



SEASONAL MONITORING OF ACETYLCHOLINESTERASE INHIBITION ACTIVITY IN HIPPEASTRUM GOIANUM (RAVENNA) MEEROW SPECIES

Amanda G. Torres¹, Christopher W. Fagg², Daniela A. de C. Nizio³, Fabrício T. C. de Almeida⁴, Pérola O. Magalhães¹, Yris M. Fonseca¹, Kicia K. P. Gomes-Copeland¹, Dâmaris Silveira¹

¹ Faculty of Health Sciences, University of Brasília, Darcy Ribeiro University Campus, Asa Norte, Brasília, Federal District, CEP 70910-900, Brazil. *amandag.torres@hotmail.com

² Faculty of Ceilândia, University of Brasília, Ceilândia, Federal District, CEP 72220-275, Brazil.

³ Federal University of Sergipe, Prof. Aloísio de Campos Campus, Av. Marechal Rondon, s/n, CEP 49100-000, São Cristóvão, SE, Brazil.

⁴ Faculty of Medicine, University of Buenos Aires, Buenos Aires, Argentina

INTRODUCTION

Success in the discovery of new drugs is attributed to the extensive chemical and structural diversity of the natural compounds (Pimentel et al. 2015, <<https://web.bndes.gov.br/bib/jspui/handle/1408/5602>> (accessed 16.03.2019). *Hippeastrum goianum* (Amaryllidaceae) is an endemic species of Cerrado, presenting alkaloids of pharmacological interest. The concentration of alkaloids can be affected by environmental factors and by the type of plant tissue. Therefore, studies were carried out to evaluate the seasonal influence on the enzymatic activity of leaves and bulbs of *H. goianum*.

MATERIAL AND METHODS

The plant material was collected in three different months (October/2017, February/2018 and May/2018). Were obtained crude ethanolic extract (EEtOH) and ethyl acetate fraction (FAcOEt) of leaves and bulbs. All samples were evaluated for *in vitro* inhibition of acetylcholinesterase (AChE), using galanthamine and physostigmine as positive controls (93.14 ± 0.08 and 98.09 ± 0.02%, respectively). Data on the percentage of inhibition of AChE were analyzed by analysis of variance.

RESULTS

The analysis of variance showed some statistical differences regarding the type of extract and collection period for AChE inhibition activity. February/2018 was the best time for leaf collection with percentage of inhibition of AChE of 85.72%, while may/2018 was the best collection period of bulbs, which presented a percentage of inhibition (89.53%) when compared to standards. However, the period from February/2018 to the FAcOEt of leaves showed inhibition of this same enzyme, not statistically differing from the bulb fraction (85.72%) for this same period.

CONCLUSIONS

These results suggest the use of fractions extracted from leaves of *H. goianum* as an alternative means to control the inhibition of acetylcholinesterase, thus avoiding the indiscriminate extraction of this population, since it is at risk of extinction according to the Ministry of the Environment. Contributing to the research of alternative products for the treatment of neurological disorders as well as neurodegenerative diseases.

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