

Supporting Information for

Chemoselective reduction of aldehydes by ruthenium trichloride and resin-bound formates

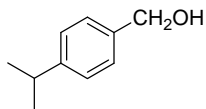
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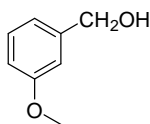
India.

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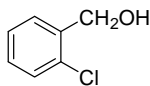
Spectral data of some selected alcohols

Table 2, Entry 3: (4-Isopropylphenyl)methanol [1]

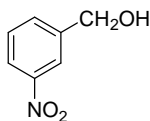
IR (neat) ν_{\max} : 3334, 2960, 2871, 1514, 1215 cm^{-1} . ^1H NMR (CDCl_3 , 400 MHz) δ = 7.29 (2H, d, J = 8.0 Hz), 7.23 (2H, d, J = 8.0 Hz), 4.65 (2H, s), 2.90 (1H, septet, J = 6.9 Hz), 1.66 (1H, br s), 1.25 (6H, d, J = 6.9 Hz). ^{13}C NMR (CDCl_3 , 100 MHz) δ = 147.5, 137.3, 126.2, 125.6, 64.3, 32.9, 22.9. HRMS: Calcd for $\text{C}_{10}\text{H}_{14}\text{ONa}$: $[\text{M}+\text{Na}]^+$, 173.0943; found: 173.0946.

Table 2, Entry 5: (3-Methoxyphenyl)methanol [2]

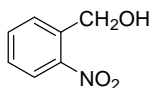
IR (neat) ν_{\max} : 3332, 2912, 2837, 1587, 1265 cm^{-1} . ^1H NMR (CDCl_3 , 300 MHz) δ = 7.25 (1H, t, J = 7.5 Hz), 6.92–6.81 (3H, m), 4.62 (2H, s), 3.79 (3H, s), 2.41 (1H, br s). ^{13}C NMR (CDCl_3 , 75 MHz) δ = 159.7, 142.5, 129.5, 119.0, 113.1, 112.2, 65.0, 55.1.

Table 2, Entry 6: (2-Chlorophenyl)methanol [3]

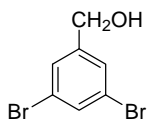
mp = 73–74 °C (Lit. 74 °C). IR (Nujol) ν_{\max} : 3201, 2854, 1458, 1034 cm^{-1} . ^1H NMR (CDCl_3 , 300 MHz) δ = 7.46 (1H, dd, J = 7.5 & 2.1 Hz), 7.35 (1H, dd, J = 7.2 & 1.8 Hz), 7.28 (1H, ddd, J = 7.5, 7.2 & 1.8 Hz), 7.23 (1H, ddd, J = 7.2, 7.2 & 2.1 Hz), 4.75 (2H, s), 2.31 (1H, s). ^{13}C NMR (CDCl_3 , 75 MHz) δ = 138.1, 132.6, 129.3, 128.8, 128.6, 127.0, 62.7.

Table 2, Entry 8: (3-Nitrophenyl)methanol [4]

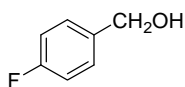
IR (neat) ν_{\max} : 3360, 2874, 1528, 1350, 1046 cm^{-1} . ^1H NMR (CDCl_3 , 300 MHz) δ = 8.18 (1H, s), 8.08 (1H, dd, J = 7.8 & 1.8 Hz), 7.64 (1H, d, J = 7.5 Hz), 7.47 (1H, t, J = 7.8 Hz), 4.76 (2H, s), 2.19 (1H, br s). ^{13}C NMR (CDCl_3 , 75 MHz) δ = 148.3, 142.8, 132.6, 129.4, 122.4, 121.4, 63.9.

Table 2, Entry 9: (2-Nitrophenyl)methanol [5]

IR (neat) ν_{\max} : 3364, 2877, 1532, 1349, 1047 cm^{-1} . ^1H NMR (CDCl_3 , 300 MHz) δ = 8.09 (1H, d, J = 8.1 Hz), 7.74 (1H, d, J = 7.5 Hz), 7.67 (1H, dd, J = 8.1 & 7.8 Hz), 7.47 (1H, dd, J = 7.8 & 7.6 Hz), 4.97 (2H, s), 2.61 (1H, br s). ^{13}C NMR (CDCl_3 , 75 MHz) δ = 136.8, 134.2, 129.9, 128.5, 125.0, 62.5.

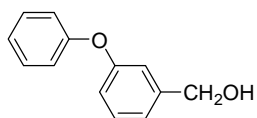
Table 2, Entry 10: (3,5-Dibromophenyl)methanol [6]

mp = 98 °C. IR (Nujol) ν_{\max} : 3309, 2925, 2854, 1556, 1033 cm^{-1} . ^1H NMR (CDCl_3 , 400 MHz) δ = 7.56 (1H, s), 7.42 (2H, s), 4.62 (2H, s), 2.15 (1H, s). ^{13}C NMR (CDCl_3 , 100 MHz) δ = 144.6, 133.0, 128.4, 123.0, 63.6.

