

# Supporting Information

## Multicomponent reaction for the synthesis of 1,2,3,4,6-pentasubstituted piperidines catalyzed by NIS

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## Methyl

**2,6-bis(2-fluorophenyl)-1-phenyl-4-(phenylamino)-1,2,5,6-tetrahydropyridine-3-carboxylate (4a)<sup>1</sup>**: white solid 0.89 g, Mp: 178-180 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 10.15 (s, 1H, -NH), 7.26 – 6.95 (m, 13H, ArH), 6.65 (t, *J* = 7.3 Hz, 1H, ArH), 6.55 (s, 1H, H-2), 6.48 (d, *J* = 8.2 Hz, 2H, ArH), 6.38 – 6.36 (m, 2H, ArH), 5.45 (s, 1H, H-6), 3.89 (s, 3H, -OMe), 2.93 – 2.87 (m, 2H, H-5); <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>) δ 167.85 (C=O), 160.53 (d, *J*<sub>C,F</sub> = 83.7 Hz), 158.89 (d, *J*<sub>C,F</sub> = 81.3 Hz), 154.93 (C-4), 145.69, 137.27, 129.16, 129.07, 128.41, 128.32, 128.26, 128.21, 127.72, 127.67, 125.25, 125.15, 123.75, 122.76, 116.30, 115.86, 115.71, 114.60, 114.45, 112.34, 96.07 (C-3), 51.65 (C-6), 51.47 (C-2), 50.42, 30.41 (C-5).

## Methyl

**2,6-bis(4-chlorophenyl)-1-phenyl-4-(phenylamino)-1,2,5,6-tetrahydropyridine-3-carboxylate (4b)<sup>2</sup>**: white solid 1.01 g, Mp: 220-222 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 11.97 (s, 0.77H, syn-NH), 10.25 (s, 0.93H, anti-NH), 7.26 – 7.01 (m, 25.67H, ArH), 6.73 (t, *J* = 7.3 Hz, 1.13H, ArH), 6.64 (t, *J* = 7.3 Hz, 1.02H, ArH), 6.51 (d, *J* = 8.0 Hz, 2.30H, ArH), 6.45 (d, *J* = 8.2 Hz, 2.04H, ArH), 6.40 (d, *J* = 6.8 Hz, 1.95H, ArH), 6.35 (s, 1.00H, syn-H-2), 5.87 (s, 1.12H, anti-H-2), 5.09 (d, *J* = 3.1 Hz, 0.96H), 5.01 (t, *J* = 5.4 Hz, 1.14H), 3.92 (s, 2.91H, syn-OMe), 3.85 (s, 3.48H, anti-OMe), 3.01 (dd, *J* = 16.6, 5.7 Hz, 1.17H), 2.82 (dd, *J* = 15.2, 5.5 Hz, 1.02H), 2.77 – 2.65 (m, 2.28H); <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>) δ 170.36 (syn-C=O), 169.74, 167.67 (anti-C=O), 155.37, 145.95, 145.83, 141.73, 140.29, 139.98, 139.77, 136.98, 132.29, 132.26, 132.19, 131.53, 128.41, 128.39, 128.19, 128.15, 127.81, 127.78, 127.74, 127.41, 127.37, 127.14, 125.41, 125.12, 118.68, 116.92, 116.14, 112.31, 100.85 (C-3), 96.91 (C-3), 57.02 (C-6), 56.73 (C-6), 55.30 (C-2), 54.11, 51.31, 50.53, 35.89 (C-5), 33.05 (C-5).

## Methyl

**1,2,6-triphenyl-4-(phenylamino)-1,2,5,6-tetrahydropyridine-3-carboxylate (4c)<sup>2</sup>**: white solid 0.80 g, Mp: 170-172 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 10.25 (s, 1H, -NH), 7.34 – 7.24 (m, 8H, ArH), 7.20-7.15 (m, 2H, ArH), 7.11-7.04 (m, 5H, ArH),

6.60 (t,  $J = 7.2$  Hz, 1H, ArH), 6.52 (d,  $J = 8.2$  Hz, 2H, ArH), 6.45 (s, 1H, H-2), 6.31 – 6.23 (m, 2H, ArH), 5.15 (d,  $J = 4.2$  Hz, 1H, H-6), 3.93 (s, 3H, -OMe), 2.87 (dd,  $J = 15.1, 5.7$  Hz, 1H, H-5'), 2.76 (dd,  $J = 15.1, 2.3$  Hz, 1H, H-5'');  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ )  $\delta$  167.94 (C=O), 155.64 (C-4), 146.32, 143.30, 142.10, 137.20, 128.25, 128.21, 128.00, 127.61, 126.51, 126.01, 125.76, 125.68, 125.24, 125.14, 115.54, 112.30, 97.32 (C-3), 57.57 (C-6), 54.49 (C-2), 50.38, 32.99 (C-5).

