

CHARACTERIZING THE OXIDATIVE STRESS IN THE BUG *Rhodnius prolixus*  
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The Chagas' disease vector *Rhodnius prolixus* ingests large amount of vertebrate blood in a single meal which is further digested in the midgut, releasing huge amounts of free heme, a powerful pro-oxidant molecule generating reactive oxygen species (ROS). Little is known about the role of ROS in insect physiology, although a few recent papers have demonstrated that these molecules might be involved in immunity towards pathogens. Here, we studied the oxidative stress in the midgut of *R. prolixus*. Lipid peroxidation in the midgut increased between the 4th to 7th days after blood-feeding. Interestingly, in the crop, we did not observe any increment in the lipid peroxidation after feeding. A transient increase of hydrogen peroxide levels, determined by scopoletin-horseradish peroxidase assay, was observed only in the midgut 3 days after blood-feeding, diminishing afterwards. A NADPH-dependent activity was measured in both crop and midgut, showing comparable activities sensitive to superoxide dismutase and apocinin. Bacterial population was higher in the midgut compared to crop regardless of the feeding status, but, in both tissues, it increased slightly when insects were starved. Conceivably, the large pool of free heme generated upon hemoglobin digestion, could interact with midgut-derived ROS, thus representing an extra source of oxidative stress for intestinal microbiota. Support: WHO-TDR-SSI, CNPq, FAPERJ, HHMI.