Supporting Information

Palladium-Catalyzed Synthesis of 2-(Aminomethyl)indoles from Ethyl 3-(*o*-Trifluoroacetamidophenyl)-1-propargyl Carbonate

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Melting points were determined with a Büchi B-545 apparatus and are uncorrected. All of the reagents, catalysts, and solvents are commercially available and were used as purchased, without further purification. Compounds **1a** and **1b** were purified on axially compressed columns, packed with SiO_2 25-40 μm (Macherey Nagel), connected to a Gilson solvent delivery system and to a Gilson refractive index detector, and eluting with *n*-hexane/ethyl acetate mixtures. Reaction products were purified by flash chromatography, using basic Al_2O_3 Brockmann activity II (Fluka) as stationary phase, eluting with *n*-hexane/ethyl acetate mixtures. ^{1}H NMR (400.13 MHz), ^{13}C NMR (100.6 MHz) and ^{19}F NMR (376.5 MHz) spectra were recorded with a Bruker Avance 400 spectrometer. Splitting patterns are designed as s (singlet), d (doublet), t (triplet), q (quartet), sp (septuplet), m (multiplet), or bs (broad singlet). IR spectra were recorded with a Jasco FT/IR-430 spectrometer.

Preparation of (1a): *o*-iodoaniline (1.50 g, 6.85 mmol), $PdCl_2(PPh_3)_2$ (0.072 g, 0.103 mmol) and CuI (0.020 g, 0.103 mmol) were added to 2.5 mL of DMF and 5.0 mL of Et_2NH and the mixture was stirred under argon for 15 minutes. Then, tetrahydro-2-(2-propynyloxy)-2*H*-pyran (1.15 g, 1.15 mL, 8.22 mmol) was added dropwise in 5 minutes and the resulting reaction mixture was stirred at 60 °C for 12 h. After cooling, the reaction mixture was diluted with diethyl ether, washed twice with NH_4Cl solution, dried over Na_2SO_4 and concentrated under reduced pressure.

The crude mixture was dissolved in 10 mL of THF containing Et_3N (6.85 mmol, 0.95 mL) and cooled at 0 °C. Then, trifluoroacetic anhydride (13.7 mmol, 1.93 mL) was added dropwise in 10 minutes and the resultant solution was stirred at room temperature for 2 hours. After this time, the solution was diluted with diethyl ether, washed twice with a saturated $NaHCO_3$ solution, dried over Na_2SO_4 and concentrated under reduced pressure.

The residue was dissolved in 12 mL of an acetone/water 1:1 solution and *p*-toluensulfonic acid hydrate (1.30 g, 6.85 mmol) was added. The resulting solution was heated at 40 °C and stirred for 6 hours. After cooling, the reaction mixture was diluted with diethyl ether, washed twice with $NaHCO_3$ solution, dried over Na_2SO_4 and concentrated under reduced pressure.

The final crude mixture was dissolved in 7 mL of CH_2Cl_2, Et_3N (10.3 mmol, 1.427 mL) was added and ethyl chloroformate (8.22 mmol, 0.78 mL) was added dropwise at 0 °C. The resulting solution was stirred at room temperature for 2 hours. Then, the reaction mixture was diluted with diethyl ether, washed twice with a saturated NaCl solution, dried over Na_2SO_4 and concentrated under reduced pressure. The residue was purified by chromatography (SiO_2, 140 g; *n*-hexane/ethylacetate 90/10 v/v) to give 1.73 g (80 % overall yield) of **1a:** m.p.: 69-70 °C; IR (KBr): 3319, 2987, 1748, 1713, 1379 cm^{-1} ; ^{1}H NMR ($CDCl_3$) δ 8.73 (bs, 1H), 8.36 (d, J = 8.3 Hz, 1H), 7.51-7.44 (m, 2H), 7.20 (t, J = 7.6 Hz 1H), 5.01 (s, 2H), 4.27 (q, J = 7.1 Hz, 2H), 1.35 (t, J = 7.1 Hz, 3H); ^{13}C NMR ($CDCl_3$) δ 154.7 (q, J = 37.6 Hz), 154.6, 136.8, 132.3, 130.5, 125.5, 119.9, 115.6 (q, J = 288.8 Hz) 112.2, 91.3, 81.1, 64.8, 55.4, 14.3; ^{19}F NMR ($CDCl_3$) δ -75.8 Anal calcd for $C_{14}H_{12}F_3NO_4$, C, 53.34; H, 3.84; N, 4.44. Found C, 53.21; H, 3.85; N, 4.40.