### Methyl

**1-phenyl-4-(phenylamino)-2,6-di-*p*-tolyl-1,2,5,6-tetrahydropyridine-3-carboxylate (4d)<sup>2</sup>**: white solid 0.82 g, Mp: 210-212 °C;  $^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )  $\delta$  10.25 (s, 1H, -NH), 7.19 (d,  $J = 7.9$  Hz, 2H, ArH), 7.12 – 7.02 (m, 11H, ArH), 6.59 (t,  $J = 7.3$  Hz, 1H, ArH), 6.52 (d,  $J = 8.3$  Hz, 2H, ArH), 6.39 (s, 1H, H-2), 6.33 – 6.25 (m, 2H, ArH), 5.11 (d,  $J = 3.9$  Hz, 1H, H-6), 3.92 (s, 3H, H-2), 2.86 (dd,  $J = 15.0, 5.6$  Hz, 1H, H-5'), 2.75 (dd,  $J = 15.1, 2.2$  Hz, 1H, H-5''), 2.33 (s, 3H, -Me), 2.32 (s, 3H, -Me);  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ )  $\delta$  167.97 (C=O), 155.64 (C-4), 146.44, 140.33, 139.06, 137.33, 135.97, 135.14, 128.63, 128.30, 128.21, 128.17, 126.12, 125.92, 125.69, 125.18, 124.99, 115.37, 112.28, 97.49 (C-3), 57.29 (C-6), 54.30 (C-2), 50.34, 33.02 (C-5), 20.46, 20.38.

### Methyl

**2,6-di(naphthalen-1-yl)-1-phenyl-4-(phenylamino)-1,2,5,6-tetrahydropyridine-3-carboxylate (4e)<sup>1</sup>**: white solid 0.95 g, Mp: 205-207 °C;  $^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )  $\delta$  12.73 (s, 0.51H, syn-NH), 10.81 (s, 0.92H, anti-NH), 8.16 – 7.86 (m, 5.78H, ArH), 7.59 (m, 9.49H, ArH), 7.41 – 7.28 (m, 2.13H, ArH), 7.24 – 6.74 (m, 16.62H, ArH), 6.60 (s, 1.03H), 6.51 (m, 3.08H), 6.41 (d,  $J = 7.9$  Hz, 2.08H), 6.21 – 6.15 (m, 1.39H), 5.41 (dd,  $J = 9.2, 3.6$  Hz, 1.00H), 5.26 – 5.18 (m, 0.769H), 3.71 (s, 2.98H, anti-OMe), 3.66 (s, 2.14H, syn-OMe), 3.06 (m, 1.77H), 2.76 (dd,  $J = 16.3, 3.6$  Hz, 1.05H), 2.52 (dd,  $J = 17.5, 3.1$  Hz, 0.75H);  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ )  $\delta$  173.69 (syn-C=O), 171.87, 169.48 (anti-C=O), 157.96, 147.50, 147.40, 139.52, 138.42, 137.97, 136.12, 135.44, 134.40, 134.28, 133.58, 133.36, 132.91, 132.71, 132.08, 131.51, 128.95, 128.57, 128.55, 128.43, 128.38, 128.35, 128.21, 128.17, 128.01, 127.87, 126.19,

125.93, 125.76, 125.56, 125.42, 125.37, 125.19, 125.15, 125.07, 124.85, 125.80, 124.71, 124.62, 124.24, 123.72, 123.62, 121.79, 121.36, 98.65 (C-3), 93.79, 58.53 (C-6), 58.27 (C-2), 52.53, 51.83, 51.49, 51.02, 28.75 (C-5), 27.70 (C-5).

