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Supporting Information

Chemoselective Acylation of 2-Amino-8-quinolinol in the Generation of C2-Amides or C8-Esters

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1. General experimental information

All starting materials and reagents were obtained from commercial suppliers and were used without further purification. Air and moisture sensitive reactions were performed under N_2 atmosphere. Flash column chromatography was performed using silica gel 60 (230-400 mesh, Merck) with the indicated solvents. Thin-layer chromatography was performed using 0.25 mm silica gel plates (Merck). ^{1}H and ^{13}C NMR spectra were recorded on a Bruker 600 MHz spectrometer as solutions in deuteriochloroform ($CDCl_3$) or methanol-d4 or DMSO-d_6. ^{1}H NMR data were reported in the order of chemical shift, multiplicity (s, singlet; d, doublet; t, triplet; m, multiplet and/or multiple resonances), number of protons, and coupling constant (*J*) in hertz (Hz). High-resolution mass spectra (HRMS) were recorded on a JEOL JMS-700 (FAB and EI) and an Agilent 6530 Q-TOF LC/MS/MS system (ESI).

For conversion measurements, the samples prepared for the HPLC were analyzed at 256 nm using an Agilent 1260 HPLC system equipped with a 6 mm x 50 mm Sunfire 5µ C18 column, in which the mobile phase was a gradient from water to acetonitrile for 30 min.

2. Experimental procedures

General procedure of condition A (Table 4) for the *O*-acylation at C8:

To a solution of 2-amino-8-quinolinol (30 mg, 0.19 mmol) and a carboxylic acid (1.2 equiv) in anhydrous tetrahydrofuran (4 mL) were added EDCI (1.3 equiv), DMAP (0.5 equiv) and *N*,*N*-diisopropylethylamine (3.0 equiv) under N_2 atmosphere with an ice bath. After stirring for 3 h at ambient temperature, the mixture was diluted with dichloromethane, washed by sat. NH_4Cl, sat. $NaHCO_3$, and brine, dried by $MgSO_4$, filtered, and concentrated. The residue was purified by silica gel column chromatography to afford the desired product.

General procedure of condition B (Table 4) for the *O*-acylation at C8:

To a solution of 2-amino-8-quinolinol (30 mg, 0.19 mmol) and a carboxylic acid (1.2 equiv) in anhydrous tetrahydrofuran were added PyBop (1.3 equiv) and *N*,*N*-diisopropylethylamine (3.0 equiv) under N_2 atmosphere with an ice bath and stirring for 4 h at ambient temperature. The reaction mixture was diluted with dichloromethane, washed by NH_4Cl, saturated $NaHCO_3$, and brine, dried by $MgSO_4$, filtered, and concentrated. The residue was purified by flash column chromatography to the desired product.

General procedure of condition C (Table 5) for the *N*-acylation at C2:

To a solution of a carboxylic acid (1.2 equiv) in tetrahydrofuran was added 1,1'-carbodiimidazole (1.3 equiv). After stirring for 1 h under N_2 atmosphere, 2-amino-8-quinolinol (30 mg, 0.19 mmol) was added to the reaction mixture. After stirring for 24 h at reflux, the mixture was diluted with tetrahydrofuran, washed by NH_4Cl, saturated $NaHCO_3$, and brine, dried by $MgSO_4$, filtered, and concentrated. The residue was purified by flash column chromatography to the desired product.

General procedure condition D (Table 5) for the *N*-acylation at C2:

To a solution of carboxylic acid (1.2 equiv) in anhydrous tetrahydrofuran (4 mL) under N_2 atmosphere, 1,1'-carbonyldiimidazole (1.3 equiv) was added under N_2 atmosphere at ambient temperature. After stirred for 1 h. The mixture was diluted with dichloromethane, extracted by brine and dichloromethane, dried by $MgSO_4$, filtered, and concentrated to obtain the acyl imidazolide

intermediate. To a solution of 2-amino-8-quinolinol (30 mg, 0.19 mmol) and NaH (2.0 equiv) in anhydrous tetrahydrofuran (4 mL) was added the acyl imidazolide intermediate under N_2 atmosphere with an ice bath. After stirring for 2 h at ambient temperature, the reaction was quenched with sat. NH_4Cl, washed by dichloromethane and dried by $MgSO_4$, filtered, and concentrated. The residue was purified by silica gel column chromatography to afford the desired product.

General procedure E for the *O*-acylation at C8

To a solution of 2-amino-8-quinolinol (30 mg, 0.19 mmol) in anhydrous tetrahydrofuran (4 mL), was added an acid chloride or anhydride (1.2 equiv) and triethylamine (3.0 equiv) under N_2 atmosphere with an ice bath. After stirring for 2 h at ambient temperature, the mixture was diluted with dichloromethane, washed by NH_4Cl, $NaHCO_3$, and brine, dried by $MgSO_4$, filtered, and concentrated. The residue was purified by silica gel column chromatography to afford the desired product.

General procedure F for the *N*-acylation at C2:

To a solution of an acid chloride or anhydride (1.2 equiv) in anhydrous tetrahydrofuran (4 mL) under N_2 atmosphere, imidazole (1.3 equiv) was added with an ice bath. After stirring for 1 h, the mixture was diluted with dichloromethane, extracted by brine and dichloromethane, dried by $MgSO_4$, filtered, and concentrated to obtain the resulting acyl imidazolide intermediate. To a solution of 2-amino-8-quinolinol (30 mg, 0.19 mmol) and NaH (2.0 equiv) in anhydrous tetrahydrofuran (4 mL) was added the acyl imidazolide under N_2 atmosphere with an ice bath. After stirring for 2 h at room temperature, the reaction was quenched with sat. NH_4Cl, washed by dichloromethane and dried by $MgSO_4$, filtered, and concentrated. The residue was purified by silica gel column chromatography to the desired product.

General procedure G for the *N*,*O*-diacylation at C2, C8:

To a solution of 2-amino-8-quinolinol (30 mg, 0.19 mmol) and a carboxylic acid (5.0 equiv) in anhydrous dichloromethane were added EDCI (2.0 equiv), HOBt (0.5 equiv) and *N*,*N*-diisopropylethylamine (5.0 equiv) under N_2 atmosphere with an ice bath. After stirring overnight at ambient temperature, the reaction mixture was diluted with dichloromethane,

washed by saturated NH_4Cl, saturated $NaHCO_3$ and brine, dried by $MgSO_4$, filtered, and concentrated. The residue was purified by silica gel column chromatography to the pure products.

3. Experimental data

2-aminoquinolin-8-yl 4-chlorobenzoate (3b)

Following the general procedure A, the product was obtained **3b** as white solid (50 mg, 90%) upon purification by column chromatography (R_f = 0.15, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 8.24 (dd, 2H, *J* = 8.4 Hz), 7.87 (d, 1H, *J* = 9 Hz), 7.55 (dd, 1H, *J* =8.4 and 1.2 Hz), 7.47 (d, 2H, *J* = 7.8 Hz), 7.39 (dd, 1H, *J* = 7.2 and 1.2 Hz), 7.27 (t, 1H, *J* = 7.8 Hz), 6.65 (d, 1H, *J* = 9 Hz), 4.79 (bs, 2H); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 164.7, 157.0, 144.9, 140.2, 139.7, 138.0, 131.8, 128.7, 128.3, 125.7, 124.9, 121.9, 121.9, 112.4; HRMS (EI): m/z calcd for $C_{16}H_{11}ClN_2O_2$: 298.0509; found: 298.0506.

2-aminoquinolin-8-yl 4-(trifluoromethyl)benzoate (3c)

Following the general procedure A, the product was obtained **3c** as white solid (57 mg, 92%) upon purification by column chromatography (R_f = 0.2, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 8.41 (d, 2H, *J* = 7.8 Hz), 8.01 (d, 2H, *J* = 7.8 Hz), 7.97(d, 1H, *J* = 9.0 Hz), 7.61 (d, 1H, *J* = 8.4 Hz), 7.42 (d, 1H, *J* = 7.8 Hz), 7.20 (t, 1H, *J* = 7.5 Hz), 6.81 (d, 1H, *J* = 9 Hz), 6.49 (bs, 2H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 164.0, 158.6, 144.6, 140.9, 137.4, 133.7, 133.7, 131.2, 126.4, 126.3, 126.2, 124.6, 121.9, 120.7, 113.7; HRMS (EI): m/z calcd for $C_{17}H_{11}F_3N_2O_2$: 332.0773; found: 332.0771.

2-aminoquinolin-8-yl 4-(*tert*-butyl)benzoate (3d)

Following the general procedure A, the product was obtained **3d** as white solid (56 mg, 94%) upon purification by column chromatography (R_f = 0.25, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 8.26 (d, 2H, *J* = 8.4 Hz), 7.85 (d, 1H, *J* = 9.0 Hz), 7.55 (d, 2H, *J* = 8.4 Hz), 7.52 (s, 1H), 7.38 (d, 1H, *J* = 7.8 Hz), 7.24 (d, 1H, *J* =7.8 Hz), 6.63 (d, 1H, *J* = 9.0 Hz), 4.78 (bs, 2H), 1.38 (s, 9H); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 165.5, 157.2, 157.1, 145.3, 140.7, 137.7, 130.3, 127.1, 125.5, 125.4, 125.0, 121.9, 121.8, 112.2, 35.2, 31.1; HRMS (EI): m/z calcd for $C_{20}H_{20}N_2O_2$: 320.1525; found: 320.1527.

2-aminoquinolin-8-yl 3-methoxybenzoate (3e)

Following the general procedure A, the product was obtained **3e** as white solid (50 mg, 91%) upon purification by column chromatography (R_f = 0.1, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 7.96 (d, 1H, *J* = 7.2 Hz), 7.88 (d, 1H, *J* = 9.0 Hz), 7.83 (s, 1H), 7.57 (d, 1H, *J* = 8.4 Hz), 7.46 (t, 1H, *J* = 7.8 Hz), 7.42 (d, 1H, *J* = 7.2 Hz), 7.28 – 7.26 (m, 1H), 7.21 (d, 1H, *J* = 7.8 Hz), 6.66 (d, 1H, *J* = 9.0 Hz), 4.86 (bs, 2H), 3.89 (s, 3H); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 165.4, 159.6, 157.0, 145.2, 140.6, 137.8, 131.2, 129.5, 125.6, 125.0, 122.9, 121.9, 121.8, 120.1, 114.5, 112.3, 55.5; HRMS (EI): m/z calcd for $C_{17}H_{14}N_2O_3$: 294.1004; found: 294.1005.

2-aminoquinolin-8-yl 3,4,5-tris(benzyloxy)benzoate (3f)

Following the general procedure A, the product was obtained **3f** as white solid (98mg, 90%) upon purification by column chromatography (R_f = 0.35, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 7.97 (d, 1H, *J* = 9.0 Hz), 7.62-7.32 (m, 19H), 7.20 (t, 1H, *J* = 7.8 Hz), 6.82 (d, 1H, *J* = 8.4 Hz), 6.52 (bs, 2H), 5.25 (s, 4H), 5.13 (s, 2H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 164.5, 158.6, 152.7, 144.8, 142.1, 141.3, 137.7, 137.4, 137.2, 128.9, 128.7, 128.6, 128.4, 128.4, 128.1, 126.1, 125.2, 124.6, 122.0, 120.8, 113.7, 109.2, 74.7, 70.8; HRMS (EI): m/z calcd for $C_{37}H_{30}N_2O_5$: 582.2155; found: 582.2157.

2-aminoquinolin-8-yl furan-2-carboxylate (3g)

Following the general procedure A, the product was obtained **3g** as white solid (42mg, 89%) upon purification by column chromatography (R_f = 0.2, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 7.83 (d, 1H, *J* = 9.0 Hz), 7.67 (t, 1H, *J* = 0.9 Hz), 7.53 (dd, 1H, *J* = 7.8 and 1.2 Hz), 7.47 (dd, 1H, *J* = 3.6 and 0.6 Hz), 7.39 (dd, 1H, *J* = 7.8 and 1.2 Hz), 7.24 (t, 1H, *J* = 7.8 Hz), 6.65 (d, 1H, *J* = 8.4 Hz), 6.59 (q, 1H, *J* = 1.8 Hz), 4.91 (bs, 2H); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 157.2, 157.1, 146.8, 144.3, 144.3, 140.5, 137.8, 125.8, 125.0, 121.9, 121.7, 119.4, 112.4, 112.1; HRMS (EI): m/z calcd for $C_{14}H_{10}N_2O_3$: 254.0691; found: 254.0691.

2-aminoquinolin-8-yl benzoate (3j)

Following the general procedure A, the product was obtained **3j** as white solid (45 mg, 91%) upon purification by column chromatography (R_f = 0.2, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 8.22 (d, 2H, *J* = 7.8 Hz), 7.97 (d, 1H, *J* = 9.0 Hz), 7.76 (t, 1H, *J* = 7.5 Hz), 7.64 – 7.59 (m, 3H), 7.39 (d, 1H, *J* = 7.8 Hz), 7.20 (t, 1H, *J* = 7.8 Hz), 6.82 (d, 1H, *J* = 9.0 Hz), 6.50 (bs, 2H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 165.0, 158.6, 144.8, 141.3, 137.4, 134.1, 130.4, 129.9, 126,1, 124.6, 122.1, 120.8, 113.7; HRMS (EI): m/z calcd for $C_{16}H_{12}N_2O_2$: 264.0899; found: 264.0897

2-aminoquinolin-8-yl 3,5-dichlorobenzoate (3k)

Following the general procedure A, the product was obtained **3k** as white solid (56 mg, 90%) upon purification by column chromatography (R_f = 0.1, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 8.12 (s, 2H), 8.06 (s, 1H), 7.96 (d, 1H, *J* = 9.0 Hz), 7.61 (d, 1H, *J* = 7.8 Hz), 7.41 (d, 1H, *J* = 7.8 Hz), 7.19 (t, 1H, *J* = 7.8 Hz), 6.80 (d, 1H, *J* = 8.4 Hz), 6.51 (bs, 2H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 162.8, 158.6, 144.4, 140.7, 137.4, 135.3, 133.5, 133.2, 128.8, 126.3, 124.5, 121.8, 120.7, 113.7.

(S)-2-aminoquinolin-8-yl 2-((*tert*-butoxycarbonyl)amino)-3-methylbutanoate (3o)

Following the general procedure A, the product was obtained **3o** as white solid (42 mg, 62%) upon purification by column chromatography (R_f = 0.2, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 7.82 (d, 1H, *J* = 9.0 Hz), 7.50 (d, 1H, *J* = 7.8 Hz), 7.30 (d, 1H, *J* = 7.2 Hz), 7.22 (t, 1H, *J* = 7.8 Hz), 6.68 (d, 1H, *J* = 8.4 Hz), 5.47 (d, 1H, *J* = 9.0 Hz), 5.14 (bs, 2H), 4.73 (q, 1H, *J* = 4.6 Hz), 2.63-2.57 (m, 1H), 1.50 (s, 9H), 1.18 (dd, 6H, *J* = 9.6 and 6.6 Hz); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 171.3, 157.1, 156.0, 144.6, 140.0, 137.7, 125.6, 124.8, 121.6, 121.6, 112.5, 79.8, 58.9, 31.2, 28.4, 19.4, 17.5; HRMS (EI): m/z calcd for $C_{19}H_{25}N_3O_4$: 359.1845; found: 359.1847.

2-aminoquinolin-8-yl 1-acetylpiperidine-4-carboxylate (3p)

Following the general procedure A, the product was obtained **3p** as white solid (50 mg, 85%) upon purification by column chromatography (R_f = 0.1, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 7.88 (d, 1H, *J* = 8.4 Hz), 7.10 (dd, 1H, *J* = 8.4 and 1.2 Hz), 7.01 (t, 1H, *J* = 7.8 Hz), 6.89 (dd, 1H, *J* = 7.2 and 1.2 Hz), 6.80 (d, 1H, *J* = 9.0 Hz), 6.44 (bs, 2H), 4.21-4.18 (m, 1H),

3.74-3.71 (m, 1H), 3.10-3.05 (m, 1H), 2.71-2.66 (m, 1H), 2.49-2.44 (m, 1H), 1.98 (s, 3H), 1.84-1.77 (m, 2H), 1.52-1.45 (m, 1H), 1.38-1.31 (m, 1H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 176.1, 168.4, 157.4, 150.4, 137.6, 137.6, 123.2, 121.9, 118.1, 113.3, 111.0, 45.5, 40.5, 28.8, 28.1, 21.7; HRMS (EI): m/z calcd for $C_{17}H_{19}N_3O_3$: 313.1426; found: 313.1428.

2-aminoquinolin-8-yl 3-methylbutanoate (3q)

Following the general procedure A, the product was obtained **3q** as colorless oil (33 mg, 72%) upon purification by column chromatography (R_f = 0.15, ethyl acetate / *n*-hexane = 1 : 3). H-NMR (600 MHz, $CDCl_3$) δ 7.83 (d, 1H, *J* = 9.0 Hz), 7.51 (dd, 1H, *J* = 7.8 and 1.2 Hz), 7.29 (dd, 1H, *J* = 7.8 and 1.8 Hz), 7.23 (t, 1H, *J* = 7.8 Hz), 6.65 (d, 1H, *J* = 8.4 Hz), 4.95 (bs, 2H), 2.65 (d, 2H, *J* = 7.2 Hz), 2.42-2.35 (m, 1H), 1.16 (d, 6H, *J* = 6.6 Hz); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 172.0, 157.1, 145.0, 140.5, 137.8, 125.4, 124.9, 121.8, 121.7, 112.3, 43.2, 25.9, 22.5; HRMS (EI): m/z calcd for $C_{14}H_{16}N_2O_2$: 244.1212; found: 244.1214.

2-aminoquinolin-8-yl pivalate (3r)

Following the general procedure E, the product was obtained **3r** as white solid (35 mg, 76%) upon purification by column chromatography (R_f = 0.25, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 7.84 (d, 1H, *J* = 9.0 Hz), 7.49 (dd, 1H, *J* = 7.8 and 1.8 Hz), 7.25 (dd, 1H, *J* = 7.8 and 1.8 Hz), 7.21 (t, 1H, *J* = 7.8 Hz), 6.66 (d, 1H, *J* = 9.0 Hz), 4.71 (bs, 2H), 1.49 (s, 9H); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 177.4, 156.8, 145.4, 140.6, 137.8, 125.2, 125.0, 121.8, 121.7, 112.1, 39.2, 27.5; HRMS (EI): m/z calcd for $C_{14}H_{16}N_2O_2$: 244.1212; found: 244.1210.

(3r,5r,7r)-2-aminoquinolin-8-yl adamantane-1-carboxylate (3s)

Following the general procedure A, the product was obtained **3s** as yellow solid (50 mg, 83%) upon purification by column chromatography (R_f = 0.1, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 7.85 (d, 1H, *J* = 9.0 Hz), 7.50 (d, 1H, *J* = 6.6 Hz), 7.28-7.20 (m, 2H), 6.68 (d, 1H, *J* = 8.4 Hz), 4.75 (bs, 2H), 2.25 (s, 6H), 2.14 (s, 3H), 1.83 (s, 6H); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 176.5, 156.8, 145.4, 140.5, 137.8, 125.1, 124.9, 121.8, 121.7, 112.0, 41.2, 39.1, 36.6, 28.1; HRMS (EI): m/z calcd for $C_{20}H_{22}N_2O_2$: 322.1681; found: 322.1680.

2-aminoquinolin-8-yl 4-methylbenzenesulfonate (3t)

Following the general procedure E, the product was obtained **3t** as white solid (51 mg, 87%) upon purification by column chromatography (R_f = 0.1, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 7.86-7.84 (m, 3H), 7.55 (d, 1H, *J* = 7.8 Hz), 7.38 (d, 1H, *J* = 7.8 Hz), 7.25 (d, 1H, *J* = 7.8 Hz), 7.08 (t, 1H, *J* = 7.8 Hz), 6.73 (d, 1H, *J* = 9.0 Hz), 6.55 (bs, 2H), 2.36 (s, 3H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 158.6, 145.4, 142.5, 141.3, 137.1, 132.9, 129.9, 129.0, 127.2, 124.9, 122.1, 120.4, 113.7, 21.6; HRMS (EI): m/z calcd for $C_{16}H_{14}N_2O_3S$: 314.0725; found: 314.0724.

2-aminoquinolin-8-yl benzyl carbonate (3u)

Following the general procedure E, the product was obtained **3u** as white solid (47 mg. 85%) upon purification by column chromatography (R_f = 0.15, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 7.95 (d, 1H, *J* = 9.0 Hz), 7.57 (d, 1H, *J* = 8.4 Hz), 7.47-7.34 (m, 6H), 7.14 (t, 1H, *J* = 7.8 Hz), 6.83 (d, 1H, *J* = 9.0 Hz), 6.59 (bs, 2H), 5.28 (s, 2H); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 158.6, 153.5, 144.6, 140.9, 137.3, 135.7, 128.9, 128.5, 126.1, 124.6, 121.2, 120.7, 113.7, 70.0; HRMS (EI): m/z calcd for $C_{17}H_{14}N_2O_3$: 294.1004; found: 294.1004.

2-aminoquinolin-8-yl *tert*-butyl carbonate (3v)

To a solution of commercially available 2-amino-8-quinolinol (30 mg, 0.19 mmol) in anhydroustetrahydrofuran (4 ml) and triethylamine (78 μL, 0.56 mmol) was added di-tert-butyl carbonate (52 μL, 0.22 mmol) under N_2 atmosphere with an ice bath and stirring for 4 hour at room temperature. The mixture was diluted with dichloromethane, washed by NH_4Cl, saturated $NaHCO_3$, and brine, dried by $MgSO_4$, filtered, concentrated. The residue was purified by silica gel column chromatography (R_f = 0.2, ethyl acetate / *n*-hexane = 1 : 3) to afford **3v** (45 mg, 92%) as white solid. ^{1}H-NMR (600 MHz, $CDCl_3$) δ 7.85 (d, 1H, *J* = 8.4 Hz), 7.50 (d, 1H, *J* = 7.8 Hz), 7.39 (d, 1H, *J* = 7.2 Hz), 7.21 (t, 1H, *J* = 7.8 Hz), 6.70 (d, 1H, *J* = 9.0 Hz), 1.59 (s, 9H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 157.3, 152.0, 144.8, 140.0, 137.8, 125.4, 124.8, 121.5, 121.4, 112.6, 83.3, 27.7; HRMS (EI): m/z calcd for $C_{14}H_{16}N_2O_3$: 260.1161; found: 260.1161.

4-chloro-*N*-(8-hydroxyquinolin-2-yl)benzamide (4b)

Following the general procedure D, the product was obtained **4b** as white solid (49 mg, 88%) upon purification by column chromatography (R_f = 0.5, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 8.73 (bs, 1H), 8.56 (d, 1H, *J* = 9Hz), 8.23 (d, 1H, *J* = 9 Hz), 7.94 (d, 2H, *J* = 8.4 Hz), 7.62 (bs, 1H), 7.52 (d, 2H, *J* = 8.4 Hz), 7.38 (t, 1H, *J* = 7.8 Hz), 7.34 (d, 1H, *J* = 7.2 Hz), 7.15 (d, 1H, *J* = 6.6 Hz); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 164.7, 150.7, 149.4, 139.0, 138.9, 136.2, 132.3, 129.2, 128.7, 126.6, 126.2, 118.1, 114.7, 110.9; HRMS (EI): m/z calcd for $C_{16}H_{11}ClN_2O_2$: 298.0509; found: 298.0511.

***N*-(8-hydroxyquinolin-2-yl)-4-(trifluoromethyl)benzamide (4c)**

Following the general procedure D, the product was obtained **4c** as white solid (58 mg, 93%) upon purification by column chromatography (R_f = 0.5, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 11.21 (bs, 1H), 9.42 (s, 1H), 8.38 (d, 1H, *J* = 8.4 Hz), 8.29 (t, 3H, *J* = 11.4 Hz), 7.93 (d, 2H, *J* = 7.8 Hz), 7.40-7.35 (m, 2H), 7.12 (d, 1H, *J* = 7.2 Hz); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 165.7, 152.6, 150.3, 138.6, 138.3, 129.5, 127.3, 126.4, 125.8, 125.8, 125.2, 123.4, 118.2, 116.3, 112.2; HRMS (EI): m/z calcd for $C_{17}H_{11}F_3N_2O_2$: 332.0773; found: 332.0770.

4-(*tert*-butyl)-*N*-(8-hydroxyquinolin-2-yl)benzamide (4d)

Following the general procedure D, the product was obtained **4d** as white solid (55 mg, 91%) upon purification by column chromatography (R_f = 0.65, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 8.70 (s, 1H), 8.61 (d, 1H, *J* = 9.0 Hz), 8.23 (d, 1H, *J* = 9.0 Hz), 7.94 (dt, 2H, *J* = 8.4 and 1.8 Hz), 7.59 (s, 1H), 7.57 (dt, 2H, *J* = 9.0 and 1.8 Hz), 7.38 (t, 1H, *J* = 7.8 Hz), 7.34 (dd, 1H, *J* = 7.8 and 1.8 Hz), 7.16 (dd, 1H, *J* = 7.2 and 1.2 Hz), 1.38 (s, 9H); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 165.7, 156.3, 150.7, 149.7, 138.9, 136.2, 131.1, 127.1, 126.5, 126.0, 125.9, 118.0, 114.8, 110.7, 35.1, 31.1; HRMS (EI): m/z calcd for $C_{20}H_{20}N_2O_2$: 320.1525; found: 320.1527.

2-(3-methoxybenzamido)quinolin-8-yl 3-methoxybenzoate (4e)

Following the general procedure D, the product was obtained **4e** as white solid (55 mg, 99%) upon purification by column chromatography (R_f = 0.2, dichloromethane / methanol = 20 : 1). ^{1}H-NMR

(600 MHz, DMSO-d_6) δ 10.87 (bs, 1H), 9.35 (bs, 1H), 8.36 (d, 1H, *J* = 9.0 Hz), 8.29 (d, 1H, *J* = 8.4 Hz), 7.68 (t, 2H, *J* = 7.5 Hz), 7.47 (t, 1H, *J* = 7.8 Hz), 7.39-7.34 (m, 2H), 7.19 (d, 2H, *J* = 7.8 Hz), 7.12 (d, 1H, *J* = 7.2 Hz); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 166.3, 159.6, 152.4, 150.5, 138.5, 137.2, 135.7, 130.0, 127.3, 118.7, 118.2, 116.5, 113.3, 112.1, 55.8; HRMS (EI): m/z calcd for $C_{17}H_{14}N_2O_3$: 294.1004; found: 294.1005.

3,4,5-tris(benzyloxy)-*N*-(8-hydroxyquinolin-2-yl)benzamide (4f)

Following the general procedure D, the product was obtained **4f** as white solid (84 mg, 77%) upon purification by column chromatography (R_f = 0.2, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 10.94 (bs, 1H), 9.42 (bs, 1H), 8.35 (d, 1H, *J* = 8.4 Hz), 8.25 (d, 1H, *J* = 8.4 Hz), 7.62 (s, 2H), 7.52-7.29 (m, 17H), 7.12 (d, 1H, *J* = 7.2 Hz), 5.26 (s, 4H), 5.05 (s, 2H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 165.8, 152.5, 152.4, 150.6, 140.8, 138.3, 137.8, 137.4, 137.3, 129.3, 128.9, 128.6, 128.5, 128.4, 128.3, 128.1, 127.2, 126.3, 118.2, 116.7, 112.2, 107.7, 74.7, 70.8; HRMS (EI): m/z calcd for $C_{37}H_{30}N_2O_5$: 582.2155; found: 582.2155.

***N*-(8-hydroxyquinolin-2-yl)furan-2-carboxamide (4g)**

Following the general procedure D, the product was obtained **4g** as white solid (43 mg, 90%) upon purification by column chromatography (R_f = 0.4, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 10.48 (bs, 1H), 9.45 (bs, 1H), 8.35 (d, 1H, *J* = 9.0 Hz), 8.29 (d, 1H, *J* = 9.0 Hz), 8.01 (s, 1H), 7.62 (d, 1H, *J* = 3.0 Hz), 7.37–7.32 (m, 2H), 7.10 (d, 1H, *J* = 7.2 Hz), 6.47 (s, 1H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 157.0, 152.4, 149.8, 147.1, 147.0, 138.7, 137.2, 127.1, 126.3, 118.1, 116.4, 115.7, 112.8, 112.2; HRMS (EI): m/z calcd for $C_{14}H_{10}N_2O_3$: 254.0691; found: 254.0691.

***N*-(8-hydroxyquinolin-2-yl)picolinamide (4h)**

Following the general procedure D, the product was obtained **4h** as white solid (47mg, 95%) upon purification by column chromatography (R_f = 0.55, dichloromethane / methanol = 10 : 1). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 10.66 (bs, 1H), 8.59-8.58 (m, 2H), 8.26 (td, 1H, *J* = 7.2 and 0.9 Hz), 8.14 (d, 1H), 7.85 (td, 1H, *J* = 7.5 and 1.2 Hz), 7.78 (bs, 1H), 7.44 – 7.41 (m, 1H), 7.32 (t, 1H, *J* = 7.8 Hz), 7.26 (dd, 1H, *J* = 8.4 and 1.2 Hz), 7.13 (dd, 1H, *J* = 7.2 and 1.2); ^{13}C-NMR (150 MHz, $CDCl_3$) δ

162.5, 151.0, 149.0, 148.2, 138.7, 137.6, 136.4, 126.9, 126.4, 126.0, 122.5, 117.8, 114.4, 110.6; HRMS (EI): m/z calcd for $C_{15}H_{11}N_3O_2$: 265.0851; found: 265.0846.

***N*-(8-hydroxyquinolin-2-yl)pyrazine-2-carboxamide (4i)**

Following the general procedure D, the product was obtained **4i** as white solid (46 mg, 92%) upon purification by column chromatography (R_f = 0.2, dichloromethane / methanol = 10 : 1). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 10.60 (bs, 1H), 9.72 (bs, 1H), 9.41 (s, 1H), 9.02 (d, 1H, *J* = 1.2 Hz), 8.88 (s, 1H), 8.50(d, 1H, *J* = 9.0 Hz), 8.46 (d, 1H, *J* = 8.4 Hz), 7.40-7.36(m, 2H), 7.09 (d, 1H, *J* = 6.6 Hz); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 161.9, 152.7, 149.0, 148.8, 144.4, 144.0, 143.9, 139.5, 137.2, 127.3, 126.7, 118.1, 114.2, 112.6; HRMS (EI): m/z calcd for $C_{14}H_{10}N_4O_2$: 266.0804; found: 266.0811.

***N*-(8-hydroxyquinolin-2-yl)benzamide (4j)**

Following the general procedure D, the product was obtained **4j** as white solid (49 mg, 98%) upon purification by column chromatography (R_f = 0.35, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 8.75 (bs, 1H), 8.61 (d, 1H, *J* = 9.0 Hz), 8.24 (d, 1H, *J* = 9 Hz), 8.00-7.99 (m, 2H), 7.63- 7.60 (m, 2H), 7.56- 7.53 (m, 2H), 7.38- 7.33 (m, 2H), 7.16 (dd, 1H, *J* = 7.8 and 1.2 Hz); ^{13}C-NMR (100 MHz, $CDCl_3$) δ 165.7, 150.7, 149.5, 138.9, 136.2, 133.9, 132.5, 128.9, 127.2, 126.5, 126.1, 118.0, 114.7, 110.7; HRMS (EI): m/z calcd for $C_{16}H_{12}N_2O_2$: 264.0899; found: 264.0897.

3,5-dichloro-*N*-(8-hydroxyquinolin-2-yl)benzamide (4k)

Following the general procedure D, the product was obtained **4k** as white solid (56 mg, 90%) upon purification by column chromatography (R_f = 0.45, dichloromethane / methanol = 20 : 1) ^{1}H-NMR (600 MHz, DMSO-d_6) δ 11.19 (bs, 1H), 9.40 (bs, 1H), 8.35 (d, 1H, *J* = 9 Hz), 8.23 (d, 1H, *J* = 9 Hz), 8.08 (d, 2H, *J* = 1.8 Hz), 7.88 (s, 1H), 7.39-7.32 (2H, m), 7.10 (d, 1H, *J* = 6.6Hz); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 164.1, 152.6, 150.1, 138.6, 137.7, 137.3, 134.7, 131.8, 127.4, 127.3, 126.5, 118.2, 116.2, 112.3; HRMS (EI): m/z calcd for $C_{16}H_{10}Cl_2N_2O_2$: 332.0119; found: 332.0118.

***N*-(8-hydroxyquinolin-2-yl)nicotinamide (4l)**

Following the general procedure C, the product was obtained **4l** as white solid (37 mg, 75%) upon purification by column chromatography (R_f = 0.2, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 11.24 (bs, 1H), 9.44 (bs, 1H), 9.21 (d, 1H, *J* = 1.8 Hz), 8.79 (dd, 1H, *J* = 4.8 and 1.8 Hz), 8.42-8.40 (m, 1H), 8.36 (d, 1H, *J* = 9.0 Hz), 8.29 (bs, 1H), 7.58 (q, 1H, *J* = 4.2 Hz), 7.39-7.34 (m, 2H), 7.13 (dd, 1H, *J* = 7.2 and 1.2); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 165.5, 152.9, 152.5, 150.4, 149.5, 138.6, 137.3, 136.3, 130.3, 127.2, 126.4, 123.8, 118.2, 116.3, 112.3; HRMS (EI): m/z calcd for $C_{15}H_{11}N_3O_2$: 265.0851; found: 265.0854.

***N*-(8-hydroxyquinolin-2-yl)isonicotinamide (4m)**

Following the general procedure C, the product was obtained **4m** as white solid (42 mg, 85%) upon purification by column chromatography (R_f = 0.2, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 8.90-8.87 (m, 3H), 8.58 (d, 1H, *J* = 9.0 Hz), 8.29 (d, 1H, *J* = 8.4 Hz), 7.85 (dd, 2H, *J* = 4.2 and 1.2 Hz), 7.64 (bs, 1H), 7.43 (t, 1H, *J* = 7.8 Hz), 7.38 (dd, 1H, *J* = 8.4 and 1.2 Hz), 7.19 (dd, 1H, *J* = 7.2 and 1.2 Hz); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 163.9, 151.0, 150.7, 148.9, 141.1, 139.2, 136.2, 128.7, 126.5, 120.9, 118.2, 114.7, 111.1; HRMS (EI): m/z calcd for $C_{15}H_{11}N_3O_2$: 265.0851; found: 265.0850.

(S)-*tert*-butyl (1-((8-hydroxyquinolin-2-yl)amino)-4-methyl-1-oxopentan-2-yl)carbamate (4n)

Following the general procedure C, the product was obtained **4n** as white solid (55 mg, 78%) upon purification by column chromatography (R_f = 0.2, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 9.63 (bs, 1H), 7.98 (d, 1H, *J* = 7.8 Hz), 7.61 (d, 2H, *J* = 11.4 Hz), 7.24 (d, 1H, *J* = 7.2 Hz), 7.09 (d, 1H, *J* = 7.2 Hz), 7.03 (d, 1H, *J* = 7.2 Hz), 5.19 (d, 1H, *J* = 8.4 Hz), 4.66 (bs, 1H), 1.84-1.79 (m, 1H), 1.76-1.65 (m, 2H), 1.47 (s, 9H), 1.01 (t, 6H, *J* = 7.2 Hz); ^{13}C-NMR (150 MHz, $CDCl_3$) δ 172.7, 156.7, 151.0, 149.1, 137.5, 136.1, 126.1, 125.6, 117.5, 114.4, 110.6, 80.9, 54.0, 40.9, 28.3, 24.8, 23.2, 21.6; HRMS (EI): m/z calcd for $C_{20}H_{27}N_3O_4$: 373.2002; found: 373.2004.

(S)-*tert*-butyl (1-((8-hydroxyquinolin-2-yl)amino)-3-methyl-1-oxobutan-2-yl)carbamate (4o)

Following the general procedure C, the product was obtained **4o** as colorless oil (63 mg, 93%) upon purification by column chromatography (R_f = 0.15, dichloromethane / methanol = 10 : 1). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 10.61 (bs, 1H), 9.48 (bs, 1H), 8.29-8.24 (m, 2H), 7.33 (dd, 1H, *J* = 7.8 and 1.2 Hz), 7.31 (t, 1H, *J* = 7.8 Hz), 7.09 (dd, 1H, *J* = 7.8 and 1.8 Hz), 7.03 (d, 2H, *J* = 8.4 Hz), 4.14 (bs, 1H), 2.10-2.06 (m, 1H), 1.39 (s, 9H), 0.94 (q, 6H, *J* = 7.0 Hz); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 172.5, 156.0, 152.2, 150.2, 138.6, 137.4, 127.1, 125.9, 118.2, 115.0, 112.3, 78.6, 61.0, 30.6, 28.6, 19.6, 18.7; HRMS (EI): m/z calcd for $C_{19}H_{25}N_3O_4$: 359.1845; found: 359.1845.

1-acetyl-*N*-(8-hydroxyquinolin-2-yl)piperidine-4-carboxamide (4p)

Following the general procedure C, the product was obtained **4p** as white solid (48 mg, 82%) upon purification by column chromatography (R_f = 0.1, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 10.74 (bs, 1H), 9.41 (bs, 1H), 8.26 (bs, 2H), 7.33 (dd, 1H, *J* = 7.8 and 1.2 Hz), 7.30 (t, 1H, *J* = 7.8 Hz), 7.08 (dd, 1H, *J* = 7.2 and 1.2 Hz), 4.43 (d, 1H, *J* = 13.2 Hz), 3.89 (d, 1H, *J* = 13.8 Hz), 3.08-3.03 (m, 1H), 2.83 (bs, 1H), 2.60 (td, 1H, *J* = 12.6 and 2.4 Hz), 2.01 (s, 3H), 1.88 (t, 2H, *J* = 15.0 Hz), 1.64-1.57 (m, 1H), 1.48-1.42 (m, 1H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 174.7, 168.4, 152.5, 150.6, 138.5, 137.4, 127.0, 125.8, 118.2, 115.1, 112.2, 45.7, 42.7, 40.7, 29.1, 28.5, 21.7; HRMS (EI): m/z calcd for $C_{17}H_{19}N_3O_3$: 313.1426; found: 313.1428.

***N*-(8-hydroxyquinolin-2-yl)-3-methylbutanamide (4q)**

Following the general procedure C, the product was obtained **4q** as white solid (40 mg, 88%) upon purification by column chromatography (R_f = 0.1, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 10.66 (bs, 1H), 9.36 (bs, 1H), 8.27-8.25 (m, 2H), 7.33-7.28 (m, 2H), 7.07 (d, 1H, *J* = 7.2 Hz), 2.35 (d, 2H, *J* = 7.2 Hz), 2.15–2.08 (m, 1H), 0.96 (d, 6H, *J* = 6.6 Hz); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 172.5, 152.4, 150.6, 138.5, 137.4, 127.0, 125.7, 118.2, 115.2, 112.2, 45.6, 26.0, 22.7; HRMS (EI): m/z calcd for $C_{14}H_{16}N_2O_2$: 244.1212; found: 244.1210.

***N*-(8-hydroxyquinolin-2-yl)pivalamide (4r)**

Following the general procedure F, the product was obtained **4r** as white solid (41 mg, 90%) upon purification by column chromatography (R_f = 0.45, dichloromethane / methanol = 20 : 1). ^{1}H-NMR

(600 MHz, DMSO-d_6) δ 9.74 (bs, 1H), 9.28 (bs, 1H), 8.28 (d, 1H, *J* = 9.0 Hz), 8.21 (d, 1H, *J* = 9.0 Hz), 7.34-7.29 (m, 2H), 7.08 (d, 1H, *J* = 7.2 Hz), 1.24 (s, 9H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 177.8, 152.3, 150.6, 138.4, 137.1, 126.9, 126.0, 118.1, 115.8, 111.9, 39.9, 27.4; HRMS (EI): m/z calcd for $C_{14}H_{16}N_2O_2$: 244.1212; found: 244.1210.

(3r,5r,7r)-*N*-(8-hydroxyquinolin-2-yl)adamantane-1-carboxamide (4s)

Following the general procedure C, the product was obtained **4s** as white solid (27 mg, 45%) upon purification by column chromatography (R_f = 0.55, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 9.59 (bs, 1H), 9.28 (bs, 1H), 8.29 (d, 1H, *J* = 9.0 Hz), 8.22 (d, 1H, *J* = 9.0 Hz), 7.34-7.29 (m, 2H), 7.07 (d, 1H, *J* = 7.2 Hz), 2.04 (s, 3H), 1.98 (s, 6H), 1.75 (t, 6H, *J* = 13.5 Hz); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 177.1, 152.3, 150.5, 138.4, 137.1, 126.8, 126.0, 118.1, 115.7, 111.8, 41.6, 38.5, 36.3, 28.1; HRMS (EI): m/z calcd for $C_{20}H_{22}N_2O_2$: 322.1681; found: 322.1682.

benzyl (8-hydroxyquinolin-2-yl)carbamate (4u)

Following the general procedure F, the product was obtained **4u** as white solid (50 mg, 91%) upon purification by column chromatography (R_f = 0.5, dichloromethane / methanol = 20 : 1). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 10.49 (bs, 1H), 9.11 (bs, 1H), 8.29 (d, 1H, *J* = 9.0 Hz), 8.05 (d, 1H, *J* = 9.0 Hz), 7.46 (d, 2H, *J* = 7.2 Hz), 7.41 (t, 2H, *J* = 7.5 Hz), 7.35-7.28 (m, 3H), 7.08 (d, 1H, *J* = 7.2 Hz), 5.23 (s, 2H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 154.1, 152.1, 150.4, 138.7, 137.2, 136.9, 128.9, 128.4, 128.2, 126.4, 125.7, 118.2, 114.2, 112.0, 66.42; HRMS (EI): m/z calcd for $C_{17}H_{14}N_2O_3$: 294.1004; found: 294.1003.

***tert*-butyl (8-hydroxyquinolin-2-yl)carbamate (4v)**

To a solution of commercially available 2-amino-8-quinolinol (30 mg, 0.19 mmol) and NaH (2 equiv) in anhydroustetrahydrofuran (4 ml) was added tert-butyl 1*H*-imidazole-1-carboxylate (1.2 equiv) under N_2 atmosphere with an ice bath and stirring for 2 h at room temperature. The reaction was quenched with sat. NH_4Cl, washed by dichloromethane and dried by $MgSO_4$, filtered, concentrated. The residue was purified by silica gel column chromatography (R_f = 0.6, dichloromethane / methanol = 20 : 1) to afford **4v** (46 mg, 95%). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 8.23 (d, 1H, *J* = 9.0 Hz), 8.14 (d,

1H, J = 8.4 Hz), 7.63 (bs, 1H), 7.53 (bs, 1H), 7.34-7.28 (m, 2H), 7.15 (d, 1H, J = 6.6 Hz), 1.58 (s, 9H); ^{13}C-NMR (150 MHz, DMSO-d_6) δ 152.2, 150.5, 149.8, 138.5, 136.2, 125.7, 125.4, 117.9, 113.3, 110.6, 81.5, 28.2; HRMS (EI): m/z calcd for $C_{14}H_{16}N_2O_3$: 260.1161; found: 260.1162.

2-(4-methoxybenzamido)quinolin-8-yl 4-methoxybenzoate (5a)

Following the general procedure G, the product was obtained **5a** as white solid (yield = 60%) upon purification by column chromatography (R_f = 0.3, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 9.11 (s, 1H), 8.50 (d, 1H, J = 9.0 Hz), 8.17 – 8.19 (m, 3H). 7.73 (d, 2H, 8.4 Hz), 7.69 (d, 1H, J = 7.8 Hz), 7.44 – 7.49 (m, 3H), 6.82 (d, 2H, J = 8.4 Hz), 6.74 (d, 2H, J = 8.4 Hz), 3.81 (s, 3H), 3.76 (s, 3H); ^{13}C NMR (150 MHz, $CDCl_3$) δ 165.8, 164.9, 163.6, 162.6, 151.7, 146.1, 139.9, 138.4, 132.5, 129.3, 127.5, 126.2, 125.4, 124.6, 122.3, 121.7, 115.2, 113.7, 113.6, 55.4, 55.3.

