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SILENCING OF LIPID METABOLISM PATHWAY GENES IN *RHODNIUS PROLIXUS* INFECTED BY *TRYPANOSOMA RANGELI*

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Triatomines are nocturnal hematophagous hemimetabolous insects that feed in large and spaced portions. Energy from food is stored in the form of triglycerides (TAG) in the fat body. On demand, these lipids are transported by the insect's hemolymph to different organs through a specific carrier, lipophorin. In addition to *Trypanosoma cruzi*, the etiological agent of Chagas disease, triatomines are capable of transmitting the protozoan *Trypanosoma rangeli*. Although it does not cause disease in humans, *T. rangeli* can cause different pathogenic effects in insects, in addition to physiological and behavioral changes. Studies conducted by our group have shown that infection by *T. rangeli* in *Rhodnius prolixus* promotes an increase in the amount of total lipids and diacylglycerides (DAG) in the hemolymph, as well as the accumulation of TAG in the fat body of fifth-instar nymphs. Thus, when evaluating the expression of the lipophorin (*lp*) and diacylglycerol acyltransferase (*dgat*) genes, which are involved in the transport and production of lipids, respectively, we found an increase in the expression of both genes. This suggests that *T. rangeli* is capable of manipulating the lipid metabolism of its insect vector. Based on these data, we performed the silencing of the *lp* and *dgat* genes, using the RNA interference (RNAi) technique, in 10 days old fifth-instar nymphs of *R. prolixus*. After one week of dsRNA injection, uninfected insects showed a silencing rate of 78.43% and 98.04% for *lp* and *dgat*, respectively. Eighteen days after silencing (28 days old insects), this rate increased to 96.94% (*lp*) and 99.49% (*dgat*), demonstrating the stability of silencing technique in this insect. Experiments evaluating the impact of gene silencing on *T. rangeli* infection showed a reduction in the number of parasites in the hemolymph of silenced insects in relation to control ones.

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