Preparation of (1b): compound **1b** was prepared as **1a** with the exception of the last step that was carried out as follow: the crude mixture derived from the acid-catalyzed hydrolysis of the tetrahydropyranyl intermediate was dissolved in 5 mL of pyridine. Then, acetic anhydride (34.2 mmol, 3.2 mL) was added dropwise at 0 °C. The resulting solution was stirred at room temperature for 2 hours. After this time, the reaction mixture was diluted with diethyl ether, washed (HCl 2 N, saturated $NaHCO_3$ solution, saturated NaCl solution), dried over Na_2SO_4 and concentrated under reduced pressure. The residue was purified by chromatography (SiO_2, 140 g; *n*-hexane/ethylacetate 90/10 v/v) to give 1.44 g (78% yield) of **1b:** m.p.: 89-91 °C; IR (KBr): 3319, 2987, 1748, 1713, 1379 cm^{-1} ; ^1H NMR ($CDCl_3$) δ 8.69 (bs, 1H), 8.35 (d, J = 8.3 Hz, 1H), 7.50-7.40 (m, 2H), 7.19 (t, J = 7.6 Hz 1H), 4.96 (s, 2H), 2.15 (s, 3H) ; ^{13}C NMR ($CDCl_3$) δ 170.1, 154.6 (q, J = 37.7 Hz), 136.7, 132.1, 130.4, 125.5, 119.9, 113.3 (q, J = 288.8 Hz), 112.4, 91.9, 80.5, 52.3, 20.6; ^{19}F NMR ($CDCl_3$) δ -75.8; Anal calcd for $C_{13}H_{10}F_3NO_3$, C, 54.74; H, 3.53; N, 4.91; . Found C, 54.59; H, 3.51; N, 4.88.

Typical procedure for the preparation of 2-(aminomethyl)indoles: a Carousel Tube Reactor (Radley Discovery), equipped with a magnetic stirrer, was charged with **1a** (0.050 g, 0.159 mmol), *N*-ethyl piperazine (0.055 g, 0.477 mmol), and $Pd(PPh_3)_4$ (0.009 g, 0.00795 mmol) in 1.0 mL of dry THF under argon. The mixture was warmed at 80 °C and stirred for 1.5 h. After cooling, the reaction mixture was dried under reduced pressure and the residue was purified by flash chromatography (Al_2O_3, 50 g; *n*-hexane/ethylacetate 70/30 v/v) to give 0.035 g of **6a** (90% yield): oil; IR (neat): 3404, 2935, 2816, 1454 cm^{-1}; ^1H NMR ($CDCl_3$) δ 8.64 (bs, 1H), 7.56 (d, J = 8.3 Hz, 1H), 7.33 (d, J = 8.3 Hz, 1H), 7.16-7.07 (m, 2H), 6.37 (s, 1H), 3.67 (s, 2H), 2.54-2.41 (m, 10H), 1.09 (t, J = 8.3 Hz, 3H); ^{13}C NMR ($CDCl_3$) δ 136.2, 135.8, 128.4, 121.6, 120.2, 119.6, 110.7, 101.7, 55.9, 53.3, 52.8, 52.3, 12.0; Anal calcd for $C_{15}H_{21}N_3$, C, 74.03; H, 8.70; N, 17.27. Found C, 74.01; H, 8.68; N, 17.25.

