

INTERACTION OF WILD AND APOSYMBIOTIC *CRITHIDIA DEANEI* WITH
Aedes Aegypti MIDGUT: INFLUENCE OF PARASITE GP63 HOMOLOGUE

d'Avila-Levy, C.M.^{1,2}, Santos, L.O.¹, Marinho, F.A.¹, Matteoli, F.P.¹, Lopes,
A.H.C.S.¹, Motta, M.C.M.³, Santos, A.L.S.¹, Branquinha, M.H.¹

¹ Instituto de Microbiologia Prof. Paulo de Góes, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil.

² Instituto de Oswaldo Cruz, FIOCRUZ, Rio de Janeiro, Brazil.
davila.levy@ioc.fiocruz.br

³ Instituto de Biofísica Carlos Chagas Filho, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil.

The present study demonstrates that the endosymbiont of *C. deanei* influences the expression of surface gp63. Ultrastructural immunocytochemical analysis shows the presence of the gp63-like protein on the protozoan surface and in the flagellar pocket, where it was seen either attached to shed membranes or in a soluble form. This surface molecule mediates the adhesive process of the protozoan to *A. aegypti* explanted guts, since the adhesion was dramatically reduced by either pre-incubating the *C. deanei* parasites (wild and cured strains) with anti-gp63 antibodies or phospholipase C (PLC), which cleaves the glycosylphosphatidylinositol (GPI) anchor, reducing the exposition of surface gp63. The adhesion was also inhibited by incubating the explanted guts of *Aedes aegypti* with purified gp63. In addition, the number of wild *C. deanei* bound to *A. aegypti* explanted guts was twice as that of aposymbiotic parasites. We may conclude that more accentuated expression of surface gp63 by the wild strain of *C. deanei* may positively influence this interaction, posing a prominent advantage for the endosymbiont-containing trypanosomatids.

Keywords: *Crithidia deanei*; endosymbiont; gp63; insect; protease.