

Synthesis and Biological Evaluation of Novel Substituted 1,3,4-Thiadiazole and 2,6-Di Aryl Substituted Imidazo [2,1-B] [1,3,4] Thiadiazole Derivatives

B. Chandrakantha^a, Arun M. Isloor^b, Prakash Shetty^c, Hoong Kun Fun^d, Gurumurthy Hegde^e

^a Department of Chemistry, Manipal Institute of Technology, Manipal University, 576 104, India

^b Medicinal Chemistry Laboratory, Department of Chemistry, National Institute of Technology Karnataka, Surathkal, Mangalore 575 025, Karnataka, India

^c Department of Printing and Media Engineering, Manipal Institute of Technology, Manipal University, 576 104, India

^d Department of Pharmaceutical Chemistry, College of Pharmacy, King Saud University, P.O. Box 2457, Riyadh 11451, Saudi Arabia

^e Faculty of Industrial Science and Technology, Universiti Malaysia Pahang, Gambang, Kuantan 26300, Pahang Darul Makmur, Malaysia

ABSTRACT

A new series of *N*-[5-(4-(alkyl/aryl)-3-nitro-phenyl)-[1,3,4-thiadiazol-2-yl]-2,2-dimethyl-propionamide 4 (a–l) and 6-(4-Methoxy-phenyl)-2-(4-alkyl/aryl)-3-nitro-phenyl)-Imidazo [2,1-*b*] [1,3,4] thiadiazole 6 (a–l) were synthesized starting from 5-(4-Fluoro-3-nitro-phenyl)-[1,3,4] thiadiazole-2-ylamine. The synthesized compounds were characterized by IR, NMR, mass spectral and elemental analysis. All the compounds were tested for antibacterial and antifungal activities. The antimicrobial activities of the compounds were assessed by well plate method (zone of inhibition). Compounds 4a, 4c and 6e, 6g displayed appreciable activity at the concentration 0.5–1.0 mg/mL.

KEYWORDS: 1,3,4-Thiadiazole; 2,6-Diaryl imidazo [2,1-*b*] [1,3,4] thiadiazole; Antibacterial; Antifungal activity

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