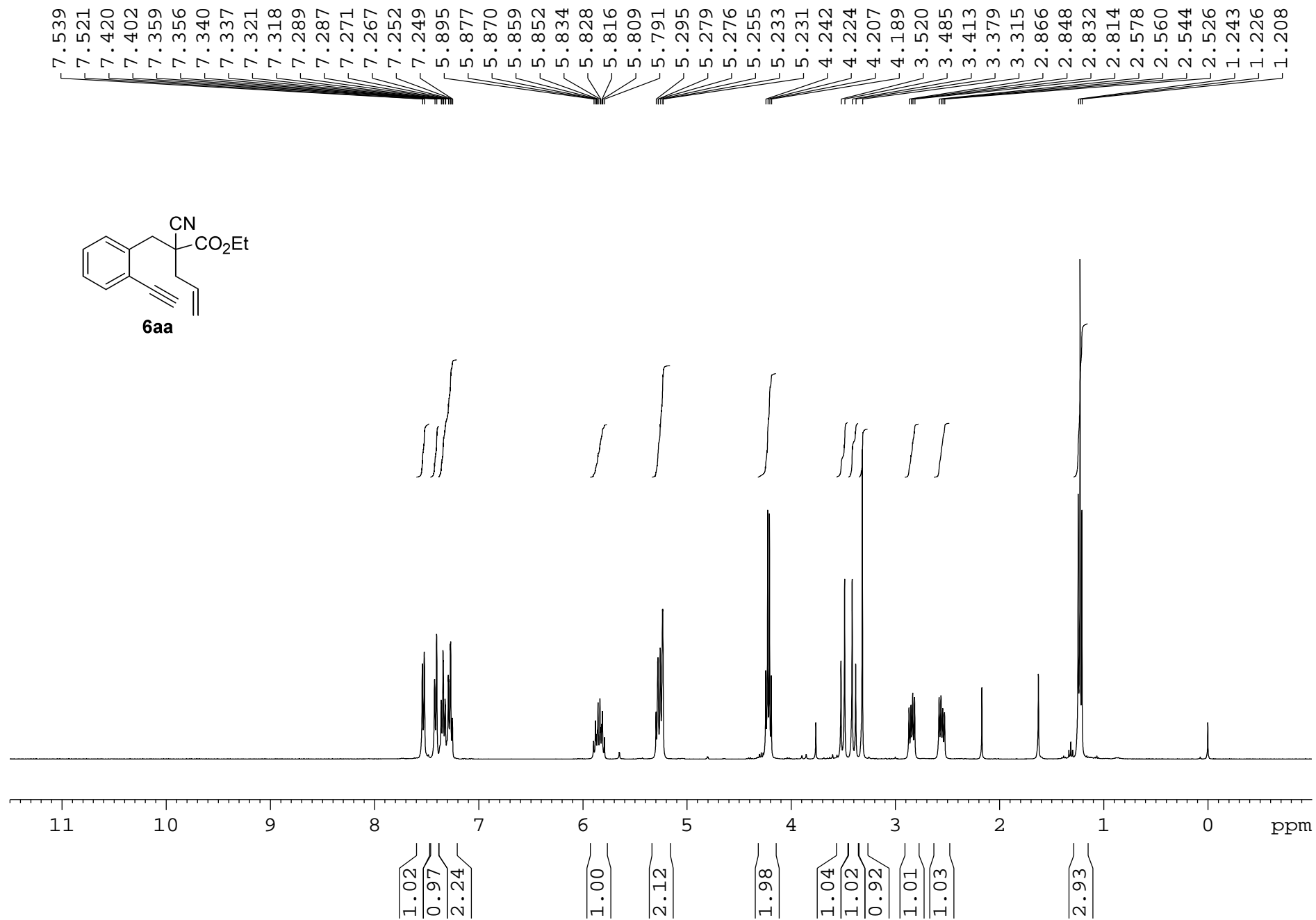


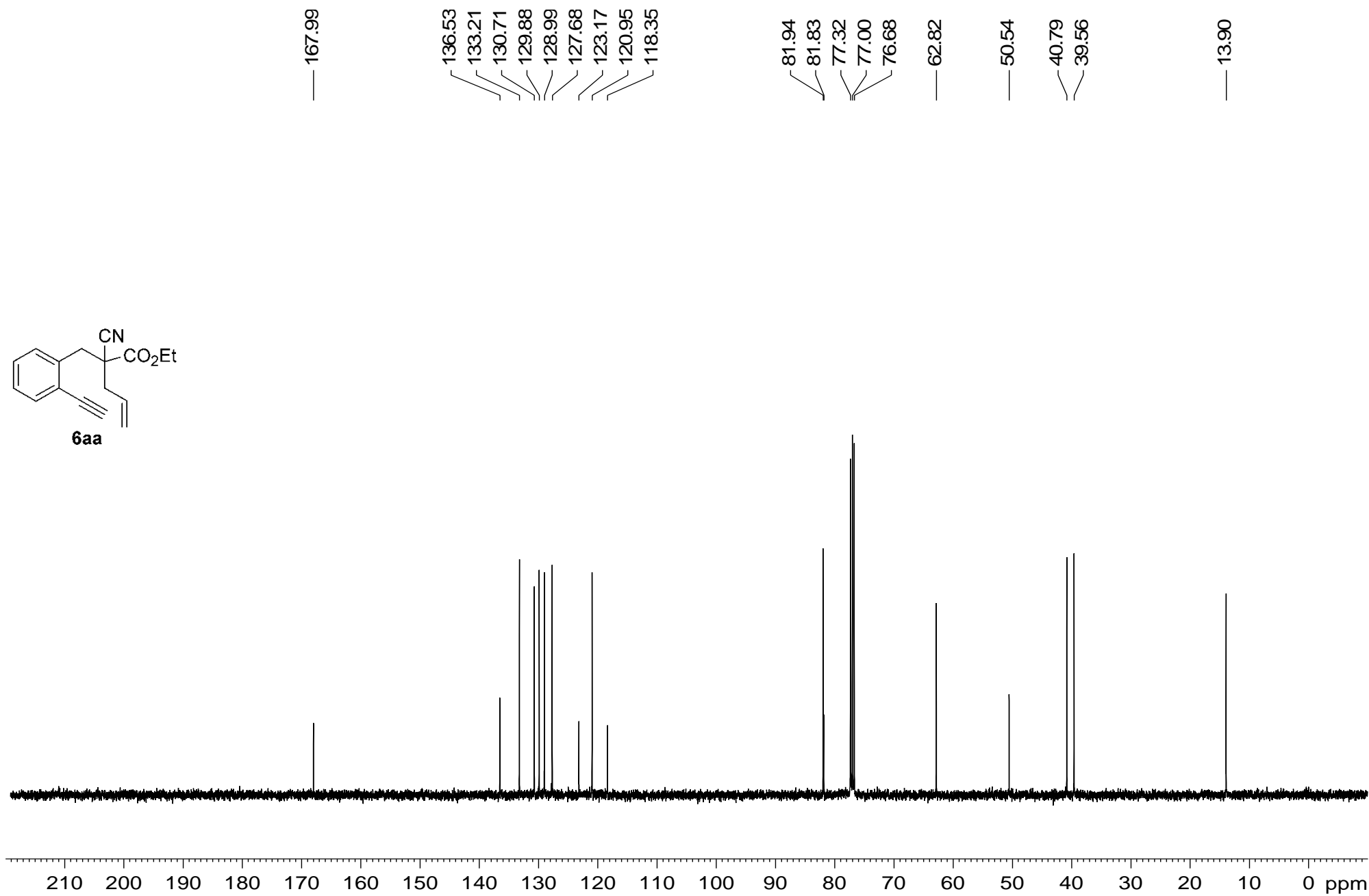
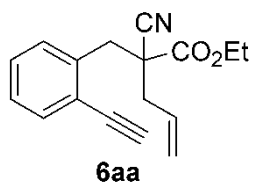
## Supporting Information-II

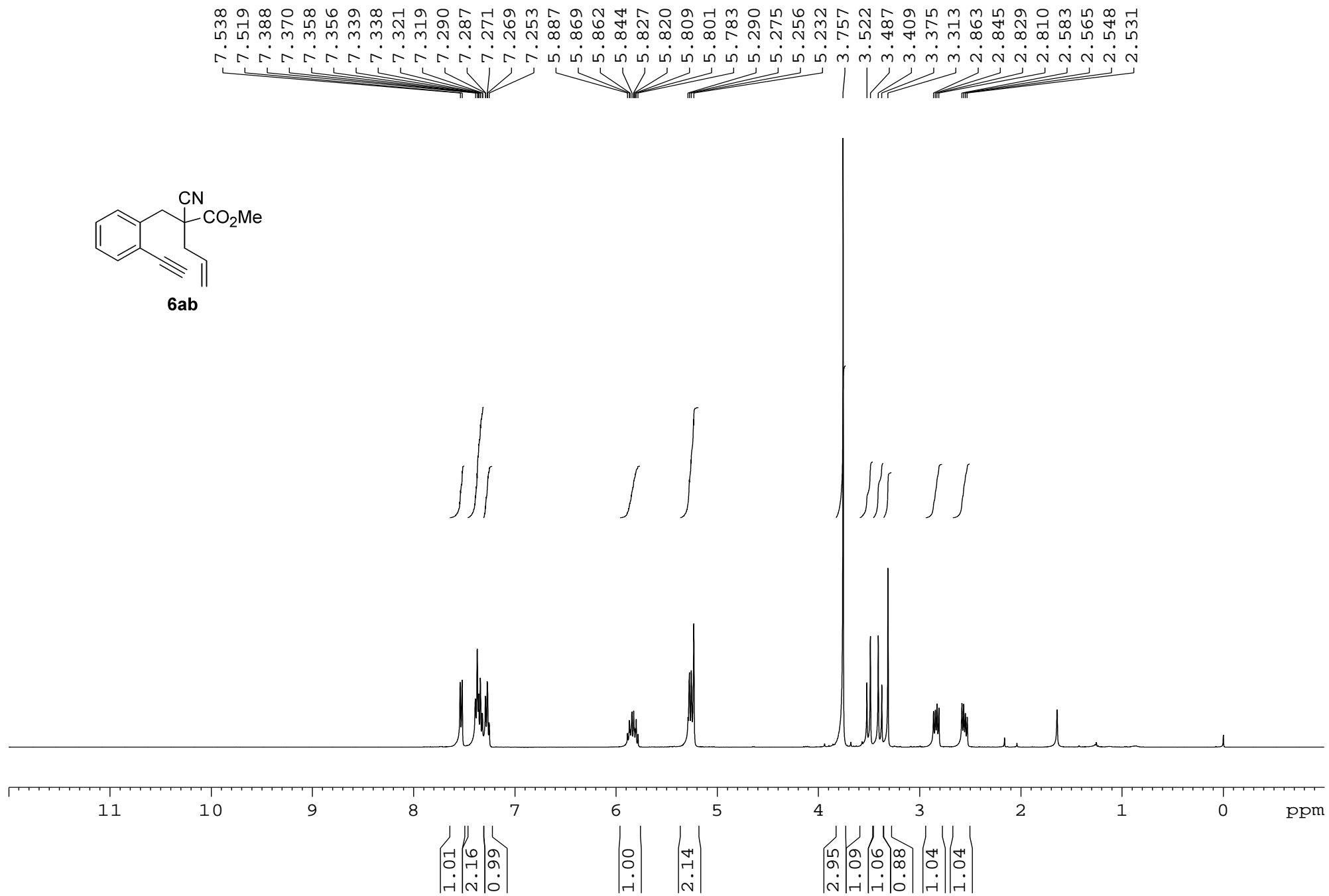
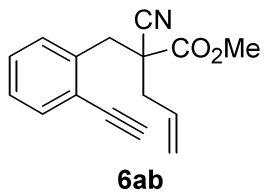
# Rapid Two-step Synthesis of Drug-like Polycyclic Substances by Sequential Multi-catalysis Cascade Reactions

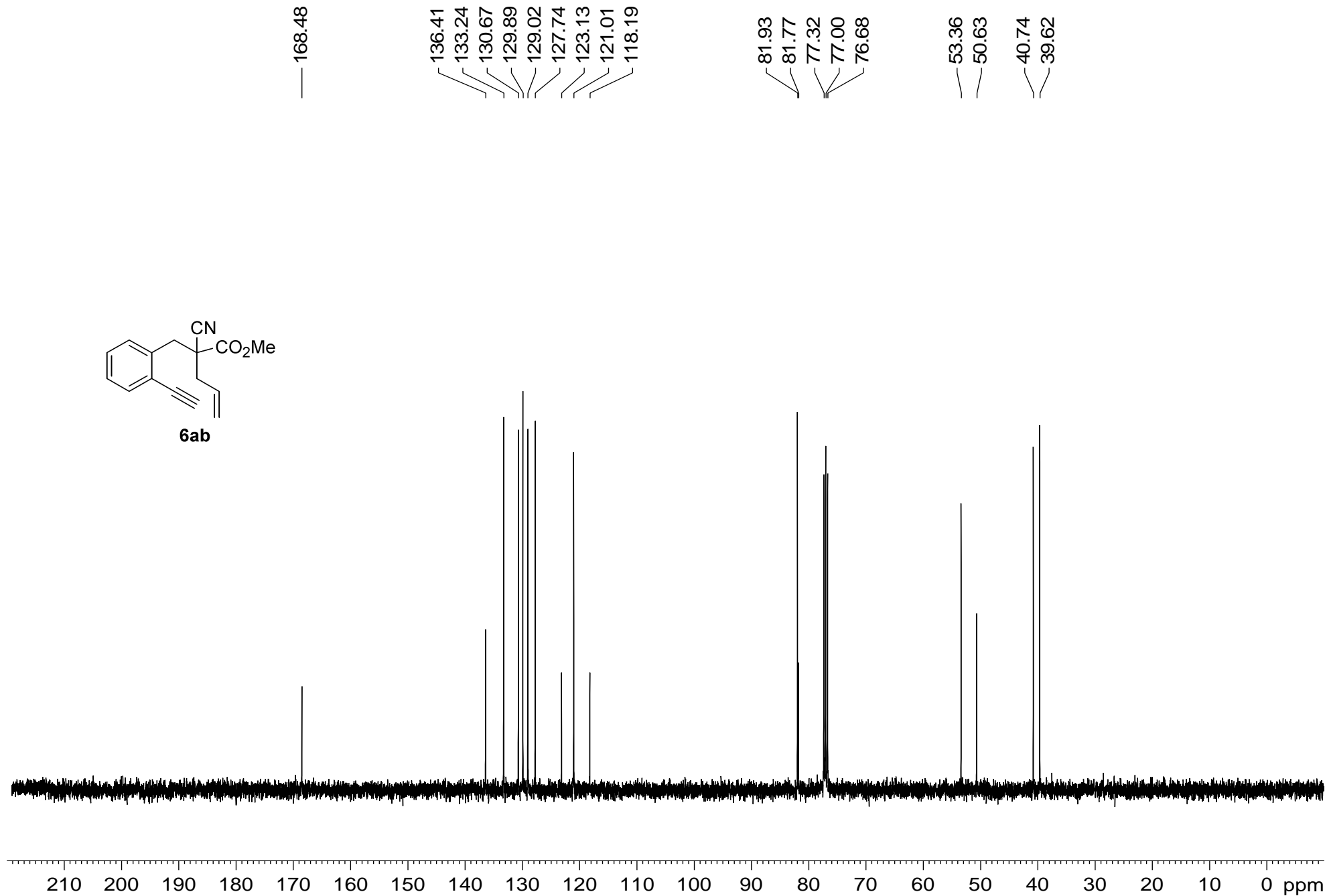
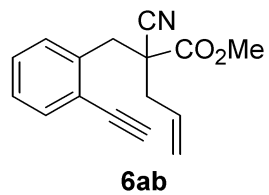
**Dhevalapally B. Ramachary\*, Rumpa Mondal and Chintalapudi Venkaiah**

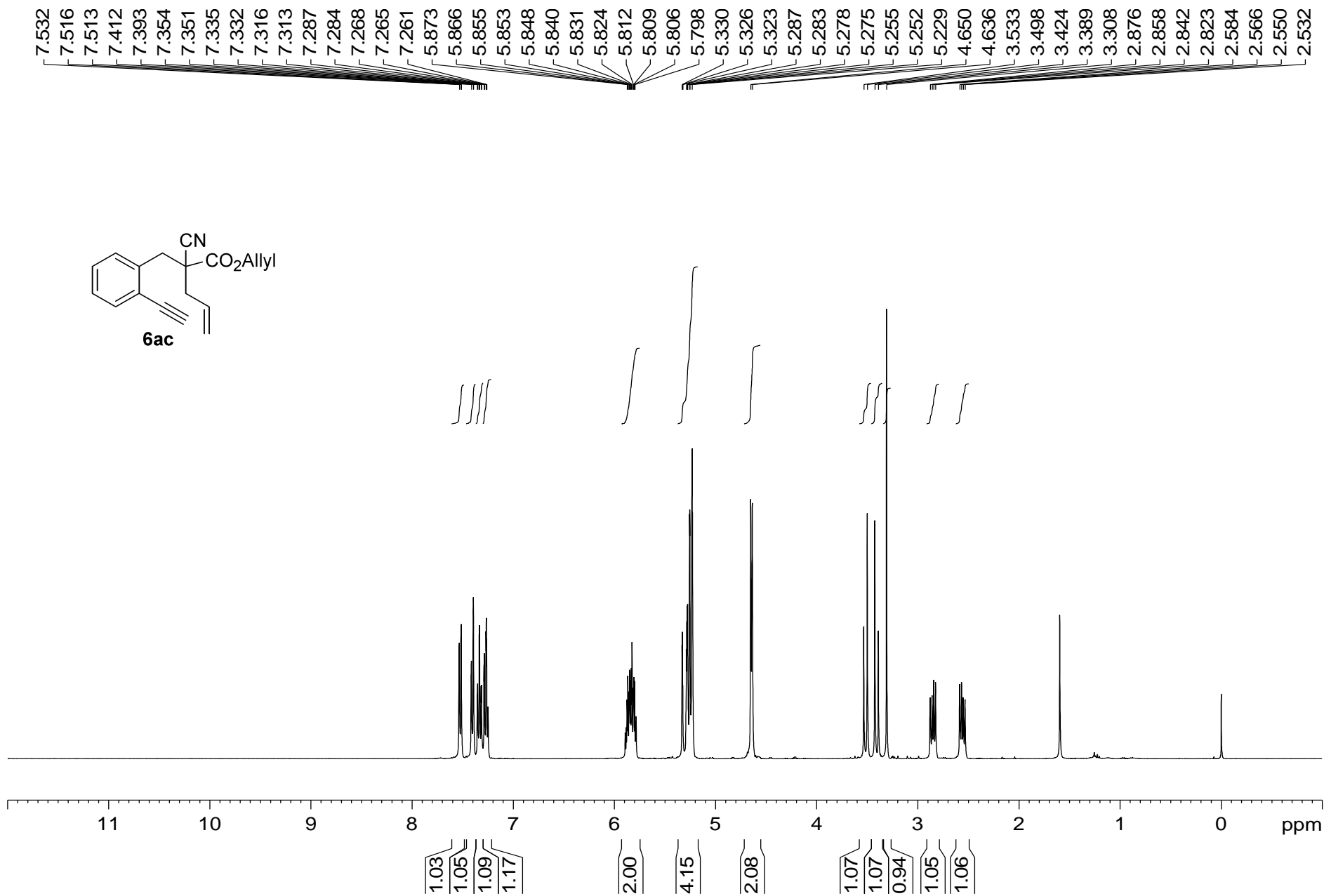
*School of Chemistry, University of Hyderabad, Central University (P.O.),  
Hyderabad 500 046, India*  
[ramsc@uohyd.ernet.in](mailto:ramsc@uohyd.ernet.in)

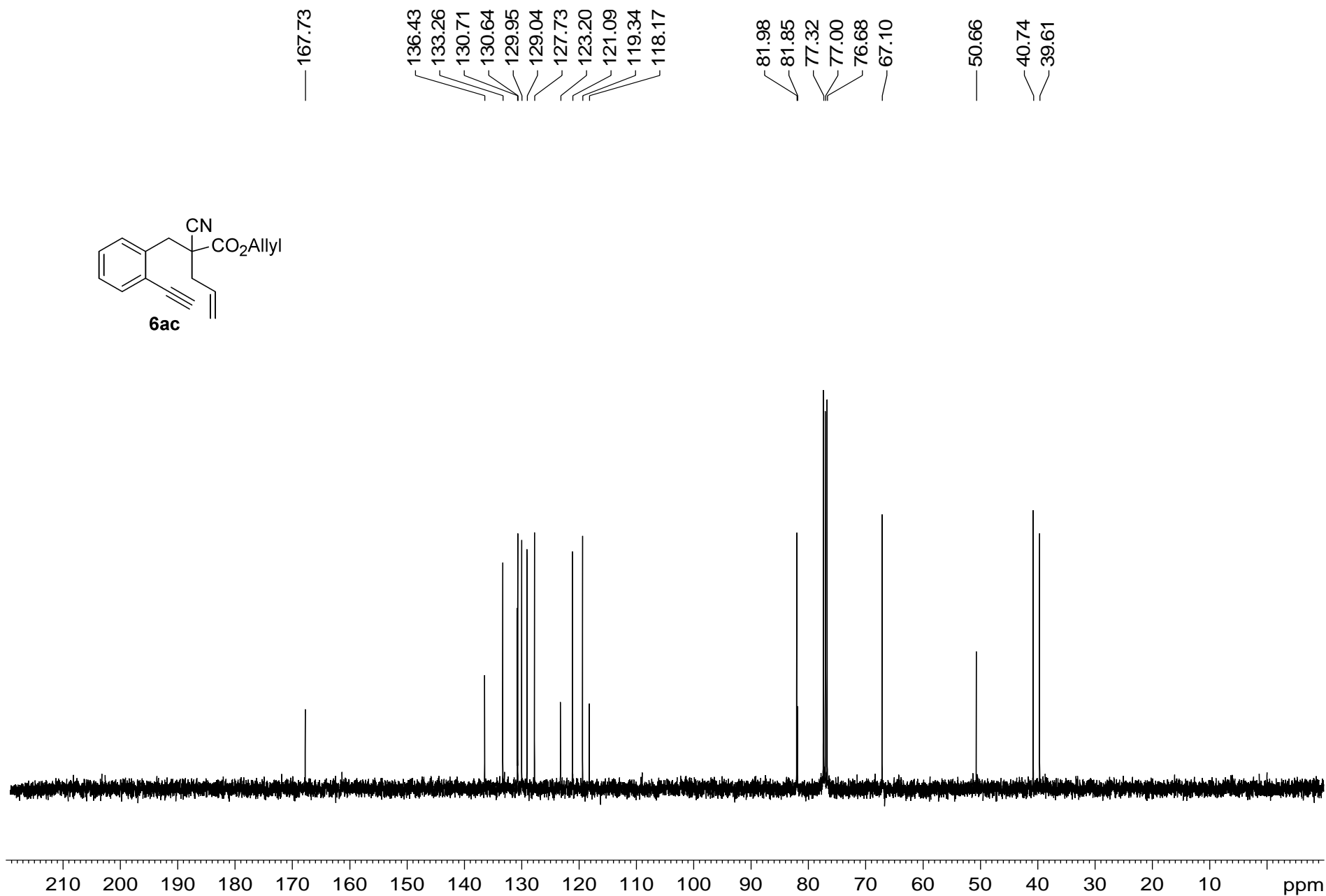
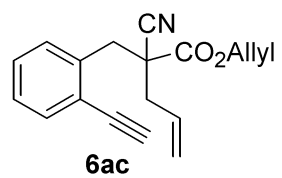


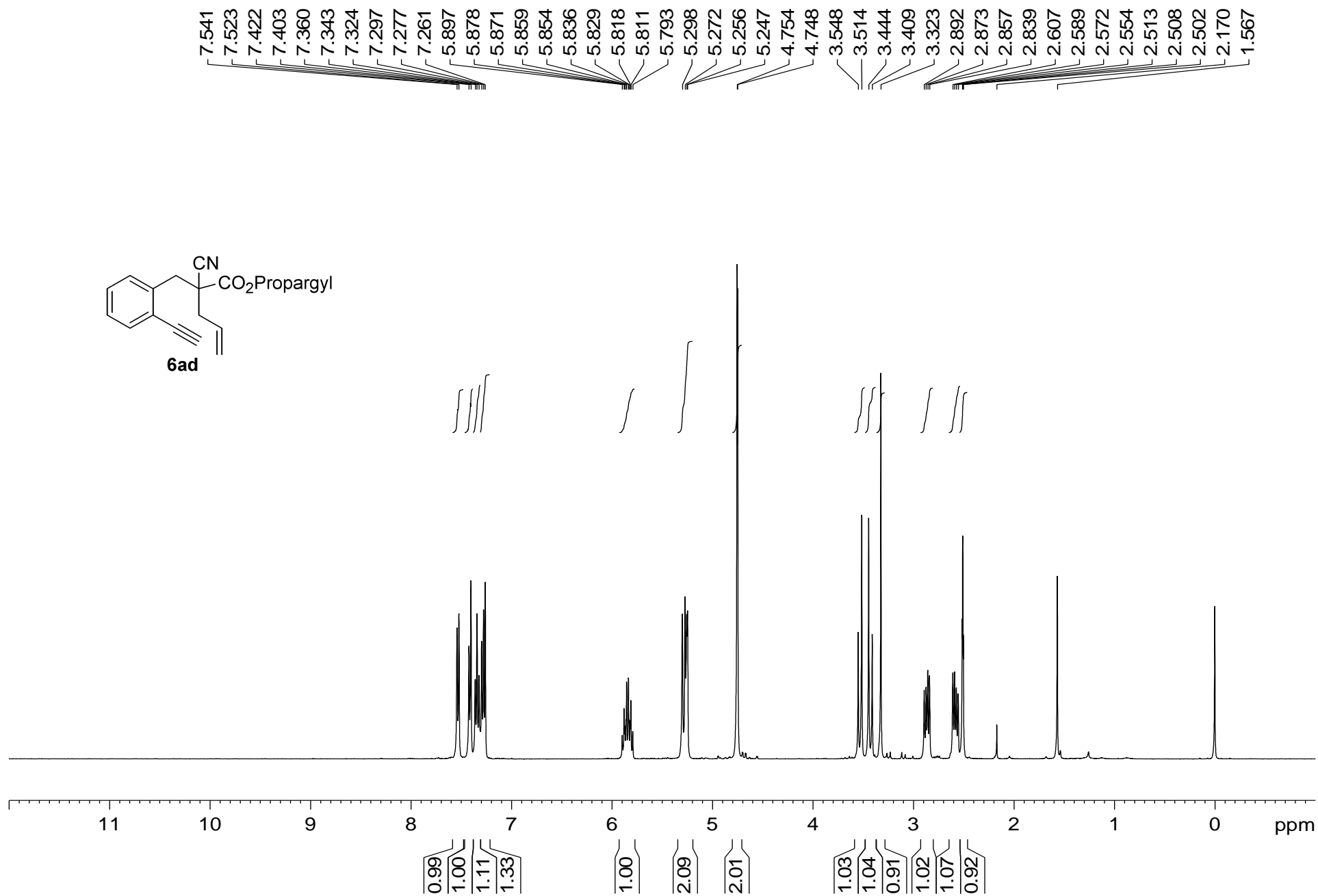
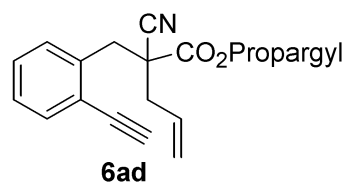




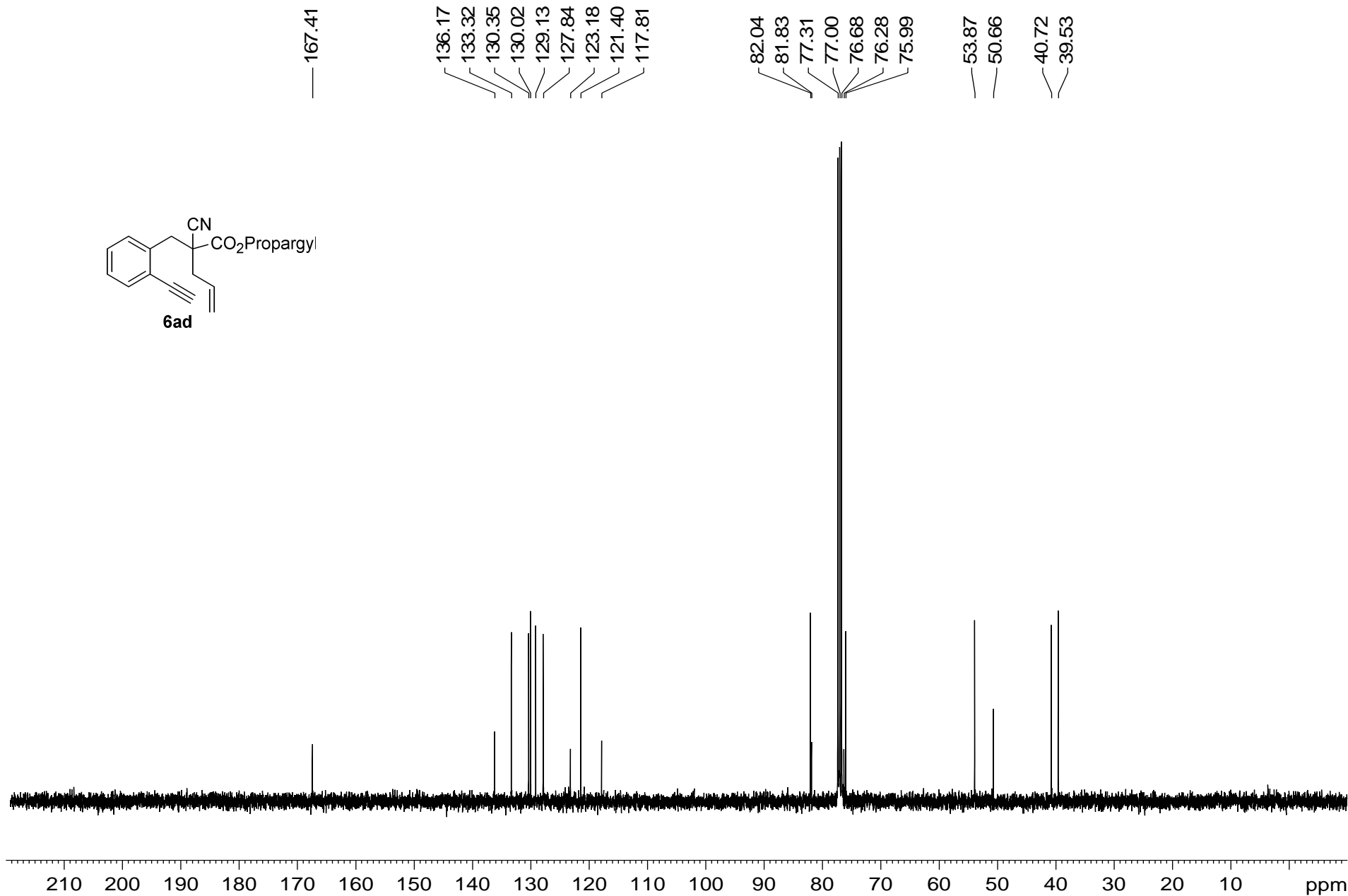
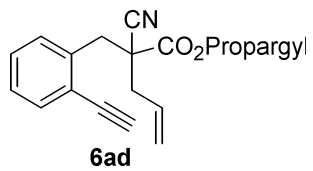




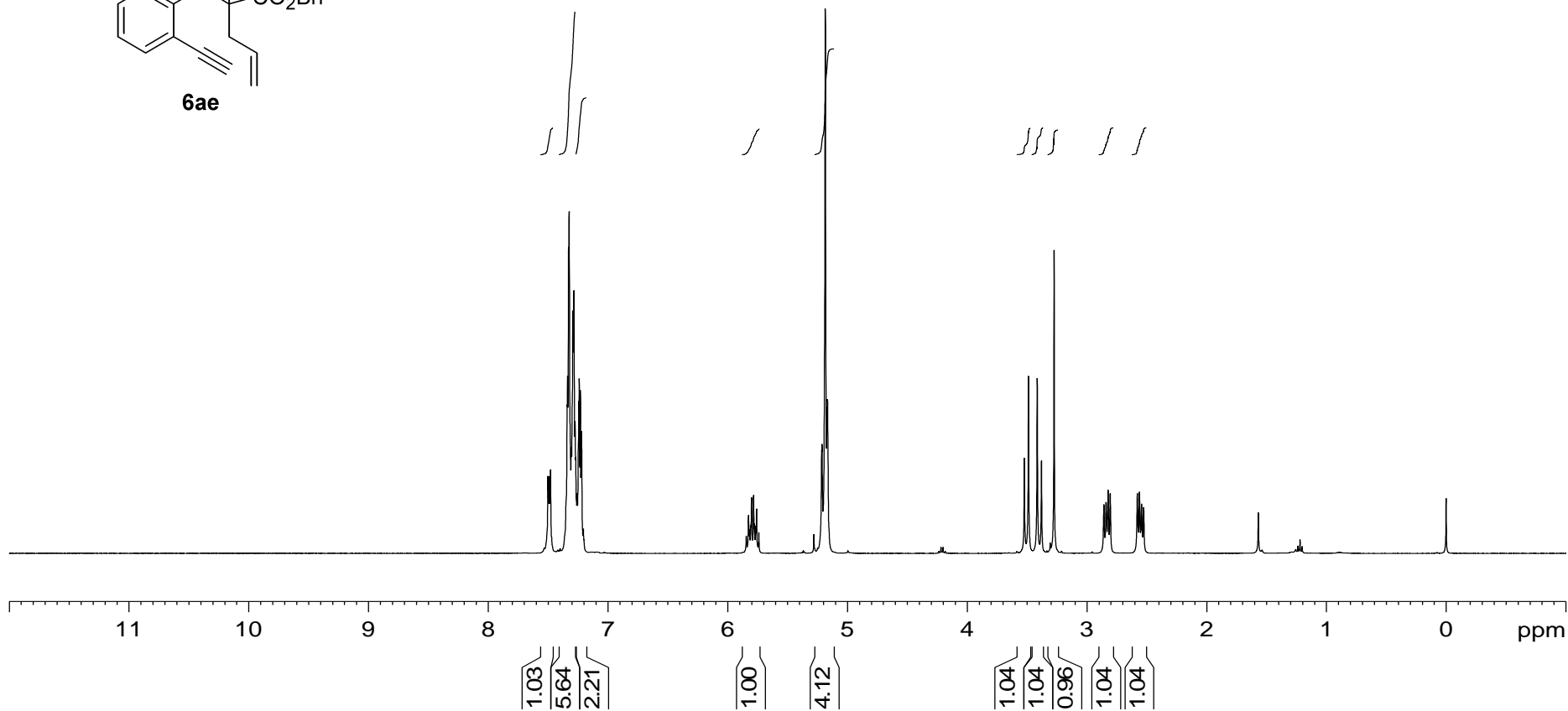
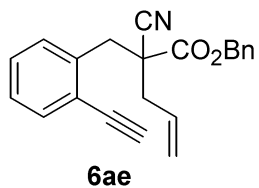


