TOXICOLOGICAL EVALUATION OF EXTRACT OBTAINED FROM Piper cernuum Vell. STEMS

Fellippe Wolff1*, Jocilene D. Jucervic2, Adriana Bramorski2, Jaqueline P. Reis2, Ângela Malheiros1,2, Josiane C. Vitorino2, José R. Santin1,2.

1Programa de Pós-graduação em Ciências Farmacêuticas, Universidade do Vale do Itajaí, SC, Brasil. 2Escola de Ciências da Saúde, Universidade do Vale do Itajaí, SC, Brasil. *fellippewolff@gmail.com

INTRODUCTION

Species of the genus Piper (Piperaceae) found in the Atlantic Forest, are widely used for medicinal purposes. Phytochemical studies performed for this family showed a wide variety of secondary metabolites such as lignans, terpenes, amides and flavonoids. In this study, we investigate the toxicological effects of ethanolic extract of P. cernuum Vell. stem extract.

MATERIAL AND METHODS

This study evaluated the cytotoxicity and hemolysis in vitro and the acute toxicity, subchronic and mutagenicity in vivo of extracts of stems of Piper cernuum. In the cytotoxicity study of both extracts (0.1, 1, 10, 100 and 1000 µg/mL), human hepatocellular carcinoma (HepG2) cells were used, analyzed by MTT. Wistar rats of both sexes were used to assess the acute toxicity (single dose of 2000 mg kg) and subchronic toxicity (50 and 250 mg/kg for 28 days). At the end of the experiments, blood and organ samples were collected for biochemical and histopathological analyzes.

RESULTS

In the in vitro assays, the stem extract of P. cernuum did not promote cytotoxicity or hemolysis when compared with the controls. In the acute toxicity test, biochemical analyzes demonstrated a decrease in AST levels in both male and female animals treated with extract. In the subacute test, an increase in relative (and absolute) weight of the spleen was observed in females treated with P. cernuum stem extract (50 mg/kg). Changes were also found in animals treated with the same extract at the concentration of 250 mg/kg, where there was an increase in the absolute weight of the spleen, heart, lungs and left kidney in female rats, as well as increases in FAL level in Male rats. During the evaluations of the in vivo tests, there were no deaths, no behavioral changes, no changes in water and feed consumption, and no hematological or histopathological changes. The stem extract were also unable to induce mutagenicity.

CONCLUSIONS

The results obtained provide data on the acute, subchronic and mutagenic oral toxicological profile of stems extract of P. cernuum, indicating safety for administration in acute or repeated doses.

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REFERENCES