For

Selectfluor−Promoted Sequential Reactions via Allene Intermediates: Metal−Free Construction of Fused Polycyclic Skeletons

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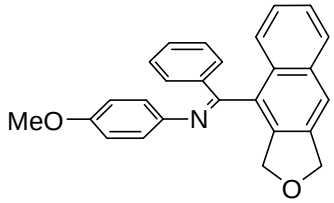
Crystal data and structure **P2**

The ^{1}H and ^{13}C NMR spectra of compounds **P4**



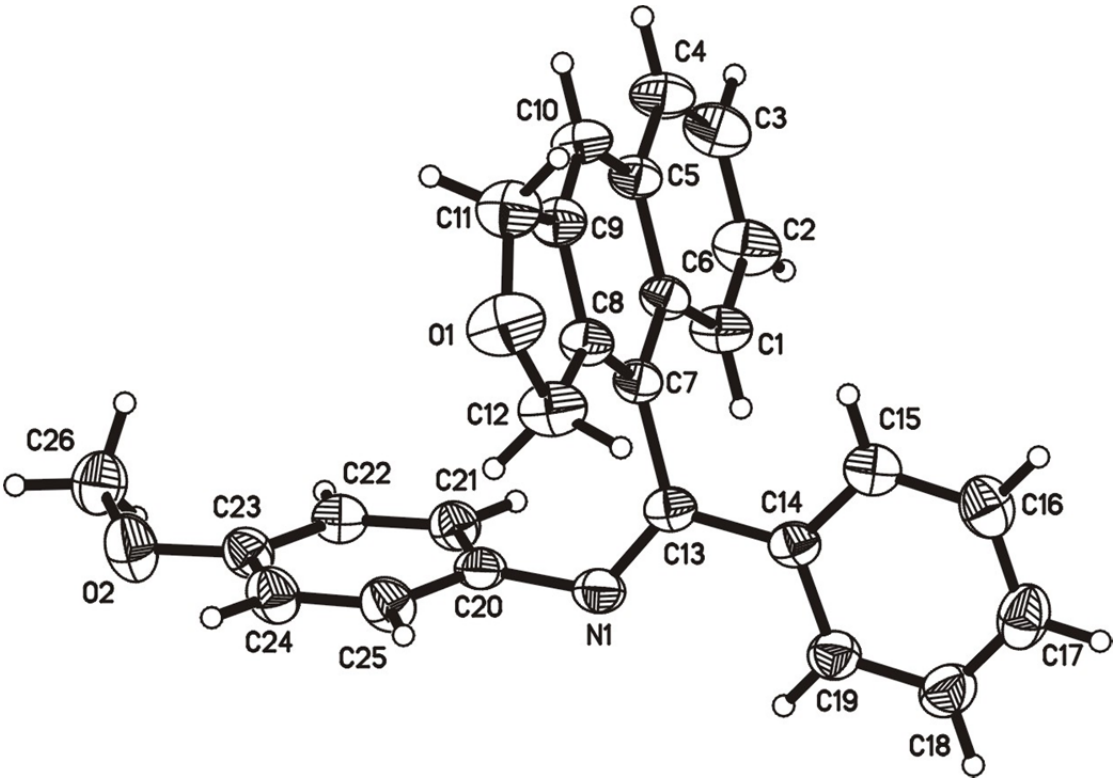
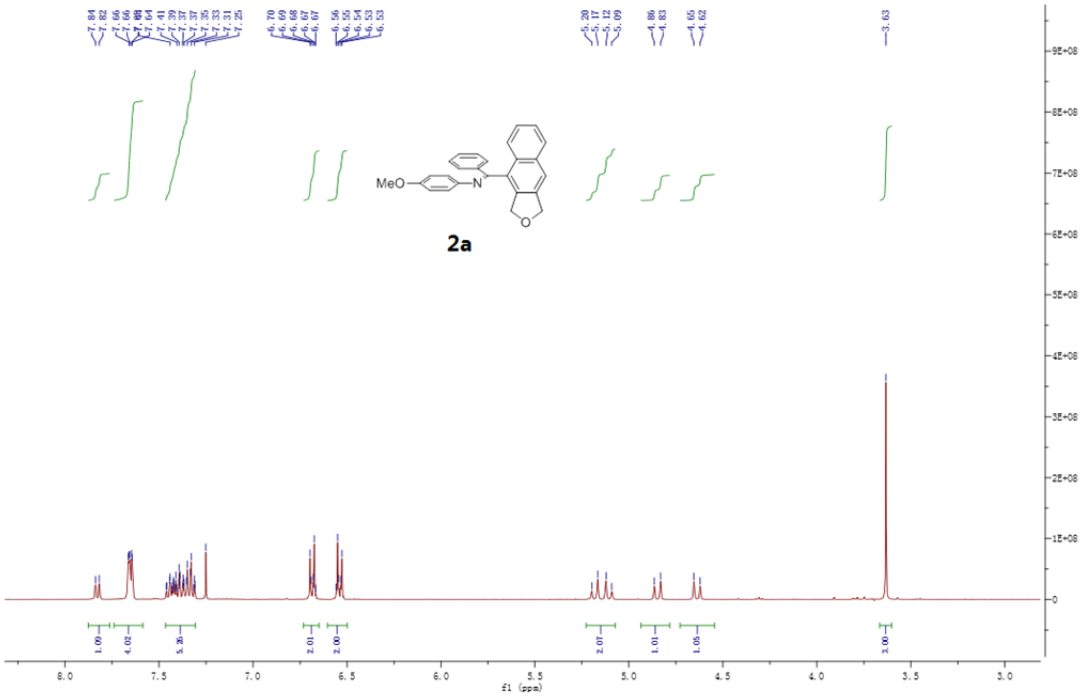


Table 1. Crystal data and structure

Empirical formula	$C_{26}H_{21}NO_2$
Formula weight	379.44
Temperature	293 K
Wavelength	0.71073 A
space group	C c
Hall group	C -2yc
Unit cell dimensions	a = 18.8074(12) A alpha = 90
	b = 12.8679(9)A beta = 99.556(7)
	c = 18.8388(13) A gamma = 90
Volume	2683.4(3) A^3
