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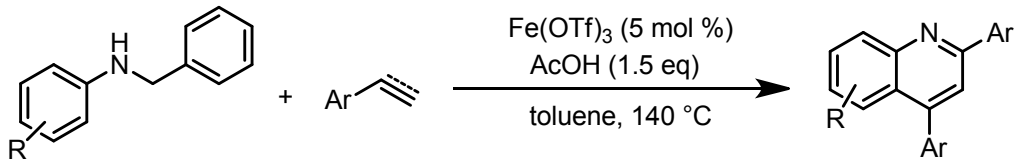
1. General Information

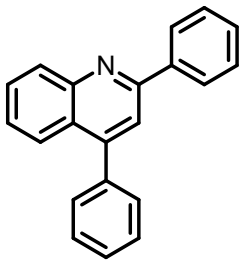
All reactions were conducted in pressure tubes under air. All solvents were received from commercial sources without further purification. Commercially available reagents were used as received. Non-commercially available substrates were synthesized following reported protocols. Thin-layer chromatography (TLC) was visualized using a combination of UV and potassium permanganate staining techniques. Silica gel (particle size 40 – 63 μm) was used for flash column chromatography. NMR spectra were recorded on Bruker AV 400 spectrometer at 400 MHz (^{1}H NMR), 100 MHz (^{13}C NMR). Proton and carbon chemical shifts are reported relative to the solvent used as an internal reference. High resolution mass spectra (HRMS) were recorded on Varian 7.0T FTICR LC/MS with Electron Spray Ionization (ESI) resource. The results of molecular docking experiments were completed using Schrödinger Suites.

2. Typical Procedure for Synthesis of 2,4-Diarylquinoline

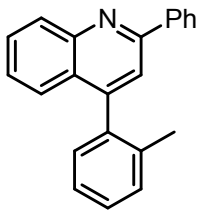


1 **2** **3**

To a 15 mL pressure tube were added N-alkyl anilines **1** (0.2 mmol), $Fe(OTf)_3$ (5.0 mg, 5.0 μmol), AcOH (18 mg, 0.3 mmol), under air, and then alkenes or alkynes (0.4 mmol) and toluene (1 mL) were added. The resulting yellow solution was stirred at 140 °C for 24 h. After the reaction was completed, the solution was cooled to room temperature, and diluted with ethyl acetate and water (2 mL). The organic phase was separated and the aqueous phase was extracted with ethyl acetate. The combined organic phases were washed with brine, dried over anhydrous Na_2SO_4, filtered and concentrated in *vacuo*. The crude product was purified by column chromatography (*n*-Hex/EtOAc = 100:1 to 20:1) to afford the desired product.

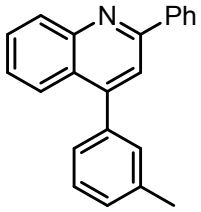


3a: 2,4-diphenylquinoline[1]. Colorless oil (46 mg, 82% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.25 (d, J = 4.0 Hz, 1H), 8.21 – 8.19 (m, 2H), 7.92 – 7.90 (m, 1H), 7.83 (s, 1H), 7.76 – 7.72 (m, 1H), 7.57 – 7.45 (m, 9H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.1, 149.3, 149.0, 139.8, 138.6, 130.3, 129.5, 129.0, 128.7, 128.6, 127.7, 126.5, 125.9, 125.8, 119.5.

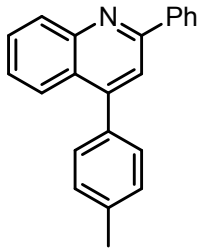


3b: 2-phenyl-4-(*o*-tolyl) quinoline[1]. Colorless oil (46 mg, 78% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.24 (d, J = 4.0 Hz, 1H), 8.21 – 8.19 (m, 2H), 7.77 (s, 1H), 7.74 –

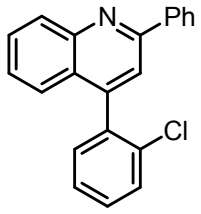
7.70 (m, 1H), 7.55 – 7.33 (m, 8H), 7.30 – 7.28 (m, 1H), 2.09 (m, 3H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.1, 149.3, 148.7, 139.8, 138.0, 136.3, 130.4, 130.2, 129.8, 129.7, 129.5, 129.0, 128.6, 127.7, 126.5, 126.5, 126.0, 125.9, 119.6, 20.2.



3c: 2-phenyl-4-(*m*-tolyl) quinoline[2]. Colorless oil (48 mg, 81% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.24 (d, J = 4.0 Hz, 1H), 8.20 – 8.18 (m, 2H), 7.92 (d, J = 4.0 Hz, 1H), 7.81 (s, 1H), 7.75 – 7.71 (m, 1H), 7.54 – 7.42 (m, 5H), 7.37 – 7.31 (m, 3H), 2.47 (m, 3H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.0, 149.5, 148.9, 139.9, 138.5, 138.5, 130.4, 130.2, 129.6, 129.5, 129.3, 129.0, 128.6, 127.7, 126.8, 126.4, 126.0, 125.9, 119.5, 21.7.

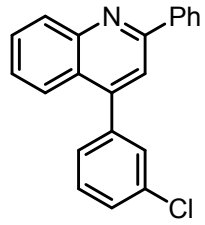


3d: 2-phenyl-4-(*p*-tolyl) quinoline[3]. Colorless oil (54 mg, 92% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.26 (d, J = 4.0 Hz, 1H), 8.21 – 8.19 (m, 2H), 7.96 – 7.94 (m, 1H), 7.82 (s, 1H), 7.76 – 7.72 (m, 1H), 7.56 – 7.46 (m, 6H), 7.38 – 7.36 (m, 2H), 2.49 (s, 3H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.1, 149.4, 149.0, 139.9, 138.5, 135.6, 130.2, 129.6, 129.6, 129.4, 129.0, 127.7, 126.4, 126.0, 125.9, 119.5, 21.5.

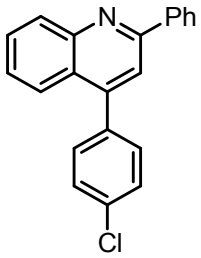


3e: 4-(2-chlorophenyl)-2-phenylquinoline[1]. Colorless oil (61 mg, 96% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.25 (d, J = 4.0 Hz, 1H), 8.21 – 8.19 (m, 2H), 7.81 (s, 1H), 7.76 – 7.71 (m, 1H), 7.60 – 7.58 (m, 1H), 7.55 – 7.39 (m, 8H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.0, 148.6, 146.7, 139.7, 137.2, 133.5, 132.0, 131.6, 131.3, 130.0, 130.0,

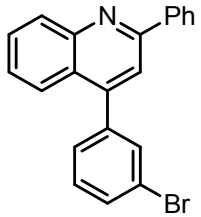
129.8, 129.6, 129.0, 127.8, 127.7, 126.6, 125.9, 125.7, 120.0.



3f: 4-(3-chlorophenyl)-2-phenylquinoline. Colorless oil (45 mg, 72% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.25 (d, J = 4.0 Hz, 1H), 8.20 – 8.18 (m, 2H), 7.85 (d, J = 4.0 Hz, 1H), 7.80 (s, 1H), 7.77 – 7.73 (m, 1H), 7.57 – 7.43 (m, 8H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.0, 148.9, 147.7, 140.3, 139.6, 134.8, 130.4, 130.0, 129.9, 129.7, 129.6, 129.0, 128.7, 127.9, 127.7, 126.8, 125.6, 125.4, 119.4; HRMS (ESI-TOF) m/z Calcd for $C_{21}H_{14}ClN$ $[M+H]^+$ 316.0893, Found 316.0882.

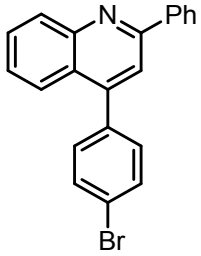


3g: 4-(4-chlorophenyl)-2-phenylquinoline[2]. Colorless oil (44 mg, 69% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.24 (d, J = 4.0 Hz, 1H), 8.20 – 8.18 (m, 2H), 7.95 – 7.93 (m, 1H), 7.81 (s, 1H), 7.75 – 7.71 (m, 1H), 7.55 – 7.45 (m, 6H), 7.38 – 7.36 (m, 2H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.1, 149.0, 148.0, 139.6, 137.0, 134.8, 131.0, 130.4,129.8, 129.6, 129.0, 127.7, 126.7, 125.7, 125.4, 119.4.

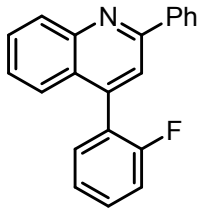


3h: 4-(3-bromophenyl)-2-phenylquinoline. Colorless oil (56 mg, 78% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.25 (d, J = 4.0 Hz, 1H), 8.19 – 8.17 (m, 2H), 7.84 (d, J = 4.0 Hz, 1H), 7.78 (s, 1H), 7.76 – 7.72 (m, 1H), 7.69 – 7.67 (m, 2H), 7.55 – 7.42 (m, 6H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.1, 149.0, 148.0, 139.6, 137.4, 132.0, 131.3, 130.4, 129.8, 129.6, 129.0, 127.7, 126.7, 125.6, 125.4, 123.0, 119.3; HRMS (ESI-

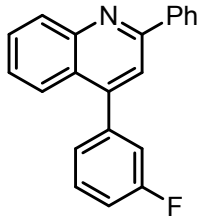
TOF) m/z Calcd for C21H15BrN $[M+H]^+$ 360.0.368, Found 360.0376.



3i: 4-(4-bromophenyl)-2-phenylquinoline[3]. Colorless oil (51 mg, 71% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.25 (d, J = 4.0 Hz, 1H), 8.20 – 8.18 (m, 2H), 7.85 (d, J = 4.0 Hz, 1H), 7.79 (s, 1H), 7.77 – 7.73 (m, 1H), 7.55 – 7.46 (m, 8H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.0, 148.8, 147.9, 139.5, 137.3, 131.9, 131.2, 130.3, 129.7, 129.5, 128.9, 127.6, 126.6, 125.5, 125.3, 122.8, 119.2.

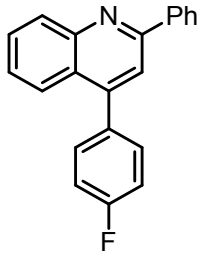


3j: 4-(2-fluorophenyl)-2-phenylquinoline. Colorless oil (37 mg, 61% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.25 (d, J = 4.0 Hz, 1H), 8.20 – 8.18 (m, 2H), 7.85 (s, 1H), 7.77 – 7.68 (m, 2H), 7.56 – 7.45 (m, 6H), 7.36 – 7.28 (m, 2H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 161.1, 158.6, 157.0, 148.7, 143.4, 139.7, 131.9 (d, $J_{C\text{-}F}$ = 3.0 Hz), 130.7 (d, $J_{C\text{-}F}$ = 4.0 Hz), 130.3, 129.8, 129.6, 129.0, 127.8, 126.7, 126.0, 125.6, 124.5 (d, $J_{C\text{-}F}$ = 2.0 Hz), 120.4, 116.1 (d, $J_{C\text{-}F}$ = 22.0 Hz); HRMS (ESI-TOF) m/z Calcd for $C_{21}H_{14}FN$ $[M+H]^+$ 300.1189, Found 300.1179.

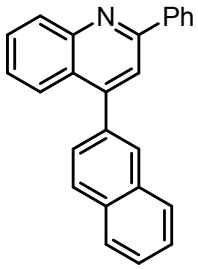


3k: 4-(3-fluorophenyl)-2-phenylquinoline. Colorless oil (35 mg, 59% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.26 (d, J = 6.0 Hz, 1H), 8.21 – 8.19 (m, 2H), 7.88 (d, J = 4.0 Hz, 1H), 7.81 (s, 1H), 7.77 – 7.73 (m, 1H), 7.56 – 7.46 (m, 5H), 7.36 – 7.34 (m, 1H), 7.30 – 7.27 (m, 1H), 7.24 – 7.20 (m, 1H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 164.2, 161.7,

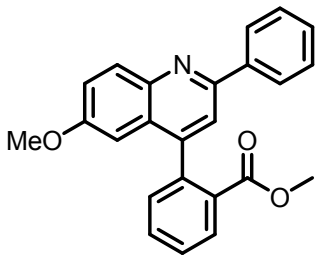
157.1, 149.0, 147.9, 140.7, 139.6, 130.4, 130.4, 130.3, 129.7 (d, $J_{C\text{-}F}$ = 24.0 Hz), 129.0, 127.7, 126.8, 125.6, 125.5 (d, $J_{C\text{-}F}$ = 8.0 Hz), 125.4, 119.4, 116.8 (d, $J_{C\text{-}F}$ = 22.0 Hz), 115.5 (d, $J_{C\text{-}F}$ = 21.0 Hz); HRMS (ESI-TOF) m/z Calcd for $C_{21}H_{14}FN$ $[M+H]^+$ 300.1189, Found 300.1179.



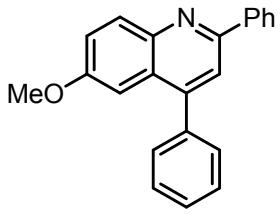
3l: 4-(4-fluorophenyl)-2-phenylquinoline[1]. Colorless oil (57 mg, 96% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.25 (d, J = 4.0 Hz, 1H), 8.21 – 8.18 (m, 2H), 7.87 – 7.85 (m, 1H), 7.80 (s, 1H), 7.74-7.73 (m, 1H), 7.56 – 7.46 (m, 6H), 7.28 – 7.23 (m, 2H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.1, 149.0, 148.0, 139.6, 137.0, 134.8, 131.0, 130.4, 129.8, 129.6, 129.0, 127.7, 126.7, 125.7, 125.4, 119.4.



