mRNA processing, degradation and quality control in eukaryotes
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Eukaryotic mRNA precursors, produced by Pol II transcription, must undergo extensive maturational processing, and the processing at the 3'-end is also coupled to Pol II transcription termination. Turnover of mature mRNAs is mediated by exoribonucleases that function in the 5'→3' or 3'→5' direction (as well as other enzymes), which are also important for the degradation of defective mRNAs (mRNA quality control).

The presentation will cover our recent structural and functional studies of proteins involved in pre-mRNA 3'-end processing, as well as 5'→3' exoribonucleases (XRNs) (1-4). Unexpectedly, our studies on a protein factor that stimulates one of these XRNs led to the discovery of a novel quality control mechanism for mRNA 5'-end capping.

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