# Structural Characterization and Pharmacological Activities Of Fucan B Extracted Seaweed *Dictyota menstrualis*

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**INTRODUCTION:** Seaweeds are a major source of bioactive compounds. The extracellular matrix of these organisms is rich in sulfated polysaccharides, such as fucans, which help in preventing dehydration seaweed at low tide periods. Many fucans has been isolated and characterized by presenting different activities such as anticoagulant, antithrombotic, antioxidant, antitumor, among others. **OBJECTIVE:** The aim of this study was to structurally characterize the FucB and analyze possible pharmacological activities performed by it in different biological systems. **MATERIALS AND METHODS:** FucB was extracted from brown alga *Dictyota menstrualis* by proteolisis with maxatase proteolitic enzyme and precipitation with crescent volumes of acetone. The fraction 0.9v (FucB) was chemical characterized and evaluated for pharmacological activities as: anticoagulant, antithrombotic and antioxidant activities and its effects in cell proliferation. **RESULTS AND DISCUSSION:** The molar ratio of FucB was 1:0,8:4,5:0,1:2, to fucose, xylose, galactose, glucuronnic acid and sulfate, respectively and the molecular weight was 26 kDa. Fuc showed moderate anticoagulant activity, increasing the aPTT (intrinsic pathway) over 90s (200mg) and had no effect on the PT (extrinsic pathway).FucB increased by 3.6 times the synthesis of heparan sulfate (HS) antithrombotic from endothelial cells (RAEC). FucB demonstrated compete with heparin for binding sites in RAEC. FucB exhibited strong antioxidant activity assays on total antioxidant (109.7 and 89.5 % compared with BHT and ascorbic acid standards), reducing power (71 % compared to ascorbic acid) and ferric chelation (71.5%, comparing with ascorbic acid). The fraction of algae showed cytostatic activity on the RAEC cells revealed that the increase of the synthesis of heparan sulfate is not related to proliferation. FucB showed antiproliferative action on cell lines modified as Hela and Hep G2 by MTT assay. **CONCLUSIONS:** These results suggest that FucB from *Dictyota menstrualis* have anticoagulant, antithrombotic, antioxidant potential as well as a possible antitumor action.

Keywords: sulfated fucans; brown seaweed, pharmacological activities.

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