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PRECLINICAL SAFETY EVALUATION OF Cyperus articulatus L. *ESSENTIAL OIL*

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INTRODUCTION: Phytotherapy, an ancient practice, uses medicinal plants for health treatments. Priprioca (*Cyperus articulatus L.*) is a medicinal plant whose essential oil is valued in the food industry and has several therapeutic properties, such as analgesic, antioxidant, anticonvulsant and antimicrobial. Therefore, given its high popular consumption, studies that guarantee the safety and efficacy of its use are essential. OBJECTIVE: To evaluate the safety of *Cyperus articulatus L.* essential oil (CAEO) through hemolytic activity. METHODOLOGY: The Red Blood Cells (RBC) test was performed. RBC 2% (v/v) were incubated with test drugs at concentrations of 2,000 to 15.6 µg/mL. Hemoglobin release was measured by absorbance at 450 nm. The positive and negative controls were 1% Extran and 1% dimethyl sulfoxide, respectively. Cytotoxicity was evaluated based on the hemolysis rate, classifying the activity as: 0-9% (non-toxic), 10-49% (slightly toxic), 50-89% (toxic) and 90-100% (highly toxic). Data analysis was performed by the variance test (ANOVA) and Newman-Keuls post-test ($p<0.05$), using Graph Pad and Microsoft Excel software. RESULTS AND DISCUSSION: The RBC showed low hemolysis rates of CAEO, below the values observed in the positive control. The highest concentration (2,000 mg/mL) caused 7.5% (± 0.30%) hemolysis, reducing to 0.31% (± 0.07%) at the lowest concentration (15.625 mg/mL), compared to the positive control with Extran (100% hemolysis). No studies on the hemolyzing effect or any post-clinical safety tests for the use of CAEO recommended by the National Health Surveillance Agency were found. However, in vitro studies of the hemolytic evaluation of the ethanolic extract of Cyperus articulatus var. nodosus residue indicate the feasibility of cytotoxicity tests to support the dosage used. CONCLUSIONS: CAEO demonstrated low cytotoxicity at the concentrations tested, suggesting safety for its use with hemolysis rates lower than the positive control. Acknowledgements: FAPESPA – Amazon Foundation for Support of Studies and Research, UFOPA – Federal University of Western Pará.

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