

Synthesis and Biological Evaluation of Novel Fused Indolo [3, 2-c] [1, 8] Naphthyridine Derivatives as Potential Antibacterial Agents

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Abstract:

Over the year's plants have contributed enormously in drug discovery and development processes leading to the identification and characterization of secondary metabolites. In West Africa a plant called *Cryptolepis sanguinolenta* was studied and led to the discovery of fused indolo-quinolines which possess several pharmacological activities including anti-inflammatory, anticancer, antidiabetic and antihypertensive. [13] However, these fused indolo-quinoline were isolated in minute quantities. Hence there is a need for improving synthetic protocols for these isomeric indolo-quinolines. In this study we have used a one pot reaction to synthesize fused indolo-1.8 naphthyridine derivatives which their structural arrangement resembles fused indolo-quinolines. The synthesized compounds were assessed in vitro for antibacterial activities against six bacterial strains. The results of the bioassay demonstrated that synthesized

compounds showed good inhibitory effect with an MIC value ranging from 0.04687 to 0.09375 µM against *Bacillus cereus* and *Staphylococcus aureus*. Furthermore, the toxicity of synthesized compounds was evaluated through mutagenicity test against *S. typhimurium* TA 98 and TA100 strains. This test revealed that all compounds did not induced any significant increase in the number of revertant colonies in comparison with the control, sodium azide.

Biography:

Mr. Talent Raymond Makhanya is a lecturer of Organic Chemistry in Durban University of Technology and currently awaiting for PhD verdicts.

Research Interests: Green Synthesis and biological evaluation of heterocyclic compounds. Fabricate nanoparticle novel synthesized heterocyclic compounds for medicinal application in drug delivery.

References:

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Suggestions of colleagues/Professors/scholars to send invitation (if any)

Suggestions of Sessions in the conference (if any)