

**HEME, BILIVERDIN AND HEME OXYGENASE ARE INVOLVED IN
Trypanosoma cruzi EPIMASTIGOTES PROLIFERATION**

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Heme (iron protoporphyrin IX) is an important molecule in metabolism of all living organisms and is a powerful generator of reactive oxygen species. One important intracellular mechanism to control heme homeostasis is its enzymatic degradation by heme oxygenase (HO). HO catalyzes the degradation of heme to biliverdin (Bv), carbon monoxide and iron. Since heme is present in the environment of *T. cruzi* epimastigota in high concentrations (about 10 mM) we have been investigating the role of heme at cell proliferation of *T. cruzi* epimastigotes. Previous results showed that the addition of heme increases the parasite proliferation in a dose-dependent manner. Thus, in order to investigate a possible contribution of its product, Bv, we evaluated the effect of Co protoporphyrin IX (CoPP, a HO inducer), Sn protoporphyrin IX (SnPP, a HO inhibitor), and Bv. The addition of SnPP decreased the parasite proliferation in a dose-dependent manner. When Bv was added to the culture this effect was reversed. On the other hand CoPP did not interfere on proliferation. Furthermore, we showed the increase of HO-1 expression in the presence of heme in *T. cruzi* epimastigotes. These results show, for the first time, that biliverdin is involved in the epimastigotes proliferation and strongly suggest the presence of HO-1 in *T. cruzi*. Supported by PIBIC/UERJ, FAPERJ, CNPq, Instituto Oswaldo Cruz.