Supporting Information

“One pot two step direct conversion of alkenes to amines through tandem ozonolysis and ammonia-borane in water”

Vipin Tyagi^{1*}, Ashok Kumar Gupta¹

Department of Chemistry, S. S. V. PG. College¹, Hapur, Uttar Pradesh- 245101

(India)

(Ch. Charan Singh University, Meerut, India)

* Email: vipingutam76@gmail.com.

General Procedure: One pot two step conversion of alkenes to amines

To a clean RBF containing a solution of alkene (1 mmol) and water (30 ml), a stream of O₃/O₂ was bubbled through the solution at room temperature. Once the pale blue color of ozone appeared, the ozonizer voltage was set to zero and the reaction was sparged with nitrogen until the blue color dissipated. Ammonia- borane (2.2 mmol) was added. The reaction mass was stirred at room temperature for 5 min., then amine (1.05 mmol) was added drop wise over a period of 15 min. The reaction mixture was stirred at r.t. for 35-50 min. and monitored the reaction progress by TLC. After completion the reaction mixture was diluted with dichloromethane (30 ml) and subsequently was with saturated brine. The organic layer was dried (Na₂SO₄) and solvent was removed under reduced pressure to give the crude product. It was purified by column chromatography on silica gel using hexane – ethylacetate mixture as eluent.

Spectral Data of Compounds

All compounds are known compounds and characterized by comparing their ^1H and ^{13}C NMR to the previously reported data (reference provided along with data).

1. Benzyl phenyl amine (11)^{3,4}: Light yellow oil; IR (neat): 3418, 2923, 1735, 1601, 1505, 1252, 1069, 749 cm^{-1} . ^1H NMR (CDCl_3): 7.69-7.59 (m, 5H), 7.53 (t, $J = 8.4$ Hz, 2H), 7.08 (t, $J = 7.3$ Hz, 1H), 6.91 (d, $J = 8.5$ Hz, 2H), 4.57 (s, 2H), 4.22 (br s, 1H, NH). ^{13}C NMR (CDCl_3): 148.02, 139.38, 129.13, 128.47, 127.32, 127.04, 117.33, 112.70, 47.99.

2. 4-bromo benzyl aniline (12)⁴: Pale yellow oil; IR (neat): 3417, 1735, 1601, 1505, 1231, 750 cm^{-1} . ^1H NMR (CDCl_3): 7.46 (d, 2H, $J = 8.1$ Hz), 7.25 (d, 2H, $J = 8.1$ Hz), 7.17 (t, 2H, $J = 7.3$ & 8.1 Hz), 6.72 (t, 1H, $J = 7.3$ Hz), 6.59 (d, 2H, $J = 8.7$ Hz), 4.29 (s, 2H), 4.05 (brs, 1H). ^{13}C NMR (CDCl_3): 147.2, 138.2, 129.9, 129.3, 129.1, 118.1, 113.2, 47.8.

3. 4-(benzylamino)-phenol (13)⁴: Light yellow oil; IR (neat): 3386, 1603, 1510, 1236 cm^{-1} . ^1H NMR (CDCl_3): 7.20 (d, 2H, $J = 8.5$ Hz), 7.11 (t, 2H, $J = 7.3$ Hz), 6.73 (d, 2H, $J = 8.6$ Hz), 6.67 (t, 1H, $J = 7.2$ Hz), 6.56 (d, 2H, $J = 7.6$ Hz), 5.28 (s, 1H), 4.50 (brs, 1H), 4.20 (s, 2H). ^{13}C NMR (CDCl_3): 154.7, 148.0, 131.2, 129.2, 128.9, 117.7, 115.4, 113.1, 47.8.

4. Cyclohexyl methyl phenyl amine (14)^{1,3}: Colorless liquid; IR (neat): 3418, 2923, 1603, 1506, 747 cm^{-1} . ^1H NMR (CDCl_3): 7.09 (m, 2H), 6.60 (t, 1H, $J = 7.5$ Hz), 6.50 (d, 2H, $J = 7.5$ Hz), 3.58 (brs, 1H), 2.93 (d, 2H, $J = 6.7$ Hz), 1.88-0.90 (m, 11H). ^{13}C NMR (CDCl_3): 148.5, 129.1, 116.8, 112.5, 50.5, 37.5, 31.2, 26.5, 25.9.

