

S59-5 **Anti-proliferative protein Tob post-transcriptionally regulates gene expression**

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The 3' poly(A) tail of mRNA interacts with the 5' cap to synergistically activate translation by circularizing the mRNA. On the other hand, the poly(A) tail shortening (referred to as deadenylation) is the rate-limiting step of mRNA decay and plays an important role in the regulation of mRNA stability. Thus, the regulation of deadenylation constitutes a pivotal mechanism of post-transcriptional control of gene expression.

We previously found that translation termination triggers mRNA deadenylation and decay, and proposed an initiation mechanism of mRNA decay: after translation termination, the termination complex eRF1-eRF3 is released from PABP, and in turn the two mRNA deadenylase complexes, Pan2-Pan3 and Caf1-Ccr4, bind to the PABP to degrade poly(A) tail of the mRNA. In this process, we also found that the anti-proliferative protein Tob mediates the interaction of Caf1-Ccr4 with PABP and functions in the general mechanism of mRNA decay.

In this symposium, I will present evidence showing that Tob plays an important role in the post-transcriptional regulation of gene expression.