

Study of effect of *Stevia rebaudiana bertonii* extract on oxidative stress in Type-2 diabetic rat models

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Diabetes is known to release a massive amount of toxic free radicals in body, which significantly decreases the amount of antioxidant enzymes, increase lipid peroxidation and causes hyperglycemia. Many plant extracts have been reported to possess anti-oxidant activities and ameliorate the effects of oxidative stress induced by diabetes. *Stevia rebaudiana* standardized extracts are used as natural sweeteners or dietary supplements. Since the stevia extract is a noncaloric and noncarcinogenic sweetener, it has been recommended to use in diabetes patients. The present study was aimed to investigate the effect of extract of *Stevia rebaudiana bertonii* on hyperglycemia and hepatic antioxidant enzymes of animal models of type 2, non-insulin dependent diabetes mellitus (NIDDM). In our study, diabetes was induced by alloxan monohydrate (150 mg/kg; b.w., i.p.). Animals of normal treated and diabetic treated groups were administered with a dose of 250 mg /kg, b.w., p.o., of stevia extract for 28 days and blood sugar levels were measured intermittently. At the end of the experiment, rat liver tissues were collected and the tissue homogenate was assayed for various oxidative scavenging enzymes. The results of enzyme assays clearly suggested that stevia extract possessed significant anti-oxidant activity as shown by increased activities of catalase ($p < 0.01$), reduced glutathione ($p < 0.01$), superoxide dismutase ($p < 0.05$) and decrease in malondialdehyde level ($p < 0.001$) present in liver tissues. Administration of the extract reduced the blood sugar levels significantly ($p < 0.001$) and improved the hyperglycemic condition.

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