Introduction and objective: Diabetes Mellitus is a chronic disorder that affects the metabolism of carbohydrates, fats and proteins. The characteristic aspect of Diabetes Mellitus is the hyperglycemia, which is due to the deterioration in the use of carbohydrates as a result of defective response to insulin secretion. During the persistent hyperglycemia, there is an increase in the production of free radicals oxygen by auto-oxidation of glucose, and these radicals exert their cytotoxic effects in phospholipids membrane. The objective of this experiment was to evaluate the hypoglycemic and antioxidant action of ethyl acetate extract of *Tabernaemontana catharinensis* through peripheral glucose dosage and enzymatic tests. Materials and Methods: Were used male rats divided into 6 groups: control, diabetic control, control extract 50, diabetic extract 50, control extract 80 and diabetic extract 80. Diabetes Mellitus was induced in the animals belonging to the diabetic groups by the administration of alloxan (150mg/Kg). After 15 days of treatment with the ethyl acetate fraction or distilled water, the animals were decapitated and their blood was collected for oxidative stress testing. Results and Conclusions: The diabetic control group had elevated glucose levels, increased levels of thiobarbituric acid and activity of superoxide dismutase, and reduced activity of catalase and glutathione peroxidase. The animals in the groups treated with 50 and 80 mg/Kg of the extract, showed a reduction in the levels of thiobarbituric acid and an increase in the activity of glutathione peroxidase when compared to the diabetic control group. Only animals that received the extract at a dose of 80mg/Kg achieved positive results in relation to the superoxide dismutase. We conclude that the ethyl acetate fraction of *Tabernaemontana catharinensis* when administered for 15 consecutive days, at doses of 50 and 80 mg/kg, promotes a decrease in the levels of oxidative stress generated by the administration of alloxan.

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Keywords: Diabetes Mellitus; Antioxidant; *Tabernaemontana catharinensis*. 