Supporting Information

A general and scalable synthesis of polysubstituted indoles.

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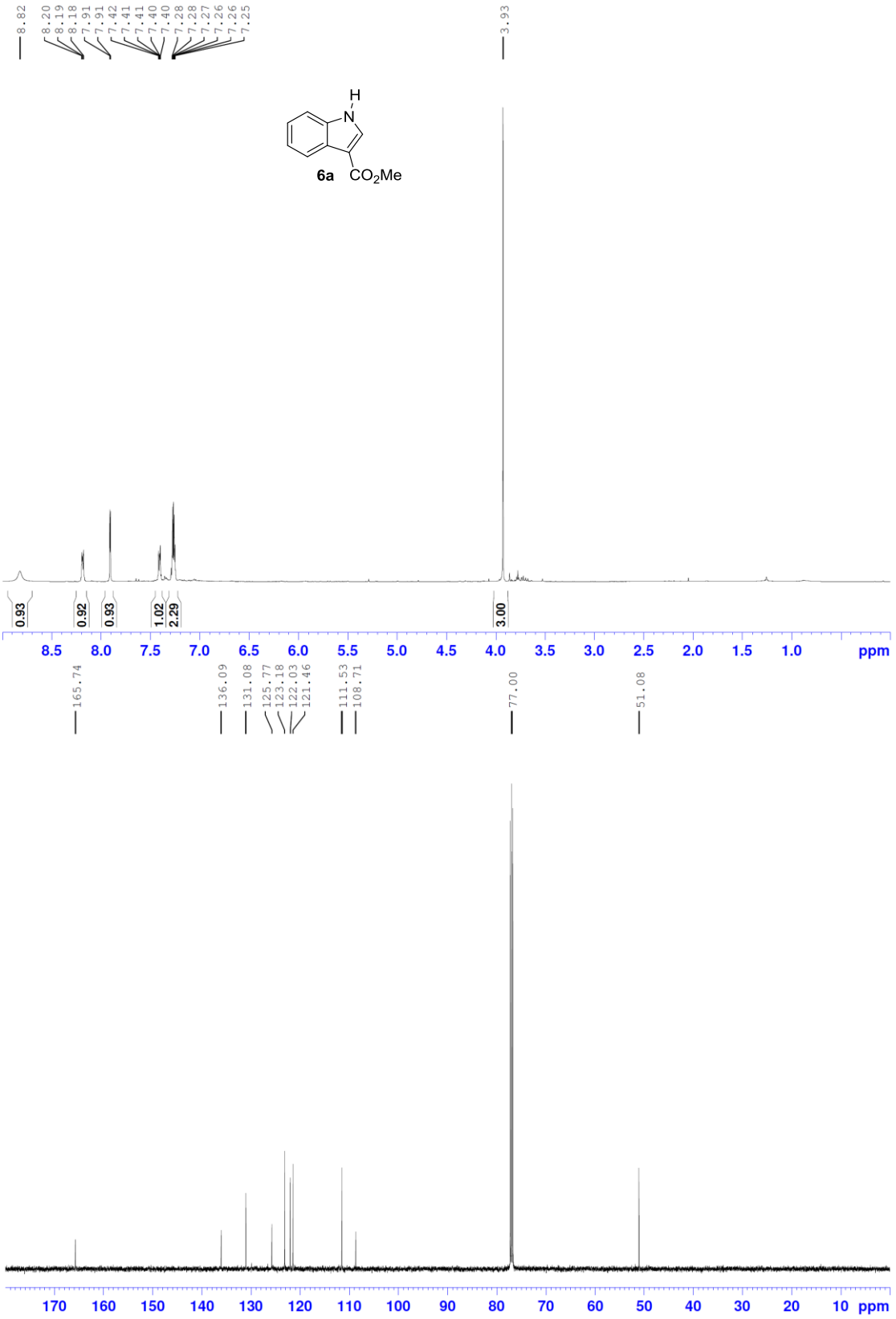
General information. ^{1}H NMR and ^{13}C NMR spectra of DMSO-d6 or $CDCl_3$ solutions were recorded either at 400 and 100 MHz or at 500 and 125 MHz **(**Bruker Ac 200 and AMX2-500 respectively**)**.

