SUPPORTING INFORMATION

Common Strategy for the Synthesis of Some Strychnos Indole Alkaloids

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II. Circular dichroism spectroscopy of (-)-Strychnopivotine

Circular dichroism experiments were carried out on a Jasco J-815 spectropolarimeter at 25°C in a 0.0019 M methanol solution at 1.0 mm pathlength. Spectra were corrected from a baseline (pure solvent) that was collected the same number of times as the spectra.

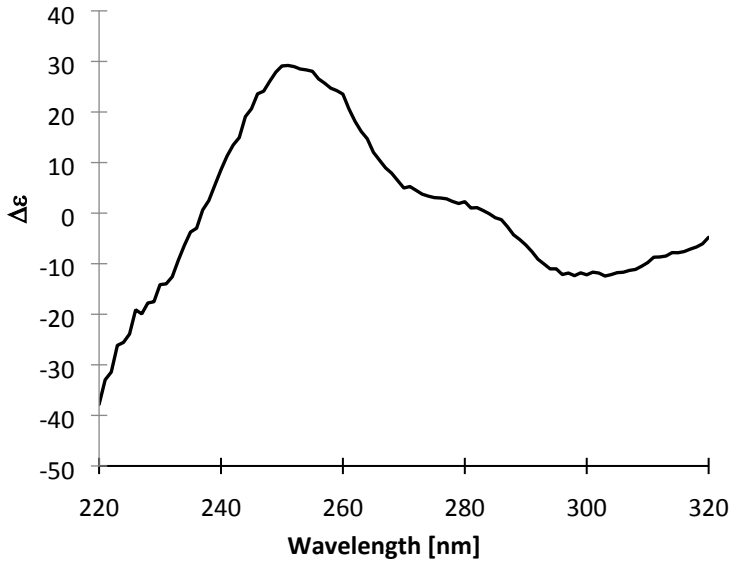


Figure S1. CD spectrum of (-)-Strychnopivotine (c = 0.0019 M in MeOH).

III. X-Ray crystal structure analysis of 16

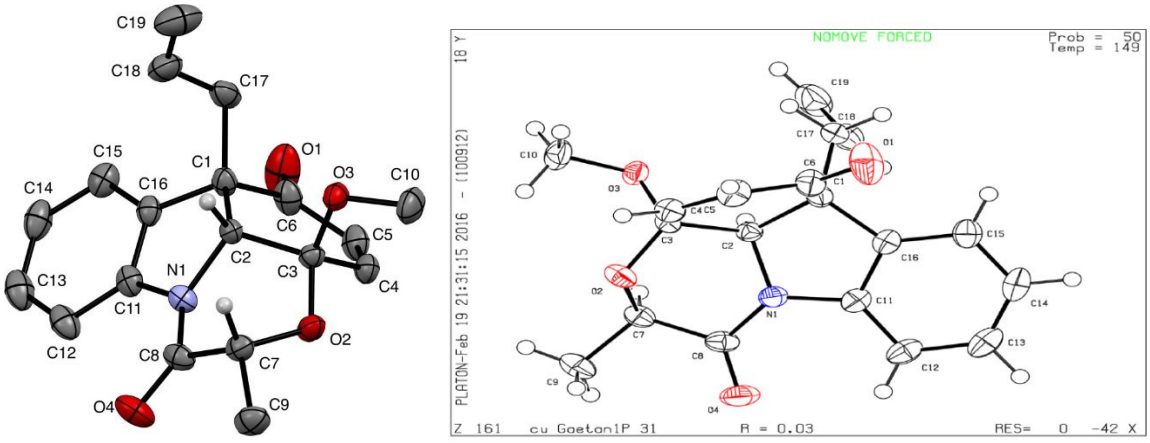


Figure S2. ORTEP representation at 50% ellipsoid probability of **16**. Hydrogen atoms were omitted for clarity, except on asymmetric carbon atoms (C2 and C7).

Crystals were directly obtained after silica gel chromatography (15:85 EtOAc/n-Hex), a recrystallization can be promoted in presence of methanol if necessary.
Crystallographic analysis was performed on a Bruker APEX-DUO diffractometer. A colorless needle-like specimen of $C_{19}H_{19}NO_4$, approximate dimensions 0.155 mm x 0.161 mm x 0.359 mm, was used for the X-ray crystallographic analysis. The X-ray intensity data were measured. A total of 5856 frames were collected. The total exposure time was 10.98 hours. The frames were integrated with the Bruker SAINT software package using a narrow-frame algorithm. The integration of the data using a trigonal unit cell yielded a total of 18370 reflections to a maximum θ angle of 68.27° (0.83 Å resolution), of which 3007 were independent (average redundancy 6.109, completeness = 100.0%, R_{int} = 7.34%, R_{sig} = 4.61%) and 2906 (96.64%) were greater than $2\sigma(F^2)$. The final cell constants of a = b = 8.6520(2) Å, c = 19.0082(6) Å, volume = 1232.27(7) $Å^3$, are based upon the refinement of the XYZ-centroids of 6230 reflections above 20 σ(I) with 11.81° < 2θ < 136.5°. Data were corrected for absorption effects using the multi-scan method (SADABS). The ratio of minimum to maximum apparent transmission was 0.891. The calculated minimum and maximum transmission coefficients (based on crystal size) are 0.6560 and 0.7360.

The structure was solved and refined using the Bruker SHELXTL Software Package, using the space group P 3_1, with Z = 3 for the formula unit, $C_{19}H_{19}NO_4$. The final anisotropic full-matrix least-squares refinement on F^2 with 220 variables converged at R_1 = 3.19%, for the observed data and wR_2 = 8.07% for all data. The goodness-of-fit was 1.049. The largest peak in the final difference electron density synthesis was 0.189 $e^-/Å^3$ and the largest hole was -0.126 $e^-/Å^3$ with an RMS deviation of 0.035 $e^-/Å^3$. On the basis of the final model, the calculated density was 1.315 g/cm^3 and F(000), 516 e^-.

The absolute structure was assigned using C7, which *R* configuration remains intact during synthesis. In addition, absolute structure was also determined using anomalous scatterers, which led to a Flack parameter of 0.16(12). Despite the large uncertainty due

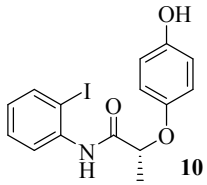
to the lack of heavy atoms, this value is sufficient close to zero to corroborate the absolute structure assignment.

```
Bond precision:      C-C = 0.0039 A              Wavelength=1.54178
Cell:        a=8.6520(2)    b=8.6520(2)    c=19.0082(6)
             alpha=90       beta=90        gamma=120
Temperature: 149 K
                   Calculated                    Reported
Volume             1232.27(8)                    1232.27(7)
Space group        P 31                          ?
Hall group         P 31                          P 31
Moiety formula     C19 H19 N O4                  C19 H19 N O4
Sum formula        C19 H19 N O4                  C19 H19 N O4
Mr                 325.35                        325.35
Dx,g cm-3          1.315                         1.315
Z                  3                             3
Mu (mm-1)          0.757                         0.757
F000               516.0                         516.0
F000'              517.64
h,k,lmax           10,10,22                      10,10,22
Nref               3006[ 1503]                   3007
Tmin,Tmax          0.864,0.889                   0.656,0.736
Tmin'              0.762
Correction method= # Reported T Limits: Tmin=0.656
Tmax=0.736 AbsCorr = MULTI-SCAN
Data completeness= 2.00/1.00   Theta(max)= 68.271
R(reflections)= 0.0319( 2906)     wR2(reflections)= 0.0807( 3007)
S = 1.049             Npar= 220
```

Table S1. Crystallographic parameters and data

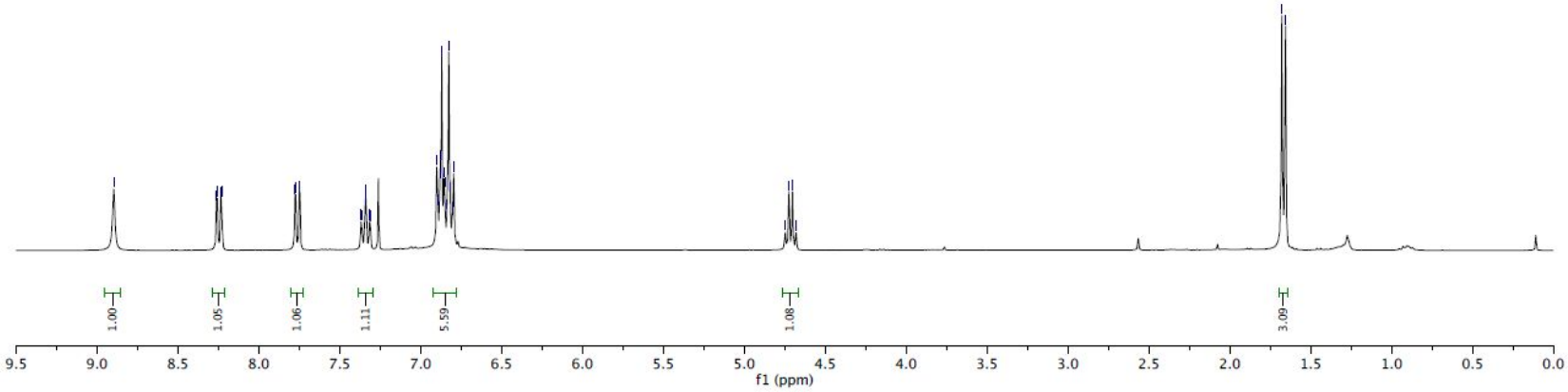
Crystallographic parameters and data are provided in the CIF file which can be retrieved from the Cambridge Crystallographic Data Centre using deposition number 1454833 at the following URL:

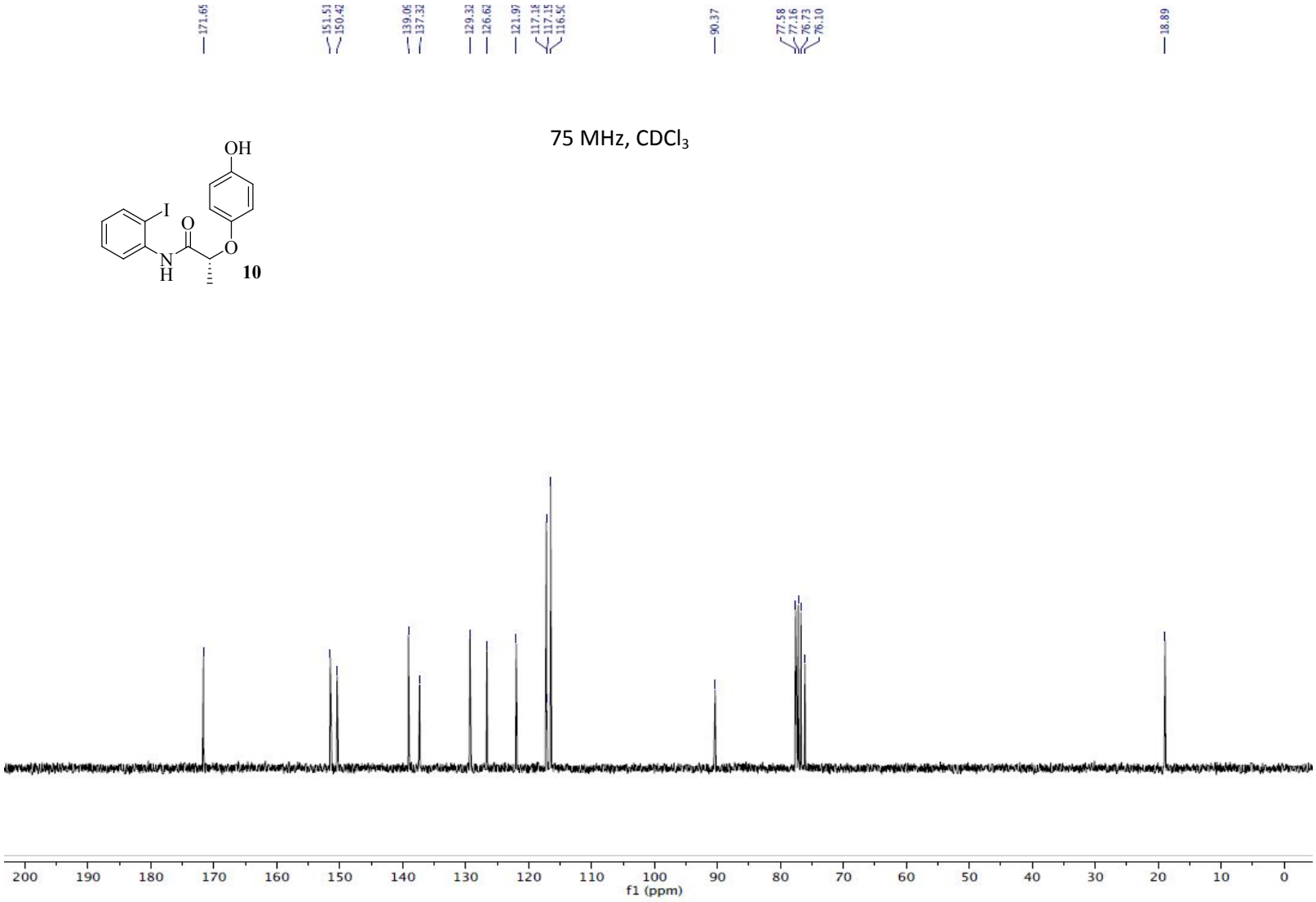
http://www.ccdc.cam.ac.uk/Community/Requestastructure/Pages/Requestastructure.aspx



10

300 MHz, $CDCl_3$

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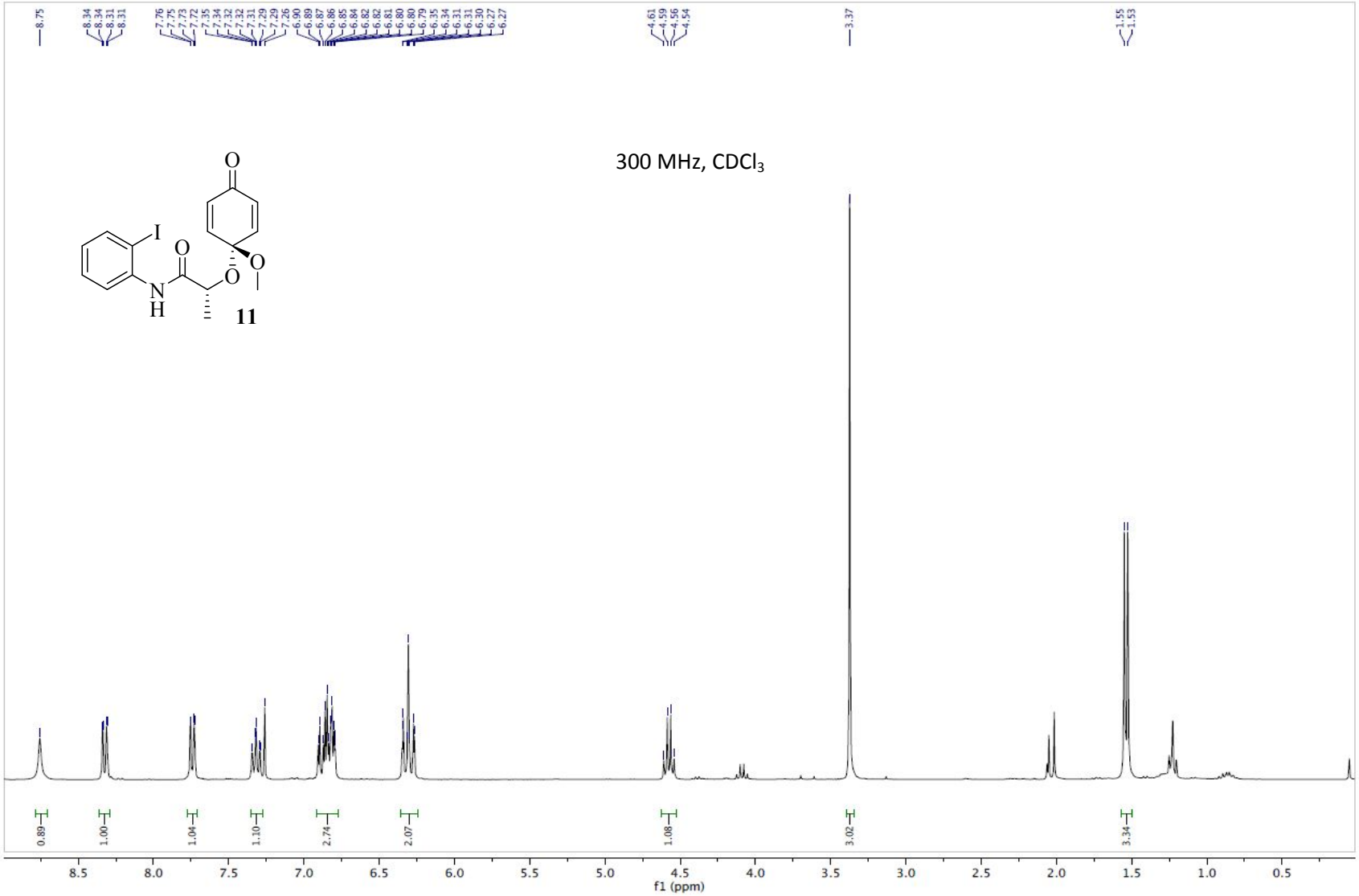
150.42
139.06
137.32
129.32
126.62
121.97
117.18
117.15
116.56
90.37
77.58
77.16
76.73
76.10
18.89
OH
I
O
O
N
H
10
75 MHz, CDCl3
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)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8.34
8.31
8.31
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7.73
7.72
7.35
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7.32
7.31
7.29
7.29
7.26
6.90
6.89
6.87
6.86
6.85
6.84
6.82
6.82
6.81
6.80
6.80
6.79
6.35
6.34
6.31
6.31
6.30
6.27
6.27
4.61
4.59
4.56
4.54
3.37
1.55
1.53
300 MHz, CDCl3
I
O
O
O
N
H
O
11
0.89
1.00
1.04
1.10
2.74
2.07
1.08
3.02
3.34
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
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4.0
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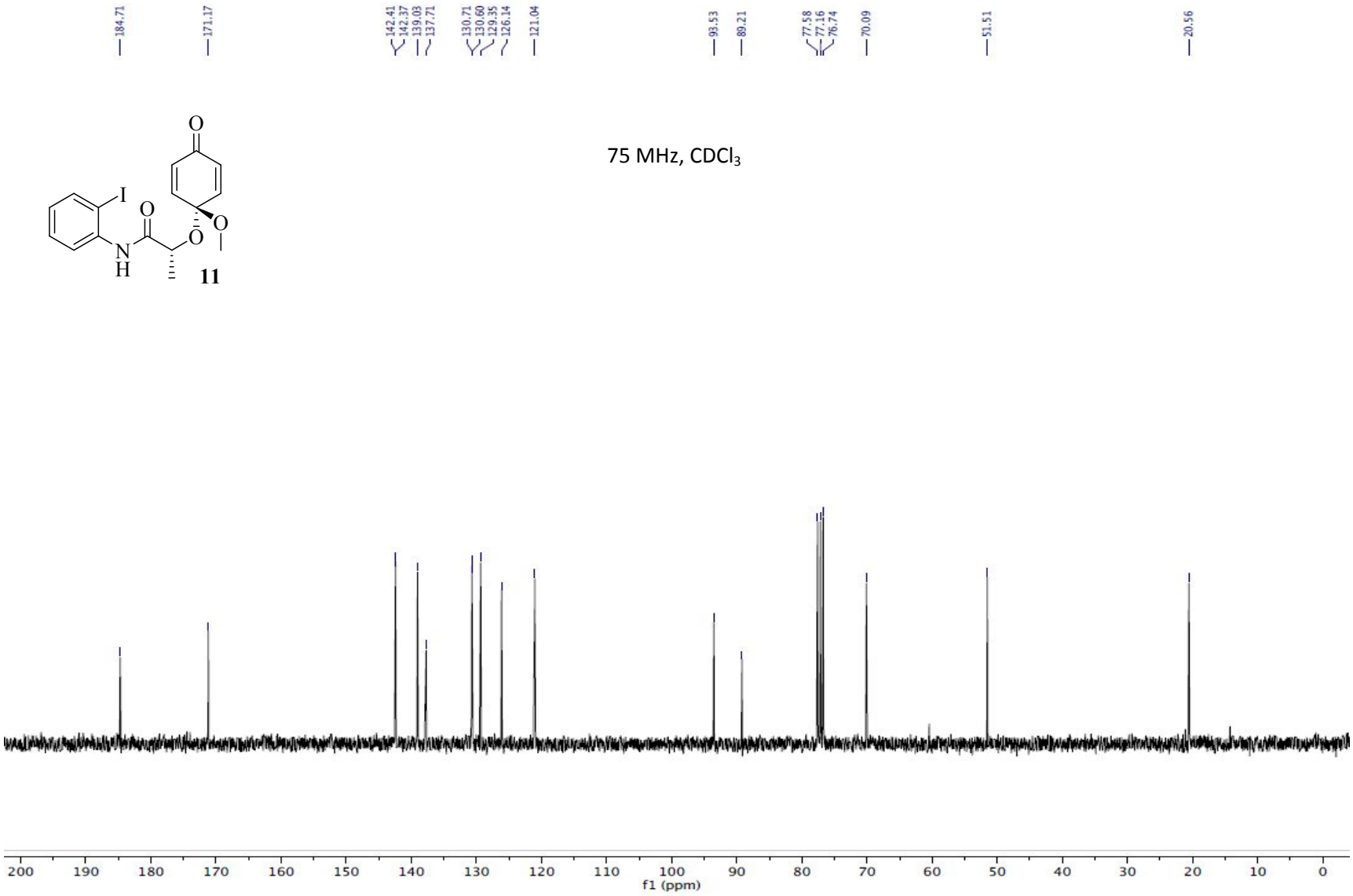
3.0
2.5
2.0
1.5
1.0
0.5
f1 (ppm)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171.17
142.41
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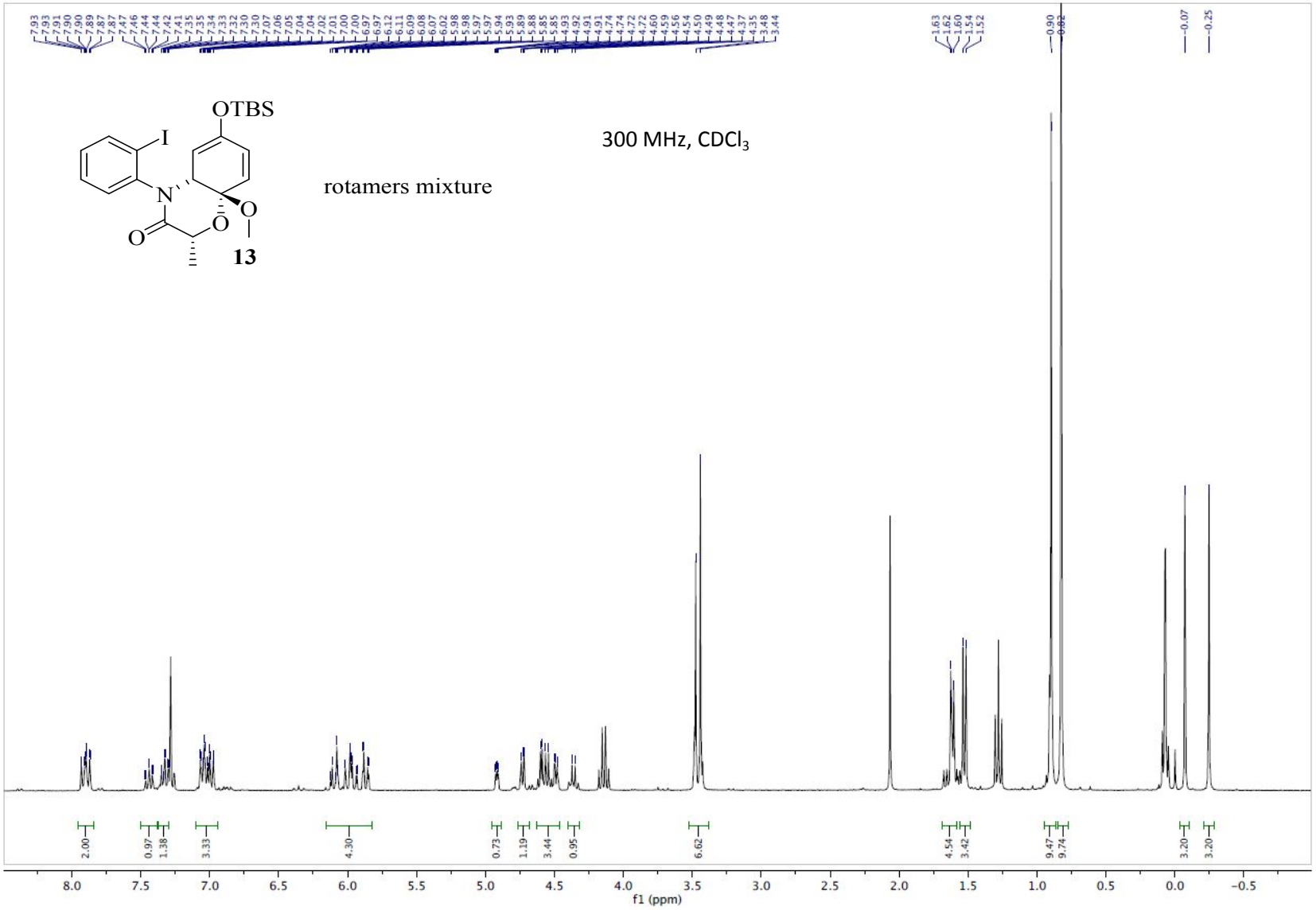
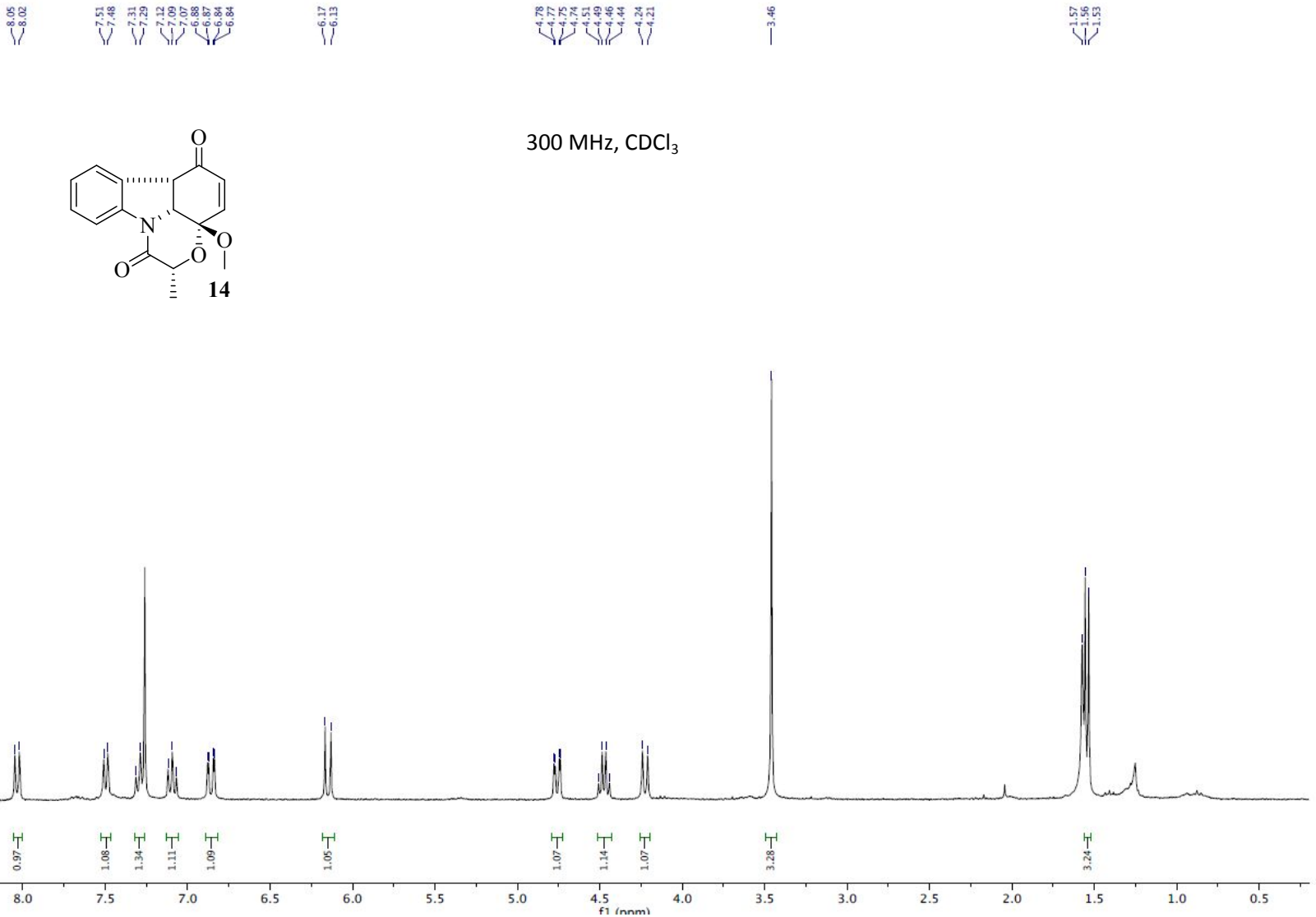
89.21
77.58
77.16
76.74
70.09
51.51
20.56
O
I
O
N
H
O
O
11
75 MHz, CDCl3
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)