3m: 4-(naphthalen-2-yl)-2-phenylquinoline. Colorless oil (41 mg, 62% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.28 (d, J = 4.0 Hz, 1H), 8.23 – 8.20 (m, 2H), 8.05 – 8.01 (m, 2H), 7.98 – 7.92 (m, 4H), 7.78 – 7.73 (m, 1H), 7.70 – 7.68 (m, 1H), 7.61 – 7.45 (m, 6H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.0, 149.2, 148.8, 139.7, 135.9, 133.3, 133.0, 130.2, 129.6, 129.4, 128.9, 128.7, 128.2, 128.2, 127.8, 127.6, 127.4, 126.7, 126.7, 126.4, 125.9, 125.7, 119.7; HRMS (ESI-TOF) m/z Calcd for $C_{25}H_{18}N$ $[M+H]^+$ 332.1439, Found 332.1427.

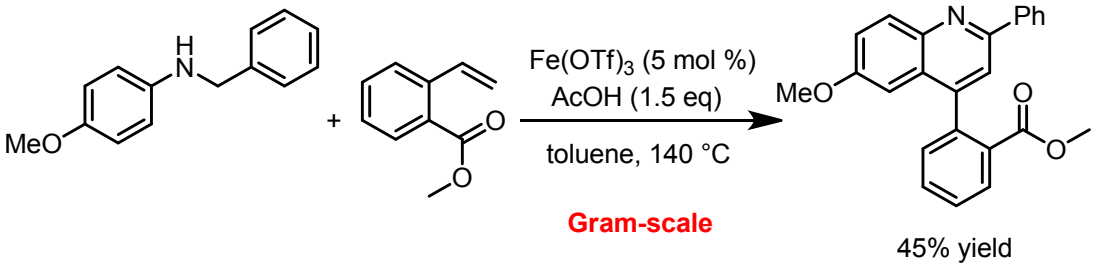


3n: methyl 2-(6-methoxy-2-phenylquinolin-4-yl)benzoate. Colorless oil (41 mg, 56% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.17 – 8.15 (m, 2H), 8.11 – 8.09 (m, 1H), 7.68 – 7.63 (m, 1H), 7.60 (s, 1H), 7.58 – 7.40 (m, 6H), 7.37 – 7.35 (m, 1H), 7.08 – 7.04 (m, 1H), 3.99 (s, 3H), 2.42 (s, 3H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 167.4, 160.6, 157.0, 149.9, 149.1, 139.8, 139.2, 132.0, 131.2, 130.9, 130.5, 129.2, 128.8, 128.5, 127.6, 126.3, 121.4, 119.4, 116.7, 107.9, 55.6, 52.0. HRMS (ESI-TOF) m/z Calcd for $C_{24}H_{19}NO_3$ $[M+H]^+$ 370.1436, Found 370.1443.



3o: 6-methoxy-2,4-diphenylquinoline[1]. Colorless oil (49 mg, 79% yield). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.17 – 8.14 (m, 3H), 7.78 (s, 1H), 7.60 – 7.50 (m, 7H), 7.46 – 7.39 (m, 2H), 7.20 (d, J = 2.0 Hz, 1H), 3.81 (s, 3H); ^{13}C NMR (100 MHz, $CDCl_3$) δ 157.8, 154.6, 147.9, 144.9, 139.7, 138.7, 131.6, 129.4, 129.0, 128.8, 128.7, 128.4, 127.3, 126.7, 121.8, 119.7, 103.7, 55.5.

3. Gram-scale Synthesis



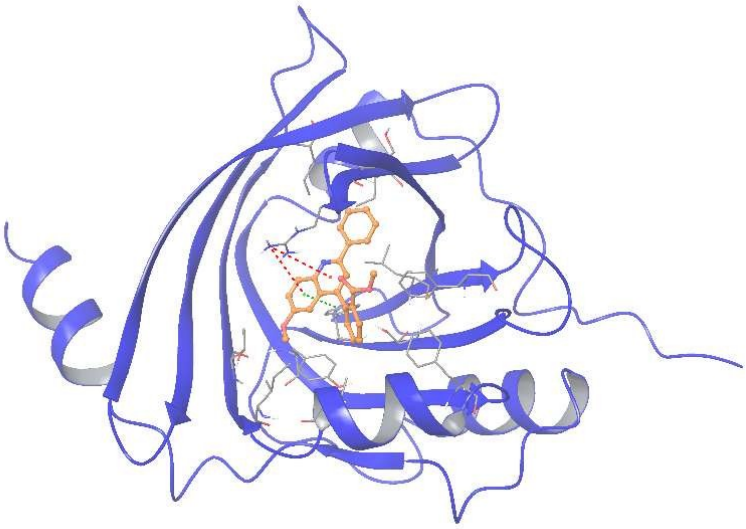
According to the typical procedure: To a 250 mL pressure tube were added *N*-benzyl-4-methoxyaniline (1.28 g, 6 mmol), $Fe(OTf)_3$ (150.9 mg, 300 μmol), and AcOH (720.6 mg, 12 mmol) under air. Then styrene (1.95 g, 12 mmol) and toluene

(50 mL) were added under air and this resulting yellow solution was stirred at 140 °C for 24 h. After column purification (*n*-Hex/EtOAc = 100:1 to 20:1), coupling product was obtained (1.0 g, 45% yield).

4. Molecular Docking Studies

P02763:

Functions as transport protein in the blood stream. Binds various ligands in the interior of its beta-barrel domain. Also binds synthetic drugs and influences their distribution and availability in the body. Appears to function in modulating the activity of the immune system during the acute-phase reaction.



Green: π-π interaction

Red： π-cation interaction

5. Zebrafish Experiments

At 6 hpf, embryos were screened under anatomical microscope to remove the morphologically abnormal individuals. Around 10 healthy embryos were loaded into each well of 96-well plate in E3 solution. At the setting time, E3 solutions were replaced with different **3n** treatment solutions. The control and treated groups were analyzed at different intervals. At 55 hpf, the *Tg(fli1a:nEGFP)* zebrafish embryos were collected for imaging. At 55 hpf, for confocal imaging embryos were

anesthetized with E3/0.16 mg/mL tricaine/1% 1-phenyl-2-thiourea (Sigma) and embedded in 0.8% low melt agarose. Confocal imaging was performed with a Leica TCS-SP8 LSM. Analysis was performed using Imaris software.

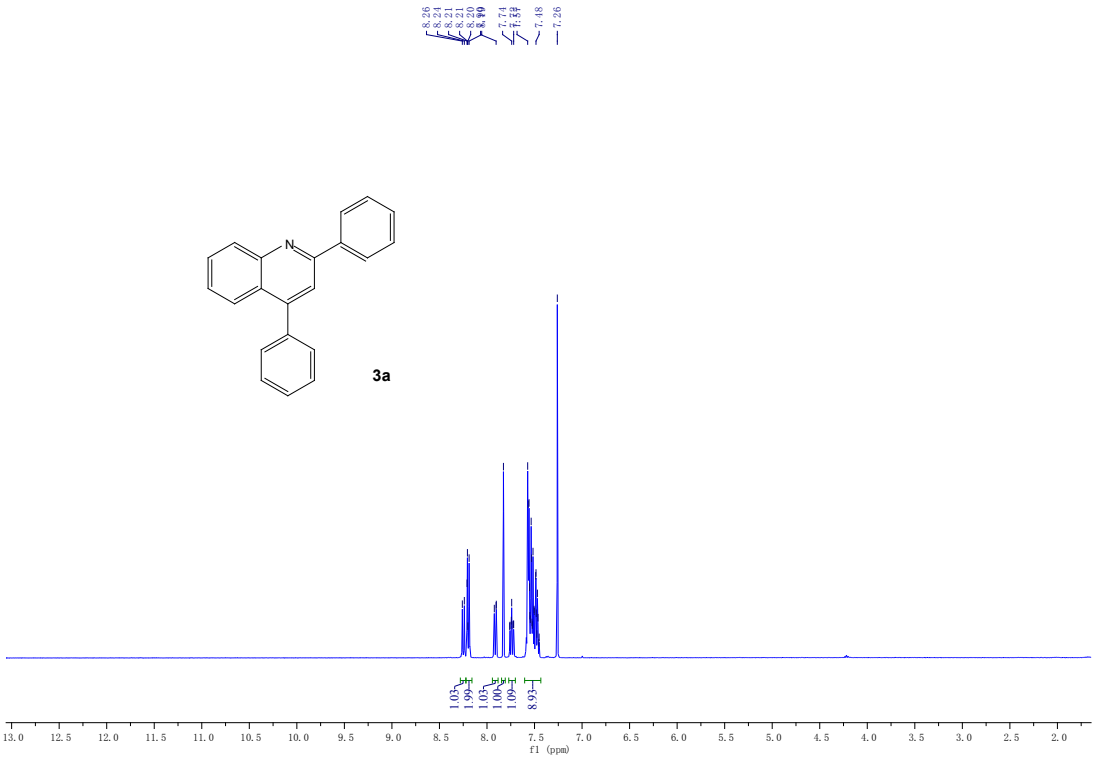
References

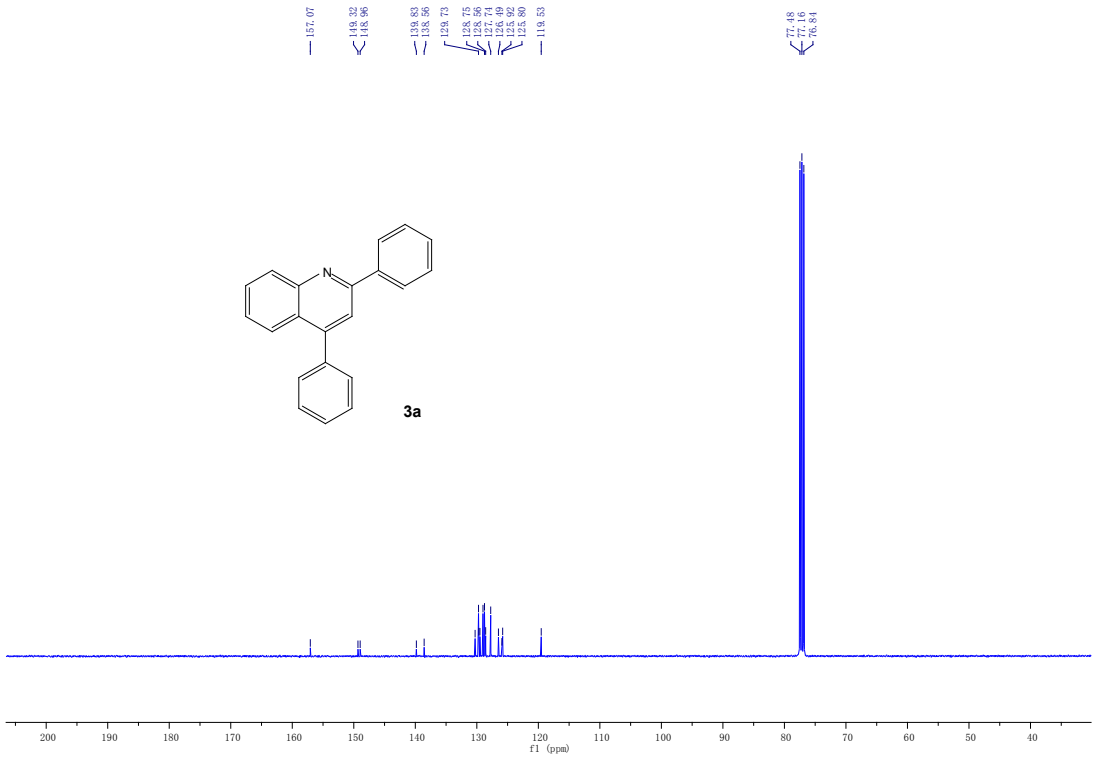
[1]. J. Zhu, W. Hu, S. Sun, J.-T. Yu, J. Cheng, *Adv. Synth. Catal.* **2017**, *359*, 3725.

