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Study on *Rhizophora stylosa* extracts as protective agent against dental bacterial biofilms (*in-vitro*)

Bacterial dental plaque is one of the most complex oral biofilm and the primary initiating factor of the most prevalent oral diseases such as dental caries, periodontal diseases, and peri-implant diseases due to the microbial film formation and hence the management of biofilm is vital for oral health as well as impeding the development of various periodontal diseases. Commercially available medications have been tried and tested against bacterial plaque pathogens. Unfortunately, various antimicrobial drugs cannot be used safely due to its side effects as well as development of antibacterial resistant strains of microorganism. The search for alternative products continues and natural extracts isolated from plants used as traditional medicines are considered as good alternatives. Hence, an attempt has been made to study the antimicrobial effect of *Rhizophora stylosa* leaf and bark extracts against the selected consortium of dental biofilms such as *Streptococcus pyogenes*, *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Streptococcus salivarius* by minimum inhibitory concentration (MIC) and minimum biofilm eradication concentration (MBEC). The extracts of *R. stylosa* leaves and barks were prepared by hot percolation method using organic solvents (petroleum ether, chloroform and methanol). The biofilms of varying microbial consortium combinations were developed and exposed to the different organic leaf and bark extracts with a highest concentration of 200 mg/ml which was serially diluted to a concentration of 0.4 mg/ml. The viability of the biofilms was determined at 570 nm by ELISA microtiter plate reader and the MBEC was determined by spot plating method. From the study, it has been concluded that petroleum ether leaf extracts exhibited better antimicrobial activity compared to other extracts and the biofilms which had *S. aureus* and *S. salivarius* being the most susceptible resistant organism respectively towards the extract.

Biography

Gopal Natesan has completed his Doctoral degree (PhD) in Pharmaceutical Chemistry from Hamdard University (Jamia Hamdard) New Delhi, India in 2000 and currently serving as Professor of Medicinal Chemistry & Deputy Dean of Research & Innovation in Faculty of Pharmacy, MAHSA University, Kuala Lumpur, Malaysia. His research focuses on the synthesis of newer small chemical entities, quinazolinones heterocyclic pharmacophore and their preliminary screening in both *in-vivo* and *in-vitro* models mainly focusing on pain & inflammation and also for newer microbial agents. He has published >40 articles in indexed journals and presented >80 papers in conferences and received number of honors, including "Young Scientist Award" in 2013 and "Edward Kennedy Memorial Award" for his high standards of research excellence in Science and Technology. He was Invited Speaker at international scientific meetings and conferences and serves as reviewer for several scientific international journals and also as Editorial/Advisory board of various journals.

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