Parcial Characterization and Antiinflammatory Activity of Polysaccharides Extracted from Stem and Leaf from *Jacaranda macranta*

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Polysaccharides are polymers composed by one type or different types of monosaccharides. These polymers found in animal, plants, mushrooms or seaweeds represent a source of novel structures that can be explored as useful polymers who show pharmacological activities. In this study, water-soluble polysaccharides from stem and leaf of *Jacaranda macranta* were isolated. Then structures were partial characterized and the antioxidant and antiinflammatory activities were investigated. Stem polysaccharide (pJMC) and leaf polysaccharide (pJMF) of *Jacaranda macranta* were extracted using NaOH 0.1M, 97°C, 2h by three times and precipitated with ethanol. pJMC and pJMF were submitted agarose gel electrophoresis 0.05M PDA buffer pH 9.0. Total sugars were estimated by phenol/H₂SO₄ reaction, uronic acid by carbazole reaction. Sulfate and protein content were determined by gelatin-barium and Bradford methods. Monosaccharide composition was determinate by fluorophore assisted carbohydrate electrophoresis (FACE). Antioxidant activity was analyzed by phosphomolybdic acid assay. Inhibitory effect from pJMC and pJMF on nitric oxide (NO) production in lipopolysaccharide (LPS)-stimulated RAW 264.7 macrophages cells were measured using Griess reagent. Total carbohydrates content of pJMC and pJMF were 54% and 47% and uronic acid content were 36% and 47%, respectively. No sulfate and protein were detected. Electrophoresis profile to pJMC and pJMF revealed that both compounds have charge density similar. FACE revealed that pJMC and pJMF is composed of galactose, galacturonic acid, glucuronic acid. Total antioxidant capacity analysis demonstrated that pJMC and pJMF exhibited low antioxidant activity. The results revealed that RAW 264.7 macrophages treated with LPS and incubated with 25, 50, 100 µg/ml pJMC (21.96; 18.03; 11.2 µg/ml NO₂/NO₃, respectively) or pJMF (15.29; 19.18; 12.5 µg/ml NO₂/NO₃, respectively) showed dose-dependent effect as compared the control (27.21µg/ml NO₂/NO₃). The investigation suggests that pJMC and pJMF can to be promising anti-inflammatory substances naturals and is possible that their bioactivity is related to structural composition.

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Keywords: *Jacaranda macranta*, polysaccharides, nitric oxide analysis.