

Conjugation Of Gallic Acid Onto Fucan Improves The Fucan Antioxidant Activity

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INTRODUCTION: Seaweeds are a natural source of sulfated polysaccharides (SP) with pharmaceutical applications. Among these SP we can highlight the fucans from *Spatoglossum schröderi*, which are widely studied, specially the fucan-A. Gallic acid (GA) is a natural phenolic compound with good antioxidant activity. **OBJECTIVE:** Synthesize a molecule made of fucan-A conjugated with GA, and evaluate its antioxidant capacity. **MATERIALS AND METHODS:** The seaweed was dried, triturated, delipidated, proteolysed and precipitated with acetone, the fraction 0.6M was submitted to ion-exchange chromatography to obtain fucan-A. Fucan-A was conjugated with GA and the amount of GA conjugated was determinate as the content of phenolics compounds. The fucan-A, and the fucan-A-conjugated (Fuc-Gal) were subjected to the following antioxidants tests: Reducing power, total antioxidant capacity (TAC) and copper chelation. **DISCUSSION AND RESULTS:** About 3.74 ± 0.33 mg GA/g fucan-A was detected in the phenolic compounds test. It is the first report of the GA conjugation to fucans. The fucan-A showed TAC of 25.56 ± 1.70 mg ascorbic acid/g of sample, reducing power of $27 \pm 1\%$ at a concentration of 1 mg/mL and $65.20 \pm 0.4\%$ of copper chelation in a concentration of 2 mg/mL. While Fuc-Gal showed TAC 42.08 ± 3.92 mg ascorbic acid/g of sample, reducing power of $83 \pm 4\%$ at a concentration of 1 mg/mL and copper chelation of $76.58 \pm 2.4\%$ at 2 mg/mL. Over all, the conjugation improved the antioxidant activity of the fucan in all tests, especially the TAC with 55% of improvement and reducing power activity with over than 200% of improvement. **CONCLUSION:** It was possible to conjugate GA to a fucan and obtain a molecule with a better antioxidant activity.

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