Supporting Information for

Copper-promoted oxidative mono- and di-bromination of 8-aminoquinoline amides with HBr and DMSO

Changdong Shao,* Jingyi Liu, Yanan Shen, Li Li, Chen Ma, Zhengsong Hu, Yuhe Kan, Ping Chen and Tingting Zhang*

Jiangsu Provincial Key Laboratory for Chemistry of Low-Dimensional Materials, School of Chemistry and Chemical Engineering, Huaiyin Normal University, Huai'an, 223300, Jiangsu, China. E-mail: shaochangdong@hytc.edu.cn.

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1. General information

^{1}H NMR, ^{19}F NMR and ^{13}C NMR spectra were recorded on Bruker ARX400 instrument. High resolution mass spectra were obtained on a Bruker micrOTOF II ESI mass spectrometer. NMR spectra were recorded in $CDCl_3$. ^{1}H NMR spectra were referenced to residual $CHCl_3$ at 7.26 ppm, and ^{13}C NMR spectra were referenced to the central peak of $CDCl_3$ at 77.16 ppm. Chemical shifts (δ) are reported in ppm, and coupling constants (J) are in Hertz (Hz). Multiplicities are reported using the following abbreviations: s = singlet, d = doublet, t = triplet, q = quartet, m = multiplet.

8-Amidequinolines were synthesized according to the previously reported protocol. [1-2] All other chemicals were purchased from commercial sources and used directly without further purification.

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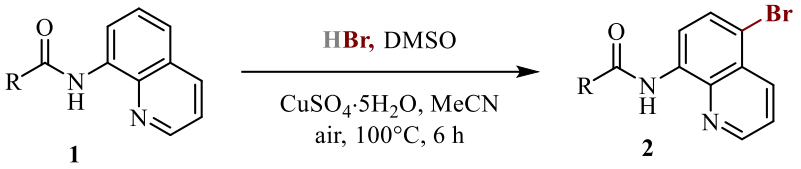
2. General procedure for the monobromination reaction



1 2

A 35 mL sealed tube equipped with a stir bar was charged with 8-amidequinolines (**1**, 0.2 mmol, 1.0 equiv.), $CuSO_4 \cdot 5H_2O$ (0.04 mmol, 20 mol%), HBr (0.4 mmol, 2.0 equiv.), DMSO (0.2 mL), and MeCN (1.0 mL). The tube was sealed with a *Teflon* cap under air, then the mixture was stirred at 100ºC for 6 h. After completion, the reaction mixture was diluted with ethyl acetate (20 mL) and washed with saturated sodium bicarbonate and brine successively. The organic layer was dried over anhydrous sodium sulfate and concentrated *in vacuo*. The residue was purified on preparative thin layer chromatography (PTLC) to afford the desired product **2**.

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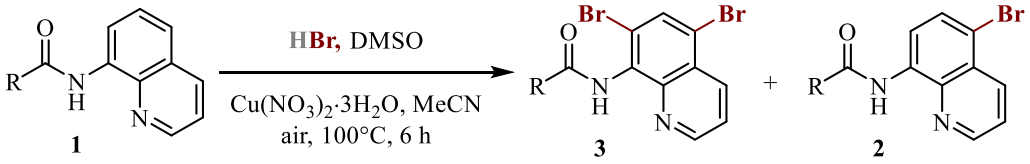
3. General procedure for the dibromination reaction



1 3 2

A 35 mL sealed tube equipped with a stir bar was charged with 8-amidequinolines (**1**, 0.2 mmol, 1.0 equiv.), $Cu(NO_3)_2 \cdot 3H_2O$ (0.04 mmol, 20 mol%), HBr (0.8 mmol, 4.0 equiv.), DMSO (1.6 mL), and MeCN (1.0 mL). The tube was sealed with a *Teflon* cap under air, then the mixture was stirred at 100ºC for 6 h. After completion, the reaction mixture was diluted with ethyl acetate (20 mL) and washed with saturated sodium bicarbonate and brine successively. The organic layer was dried over anhydrous sodium sulfate and concentrated *in vacuo*. The residue was purified on preparative thin layer chromatography (PTLC) to afford the desired product **3** and the incidental monosubstituted product **2**.

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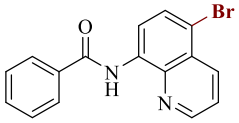
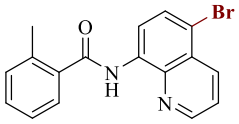
4. Characterization of isolated products

N-(5-bromoquinolin-8-yl)benzamide (**2a**)



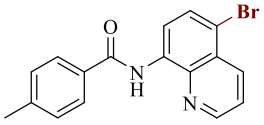
Purified with PTLC (PE/EA = 5/1, R_f = 0.69) to afford the title compound as a white solid (58.9 mg, 90%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.67 (s, 1H), 8.86 – 8.78 (m, 2H), 8.51 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.09 – 8.02 (m, 2H), 7.82 (d, *J* = 8.4 Hz, 1H), 7.63 – 7.50 (m, 4H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 165.37, 148.81, 139.44, 136.01, 134.91, 134.55, 132.08, 131.00, 128.92, 127.35, 127.27, 122.78, 117.05, 114.48. Characterization data were consistent with a previous report. [3]

N-(5-bromoquinolin-8-yl)-2-methylbenzamide (**2b**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.70) to afford the title compound as a white solid (66.1 mg, 97%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.18 (s, 1H), 8.82 (d, *J* = 8.3 Hz, 1H), 8.76 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.49 (dd, *J* = 8.5, 1.6 Hz, 1H), 7.82 (d, *J* = 8.3 Hz, 1H), 7.68 (d, *J* = 7.7 Hz, 1H), 7.52 (dd, *J* = 8.5, 4.2 Hz, 1H), 7.40 (td, *J* = 7.5, 1.5 Hz, 1H), 7.32 (t, *J* = 7.7 Hz, 2H), 2.61 (s, 3H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 168.12, 148.80, 139.34, 136.88, 136.36, 135.99, 134.73, 131.54, 130.96, 130.57, 127.30, 127.28, 126.13, 122.76, 117.03, 114.54, 20.32. Characterization data were consistent with a previous report. [3]

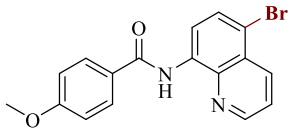
N-(5-bromoquinolin-8-yl)-4-methylbenzamide (**2c**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.71) to afford the title compound as a white solid (59.3 mg, 87%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.65 (s, 1H), 8.83 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.81 (d, *J* = 8.4 Hz, 1H), 8.50 (dd, *J* = 8.5, 1.6 Hz, 1H), 7.95 (d, *J* = 8.2 Hz, 2H), 7.81 (d, *J* = 8.4 Hz, 1H), 7.55 (dd, *J* = 8.6, 4.2 Hz, 1H), 7.33 (d, *J* = 7.9 Hz, 2H), 2.44 (s, 3H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 165.53, 148.86, 142.70, 139.59, 136.14, 134.77, 132.18, 131.13, 129.64, 127.43, 127.39, 122.83, 117.09,

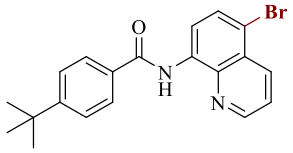
114.37, 21.69. Characterization data were consistent with a previous report. [3]

N-(5-bromoquinolin-8-yl)-4-methoxybenzamide (**2d**)



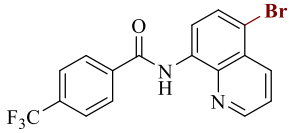
Purified with PTLC (PE/EA = 5/1, R_f = 0.51) to afford the title compound as a white solid (68.5 mg, 96%). **^{1}H NMR (400 MHz, CDCl$_3$)** δ 10.62 (s, 1H), 8.85 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.80 (d, *J* = 8.4 Hz, 1H), 8.52 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.03 (d, *J* = 8.8 Hz, 2H), 7.82 (d, *J* = 8.4 Hz, 1H), 7.56 (dd, *J* = 8.5, 4.2 Hz, 1H), 7.03 (d, *J* = 8.8 Hz, 2H), 3.89 (s, 3H). **^{13}C NMR (101 MHz, CDCl$_3$)** δ 165.05, 162.80, 148.80, 139.58, 136.12, 134.86, 131.15, 129.31, 127.38, 127.29, 122.80, 116.98, 114.18, 55.61. Characterization data were consistent with a previous report. [3]

N-(5-bromoquinolin-8-yl)-4-(tert-butyl)benzamide (**2e**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.78) to afford the title compound as a white solid (69.0 mg, 90%). **^{1}H NMR (400 MHz, CDCl$_3$)** δ 10.65 (s, 1H), 8.84 – 8.78 (m, 2H), 8.49 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.00 (d, *J* = 8.5 Hz, 2H), 7.81 (d, *J* = 8.4 Hz, 1H), 7.60 – 7.50 (m, 3H), 1.38 (s, 9H). **^{13}C NMR (101 MHz, CDCl$_3$)** δ 165.45, 155.69, 148.79, 139.51, 136.03, 134.74, 132.15, 131.06, 127.31, 127.26, 125.89, 122.77, 117.02, 114.29, 35.14, 31.30. Characterization data were consistent with a previous report. [4]

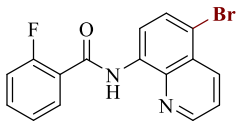
N-(5-bromoquinolin-8-yl)-4-(trifluoromethyl)benzamide (**2f**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.70) to afford the title compound as a white solid (69.5 mg, 88%). **^{1}H NMR (400 MHz, CDCl$_3$)** δ 10.67 (s, 1H), 8.82 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.74 (d, *J* = 8.4 Hz, 1H), 8.49 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.13 (d, *J* = 8.2 Hz, 2H), 7.82 – 7.75 (m, 3H), 7.55 (dd, *J* = 8.5, 4.2 Hz, 1H). **^{19}F NMR (376 MHz, CDCl$_3$)** δ -62.91. **^{13}C NMR (101 MHz, CDCl$_3$)** δ 163.90,

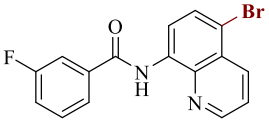
148.97, 139.34, 138.10, 136.13, 134.09, 133.71 (q, J = 33.6 Hz), 130.96, 127.81, 127.30, 125.98 (q, J = 3.8 Hz), 122.92, 123.83 (q, J = 273.7 Hz), 117.23, 115.05. Characterization data were consistent with a previous report. [3]

N-(5-bromoquinolin-8-yl)-2-fluorobenzamide (**2g**)



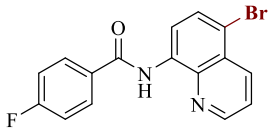
Purified with PTLC (PE/EA = 5/1, R_f = 0.62) to afford the title compound as a white solid (62.1 mg, 90%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 11.14 (d, J = 12.8 Hz, 1H), 8.90 – 8.83 (m, 2H), 8.52 (dd, J = 8.5, 1.6 Hz, 1H), 8.21 (td, J = 7.9, 1.9 Hz, 1H), 7.83 (d, J = 8.4 Hz, 1H), 7.60 – 7.49 (m, 2H), 7.33 (td, J = 7.5, 1.1 Hz, 1H), 7.24 (dd, J = 11.9, 8.2 Hz, 1H). **^{19}F NMR (376 MHz, $CDCl_3$)** δ -111.95. **^{13}C NMR (101 MHz, $CDCl_3$)** δ 161.67 (d, J = 3.3 Hz), 160.72 (d, J = 249.3 Hz), 149.04, 139.57, 135.94, 134.89, 133.86 (d, J = 9.2 Hz), 132.19 (d, J = 2.0 Hz), 131.00, 127.31, 125.02 (d, J = 3.3 Hz), 122.81, 121.91 (d, J = 11.5 Hz), 117.81, 116.47 (d, J = 24.5 Hz), 114.92. Characterization data were consistent with a previous report. [6]

N-(5-bromoquinolin-8-yl)-3-fluorobenzamide (**2h**)



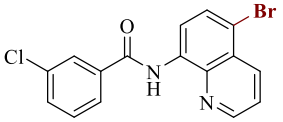
Purified with PTLC (PE/EA = 5/1, R_f = 0.62) to afford the title compound as a white solid (62.8 mg, 91%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.65 (s, 1H), 8.85 (dd, J = 4.2, 1.6 Hz, 1H), 8.78 (d, J = 8.4 Hz, 1H), 8.52 (dd, J = 8.5, 1.6 Hz, 1H), 7.82 (d, J = 8.3 Hz, 2H), 7.76 (dt, J = 9.4, 2.2 Hz, 1H), 7.58 (dd, J = 8.5, 4.2 Hz, 1H), 7.52 (td, J = 8.0, 5.5 Hz, 1H), 7.33 – 7.24 (m, 1H). **^{19}F NMR (376 MHz, $CDCl_3$)** δ -111.30. **^{13}C NMR (101 MHz, $CDCl_3$)** δ 163.93 (d, J = 2.6 Hz), 163.04 (d, J = 248.0 Hz), 148.92, 139.37, 137.15 (d, J = 6.7 Hz), 136.08, 134.22, 130.96, 130.58 (d, J = 7.8 Hz), 127.28, 122.87, 122.76 (d, J = 3.2 Hz), 119.10 (d, J = 21.3 Hz), 117.16, 114.83, 114.77 (d, J = 23.1 Hz). Characterization data were consistent with a previous report. [3]

N-(5-bromoquinolin-8-yl)-4-fluorobenzamide (**2i**)



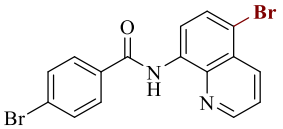
Purified with PTLC (PE/EA = 5/1, R_f = 0.62) to afford the title compound as a white solid (59.3 mg, 86%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.63 (s, 1H), 8.85 (dd, *J* = 4.3, 1.6 Hz, 1H), 8.78 (d, *J* = 8.4 Hz, 1H), 8.53 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.12 – 8.02 (m, 2H), 7.82 (d, *J* = 8.4 Hz, 1H), 7.58 (dd, *J* = 8.5, 4.2 Hz, 1H), 7.27 – 7.17 (m, 2H). **^{19}F NMR (376 MHz, $CDCl_3$)** δ -107.22. **^{13}C NMR (101 MHz, $CDCl_3$)** δ 165.25 (d, *J* = 253.0 Hz), 164.40, 148.94, 139.56, 136.23, 134.53, 131.21 (d, *J* = 3.2 Hz), 131.13, 129.82 (d, *J* = 8.9 Hz), 127.44, 122.92, 117.18, 116.07 (d, *J* = 22.0 Hz), 114.69. Characterization data were consistent with a previous report. [3]

N-(5-bromoquinolin-8-yl)-3-chlorobenzamide (**2j**)



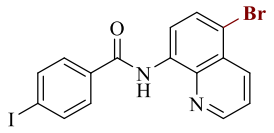
Purified with PTLC (PE/EA = 5/1, R_f = 0.62) to afford the title compound as a white solid (69.5 mg, 96%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.58 (s, 1H), 8.82 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.73 (d, *J* = 8.3 Hz, 1H), 8.48 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.00 (t, *J* = 1.8 Hz, 1H), 7.88 (dt, *J* = 7.7, 1.4 Hz, 1H), 7.78 (d, *J* = 8.4 Hz, 1H), 7.58 – 7.49 (m, 2H), 7.45 (t, *J* = 7.8 Hz, 1H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 163.86, 148.87, 139.33, 136.61, 136.04, 135.10, 134.15, 132.02, 130.90, 130.10, 127.69, 127.24, 125.22, 122.79, 117.15, 114.79. Characterization data were consistent with a previous report. [3]

4-bromo-*N*-(5-bromoquinolin-8-yl)benzamide (**2k**)



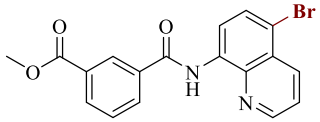
Purified with PTLC (PE/EA = 5/1, R_f = 0.65) to afford the title compound as a white solid (75.5 mg, 93%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.61 (s, 1H), 8.82 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.75 (d, *J* = 8.4 Hz, 1H), 8.50 (dd, *J* = 8.5, 1.6 Hz, 1H), 7.93 – 7.85 (m, 2H), 7.79 (d, *J* = 8.4 Hz, 1H), 7.69 – 7.61 (m, 2H), 7.55 (dd, *J* = 8.5, 4.2 Hz, 1H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 164.35, 148.91, 139.41, 136.14, 134.30, 133.74, 132.18, 131.03, 128.94, 127.33, 126.94, 122.88, 117.16, 114.78. Characterization data were consistent with a previous report. [3]

N-(5-bromoquinolin-8-yl)-4-iodobenzamide (**2l**)



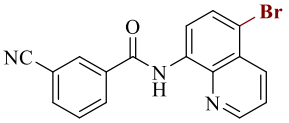
Purified with PTLC (PE/EA = 5/1, R_f = 0.66) to afford the title compound as a white solid (80.6 mg, 89%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.63 (s, 1H), 8.86 – 8.81 (m, 1H), 8.76 (d, *J* = 8.2 Hz, 1H), 8.52 (dd, *J* = 8.6, 1.3 Hz, 1H), 7.88 (d, *J* = 8.3 Hz, 2H), 7.81 (d, *J* = 8.4 Hz, 1H), 7.76 (d, *J* = 8.3 Hz, 2H), 7.57 (dd, *J* = 8.5, 4.2 Hz, 1H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 164.62, 148.94, 139.45, 138.20, 136.18, 134.36, 134.33, 131.06, 128.92, 127.37, 122.91, 117.20, 114.81, 99.30. Characterization data were consistent with a previous report. [7]

methyl 3-((5-bromoquinolin-8-yl)carbamoyl)benzoate (**2m**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.35) to afford the title compound as a white solid (61.6 mg, 80%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.66 (s, 1H), 8.83 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.76 (d, *J* = 8.4 Hz, 1H), 8.67 (t, *J* = 1.8 Hz, 1H), 8.48 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.25 – 8.18 (m, 2H), 7.79 (d, *J* = 8.4 Hz, 1H), 7.60 (t, *J* = 7.8 Hz, 1H), 7.54 (dd, *J* = 8.5, 4.2 Hz, 1H), 3.97 (s, 3H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 166.33, 164.37, 148.96, 139.40, 136.05, 135.31, 134.29, 132.91, 131.69, 130.99, 130.96, 129.13, 128.36, 127.27, 122.86, 117.23, 114.81, 52.52. Characterization data were consistent with a previous report. [7]

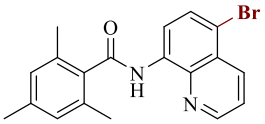
N-(5-bromoquinolin-8-yl)-3-cyanobenzamide (**2n**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.35) to afford the title compound as a white solid (62.0 mg, 88%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.72 (s, 1H), 8.90 (dd, *J* = 4.3, 1.6 Hz, 1H), 8.78 (d, *J* = 8.4 Hz, 1H), 8.56 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.33 (t, *J* = 1.7 Hz, 1H), 8.29 (dt, *J* = 7.9, 1.5 Hz, 1H), 7.91 – 7.82 (m, 2H), 7.69 (t, *J* = 7.8 Hz, 1H), 7.62 (dd, *J* = 8.5, 4.2 Hz, 1H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 163.15, 149.21, 139.50, 136.39, 136.29, 135.26, 134.02, 131.65, 131.13, 131.10, 130.04, 127.52,

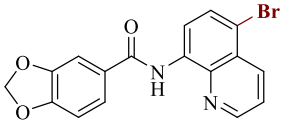
123.13, 118.16, 117.49, 115.40, 113.56. Characterization data were consistent with a previous report. [7]

N-(5-bromoquinolin-8-yl)-2,4,6-trimethylbenzamide (**2o**)



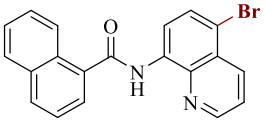
Purified with PTLC (PE/EA = 5/1, R_f = 0.76) to afford the title compound as a white solid (62.0 mg, 84%). **^{1}H NMR (400 MHz, CDCl$_3$)** δ 9.92 (s, 1H), 8.91 (d, *J* = 8.4 Hz, 1H), 8.73 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.50 (dd, *J* = 8.5, 1.6 Hz, 1H), 7.85 (d, *J* = 8.4 Hz, 1H), 7.52 (dd, *J* = 8.5, 4.2 Hz, 1H), 6.92 (s, 2H), 2.41 (s, 6H), 2.33 (s, 3H). **^{13}C NMR (101 MHz, CDCl$_3$)** δ 169.13, 148.77, 139.26, 138.95, 135.91, 135.18, 134.54, 134.48, 130.94, 128.53, 127.28, 122.72, 117.19, 114.60, 21.21, 19.47. Characterization data were consistent with a previous report. [4]

N-(5-bromoquinolin-8-yl)benzo[d][1,3]dioxole-5-carboxamide (**2p**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.35) to afford the title compound as a white solid (70.5 mg, 95%). **^{1}H NMR (400 MHz, CDCl$_3$)** δ 10.59 (s, 1H), 8.86 (d, *J* = 4.5 Hz, 1H), 8.78 (d, *J* = 8.4 Hz, 1H), 8.54 (d, *J* = 8.5 Hz, 1H), 7.83 (d, *J* = 8.4 Hz, 1H), 7.66 – 7.55 (m, 2H), 7.53 (s, 1H), 6.94 (d, *J* = 8.1 Hz, 1H), 6.08 (s, 2H). **^{13}C NMR (101 MHz, CDCl$_3$)** δ 164.76, 151.02, 148.89, 148.41, 139.60, 136.19, 134.76, 131.16, 129.27, 127.43, 122.87, 122.35, 117.07, 114.38, 108.41, 107.99, 102.01. **HRMS (ESI-TOF)** m/z: calculated for $C_{17}H_{12}BrN_2O_3^+$: 371.0026 $(M + H)^+$, found: 371.0030.

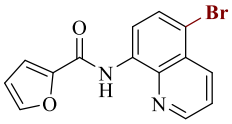
N-(5-bromoquinolin-8-yl)-1-naphthamide (**2q**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.63) to afford the title compound as a white solid (70.1 mg, 93%). **^{1}H NMR (400 MHz, CDCl$_3$)** δ 10.40 (s, 1H), 8.95 (d, *J* = 8.4 Hz, 1H), 8.77 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.59 – 8.49 (m, 2H), 8.02 (d, *J* = 8.3 Hz, 1H), 7.96 – 7.87 (m, 3H), 7.64 – 7.52 (m, 4H). **^{13}C NMR (101 MHz, CDCl$_3$)** δ 167.81, 148.93, 139.49, 136.14, 134.91, 134.52, 134.06, 131.47,

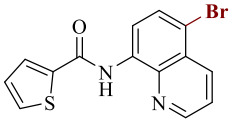
131.11, 130.47, 128.58, 127.54, 127.45, 126.72, 125.70, 125.63, 124.98, 122.88, 117.36, 114.81. Characterization data were consistent with a previous report. [4]

N-(5-bromoquinolin-8-yl)furan-2-carboxamide (**2r**)



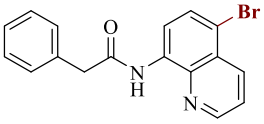
Purified with PTLC (PE/EA = 5/1, R_f = 0.60) to afford the title compound as a white solid (60.9 mg, 96%). **^{1}H NMR (400 MHz, CDCl$_3$)** δ 10.71 (s, 1H), 8.87 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.74 (d, *J* = 8.3 Hz, 1H), 8.51 (dd, *J* = 8.5, 1.6 Hz, 1H), 7.80 (d, *J* = 8.4 Hz, 1H), 7.62 (s, 1H), 7.56 (dd, *J* = 8.5, 4.2 Hz, 1H), 7.30 (d, *J* = 3.5 Hz, 1H), 6.58 (dd, *J* = 3.5, 1.7 Hz, 1H). **^{13}C NMR (101 MHz, CDCl$_3$)** δ 156.47, 149.03, 148.32, 144.79, 139.47, 136.09, 134.29, 131.06, 127.43, 122.89, 117.26, 115.54, 114.73, 112.67. Characterization data were consistent with a previous report. [5]

N-(5-bromoquinolin-8-yl)thiophene-2-carboxamide (**2s**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.60) to afford the title compound as a white solid (64.0 mg, 96%). **^{1}H NMR (400 MHz, CDCl$_3$)** δ 10.49 (s, 1H), 8.82 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.69 (d, *J* = 8.4 Hz, 1H), 8.49 (dd, *J* = 8.5, 1.6 Hz, 1H), 7.82 – 7.75 (m, 2H), 7.58 (dd, *J* = 5.0, 1.1 Hz, 1H), 7.54 (dd, *J* = 8.5, 4.2 Hz, 1H), 7.17 (dd, *J* = 5.0, 3.7 Hz, 1H). **^{13}C NMR (101 MHz, CDCl$_3$)** δ 160.00, 148.88, 139.86, 139.21, 136.06, 134.32, 131.26, 131.03, 128.68, 128.02, 127.30, 122.84, 117.03, 114.51. Characterization data were consistent with a previous report. [3]

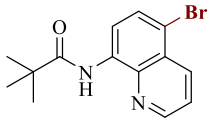
N-(5-bromoquinolin-8-yl)-2-phenylacetamide (**2t**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.55) to afford the title compound as a white solid (51.2 mg, 75%). **^{1}H NMR (400 MHz, CDCl$_3$)** δ 9.83 (s, 1H), 8.67 – 8.59 (m, 2H), 8.39 (dd, *J* = 8.5, 1.6 Hz, 1H), 7.70 (d, *J* = 8.4 Hz, 1H), 7.46 – 7.39 (m, 5H), 7.39 – 7.30 (m, 1H), 3.88 (s, 2H). **^{13}C NMR (101 MHz, CDCl$_3$)** δ 169.50, 148.62, 139.06, 135.75, 134.53, 134.31, 130.80, 129.60, 129.07,

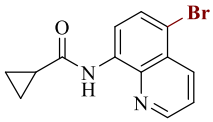
127.47, 127.03, 122.57, 116.79, 114.29, 45.39. Characterization data were consistent with a previous report. [3]

N-(5-bromoquinolin-8-yl)pivalamide (**2u**)



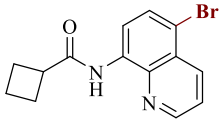
Purified with PTLC (PE/EA = 5/1, R_f = 0.75) to afford the title compound as a white solid (49.1 mg, 80%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.22 (s, 1H), 8.81 (dd, *J* = 4.3, 1.6 Hz, 1H), 8.68 (d, *J* = 8.4 Hz, 1H), 8.49 (dd, *J* = 8.6, 1.6 Hz, 1H), 7.77 (d, *J* = 8.4 Hz, 1H), 7.54 (dd, *J* = 8.5, 4.2 Hz, 1H), 1.42 (s, 9H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 177.39, 148.81, 139.64, 136.05, 134.80, 131.08, 127.30, 122.70, 116.87, 114.01, 40.52, 27.82. Characterization data were consistent with a previous report. [3]

N-(5-bromoquinolin-8-yl)cyclopropanecarboxamide (**2v**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.57) to afford the title compound as a white solid (50.0 mg, 86%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.95 (s, 1H), 8.78 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.60 (d, *J* = 8.4 Hz, 1H), 8.46 (dd, *J* = 8.5, 1.6 Hz, 1H), 7.73 (d, *J* = 8.4 Hz, 1H), 7.51 (dd, *J* = 8.5, 4.2 Hz, 1H), 1.85 – 1.73 (m, 1H), 1.19 – 1.07 (m, 2H), 1.00 – 0.83 (m, 2H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 172.34, 148.61, 138.97, 135.97, 134.71, 131.00, 127.21, 122.67, 116.92, 113.88, 16.39, 8.38. Characterization data were consistent with a previous report. [7]

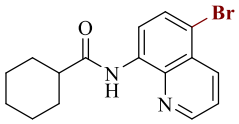
N-(5-bromoquinolin-8-yl)cyclobutanecarboxamide (**2w**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.66) to afford the title compound as a white solid (53.7 mg, 88%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.70 (s, 1H), 8.79 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.69 (d, *J* = 8.4 Hz, 1H), 8.49 (dd, *J* = 8.5, 1.6 Hz, 1H), 7.77 (d, *J* = 8.4 Hz, 1H), 7.53 (dd, *J* = 8.6, 4.2 Hz, 1H), 3.38 (p, *J* = 8.5 Hz, 1H), 2.55 – 2.41 (m, 2H), 2.39 – 2.26 (m, 2H), 2.14 – 1.89 (m, 2H). **^{13}C NMR (101**

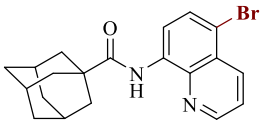
MHz, $CDCl_3$) δ 173.84, 148.69, 139.22, 136.04, 134.64, 131.06, 127.27, 122.70, 116.96, 114.03, 41.50, 25.59, 18.28. Characterization data were consistent with a previous report. [10]

N-(5-bromoquinolin-8-yl)cyclohexanecarboxamide (**2x**)



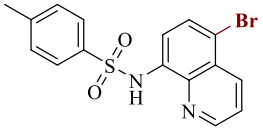
Purified with PTLC (PE/EA = 5/1, R_f = 0.68) to afford the title compound as a white solid (58.0 mg, 87%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.85 (s, 1H), 8.81 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.68 (d, *J* = 8.4 Hz, 1H), 8.50 (dd, *J* = 8.5, 1.7 Hz, 1H), 7.77 (d, *J* = 8.4 Hz, 1H), 7.54 (dd, *J* = 8.5, 4.2 Hz, 1H), 2.46 (tt, *J* = 11.7, 3.5 Hz, 1H), 2.12 – 2.03 (m, 2H), 1.92 – 1.84 (m, 2H), 1.77 – 1.69 (m, 1H), 1.69 – 1.56 (m, 2H), 1.46 – 1.23 (m, 3H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 174.97, 148.69, 139.34, 136.09, 134.73, 131.08, 127.30, 122.70, 117.06, 114.00, 47.00, 29.84, 25.89, 25.86. Characterization data were consistent with a previous report. [3]

N-(5-bromoquinolin-8-yl)adamantane-1-carboxamide (**2y**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.84) to afford the title compound as a white solid (69.3 mg, 90%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.18 (s, 1H), 8.83 (dd, *J* = 4.3, 1.6 Hz, 1H), 8.70 (d, *J* = 8.4 Hz, 1H), 8.49 (dd, *J* = 8.5, 1.6 Hz, 1H), 7.77 (d, *J* = 8.4 Hz, 1H), 7.54 (dd, *J* = 8.5, 4.2 Hz, 1H), 2.17 – 2.06 (m, 9H), 1.80 (t, *J* = 3.1 Hz, 6H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 176.87, 148.77, 139.68, 136.02, 134.77, 131.08, 127.28, 122.65, 117.00, 113.93, 42.42, 39.44, 36.64, 28.34. Characterization data were consistent with a previous report. [7]

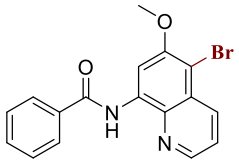
N-(5-bromoquinolin-8-yl)-4-methylbenzenesulfonamide (**2z**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.37) to afford the title compound as a white solid (54.3 mg, 72%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.19 (s, 1H), 8.76 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.42 (dd, *J* = 8.5,

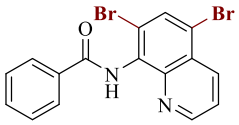
1.6 Hz, 1H), 7.79 (d, *J* = 8.4 Hz, 2H), 7.69 (d, *J* = 2.1 Hz, 2H), 7.51 (dd, *J* = 8.5, 4.2 Hz, 1H), 7.16 (d, *J* = 8.1 Hz, 2H), 2.29 (s, 3H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 149.31, 144.11, 139.23, 136.38, 136.00, 133.98, 130.47, 129.75, 127.61, 127.35, 123.13, 115.38, 115.00, 21.58. Characterization data were consistent with a previous report. [8]

N-(5-bromo-6-methoxyquinolin-8-yl)benzamide (**2aa**)



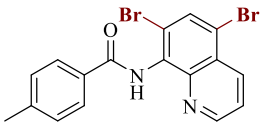
Purified with PTLC (PE/EA = 5/1, R_f = 0.50) to afford the title compound as a white solid (67.6 mg, 95%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 10.72 (s, 1H), 8.91 (s, 1H), 8.64 (dd, *J* = 4.2, 1.5 Hz, 1H), 8.45 (dd, *J* = 8.6, 1.5 Hz, 1H), 8.08 – 8.02 (m, 2H), 7.62 – 7.51 (m, 3H), 7.46 (dd, *J* = 8.6, 4.2 Hz, 1H), 4.09 (s, 3H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 165.53, 154.63, 146.32, 135.43, 134.99, 134.80, 134.72, 132.22, 128.99, 128.13, 127.33, 123.18, 104.52, 99.81, 57.09. Characterization data were consistent with a previous report. [3]

N-(5,7-dibromoquinolin-8-yl)benzamide (**3a**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.26) to afford the title compound as a white solid (70.0 mg, 86%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.25 (s, 1H), 8.81 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.47 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.10 – 8.04 (m, 3H), 7.62 – 7.46 (m, 4H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 165.44, 150.72, 143.95, 136.12, 134.54, 134.30, 134.17, 132.40, 128.87, 128.16, 127.00, 122.94, 120.09, 118.93. Characterization data were consistent with a previous report. [9]

