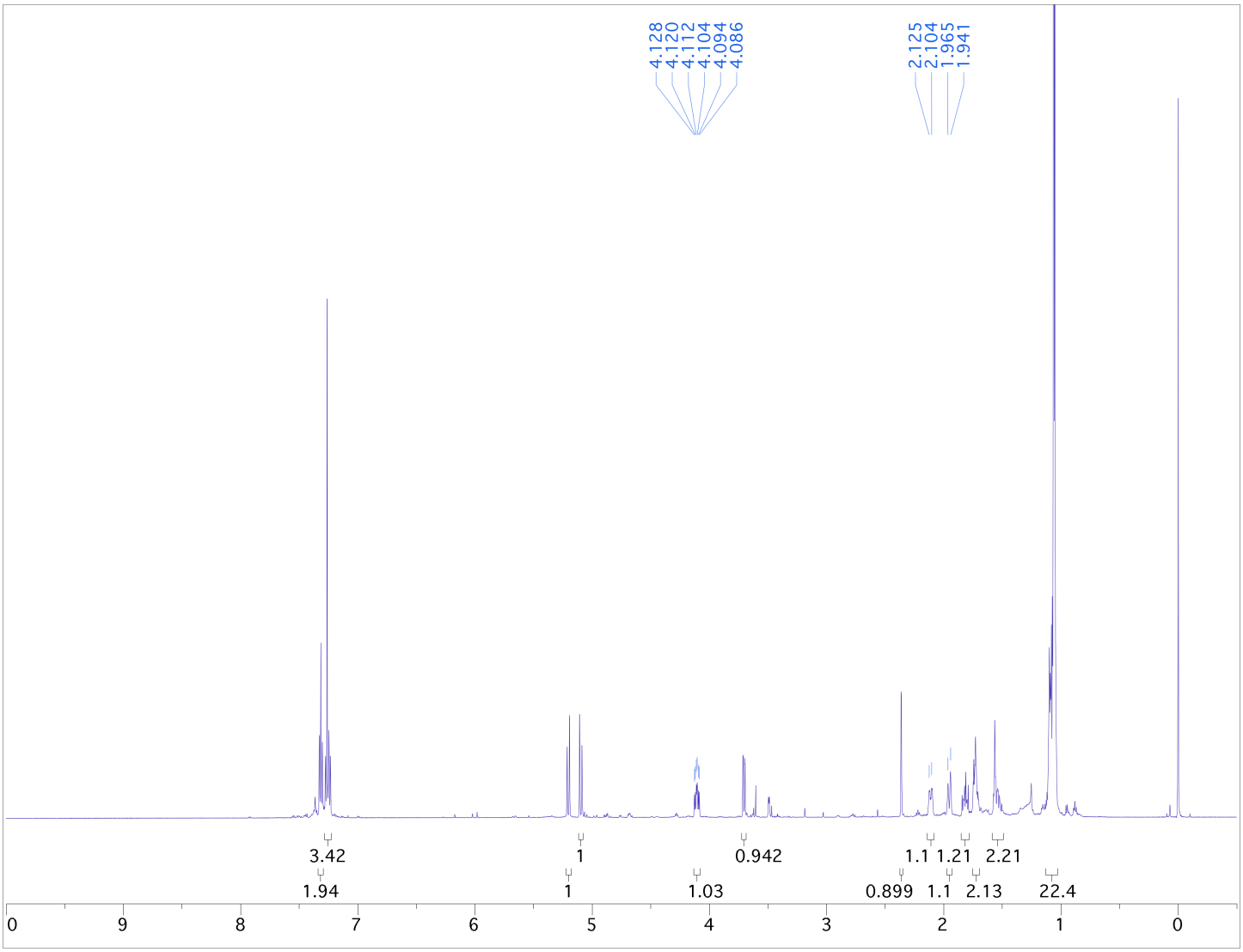
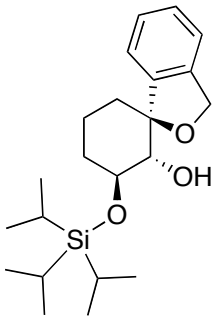
138.210
128.971
127.977
127.868
127.240
66.779
63.183
62.760
62.662
30.677
29.413
18.082
18.042
15.379
12.246
70
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

