http://www.e-journals.net

ISSN: 0973-4945; CODEN ECJHAO
E-Journal of Chemistry
2011, **8(1),** 240-244

Syntheses of 2-(6'-Fluorobenzothiazol-2'-ylamino) -4, 6-(disubstituted thiouriedo)-1,3-pyrimidine Derivatives as Antimicrobial Agents

ANOOP K. PATHAK, VINEY CHAWLA and SHAILENDRA K. SARAF*

Faculty of Pharmacy, Northern India Engineering College
Sector-2, Dr. Akhilesh Das Nagar, Faizabad Road, Lucknow- 227105
dirpharmniec@gmail.com

Received 29 April 2010; Accepted 17 July 2010

Abstract: A new series of 1,3-pyrimidine derivatives (**3a-f**) have been synthesized by reacting 2,4,6-Trichloropyrimidine with nucleophilic reagents 2-amino-6-fluorobenzothiazole (**1**) in the presence of acetone. The (4,6- dichloro-pyrimidin-2-yl)-amine (**2**) so produced was then reacted to two moles of phenylthiourea derivatives to yield title compounds (**3a-f**). The structural assessment of the compounds (**3a-f**) was made on the basis of spectral data. The synthesized compounds were screened for their *in vitro* growth inhibiting activity against different strains of bacteria *viz*., *B. subtilis, E. coli, P. aeruginosa* and *S. aureus* using agar diffusion technique. Compounds **3c** and **3f** exhibited highest antibacterial activity.

Keywords: Fluorobenzothiazole, Pyrimidine derivatives, Phenyl thiourea derivatives, Antimicrobial activity.

Introduction

Pyrimidine is the most important member of all the diazines as this ring system occurs widely in living organisms. Purines, uric acid, alloxan, barbituric acid and a number of antimalarial and antibacterial drugs also contain the pyrimidine ring[1,2]. Thiazole ring system is quite common in natural products, since it can be produced by cyclization of cysteine residues in peptides[3,4]. The most important of these is Vitamin B_1 (thiamine), which contains both a pyrimidine and a thiazole ring system. The bleomycin antibiotics, which have anti-tumour properties, are complex aminoglycosidic structures containing thiazole units. Several semi-synthetic beta lactams contain 2-aminothiazole units in the side chain[5,6].

Since benzothiazoles, pyrimidines and thioureas all possess diverse biological activities[7-11]; the aim of this study was to synthesize some new derivatives incorporating these nuclei and evaluate the prepared compounds for antibacterial activity.