Antimicrobial and anticancer properties of leaf extracts of seagrass enhalus acoroides (2012)

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Enhalus acoroides is one of the abundant seagrasses found along the seabeds of Malaysia. The uses of some species of seagrasses have been well documented, but reports on the therapeutic values of E. acoroides are limited. In this study, E. acoroides collected from Merambung Island off the coast of South Johor were screened for their antimicrobial and anticancer properties. The leaves of this seagrass were ground into powder and the bioactive compounds were extracted using two solvents, ethyl acetate and ethanol. Antimicrobial properties of the leaf extracts were determined by performing disk diffusion method against three species of bacteria; Pseudomonas aeruginosa, Staphylococcus epidermidis and Staphylococcus aureus (both methicilin-sensitive and methicillin-resistant strains) while the cytotoxicity effect of the seagrass on HeLa cells was carried out using methylthiozoltetrazolium (MTT) assay. Results showed that ethyl acetate extract at a concentration 6.25 mg/ml was not only able to inhibit growth of all the bacteria tested but also killed 50% of the HeLa cells. Although the ethanolic extract was not able to reveal the antimicrobial properties of the seagrass, it was able to inhibit HeLa cells at a lower concentration than the ethyl acetate extracts. From this preliminary study, the information that E.acoroides has phytochemical properties provided a platform for further studies of its medical benefits for treatment of other diseases and that each solvent used in this experiment was for different purpose.