Compound	Solvent	Field
6a, 6c, 6f, 6h, 6j, 6l, 6n (C-4 and C-6 isomers), 6o (C-6 isomer), 6r (C-4 isomer), 6s, 6u, 6z, 6aa, 10s	$CDCl_3$	400/100 MHz
6d, 6e, 6f, 6i, 6k, 6m, 6o (C-4 isomer), 6p (C-4 and C-6 isomers), 6q (C-4 and C-6 isomers), 6r (C-6 isomer), 6t, 6v, 6x, 6w, 6y, 6ac	DMSO-d6	400/100 MHz
6z, 10t, 10u, 10z	$CDCl_3$	500/125 MHz
6b, 6g, 6ab, 6ad (C-4 and C-6 isomers)	DMSO-d6	500/125 MHz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7.27
7.26
7.26
7.25
3.93
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N
6a CO2Me
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0.92
0.93
1.02
2.29
3.00
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165.74
136.09
131.08
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121.46
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77.00
51.08
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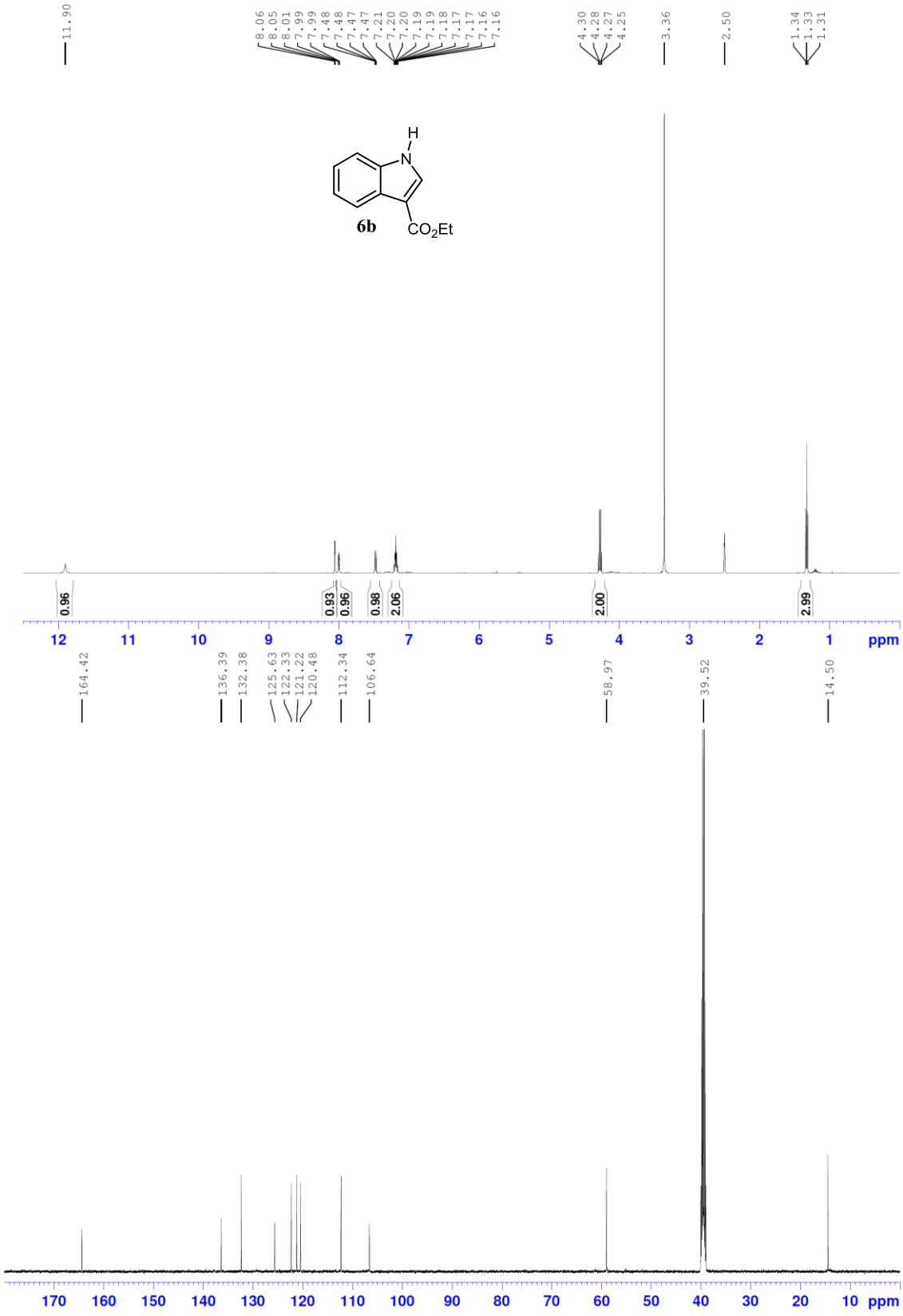
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7.19
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7.16
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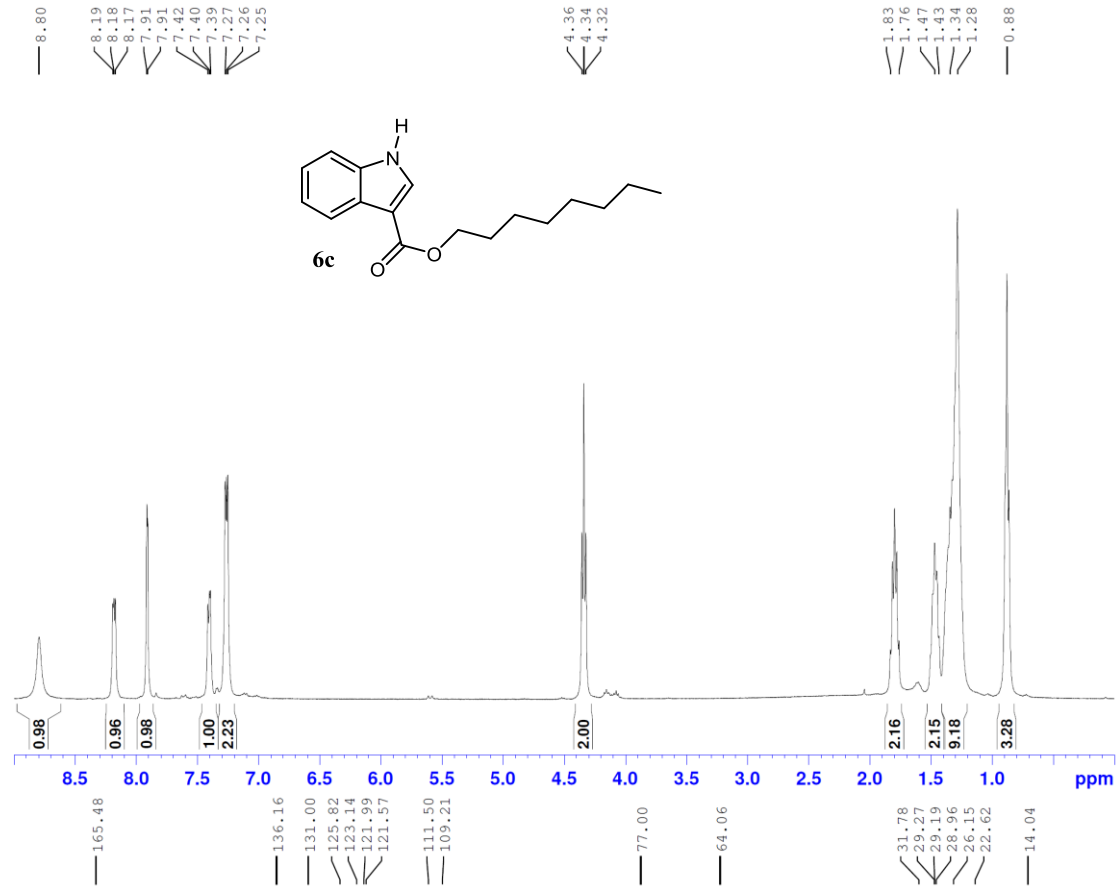
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O
O
6c
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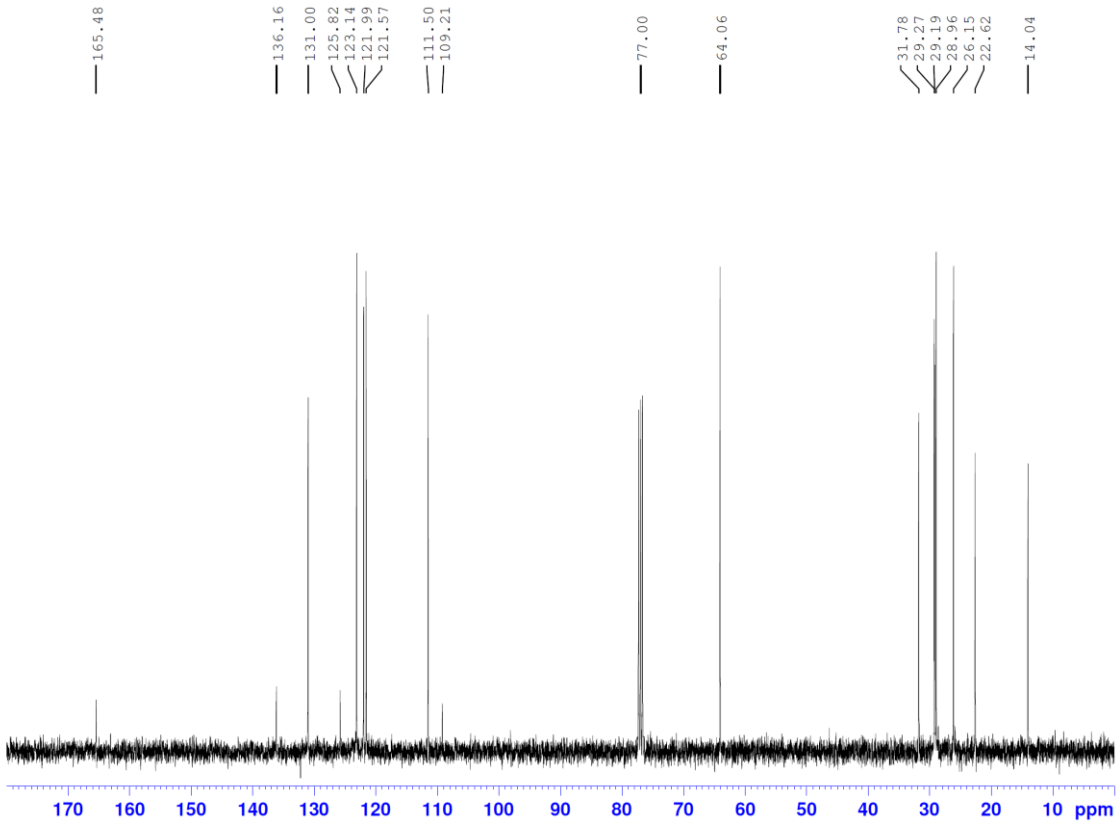
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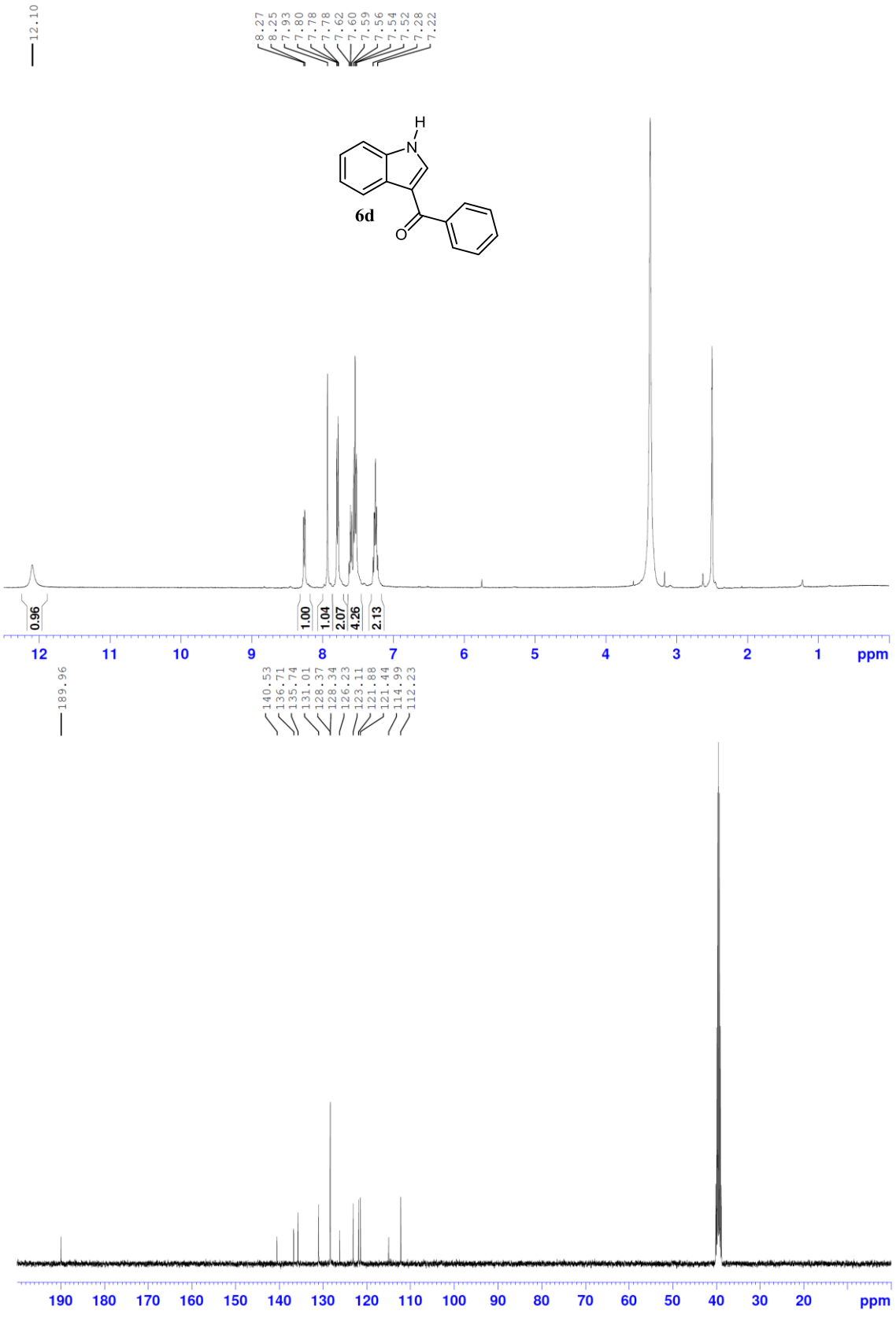
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O
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4
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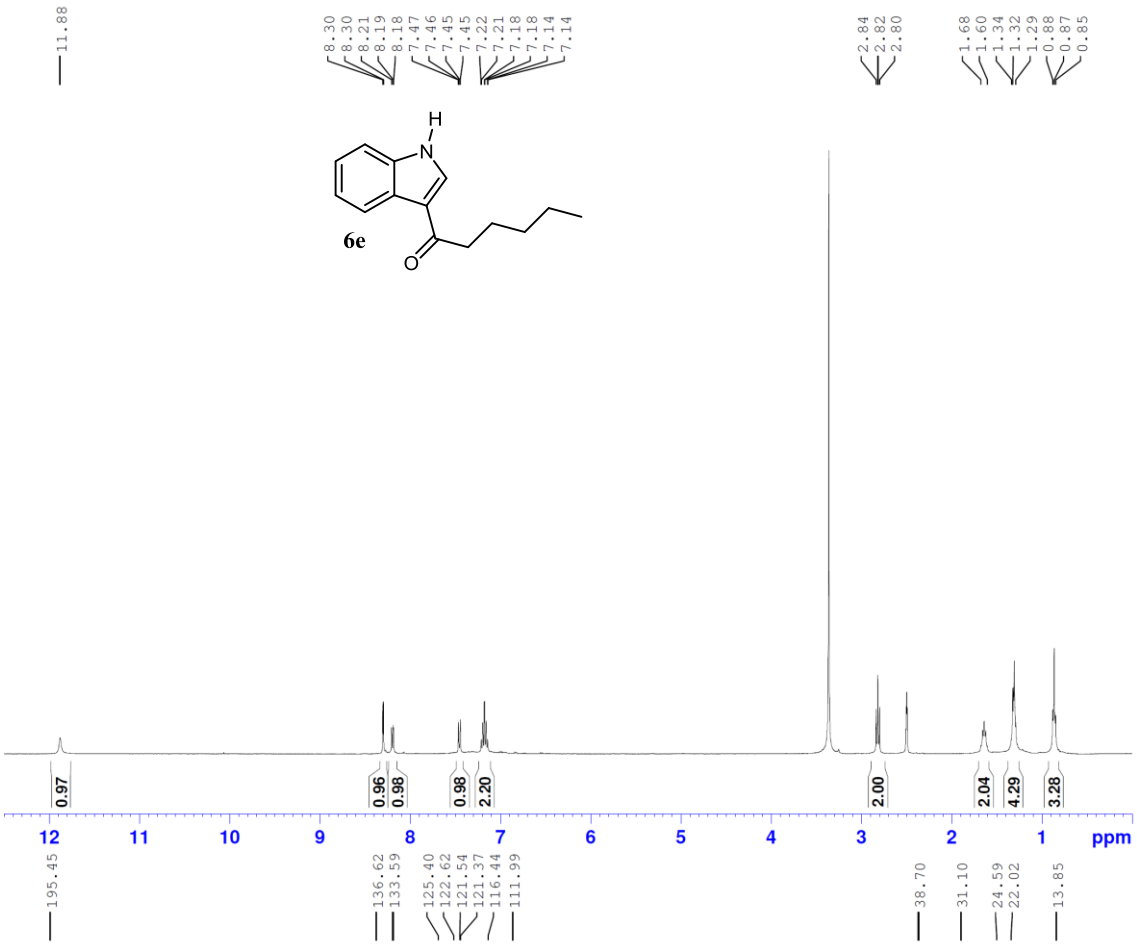
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7.14
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1.68
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0.85
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N
O
6e
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0.96
0.98
0.98
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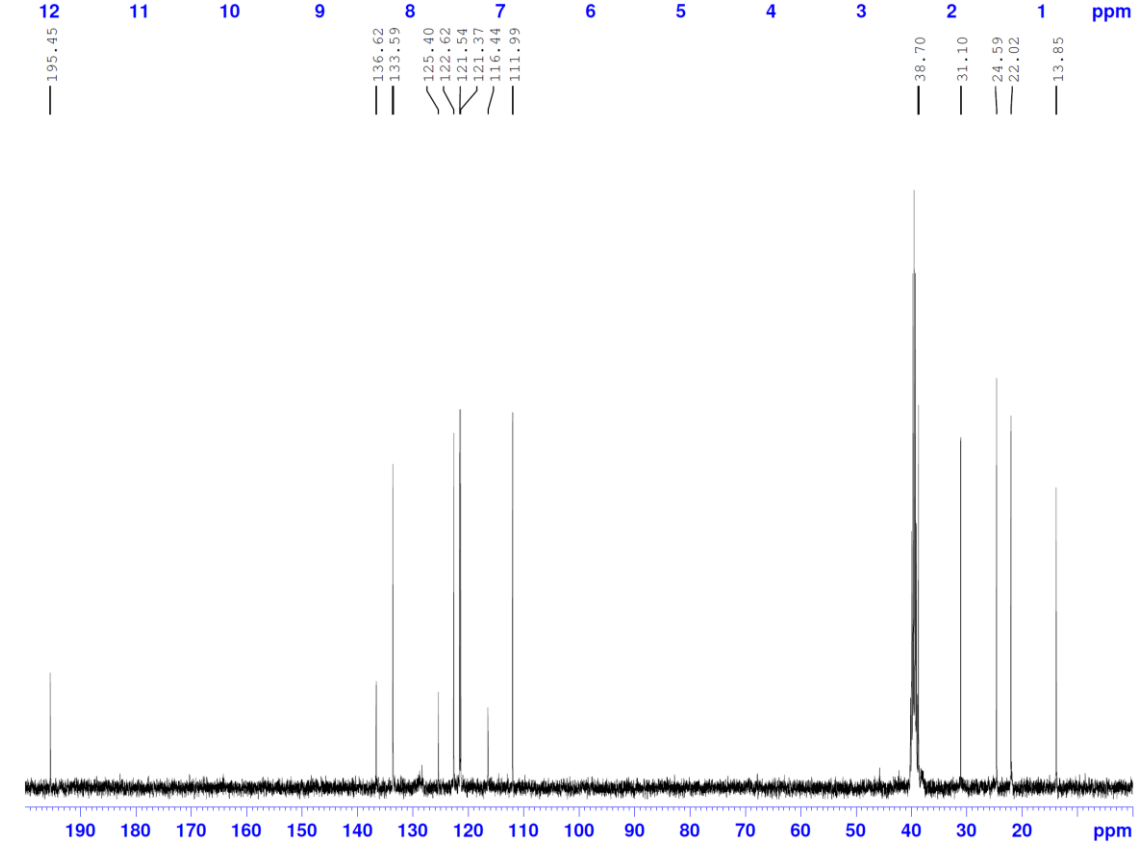
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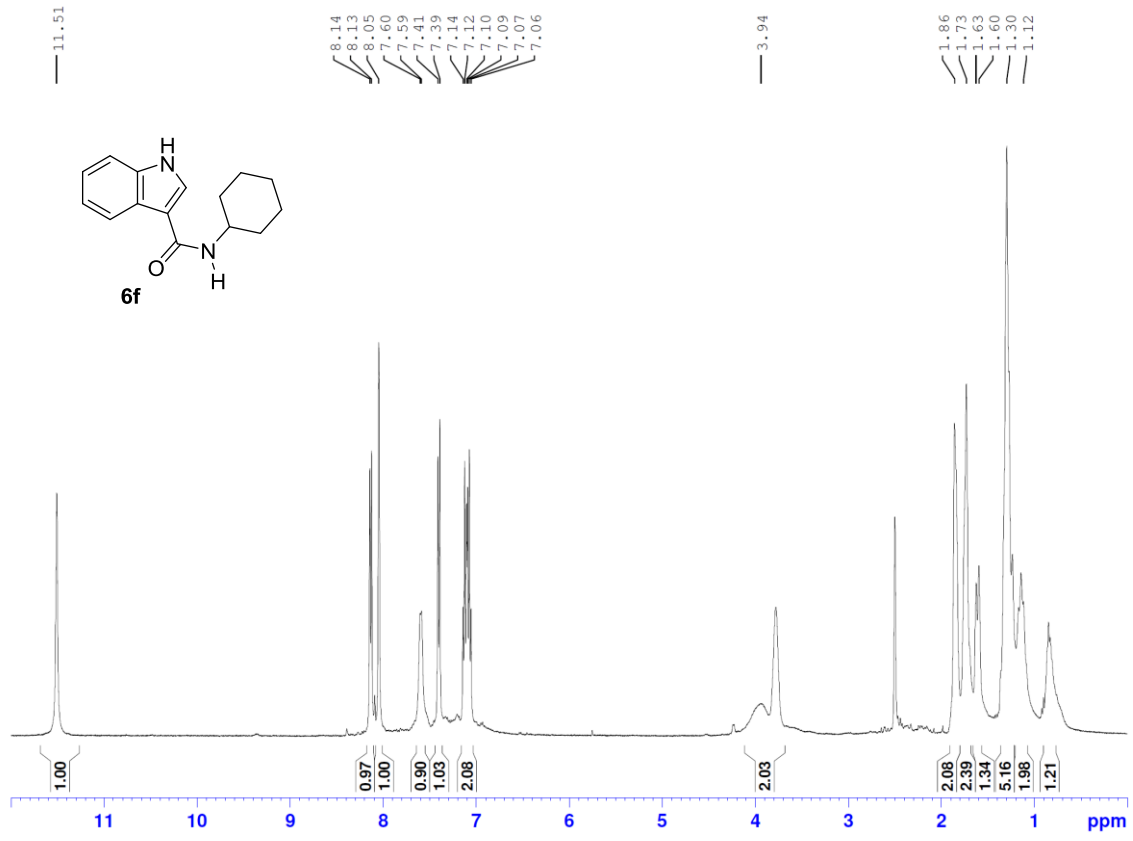
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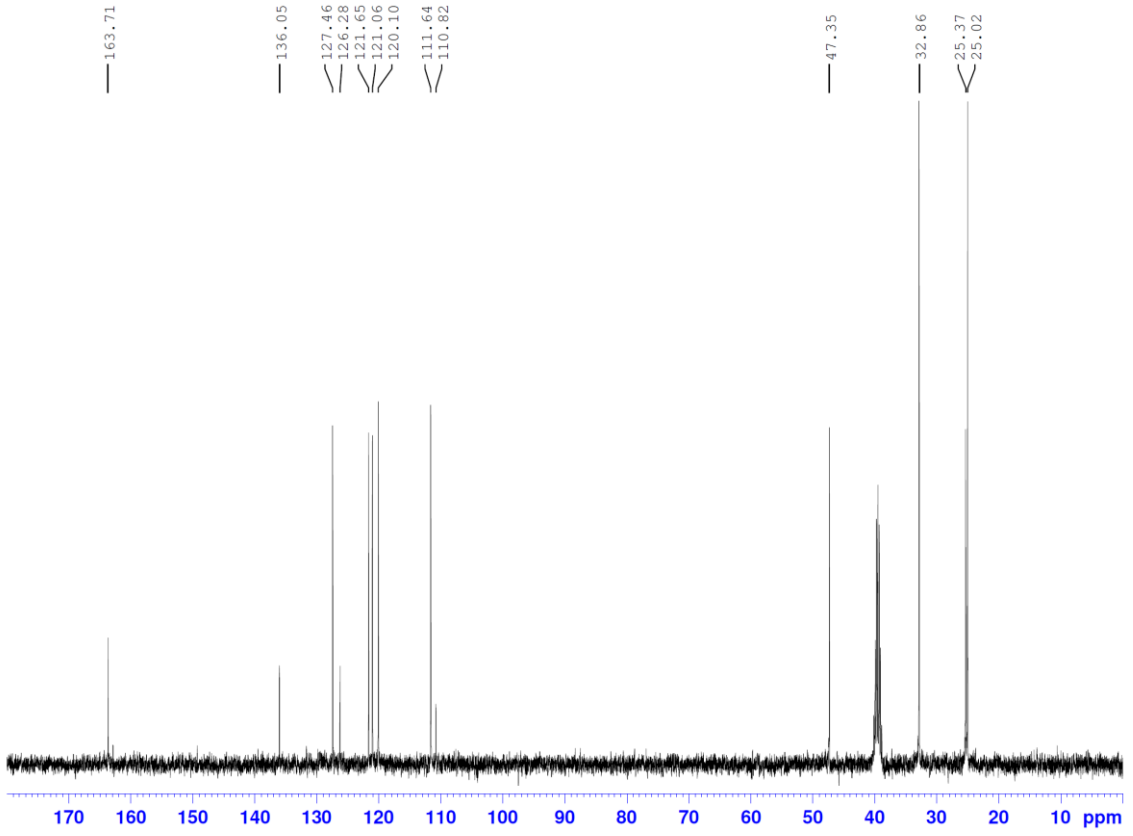
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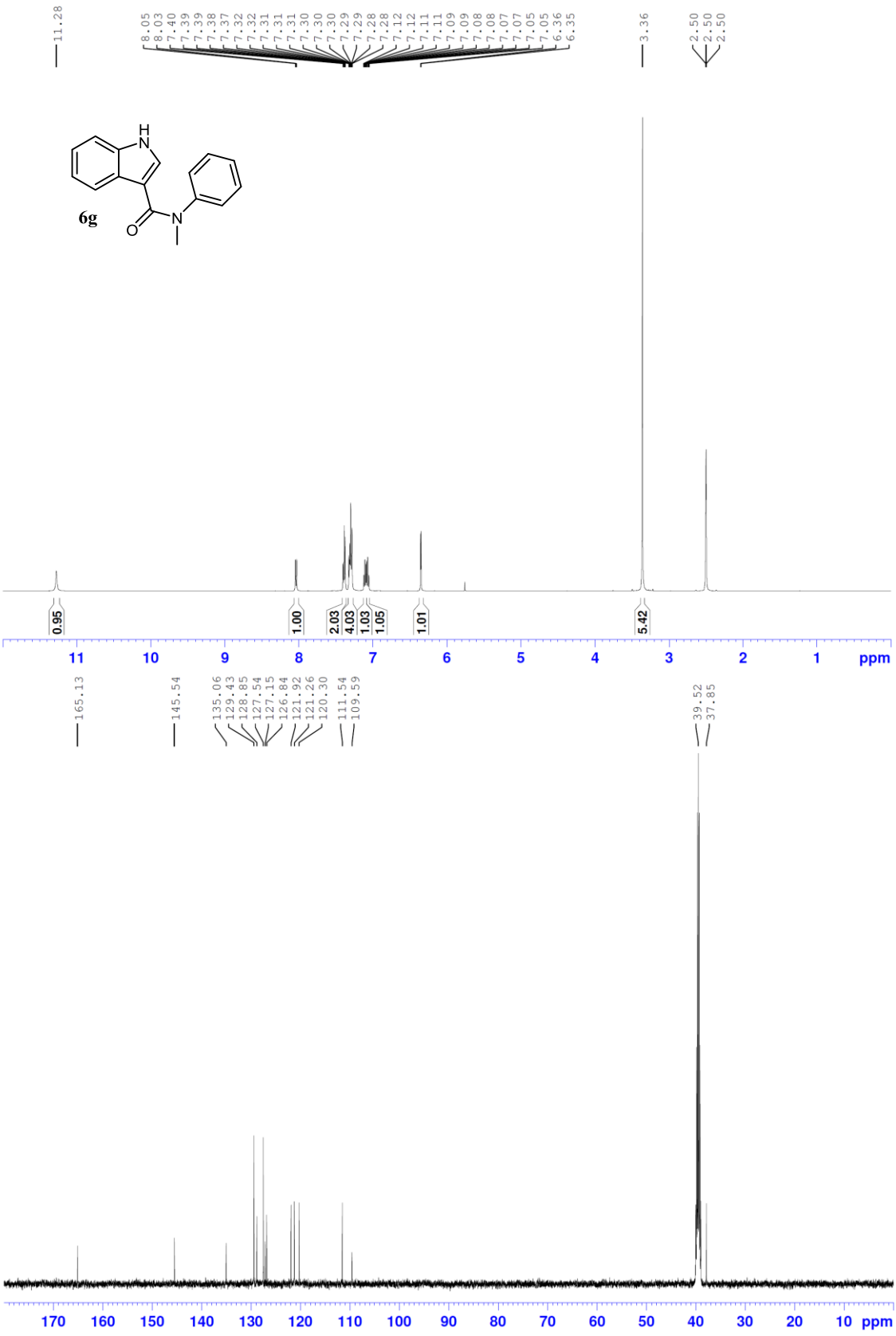
6f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7.07
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7.05
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1.03
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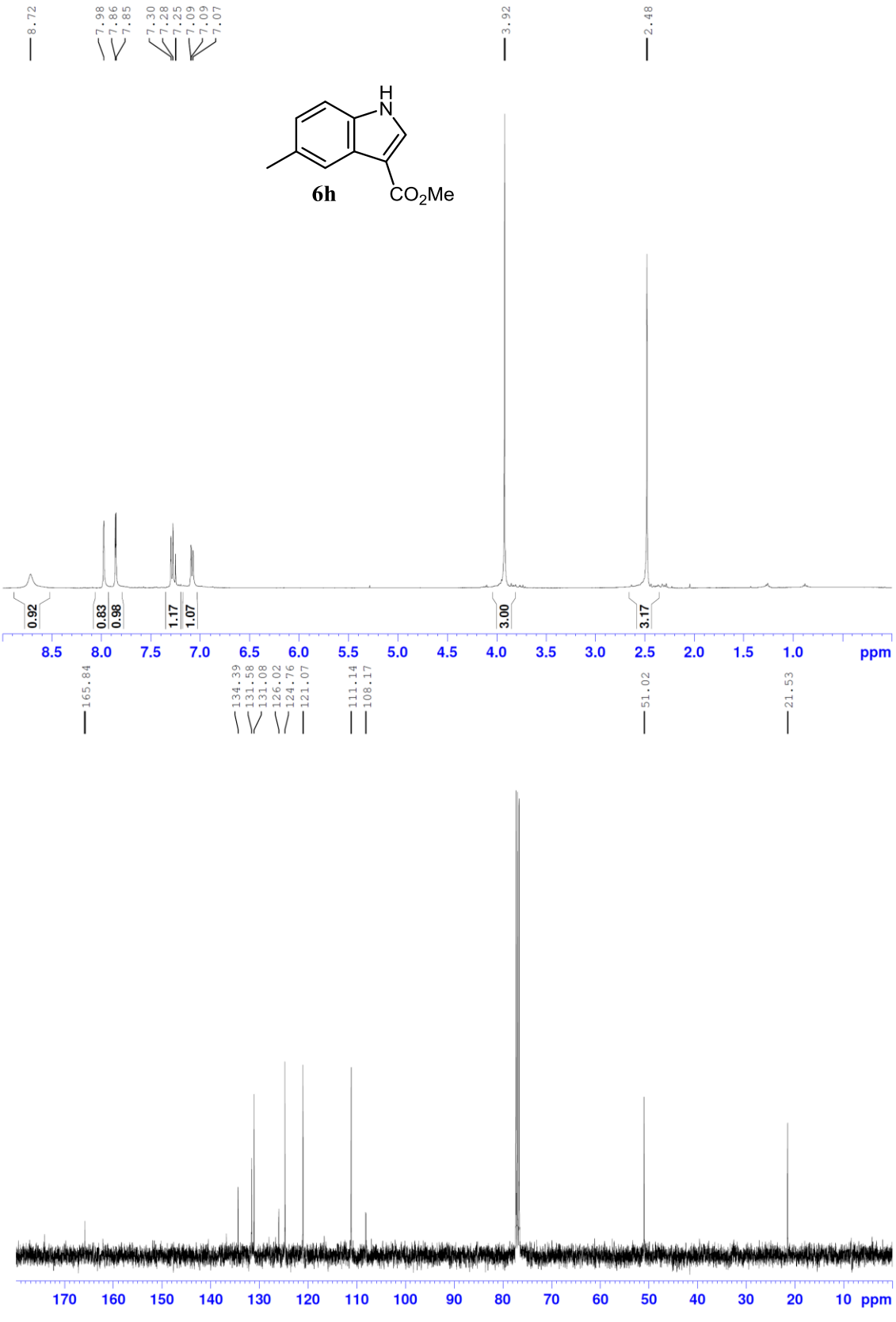
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6h
CO2Me
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1.07
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6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm
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131.58
131.08
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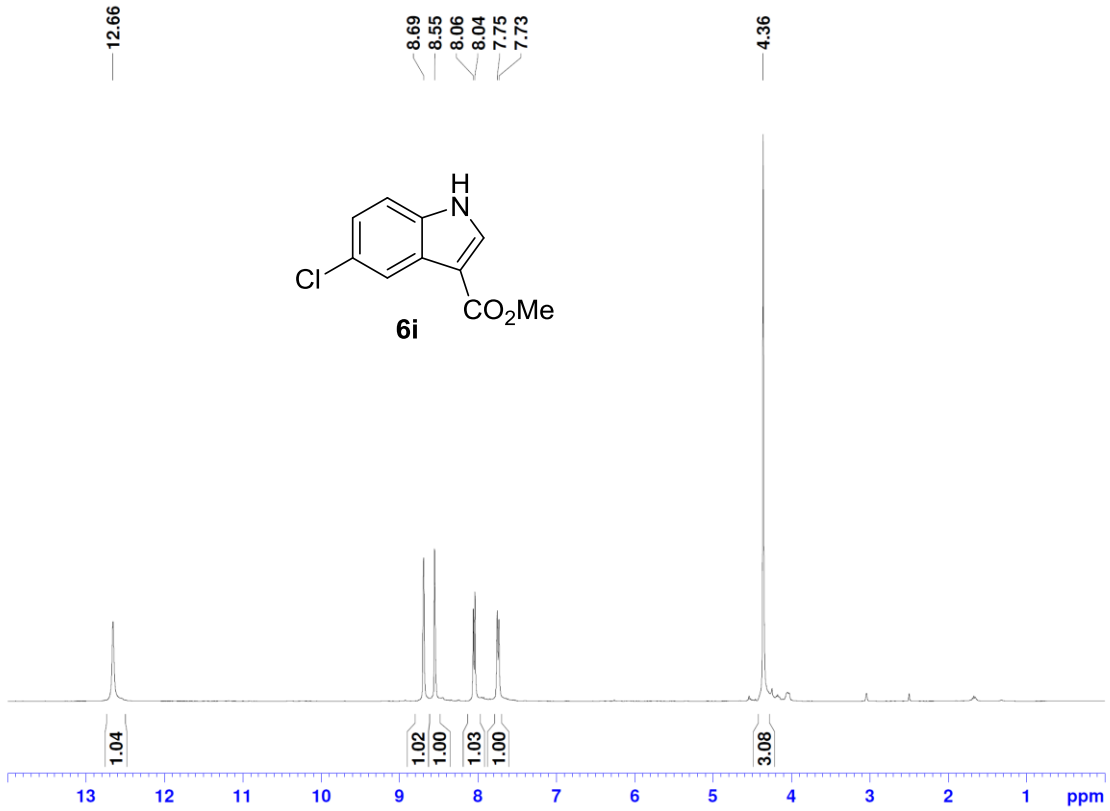
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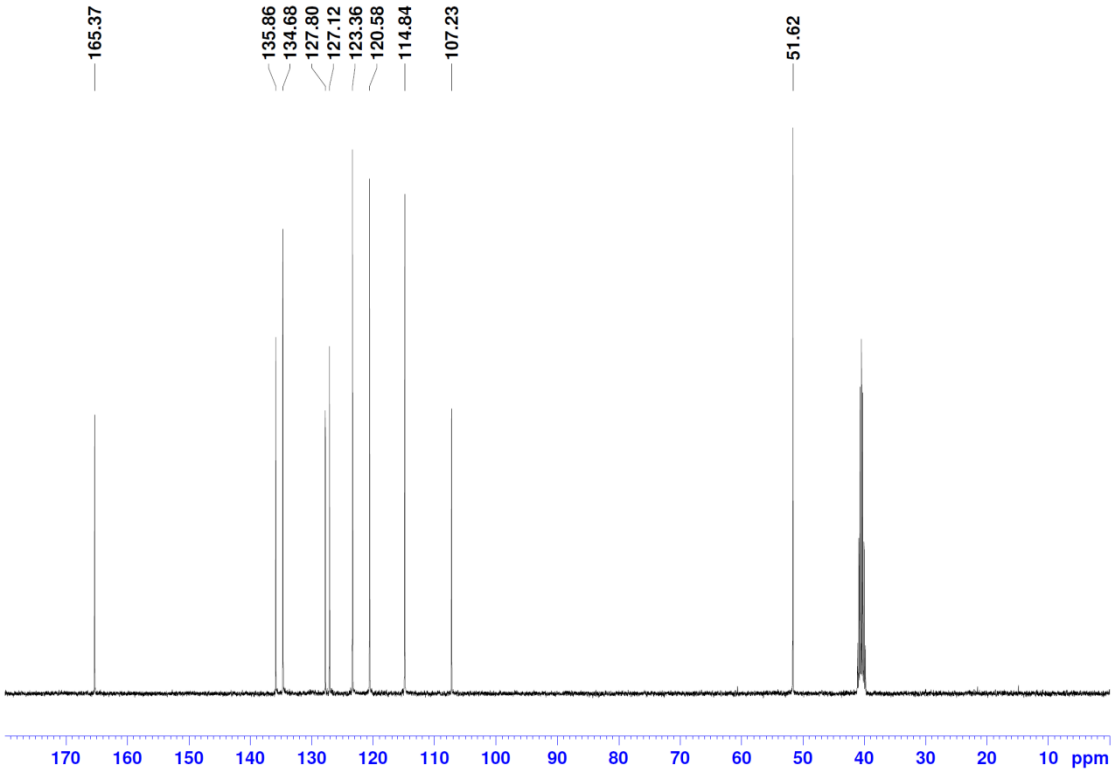
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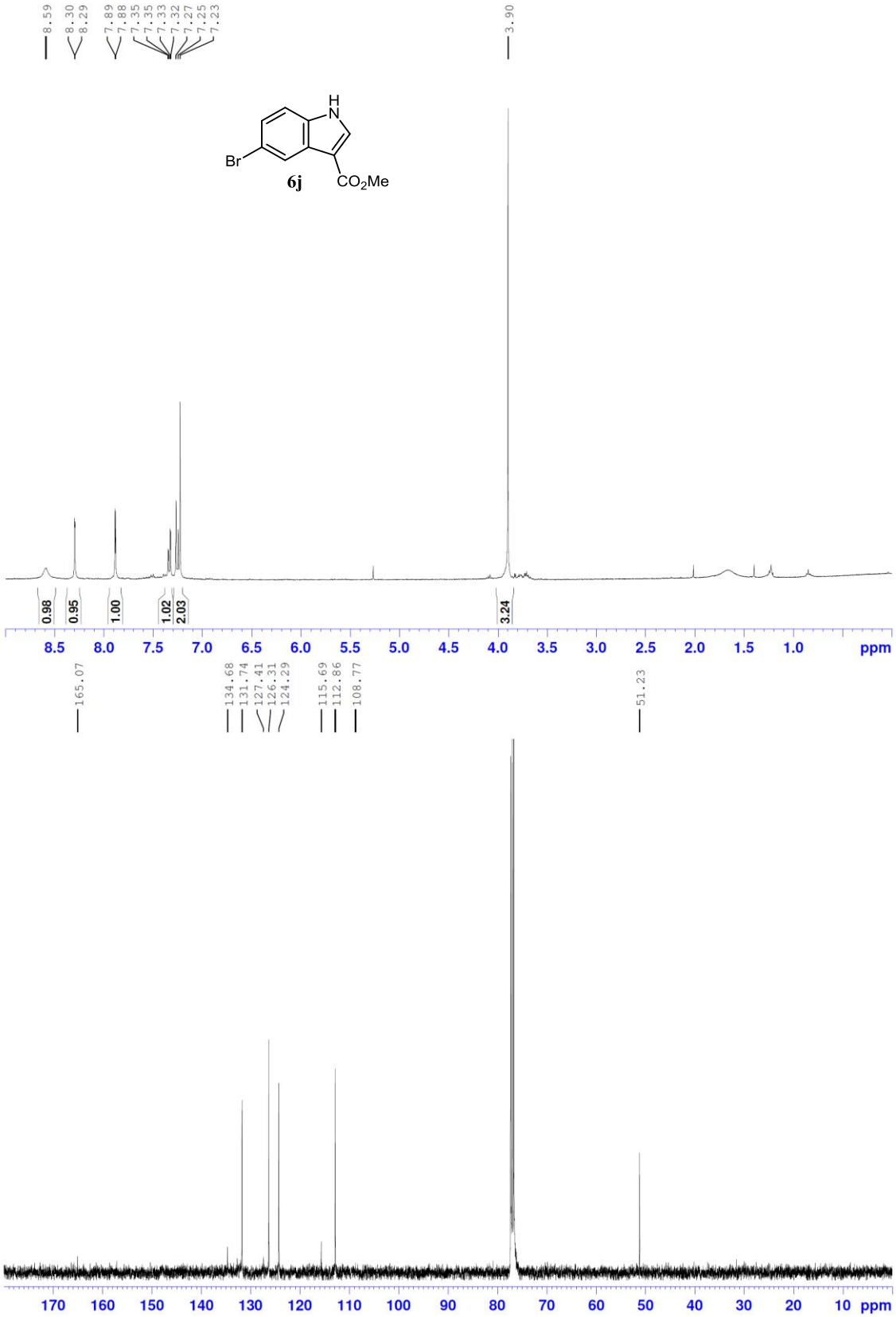
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N
Br
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1.02
2.03
3.24
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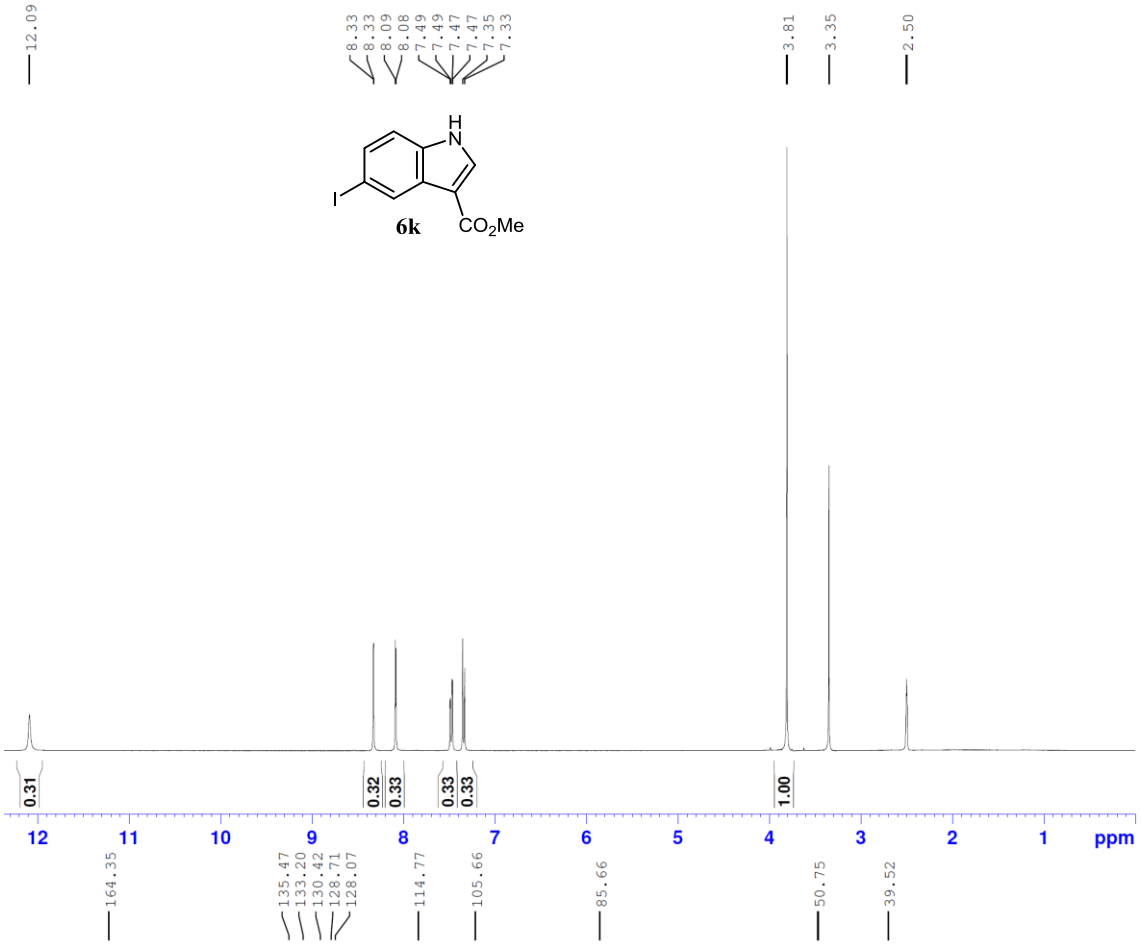
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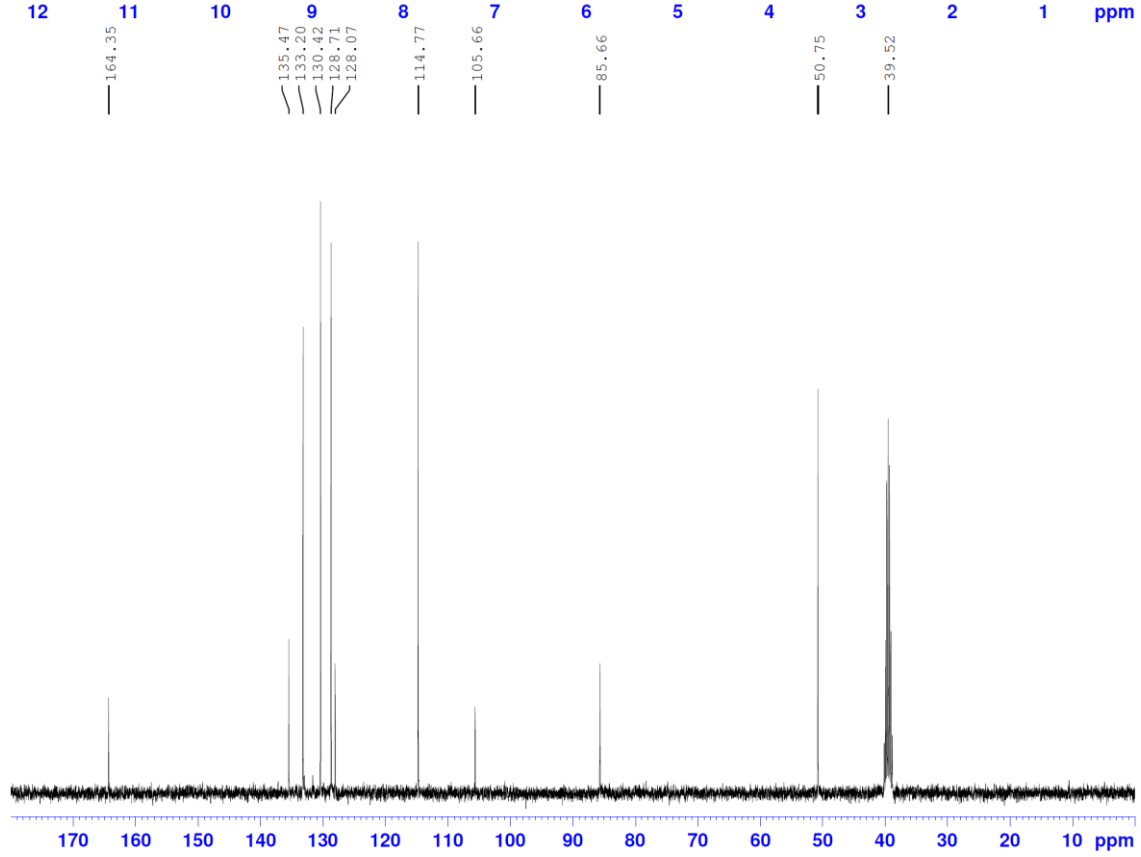
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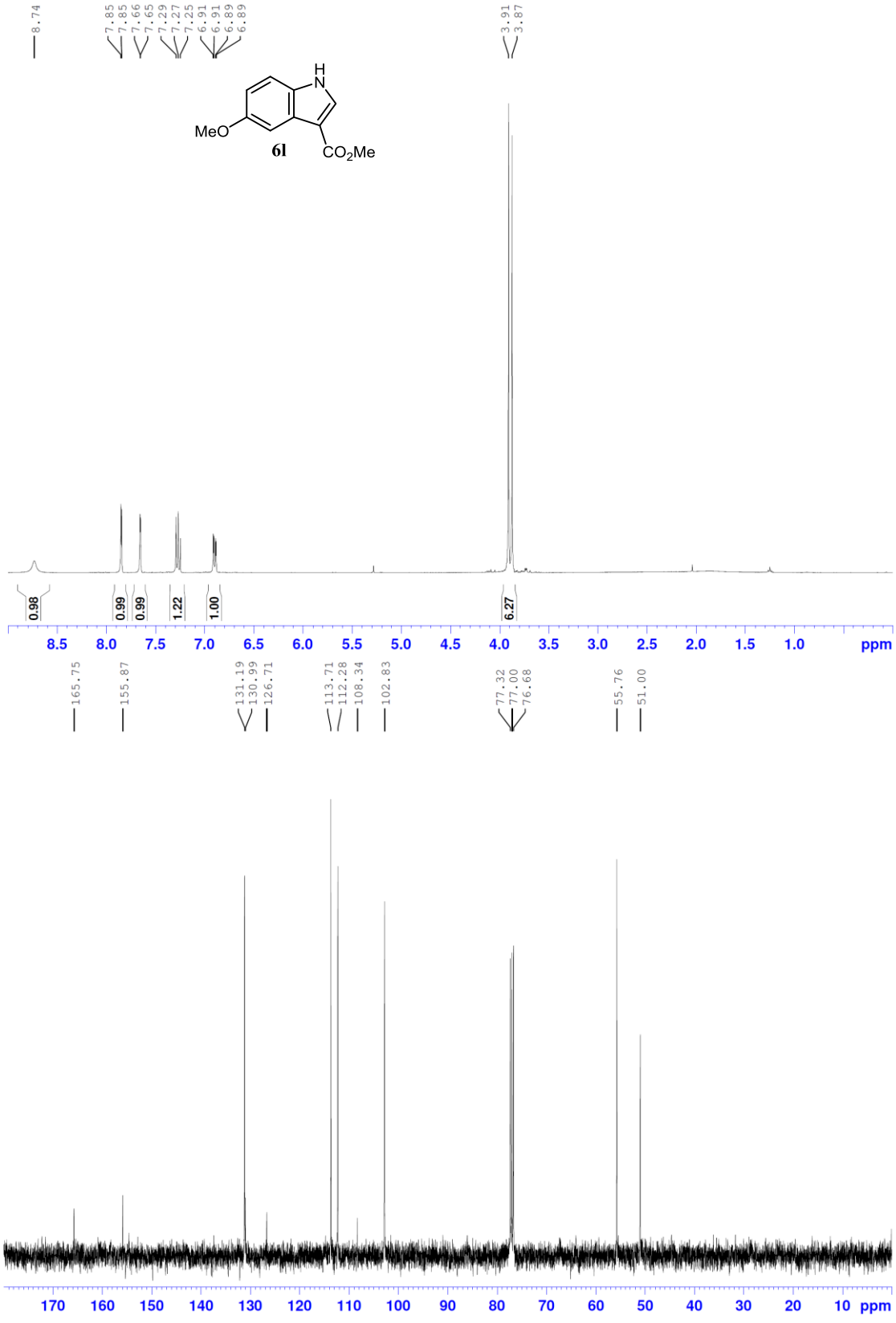
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3.91
3.87
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CO2Me
6l
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0.99
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7.0
6.5
6.0
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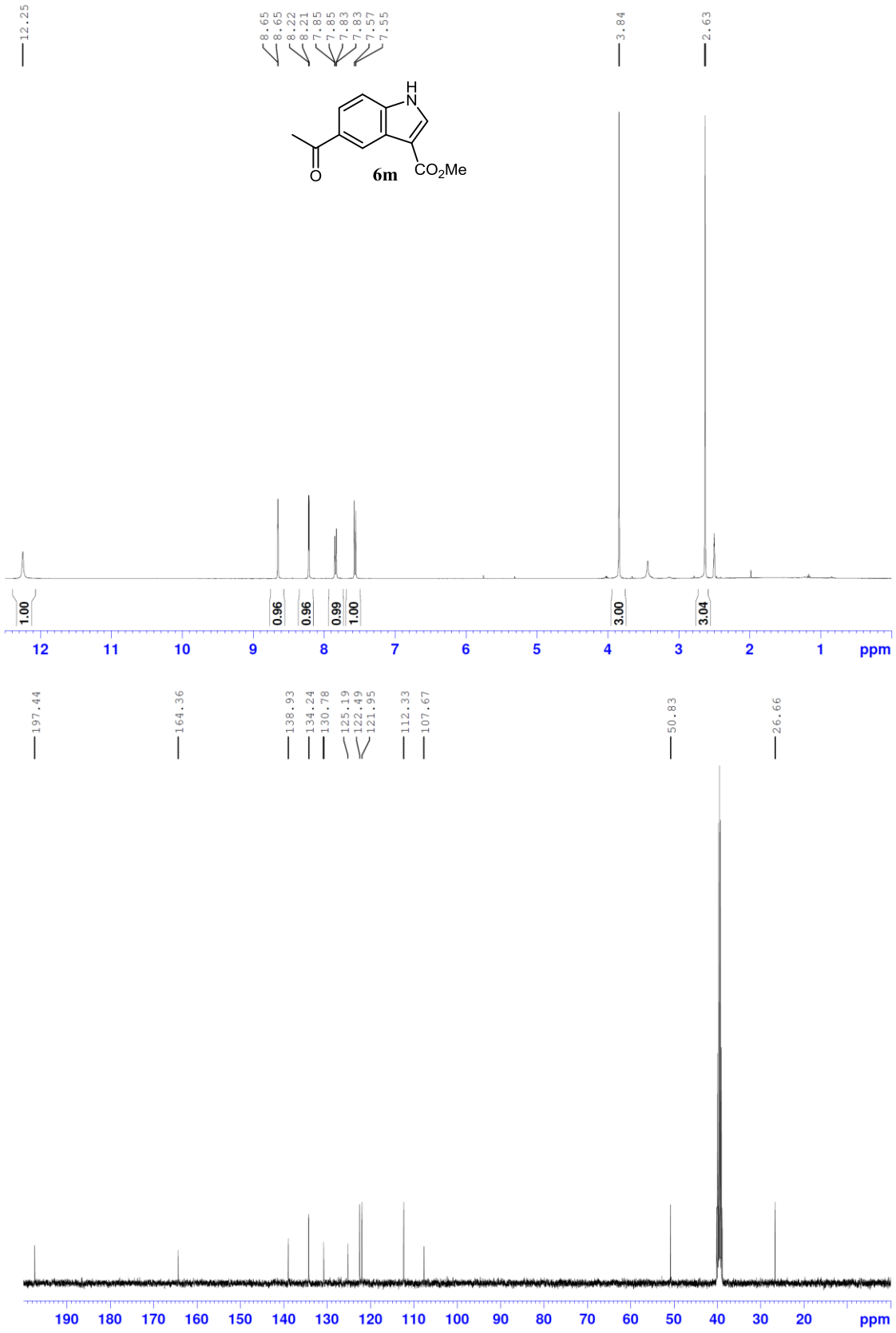
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H
N
O
CO2Me
6m
1.00
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0.96
0.99
1.00
3.00
3.04
12
11
10
9
8
7
6
5
4
3
2
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ppm
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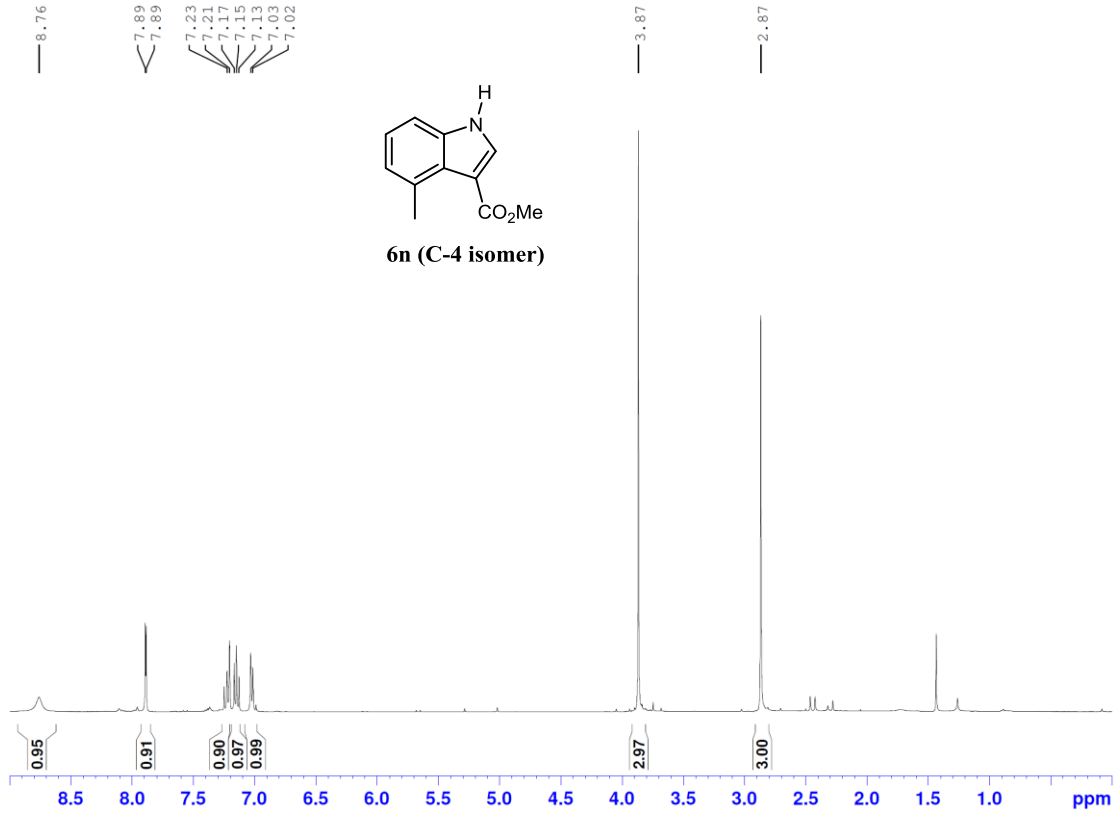
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3.00
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6.5
6.0
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1.5
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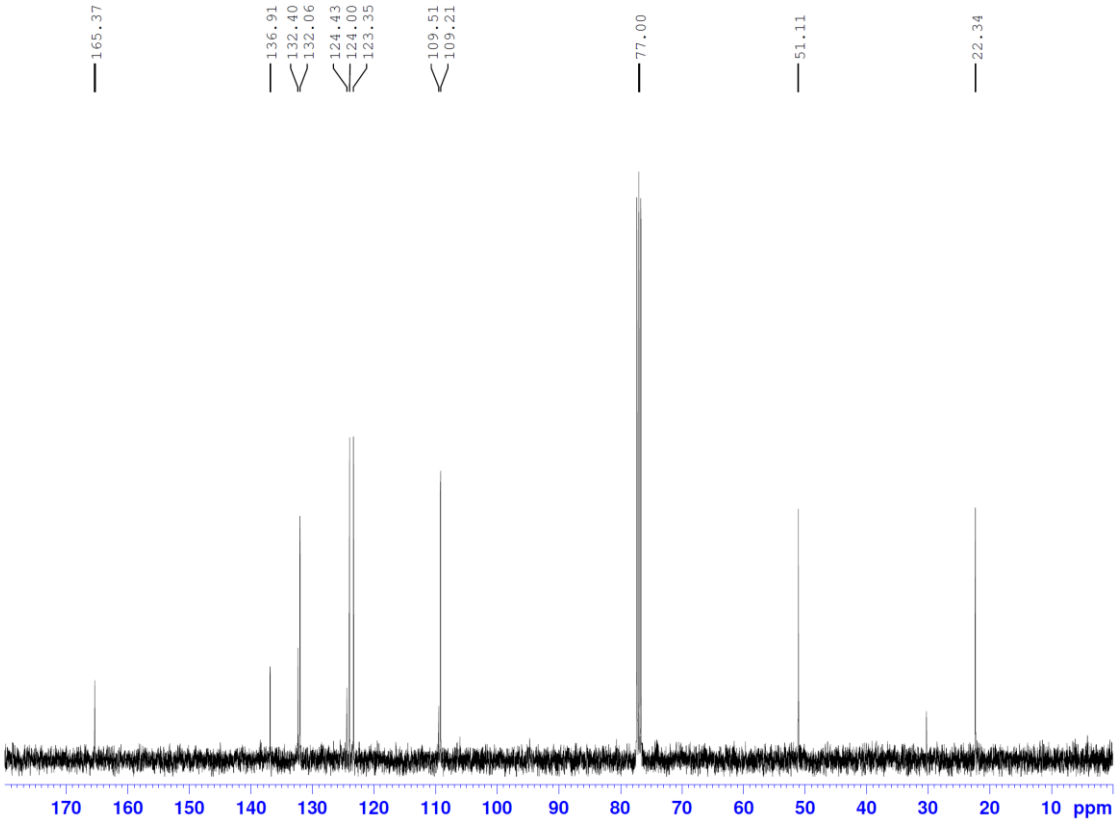
ppm

