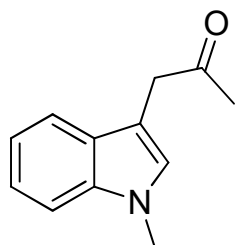


VII. ^1H and ^{13}C NMR Spectral Copies

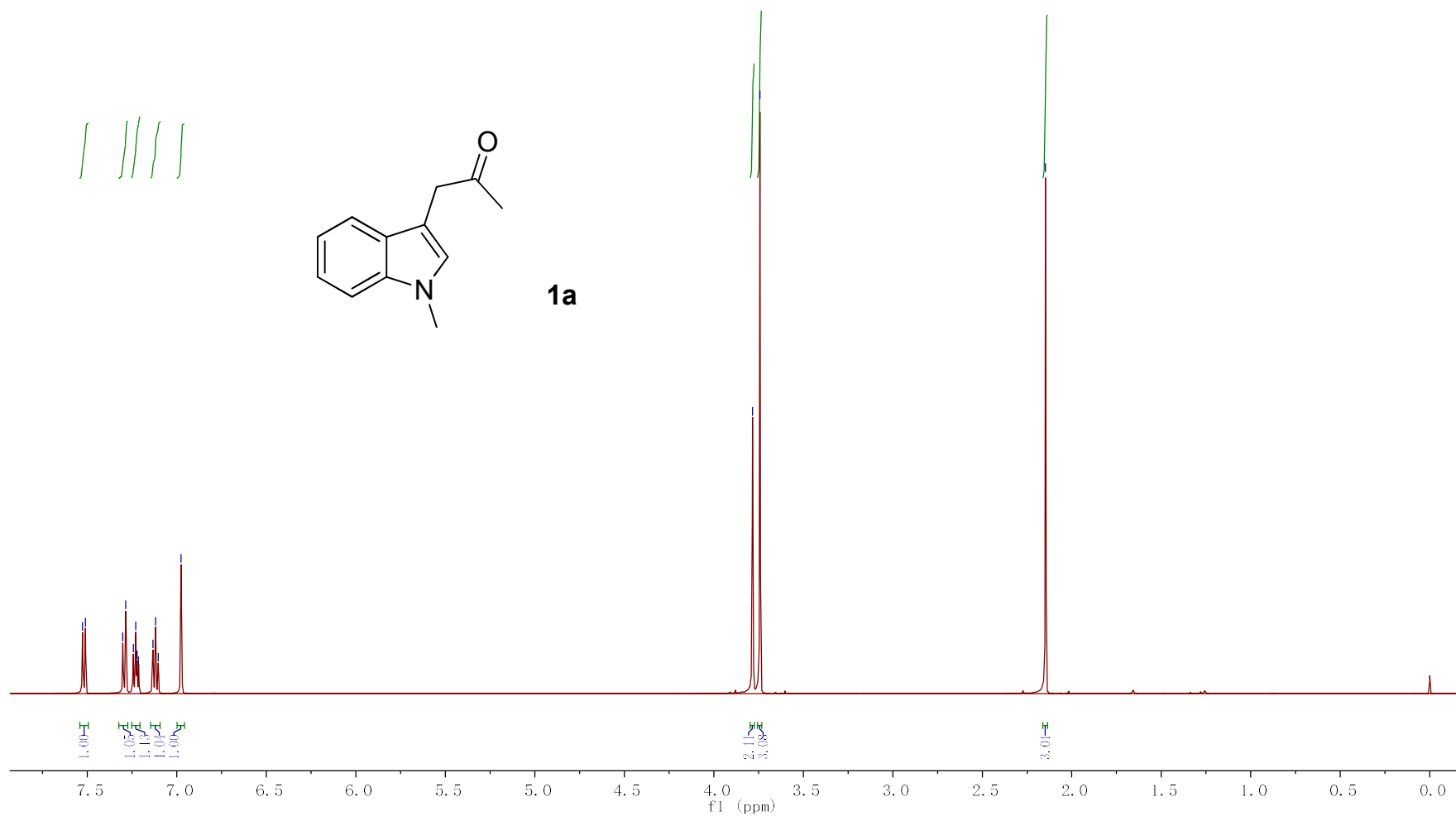
3zd63-
12.31
7.30
7.29
7.24
7.23
7.21
7.13
7.10
7.06



1a

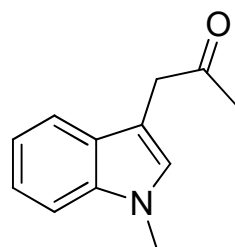
3.78
3.74

2.15

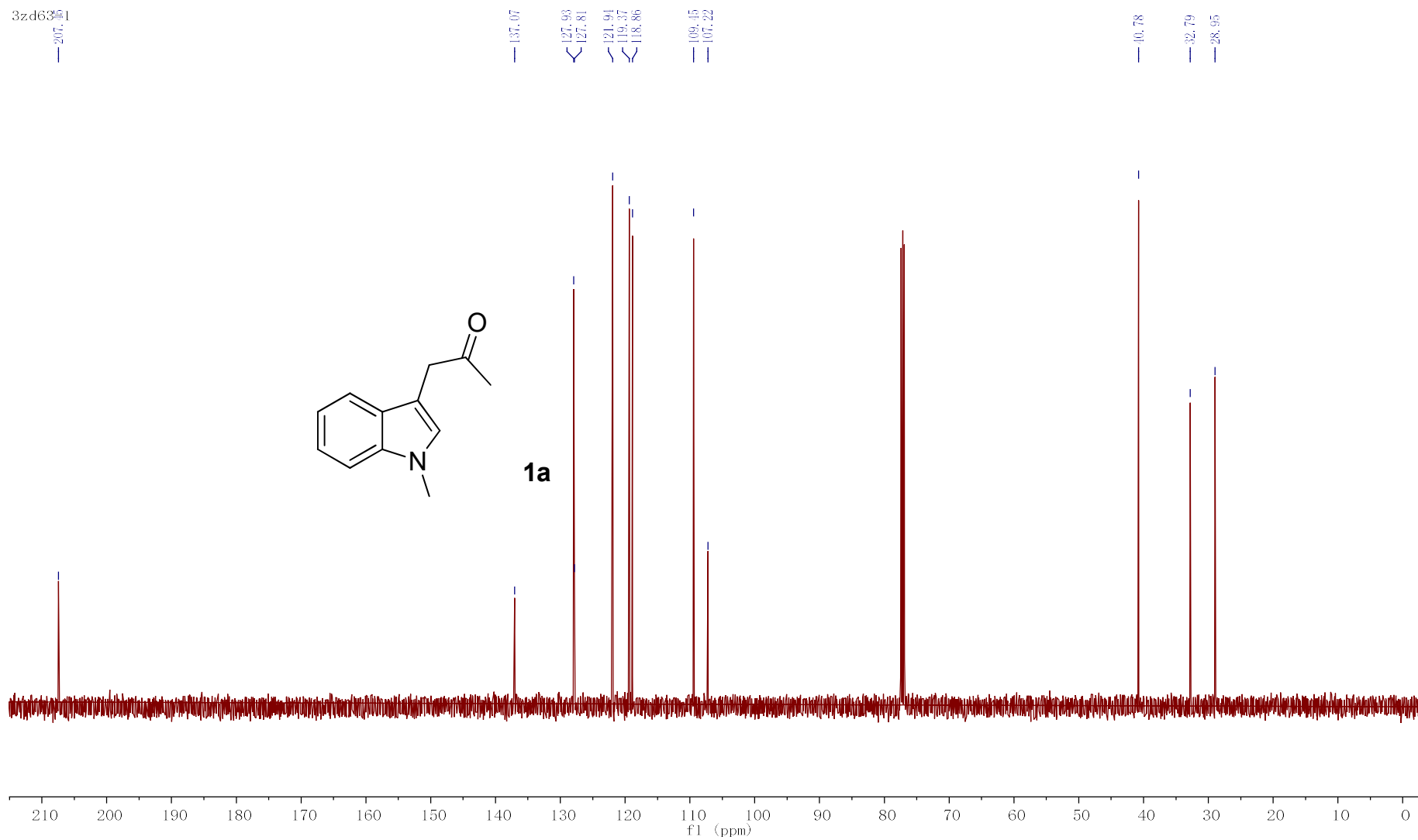


NMR-2

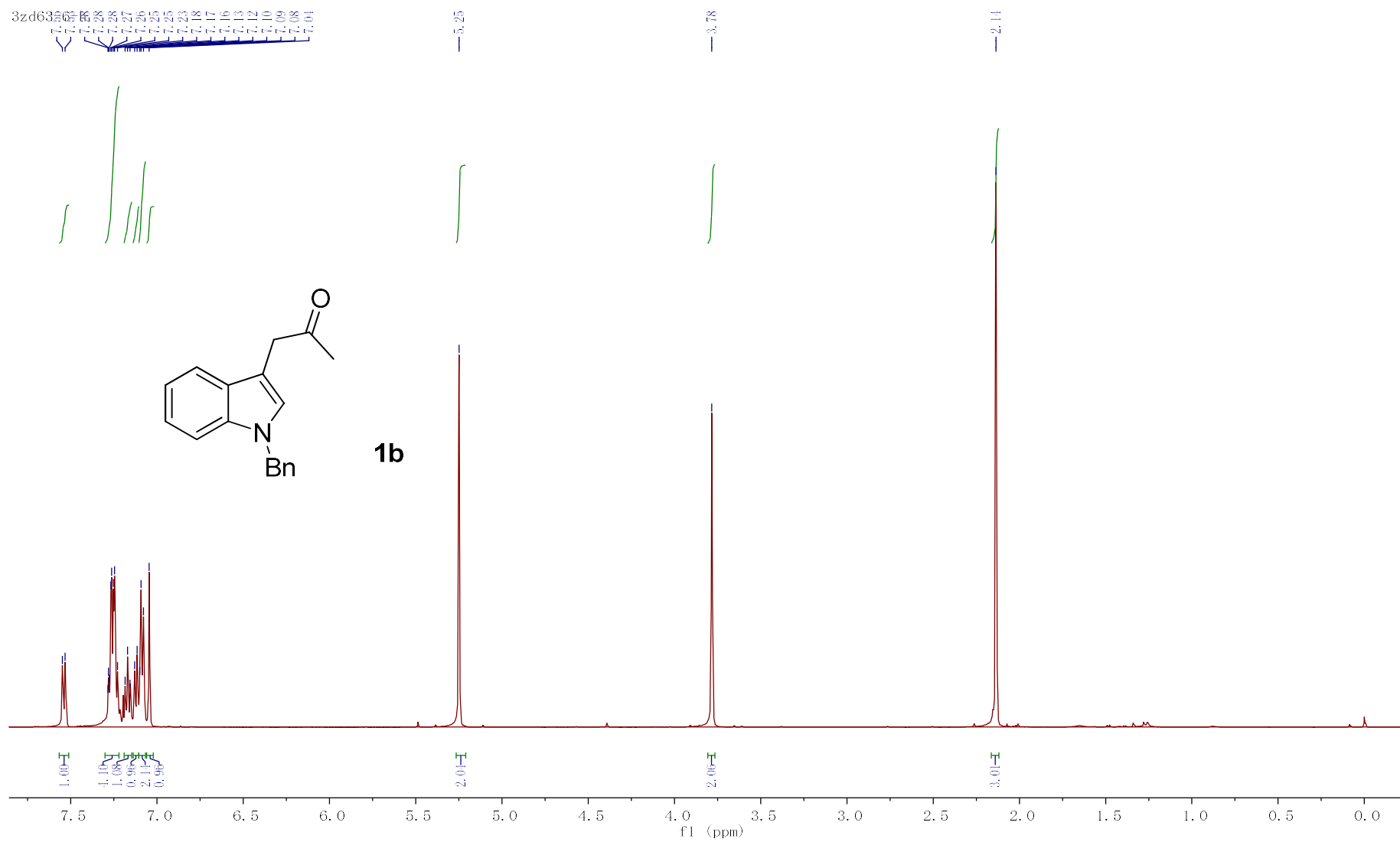
3zd6391



1a



NMR-3



NMR-4

3zd63-61.c

207.61

137.47
136.71

128.85
127.73

127.29
125.89

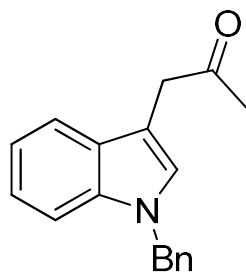
122.16
119.65
119.00

109.93
108.03

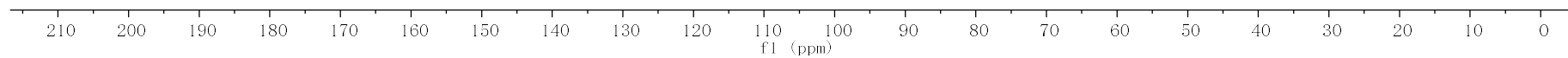
50.05

40.81

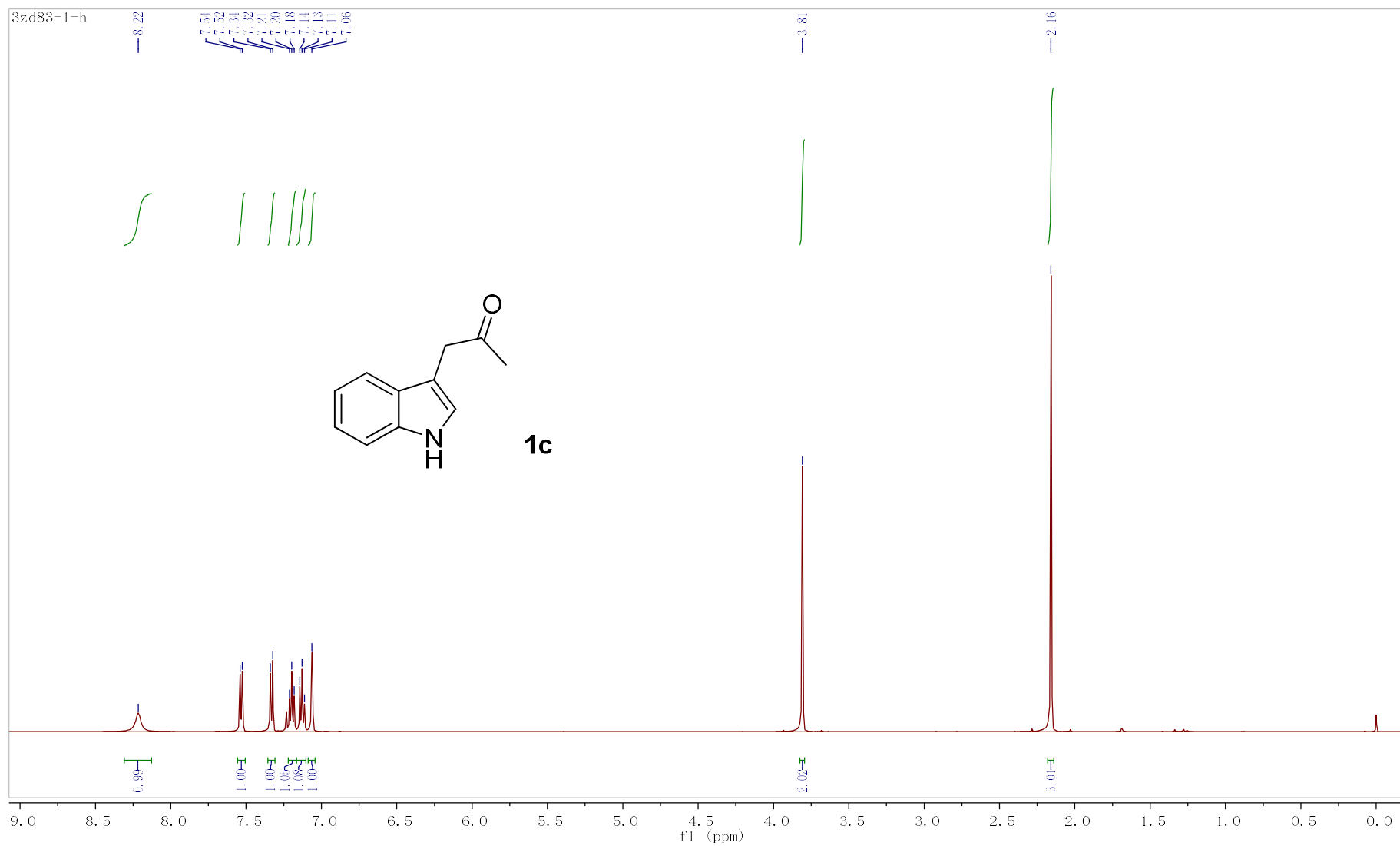
28.93



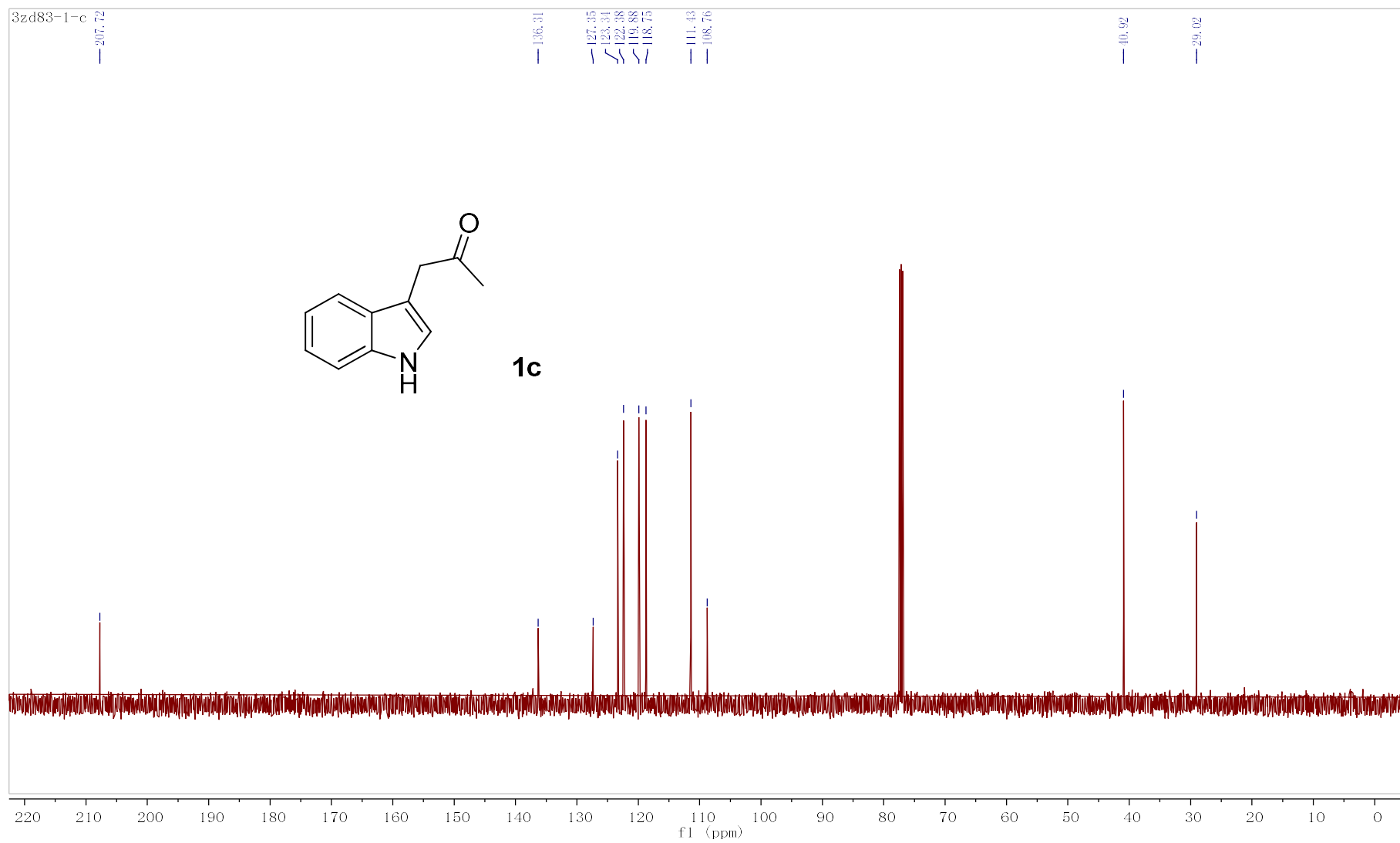
1b



NMR-5

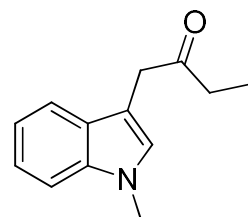


NMR-6



NMR-7

3zd63-2-53
7.51
7.31
7.28
7.26
7.23
7.21
7.20
7.12
7.11
7.09
6.95

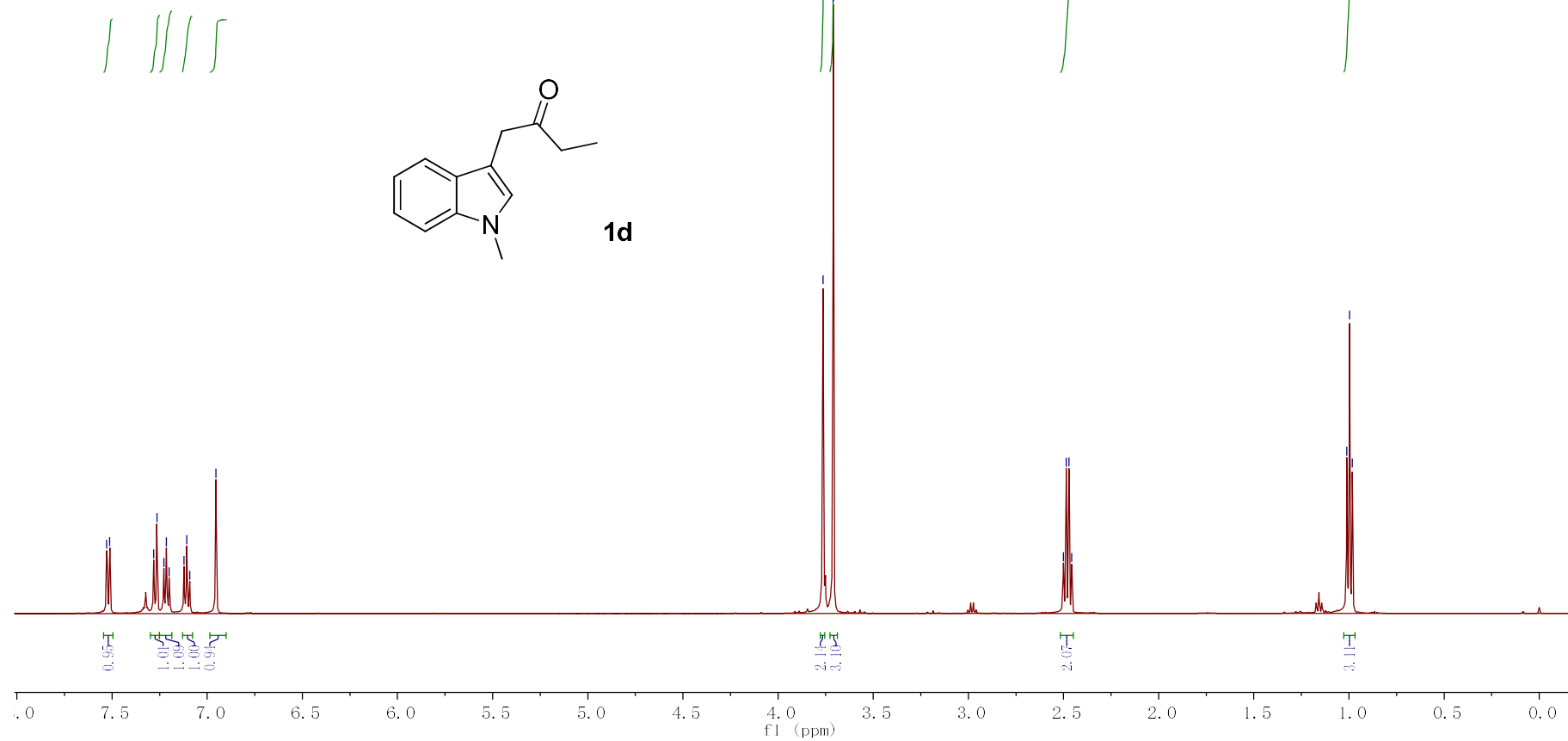


1d

3.76
3.71

2.50
2.49
2.47
2.46

1.01
1.00
0.98



NMR-8

3zd63-2-c

209.96

137.00

127.86

127.83

121.83

119.27

118.85

109.38

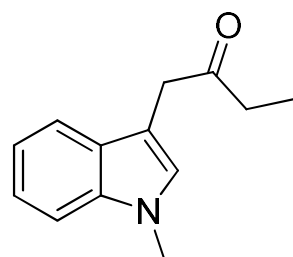
107.36

39.51

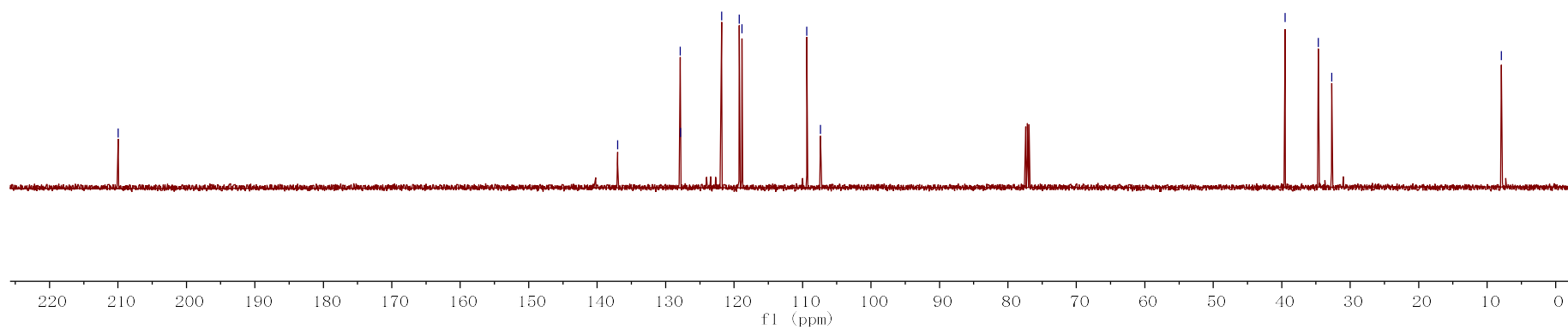
34.65

32.70

7.93



1d



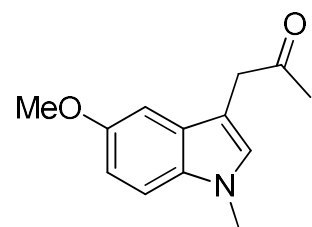
NMR-9

3zd19a-h

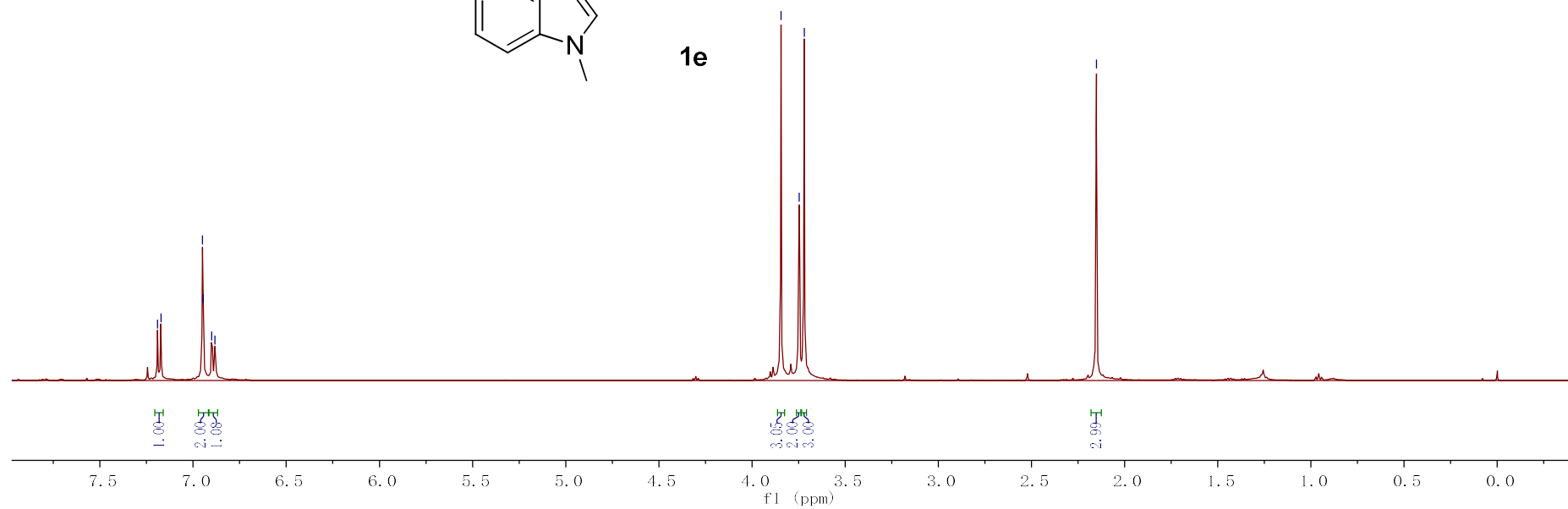
7.19
7.17
6.95
6.91
6.90
6.88

3.87
3.85
3.83

2.15

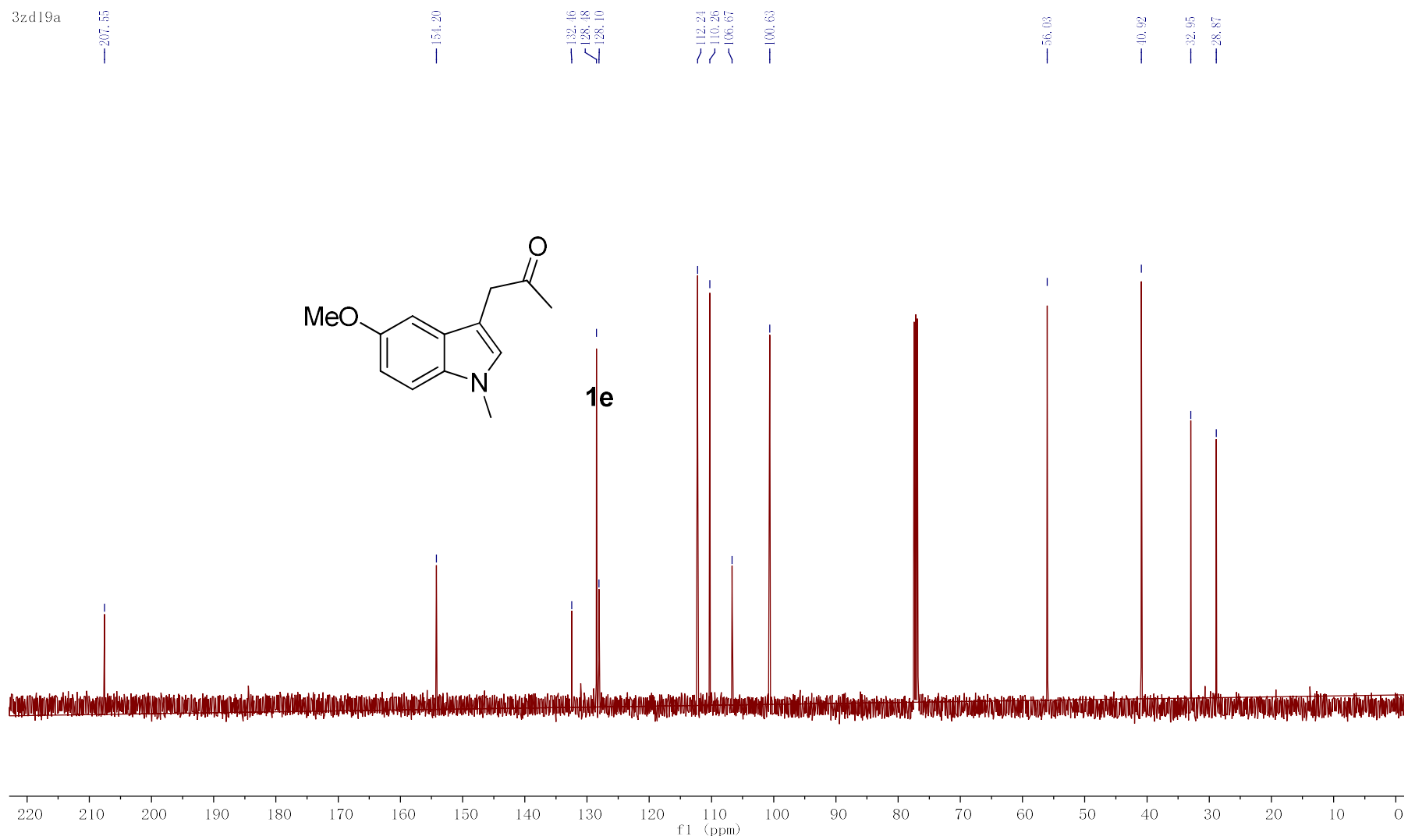


1e

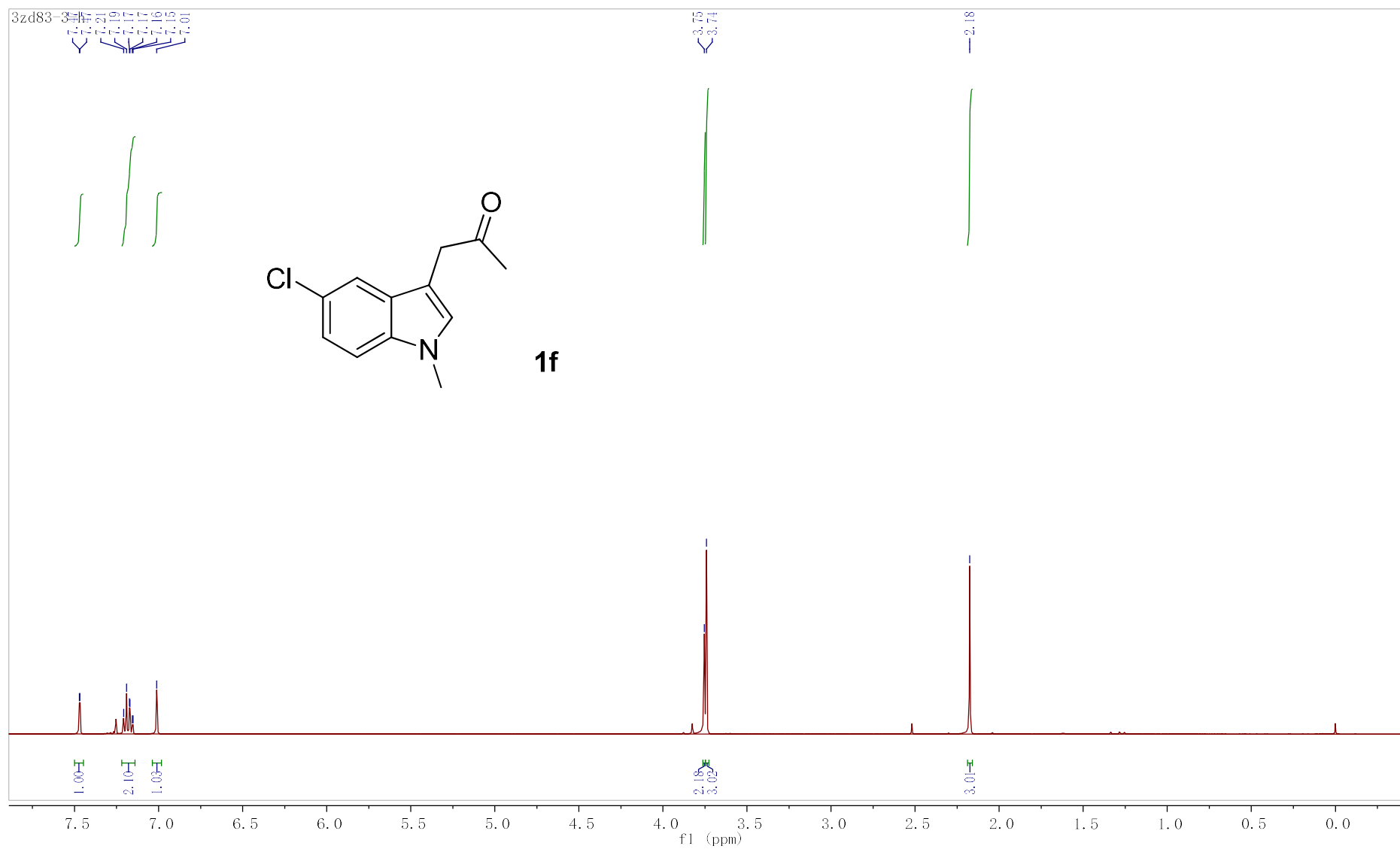


NMR-10

3zd19a



NMR-11



NMR-12

3zd19b-c

206.82

135.45

129.29

128.81

125.26

122.19

118.32

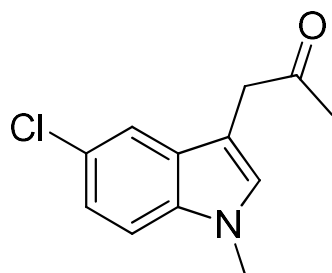
110.54

106.86

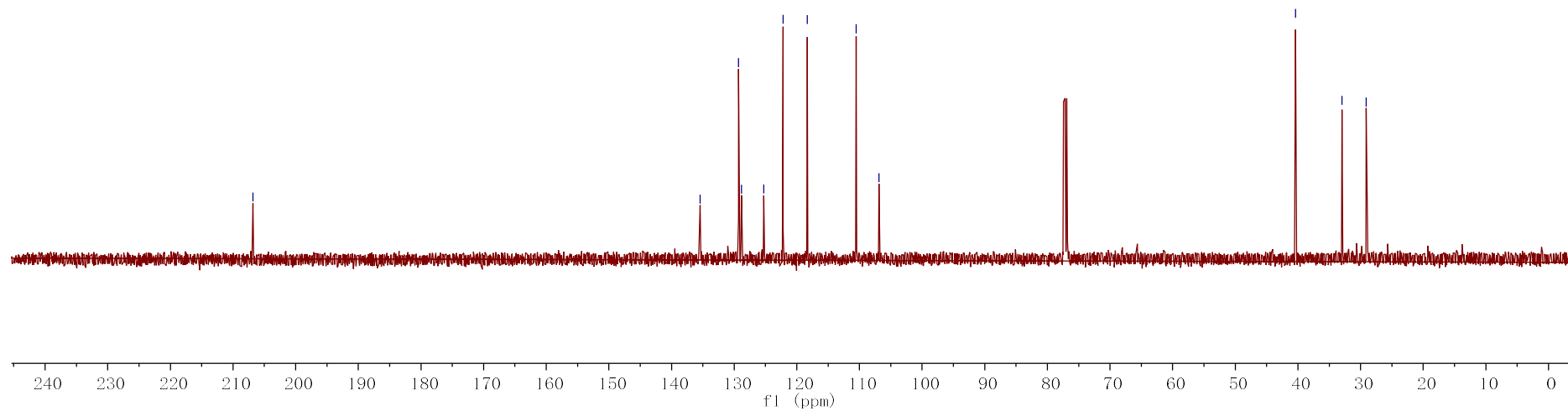
40.40

32.97

29.10



1f



NMR-13

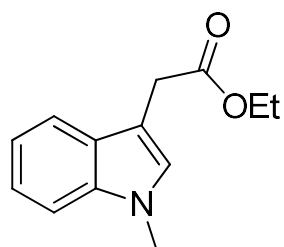
3zd61d-h

7.61
7.60
7.30
7.28
7.24
7.22
7.21
7.13
7.12
7.10
7.04

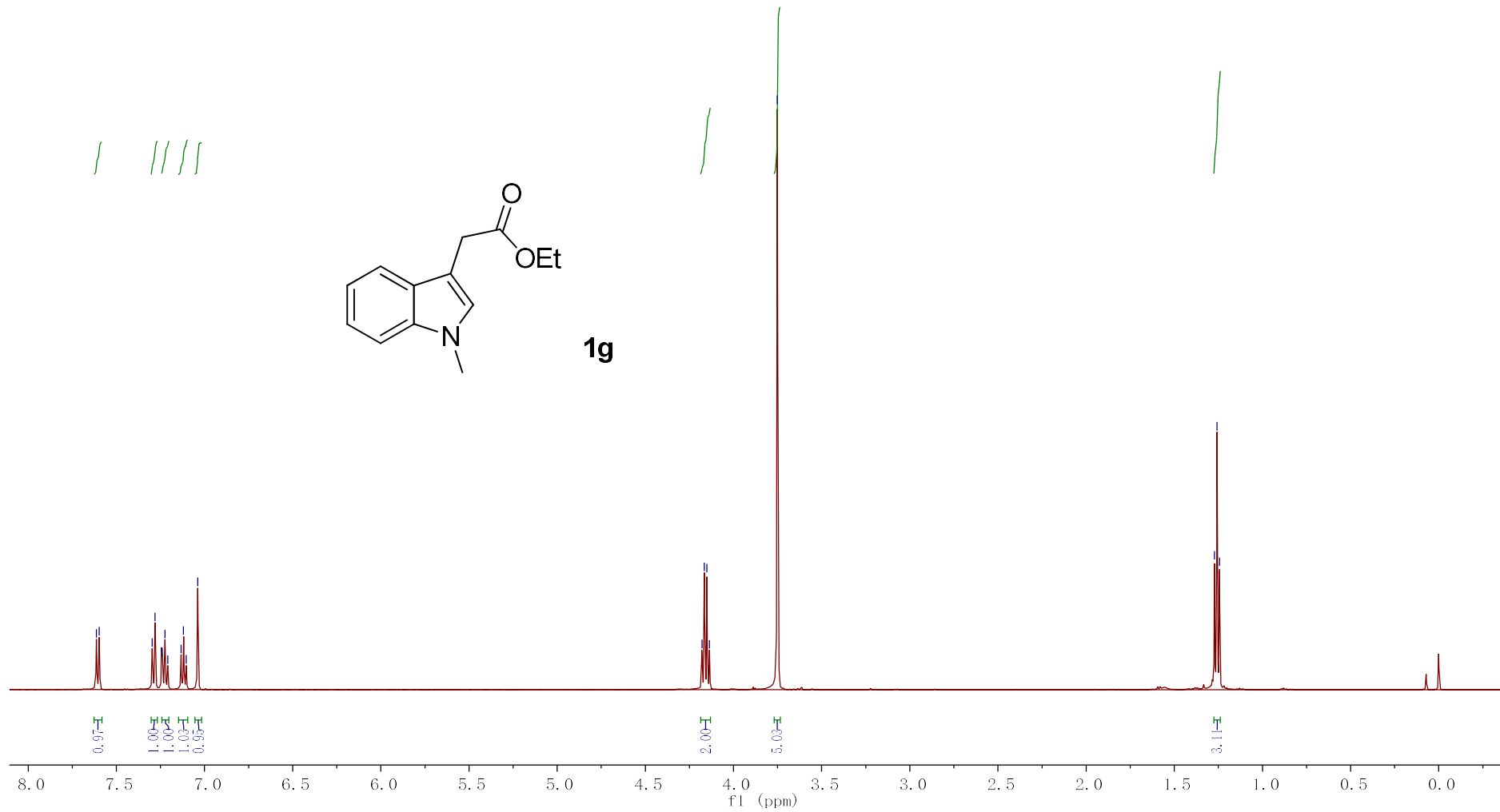
4.18
4.16
4.15
4.14

3.75

1.27
1.26
1.24



1g



NMR-14

3zd61d-c

— 172.27

— 137.03

— 127.83

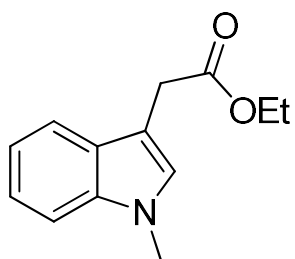
— 121.85
— 119.23
— 119.15

— 109.37
— 107.07

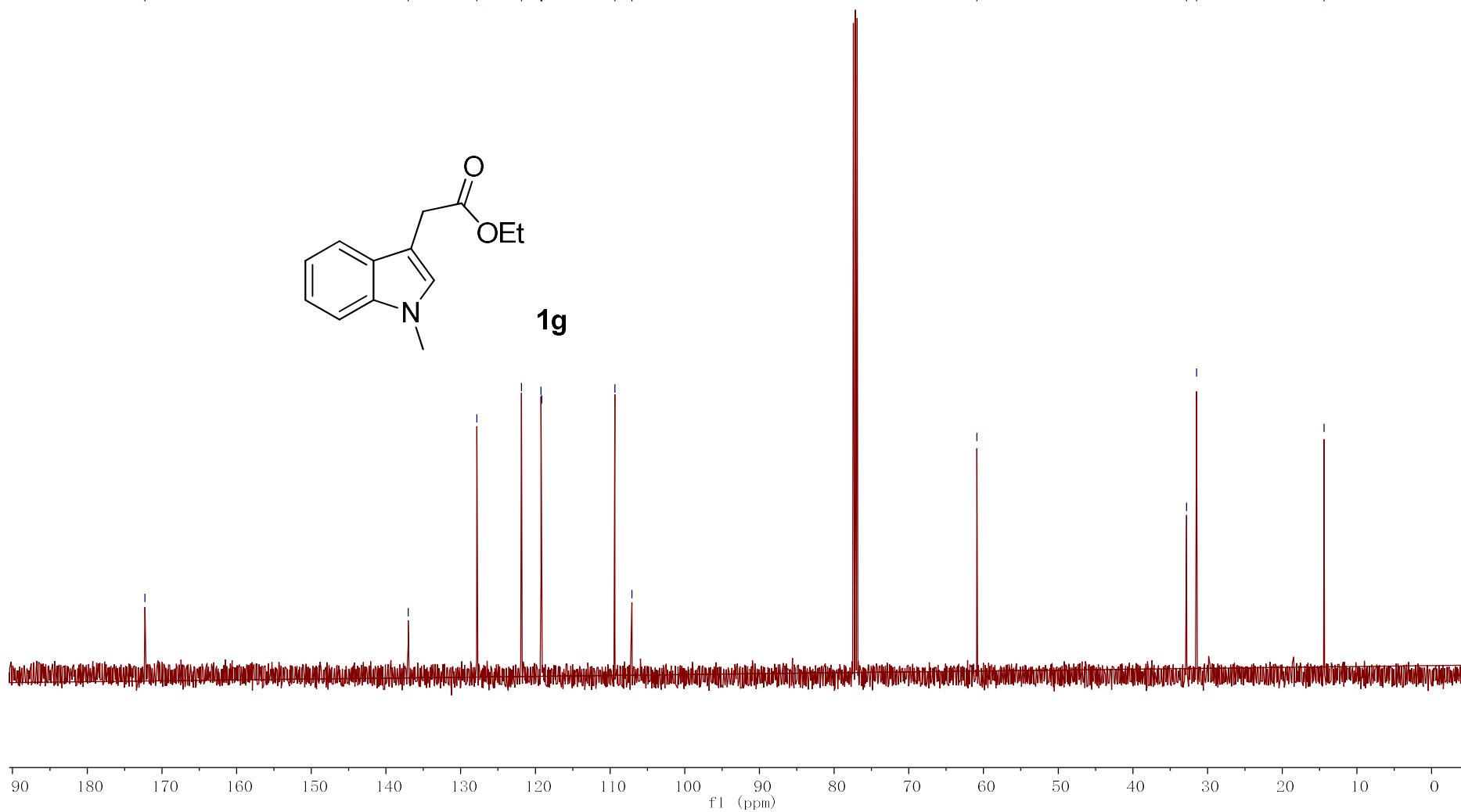
— 60.88

— 32.82
— 31.46

— 14.38



1g



NMR-15

3zd61e-h

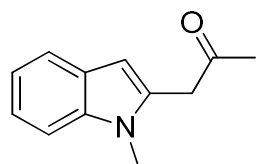
7.56
7.55
7.38
7.26
7.21
7.19
7.18
7.10
7.09
7.07

