

Expression profile of antioxidant genes in the gut of *Rhodnius prolixus*

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The bloodsucking insect *Rhodnius prolixus*, a Chagas' disease vector, takes blood several times its own body weight in a single meal, and the digestion of vertebrate hemoglobin in the gut results in the production of large amounts of heme, a pro-oxidant and cytotoxic molecule. Therefore, in order to use blood as the main food source, bloodsucking insects must develop efficient ways to counteract heme toxicity and a whole array of antioxidant defences designed to prevent radical formation or to scavenge reactive molecules. In the present study, we evaluated by qPCR the expression of 18 genes along the course of blood digestion that were putatively involved in defense against oxidant molecules as well as heme and iron toxicity. Aiming the design of specific primers, the sequences of orthologous genes were accessed in NCBI data bank, blasted against trace archives of the *R. prolixus* genome project and the best hits were selected. The expression profiles of superoxide dismutases, peroxiredoxins, catalases, a predicted selenium-glutathione peroxidase, ferritin, and a predicted peritrofin in the anterior midgut, posterior midgut and hindgut suggest that *R. prolixus* has a multifaceted compensatory mechanism that counteract the deleterious effects of a blood-based diet.

Key words: *Rhodnius prolixus*, hematophagy, antioxidant defense.

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