

Supporting Information

Visible Light Bromide Catalysis for Oxazoline, Pyrrolidine, and Dihydrooxazine Syntheses via Csp³-H Functionalizations

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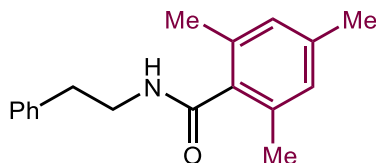
1. General Information

Commercial reagents and solvents were purchased from Sigma Aldrich, Oakwood Chemicals, Alfa Aesar, Matrix Scientific, Acros Organic and were used as received. Organic solutions were concentrated under reduced pressure on a IKA rotary evaporator using an acetone-dry ice bath. Chromatographic purification of products was accomplished using flash chromatography on 230-400 mesh silica gel. Thin-layer chromatography (TLC) was performed on Analtech 250 mm silica gel HLF UV-250 plates. Visualization of the developed plates was performed by fluorescent quenching and potassium permanganate. ^1H and ^{13}C NMR spectra were recorded on a Bruker instrument (600 and 150 MHz) or INOVA 600 (600 and 150 MHz) and are internally referenced to residual protio solvent signals (for CDCl_3 , 7.26 and 77.0 ppm, respectively). ^{19}F NMR spectra were recorded on Varian VXR 400 (375 MHz). Data for ^1H NMR are reported as follows: chemical shift (ppm), multiplicity (s = singlet, d = doublet, t = triplet, q = quartet, p = pentet, m = multiplet, br = broad), integration, coupling constant (Hz). ^{13}C and ^{19}F NMR spectra were recorded as chemical shifts in ppm and multiplicity where appropriate. IR spectra were recorded on a PerkinElmer FT-IR spectrophotometer and reported in terms of wavenumber of absorption (cm^{-1}). High resolution mass spectra were obtained on Waters Synapt High-Definition Mass Spectrometer (HDMS) by electrospray ionization at the University of Toledo, OH, USA and Maxis Ultra High-resolution ESI LC/MS at the University of Wisconsin-Madison, WI, USA.

2. Experimental Procedures

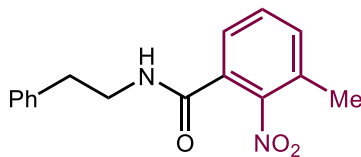
Synthesis and Characterization of Amide Starting Materials: Amide starting materials of products 2^{S1} , 3^{S2} , 4^{S2} , 5^{S2} , 6^{S1} , 7^{S2} , 8^{S6} , 9^{S3} , 12^{S4} , 13^{S3} , 15^{S2} , 16^{S5} , 17^{S1} , 18^{S2} , 19^{S3} , 20^{S6} , 21^{S5} , 22^{S7} , 23^{S7} , 24^{S8} , 25^{S8} matched with previously reported literatures and were prepared according to

General Procedure for the synthesis of amides reported^{S9}. Amide starting materials 27a^{S10}, 27b^{S10}, 27c and 27d^{S11} were prepared according to previously reported procedure^{S12}.



2,4,6-trimethyl-N-phenethylbenzamide (10a): This compound was prepared according to the General Procedure,^{S9} using 2-phenethylamine (1.3 mL, 10 mmol) and 2,4,6-trimethylbenzoic acid (1.6 g, 10 mmol). After purification by column chromatography SiO₂ (20% to 30% EtOAc in Hexanes), the title compound was isolated as a white solid (2.3 g, 85% yield).

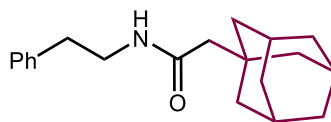
¹H NMR (600 MHz, CDCl₃): δ 7.33-7.29 (m, 2 H), 7.26-7.20 (m, 3 H), 6.81 (s, 2 H), 5.60 (br. s., 1 H), 3.78 (q, *J* = 6.8 Hz, 2 H), 2.94 (t, *J* = 6.9 Hz, 2 H), 2.26 (s, 3 H), 2.22 (s, 6 H); ¹³C NMR (150 MHz, CDCl₃): δ 170.5, 138.6, 138.4, 134.9, 134.1, 128.7, 128.7, 128.1, 126.6, 40.3, 35.7, 21.0, 19.0; IR (neat): 1625, 1610, 1554, 724, 695, 465 cm⁻¹; HRMS (ESI) *m/z* calcd for C₁₈H₂₂NO [(M+H)]⁺ 268.1701, found 268.1683.



3-methyl-2-nitro-N-phenethylbenzamide (11a): This compound was prepared according to the General Procedure,^{S9} using 2-phenethylamine (1.3 mL, 10 mmol) and 3-methyl-2-nitrobenzoic acid (1.8 g, 10 mmol). After purification by column chromatography SiO₂ (20% to 30% EtOAc in Hexanes), the title compound was isolated as a white solid (2.6 g, 93% yield).

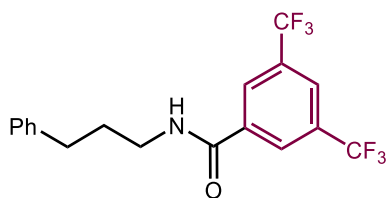
¹H NMR (600 MHz, CDCl₃): δ 7.42-7.37 (m, 2 H), 7.36-7.31 (m, 2 H), 7.30-7.23 (m, 4 H), 5.92 (br. s., 1 H), 3.69 (q, *J* = 6.8 Hz, 2 H), 2.93 (t, *J* = 6.9 Hz, 2 H), 2.39 (s, 3 H); ¹³C NMR (150

MHz, CDCl₃): δ 165.3, 149.3, 138.6, 133.6, 131.3, 130.4, 130.3, 128.9, 128.7, 126.7, 125.4, 41.3, 35.3, 17.7; IR (neat): 1637, 1549, 1527, 1364, 743, 680 cm⁻¹; HRMS (ESI) m/z calcd for C₁₆H₁₇N₂O₃ [(M+H)]⁺ 285.1239, found 285.1220.



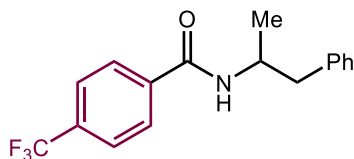
2-(adamantan-1-yl)-N-phenethylacetamide (14a): This compound was prepared according to the General Procedure,^{S9} using 2-phenethylamine (1.3 mL, 10 mmol) and 2-(adamantan-1-yl)acetic acid (1.9 g, 10 mmol). After purification by column chromatography SiO₂ (20% to 30% EtOAc in Hexanes), the title compound was isolated as white solid (2.6 g, 87% yield).

¹H NMR (600 MHz, CDCl₃): δ 7.35-7.29 (m, 2 H), 7.26-7.19 (m, 3 H), 5.31 (br. s., 1 H), 3.59-3.50 (q, J = 7.1 Hz 2 H), 2.83 (t, J = 6.9 Hz, 2 H), 1.95 (br. s., 3 H), 1.87 (s, 2 H), 1.71-1.67 (m, 3 H), 1.63-1.59 (m, 3 H), 1.56-1.54 (m, 6 H); ¹³C NMR (150 MHz, CDCl₃): δ 170.9, 138.9, 128.8, 128.6, 126.5, 51.9, 42.5, 40.4, 36.7, 35.7, 32.6, 28.6; IR (neat): 2899, 2847, 1638, 1545, 749, 697 cm⁻¹; HRMS (ESI) m/z calcd for C₂₀H₂₈NO [(M+H)]⁺ 298.2171, found 298.2154.



N-(3-phenylpropyl)-3,5-bis(trifluoromethyl)benzamide (26a): This compound was prepared according to the General Procedure,^{S9} using 3-phenyl-1-propylamine (1.4 mL, 10 mmol) and 3,5-bis(trifluoromethyl)benzoic acid (2.6 g, 10 mmol). After purification by column chromatography SiO₂ (15% to 25% EtOAc in Hexanes), the title compound was isolated as white solid (3.1 g, 82% yield).