2-(4-chlorobenzamido)quinolin-8-yl 4-chlorobenzoate (5b)

Following the general procedure G, the product was obtained **5b** as white solid (yield = 55%) upon purification by column chromatography (R_f = 0.5, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 9.4 (1H, s), 8.43 (1H, d, J = 9 Hz), 8.23 (1H, d, J = 9 Hz), 8.09 (2H, d, J = 8.4 Hz), 7.75 (1H, d, J = 6.6 Hz), 7.63 (2H, d, J = 8.4 Hz), 7.51 – 7.47 (2H, m), 7.26 (2H, d, J = 9 Hz), 7.17 (2H, d, J = 8.4); ^{13}C NMR (150 MHz, $CDCl_3$) δ 165.6, 164.3, 151.5, 145.6, 139.9, 139.4, 138.7, 138.4, 132.4, 131.6, 128.7, 128.6, 128.6, 127.6, 127.6, 125.8, 124.9, 122.4, 115.2.

2-(4-(trifluoromethyl)benzamido)quinolin-8-yl 4-(trifluoromethyl)benzoate (5c)

Following the general procedure G, the product was obtained **5c** as white solid (yield = 56%) upon purification by column chromatography (R_f = 0.5, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 9.92 (1H, bs), 8.37 (1H, d, J = 9 Hz), 8.20 (2H, d, J = 7.8 Hz), 8.17 (1H, d, J = 9 Hz), 7.73 (1H, dd, J = 8.4 and 1.2 Hz), 7.70 (2H, d, J = 7.8 Hz), 7.50 – 7.43 (4H, m), 7.33 (2H, d, J = 8.4 Hz); ^{13}C NMR (150 MHz, $CDCl_3$) δ 165.8, 163.8, 151.4, 145.2, 139.2, 137.5, 134.7, 133.5, 132.3, 130.5, 127.5, 127.4, 125.9, 125.2, 125.2, 125.2 125.1, 125.1, 125.1, 122.4, 115.0.

2-(4-(*tert*-butyl)benzamido)quinolin-8-yl 4-(*tert*-butyl)benzoate (5d)

Following the general procedure G, the product was obtained **5d** as white solid (yield = 60%) upon purification by column chromatography (R_f = 0.55, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, DMSO-d_6) δ 8.47 (1H, d, *J* = 9 Hz), 8.28 (1H, d, *J* = 9 Hz), 8.13 (2H, d, *J* = 8.4 Hz), 7.91 (1H, dd, *J* = 7.8 and 1.2 Hz), 7.88 (2H, dd, *J* = 8.4 and 1.8 Hz), 7.64 (2H, dd, *J* = 7.2 and 2.4 Hz), 7.61 (2H, dd, *J* = 7.2 and 1.2 Hz), 7.56 (1H, t, *J* = 7.8 Hz), 7.48 (2H, dd, *J* = 6.6 and 1.8 Hz); ^{13}C NMR (150 MHz, DMSO-d_6) δ 130.4, 128.6, 126.2, 125.5, 125.3, 35.4, 35.1, 31.3, 31.3

2-(3-methoxybenzamido)quinolin-8-yl 3-methoxybenzoate (5e)

Following the general procedure G, the product was obtained **5e** as white solid (yield = 59%) upon purification by column chromatography (R_f = 0.3, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 9.11 (1H, s), 8.55 (1H, d, *J* = 9 Hz), 8.25 (1H, *J* = 9 Hz), 7.90 (1H, dt, *J* = 7.8 and 1.2 Hz), 7.75 (2H, dd, *J* = 6.6 and 3.0 Hz), 7.52 – 7.45 (2H, m), 7.41 – 7.40 (1H, m), 7.38 (2H, d, *J* = 9.0 Hz), 7.31 – 7.25 (1H, m), 7.15 (1H, dd, *J* = 8.4 and 3 Hz); ^{13}C NMR (150 MHz, $CDCl_3$) δ 166.2, 165.2, 159.8, 159.6, 151.4, 146.1, 139.7, 138.7, 135.6, 130.8, 129.6, 129.5, 127.7, 125.7, 124.8, 122.8, 122.3, 120.2, 119.2, 118.5, 115.3, 114.5, 112.5, 55.4.

2-(3,4,5-tris(benzyloxy)benzamido)quinolin-8-yl 3,4,5-tris(benzyloxy)benzoate (5f)

Following the general procedure G, the product was obtained **5f** as white solid (yield = 50%) upon purification by column chromatography (R_f = 0.4, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 8.34 (1H, d, *J* = 9.0 Hz), 7.97 (1H, d, *J* = 8.4 Hz), 7.53 (1H, d, *J* = 7.8 Hz), 7.44 – 7.34 (14H, m), 7.32 – 7.29 (22H, m), 7.12 (2H, s), 5.13 (2H, s), 4.95 (2H, s), 4.87 (4H, s), 4.74 (4H, s); ^{13}C NMR (150 MHz, $CDCl_3$) δ 166.2, 164.9, 152.6, 152.4, 152.0, 146.1, 142.5, 141.7, 139.7, 138.6, 137.6, 137.3, 136.6, 136.4, 129.4, 128.4, 128.4, 128.4, 128.4, 128.4, 128.4, 127.9, 127.9, 127.9, 127.6, 127.5, 125.9, 124.7, 124.2, 122.4, 115.6, 109.0, 107.1, 75.1, 75.0, 71.0, 70.7.

2-(furan-2-carboxamido)quinolin-8-yl furan-2-carboxylate (5g)

Following the general procedure G, the product was obtained **5g** as white solid (yield = 65%) upon purification by column chromatography (R_f = 0.2, ethyl acetate / *n*-hexane = 1 : 3). ^{1}H-NMR (600 MHz, $CDCl_3$) δ 9.09 (1H, bs), 8.56 (1H, d, *J* = 9 Hz), 8.22 (1H, d, *J* = 9 Hz), 7.73 (1H, d, *J* = 7.8 Hz),

7.66 (1H, s), 7.51 (1H, dd, J = 7.8 and 1.2 Hz), 7.47 (1H, d, J = 3.6 Hz), 7.45 (1H, d, J = 7.8 Hz), 7.33 (1H, s), 7.24 (1H, d, J = 3.6 Hz), 6.56 (1H, dd, J = 3.6 and 1.8 Hz), 6.49 (1H, dd, J = 3.6 and 1.8 Hz); ^{13}C NMR (150 MHz, $CDCl_3$) δ 156.9, 156.4, 150.8, 147.1, 147.0, 145.3, 144.8, 144.0, 139.8, 138.6, 127.6, 125.9, 124.7, 122.3, 119.7, 116.3, 115.1, 112.6, 112.2.

4. ^{1}H and ^{13}C NMR Spectra

There was an amine peak at about 6.5 ppm in the NMR analysis. **SG-HQ1** was also confirmed to be an ester in X-ray crystallography (vide infra). Consequently, **SG-HQ1** was also confirmed to be an ester.

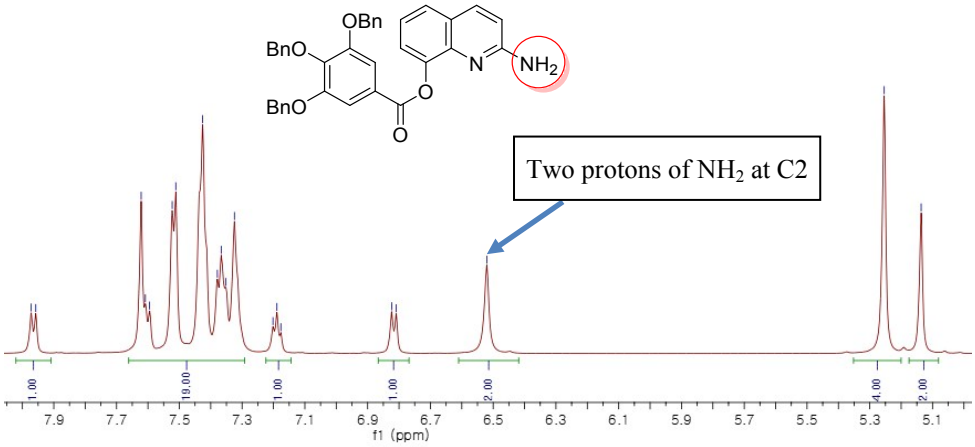


Figure S1. The ^{1}H-NMR of SG-HQ1 dissolved in DMSO-d_6.

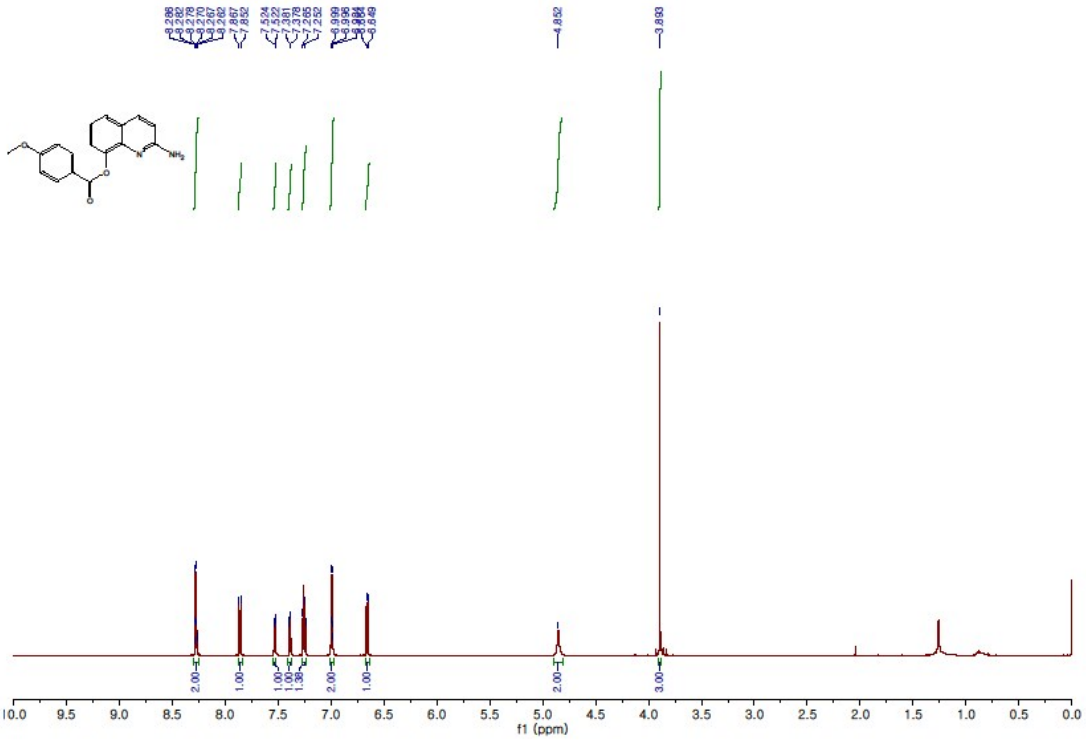


Figure S2. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 3a.

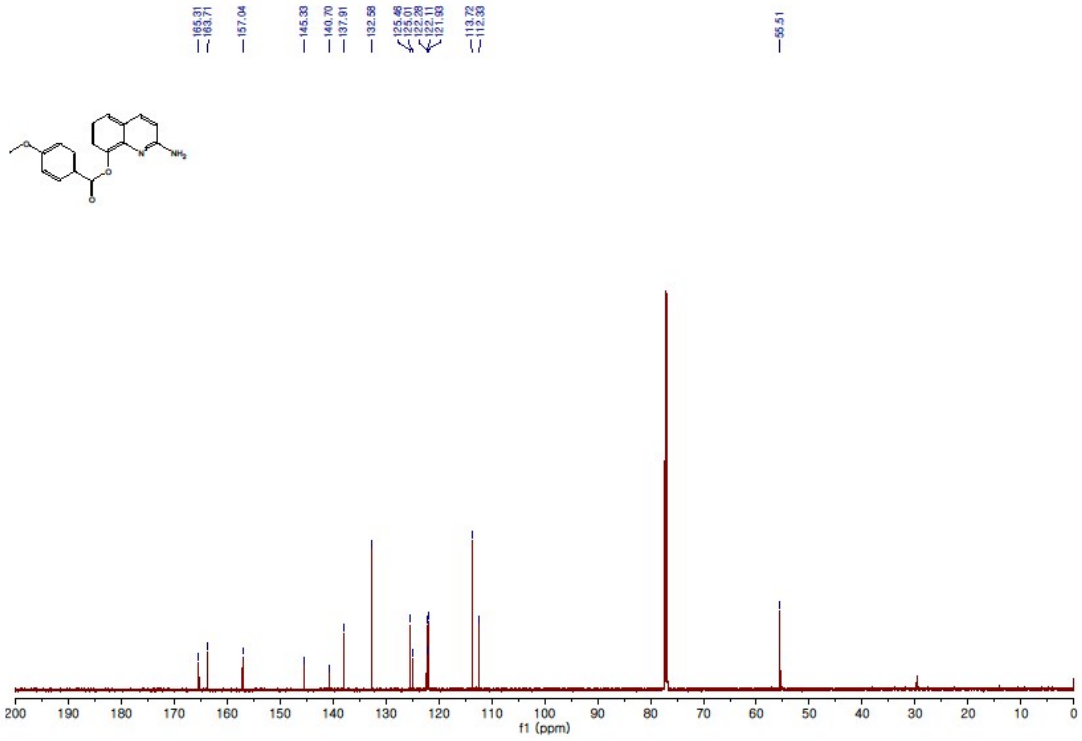


Figure S3. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 3a.

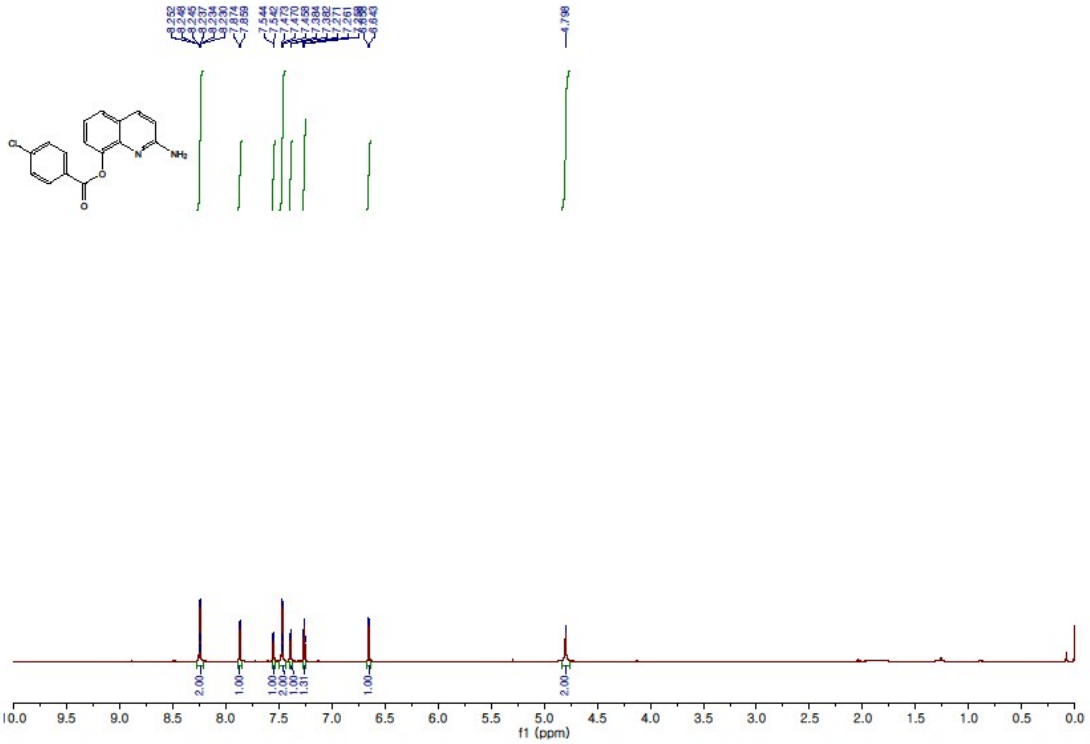


Figure S4. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 3b.

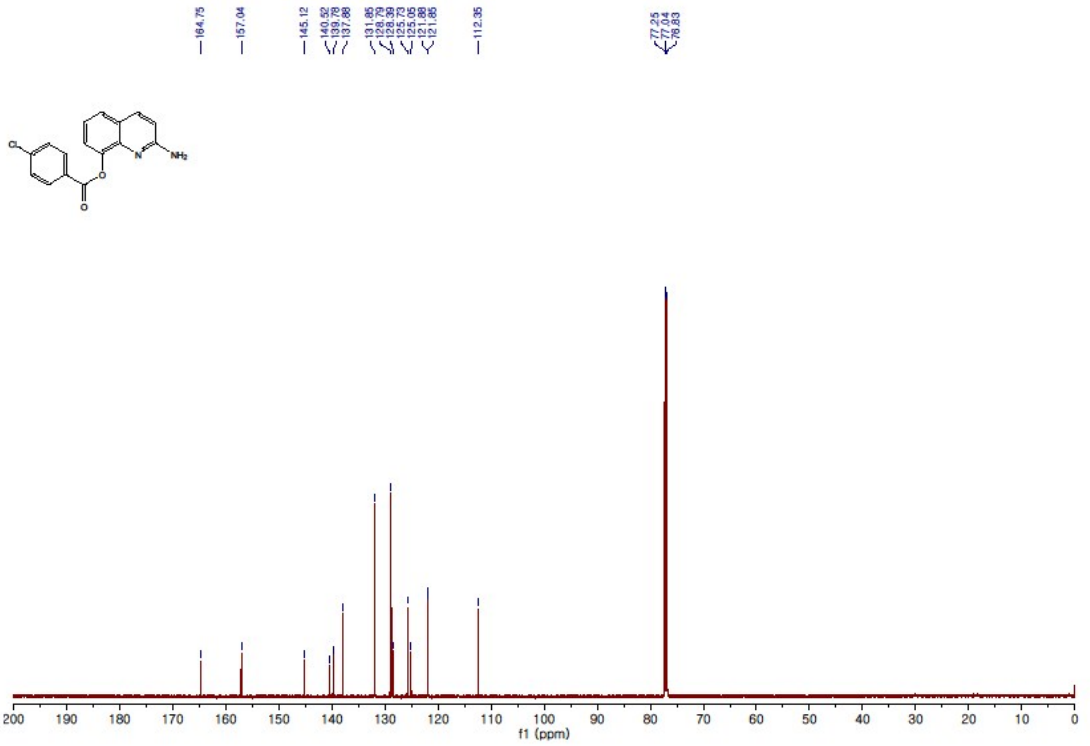


Figure S5. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 3b.

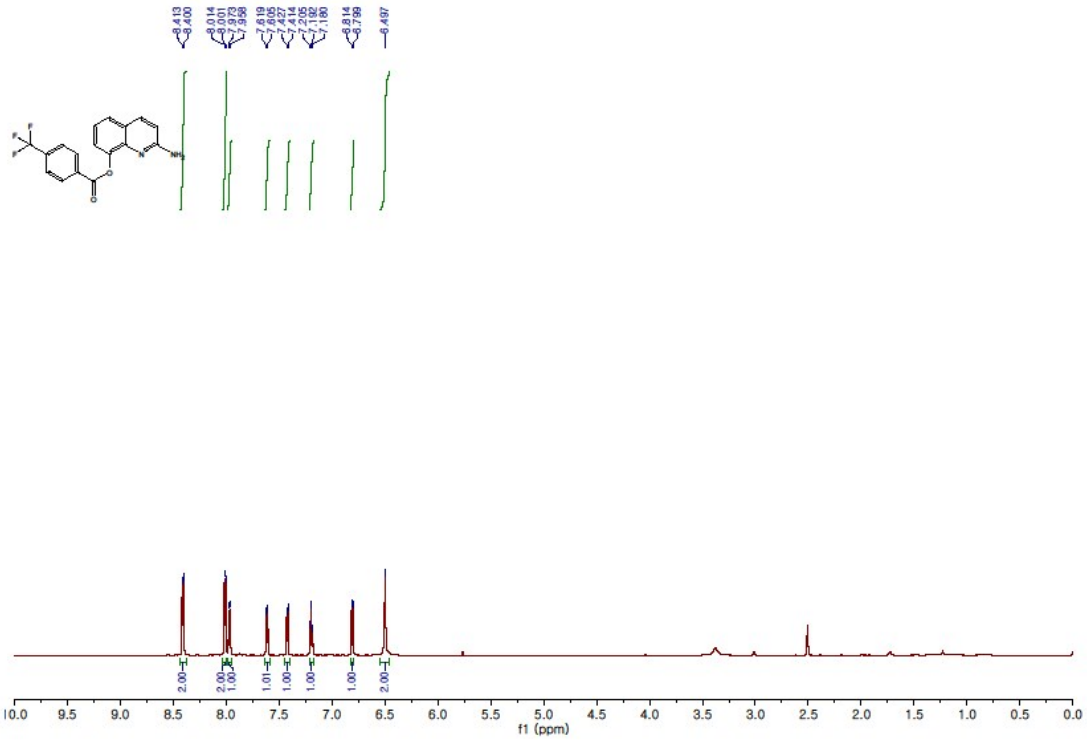


Figure S6. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 3c.

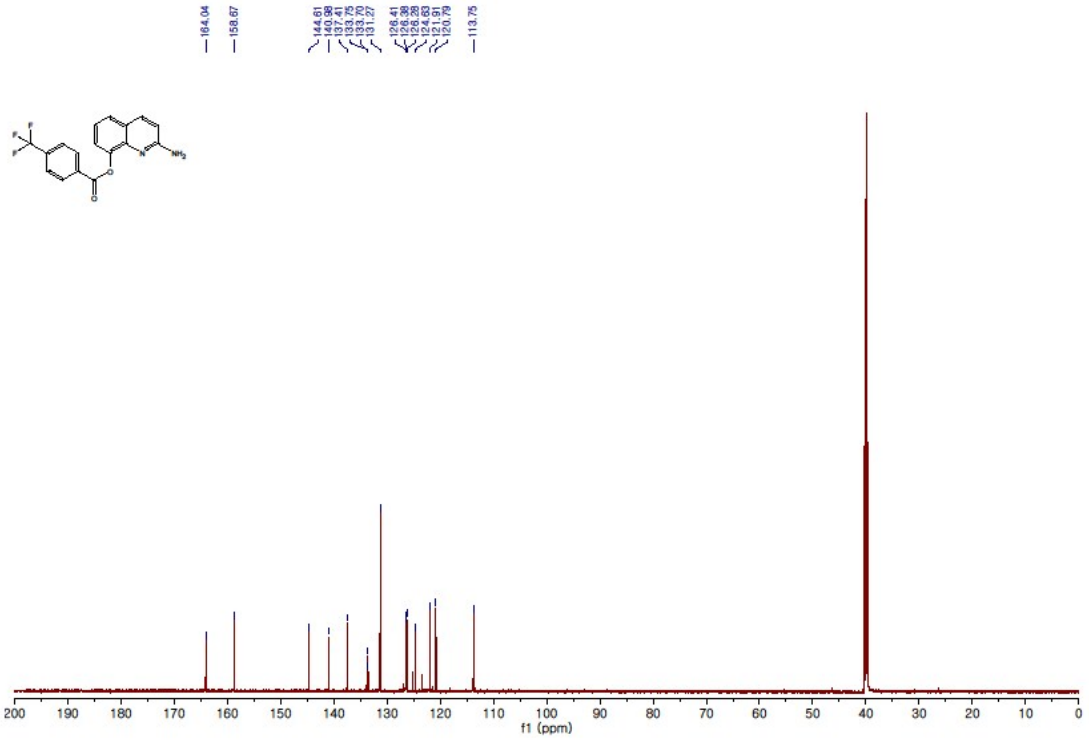


Figure S7. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 3c.

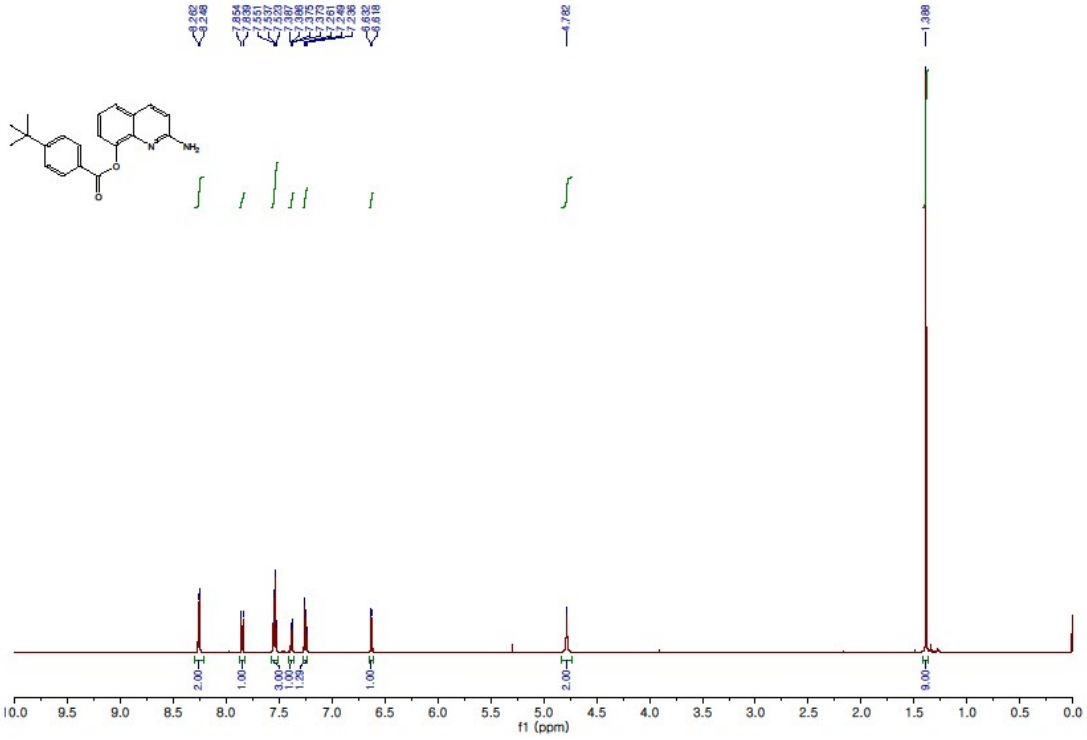


Figure S8. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 3d.

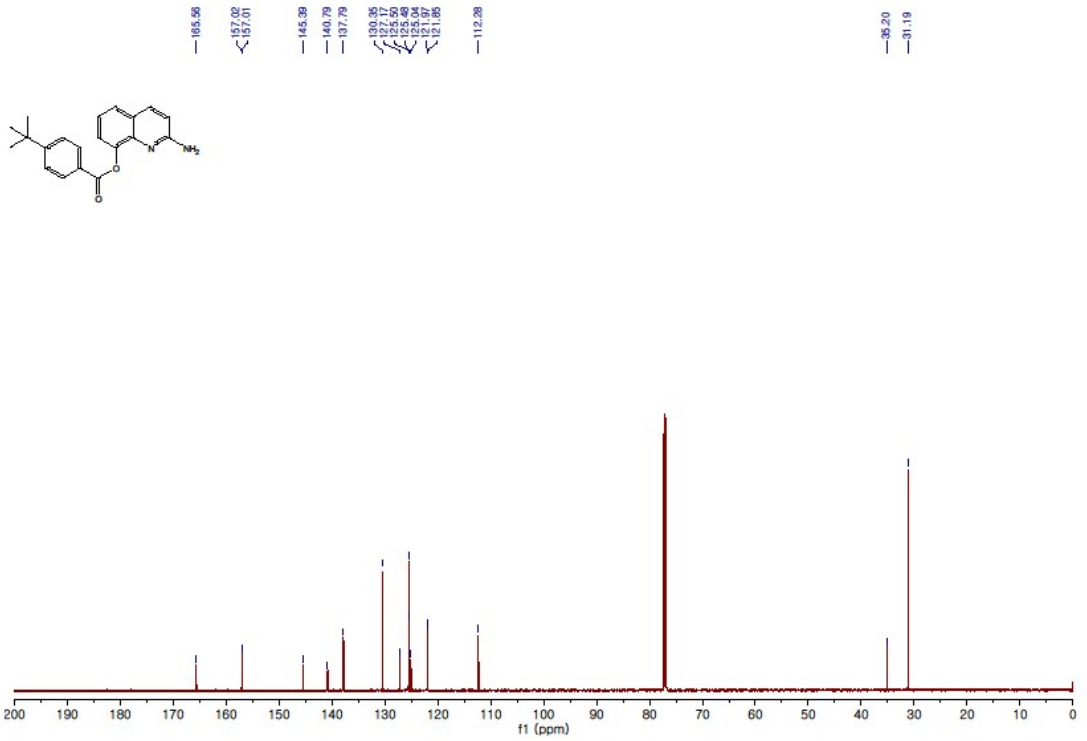


Figure S9. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 3d.

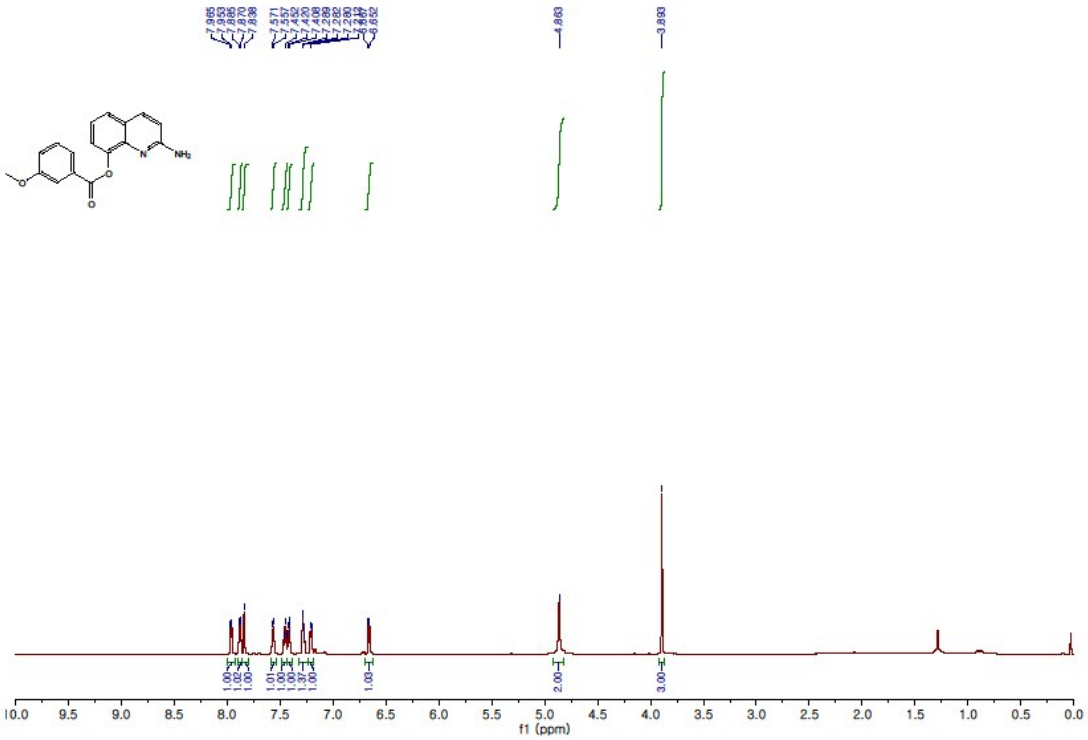


Figure S10. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 3e.

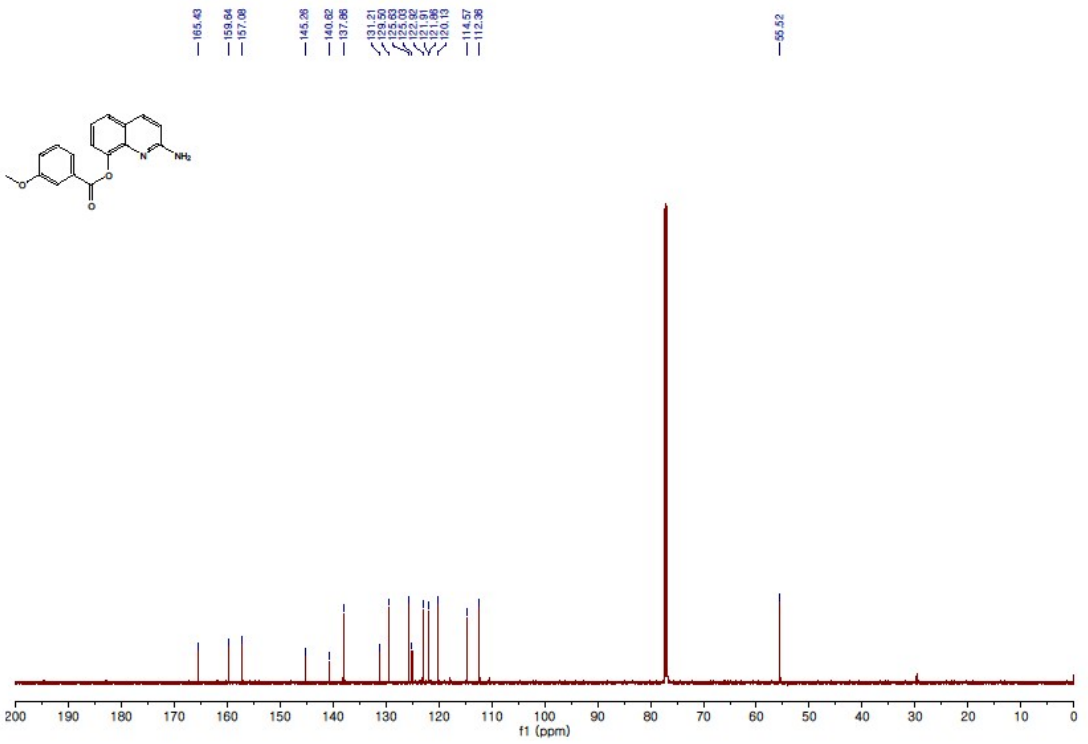


Figure S11. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 3e.

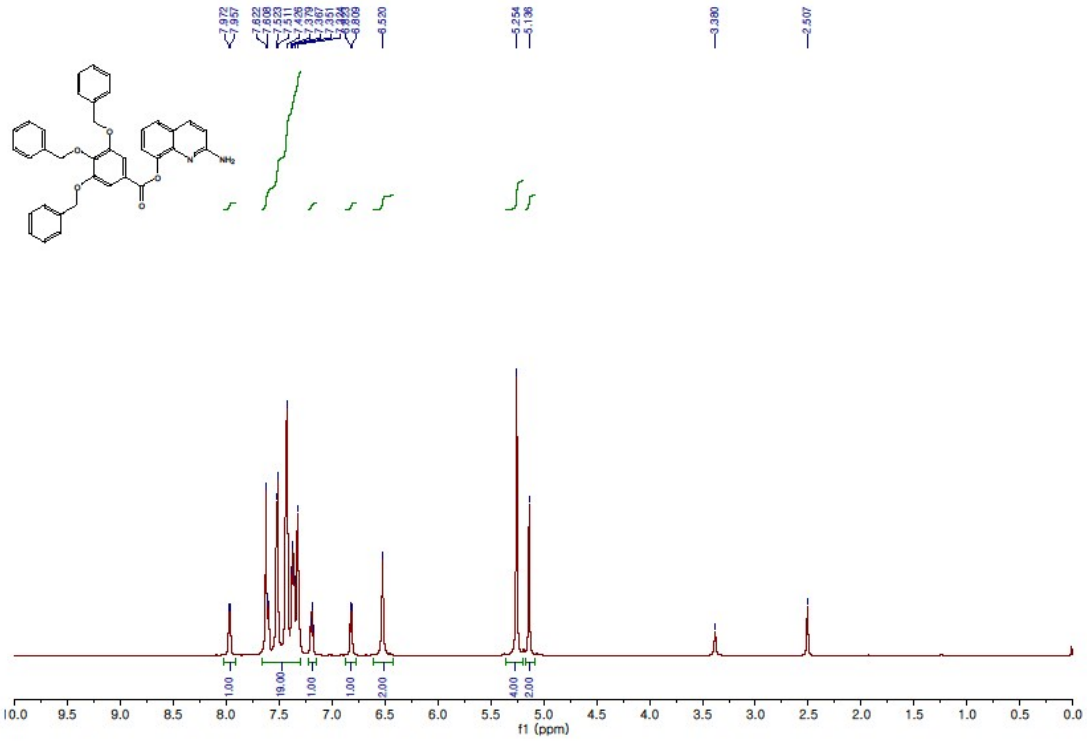


Figure S12. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 3f.

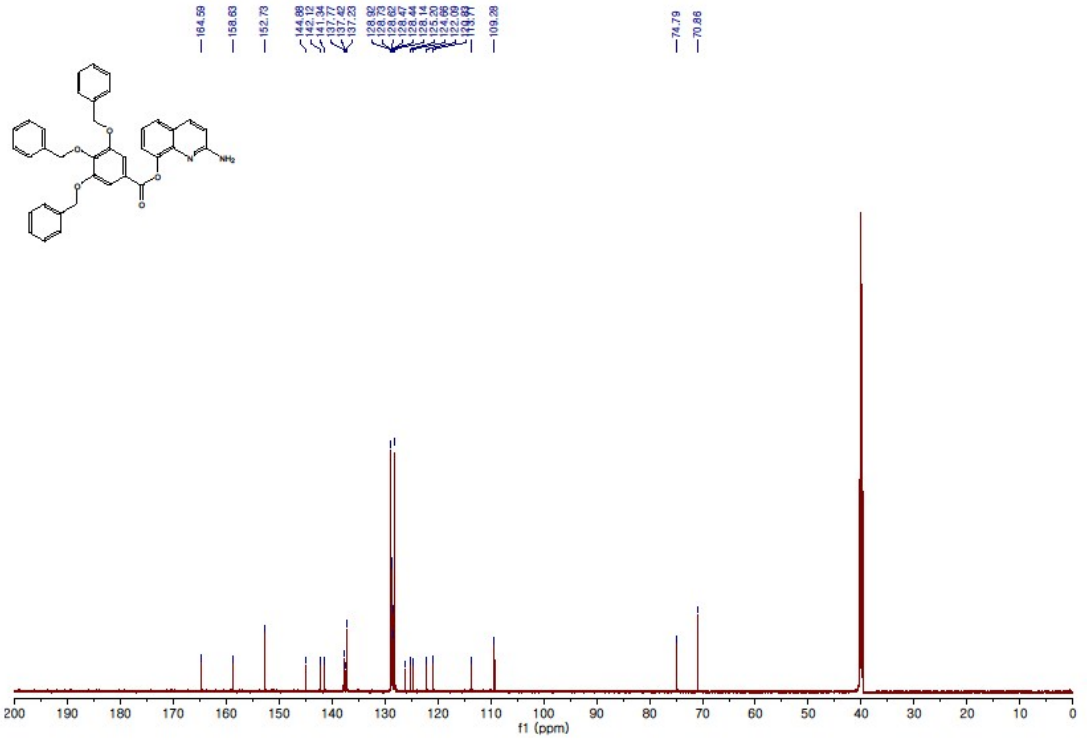


Figure S13. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 3f.

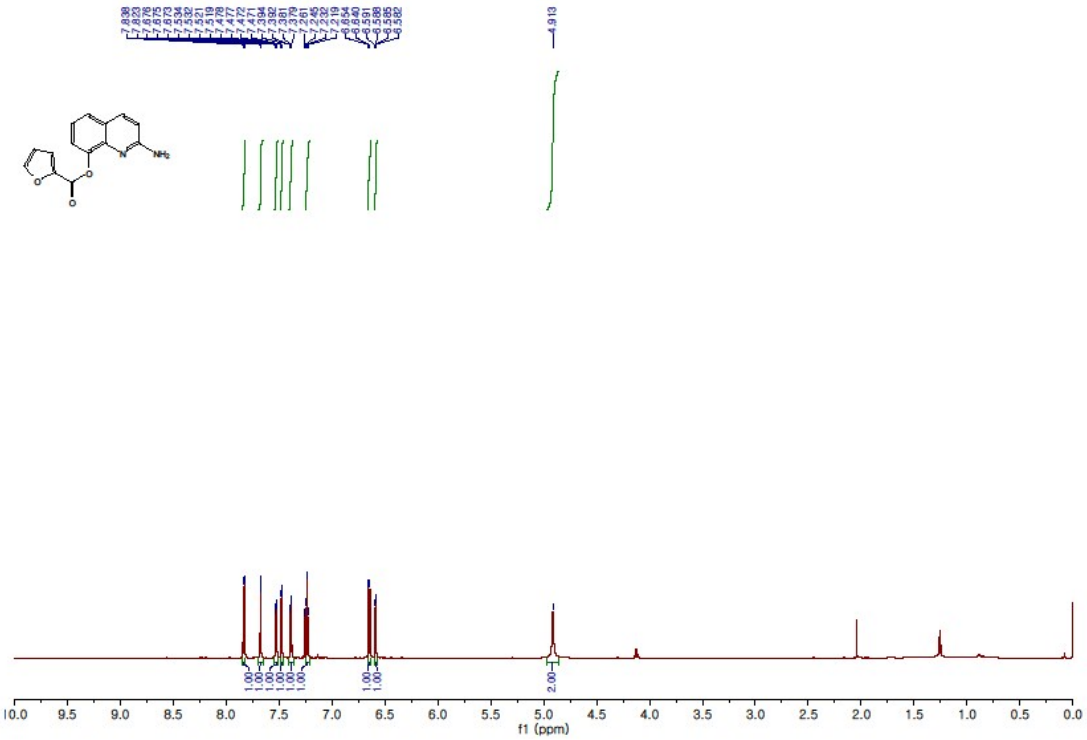


Figure S14. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 3g.

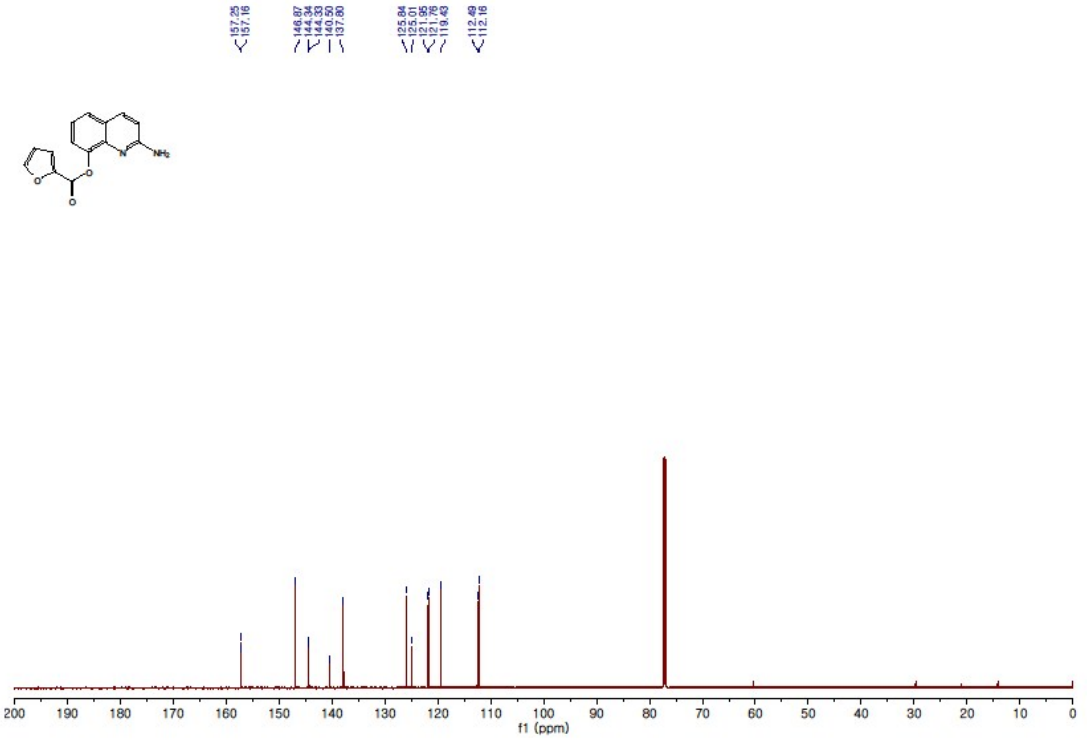


Figure S15. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 3g.

