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ASSESSMENT OF THE ANTI-INFLAMMATORY POTENTIAL OF *IXORA BREVIFOLIA BENTH*

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Ixora brevifolia Benth. is an endemic Brazilian species belonging to the Rubiaceae family, known for its specialized metabolites, particularly indole alkaloids[1]. The genus *Ixora*, which comprises approximately 400 species, is widely used in traditional medicine due to its pharmacological properties, including anti-inflammatory activity[2]. Prostaglandin E_2 (PGE_2) and leukotriene B_4 (LTB_4) are key inflammatory mediators produced by the COX and LOX enzymes, respectively. Although non-steroidal anti-inflammatory drugs (NSAIDs) inhibit COX, their lack of effect on LOX can lead to increased leukotriene production, which is associated with various adverse effects[3]. Given the limitations of NSAIDs and the scarcity of information regarding the metabolites of *I. brevifolia*, the present study aimed to evaluate the anti-inflammatory potential of this species. Leaves of *I. brevifolia* were collected from the Atlantic Forest in the municipality of Alfenas (MG, Brazil), and subsequently dried, ground, and extracted using ethanol:water (7:3, v/v). The crude extract was partitioned to yield hexane (Ixh), ethyl acetate (Ixac), chloroform (Ixcl), and hydroalcoholic (Ixhd) fractions. Anti-inflammatory activity was assessed through an ex vivo assay measuring the levels of PGE_2 and LTB_4. The crude extract showed a yield of 14.0%, while the fractions ranged from 0.40% to 42.9%. The extract moderately inhibited the production of PGE_2 (34.9%) and LTB_4 (34.8%), with statistically significant differences compared to the negative control ($p \leq 0.05$). Future investigations will include the screening of the obtained fractions to identify the most bioactive one, guiding further bioactivity-directed isolation. Additionally, the chemical profile of the extract will be investigated through metabolomic analyses to further elucidate the species chemical composition.

Keywords: *Rubiaceae, COX, LOX, Ex vivo assay.*

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[1]Martins, D., Nunez, C.V. Molecules, 2015, 20 (7), 13422–13495.

[2]Medina, R.P. et al. Nat. Prod. Res., 2018, 32 (11), 1357–1360.

[3]Parente, L. J. Rheumatol., 2001, 28 (11), 2375–2382.