^1H NMR (600 MHz, CDCl_3): δ 8.04 (s, 2 H), 7.98 (s, 1 H), 7.28-7.34 (m, 2 H), 7.18-7.26 (m, 3 H), 6.12 (br. s., 1 H), 3.57 (q, J = 6.5 Hz, 2 H), 2.78 (t, J = 7.2 Hz, 2 H), 2.03 ppm (p, J = 7.0 Hz, 2 H); ^{13}C NMR (150 MHz, CDCl_3): δ 163.8, 140.8, 136.1, 131.6 (q, $J_{\text{C,F}}$ = 34.5 Hz), 128.3, 127.9, 126.7, 125.9, 124.4 (q, $J_{\text{C,F}}$ = 4.5 Hz), 122.5 (q, CF_3 , $J_{\text{C,F}}$ = 271.5 Hz), 40.0, 33.4, 30.2; ^{19}F NMR (375 MHz, CDCl_3): δ -63.2 (s, 6 F); IR (neat): 1645, 1556, 1277, 1124, 905, 694, 680 cm^{-1} ; HRMS (ESI) m/z calcd for $\text{C}_{18}\text{H}_{16}\text{F}_6\text{NO}$ [(M+H)] $^+$ 376.1136, found 376.1122.



***N*-(1-phenylpropan-2-yl)-4-(trifluoromethyl)benzamide (27c):** This compound was prepared according to the procedure reported in literature.^{S10}

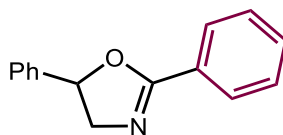
^1H NMR (600 MHz, CDCl_3): δ 7.79 (d, J = 8.1 Hz, 2 H), 7.69 (d, J = 8.1 Hz, 2 H), 7.35-7.31 (m, 2 H), 7.27-7.21 (m, 3 H), 5.90 (d, J = 7.2 Hz, 1 H), 4.55-4.45 (m, 1 H), 2.97-2.88 (m, 2 H), 1.27 (d, J = 6.6 Hz, 3 H); ^{13}C NMR (150 MHz, CDCl_3): δ 165.5, 138.1, 137.5, 133.1 (q, $J_{\text{C,F}}$ = 31.5 Hz), 129.5, 128.5, 127.2, 126.7, 125.6 (q, $J_{\text{C,F}}$ = 4.5 Hz), 123.8 (q, CF_3 , $J_{\text{C,F}}$ = 271.5 Hz), 46.7, 42.2, 20.0; ^{19}F NMR (375 MHz, CDCl_3): δ -63.3 (s, 3 F); IR (neat): 1634, 1548, 1326, 1158, 1124, 1066, 691, 682 cm^{-1} ; HRMS (ESI) m/z calcd for $\text{C}_{17}\text{H}_{18}\text{F}_3\text{NO}$ [(M+H)] $^+$ 308.1262, found 308.1252.

General Procedure for C-H Oxygenation of Amides:

To an 8 mL vial equipped with a stir bar was added LiBr (4 mg, 0.05 mmol), $\text{Y}(\text{OTf})_3$ (27 mg, 0.05 mmol), amide substrate (0.25 mmol) and F-TEDA- BF_4 (106 mg, 0.3 mmol). Then DCM (1 mL) was added via syringe. The reaction mixture was illuminated with blue LED (with an

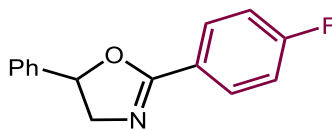
electric fan on top) and stirred for 18 h. After completion, it was diluted with EtOAc (2 mL) and 1M Na₂CO₃ (2 mL) solution was added. The organic layer was separated, and the aqueous layer was extracted with EtOAc (2×2 mL). The combined organic layer was dried over anhydrous Na₂SO₄ and concentrated under reduced pressure to give the crude product, which was purified by column chromatography on silica gel to afford the pure product.

3. Spectral Characterization of the Products



2,5-diphenyl-4,5-dihydrooxazole (2): This compound was prepared according to the General Procedure, using *N*-phenethylbenzamide (56 mg, 0.25 mmol). After purification by column chromatography SiO₂ (10% to 15% EtOAc in Hexanes), the title compound was isolated as a colorless oil (39 mg, 70% yield). For 1.0 mmol scale, the reaction afforded 136 mg, 61% yield of the title compound. The spectral data matched with previously reported literature.¹

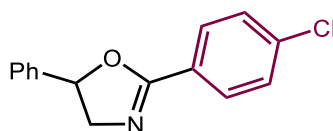
¹H NMR (600 MHz, CDCl₃): δ 8.05 (d, *J* = 7.5 Hz, 2 H), 7.55-7.48 (m, 1 H), 7.49-7.43 (m, 2 H), 7.43-7.31 (m, 5 H), 5.68 (dd, *J* = 9.8, 8.3 Hz, 1 H), 4.50 (dd, *J* = 14.8, 10.1 Hz, 1 H), 4.02 (dd, *J* = 14.6, 7.8 Hz, 1 H); ¹³C NMR (150 MHz, CDCl₃): δ 164.0, 141.0, 131.4, 128.8, 128.4, 128.3 (overlap), 127.5, 125.7, 81.0, 63.1.



2-(4-fluorophenyl)-5-phenyl-4,5-dihydrooxazole (3): This compound was prepared according to the General Procedure, using 4-fluoro-*N*-phenethylbenzamide (61 mg, 0.25 mmol). After purification by column chromatography SiO₂ (20% EtOAc in Hexanes), the title compound was

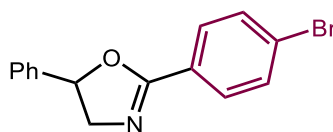
isolated as a colorless oil (41 mg, 68% yield). The spectral data of this compound matched with previously reported literature.¹

¹H NMR (600 MHz, CDCl₃): δ 8.07-8.00 (m, 2 H), 7.42-7.38 (m, 2 H), 7.37-7.33 (m, 3 H), 7.15-7.10 (m, 2 H), 5.67 (dd, *J* = 10.1, 8.1, 1 H), 4.48 (dd, *J* = 14.7, 10.1 Hz, 1 H), 4.00 (dd, *J* = 14.8, 8.0, Hz, 1 H); ¹³C NMR (150 MHz, CDCl₃): δ 165.6 (d, *J*_{C,F} = 250.5 Hz), 163.1, 140.8, 130.5 (d, *J*_{C,F} = 37.5 Hz), 128.8, 128.4, 125.7, 123.8 (d, *J*_{C,F} = 4.5 Hz), 115.5 (d, *J*_{C,F} = 22.5 Hz), 81.2, 63.1; ¹⁹F NMR (375 MHz, CDCl₃): δ -108.4 (m, 1 F).



2-(4-chlorophenyl)-5-phenyl-4,5-dihydrooxazole (4): This compound was prepared according to the General Procedure, using 4-chloro-*N*-phenethylbenzamide (65 mg, 0.25 mmol). After purification by column chromatography SiO₂ (20% EtOAc in Hexanes), the title compound was isolated as a colorless oil (44 mg, 68% yield). The spectral data of this compound matched with previously reported literature.²

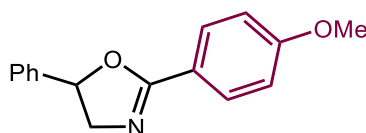
¹H NMR (600 MHz, CDCl₃): δ 7.97 (d, *J* = 8.5 Hz, 2 H), 7.44-7.37 (m, 4 H), 7.37-7.32 (m, 3 H), 5.67 (dd, *J* = 9.9, 8.2, Hz, 1 H), 4.49 (dd, *J* = 14.6, 10.3 Hz, 1 H), 4.01 (dd, *J* = 14.8, 7.9 Hz, 1 H); ¹³C NMR (150 MHz, CDCl₃): δ 163.2, 140.7, 137.7, 129.6, 128.8, 128.7, 128.4, 126.0, 125.7, 81.3, 63.1.



