



SUBJECT AREA: PHYTOCHEMISTRY AND BIOLOGICAL ACTIVITY OF  
BIOACTIVE COMPOUNDS OF MEDICINAL PLANTS

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## INHIBITION OF ACETYLCHOLINESTERASE IN MICROPROPAGATED *HABRANTHUS IRWINIANUS* RAVENNA (AMARYLLIDACEAE) SEEDLINGS

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### INTRODUCTION:

*Habranthus irwinianus* Ravenna (Amaryllidaceae) is an endemic Brazilian from *in vitro* cultivation. This study aimed to evaluate the AChE inhibition of micropropagated *H. irwinianus* hexane and ethanol extracts from leaves, bulbs and roots.



Fig. 1. *H. irwinianus*

**METHODOLOGY:** One-year-old specimens of *H. irwinianus* were obtained by micropropagation. Roots, bulbs, and leaves were extracted by maceration. The extracts evaluated for AChE inhibit.

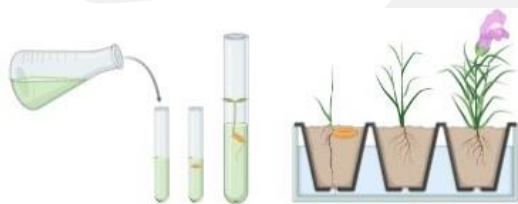


Fig. 2. Micropropagation of *H. irwinianus*.

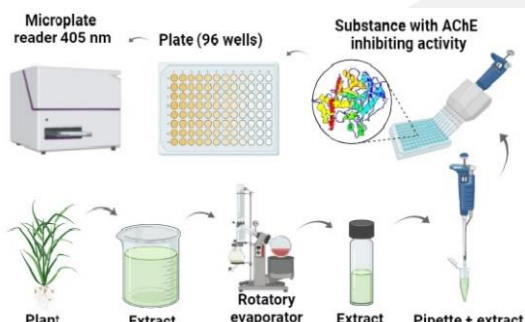


Fig. 3. Extraction and AChE inhibition squeme [1,2].

**RESULTS AND DISCUSSION:** Hexane extracts did not inhibit AChE enzyme at all tested concentrations. Galantamine was used as positive control (IC<sub>50</sub> of 0.63±0.09 µg/mL). Roots ethanol extracts were more potent, compared to bulbs and leaves ethanol extracts. Once crude extracts have diferent class of compounds, selective alkaloid extraction might improve the results obtained, once Amaryllidaceae alkaloids have remarkable activity in AChE inhibition.

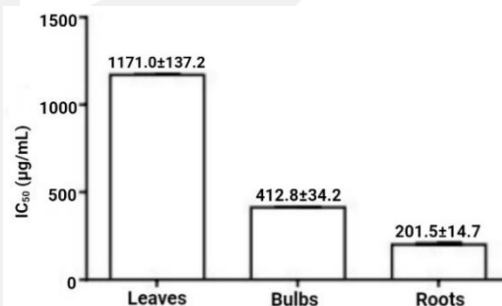


Fig. 4. Inhibition of AChE by ethanolic extracts of leaves, bulbs and roots of *H. irwinianus*.

**CONCLUSIONS:** Therefore, *H. irwinianus* ethanol extracts results on AChE inhibition may direct further research with this plant species. More studies are needed to investigate which compounds are responsible for this effect.

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[2] LÓPEZ, S. et al. Acetylcholinesterase inhibitory activity of some Amaryllidaceae alkaloids and *Narcissus* extracts. *Life Sciences*, v. 71, p. 2521-2529, 2002.