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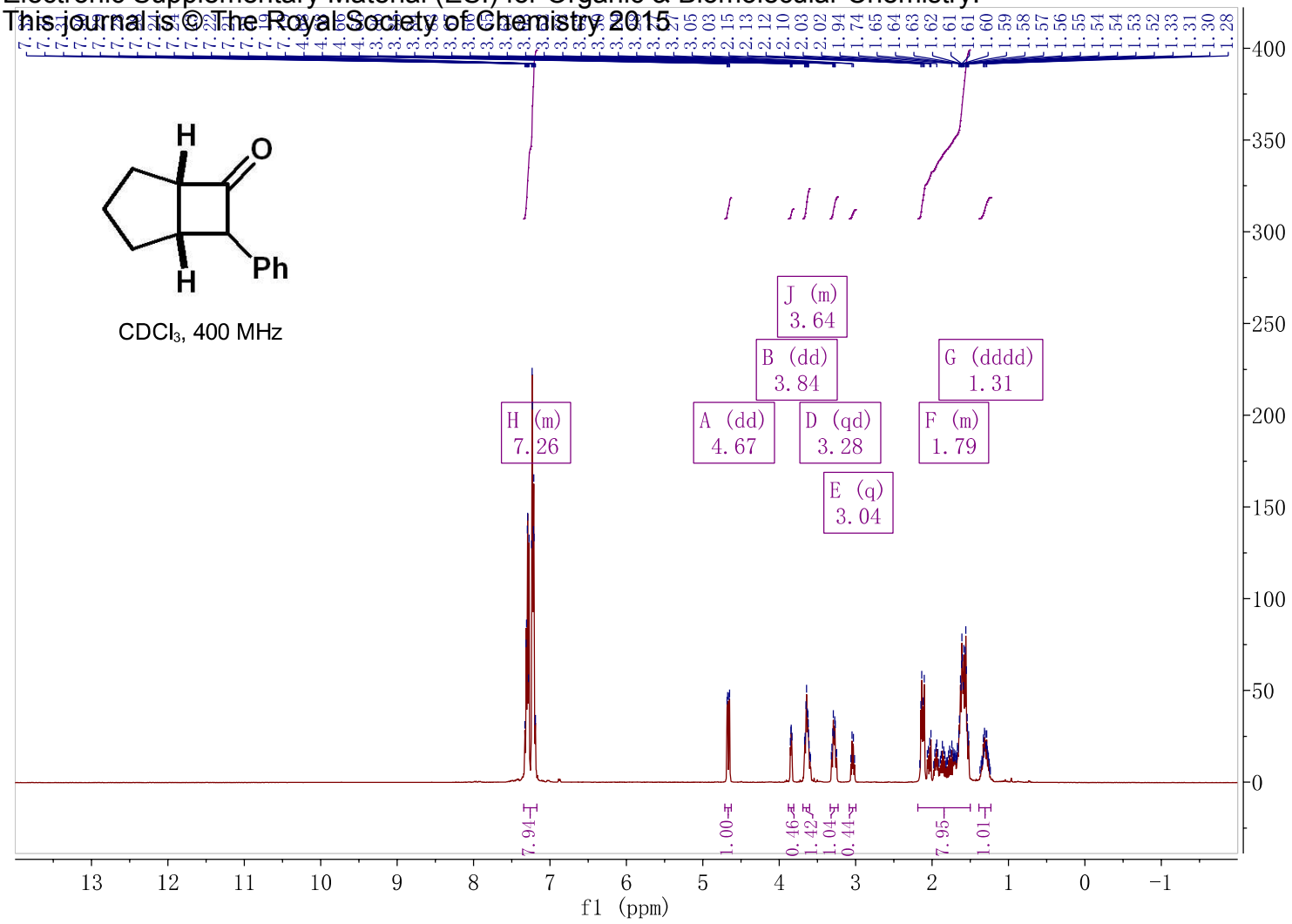
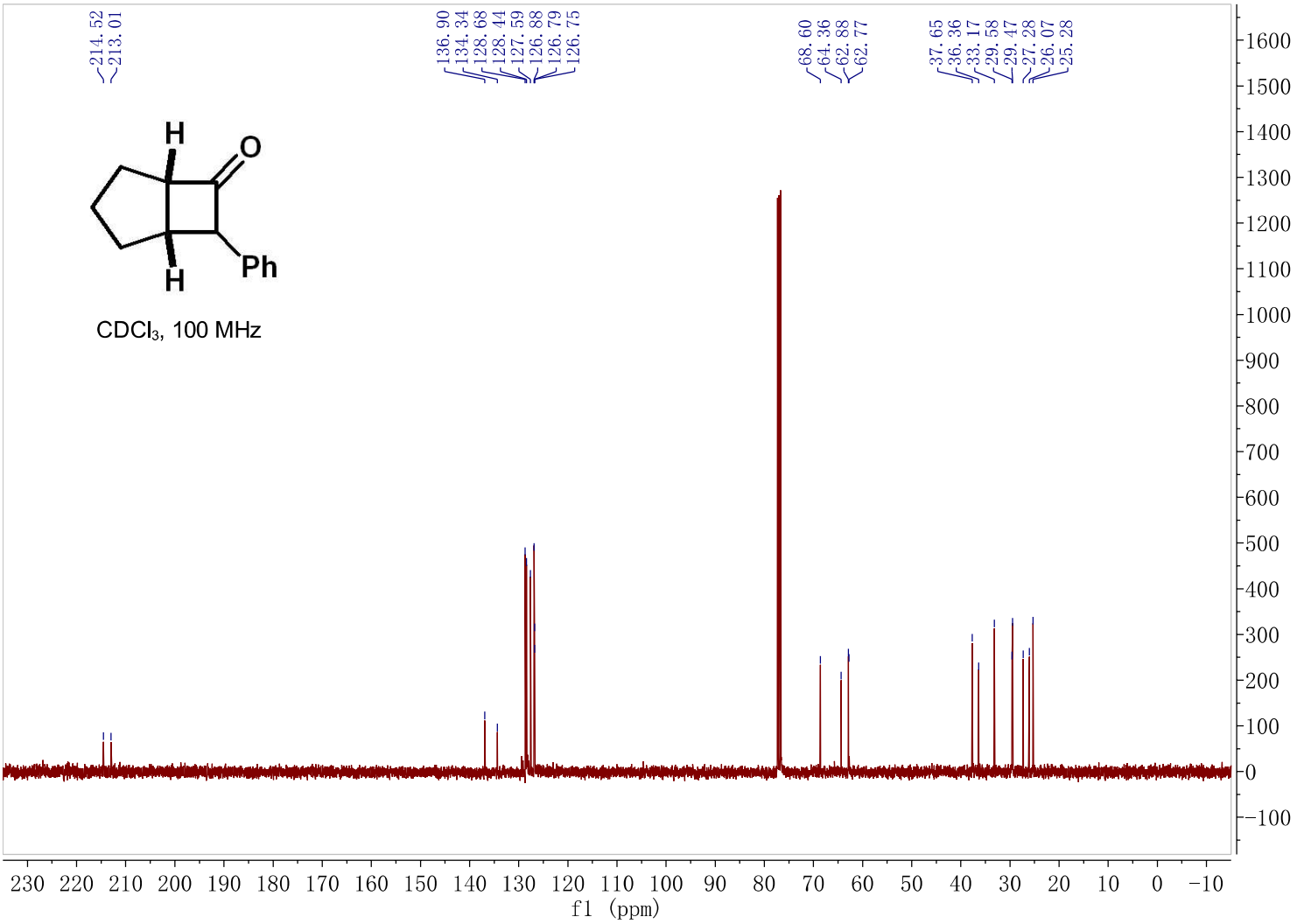
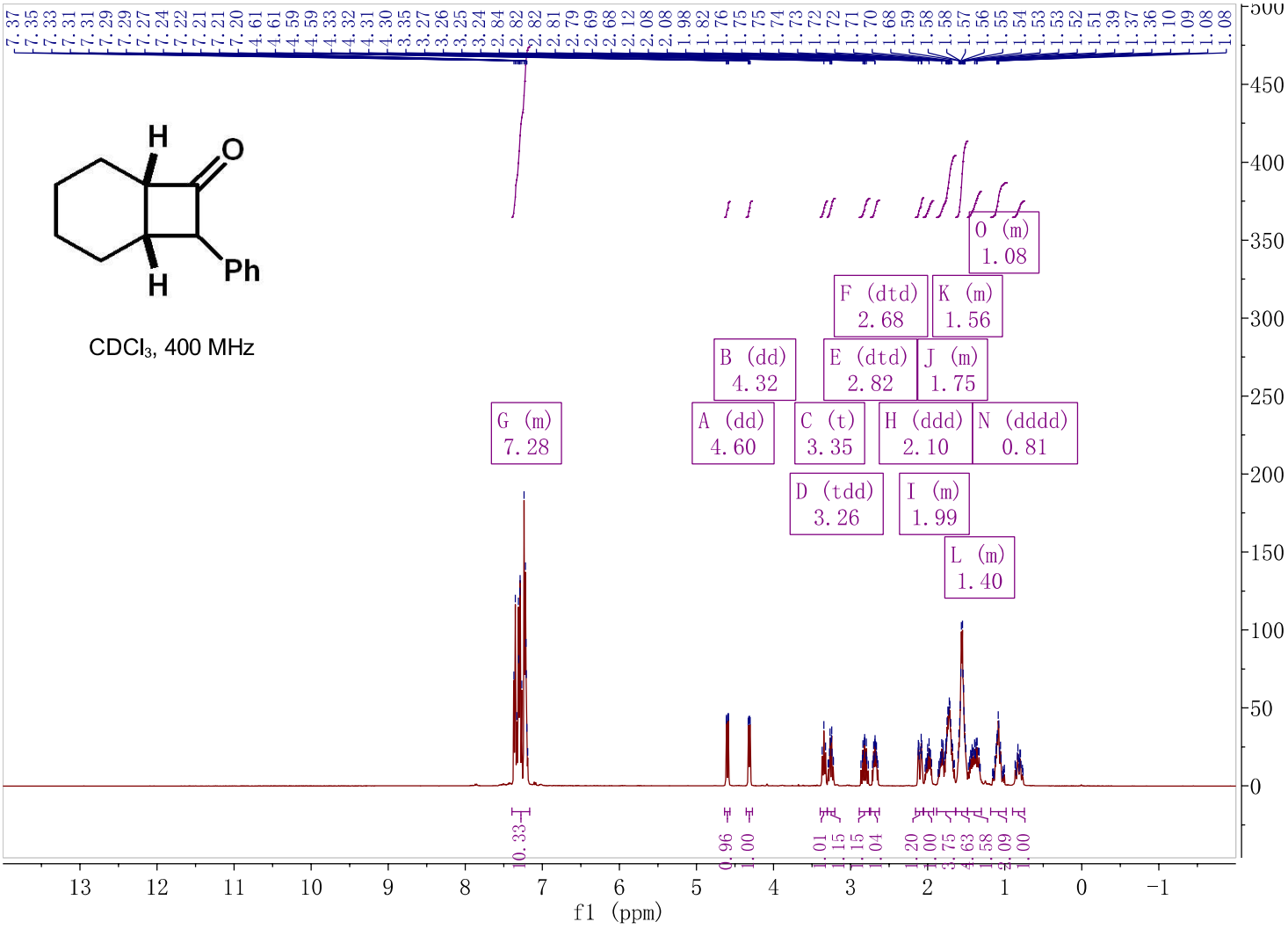
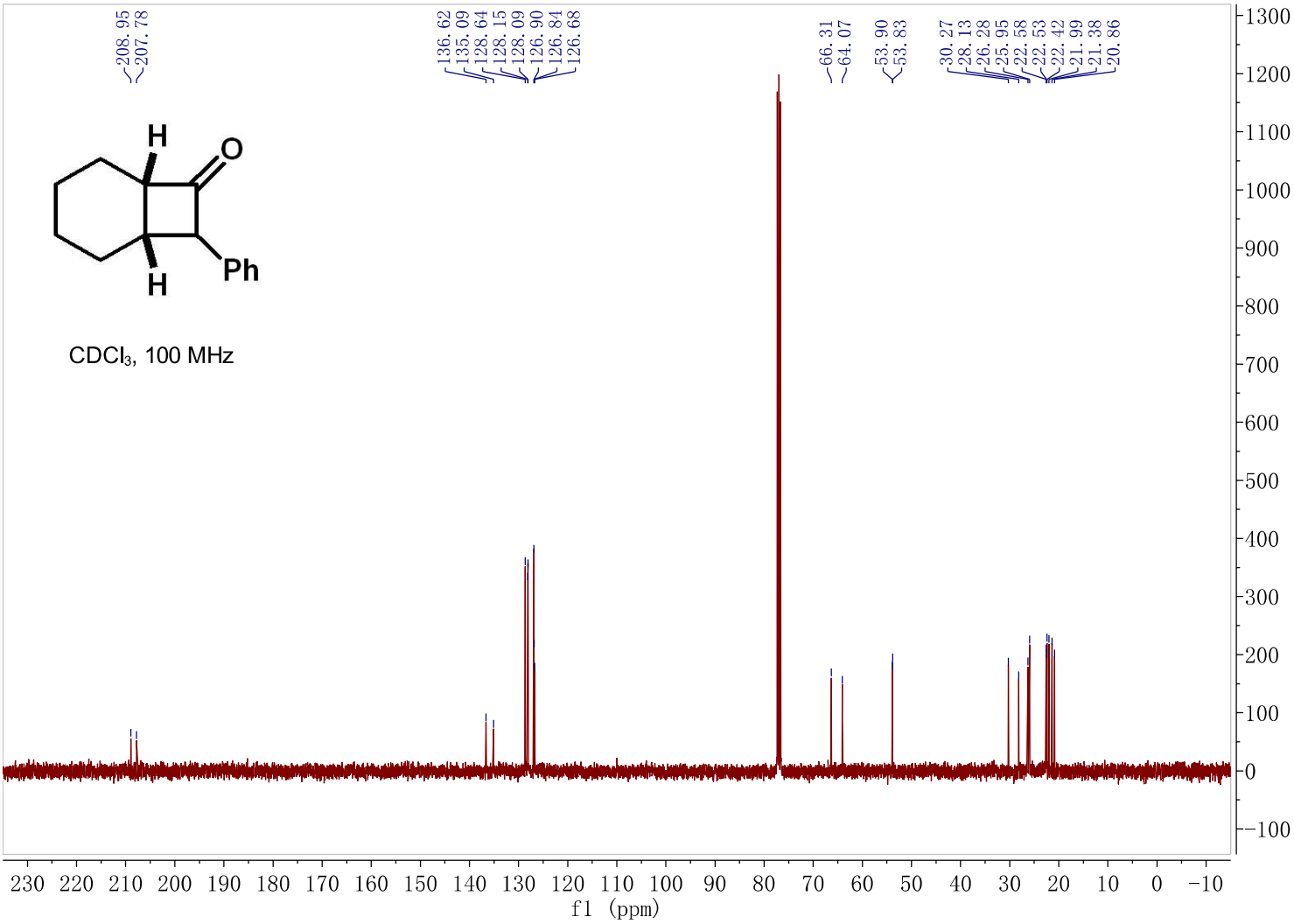
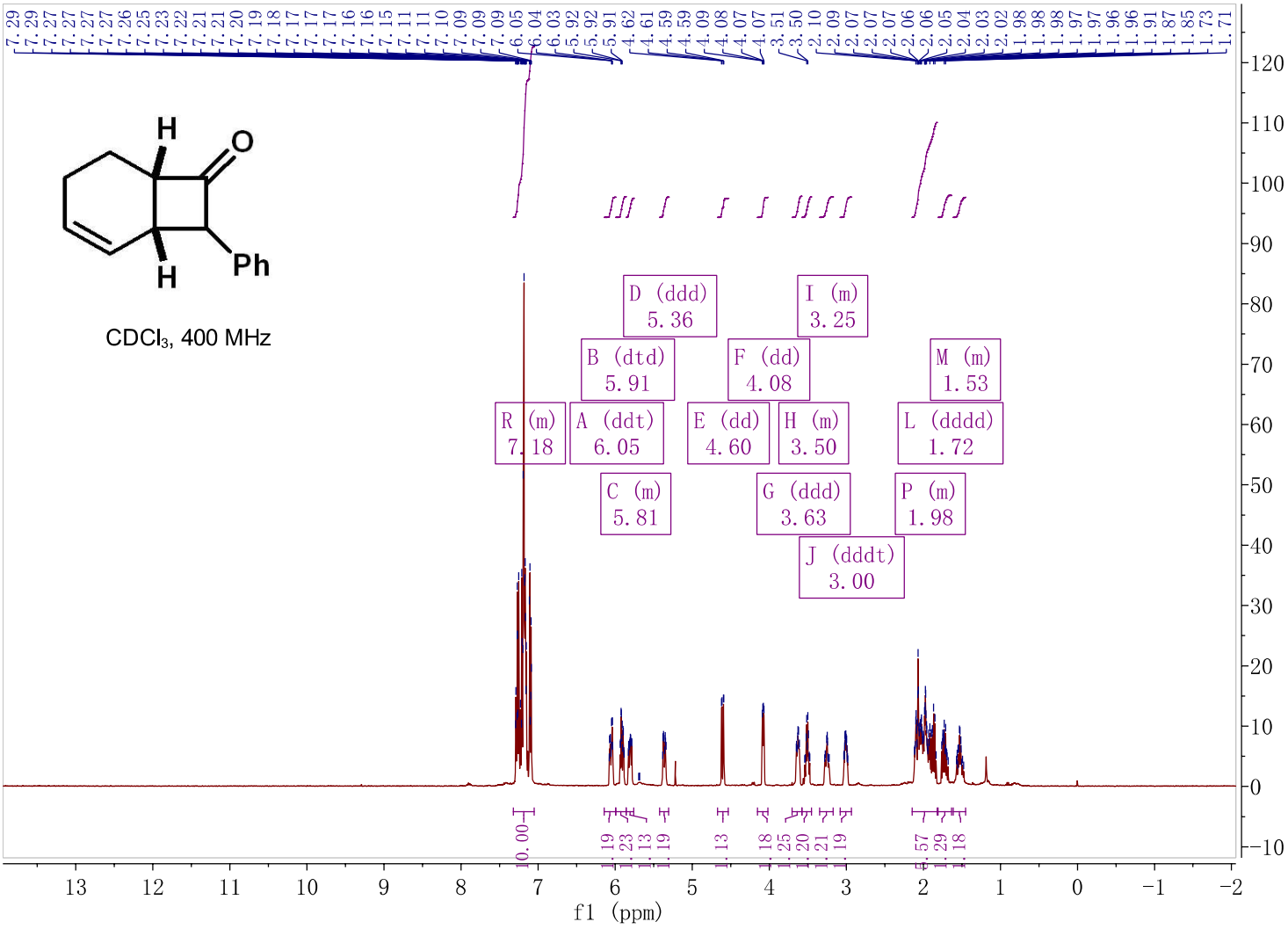
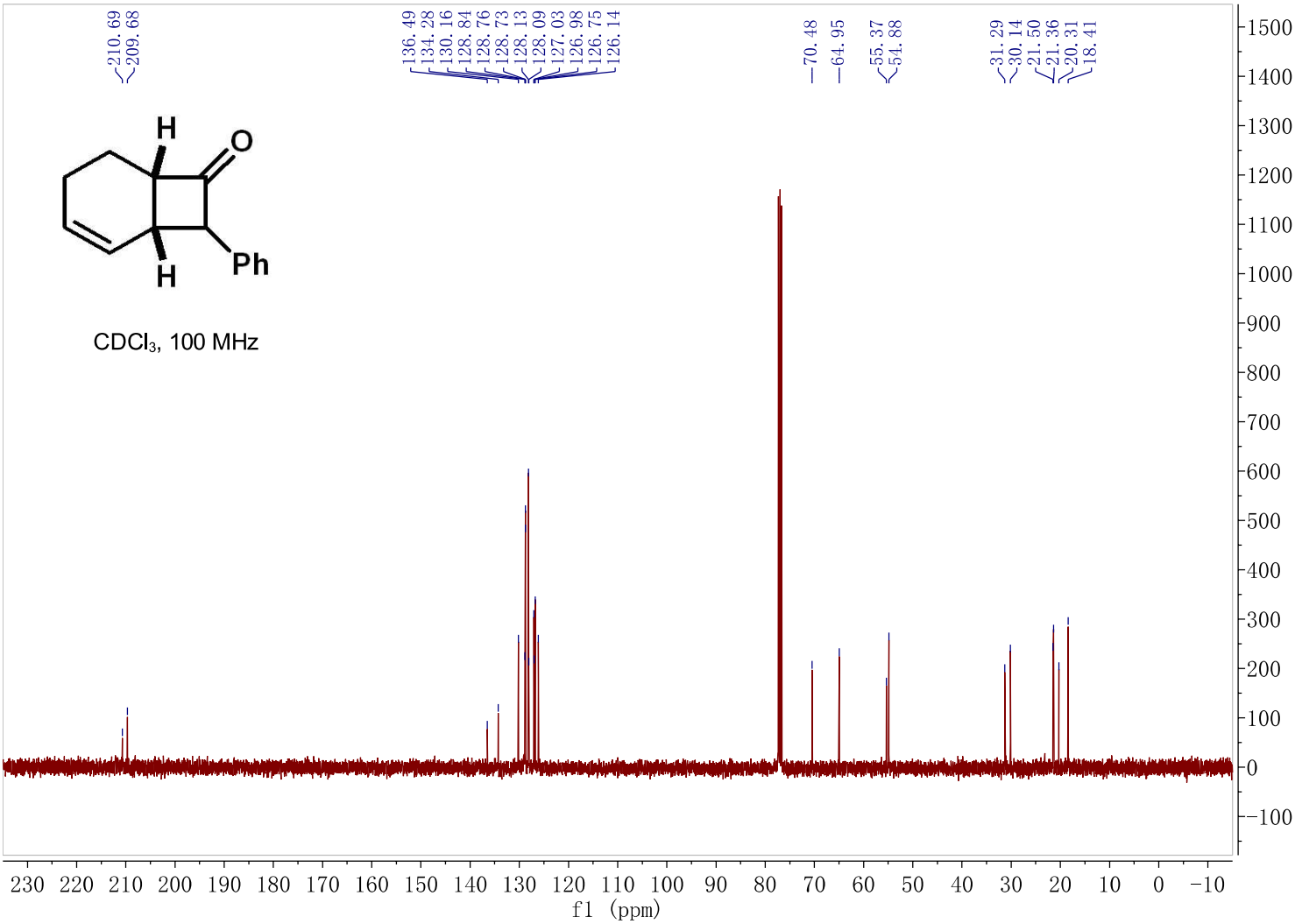





