

CURRICULUM VITAE

Steffen Abel, Professor

Leibniz-Institute of Plant Biochemistry
Department of Molecular Signal Processing
Weinberg 3, D-06120 Halle (Saale), Germany

Phone: (49) (345) 5582-1200

FAX: (49) (345) 5582-1209

Email: sabel@ipb-halle.de

ACADEMIC POSITIONS AND EDUCATION

Head of Department 2009 – present

University Professor 2009 – present

Professor 2007 – 2009

Associate Professor 2002 – 2007

Assistant Professor 1997 – 2002

Postdoctoral Associate 1991 – 1996

Staff Scientist 1989 – 1990

Visiting Scientist 1987 – 1989

Dissertation Research 1984 – 1987

Undergraduate Studies 1979 – 1984

Leibniz-Institute of Plant Biochemistry

Department of Molecular Signal Processing

Martin-Luther-University Halle-Wittenberg

Institute of Biochemistry and Biotechnology

University of California, Davis, USA

Department of Plant Sciences

University of California, Berkeley, USA

Plant Gene Expression Center

Martin-Luther-University Halle-Wittenberg

Department of Biological Sciences

Hungarian Academy of Sciences, Hungary

Biological Research Center, Szeged

Martin-Luther-University Halle-Wittenberg

Biochemistry (*Dr. rer. nat., summa cum laude*)

Biochemistry (*Diplom-Biochemist*)

GRANTS AND AWARDS

11 competitive research grants awarded by NSF, DOE and USDA (1998 – 2009)

Kinney Postdoctoral Fellowship of the U.S. Department of Agriculture (1993)

Boehringer-Ingelheim-Fonds Postdoctoral Fellowship (1991 - 1992)

UNESCO/Hungarian Academy of Sciences Fellowship (1987 - 1989)

TEACHING AT UC DAVIS

Bioenergetics and Metabolism (2002 – 2009, annually; class of 200-350 undergraduate students)

Plant Biochemistry (1998 – 2009, annually; class of 20-30 undergraduate students)

Plant Hormones (1997 – 2003, biannually; class of 10-20 Ph.D. students)

SERVICE

Panel Review Member, National Science Foundation (2004, 2005, 2006)

Panel Review Member, U.S. Department of Agriculture (2003, 2008)

Plant Biology Graduate Group, Educational Policy Committee, Chair (2004 – 2009)

Plant Biology Graduate Group, Executive Committee, Member (2002 – 2009)

Student Advisor (Cell and Molecular Biology) (2003 – 2009)

Ad-hoc Committee on Mentoring Junior Faculty (Appointed by Chancellor), Member (2004)

UC Davis Committee on Research, Member (1999 – 2002)

