

Metal-free sp³ C-H bond Oxidation and Functionalization of α -Bromoketones to Quinoxalinone, Benzoxazinone, and Benzothiazinone Heterocyclic Compounds

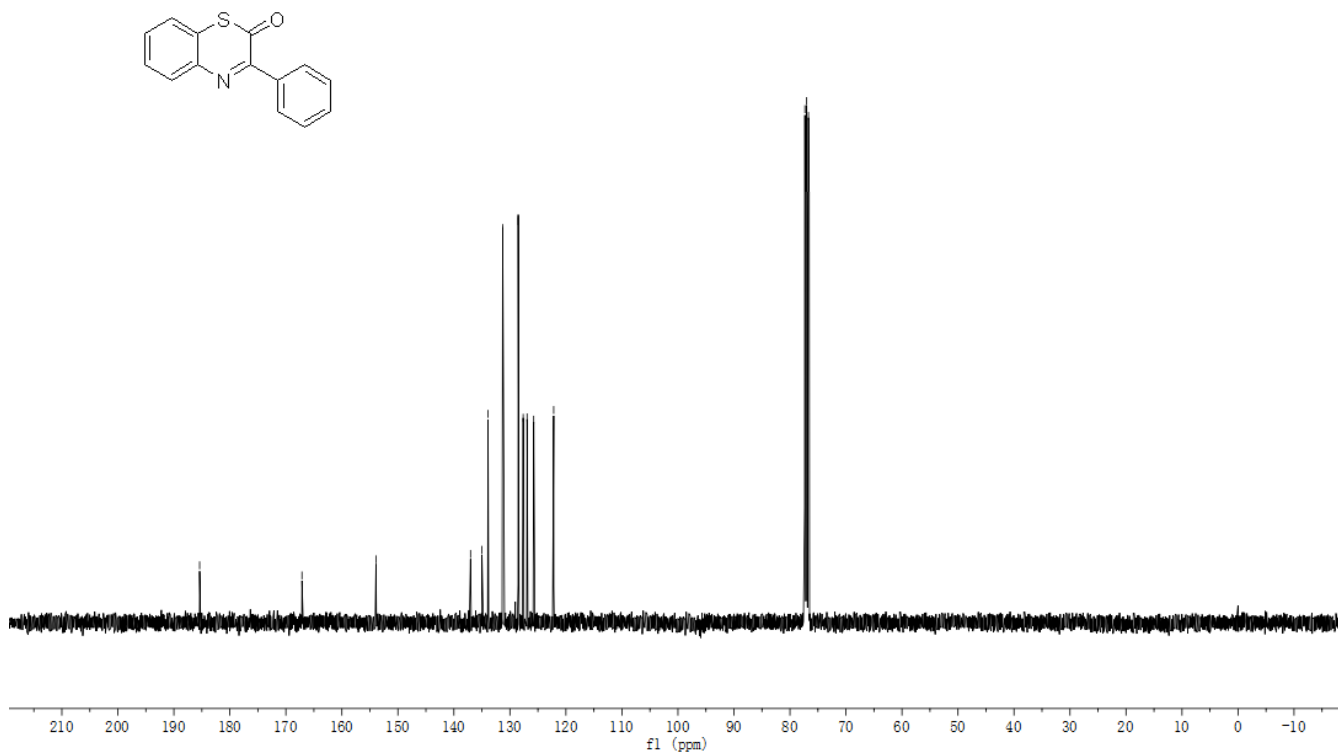
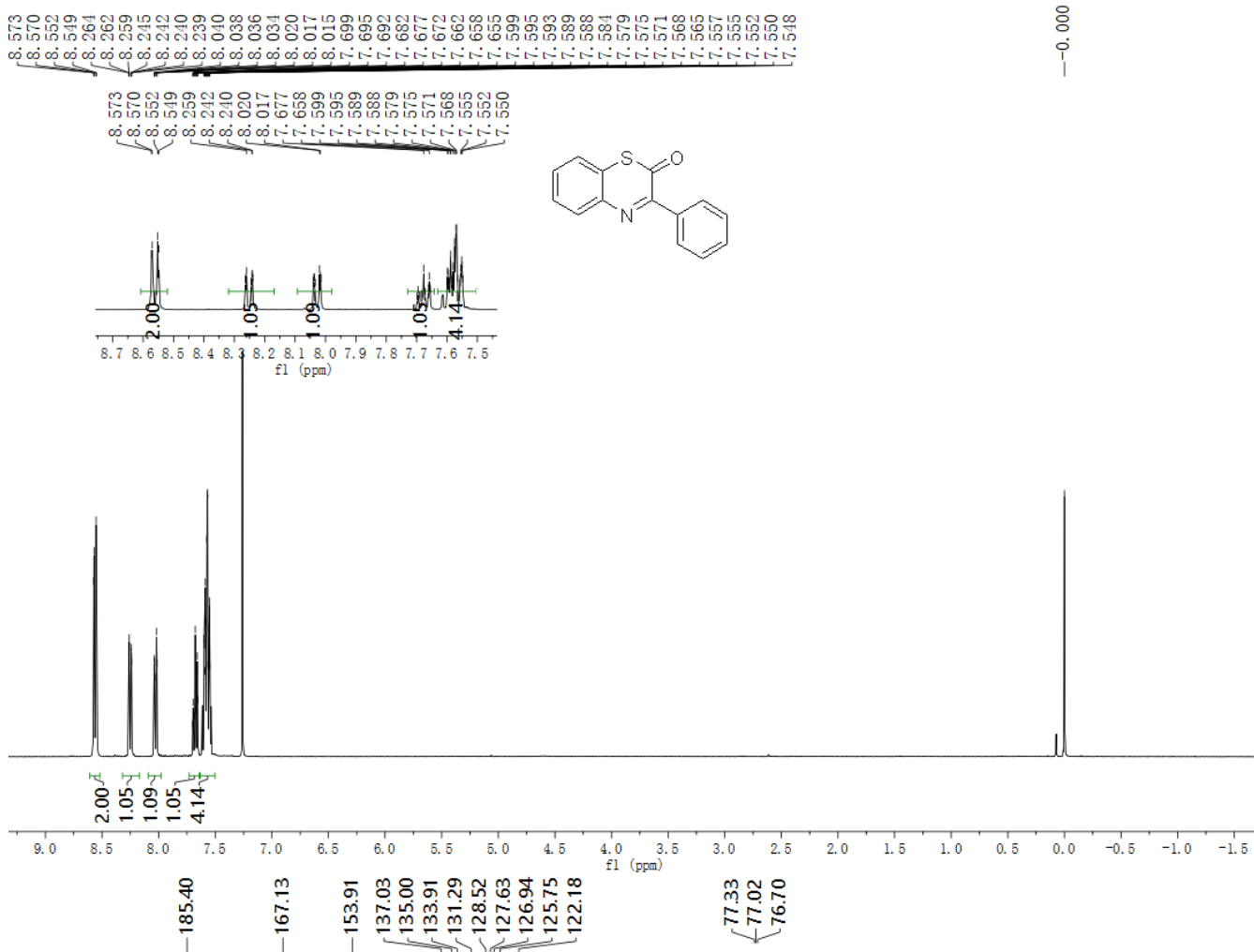
Tianlong Wei,^a Haiying Tian,^c Fang Guo,^{b*} Hongxue Qi,^b and Xiuling Chen^{a*}