6n (C-4 isomer)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70
60
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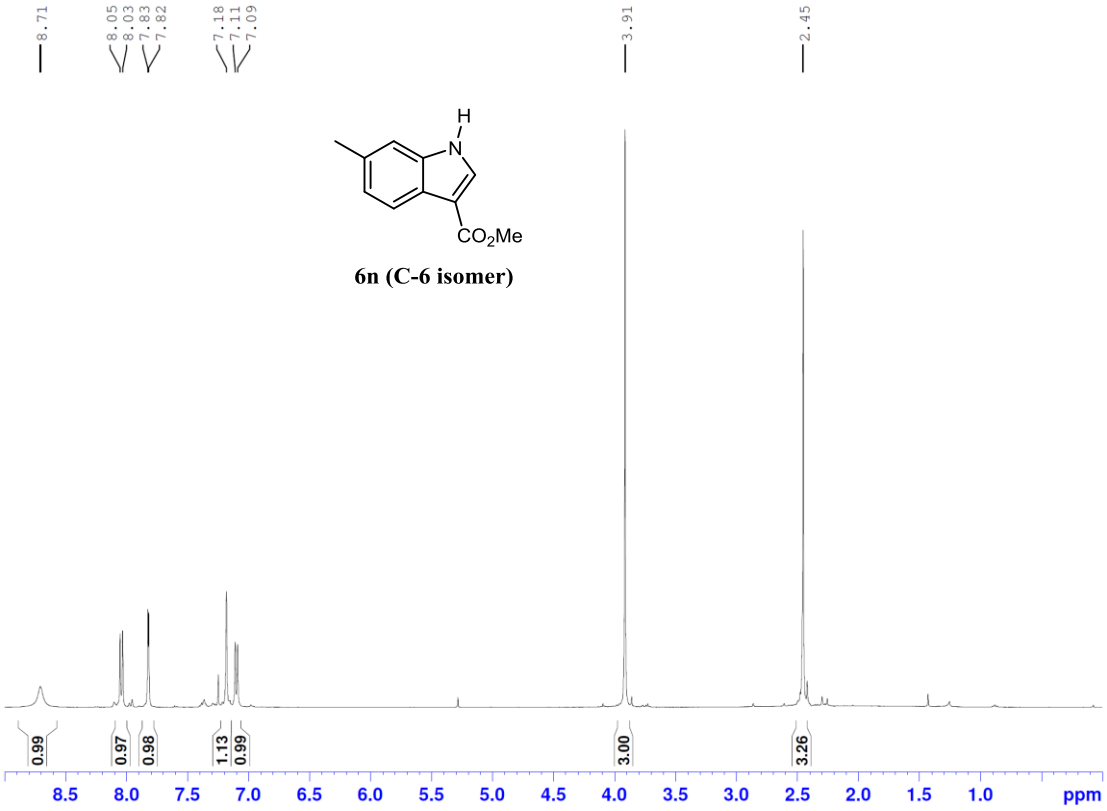
40
30
20
10
ppm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7.82
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CO2Me
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0.97
0.98
1.13
0.99
3.00
3.26
8.5
8.0
7.5
7.0
6.5
6.0
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3.0
2.5
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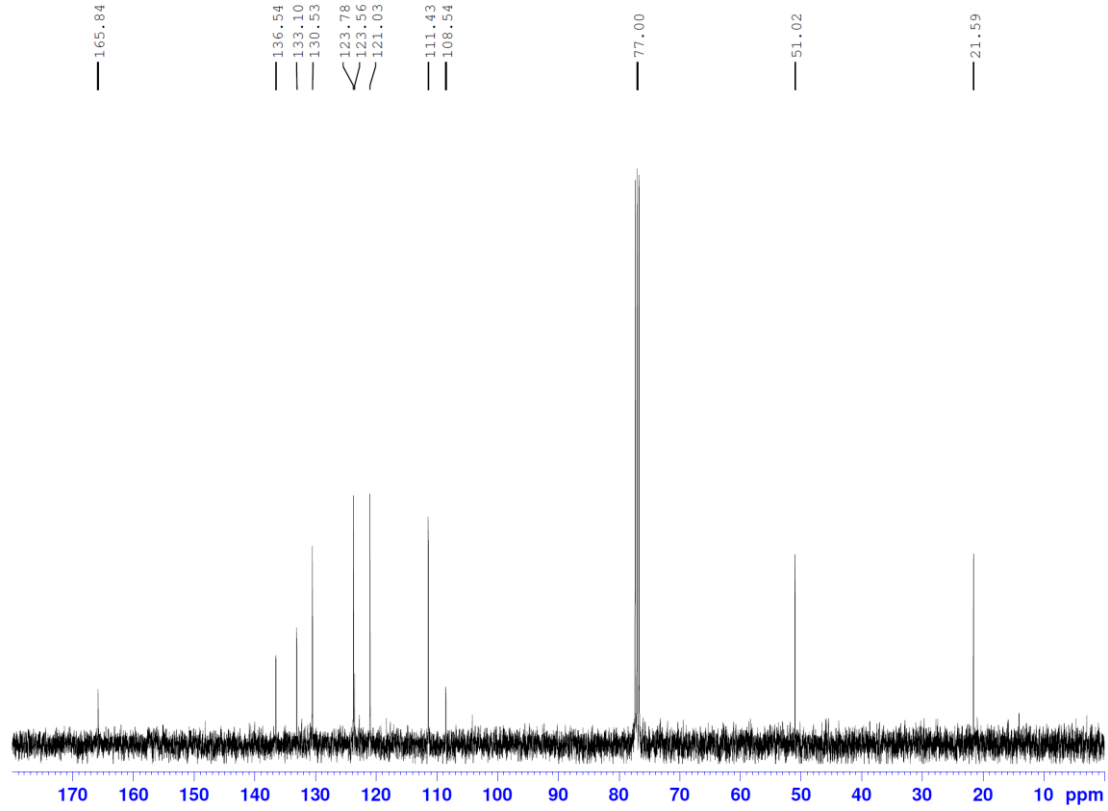
ppm

