

Antimicrobial activity of aqueous extracts of selected seaweeds against some human pathogens

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Infectious diseases contribute substantially to global human mortality and morbidity while the antimicrobials are being used to control those. However the evolution of antibiotic-resistant pathogenic bacteria has demanded to search for alternative antimicrobials. Seaweeds act as one of the good alternative solutions found from the ocean. In this study, antimicrobial activity of aqueous extracts of selected seaweeds was evaluated against some human pathogens.

Algal material of *Padina antillarum*, *Sargassum crassifolium*, *Ulva lactuca* and *Halimeda opuntio* were collected from the coast of Koggala, Sri Lanka. Aqueous extracts of these seaweeds were prepared and tested for antimicrobial activity against five bacterial isolates: *Staphylococcus aureus* (ATCC 25923), *Escherichia coli* (ATCC 25922), *Pseudomonas aeruginosa* (ATCC 27852) and wild strains of methicillin resistant *Staphylococcus aureus*, clindamycin resistant *Staphylococcus aureus* and one fungal isolate: *Candida albicans* (ATCC 90028) using cut well diffusion and agar dilution methods.

Aqueous extract of *S. crassifolium* demonstrated growth inhibitory action against *S. aureus* (ATCC 25923) in cut well diffusion method while aqueous extraction of *U. lactuca* demonstrated growth inhibitory action against *S. aureus* (ATCC 25923), clindamycin resistant *S. aureus* and *C. albicans* (ATCC 90028) in agar dilution method.

These observations revealed the possible presence of water soluble antibacterial agent/s in *S. crassifolium* and *U. lactuca*. The fact that the lowest minimum inhibitory concentration for clindamycin resistant *S. aureus* was given by extracts of *U. lactuca*, indicated the potential to develop a new therapeutic agent. Therefore extensive studies are warranted to isolate active compounds in seaweed extracts using different methods and to test their potential to be used as commercial antibiotics.