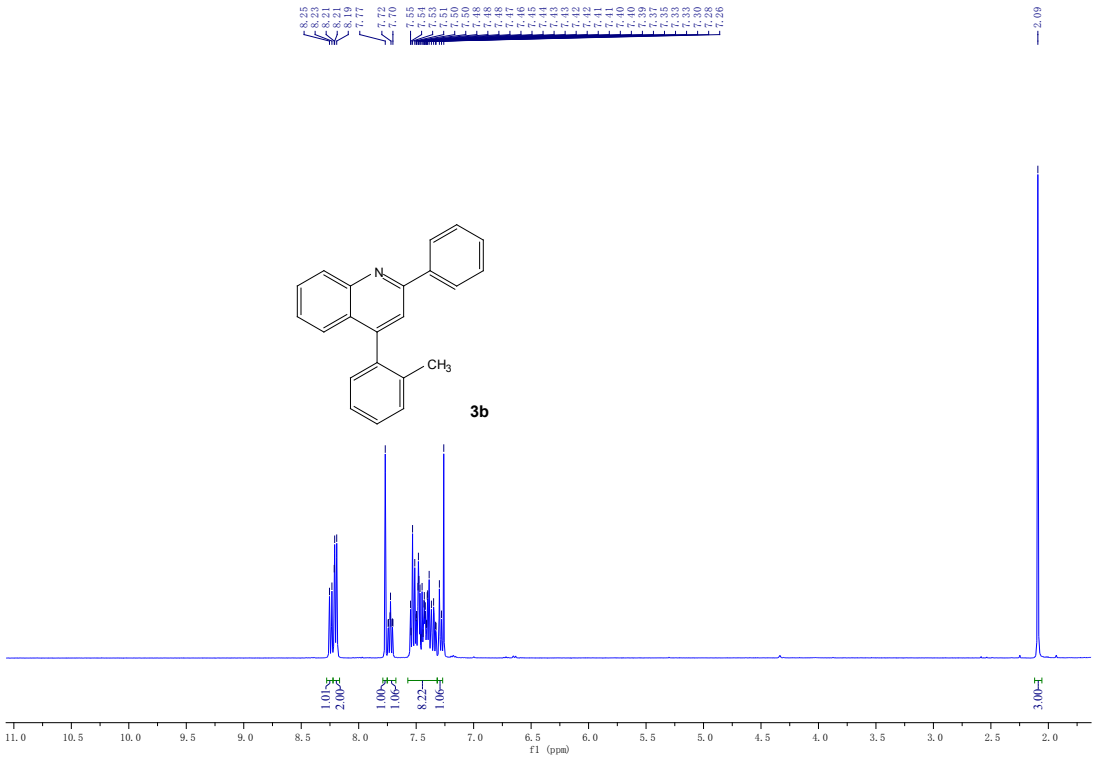
[2]. K. Sapkota, S.-S. Han, *New J. Chem*. **2017**, *41*, 5395.

[3]. Z. Zhang, H. Du, *Org. Lett*. **2015**, *17*, 6266.

6. NMR Spectra


8.26
8.24
8.21
8.21
8.20
8.19
7.74
7.73
7.54
7.54
7.48
7.26
N
3a
1.03
1.99
1.03
1.00
1.09
8.93
13.0 12.5 12.0 11.5 11.0 10.5 10.0 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
f1 (ppm)


157.07
149.32
148.96
139.83
138.56
129.73
128.75
128.56
127.74
126.49
125.92
125.80
119.53
77.48
77.16
76.84
N
3a
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40
f1 (ppm)


