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Non-clinical acute toxicology of the dichloromethane fraction from crude ethanolic extract of *Sida rhombifolia* in Wistar rats

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Sida rhombifolia L., Malvaceae, is widely distributed in South America popularly known as “guanxuma” and “mata-pasto”. It is used as infusion to combat cholesterol, hypertension and as diuretic. This study aimed to evaluate the *in vivo* acute toxicity of the dichloromethane fraction from crude ethanolic extract of *S. rhombifolia* (DFCEE). By analyzing the extract and the dichloromethane phase, it was possible to isolate by chromatographic techniques and to identify the quindolinone alkaloid by ¹H- and ¹³C-NMR in one and two-dimensional methods (HMQC, HSQC, HMBC, COSY and NOESY). Acute toxicity study was based on ‘Guide for conducting non-clinical toxicology study and pharmacology safety necessary for the development of drugs’ and was conducted by oral treatment in Wistar rats. The study was approved by the Ethics Committee on Animal Research (CEPA) number 029/2015. The animals were divided into two groups with 12 rats (6 females and 6 males). The control group received saline. In the treated group with DFCEE it was administered a dose of 2000 mg/kg. We evaluate food and water consumption; weight evolution; pharmacological screening to detect signs of activity in the CNS and ANS described by Almeida et al. (1999); hematological and biochemical parameters of blood; and histopathology of liver and kidney. For the statistical analysis, we use the test “t” Student unpaired using the software GraphPad Prism 6.0, and the results were considered significant when presented values of $p < 0.05$. After 14 days, there were not deaths in the groups and the animals showed no change in the CNS and ANS. It was observed in the first week a significant increase in the weight evolution of the females and a decrease in the males, suggesting that the variation was a result of drug metabolism during this period, and could predict specific sensitivity for each sex of the rat. Feed consumption was significantly reduced for both sexes. Hematological parameters showed a decrease in lymphocytes in males and eosinophils in females, and an increase in neutrophils in males. The hematopoietic system is a target of toxic substances, being interesting to analyze the state of physical and pathological health. The increase of neutrophils suggests the occurrence of an inflammatory response. In females, a statistically significant increase in the biochemical parameters of phosphorus and alkaline phosphatase was observed. The kidney and liver had not histological changes. The results suggest that the DFCEE of *Sida rhombifolia* has low acute toxicity.

Keywords: Medicinal plants; acute toxicity; biochemical and hematological parameters.



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