6.38

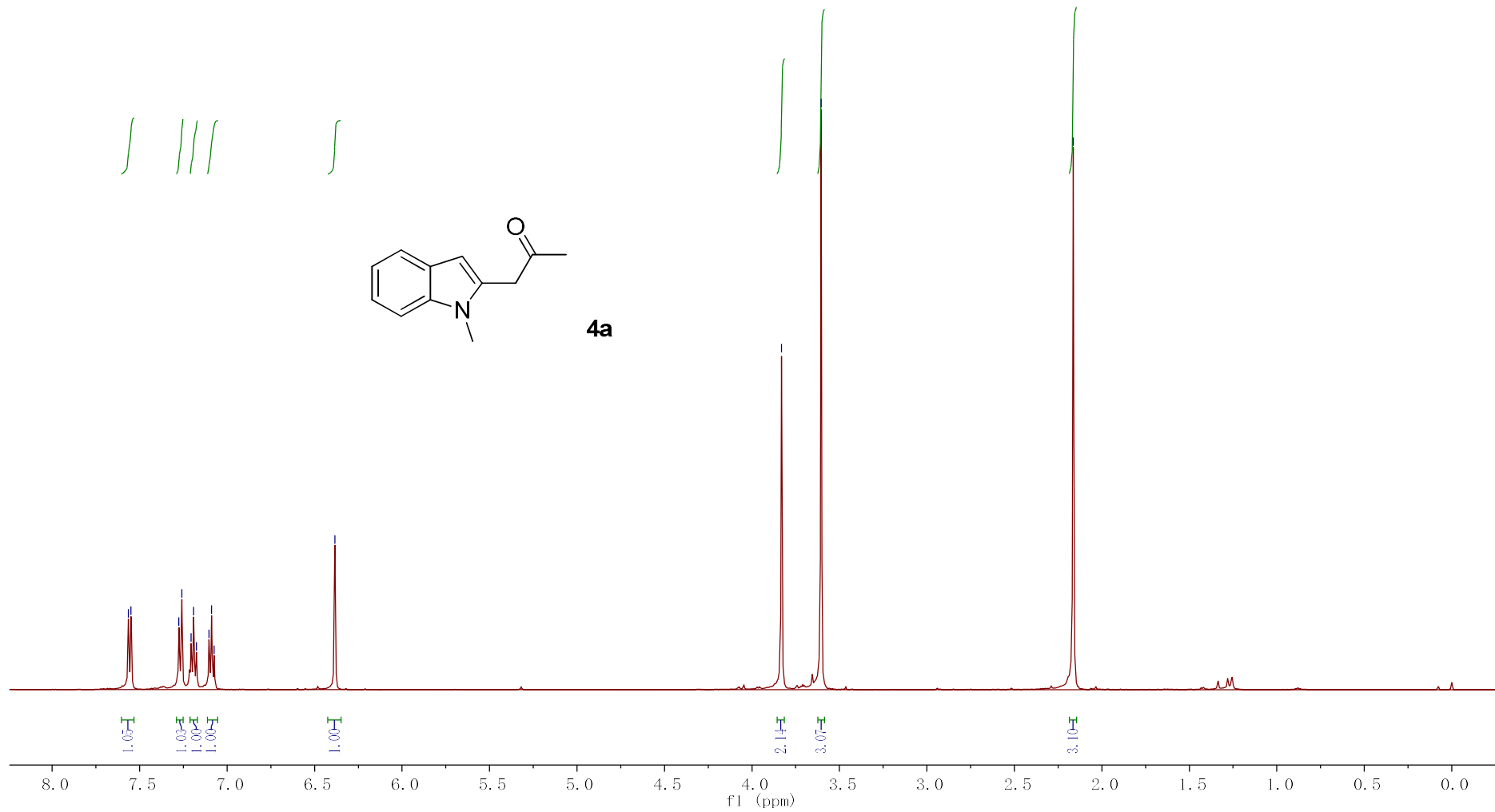
3.83

3.60

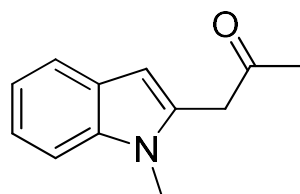
2.16



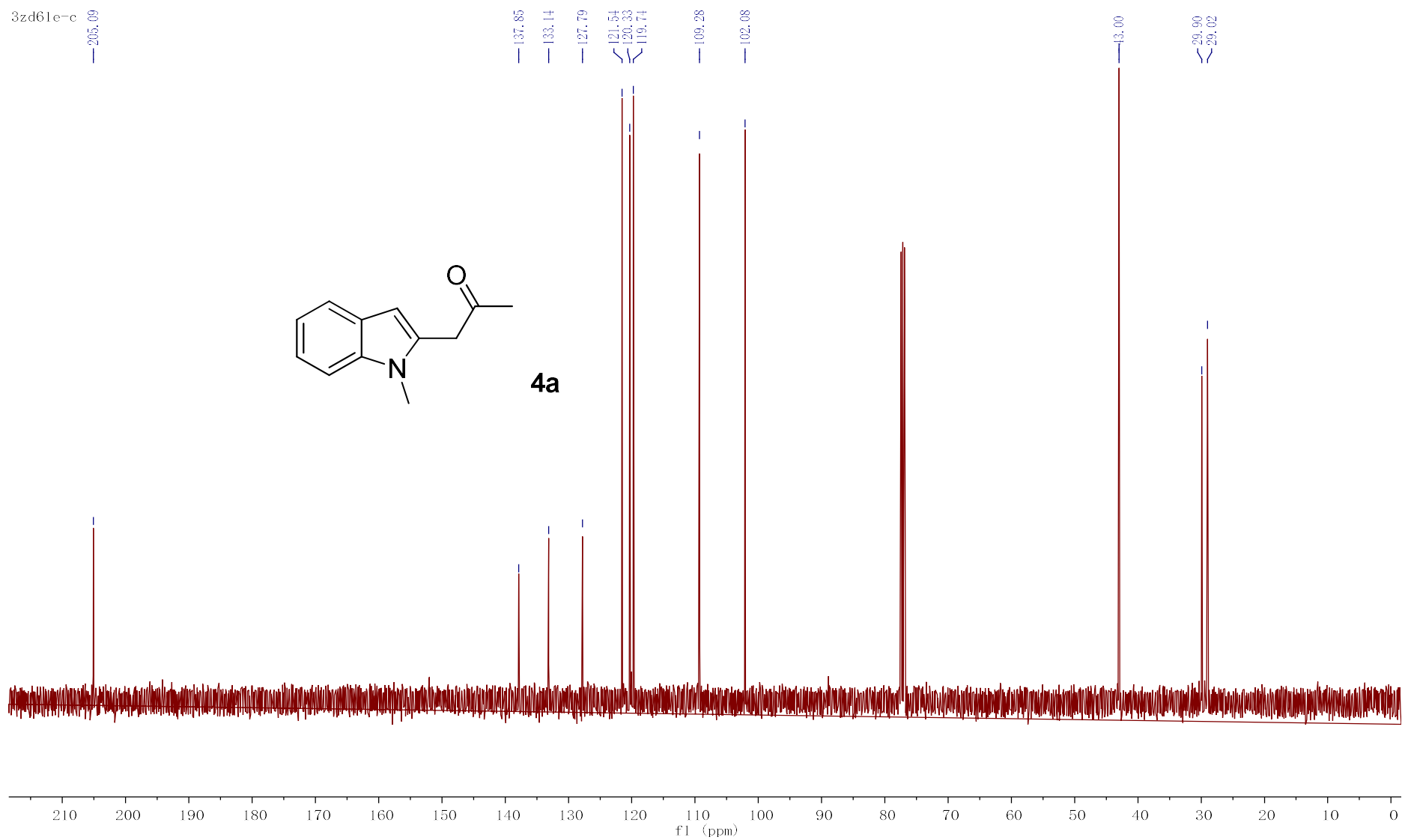
4a



3zd61e-c



4a



NMR-17

3zd1b
BOXD-PN02

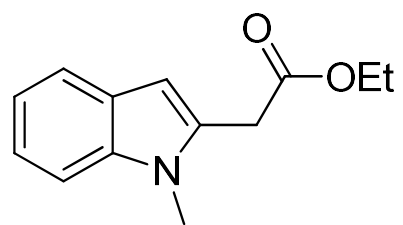
7.56
7.54
7.30
7.27
7.21
7.19
7.16
7.10
7.08
7.05

6.41

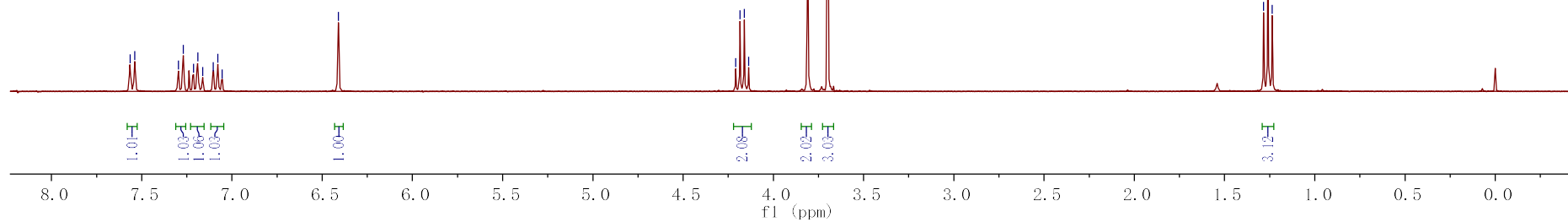
4.21
4.19
4.16
4.11

3.81
3.70

1.28
1.26
1.24



4b



NMR-18

3zd62c-c

169.77

138.17

133.59

127.41

126.17

121.19

120.24

109.33

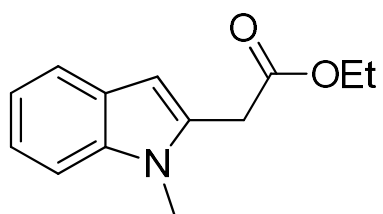
102.08

61.46

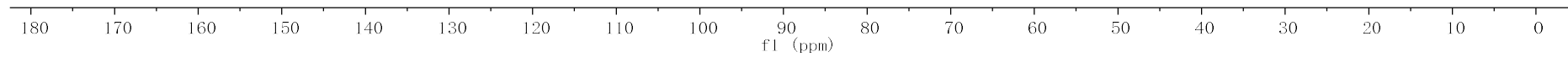
33.39

30.08

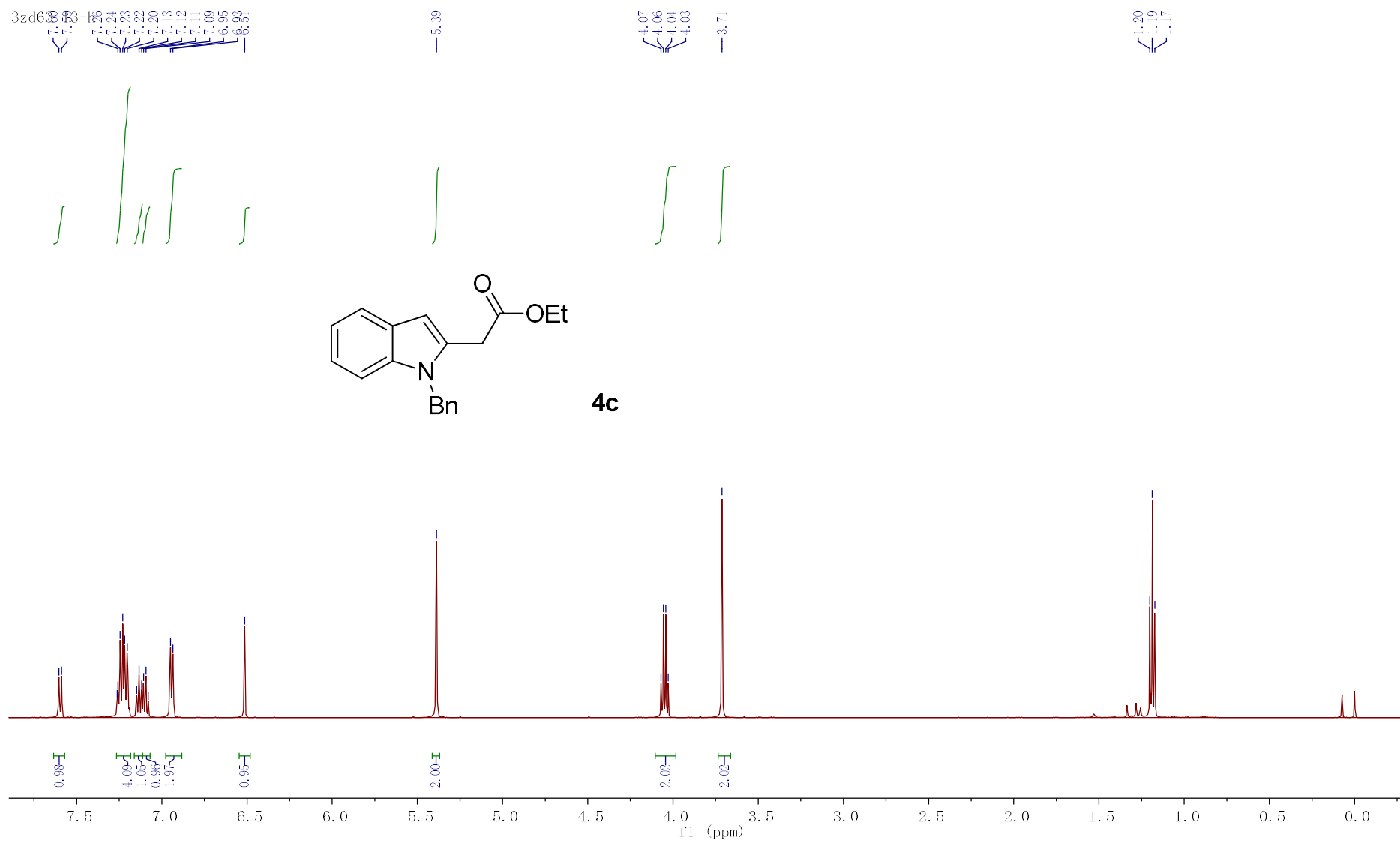
14.27



4b



NMR-19



NMR-20

3zd63-13-c

169.96

137.70
137.64

132.75

128.88
127.94

127.47

126.08

121.80
120.54
119.92

109.77

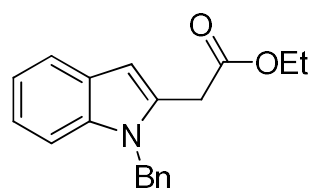
102.90

61.37

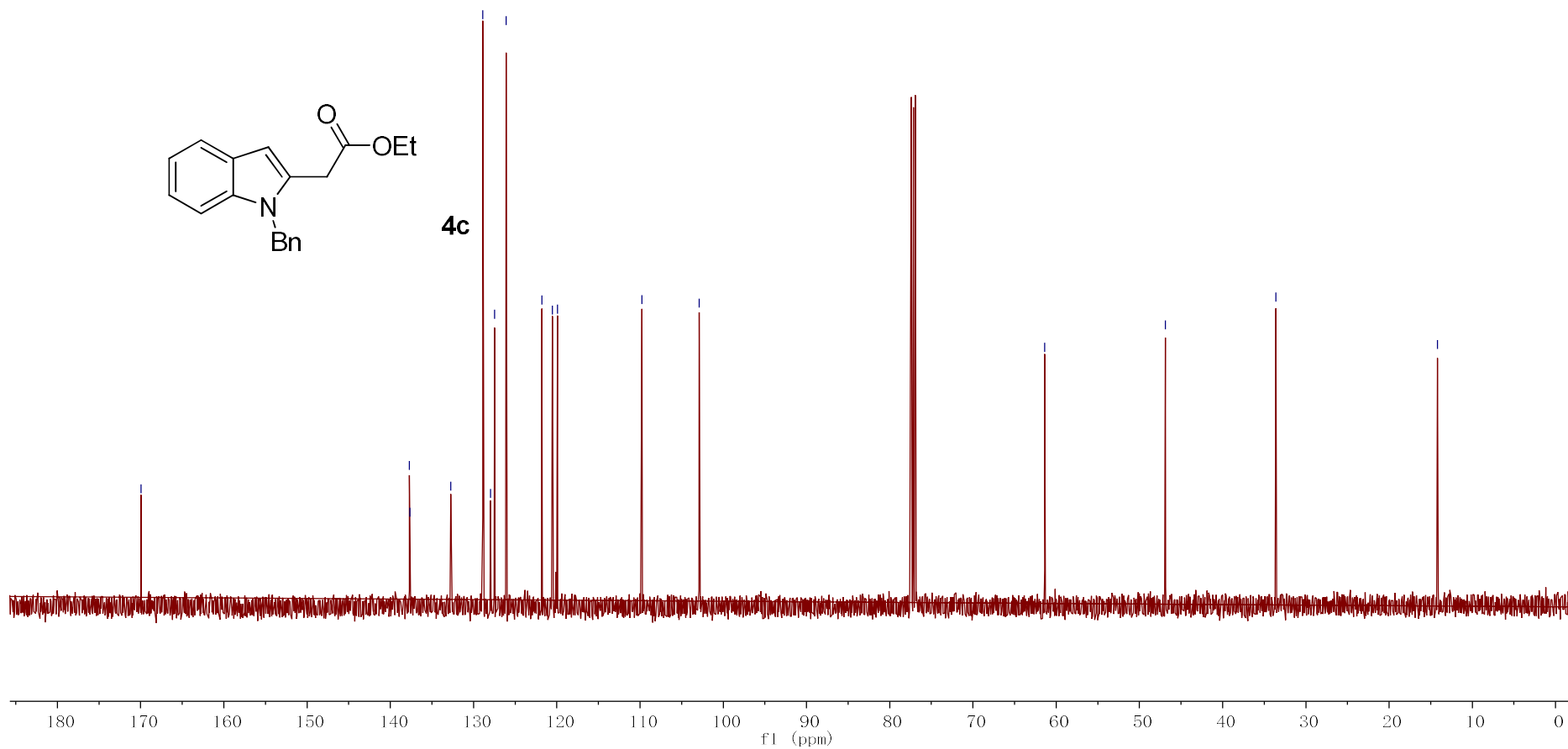
46.87

33.60

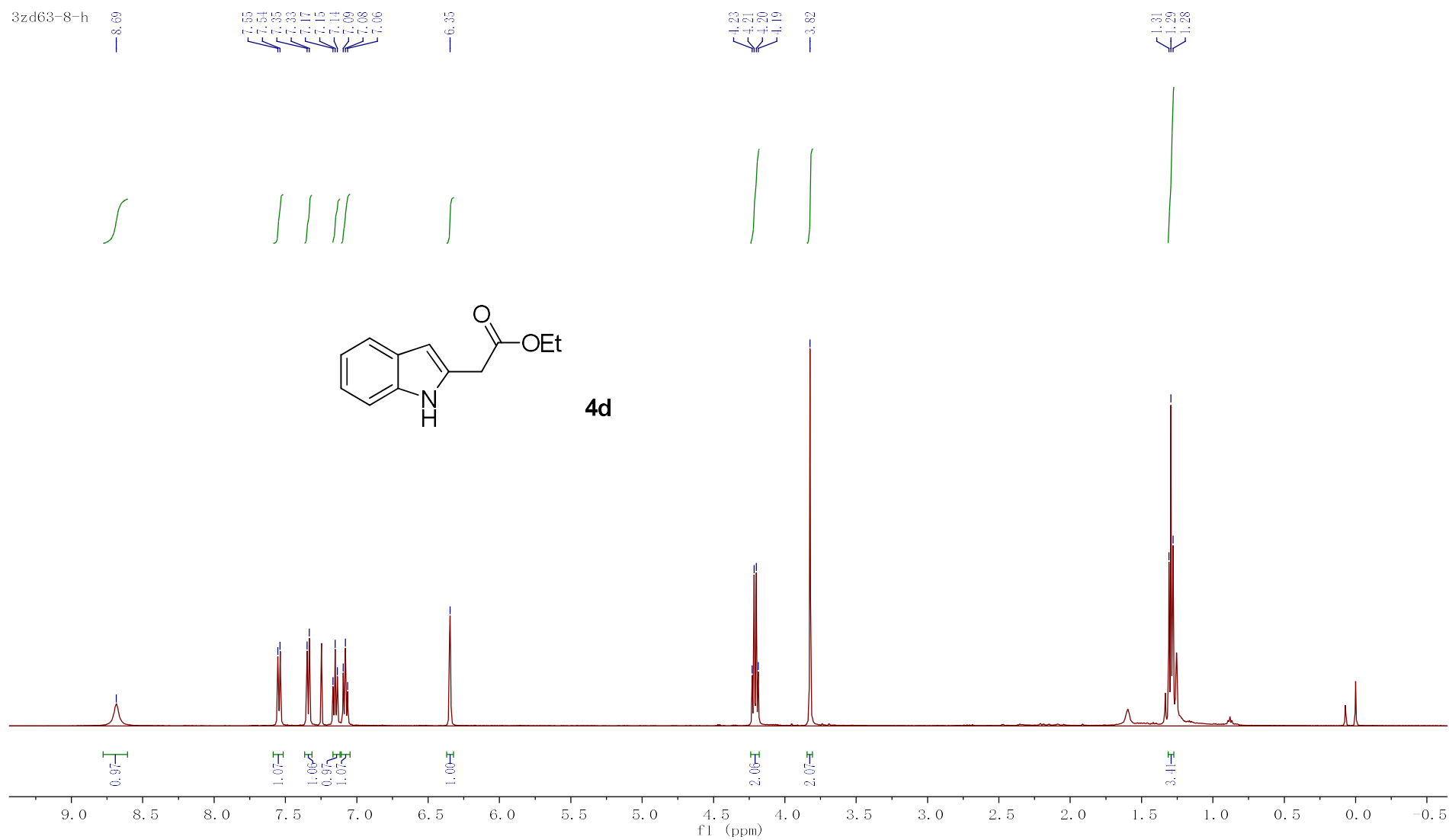
14.20



4c

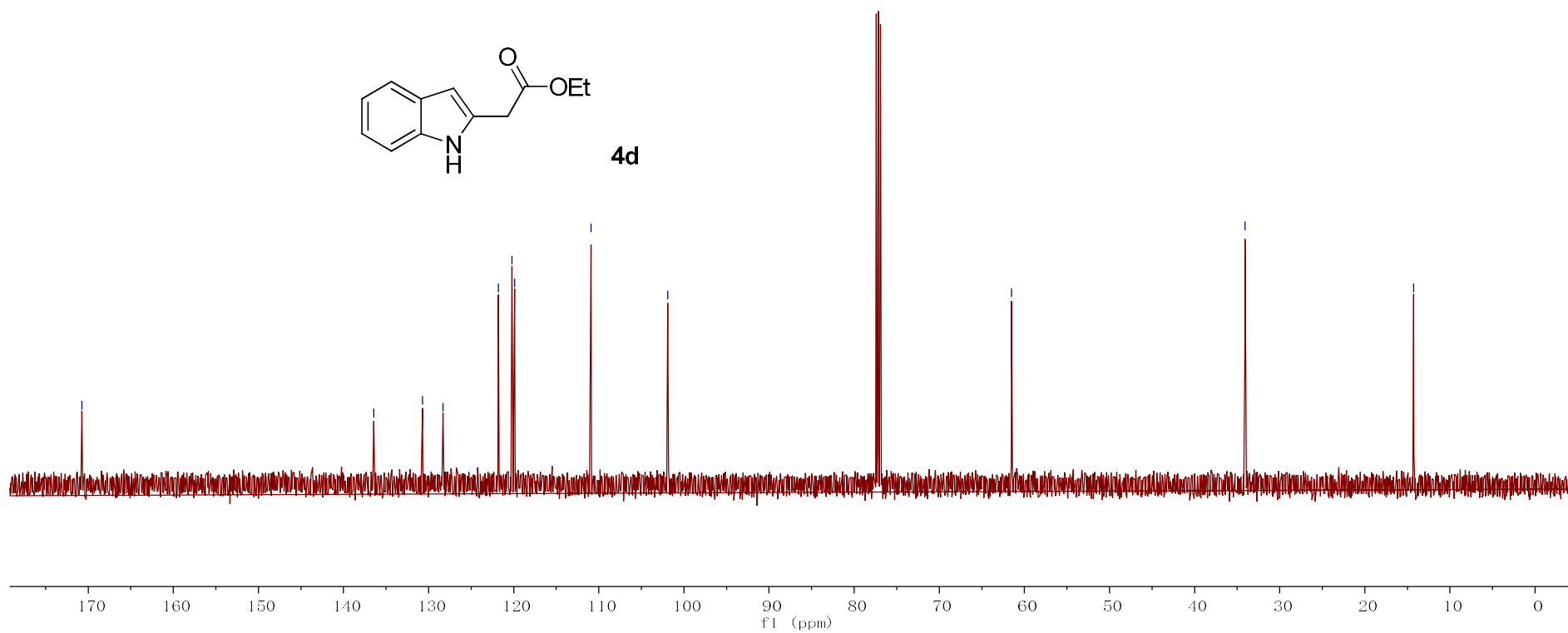
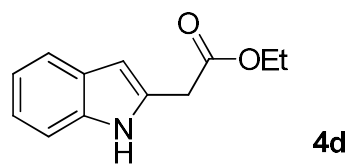


NMR-21



NMR-22

3zd63-84



3zd63-11-h

8.58

7.19

7.18

7.01

6.81

6.79

6.26

4.21

4.19

4.18

4.17

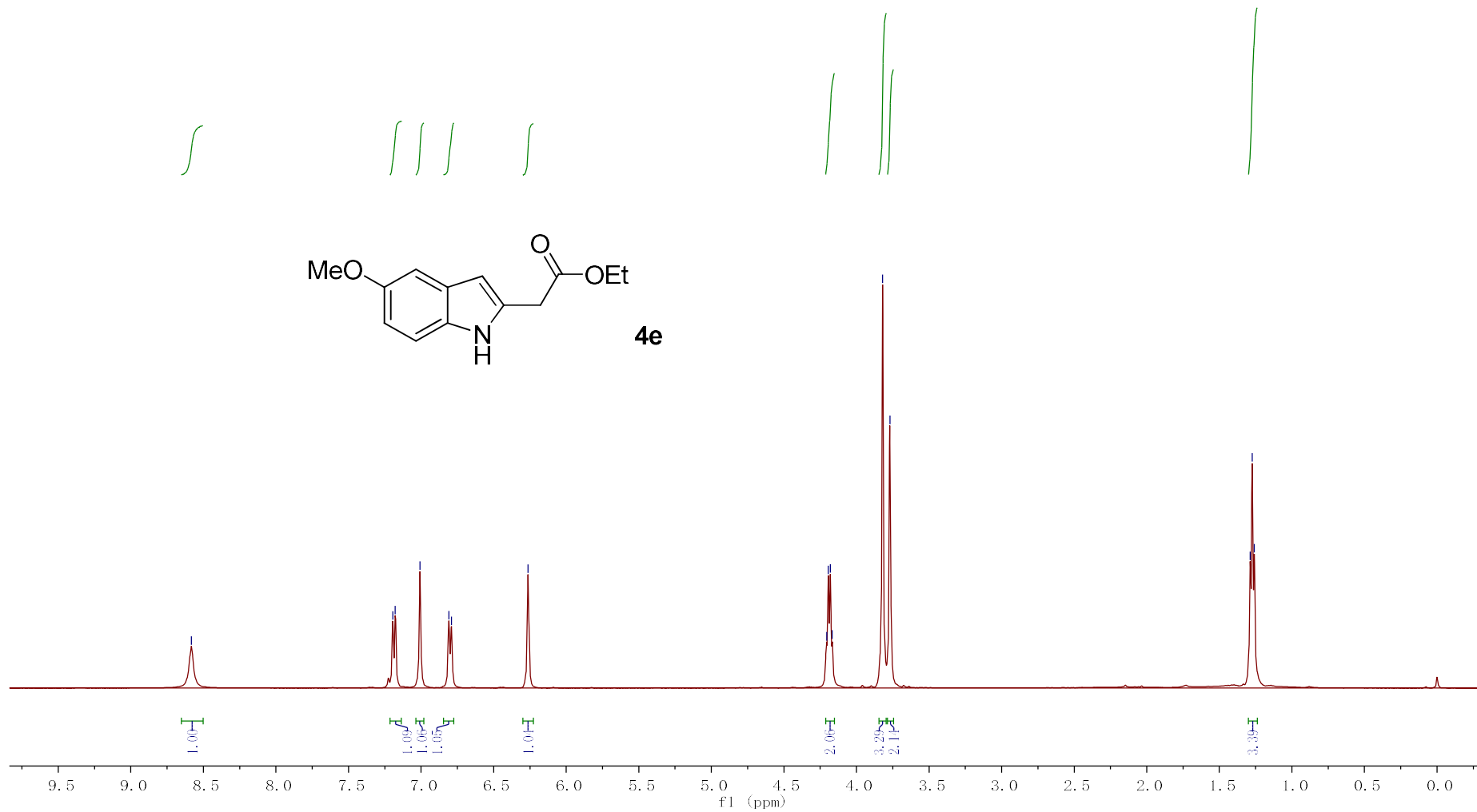
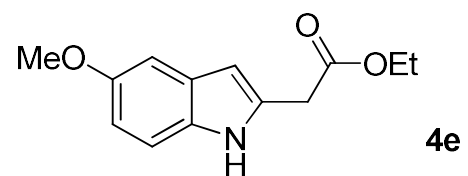
3.82