2-(4-bromophenyl)-5-phenyl-4,5-dihydrooxazole (5): This compound was prepared according to the General Procedure, using 4-bromo-*N*-phenethylbenzamide (76 mg, 0.25 mmol). After purification by column chromatography SiO₂ (20% EtOAc in Hexanes), the title compound was

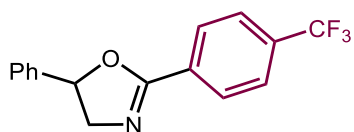
isolated as a colorless oil (50 mg, 66% yield). The spectral data of this compound matched with previously reported literature.¹

¹H NMR (600 MHz, CDCl₃): δ 7.89 (d, *J* = 8.5 Hz, 2 H), 7.58 (d, *J* = 8.5 Hz, 2 H), 7.42-7.37 (m, 2 H), 7.37-7.32 (m, 3 H), 5.67 (dd, *J* = 9.9, 8.2 Hz, 1 H), 4.48 (dd, *J* = 14.9, 10.3 Hz, 1 H), 4.00 (dd, *J* = 14.9, 8.1 Hz, 1 H); ¹³C NMR (150 MHz, CDCl₃): 163.3, 140.6, 131.7, 129.9, 128.9, 128.4, 126.4, 126.2, 125.7, 81.4, 63.0.



2-(4-methoxyphenyl)-5-phenyl-4,5-dihydrooxazole (6): This compound was prepared according to the General Procedure, using 4-methoxy-*N*-phenethylbenzamide (64 mg, 0.25 mmol). After purification by column chromatography SiO₂ (20% to 30% EtOAc in Hexanes), the title compound was isolated as a colorless oil (39 mg, 61% yield). The spectral data of this compound matched with previously reported literature.¹

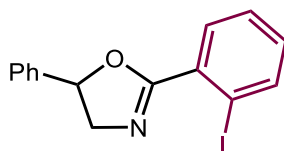
¹H NMR (600 MHz, CDCl₃): δ 7.98 (d, *J* = 9.0 Hz, 2 H), 7.41-7.31 (m, 5 H), 6.95 (d, *J* = 9.0 Hz, 2 H), 5.65 (dd, *J* = 9.8, 8.2 Hz, 1 H), 4.47 (dd, *J* = 14.5, 10.1 Hz, 1 H), 3.98 (dd, *J* = 14.5, 7.9 Hz, 1 H), 3.86 (s, 3 H); ¹³C NMR (150 MHz, CDCl₃): δ 163.8, 162.2, 141.1, 130.0, 128.8, 128.2, 125.7, 120.0, 113.7, 80.9, 63.0, 55.4.



5-phenyl-2-(4-(trifluoromethyl)phenyl)-4,5-dihydrooxazole (7): This compound was prepared according to the General Procedure, using *N*-phenethyl-4-(trifluoromethyl)benzamide (73 mg, 0.25 mmol). After purification by column chromatography SiO₂ (20% EtOAc in Hexanes), the

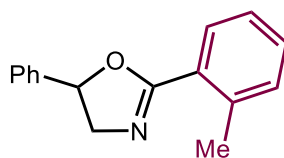
title compound was isolated as a colorless oil (43 mg, 59% yield). The spectral data of this compound matched with previously reported literature.¹

¹H NMR (600 MHz, CDCl₃): δ 8.15 (d, *J* = 8.1 Hz, 2 H), 7.71 (d, *J* = 8.1 Hz, 2 H), 7.43-7.38 (m, 2 H), 7.38-7.34 (m, 3 H), 5.72 (dd, *J* = 10.1, 8.9 Hz, 1 H), 4.53 (dd, *J* = 15.1, 10.3 Hz, 1 H), 4.05 (dd, *J* = 15.0, 7.9 Hz, 1 H); ¹³C NMR (150 MHz, CDCl₃): δ 162.8, 140.6, 133.0 (q, *J*_{C,F} = 32.5 Hz), 130.9, 128.9, 128.7, 128.5, 125.7, 125.4 (q, *J*_{C,F} = 3.0 Hz), 123.7 (q, CF₃, *J*_{C,F} = 270.5 Hz), 81.4, 63.2; ¹⁹F NMR (375 MHz, CDCl₃): δ -63.3 (s, 3 F).



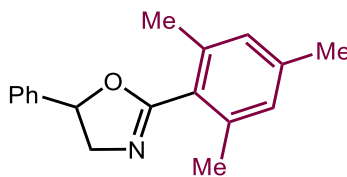
2-(2-iodophenyl)-5-phenyl-4,5-dihydrooxazole (8): This compound was prepared according to the General Procedure, using 2-iodo-*N*-phenethylbenzamide (88 mg, 0.25 mmol). After purification by column chromatography SiO₂ (10% to 15% EtOAc in Hexanes), the title compound was isolated as a colorless oil (39 mg, 45% yield).

¹H NMR (600 MHz, CDCl₃): δ 7.99 (dd, *J* = 8.0, 1.0 Hz, 1 H), 7.74 (dd, *J* = 7.7, 1.7 Hz, 1 H), 7.45-7.39 (m, 5 H), 7.36 (d, *J* = 7.0 Hz, 1 H), 7.16-7.12 (m, 1 H), 5.69 (dd, *J* = 10.1, 8.6 Hz, 1 H), 4.56 (dd, *J* = 14.9, 10.3 Hz, 1 H), 4.07 (dd, *J* = 14., 8.6 Hz, 1 H); ¹³C NMR (150 MHz, CDCl₃): δ 164.0, 140.7, 140.5, 133.1, 131.7, 130.8, 128.8, 128.4, 127.9, 126.1, 94.7, 81.5, 63.3; IR (neat): 1264, 1015, 731, 699 cm⁻¹; HRMS (ESI) *m/z* calcd for C₁₅H₁₃INO [(M+H)]⁺ 350.0042, found 350.0035.



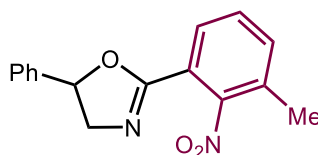
5-phenyl-2-(o-tolyl)-4,5-dihydrooxazole (9): This compound was prepared according to the General Procedure, using 2-methyl-*N*-phenethylbenzamide (60 mg, 0.25 mmol). After purification by column chromatography SiO₂ (10% to 15% EtOAc in Hexanes), the title compound was isolated as a colorless oil (29 mg, 49% yield). The spectral data of this compound matched with previously reported literature.²

¹H NMR (600 MHz, CDCl₃): δ 7.91 (d, *J* = 7.7 Hz, 1 H), 7.43-7.32 (m, 6 H), 7.30-7.23 (m, 2 H), 5.66-5.60 (m, 1 H), 4.53 (dd, *J* = 14.7, 10.3 Hz, 1 H), 4.04 (dd, *J* = 14.7, 8.1 Hz, 1 H), 2.65 (s, 3 H); ¹³C NMR (150 MHz, CDCl₃): δ 164.4, 141.2, 139.0, 131.3, 130.7, 130.0, 128.8, 128.2, 126.9, 125.7, 125.6, 80.2, 63.6, 22.0.



