

1

^{13}C , CDCl_3 , 100MHz

190.342

177.463

141.685

140.294

138.020

133.634

132.924

130.511

129.995

128.658

128.557

127.125

126.912

123.986

35.201

27.996

ppm (t1)

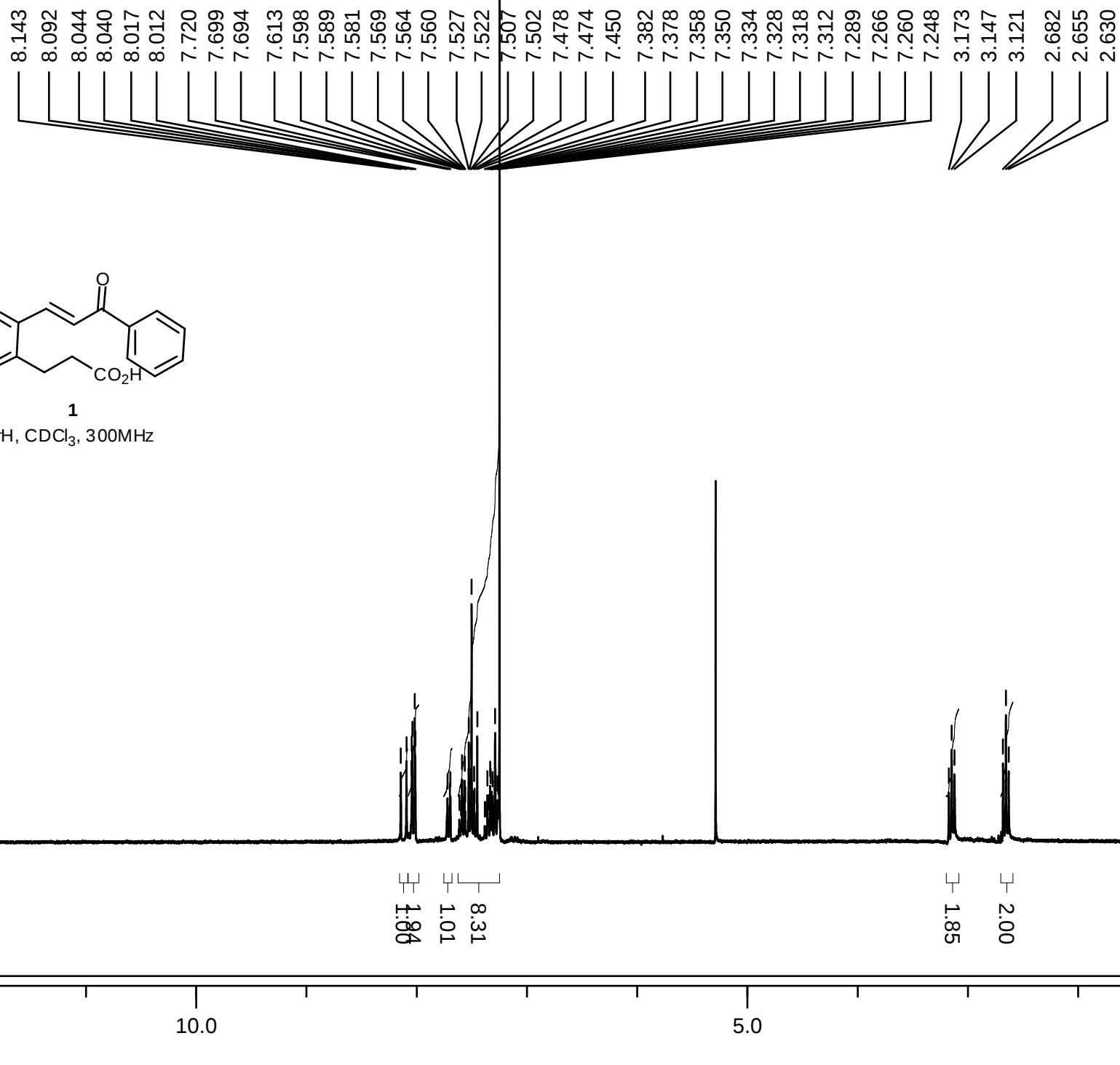
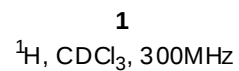
200

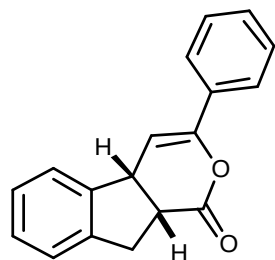
150

100

50

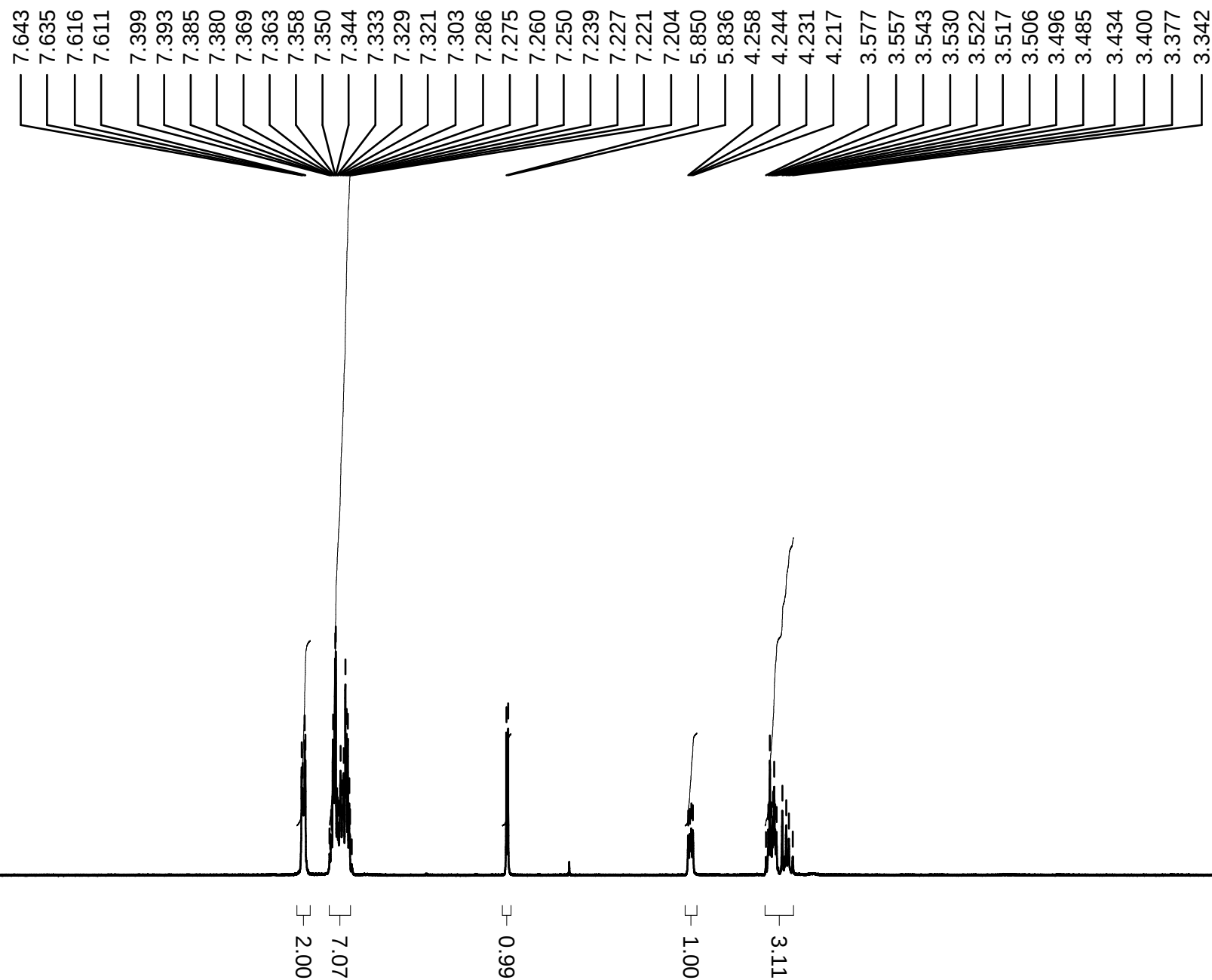
0



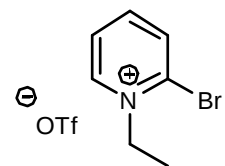


2

^1H , CDCl_3 , 300MHz

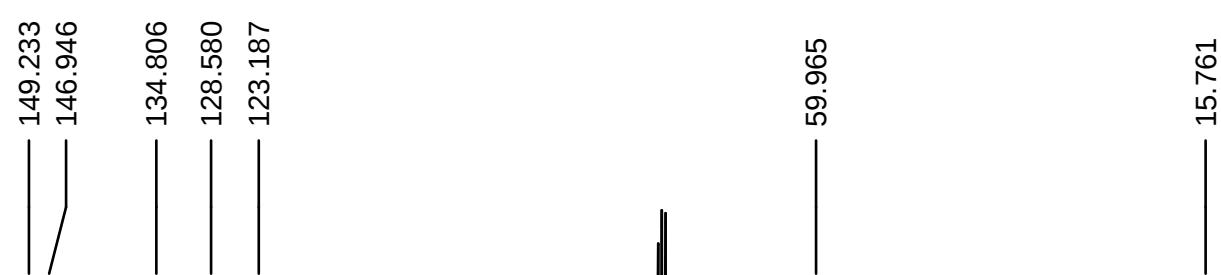


ppm (t1)

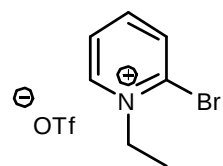


6

^{13}C , CDCl_3 , 100MHz



ppm (t1)



6

^1H , CDCl_3 , 400MHz

9.418
9.413
9.398
9.392
8.377
8.371
8.350
8.345
8.324
8.318
8.206
8.202
8.189
8.179
8.174
8.162
8.158
8.142
8.137
8.117
8.112

4.984
4.960
4.936
4.911

1.701
1.677
1.653

1.00

1.00
2.00

2.00

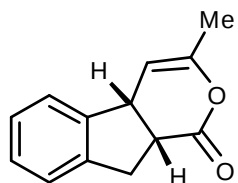
3.00

ppm (t1)

10.0

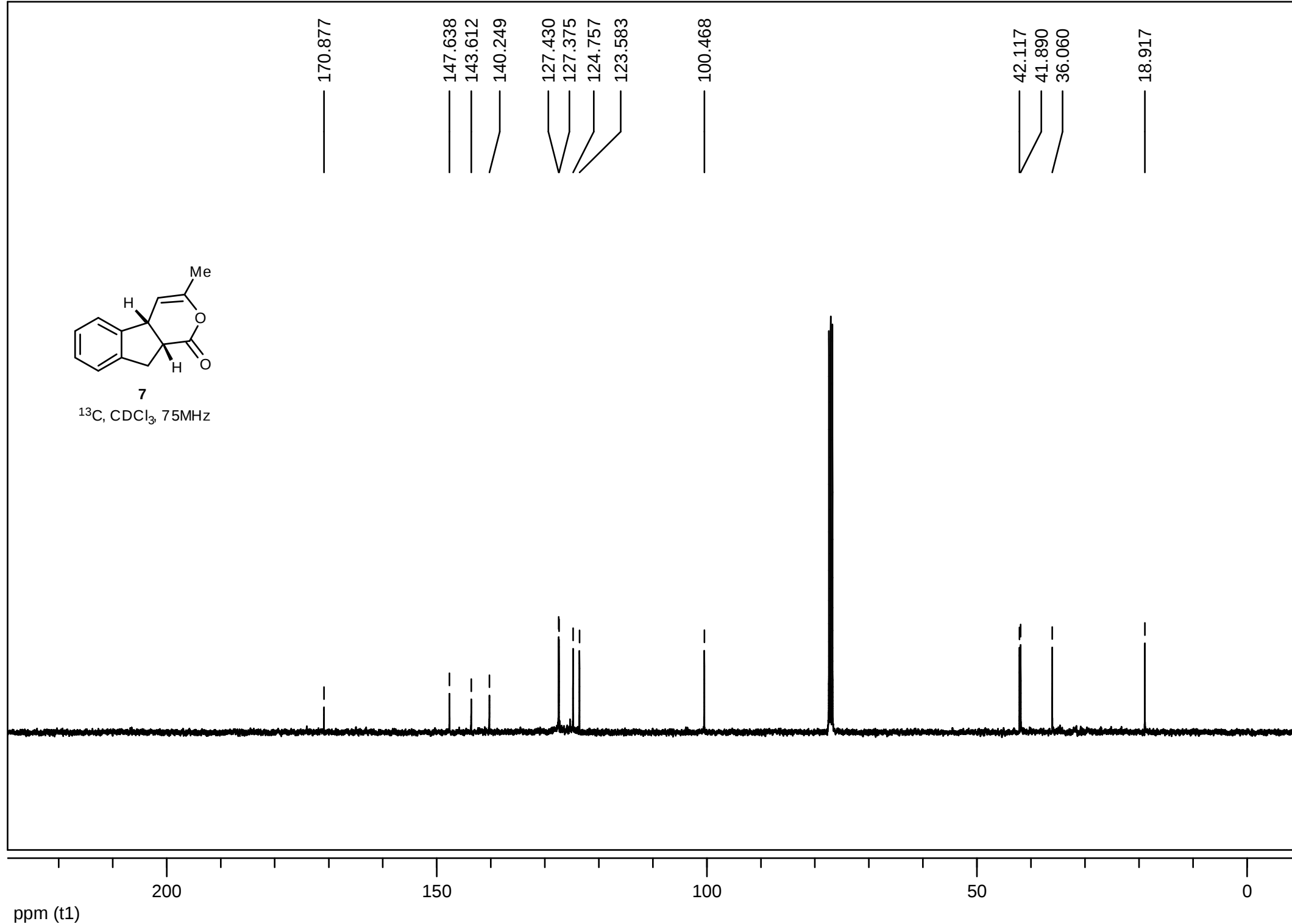
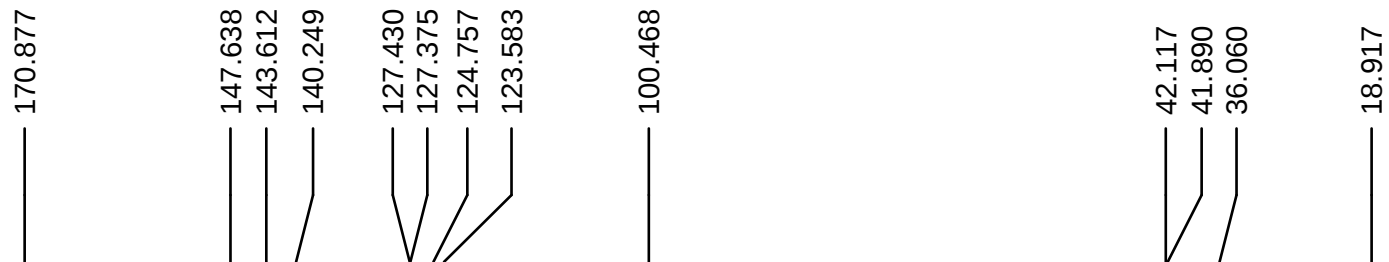
5.0

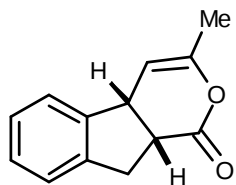
0.0



7

^{13}C , CDCl_3 , 75MHz





7

^1H , CDCl_3 , 300MHz

7.209
7.203
7.190
7.177
7.166
7.161
7.151
7.144
7.132
7.118
4.993
4.990
4.980
4.977
3.949
3.943
3.937
3.931
3.925
3.919
3.913
3.416
3.401
3.375
3.369
3.359
3.347
3.341
3.329
3.319
3.310
3.304
3.287
3.285
3.278
3.270
3.267
3.248
3.237
3.225
3.208
1.821

4.68

0.96

1.05

3.13

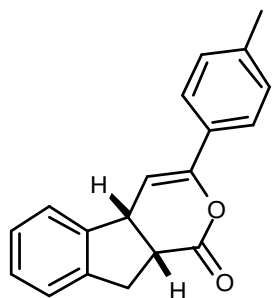
3.00

ppm (t1)

10.0

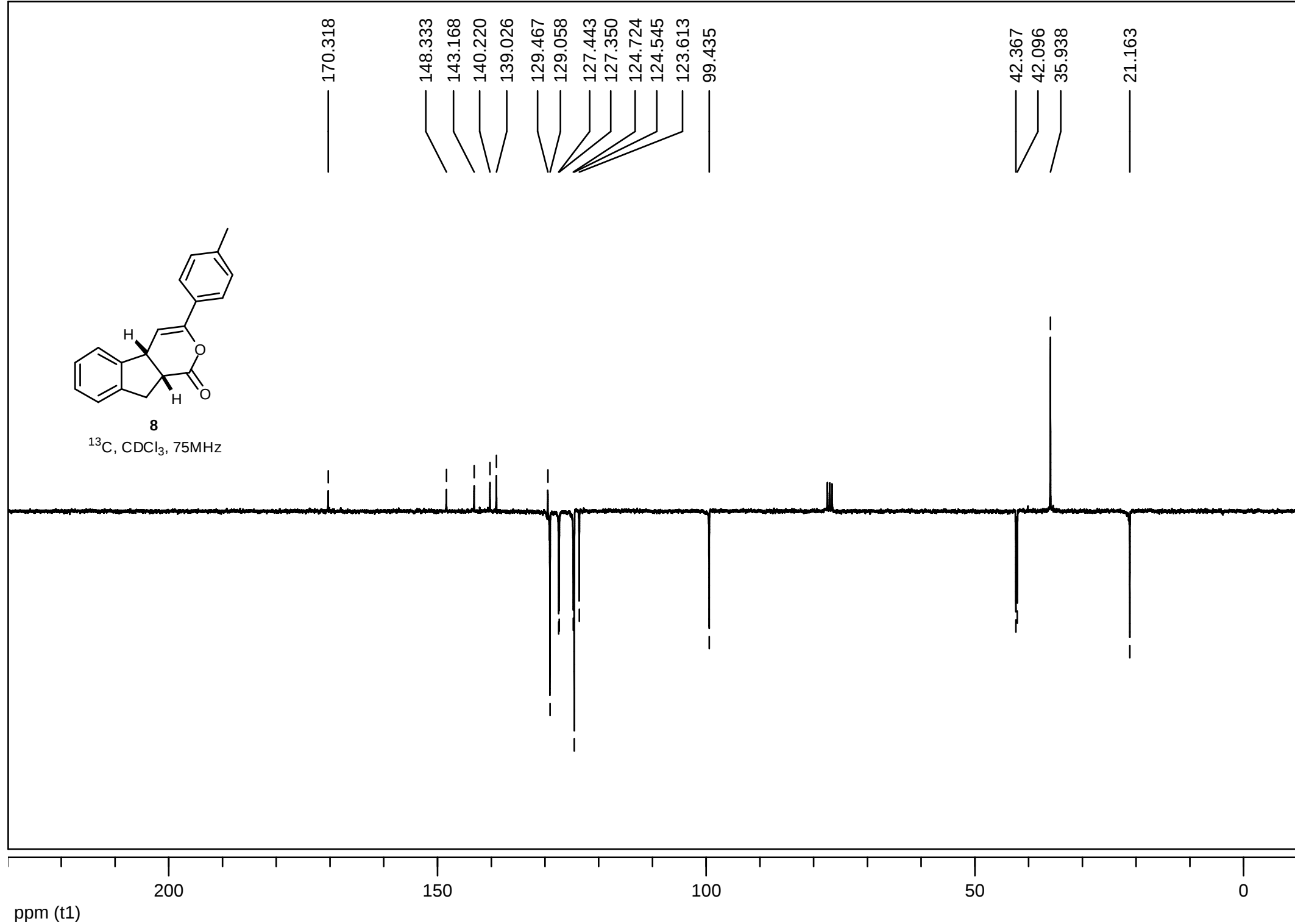
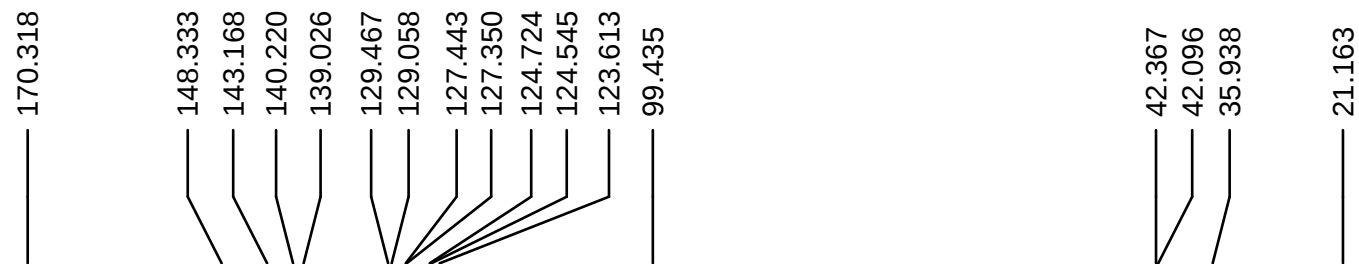
5.0

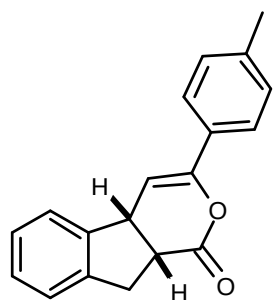
0.0



8

^{13}C , CDCl_3 , 75MHz





8

^1H , CDCl_3 , 500MHz

7.450
7.430
7.244
7.239
7.222
7.205
7.199
7.188
7.177
7.172
7.168
7.161
7.154
7.150
7.147
7.102
7.082
5.714
5.703
4.162
4.151
4.142
4.131
3.480
3.464
3.454
3.444
3.437
3.434
3.427
3.418
3.412
3.343
3.317
3.299
3.273
2.280

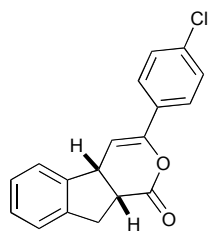
6.42
2.00
1.00
1.01
3.16
3.00

ppm (t1)

10.0

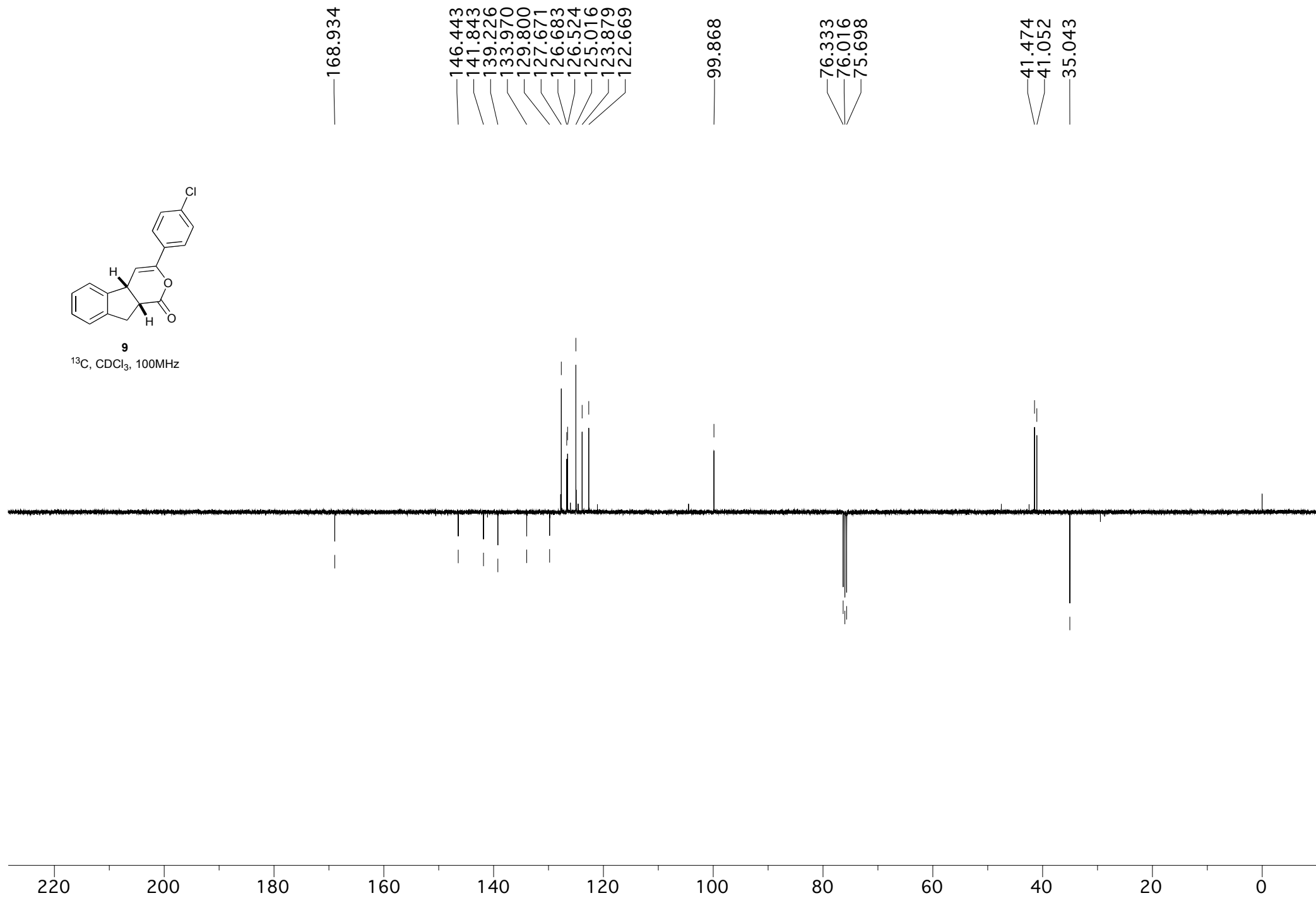
5.0

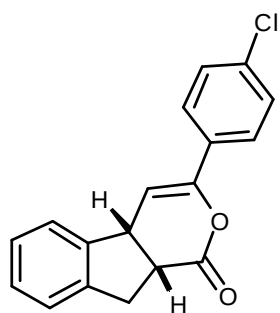
0.0



9

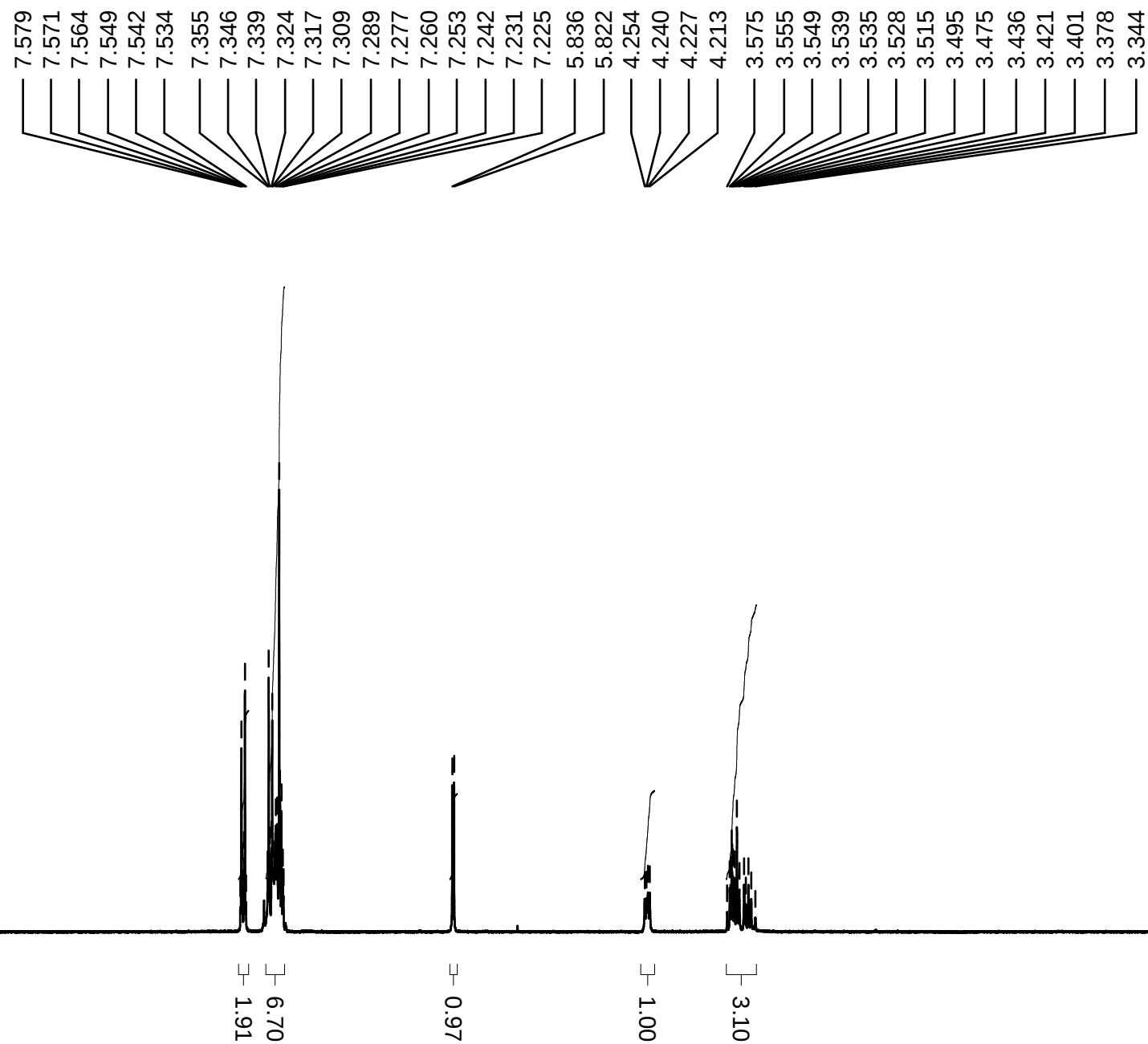
^{13}C , CDCl_3 , 100MHz



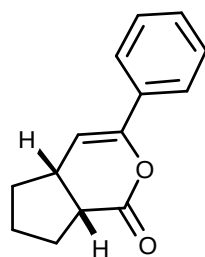


9

^1H , CDCl_3 , 300MHz



ppm (t1)