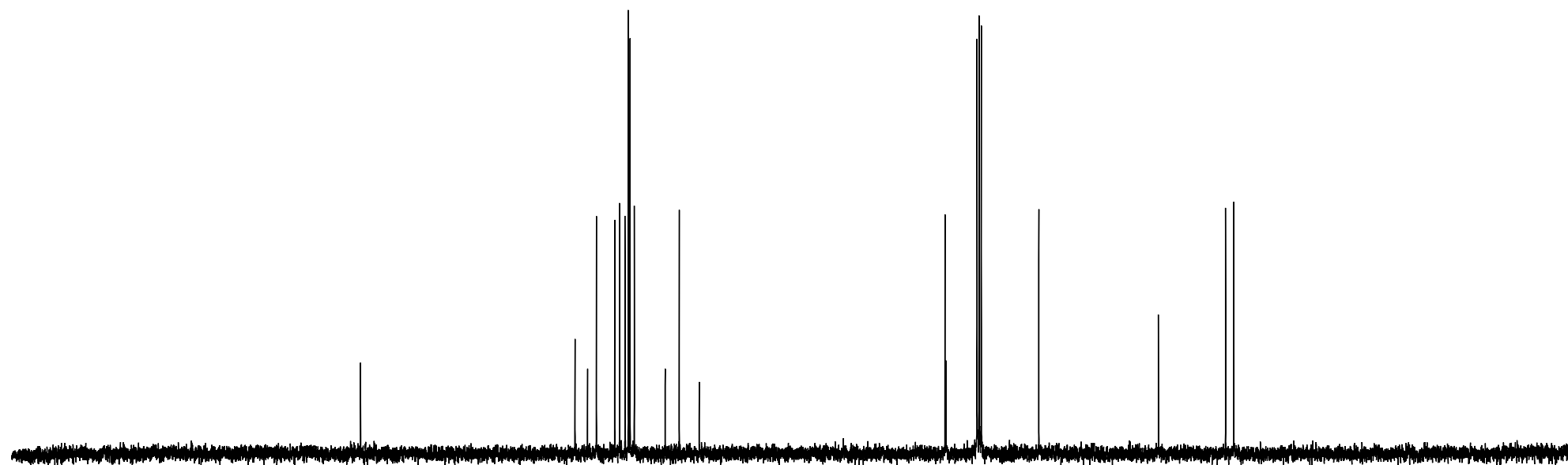
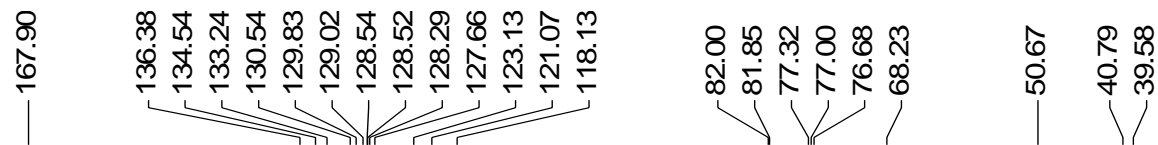
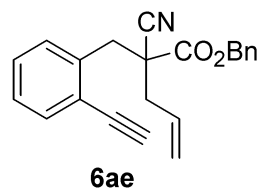






7.502  
7.497  
7.489  
7.479  
7.471  
7.341  
7.337  
7.329  
7.324  
7.307  
7.294  
7.285  
7.275  
7.270  
7.258  
7.245  
7.241  
7.232  
7.223  
7.206  
7.201  
5.845  
5.827  
5.819  
5.808  
5.802  
5.784  
5.777  
5.766  
5.759  
5.741  
5.216  
5.213  
5.185  
5.167  
3.523  
3.488  
3.415  
3.380  
3.274  
2.858  
2.840  
2.824  
2.805  
2.579  
2.561  
2.545  
2.527  
0.000

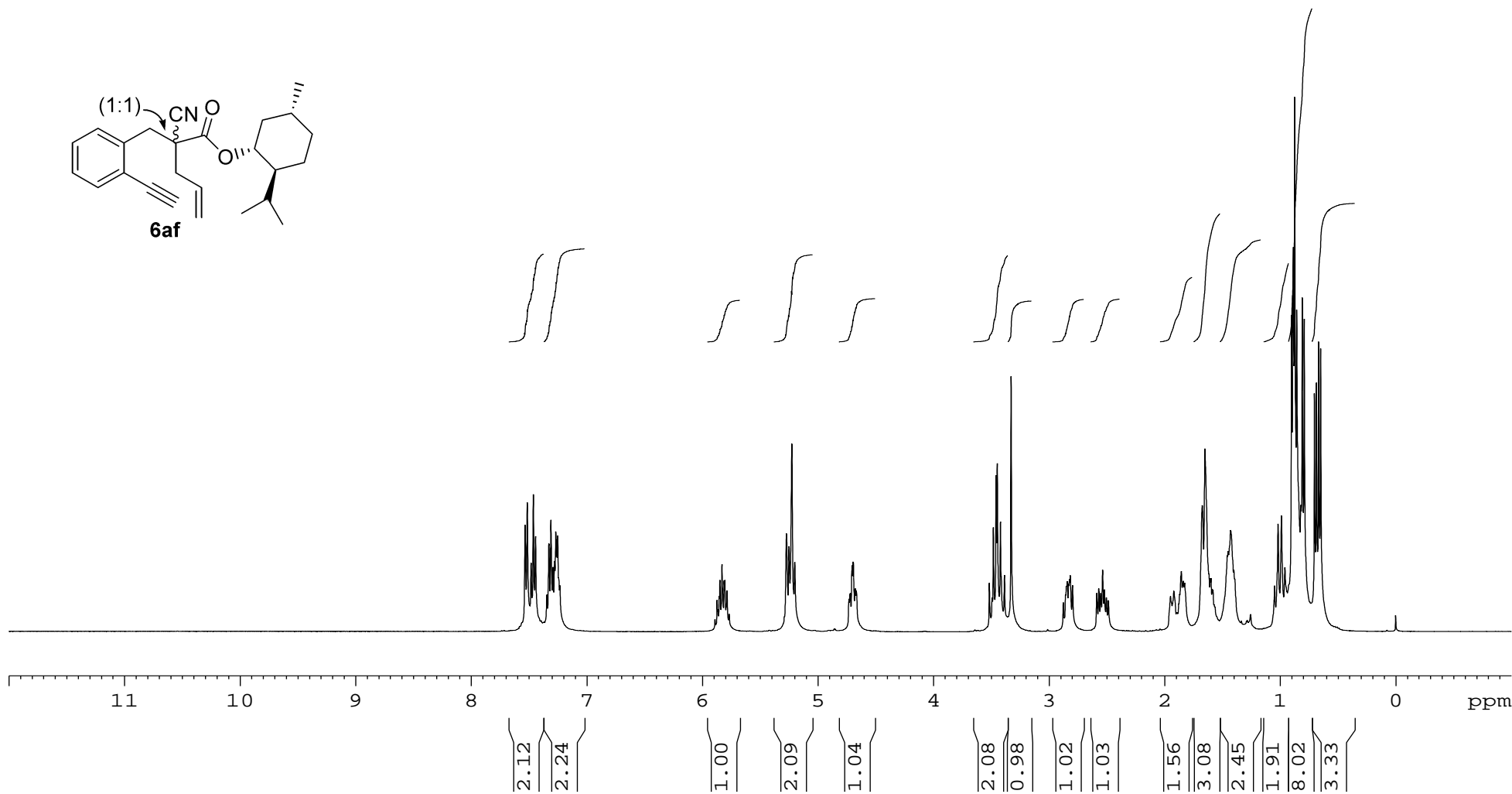
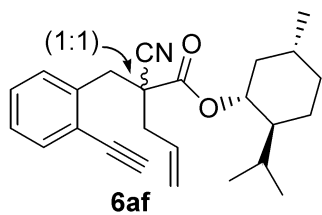


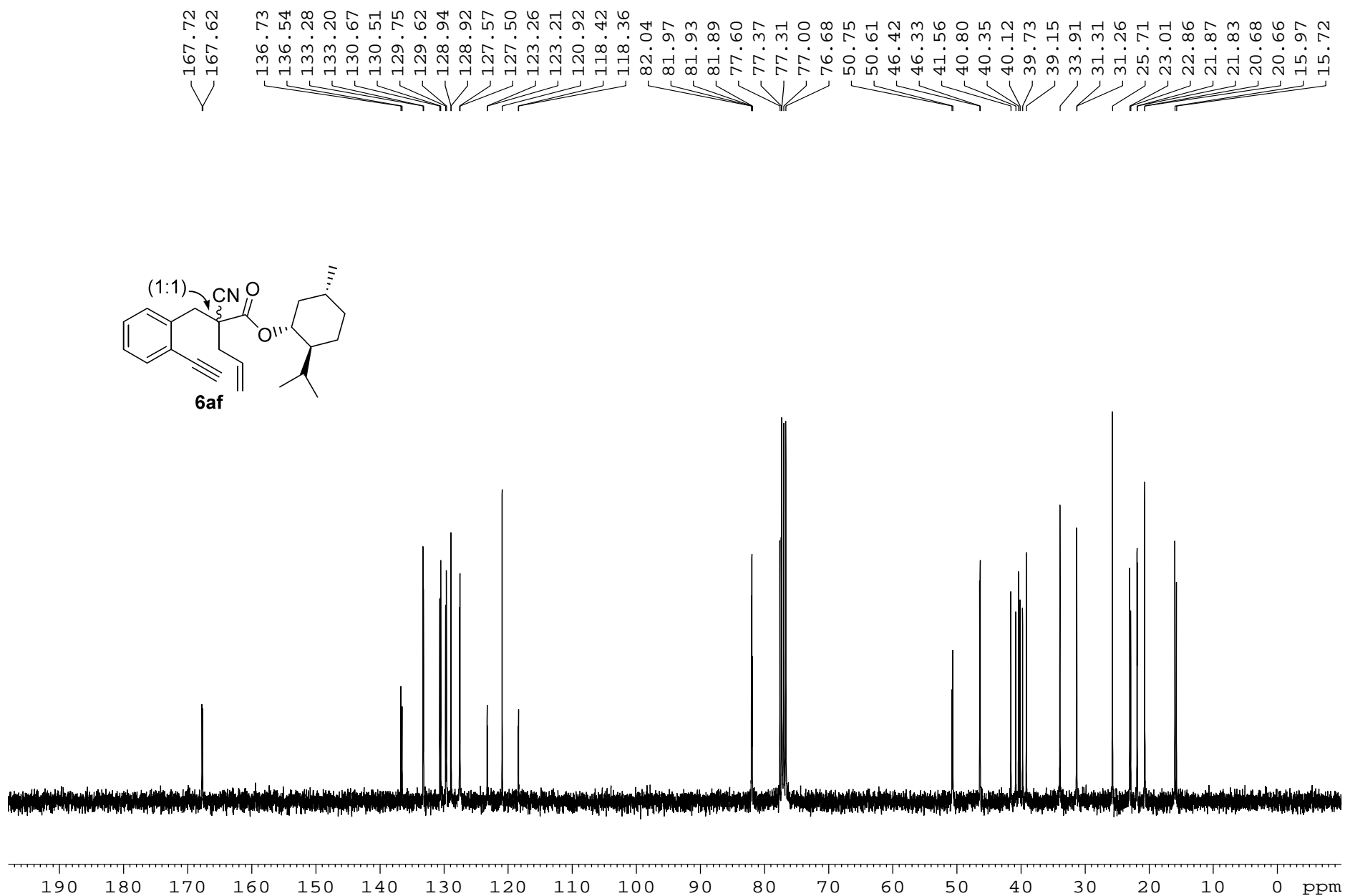


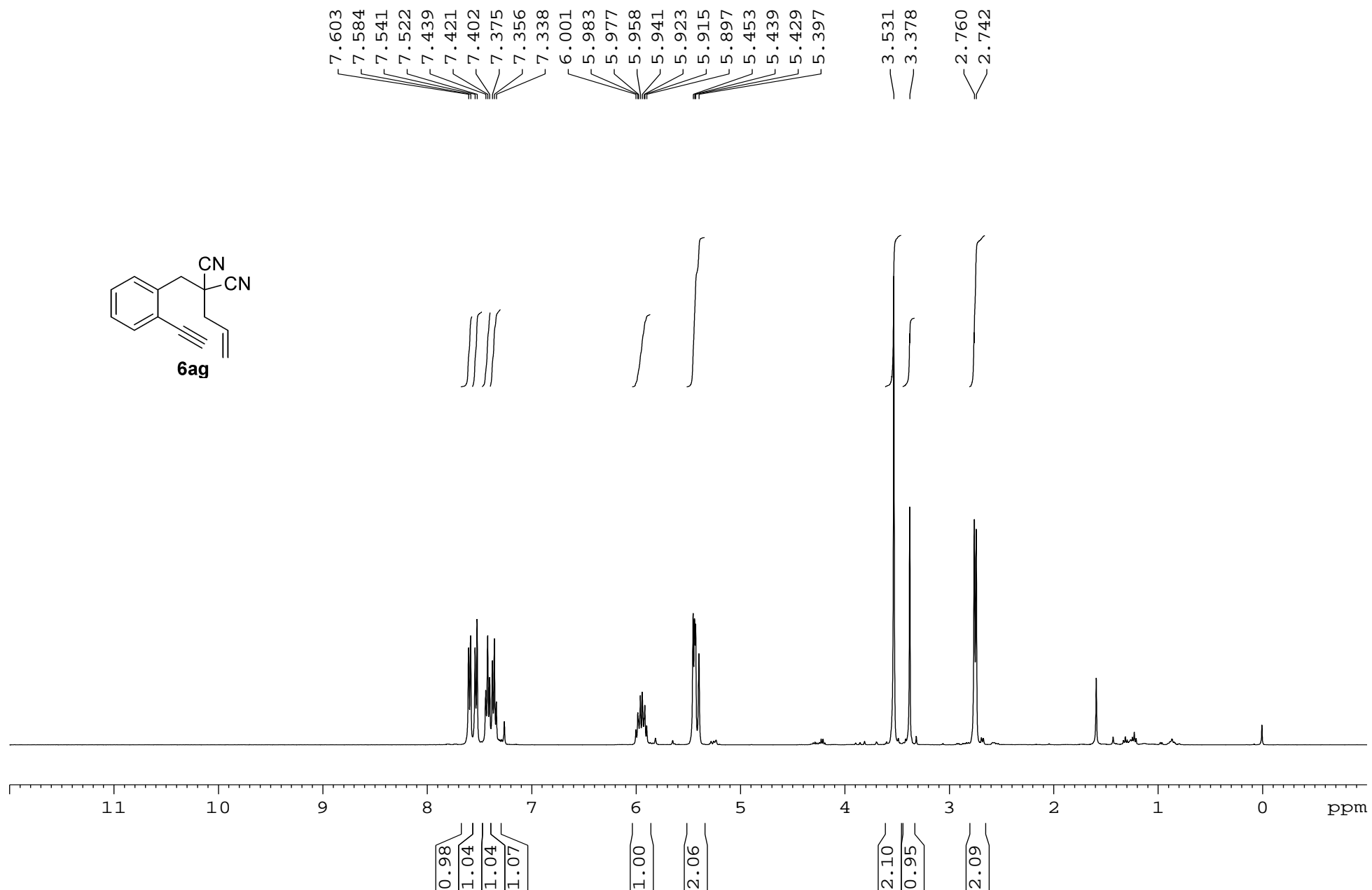
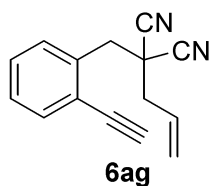
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

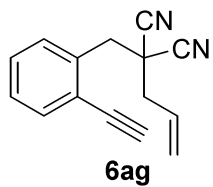
S-11

7.532  
7.514  
7.480  
7.460  
7.441  
7.327  
7.325  
7.309  
7.293  
7.290  
7.276  
7.270  
7.266  
7.260  
7.258  
7.252  
7.249  
7.242  
5.828  
5.271  
5.248  
5.224  
5.199  
4.702  
4.694  
4.691  
3.480  
3.456  
3.446  
3.420  
3.412  
3.385  
3.326  
2.814  
2.535  
1.853  
1.673  
1.650  
1.615  
1.457  
1.449  
1.427  
1.400  
1.017  
0.988  
0.957  
0.900  
0.890  
0.884  
0.873  
0.856  
0.820  
0.808  
0.790  
0.702  
0.685  
0.666  
0.649





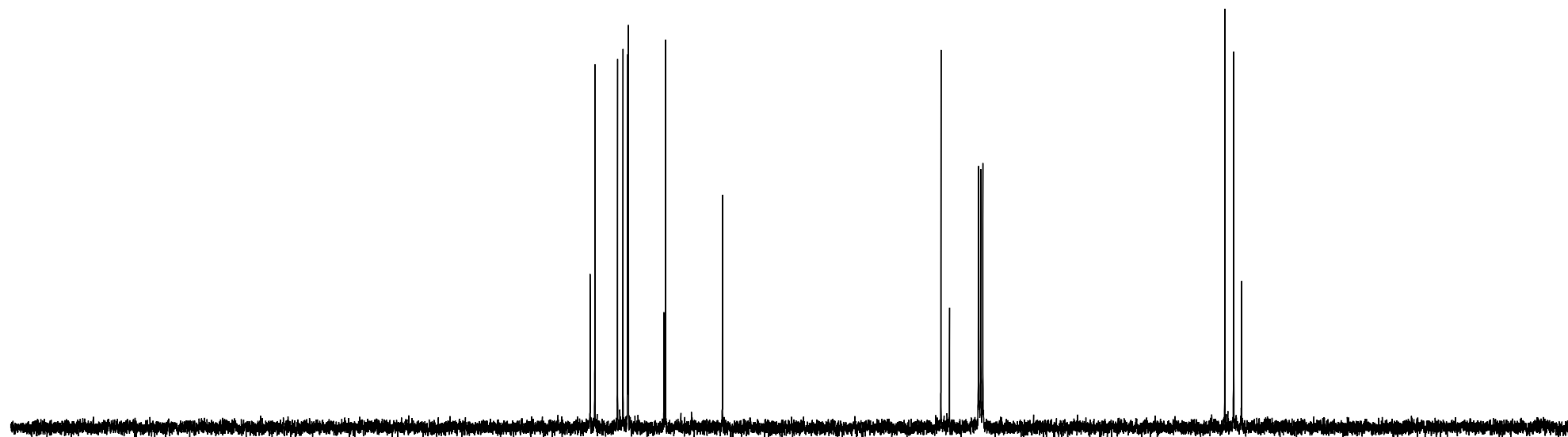




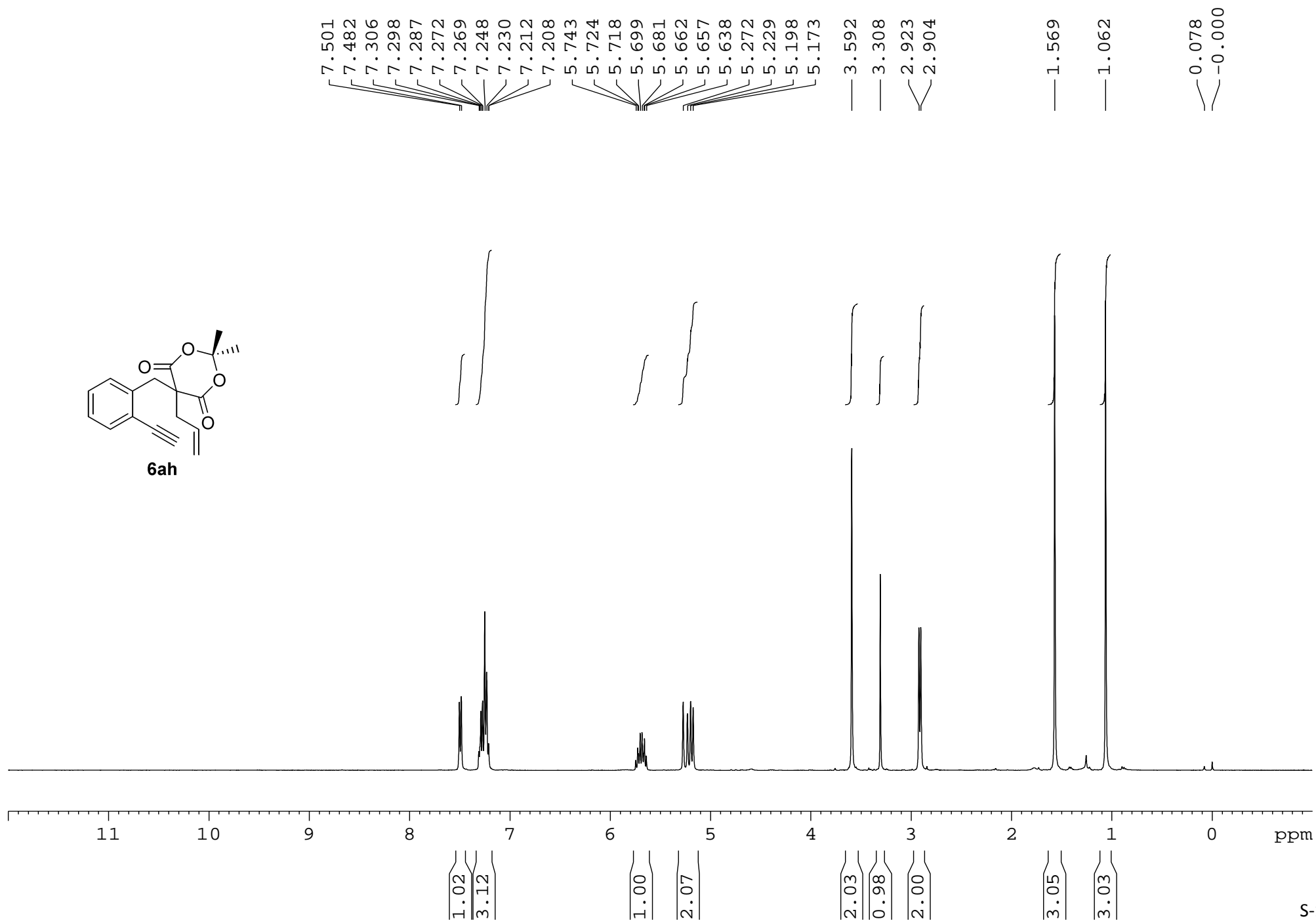
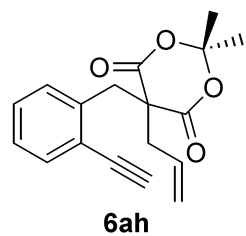
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133.51  
130.22  
129.41  
128.73  
128.63  
123.41  
123.19  
114.84

82.82  
81.57  
77.32  
77.00  
76.68

41.21  
39.93  
38.77

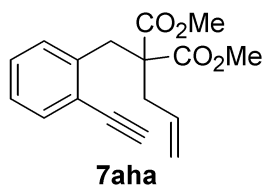


210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm  
Supplementary Material (ESI) for Organic & Biomolecular Chemistry

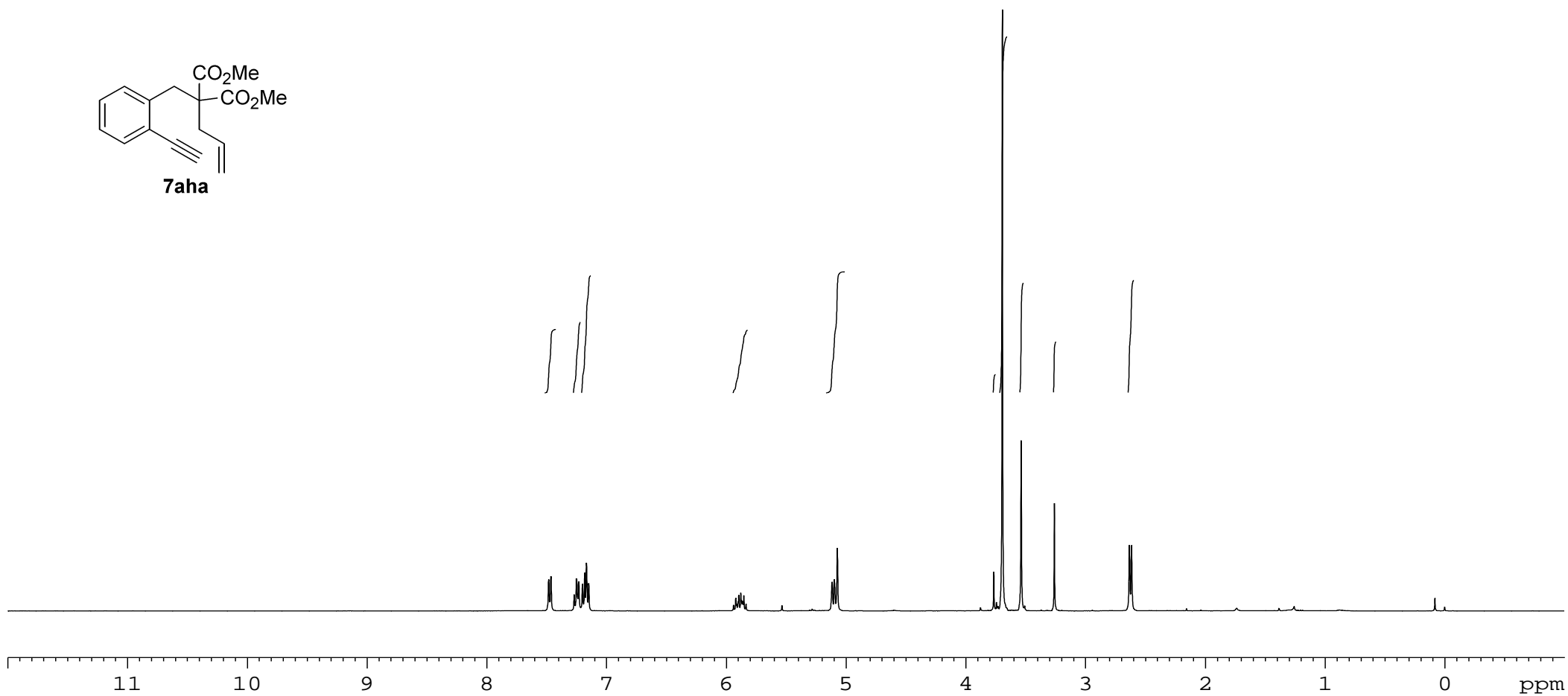




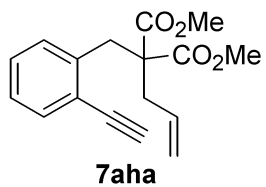




7.482  
 7.464  
 7.269  
 7.251  
 7.248  
 7.232  
 7.229  
 7.199  
 7.180  
 7.167  
 7.149  
 5.938  
 5.920  
 5.912  
 5.902  
 5.895  
 5.878  
 5.871  
 5.864  
 5.860  
 5.852  
 5.834  
 5.115  
 5.097  
 5.072  
 3.694  
 3.537  
 3.259  
 2.632  
 2.614



1.01  
 1.14  
 1.87  
 1.00  
 1.93  
 0.30  
 5.67  
 1.76  
 0.82  
 1.80



— 171.10

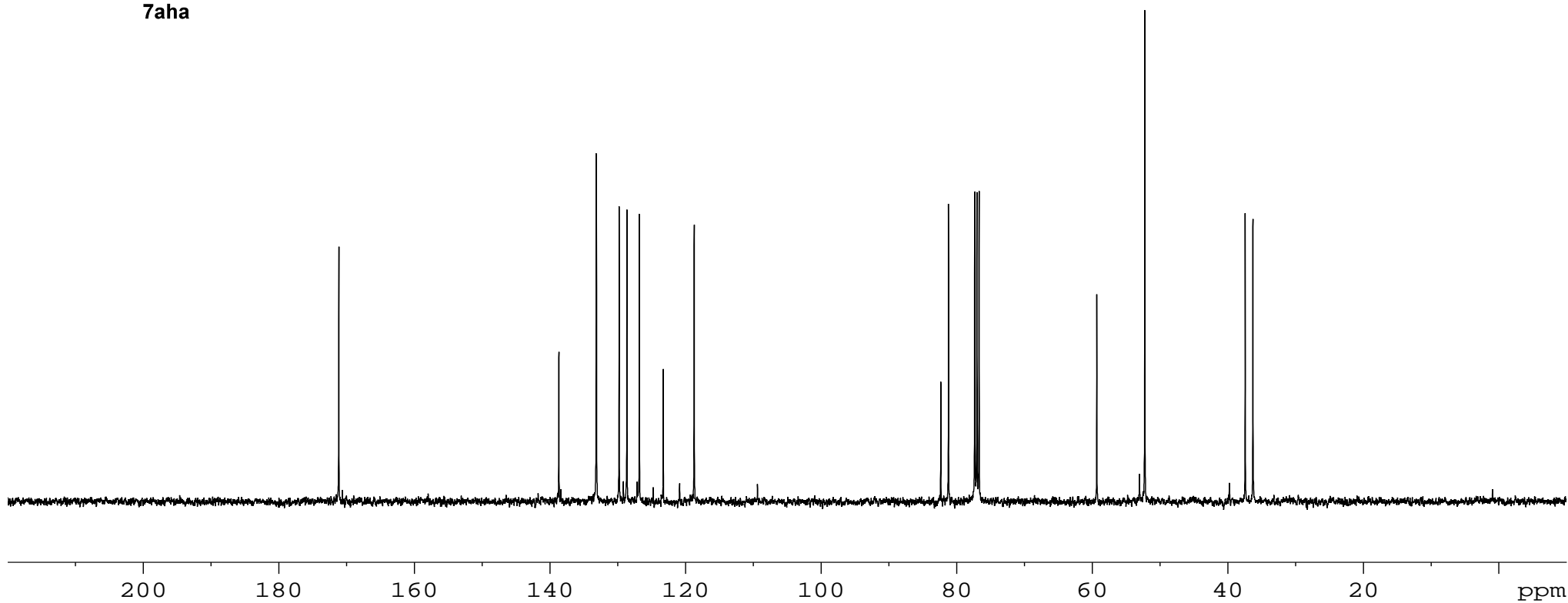
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133.12  
133.08  
129.74  
128.59  
126.76  
123.24  
118.66

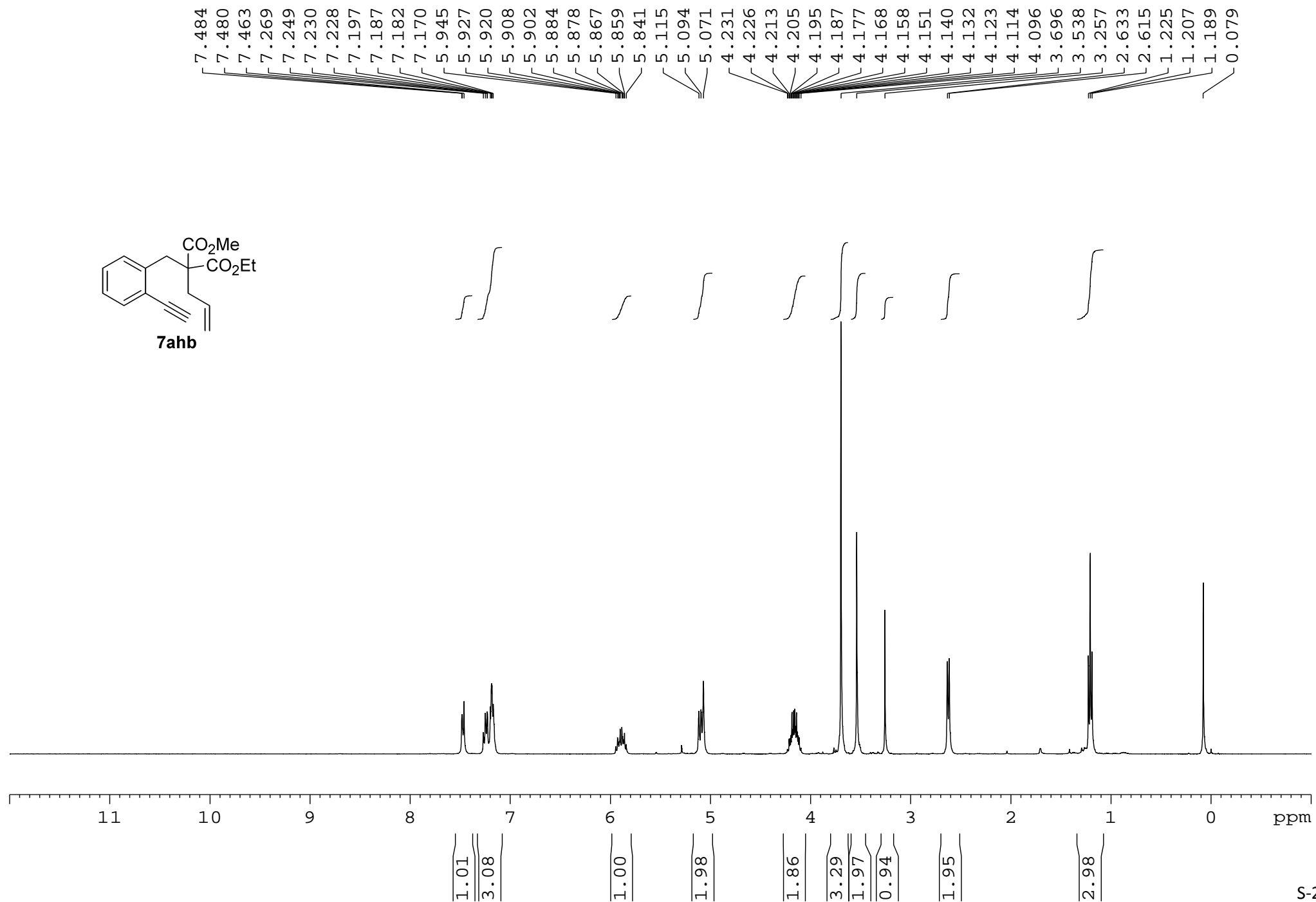
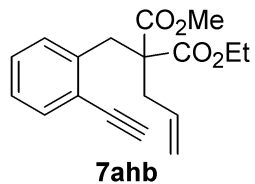
82.33  
81.20  
77.32  
77.00  
76.68

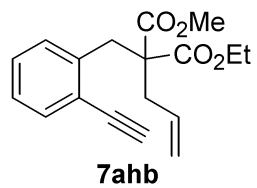
— 59.32

— 52.23

37.42  
36.28







171.23  
170.61

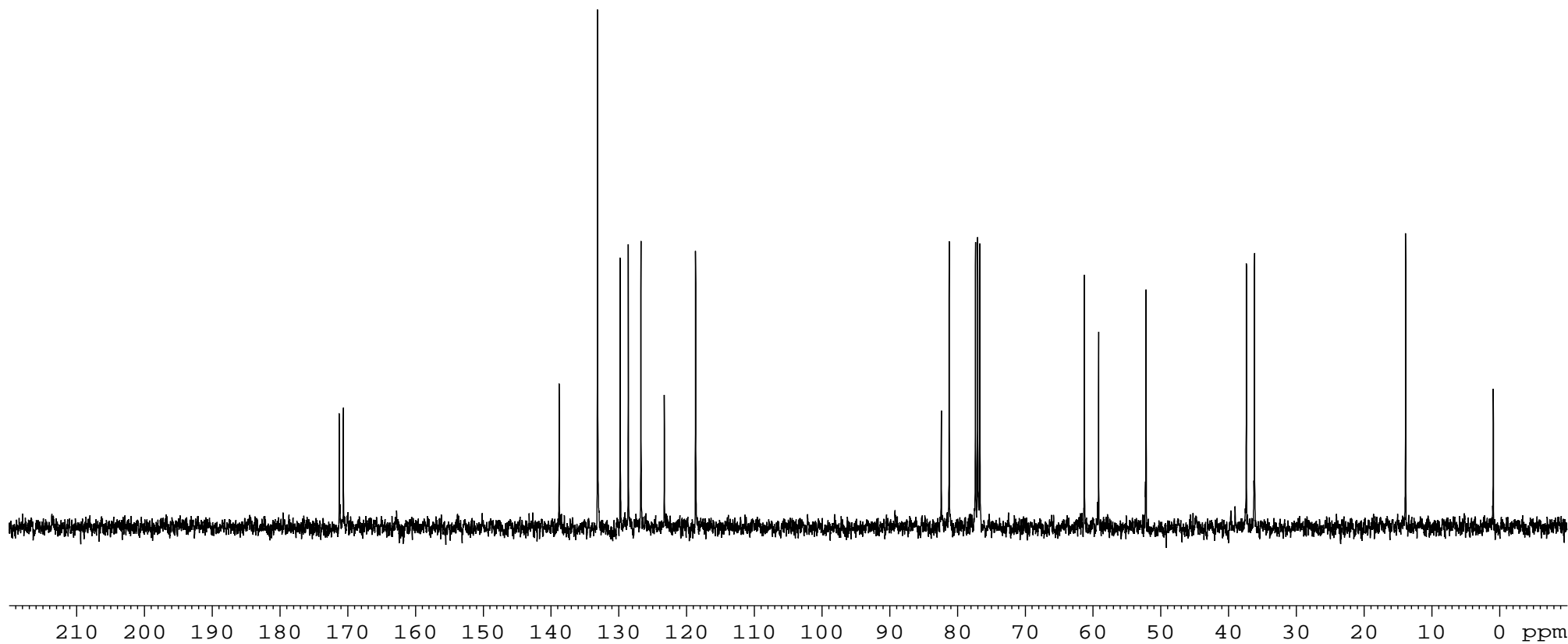
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133.10  
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118.63

