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DNA protective and antioxidant effects of Astragalus methanolic extract in streptozotocin-induced diabetic rats

Besma Abed

University of Monastir, Tunisia

The protective effect of Methanolic Astragalus Roots (MAR) extract (250 and 500 mg/kg b.w) against oxidative stress was evaluated in Streptozotocin (STZ) induced diabetes rats. Administration of MAR extract induces a significant decrease in ROS production, Malondialdehyde (MDA) level, and protein carbonyl (PC) contents, and protects against DNA damage showed in diabetic rats. Decreased superoxide dismutase and catalase enzymes activities revealed in pancreas, liver, kidney and brain-STZ-induced diabetes groups were significantly restored in MAR-treated groups compared to the untreated diabetic group. Moreover, MAR extract was able to reduce nitric oxide (NO) levels and to enhance phagocytic activity of macrophages. Our study demonstrated that MAR extract may be effective against development of diabetes complications through the improvement of the oxidative status, especially in the pancreas and liver. This could be an important support for further investigations of this bioactive plant in the development of dietary supplement and pharmaceutical products.

abedbesma@yahoo.fr

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