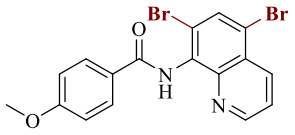
N-(5,7-dibromoquinolin-8-yl)-4-methylbenzamide (**3c**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.28) to afford the title compound as a white solid (71.4 mg, 85%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.24 (s, 1H), 8.80 (dd, *J* = 4.3, 1.6 Hz, 1H), 8.45 (dd, *J* = 8.5,

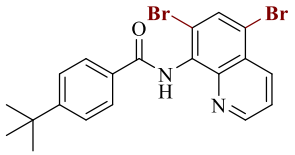
1.6 Hz, 1H), 8.07 (s, 1H), 7.96 (d, J = 8.3 Hz, 2H), 7.51 (dd, J = 8.5, 4.2 Hz, 1H), 7.28 (d, J = 8.0 Hz, 2H), 2.43 (s, 3H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 165.42, 150.61, 143.92, 142.90, 136.05, 134.46, 134.38, 131.23, 129.44, 128.14, 126.92, 122.86, 120.18, 118.79, 21.68. Characterization data were consistent with a previous report. [9]

N-(5,7-dibromoquinolin-8-yl)-4-methoxybenzamide (**3d**)



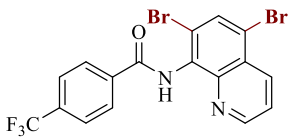
Purified with PTLC (PE/EA = 5/1, R_f = 0.12) to afford the title compound as a white solid (71.5 mg, 82%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.26 (s, 1H), 8.80 (dd, J = 4.2, 1.5 Hz, 1H), 8.45 (dd, J = 8.5, 1.6 Hz, 1H), 8.07 (s, 1H), 8.05 – 8.00 (m, 2H), 7.52 (dd, J = 8.5, 4.2 Hz, 1H), 7.00 – 6.92 (m, 2H), 3.87 (s, 3H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 165.05, 162.93, 150.56, 143.92, 136.11, 134.48, 130.07, 126.95, 126.33, 122.86, 120.18, 118.69, 114.00, 55.60. Characterization data were consistent with a previous report. [9]

4-(tert-butyl)-*N*-(5,7-dibromoquinolin-8-yl)benzamide (**3e**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.28) to afford the title compound as a white solid (73.9 mg, 80%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.23 (s, 1H), 8.82 (dd, J = 4.3, 1.6 Hz, 1H), 8.49 (dd, J = 8.5, 1.6 Hz, 1H), 8.10 (s, 1H), 8.06 – 7.99 (m, 2H), 7.59 – 7.50 (m, 3H), 1.38 (s, 9H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 165.29, 156.05, 150.64, 143.97, 136.14, 134.59, 134.46, 131.29, 128.06, 127.02, 125.85, 122.92, 120.03, 118.74, 35.21, 31.32. Characterization data were consistent with a previous report. [9]

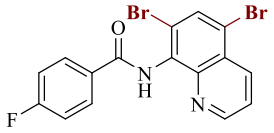
N-(5,7-dibromoquinolin-8-yl)-4-(trifluoromethyl)benzamide (**3f**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.29) to afford the title compound as a white solid (80.6 mg,

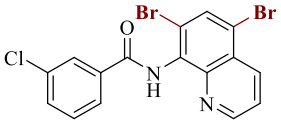
85%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.57 (s, 1H), 8.82 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.50 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.16 (d, *J* = 8.0 Hz, 2H), 8.10 (s, 1H), 7.72 (d, *J* = 8.1 Hz, 2H), 7.56 (dd, *J* = 8.5, 4.3 Hz, 1H). **^{19}F NMR (376 MHz, $CDCl_3$)** δ -63.00. **^{13}C NMR (101 MHz, $CDCl_3$)** δ 164.26, 150.79, 144.02, 137.23, 136.38, 134.51, 133.94 (q, *J* = 32.3 Hz), 133.75, 128.55, 127.15, 125.87 (q, *J* = 3.8 Hz), 123.79 (q, *J* = 273.7 Hz), 123.08, 120.91, 119.68. Characterization data were consistent with a previous report. [9]

N-(5,7-dibromoquinolin-8-yl)-4-fluorobenzamide (**3i**)



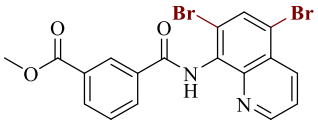
Purified with PTLC (PE/EA = 5/1, R_f = 0.25) to afford the title compound as a white solid (67.1 mg, 79%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.14 (s, 1H), 8.84 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.50 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.13 – 8.05 (m, 3H), 7.56 (dd, *J* = 8.5, 4.2 Hz, 1H), 7.23 – 7.14 (m, 2H). **^{19}F NMR (376 MHz, $CDCl_3$)** δ -106.81. **^{13}C NMR (101 MHz, $CDCl_3$)** δ 165.43 (d, *J* = 253.1 Hz), 164.48, 150.74, 143.93, 136.23, 134.55, 134.16, 130.60 (d, *J* = 9.2 Hz), 130.35 (d, *J* = 3.0 Hz), 127.06, 122.99, 120.24, 119.11, 115.95 (d, *J* = 22.0 Hz). Characterization data were consistent with a previous report. [9]

3-chloro-*N*-(5,7-dibromoquinolin-8-yl)benzamide (**3j**)



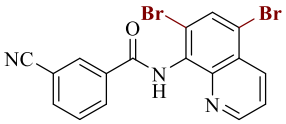
Purified with PTLC (PE/EA = 5/1, R_f = 0.25) to afford the title compound as a white solid (68.8 mg, 78%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.09 (s, 1H), 8.85 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.51 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.11 (s, 1H), 8.05 (t, *J* = 1.9 Hz, 1H), 7.96 (dt, *J* = 7.8, 1.4 Hz, 1H), 7.61 – 7.54 (m, 2H), 7.46 (t, *J* = 7.9 Hz, 1H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 164.19, 150.83, 143.93, 136.23, 135.93, 135.12, 134.53, 133.91, 132.43, 130.19, 128.45, 127.08, 126.18, 123.04, 120.34, 119.34. Characterization data were consistent with a previous report. [9]

methyl 3-((5,7-dibromoquinolin-8-yl)carbamoyl)benzoate (**3m**)



Purified with PTLC (PE/EA = 5/1, R_f = 0.10) to afford the title compound as a white solid (64.0 mg, 69%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.29 (s, 1H), 8.84 (dd, *J* = 4.3, 1.6 Hz, 1H), 8.71 (t, *J* = 1.7 Hz, 1H), 8.50 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.30 – 8.21 (m, 2H), 8.10 (s, 1H), 7.63 – 7.52 (m, 2H), 3.94 (s, 3H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 166.41, 164.53, 150.84, 143.99, 136.21, 134.54, 134.53, 134.02, 133.30, 132.74, 130.91, 129.17, 128.97, 127.08, 123.02, 120.40, 119.31, 52.54. **HRMS (ESI-TOF)** m/z: calculated for $C_{18}H_{13}Br_2N_2O_3^+$: 462.9287 $(M + H)^+$, found: 462.9295.

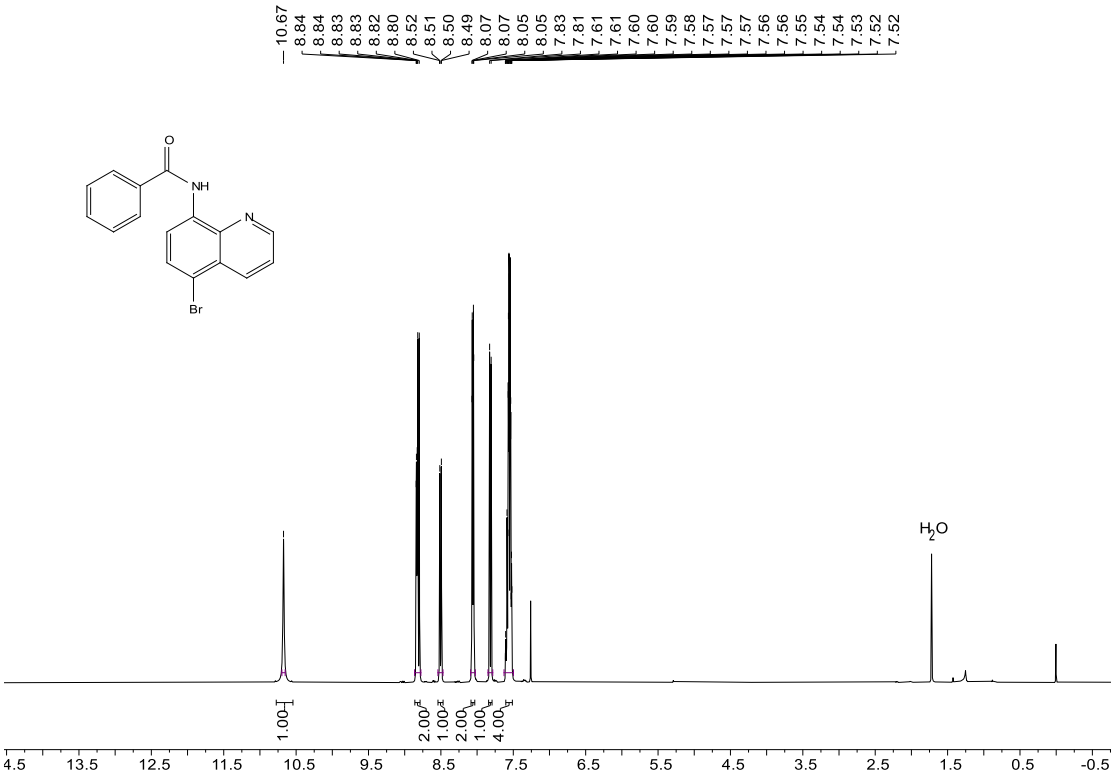
3-cyano-*N*-(5,7-dibromoquinolin-8-yl)benzamide (**3n**)



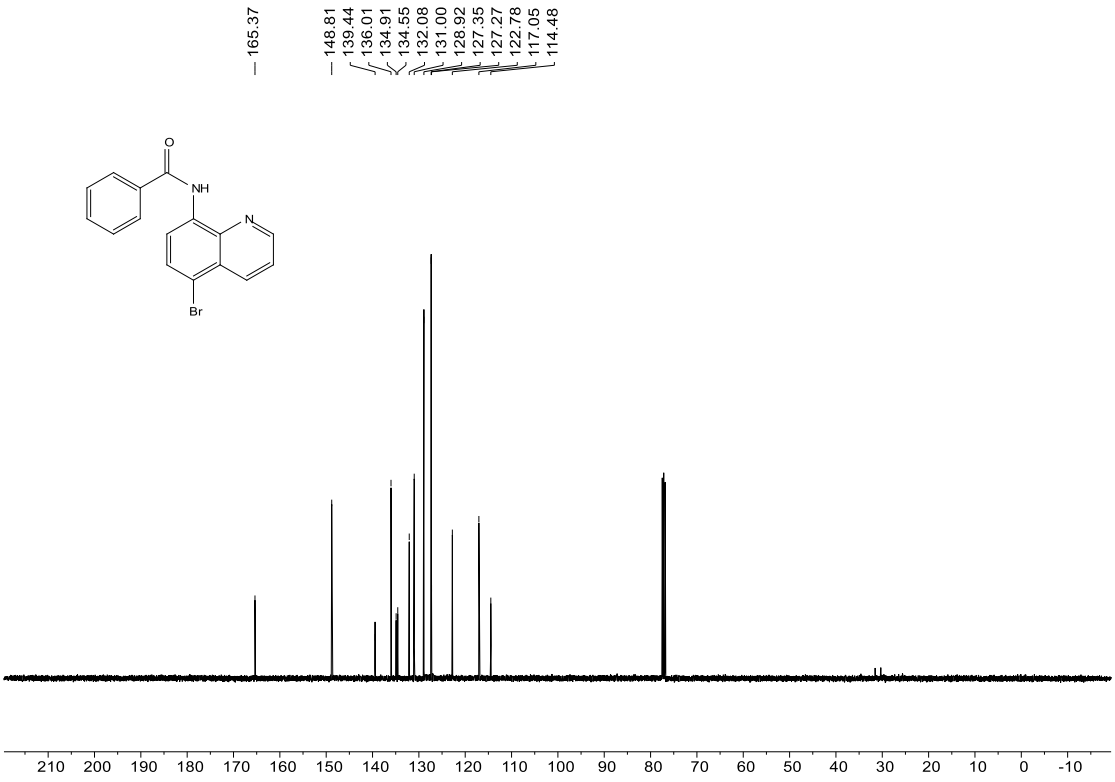
Purified with PTLC (PE/EA = 5/1, R_f = 0.10) to afford the title compound as a white solid (60.3 mg, 70%). **^{1}H NMR (400 MHz, $CDCl_3$)** δ 9.31 (s, 1H), 8.83 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.50 (dd, *J* = 8.5, 1.6 Hz, 1H), 8.33 (t, *J* = 1.7 Hz, 1H), 8.28 (dt, *J* = 8.0, 1.5 Hz, 1H), 8.08 (s, 1H), 7.85 (dt, *J* = 7.7, 1.4 Hz, 1H), 7.63 (t, *J* = 7.8 Hz, 1H), 7.57 (dd, *J* = 8.5, 4.2 Hz, 1H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ 163.45, 150.93, 143.86, 136.32, 135.45, 135.43, 134.47, 133.52, 132.24, 131.85, 129.88, 127.10, 123.14, 120.51, 119.74, 118.03, 113.39. **HRMS (ESI-TOF)** m/z: calculated for $C_{17}H_{10}Br_2N_3O^+$: 429.9185 $(M + H)^+$, found: 429.9181.

5. Copies of NMR spectra

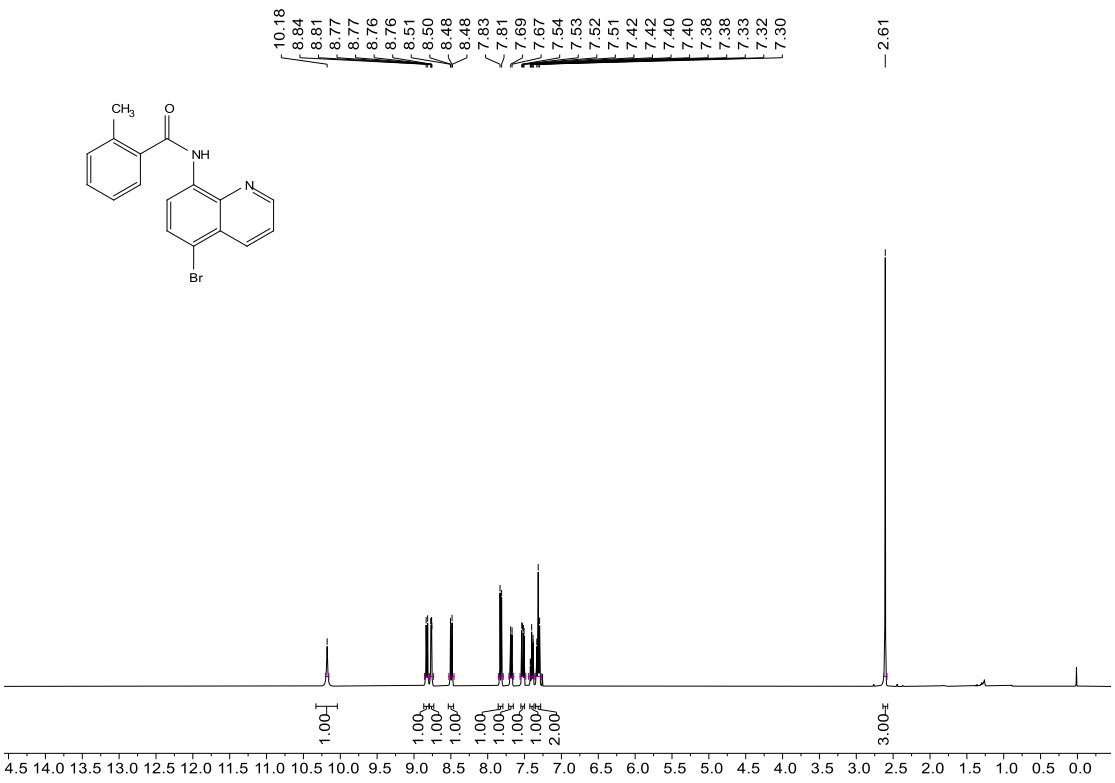
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)benzamide (**2a**)



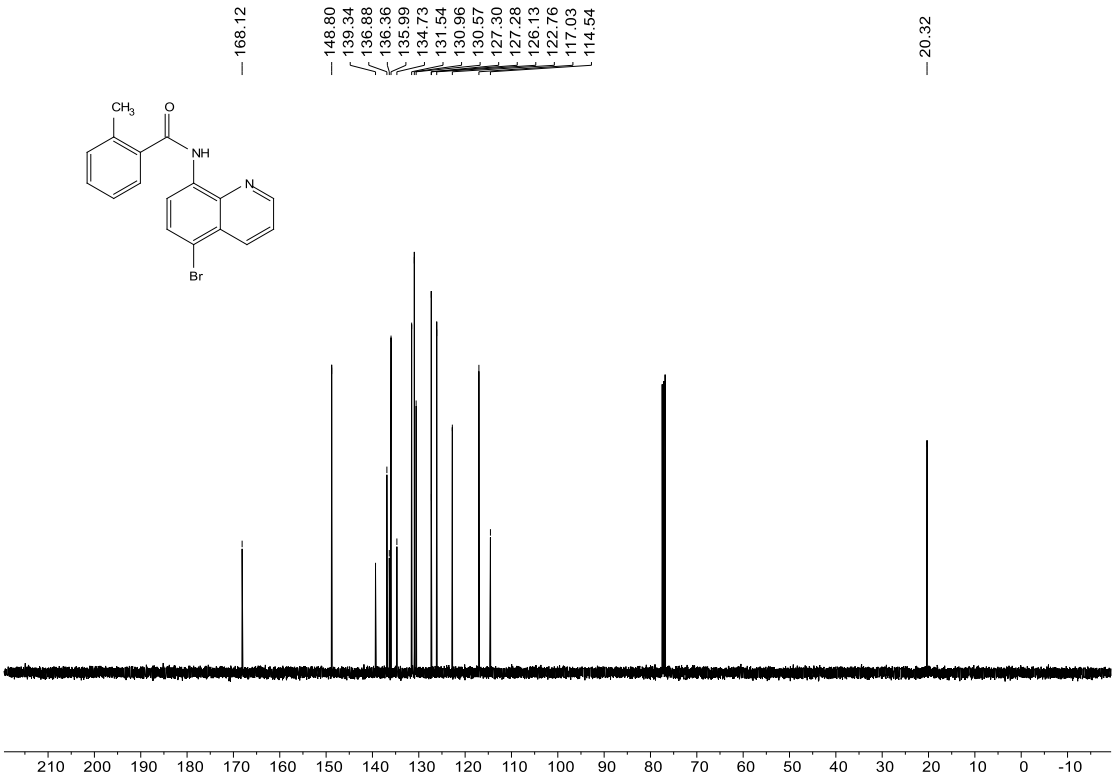
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)benzamide (**2a**)



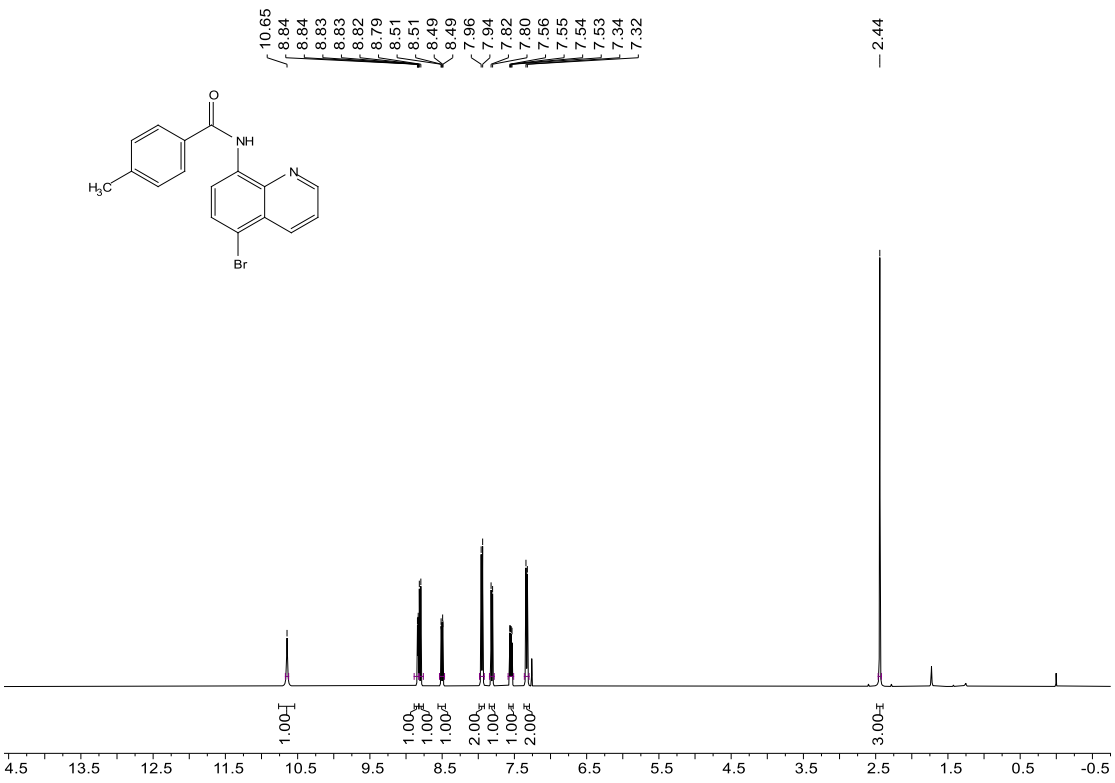
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-2-methylbenzamide (**2b**)



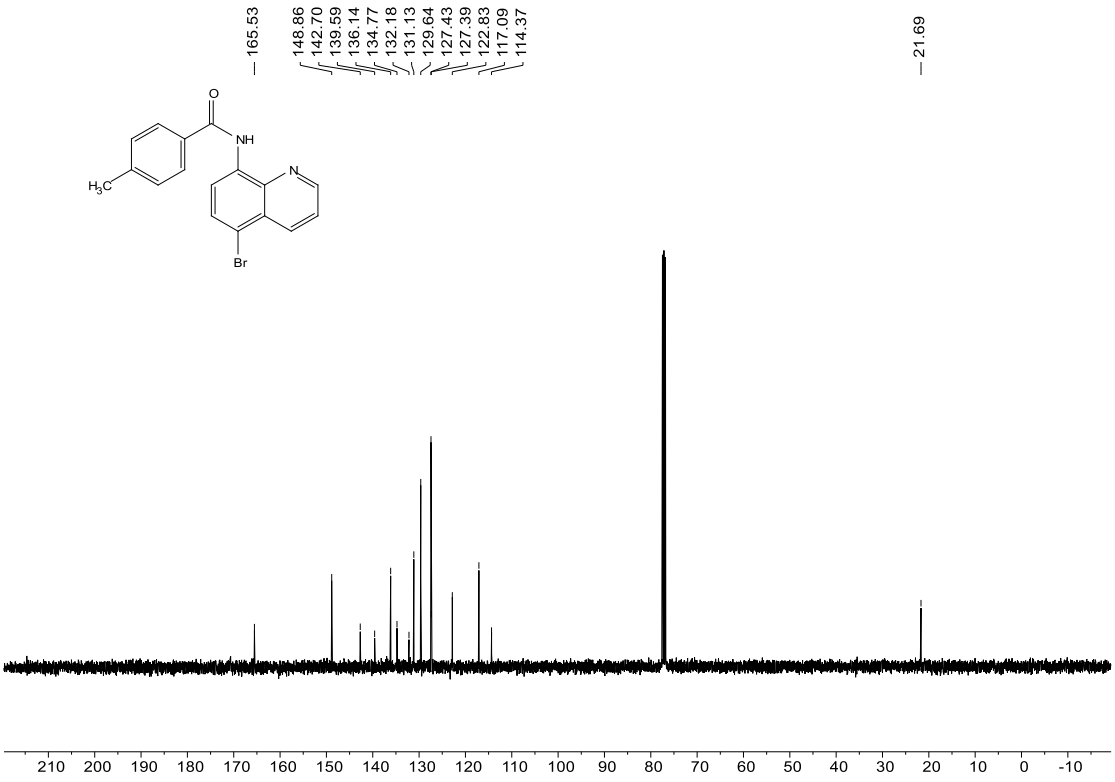
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-2-methylbenzamide (**2b**)



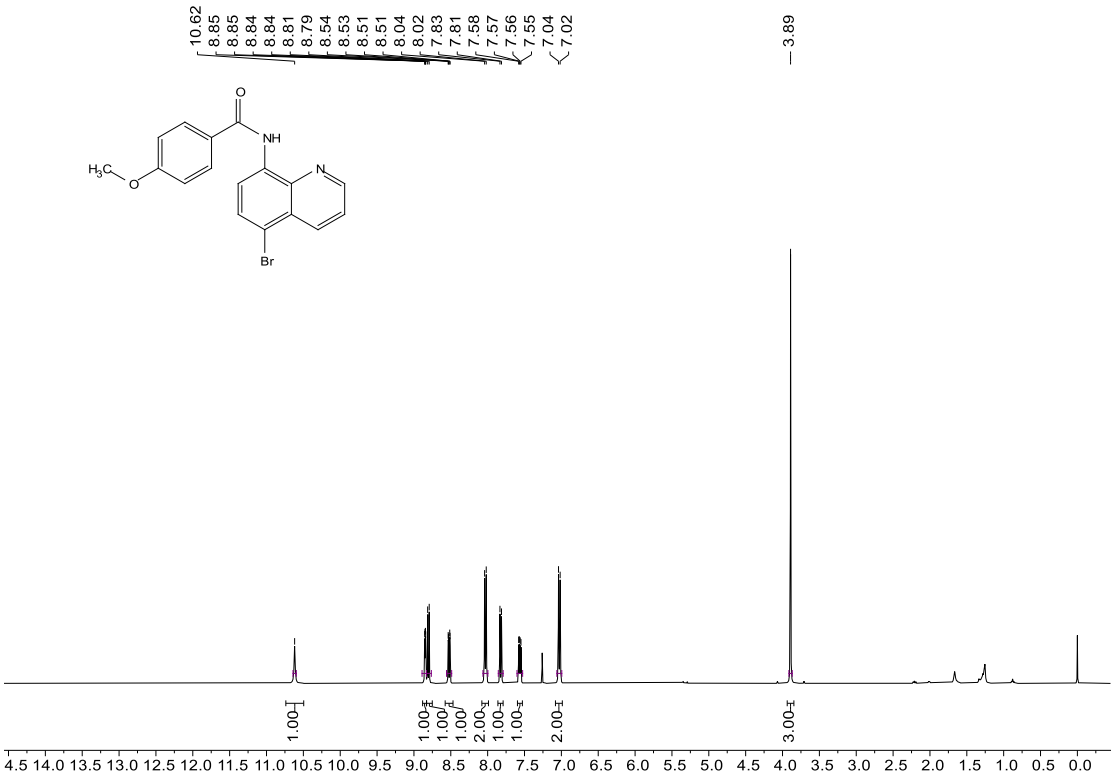
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-4-methylbenzamide (**2c**)



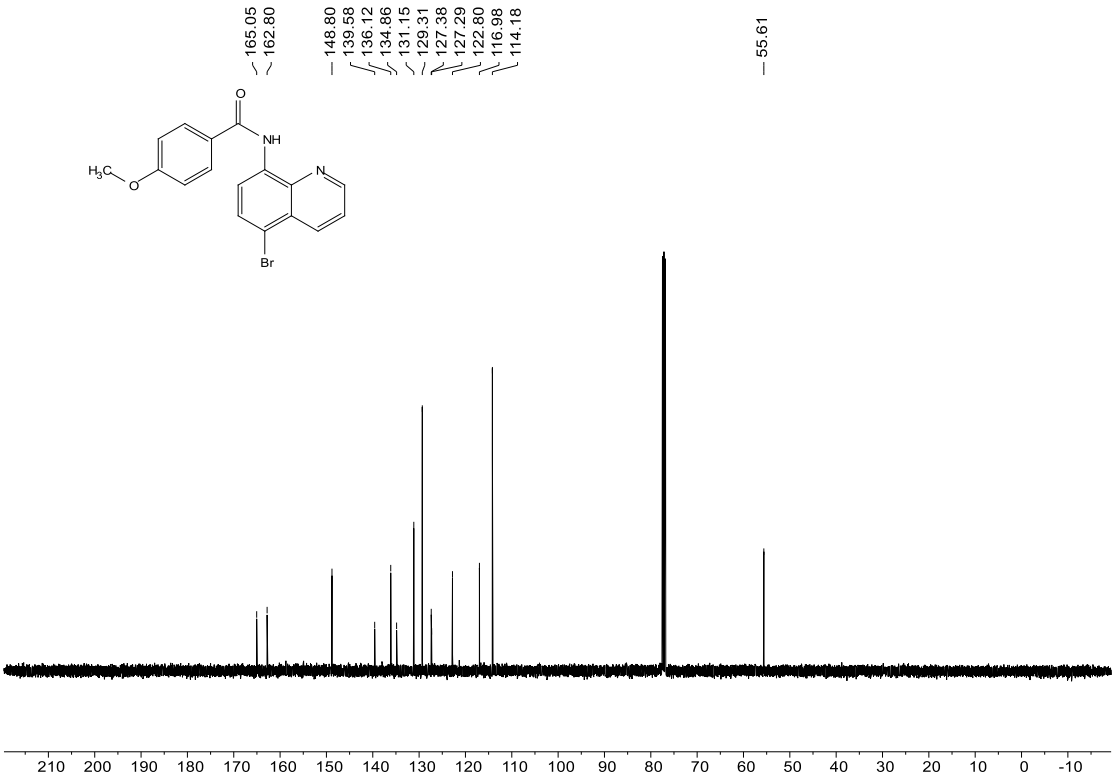
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-4-methylbenzamide (**2c**)



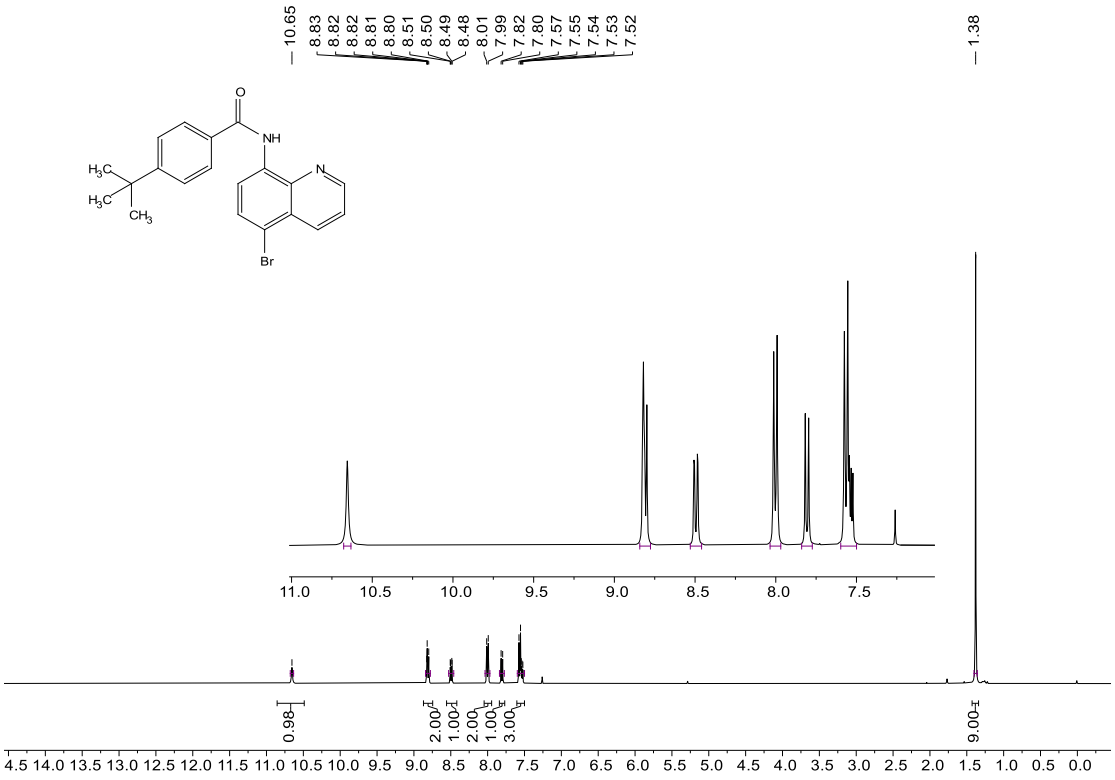
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-4-methoxybenzamide (**2d**)