82.37  
81.21  
77.32  
77.00  
76.68

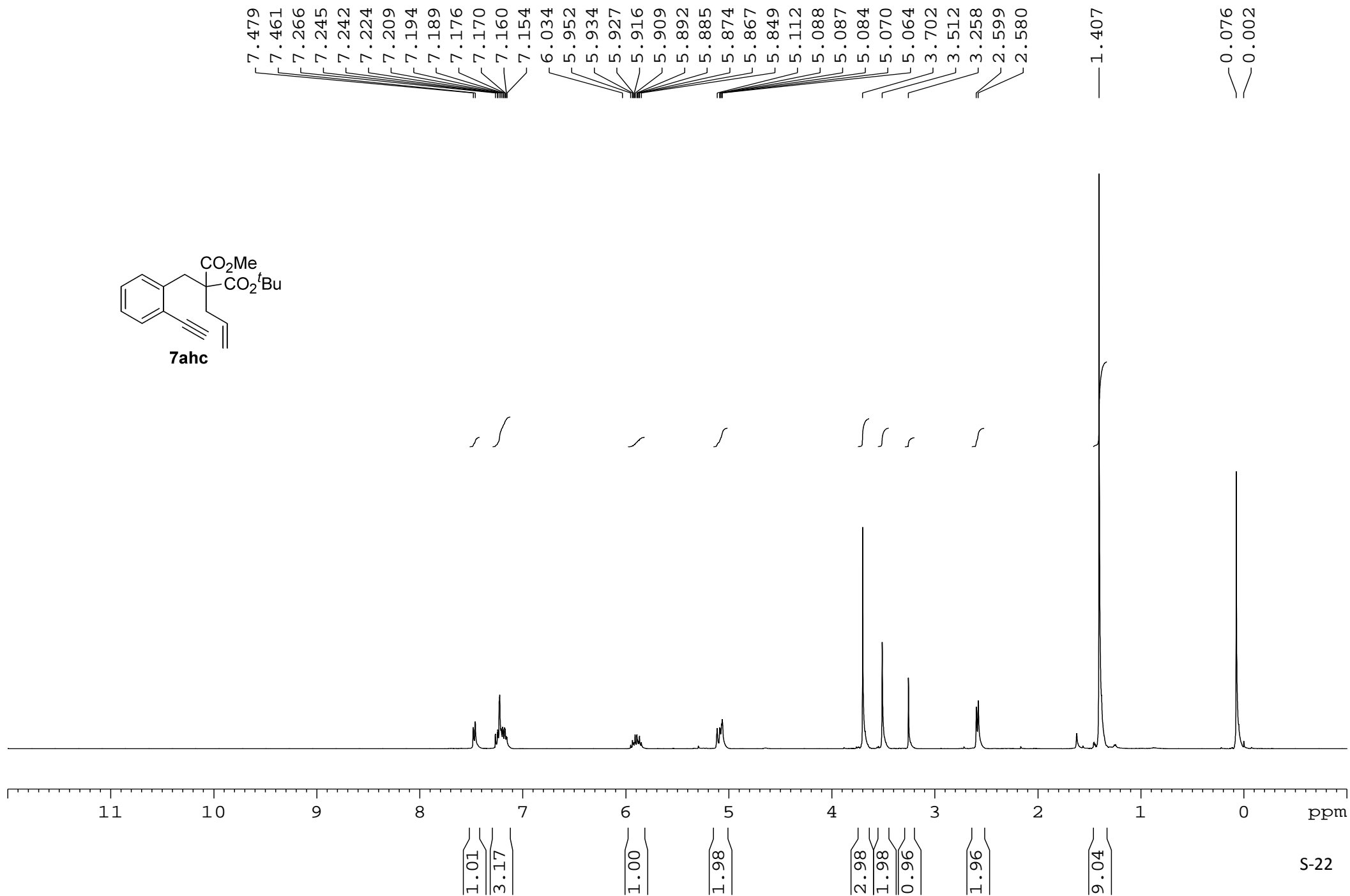
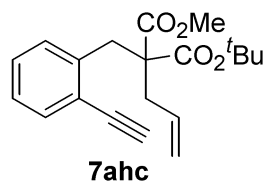
61.26  
59.15  
52.15

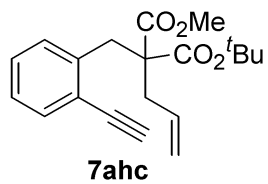
37.38  
36.17

13.87



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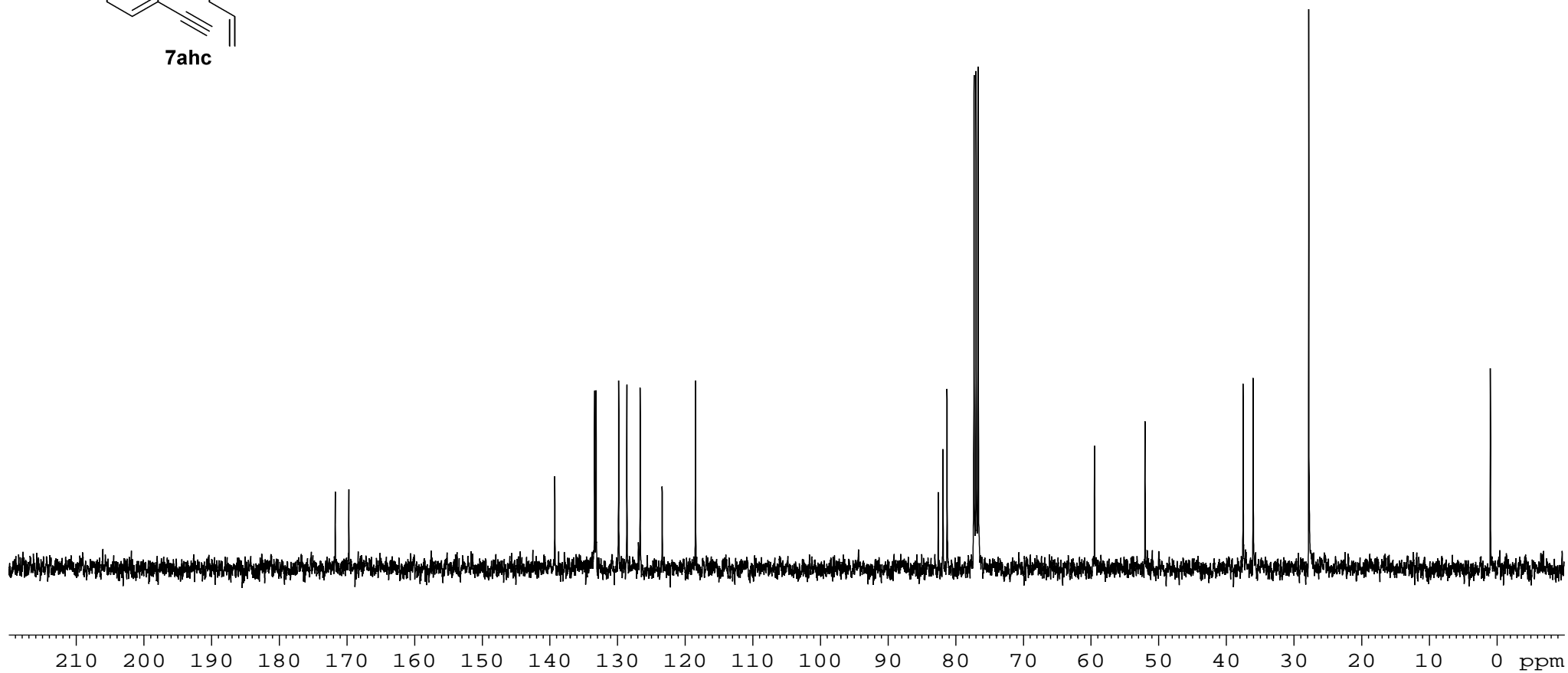
171.69  
169.68

139.24  
133.36  
133.14  
129.80  
128.58  
126.62  
123.36  
118.47

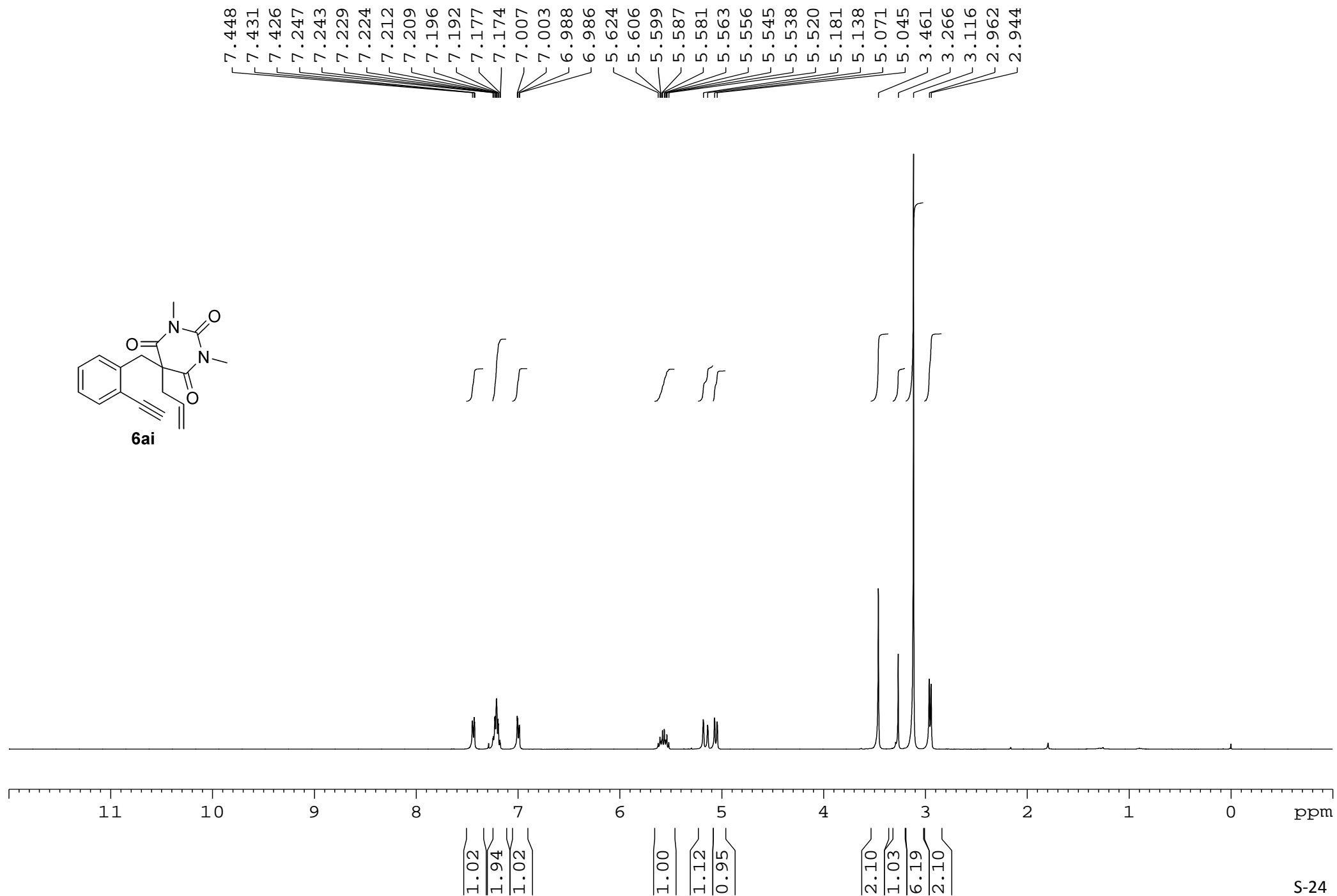
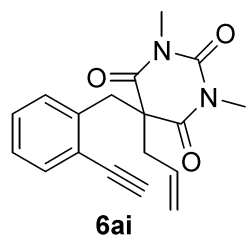
82.59  
81.90  
81.29  
77.32  
77.00  
76.68

59.50  
52.03

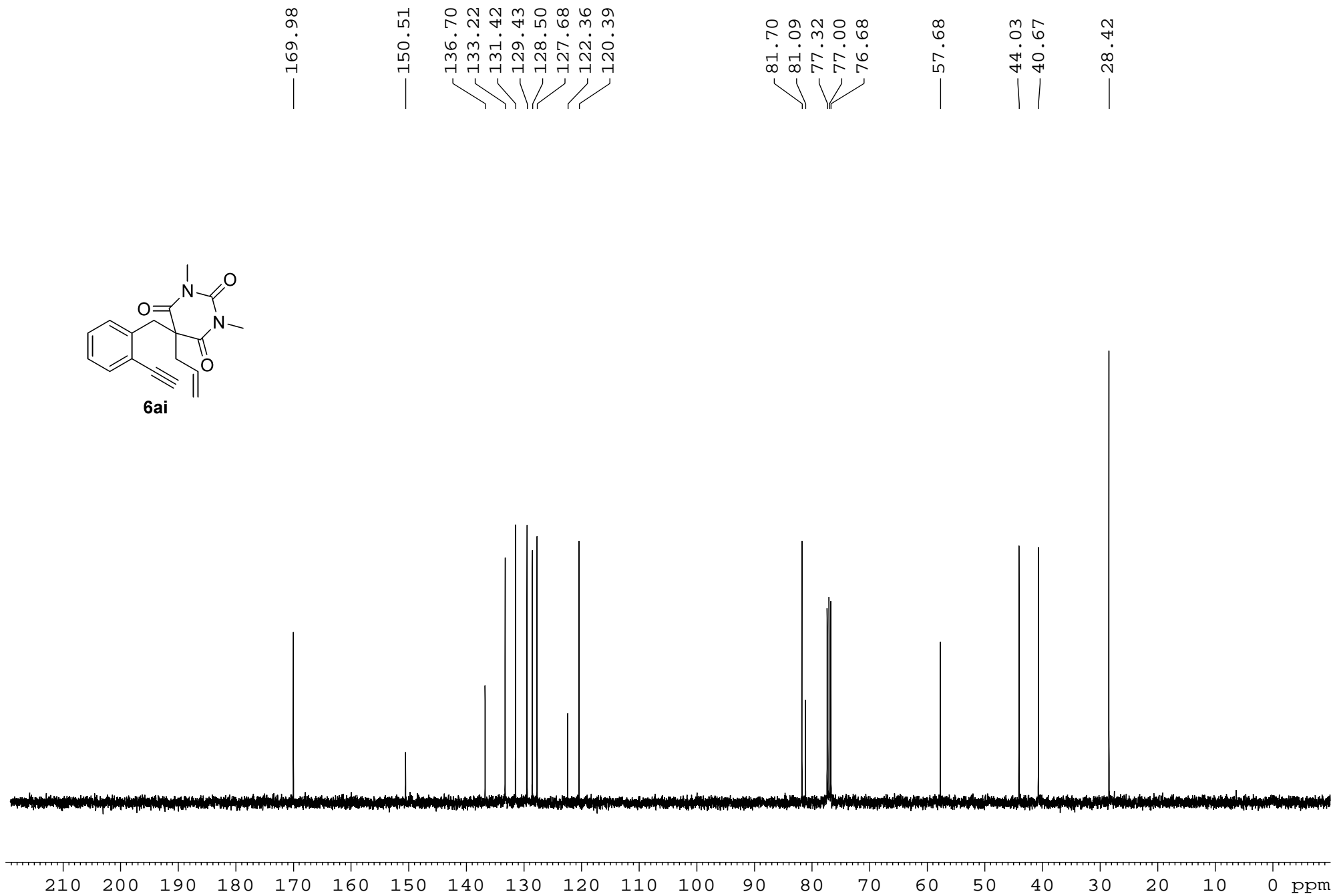
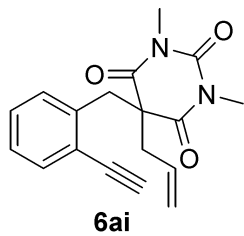
37.54  
36.05  
27.82

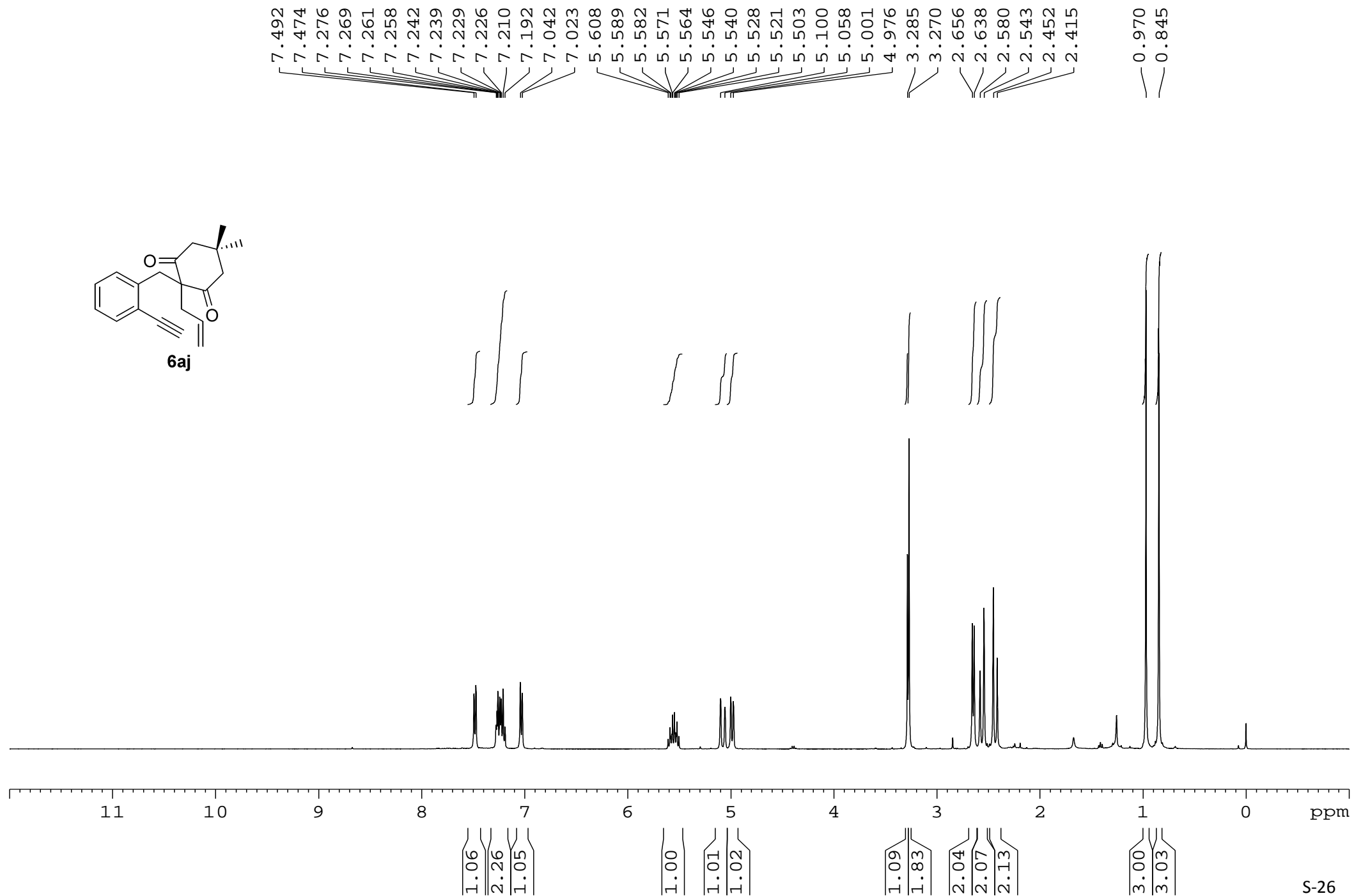
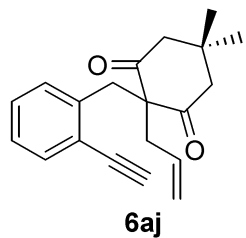


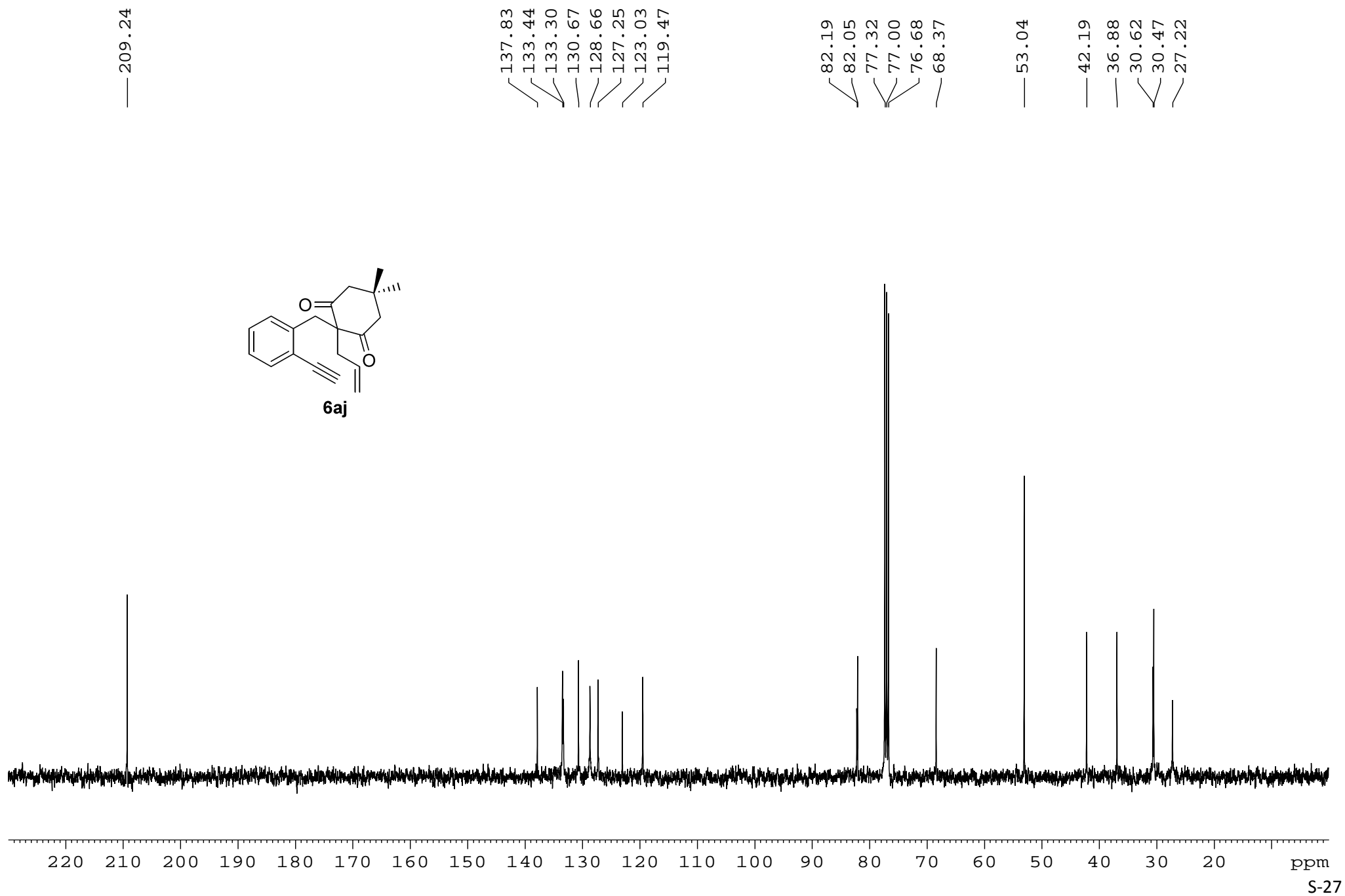
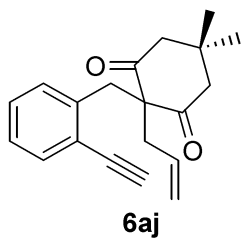
S-23

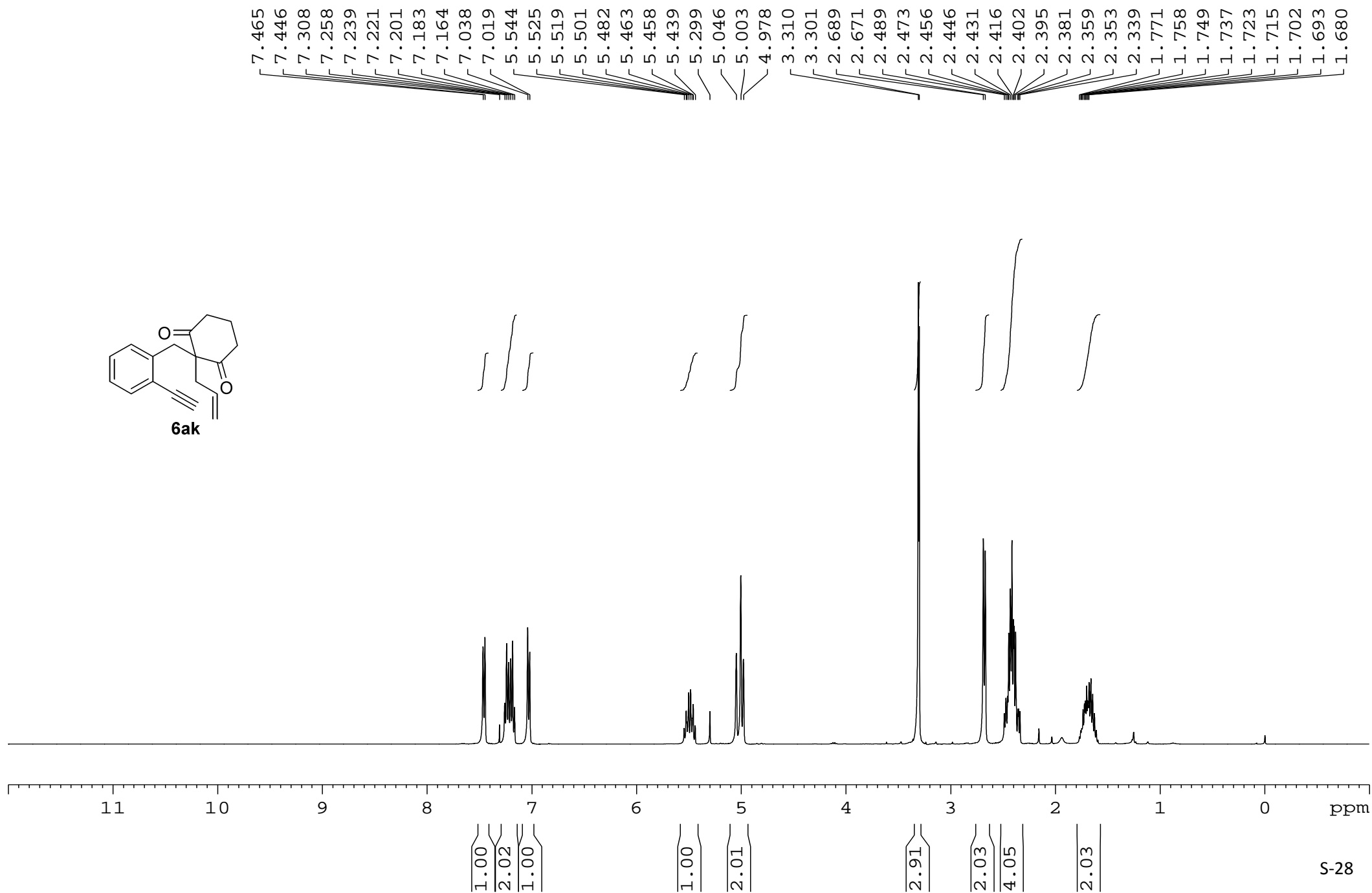
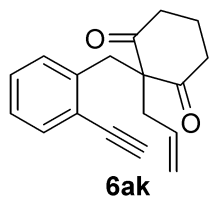


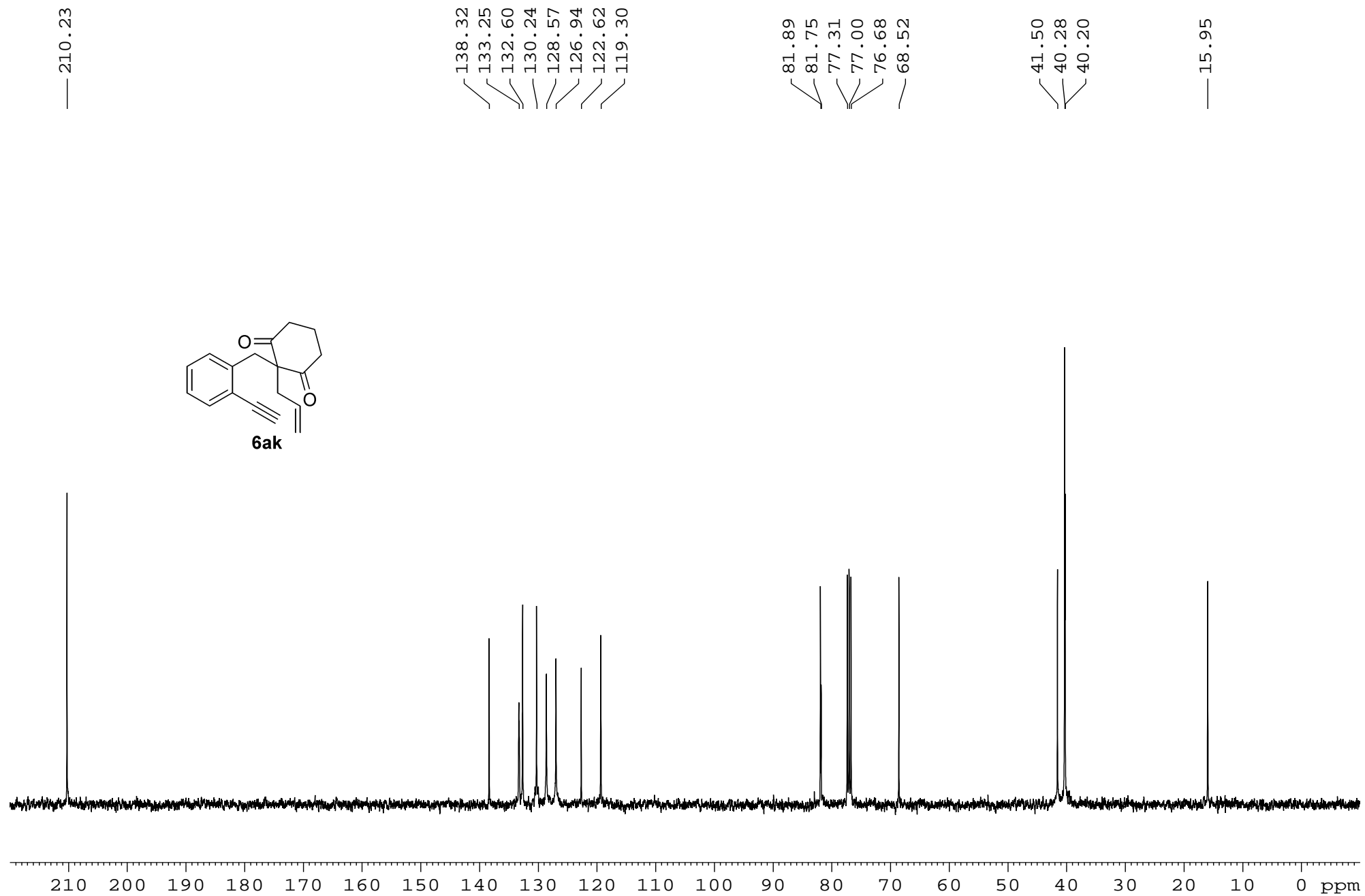


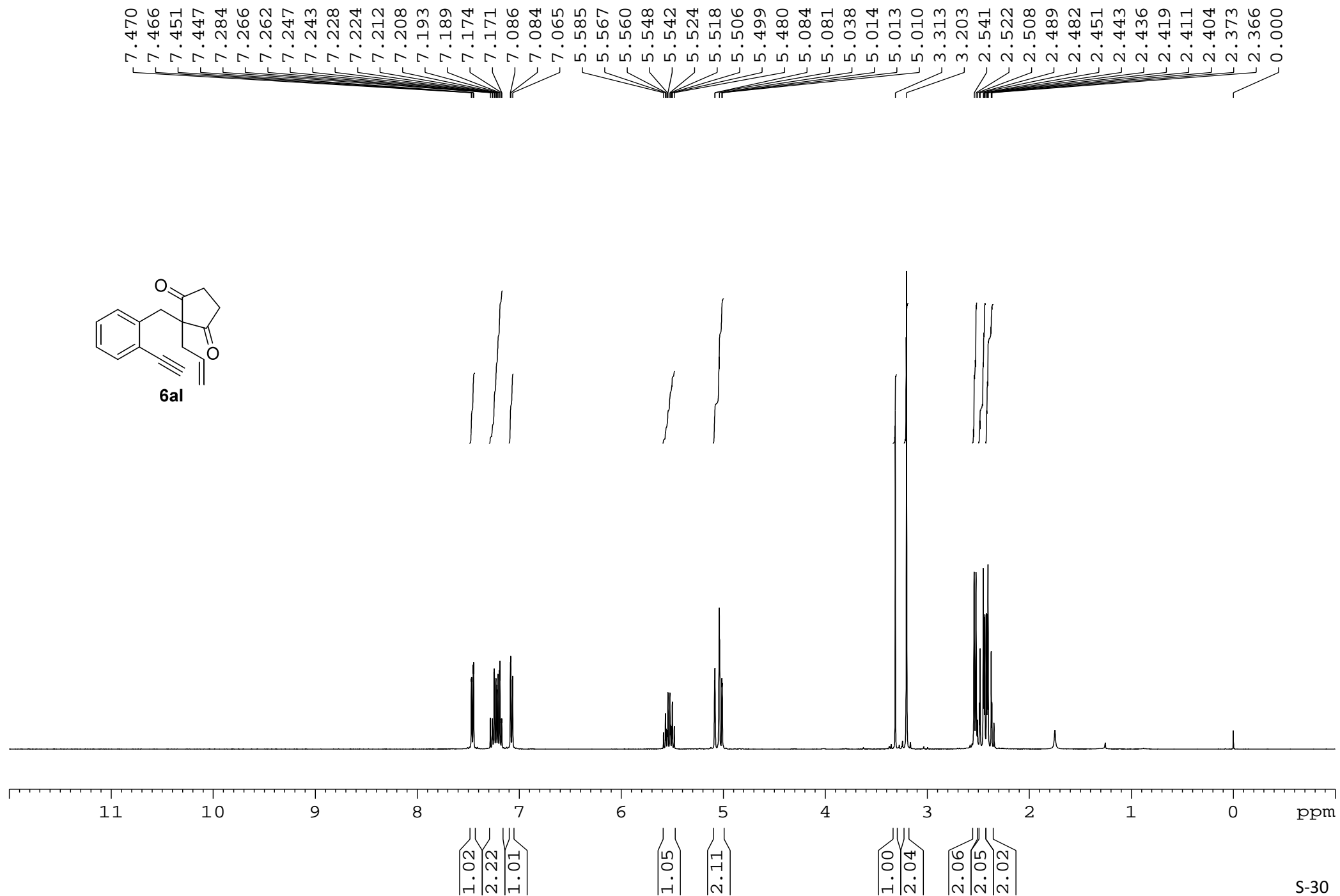
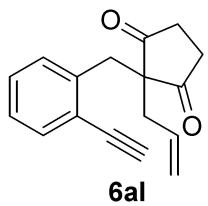












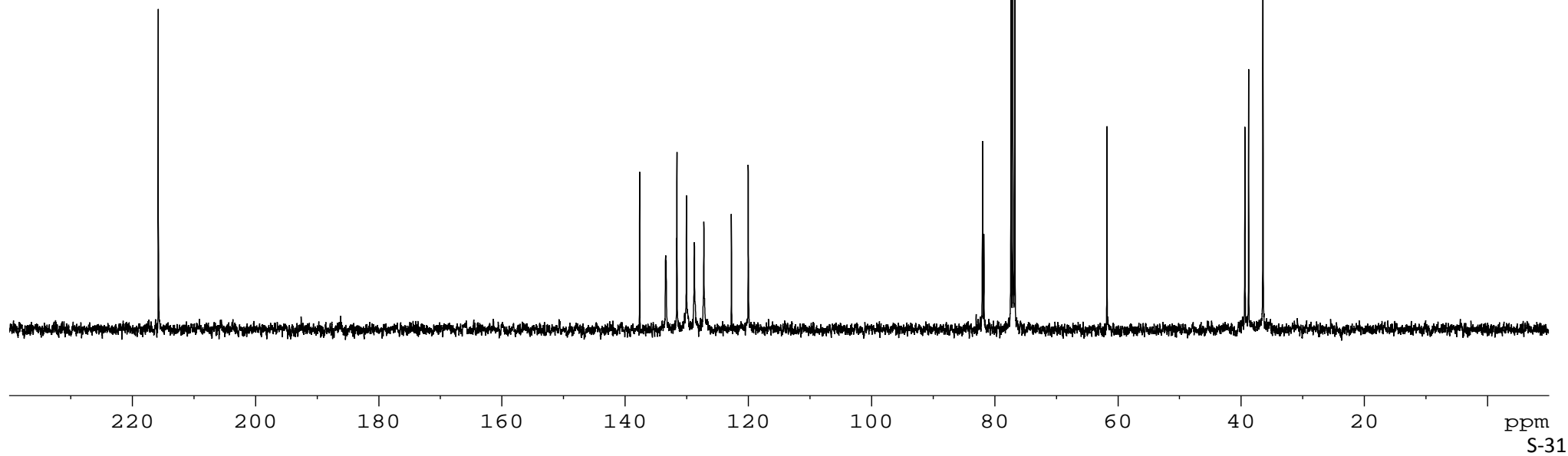
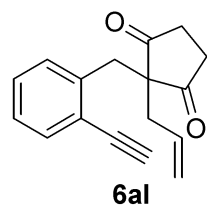
— 215.73

