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Short Note

4-[(Pyridin-3-ylmethylene)amino]phenylhexadecanoate

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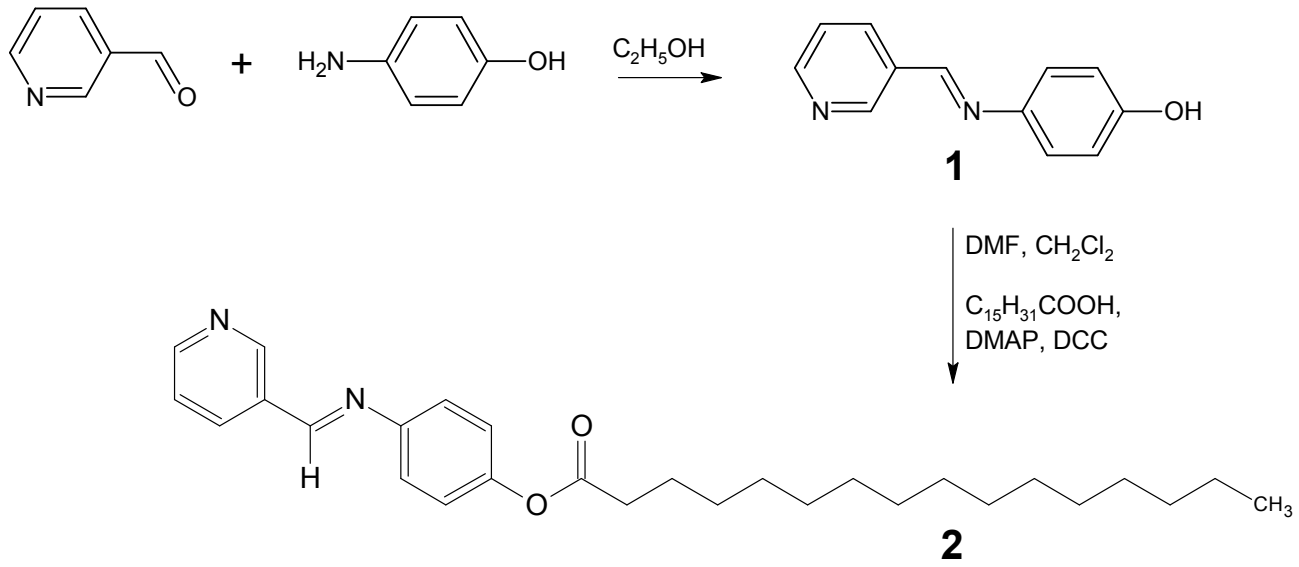
Abstract: A new Schiff base 4-[(pyridin-3-ylmethylene)amino]phenylhexadecanoate was synthesized and its IR, ^{1}H NMR, ^{13}C NMR and MS spectroscopic data are presented.

Keywords: 4-[(Pyridin-3-ylmethylene)amino]phenylhexadecanoate; Schiff base; alkyl chain.

Schiff bases have received a considerable amount of attention from many researchers owing to their importance in exhibiting thermochromism and photochromism [1]. The presence of a long alkyl chain at the *para* position of the aldehyde or aniline fragment of *N*-benzylideneanilines has been regarded as one of the important elements which favours the existence of liquid crystal phases [2-5].

The title compound was synthesized according to a previously reported method [6]. A solution of 3-pyridinecarbaldehyde (4.28 g, 40 mmol) and 4-aminophenol (4.37g, 40 mmol) in absolute ethanol (70 mL) was heated under reflux for 3 hours. Schiff base **1** obtained was recrystallized from absolute ethanol. Then, Schiff base **1** (3.96 g, 20 mmol) in dimethylformamide (DMF) (4 mL), was added to a solution of palmitic acid (5.13g, 20 mmol) and 4-dimethylaminopyridine (DMAP) (1.22 g, 10 mmol) in dichloromethane (70 mL). The resulting mixture was stirred in an ice bath. To this solution, N,N'-dicyclohexylcarbodiimide (DCC) (4.12 g, 20 mmol) dissolved in dichloromethane (20 mL) was added dropwise while stirring in the ice bath for an hour. The resulting mixture was subsequently stirred at room temperature for another 3 hours. Then, the reaction mixture was filtered and the excess solvent

was removed from the filtrate by evaporation. Recrystallization from absolute ethanol gave the Schiff base **2** as gray solid (3.67g, 42%).



Melting Point: 87.6°C.

MS(EI): M^+ (m/z) = 436

IR (KBr, cm^{-1}): 2954, 2916, 2848 (C-H aliphatic); 1754 (C=O ester); 1626 (C=N); 1596, 1498 (C=C aromatic).

^{1}H NMR (400 MHz, $CDCl_3$): δ/ppm 0.89 (t, 3H, *J* = 7.0 Hz, CH_3), 1.23-1.45 {m, 24H, $CH_3(C\underline{H}_2)_{12}$-}, 1.77 (qt, 2H, *J* = 7.4 Hz, -$C\underline{H}_2CH_2COO$-), 2.58 (t, 2H, *J* = 7.5 Hz, -$C\underline{H}_2COO$-), 7.14 (d, 2H, *J* = 8.7 Hz, Ar-H), 7.26 (d, 2H, *J* = 8.7 Hz, Ar-H), 7.41 (dd, 1H, *J* = 7.8 Hz, 4.9 Hz, Ar-H), 8.30 (d, 1H, *J* = 7.9 Hz, Ar-H), 8.51 (s, 1H, CH=N), 8.71 (dd, 1H, *J* = 4.7 Hz, 1.4 Hz, Ar-H), 9.02 (d, 1H, *J* = 1.4 Hz, Ar-H).

^{13}C NMR (100 MHz, $CDCl_3$): δ/ppm 172.8 (COO), 157.6 (CH=N), 152.5, 151.4, 149.8, 149.3, 135.3, 132.1, 124.2, 122.7 and 122.2 (aromatic carbons), 34.8 (-$\underline{C}H_2COO$-), 25.3 (-$\underline{C}H_2CH_2COO$-), 32.3, 30.1, 30.0, 29.9, 29.8, 29.7, 29.5, 25.3 and 23.1 ($CH_3(C\underline{H}_2)_{12}$-), 14.5 ($CH_3$).

Elemental analysis: Calculated for $C_{28}H_{40}N_2O_2$: C, 77.02%, H, 9.23%, N, 6.42%; Found: C, 77.12%, H, 9.30%, N, 6.33%.

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