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Antimicrobial Activity of the Natural Products Derived from Phyllanthus Emblica and Gracilaria Fisheri Against Staphylococcus Aureus

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Abstract : Several medicinal plants are well known to contain active constituents such as flavonoids and phenolic compounds with are plausible candidates for therapeutic purposes. An infectious disease caused by microbial infection is the leading cause of death. Antibiotics are typically used to eradicate these microbes, but recent evidence indicates that they are developing antibiotic-resistant effects. This study focused on antimicrobial activities of Phyllanthus emblica and Gracilaria fisheri using the agar disk diffusion method and broth microdilution to determine the minimum inhibitory concentration (MIC) value. The extracts were screened against Staphylococcus aureus. Five concentrations of plant extracts were used to determine the minimum inhibitory concentration (MIC) by 2-fold dilution of plant extract. The results indicated that G. fisheri extract gave the maximum zones of inhibition of 11.7 mm against S. aureus while P. emblica showed no effects. The MIC values of G. fisheri extract against S. aureus was 500 µg/ml. To summarise, G. fisheri extracts demonstrated high efficacy of antibacterial activity against Gram-positive S. aureus, which may pave the way for developing a formulation containing this plant. G. fisheri extract should be subjected to additional investigation in order to determine the mechanism of action of its antimicrobial activity.

Keywords : antibacterial activity, Staphylococcus aureus, gracilaria fishery, Phyllanthus emblica
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