Valuable Antioxidant and Antimicrobial Extracts from Rhizophora Mucronata of Asiatic Mangrove Forests

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Abstract

The antioxidant and antimicrobial properties of ethanol, methanol and chloroform extracts of Rhizophora mucronata leaves were examined in this study. The antioxidant activities of the samples were evaluated using a combination of enzymatic and non-enzymatic methods namely superoxide dismutase determination, erythrocyte haemolysis protection and 2,2-diphenyl-1-picrylhydrazil free radical scavenging assays. Folin-Ciocalteu reagent method was used to estimate the amount of total phenolic compounds of the extracts. Ethanol, chloroform and methanol extracts of the leaves showed the highest antioxidant potential in superoxide dismutase, erythrocyte haemolysis and free radical scavenging assays respectively. The highest total phenolic content was found in ethanol extract followed by methanol extract. Paper disk diffusion method was applied to determine the antimicrobial activities of ethanol and methanol extracts of the leaves. Both ethanol and methanol extracts could inhibit the growth of Escherichia coli, Staphylococcus aureus and Bacillus cereus while no inhibition was detected against Pseudomonas aeruginosa.