#### Methyl

**1-phenyl-4-(phenylamino)-2,6-di(thiophen-2-yl)-1,2,5,6-tetrahydropyridine-3-carboxylate (4f)<sup>3</sup>**: white solid 0.76 g, Mp: 220-222 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 10.61 (s, 1H, -NH), 7.31 (t, *J* = 7.8 Hz, 2H, ArH), 7.27 – 7.11 (m, 5H, ArH), 7.08 – 7.02 (m, 2H, ArH), 6.98 (t, *J* = 8.8 Hz, 5H, ArH), 6.85 – 6.75 (m, 2H, ArH), 6.16 (s, 1H, H-2), 4.90 (dd, *J* = 11.3, 4.4 Hz, 1H, H-6), 3.75 (s, 3H, -OMe), 3.04 – 2.75 (m, 2H, H-5); <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>) δ 167.54 (C=O), 156.66 (C-4), 152.06, 149.30, 147.73, 137.68, 128.72, 128.42, 128.23, 128.10, 126.47, 125.85, 125.02, 124.51, 123.94, 123.47, 123.42, 123.38, 123.31, 118.64, 115.75, 112.75, 97.85 (C-3), 58.90 (C-6), 55.36 (C-2), 50.42, 36.33 (C-5).

#### Methyl

**1-(4-chlorophenyl)-4-((4-chlorophenyl)amino)-2,6-bis(4-fluorophenyl)-1,2,5,6-tetrahydropyridine-3-carboxylate (4g)<sup>4</sup>**: white solid 1.04 g, Mp: 175-177 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 10.22 (s, 1H, -NH), 7.21 (dd, *J* = 8.3, 5.4 Hz, 2H, ArH), 7.15 – 7.04 (m, 4H, ArH), 6.98 (m, 6H, ArH), 6.38 (d, *J* = 9.1 Hz, 2H, ArH), 6.32 – 6.26 (m, 3H, ArH, H-2), 5.07 (d, *J* = 3.7 Hz, 1H, H-6), 3.93 (s, 3H, -OMe), 2.82 (dd, *J* = 15.2, 5.6 Hz, 1H, H-5'), 2.68 (dd, *J* = 15.1, 2.1 Hz, 1H, H-5''); <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>) δ 167.65 (C=O), 162.06 (d, *J*<sub>C,F</sub> = 56.3 Hz), 160.43 (d, *J*<sub>C,F</sub> = 55.0 Hz), 154.77 (C-4), 144.49, 138.02, 136.92, 135.58, 131.06, 128.55, 128.21, 127.43, 127.24, 127.19, 126.27, 121.12, 115.13, 114.99, 114.68, 114.64, 114.45, 113.48, 97.66 (C-3), 56.77 (C-6), 54.18 (C-2), 50.66, 33.03 (C-5).

#### Methyl

**1-(4-chlorophenyl)-4-((4-chlorophenyl)amino)-2,6-diphenyl-1,2,5,6-tetrahydropyridine-3-carboxylate (4h)<sup>3</sup>**: white solid 0.91 g, Mp: 200-202 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 10.19 (s, 1H, -NH), 7.32 – 7.21 (m, 8H, ArH), 7.17 – 7.12 (m, 2H, ArH), 7.05 (d, *J* = 8.6 Hz, 2H, ArH), 6.99 (d, *J* = 9.0 Hz, 2H, ArH), 6.43 (t, *J* = 6.2 Hz, 2H,

ArH), 6.38 (s, 1H, H-2), 6.16 (d,  $J = 8.5$  Hz, 2H, ArH), 5.11 (d,  $J = 4.6$  Hz, 1H, H-6), 3.94 (s, 3H, -OMe), 2.85 (dd,  $J = 15.1, 5.8$  Hz, 1H, H-5'), 2.69 (dd,  $J = 15.1, 2.0$  Hz, 1H, H-5'');  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ )  $\delta$  167.84 (C=O), 154.96 (C-4), 144.85, 142.54, 141.62, 135.74, 130.85, 128.62, 128.41, 128.10, 127.76, 126.85, 126.47, 125.97, 125.88, 125.67, 120.64, 113.40, 97.85 (C-3), 57.68 (C-6), 54.67 (C-2), 50.56, 32.85 (C-5).