10

^{13}C , CDCl_3 , 75MHz

170.357

135.980

133.087

132.073

128.079

127.569

127.066

45.659

37.753

30.325

28.705

27.508

ppm (t1)

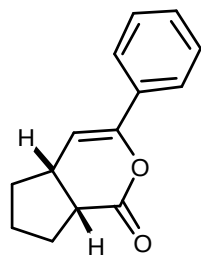
200

150

100

50

0



10

^1H , CDCl_3 , 400MHz

7.629
7.625
7.608
7.605
7.392
7.386
7.370
7.351
7.346
7.330
5.623
5.614
3.053
3.032
3.003
2.983
2.963
2.943
2.227
2.193
2.149
2.110
2.074
2.046
2.011
1.839
1.818
1.787
1.754
1.710
1.671
1.658
1.633
1.603

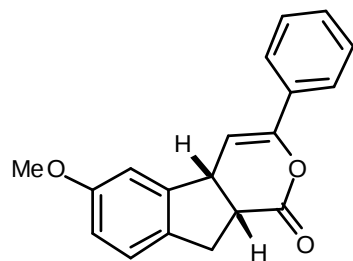
2.28
3.30
1.06
2.00
3.06
3.41

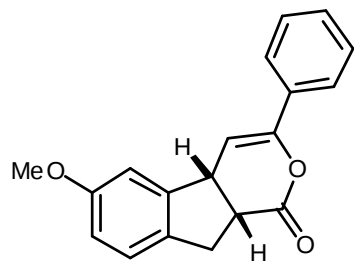
ppm (t1)

10.0

5.0

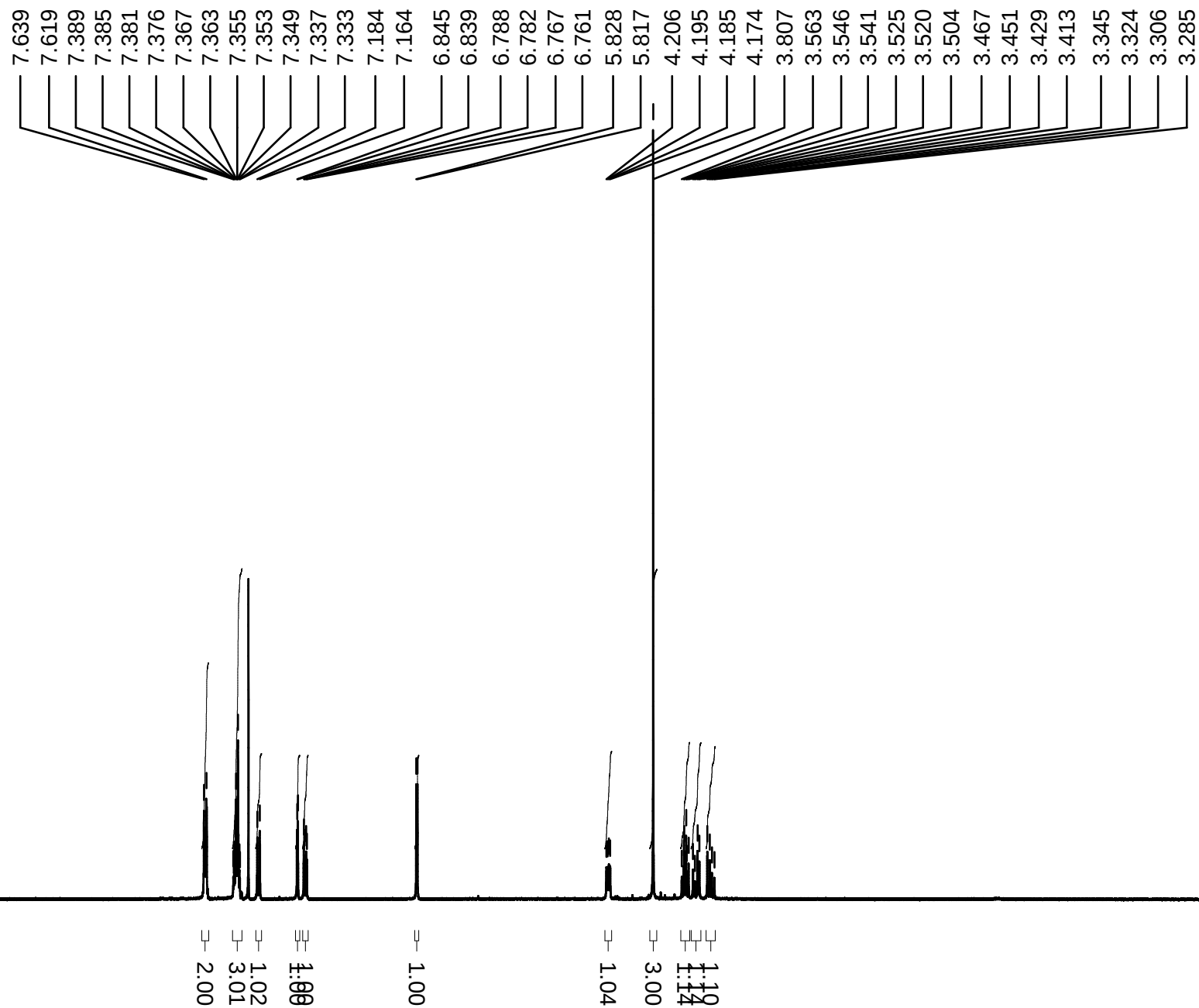
0.0



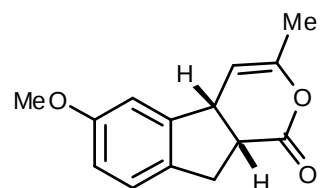


11

^1H , CDCl_3 , 400MHz

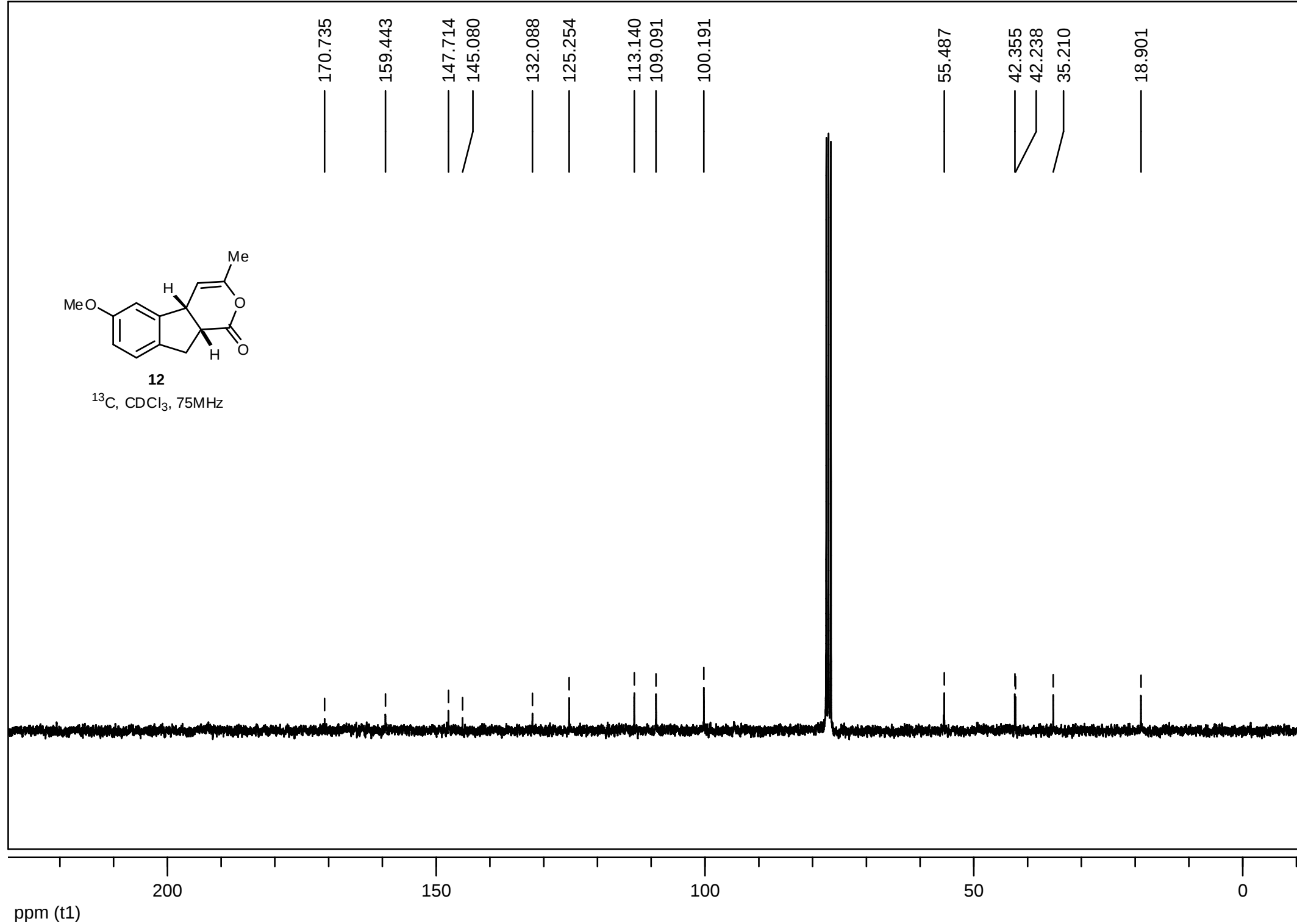
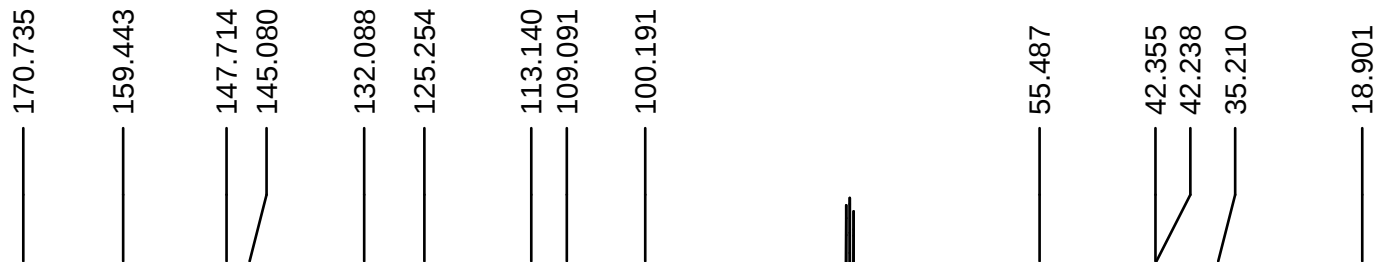


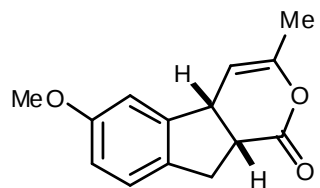
ppm (t1)



12

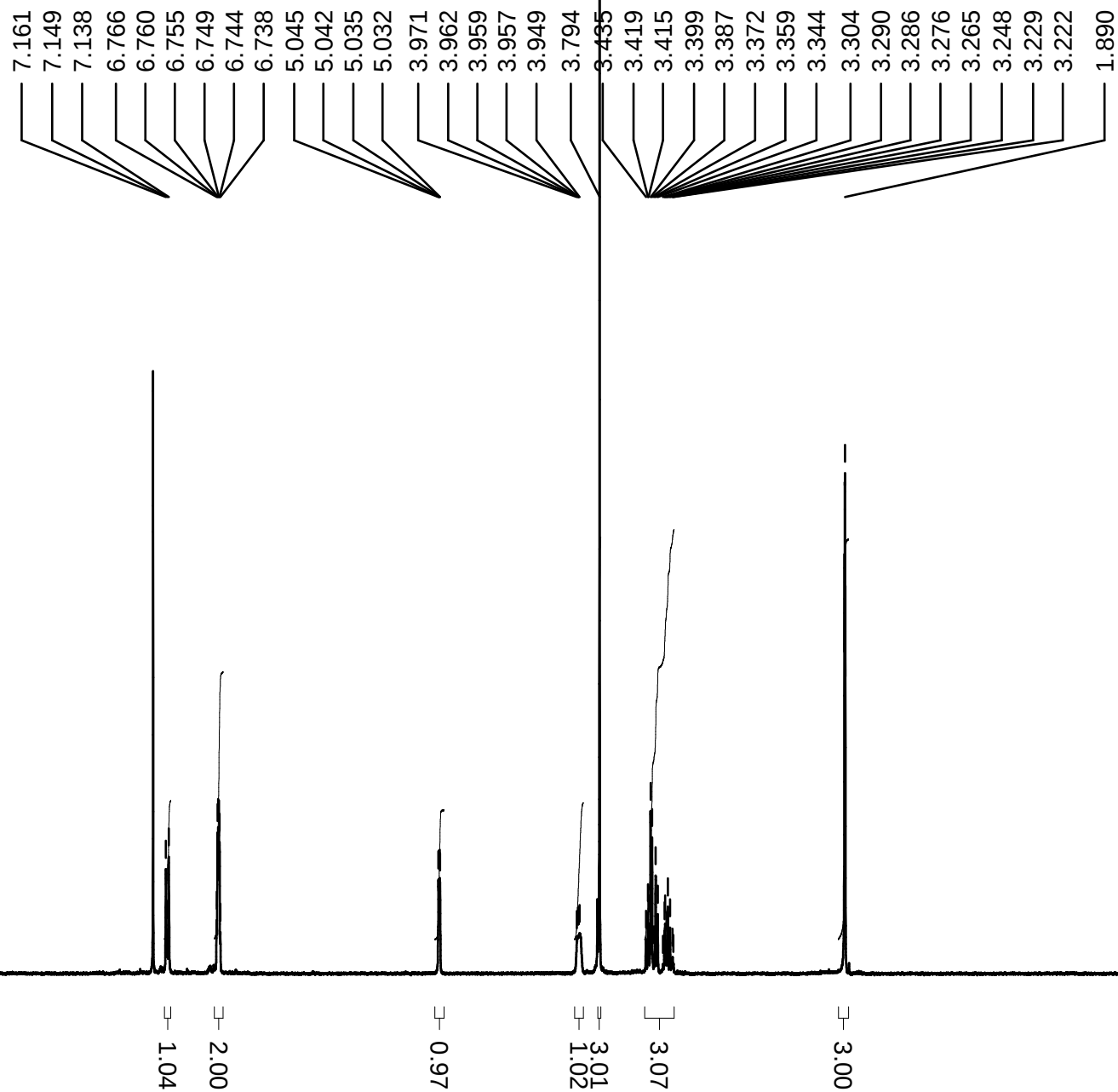
^{13}C , CDCl_3 , 75MHz



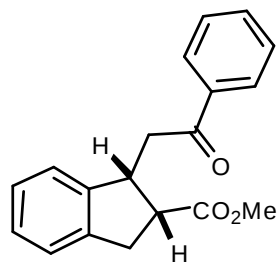


12

^1H , CDCl_3 , 400MHz

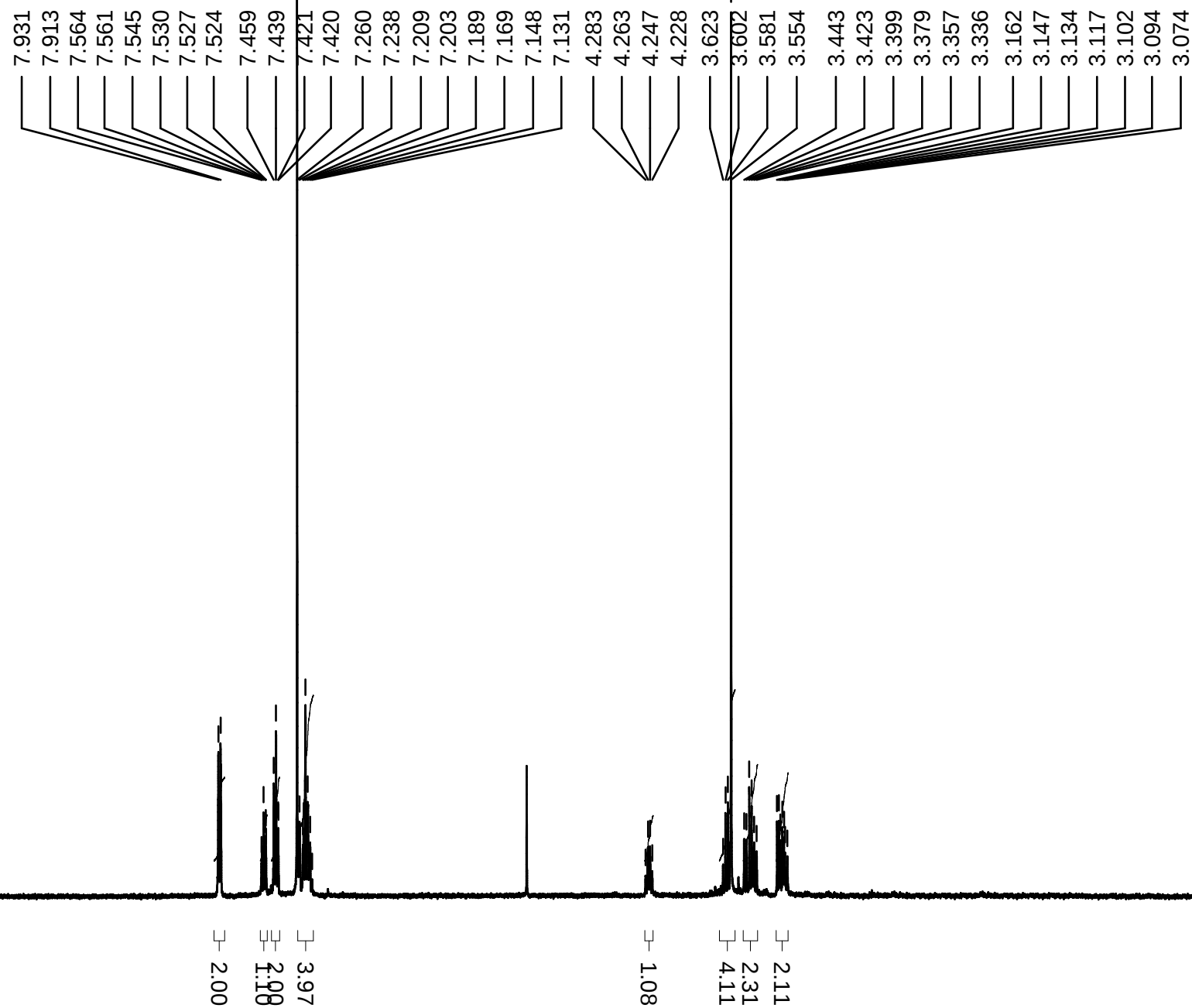


ppm (t1)

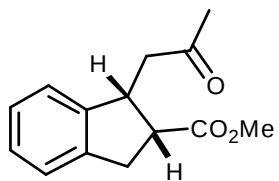


13

^1H , CDCl_3 , 400MHz

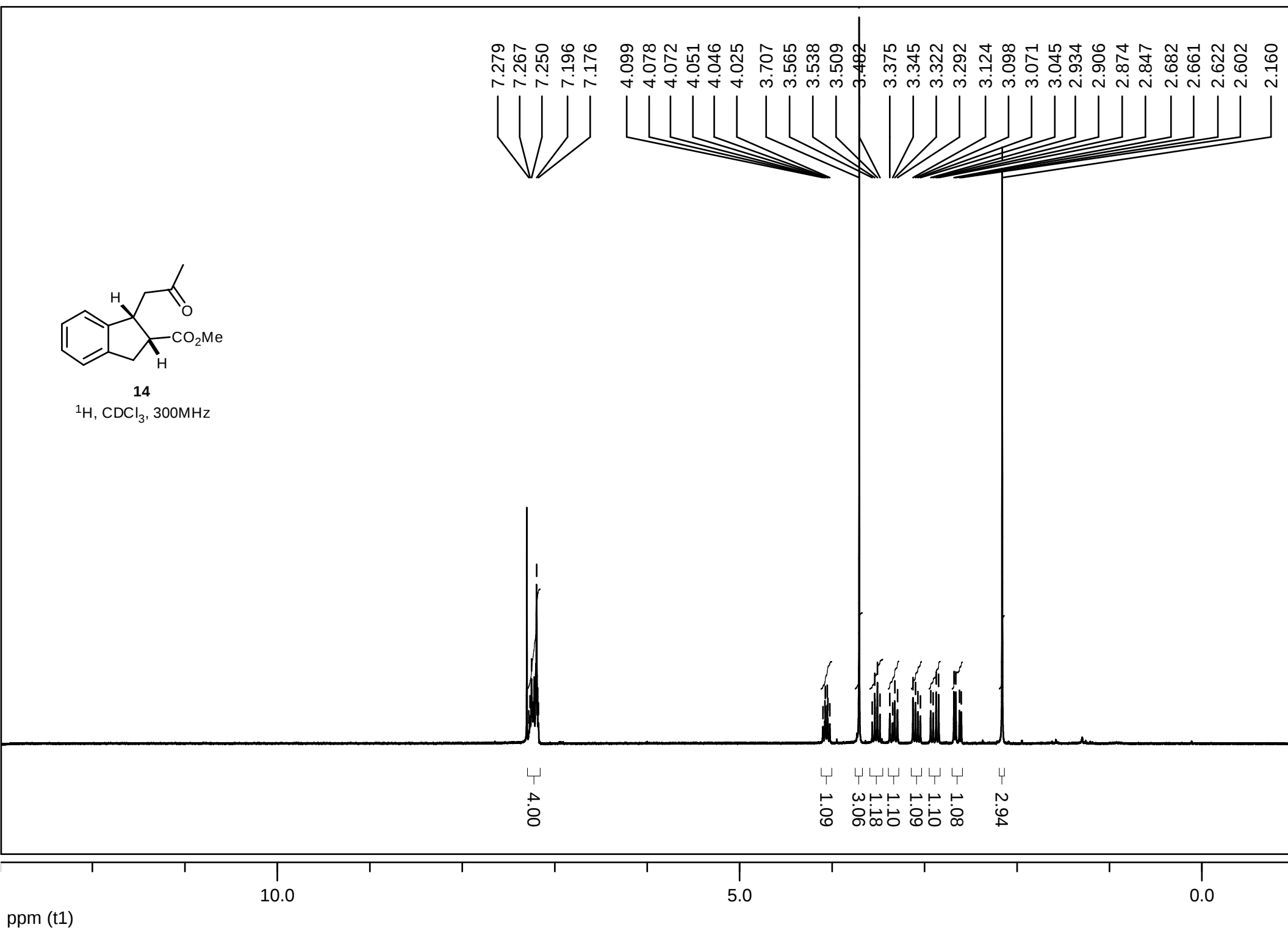


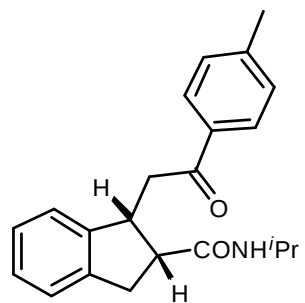
ppm (t1)



14

^1H , CDCl_3 , 300MHz





15

^{13}C , CDCl_3 , 100MHz

199.123

172.185

144.836

143.974

142.283

134.476

129.283

128.224

127.122

126.639

124.458

123.711

49.069

42.550

41.289

40.548

34.886

22.763

22.431

21.675

200

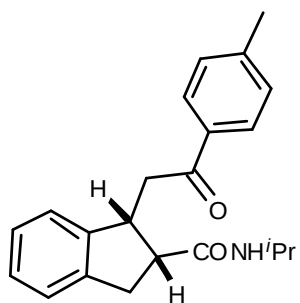
150

100

50

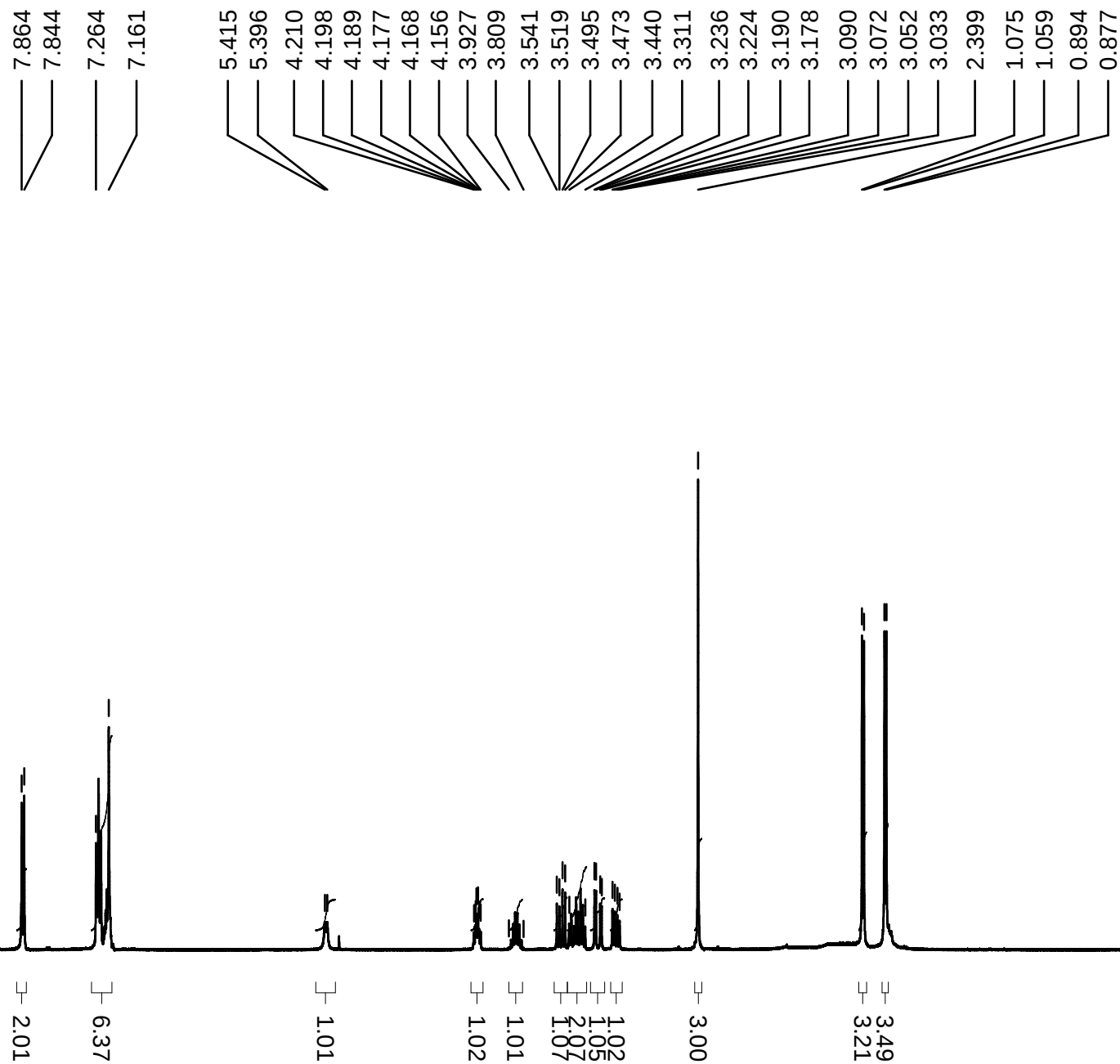
0

ppm (t1)