CDCl3, 400 MHz
G (m) 7.28
A (dd) 4.60
B (dd) 4.32
C (t) 3.35
D (tdd) 3.26
E (dtd) 2.82
F (dtd) 2.68
H (ddd) 2.10
I (m) 1.99
J (m) 1.75
K (m) 1.56
L (m) 1.40
N (dddd) 0.81
O (m) 1.08
f1 (ppm)


CDCl3, 100 MHz
208.95
207.78
136.62
135.09
128.64
128.15
128.09
126.90
126.84
126.68
66.31
64.07
53.90
53.83
30.27
28.13
26.28
25.95
22.58
22.53
22.42
21.99
21.38
20.86
f1 (ppm)


CDCl3, 400 MHz
D (ddd) 5.36
I (m) 3.25
B (dtd) 5.91
F (dd) 4.08
M (m) 1.53
R (m) 7.18
A (ddt) 6.05
E (dd) 4.60
H (m) 3.50
L (dddd) 1.72
C (m) 5.81
G (ddd) 3.63
P (m) 1.98
J (dddt) 3.00
f1 (ppm)


CDCl3, 100 MHz
210.69
209.68
136.49
134.28
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128.84
128.76
128.73
128.13
128.09
127.03
126.98
126.75
126.14
70.48
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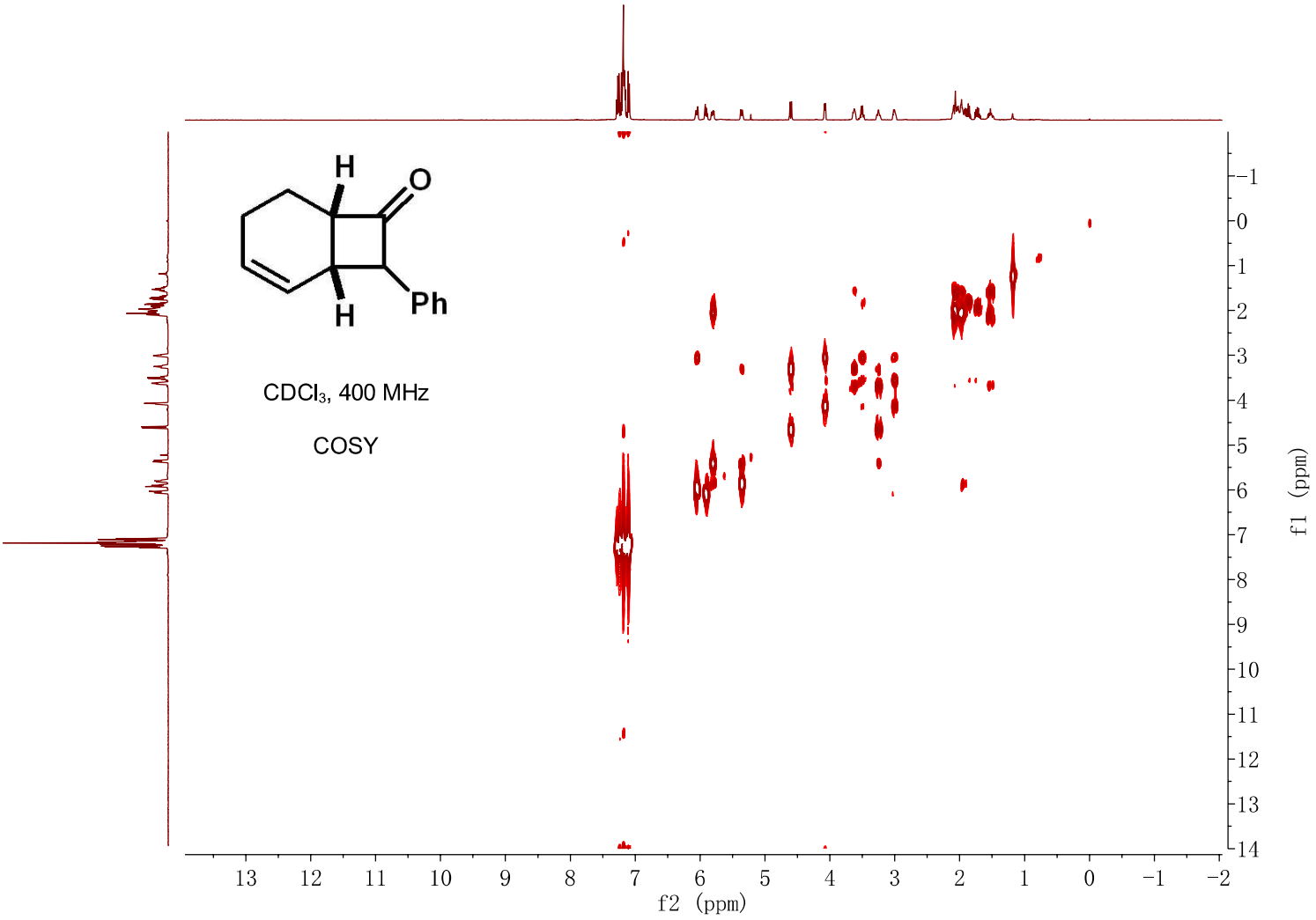
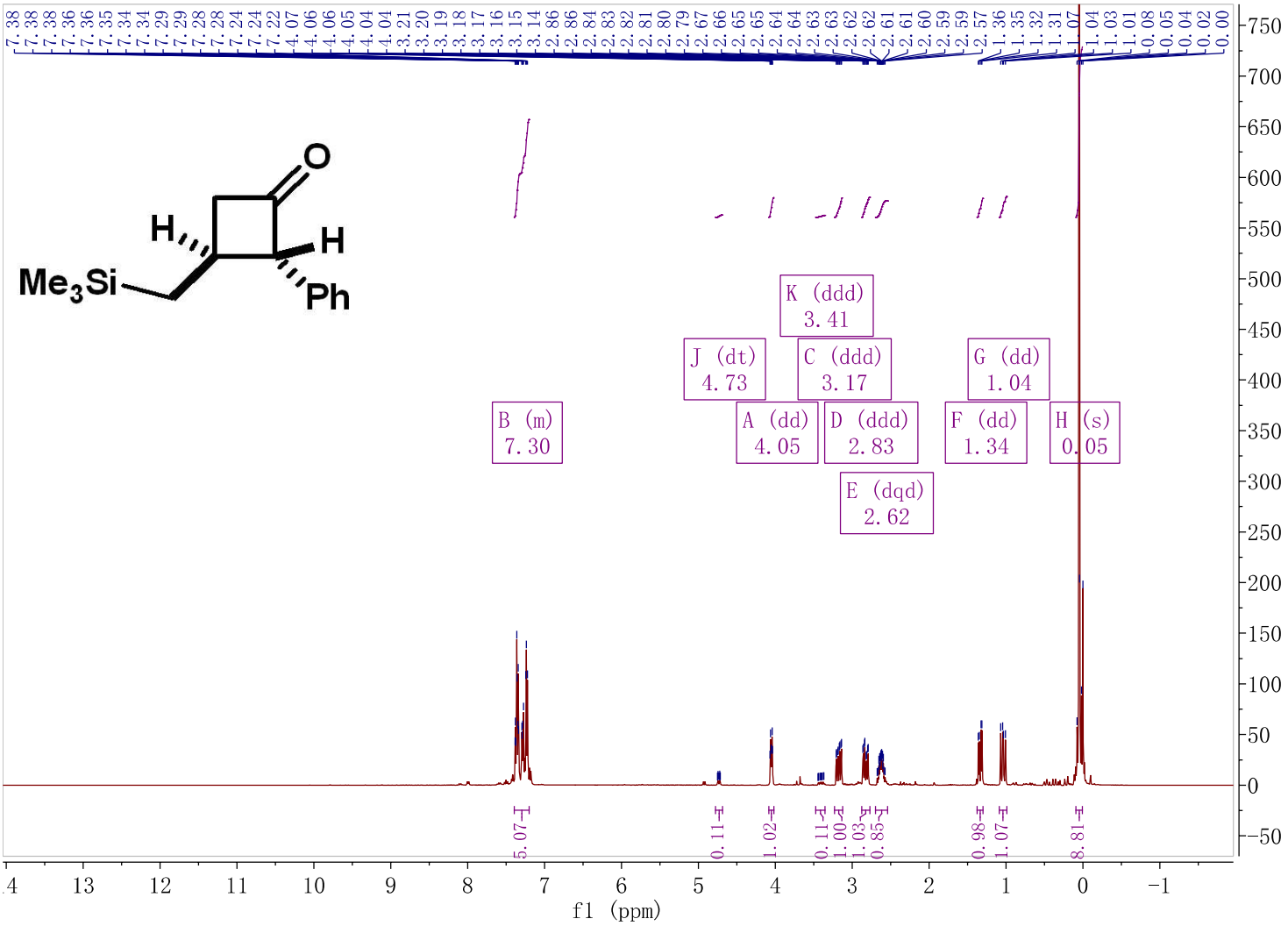
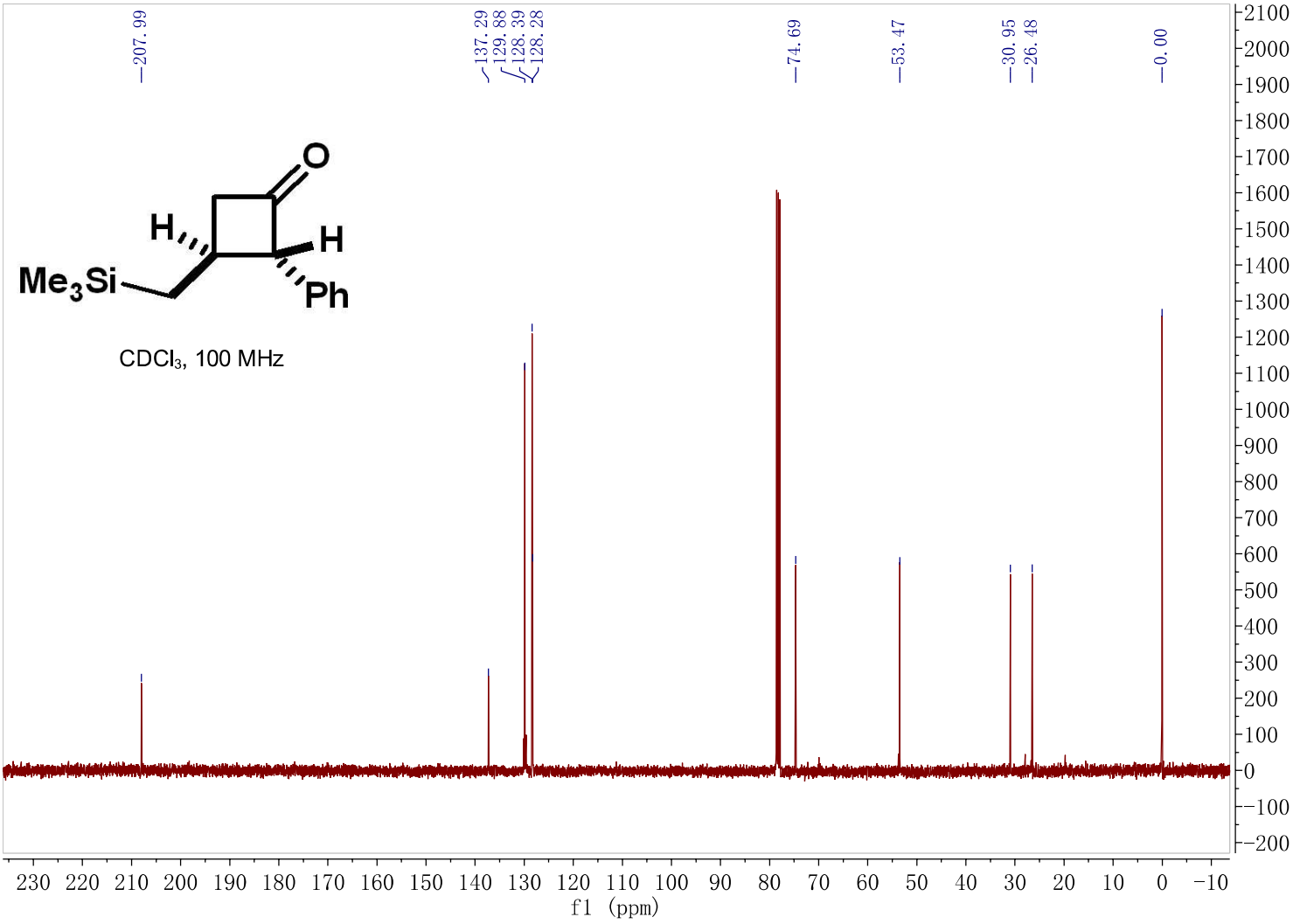
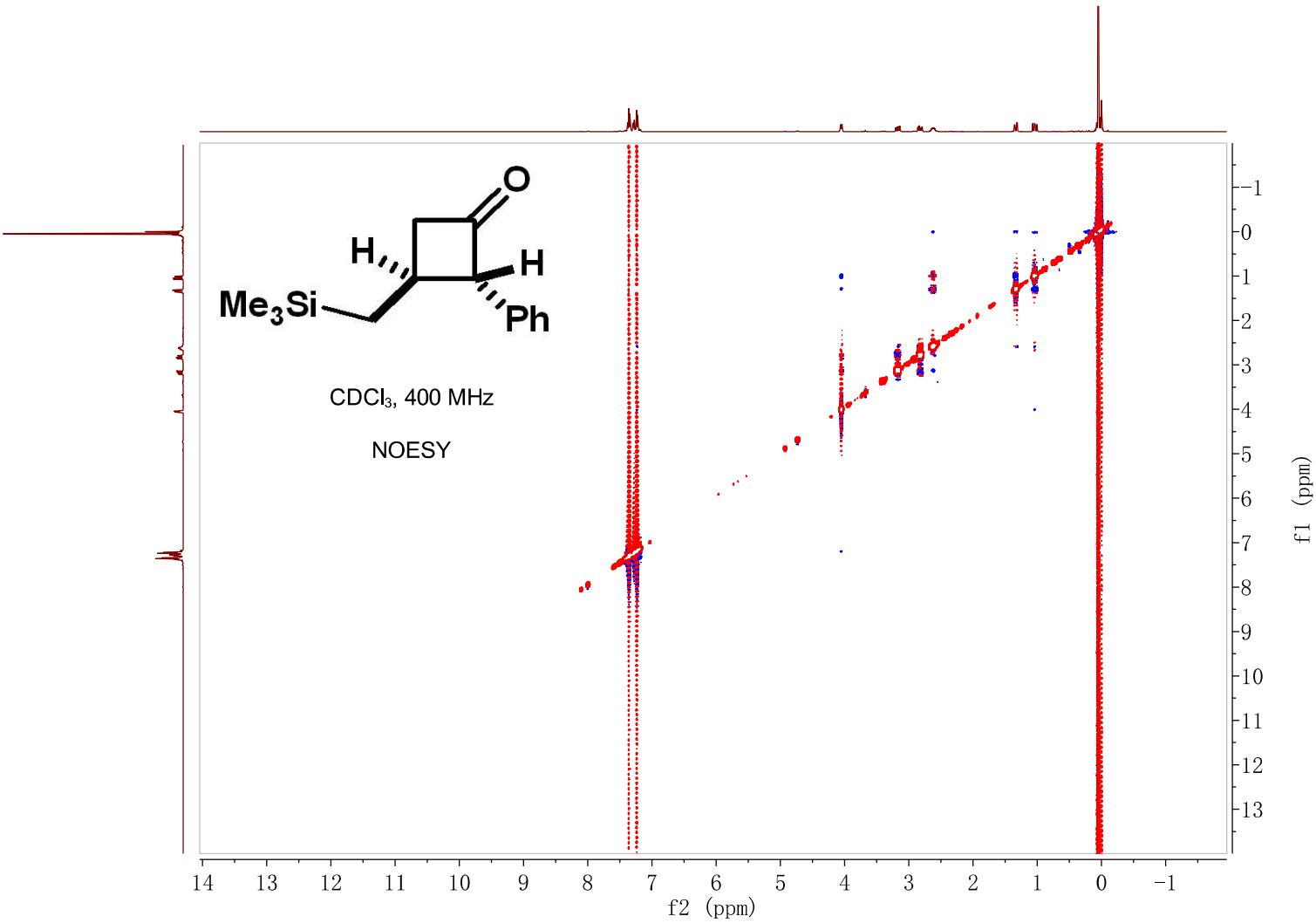
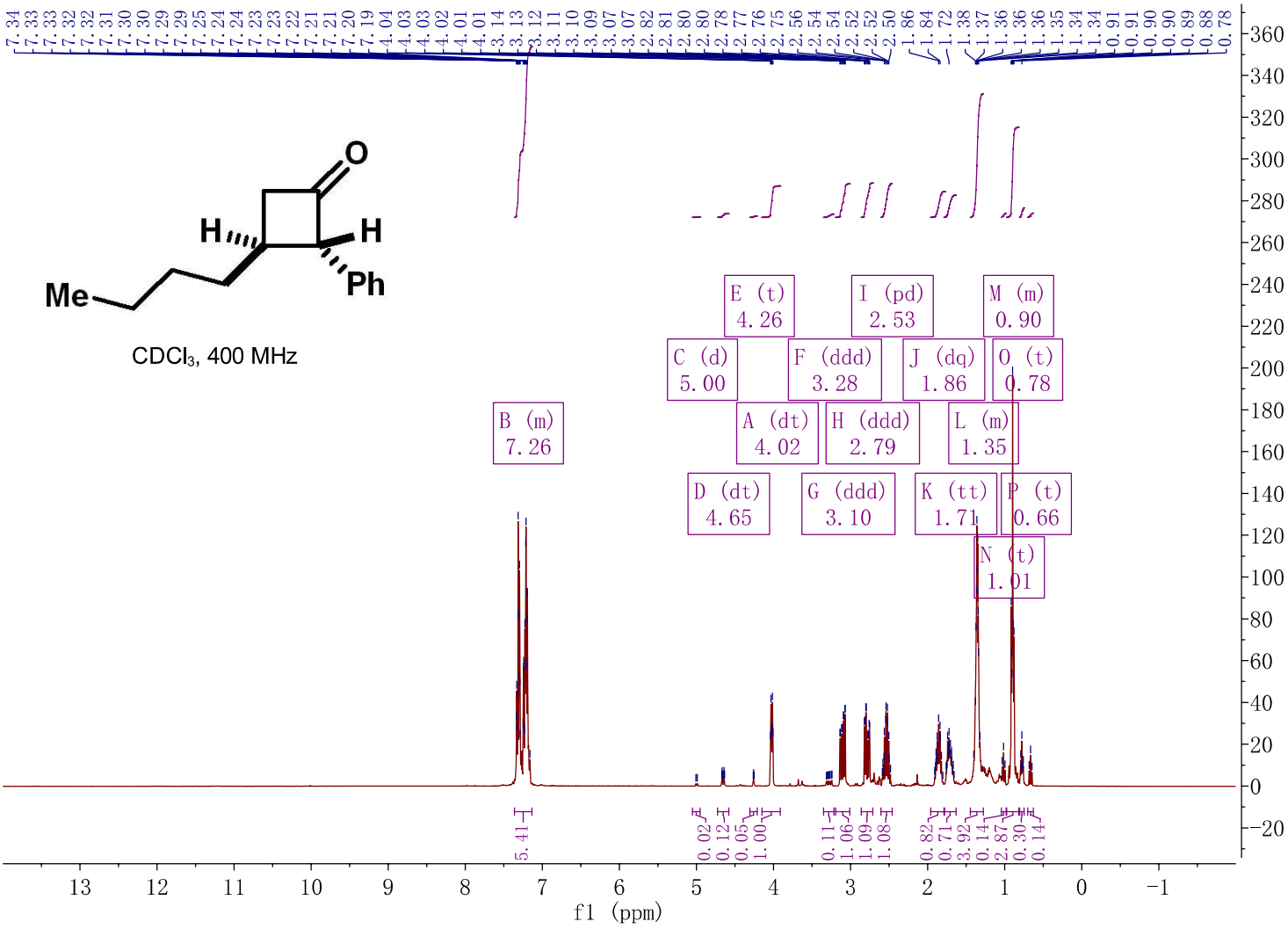
55.37
54.88
31.29
30.14
21.50
21.36
20.31
18.41
f1 (ppm)

