

Biochemical Studies on the Effects of Cymbopogon citratus (Lemon Grass) on Wistar Albino Rats

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Abstract : Medicinal plants have been recognized to have therapeutic effects and they may also have toxic side effects. The present study was undertaken to investigate the effect of extracts of Cymbopogon citratus on normal rats. Blood glucose levels of all animals were determined. Biochemical studies carried out to determine the oxidative status by measuring activities of superoxide dismutase (SOD) and catalase (CAT), and in the liver, kidney and pancreas. Oral administration of ethanolic and aqueous extract of C. citratus at a doses of 200 mg/kg body weight, for a period of 30 days, caused a significant ($p < 0.05$) reduction in blood glucose levels. Effect on hormonal profile (TSH, T3, and T4) was also determined, and was found to be significantly higher in all the administered groups when compared with control. Lipid profiles levels; Total cholesterols, triglycerides, high density lipoprotein-cholesterol and low density lipoprotein-cholesterol were significantly ($p > 0.05$) higher for all treated rats as compared against control. SOD, catalase, GSH and Vitamin C activities in the tissues (liver, kidney and pancreas) of the rats treated with the medicinal plants were generally higher or statistical slightly similar to control. Histopathology result showed that both ethanolic and aqueous extracts (200 mg/kg body weight) of C. citratus was safer as no adverse effects were observed in the organs examined. Findings in this study showed that this plant has hypoglycemic properties and did not exert oxidative damage; in some instances, particularly in the liver, kidney and pancreas as well as its relative safety and possible use for weight gain.

Keywords : medicinal plants, blood glucose, cymbopogon citratus, hypoglycaemic, oxidative status

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