Z, Calculated density	8, 1.121 g/cm^3
F(000)	1600

h,k,lmax	22,15,22
Nref	4107
Tmin,Tmax	0.974,0.978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O
2a
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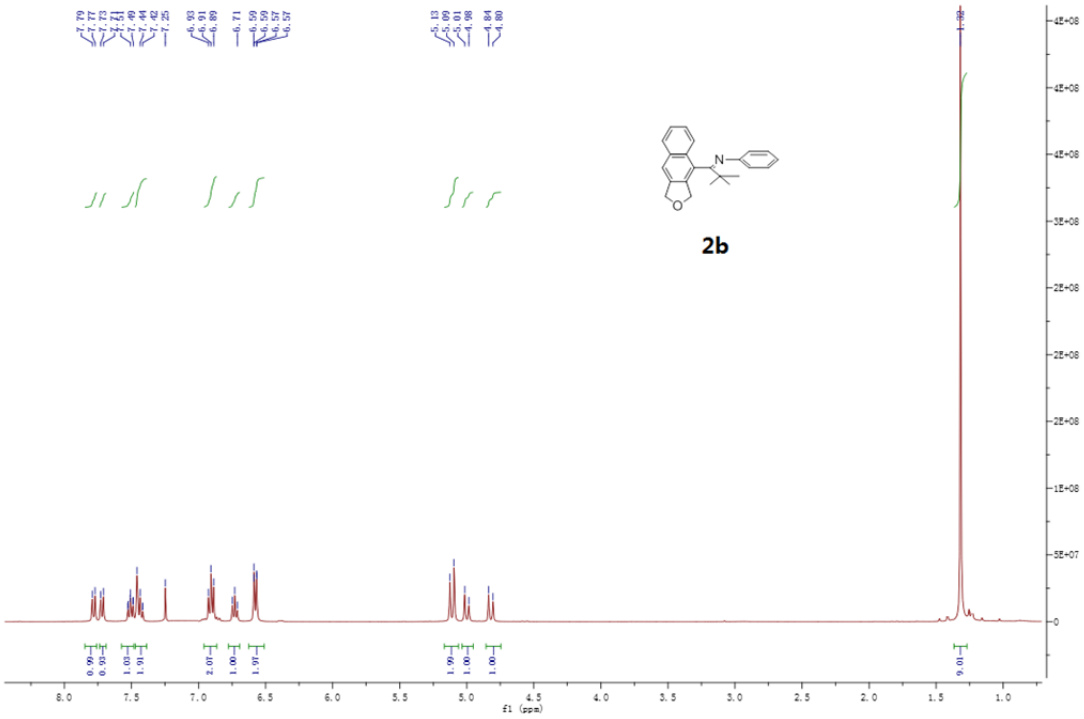
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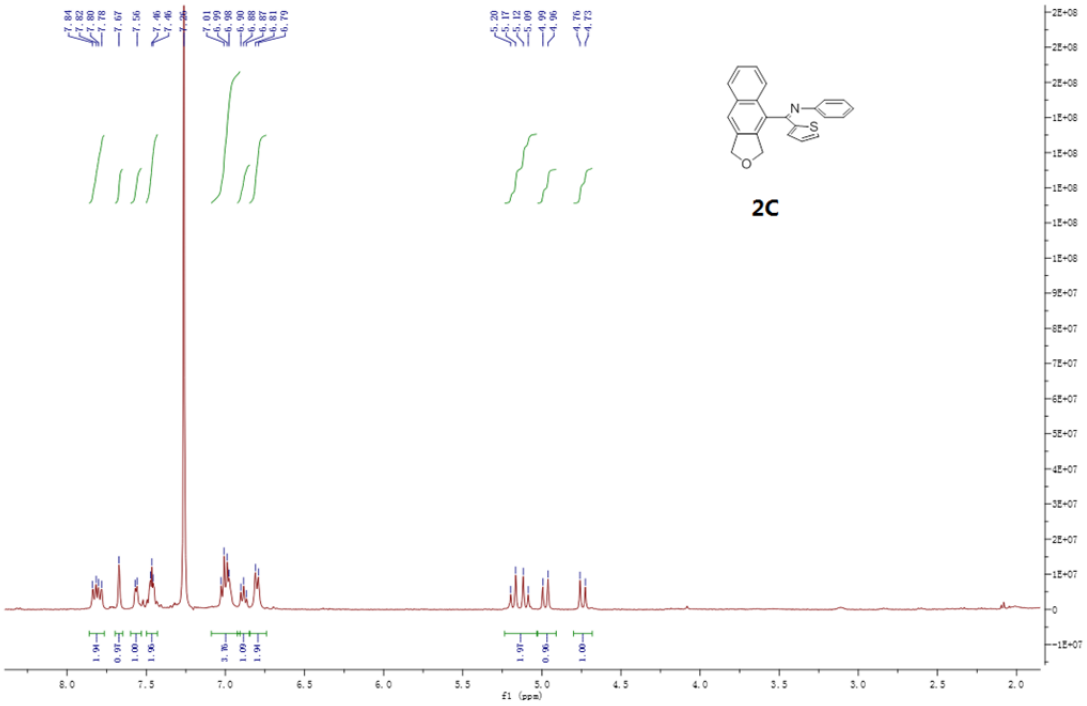
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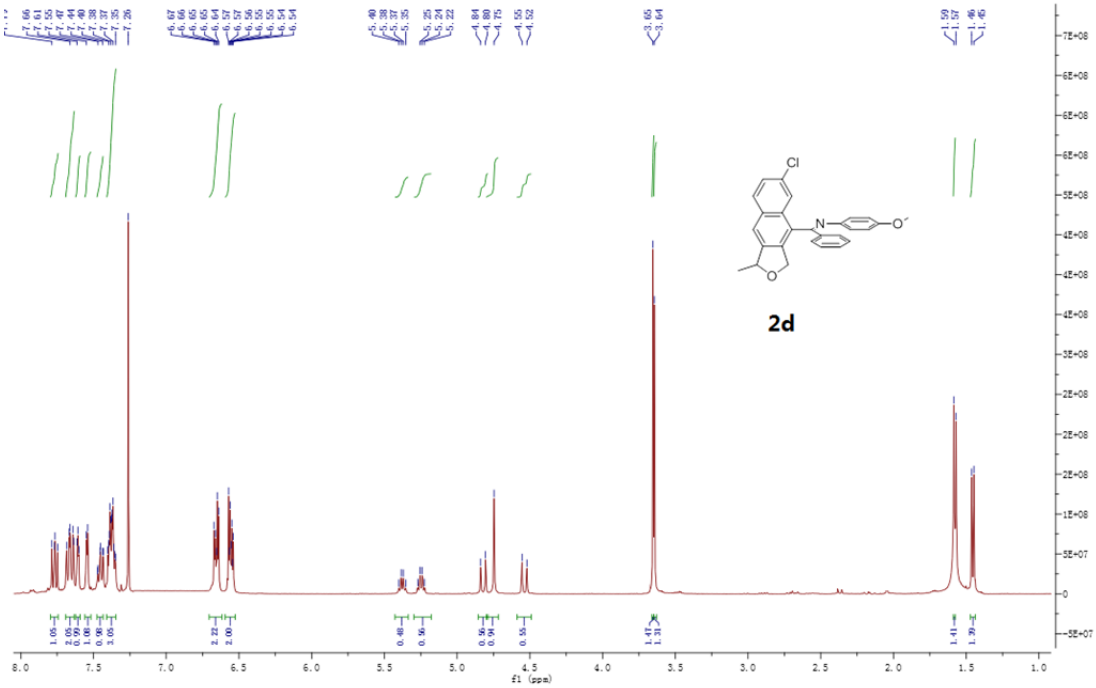
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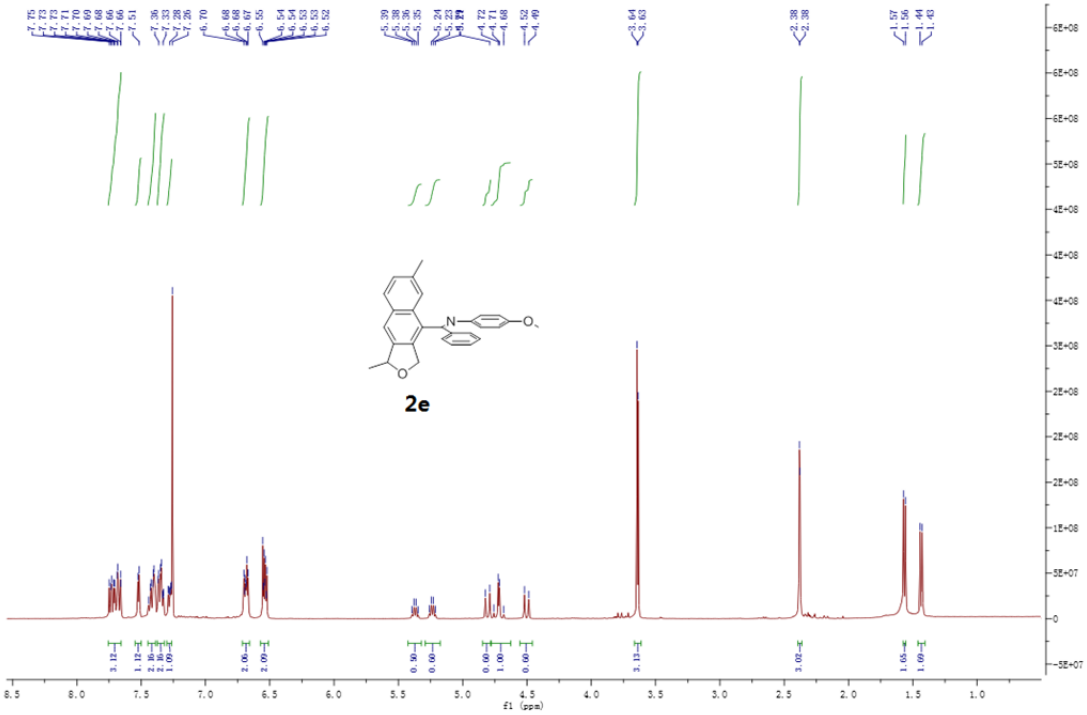
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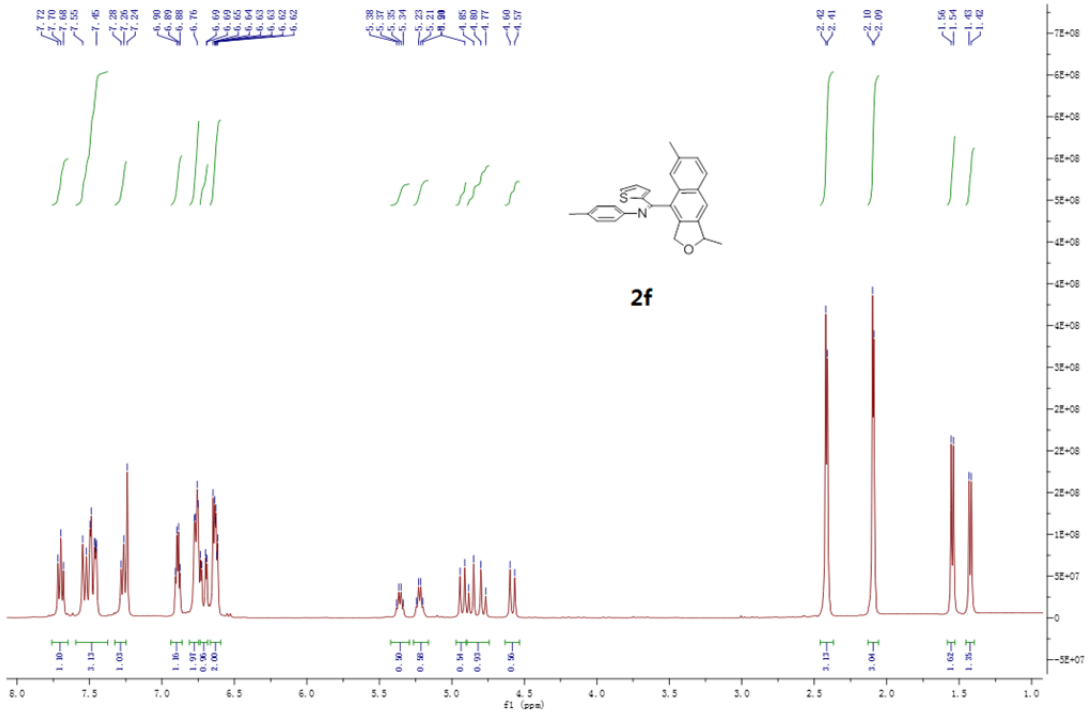
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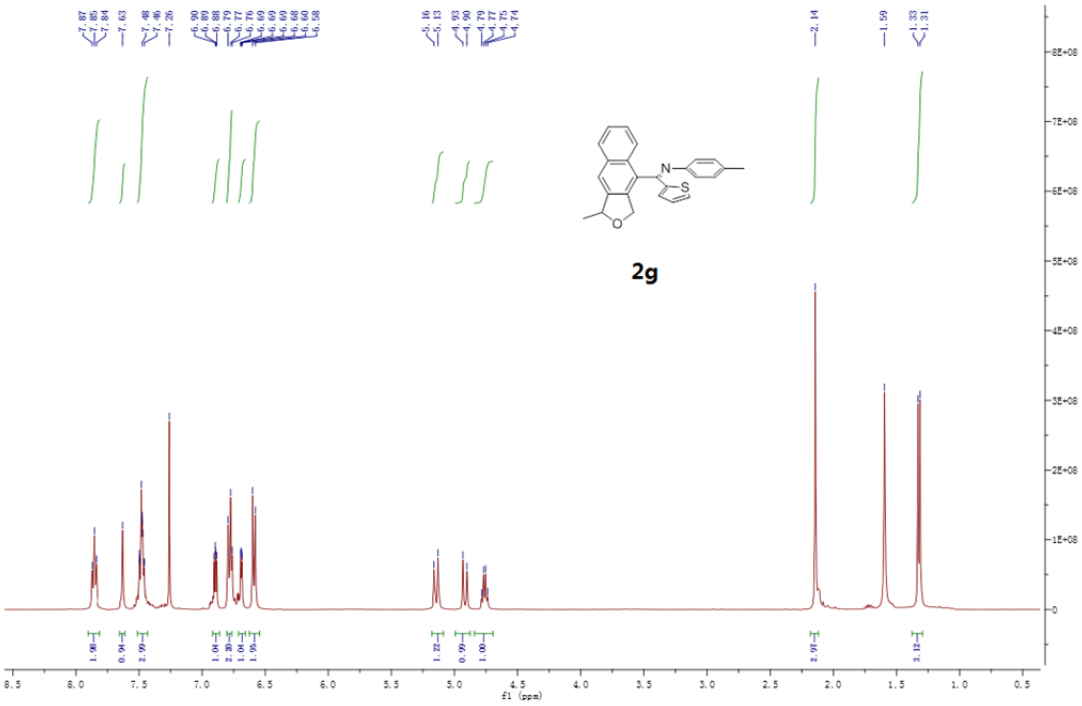
