Leonard Blaschek

*01.03.1992
leonard.blaschek@su.se
Phone: +46 816 3793

Svante Arrhenius väg 20A
114 18 Stockholm
Sweden

leonardblaschek.github.io

EDUCATION

PhD, Plant Physiology — 2017–2021 (expected)

Stockholms Universitet, Sweden
Project: Functional and Genetic Analysis of Laccase Isoforms during Lignification
Advisor: Dr. Edouard Pesquet
Co-Advisors: Prof. Vincent Bulone, Prof. Jonas Gunnarsson

My project aims to determine whether differences in lignin amount and composition on the cellular and organismal scale are due to distinct roles of laccase paralogues during lignification. Biochemical and genetic analyses of laccases from *A. thaliana*, *Zinnia violacea* and *Populus* will be used to elucidate the basis of laccase specificity as well as the evolutionary conservation of the roles of laccases in lignification.

Master of Science, Genetic and Molecular Plant Biology — 2015–2017

Uppsala Universitet, Sweden
Thesis: Distinct Roles of Laccase Isoforms During Lignification in *A. thaliana*
Advisor: Dr. Edouard Pesquet

In this thesis work, I provided evidence that laccase isoforms in *A. thaliana* have distinct and non-redundant roles during lignification. Phenotypic analysis of *laccase* loss-of-function mutants, *in situ* activity assays and biochemical lignin characterisation showed that different laccase isoforms were active in a cell and substrate specific manner.

Bachelor of Science, Biology — 2013–2015

Ernst-Moritz-Arndt-Universität Greifswald, Germany
Thesis: Plasma Membrane–Bound Proteases in the Roots of *H. vulgare* (grade: 1.0)
Advisor: Prof. Christine Stöhr

In my bachelor's thesis I investigated proteolytic activity in the plasma membrane of *Hordeum vulgare* roots. Plasma membrane purification and SDS-PAGE analysis followed by zymographic and chromogenic activity assays provided evidence for the presence of an undescribed oligomeric membrane-bound aminopeptidase.

EXPERTISE

Practical

Quantitative bright field and fluorescence microscopy, enzyme kinetics, image analysis, cell suspension cultures, histology, cloning, transformation, crossing

Computational

R, LaTeX, ImageJ, git, HTML (basics), Python (basics), Linux, Windows

COURSES & WORKSHOPS

Advanced Imaging of Cells *in vitro* and *in vivo* (2018). *Stockholm University*

Optical Clearing and Expansion Microscopy (2018). *SciLifeLab, Stockholm*

Advances in Enzyme Regulation (2018). *Swedish University of Agricultural Sciences, Uppsala*

Piecewise Structural Equation Modelling (2019). *Stockholm University*

PUBLICATIONS

Blaschek L, Champagne A, Dimotakis C, Nuoendagula, Decou R, Hishiyama S, Kratzer S, Kajita S, Pesquet E. (*In minor revisions at FiPS.*) Cellular and Genetic Regulation of Coniferaldehyde Incorporation in Lignin of Herbaceous and Woody Plants Using Quantitative Wiesner Staining.

Blaschek L, Pesquet E (*in preparation*). Phenoloxidases: Functions, Structures and Evolution.

Ménard D, Serk H, Gorzsás A, Jauneau A, Fukuda H, **Blaschek L**, Demura T, Goffner D, Pesquet E (*in preparation*). The *post-mortem* spatial restriction of lignification in protoxylem and metaxylem vessels in *Zinnia elegans* is controlled by laccases and peroxidases.

Blaschek L[†], Nuoendagula[†], Bacsik Z, Kajita S, Pesquet E. (*In preparation.*) Genetic Regulation and Coordination of Lignification in Stem Tissues of *Arabidopsis*.

Ménard D, **Blaschek L**, Zhong C, Kriechbaum K, Lee CC, Nuoendagula, Kajita S, Mathew A, Pesquet E. (*In preparation.*) Lignin Ensures the Biomechanical Properties of Xylem Vessels under Tension.

[†]: contributed equally

PRESENTATIONS

Blaschek L (2018). Determining the Spatial Distribution of Aldehyde Units in Lignin. *2nd Stockholm Cell Wall Meeting*, KTH Royal Institute of Technology, Stockholm.

Blaschek L (2019). Spatial Distribution of Coniferaldehyde Lignin. *28th Congress of the Scandinavian Plant Physiology Society*, Umeå.

Blaschek L (2019). The Structural Importance of Lignin in Xylem Vessels. *3rd Stockholm Cell Wall Meeting*, Stockholm University, Stockholm.

GRANTS & SCHOLARSHIPS

Blaschek L, Pesquet E Kungliga Vetenskapsakademien Scholarship BS2018–0061 (100 000 kr) for the sequencing of the *Zinnia violacea* genome (2018).