6n (C-6 isomer)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51.02
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140
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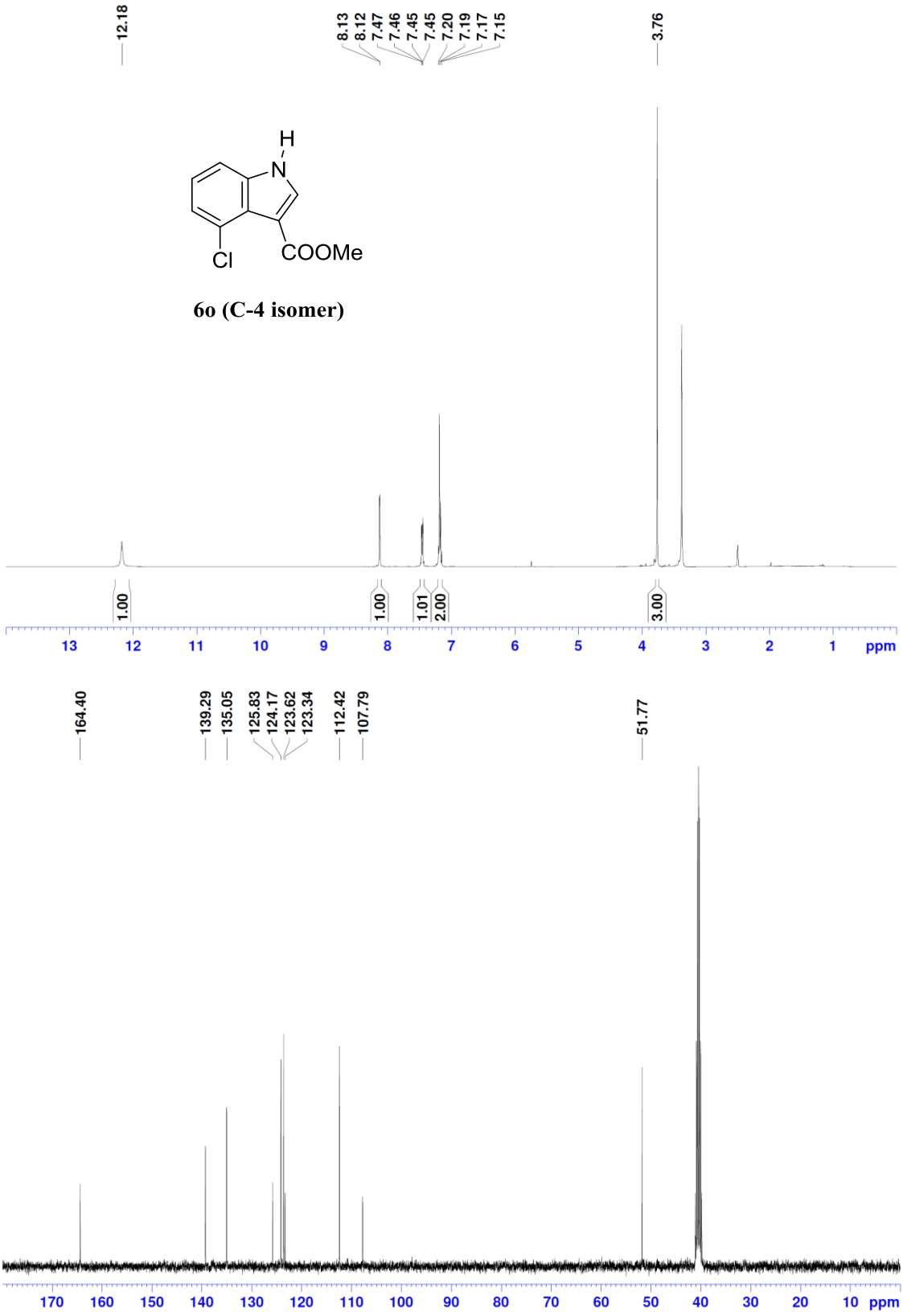
10
ppm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H
N
Cl
COOMe
1.00
1.00
1.01
2.00
3.00
13
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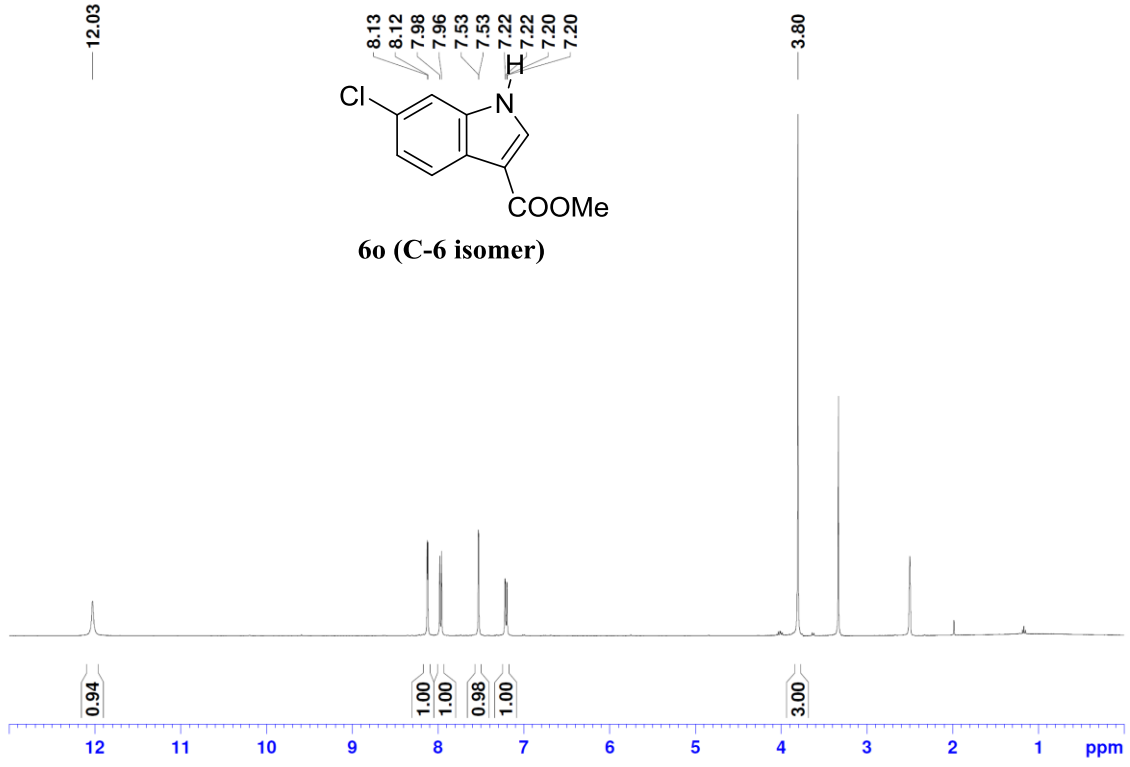
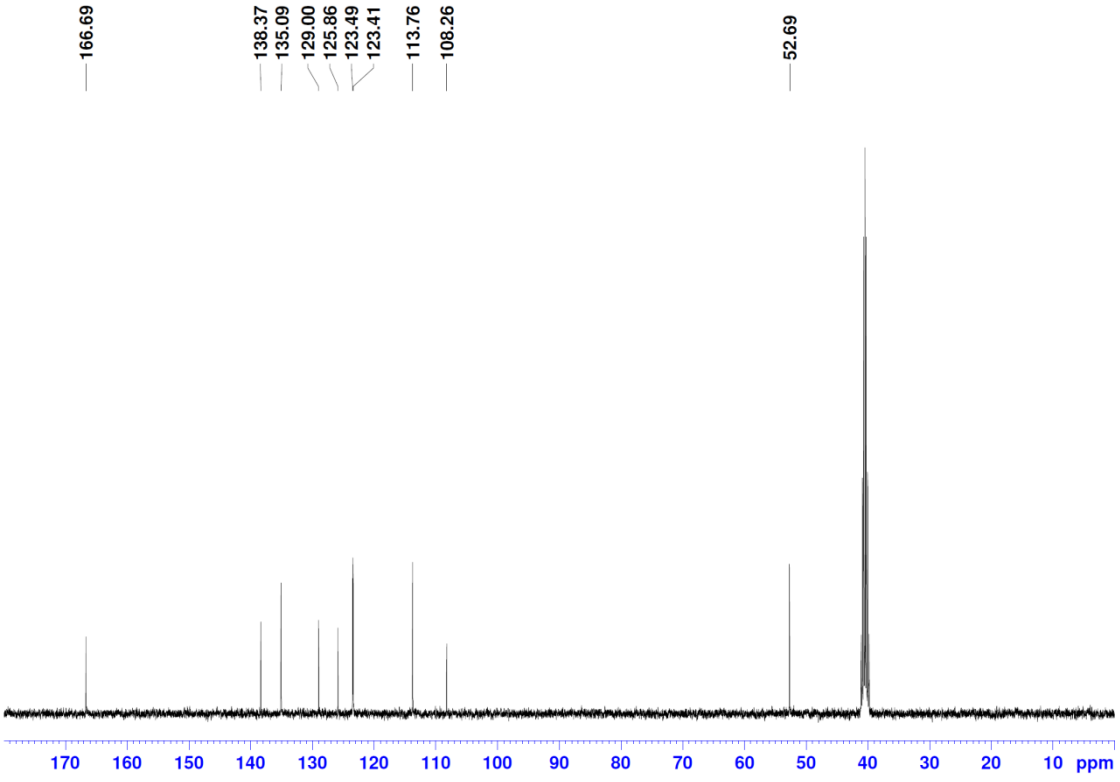
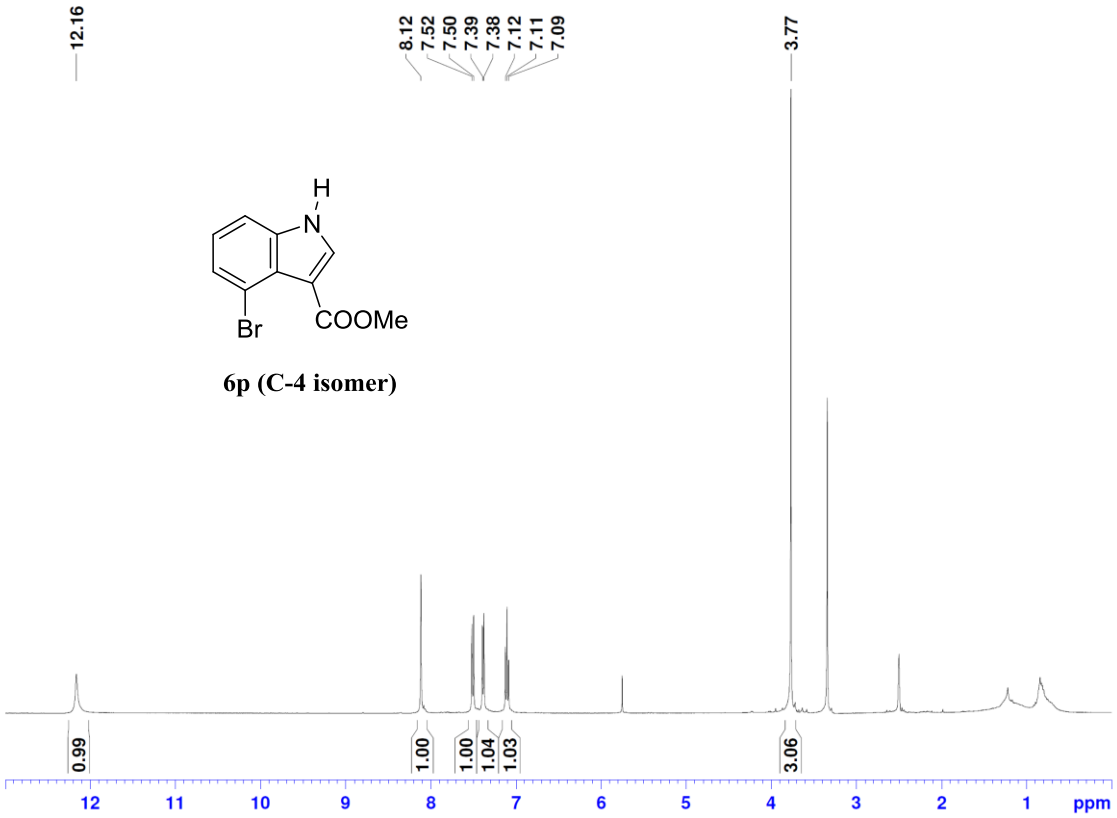
11
10
9
8
7
6
5
4
3
2
1
ppm
164.40
139.29
135.05
125.83
124.17
123.62
123.34
112.42
107.79
51.77
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

6o (C-4 isomer)

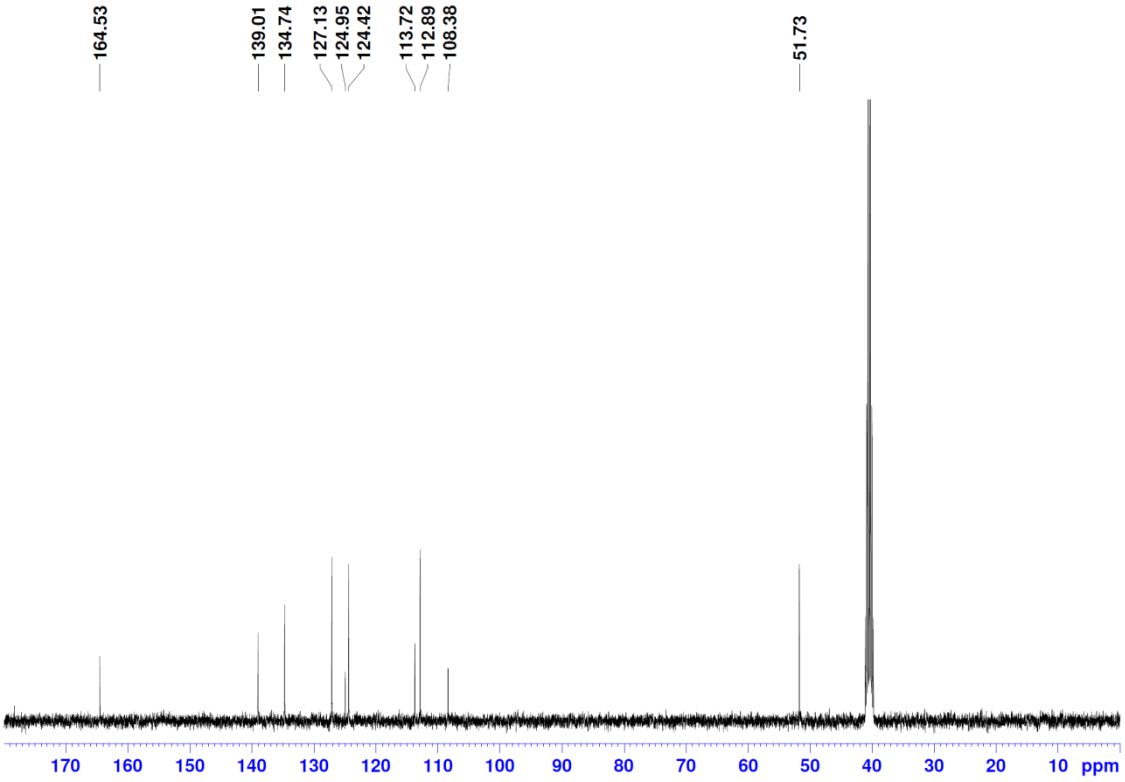

12.03
8.13
8.12
7.98
7.96
7.53
7.53
7.22
7.22
7.20
7.20
3.80
Cl
H
N
COOMe
0.94
1.00
1.00
0.98
1.00
3.00
12
11
10
9
8
7
6
5
4
3
2
1
ppm

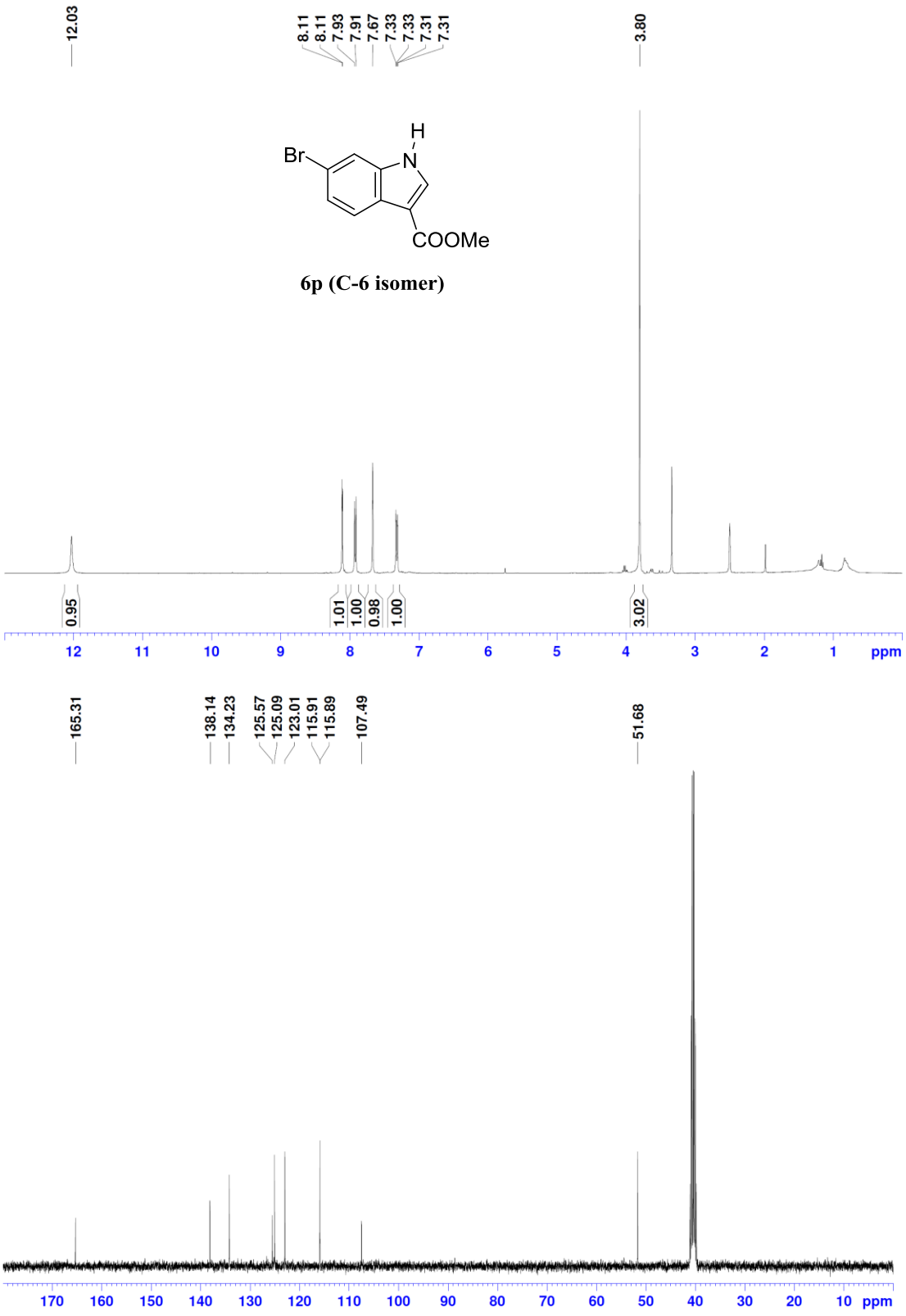
6o (C-6 isomer)


166.69
138.37
135.09
129.00
125.86
123.49
123.41
113.76
108.26
52.69
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