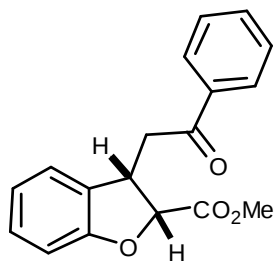


15

^1H , CDCl_3 , 400MHz



ppm (t1)



16

¹³C, CDCl₃, 100MHz

197.391

169.976

158.724

136.536

133.493

129.011

128.761

128.554

128.032

124.415

121.541

110.132

82.640

52.191

40.248

40.144

200

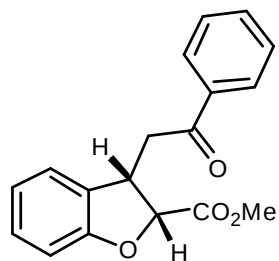
150

100

50

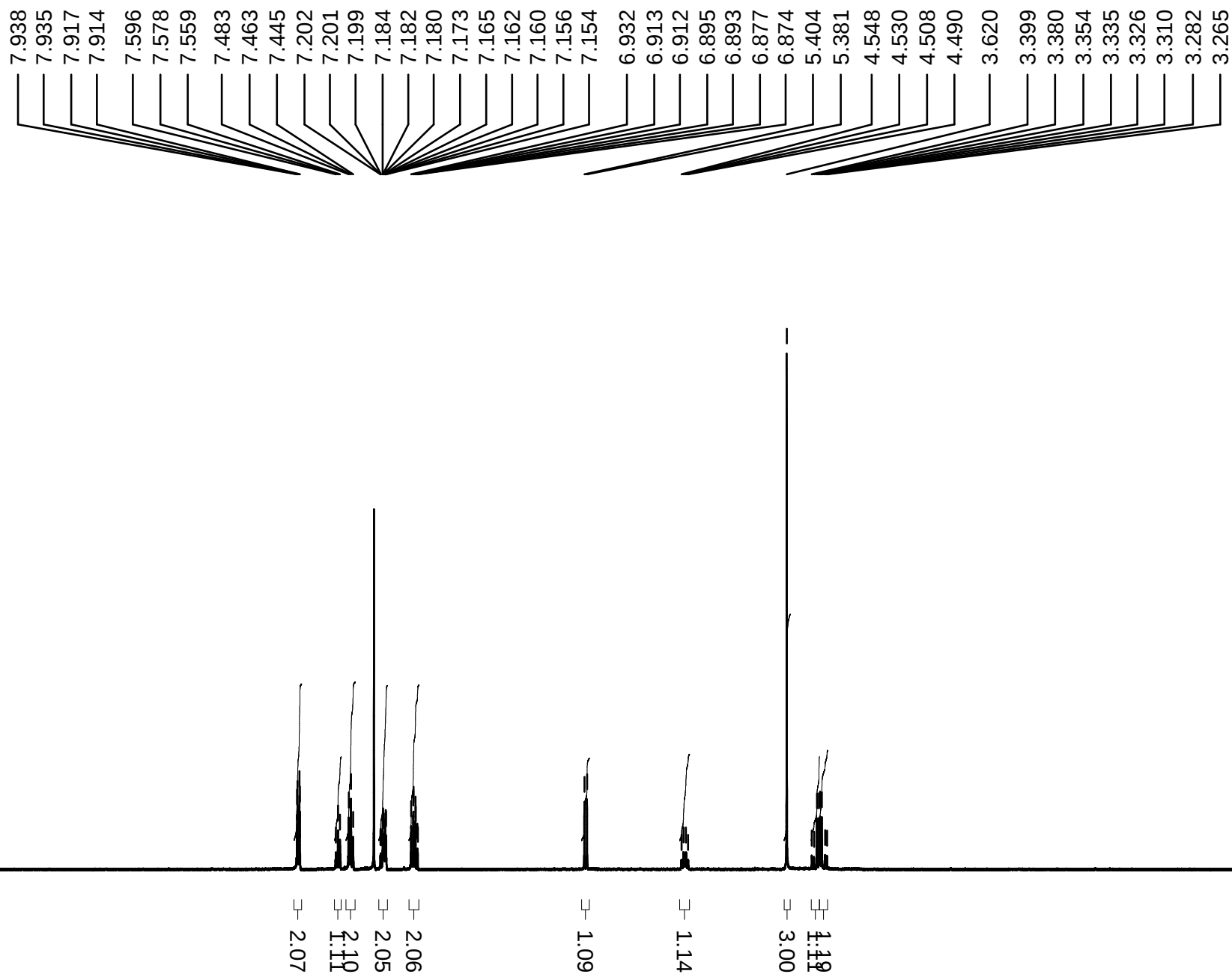
0

ppm (t1)

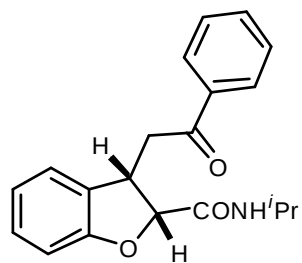


16

^1H , CDCl_3 , 400 MHz

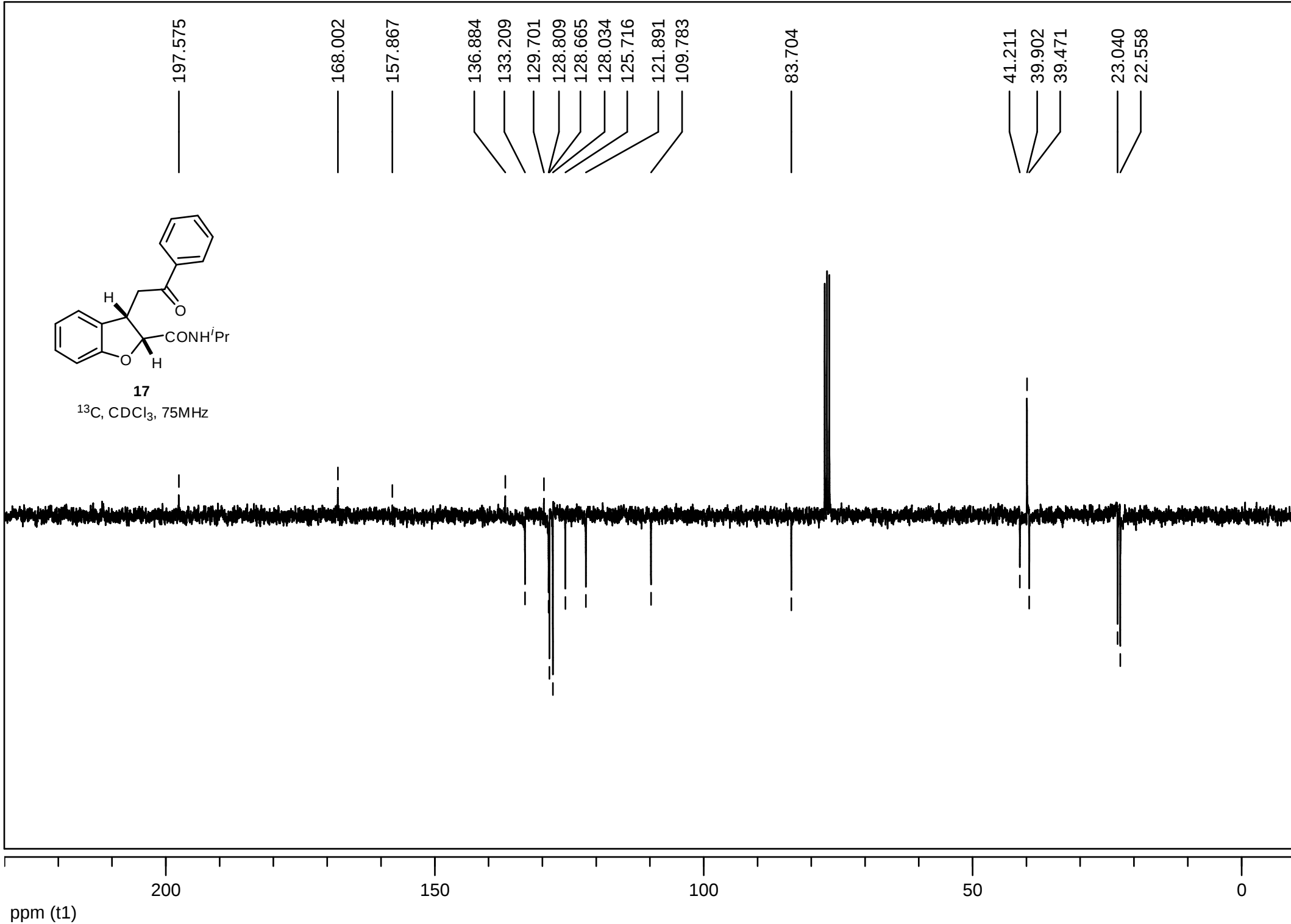


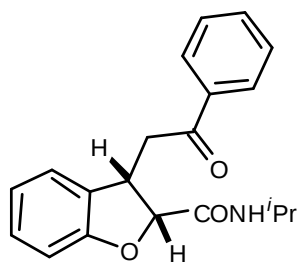
ppm (t1)



17

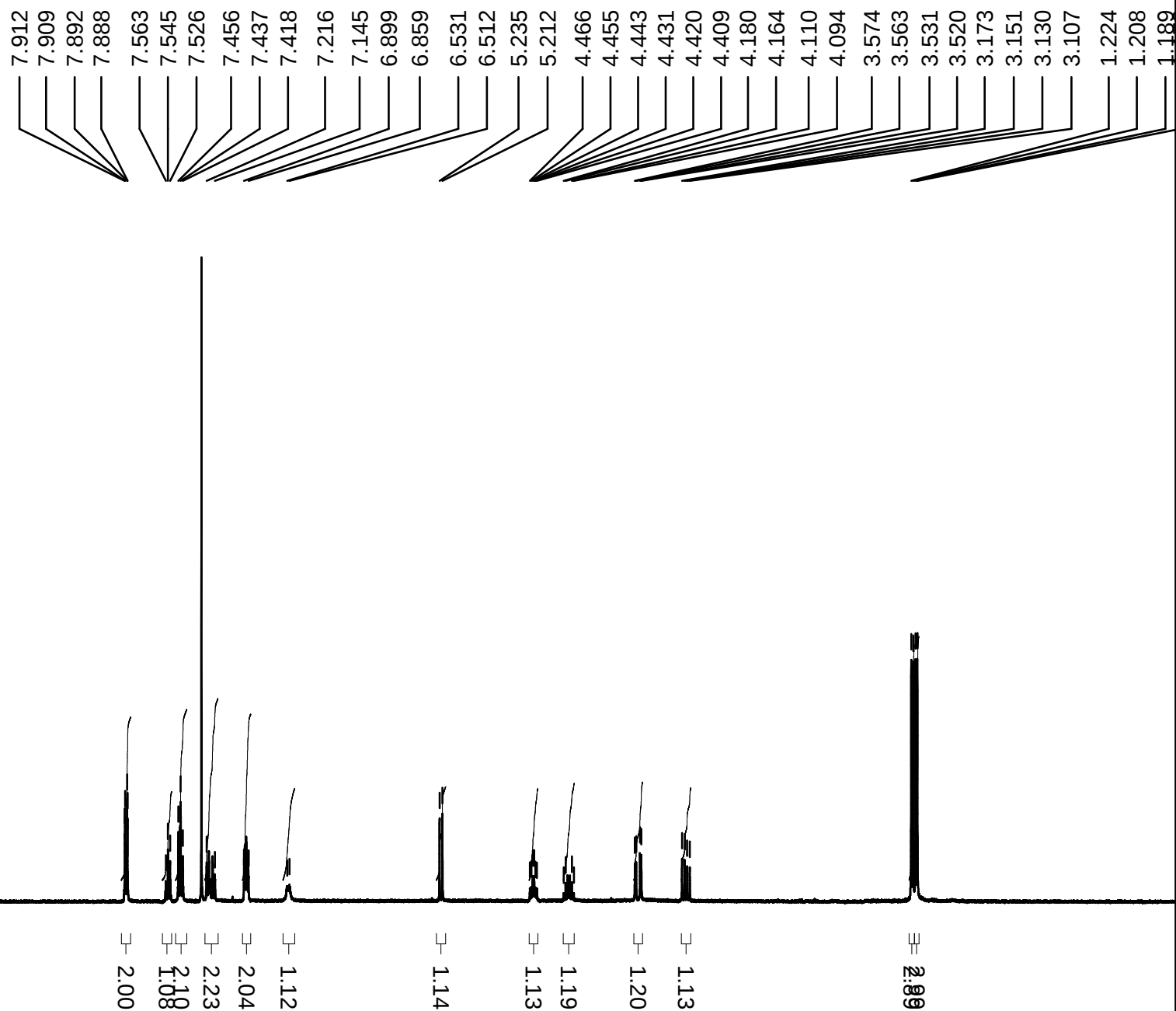
^{13}C , CDCl_3 , 75MHz



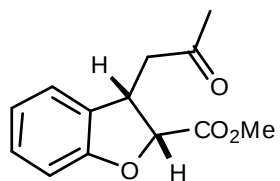


17

¹H, CDCl₃, 400MHz



ppm (t1)



18

^{13}C , CDCl_3 , 75MHz

205.871

169.985

158.594

128.981

128.459

124.304

121.548

110.097

82.410

52.269

44.841

39.790

30.325

ppm (t1)

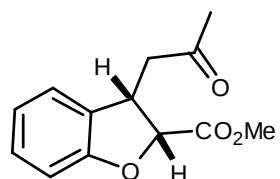
200

150

100

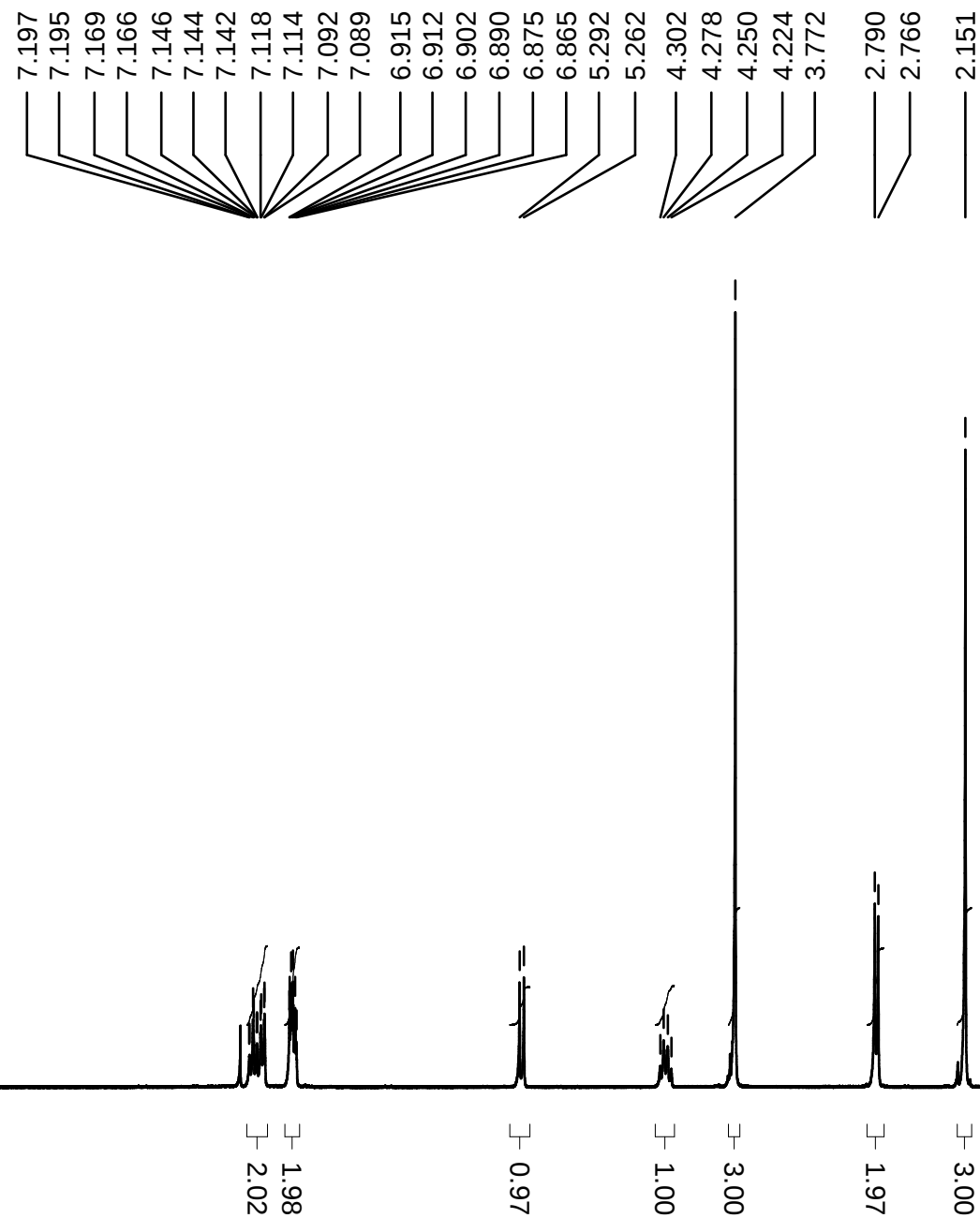
50

0



18

^1H , CDCl_3 , 300MHz

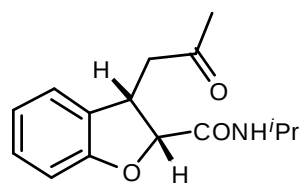


10.0

5.0

0.0

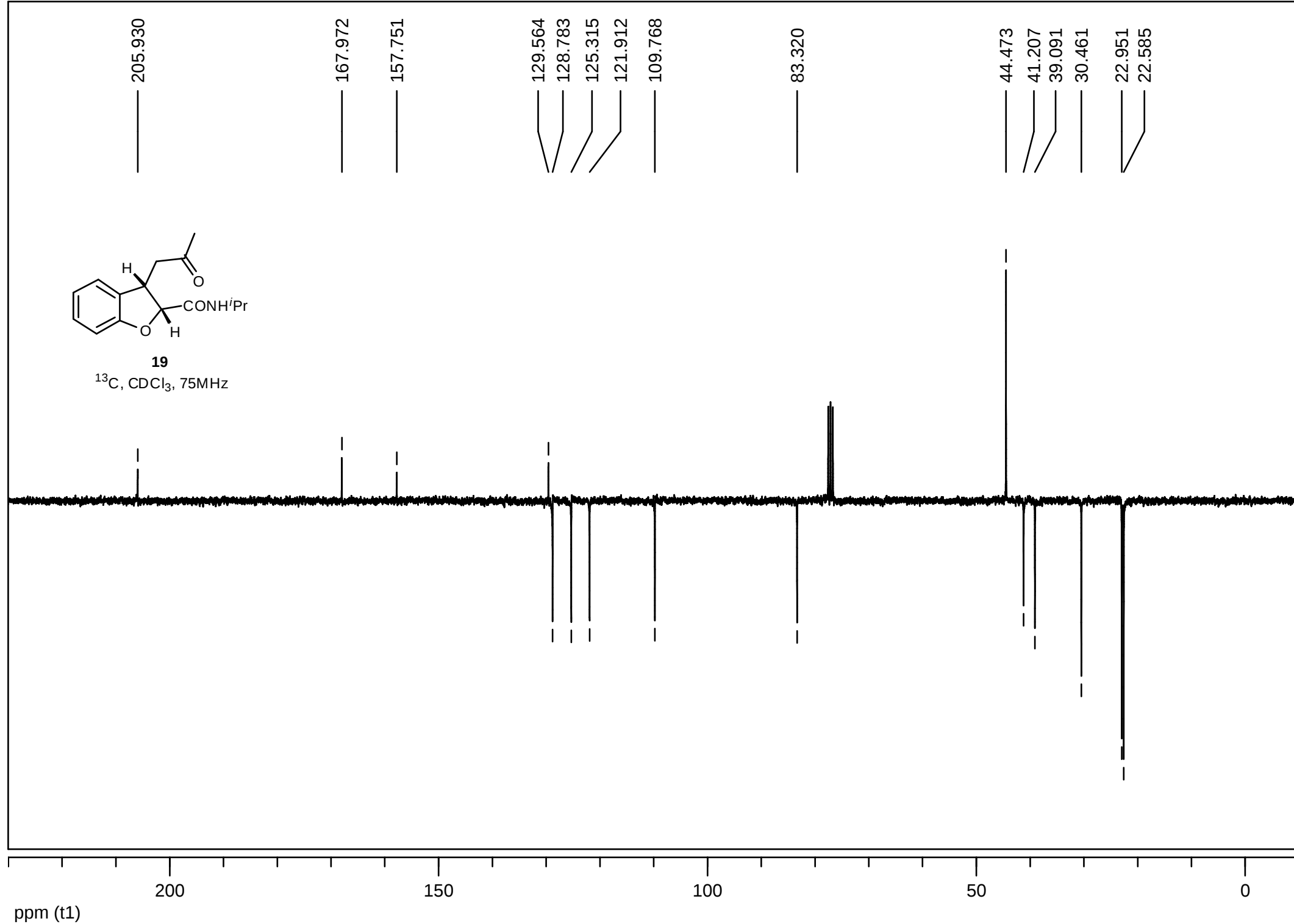
ppm (t1)

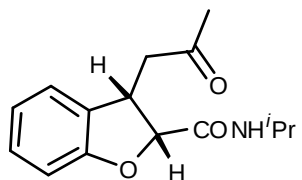


19

^{13}C , CDCl_3 , 75MHz

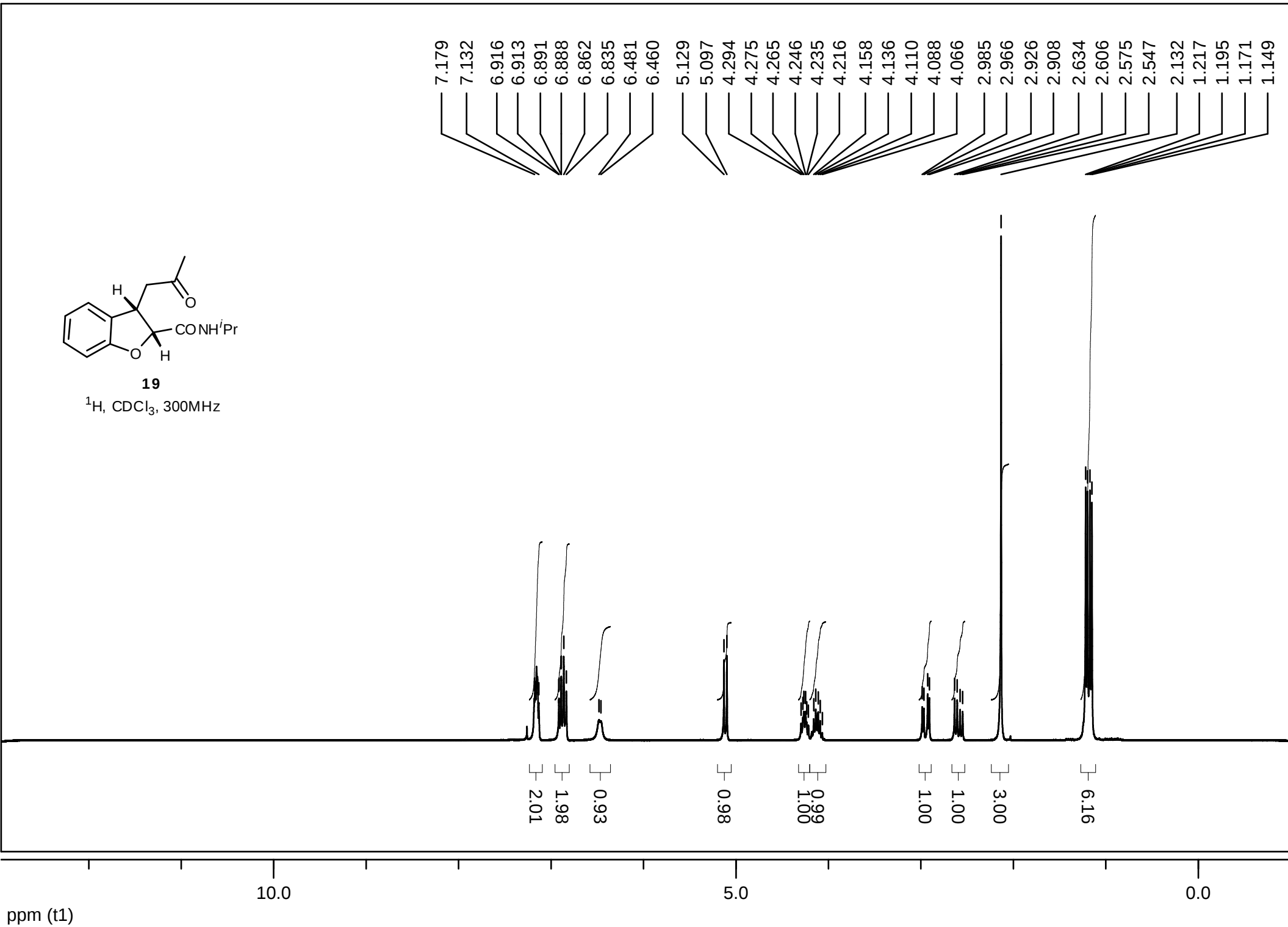
205.930
167.972
157.751
129.564
128.783
125.315
121.912
109.768
83.320
44.473
41.207
39.091
30.461
22.951
22.585