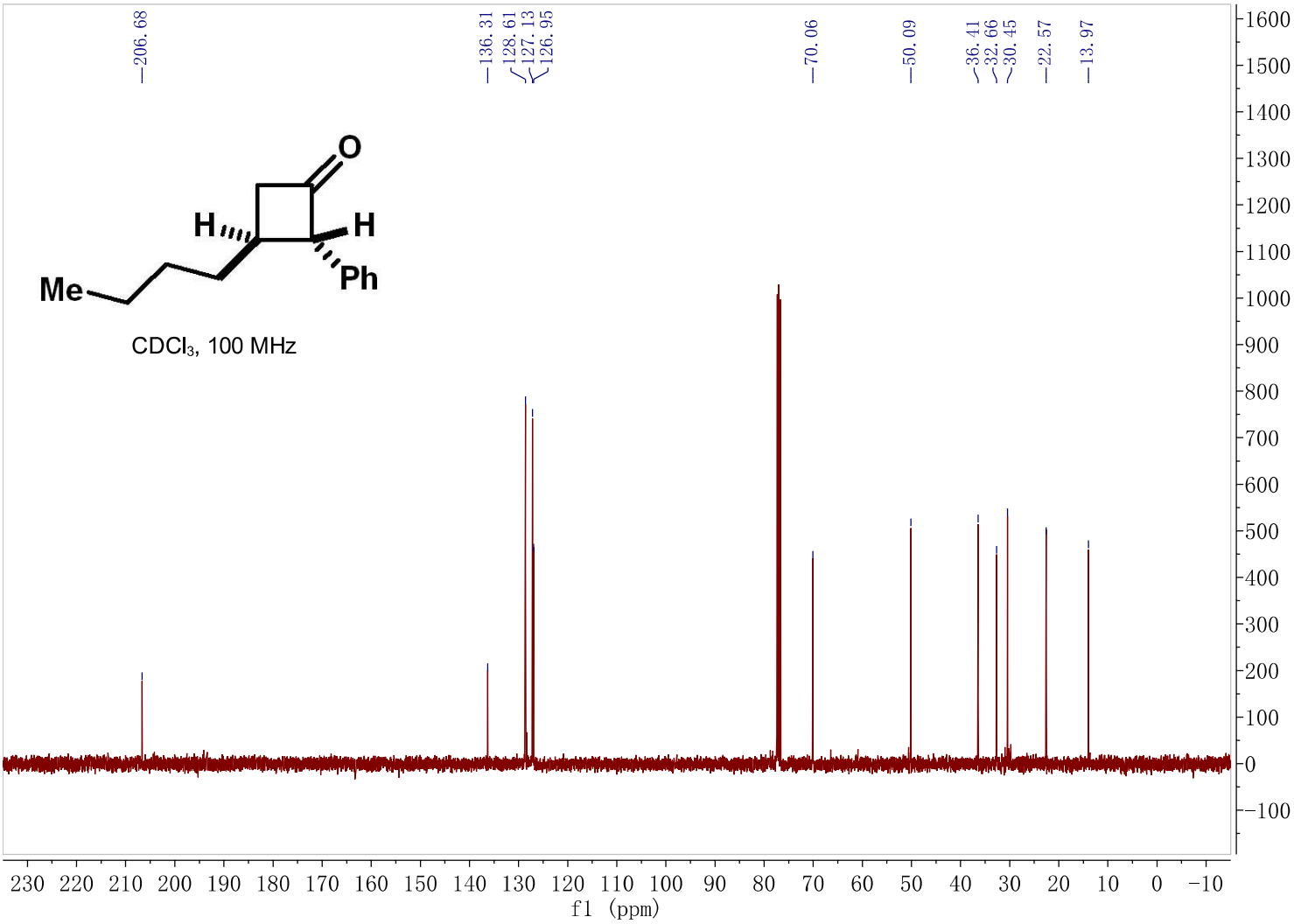

H
O
H
Ph
CDCl3, 400 MHz
COSY
f2 (ppm)
f1 (ppm)

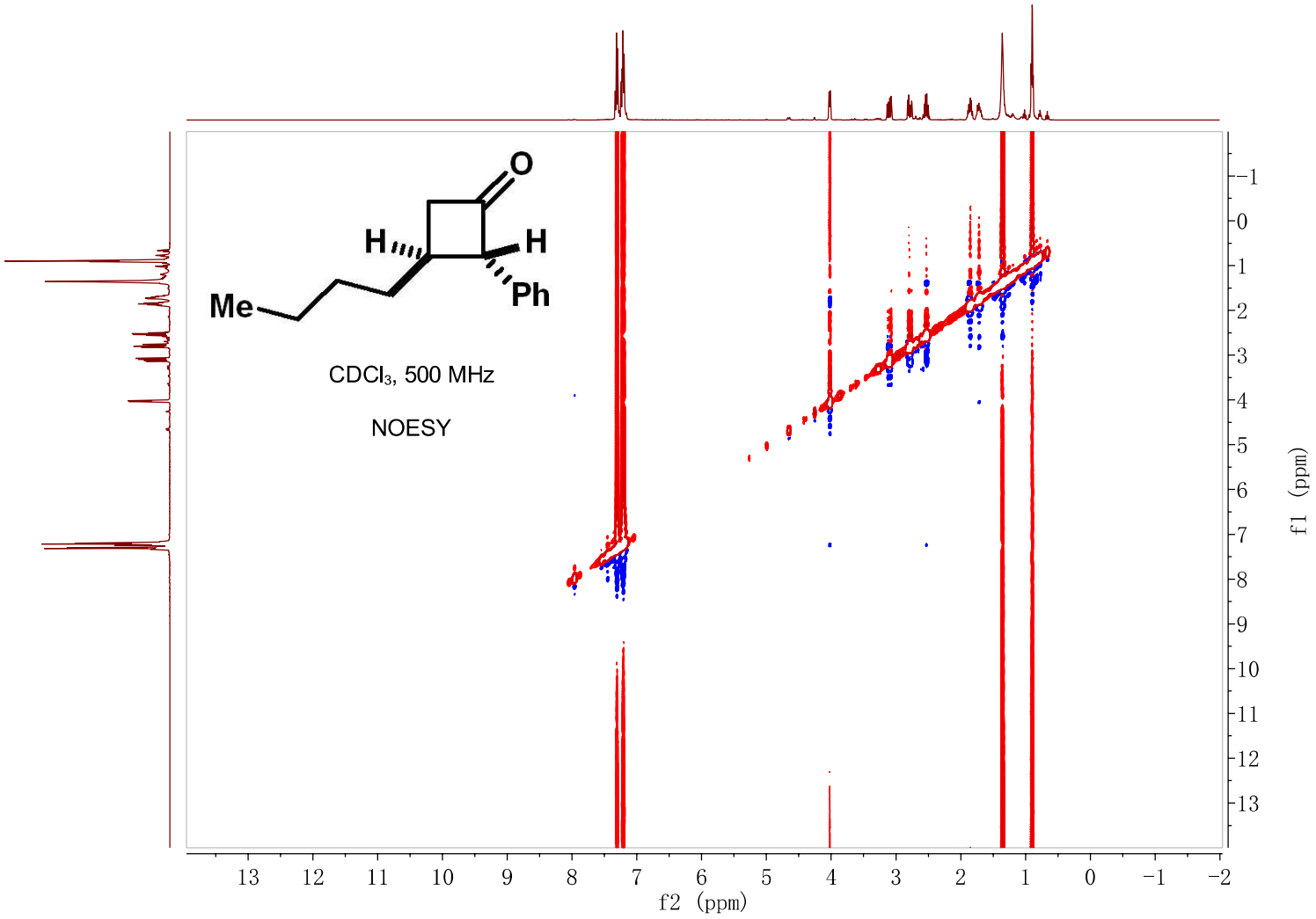

O
H
H
Me3Si
Ph
B (m) 7.30
J (dt) 4.73
A (dd) 4.05
K (ddd) 3.41
C (ddd) 3.17
D (ddd) 2.83
E (dqd) 2.62
G (dd) 1.04
F (dd) 1.34
H (s) 0.05
f1 (ppm)

