

Short Note

1-[[3,4-Dimethylisoxazol-5-yl]imino]methyl}-2-naphthol

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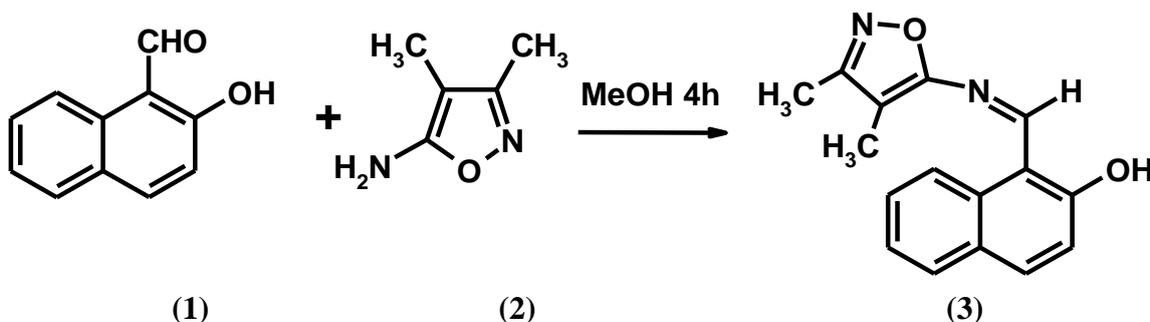
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Abstract: The title compound, 1-[[3,4-dimethylisoxazol-5-yl]imino]methyl}-2-naphthol has been synthesized by condensation of 5-amino-3,4-dimethylisoxazole and 2-hydroxy-1-naphthaledhyde in ethanol. The structure of this new compound was confirmed by elemental analysis, IR, ¹H-NMR, ¹³C-NMR and EI-MS spectral analysis.

Keywords: 5-amino-3,4-dimethylisoxazole; Schiff base; 2-hydroxy-1-naphthaledhyde

Compounds with the structure of -C=N- (azomethine group) are known as Schiff bases, which are usually synthesized by condensation of primary amines and active carbonyl groups. Schiff bases are an important class of compounds in the medicinal and pharmaceutical field, including antibacterial [1,2], antifungal [3,4] and antitumor activity [5,6]. Heterocycle-containing Schiff bases can show dramatically increased biological activities. As evident from the literature, it was noted that a lot of research has been carried out on Schiff bases, but no work has been done on this particular type of Schiff base. In this paper we report the synthesis of a novel Schiff base from 5-amino-3,4-dimethylisoxazole and 2-hydroxy-1-naphthaledhyde.

A mixture of 5-amino-3,4-dimethylisoxazole (0.50 g, 0.0025 mol) and 2-hydroxy-1-naphthaledhyde (0.43 g, 0.0025 mol) in methanol (15 mL) was refluxed at 80 °C for 5 h with continuous stirring. Progress of the reaction was monitored by TLC. After completion of the reaction, the solution was cooled. The heavy precipitate thus obtained was collected by filtration and purified by recrystallization from methanol and chloroform to give the title compound (**3**).



Yield: 72%; m.p. 160 °C

EI-MS m/z (rel. int.%): 267 (75) $[M + 1]^+$

IR (KBr) ν_{\max} cm^{-1} : 2933 (C-H), 1626 (C=C), 1585 (HC=N), 1123 (C-N).

$^1\text{H-NMR}$ (600 MHz, CDCl_3) δ : 14.46 (s, OH), 8.30 (d, $J = 12.7$ Hz, 1H, H-3), 7.99 (d, $J = 13.5$ Hz, 1H, H-4), 7.87 (d, $J = 11.8$ Hz, 1H, H-5), 7.70 (dd, $J = 8.6$ Hz, 1H, H-6), 7.51 (dd, $J = 10.8$ Hz, 1H, H-7), 7.28 (d, $J = 13.6$ Hz, 1H, H-8), 7.34 (s, 1H, $\text{CH}_{\text{olefinic}}$), 2.36 (s, CH_3), 2.15 (s, CH_3).

$^{13}\text{C-NMR}$ (150 MHz, CDCl_3) δ : 163.69, 162.76, 162.21, 158.27, 136.55, 132.85, 129.33, 128.28, 128.00, 124.19, 121.14, 119.78, 119.44, 105.57, 10.77, 6.71.

Anal. calc. for $\text{C}_{16}\text{H}_{14}\text{O}_2\text{N}_2$: C, 72.17, H, 5.30, N, 10.52. Found: C, 72.13, H, 5.26, N, 10.48.

Acknowledgements

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