OTBS
I
N
O
O
O
13
rotamers mixture
300 MHz, CDCl3
f1 (ppm)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7.51
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7.31
7.29
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7.09
7.07
6.88
6.87
6.84
6.84
6.17
6.13
4.78
4.77
4.75
4.74
4.51
4.49
4.46
4.44
4.24
4.21
3.46
1.57
1.56
1.53
O
N
O
O
O
14
300 MHz, CDCl3
0.97
1.08
1.34
1.11
1.09
1.05
1.07
1.14
1.07
3.28
3.24
8.0
7.5
7.0
6.5
6.0
5.5
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4.0
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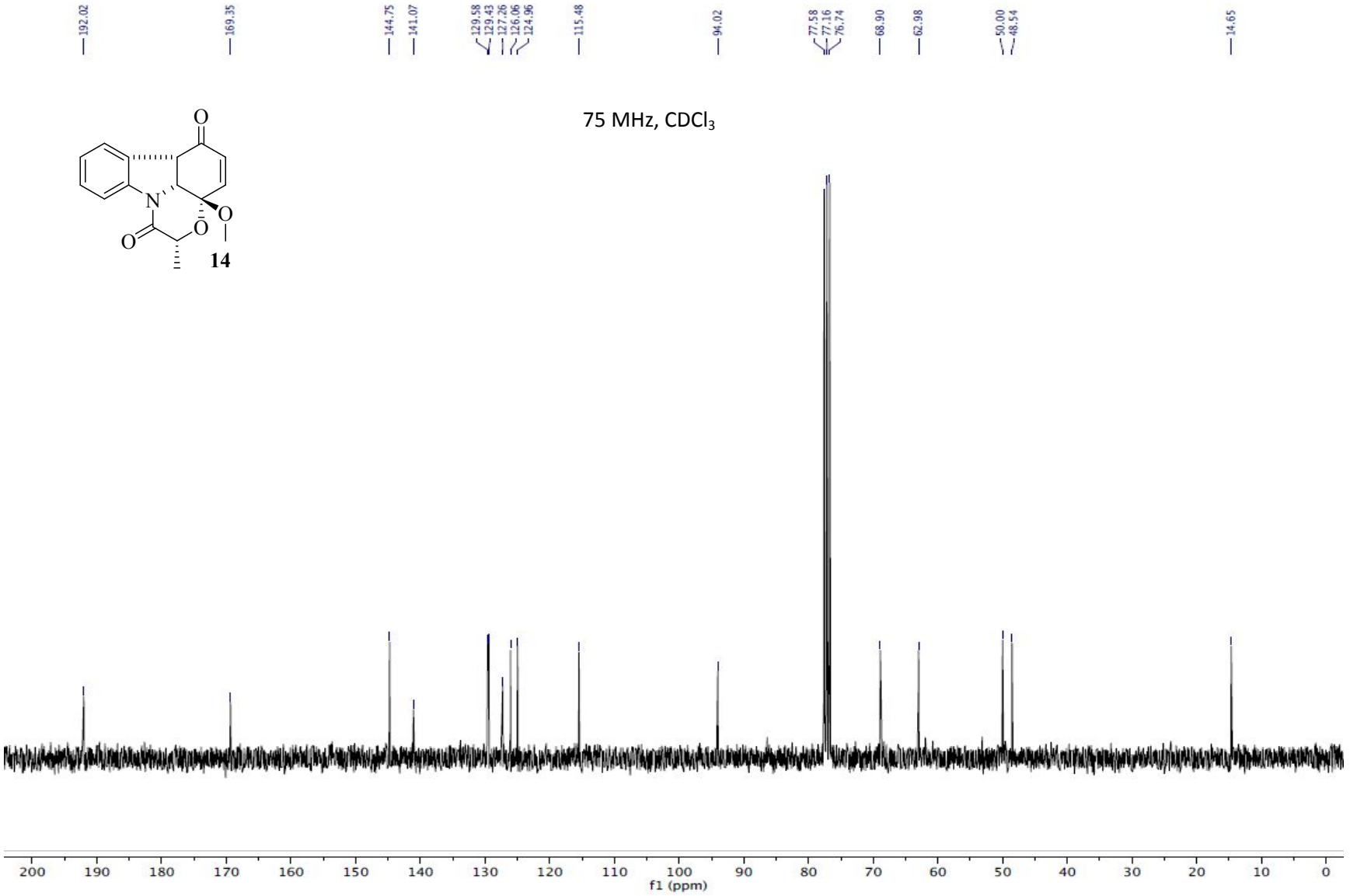
3.0
2.5
2.0
1.5
1.0
0.5
f1 (ppm)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126.06
124.96
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77.58
77.16
76.74
68.90
62.98
50.00
48.54
14.65
75 MHz, CDCl3
14
200
190
180
170
160
150
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130
120
110
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90
80
70
60
50
40
30
20
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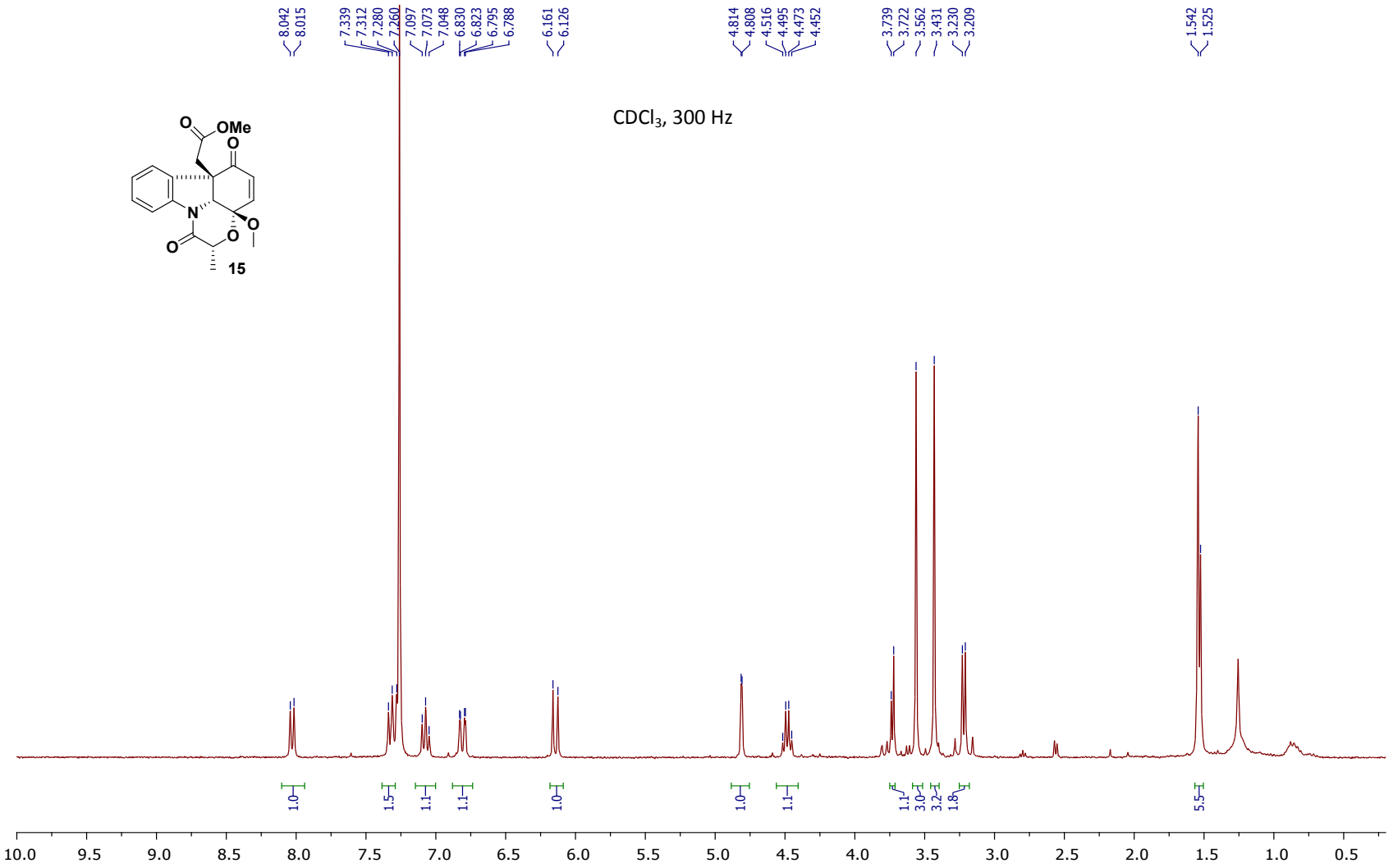
0
f1 (ppm)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7.097
7.073
7.048
6.830
6.823
6.795
6.788
6.161
6.126
4.814
4.808
4.516
4.495
4.473
4.452
3.739
3.722
3.562
3.431
3.230
3.209
1.542
1.525
CDCl3, 300 Hz
O
OMe
O
N
O
O
O
15
1.0
1.5
1.1
1.1
1.0
1.0
1.1
1.1
3.0
3.2
1.8
5.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
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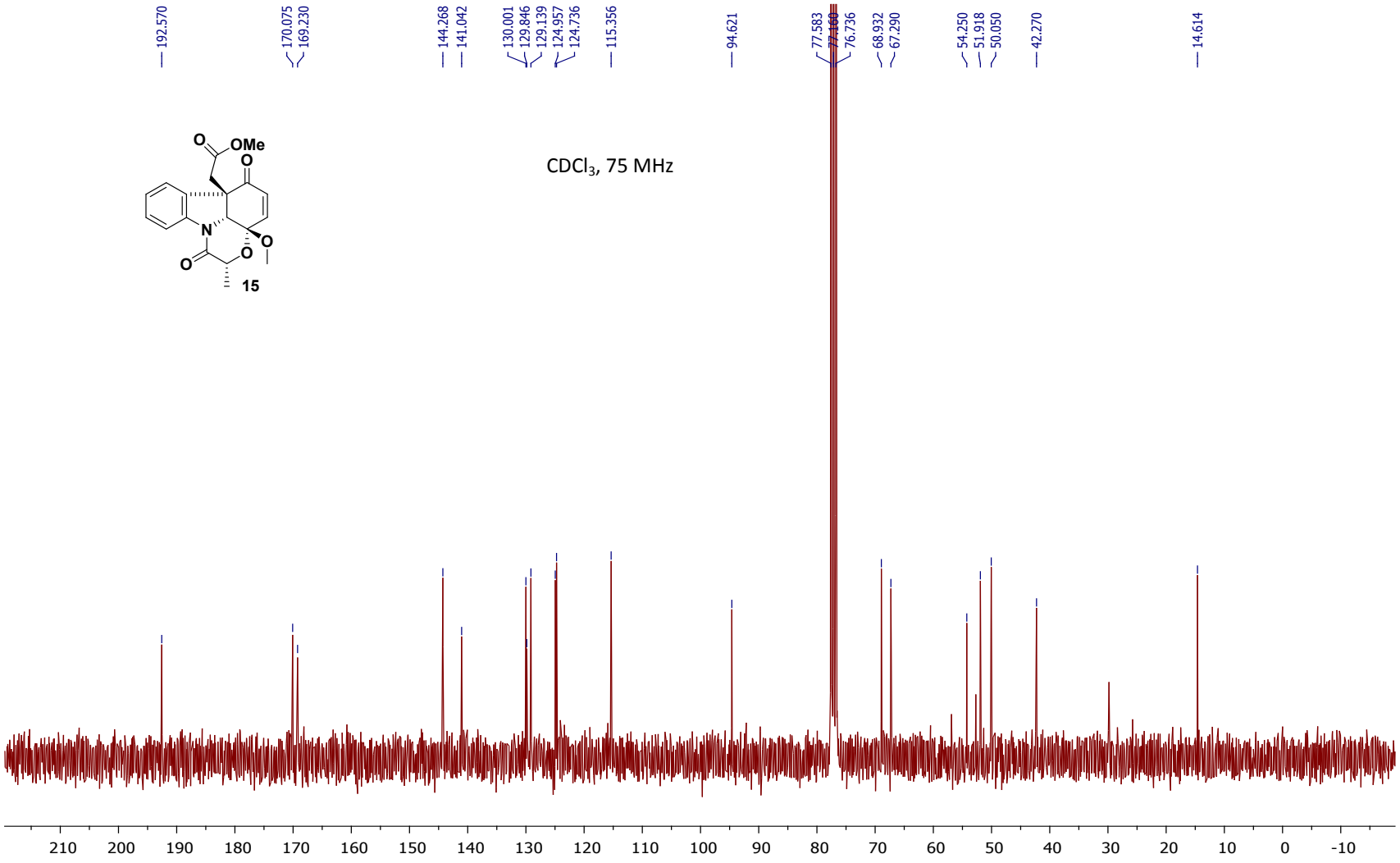
2.5
2.0
1.5
1.0
0.5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141.042
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124.957
124.736
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77.583
77.160
76.736
68.932
67.290
54.250
51.918
50.050
42.270
14.614
CDCl3, 75 MHz
15
210
200
190
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100
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80
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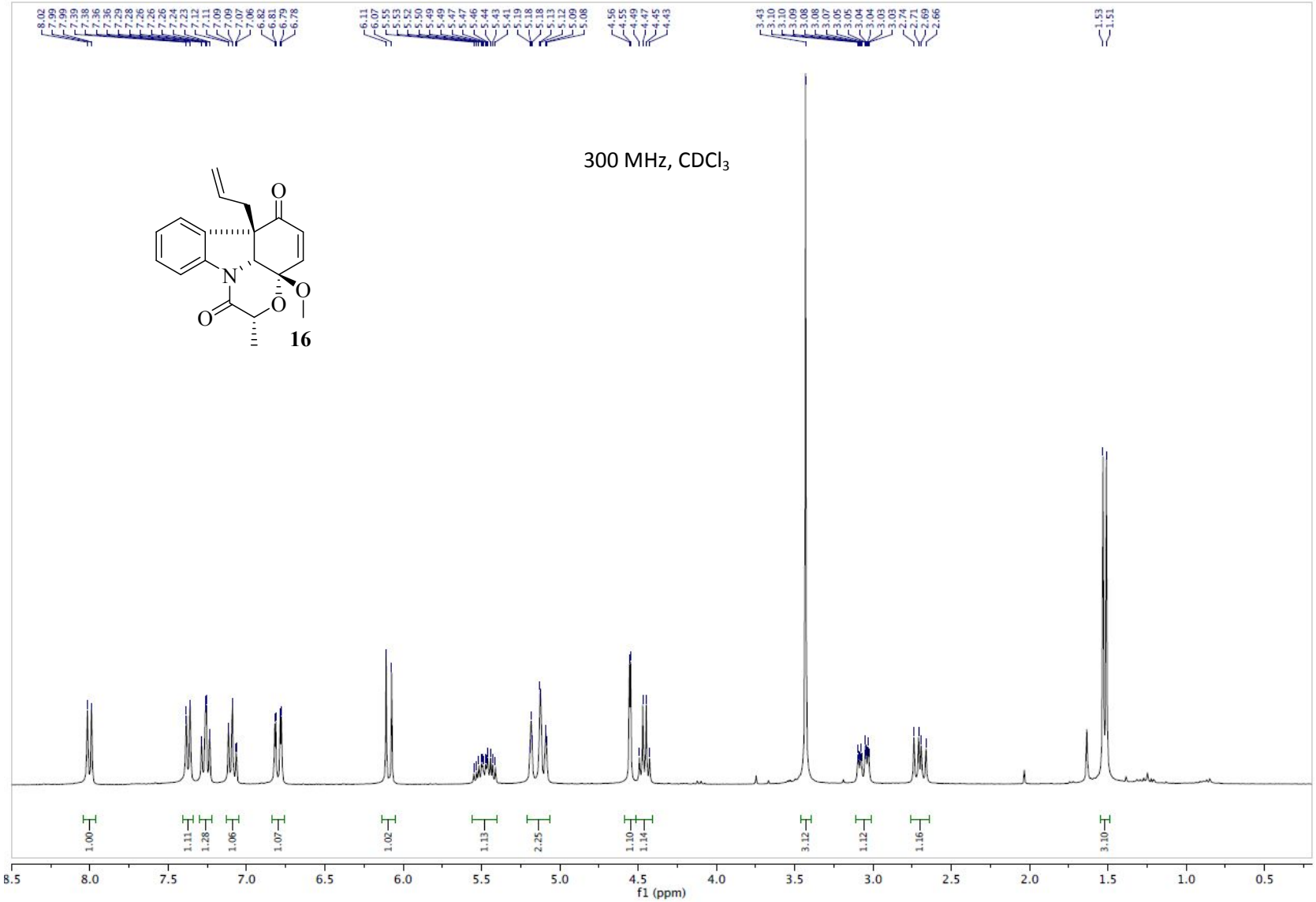
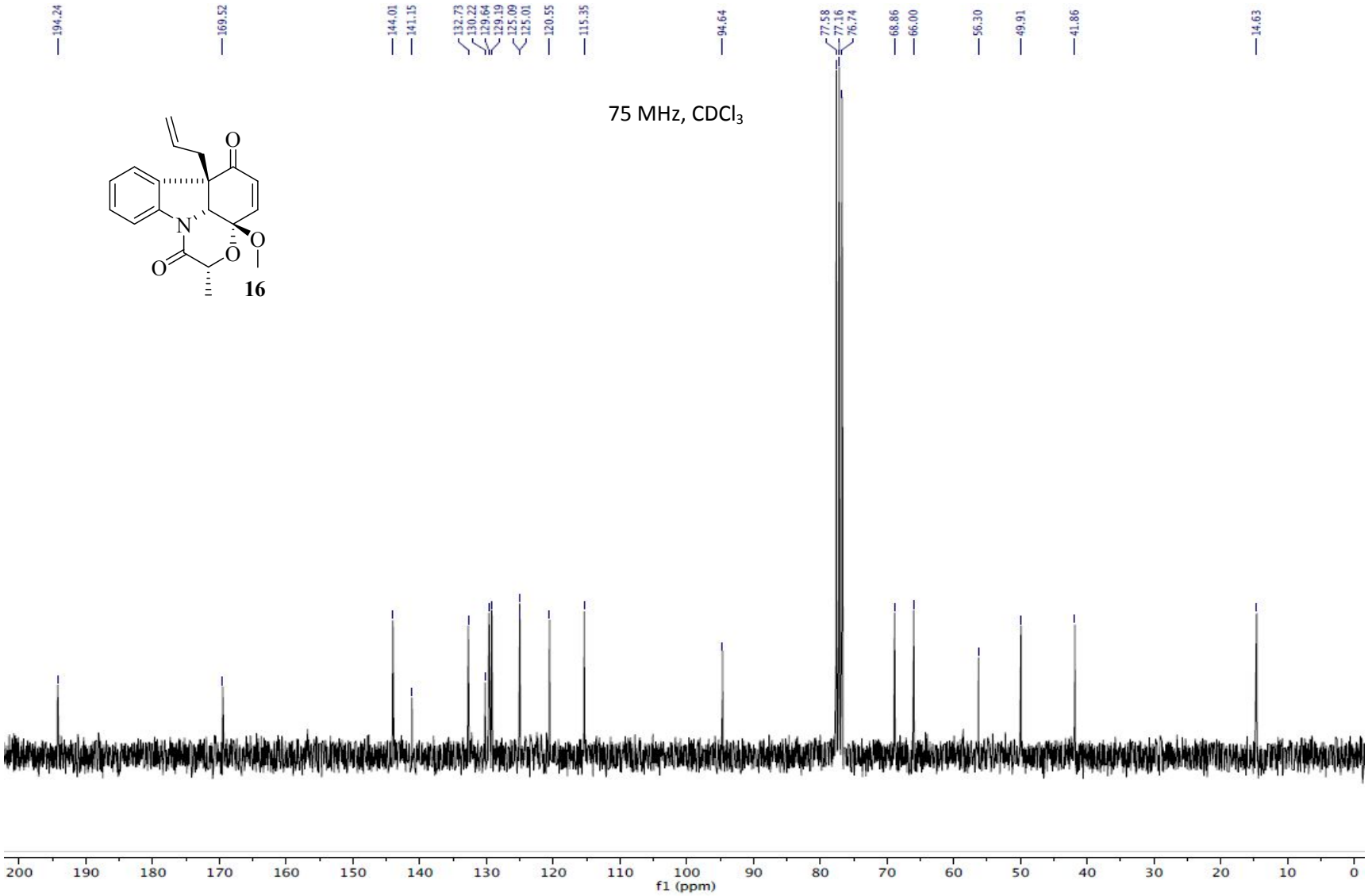
60
50
40
30
20
10
0
-10


300 MHz, CDCl3
16
f1 (ppm)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130.22
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129.19
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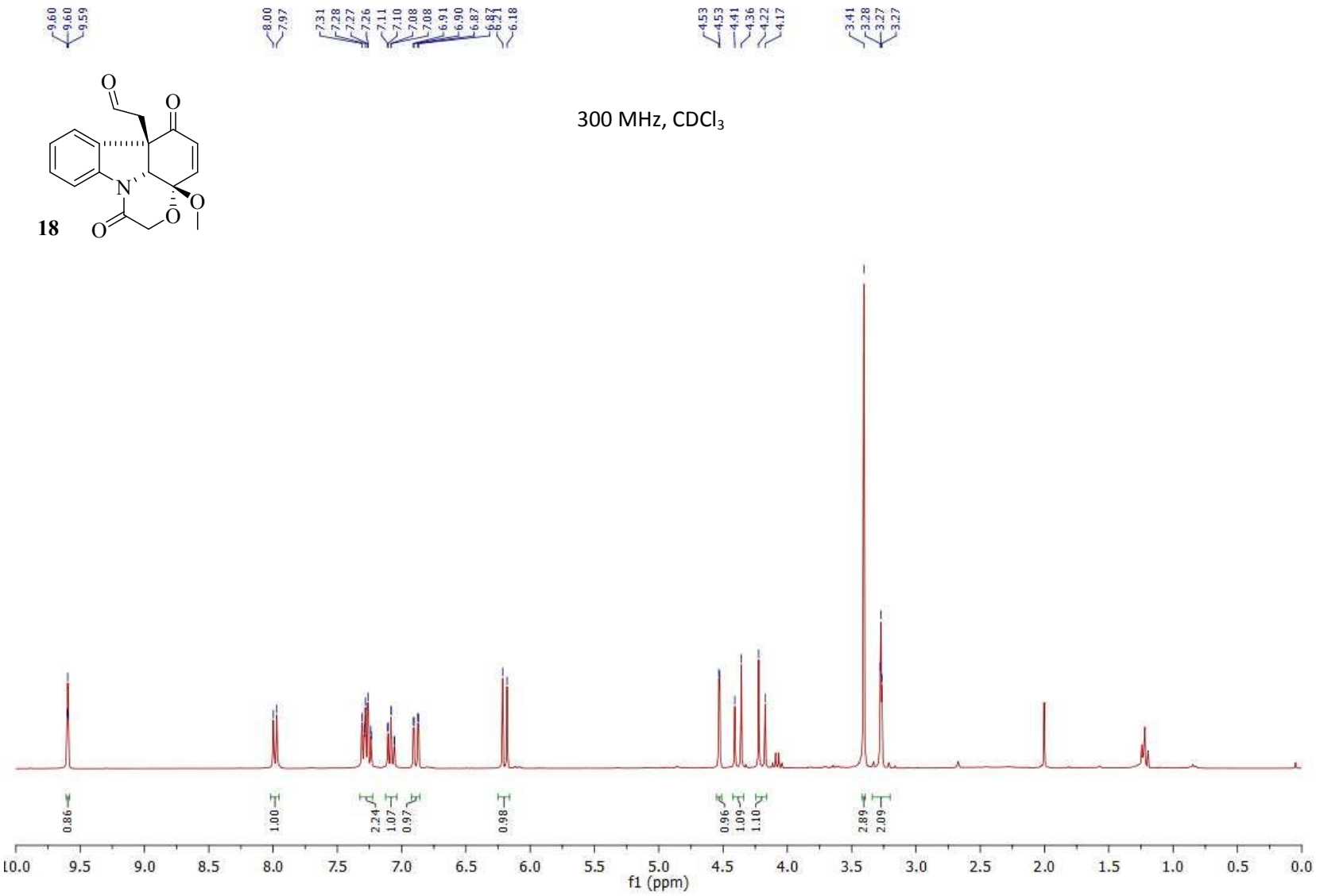
125.01
120.55
115.35
94.64
77.58
77.16
76.74
68.86
66.00
56.30
49.91
41.86
14.63
75 MHz, CDCl3
O
N
O
O
O
O
16
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)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7.27
7.26
7.11
7.10
7.08
7.08
6.91
6.90
6.87
6.87
6.18
4.53
4.53
4.41
4.36
4.22
4.17
3.41
3.28
3.27
3.27
O
O
N
O
O
O
O
18
300 MHz, CDCl3
0.86
1.00
2.24
1.07
0.97
0.98
0.96
1.09
1.10
2.89
2.09
10.0
9.5
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
f1 (ppm)