4a: oil; IR (neat): 3401, 2924, 2855, 1455 cm^{-1}; ^1H NMR ($CDCl_3$) δ 9.03 (bs, 1H), 7.57 (d, J = 8.3 Hz, 1H), 7.35 (d, J = 8.3 Hz, 1H), 7.18-7.07 (m, 2H), 6.37 (s, 1H), 3.67 (s, 2H), 2.51-2.41 (m, 4H), 1.62 (t, J = 5.3 Hz, 6H); ^{13}C NMR ($CDCl_3$) δ 136.3, 135.7, 128.3, 121.5, 120.1, 119.5, 110.9, 101.8, 56.5, 54.6, 25.8, 24.2; Anal calcd for $C_{14}H_{18}N_2$, C, 78.46; H, 8.47; N; 13.07. Found C, 78.39; H, 8.46; N; 13.04.

4b: oil; IR (neat): 3400, 2923, 2885, 1455, 1114 cm^{-1}; ^1H NMR ($CDCl_3$) δ 8.61 (bs, 1H), 7.59 (d, J_1 = 7.7 Hz, 1H), 7.35 (dd, J_1 = 7.7 Hz, J_2 = 0.8 Hz, 1H), 7.20-7.10 (m, 2H), 6.41 (s, 1H), 3.75 (t, J = 4.7 Hz, 4H), 3.68 (s, 2H), 2.51 (t, J = 4.4 Hz, 4H); ^{13}C NMR ($CDCl_3$) δ 136.2, 135.2, 128.3, 121.7, 120.2, 119.7, 110.7, 101.9, 66.9, 56.2, 53.7; Anal calcd for $C_{13}H_{16}N_2O$, C, 72.19; H, 7.46; N, 12.95. Found C, 72.10; H, 7.44; N, 12.96.

4c: oil; IR (neat): 3401, 2924, 2855, 1455, 1060 cm^{-1}; ^1H NMR ($CDCl_3$) δ 8.72 (bs, 1H), 7.55 (d, J = 7.9 Hz, 1H), 7.34 (d, J = 7.9 Hz, 1H), 7.17-7.05 (m, 2H), 6.35 (s, 1H), 3.77 (s, 2H), 2.58 (q, J = 7.1 Hz, 4H), 1.06 (t, J = 7.1 Hz, 6H) ; ^{13}C NMR ($CDCl_3$) δ 137.3, 136.0, 128.7, 121.4, 120.1, 119.6, 110.8, 100.9, 51.0, 46.9, 11.7; Anal calcd for $C_{13}H_{18}N_2$, C, 77.18; H, 8.97; N, 13.85. Found C, 77.02; H, 8.95; N, 13.80.

4d: oil; IR (neat): 3401, 2938, 2825, 1445, 1065 cm^{-1}; ^1H NMR ($CDCl_3$) δ 8.49 (bs, 1H), 7.51 (d, J = 7.9 Hz, 1H), 7.32 (d, J = 8.0 Hz, 1H), 7.17-7.05 (m, 2H), 6.38 (s, 1H), 3.81 (s, 2H), 3.10 (sp, J = 6.6 Hz, 2H), 1.07 (d, J = 7.6 Hz, 12H) ; ^{13}C NMR ($CDCl_3$) δ 137.2, 136.0, 128.7, 121.4, 120.1, 119.6, 110.8, 100.9, 48.5, 40.5, 20.8; Anal calcd for $C_{15}H_{22}N_2$, C, 78.21; H, 9.63; N, 12.16. Found C, 78.05; H, 9.64; N, 12.11.

