Natureza do trabalho: Resumo

TÍTULO

EVALUATION OF AMIDES OBTAINED FROM PIPER AMALAGO IN MECHANICAL HYPERAGESY INDUCED BY CARRAGEENAN IN MICE

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RESUMO

Introduction: Tissue injury or inflammation increase the response of nociceptors, known as sensitization or facilitation. These events begin after the local release of inflammatory mediators and activation of immune cells or specific receptors in the peripheral and central nervous system (Rocha et al., 2007). In popular medicine, *Piper amalago* has been used as an anti-inflammatory agent and this effect has been scientifically validated as topical anti-inflammatory agent (Sosa et al., 2002). The ethanol extract of the aerial parts of *Piper amalago* (EEPA) possesses the anti-hyperalgesic actions **Objective:** Based on this context, the objective of this study was to evaluate compounds isolated from EEPA such as the amides N-[7-(3',4'-methylenedioxyphenyl)-2(Z),4(Z)-heptadienoyl] pyrrolidine (**1**) and N-[7-(3',4'-methylenedioxyphenyl)-2(E),4(E)-heptadienoyl]pyrrolidine (**2**) in experimental model of carrageenan-induced mechanical hyperalgesia in mice. **Materials and Methods:** In this model, male *Swiss* mice (20-25 g) were treated orally with, compound **1** (1mg/kg), compound **2** (1 mg/kg), one hour before the induction of hypernociception by acute application of intraplantar 20µl of carrageenan (Cg) 300µg/paw. The evaluation of the sensitivity threshold or mechanical hyperalgesia was performed using Von Frey filaments before (baseline) and after injection (1-4 hours). The animals were placed in boxes with one side transparent background on a platform with wire mesh, allowing access to rear paw of the animal Von Frey filaments. **Results:** The treatment with **1** and **2** significantly prevented the reduction of threshold mechanical sensitivity after 3 h, with a maximum reduction for **1** of 82 ± 6 % and for **2** of 86 ± 3 % ($P < 0.001$) compared with control. The same result occurred when the sensitivity was assessed 4 h after carrageenan, with maximal inhibition for **1** of 96 ± 3 % and for **2** of 93 ± 6 % ($P < 0.001$) compared with control. **Conclusion and Discussion:** Thus, the present study showed for the first time the compounds responsible for EEPA anti-hiperalgesic activity when administered orally in mice. Studies are being conducted to highlight the possible charge of the activity and its demonstrated its mechanism of action.

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References

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