198.47
192.62
166.31
144.68
140.75
130.60
129.98
129.42
125.47
124.50
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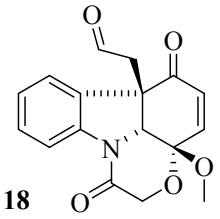
94.40
67.23
64.46
53.75
50.68
50.28



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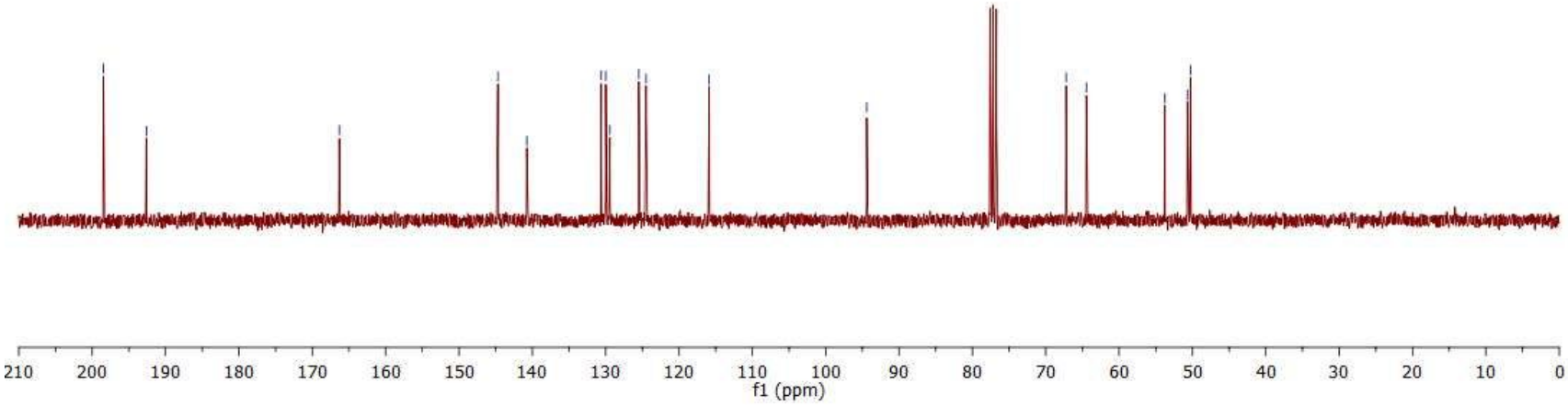
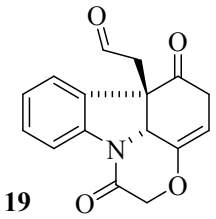
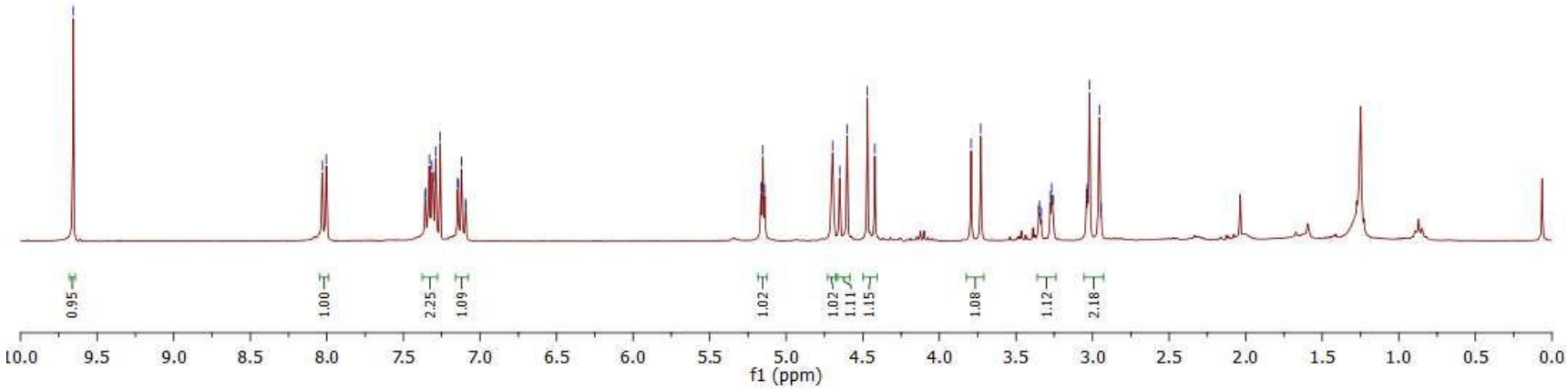
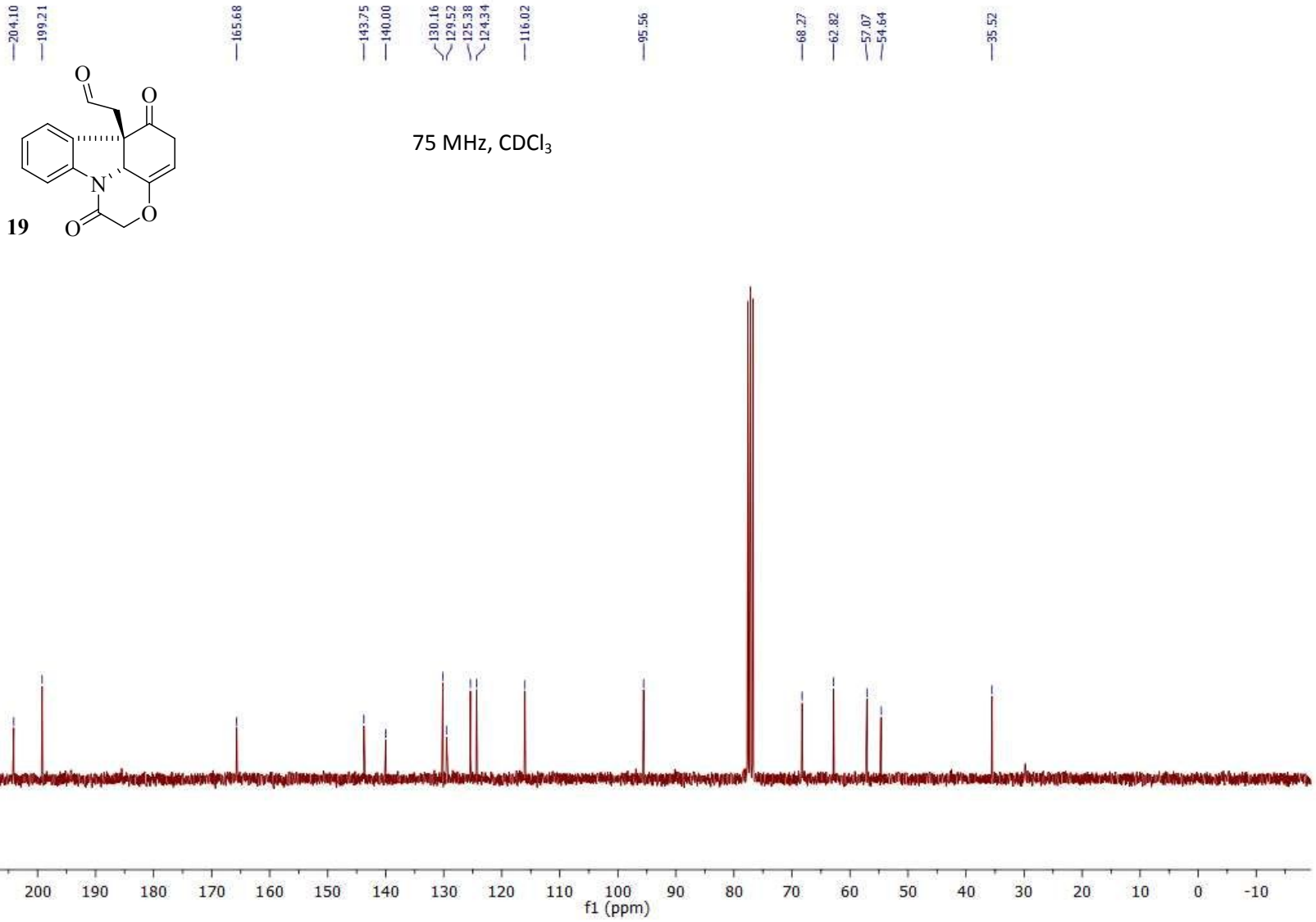


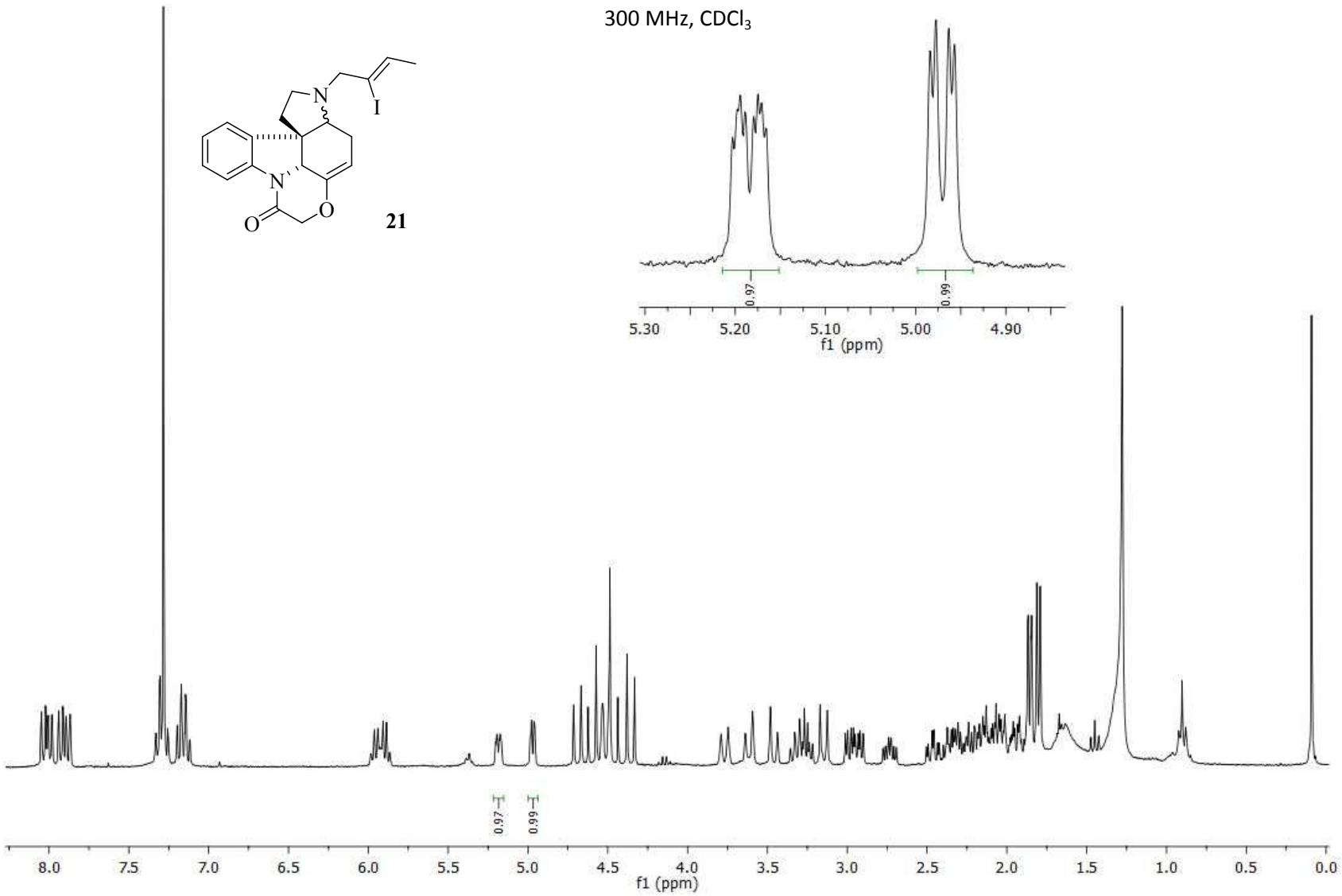


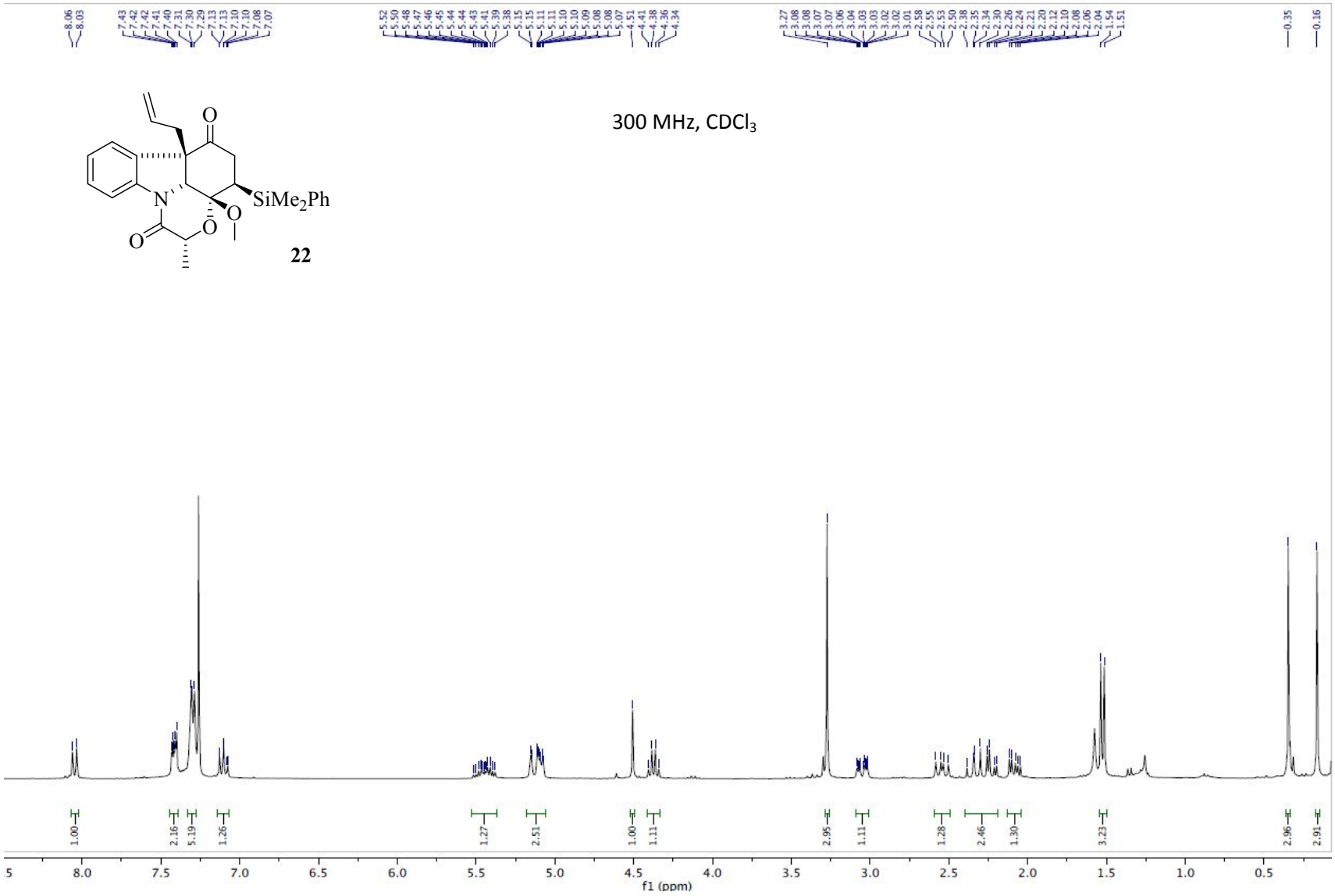
19

300 MHz, $CDCl_3$




204.10
199.21
165.68
143.75
140.00
130.16
129.52
125.38
124.34
116.02
95.56
68.27
62.82
57.07
54.64
35.52
O
O
N
O
O
19
75 MHz, CDCl3
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
f1 (ppm)


300 MHz, CDCl3
N
I
N
O
O
21
0.97
0.99
5.30
5.20
5.10
5.00
4.90
f1 (ppm)
0.97
0.99
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
f1 (ppm)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7.42
7.41
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7.31
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7.29
7.13
7.13
7.10
7.10
7.08
7.07
5.52
5.50
5.48
5.47
5.46
5.45
5.44
5.44
5.43
5.41
5.39
5.38
5.15
5.15
5.11
5.11
5.10
5.10
5.09
5.08
5.08
5.07
4.51
4.41
4.38
4.36
4.34
3.27
3.08
3.08
3.07
3.07
3.06
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3.03
3.03
3.02
3.02
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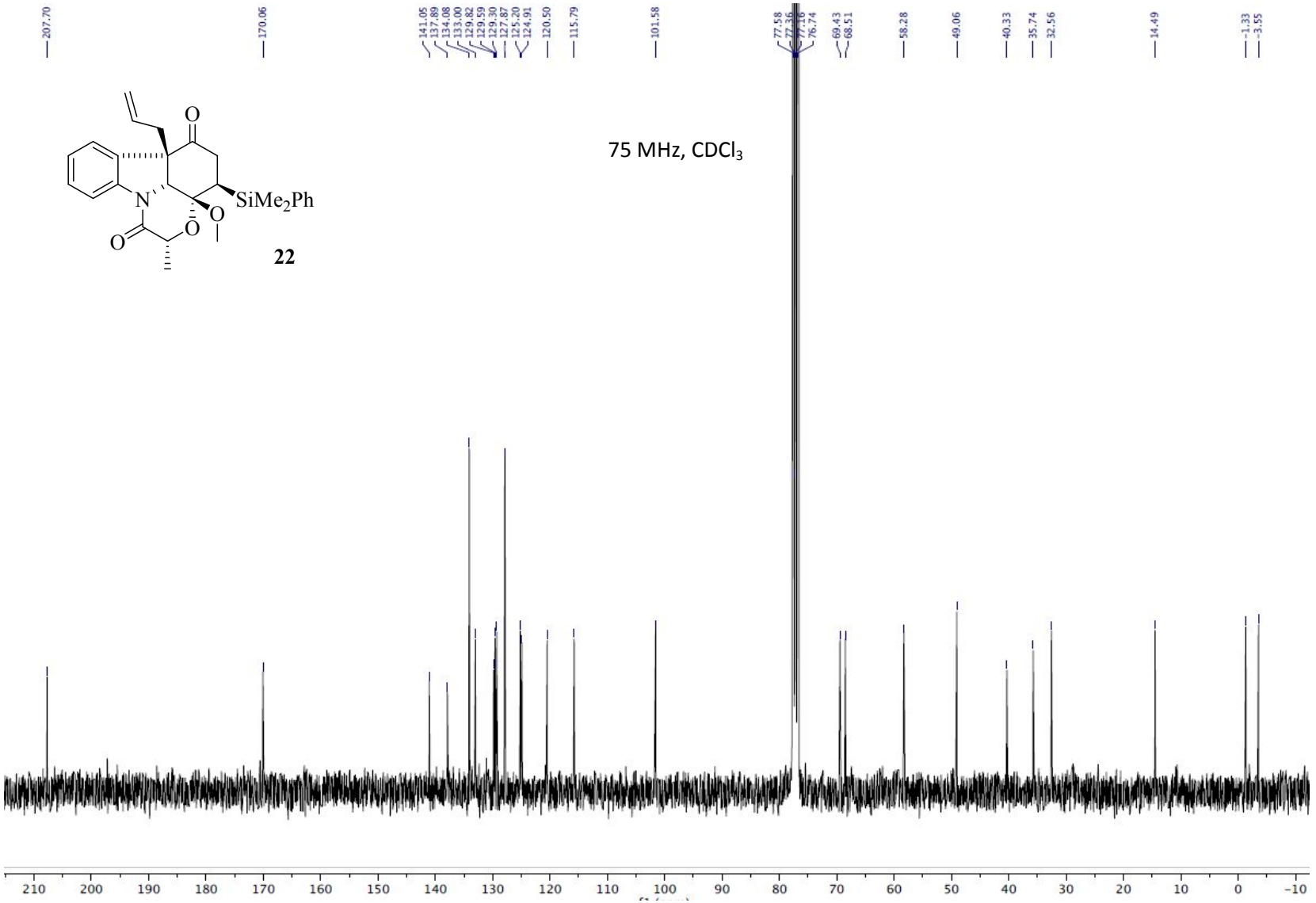
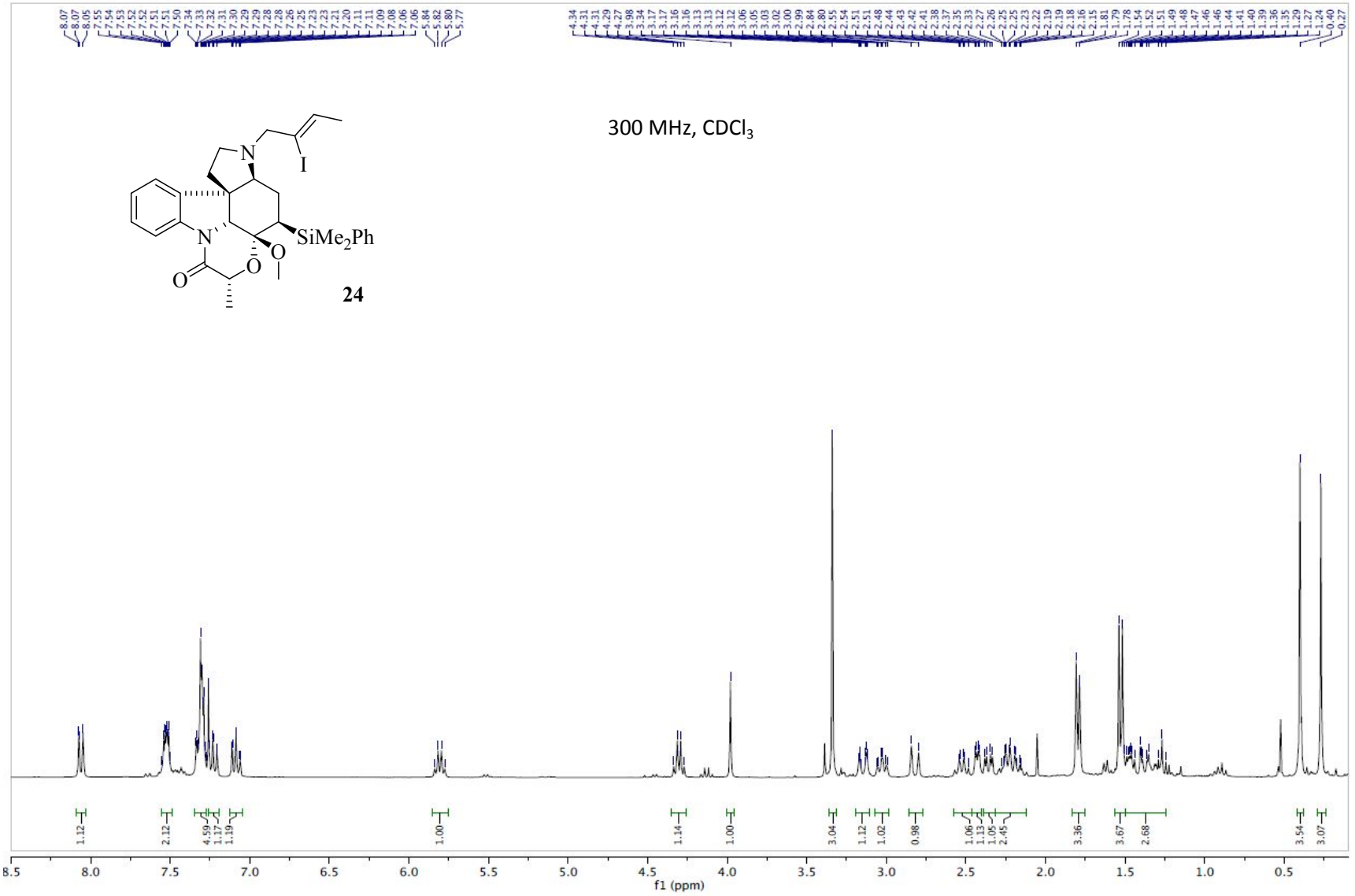
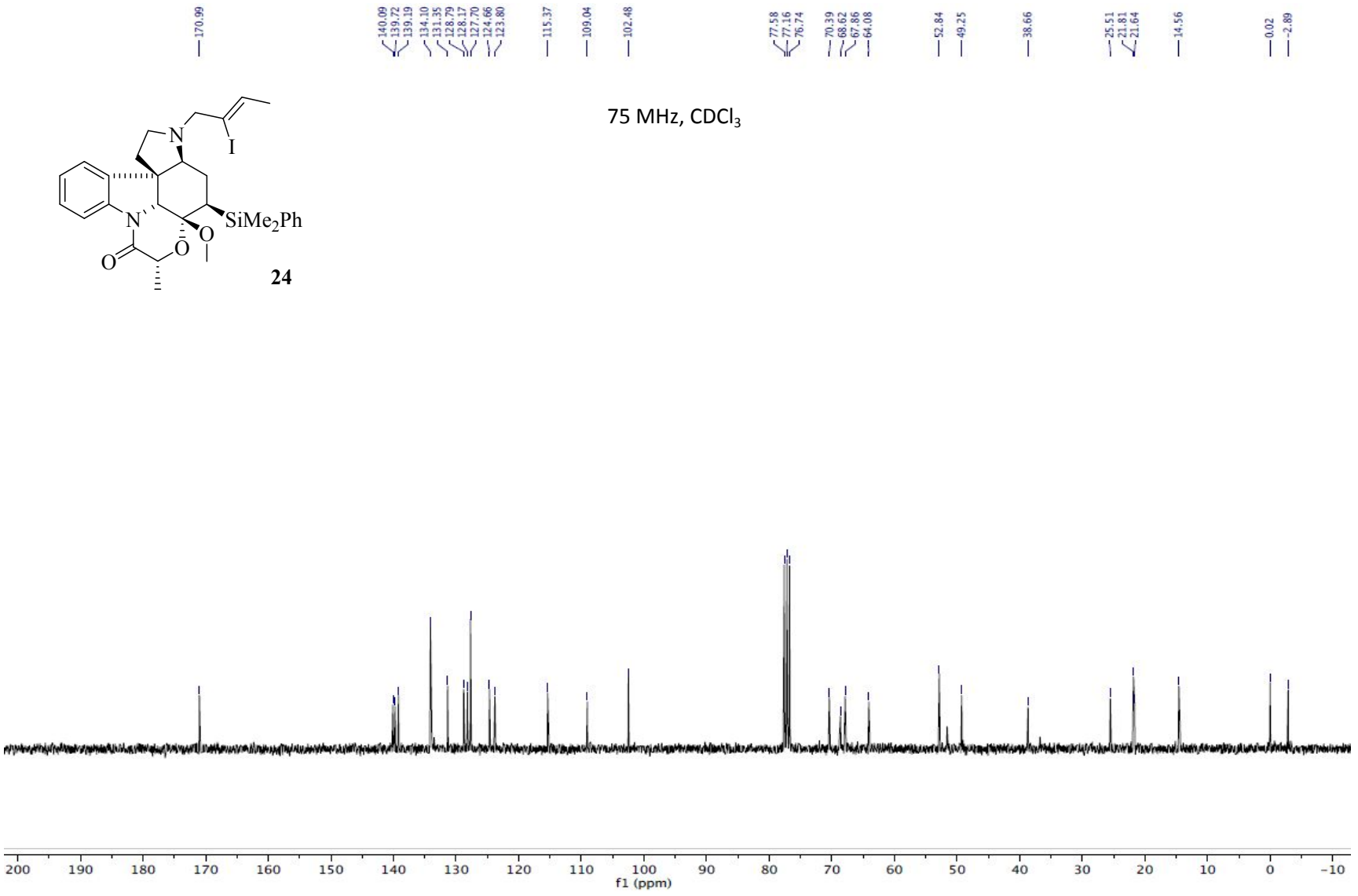
2.34
2.30
2.26
2.24
2.21
2.20
2.12
2.10
2.08
2.06
2.04
1.54
1.51
0.35
0.16
O
N
O
O
O
SiMe2Ph
22
300 MHz, CDCl3
1.00
2.16
5.19
1.26
1.27
2.51
1.00
1.11
2.95
1.11
1.28
2.46
1.30
3.23
2.96
2.91
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
f1 (ppm)