6b: oil; IR (neat): 3399, 2939, 2825, 1447, 752 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 8.48 (bs, 1H), 7.58 (d, *J* = 8.0 Hz, 1H), 7.36 (d, *J* = 8.0 Hz, 1H), 7.28 (d, *J* = 8.0 Hz, 1H), 7.18 (t, *J* = 7.9 Hz, 1H), 7.11 (t, *J* = 7.9 Hz, 1H) , 6.96 (d, *J* = 2.7 Hz, 1H), 6.74 (dd, J_1 = 8.0 Hz, J_2 = 2.7 Hz, 1H), 6.40 (s, 1H), 3.73 (s, 2H), 3.18 (t, *J* = 4.5 Hz, 4H), 2.63 (t, *J* = 4.7 Hz, 4H); ^{13}C NMR ($CDCl_3$) δ 150.7, 136.2, 135.4, 132.9, 130.5, 128.4, 122.3, 121.8, 120.3, 119.8, 117.3, 115.4, 110.8, 101.9, 55.8, 52.9, 48.8; Anal calcd for $C_{19}H_{19}Cl_2N_3$, C, 63.34; H, 5.32; N, 11.66. Found C, 67,15; H, 5,19; N,11.63.

6c: wax; IR (neat): 3401, 2938, 2825, 1445, 751cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 8.47 (bs, 1H), 7.57 (d, *J* = 7.9 Hz, 1H), 7.44-7.30 (m, 3H), 7.21-7.07 (m, 3H), 6.37 (s, 1H), 3.68 (s, 2H), 3.47 (s, 2H), 2.52-2.42 (m, 8H) ; ^{13}C NMR ($CDCl_3$) δ 138.8, 136.2, 135.8, 132.4, 131.0, 130.8, 130.3, 128.4, 128.3, 121.6, 120.3, 119.7, 110.7, 101.7, 61.8, 55.8, 53.3, 53.1; Anal calcd for $C_{20}H_{21}Cl_2N_3$, C, 64.18; H, 5.65; N, 11.23. Found C, 64.28; H, 5.64; N, 11.22.

6d: wax; IR (neat): 3398, 2940, 2825, 2218, 1447, 751 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 8.50 (bs, 1H), 7.61-7.56 (m, 2H), 7.50 (t, *J* = 8.0 Hz, 1H), 7.36 (d, *J* = 7.9 Hz, 1H), 7.18 (t, *J* = 7.1 Hz, 1H), 7.11 (t, *J* = 7.1 Hz, 1H), 7.05-6.98 (m, 2H), 6.42 (s, 1H), 3.76 (s, 2H), 3.26 (t, *J* = 4.5 Hz, 4H), 2.73 (t, *J* = 4.6 Hz, 4H); ^{13}C NMR ($CDCl_3$) δ 155.5, 136.2, 135.3, 134.3, 133.8, 128.4, 121.8, 121.6, 120.3, 119.7, 118.7, 118.4, 110.7, 106.0, 101.9, 55.7, 53.1, 51.5; Anal calcd for $C_{20}H_{20}N_4$, C, 75.92; H, 6.37; N, 17.71. Found C, 75.75; H, 6.55; N, 17.75.

6e: m.p.: 139.7-141.8 °C; IR (KBr): 3405, 2938, 2825, 1500, 752 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 8.55 (bs, 1H), 7.60 (d, *J* = 7.9 Hz, 1H), 7.37 (d, *J* = 7.9 Hz, 1H), 7.20-7.11 (m, 2H), 7.02-6.87 (m, 4H), 6.42 (s, 1H), 3.75 (s, 2H), 3.15 (t, *J* = 4.8 Hz, 4H), 2.67 (t, *J* = 4.9 Hz, 3H); ^{13}C NMR ($CDCl_3$) δ 156.7 (d, *J* = 238.9 Hz), 147.4 (d, *J* = 2.1 Hz), 135.7, 135.0, 127.9, 121.2, 119.8, 119.2, 117.3, (d, *J* = 7.6 Hz), 115.0 (d, *J* = 21.9 Hz), 110.2, 101.3, 55.3, 52.8, 49.7; ^{19}F NMR ($CDCl_3$) δ -124.4; Anal calcd for $C_{19}H_{20}FN_3$, C, 73.76; H, 6.52; N, 13.58. Found C, 73.68; H, 6.50; N, 13.55.

