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

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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: