

REACTIVE OXYGEN SPECIES AS IMMUNE MOLECULES AGAINST BACTERIA IN THE GUT OF *AEDES AEGYPTI*

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Besides the toxic effects of reactive oxygen species (ROS) it has been shown that these molecules have important physiological roles in a wide range of processes like microbial killing. Little is known about the role of ROS in insect physiology, although a few recent reports have demonstrated that they might be involved in the vectorial capacity of mosquitoes. Concerning this scenario the aim of our work is to characterize the production of ROS in the midgut of *Aedes aegypti* and determine its possible roles in the local immunity. We used the redox sensitive dye CM-H₂DCFDA to show that (1) ROS production is higher in the gut of sugar-fed females and decreases immediately after blood or plasma meal. (2) There are two types of cells that produce ROS in the midgut epithelium; the majority of cells produce ROS in the cell periphery (3) the gut lumen of sugar-fed females is filled with ROS. Finally, we show that antioxidants reduce the intensity of ROS signal and it is accompanied by an increase in the number of bacteria present in the gut, showing that these molecules are involved in the control of local microbiota. The hypothesis that ROS could influence plasmodium and arbovirus infection is currently being tested.