# EVALUATION OF RADICAL SCAVENGING ACTIVITY FROM THE EXTRACTS AND ISOLATED SUBSTANCES OF *PAEPALANTHUS GENICULATUS* SCAPES.

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## ABSTRACT

Eriocaulaceae family, with species popularly known as “sempre-vivas”, comprising approximately 1.200 species divided into 10 genera, with high endemic levels [1]. *Paepalanthus* genus has high incidence in the Espinhaço Range region. Despite the previous studies with Eriocaulaceae species, *Paepalanthus geniculatus* shows a few numbers of studies in the literature, which demonstrates the need for new research to identify their chemical and biological composition.

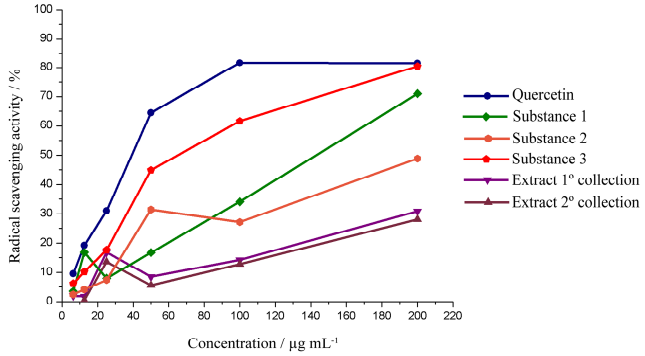
The aim of this work was to study the chemical composition of *P. geniculatus* polar extracts obtained in two different collections and evaluate the radical scavenging activity of extracts and isolated substances using DPPH [2]. *Paepalanthus geniculatus* scapes were collected in 2007 (Voucher: 139580 SPF) and 2013 (Voucher: SANO 3193) and the extracts were prepared with methanol and ethanol.

A fractionation by Gel Permeation Chromatography (GPC) from the first collection extract was performed, yielding 56 fractions were analyzed by Thin-Layer Chromatography (TLC). The fraction 22 (120 mg) was purified by semipreparative HPLC-PDA, resulting in the isolation of substance **1**.

A fractionation by Medium-Pressure Liquid Chromatography (MPLC) from the second collection extract was performed, yielding 15 fractions analyzed by TLC. The fraction number 4 (92 mg) was purified by semipreparative HPLC-PDA, resulting in the isolation of the substances **2** and **3**. The substances were analyzed by mono and two-dimensional NMR (**1** and **3**) and with comparison to standards (**2**), resulting in the identification of the flavonoids: 6-methoxyquercetin-3-*O*-*β*-D-(6‴-*p*-coumaroyl)-glucopyranoside, 6-hydroxyquercetin-7-O-β-D-glucopyranoside and 6-hydroxy-7-methoxyquercetin-3-*O*-β-D-glucopyranoside.

The evaluation of radical scavenging activity for the extracts and the isolated substances showed significant results for **1** ($IC_{50}$ = 147,44 ±4,2 µg $mL^{-1}$) and **3** ($IC_{50}$ = 69,16 ±5,6 µg $mL^{-1}$) when compared with quercetin ($IC_{50}$ = 42,69 ±1,2 µg $mL^{-1}$). The substance **2** and the polar extracts showed no significant activity.

**Figure 1 -** DPPH inhibition percentage for the extracts and isolated substances.




This study results in the isolation and identification of three flavonoids in the *P. geniculatus* scapes. The evaluation of radical scavenging activity showed significant activity for isolated flavonoids when compared with crude extracts.

## 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] Pauletti, P. M., Castro-Gamboa, I., Silva, D. H. S., Young, M. C. M., Tomazela, D. M., Eberlin, M. N. and Bolzani, V. S. 2003. New Antioxidant C-glucosylxanthone from the stems of *Arrabidaea samydoides.* J. Nat. Prod. 66: 1384-1387.