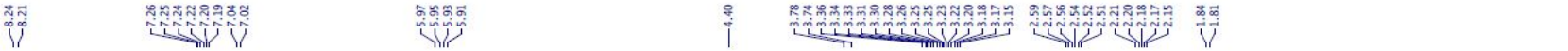

207.70
170.06
141.05
137.89
134.08
133.00
129.82
129.59
129.30
127.87
125.20
124.91
120.50
115.79
101.58
77.58
77.36
77.16
76.74
69.43
68.51
58.28
49.06
40.33
35.74
32.56
14.49
-1.33
-3.55
O
N
O
O
O
SiMe2Ph
22
75 MHz, CDCl3
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10

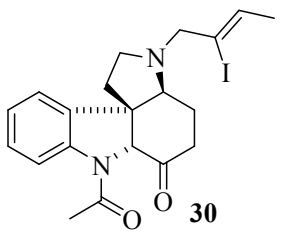

300 MHz, CDCl3
SiMe2Ph
24
f1 (ppm)



24

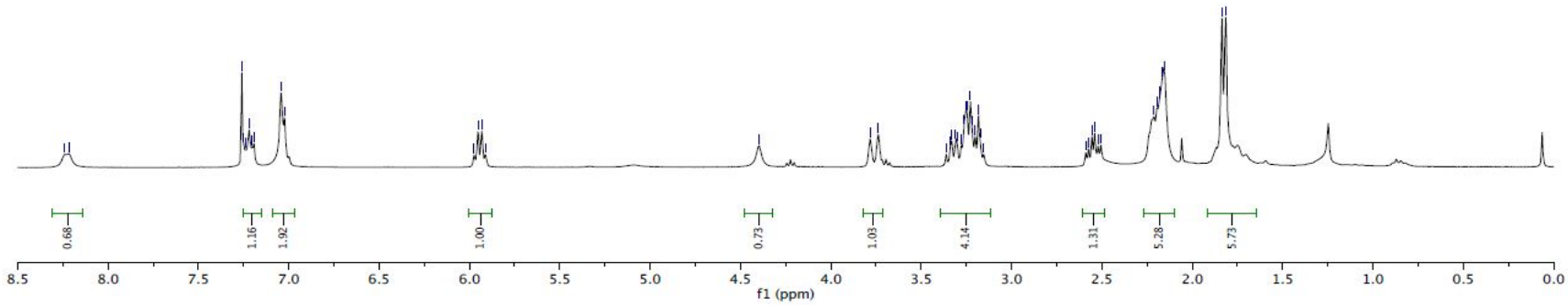
75 MHz, $CDCl_3$

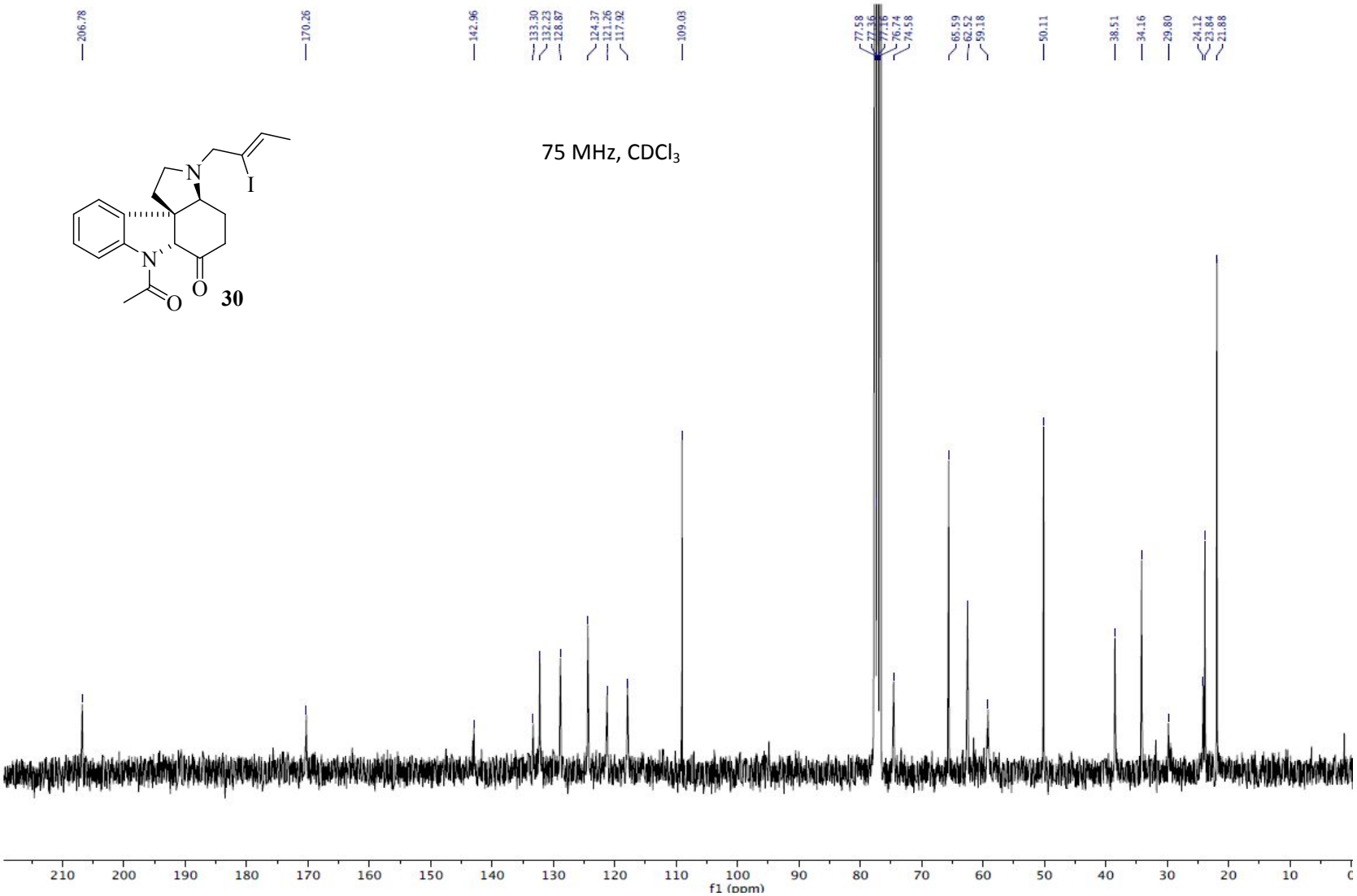


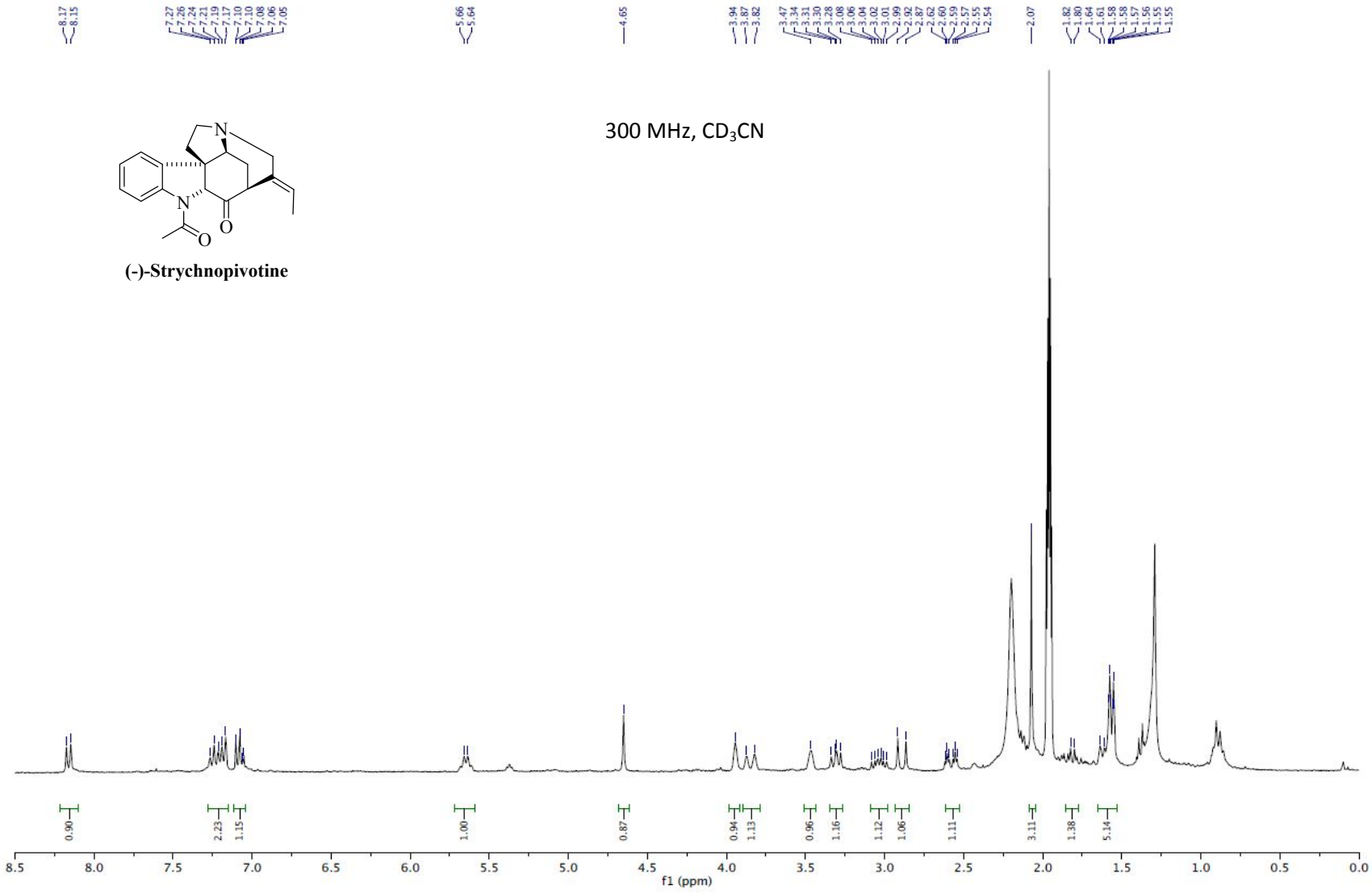


30

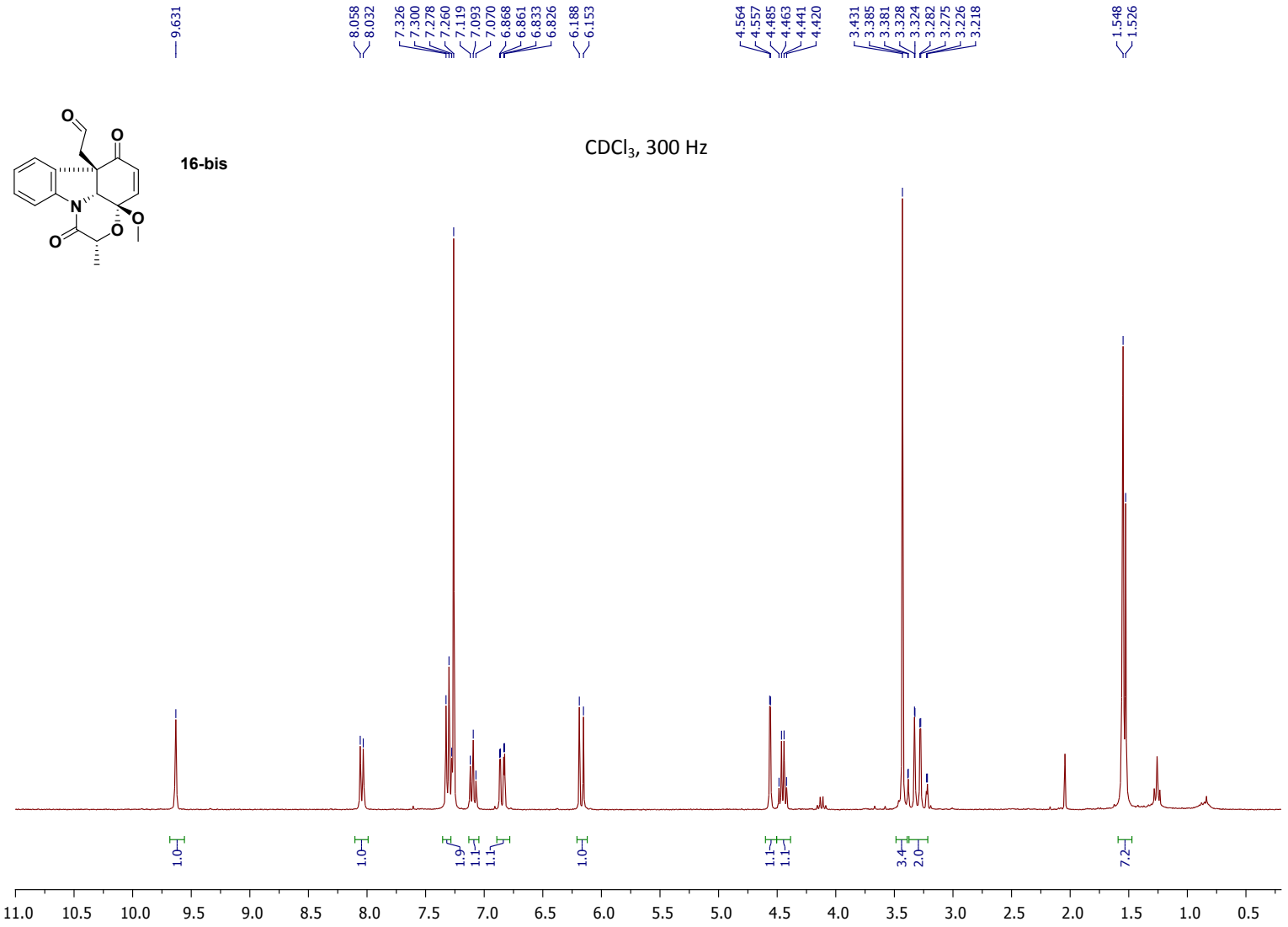
300 MHz, $CDCl_3$

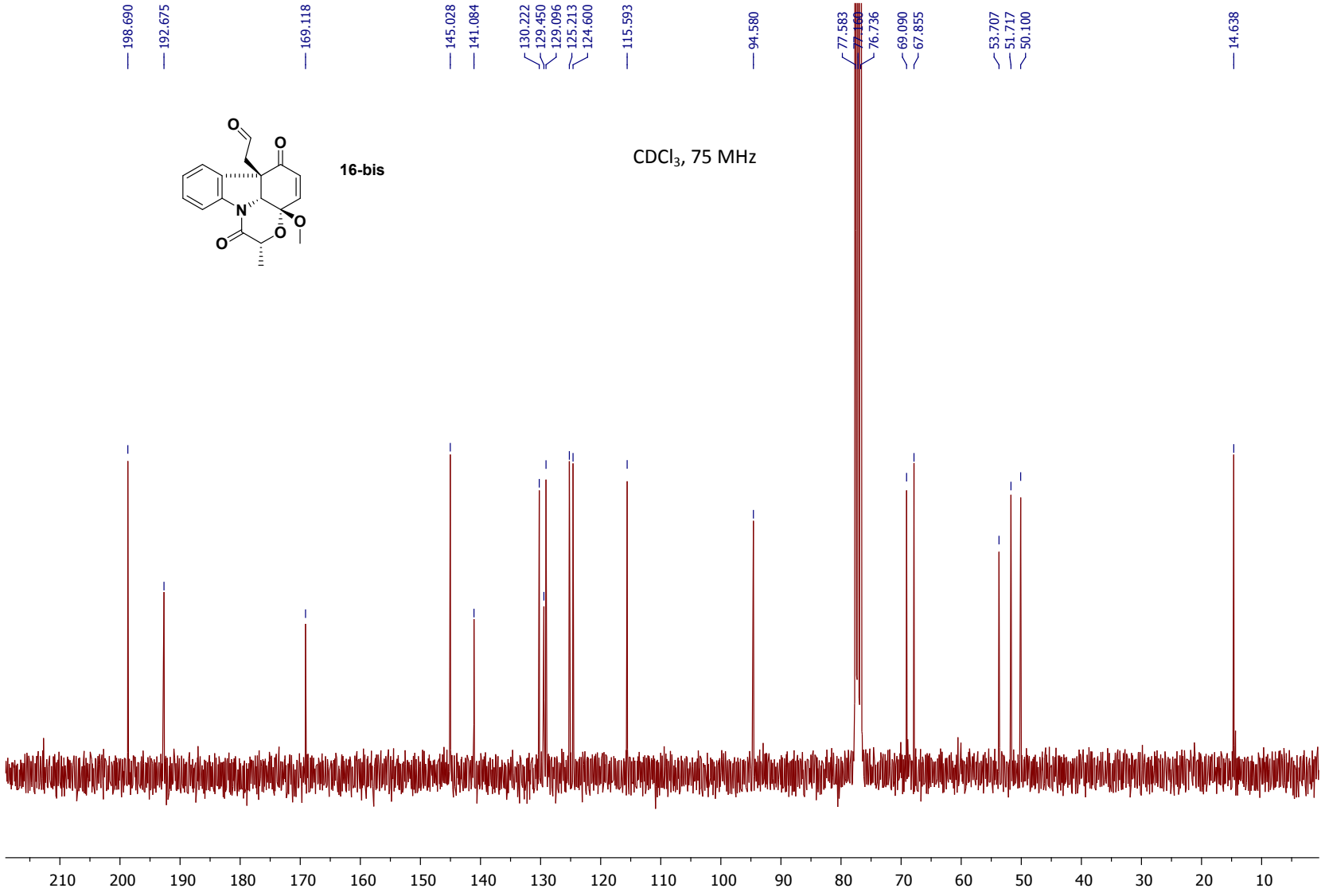


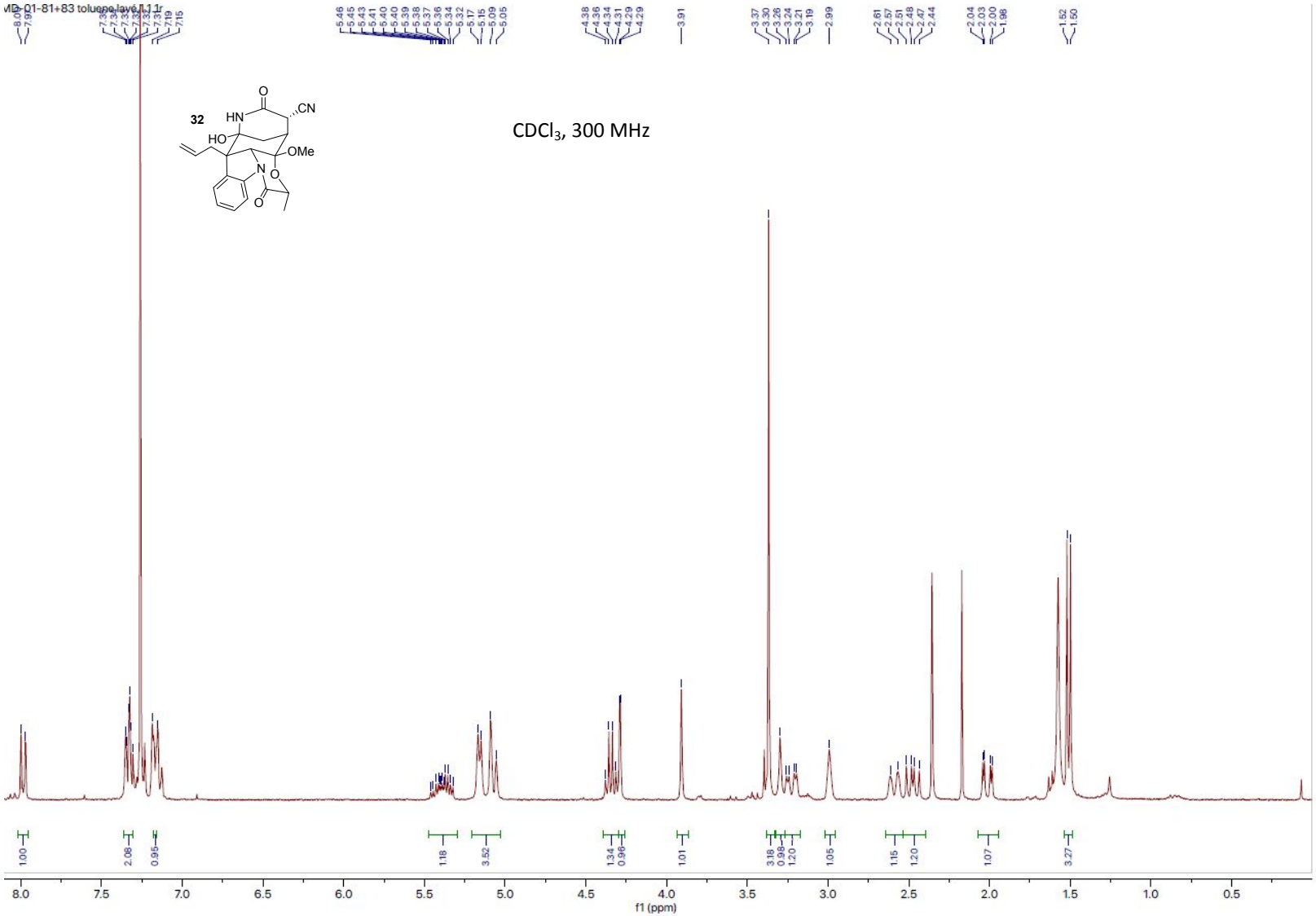

206.78
170.26
142.96
133.30
132.23
128.87
124.37
121.26
117.92
109.03
77.58
77.36
77.16
76.74
74.58
65.59
62.52
59.18
50.11
38.51
34.16
29.80
24.12
23.84
21.88
75 MHz, CDCl3
N
I
N
O
O
30
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
f1 (ppm)