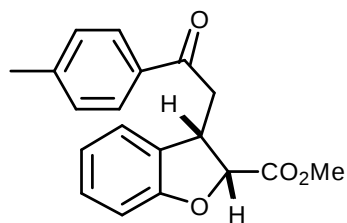




19

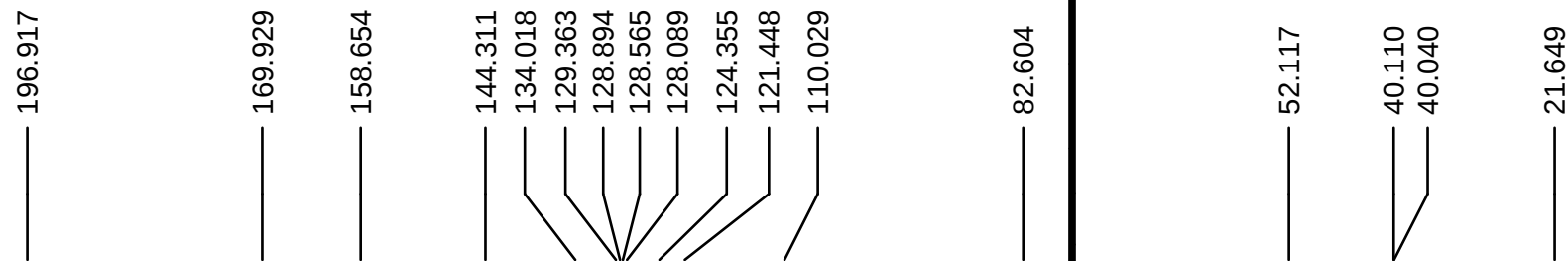
^1H , CDCl_3 , 300MHz



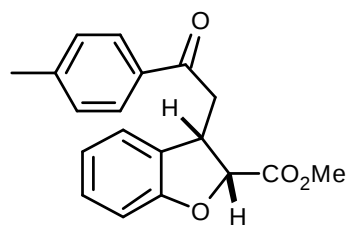


20

^{13}C , CDCl_3 , 125MHz

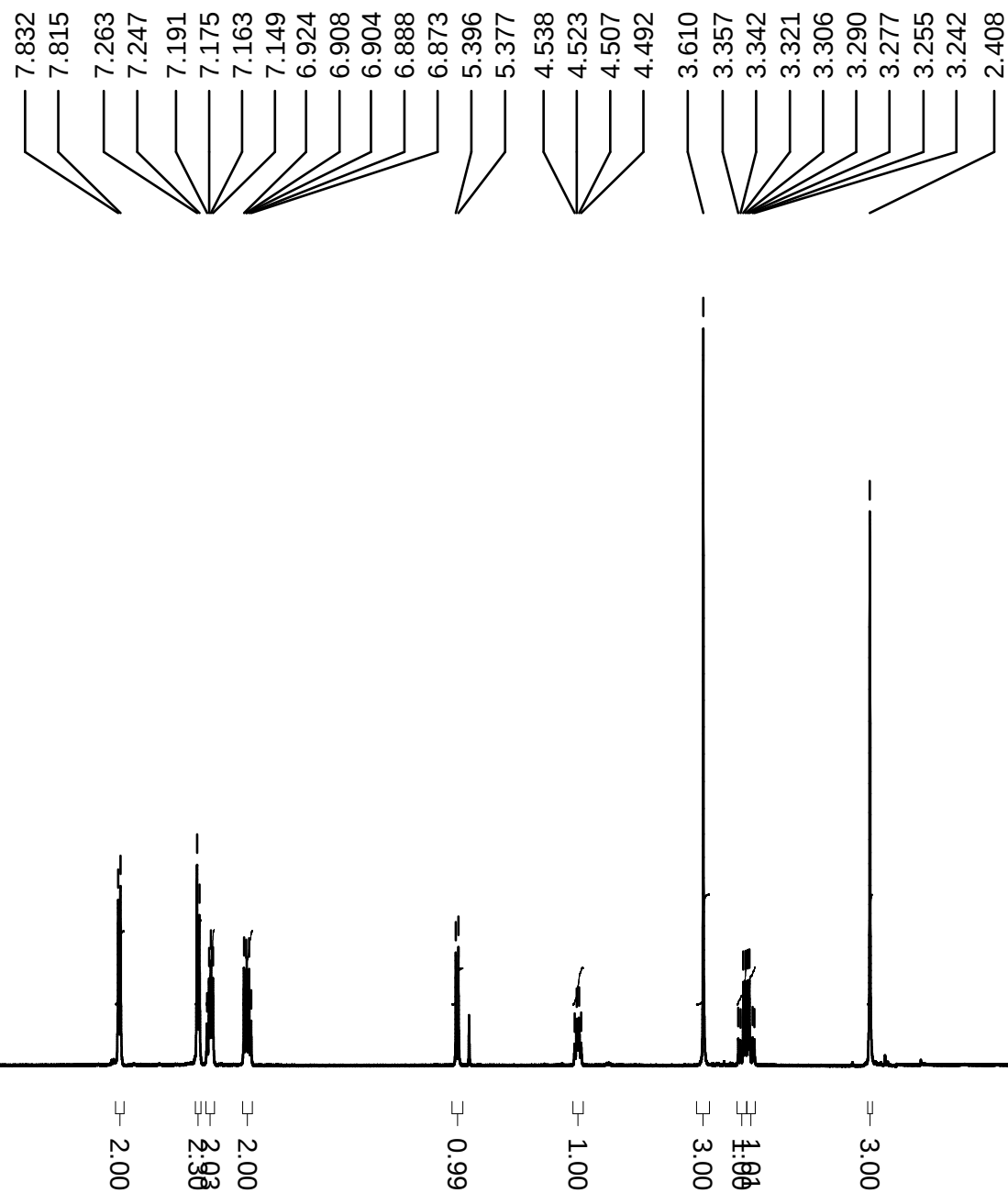


ppm (t1)

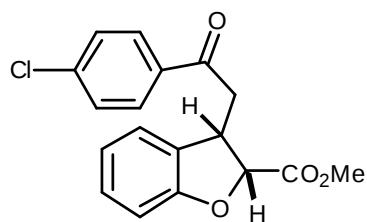


20

^1H , CDCl_3 , 500MHz



ppm (t1)



21

^{13}C , CDCl_3 , 100MHz

196.223

169.938

158.682

140.013

134.837

129.440

129.102

128.372

124.348

121.585

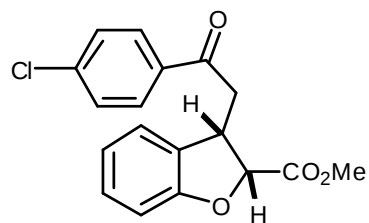
110.206

82.553

52.256

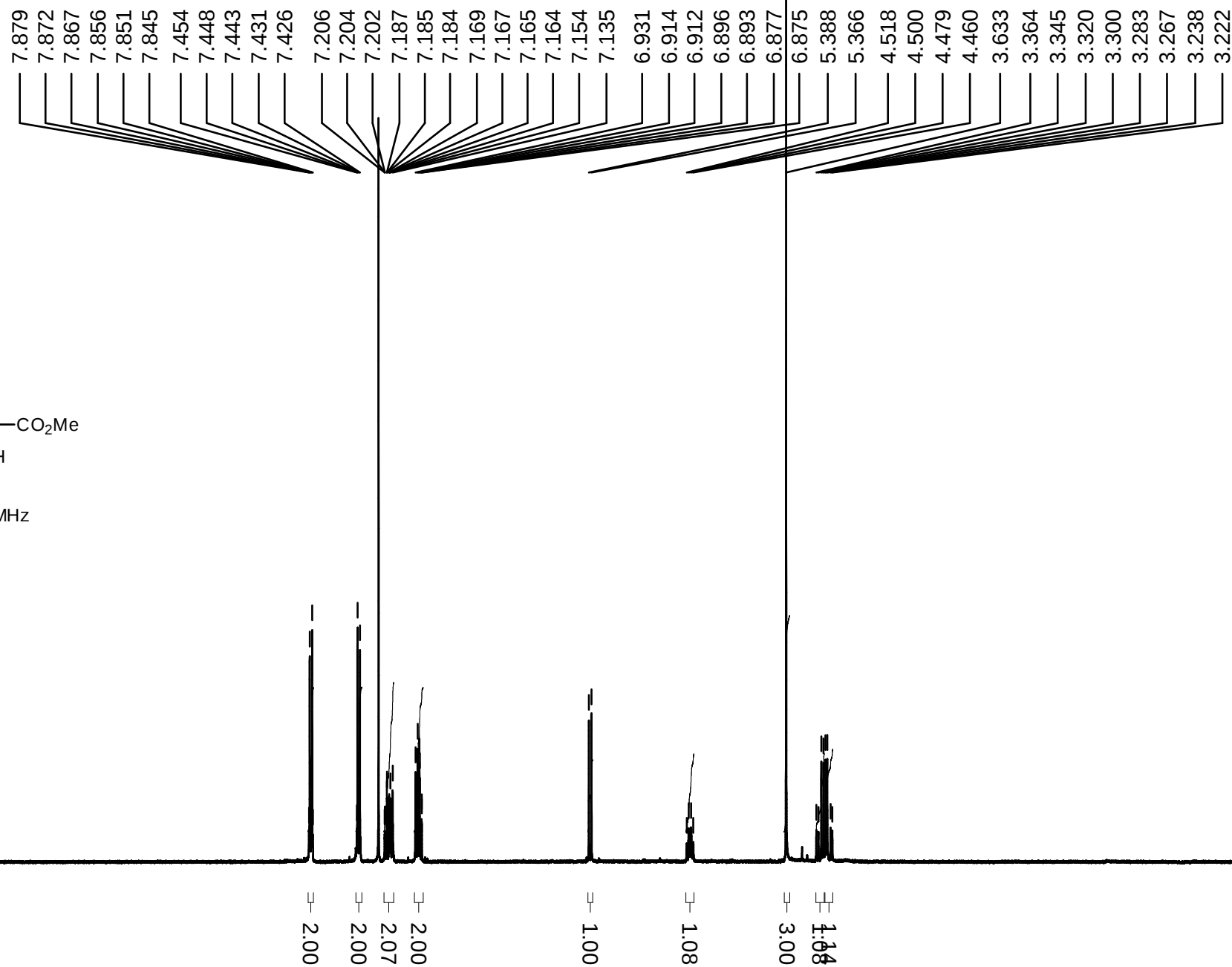
40.113

ppm (t1)

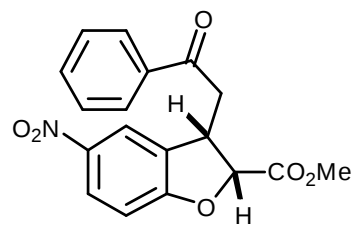


21

^1H , CDCl_3 , 400MHz



ppm (t1)



22

^{13}C , CDCl_3 , 100MHz

196.501

168.830

164.166

142.728

135.993

133.816

130.099

128.858

127.994

126.456

120.737

109.977

84.131

52.405

39.663

39.473

ppm (t1)

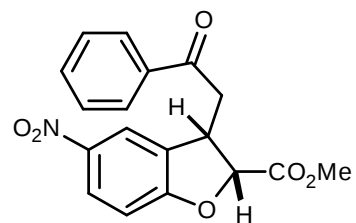
200

150

100

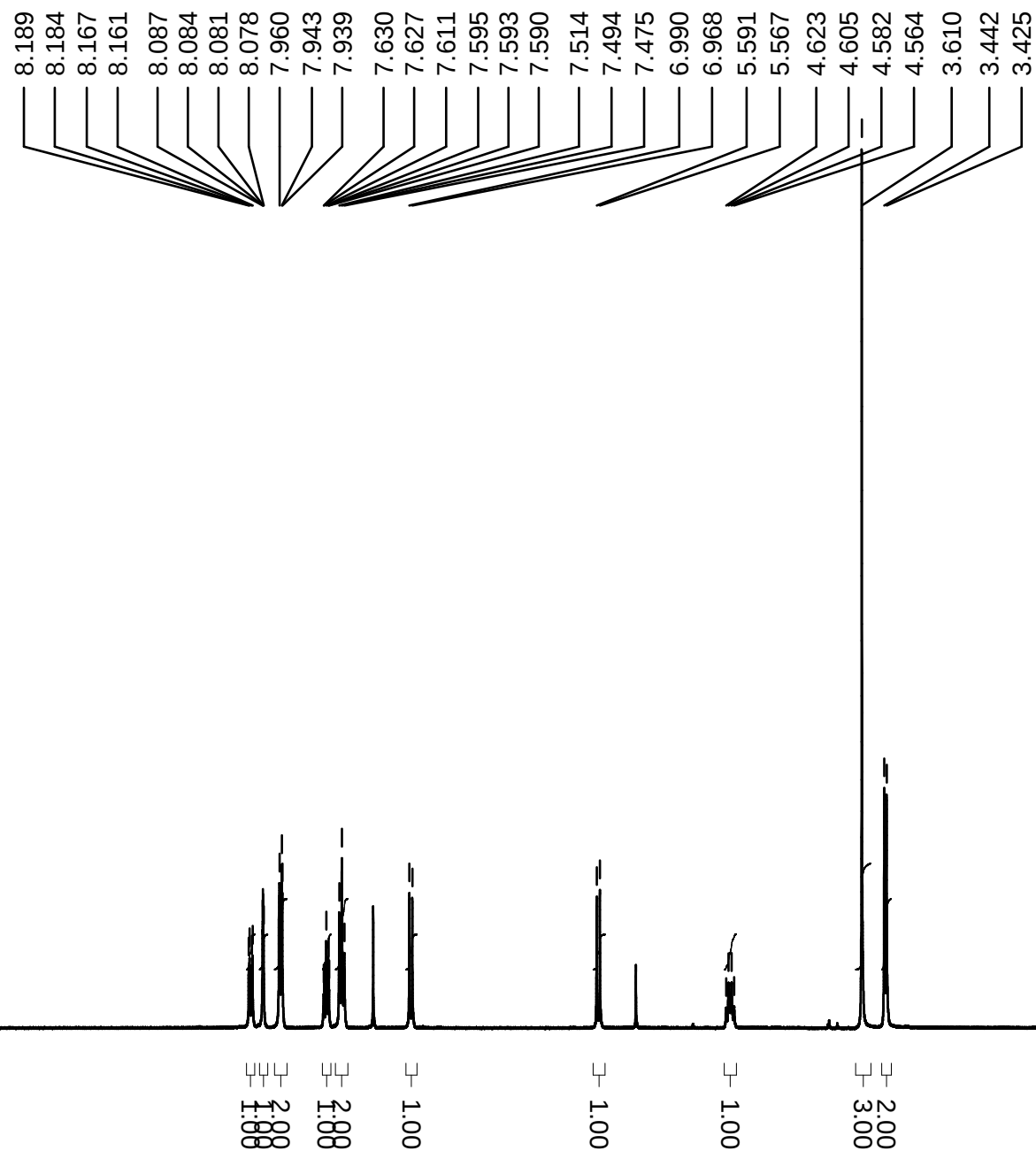
50

0

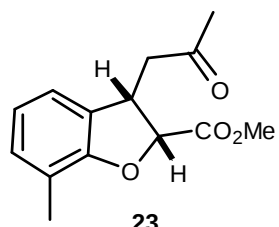


22

^1H , CDCl_3 , 400MHz

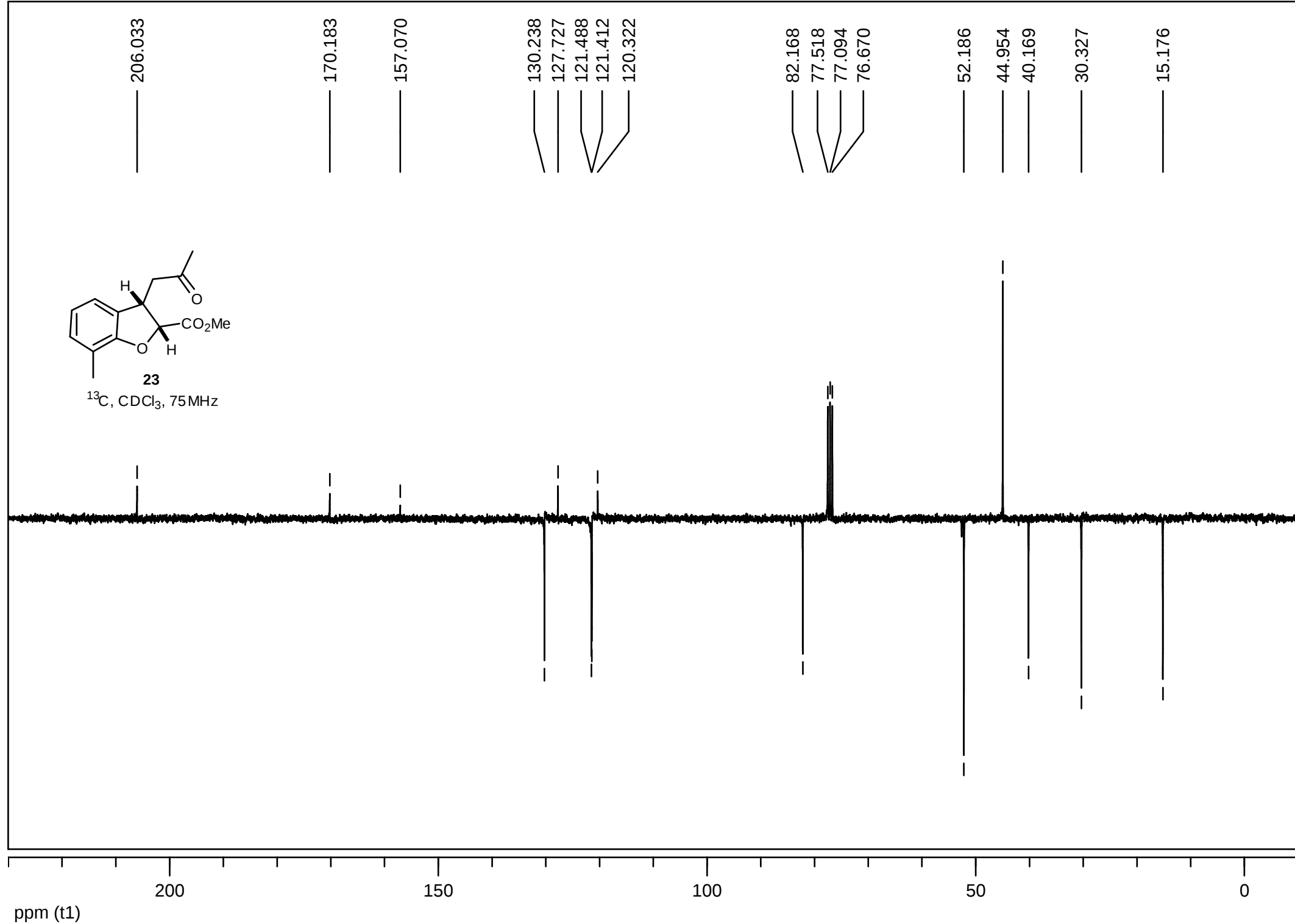


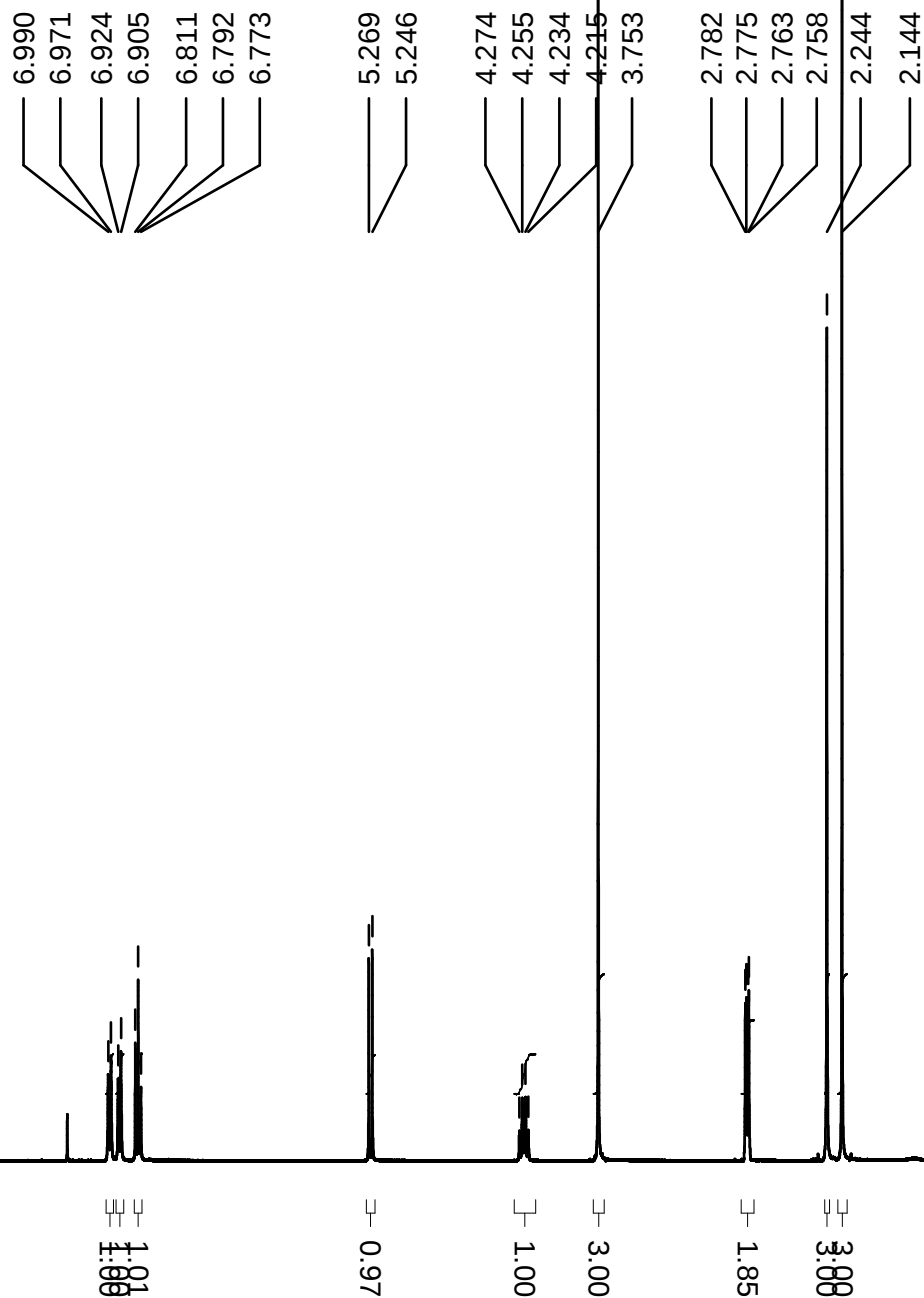
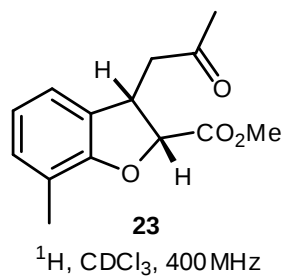
ppm (t1)



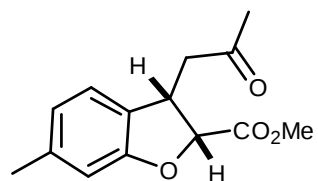
^{13}C , CDCl_3 , 75 MHz

206.033
170.183
157.070
130.238
127.727
121.488
121.412
120.322
82.168
77.518
77.094
76.670
52.186
44.954
40.169
30.327
15.176





ppm (t1)



24

^{13}C , CDCl_3 , 75MHz

205.972

170.074

158.831

139.313

125.462

123.863

122.248

110.777

82.624

52.237

44.937

39.591

30.362

21.546

ppm (t1)

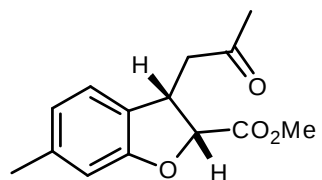
200

150

100

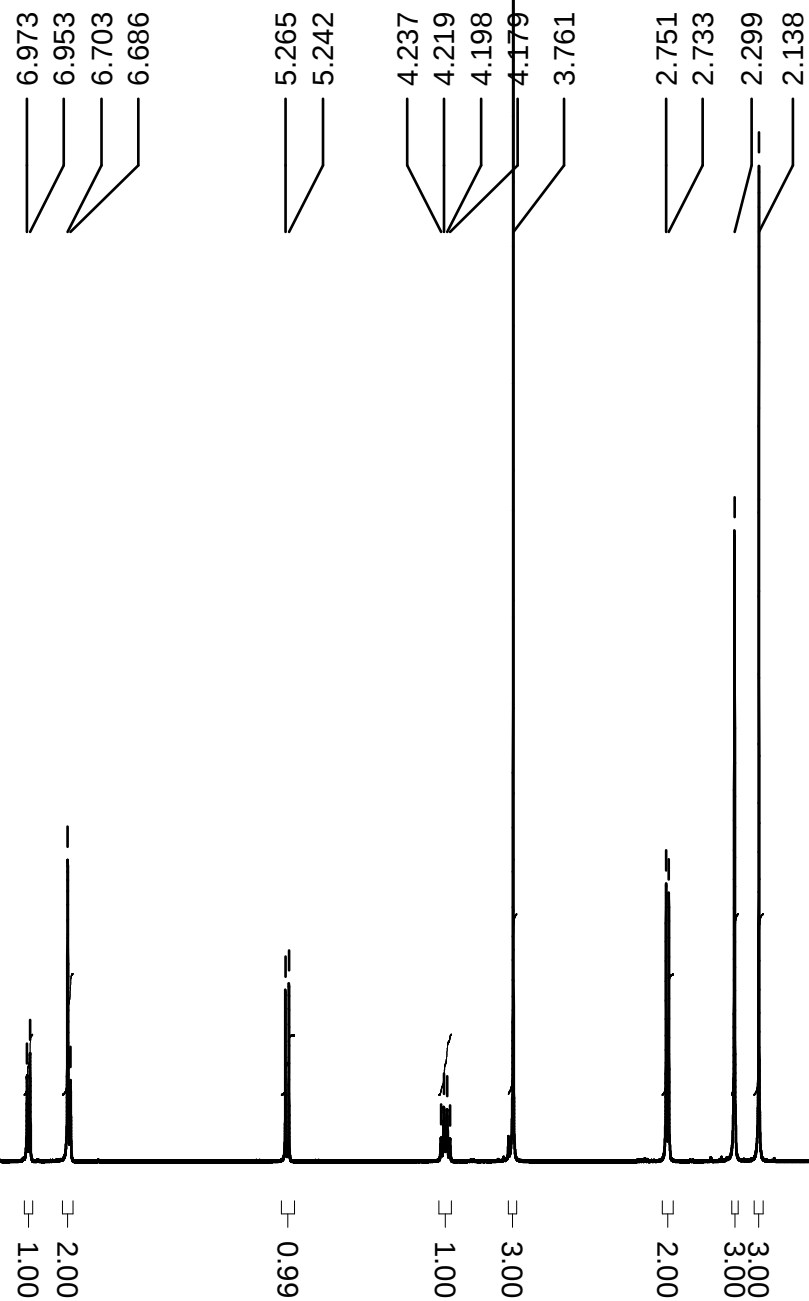
50

0

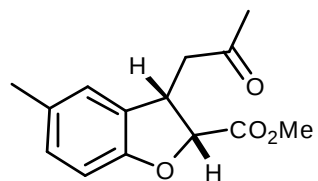


24

^1H , CDCl_3 , 400MHz



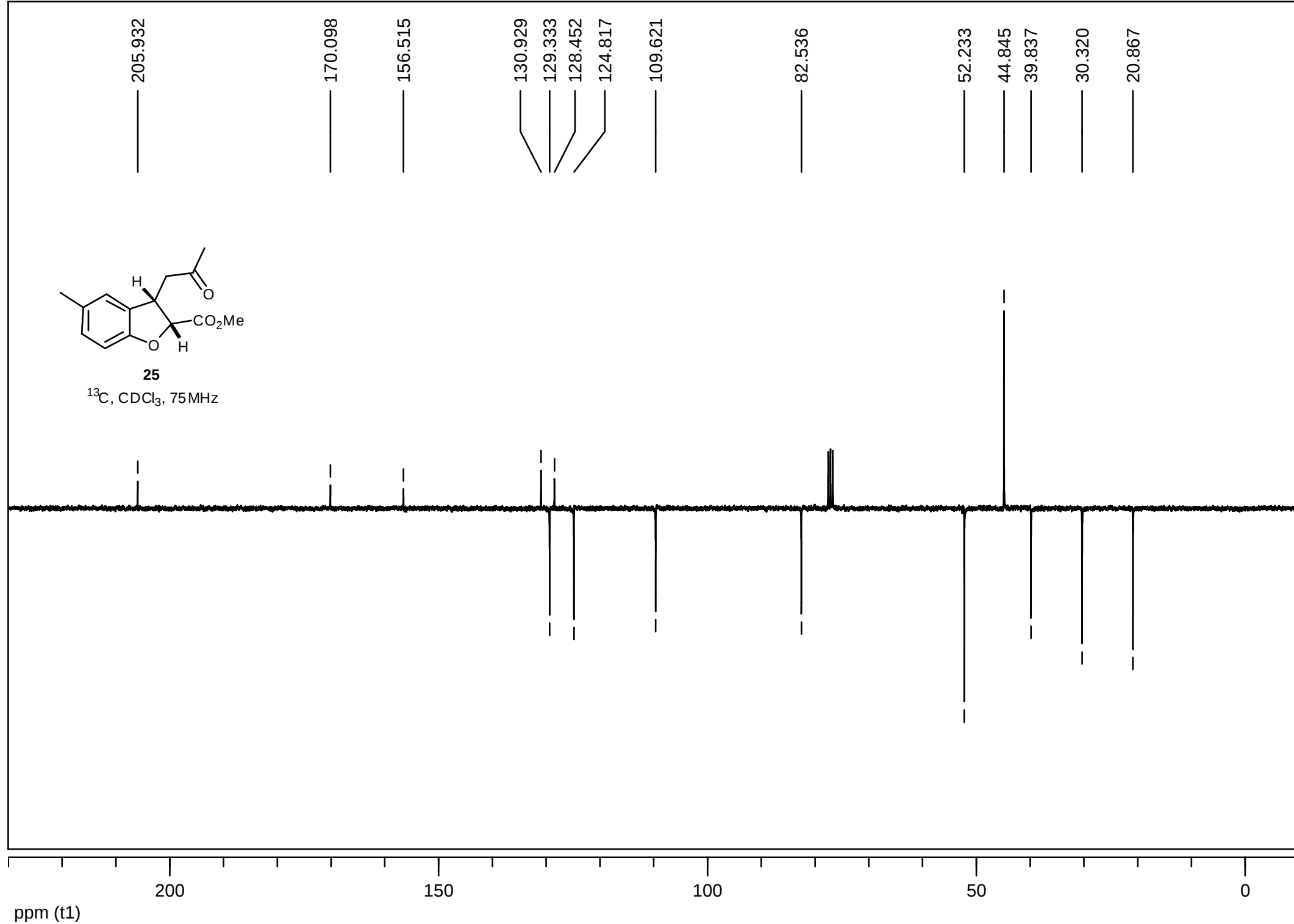
ppm (t1)

