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METABOLOMICS AND ANTI-INFLAMMATORY PROPERTIES EVALUATION OF CYRTOCYMURA SCORPIOIDES

Paulo R. S. da Silva[1], Lara P. D M. Costa[1], Daniele de Oliveira Silva[1], Paula P. O. Salem[1], Michael Murgu[2], Danielle F. Dias[1], Marisi G. Soares[1], Daniela A. Chagas de Paula[1]

paulo.santos@sou.unifal-mg.edu.br

1-Institute of Chemistry, Federal University of Alfenas, 37130-001, Alfenas, MG, Brazil.
2-Waters Corporation, 06455-020, Barueri, SP, Brazil.

The species *Cyrtocymura scorpioides* (Lam.) H.Rob. (Asteraceae), popularly known as "Piracá," "Capixingui," "enxuga," or "erva-de-São Simão," is widely used in traditional medicine. Its use has been reported for anti-inflammatory, antitumor, and other purposes[1]. However, there are no in-depth studies on the chemical composition of this species, nor scientific evidence regarding its anti-inflammatory properties. Metabolomic analyses were conducted using analytical techniques such as ultra-high-performance liquid chromatography coupled with high-resolution mass spectrometry, which enables a comprehensive analysis of the chemical composition of samples. Metabolomic analysis, when combined with chemometric and pharmacological studies, have simplified the identification of secondary metabolites[2]. The anti-inflammatory effects were evaluated *ex vivo* in human blood samples, with an emphasis on the analysis of the COX and LOX pathways, targeting Prostaglandin E_2 (from COX) and leukotriene B_4 (from LOX). The chemical characterization was performed by UHPLC-ESI-HRMS in positive mode with DIA acquisition, followed by data processing using the MZmine 4 software and subsequent annotation using *in house* databases and online platforms. The stem micro extract and the hexane fraction exhibited the most effective inhibition of inflammatory mediators, with approximately 25% inhibition of prostaglandin E_2 (PGE_2) observed for both samples, and 22% inhibition of leukotriene B_4 (LTB_4) for the micro extract, compared to the negative control. Twenty-four compounds were annotated according to confidence level 2 of the Metabolomics Standards Initiative (MSI), with a predominance of flavonoids and sesquiterpene lactones[3].

Keywords: *Metabolomics, PGE2, LTB4, Cytocymura*

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