January 31st 2023

# Master's thesis project available at the Institute for Molecular Physiology

**Project title:**   Optimization and application of a proximity labeling tool for *in planta* use

**Description:**   As sessile organisms, plants evolved diverse mechanisms to adapt and defend themselves against environmental stimuli, such as wounding. Part of this adaptation resulted in the ability of organs and tissues to rapidly communicate with one another, not only locally, but on a plant-wide, systemic scale. Our group is focused on better understanding the molecular and genetic bases underlying this long-distance signaling, as well as the mechanisms for signal generation, propagation and detection. We recently discovered candidate proteins with a function in systemic signaling.

The project aims to detect and preliminarily characterize proteins that interact with our candidates, using a non-invasive proximity labeling tool (turboID).

**Methods:**   - turboID protocol adjustments and optimization for plant leaf samples
- fluorescent microscopy
- diverse cloning and molecular biology strategies
- generation of stable transgenic Arabidopsis lines
- biochemical methods: protein extraction, purification and immunoblots
- mass spectrometry

**Prerequisites:**   We are seeking a very enthusiastic, committed and reliable Master's student with a scientific background in Life Sciences or related studies. Experience in biochemical methods is desirable. As we are an international laboratory, English is the official language of our lab und your thesis will have to written in English.

**Start date:**   mid-February 2023 or at your earliest convenience

**How to apply?**   Please apply via e-mail to imp.application1@hhu.de by providing a letter of motivation, a short CV and your preferred start date.

More information about Team Signaling: https://www.molecular-physiology.hhu.de/signaling

We're looking forward to your application!