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Short Note

N-[(9-Ethyl-9*H*-carbazol-3-yl)methylene]-3,4-dimethylisoxazol-5-amine

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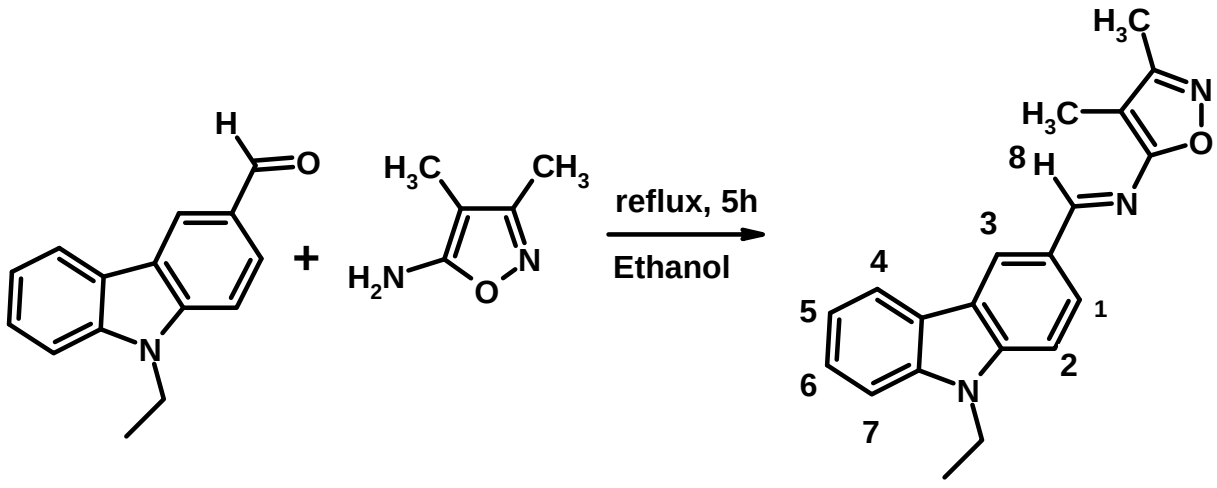
Abstract: The title compound, *N*-[(9-ethyl-9*H*-carbazol-3-yl)methylene]-3,4-dimethyl-isoxazol-5-amine has been synthesized by reaction of 9-ethyl-9*H*-carbazole-3-carbaldehyde with 5-amino-3,4-dimethylisoxazole in the presence of acetic acid in ethanol. The structure of this new compound was confirmed by elemental analysis, IR, ^{1}H-NMR, ^{13}C-NMR and EI-MS spectral analysis.

Keywords: carbazole; Schiff base; isooxazole

Schiff base compounds are generally known due to the azomethine group present. These compounds 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. They show biological applications including antibacterial [1], antifungal [2], anticancer [3], anti-inflammatory [4] and antitumor activity [5]. Heterocycle-containing derivatives of Schiff bases are known to possess a variety of biological activities such as CNS depressant, anticancer [6], antibiotic [7], antihistaminic [8], anticonvulsant [9] and many others. Due to the wide application of hetrocyclic Schiff bases, we undertook the synthesis of a new heterocyclic Schiff base from a carbazole aldehyde and 5-amino-3,4-dimethylisoxazole.



(1) **(2)** **(3)**

Experimental

A mixture of 9-ethyl-9*H*-carbazole-3-carbaldehyde (0.50 g, 0.0022 mol) and 5-amino-3,4-dimethyl-isoxazole (0.36 g, 0.0022 mol) in ethanol (15 mL) was refluxed for 5 h with stirring to give a light yellow precipitate. This material was filtered off and washed with ethanol to give the pure Schiff base. Figures 1a and 1b showed the absorption and emission spectra of compound **3** in chloroform solution.

Yield: 88%; mp: 188–189 ^{o}C

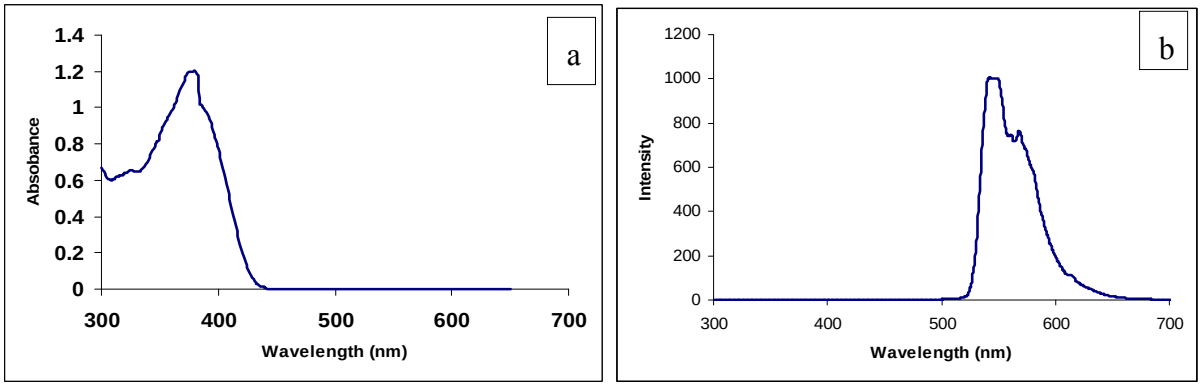
EI-MS *m/z* (rel. int.%): 318 (68) $[M + 1]^{+}$

IR (KBr) ν_{max} cm^{-1}: 2971 (C-H), 1627 (C=C), 1584 (HC=N), 1126 (C-N).

^{1}H NMR ($CDCl_3$) δ: 8.16 (d. H1, *J* = 7.8 Hz), 8.09 (d, H2, *J* = 8.4 Hz), 8.63 (s, H3), 7.32 (d, H4, *J* = 7.2 Hz), 7.53 (dd, H5, *J* = 7.8 Hz), 7.45 (dd, H6, *J* = 4.8 Hz), 7.29 (d, H7, *J* = 7.4 Hz), 9.00 (s, H8, CH $_{olefinic}$), 4.40 (t, N-C$\underline{H}_2$-CH_3, *J* = 7.2 Hz), 1.48 (q, N-CH_2-C$\underline{H}_3$, *J* = 8.4 Hz), 2.26 (s, CH_3), 2.12 (s, CH_3).

Anal. calc. for $C_{20}H_{19}N_3O$: C, 75.69, H, 6.03, N, 13.24. Found: C, 75.66, H, 5.98, N, 13.21.

Figure 1. (a) UV-Visible absorption of compound **3**; (b) Emission Spectrum of compound **3**.



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