Table 2, Entry 11: (4-Fluorophenyl)methanol [7]

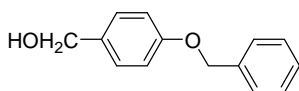
IR (neat) ν_{\max} : 3332, 2879, 1514, 1417, 1222 cm^{-1} . ^1H NMR (CDCl_3 , 300 MHz) δ = 7.31–7.23 (2H, m), 7.05–6.96 (2H, m), 4.58 (2H, s), 2.50 (1H, s). ^{13}C NMR (CDCl_3 , 75 MHz) δ = 163.9, 160.6, 136.6, 136.5, 128.8, 128.7, 115.5, 115.2, 64.4.

Table 2, Entry 12: (3-Phenoxyphenyl)methanol



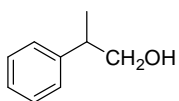
IR (neat) ν_{\max} : 3319, 3039, 2871, 1583, 1446, 1215 cm^{-1} . ^1H NMR (CDCl_3 , 400 MHz) δ = 7.36–7.29 (3H, m), 7.13–7.07 (2H, m), 7.02–7.00 (3H, m), 6.94–6.91 (1H, m), 4.62 (2H, s), 2.20 (1H, br s). ^{13}C NMR (CDCl_3 , 100 MHz) δ = 157.4, 156.9, 142.9, 129.7, 129.6, 123.2, 121.5, 118.9, 117.7, 116.3, 64.5. HRMS: Calcd for $\text{C}_{13}\text{H}_{12}\text{O}_2\text{Na}$: $[\text{M}+\text{Na}]^+$, 223.0735; found: 223.0739.

Table 2, Entry 13: [4-(Benzyloxy)phenyl]methanol

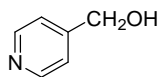


mp = 90 °C. IR (neat) ν_{\max} : 3379, 2923, 2856, 1508, 1456, 1244 cm^{-1} . ^1H NMR (CDCl_3 , 400 MHz) δ = 7.34–7.27 (7H, m), 6.97–6.95 (2H, m), 5.07 (2H, s), 4.60 (2H, s). ^{13}C NMR (CDCl_3 , 75 MHz) δ = 158.3, 136.9, 133.4, 128.6, 127.9, 127.4, 114.9, 70.0, 64.8. HRMS: Calcd for $\text{C}_{14}\text{H}_{14}\text{O}_2\text{Na}$: $[\text{M}+\text{Na}]^+$, 237.0892; found: 237.0899.

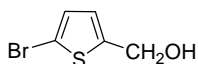
Table 2, Entry 14: 2-Phenylpropan-1-ol



IR (neat) ν_{\max} : 3350, 3010, 2950, 1600, 1500 cm^{-1} . ^1H NMR (CDCl_3 , 400 MHz) δ = 7.38–7.34 (2H, m), 7.28–7.24 (3H, m), 3.73 (2H, s), 2.97 (1H, q, J = 6.96 Hz), 1.31 (3H, d, J = 7.08 Hz). ^{13}C NMR (CDCl_3 , 75 MHz) δ = 143.8, 128.6, 127.5, 126.7, 68.7, 42.4, 17.6. HRMS: Calcd for $\text{C}_9\text{H}_{12}\text{ONa}$: $[\text{M}+\text{Na}]^+$, 159.0786; found: 159.0789.

Table 2, Entry 16: (Pyridin-4-yl)methanol [8]

mp = 58 °C (Lit. 57–60 °C). IR (Nujol) ν_{\max} : 3125, 2854, 1605, 1042 cm^{-1} . ^1H NMR (CDCl_3 , 300 MHz) δ = 8.33 (2H, dd, J = 4.5 & 1.8 Hz), 7.21 (2H, dd, J = 4.5 & 1.8 Hz), 4.64 (2H, s), 4.20 (1H, br s). ^{13}C NMR (CDCl_3 , 75 MHz) δ = 151.5, 149.0, 121.3, 62.8.

Table 2, Entry 17: (5-bromothiophen-2-yl)methanol [9]

IR (neat) ν_{\max} : 3321, 2927, 2869, 1014 cm^{-1} . ^1H NMR (CDCl_3 , 400 MHz) δ = 6.90 (1H, d, J = 3.68 Hz), 6.72 (1H, d, J = 3.64 Hz), 4.69 (2H, s), 2.42 (1H, br s). ^{13}C NMR (CDCl_3 , 100 MHz) δ = 145.7, 129.6, 125.6, 112.2, 60.0.

References

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