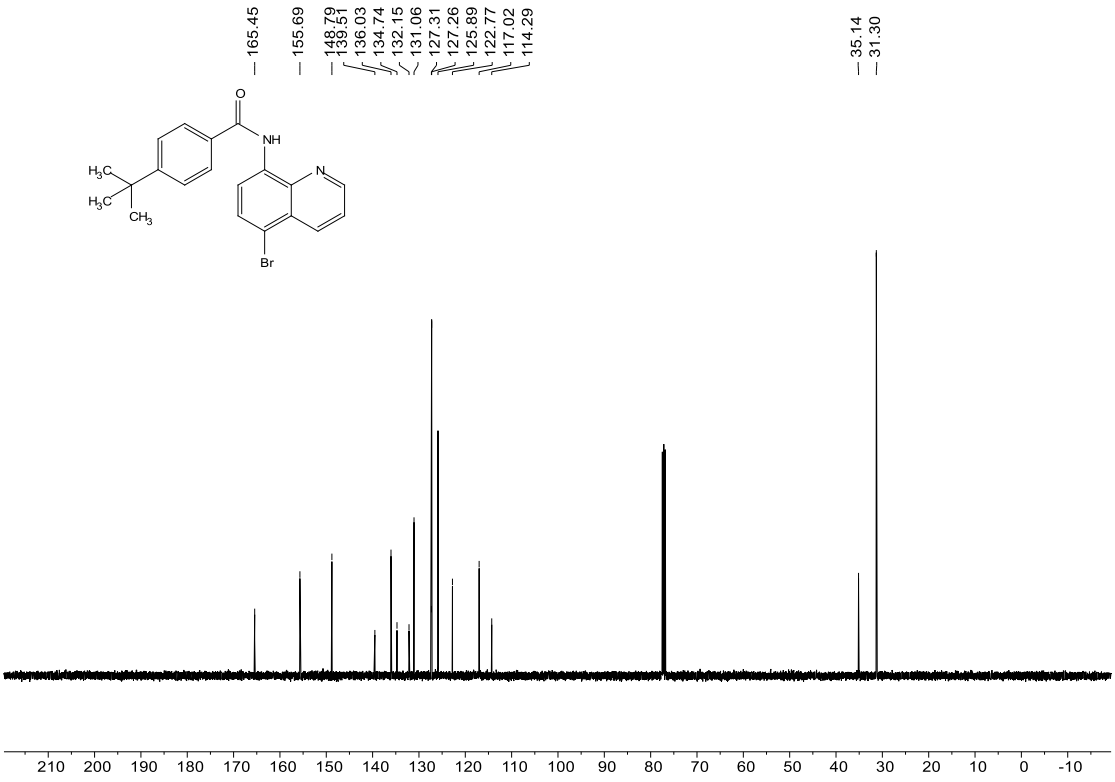
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-4-methoxybenzamide (**2d**)



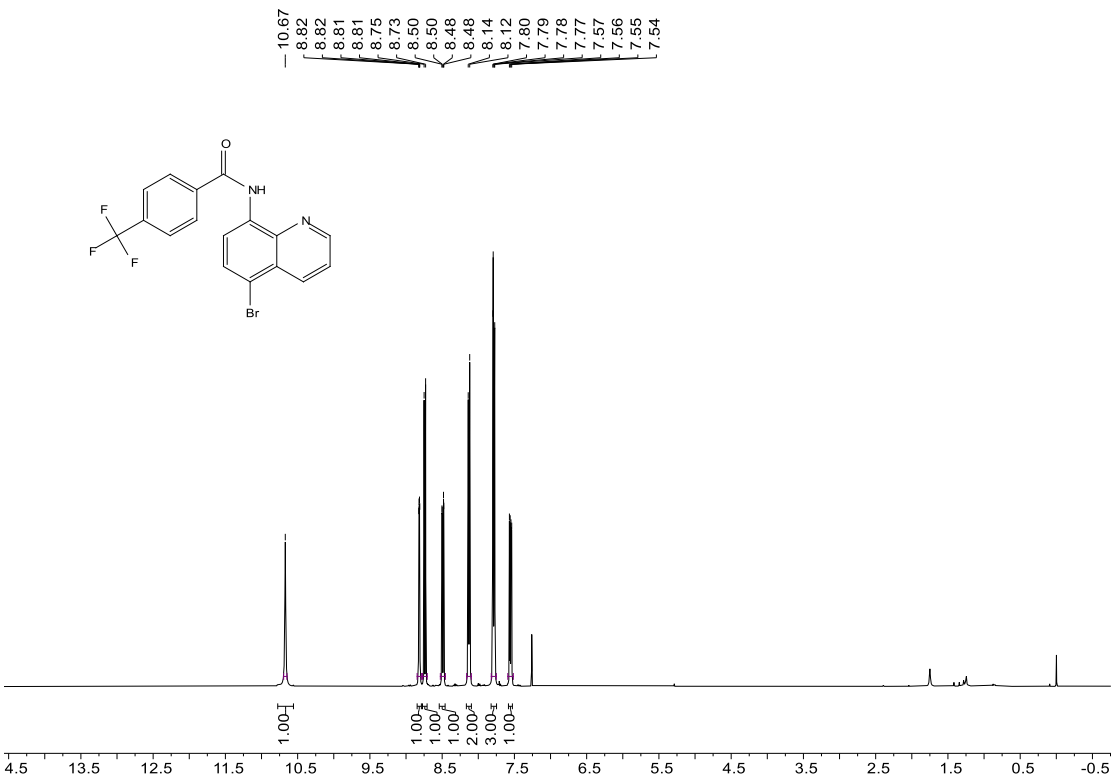
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-4-(tert-butyl)benzamide (**2e**)



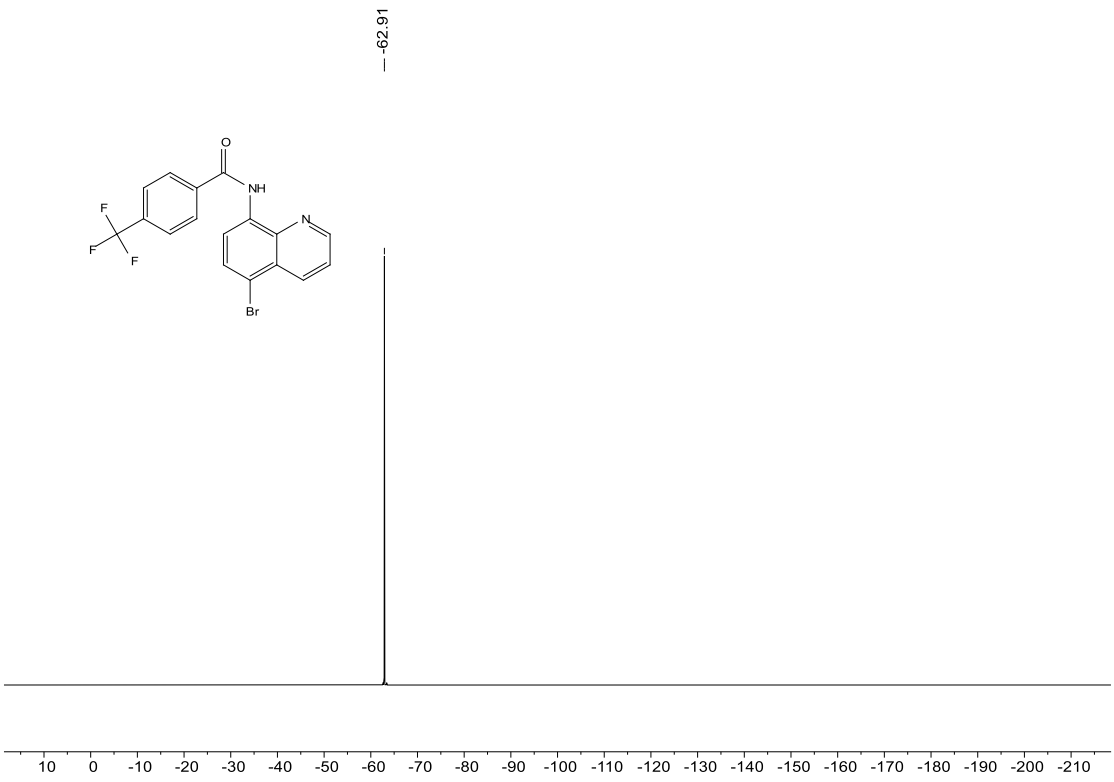
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-4-(tert-butyl)benzamide (**2e**)



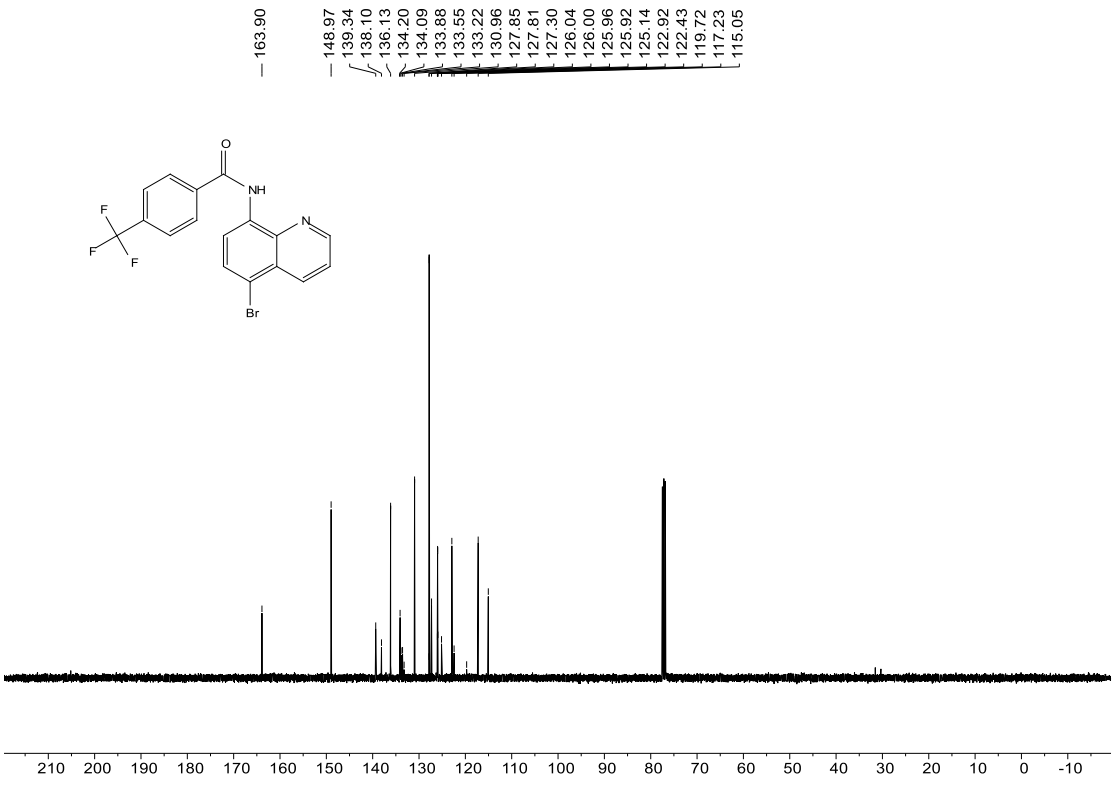
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-4-(trifluoromethyl)benzamide (**2f**)



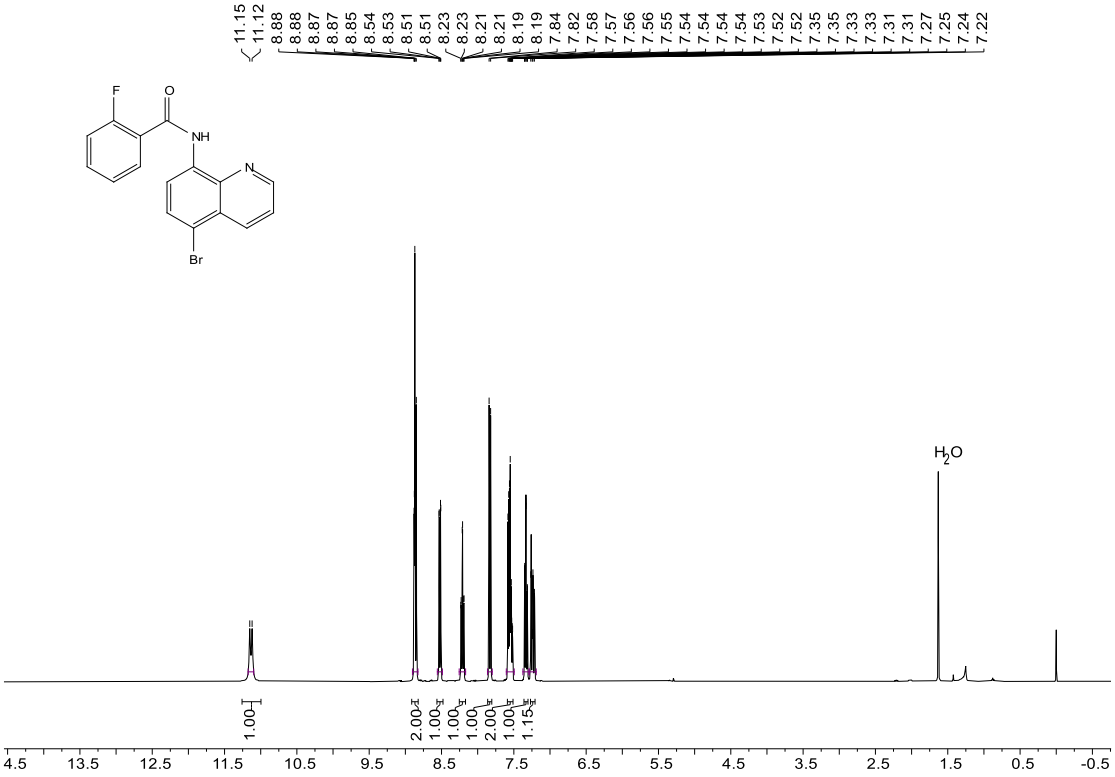
^{19}F NMR for *N*-(5-bromoquinolin-8-yl)-4-(trifluoromethyl)benzamide (**2f**)



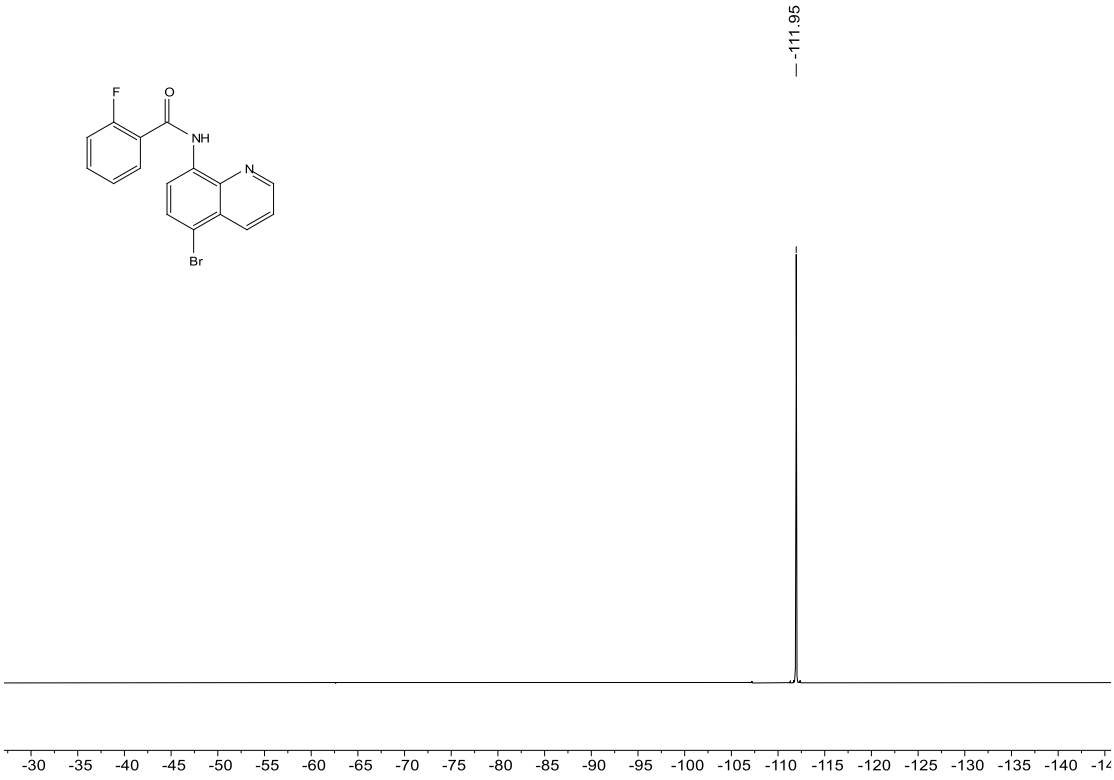
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-4-(trifluoromethyl)benzamide (**2f**)



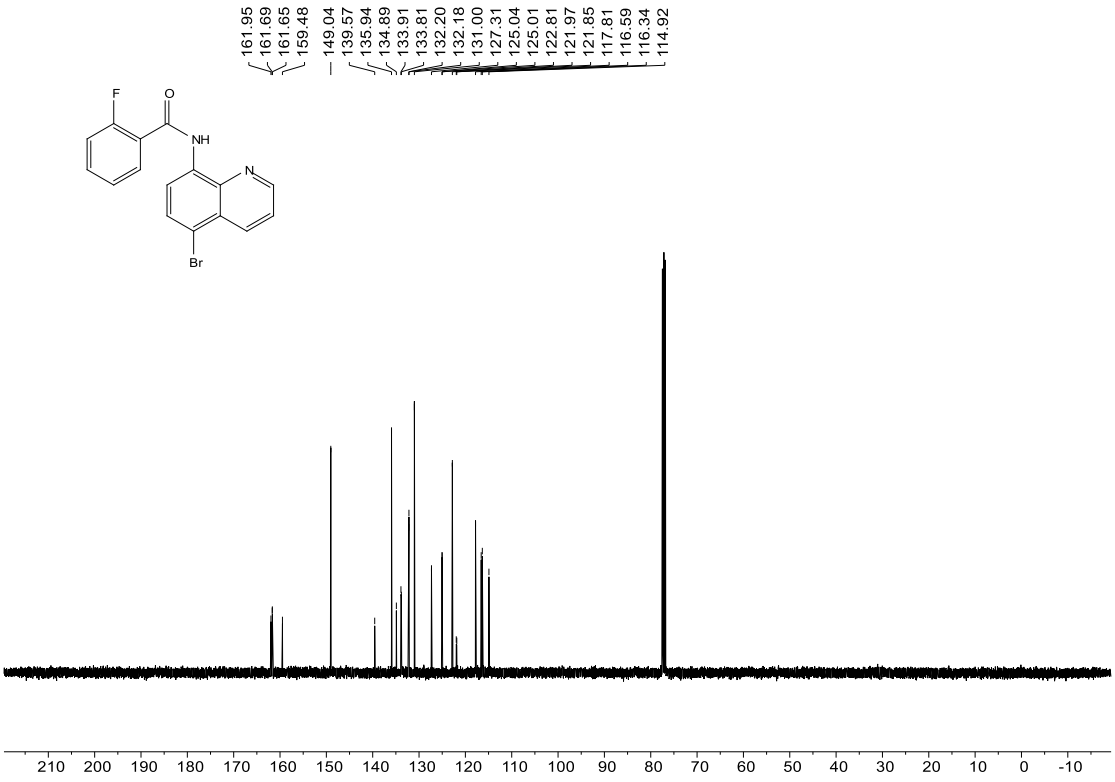
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-2-fluorobenzamide (**2g**)



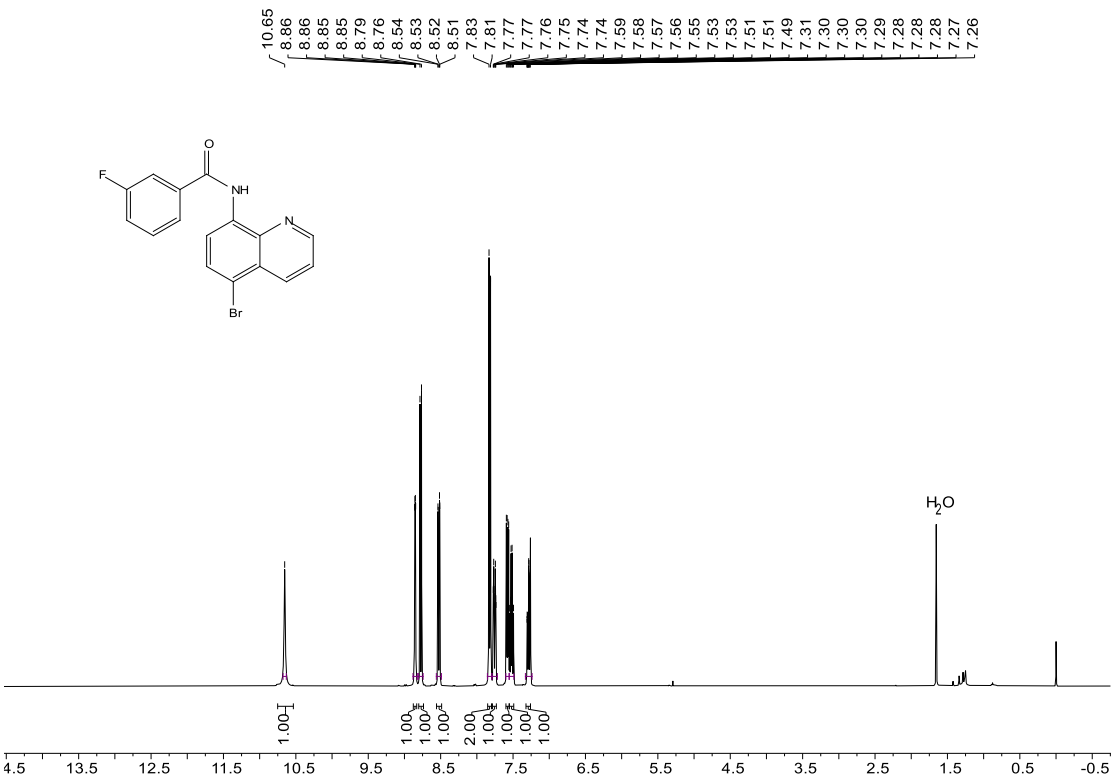
^{19}F NMR for *N*-(5-bromoquinolin-8-yl)-2-fluorobenzamide (**2g**)



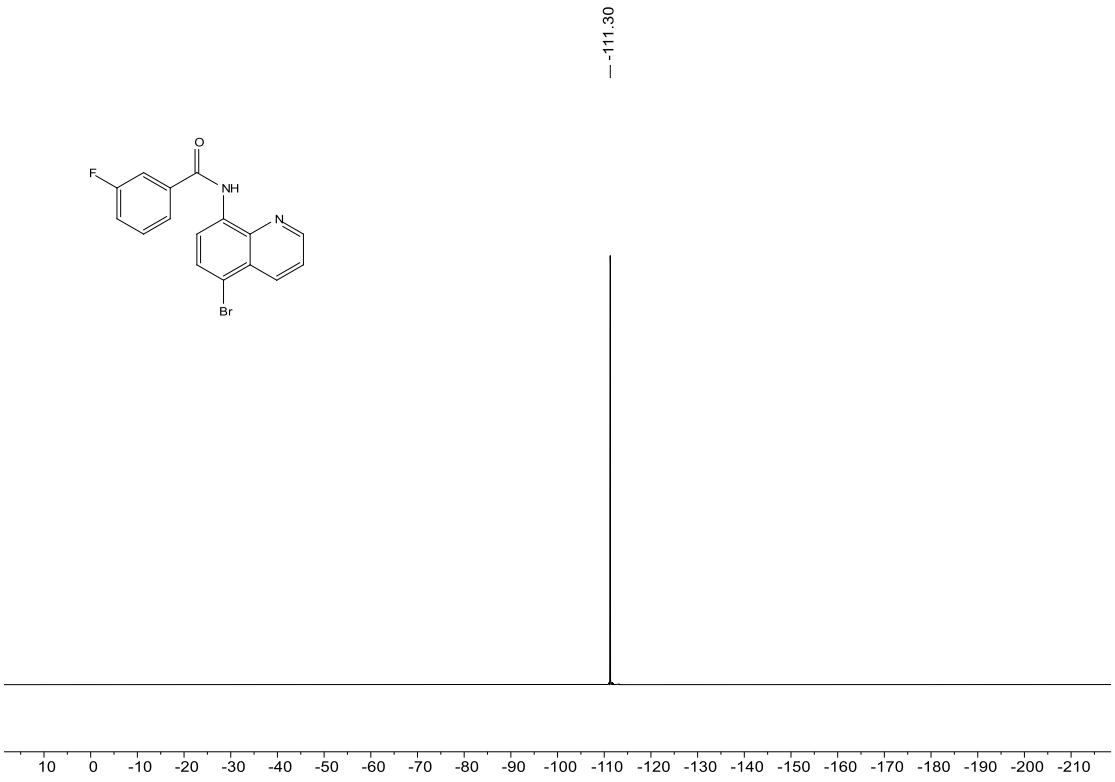
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-2-fluorobenzamide (**2g**)



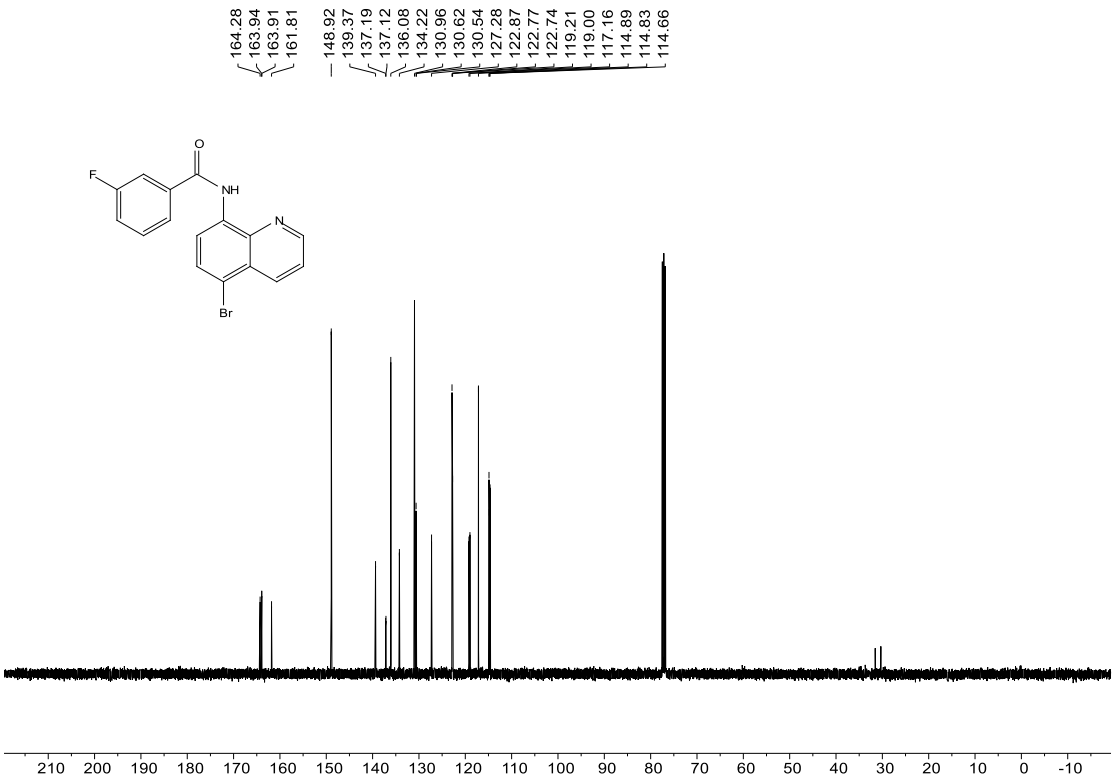
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-3-fluorobenzamide (**2h**)



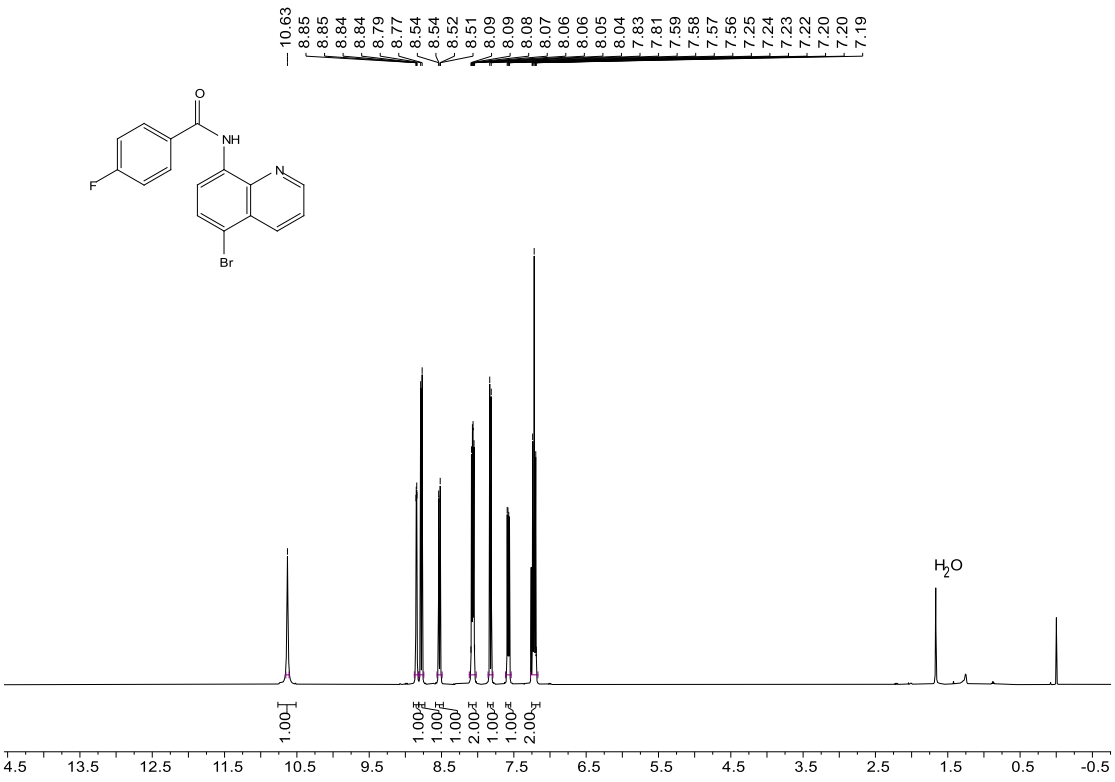
^{19}F NMR for *N*-(5-bromoquinolin-8-yl)-3-fluorobenzamide (**2h**)



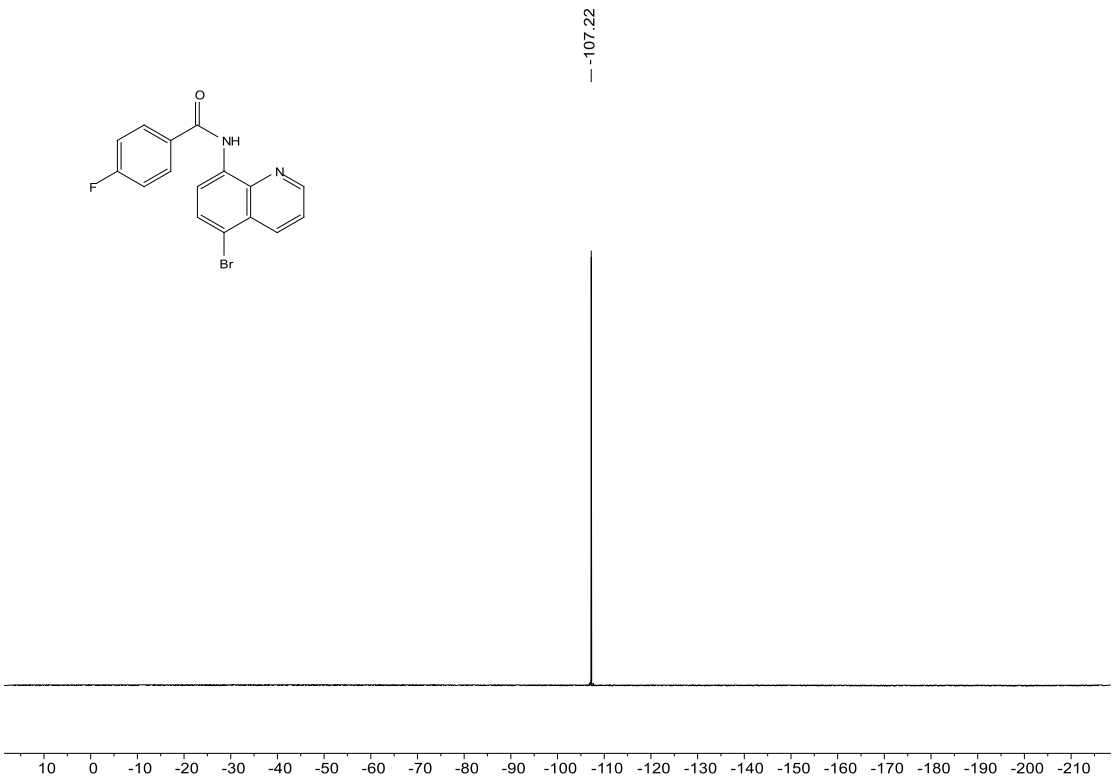
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-3-fluorobenzamide (**2h**)



