



## HISTOCHEMISTRY OF ALKALOID CONTENT IN *EX VITRO* AND *IN VITRO* LEAVES OF *Psychotria viridis* (Rubiaceae)

Camila Moreno Lopes de Andrade<sup>1</sup>; Maurício Yonamine<sup>2</sup>; Jaime Eduardo Cecilio Hallak<sup>3</sup>; José Alexandre De Souza Crippa<sup>4</sup>; Fernando Henrique Ferrari<sup>5</sup>; Vanessa Cristina Stein<sup>6</sup>

<sup>1</sup> Mestre - Programa de Pós-graduação em Botânica Aplicada - Departamento de Biologia, Universidade Federal de Lavras, camila.andrade3@estudante.ufla.br

<sup>2</sup> Professor Associado - Departamento de Análises Clínicas e Toxicológicas da Faculdade de Ciências Farmacêuticas da Universidade de São Paulo, yonamine@usp.br

<sup>3</sup> Professor titular - Departamento de Neurociências e Ciências do Comportamento da FMRP da Universidade de São Paulo - jhallak@fmrp.usp.br

<sup>4</sup> Professor titular - Departamento de Neurociências e Ciências do Comportamento da FMRP da Universidade de São Paulo - jcrippa@fmrp.usp.br

<sup>5</sup> Professor associado - Campus São Sebastião do Paraíso, Universidade Federal de Lavras, fernando.ferrari@ufla.br

<sup>6</sup> Professora associada - Programa de Pós-graduação em Botânica Aplicada, Departamento de Biologia, Universidade Federal de Lavras, vanessastein@ufla.br

**ABSTRACT:** The species *Psychotria viridis* (Rubiaceae) is native to the Amazon but has a very sparse distribution throughout Central America. It is widespread in Peru and occurs in Cuba, Colombia, Venezuela, Ecuador, Brazil, and Bolivia. It is found in the form of shrubs, reaching 2 to 4 m in height and its leaves are commonly used in the preparation of the ritualistic drink ayahuasca, combined with the species *Banisteriopsis caapi* (Malpighiaceae). Currently, there are no reports regarding *in vitro* culture of *P. viridis*. Herein, this study compared leaf samples from *ex vitro* and *in vitro* plants of *P. viridis*. Leaves were collected and fixed in a FAA 70% solution for 3 days and then transferred to ethanol 70%. Three leaves from each sample were free-hand cut with a razor blade and stained with Dittmar's reagent for alkaloid investigation. The sections were then placed on microscope slides with drops of a 50% glycerin water solution and finished with coverslips. The sections were examined and photographed using an optical microscope attached to a digital camera. The qualitative analyses showed that *in vitro* plantlet leaves may contain higher amounts of alkaloids. Due to the low number of regenerated plantlets, it was not possible to perform a quantitative analysis. However, developing and improving an *in vitro* propagation system for *Psychotria viridis* is valuable due to alkaloid production being present in high yields in plantlets and the imperative of preserving natural resources in light of global climate change. The findings here presented, serve as fundamental results for future research aiming to apply new biotechnologies to this Amazonian species. Hence, this study contributes to the advancement of this field. However, more studies are needed in order to establish an efficient protocol for *in vitro* regeneration, rooting, and acclimatization.

**KEYWORDS:** Dittmar's reagent; Plant biotechnology; Rubiaceae.

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