Evaluation of the Anti-Inflammatory Properties of 2-hydroxy-5-selenocyanatobenzoic acid, a Salicylic Acid-derivative Organoselenium, in mice.

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Introduction: Inflammation is an adaptive response that involves the recruitment of leucocytes and plasma proteins to an affected tissue site. The salicylate derivatives are one of the most used drugs as anti-inflammatory agents. In addition, the organoselenium compounds have roused interest due to their biological and pharmacological activities. Therefore, the present study investigated the protective properties of the 2-hydroxy-5-selenocyanatobenzoic acid (HSCB), a salicylic acid-derivative organoselenium in the model of the ear edema induced by croton oil.

Material and Methods: Male adult Swiss mice were pretreated with HSCB (50 mg/kg, p.o.) 30 and 60 min before assay. Ear edema was induced by application croton oil in the ear of each animal. Four hours after, the ear edema was evaluated, as well as inflammation parameters as myeloperoxidase activity and the levels of nitrate/nitrite (NOx).

Results: The HSCB, when pre-administered 30 and 60 min before croton oil application, as well as AAS (200 mg/kg, p.o., 60 min before the test), used as positive control, significantly protected against the ear edema formation induced by croton oil [F(3,32)=13.99; p>0.0001]. The croton oil significantly increased the MPO activity in ears of mice when compared with the control group and the pre-treatment with HSCB protected against this increase, similar protective effect was observed for AAS [F(4,43)=8.716; p>0.0001]. Neither the croton oil nor the HSCB and AAS changed significantly the NOx levels in ears of mice [F(4,39)=0.9578, p>0.05].

Conclusion: These results provide experimental evidence that the compound HSCB protected against the ear edema formation and the increase in the MPO activity in ear of mice, demonstrating its anti-inflammatory potential.

Keywords: inflammation, salicylate, organoselenium, myeloperoxidase.

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