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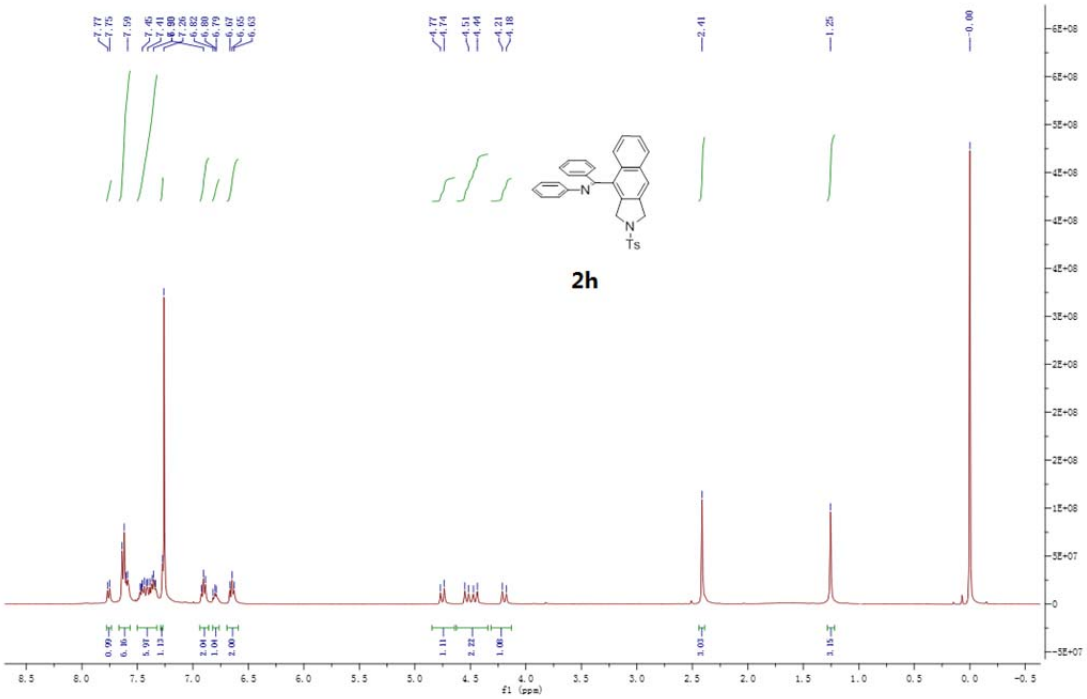
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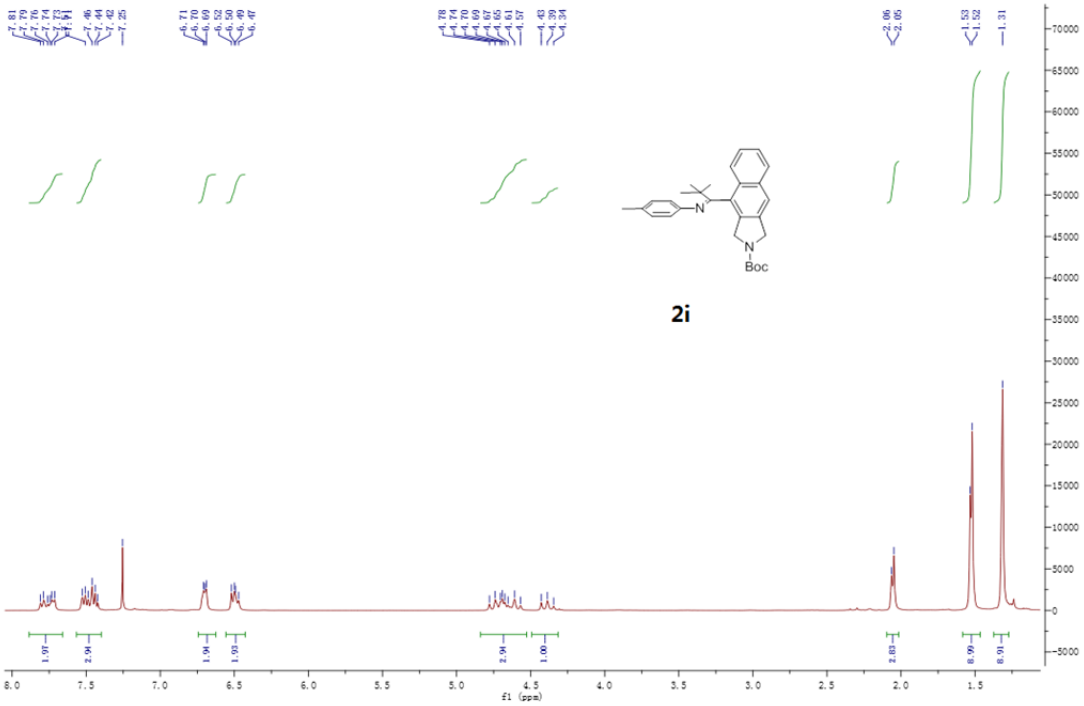
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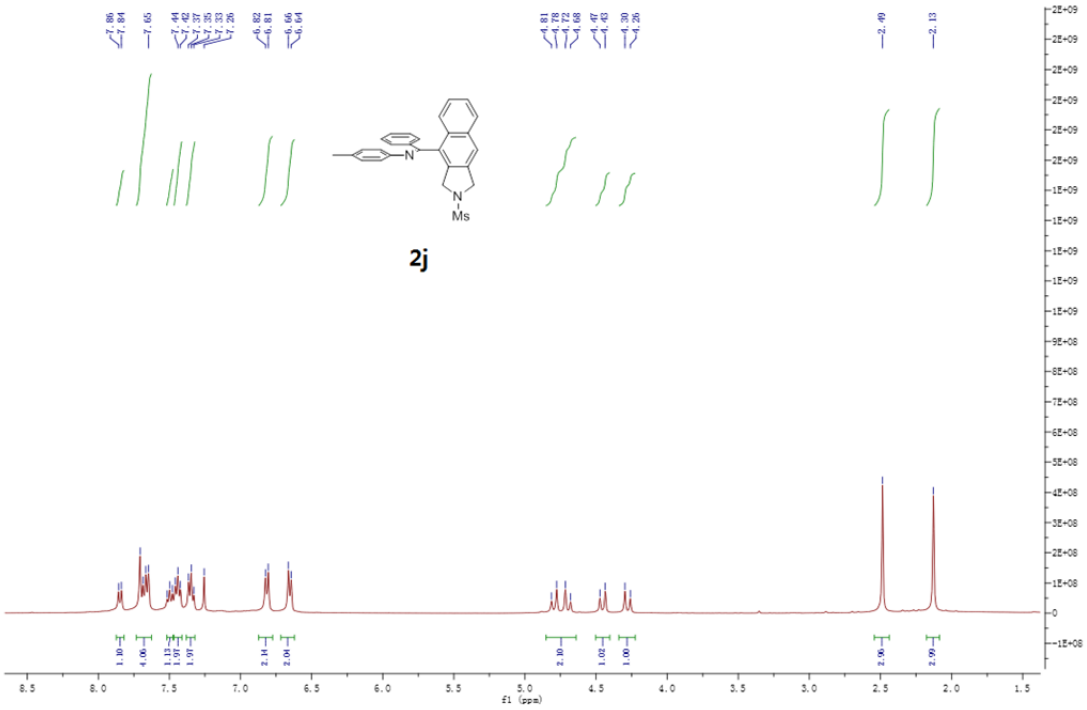
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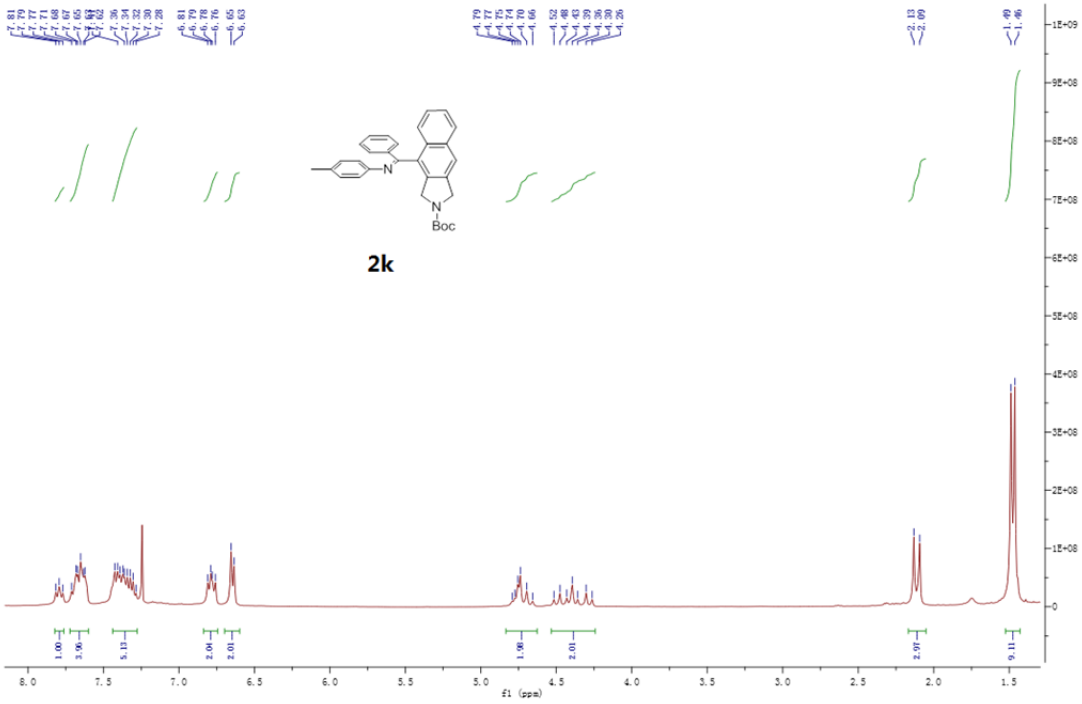

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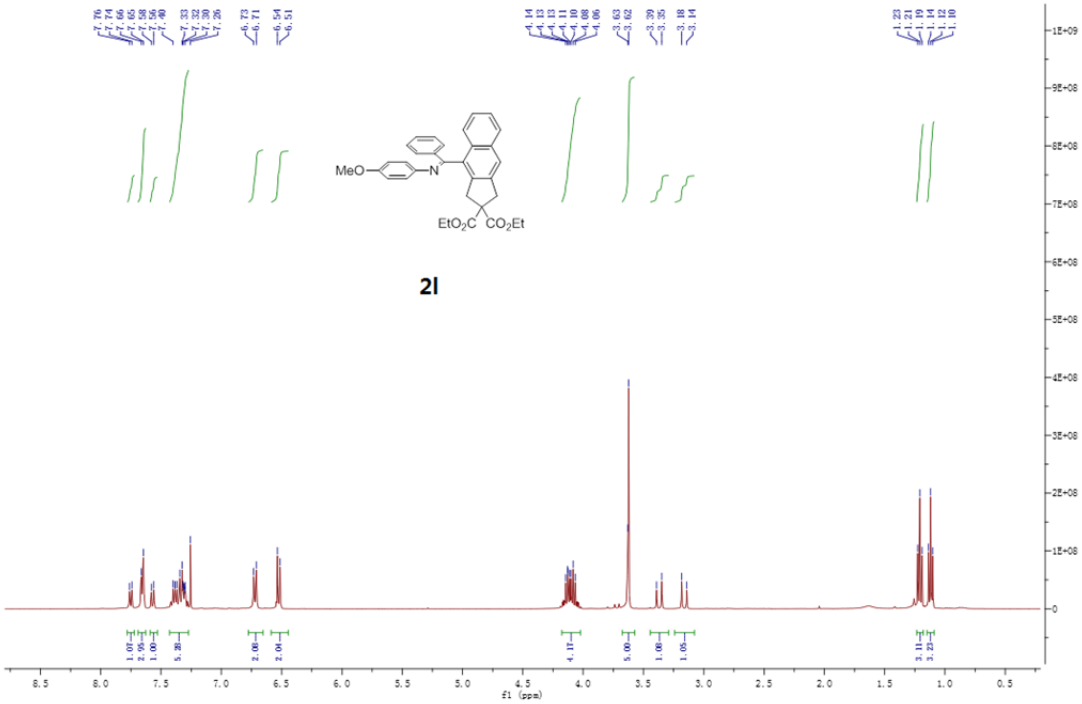

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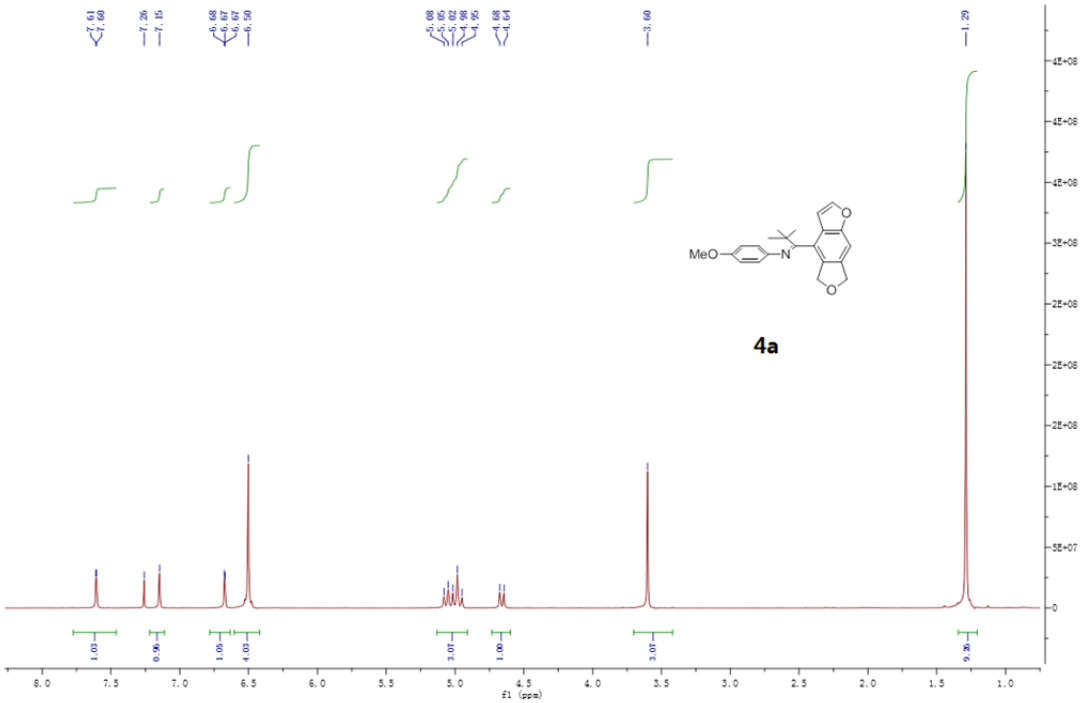
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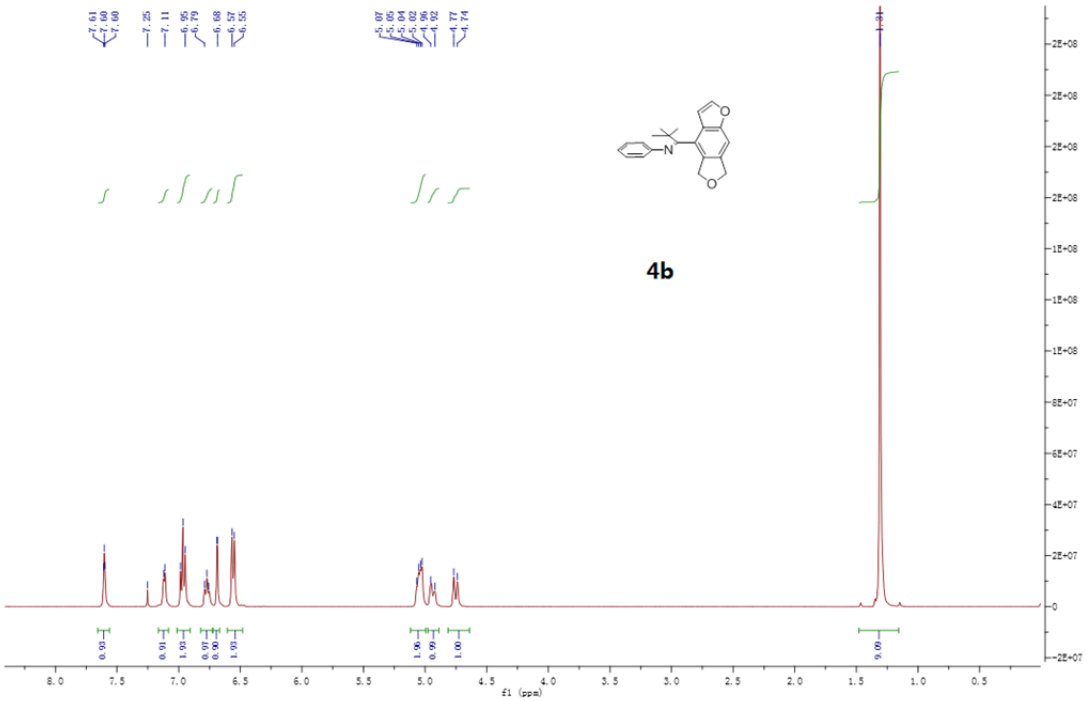