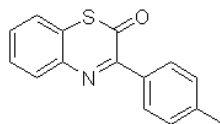
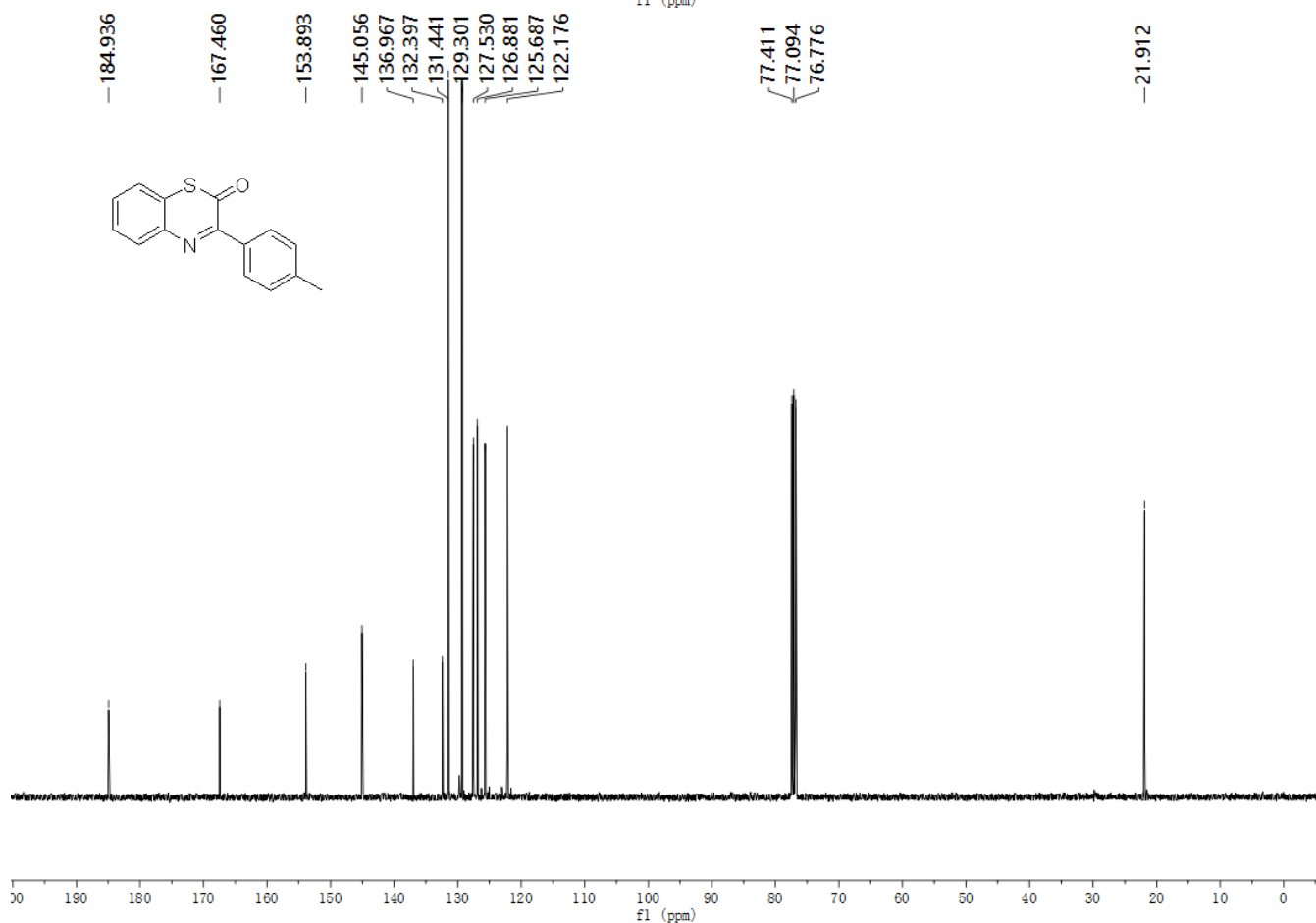
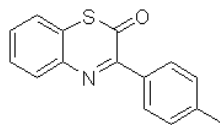
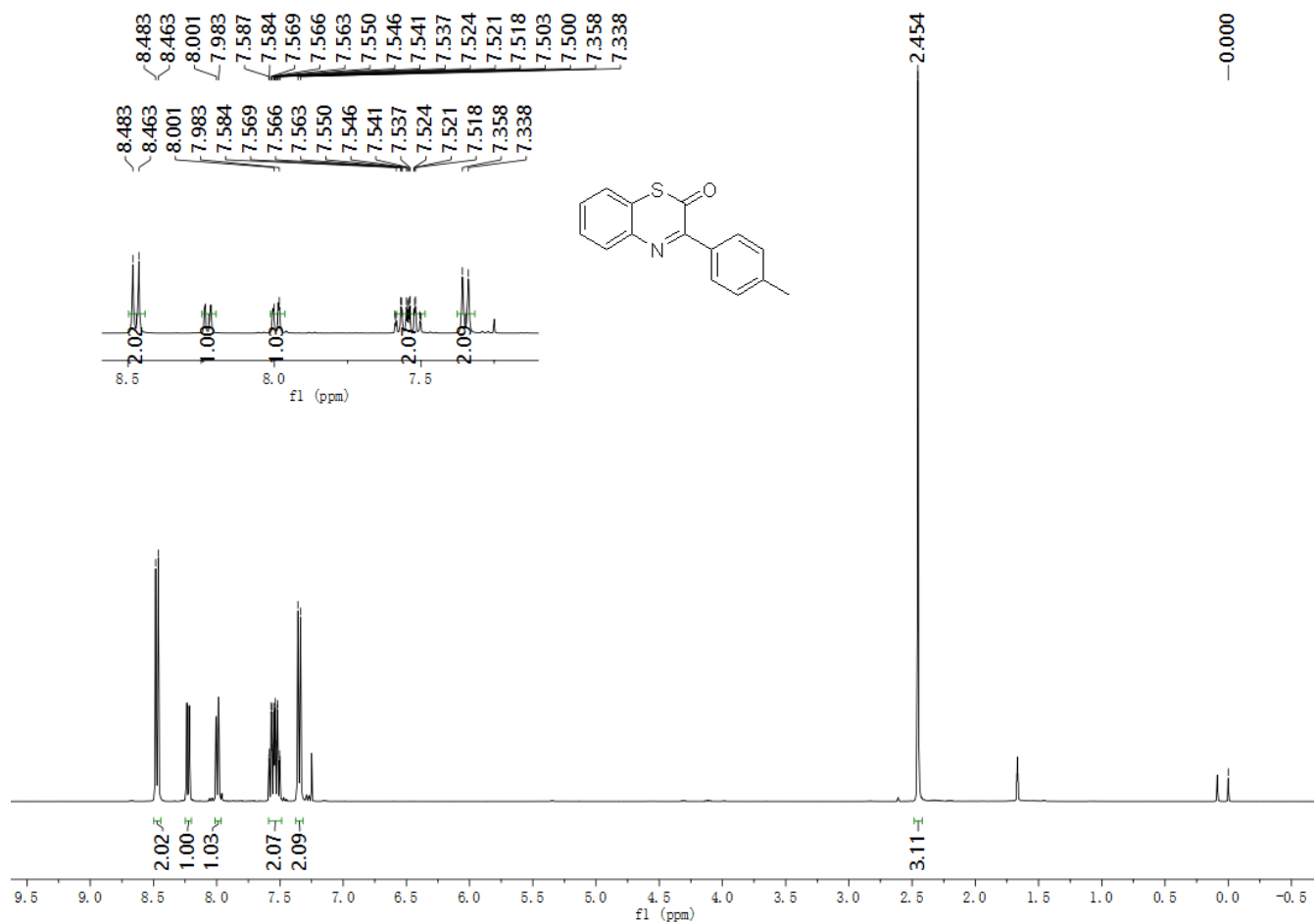
^aSchool of Nuclear Technology and Chemistry & Biology, Hubei University of Science and Technology, Xianning 437100, China

