

CHARACTERIZATION OF PROTEIN KINASE CK2 ACTIVITIES AND ITS
RELATIONSHIP WITH BIOLOGICAL ASPECTS IN *Trypanosoma cruzi*.

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Trypanosoma cruzi undergoes complex morphological changes through its life cycle in both insect vector and vertebrate host. Cell differentiation of these parasites is highly regulated and includes significant changes in signaling pathways. Protein kinase CK2 was directly related to cell differentiation in trypanosomatids. CK2 activities have been described on the cell surface and as secreted enzymes in different tripanosomatids, where these enzymes seem to be involved in cell growth, morphology and infectivity. In the present study, we demonstrate the presence of CK2 activities on the surface, in a membrane-enriched fraction, as a secreted form, and in the cytoplasmic contents of this parasite. Macrophage proteins, inactivated human serum and midgut contents of *Rhodnius prolixus* were able to promote an enhancement (67%, 36% and 84%, respectively) on the secreted CK2 activity. This last enzymatic form showed a specific activity of 16.8 pmoles Pi/mg.min after purification by HPLC. Polyclonal antibodies raised against the mammalian CK2 alfa catalytic subunit were able to recognize, through immunoblotting, a protein from *T. cruzi*, with a compatible molecular mass of 55 kDa. CK2-activators stimulated epimastigotes growth, while CK2-inhibitors reversed this stimulatory effect, which substantiates the meaning of CK2 for the life cycle of trypanosomatids.