

EFFECTS OF TRYPANOSOME SURFACE GIPL ADMINISTRATION ON
Rhodnius prolixus NITRIC OXIDE SYNTHASE ACTIVITY.

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Rhodnius prolixus is a blood-sucking bug whose saliva contains several antihemostatic molecules. Nitric oxide (NO) is generated by nitric oxide synthases (NOS) present in the insect's salivary glands. *Trypanosoma rangeli* is a hemoflagellate protozoan that parasites *R. prolixus* salivary glands. In this study we have investigated the effects of *T. rangeli* infection on NO generation. Using both immunohistochemical and biochemical techniques, we have observed a major decrease in NOS levels and activity in infected glands. DAF-FM fluorescent probe was used to determine NO production in infected and control animals. Fluorescence was completely abolished in infected insects. Parasite surface glycoinositolphospholipids (GIPLs) were administrated to uninfected bugs in order to determine its possible role in the manipulation of host NOS activity. Insects were injected with *Trypanosoma cruzi*, *T. rangeli*, *Phytomonas serpens* or *Phytomonas françai*-derived GIPLs. Both *T. cruzi* and *T. rangeli*-derived GIPLS diminished NOS NADPH-diaphorase activity and NO production, mimicking infection. However, no effects were observed when *P. serpens* or *P. françai*-derived GIPLs were administrated to the insects. Taken together, these data suggests that *T. rangeli* manipulates *Rhodnius* salivary NO generation in a GIPL-dependent manner. Preliminary results indicates that these glycoconjugates also regulates salivary gland phosphoprotein phosphatase activity. The role of such phosphatases in NOS regulation will be investigated in future experiments. Sponsors: CNPq, OMS, FAPERJ.