

Short Note

Synthesis of 3-Methyl-1-morpholin-4-ylmethyl-2,6-diphenylpiperidin-4-one

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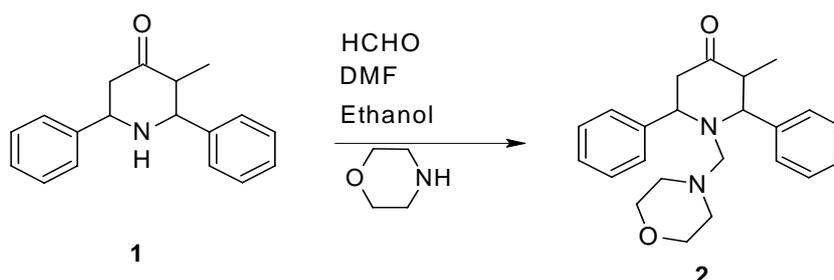
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Abstract: This paper describes the synthesis of 3-methyl-1-morpholin-4-ylmethyl-2,6-diphenylpiperidin-4-one from 3-methyl-2,6-diphenylpiperidin-4-one. The synthesized compound was characterized by FT-IR, ¹H NMR, EI-MS and elemental analysis.

Keywords: piperidin-4-one; morpholine; Mannich condensation

Introduction

Compounds with a piperidin-4-one nucleus have received extensive attention in the past and recent years because of their diverse biological activities, including antiviral [1], antitumor [2], central nervous system stimulant [3], analgesic [4], anticancer [5] and antimicrobial activity [6]. Morpholine is a compound widely used in synthesis because of its various industrial applications. In this paper, we want to report the synthesis of 3-methyl-1-morpholin-4-ylmethyl-2,6-diphenylpiperidin-4-one.



Synthesis

Preparation of 3-methyl-1-morpholin-4-ylmethyl-2, 6-diphenylpiperidin-4-one 2

3-Methyl-2,6-diphenylpiperidin-4-one **1** (1.32 g, 0.005 mol), prepared according to the reported literature [7] and formaldehyde (3 mL) were dissolved in a mixture of ethanol (25 mL) and DMF (10 mL). The contents were warmed on a water bath maintained at 60 °C and morpholine (1 mL, 0.01 mol) was added with constant stirring. It was shaken well for an hour. The mixture was poured into crushed ice with constant stirring and kept overnight at room temperature. The precipitate obtained was filtered and dried. The crude sample **2** was recrystallized from absolute ethanol. The yield of the product is 72%.

Melting point: sublimation at 92-94 °C

IR (KBr pellet, cm^{-1}): 1722 (C=O), 1523 (C=C str.), 1222 (C-O-C) (morpholine), 2889 (C-H str.)

^1H NMR (300 MHz, CDCl_3): 1.71 (s, 3H, CH_3), 2.45 (t, $J = 7.3$ Hz, 4H, morpholine- CH_2), 3.61 (t, $J = 6.4$ Hz, 4H, morpholine- CH_2) 4.12 (d, $J = 3.6$ Hz, 1H, CH), 3.47 (s, 2H, N- CH_2 -N), 7.08-7.30 (m, 10H, phenyl-H).

Mass (m/z): 364 (M^+ ; 15%), 100 (100%)

Elemental analysis: Calculated: C, 75.79; H, 7.74; N, 7.69;

Observed: C, 75.70; H, 7.69; N, 7.71.

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