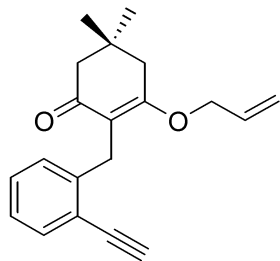
137.60  
133.38  
131.54  
130.00  
128.71  
127.17  
122.69  
119.96

81.94  
81.71  
77.32  
77.00  
76.68

— 61.78

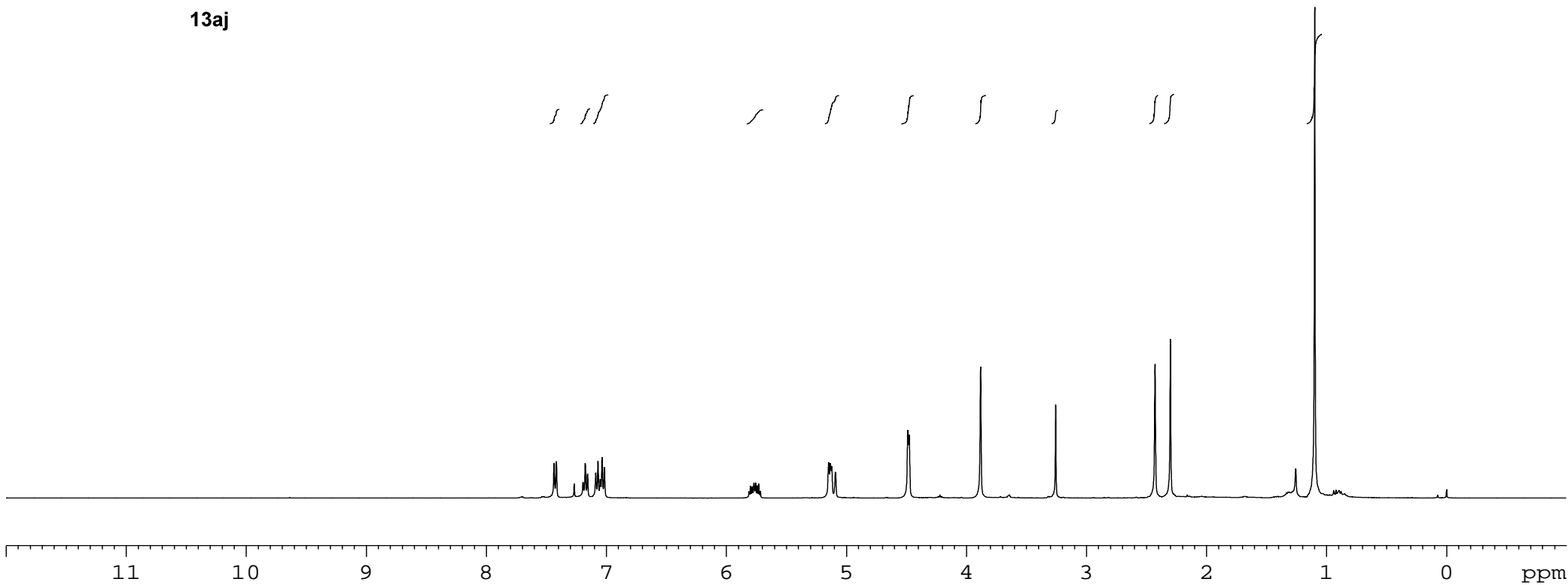
39.38  
38.78  
36.45





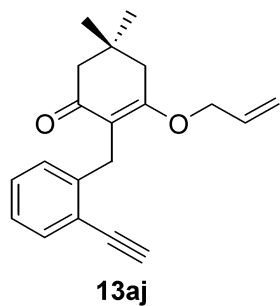
**13aj**

7.433  
7.414  
7.192  
7.173  
7.154  
7.086  
7.067  
7.048  
7.033  
7.014  
5.809  
5.797  
5.783  
5.769  
5.754  
5.740  
5.727  
5.715  
5.146  
5.132  
5.120  
5.089  
4.486  
4.474  
3.880  
3.256  
2.429  
2.301  
1.098



1.07  
1.11  
2.14  
1.03  
2.09  
2.08  
2.10  
1.00  
2.11  
2.20  
6.64





197.69

170.63

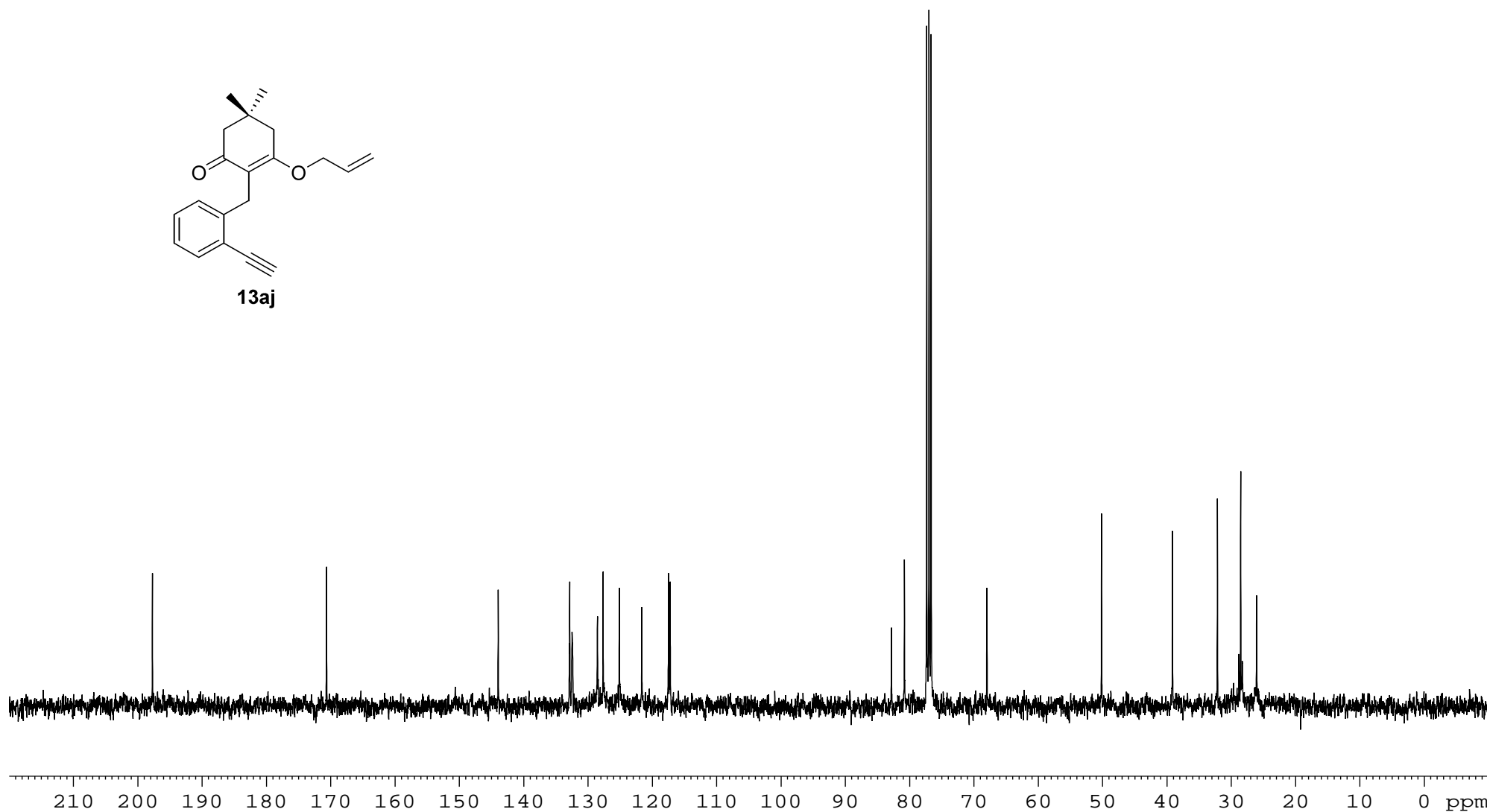
143.94  
132.81  
132.44  
128.51  
127.63  
125.10  
121.63  
117.46  
117.22

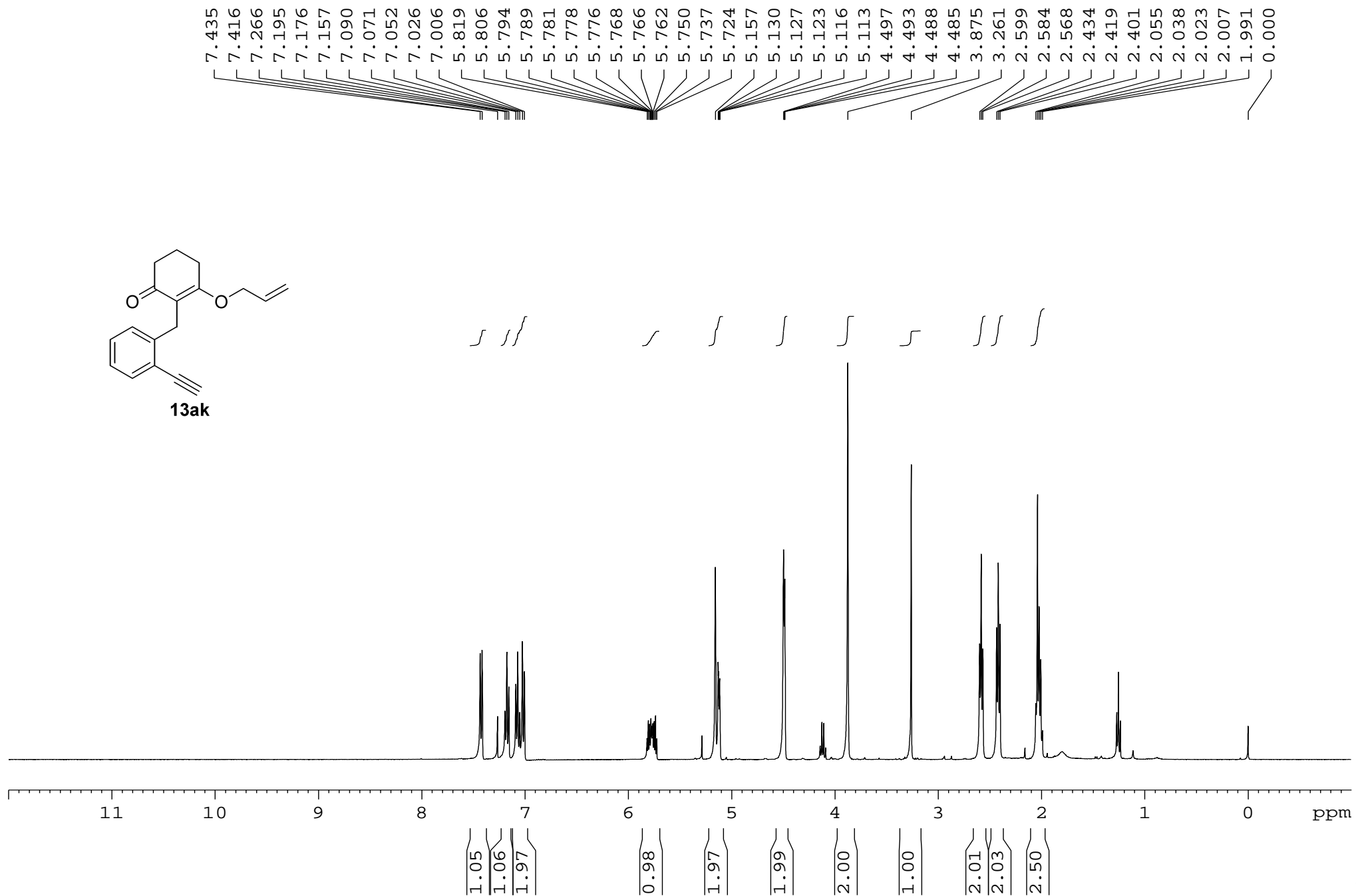
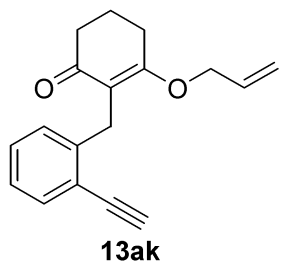
82.81  
80.79  
77.32  
77.00  
76.68  
68.01

50.19

39.15

32.17  
28.55  
26.08





197.87

172.44

143.83

132.71

132.41

128.52

127.47

125.09

121.63

118.49

117.29

82.76

80.86

77.32

77.00

76.68

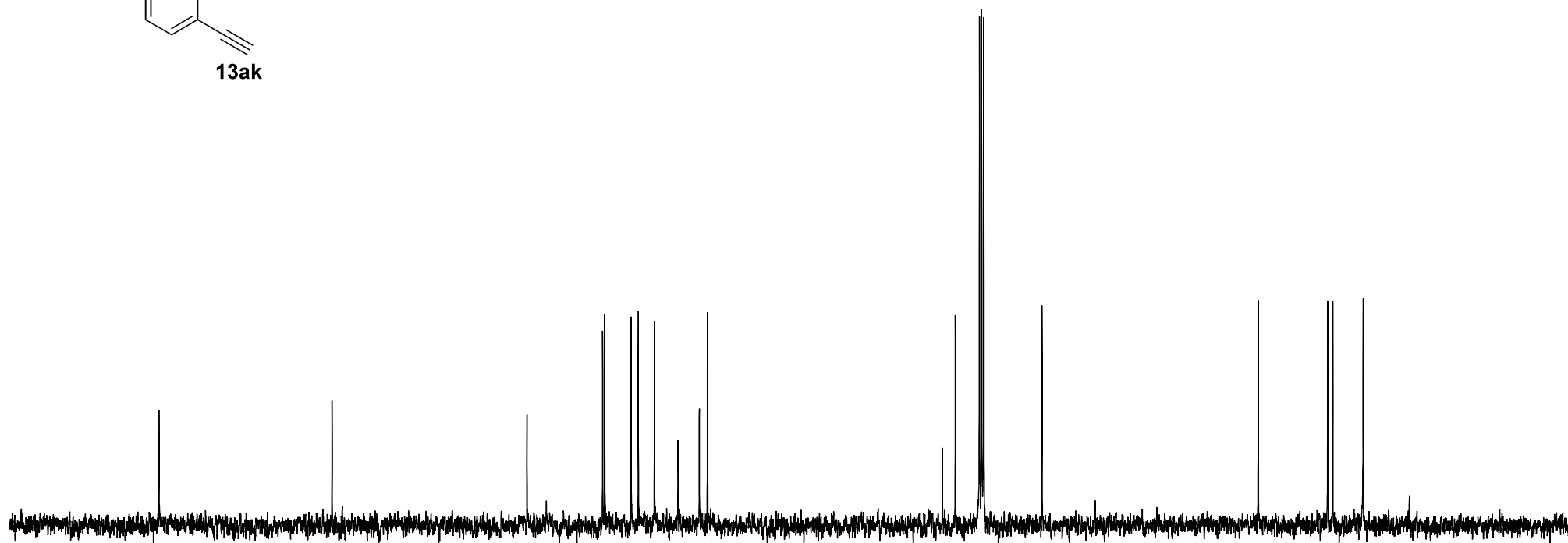
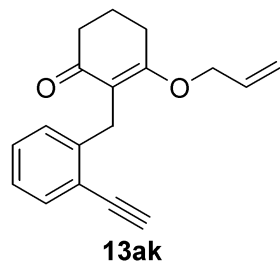
68.13

36.35

26.14

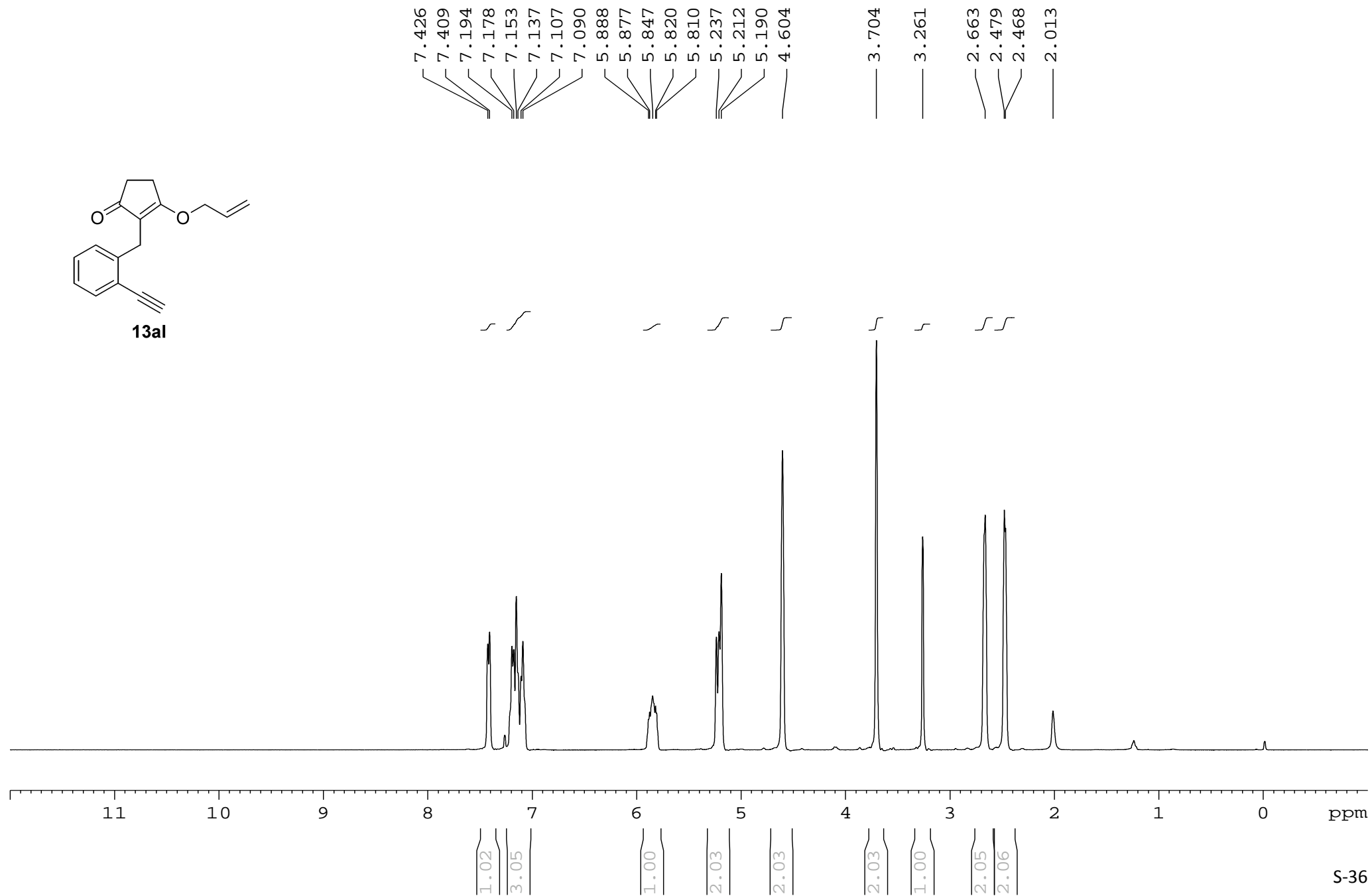
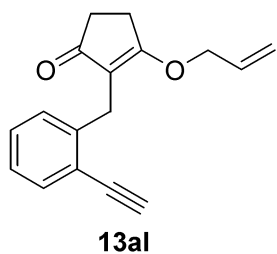
25.38

20.92



210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

S-35



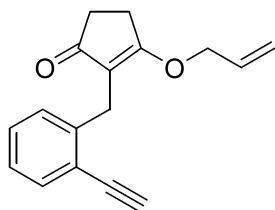
— 204.20

— 184.72

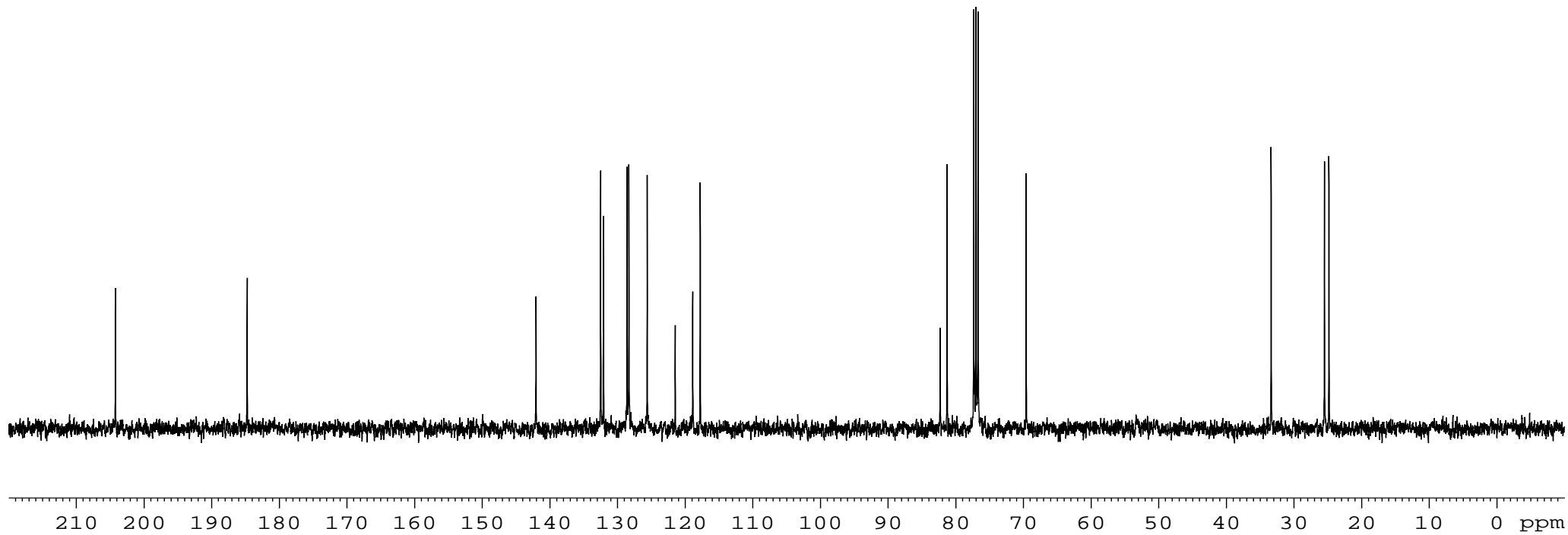
— 142.02  
— 132.46  
— 132.04  
— 128.58  
— 128.29  
— 125.58  
— 121.44  
— 118.85  
— 117.75

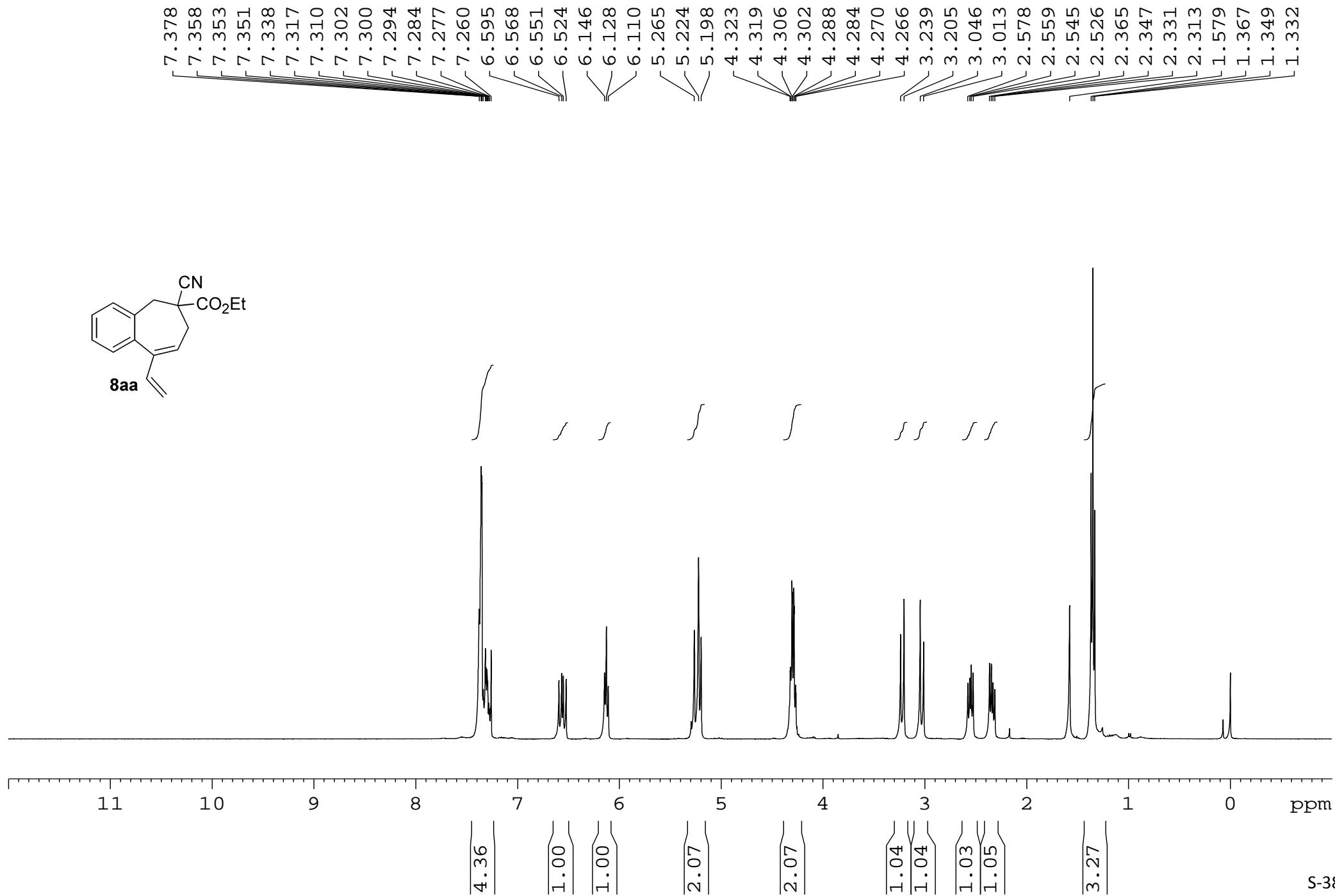
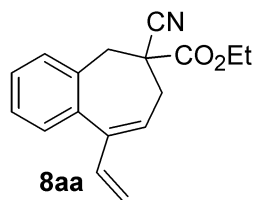
— 82.27  
— 81.26  
— 77.32  
— 77.00  
— 76.68  
— 69.57

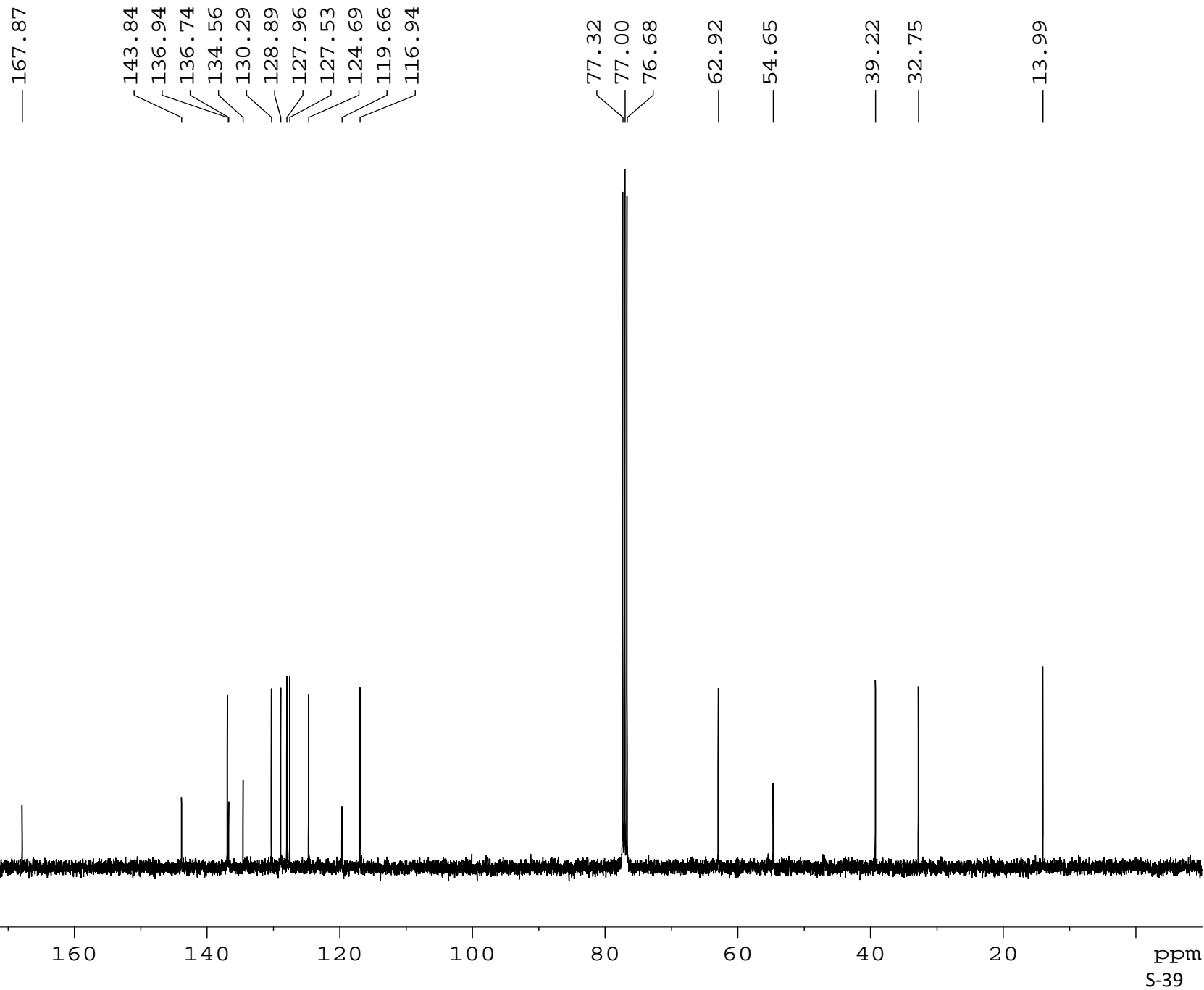
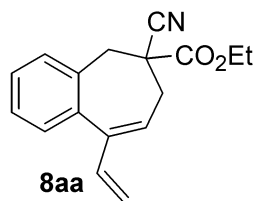
— 33.39  
— 25.51  
— 24.85

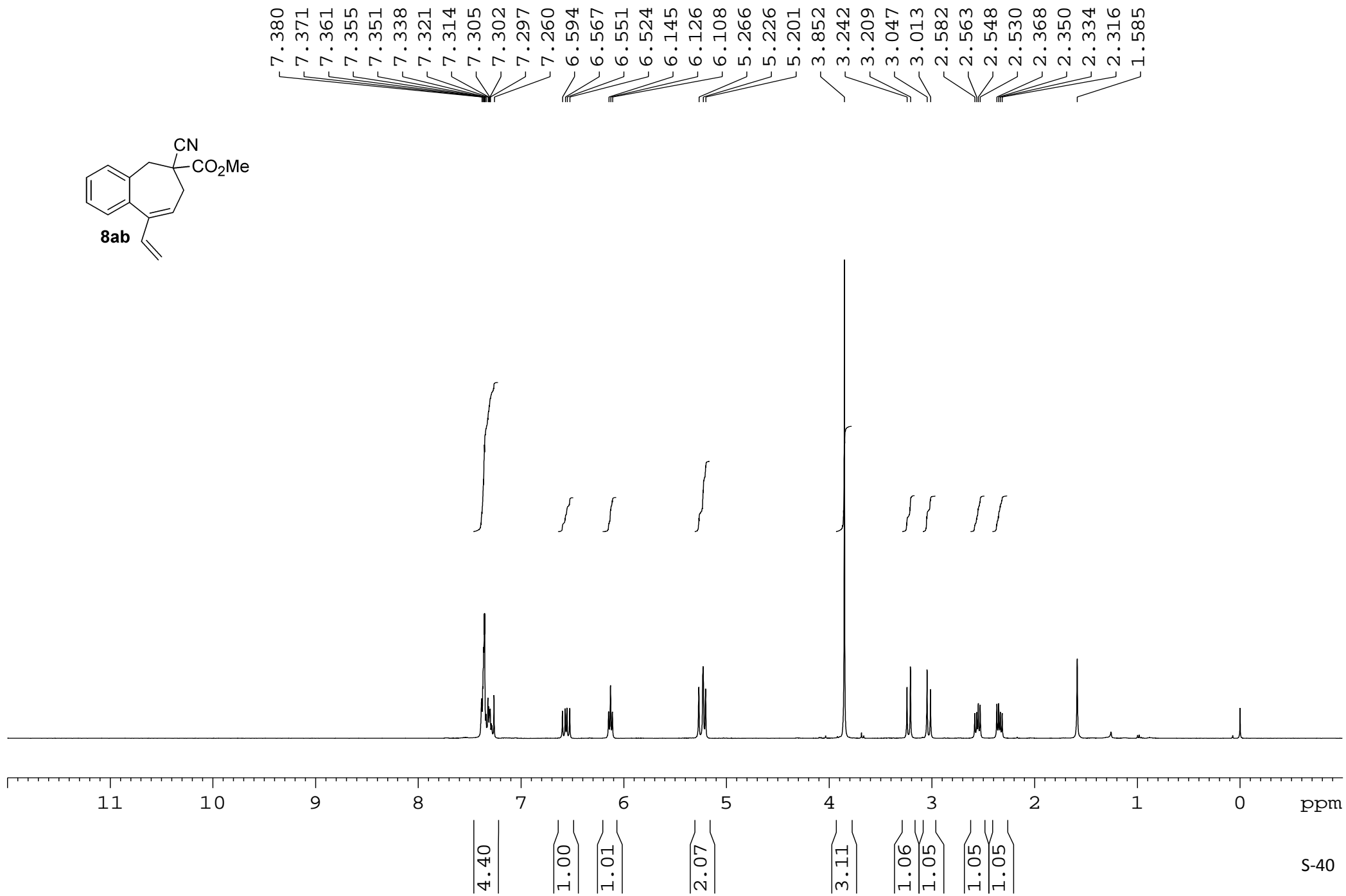
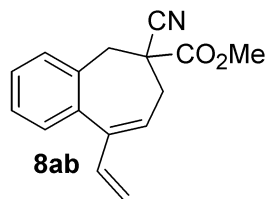


