

Antimicrobial and cytotoxic activities of seaweeds extracts from Antarctica

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Introduction: Seaweeds are considered as a source of bioactive compounds as they are able to produce a great variety of secondary metabolites characterised by a broad spectrum of biological activities. Antarctica is characterized by the extremely abundant aggregations of macroalgae, however, our current knowledge about the macroalgae of that region is still fragmented. **Objective:** This study aimed to evaluate the antimicrobial activity and cytotoxic activity on cancer and non-cancer cell lines of different extracts (hexane, chloroform, ethyl acetate and ethanol) of four seaweeds from Antarctic: *Cystosphaera jacquinotii*, *Iridaea cordata*, *Himantothallus grandifolius* and *Pyropia endiviifolia*. **Material and Methods:** The antimicrobial activity was evaluated by the broth microdilution method. The extracts were assessed against *Staphylococcus aureus* ATCC 19095, *Enterococcus faecalis* ATCC 4083, *Escherichia coli* ATCC29214, *Pseudomonas aeruginosa* ATCC 9027, *Candida albicans* ATCC 62342 and clinical isolates from the human oral cavity of *C. albicans* (3), *C. parapsilosis*, *C. glabrata*, *C. lipolytica* e *C. famata*. Cytotoxicity was evaluated on human epidermoid carcinoma (A-431) and mouse embryonic fibroblast (NIH/3T3) cell lines by MTT colorimetric assay. **Results and Discussion:** Ethyl acetate extract of *H. grandifolius* showed noticeable antifungal activity against all fungal strains tested, including fluconazole resistant samples. Findings of cytotoxicity investigation on cancer cell line reveal that ethyl acetate extract of *I. cordata* showed very strong activity against A-431 cancer cell line, increasing the inhibitory ratio to 91.1% and 95.6% at the concentration of 500 µg mL⁻¹ after 24 and 48h of exposure, respectively. Most of algal extracts tested showed very low or no cytotoxicity effect on normal cell line. **Conclusion:** The data demonstrate the bioactive profile of seaweeds extracts from Antarctica, suggesting that seaweeds from this region may be promising for the isolation of substances with important biological potential.

Palavra chave: Antarctica, Seaweeds, Biological Activities

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