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In-vitro antimicrobial activity in stems of *Montrichardia arborescens* (Moco moco) and combined extract of *Montrichardia arborescens* stems and *Azadirachta indica* (Neem) leaves

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The antimicrobial activity of the ethanol and hexane extracts of the stems of *Montrichardia arborescens* (Araceae) and leaves of *Azadirachta indica* (Moraceae) and their combined extracts were investigated against *Staphylococcus aureus*, *Escherichia coli, Klebsiella pneumoniae* and *Candida albicans*. The extracts were prepared at different concentrations of (0.01g/L, 0.025g/L and 0.05g/L) and their antimicrobial screening was carried out using the Agar Disc diffusion method. These selected microorganisms were also tested against a standard antibiotic, Ampicillin (0.05mg/L). The *M. arborescens*, hexane extract showed the largest area of zone of inhibition (AZOI), of 283mm^2 against *E. coli*. The lowest AZOI of 31mm^2 was induced by the combined ethanolic extract against *K. pneumoniae*. Antimicrobial selectivity was also evident. Antimicrobial selectivity is an important factor that must be taken into consideration to prevent Antimicrobial resistance. The hexane and ethanolic extract of *M.arborescens* seems to be selective against *E. coli* and *C. albicans* respectively. The combined hexane and ethanolic extract of *M. arborescens* and *A.indica* seems to be more selective against *C. albicans*. Also, a decrease in antimicrobial activity was evident for the combined extracts. It was anticipated that the combined extracts would result in antimicrobial synergy. Thus, the extract of *M.arborescens* stem and *A. indicia* leaves can be used as possible natural therapeutic antimicrobial agents, singly or in combination.

Speaker Biography

Raymond Compton Jagessar obtained his BSc (Distinction) in Chemistry/Biology from the University of Guyana (1992) and PhD from the UK (1995). He held three Post Doctoral Research Fellowships (PDF) at the University of South Carolina (USA), Wichita State University (USA) and the University of the West Indies during the period, 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, research grants etc. His research interests are broad, covering the spectrum of Pure and Applied Chemistry, Chemical Biology, Pharmaceutical and Medicinal Chemistry. He has published over seventy (75) research articles, five book chapters and presented at several international conferences, locally and internationally. He is currently Professor in Chemistry at the University of Guyana (South America) and Part-Time Lecturer in the Department of Pharmacy, Faculty of Health Sciences.

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