**13al**

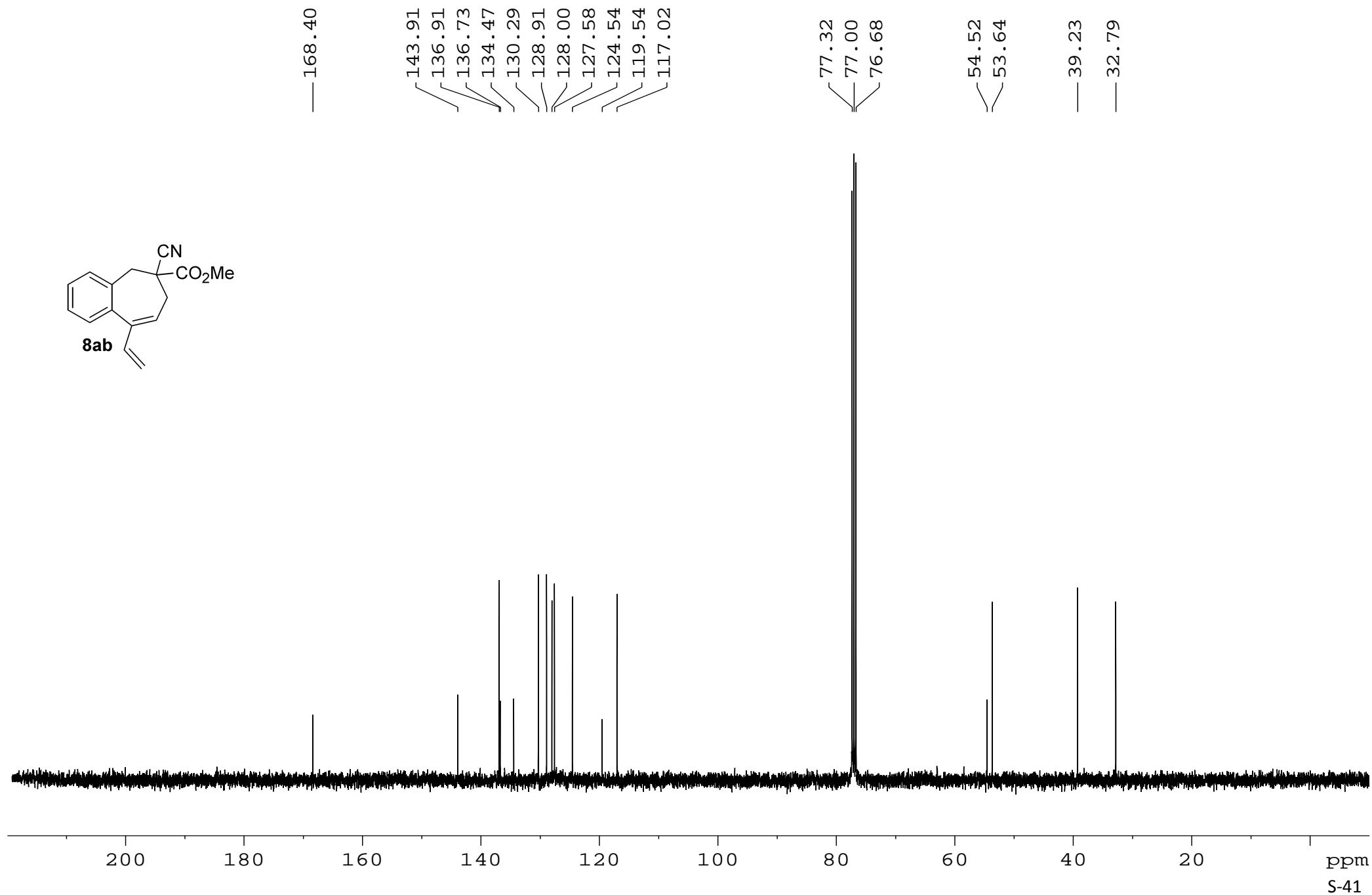
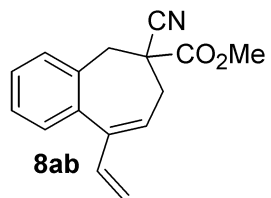


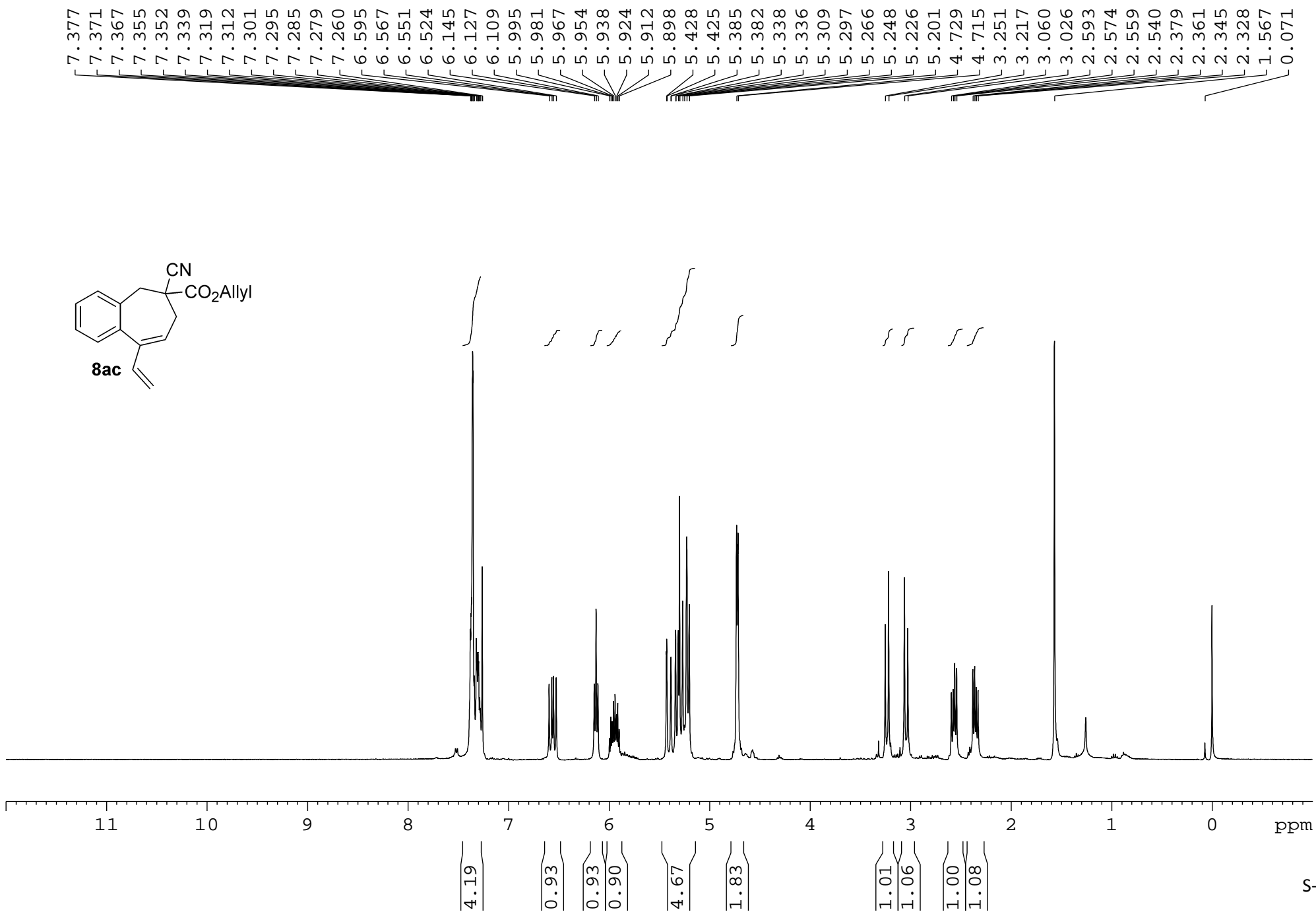


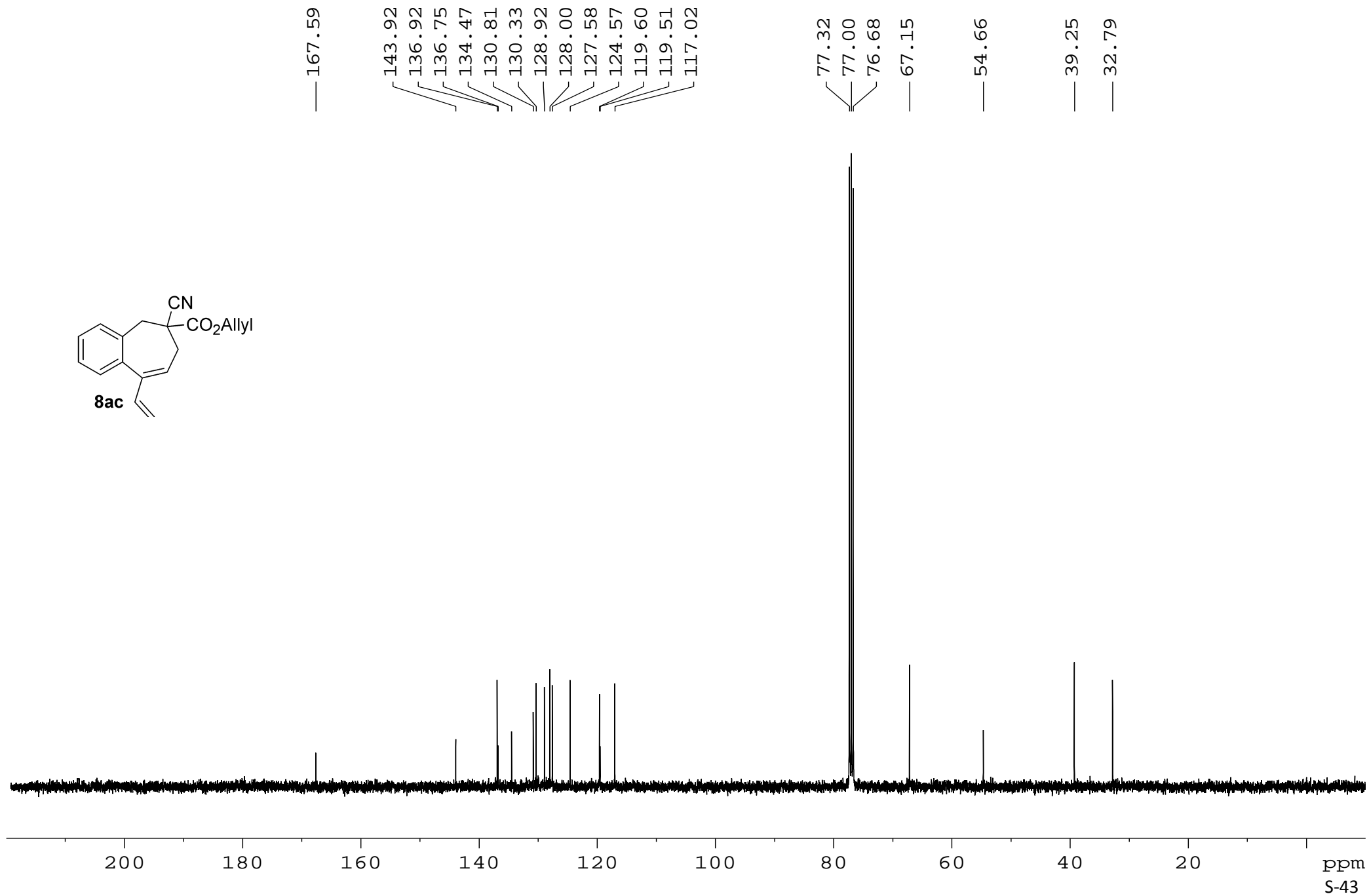
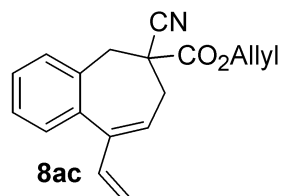


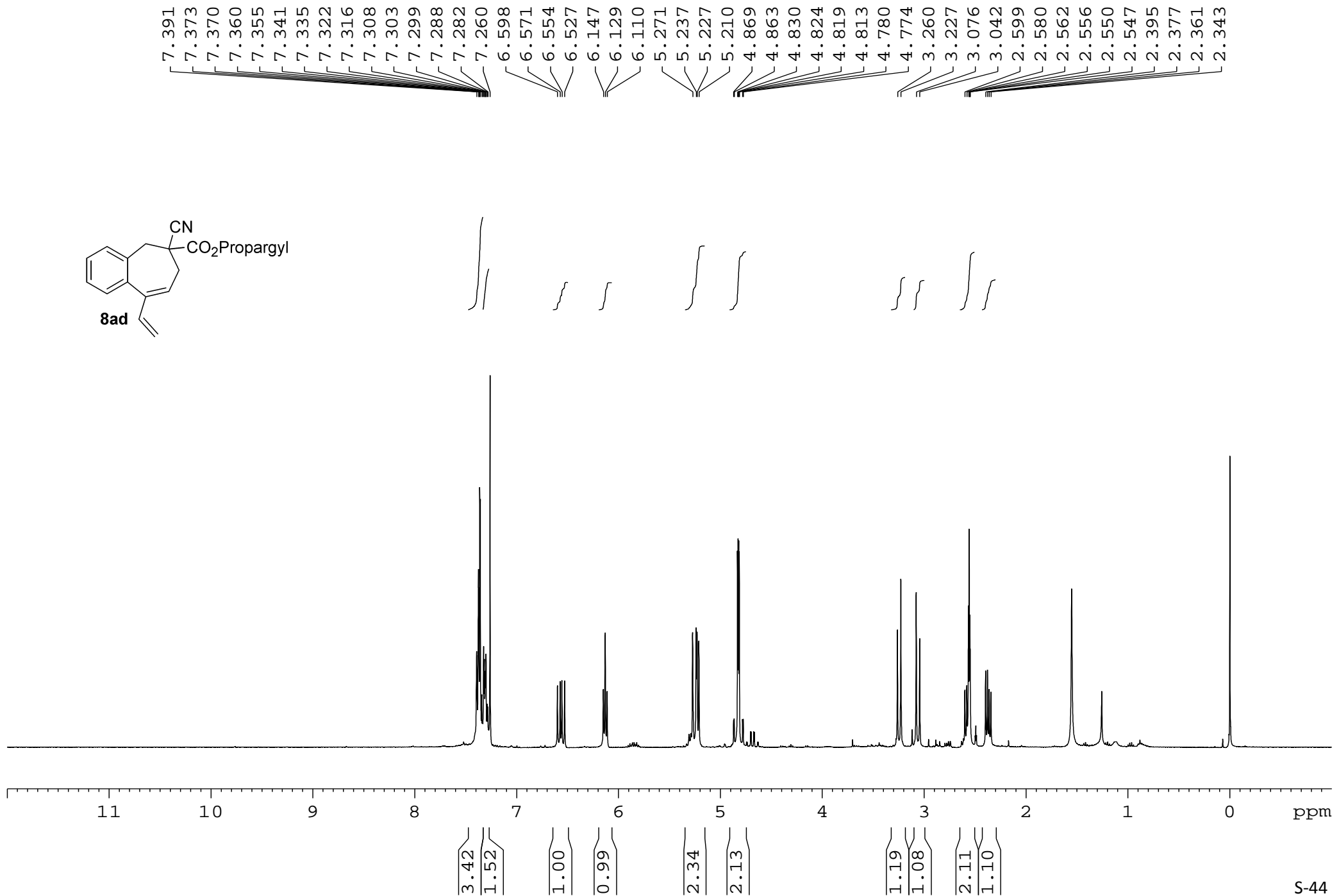


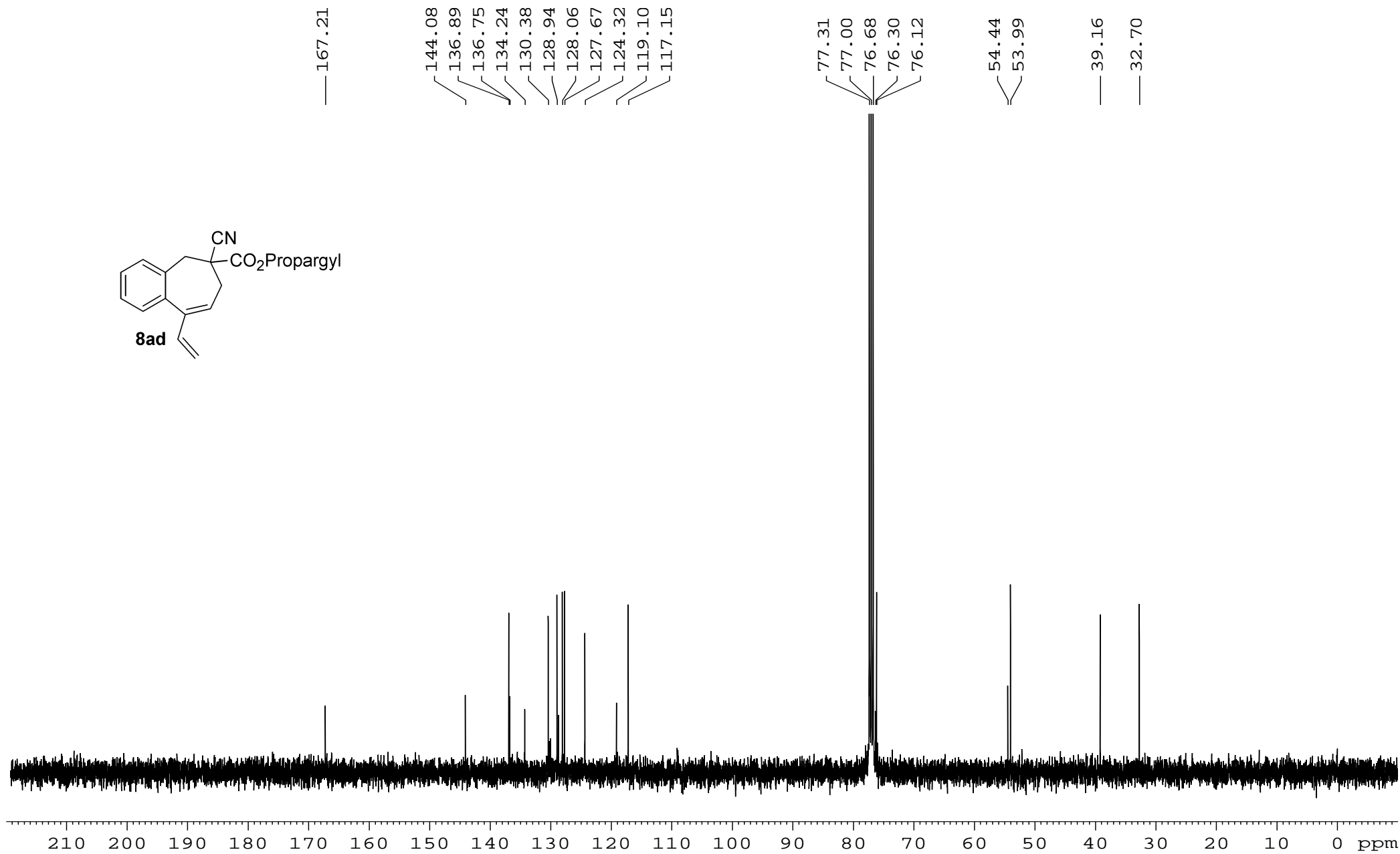
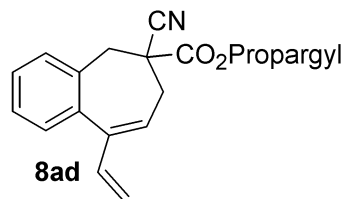


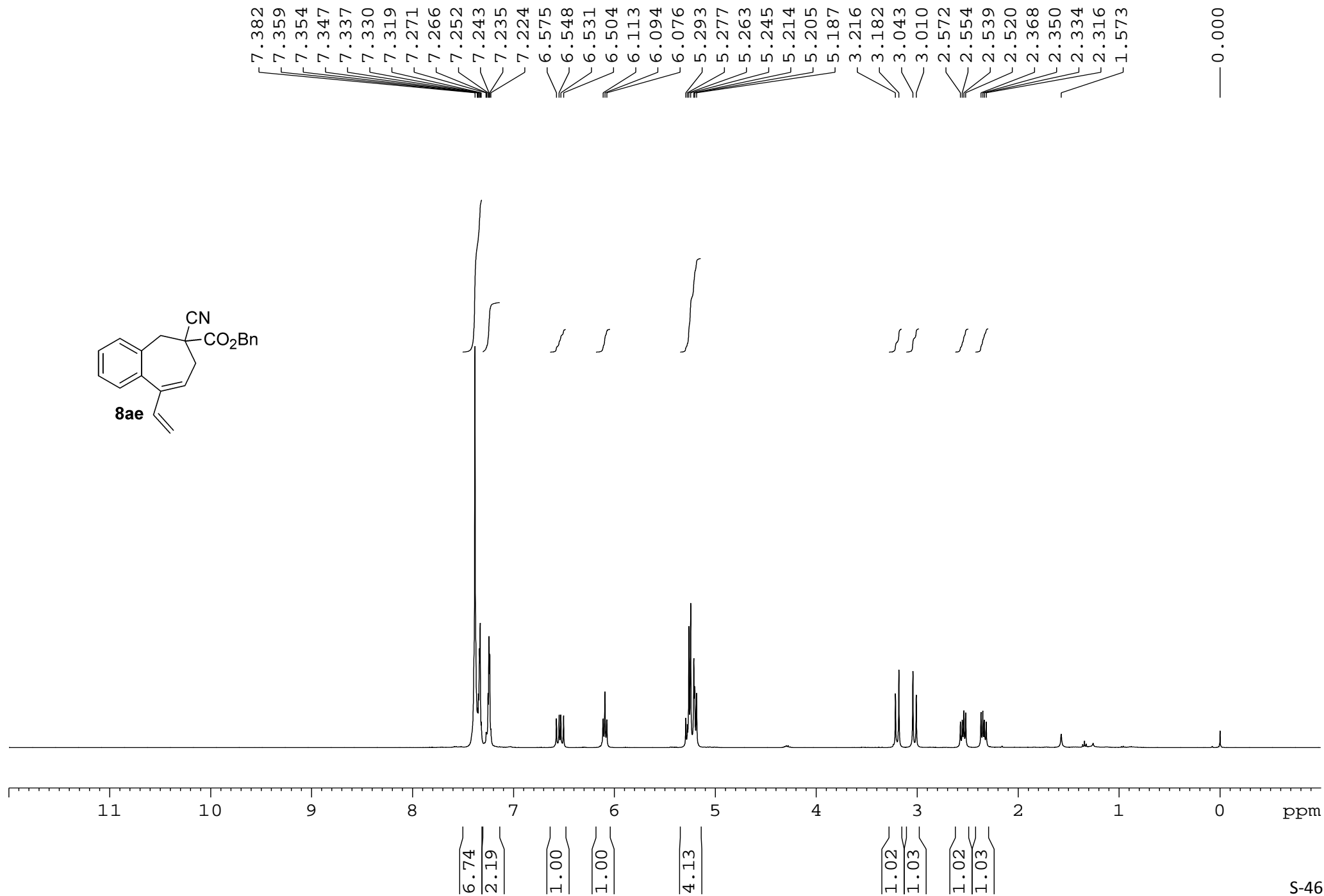
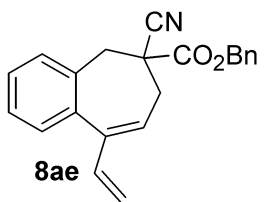


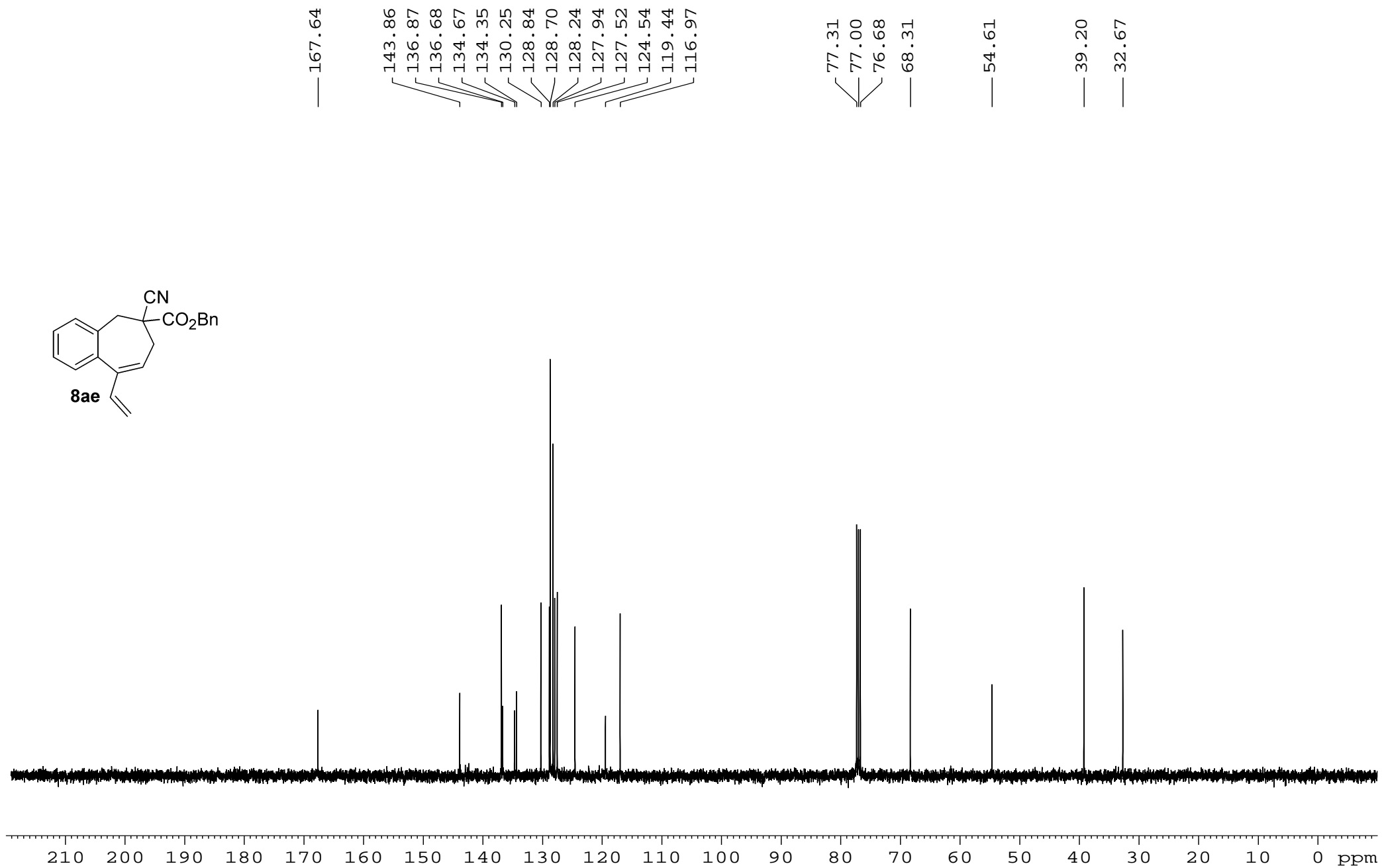
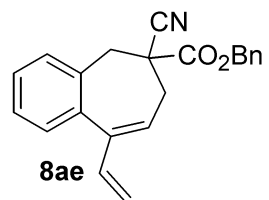


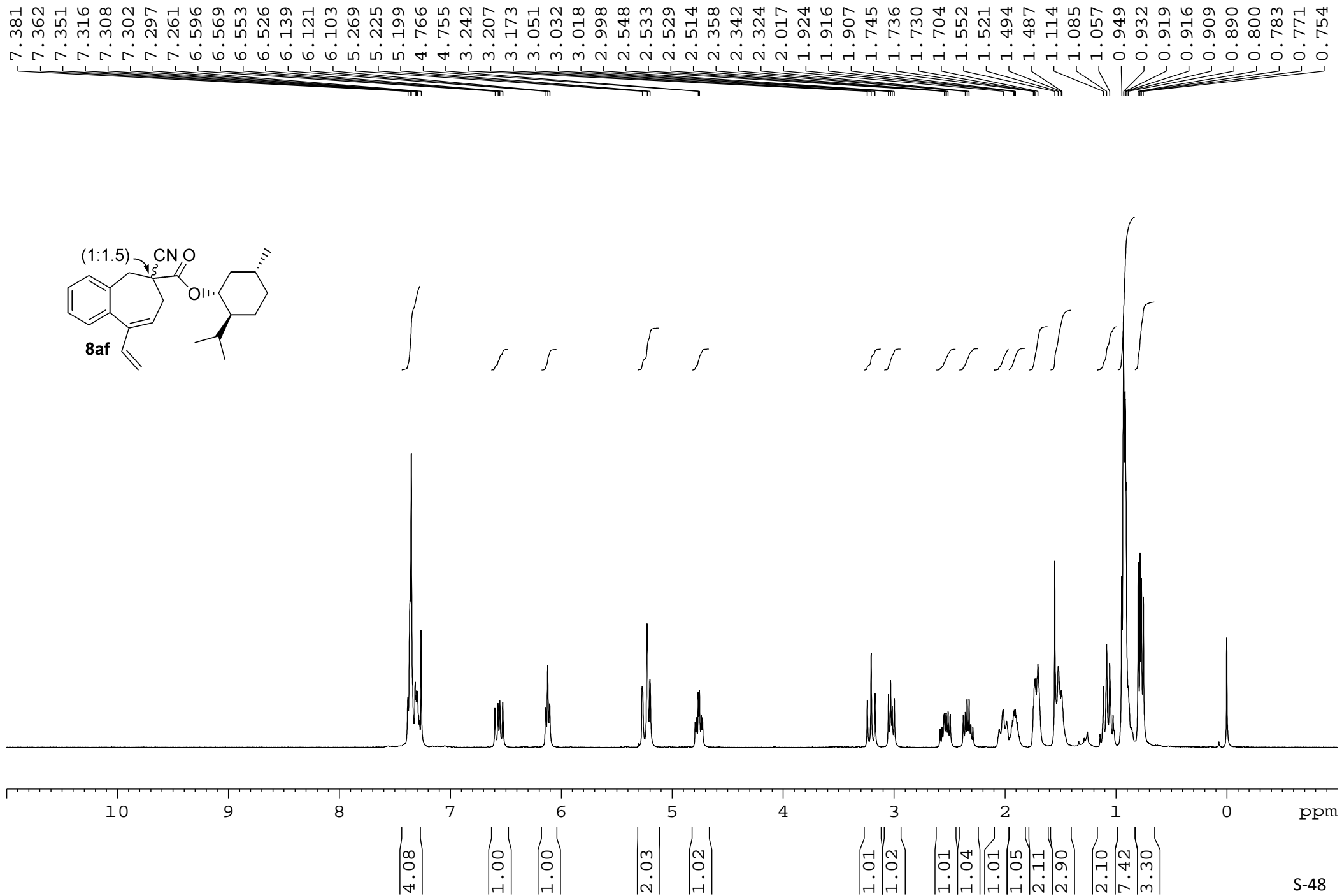




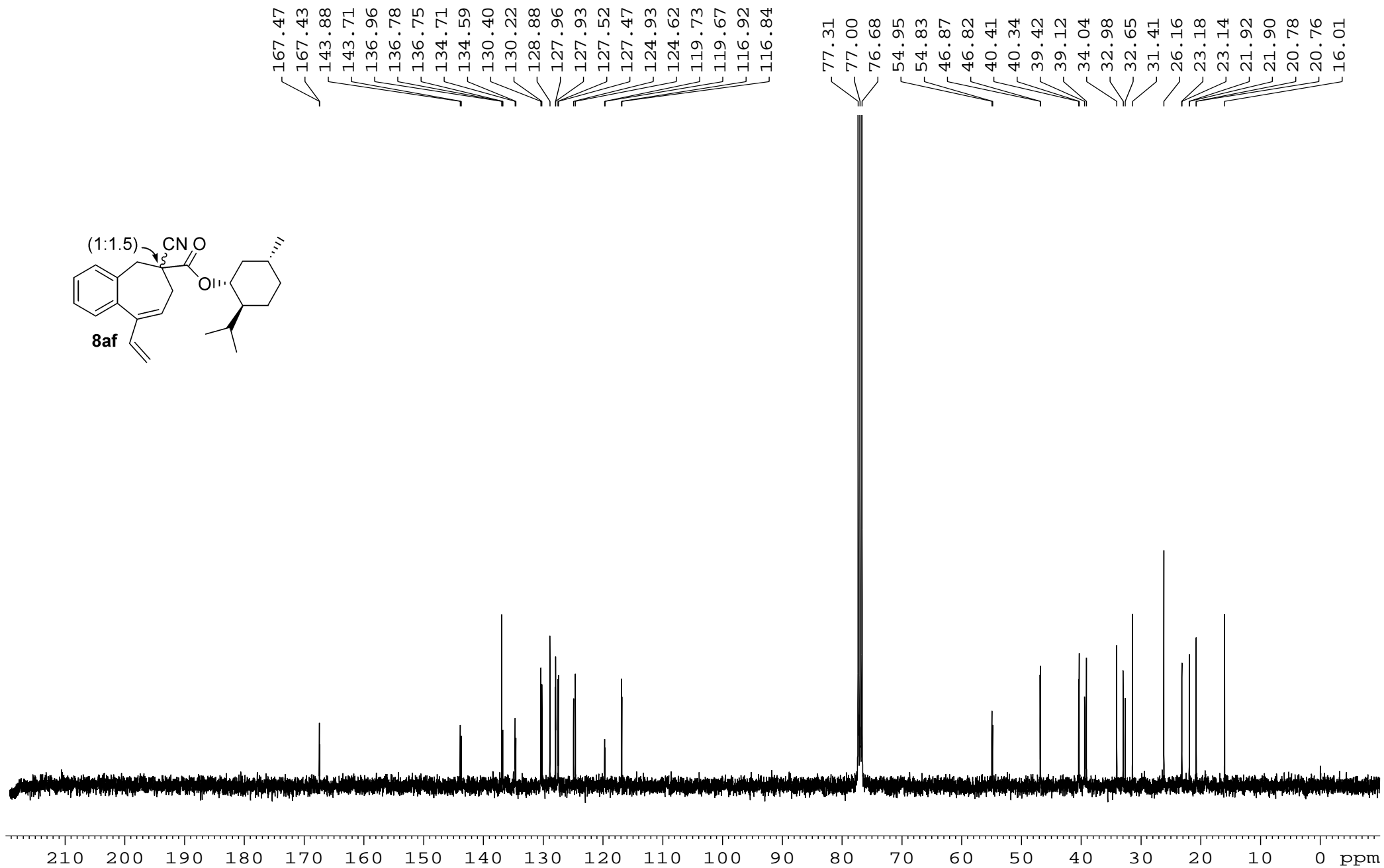


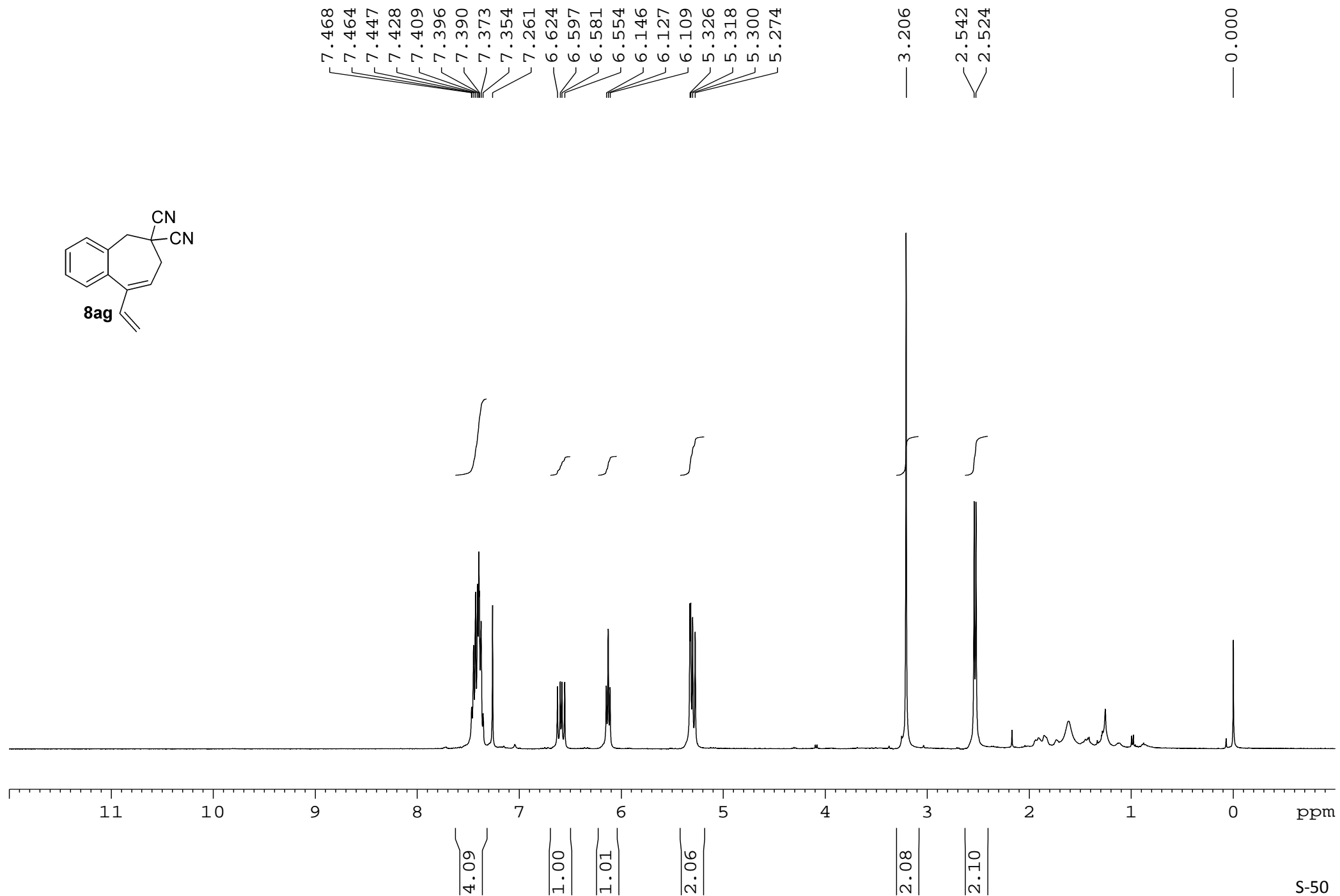
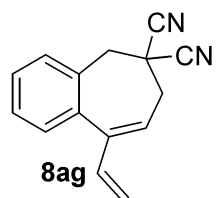




