

## Presentation Abstract

- Presentation Number: 187-15
- Presentation Title: Potential antioxidant and chemical characterization of sulfated polysaccharide from the red seaweed (*Gracilaria birdiae*)
- Division: Food Chemistry
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- Location: Hall A
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- Presentation Description/Abstract: There has been an increasing interest in biological activity of sulfated polysaccharides from marine algae due to alleged anticoagulant, antioxidant and antithrombotic activities. Marine red algae of the genus *Gracilaria* are a major agarophyte resource in the world and are cultivated for the phycocolloid industry or for integrated marineculture. In this work, a polysaccharide was isolated by an aqueous extraction from the red seaweed *Gracilaria birdiae* (*Gb*), with a yield of 27.2%. The sulfate content of polysaccharide was 8.4 % and it is composed mainly by galactose (65.4% mol), 3,6-anhydrogalactose (25.1% mol), and 6-*O*-methylgalactose (9.2% mol). The analysis through gel permeation chromatography showed that *Gb* has a heterogeneous system, with a molar mass at the principal peak of  $2.6 \times 10^6$  g/mol and a shoulder of  $3.7 \times 10^5$  g/mol. The sulfated polysaccharide of *Gb* characterized by FTIR exhibits the characteristic bands of agarocolloids (at 1372 and 770  $\text{cm}^{-1}$ ). The rheological behaviour of *Gb* sulphated polysaccharide was evaluated and compared to that of commercial agar. The results showed that the sulfated polysaccharide of *Gb* exhibit a gel-like behaviour close to the one displayed by commercial agar. DPPH free-radical scavenging effect of each sample was measured; the results obtained demonstrated that the sulphated polysaccharide had a moderate effect on inhibiting the formation of these radicals *Gb* sulphated polysaccharide can be an alternative to commercial agar for applications such as a gelling agent in food industry as shown by their rheological behaviour and significant antioxidant activity.