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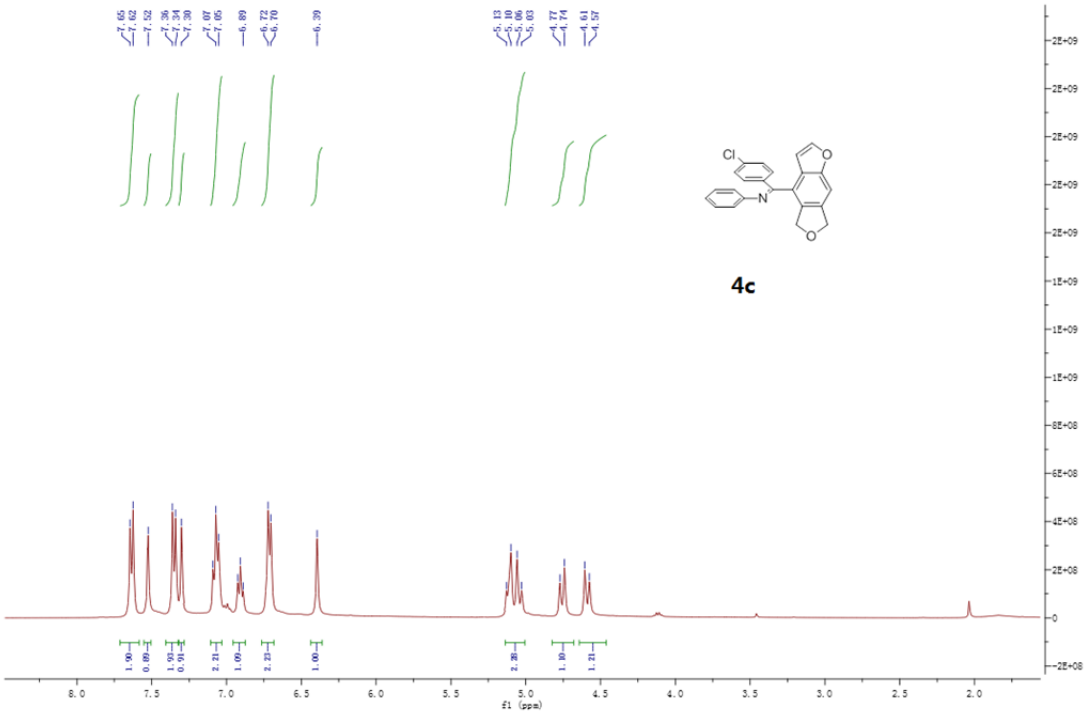
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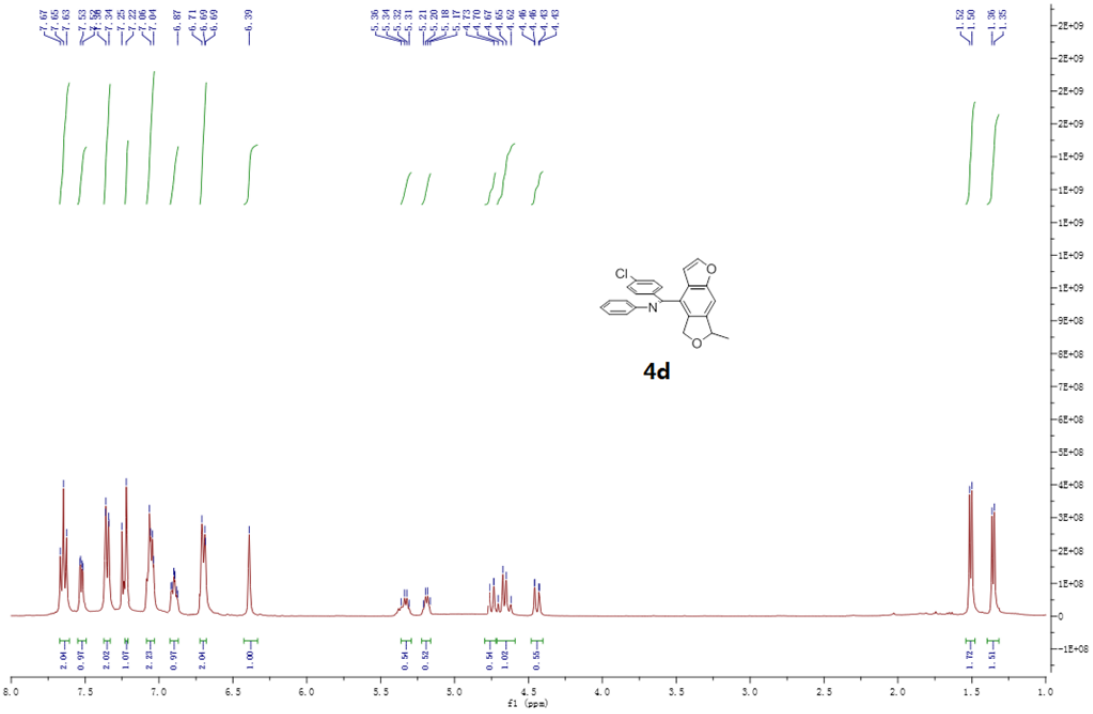
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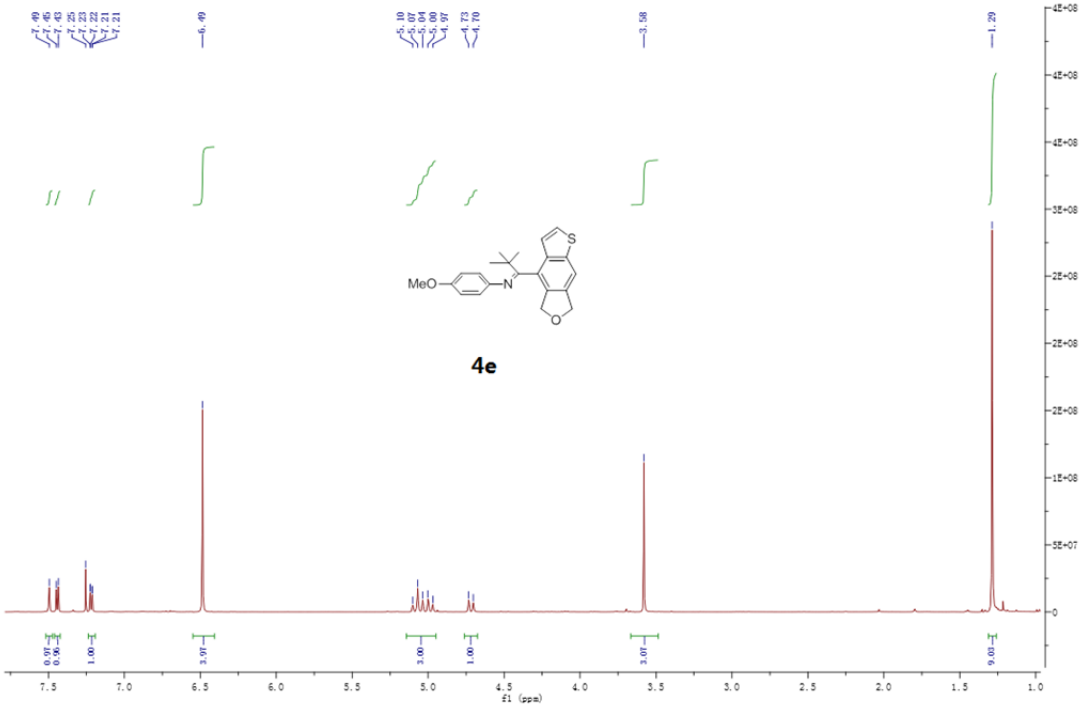
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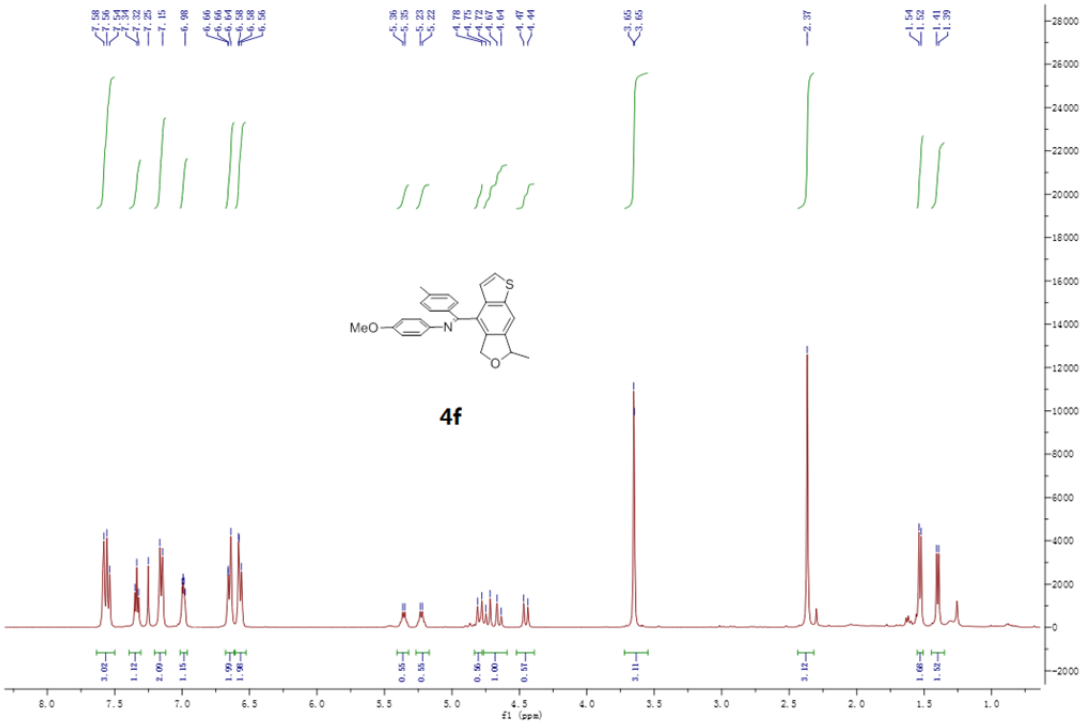
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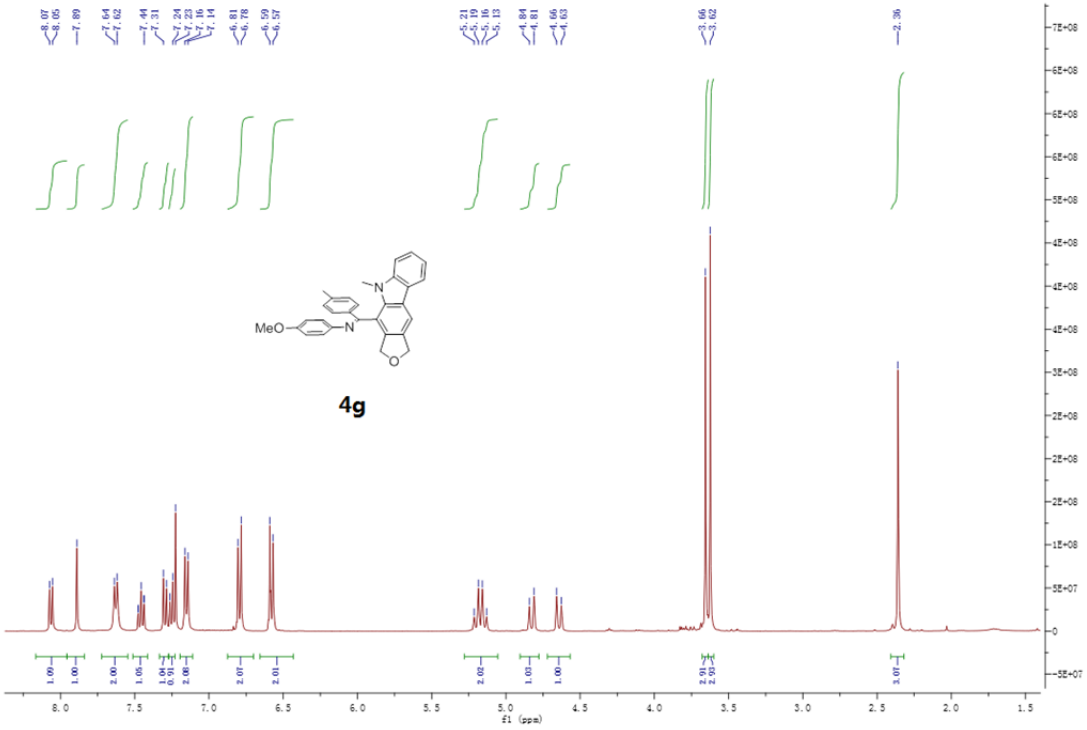
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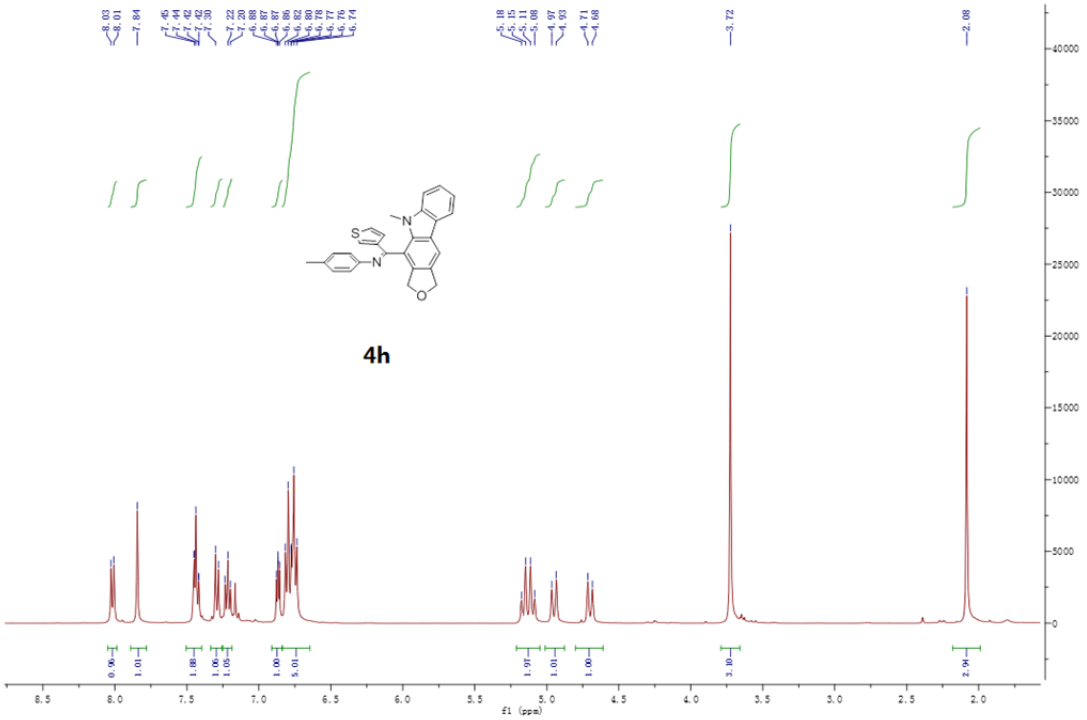
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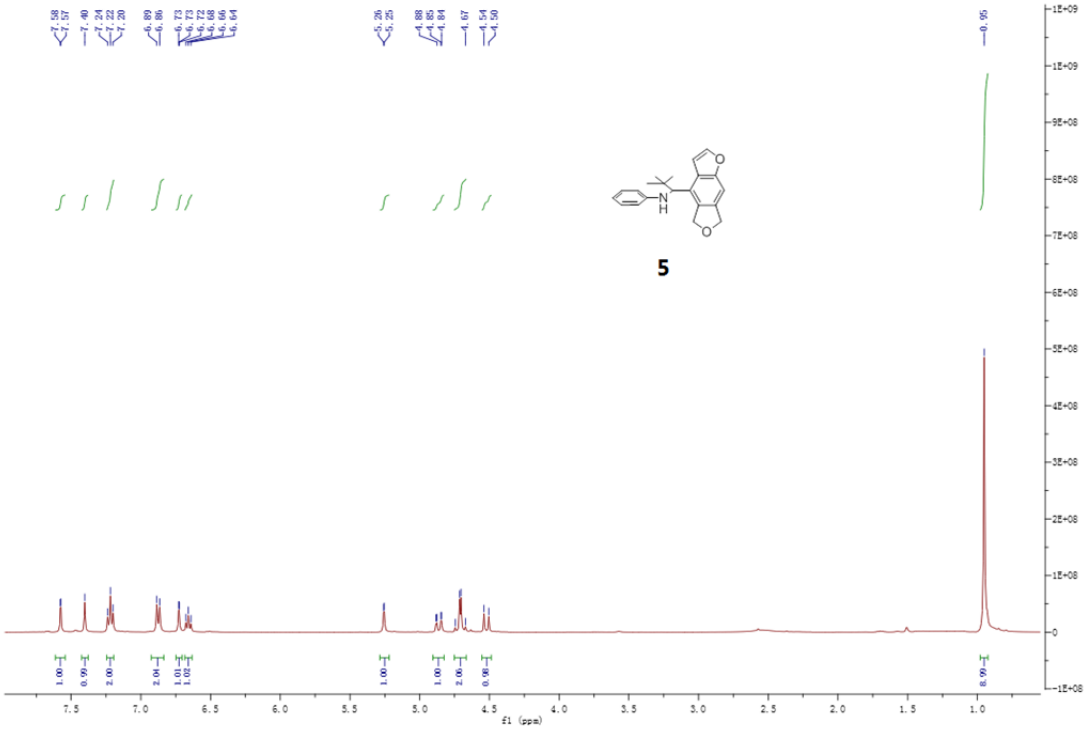
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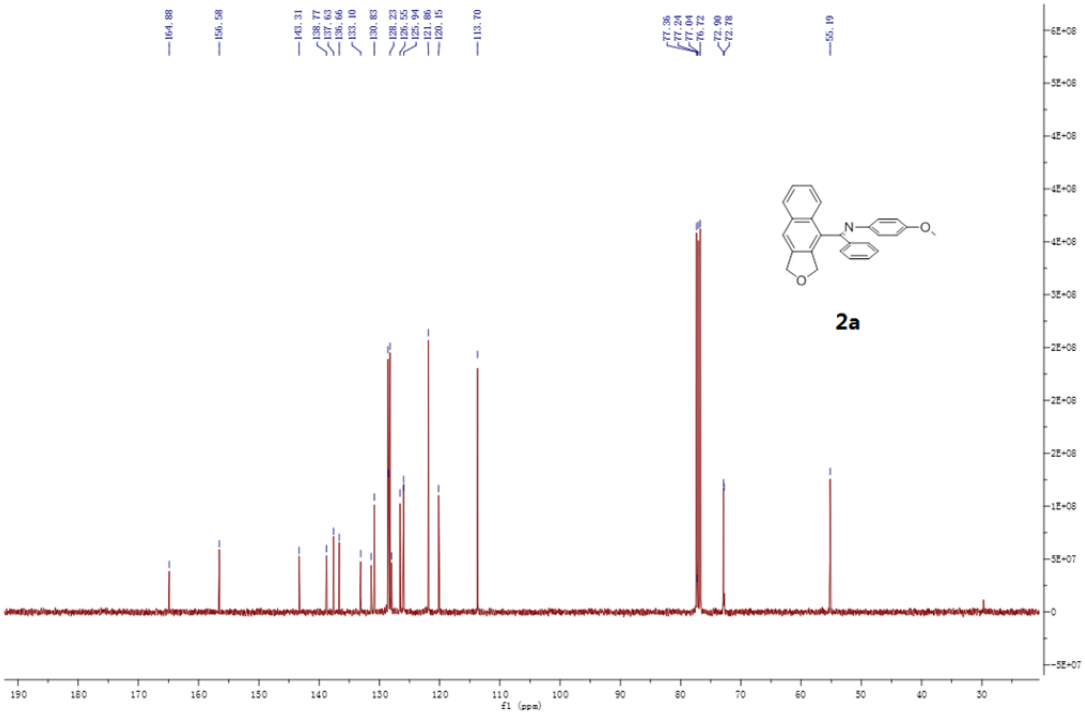