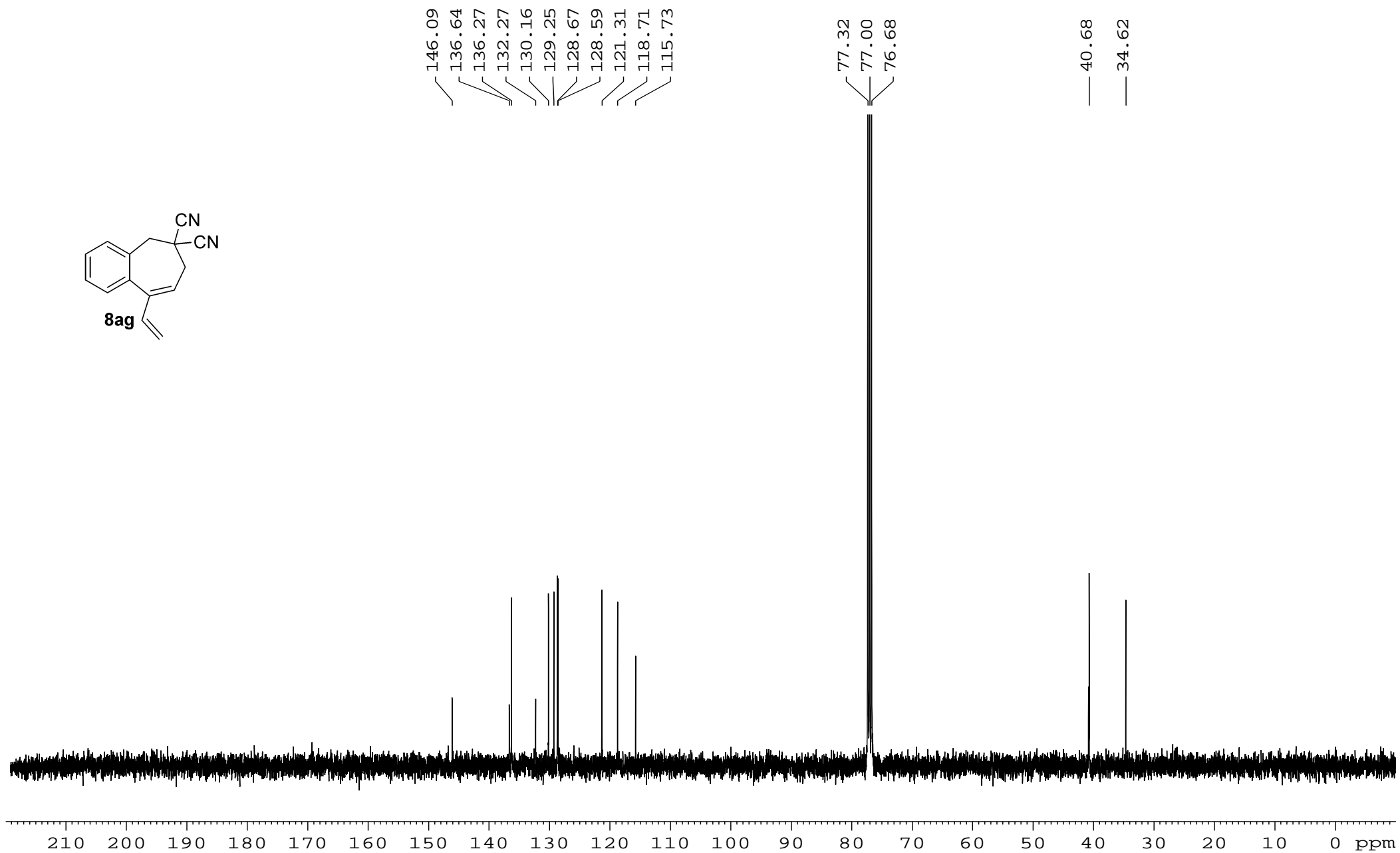
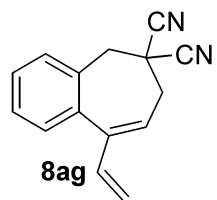




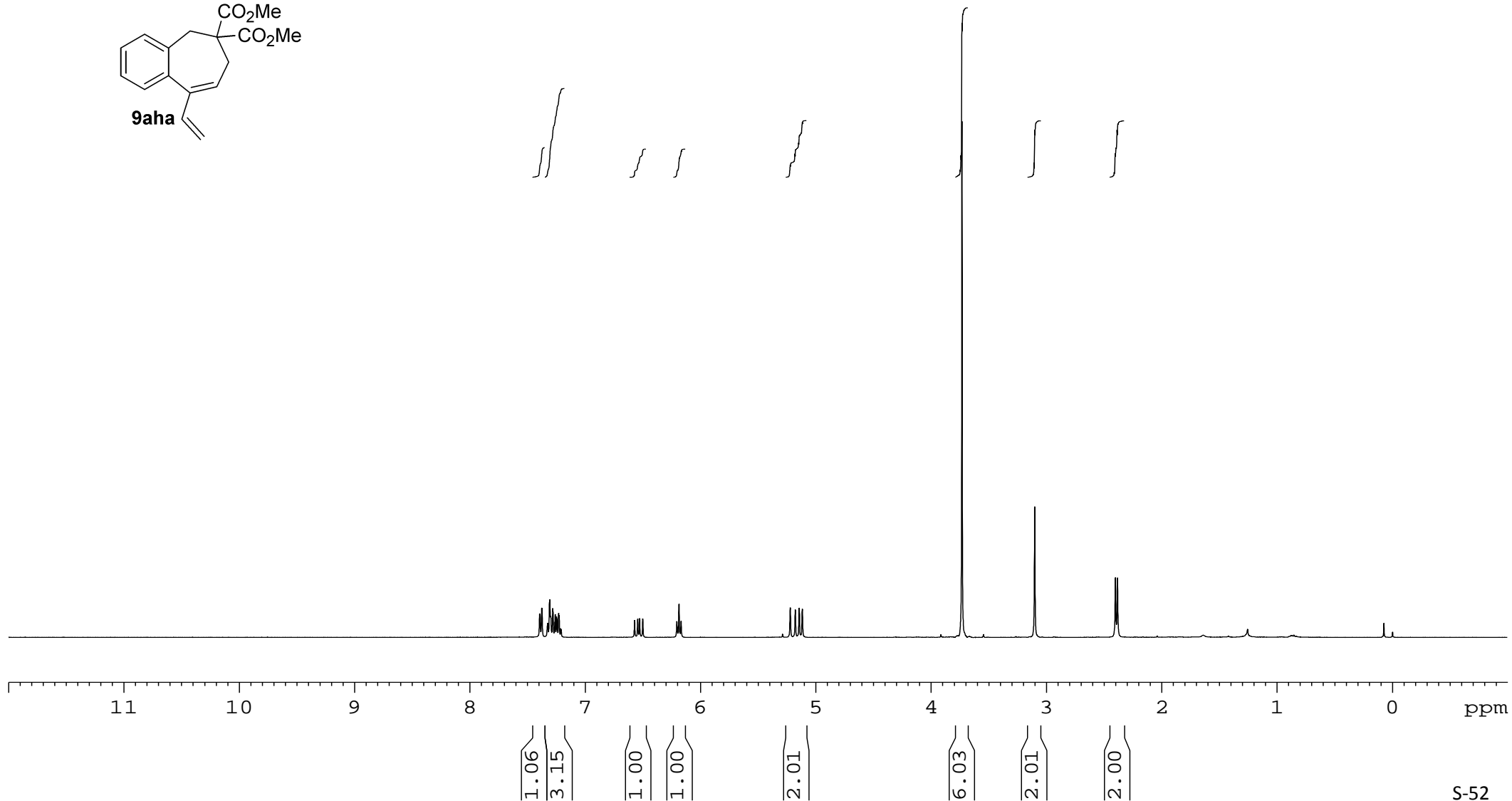
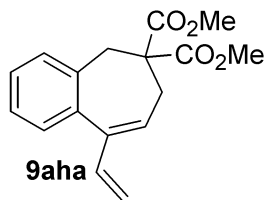


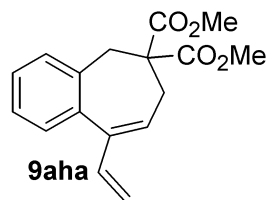


S-50



7.394  
7.375  
7.324  
7.309  
7.306  
7.300  
7.297  
7.282  
7.259  
7.248  
7.243  
7.229  
7.225  
7.211  
7.207  
6.571  
6.544  
6.527  
6.500  
6.205  
6.186  
6.168  
5.223  
5.180  
5.146  
5.119  
3.734  
3.103  
2.404  
2.385





— 171.43

142.18  
 137.46  
 136.89  
 136.84  
 130.59  
 128.52  
 127.58  
 127.29  
 126.53  
 115.60

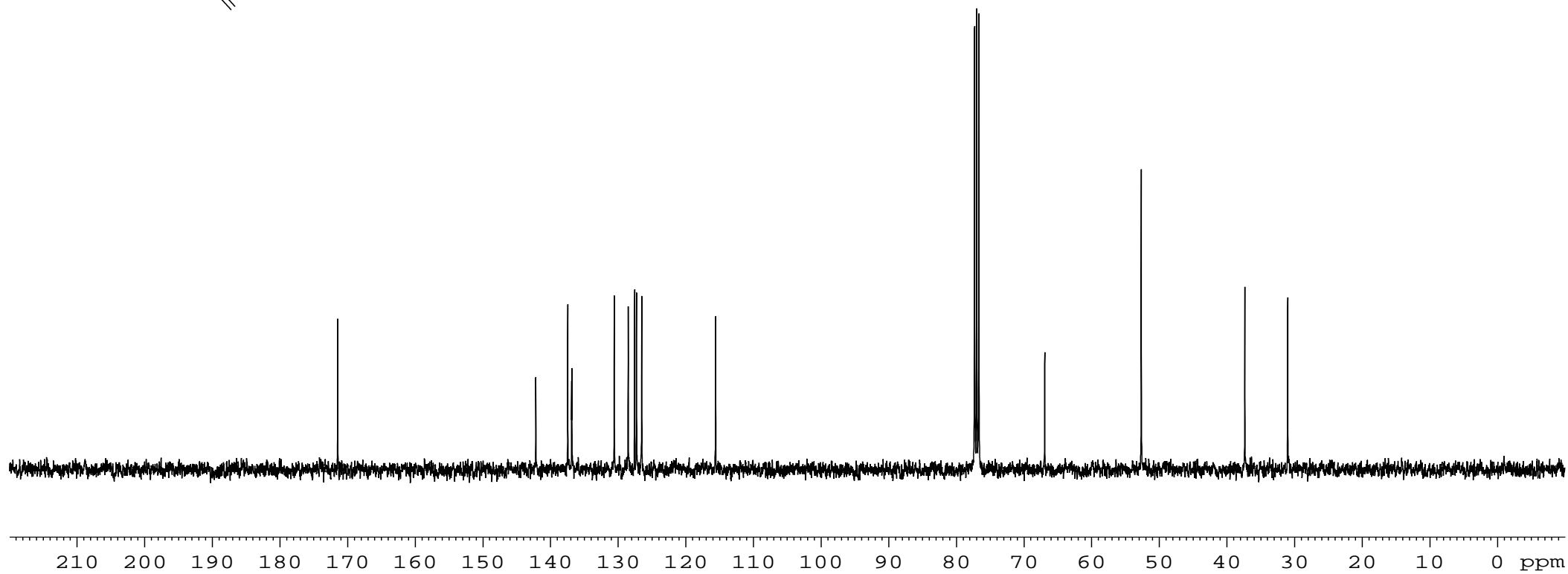
77.32  
 77.00  
 76.68

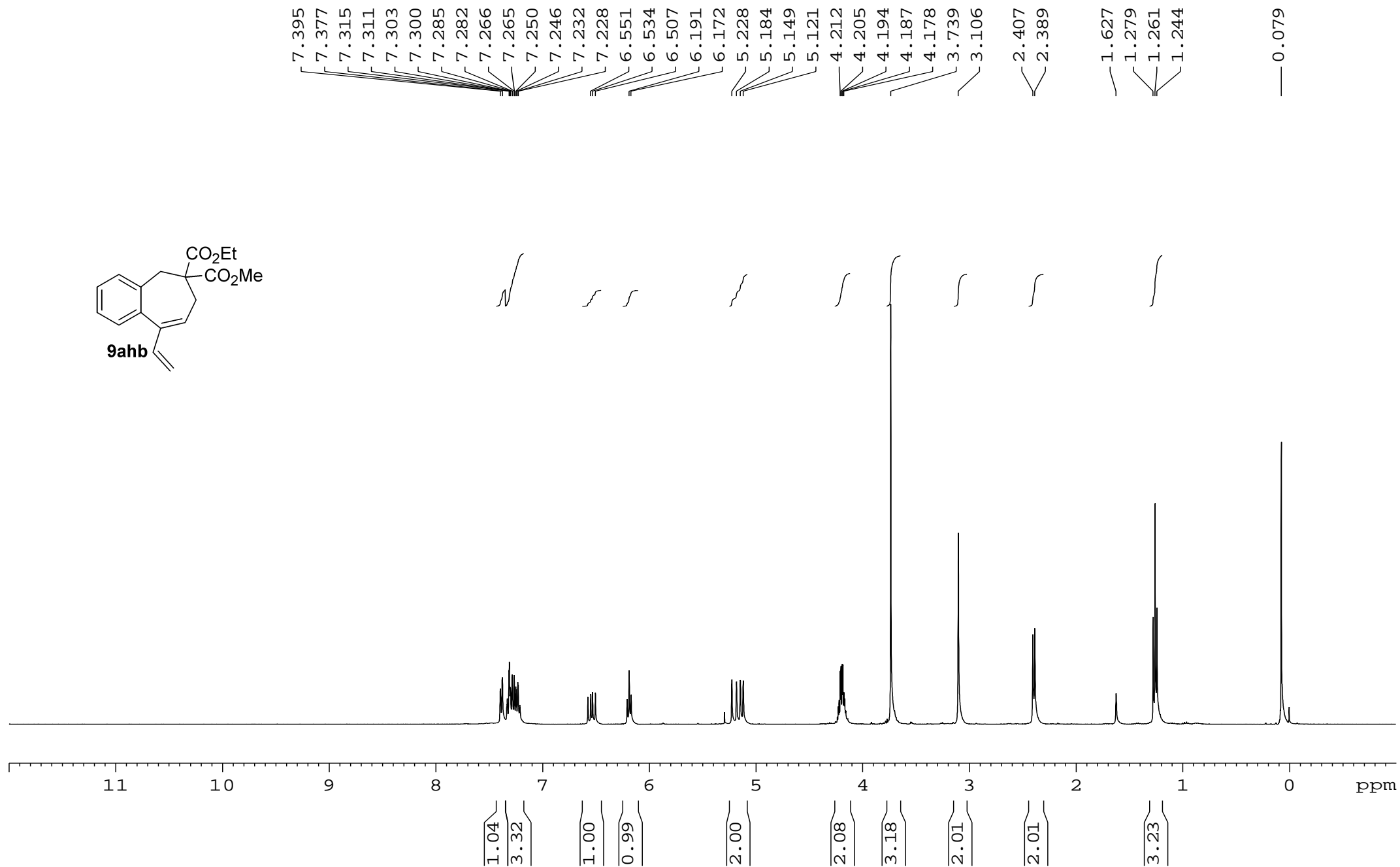
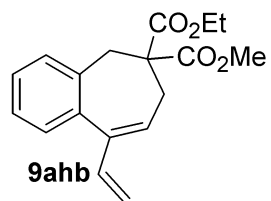
— 66.94

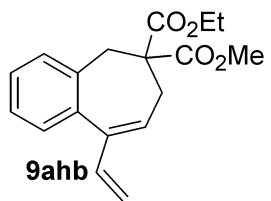
— 52.67

— 37.36

— 31.02







171.58  
170.93

142.15  
137.50  
136.92  
130.62  
128.53  
127.69  
127.27  
126.50  
115.54

77.32  
77.00  
76.68

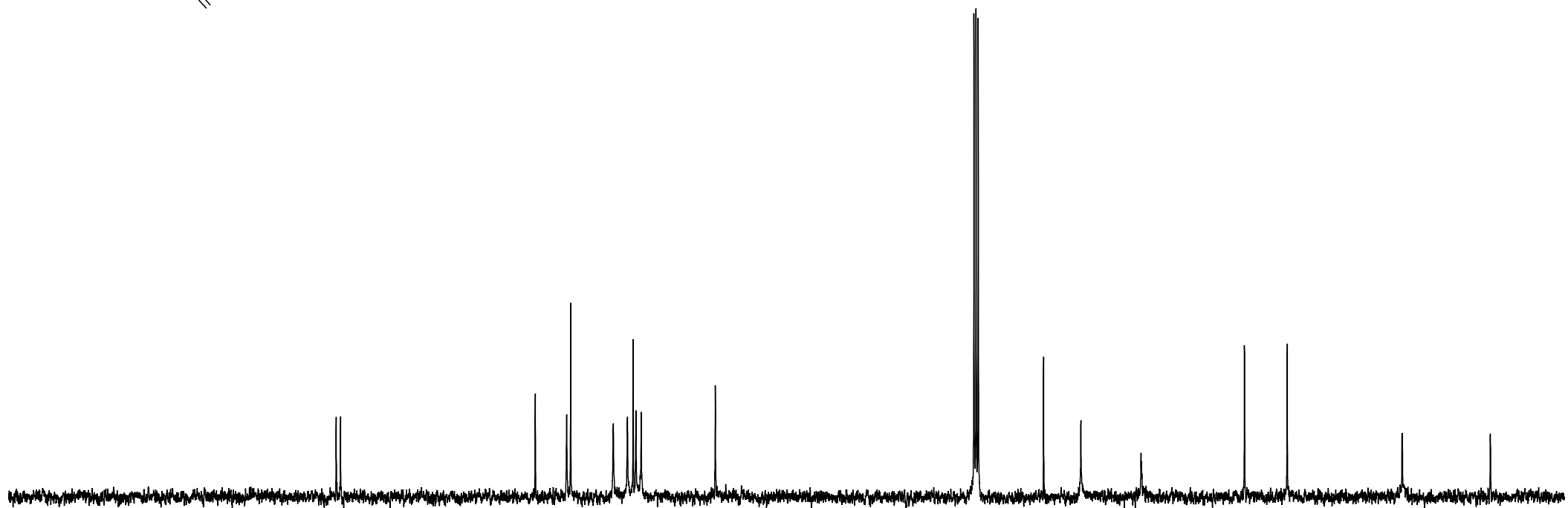
67.02  
61.52

52.63

37.33

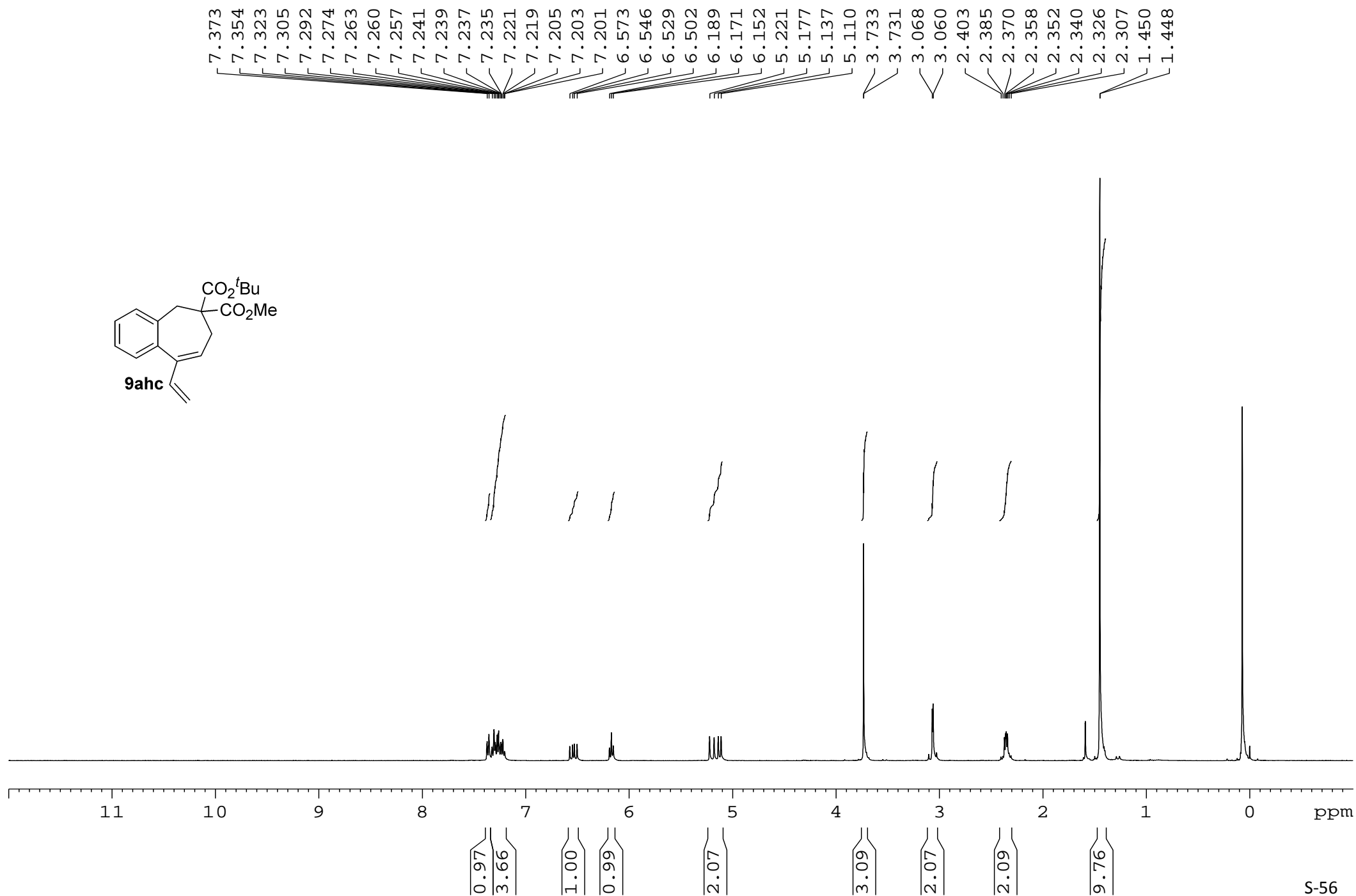
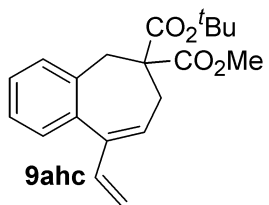
31.02

14.05

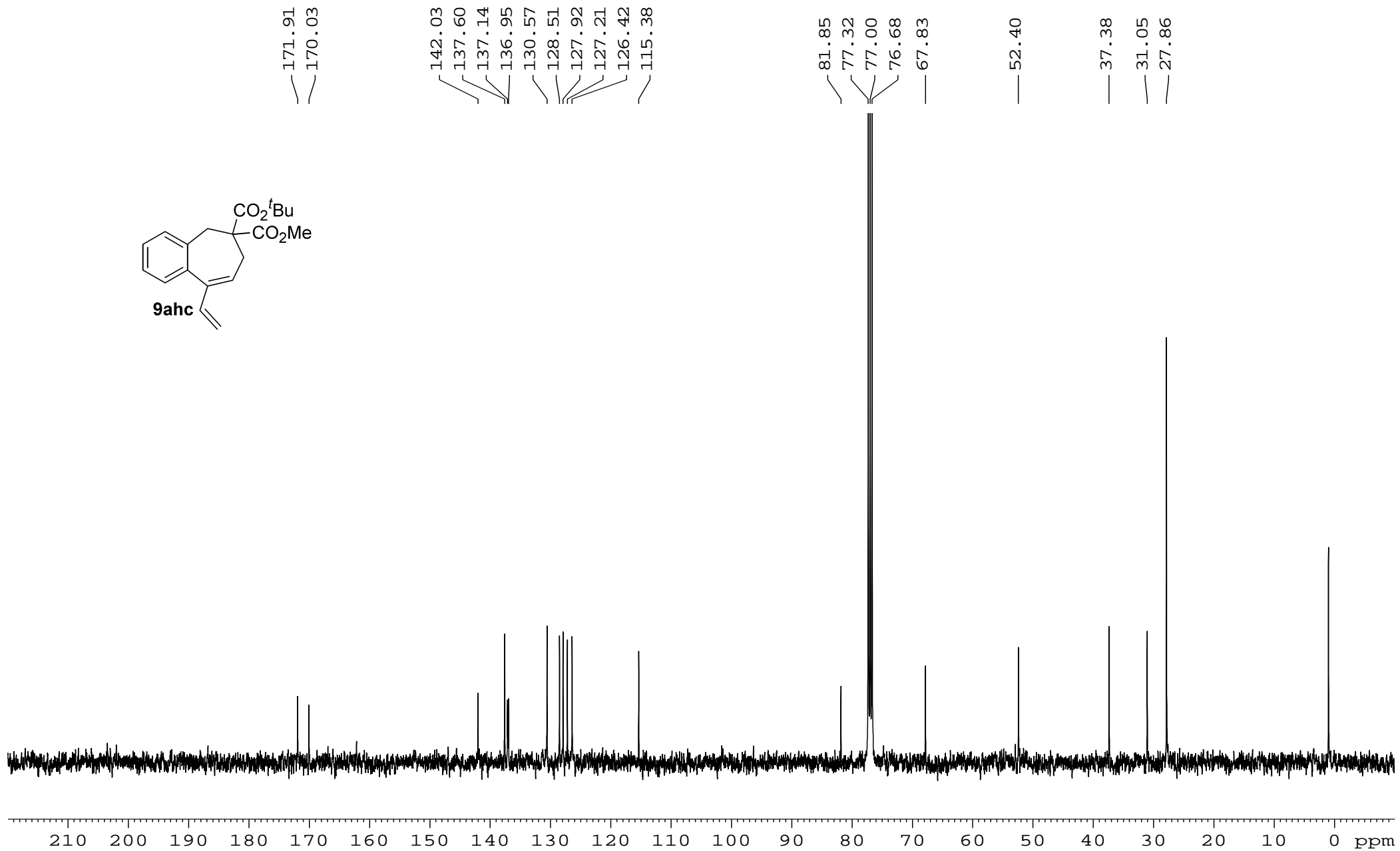
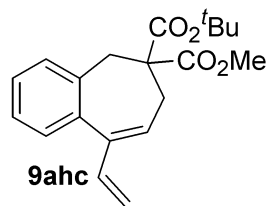


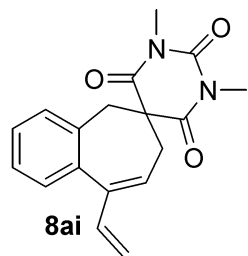
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

S-55

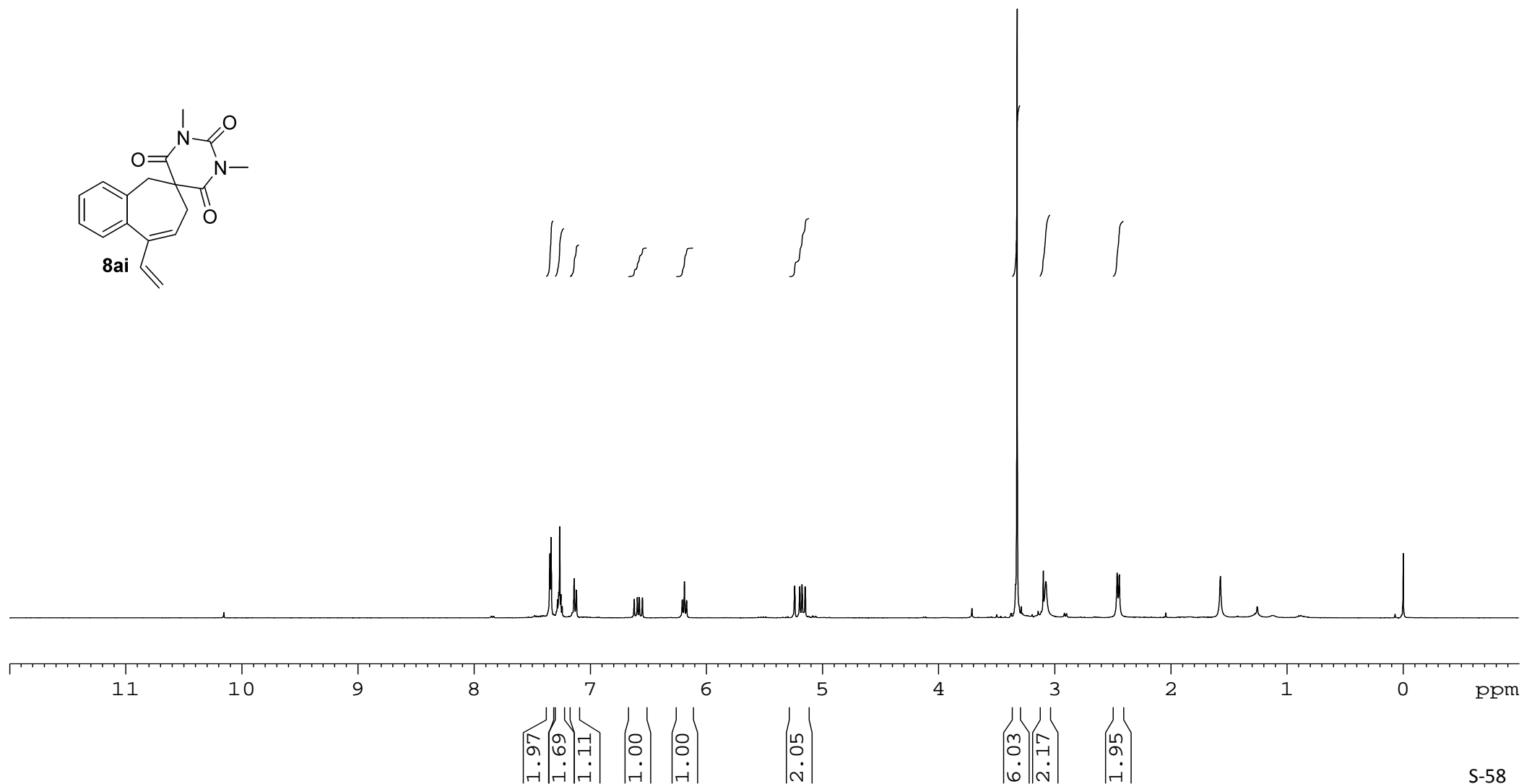


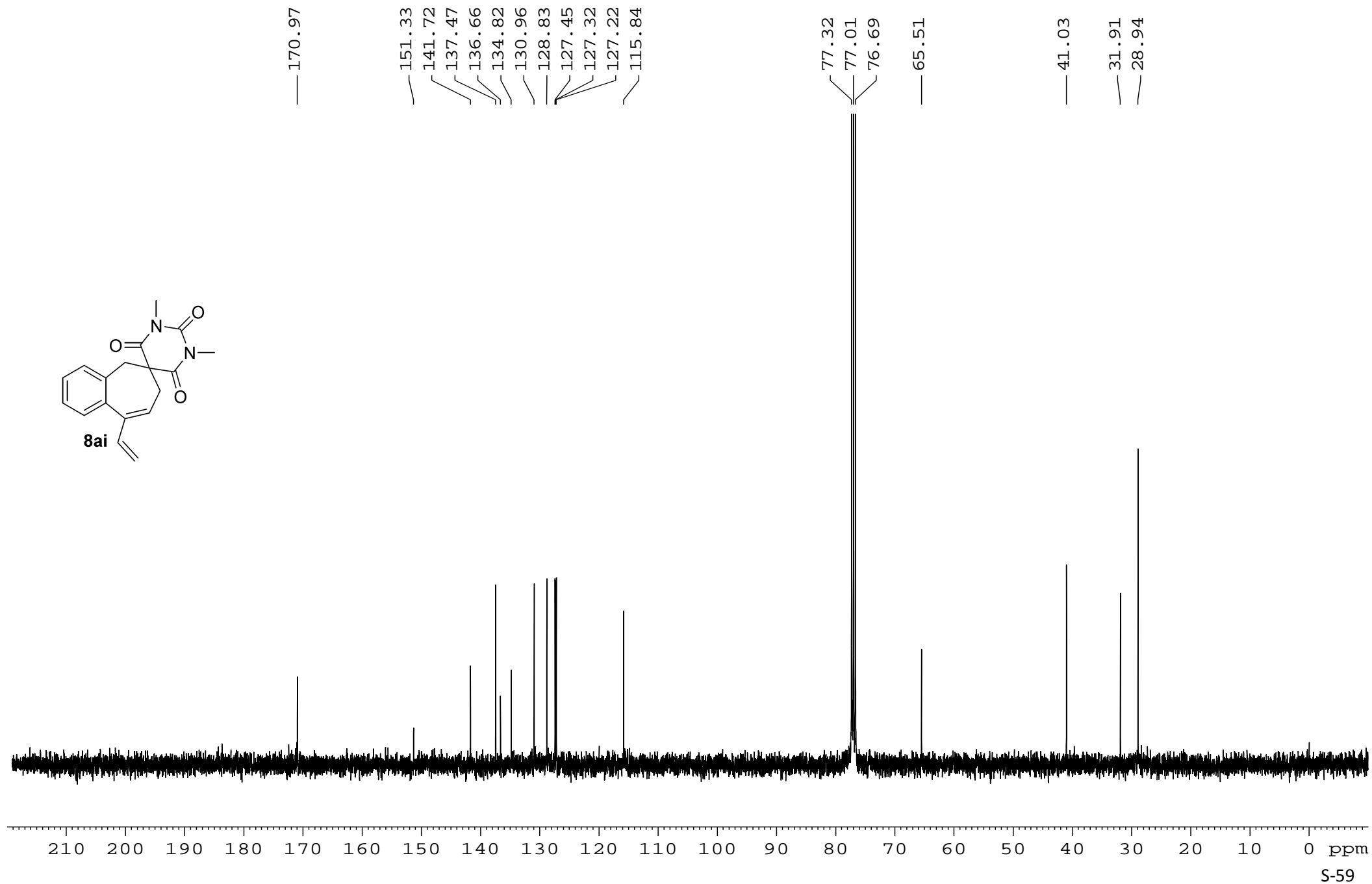
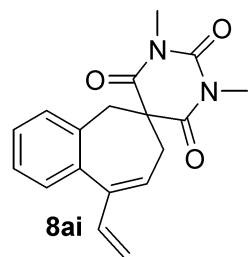


