

Synthesis, characterization and study of antibacterial and antifungal activities of some 1,3,4-oxadiazole compounds

Abstract

Two new series of 2-alkylthio-5-aryl-1,3,4-oxadiazole (aryl = 2-hydroxyphenyl, 5-bromofuryl and alkyl = H, CH₂CH₃, CH₂(CH₂)₂CH₃, CH₂Ph, CH₂CO₂CH₂CH₃, CH₂CO₂H) were synthesized and characterized by elemental analysis, UV-visible spectrophotometer, FT-IR spectrophotometer and ¹H-NMR spectrophotometer. The prepared compounds were examined against two bacterial strains, Gram negative (*E. coli*) and Gram positive (*S. aureus*), and against pathogenic fungi *Aspergillus niger*. MIC was determined for all compounds against two bacterial strains. LD₅₀ values were determined for some selected compounds which have showed a good antimicrobial activity. These results showed that the selected compounds exhibited moderate toxic values and the LD₅₀ were in the range 1.85-2.9g/kg