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### Antimicrobial potential of n-hexane fraction and ethanolic extract of seaweeds and GC-MS metabolic profiling of *Sargassum ilicifolium* and *Ulva fasciata*

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Marine macro-algae (seaweeds) have been used as food in many Asian countries since a long time. They contain proteins, lipids, carbohydrates and polysaccharides in high amounts such as carrageenan, alginates, ulvans, vitamins and minerals. Interest in seaweed has also been increasing due to their health benefits. Several researchers evaluated the biological activities of *S. ilicifolium* and *Ulva fasciata*. *S. ilicifolium* contains calcium and ascorbic acid and also possesses antifungal activity. In this study, antibacterial and antifungal activity of n-hexane fraction and ethanol extract of *S. ilicifolium* and *U. fasciata* were checked. For antibacterial activity, five common laboratory bacteria were used viz; *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Bacillus subtilis* and *Escherichia coli*, while for antifungal activity *Macrophomina phaseolina*, *Fusarium oxysporum*, *F. solani* and *Rhizoctonia solani* were used. Both seaweeds showed a potential against bacteria as well as pathogenic fungi by forming the prominent zone of inhibition. Seaweeds extract and their fraction were subjected to GC-MS analysis in order to isolate compounds. GC-MS analysis revealed the presence of several compounds and some of them are new from their source. GC-MS spectroscopy of n-hexane fraction of *S. ilicifolium* revealed the presence of some new compounds. Among them, fatty acids were found to be in highest concentration followed by halogenated hydrocarbons, benzene derivatives and sterols. Characterization of n-hexane soluble fraction of *S. ilicifolium* confirmed the presence of different volatile compounds, in which fatty acids were found to be in highest concentration followed by halogenated hydrocarbons, fatty acid derivatives and sterols. Since *U. fasciata* is edible seaweed, it may be used as a diet supplement. The identification of compounds from seaweeds shows that these seaweeds can be an alternative therapy in medicine and can be widely used in drug industries.

#### Biography

Hafiza Farhat did PhD on Antibiotic producing endophytic fungi associated with healthy plants and received PhD degree from university of Karachi. Now she is serving in well renowned and Public Sector University (Gomal University D.I Khan) of Pakistan as an Assistant Professor. She has research articles in high impact factor journal in national and international journals. She attended so many conference and workshop as a speaker. She is also gold medalist as she achieved two gold medals in University level by getting first position in M.Sc.

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