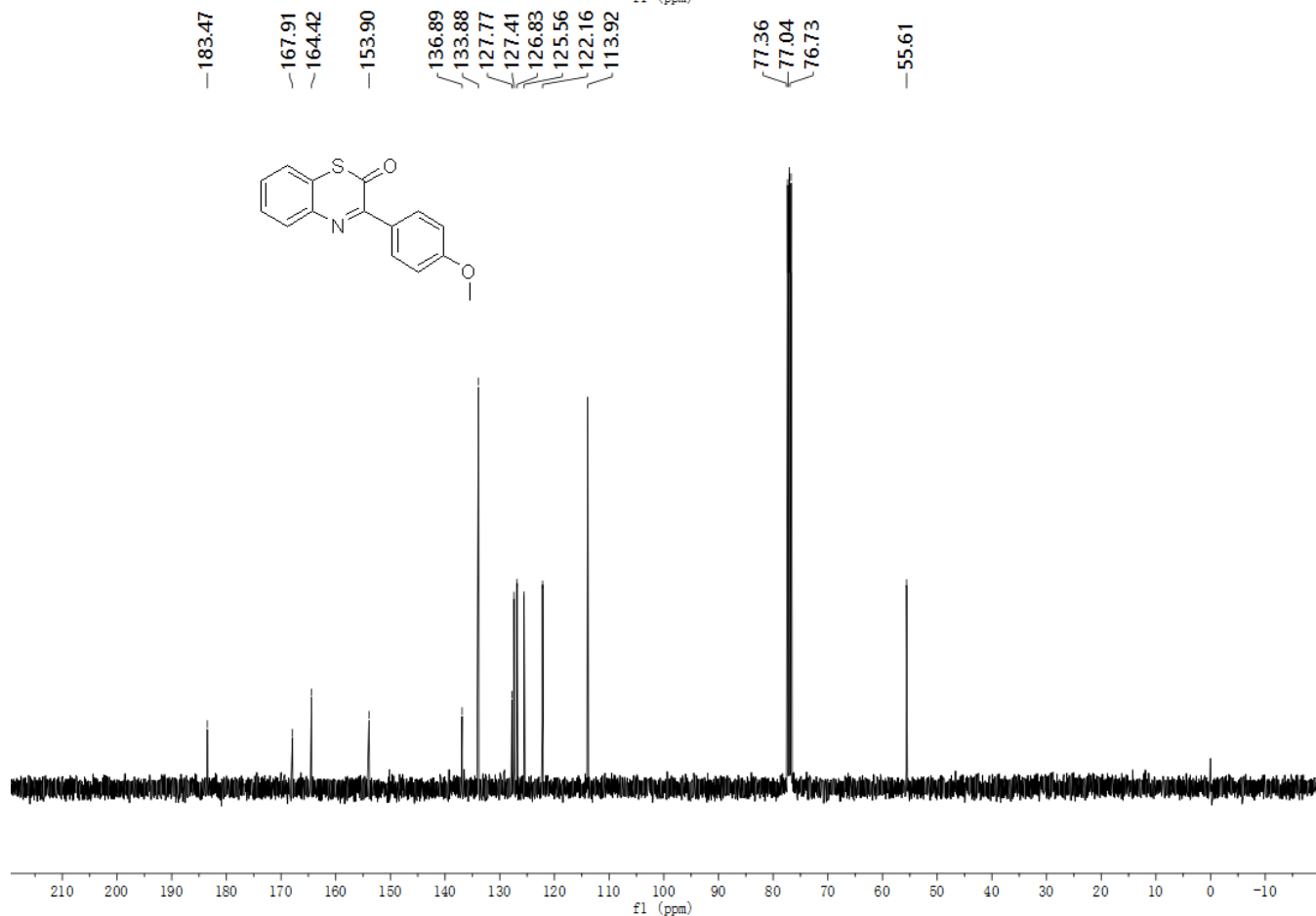
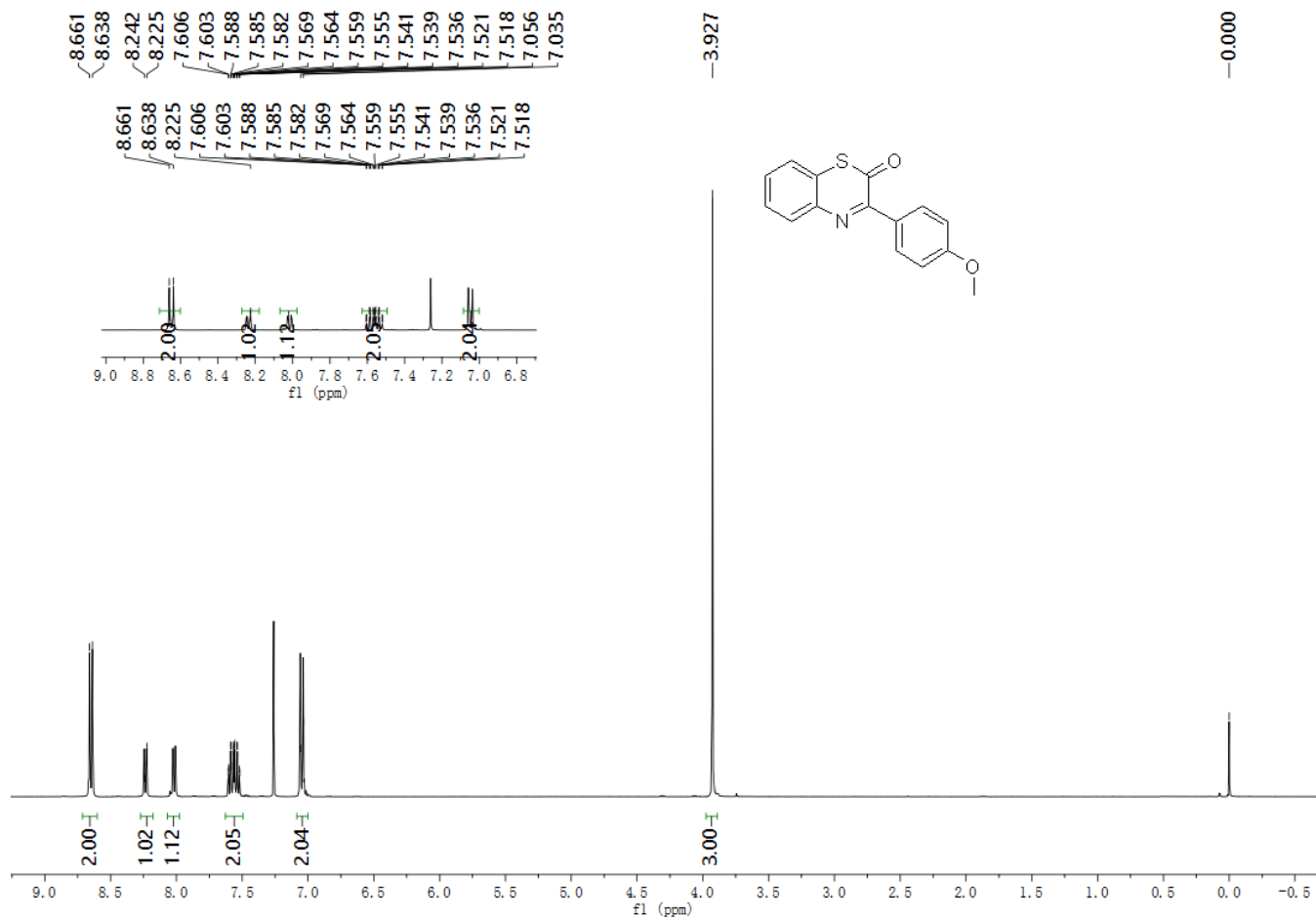
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¹H NMR and ¹³C NMR spectra of compound 3a- 3w