PUBLICATIONS

- Ticconi CA, Lucero RD, Sakhonwasee S, Adamson AW, Creff A, Nussaume L, Desnos T, and S Abel (2009) ER-resident proteins PDR2 and LPR1 mediate the developmental response of root meristems to phosphate availability. *Proc. Natl. Acad. Sci. USA* 106 (14174-14179).
- Abel S (2007) Auxin is surfacing. *ACS Chem Biol* 2:380-384.
- Grubb CD and S Abel (2006) Glucosinolate metabolism and its control. *Trends Plant Sci* 11:89-100.
- Abel S, Savchenko T, and M Levy (2005) Genome-wide comparative analysis of the IQD gene families in *Arabidopsis thaliana* and *Oryza sativa*. *BMC Evolutionary Biology* 5:72 (1-25).
- Levy M, Rachmilevitch S and S Abel (2005) Transient *Agrobacterium*-mediated gene expression in the *Arabidopsis* hydroponics root system for subcellular localization studies. *Plant Mol Biol Rep* 23:179-184.
- Levy M, Wang Q, Kaspi R, Parrella MP, and S Abel (2005) *Arabidopsis* IQD1, a novel calmodulin-binding nuclear protein, stimulates glucosinolate accumulation and plant defense. *Plant J* 43:79-96. (Cover Photo)
- Ebeler SE, Dingley KH, Ubick E, Abel S, Mitchell AE, Burns SA, Steinberg FM, and AJ Clifford (2005) Animal models and analytical approaches for understanding the relationships between wine and cancer. *Drugs Exptl Clin Res* 31:19-27.
- Grubb CD, Zipp B, Ludwig-Müller J, Masuno MN, Molinski TF, and S Abel (2004) *Arabidopsis* glucosyltransferase UGT74B1 functions in glucosinolate biosynthesis and auxin homeostasis. *Plant J* 40:893-908.
- Ticconi CA and S Abel (2004) Short on phosphate: plant surveillance and countermeasures. *Trends Plant Sci* 9:548-555.
- Ticconi CA, Delatorre CA, Lahner B, Salt DE, and S Abel (2004) *Arabidopsis pdr2* reveals a phosphate-sensitive checkpoint in root development. *Plant J* 37:801-814.
- Dingley KH, Ubick EA, Chiarappa-Zucca ML, Nowell S, Abel S, Ebeler SE, Mitchell AE, Burns SA, Steinberg FM, and AJ Clifford (2003) Effect of dietary constituents with chemopreventive potential on adduct formation of a low dose of the heterocyclic amines PhIP and IQ and Phase II hepatic enzymes. *Nutr. & Cancer* 46:212-221.
- Abel S, Ticconi CA, and CA Delatorre (2002) Phosphate sensing in higher plants. *Physiol Plant* 115:1-8.
- Wang Q, Grubb CD, and S Abel (2002) Direct analysis of single leaf disks for chemopreventive glucosinolates. *Phytochem Anal* 13:152-157.
- Laskowski MJ, Dreher KA, Gehring M, Abel S, Gensler A, and IM Sussex (2002) *FQR1*, a novel primary auxin-response gene, encodes an FMN-binding quinone reductase. *Plant Physiol* 128:578-590.
- Grubb CD, Gross HB, Chen DL, and S Abel (2002) Identification of *Arabidopsis* mutants with altered glucosinolate profiles based on isothiocyanate bioactivity. *Plant Sci* 162:143-152.
- Ticconi CA, Delatorre CA, and S Abel (2001) Attenuation of phosphate starvation responses by phosphite in *Arabidopsis thaliana*. *Plant Physiol* 127:963-972.
- Abel S and M Köck (2001) Secretory ribonucleases from tomato (*Lycopersicon esculentum* cv. Mill.). *Meth Enzymol* 341:351-368.
- Li G, GS Goyal, S Abel, and CF Quiros (2001) Inheritance of three major genes involved in the synthesis of aliphatic glucosinolates in *Brassica oleracea*. *J Amer Soc Hort Sci* 126:427-431.
- Colon-Carmona A, DL Chen, KC Yeh, and S Abel (2000) Aux/IAA proteins are phosphorylated by phytochrome *in vitro*. *Plant Physiol* 124:1728-1738.
- Gross HB, T Dalebout, CD Grubb, and S Abel (2000) Functional detection of chemopreventive glucosinolates in *Arabidopsis thaliana*. *Plant Sci* 159:265-272.
- Chen DL, CA Delatorre, A Bakker, and S Abel (2000) Conditional identification of phosphate starvation-response mutants in *Arabidopsis thaliana*. *Planta* 211:13-22.
- Abel S, T Nürnbergger, V Ahnert, GJ Krauss, and K Glund (2000) Induction of an extracellular cyclic nucleotide phosphodiesterase as an accessory ribonucleolytic activity during phosphate starvation of cultured tomato cells. *Plant Physiol* 122:543-532.
- Morgan KE, TI Zarembinski, A Theologis, and S Abel (1999) Biochemical characterization of recombinant polypeptides corresponding to the predicted $\beta\alpha\alpha$ -fold in Aux/IAA proteins. *FEBS Lett* 454:283-287.
- Abel S and A Theologis (1996) Early genes and auxin action. *Plant Physiol* 111:9-17.
- Abel S, N Ballas, L-M Wong, and A Theologis (1996) DNA elements responsive to auxin. *BioEssays* 18:647-654.

