

BIOCHEMICAL CHANGES IN STREPTOZOTOCIN-INDUCED DIABETIC RATS AFTER TREATMENT WITH ETHANOLIC LEAF EXTRACT OF *Croton Zambesicus* (Müll. Arg.)

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Abstract

Objective: This study was designed to evaluate the effect of ethanolic leaf extract of *C. zambesicus* on total protein (TP), albumin (ALB), globulin (GLO), lactate dehydrogenase (LDH) and glucose-6-phosphate dehydrogenase (G6PDH) in streptozotocin (STZ) induced diabetic rats.

Methods: Seventy adult male wistar rats were divided into seven groups (n=10). Group A, control rats; Group B, untreated diabetic rats; Group C, diabetic rats in which *C. zambesicus* therapy started 2 weeks prior to induction of diabetes; Group D, diabetic rats administered orally with *C. zambesicus leaf* extract for 2 weeks after the initial four weeks of diabetic induction; Group E, diabetic rats administered orally with *C. zambesicus leaf* extract for 4 weeks after the initial four weeks of diabetic induction; Group F, normal rats administered orally with *C. zambesicus leaf* extract for four weeks; Group G, diabetic rats administered with glimepiride (2 mg/kg/day) for four weeks after the initial four weeks of diabetic induction. At the end of the experimental period, the animals were weighed and sacrificed. Serum was obtained for TP, ALB, LDH and G6PDH analysis using respective diagnostic kits.

Results: The results showed an improvement in protein metabolites (TP, ALB, GLO) while the LDH and G6PDH in the extract and glimepiride treated groups were restored near normal level when compared with normal control (group A).

Conclusion: In conclusion, this study showed that *C. zambesicus* leaf extract exerts positive effects on serum levels of TP, ALB, GLO, LDH and G6PDH in diabetic rats. Thus, ethanolic leaf extract of *Croton zambesicus* can be adopted in the management of diabetes mellitus.

Keywords: Albumin, diabetes, globulin, glucose-6-phosphate dehydrogenase, lactate dehydrogenase, total protein.

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