**IN VIVO AND IN VITRO TOXICITY OF THE HYDROETHANOLIC EXTRACT OF FRUITS FROM GENIPA AMERICANA L.**


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**Introduction and objectives:** Medicinal plants has much contributed to the health. They are one of the major source in the search for new substances. However, many extracts are used without scientific basis as regards the efficacy and safety. In this context, there is the *Genipa americana* species (Rubiaceae), known as “jenipapo” and popularly used against inflammatory and hemorrhagic problems. The aim of this study was to evaluate the cytotoxicity and the toxicity of extract of *G. americana*. **Materials and methods:** The extract was prepared using the fruits of *G. americana* and 70% ethanol by maceration. Cytotoxic activity was determined by the MTT assay against the cell lines of mouse fibroblast (3T3), human hepatocellular carcinoma (HepG2) and kidney carcinoma (786-0) during 24 hours, at concentrations from 0.1 to 100 µg/100µL. Assessment of toxicity was based on guide for conducting non-clinical studies of toxicology from ANVISA and the OECD Guidelines, using doses from 100 to 1000 mg/Kg. The protocols were approved by Ethics Committee on Animal Use/UFRN with No. 045/2013. **Results and conclusions:** Evaluation against the cell line 3T3, showed that at 24 h of exposure, the extract didn't promotes cell death. Assessment of the extract front HepG2 shown that all the concentrations tested promote no effect on cell growth. Against the cell line 786-0 the extract promoted cell death up to 29.3% at the dose of 10 µg/100µL, with slight reduction of the effect on the highest dose. The *in vivo* toxicity assessment demonstrated changes in left kidney weight and plasma concentration of urea in the animals subjected to the dose of 1000 mg/kg. However, the histopathological analysis of the organs (liver, kidney and spleen) showed no differences between the groups. Despite the *in vitro* study demonstrated cytotoxicity against only 786-0 cell line, the *in vivo* studies suggest that the fruit extract from *G. americana* is classified as low toxicity.

Keywords: genipap, cytotoxicity, cell culture.
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