

Bachelor thesis

Epitranscriptomics - a new key player in controlling gene activity in development and under changing conditions

School year	2024-2025	Department / Workplace	Department of Experimental Plant Biology, Faculty of Science, Charles University; Institute of Experimental Botany of the CAS
Type of work	Bachelor thesis	Supervisor	prof. RNDr. David Honys, Ph.D.
Language	Czech / English	Consultant	

Preliminary work description

This project explores the intriguing field of **epitranscriptomics** in the context of plant development. Epitranscriptomics, focusing on **RNA modifications**, is key to unraveling the complex regulatory mechanisms governing different stages of plant ontogeny. The aim of this study is to map and describe current knowledge on how epitranscriptomic mRNA modifications affect the **fate of these transcripts**, their **localization, stability and translation** during **plant development and stress conditions**, and ultimately shape plant phenotypes. By delving into this emerging field, we will seek to organise the knowledge of the molecular basis of plant development with potential implications for crop improvement and breeding.

Principles for a good thesis

The prerequisites for a successful solution are a keen **interest** in the subject, **motivation** to write and defend the thesis and at least a basic **knowledge of plant biology**. **Independence** (which does not mean being left to one's own, but actively seeking and exploring new stimuli with the all-round support of the supervisor and consultant) and a willingness to learn new things and **openness to new approaches** are advantageous. The thesis will be based on a variety of literature, overwhelmingly in English, including relevant reviews. The Bachelor's thesis may be followed by an **experimental Master thesis** based on the information gathered. **Examples of theses** from our lab are here: <http://www.pollenbiology.cz/team/>.

Scientific literature

Original scientific articles and reviews in English, e.g. here: <http://www.pollenbiology.cz/publications/>.

We offer

Work in a young and inspiring team; the successful candidate may get a **position** in the Laboratory of Pollen Biology of the **Institute of Experimental Botany** of the CAS. This includes, e.g., the possibility to cover **conference** expenses (presentation of own results) and the chance to participate in **language courses** of the Language Department of the CAS. Financial support for the work on ongoing projects.

Contact

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