Ear Inflammation Induced by Croton Oil in Mice was Attenuated by p-Chloro-Selenosteroid: a Compound with Anti-inflammatory Property

Sari, M.H.M.¹; Souza, A.C.G.¹; Rosa, S.G.¹; Souza, D.²; Rodrigues, O.D.E.²; Nogueira, C.W.¹

¹Laboratório de Síntese, Reatividade e Avaliação Farmacológica e Toxicológica de Organocalcogênios, UFSM, Santa Maria, RS, Brazil. ²LabSelen-NanoBio, UFSM, Santa Maria, RS, Brazil.

Introduction Inflammation is a basic process that is essential for the preservation of the integrity of the organism against events of chemical, physical and infectious damage. Despite its protective function, sometimes this inflammatory response becomes too severe and leads to damage to the normal tissue. Taking it into account, this study evaluated the possible anti-inflammatory effect of p-chloro-selenosteroid (PCS) in croton oil-induced ear inflammation in mice.

Material and Methods Female Swiss mice (25-35g) were pretreated with PCS (i.g.), vehicle (10 ml/kg, i.g.) or dexamethasone (1 mg/kg, i.g. 60 min earlier) before croton oil application (20 µl of an acetone solution containing the irritant agent, 2.5% of croton oil). After 4 hours of induction, the animals were killed and both ears of each mouse were extirpated at the base to establish the weight difference between them, which was considered as ear edema. The myeloperoxidase (MPO) enzyme activity and histology were also performed.

Results and Discussion PCS, at a dose of 10 mg/kg, caused a significant reduction in ear edema induced by croton oil, as well as prevented the increase in the MPO activity. The histological evaluation revealed that pretreatment with PCS at a dose of 10 mg/kg caused a decrease in inflammatory signals in the tissue evaluated.

Conclusion The results indicate that PCS showed an anti-inflammatory activity in the ear inflammation induced by croton oil in mice by inhibiting ear edema, MPO activity and tissue inflammation signals.

Keywords: selenium, anti-inflammatory, croton oil, mice.

Supported by: UFSM, CNPq (PIBIC), FAPERGS.