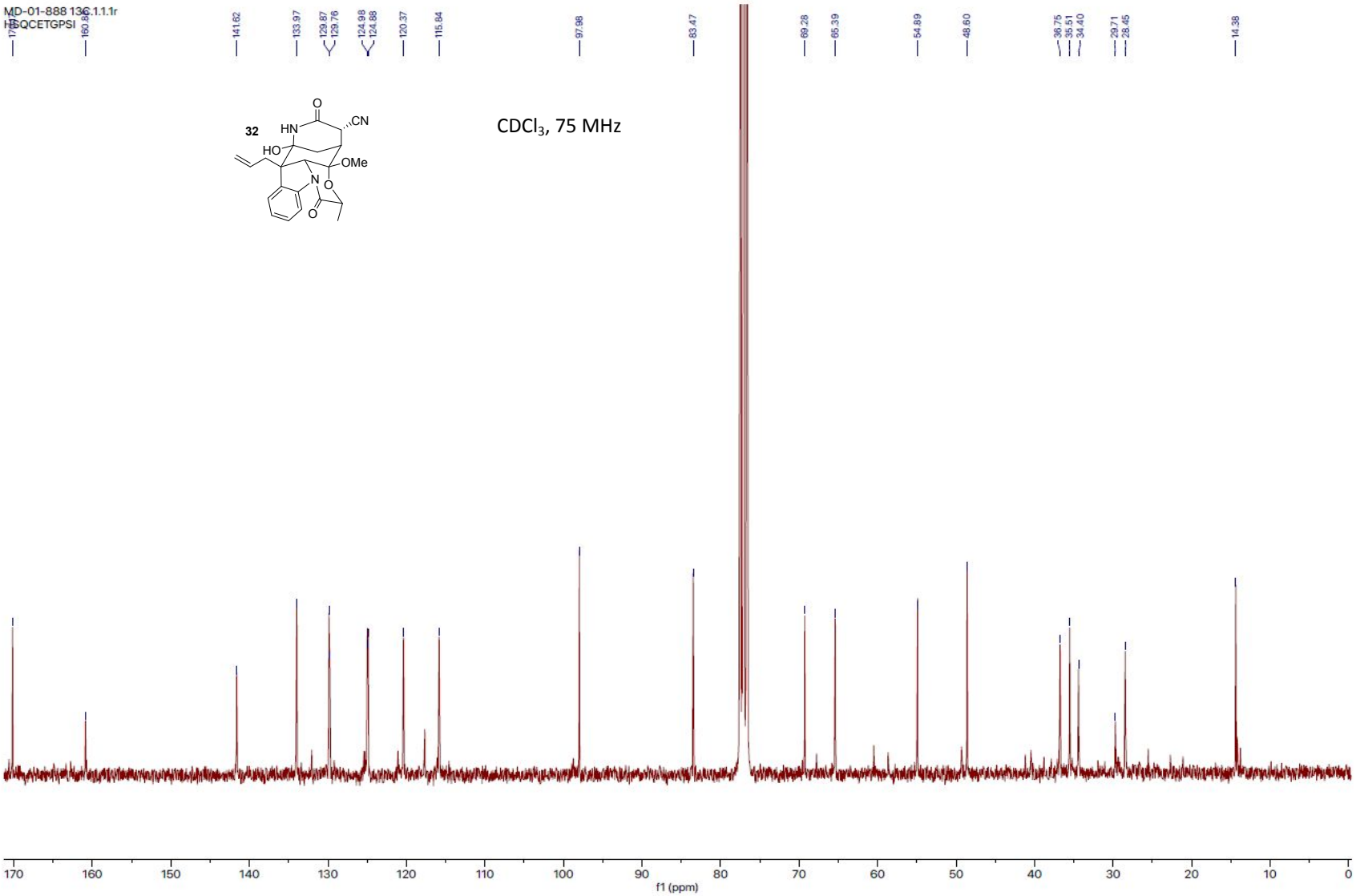


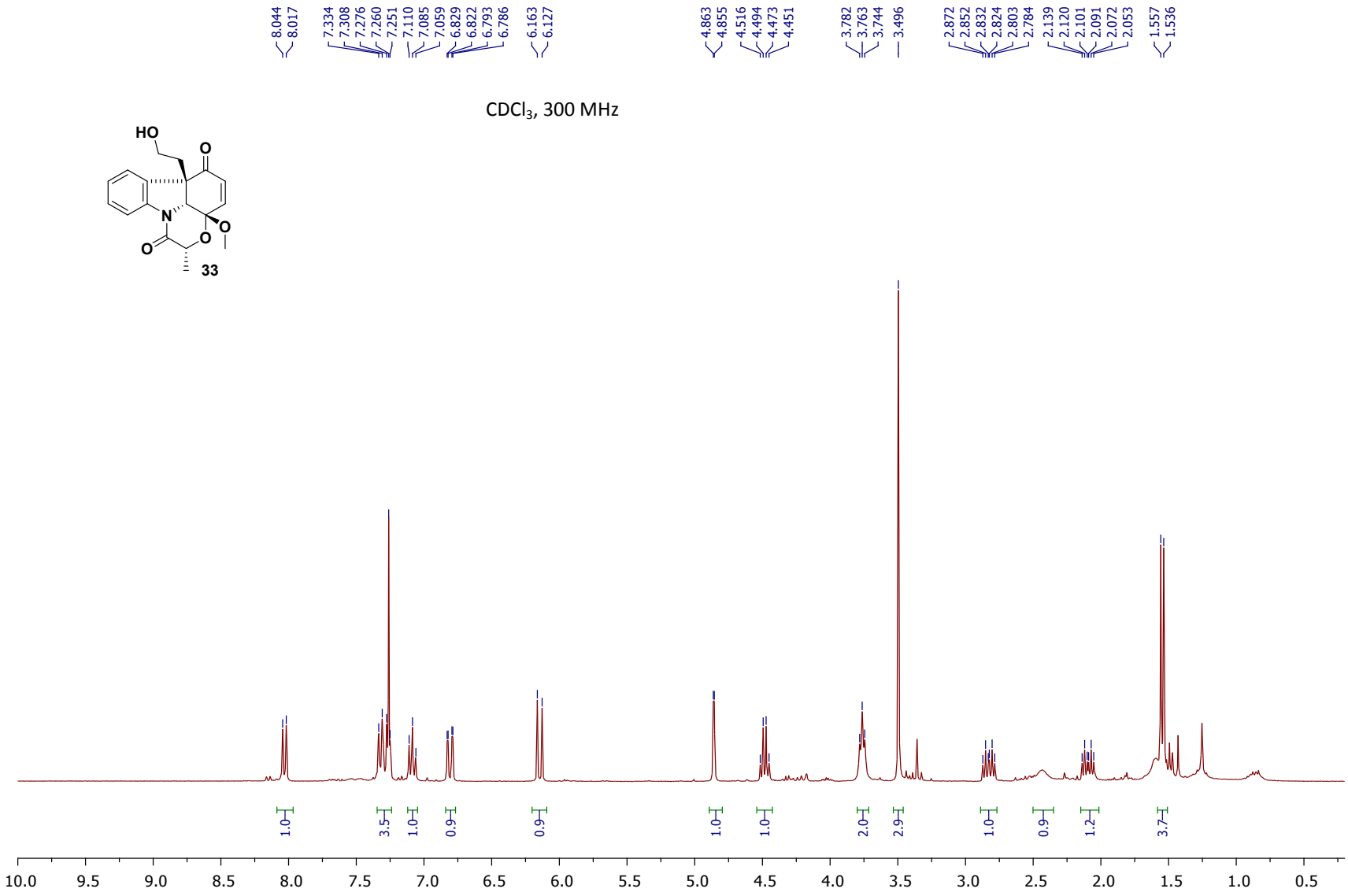
(-)-Strychnopivotine

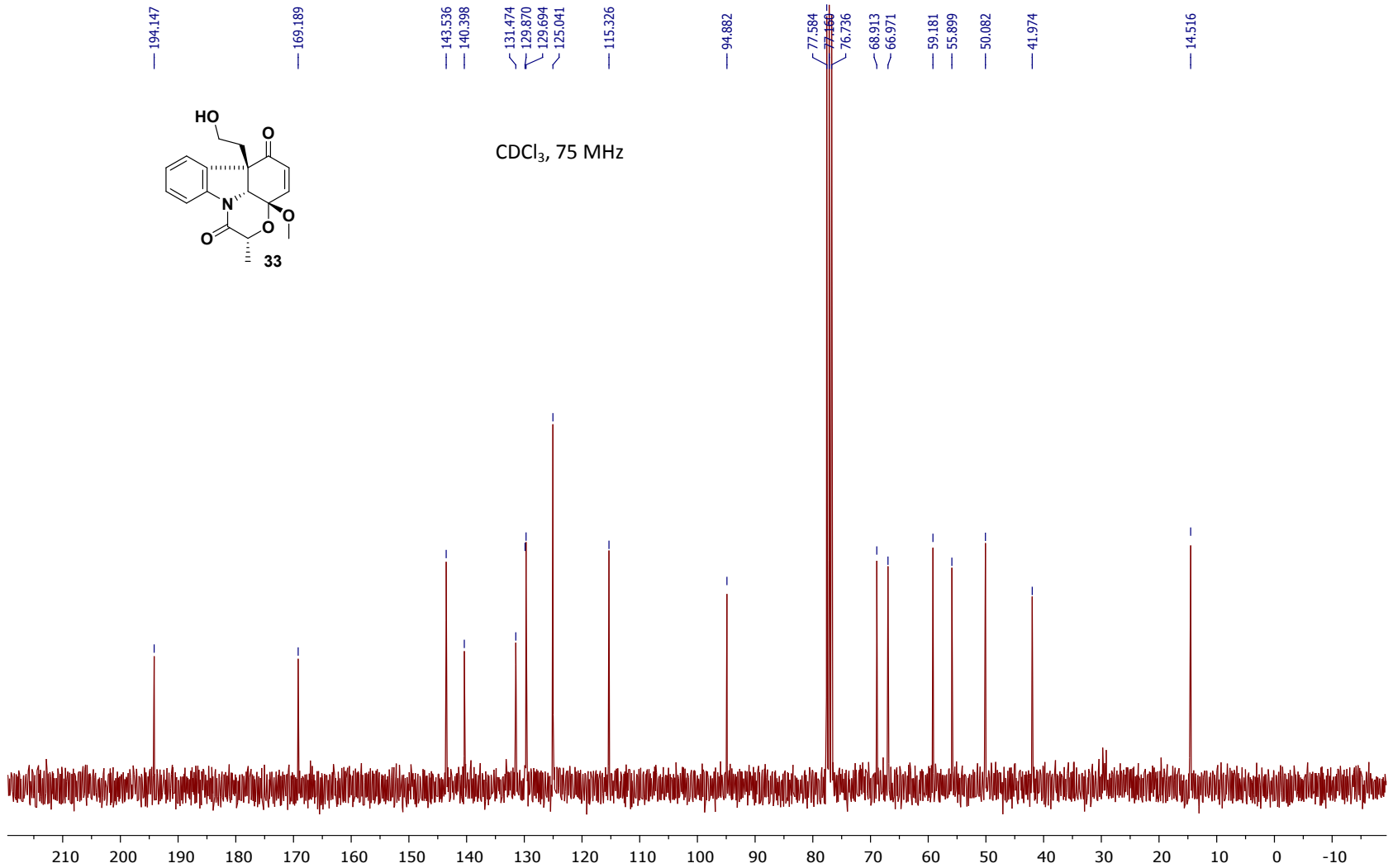

9.631
8.058
8.032
7.326
7.300
7.278
7.260
7.119
7.093
7.070
6.868
6.861
6.833
6.826
6.188
6.153
4.564
4.557
4.485
4.463
4.441
4.420
3.431
3.385
3.381
3.328
3.324
3.282
3.275
3.226
3.218
1.548
1.526
16-bis
CDCl3, 300 Hz
1.0
1.0
1.9
1.1
1.1
1.0
1.1
1.1
3.4
2.0
7.2
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
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

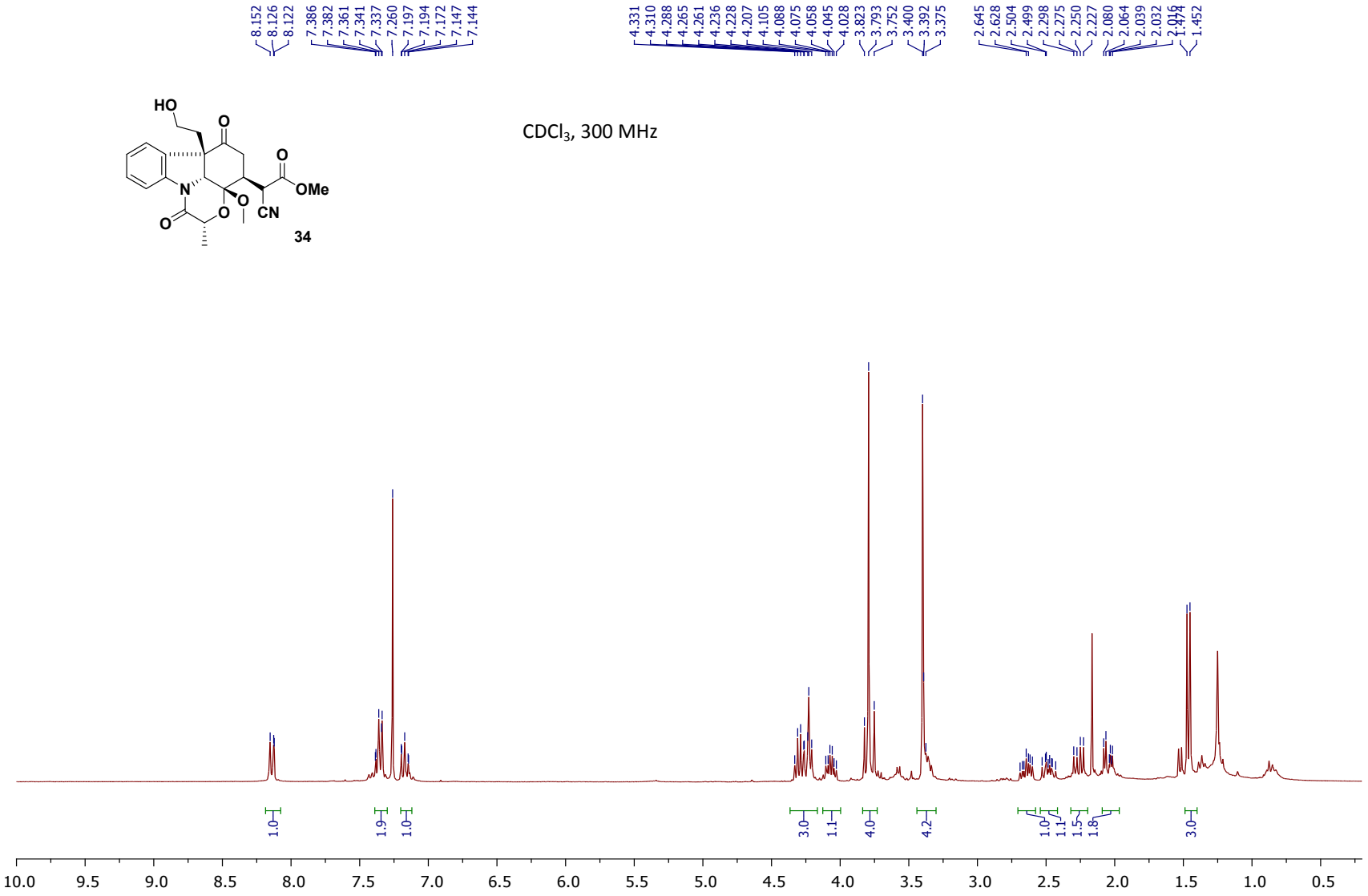

198.690
192.675
169.118
145.028
141.084
130.222
129.450
129.096
125.213
124.600
115.593
94.580
77.583
77.160
76.736
69.090
67.855
53.707
51.717
50.100
14.638
16-bis
CDCl3, 75 MHz
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

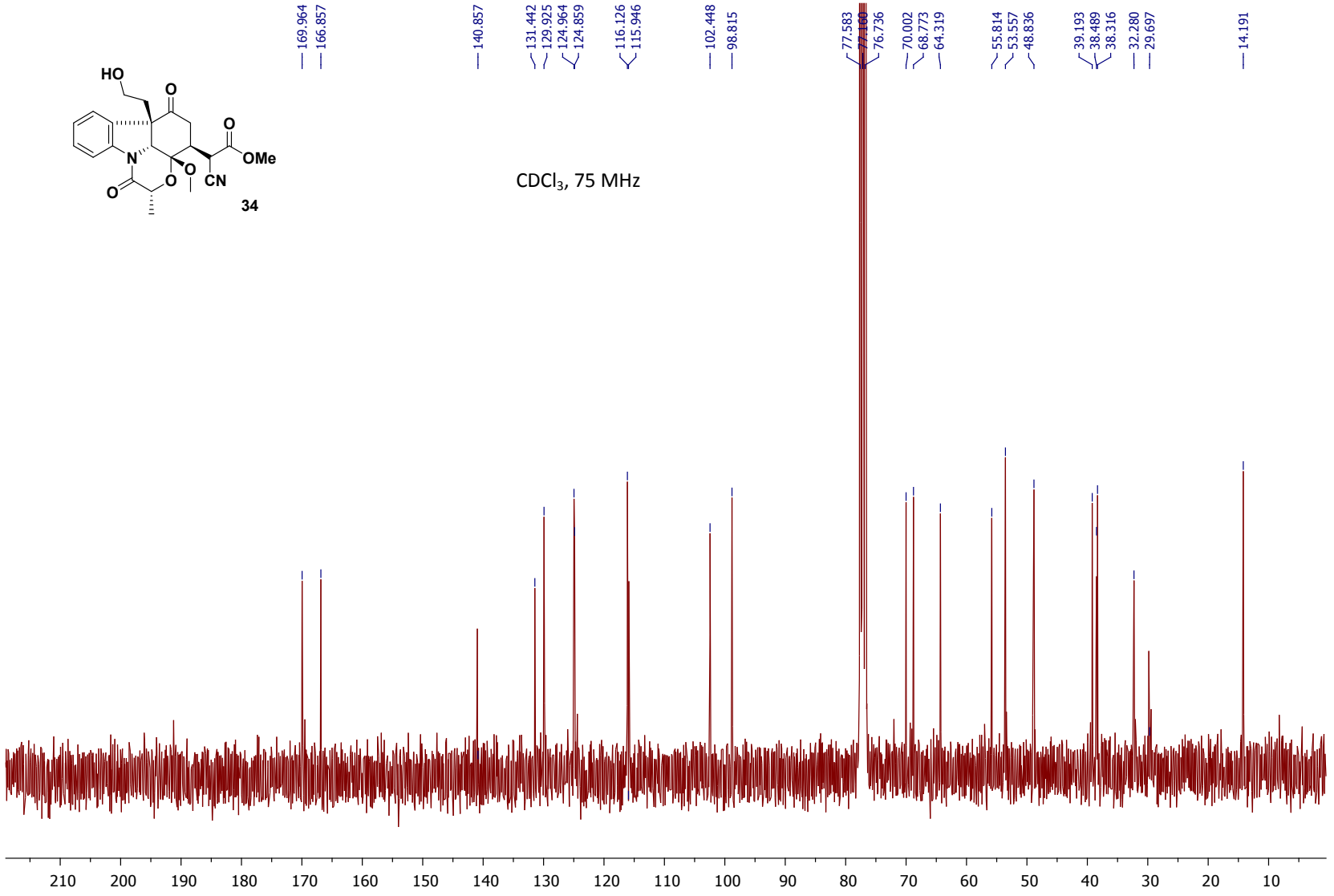

32
CDCl3, 300 MHz
f1 (ppm)

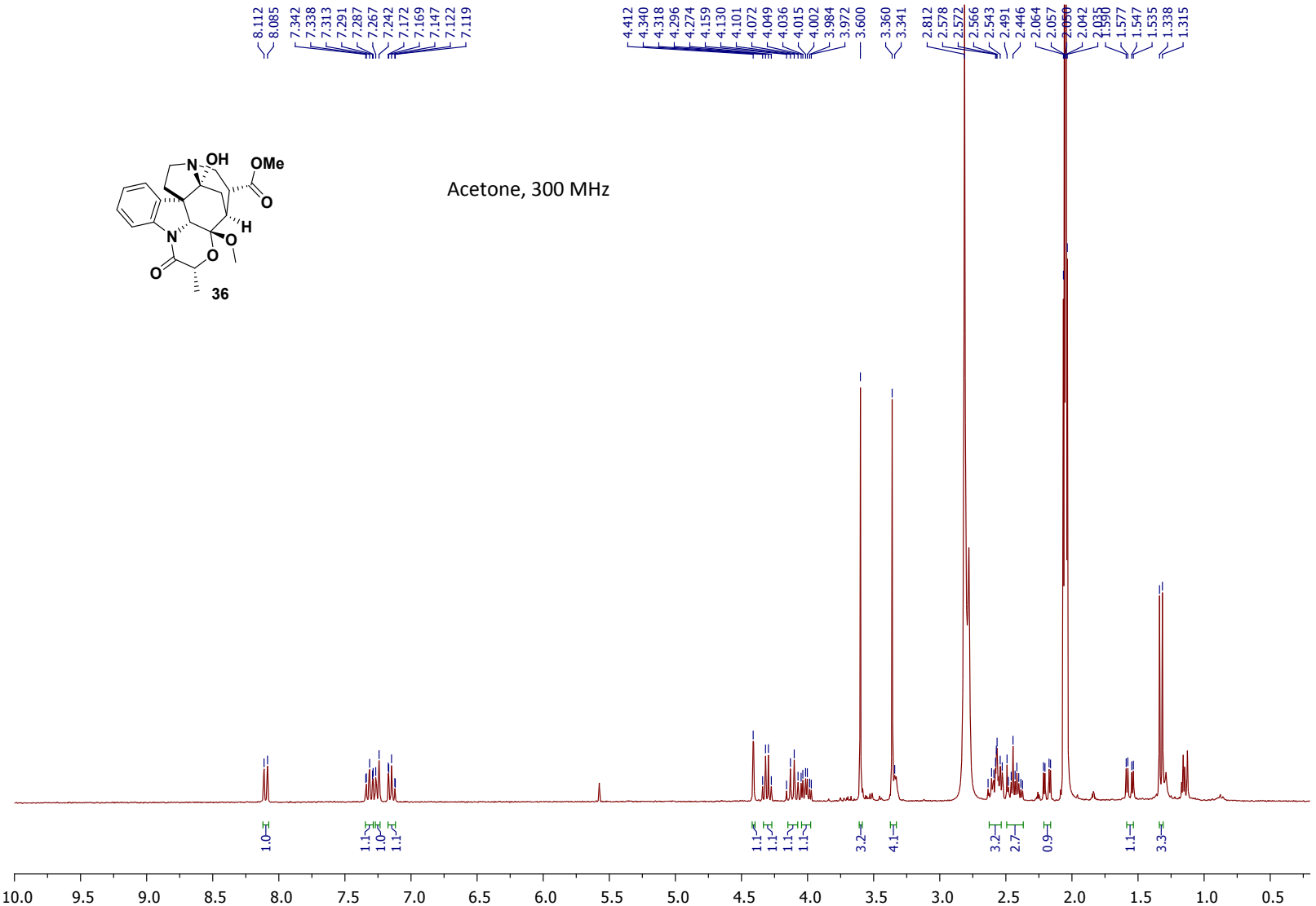

MD-01-888 136.1.1.1r
HSQCETGPSI
160.86
141.62
133.97
129.87
129.76
124.98
124.88
120.37
115.84
97.86
83.47
69.28
65.39
54.89
48.60
36.75
35.51
34.40
29.71
28.45
14.38
32
HN
HO
CN
OMe
N
O
O
O
CDCl3, 75 MHz
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)

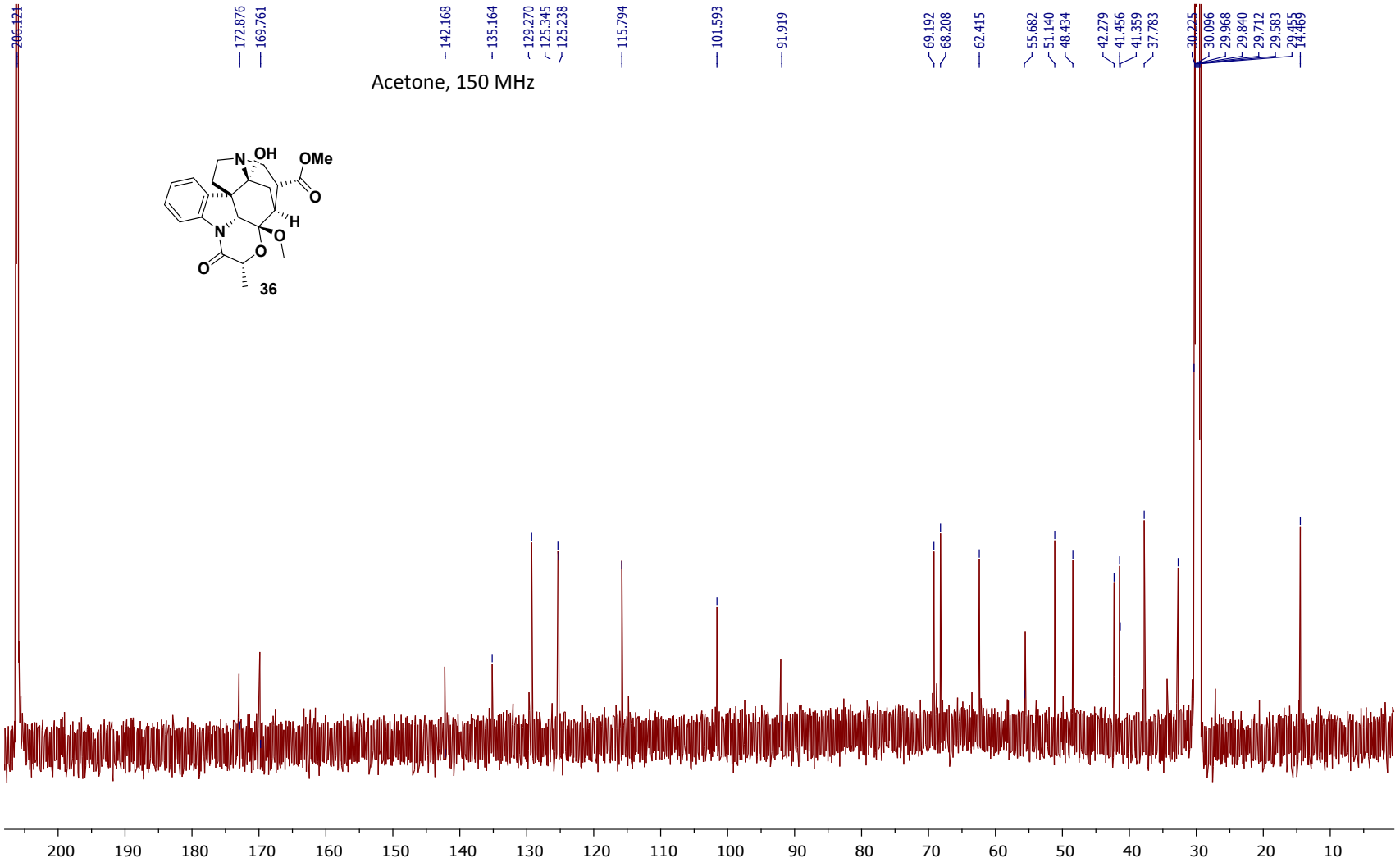

8.044
8.017
7.334
7.308
7.276
7.260
7.251
7.110
7.085
7.059
6.829
6.822
6.793
6.786
6.163
6.127
4.863
4.855
4.516
4.494
4.473
4.451
3.782
3.763
3.744
3.496
2.872
2.852
2.832
2.824
2.803
2.784
2.139
2.120
2.101
2.091
2.072
2.053
1.557
1.536
CDCl3, 300 MHz
HO
O
N
O
O
O
33
1.0
3.5
1.0
0.9
0.9
1.0
1.0
2.0
2.9
1.0
0.9
1.2
3.7
10.0
9.5
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


194.147
169.189
143.536
140.398
131.474
129.870
129.694
125.041
115.326
94.882
77.584
77.160
76.736
68.913
66.971
59.181
55.899
50.082
41.974
14.516
HO
O
N
O
O
O
33
CDCl3, 75 MHz
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10

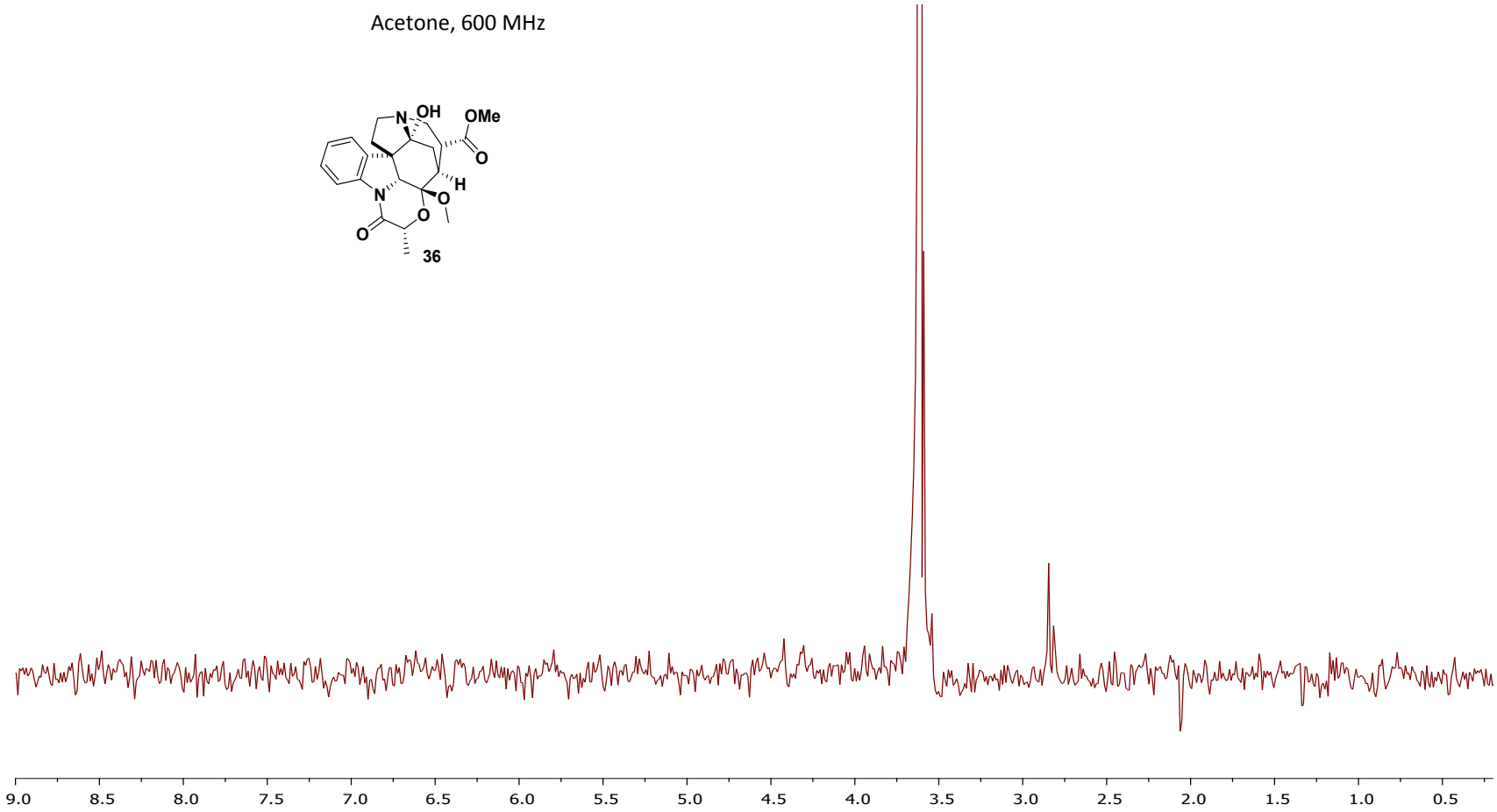

8.152
8.126
8.122
7.386
7.382
7.361
7.341
7.337
7.260
7.197
7.194
7.172
7.147
7.144
4.331
4.310
4.288
4.265
4.261
4.236
4.228
4.207
4.105
4.088
4.075
4.058
4.045
4.028
3.823
3.793
3.752
3.400
3.392
3.375
2.645
2.628
2.504
2.499
2.298
2.275
2.250
2.227
2.080
2.064
2.039
2.032
2.016
1.474
1.452
HO
O
O
OMe
N
O
O
CN
O
34
CDCl3, 300 MHz
1.0
1.9
1.0
3.0
1.1
4.0
4.2
1.0
1.1
1.5
1.8
3.0
10.0
9.5
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


