

Short Note

3-Hydroxy-4-{[(3-nitrophenyl)imino]methyl}phenyl Tetradecanoate

Sie-Tiong Ha ^{1,*}, Siew-Teng Ong ¹, Yee-Ting Chong ² and Guan-Yeow Yeap ³

¹ Department of Chemical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Jln Universiti, Bandar Barat, 31900 Kampar, Perak, Malaysia

² Department of Science & Engineering, Centre for Foundation Studies, Universiti Tunku Abdul Rahman, Building PE, No. 1 Jalan 13/4, 46200 Petaling Jaya, Selangor, Malaysia

³ Liquid Crystal Research Laboratory, School of Chemical Sciences, Universiti Sains Malaysia, Minden 11800 Minden, Penang, Malaysia

* Author to whom correspondence should be addressed; E-Mail: hast@utar.edu.my or hast_utar@yahoo.com.

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Abstract: A new Schiff base ester, 3-hydroxy-4-{[(3-nitrophenyl)imino]methyl}phenyl tetradecanoate, was synthesized and its IR, ¹H NMR, ¹³C NMR and MS spectroscopic data are presented.

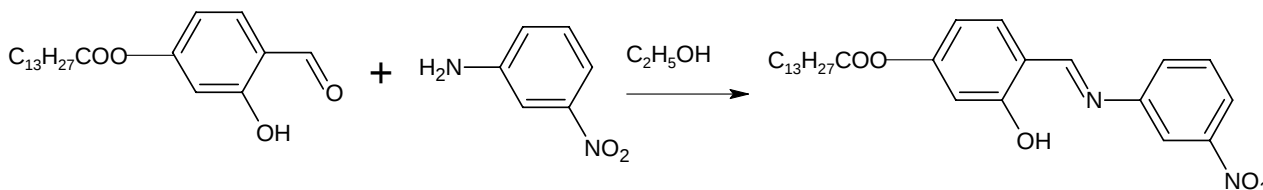
Keywords: 3-hydroxy-4-{[(3-nitrophenyl)imino]methyl}phenyl tetradecanoate; Schiff base; alkyl chain

Schiff bases have received a considerable amount of attention from many researchers owing to their importance in exhibiting thermochromism and photochromism [1–4]. Aromatic Schiff bases possessing long alkyl chain have received overwhelming attention due to their possibility to show mesomorphic properties such as smectic and nematic phases [5–9].

Synthesis

4-Formyl-3-hydroxyphenyl tetradecanoate was previously prepared *via* Steglich esterification [10]. In a round-bottom flask, a mixture of the aldehyde (1.74 g, 5.0 mmol), 3-nitroaniline (0.69 g, 5.0 mmol) and absolute ethanol (50 mL) was refluxed with stirring. The reaction mixture was filtered

and the solvent was removed from the filtrate by evaporation. Recrystallization from absolute ethanol gave the title compound as a yellow solid (0.33 g, 14%).



Melting point: 110.0 °C.

MS (EI): M^+ (m/z) = 468 (3).

IR (KBr, cm^{-1}): 3445 (O-H), 2952, 2917, 2849 (C-H aliphatic); 1755 (C=O ester); 1626 (C=N); 1594, 1498 (C=C aromatic).

^1H NMR (400 MHz, CDCl_3): δ /ppm 0.88 (t, 3H, $J = 7.1$ Hz, CH_3), 1.29-1.46 {m, 20H, $\text{CH}_3(\text{CH}_2)_{10}$ -}, 1.74 (q, 2H, $J = 7.5$ Hz, $-\text{CH}_2\text{CH}_2\text{COO}-$), 2.57 (t, 2H, $J = 7.5$ Hz, $-\text{CH}_2\text{COO}-$), 6.75 (dd, 1H, $J = 2.2, 8.4$ Hz, Ar-H), 6.81 (d, 1H, $J = 2.2$ Hz, Ar-H), 7.44 (d, 1H, $J = 8.4$ Hz, Ar-H), 7.61 (m, 2H, Ar-H), 8.13 (m, 2H, Ar-H), 8.68 (s, 1H, $\text{CH}=\text{N}$), 12.92 (s, 1H, OH).

^{13}C NMR (100 MHz, CDCl_3): δ /ppm 171.6 (COO), 164.4 ($\text{CH}=\text{N}$), 163.1, 156.0, 150.2, 134.0, 130.5, 128.0, 121.6, 117.0, 115.9, 113.7, 111.0, 110.0 (aromatic carbons), 34.83 ($-\text{CH}_2\text{COO}-$), 25.23 ($-\text{CH}_2\text{CH}_2\text{COO}-$), 32.22, 29.96, 29.93, 29.88, 29.75, 29.62, 29.53, 29.41, 22.94 ($\text{CH}_3(\text{CH}_2)_{14}$ -), 14.26 (CH_3).

Elemental analysis: Calculated for $\text{C}_{27}\text{H}_{36}\text{N}_2\text{O}_5$ C, 69.21%, H, 7.74%, N, 5.98%; Found: C, 69.12%, H, 7.80%, N, 6.10%.

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