CHARACTERIZATION OF PEROXINECTINS IN Aedes aegypti MOSQUITO
Garbocci, V.C.¹, Barletta, A.B.F¹ & Sorgine, M.H.F.¹
¹Instituto de Bioquímica Médica IBqM UFRJ, RJ

Introduction: Aedes aegypti is the vector of diseases like Dengue and Yellow Fever. This project aims to study the role of eicosanoids, particularly prostaglandins, on the humoral immune response of this insect. In a previous work, our group has implicated these bioactive lipids as mediators of the mosquito immune response. According to the literature, insects don’t have cyclooxygenase, the enzyme responsible for prostaglandin synthesis in vertebrates. In Drosophila melanogaster, Peroxinectin one has been shown to perform the function of cyclooxygenase. This Peroxinectin is described as a protein present in cells with immunological roles and its involvement with the eicosanoid synthesis in these cells in mosquito is a possibility. **Objective:** Identify the Peroxinectin responsible for the synthesis of prostaglandin in the mosquito Aedes aegypti. **Material and methods:** Aedes aegypti mosquitoes were fed on rabbit’s ear. After that, RNA was extracted from different groups, whole body, gut, fat body and ovary, cDNA was synthesized and expression of peroxinectin was quantified by real time PCR. For the in vitro assays, mosquito Aaq-2 cells were cultured in Schneider medium with 10% fetal bovine serum (BFS) and challenged with three different heat killed bacteria: Serratia marcescens, Enterococcus cloacae and Micrococcus luteus. **Results and discussion:** It was observed that the expression of two Peroxinectin, Pxt027 and Pxt031 are increased after blood feeding. Another two enzymes, Pxt030 and Pxt034, were also tested, and it was observed that their expression is not affected after the microbiota growth that follows the blood meal. We also knocked down, using iRNA, two Peroxinectins, Pxt027 and Pxt030, in order to observe whether the silencing of these genes would alter the insect gut microbiota levels. **Conclusion:** Our results suggest that one peroxinectin, probably Pxt027 is involved in prostaglandin synthesis in Aedes aegypti. **Key words:** Peroxinectin, Eicosanoids, Prostaglandin

Reference:


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