



Synthesis, Spectral Characterization, Antimicrobial Evaluation and Molecular Docking Studies of Some Novel Ethanone Derivatives Comprising Tetrazole and Piperazine Nuclei

D. Bhakiaraj, T. Elavarasan and M. Gopalakrishnan*

*Synthetic Organic Chemistry Laboratory, Department of Chemistry, Annamalai University, Annamalainagar 608 002, Tamil Nadu, **INDIA**

Email: profmgk61@gmail.com

Accepted on 16th October 2014

ABSTRACT

*In the present work, a new series of novel heterocyclic compounds containing both tetrazole and piperazine nuclei together namely 1-(1-aryl-1H-tetrazol-5-yl)-2-(piperazin-1-yl)ethanones (**4-10**) were synthesized by the treatment of respective 2-chloro-1-(1-aryl-1H-tetrazol-5-yl)ethanones (**3**) with piperazine in acetonitrile for 6h. The synthesized novel tetrazole substituted piperazine derivatives were evaluated for their antimicrobial activity using serial dilution method. The structures of the synthesized compounds were characterized by IR, ¹H NMR, ¹³C NMR, Mass spectral data and Elemental analysis. Evaluation of antimicrobial activity shows that several compounds exhibits good activity when compared with the reference drug candidates and thus could be promising new lead molecules. The molecular docking studies have widened the scope of developing a new class of antimicrobial agents.*

Keywords: Tetrazole; piperazine; synthesis; antimicrobial activity; molecular docking.