3.77

1.29

1.27

1.26



NMR-24

3zd63-11-c

— 170.71

— 154.27

131.59
131.43
128.76

111.83
111.59

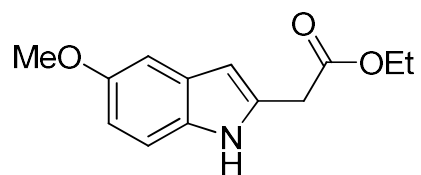
102.17
101.71

— 61.45

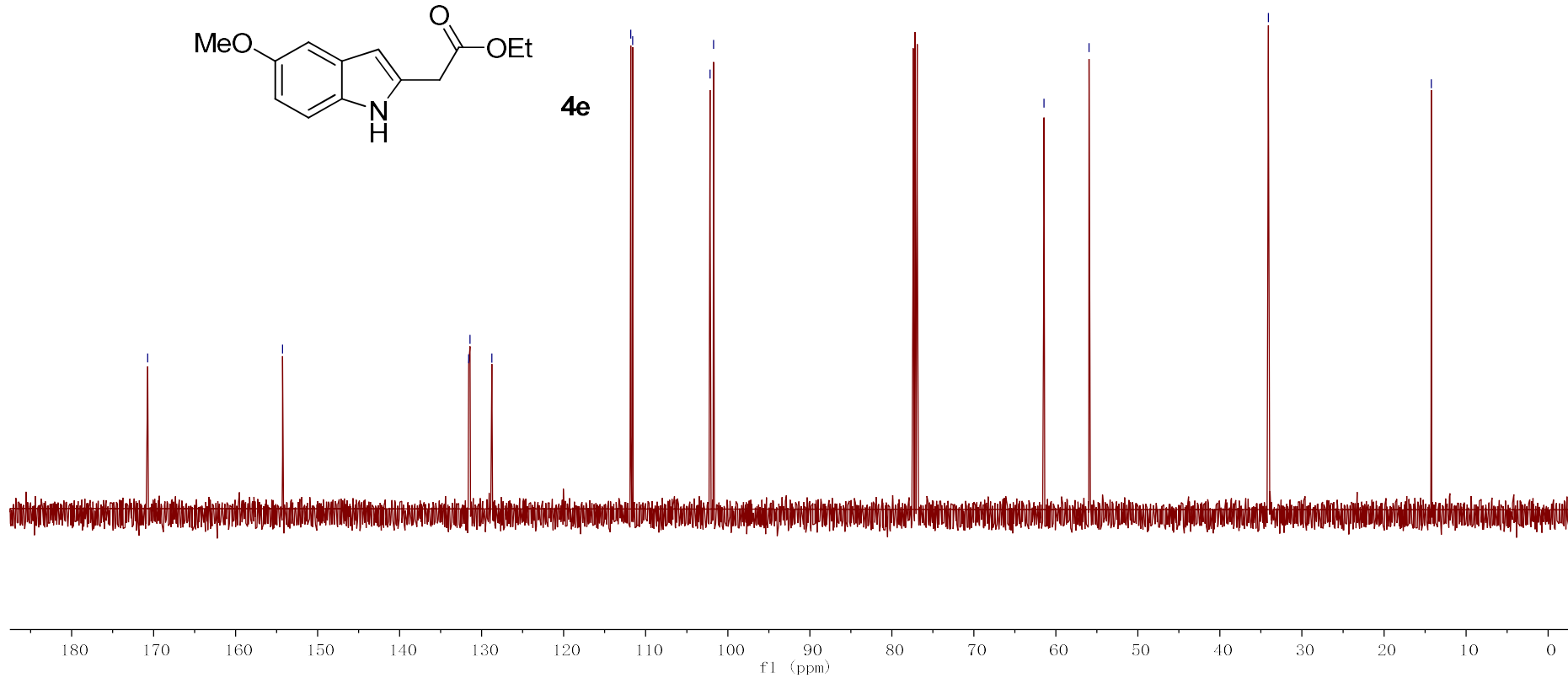
— 55.94

— 34.09

— 14.24



4e



NMR-25

3zd62b-h

8.79

7.49

7.24

7.22

7.10

7.10

7.08

6.28

4.24

4.22

4.21

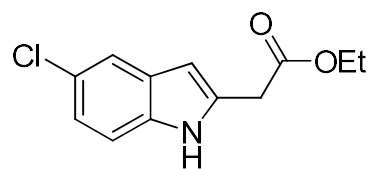
4.19

3.81

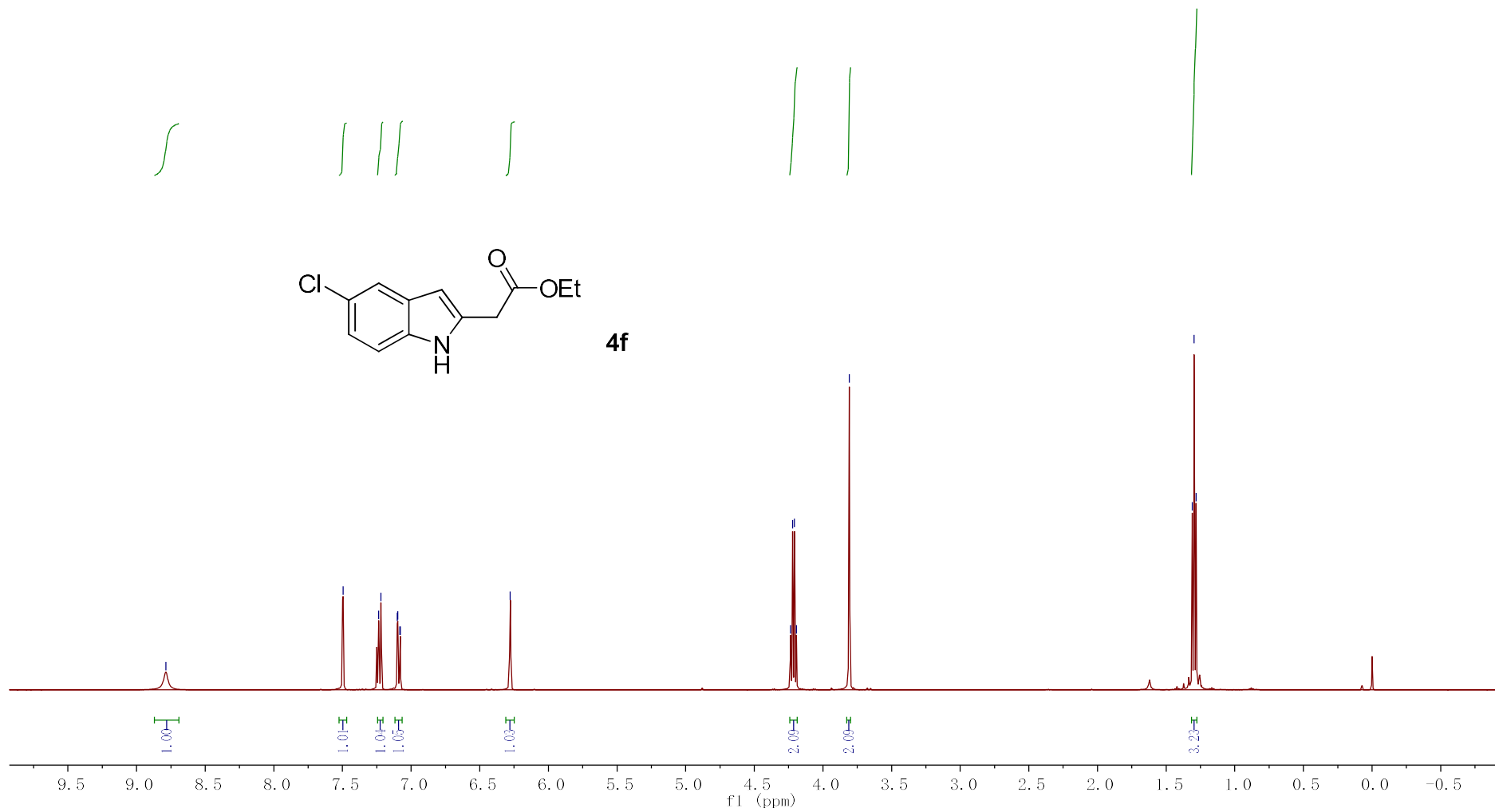
1.31

1.30

1.28



4f



NMR-26

3zd62b-c

170.63

134.75
132.24
129.38
125.54
122.08
119.63

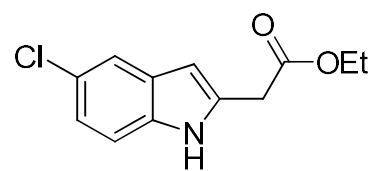
111.90

101.59

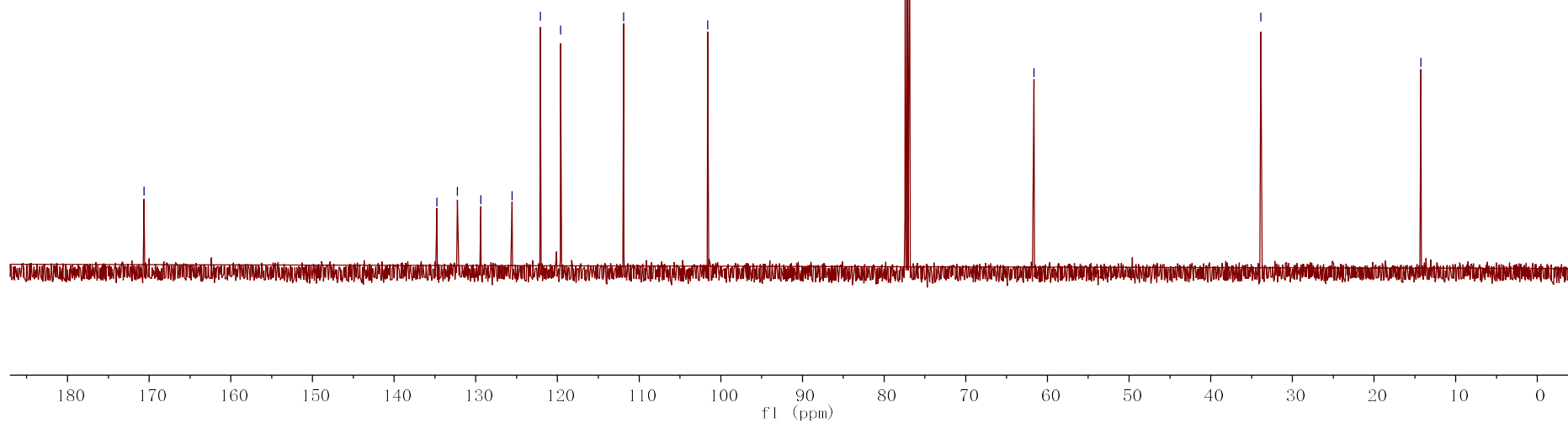
61.65

33.87

14.28



4f



NMR-27

3zd62a-h

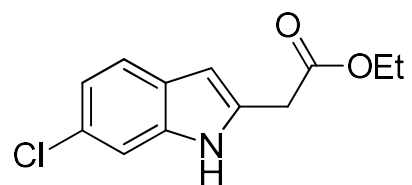
7.43
7.42
7.30
7.05
7.03

6.31

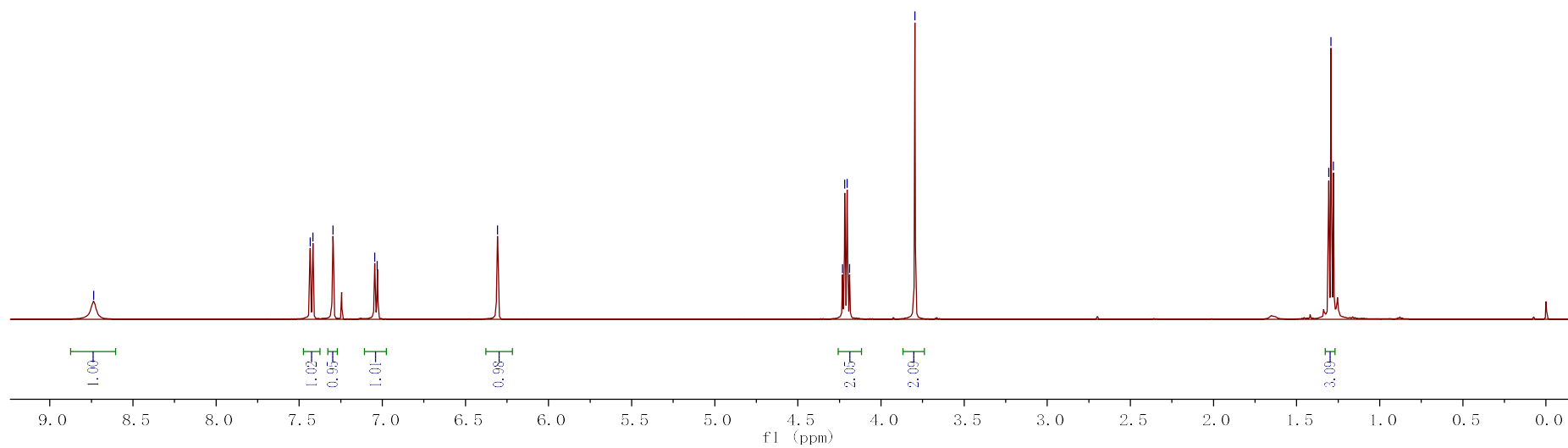
4.23
4.22
4.20
4.19

3.80

1.31
1.29
1.28



4g



NMR-28

3zd62a-c

170.65

136.76

131.51

127.61

126.87

121.03

120.63

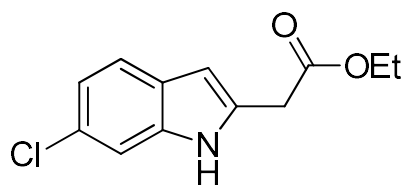
110.90

101.96

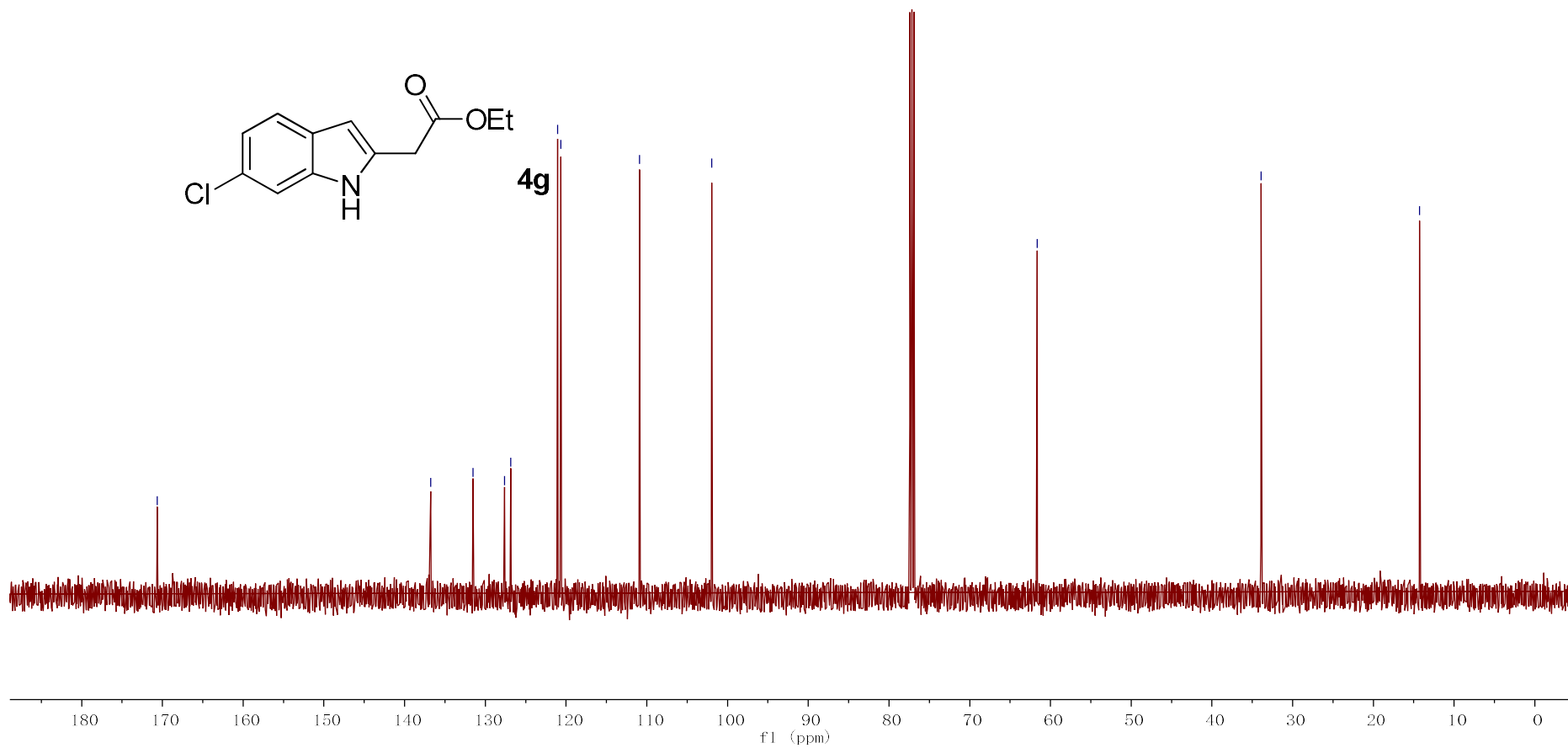
61.64

33.91

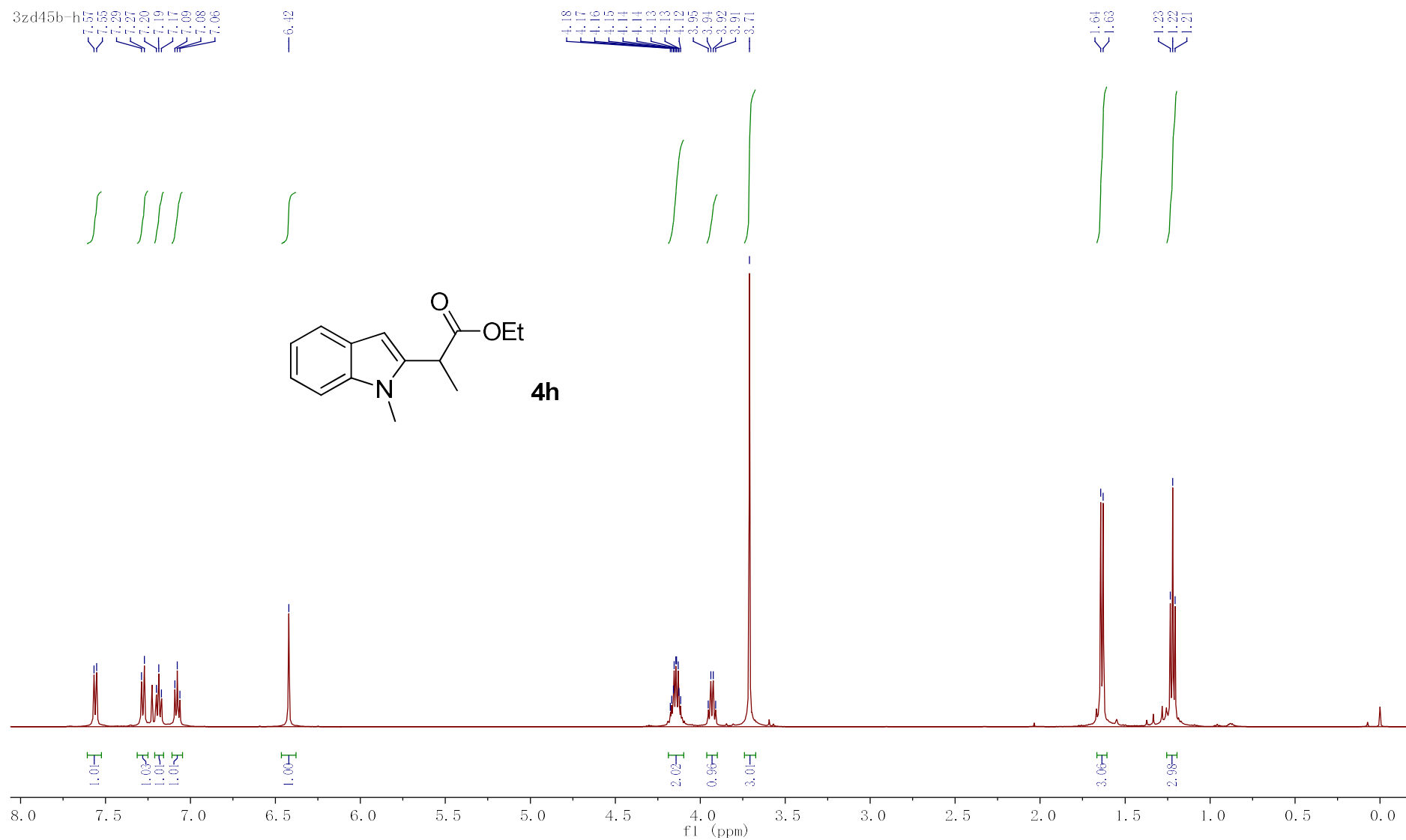
14.28



4g



NMR-29



NMR-30

3zd45b-c

173.19

139.11

137.66

127.65

121.45

120.49

119.60

109.15

99.55

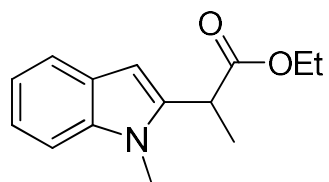
61.30

38.06

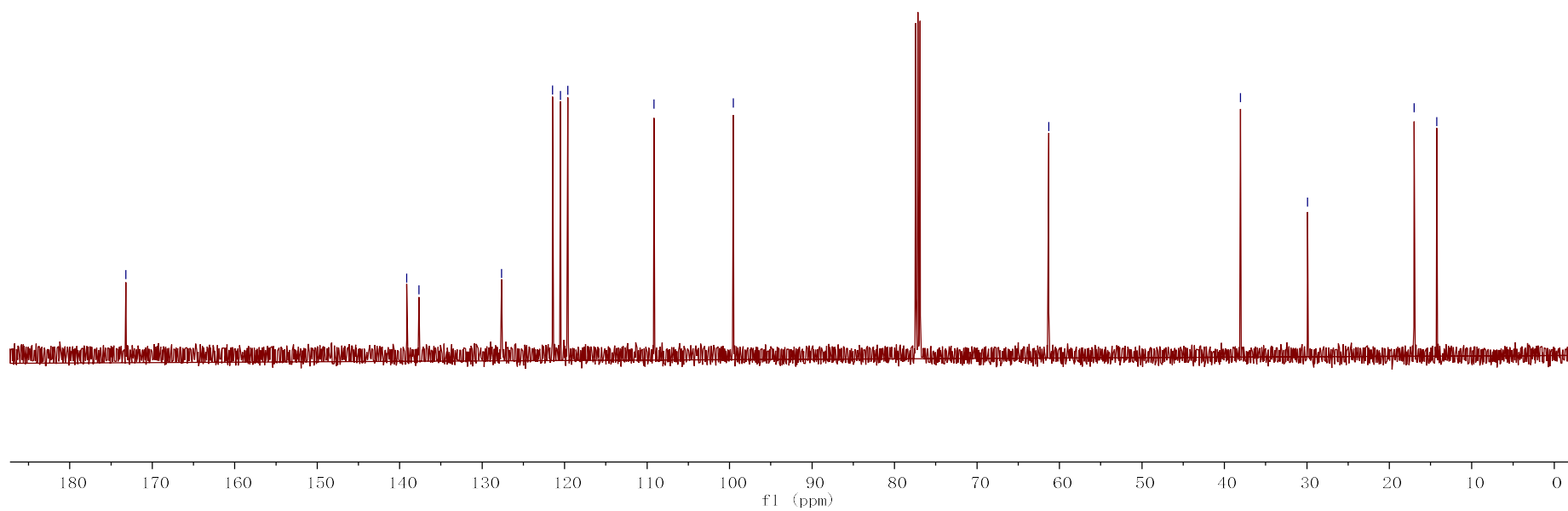
29.92

16.99

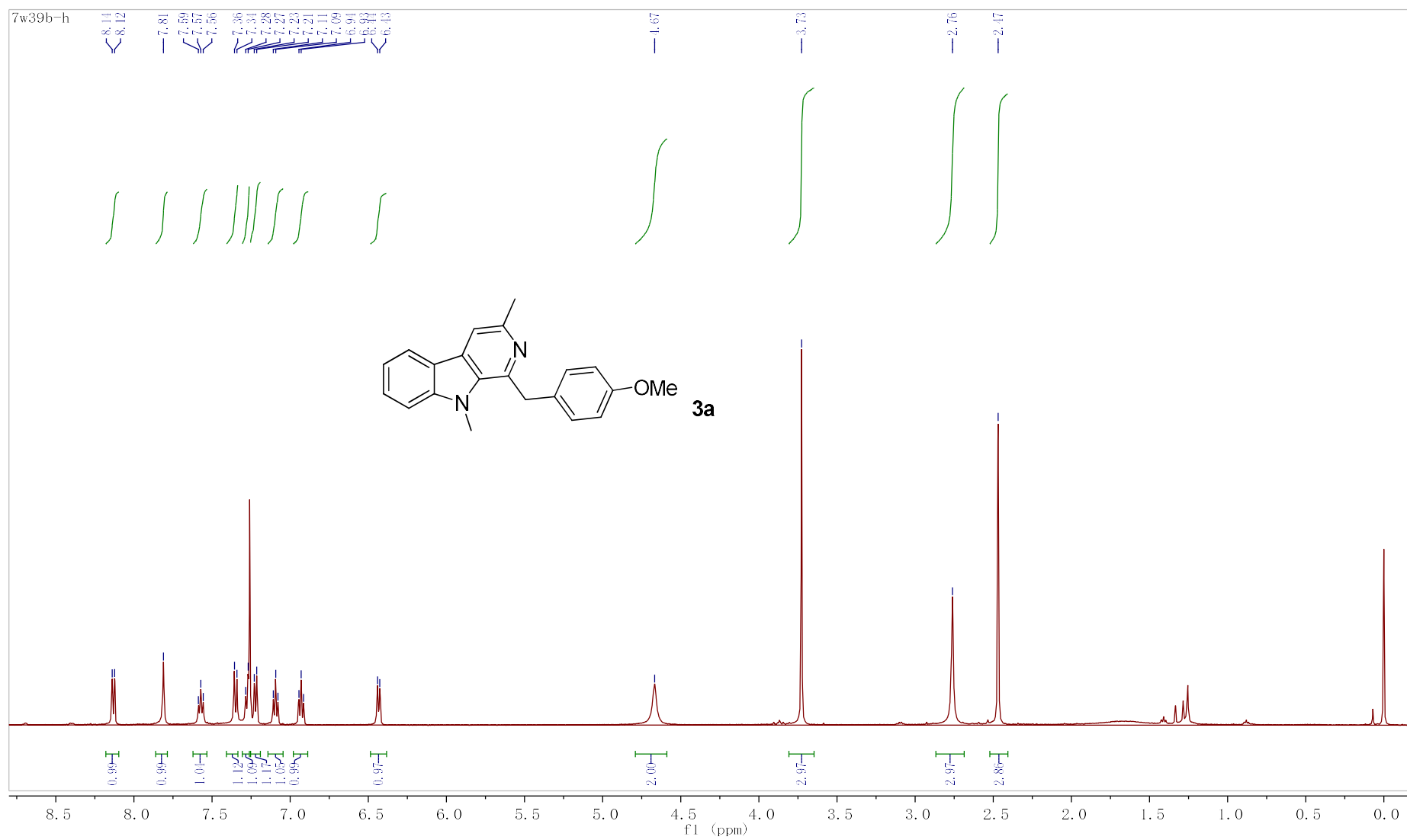
14.25



4h



NMR-31



7w39b-c

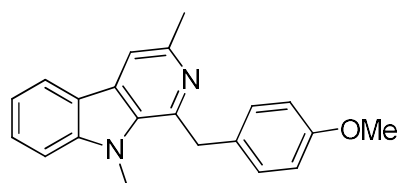
146.77
142.60
141.74
138.71
135.55
134.84
130.60
130.01
128.26
127.75
126.34
126.31
121.48
121.11
119.42
112.41
109.45

39.89

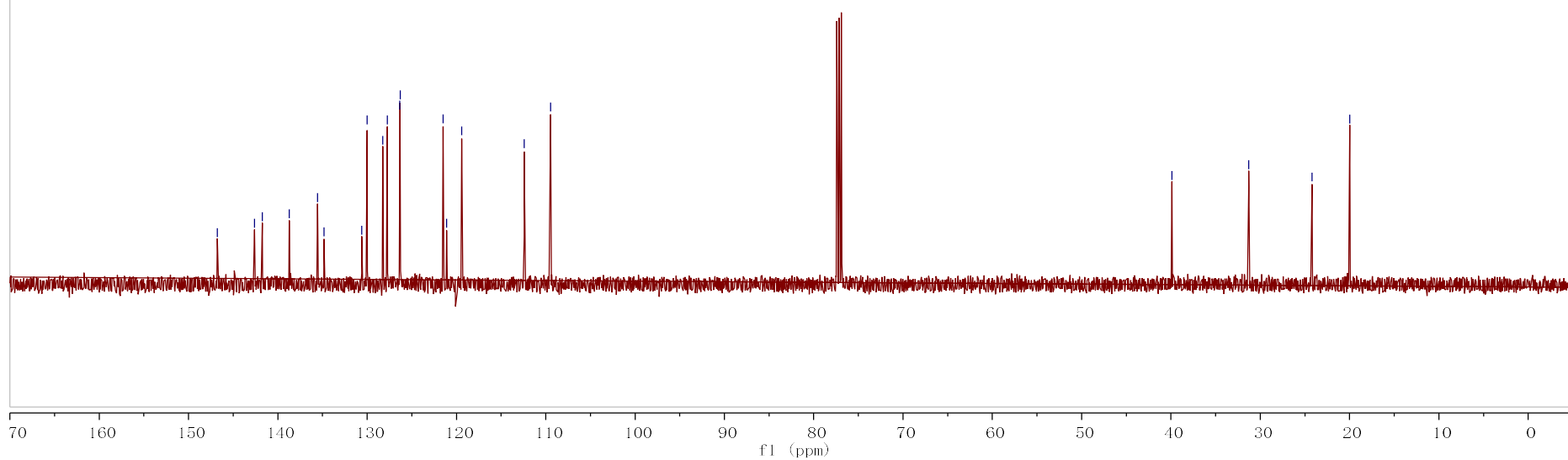
31.29

24.21

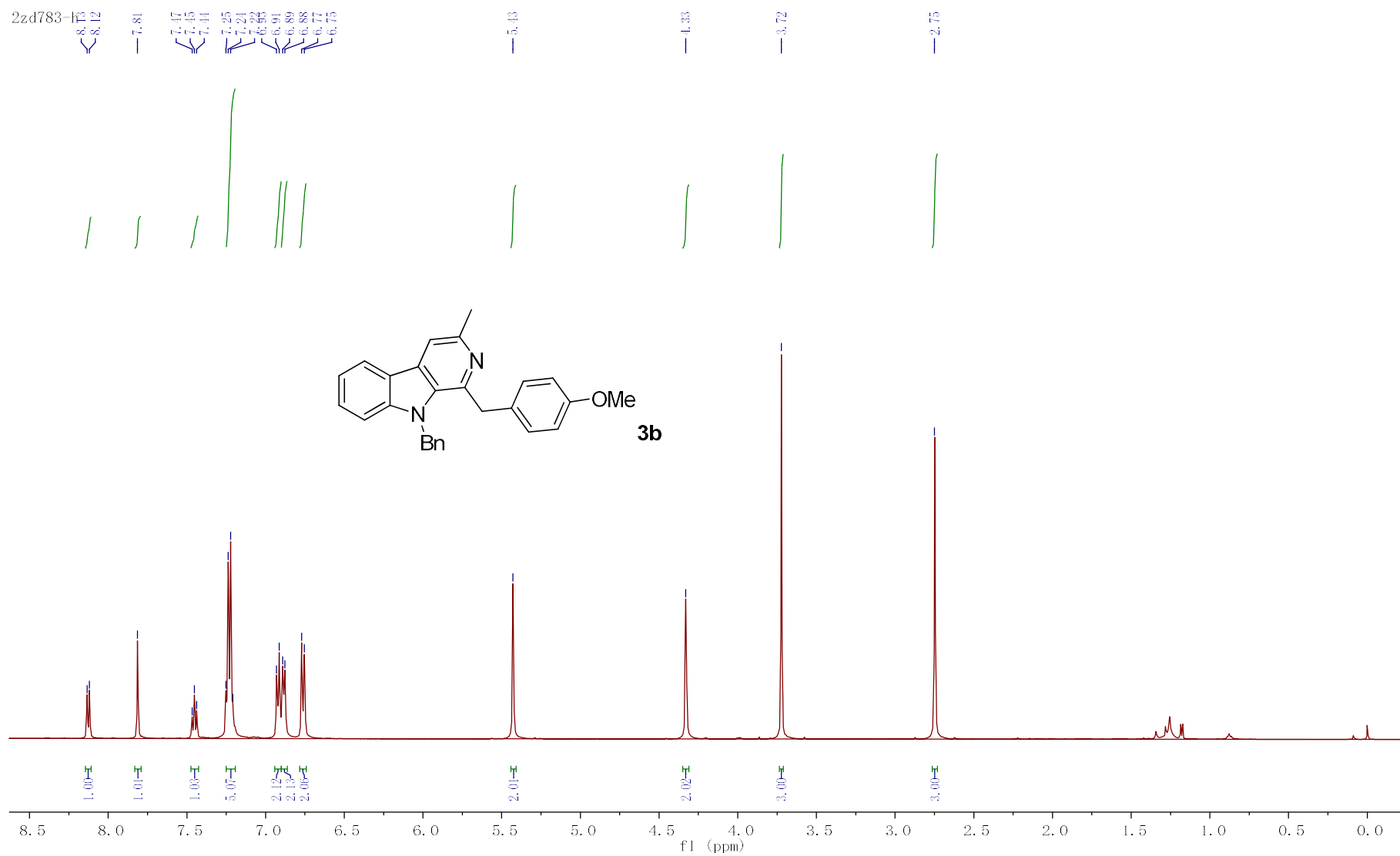
19.99



3a



NMR-33

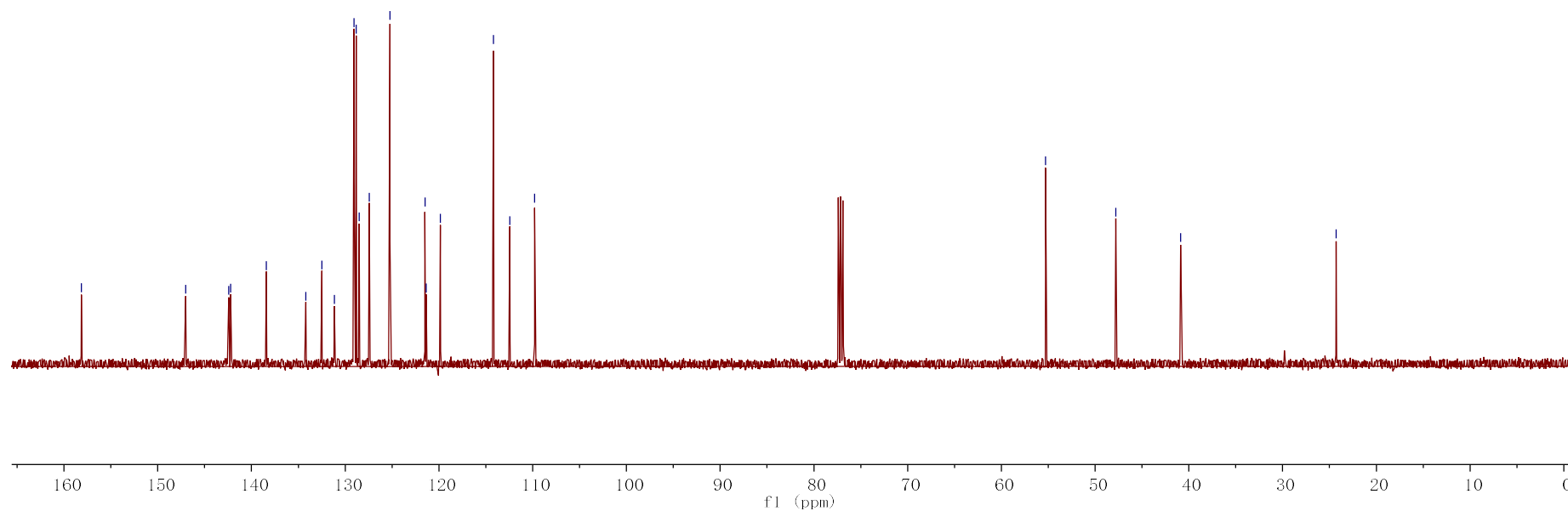
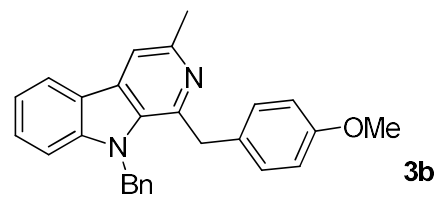


NMR-34

2zd783-5

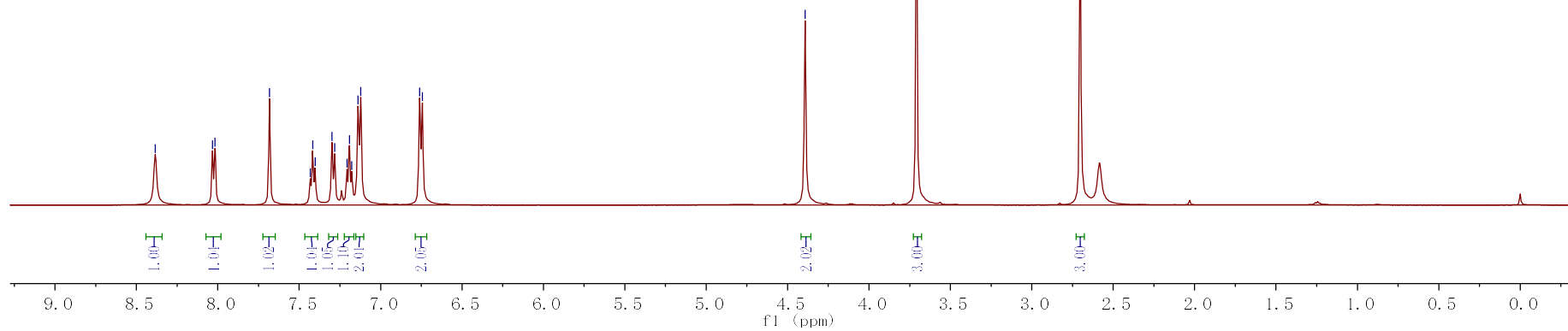
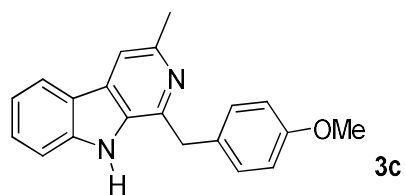
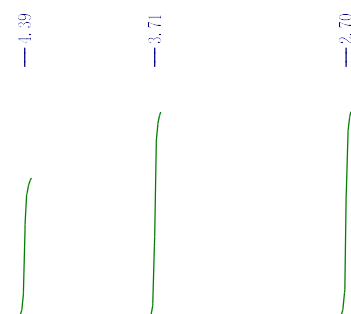
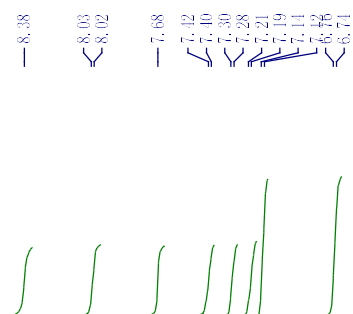
158.45
117.01
112.43
112.21
118.41
131.19
132.50
131.14
129.07
128.81
128.50
127.43
125.22
121.49
121.36
119.85
111.20
112.45
109.79

55.28
47.80
40.87
24.30



NMR-35

2zd81f-h



2zd81f-Cc

158.41

146.86

143.20

140.83

133.06

130.54

130.51

129.78

128.22

121.67

121.60

119.82

114.30

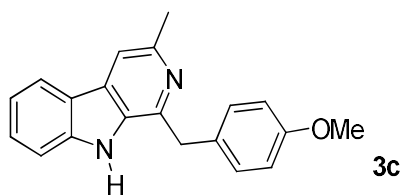
112.38

111.69

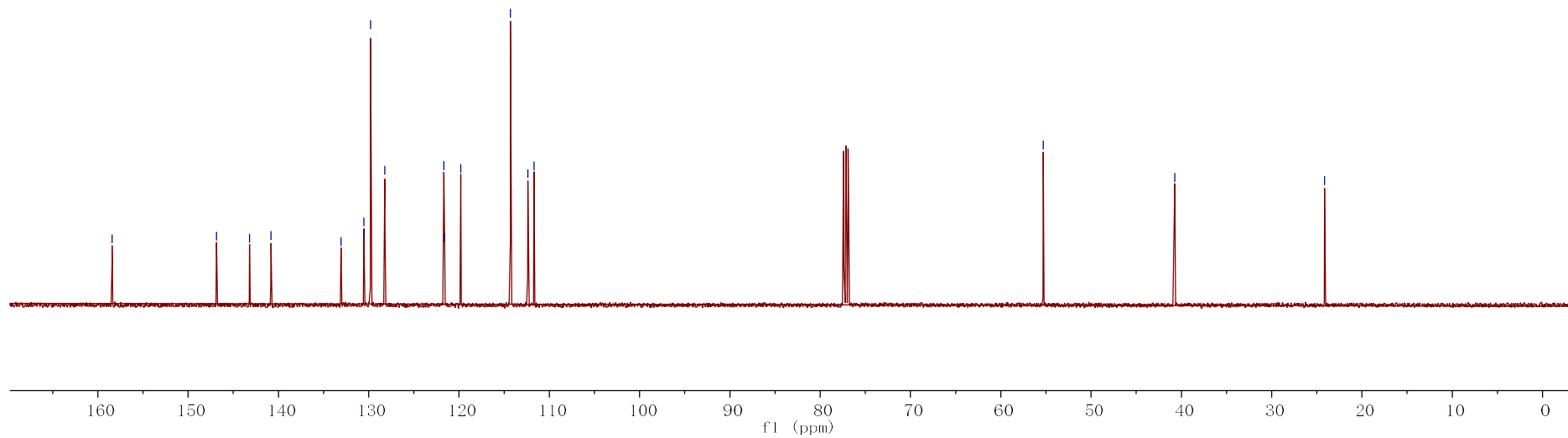
55.31

40.73

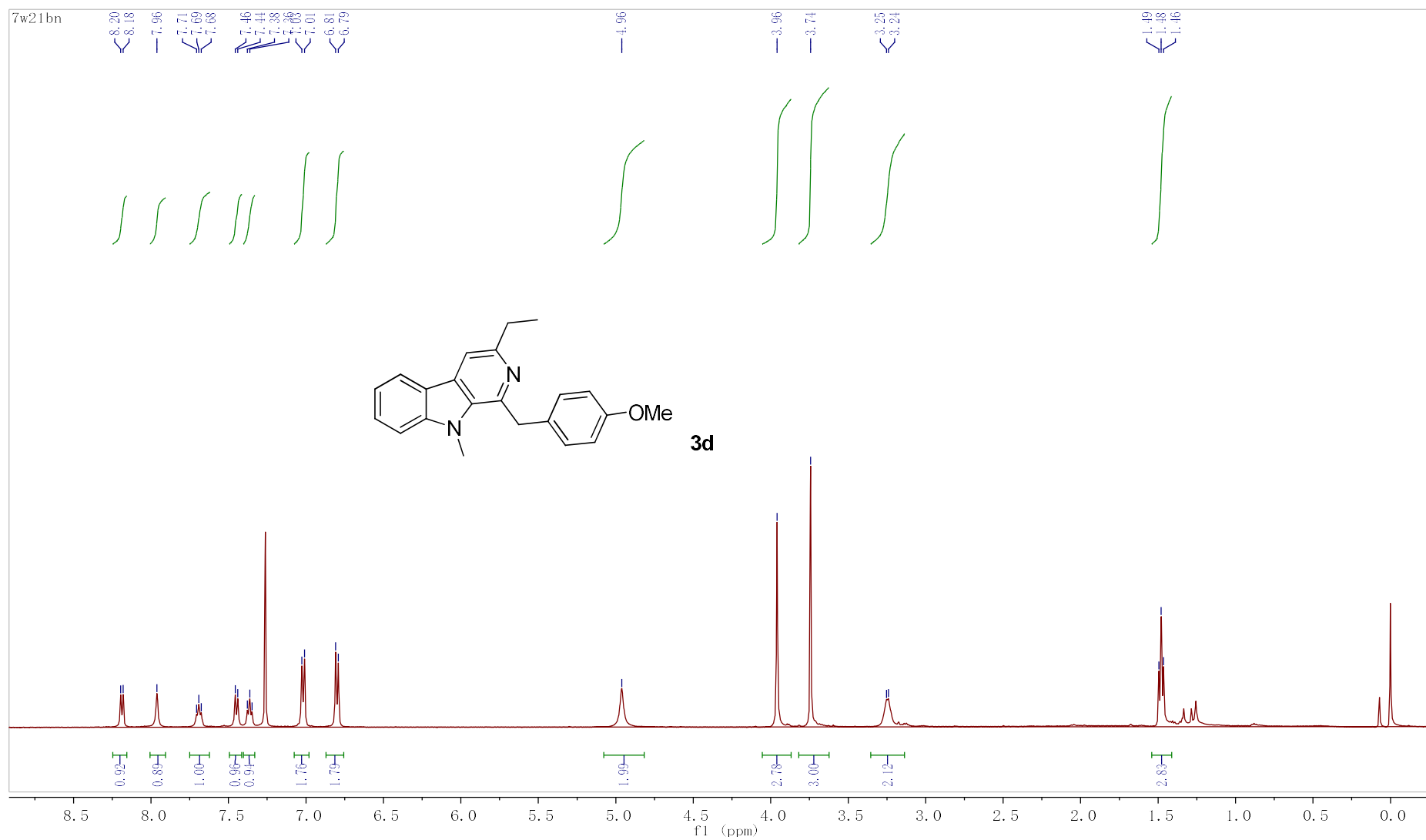
24.13

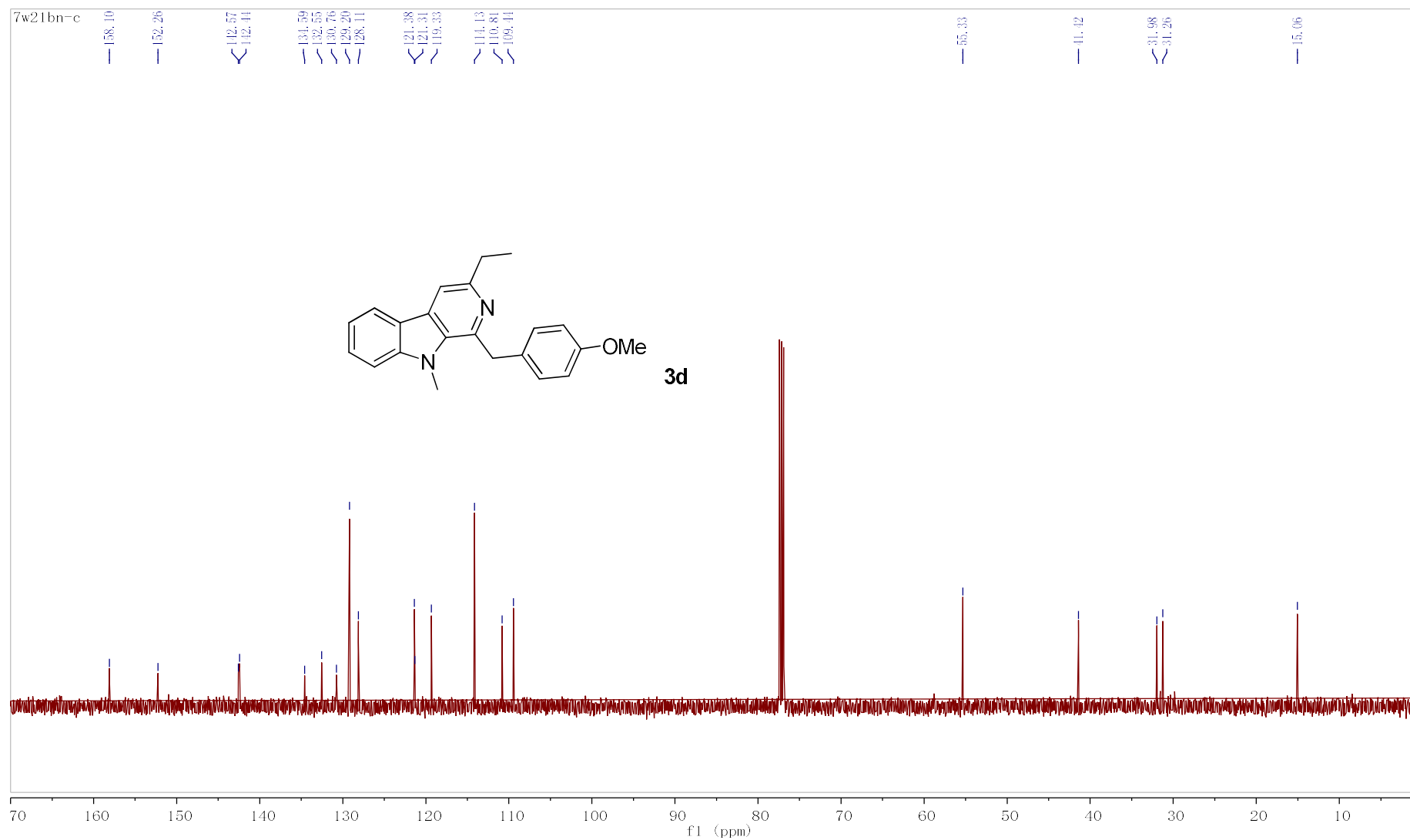


3c

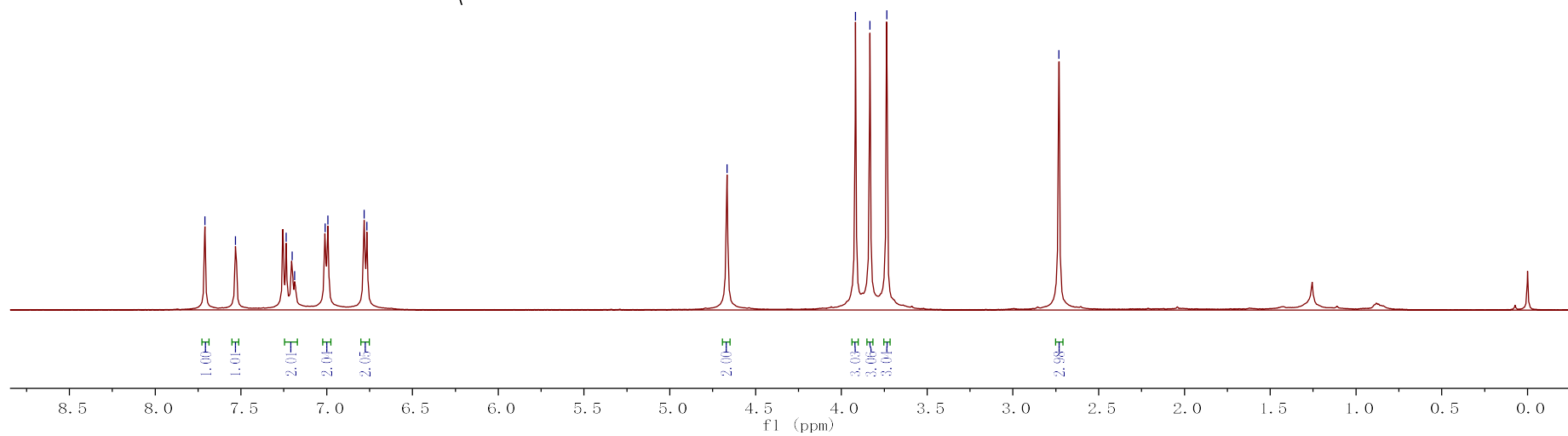
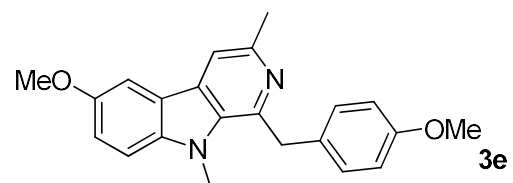
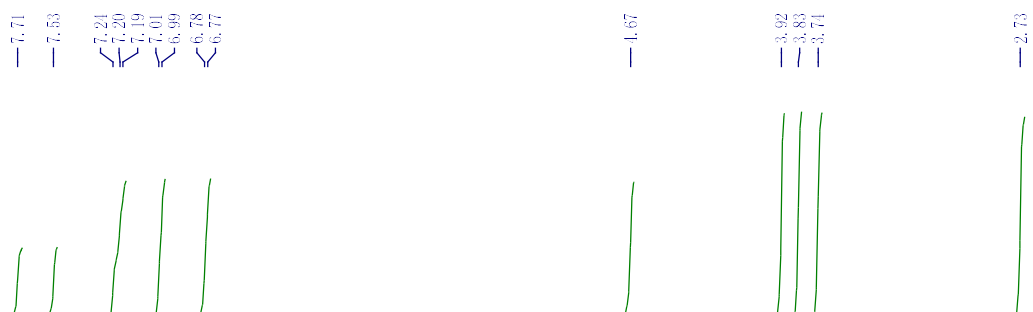


NMR-37



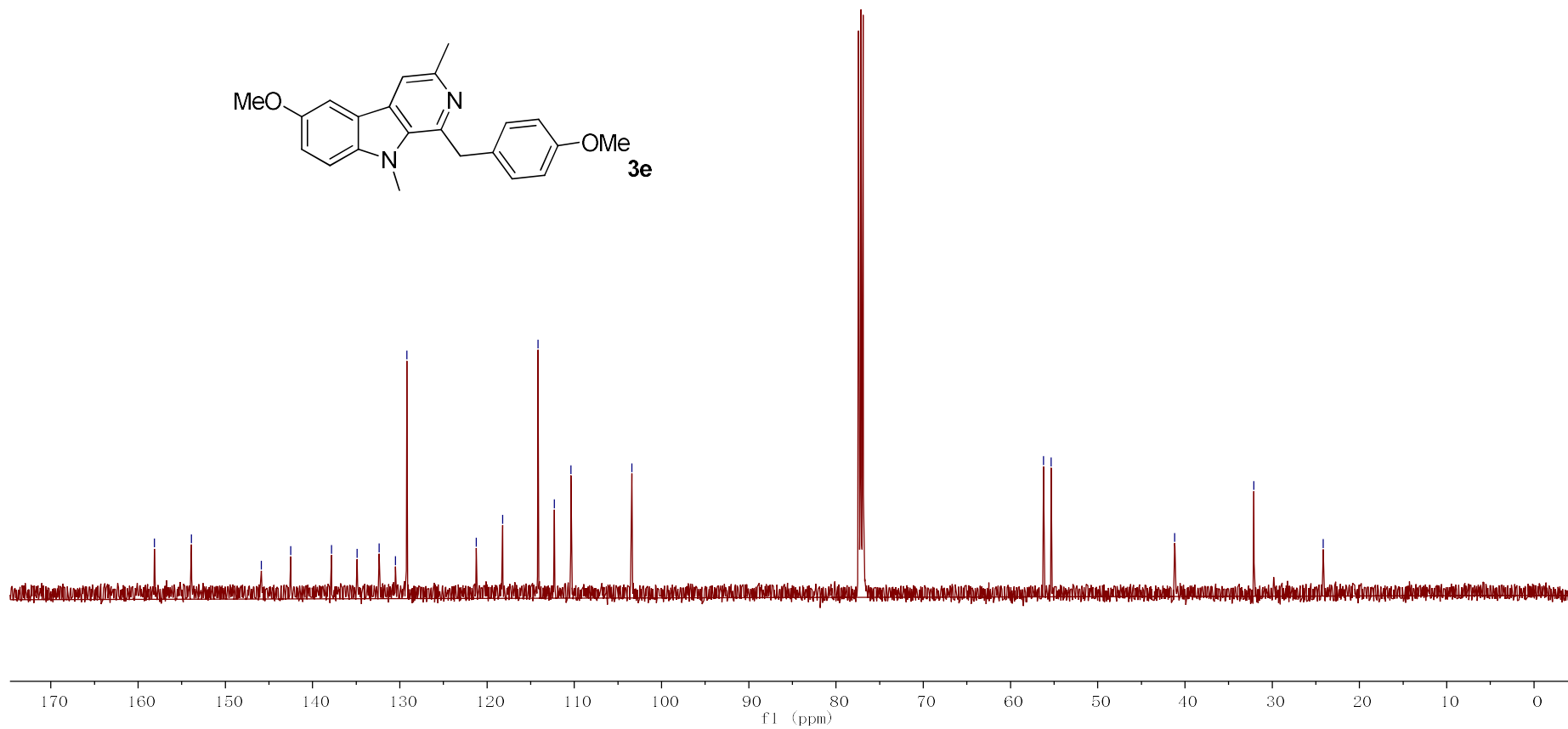
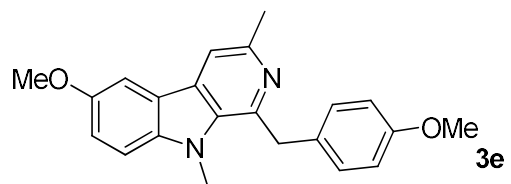


3zd16b1-h



3zd16b1-c

158.13
153.89
145.88
142.50
137.85
131.91
132.38
130.50
129.19
121.23
118.23
114.16
112.29
110.40
103.40
56.21
55.34
41.18
32.40
24.15