8.25
8.23
8.21
8.21
8.19
7.77
7.72
7.70
7.55
7.54
7.53
7.51
7.50
7.48
7.48
7.47
7.46
7.45
7.44
7.43
7.43
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7.42
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7.41
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7.39
7.37
7.35
7.33
7.30
7.28
7.26
2.09
N
CH3
3b
1.01
2.00
1.00
1.06
8.22
1.06
3.00
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
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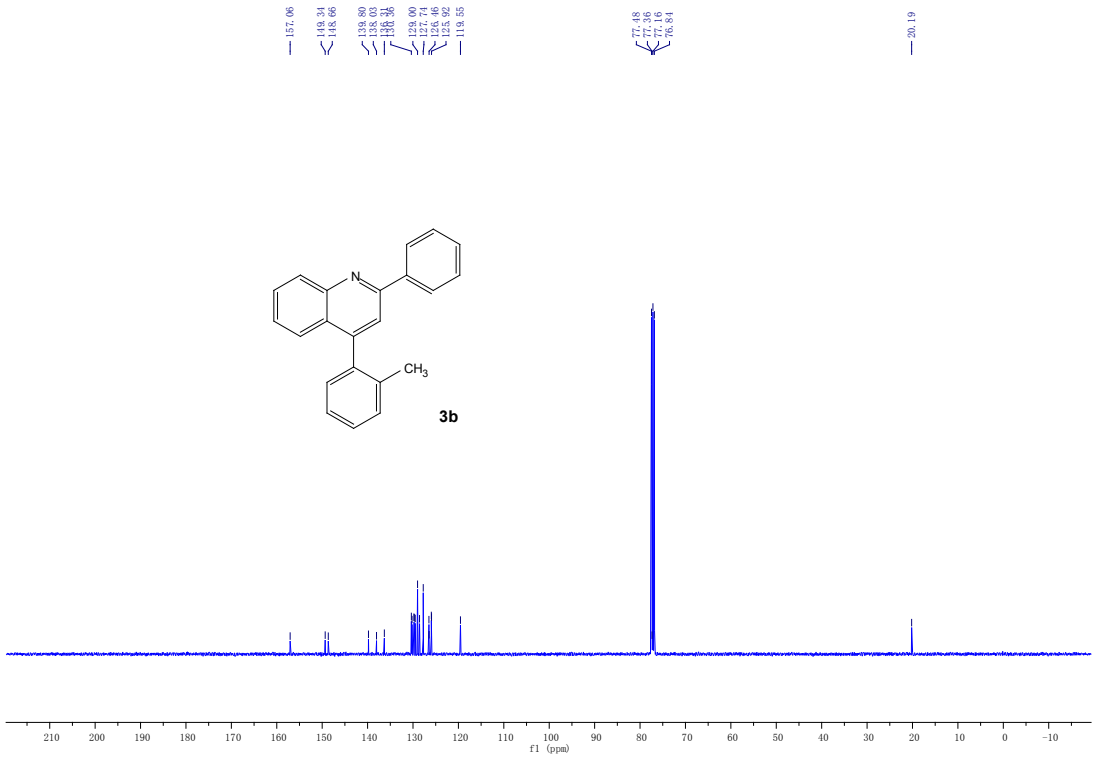
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125.92
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77.36
77.16
76.84
20.19
N
CH3
3b
210
200
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180
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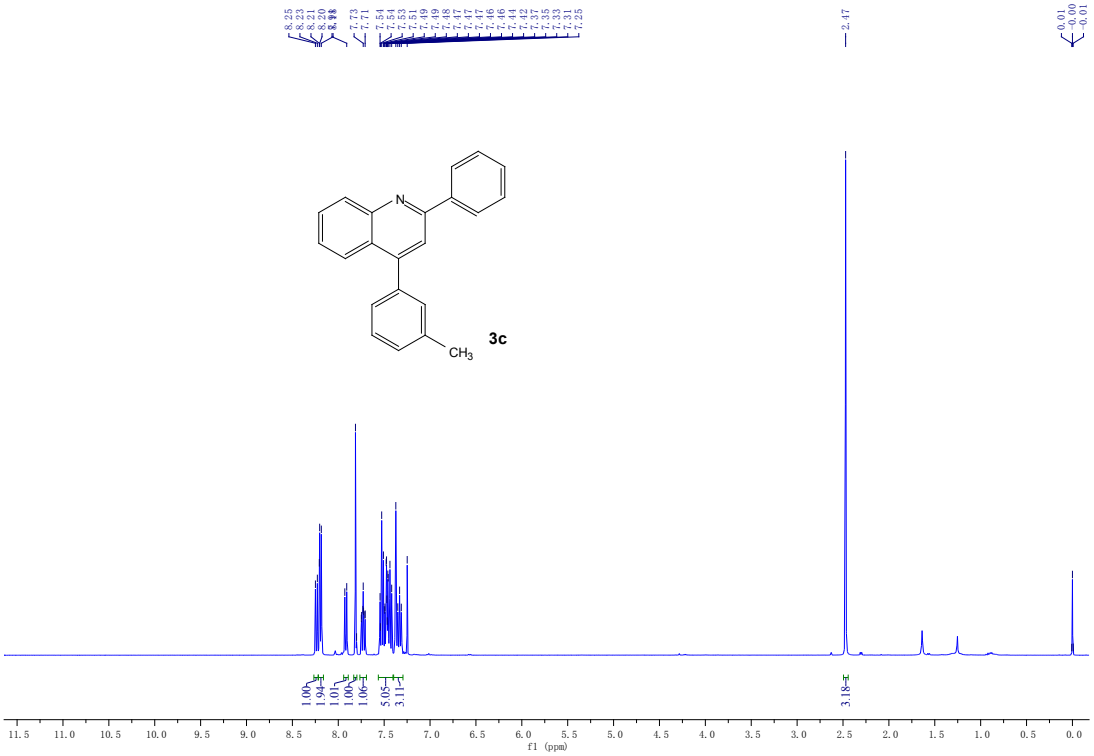
f1 (ppm)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7.47
7.47
7.46
7.46
7.44
7.42
7.37
7.35
7.33
7.31
7.25
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0.00
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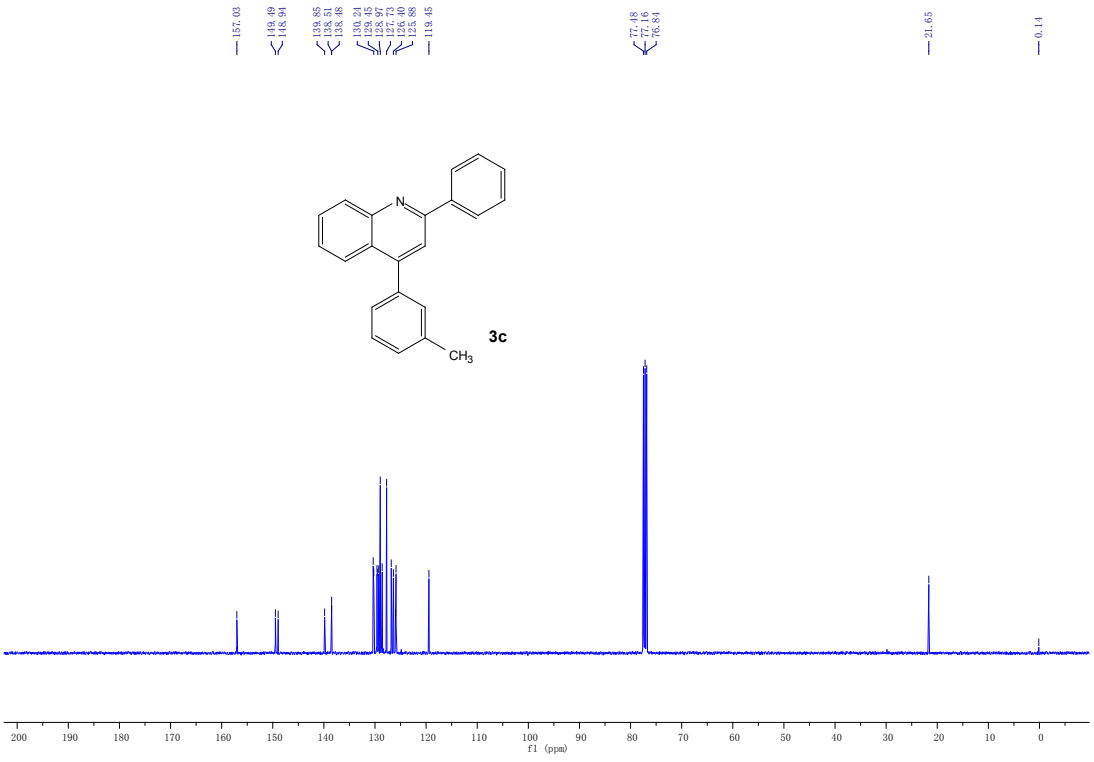
3.18
f1 (ppm)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77.16
76.84
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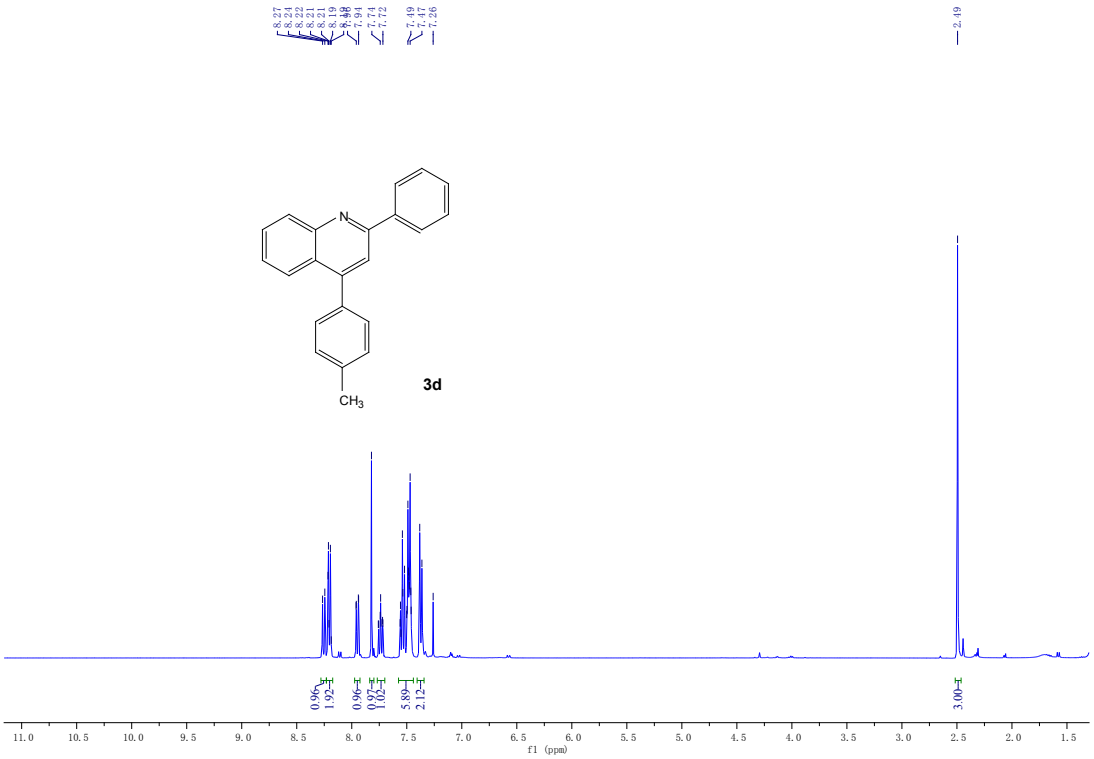
0.14
3c
CH3
f1 (ppm)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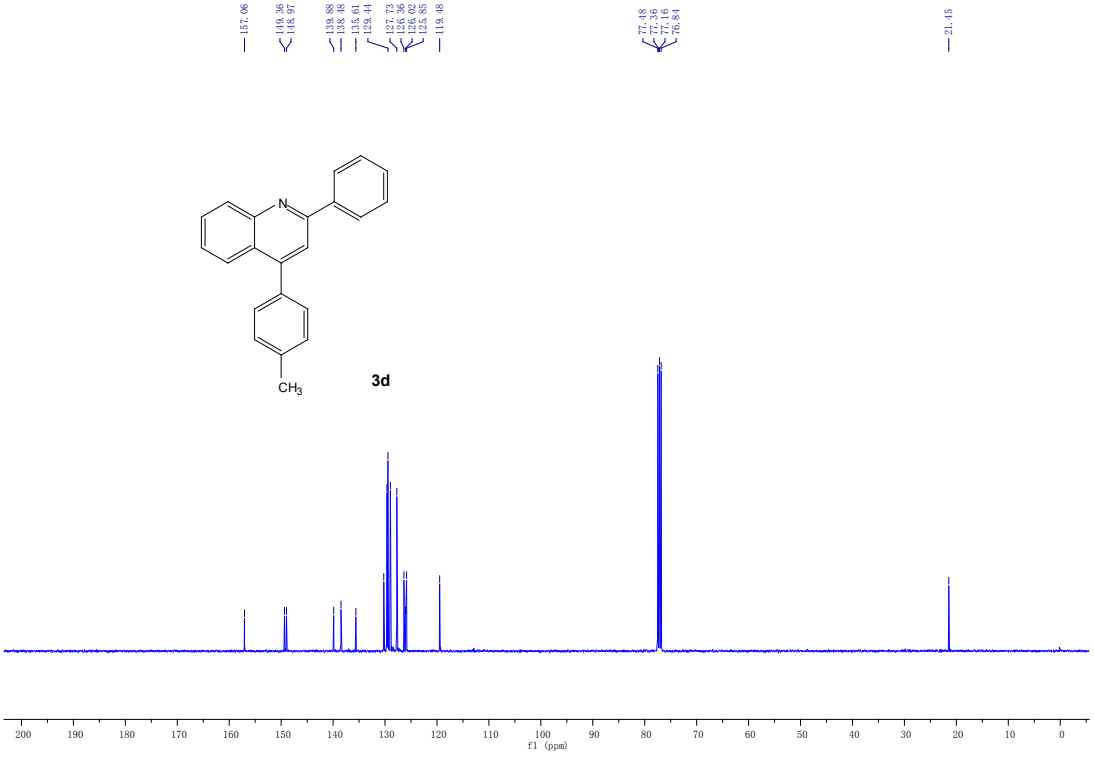
f1 (ppm)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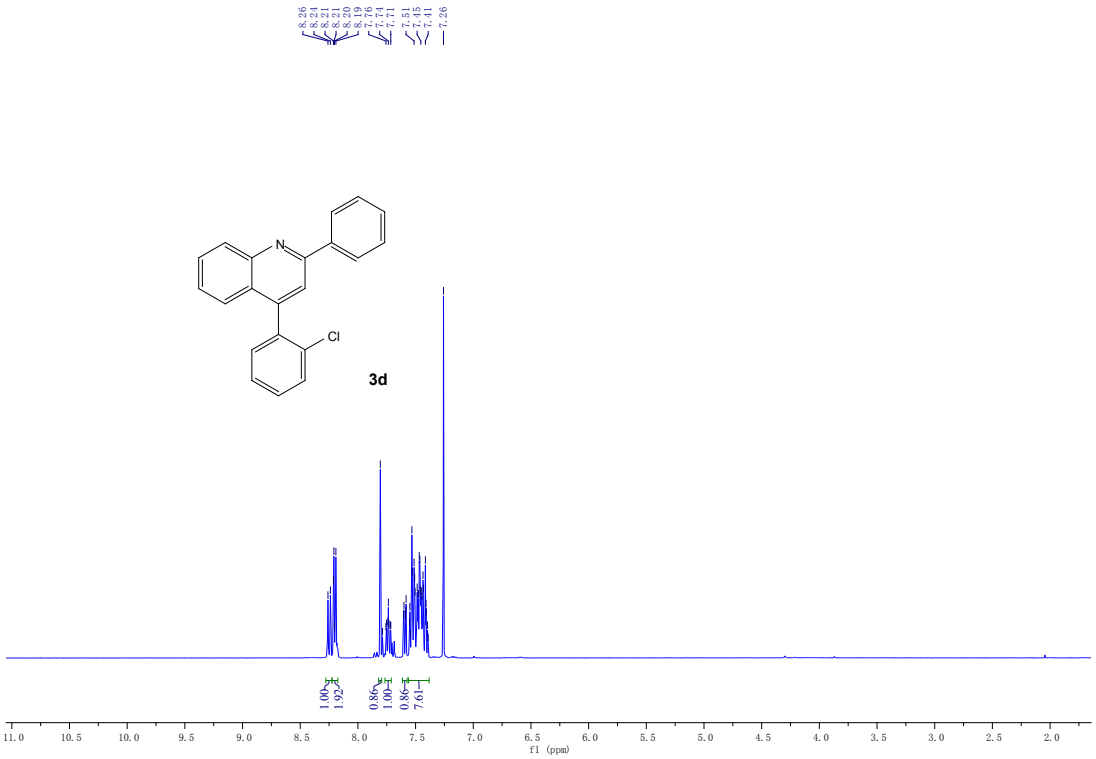
77.36
77.16
76.84
21.45
N
CH3
3d
f1 (ppm)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7.51
7.45
7.41
7.26
N
Cl
3d
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1.92
0.86
1.00
0.86
7.61
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
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2.5
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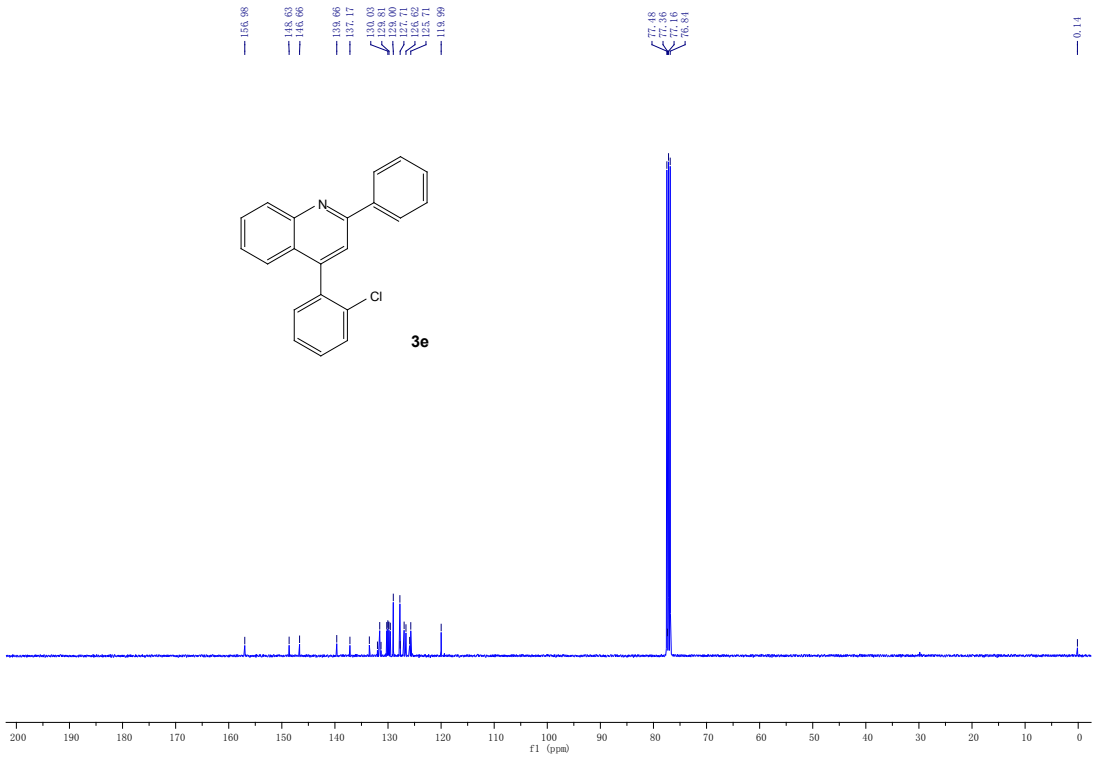