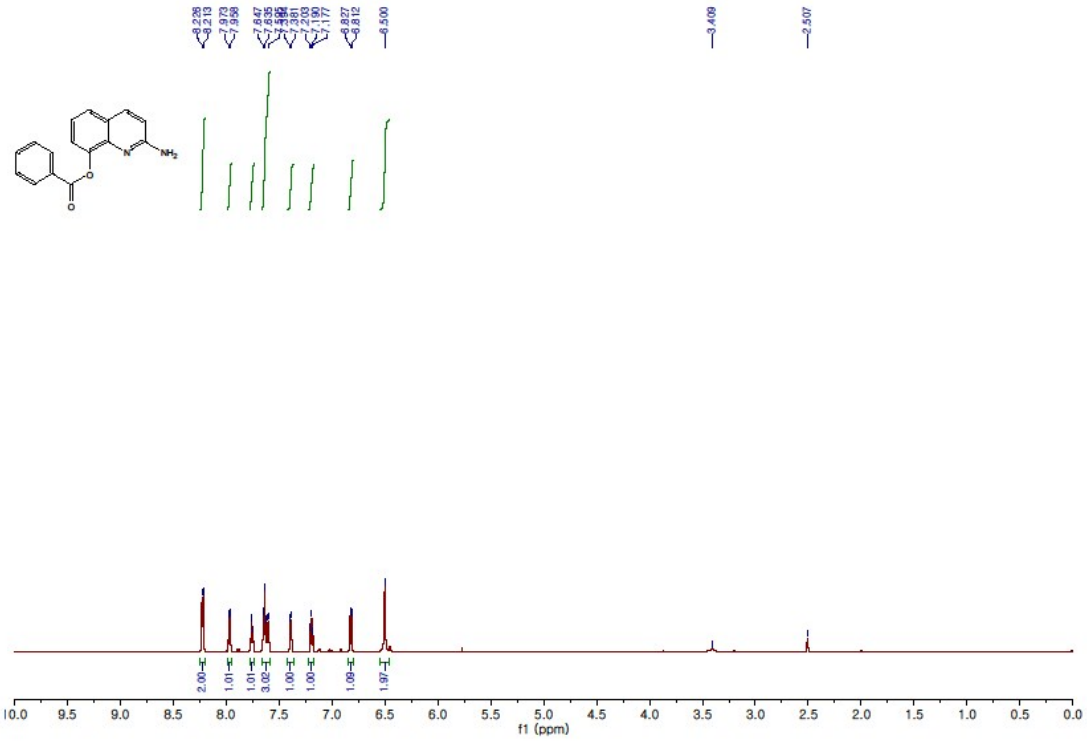


Figure S16. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 3j.

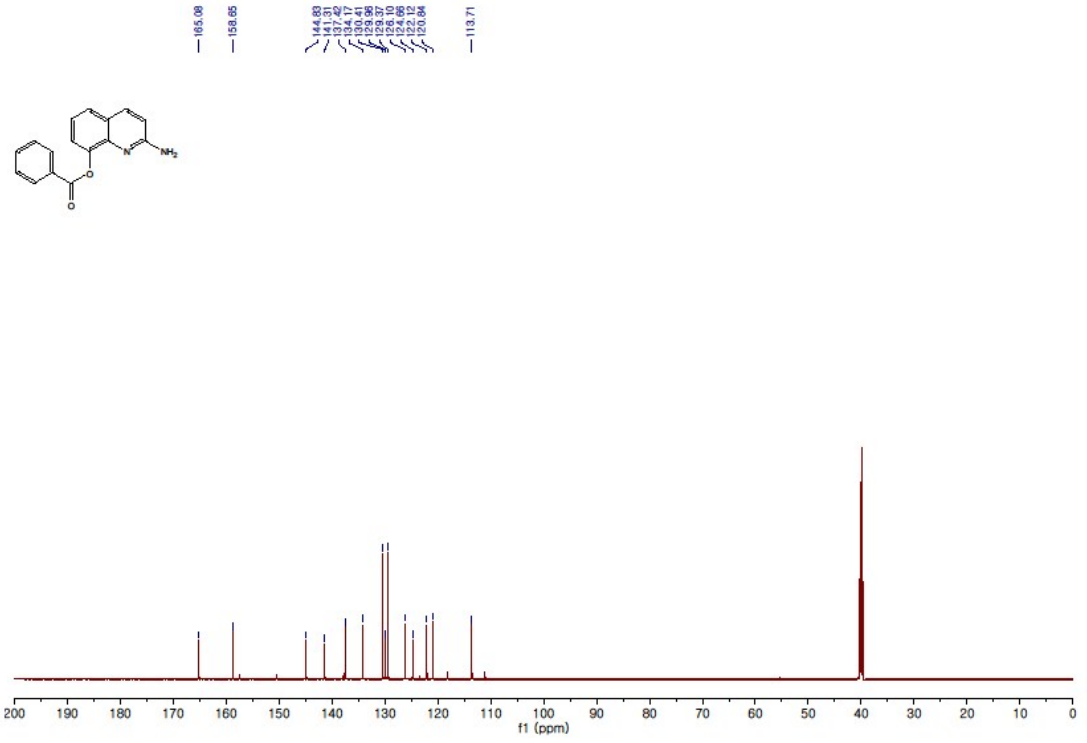


Figure S17. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 3j.

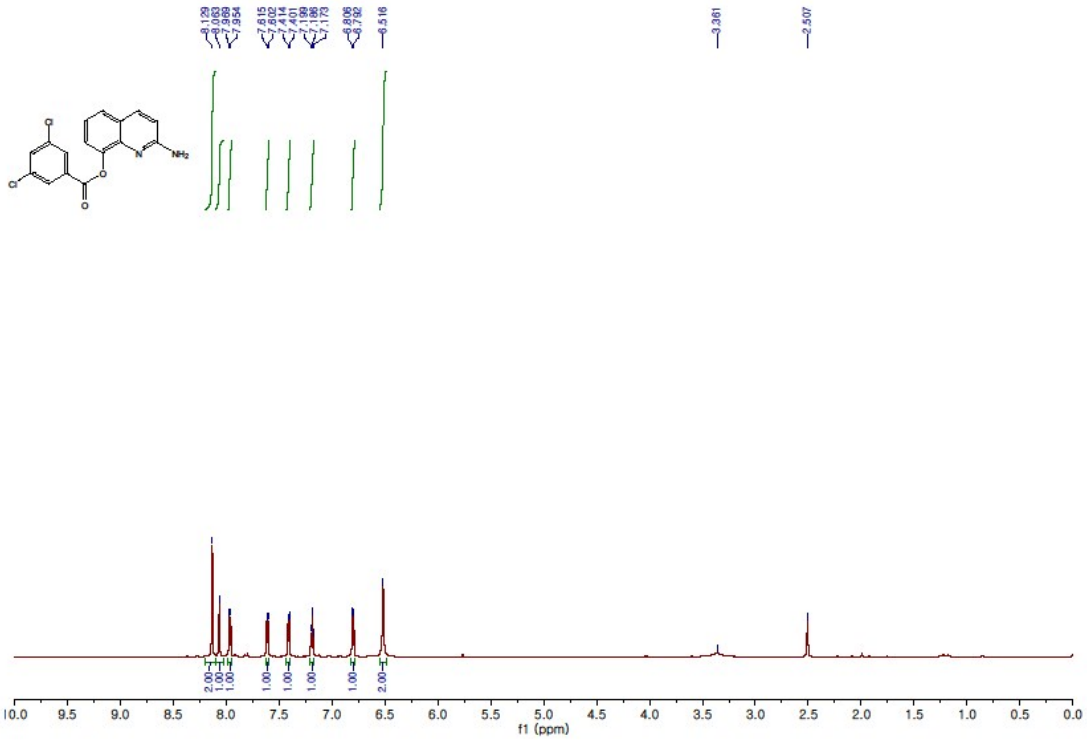


Figure S18. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 3k.

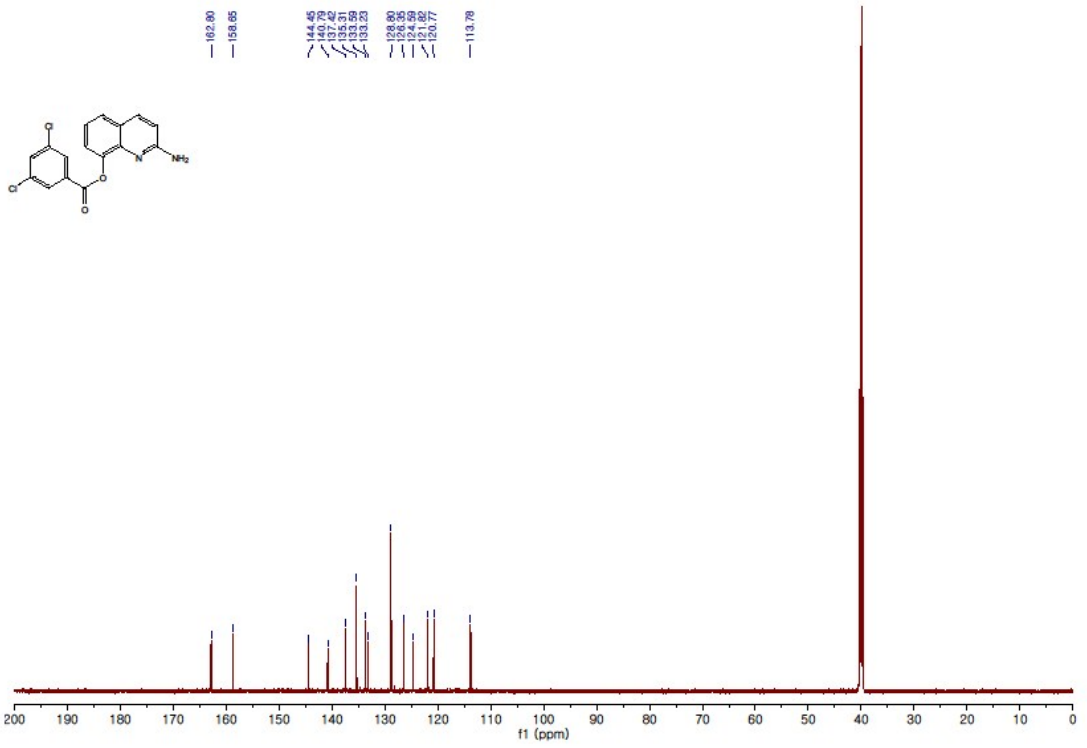


Figure S19. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 3k.

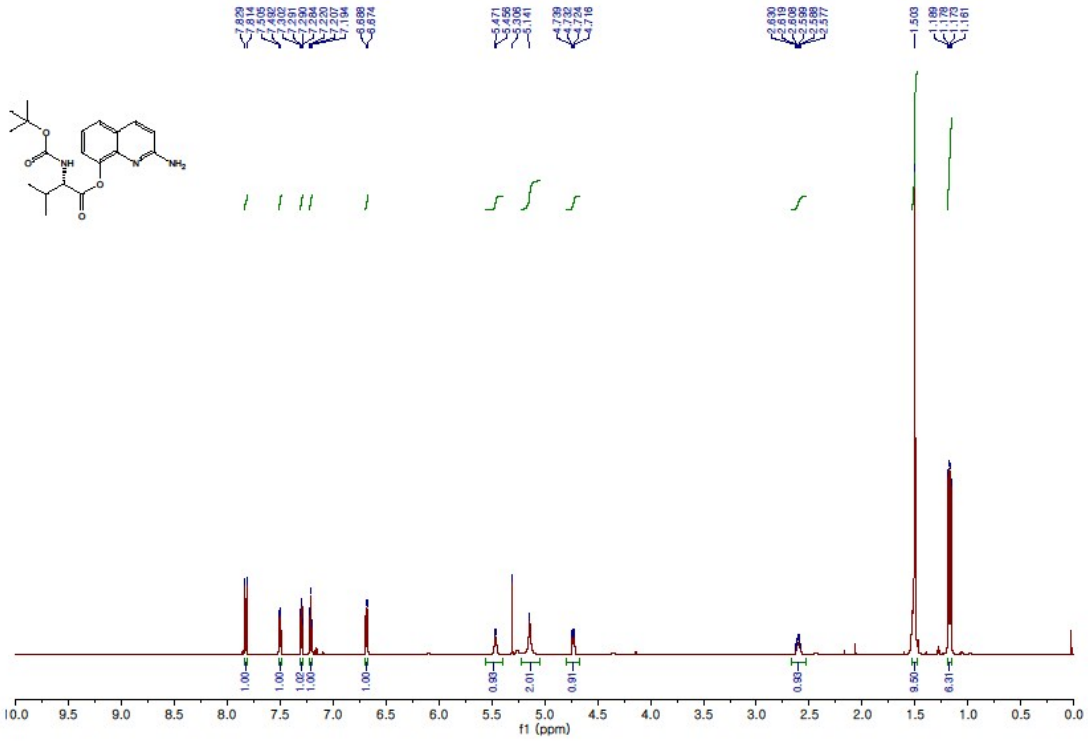


Figure S20. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 3o.

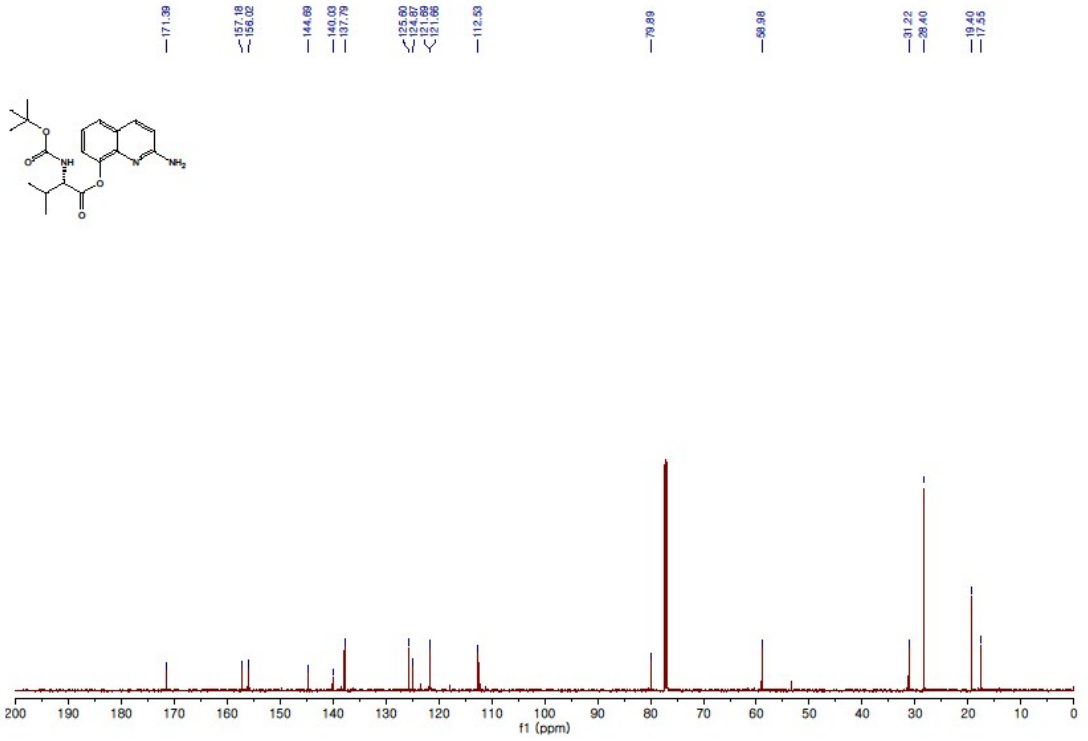


Figure S21. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 3o.

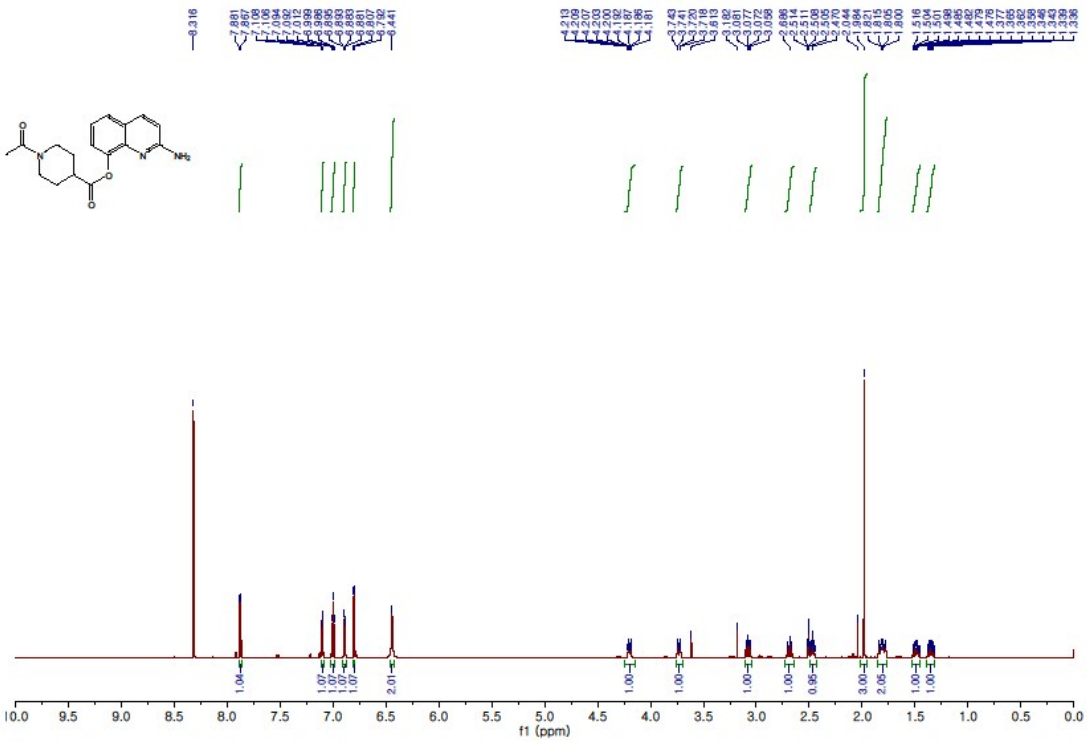


Figure S22. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 3p.

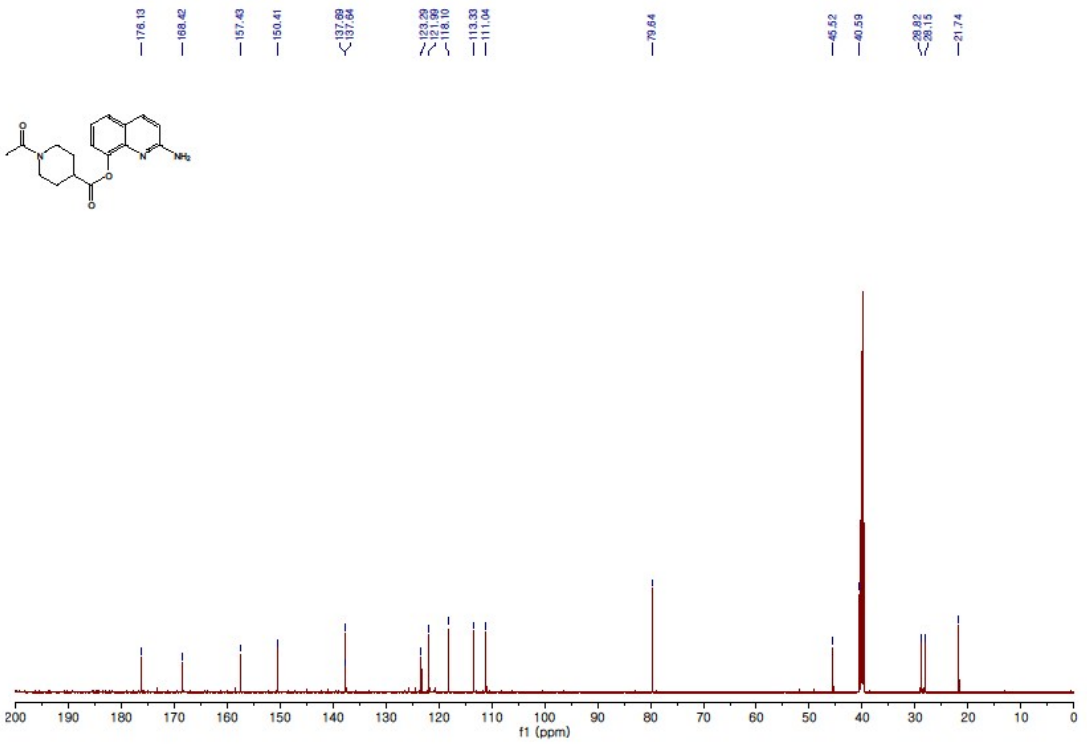


Figure S23. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 3p.

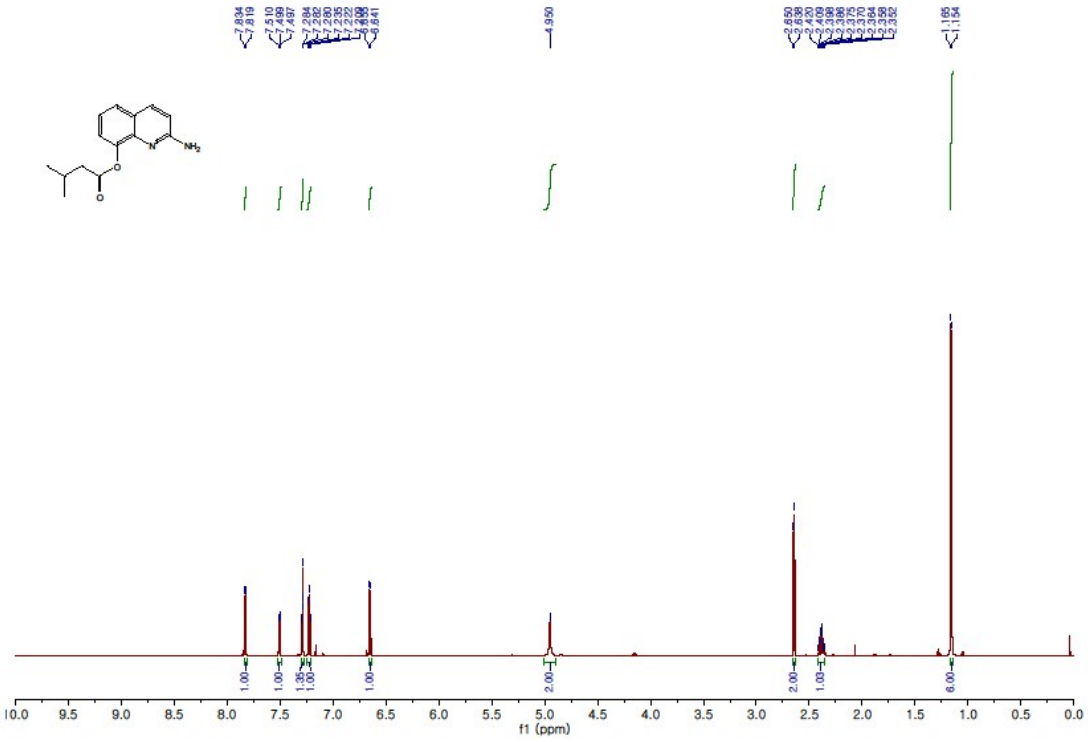


Figure S24. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 3q.

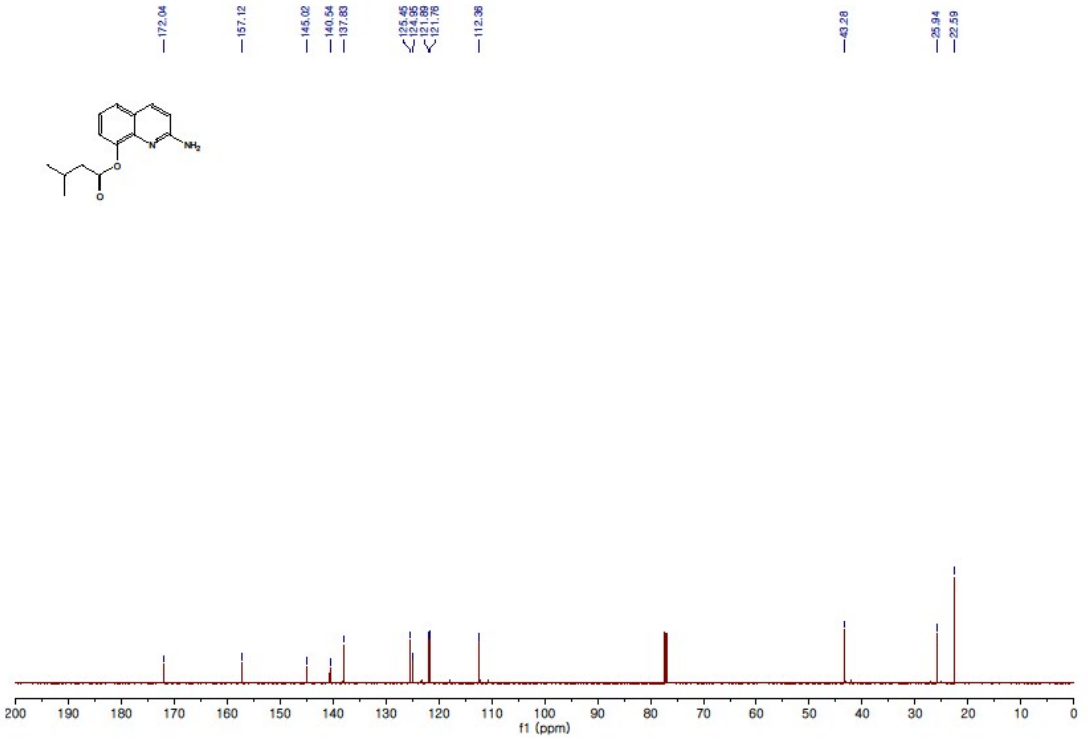


Figure S25. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 3q.

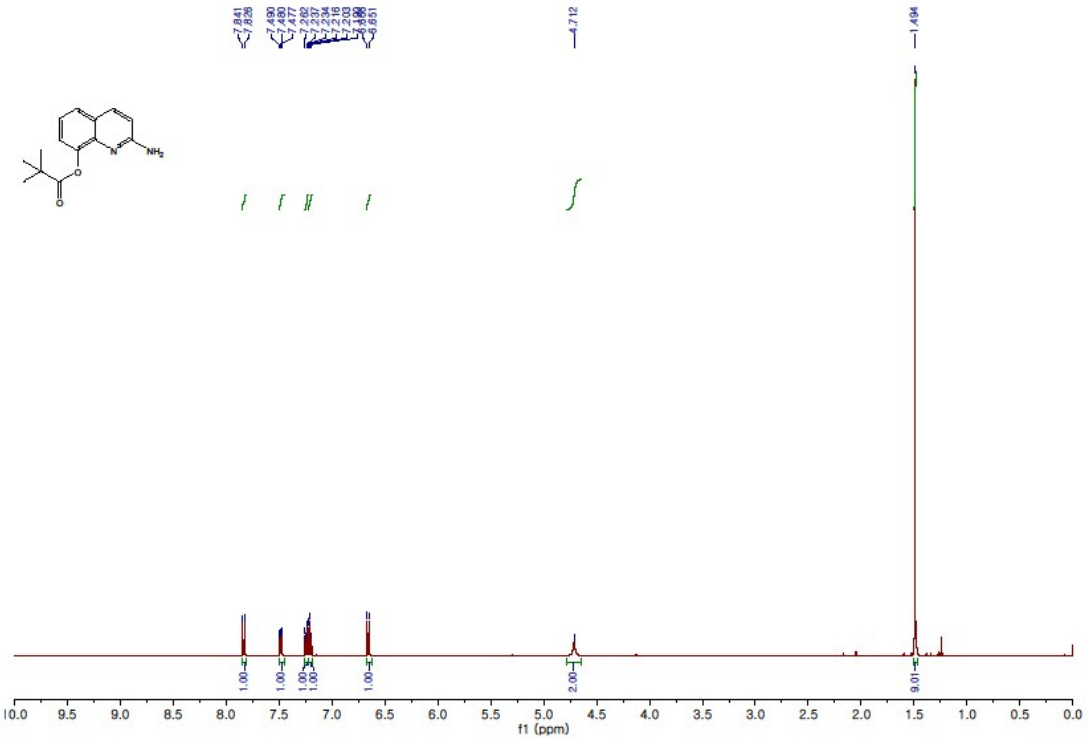


Figure S26. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 3r.

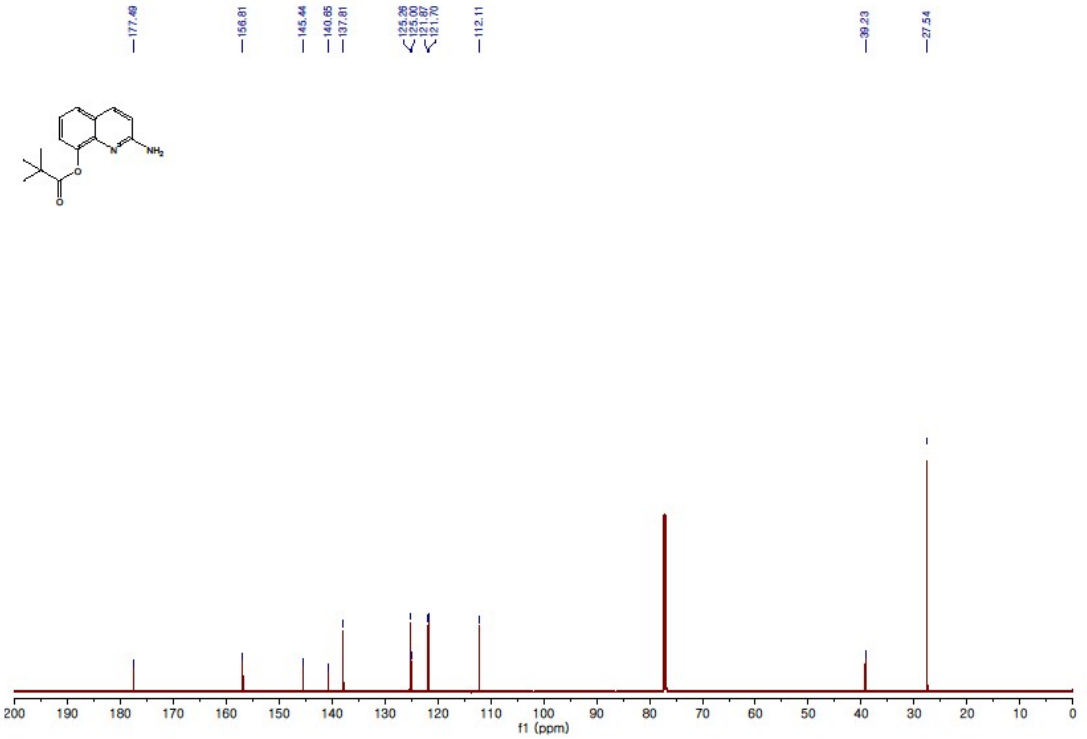


Figure S27. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 3r.

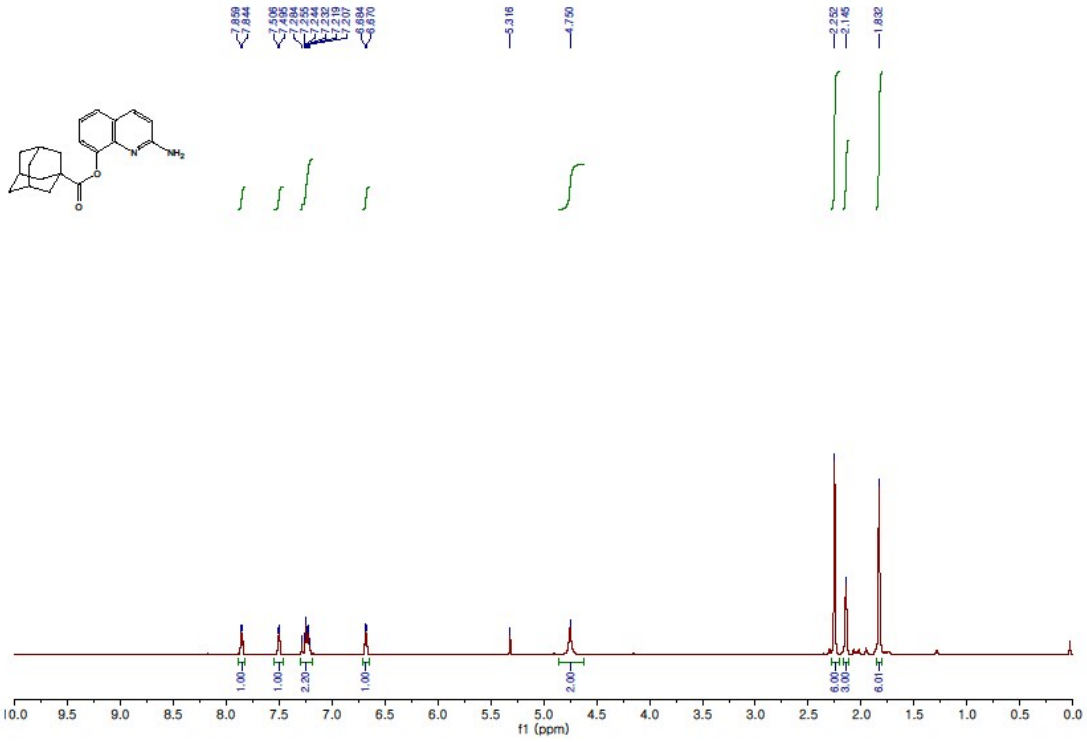


Figure S28. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 3s.

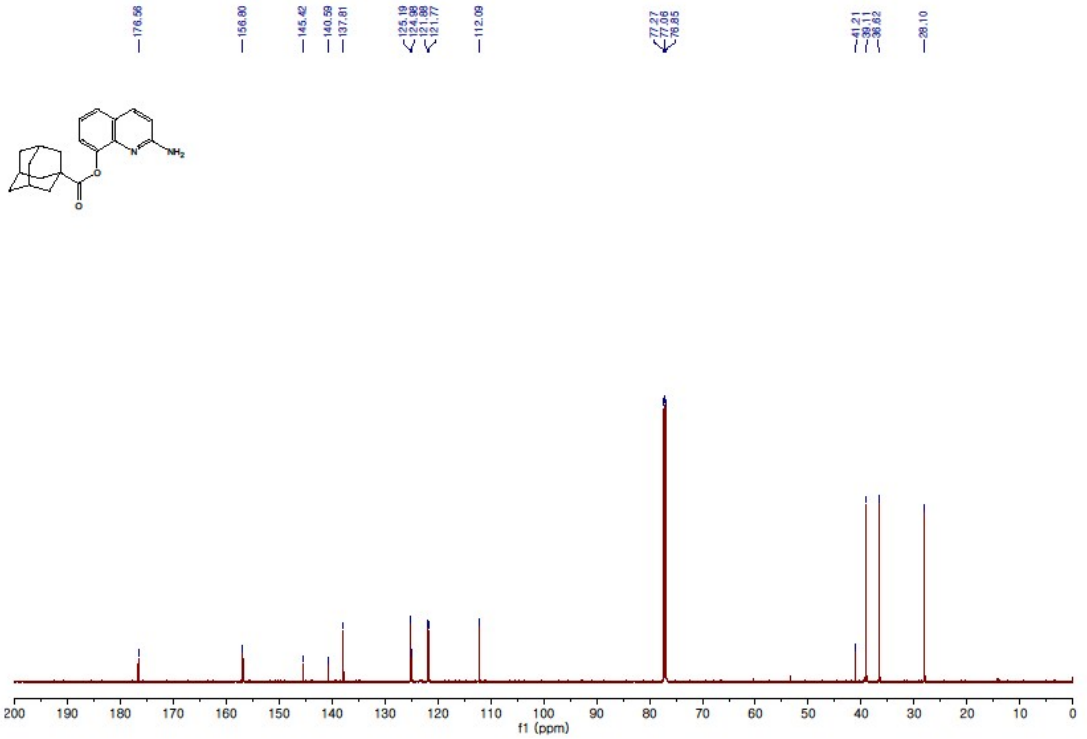


Figure S29. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 3s.

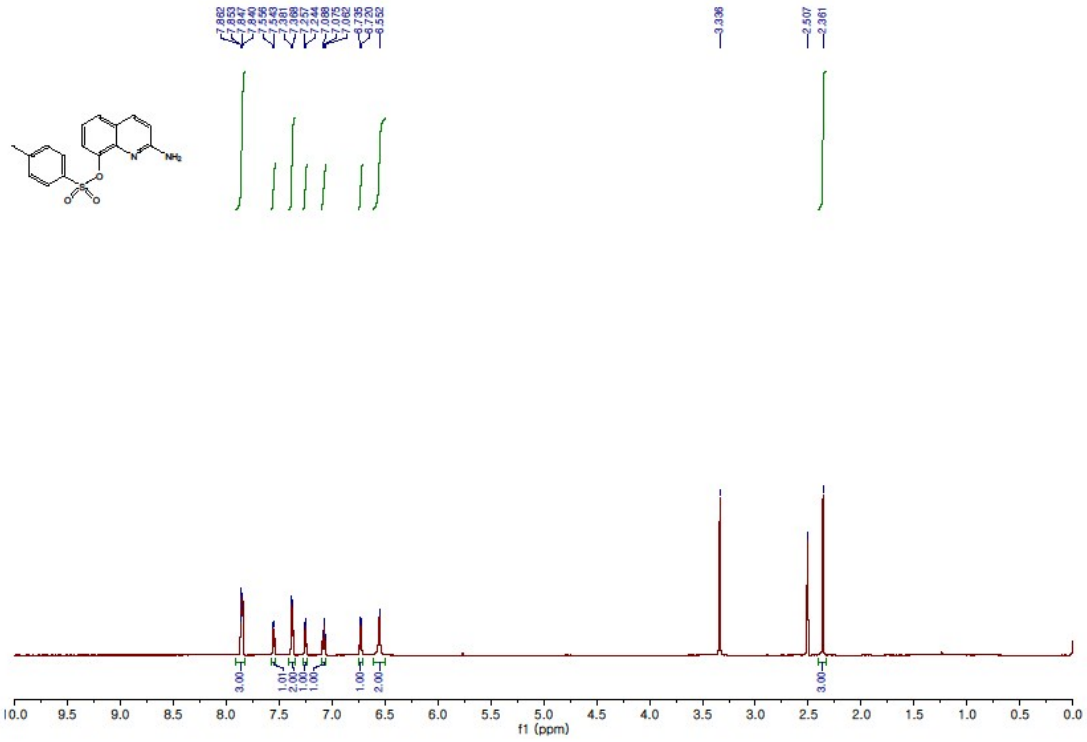


Figure S30. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 3t.

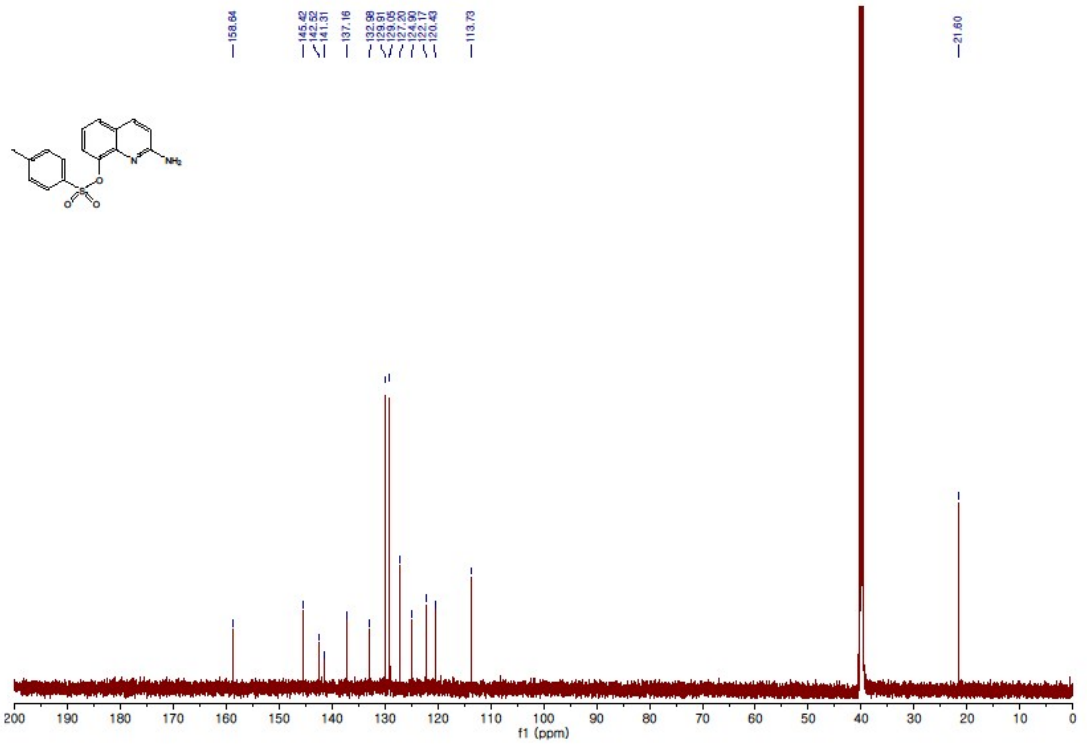


Figure S31. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 3t.

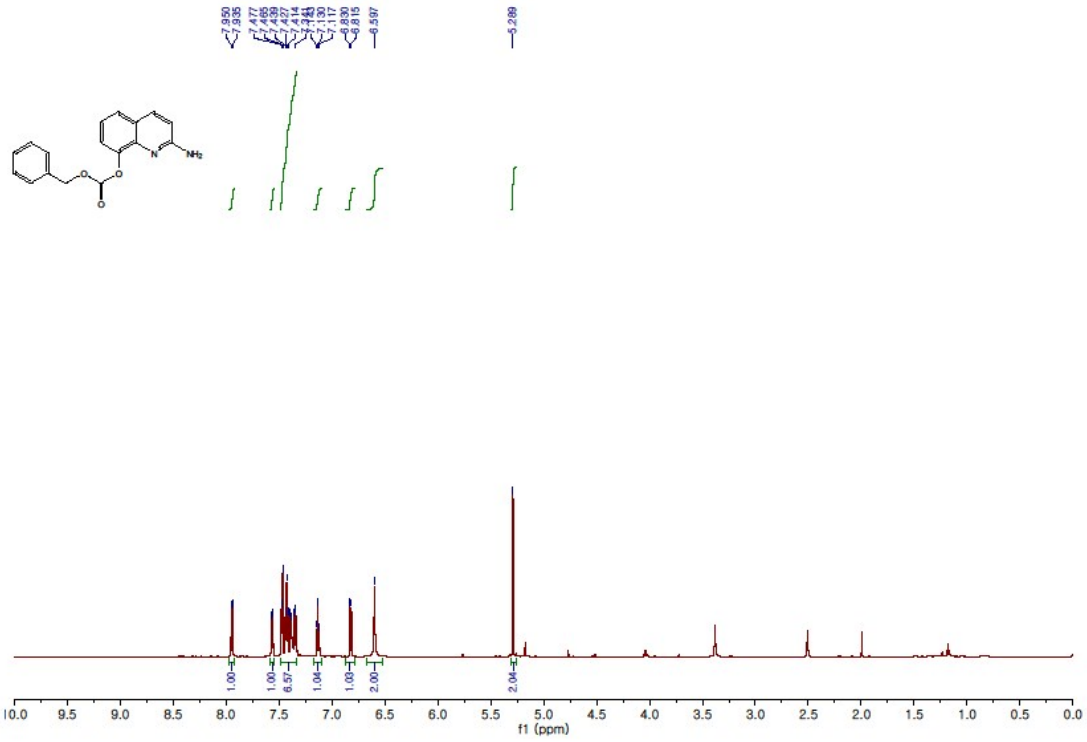


Figure S32. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 3u.

