

A general synthesis of new derivatives of pyrimido[4,5-e][1,2,4]triazolo[3,4-b][1,3,4]thiadiazine

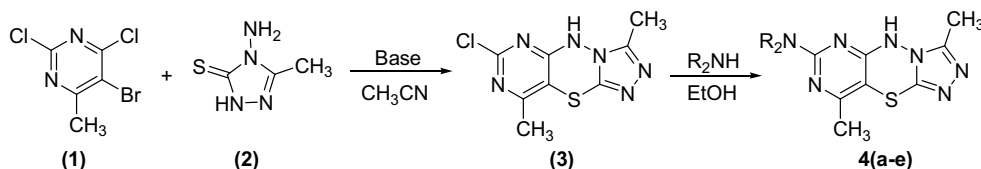
Mehdi Bakavoli,* Mohammad Rahimizadeh, Ali Keshavarzi, Ali Shiri

Department of Chemistry, School of Sciences, Ferdowsi University of Mashhad, 91775-1436
Mashhad, Iran.

*Corresponding Author E-mail: mbakavoli@yahoo.com

Some triazolothiadiazines have been reported to possess antibacterial and antifungal activity.[1] Therefore, it seems to be of interest to introduce a pyrimidine ring which has been fused to a triazolothiadiazine ring system. Some pyrimido[4,5-e][1,2,4]-triazolo[3,4-b][1,3,4]-thiadiazine-7,9-diones have been synthesized by the condensation of 3-alkyl-4-amino-5-mercapto-[1,2,4]-triazoles with 5-bromobarbituric acid.[2]

In continuation of our previous efforts on the synthesis of new derivatives of pyrimidine fused rings,[3] here, we report the synthesis of new derivatives, namely 7-chloro-3,9-dimethyl-5H-pyrimido[4,5-e][1,2,4]triazolo[3,4-b][1,3,4]thiadiazine (**3**) from the condensation of 5-bromo-2,4-dichloro-6-methylpyrimidine (**1**) with 4-amino-3-methyl-4,5-dihydro-1H-1,2,4-triazole-5-thione (**2**) in CH₃CN in alkaline conditions. Then, the resulting product was treated with various secondary amines to give the substituted chlorine atom products **4(a-e)** by amines in good to excellent yields.



References:

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- [2] Gakhar, H. K.; Gill, J. K. *Monatsh. Chem.* **1985**, *116*, 633.
- [3] Bakavoli, M.; Rahimizadeh, M.; Shiri, A.; Eshghi, H.; Nikpour, M. *Heterocycles*, **2008**, *75*, 1745.