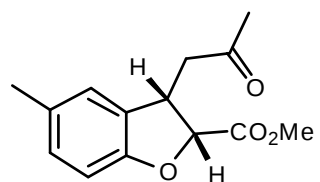


25

^{13}C , CDCl_3 , 75 MHz

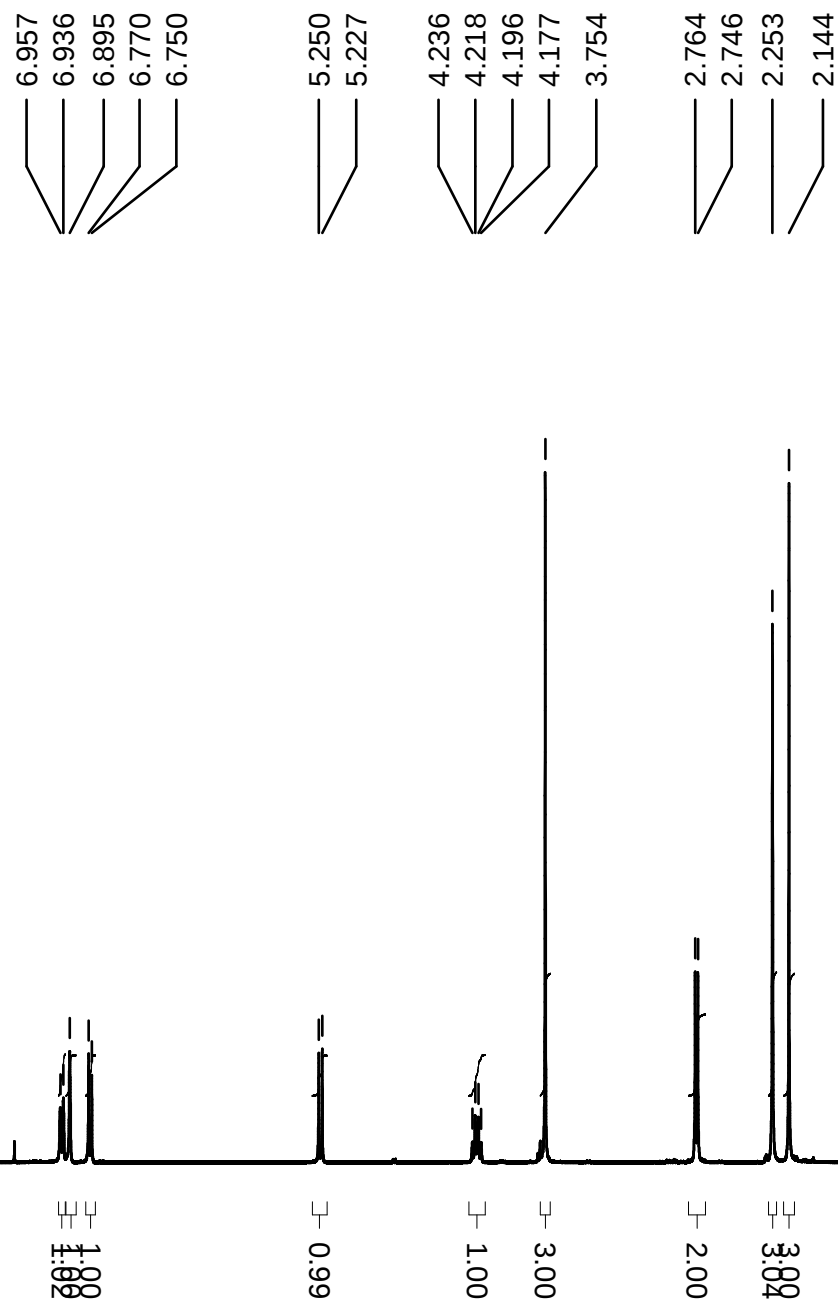
205.932
170.098
156.515
130.929
129.333
128.452
124.817
109.621
82.536
52.233
44.845
39.837
30.320
20.867



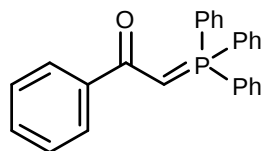


25

^1H , CDCl_3 , 400 MHz



ppm (t1)



59

^1H , CDCl_3 , 300MHz

7.987
7.981
7.976
7.972
7.963
7.750
7.737
7.732
7.729
7.719
7.706
7.701
7.697
7.581
7.577
7.574
7.569
7.563
7.558
7.554
7.548
7.544
7.540
7.537
7.494
7.487
7.475
7.471
7.468
7.457
7.454
7.450
7.372
7.363
7.356
7.346
7.340
4.458
4.397

2.00
6.00
9.00
3.00

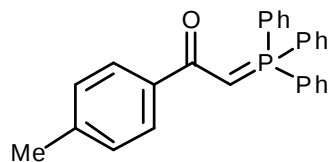
1.02

ppm (t1)

10.0

5.0

0.0



60

^{13}C , CDCl_3 , 100MHz

184.735

139.202

138.356

138.221

133.089

132.988

132.004

131.906

128.804

128.683

128.446

128.322

126.854

50.609

49.459

21.255

ppm (t1)

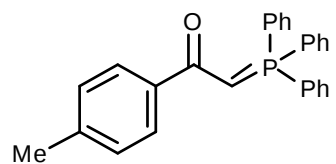
200

150

100

50

0



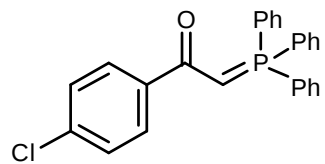
60

^1H , CDCl_3 , 300MHz

7.880
7.853
7.749
7.726
7.721
7.708
7.684
7.578
7.558
7.552
7.533
7.529
7.494
7.484
7.468
7.458
7.445
7.441
7.435
7.169
7.142
4.440
4.358
2.359

2.00
6.00
9.00
1.99
1.01
2.96

ppm (t1)



61

^{13}C , CDCl_3 , 100MHz

183.488
183.454

139.824
139.675
135.213
133.217
133.116
132.219
132.194
129.036
128.913
128.415
127.866
127.294
126.386

51.685
50.571

200

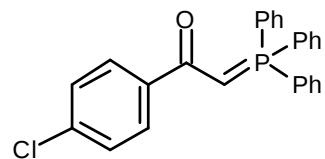
150

100

50

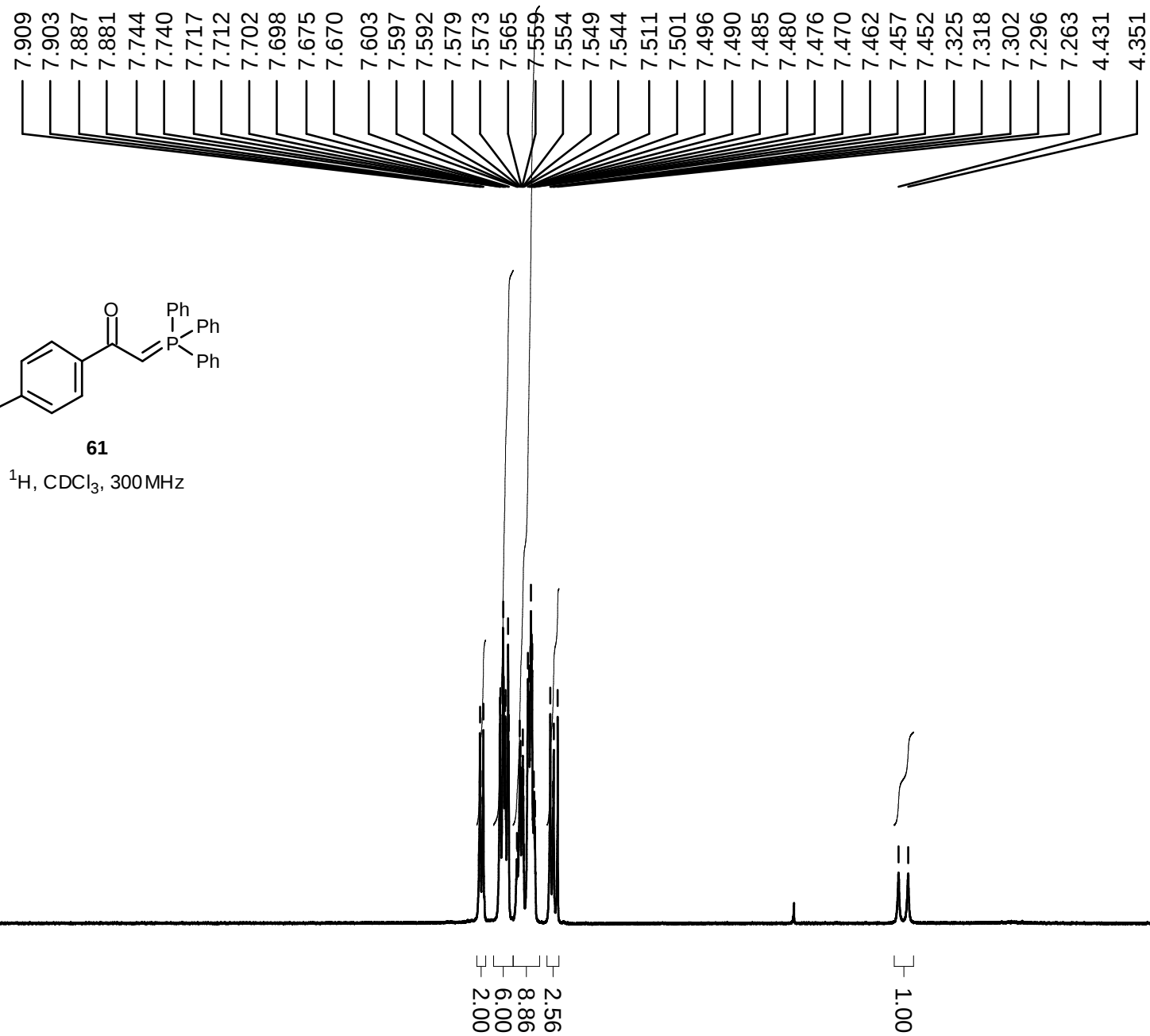
0

ppm (t1)

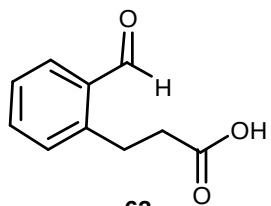


61

^1H , CDCl_3 , 300MHz



ppm (t1)



^{13}C , CDCl_3 , 100MHz

193.011

178.740

142.385

133.989

133.898

133.641

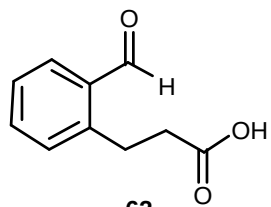
131.142

127.107

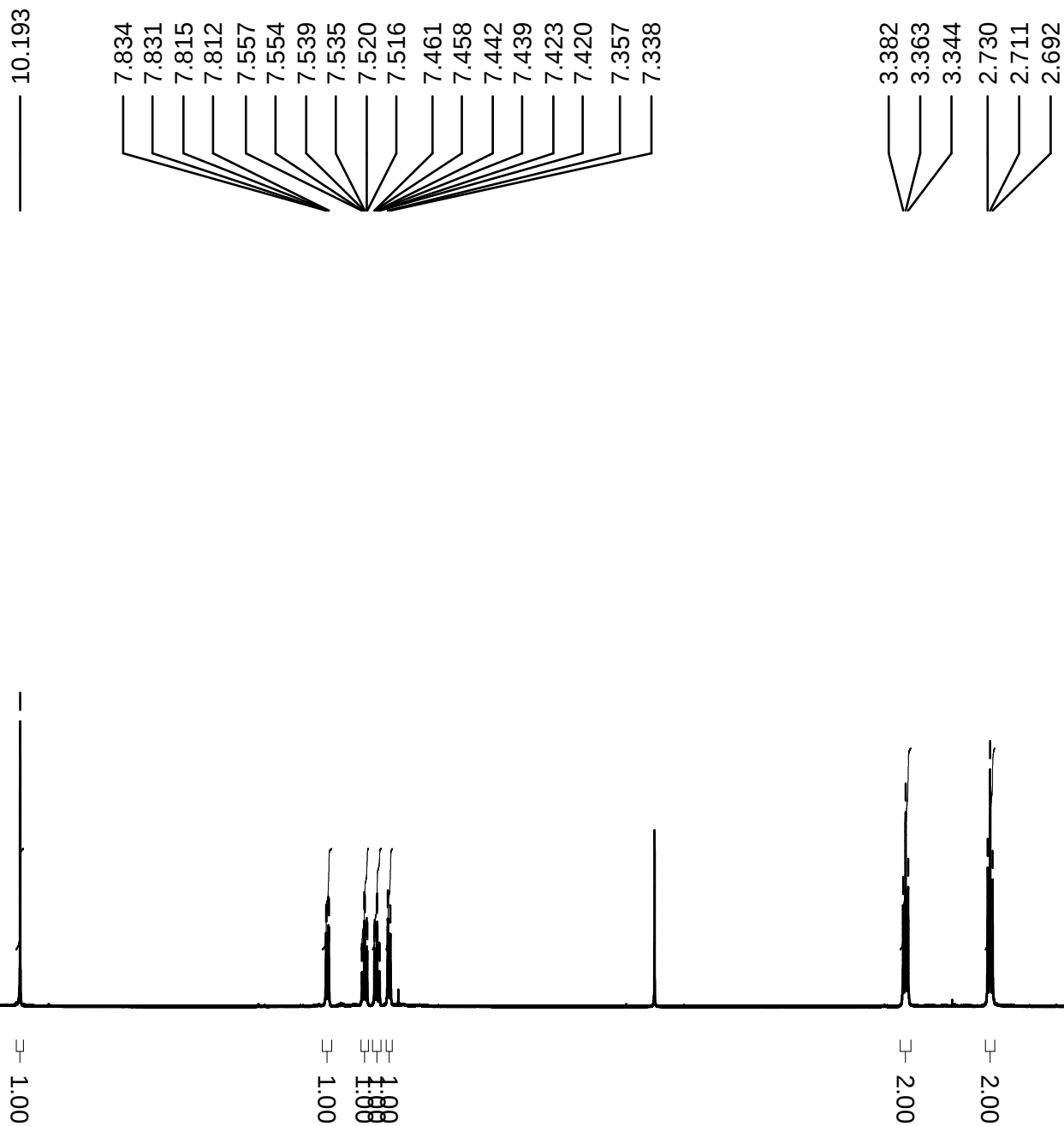
35.091

27.782

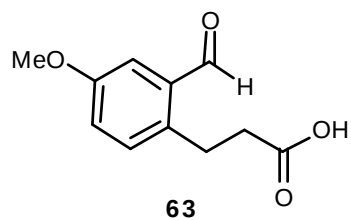
ppm (t1)



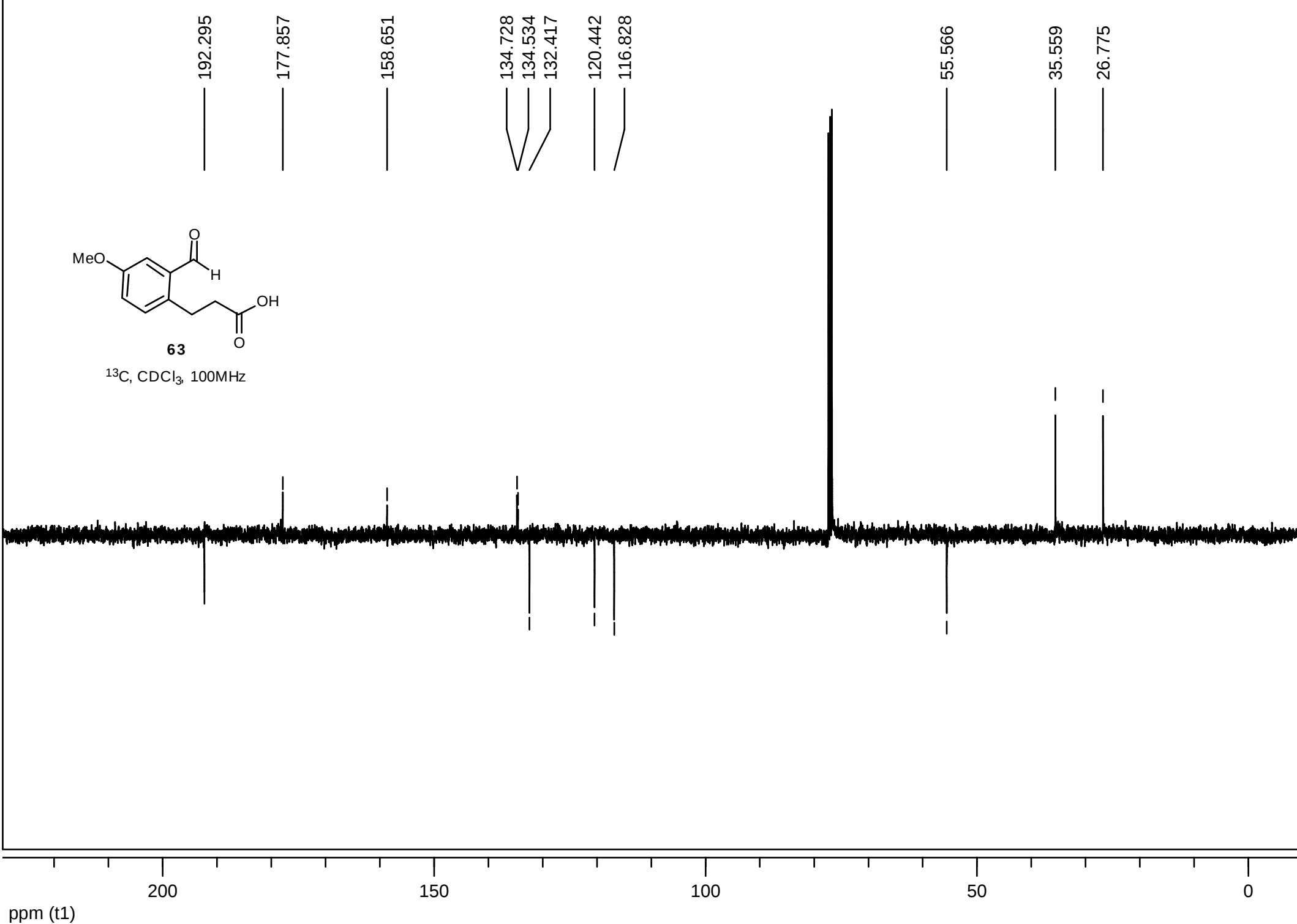
^1H , CDCl_3 , 400MHz

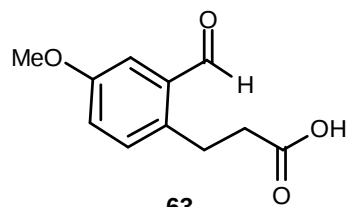


ppm (t1)

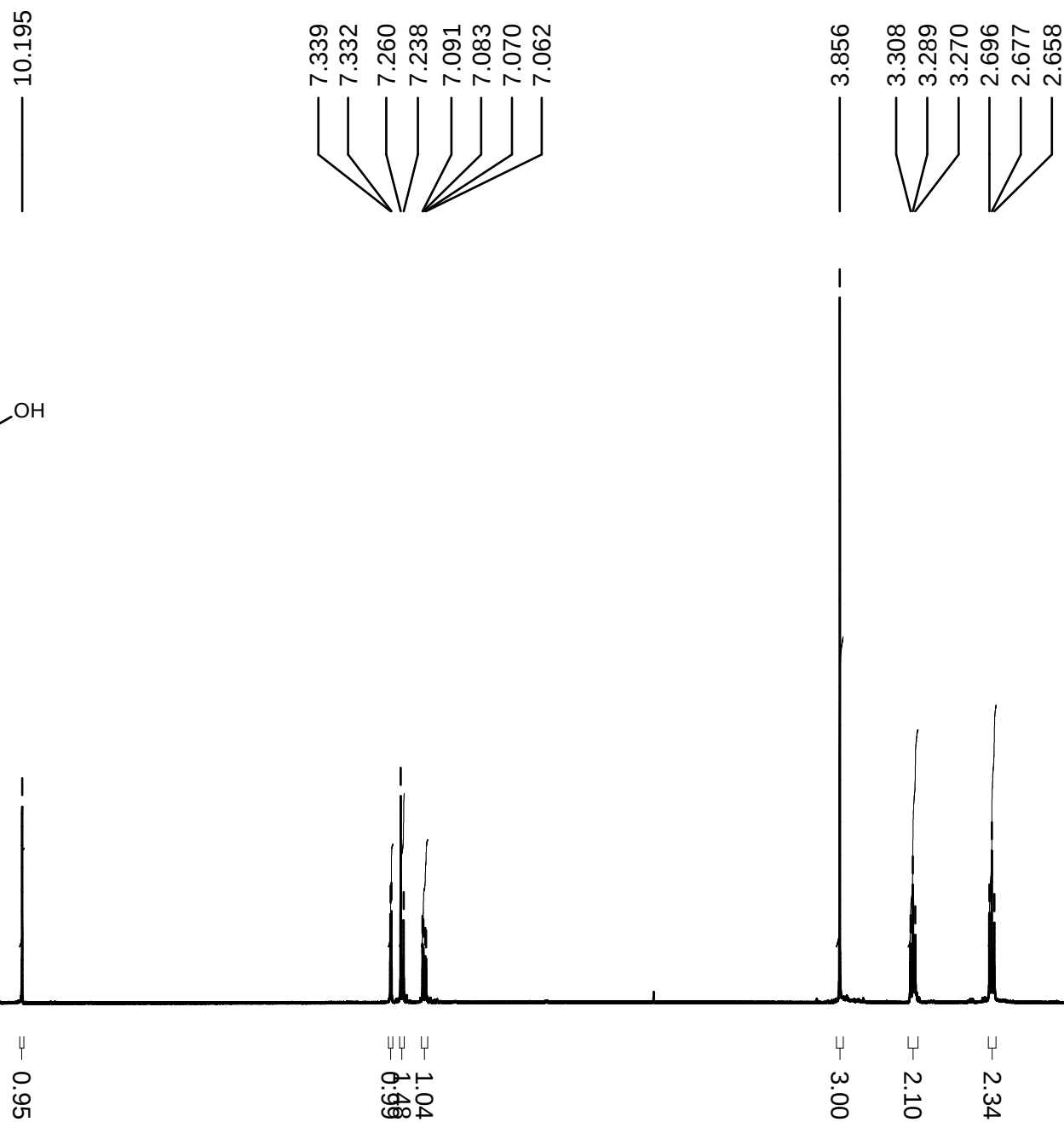


^{13}C , CDCl_3 , 100MHz

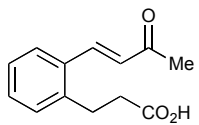




¹H, CDCl₃, 400MHz

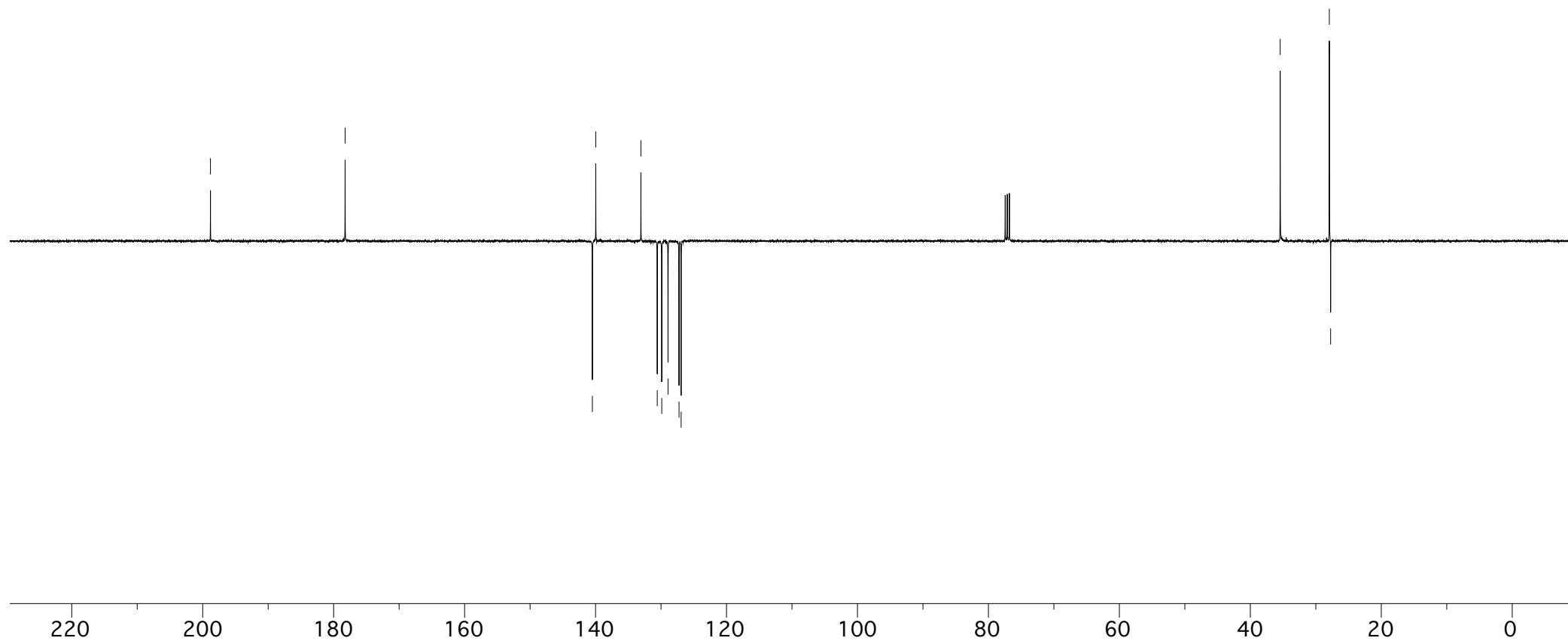


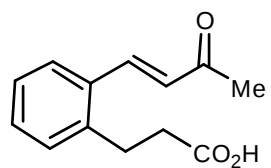
ppm (t1)



