

## Changes in 3' nucleotidase and phosphatase activities in *Leishmania chagasi* grown in culture medium in the absence of added inorganic phosphate

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In the New World, visceral leishmaniasis is caused by *Leishmania chagasi*. Some tripanosomatids, including *Leishmania* species, possesses a unique bifunctional externally oriented cell surface membrane enzyme 3'-nucleotidase/nuclease which is involved in the salvage of host-derived purines. Phosphorylation-dephosphorylation of serine, threonine, and tyrosine residues triggers conformational changes that modulate protein biological properties. In this work, we analysed the growth and some ecto-phosphohydrolase activities of *Leishmania chagasi* modulated by the absence or the presence of added inorganic phosphate in the culture medium. The parasites were grown in the absence (2 mM Pi) or in the presence of added inorganic phosphate (83 mM) and the cell growth was daily determined. The parasites grown in the absence of added phosphate inorganic presented a reduction of growth (50 %) as compared to the cells grown in the presence of the phosphate source. In the other hand, the ecto-3'nucleotidase activity assay showed a two-fold increase in the enzyme activity when *L. chagasi* was grown in the absence of added inorganic phosphate as compared to the cells grown in the presence of this phosphate source. Also, the phosphatase activity assay, using  $\beta$ -glycerol phosphate as substrate, was inhibited when the cells grown in the absence of added inorganic phosphate. However, the phosphatase activity assay, using *p*-nitrophenylphosphate as substrate, showed an increase (35%) when *L. chagasi* was grown in the absence of added inorganic phosphate as compared to the cells grown in the presence of this phosphate source.

Key words: *Leishmania*, protein phosphorylation, phosphatase, 3' nucleotidase, inorganic phosphate.

Supported by: CNPq, FAPERJ.