#### Methyl

**1-(4-chlorophenyl)-4-((4-chlorophenyl)amino)-2,6-bis(4-methoxyphenyl)-1,2,5,6-tetrahydropyridine-3-carboxylate (4i)<sup>2</sup>**: white solid 0.96 g, Mp: 199-200 °C;  $^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )  $\delta$  10.22 (s, 1H, -NH), 7.16 (d,  $J = 8.6$  Hz, 2H, ArH), 7.06 (dd,  $J = 13.0, 8.6$  Hz, 4H, ArH), 6.99 (d,  $J = 9.0$  Hz, 2H, ArH), 6.86 – 6.78 (m, 4H, ArH), 6.42 (d,  $J = 9.1$  Hz, 2H, ArH), 6.28 (s, 1H, H-2), 6.25 (d,  $J = 8.5$  Hz, 2H, ArH), 5.04 (d,  $J = 3.8$  Hz, 1H, H-6), 3.93 (s, 3H, -OMe), 3.80 (s, 3H, -OMe), 3.78 (s, 3H, -OMe), 2.83 (dd,  $J = 15.1, 5.6$  Hz, 1H, H-5'), 2.68 (dd,  $J = 15.0, 2.2$  Hz, 1H, H-5'');  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ )  $\delta$  167.86 (C=O), 158.31, 157.63, 155.03 (C-4), 144.91, 135.84, 134.44, 133.43, 130.72, 128.41, 128.04, 126.94, 126.75, 126.35, 120.52, 113.52, 113.45, 113.07, 98.02 (C-3), 56.98 (C-6), 54.70 (C-2), 54.61, 54.13, 50.51, 32.97 (C-5).

#### Methyl

**1-(4-chlorophenyl)-4-((4-chlorophenyl)amino)-2,6-di(thiophen-2-yl)-1,2,5,6-tetrahydropyridine-3-carboxylate (4j)<sup>3</sup>**: white solid 0.89 g, Mp: 215-216 °C;  $^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )  $\delta$  10.37 (s, 1H, -NH), 7.19 – 7.10 (m, 4H, ArH), 7.05 (t,  $J = 6.5$  Hz, 2H, ArH), 6.89 (ddd,  $J = 11.0, 5.0, 3.6$  Hz, 2H, ArH), 6.81 (s, 2H), 6.65 (d,  $J = 9.1$  Hz, 2H), 6.47 (d,  $J = 8.5$  Hz, 2H, ArH), 6.35 (s, 1H), 5.36 (s, 1H), 3.90 (s, 3H, -OMe), 3.09 (dd,  $J = 15.3, 5.3$  Hz, 1H, H-5'), 2.83 (dd,  $J = 15.3, 2.6$  Hz, 1H, H-5'');  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ )  $\delta$  167.28 (C=O), 154.90 (C-4), 147.71, 146.02, 144.02, 135.86, 130.86, 128.61, 128.11, 126.25, 125.15, 125.95, 123.91, 123.79, 123.51, 123.15, 121.69, 113.88, 97.22 (C-3), 53.11 (C-6), 52.02 (C-2), 50.51, 33.53 (C-5).

### Methyl

**2,6-bis(2-fluorophenyl)-1-(4-methoxyphenyl)-4-((4-methoxyphenyl)amino)-1,2,5,6-tetrahydropyridine-3-carboxylate (4k)<sup>1</sup>**: white solid 0.90 g, Mp: 202-204 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 10.05 (s, 1H, -NH), 7.18 (ddd, *J* = 24.3, 12.9, 7.6 Hz, 4H, ArH), 7.09 – 6.91 (m, 4H, ArH), 6.66 (dd, *J* = 8.9, 6.4 Hz, 4H, ArH), 6.52 – 6.27 (m, 5H, ArH, H-2), 5.32 (t, *J* = 4.3 Hz, 1H, H-6), 3.82 (s, 3H, -OMe), 3.76 (s, 3H, -OMe), 3.66 (s, 3H, -OMe), 2.87 – 2.69 (m, 2H, H-5); <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>) δ 167.97 (C=O), 160.62 (d, *J*<sub>C,F</sub> = 86.6 Hz), 158.99 (d, *J*<sub>C,F</sub> = 85.1 Hz), 157.25 (C-4), 155.68, 151.32, 140.24, 130.20, 129.34, 129.25, 128.54, 128.43, 128.03, 127.54, 127.15, 123.68, 122.61, 115.57, 115.42, 114.95, 114.40, 113.80, 113.48, 94.87 (C-3), 54.92 (C-6), 54.77 (C-2), 52.52, 50.89, 50.26, 30.85 (C-5).