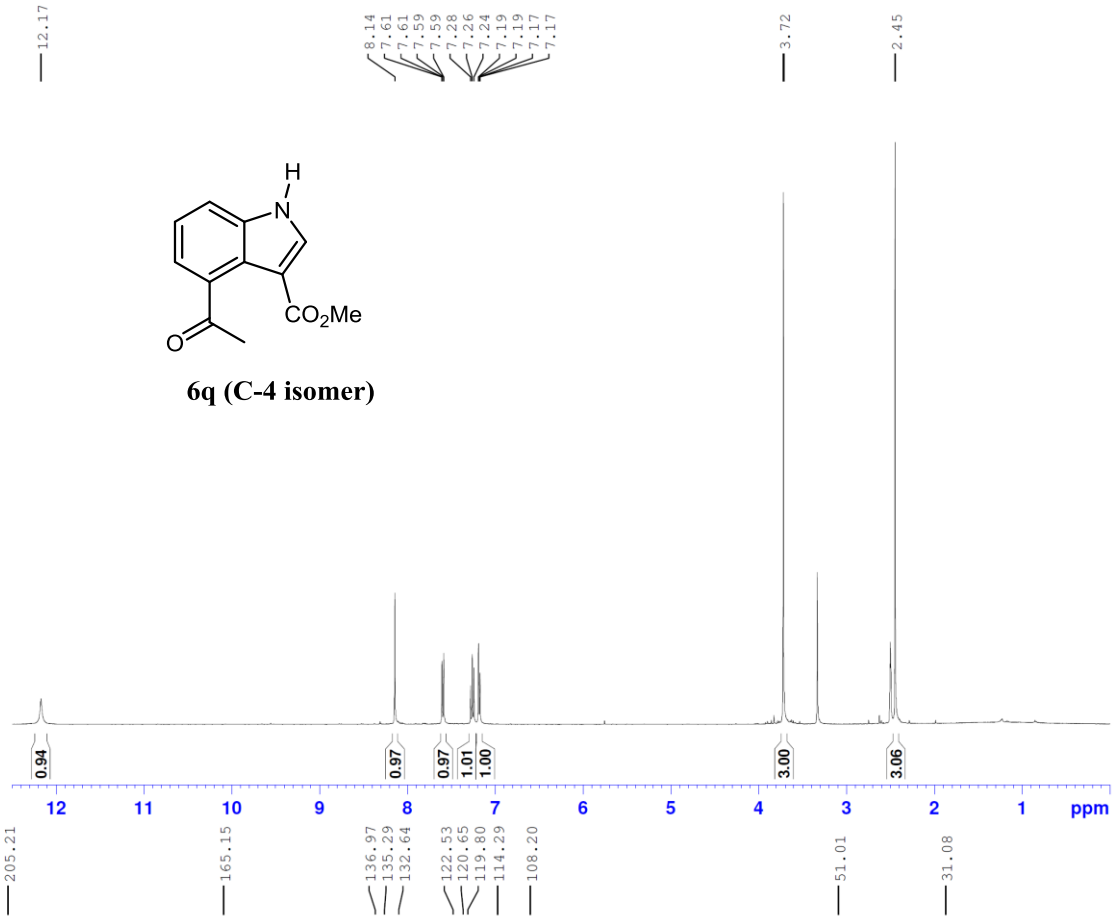

12.16
8.12
7.52
7.50
7.39
7.38
7.12
7.11
7.09
3.77
H
N
Br
COOMe
0.99
1.00
1.00
1.04
1.03
3.06
12
11
10
9
8
7
6
5
4
3
2
1
ppm

6p (C-4 isomer)

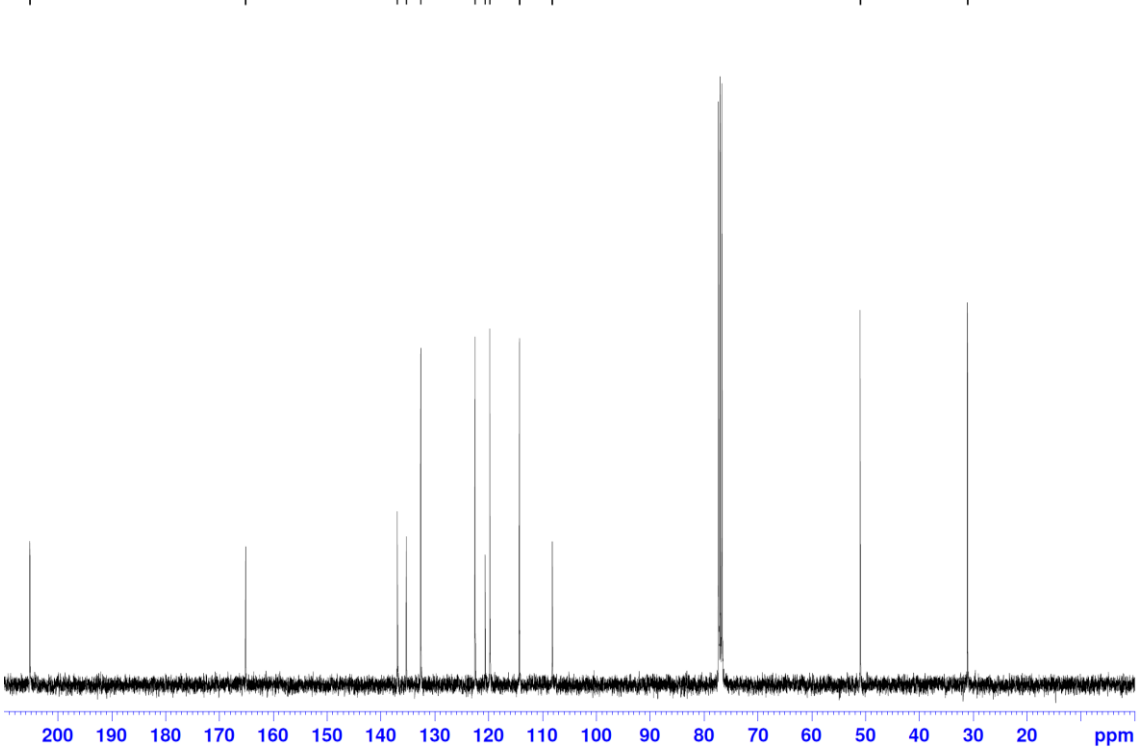

164.53
139.01
134.74
127.13
124.95
124.42
113.72
112.89
108.38
51.73
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

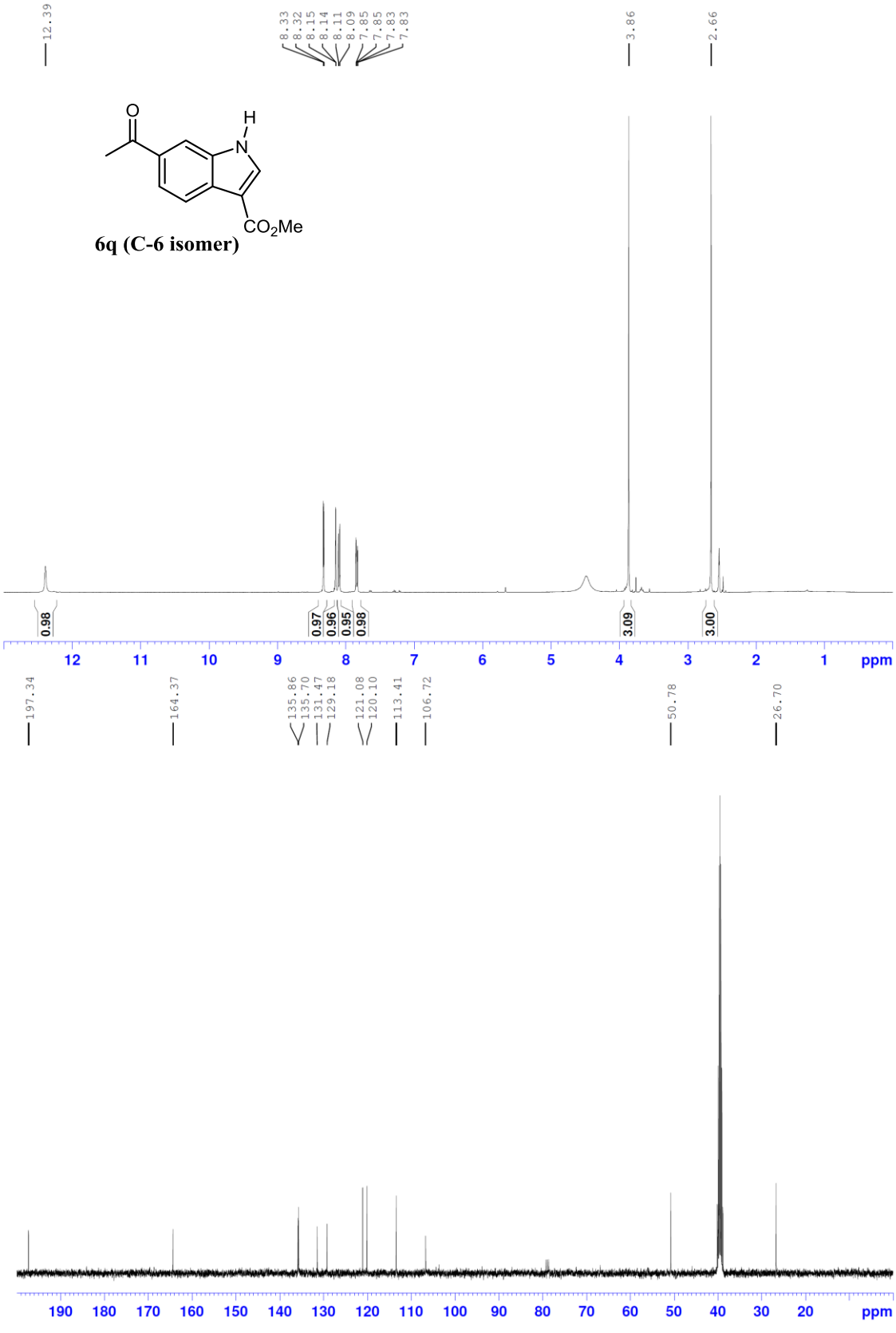

12.03
8.11
8.11
7.93
7.91
7.67
7.33
7.33
7.31
7.31
3.80
H
N
Br
COOMe
0.95
1.01
1.00
0.98
1.00
3.02
12
11
10
9
8
7
6
5
4
3
2
1
ppm
165.31
138.14
134.23
125.57
125.09
123.01
115.91
115.89
107.49
51.68
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

6p (C-6 isomer)

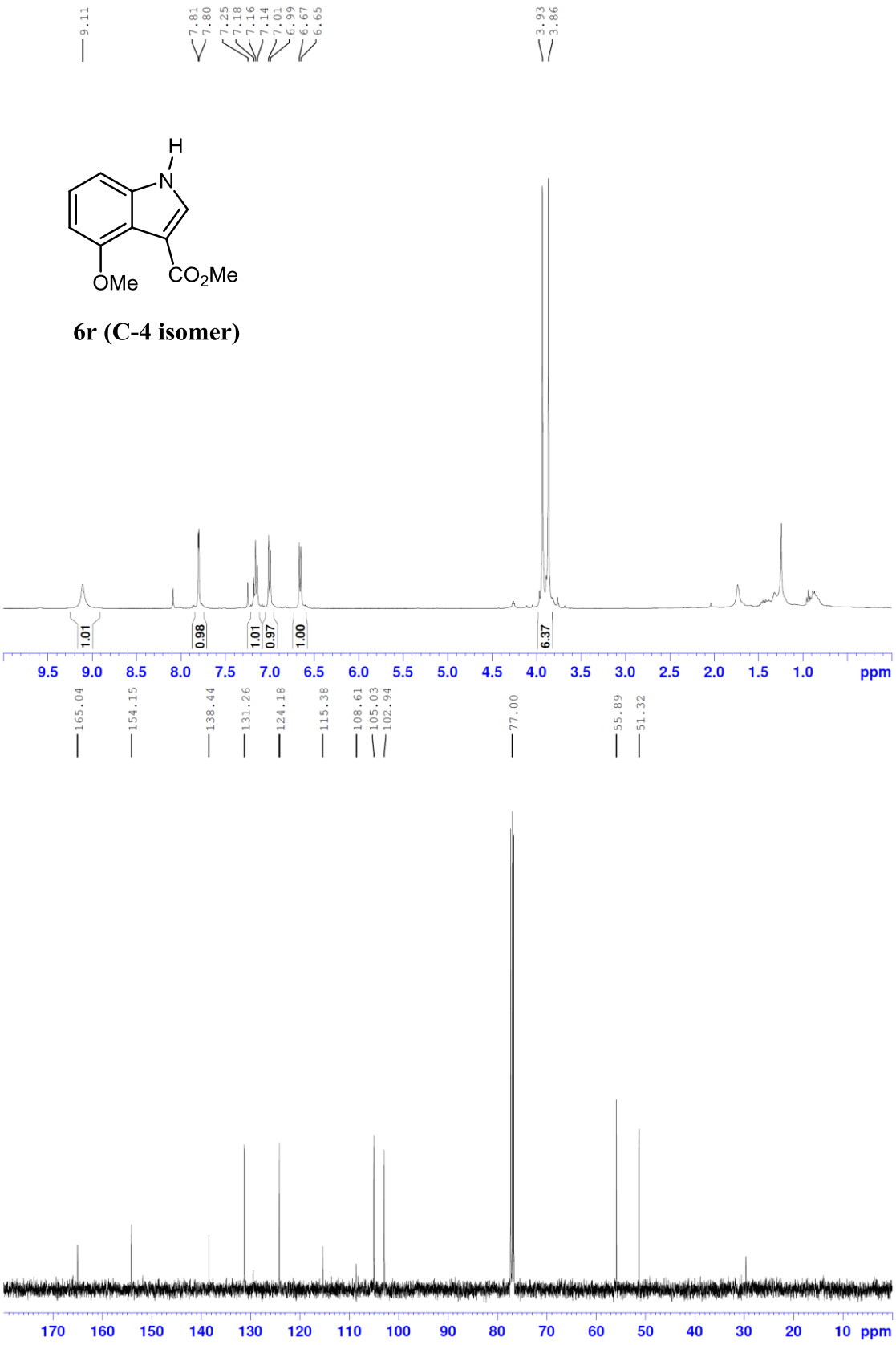

12.17
8.14
7.61
7.61
7.59
7.59
7.28
7.26
7.24
7.19
7.19
7.17
7.17
3.72
2.45
H
N
CO2Me
O
0.94
0.97
0.97
1.01
1.00
3.00
3.06
12
11
10
9
8
7
6
5
4
3
2
1
ppm

6q (C-4 isomer)

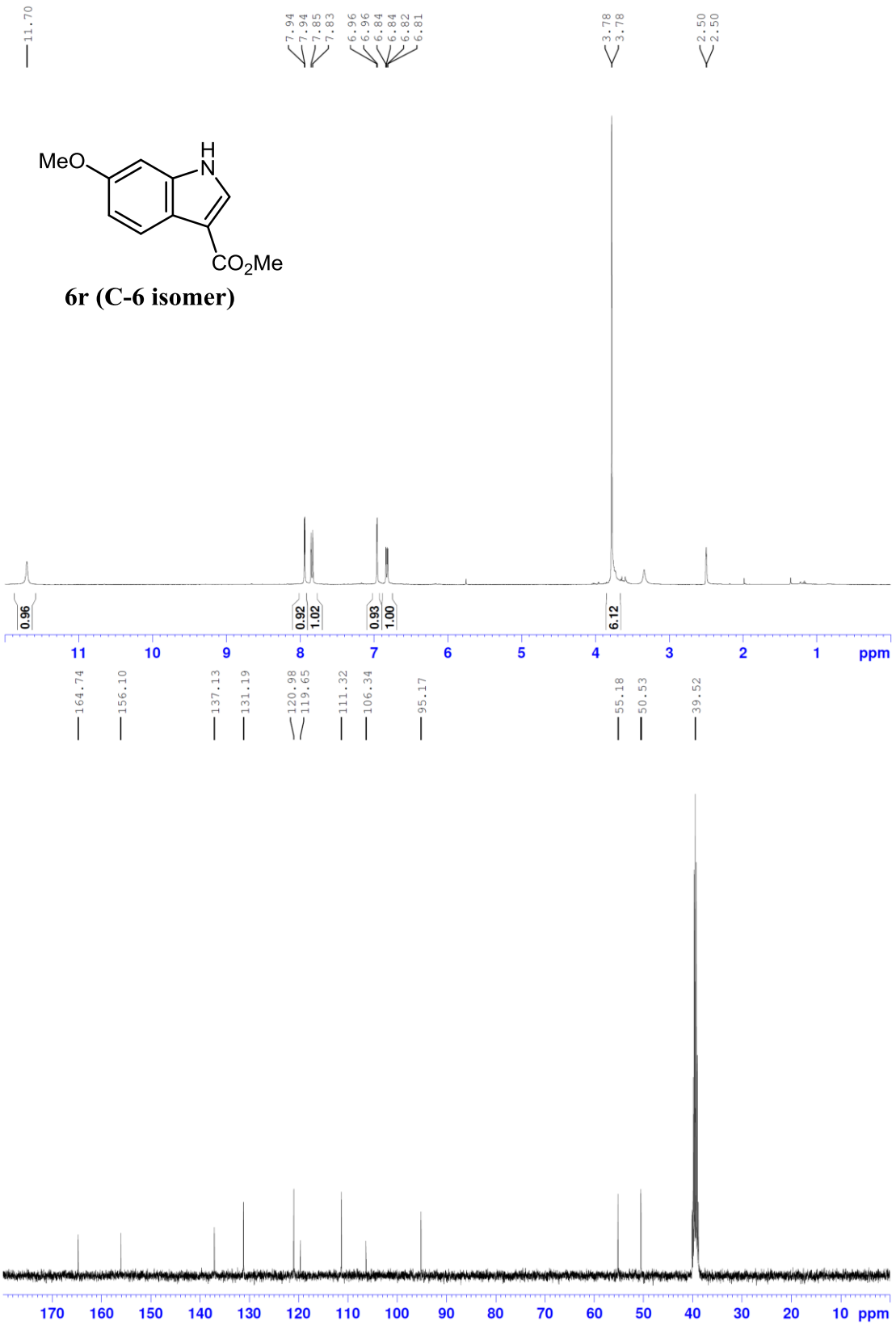

205.21
165.15
136.97
135.29
132.64
122.53
120.65
119.80
114.29
108.20
51.01
31.08
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm


12.39
8.33
8.32
8.15
8.14
8.11
8.09
7.85
7.85
7.83
7.83
3.86
2.66
O
H
N
CO2Me
0.98
0.97
0.96
0.95
0.98
3.09
3.00
12
11
10
9
8
7
6
5
4
3
2
1
ppm
197.34
164.37
135.86
135.70
131.47
129.18
121.08
120.10
113.41
106.72
50.78
26.70
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm

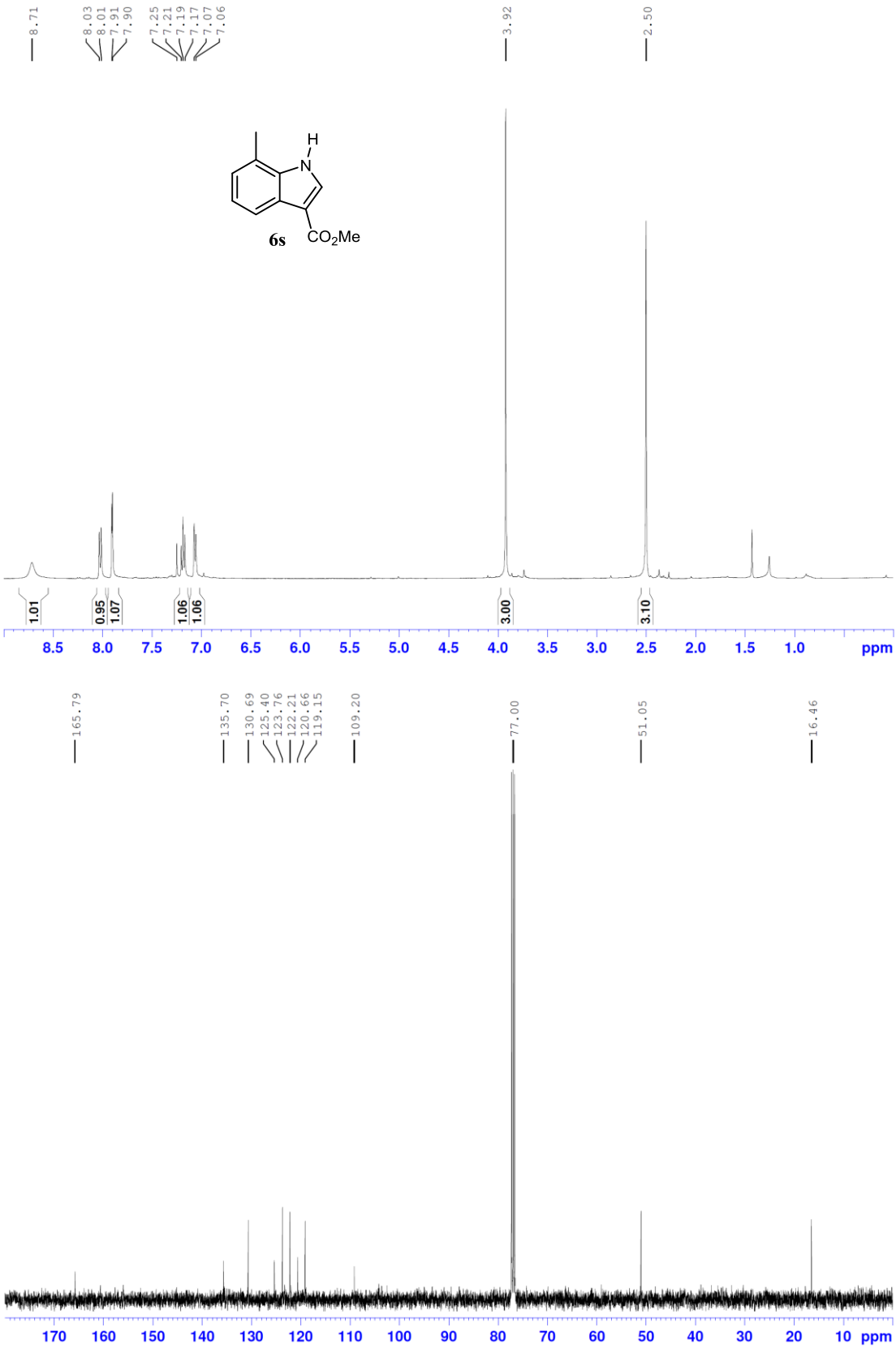
6q (C-6 isomer)

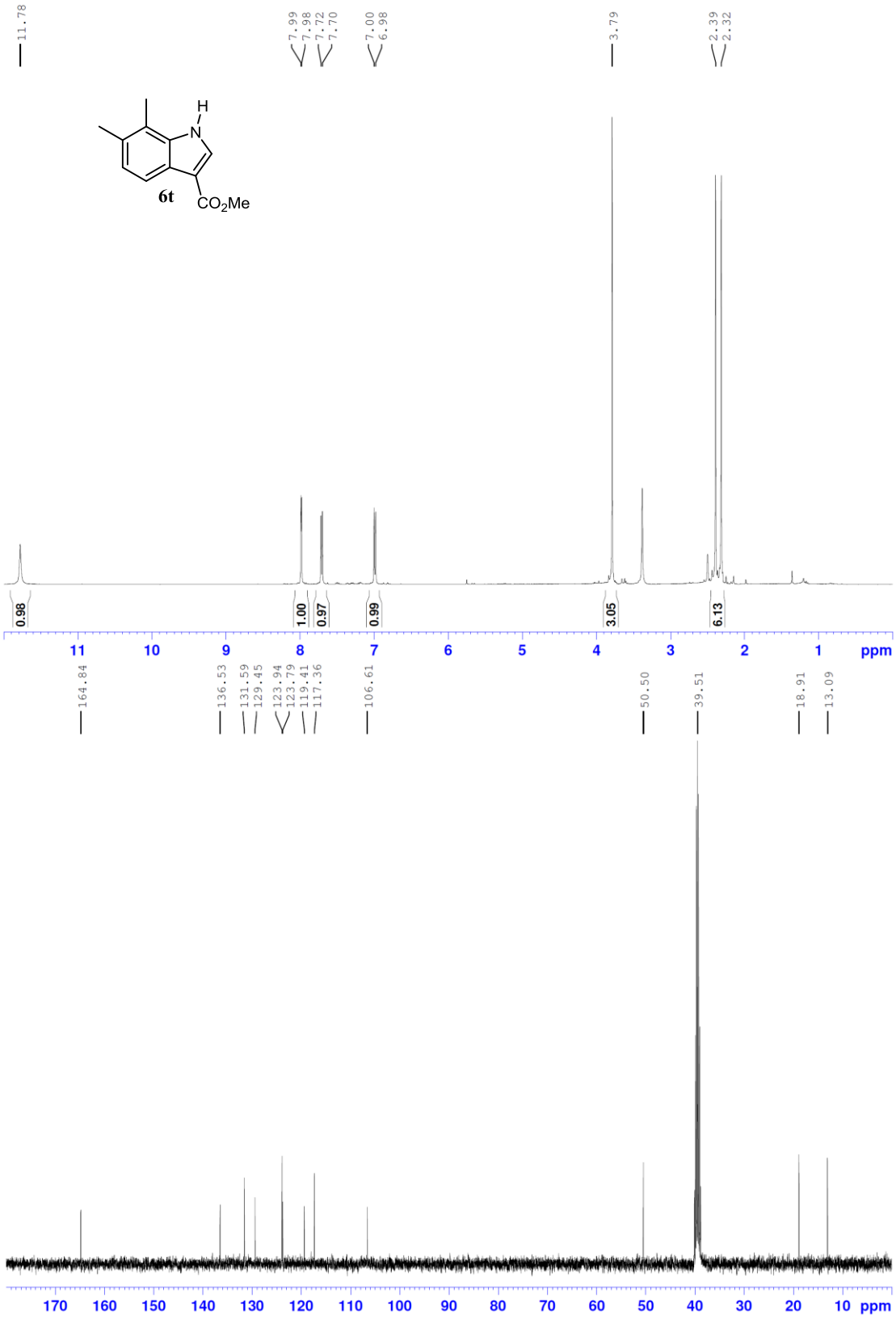

9.11
7.81
7.80
7.25
7.18
7.16
7.14
7.01
6.99
6.67
6.65
3.93
3.86
H
N
OMe
CO2Me
1.01
0.98
1.01
0.97
1.00
6.37
9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 ppm
165.04
154.15
138.44
131.26
124.18
115.38
108.61
105.03
102.94
77.00
55.89
51.32
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

