

Short Note

4,6-Diamino-5-[4-(dimethylamino)benzylidene]pyrimidin-2(5H)-one

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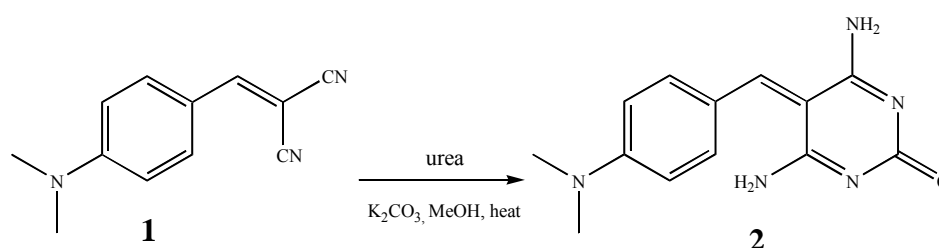
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Abstract: A new compound, 4,6-diamino-5-[4-(dimethylamino)benzylidene]pyrimidin-2(5H)-one, was synthesized and its IR, ¹H NMR and ¹³C NMR and MS spectroscopic data are presented.

Keywords: 4,6-diamino-5-[4-benzylidene]pyrimidin-2(5H)-one; urea; antimicrobial activity



A mixture of (4-dimethylaminobenzylidene)malononitrile **1** [1,2] (0.17 g, 1.00 mmol), urea (0.07 g, 1.00 mmol) and K₂CO₃ (0.20 g, 1.17 mmol) in methanol was refluxed for 24 h. The precipitated solid was filtered off, washed with water and dried. After recrystallization from water-DMF, 4,6-diamino-5-[4-(dimethylamino)benzylidene]pyrimidin-2(5H)-one **2** was obtained as a green crystalline solid (0.21 g, 80%). Synthesis of such pyrimidine derivatives and study of their biological activity are under

investigation, especially tests of antimicrobial activity as part of research programmes directed to the synthesis of novel heterocyclic compounds of pharmacological interest.

Melting point: 210-212 °C

IR (KBr, cm^{-1}): 3270 (NH_2), 1780 ($\text{C}=\text{O}$), 1651 ($\text{C}=\text{N}$)

^1H NMR ($\text{DMSO}-d_6$, 270 MHz): δ = 7.54 (2H, dd, J = 8.9, 2.0 Hz, Ar-H); 7.51 (1H, s, olefinic-H); 6.99 (2H, dd, J = 8.9, 2.0 Hz, Ar-H); 5.61 (4H, sa, NH_2), 4H, NH_2); 3.06 (6H, s, $(\text{CH}_3)_2\text{N}$).

^{13}C NMR ($\text{DMSO}-d_6$, 270 MHz): δ = 167.07; 161.11; 142.08; 130.20; 116.47; 112.68; 112.63; 112.59; 40.79.

MS (m/z , %): 257 (M^+ , 5%); 242 ($\text{M}^+ - \text{CH}_3$, 7.5%); 197 ($\text{M}^+ - \text{CO}-\text{N}_2\text{H}_4$, 100%).

Biological Activity: Compound **2** showed antimicrobial activity against *Escherichia coli* (gram negative).

Acknowledgements

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References

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