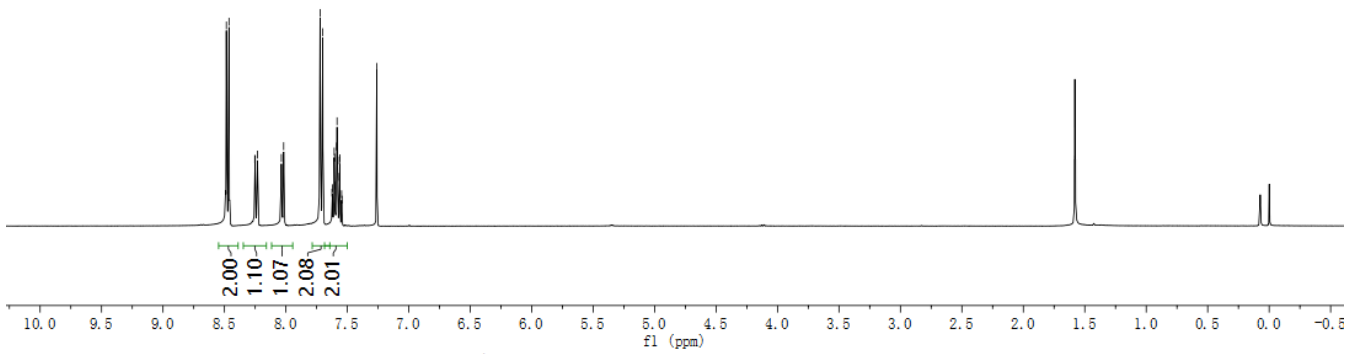
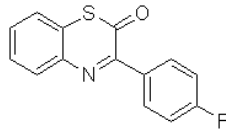
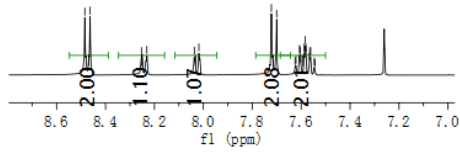