- Abel S and A Theologis (1996) Transient gene expression in protoplasts of *Arabidopsis thaliana*. *Meth Mol Biol* 82:209-217.
- Wong L-M, S Abel, N Shen, M de la Foata, Y Mal, and A Theologis (1996) Differential activation of the primary auxin response genes, *PS-IAA4/5* and *PS-IAA6*, during early plant development. *Plant J* 9:587-599.
- Köck M, A Löffler, S Abel, and K Glund (1995) cDNA structure and regulatory properties of a family of phosphate starvation-induced ribonucleases in tomato. *Plant Mol Biol* 27:77-84.
- Abel S, MD Nguyen, and A Theologis (1995) The *PS-IAA4/5*-like family of early auxin-inducible mRNAs in *Arabidopsis thaliana*. *J Mol Biol* 251:533-549.
- Abel S, MD Nguyen, W Chow, and A Theologis (1995) *ACS4*, a primary auxin-responsive gene encoding 1-Aminocyclopropane-1-carboxylate synthase in *Arabidopsis thaliana*. *J Biol Chem* 270:19093-19099.
- Abel S and A Theologis (1995) A polymorphic bipartite motif signals nuclear targeting of early auxin-inducible proteins related to *PS-IAA4* from pea (*Pisum sativum*). *Plant J* 8:87-96.
- Abel S and A Theologis (1994) Transient transformation of *Arabidopsis* leaf protoplasts: a versatile experimental system to study gene expression. *Plant J* 5:421-427.
- Abel S, PW Oeller, and A Theologis (1994) Early auxin-induced genes encode short-lived nuclear proteins. *Proc Natl Acad Sci USA* 91:326-330.
- Theologis A, TI Zarembinski, PW Oeller, X Liang and S Abel (1992) Modification of fruit ripening by suppressing gene expression. *Plant Physiol* 100:549-551.
- Liang X, S Abel, JA Keller, NF Shen and A Theologis (1992) The 1-Aminocyclopropane-1-carboxylate synthase family of *Arabidopsis thaliana*. *Proc Natl Acad Sci USA* 89:11046-11050.
- Löffler A, S Abel, W Jost and K Glund (1992) Phosphate-regulated induction of intracellular ribonucleases in cultured tomato (*L. esculentum*) cells. *Plant Physiol* 98:1472-1478.
- Nürnberg T, S Abel, W Jost and K Glund (1990) Induction of an extracellular ribonuclease in cultured tomato cells upon phosphate starvation. *Plant Physiol* 92:970-976.
- Abel S, B Blume and K Glund (1990) Evidence for RNA-oligonucleotides in plant vacuoles isolated from cultured tomato cells. *Plant Physiol* 94:1163-1171.
- Abel S, GJ Krauss and K Glund (1989) Ribonuclease in tomato vacuoles: HPLC analysis of ribonucleolytic activities and base specificity. *Biochim Biophys Acta* 998:145-150.
- Abel S, T Kiss and F Solymosy (1989) Molecular analysis of eight U1 RNA gene candidates from tomato that could be potentially transcribed into U1 RNA sequence variants differing from each other in similar regions of secondary structure. *Nucleic Acids Res* 17:6319-6337.
- Kiss T, S Abel and F Solymosy (1989) A plant pseudogene for U1 RNA. *Plant Mol. Biol.* 12:709-712.
- Kiss T, M Kis, S Abel and F Solymosy (1988) Nucleotide sequence of the 17S-25S spacer region from tomato rDNA. *Nucleic Acids Res* 16:7179.
- Glund K and S Abel (1989) Structural dynamics of the vacuolar system in cultured tomato cells. A direct isolation study. *J Plant Physiol* 135:242-244.
- Abel S, GJ Krauss and K Glund (1988) Single-step HPLC analysis of nucleoside monophosphates for ribonuclease specificity. *J Chromat* 446:187-189.
- Abel S and K Glund (1987) Ribonuclease in plant vacuoles: purification and molecular properties of the enzyme from cultured tomato cells. *Planta* 172:71-78.
- Abel S and K. Glund (1986) Localization of RNA-degrading enzyme activity within vacuoles of cultured tomato cells. *Physiol Plant* 66:79-86.
- Glund K, A Tewes, S Abel, V Leinhos, R Walther and H Reinbothe (1984) Vacuoles from cell suspension cultures of tomato (*Lycopersicon esculentum*) - Isolation and characterization. *Z. Pflanzenphysiol* 113:151-161.

MEETING REPORTS

- Abel, S., M. Blazquez, J. Dangl, X.W. Deng, I. Graham, J. Harada, J. Jones, O. Nilsson (2000). Arabidopsis Research 2000. *Plant Cell* 12:2302-2309.