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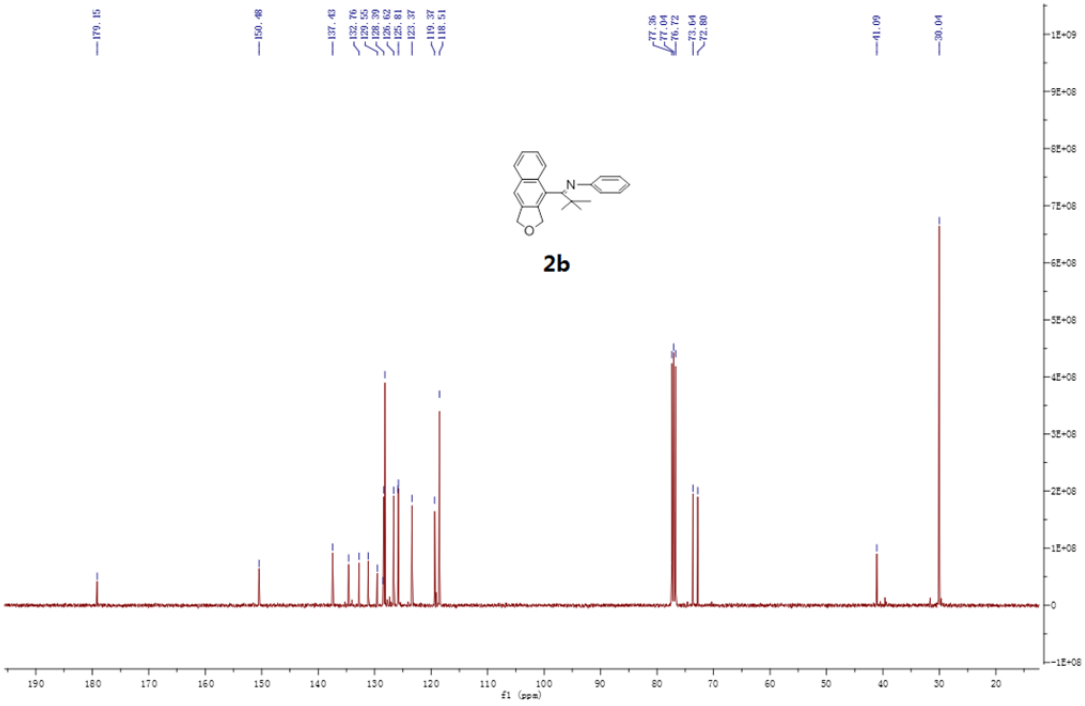
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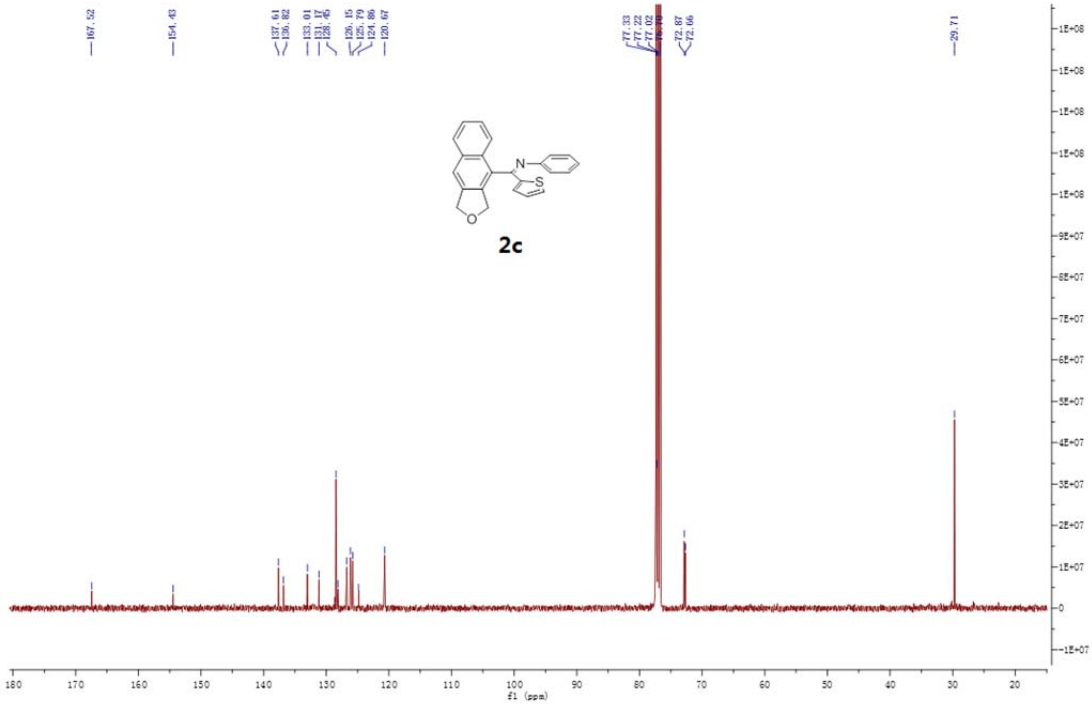
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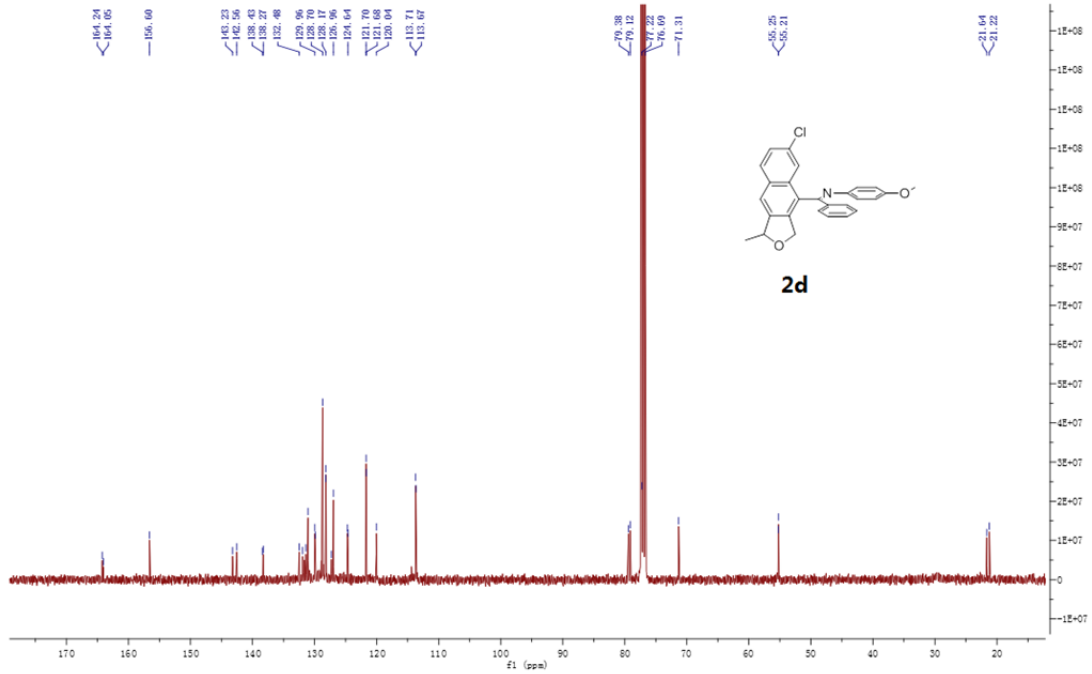
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O
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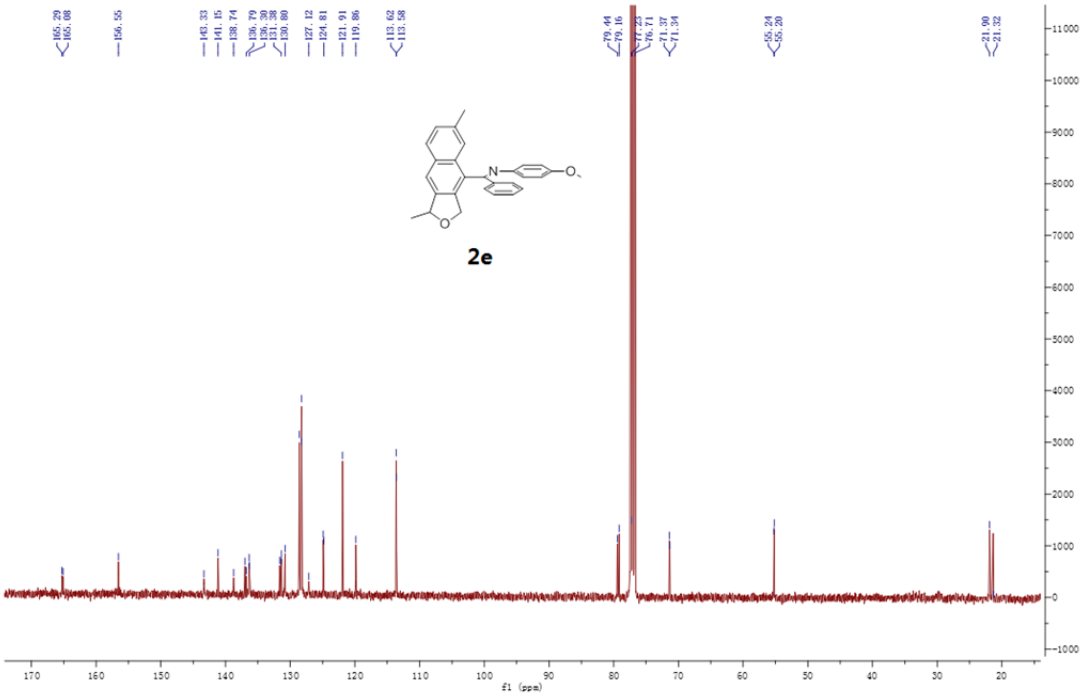
f1 (ppm)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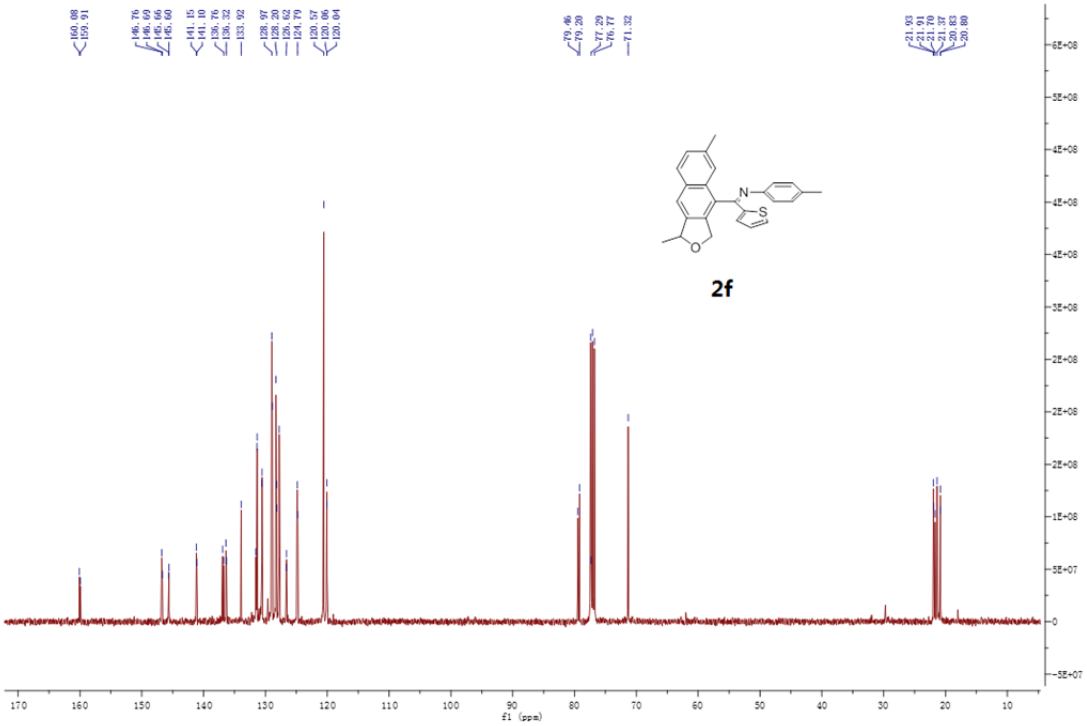
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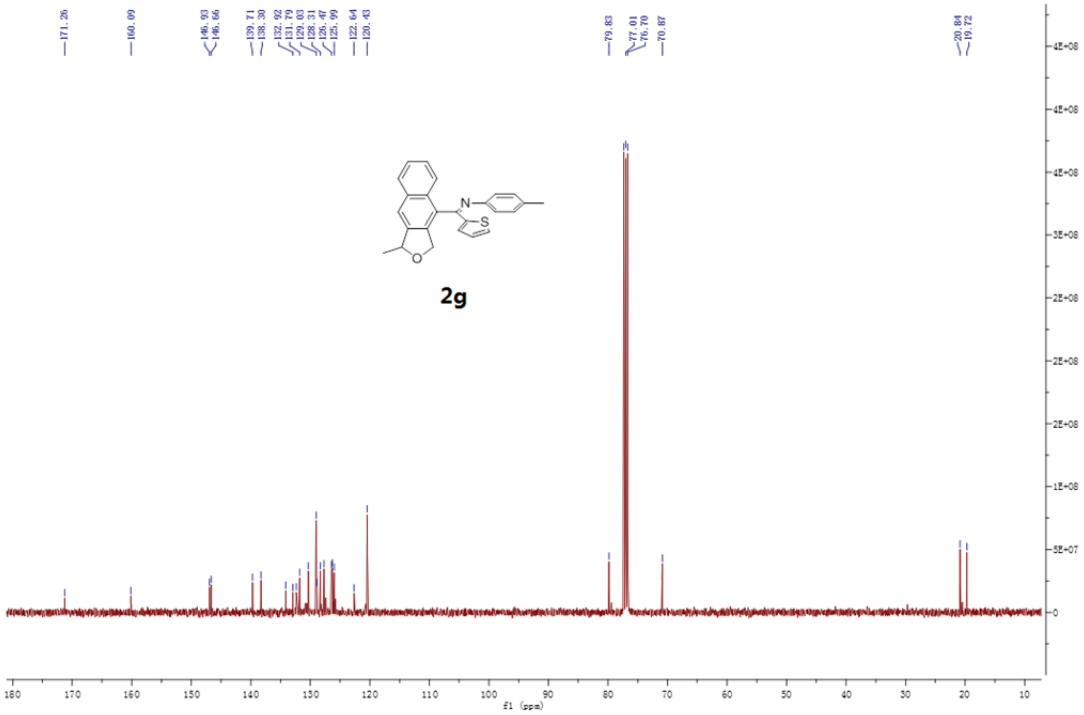
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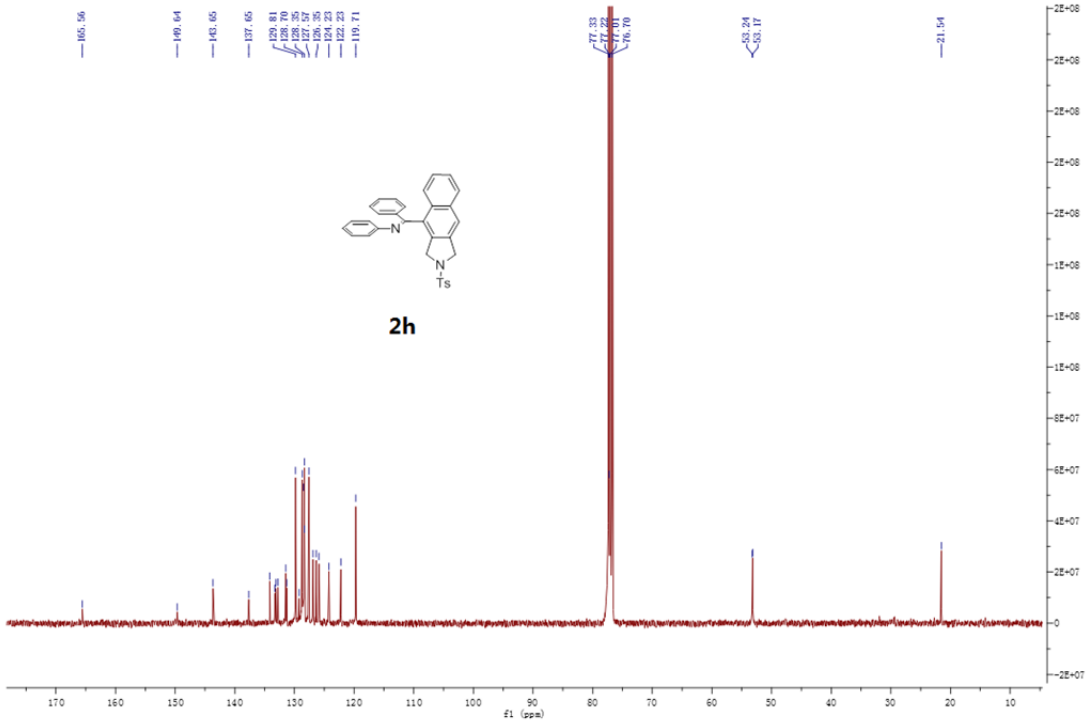