6f: oil; IR (neat): 3405, 2938, 2825, 1500, 752 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 8.56 (bs, 1H), 7.57 (d, *J* = 7.8 Hz, 1H), 7.39-7.24 (m, 3H), 7.18-7.03 (m, 4H), 6.37 (s, 1H), 3.68-3.63 (m, 4H), 2.81-2.22 (m, 8H); ^{13}C NMR ($CDCl_3$) δ 161.5 (d, *J* = 246.1 Hz), 136.3, 135.5, 131.7 (d, *J* = 4.5 Hz), 128.9 (d, *J* = 8.2 Hz), 128.4, 124.5 (d, *J* = 14.8 Hz), 123.9 (d, *J* = 3.5 Hz), 121.6, 120.2, 119.7, 115.3 (d, *J* = 22.3 Hz), 110.8, 101.8, 55.8, 55.2, 53.2, 52.7; ^{19}F NMR ($CDCl_3$) δ -117.7; Anal calcd for $C_{20}H_{22}FN_3$, C, 74.28; H, 6.86; N, 12.99. Found C, 74.20; H, 6.87; N, 12.96.

6g: oil; IR (neat): 3406, 2938, 2824, 1500, 750 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 8.59 (bs, 1H), 7.59 (d, *J* = 7.8 Hz, 1H), 7.36 (d, *J* = 7.8 Hz, 1H), 7.22-7.06 (m, 4H), 7.00-6.95 (m, 2H), 6.43 (s, 1H), 3.76 (s, 2H), 3.16-3.14 (m, 4H), 2.71-2.69 (m, 4H); ^{13}C NMR ($CDCl_3$) δ 155.8 (d, *J* = 245.9 Hz), 140.1 (d, *J* = 8.7 Hz), 136.2, 135.6, 128.4, 124.5 (d, *J* = 3.5 Hz), 122.5 (d, *J* = 7.9 Hz), 121.7, 120.3, 119.7, 119.0 (d, *J* = 3 Hz), 116.2 (d, *J* = 20.8 Hz), 110.7, 101.8, 55.9, 53.4, 50.6; ^{19}F NMR ($CDCl_3$) δ -122.6; Anal calcd for $C_{19}H_{20}FN_3$, C, 73.76; H, 6.52; N, 13.58. Found C, 73.67; H, 6.50; N, 13.54.

6h: mp: 145.6 °C; IR (KBr): 3401, 2938, 2825, 1445, 751cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 8.49 (bs, 1H), 7.55 (d, *J* = 7.7 Hz, 1H), 7.35-7.24 (m, 5H), 7.17-7.06 (m, 2H), 6.36 (s, 1H), 3.67 (s, 2H), 3.49, (s, 2H), 2.51-2.39 (m, 8H) ; ^{13}C NMR ($CDCl_3$) δ 136.7, 136.1, 135.9, 132.8, 130.4, 128.5, 128.4, 121.6, 120.2, 119.6, 110.7, 101.5, 62.2, 55.8, 53.3, 53.1; Anal calcd for $C_{20}H_{22}ClN_3$, C, 70.68; H, 6.52; N, 12.36. Found C, 70.60; H, 6.52; N, 12.32

.**6i:** mp: 159.8-161.7 °C; IR (KBr): 3401, 2938, 2825, 1445, 751 cm^{-1}; ^1H NMR ($CDCl_3$) δ 8.50 (bs, 1H), 7.56 (d, *J* = 7.7 Hz, 1H), 7.45 (d, *J* = 7.7 Hz, 2H), 7.33 (d, *J* = 7.7 Hz, 1H), 7.22-7.09 (m, 4H), 6.37 (s, 1H), 3.67 (s, 2H), 3.48 (s, 2H), 2.52-2.40 (m, 8H); ^{13}C NMR ($CDCl_3$) δ 137.3, 136.1, 135.9, 131.4, 130.8, 128.5, 121.6, 120.9, 120.2, 119.6, 110.7, 101.6, 62.3, 55.8, 53.3, 53.1; Anal calcd for $C_{20}H_{22}BrN_3$, C, 62.50; H, 5.77; N, 10.93. Found C, 62.42; H, 5,76; N,10.92.