f1 (ppm)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77.48
77.36
77.16
76.84
0.14
N
Cl
3e
200
190
180
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150
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130
120
110
100
90
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50
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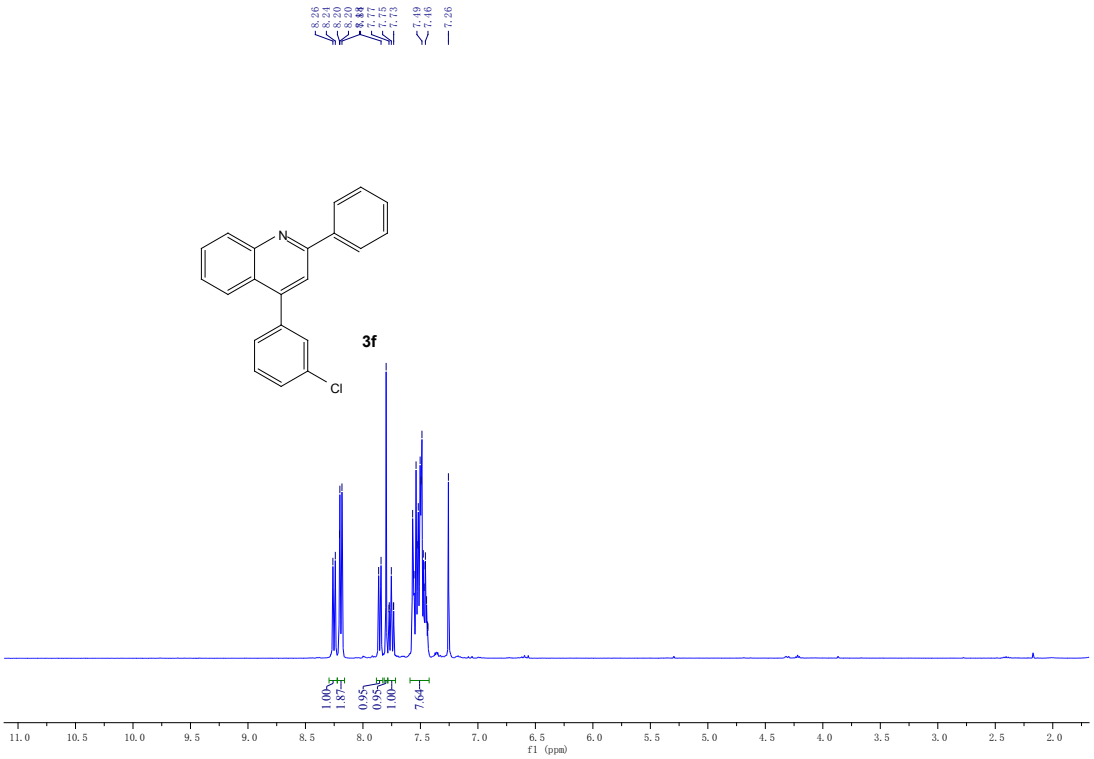
f1 (ppm)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8.20
7.77
7.75
7.73
7.49
7.46
7.26
N
Cl
3f
1.00
1.87
0.95
0.95
1.00
7.64
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
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5.0
4.5
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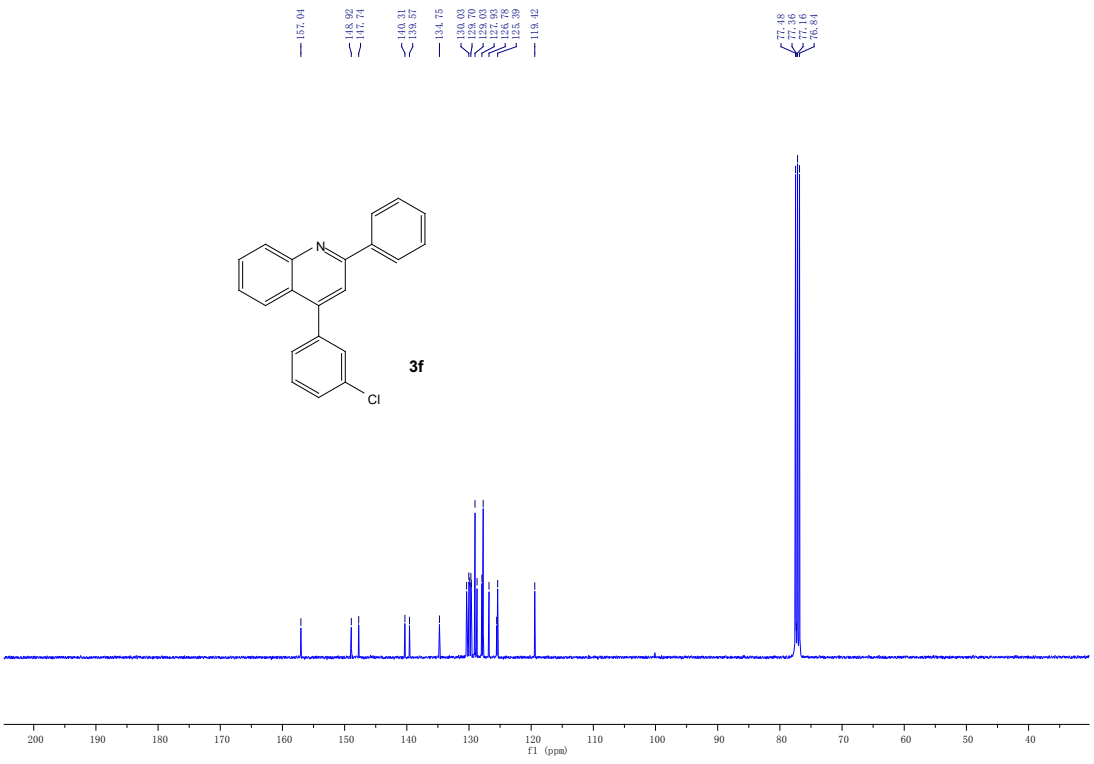
3.0
2.5
2.0
f1 (ppm)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130.03
129.70
129.03
127.93
126.78
125.39
119.42
77.48
77.36
77.16
76.84
N
Cl
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160
150
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130
120
110
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90
80
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50
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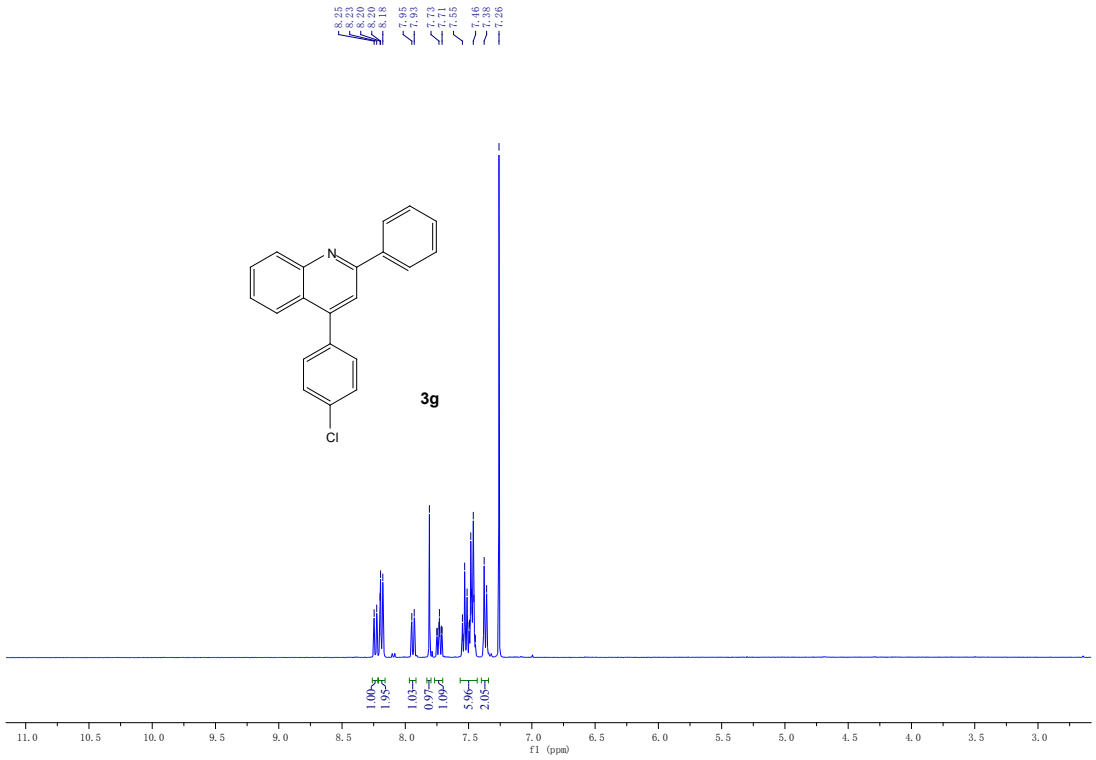
f1 (ppm)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8.19
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7.95
7.93
7.73
7.71
7.55
7.46
7.38
7.26
N
Cl
3g
1.00
1.95
1.03
0.97
1.09
5.96
2.05
11.0
10.5
10.0
9.5
9.0
8.5
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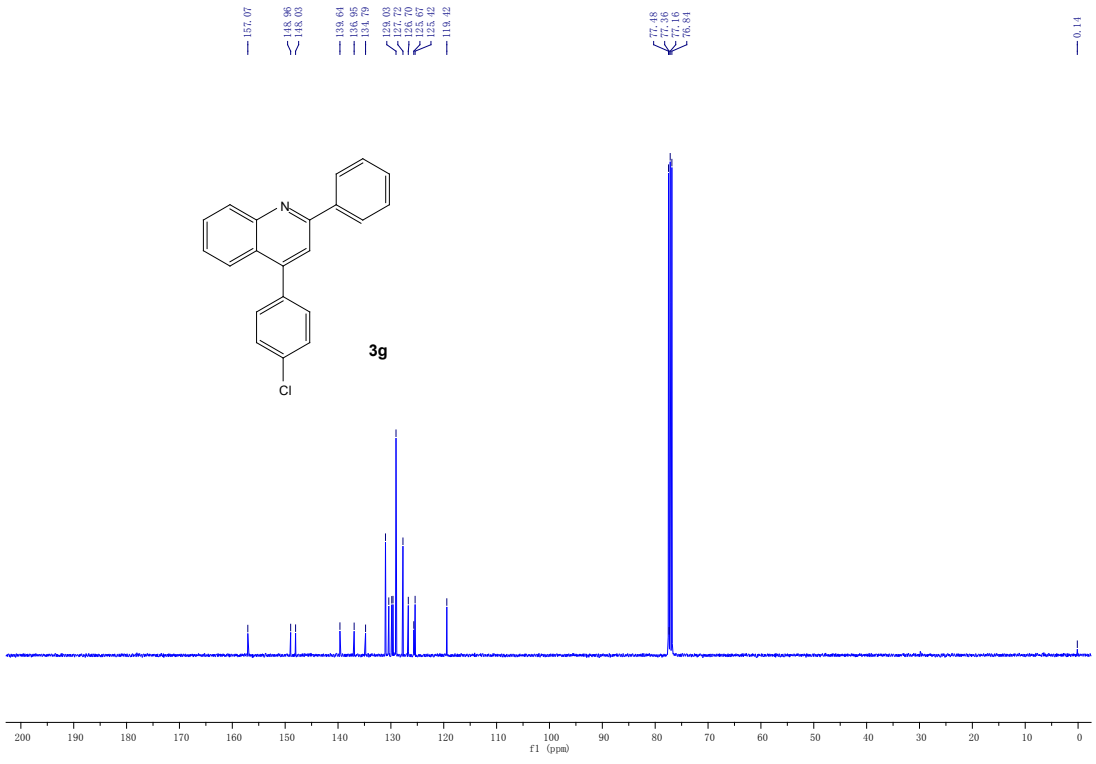
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
f1 (ppm)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139.64
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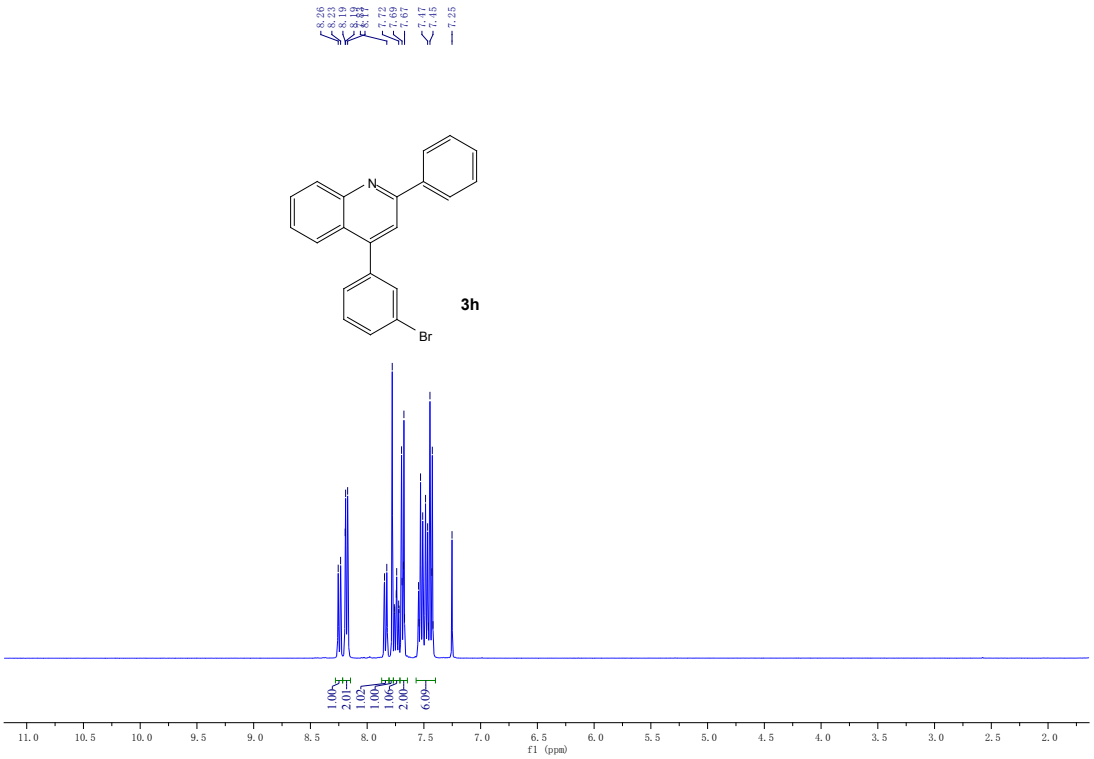
127.72
126.70
125.67
125.42
119.42
77.48
77.16
76.84
0.14
N
Cl
3g