NMR-41

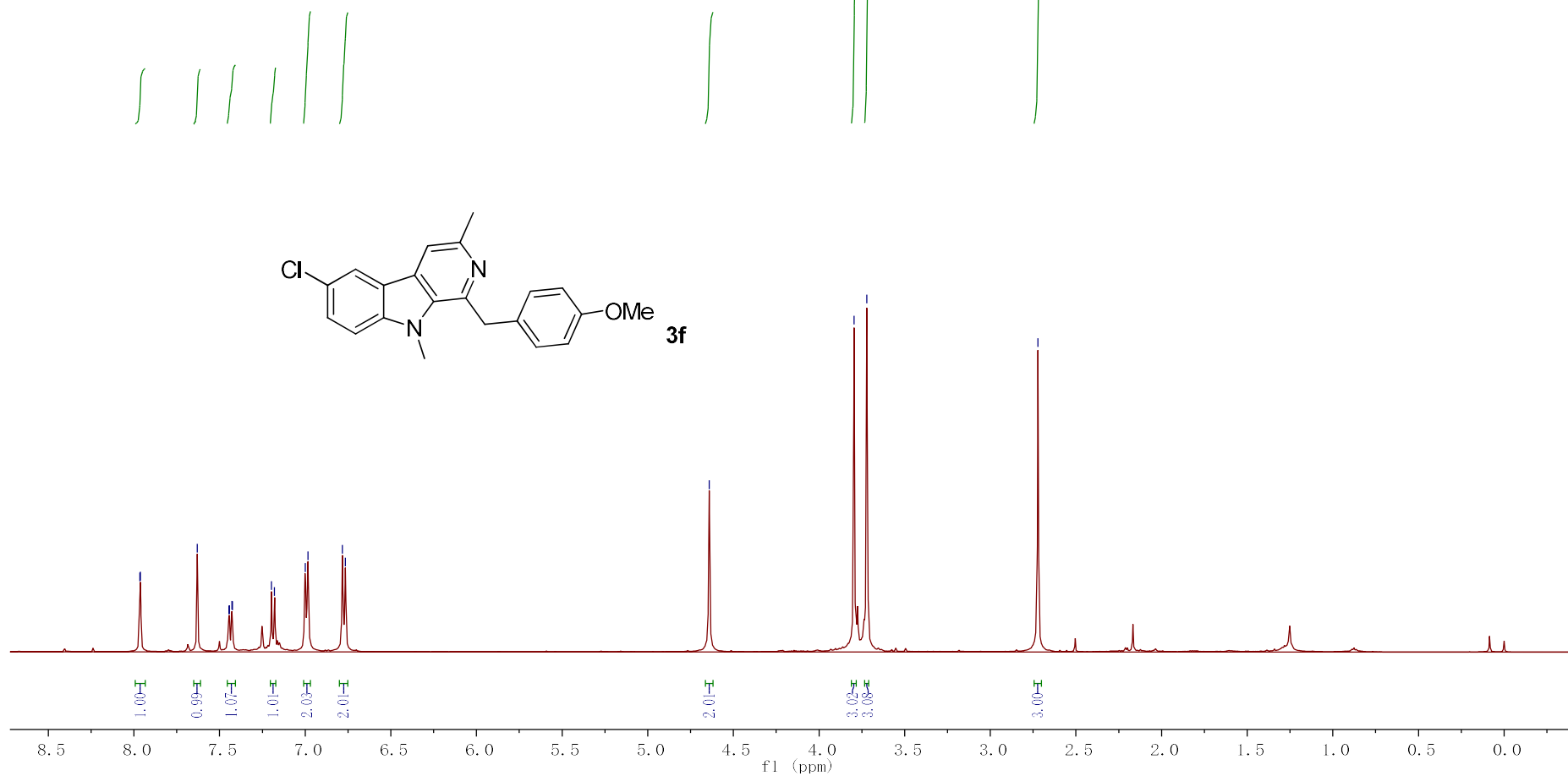
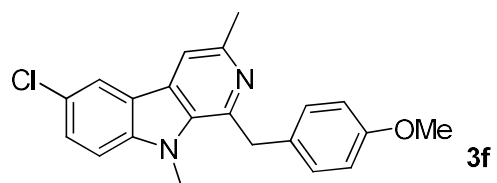
5-cl-20171027

7.64
7.66
7.63
7.44
7.43
7.42
7.18
7.00
6.98
6.78
6.77

4.64

3.80
3.72

2.72



5-cl-20171027-c

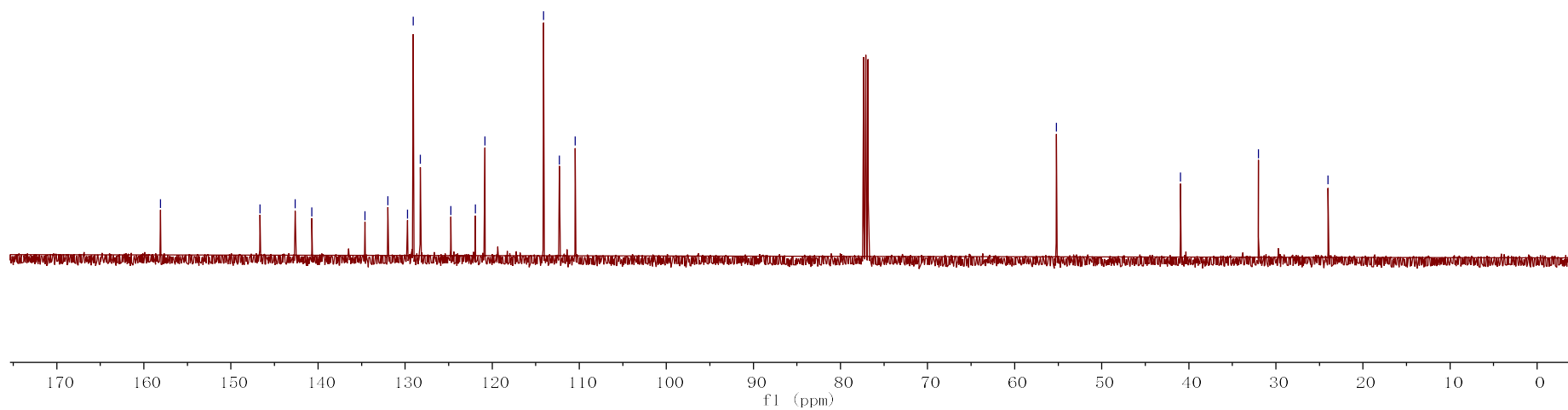
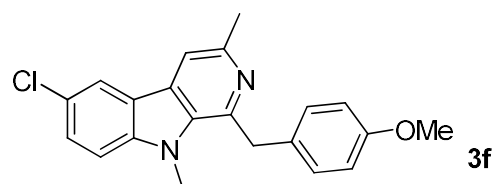
138.09
136.65
132.62
130.71
131.62
131.98
129.73
129.05
128.25
121.76
121.92
120.84
111.11
112.29
110.45

55.22

40.95

32.01

21.00



NMR-43

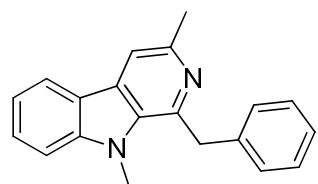
2zd81g-H

8.10
8.08
7.76
7.55
7.51
7.52
7.34
7.32
7.25
7.23
7.22
7.17
7.16
7.14
7.09
7.08

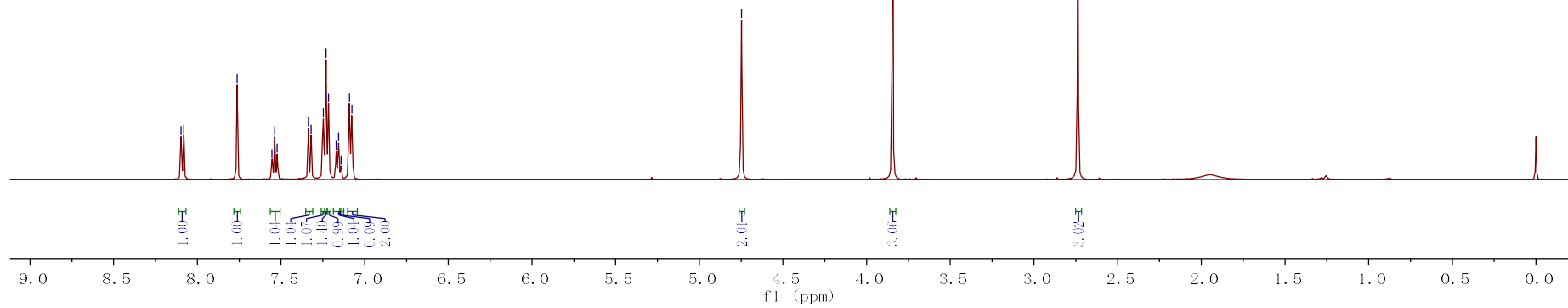
4.75

3.84

2.74



3g



NMR-44

2zd81gC
146.56
142.54
141.86
140.35

134.48
130.80
128.69
128.20
126.26

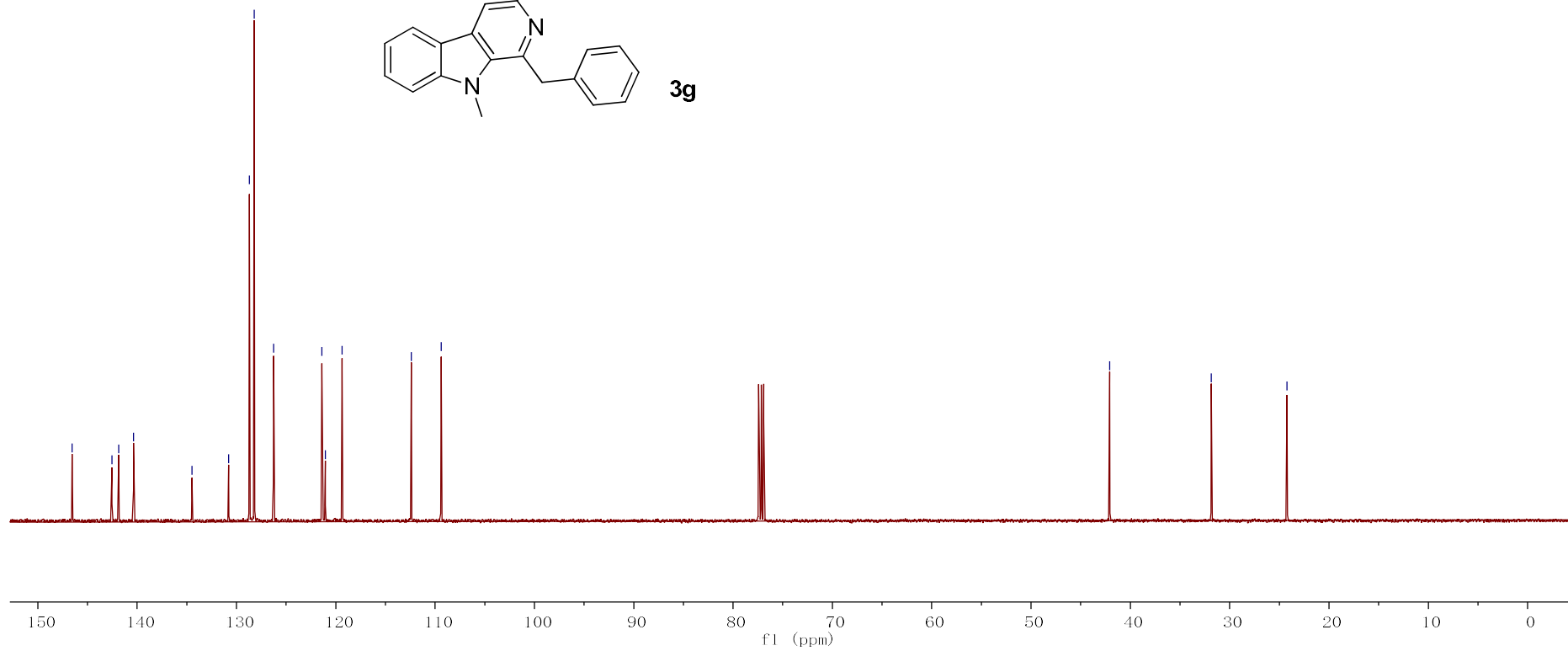
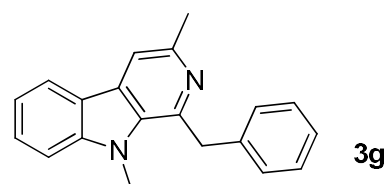
121.39
121.06
119.36

112.40
109.40

42.09

31.86

24.22



NMR-45

7w39b-h

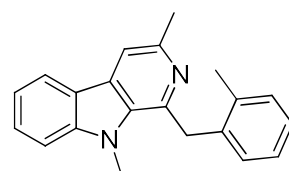
8.14
8.12
7.81
7.69
7.57
7.56
7.36
7.34
7.28
7.27
7.23
7.21
7.09
6.94
6.84
6.43

1.67

3.73

2.76

2.47



3h

1.08
1.08
1.11
1.20
1.21
1.02
1.06
1.03

1.02

2.22

3.00

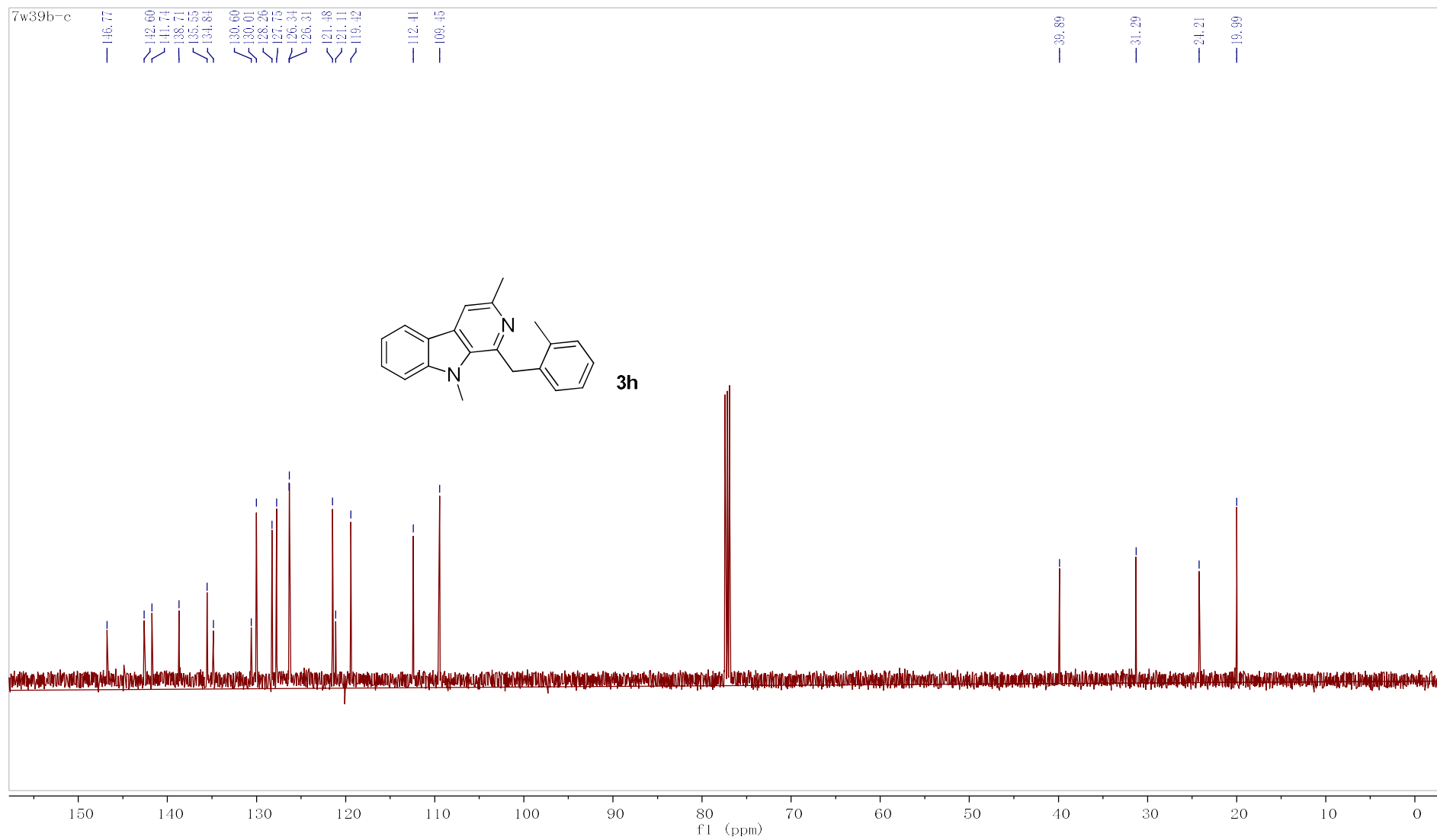
2.97

3.01

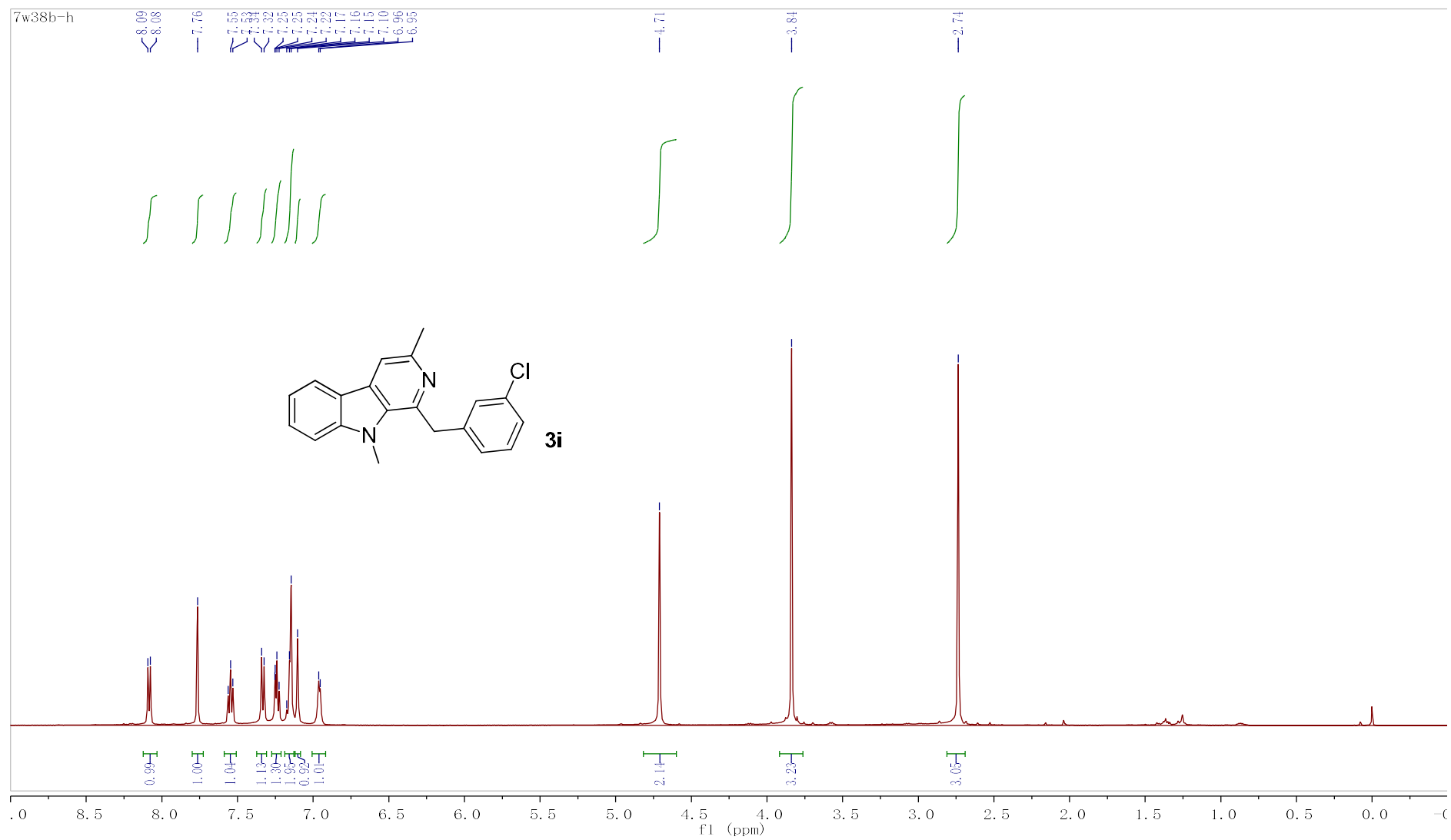
8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0

f1 (ppm)

NMR-46



NMR-47



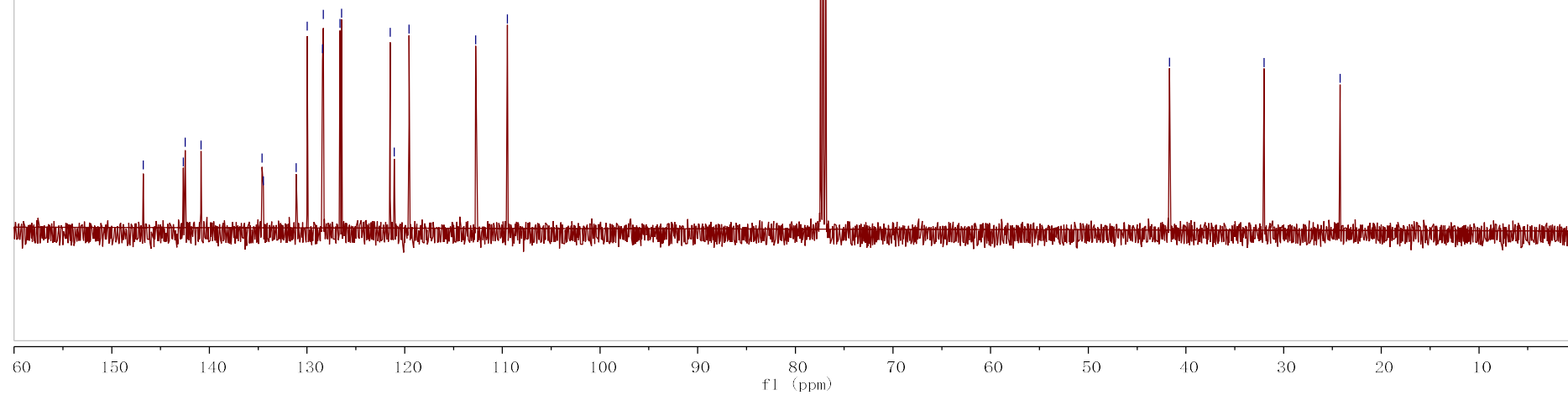
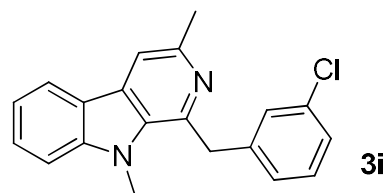
7w38b

146.78
142.66
142.47
140.87
134.62
134.47
131.10
129.97
128.42
128.35
126.62
126.47
121.49
121.07
119.55
112.72
109.48

41.69

32.00

24.21



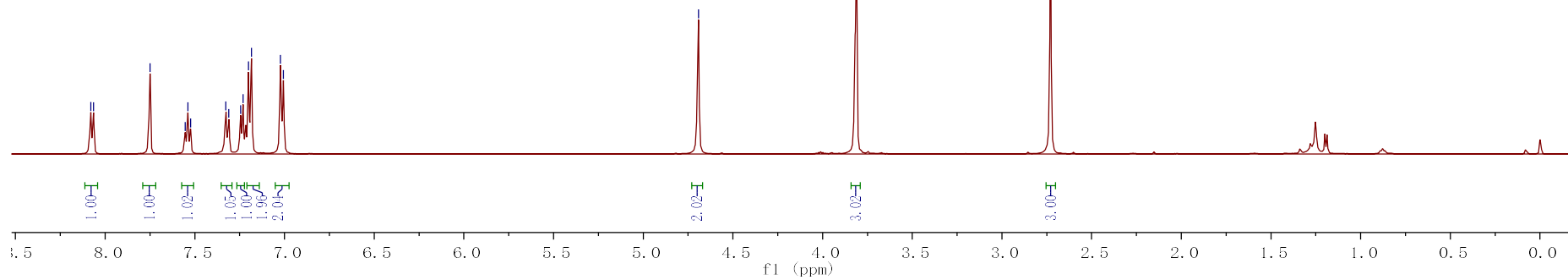
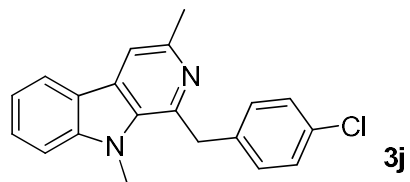
NMR-49

2zd81-338
 8.00
 7.75
 7.55
 7.54
 7.52
 7.33
 7.31
 7.25
 7.23
 7.20
 7.18
 7.02
 7.01

4.69

3.81

2.73

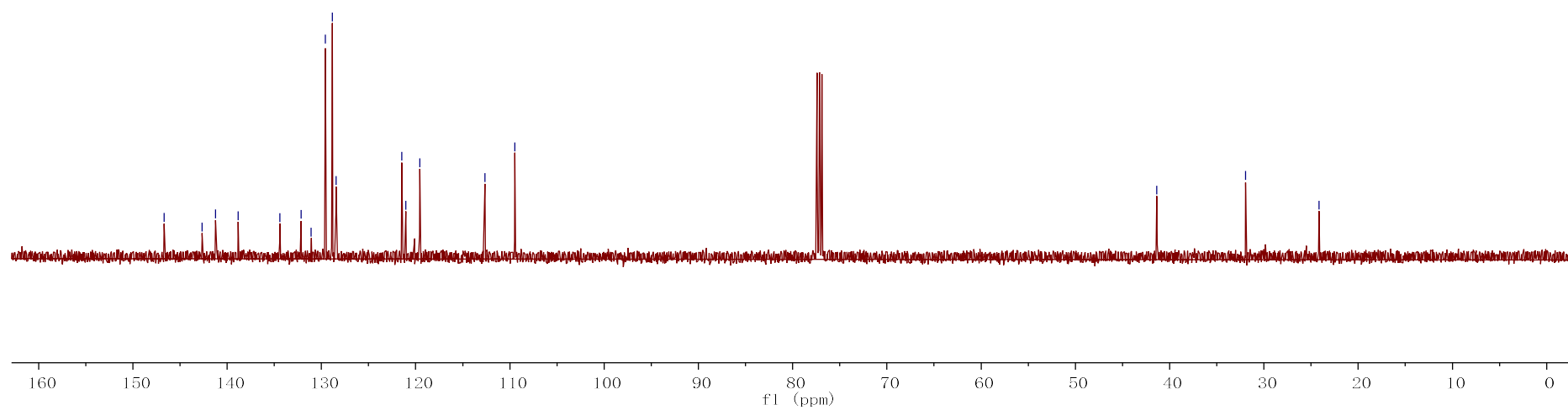
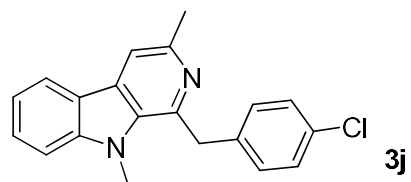


NMR-50

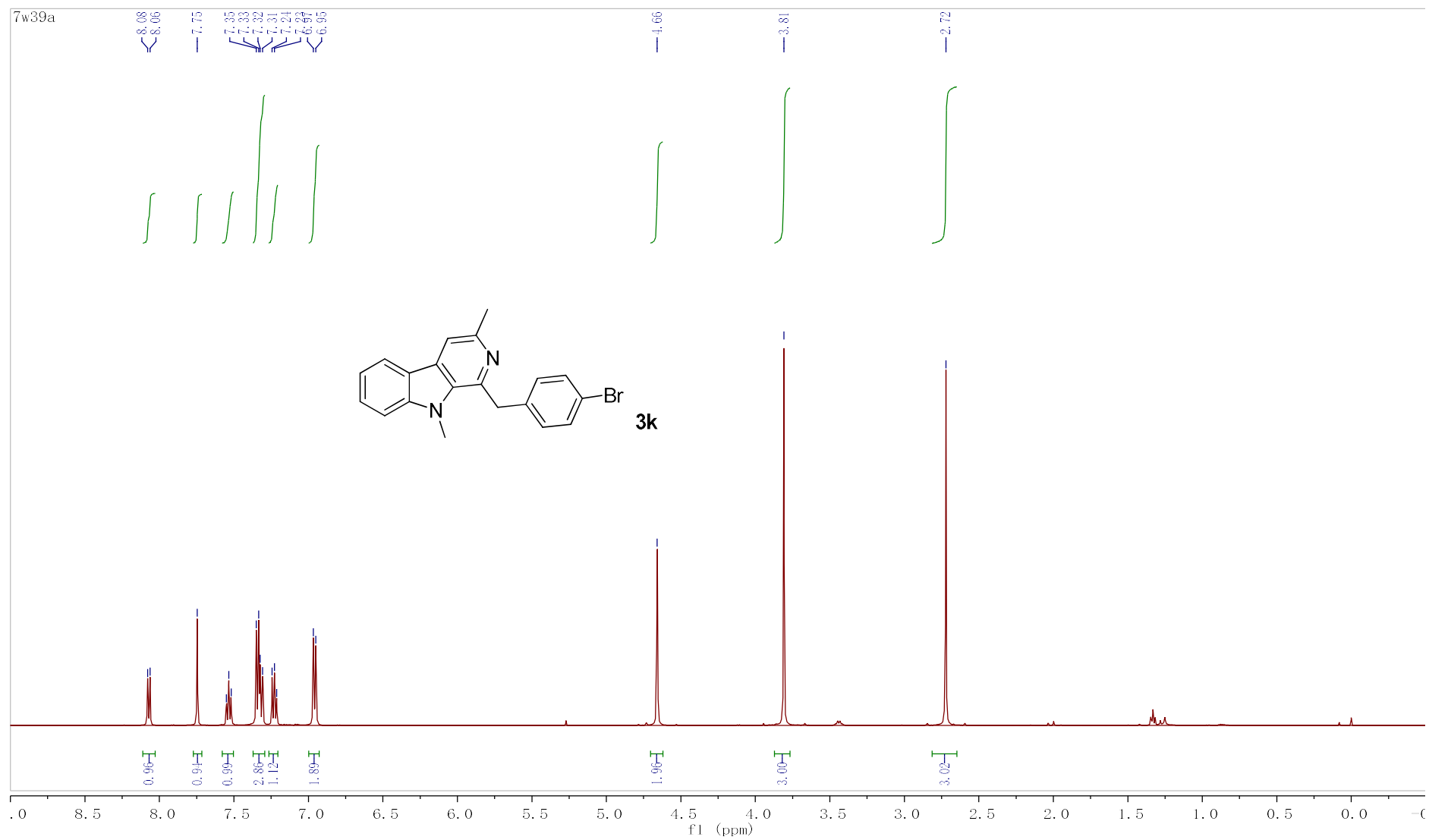
2zd81-3

146.67
142.66
141.23
138.82
134.41
132.15
131.08
129.59
128.85
128.44
121.48
121.04
119.57
112.65
109.48

41.36
31.94
24.15



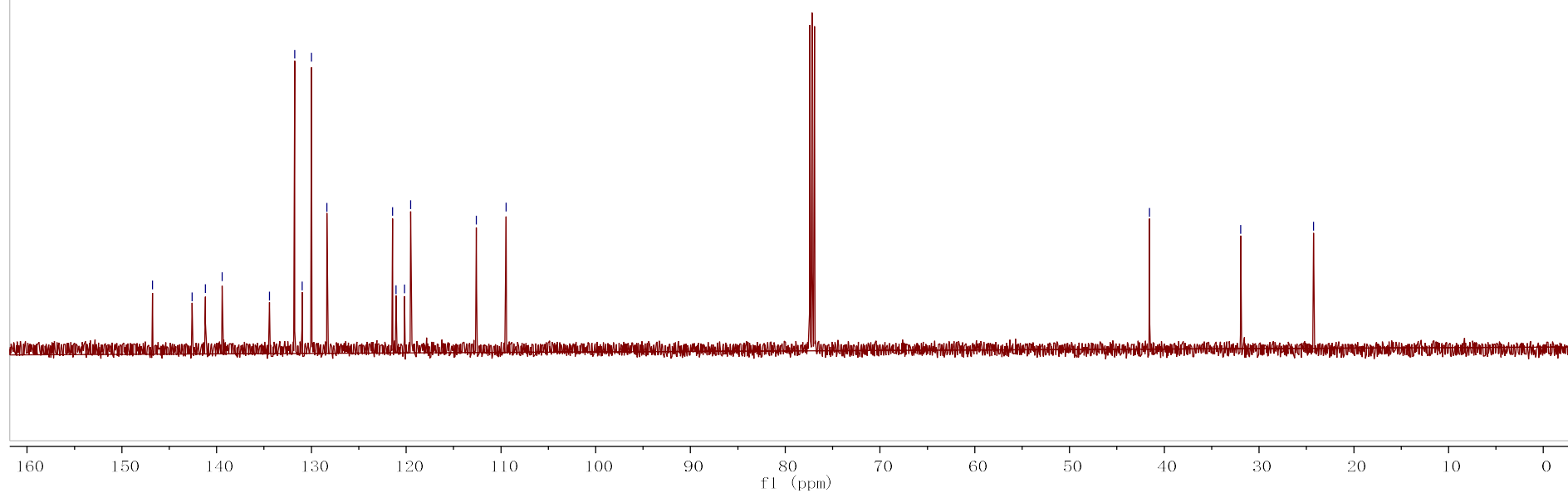
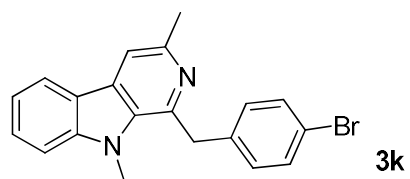
NMR-51



7w39a-c

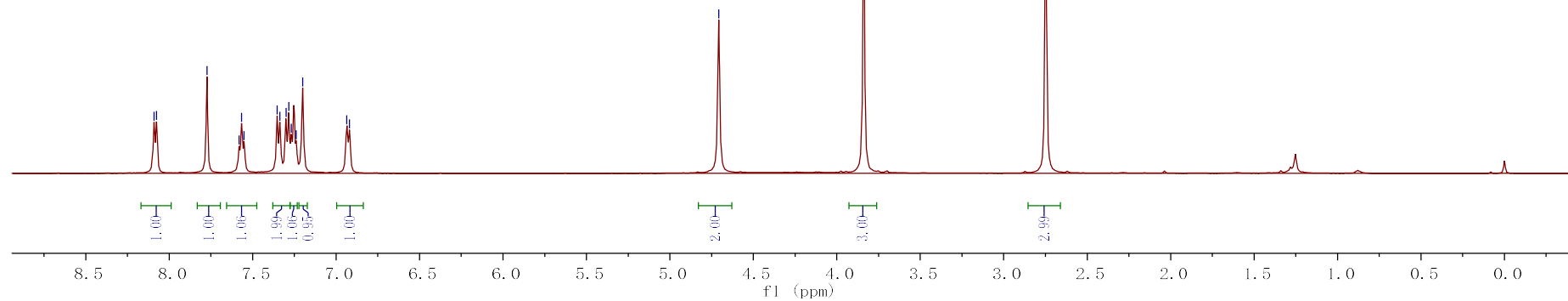
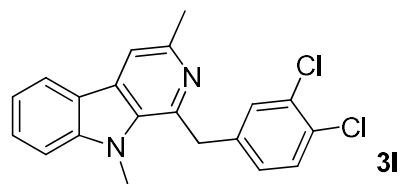
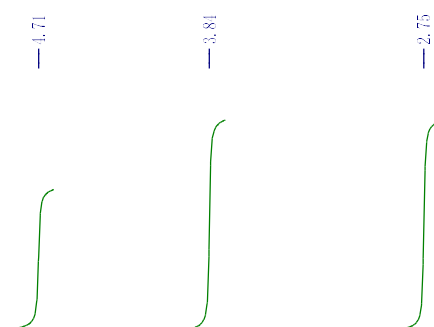
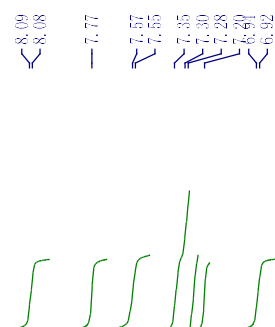
146.77
142.59
141.18
139.42
134.41
131.77
130.98
129.98
128.36
121.44
121.06
120.18
119.31
112.59
109.45

41.56
31.94
24.25

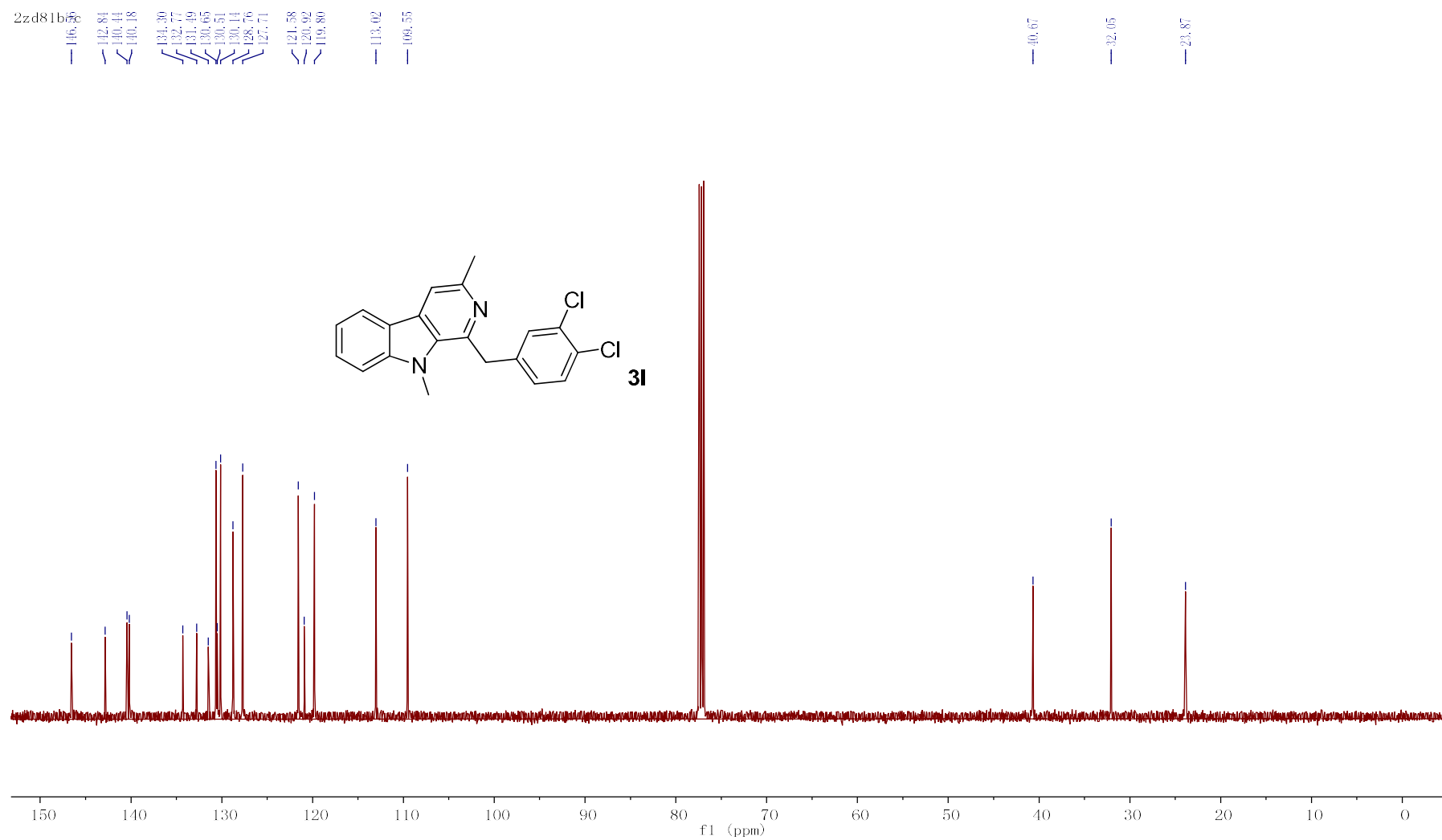


NMR-53

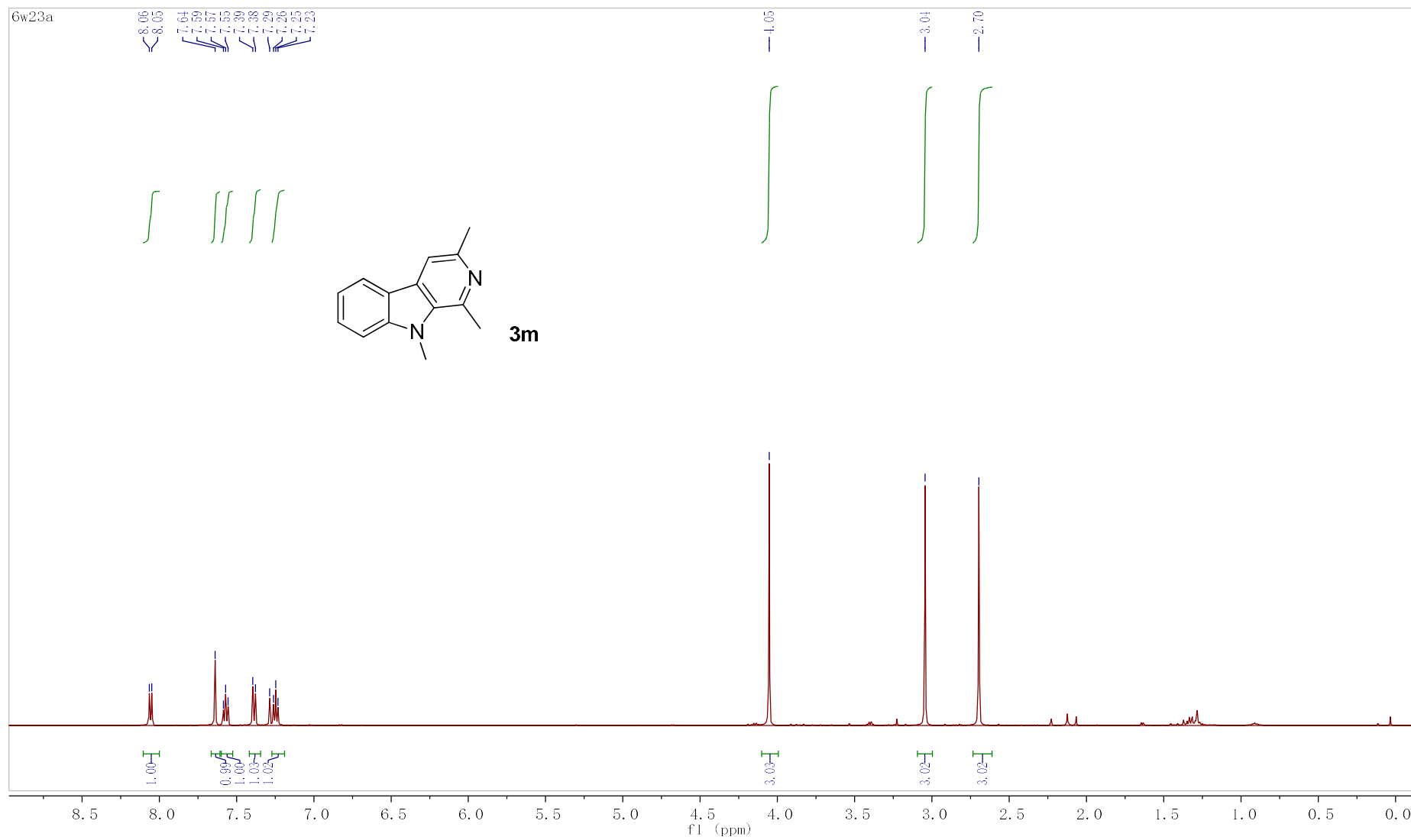
2zd81b-h



NMR-54



NMR-55



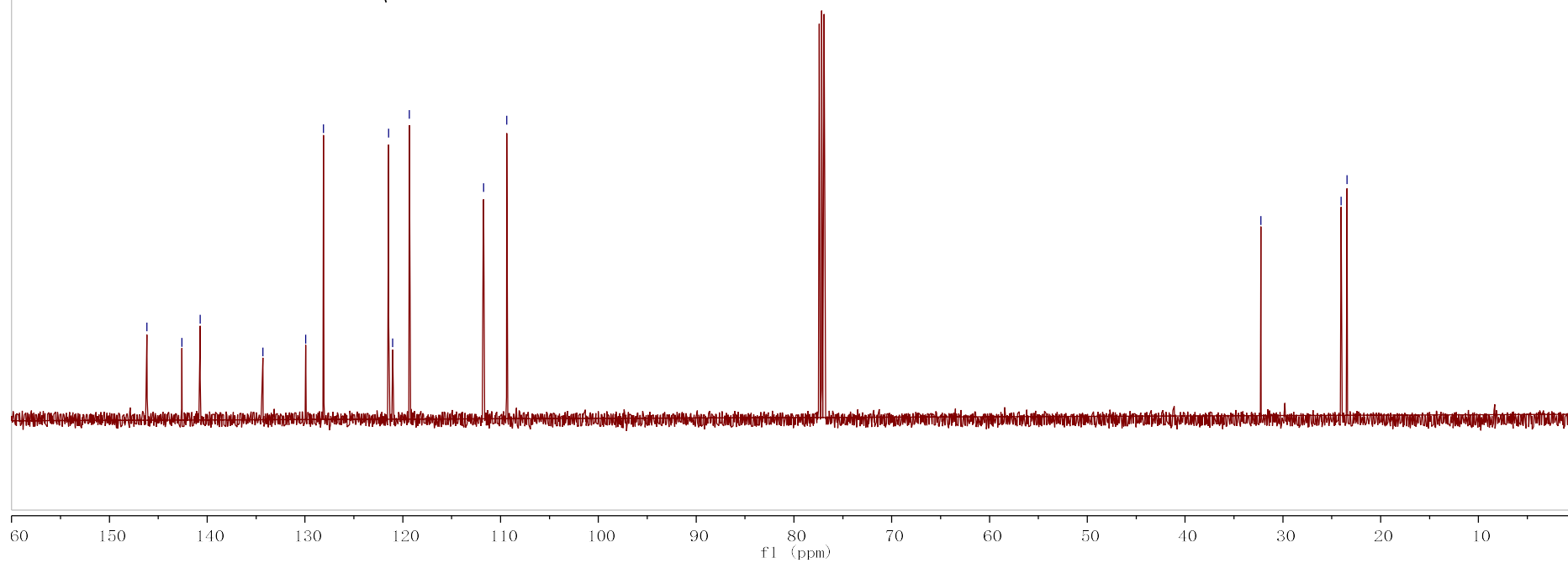
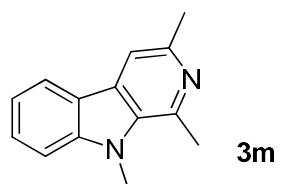
NMR-56

