

CULTURE MEDIUM PHOSPHATE CONTENT MODULATES PHOSPHATASE EXPRESSION AND MORPHOLOGY IN *TRYPANOSOMA RANGELI*

Dick, C. F.¹, Fonseca de Souza, A. L.¹, Santos, A. L. A.¹ & Meyer-Fernandes, J.R.¹

¹Laboratório de Bioquímica Celular, IBqM, UFRJ, Rio de Janeiro, Brazil.
e-mail: cfdick@bioqmed.ufrj.br

Trypanosoma rangeli is a South American trypanosoma, considered harmless to humans and animals but able to infect triatomines. This parasite coexist with *T. cruzi*, the etiologic agent of Chagas' disease, in the Northern of South America, posing some problems for diagnosis. Ecto-enzymes are enzymes with catalytic site faced to the external medium and have been detected in different microorganisms. There are many classes of them, including ecto-ATPases and ecto-phosphatases. For ecto-phosphatases, several reports have shown that they can be modulated by the environmental phosphate content, which makes this fact relevant to study these enzymes in response to phosphate starvation. In this study, we showed the effect of phosphate starvation on morphology, cell growth and ecto-phosphatase activities of *T. rangeli*. Cells maintained at Pi-starved medium presented as spherical forms, showing low motility, cytosol vacuolization and inefficient cell proliferation. Epimastigotes maintained at Pi-starved medium showed an increase of 2-fold and 5-fold on the ecto-ATPase and ecto-phosphatase activities, respectively, when compared with those maintained at Pi-supplemented medium. We observed that the ecto-phosphatase activity of cells maintained at Pi-supplemented medium represents 30-40% of the total phosphatase activity, while the ecto-phosphatase activity of cells maintained at Pi-starved medium represents 100% of the total phosphatase activity, suggesting that a translocation of enzymes involved in nutrients acquisition could be occurring during Pi-starvation.

Supported by CNPq, CAPES and FAPERJ.