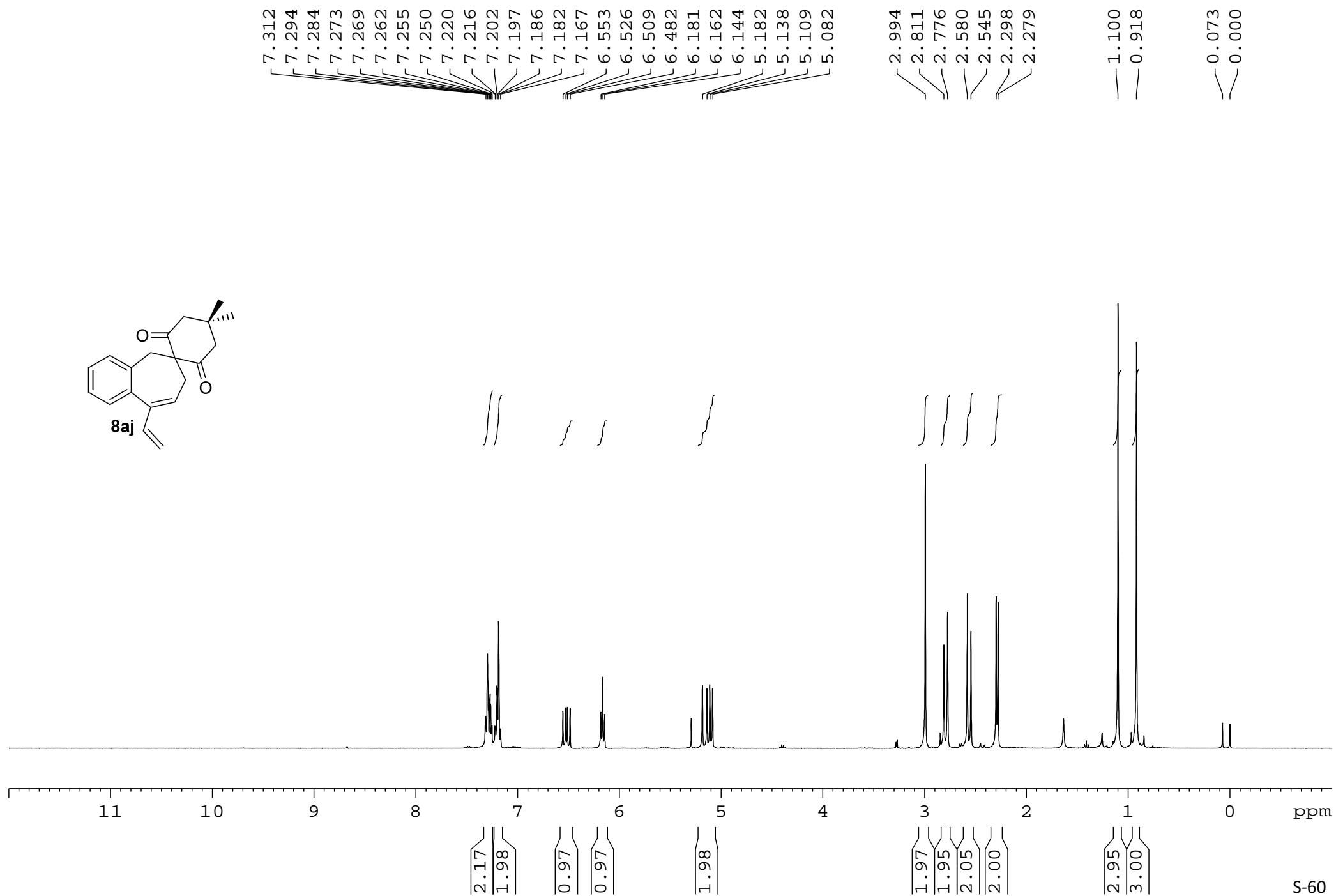




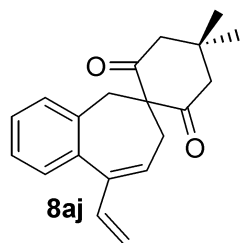
7.346  
7.335  
7.281  
7.269  
7.261  
7.251  
7.240  
7.137  
7.118  
6.620  
6.593  
6.576  
6.549  
6.205  
6.187  
6.168  
5.238  
5.194  
5.175  
5.148  
3.324  
3.078  
2.463  
2.445







— 206.84

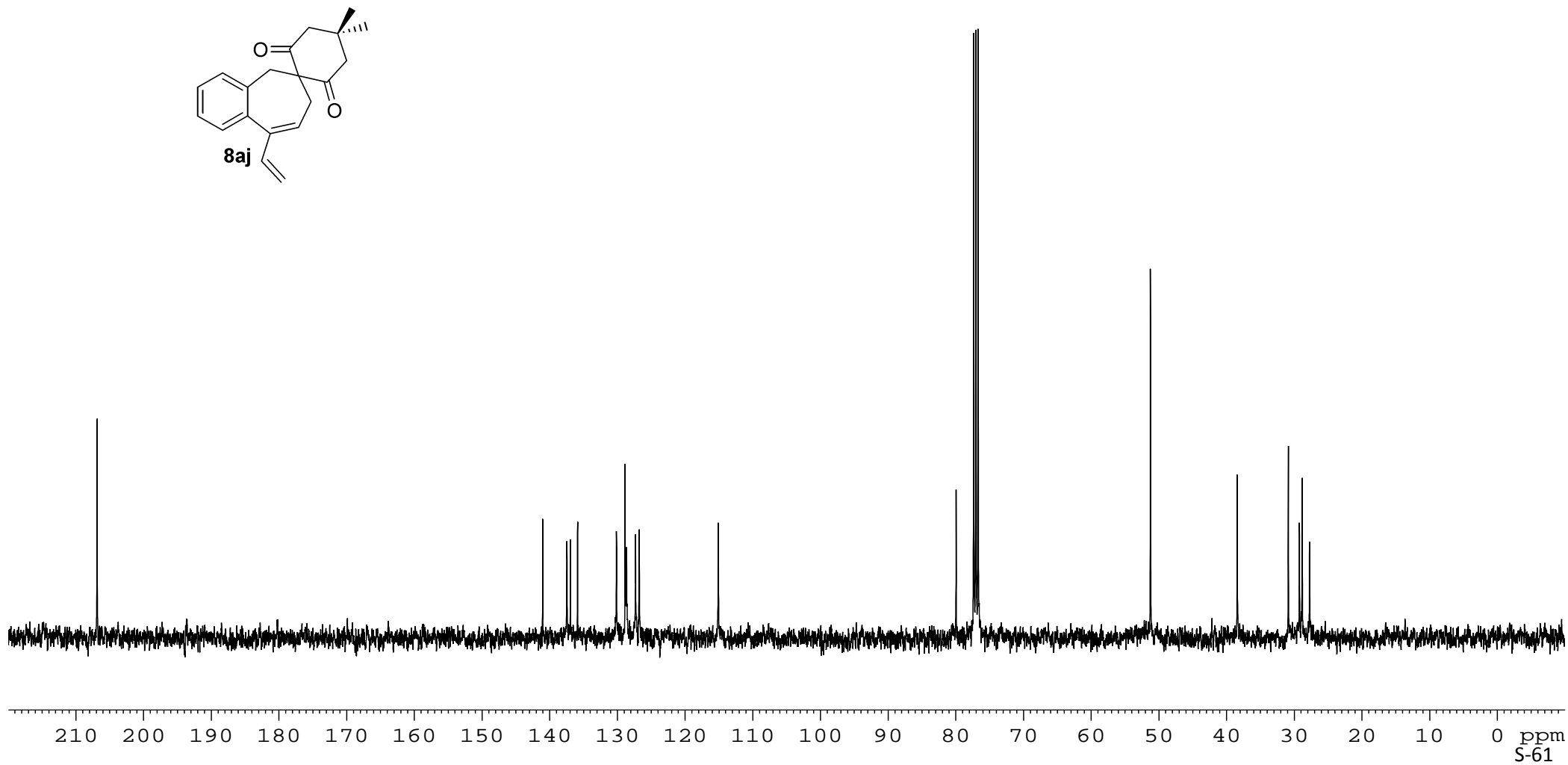


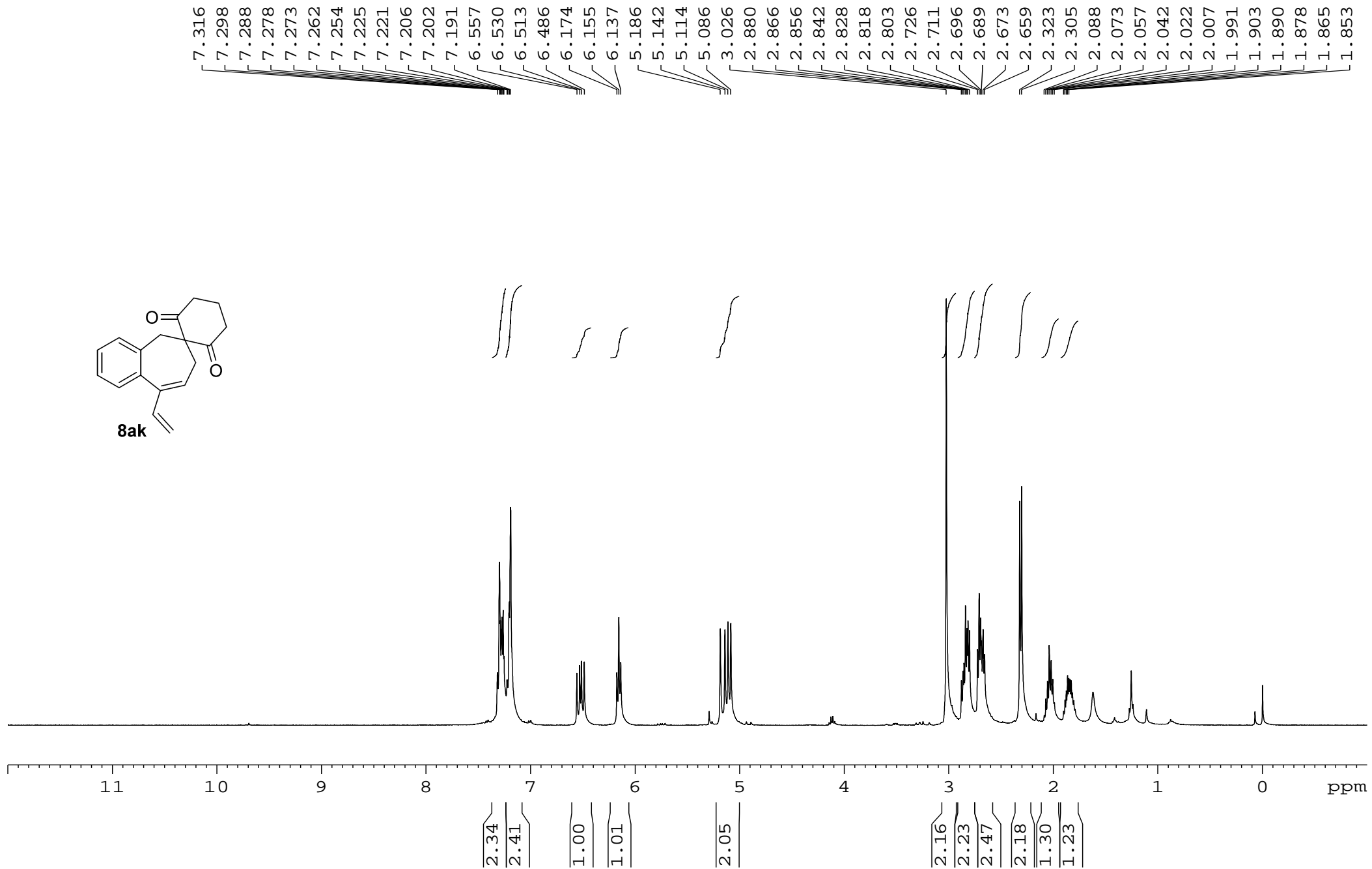
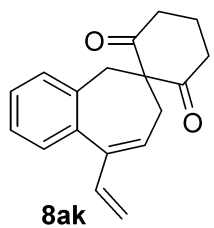
141.00  
137.43  
136.90  
135.85  
130.11  
128.83  
128.63  
127.29  
126.74  
115.07

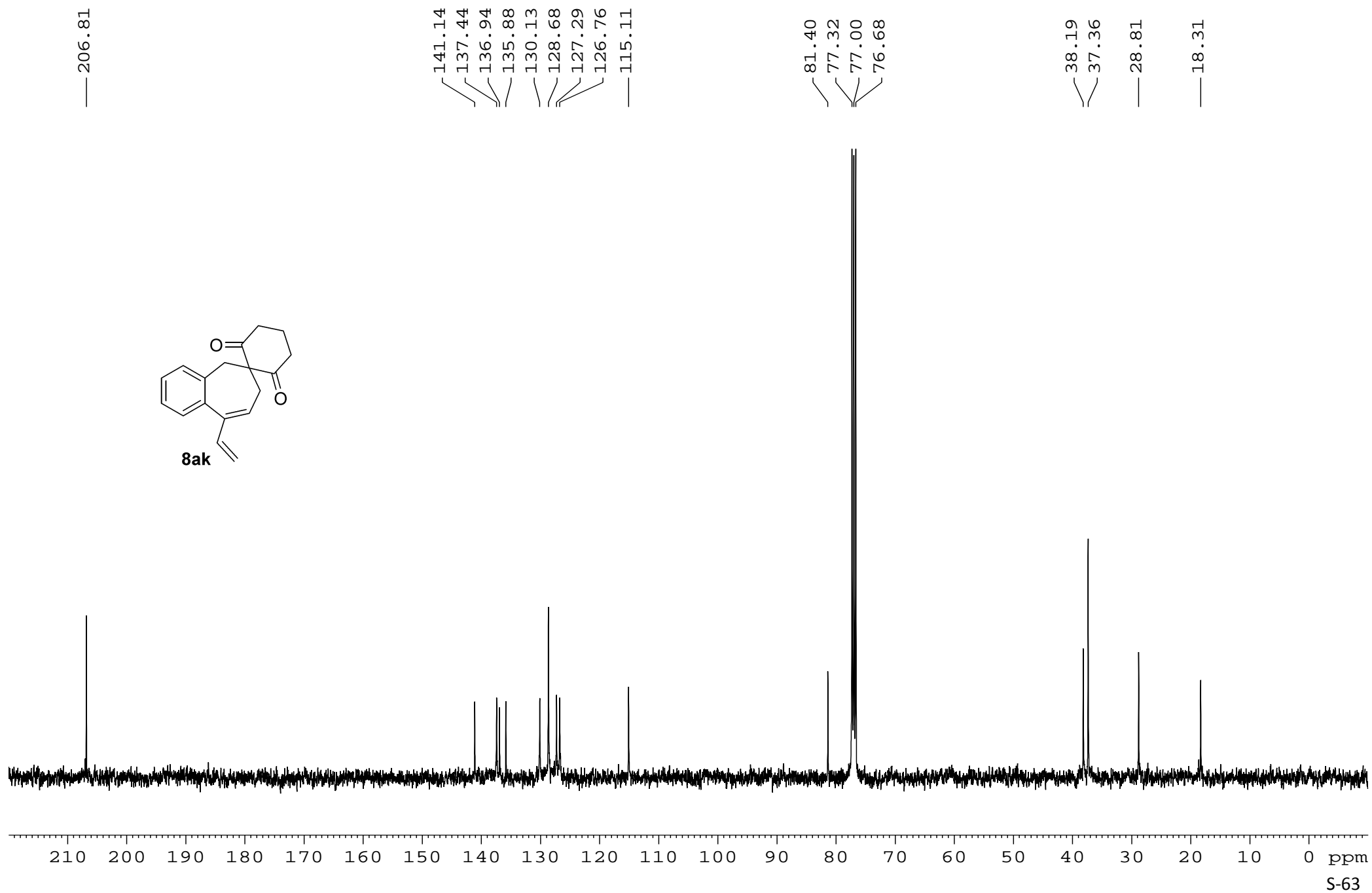
79.92  
77.32  
77.00  
76.68

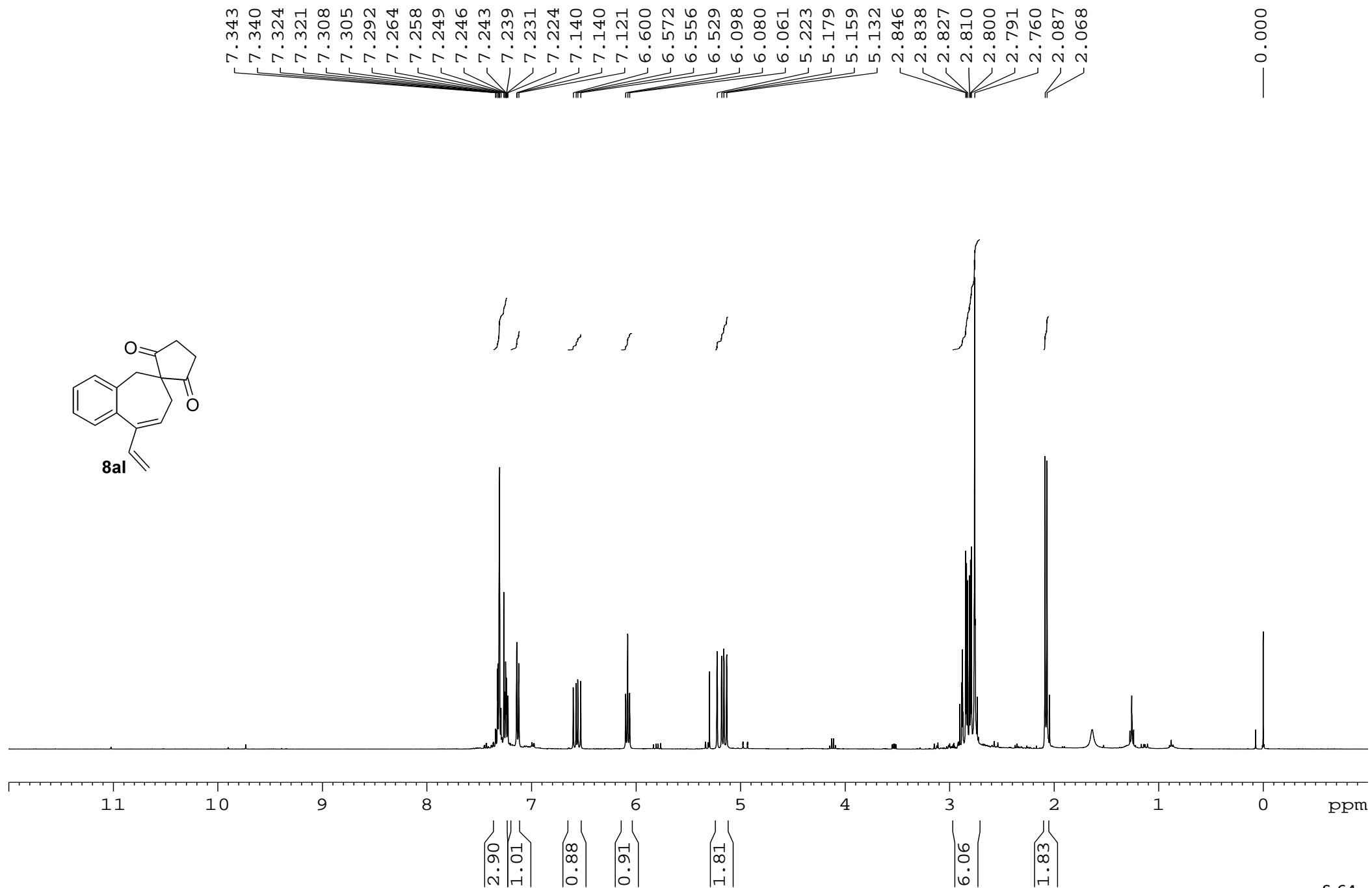
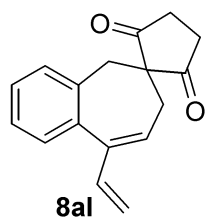
— 51.21

38.42  
30.87  
29.25  
28.83  
27.74









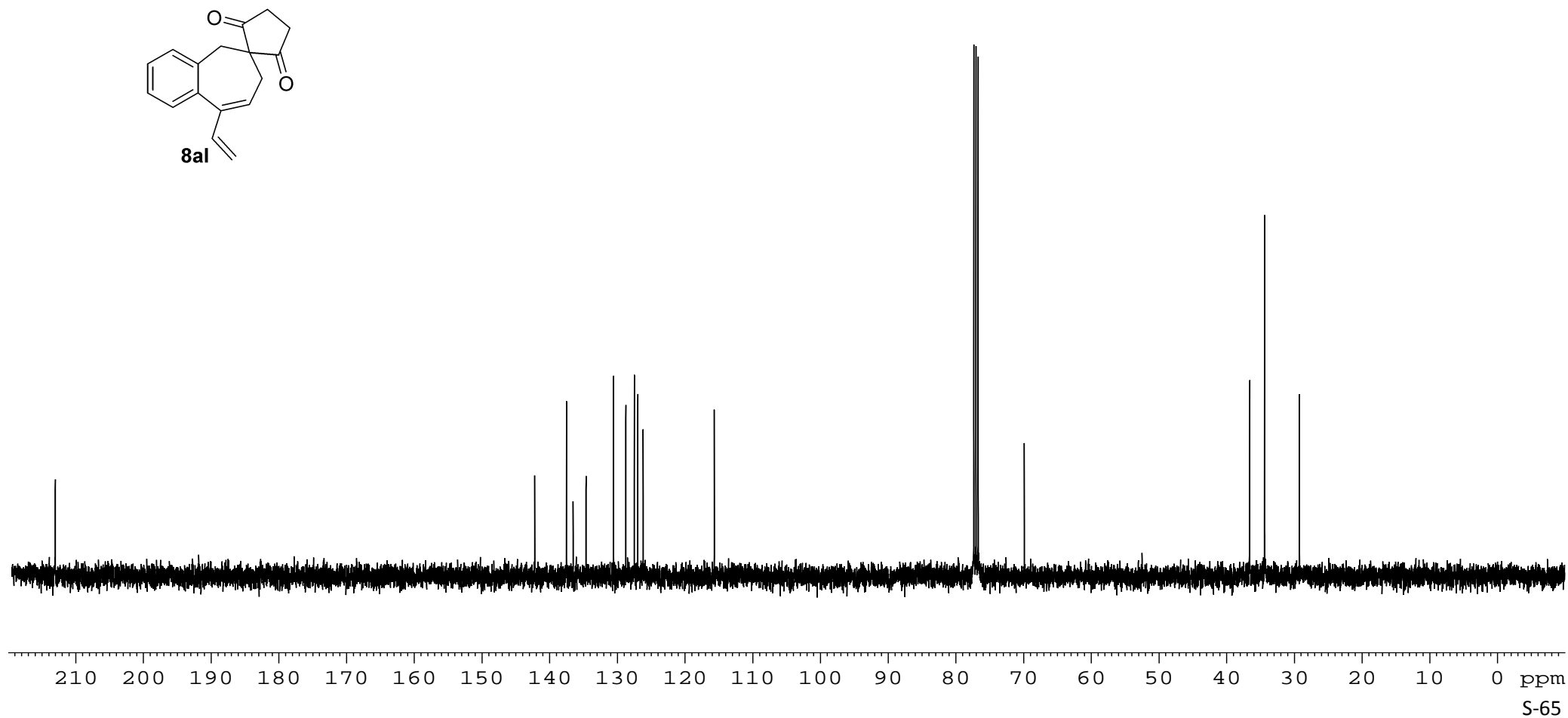
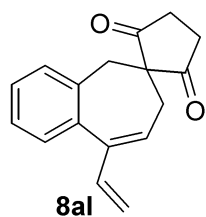


— 213.00

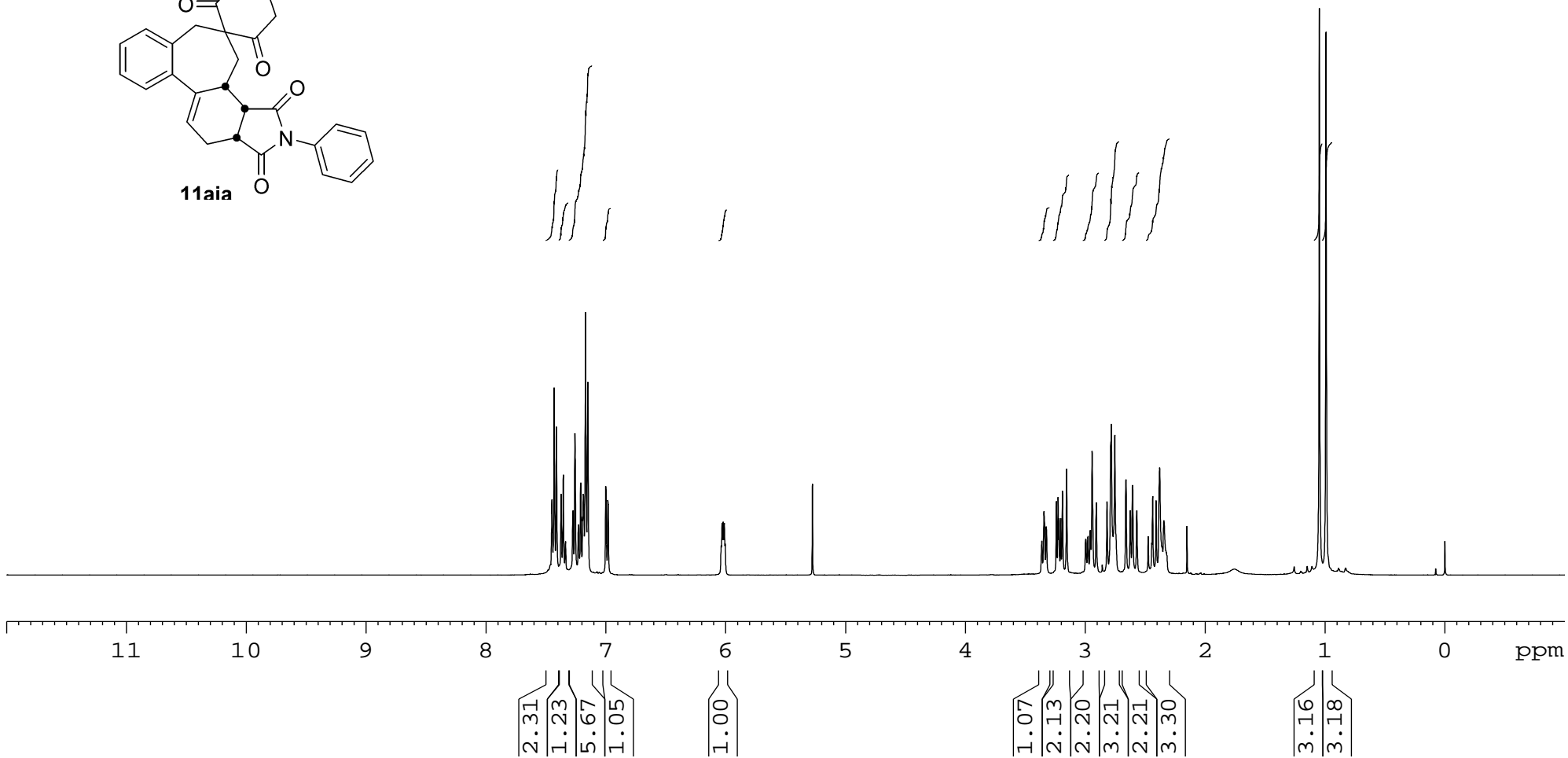
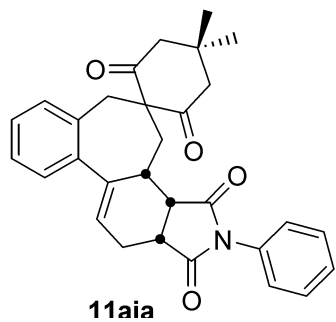
142.18  
137.48  
136.50  
134.60  
130.52  
128.73  
127.48  
126.96  
126.16  
115.66

77.32  
77.00  
76.68  
69.85

36.56  
34.38  
29.22



7.448  
7.430  
7.410  
7.371  
7.353  
7.335  
7.272  
7.257  
7.228  
7.225  
7.210  
7.207  
7.192  
7.186  
7.181  
7.167  
7.148  
6.999  
6.981  
6.028  
6.019  
6.010  
3.363  
3.344  
3.326  
3.242  
3.227  
3.220  
3.205  
3.191  
3.156  
2.998  
2.996  
2.980  
2.977  
2.960  
2.957  
2.943  
2.909  
2.819  
2.783  
2.754  
2.660  
2.624  
2.606  
2.570  
2.475  
2.446  
2.438  
2.409  
2.380  
2.344  
1.047  
0.992



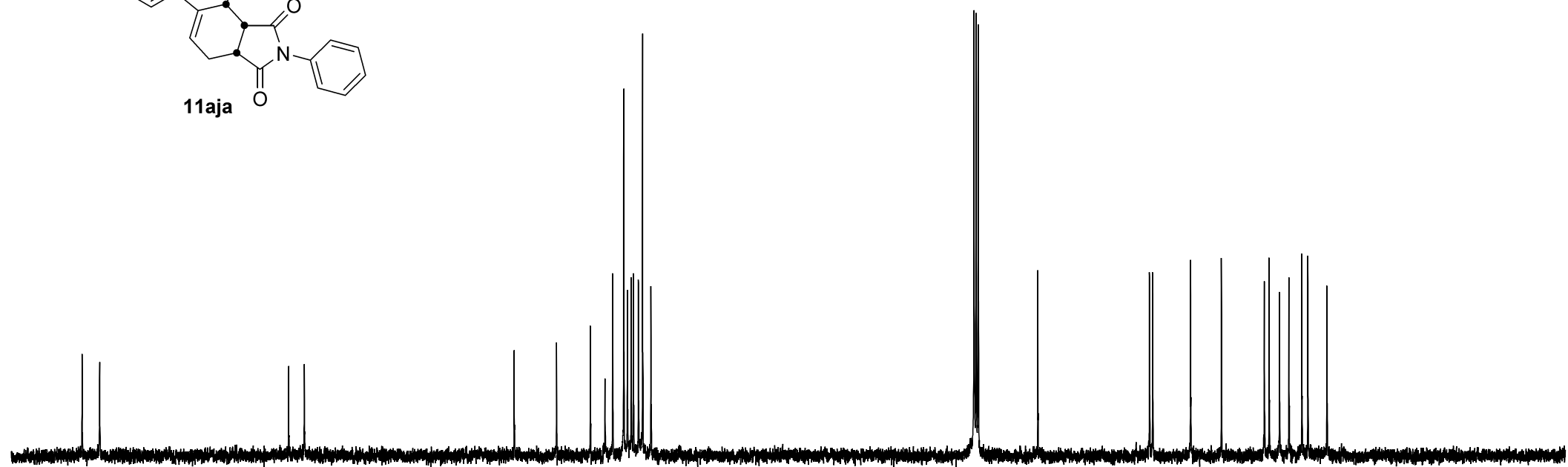
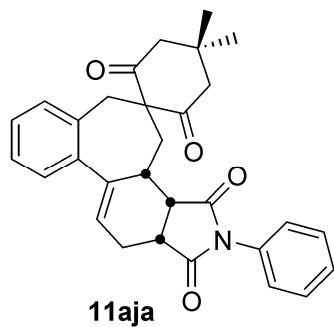
208.95  
206.36

178.46  
176.15

145.18  
138.93  
133.94  
131.77  
130.64  
129.01  
128.46  
127.90  
127.57  
126.84  
126.22  
125.00

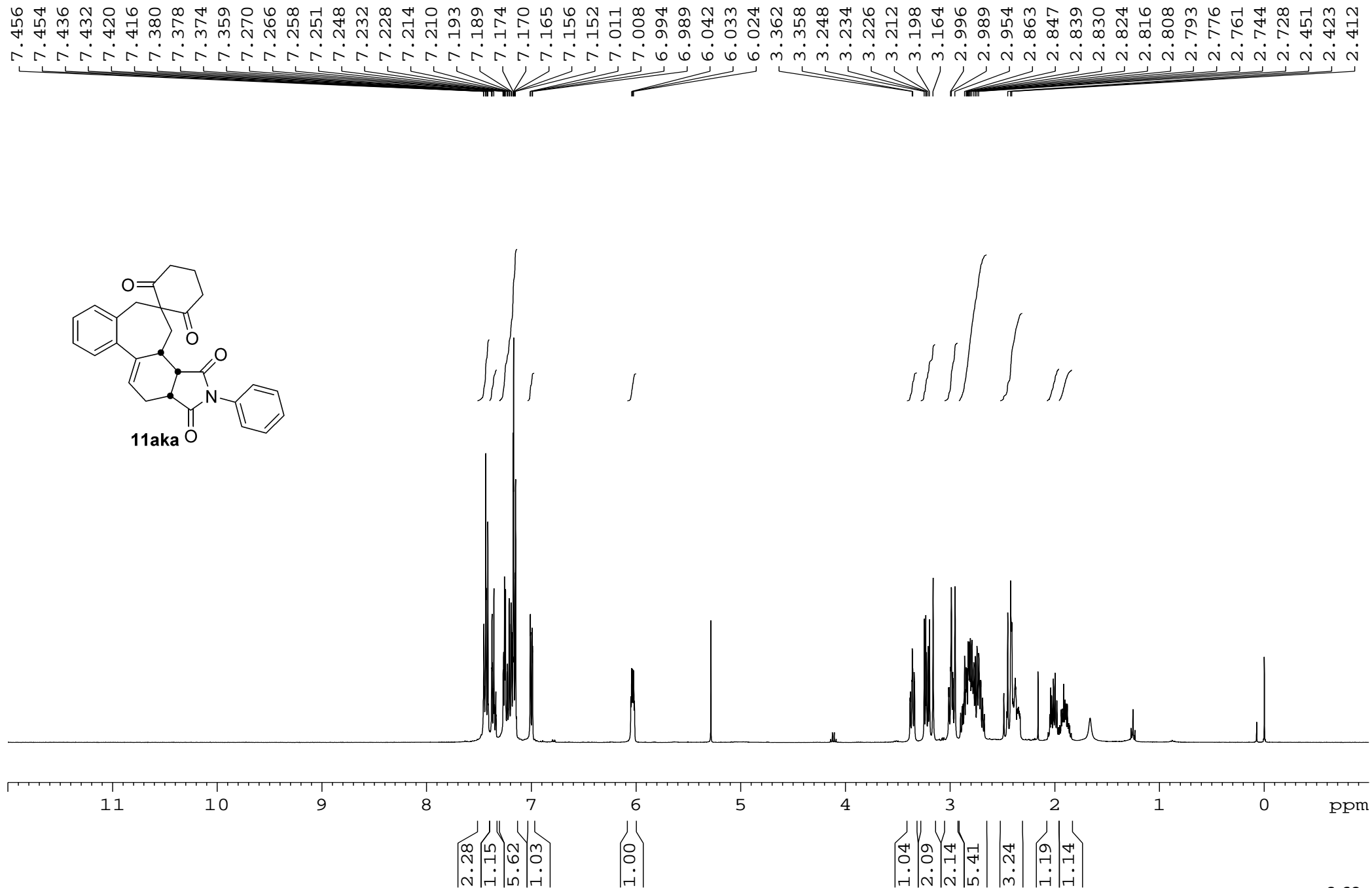
77.32  
77.00  
76.68  
67.89

51.41  
50.93  
45.34  
40.79  
34.45  
33.75  
32.22  
30.83  
28.92  
28.03  
25.22



