Leonard Blaschek

lb@plen.ku.dk
leonardblaschek.github.io

Thorvaldsensvej 40
1871 Frederiksberg C, Denmark

Employment

EMBO fellow|postdoctoral researcher 2022–present
University of Copenhagen, Denmark
Project: Cell Wall Integrity Sensing and its Feedback on Cell Wall Composition in Plants
Advisors: Prof. Staffan Persson, Prof. Jürgen Kleine-Vehn

Education

PhD, Plant Physiology 2017–2022
Stockholms Universitet, Sweden
Project: Functional and Genetic Analysis of Laccase Isoforms during Lignification
Supervisor: Dr. Edouard Pesquet
Co-Supervisors: Prof. Vincent Bulone, Prof. Jonas Gunnarsson
Examination committee: Dr. Richard Sibout (opponent), Prof. Martin Lawoko, Dr. Anna Kärkönen, Prof. Igor Cesarino, Prof. Geoffrey Daniel, Dr. Mika Sipponen

Licentiate, Plant Physiology 2017–2020
Stockholms Universitet, Sweden
Project: Cellular Lignin Distribution Patterns and their Physiological Relevance
Supervisor: Dr. Edouard Pesquet
Co-Supervisors: Prof. Vincent Bulone, Prof. Jonas Gunnarsson
Examination Committee: Dr. András Gorzsás (opponent), Dr. Annelie Carlsbecker, Prof. Ulla Westermark

Master of Science, Genetic and Molecular Plant Biology 2015–2017
Uppsala Universitet, Sweden
Thesis: Distinct Roles of Laccase Isoforms During Lignification in *A. thaliana*
Supervisor: Dr. Edouard Pesquet

Bachelor of Science, Biology 2012–2015
Ernst-Moritz-Arndt-Universität Greifswald, Germany
Thesis: Plasma Membrane–Bound Proteases in the Roots of *H. vulgare*
Supervisor: Prof. Christine Stöhr

Publications

2023

Blaschek L, Murozuka E, Serk H, Ménard D, Pesquet E (2023). Different combinations of laccase paralogs non-redundantly control the lignin amount and composition of specific cell types and cell wall layers in *Arabidopsis*. *Plant Cell* 35, 889–909. 10.1093/plcell/koac344 — *previously on bioRxiv*

Blichfeldt Pedersen G†, **Blaschek L**†, Frandsen KEH, Noack LC, Persson S (2023). Cellulose synthesis in land plants. *Mol. Plant.* 16, 206–231. 10.1016/j.molp.2022.12.015

2022

Ménard D†, **Blaschek L**†, Kriechbaum K, Lee CC, Serk H, Zhu C, Lyubartsev A, Nuoendagula, Bacsik Z, Bergström L, Mathew A, Kajita S, Pesquet E (2022). Plant biomechanics and resilience to environmental changes are controlled by specific lignin chemistries in each vascular cell type and morphotype. *Plant Cell* 34, 4877–4896. 10.1093/plcell/koac284 — *previously on bioRxiv*

2021

Blaschek L, Pesquet E (2021). Phenoloxidases in Plants—How Structural Diversity Enables Functional Specificity. *Front. Plant Sci.* 12, 2183. 10.3389/fpls.2021.754601

2020

Yamamoto M, **Blaschek L**, Subbotina E, Kajita S, Pesquet E (2020). Importance of Lignin Coniferaldehyde Residues for Plant Properties and Sustainable Uses. *ChemSusChem* 13, 4400–4408. 10.1002/cssc.202001242

Blaschek L†, Nuoendagula†, Bacsik Z, Kajita S, Pesquet E (2020). Determining the Genetic Regulation and Coordination of Lignification in Stem Tissues of *Arabidopsis* Using Semiquantitative Raman Microspectroscopy. *ACS Sustain. Chem. Eng.* 8, 4900–4909. 10.1021/acssuschemeng.0c00194

Blaschek L, Champagne A, Dimotakis C, Nuoendagula, Decou R, Hishiyama S, Kratzer S, Kajita S, Pesquet E (2020). Cellular and Genetic Regulation of Coniferaldehyde Incorporation in Lignin of Herbaceous and Woody Plants Using Quantitative Wiesner Staining. *Front. Plant Sci.* 11, 109. 10.3389/fpls.2020.00109

†: contributed equally

Presentations

Blaschek L (2021, selected talk). Laccase paralogs non-redundantly direct lignification. *ASPB Plant Biology 2021,* online.

Blaschek L (2021, selected talk). Specific and dynamic lignification at the cell-type level controls plant physiology and adaptability. *SEB 2021 Annual Conference,* online. — link to recording

Blaschek L (2021, selected talk). Laccase paralogs non-redundantly direct lignification. *SEB 2021 Annual Conference,* online.

Blaschek L (2021, selected talk). Laccase paralogs non-redundantly direct lignification. *7th International Conference on Plant Cell Wall Biology,* online. — link to recording

Blaschek L (2019, selected talk). The structural importance of lignin in xylem vessels. *3rd Stockholm Cell Wall Meeting*, Stockholm University, Stockholm.

Blaschek L (2019, selected talk). Spatial distribution of coniferaldehyde lignin. *28th Congress of the Scandinavian Plant Physiology Society*, Umeå.

Blaschek L (2018, selected talk). Determining the spatial distribution of aldehyde units in lignin. *2nd Stockholm Cell Wall Meeting*, KTH Royal Institute of Technology, Stockholm.

Grants, scholarships & awards

Blaschek L (2023). Freiburg Rising Stars Academy, cohort 2023/24.

Blaschek L (2023). Groupe Polyphénols Ragaï Ibrahim prize at the *31st International Conference on Polyphenols.*

Blaschek L (2022). EMBO Postdoc fellowship ALTF 37-2022. *Cell wall integrity sensing and its feedback on cell wall composition in plants.* Hosted by Staffan Persson in Copenhagen and Jürgen Kleine-Vehn in Freiburg.

Blaschek L (2021). Best student presentation award at the *7th International Conference on Plant Cell Wall Biology.*

Blaschek L (2019). Travel grant of the Department of Ecology, Environment and Plant Sciences, Stockholm University to attend the *28th Congress of the Scandinavian Plant Physiology Society.*

Blaschek L, Pesquet E (2018). Kungliga Vetenskapsakademien Scholarship BS2018–0061.

Expertise

Wet lab

- cloning (Gibson, GoldenGate, Gateway, TA)
- plant histology and histochemistry
- *in vitro* plant systems (cell suspension cultures, seedlings, saplings)
- plant phenotyping, transformation & crossing (*Arabidopsis, Populus, Zinnia*)
- protein biochemistry (expression, purification, Western blotting, activity assays)
- RT-qPCR
- targeted mutagenesis and gene editing
- quantitative bright field, fluorescence and vibrational micro(spectro)scopy

Dry lab

- automated image analysis (Python, ImageJ)
- data analysis and visualisation (R, Python, bash)
- molecular phylogenetics
- protein homology modelling
- reproducible reporting (markdown, git)
- text processing (Office, LaTeX)

Teaching

Getting started with ggplot2. 2023. Independent workshop. *Copenhagen University.*

Molecular plant–microbe interactions (MSc level). 2017–2020. Project design and supervision. *Stockholm University.*

Green biotechnology (MSc level). 2018–2021. Project design and supervision. *Stockholm University.*

Service

Departmental data science task force, *PLEN, University of Copenhagen*	2023–
Departmental equality group, *DEEP, Stockholm University*	2019–2021
Course representative, *ECB, Uppsala University*	2015
Student representative on the board, *BOT, Greifswald University*	2014–2015