

## Evaluation of potential anticoagulant activity of sulfated glucogalactans from the green seaweed *C. cupressoides*

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**INTRODUCTION:** Sulfated polysaccharides (SP) have a wide range of important biological properties. Various anticoagulant-active polysaccharides from seaweeds have been isolated and characterized. Fractions rich in SP from *Caulerpa cupressoides* var. *flabellata* have excellent anticoagulant activity. However, SP bioactive from these fractions have not been purified. **OBJECTIVE:** The aim of the present study was to purify the SP from the fraction CCB-0.5 and evaluate its anticoagulant activity. **MATERIAL E METHODS:** The SP were extracted by proteolytic digestion, followed by separation through sequential acetone precipitation and ion-exchange chromatography. The purified SP obtained were analyzed by agarose gel electrophoresis, chemical analysis and the monosaccharide composition by HPLC. Anticoagulant activities of SP were evaluated by assays of aPTT, PT and TT. The effect of SP on inhibition of thrombin activity in the absence and presence of antithrombin and heparin cofactor II was also evaluated. **DISCUSSION AND RESULTS:** After precipitation with acetone the SP *C. cupressoides* were separated into four fractions. The fraction CCB-0.5 was subjected to ion-exchange chromatography so it was eluted in two fractions (FI and FII). The total amount of sugar was 58.9% and 50.7% for FI and FII, respectively. The sulfate content was 33.4% and 36.4% for FI and FII, respectively. The HPLC analyses indicated that FI and FII are glucogalactanas. The presence of PS was confirmed by electrophoresis on agarose gel, in addition, we observed the presence of one band in all the fractions. Sulfated glucogalactans exhibited anticoagulant activity in the intrinsic (aPTT test), extrinsic (PT test) and common pathway (TT test). In all tests, FI and FII displayed considerable dose-dependent activity. A significant result was the aPTT activity of the polysaccharides, which was similar to the result of Clexane®, a low molecular weight heparin. They also hastened direct inhibition of thrombin and the potentiation of heparin cofactor II. **CONCLUSION:** SP from *C. cupressoides* are therefore promising anticoagulant agents.

Key Words: anticoagulant activity, sulfated polysaccharide, seaweed.  
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