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Summerlee Science Complex SSC 2315

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La proteins use distinct RNA binding modes to alternate function between tRNA processing and mRNA translation

La proteins are highly conserved RNA binding proteins that alternate between tRNA processing and mRNA translation functions in the nucleus and cytoplasm,



respectively. La is also known to be critical for the pathogenesis of a number of RNA viruses as well as in cellular proliferation and cancer. Why La proteins perform such diverse roles has been a mystery, and we have hypothesized that the common thread by which La functions for so many different targets relates to its activity as an RNA chaperone. Thus much of our research centers around the RNA binding modes by which it engages a diverse cohort of targets, as well as in attempts to understand the mechanisms by which it remodels RNA structure. I will discuss our recent work describing how La is able to bind mRNAs and how it differentiates folded from misfolded substrates.