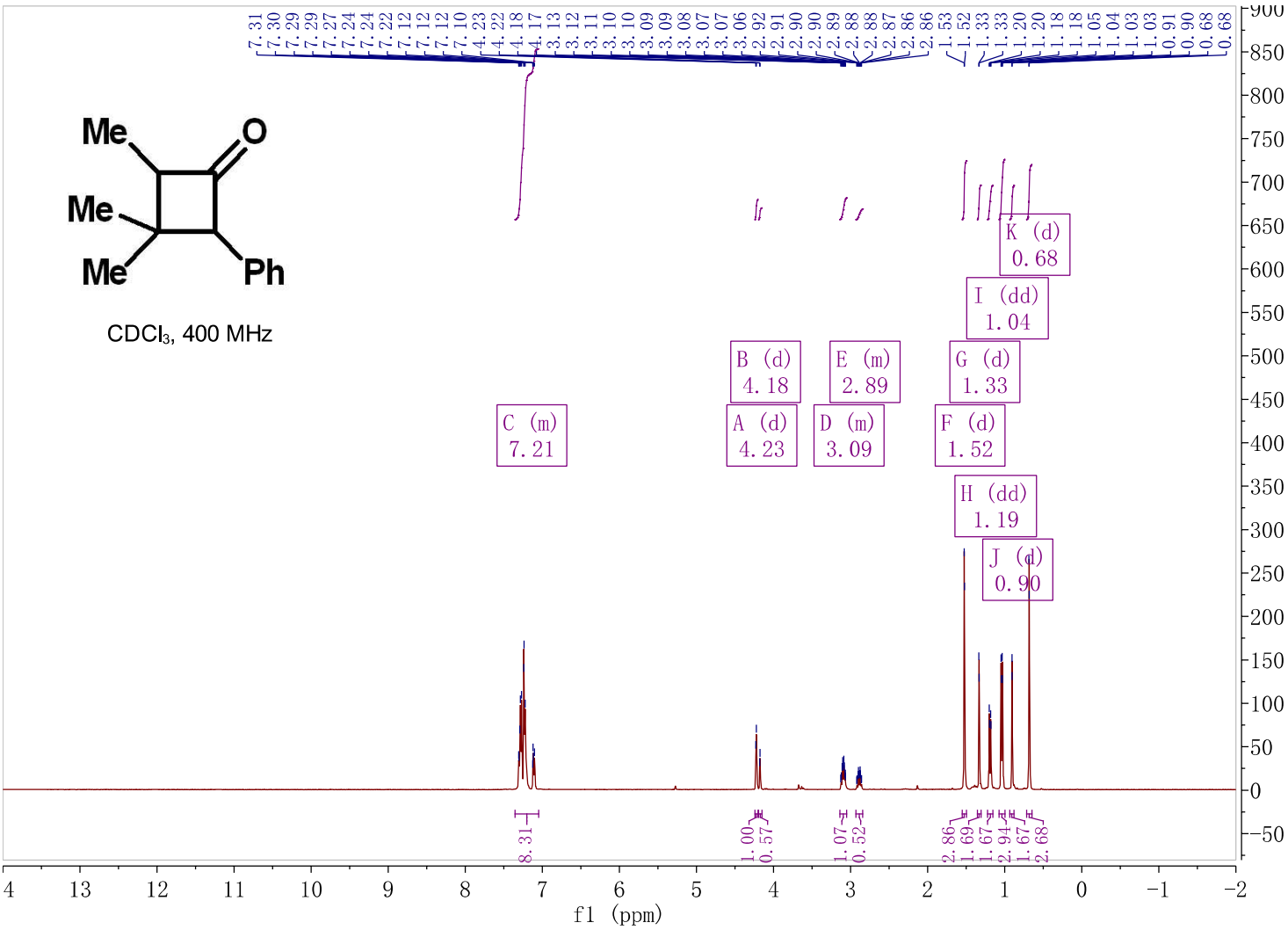

207.99
137.29
129.88
128.39
128.28
74.69
53.47
30.95
26.48
0.00
O
H
H
Me3Si
Ph
CDCl3, 100 MHz
f1 (ppm)

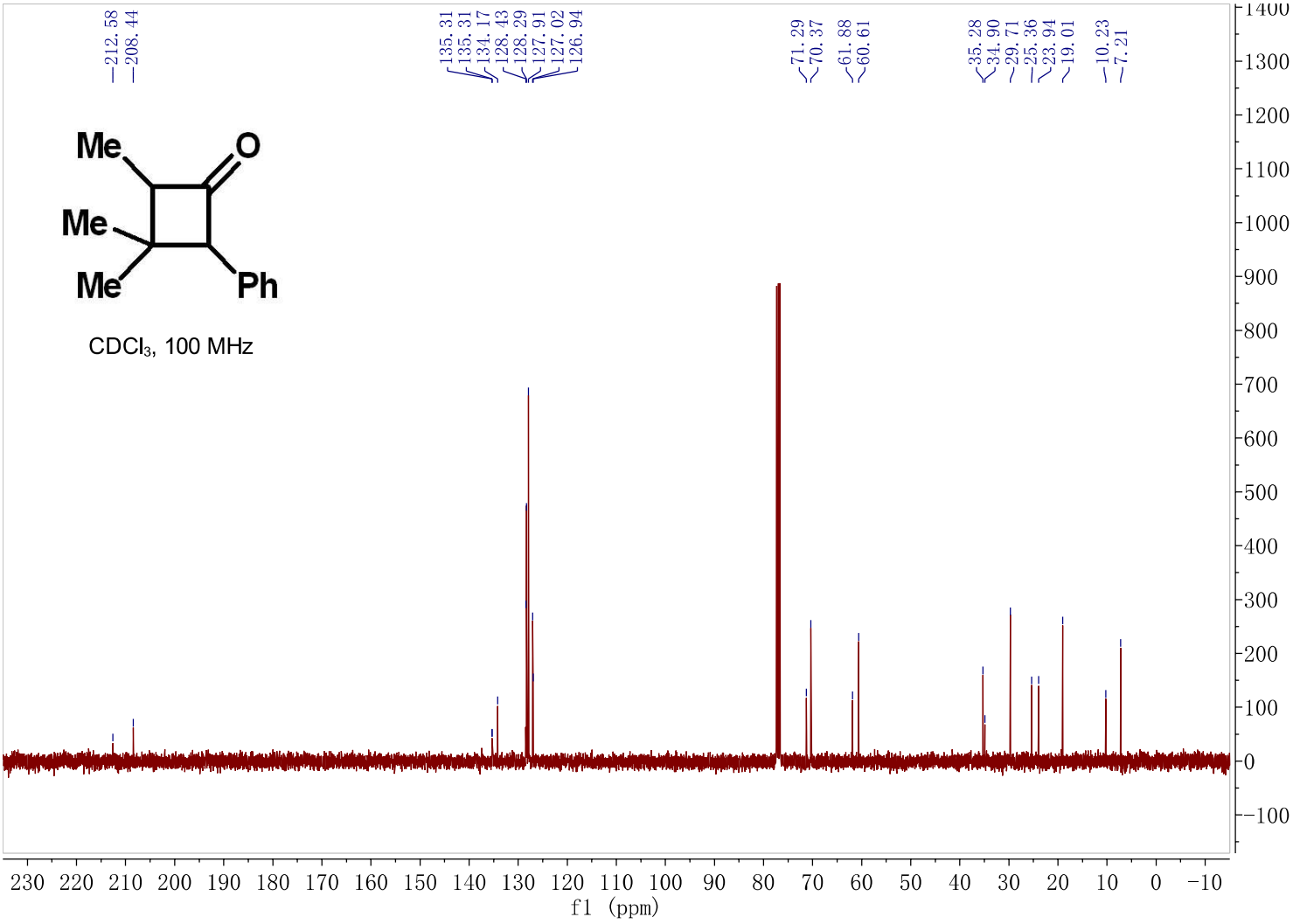

O
H
H
Me3Si
Ph
CDCl3, 400 MHz
NOESY
f1 (ppm)
f2 (ppm)

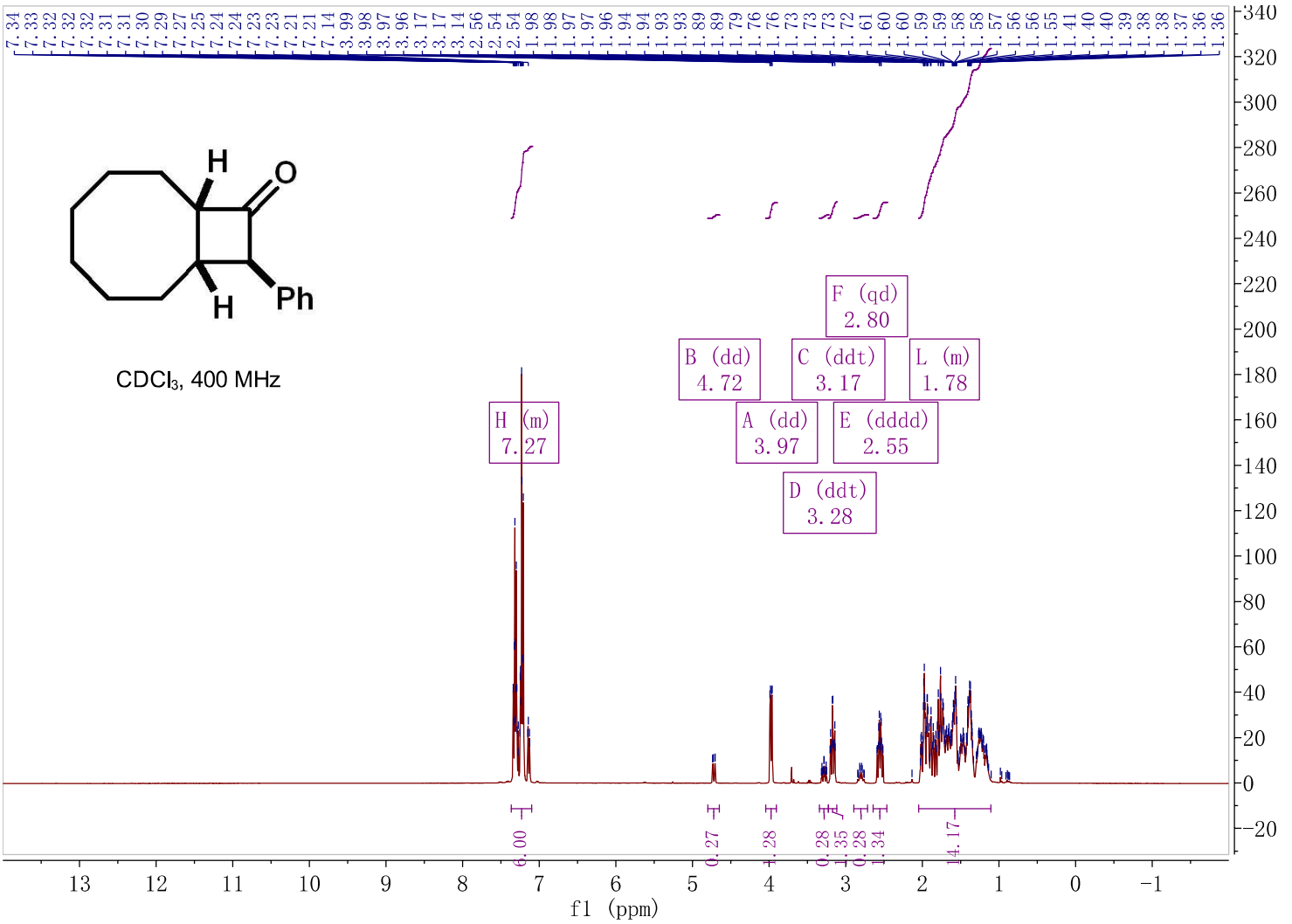

CDCl3, 400 MHz
Me
H
H
Ph
O
B (m) 7.26
E (t) 4.26
I (pd) 2.53
M (m) 0.90
C (d) 5.00
F (ddd) 3.28
J (dq) 1.86
O (t) 0.78
A (dt) 4.02
H (ddd) 2.79
L (m) 1.35
D (dt) 4.65
G (ddd) 3.10
K (tt) 1.71
P (t) 0.66
N (t) 1.01
f1 (ppm)

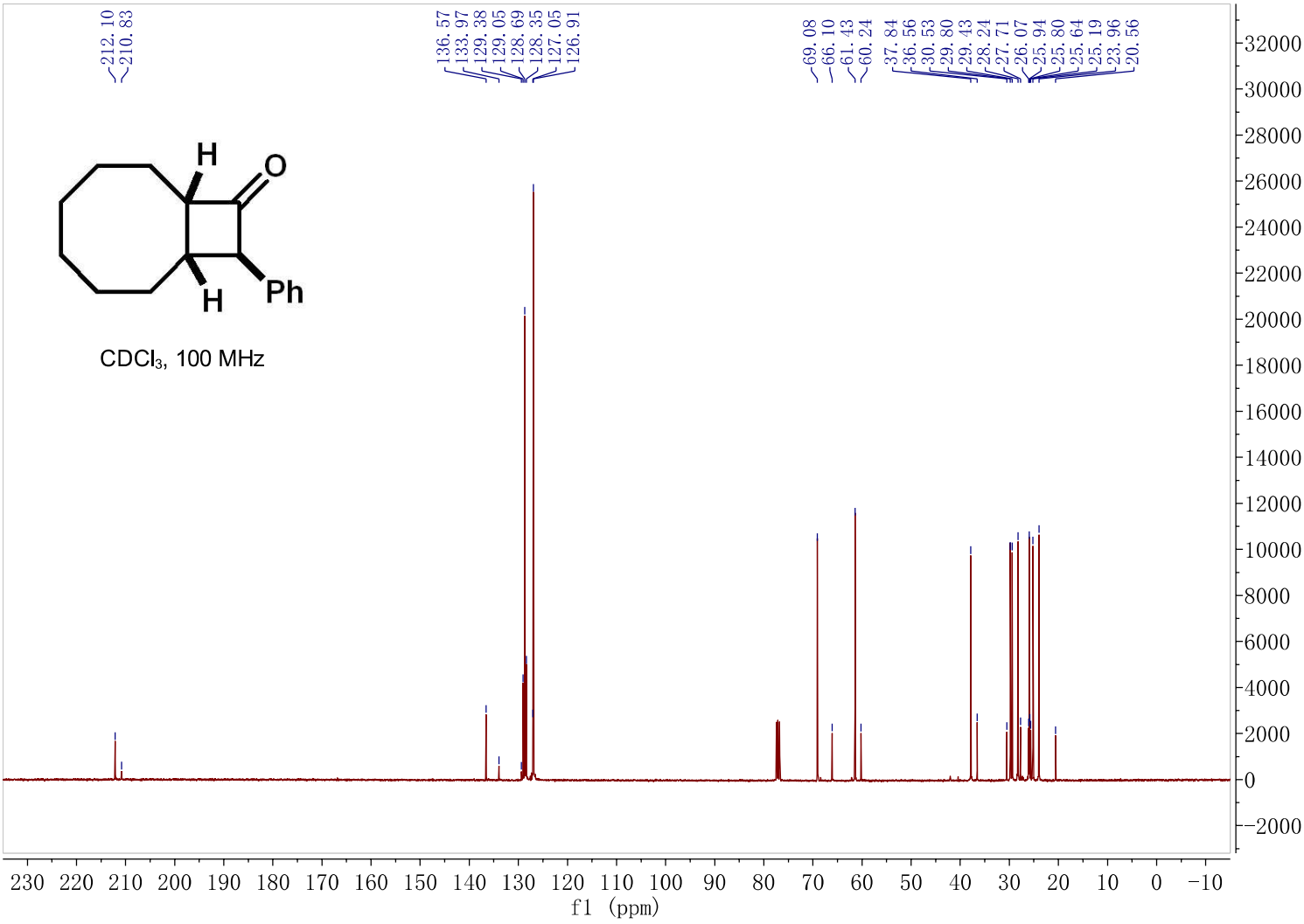

CDCl3, 100 MHz
Me
H
H
Ph
O
206.68
136.31
128.61
127.13
126.95
70.06
50.09
36.41
32.66
30.45
22.57
13.97
f1 (ppm)