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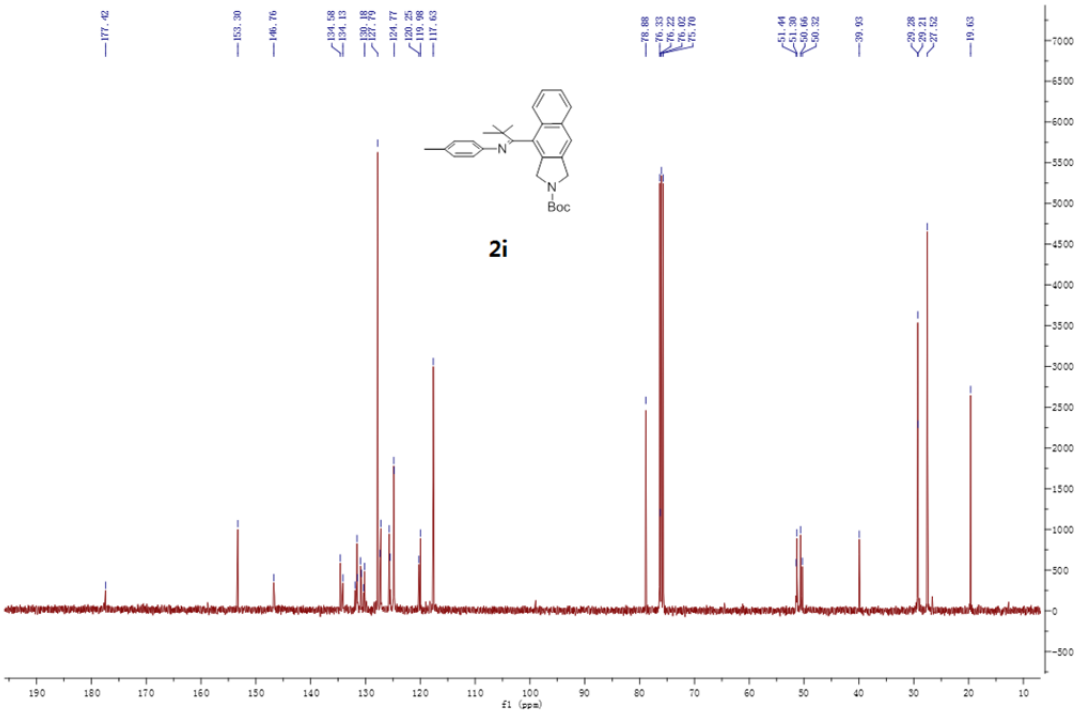
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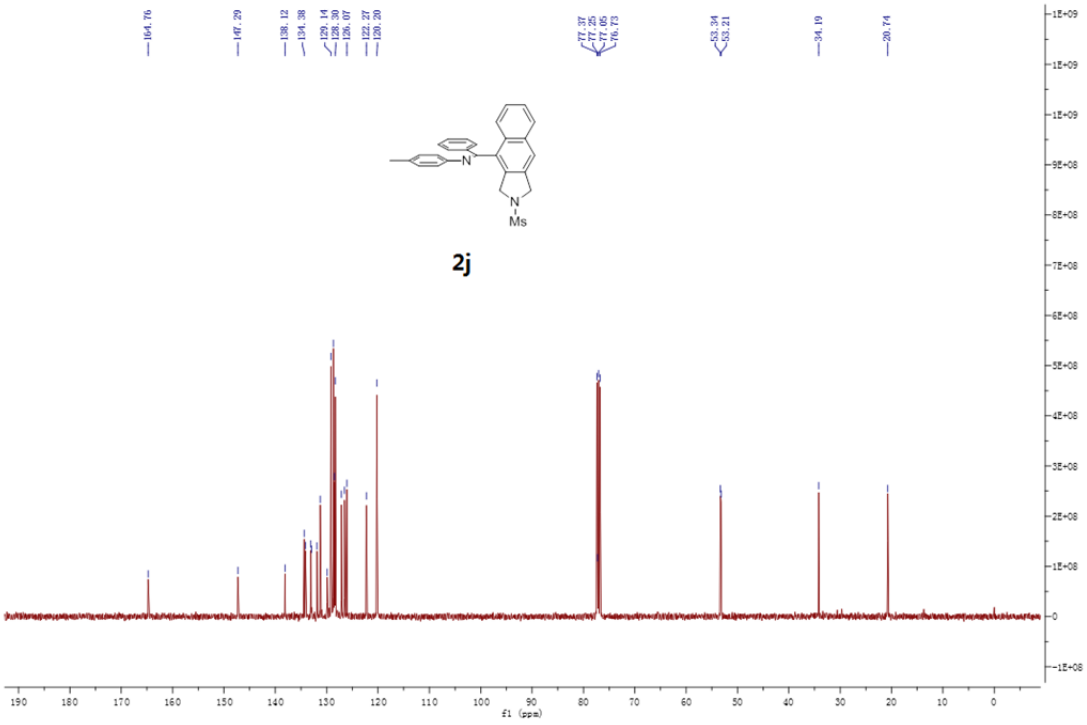
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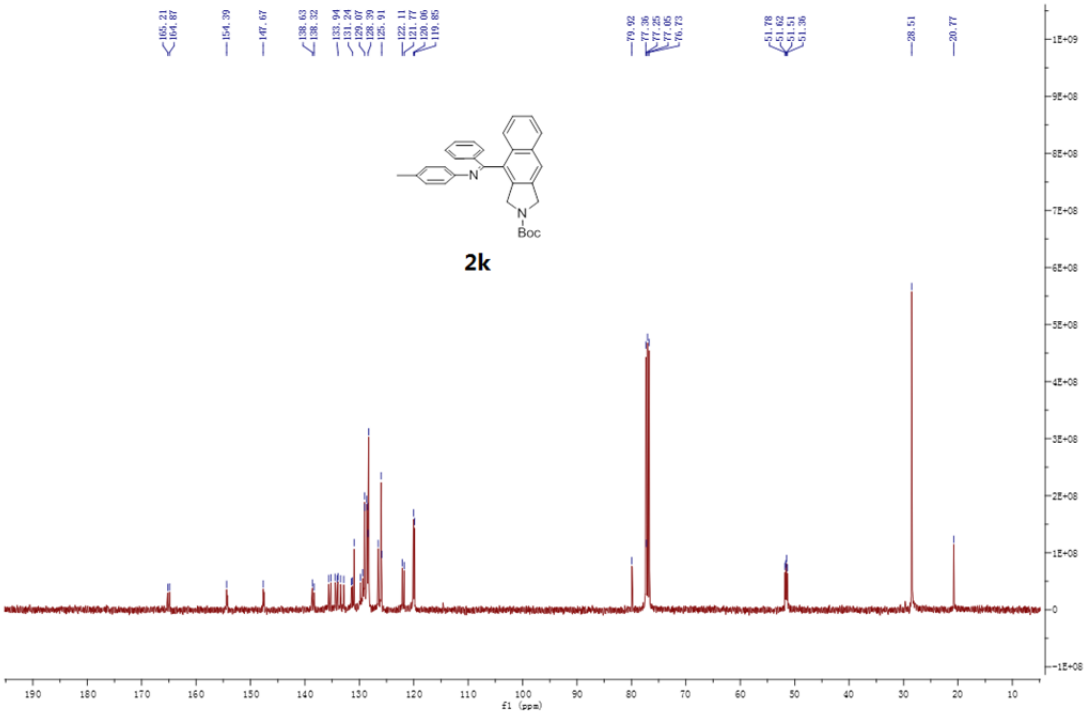
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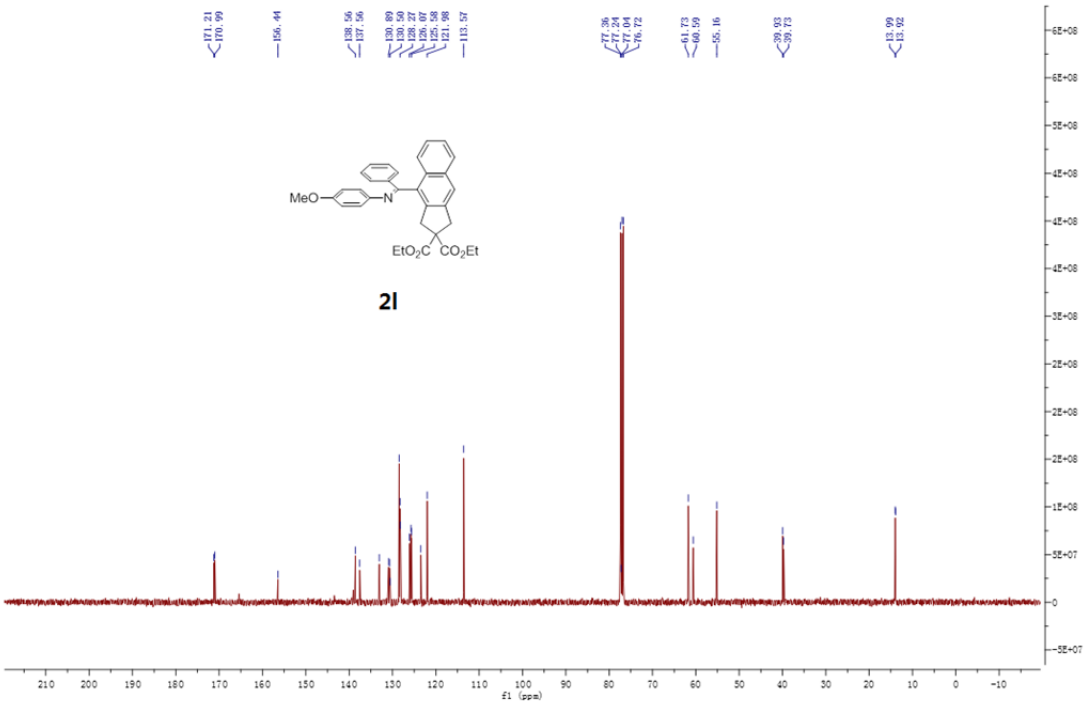
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EtO2C CO2Et
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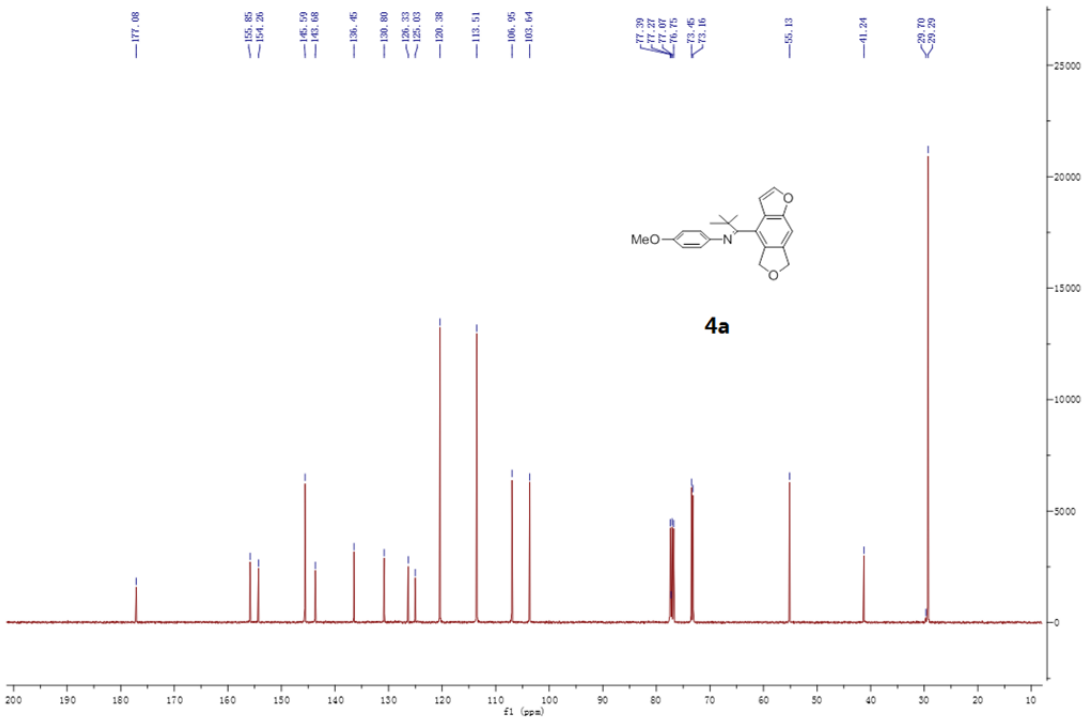
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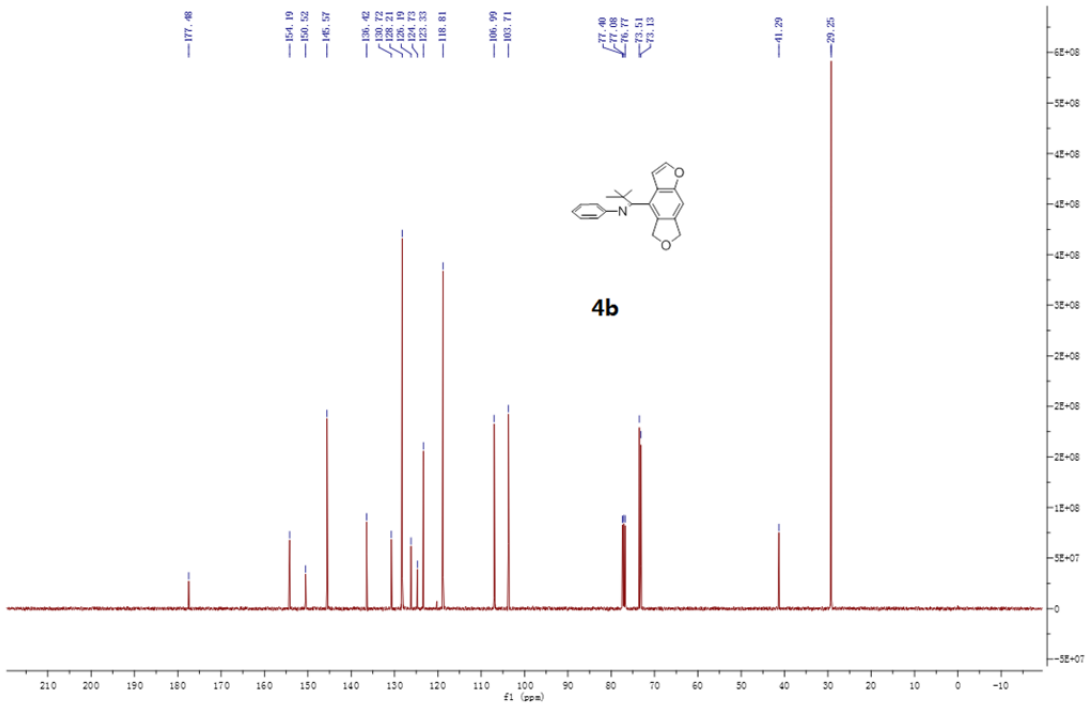
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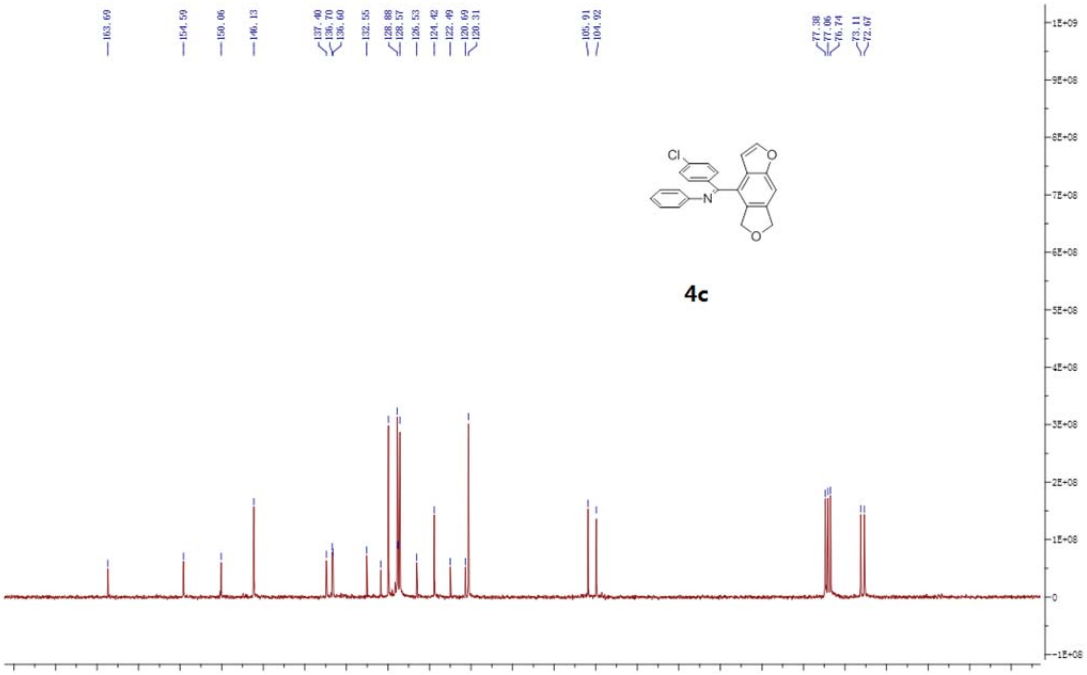