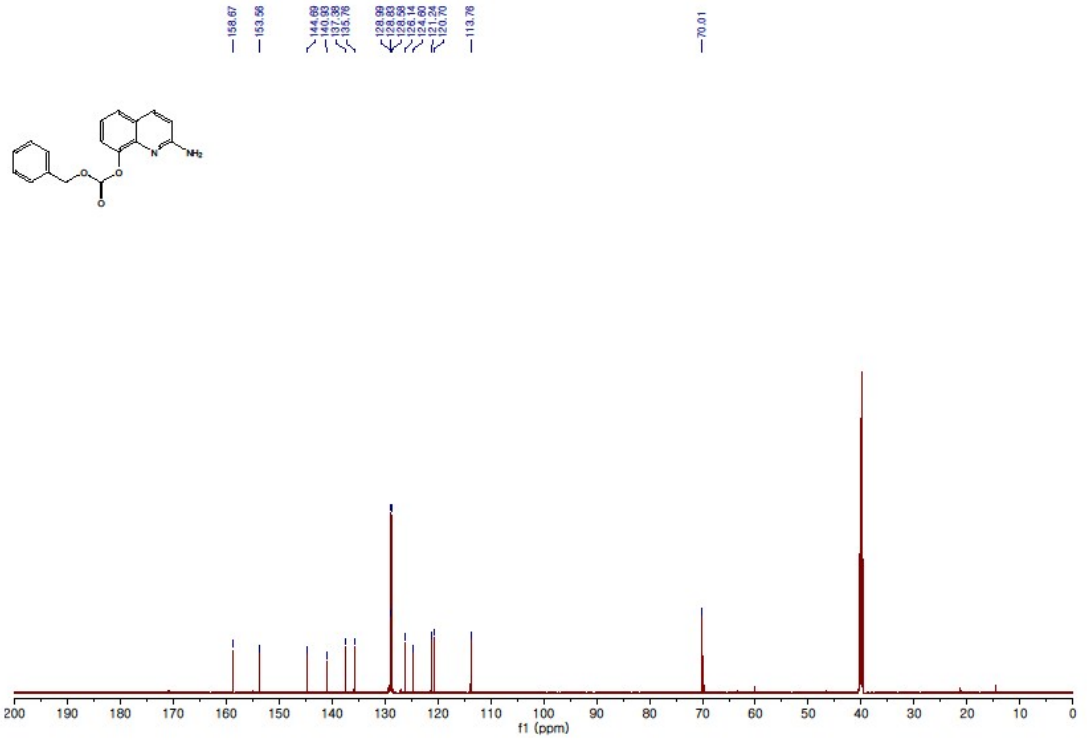


Figure S33. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 3u.

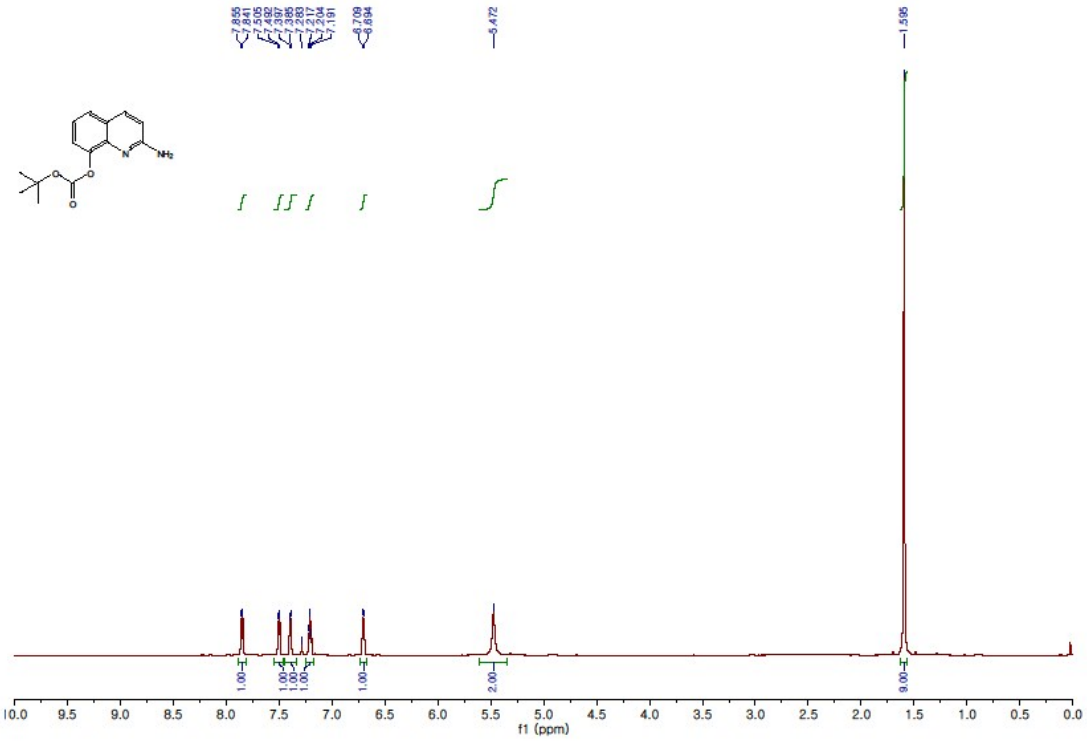


Figure S34. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 3v.

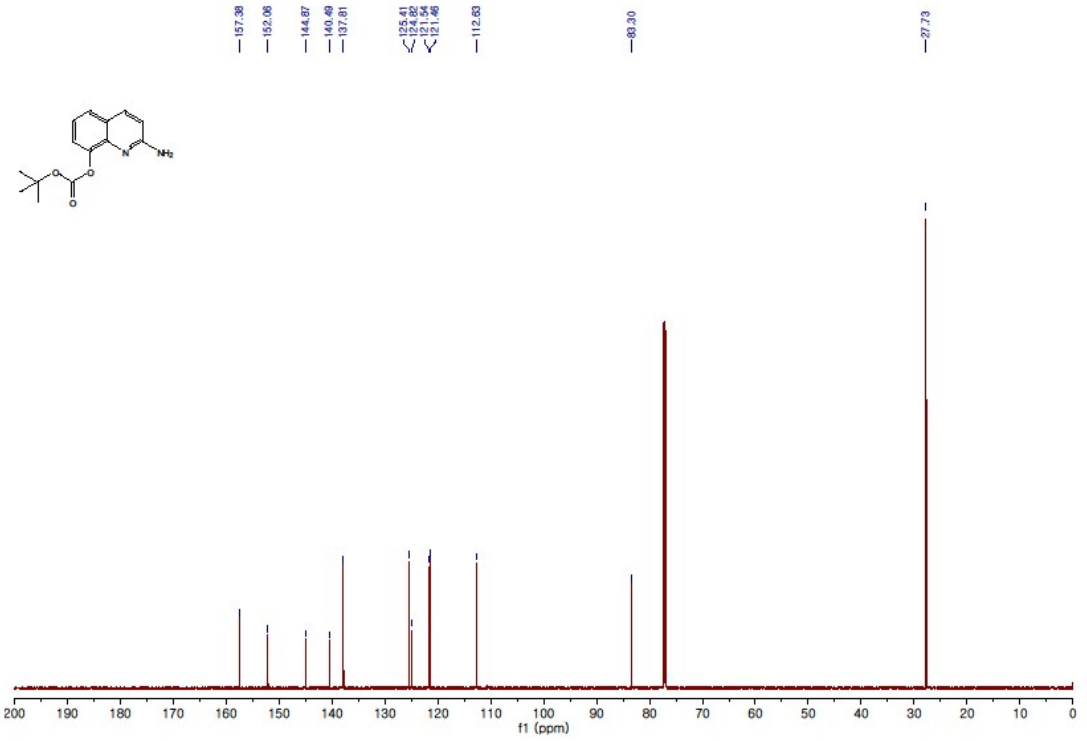


Figure S35. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 3v.

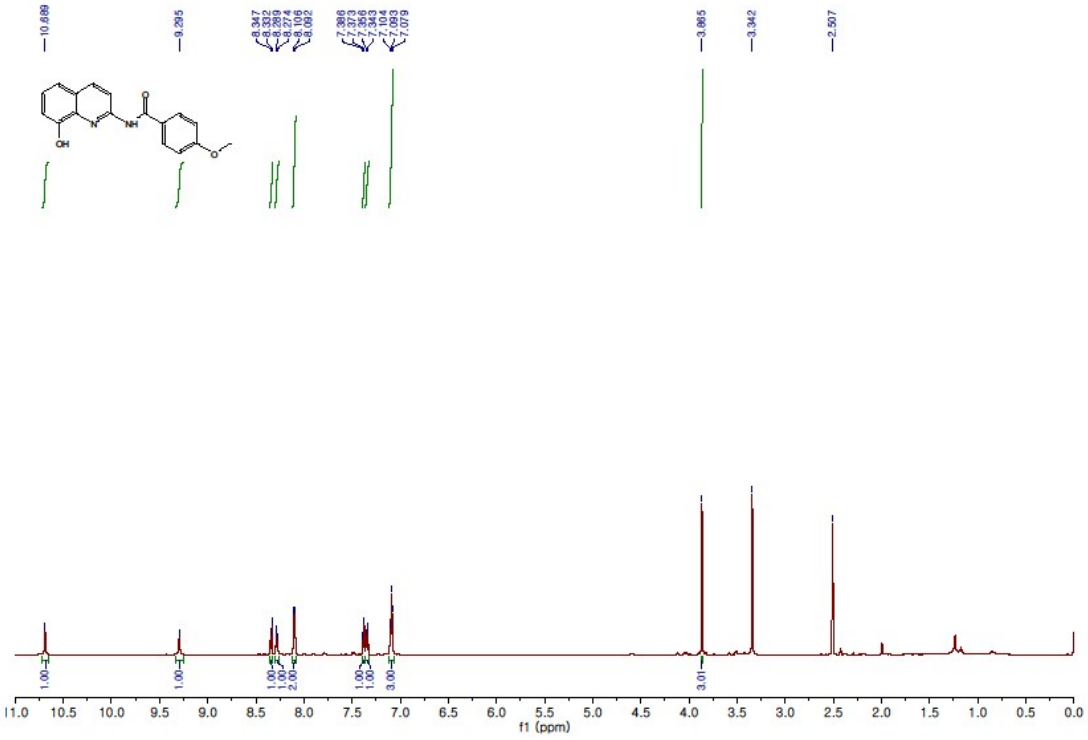


Figure S36. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4a.

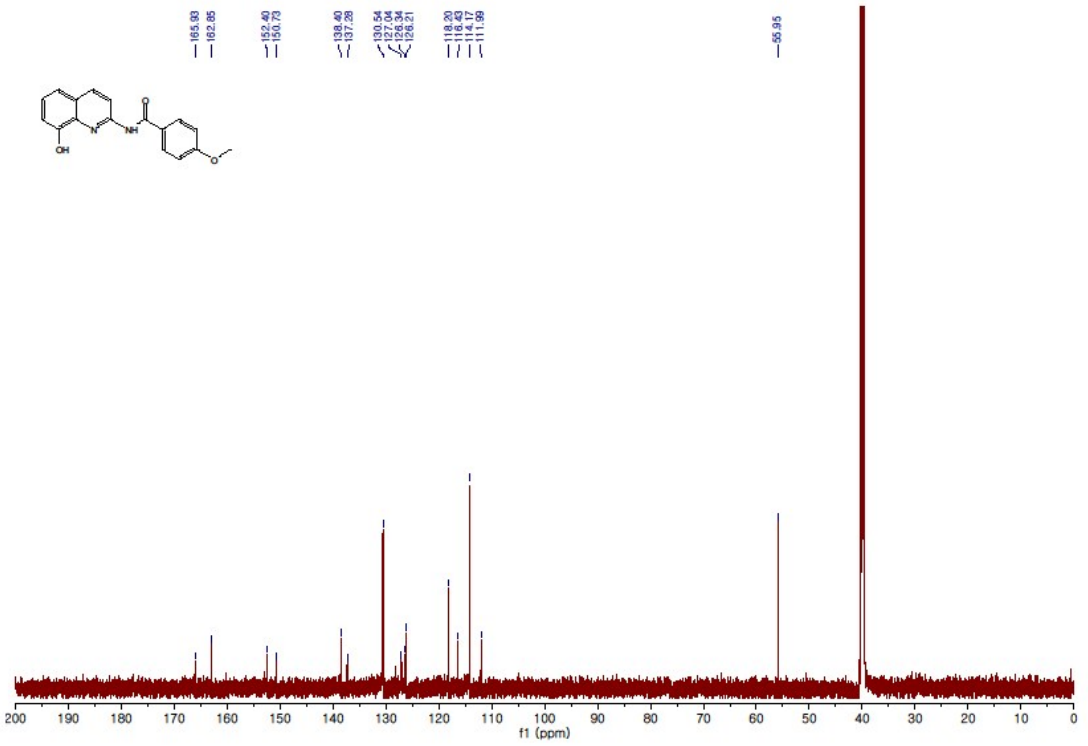


Figure S37. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4a.

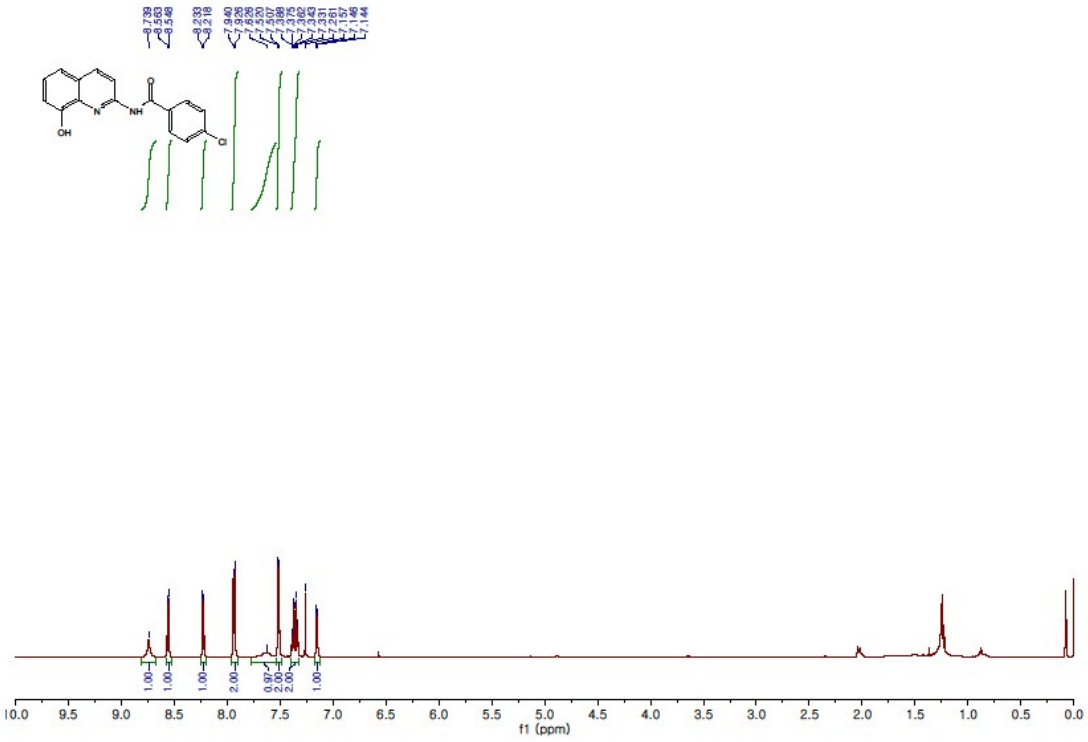


Figure S38. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 4b.

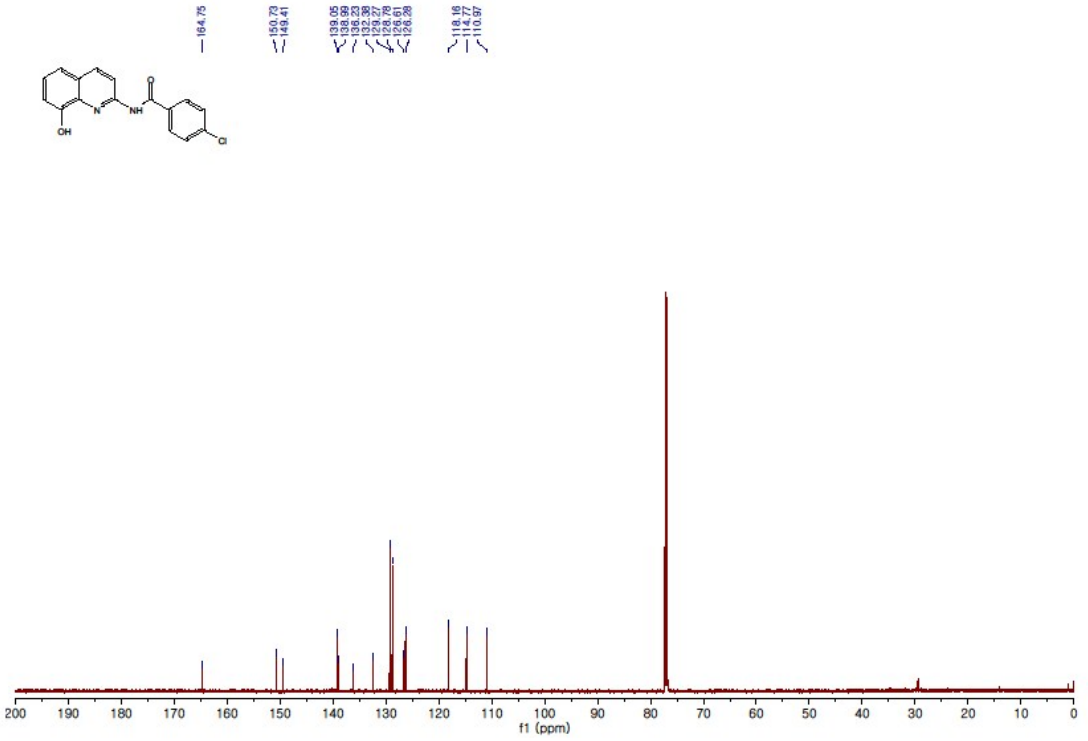


Figure S39. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 4b.

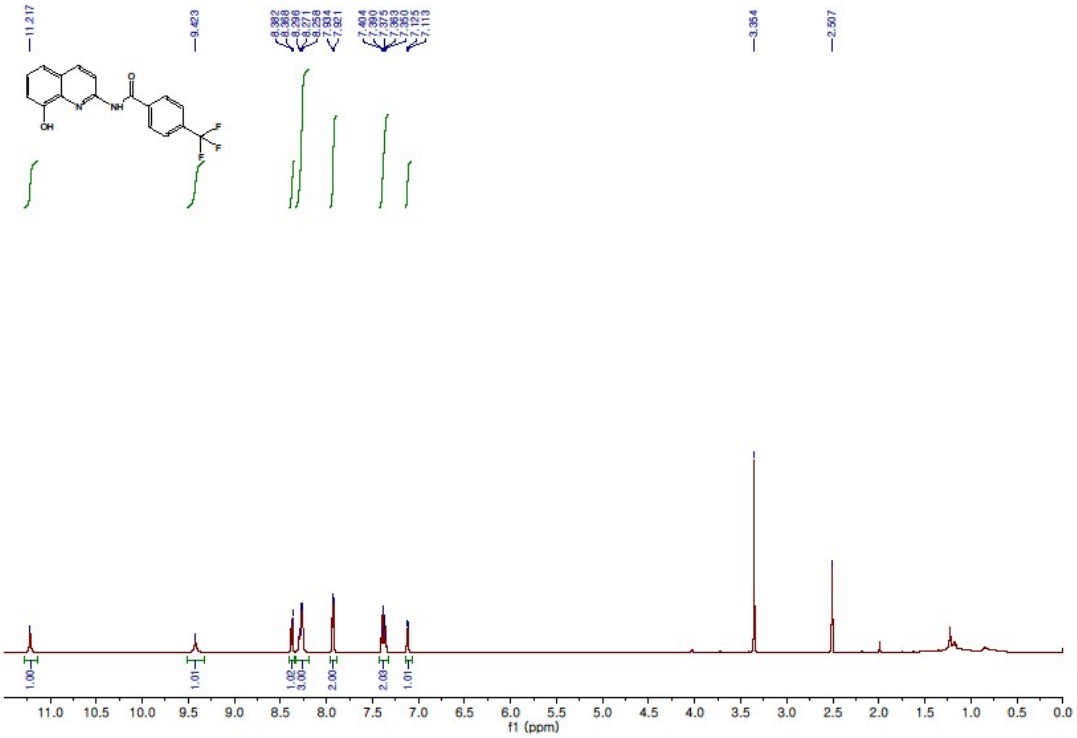


Figure S40. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4c.

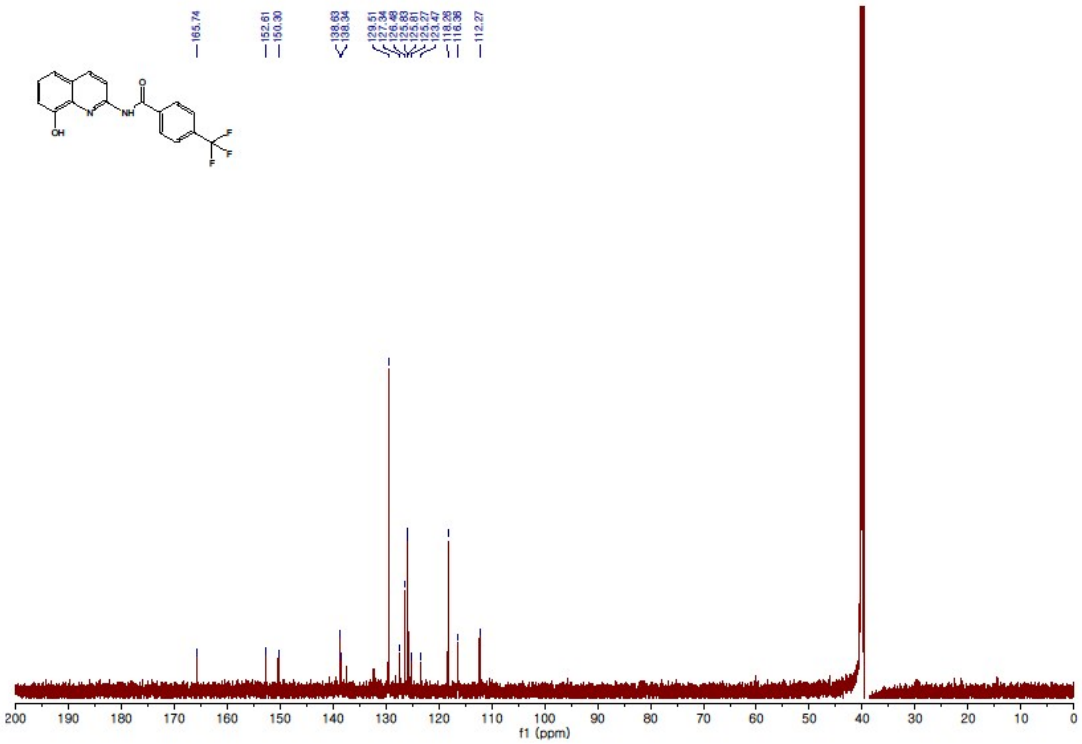


Figure S41. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4c.

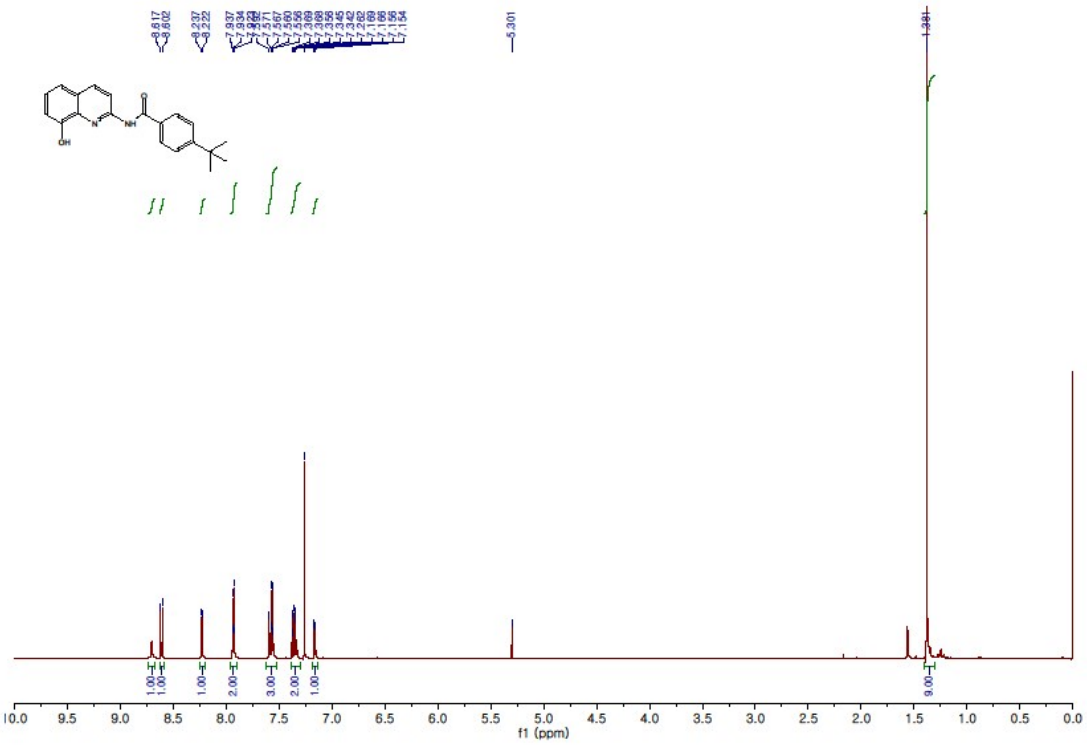


Figure S42. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 4d.

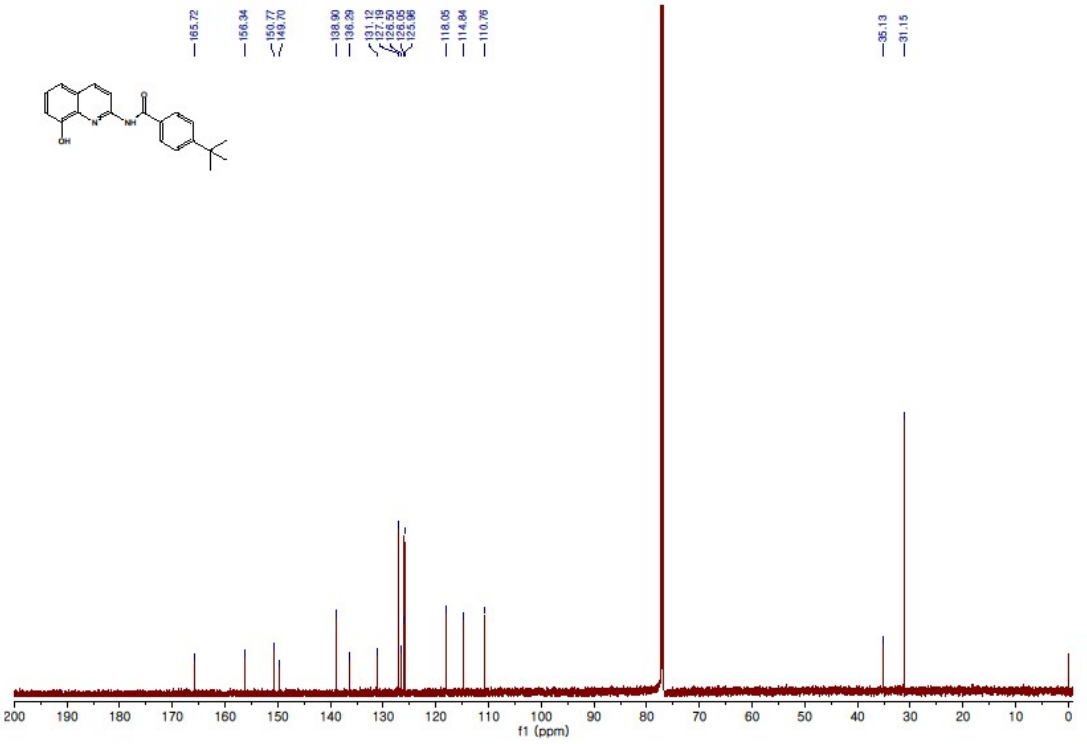


Figure S43. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 4d.

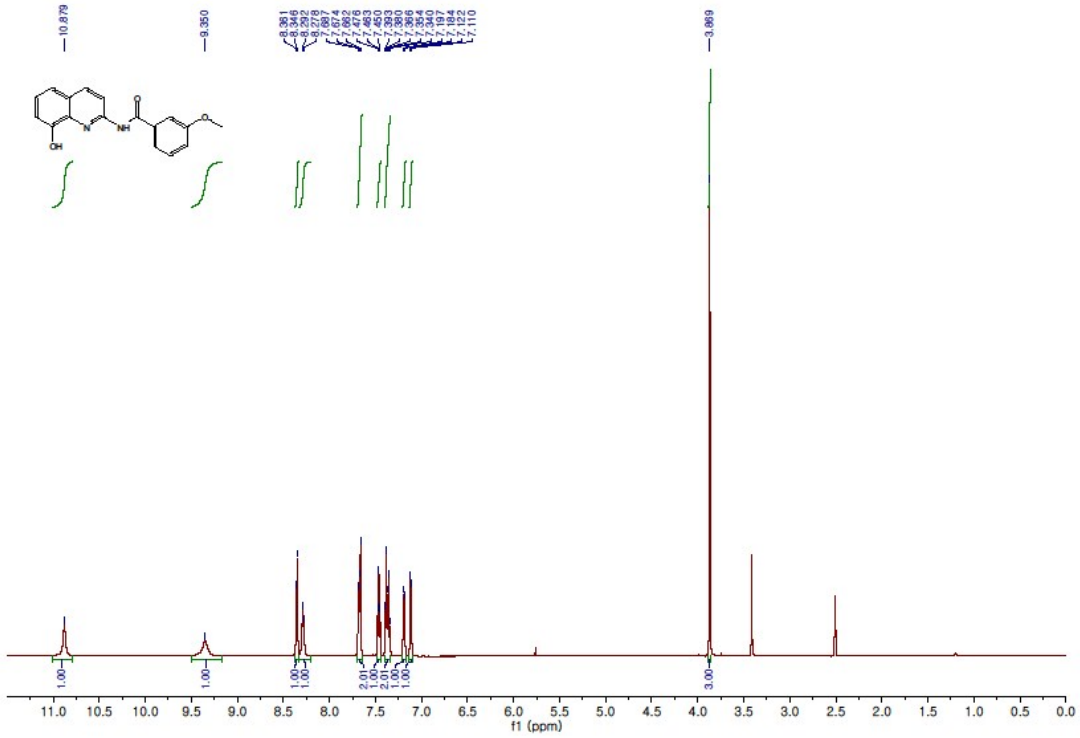


Figure S44. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4e.

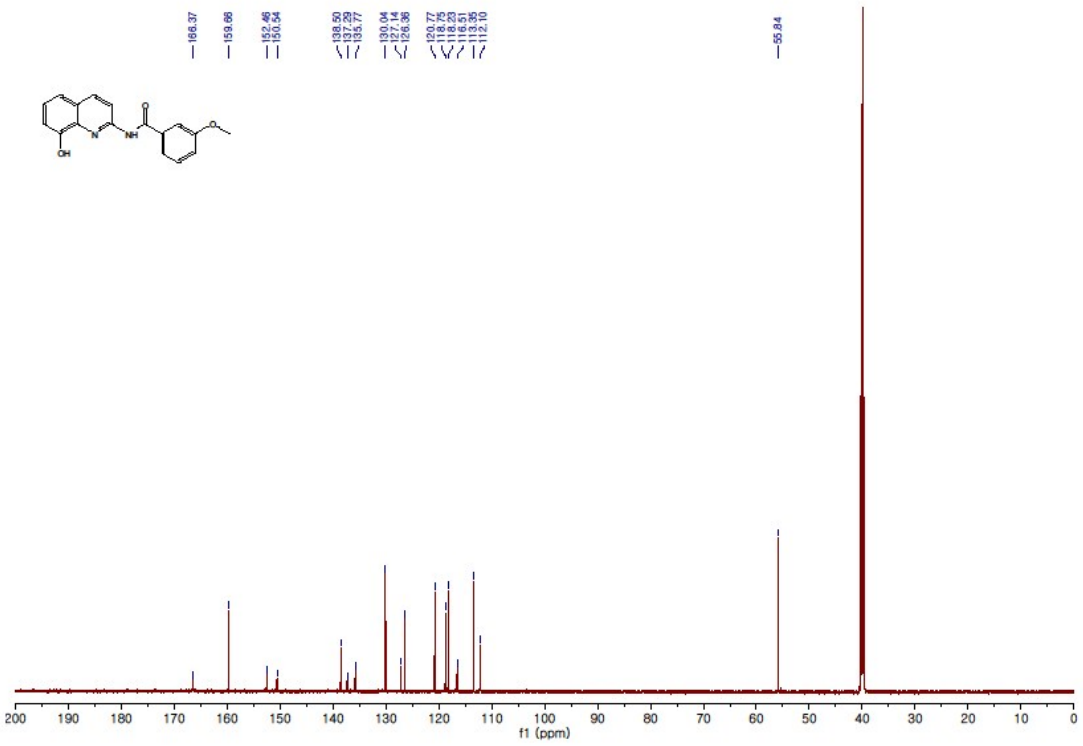


Figure S45. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4e.

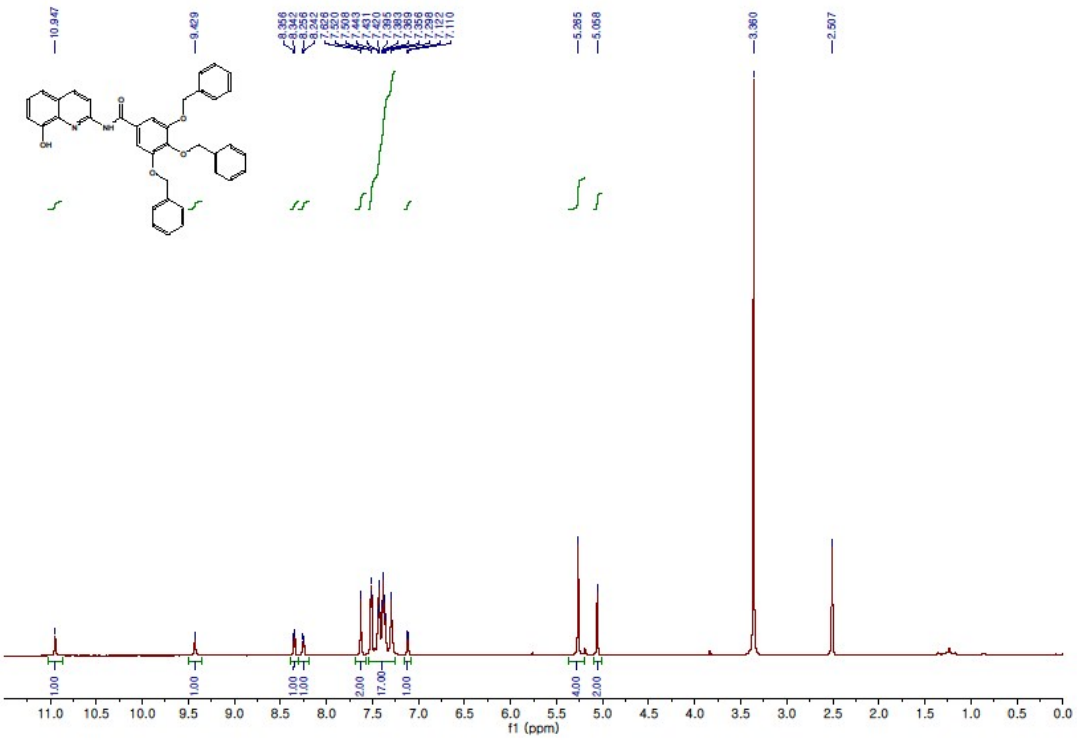


Figure S46. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4f.

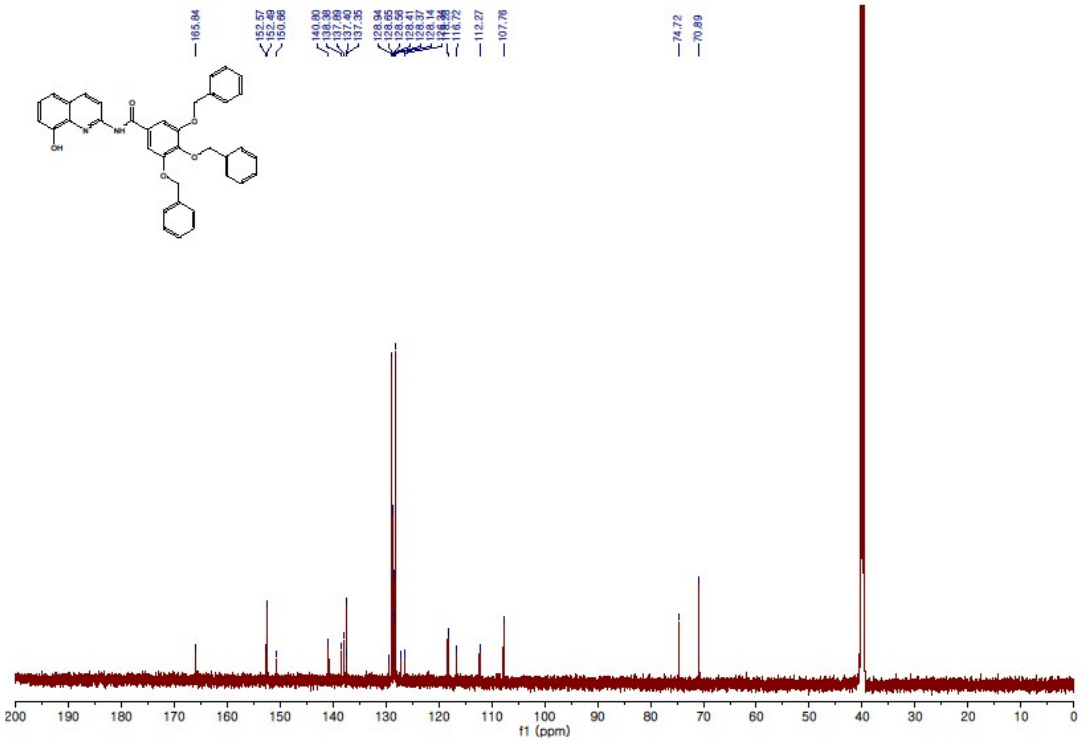


Figure S47. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4f.

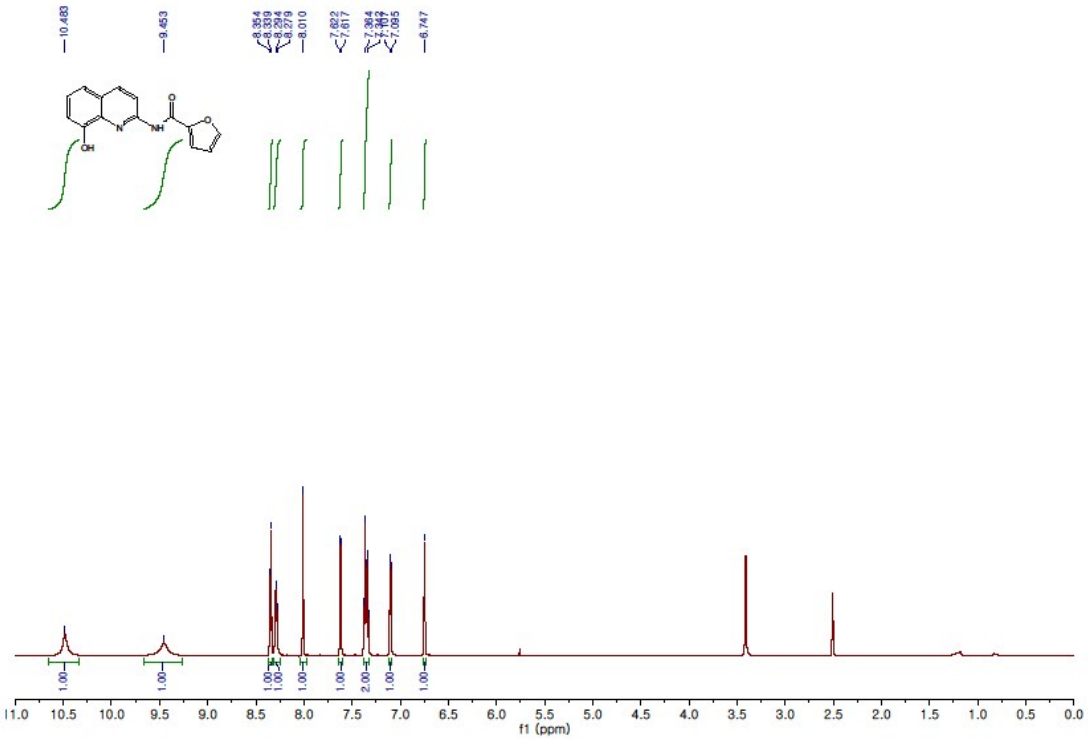


Figure S48. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4g.

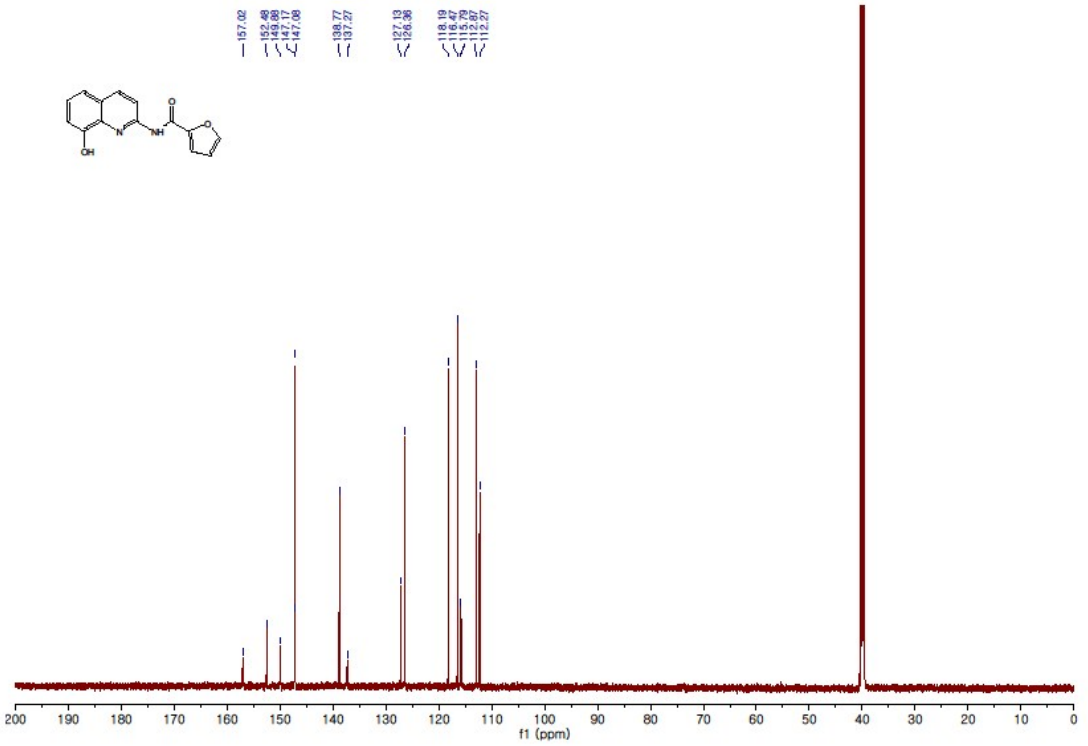


Figure S49. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4g.