6w23a

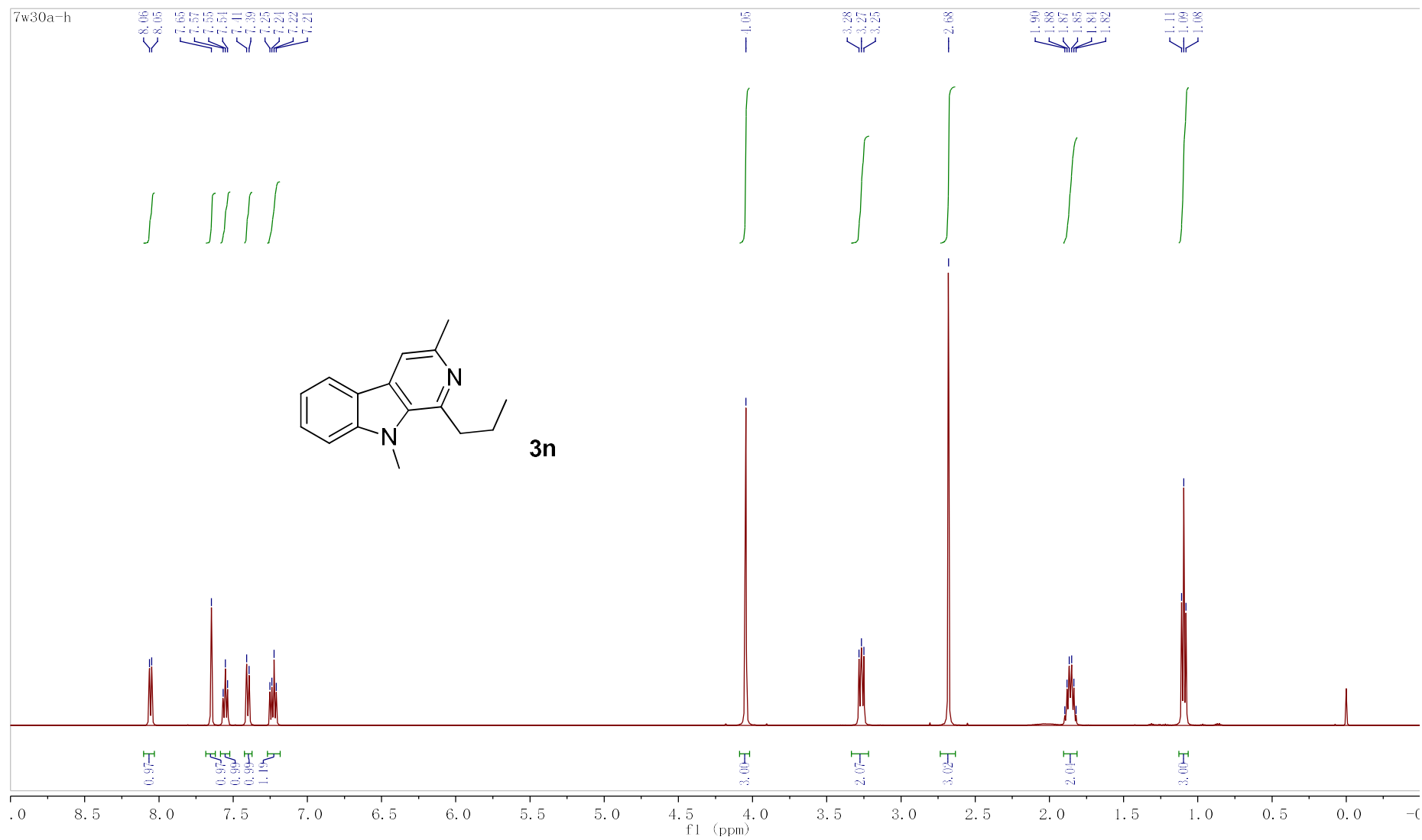
146.15
142.60
140.71
134.31
129.93
128.09
121.45
121.02
119.32
111.74
109.37

32.24

24.03
23.44



NMR-57



NMR-58

7w30a-c

146.39
143.23
142.75

133.79
130.49
128.09

121.40
121.26
119.31

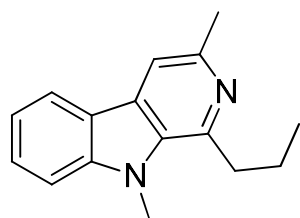
111.61
109.43

38.30

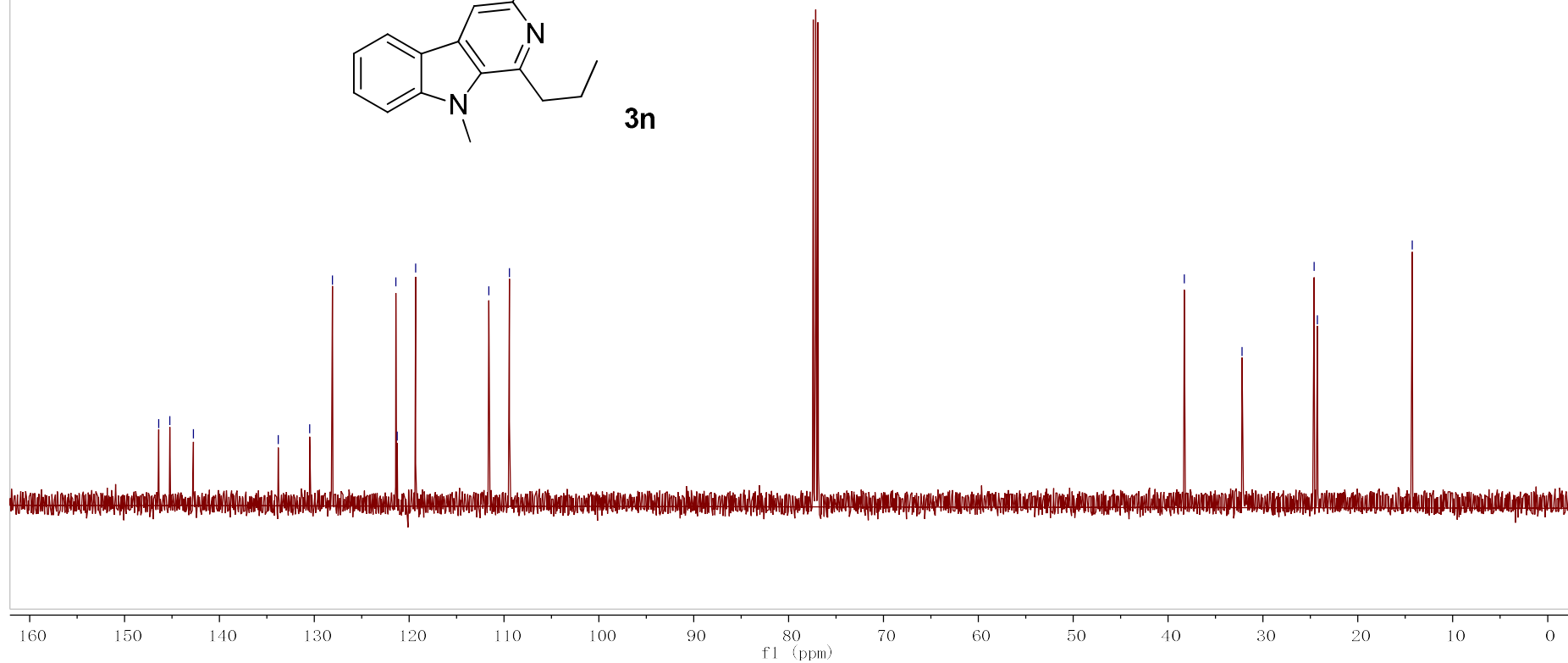
32.21

24.62
24.28

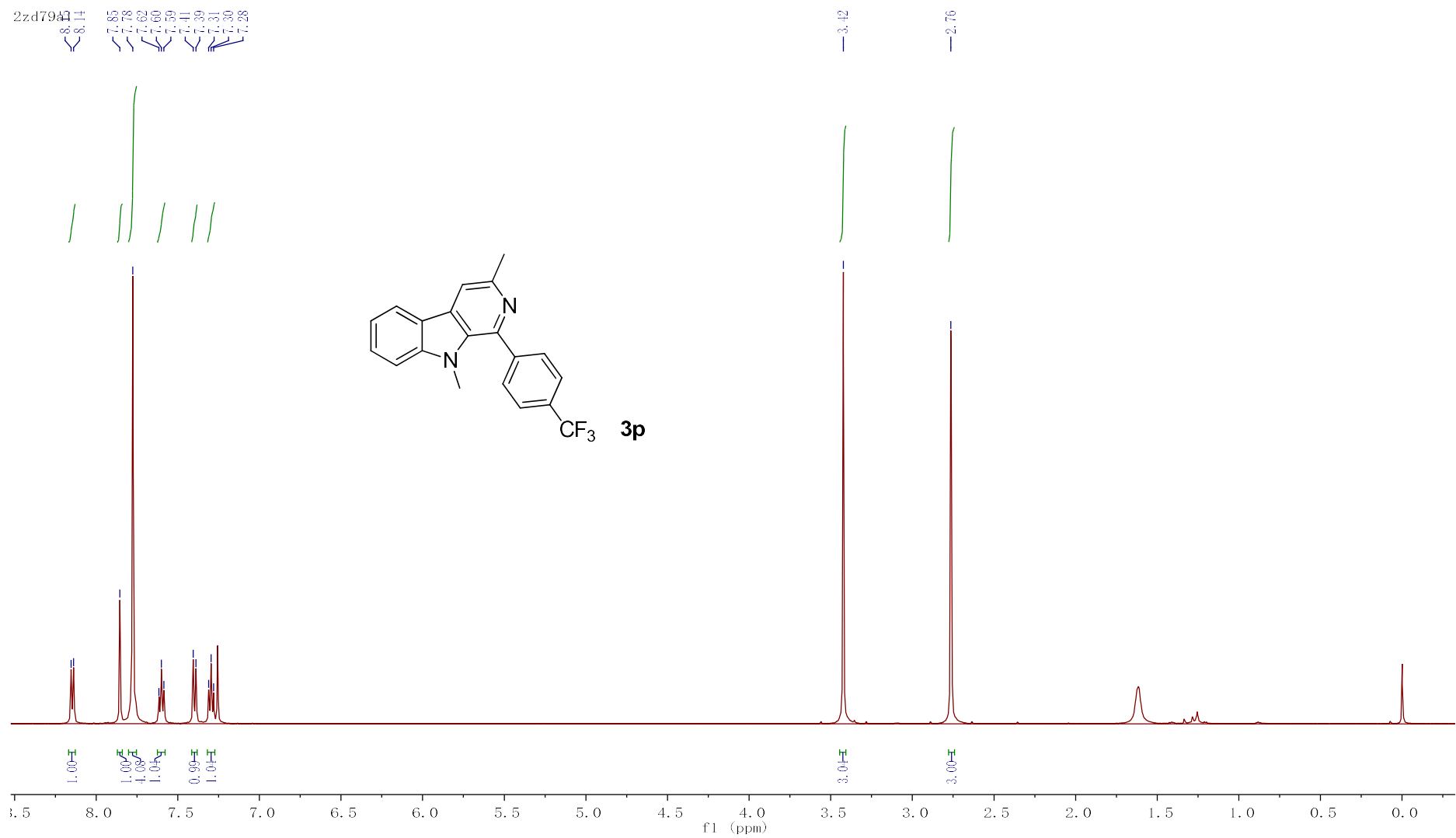
14.26



3n



NMR-59

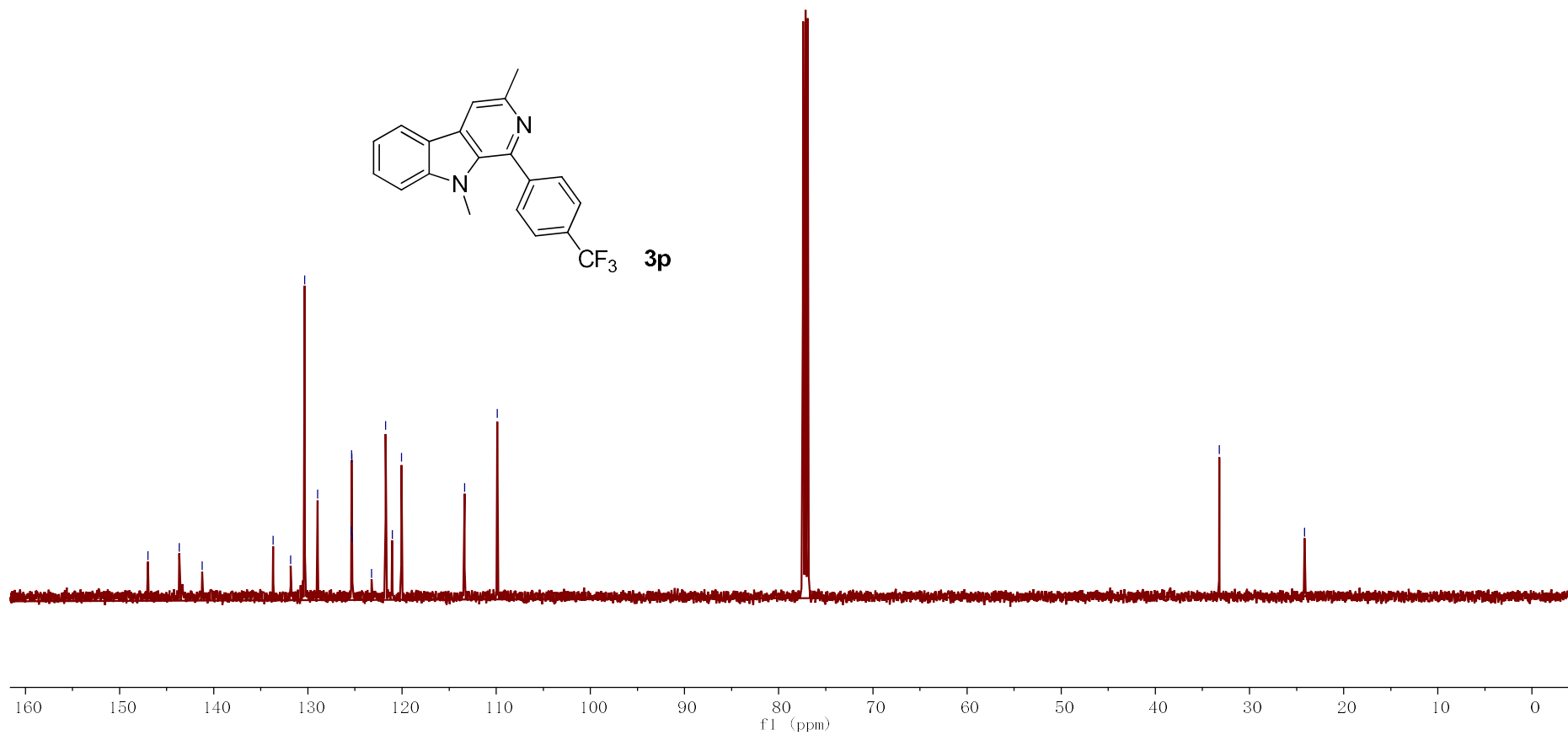
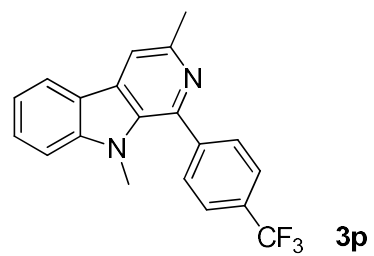


NMR-60

146.98
 143.67
 141.27
 133.69
 131.82
 130.34
 128.95
 125.38
 125.36
 125.33
 125.30
 123.23
 121.75
 121.05
 120.05
 113.37
 109.89

— 33.22

— 24.15

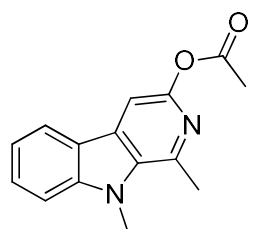


NMR-61

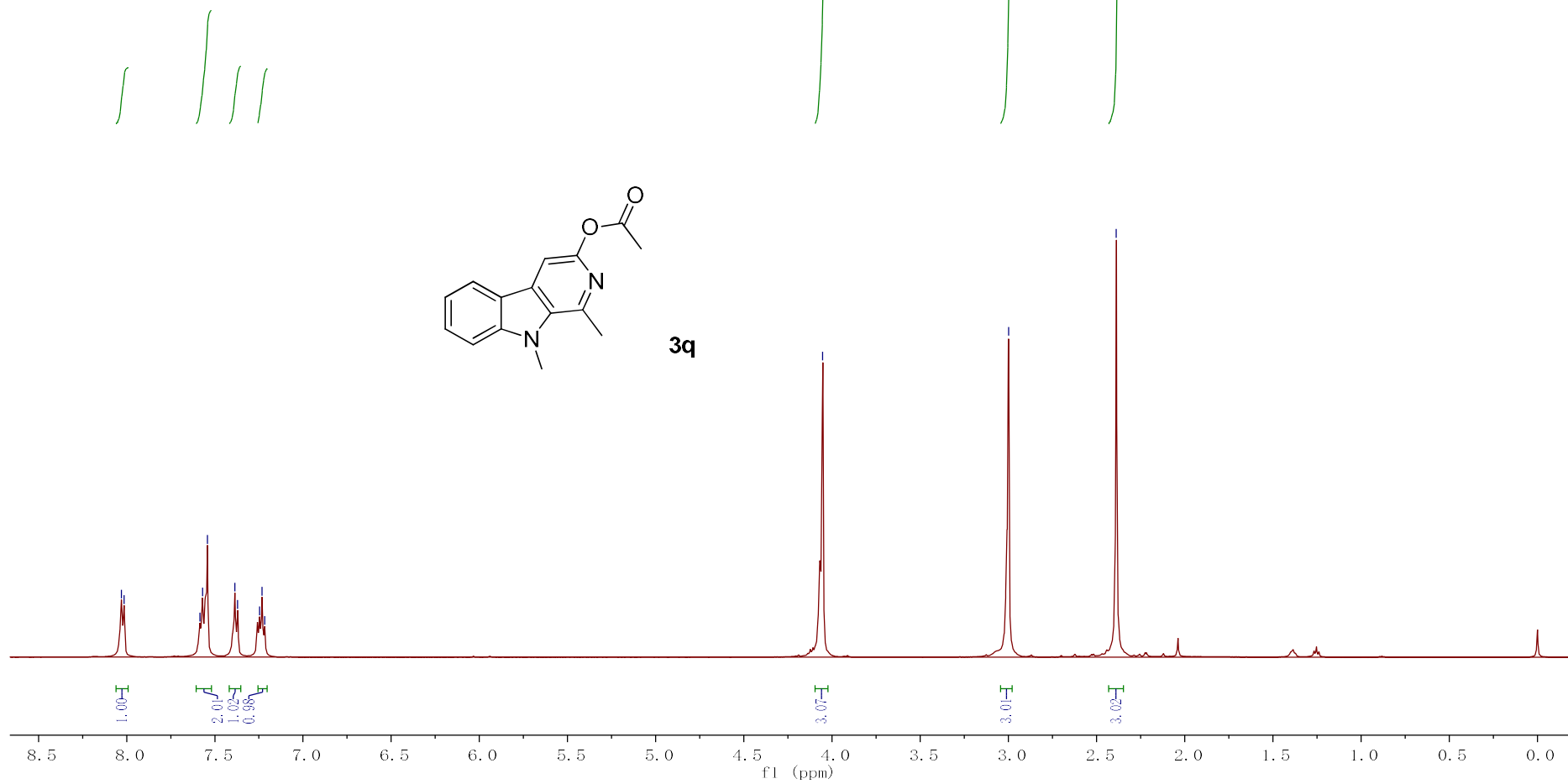
cooet-1-h

8.03
8.02
7.59
7.57
7.54
7.39
7.37
7.25
7.23
7.22

4.05
3.00
2.39



3q



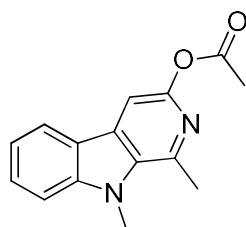
NMR-62

— 170.18
COOCH₃

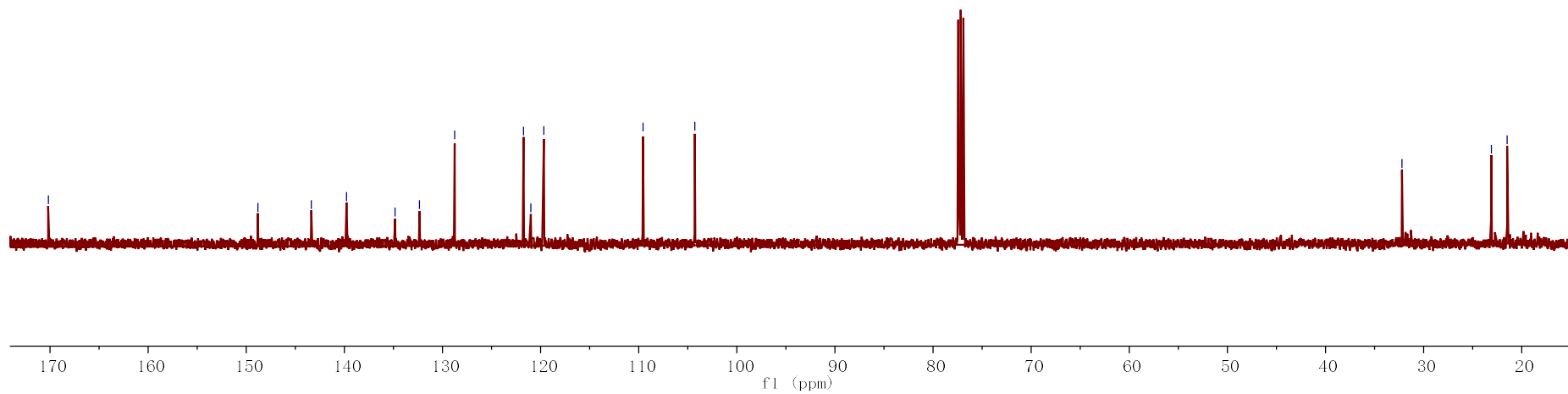
— 148.80
— 143.36
— 139.78
— 134.82
— 132.36
— 128.76
— 121.74
— 120.98
— 119.66

