Curriculum vitae

CONTACT INFORMATION

Name: Dr. Christian Hettenhausen

Address: Key Laboratory of Economic Plants and Biotechnology
Kunming Institute of Botany, Chinese Academy of Sciences
Lanhei Road 132
650201 Kunming
China

Webpage:

Email: hettenhausen@mail.kib.ac.cn

Phone: +86-871-5229552

Fax: +86-871-5238769

EDUCATION

02.2007-12.2011	**Ph.D. Plant Molecular Biology and Genetics** Thesis: MPK4 is a novel MAPK in *Nicotiana attenuata*'s resistance to herbivore *Manduca sexta* and pathogen *Pseudomonas syringae* pv. *tomato* DC3000	Department of Molecular Ecology (Prof. Ian T. Baldwin), Max Planck Institute for Chemical Ecology, Jena, Germany
10.1997 - 02.2006	**Diploma Biochemistry/Molecular Biology** Thesis: Characterization of a trypsin protease inhibitor-deficient ecotype of *Nicotiana attenuata* collected from Arizona.	Department of Molecular Ecology (Prof. Ian T. Baldwin), Max Planck Institute for Chemical Ecology, Jena, Germany

WORK EXPERIENCE

Since 04.2012 **Postdoc**, Key Laboratory of Economic Plants and Biotechnology Kunming Institute of Botany, Chinese Academy of Sciences, Kunming, China

Research focus:

1) The role of MPK4 in the defense of *Nicotiana attenuata* against surface-deposited bacterial pathogens.

2) Functional study of the mechanisms underlying soybean resistance to insect herbivores.

06.2002 – 06.2004: **Postdoc**, Department of Molecular Ecology, Max Planck Institute for Chemical Ecology, Jena, Germany
Research focus:
Herbivory-induced systemic responses in *Nicotiana attenuata*.

03.2006 – 12.2006: **Research Assistant**, Department of Molecular Ecology, Max Planck Institute for Chemical Ecology, Jena, Germany

06.2002 – 06.2004: **Student Assistant**, Department of Molecular Ecology, Max Planck Institute for Chemical Ecology, Jena, Germany

PUBLICATIONS (* indicates first author with equal contribution)

Book Chapters

Galis, I., Schuman, M., Gase, K., **Hettenhausen, C.**, Hartl, M., Dinh, T. S., Wu, J. Bonaventure, G., Baldwin, I. T. (in press). The use of VIGS technology to study plant-herbivore interactions. A. Becker (Ed.), Virus-induced gene silencing: Methods and protocols.

Review Articles

Yang D.H., **Hettenhausen C.**, Baldwin I.T., Wu J. The multifaceted function of BAK1/SERK3: plant immunity to pathogens and responses to insect herbivores. **Plant Signaling & Behavior** (in press).

Research Papers

Yang, D.H. *****, **Hettenhausen, C. ***, Baldwin, I.T., Wu, J. (2012). *Nicotiana attenuata* Calcium-Dependent Protein Kinases, CDPK4 and CDPK5, Strongly Downregulate Wound- and Herbivory-Induced Jasmonic Acid Accumulations. **Plant Physiology**.

http://www.ncbi.nlm.nih.gov/pubmed/22715110

Hettenhausen, C., Baldwin, I.T., Wu, J (2011). Silencing MPK4 in *Nicotiana attenuata* enhances photosynthesis and seed production but compromises abscisic acid-induced stomatal closure and guard cell-mediated resistance to *Pseudomonas syringae* pv. *tomato* DC3000. **Plant Physiology 158**, 759-776.

http://www.ncbi.nlm.nih.gov/pubmed/22147519

Gilardoni, P. A., **Hettenhausen, C.**, Baldwin, I. T., Bonaventure, G. (2011). The *Nicotiana attenuata* NaLecRK1 gene suppresses the salicylic acid-mediated inhibition of induced defense responses during *Manduca sexta* herbivory. **Plant Cell 23,** 3512-3532.

http://www.ncbi.nlm.nih.gov/pubmed/21926334

Yang, D.H., **Hettenhausen, C.*****, Baldwin, I.T., Wu, J*. BAK1 regulates the accumulation of jasmonic acid and the levels of trypsin proteinase inhibitors in *Nicotiana attenuata*'s responses to herbivory. **Journal of Experimental Botany 62**, 641-52.

http://www.ncbi.nlm.nih.gov/pubmed/20937731

Jassbi, A. R., Gase, K., **Hettenhausen, C.**, Schmidt, A., Baldwin, I. T. (2008). Silencing geranylgeranyl diphosphate synthase in *Nicotiana attenuata* dramatically impairs resistance to tobacco hornworm. Plant Physiology, 146(3), 974-986. [ITB241]

http://www.ncbi.nlm.nih.gov/pubmed/17965175

Wu, J., **Hettenhausen, C.**, Schuman, M.C., and Baldwin, I.T.***** (2008). A comparison of two *Nicotiana attenuata* accessions reveals large differences in *Manduca sexta*-induced signaling events. **Plant Physiology 146**, 927-39.
http://www.ncbi.nlm.nih.gov/pubmed/18218965

Wu, J., **Hettenhausen, C.**, Meldau, S., and Baldwin, I.T.***** (2007). Herbivory rapidly activates MAPK signaling in attacked and unattacked leaf regions but not between leaves of *Nicotiana attenuata*. **Plant Cell 19,** 1096-1122.
http://www.ncbi.nlm.nih.gov/pubmed/17400894

