

Área: ORG

Cabreuvanols A-C, three new cassane-derived diterpenes from *Myrcarpus frondosus* and their anti-inflammatory effects.

Bruno G. Larsen Soares (IC) ^{1*}, Ana C. da Silva (PG) ¹, Tiago Tizziani (PG) ¹, Tainá L. Lubschinski (PG) ², Octavio L. Guterres Fernandes (PG) ¹, Eduardo M. Dalmarco (PQ) ², Louis P. Sandjo (PQ) ¹.

brunoslarsen@gmail.com; p.l.sandjo@ufsc.br

¹Chemistry Department, UFSC; ²Clinical Analysis Department, UFSC.

Keywords: *Myrcarpus frondosus*, structure elucidation, diterpenes, anti-inflammatory activity.

Highlights

Three new diterpenes were isolated from fractions of *Myrcarpus frondosus* fractions.

Two compounds demonstrated activity in vivo experimental model of acute pulmonary inflammation.

Resumo/Abstract

Myrcarpus frondosus is a 15–30 m tall tree, known as Cabreuva, and is distributed from southern to northeastern Brazil (Carvalho, 2003). It is traditionally used in folk medicine due to its anti-inflammatory properties, commonly prepared as a tea to relieve symptoms of flu, colds, and respiratory problems (Mors, Rizzini & Pereira, 2000). In a previous study, the LC-ESIMS chemical profile of the hydroalcoholic extract showed strong inhibitory effects on NOx, TNF- α , and IL-6 in in vivo models (Bottamedi et al., 2021). In the present work, seven compounds were isolated from different extracts (dichloromethane, ethyl acetate, and methanol). Purification was performed using a silica gel chromatography column, and the scaffolds were identified by NMR, MS, IR, and X-ray analysis, resulting in three new compounds, Cabreuvanols A–C (2–4), which are unreported cassane-type diterpenoids, and four known compounds (1, 5–7): ayapin, afromosin 7-O- β -D-apiofuranosyl-(1 \rightarrow 2)-glucopyranoside, thyrifloside, and afromosin 7-O- β -D-glucopyranoside. The crude extract, along with its fractions and compounds 1–3, were evaluated for cytotoxicity in mouse macrophage J774 cells and for their inhibitory effects on inflammatory biomarkers. All extracts showed high cell viability, except for methanolic extract. The compound 3 was the most cytotoxic and compounds 1 and 2 reduced NOx, myeloperoxidase, exudation, cell migration from the bronchoalveolar lavage in the *in vivo* experimental model of acute pulmonary inflammation.

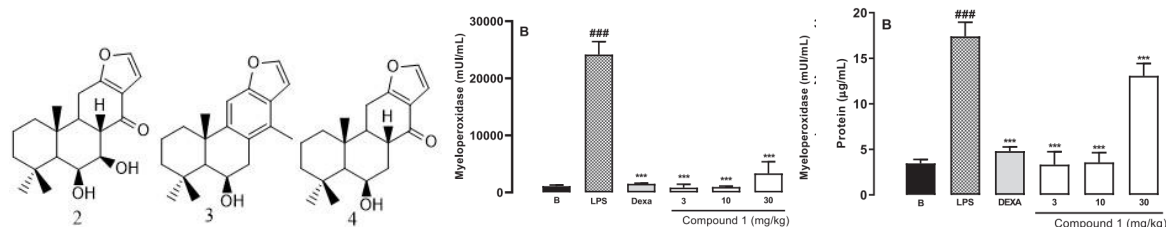


Figure 1: Chemical structures of Cabreuvanols and Myeloperoxidase and number of proteins present in bronchoalveolar lavage.

Agradecimentos/Acknowledgments

Thanks for CNPq, FAPESC, CAPES, LQPN, UFSC and off-course, SBQSul.

The banner features a dark teal background with a subtle pattern of molecular models and laboratory glassware. On the left, a molecular model with orange and white spheres is visible. On the right, another molecular model with red and white spheres is shown. The text is arranged in three main sections: a large '31' followed by the event title, a central theme statement, and the date and location on the right.

31º ENCONTRO DE
QUÍMICA DA REGIÃO SUL

A QUÍMICA COMO PROPULSORA
DE NOVOS ECOSISTEMAS
DE INOVAÇÃO

19 A 21 DE NOVENBRO
Campus Toledo
Unioeste