



**Design, Synthesis, Characterization and Biological evaluation of novel amides containing 1,2,4-Oxadiazole Derivatives**

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**ABSTRACT**

*Some new amides containing oxadiazole derivatives have been synthesized taking N-Boc piperazine as starting material. These work converted to N-cyano-4-Boc piperazine by nucleophilic substitution reaction. The substituted product was treated with hydroxyl amine hydrochloride in basic condition to give hydroxycarbamide and cyclized with 3-fluorobenzoic acid to yield N-protected piperazine 1,2,4-oxadiazole. Deprotection of secondary amine was done using trifluoro acetic acid, free secondary amine obtained was condensed with different substituted acids in the presence of triethyl amine to yield amides of piperazine containing 1,2,4-oxadiazole nucleus. The newly synthesized compounds were characterized by spectroscopic studies such as IR, <sup>1</sup>H NMR, <sup>13</sup>C NMR, LCMS and CHN elemental analysis. All the synthesized compounds were screened for their in vitro antibacterial activity, anthelmintic activity. Some of the compounds showed good biological activity.*

**Keywords:** Cyanogen bromide, 1,1-carbonyldiimidazole, 3-fluorobenzoic acid, 3-(3-dimethylamino propyl) carbodiimide hydrochloride, hydroxybenzotriazole, 1,2,4-oxadiazole and antibacterial activity, anthelmintic activity.

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