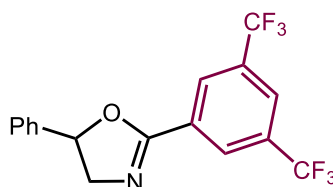
2-mesityl-5-phenyl-4,5-dihydrooxazole (10): This compound was prepared according to the General Procedure, using 2,4,6-trimethyl-*N*-phenethylbenzamide (67 mg, 0.25 mmol). After purification by column chromatography SiO₂ (10% to 15% EtOAc in Hexanes), the title compound was isolated as a colorless oil (19 mg, 29% yield).

¹H NMR (600 MHz, CDCl₃): δ 7.41 (d, *J* = 4.2 Hz, 4 H), 7.38-7.33 (m, 1 H), 6.88 (s, 2 H), 5.65 (dd, *J* = 10.0, 9.1 Hz, 1 H), 4.52 (dd, *J* = 14.5, 10.3 Hz, 1 H), 4.06 (dd, *J* = 14.6, 8.9 Hz, 1 H), 2.37 (s, 6 H), 2.29 (s, 3 H); ¹³C NMR (150 MHz, CDCl₃): δ 164.4, 140.7, 139.2, 137.0, 128.8, 128.3, 126.1, 125.9, 80.7, 63.0, 29.7, 21.2, 19.9; IR (neat): 1450, 1052, 759, 741, 693 cm⁻¹; HRMS (ESI) *m/z* calcd for C₁₈H₂₀NO [(M+H)]⁺ 266.1545, found 266.1527.



2-(3-methyl-2-nitrophenyl)-5-phenyl-4,5-dihydrooxazole (11): This compound was prepared according to the General Procedure, using 3-methyl-2-nitro-*N*-phenethylbenzamide (71 mg, 0.25 mmol). After purification by column chromatography SiO₂ (10% to 15% EtOAc in Hexanes), the title compound was isolated as a colorless oil (14 mg, 19% yield).

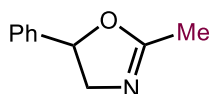
¹H NMR (600 MHz, CDCl₃): δ 7.89-7.84 (m, 1 H), 7.47-7.44 (m, 2 H), 7.42-7.37 (m, 2 H), 7.37-7.31 (m, 3 H), 5.64 (dd, *J* = 10.2, 8.4 Hz, 1 H), 4.49 (dd, *J* = 15.1, 10.2 Hz, 1 H), 4.00 (dd, *J* = 15.2, 8.4 Hz, 1 H), 2.38 (s, 3 H); ¹³C NMR (150 MHz, CDCl₃): δ 159.8, 150.1, 140.2, 134.1, 130.2, 129.8, 128.8, 128.5, 127.9, 125.8, 119.9, 81.5, 63.5, 17.2; IR (neat): 1654, 1535, 1369, 758, 697 cm⁻¹; HRMS (ESI) *m/z* calcd for C₁₆H₁₅N₂O₃ [(M+H)]⁺ 283.1083, found 283.1082.



2-(3,5-bis(trifluoromethyl)phenyl)-5-phenyl-4,5-dihydrooxazole (12): This compound was prepared according to the General Procedure, using *N*-phenethyl-3,5-bis(trifluoromethyl)benzamide (90 mg, 0.25 mmol). After purification by column chromatography SiO₂ (2% EtOAc in Hexanes), the title compound was isolated as a colorless oil (38 mg, 42% yield).

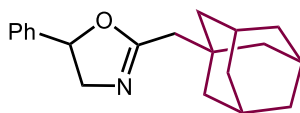
¹H NMR (600 MHz, CDCl₃): δ 8.49 (s, 2 H), 8.01 (s, 1 H), 7.46-7.41 (m, 2 H), 7.41-7.35 (m, 3 H), 5.76 (t, *J* = 9.2 Hz, 1 H), 4.55 (dd, *J* = 15.1, 10.3 Hz, 1 H), 4.09 (dd, *J* = 15.1, 8.3 Hz, 1 H);

^{13}C NMR (150 MHz, CDCl_3): δ 161.5, 140.0, 132.1 (q, $J_{\text{C,F}} = 34.5$ Hz), 129.8, 129.0, 128.8, 128.5 (m), 125.9, 124.9-124.8 (m), 123.0 (q, CF_3 , $J_{\text{C,F}} = 271.5$ Hz), 82.1, 63.1; ^{19}F NMR (375 MHz, CDCl_3): δ -63.4 (s, 6 F); IR (neat): 1656, 1275, 1127, 906, 697, 681 cm^{-1} ; HRMS (ESI) m/z calcd for $\text{C}_{17}\text{H}_{12}\text{F}_6\text{NO}$ $[(\text{M}+\text{H})]^+$ 360.0823, found 360.0824.



2-methyl-5-phenyl-4,5-dihydrooxazole (13): This compound was prepared according to the General Procedure, using *N*-phenethylacetamide (41 mg, 0.25 mmol). After purification by column chromatography SiO_2 (40 to 50% EtOAc in Hexanes), the title compound was isolated as a colorless oil (16 mg, 40% yield). The spectral data of this compound matched with previously reported literature.³

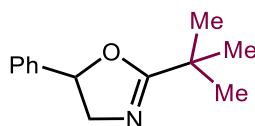
^1H NMR (600 MHz, CDCl_3): δ 7.40-7.37 (m 2 H), 7.35-7.33 (m, 1 H), 7.31-7.29 (m, 2 H), 5.47 (dd, $J = 10.2, 8.1$ Hz, 1 H), 4.25 (dd, $J = 14.1, 10.2$ Hz, 1 H), 3.77 (dd, $J = 14.0, 7.9$ Hz, 1 H), 2.09 (s, 3 H); ^{13}C NMR (150 MHz, CDCl_3): δ 165.0, 140.9, 128.8, 128.3, 125.7, 80.9, 62.6, 14.0.



2-(adamantan-1-yl)methyl-5-phenyl-4,5-dihydrooxazole (14): This compound was prepared according to the General Procedure, using 2-(adamantan-1-yl)-*N*-phenethylacetamide (74 mg, 0.25 mmol). After purification by column chromatography SiO_2 (20% to 30% EtOAc in Hexanes), the title compound was isolated as a colorless oil (27 mg, 37% yield).

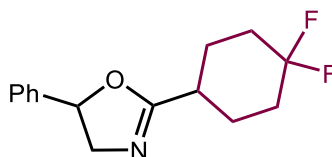
^1H NMR (600 MHz, CDCl_3): δ 7.41-7.36 (m, 2 H), 7.35-7.30 (m, 3 H), 5.45 (dd, $J = 8.4, 7.8$ Hz, 1 H), 4.26 (dd, $J = 14.3, 14.3$ Hz, 1 H), 3.79 (dd, $J = 14.2, 8.5$ Hz, 1 H), 2.17 (s, 2 H), 1.99 (br. s., 3 H), 1.74-1.69 (m, 3 H), 1.68-1.63 (m, 9 H); ^{13}C NMR (150 MHz, CDCl_3): δ 166.1, 141.0,

128.7, 128.2, 125.9, 80.7, 62.5, 42.6, 42.5, 36.8, 32.8, 28.6; IR (neat): 2899, 2846, 1660, 1445, 1146, 978, 698 cm^{-1} ; HRMS (ESI) m/z calcd for $\text{C}_{20}\text{H}_{26}\text{NO}$ $[(\text{M}+\text{H})]^+$ 296.2014, found 296.2015.



