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Synthesis of novel furo[3',2':5,6]pyrimido[2,1-c][1,2,4]triazines and furo[3,2-e][1,2,3,4]tetrazolo[1,5-a]pyrimidine

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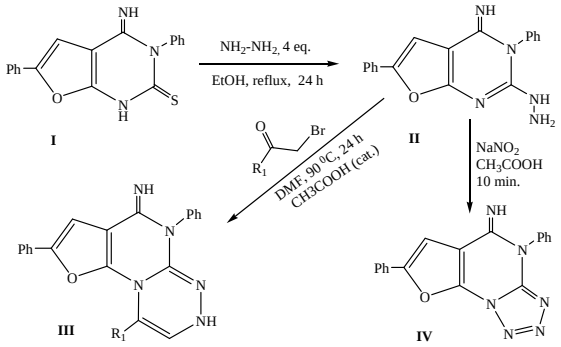
Furo[2,3-*d*]pyrimidines have received much attention due to their biological activities. Antifungal, antibacterial, antiviral, antifolate, antitumor, and anti-HCMV (human cytomegalovirus) activities have been described for these compounds [1]. Recently, some furopyrimidines were shown to be potent LCK (lymphocyte-specific kinase) [2], PI3K (phosphoinositide 3-kinase) [3], VEGFR2 (vascular endothelial growth factor receptor2) and EGFR (epidermal growth factor receptor) inhibitors [4]. Furthermore, a wide range of biological activities has been attributed to fused triazoles, triazines and tetrazoles [5].

In connection with our interest in the synthesis of polyheterocyclic systems, we now report here the utility of 4-imino-3,6-diphenyl-3,4-dihydrofuro[2,3-*d*]pyrimidine-2(1*H*)-thione **I** for the synthesis of some novel tricyclic fused furo[3',2':5,6]pyrimido [2,1-*c*][1,2,4]triazines **III** and furo[3,2-*e*][1,2,3,4]tetrazolo[1,5-*a*]pyrimidine **IV** from α-haloketones and nitrous acid respectively in high yields.



References:

[1] Robins, M. J.; Miranda, K.; Rajwanshi, V. K.; Peterson, M. A.; Andrei, G. *J. Med. Chem.* **2006**, *49*, 391.
[2] DiMauro, E. F.; Newcomb, J.; Nunes, J. J.; Bemis, J. E. *Bioorg. Med. Chem. Lett.* **2007**, *17*, 2305.
[3] Hayakawa, M.; Kaizawa, H.; Moritomo, H.; Koizumi, T. *Bioorg. Med. Chem. Lett.* **2007**, *17*, 2438.
[4] Martin-Kohler, A.; Widmer, J.; Bold, G.; Meyer, T.; Séquin, U. *Helv. Chem. Acta* **2004**, *87*, 956.
[5] Hozien, Z. A.; Abdel-Wahab, A. A.; Hassan, K. M.; Atta, F. M.; Ahmed, S. A. *Pharmazie,* **1997**, *52*, 753.