64

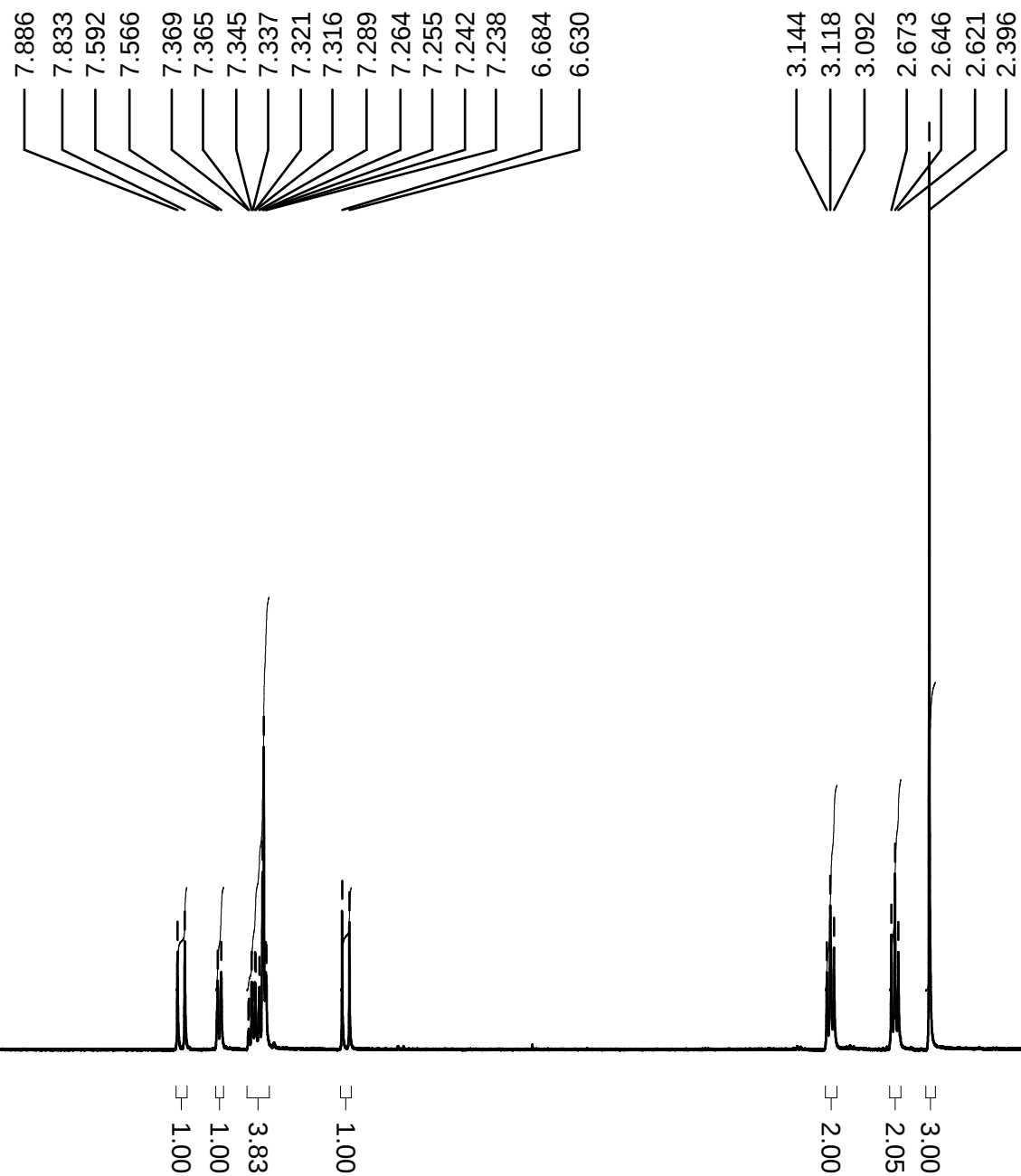
^{13}C , CDCl_3 , 100MHz



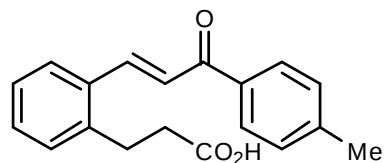


64

^1H , CDCl_3 , 300MHz

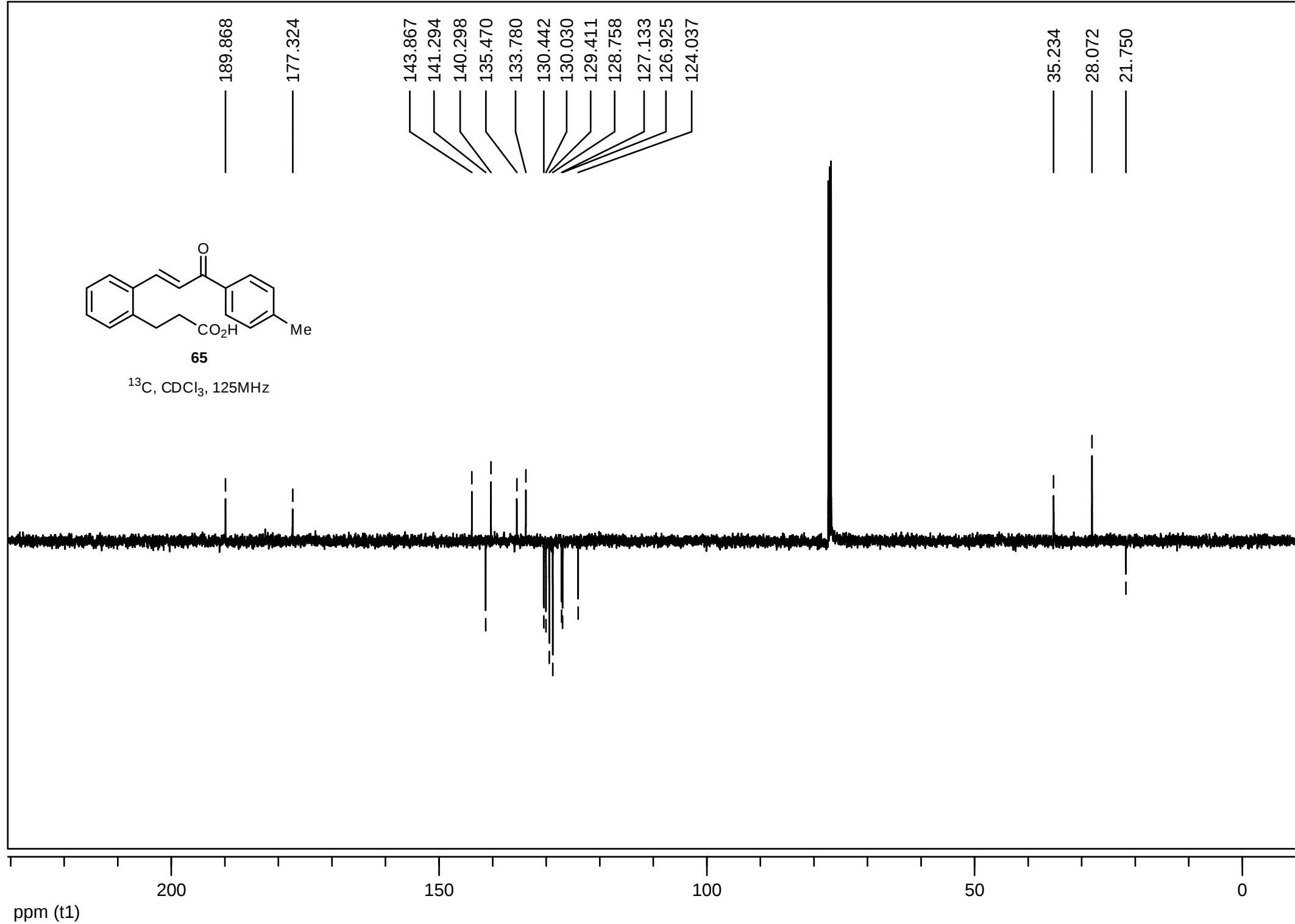


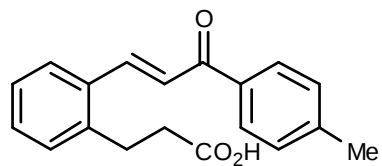
ppm (t1)



65

^{13}C , CDCl_3 , 125MHz





65

^1H , CDCl_3 , 500MHz

8.129
8.098
7.960
7.944
7.720
7.705
7.500
7.469
7.367
7.352
7.338
7.314
7.298
7.284
7.269

3.163
3.147
3.132
2.672
2.657
2.641
2.436

5.03
2.01
1.07
1.03
1.05

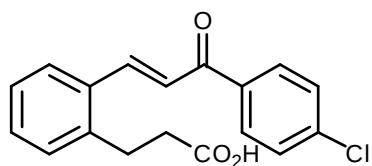
2.01
2.02
3.00

ppm (t1)

10.0

5.0

0.0



66

^{13}C , CDCl_3 , 75MHz

189.332

177.236

142.161

140.362

138.560

136.338

133.454

130.697

130.031

129.960

128.989

127.168

126.942

123.407

35.151

27.963

200

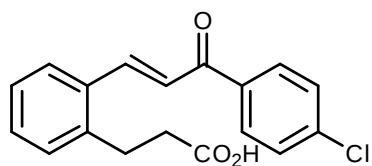
150

100

50

0

ppm (t1)

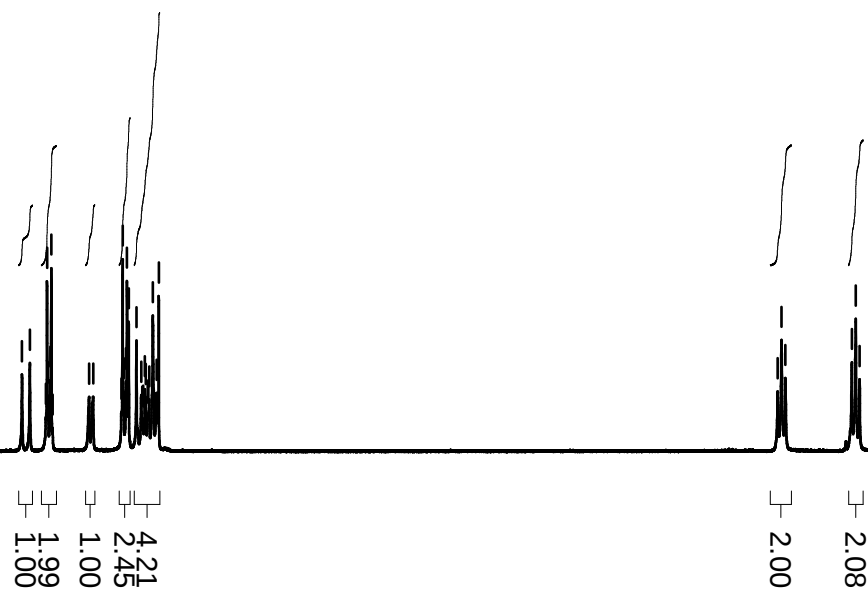


66

^1H , CDCl_3 , 300MHz

8.172
8.121
8.015
8.007
8.001
7.985
7.979
7.971
7.730
7.704
7.516
7.509
7.502
7.486
7.480
7.469
7.417
7.386
7.380
7.373
7.362
7.357
7.343
7.339
7.333
7.309
7.284
7.270

3.186
3.161
3.134
2.697
2.670
2.645

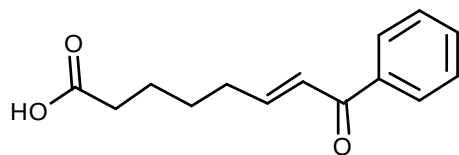


ppm (t1)

10.0

5.0

0.0



67

^{13}C , CDCl_3 , 75MHz

190.872

179.436

149.055

137.804

132.650

128.510

128.489

126.158

33.726

32.368

27.447

24.160

ppm (t1)

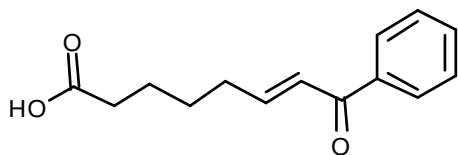
200

150

100

50

0



67

^1H , CDCl_3 , 300MHz

7.940
7.917
7.912
7.585
7.559
7.536
7.493
7.468
7.444
7.099
7.077
7.054
7.048
7.025
7.003
6.926
6.875

2.435
2.411
2.387
2.370
2.347
2.325
1.771
1.751
1.722
1.699
1.675
1.650
1.626
1.603
1.578
1.574
1.551

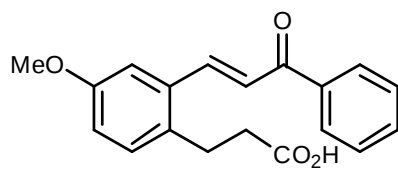


ppm (t1)

10.0

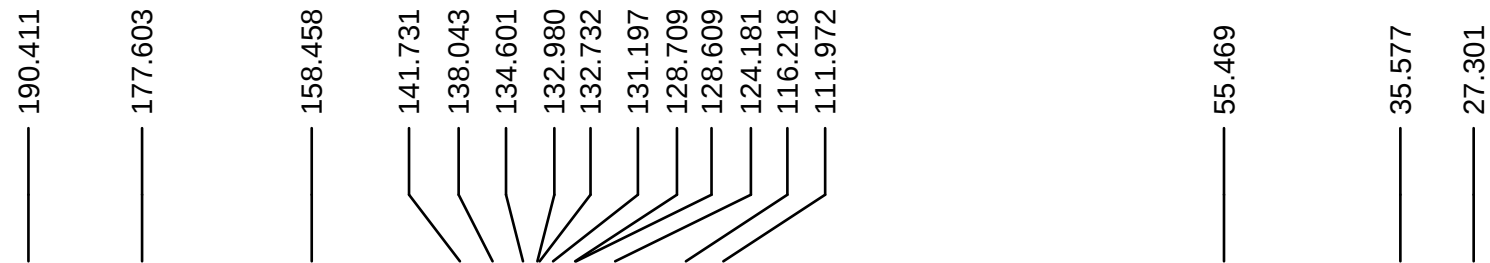
5.0

0.0

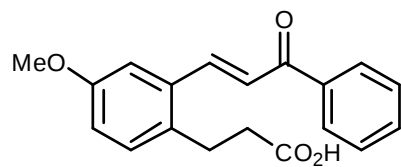


68

^{13}C , CDCl_3 , 100MHz

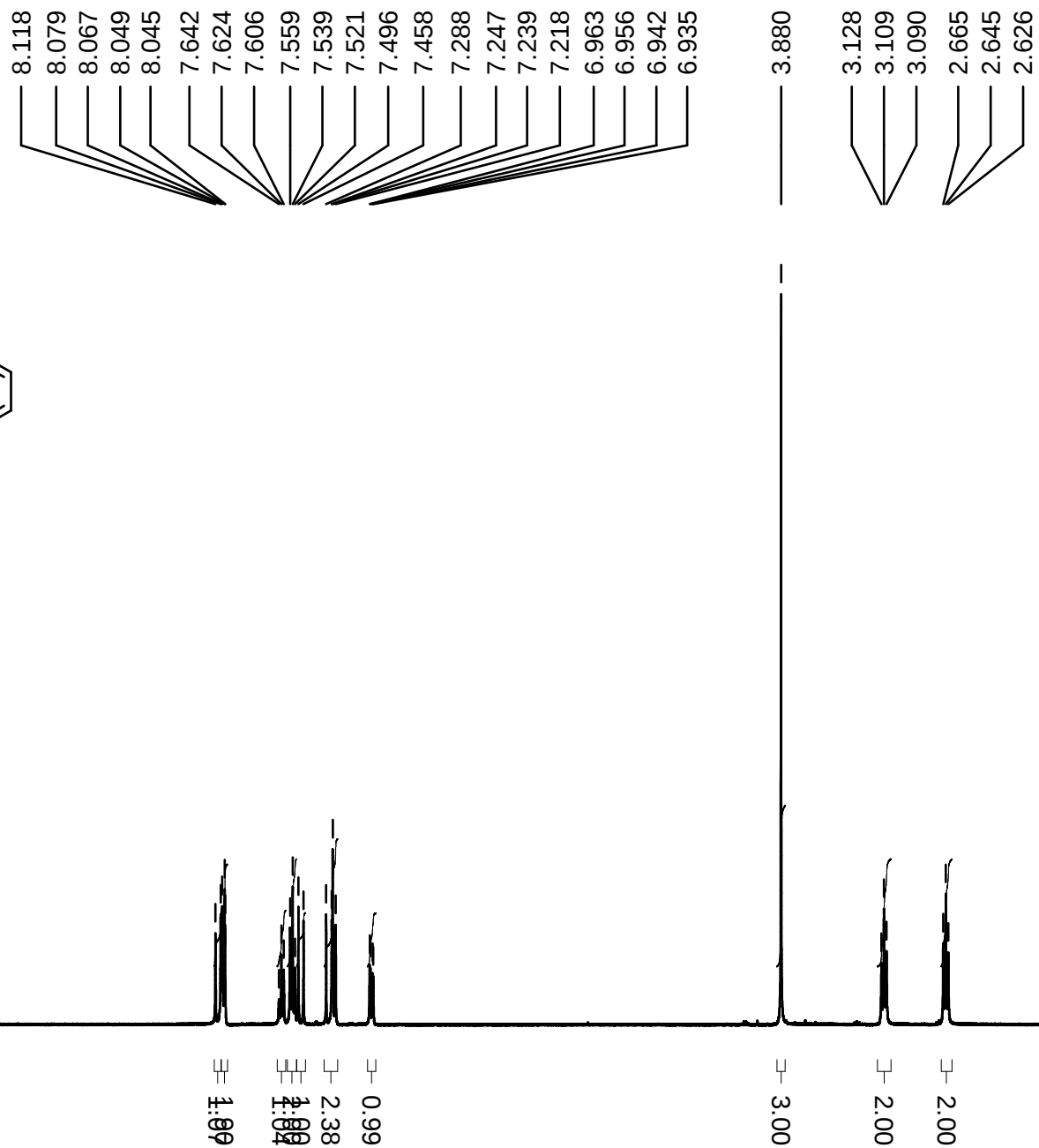


ppm (t1)

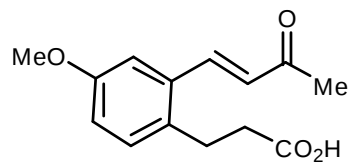


68

^1H , CDCl_3 , 400MHz

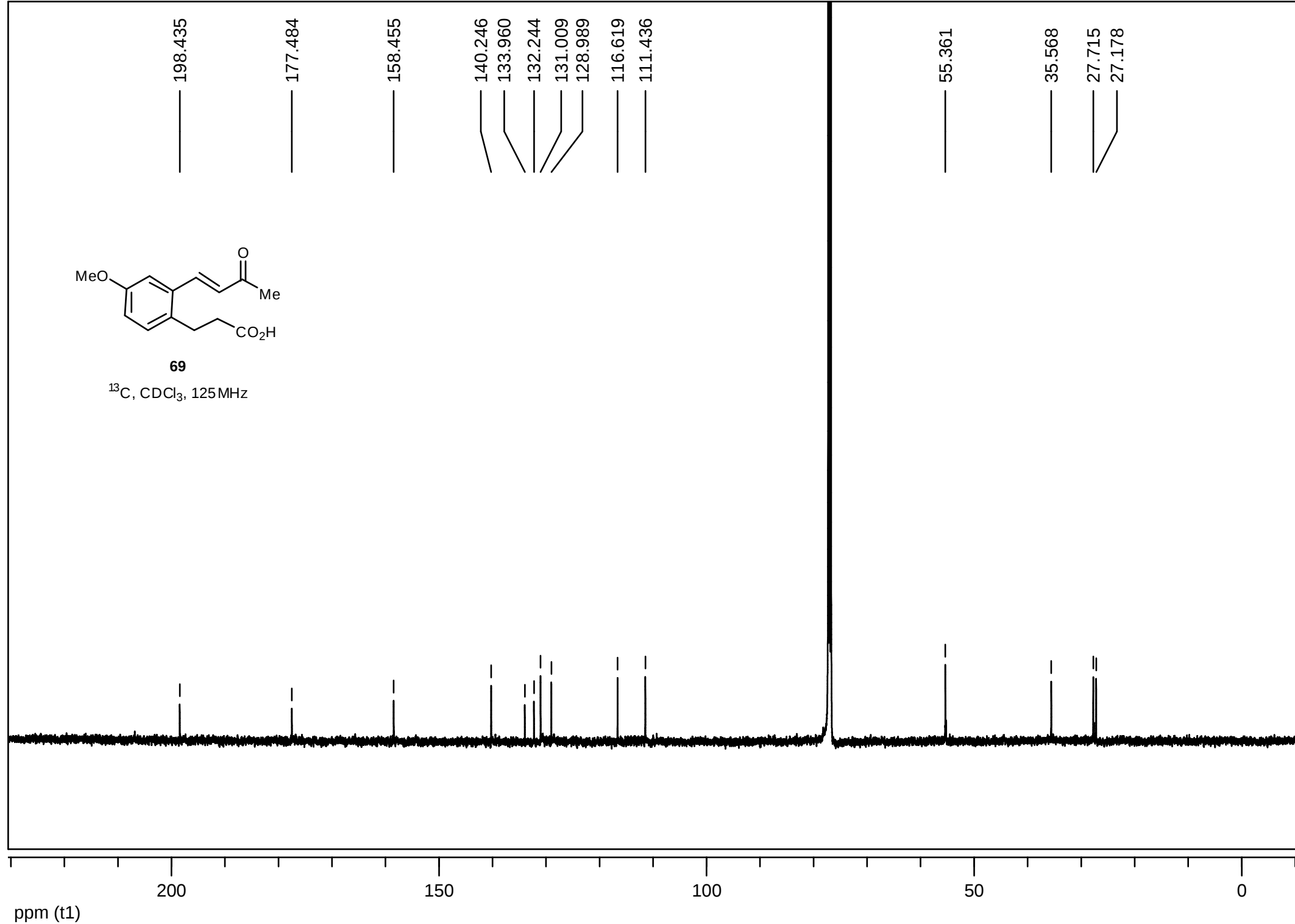
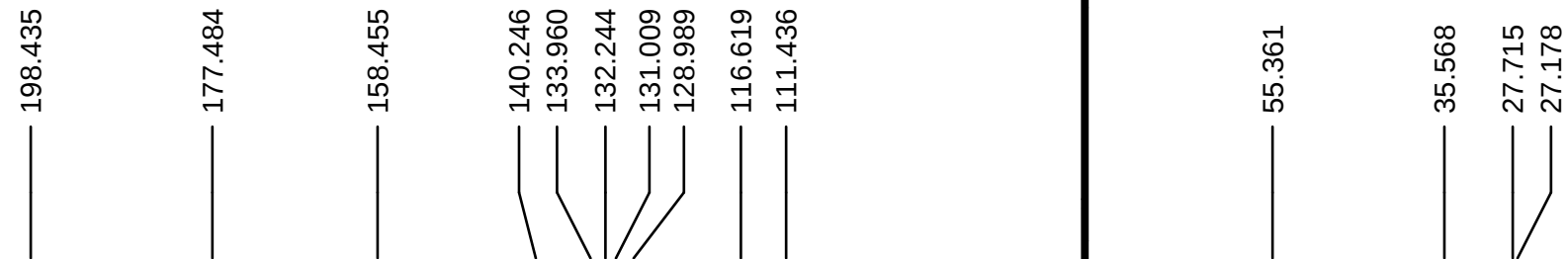


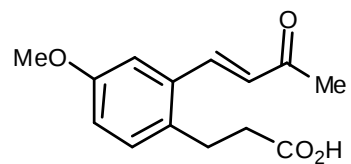
ppm (t1)



69

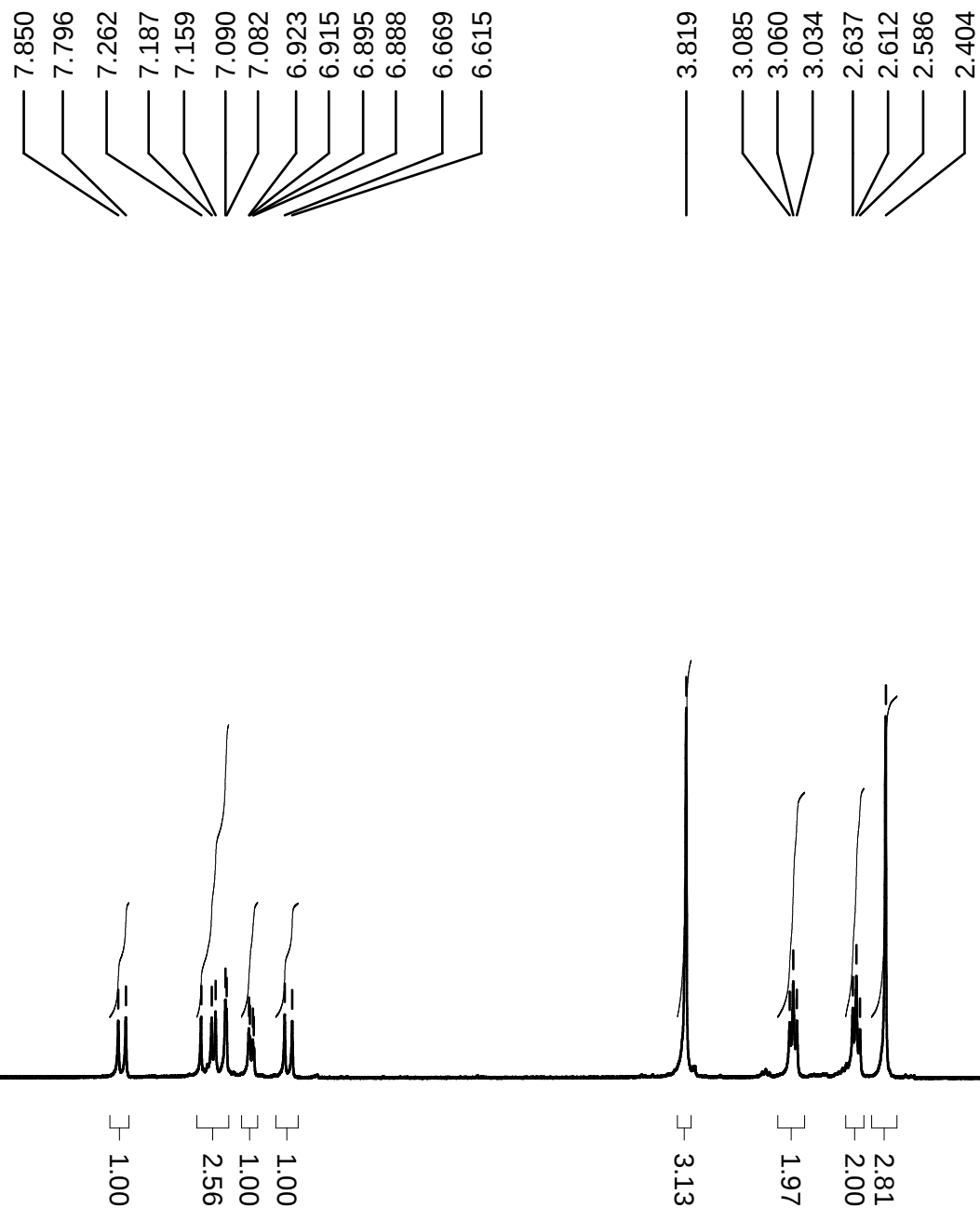
^{13}C , CDCl_3 , 125MHz



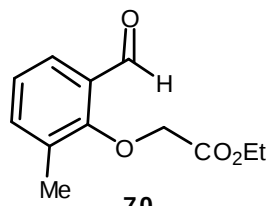


69

^1H , CDCl_3 , 300MHz



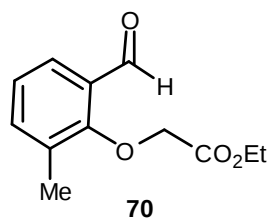
ppm (t1)



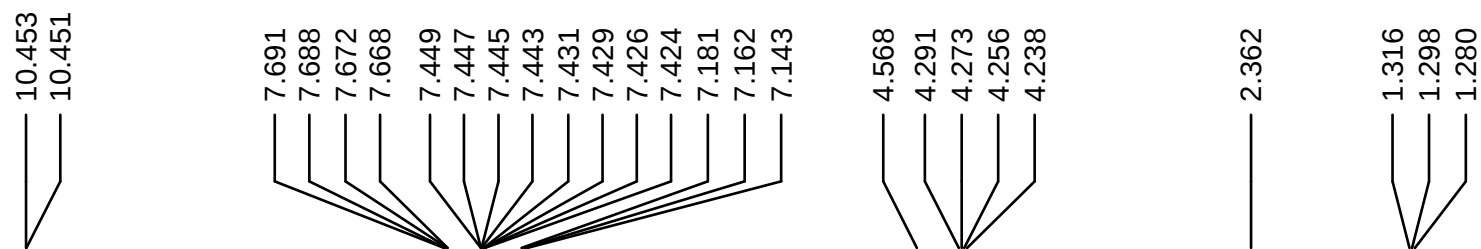
^{13}C , CDCl_3 , 100MHz



ppm (t1)



^1H , CDCl_3 , 400MHz



6.94

0.98

1.00

1.00

2.00

2.01

3.00

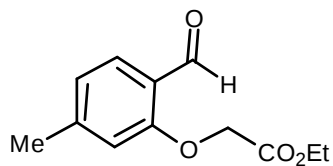
3.02

ppm (t1)

10.0

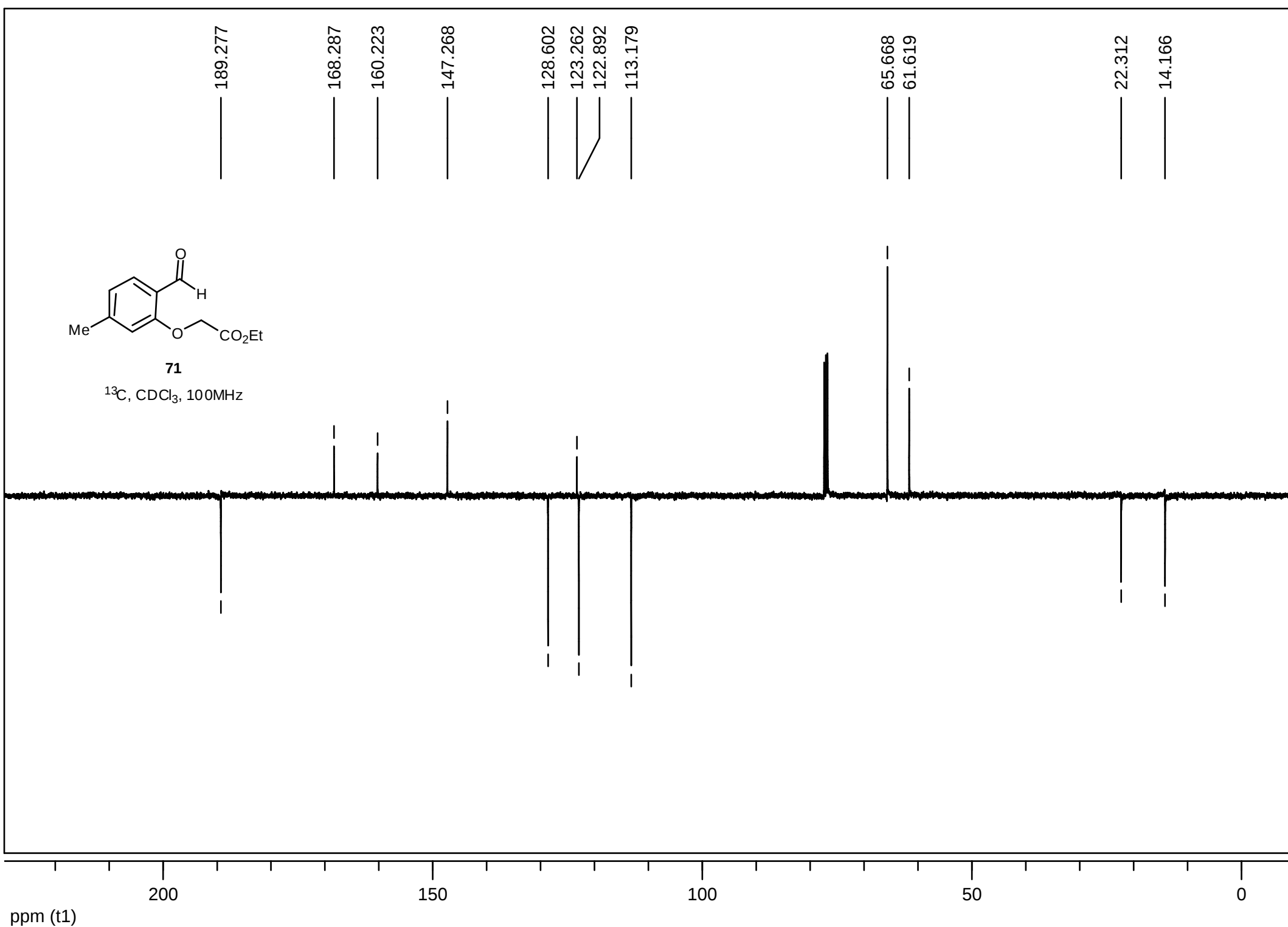
5.0

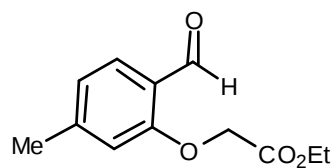
0.0



71

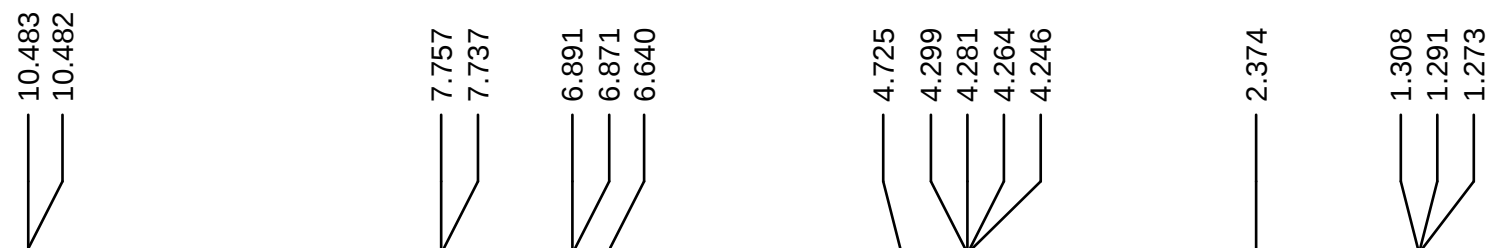
¹³C, CDCl₃, 100MHz



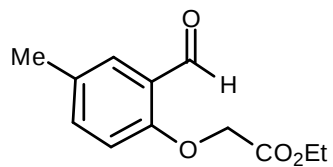


71

^1H , CDCl_3 , 400MHz

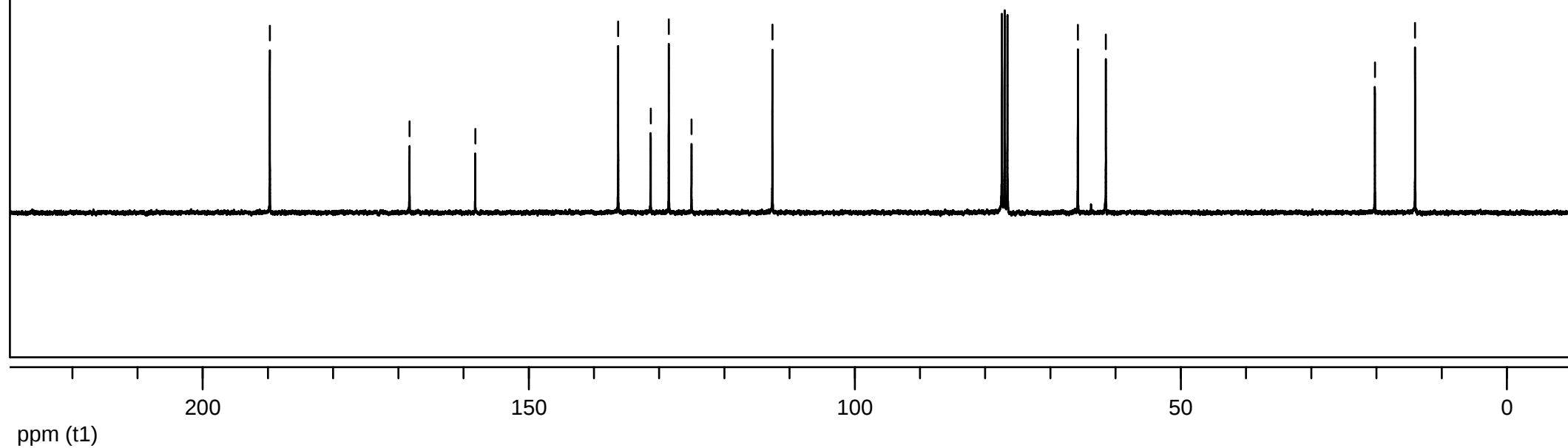
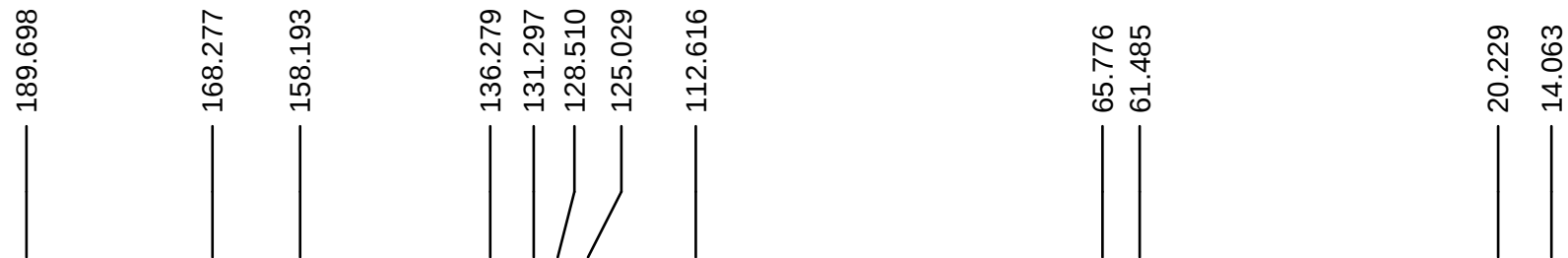


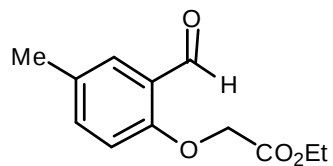
ppm (t1)



72

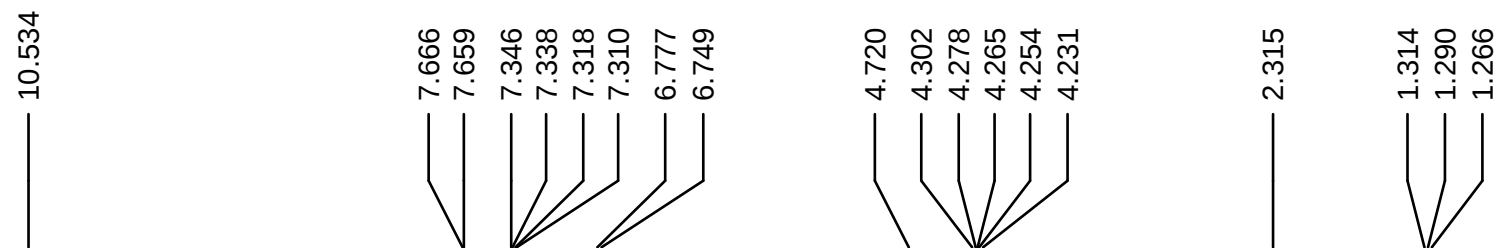
^{13}C , CDCl_3 , 75MHz





72

¹H, CDCl₃, 300 MHz

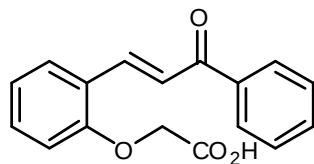


10.0

5.0

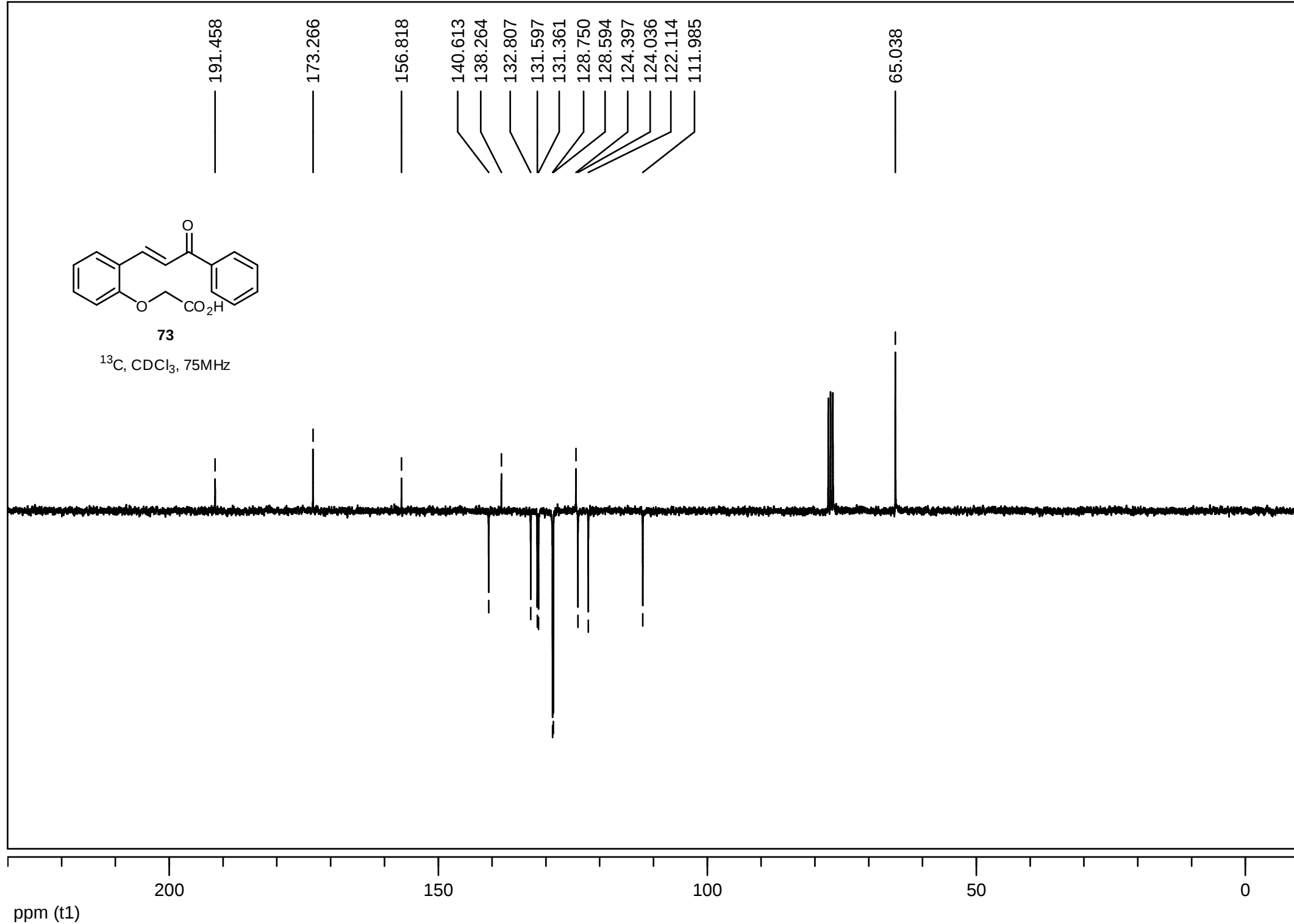
0.0

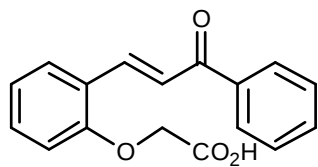
ppm (t1)



73

^{13}C , CDCl_3 , 75MHz





73

^1H , CDCl_3 , 300MHz

8.139
8.127
8.123
8.100
8.095
8.086
8.005
7.953
7.690
7.685
7.665
7.660
7.597
7.592
7.582
7.572
7.564
7.553
7.549
7.544
7.522
7.497
7.479
7.474
7.469
7.432
7.426
7.404
7.379
7.374
7.134
7.109
7.084
6.910
6.883
4.854

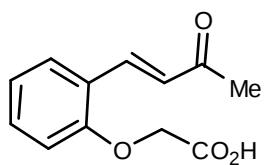
20.9
1.07
3.11
1.12
1.12
1.08
2.00

ppm (t1)

10.0

5.0

0.0



74

^{13}C , DMSO, 125MHz

198.021

169.880

156.469

137.476

131.765

128.714

127.607

122.802

121.223

112.626

64.827

27.645

ppm (t1)

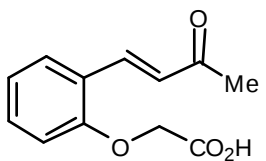
200

150

100

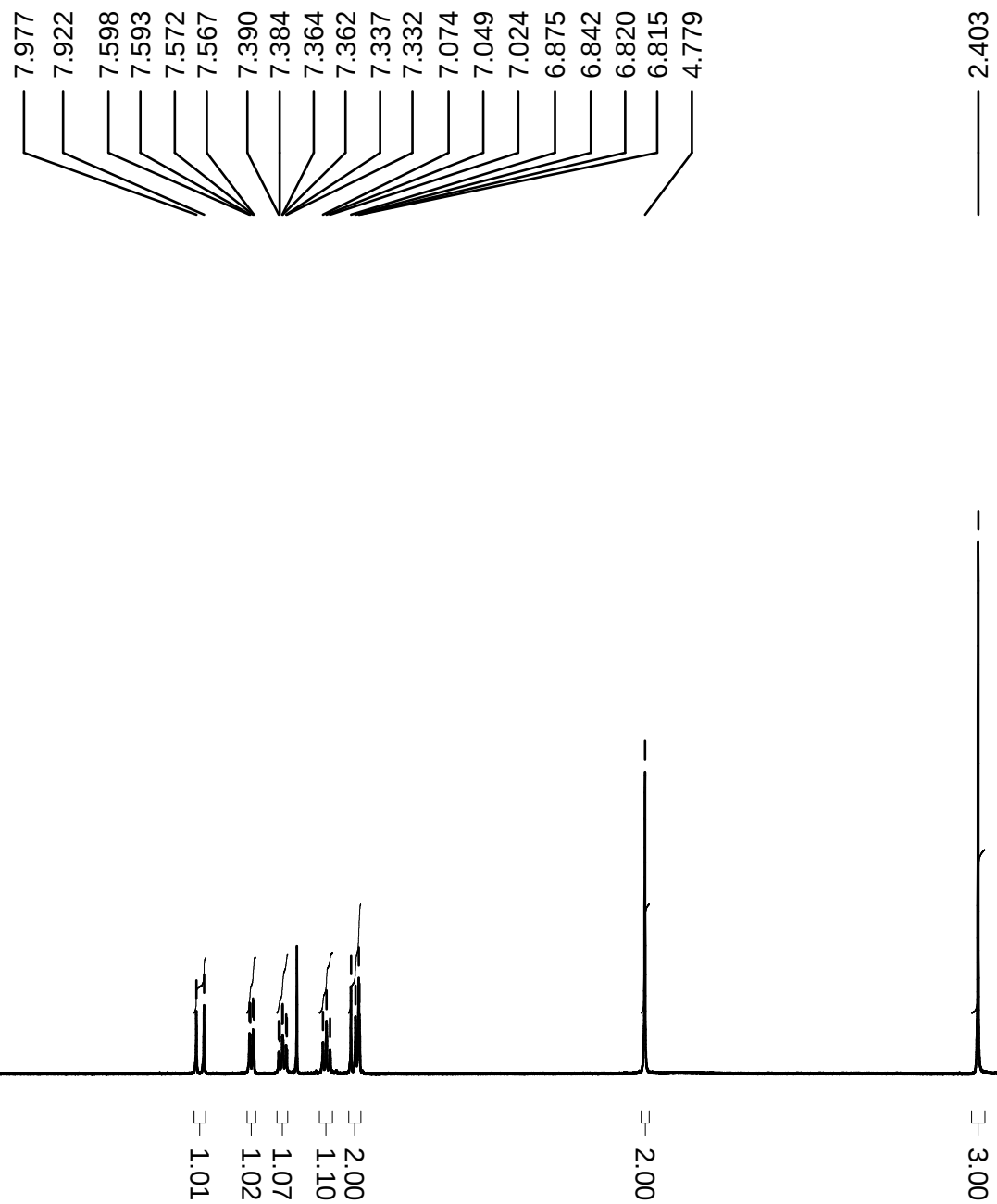
50

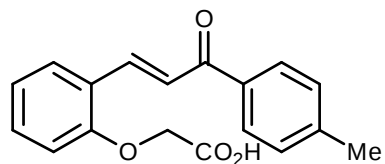
0



74

^1H , CDCl_3 , 300MHz





75

^{13}C , MeOD, 100MHz

192.839

172.100

158.813

145.394

141.782

136.890

132.996

132.051

130.479

130.040

125.290

124.526

122.770

113.475

66.347

21.715

ppm (t1)

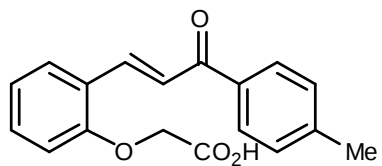
200

150

100

50

0



75

^1H , MeOD, 400MHz

8.143
8.103
8.068
8.053
8.049
8.028
7.729
7.725
7.709
7.705
7.434
7.429
7.415
7.413
7.411
7.409
7.394
7.390
7.374
7.354
7.093
7.091
7.074
7.072
7.055
7.053
7.024
7.003
4.822
2.441

2.83
0.99
1.88
1.00

2.56

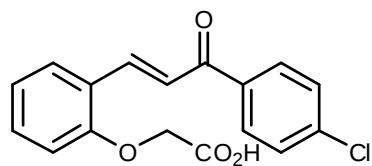
3.00

ppm (t1)

10.0

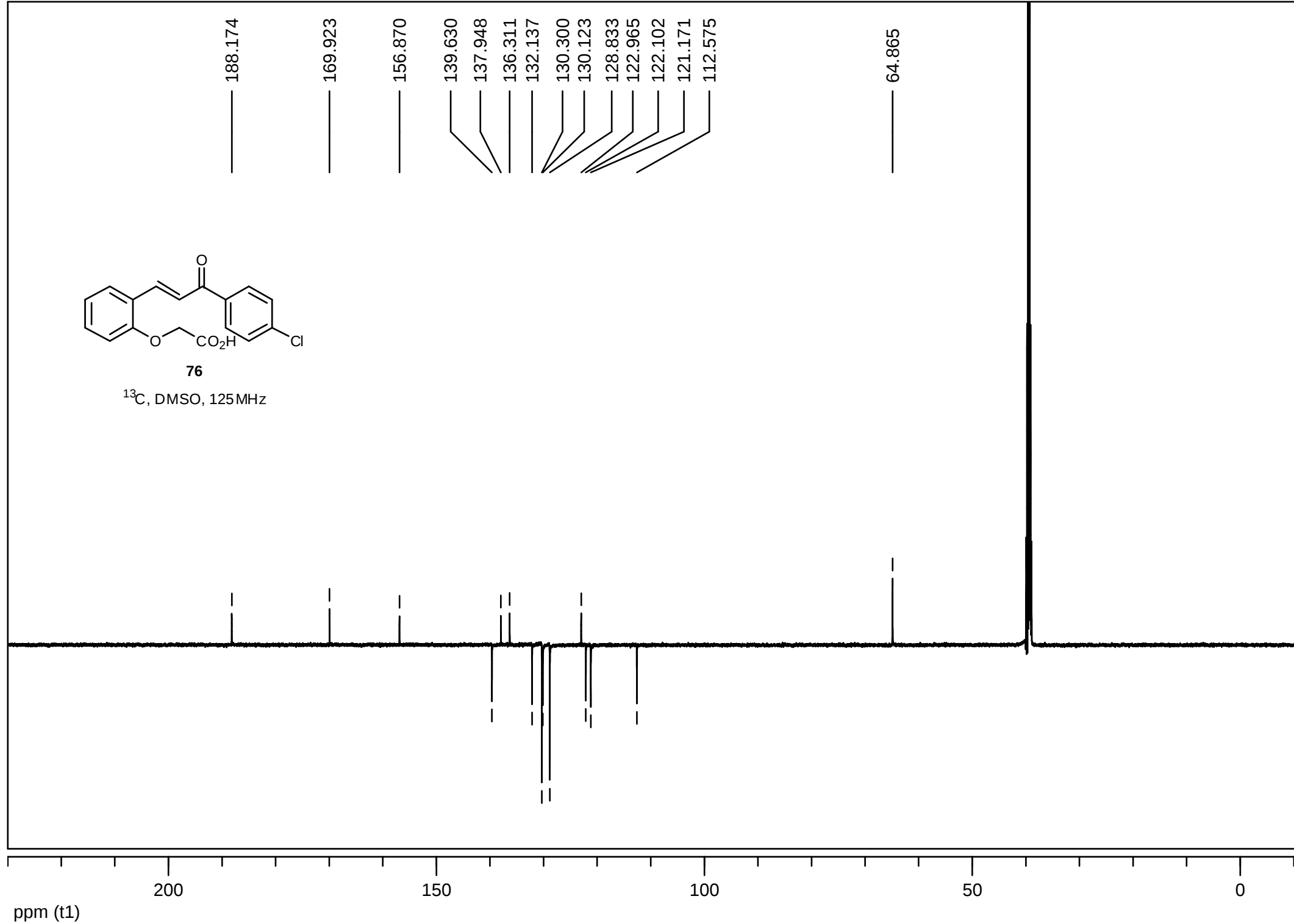
5.0

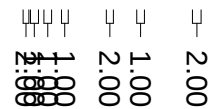
0.0



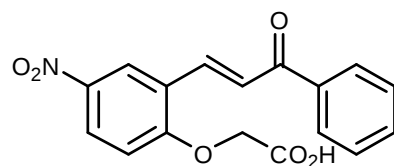
76

^{13}C , DMSO, 125MHz





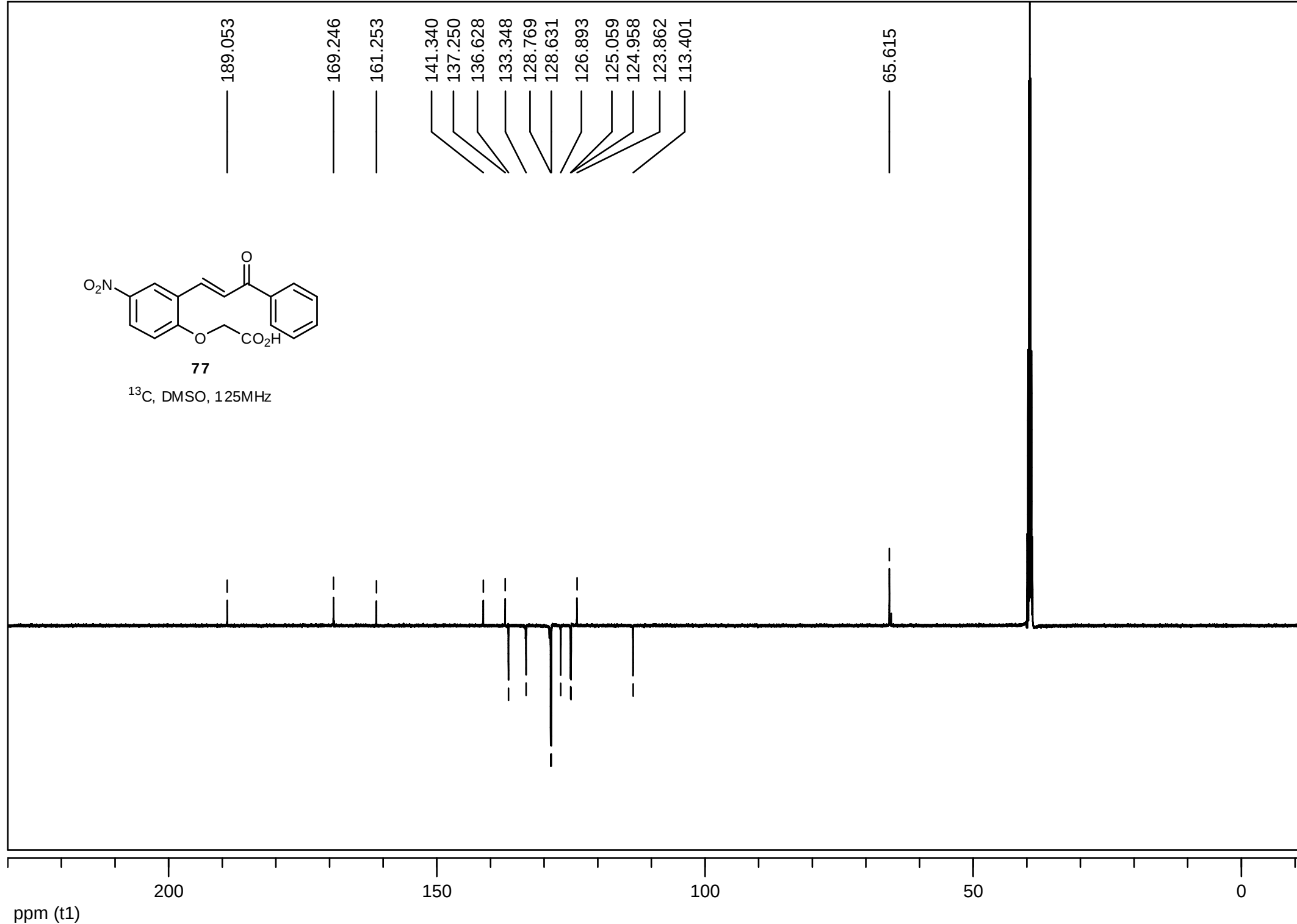
ppm (t1)

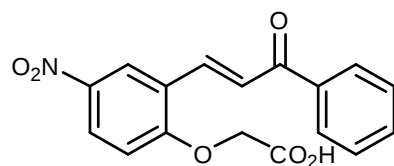


77

¹³C, DMSO, 125MHz

189.053
169.246
161.253
141.340
137.250
136.628
133.348
128.769
128.631
126.893
125.059
124.958
123.862
113.401
65.615





77

¹H, DMSO, 400MHz

8.848
8.842
8.350
8.311
8.299
8.282
8.276
8.240
8.221
8.037
7.998
7.712
7.694
7.676
7.606
7.587
7.568
7.303
7.280
5.060

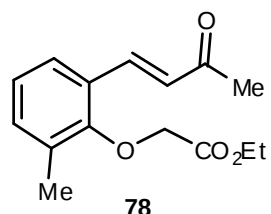
1.00
4.00
1.00
2.00
1.00
2.00

ppm (t1)

