



Research article

## Biochemical study on the antioxidant effect of some natural plants on the streptozotocin induced diabetic rats

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### Abstract

Oxidative stress is a phenomenon associated with pathogenetic mechanisms of several diseases including diabetes mellitus. There are many medicinal herbs, which have been recommended for the treatment of diabetes. Cinnamon aqueous extract has many pharmacological properties, such as antioxidants activity; also, Coffee is rich in phenolic compounds with a strong antioxidant activity. The aim of the present study was to deduce of better methods of herbal treatment comparison between treatments by cinnamon, green and black coffee alone or by mixing herbs together on the Streptozotocin induced diabetic Rats. Sixty four female albino rats were weighed and divided into eight equal groups; 6 groups were treated orally one time daily for 90 days. Group 1: untreated controls; Group 2: diabetic control; Group 3: (0.6 ml black coffee extract /150g/day); Group 4: (0.6 ml green coffee extract /150g /day); Group 5: (0.6 ml cinnamon extract /150g /day); Group 6: (0.3ml of black coffee and 0.3 ml of cinnamon /150g/day); Group 7: (0.3 ml of green coffee and 0.3 ml of cinnamon/150g/day); Group 8: (0.3 ml of black coffee, 0.3 ml of green coffee and 0.3 ml of cinnamon/150g/day). The mean value level of nitric oxide and malondialdehyde in the triple combination treated group was significantly decreased in compared with all treated groups while, the mean value level of serum reduced glutathione and paraoxinase in this group is significantly increased ( $p=0.001$ ) compared with all treated groups. In conclusion: the triple combination treatment by cinnamon, green and black coffee is the best group that acts as antioxidant effect.

**Key words:** Streptozotocin, Cinnamon, green and black coffee, Malondialdehyde, Nitric oxide, reduced glutathione and paraoxinase.

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