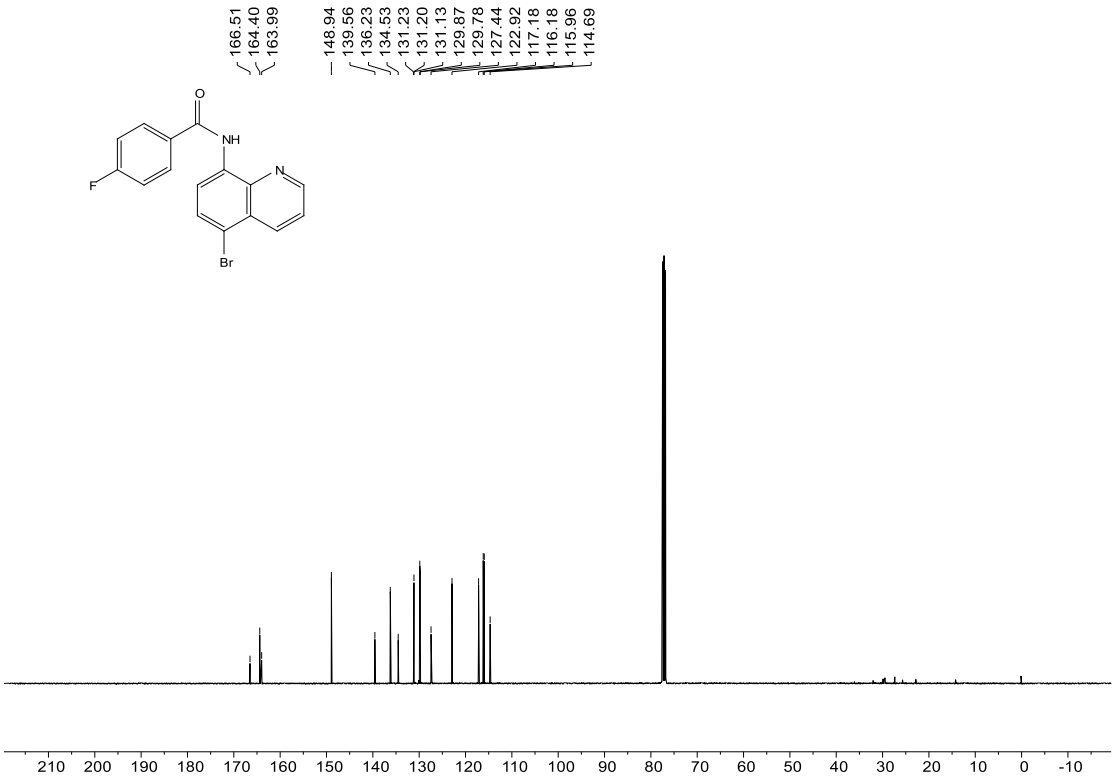
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-4-fluorobenzamide (**2i**)



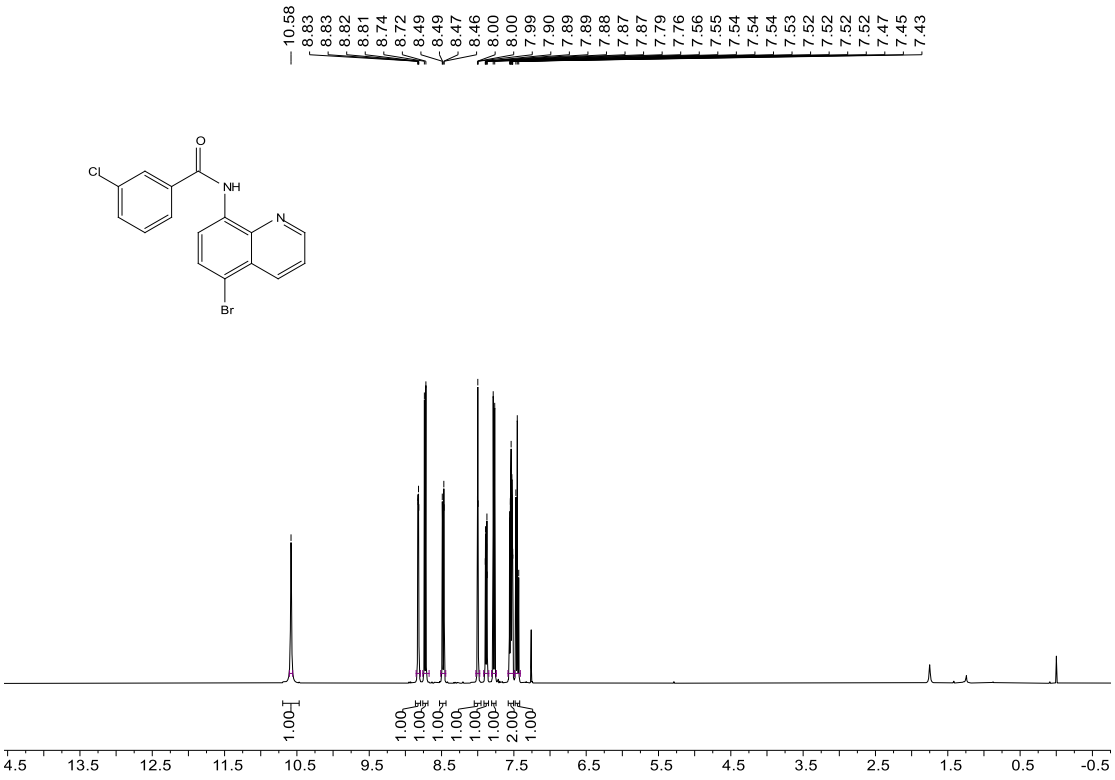
^{19}F NMR for *N*-(5-bromoquinolin-8-yl)-4-fluorobenzamide (**2i**)



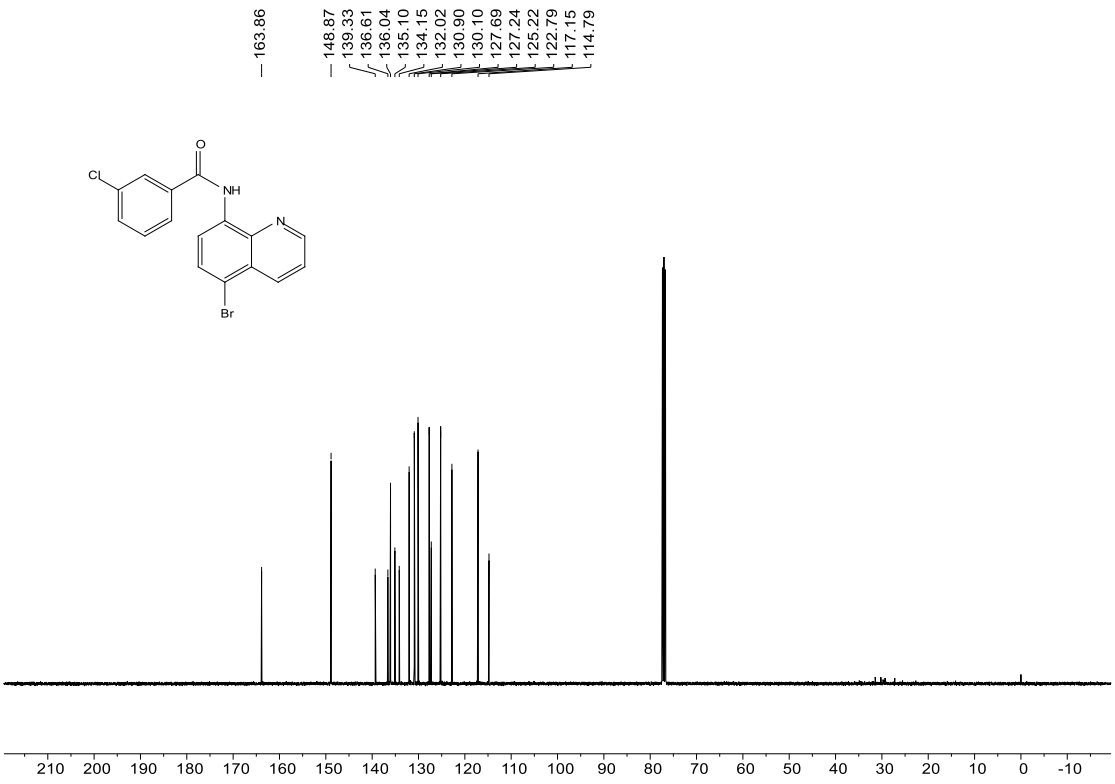
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-4-fluorobenzamide (**2i**)



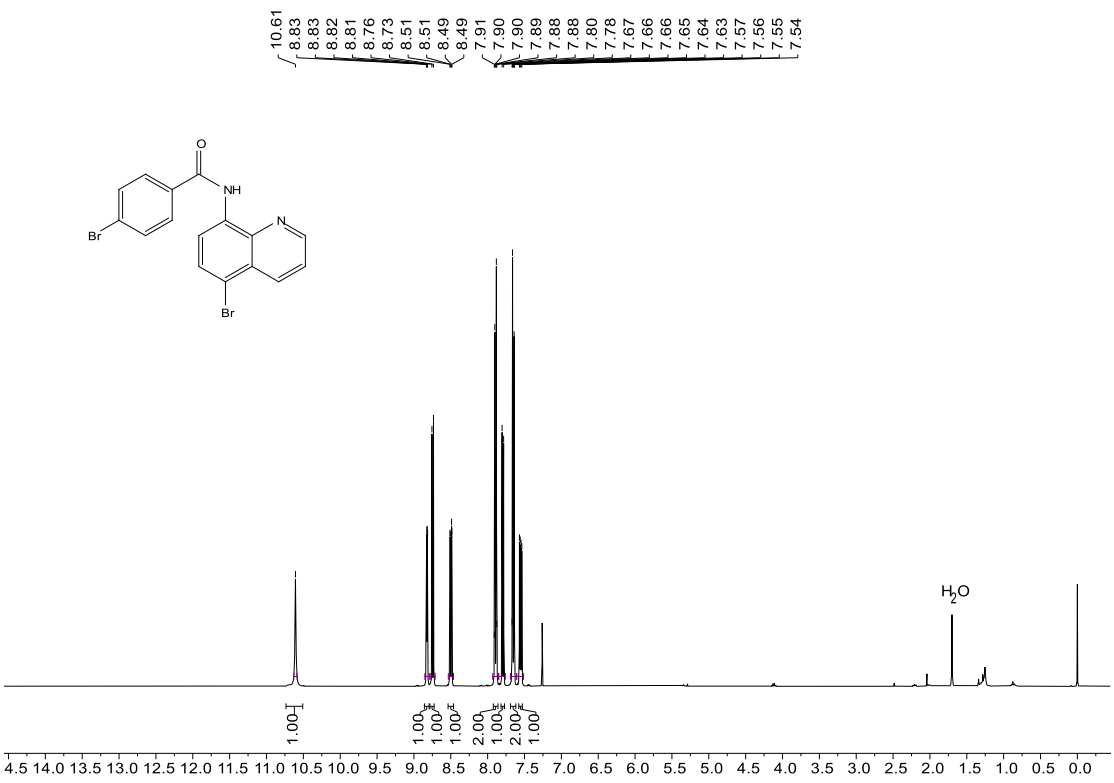
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-3-chlorobenzamide (**2j**)



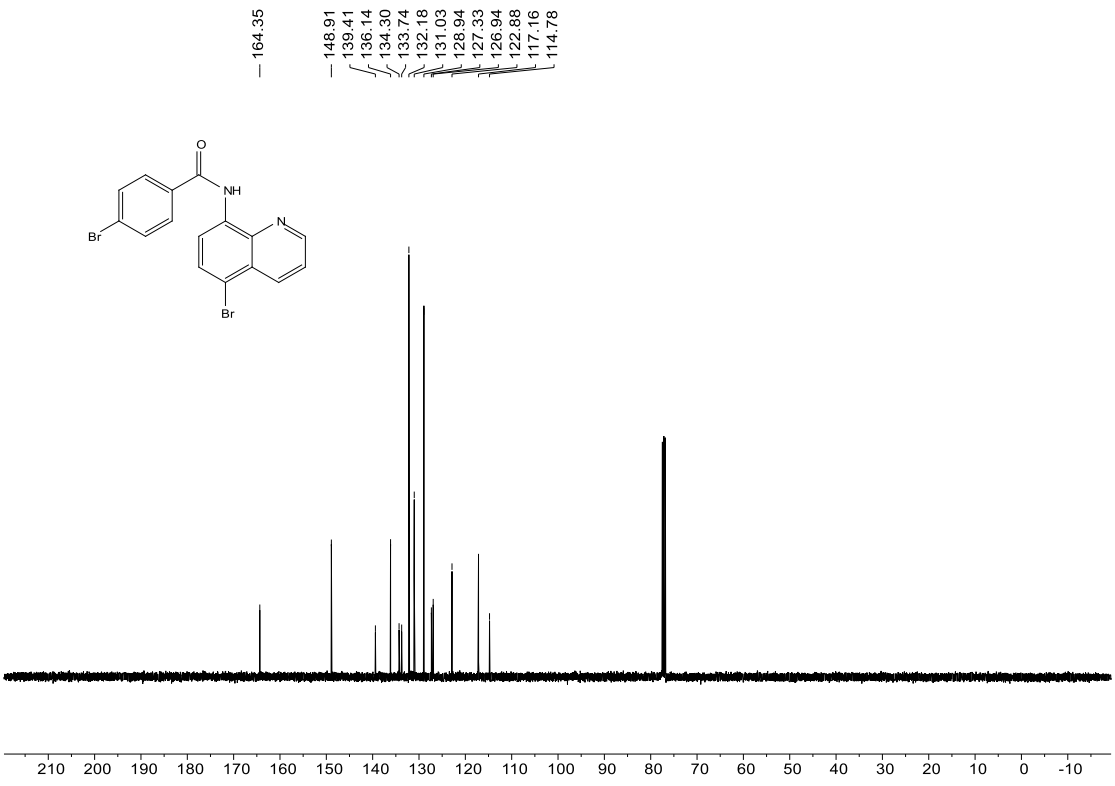
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-3-chlorobenzamide (**2j**)



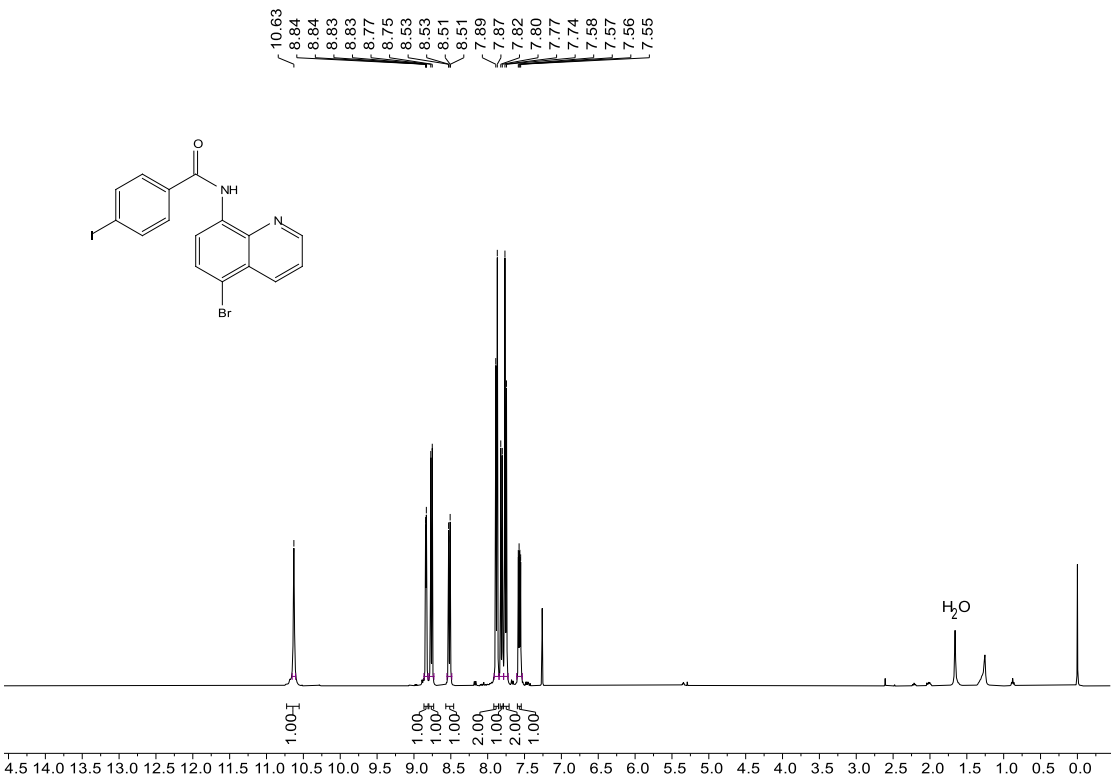
^{1}H NMR for 4-bromo-*N*-(5-bromoquinolin-8-yl)benzamide (**2k**)



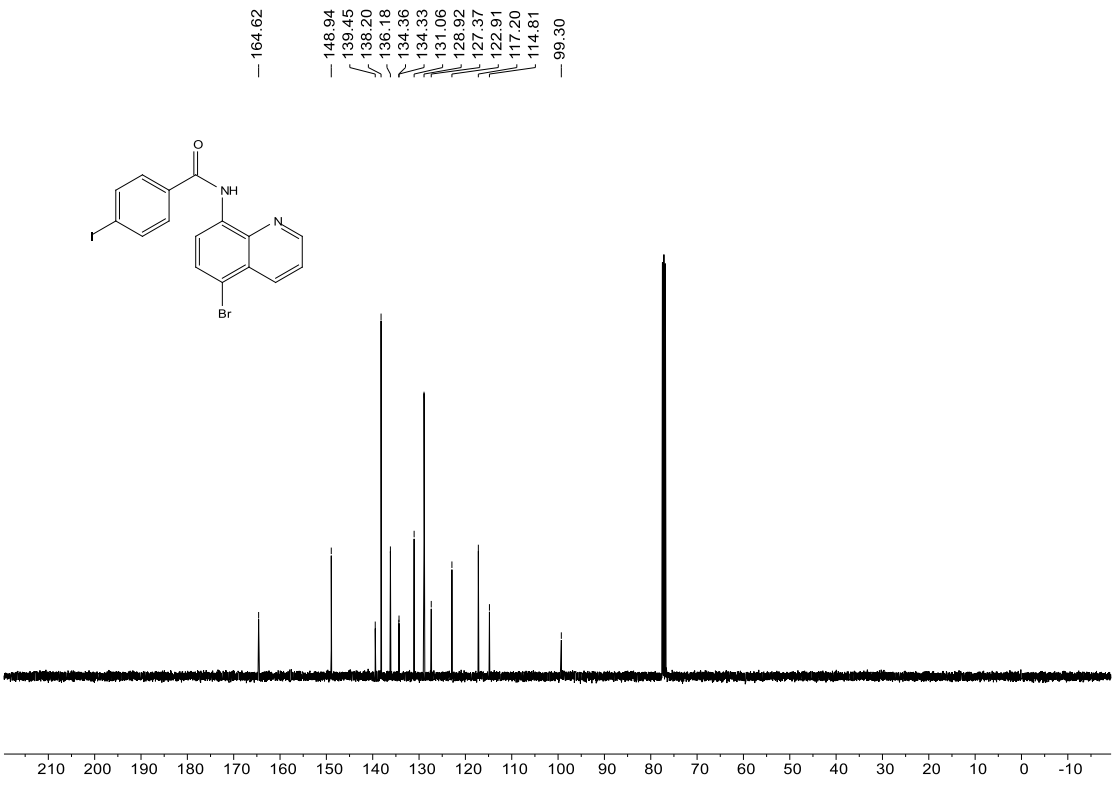
^{13}C NMR for 4-bromo-*N*-(5-bromoquinolin-8-yl)benzamide (**2k**)



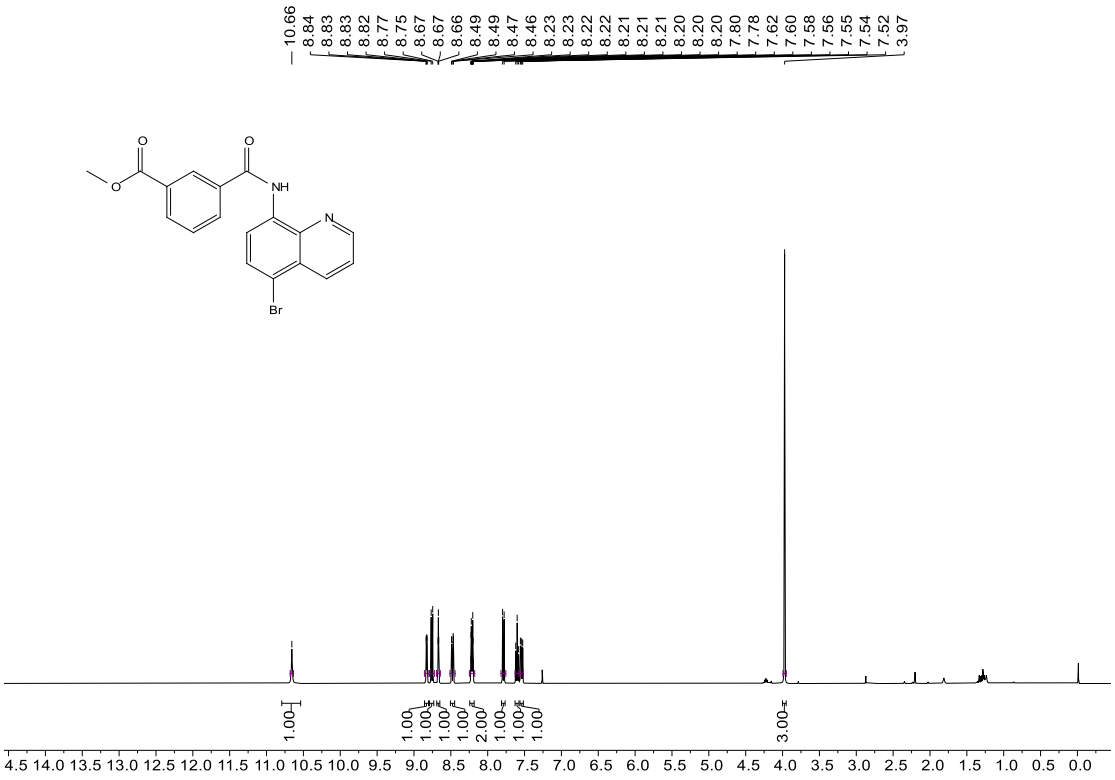
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-4-iodobenzamide (**2l**)



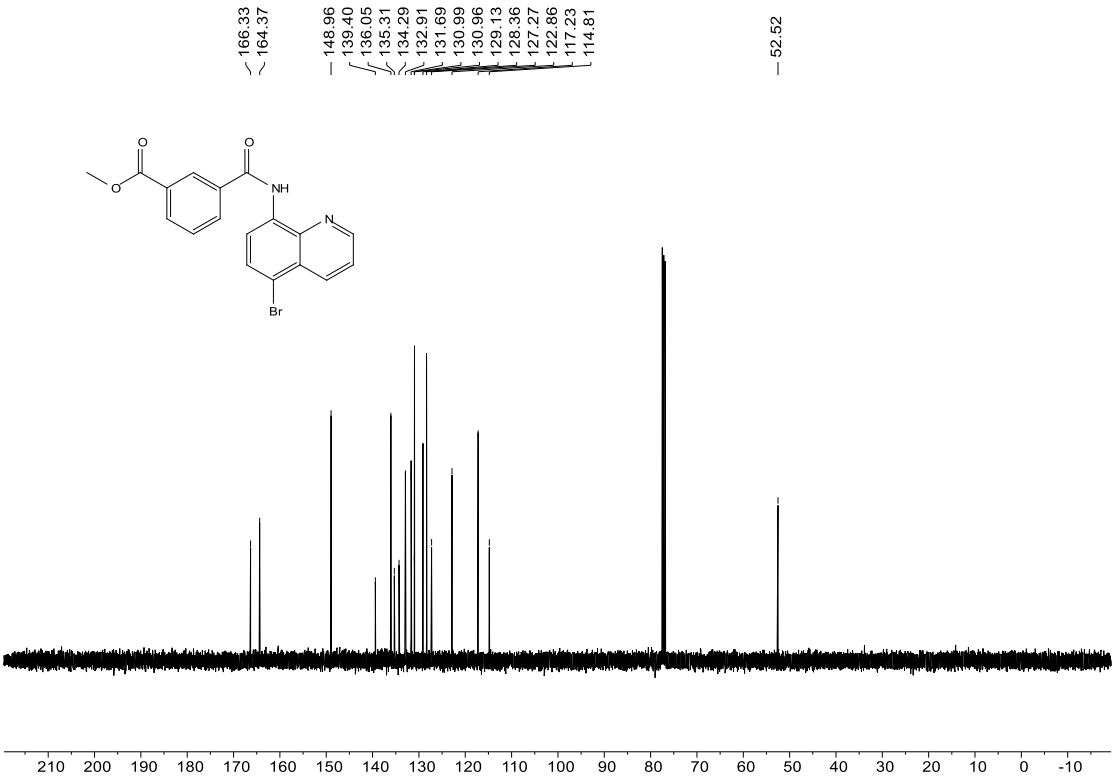
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-4-iodobenzamide (**2l**)



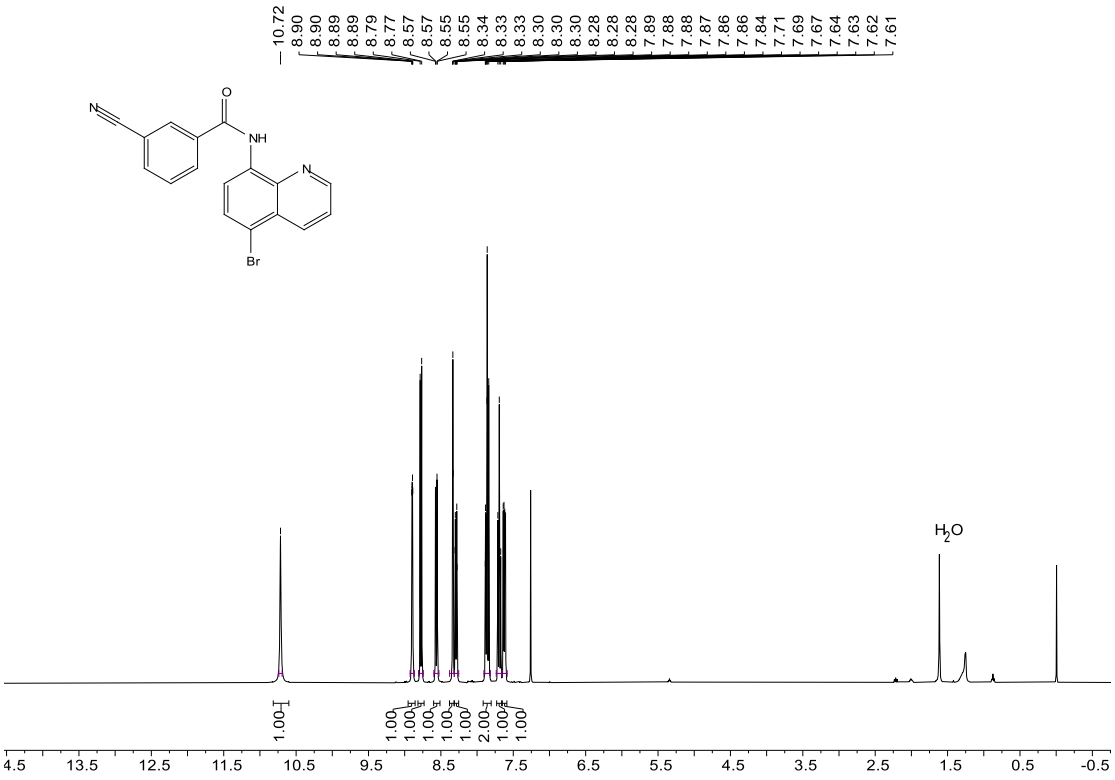
^{1}H NMR for methyl 3-((5-bromoquinolin-8-yl)carbamoyl)benzoate (**2m**)



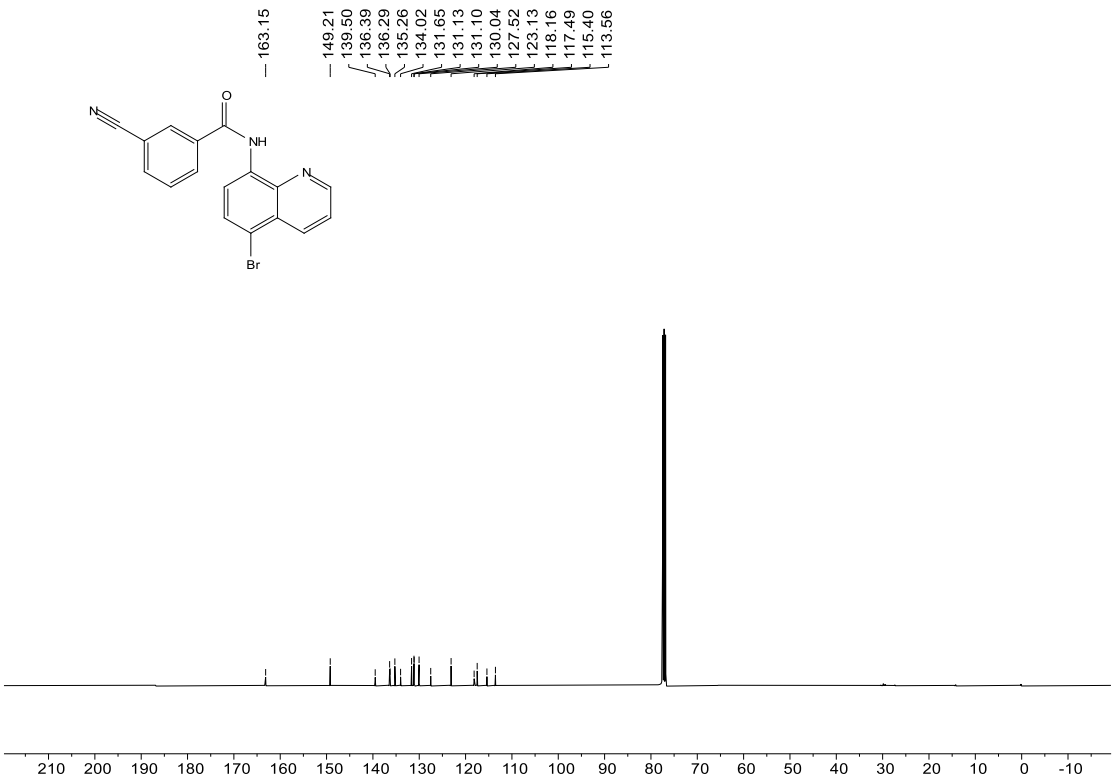
^{13}C NMR for methyl 3-((5-bromoquinolin-8-yl)carbamoyl)benzoate (**2m**)



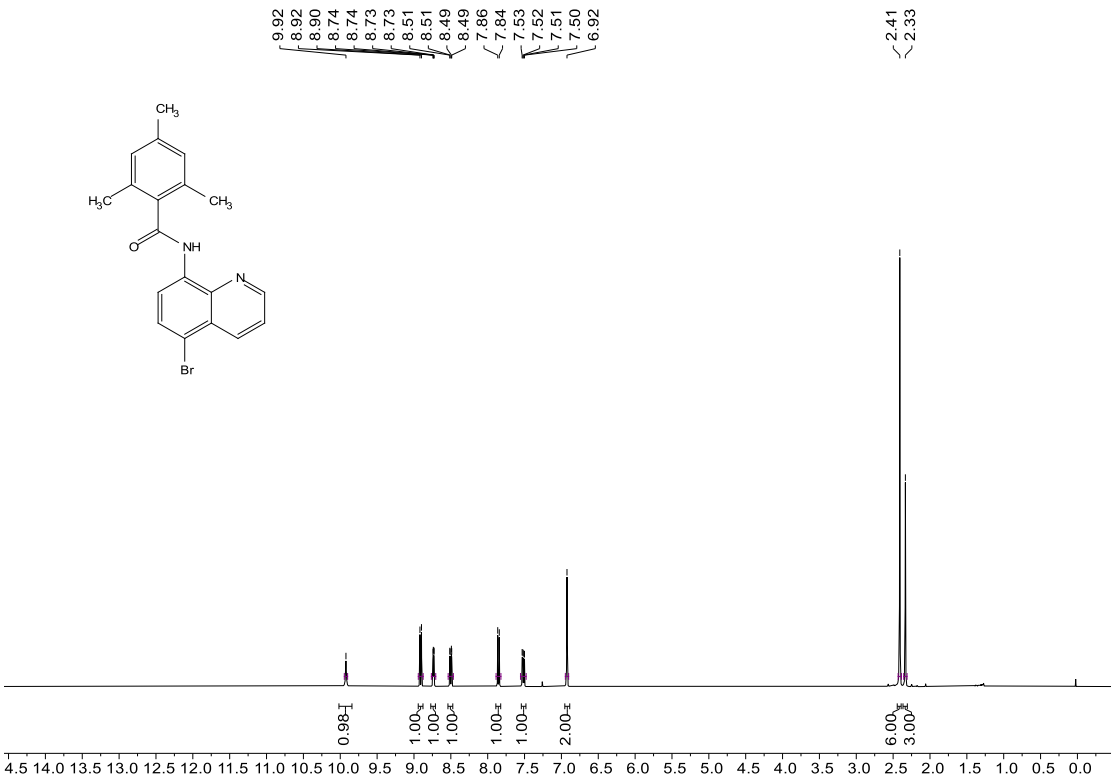
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-3-cyanobenzamide (**2n**)



