ROLE OF TBRBP3 IN GENE REGULATION IN TRYPANOSOMA BRUCEI

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Trypanosoma brucei, the agent causing sleeping sickness, constitutes one of the best-studied biological models so far. In order to adapt to different environments, this parasite mainly regulates gene expression by post-transcriptional mechanisms such as mRNA stability and translation. These processes are mediated by the interaction of sequences located in the 3'-UTR with *trans* acting factors. RRM-proteins are involved in many aspects of the RNA metabolism. However, the function of most of them is unknown. In this work we characterised RBP3 and its role in developmental control of gene expression. Orthologues of this protein are found in T. cruzi, T. congolense and L. major. Over-expression and depletion of *Tb*RBP3 by RNAi suggest a stage-specific role for this protein in bloodstream cells. Microarray studies comparing wild-type cells with cells where *Tb*RBP3 levels have been perturbed (either by RNAi or over-expression) were unsuccessful in revealing putative mRNA targets, suggesting that this protein is not involved in control of mRNA levels. Pull down of *Tb*RBP3-RNP complexes allowed the identification of several transcripts that selectively bind this protein. Specifically, the interaction of cyclin F-box and ZFP-mRNAs was confirmed by RT-PCR and the role of the over-expression of *Tb*RBP3 at mRNA levels was determined by Northern blot analysis. Unfortunately, attempts to identify *Tb*RBP3 interaction partners have failed. Studies to determine the role of this protein are in progress.

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