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A TOXICOLOGICAL STUDY OF THE BARK EXTRACT OF *SPONDIAS PINNATA* IN HEALTHY WISTAR RATS

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Objectives: The present study is aimed at investigating acute and sub-chronic toxicological effects of the aqueous bark extract of *Spondias pinnata* (Linn. f) Kurz. (Anacardiaceae) in male Wistar rats.

Materials and methods: An aqueous extract of *S. pinnata* was administered orally at graded doses (0.25-2.00 g/kg) to Wistar rats (n=6/group) and the general behaviour of the animals was observed for 14 days in acute toxicity test. Sub-chronic toxicity was evaluated by daily administration of the extract at 1.00 g/kg (optimum effective anti-hyperglycaemic dose in diabetic rats) orally to Wistar rats (n=6/group) for 28 days. The effects of the extract on biochemical (including serum lipid parameters, activities of liver enzymes) and haematological parameters (full blood count) were also assessed on the 28th day. Further, histopathological effects were assessed in heart, lung, small intestine, liver, kidney, spleen and pancreas. Toxicological data were analyzed by two sample t-test using the Minitab statistical software.

Results: All animals were physically active and no death was observed up to the dose of 2.00 g/kg in the acute toxicity study. The extract neither produced statistically significant changes in biochemical and hematological parameters including lipid profile, activities of liver enzymes and full blood count ($p > 0.05$). No treatment-related cellular changes were observed in the haematoxylin and eosin tissue sections of *S. pinnata* treated rats on light microscopic examination.

Conclusion: The aqueous extract of *S. pinnata* is safe in healthy rats up to a dose of 2.00 g/kg. Further the extract at a dose of 1.00 g/kg was found to be toxicologically safe for further investigations as a potential anti-diabetic agent.

Key words: Acute toxicity; sub-chronic toxicity; anti-hyperglycaemic agent; *Spondias pinnata*; Wistar rats