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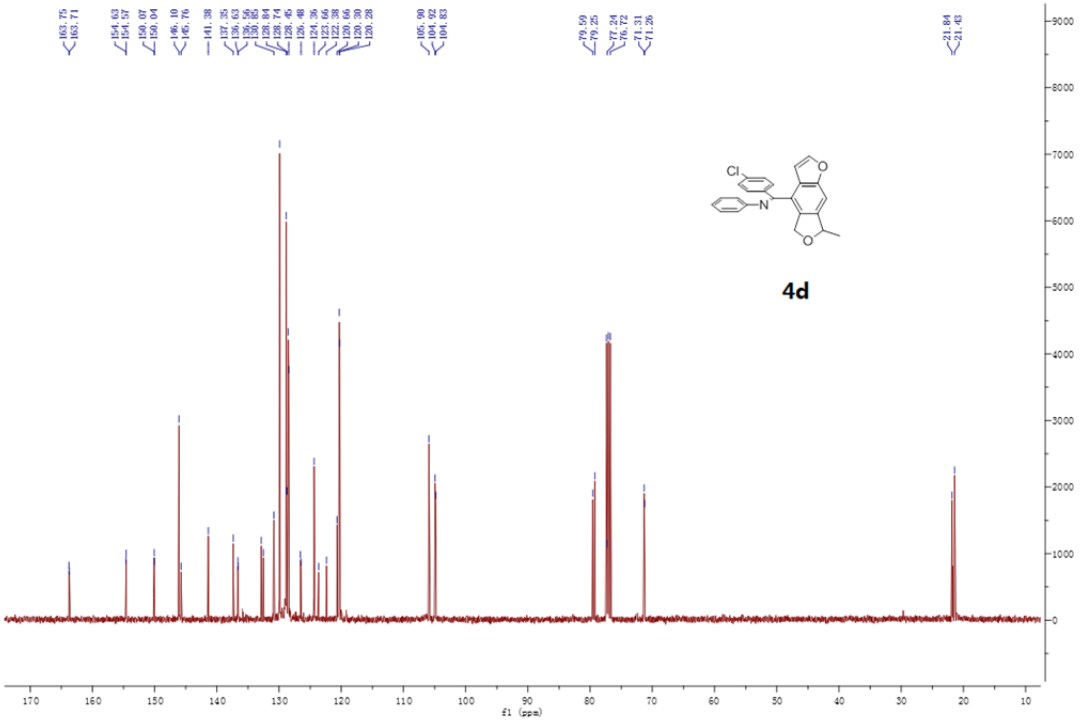
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Cl
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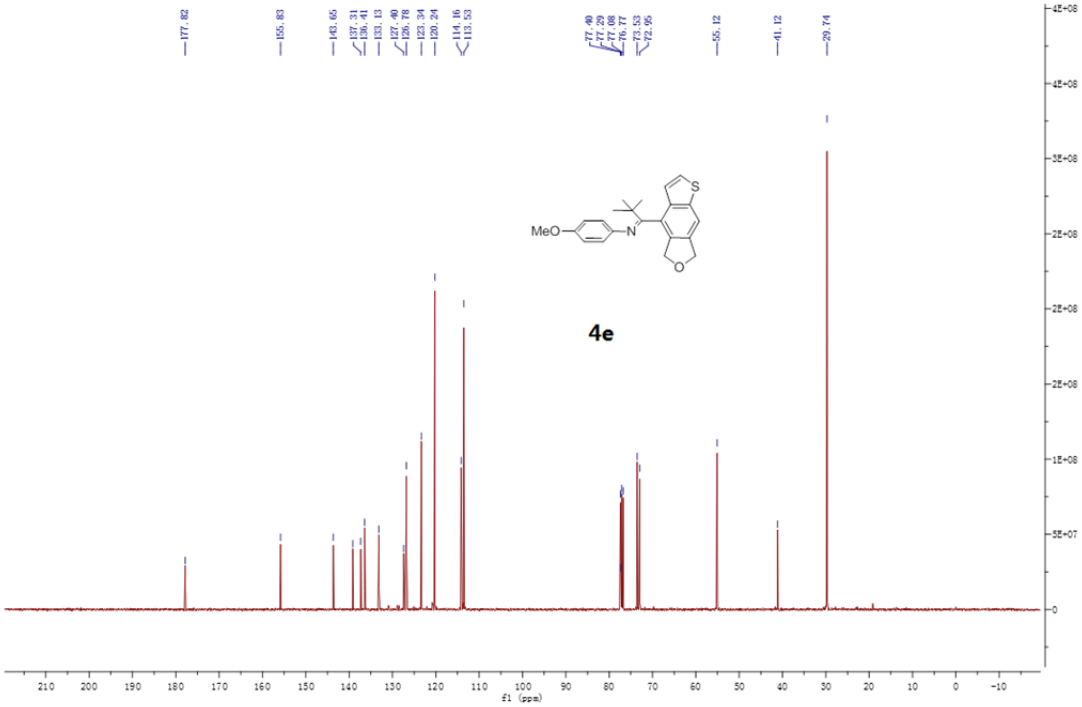
O
O
4d
f1 (ppm)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120.24
114.16
113.53
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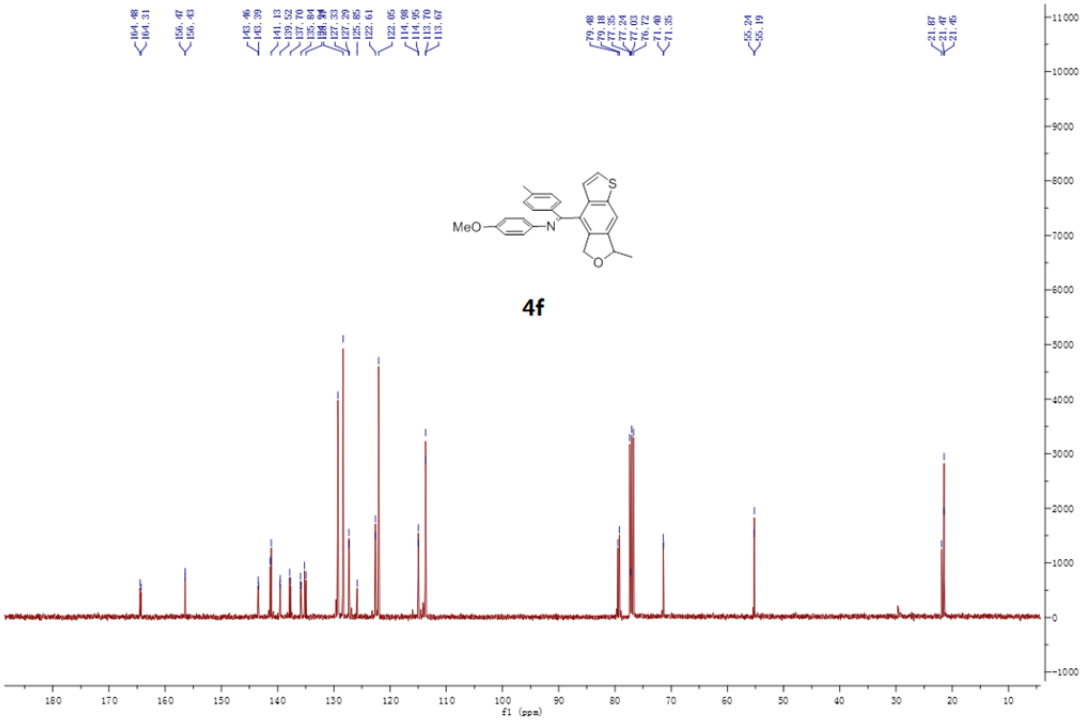
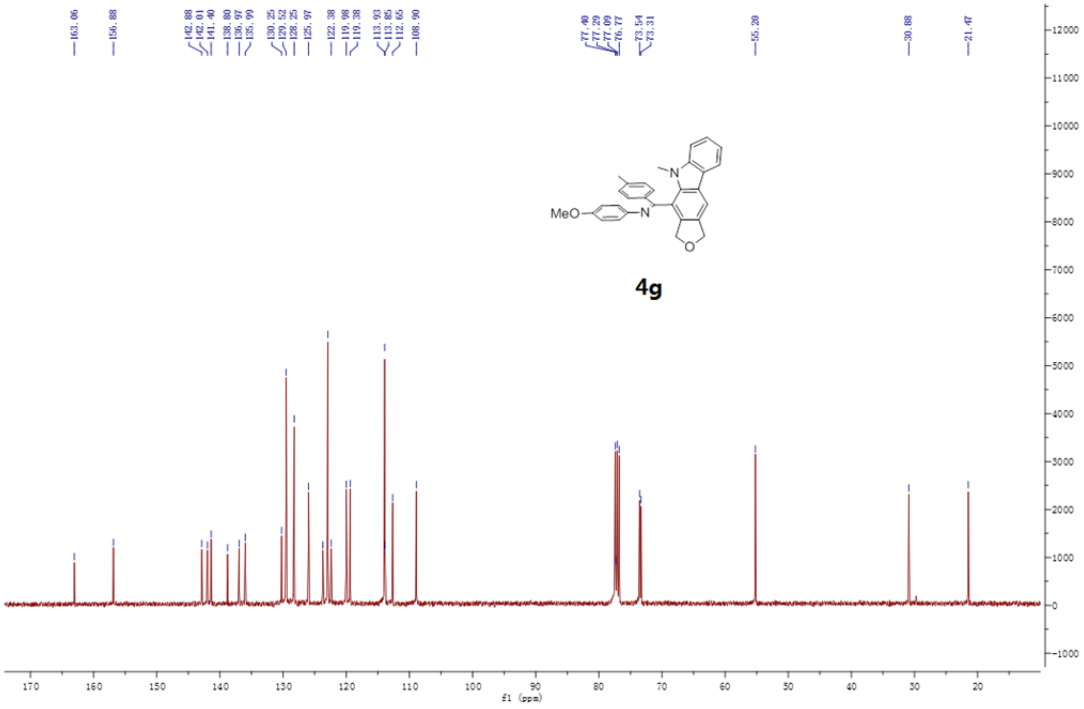
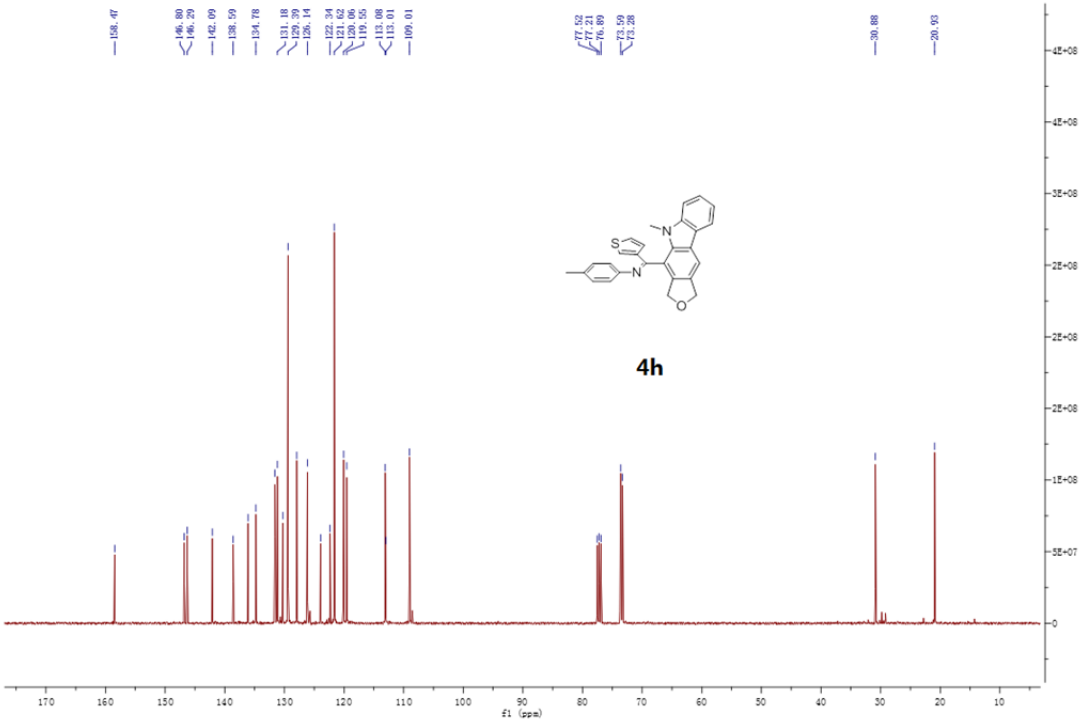
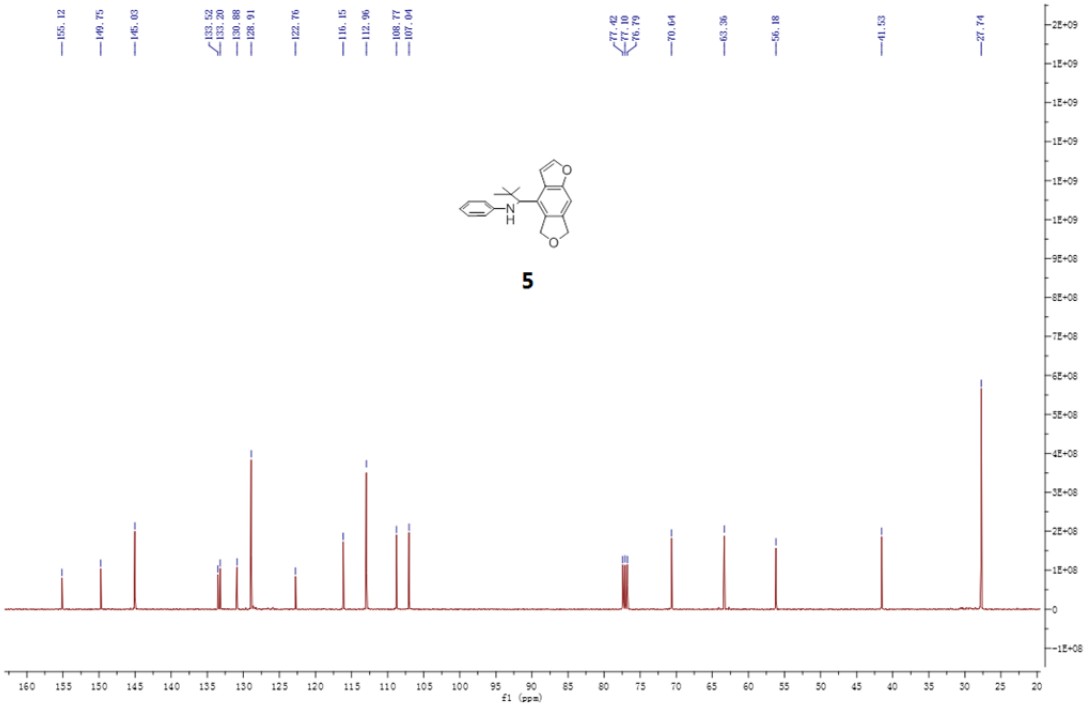
77.29
77.08
76.77
73.53
72.95
55.12
41.12
29.74
MeO
N
S
O
4e
f1 (ppm)


164.48
164.31
156.47
156.43
143.46
143.39
141.13
139.52
137.70
135.84
127.33
127.29
125.86
122.61
122.05
114.98
114.95
113.70
113.67
79.48
79.18
77.35
77.24
77.03
76.72
71.40
71.35
55.24
55.19
21.87
21.47
21.45
MeO
N
S
O
4f
f1 (ppm)


163.06
156.88
142.88
142.01
141.40
138.80
136.97
135.99
130.25
129.52
128.25
125.97
122.38
119.98
119.38
113.93
113.85
112.65
108.90
77.49
77.29
77.09
76.77
73.54
73.31
55.20
30.88
21.47
MeO
N
N
O
4g
f1 (ppm)


158.47
146.80
146.29
142.09
138.59
134.78
131.18
129.39
126.14
122.34
121.62
120.06
119.55
113.08
113.01
109.01
77.52
77.21
76.89
73.59
73.28
30.88
20.93
S
N
N
O
4h
f1 (ppm)


155.12
149.75
145.03
133.52
133.20
130.88
128.91
122.76
116.15
112.96
108.77
107.04
77.42
77.10
76.79
70.64
63.36
56.18
41.53
27.74
5
f1 (ppm)