Myricetin modulates hyperglycemia mediated oxidative stress in high fat fed – streptozotocin induced type 2 diabetic rats

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ABSTRACT

Diabetes mellitus (DM) is a multifactorial, multisystemic endocrine disorder often characterized by persistent elevation in both fasting as well as postprandial glucose levels resulting in disturbances of carbohydrate, lipid and protein metabolism. Flavonoids as potent antioxidants may prevent the progressive impairment of pancreatic β-cell function due to oxidative stress and thereby reduce the complications of type 2 diabetes. Among the flavonoids, myricetin is a major component found to be present in various traditional medicinal herbs. The present study was designed to evaluate the antihyperglycemic effect of oral administration of myricetin (5mg/kg b.w) for 30 days on high fat diet low dose streptozotocin induced type 2 diabetes in experimental rats. Oral administration of myricetin significantly decreases the levels of fasting blood glucose, glycosylated hemoglobin and significant increase in the levels of plasma insulin. Upon treatment with myricetin, the diabetic rats showed significant improvement in enzymatic and non – enzymatic antioxidants. These findings demonstrate that myricetin posses both significant antihyperglycemic as well as antioxidant properties.

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