210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

S-67



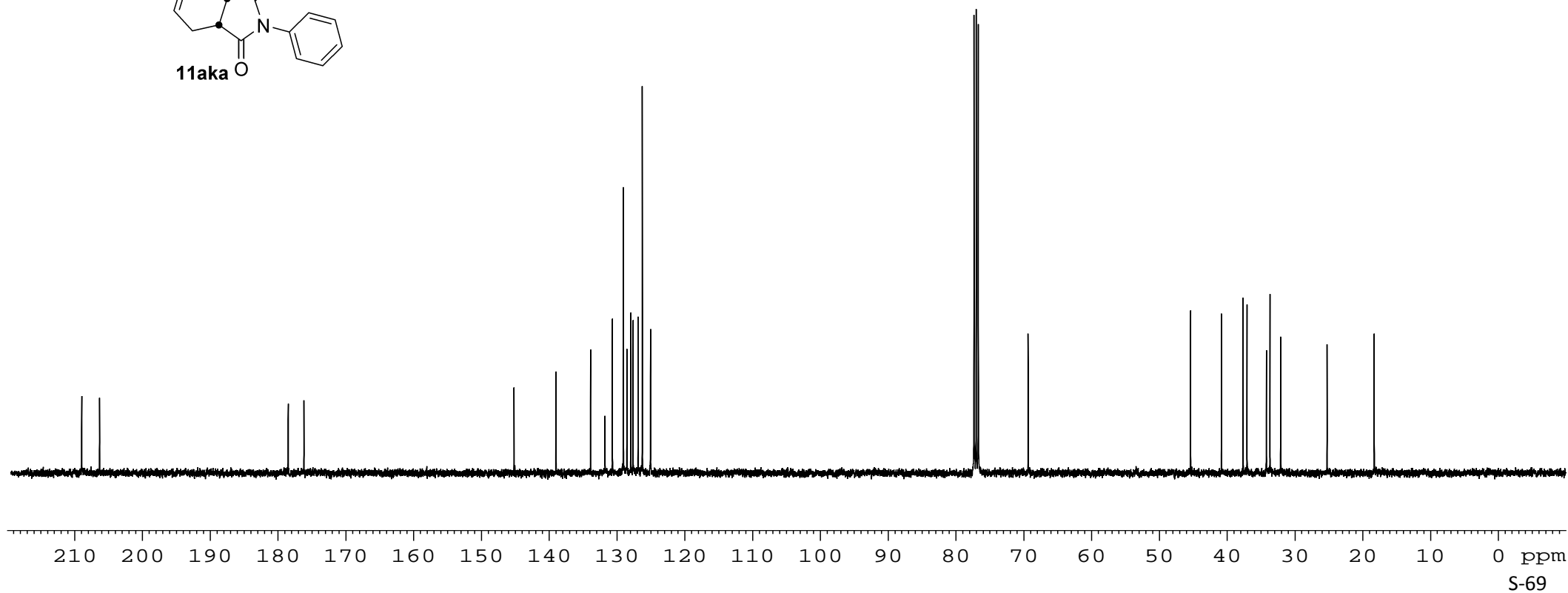
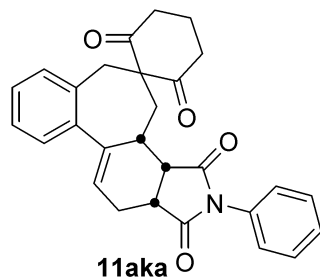
208.96  
206.33

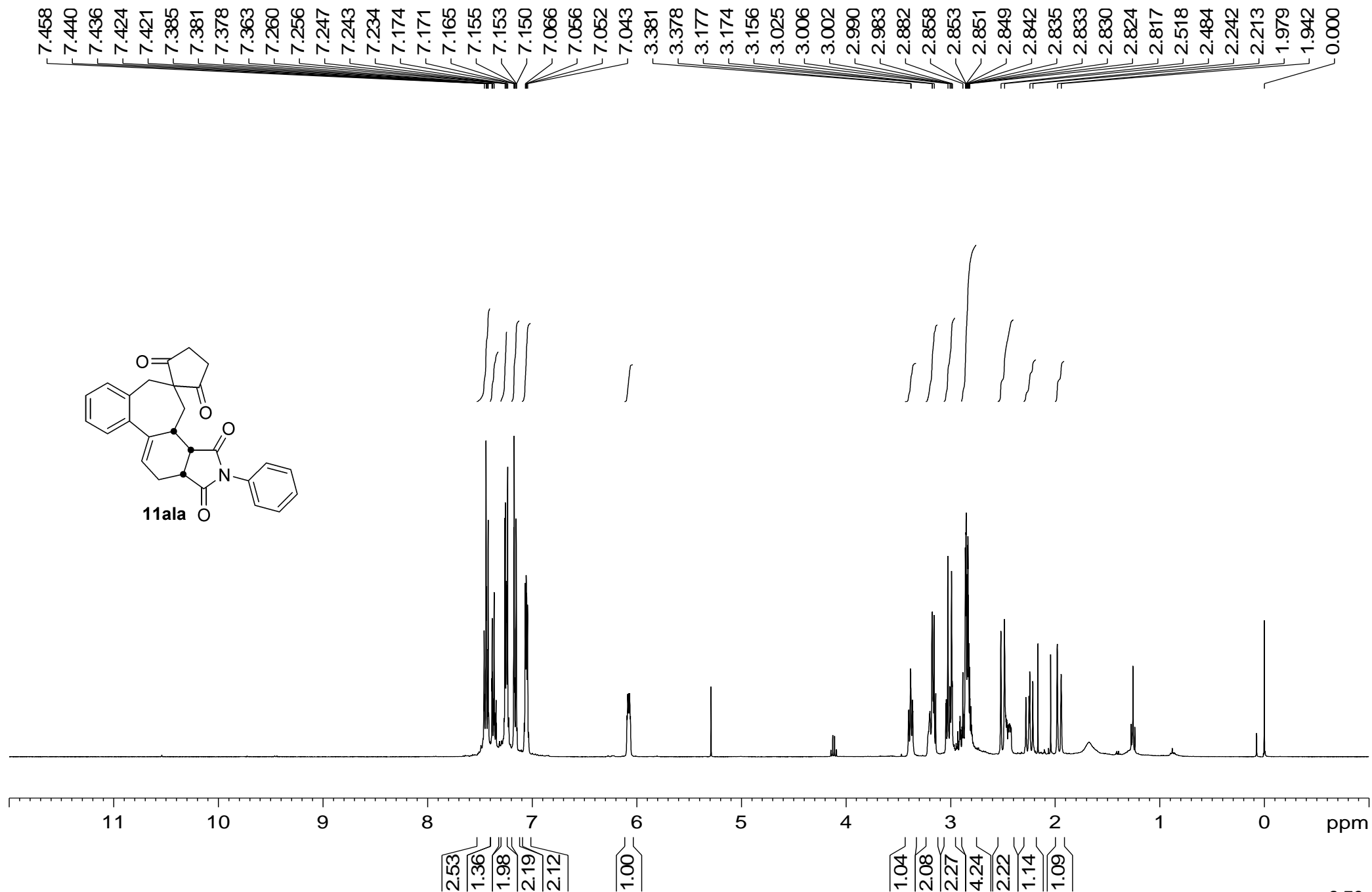
178.50  
176.17

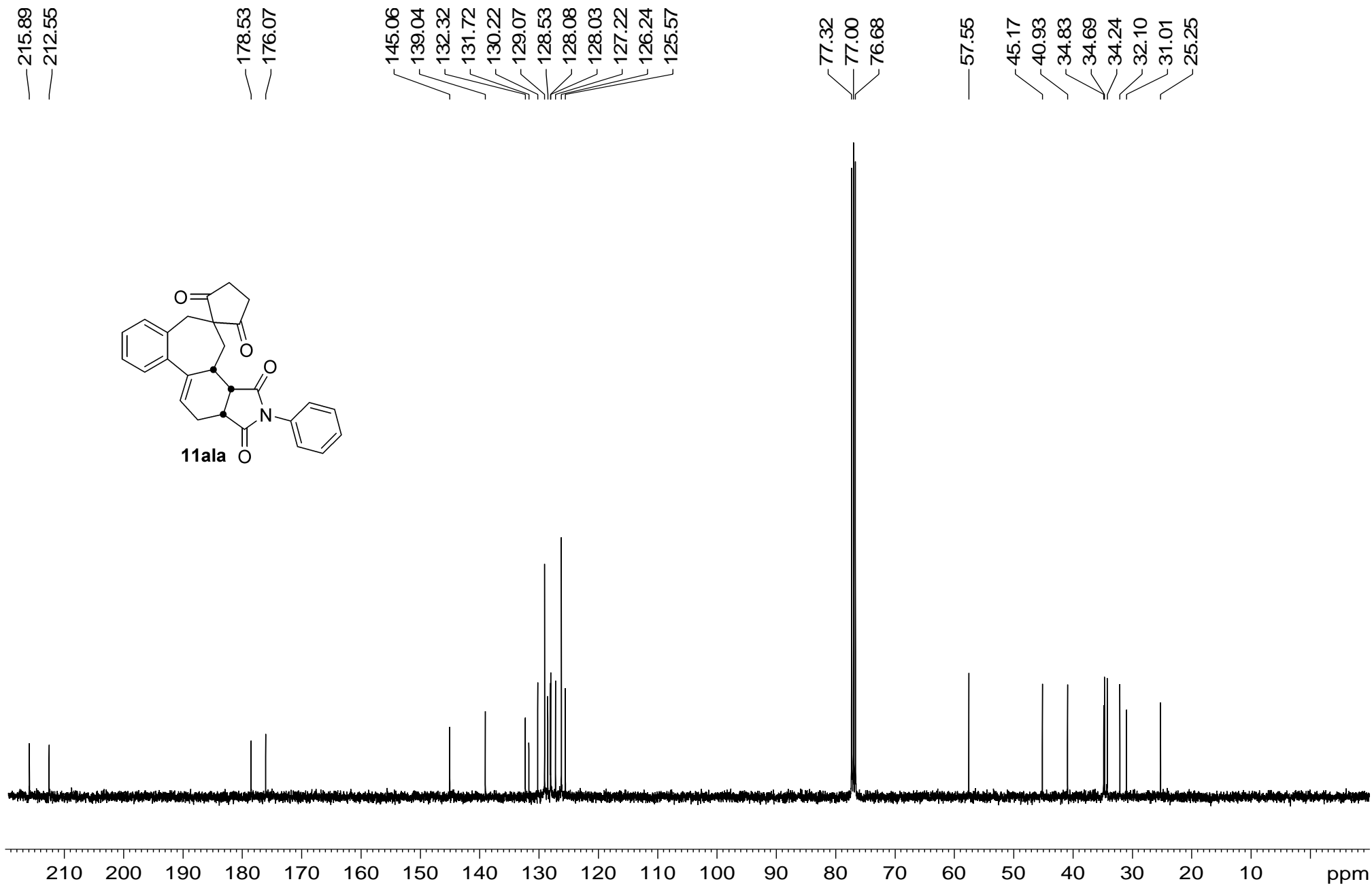
145.19  
138.99  
133.89  
131.77  
130.67  
129.05  
128.51  
127.94  
127.62  
126.87  
126.25  
125.04

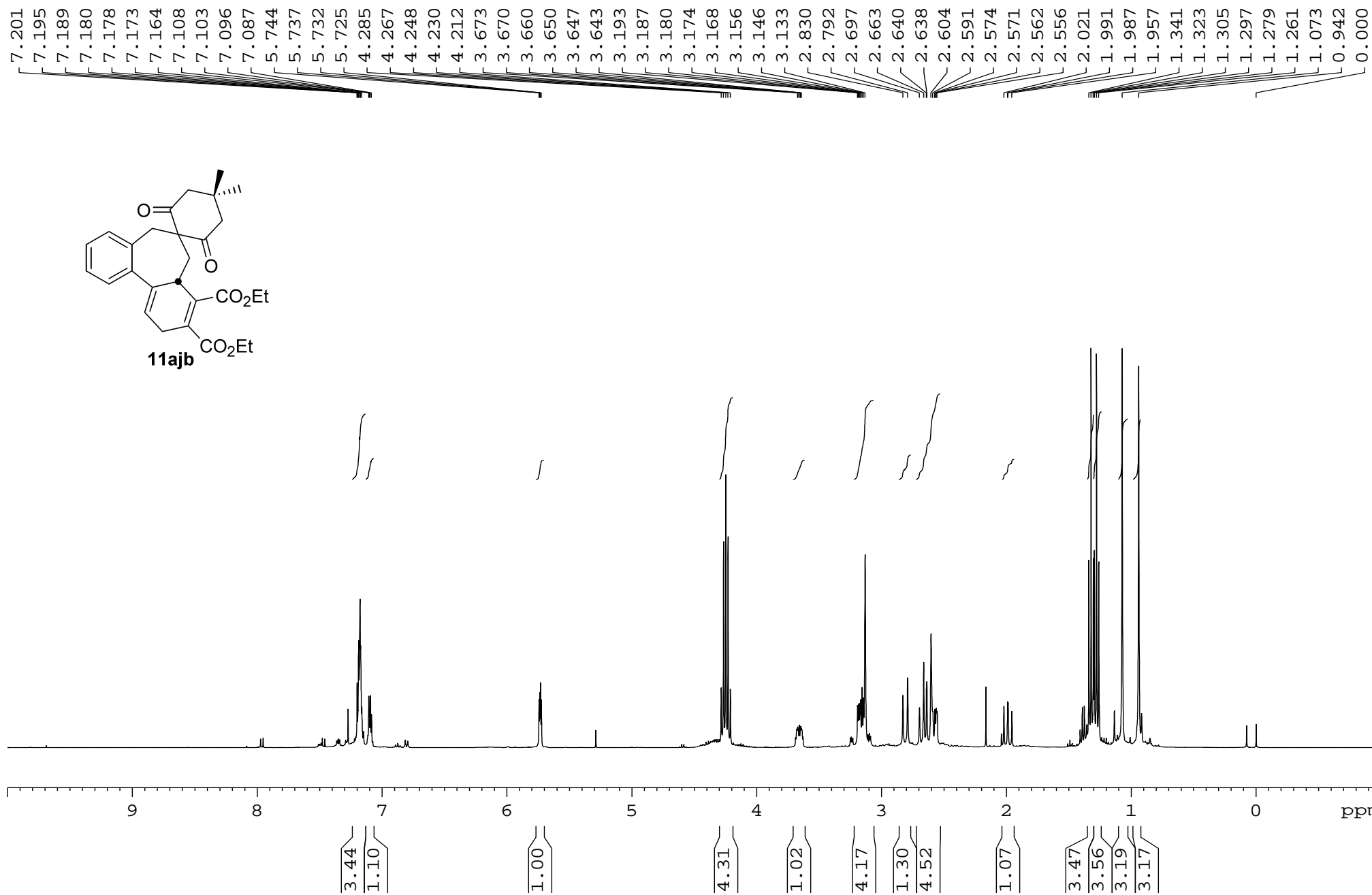
77.32  
77.00  
76.68  
69.34

45.38  
40.82  
37.63  
37.04  
34.19  
33.66  
32.08  
25.23  
18.27











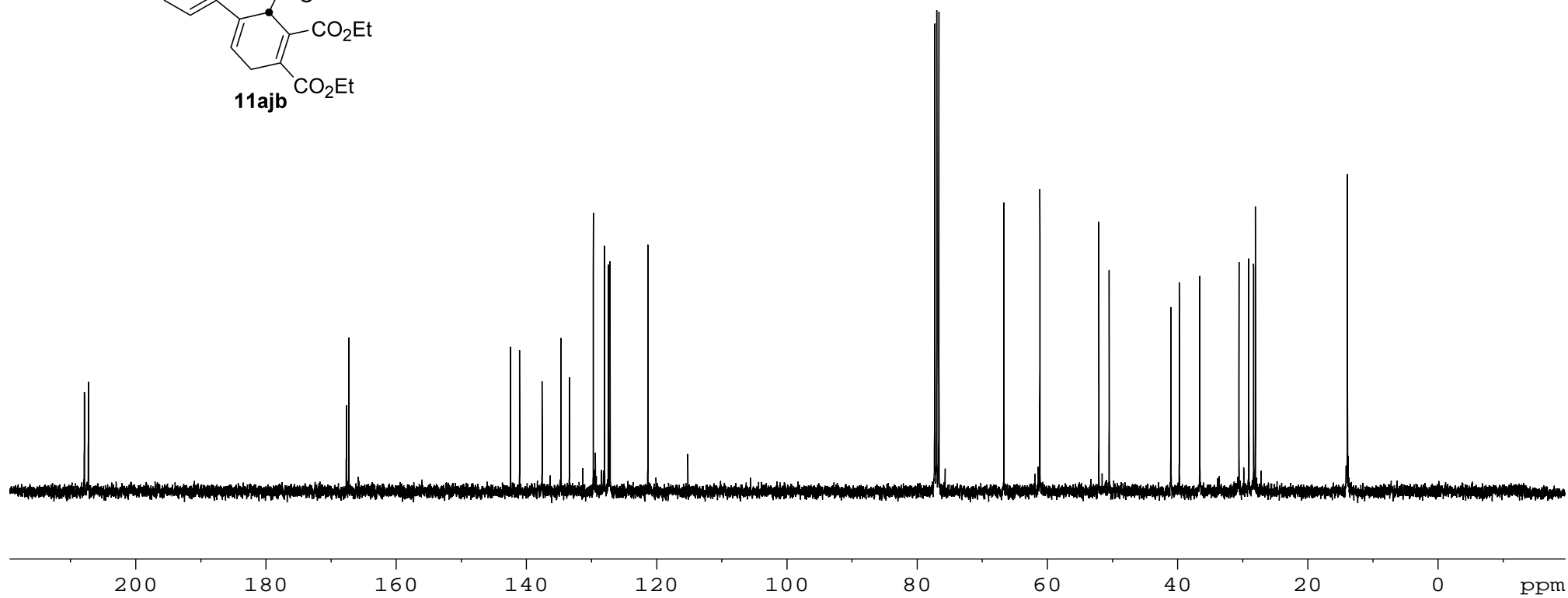
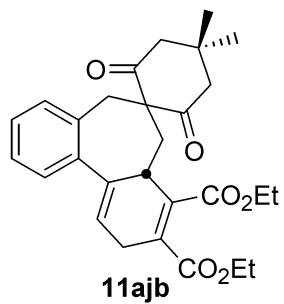
207.890  
207.275

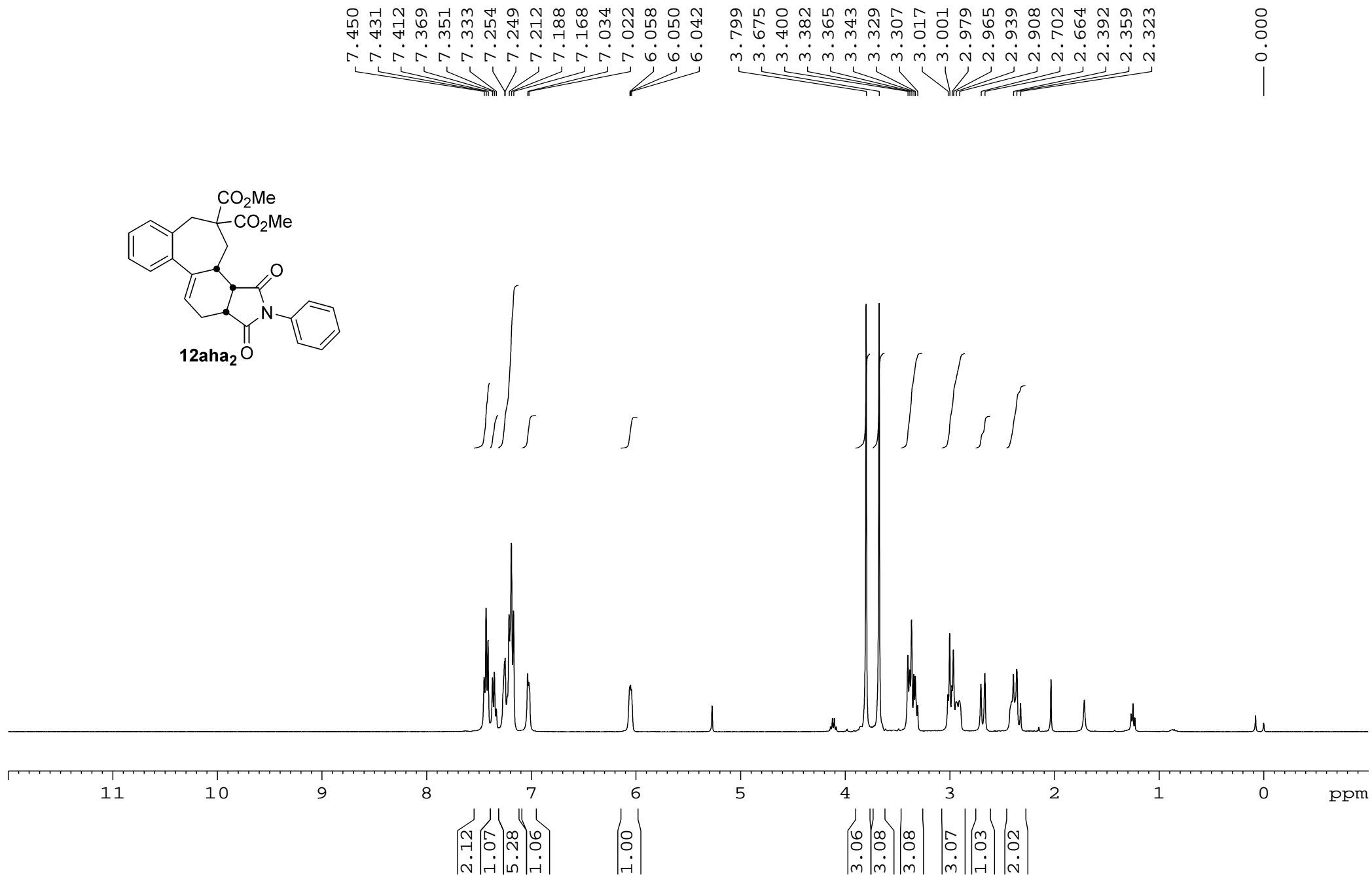
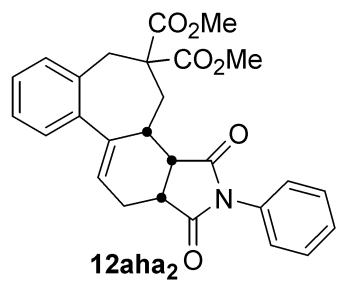
167.665  
167.289

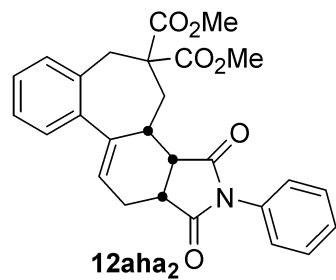
142.468  
141.075  
137.612  
134.703  
133.413  
129.747  
128.033  
127.431  
127.180  
121.365

77.316  
76.999  
76.680  
66.692  
61.185

52.121  
50.544  
41.050  
39.762  
36.620  
30.598  
29.090  
28.357  
28.084  
13.962  
13.938





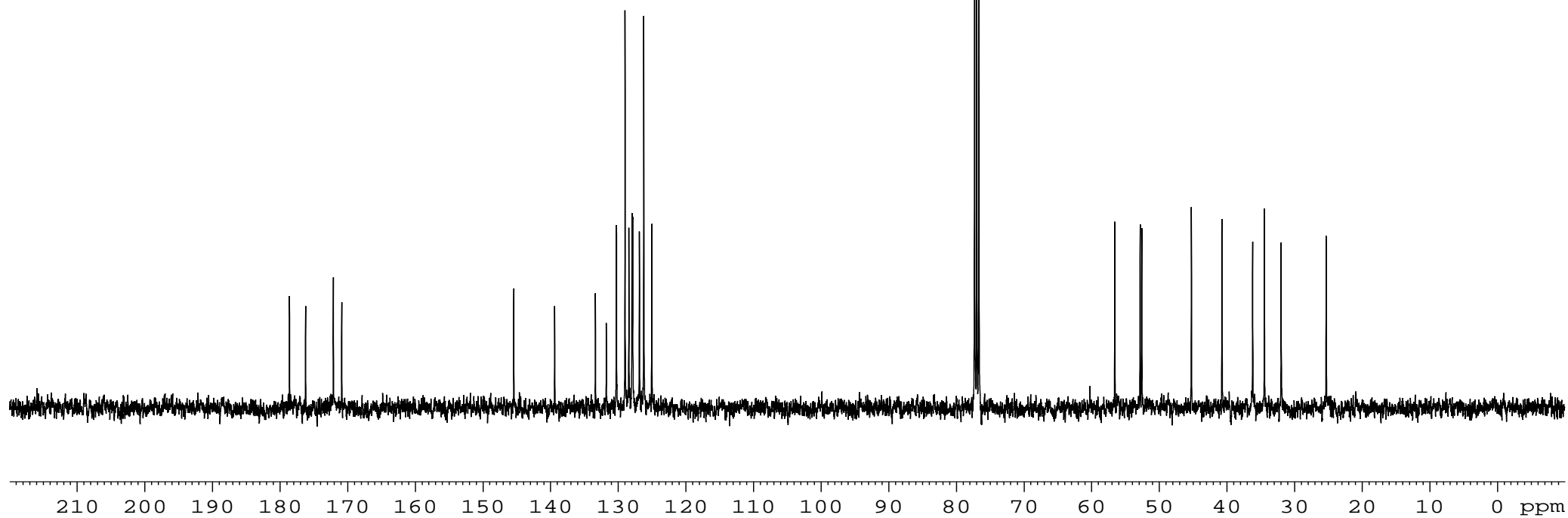


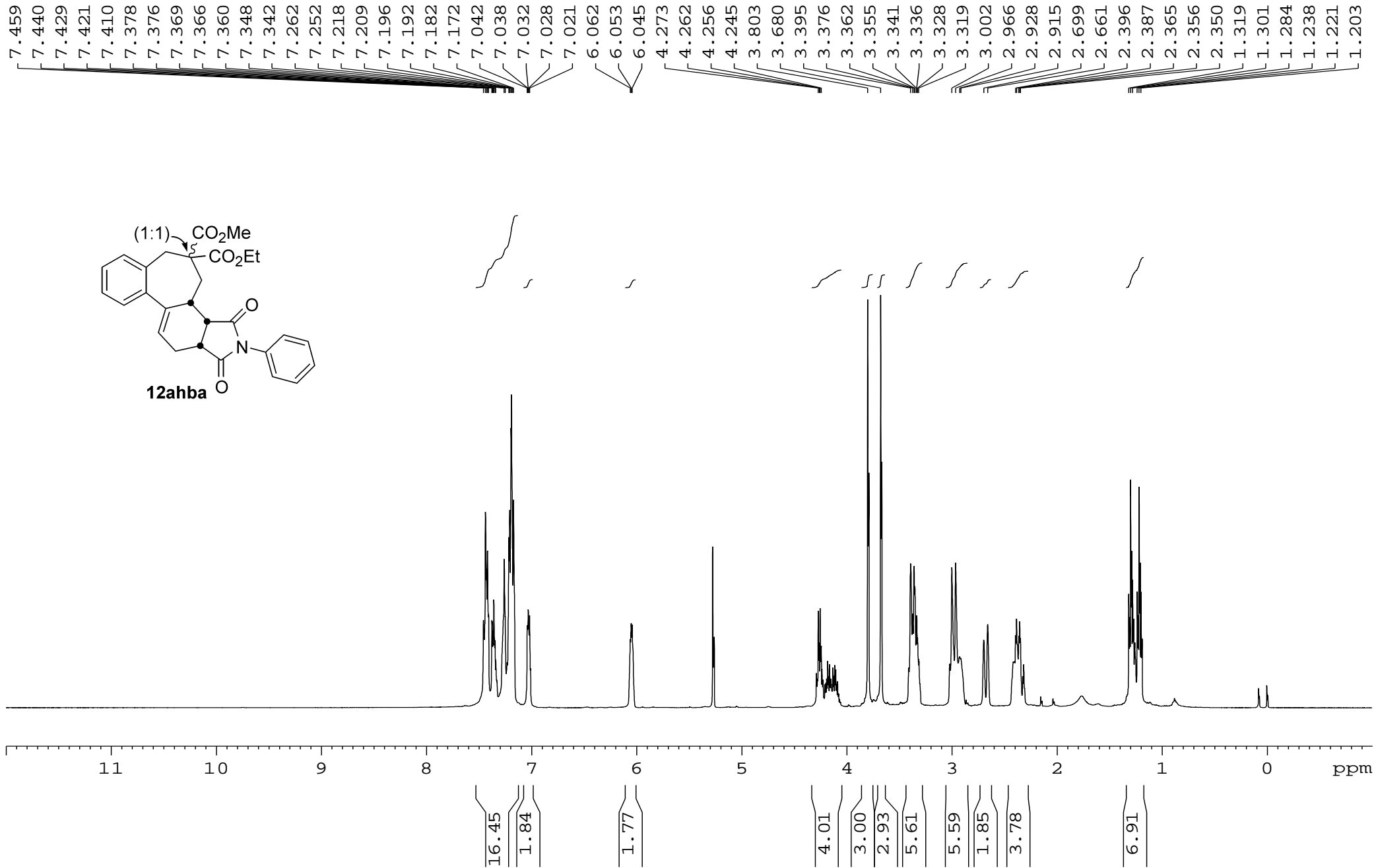
178.57  
 176.20  
 172.09  
 170.85

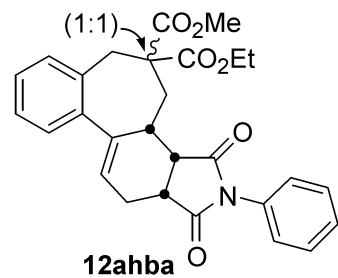
145.46  
 139.41  
 133.37  
 131.77  
 130.28  
 128.99  
 128.44  
 127.96  
 127.86  
 126.88  
 126.23  
 125.05

77.32  
 77.00  
 76.68

56.58  
 52.84  
 52.59  
 45.26  
 40.74  
 36.20  
 34.46  
 31.98  
 25.33

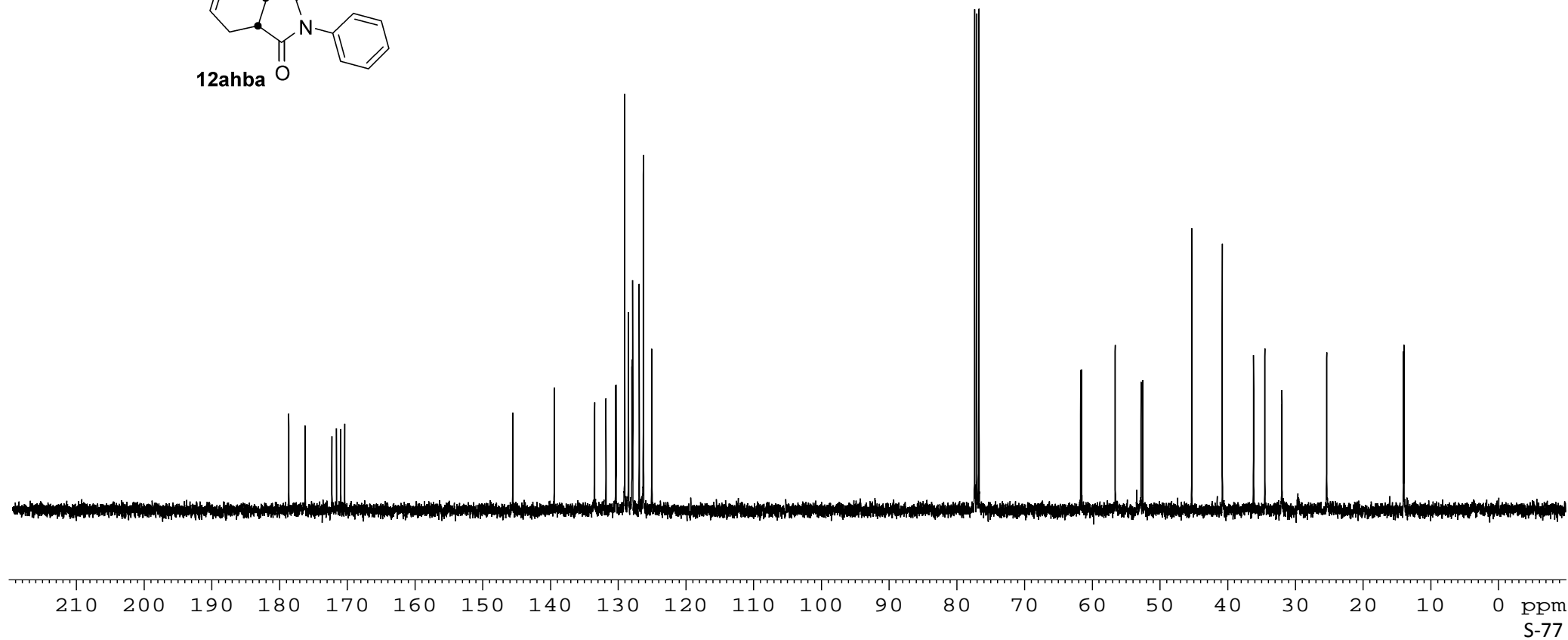


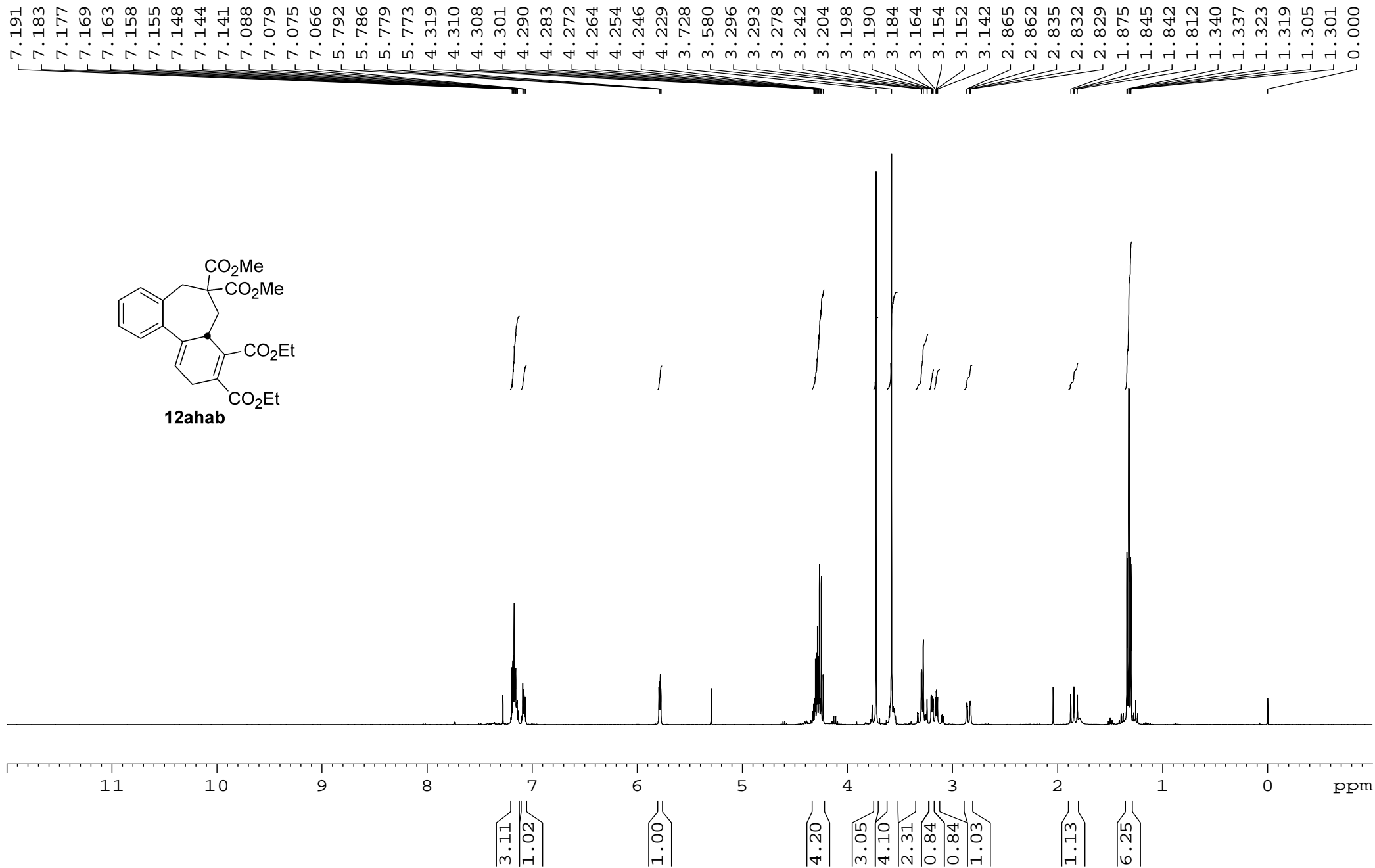


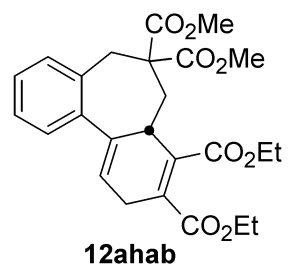


178.61  
176.20  
172.24  
171.58  
170.94  
170.34  
145.51  
139.41  
133.47  
133.44  
131.77  
130.35  
130.28  
129.00  
128.44  
127.95  
127.88  
127.82  
126.86  
126.26  
126.23  
125.00

77.32  
77.00  
76.68  
61.68  
61.52  
56.56  
52.74  
52.49  
45.26  
40.74  
36.13  
34.48  
34.45  
31.97  
31.93  
25.33  
13.99  
13.92







172.01  
 169.63  
 167.40

143.01  
 140.51  
 138.55  
 134.38  
 132.04  
 130.67  
 127.76  
 127.33  
 127.19  
 121.45

77.32  
 77.00  
 76.68

61.24  
 61.18  
 56.00  
 52.86  
 52.01  
 40.99  
 39.96  
 37.22

28.00

13.94