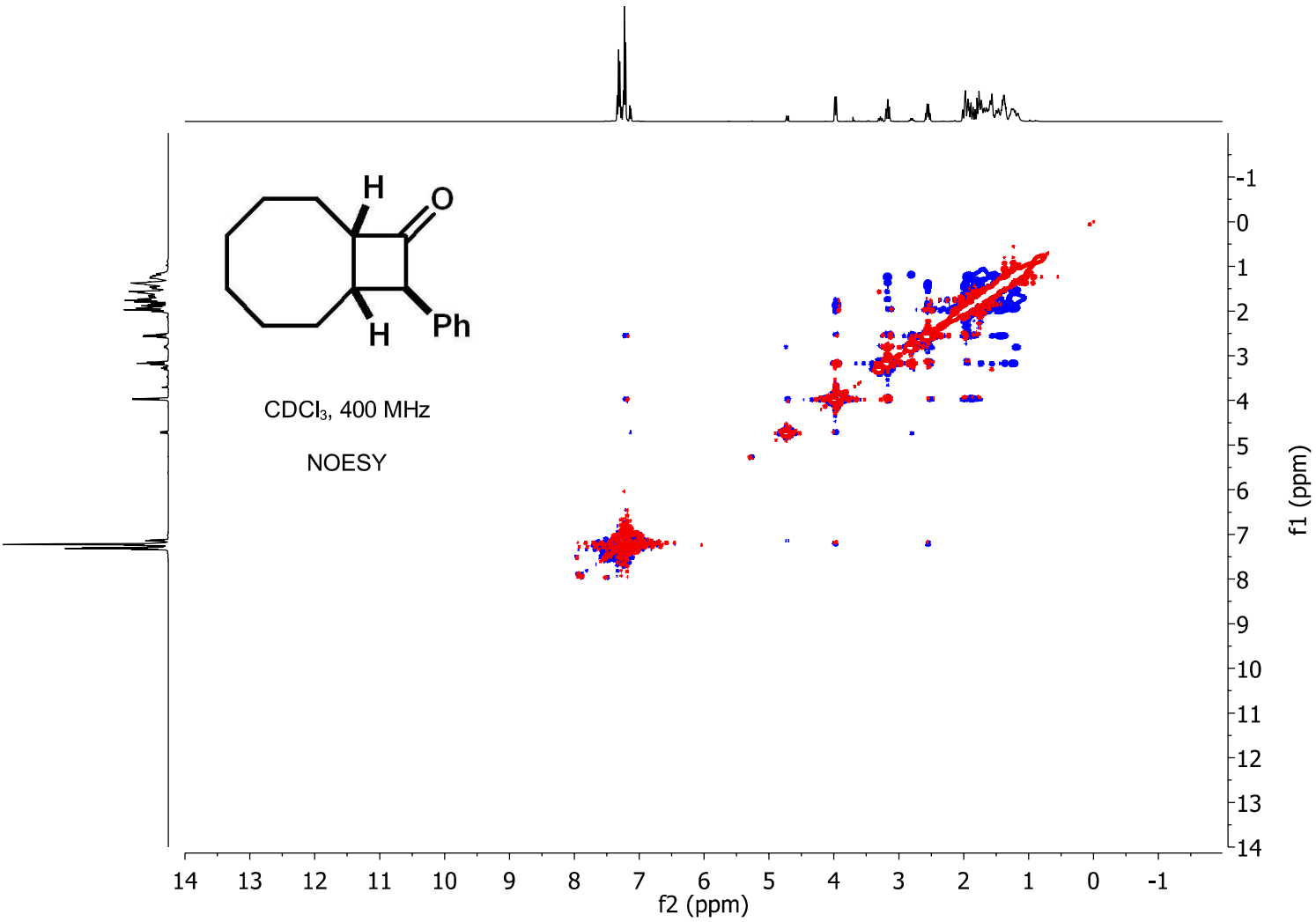

CDCl3, 500 MHz
NOESY
f2 (ppm)
f1 (ppm)

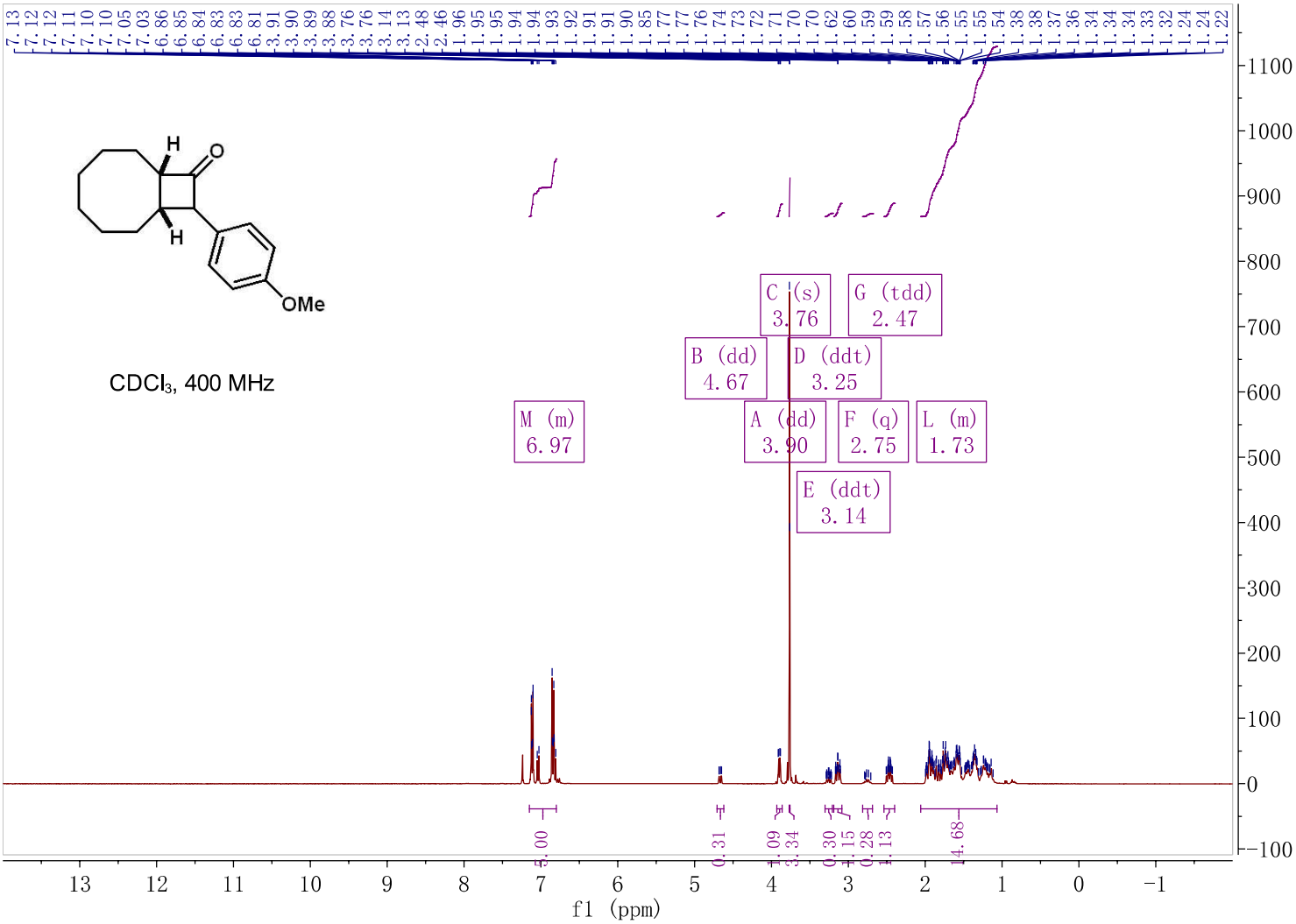

CDCl3, 400 MHz
C (m) 7.21
B (d) 4.18
A (d) 4.23
E (m) 2.89
D (m) 3.09
K (d) 0.68
I (dd) 1.04
G (d) 1.33
F (d) 1.52
H (dd) 1.19
J (d) 0.90
f1 (ppm)

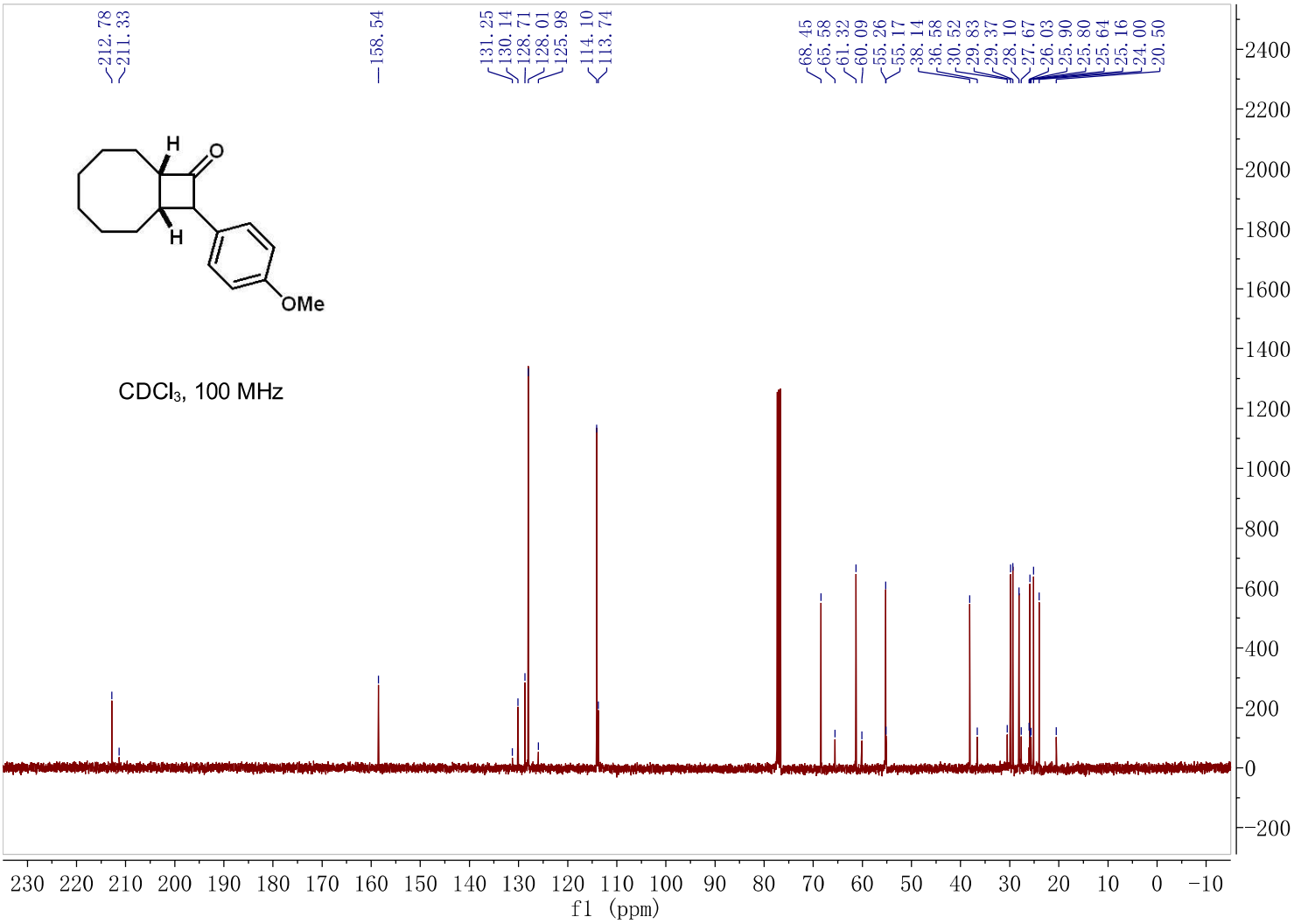

212.58
208.44
135.31
135.31
134.17
128.43
128.29
127.91
127.02
126.94
71.29
70.37
61.88
60.61
35.28
34.90
29.71
25.36
23.94
19.01
10.23
7.21
Me
O
Me
Me
Ph
CDCl3, 100 MHz
f1 (ppm)

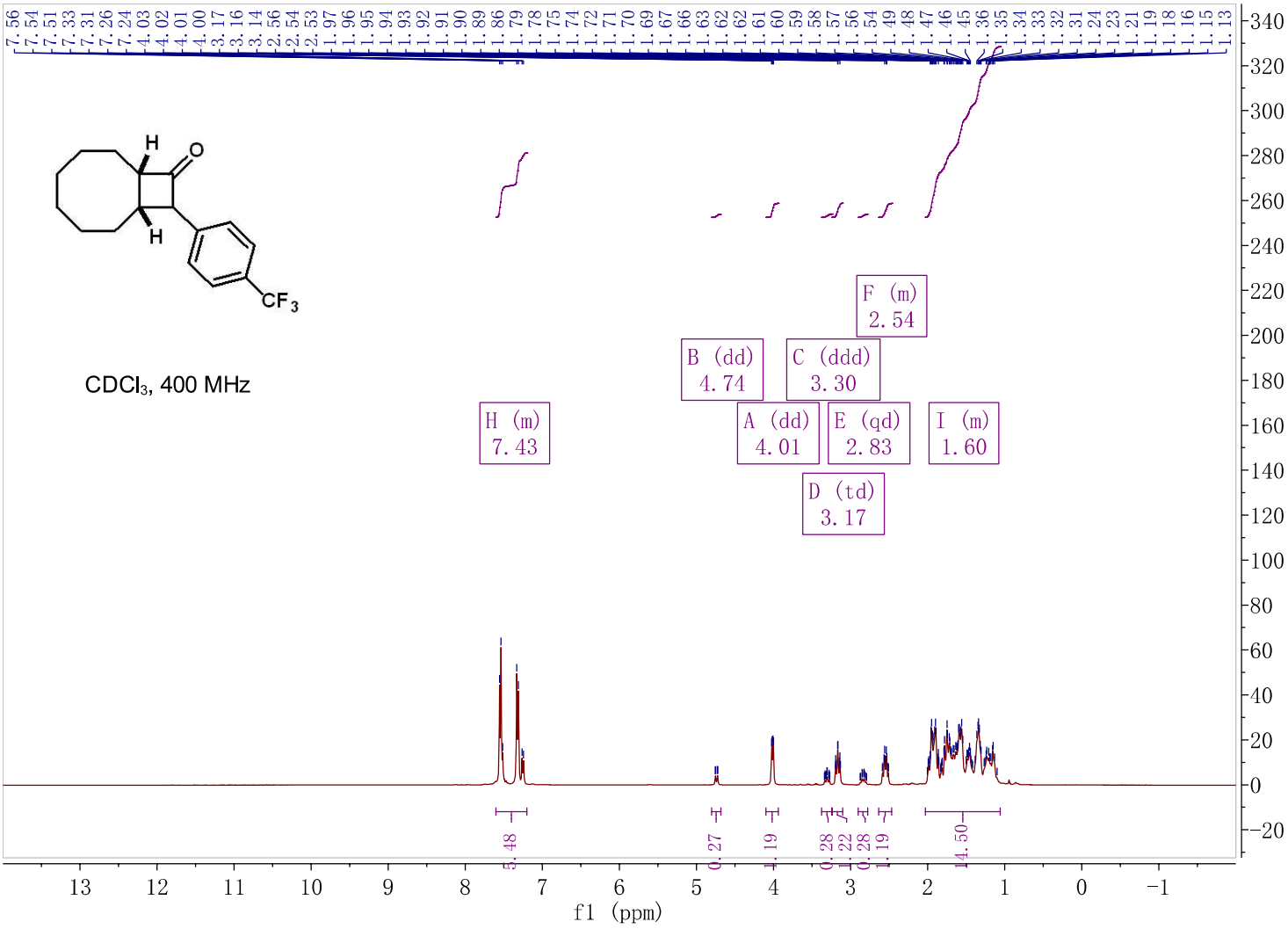

H
O
H
Ph
CDCl3, 400 MHz
H (m)
7.27
B (dd)
4.72
A (dd)
3.97
D (ddt)
3.28
C (ddt)
3.17
F (qd)
2.80
E (dddd)
2.55
L (m)
1.78
6.00
0.27
1.28
0.28
1.35
0.28
1.34
14.17
f1 (ppm)

