HYPOGLYCEMIC EFFECT OF NEW PECTIN ISOLATED FROM PASSIFLORA GLANDULOSA CAV. IN ALLOXAN - INDUCED DIABETIC MICE

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Introduction: Several species from Passiflora has been used to treat Diabetes. This species are source of pectin, a dietary fiber with antidiabetic potential. Studies regarding the chemical characterization and biological effects of Passiflora glandulosa Cav are not reported in the literature. A new polysaccharide was extracted and characterized from the fresh peels of Passiflora glandulosa Cav, isolated pectin was characterized by a low degree of methoxylation and a high molecular weight, in addition to containing galacturonic acid in a carboxilate form in its chemical structure. Objective: This study aimed to chemically characterize and evaluate in diabetic mice the hypoglycemic effects of pectin isolated from P. glandulosa. Materials and methods: The isolation and chemical characterization of the pectin was performed via proton nuclear magnetic resonance (¹H NMR) spectroscopy, Fourier transform infrared spectroscopy (FTIR), molecular weight, degree of methoxylation and physicochemical tests. Diabetes was induced in the animals with alloxan and the mice were treated with pectin for a period of 30 days. Results and conclusions: The results indicate that the studied pectin has a hypoglycemic action at doses of 200, 400 and 600 mg/kg b.w in animals with alloxan-induced diabetes. The 200 mg/kg b.w dose reduced the concentration of blood glucose and showed no renal toxicity and hepatotoxicity for animals. This study demonstrates the potential use of plants from the Caatinga biome in the research for novel diabetes treatments.

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Keywords: Diabetes mellitus, Pectin, Passiflora glandulosa Cav.