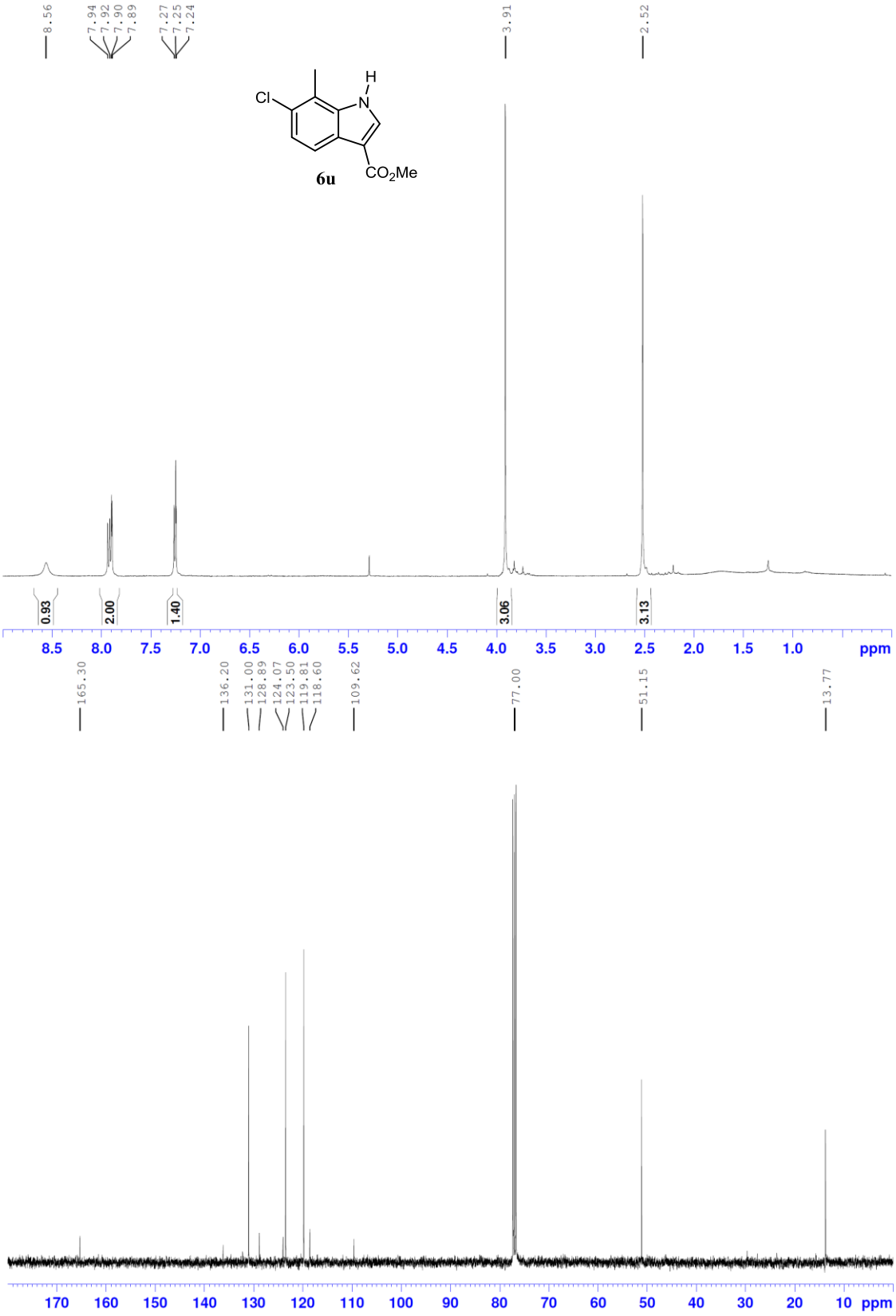
6r (C-4 isomer)

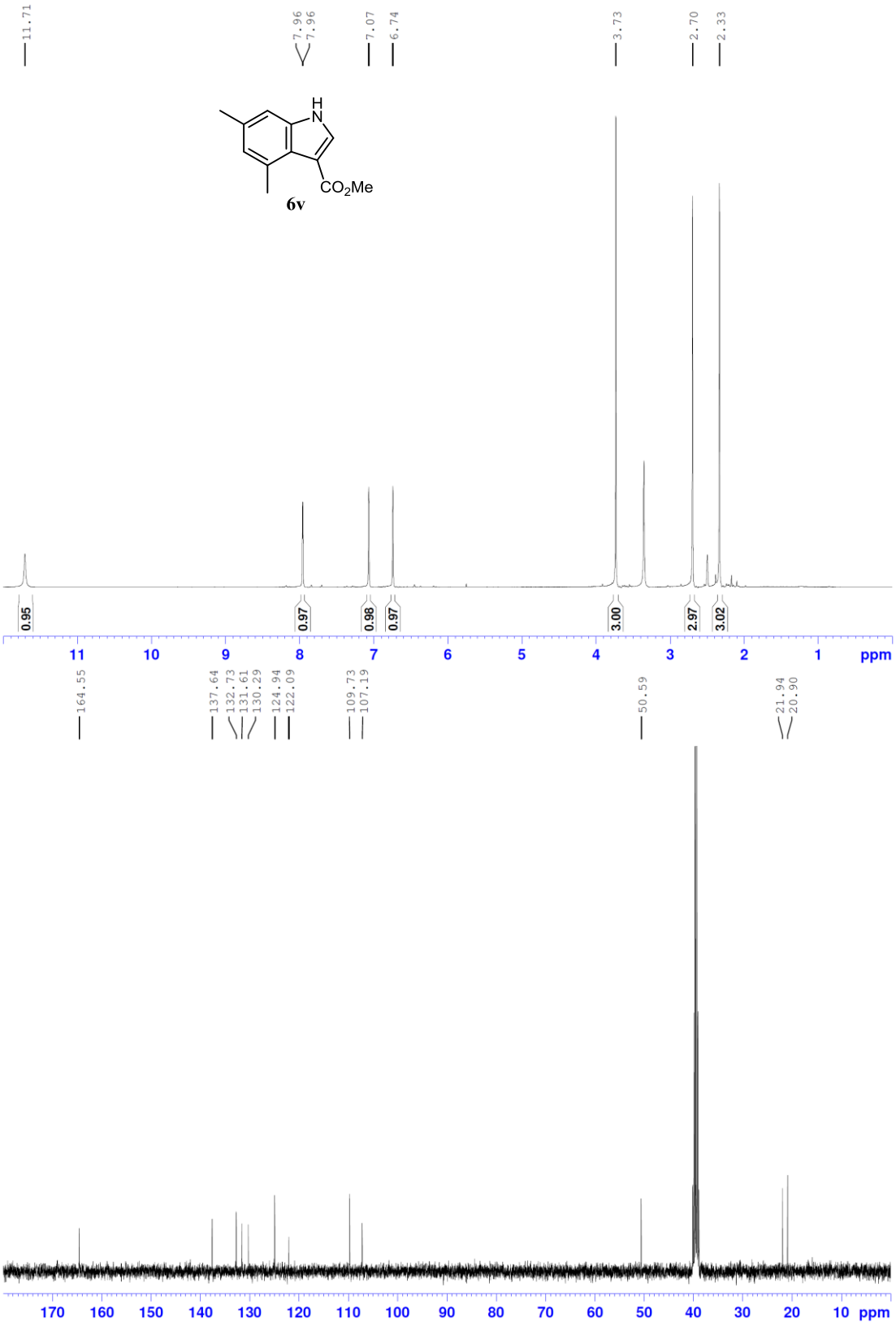

11.70
7.94
7.94
7.85
7.83
6.96
6.96
6.84
6.84
6.82
6.81
3.78
3.78
2.50
2.50
MeO
H
N
CO2Me
0.96
0.92
1.02
0.93
1.00
6.12
11
10
9
8
7
6
5
4
3
2
1
ppm
164.74
156.10
137.13
131.19
120.98
119.65
111.32
106.34
95.17
55.18
50.53
39.52
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

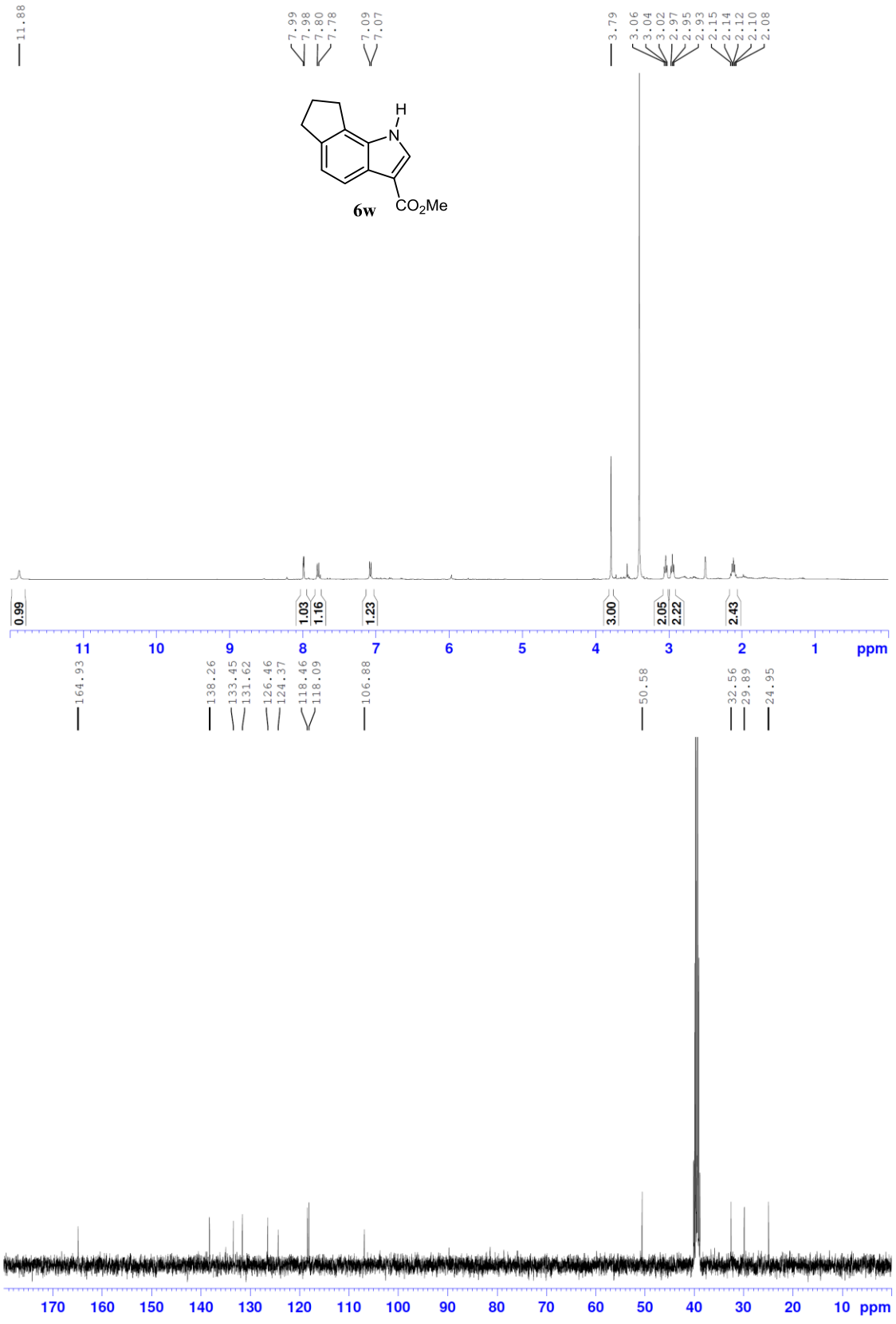
6r (C-6 isomer)

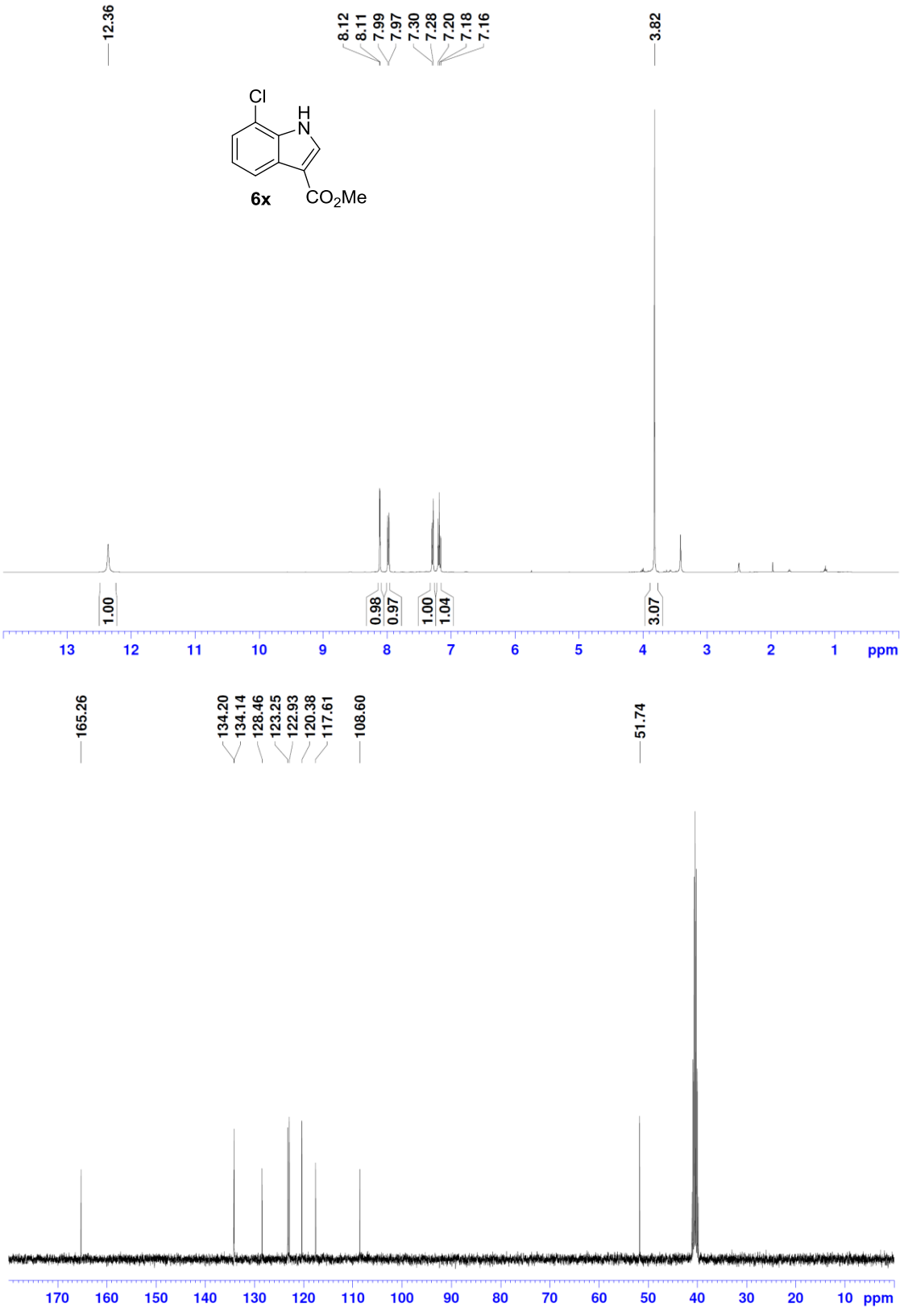

8.71
8.03
8.01
7.91
7.90
7.25
7.21
7.19
7.17
7.07
7.06
3.92
2.50
H
N
CO2Me
6s
1.01
0.95
1.07
1.06
1.06
3.00
3.10
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm
165.79
135.70
130.69
125.40
123.76
122.21
120.66
119.15
109.20
77.00
51.05
16.46
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

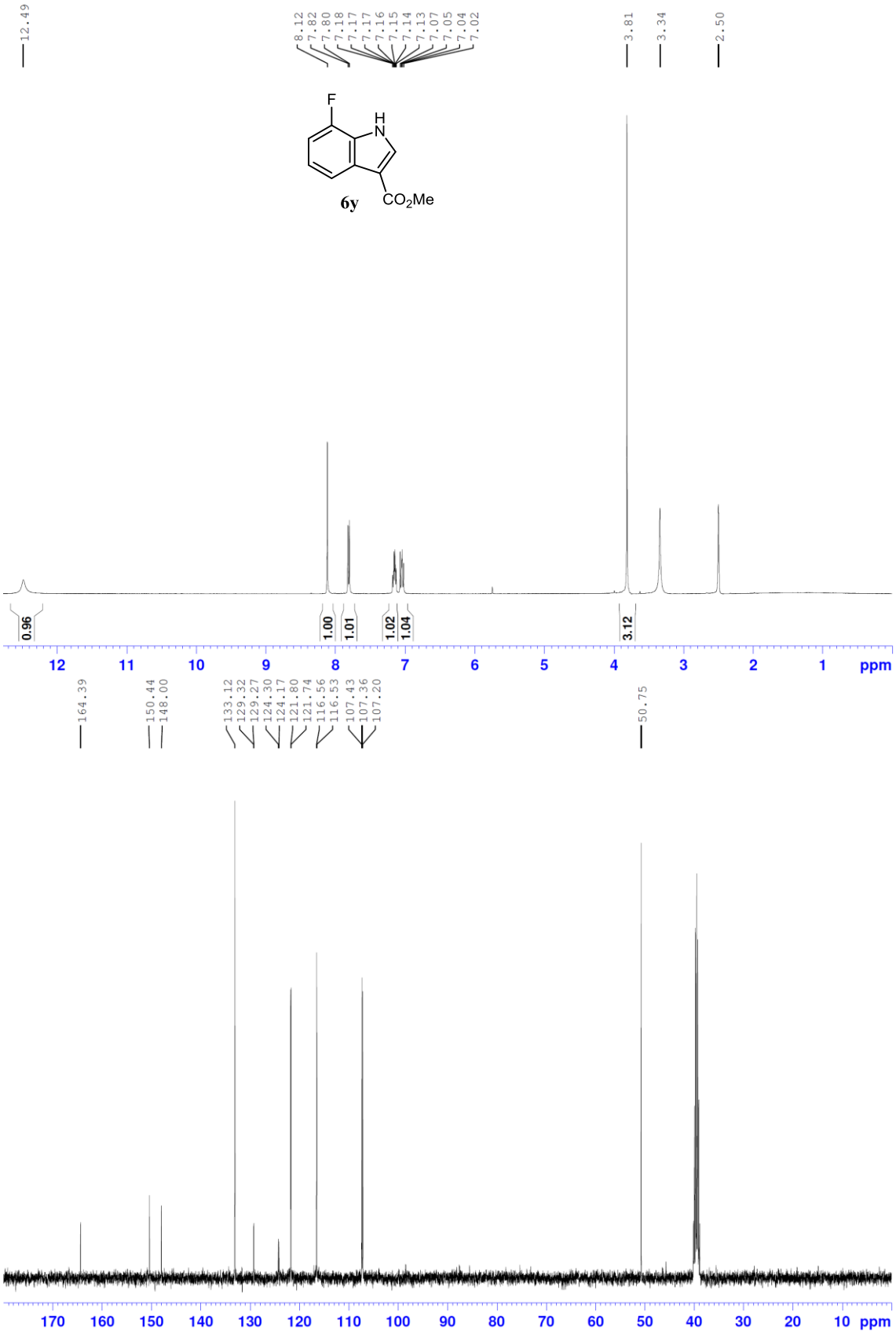

11.78
7.99
7.98
7.72
7.70
7.00
6.98
3.79
2.39
2.32
H
N
6t
CO2Me
0.98
1.00
0.97
0.99
3.05
6.13
11
10
9
8
7
6
5
4
3
2
1
ppm
164.84
136.53
131.59
129.45
123.94
123.79
119.41
117.36
106.61
50.50
39.51
18.91
13.09
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

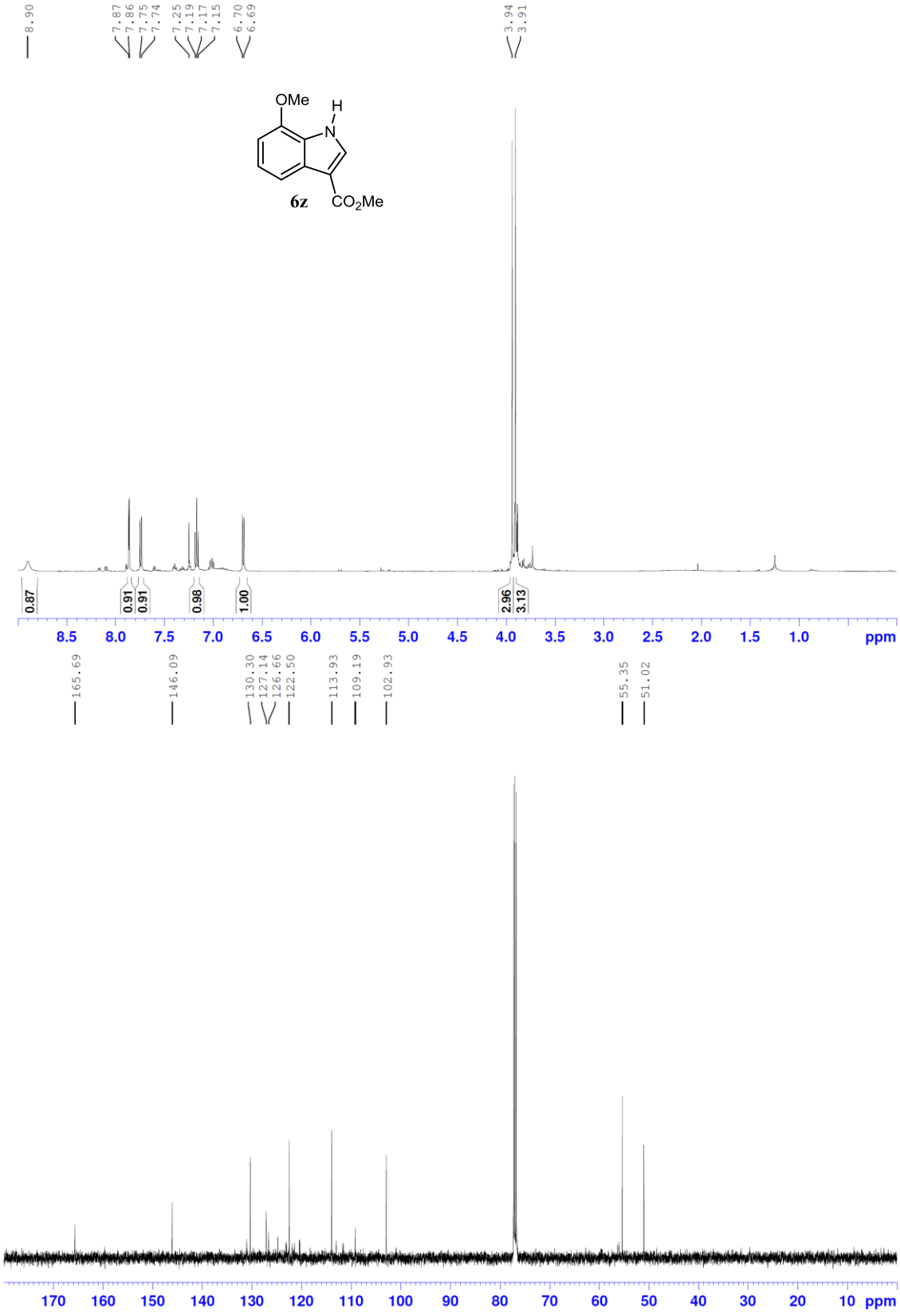

8.56
7.94
7.92
7.90
7.89
7.27
7.25
7.24
3.91
2.52
Cl
H
N
CO2Me
6u
0.93
2.00
1.40
3.06
3.13
8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 ppm
165.30
136.20
131.00
128.89
124.07
123.50
119.81
118.60
109.62
77.00
51.15
13.77
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