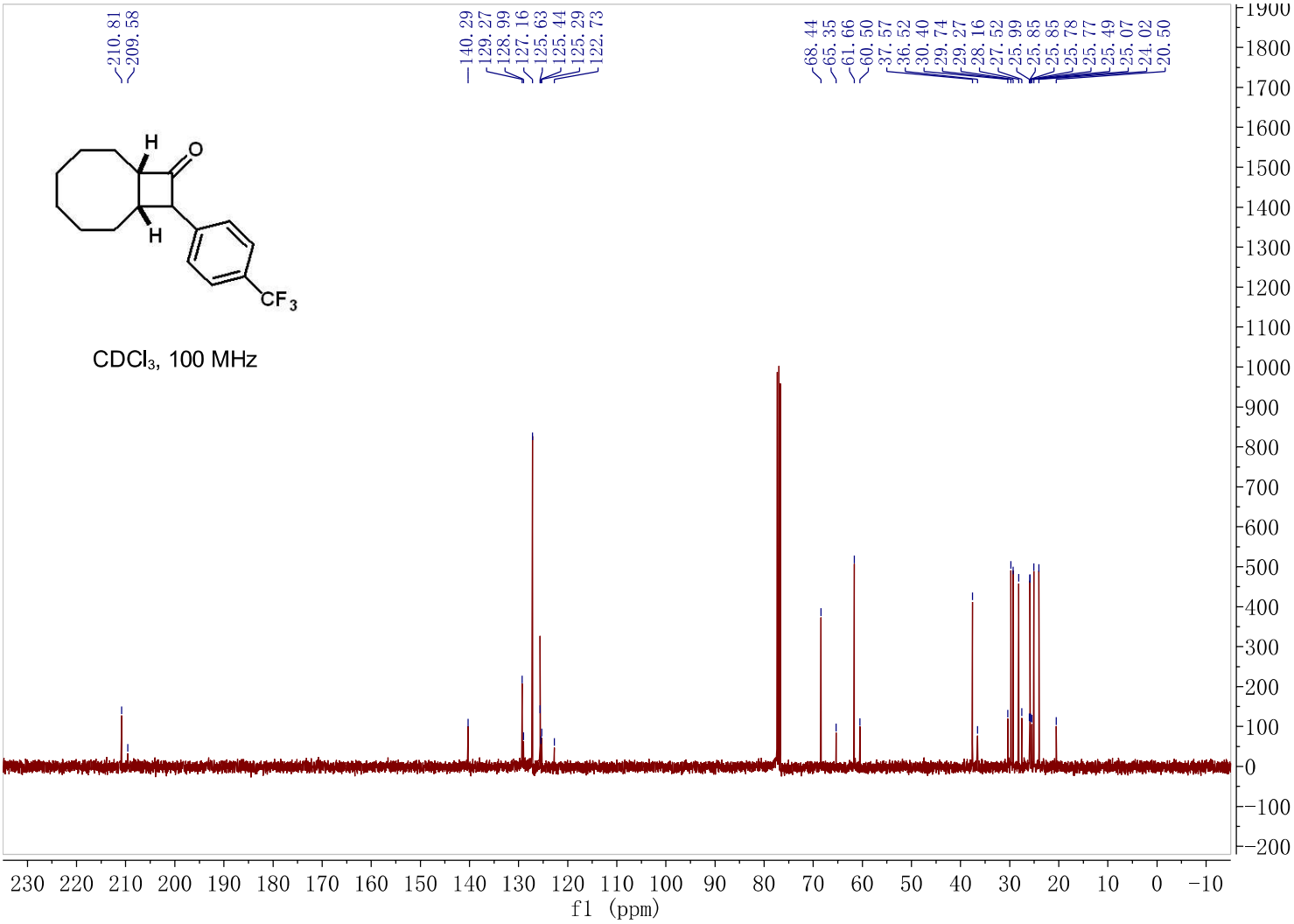

212.10
210.83
136.57
133.97
129.38
129.05
128.69
128.35
127.05
126.91
69.08
66.10
61.43
60.24
37.84
36.56
30.53
29.80
29.43
28.24
27.71
26.07
25.94
25.80
25.64
25.19
23.96
20.56
H
O
H
Ph
CDCl3, 100 MHz
f1 (ppm)

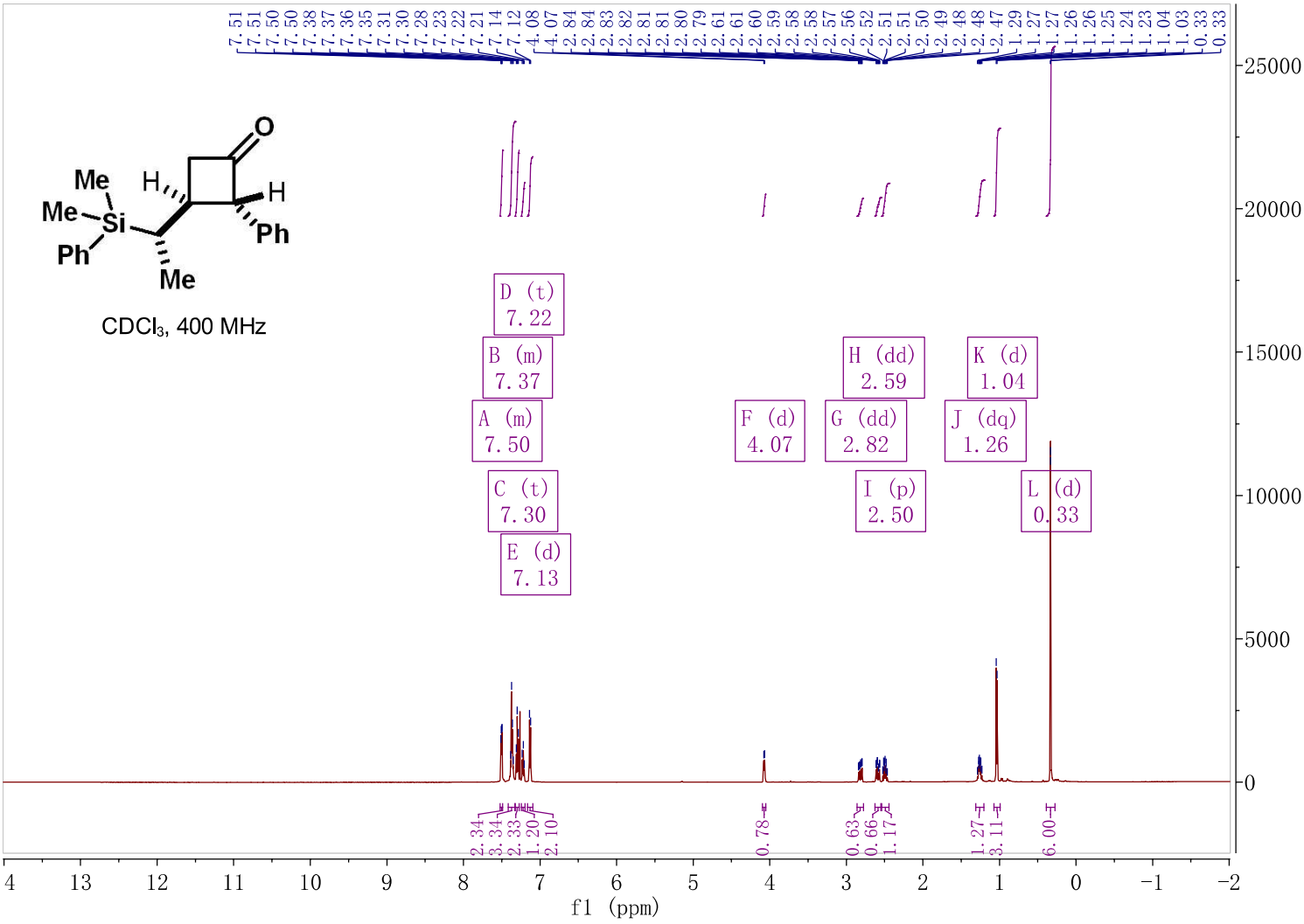

H
O
H
Ph
CDCl3, 400 MHz
NOESY
f1 (ppm)
f2 (ppm)

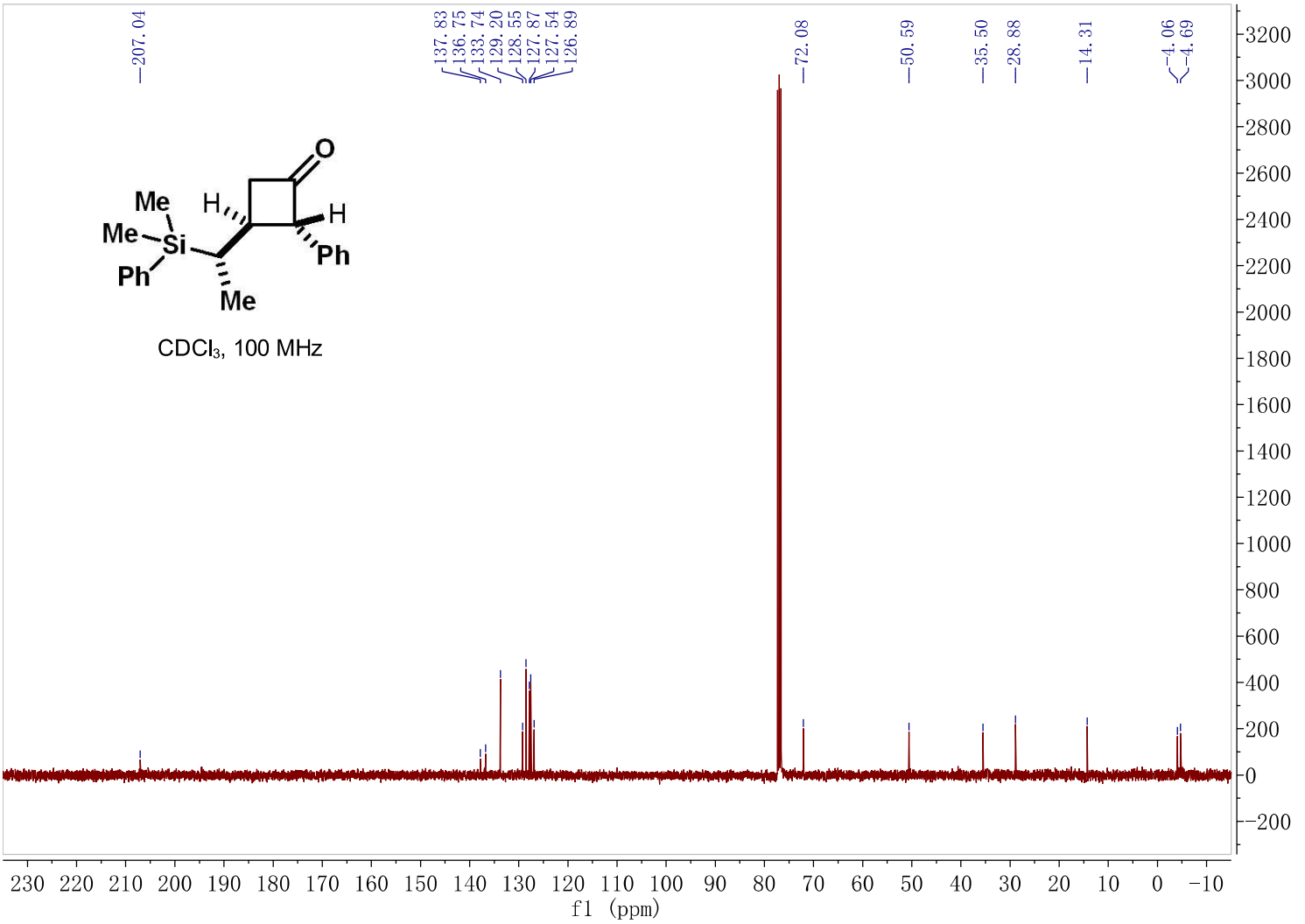

CDCl3, 400 MHz
C (s) 3.76
G (tdd) 2.47
B (dd) 4.67
D (ddt) 3.25
M (m) 6.97
A (dd) 3.90
F (q) 2.75
L (m) 1.73
E (ddt) 3.14
f1 (ppm)

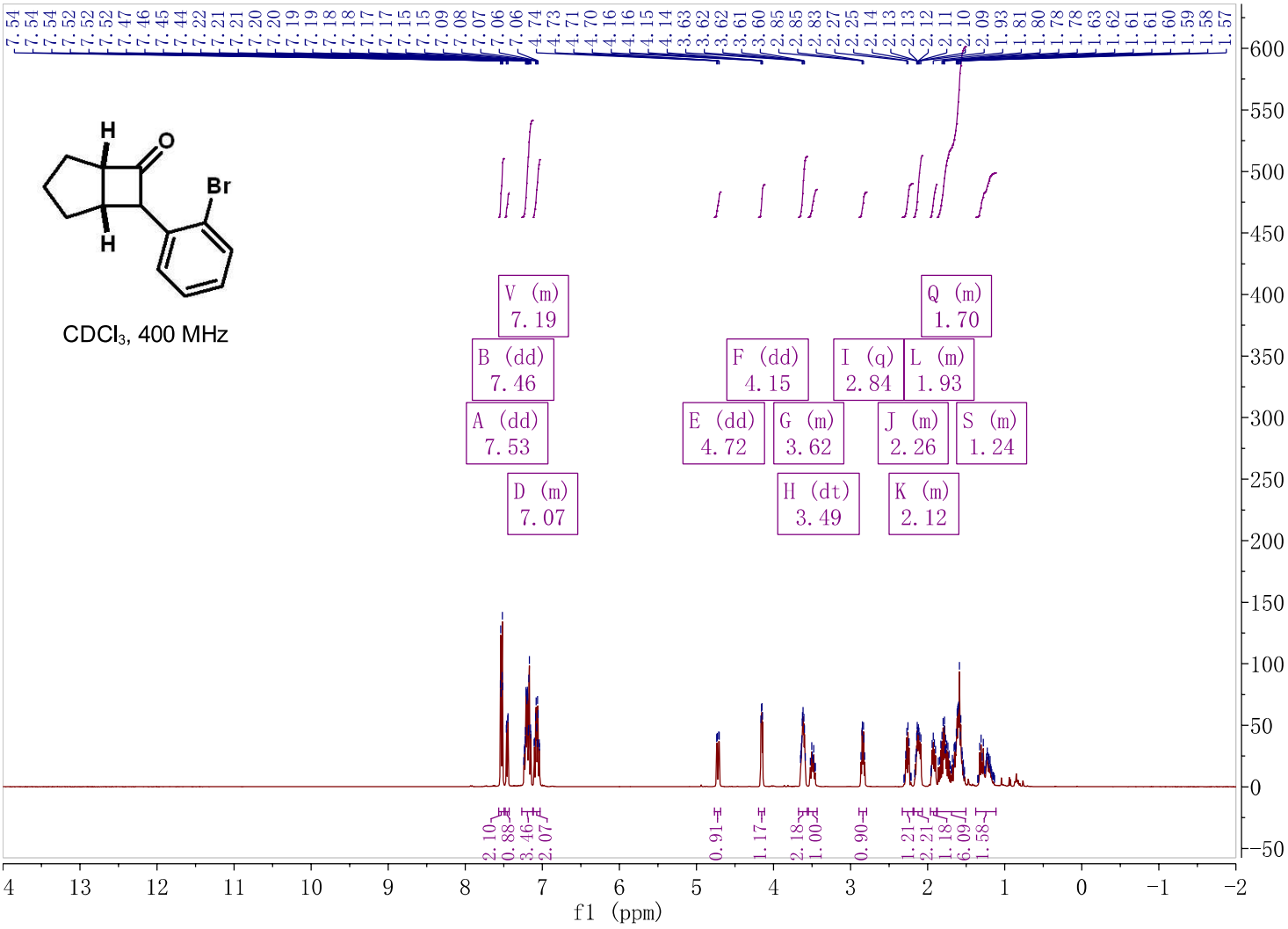

CDCl3, 100 MHz
f1 (ppm)

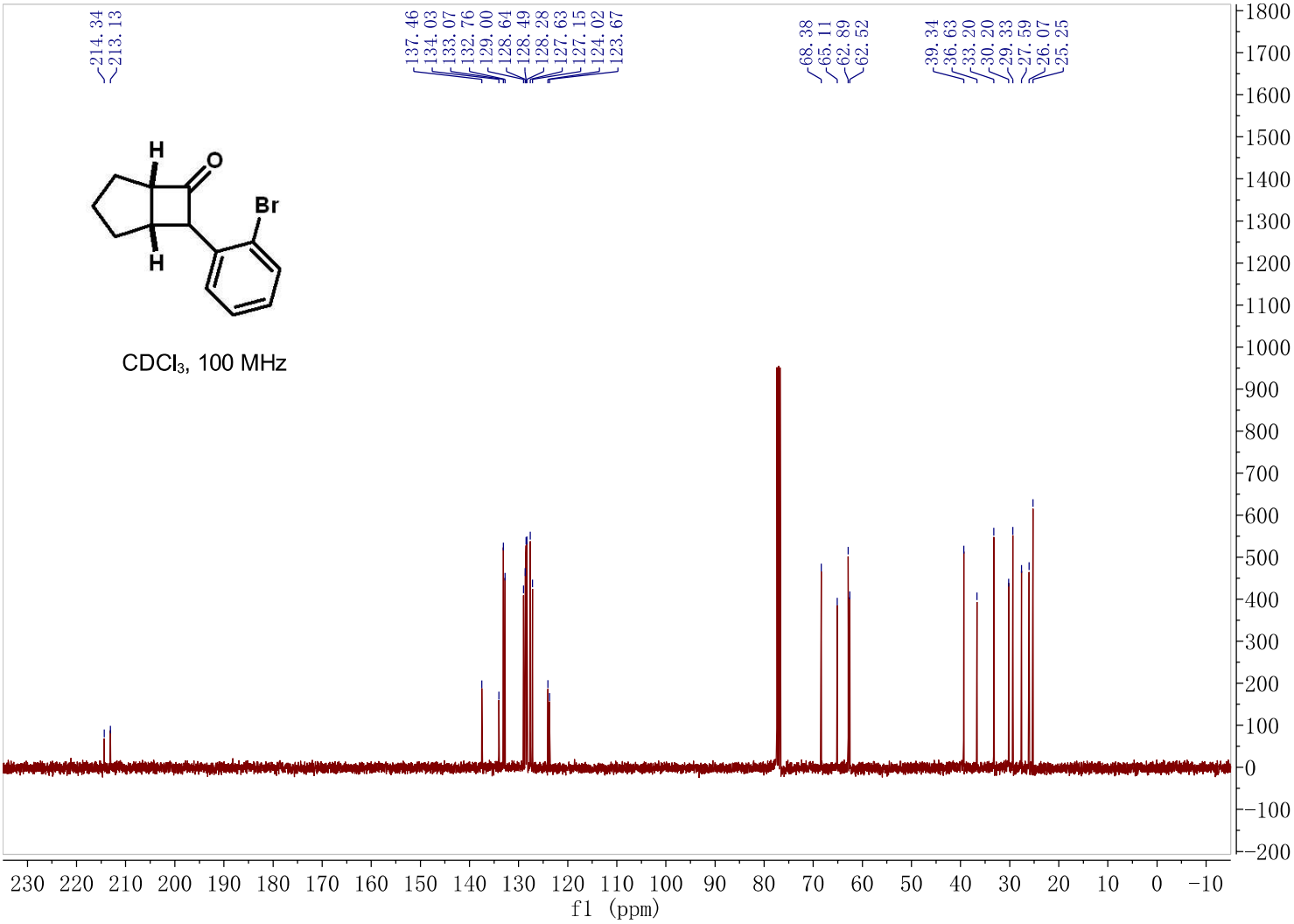

CDCl3, 400 MHz
H (m) 7.43
B (dd) 4.74
A (dd) 4.01
D (td) 3.17
C (ddd) 3.30
E (qd) 2.83
F (m) 2.54
I (m) 1.60
f1 (ppm)

