



ACUTE TOXICOLOGICAL EVALUATION OF VITAMIN C CONCENTRATE OBTAINED FROM THE FRUITS OF *Malpighia Emarginata* DC.

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INTRODUCTION

The fruit known as acerola originates from the species *Malpighia emarginata* DC. This part of the plant is rich in ascorbic acid, a compound widely used in the pharmaceutical area. However, there are no in vivo toxicological studies for vitamin C concentrates. Thus, the objective of this study was to evaluate the acute toxicity of a concentrated vitamin C product produced from the fruits of *M. emarginata*, in rodents.

MATERIAL AND METHODS

Vitamin C concentrate is produced using a patent-protected process. The acute toxicological evaluation of this concentrate was approved by the CEUA under protocol n°006/2021. The test was carried out in accordance with the guidelines proposed by the OECD and Anvisa. Thus, rats and mice (n = 3) of both sexes were used, which received the treatments orally and parenterally, at a dosage of 2000 mg/kg and the vehicle groups (Veh), which received saline solution parenterally or water by mouth (gavage). After administration of the concentrate, the presence of behavioral changes was observed, which were performed at specific periods according to established scores for each variable, characterized by absence of signal, rare signals, evident signals and evident and continuous signals. The consumption of water and food was also observed. In addition, at the end of the experimental period, macroscopic analyzes of the liver, lung, heart, brain, spleen and kidney were performed. Data were treated

by mean ± SEM, ANOVA (one-way or two-way) followed by Tukey's test. Results for $p < 0.05$ were considered significant.

RESULTS

In the behavioral assessments of general activity, piloerection, touch, irritability, auricular and corneal reflex, tremor, convulsions, breathing, vocal tremor, tail grip, straub and stimulation, no differences were observed in the groups tested. In the feeding parameter, the group of rats that received the concentrate orally and parenterally showed a difference and increase in consumption ($p < 0.05$), compared to the Veh group. Regarding water consumption, the groups showed no significant difference when compared with the vehicle. The group of mice that received the treatments orally showed a significant difference, with a decrease in body mass ($p < 0.05$, 14th day) in relation to Veh. And the general macroscopic evaluations of the organs revealed no difference in any group.

CONCLUSIONS

Acute toxicology testing for vitamin C concentrate shows that the 2000 mg/kg dose has no lethal effects in rodents. There are also no signs of behavioral or physiological toxicity in the animals.

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