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Adventure with alkynes: Modern tool for the synthesis of heterocycles, natural products-like and π-conjugated scaffolds from alkynes

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Synthesis of small heterocyclic molecules in terms of selectivity, operational simplicity, functional group tolerance and environmental sustainability are in constant demand as majority of drugs; drug-like compounds contain hetero atom at their core. In continuation of our interest in the synthesis of heterocycles using alkynes, we have successfully engineered the synthesis of variety of biologically important heterocyclic scaffolds using electrophilic cyclization/hydroamination/and alkyne annulations. In this presentation the author would like to discuss about recent results in this chemistry.

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Isolation, characterization and biological evaluation of *Terminalia serecia* metabolites

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The Limpopo province has a rich biodiversity of a wide range of plants which are currently being exploited by traditional healers for the treatment of various diseases. As part of an ongoing research programme in natural products at the University of Venda, we have been interested on *Terminalia sericea* Burch ex. DC. Ethno medicinal information revealed that the fruit, leaves, stem bark and roots of *T. sericea* are commonly used for the treatment of coughs, skin infections, diabetes, diarrhea, and gonorrhea. Anolignan B and termilignan B isolated from the root have been reported to possess antibacterial activity against *Bacillus subtilis, Staphylococcus aureus, Escherichia coli* and *Klebsiella pneumoniae*. The aim of our study was to isolate, purify and evaluate the biological activity of various fractions and pure compounds. Various spectroscopic techniques such as 1D and 2D, HRMS and IR were used to elucidate the structures of pure compounds. This study has shown that the antibacterial constituents of *T. sericea* root cannot be limited to compounds with lignan structure which have been isolated previously from fractions obtained from mixture of hexane and ethyl acetate using silica gel. The presentation will focus on the results of antibacterial activity against diarrhea pathogens and skin infection organism, and isolated compounds responsible for these activities including their structural elucidation.

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