Characterization of evolutionary conserved intercellular communication-related processes

Unlike animals, plants are sessile organisms which cannot actively avoid various environmental conditions. Partially because of the lack of locomotion organs, but also because of the presence of rigid cell wall encapsuling their cells. Importantly, the presence of cell wall restricts cell communication possibilities and focuses this process into apoplastic space and plasmodesmata – intercellular channels connecting almost all of the plant cells. Interestingly, plasmodesmata are platform for the organization of macromolecular complexes.

Our project aims to characterize evolutionary conserved processes impacting cell-to-cell communication. For this purpose, we introduce the experimental model organism *Marchantia polymorpha*. Proposed project aims to establish the methodology to analyze *M. polymorpha* and provide insight into impact of symplastic communication on plant development.

Main goal	Introduction of model organism *Marchantia polymorpha* Analysis of impact of restricted symplastic communication on plant development Comparative study of restricted symplastic transport
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Type	Bc. or Mgr. project
Requirements	Proficiency in English (oral and written) High self-motivation Interest in molecular biology, biochemistry, microscopy Openness to learn new techniques and concepts Sense for the responsibility
Offering	Exciting project about evolutionary conserved mechanisms of intercellular communication Work in the international team Stimulating English language environment Wide spectra of proposed methods (*in vitro* cultivation of *Marchantia polymorpha*, Agrobacterium-mediated transformation, molecular cloning, tissue staining, confocal microscopy, data analysis, bombardment, protein sample fractionation, ultracentrifugation, SDS-PAGE, phenotypic analysis)

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