CLONING AND SEQUENCING OF THE TRNA LIGASE GENES FROM *TRYPANOSOMA CRUZI* AND *T. BRUCEI*

Lopes, R. R. S.; Rocha, T.; Polycarpo, C.
Instituto de Bioquímica Médica, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil
(e-mail: rapha.jpa2003@globo.com)

Chagas disease and sleeping sickness are very debilitating diseases, affecting people in Latin America. These illnesses are caused by the trypanosomatids *Trypanosoma cruzi* and *Trypanosoma brucei*, respectively. There are no vaccines against these protozoa and only few medicines, that are expensive and normally very toxic, characterizing an urgent need for new drugs against these parasites. tRNAs are molecules that have a central role in protein synthesis, being the translators of the genetic code. Among all the steps necessary for tRNA maturation is the editing of introns. This essential step involves an endonuclease, a ligase and a 2' - fosfotransferase. Recently it was described that the genomes of *Leishmania major*, *Trypanosoma cruzi and Trypanosoma brucei* possess homologous genes to the yeast tRNA ligase, the *trl1*. These enzymes present very restricted phylogenetic distribution, being found only in these protozoas and some fungi. Therefore, we believe this enzyme can be an excellent target for new drugs. Here we present the cloning and sequencing of the Trl1 genes from *Trypanosoma brucei* and *Trypanosoma cruzi*. The successful cloning of these genes allow us now to perform the biochemical characterization of the enzymes in question.

Supported by FAPERJ

Key words: Trypanosoma, tRNA, ligase