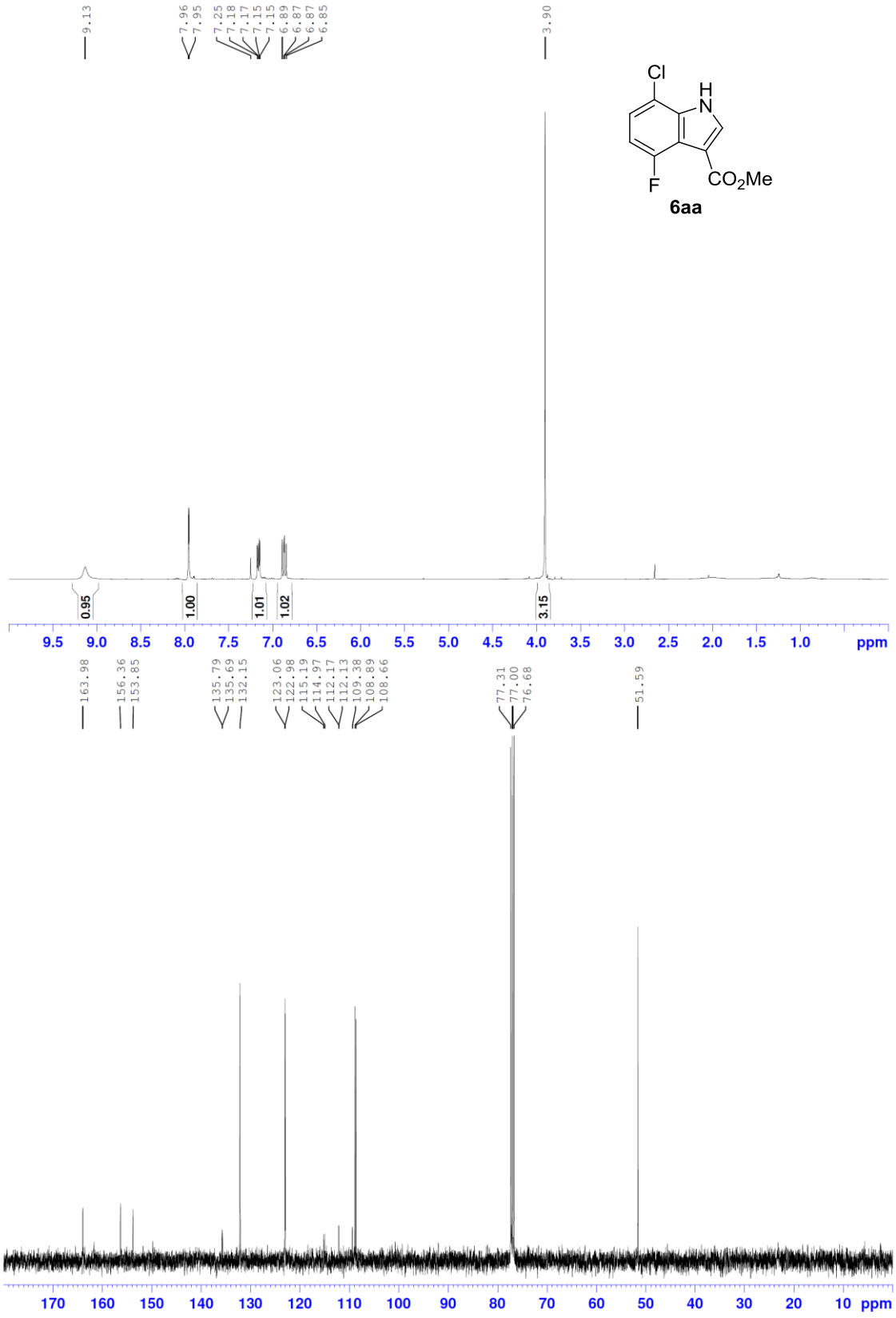

11.71
7.96
7.96
7.07
6.74
3.73
2.70
2.33
H
N
CO2Me
6v
0.95
0.97
0.98
0.97
3.00
2.97
3.02
11
10
9
8
7
6
5
4
3
2
1
ppm
164.55
137.64
132.73
131.61
130.29
124.94
122.09
109.73
107.19
50.59
21.94
20.90
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

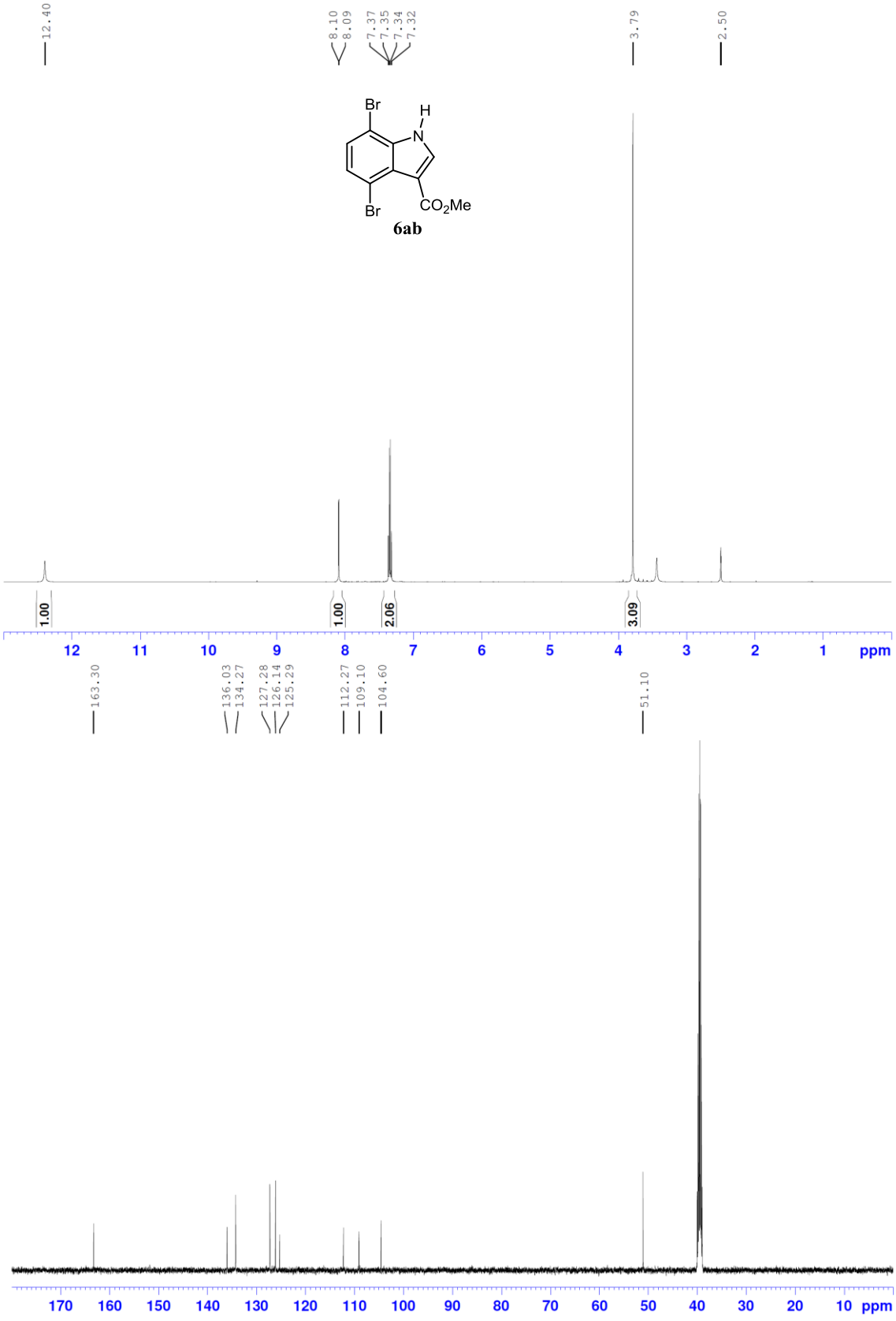

11.88
7.99
7.98
7.80
7.78
7.09
7.07
3.79
3.06
3.04
3.02
2.97
2.95
2.93
2.15
2.14
2.12
2.10
2.08
H
N
CO2Me
6w
0.99
1.03
1.16
1.23
3.00
2.05
2.22
2.43
11
10
9
8
7
6
5
4
3
2
1
ppm
164.93
138.26
133.45
131.62
126.46
124.37
118.46
118.09
106.88
50.58
32.56
29.89
24.95
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

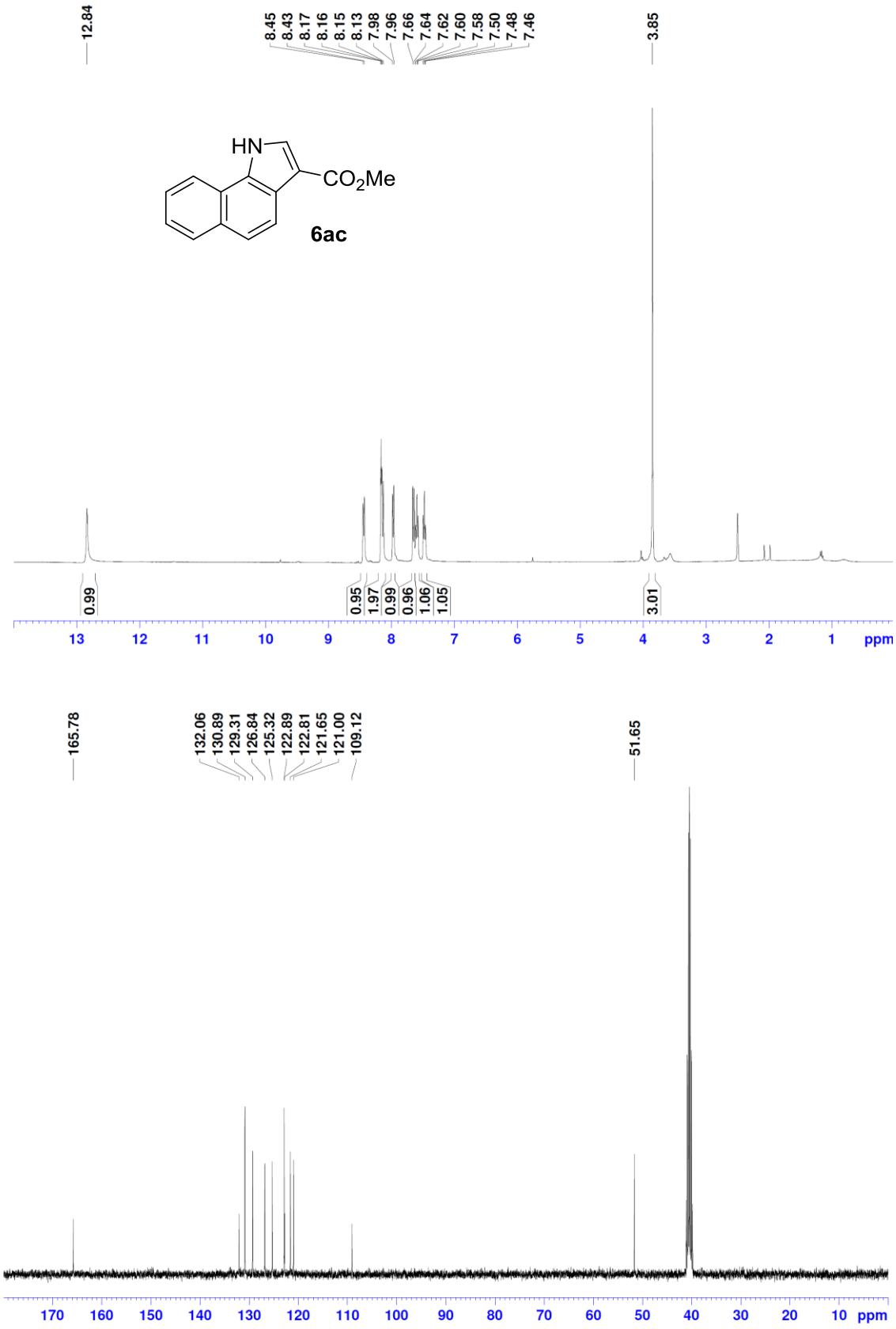

12.36
8.12
8.11
7.99
7.97
7.30
7.28
7.20
7.18
7.16
3.82
Cl
H
N
6x
CO2Me
1.00
0.98
0.97
1.00
1.04
3.07
13 12 11 10 9 8 7 6 5 4 3 2 1 ppm
165.26
134.20
134.14
128.46
123.25
122.93
120.38
117.61
108.60
51.74
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

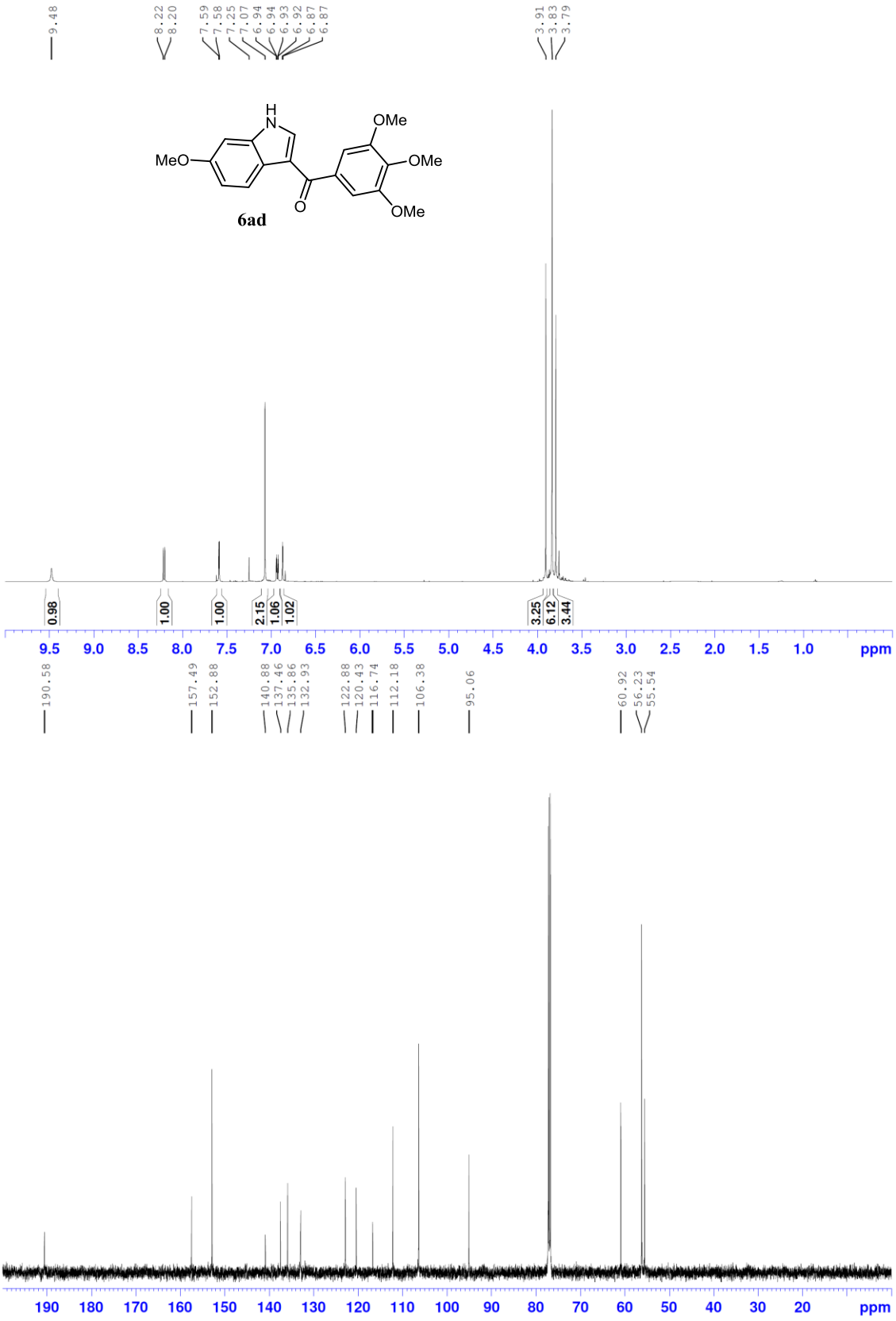

12.49
8.12
7.82
7.80
7.18
7.17
7.17
7.16
7.15
7.14
7.13
7.07
7.05
7.04
7.02
3.81
3.34
2.50
F
H
N
CO2Me
6y
0.96
1.00
1.01
1.02
1.04
3.12
12
11
10
9
8
7
6
5
4
3
2
1
ppm
164.39
150.44
148.00
133.12
129.32
129.27
124.30
124.17
121.80
121.74
116.56
116.53
107.43
107.36
107.20
50.75
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

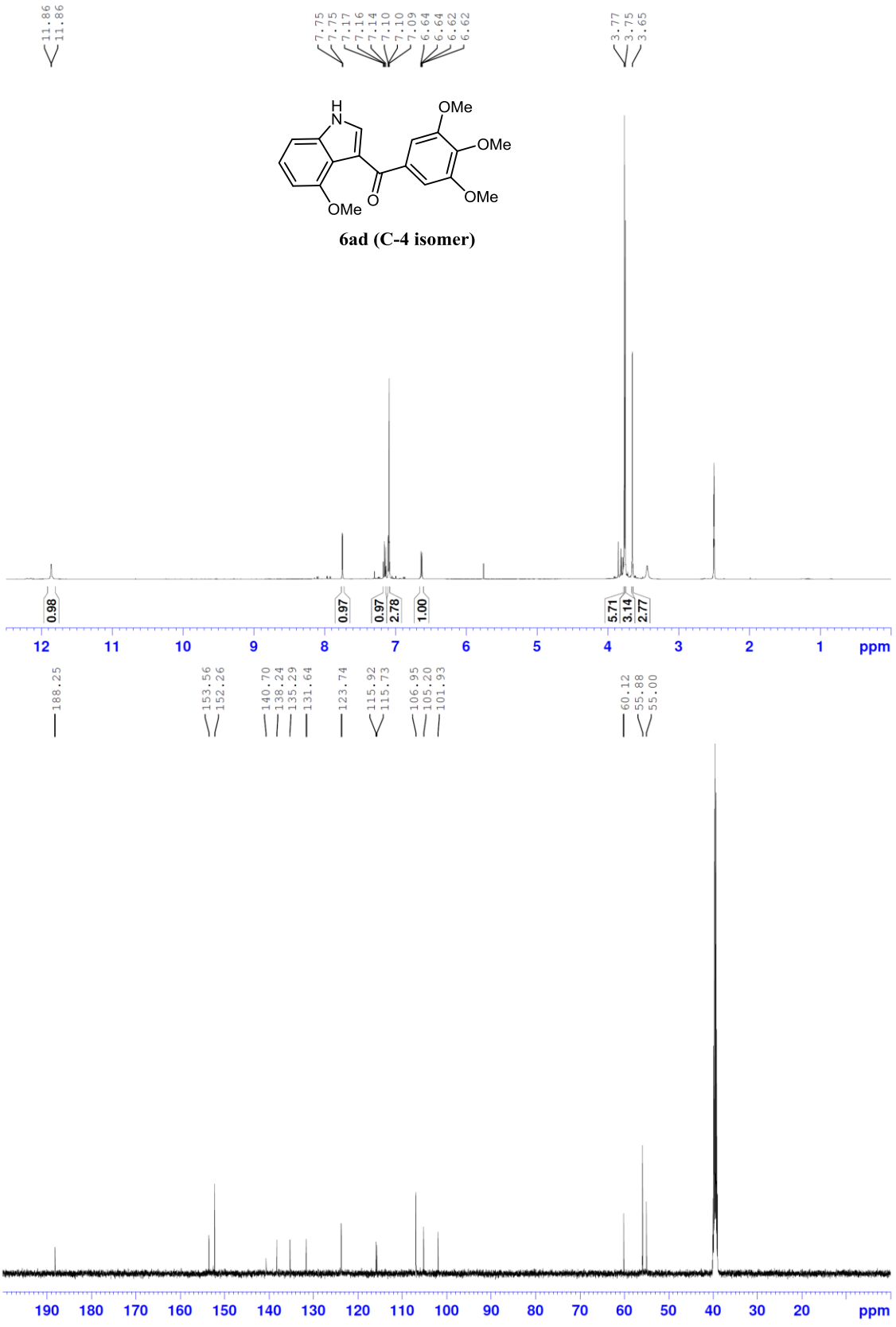

8.90
7.87
7.86
7.75
7.74
7.25
7.19
7.17
7.15
6.70
6.69
3.94
3.91
OMe
H
N
6z
CO2Me
0.87
0.91
0.91
0.98
1.00
2.96
3.13
8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 ppm
165.69
146.09
130.30
127.14
126.66
122.50
113.93
109.19
102.93
55.35
51.02
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm


9.13
7.96
7.95
7.25
7.18
7.17
7.15
7.15
6.89
6.87
6.87
6.85
3.90
Cl
H
N
F
CO2Me
6aa
0.95
1.00
1.01
1.02
3.15
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 ppm
163.98
156.36
153.85
135.79
135.69
132.15
123.06
122.98
115.19
114.97
112.17
112.13
109.38
108.89
108.66
77.31
77.00
76.68
51.59
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

