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Exploration and Purification of Bioactive compound from seaweeds against human bacterial pathogen

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Treatment of Infectious diseases by the use of commercially available drugs are becoming certain limitations due to changing patterns of resistance in pathogens and causing side effects. These limitations demand for improved pharmacokinetic properties which necessitates continued research for the search of new novel drugs. Marine organisms are rich source of structurally novel and biologically active metabolites. The cell extracts and active constituents of various algae and seaweeds have been shown to have antibacterial activity against gram positive and gram negative bacteria. Hence the crude extracts from the seaweeds *Amphiroa foliacea*, *Chactomorpha tortuosa*, *Caulerpa scalpelliformis* and *Sargassum sp* were tested for their resistance against multidrug resistance pathogens such as *Staphylococcus aureus*, *Klebsella sp*, *Proteus sp*. The extracts were obtained with the solvents methanol, chloroform, ethyl acetate and hexane. A highest zone of inhibition was observed in the hexane extract of *Amphiroa foliacea* and ethyl acetate extract of *Sargassam sp* against *Proteus sp*, *Staphylococcus aureus* respectively. An inhibition zone of 8mm was observed in ethyl acetate extract of *Sargassam sp* against *Staphylococcus aureus*. Further the extract of *Sargassum sp* was purified using silica column chromatography. Single compound fractions were separated and each fraction was screened for antibacterial activity against *Staphylococcus aureus*. F4 fraction possessed antibacterial activity of 7mm which is similar to crude extract. Further the F4 fraction is subjected NMR analysis. Ethyl acetate fraction was found to be possess α -hydroxy stearic acid.

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