



EFFECT OF THE METANOL EXTRACT FROM THE LEAVES OF *Garcinia humilis* Vahl (CLUSIACEAE) ON ACUTE INFLAMMATION

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INTRODUCTION

Garcinia humilis, popularly known as “achachairu” comes from the region of Santa Cruz - Bolivia, but very well adapted in the southern region of Brazil. In Brazil, the *G. humilis* is little known and sometimes confused by the lay public with fruits of other species, such as “bacuripari” and “bacurizinho”. In folk medicine, fruits and leaves are used as healing, digestive and laxative and in treatment of rheumatism, gastric ulcer and inflammation (Dal Molin et al. 2012; Marques et al. 2012). We investigated the *in vivo* and *in vitro* effects of the methanol extract of *G. humilis* leaves (MEGh) on inflammatory cells behavior (migration and chemical mediators release) and hypersensitivity.

MATERIAL AND METHODS

Anti-inflammatory activity was investigated using carrageenan-induced inflammation in the subcutaneous tissue of male Swiss mice treated orally with MEGh (0.1, 1, 10 or 30 mg/kg). Leucocyte migration, chemical mediators secretion (TNF, IL-1 β , IL-6 and CXCL1) and protein exudation were quantified in the exudate. The adhesion molecules expression (CD62L and CD18), chemical mediators and chemotactic power was evaluated using neutrophils or macrophages RAW.264.7 previously treated with the extract (0.1, 1, 10 or 100 μ g/mL) and activated with LPS. The anti-inflammatory activity of the isolated compounds friedelin, canophyllol, amentoflavone and 3-desmethyl-2-geranyl-4-prenylbellidiphyline xanthone (10 μ M) was evaluated in macrophages nitric oxide (NO) and TNF release.

RESULTS

(Protocol CEUA #061/17). MEGh, given orally (30 mg/kg) reduced neutrophil migration and decreased TNF, IL-1 β and CXCL1 levels, without interfering with protein exudation and IL-6. *In vitro*, the extract reduced IL-1 β and IL-6 levels but did not alter TNF and CXCL1. The MEGh also reduced the expression of CD62L and CD18 and consequently neutrophil chemotaxis. The compounds friedelin, amentoflavone and 3-desmethyl-2-geranyl-4-prenylbellidiphyline xanthone decreased the secretion of NO and TNF by RAW264.7. The MEGh effects were extended to the mechanical hypersensitivity induced by carrageenan.

CONCLUSIONS

Taken together, the data herein obtained allow us to conclude that the treatment with the extract of *G. humilis* exerts neutrophilic functions, blocking the secretion and migration pathways of neutrophils, besides exerting antinociceptive effects in relation to inflammatory pain, suggesting its therapeutic application in acute inflammatory reactions.

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REFERENCES

Dal Molin et al. 2012, Arch. Pharmacol Res.
Marques et. al. 2012, J. Ethnopharmacol.