### Methyl

**1-(4-methoxyphenyl)-4-((4-methoxyphenyl)amino)-2,6-diphenyl-1,2,5,6-tetrahydropyridine-3-carboxylate (4l)<sup>5</sup>**: white solid 0.77 g, Mp: 223-225 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 10.10 (s, 1H, -NH), 7.40 – 7.08 (m, 10H, ArH), 6.63 (dd, *J* = 19.5, 8.8 Hz, 4H, ArH), 6.43 (d, *J* = 9.0 Hz, 2H, ArH), 6.34 (s, 1H, H-2), 6.18 (d, *J* = 8.6 Hz, 2H, ArH), 5.05 (d, *J* = 3.2 Hz, 1H, H-6), 3.91 (s, 3H, -OMe), 3.74 (s, 3H, -OMe), 3.65 (s, 3H, -OMe), 2.79 (dd, *J* = 14.9, 5.4 Hz, 1H, H-5'), 2.63 (d, *J* = 15.1 Hz, 1H, H-5''); <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>) δ 168.01 (C=O), 157.20, 156.39 (C-4), 150.29, 143.65, 142.62, 140.94, 130.04, 127.97, 127.51, 127.26, 126.44, 126.16, 125.89, 125.59, 113.89, 113.41, 113.33, 96.39 (C-3), 57.62 (C-6), 55.07 (C-2), 55.02, 54.75, 50.25, 32.94 (C-5).

### Methyl

**1-(4-methoxyphenyl)-4-((4-methoxyphenyl)amino)-2,6-di(thiophen-2-yl)-1,2,5,6-tetrahydropyridine-3-carboxylate (4m)<sup>6</sup>**: white solid 0.74 g, Mp: 210-212 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 10.44 (s, 1H, -NH), 7.23 (d, *J* = 5.0 Hz, 1H, ArH), 7.12 (d, *J* = 3.3 Hz, 1H, ArH), 7.07 (d, *J* = 5.0 Hz, 1H), 7.04 – 6.99 (m, 1H, ArH), 6.93 (t, *J* = 6.4 Hz, 5H), 6.82 (dd, *J* = 8.6, 6.6 Hz, 3H, ArH), 6.72 (d, *J* = 9.0 Hz, 2H), 5.94 (s, 1H), 4.78 (t, *J* = 7.8 Hz, 1H), 3.78 (s, 3H, -OMe), 3.74 (s, 3H, -OMe), 3.70 (s, 3H,

-OMe), 2.79 (d,  $J = 7.9$  Hz, 2H, H-5);  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ )  $\delta$  167.71 (C=O), 157.72, 157.25, 156.18 (C-4), 153.25, 151.43, 149.02, 148.15, 146.94, 143.99, 139.98, 130.53, 130.21, 127.11, 126.39, 125.87, 125.77, 125.56, 123.80, 123.72, 123.55, 123.51, 123.24, 122.86, 122.77, 118.42, 115.23, 113.89, 113.67, 113.57, 113.45, 96.24 (C-3), 95.54, 60.01 (C-6), 56.21, 54.90 (C-2), 54.80, 53.08, 52.88, 50.23, 36.26, 33.39 (C-5).