2-(*tert*-butyl)-5-phenyl-4,5-dihydrooxazole (15): This compound was prepared according to the General Procedure, using *N*-phenethylpivalamide (51 mg, 0.25 mmol). After purification by column chromatography SiO_2 (15% to 20% EtOAc in Hexanes), the title compound was isolated as a colorless oil (32 mg, 63% yield). The spectral data of this compound matched with previously reported literature.¹

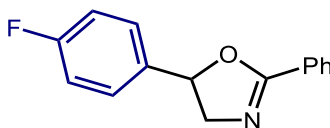
^1H NMR (600 MHz, CDCl_3): δ 7.39-7.35 (m, 2 H), 7.33-7.29 (m, 1 H), 7.28-7.25 (m, 2 H), 5.45 (dd, J = 10.1, 8.1 Hz, 1 H), 4.25 (dd, J = 14.2, 10.4 Hz, 1 H), 3.75 (dd, J = 14.2, 7.8 Hz, 1 H), 1.30 (s, 9 H); ^{13}C NMR (150 MHz, CDCl_3): δ 174.1, 141.6, 128.7, 128.0, 125.5, 80.6, 62.9, 33.3, 27.7.



2-(4,4-difluorocyclohexyl)-5-phenyl-4,5-dihydrooxazole (16): This compound was prepared according to the General Procedure, using 4,4-difluoro-*N*-phenethylcyclohexane-1-carboxamide (67 mg, 0.25 mmol). After purification by column chromatography SiO_2 (20% to 30% EtOAc in Hexanes), the title compound was isolated as a colorless oil (24 mg, 36% yield).

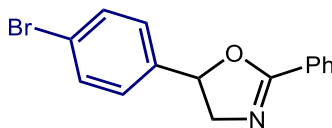
^1H NMR (600 MHz, CDCl_3): δ 7.40-7.36 (m, 2 H), 7.35-7.31 (m, 1 H), 7.28-7.25 (m, 2 H), 5.47 (dd, J = 10.2, 8.0 Hz, 1 H), 4.27 (dd, J = 14.3, 10.3 Hz, 1 H), 3.79 (dd, J = 14.4, 7.8 Hz, 1 H), 2.54-2.48 (m, 1 H), 2.22-2.13 (m, 2 H), 2.13-2.05 (m, 2 H), 1.97-1.88 (m, 2 H), 1.88-1.76 (m, 2

H); ^{13}C NMR (150 MHz, CDCl_3): δ 168.9, 141.0, 128.8, 128.3, 125.6, 122.8 (t, $J_{\text{C,F}} = 241.5$ Hz), 80.6, 62.6, 34.9, 32.7 (t, $J_{\text{C,F}} = 24.0$ Hz), 25.7 (m); ^{19}F NMR (375 MHz, CDCl_3): δ -94.0 (m, 1 F), -100.3 (m, 1 F); IR (neat): 1664, 1102, 958, 698, 497 cm^{-1} ; HRMS (ESI) m/z calcd for $\text{C}_{15}\text{H}_{18}\text{F}_2\text{NO}$ [(M+H)] $^{+}$ 266.1356, found 266.1363.



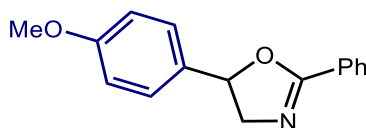
5-(4-fluorophenyl)-2-phenyl-4,5-dihydrooxazole (17): This compound was prepared according to the General Procedure, using *N*-(4-fluorophenethyl)benzamide (61 mg, 0.25 mmol). After purification by column chromatography SiO_2 (20% to 30% EtOAc in Hexanes), the title compound was isolated as a colorless oil (42 mg, 70% yield). The spectral data of this compound matched with previously reported literature.¹

^1H NMR (600 MHz, CDCl_3): δ 8.02 (d, $J = 7.9$ Hz, 2 H), 7.55-7.48 (m, 1 H), 7.48-7.41 (m, 2 H), 7.34 (dd, $J = 8.3, 5.5$ Hz, 2 H), 7.08 (t, $J = 8.6$ Hz, 2 H), 5.65 (dd, $J = 9.7, 8.3$ Hz, 1 H), 4.49 (dd, $J = 14.8, 10.2$ Hz, 1 H), 3.98 (dd, $J = 14.9, 7.9$ Hz, 1 H); ^{13}C NMR (150 MHz, CDCl_3): δ 163.9, 162.6 (d, $J_{\text{C,F}} = 244.5$ Hz), 136.8 (d, $J_{\text{C,F}} = 3.0$ Hz), 131.5, 128.4, 128.3, 127.6, 127.5, 115.7 (d, $J_{\text{C,F}} = 21.0$ Hz), 80.4, 63.1; ^{19}F NMR (375 MHz, CDCl_3): δ -114.0 (m, 1 F).



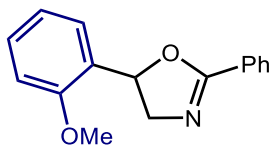
5-(4-bromophenyl)-2-phenyl-4,5-dihydrooxazole (18): This compound was prepared according to the General Procedure, using *N*-(4-bromophenethyl)benzamide (76 mg, 0.25 mmol). After purification by column chromatography SiO_2 (20% to 30% EtOAc in Hexanes), the title compound was isolated as a colorless oil (51 mg, 68% yield). The spectral data of this compound matched with previously reported literature.¹

^1H NMR (600 MHz, CDCl_3): δ 8.02 (d, $J = 7.3$ Hz, 2 H), 7.54-7.49 (m, 3 H), 7.48-7.42 (m, 2 H), 7.23 (d, $J = 8.3$ Hz, 2 H), 5.63 (dd, $J = 9.9, 8.2$ Hz, 1 H), 4.49 (dd, $J = 14.8, 10.1$ Hz, 1 H), 3.95 (dd, $J = 14.6, 7.8$ Hz, 1 H); ^{13}C NMR (150 MHz, CDCl_3): 163.9, 140.0, 131.9, 131.6, 128.4, 128.3, 127.4, 127.3, 122.2, 80.2, 63.0.



5-(4-methoxyphenyl)-2-phenyl-4,5-dihydrooxazole (19): This compound was prepared according to the General Procedure, using *N*-(4-methoxyphenethyl)benzamide (64 mg, 0.25 mmol). After purification by column chromatography SiO_2 (20% to 30% EtOAc in Hexanes), the title compound was isolated as a colorless oil (38 mg, 61% yield). The spectral data of this compound matched with previously reported literature.³

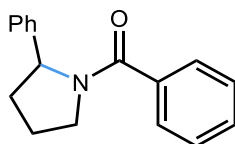
^1H NMR (600 MHz, CDCl_3): δ 8.03-7.99 (m, 2 H), 7.52-7.48 (m, 1 H), 7.45-7.42 (m, 2 H), 7.32-7.28 (m, 2 H), 6.94-6.90 (m, 2 H), 5.63 (dd, $J = 10.2, 7.8$ Hz, 1 H), 4.45 (dd, $J = 14.9, 10.1$ Hz, 1 H), 4.00 (dd, $J = 14.9, 7.9$ Hz, 1 H), 3.82 (s, 3 H). ^{13}C NMR (151 MHz, CDCl_3): δ 163.9, 159.7, 133.0, 131.4, 128.4, 128.3, 127.7, 127.4, 114.2, 81.0, 63.0, 55.3.



5-(2-methoxyphenyl)-2-phenyl-4,5-dihydrooxazole (20): This compound was prepared according to the General Procedure, using *N*-(2-methoxyphenethyl)benzamide (64 mg, 0.25 mmol). After purification by column chromatography SiO_2 (20% to 30% EtOAc in Hexanes), the

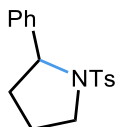
title compound was isolated as a colorless oil (32 mg, 50% yield). The spectral data of this compound matched with previously reported literature.