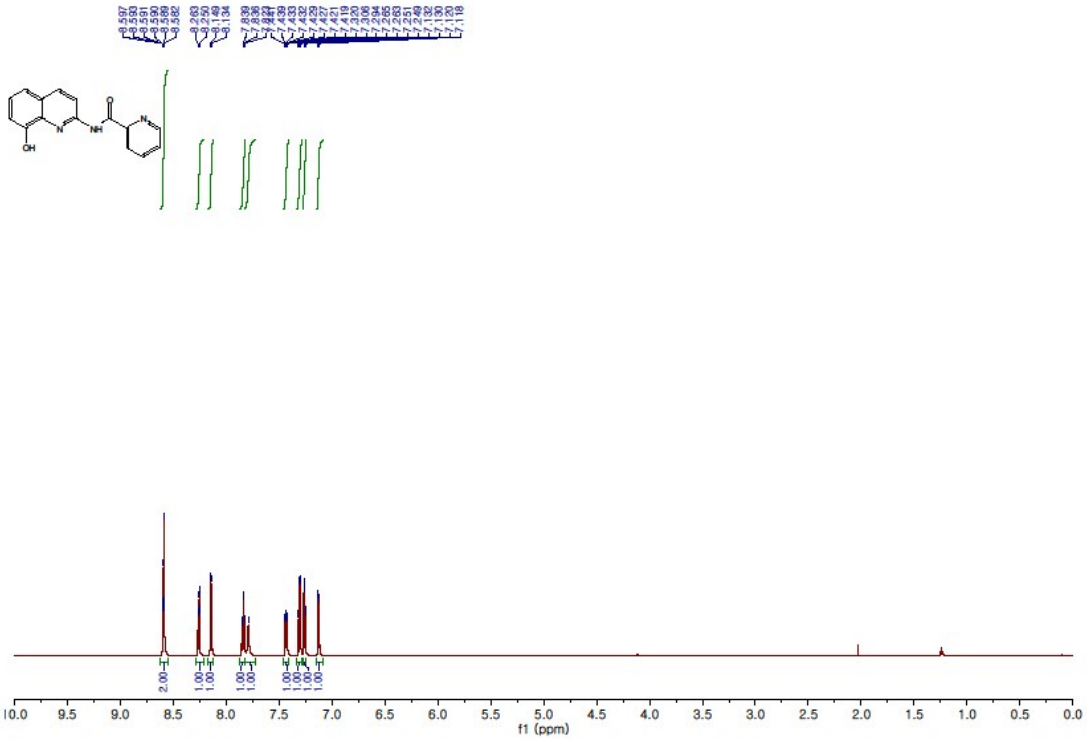


Figure S50. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 4h.

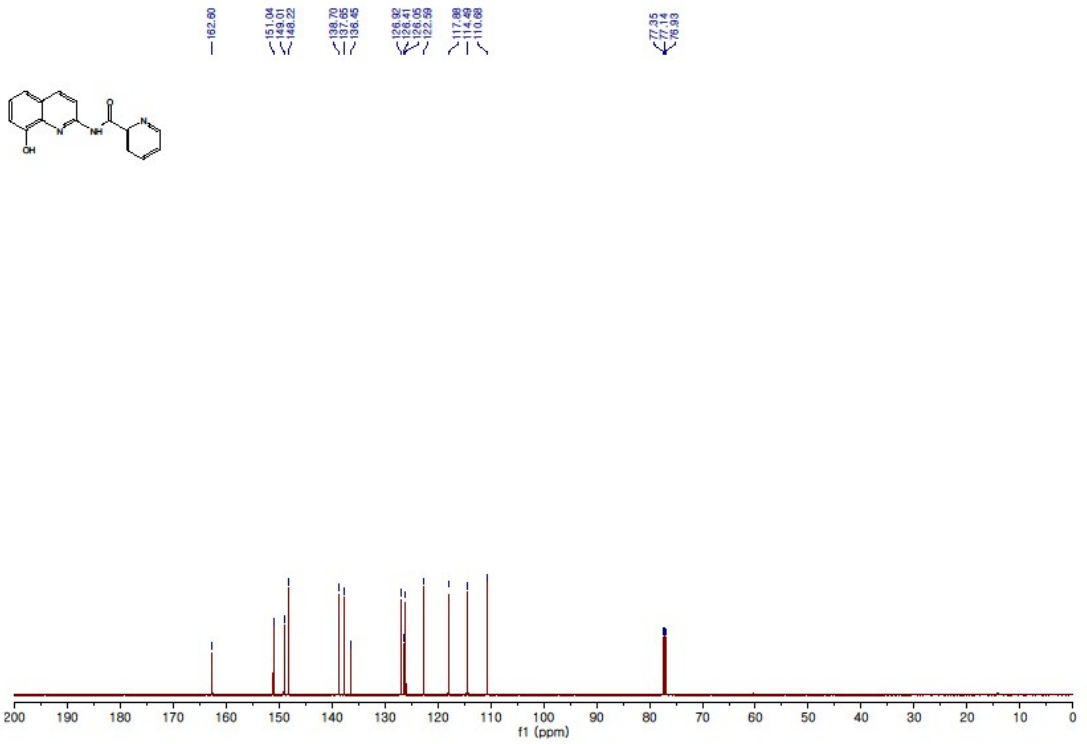


Figure S51. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 4h.

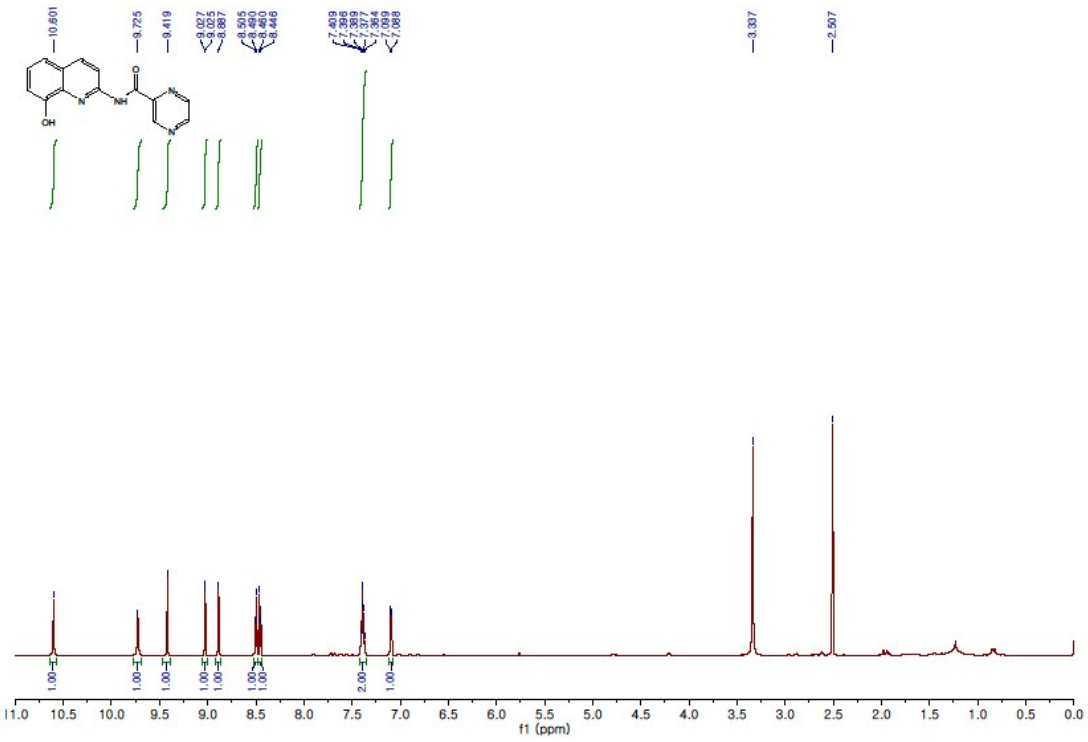


Figure S52. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4i.

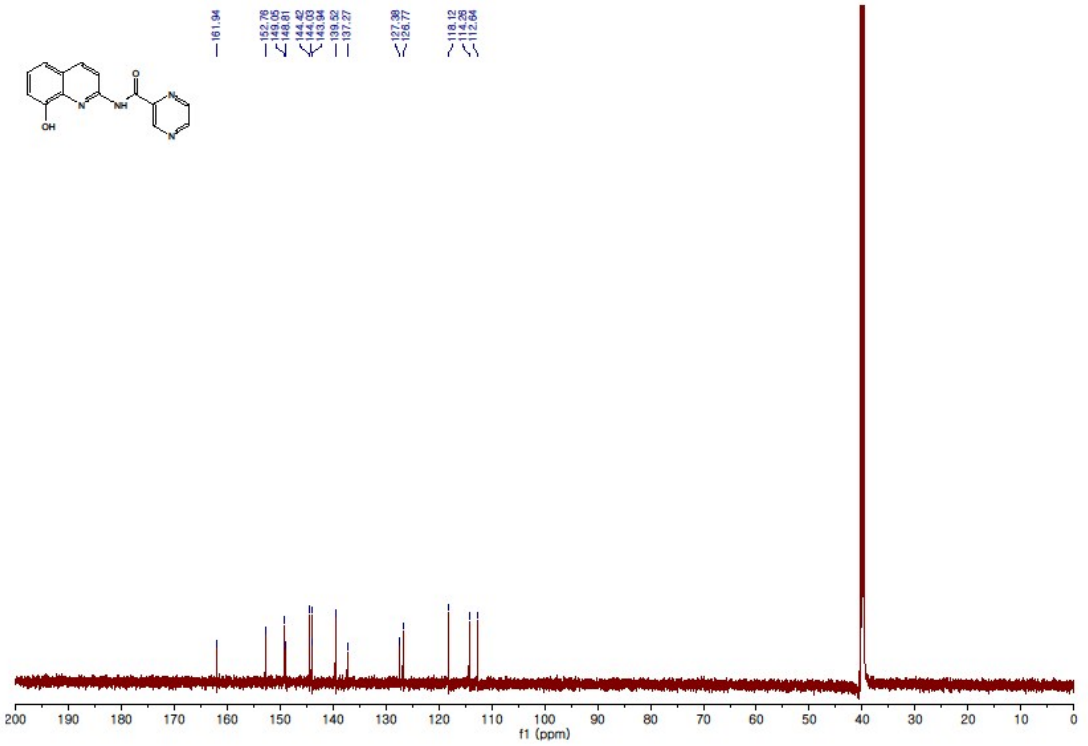


Figure S53. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4i.

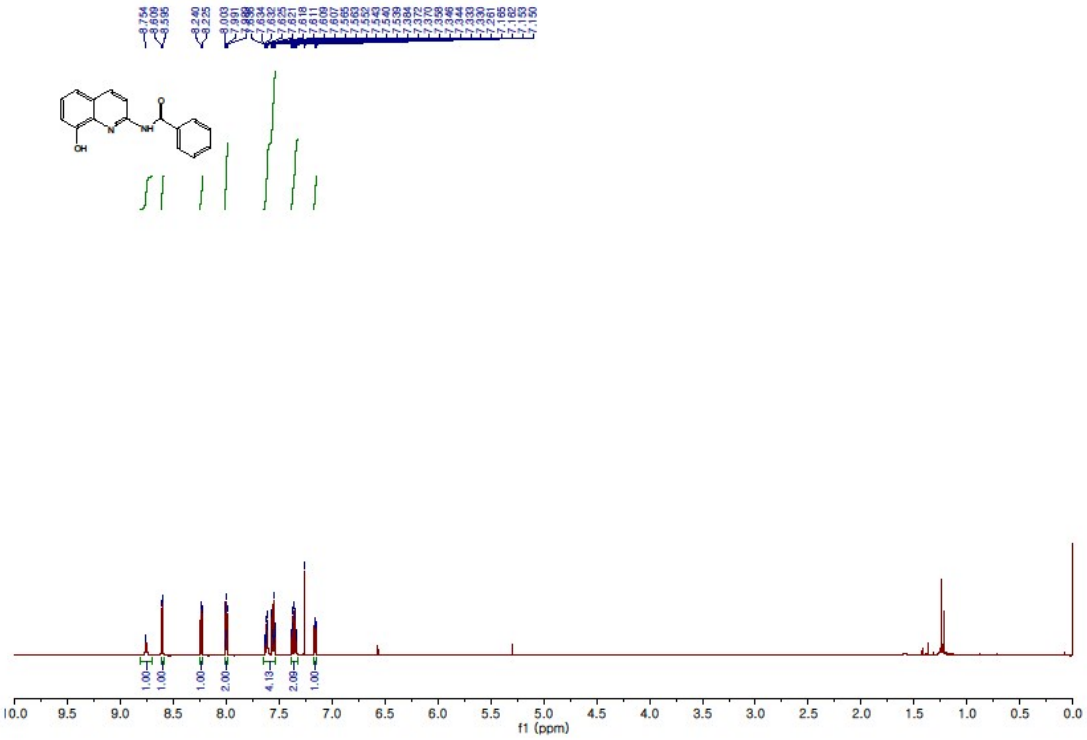


Figure S54. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 4j.

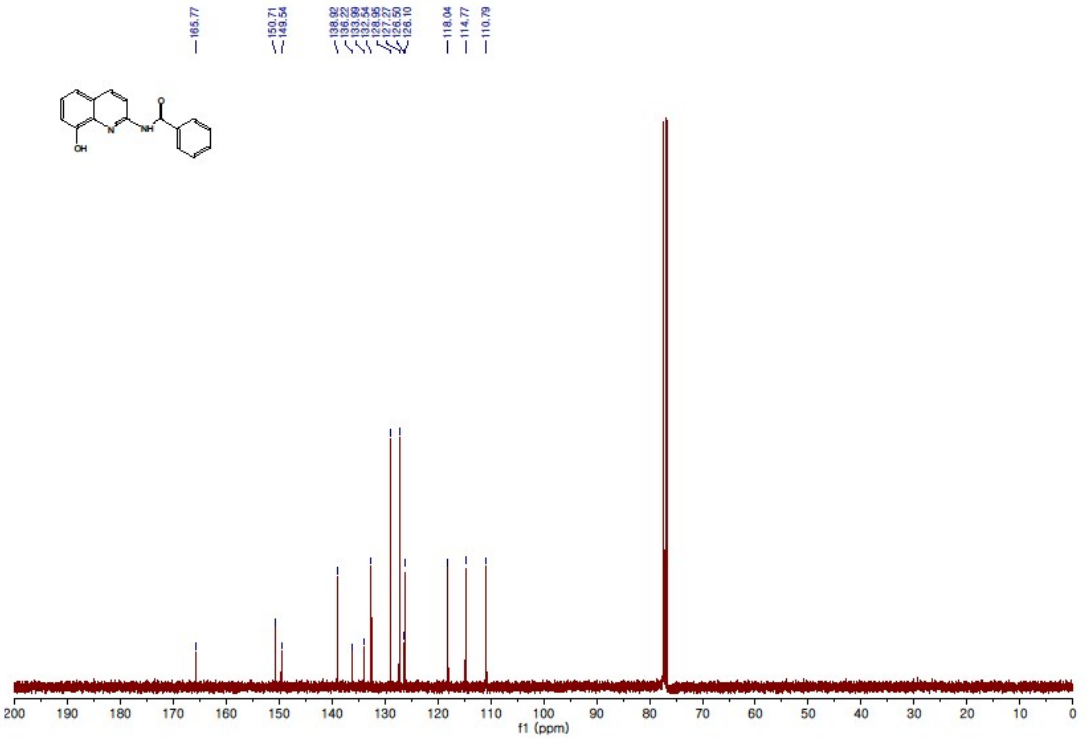


Figure S55. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 4j.

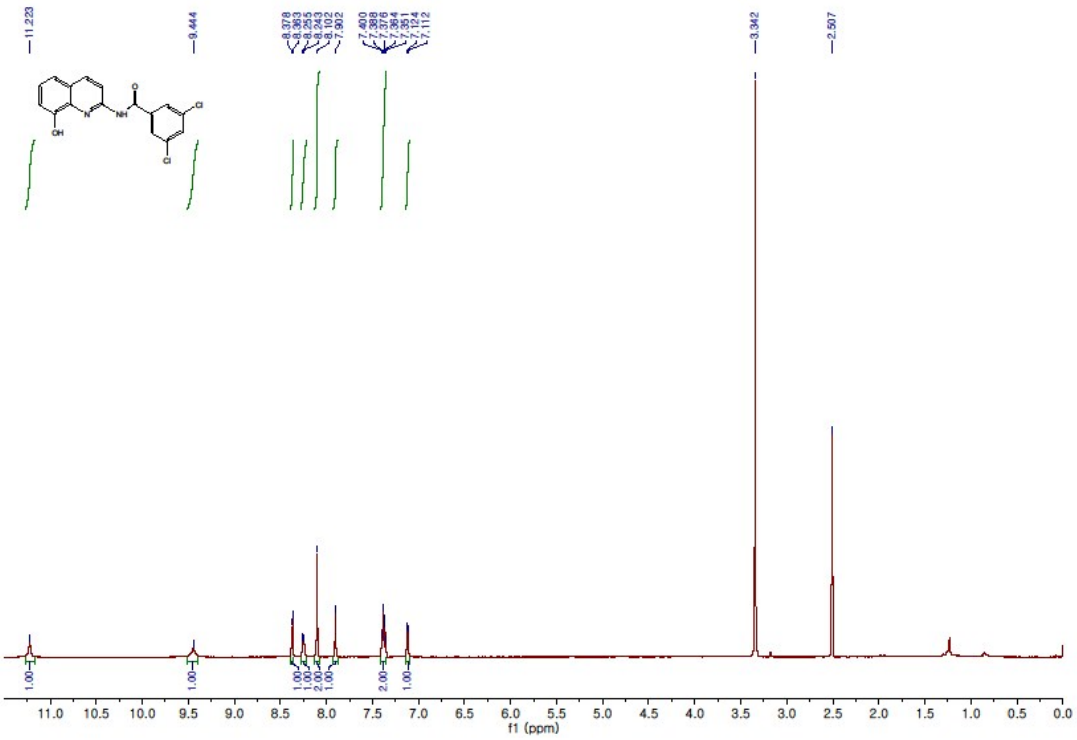


Figure S56. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4k.

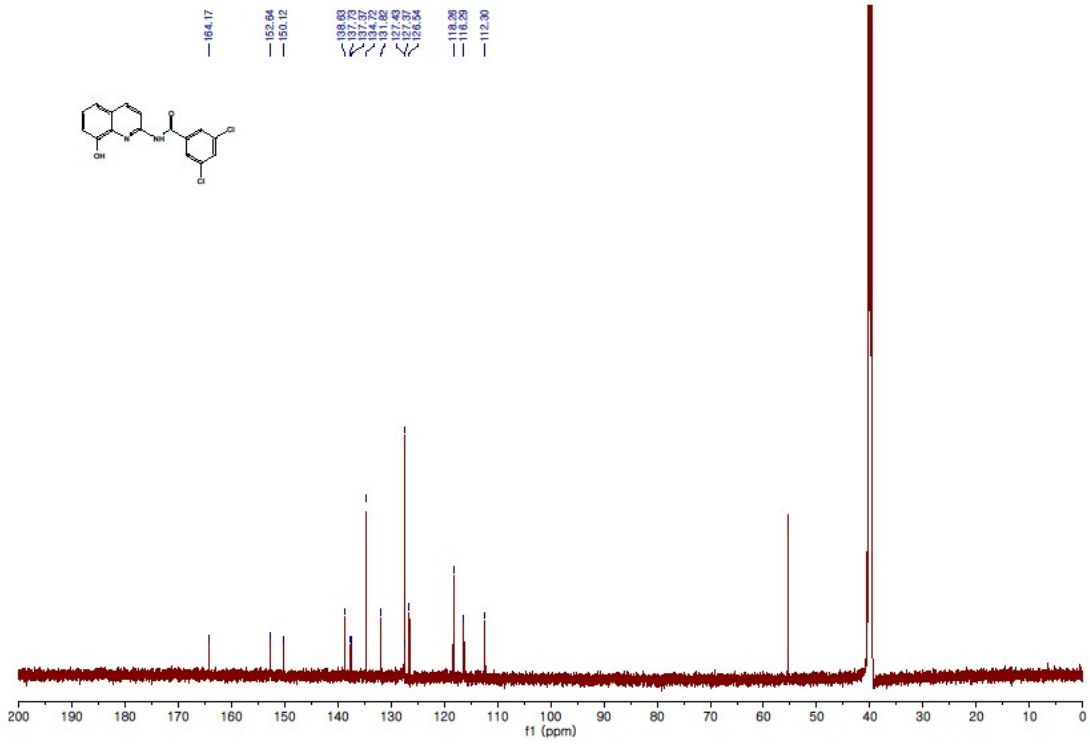


Figure S57. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4k.

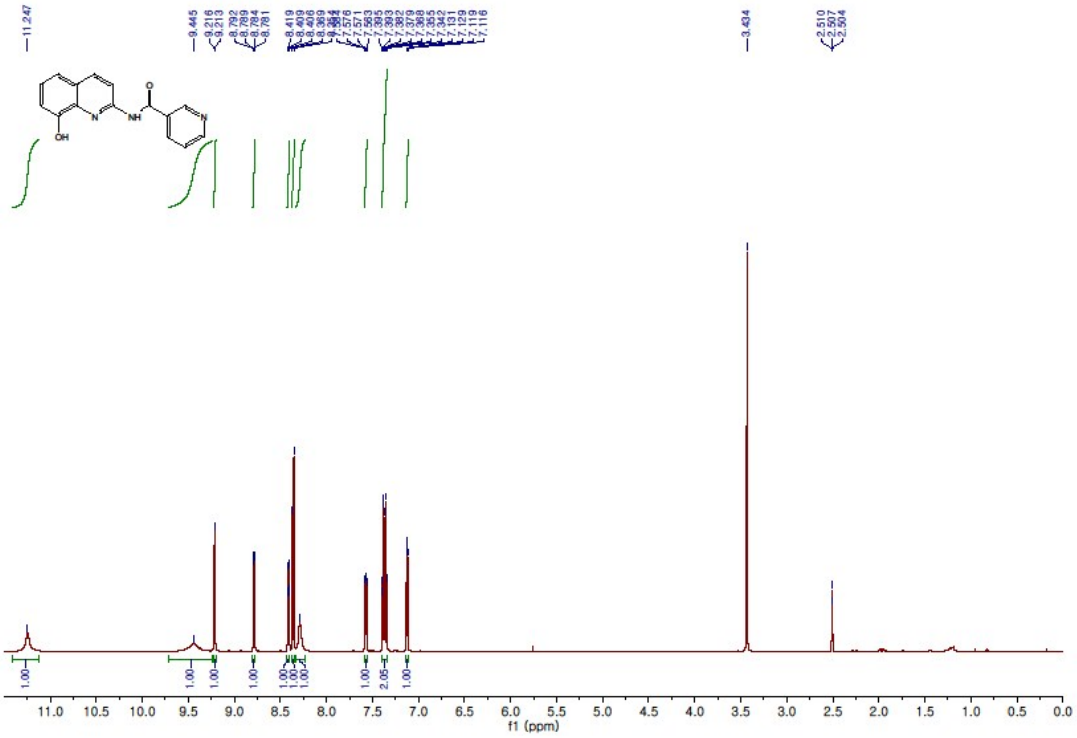


Figure S58. . ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4l.

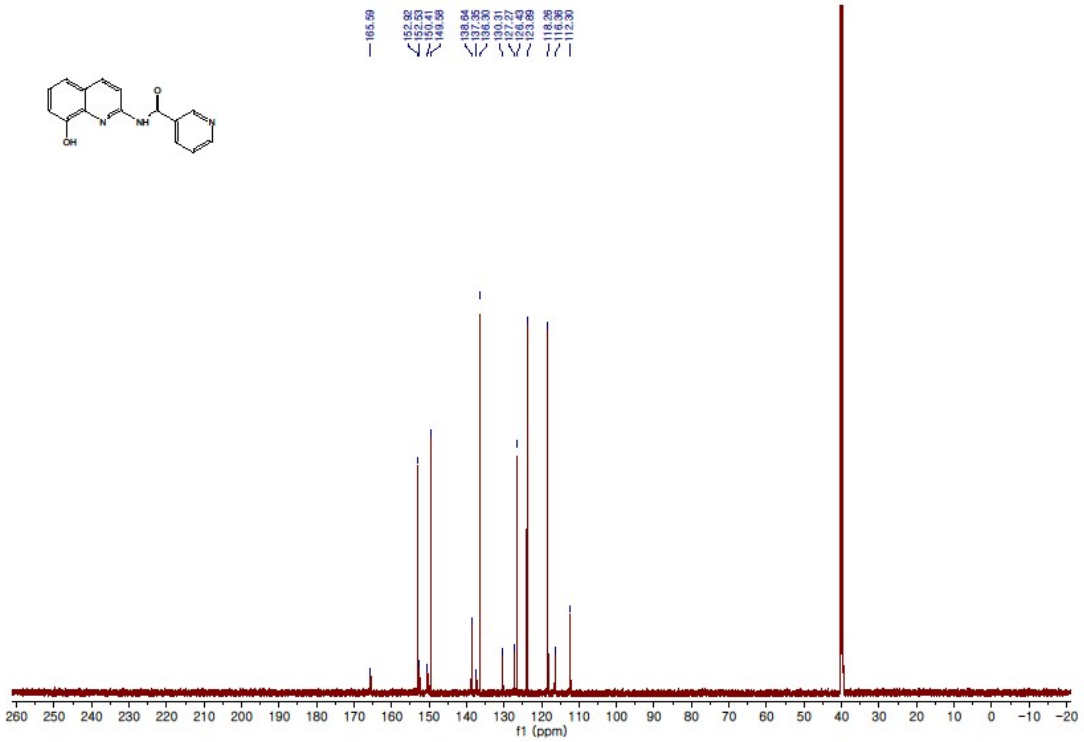


Figure S59. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4l.

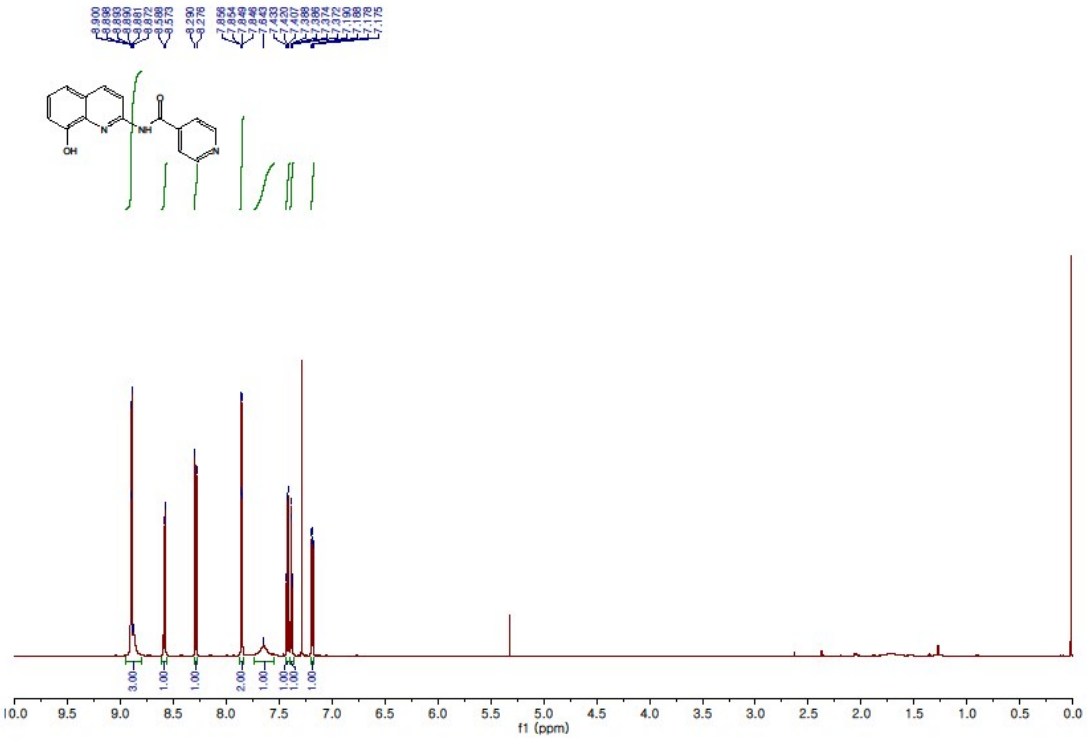


Figure S60. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 4m.

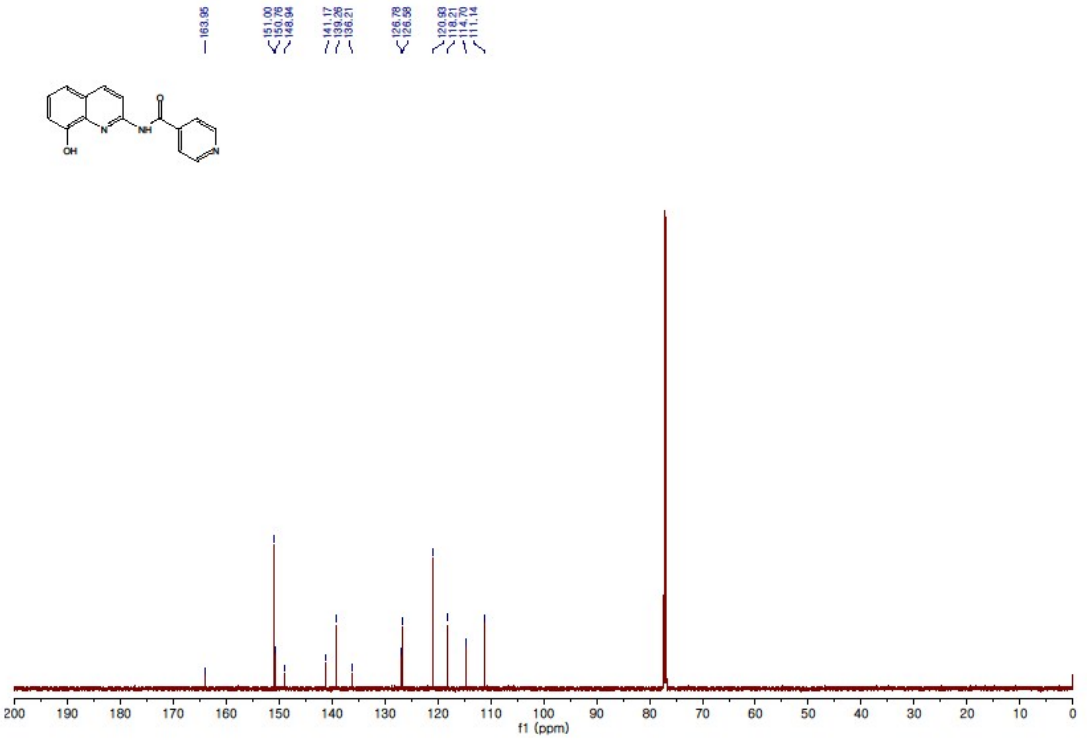


Figure S61. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 4m.

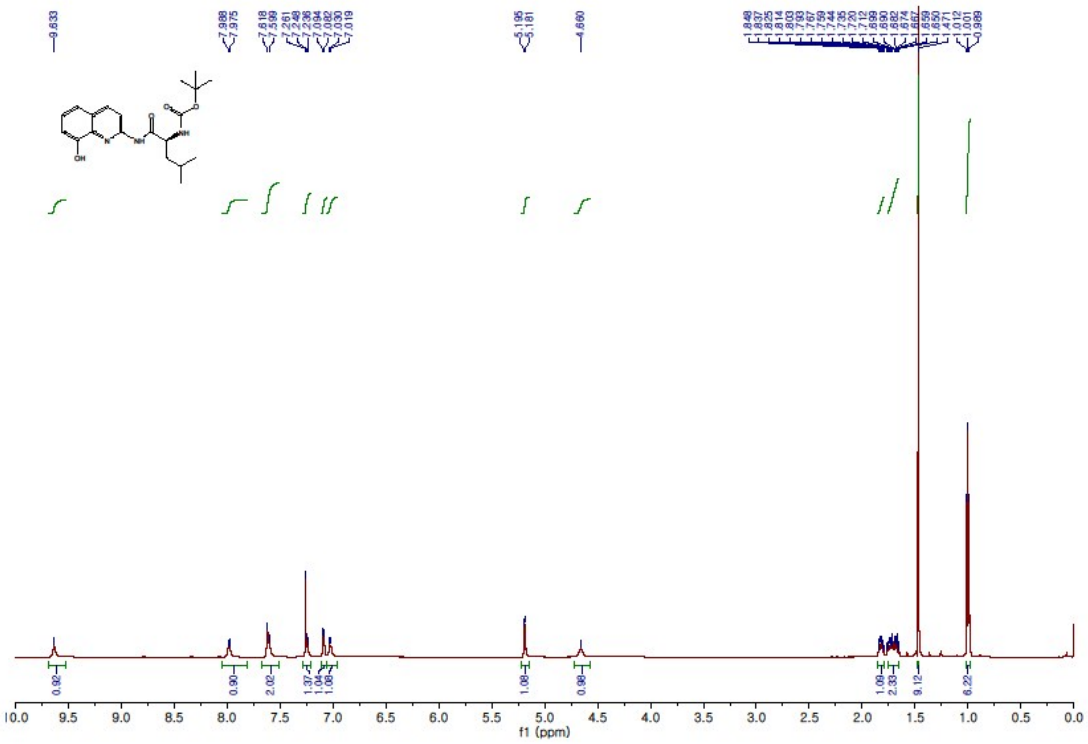


Figure S62. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 4n.

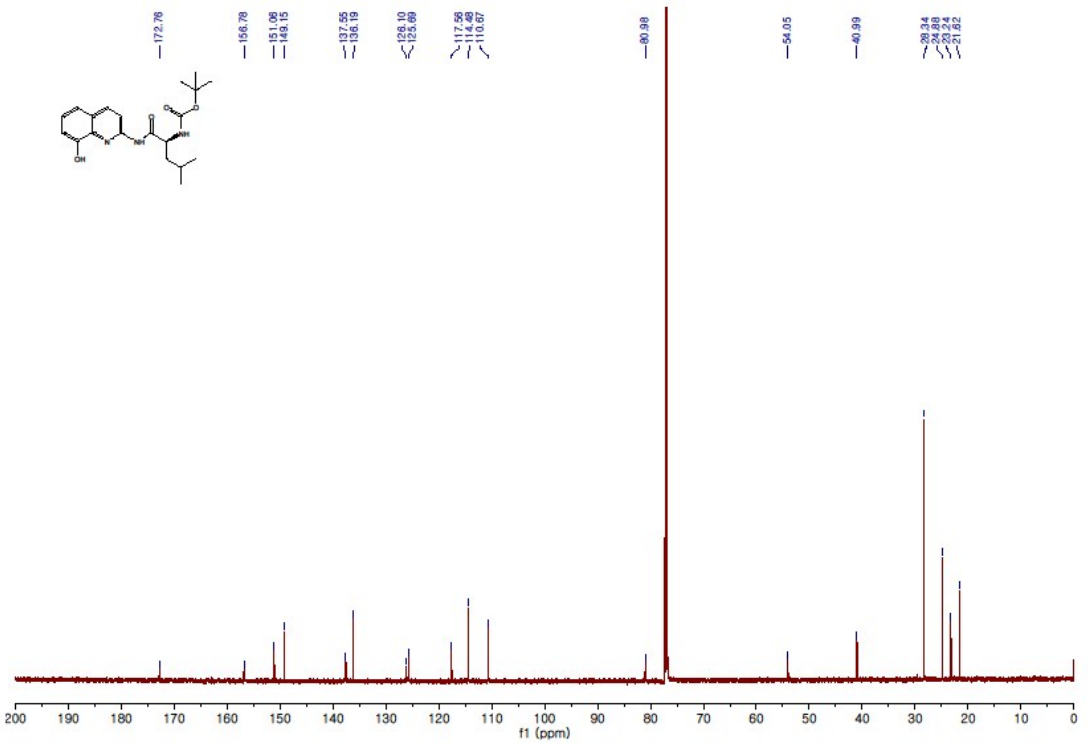


Figure S63. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 4n.

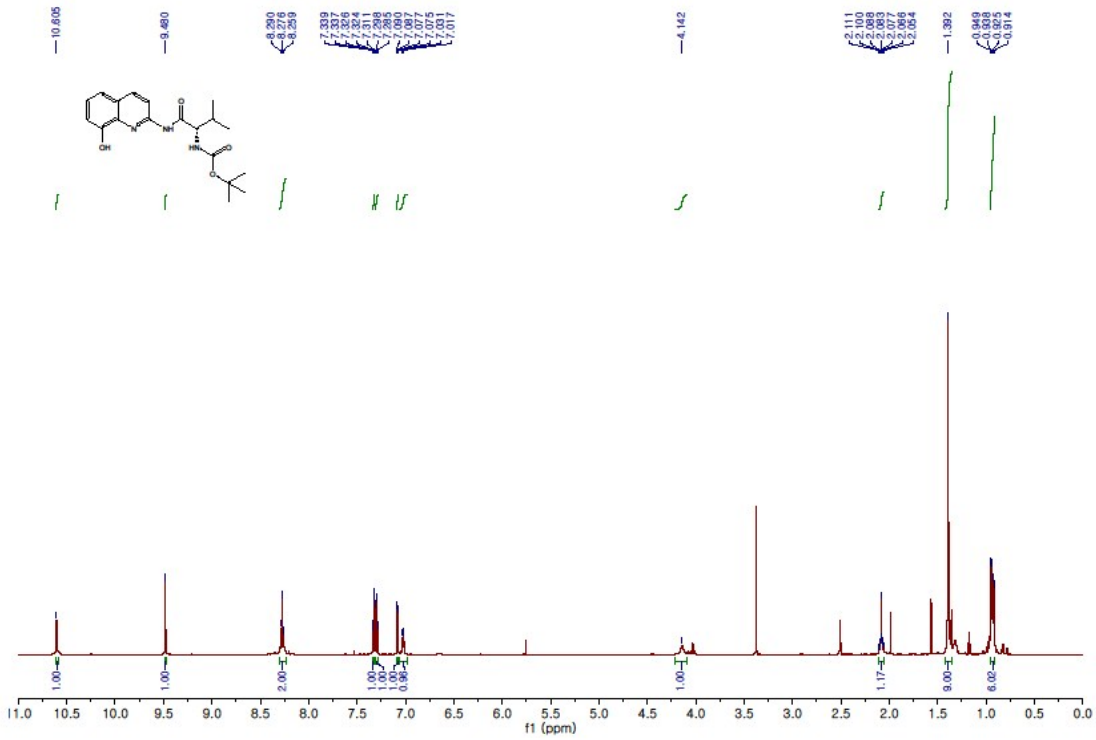


Figure S64. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4o.

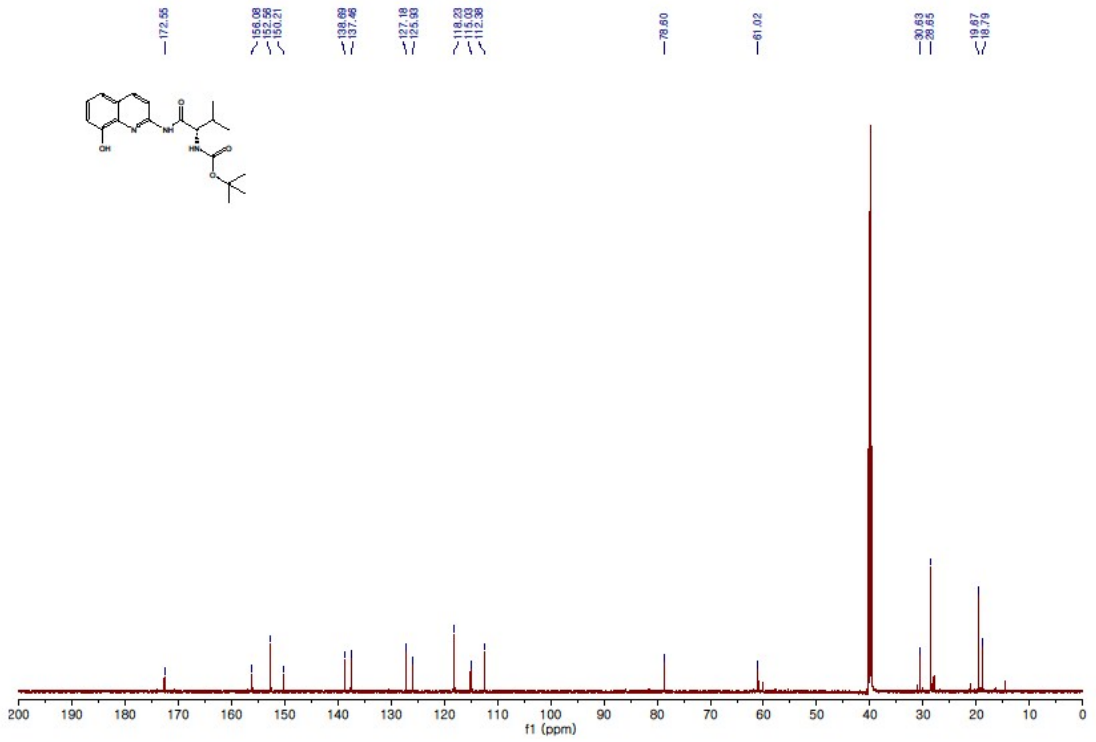


Figure S65. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4o.

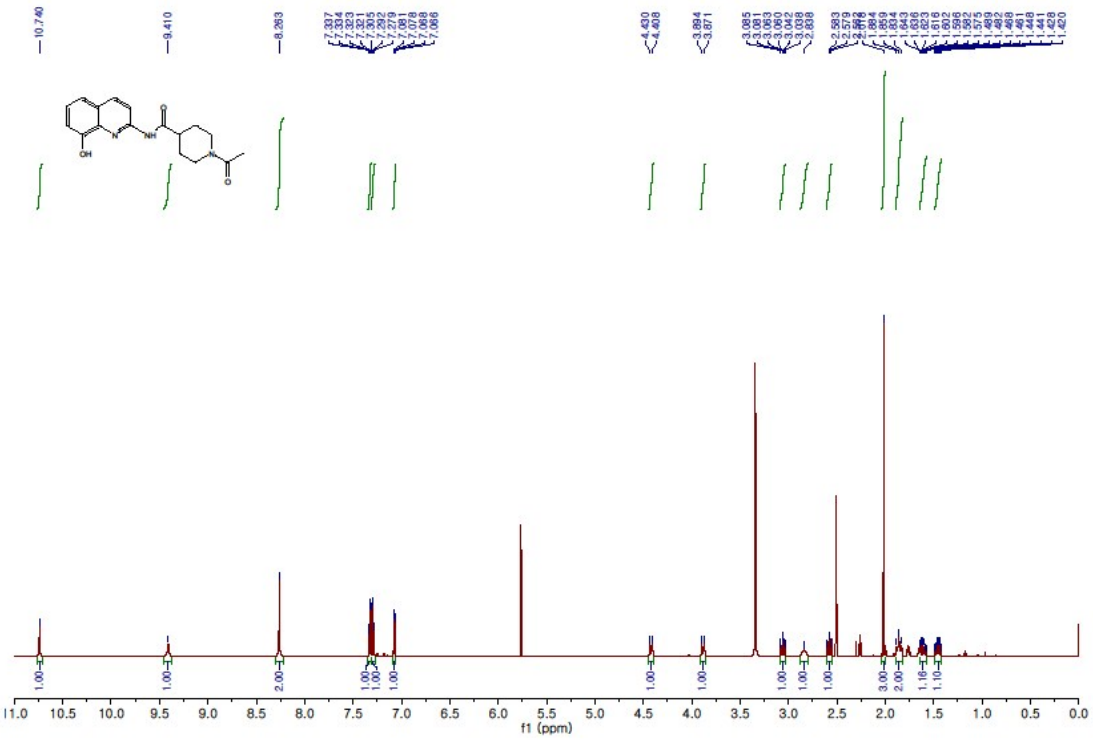


Figure S66. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4p.

