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(*R*,*S*)-*N*-[(2-Oxocyclohexyl)methyl]-2-phenyl-1-ethanaminium Chloride

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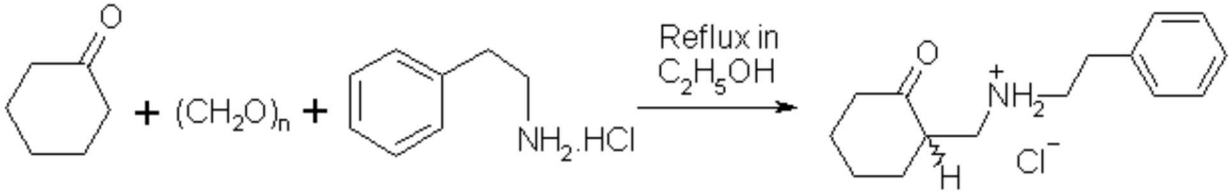

The Mannich bases of cyclohexanone with benzylamine and 3,4-methylenedioxybenzylamine hydrochlorides have been prepared in moderate yields using aqueous formaldehyde solution [1]. We report now the synthesis of an analogous product from 2-phenylethylamine. A mixture of cyclohexanone (2.00 g, 0.02 mol), paraformaldehyde (1.20 g, 0.04 mol) and 2-phenylethylamine hydrochloride (3.18 g, 0.02 mol) was refluxed under stirring in anhydrous ethanol (15 ml) for 5 h (TLC monitoring). The reaction mixture gradually turned into a solution. The solvent was then removed under reduced pressure and the residue was triturated with ice-cooled acetone (20 ml). The separated crystals were filtered, washed with cold acetone, recrystallized from *n*-butanol and air-dried. Yield: 3.00 g (52 %) of colorless crystals. TLC homogeneous product (TLC: silica gel Merck GF_{254} Al-sheets, eluted by chloroform-ethanol 3:1).

Mp. 155-156 ºC (*n*-butanol).

^{1}H NMR (300 MHz, d_6-DMSO): 1.23-1.42 (m, 1H), 1.50-1.84 (m, 3H), 1.88-2.05 (m, 1H), 2.09-2.35 (m, 2H), 2.35-2.47 (m, 1H), 2.75-2.83 (m, 1H), 2.92-3.06 (m, 3H), 3.06-3.18 (m, 2H), 3.18-3.29 (m, 1H), 7.20-7.38 (m, $5H_{arom.}$), 9.15 (br. s, N^+H_2).

FT IR (fluorolube): 3023, 2936, 2861, 2750, 2705, 1705 (C=O), 1593, 1455, 1424, 1390.

FAB-MS [glycerol; *m/z* (%)]: 499 (2M + HCl + H+(super)), 463 (2; 2M + H^+), 324 (6; MH^+ + glycerol), *232* (100; $MH^+ = C_{15}H_{22}NO^+$), 140 (6), 134 (25), 105 (13).

Anal. calcd. for $C_{15}H_{22}NOCl$ (267.80): C 67.28, H 8.28, N 5.23, Cl 13.24; found C 67.24, H 8.27, N 5.23, Cl 13.36.

Reference

1. Mannich C.; Hieronimus O. *Ber. Dtsch. Chem. Ges.* **1942**, *75*, 49-55.

Sample Availability: Available from the authors and from MDPI.