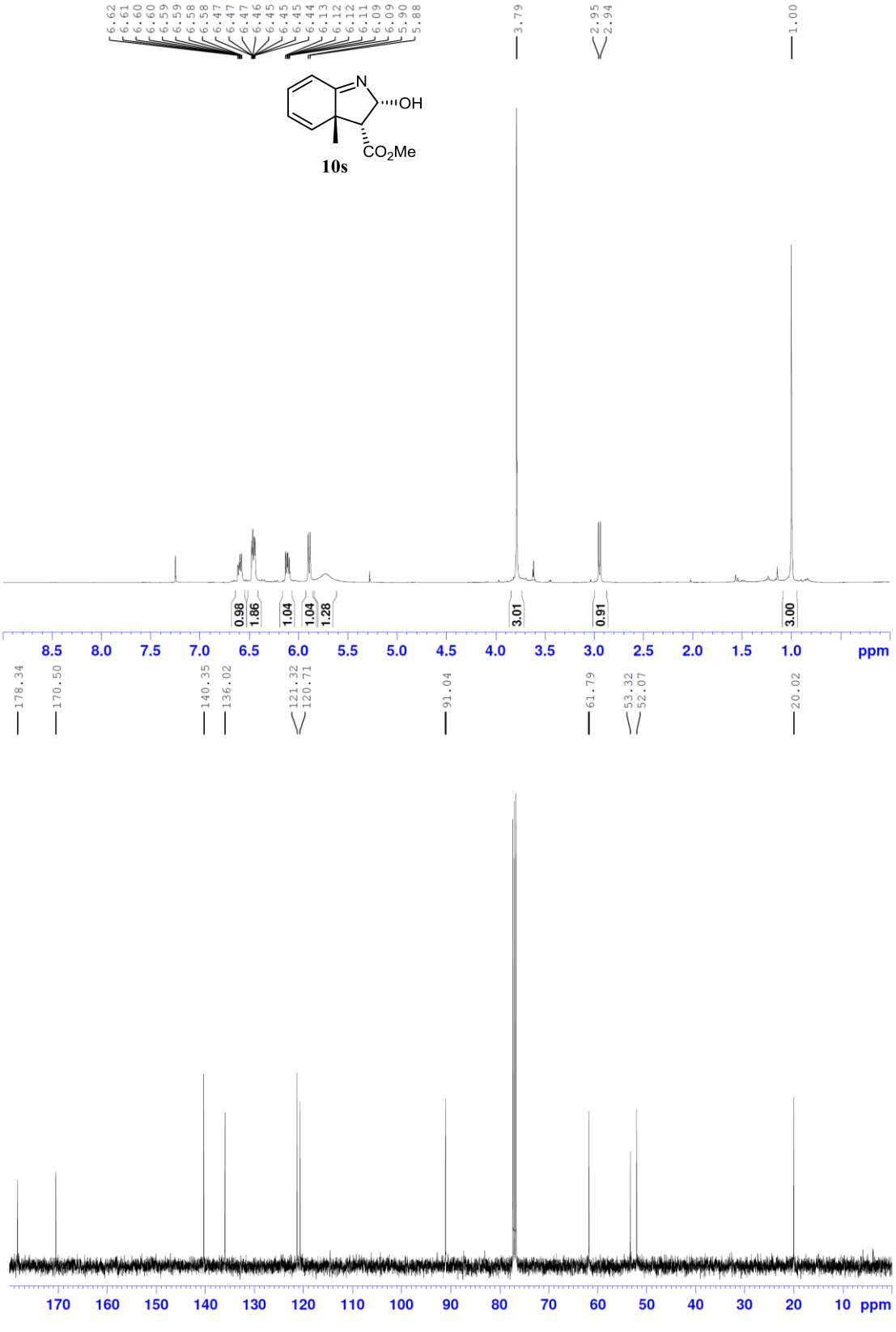

12.40
8.10
8.09
7.37
7.35
7.34
7.32
3.79
2.50
Br
H
N
Br
CO2Me
6ab
1.00
1.00
2.06
3.09
12
11
10
9
8
7
6
5
4
3
2
1
ppm
163.30
136.03
134.27
127.28
126.14
125.29
112.27
109.10
104.60
51.10
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

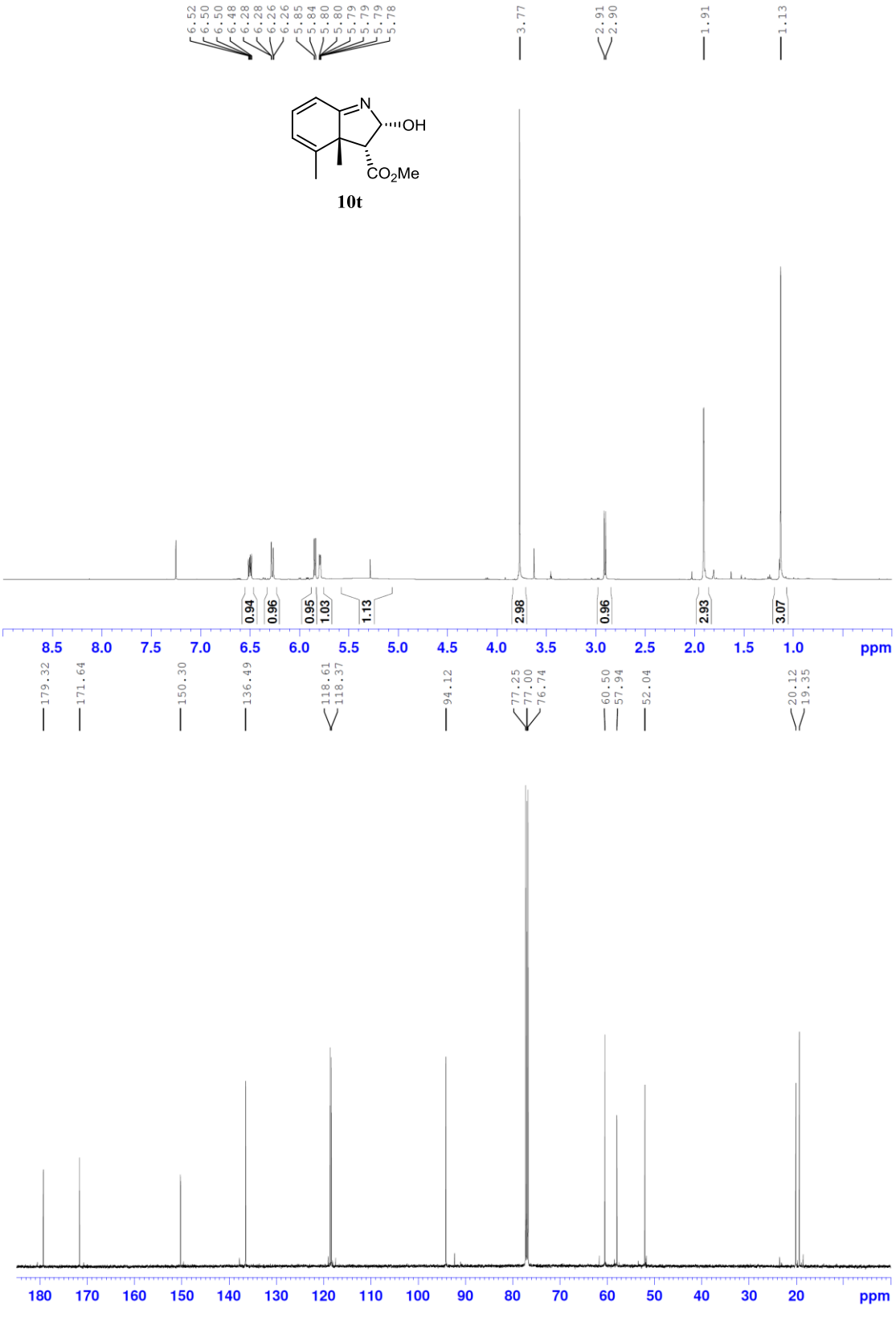

12.84
8.45
8.43
8.17
8.16
8.15
8.13
7.98
7.96
7.66
7.64
7.62
7.60
7.58
7.50
7.48
7.46
3.85
HN
CO2Me
6ac
0.99
0.95
1.97
0.99
0.96
1.06
1.05
3.01
13
12
11
10
9
8
7
6
5
4
3
2
1
ppm
165.78
132.06
130.89
129.31
126.84
125.32
122.89
122.81
121.65
121.00
109.12
51.65
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm


9.48
8.22
8.20
7.59
7.58
7.25
7.07
6.94
6.94
6.93
6.92
6.87
6.87
3.91
3.83
3.79
H
N
MeO
OMe
OMe
OMe
O
6ad
0.98
1.00
1.00
2.15
1.06
1.02
3.25
6.12
3.44
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 ppm
190.58
157.49
152.88
140.88
137.46
135.86
132.93
122.88
120.43
116.74
112.18
106.38
95.06
60.92
56.23
55.54
190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 ppm

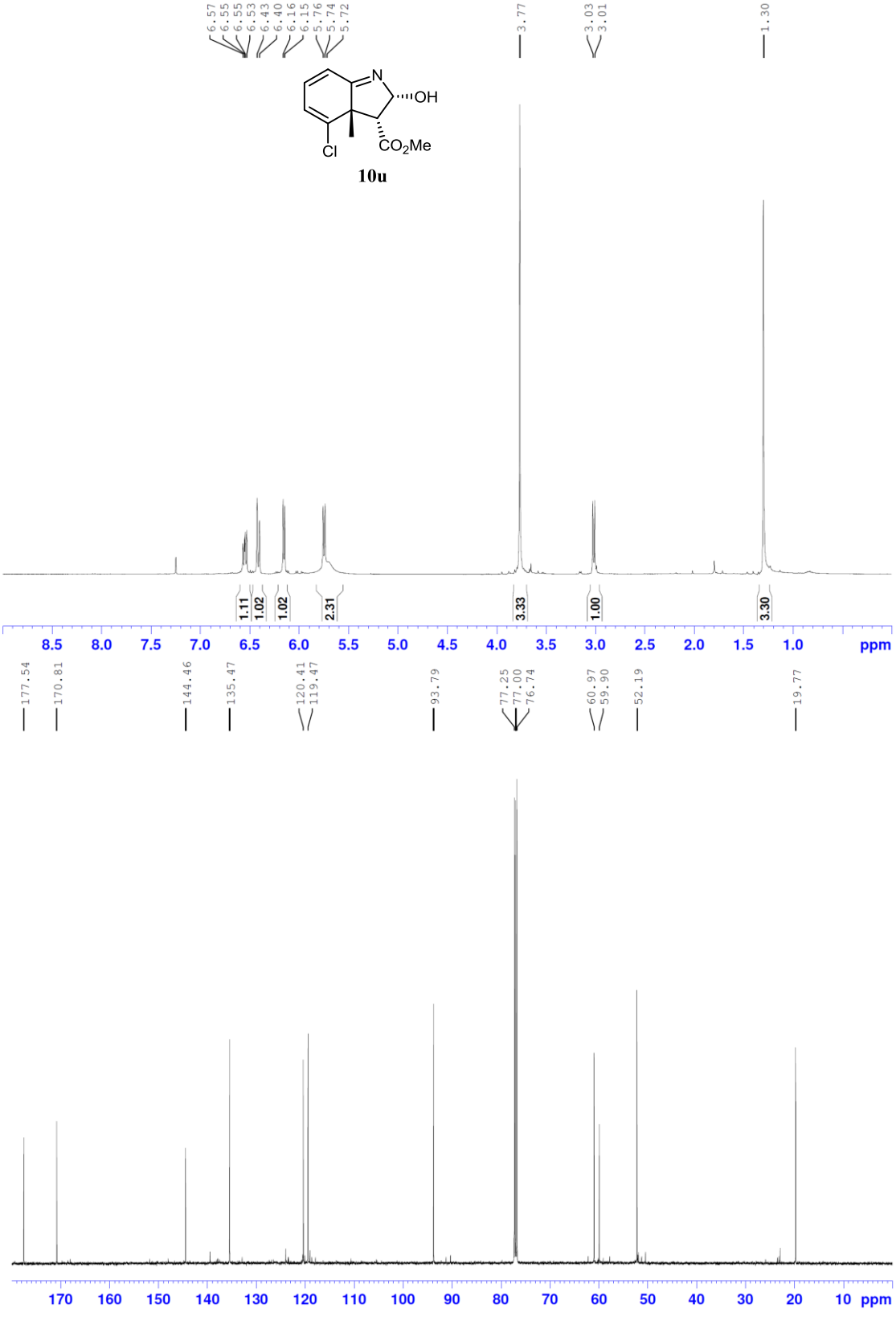


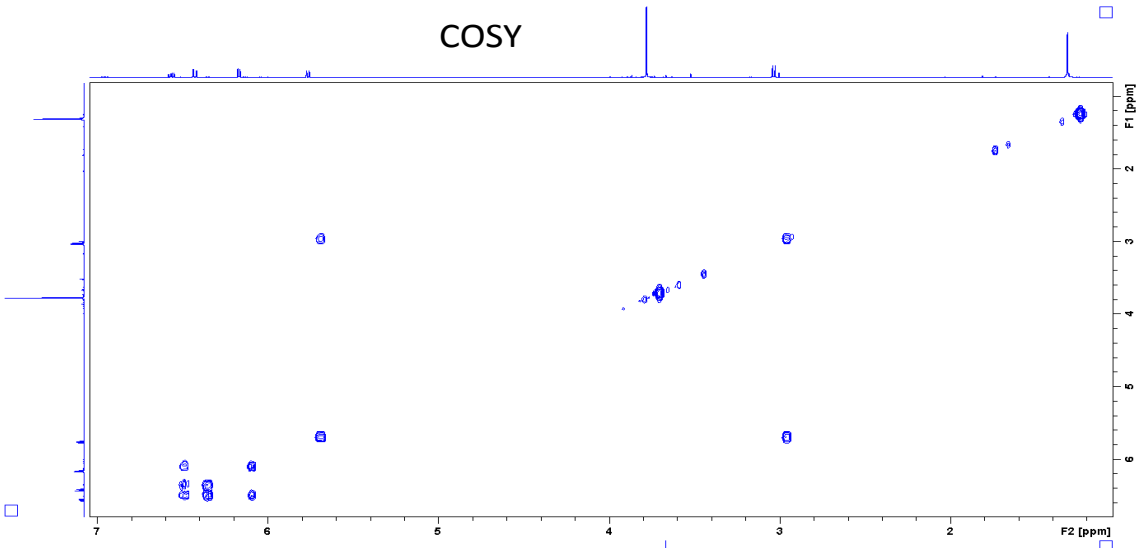
6ad (C-4 isomer)

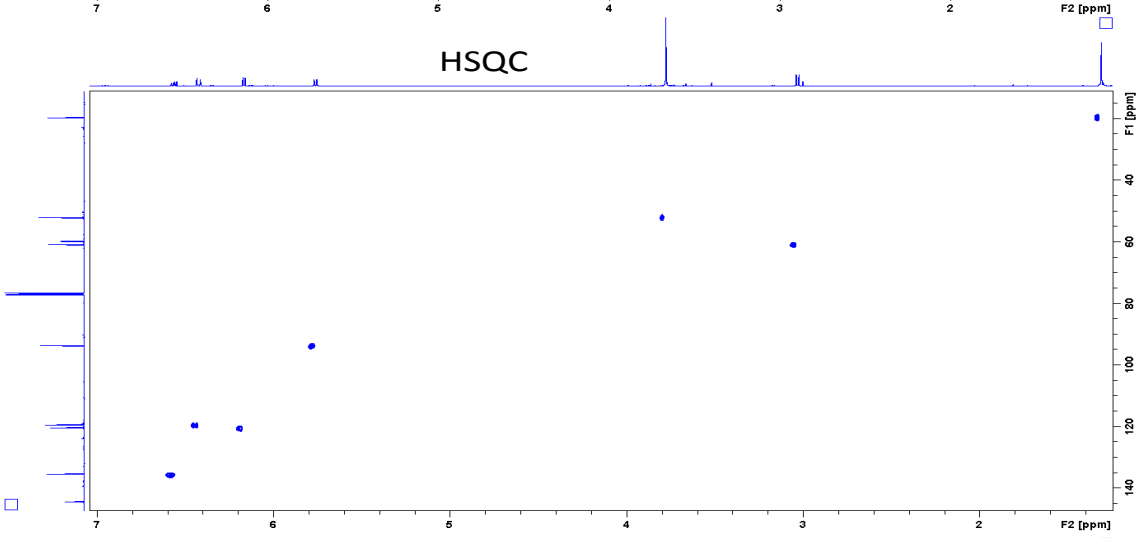

6.62
6.61
6.60
6.60
6.59
6.59
6.58
6.58
6.47
6.47
6.47
6.46
6.45
6.45
6.45
6.44
6.13
6.12
6.12
6.11
6.09
6.09
5.90
5.88
3.79
2.95
2.94
1.00
N
OH
CO2Me
10s
0.98
1.86
1.04
1.04
1.28
3.01
0.91
3.00
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm
178.34
170.50
140.35
136.02
121.32
120.71
91.04
61.79
53.32
52.07
20.02
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

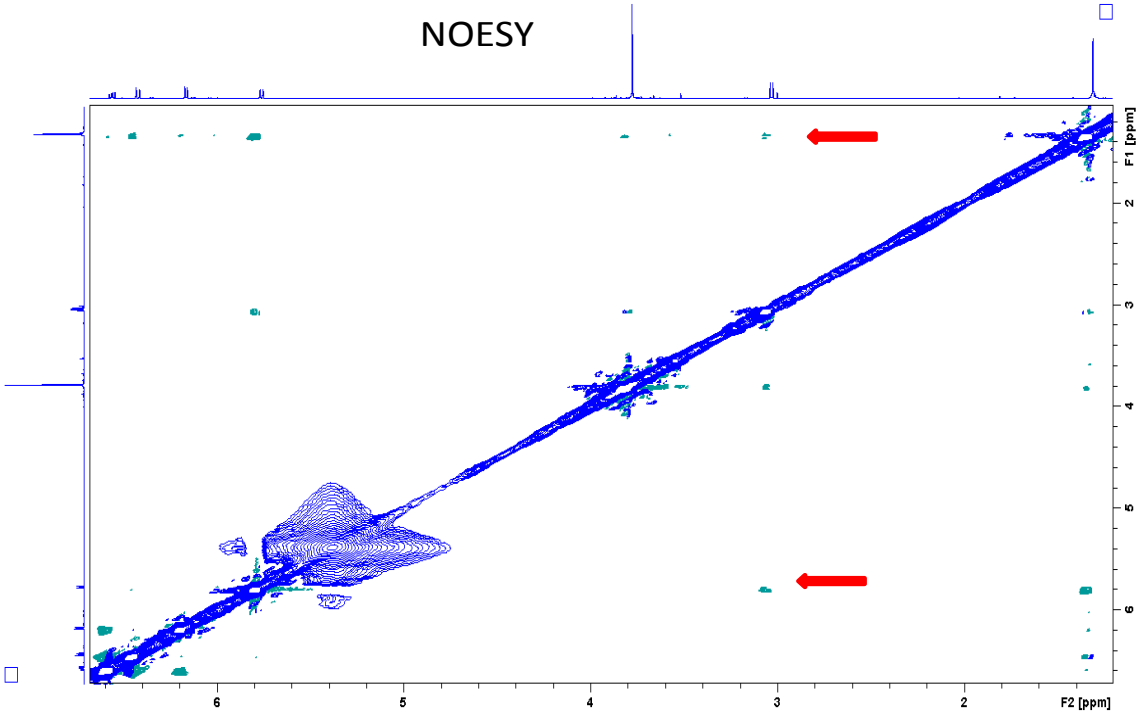

6.52
6.50
6.50
6.48
6.28
6.28
6.26
6.26
5.85
5.84
5.80
5.80
5.79
5.79
5.79
5.78
3.77
2.91
2.90
1.91
1.13
N
OH
CO2Me
0.94
0.96
0.95
1.03
1.13
2.98
0.96
2.93
3.07
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm
179.32
171.64
150.30
136.49
118.61
118.37
94.12
77.25
77.00
76.74
60.50
57.94
52.04
20.12
19.35
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm

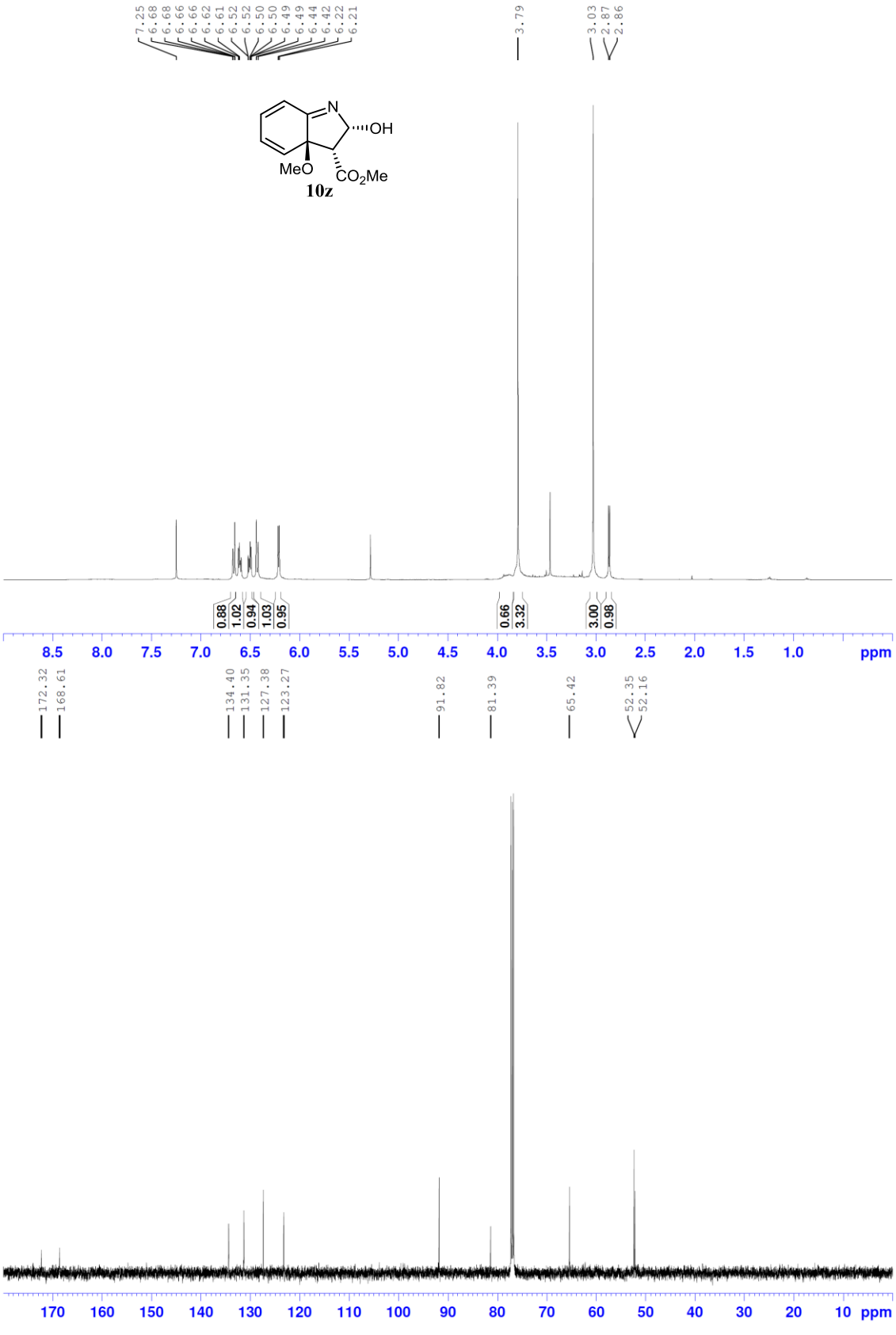
10t


6.57
6.55
6.55
6.53
6.43
6.40
6.16
6.15
5.76
5.74
5.72
3.77
3.03
3.01
1.30
N
OH
Cl
CO2Me
10u
1.11
1.02
1.02
2.31
3.33
1.00
3.30
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
ppm
177.54
170.81
144.46
135.47
120.41
119.47
93.79
77.25
77.00
76.74
60.97
59.90
52.19
19.77
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm


COSY
F1 [ppm]
F2 [ppm]


HSQC
F1 [ppm]
F2 [ppm]


NOESY
F1 [ppm]
F2 [ppm]


7.25
6.68
6.68
6.66
6.66
6.62
6.61
6.52
6.52
6.50
6.50
6.49
6.49
6.44
6.42
6.22
6.21
3.79
3.03
2.87
2.86
N
OH
MeO
CO2Me
10z
0.88
1.02
0.94
1.03
0.95
0.66
3.32
3.00
0.98
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
ppm
172.32
168.61
134.40
131.35
127.38
123.27
91.82
81.39
65.42
52.35
52.16
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm