8th International Conference and Exhibition on
Pharmaceutical Regulatory Affairs and IPR
&
8th International Conference and Exhibition on
Pharma Audit, GMP, GCP & Quality Control
June 08-09, 2018 | Philadelphia, USA

Antimicrobial activity of the uncombined and combined aqueous extract of *Phyllanthus acidus, Sphagneticola trilobata* leaves and *Doliocarpus dentatus's* bark against human pathogenic microorganism in the absence and presence of Zn^2+ cations

Jagessar R C and **Hope S**
University of Guyana, Guyana

The search for alternative complementary natural medicines to replace synthetic antibiotics is on the increase, considering the side effects produced by synthetic drugs, some of which are irreversible. The aqueous extract of leaves of *Phyllanthus acidus, Sphagneticola trilobata* and *Doliocarpus dentatus's* bark, uncombined and combined in the absence and presence of Zn^2+ were tested against selective pathogenic microorganism such as *S. aureus, E.coli., K. pneumoniae, P. aeruginosa and C. albicans* using the Disc Diffusion Assay. The area of zone of inhibition, Azoi was taken as an indicator of the plant extract's antimicrobial potency. The highest Azoi of 165.05 mm2 was induced by *P. acidus* extract against *E. coli*. In the absence of Zn^2+ , zero Azoi was observed for the combined extract of *P. acidus* + *S. Trilobata, S. trilobata* + *D. dentatus and P. acidus* + *D. dentatus* against *S. aureus* and *K. pneumoniae*. The combined plant extract, without Zn^2+, seems to induce a higher Azoi against *E. coli, K, pneumoniae, C. albicans* and *P. aeruginosa* in comparison with the individual plant extract. As an example, the combined plant extract of *S. trilobata* and *D. dentatus* induces Azoi of 122.66 mm2, whereas *S. trilobata* induces AzoI of 117.79 mm2. For the combined plant extract with Zn^2+, a lower Azoi was induced, compared with the individual plant extract. Selective antimicrobial activity was observed for the uncombined and combined extracts, with and without Zn^2+ against some of the pathogens. For example, *P. acidus* aqueous extract showed Azoi of 165.1 mm2 against *E. coli*, whereas *S. trilobata* showed Azoi of 67.17 mm2 against *E. coli* i.e., a selectivity ratio of 2.5 vs. *E.coli* with respect to the above two extracts.

Biography

Raymond C. Jagessar obtained his BSc (Distinction) in Chemistry/Biology from the University of Guyana (1992) and his PhD from the UK (1995). He held three Post Doctoral Research Fellowships at the University of South Carolina (USA), Wichita State University (USA) and the University of the West Indies (1996-1999). He has also won several international awards, amongst them are Chartered Chemist, CChem and Fellow of the Royal Society of Chemistry, FRSC, UK. His research interests are broad, covering the spectrum of Pure and Applied Chemistry, Chemical Biology, Pharmaceutical and Medicinal Chemistry. He has published over seventy (70) research articles, five book chapters and presented at several international conferences. He is currently Professor in Chemistry at the University of Guyana (South America)

raymondjagessar@yahoo.com

Notes: