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IN VITRO EVALUATION OF CYTOTOXICITY OF CERRADO PLANTS IN HEPG2 CELLS

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INTRODUCTION

Plants are widely used for therapeutic purposes and are of great importance in contributing to the discovery of new drugs from empirical use. The use of plants for treatment, cure and prevention of diseases is made with little or no proof of their pharmacological properties and toxicity. In addition, plant consumption is encouraged by the belief that, because they are natural, they pose no health risk (Veiga Junior et al. 2005, Quim Nov). The liver is susceptible to the action of xenobiotics and infectious agents and may cause acute or chronic liver injury that may progress to liver failure or hepatocellular carcinoma (Malhi & Goris, 2008, Gastroenterol). In this context, it is relevant to investigate the existence of hepatotoxicity in cerrado plant extracts: *Hancornia speciosa* Gomes, *Hymenaea stigonocarpa* Hayne, *Cheiloclinium cognatum* (Miers) A.C.Sm. and *Guazuma ulmifolia* Lam.

MATERIAL AND METHODS

The leaves of the species were collected in Brasília-DF. Aqueous extract was prepared in 1:10 ratio for infusion which was further filtered and lyophilized. In the hepatotoxicity study we used the HepG2 cell line, commonly used for hepatotoxicity studies (Donato et al, 2015). Cells were seeded in a 96-well plate at 2.5 x 10^4 cells / well and incubated for 24 hours. Cell cytotoxicity was assessed by MTT method (Mosmann 1983; Hansen et al. 1989, J Immunol Methods).

RESULTS

Dose-dependent cell viability decreased, and the highest tested dose of extracts significantly decreased cell viability. The IC_{50} of *H. speciosa*, *H. stigonocarpa*, *C. cognatum* and *G. ulmifolia* extracts were: 249.97 µg/mL, 148.37 µg/mL, 363.43 µg/mL and 528.97 µg/mL, respectively. The range of doses in which *H. speciosa*, *H. stigonocarpa*, *C. cognatum* and *G. ulmifolia* extracts did not show cytotoxicity were: 25-75 µg/mL, 25-75 µg/mL, 25-100 µg/mL and 25 -200 µg/mL respectively.

CONCLUSIONS

The cytotoxicity of all extracts was dose dependent, with potential antiproliferative effect at the highest concentrations. Non-cytotoxic doses may be the target of pharmacological studies with hepatoprotective effect against toxicants, whereas cytotoxic doses that have shown antiproliferative effect may be the target of pharmacological studies for hepatocellular carcinoma.

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