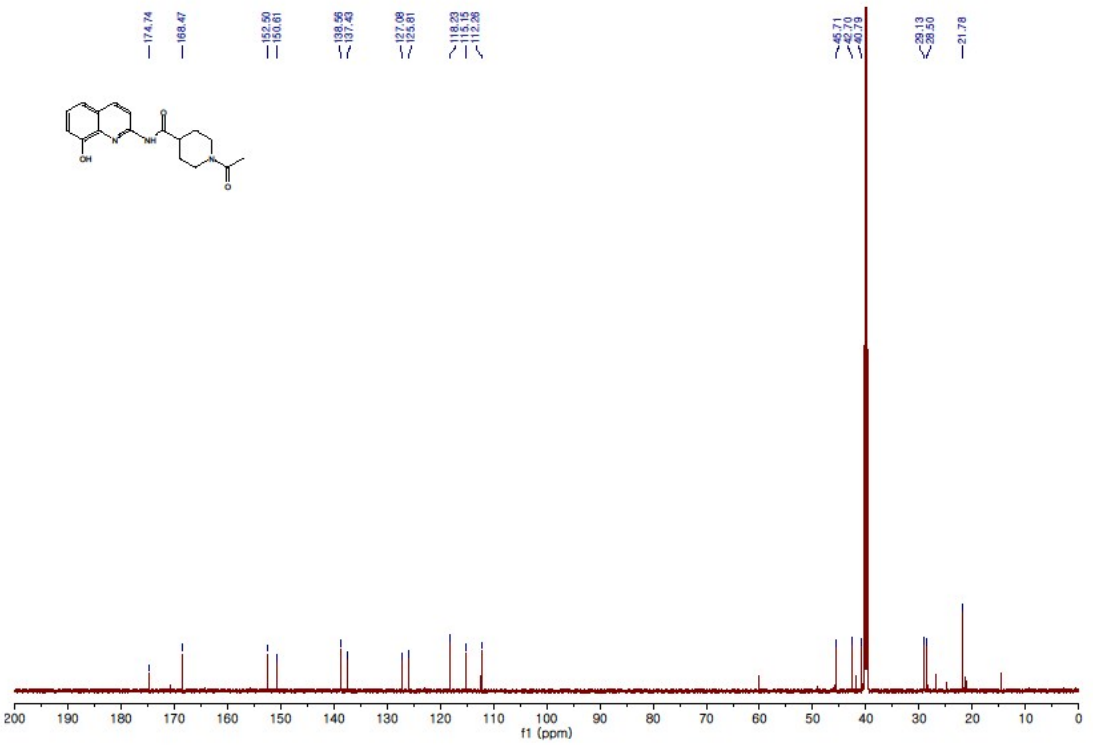


Figure S67. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4p.

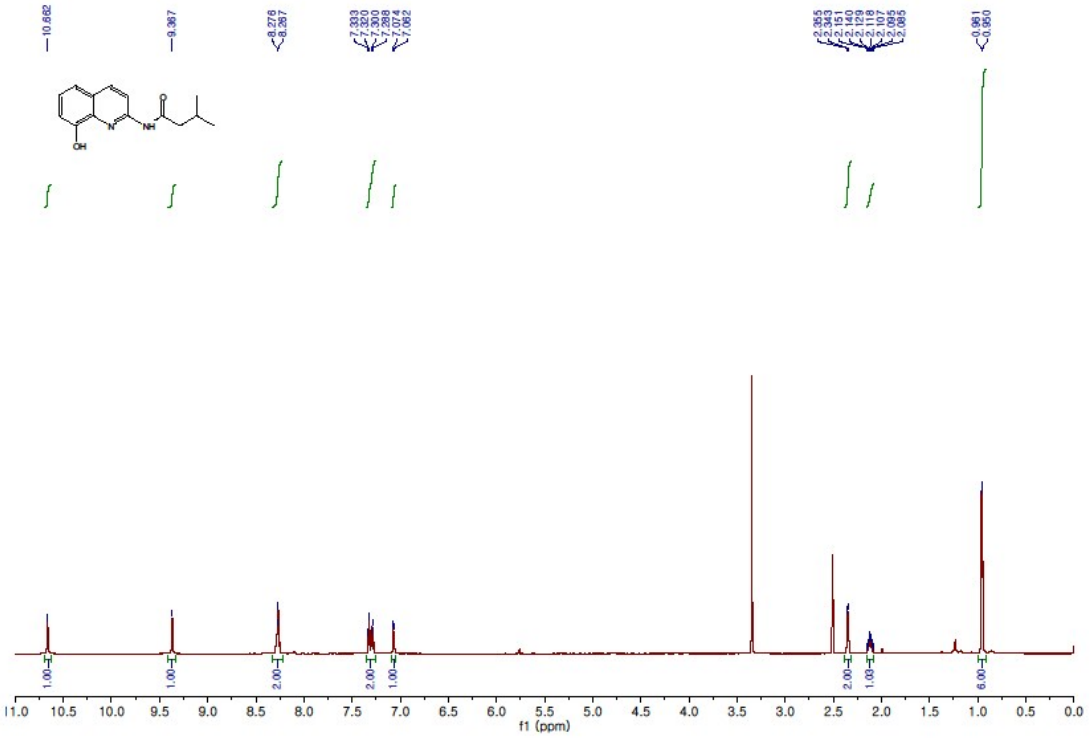


Figure S68. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4q.

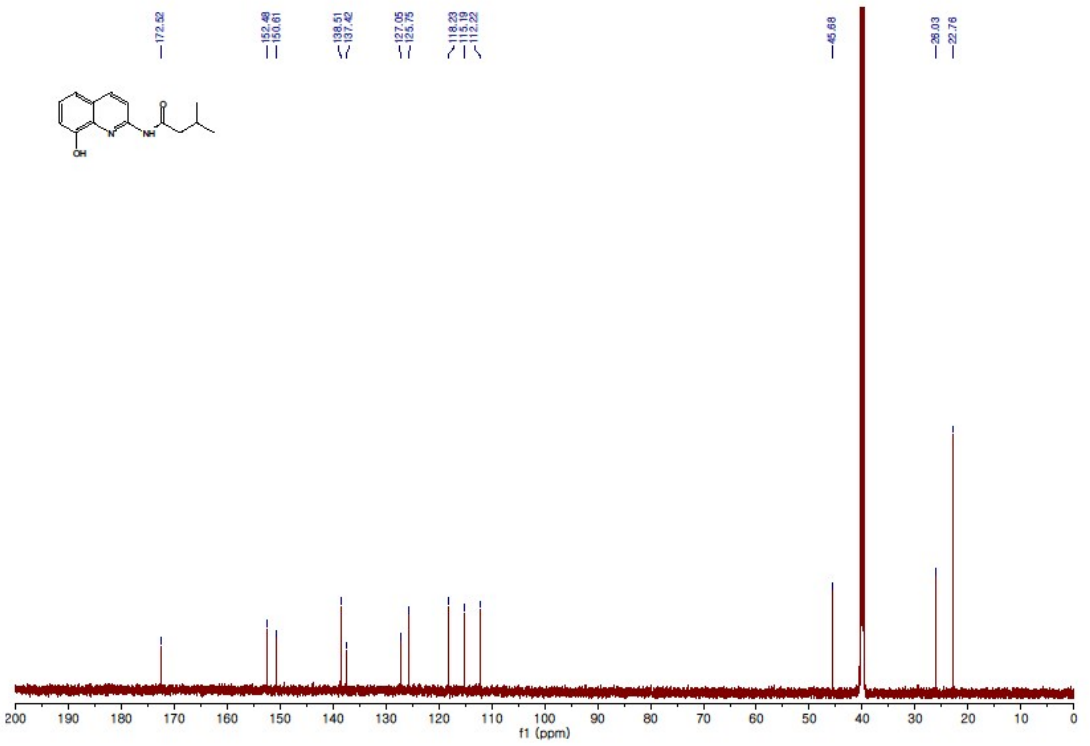


Figure S69. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4q.

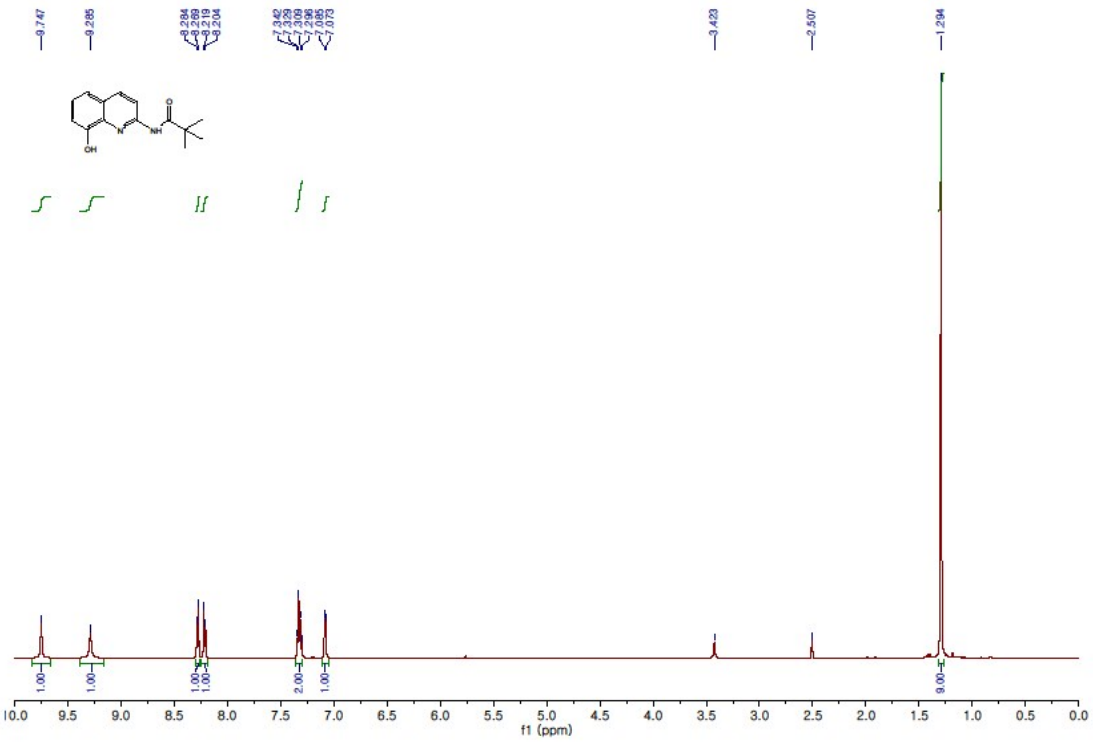


Figure S70. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4r.

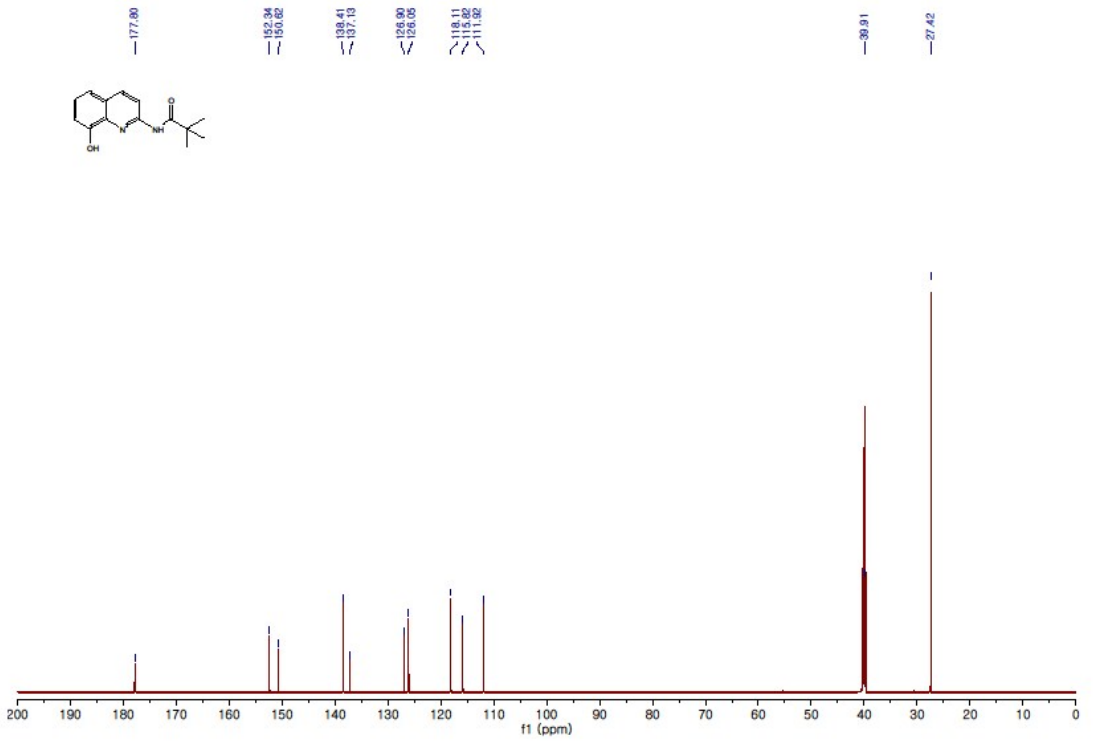


Figure S71. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4r.

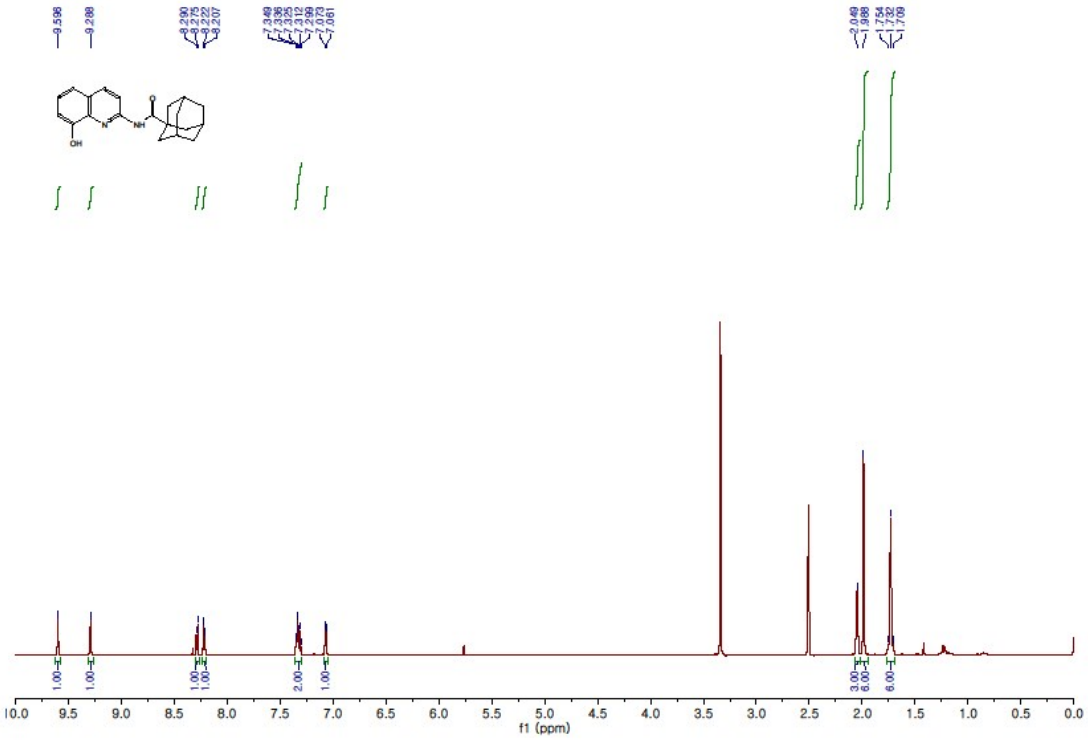


Figure S72. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4s.

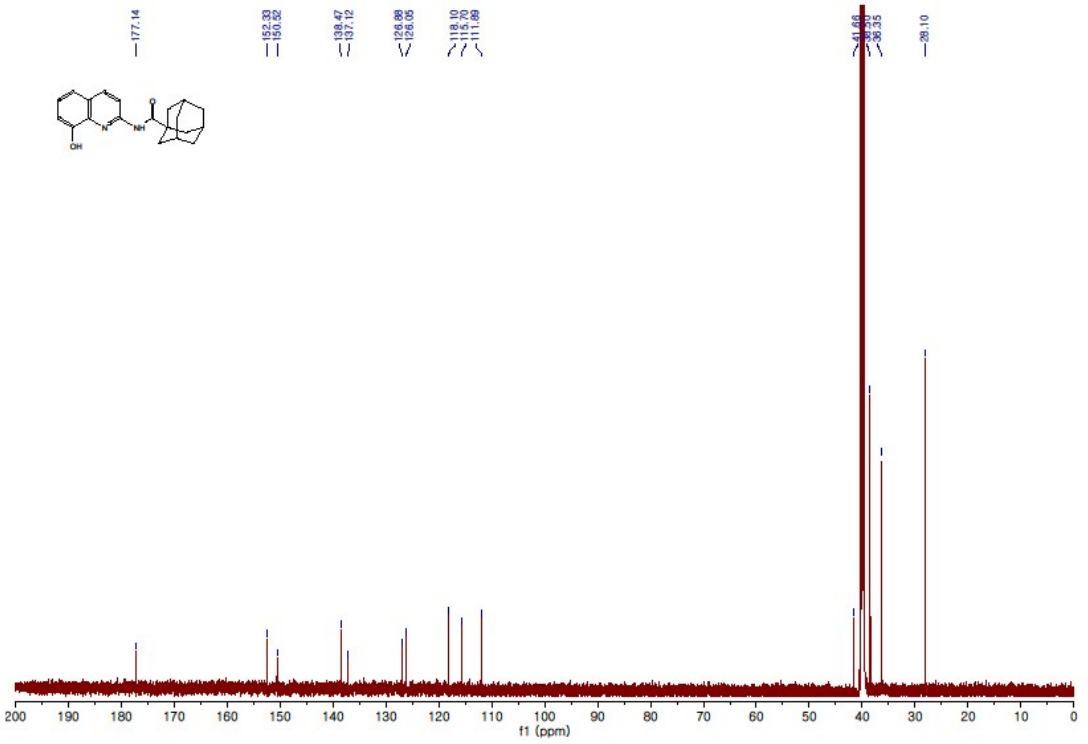


Figure S73. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4s.

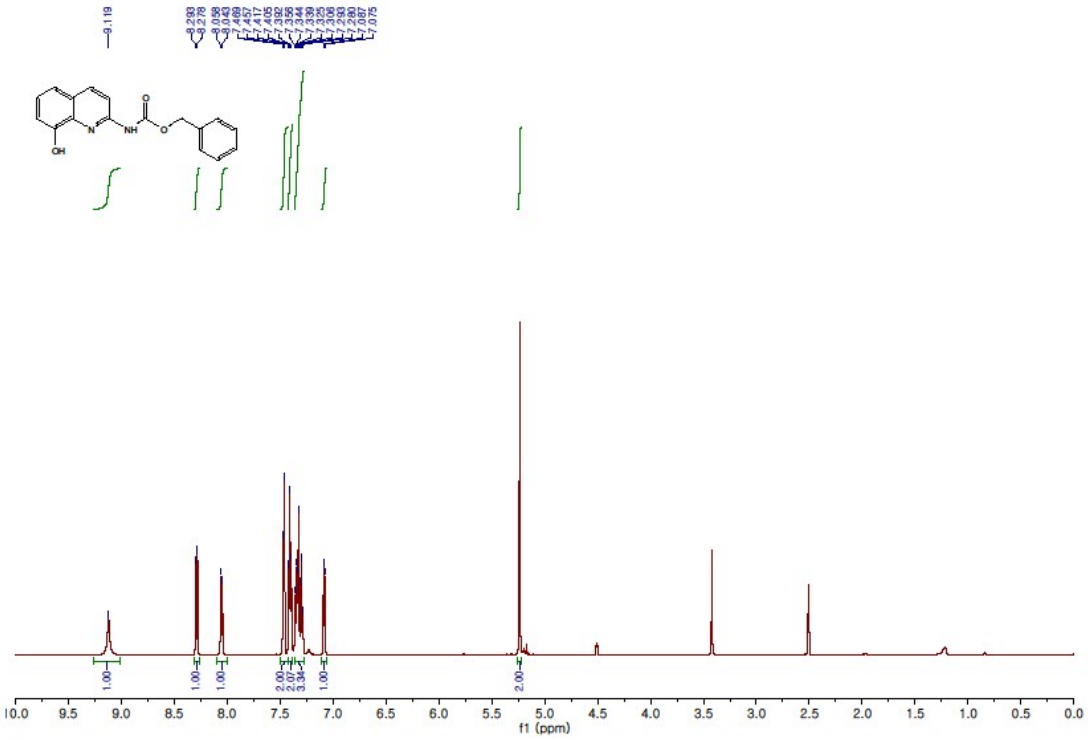


Figure S74. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 4u.

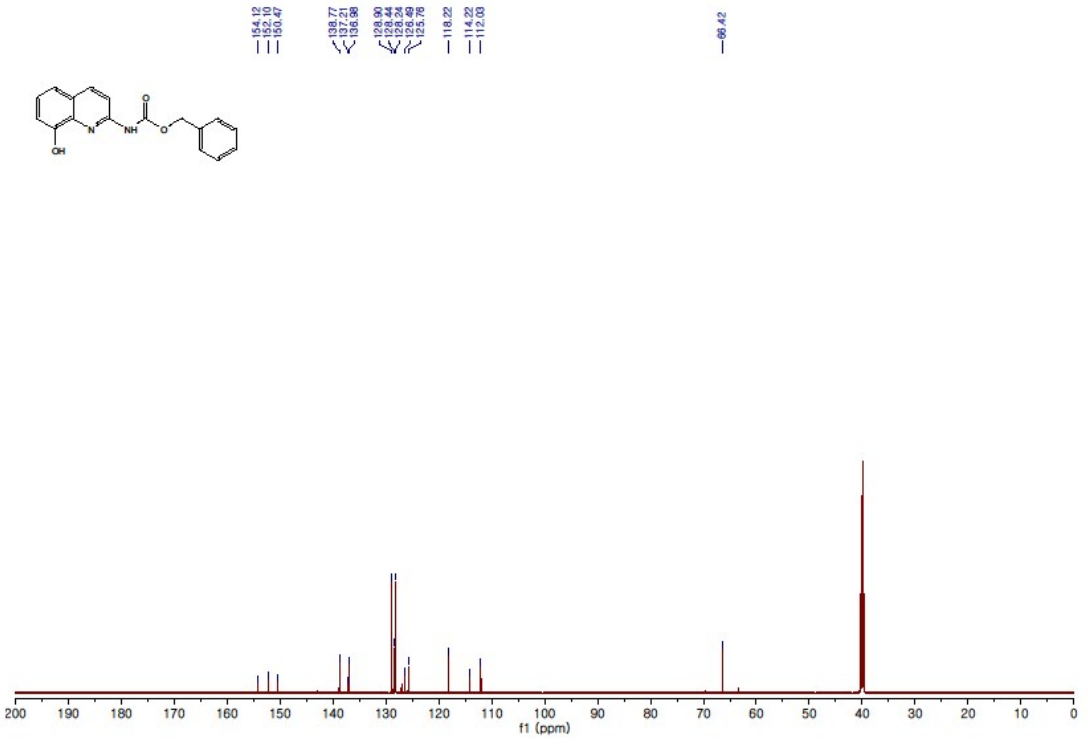


Figure S75. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 4u.

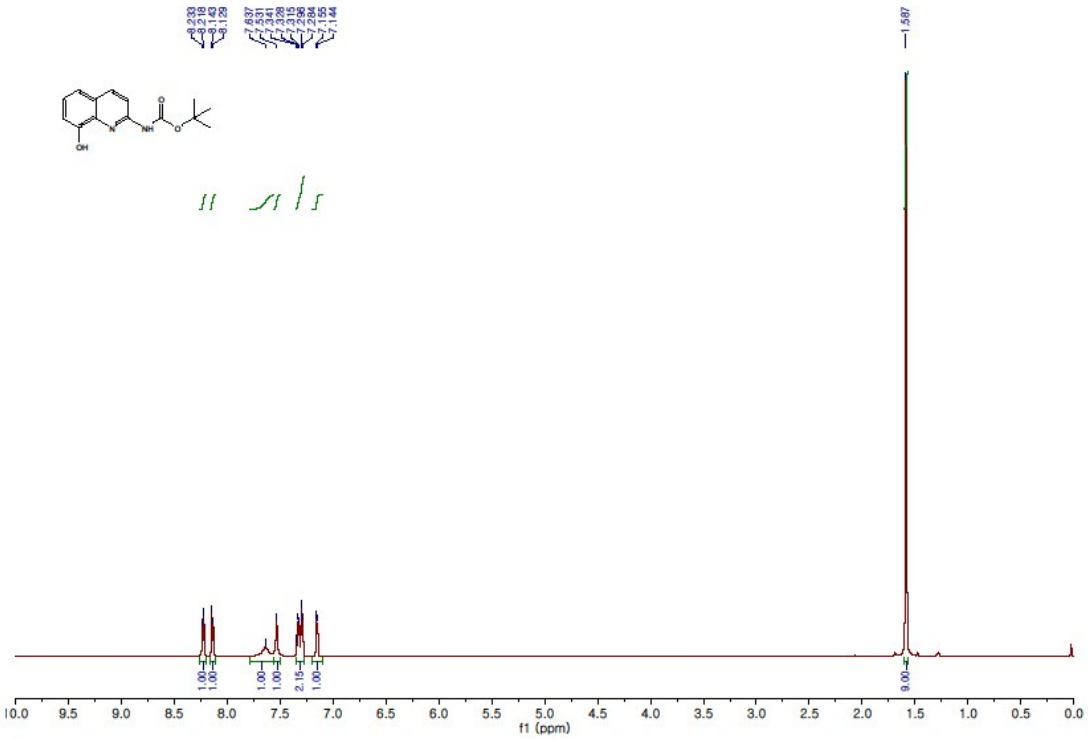


Figure S76. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 4v.

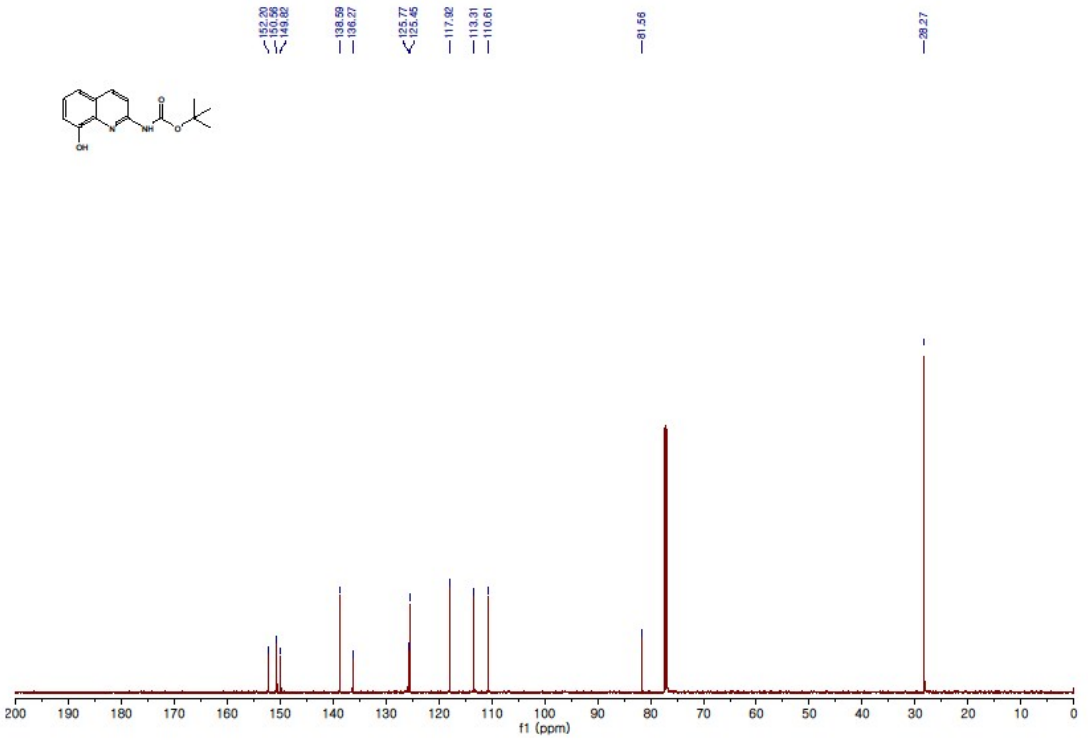


Figure S77. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 4v.

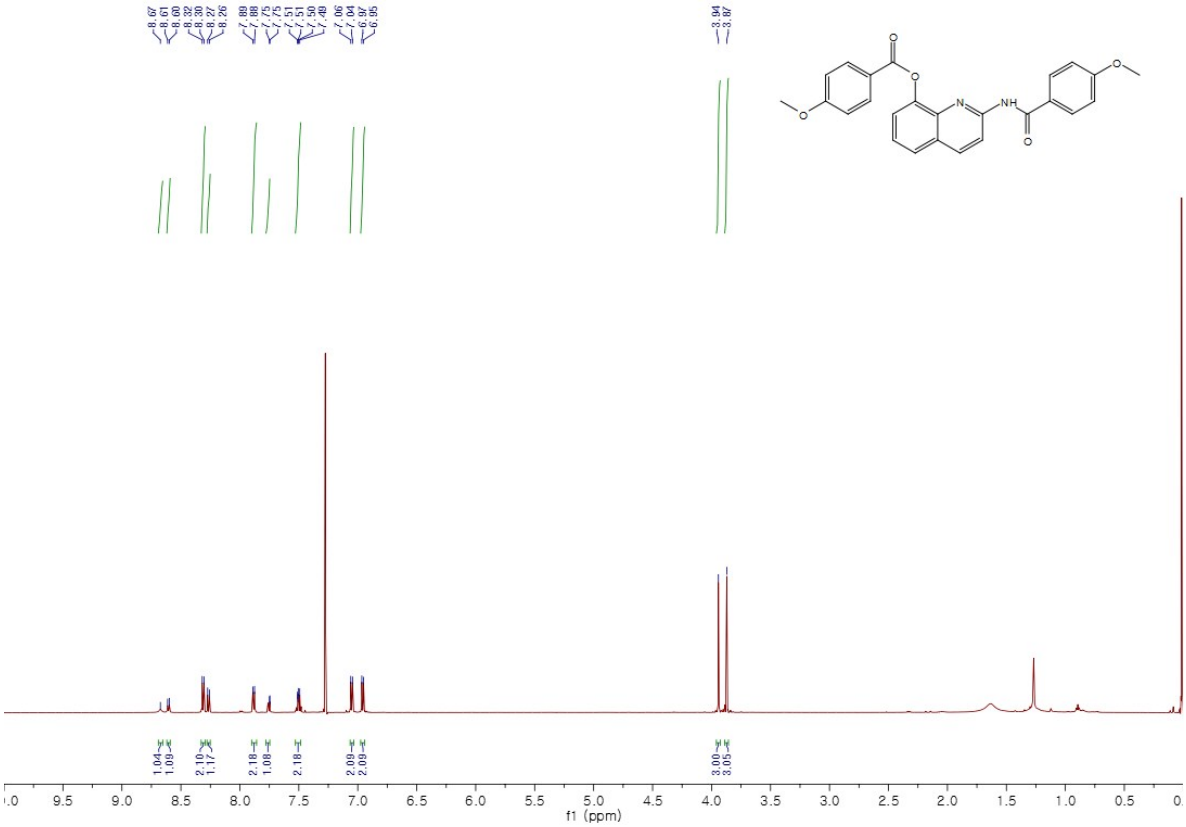


Figure S78. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 5a.

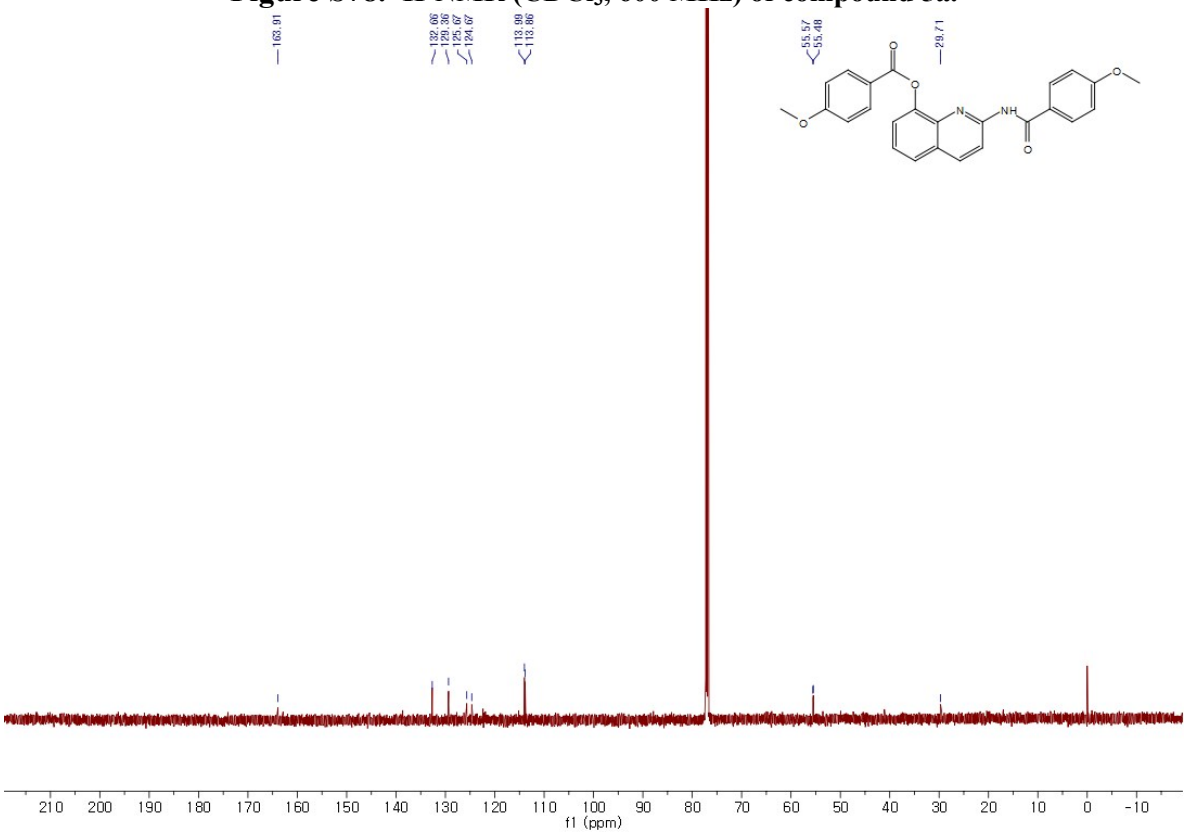


Figure S79. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 5a.

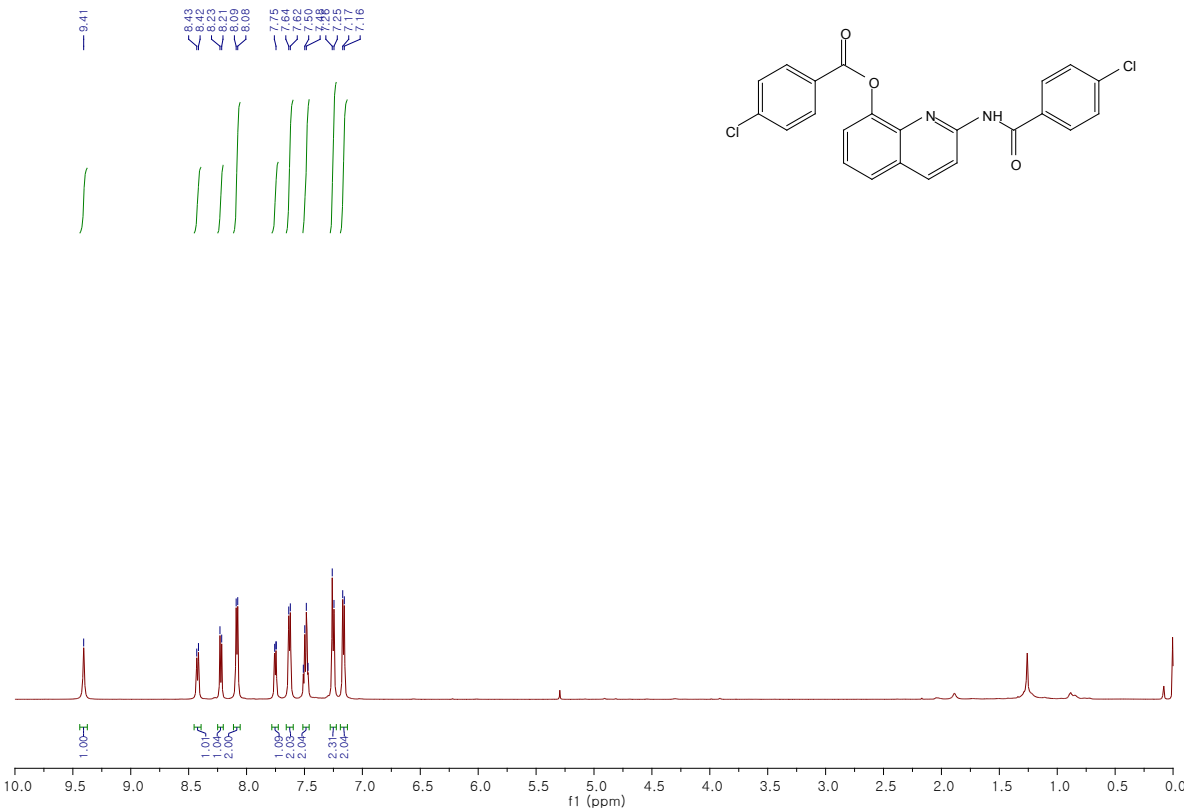


Figure S80. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 5b.

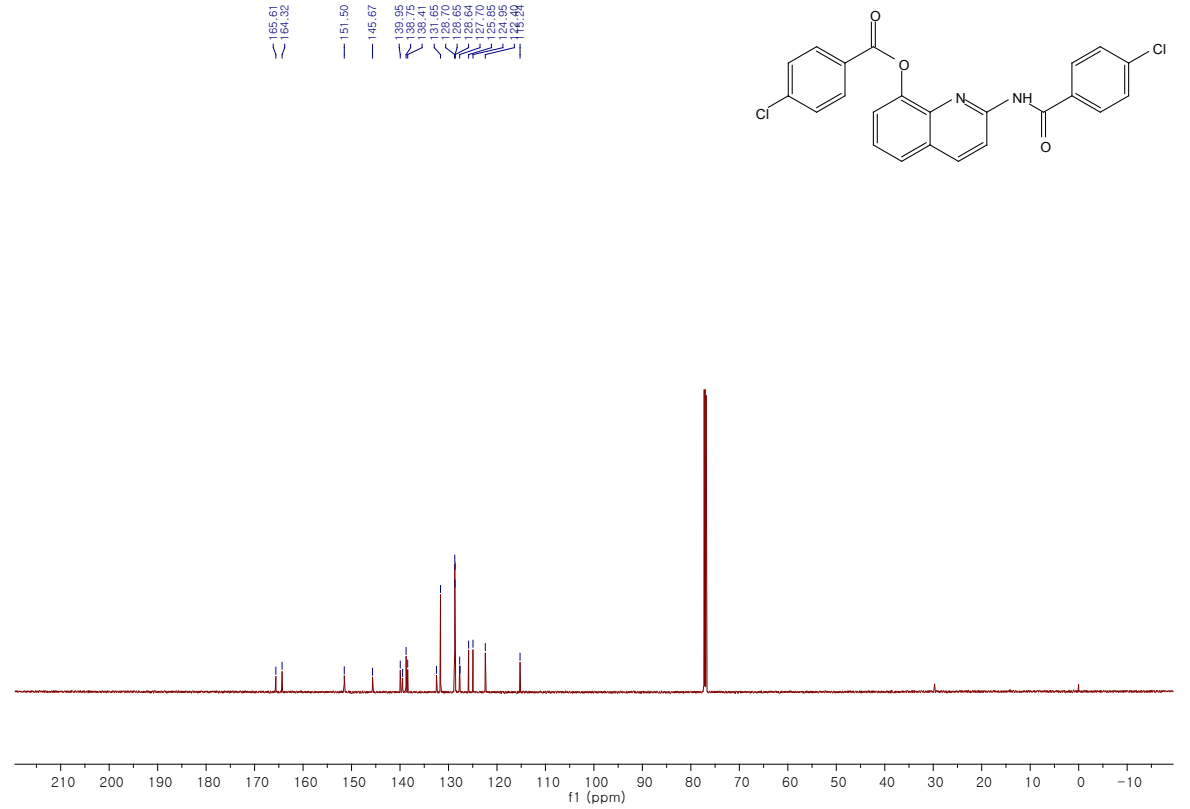


Figure S81. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 5b.

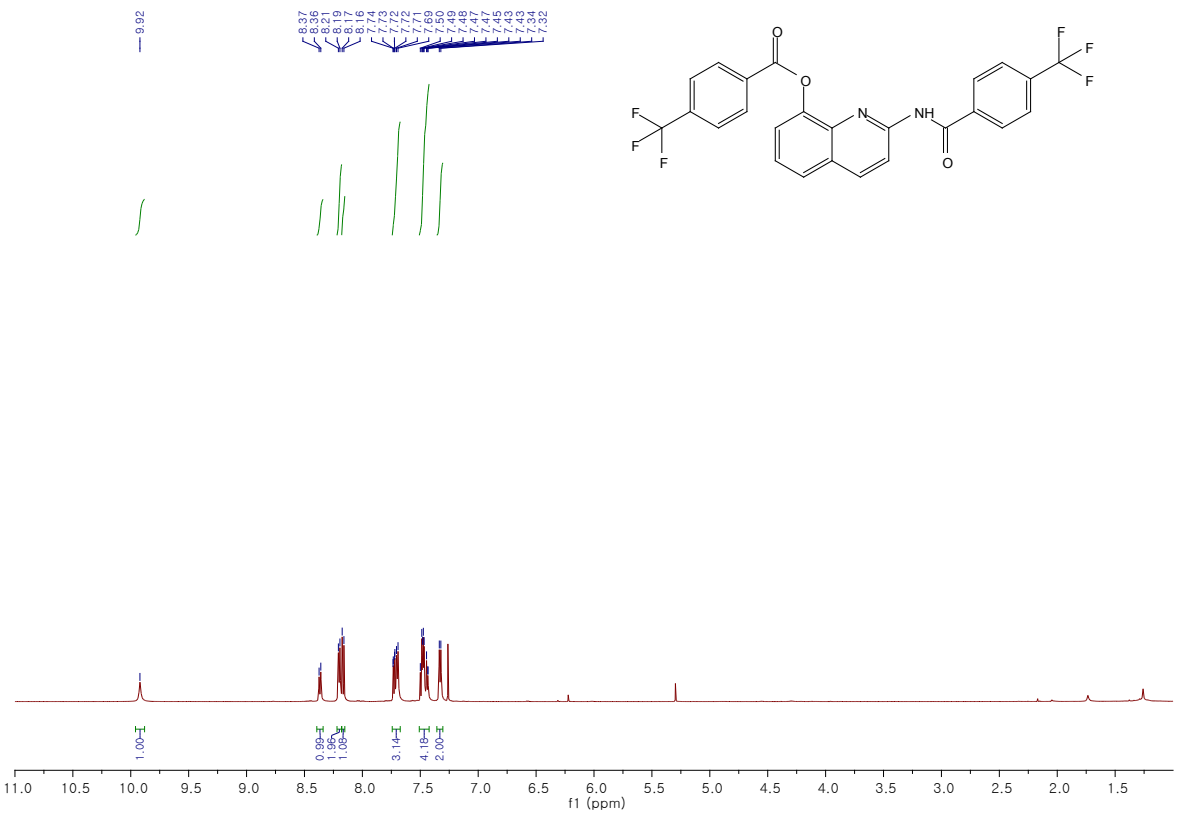


Figure S82. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 5c.

