عنوان مقاله:

In Vitro Evaluation of Antimicrobial Properties of Some Newly Synthesized S-Triazole Thioglycosides

محل انتشار:

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خلاصه مقاله:

Backgrounds: Nowadays, the need for replacement of new drug structures is felt more than ever due to the spread of microbial resistance. S-triazoles are significant five-membered heterocyclic scaffolds due to their wide range of biological activities. Materials & Methods: A new series of Schiff bases (۵a-f) were synthesized by the reaction of ۴-amino-S-triazoles (۳a-c) with furan and benzaldehyde ۴(d-e). Then a novel series of triazole thioglycosides (۷a-f) were synthesized by the reaction of Schiff bases (۵a-f) and T-O-acetyle-α-D-glucopyranosyle-Br in the presence of potassium carbonate as a weak base in acetone. The structure of the products was confirmed by FT-IR, H-NMR, and C-NMR assays. The antimicrobial properties of the newly synthesized compounds were studied against four bacterial strains, including Bacillus cereus, Staphylococcus aureus, Pseudomonas aeruginosa, and Escherichia coli, and two fungal strains, including Aspergillus niger and Candida albicans. Findings: The synthesized compounds exhibited better antifungal activity than antibacterial activity, espetially ۷d. Among all the compounds, the compound ۷d was found to have the highest activity against C. albicans with IZ=۱۸±۰.۷ mm, MIC=۲۵۰ mg/mL, and MFC= ۲۵۰ mg/mL. Conclusion: The present study results indicated that compounds containing S-triazole had the potential to be used in a wide variety of new antifungal formulations.

کلمات کلیدی:

Triazoles, Candida albicans, Drug resistance