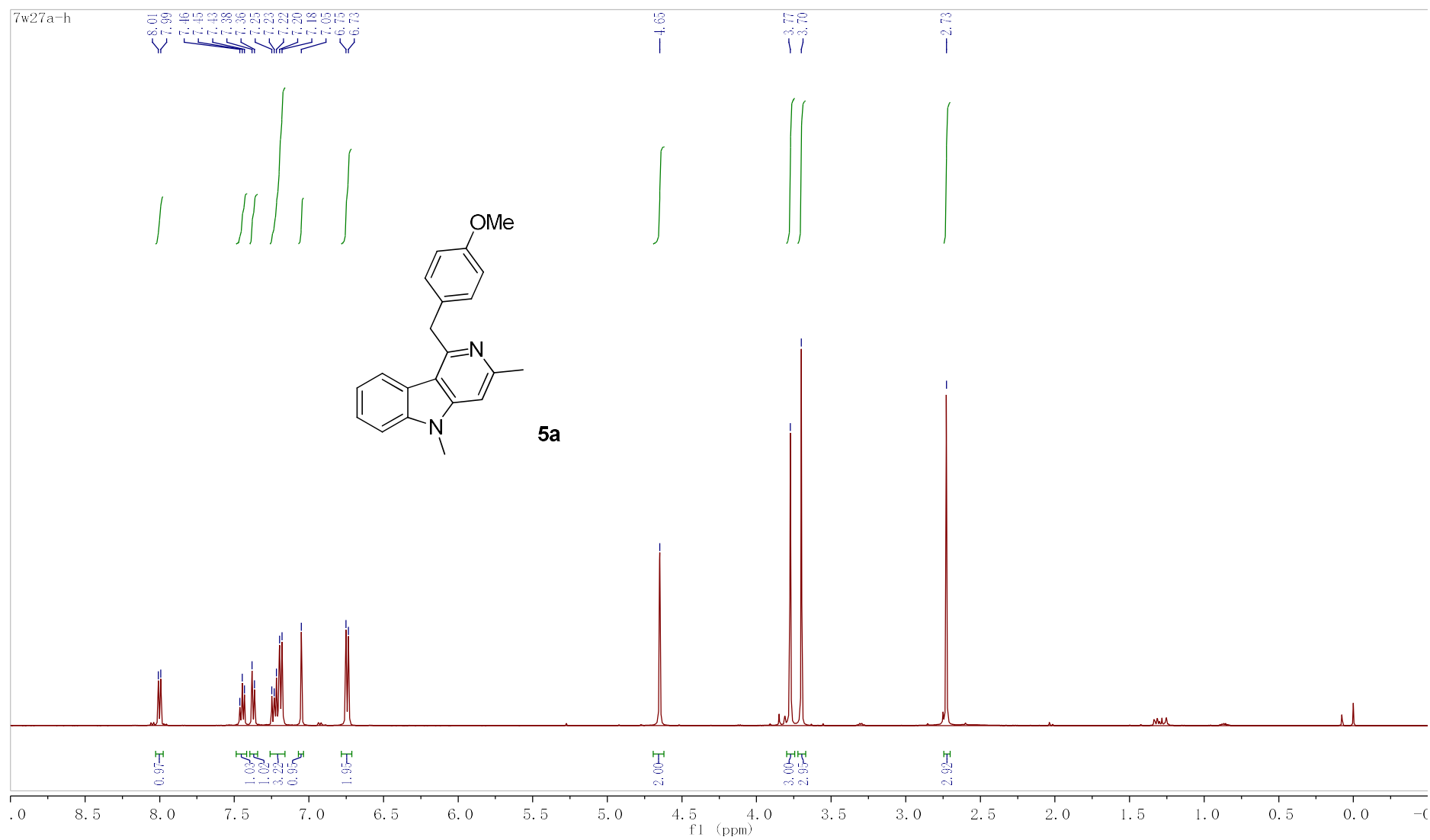
— 109.56
— 104.27

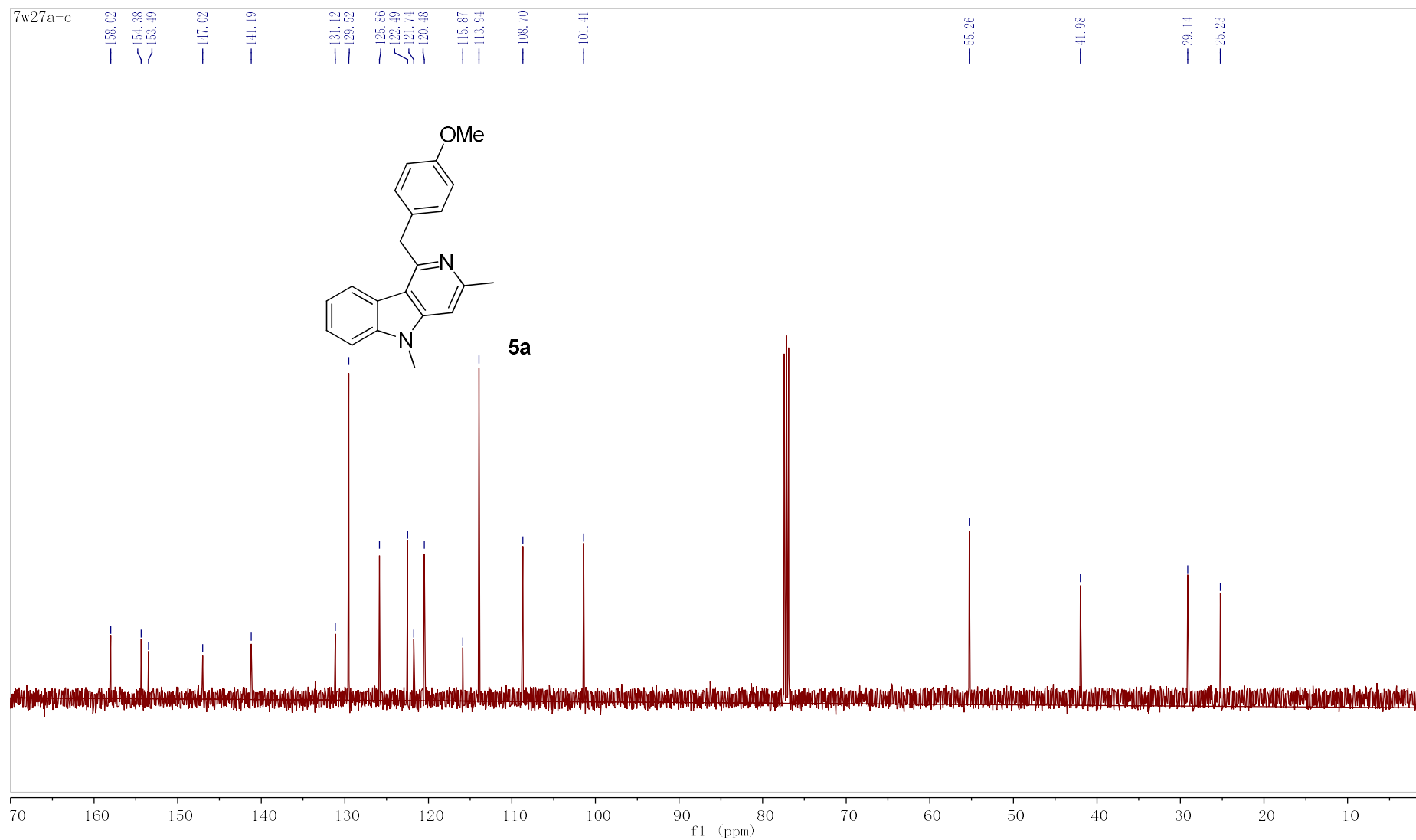
— 32.20
— 23.10
— 21.47



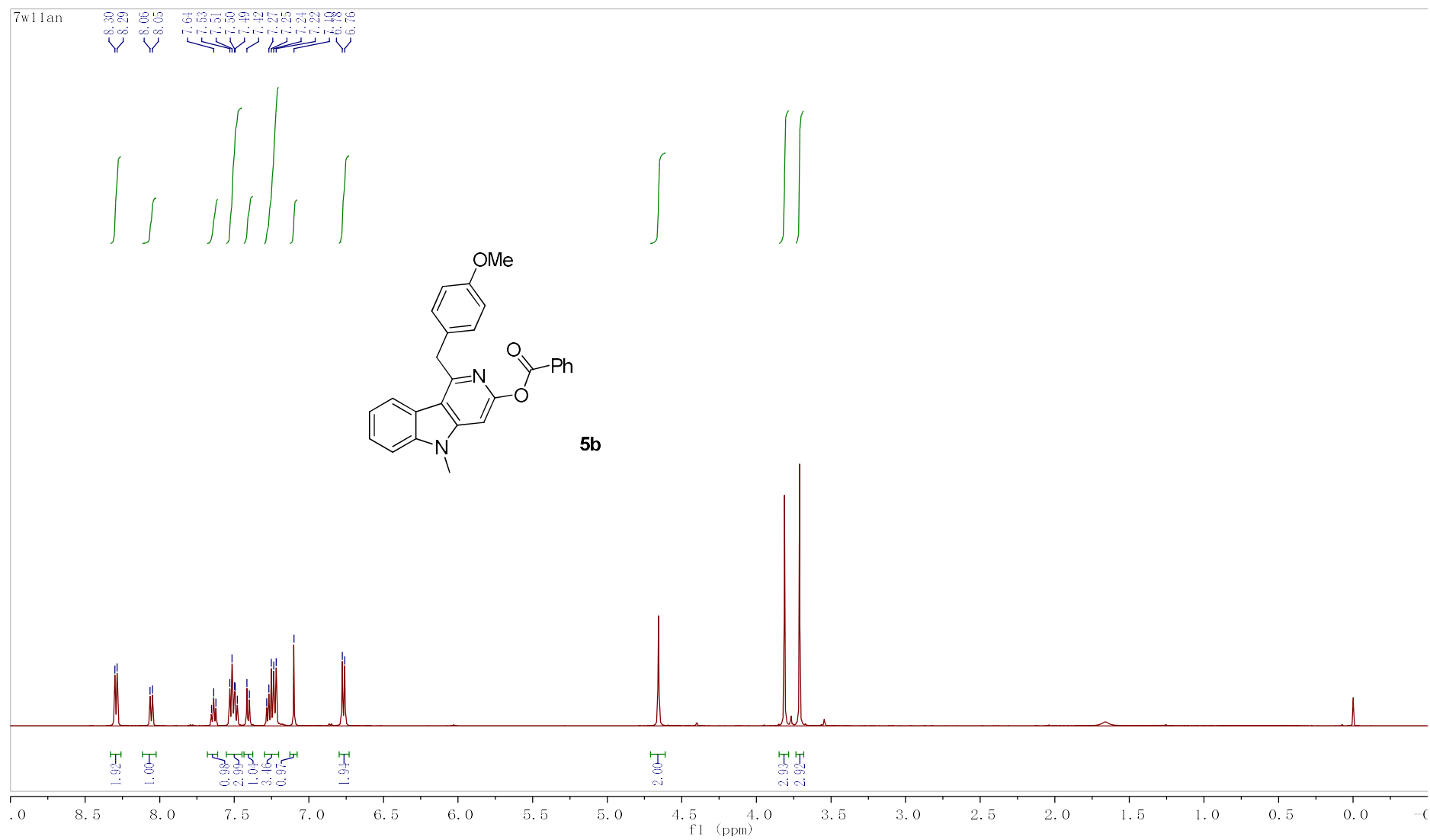
3q

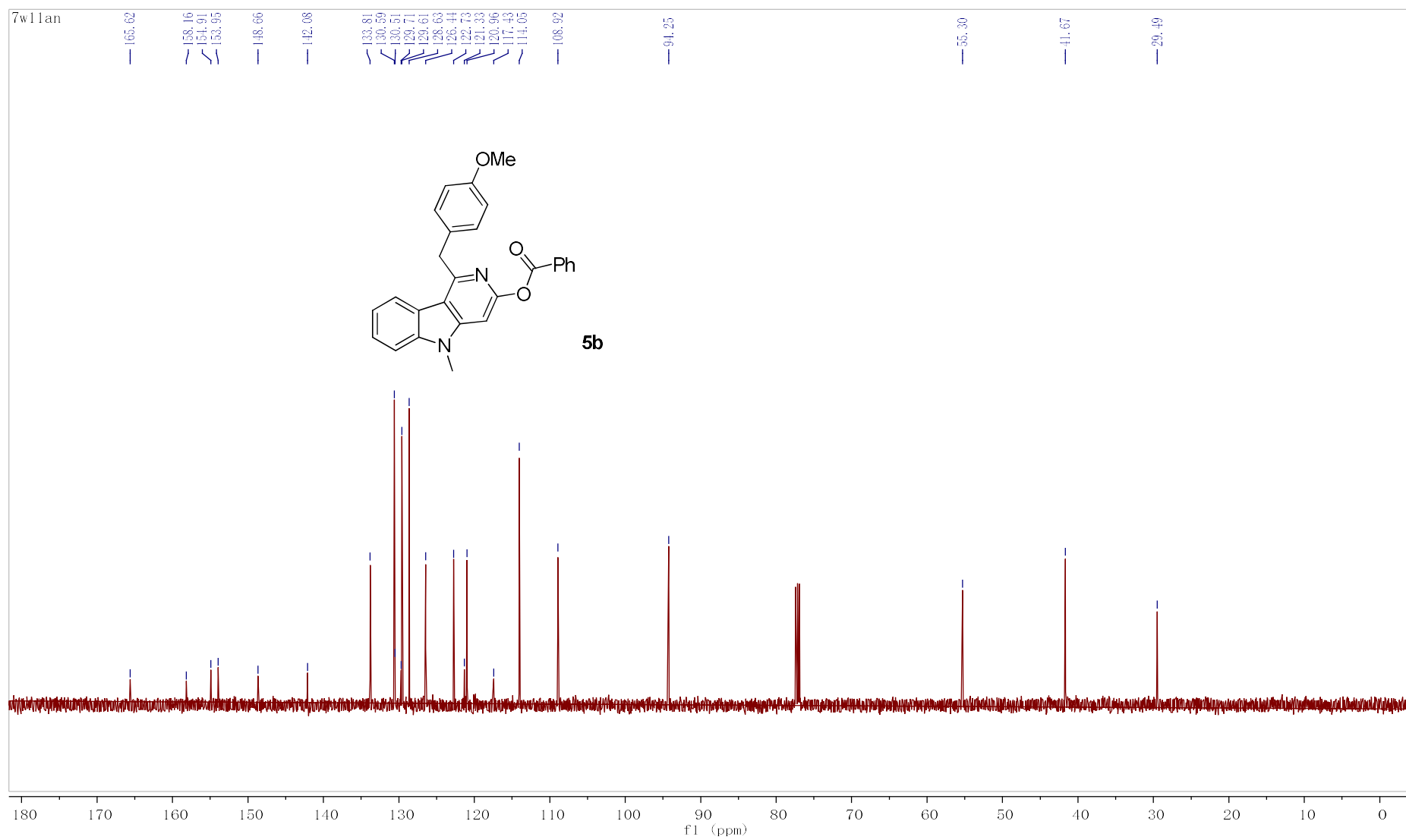




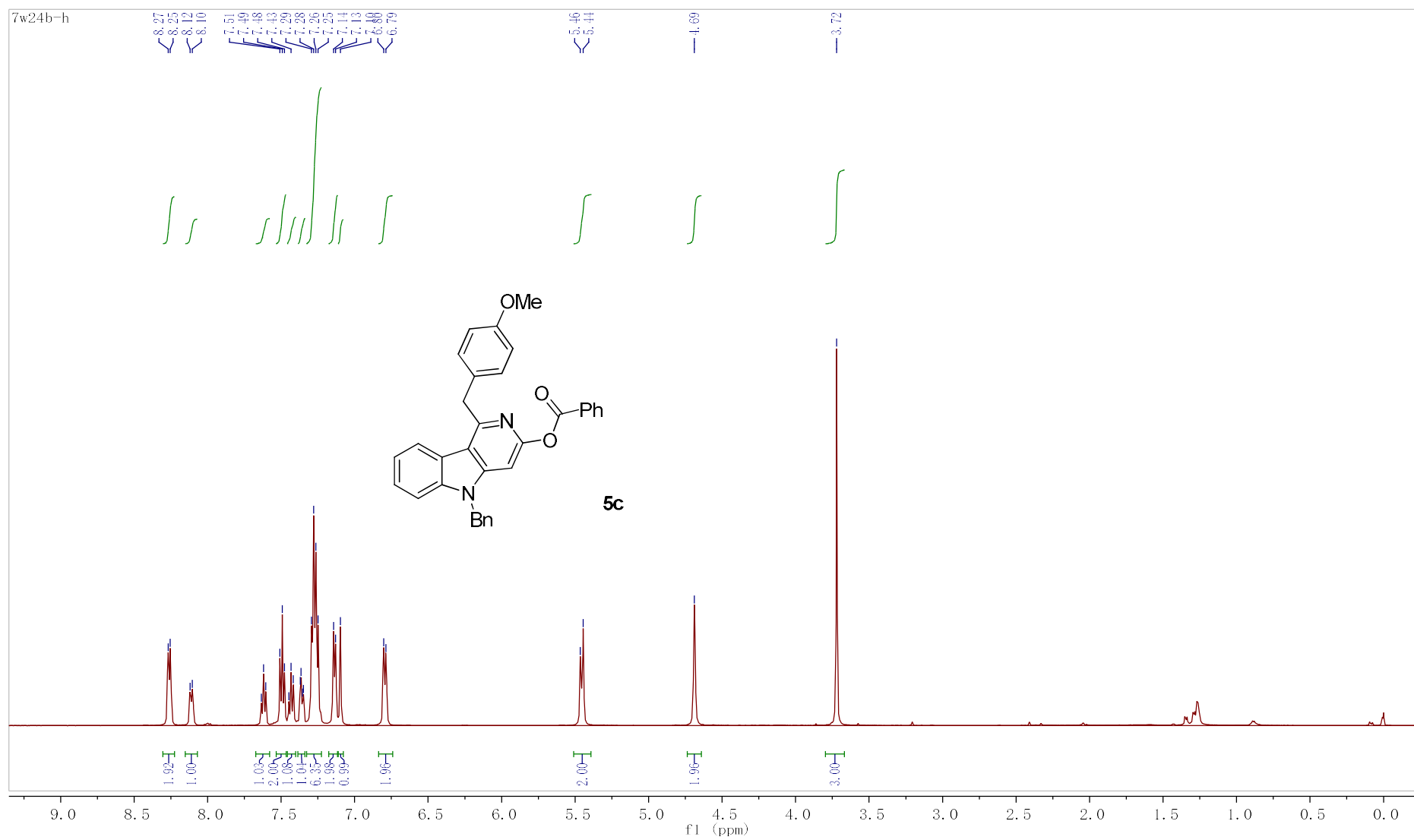


NMR-65

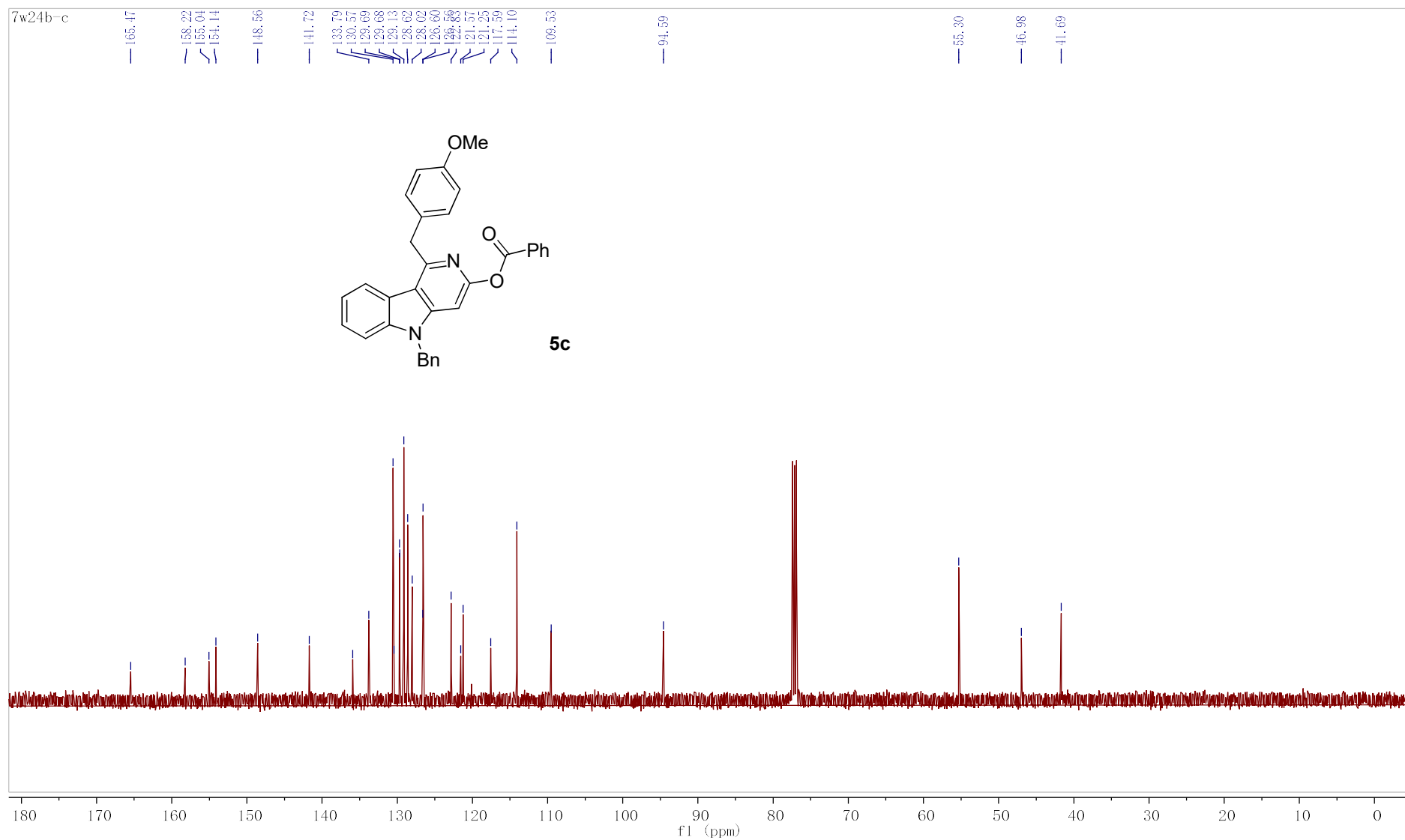




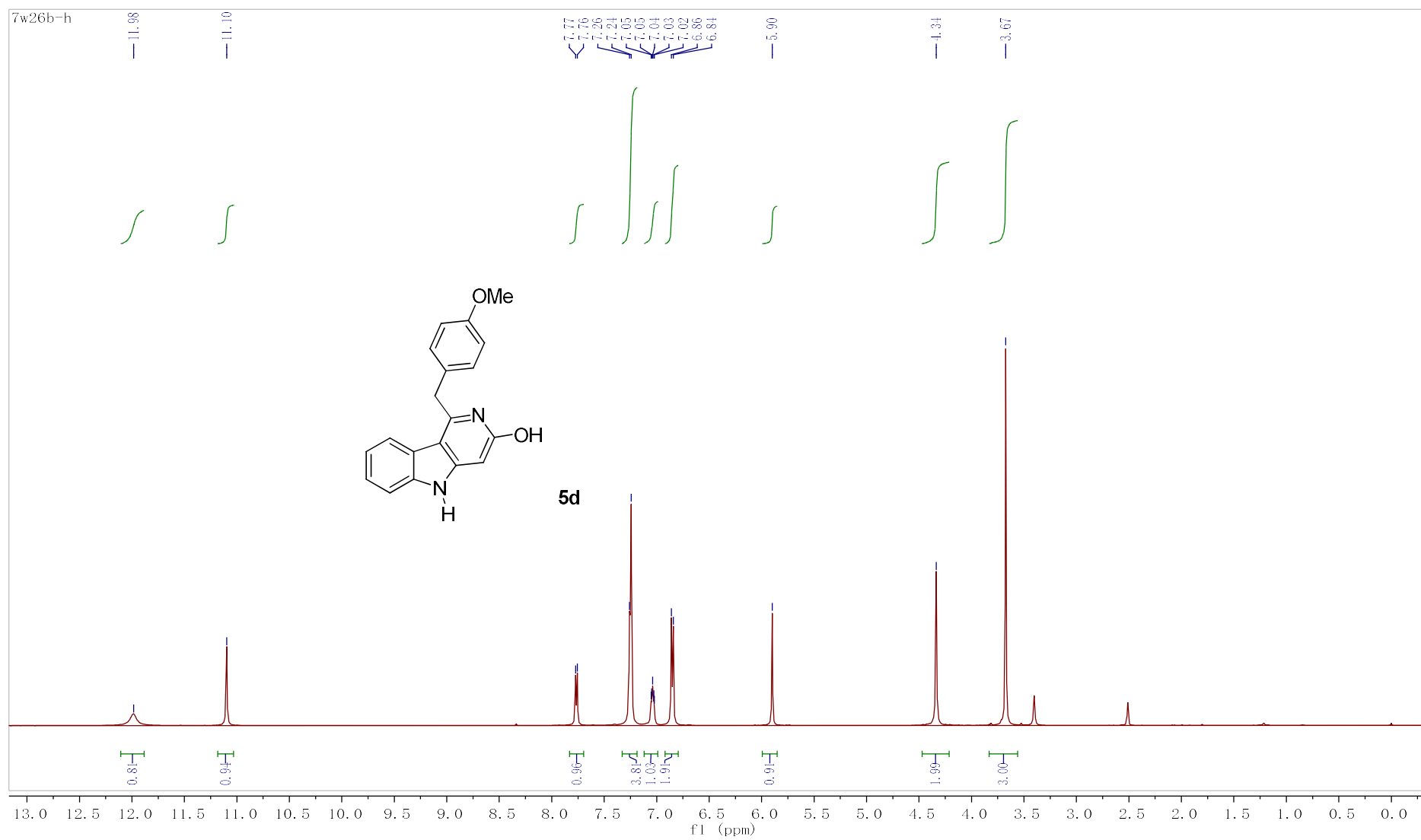
NMR-67



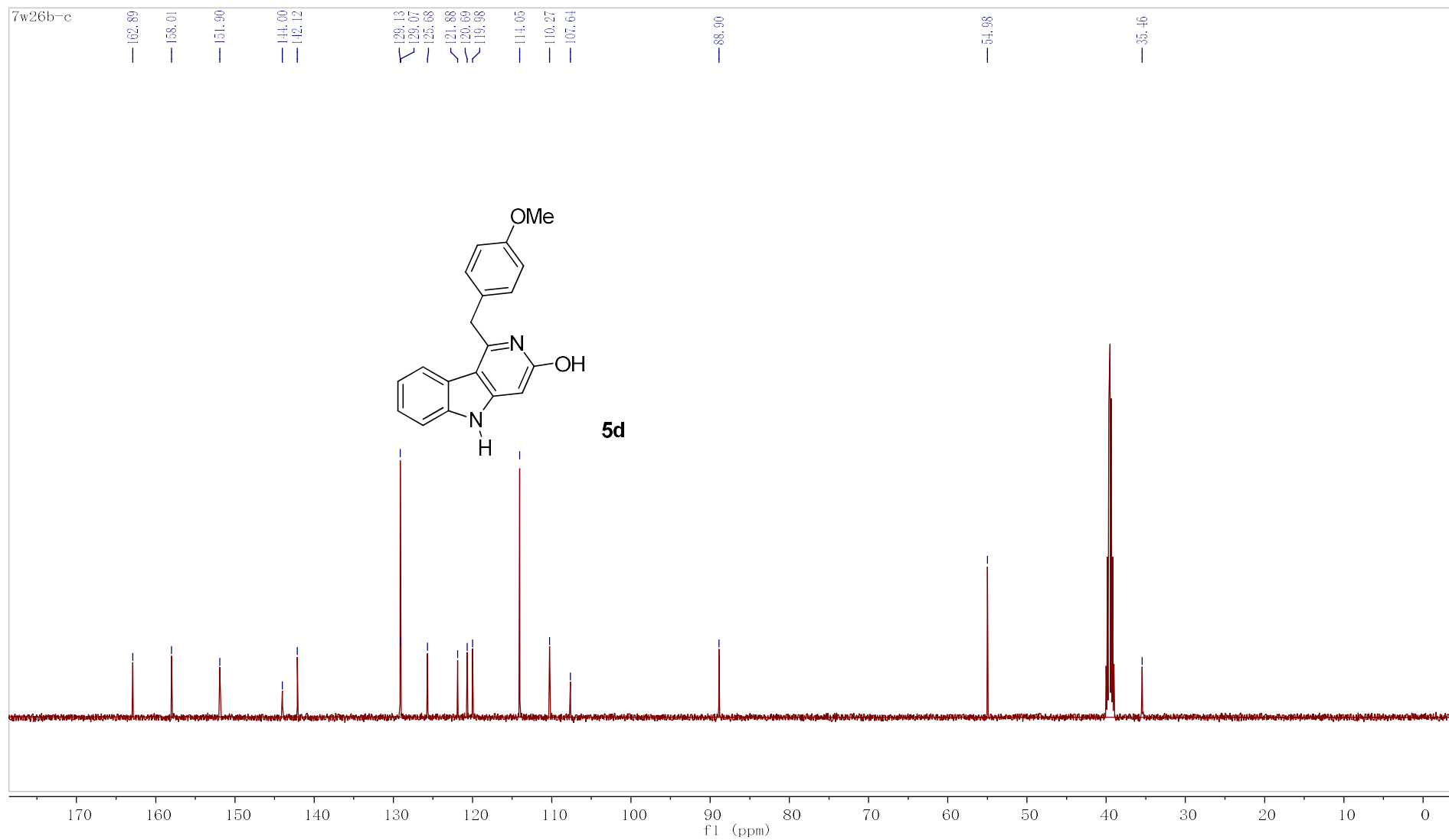
NMR-68



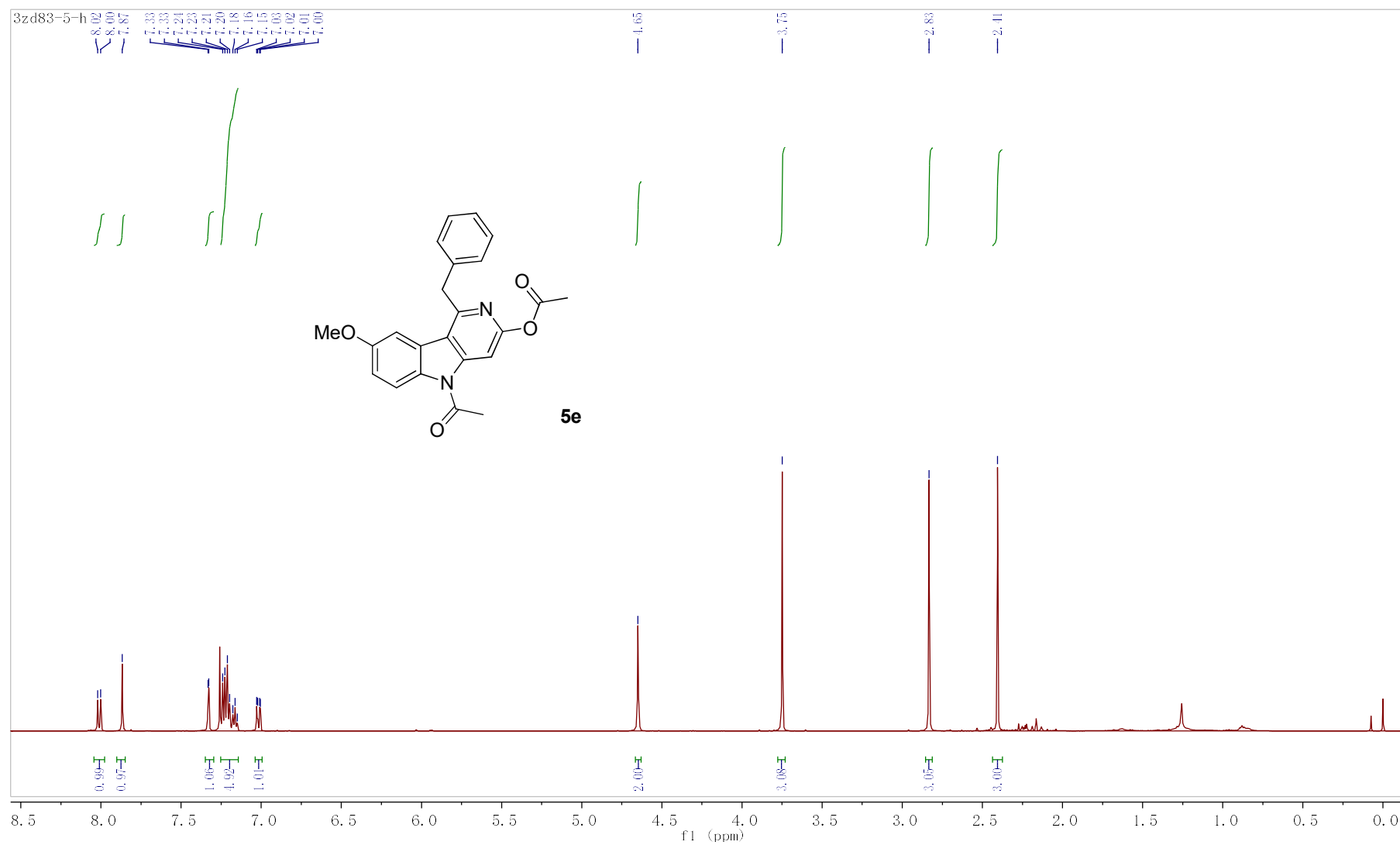
NMR-69



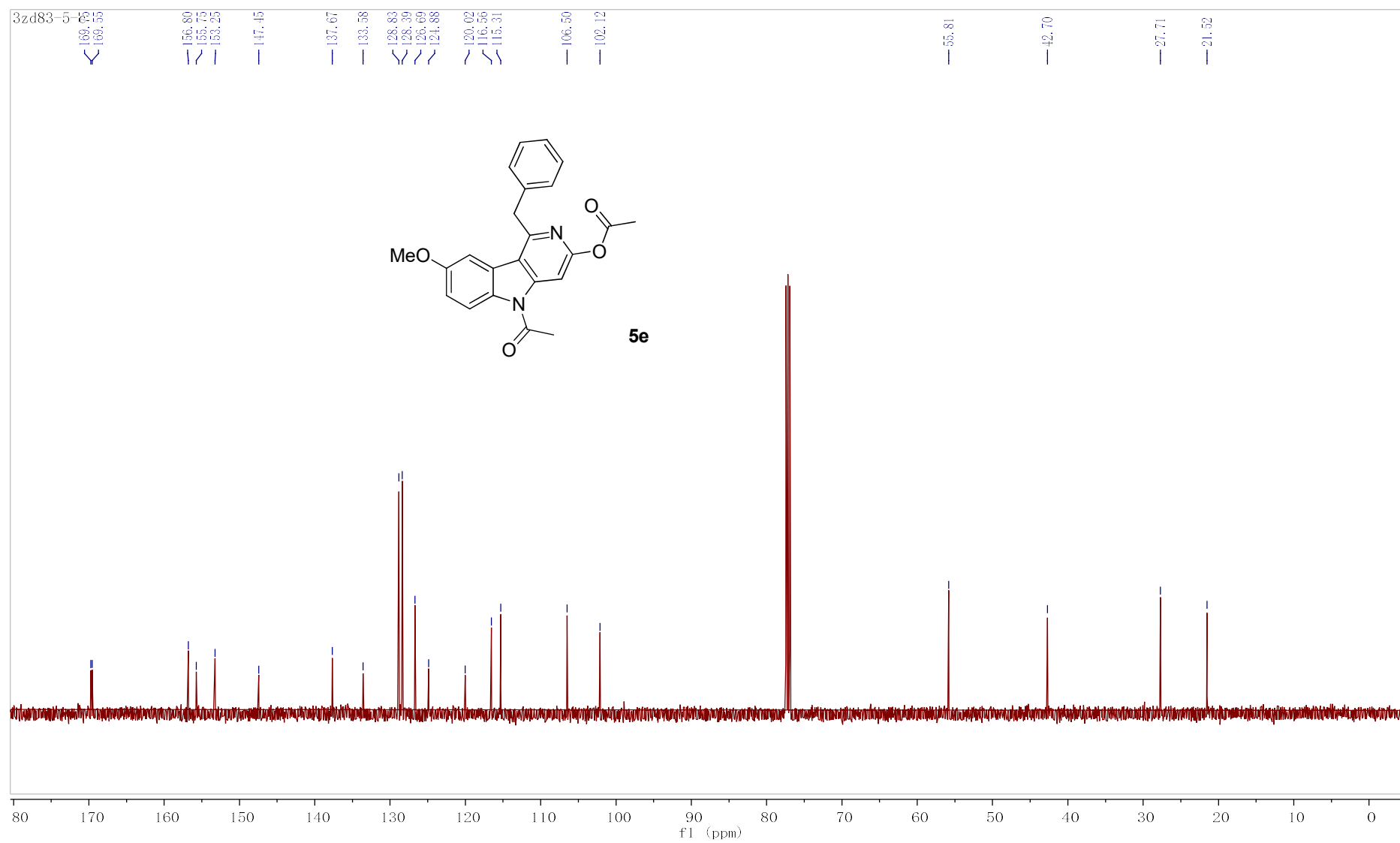
NMR-70



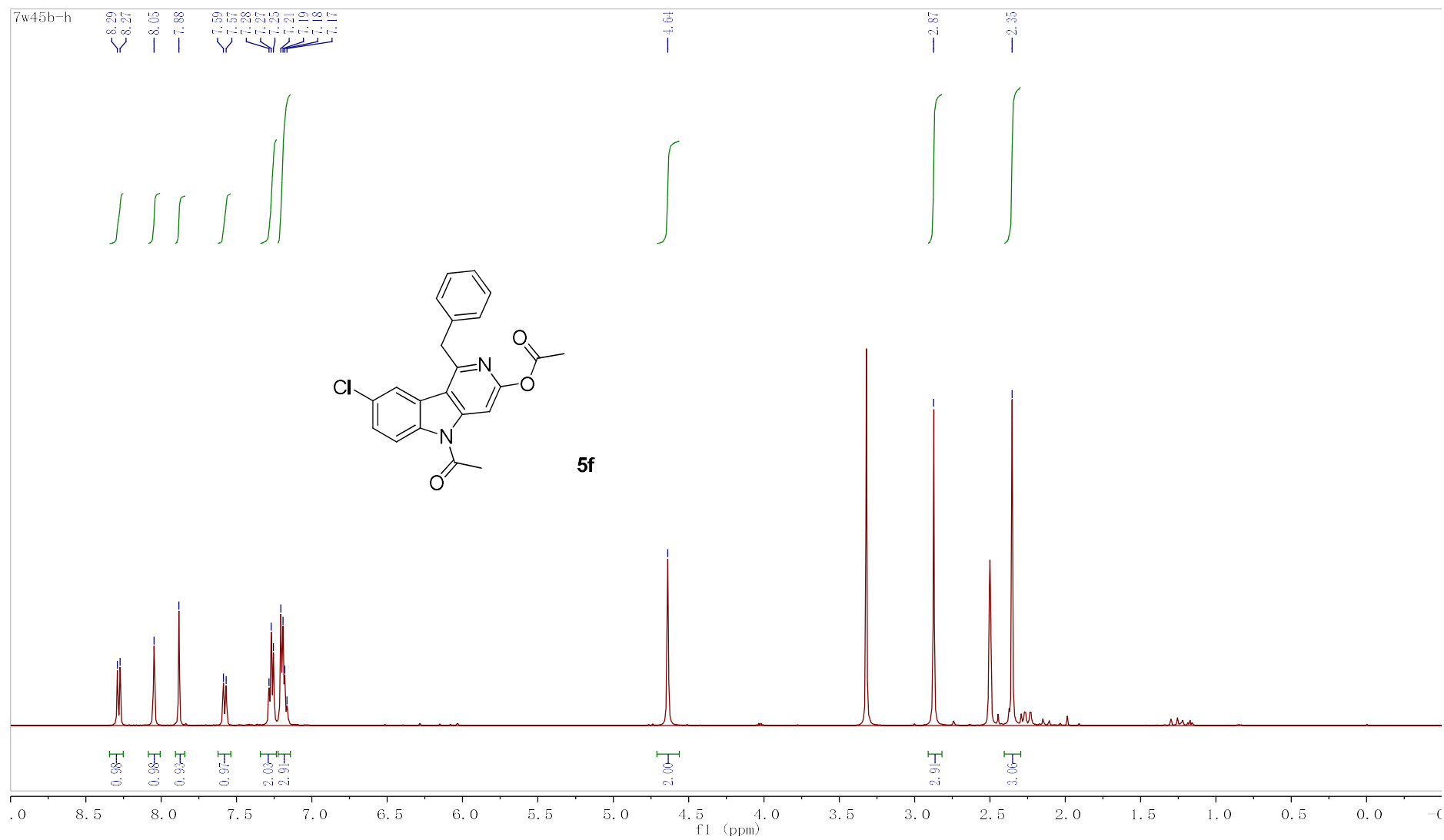
NMR-71



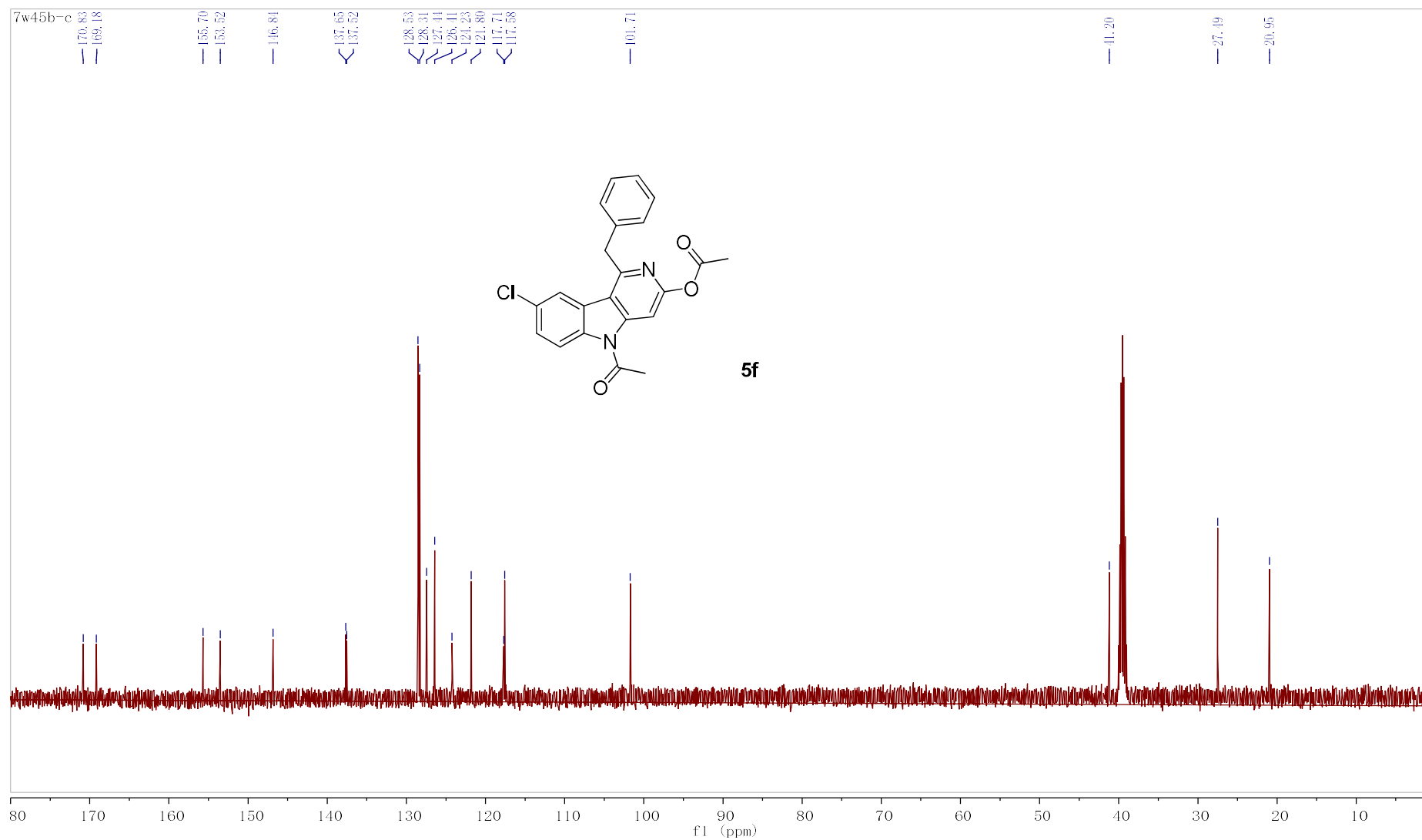
NMR-72



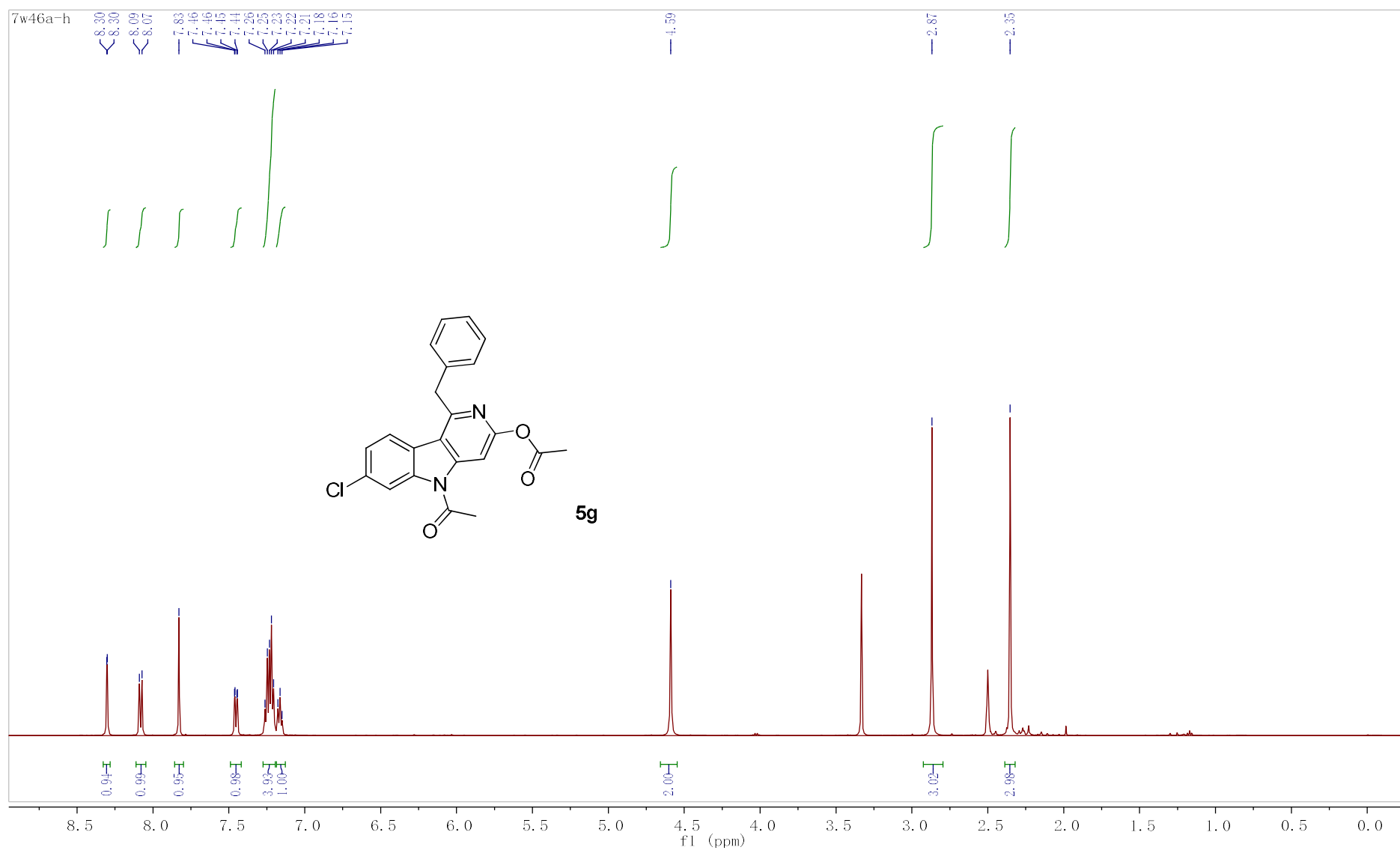
NMR-73



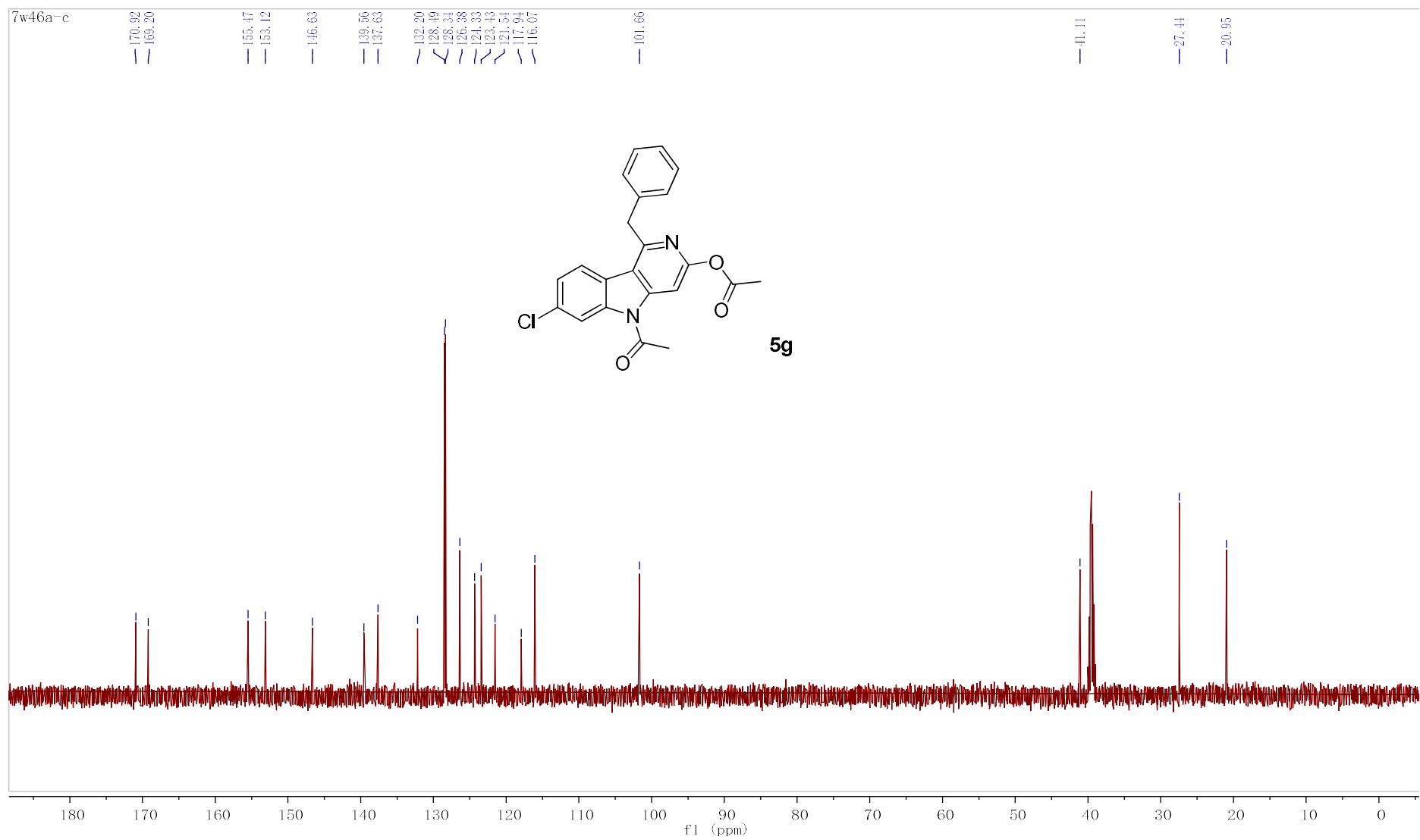
NMR-74



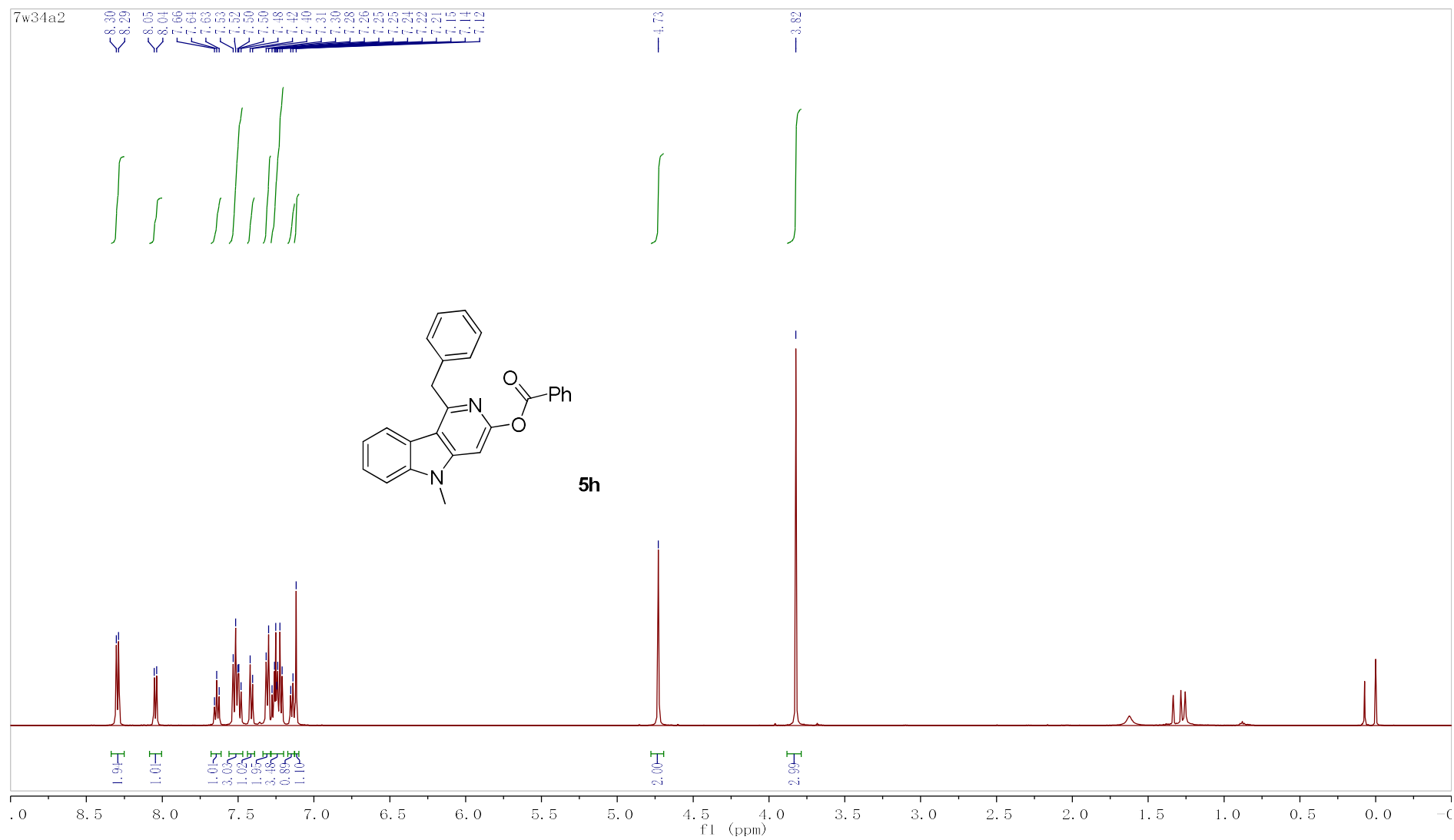
NMR-75



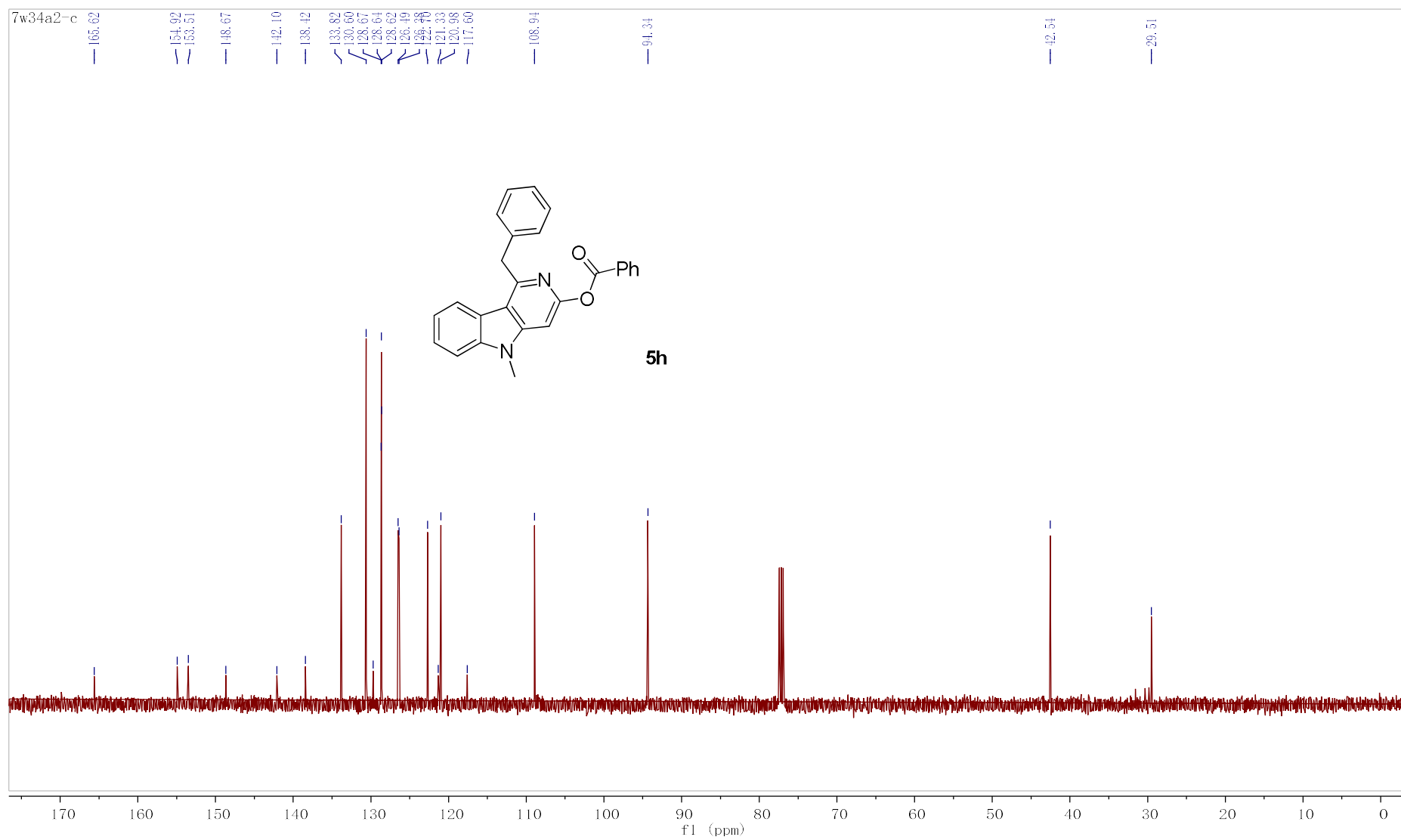
NMR-76



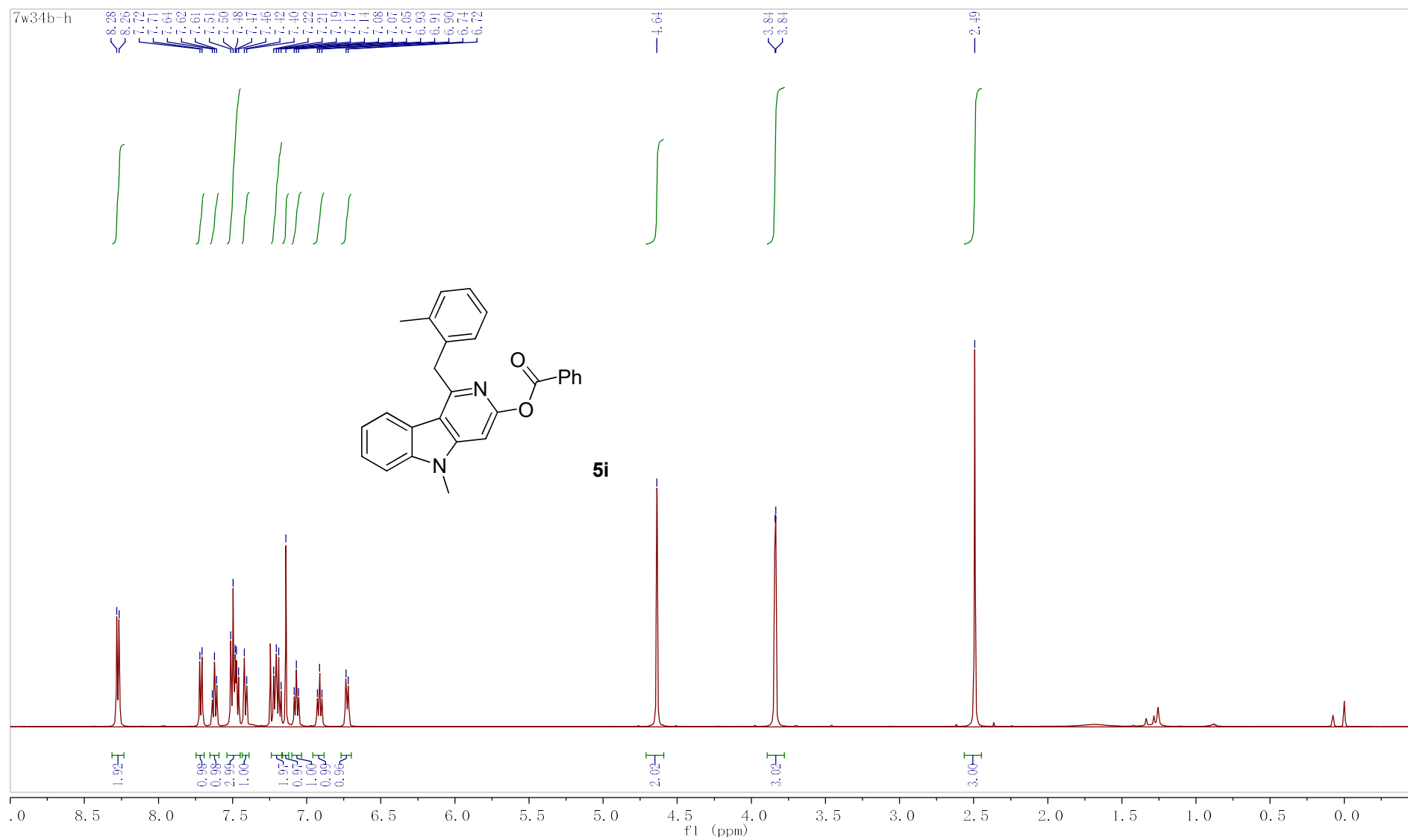
NMR-77



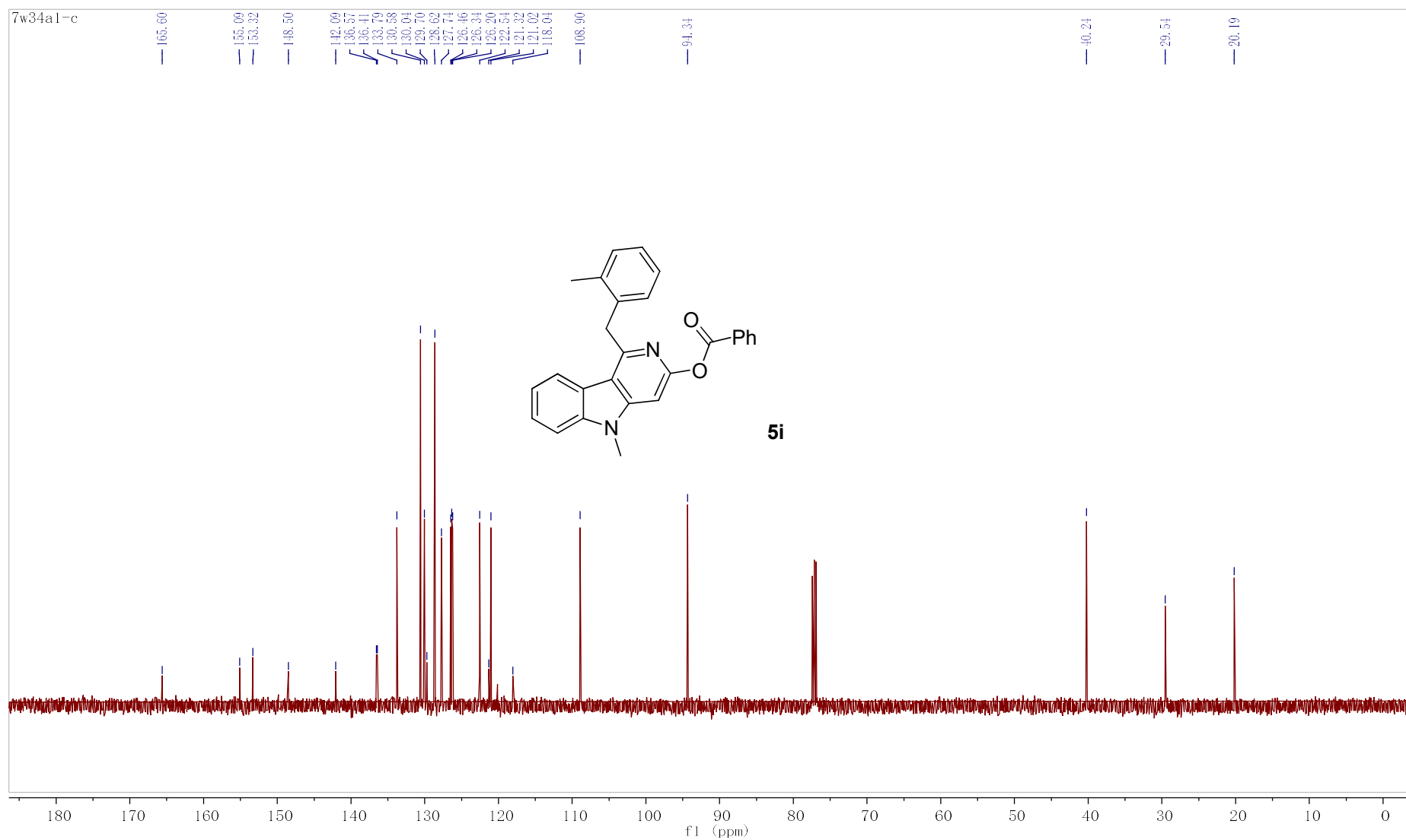
NMR-78



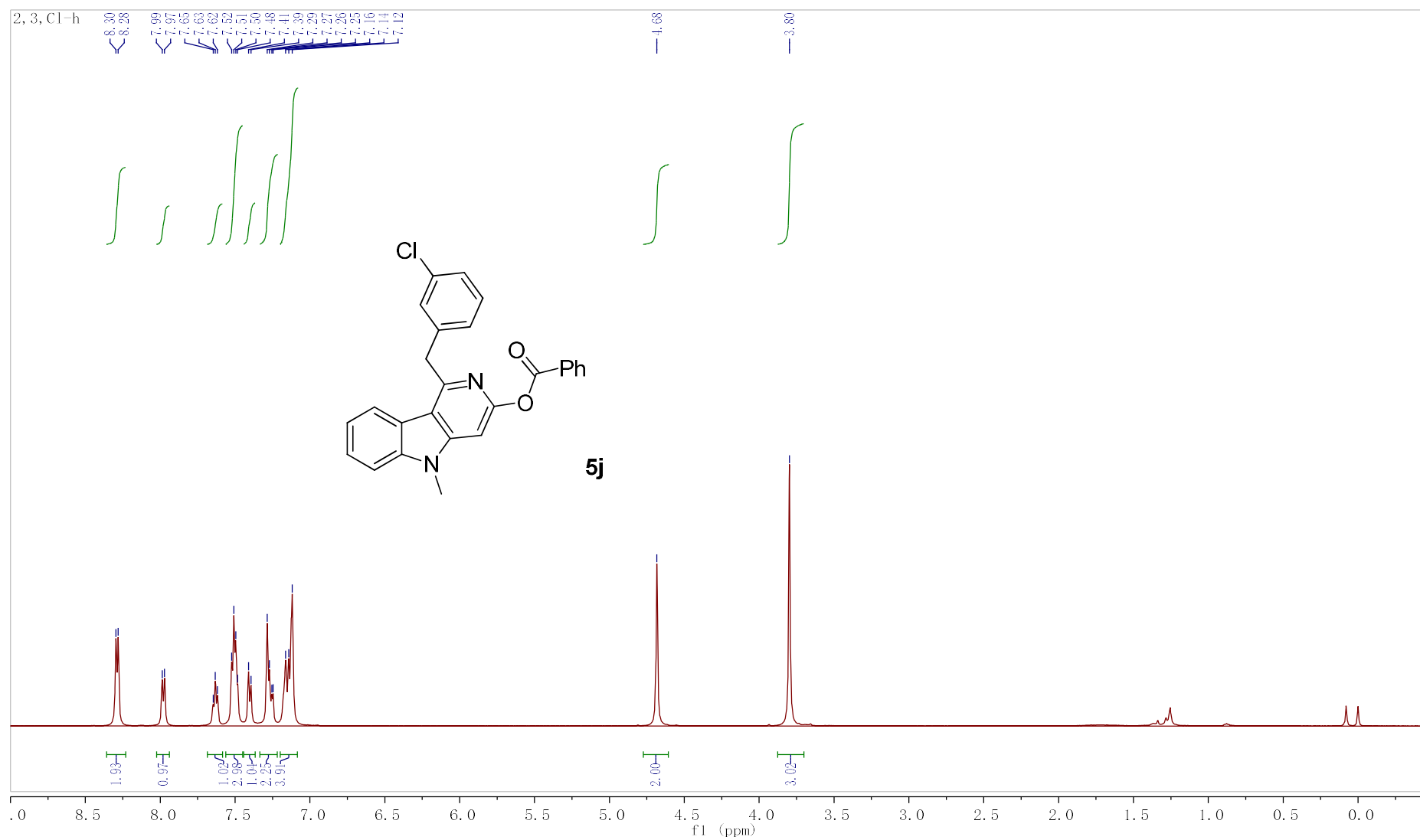
NMR-79

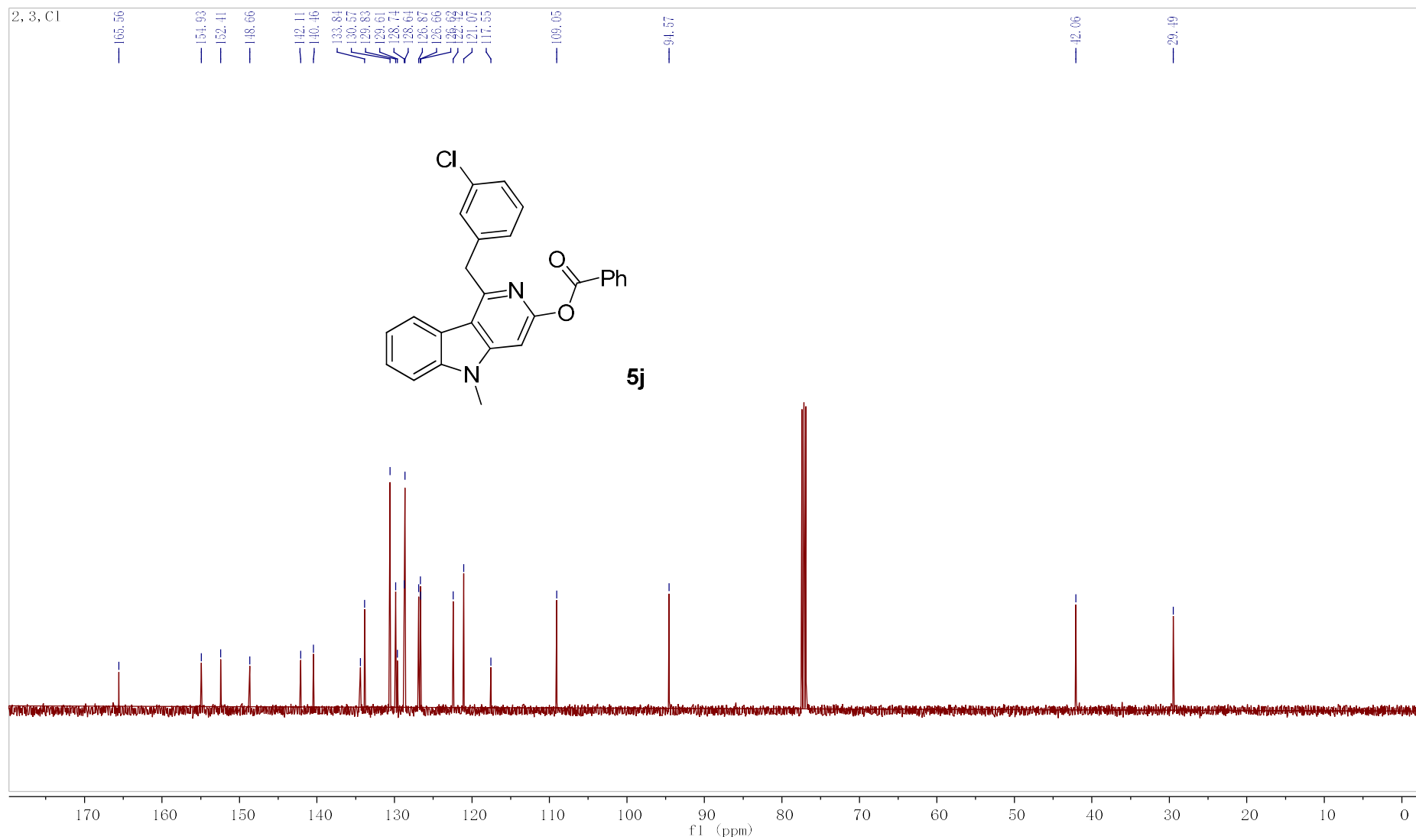


NMR-80

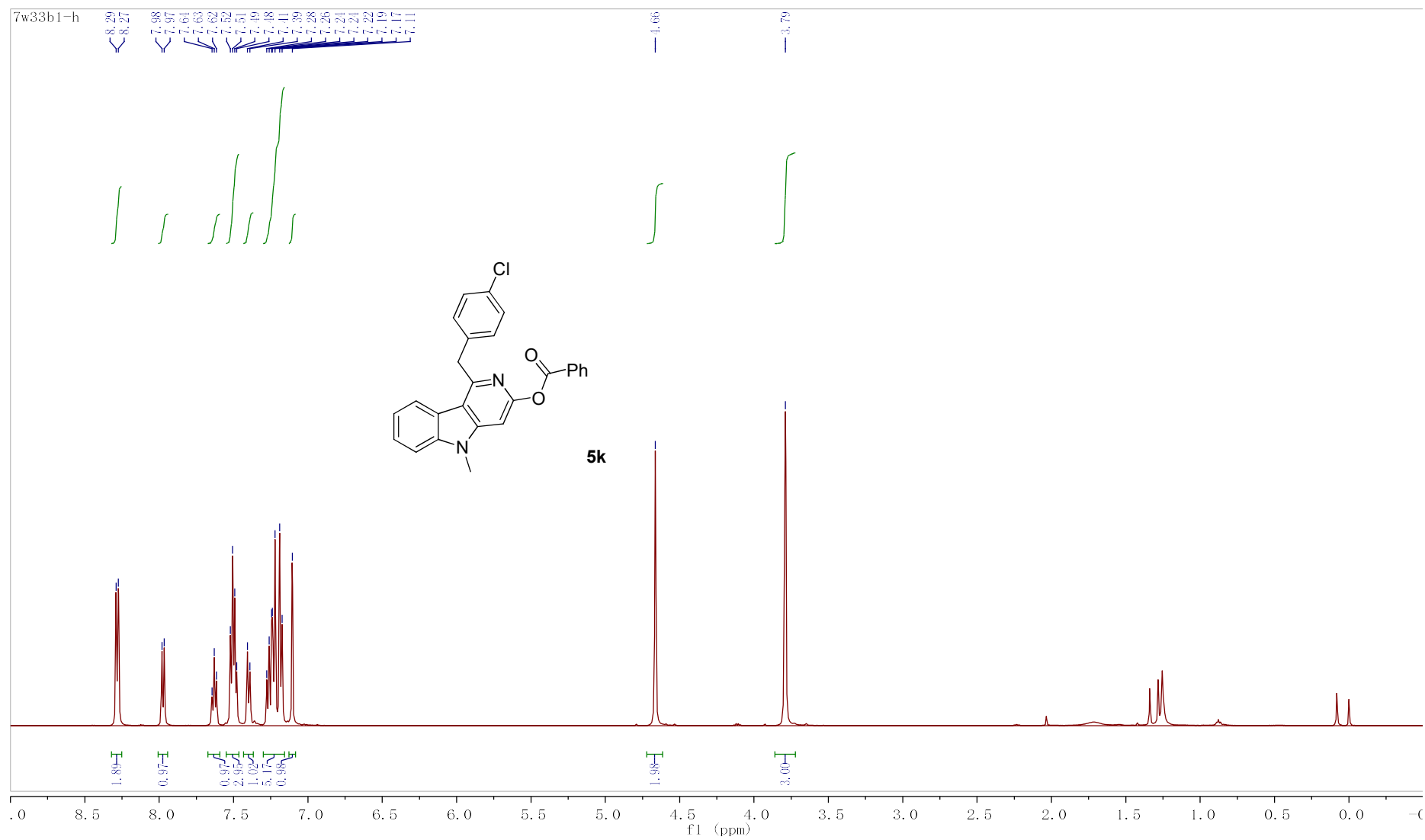


NMR-81

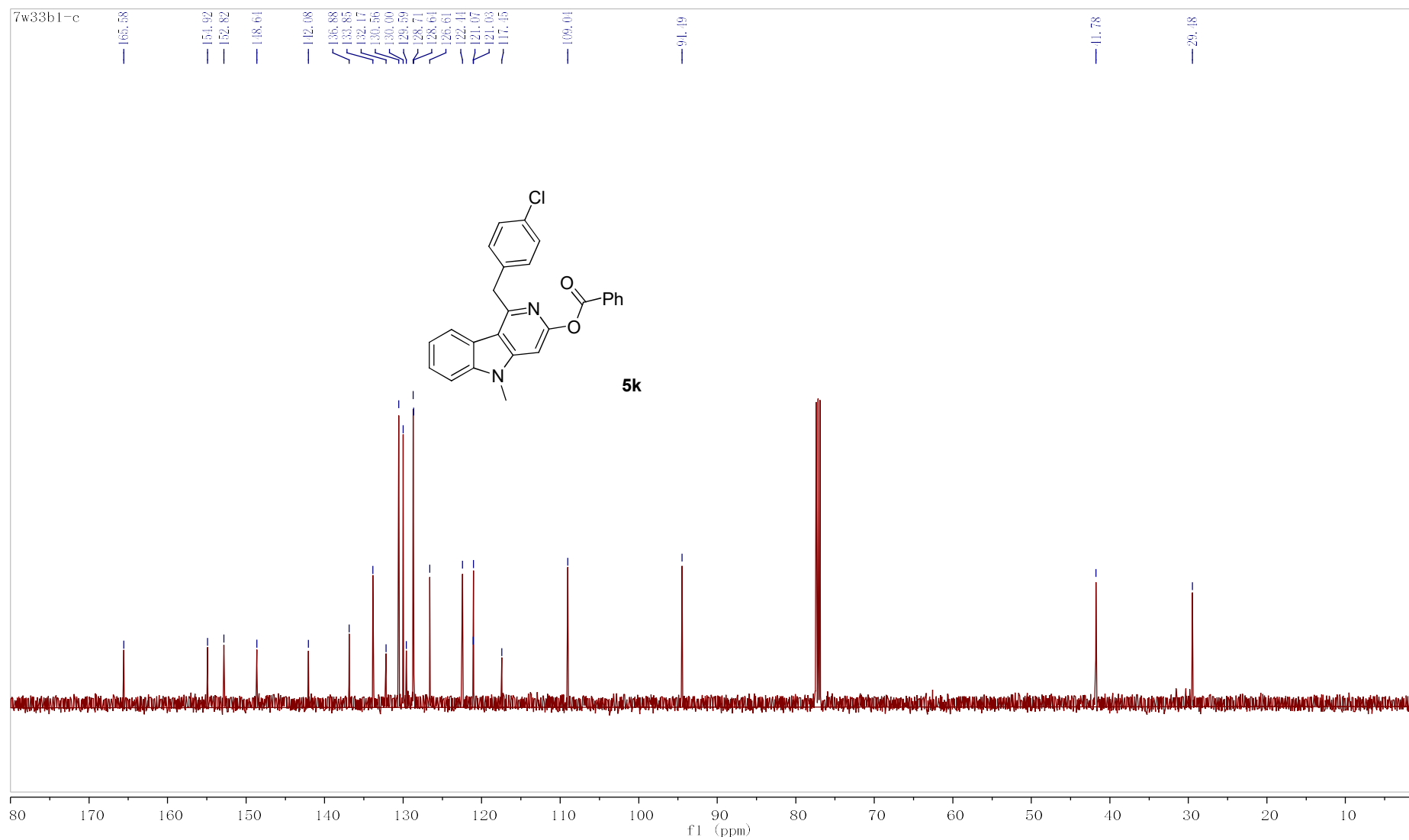




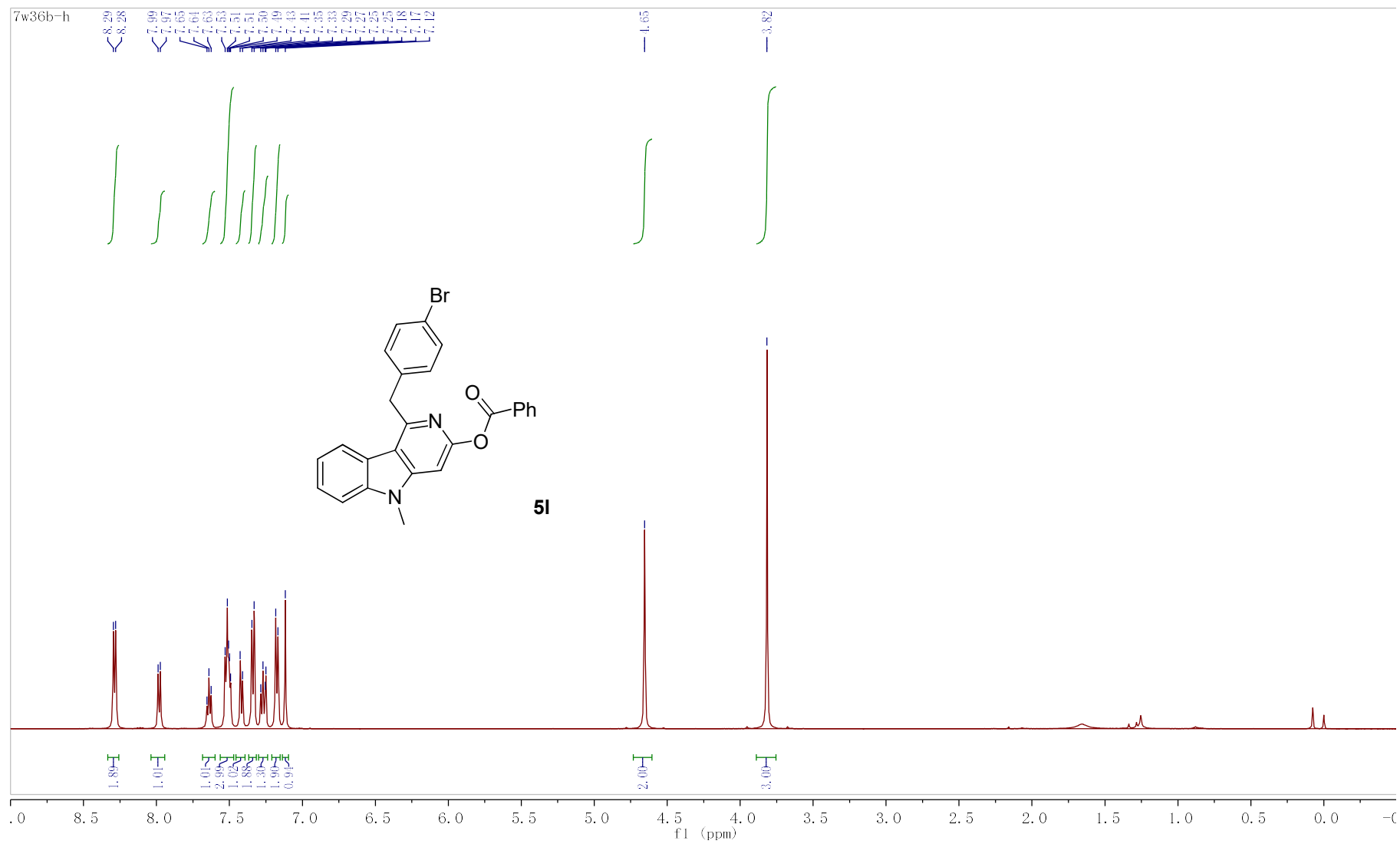
NMR-83



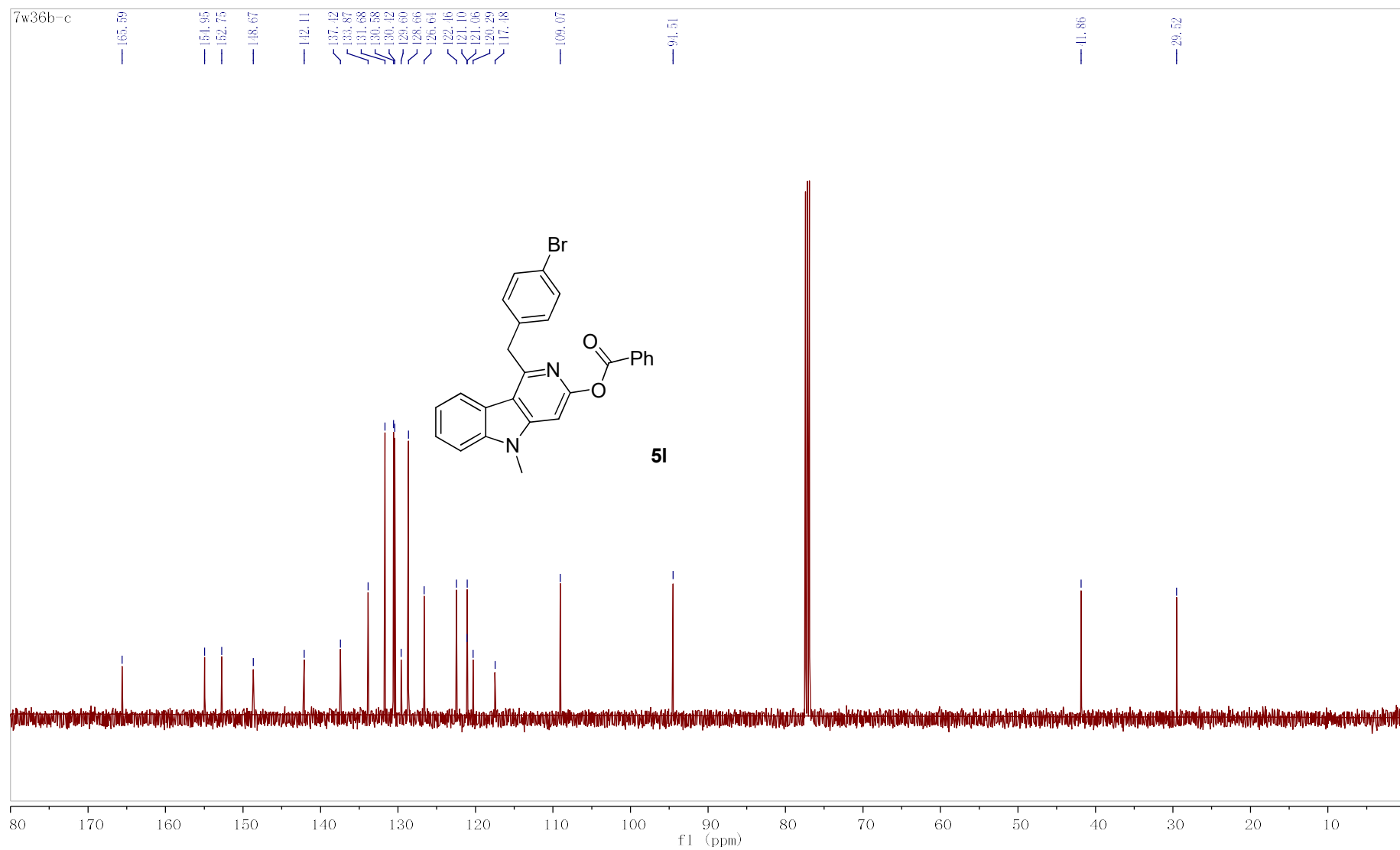