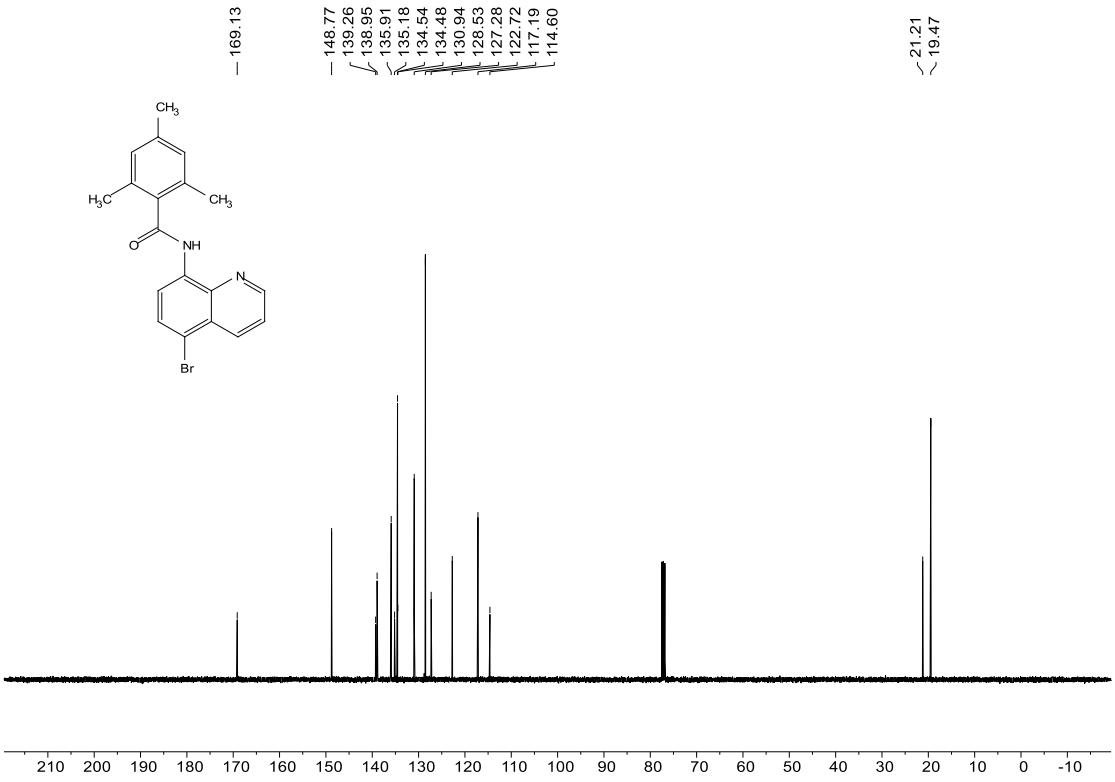
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-3-cyanobenzamide (**2n**)



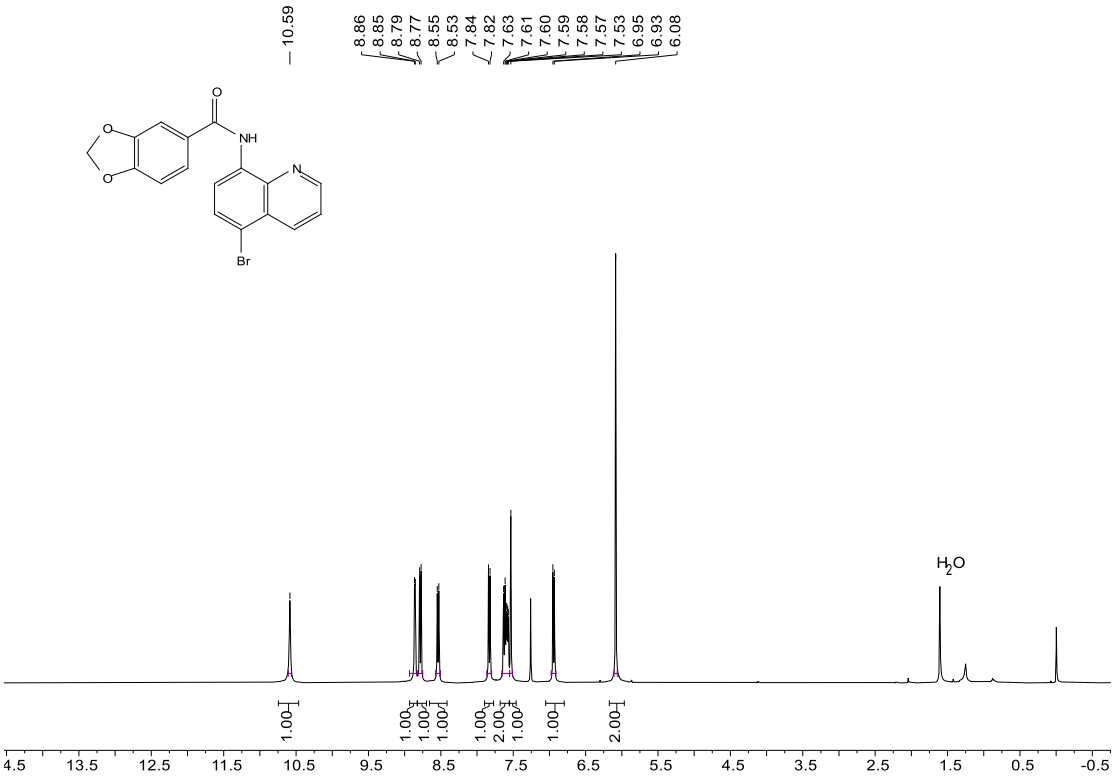
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-2,4,6-trimethylbenzamide (**2o**)



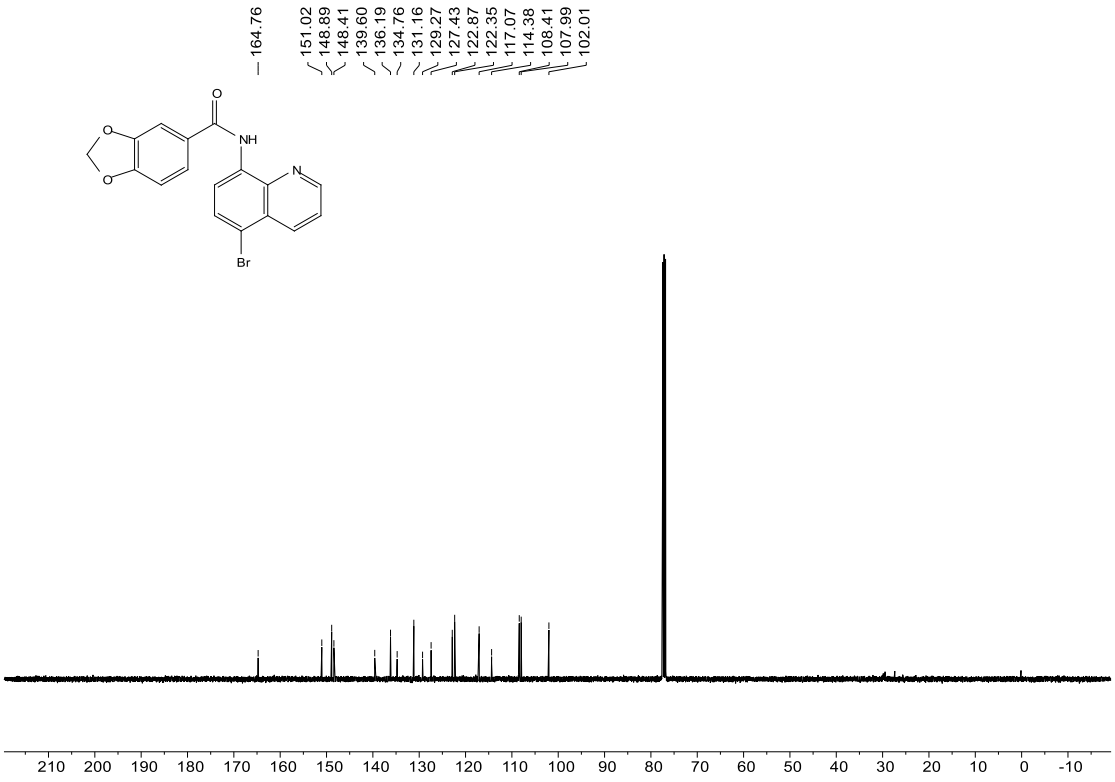
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-2,4,6-trimethylbenzamide (**2o**)



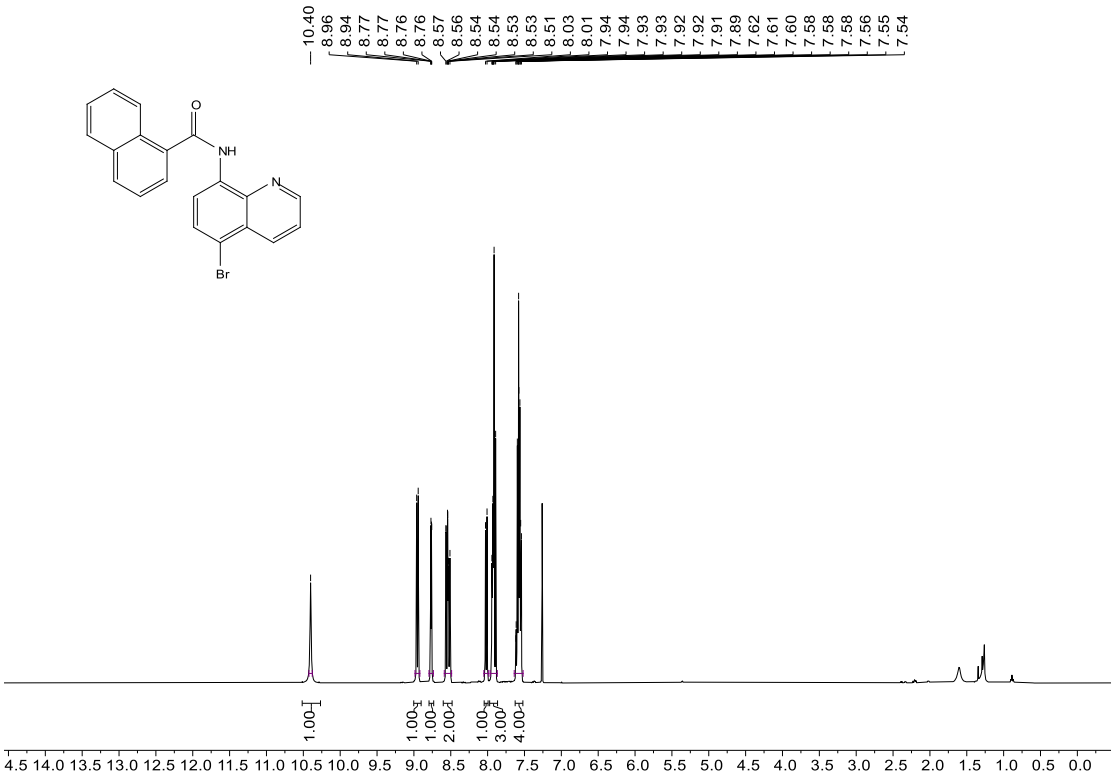
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)benzo[d][1,3]dioxole-5-carboxamide (**2p**)



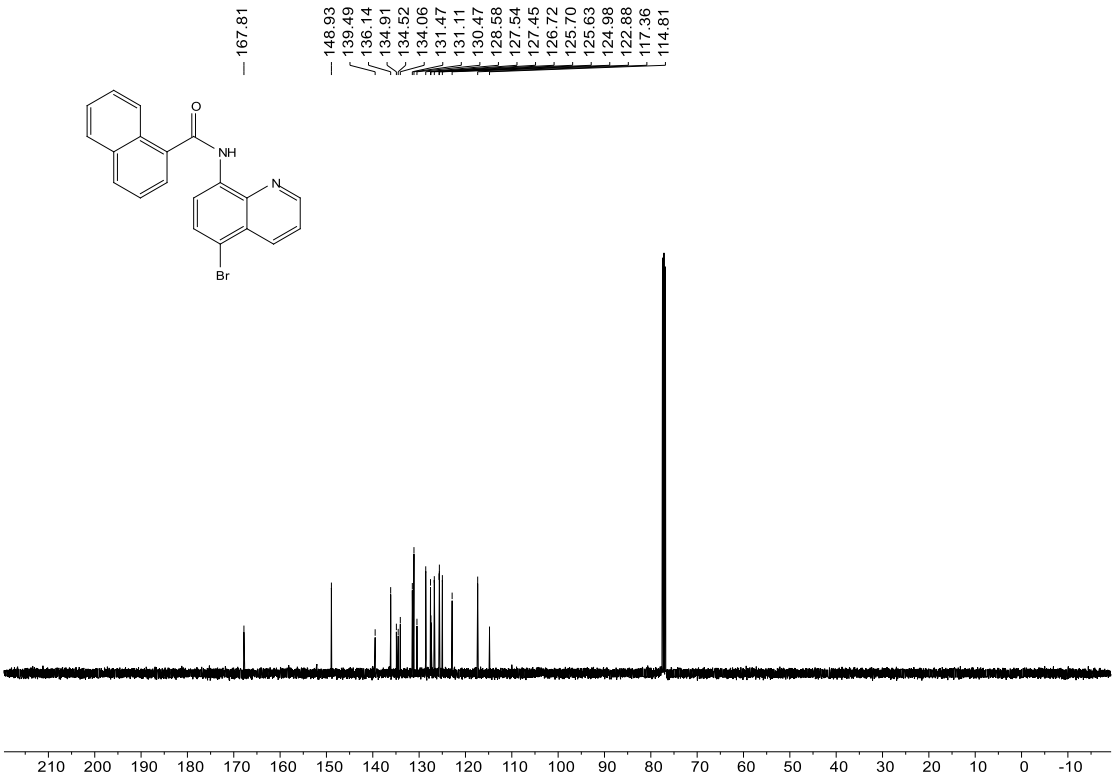
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)benzo[d][1,3]dioxole-5-carboxamide (**2p**)



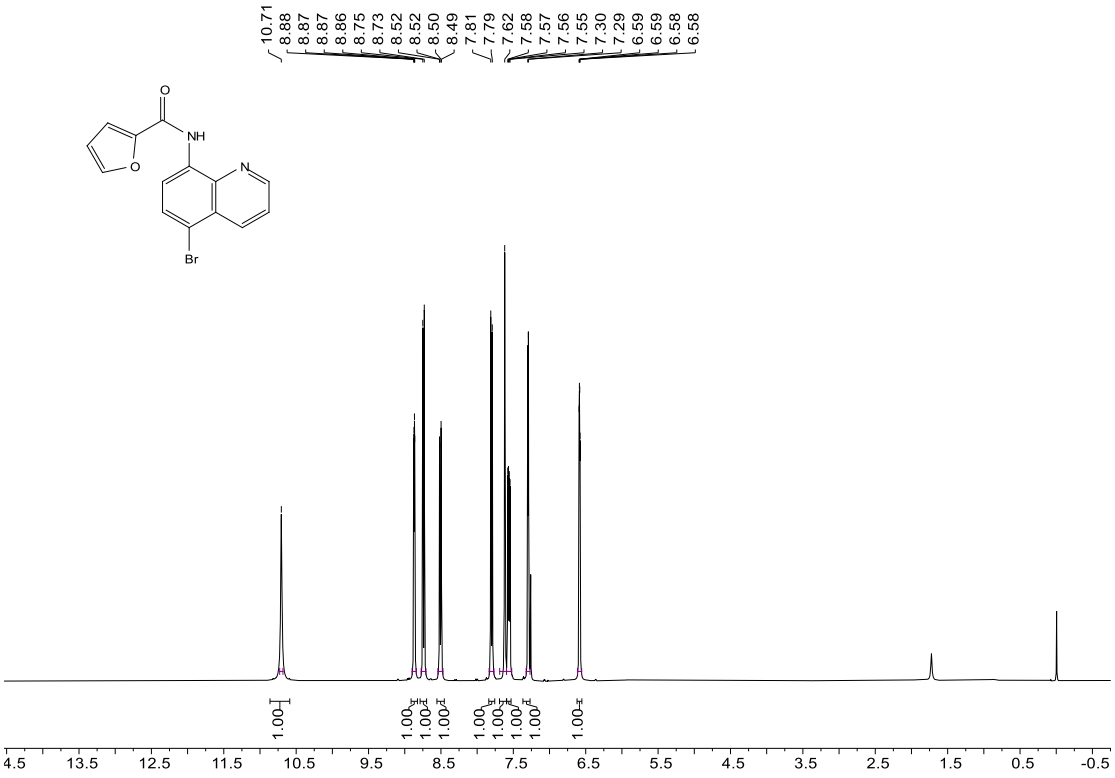
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-1-naphthamide (**2q**)



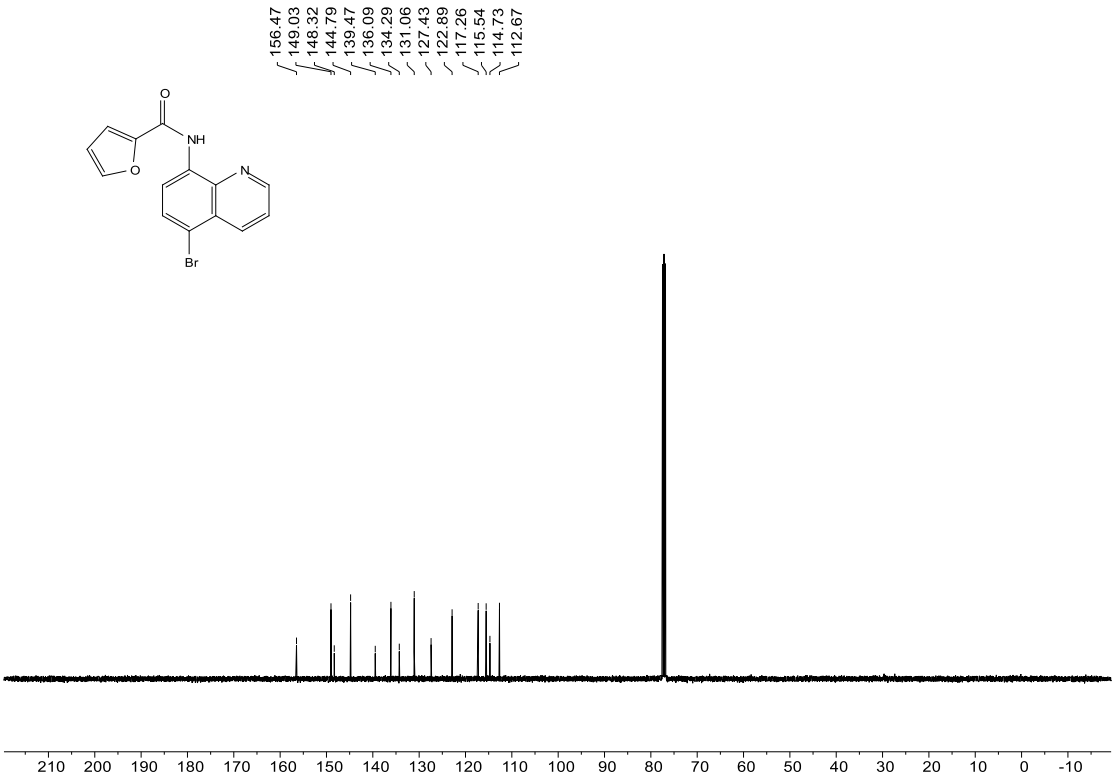
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-1-naphthamide (**2q**)



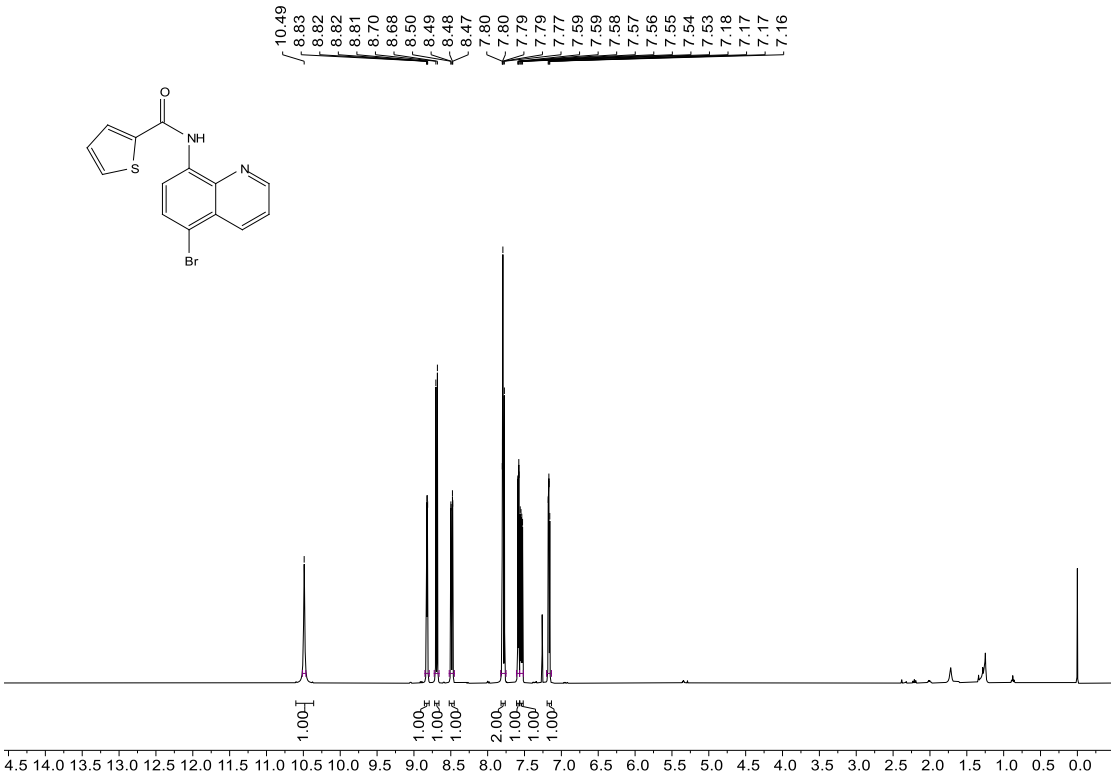
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)furan-2-carboxamide (**2r**)



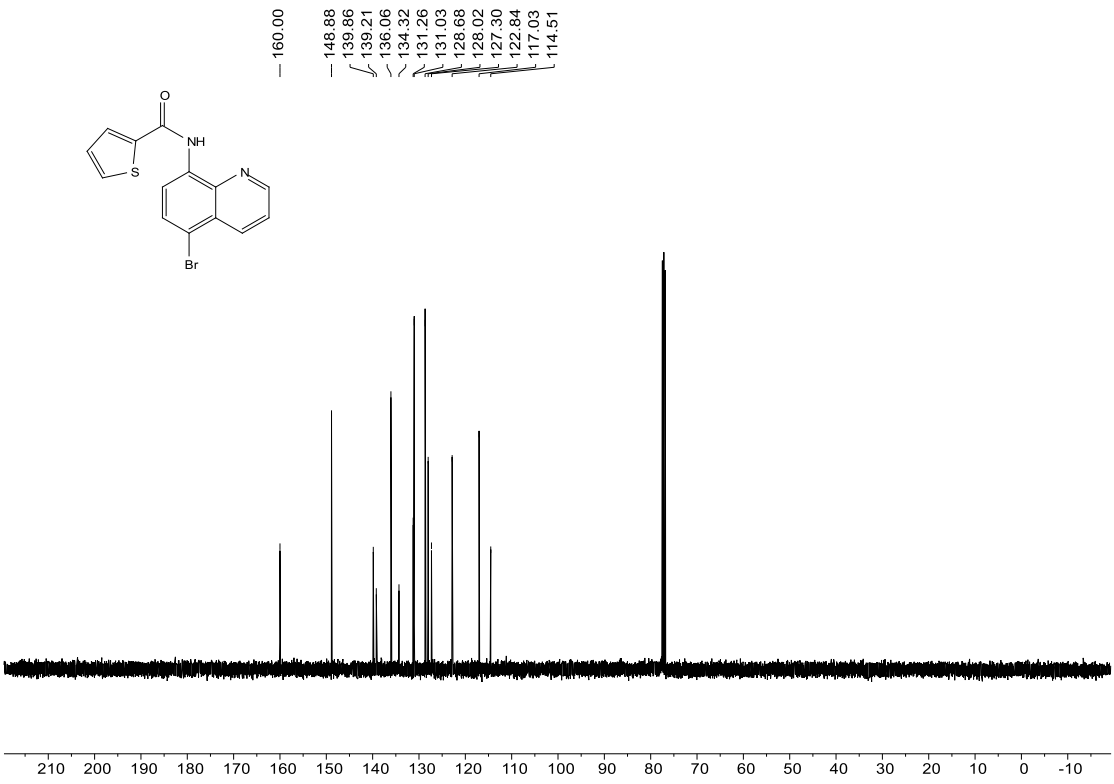
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)furan-2-carboxamide (**2r**)



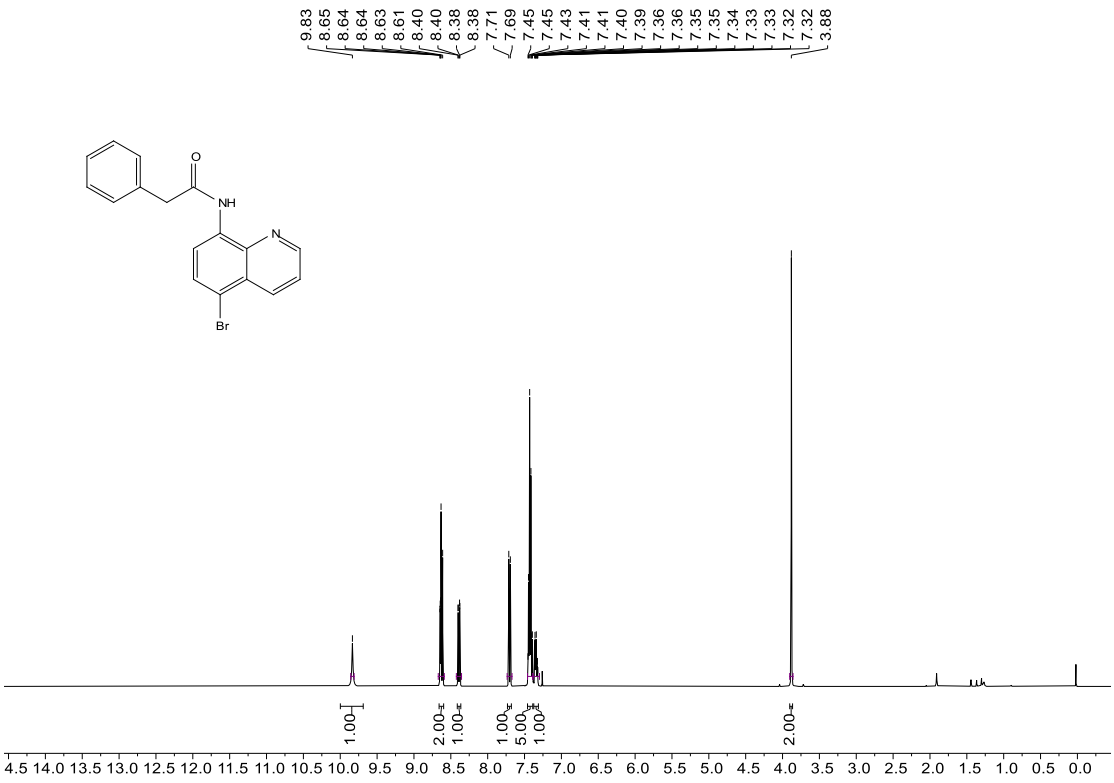
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)thiophene-2-carboxamide (**2s**)



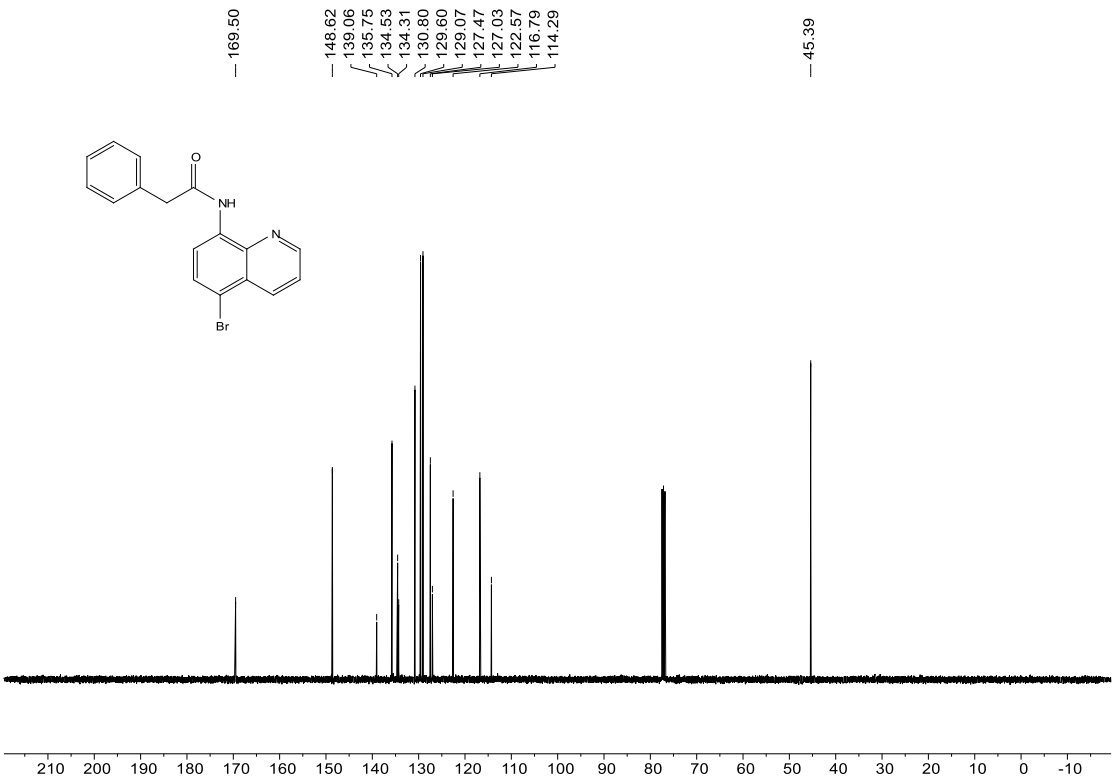
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)thiophene-2-carboxamide (**2s**)



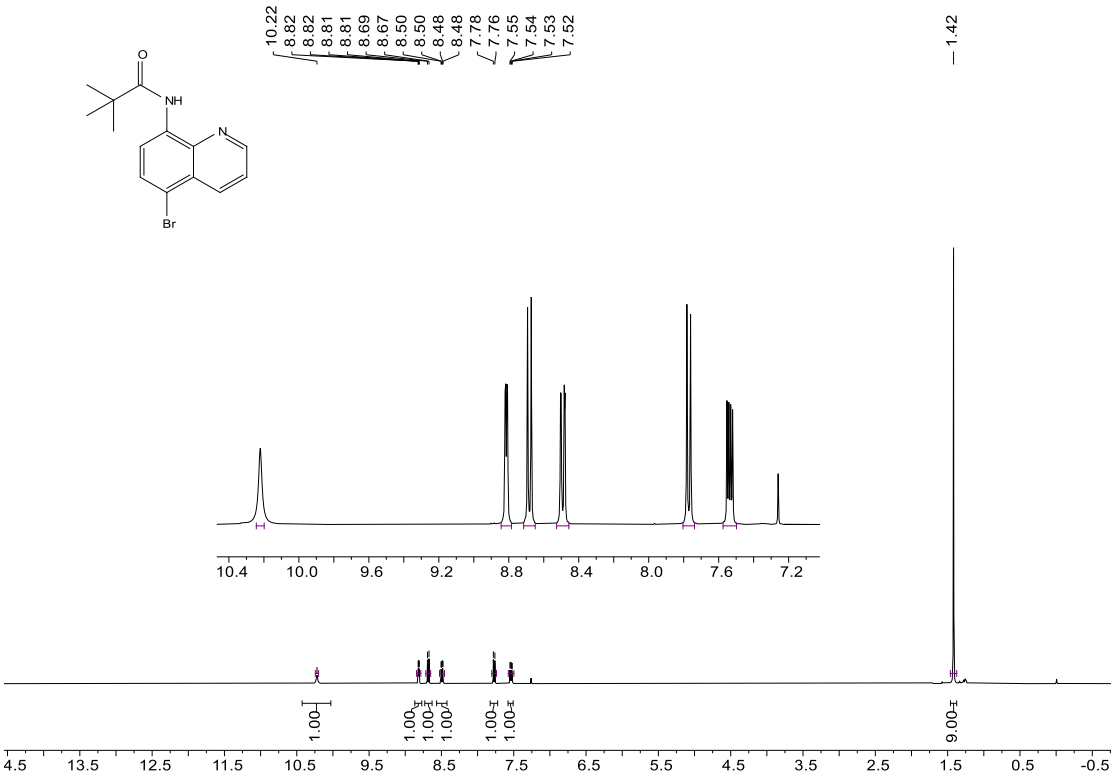
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-2-phenylacetamide (**2t**)