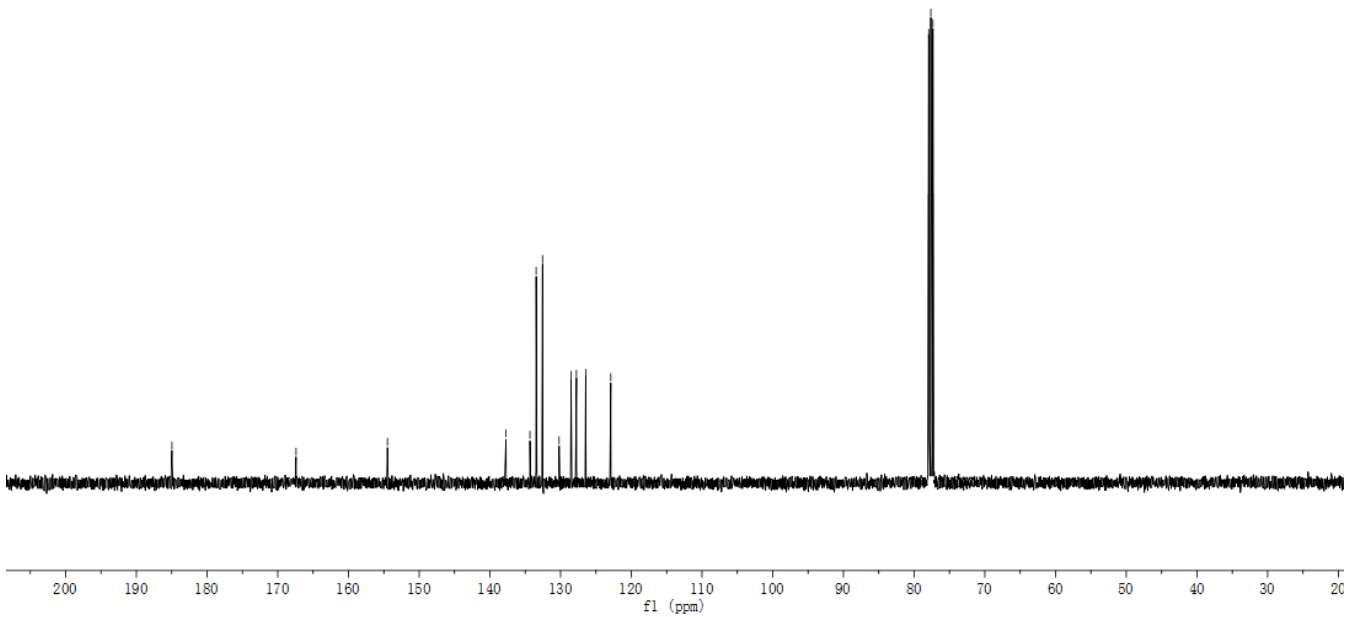
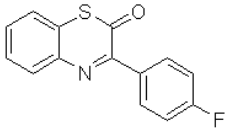