Wu, J., Kang, J.H., **Hettenhausen, C.**, and Baldwin, I.T.***** (2007). Nonsense-mediated mRNA decay (NMD) silences the accumulation of aberrant trypsin proteinase inhibitor mRNA in *Nicotiana attenuata*. **Plant Journal 51,** 693-706.
http://www.ncbi.nlm.nih.gov/pubmed/17587303

Wu, J., **Hettenhausen, C.**, Baldwin, I.T.***** (2006). Evolution of proteinase inhibitor defenses in North American allopolyploid species of *Nicotiana*. **Planta 224,** 750-760.

http://www.ncbi.nlm.nih.gov/pubmed/16534618

TALKS

- From wild tobacco to soybean - defense responses help plants to survive. Kunming Institute of Botany, Chinese Academy of Sciences, July 2012
- MPK4 mediates plants' resistance to herbivores and pathogens. 9th IMPRS Symposium, MPI for Chemical Ecology, Dornburg, DE, Feb 2010
- MPK4 and its function in *N. attenuata*. 6th Biannual IMPRS Symposium, MPI for Chemical Ecology, Dornburg, DE, Mar 2007

POSTER PRESENTATIONS

- Yang D.*, **Hettenhausen, C.**, Wu J., Baldwin I.T. Common signaling partner? BAK1 regulates particular BRI1-independent components of *Nicotiana attenuata*'s response to its specialist herbivore *Manduca sexta*. 5th EPSO Conference "Plants for Life", European Plant Science Organisation, Kittila, FI, Sep 2010
- Wu J.*, **Hettenhausen, C.**, Meldau S., Baldwin I.T. MAPKs Regulate Plants' Responses to Herbivory in *Nicotiana attenuata*. Gordon Research Conference - Evolutionary and Ecological Functional Genomics, Tilton, US, Jul 2009
- **Hettenhausen, C.** Lost in a desert? – make sure you brought a MAP kinase! 5th Plant Science Student Conference, Halle (Saale), DE, Jun 2009
- **Hettenhausen, C.** Silencing MPK4 impairs ABA-mediated stomata closure in *Nicotiana attenuata*. ICE Symposium, MPI for Chemical Ecology, Jena, DE, Jun 2009
- **Hettenhausen, C.** Lost in a desert? – make sure you brought a MAP kinase! 8th IMPRS Symposium, MPI for Chemical Ecology, Dornburg, DE, Mar 2009
- **Hettenhausen, C.** MPK4-a Mediator of Herbivore Defense in *N. attenuata*. 7th IMPRS Symposium, MPI for Chemical Ecology, Dornburg, DE, Feb 2008
- Meldau S.*, **Hettenhausen, C.**, Yang D., Wu J., Baldwin I.T. 5: Roles of MAP kinases and a CDPK in regulating defense responses to herbivory in *Nicotiana attenuata*. SAB Meeting 2008, MPI for Chemical Ecology, Jena, DE, Jan 2008

- **Hettenhausen, C.** MPK4 - a Mediator of Herbivore Defense? IMPRS Evaluation Symposium, MPI for Chemical Ecology, Jena, DE, Sep 2007
- **Hettenhausen, C.**, Wu J., Baldwin I.T. Is MPK4 a Mediator of Herbivore Defense in *Nicotiana attenuata*? International Summerschool - Environmental signaling: Arabidopsis as a model, Utrecht University, Faculty of Biology, Phytopathology, Utrecht, NL, Aug 2007
- Jassbi A.R.*, Zamanizadehnajari S., Kessler D., **Hettenhausen, C.**, Gase K., Baldwin I.T. Anti-feeding diterpene glycosides from *Nicotiana attenuata*. 8th Tetrahedron Symposium (50th Anniversary Meeting), Elsevier, Berlin, DE, Jun 2007
- Jassbi A.R.*, Gase K., **Hettenhausen, C.**, Schmidt A., Baldwin I.T. Silencing prenyl transferase genes in *Nicotiana attenuata* to examine the defensive role of terpenoids against *Manduca sexta* attack. 50 Years of the Phytochemical Society of Europe, Phytochemical Society of Europe, Churchill College, Cambridge, GB, Apr 2007
- **Hettenhausen, C.**, Schuman M., Baldwin I.T., Gase K., Jassbi A.R., Wu J. Another one bites the dust: Herbivore-induced defense strategies in *Nicotiana attenuata*. SAB Meeting 2006, MPI for Chemical Ecology, Jena, DE, Oct 2006
- Meldau S.*, **Hettenhausen, C.**, Wu J., Baldwin I.T. MAPK signaling mediates herbivore- specific responses in *Nicotiana attenuata*. SAB Meeting 2006, MPI for Chemical Ecology, Jena, DE, Oct 2006
- Anssour S., **Hettenhausen, C.**, Schuman M. Variation in JA-controlled herbivore defense systems within *Nicotiana*. ICE Symposium, MPI for Chemical Ecology, Jena, DE, Jun 2006

THESES SUPERVISED

06.2010 – 10.2010. Yvonn Stampnik, bachelor thesis: Silencing BAK1 in *Nicotiana attenuata* impairs the upregulation of herbivory-induced Jasmonic Acid and its conjugate Jasmonic Acid - Isoleucine

08.2010 – 03.2011. Astemir Ozarev, Marcus Spörlein und Felix Zirnsack, seminar paper: Die Organisation des Abwehrsystems der wilden Tabakpflanze gegen natürliche Fraßfeinde

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