

Antiproliferative Activity of Nonpolar Extracts from *Dictyota menstrualis*

Chiquetti, S. C.¹; Galinari, E.²; Rocha, H. A. O.³

^{1,3} Department of Biochemistry, Bioscience Center, Federal University of Rio Grande do Norte, Rio Grande do Norte; Brazil; ² Department of Microbiology, Biological Sciences Center and health, Federal University of Viçosa

Introduction

Seaweeds are known to have a variety of biomolecules with pharmacological properties. The coast of Rio Grande do Norte has several seaweed species with biological properties including *Dictyota menstrualis*.

Objectives

The objective of this study was to obtain different nonpolar fractions from *Dictyota menstrualis* seaweed and evaluated their antiproliferative activity against two liver tumor cell lines (HUH7 and HEPG2) and normal macrophage cell (RAW).

Material and Methods

The seaweeds were collected in Pirambúzios/RN, washed with fresh water, dried at 60 ° C and crushed into smaller particles. After, these particles were macerated with methanol (24h/4 °C) in the dark, filtered and the solution was concentrated using a rotary evaporator and lyophilized. Sequentially, we used the following solvents: hexane, ethyl acetate, ethanol and water. The antiproliferative activity of each extract was determinate using MTT [3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide] assay. We used two human hepatoma cell lines (HepG2 and HUH7) and macrophage murine cells (RAW 264.7).

Results and Discussion

Water extract only decreased the HUH7 cell viability (~ 75%, 16 mg/mL) whereas ethanol extract affect only RAW viability (~40%, 16 mg/mL). On the other hand, Ethyl acetate extract affect the viability of all cell lines mainly of HUH7 (~70%, 16 mg/mL). The hexane extract was the most potent extract, it showed cytotoxicity against all the cell line and at 0.1 mg/mL the percentage of living cells was around 80%. Water and ethanol extracts were composed mainly sulfated polysaccharides (75 and 40%, respectively) and low level of proteins and phenolic compounds, whereas hexane extract was composed mainly phenolic compounds (~70%).

Conclusions

The hexane extract was the most potent extract and it will submitted to purification bioguide steps of its antiproliferative compounds.

Keyword: antiproliferative, methanolic extracts, seaweeds, cytotoxicity

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