



Cytotoxicity of fractions from ethanolic extract of the solid residues of *Cyperus articulatus* by brine shrimp assay

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Priprioica (*Cyperus articulatus* var. *nodosus*) is a herbaceous species found in Americas, Africa, Asia and Austria [1]. In Brasil it is found mainly in Amazon Region. This plant is very well known in traditional medicine as well as used by Brazilian cosmetics industries [2]. The process to extract essential oil from its rhizomes produces tons of solid residues that currently do not possess any specific destination. The aim of this work was evaluate the cytotoxic potential of fractions from ethanolic extract of solid residues of priprioica using microcrustacean *Artemia salina*. Previous assays have shown antitumor activity for these fractions. 150 g of solid residue were extracted with ethanol in warm bath at 60°C (yield 7.33%). The extract was fractionated by liquid-liquid partition with solvents of different polarities, yielding following fractions: *n*-hexane (4.85%), methylene chloride (23.81%) and ethyl acetate (4.08%). For biological assays experimental design was entirely casual with three repetitions in factorial scheme 4x3x4. The factors were: observation time during 24, 48, 72 and 96 h (first factor); *n*-hexane, methylene chloride and acetyl acetate fractions of ethanolic extract (second factor) and the concentrations 50, 5.0, 0.50 and 0.05 µg/mL (third factor). Positive and negative controls were ethanol and saline solution, respectively. Mortality rate of *A. salina* was evaluated with 10 nauplii per each concentration. Data were submitted to analysis of variance and the averages compared by Tukey test using Assistant 7.7 software. Results were significant for the isolated factors as well for the interaction between them. Higher levels of toxicity were observed after 72 h, with average of 3.03 dead nauplii. The *n*-hexane fraction was the most effective (average: 4.10 dead nauplii), followed by ethyl acetate (average: 1.14) and methylene chloride (average: 1.10). Mortality rate of *A. salina* was directly proportional to increasing concentrations. GC-MS and HPLC analysis of *n*-hexane fraction are in progress. This fraction of *Cyperus articulatus* contains non-polar substances remained from the extraction of essential oil, such as sesquiterpenes, fatty acids, steroids and acetophenones known as actives in different biological assays.

[1] ZOGHBI, M. G. B.; GUILHON, G. M. S. P.; ANDRADE, E. H. A.; VILHENA, K. S. S. Química das espécies de *Cyperus* conhecidas por Priprioica In: POTIGUARA, R. C. V.; ZOGHBI, M. G. B. (Org) **Priprioica um recurso aromático do Pará** Belém: MPEG, UEPA, 2008.

[2] BUM A, C.L. MEIER A., S. URWYLER A, Y. WANG B, P.L. Herrling Extracts from rhizomes of *Cyperus articulatus* (Cyperaceae) displace [3H]CGP39653 and [3H]glycine binding from cortical membranes and selectively inhibit NMDA receptor-mediated neurotransmission. **Journal of Ethnopharmacology**, v. 54, p. 103-111, 1996.