5. Phenyl propyl amine (15)³: Light brown oil; IR (neat): 3410, 2960, 1603, 1507, 1320, 1178, 748 cm^{-1} . ^1H NMR (CDCl_3): 7.09 (t, 2H, $J = 8.5$ Hz), 6.62 (t, 1H, $J = 7.2$

Hz), 6.52 (d, 2H, $J = 8.5$ Hz), 3.58 (brs, 1H), 3.07 (t, 2H, $J = 7.2$ Hz), 1.71-1.59 (m, 2H), 1.01 (t, 3H, $J = 7.5$ Hz). ^{13}C NMR (CDCl_3): 148.4, 129.1, 116.9, 112.6, 45.7, 22.6, 11.6.

6. Butyl phenyl amine (16)³: Colorless liquid; IR (neat): 3410, 2957, 1603, 1506, 1320, 747 cm^{-1} . ^1H NMR (CDCl_3): 7.12-7.06 (m, 2H), 6.61 (t, 1H, $J = 7.4$ Hz), 6.52 (d, 2H, $J = 7.7$ Hz), 3.47 (brs, 1H), 3.10 (t, 2H, $J = 6.9$ Hz), 1.65-1.56 (m, 2H), 1.50-1.38 (m, 2H), 0.97 (t, 3H). ^{13}C NMR (CDCl_3): 148.5, 129.1, 116.9, 112.6, 43.6, 31.6, 20.3, 13.8.

7. 1-benzylpiprazine (17)⁶: Pale yellow oil; ^1H NMR (CDCl_3): 7.34-7.23 (m, 5H), 3.45 (s, 2H), 2.84-2.78 (m, 4H), 2.37 (m, 4H), 1.76 (s, 1H). ^{13}C NMR (CDCl_3): 137.8, 128.9, 127.9, 126.7, 77.40, 77.08, 76.76, 63.4, 54.2, 45.8

8. N-cyclohexylaniline (18)⁷: Colorless liquid; ^1H NMR (CDCl_3): 7.40-7.35 (m, 2H), 6.88 (t, $J = 7.28$ Hz, 1H), 6.79 (d, $J = 8.44$ Hz, 2H), 3.45 (m, 1H), 2.22-1.43 (m, 10H), 3.73 (br s, 1H, NH). ^{13}C NMR (CDCl_3): 147.23, 129.07, 116.61, 112.61, 51.44, 33.25, 25.81, 24.91.

9. N-benzyl-4-methylaniline (19)²: Light brown liquid; IR (neat) $\nu_{\text{max}}/\text{cm}^{-1}$ 3445, 3027, 2918, 2763, 1951, 1865, 1701, 1618, 1522, 1452, 1302, 1126, 807, 742, 697, 511. ^1H NMR (CDCl_3): 7.40-7.21 (m, 5H), 7.04 (d, 2H), 6.61 (d, 2H), 4.36 (s, 2H), 3.90 (br s, 1H), 2.30 (s, 3H); ^{13}C NMR (CDCl_3): 146.0, 139.6, 129.7, 128.6, 127.5, 127.1, 126.7, 113, 48.6, 20.4.

10. N-benzyl-4-chloroaniline (20)²: Light yellow oil; IR (neat) $\nu_{\text{max}}/\text{cm}^{-1}$ 3427, 3028, 2924, 2853, 1952, 1864, 1600, 1502, 1453, 1401, 1321, 1177, 1094, 915, 815, 733, 698, 505. ^1H NMR (CDCl_3): 7.37-7.31 (m, 5H), 6.14 (d, 2H), 6.56 (d, 2H), 4.32 (s, 2H), 4.10 (br s, 1H); ^{13}C NMR (CDCl_3): 146.7 139.0 129.0 128.7 127.4 127.3 122.0, 114.0, 48.3.

11. Phenyl-thiophen-2-ylmethyl-amine (21)⁵: Pale yellow oil; IR (neat): 3409, 2923, 1601, 1504, 1315, 1258, 750, 696 cm⁻¹. ¹H NMR (CDCl₃): 7.07-7.14 (m, 3H), 6.96 (s, 1H), 6.91 (t, 1H, J = 3.0 Hz), 6.68 (t, 1H, J = 7.5 Hz), 6.60 (d, 2H, J = 7.5 Hz), 4.47 (s, 2H), 3.38 (brs, 1H). ¹³C NMR (CDCl₃): 138.7, 129.2, 126.7, 125.0, 124.5, 118.1, 114.2, 113.1, 49.4.

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