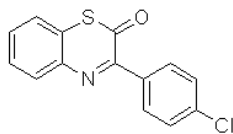
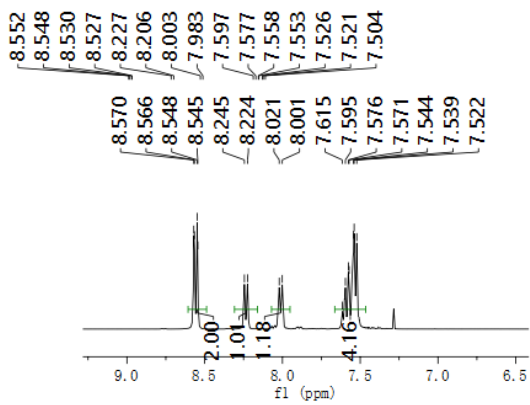
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8.463
8.253
8.231
8.037
8.018
7.722
7.700
7.625
7.621
7.607
7.603
7.601
7.588
7.584
7.580
7.567
7.565
7.561
7.547
7.543
7.261

8.484
8.463
8.253
8.231
8.037
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7.561

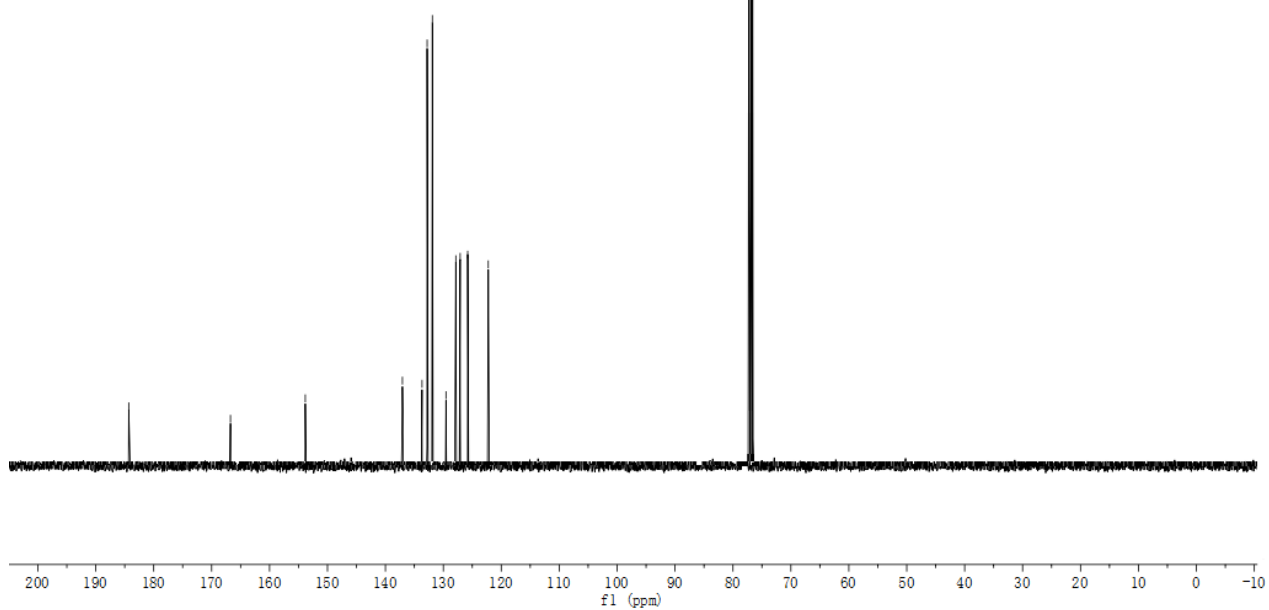
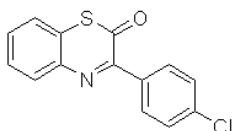
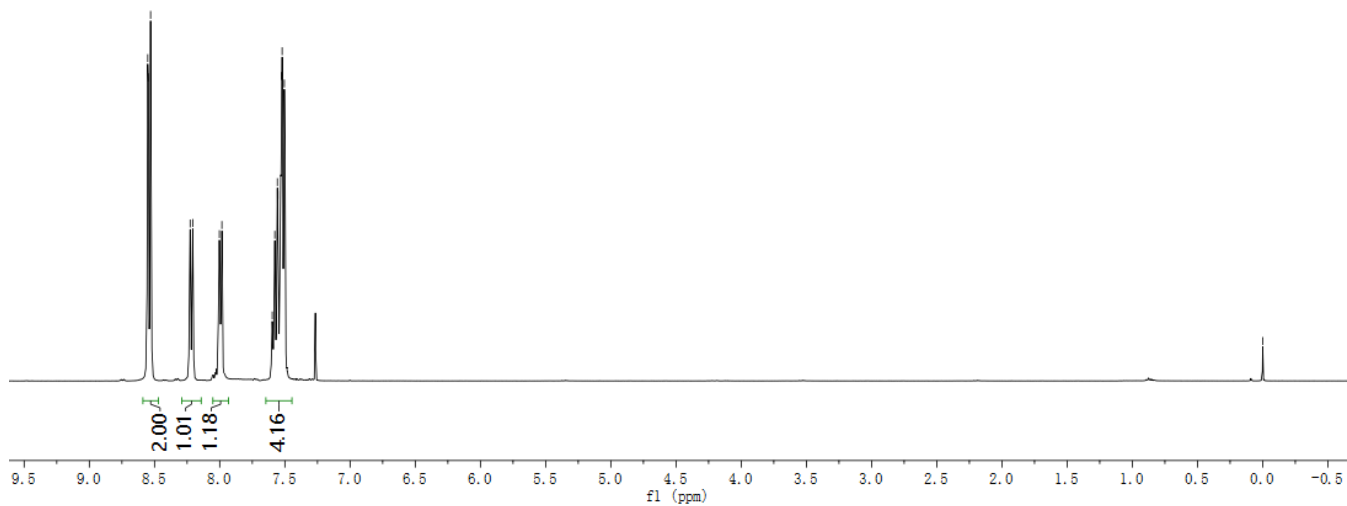


