



EVALUATION OF ANTIMICROBIAL ACTIVITY FROM THE EXTRACT AND ISOLATED SUBSTANCES OF *ANTHOSTOMELLA BRABEJI*

**Marcelo Rodrigues de Amorim, Andressa Somensi, Angela Regina Araujo, Bruna
Vidal Bonifácio, Taís Maria Bauab, Lourdes Campaner dos Santos.**

*Sao Paulo State University (UNESP), Institute of Chemistry, Araraquara, Brazil; Sao Paulo State
University (UNESP), Faculty of Pharmaceutical Sciences, Araraquara, Brazil;*
marceloamorim.unesp@gmail.com

ABSTRACT

Eriocaulaceae family, with species popularly known as “sempre-vivas”, comprising approximately 1.200 species divided into 10 genera [1]. *Paepalanthus* is the largest genus in this family with approximately 500 species, more than 400 occurring only in Brazil. Despite the large number of previous studies with Eriocaulaceae species, it is important to describe many of these species are endangered and without studies, which demonstrates the need for new research about endophytic fungi associate to Eriocaulaceae species.

The aims of this work were the isolation and identification of secondary metabolites of *Anthostomella brabeji*, an endophytic fungus isolated of *Paepalanthus planifolius* (Voucher: SANO 4979), and the evaluation of antimicrobial activity from EtOAc extract of *A. brabeji* and isolated substances.

In this study, fifteen endophytic fungi were isolated from leaves, capitula and scapes of *P. planifolius*; seven were isolated from the capitula, were screened and evaluated for their metabolomic profile and radical scavenging activity. This preliminary screening allowed us to select the extract produced by the endophytic fungus identified as *Anthostomella brabeji* for the study on a large scale in PDB culture media.

The fractionation by HPLC-DAD of the EtOAc extract *A. brabeji* allowed to isolate and identify three secondary metabolites [(6-hydroxy-2,2-dimethyl-5,6,7,8-tetrahydro-7,8-epoxychroman-4-one (**1**), Siccayne (**2**) and Eutypinol (**3**). The bioactive substance **2** has activity against a wide range of bacteria and fungi strains, antibiotic and citotoxic activities [3]. Antimicrobial activity assays were performed and showed promising results for *A. brabeji* extract for *Candida albicans* (MIC = 250 µg/mL), substances **2** for *C. albicans* (MIC = 62.5 µg/mL) and **3** for *Staphylococcus aureus* and *Salmonella setubal* (MIC = 31.25 µg/mL).

Table 1 – Antimicrobial activity assays for *A. brabeji* extract and isolated substances.

Samples	MIC ^a			
	<i>E. coli</i>	<i>S. setubal</i>	<i>S. aureus</i>	<i>C. albicans</i>
Extract	–	1000,0	–	250,0
1	–	500,0	–	1000,0
2	–	1000,0	62,5	62,5
3	–	31,2	31,2	1000,0

^a value in µg/mL; (–) MIC > 1000 µg/mL.

REFERENCES

- [1] Andrade, M. J. G., Giulietti, A. M., van den Berg, C. and Harley, R. 2011. *Blastocaulon* (Eriocaulaceae), a synonym of *Paepalanthus*: morphological and molecular evidence. *Taxon*. 60: 178-184.
- [2] Trovó, M. and Sano, P. T. 2010. Taxonomic survey of *Paepalanthus* section *Diphyomene* (Eriocaulaceae). *Phytotaxa*, 14: 49-55.
- [3] Liu, S., Guo, L., Che, Y. and Liu, L. 2013. Pestaloficiols Q–S from the plant endophytic fungus *Pestalotiopsis fici*. *Fitoterapia*, 85: 114-118.