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Antioxidant, anti-diabetic and renal protective properties of *Stevia rebaudiana*

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Stevia rebaudiana has been used for the treatment of diabetes in for example, Brazil, although a positive effect on anti-diabetic and its complications has not been unequivocally demonstrated. Streptozotocin is a potential source of oxidative stress that induces genotoxicity. The effects of *Stevia* leaves and its extracted polyphenols on streptozotocin induced diabetic rats were studied. It can be hypothesized that supplementation of polyphenols extract from *Stevia* to the diet causes a reduction in diabetes and its complications. Several indices were analyzed to assess the modulation of the streptozotocin induced oxidative stress, toxicity and blood glucose levels by *Stevia*. The results showed a reduction of blood glucose, ALT and AST and increment of insulin level in the *Stevia* whole leaves powder and extracted polyphenols fed rats compared to control diabetic group. Its feeding also reduced the MDA concentration in liver and improved its antioxidant status through antioxidant enzymes. Glucose tolerance and insulin sensitivity were improved by their feeding. Streptozotocin induces kidney damage as evidenced by decreased glomerular filtration rate; this change was however alleviated in the *Stevia* leaves and extracted polyphenol fed groups. The results suggested that *Stevia* leaves do have a significant role in alleviating liver and kidney damage in the STZ-diabetic rats besides its hypoglycemic effect. It might be adequate to conclude that *Stevia* leaves could protect rats against streptozotocin induced diabetes reduces the risk of oxidative stress and ameliorate liver and kidney damage.

Biography

Naveen Shivanna has received his PhD degree in Biochemistry from University of Mysore, India in 2009. He has 15 years research experience as a Scientist in Defense Food Research Laboratory (DRDO), Ministry of Defense; Mysore, India. He has worked as a Faculty of Biochemistry in Department of Biochemistry, Armed Forces Medical College, India for 2 years. Currently he is working as a Scientist with grade 'C' at DFRL, Mysore, India. His fields of interest are food chemistry and diabetes. He has authored 25 research papers in various international journals.

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