Alternative Mechanisms of Control for Gene Expression in Kinetoplastids?

Regulation of protein expression in kinetoplastids is predominantly posttranscriptional. Accordingly, trypanosomes possess extended families of eIF4E-like and eIF4G-like translation-initiation factors. Through examination of the *Trypanosoma brucei* mRNA cap-binding homolog TbEIF4E6, Freire et al. (p. 896–908) describe a stable tripartite complex that also contains TbEIF4G5 and a protein with nucleotide triphosphate hydrolase and guanylyltransferase domains similar to those found in mRNA capping enzymes. RNAi knockdown of TbEIF4E6 results in a detached-flagellum phenotype and reduction in social motility behavior. A specific subset of transcripts may be controlled by the tripartite complex.

Understanding a Peculiar Way To Regulate Gene Expression

The largest subunit of RNA polymerase II (RNA Pol II) of trypanosomes, although phosphorylated, lacks the typical carboxy-terminal repeats, which in most eukaryotes are targets for distinct phosphorylations and control several transcription-related events. Rocha et al. (p. 855–865) demonstrate that the hyperphosphorylated form of RNA Pol II of *Trypanosoma cruzi* is associated with the chromatin. They also show that dephosphorylation does not release the enzyme, but it is required for a new round of association with transcription sites. Dephosphorylation occurs upon heat shock, with normal processing of heat shock mRNAs to the detriment of housekeeping messages. DNA damage keeps the enzyme dephosphorylated, preventing its association with the new sites of transcription initiation. These results provide new insights into the unusual way used by trypanosomatids for transcriptional regulation and RNA processing.

Wound Healing Machinery in Filamentous Fungi: Flexibility of Woronin Body Tether by a Long Nonconserved Polypeptide

The Woronin body, a wound-healing organelle of *Pezizomycotina* species, plugs the septal pore to limit excessive loss of cytoplasm upon hyphal wounding. Woronin bodies are typically found ~100 nm from the septum, which has been suggested to be tethered by a long elastic filament. Han et al. (p. 866–877) demonstrate in *Aspergillus oryzae* that a huge protein, AoLAH, with 5,727 amino acids bridges the Woronin body and the septum by associating them with its conserved N- and C-terminal regions, respectively. In the absence of a long (~2,700 amino acids) nonconserved middle region of AoLAH, Woronin bodies can be tethered to the septum; however, they lose elastic motility and the ability to plug the septal pore. Thus, the long nonconserved region of AoLAH confers flexibility to the Woronin body tether, possibly as a molecular spring, consequently enabling the septal plugging.