

Short Note

N-[1-(2,5-Dimethyl-3-thienyl)ethylidene]-1,3-benzothiazol-2-amine

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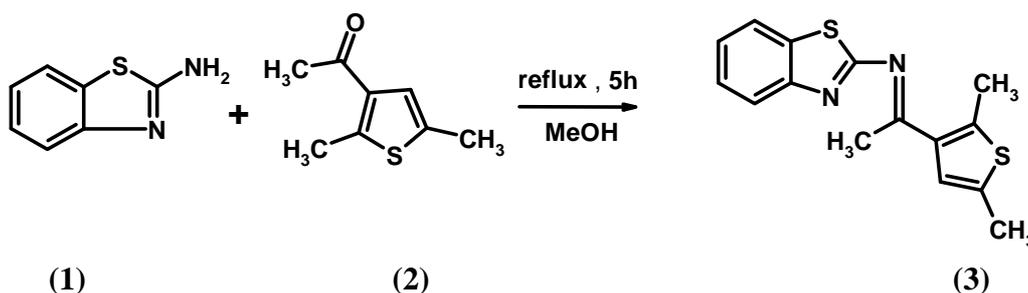
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Abstract: The title compound, *N*-[1-(2,5-dimethyl-3-thienyl)ethylidene]-1,3-benzothiazol-2-amine has been synthesized by condensation of 2-aminobenzothiazole and 3-acetyl-2,5-dimethylthiophene in ethanol. The structure of this new compound was confirmed by elemental analysis, IR, ¹H-NMR, ¹³C-NMR and EI-MS spectral analysis.

Keywords: 2-aminobenzothiazole; condensation; 3-acetyl-2,5-dimethylthiophene

Heterocyclic compounds containing nitrogen and sulphur exhibit a wide variety of biological activities such as antibacterial [1], antifungal [2], antitumor [3], or anti-HIV activity [4]. The thiazole ring dramatically increases the diversity of certain biological properties such as antibacterial [5], antiviral [6], and antitubercular [7] activities. In this paper, we report the synthesis of a novel compound by condensation of 2-aminobenzothiazole and 3-acetyl-2,5-dimethyl thiophene.



A mixture of 2-aminobenzothiazole (0.50 g, 0.0033 mol) and 3-acetyl-2,5-dimethylthiophene (0.475 mL, 0.0033 mol) in methanol (15 mL) was refluxed for 5 h with stirring to give a yellow precipitate. This material was filtered and recrystallized from a mixture of methanol and chloroform to give the pure compound **3**.

Yield: 72%; m.p. 86 °C.

EI-MS m/z (rel. int. %): $[M+1]^+$ 287 (68).

IR (KBr) ν_{\max} cm^{-1} : 3271 (C-H), 3054 (C-H_{aromatic}), 1637 (C=N), 1104 (C-N).

$^1\text{H-NMR}$ (600 MHz, CDCl_3) δ : 7.59 (CH , dd, $J = 7.2$ Hz), 7.54 (CH , dd, $J = 4.2$ Hz), 7.32 (CH , d, $J = 3.6$ Hz), 7.12 (CH , d, $J = 4.2$ Hz), 6.98 (thienyl-4H, s), 2.66 (CH_3 , s), 2.55 (CH_3 , s), 2.44 (CH_3 , s).

$^{13}\text{C-NMR}$ (150 MHz, CDCl_3) δ : 194.26, 166.04, 151.98, 147.31, 135.78, 135.01, 131.51, 126.61, 125.97, 122.26, 120.91, 119.12, 29.86, 16.07, 14.55.

Anal. calc. for $\text{C}_{15}\text{H}_{14}\text{N}_2\text{S}_2$: C, 62.97, H, 4.89, N, 9.79. Found: C, 62.95, H, 4.85, N, 9.75.

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