STRUCTURAL AND FUNCTIONAL ANALYSIS OF THE *LEISHMANIA AMAZONENSIS* LaRbp38 PROTEIN

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Parasites of the *Leishmania* genus, can infect and cause the death of millions of humans and animals in the tropical and subtropical areas of the globe, including Brazil. The present work has the aim of study the structure and function of LaRbp38, a trypanosomatid protein that stabilizes mitochondrial RNAs and associates kinetoplast and G-rich telomeric DNA. In a biochemical screening using complementary chromatographic purification columns for proteins binding to *Leishmania (L.) amazonensis* double-stranded telomeric DNA, we isolated a 38 kDa polypeptide. Mass spectrometry analysis identified this protein as Rbp38. Recombinant LaRbp38 was produced in a bacterial system and circular dichroism assays were used to access its secondary structure. Truncated mutants are being constructed in order to map LaRbp38 nucleic acid binding domain. A polyclonal antibody raised against the recombinant LaRbp38 was able to recognize the native affinity-purified protein in a Western blotting and in a supershift assay. *In vitro* competition assays confirmed that LaRbp38 binds preferentially to the double-stranded telomeric DNA, to kDNA and to GT-rich DNAs. Results about the conformational analysis of LaRbp38 bound and unbound to the telomeric DNA by fluorescence spectroscopy, suggests that binding alters the tertiary structure of the protein. Chromatin immunoprecipitation assays confirmed that LaRbp38 interacts *in vivo* with mitochondrial and nuclear DNAs, suggesting that LaRbp38 may have dual cell localization and different cellular functions.
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