169.964
166.857
140.857
131.442
129.925
124.964
124.859
116.126
115.946
102.448
98.815
77.583
77.160
76.736
70.002
68.773
64.319
55.814
53.557
48.836
39.193
38.489
38.316
32.280
29.697
14.191
HO
O
O
OMe
N
O
O
O
CN
34
CDCl3, 75 MHz
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

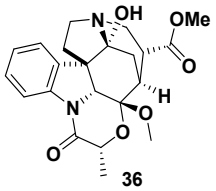

8.112
8.085
7.342
7.338
7.313
7.291
7.287
7.267
7.242
7.172
7.169
7.147
7.122
7.119
4.412
4.340
4.318
4.296
4.274
4.159
4.130
4.101
4.072
4.049
4.036
4.015
4.002
3.984
3.972
3.600
3.360
3.341
2.812
2.578
2.572
2.566
2.543
2.491
2.446
2.064
2.057
2.050
2.042
2.035
1.590
1.577
1.547
1.535
1.338
1.315
OH
OMe
O
H
N
O
O
O
N
36
Acetone, 300 MHz
1.0
1.1
1.0
1.1
1.1
1.1
1.1
3.2
4.1
3.2
2.7
0.9
1.1
3.3
10.0
9.5
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


206.121
172.876
169.761
142.168
135.164
129.270
125.345
125.238
115.794
101.593
91.919
69.192
68.208
62.415
55.682
51.140
48.434
42.279
41.456
41.359
37.783
30.225
30.096
29.968
29.840
29.712
29.583
29.455
14.469
Acetone, 150 MHz
N
OH
OMe
O
H
N
O
O
O
36
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

NOE ^{1}H-^{1}H Peak at 3.60 ppm :

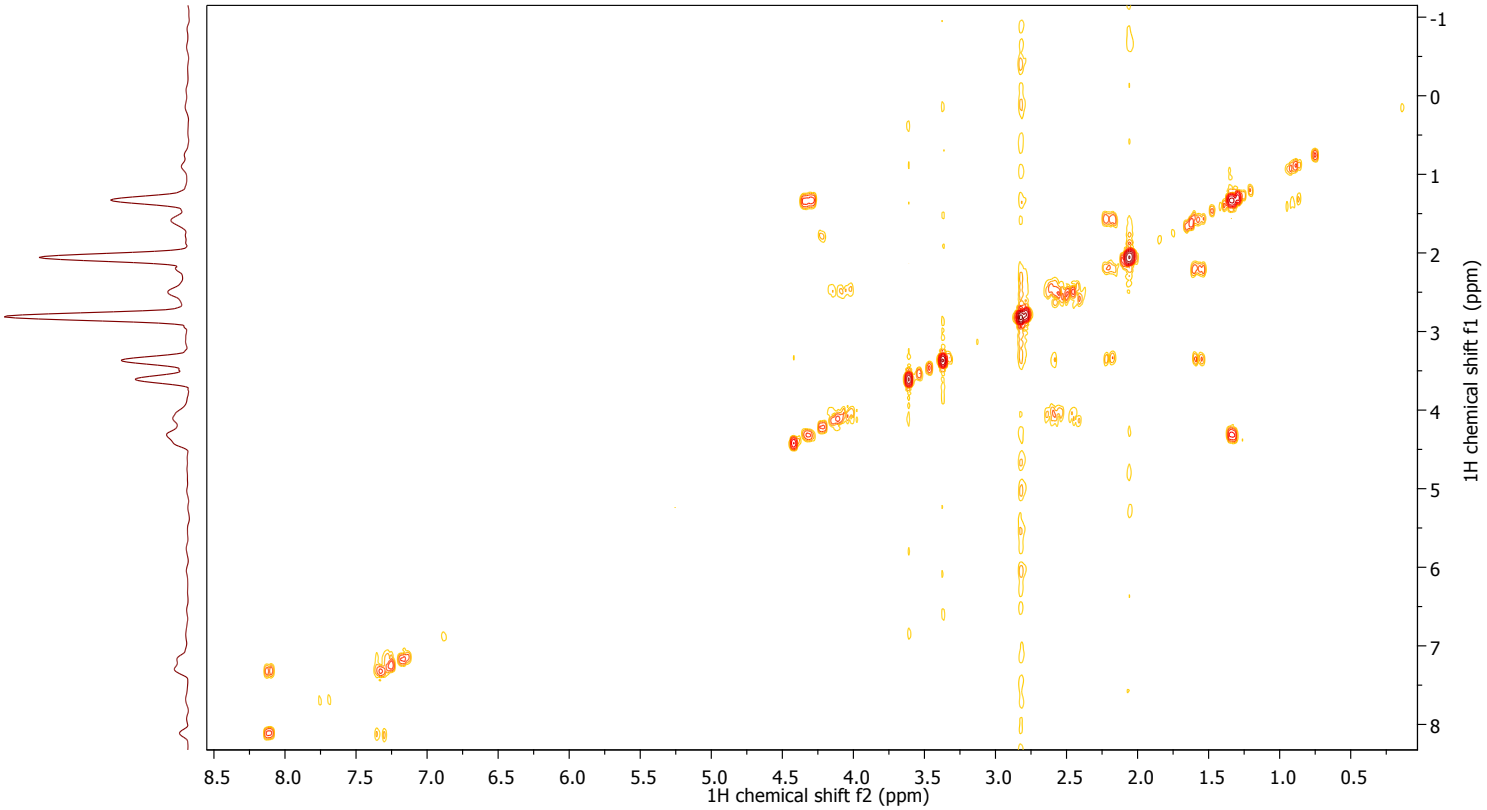


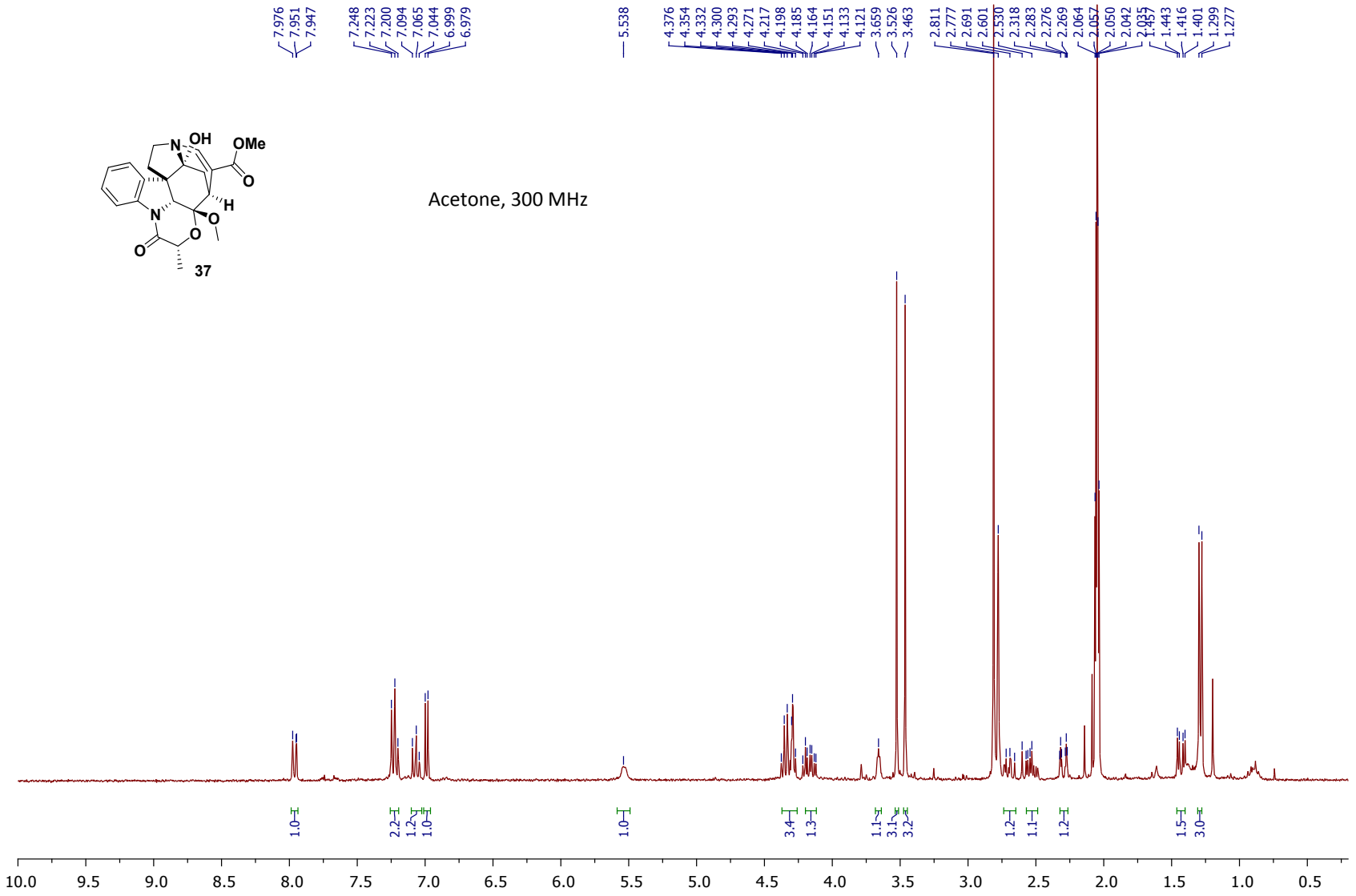
COSY ^{1}H-^{1}H:

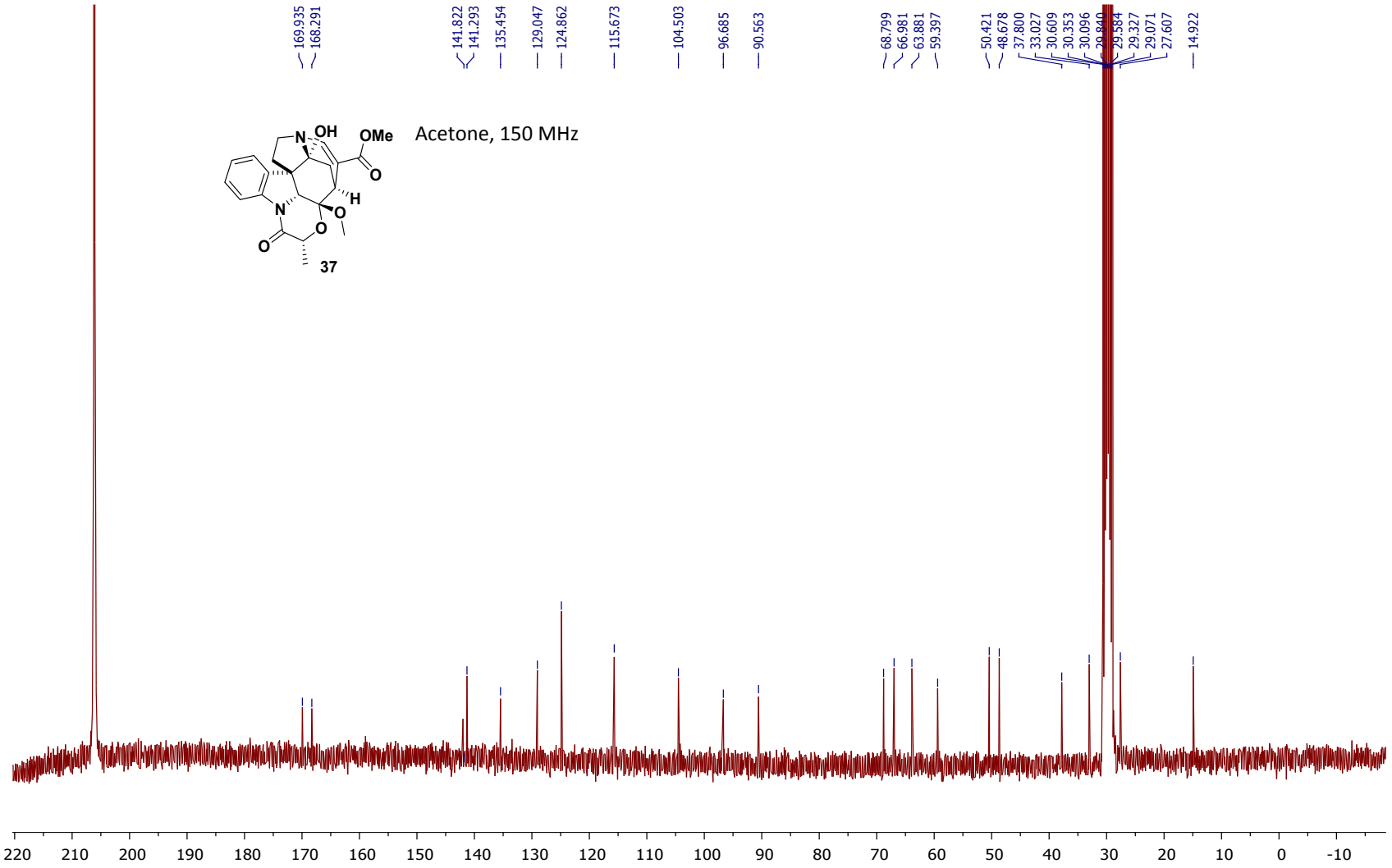


36

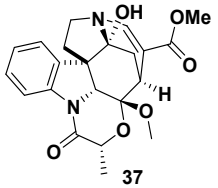
Acetone, 300 MHz



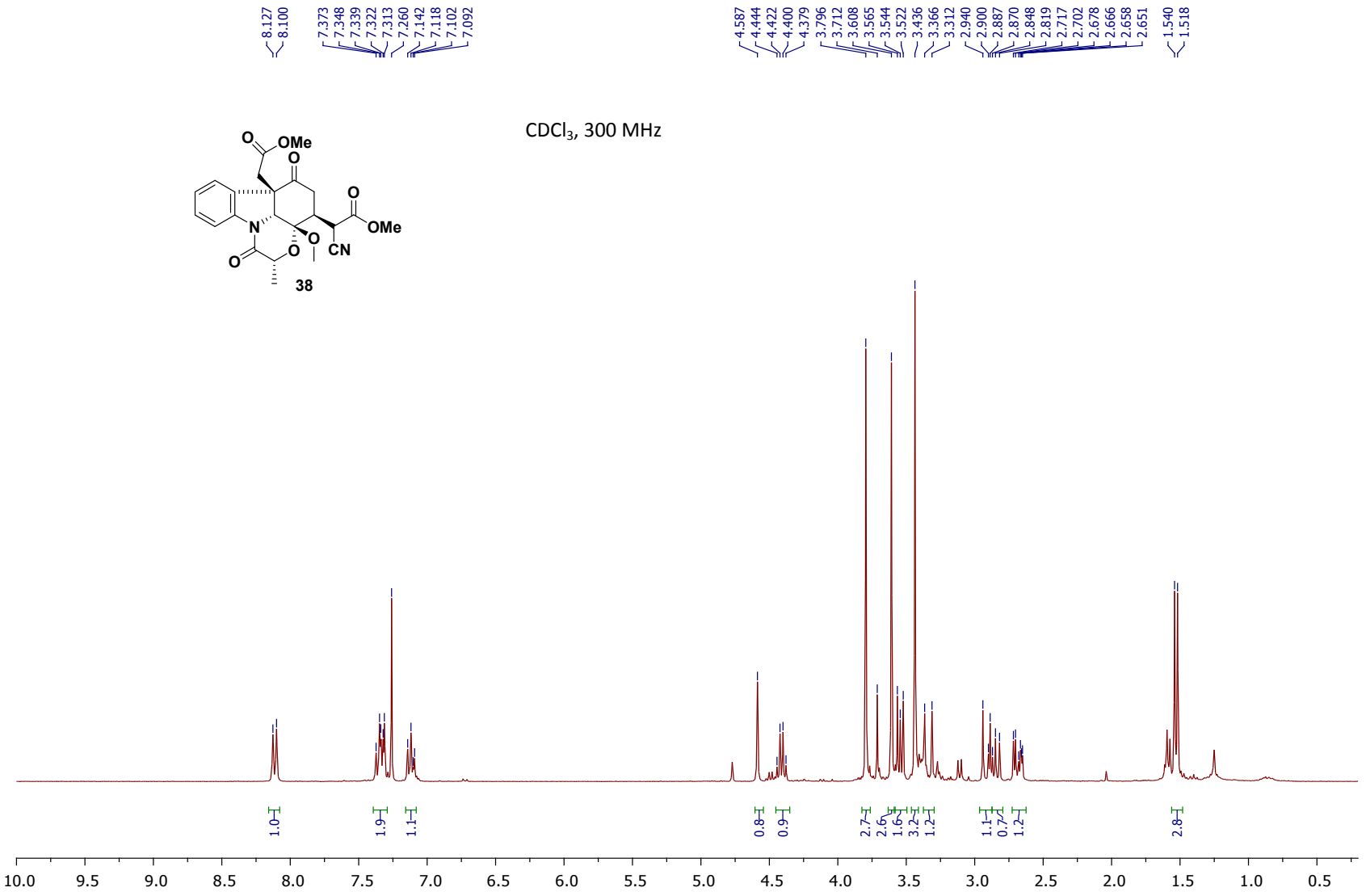

7.976
7.951
7.947
7.248
7.223
7.200
7.094
7.065
7.044
6.999
6.979
5.538
4.376
4.354
4.332
4.300
4.293
4.271
4.217
4.198
4.185
4.164
4.151
4.133
4.121
3.659
3.526
3.463
2.811
2.777
2.691
2.601
2.530
2.318
2.283
2.276
2.269
2.064
2.052
2.050
2.042
1.443
1.416
1.401
1.299
1.277
OH
OMe
O
H
N
O
O
O
37
Acetone, 300 MHz
1.0
2.2
1.2
1.0
1.0
3.4
1.3
1.1
3.1
3.2
1.2
1.1
1.2
1.5
3.0
10.0
9.5
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

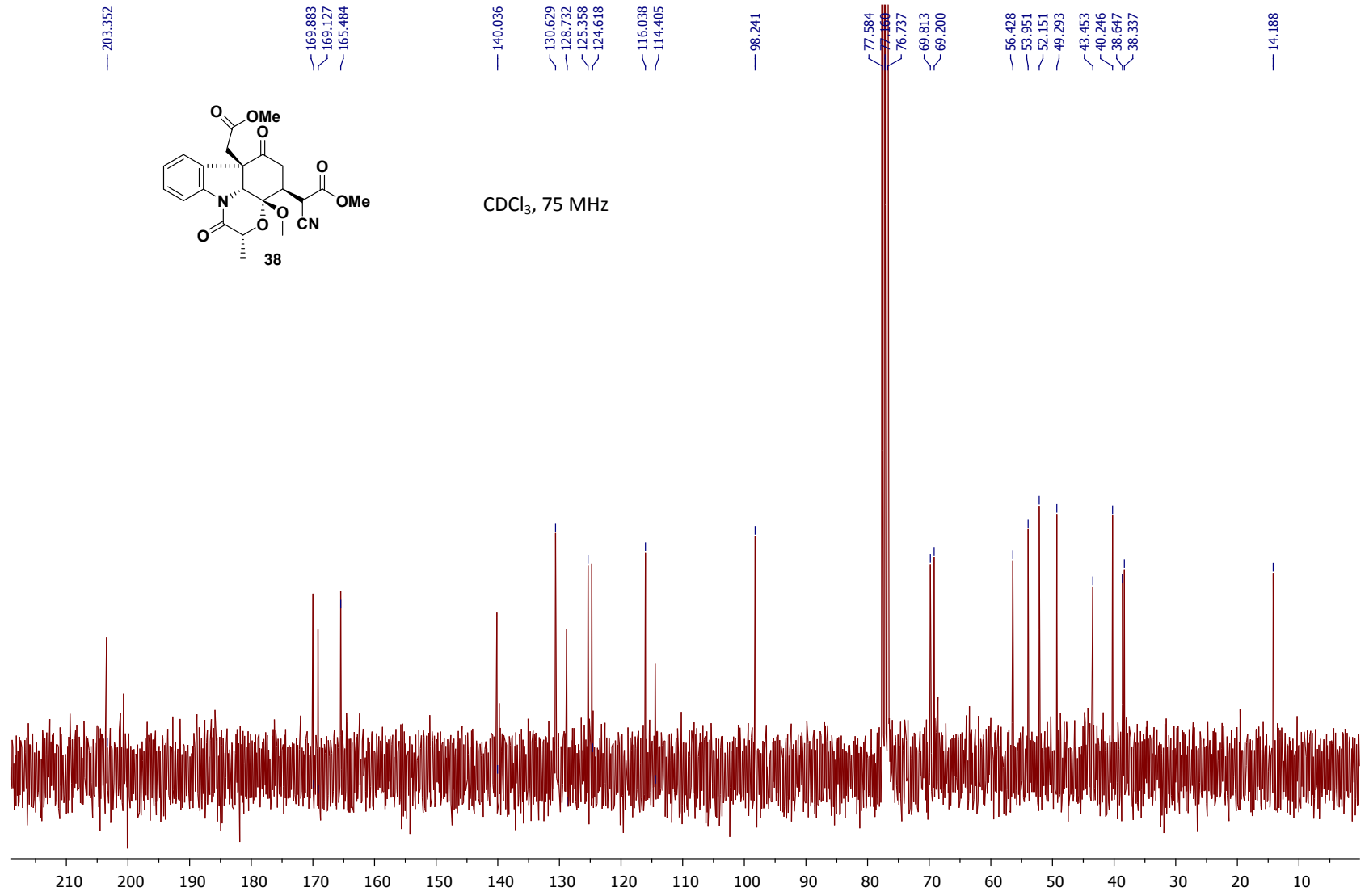

169.935
168.291
141.822
141.293
135.454
129.047
124.862
115.673
104.503
96.685
90.563
68.799
66.981
63.881
59.397
50.421
48.678
37.800
33.027
30.609
30.353
30.096
29.840
29.584
29.327
29.071
27.607
14.922
OH
OMe
O
H
N
O
O
O
37
Acetone, 150 MHz
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10