### Ethyl

**2,6-bis(4-methoxyphenyl)-1-phenyl-4-(phenylamino)-1,2,5,6-tetrahydropyridine-3-carboxylate (4n)<sup>2</sup>**: white solid 0.81 g, Mp: 166-168 °C;  $^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )  $\delta$  10.31 (s, 1H, -NH), 7.23 (d,  $J = 8.5$  Hz, 2H, ArH), 7.15 – 7.04 (m, 7H, ArH), 6.81 (dd,  $J = 8.7, 1.8$  Hz, 4H, ArH), 6.60 (t,  $J = 7.2$  Hz, 1H, ArH), 6.53 (d,  $J = 8.2$  Hz, 2H, ArH), 6.38 – 6.35 (m, 2H, ArH), 6.34 (s, 1H, H-2), 5.08 (d,  $J = 3.4$  Hz, 1H, H-6), 4.44 (ddd,  $J = 14.2, 8.9, 5.4$  Hz, 1H, -OCH<sub>2</sub>Me), 4.32 (dq,  $J = 10.8, 7.1$  Hz, 1H, -OCH<sub>2</sub>Me), 3.79 (s, 3H, -OMe), 3.78 (s, 3H, -OMe), 2.85 (dd,  $J = 15.0, 5.5$  Hz, 1H, H-5'), 2.75 (dd,  $J = 15.0, 2.4$  Hz, 1H, H-5''), 1.46 (t,  $J = 7.1$  Hz, 3H, -OCH<sub>2</sub>Me);  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ )  $\delta$  167.64 (C=O), 158.07, 157.42, 155.51 (C-4), 146.43, 137.40, 135.38, 134.05, 128.21, 127.06, 126.83, 125.07, 124.92, 115.41, 113.36, 112.93, 112.37, 97.80 (C-3), 58.99, 56.90 (C-6), 54.67 (C-2), 54.60, 53.93, 33.12 (C-5), 14.18.

### Ethyl

**1-phenyl-4-(phenylamino)-2,6-di-*p*-tolyl-1,2,5,6-tetrahydropyridine-3-carboxylate (4o)<sup>4</sup>**: white solid 0.89 g, Mp: 228-230 °C;  $^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ )  $\delta$  10.29 (s, 1H, -NH), 7.20 (dd,  $J = 15.6, 8.0$  Hz, 2H, ArH), 7.11 – 7.04 (m, 11H, ArH), 6.58 (dd,  $J = 13.2, 5.9$  Hz, 1H, ArH), 6.52 (d,  $J = 8.3$  Hz, 2H, ArH), 6.41 (s, 1H, H-2), 6.33 – 6.24 (m, 2H, ArH), 5.11 (d,  $J = 4.2$  Hz, 1H, H-6), 4.50 – 4.38 (m, 1H, -OCH<sub>2</sub>Me), 4.37 – 4.26 (m, 1H, -OCH<sub>2</sub>Me), 2.86 (dd,  $J = 15.0, 5.6$  Hz, 1H, H-5'), 2.76 (dd,  $J = 15.0, 2.3$  Hz, 1H, H-5''), 2.33 (s, 3H, -Me), 2.32 (s, 3H, -Me), 1.46 (t,  $J = 7.1$  Hz, 3H, -OCH<sub>2</sub>Me);  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ )  $\delta$  167.64 (C=O), 155.43 (C-4), 146.48, 140.45, 139.09, 137.40, 135.95, 135.10, 128.65, 128.62, 128.34, 128.28, 128.21,

128.14, 126.07, 125.92, 125.70, 125.10, 124.88, 115.52, 115.33, 112.29, 97.78 (C-3), 58.98, 57.31 (C-6), 54.27 (C-2), 33.02 (C-5), 20.46, 20.37, 14.16.

**Ethyl 1,2,6-triphenyl-4-(phenylamino)-1,2,5,6-tetrahydropyridine-3-carboxylate (4p)<sup>2</sup>**: white solid 0.74 g, Mp: 172-173 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 10.30 (s, 1H, -NH), 7.25 (ddt, *J* = 18.1, 7.8, 6.7 Hz, 10H, ArH), 7.13 – 7.02 (m, 5H, ArH), 6.61 (t, *J* = 7.2 Hz, 1H, ArH), 6.53 (d, *J* = 8.3 Hz, 2H, ArH), 6.47 (s, 1H, H-2), 6.27 (dd, *J* = 7.3, 1.9 Hz, 2H, ArH), 5.15 (d, *J* = 3.8 Hz, 1H, H-6), 4.47 (dq, *J* = 10.8, 7.1 Hz, 1H, -OCH<sub>2</sub>Me), 4.33 (dq, *J* = 10.8, 7.1 Hz, 1H, -OCH<sub>2</sub>Me), 2.88 (dd, *J* = 15.1, 5.7 Hz, 1H, H-5'), 2.77 (dd, *J* = 15.1, 2.3 Hz, 1H, H-5''), 1.47 (t, *J* = 7.1 Hz, 3H, -OCH<sub>2</sub>Me); <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>) δ 167.63 (C=O), 155.44 (C-4), 146.37, 143.44, 142.15, 137.29, 128.27, 128.20, 128.00, 127.61, 126.51, 126.02, 125.78, 125.65, 125.17, 125.04, 115.52, 112.34, 97.62 (C-3), 59.06, 57.61 (C-6), 54.49 (C-2), 33.00 (C-5), 14.18.