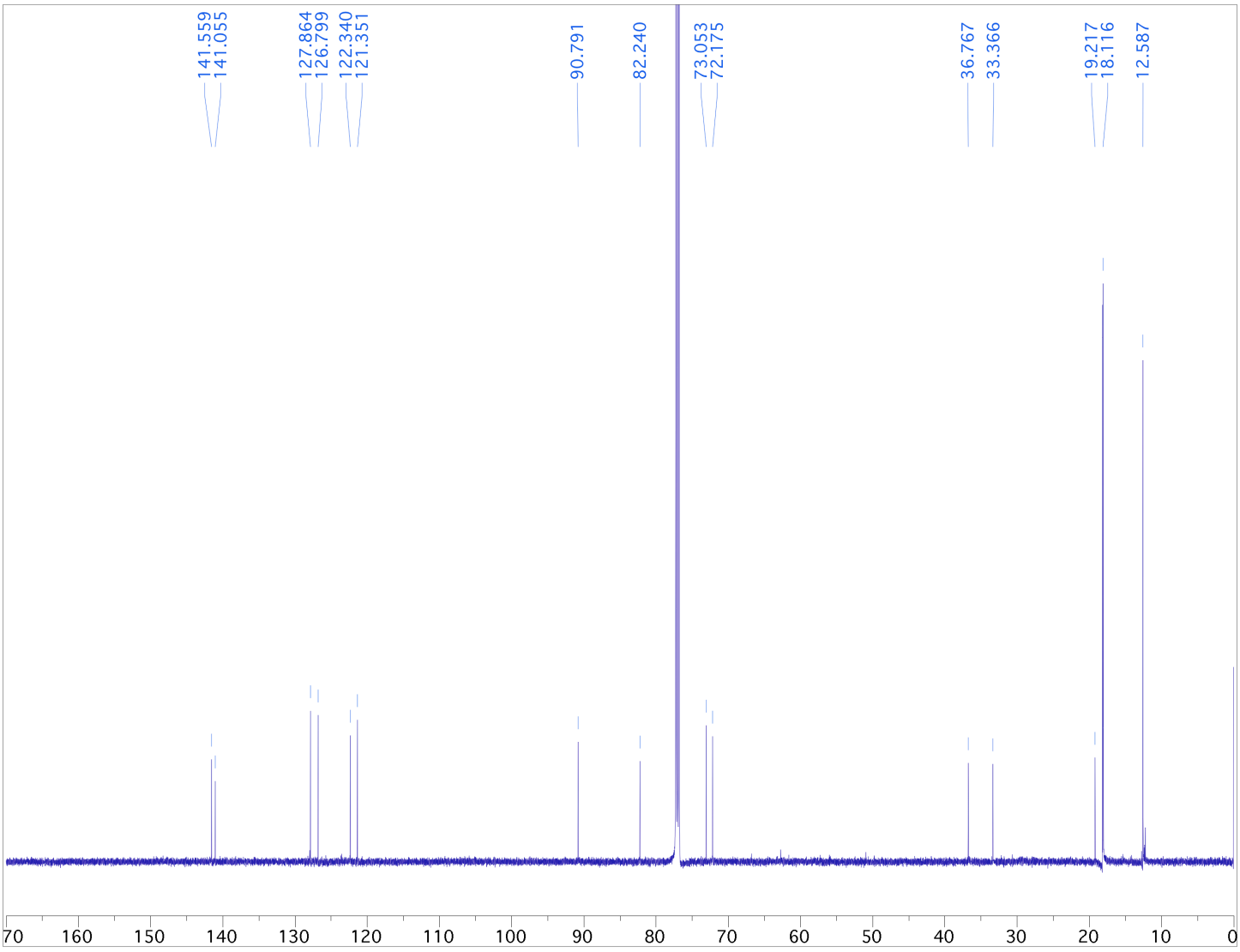

O
OH
O
Si

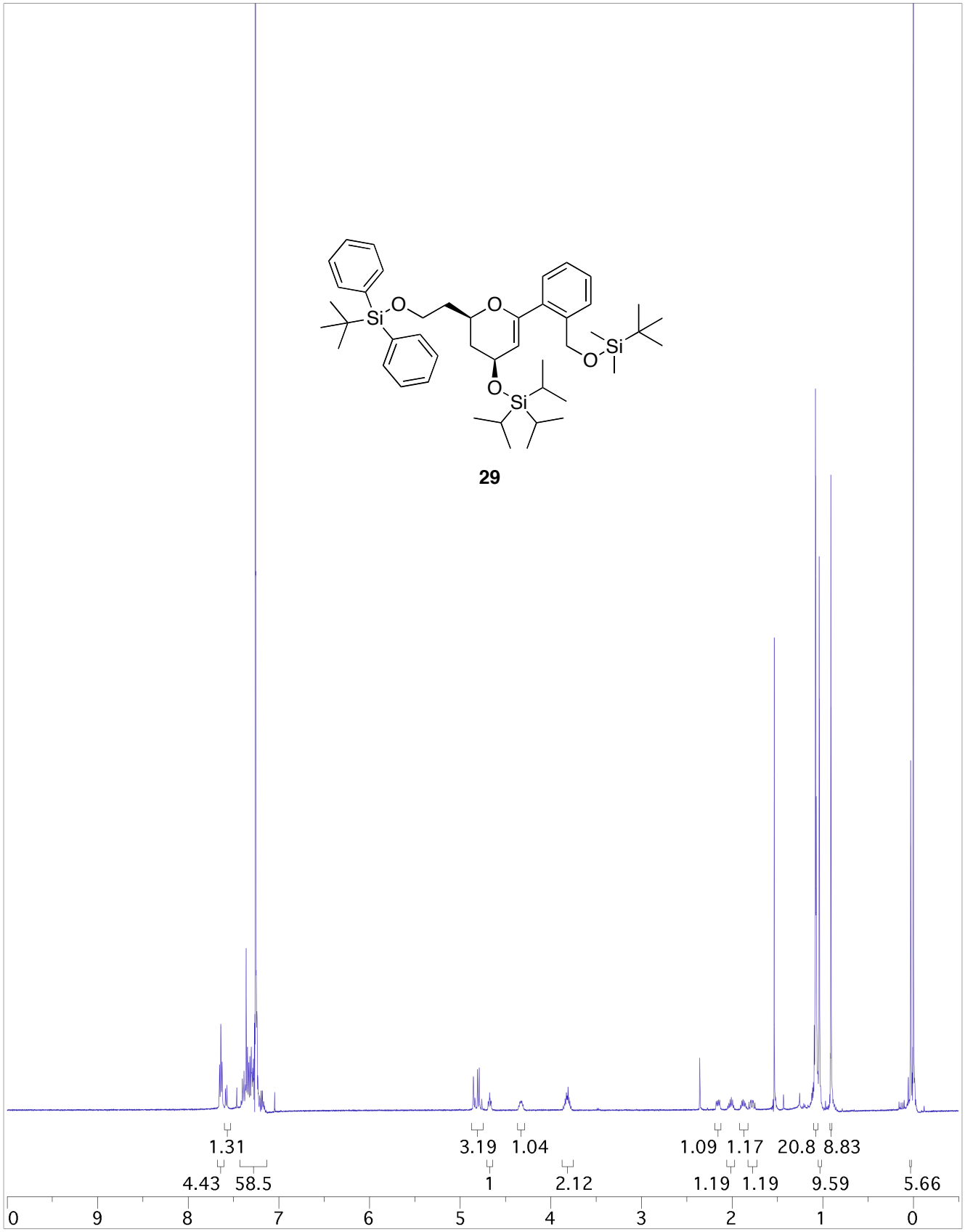
28


4.128
4.120
4.112
4.104
4.094
4.086
2.125
2.104
1.965
1.941
3.42
1.94
1
1
0.942
1.03
1.1
0.899
1.21
1.1
2.21
2.13
22.4
0
9
8
7
6
5
4
3
2
1
0

