UNCONVENTIONAL CONTROL OF GENE EXPRESSION: MRNA DEGRADATION IN TRYPANOSOMES

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The Kinetoplastid parasites *Trypansoma* and *Leishmania* infect many millions of people and their domestic animals, causing significant mortality, morbidity and economic damage. They are transmitted from one mammal to the next by arthropod vectors. Adaptation to, and multiplication in, the two different hosts requires control of gene expression. Genes are arranged in polycistronic trasncription units and the precursors are cut into single-open-reading-frame units by *trans* splicing and polyadenylation. The efficiency of processing and the rate of degradation determine the mRNA level, and there is further control of translation. Most trypanosome mRNAs follow a degradation pathway in which the first event is shortening of the 3' poly(A) tail by a complex containing the CAF1 protein. Very unstable mRNAs, in contrast, are directly attacked from the 5'-end. We are now trying to find out how different mRNAs are either directed towards the rapid degradation pathway, or protected from degradation.

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