

BIOLOGICAL ACTIVITIES OF SULFATED POLYSACCHARIDES FROM RED SEAWEED *Gracilaria caudata*

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In recent years, sulfated polysaccharides (SP) from marine algae have emerged as an important class of natural biopolymers with potential pharmacology applications. Among these, SP isolated from the cell walls of red algae has been study due to their anticoagulant, antithrombotic, anti-inflammatory and antioxidant activities. In the present study, three sulfated polysaccharides fractions denominated F1.5v, F2.0v and F3.0v were obtained from seaweed *G. caudate* by proteolysis followed to acetone fractionation. Gel electrophoresis using 0.05 M 1,3-diaminopropane-acetate buffer, showed the presence of SP in all fractions. The chemical analysis demonstrated that all the fractions are composed mainly of galactose. These compounds were evaluated in anticoagulant, antioxidant and antiproliferative activities. In anticoagulant activity evaluated through aPTT and PT tests, no one fractions presented anticoagulant activity at tested concentrations (0.1 mg/mL; 1.0 mg/mL; 2.0 mg/mL). The antioxidant activities of the three fractions were evaluated by the following in vitro systems: Total antioxidant capacity, superoxide and hydroxyl radical scavenging, ferrous chelating activity and reducing power. The fractions were found to have different levels of antioxidant activity in the systems tested. F1.5v shows the highest activity, especially in the ferrous chelating system, with 70% of ferrous inhibiting at 1.0 mg.mL⁻¹. Finally, all the fractions showed dose-dependent antiproliferative activity against HeLa cells. The fractions F1.5v and F2.0v presented the highest antiproliferative activity at 2.0 mg/mL with 42.7% and 37.0% of inhibition, respectively. Ours results suggests that the sulfated polysaccharides from seaweed *G. caudata* are promising compounds in antioxidant and/or antitumor therapy.

Keywords: Red Algae ; Anticoagulant; Antioxidant; Antiproliferative; HeLa Cells.

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