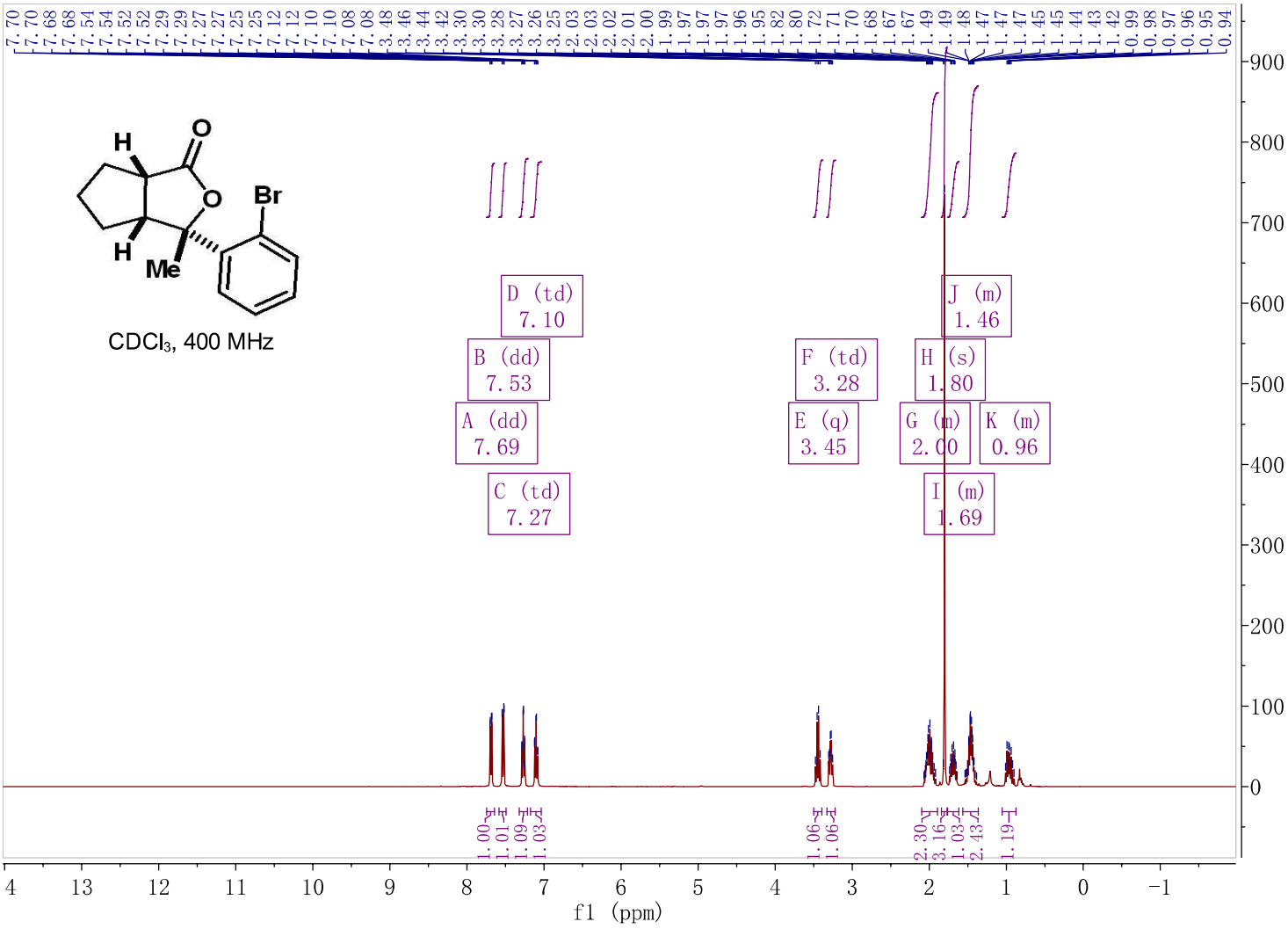

CDCl3, 100 MHz
f1 (ppm)

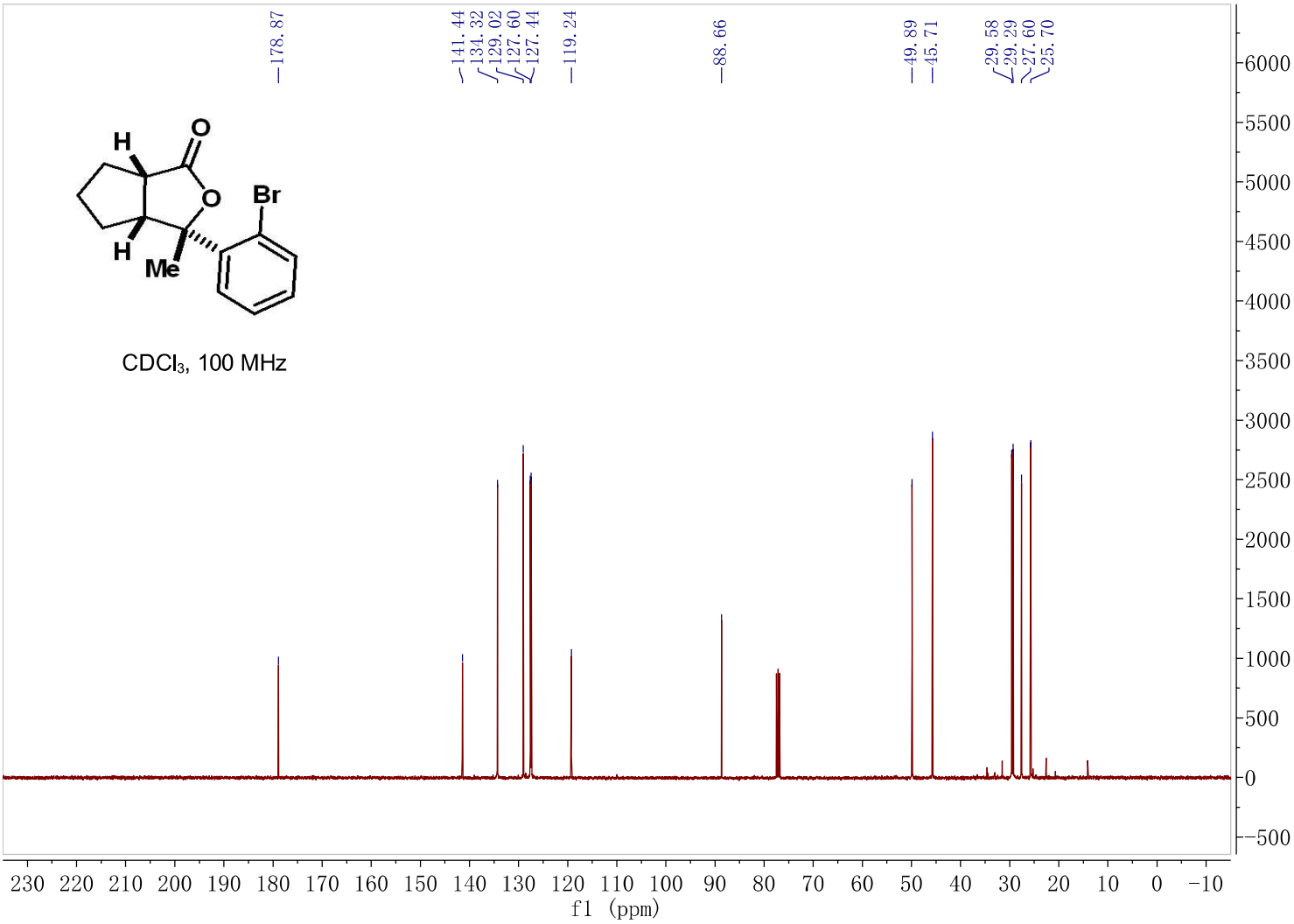

CDCl3, 400 MHz
D (t) 7.22
B (m) 7.37
A (m) 7.50
C (t) 7.30
E (d) 7.13
F (d) 4.07
H (dd) 2.59
G (dd) 2.82
I (p) 2.50
K (d) 1.04
J (dq) 1.26
L (d) 0.33
f1 (ppm)

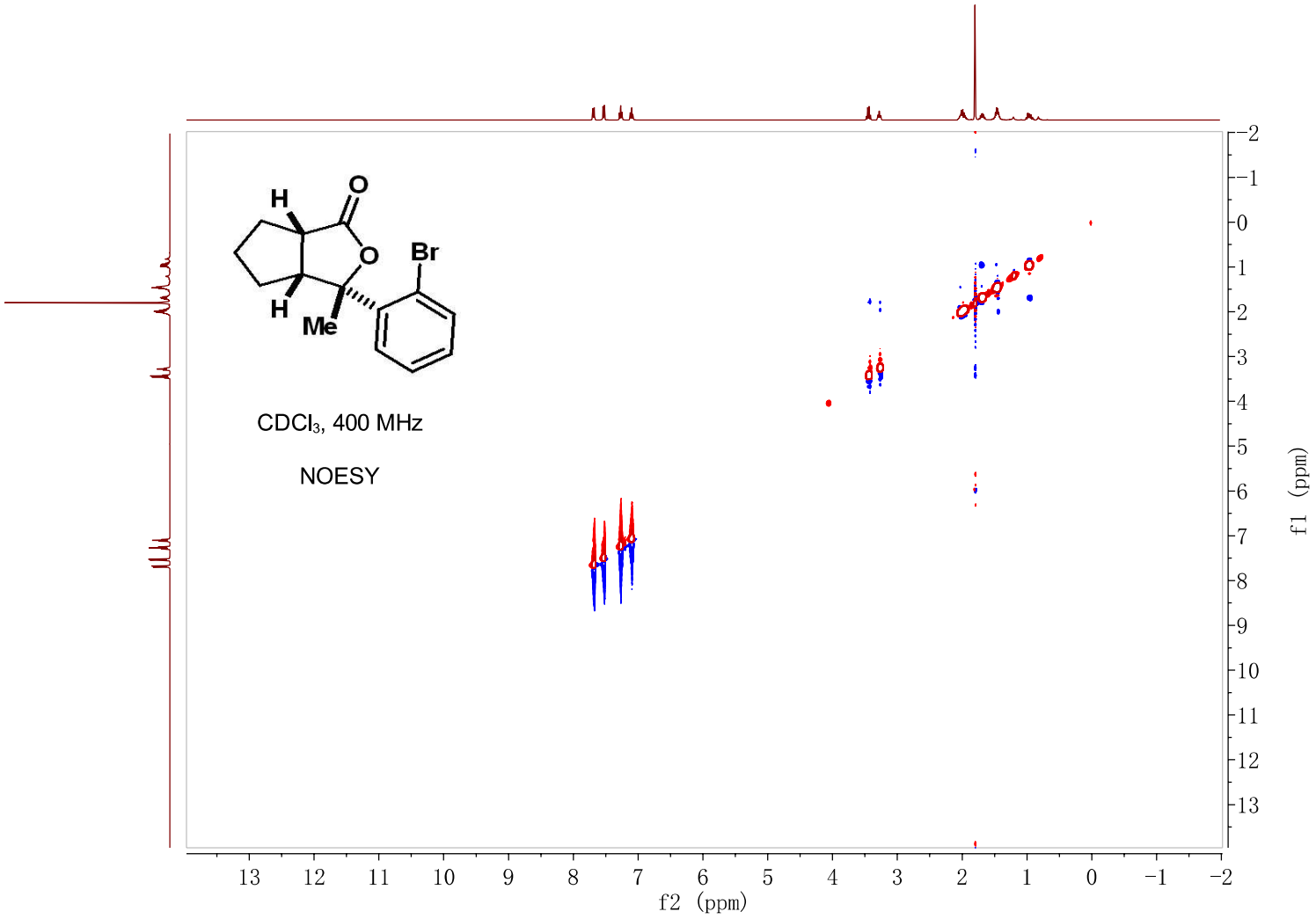

CDCl3, 100 MHz
207.04
137.83
136.75
133.74
129.20
128.55
127.87
127.54
126.89
72.08
50.59
35.50
28.88
14.31
-4.06
-4.69
f1 (ppm)

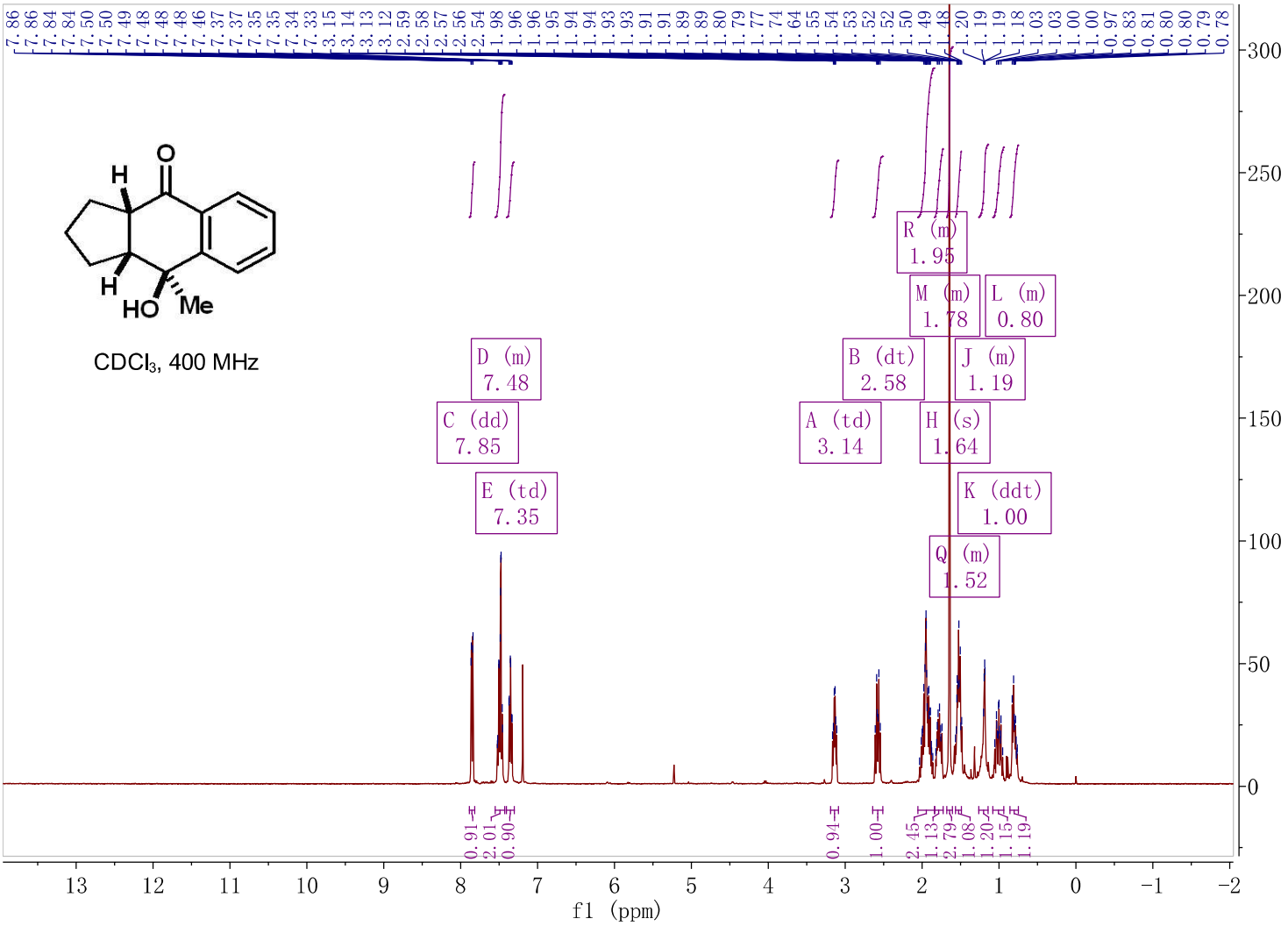

CDCl3, 400 MHz
V (m) 7.19
B (dd) 7.46
A (dd) 7.53
D (m) 7.07
F (dd) 4.15
E (dd) 4.72
G (m) 3.62
H (dt) 3.49
I (q) 2.84
J (m) 2.26
Q (m) 1.70
L (m) 1.93
S (m) 1.24
K (m) 2.12
f1 (ppm)