184.97
167.41
167.25
154.49
137.72
134.34
133.45
132.55
130.21
128.51
127.75
126.45
122.90
77.62
77.30
76.98



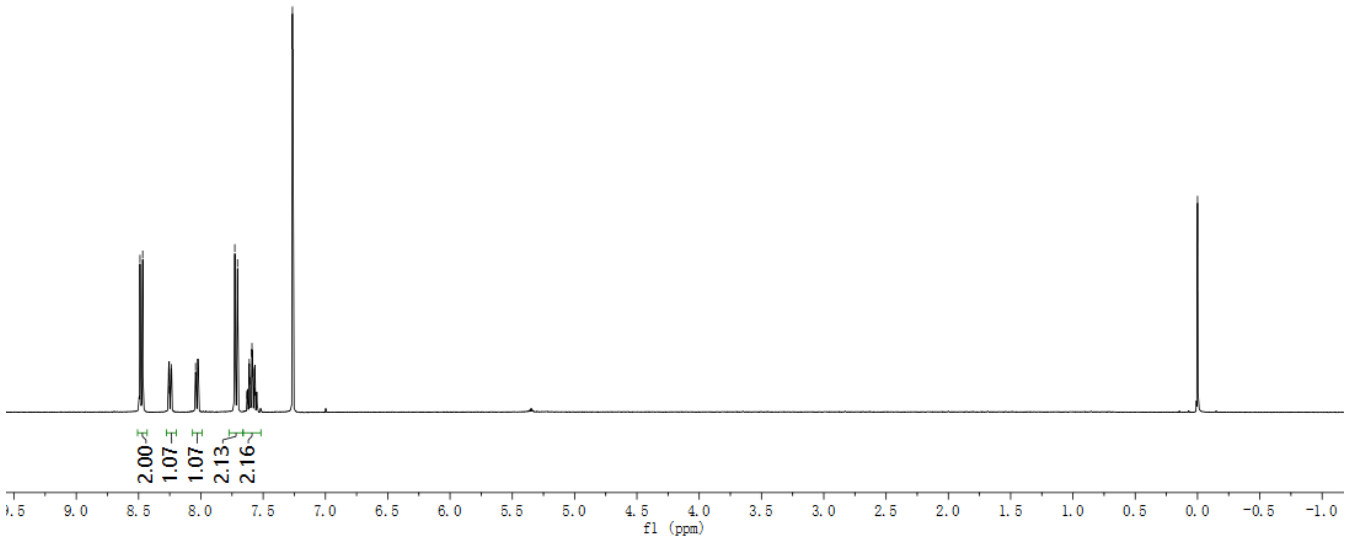
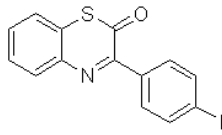


