

Short Note

Anthracen-9-ylmethylen-(3,4-dimethylisoxazol-5-yl)amine

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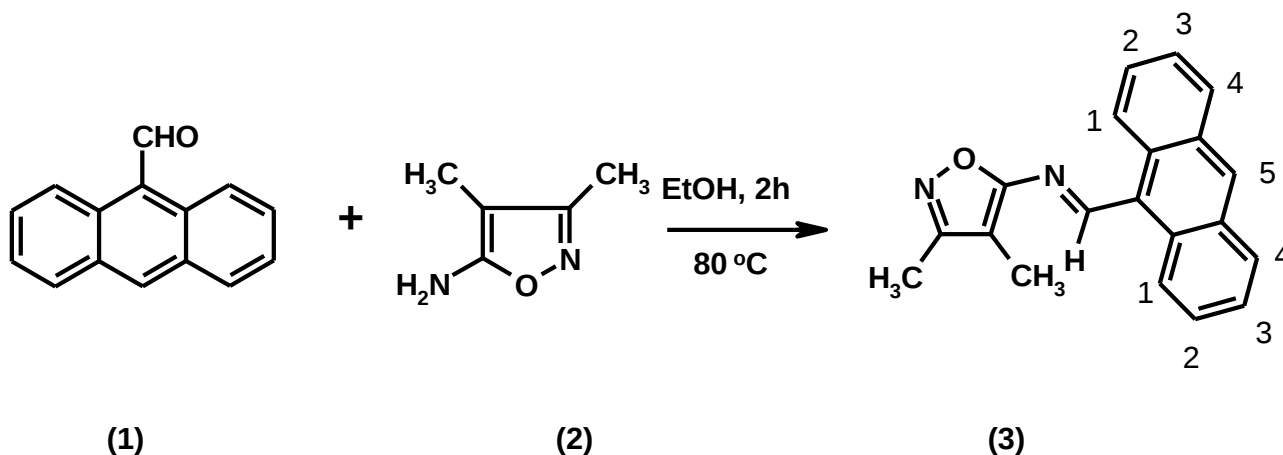
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Abstract: The title compound, anthracen-9-ylmethylen-(3,4-dimethylisoxazol-5-yl)amine (**3**), was synthesized in high yield by reaction of anthracene-9-carbaldehyde and 5-amino-3,4-dimethylisoxazole in ethanol. The structure of this new compound was confirmed by elemental analysis, IR, ¹H NMR, ¹³C NMR and GC-MS spectral analysis.

Keywords: Schiff base; anthracene aldehyde; isoxazole

Five-membered heterocyclic compounds with special reference to isoxazole derivatives are an important subset of the natural products that exhibit biological activities, including anticancer [1], antifungal and antibacterial properties [2]. These compounds have also found application in electroluminescent devices and UV stabilization polymers [3]. Isoxazole-containing Schiff bases can form complexes with d4, d5, d6 metals, such as zinc, cadmium, cobalt, nickel, osmium and iridium, they exhibit luminescent properties and have been widely investigated in recent experiments [4]. They are applicable in the fields of materials science such as non-linear optics (NLO) [5], optical limiting [6], electrochemical sensing and Langmuir films [7]. In the present paper, we are reporting a novel isoxazole-containing Schiff base from the reaction of anthracene-9-carbaldehyde with 5-amino-3,4-dimethylisoxazole [8].

Scheme 1. Synthesis of the title compound.

Experimental

A mixture of anthracene-9-carbaldehyde (0.50 g, 0.0024 mol) and 5-amino-3,4-dimethylisoxazole (0.27 g, 0.0024 mol) in ethanol (15 mL) was heated for 2 h at 80 °C. The progress of the reaction was monitored by TLC. The solid that separated from the cooled mixture was collected and recrystallized from a methanol-chloroform mixture (8:2) to give the title compound (3) as a yellow solid.

Yield: 82%; m.p. 146–147 °C.

GC-MS m/z (rel. int.%): 301 (62) $[M+1]^+$.

IR (KBr) $\nu_{\max}$ cm^{-1} : 2917 (C-H), 1580 (HC=N), 1158 (C-N).

^1H NMR (600 MHz, CDCl_3) (δ/ppm): 10.12 (s, $\text{CH}_{\text{olefinic}}$), 8.95 (d, 2H, H-1, $J = 8.8$ Hz), 7.61 (dd, 2xH, H-2, $J = 5.6$ Hz), 7.50 (dd, 2xH, H-3, $J = 7.2$ Hz), 8.56 (d, 2H, H-4 $J = 8.0$ Hz), 7.65 (s, H-5), 2.30 (s, CH_3), 2.16 (s, CH_3).

^{13}C NMR (150 MHz, CDCl_3) δ : 165.44, 162.07, 159.82, 132.63, 131.53, 131.10, 130.05, 129.27, 129.12, 127.94, 125.54, 124.07, 123.56, 116.50, 108.03, 10.83, 6.89.

Anal. calc. for $\text{C}_{20}\text{H}_{16}\text{N}_2\text{O}$: C, 79.98, H, 5.37, N, 9.33. Found: C, 79.94, H, 5.32, N, 9.28.

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