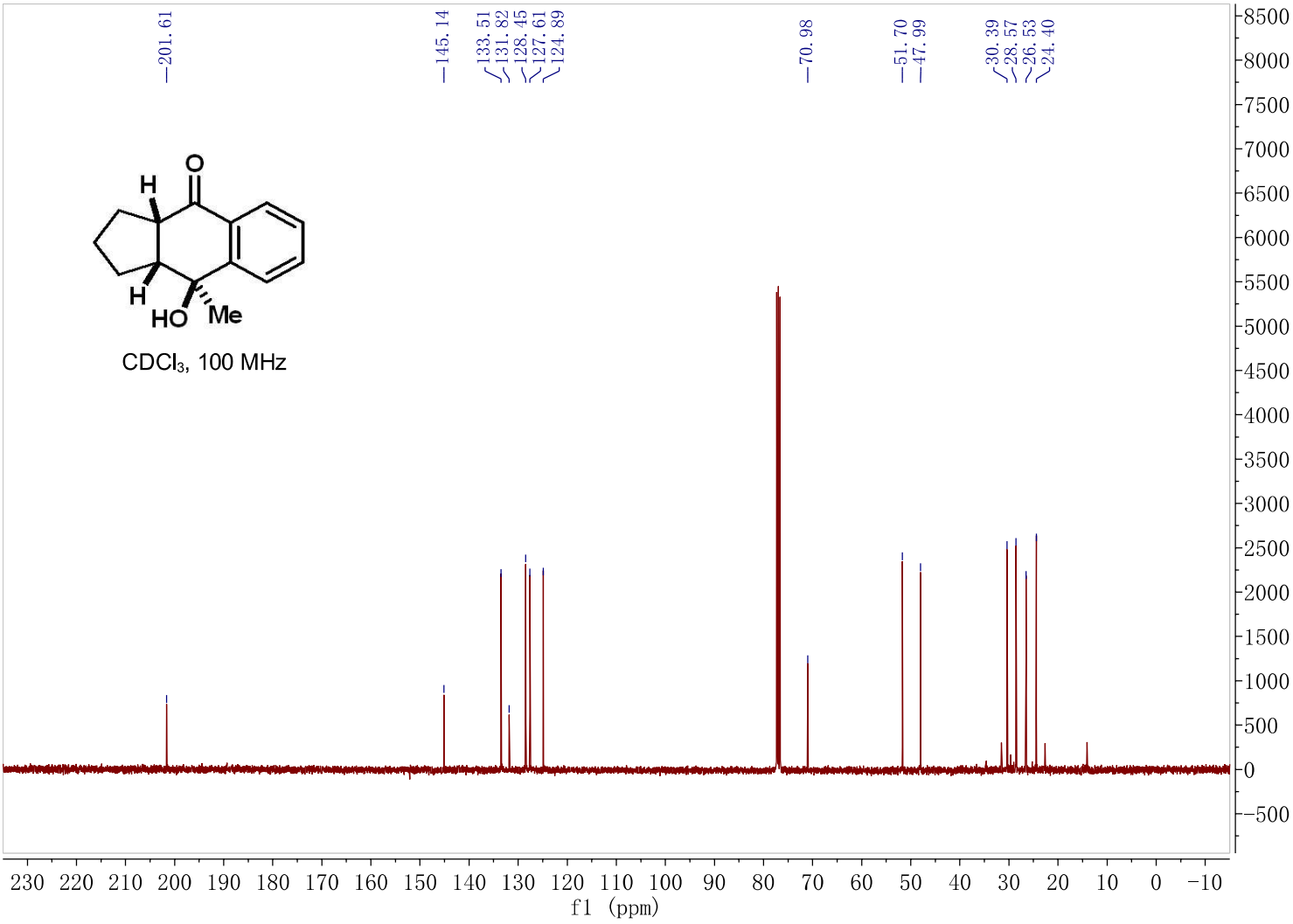

CDCl3, 100 MHz
214.34
213.13
137.46
134.03
133.07
132.76
129.00
128.64
128.49
128.28
127.63
127.15
124.02
123.67
68.38
65.11
62.89
62.52
39.34
36.63
33.20
30.20
29.33
27.59
26.07
25.25
f1 (ppm)

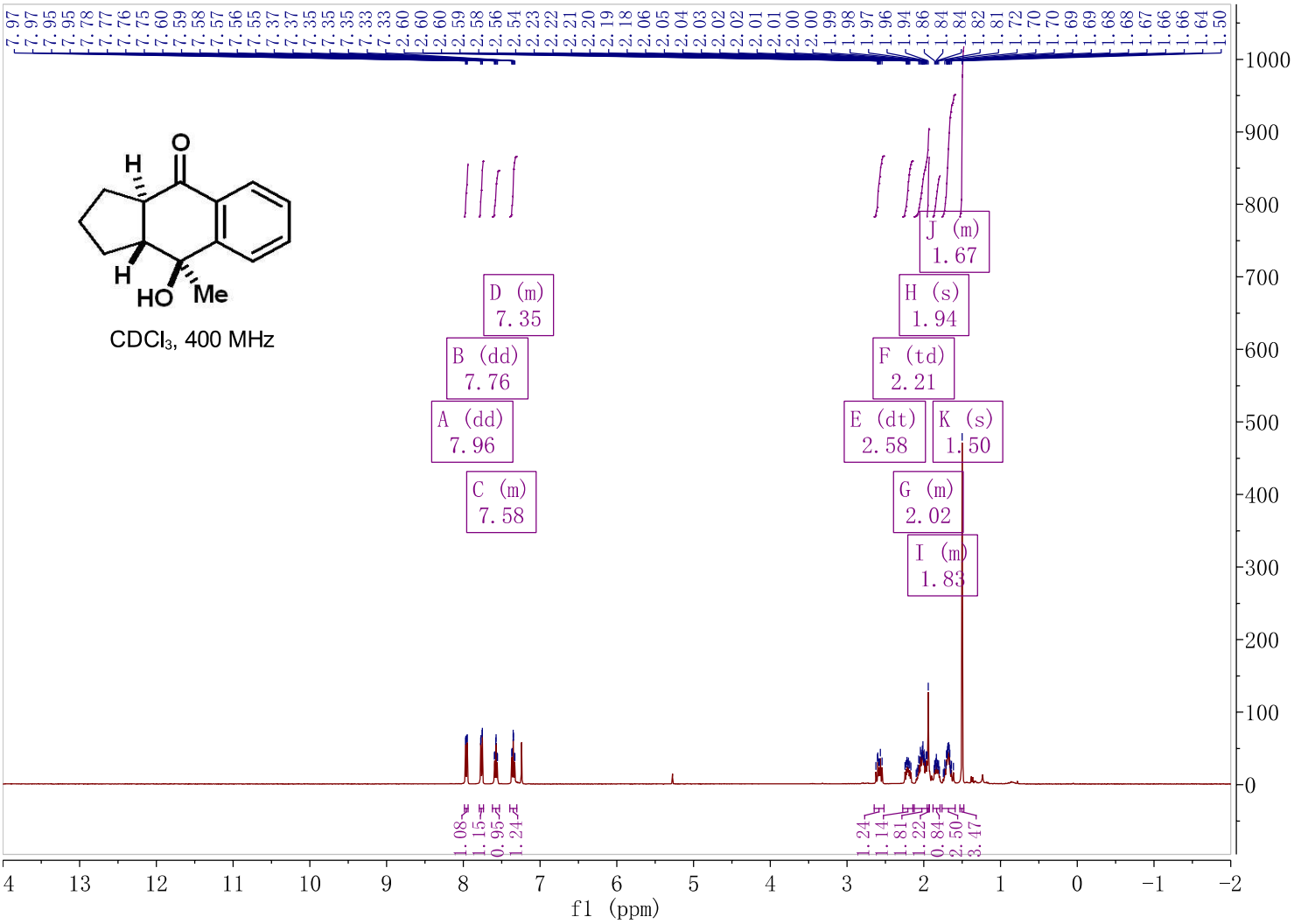

CDCl3, 400 MHz
D (td) 7.10
B (dd) 7.53
A (dd) 7.69
C (td) 7.27
F (td) 3.28
E (q) 3.45
J (m) 1.46
H (s) 1.80
G (m) 2.00
K (m) 0.96
I (m) 1.69
f1 (ppm)

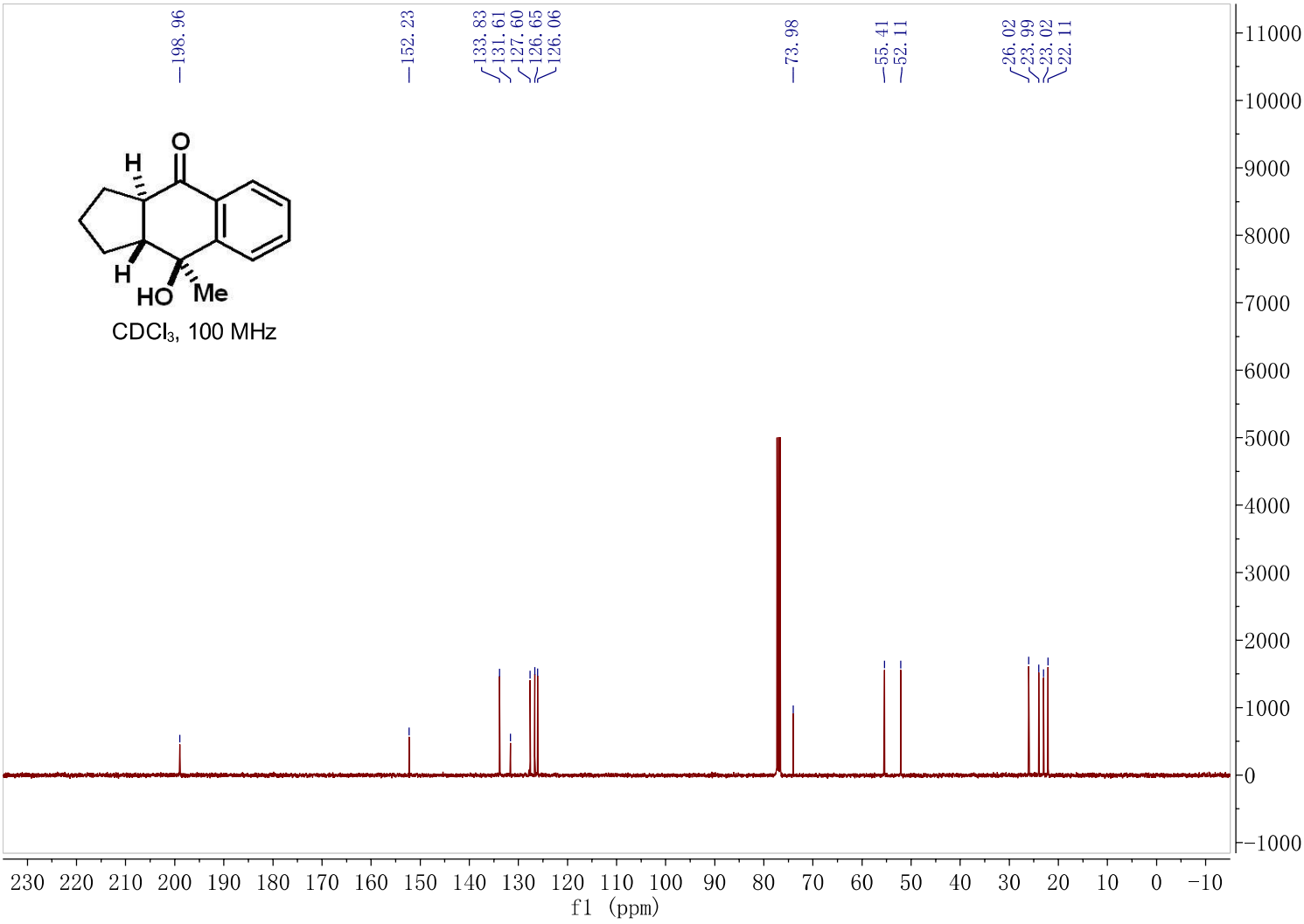

CDCl3, 100 MHz
178.87
141.44
134.32
129.02
127.60
127.44
119.24
88.66
49.89
45.71
29.58
29.29
27.60
25.70
f1 (ppm)

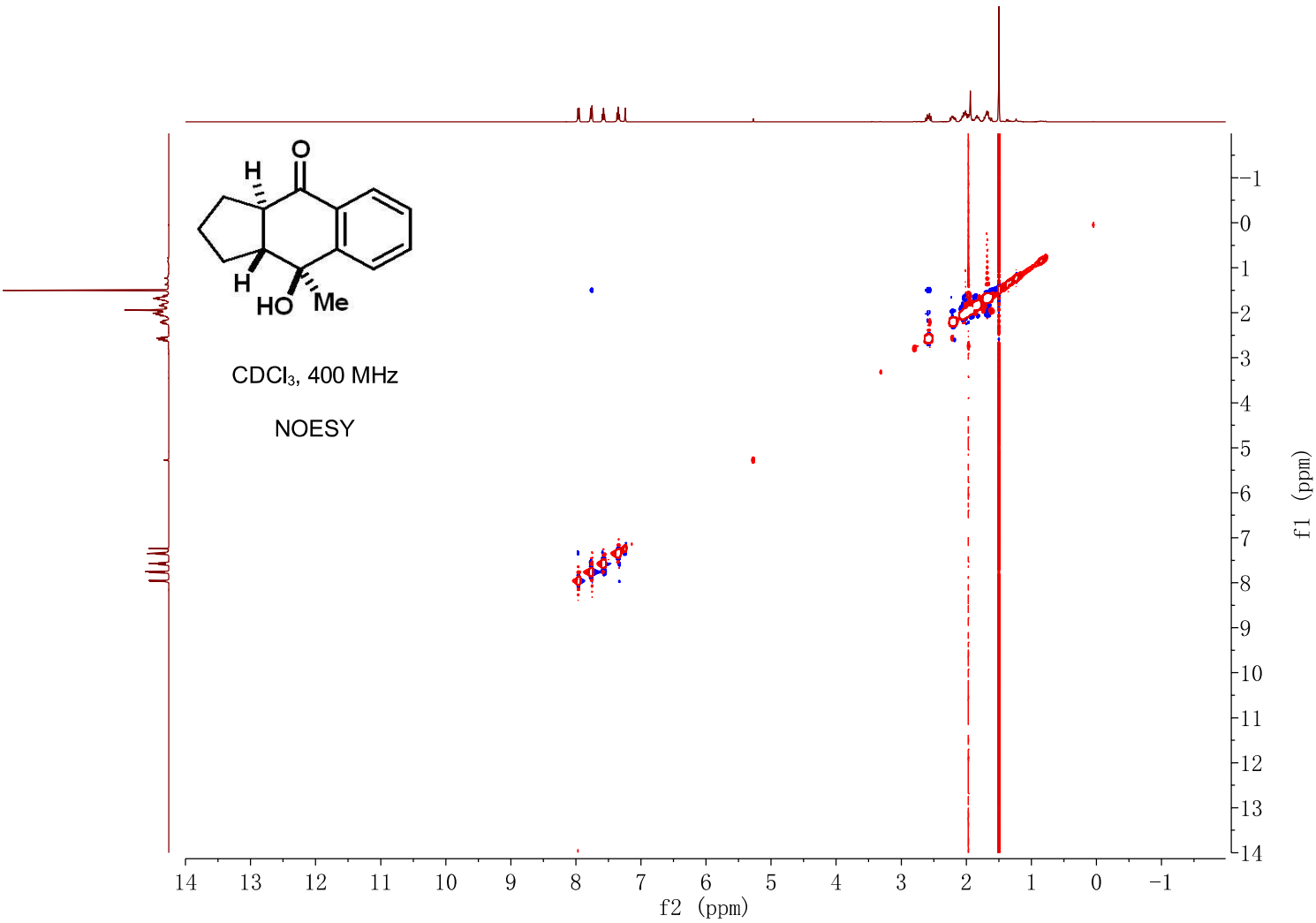

CDCl3, 400 MHz
NOESY
f2 (ppm)
f1 (ppm)


CDCl3, 400 MHz
D (m) 7.48
C (dd) 7.85
E (td) 7.35
B (dt) 2.58
A (td) 3.14
R (m) 1.95
M (m) 1.78
L (m) 0.80
J (m) 1.19
H (s) 1.64
K (ddt) 1.00
Q (m) 1.52
f1 (ppm)


201.61
145.14
133.51
131.82
128.45
127.61
124.89
70.98
51.70
47.99
30.39
28.57
26.53
24.40
CDCl3, 100 MHz
f1 (ppm)


CDCl3, 400 MHz
A (dd) 7.96
B (dd) 7.76
C (m) 7.58
D (m) 7.35
E (dt) 2.58
F (td) 2.21
G (m) 2.02
H (s) 1.94
I (m) 1.83
J (m) 1.67
K (s) 1.50
f1 (ppm)


198.96
152.23
133.83
131.61
127.60
126.65
126.06
73.98
55.41
52.11
26.02
23.99
23.02
22.11
CDCl3, 100 MHz
f1 (ppm)


CDCl3, 400 MHz
NOESY
f2 (ppm)
f1 (ppm)