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Hypolipidemic and hepato-protective effects of Alchornea cordifolia leaf extract in streptozotocin-induced diabetic rats

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Abstract

The study investigated the hypolipidemic and hepato-protective effects of n-butanol fraction of Alchornea cordifolia leaf extract in streptozotocin-induced diabetic rats. To achieve this set objective, 16 hours fasted rats were made diabetic by single intraperitoneal injection of 60 mg/kg body weight dose of streptozotocin dissolved in 0.1 ml fresh cold citrate buffer pH 4.5. After this, the diabetic animals were randomly divided into the following groups: Group I served as the normal control, Group II served as diabetic control, while Group III to Group VI were treated with 200, 400 and 800mg/kg b w of the plant extract fraction and glibenclamide 10mg/kg b w respectively by oral gavage for a period of 4weeks. At the end of treatment period all animals from each group were euthanized and blood samples collected by cardiac puncture. There was a

statistically significant ($p < 0.05$) reduction in blood glucose level in all groups treated with 200, 400 and 800mg/kg b w of the extract after day 7, 14, 21 and 28 when compared to the diabetic control group. The study also revealed a significantly decreased ($p<0.05$) serum total cholesterol, triglyceride and low-density lipoprotein and significantly elevated ($p<0.05$) serum levels especially in the groups treated with 400 and 800 mg/kg b w of the extract when compared to the diabetic control group. There was also a significantly reduced($p<0.05$) serum liver enzymes, AST, ALT and ALP as well as total and direct conjugated bilirubin levels in all groups that received various doses of the plant extract when compared to the diabetic control group. It can be concluded that the plant possesses anti-diabetic property suggesting that the plant maybe useful in the management of dyslipidemia, a secondary complication that usually occur in diabetic condition.

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