

Synthesis, Characterization of Heterocyclic Compounds and their Application as Antibacterial Therapeutic Agents

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The innovative research for antibiotics has improved mankind's health status by confining life threatening infections. However, the emergence and spread of bacterial resistance represent a severe global problem. Heterocyclic especially azoles are widely exposed to therapeutic world, keeping in mind the therapeutic effect of heterocyclic compounds a series of heterocyclic compounds were synthesized and aimed to explore their effect on in vitro growth of microorganisms causing microbial infection. The chemical structures of the compound were elucidated by elemental analysis, FTIR,

¹H and ¹³C NMR and ESI-MS spectral data. In vitro anti-microbial activity was performed against Staphylococcus aureus, Streptococcus pyogenes, Salmonella typhimurium, and Escherichia coli. The MIC was detected using the double dilution method. The results were compared by calculating percent inhibit area/mg of the compounds and the standard "amoxicillin". The selected compounds were tested for cytotoxic results using MTT assay H9c2 cardiac myoblasts cell line and the results showed that all the compounds offered remarkable >80% viability to a concentration of 200 mg/mL.