



ANTIBIOFILM AND ANTIADHESION ACTIVITIES OF PHALERIA MACROCARPA EXTRACTS AGAINST STREPTOCOCCUS MUTANS

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ABSTRACT

Dental caries is a major concern in oral healthcare. Continuous researches have been performed extensively in finding new compounds that are capable to solve the problems. Phaleria macrocarpa has been identified effective against hypertension, diabetic, cancer, and diuretic acid. In this study, antiadhesion and antibiofilm activities of Streptococcus mutans were investigated using crude extracts of fruit, leaf and stem of P. macrocarpa. Minimal inhibitory concentration (MIC) assay was conducted to identify the lowest concentration of the extracts required to suppress the activity of S. mutans. This assay confirmed that all tested extracts were able to inhibit the bacterial activities with concentration of less than 8 mg/mL and thus can be classified as natural antimicrobial agents. The extracts were found capable of reducing 50 to 80% of both adhesion and biofilm activity of S. mutans at 1.56 mg/ml. Results from this study provide a preliminary data for the effectiveness of P. macrocarpa crude extracts as antiadhesion and antibiofilm agent against S. Mutans and may have potential for antiseptic agent to treat oral dental caries.

Keywords – Streptococcus mutans, antibiofilm, antiadhesion, Phaleria macrocarpa