III SIMPÓSIO INTERNACIONAL EM INVESTIGAÇÕES QUÍMICO-FARMACÊUTICAS
I ENCONTRO IBERO-AMERICANO DE PLANTAS MEDICINAIS DR. MAHABIR GUPTA
I CONGRESSO LUSO-BRASILEIRO DE CIÊNCIAS E TECNOLOGIAS EM SAÚDE

Área: FAR 27

IN-VIVO ANTI-INFLAMMATORY ACTIVITY OF (R)-(-) AND (S)- (+)- CARVONE

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INTRODUCTION

Inflammatory diseases such as arthrosis, dysmenorrhea, traumatic injuries, are common illnesses that are affecting people worldwide and they are treated with non-steroidal anti-inflammatory drugs that cause serious side effects. This fact renews the interest in the search of new agents against pain and inflammation but with fewer adverse events profile. In these sense, plant-derived essential oils, have biological properties. Among them, carvone found in nature as (S-) and (R-) enantiomers with proven antinociceptive and anti-inflammatory properties. Considering its virtues, we aimed to reinforce the anti-inflammatory character of carvone enantiomers.

MATERIALES Y MÉTODOS

According with our protocol approved by CEIBAUP-014-2022. Male C57BL/6 mice were anesthetized, subcutaneous injection of 5 mL of sterile air in the back of mice was performed. At day three, booster of 3 mL of sterile air was injected into their pouches and at day 6 after the first air injection, mice were separated into groups: Vehicle, DEX (2,5 mg/kg I.P.), R-Carvone (100 y 200 mg/kg, I.P), S-Carvone (100 y 200 mg/kg, I.P) and one hour later an injection of 1 mL of carrageenan 1% was administered directly into the pouches. Then, mice were sacrificed, and the pouches were washed with saline/EDTA 5.4 mM. Exudates were harvested, weighted and leucocytes were counted.

RESULTS

Difference between means showed that R-Carvone (100 and 200 mg/kg) inhibited leukocyte migration and plasmatic leakage induced by carrageenan, in a non-dose-dependent effect, being the dose of 100 mg more efficacious (-5.60E+06 ± 2.34E+06) (*p=0.043) and* (-0.2958±0.1058) (*p=0.031), respectively*. S-carvone exhibited higher reduction of cells recruitment and exudate volume as compared with carrageenan mice (-6.24E06±2.32E+06) (*p=0.036*) at dose of 200 mg/kg, which is similar to dexamethasone standard that inhibited up to 70% of leukocytes migration (-6.68E+06± 2.32E+06) (*p=0.028*).

CONCLUSIONS

Overall, both enantiomers exhibit anti-inflammatory effect, extending the possibility to study carvone derivatives.

AKNOWLEDGEMENTS

National System of Researchers - SENACYT.