NMR-84



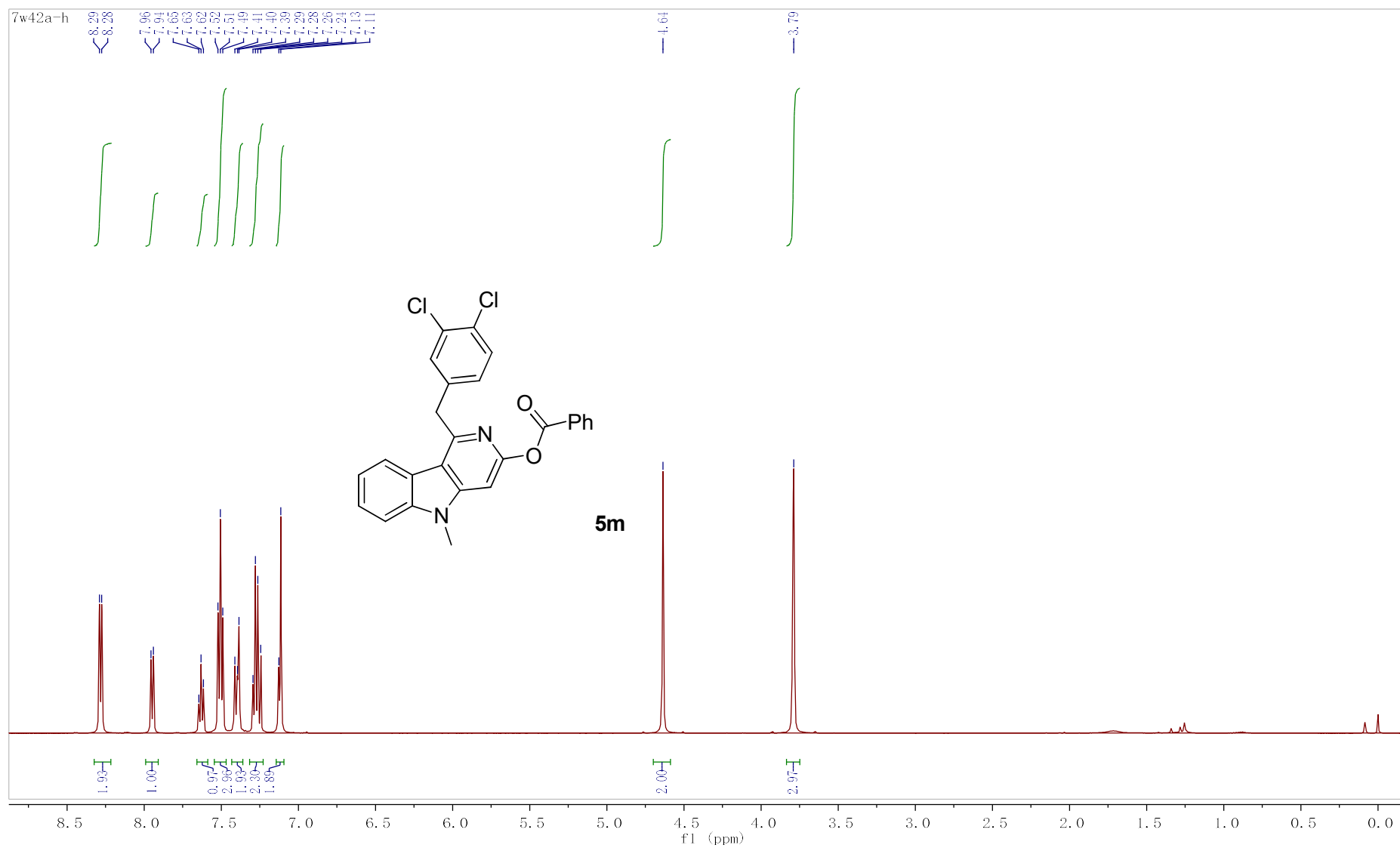
NMR-85



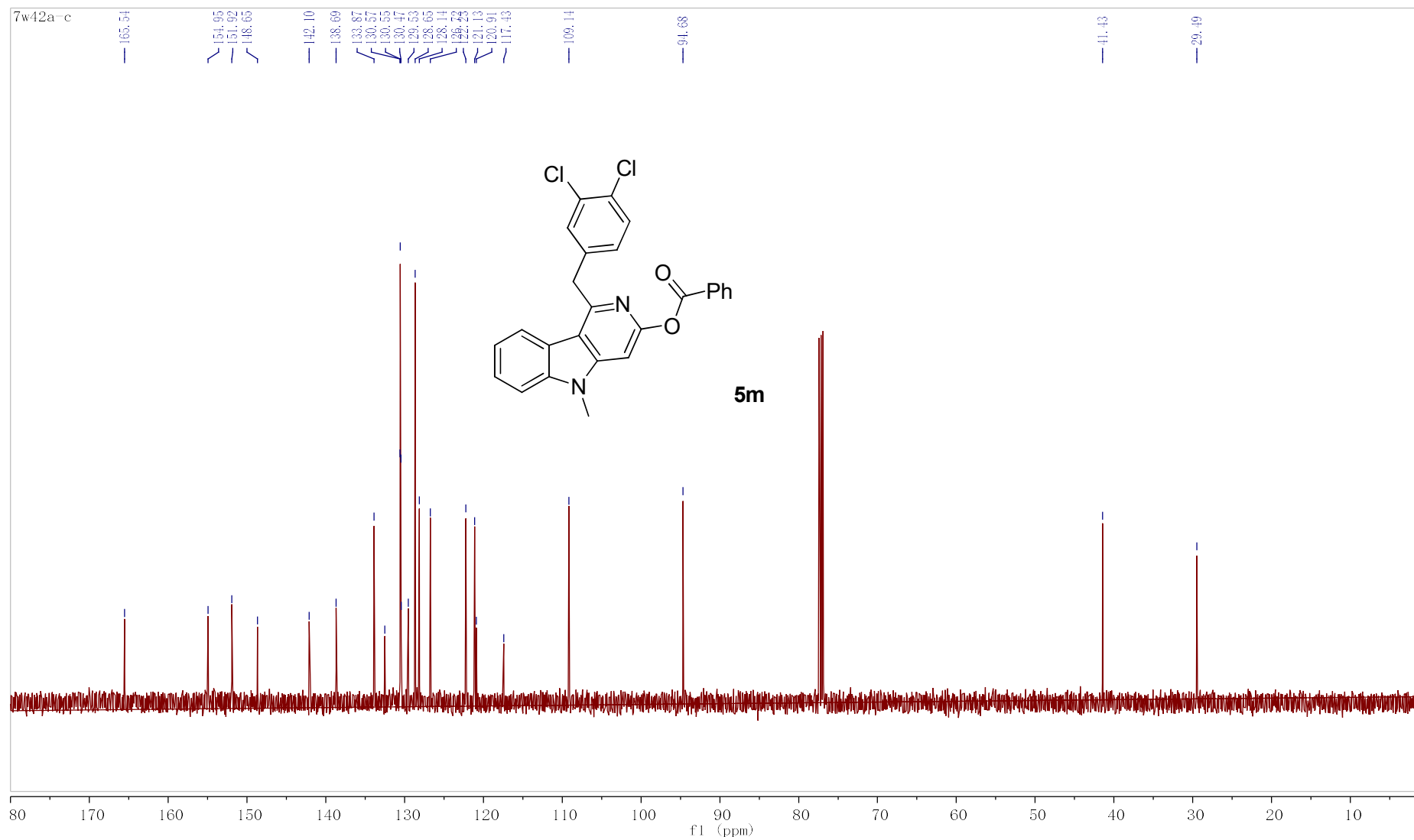
NMR-86



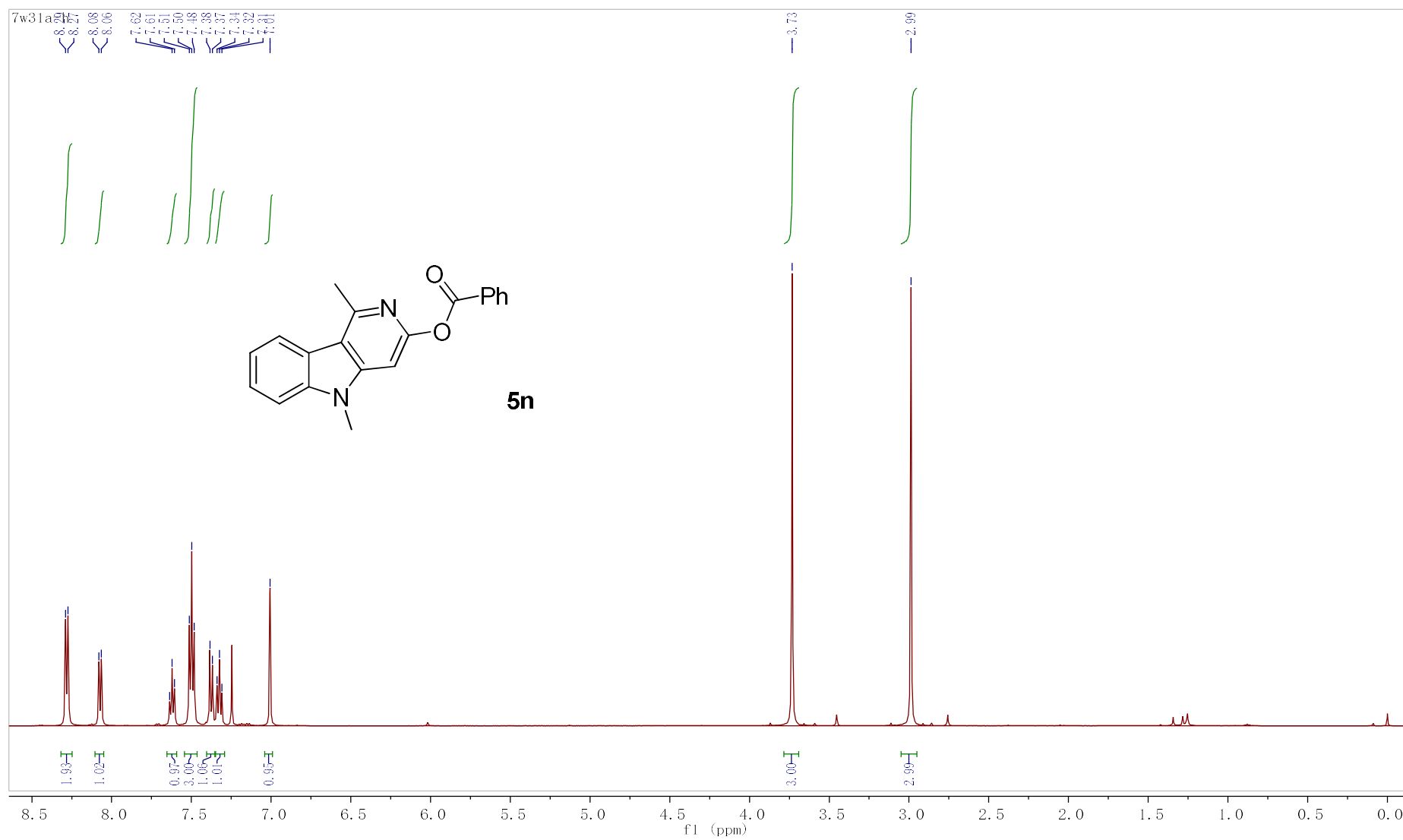
NMR-87



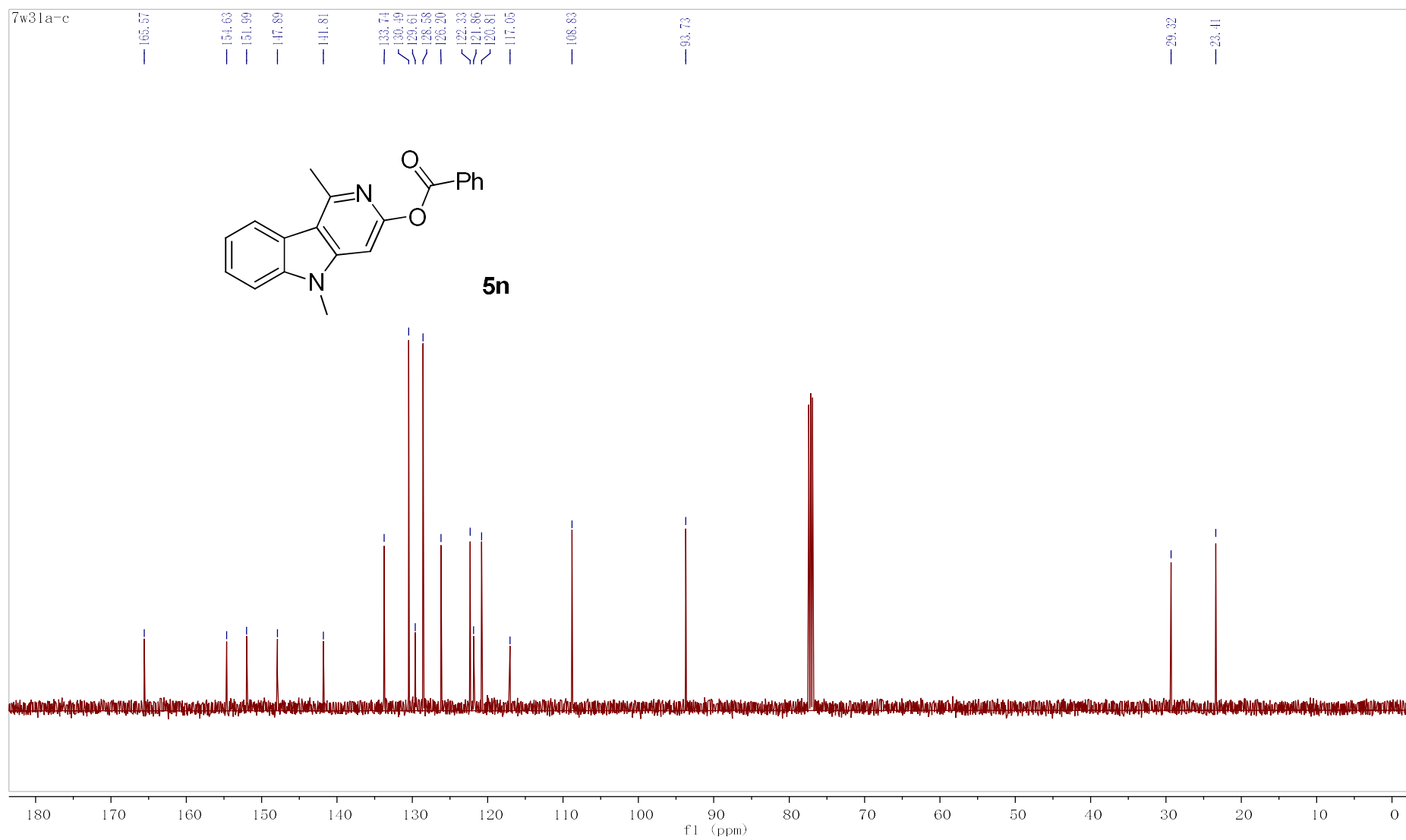
NMR-88



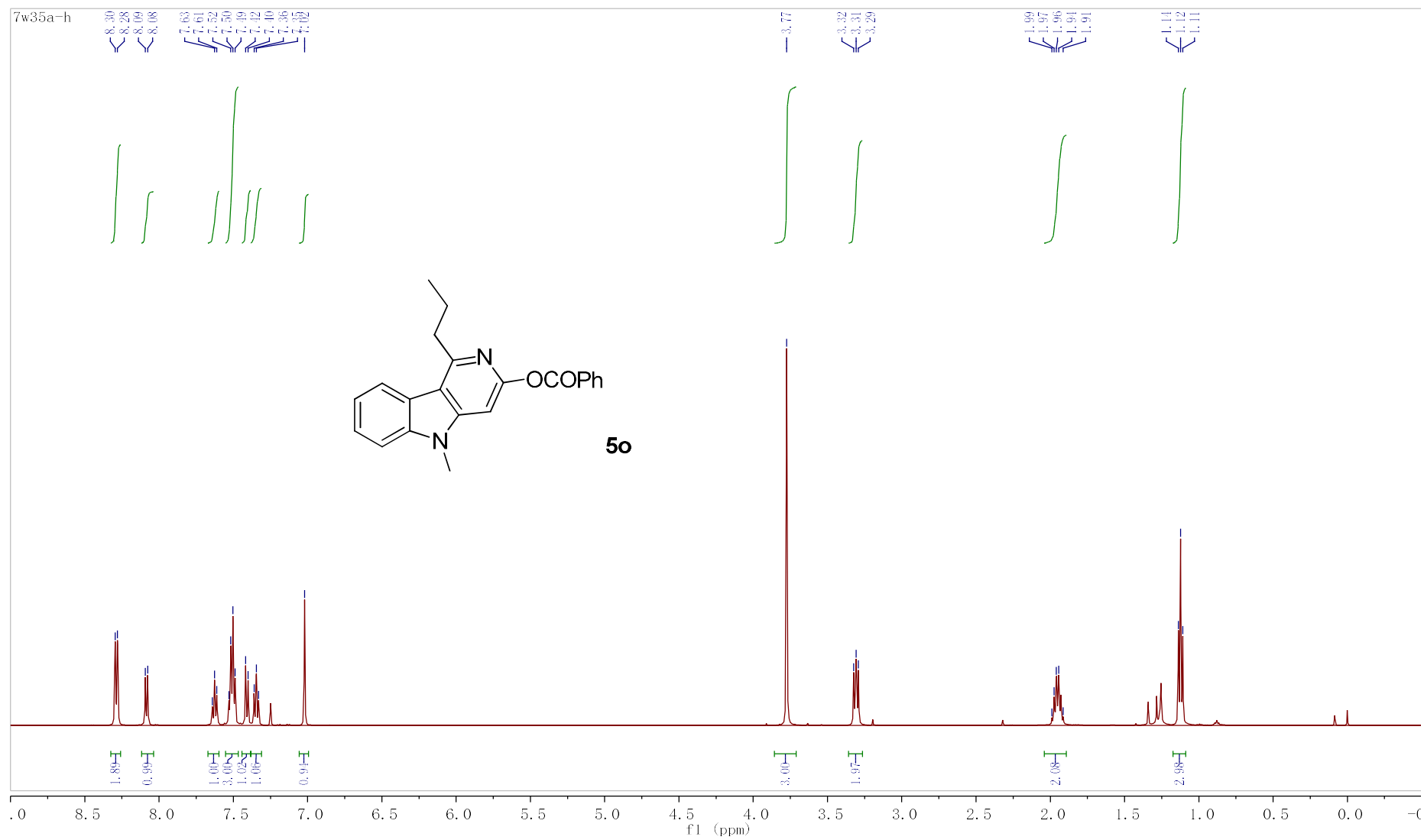
NMR-89



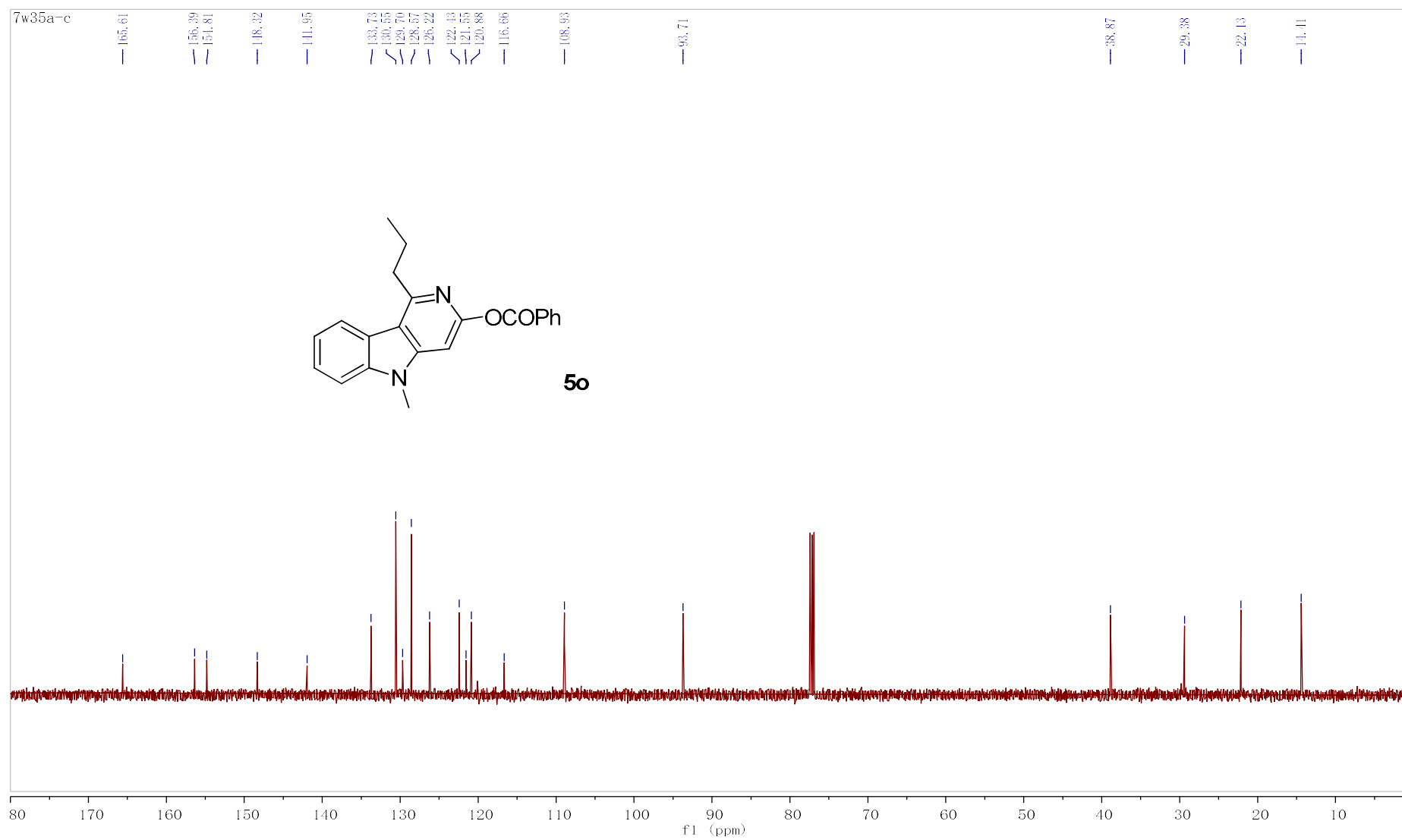
NMR-90



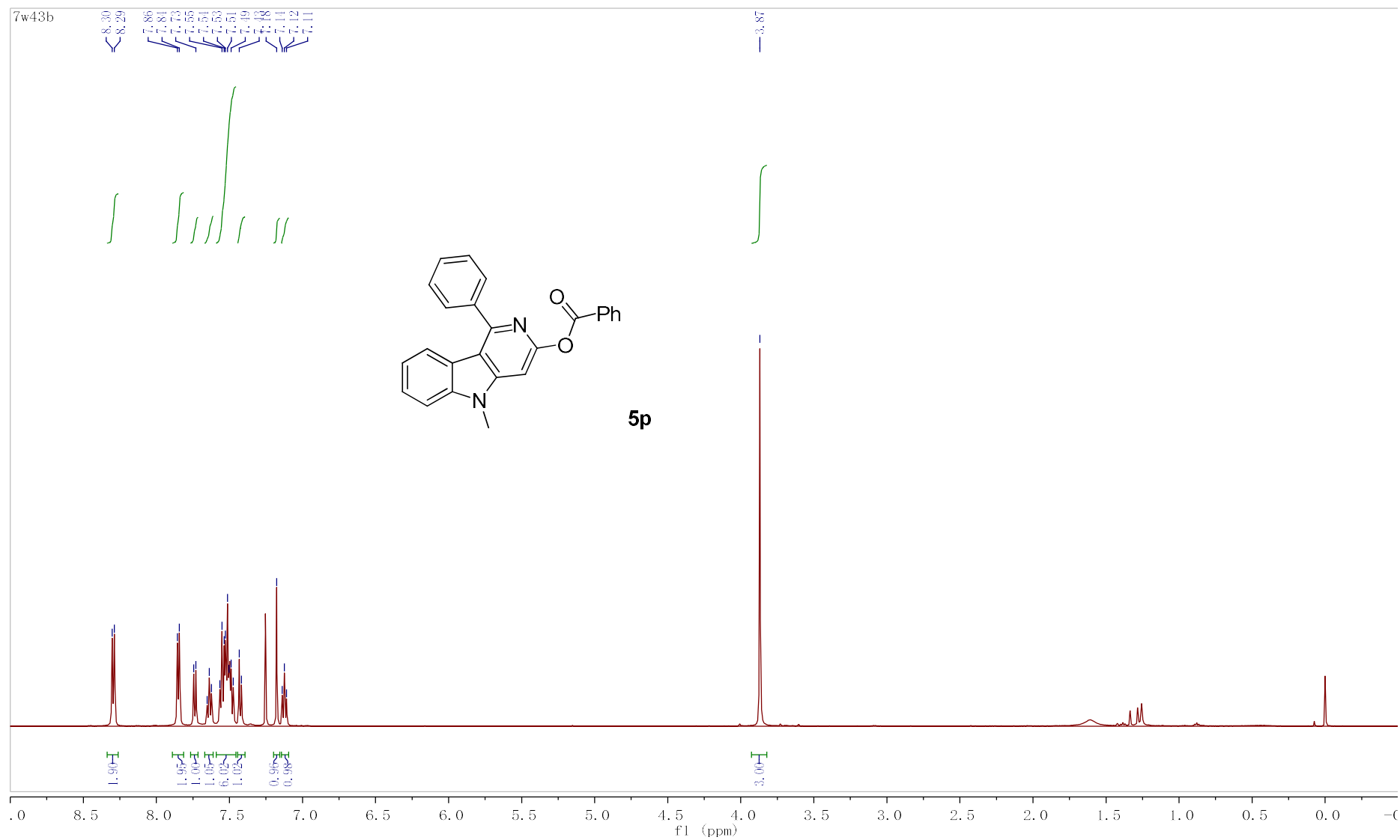
NMR-91



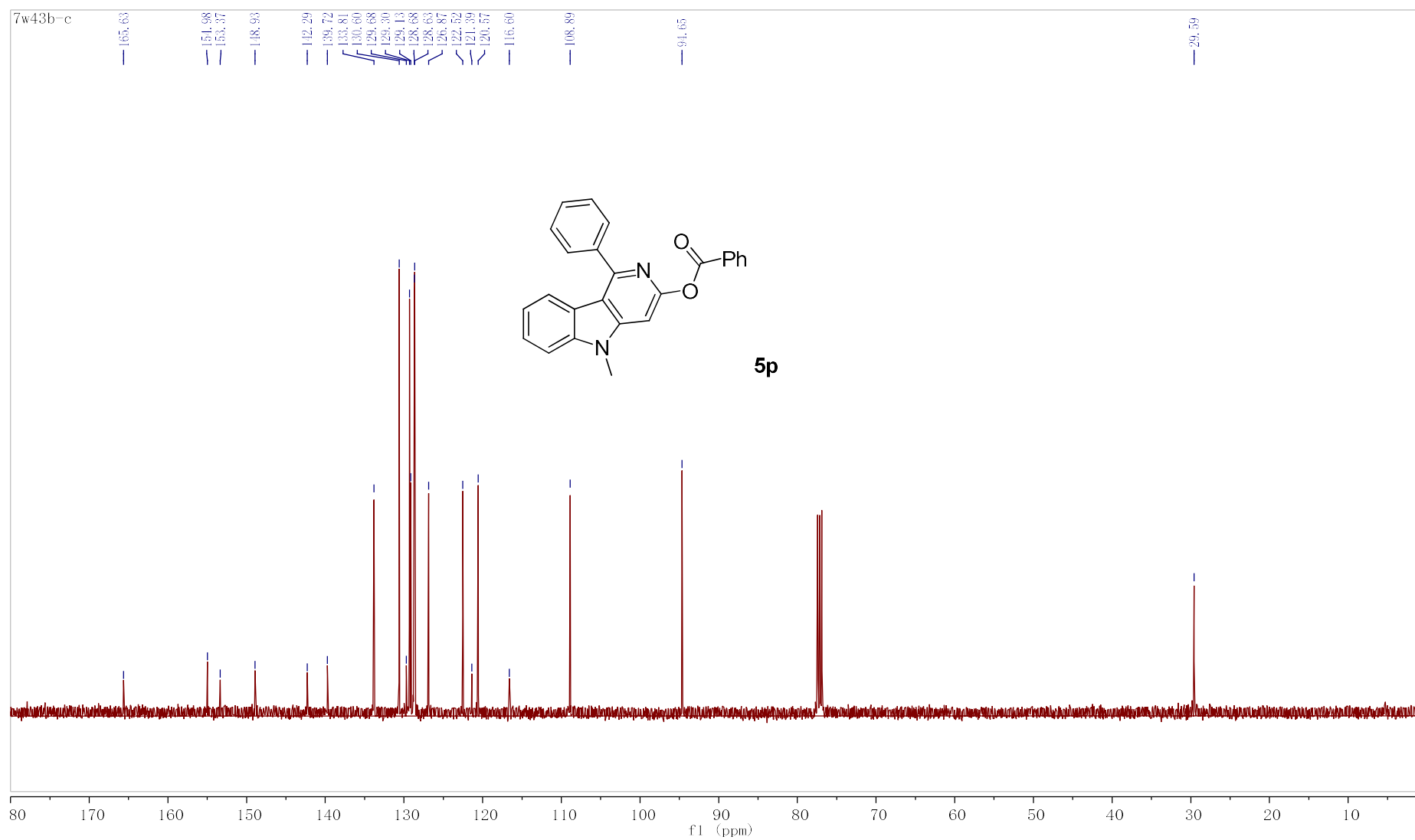
NMR-92



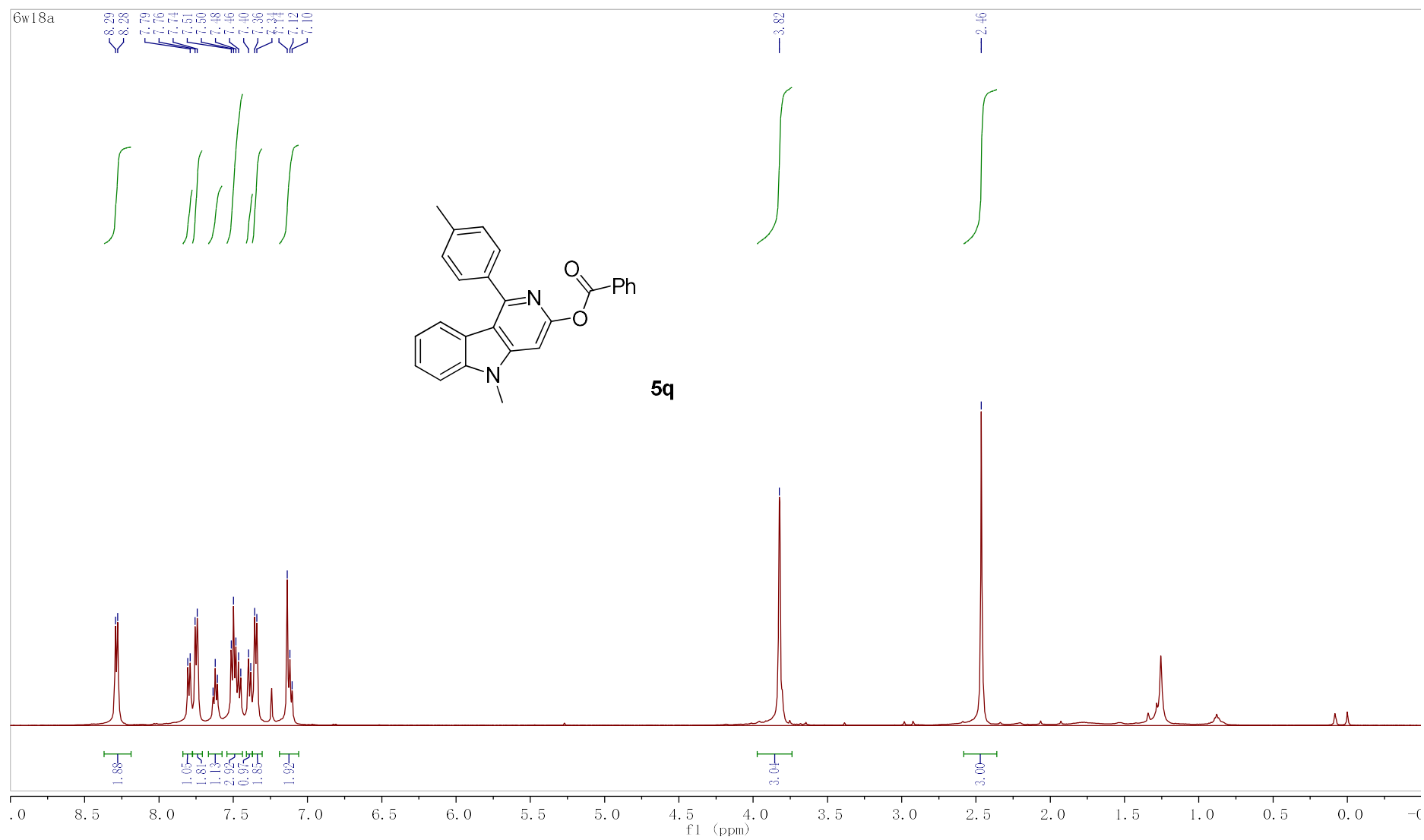
NMR-93



NMR-94



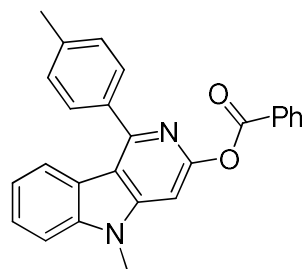
NMR-95



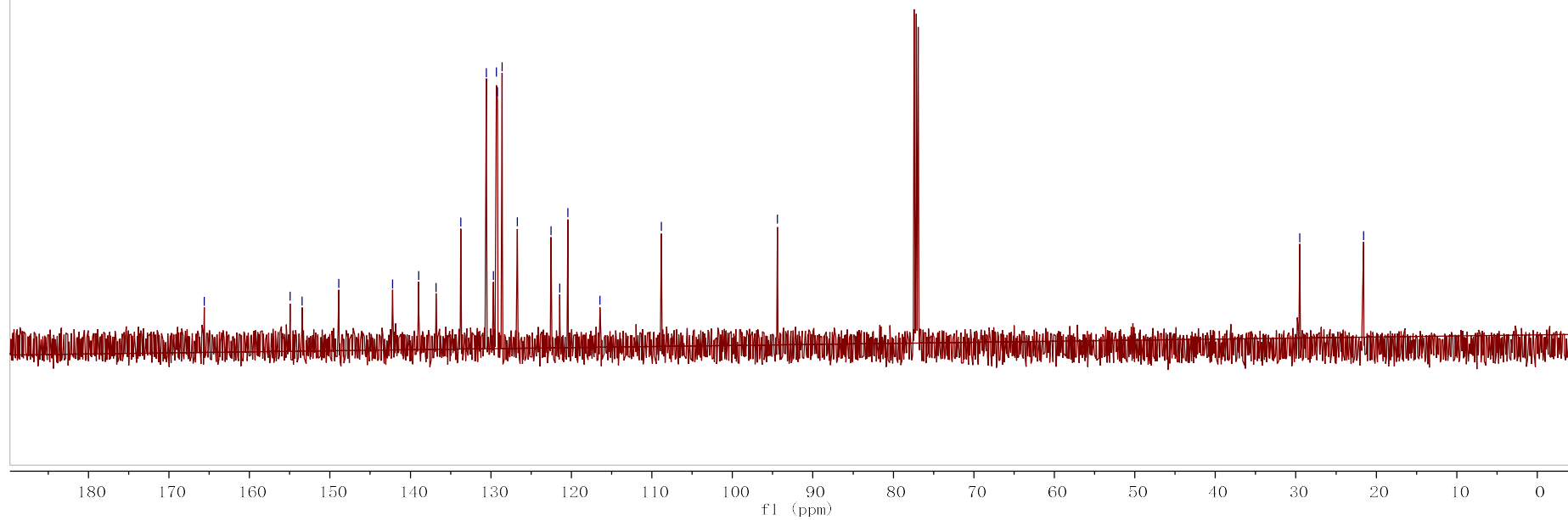
NMR-96

6w18a-c

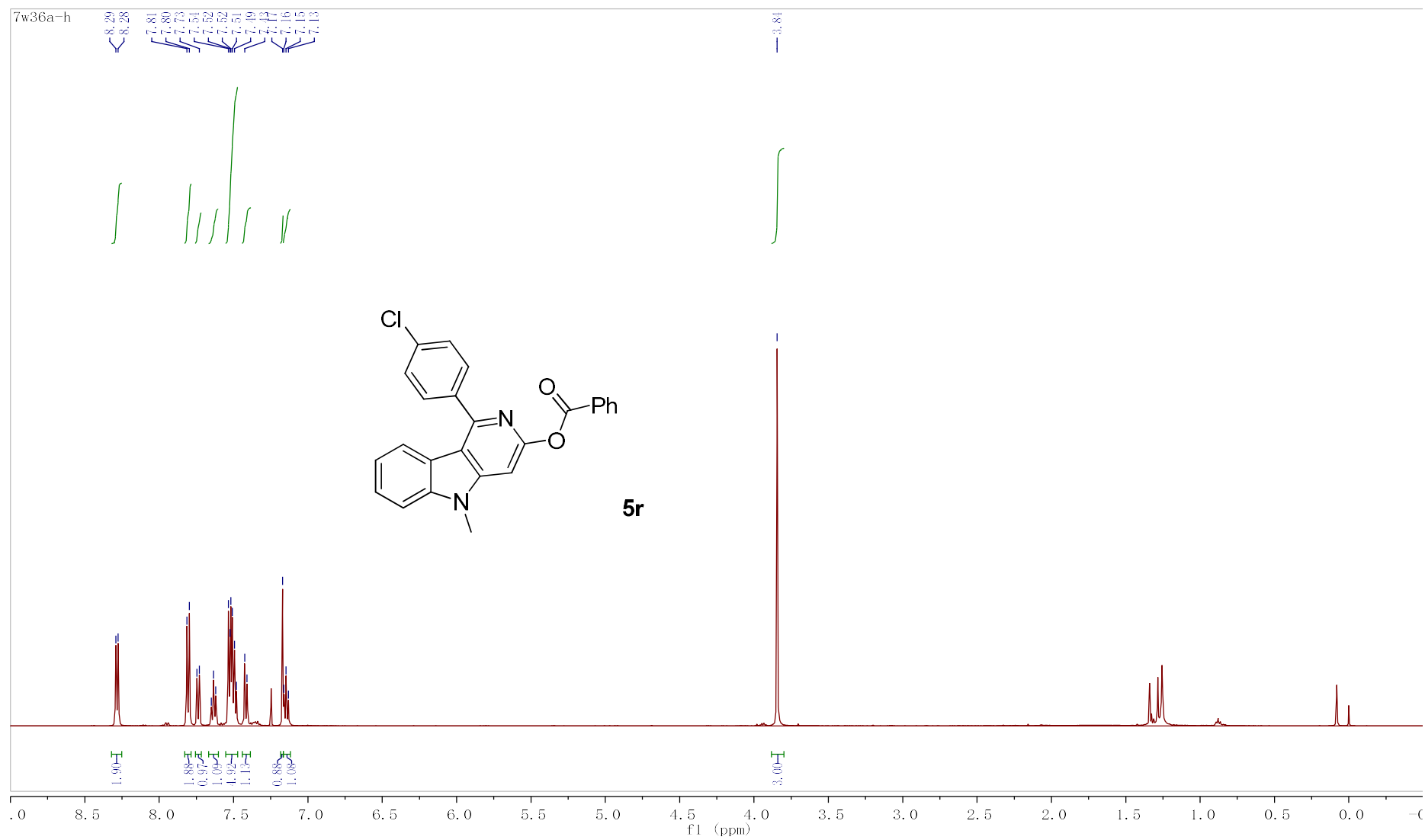
165.60
151.93
153.46
148.90
142.20
138.98
136.81
133.75
130.56
129.69
129.31
129.19
128.59
126.73
122.53
121.41
120.45
116.47
108.82
94.41
29.51
21.59



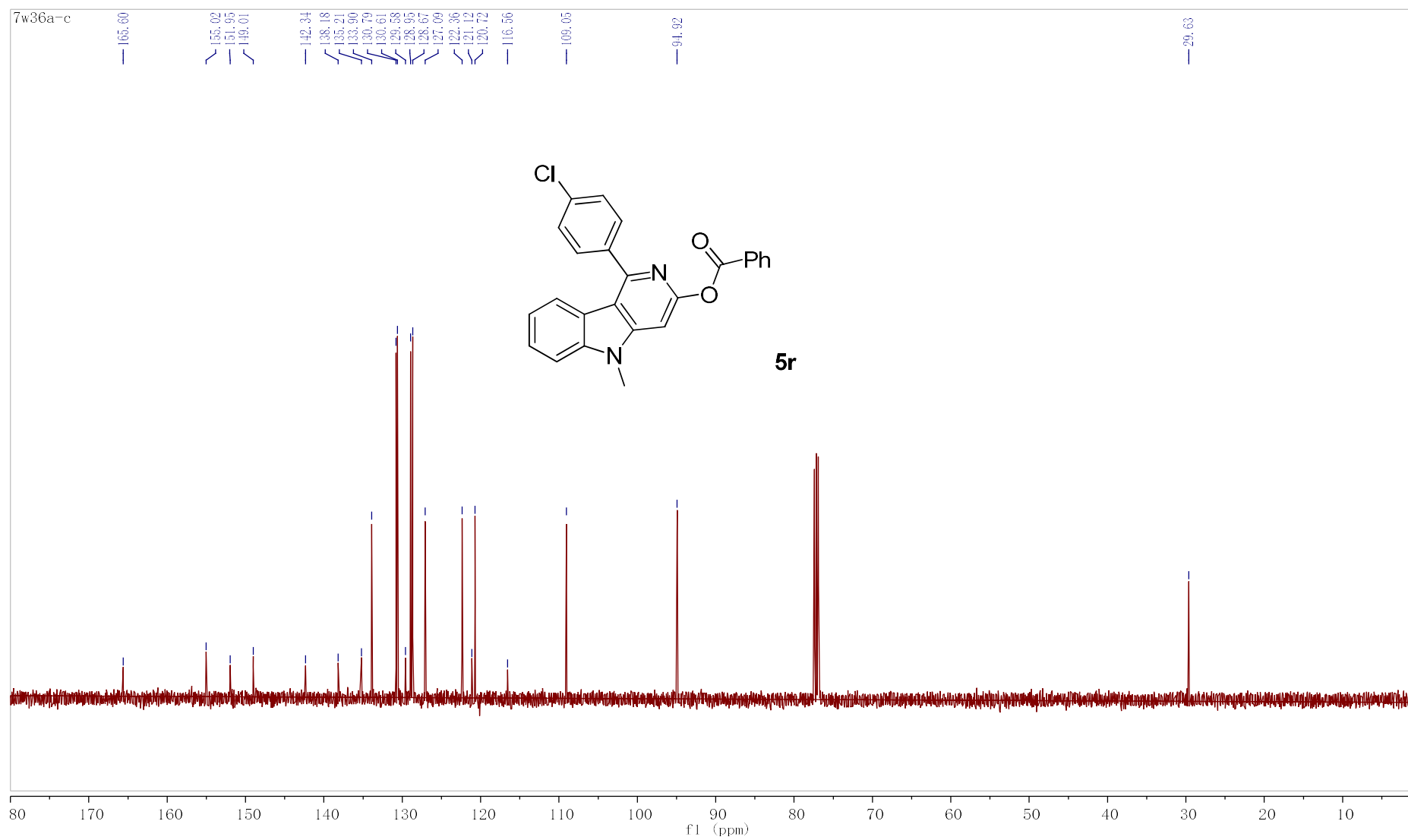
5q



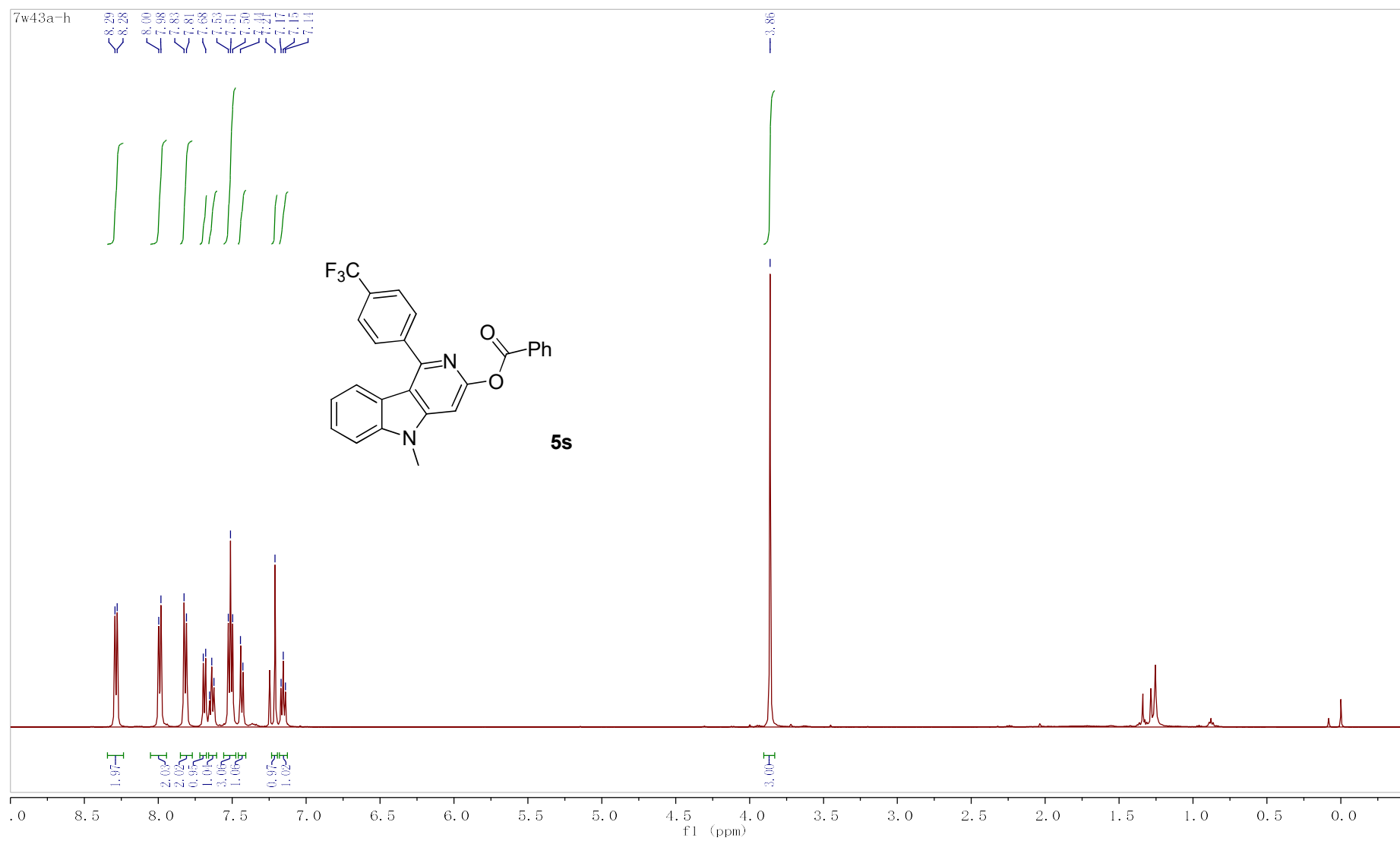
NMR-97



NMR-98

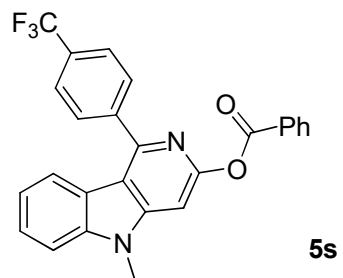


NMR-99



NMR-100

7w43a-c

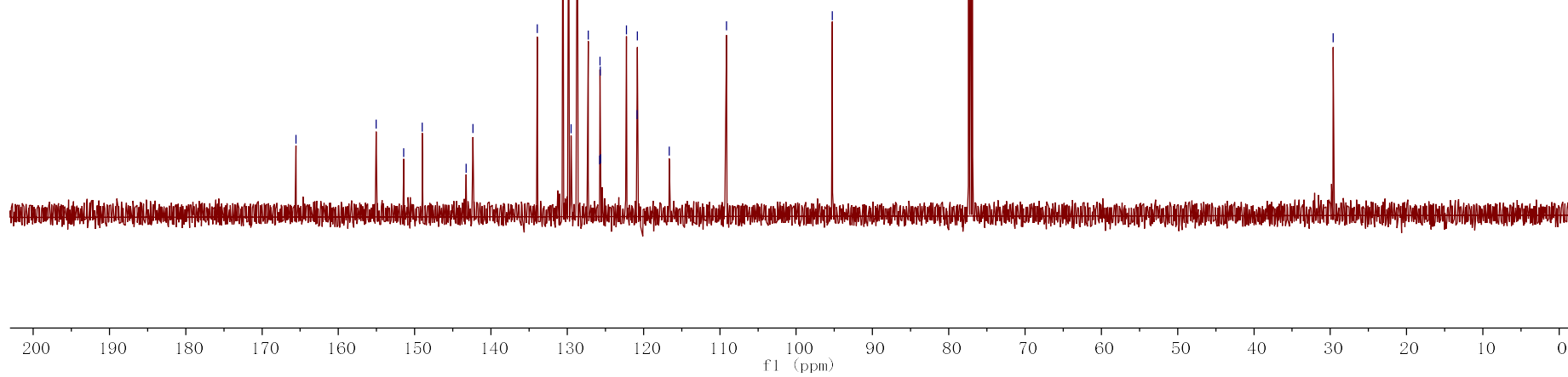


5s

165.56
155.04
151.43
149.00
143.26
142.37
133.92
130.57
129.80
129.49
128.67
127.26
125.70
125.67
122.23
120.85
109.13

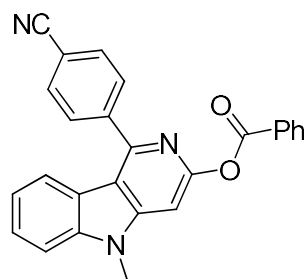
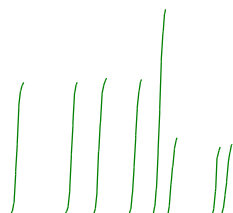
