MANY ROUTES THAT *TRYPANOSOMA CRUZI* EMPLOYS TO INVADE CELLS

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T. cruzi invades almost all mammalian host cells, but infection is preferentially established in some organs/tissues, as heart, skeletal muscle or intestine. Both, different parasite strains and the genetic background of the host contribute to this result. Several antigens and signaling pathways were described in the invasion process of host cells by the parasite, among them the members of the gp85/trans-sialidase gene superfamily. Tc85, a subset of the gp85 group, was implicated in the adhesion step of trypomastigote~~s~~ invasion of tissue culture cells. At least two adhesion sequences are present in one member of Tc85 (Tc85-11): a cytokeratin 18 (CK18)-binding region at the carboxyl portion of Tc85 (FLY sequence) and a laminin-binding region at the amino terminal end. *In vitro*, a synthetic peptide based on FLY sequence enhances *T. cruzi* invasion, promotes dephosphorylation of CK18 and activation of the ERK1/2 signaling cascade (Magdesian et al, Exp. Cell Res. 313, 210, 2007). Enhancement of parasitemia and mortality were also observed when mice were inoculated with FLY and challenged with blood trypomastigotes (R.R. Tonelli et al, in preparation). When administered to mice, vesicles that are continuously shed by the parasite also enhance parasitemia and increase nests of amastigotes and inflammation in the heart (A.C. Torrecilhas et al., in preparation). Since Tc85, in addition to other molecules, are present in vesicles, our group work under the hypothesis that vesicles are signals emitted by *T. cruzi* to facilitate the establishment of infection.

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