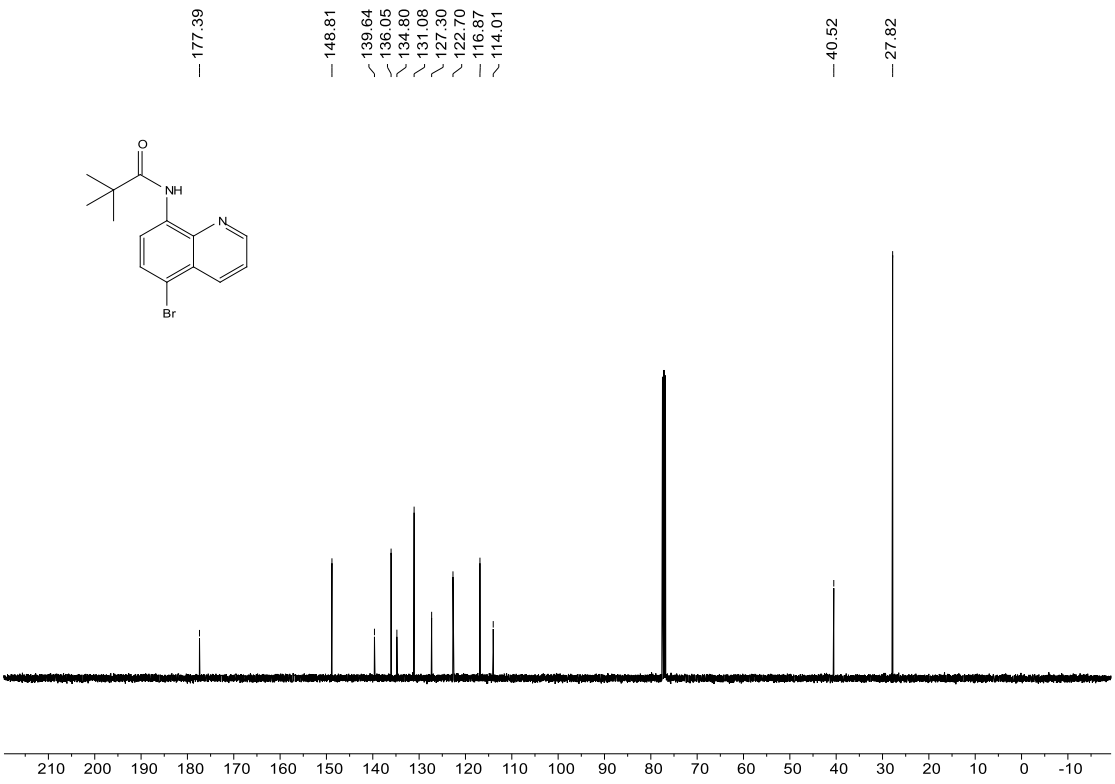
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-2-phenylacetamide (**2t**)



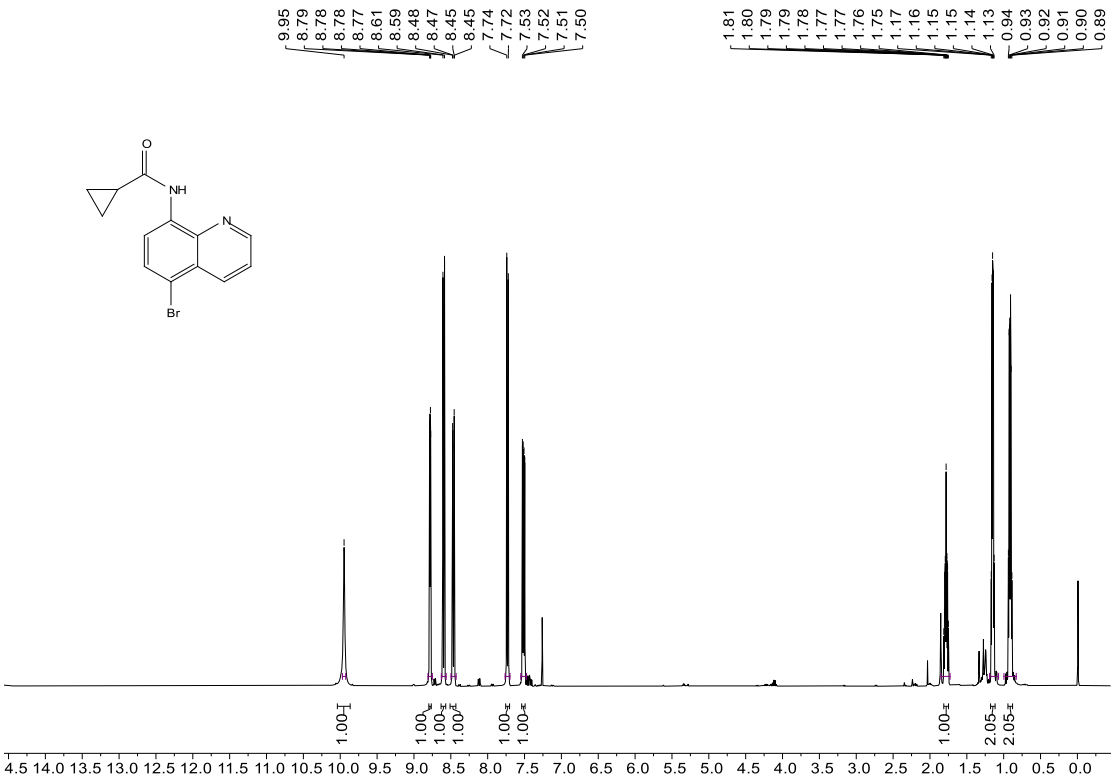
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)pivalamide (**2u**)



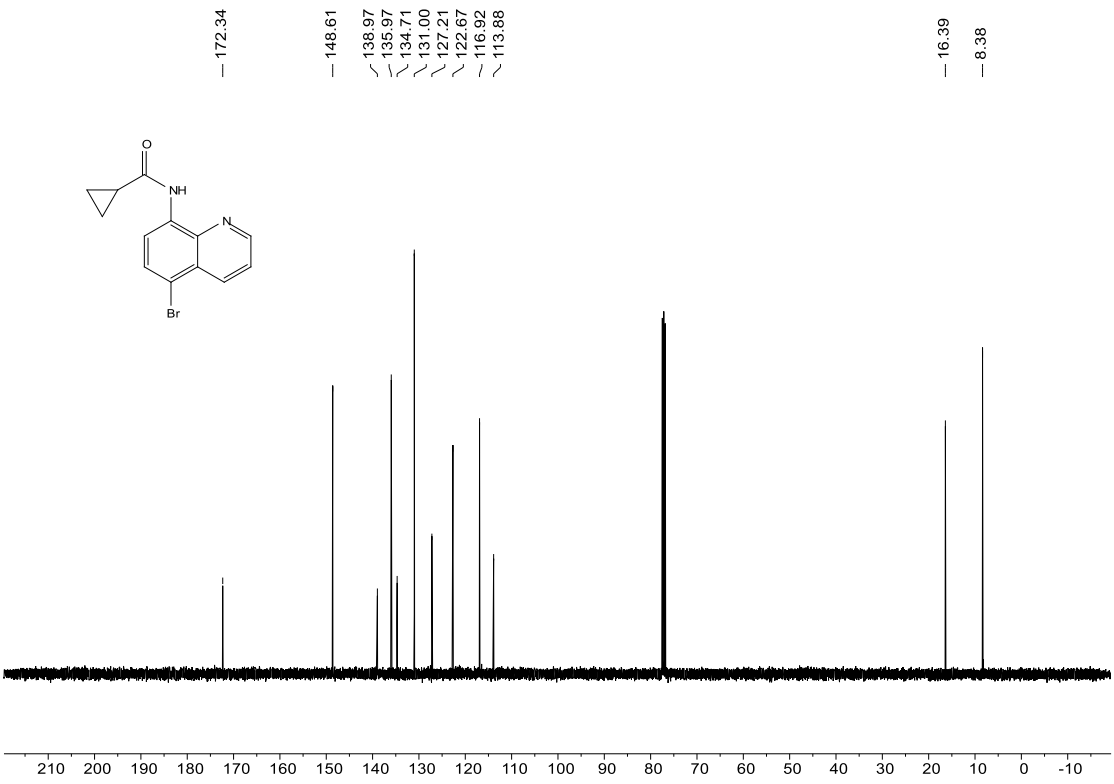
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)pivalamide (**2u**)



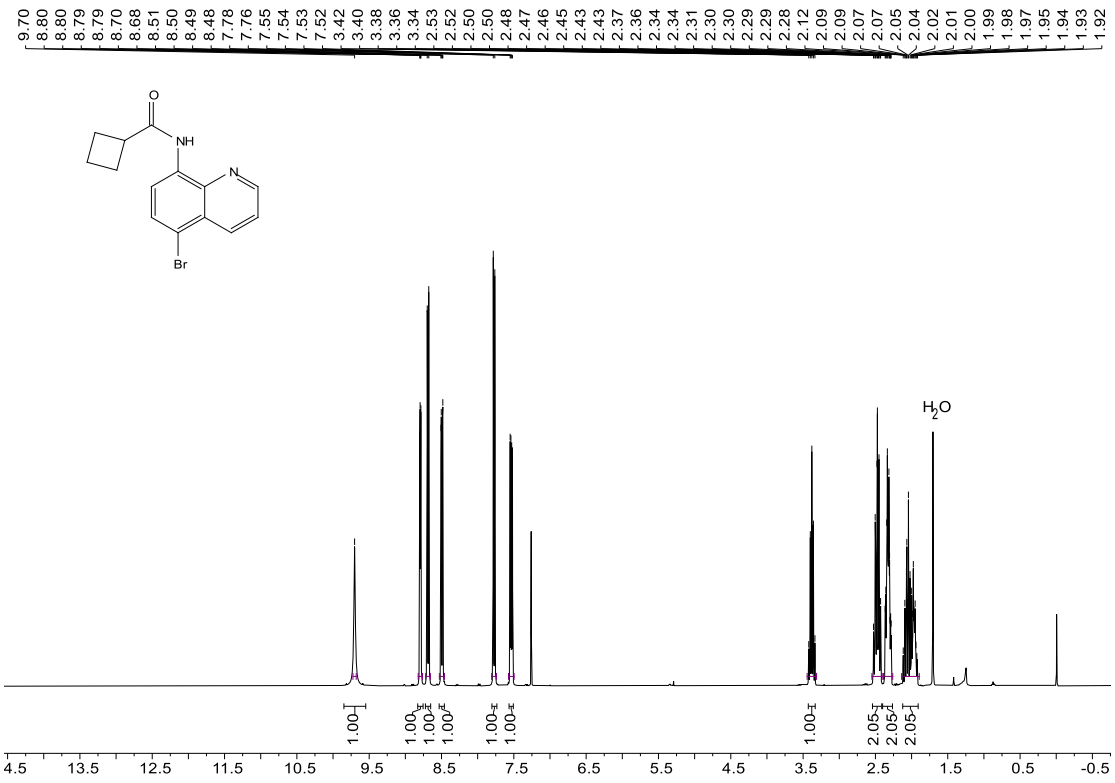
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)cyclopropanecarboxamide (**2v**)



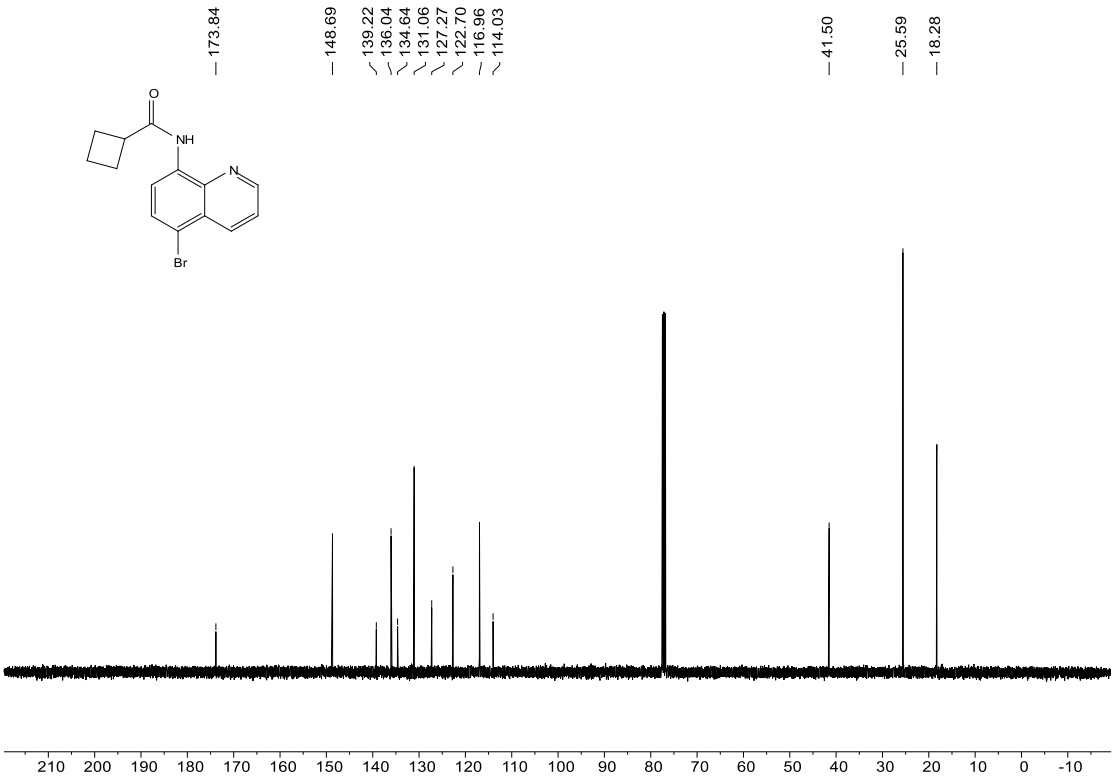
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)cyclopropanecarboxamide (**2v**)



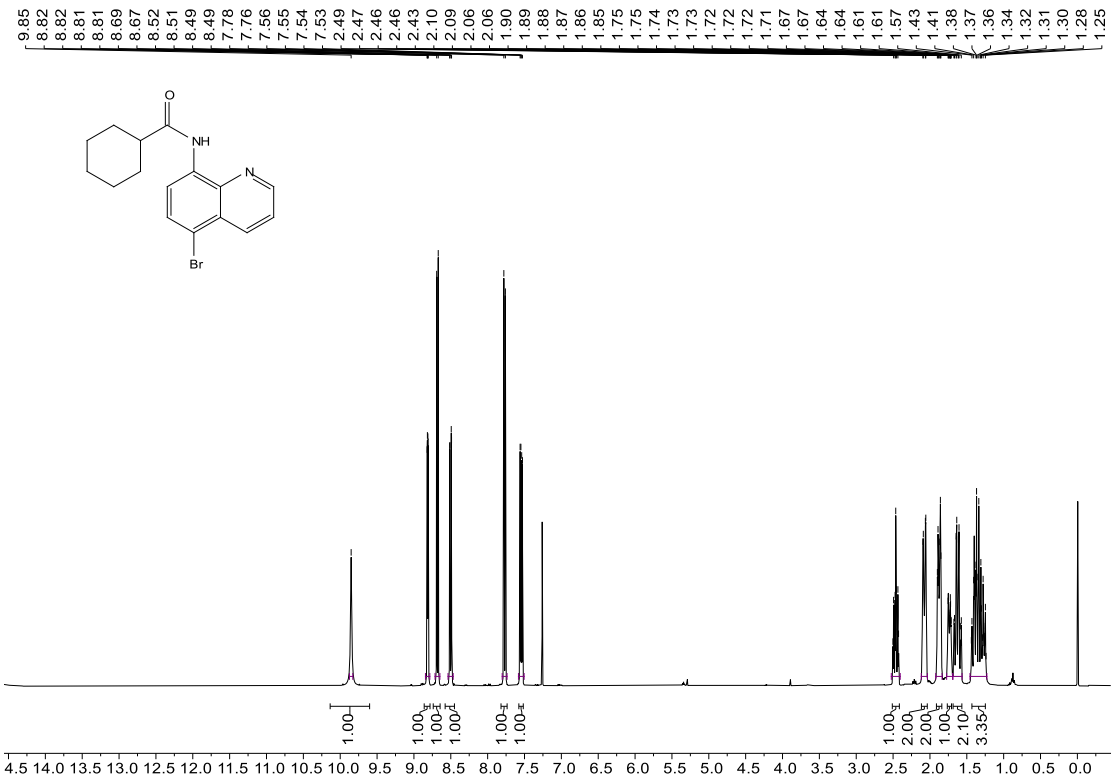
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)cyclobutanecarboxamide (**2w**)



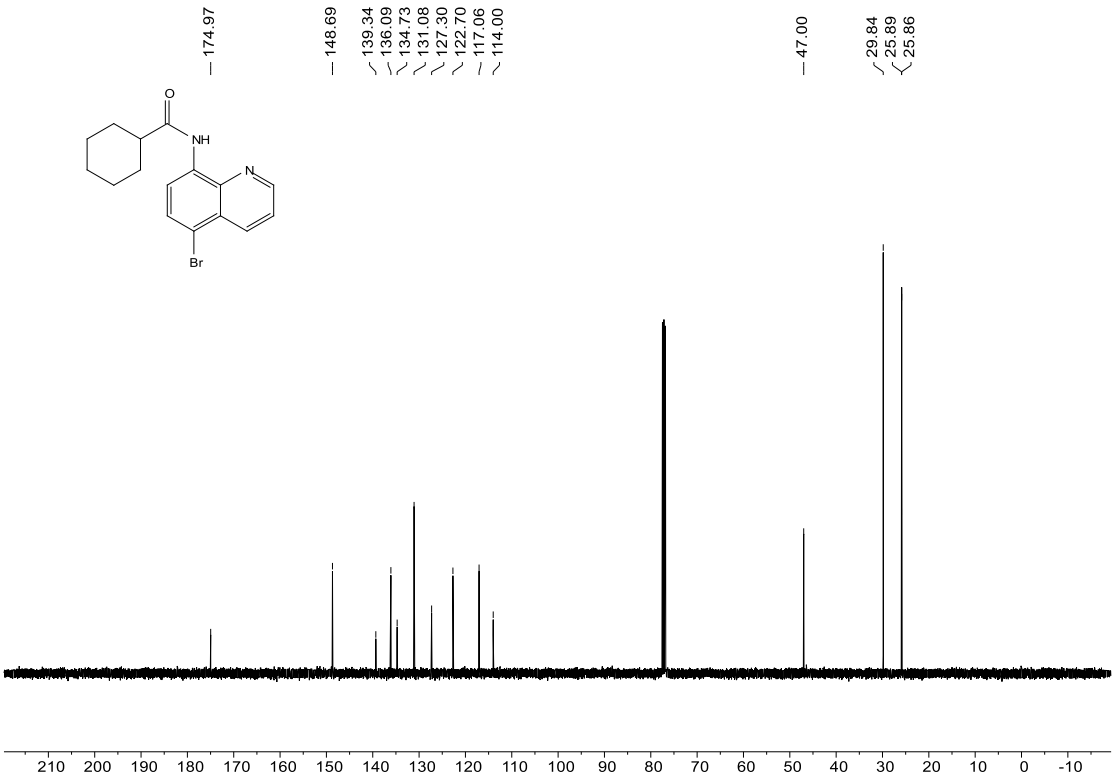
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)cyclobutanecarboxamide (**2w**)



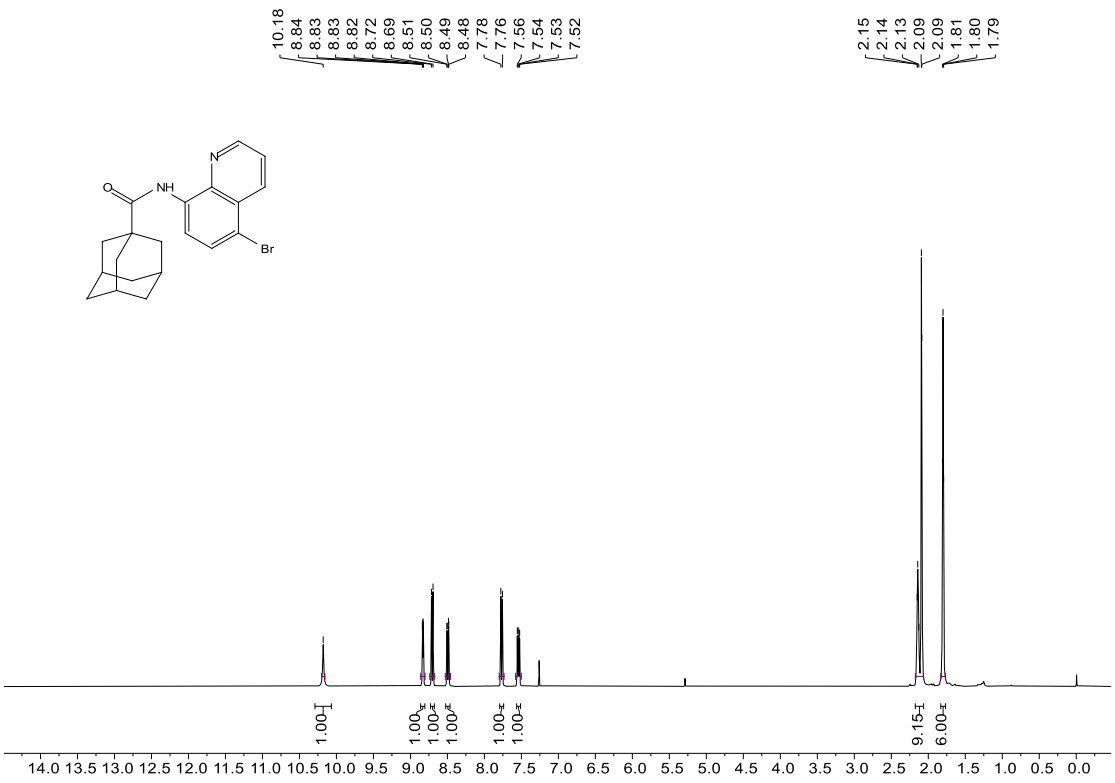
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)cyclohexanecarboxamide (**2x**)



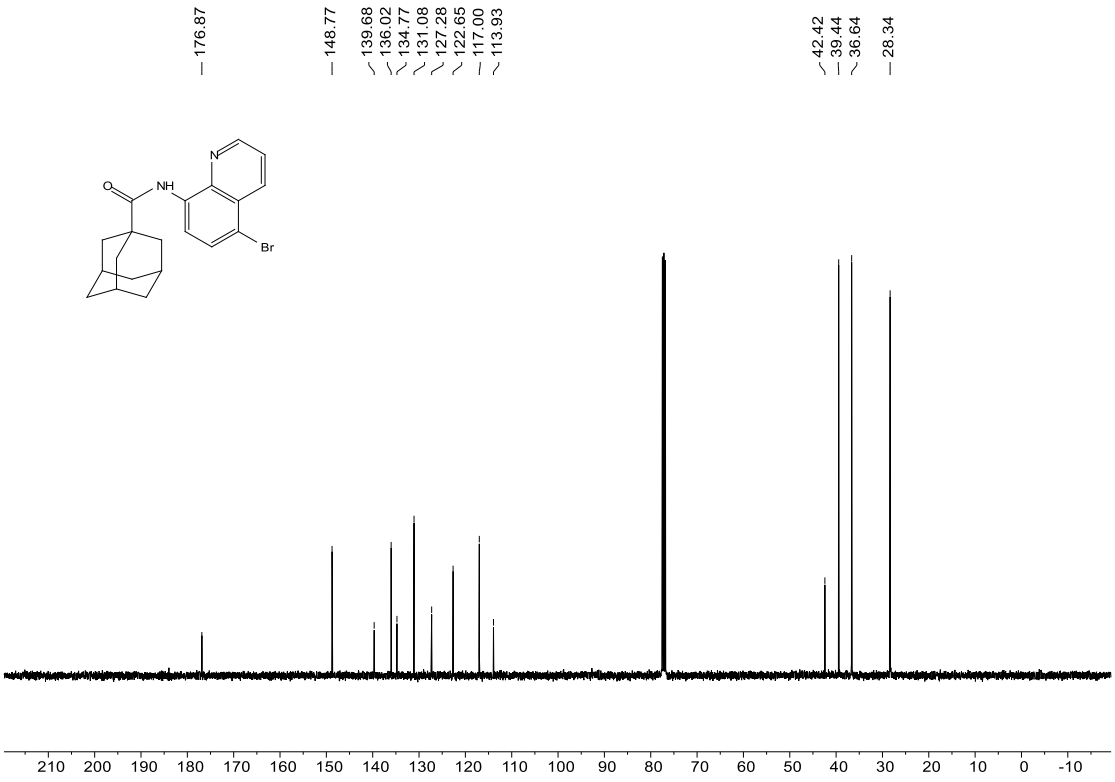
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)cyclohexanecarboxamide (**2x**)



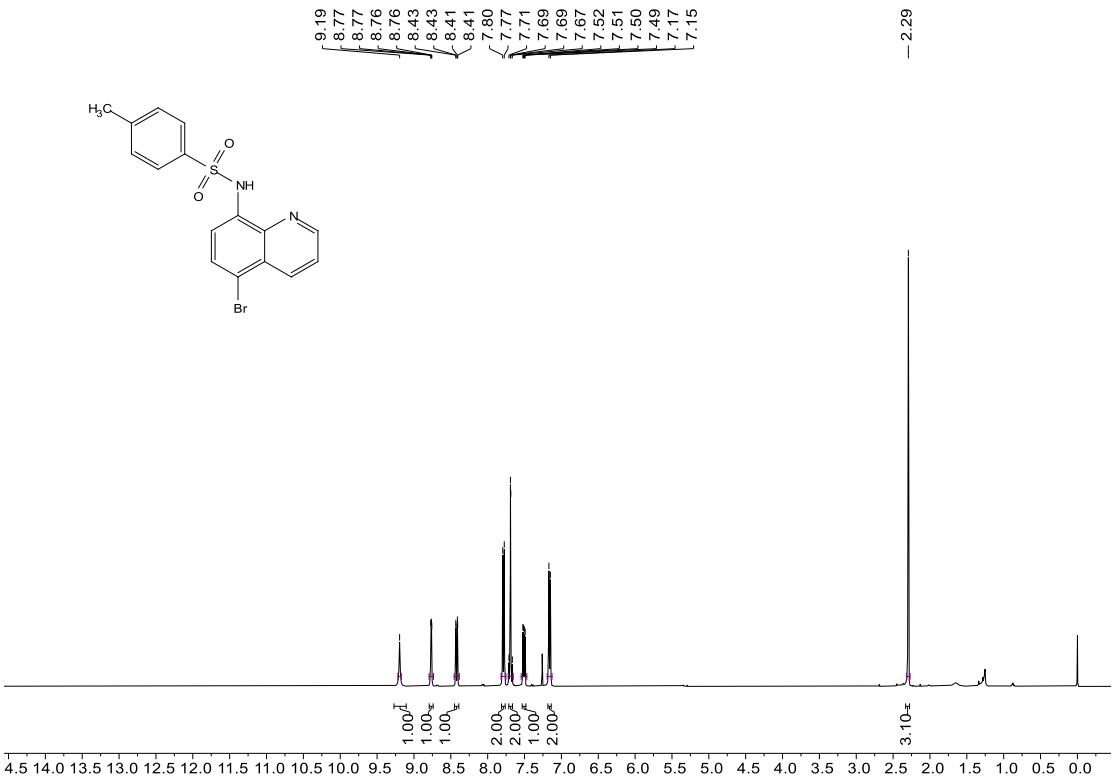
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)adamantane-1-carboxamide (**2y**)



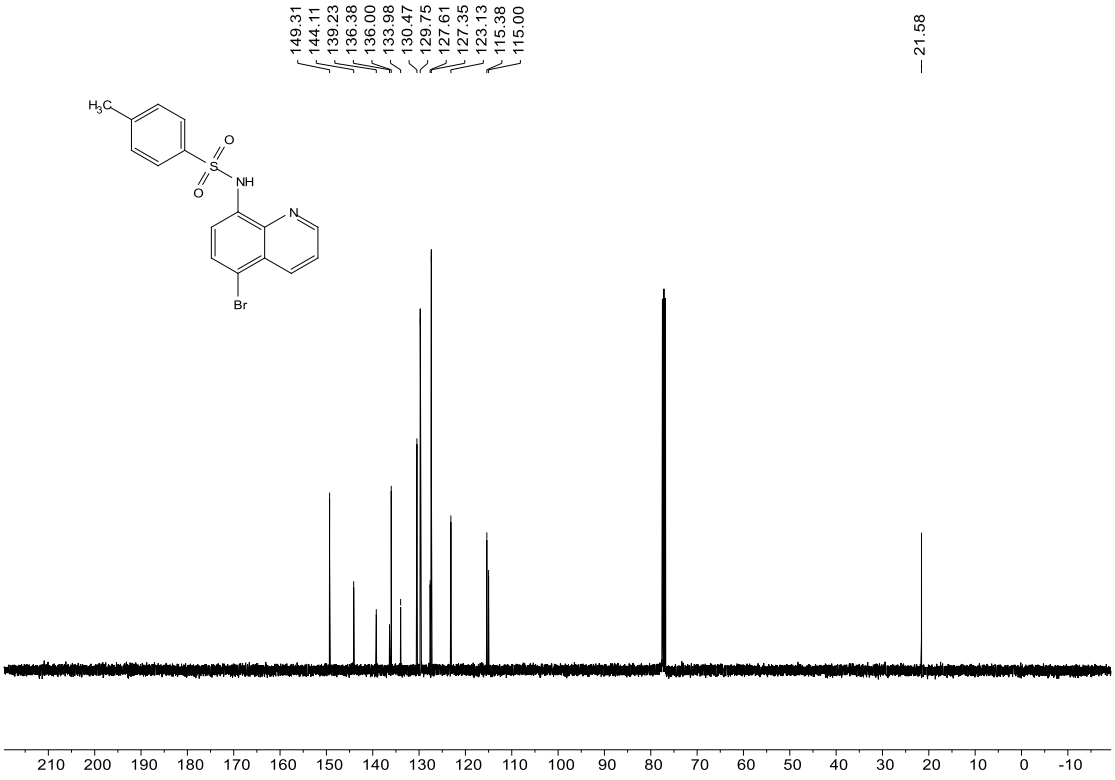
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)adamantane-1-carboxamide (**2y**)



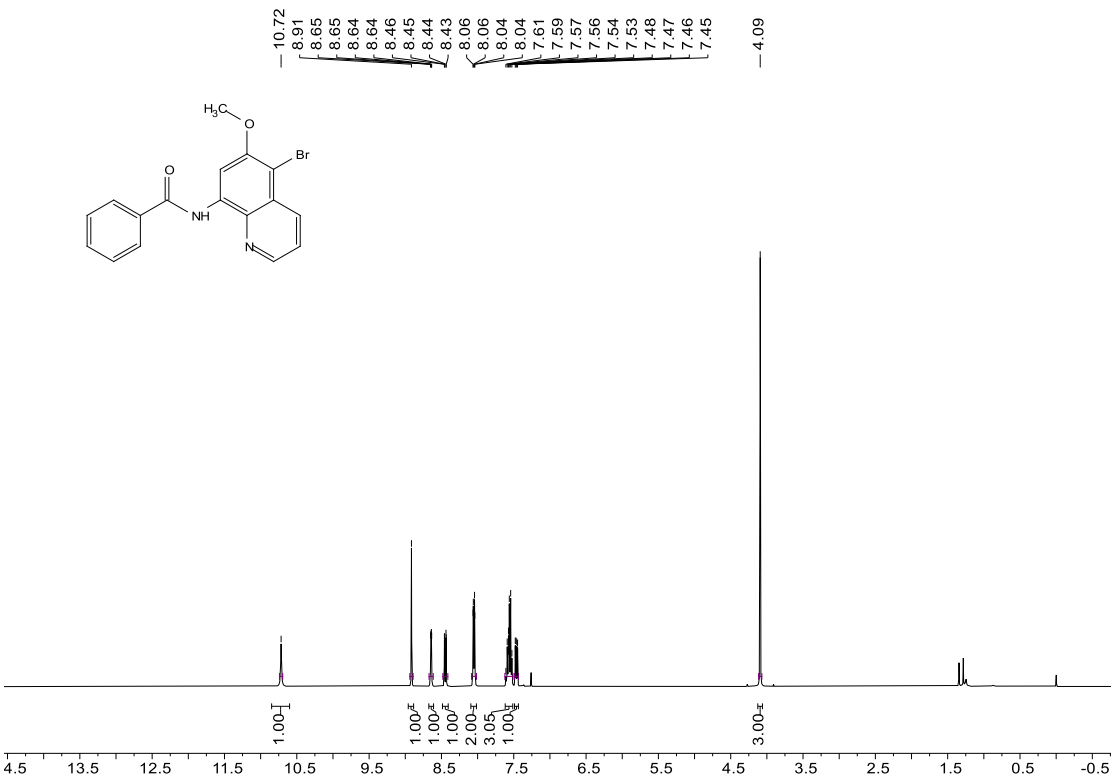
^{1}H NMR for *N*-(5-bromoquinolin-8-yl)-4-methylbenzenesulfonamide (**2z**)



