

# Dissertation Thesis Topic

**Doctoral study program:** Life Sciences

**Supervisor:** Karel Říha

**Topic title:** RNA condensates in plant stress adaptation

**Annotation:**

The topic of this proposal is to investigate the role of cytoplasmic RNA condensates (P-bodies and stress granules) in plant adaptation to abiotic stress, including heat stress and salt stress. P-bodies and stress granules (SG) are known to play a crucial role in RNA storage, translation, and decay, and their structure and behavior dynamically respond to both developmental and environmental stimuli. However, we still have a limited understanding of how these biomolecular condensates contribute to the regulation of plant growth and stress responses. In this project, the candidate will utilize genetics, genomics, and cell biology approaches to explore the regulation of SG and P-bodies by stress response kinases in model plants like *Arabidopsis thaliana*, as well as in rice and barley

**Recommended literature:**

DOI: [10.1104/pp.17.01468](https://doi.org/10.1104/pp.17.01468)

DOI: <https://doi.org/10.1038/nrm.2017.7>

**Funding:** Project TANGENC

**Requirements on candidates:**

Solid theoretical background in genetics, molecular biology and cell biology. Practical experience in plant biology, bioinformatics or microscopy is a bonus, but not essential. Motivation and drive are must.