



# *Sargassum*, *Gracilaria* and *Ulva* Exhibit Positive Antimicrobial Activity against Human Pathogens

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## Abstract

Bacterial resistance to pharmaceutical drugs is on rise, which emphasizes the need for screening of new drugs from natural resources. Seaweeds from the marine ecosystem are important source of bioactive compounds making them one of the major subjects for screening of various pharmaceutical drugs. So here, we assessed the bacterial growth inhibitory functions of four seaweeds *Sargassum wightii*, *Gracilaria edulis*, *G. corticata* and *Ulva lactuca* of Andaman Sea and Bay of Bengal, India respectively against three pathogens *Pseudomonas aeruginosa*, *E. coli* and *Staphylococcus aureus*. Solvent extraction of four seaweeds was performed using 70% methanol, ethanol and ethyl acetate. Agar well diffusion method was used to test the bioactivity of seaweeds against pathogens. *S. wightii*, *G. edulis* and *U. lactuca* were observed with better solvent extracts compared to *G. corticata*. Methanol extract of *S. wightii* was observed with the highest ( $29.0 \pm 1.22$ ) zone of inhibition (ZOI) and ethyl acetate extract of *U. lactuca* was observed with the lowest ZOI ( $5.0 \pm 0.0$ ) against *S. aureus*. Butanol extract of *S. wightii* was observed with the highest ZOI ( $14.0 \pm 0.83$ ) against *P. aeruginosa*, whereas *G. edulis* methanol extract and *U. lactuca* ethyl-acetate extract were observed with the lowest ZOI ( $6.0 \pm 0.0$ ). For *E. coli*, butanol and methanol extracts of *G. edulis* and *U. lactuca* showed the highest ( $12.0 \pm 0.54$ ) and the lowest ( $6.0 \pm 0.0$ ). Our preliminary results suggest bioactivity of *S. wightii*, *G. edulis* and *U. lactuca* showed positive results. Further biochemical characterization of *S. wightii* should be carried out for potential bioactive compounds against human pathogens. Our results suggest bioactive compounds from seaweeds can be used as pharmaceutical drugs.

## Subject Areas

Ecology, Marine Biology, Microbiology