

Anticoagulant and Antithrombotic Activities of Sulfated Galactans Isolated from the Red Marine Alga *Acanthophora spicifera*

Fontes, B.P.¹, Queiroz, I.N.L.¹, Quinderé, A.L.G.¹, Vanderlei, E.S.O.¹, Rodrigues, J.A.G.², Benevides, N.M.B.¹

¹Departamento de Bioquímica e Biologia Molecular, Universidade Federal do Ceará, Fortaleza, Brazil; ²Doutorado da Rede Nordeste de Biotecnologia - RENORBIO, Universidade Estadual do Ceará, Fortaleza, Brazil.

Heparin is an important therapeutic agent for prophylaxis and treatment of arterial and venous thrombosis. However, the use of heparin may be accompanied by side effects, such as bleeding complications, and besides that it is obtained from animal resources which represent a risk of viral contamination. Thus, this work aimed to evaluate the anticoagulant and the antithrombotic activities of sulfated polysaccharides (SP) purified from the red marine alga *Acanthophora spicifera*. The total SP were obtained by enzymatic digestion and purified by ion-exchange chromatography on a DEAE-cellulose column. The fractions (F I; F II; F III and F IV) obtained by stepwise gradient were analyzed by 0.5% agarose gel electrophoresis. The clotting assays were measured by the activated partial thromboplastin time (APTT), using human plasma and heparin as standard (193 IU.mg⁻¹). The antithrombotic activity was investigated using male rats (~190-250g; n=5) and utilizing thromboplastin as thrombogenic stimulus, when the animals were previously anesthetized with intramuscular injection (xylazine 16 mg/Kg and ketamine 100 mg/Kg), and different doses of SP were infused into the right carotid artery. The results showed that all fractions revealed single bands, and the highest activities (APTT) were to F III and F IV (20.78 and 19.97 IU mg⁻¹, respectively). The anticoagulant F III was also capable of reducing the thrombus formation at the dose of 0.50mg/mL (61.96±13.91%). Therefore, SP isolated from *A. spicifera* modifies the normal APTT to also exhibit an antithrombotic effect. Supported by: CNPq, CAPES and FUNCAP.

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