BIOLOGICAL AND PHARMACOLOGICAL ACTIVITIES OF ETHANOL EXTRACT FROM LEAVES OF *HIPPEASTRUM GOIANUM* RAVENA (AMARYLLIDACEAE): AN *IN VITRO* STUDY

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1. INTRODUCTION

Hippeastrum goianum Ravena (Amaryllidaceae) is an endemic plant species from the Brazilian Savanna. Several studies about medicinal properties of Amaryllidaceae species crudes extracts have been performed. Although, few investigations describe the biological and pharmacological potential for this specie. In this study, were investigated biological and pharmacological activities of ethanol extract (EE) from *H. goianum* leaves.

2. METODOLOGY

There were evaluated the effects on acetylcholinesterase enzyme activity, using a method proposed by Ellman et al. (1961), with some modifications (López et al. 2002), antioxidant capacity, and the effect in the PPARα, PPARγ and TRβ receptors cotransfected in human uterine cervical tumor cells (HeLa). To evaluate the maximum concentration not toxic of ethanol crude extract in HeLa, the MTT assay was carried out and the maximum not toxic concentration founded was 300 µg/mL of EE for furthers gene reporter assays. HeLa cells were cotransfected with the expression vector for PPARα, PPARγ or TRβ receptor and a luciferase reporter and then treated with vehicle (DMSO/ethanol 1:1), benzafibrate, rosiglitazone or increasing amouts of the ethanolic extract (100-300 µg/mL).

3. RESULTS

The concentrations of 250 and 300 µg/mL of EE were able to activate in a range of 2-4 fold times on PPARα and PPARγ receptors. None of EE concentrations tested were able to activate TRβ receptor. The AChE inhibition by ethanol crude extract of *H. goianum* leaves was 27.07±2.82 µg/mL, while galanthamine bromide was 0.32 ±0.08 µg/mL. The antioxidant potential was evaluated by two different *in vitro* methods: DPPH radical and phosphomolybdenum reduction, using ascorbic acid (AA) as antioxidant standard. The EE was able to DPPH scavenging on 50% at 61.88±0.43 µg/mL (AA EC_{50} at 7.71±0.45 µg/mL. For phosphomolybdenum reduction, EE achieved 93.76±6.58 µg of AA per mg of sample.

4. CONCLUSIONES

More studies are needed, however, the results were positive indicative of the pharmacological potential of *H. goianum*.

5. REFERENCES

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