CURRICULUM VITAE

Steffen Abel, *Professor*
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ACADEMIC POSITIONS AND EDUCATION

Vice Director	2010 – present	**Leibniz Institute of Plant Biochemistry**
Department Chair	2009 – present	Department of Molecular Signal Processing
University Professor (W3)	2009 – present	**Martin Luther University Halle-Wittenberg** Institute of Biochemistry and Biotechnology
Full Professor	2007 – 2009	**University of California, Davis, USA**
Associate Professor	2002 – 2007	Department of Plant Sciences
Assistant Professor	1997 – 2002	
Postdoctoral Associate	1991 – 1996	**University of California, Berkeley, USA** Plant Gene Expression Center
Staff Scientist	1989 – 1990	**Martin Luther University Halle-Wittenberg** Department of Biological Sciences
Visiting Scientist	1987 – 1989	**Hungarian Academy of Sciences, Hungary** Biological Research Center, Szeged
Dissertation Research	1984 – 1987	**Martin Luther University Halle-Wittenberg** Biochemistry (*Dr. rer. nat., summa cum laude*)
Undergraduate Studies	1979 – 1984	Biochemistry (*Diplom-Biochemist*)

GRANTS AND AWARDS

DFG Collaborative Center Grant (SFB648), Project B12, current (2013 – 2016)
Leibniz Association Center Grant, Pact for Research and Innovation, current (2011 – 2014)
DFG Graduate Research Training Group (GRK1026), Project B2, current (2010 – 2013)
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

Martin Luther University Halle-Wittenberg
Master Module Plant Biochemistry (since 2012, annually)
University of California, 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

Member, Executive Committee SFB 648 (2013 – 2016)
Panel Member, DFG Review Board 202 Plant Sciences (2012 – 2016)
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)
UC Davis Campus Committee on Research, Member (1999 – 2002)

PUBLICATIONS

Dinesh DC, Kovermann M, Gopalswamy M, Hellmuth A, Calderón Villalobos LIA, Lilie H, Balbach J, and S Abel (2015) Solution structure of the PsIAA4 oligomerization domain reveals interaction modes for transcription factors in early auxin response. *Proc Natl Acad Sci USA 112:6230-6235*

Müller J, Toev T, Heisters M, Teller T, Moore KL, Hause G, Dhurvas CD, Bürstenbinder K, and S Abel (2015) Iron-dependent callose deposition adjusts root meristem maintenance to phosphate availability. *Dev Cell 33: 216-230 (Cover Photo)*

Ziegler J and S Abel (2014) Analysis of amino acids by HPLC/electrospray negative ion tandem mass spectrometry using 9-fluorenylmethoxycarbonyl chloride (Fmoc-Cl) derivatization. *Amino Acids 46:2799-2808*

Ziegler J, Qwegwer J, Schubert M, Erickson JL, Schattat M, Bürstenbinder K, Grubb CD, and S Abel (2014) Simultaneous analysis of apolar phytohormones and 1-aminocyclopropane-1-carboxylic acid by high performance liquid chromatography/electrospray negative ion tandem mass spectrometry via 9-fluorenylmethoxycarbonyl chloride derivatization. *J Chromat A 1362:102-109*

Grubb CD, Zipp BJ, Kopycki J, Schubert M, Quint M, Lim E-K, Bowles D, Pedras MSC and S Abel (2014) Comparative analysis of Arabidopsis UGT74 glucosyltransferases reveals a special role of UGT74C1 in glucosinolate synthesis. *Plant J 79:92-105*

Erickson JL, Ziegler J, Guevara D, Abel S, Klösgen RB, Mathur J, Rothstein SJ, and MH Schattat (2014) Agrobacterium-derived cytokinin influences plastid morphology and starch accumulation in *Nicotiana benthamiana* during transient assays. *BMC Plant Biology 14:127*

Abel S, Bürstenbinder K, and J Müller (2013) The emerging function of IQD proteins as scaffolds in cellular signaling and trafficking. *Plant Signal & Behavior 8:6, e24369 (1-6)*

Bürstenbinder K, Savchenko T, Müller J, Adamson AW, Stamm G, Kwong R, Zipp BJ, Dinesh DC, and S Abel (2013) Arabidopsis calmodulin-binding protein IQ-67 Domain 1 localizes to microtubules and interacts with kinesin light chain-related protein-1. *J Biol Chem 288:1871-1882*

Kopycki J, Wieduwild E, Kohlschmidt J, Brandt W, Stepanova A, Alonso JM, Pedras MSC, Abel S and CD Grubb (2013) Kinetic analysis of Arabidopsis glucosyltransferase UGT74B1 illustrates a general mechanism by which enzymes can escape product inhibition. *Biochem J 450:37-46*

Kovermann M, Dhurvas Chandrasekaran D, Gopalswamy M, Abel S, and J Balbach (2012) Solution structure of the dimerization domain of Aux/IAA transcription factor Ps-IAA4 from pea (*Pisum sativum*). *Protein Data Base* ID: 2M1M; *RCSB* ID: RCSB103094

Abel S (2011) Phosphate sensing in root development. *Curr Opn Plant Biol 14:303-309*

Kopycki J, Schmidt J, Abel S, and CD Grubb (2011) Chemoenzymatic synthesis of diverse thiohydroximates from glucosinolates utilizing enzymes from *Helix pomatia* and *Caldicellulosiruptor saccharolyticus*. *Biotech Lett 33:1039-1046*

Abel S and A Theologis (2010) Odyssey of auxin. *Cold Spring Harbor Perspectives in Biology 2:a004572 (1-13)*

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 Sc. 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 Nürnberger, 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 βαα-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 27:77-484*

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 supressing 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*

Nürnberger 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 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*