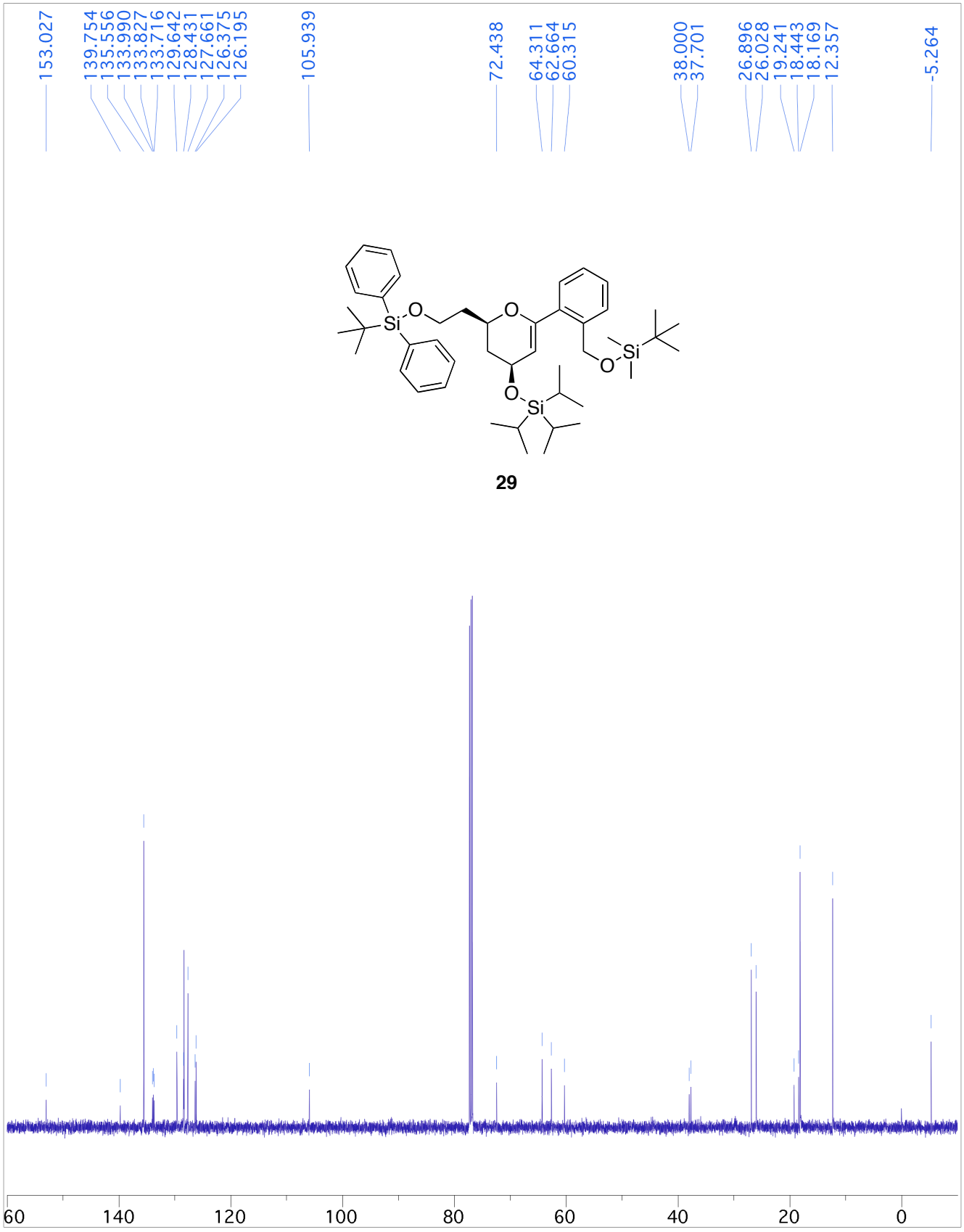

O
OH
O
Si

28


141.559
141.055
127.864
126.799
122.340
121.351
90.791
82.240
73.053
72.175
36.767
33.366
19.217
18.116
12.587
70
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0


Si
O
O
Si
O
O
Si
1.31
4.43
58.5
3.19
1
1.04
2.12
1.09
1.19
1.17
1.19
20.8
9.59
8.83
5.66
0
9
8
7
6
5
4
3
2
1
0