^1H NMR (600 MHz, CDCl_3): δ 8.09-8.03 (m, 2 H), 7.54-7.50 (m, 1 H), 7.48-7.44 (m, 2 H), 7.36 (dd, $J = 7.5, 1.3$ Hz, 1 H), 7.30 (dt, $J = 7.8, 1.7$ Hz, 1 H), 6.96 (dt, $J = 7.5, 0.7$ Hz, 1 H), 6.94-6.90 (m, 1 H), 5.94 (dd, $J = 10.1, 7.9$ Hz, 1 H), 4.51 (dd, $J = 14.9, 10.3$ Hz, 1 H), 3.86 (dd, $J = 14.9, 7.8$ Hz, 1 H), 3.87 (s, 3H); ^{13}C NMR (150 MHz, CDCl_3): δ 163.7, 156.0, 131.3, 129.6, 128.9, 128.4, 128.2, 127.8, 125.4, 120.6, 110.3, 76.7, 62.5, 55.4; IR (neat): 1651, 1354, 1244, 1064, 1022, 955, 751, 689, 670 cm^{-1} ; HRMS (ESI) m/z calcd for $\text{C}_{16}\text{H}_{16}\text{NO}_2$ $[(\text{M}+\text{H})]^+$ 254.1181, found 254.1181.



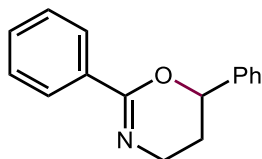
Phenyl(2-phenylpyrrolidin-1-yl)methanone (21a): This compound was prepared according to the General Procedure, using *N*-(4-phenylbutyl)benzamide (63 mg, 0.25 mmol). After purification by column chromatography SiO_2 (30% to 35% EtOAc in Hexanes), the title compound was isolated as a colorless oil of racemic mixture (11 mg, 17% yield). The spectral data of this compound matched with previously reported literature.^{4a}

^1H NMR (600 MHz, CDCl_3): δ 7.63-7.03 (m, 10 H), 5.38-4.86 (m, 1 H), 4.03-3.84 (m, 1 H), 3.79-3.61 (m, 1 H), 2.49-2.26 (m, 1 H), 2.01-1.85 (m, 3 H); ^{13}C NMR (150 MHz, CDCl_3): δ 170.9, 169.9, 143.8, 143.2, 137.0, 136.9, 130.0, 129.4, 128.5, 128.2, 127.8, 127.4, 126.9, 126.8, 126.6, 125.6, 125.5, 63.4, 60.9, 51.0, 47.1, 35.7, 34.7, 25.2, 21.6.



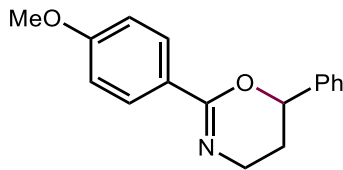
2-phenyl-1-tosylpyrrolidine (21b): This compound was prepared using 4-methyl-*N*-(4-phenylbutyl)benzenesulfonamide (76 mg, 0.25 mmol), NH₄I (7 mg, 0.05 mmol) and F-TEDA-BF₄ (133 mg, 0.375 mmol) in MeCN (0.25 M) under fluorescent lights for 16 h. Work up was done according to General Procedure and after purification by column chromatography SiO₂ (10% to 15% EtOAc in Hexanes), the title compound was isolated as a white solid (48 mg, 64% yield). The spectral data of this compound matched with previously reported literature.^{4b}

¹H NMR (600 MHz, CDCl₃): δ 7.67-7.59 (m, 2 H), 7.28-7.22 (m, 6 H), 7.21-7.17 (m, 1 H), 4.75 (dd, *J* = 8.0, 3.8 Hz, 1 H), 3.61-3.55 (m, 1 H), 3.38 (td, *J* = 10.1, 7.4 Hz, 1 H), 2.39 (s, 3 H), 1.98-1.91 (m, 1 H), 1.85-1.75 (m, 2 H), 1.65-1.59 (m, 1 H); ¹³C NMR (150 MHz, CDCl₃): δ 143.2, 143.0, 135.0, 129.5, 128.2, 127.4, 127.0, 126.1, 63.2, 49.3, 35.7, 23.9, 21.5.



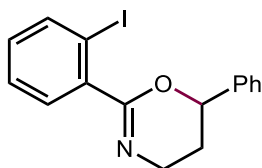
2,6-diphenyl-5,6-dihydro-4*H*-1,3-oxazine (22): This compound was prepared according to the General Procedure, using *N*-(3-phenylpropyl)benzamide (60 mg, 0.25 mmol). After purification by column chromatography SiO₂ (20% to 25% EtOAc in Hexanes), the title compound was isolated as a colorless oil (42 mg, 71% yield). The spectral data of this compound matched with previously reported literature.⁵

¹H NMR (600 MHz, CDCl₃): δ 8.03-7.99 (m, 2 H), 7.47-7.35 (m, 8 H), 5.32 (dd, *J* = 9.9, 3.1 Hz, 1 H), 3.77-3.68 (m, 2 H), 2.26-2.21 (m, 1 H), 2.04-1.97 (m, 1 H); ¹³C NMR (150 MHz, CDCl₃): δ 155.8, 140.8, 133.8, 130.4, 128.6, 128.0, 128.0, 127.0, 125.6, 76.3, 42.9, 29.6.



2-(4-methoxyphenyl)-6-phenyl-5,6-dihydro-4H-1,3-oxazine (23): This compound was prepared according to the General Procedure, using 4-methoxy-*N*-(3-phenylpropyl)benzamide (67 mg, 0.25 mmol). After purification by column chromatography SiO₂ (20% to 25% EtOAc in Hexanes), the title compound was isolated as a colorless oil (34 mg, 50% yield). The spectral data of this compound matched with previously reported literature.⁶

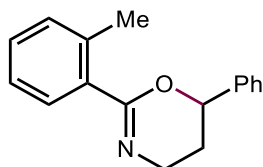
¹H NMR (600 MHz, CDCl₃): δ 7.96-7.91 (m, 2 H), 7.44-7.39 (m, 4 H), 7.38-7.34 (m, 1 H), 6.91-6.88 (m, 2 H), 5.30 (dd, *J* = 9.9, 3.1 Hz, 1 H), 3.84 (s, 3 H), 3.74-3.64 (m, 2 H), 2.25-2.19 (m, 1 H), 2.02-1.96 (m, 1 H); ¹³C NMR (150 MHz, CDCl₃): δ 161.4, 155.6, 141.0, 128.6, 128.6, 128.0, 126.4, 125.6, 113.3, 76.2, 55.3, 42.8, 29.7.



2-(2-iodophenyl)-6-phenyl-5,6-dihydro-4H-1,3-oxazine (24): This compound was prepared according to the General Procedure, using 2-iodo-*N*-(3-phenylpropyl)benzamide (91 mg, 0.25 mmol). After purification by column chromatography SiO₂ (20% to 25% EtOAc in Hexanes), the title compound was isolated as a colorless oil (45 mg, 49% yield).

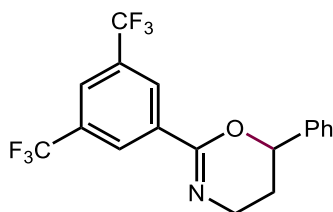
¹H NMR (600 MHz, CDCl₃): δ 7.87 (dd, *J* = 8.0, 0.8 Hz, 1 H), 7.52 (dd, *J* = 7.7, 1.7 Hz, 1 H), 7.46-7.43 (m, 2 H), 7.43-7.38 (m, 2 H), 7.38-7.32 (m, 2 H), 7.06 (dt, *J* = 7.7, 1.7 Hz, 1 H), 5.34 (dd, *J* = 10.3, 2.9 Hz, 1 H), 3.78-3.74 (m, 2 H), 2.26-2.21 (m, 1 H), 2.17-2.09 (m, 1 H); ¹³C NMR (150 MHz, CDCl₃): δ 158.4, 140.2, 140.1, 139.5, 130.5, 129.5, 128.6, 128.2, 127.9, 126.0, 94.8,

76.8, 43.4, 29.3; IR (neat): 1668, 1106, 755, 726, 696 cm^{-1} ; HRMS (ESI) m/z calcd for $\text{C}_{16}\text{H}_{15}\text{INO}$ $[(\text{M}+\text{H})]^+$ 364.0198, found 364.0179.



