

Title : Synthesis of Some New Pyrimidine and Fused Pyrimidine Derivatives

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2-Mercapto- and 2-hydroxy-3,4-dihydro-4-oxo-6-(4-tolyl)pyrimidine-S-carbonitriles (3a, b) were synthesized by two different routes. Compound 3a could be converted into 3b by the action of hydrogen peroxide. Alkylation of 3a with alkyl halides gave the S-alkyl derivatives 4a-c. Compound 4a could also be prepared by two other different methods. The reaction of 4a-c with phosphorus oxychloride yielded the 4-chloropyrimidine derivatives 6a-c. Compounds 6a-c reacted with ammonia, glycine, anthranilic acid and hydrazine hydrate to form the tetrasubstituted pyrimidine derivatives 7a-d. Compound 7a could also be produced via two other alternative routes. The reaction of 6a with phenyl hydrazine gave directly the pyrazolo[3,4-d] pyrimidine derivative 10. The 2,4-dihydrazino-pyrimidine derivative 7d reacted with nitrous acid to give ditetrazolo[1,S-a:l', S'-c] pyrimidine 11. It also reacted with carbon disulphide to form pyrazolo[3,4-d]-s-triazolo[3,4-b] pyrimidine 12. Compounds 7b,c could be cyclised into imidazo[1,2-c]pyrimidine 13 and pyrimido[6,l-b] quinazoline 14, respectively. Product 13 could be directly obtained by the reaction of 6c with glycine in acetic acid.