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Synthesis, Characterization and Antimicrobial Studies of Some Novel Thiadiazoles derived from [1,2,4]Triazoles

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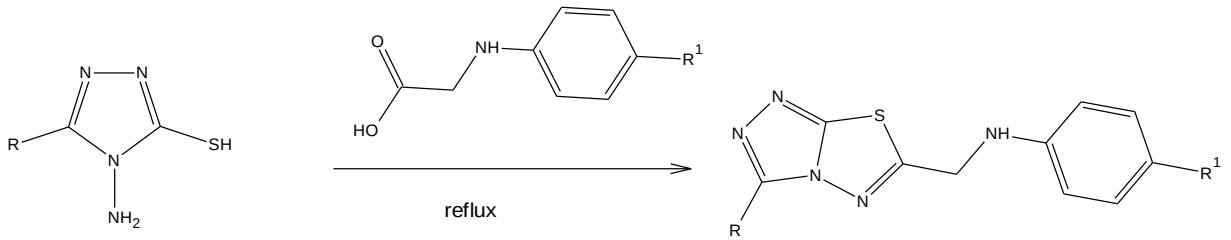
ABSTRACT

*During the present investigation, a new series of 3,6-disubstituted[1,2,4]triazolo[3,4-b][1,3,4]thiadiazole derivatives (**3**) were synthesized by refluxing a mixture of 3-substituted-4-amino-5-mercapto-1,2,4-triazoles with substituted anilinoacetic acids in presence of phosphoryl chloride in good yield. The newly synthesized compounds were confirmed on the basis of elemental analyses, IR, ^{1}H NMR and Mass spectral data. All compounds were screened for their antibacterial and anti-fungal activity. Among the synthesized compounds **(3c), (3f), (3g), (3j)** and **(3m)** exhibited good antibacterial activity and antifungal activity.*

Graphical Abstract

A new series of novel thiadiazoles derived from [1, 2, 3] -triazoles were synthesized, characterized by spectral and analytical data and screened for antibacterial and antifungal activities. Compounds containing chlorine and nitro groups exhibited significant activity.



R = H, CH_3, C_2H_5, C_6H_5,, R^1 = H, CH_3, Cl, NO_2

Keywords: [1,2,4]-triazoles, [1,3,4]-thiadiazoles, [1,2,4]-triazolo-[3,4-b][1,3,4]-thiadiazoles, antibacterial, antifungal.