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)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7.25
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Br
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2.01
1.02
1.00
1.06
2.00
6.09
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
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4.5
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3.0
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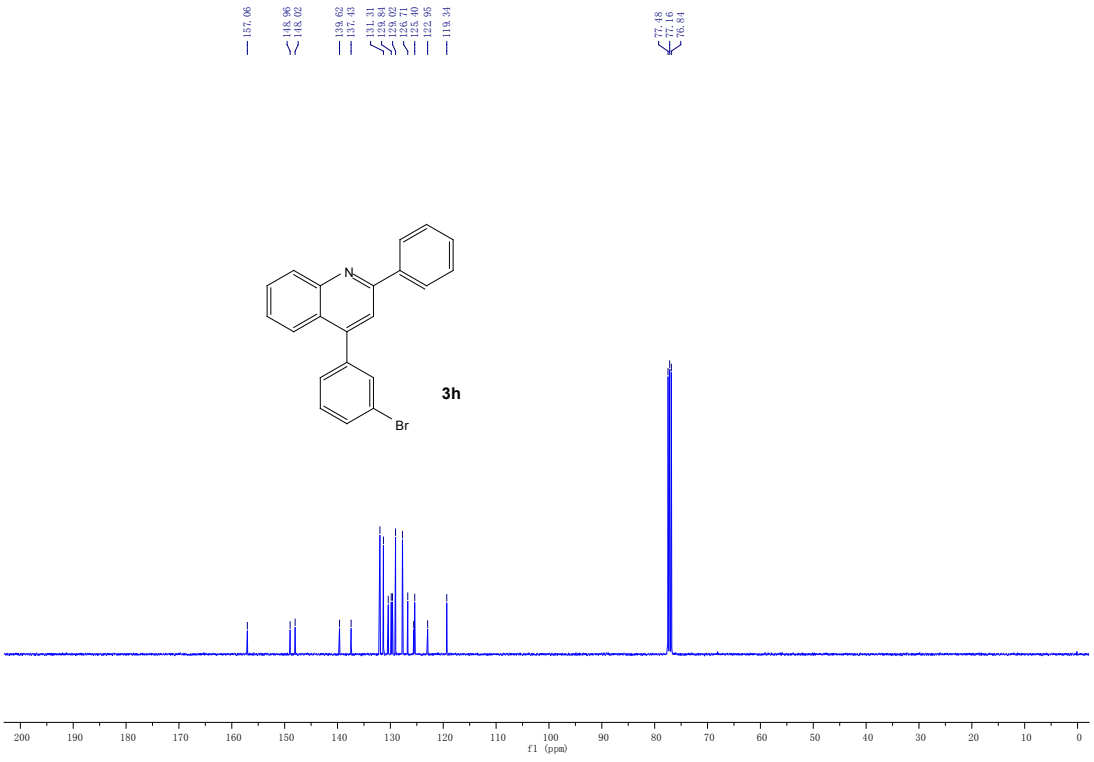
2.0
f1 (ppm)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129.02
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125.40
122.95
119.34
77.48
77.16
76.84
N
Br
3h
200
190
180
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130
120
110
100
90
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50
40
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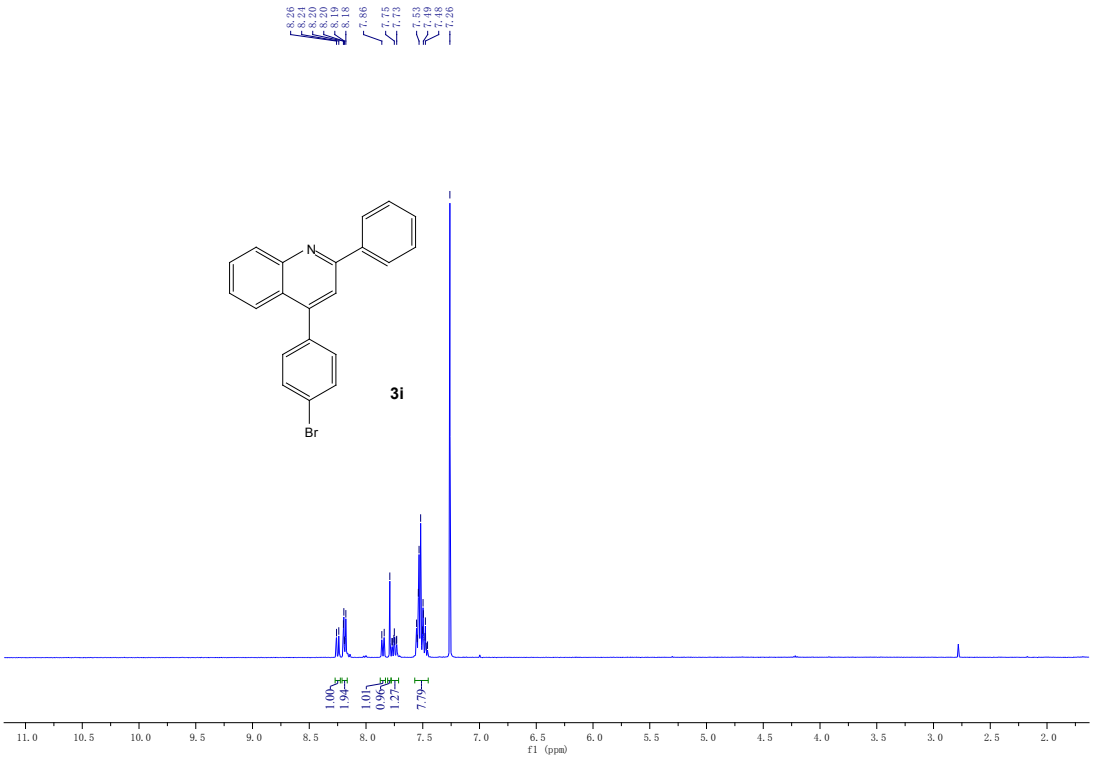
20
10
0
f1 (ppm)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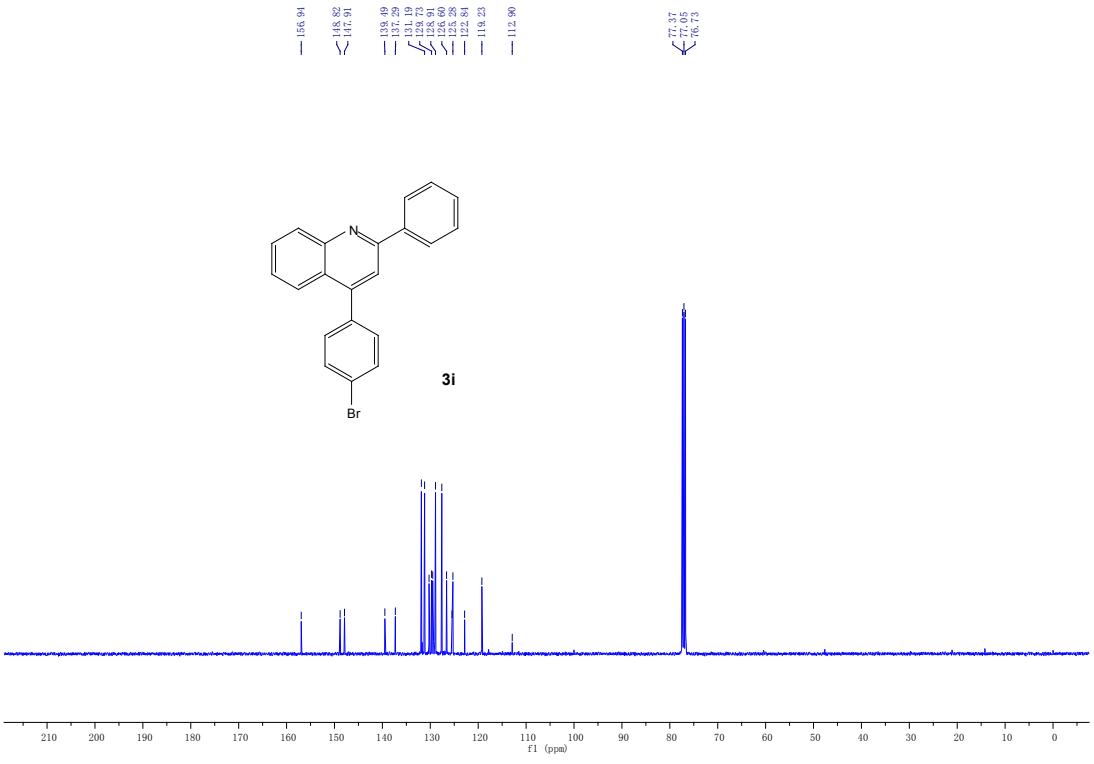
7.26
N
Br
3i
1.00
1.94
1.01
0.96
1.27
7.79
11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0
f1 (ppm)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122.84
119.23
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N
Br
3i
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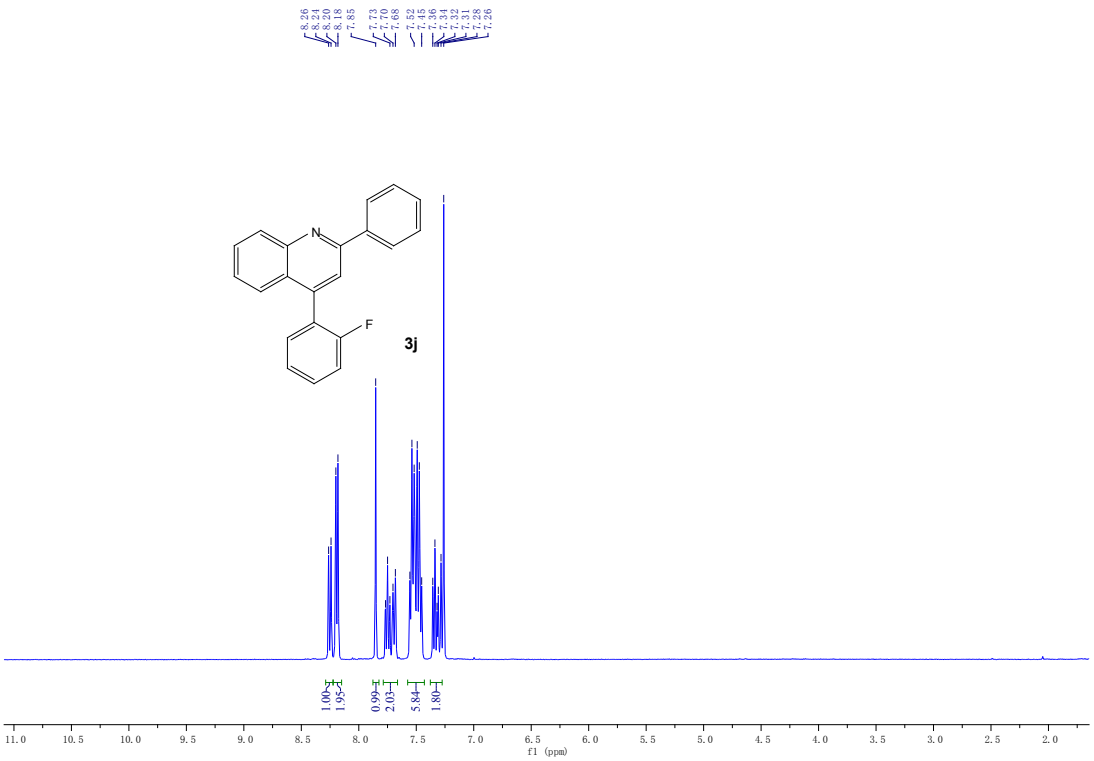
f1 (ppm)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7.32
7.31
7.28
7.26
N
F
3j
1.00
1.95
0.99
2.03
5.84
1.80
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
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5.5
5.0
4.5
4.0
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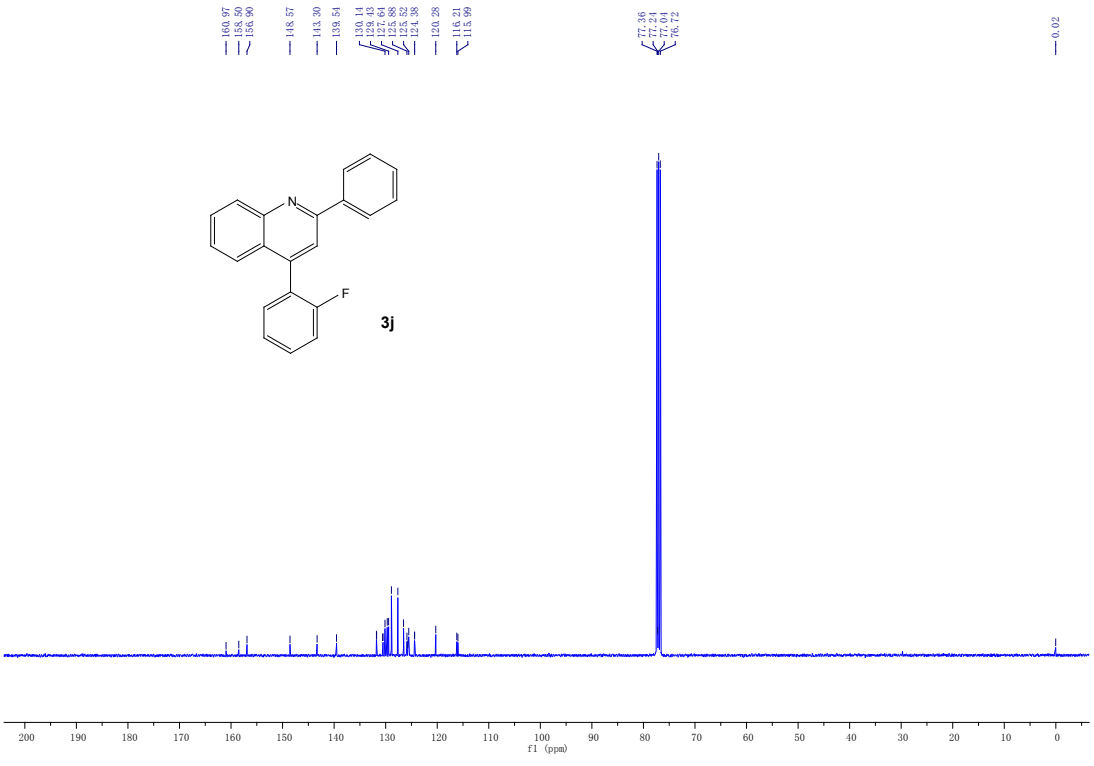
3.0
2.5
2.0
f1 (ppm)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125.88
125.52
124.38
120.28
116.21
115.99
77.36
77.24
77.04
76.72
0.02
N
F
3j
200
190
180
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130
