Antidiabetic Activity of Vochysia sp. Extract in Streptozotocin-Induced Diabetic Rats

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Vochysia sp. popularly known as “quina-doce” has been used in folk medicine to treat diabetes mellitus type 1 and type 2 in Uberlandia, Brazil. The mechanism of action and phytochemical profile of the studied specie is unknown; therefore our aim is to evaluate the potential antidiabetic in non-diabetic (ND) and streptozotocin-induced diabetic (D) rats for 43 days. Preliminary screening of the extract revealed the presence of proteins and carbohydrates. In acute toxicity assay, the extract did not show any sign and symptoms of toxicity and mortality up to 5000 mg/Kg dose. In another assay, the animals received water (ND and D control groups), Vochysia sp. extract (500 mg/kg) (NDV and DV groups) and glibenclamide (6 mg/kg) as a control drug (NDG and DG groups) through oral gavage daily for 43 days. NDV and DV groups showed no reductions in the glycemia and body weight values when respectively compared with those in the controls groups (water and glibenclamide). However, NDV and DV as well as NDG and DG rats lower glycemic levels when compared before and after treatment. NDV rats increased urea ($P<0.05$) and aspartate aminotransferase (AST) ($P<0.001$) levels compared to ND rats. NDG rats increased alanine aminotransferase (ALT) ($P<0.05$) and decreased cholesterol ($P<0.05$) levels compared to ND rats. DV compared to D group decreased AST ($P<0.05$), ALT ($P<0.05$) and HDL-C ($P<0.05$) levels while DG compared to D group increased uric acid ($P<0.01$), creatinine ($P<0.05$) and decreased alkaline phosphatase (ALP) ($P<0.01$) levels. Therefore, Vochysia sp. extract was able to reduce glycemia and alleviated the renal and hepatic effects observed in streptozotocin-induced diabetic rats.

Keywords: diabetes, Vochysia, plant extract, glibenclamide.

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