Gossypin, a flavonol glucoside recuperates pancreatic beta cell function by attenuating hyperglycemia mediated oxidative stress and inflammatory responses in streptozotocin – induced experimental diabetes in rats.

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ABSTRACT

There is considerable evidence that chronic oxidative stress plays a crucial role in the progression of pancreatic beta cell dysfunction in diabetes mellitus. The present study was aimed to investigate role of gossypin, 3,3',4',5,7 pentahydroxy flavonol glucoside, on persistent high glucose mediated oxidative stress induced pancreatic beta cell dysfunction in streptozotocin – induced diabetic rats. Oral administration of gossypin to diabetic rats significantly improved the enzymatic and non enzymatic antioxidants in pancreatic tissues. The plasma non enzymatic antioxidants, oxidative stress markers and nitric oxide, inflammatory cytokines were also significantly reverted upon treatment with gossypin. The reduced insulin content in pancreas was significantly improved in the experimental diabetic rats treated with gossypin. In addition, the histological and ultrastructural observations demonstrate the possible role for gossypin in the protection of pancreatic beta cells.

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