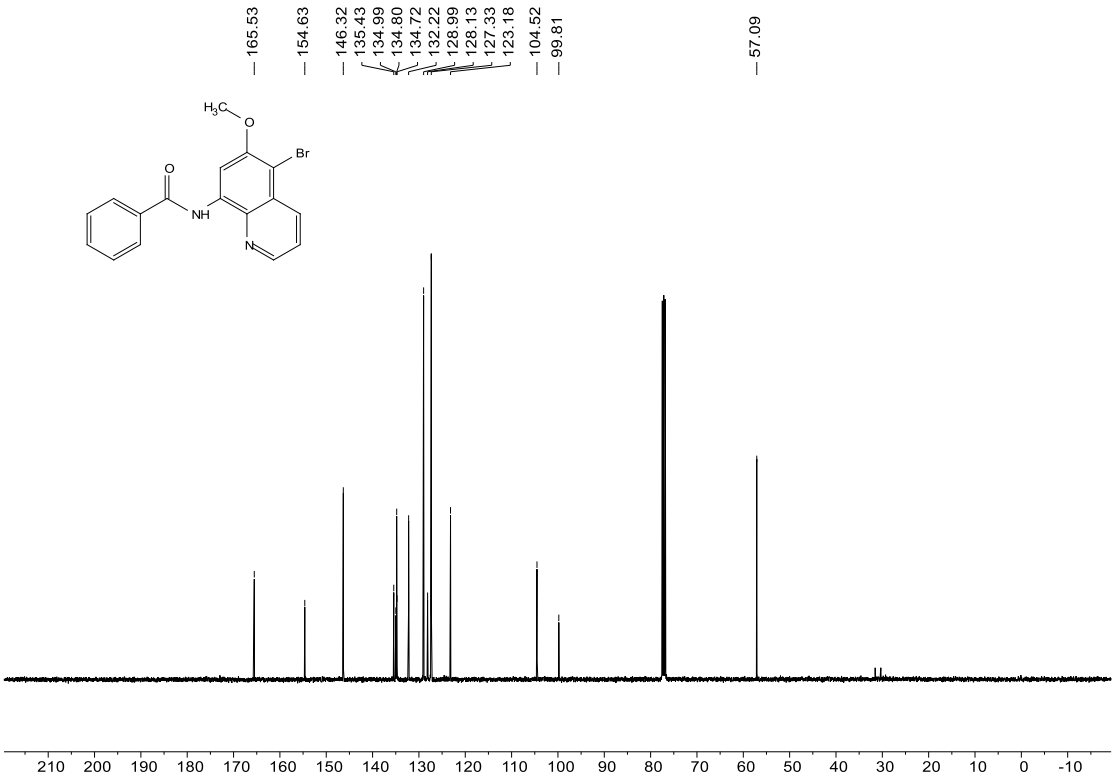
^{13}C NMR for *N*-(5-bromoquinolin-8-yl)-4-methylbenzenesulfonamide (**2z**)



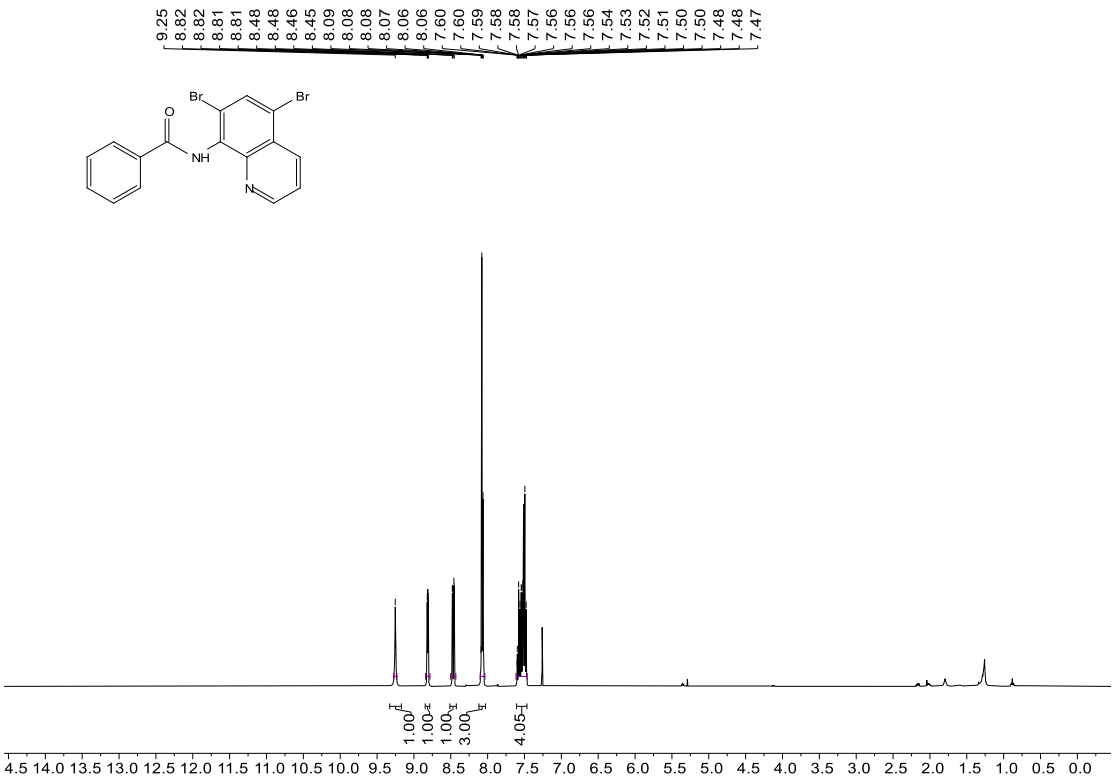
^{1}H NMR for *N*-(5-bromo-6-methoxyquinolin-8-yl)benzamide (**2aa**)



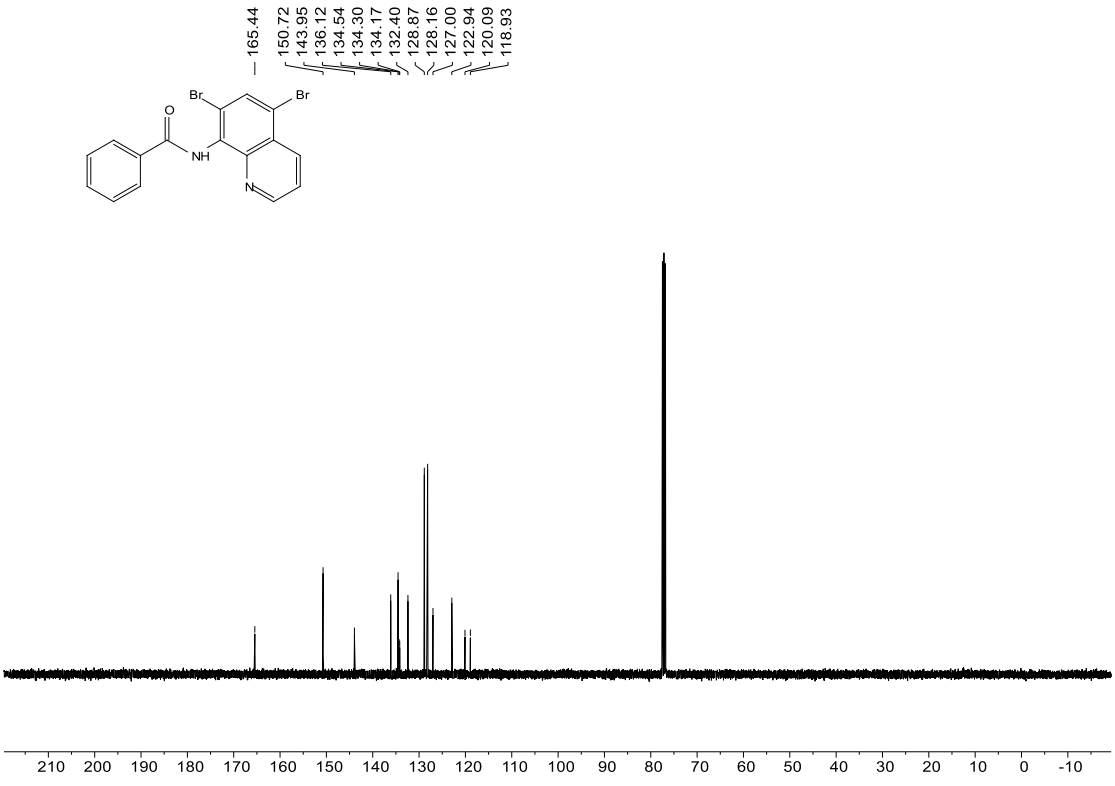
^{13}C NMR for *N*-(5-bromo-6-methoxyquinolin-8-yl)benzamide (**2aa**)



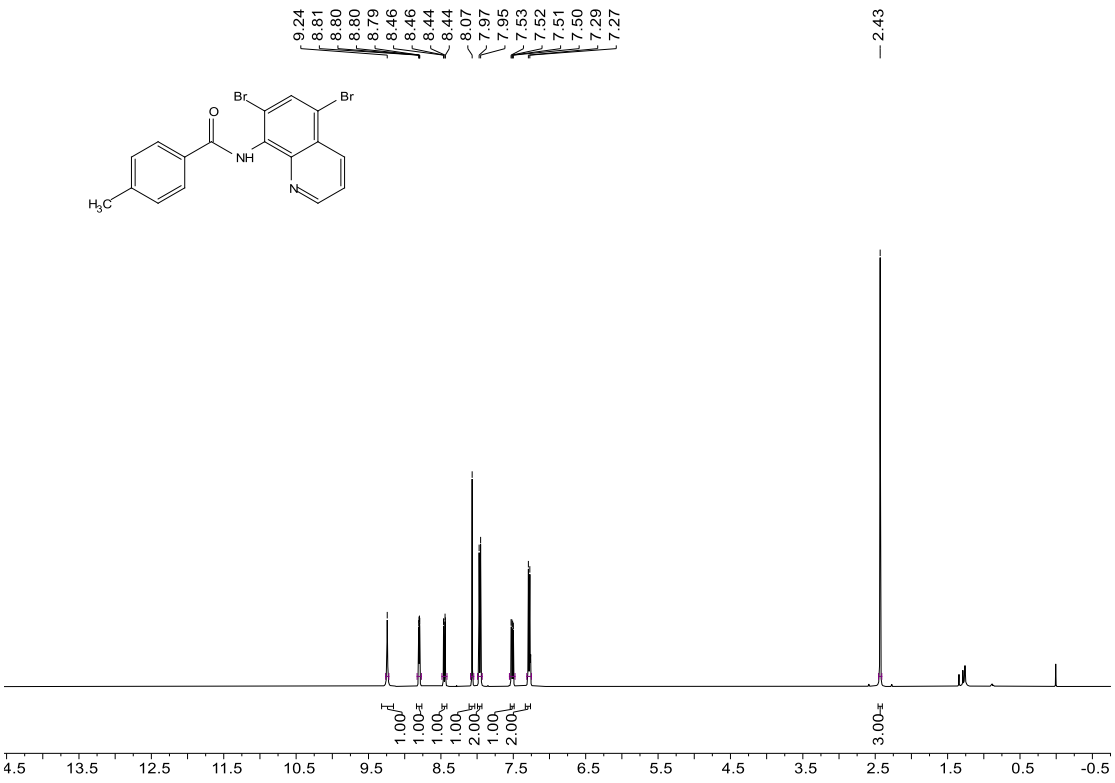
^{1}H NMR for *N*-(5,7-dibromoquinolin-8-yl)benzamide (**3a**)



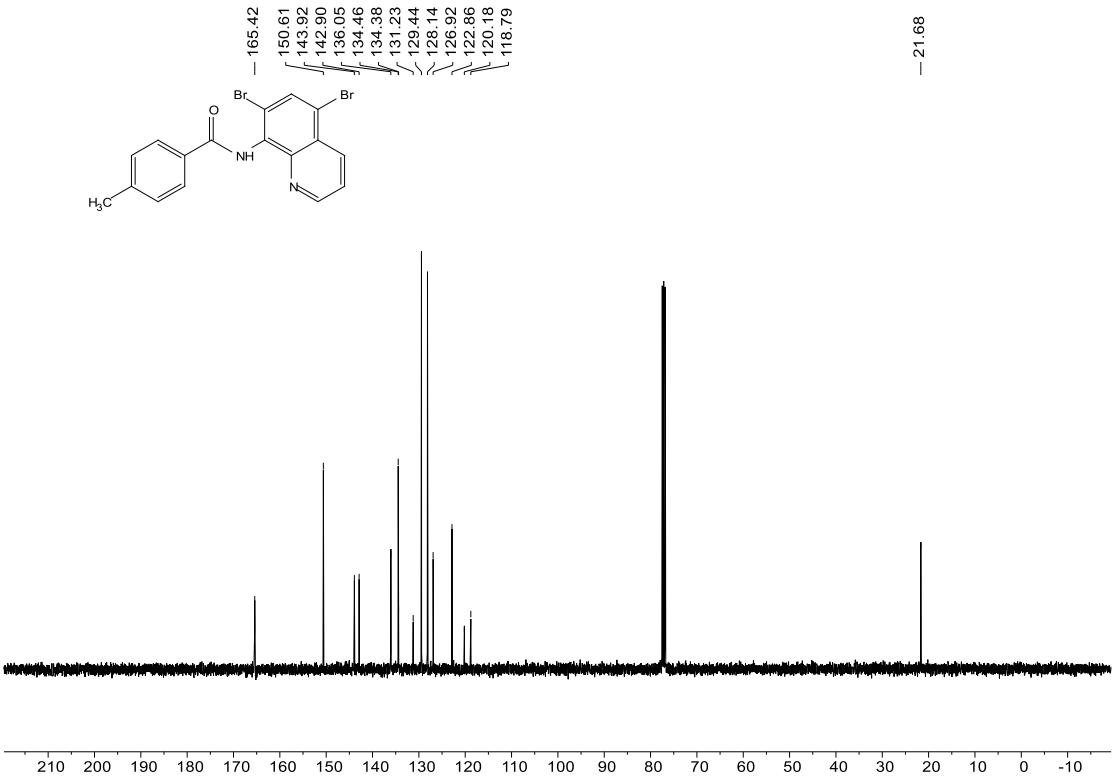
^{13}C NMR for *N*-(5,7-dibromoquinolin-8-yl)benzamide (**3a**)



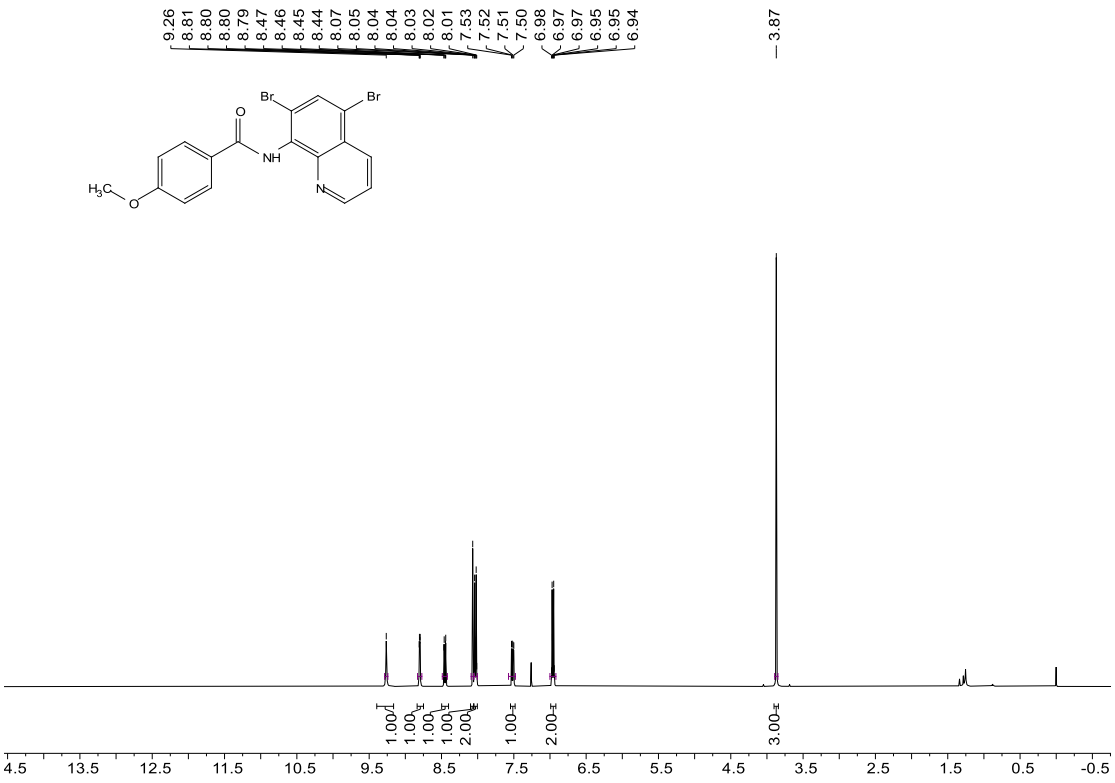
^{1}H NMR for *N*-(5,7-dibromoquinolin-8-yl)-4-methylbenzamide (**3c**)



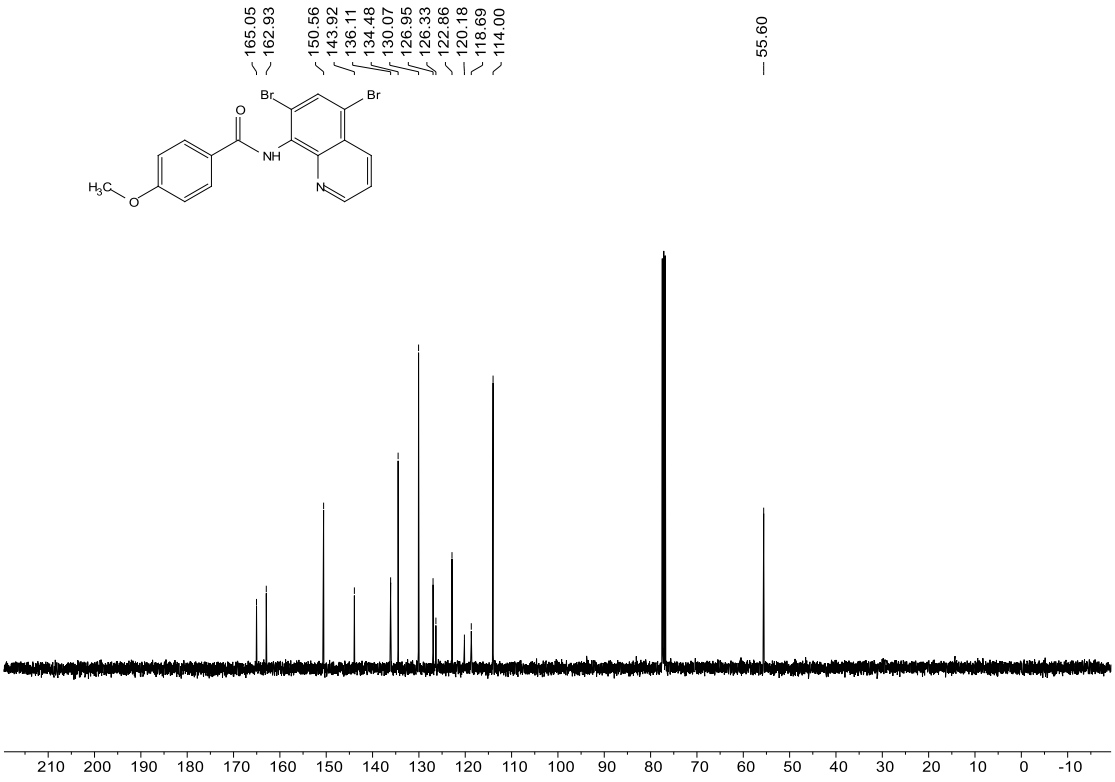
^{13}C NMR for *N*-(5,7-dibromoquinolin-8-yl)-4-methylbenzamide (**3c**)



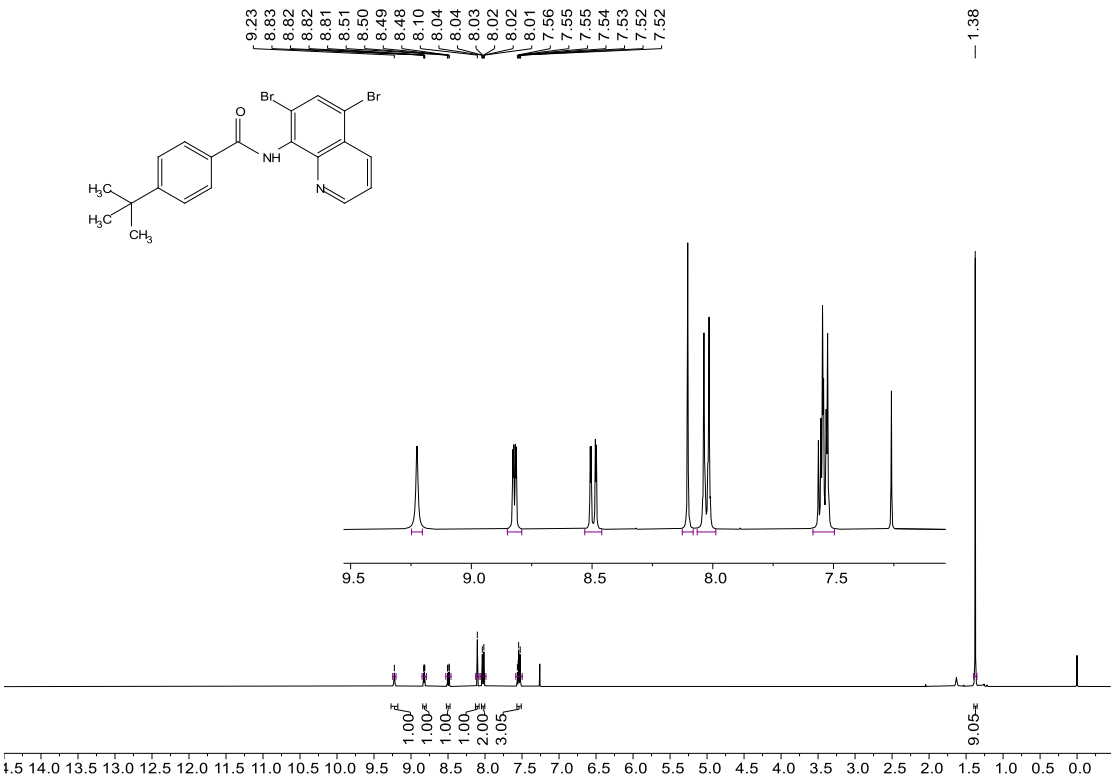
^{1}H NMR for *N*-(5,7-dibromoquinolin-8-yl)-4-methoxybenzamide (**3d**)



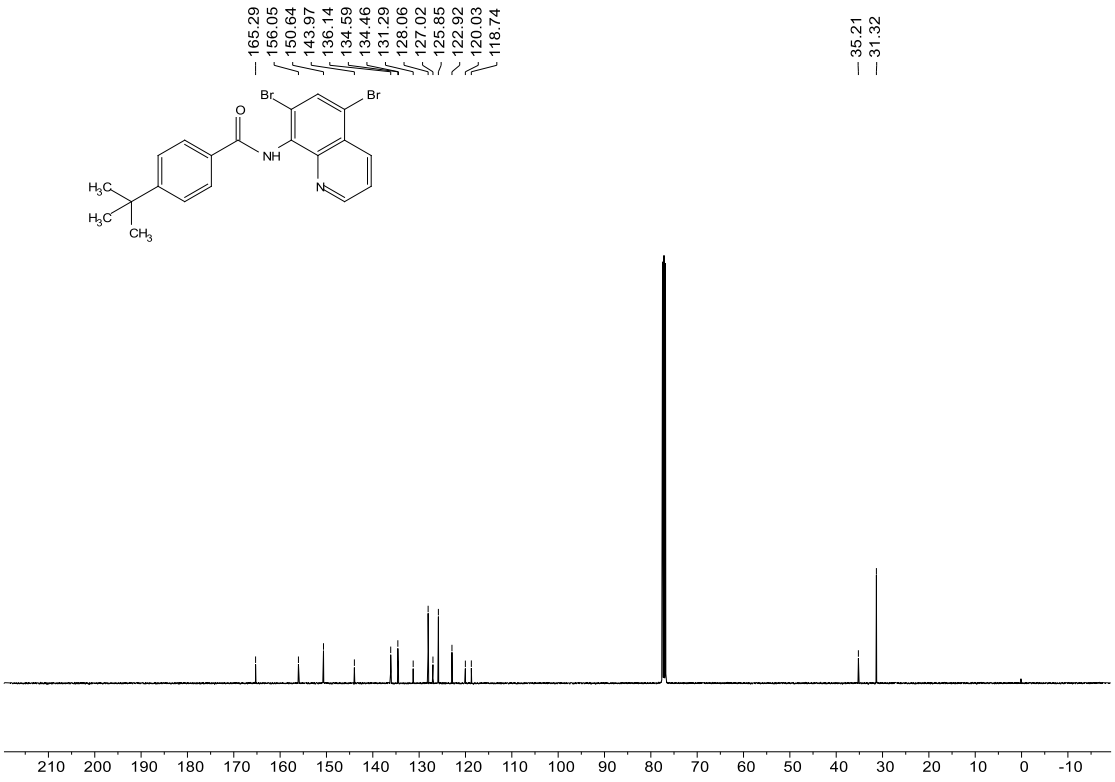
^{13}C NMR for *N*-(5,7-dibromoquinolin-8-yl)-4-methoxybenzamide (**3d**)



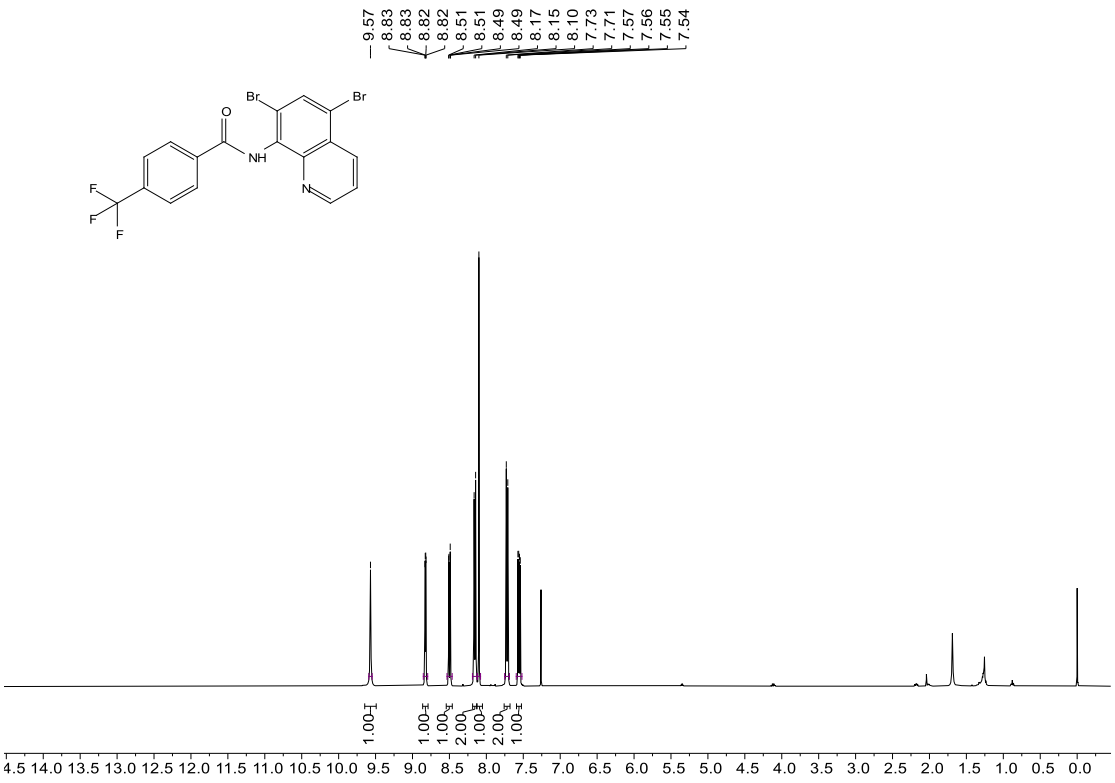
^{1}H NMR for 4-(tert-butyl)-*N*-(5,7-dibromoquinolin-8-yl)benzamide (**3e**)



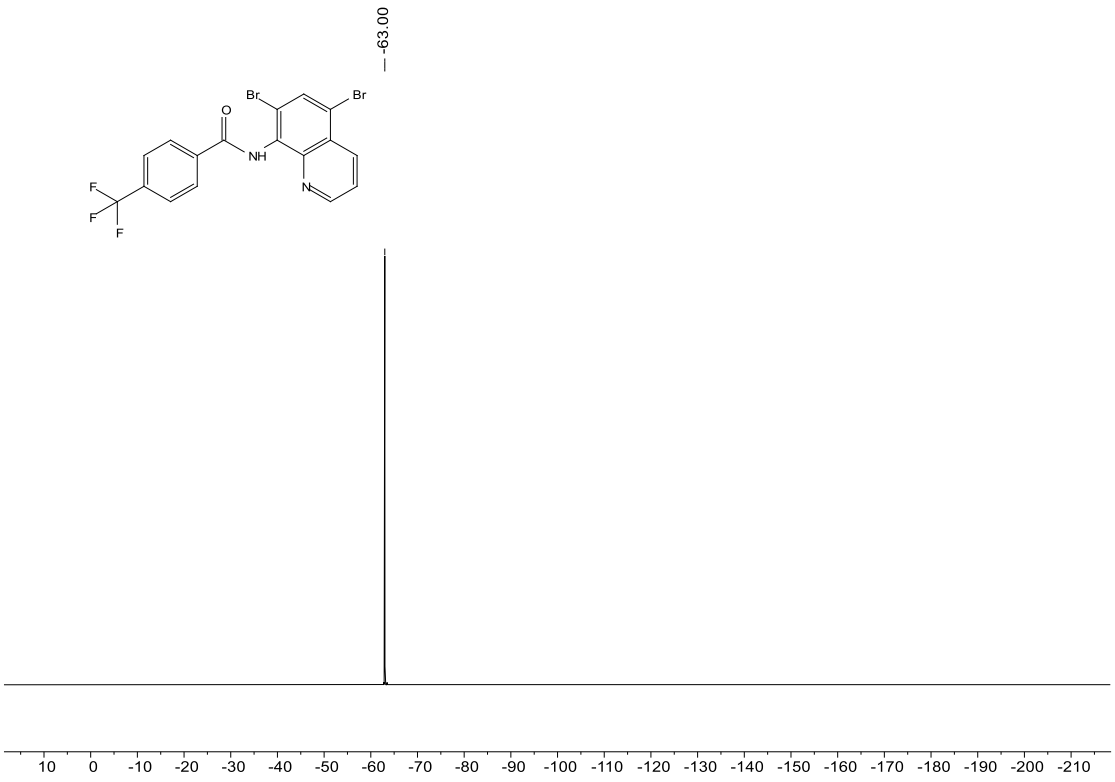
^{13}C NMR for 4-(tert-butyl)-*N*-(5,7-dibromoquinolin-8-yl)benzamide (**3e**)