29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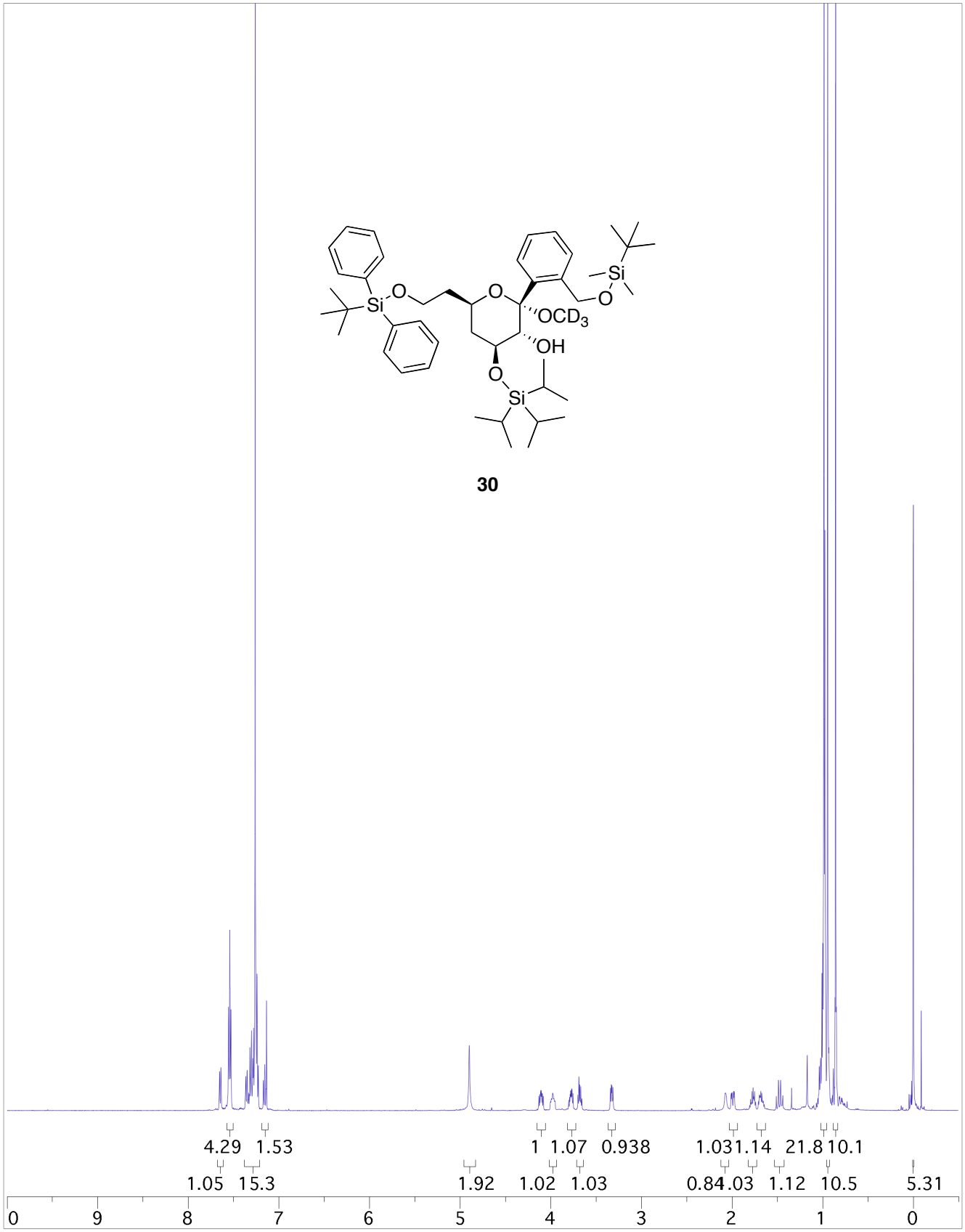
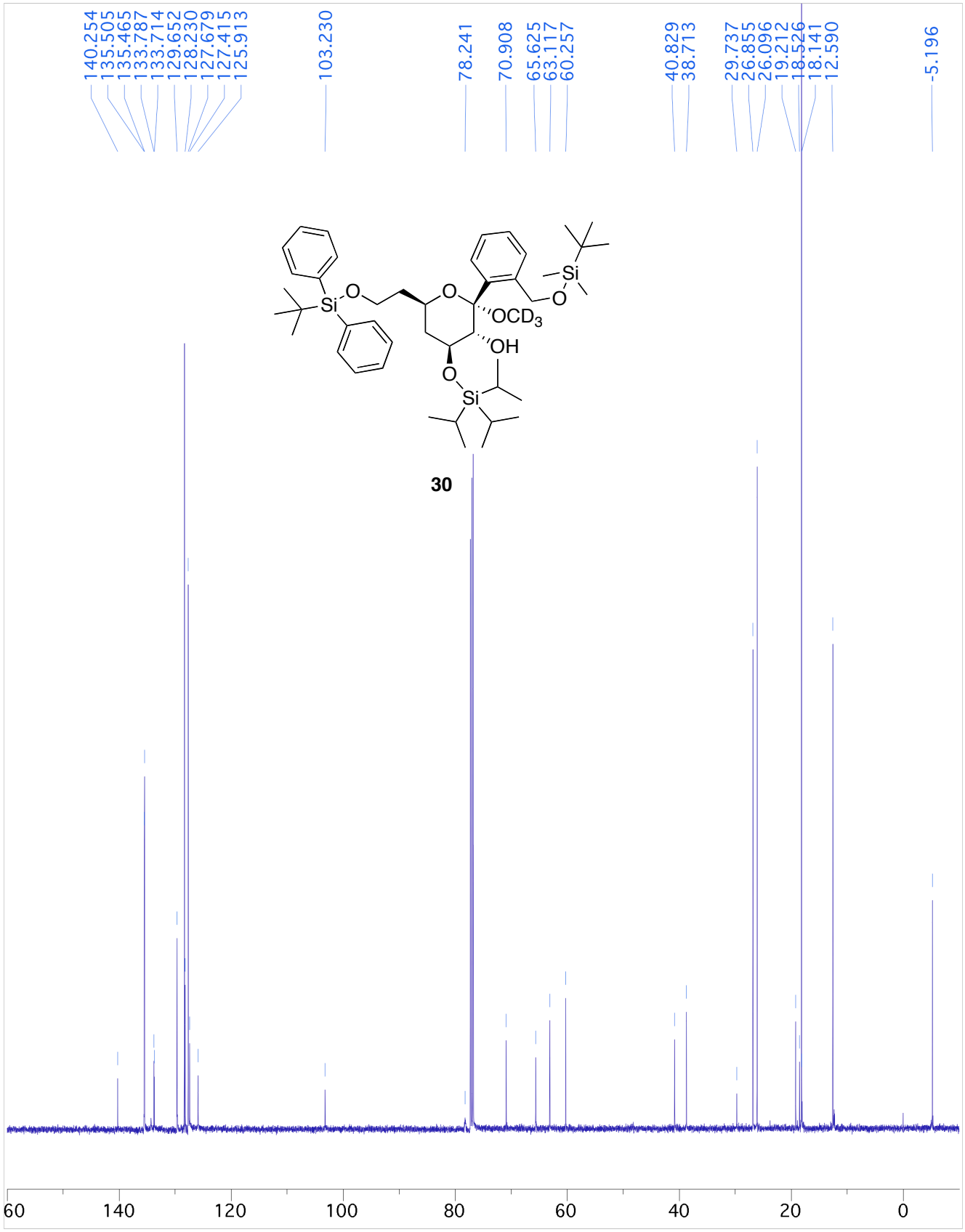
135.556
133.990
133.827
133.716
129.642
128.431
127.661
126.375
126.195
105.939
72.438
64.311
62.664
60.315
38.000
37.701
26.896
26.028
19.241
18.443
18.169
12.357
-5.264
Si
O
O
O
Si
O
Si
60
140
120
100
80
60
40
20
0

29


Si
O
O
O
OCD3
OH
O
Si
Si
O
4.29
1.53
1.05
15.3
1.92
1
1.07
0.938
1.02
1.03
1.03
1.14
21.8
10.1
0.84
4.03
1.12
10.5
5.31
0
9
8
7
6
5
4
3
2
1
0

30


140.254
135.505
135.465
133.787
133.714
129.652
128.230
127.679
127.415
125.913
103.230
78.241
70.908
65.625
63.117
60.257
40.829
38.713
29.737
26.855
26.096
19.212
18.526
18.141
12.590
-5.196
Si
O
O
OCD3
OH
O
Si
Si
O
60
140
120
100
80
60
40
20
0

30