6-phenyl-2-(o-tolyl)-5,6-dihydro-4H-1,3-oxazine (25): This compound was prepared according to the General Procedure, using 2-methyl-*N*-(3-phenylpropyl)benzamide (63 mg, 0.25 mmol). After purification by column chromatography SiO_2 (20% to 25% EtOAc in Hexanes), the title compound was isolated as a colorless oil (35 mg, 56% yield).

^1H NMR (600 MHz, CDCl_3): δ 7.61 (d, $J = 7.5$ Hz, 1 H), 7.42-7.37 (m, 4 H), 7.36-7.32 (m, 1 H), 7.30-7.26 (m, 1 H), 7.22-7.17 (m, 2 H), 5.30 (dd, $J = 10.1, 2.6$ Hz, 1 H), 3.78-3.69 (m, 2 H), 2.51 (s, 3 H), 2.26-2.20 (m, 1 H), 2.09-2.01 (m, 1 H); ^{13}C NMR (150 MHz, CDCl_3): δ 158.3, 140.6, 136.6, 134.5, 130.7, 129.3, 128.8, 128.6, 128.0, 125.7, 125.5, 76.5, 43.2, 29.5, 20.8; IR (neat): 1657, 1262, 1088, 729, 698 cm^{-1} ; HRMS (ESI) m/z calcd for $\text{C}_{17}\text{H}_{18}\text{NO}$ $[(\text{M}+\text{H})]^+$ 252.1388, found 252.1373.

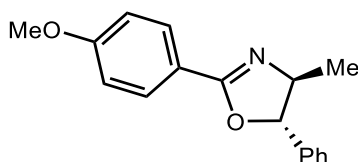


2-(3,5-bis(trifluoromethyl)phenyl)-6-phenyl-5,6-dihydro-4H-1,3-oxazine (26): This compound was prepared according to the General Procedure, using *N*-(3-phenylpropyl)-3,5-bis(trifluoromethyl)benzamide (94 mg, 0.25 mmol). After purification by column

chromatography SiO₂ (5% to 10% EtOAc in Hexanes), the title compound was isolated as a colorless oil (40 mg, 43% yield).

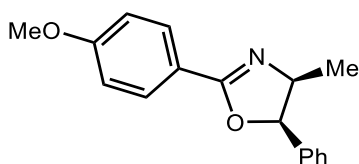
¹H NMR (600 MHz, CDCl₃): δ 8.46 (s, 2 H), 7.95 (s, 1 H), 7.48-7.43 (m, 2 H), 7.43-7.37 (m, 3 H), 5.37 (dd, *J* = 9.7, 3.3 Hz, 1 H), 3.81-3.71 (m, 2 H), 2.30-2.24 (m, 1 H), 2.09-2.02 (m, 1 H); ¹³C NMR (150 MHz, CDCl₃): δ 153.4, 140.1, 136.0, 131.5 (q, *J*_{C,F} = 33.0 Hz), 128.8, 128.4, 127.2 (m), 125.6, 123.9-123.8 (m), 123.3 (q, CF₃, *J*_{C,F} = 271.5), 77.0, 42.9, 29.5; ¹⁹F NMR (375 MHz, CDCl₃): δ -63.2 (s, 6 F); IR (neat): 1276, 1251, 1123, 681, 697 cm⁻¹; HRMS (ESI) *m/z* calcd for C₁₈H₁₄F₆NO [(M+H)]⁺ 374.0980, found 374.0970.

Note: Table 3 compounds were isolated only for spectral characterization.



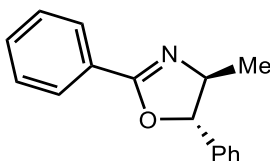
***trans*-2-(4-methoxyphenyl)-4-methyl-5-phenyl-4,5-dihydrooxazole (29a):** This compound was prepared according to the General Procedure, using 4-methoxy-*N*-(1-phenylpropan-2-yl)benzamide (27 mg, 0.1 mmol) and 50% LiBr. After purification by column chromatography SiO₂ (15% EtOAc in Hexanes), the title compound was isolated as the major diastereomer as a colorless oil. The spectral data of this compound matched with previously reported literature.⁷

¹H NMR (600 MHz, CDCl₃): δ 8.01 (d, *J* = 8.8 Hz, 2 H), 7.42-7.38 (m, 2 H), 7.38-7.34 (m, 3 H), 6.97-6.93 (m, 2 H), 5.11 (d, *J* = 7.7 Hz, 1 H), 4.21 (dq, *J* = 7.7, 6.5 Hz, 1 H), 3.87 (s, 3 H), 1.50 (d, *J* = 6.6 Hz, 3 H); ¹³C NMR (150 MHz, CDCl₃): δ 162.9, 162.4, 140.3, 130.3, 128.8, 128.4, 127.2, 125.7, 113.8, 88.4, 70.4, 55.4, 21.3.



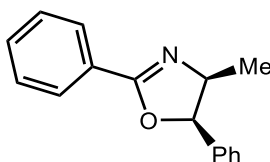
***cis*-2-(4-methoxyphenyl)-4-methyl-5-phenyl-4,5-dihydrooxazole (31a):** Minor diastereomer was obtained as a colorless oil. The spectral data of this compound matched with previously reported literature.⁷

¹H NMR (600 MHz, CDCl₃): δ 8.07 (d, *J* = 8.6 Hz, 2 H), 7.41-7.27 (m, 5 H), 7.00-6.96 (m, 2 H), 5.81 (d, *J* = 9.5 Hz, 1 H), 4.77-4.63 (m, 1 H), 3.89 (s, 3 H), 0.92 (d, *J* = 7.0 Hz, 3 H); ¹³C NMR (150 MHz, CDCl₃): δ 162.7, 162.0, 137.8, 130.5, 128.4, 128.1, 127.2, 126.2, 114.0, 84.4, 64.3, 55.5, 17.7.



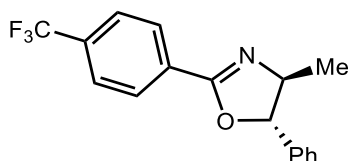
***trans*-4-methyl-2,5-diphenyl-4,5-dihydrooxazole (29b):** This compound was prepared according to the General Procedure, using *N*-(1-phenylpropan-2-yl)benzamide (24 mg, 0.1 mmol) and 50% LiBr. After purification by column chromatography SiO₂ (10% EtOAc in Hexanes), the title compound was isolated as the major diastereomer as a colorless oil. The spectral data of this compound matched with previously reported literature.⁷

¹H NMR (600 MHz, CDCl₃): δ 8.06-8.02 (m, 2 H), 7.53-7.50 (m, 1 H), 7.47-7.43 (m, 2 H), 7.42-7.33 (m, 5 H), 5.12 (d, *J* = 7.7 Hz, 1 H), 4.26-4.19 (m, 1 H), 1.51 (d, *J* = 6.6 Hz, 3 H); ¹³C NMR (150 MHz, CDCl₃): δ 162.8, 140.4, 131.5, 128.8, 128.4, 128.4, 128.3, 127.6, 125.6, 88.2, 70.9, 21.4.



