



## EVALUATION OF THE ACTION OF THE SQUID PEN (*Loligo sp.*) IN THE PULMONARY ALLERGIC INFLAMMATION

Giovanna dos Passos<sup>1\*</sup>, Rafael Simas, Giovana Vieira Ghisi, Livia Gardini, Daniel Cury Ogata, Ana Angélica Steil.

<sup>1</sup>Laboratório de Imunopatologia II, Escola de Ciências da Saúde, Universidade do Vale do Itajaí, SC, Brasil. \*giovannapassos@edu.univali.br.

### INTRODUCTION

A previous study of our research group showed that popular medicine use an infusion made from the squid pen's powder, this practice has been associated with the community linked to artisanal fishermen. Squid pen is an internal shell found in many cephalopods, which the major composition is chitin. Although there are many reports about the use, no study, so far, has yet examined the form used and reported in popular medicine. This study aims to evaluate the efficacy of the squid pen's infusion in pulmonary allergic inflammation.

### MATERIAL AND METHODS

For the evaluation of the treatment, BALB/C mice were divided into 5 groups: 1= health control; 2= only immunized; 3= only challenged; 4= reaction, immunized and challenged; 5= immunized, challenged and treated with squid pen's powder infusion 0,1025mg/kg/day *per os*. Animals were immunized with Ovalbumin (OVA)/Alum injected intraperitoneally (groups 2, 4 and 5) and challenged with OVA aerosol for 8 days (groups 3, 4, and 5) to induce the pulmonary allergic inflammation model. To evaluate lung inflammation, leukocyte infiltration and mucin in lung tissue were evaluated; bone marrow and bronchoalveolar lavage (BAL) leukocytes were quantified. Research project were submitted and approved by Animal Ethics Committee (CEUA – UNIVALI), 015/18.

### RESULTS

The reaction induced a significant increase in leukocyte infiltration in lung tissue (reaction  $3,0\pm0,013$ ; challenged  $0,53\pm0,075$ ) and in mucin production by goblet cells (reaction  $2,8\pm0,23$ ; challenged  $0,14\pm0,053$ ). The reaction also increased the number of eosinophils in BAL fluid (reaction  $401\pm134,4$ ; challenged  $0,85\pm0,8$ ) and increased the percentage of eosinophils in bone marrow (reaction  $19\pm2,4$ ; challenged  $3,5\pm0,9$ ). The treatment with the squid pen's powder significantly reduced leukocyte infiltration in lung tissue (reaction  $3,0\pm0,013$ ; treatment  $1,63\pm0,1$ ) and the mucin production (reaction  $2,8\pm0,2$ ; treatment  $1,65\pm0,2$ ). The treatment also reduced the percentage of eosinophils (reaction  $19\pm2,4$ ; treatment  $7,3\pm0,95$ ) in bone marrow.

### CONCLUSIONS

Our findings indicate that the squid pen's infusion reduces the pulmonary allergic inflammatory response confirming the reports about the use found in popular medicine.