Translational regulation of hormone synthesis and signaling mRNAs

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Translational regulation has long been recognized as a vital process in the cell responses to the environment and in the execution of developmental programs, yet still little is known about the selective translation of specific mRNAs and its regulation (*1*).

Our research tries to understand the role of translational regulation in developmental and environmental responses and to that, we are using different perspectives: 1) we are studying ribosome heterogeneity in Arabidopsis and trying to determine whether it is involved in the selective translation of specific mRNAs under different cell conditions, and 2) we are trying to identify the translational machinery and RNA-binding proteins involved in the translational regulation of hormonal pathways using well-known translationally regulated hormone-biogenesis and signaling genes (*2-4*). We have been able to show that certain ribosomal protein paralogs are required for the specific translation of uORF-containing hormone-related mRNAs, and are now trying to understand the molecular mechanisms that control this regulation. Our progress regarding this objective will be presented.

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