6j: oil; IR (neat): 3400, 2940, 2825, 1447, 742 cm^{-1}; ^1H NMR ($CDCl_3$) δ 8.51 (bs, 1H), 7.52 (d, *J* = 7.7 Hz, 1H), 7.49 (d, *J* = 7.7 Hz, 1H), 7.39-7.20 (m, 5H), 7.17-7.03 (m, 2H), 6.29 (s, 1H), 3.89 (s, 2H), 3.47 (dd, J_1 = 7.7 Hz, J_2 = 2.5 Hz, 1H), 3.10-3.01 (m, 2H), 2.86-2.76 (m, 2H), 2.29 (s, 3H), 2.15-2.09 (m, 1H), 1.97 (t, *J* = 10.0 Hz, 1H); ^{13}C NMR ($CDCl_3$) δ 141.4, 136.2, 135.8, 128.6, 128.4, 128.3, 121.2, 119.9, 119.4, 110.5, 101.2, 67.3, 63.7, 55.2, 52.2, 52.0, 45.7; Anal calcd for $C_{20}H_{23}N_3$, C, 78.65; H, 7.59; N, 13.76. Found C, 78.58; H, 7.60; N, 13.74.

6k: mp: 150.7 °C; IR (KBr): 3400, 2940, 2825, 1447, 749cm^{-1}; ^1H NMR ($CDCl_3$) δ 8.66 (bs, 1H), 7.62 (d, *J* = 7.7 Hz, 1H), 7.34 (d, *J* = 7.7 Hz, 1H), 7.26-7.11 (m, 6H), 6.41 (s, 1H), 3.70 (s, 2H), 3.55 (s, 2H), 2.58-2.46 (m, 8H), 2.40 (s, 3H) ; ^{13}C NMR ($CDCl_3$) δ 136.7, 136.1, 135.9, 134.9, 129.2, 128.9, 128.4, 121.5, 120.2, 119.6, 110.7, 101.5, 62.7, 55.8, 53.3, 53.0, 21.1; Anal calcd for $C_{21}H_{25}N_3$, C, 78.96; H, 7.89; N, 13.15. Found C, 78.85; H, 7.87; N, 13.14.

6l: wax; IR (neat): 3401, 2938, 2825, 1445, 751; ^1H NMR ($CDCl_3$) δ 8.51 (bs, 1H), 7.55 (d, *J* = 7.2 Hz, 1H), 7.33 (dd, J_1 = 7.2 Hz, J_2 = 0.8 Hz, 1H), 7.23-6.98 (m, 5H), 6.35 (s, 1H), 3.75 (s, 2H), 3.65 (s, 2H), 2.63-2.49 (m, 8H); ^{13}C NMR ($CDCl_3$) δ 161.7, (d, *J* = 249 Hz), 136.2 (d, *J* = 5.9 Hz), 135.6, 135.4, 128.6 (d, *J* = 9.7 Hz), 127.9, 124.9 (d, *J* = 1.3 Hz), 123.3 (d, *J* = 18.3 Hz), 121.0, 119.7, 119.1, 113.4 (d, *J* = 23.5 Hz), 110.2, 101.0, 55.3, 52.8, 52.2, 51.8; ^{19}F NMR ($CDCl_3$) δ -111.7 Anal calcd for $C_{20}H_{21}ClFN_3$, C, 67.13; H, 5.91; N, 11.74. Found C, 67,22; H, 5,90; N, 11.71.