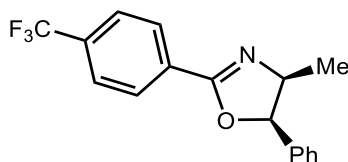
***cis*-4-methyl-2,5-diphenyl-4,5-dihydrooxazole (31b):** Minor diastereomer was obtained as a colorless oil. The spectral data of this compound matched with previously reported literature.⁷

^1H NMR (600 MHz, CDCl_3): δ 8.10-8.05 (m, 2 H), 7.56-7.51 (m, 1 H), 7.49-7.44 (m, 2 H), 7.40-7.36 (m, 2 H), 7.34-7.31 (m, 1 H), 7.29-7.27 (m, 2 H), 5.80 (d, $J = 9.7$ Hz, 1 H), 4.69 (qd, $J = 9.8$, 7.0 Hz, 1 H), 0.91 (d, $J = 7.2$ Hz, 3 H); ^{13}C NMR (150 MHz, CDCl_3): δ 163.2, 137.0, 131.6, 128.5, 128.4, 128.3, 127.9, 127.8, 126.2, 84.2, 65.3, 17.8.



***trans*-4-methyl-5-phenyl-2-(4-(trifluoromethyl)phenyl)-4,5-dihydrooxazole (29c):** This compound was prepared according to the General Procedure, using *N*-(1-phenylpropan-2-yl)-4-(trifluoromethyl)benzamide (31 mg, 0.1 mmol) and 50% LiBr. After purification by column chromatography SiO_2 (10% to 15% EtOAc in Hexanes), the title compound was isolated as the major diastereomer as a colorless oil. The spectral data of this compound matched with previously reported literature.⁸

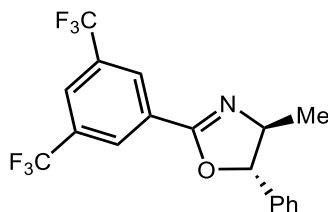
^1H NMR (600 MHz, CDCl_3): δ 8.15 (d, $J = 8.1$ Hz, 2 H), 7.71 (d, $J = 8.1$ Hz, 2 H), 7.43-7.39 (m, 2 H), 7.38-7.35 (m, 3 H), 5.15 (d, $J = 7.8$ Hz, 1 H), 4.26 (p, $J = 7.0$ Hz, 1 H), 1.52 (d, $J = 6.6$ Hz, 3 H); ^{13}C NMR (150 MHz, CDCl_3): δ 161.6, 140.0, 133.0 (q, $J_{\text{C,F}} = 32.9$ Hz), 131.0, 128.9, 128.7, 128.5, 125.6, 125.4 (q, $J_{\text{C,F}} = 4.5$), 123.8 (q, CF_3 , $J_{\text{C,F}} = 271.5$), 88.5, 71.0, 21.3; ^{19}F NMR (375 MHz, CDCl_3): δ -63.4 (s, 3 F).



***cis*-4-methyl-5-phenyl-2-(4-(trifluoromethyl)phenyl)-4,5-dihydrooxazole (31c):** This compound was prepared according to the General Procedure, using *N*-(1-phenylpropan-2-yl)-4-

(trifluoromethyl)benzamide (31 mg, 0.1 mmol) and 50% LiBr. After heating the crude mixture at 50 °C for 24 h and purification by column chromatography SiO₂ (10% to 15% EtOAc in Hexanes), the title compound was isolated as the minor diastereomer as a colorless oil.

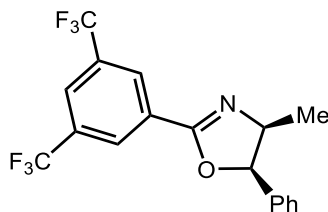
¹H NMR (600 MHz, CDCl₃): δ 8.16 (d, *J* = 8.3 Hz, 2 H), 7.71 (d, *J* = 8.3 Hz, 2 H), 7.41-7.37 (m, 2 H), 7.36-7.32 (m, 1 H), 7.25 (s, 2 H), 5.82 (d, *J* = 9.8 Hz, 1 H), 4.75-4.67 (m, 1 H), 0.91 (d, *J* = 7.1 Hz, 3 H); ¹³C NMR (150 MHz, CDCl₃): δ 161.9, 136.6, 133.1 (q, *J*_{C,F} = 33.0 Hz), 131.0, 128.7, 128.4, 128.1, 126.1, 125.4 (q, *J*_{C,F} = 3.0 Hz), 123.8 (q, CF₃, *J*_{C,F} = 271.5), 84.4, 65.6, 17.7; ¹⁹F NMR (375 MHz, CDCl₃): δ -63.4 (s, 3 F); IR (neat): 1324, 1128, 1168, 1099, 1066 cm⁻¹; HRMS (ESI) *m/z* calcd for C₁₇H₁₅F₃NO [(M+H)]⁺ 306.1106, found 306.1100.



***trans*-2-(3,5-bis(trifluoromethyl)phenyl)-4-methyl-5-phenyl-4,5-dihydrooxazole (29d):** This compound was prepared according to the General Procedure, using *N*-(1-phenylpropan-2-yl)-3,5-bis(trifluoromethyl)benzamide (38 mg, 0.1 mmol) and 50% LiBr. After purification by column chromatography SiO₂ (2% EtOAc in Hexanes), the title compound was isolated as the major diastereomer as a colorless oil. (11.4 mg, 31% yield)

¹H NMR (600 MHz, CDCl₃): δ 8.49 (s, 2 H), 8.01 (s, 1 H), 7.45-7.35 (m, 5 H), 5.18 (d, *J* = 8.3 Hz, 1 H), 4.31 (p, *J* = 7.1 Hz, 1 H), 1.53 (d, *J* = 6.8 Hz, 3 H); ¹³C NMR (150 MHz, CDCl₃): δ 160.4, 139.4, 132.1 (q, *J*_{C,F} = 34.5 Hz), 129.0, 128.8, 128.8, 128.6-128.5 (m), 125.8, 124.9-124.8 (m), 123.0 (q, CF₃, *J*_{C,F} = 271.5 Hz), 89.2, 71.1, 21.2; ¹⁹F NMR (375 MHz, CDCl₃): δ -

63.4 (s, 6 F); IR (neat): 1279, 1172, 1132, 1121, 696, 541 cm^{-1} ; HRMS (ESI) m/z calcd for $\text{C}_{18}\text{H}_{14}\text{F}_6\text{NO}$ $[(\text{M}+\text{H})]^+$ 374.0980, found 374.0970.



***cis*-2-(3,5-bis(trifluoromethyl)phenyl)-4-methyl-5-phenyl-4,5-dihydrooxazole (31d):** This compound was prepared according to the General Procedure, using *N*-(1-phenylpropan-2-yl)-3,5-bis(trifluoromethyl)benzamide (38 mg, 0.1 mmol) and 50% LiBr. After heating the crude mixture at 50 °C for 24 h and purification by column chromatography SiO_2 (2% EtOAc in Hexanes), the title compound was isolated as the minor diastereomer as a colorless oil. (7.5 mg, 20% yield)

^1H NMR (600 MHz, CDCl_3): δ 8.53 (s, 2 H), 8.04 (s, 1 H), 7.43-7.38 (m, 5 H), 5.87 (d, $J = 9.9$ Hz, 1 H), 4.75 (dq, $J = 9.9, 7.0$ Hz, 1 H), 0.94 (d, $J = 7.2$ Hz, 3 H); ^{13}C NMR (150 MHz, CDCl_3): δ 160.6, 136.2, 132.1 (q, $J_{\text{C,F}} = 34.5$ Hz), 129.0, 128.7, 128.5, 128.3 (m), 126.1, 124.9-124.8 (m), 123.0 (q, CF_3 , $J_{\text{C,F}} = 271.5$ Hz), 84.9, 65.8, 17.6; ^{19}F NMR (375 MHz, CDCl_3): δ -63.4 (s, 3 F); IR (neat): 1278, 1176, 1135, 699, 682 cm^{-1} ; HRMS (ESI) m/z calcd for $\text{C}_{18}\text{H}_{14}\text{F}_6\text{NO}$ $[(\text{M}+\text{H})]^+$ 374.0980, found 374.0971.

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