

## Antimicrobial activity of extracts of selected marine plants from the Southwest coast of Sri Lanka

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Compounds produced by marine plants are known to have a variety of biological properties including antimicrobial activity. Even though these activities are well known, only a limited number of studies have assessed the antimicrobial properties of extracts from marine vegetation in Sri Lanka. To address this issue, the antimicrobial activity of extracts from selected algae and a seagrass species were tested. Samples were collected from the Barbery Reef off Beruwela coast and beach rocky platforms in Hikkaduwa. Using different solvents (chloroform, methanol, and water) natural products were extracted from four macro algae species; *Ulva pertusa*, *Gracilaria salicornia*, *Gracilaria hikkaduensis* and *Padina minor* and a seagrass species *Cymodocea serrulata*. The antimicrobial activity of each extract was assayed by using agar well diffusion and agar disc diffusion method against *Staphylococcus aureus* (pathogenic strain, ATCC 29213), *Escherichia coli* (strain DH 5 $\alpha$ ) and one yeast species *Candida albicans* (Bench cultured). Testing was carried out for varying quantities of extracts (1, 2 and 5 mg for disc diffusion; 5, 10 and 20 mg for well diffusion). The antimicrobial activity of extracts was compared with Kanamycin and Fluconazole, which were used as positive controls for antibacterial and antifungal activity respectively. Methanol and chloroform extracts (1- 20 mg, methanol and 2 - 20 mg, chloroform) of *C. serrulata* and *G. hikkaduensis* showed antibacterial activity against *S. aureus*. Chloroform extract of *U. pertusa* (5 - 20 mg) showed antimicrobial activity against *S. aureus* and *C. albicans*. Additionally, chloroform extract of *C. serrulata* (5 - 20 mg) gave positive results against *C. albicans*. The maximum antibacterial activity was observed in the methanol extract of *C. serrulata* (for 20 mg: 11  $\pm$  1.53 mm zone diameter) and minimum activity observed in chloroform extract of *G. hikkaduensis* against *S. aureus* (for 20 mg : 9.33 $\pm$  0.33 mm zone diameter). Water extracts did not show antimicrobial activity. The results from this study confirm antimicrobial activity in extracts from *C. serrulata*, *U. pertusa* and *G. hikkaduensis* found in Sri Lanka. Further investigations are required to identify

the individual compounds responsible for antimicrobial activity, which may in turn lead to developing therapeutic drugs from locally available marine vegetation such as *C. serrulata*.

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