ABSTRACT

Antidiabetic Activity of Dry Extract from the Pericarp of Mangosteen (*Garcinia mangostana* Linn) in Alloxan Induced Diabetic Mice

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Diabetes mellitus is a group of metabolic disorder characterized by hyperglycemia and alteration in the carbohydrate, fat and protein metabolism associated with absolute or relative deficiencies in insulin secretion or insulin action. The aim of this present study is to evaluate potentially new antidiabetic agent using dried extract from the pericarp of mangosteen (Garcinia mangostana L.) in alloxan-induced diabetic mice.

To induced diabetes, 25 mice were administered alloxan in buffer citrate pH 4,5 intraperitoneally (130 mg/kg body weight). The standardized drug-glibenclamide (0,013mg/20g BW mice)-was used as positive control, corn starch with comprecell were used as negative control, and dry extract from pericarp of mangosteen was given by three groups of doses (3,33 mg/20 g BW mice; 5,00 mg/20 g BW mice; and 6,67 mg/20 g BW mice) were administered orally to mice for seven days. The blood glucose levels of diabetic mice was determined every day in seven days of oral administration of each groups.

After repeated daily oral administrations of the extract for seven days, the first dose decreases the blood glucose levels in accumulation 274,6 mg/dL, the second dose is 669,8 mg/dL and the third dose with the biggest decreases 1319,2 mg/dL. There was significant difference in blood glucose level between the negative control and the diabetic mice treated with dry extract of pericarp of mangosteen in doses 5,00 mg/20g BW ($p=0,007$) and 6,67 mg/20g BW ($p=0,000$) ($\alpha<0,05$). The results show that the dry extract from pericarp of mangosteen (Garcinia mangostana L.) in doses 5,00 mg/20g BW and 6,67 mg/20g BW can decreases the blood glucose levels in diabetic mice induced with alloxan with positive control glibenclamida.

Keywords: Diabetic, Antioxidant, Antidiabetic, Garcinia mangostana L., dry extract, alloxan-induced diabetic mice