

Acute and 28 Day Sub-Acute Toxicity Studies of Hydroalcoholic Extract of *Blepharis maderaspatensis* (L.) Heyne Ex Roth in Wistar Albino Rats

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ABSTRACT

Blepharis maderaspatensis L. Roth (Acanthaceae) popularly known as creeping *Blepharis* has been well cited in folklore medicine. Despite its numerous therapeutic benefits, its toxicological manifestations are yet to be documented. The present study was aimed to establish the safety profile of hydroalcoholic extract of *Blepharis maderaspatensis* L. Roth (HEBM) by performing acute and sub-acute oral toxicity studies in Wistar Albino rats of both sexes in accordance with OECD guidelines. In the acute toxicity study (OECD 420), first group ($n = 6$) served as control group which received distilled water while the second group ($n = 6$) was treated with HEBM at the dose of 5000 mg/kg body weight per orally. All the animals were closely observed for 14 days. Mortality, food and water consumption and other clinical signs were monitored throughout the experimental period. In the sub-acute toxicity studies (OECD 407), the first group served as the control group while the other three groups ($n = 6$) received repeated oral administration of HEBM at three different doses of 100, 200, and 400 mg/kg b.w/day respectively for 28 days. Body and organ weights, hematological and biochemical parameters, and histopathological changes were evaluated. The results obtained from acute toxicity study showed no adverse effects or mortality after the oral administration of 5000 mg/kg of HEBM. Food and water intake were normal. Sub-acute toxicity study proved that the 28 day oral exposure of various dosages of HEBM to Wistar rats of both sexes did not produce significant changes with respect to organ weight, haematological parameters, and biochemical parameters. Statistical Analysis was performed using Duncan's multiple range test (DMRT). Our results clearly depict that acute exposure of 5 g/kg b.w of HEBM proved safe as it did not cause mortality and the oral sub-acute administration of HEBM for 28 days did not cause toxicity risks as confirmed by biochemical investigations and histopathological examinations. To conclude, the hydroalcoholic extract of *Blepharis maderaspatensis* L. Roth extract may be considered non-toxic and safe for therapeutic use.