10.0

5.0

0.0



^{13}C , CDCl_3 , 75MHz

199.161

168.733

156.262

138.694

133.663

131.612

128.877

127.978

125.337

125.049

70.574

61.486

26.968

16.317

14.229

ppm (t1)

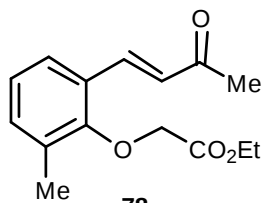
200

150

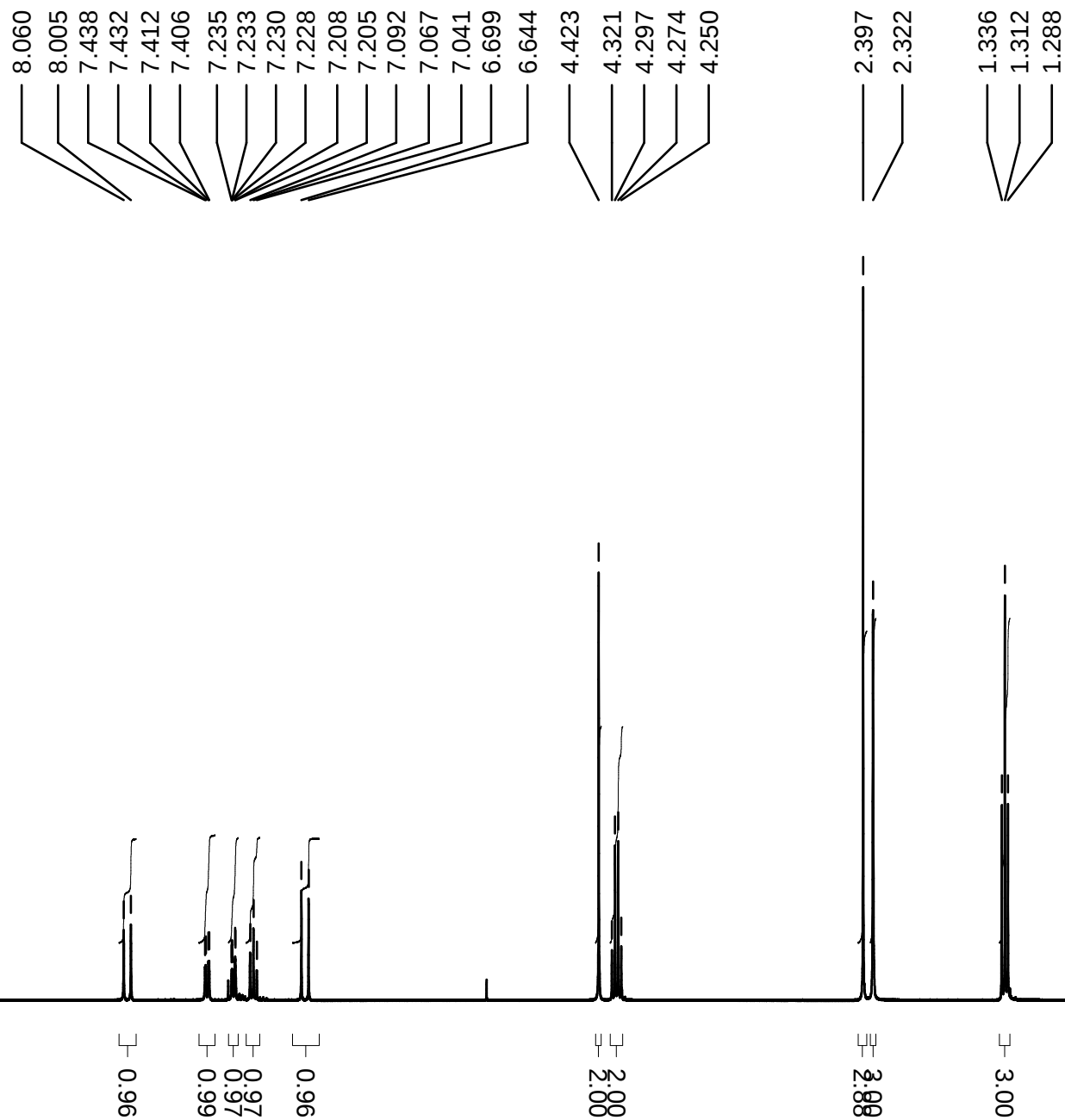
100

50

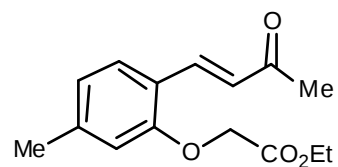
0



^1H , CDCl_3 , 300MHz



ppm (t1)



79

¹³C, CDCl₃, 75MHz

199.319

168.543

156.526

142.549

138.633

128.678

127.469

122.909

121.340

113.096

65.773

61.537

27.090

21.919

14.211

ppm (t1)

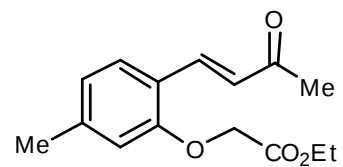
200

150

100

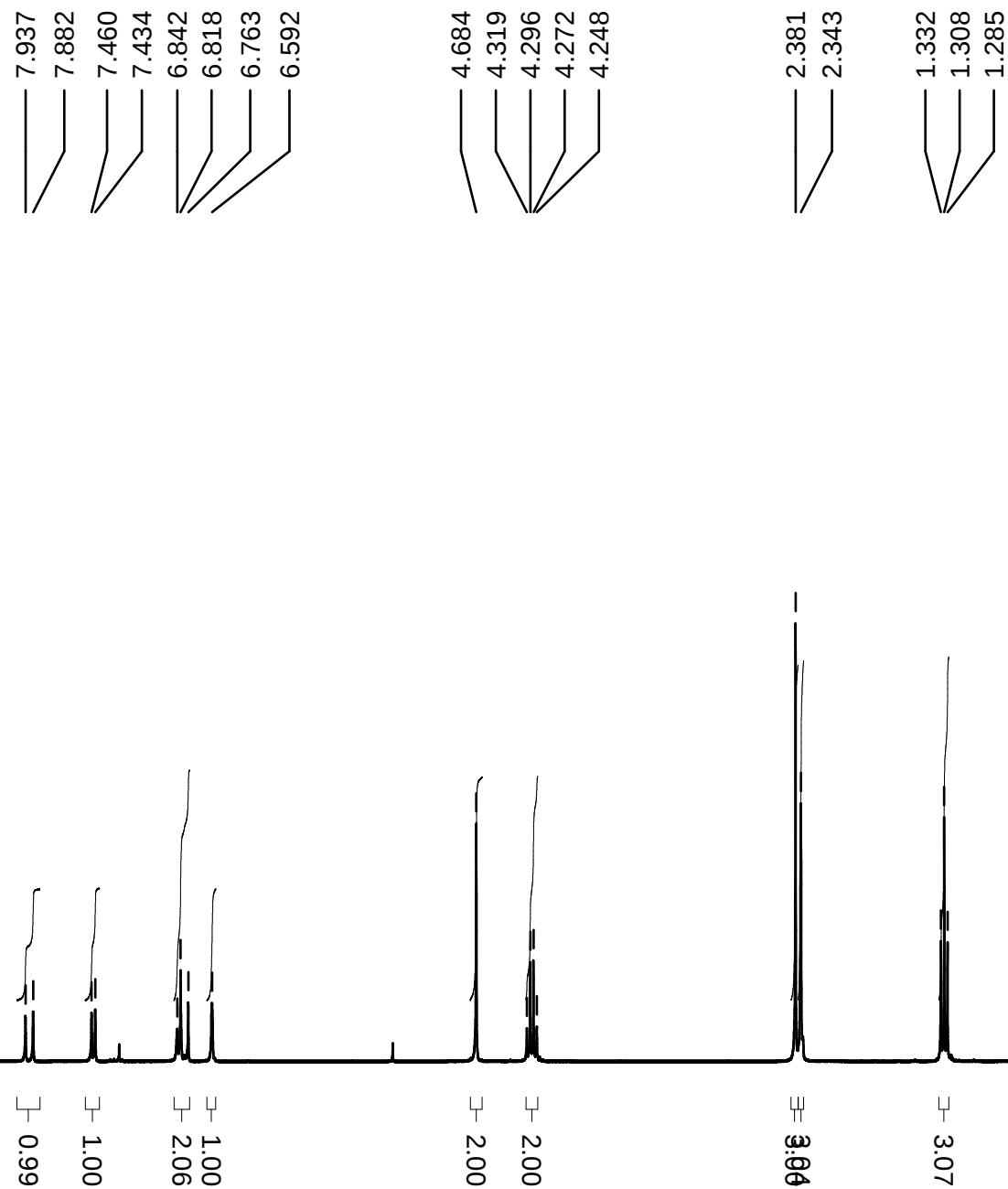
50

0

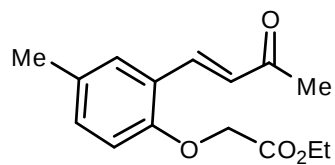


79

^1H , CDCl_3 , 300MHz



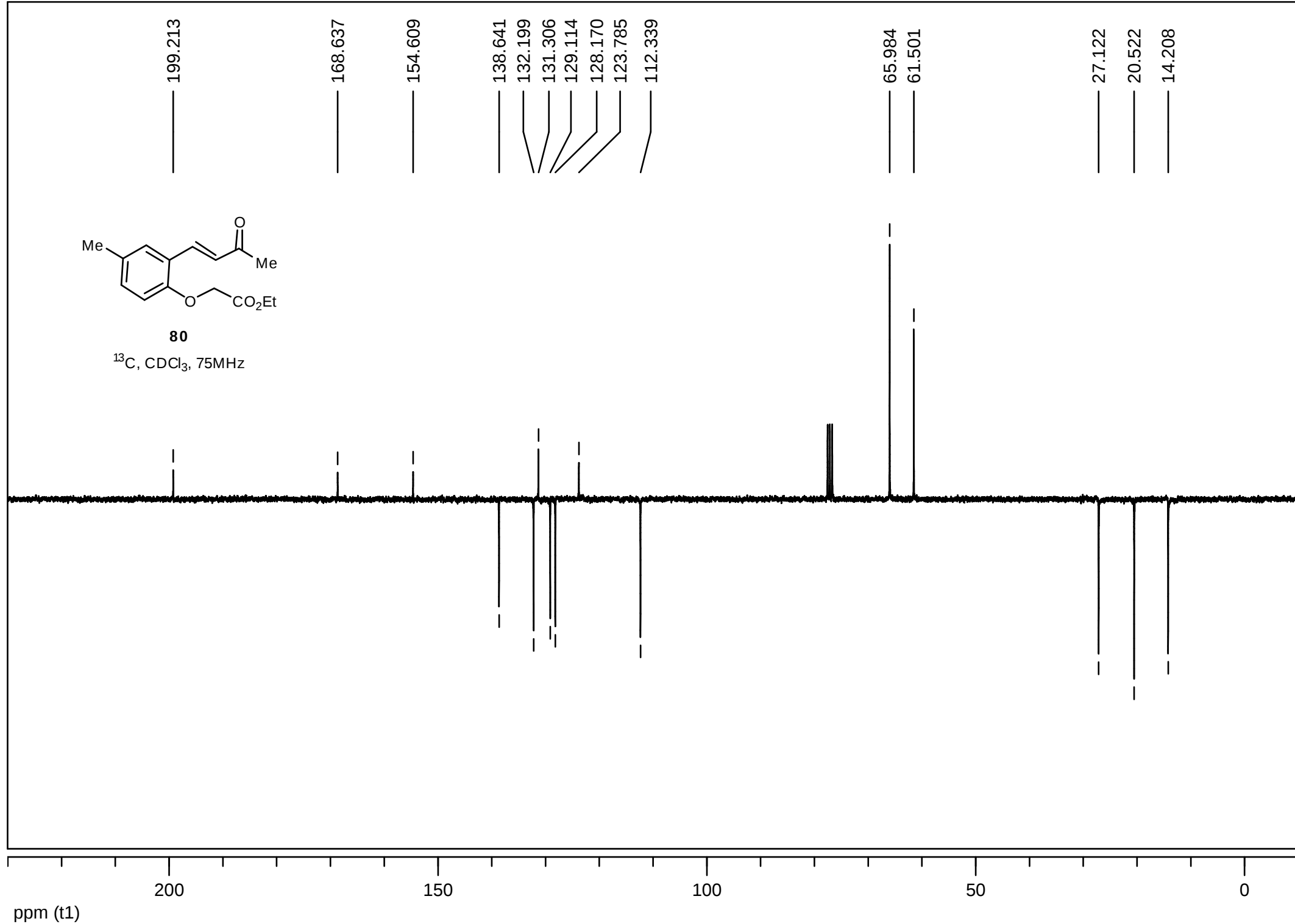
ppm (t1)

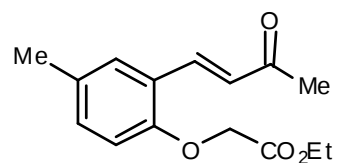


80

¹³C, CDCl₃, 75MHz

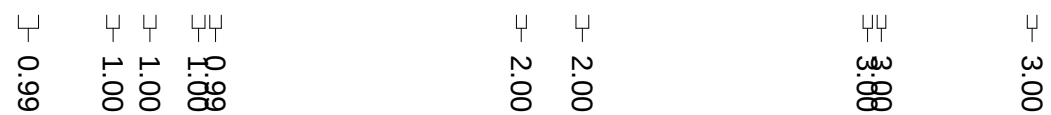
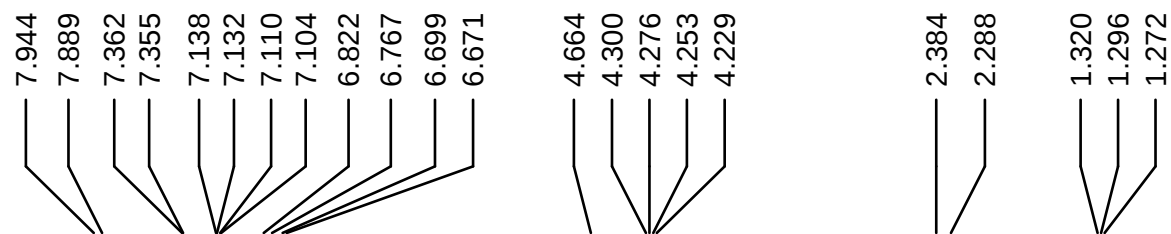
199.213
168.637
154.609
138.641
132.199
131.306
129.114
128.170
123.785
112.339
65.984
61.501
27.122
20.522
14.208



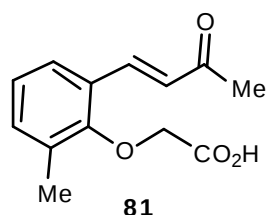


80

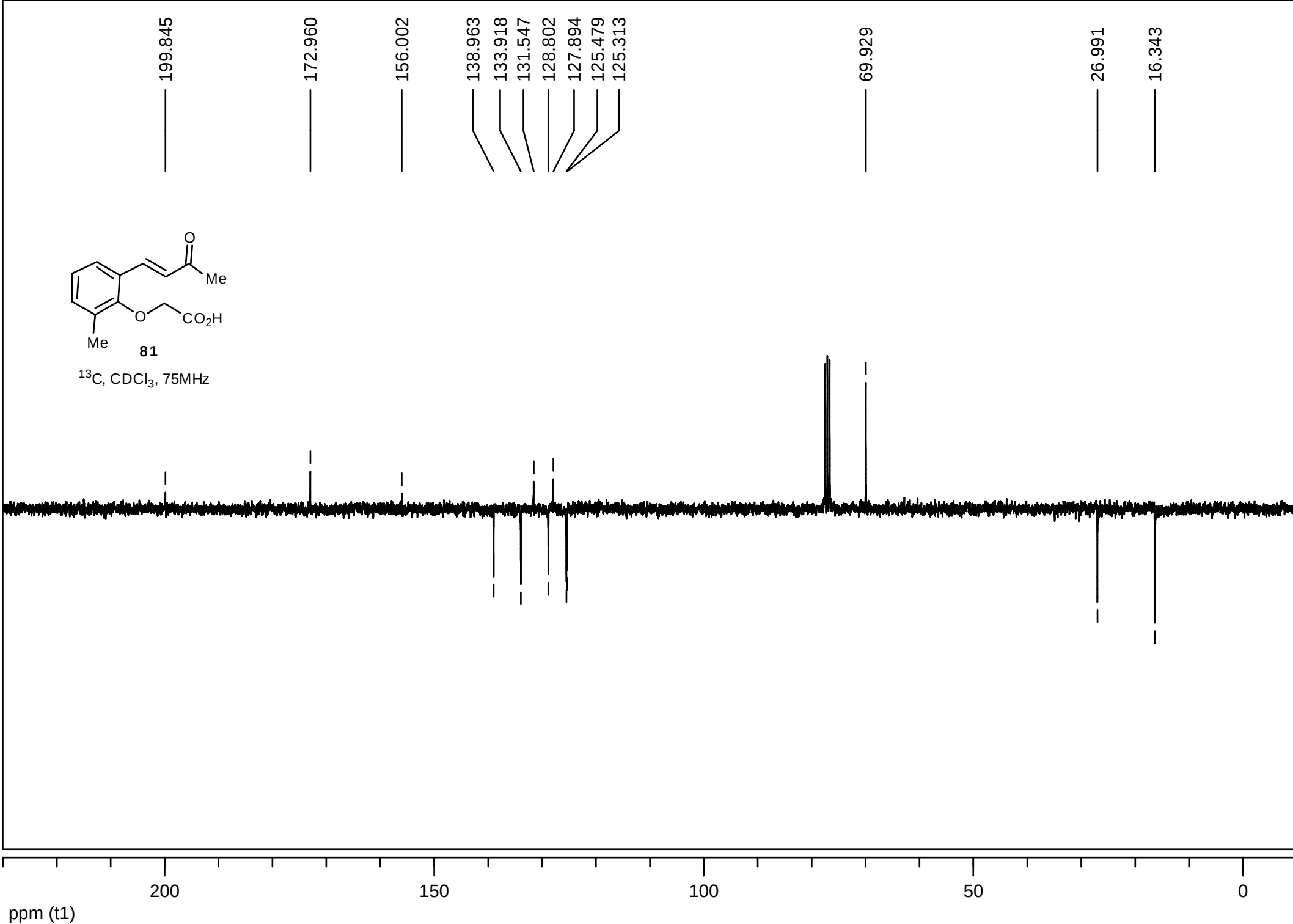
^1H , CDCl_3 , 300MHz

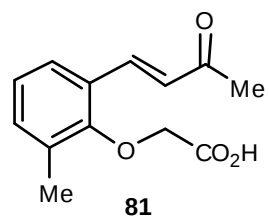


ppm (t1)

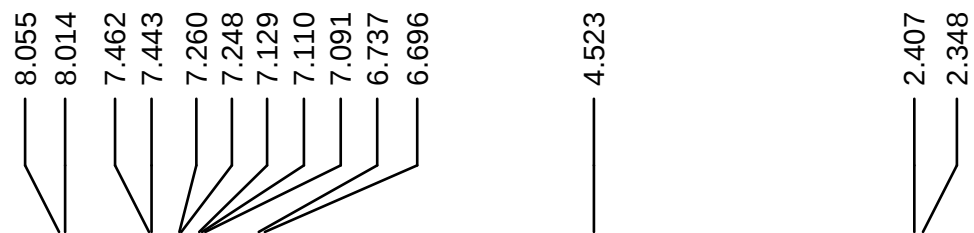


^{13}C , CDCl_3 , 75MHz





^1H , CDCl_3 , 300MHz

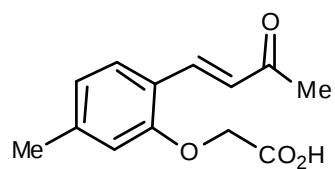


ppm (t1)

10.0

5.0

0.0



82

^{13}C , CDCl_3 , 75MHz

200.136

172.959

156.356

142.873

139.030

128.858

127.334

123.158

121.250

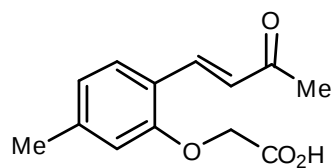
113.049

65.169

27.122

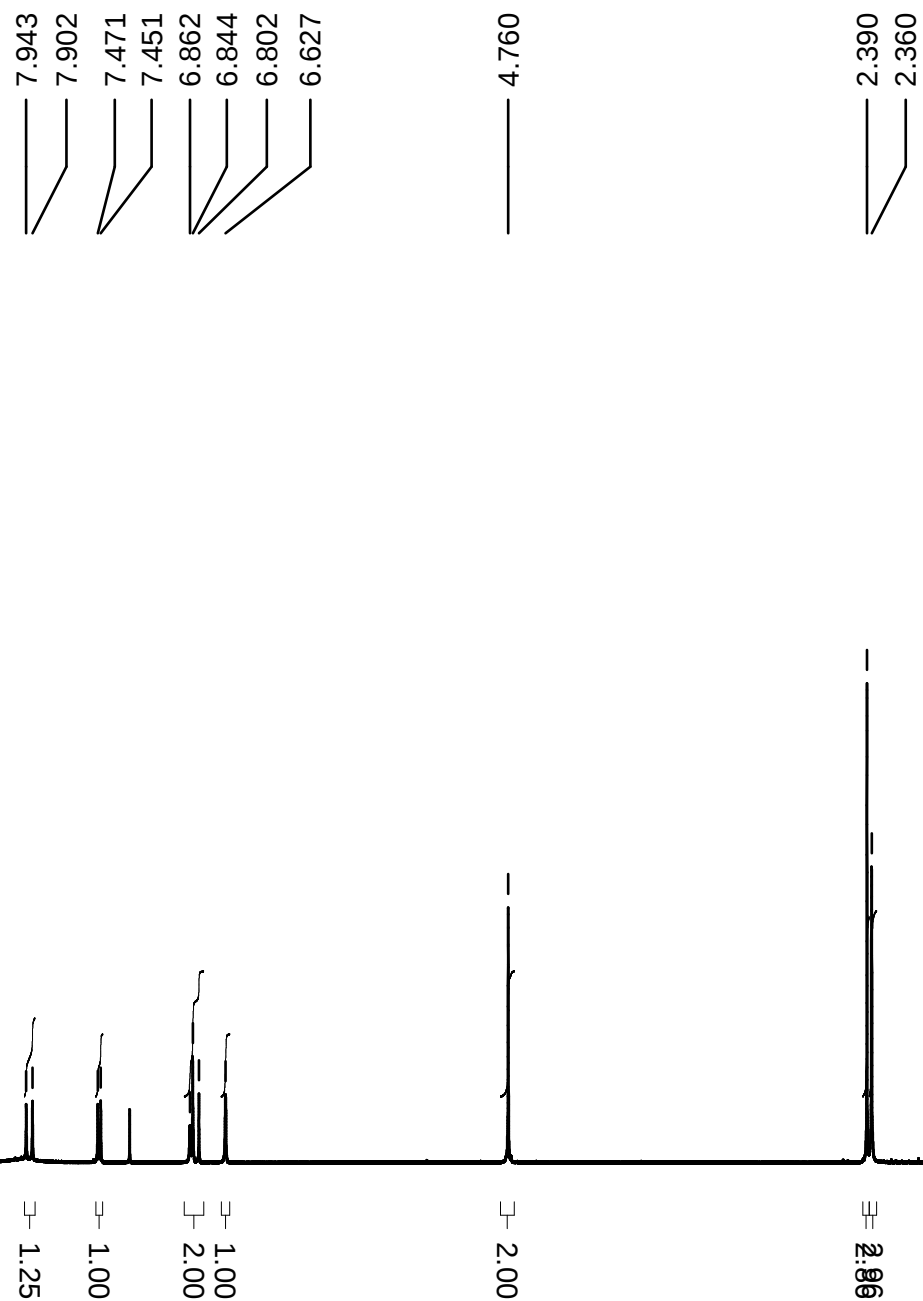
21.947

ppm (t1)

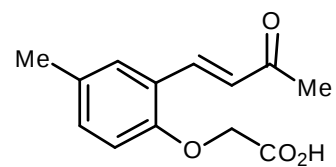


82

^1H , CDCl_3 , 400MHz



ppm (t1)



83

^{13}C , CDCl_3 , 75MHz

199.784

172.919

154.362

138.798

132.353

131.636

129.256

128.110

123.740

112.304

65.366

27.192

20.519

200

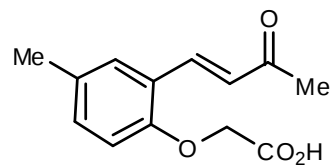
150

100

50

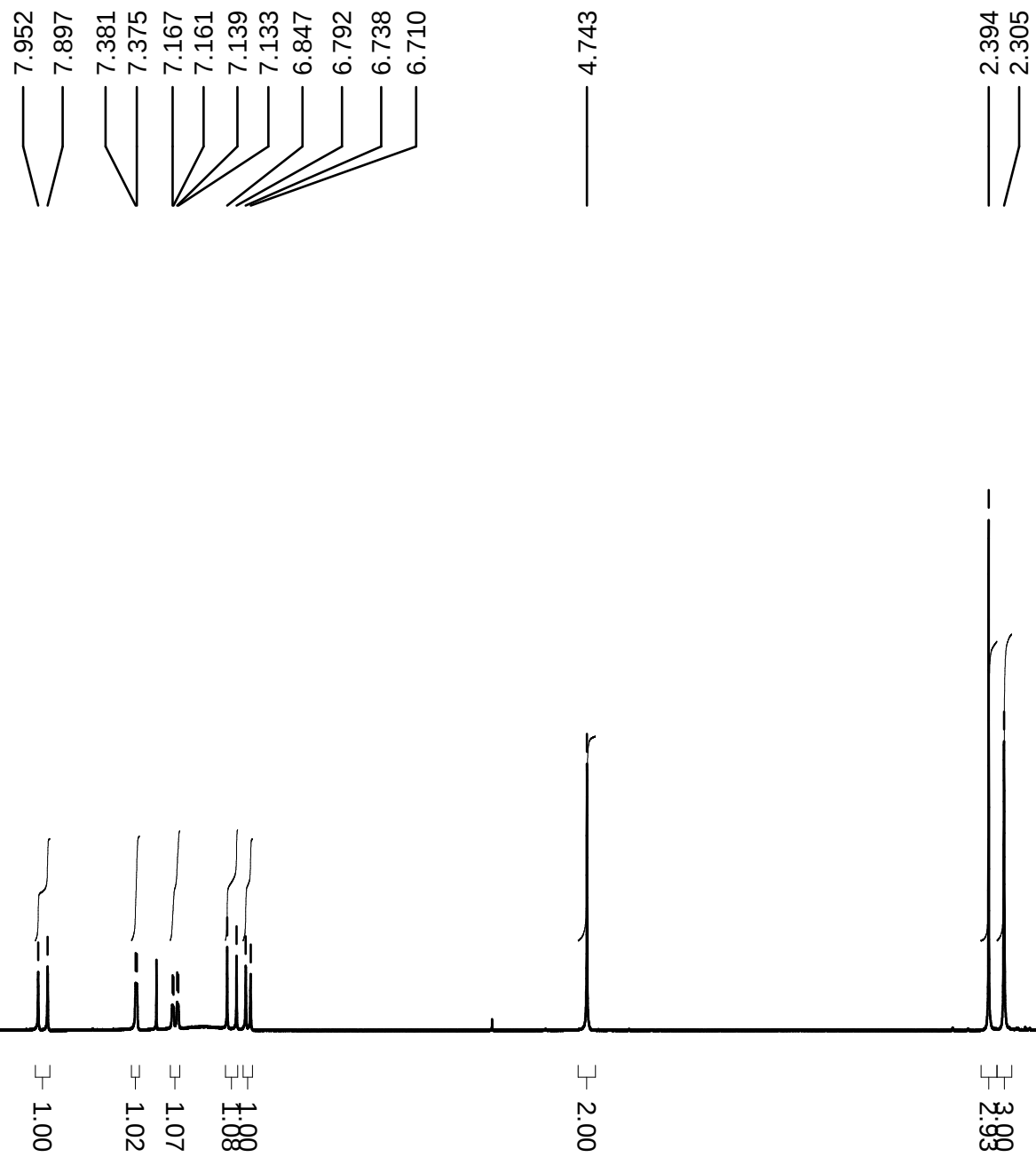
0

ppm (t1)



83

¹H, CDCl₃, 300MHz



10.0
ppm (t1)

5.0

0.0