120
110
100
90
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50
40
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10
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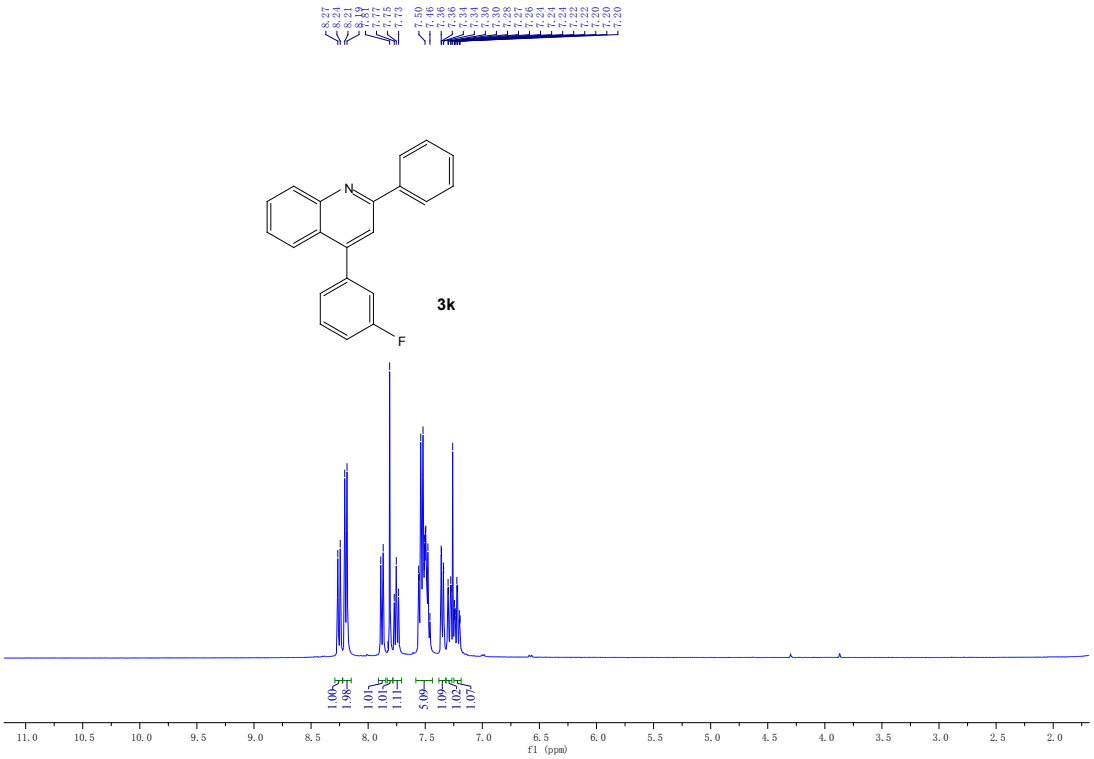
f1 (ppm)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7.28
7.27
7.26
7.24
7.24
7.24
7.22
7.20
7.20
7.20
N
F
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1.01
1.01
1.11
5.09
1.09
1.02
1.07
11.0
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10.0
9.5
9.0
8.5
8.0
7.5
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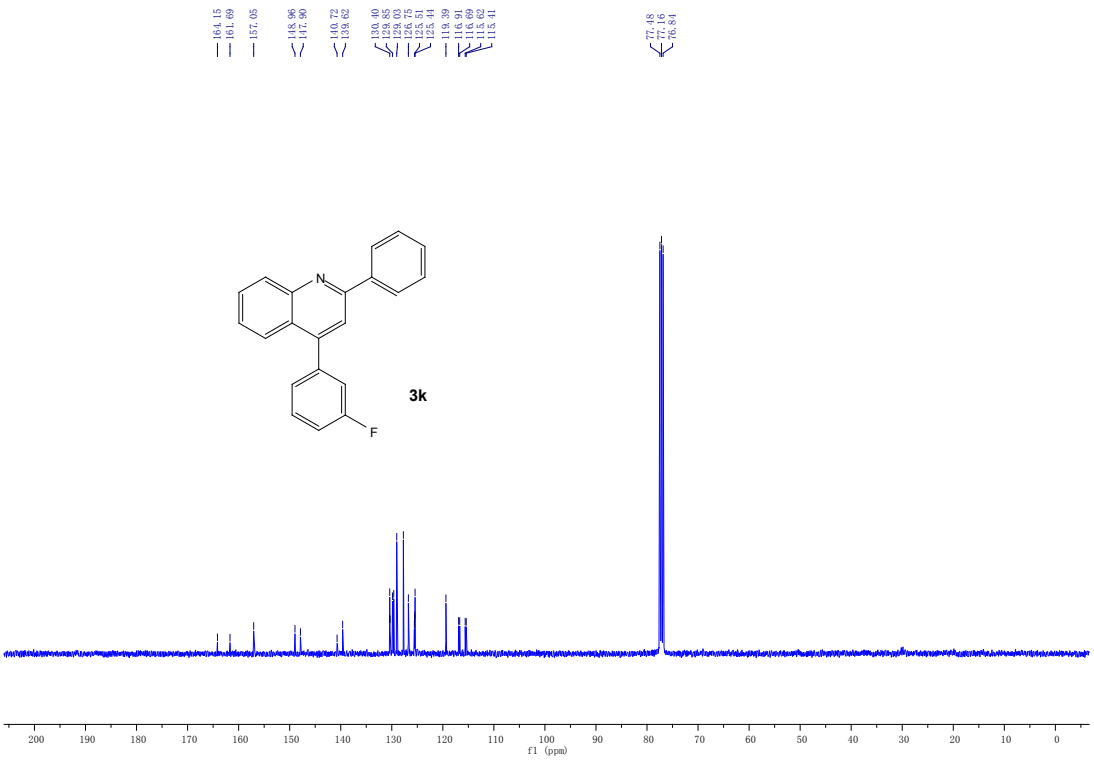
f1 (ppm)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119.39
116.91
116.69
115.62
115.41
77.48
77.16
76.84
N
F
3k
200
190
180
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50
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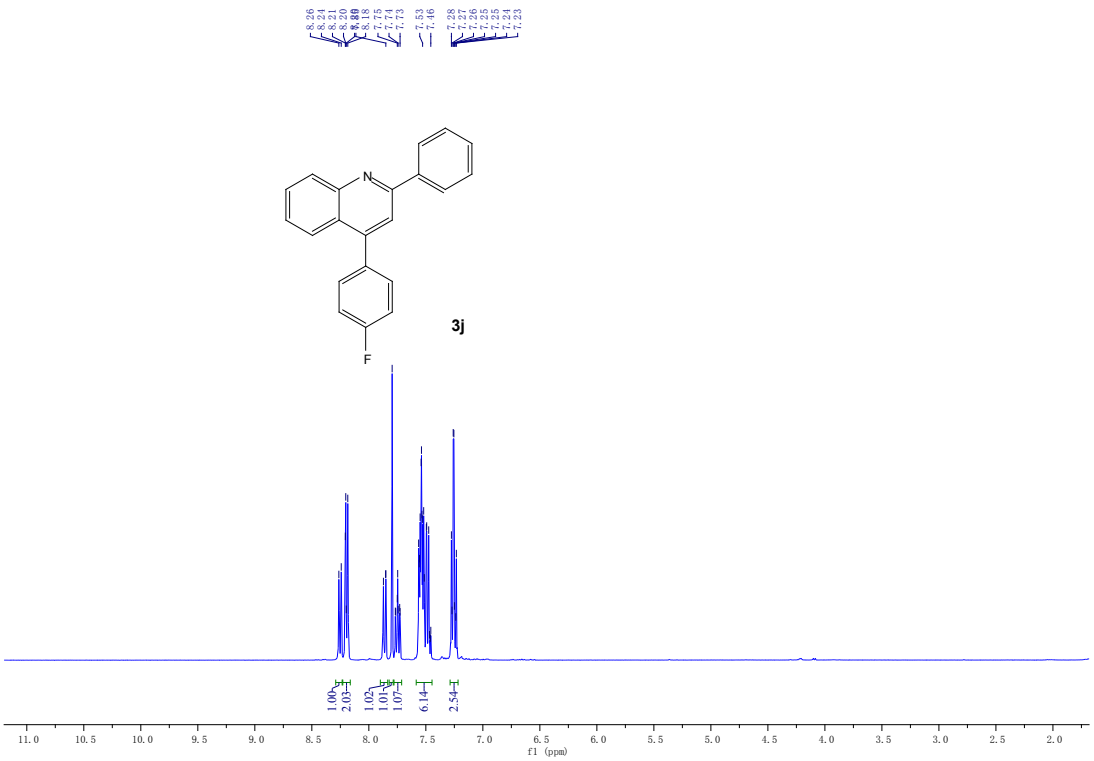
f1 (ppm)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7.46
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7.26
7.25
7.25
7.24
7.23
N
F
3j
1.00
2.03
1.02
1.01
1.07
6.14
2.54
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10.5
10.0
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9.0
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8.0
7.5
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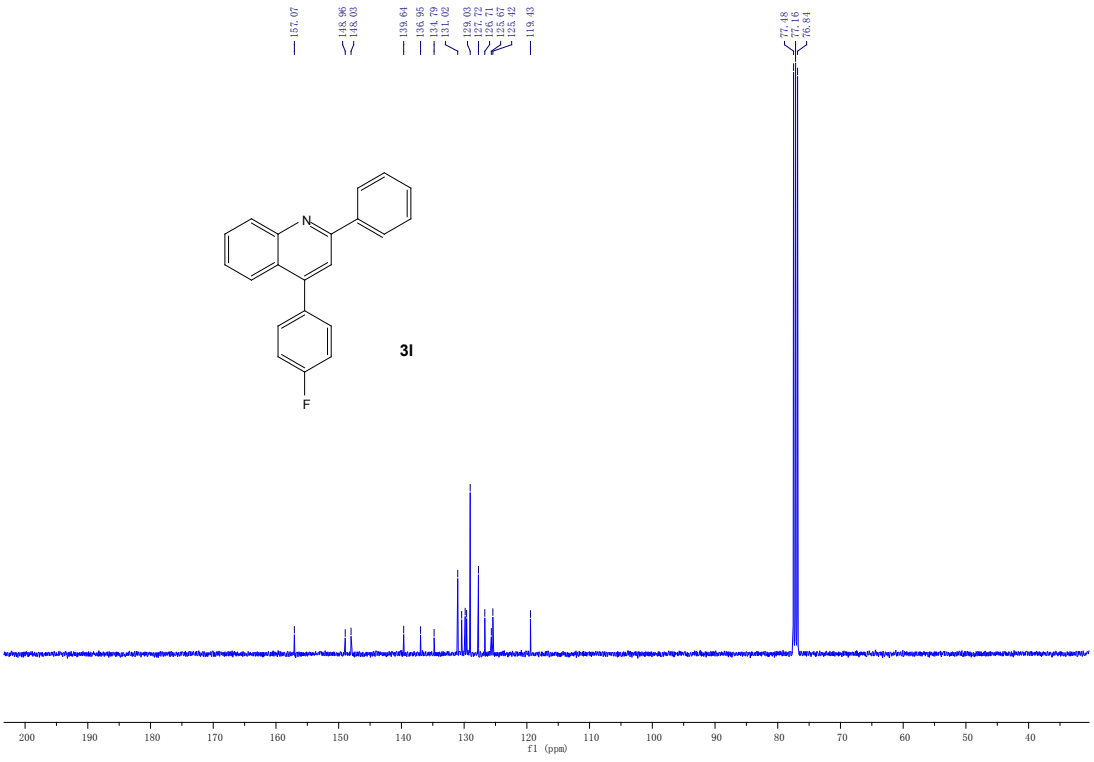
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134.79
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129.03
127.72
126.71
125.67
125.42
119.43
77.48
77.16
76.84
N
F
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150
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130
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110
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90
80
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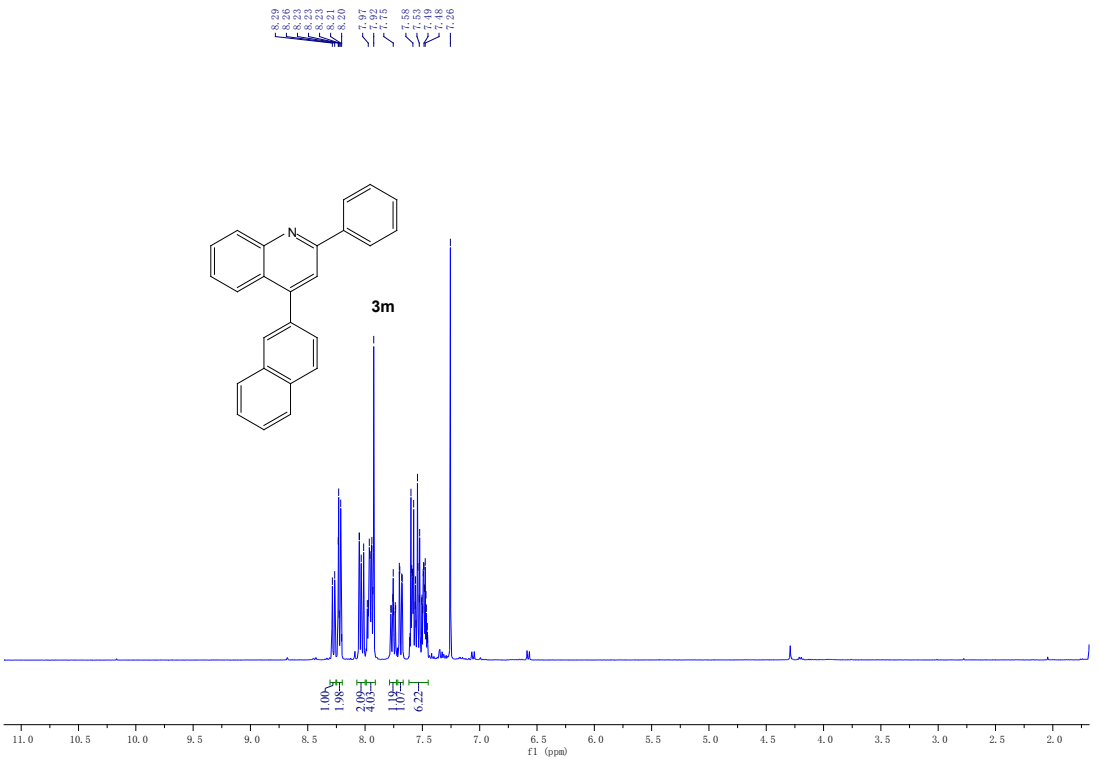