6m: mp: 151.6 °C; IR (KBr): 3404, 2914, 2815, 1456, 1290, 1251, 751cm^{-1}; ^1H NMR ($CDCl_3$) δ 8.50 (bs, 1H), 7.55 (d, *J* = 7.9 Hz, 1H), 7.34 (dd, J_1 = 8.0 Hz, J_2 = 0.75 Hz, 1H), 7.25-7.21 (m, 2H), 7.17-7.06 (m, 2H), 6.86 (d, *J* = 7.9 Hz, 2H), 6.35 (s, 1H), 3.82 (s, 3H), 3.67 (s, 2H), 3.48 (s, 2H), 2.59-2.49 (m, 8H); ^{13}C NMR ($CDCl_3$) δ 158.3, 135.6, 135.4, 129.9, 129.5, 127.9, 121.0, 119.7, 119.1, 113.1, 110.2, 101.0, 61.9, 55.3, 54.8, 52.8, 52.4; Anal calcd for $C_{21}H_{25}N_3O$, C, 75.19; H, 7.51; N, 12.53. Found C, 67,15; H, 5,19; N, 12.49.

6n: oil; IR (neat): 3401, 2938, 2825, 1445, 751cm^{-1}; ^1H NMR ($CDCl_3$) δ 8.57 (bs, 1H), 7.57 (d, *J* = 7.3 Hz, 1H), 7.36 (d, *J* = 7.3 Hz, 1H), 7.19-7.10 (m, 2H), 6.86 (s, 2H), 6.36 (s, 1H), 3.66 (s, 2H), 3.49 (s, 2H), 2.52-2.42 (m, 8H), 2.38 (s, 6H), 2.30 (s, 3H); ^{13}C NMR ($CDCl_3$) δ 137.6, 135.8, 135.6, 135.5, 131.3, 128.4, 127.9, 121.0, 119.7, 119.1, 110.2, 100.9, 55.36, 55.32, 53.1, 52.2, 20.4, 19.6; Anal calcd for $C_{23}H_{29}N_3$, C, 79.50; H, 8.41; N, 12.09. Found C, 79.43; H, 8.42; N, 12.06.

6o: oil; IR (neat): 3401, 2938, 2825, 1445, 751cm^{-1}; ^1H NMR ($CDCl_3$) δ 8.47 (bs, 1H), 7.54 (d, *J* = 7.8 Hz, 1H), 7.37-7.07 (m, 12H), 6.34 (s, 1H), 4.24 (s, 1H), 3.67 (s, 2H), 2.56-2.34 (m, 8H); ^{13}C NMR ($CDCl_3$) δ 142.0, 141.2, 136.2, 135.6, 132.6, 129.2, 128.7, 128.6, 128.4, 127.9, 127.2, 121.6, 120.2, 119.6, 110.7, 101.7, 75.4, 55.8, 53.5, 51.7; Anal calcd for $C_{26}H_{26}ClN_3$, C, 75.07; H, 6.30; N, 10.10. Found C, 74.98; H, 6.29; N, 10.06.

6p: oil; IR (neat): 3400, 2940, 2825, 1748, 1713, 1447 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 8.52 (bs, 1H), 7.57 (d, *J* = 7.8 Hz, 1H), 7.35 (d, *J* = 7.9 Hz, 1H), 7.20-7.07 (m, 2H), 6.38 (s, 1H), 4.16 (q, *J* = 7.1 Hz, 2H), 3.68 (s, 2H), 3.54-3.46 (m, 4H), 2.49-2.41 (m, 4H), 1.28 (t, *J* = 7.1 Hz, 3H) ; ^{13}C NMR ($CDCl_3$) δ 155.6, 136.2, 135.4, 128.4, 121.7, 120.3, 119.8, 110.8, 101.9, 61.5, 55.9, 52.9, 43.8, 14.7; Anal calcd for $C_{13}H_{18}N_2$, C, 77.18; H, 8.97; N, 13.85. Found C, 77.02; H, 8.95; N, 13.80.