Leishmania amazonensis INCORPORATES CHOLESTEROL FROM HUMAN LOW DENSITY LIPOPROTEIN (LDL)

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Cutaneous leishmaniasis caused by *Leishmania amazonensis* are serious tropical diseases. Trypanosomatids show incomplete lipid *de novo* biosynthesis pathways. Therefore, they avidly take up lipids from vertebrate bloodstream to provide the requirements for growth and differentiation. The objective of this work is the study of human low density lipoprotein (LDL) endocytic uptake by *Leishmania*.

In order to observe the LDL endocytosis in a lipid raft-dependent process, the LDL was fluorescently labeled in the protein and lipid moiety with FITC and phosphatidylethanolamine-TEXAS RED respectively. *L.amazonensis* cells were pre-treated with MBCD (Methil-β-cyclodextrin) for 60 min and then incubated with fluorescent LDL for different times. After 10 and 24 hours, cells were collected and analyzed by microscopy. It was observed that LDL endocytosis was significantly inhibited by MBCD suggesting that, in *L.amazonensis* cells, this process is dependent on the presence of lipid raft.

To verify if the parasites can incorporate the cholesterol from LDL, cells were incubated in the presence of different concentrations of lipoprotein. After the incubation, parasites were washed and the cholesterol amount was estimated. The result showed an increase in the cholesterol amount associated with the parasites proportional to LDL addition in culture medium. These results were confirmed by high performance thin-layer chromatograph (HPTLC).

Supported by CNPq, FAPERJ, IFS