

Olaf Czarnecki
Oak Ridge National Laboratory,
Bioscience Division, Plant Genomics Group
1 Bethel Valley Road, Building 1507, Room 110, P.O. Box 2008
Oak Ridge, TN 37831-6407
Phone: (001)-(865)-576-3472
Fax: (001)-(865)-574-5353
czarneckio@ornl.gov

EDUCATION

Ph.D. (2010) Plant Physiology, Humboldt University Berlin, Germany,
Supervisor: Prof. Dr. Bernhard Grimm

Dipl.-Biol. (2003) Plant Physiology, Ecology, and Animal Physiology,
Humboldt University Berlin, Germany, Supervisor: Prof. Dr.
Bernhard Grimm

PROFESSIONAL EXPERIENCE

May 2011 - present

Postdoctoral research associate, Oak Ridge
Associated Universities at Oak Ridge National Laboratory
(ORNL)
Research focus on plant signaling networks within several
projects of the Bioenergy Science Center (BESC) and Plant
Microbe Interface (PMI)
Supervisor Dr. Jin-Gui (Jay) Chen

January 2010 - May 2011

Postdoctoral research assistant within the Research
Unit 804 of the German Science Foundation „Retrograde
Signaling in Plants“, Humboldt University Berlin,
Department of Plant Physiology, Supervisor Prof. Dr.
Bernhard Grimm

November 2003 - December 2009

PhD student
Department of Plant Physiology
Humboldt University Berlin, Germany
Research focus on regulation of early steps of tetrapyrrole
biosynthesis in plants, identification of novel proteins

interacting with ALA synthesizing enzymes
Supervisor Prof. Dr. Bernhard Grimm

November 1999 – October 2002

Student research assistant

Department of Ecophysiology

Humboldt University Berlin

Research focus on new active eco- and humantoxic
compounds in cyanobacteria

Supervisor Dr. Manfred Henning

TEACHING EXPERIENCE

Conducting of laboratory practical courses

- Limnology and water protection
- Ecology of saline areas
- Techniques for plant transformation and analysis of transgenic plants
- Basic plant physiology

Conducting of field practical courses

- Ecological and taxonomical field studies

LIST OF PUBLICATIONS

Journals (peer-review):

Rohrlack, T., Christoffersen, K., Hansen, P.E., Zhang, W., **Czarnecki, O.**, Henning, M., Fastner, J., Neilan, B.A. & Kaebernick, M. (2003): Isolation, characterization and quantitative analysis of microviridin L, a new *Microcystis* metabolite toxic to *Daphnia*. J. Chem. Ecol. 29: 1757-1770.

Czarnecki, O., Henning, M., Lippert, I. & Welker, M. (2006): Identification of peptide metabolites of *Microcystis* (Cyanobacteria) that inhibit trypsin-like activity in planktonic herbivorous *Daphnia* (Cladocera). Environm. Microbiol. 8: 77-87.

Shalygo, N., **Czarnecki, O.**, Peter, E. & Grimm, B. (2009): Expression of chlorophyll synthase is also involved in feedback-control of chlorophyll biosynthesis. Plant Mol. Biol. 71: 425-436.

Richter, A., Peter, E., Pörs, Y., Lorenzen, S., Grimm, B. & **Czarnecki, O.** (2010): Rapid dark repression of 5-aminolevulinic acid synthesis in green barley leaves. Plant Cell Physiol. 51: 670-681.

Czarnecki, O., Peter, E. & Grimm, B. (2010): Metabolic analysis of tetrapyrrole biosynthesis in tobacco (*Nicotiana tabacum*) leaves: Determination 5-aminolevulinic acid synthesis rate and steady-state levels of porphyrins and Mg porphyrins. J. Endocyt. Cell Res. 20: 113-119.

Czarnecki, O., Hedtke, B., Melzer, M., Rothbart, M., Richter, A., Schroeter, Y., Pfannschmidt, T. & Grimm, B. (2011): An Arabidopsis GluTR binding protein mediates spatial separation of 5-aminolevulinic acid synthesis in chloroplasts. Plant Cell 23: 4476-4491.

Czarnecki, O. & Grimm, B. (2012): Post-translational control of tetrapyrrole biosynthesis in plants, algae, and cyanobacteria. J. Exp. Bot. 63: 1675-1687.

O. Czarnecki, C. Glässer, J.-G. Chen, K.F.X. Mayer & B. Grimm (2012): Evidence for a contribution of ALA synthesis to plastid-to-nucleus signaling. Front. Plant Sci 3: 236.

C.A. Albus, A. Salinas, **O. Czarnecki,** S. Kahlau, M. Rothbart, W. Thiele, W. Lein, R. Bock, B. Grimm & M.A. Schöttler (2012): LCAA, a novel factor required for Mg protoporphyrin monomethylester cyclase accumulation and feedback-control of aminolevulinic acid biosynthesis in tobacco. Plant Physiol. 160: 1923-1939.

O. Czarnecki & B. Grimm (2012): New insights in the topology of the biosynthesis of 5-aminolevulinic acid. Plant Signal. Behav. 8: e23124.

O. Czarnecki, J. Yang, D.J. Weston, G.A. Tuskan & J.-G. Chen (2013): A dual role of strigolactones in phosphate acquisition and utilization in plants. Int. J. Mol. Sci. 14: 7681-7701.

Book chapters:

Czarnecki, O., Peter, E. & Grimm, B. (2011): Methods for analysis of photosynthetic pigments and steady-state levels of intermediates of tetrapyrrole biosynthesis. Meth. Mol. Biol. 775: Chloroplast Research in Arabidopsis: Methods and Protocols (ed. P. Jarvis), Springer Science and Business Media, Vol. 2, 357-385.

PhD thesis:

Czarnecki, O. (2010): Synthesis of 5-aminolevulinic acid in plants: Characterization of a novel GluTR-binding protein and its role for the microcompartmentation of tetrapyrrole biosynthesis. (*in german*)
Reviewed by Bernhard Grimm (Humboldt University Berlin), Diter von Wettstein (Washington State University) and Thomas Pfannschmidt (University Jena)