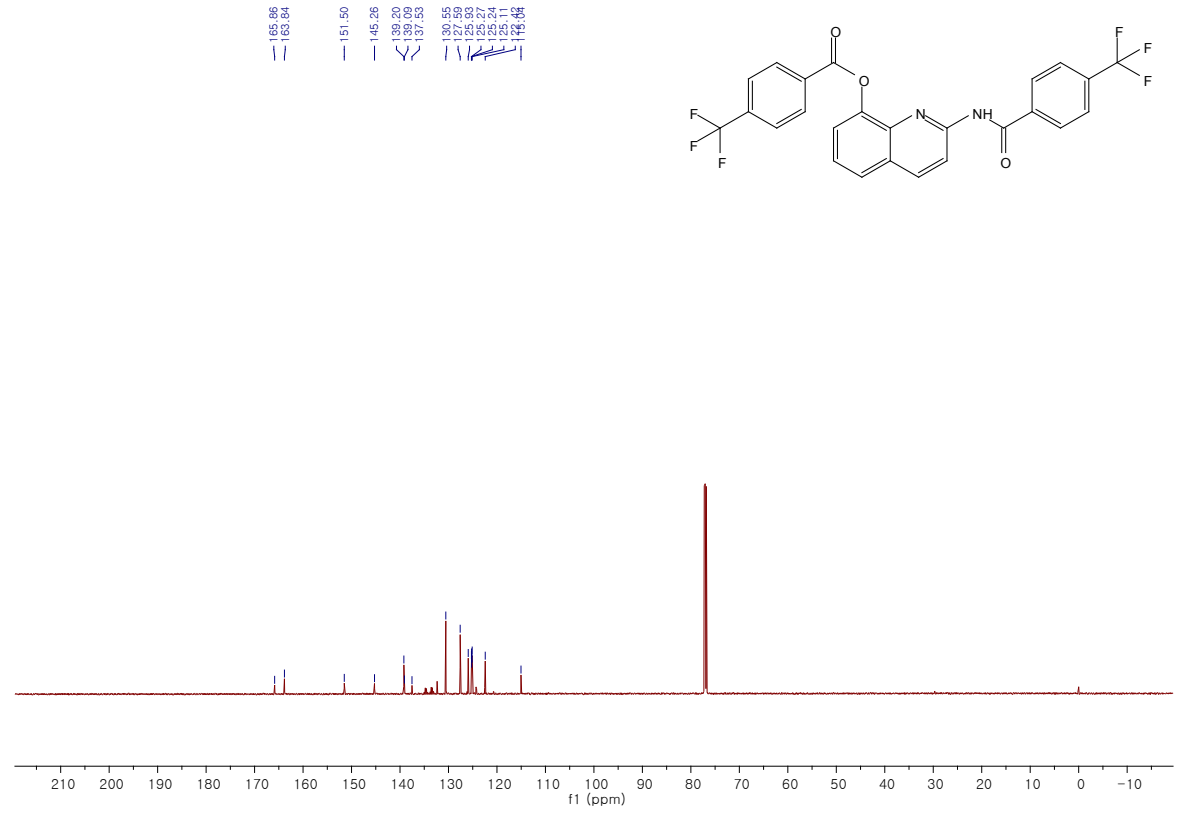


Figure S83. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 5c.

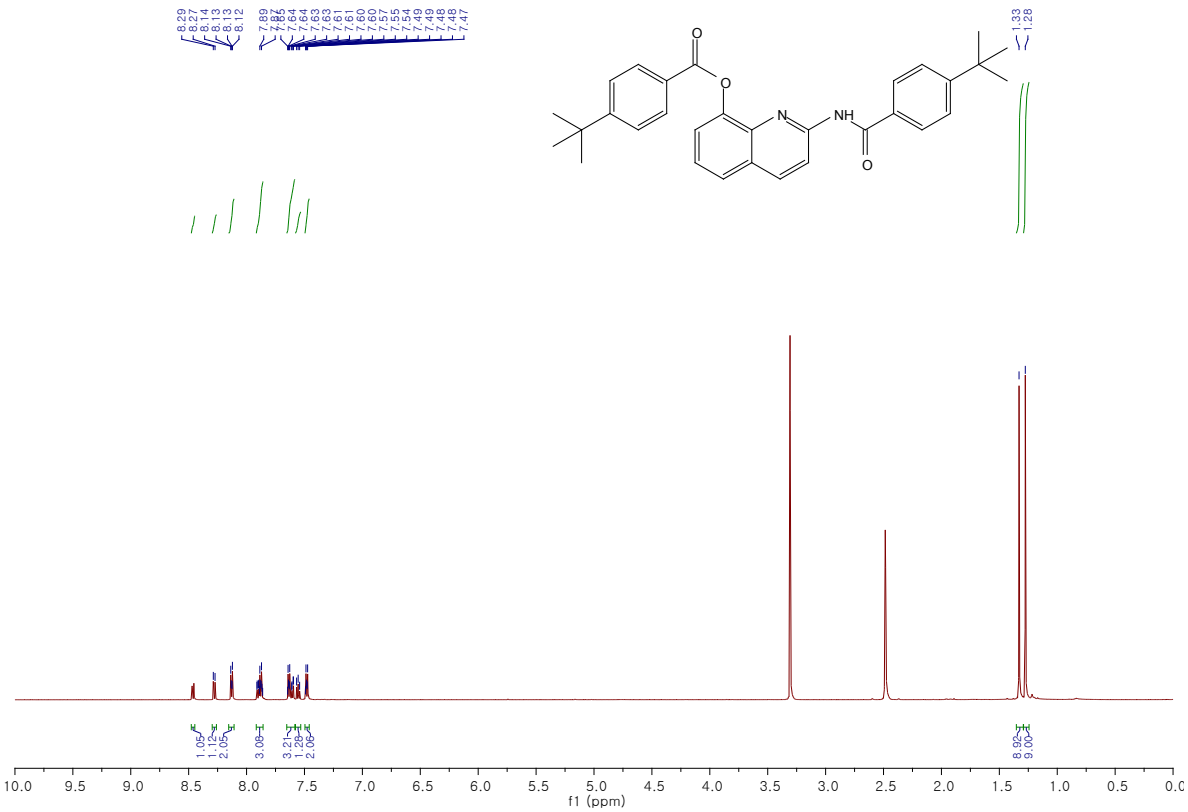


Figure S84. ^{1}H-NMR (DMSO-d$_6$, 600 MHz) of compound 5d.

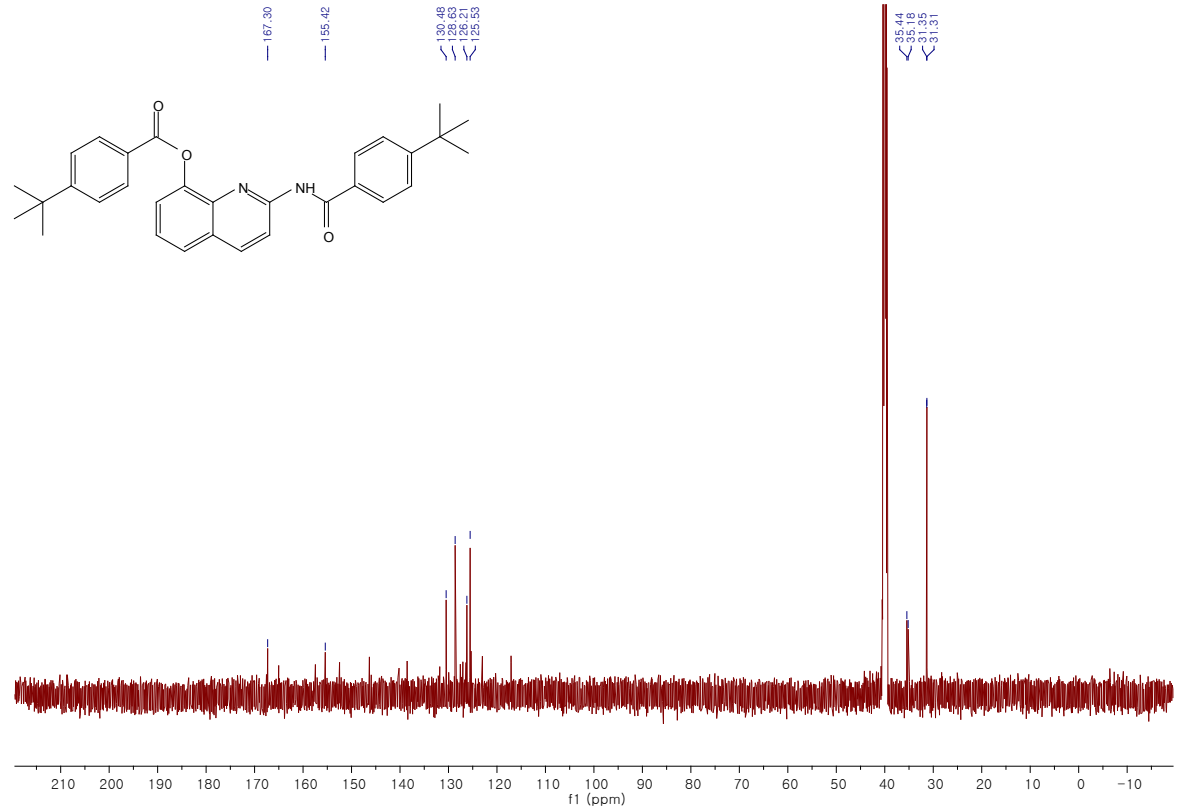


Figure S85. ^{13}C-NMR (150 MHz, DMSO-d$_6$) of compound 5d.

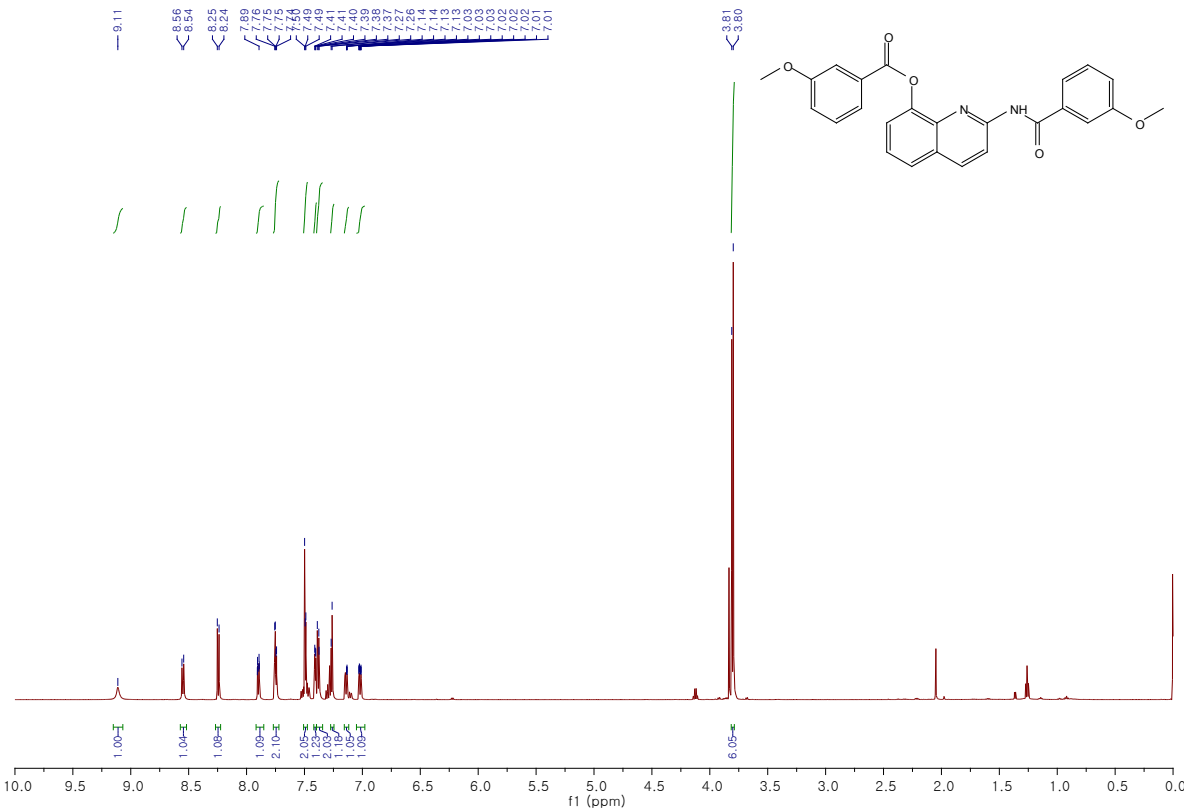


Figure S86. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 5e.

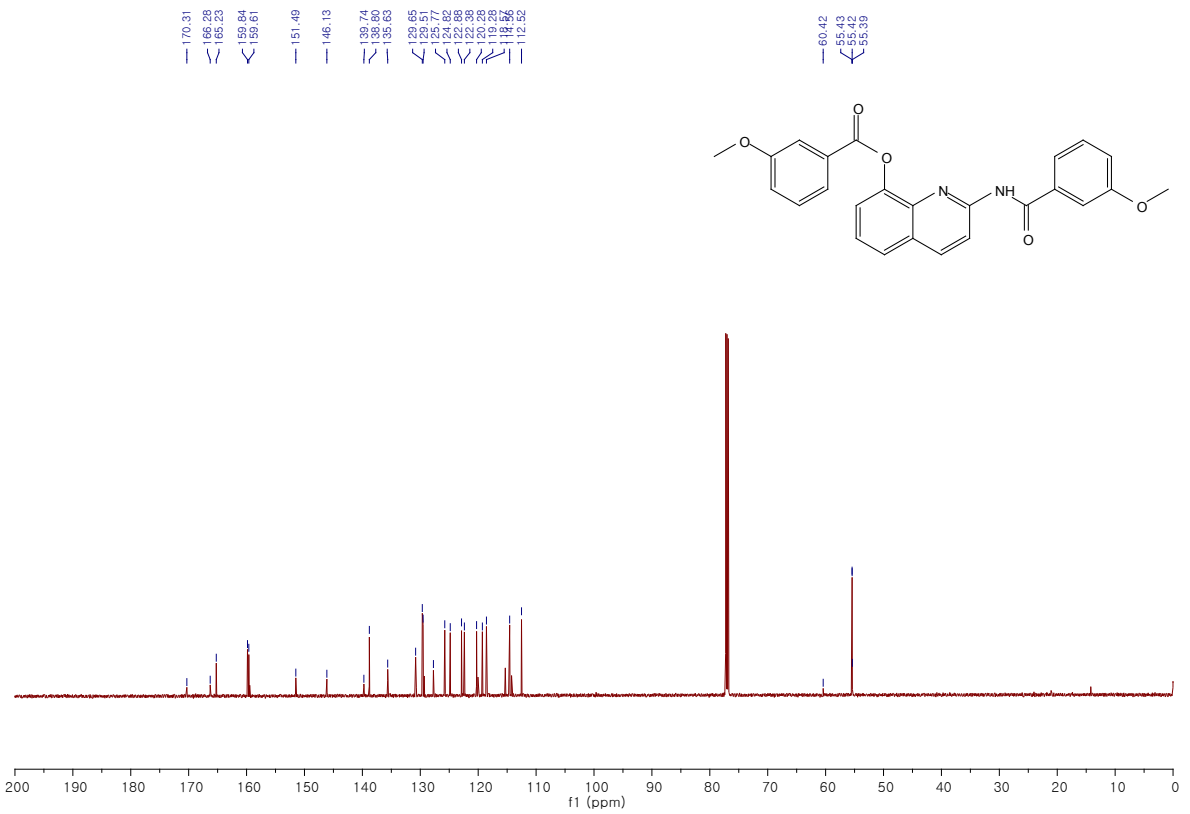


Figure S87. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 5e.

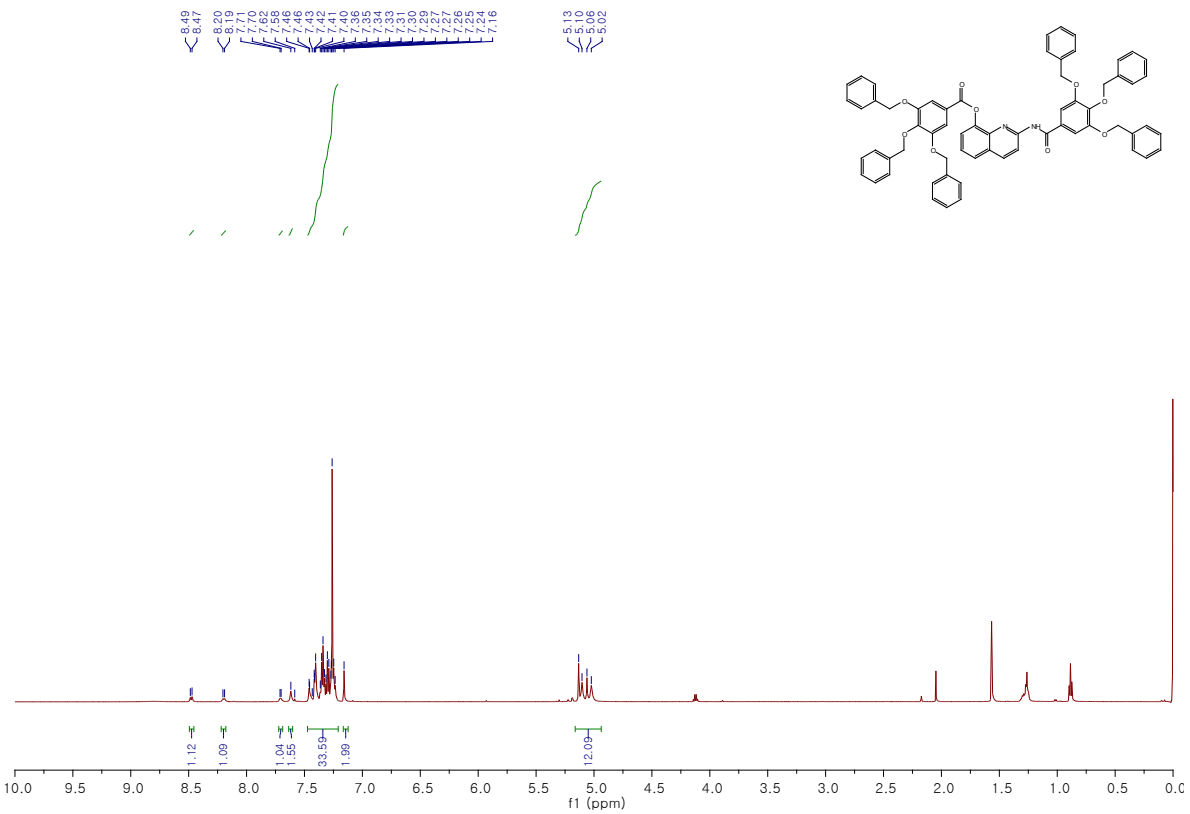


Figure S88. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 5f.

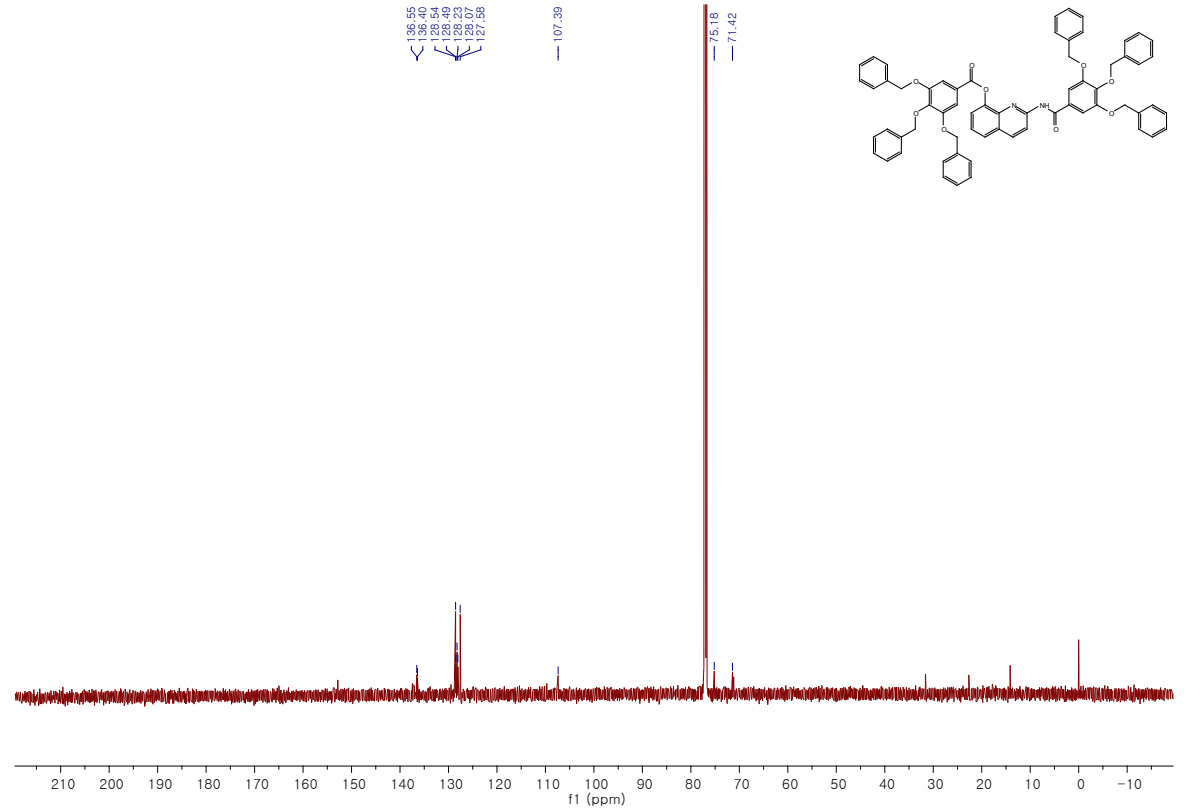


Figure S89. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 5f.

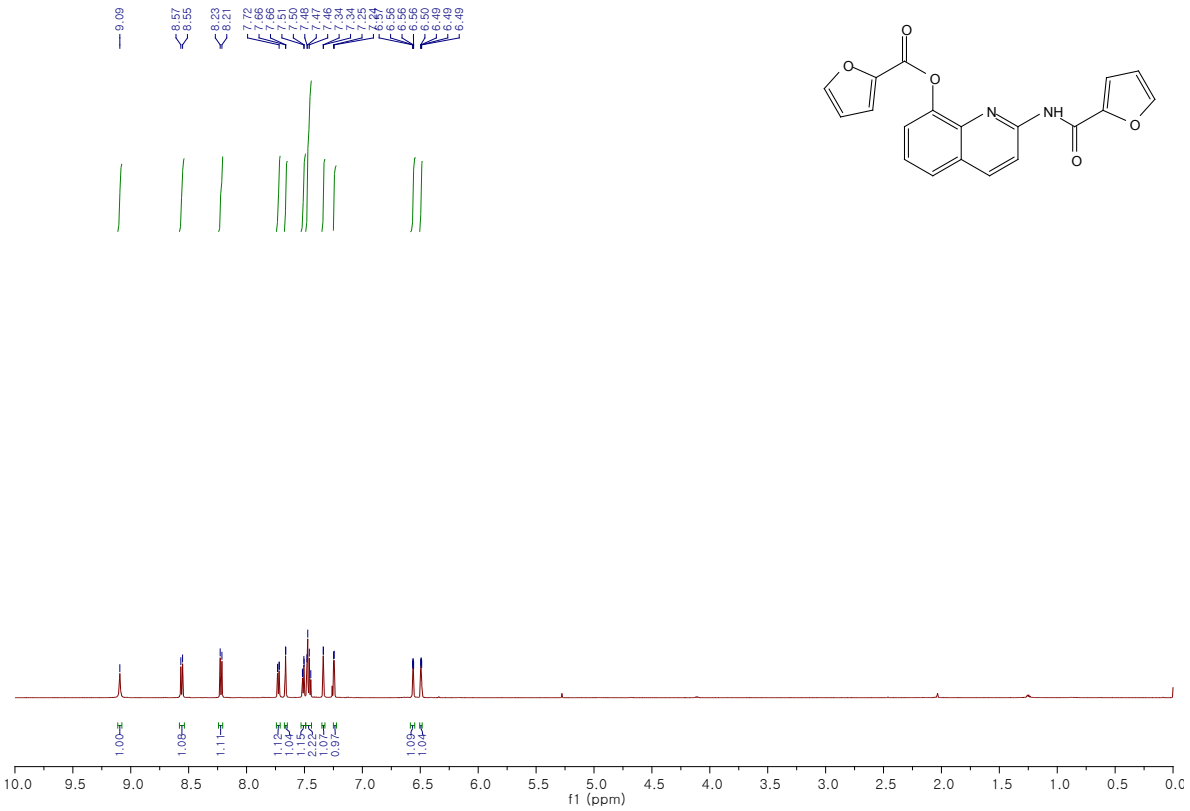


Figure S90. ^{1}H-NMR ($CDCl_3$, 600 MHz) of compound 5g.

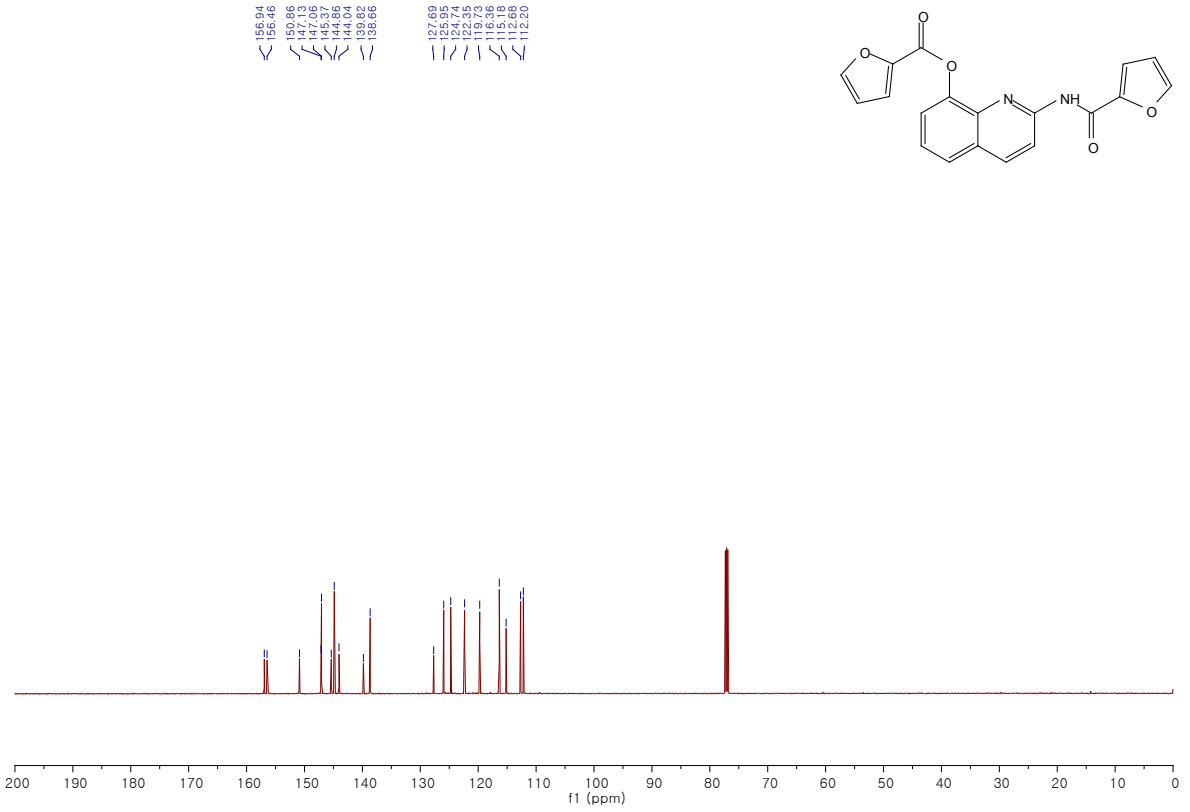


Figure S91. ^{13}C-NMR (150 MHz, $CDCl_3$) of compound 5g.

5. Preparation of single crystal for X-ray analysis

3,4,5-tris(benzyloxy)-N-(8-hydroxyquinolin-2-yl)benzamide (4h)

Single crystal of the **4h** was grown by layering in NMR tube in $CDCl_3$ solution, hexane was used as an antisolvent and a drop of benzene was added. The single crystal was obtained after keeping at 4 °C for 1 week.

2-aminoquinolin-8-yl 4-chlorobenzoate (3b)

Single crystal of **3b** was made by vapor diffusion in a diffusion chamber with 1 mL THF and 2 mL cyclohexane as an antisolvent. The single crystal was obtained after keeping at 4 °C for 4 days.

4-chloro-N-(8-hydroxyquinolin-2-yl)benzamide (4c)

Single crystal of the **4c** ester was made by vapor diffusion in a diffusion chamber with 1 mL THF solution and 2 mL cyclohexane as an antisolvent. The single crystal was obtained after keeping at 4 °C for 4 days.

Analysis of single crystal X-ray diffraction

A suitable crystal (approximate dimensions 0.3 x 0.2 x 0.1 mm^3) was selected and placed onto a nylon loop with Paratone-N oil and mounted on a SuperNova, Dual, Cu at zero, AtlasS2 diffractometer. The crystal was kept at room temperature during data collection. The structure was solved with the ShelXL structure solution program using direct methods and refined with the ShelXL refinement package of OLEX2.

Table S1 Crystal data and structure refinement for SG-HQ2 (4h), 3b, 4b

	SG-HQ2 (4h)	**3b**	**4b**
Formula	$C_{37}H_{30}N_2O_5$	$C_{16}H_{11}ClN_2O_2$	$C_{16}H_{11}ClN_2O_2$
Temperature/K	297.0(3)	293.3(3)	294(1)
Crystal system	monoclinic	monoclinic	triclinic
Space group	$P2_1/c$	I2/a	P-1
a/Å	17.841(4)	23.1622(3)	10.2425(2)
b/Å	8.9458(16)	3.82800(10)	11.2220(3)
c/Å	18.773(3)	31.4881(3)	13.7847(3)
α/°	90	90	112.293(2)
β/°	94.309(15)	99.6800(10)	92.6647(18)
γ/°	90	90	104.094(2)
Volume/Å^3	2987.7(9)	2752.14(8)	1404.75(6)
Z	4	8	4
Radiation	Cu Kα	Cu Kα	Cu Kα
Data/restraints/parameters	6241/0/398	2882/0/200	5881/0/381
Goodness-of-fit on F^2	1.069	1.041	1.068
Final R indexes [all data]	R_1 = 0.1821, wR_2 = 0.3937	R_1 = 0.0446, wR_2 = 0.1273	R_1 = 0.0436, wR_2 = 0.1142

The X-ray crystal structures of 4h, 3c and 4c

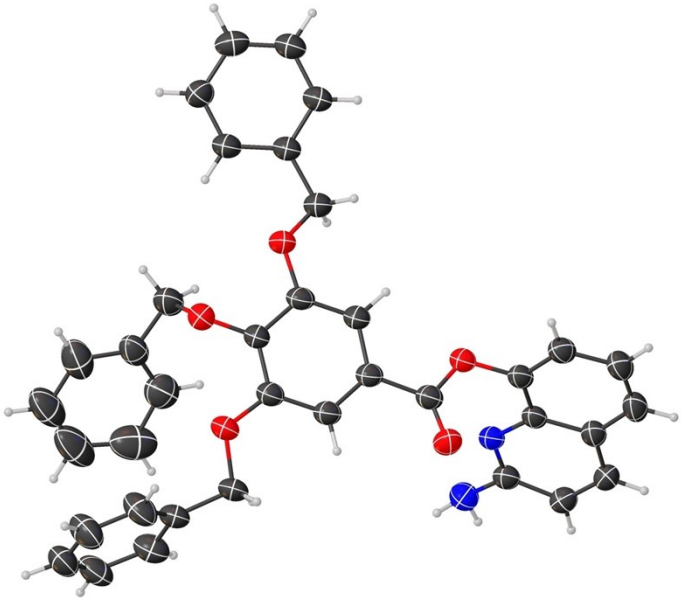


Figure S92. ORTEP diagrams of **4h** with thermal ellipsoids at 30% probability.

.

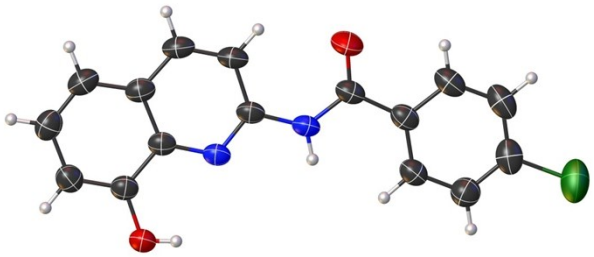


Figure S93. ORTEP diagrams of **3b** with thermal ellipsoids at 50% probability.

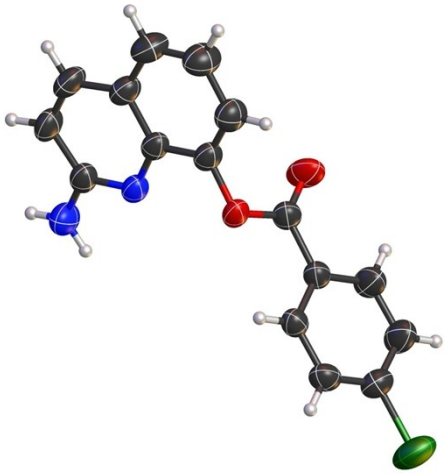
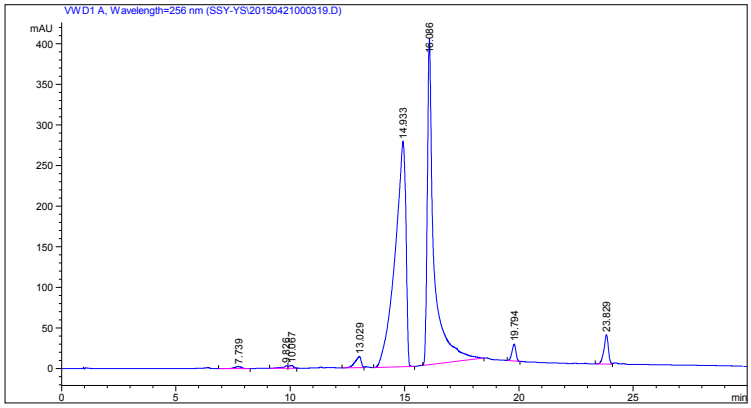


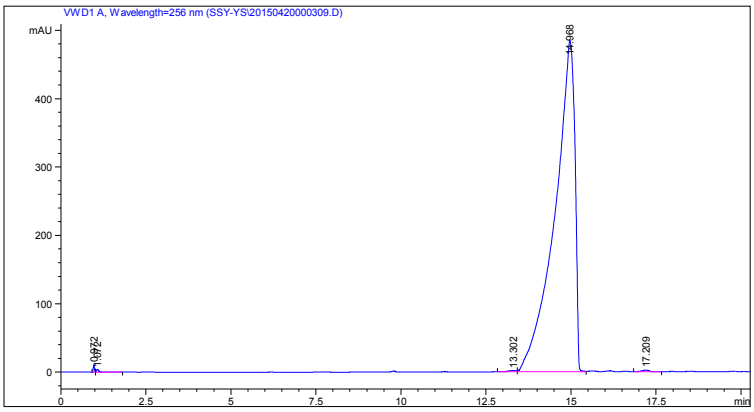
Figure S94. ORTEP diagrams of **4b** with thermal ellipsoids at 50% probability.

6. HPLC analysis in Table 1



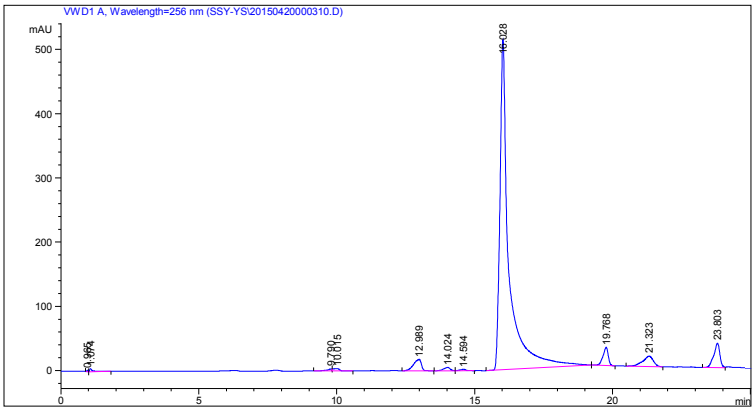
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	7.739	BB	0.3129	51.02781	2.49459	0.2748
2	9.826	BV	0.1861	43.55033	3.09328	0.2345
3	10.067	VB	0.1915	42.92062	3.28943	0.2312
4	13.029	BV	0.2506	256.46255	13.87210	1.3812
5	14.933	BB	0.4619	9219.54102	277.44287	49.6527
6	16.086	BB	0.2797	8220.75098	401.41565	44.2736
7	19.794	BB	0.1870	247.82561	20.59019	1.3347
8	23.829	BV	0.1990	485.97626	36.15687	2.6173

Figure S95 HPLC analysis of authentic mixture of *p*-methoxybenzoyl ester (**3a**) and amide (**4a**)



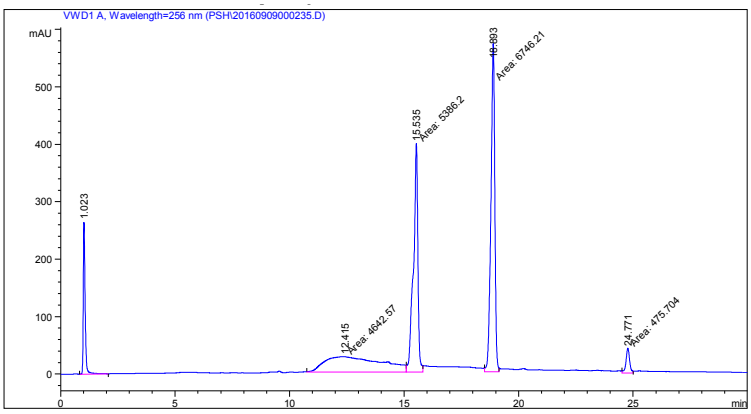
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	0.972	BV	0.0377	24.48672	10.38738	0.1226
2	1.072	VB	0.0841	24.27492	4.16178	0.1215
3	13.302	BV	0.2425	30.38230	1.92373	0.1521
4	14.968	VV	0.5612	1.98587e4	484.51944	99.4213
5	17.209	BB	0.2318	36.44161	2.53412	0.1824

Figure S96 HPLC analysis of authentic *p*-methoxybenzoyl C8-ester (**3a**)



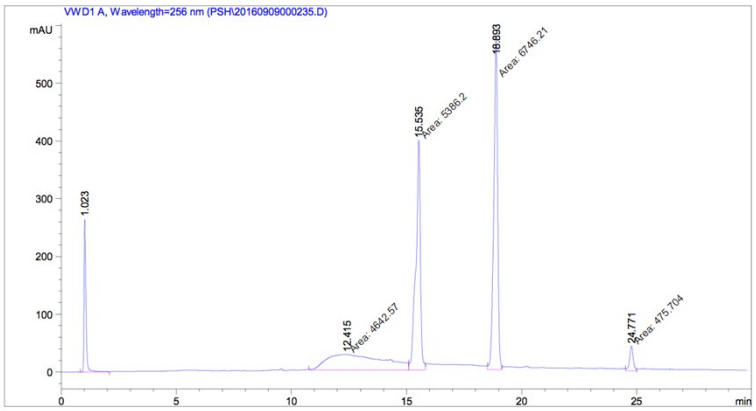
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	0.965	BB	0.0413	5.64205	2.11487	0.0413
2	1.074	BB	0.1140	40.23496	4.78873	0.2944
3	9.790	BV	0.1763	44.02928	3.26397	0.3221
4	10.015	VB	0.2182	60.21154	3.86399	0.4405
5	12.989	BB	0.2667	351.22577	17.79545	2.5697
6	14.024	BV	0.2664	87.08006	5.20741	0.6371
7	14.594	VB	0.2420	31.76961	2.11735	0.2324
8	16.028	BB	0.3068	1.16574e4	514.03693	85.2903
9	19.768	BB	0.1943	374.58636	28.45710	2.7406
10	21.323	BB	0.3899	429.06500	16.08113	3.1392
11	23.803	BV	0.2233	586.66797	38.11327	4.2923

Figure S97 HPLC analysis of *p*-methoxybenzoyl C2-amide (**4a**)



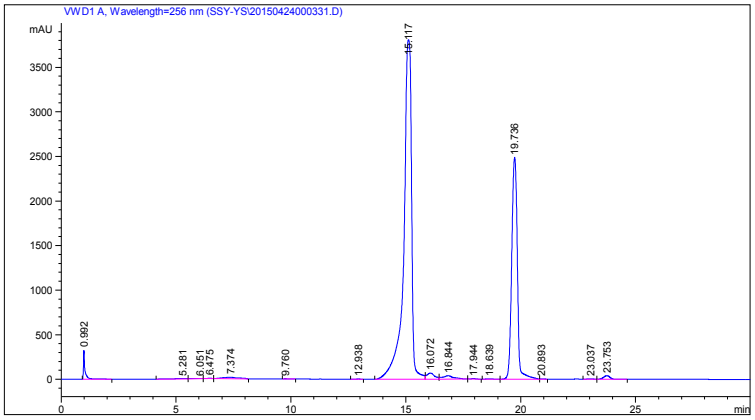
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.023	BV	0.0852	1503.98743	264.58588	8.0193
2	12.415	MM	2.9145	4642.56641	26.54828	24.7542
3	15.535	MM	0.2256	5386.20361	397.86374	28.7193

Figure S98. HPLC analysis of Table 1, entry 1, DCC (1.3 equiv), DMAP (0.5 equiv), rt, 24 h



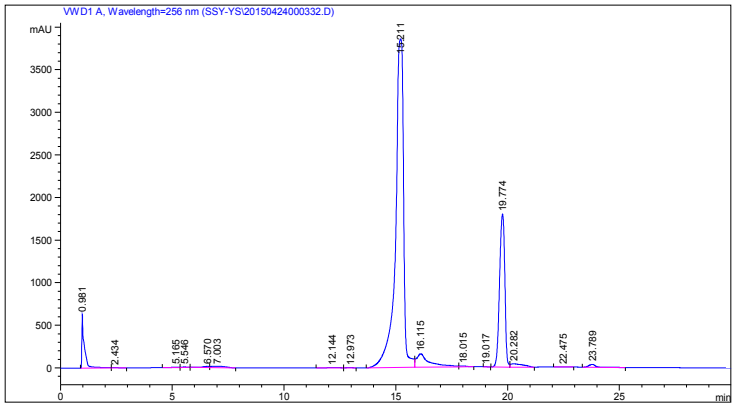
4	18.893	MM	0.1969	6746.20898	571.07611	35.9708
5	24.771	MM	0.1851	475.70428	42.84240	2.5365

Figure S99. HPLC analysis of Table 1, entry 2, EDCI (1.3 equiv), iPr_2NEt, rt, 24 h



