

Synthesis of {3,4-bis-[(2-hydroxy-3-methoxy benzylidene)amino] phenyl}phenyl methanone as a new salen derivative

A. A. Jarrahpour*, M. Zarei

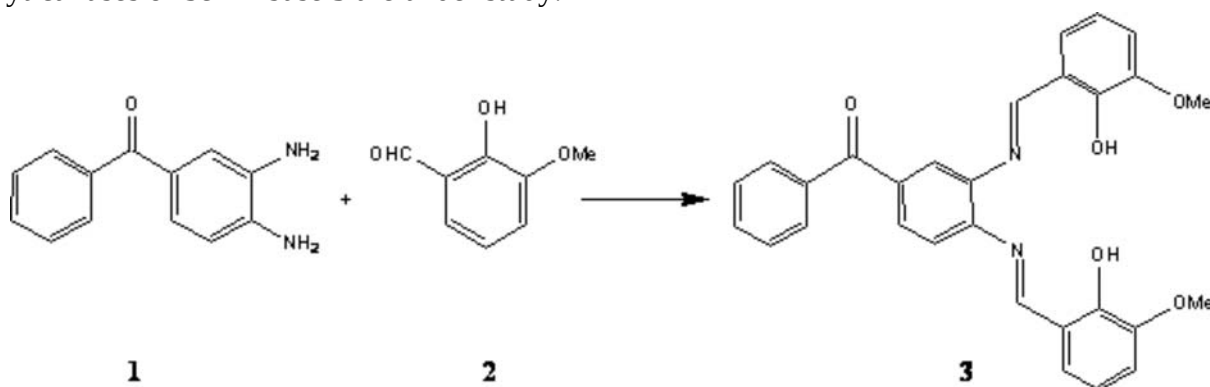
Department of Chemistry, College of Sciences, Shiraz University, Shiraz 71454, Iran Tel. 0098 711 2284822, Fax: 0098 711 2280926

E-mail: aliasghar6683@yahoo.com, jarrah@susc.ac.ir

Received: 31 January 2004 / Accepted: 18 February 2004 / Published: 24 February 2004

Keywords: Schiff base, 3,4-diamino benzophenone, *o*-vanillin, biological activity, salen.

Benzophenone derivatives are reported to show biological activities such as cytotoxic activities against human oral squamous carcinoma cells (HSC-2) and normal human gingival fibroblasts (HGF) [1], antibiotic activities against methicillin-resistant *Staphylococcus aureus* and vancomycin-resistant *Enterococcus faecium* [2] and protein kinase C inhibitor [3]. Boyd and coworkers have reported a benzophenone derivative exhibited activity in the primary anti-HIV screen [4]. Schiff bases are widely in use for synthetic purposes both by organic and inorganic chemists [5]. In addition, Schiff bases show biological activities including antibacterial [6-7], antifungal [8-9], antitumor [10-11] and herbicidal [12] activities. Schiff bases are also used as ligand for complex formation of some metal ions [13]. Metal-salen complexes are used as catalysis in epoxidation of alkenes [14], asymmetric cyclopropanation [15] and highly selective PVC membrane sensors for the sulfate ion [16]. The mentioned properties prompted us to synthesize Schiff base **3**. The biological and analytical uses of Schiff base **3** are under study.



To stirred solution of *o*-vanillin **2** (0.85 g, 5.64 mmol) in dry dichloromethane (40.00 mL) at 0 °C were successively added 3,4-diamino benzophenone **1** (0.60 g, 2.82 mmol) and a large excess of anhydrous MgSO₄ (2.00 g, 16.67 mmol). The resulting mixture was stirred for 8 hours at room temperature. The filtered solution was evaporated under reduced pressure to yield the crude Schiff base [17] which was recrystallized from ethanol 95% to give the pure Schiff base **3** as an orange solid (1.13 g, 83%).

m.p. 150-152 °C

IR (KBr) (cm⁻¹): 1612.4 (C=N), 1678.7 (C=O), 3170.8-3656.8 (OH).

¹H-NMR (CDCl₃) (250 MHz) δ(ppm): 3.79 H, s, 2 OMe), 6.70-7.96 (14H, m, aryl hydrogens), 8.53 (2H, s,

2HC=N), 12.84 (2H, br, 2 OH).

^{13}C -NMR (CDCl_3) (62.90 MHz) δ (ppm): 56.43 (OMe), 109.71-152.15 (aromatic carbons), 165.74 (HC=N), 197.04 (C=O).

MS (m/z, %): 480 (M^+ , 9.9), 344 ($\text{C}_6\text{H}_5\text{COC}_6\text{H}_3\text{N}=\text{CC}_6\text{H}_3\text{OHOMeN}$, 70.6), 239 ($\text{C}_6\text{H}_3\text{N}=\text{CC}_6\text{H}_3\text{OHOMeN}$, 4.6), 221 ($\text{C}_6\text{H}_5\text{COC}_6\text{H}_3\text{N}=\text{CH}_2\text{N}$, 5.0), 180 ($\text{C}_6\text{H}_5\text{COC}_6\text{H}_3$, 3.2), 123 ($\text{C}_6\text{H}_3\text{OHOMe}$, 11.5), 105 ($\text{C}_6\text{H}_5\text{CO}$, 95.0), 77 (C_6H_5 , 100.0).

Acknowledgment

The authors thank the Shiraz University Research Council for financial support (Grant No. 81-SC-1540-C220).

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