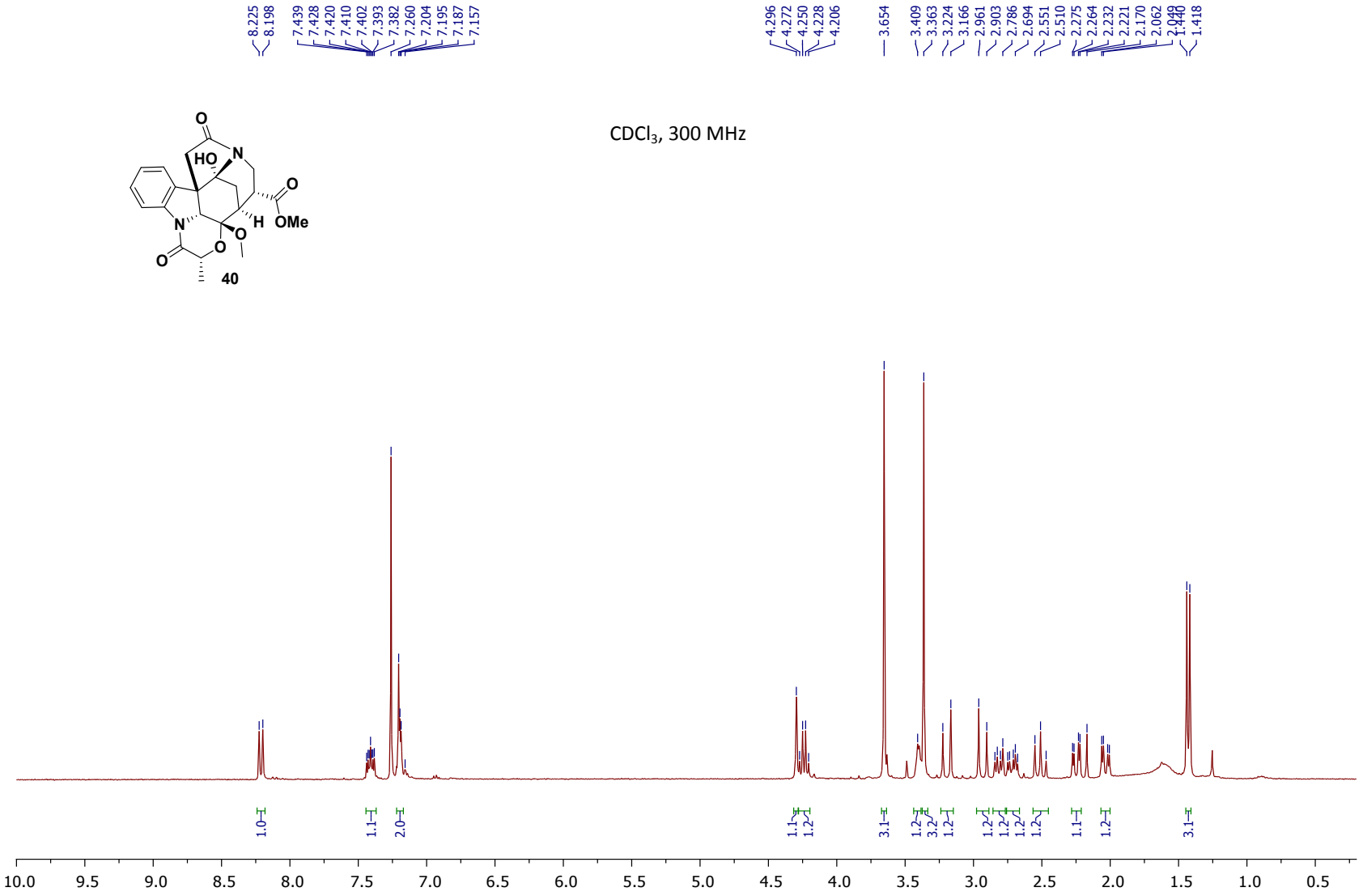
COSY ^{1}H-^{1}H

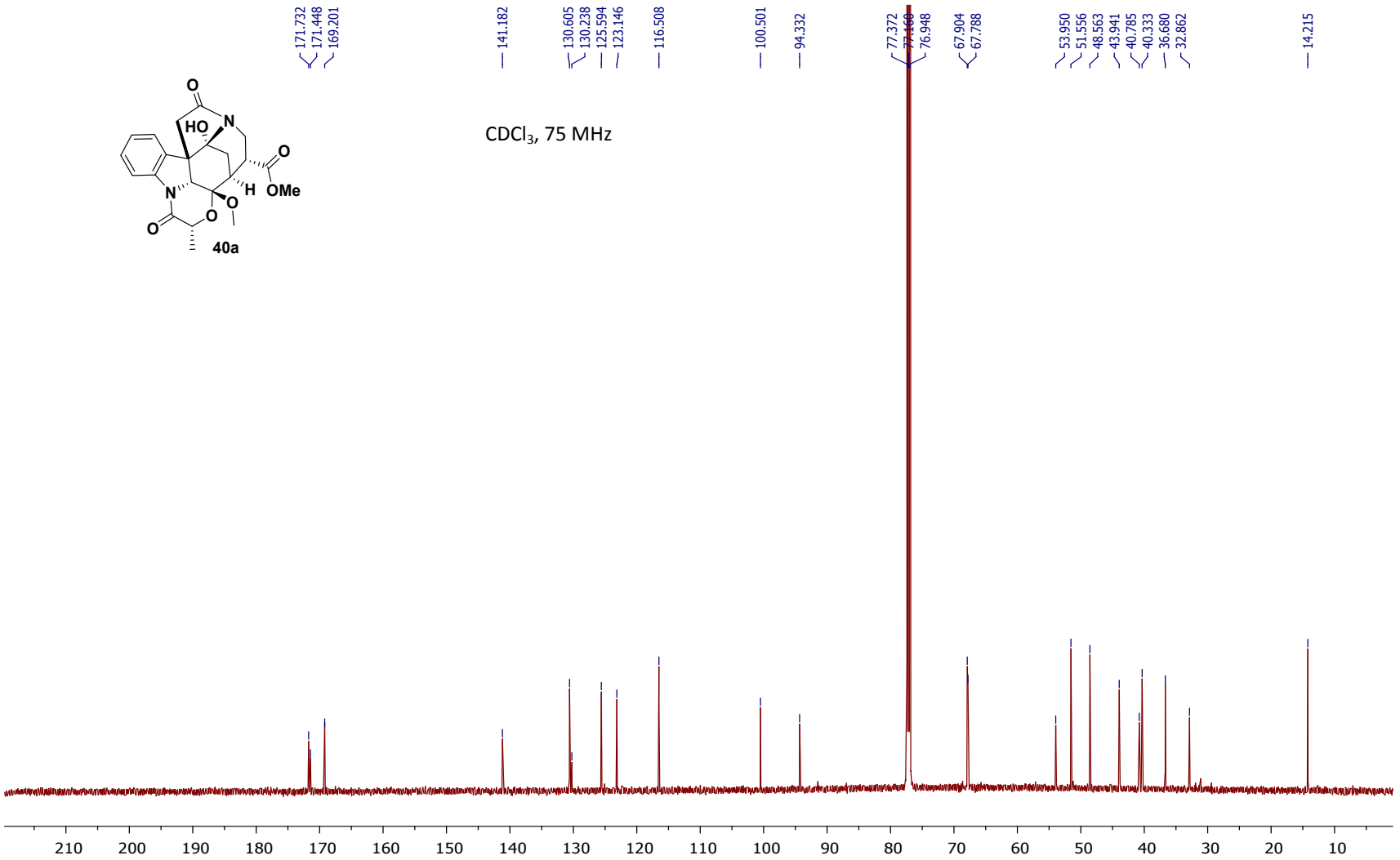


$CDCl_3$, 300 MHz


8.127
8.100
7.373
7.348
7.339
7.322
7.313
7.260
7.142
7.118
7.102
7.092
4.587
4.444
4.422
4.400
4.379
3.796
3.712
3.608
3.565
3.544
3.522
3.436
3.366
3.312
2.940
2.900
2.887
2.870
2.848
2.819
2.717
2.702
2.678
2.666
2.658
2.651
1.540
1.518
CDCl3, 300 MHz
OMe
O
O
O
OMe
N
O
O
CN
O
38
1.0
1.9
1.1
0.8
0.9
2.7
2.6
1.6
3.2
1.2
1.1
0.7
1.2
2.8
10.0
9.5
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

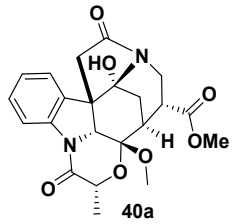

203.352
169.883
169.127
165.484
140.036
130.629
128.732
125.358
124.618
116.038
114.405
98.241
77.584
77.160
76.737
69.813
69.200
56.428
53.951
52.151
49.293
43.453
40.246
38.647
38.337
14.188
CDCl3, 75 MHz
38
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10


8.225
8.198
7.439
7.428
7.420
7.410
7.402
7.393
7.382
7.260
7.204
7.195
7.187
7.157
4.296
4.272
4.250
4.228
4.206
3.654
3.409
3.363
3.224
3.166
2.961
2.903
2.786
2.694
2.551
2.510
2.275
2.264
2.232
2.221
2.170
2.062
2.049
1.440
1.418
HO
N
O
O
H
OMe
N
O
O
O
O
40
CDCl3, 300 MHz
1.0
1.1
2.0
1.1
1.2
3.1
1.2
3.2
1.2
1.2
1.2
1.2
1.2
1.1
1.2
3.1
10.0
9.5
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


171.732
171.448
169.201
141.182
130.605
130.238
125.594
123.146
116.508
100.501
94.332
77.372
77.160
76.948
67.904
67.788
53.950
51.556
48.563
43.941
40.785
40.333
36.680
32.862
14.215
CDCl3, 75 MHz
HO
N
O
O
H
OMe
N
O
O
O
40a
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

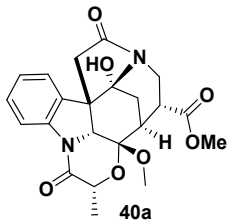
NOE ^{1}H-^{1}H Peak at 3.65 ppm :

$CDCl_3$, 600 MHz

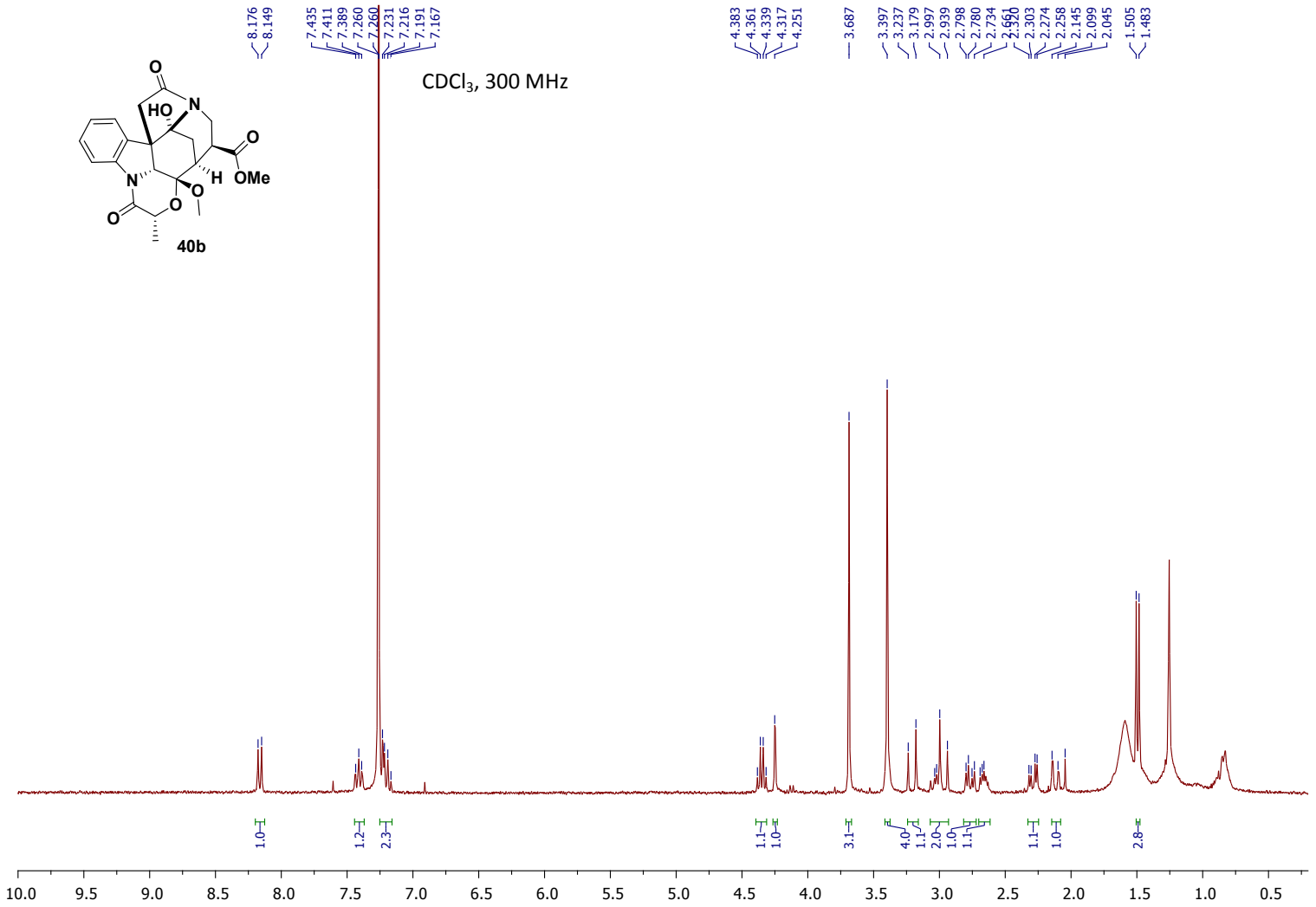


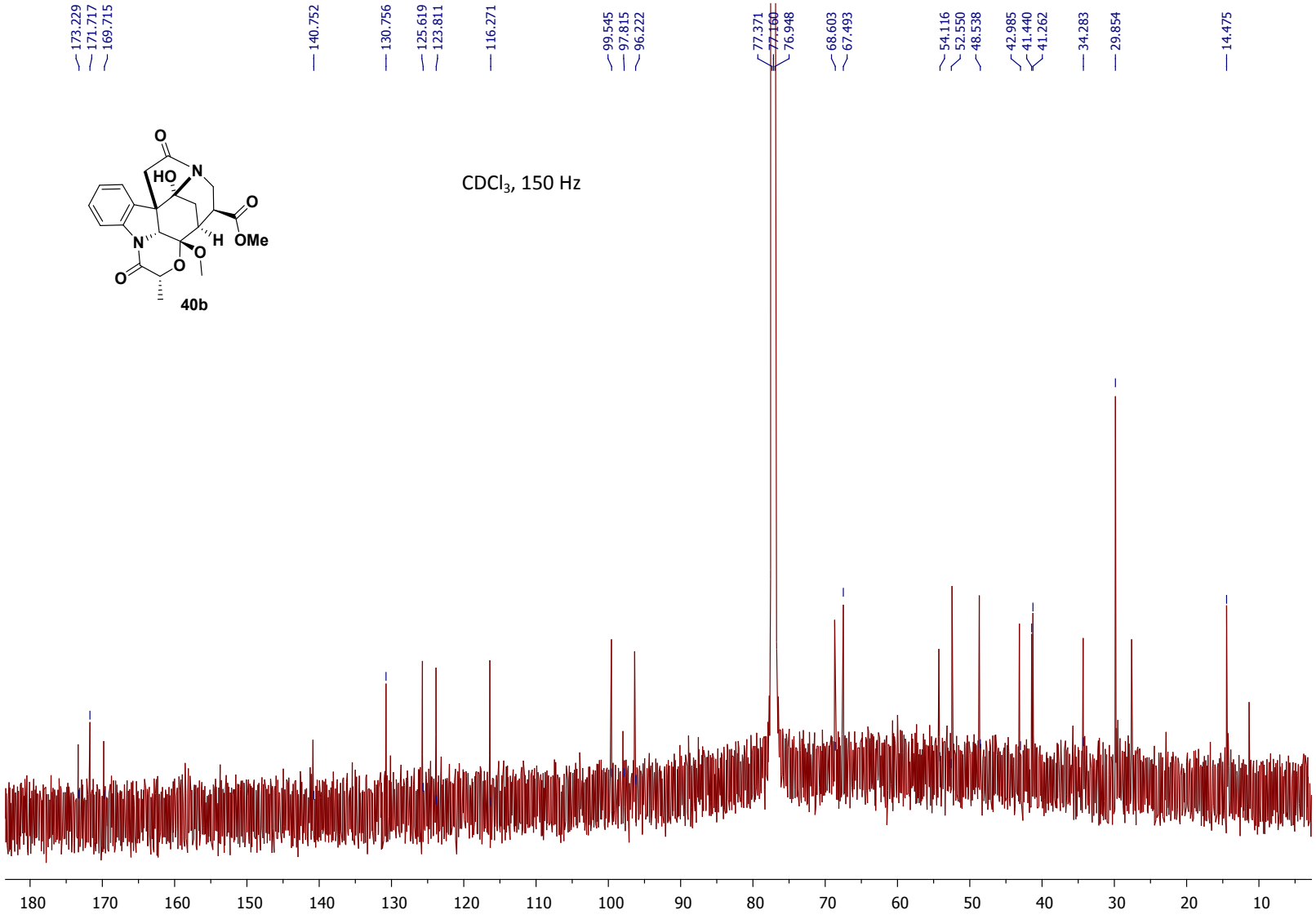
40a

COSY ^{1}H-^{1}H:

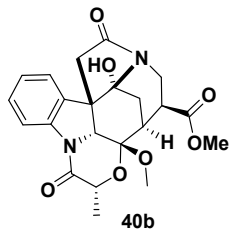


40a


8.176
8.149
7.435
7.411
7.389
7.260
7.260
7.231
7.216
7.191
7.167
4.383
4.361
4.339
4.317
4.251
3.687
3.397
3.237
3.179
2.997
2.939
2.798
2.780
2.734
2.303
2.274
2.258
2.145
2.099
2.045
1.505
1.483
CDCl3, 300 MHz
HO
N
O
O
N
H
OMe
O
O
O
40b
1.0
1.2
2.3
1.1
1.0
3.1
4.0
1.1
2.0
1.0
1.1
1.1
1.0
2.8
10.0
9.5
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

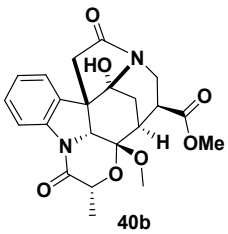

173.229
171.717
169.715
140.752
130.756
125.619
123.811
116.271
99.545
97.815
96.222
77.371
77.160
76.948
68.603
67.493
54.116
52.550
48.538
42.985
41.440
41.262
34.283
29.854
14.475
CDCl3, 150 Hz
40b
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

NOE ^{1}H-^{1}H Peak at 3.69 ppm :

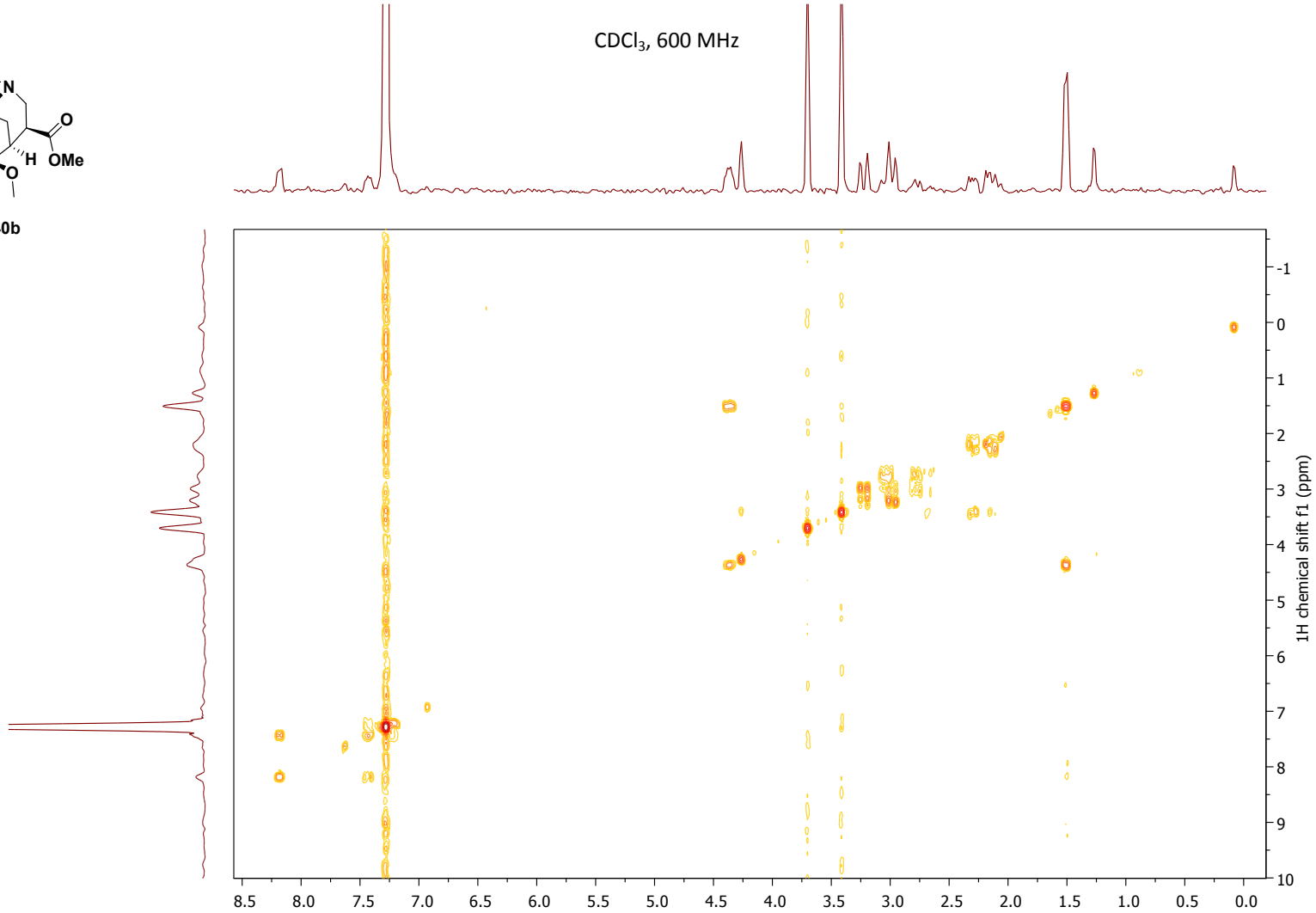


40b

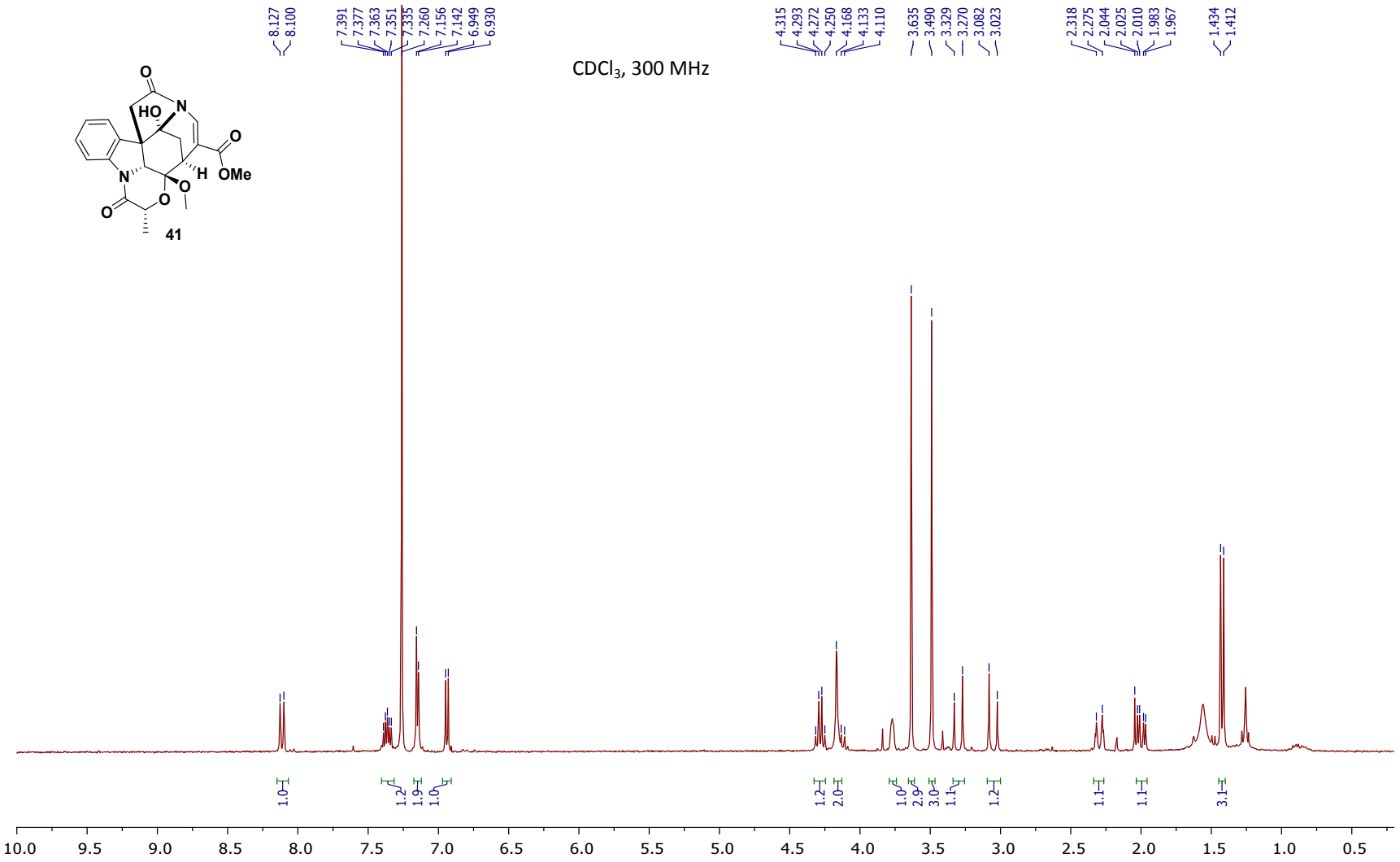
$CDCl_3$, 600 MHz

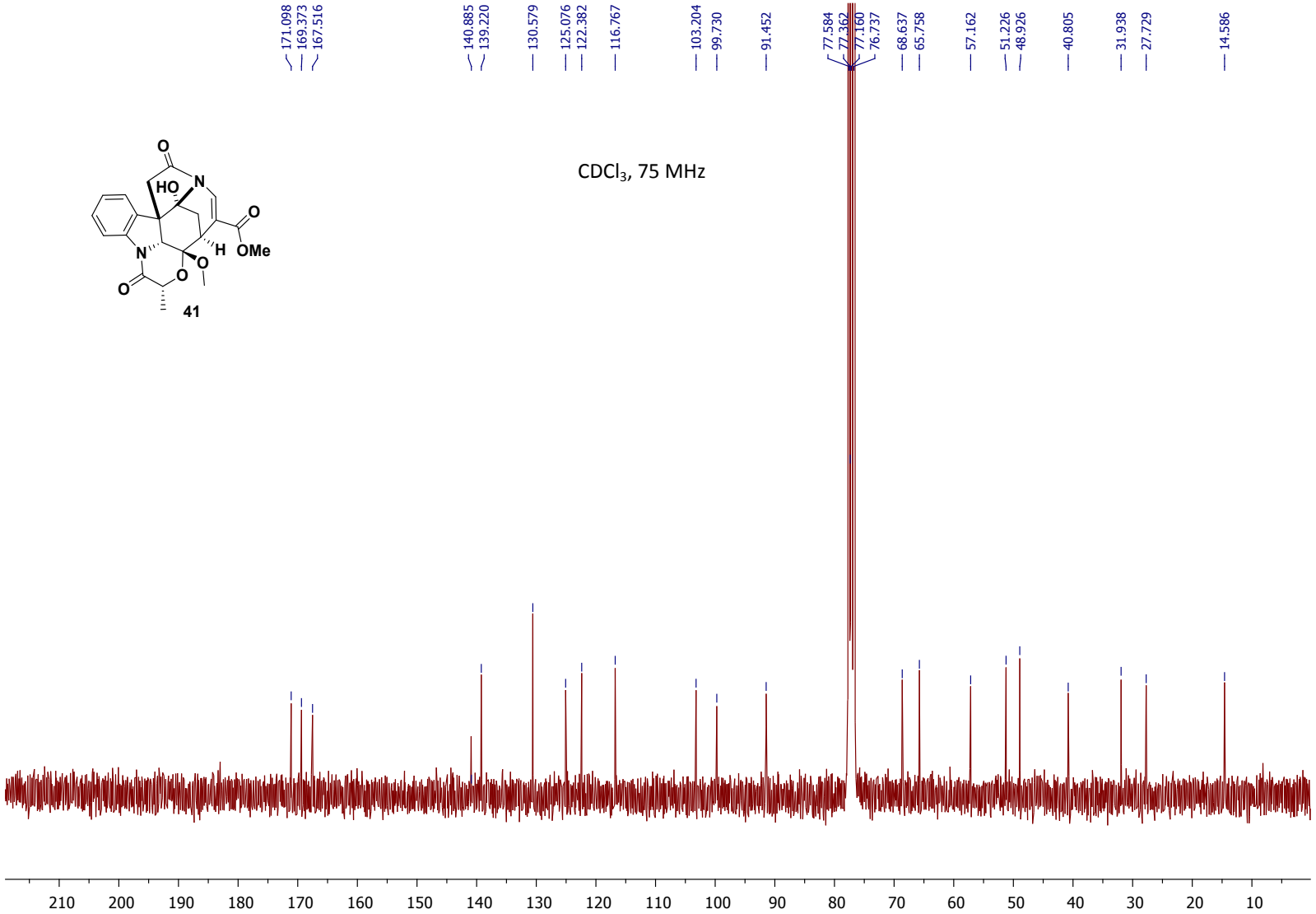


40b



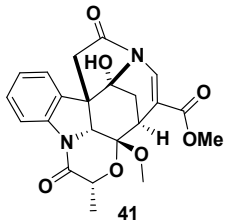
COSY ^{1}H-^{1}H:


8.127
8.100
7.391
7.377
7.363
7.351
7.335
7.260
7.156
7.142
6.949
6.930
4.315
4.293
4.272
4.250
4.168
4.133
4.110
3.635
3.490
3.329
3.270
3.082
3.023
2.318
2.275
2.044
2.025
2.010
1.983
1.967
1.434
1.412
CDCl3, 300 MHz
HO
N
O
O
H
OMe
O
O
O
N
41
1.0
1.2
1.9
1.0
1.2
2.0
1.0
2.9
3.0
1.1
1.2
1.1
1.1
3.1
10.0
9.5
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


171.098
169.373
167.516
140.885
139.220
130.579
125.076
122.382
116.767
103.204
99.730
91.452
77.584
77.362
77.160
76.737
68.637
65.758
57.162
51.226
48.926
40.805
31.938
27.729
14.586
CDCl3, 75 MHz
HO
N
O
O
H
OMe
N
O
O
O
41
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

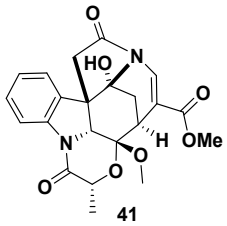
NOE ^{1}H-^{1}H Peak at 3.63 ppm :

$CDCl_3$, 600 MHz



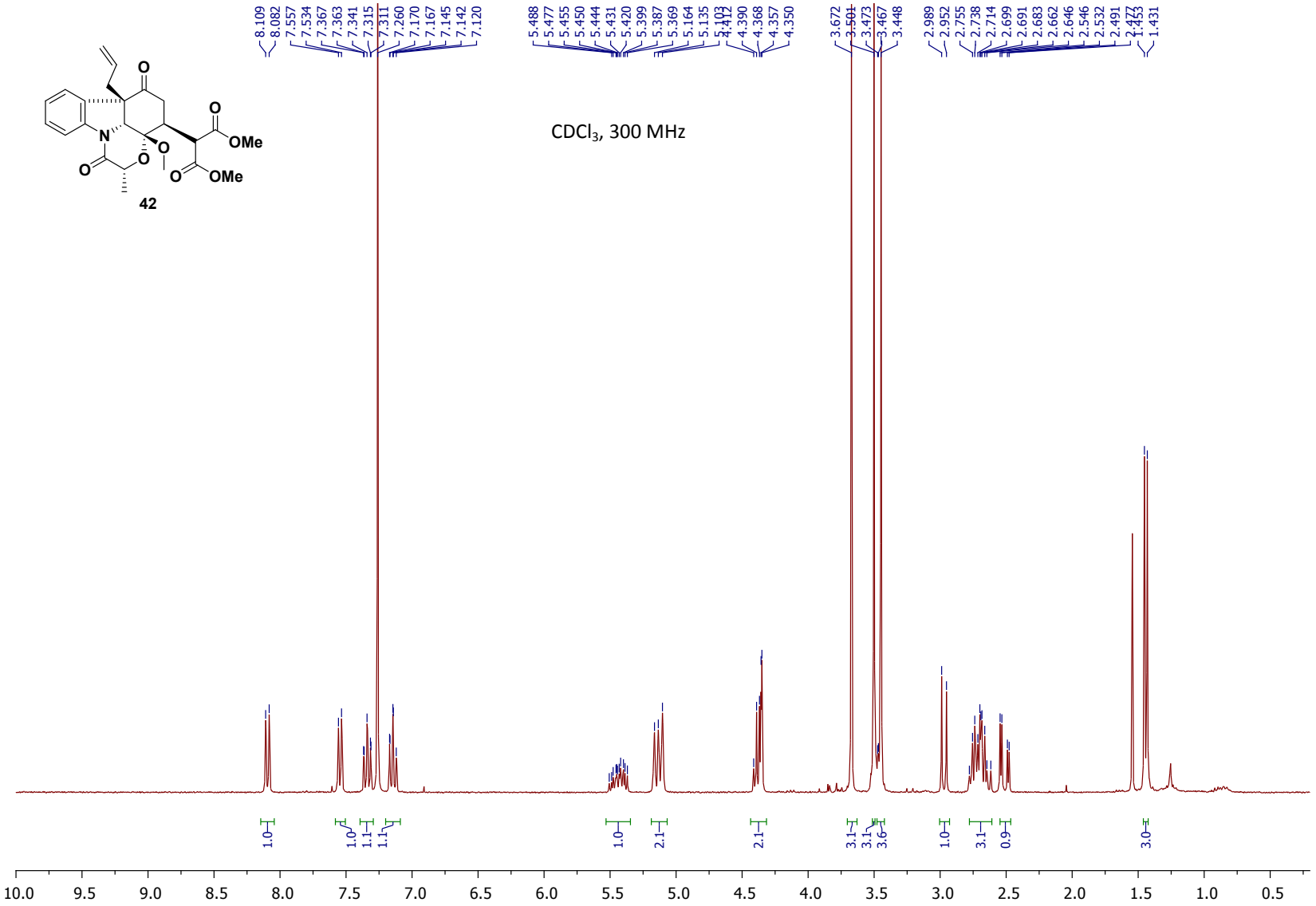
41

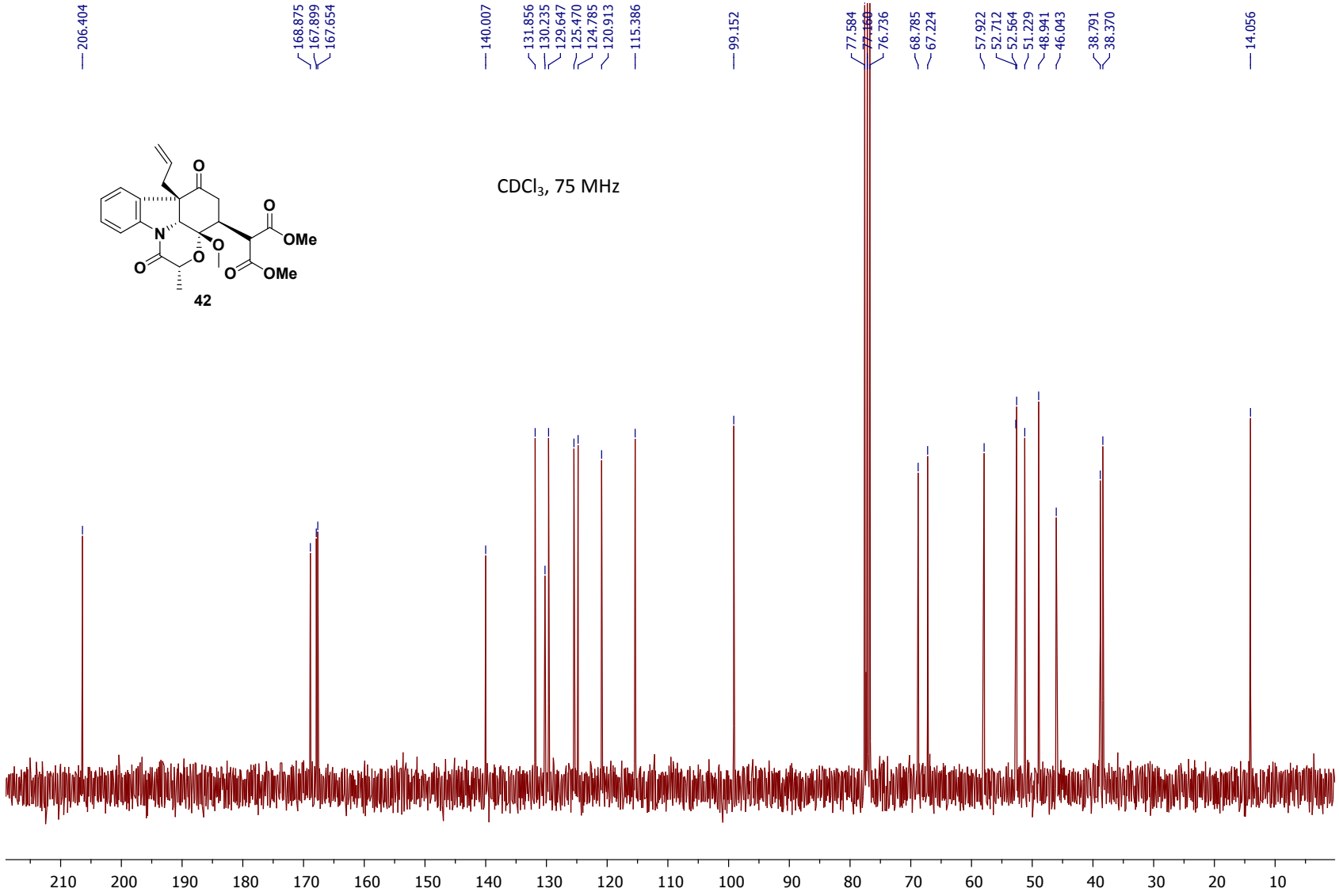
COSY ^{1}H-^{1}H:

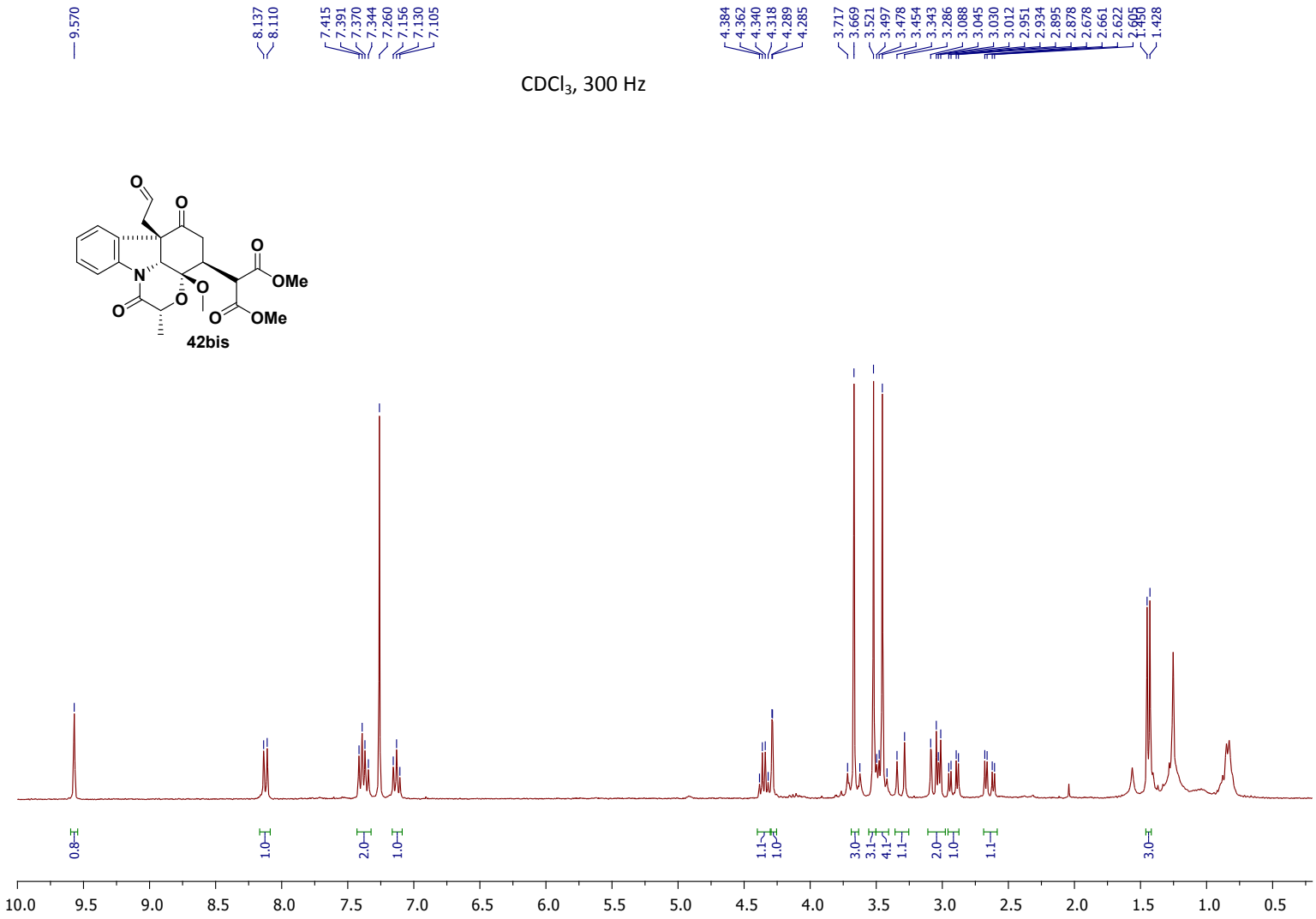


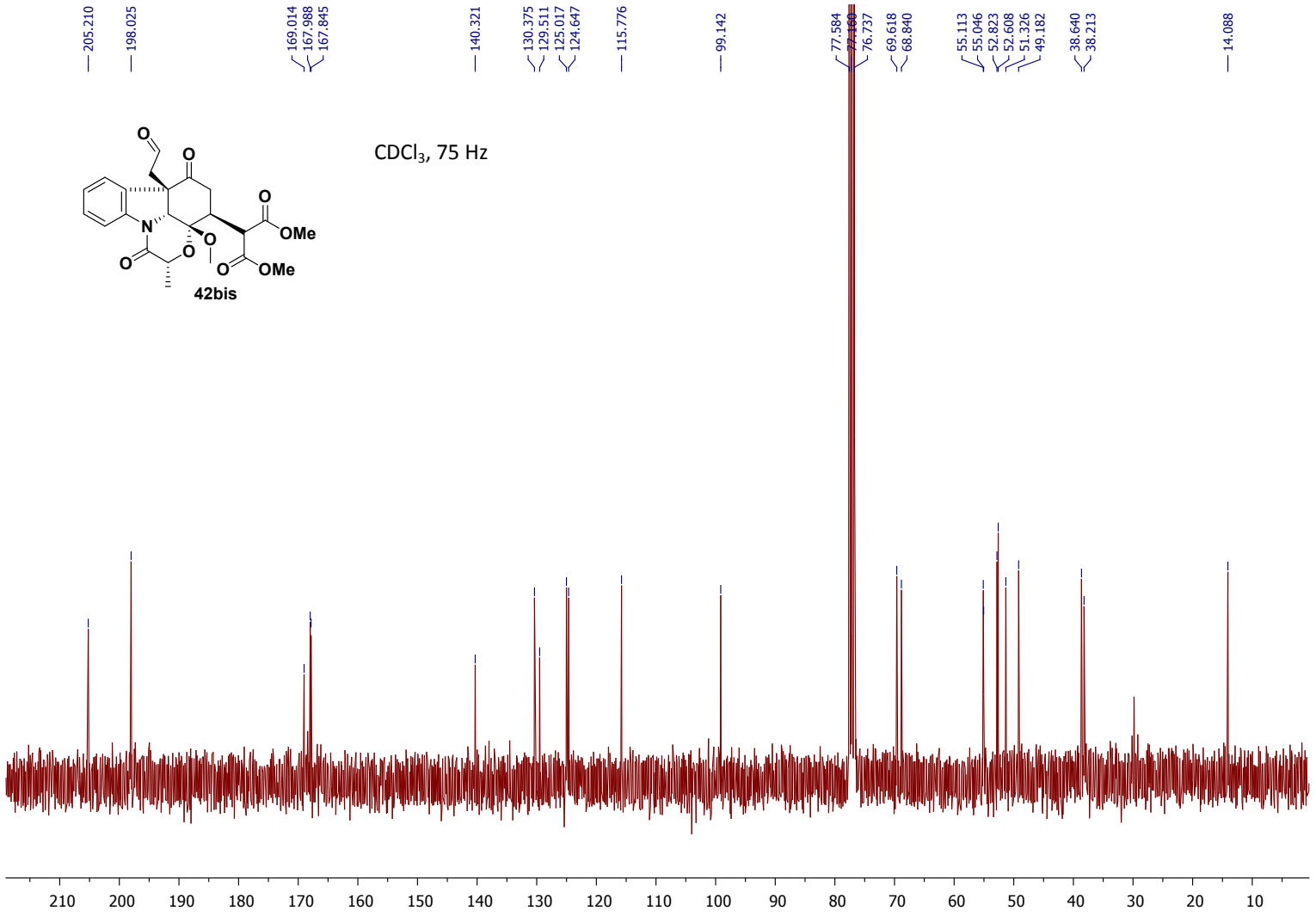
41

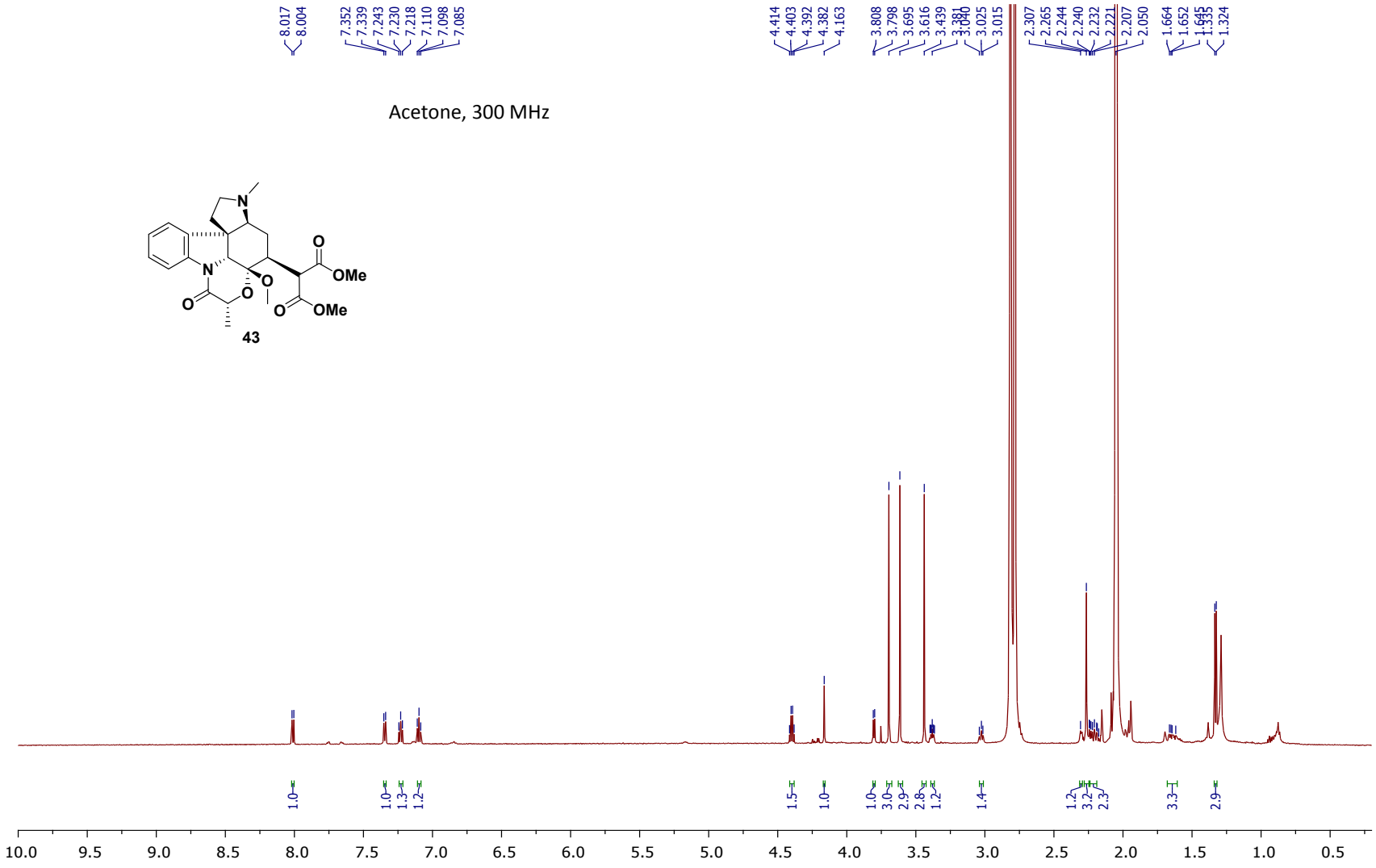
$CDCl_3$, 600 MHz

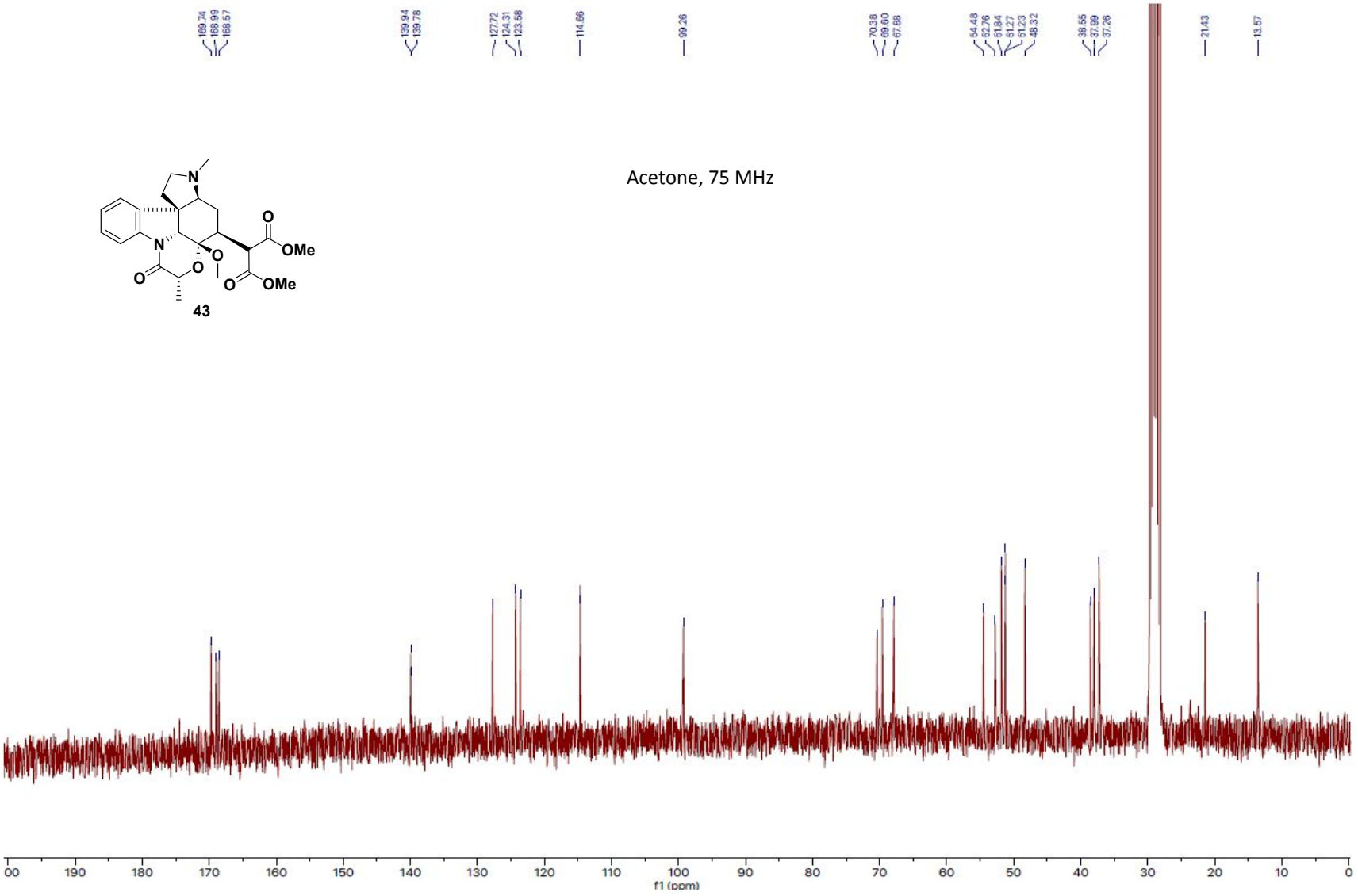

8.109
8.082
7.557
7.534
7.367
7.363
7.341
7.315
7.311
7.260
7.170
7.167
7.145
7.142
7.120
5.488
5.477
5.455
5.450
5.444
5.431
5.420
5.399
5.387
5.369
5.164
5.135
5.103
4.412
4.390
4.368
4.357
4.350
3.672
3.501
3.473
3.467
3.448
2.989
2.952
2.755
2.738
2.714
2.699
2.691
2.683
2.662
2.646
2.546
2.532
2.491
2.477
1.453
1.431
CDCl3, 300 MHz
O
O
OMe
N
O
O
O
O
OMe
42
1.0
1.0
1.1
1.1
1.0
2.1
2.1
3.1
3.1
3.6
1.0
3.1
0.9
3.0
10.0
9.5
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


206.404
168.875
167.899
167.654
140.007
131.856
130.235
129.647
125.470
124.785
120.913
115.386
99.152
77.584
77.160
76.736
68.785
67.224
57.922
52.712
52.564
51.229
48.941
46.043
38.791
38.370
14.056
CDCl3, 75 MHz
42
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10


9.570
8.137
8.110
7.415
7.391
7.370
7.344
7.260
7.156
7.130
7.105
4.384
4.362
4.340
4.318
4.289
4.285
3.717
3.669
3.521
3.497
3.478
3.454
3.343
3.286
3.088
3.045
3.030
3.012
2.951
2.934
2.895
2.878
2.678
2.661
2.622
1.450
1.428
CDCl3, 300 Hz
OMe
OMe
42bis
0.8
1.0
2.0
1.0
1.1
1.0
3.0
3.1
4.1
1.1
2.0
1.0
1.1
3.0
10.0
9.5
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


205.210
198.025
169.014
167.988
167.845
140.321
130.375
129.511
125.017
124.647
115.776
99.142
77.584
77.160
76.737
69.618
68.840
55.113
55.046
52.823
52.608
51.326
49.182
38.640
38.213
14.088
CDCl3, 75 Hz
OMe
OMe
42bis
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10


8.017
8.004
7.352
7.339
7.243
7.230
7.218
7.110
7.098
7.085
4.414
4.403
4.392
4.382
4.163
3.808
3.798
3.695
3.616
3.439
3.381
3.040
3.025
3.015
2.307
2.265
2.244
2.240
2.232
2.221
2.207
2.050
1.664
1.652
1.645
1.335
1.324
Acetone, 300 MHz
N
O
OMe
O
O
O
OMe
43
1.0
1.0
1.3
1.2
1.5
1.0
1.0
3.0
2.9
2.8
1.2
1.4
1.2
3.2
2.3
3.3
2.9
10.0
9.5
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


169.74
168.99
168.57
139.94
139.78
127.72
124.31
123.58
114.66
99.26
70.38
69.60
67.88
54.48
52.76
51.84
51.27
51.23
48.32
38.55
37.99
37.26
21.43
13.57
Acetone, 75 MHz
N
O
OMe
N
O
O
O
O
OMe
43
f1 (ppm)