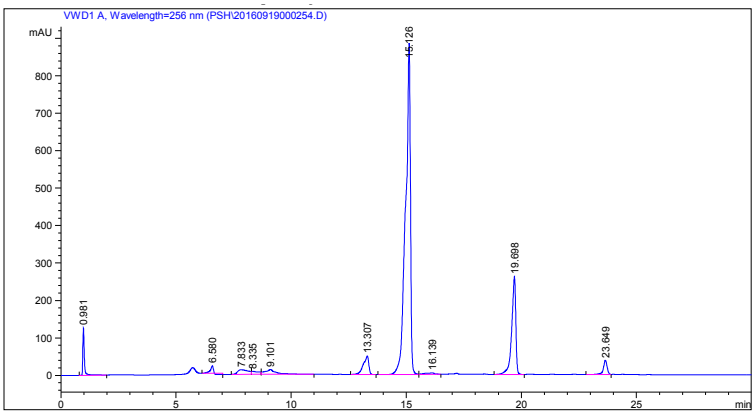
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	0.992	BB	0.0669	1591.03845	327.25790	1.1454
2	5.281	BV	0.4693	132.59822	3.73736	0.0955
3	6.051	VV	0.4382	69.49194	2.15872	0.0500
4	6.475	VB	0.2252	63.44515	4.14395	0.0457
5	7.374	BB	0.7481	786.92810	15.65332	0.5665
6	9.760	VB	0.1754	36.77995	2.87568	0.0265
7	12.938	BV	0.2706	44.91788	2.46815	0.0323
8	15.117	BV	0.3532	9.00681e4	3806.44531	64.8402
9	16.072	VV	0.3527	1598.75269	66.99922	1.1509
10	16.844	VB	0.4650	1293.62354	38.20231	0.9313
11	17.944	BB	0.2548	79.79263	5.11368	0.0574
12	18.639	BB	0.2581	77.61893	4.73861	0.0559
13	19.736	BV	0.2723	4.22443e4	2488.26123	30.4117
14	20.893	VV	0.2139	53.85111	3.92485	0.0388
15	23.037	BB	0.2504	32.29681	2.02215	0.0233
16	23.753	BB	0.2953	734.24213	39.52865	0.5286

Figure S100 HPLC analysis of Table 1, entry 3, EDCI (1.3 equiv), DMAP (0.5 equiv), iPr_2NEt, rt, 24 h



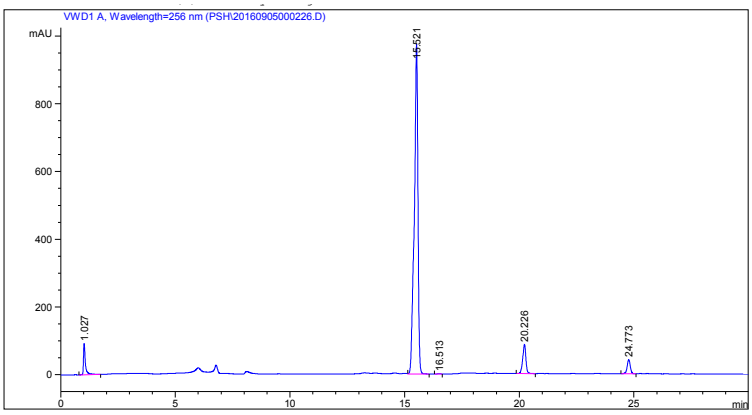
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	0.981	BV	0.0998	4824.67822	628.48798	3.4178
2	2.434	VB	0.3259	82.85815	3.90968	0.0587
3	5.165	BV	0.2815	81.70554	3.88952	0.0579
4	5.546	VB	0.1939	63.42876	4.61438	0.0449
5	6.570	BV	0.3035	266.14886	13.12997	0.1885
6	7.003	VB	0.7215	702.88849	15.28179	0.4979
7	12.144	VV	0.5765	163.57835	3.62122	0.1159
8	12.973	VB	0.2804	63.46211	3.46881	0.0450
9	15.211	BV	0.3722	9.65070e4	3853.88721	68.3662
10	16.115	VV	0.5431	6430.57129	158.52843	4.5555
11	18.015	VB	0.3304	202.01534	9.14944	0.1431
12	19.017	VB	0.1891	35.64569	2.94917	0.0253
13	19.774	BV	0.2652	2.94061e4	1796.96606	20.8315
14	20.282	VB	0.5270	1590.38928	39.70477	1.1266
15	22.475	BB	0.3451	61.19325	2.70881	0.0433
16	23.789	BB	0.3044	680.16711	34.70573	0.4818

Figure S101 HPLC analysis of Table 1, entry 4, EDCI (1.3 equiv), DMAP (0.5 equiv), iPr_2NEt, reflux, 24 h



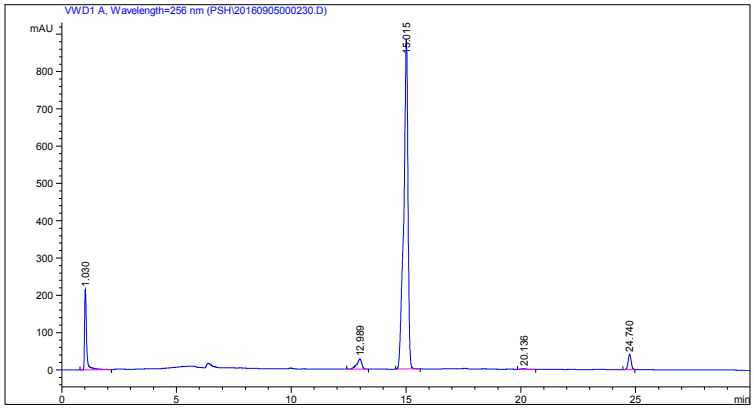
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
4	8.335	HH	0.2829	171.25650	7.85828	0.8871
5	9.101	HB	0.4337	441.30902	12.95806	2.2859
6	13.307	HB	0.2220	812.16339	49.39222	4.2068
7	15.126	BH	0.1972	1.29854e4	885.37836	67.2618
8	16.139	HH	0.3654	126.62316	4.17923	0.6559
9	19.698	BH	0.1757	3222.45605	261.66586	16.6917
10	23.649	BH	0.1725	433.47363	37.96698	2.2453

Figure S102 HPLC analysis of Table 1, entry 5, EDCI (1.3 equiv), HOBt (0.5 equiv), Et_3N, rt, 24 h



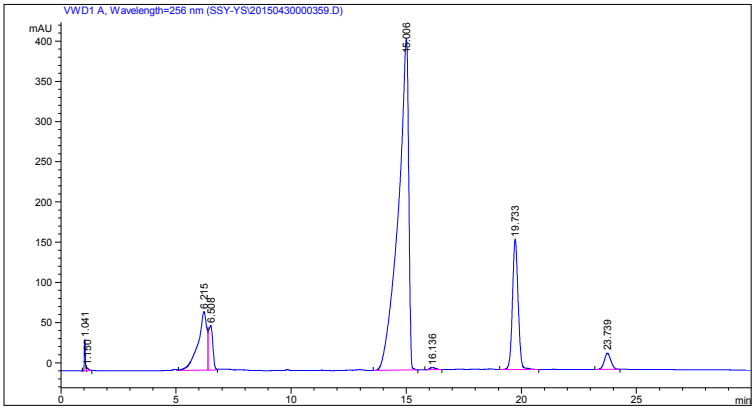
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.027	BB	0.0840	538.29639	92.40935	4.3086
2	15.521	HB	0.1590	1.07327e4	973.78925	85.9055
3	16.513	BH	0.1269	7.42924	8.86834e-1	0.0595
4	20.226	HB	0.1445	822.00372	85.30499	6.5794
5	24.773	HB	0.1458	393.18423	41.37619	3.1471

Figure S103 HPLC analysis of Table 1, entry 6, EDCI (1.3 equiv), HOAt (0.5 equiv), iPr_2NEt, rt, 24 h



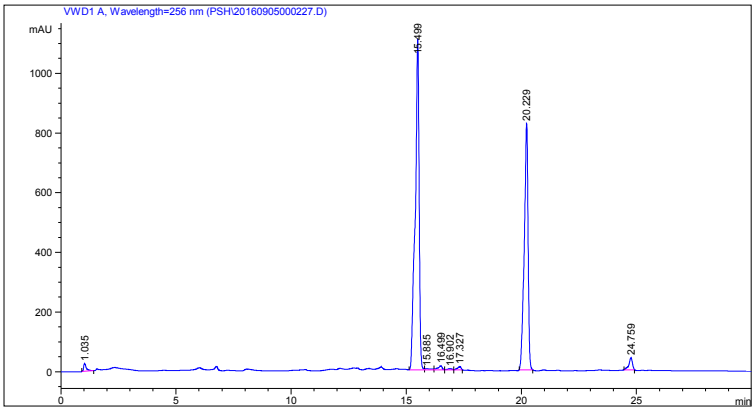
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.030	BB	0.0949	1351.01672	215.81392	9.9631
2	12.989	HB	0.2168	407.88559	27.03651	3.0079
3	15.015	BH	0.1848	1.13872e4	885.44080	83.9745
4	20.136	HB	0.2424	32.53624	2.14600	0.2399
5	24.740	BH	0.1451	381.66016	41.52211	2.8146

Figure S104 HPLC analysis of Table 1, entry 7, EDCI (1.3 equiv), DMAP (0.5 equiv), iPr_2NEt, rt, 3 h



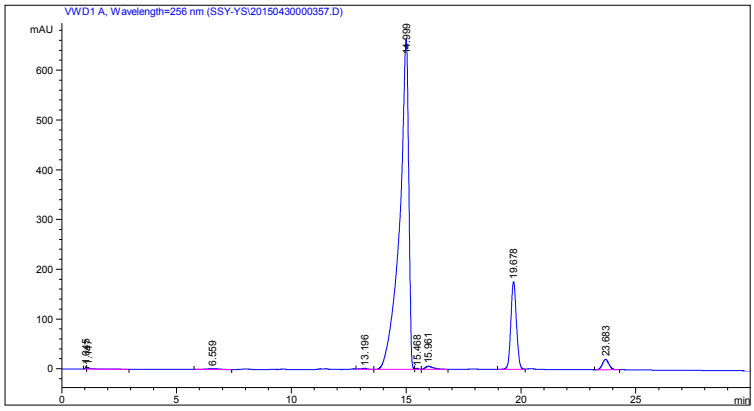
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.041	BV	0.0422	106.33498	38.74271	0.5592
2	1.150	VB	0.0885	19.36809	3.18214	0.1019
3	6.215	BV	0.3635	1960.16956	72.83083	10.3079
4	6.508	VV	0.1906	719.68311	55.50499	3.7846
5	15.006	BB	0.4272	1.30260e4	411.92273	68.4997
6	16.136	BB	0.2706	45.65895	2.67276	0.2401
7	19.733	BB	0.2576	2743.22144	161.68330	14.4257
8	23.739	BB	0.3001	395.70337	20.05310	2.0809

Figure S105 HPLC analysis of Table 1, entry 8, HATU (1.3 equiv), iPr_2NEt, rt, 24 h



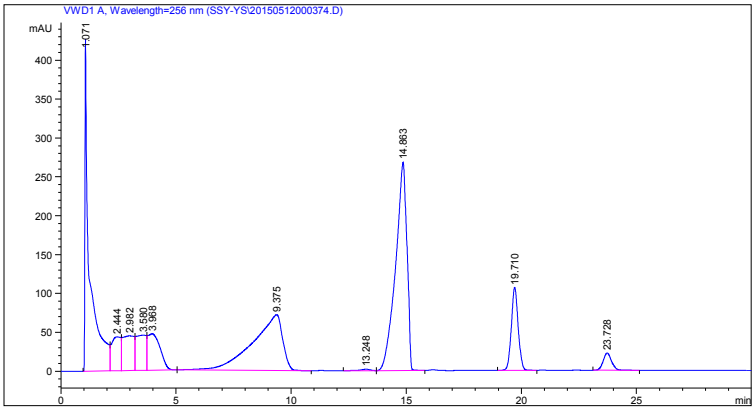
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.035	BB	0.1300	220.59694	25.52355	0.9338
2	15.499	PH T	0.1672	1.31075e4	1107.82104	55.4821
3	15.885	H T	0.2735	72.96860	3.48284	0.3089
4	16.499	H T	0.1705	164.65790	13.58799	0.6970
5	16.902	H T	0.1927	42.74485	3.55472	0.1809
6	17.327	H T	0.1496	109.79536	10.89503	0.4647
7	20.229	PH T	0.1675	9483.23438	825.74622	40.1410
8	24.759	PH T	0.1592	423.28052	40.19876	1.7917

Figure S106 HPLC analysis of Table 1, entry 9, PyBop (1.3 equiv), iPr_2NEt, rt, 4 h



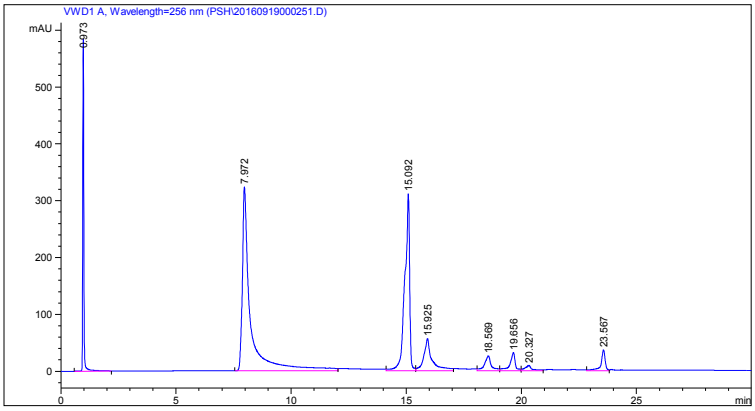
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.045	BV	0.0455	13.55091	4.48224	0.0610
2	1.147	VB	0.1854	43.41385	3.04208	0.1955
3	6.559	BB	0.5155	66.84064	1.73301	0.3010
4	13.196	VB	0.3172	56.19168	2.34718	0.2530
5	14.999	BV	0.3876	1.84681e4	663.01544	83.1679
6	15.468	VV	0.1373	18.47124	1.93979	0.0832
7	15.961	VB	0.3600	149.59258	6.07761	0.6737
8	19.678	BV	0.2597	2977.76074	176.22758	13.4098
9	23.683	BB	0.3002	411.87933	20.99262	1.8548

Figure S107 HPLC analysis of Table 1, entry 10, 4-methoxybenzoyl chloride (1.2 equiv), Et_3N, rt, 4 h



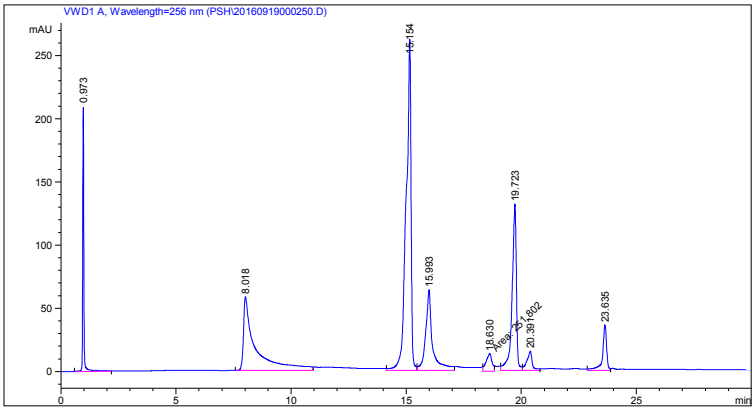
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.071	BV	0.1780	6049.59912	427.89633	19.8830
2	2.444	VV	0.4095	1206.28564	43.48595	3.9647
3	2.982	VV	0.4859	1526.90771	44.53640	5.0184
4	3.580	VV	0.4432	1395.50818	45.20489	4.5866
5	3.968	VB	0.5846	1765.50781	46.92358	5.8026
6	9.375	BB	1.1664	6461.52783	71.90076	21.2369
7	13.248	BV	0.4370	64.86675	2.06167	0.2132
8	14.863	VB	0.4643	9189.62305	267.90106	30.2033
9	19.710	BB	0.3096	2197.46411	106.95488	7.2223
10	23.728	BB	0.3898	568.63208	22.15212	1.8689

Figure S108 HPLC analysis of Table 1, entry 11, 4-methoxybenzoyl chloride (1.2 equiv), pyridine, rt, 24h



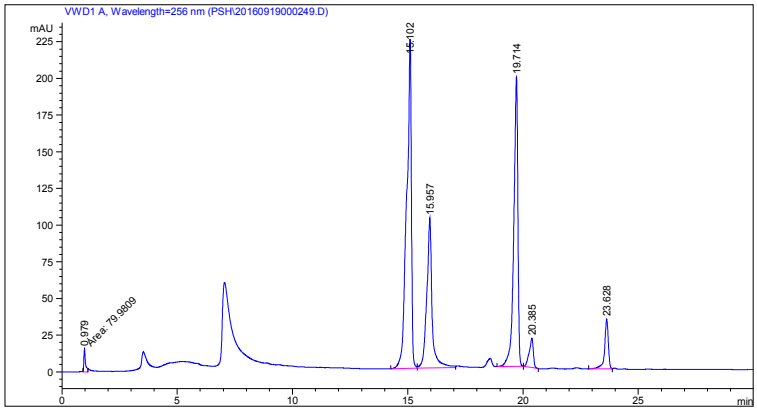
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	0.973	BV	0.0498	1922.52808	587.36560	10.9690
2	7.972	HH S	0.3238	7858.10693	323.48657	44.8345
3	15.092	HH	0.1961	4565.74023	311.27759	26.0499
4	15.925	HH	0.3218	1415.01697	56.66873	8.0734
5	18.569	HH	0.2762	543.94177	26.27806	3.1035
6	19.656	HH	0.2235	521.53717	32.02246	2.9756
7	20.327	HH	0.2977	218.95819	9.56268	1.2493
8	23.567	HH	0.1898	481.08807	36.58801	2.7449

Figure S109 HPLC analysis of Table 1, entry 12, CDI (1.3 equiv), rt, 24 h



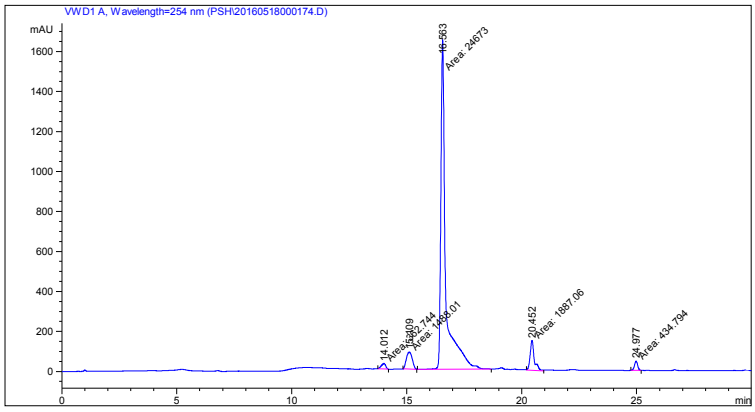
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	0.973	VV	0.0511	710.80316	210.37077	6.6452
2	8.018	HH	0.4643	2102.99609	58.32565	19.6606
3	15.154	HH	0.1982	3896.05859	262.08170	36.4236
4	15.925	HH	0.3218	1415.01697	56.66873	8.0734
5	18.569	HH	0.2762	543.94177	26.27806	3.1035
6	19.656	HH	0.2235	521.53717	32.02246	2.9756
7	20.327	HH	0.2977	218.95819	9.56268	1.2493
8	23.567	HH	0.1898	481.08807	36.58801	2.7449

Figure S110 HPLC analysis of Table 1, entry 13, CDI (1.3 equiv), reflux, 24 h



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	0.979	MM	0.0832	79.98094	16.03107	1.0044
2	15.102	BH	0.1906	3190.58472	224.57256	40.0687
3	15.957	HH	0.2165	1633.93262	102.52798	20.5196
4	19.714	BH	0.1774	2436.05908	197.39302	30.5931
5	20.385	HH	0.1752	248.76735	20.07367	3.1241
6	23.628	BB	0.1665	373.45319	33.86475	4.6900

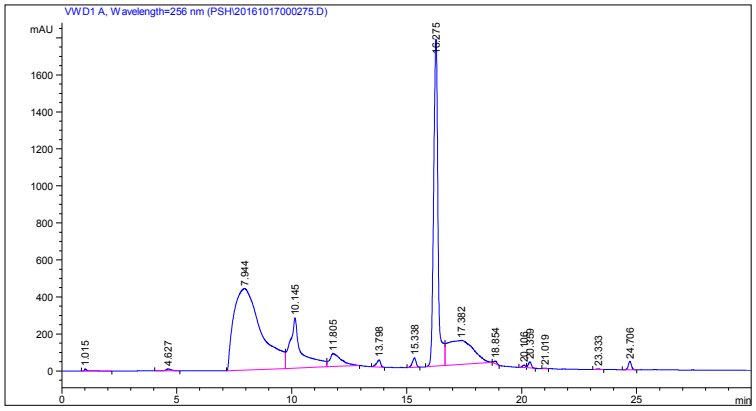
Figure S111 HPLC analysis of Table 1, entry 14, CDI (1.0 equiv), reflux, 24 h



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	14.012	MM	0.2199	362.74432	27.49884	1.2575
2	15.109	MM	0.2944	1488.01001	84.22723	5.1585
3	16.563	MM	0.2493	2.46730e4	1649.24316	85.5347
4	20.452	MM	0.2097	1887.06274	149.96741	6.5420
5	24.977	MM	0.1574	434.79361	46.04012	1.5073

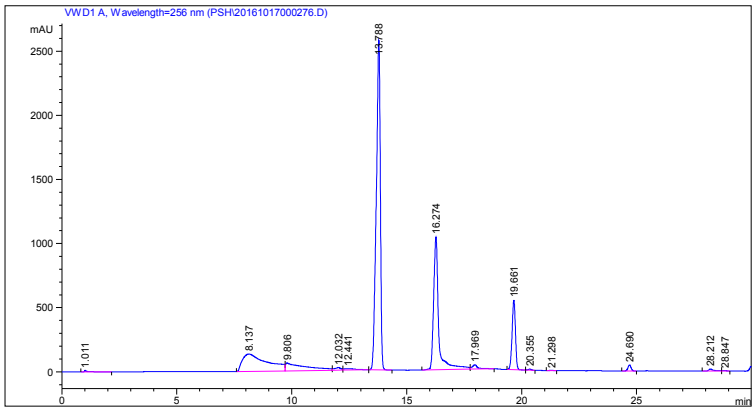
Figure S112 HPLC analysis of Table 1, entry 15, CDI (1.3 equiv), NaH (2 equiv), rt, 3 h

7. HPLC analysis in Table 2



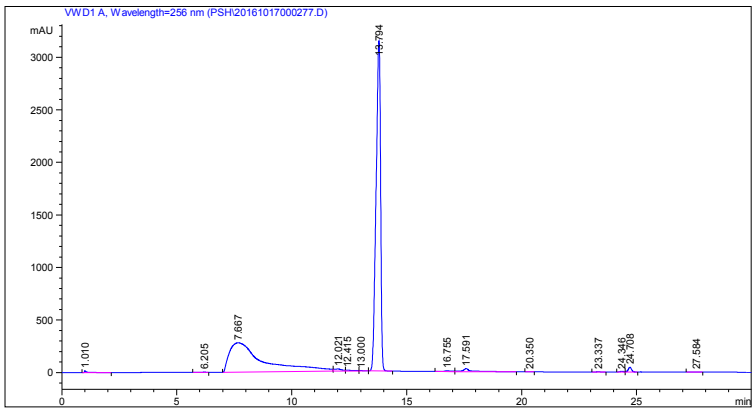
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.015	BB	0.0944	77.12463	11.06128	0.0916
2	4.627	BB	0.2426	173.59320	10.33300	0.2062
3	7.944	BV	1.3175	3.64482e4	440.59952	43.2957
4	10.145	VV	0.4470	9570.33594	270.97177	11.3683
5	11.805	VB	0.4720	2485.64893	69.84393	2.9526
6	13.798	BB	0.1748	463.56946	38.65974	0.5507
7	15.338	BB	0.1703	562.46924	50.10668	0.6681
8	16.275	BV	0.2044	2.32351e4	1766.24768	27.6003
9	17.382	VB	1.0035	1.01254e4	128.94714	12.0276
10	18.854	BB	0.1369	119.16031	13.63762	0.1415
11	20.106	BV	0.1458	131.27226	13.63487	0.1559
12	20.359	VB	0.1497	317.25510	32.66832	0.3769
13	21.019	BV	0.1366	18.18744	2.05805	0.0216
14	23.333	BB	0.1581	36.19147	3.55499	0.0430
15	24.706	BB	0.1429	420.89175	45.47739	0.5000

Figure S113 HPLC analysis of Table 2, entry 2, NaH (2.0 equiv), 24 h



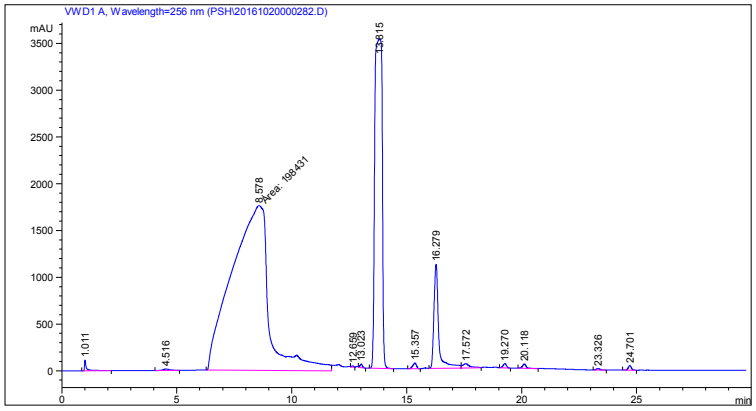
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.010	BB	0.0856	99.40861	15.99396	0.1344
2	6.205	BB	0.1597	32.38504	2.89439	0.0438
3	7.667	BV	1.5189	2.87646e4	279.99582	38.9025
4	12.021	VV	0.3053	513.97552	21.94077	0.6951
5	12.415	VV	0.3140	216.60870	8.86985	0.2930
6	13.000	VB	0.1695	51.46142	4.14786	0.0696
7	13.794	BB	0.1996	4.27853e4	3141.94775	57.8647
8	16.755	BV	0.2785	154.63245	7.68367	0.2091

Figure S114 HPLC analysis of Table 2, entry 3, *n*-BuLi (2.0 equiv), 4 h



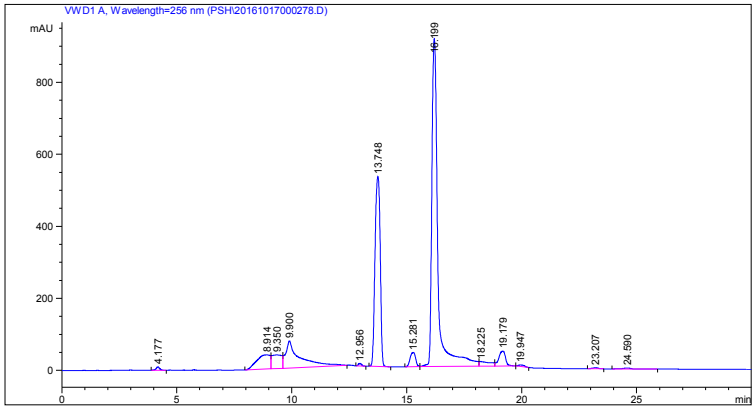
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.011	BB	0.0865	712.03314	113.11604	0.2398
2	4.516	BB	0.2528	312.81122	16.74942	0.1054
3	8.578	MM	1.8782	1.98431e5	1760.82214	66.8340
4	12.659	VB	0.0951	84.09570	13.40147	0.0283
5	13.023	VB	0.1143	296.96344	38.68196	0.1000
6	13.815	BB	0.3073	7.77885e4	3519.97217	26.2001
7	15.357	BB	0.1715	683.55865	60.33674	0.2302
8	16.279	BV	0.2176	1.58772e4	1111.63660	5.3477
9	17.572	VV	0.3169	1102.08826	47.30938	0.3712
10	19.270	BB	0.1571	465.87958	46.16305	0.1569

Figure S115 HPLC analysis of Table 2, entry 4, iPrMgCl (2.0 equiv), 24 h



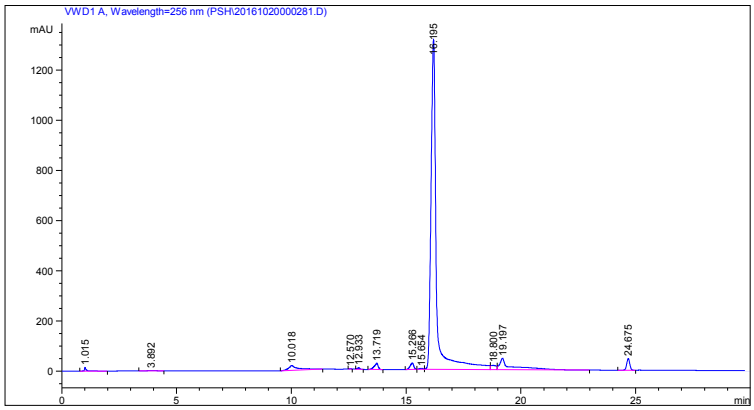
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
6	13.748	BB	0.2571	8265.19434	527.26520	24.9985
7	15.281	BB	0.2681	637.10278	39.22286	1.9269
8	16.199	BV	0.2779	1.65593e4	909.63550	50.0845
9	18.225	VV	0.4278	422.79178	12.50962	1.2788
10	19.179	VB	0.3243	848.78381	41.27934	2.5672
11	19.947	BB	0.3065	81.12395	4.34719	0.2454
12	23.207	BB	0.3202	50.85431	2.64699	0.1538
13	24.590	BB	0.3834	65.13049	2.55434	0.1970

Figure S116 HPLC analysis of Table 2, entry 5, *t*-BuOK (1.0 equiv), 24 h



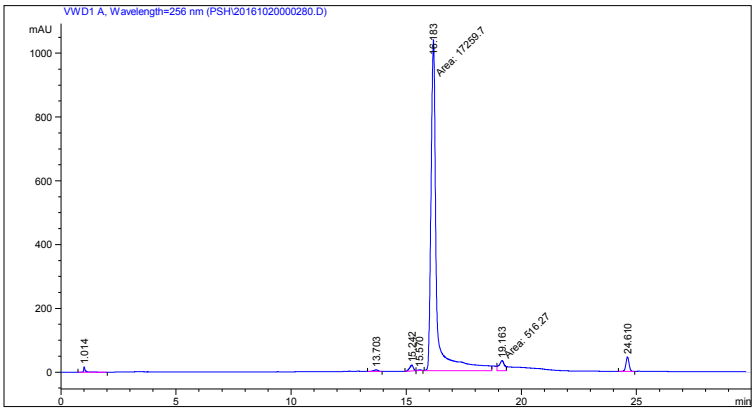
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
6	13.748	BB	0.2571	8265.19434	527.26520	24.9985
7	15.281	BB	0.2681	637.10278	39.22286	1.9269
8	16.199	BV	0.2779	1.65593e4	909.63550	50.0845
9	18.225	VV	0.4278	422.79178	12.50962	1.2788
10	19.179	VB	0.3243	848.78381	41.27934	2.5672
11	19.947	BB	0.3065	81.12395	4.34719	0.2454
12	23.207	BB	0.3202	50.85431	2.64699	0.1538
13	24.590	BB	0.3834	65.13049	2.55434	0.1970

Figure S117 HPLC analysis of Table 2, entry 6, *t*-BuOK (2.0 equiv), 2 h



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
5	12.933	VB	0.1170	44.05045	5.57213	0.1748
6	13.719	BB	0.1758	295.96536	24.25520	1.1746
7	15.266	BB	0.1666	281.66254	25.52220	1.1178
8	15.654	BV	0.1757	49.62551	4.24540	0.1969
9	16.195	VV	0.2456	2.14331e4	1314.15540	85.0607
10	18.800	VV	0.2311	286.87378	17.18947	1.1385
11	19.197	VB	0.4623	1660.52490	45.79566	6.5901
12	24.675	BV	0.1457	435.39011	46.49386	1.7279

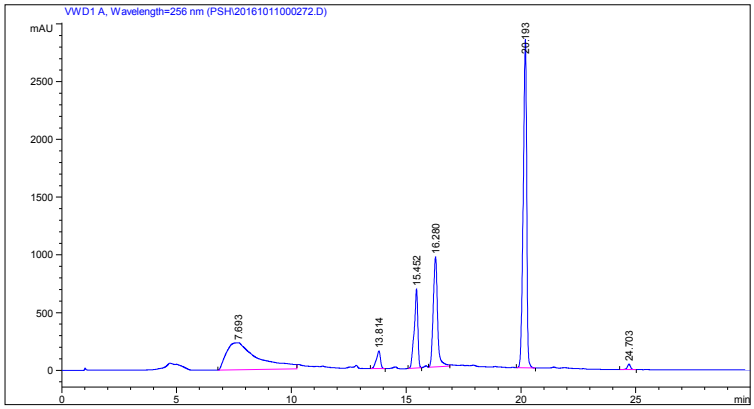
Figure S118 HPLC analysis of Table 2, entry 7, *t*-BuOK (2.5 equiv), 1 h



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
5	16.183	MM	0.2775	1.72597e4	1036.80322	92.9570
6	19.163	MM	0.2681	516.27026	32.09851	2.7805
7	24.610	BV	0.1461	426.87015	45.39019	2.2990

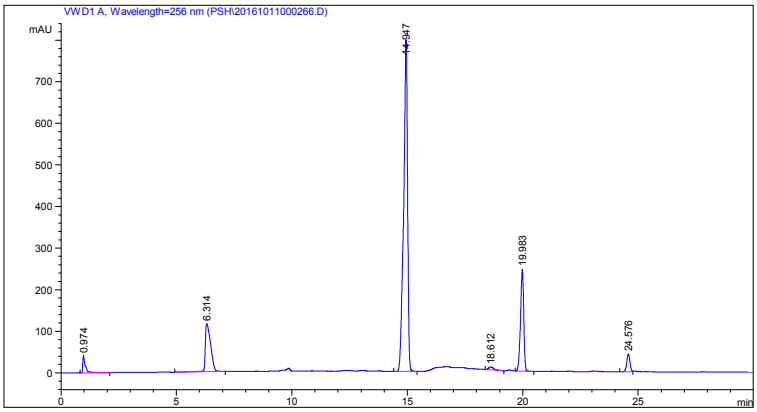
Figure S119 HPLC analysis of Table 2, entry 8, *t*-BuOK (3.0 equiv), 0.5 h

8. HPLC analysis in Table 3



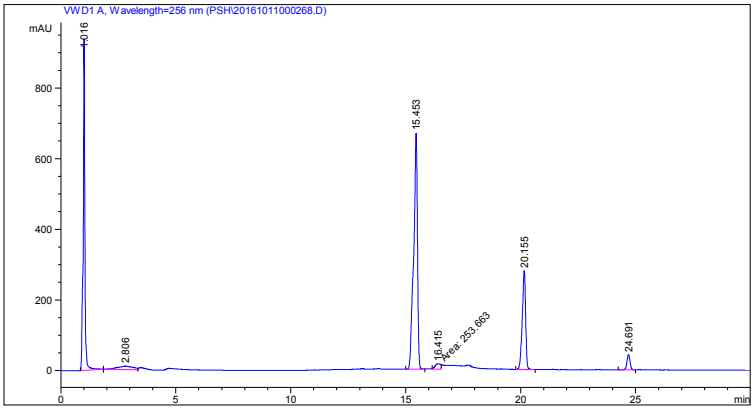
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	7.693	BV	1.1502	2.24931e4	234.98672	30.2498
2	13.814	BV	0.1789	1890.42383	153.21947	2.5423
3	15.452	BV	0.1556	7416.05566	684.22827	9.9735
4	16.280	BV	0.2030	1.24138e4	952.59497	16.6946
5	20.193	BB	0.1566	2.96923e4	2848.39771	39.9315
6	24.703	BV	0.1492	452.28699	46.77787	0.6083

Figure S120. HPLC analysis of Table 3, entry 1



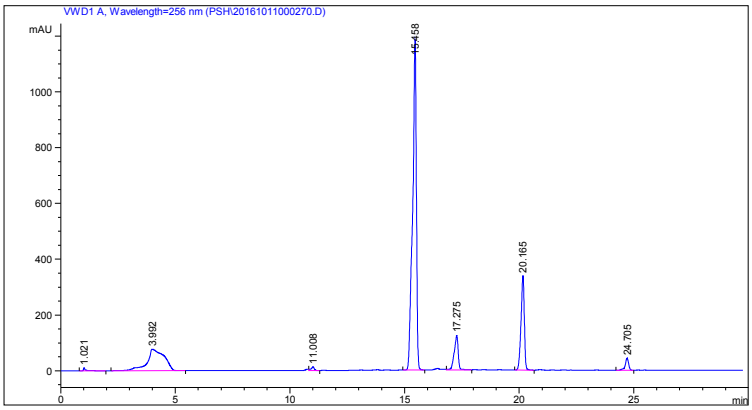
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	0.974	VB	0.1102	322.46384	40.56422	2.2222
2	6.314	BB	0.2659	1852.92004	115.43001	12.7688
3	14.947	BB	0.1718	9454.75879	797.71002	65.1543
4	18.612	BB	0.2371	107.86018	7.09493	0.7433
5	19.983	BB	0.1476	2374.39893	245.80315	16.3624
6	24.576	BV	0.1453	398.93613	42.74579	2.7491

Figure S121. HPLC analysis of Table 3, entry 2



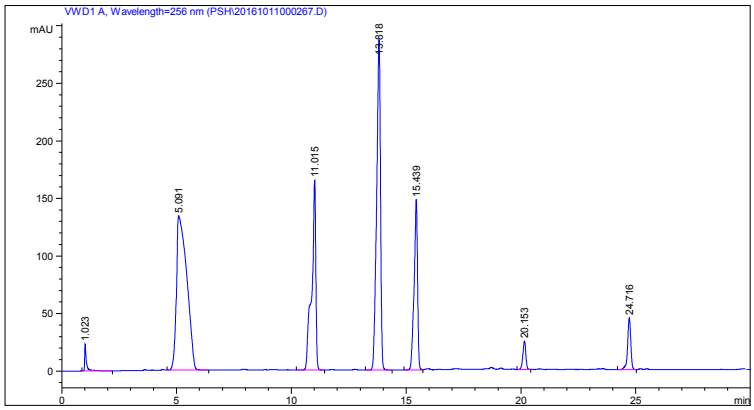
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.016	BB	0.0707	4756.75098	940.46521	29.0336
2	2.806	BV	0.6007	452.57574	9.57978	2.7624
3	15.453	BV	0.1627	7649.06299	668.07898	46.6873
4	16.415	MM	0.2727	253.66312	15.50507	1.5483
5	20.155	BB	0.1531	2866.54590	279.66656	17.4964
6	24.691	BV	0.1444	405.01566	43.16187	2.4721

Figure S122. HPLC analysis of Table 3, entry 3



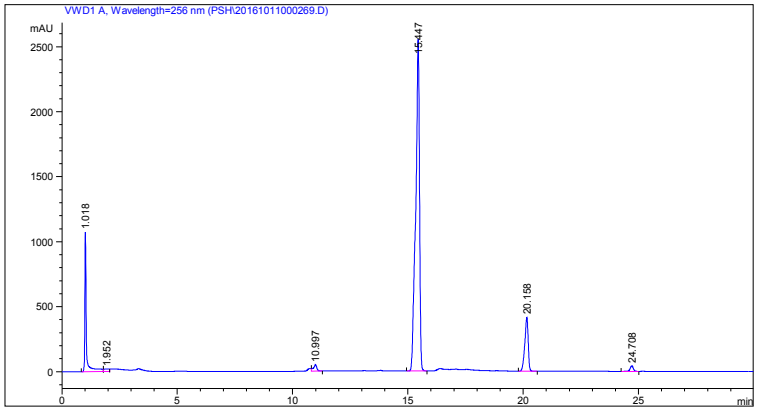
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.021	BB	0.0749	60.90342	11.50704	0.2634
2	3.992	BB	0.6737	3994.06006	77.17799	17.2712
3	11.008	VV	0.1391	126.98858	12.95206	0.5491
4	15.458	BB	0.1648	1.36138e4	1183.34546	58.8689
5	17.275	VV	0.1723	1490.86401	123.96378	6.4468
6	20.165	BB	0.1503	3395.77954	339.25125	14.6841
7	24.705	BV	0.1542	443.21701	43.37648	1.9166

Figure S123. HPLC analysis of Table 3, entry 4



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.023	BB	0.0752	126.84547	23.26951	1.0668
2	5.091	BB	0.5185	4188.96484	134.18446	35.2291
3	11.015	BB	0.1716	2054.91968	164.85330	17.2818
4	13.818	BB	0.1693	3338.55859	286.87268	28.0772
5	17.275	VV	0.1723	1490.86401	123.96378	6.4468
6	20.165	BB	0.1503	3395.77954	339.25125	14.6841
7	24.705	BV	0.1542	443.21701	43.37648	1.9166

Figure S124. HPLC analysis of Table 3, entry 5



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.018	BV	0.0643	4855.90088	1075.50671	12.2511
2	1.952	VV	0.2276	314.82007	19.66252	0.7943
3	10.997	VV	0.1471	510.31491	49.23336	1.2875
4	15.447	BV	0.1644	2.93022e4	2553.71387	73.9272
5	20.158	BB	0.1524	4236.87842	415.85101	10.6893
6	24.708	BV	0.1487	416.42599	43.26843	1.0506

Figure S125. HPLC analysis of Table 3, entry 6

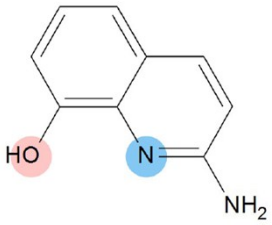
9. pK_a Value determination of 2-amino-8-quinolinol

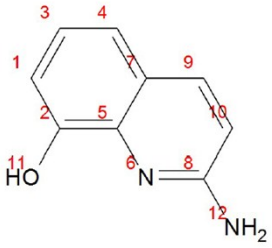
(1) ACD/LABS calculation

Strongest pKa(Acid): 6.7 +- 0.5

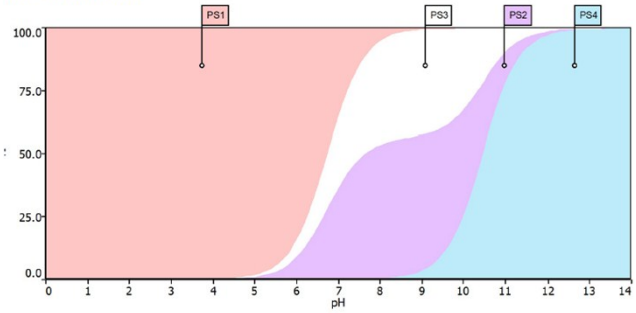
Strongest pKa(Base): 10.5 +- 0.5

6.7 +- 0.5 (Atom number: 11,6), 56% MS1, 44% MS2
10.5 +- 0.5 (Atom number: 6,11), 56% MS3, 44% MS4

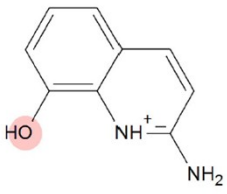




Net Charge vs pH

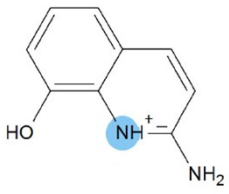


MS1



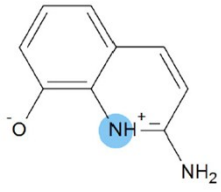
PS1 ⇄ PS2 + H^+, pK_a(microconstant) = 7.0

MS2



PS1 ⇄ PS3 + H^+, pK_a(microconstant) = 7.1

MS3



PS2 ⇄ PS4 + H^+, pK_a(microconstant) = 10.2

(2) An experimental curve for NMR chemical shift perturbation depending on pHs