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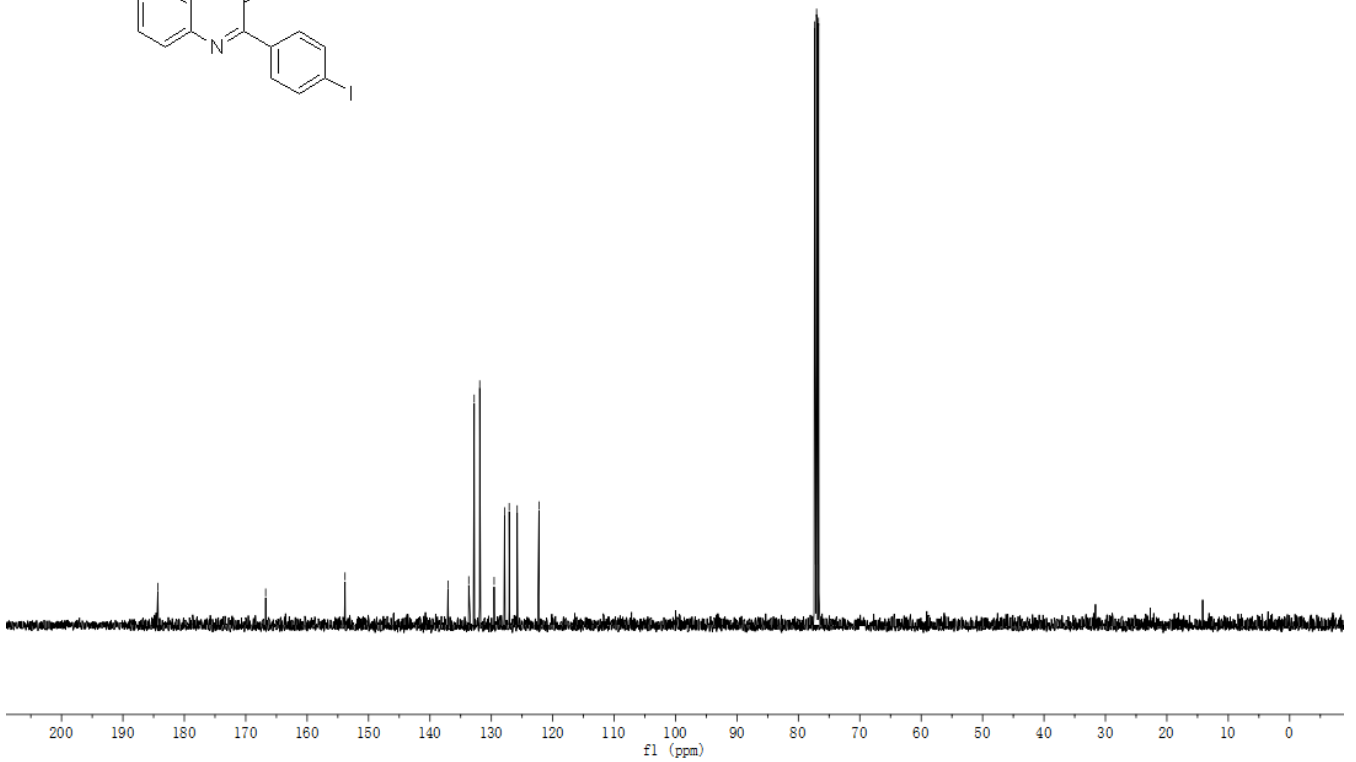
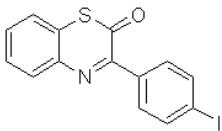


8.489
8.467
8.258
8.253
8.240
8.237
8.042
8.038
8.023
8.019
7.727
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7.624
7.611
7.607
7.593
7.590
7.587
7.569
7.565

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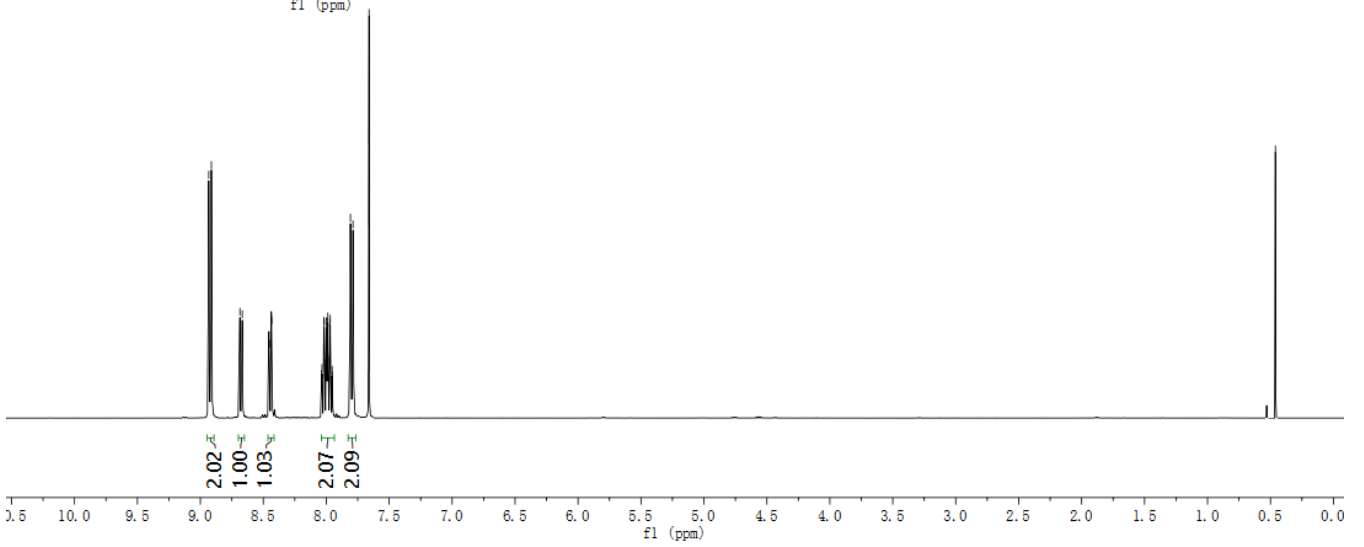
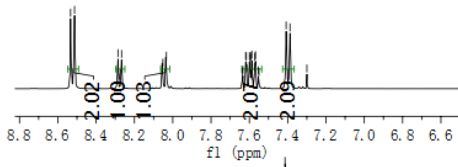


184.31
166.75
153.83
137.06
133.68
132.79
131.89
129.55
127.85
127.10
125.79
122.24
77.35
77.04
76.72



8.933
8.913
8.686
8.667
8.451
8.433
8.037
8.034
8.019
8.016
8.013
8.000
7.996
7.991
7.987
7.974
7.971
7.968
7.953
7.950
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7.788

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7.388



184.42
166.86
153.94
137.17
133.79
132.90
132.00
129.66
127.96
127.20
125.90
122.35
77.62
77.30
76.98