#### Ethyl

**2,6-bis(4-fluorophenyl)-1-phenyl-4-(phenylamino)-1,2,5,6-tetrahydropyridine-3-carboxylate (4q)<sup>7</sup>**: white solid 0.93 g, Mp: 204-208 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ 10.31 (s, 1H, -NH), 7.27 (dd, *J* = 8.4, 5.4 Hz, 2H, ArH), 7.17 – 7.05 (m, 7H, ArH), 6.95 (ddd, *J* = 8.7, 4.7, 2.5 Hz, 4H, ArH), 6.63 (t, *J* = 7.3 Hz, 1H, ArH), 6.48 (d, *J* = 8.2 Hz, 2H, ArH), 6.39 (d, *J* = 8.0 Hz, 3H, ArH, H-2), 5.11 (d, *J* = 3.1 Hz, 1H, H-6), 4.45 (dq, *J* = 10.8, 7.1 Hz, 1H, -OCH<sub>2</sub>Me), 4.32 (dq, *J* = 10.8, 7.1 Hz, 1H, -OCH<sub>2</sub>Me), 2.83 (dd, *J* = 15.2, 5.6 Hz, 1H, H-5'), 2.75 (dd, *J* = 15.2, 2.6 Hz, 1H, H-5''), 1.45 (t, *J* = 7.1 Hz, 3H, -OCH<sub>2</sub>Me); <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>) δ 168.07 (C=O), 162.75 (d, *J*<sub>C,F</sub> = 57.7 Hz), 160.80 (d, *J*<sub>C,F</sub> = 56.8 Hz), 155.88 (C-4), 146.67, 139.53, 138.14, 137.81, 129.01, 128.98, 128.17, 128.11, 127.96, 127.90, 125.86, 125.65, 116.62, 115.55, 115.38, 115.10, 114.93, 113.07, 98.12 (C-3), 59.81, 57.35 (C-6), 54.68 (C-2), 33.81 (C-5), 14.80.

#### Ethyl

**2,6-bis(4-fluorophenyl)-1-(4-methoxyphenyl)-4-((4-methoxyphenyl)amino)-1,2,5,6-tetrahydropyridine-3-carboxylate (4r)<sup>8</sup>**: white solid 0.90 g, Mp: 224-228 °C; <sup>1</sup>H

NMR (500 MHz, CDCl<sub>3</sub>)  $\delta$  10.16 (s, 1H, -NH), 7.25 – 7.22 (m, 2H, ArH), 7.12 – 7.06 (m, 2H, ArH), 6.99 – 6.90 (m, 4H, ArH), 6.67 (t,  $J$  = 6.1 Hz, 4H, ArH), 6.42 – 6.38 (m, 2H, ArH), 6.35 (t,  $J$  = 6.0 Hz, 2H, ArH), 6.23 (s, 1H, H-2), 5.02 – 4.93 (m, 1H), 4.40 (ddd,  $J$  = 14.2, 9.0, 5.4 Hz, 1H, -OCH<sub>2</sub>Me), 4.33 – 4.23 (m, 1H, -OCH<sub>2</sub>Me), 3.75 (s, 3H, -OCH<sub>2</sub>Me), 3.67 (s, 3H, -OMe), 2.73 (dd,  $J$  = 15.3, 5.6 Hz, 1H, H-5'), 2.62 (dd,  $J$  = 15.3, 3.2 Hz, 1H, H-5''), 1.41 (t,  $J$  = 7.1 Hz, 3H, -OCH<sub>2</sub>Me). <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>)  $\delta$  168.22 (C=O), 162.74 (d,  $J_{C,F}$  = 56.6 Hz), 160.80 (d,  $J_{C,F}$  = 55.6 Hz), 157.97 (C-4), 156.63, 151.49, 141.26, 139.83, 138.68, 130.72, 128.42, 128.36, 128.20, 128.14, 127.75, 115.52, 115.35, 114.97, 114.88, 114.81, 114.60, 114.16, 97.03 (C-3), 59.64, 57.30 (C-6), 55.68, 55.47 (C-2), 33.79 (C-5), 14.81.

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