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CC - *TRYPANOSOMA CRUZI*: PECULIAR STRATEGIES FOR HOST CELL INFECTION

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The ability to infect and replicate within a variety of cell types is an essential feature of *Trypanosoma cruzi* in the mammalian host. In order to understand the pathogenesis of Chagas' disease, identification of molecules involved in invasion and establishment of infection is an important task. Our laboratory has been using *in vitro* models of infection to study the molecular and cellular basis of the interaction between the host and the parasite. One interesting finding of the *in vitro* studies was the characterization of an epimastigote-like form in the intracellular cycle of the parasite (intracellular epimastigotes-IE), originally described in the early forties but since then neglected by the literature. Despite being approximately five times smaller than the extracellular epimastigotes, the overall morphology of IE is very similar to a *bona fide* epimastigote, when cell shape, position and general aspect of organelles are compared. Interestingly, IE were characterized as a transition form between the amastigote and trypomastigote stages of *T. cruzi*, showing an apparent similarity with the invertebrate cycle of the parasite. Probably, the predominance of a given stage and the period in which it remains as such would be dictated mostly by the environmental conditions.

Presently, a number of different molecules described by different laboratories have been implicated in the invasion of cells by *T. cruzi*, a fact that is not surprising due to the complexity of the host-parasite interaction. We had formerly characterized the glycoprotein family called Tc-85, related to the gp85/trans-sialidase family and involved in the adhesion of *T. cruzi* to the host. The recombinant protein (Tc-85p) binds to laminin, but not to fibronectin or gelatin, and to cytokeratin-18 (CK18) by the amino and carboxyl-terminus, respectively. Using synthetic peptides, we were able to both localize the laminin binding site and show that the FLY domain (VTVXNVFLYNR), present in all members of the family, binds to CK18 exposed on host-cell surfaces. Furthermore, the FLY domain potentiates parasite infection and induces non-phagocytic cells to internalize different active and inert particles predicting an important role of that peptide in the triggering of cell invasion.

In spite of major advances, the mechanism of cell invasion by the parasite and the cellular events that contribute to intracellular growth and persistence of the parasite under harsh environmental conditions remain, as yet, poorly understood.

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