95.27

29.61

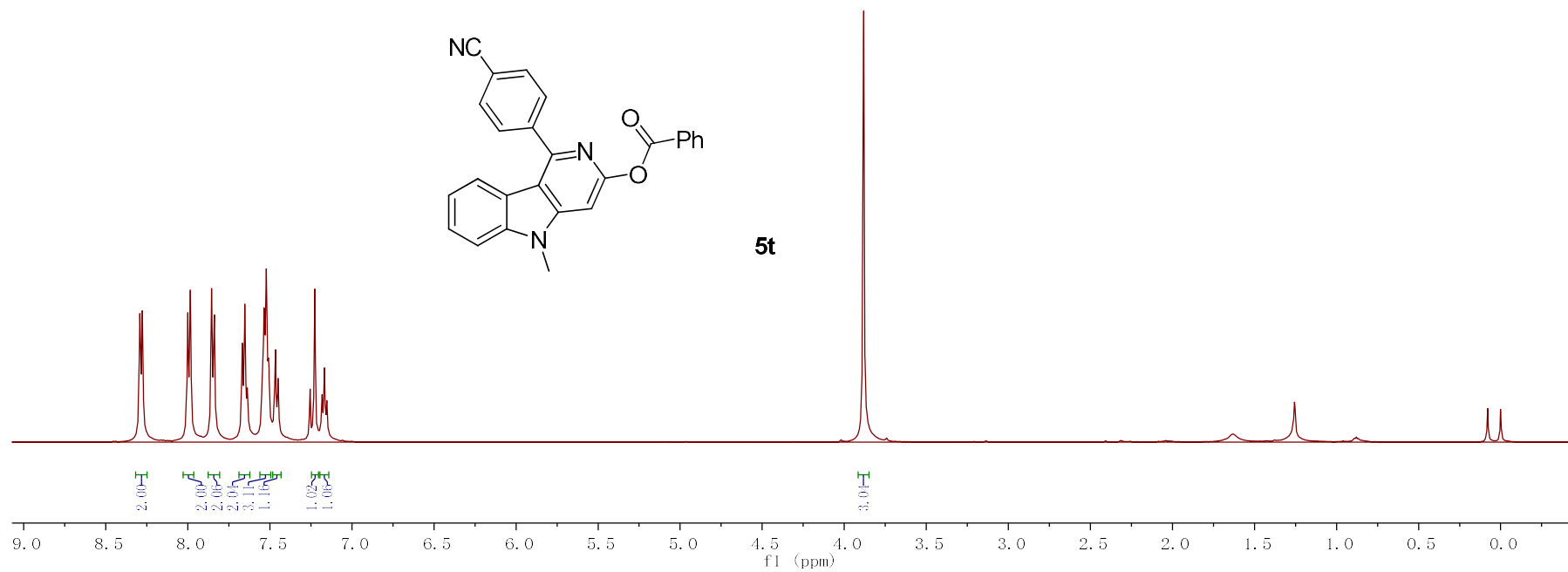


NMR-101

3zd18b2-h

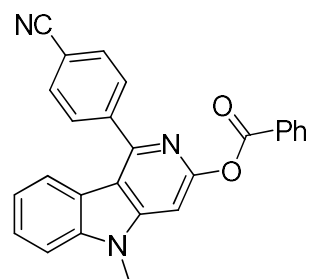


5t

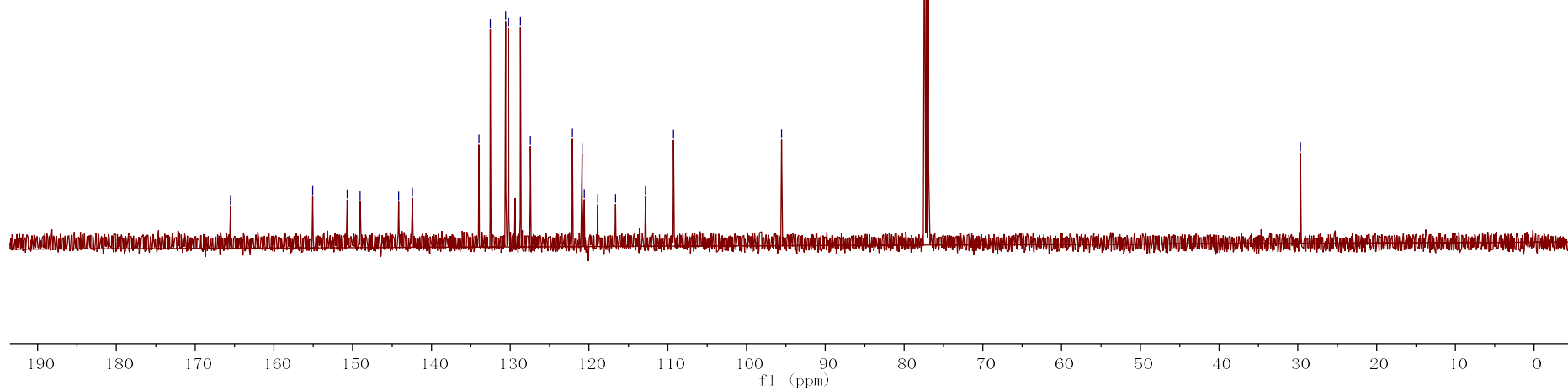


NMR-102

3zd18b2



5t



NMR-103

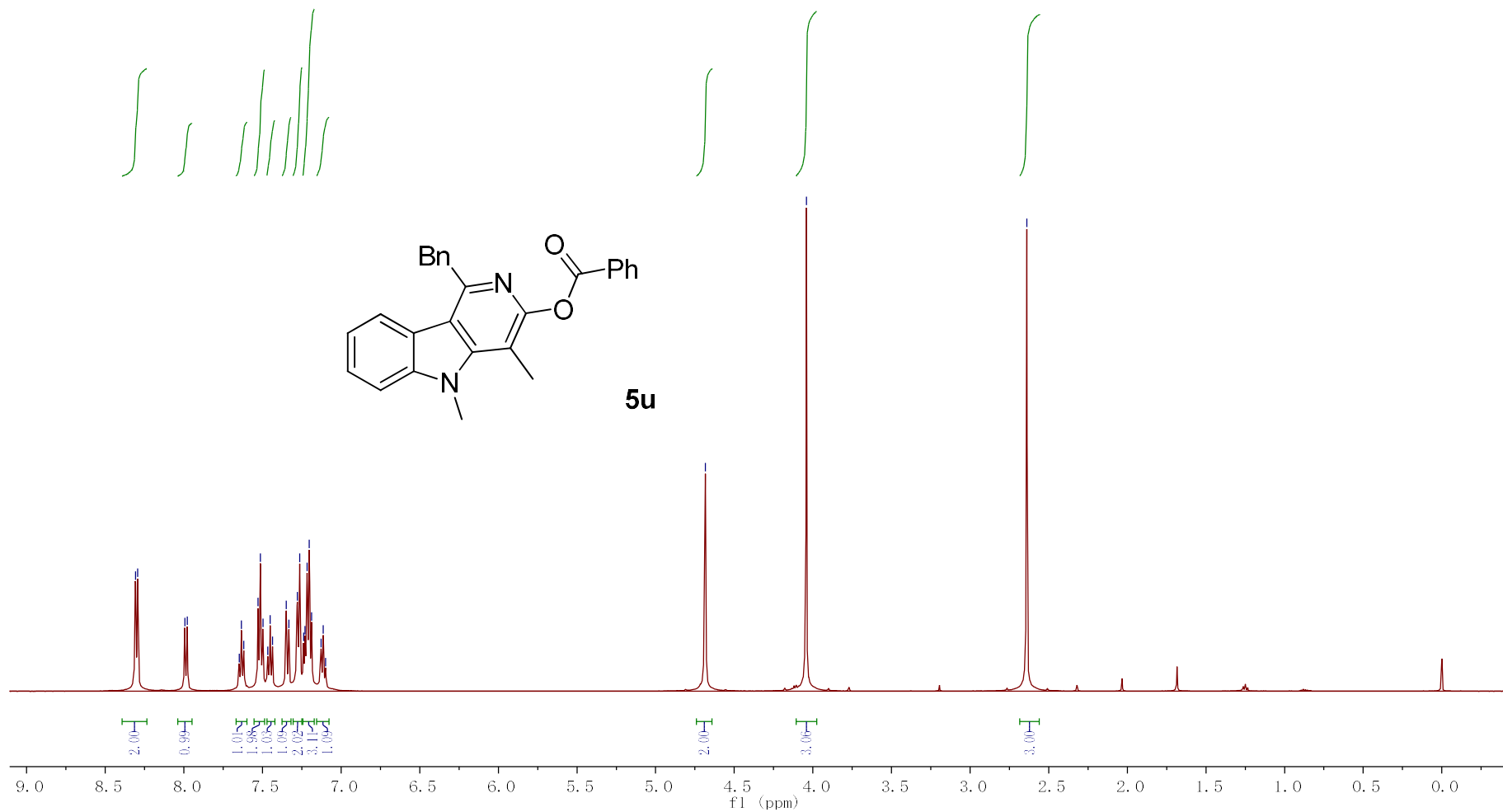
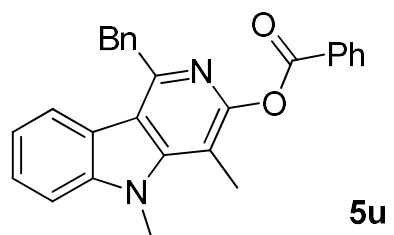
3zd46aa-h

8.31
8.29
7.99
7.98
7.65
7.63
7.62
7.53
7.51
7.50
7.47
7.45
7.41
7.35
7.33
7.28
7.26
7.21
7.23
7.22
7.20
7.19
7.13
7.11
7.10

4.68

4.01

2.64



3zd46aa-62

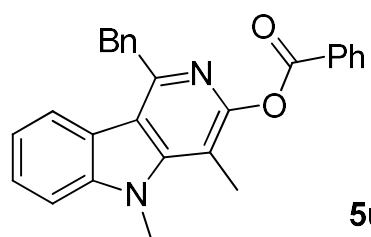
165.52
153.75
150.98
147.13
142.55
138.53
133.76
130.58
129.56
128.65
128.57
126.24
122.58
121.05
120.88
118.27

108.94
105.06

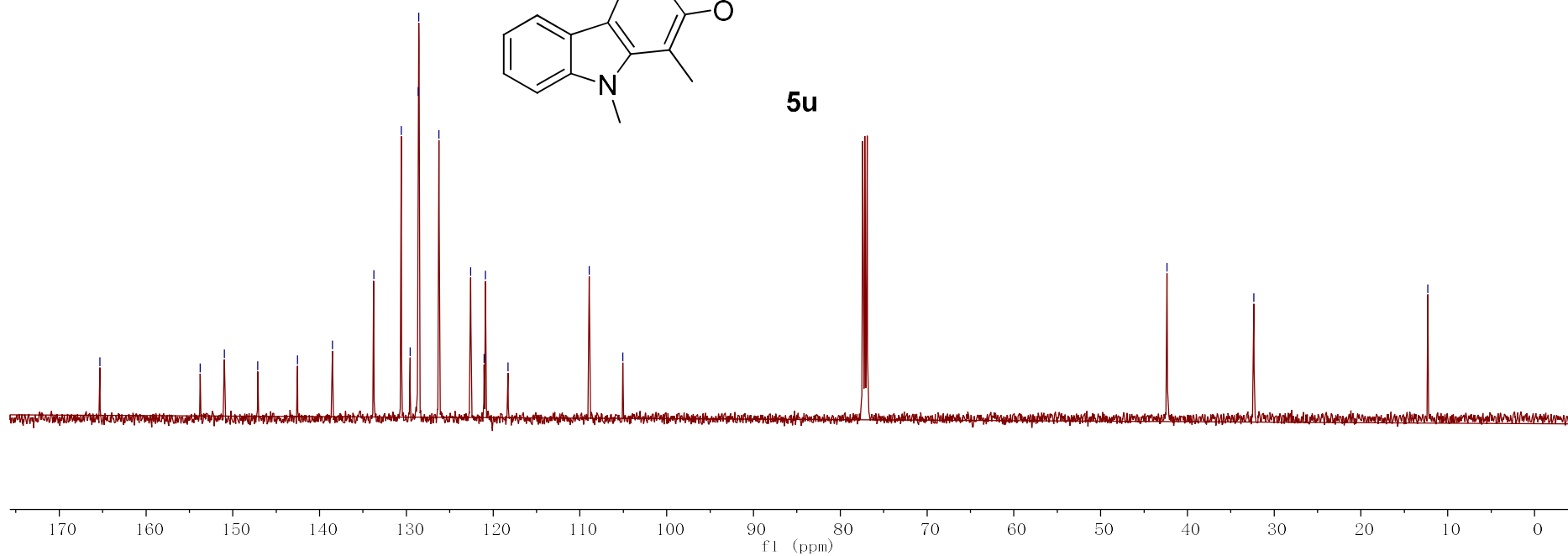
42.34

32.34

12.29



5u



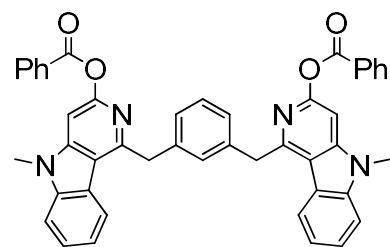
NMR-105

3zd83-7

8.30
8.28
7.84
7.83
7.63
7.52
7.51
7.49
7.42
7.36
7.34
7.31
7.09
7.05
7.04
7.03

4.64

3.78



6

4.00
2.02
2.08
3.99
2.02
3.09
6.99

4.00

6.03

9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0

f1 (ppm)

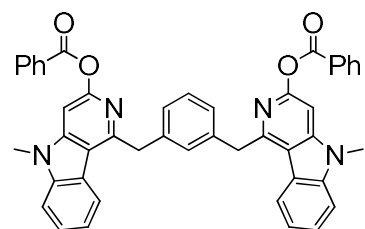
NMR-106

3zd17c

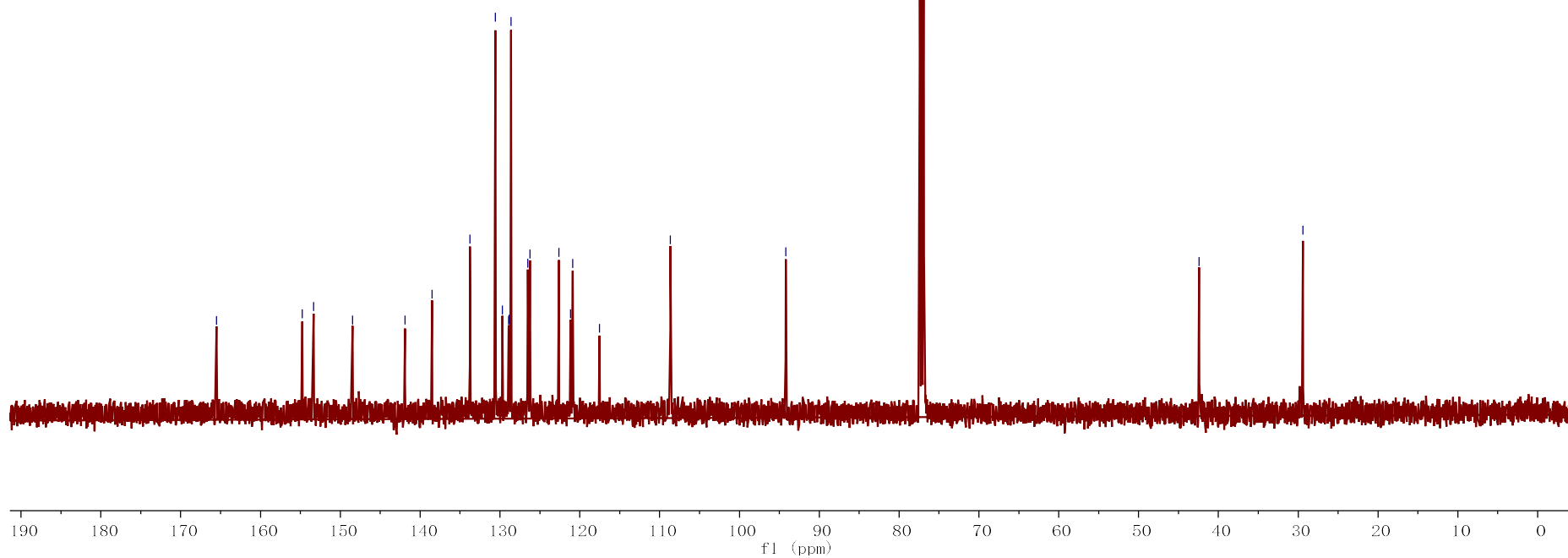
165.52
154.76
153.34
148.47
138.49
133.76
130.57
129.70
128.85
128.60
126.51
126.24
122.62
121.14
120.87
108.66
94.20

42.42

29.41



6



NMR-107