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ANTIBACTERIAL AND ANTIFUNGAL ACTIVITY OF SOME SEAWEEDS IN SRI LANKA

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Compounds having antimicrobial activity are known to be present in seaweeds.[1] Extracts of 16 species of marine algae in the coastal waters of Sri Lanka were screened for antifungal (against yeast and *Cladoporium*) and antibacterial (against *Staphylococcus aureus* and *Escherichia coli*) activity with a view to isolating active compounds subsequently.

The extracts (methanol, petroleum and chloroform) of *Chondrococcus hornemanii* showed both antifungal and antibacterial activity on all four cultures. The activity was found to be in the least polar chromatographic fraction containing halogen hydrocarbons.

The extracts of *Chrysemania uvaria* (methanol and chloroform on *Staphylococcus aureus*, methanol on *E. coli*) and *Gracilaria corticata* (methanol) showed only antibacterial activity. The extracts of *Sarcodia ceylanica* (methanol), *Corynymorpha pristmatica* (methanol) and *Liogora* species (methanol and petroleum) suppressed the growth of *S. aureus* while the extract of *Spyridia aculeata* was active against *S. aureus* (methanol and petroleum) and yeast (petroleum).

The extracts of *Laurensia papillosa*, *Acanthophora delilei*, *Polyopes ligulatus*, *Gracilaria fergusonii*, *Ulva fasciata*, *Chnoospora fastigiata*, *Halimeda macroloba*, *Turbinaria conoides* and *Valonopsis pochynema* did not inhibit the growth of the microbes tested. The results obtained for the last two species are different to those from a previous report.[2] This may be due to a seasonable variation in the constituents of the seaweeds.

The extracts were prepared by digesting seaweeds in aq. methanol, light petroleum (b.p. 40-60°C) and chloroform, sequentially, at room temperature. Bacteriological testing of extracts against yeast, *S. aureus*, and *E. coli* was carried out using the standard disc method (6 mm discs). The activity against *Cladosporium* was investigated on thin layer chromatographic plates (0.55 mm x 20 cm x 20 cm). The extracts were partitioned

on the tlc plates using ethyl acetate and light petroleum (1 : 1). A nutrient solution containing spores of *Cladosporium* species was sprayed on the plates, and the plates were incubated in a moist chamber at room temperature for 47 h. The components showing antifungal activity were detected, visually.

We thank Prof. S. N. Arsecularatne for permitting the use of facilities for bacteriological testing and NARESA for a research grant.

References

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