

Purification and Antithrombotic Activity of Sulfated Galactans Isolated from the Red Marine Alga *Pterocladia capillacea*

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The occurrence of cardiovascular diseases and the side effects of heparin justify the search for new therapeutic agents. Among investigated compounds presenting anticoagulant and/or antithrombotic activity, the sulfated polysaccharides are a promising alternative. In this context, the current work intends to evaluate the anticoagulant and the antithrombotic activities of sulfated galactans purified from the red marine alga *Pterocladia capillacea*. The total sulfated polysaccharides (TSP) were obtained by enzymatic digestion and purified by ion-exchange chromatography on DEAE-cellulose column. The fractions (F I; F II and F III) were eluted by stepwise gradient. Then, only one F I was analyzed in 0.5% agarose gel electrophoresis and submitted to clotting assay (Activated Partial Thromboplastin Time - APTT) using human plasma and heparin as standard (193 IU.mg⁻¹). The antithrombotic activity was investigated in rats with rabbit brain thromboplastin as the thrombogenic stimulus. Male rats (~190-250g; n=5) were previously anesthetized with intramuscular injection (xylazine 16 mg/Kg and ketamine 100 mg/Kg) and different doses of F I were infused into the right carotid artery. The results showed that F I was partially purified, when compared to the TSP by electrophoresis, and its contents of total carbohydrate, proteins and free sulfate were 52.4, 0.52 and 12.64%, respectively. The fraction F I has not modified the clotting time at a higher concentration (1.0 mg/mL), but it showed antithrombotic activity, achieving the best inhibitory effect (65.65%) at the dose of 0.5 mg/Kg body weight. Supported by: CNPq, CAPES and FUNCAP.

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