50
40
f1 (ppm)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7.92
7.75
7.58
7.53
7.49
7.48
7.26
N
3m
1.00
1.98
2.09
4.03
1.13
1.07
6.22
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
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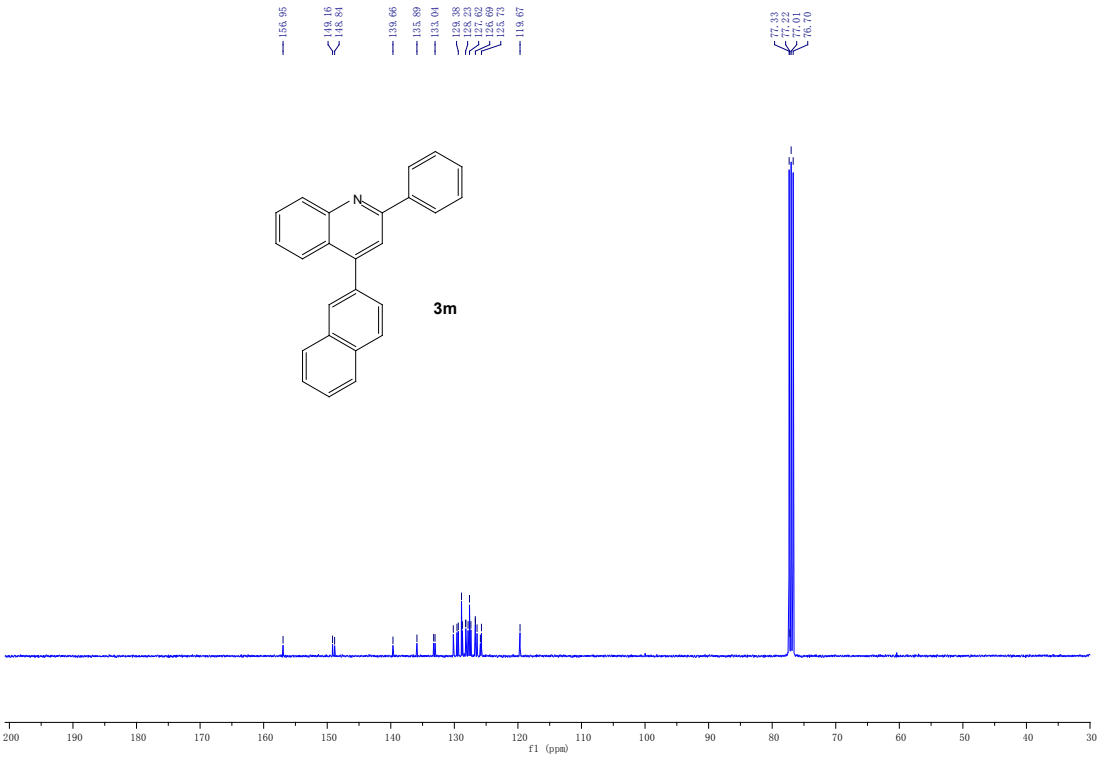
f1 (ppm)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126.69
125.73
119.67
77.33
77.22
77.01
76.70
N
3m
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150
140
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80
70
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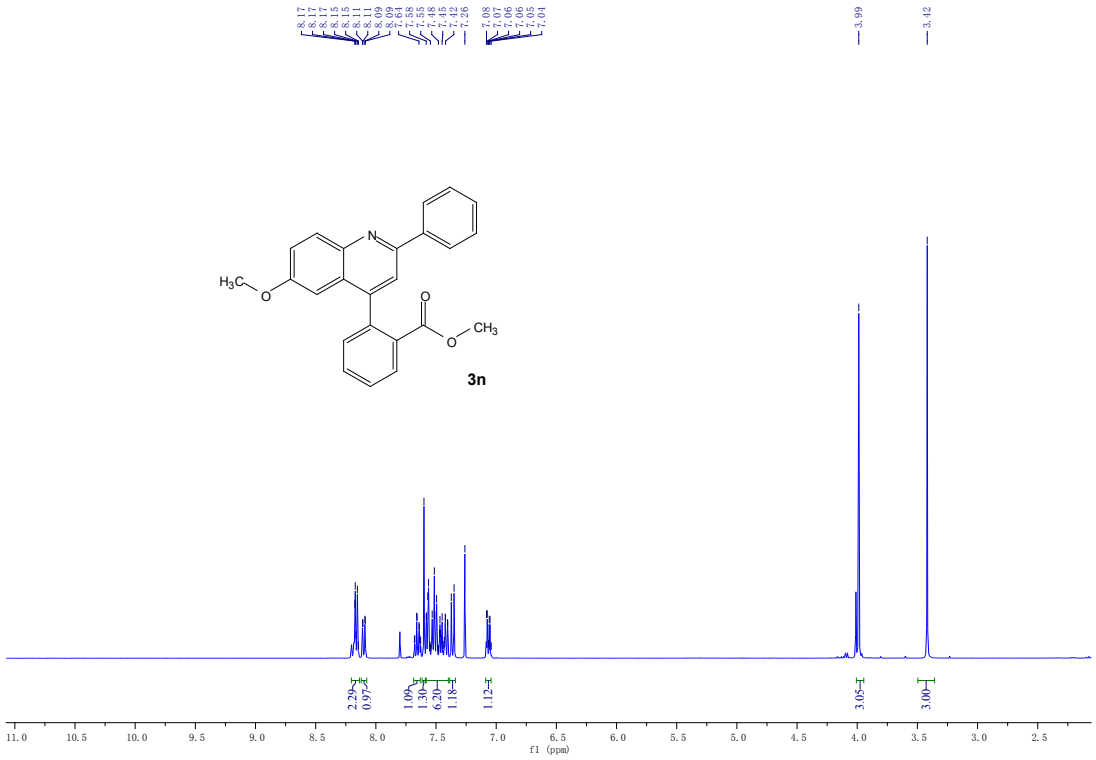
50
40
30
f1 (ppm)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8.17
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8.11
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7.58
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7.48
7.45
7.42
7.26
7.08
7.07
7.06
7.06
7.05
7.04
3.99
3.42
N
H3C
O
O
O
CH3
3n
2.29
0.97
1.09
1.30
6.20
1.18
1.12
3.05
3.00
11.0
10.5
10.0
9.5
9.0
8.5
8.0
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3.5
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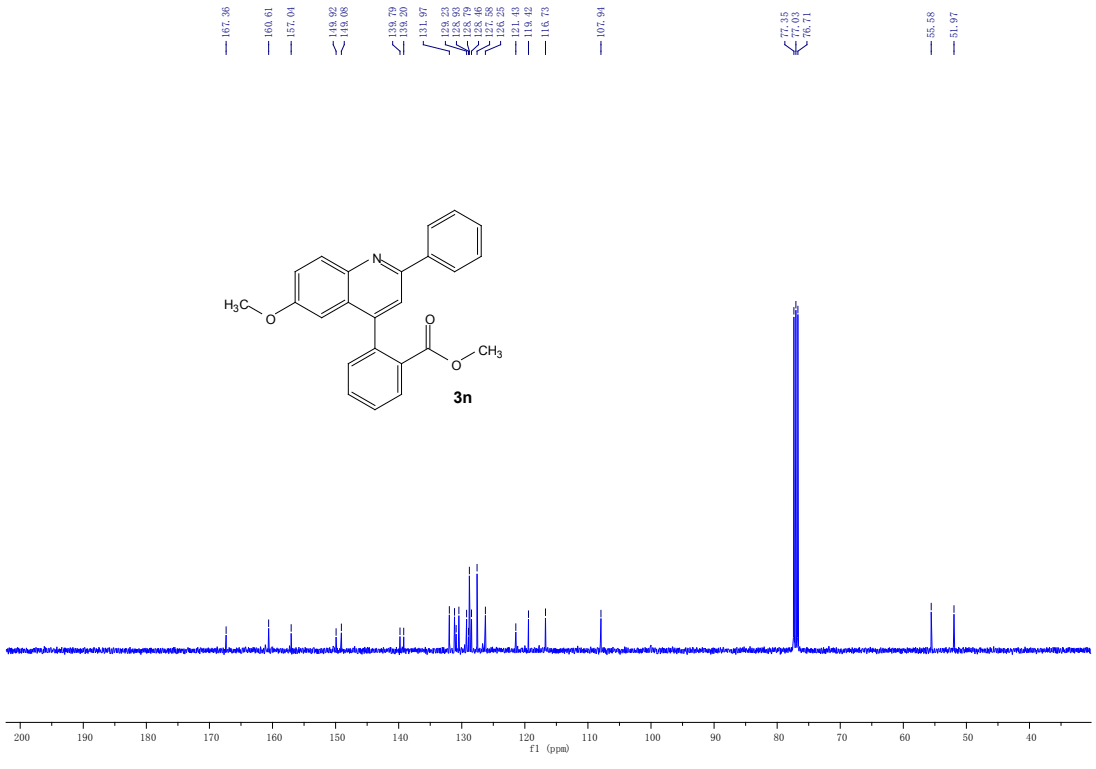
2.5
f1 (ppm)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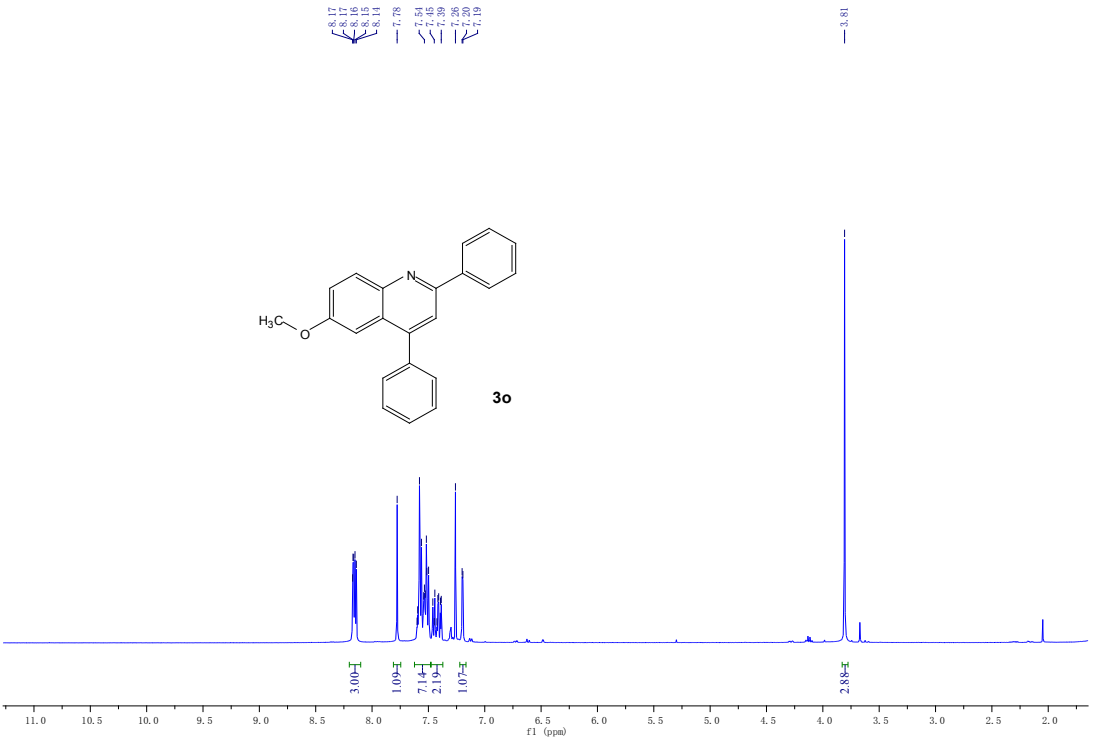
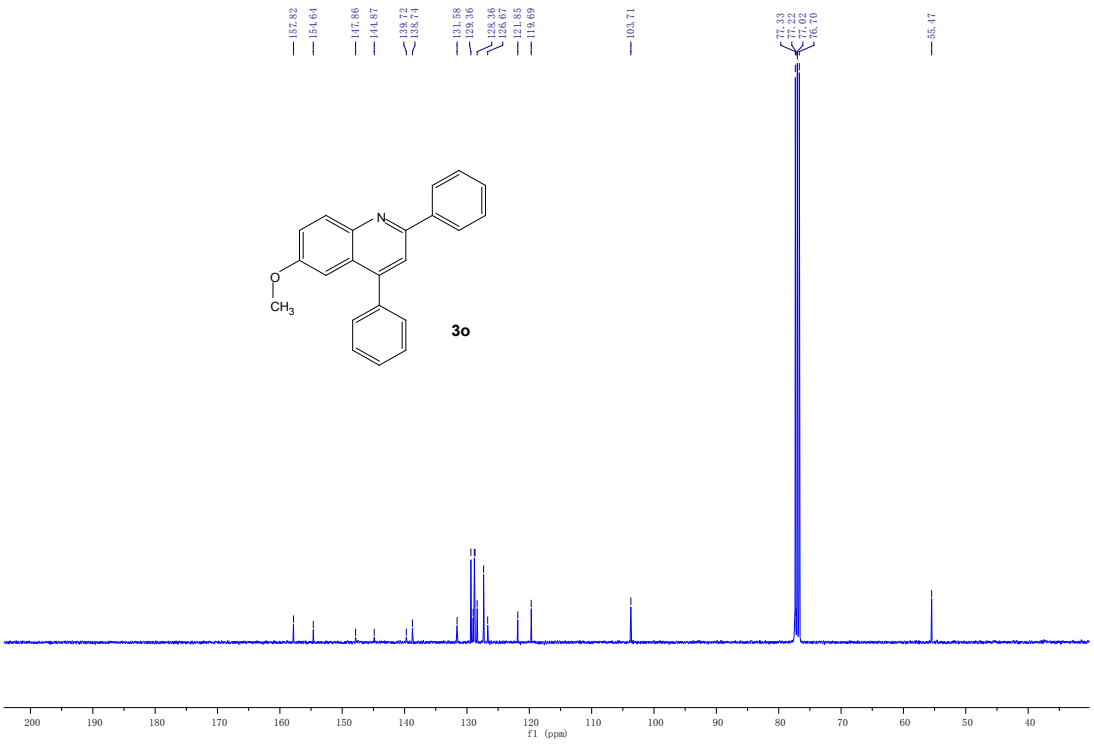
128.79
128.46
127.58
126.25
121.43
119.42
116.73
107.94
77.35
77.03
76.71
55.58
51.97
N
H3C
O
O
O
CH3
3n
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
f1 (ppm)


8.17
8.17
8.16
8.15
8.14
7.78
7.54
7.45
7.39
7.26
7.20
7.19
3.81
N
H3C
O
3o
3.00
1.09
7.14
2.19
1.07
2.88
11.0 10.5 10.0 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
f1 (ppm)


157.82
154.64
147.86
144.87
139.72
138.74
131.58
129.36
128.36
126.67
121.85
119.69
103.71
77.33
77.22
77.02
76.70
55.47
N
O
CH3
3o
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40
f1 (ppm)