

α -Hydroxy amides from carbamoylsilane and aldehydes

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^1H and ^{13}C NMR spectra were recorded on a Bruker AR600 MHz spectrometer in CDCl_3 as a solvent and TMS as an internal standard. Peak values are shown in δ (ppm). IR spectra were recorded on IMPACT-410 spectrophotometer. Elemental analysis was performed on an EA-1108 analyzer. Melting points were uncorrected. THF was distilled from sodium-benzophenone ketyl immediately before use. The monitoring of reaction and checking of purity of the product were done using pre-coated silica gel plates and visualization using iodine/UV lamp.

For **3b**: Colourless liquid, yield 75%. ^1H NMR (600 MHz, CDCl_3) δ : 4.27 (d, $J = 4.2$ Hz, 1H), 3.60 (br s, 1H), 3.02 (s, 3H), 3.01 (s, 3H), 1.99 (m, 1H), 1.08 (d, $J = 6.6$ Hz, 3H), 0.81 (d, $J = 6.6$ Hz, 3H). ^{13}C NMR (151 MHz, CDCl_3) δ : 173.9, 72.1, 36.5, 35.8, 31.1, 19.7, 15.0. IR (KBr, ν/cm^{-1}): 3430, 1611, 1420, 1330. Found (%): C, 58.03; H, 10.45; N, 9.46. Calc. for $\text{C}_7\text{H}_{15}\text{NO}_2$ (%): C, 57.90; H, 10.41; N, 9.65.

For **3d**: Colourless crystal, yield 76%, mp 119–120 °C. ^1H NMR (600 MHz, CDCl_3) δ : 7.28–7.23 (m, 4H), 5.19 (s, 1H), 4.70 (br s, 1H), 3.81 (s, 3H), 3.04 (s, 3H), 2.78 (s, 3H). ^{13}C NMR (151 MHz, CDCl_3) δ : 172.7, 160.0, 131.5, 128.8, 114.4, 71.0, 55.3, 36.4, 36.3. IR (KBr, ν/cm^{-1}): 3401, 1635, 1511, 1273, 1180. Found (%): C, 63.01; H, 7.38; N, 6.55. Calc. for $\text{C}_{11}\text{H}_{15}\text{NO}_3$ (%): C, 63.14; H, 7.23; N, 6.69.

For **3e**: Colourless crystal, yield 78%, mp 117–119 °C. ^1H NMR (600 MHz, CDCl_3) δ : 7.23–7.18 (m, 4H), 5.19 (s, 1H), 4.71 (br s, 1H), 3.05 (s, 3H), 2.80 (s, 3H), 2.36 (s, 3H). ^{13}C NMR (151 MHz, CDCl_3) δ : 172.6, 138.3, 136.3, 129.7, 127.4, 71.4, 36.4, 36.3, 21.2. IR (KBr, ν/cm^{-1}): 3415, 1623, 1505, 1258, 1162. Found (%): C, 68.48; H, 7.35; N, 7.20. Calc. for $\text{C}_{11}\text{H}_{15}\text{NO}_2$ (%): C, 68.37; H, 7.82; N, 7.25.

For **3g**: Colourless crystal, yield 85%, mp 120–122 °C. ^1H NMR (600 MHz, CDCl_3) δ : 7.37–7.27 (m, 4H), 5.20 (s, 1H), 4.76 (br s, 1H), 3.05 (s, 3H), 2.80 (s, 3H). ^{13}C NMR (151 MHz, CDCl_3) δ : 172.8, 137.7, 134.5, 129.2, 128.9, 70.8, 36.4, 36.3. IR (KBr, ν/cm^{-1}): 3370, 1628, 1402, 1268, 1146. Found (%): C, 56.03; H, 5.71; N, 6.53. Calc. for $\text{C}_{10}\text{H}_{12}\text{NO}_2\text{Cl}$ (%): C, 56.21; H, 5.66; N, 6.56.

For **3h**: Colourless crystal, yield 86%, mp 123–124 °C. ^1H NMR (600 MHz, CDCl_3) δ : 8.26 (m, 2H), 7.56 (m, 2H), 5.32 (s, 1H), 4.86 (br s, 1H), 3.07 (s, 3H), 2.84 (s, 3H). ^{13}C NMR (151 MHz, CDCl_3) δ : 171.2, 147.9, 146.0, 128.5, 124.3, 70.1, 36.5, 36.4. IR (KBr, ν/cm^{-1}): 3448, 1634, 1507, 1269, 1123. Found (%): C, 53.47; H, 5.39; N, 12.58. Calc. for $\text{C}_{10}\text{H}_{12}\text{N}_2\text{O}_4$ (%): C, 53.57; H, 5.39; N, 12.49.

For **3i**: Colourless liquid, yield 71 %. ^1H NMR (600 MHz, CDCl_3) δ : 5.82 (m, 1H), 5.43 (d, $J = 16.8$ Hz, 1H), 5.33 (d, $J = 9.6$ Hz, 1H), 4.78 (d, $J = 7.2$ Hz, 1H), 3.86 (br s, 1H), 3.05 (s, 3H), 3.02 (s, 3H). ^{13}C NMR (151 MHz, CDCl_3) δ : 172.0, 134.8, 118.5, 69.9, 36.5, 36.3. IR (KBr, ν/cm^{-1}): 3325, 1631, 1250, 1114. Found (%): C, 55.76; H, 8.61; N, 10.80. Calc. for $\text{C}_6\text{H}_{11}\text{NO}_2$ (%): C, 55.80; H, 8.58; N, 10.84.

For **3j**: Colourless crystal, yield 73%, mp 115–117 °C. ^1H NMR (600 MHz, CDCl_3) δ : 7.41–7.30 (m, 5H), 6.75 (d, $J = 16.2$ Hz, 1H), 6.15 (q, $J = 7.2$ Hz, $J = 16.2$ Hz, 1H), 4.94 (d, $J = 7.2$ Hz, 1H), 4.75 (br s, 1H), 3.08, 3.06 (2s, 6H). ^{13}C NMR (151 MHz, CDCl_3) δ : 172.1, 136.1, 133.8, 128.6, 128.2, 126.7, 125.9, 69.6, 36.5, 36.4. IR (KBr, ν/cm^{-1}): 3325, 1620, 1486, 1396, 1263, 1132. Found (%): C, 70.01; H, 7.41; N, 6.81. Calc. for $\text{C}_{12}\text{H}_{15}\text{NO}_2$ (%): C, 70.22; H, 7.37; N, 6.82.

For **3l**: Colourless crystal, yield 91%, mp 140–141 °C. ^1H NMR (600 MHz, CDCl_3) δ : 7.31 (m, 1H), 7.02–6.97 (m, 2H), 5.50 (s, 1H), 4.67 (br s, 1H), 3.07 (s, 3H), 2.90 (s, 3H). ^{13}C NMR (151 MHz, CDCl_3) δ : 171.6, 142.3, 126.9, 126.3, 126.0, 66.2, 36.6, 36.3. IR (KBr, ν/cm^{-1}): 3381, 1630, 1404, 1212, 1168. Found (%): C, 51.90; H, 5.86; N, 7.65. Calc. for $\text{C}_8\text{H}_{11}\text{NO}_2\text{S}$ (%): C, 51.87; H, 5.98; N, 7.56.