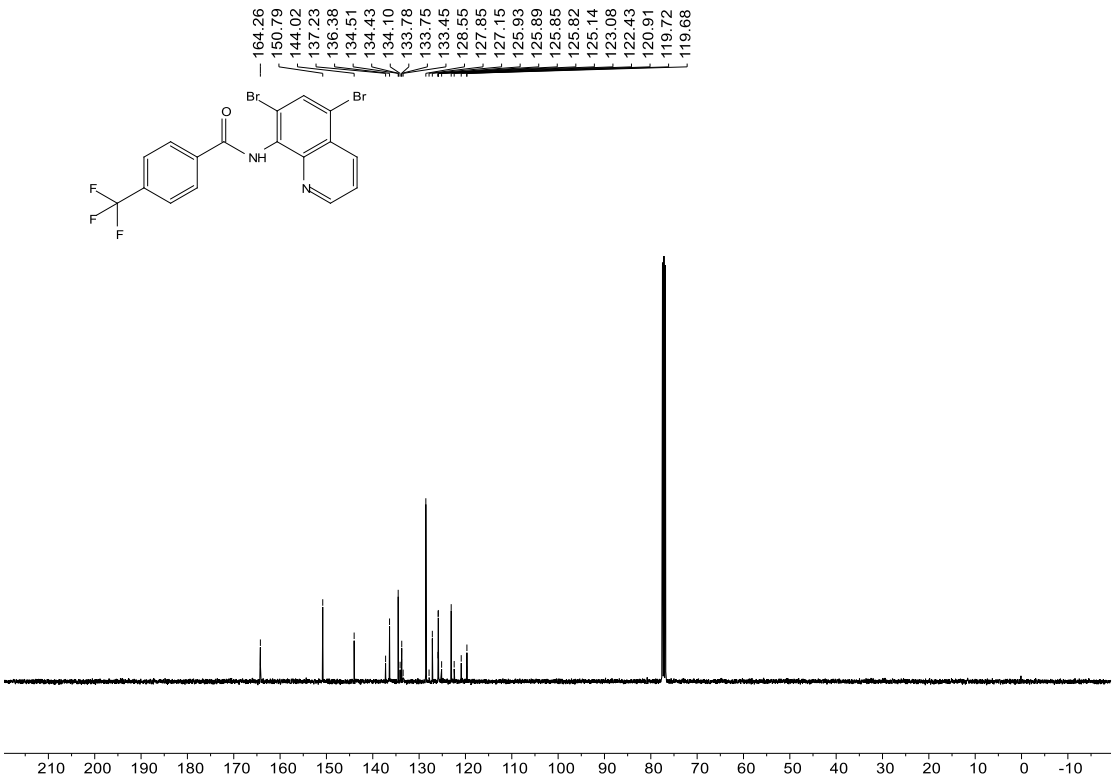
^{1}H NMR for *N*-(5,7-dibromoquinolin-8-yl)-4-(trifluoromethyl)benzamide (**3f**)



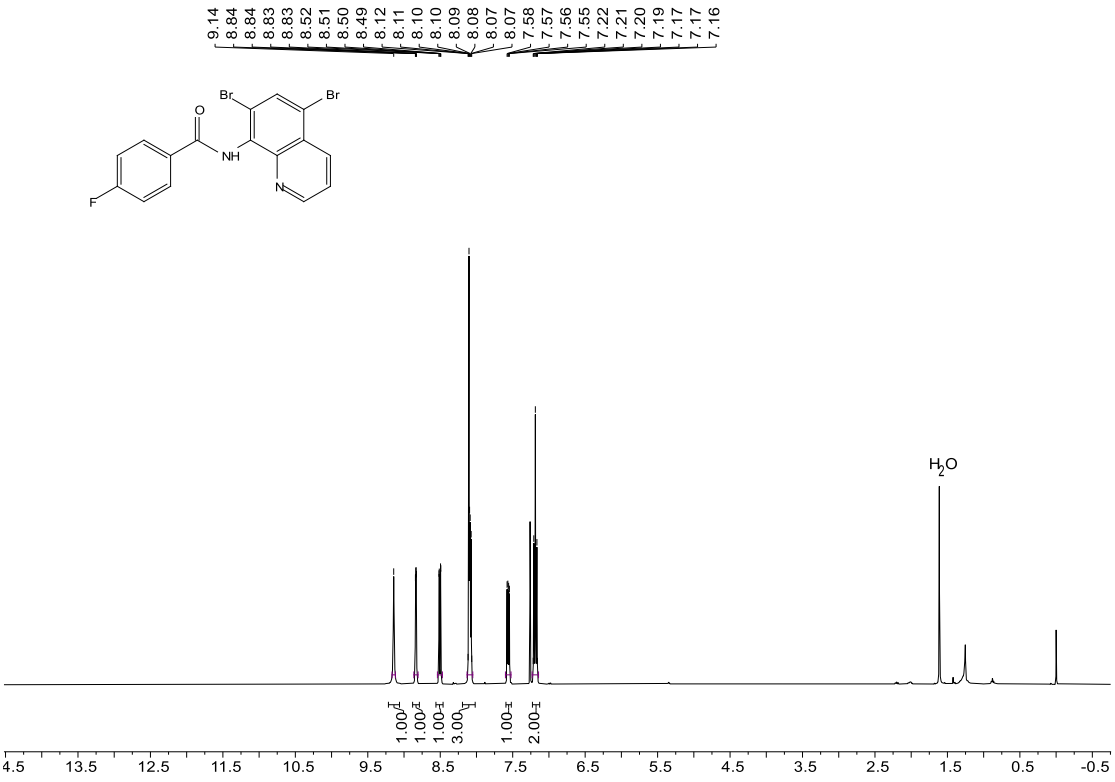
^{19}F NMR for *N*-(5,7-dibromoquinolin-8-yl)-4-(trifluoromethyl)benzamide (**3f**)



^{13}C NMR for *N*-(5,7-dibromoquinolin-8-yl)-4-(trifluoromethyl)benzamide (**3f**)

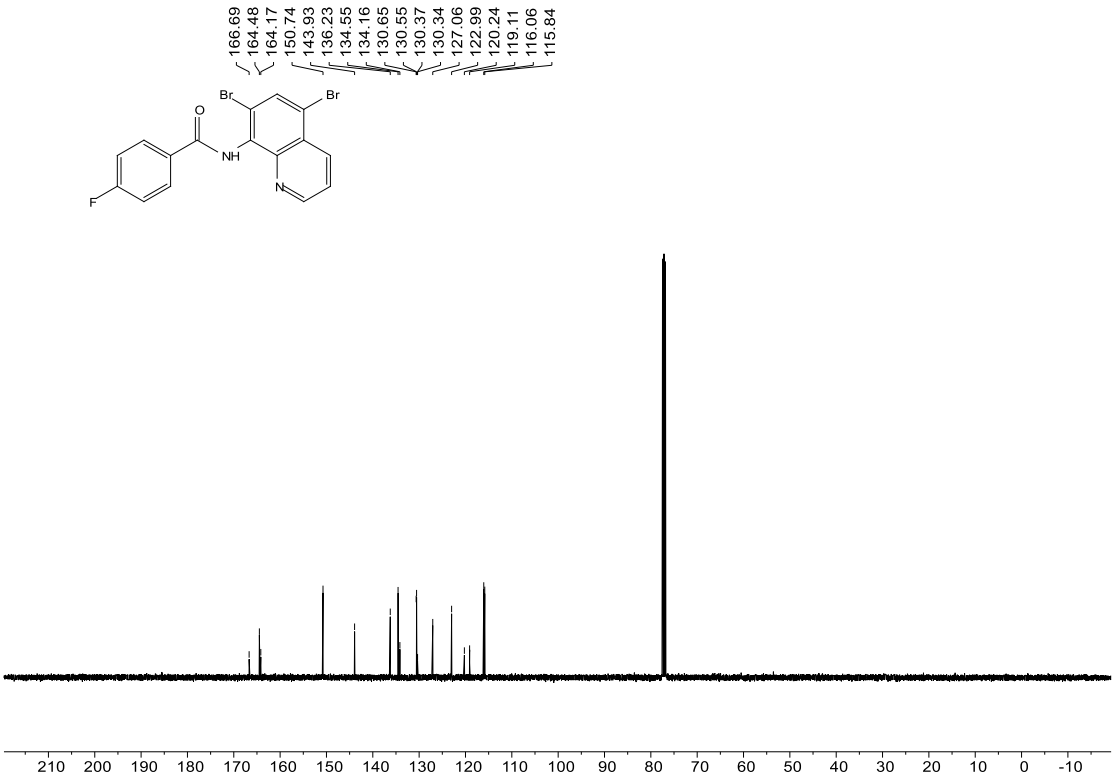


^{1}H NMR for *N*-(5,7-dibromoquinolin-8-yl)-4-fluorobenzamide (**3i**)

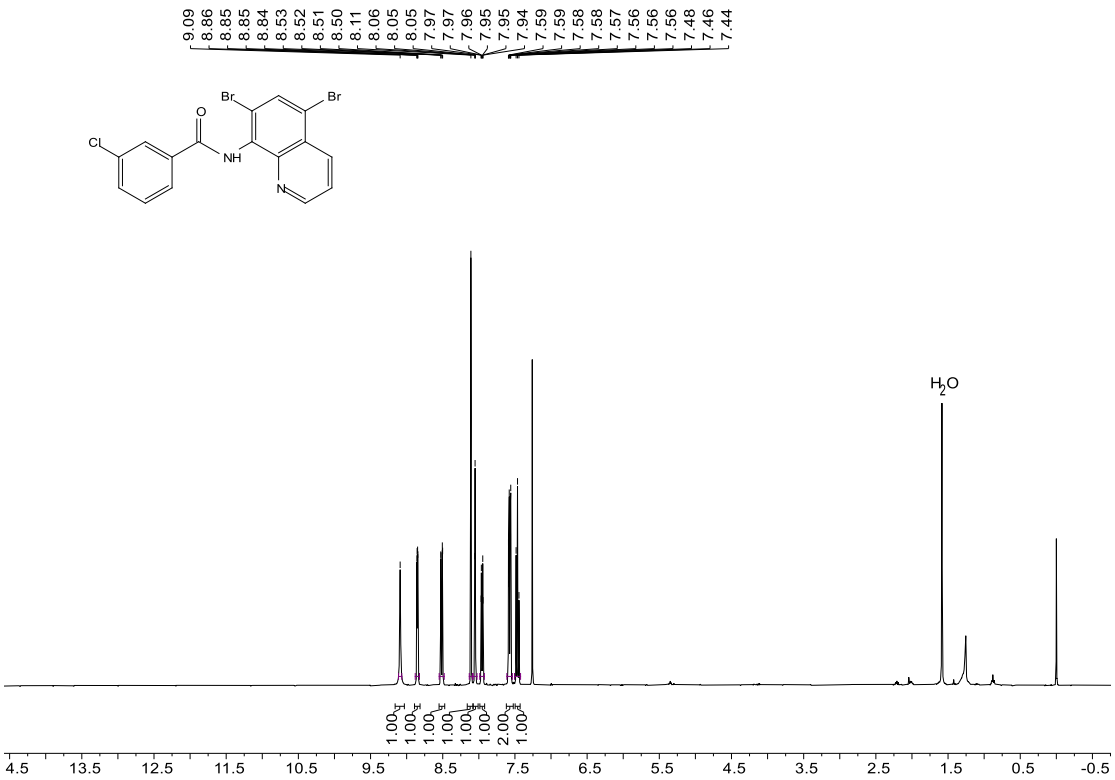


^{19}F NMR for *N*-(5,7-dibromoquinolin-8-yl)-4-fluorobenzamide (**3i**)

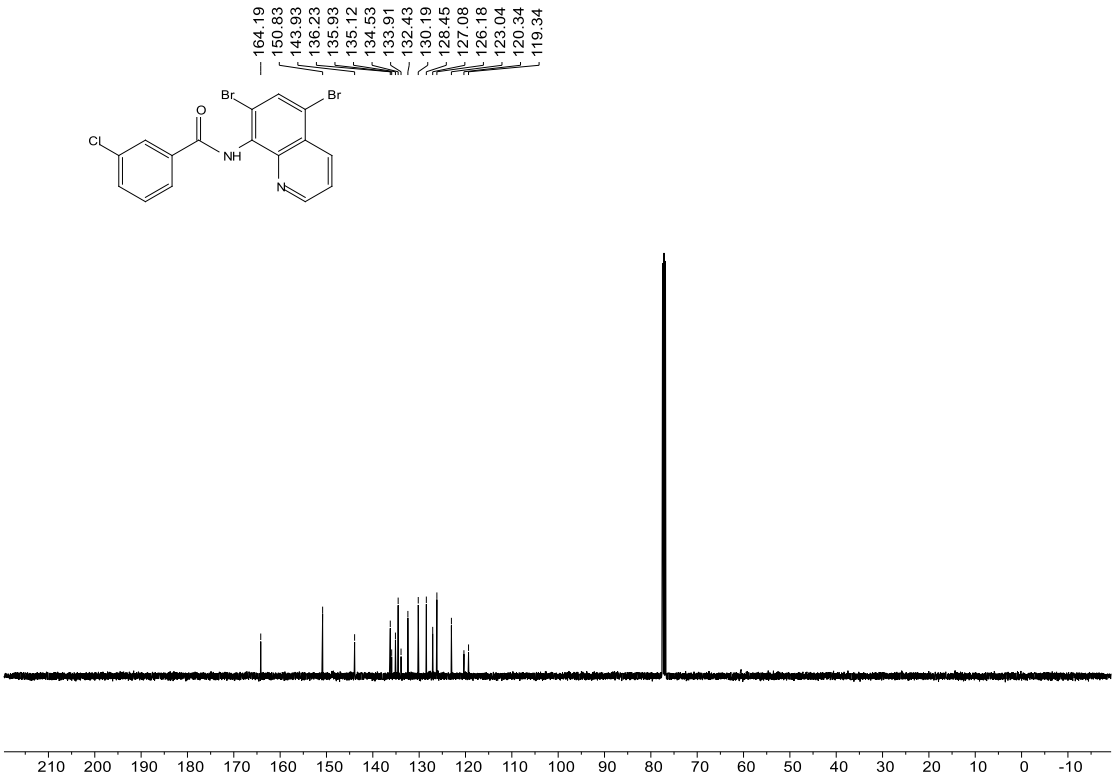
^{13}C NMR for *N*-(5,7-dibromoquinolin-8-yl)-4-fluorobenzamide (**3i**)



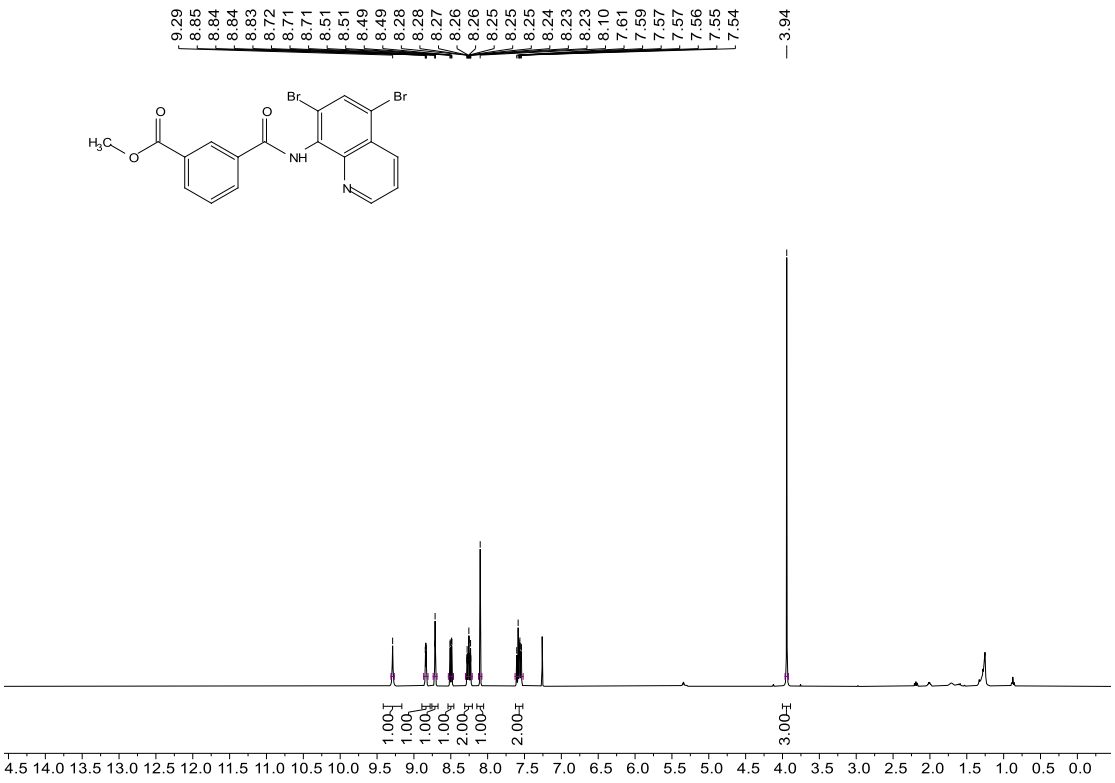
^{1}H NMR for 3-chloro-*N*-(5,7-dibromoquinolin-8-yl)benzamide (**3j**)



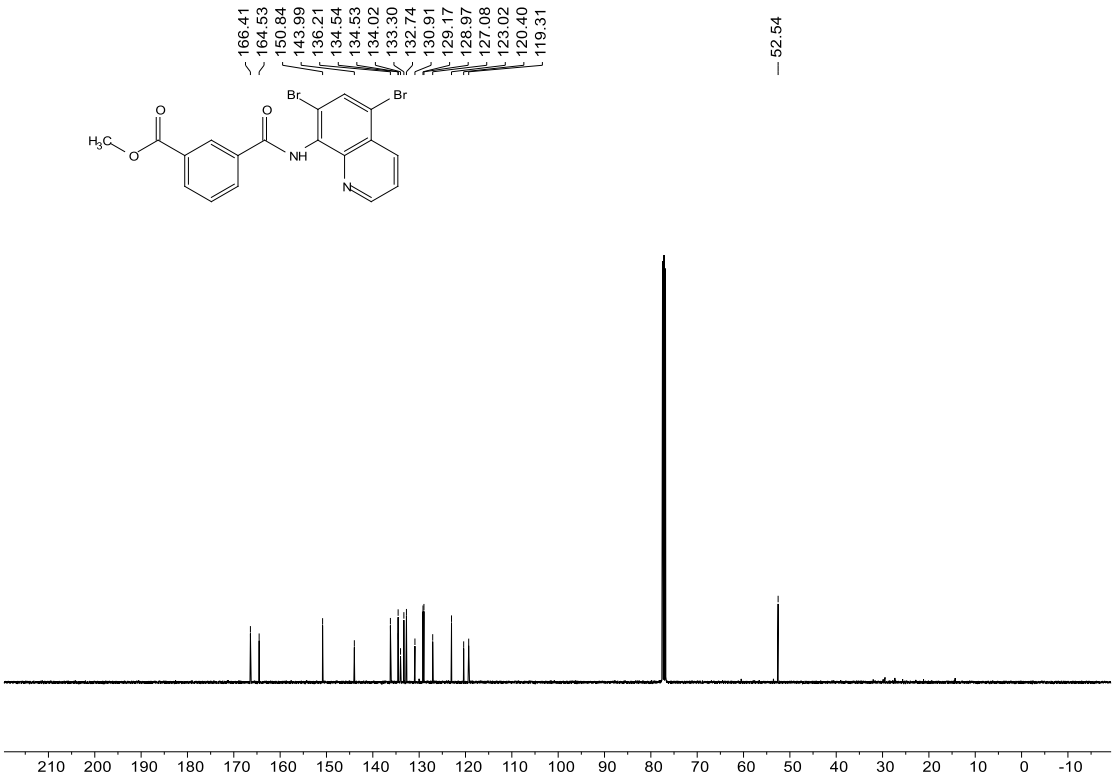
^{13}C NMR for 3-chloro-*N*-(5,7-dibromoquinolin-8-yl)benzamide (**3j**)



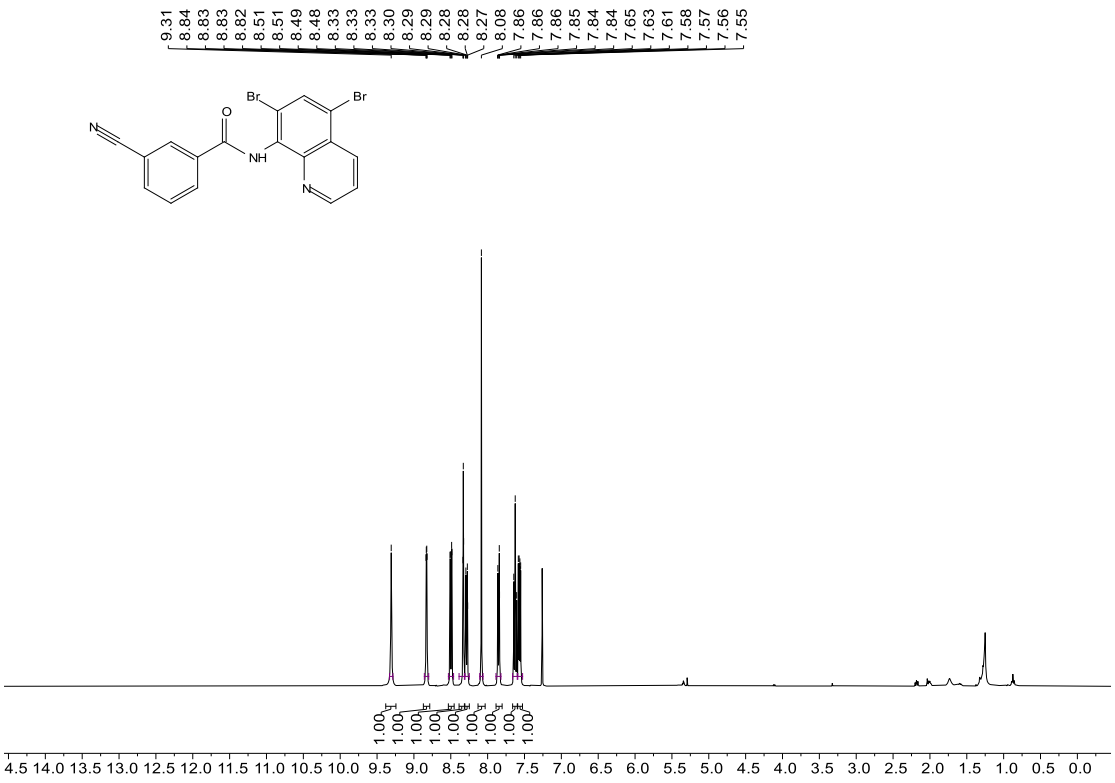
^{1}H NMR for methyl 3-((5,7-dibromoquinolin-8-yl)carbamoyl)benzoate (**3m**)



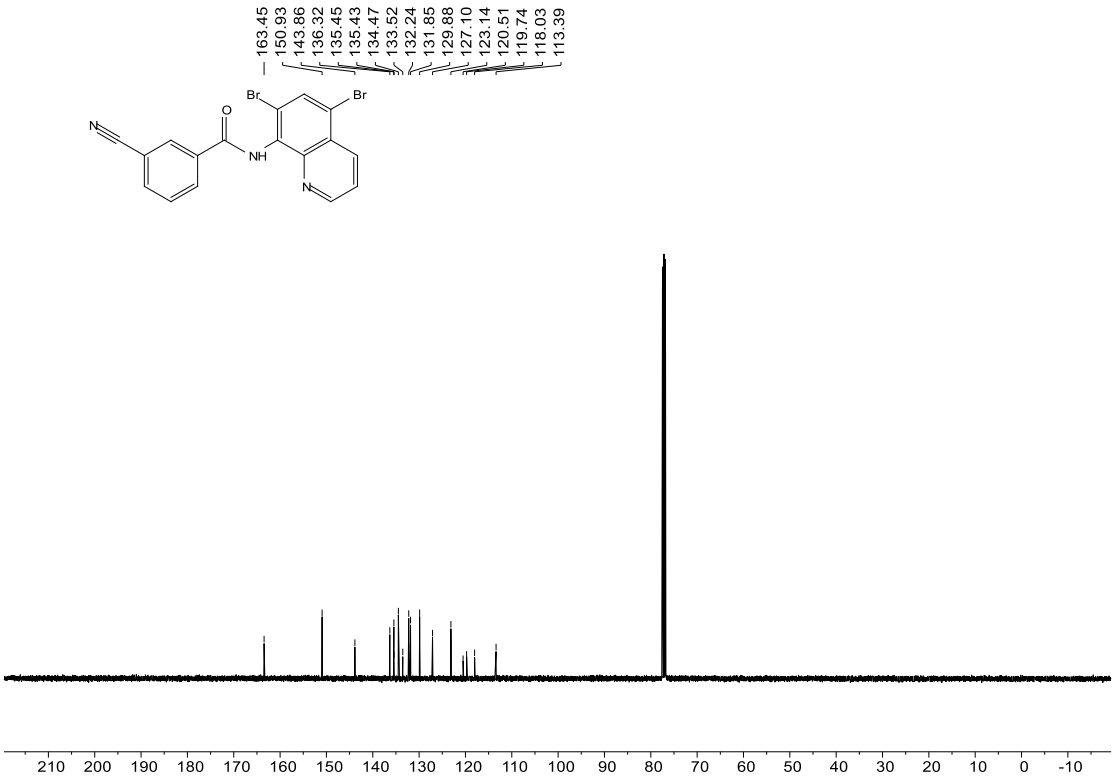
^{13}C NMR for methyl 3-((5,7-dibromoquinolin-8-yl)carbamoyl)benzoate (**3m**)



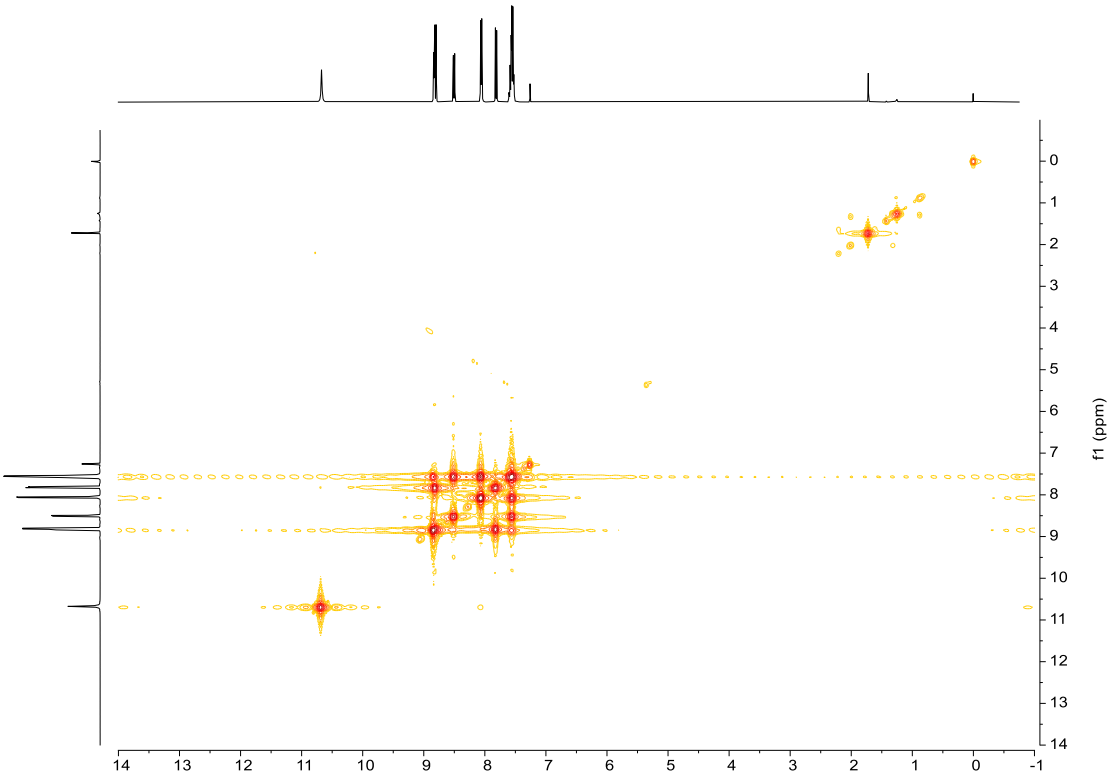
^{1}H NMR for 3-cyano-*N*-(5,7-dibromoquinolin-8-yl)benzamide (**3n**)



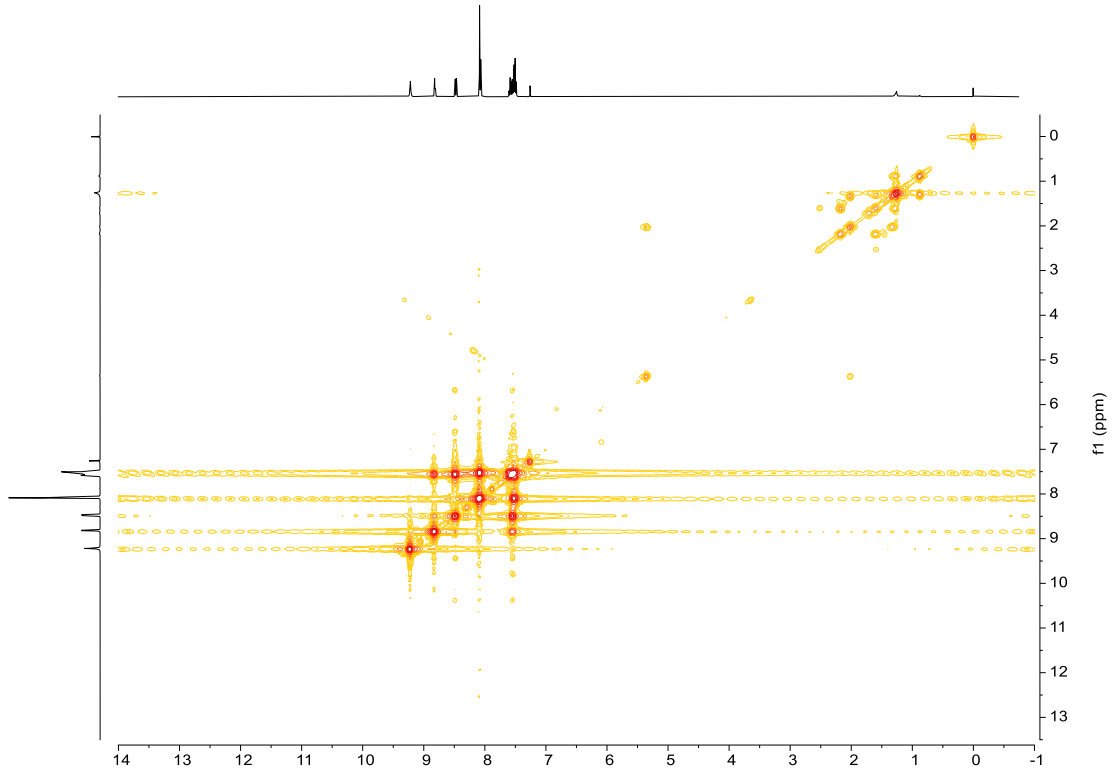
^{13}C NMR for 3-cyano-*N*-(5,7-dibromoquinolin-8-yl)benzamide (**3n**)



^{1}H-^{1}H COSY for *N*-(5-bromoquinolin-8-yl)benzamide (**2a**)



^{1}H-^{1}H COSY for *N*-(5,7-dibromoquinolin-8-yl)benzamide (**3a**)



6. References

[1] L. Zhu, R. Qiu, X. Cao, S. Xiao, X. Xu, C.-T. Au and S.-F. Yin, *Org. Lett.*, 2015, **17**, 5528–5531.

[2] Y. Kuninobu, M. Nishi and M. Kanai, *Org. Biomol. Chem.*, 2016, **14**, 8092–8100.

[3] H. Qiao, S. Sun, F. Yang, Y. Zhu, J. Kang, Y. Wu and Y. Wu, *Adv. Synth. Catal.*, 2017, **359**, 1976–1980.

[4] X. Yang, Q.-L. Yang, X.-Y. Wang, H.-H. Xu, T.-S. Mei, Y. Huang and P. Fang, *J. Org. Chem.*, 2020, **85**, 3497–3507.

[5] J.-Y. Jiao, Y.-J. Mao, A.-W. Feng, X.-F. Li, M.-T. Li and X.-H. Zhang, *Tetrahedron*, 2017, **73**, 1482–1488.

[6] Y. Guan, K. Wang, J. Shen, J. Xu, C. Shen and P. Zhang, *Catal. Lett.*, 2017, **147**, 1574–1580.

[7] C. Shao, T. Xu, C. Chen, Q. Yang, C. Tang, P. Chen, M. Lu, Z. Hu, H. Hu and T. Zhang, *RSC Adv.*, 2023, **13**, 6993–6999.

[8] Q. Shu, Y. Li, T. Liu, S. Zhang, L. Jiang, K. Jin, R. Zhang and C. Duan, *Tetrahedron*, 2019, **75**, 3636–3642.

[9] J. Hou, K. Wang, C. Zhang, T. Wei, R. Bai and Y. Xie, *Eur. J. Org. Chem.*, 2020, **2020**, 6382–6386.

[10] C. Shao, C. Ma, L. Li, J. Liu, Y. Shen, C. Chen, Q. Yang, T. Xu, Z. Hu, Y. Kan and T. Zhang, *Beilstein J. Org. Chem.*, 2024, **20**, 155–161.