

Curriculum Vitae - Martina Beck

• EDUCATION

- 06/2006 – 9/2009 PhD studies
 Dept of Plant Cell Biology, Institute of Cellular and Molecular Botany, University Bonn, DE
 10/12/2009 awarded with PhD in Life Sciences from University Bonn, De
- 10/2000 – 09/2005 Diploma studies in Biology, University Bonn, De
 30/09/2005 awarded with Diploma (Msc) in Biology, Dept of Plant Cell Biology, Institute of Cellular and Molecular Botany, University Bonn, DE
- 08/1996–06/1998 Biological technical assistant training, Rheinische Akademie, Cologne, DE
 06/1998 National certified graduation

• CURRENT POSITION

- from 01.04.2015 - **Tulip LabEx Fellowship** for the project “ Cell to Cell Signalling during the establishment of nitrogen fixing symbiosis “, LIPM, Toulouse, F

• PREVIOUS POSITIONS

- 06/2014-03/2015 *Maternity leave*
- 02/2010- 05/2014 **Post-Doctoral fellow**, Dr. S. Robatzek’s group, The Sainsbury Laboratory Norwich, UK
 Project: Microbe-induced signalling and endocytosis in Arabidopsis
- 06/2006 – 09/2009 **PhD student**, Dr. J.Samaj’s group, Dept of Plant Cell Biology, IZMB, Bonn, DE
 Project: Polarity control and cross-talk between signaling endomembranes and the cytoskeleton in Arabidopsis root hairs.
- 06/ 2007 **PhD internship**, Dr. T. Timmers’ group, LIPM, CNRS, Toulouse, F
 Project: FRET/ FLIM, CLSM on root hairs and multitracking analysis of endosomes
- 10/2005 – 12/ 2005 **Short term Researcher**, Dr. U. Bonas’ group, Institute of Genetics, Halle, DE
 Project: Investigating the effects of Xanthomonas campestris pv. vesicatoria infection on cytoskeleton
- 09/2004-09/2005 **Diploma student**, Dr. D. Menzel’s group, Dept of Plant Cell Biology, IZMB, Bonn, DE
 Project: Characterization of Myosin VIII in plants
- 06/2001–12/2004 **Undergraduate Assistant**, Dr. U. Schlegel’s group, Department of Neurooncology, Neurology, Medical Center Bonn, DE
- 01/2003–02/2003 **Undergraduate Assistant**, Dr. G. Landreth’s group, Department of Neuroscience, Case Western University, Cleveland, Ohio, USA
- 08/1999–05/2001 **Research Assistant**, Dr J. Kraus’group, Department of Neurooncology, Neurology, Medical Center Bonn, DE
- 07/1998–07/1999 **Research Assistant**, Dr. M. Zöller’s group, Department of Tumorprogression and Tumordefense, German Cancer Research Center (DKFZ), Heidelberg, DE

• RESEARCH SKILLS AND METHODS

Cell biology: Live cell imaging of fluorescent protein fusions in plant cells (transient: Protoplast, BY-2, particle bombardment, agro-mediated expression in tobacco leaves; stable: in Arabidopsis and Tobacco root and leaves), confocal microscopy (Point Laser Scan-, Spinning Disc-, High Throughput-microscopes), protein co-localization analysis, GUS and GFP reporter gene analysis in whole tissue, fixation, embedding, sectioning. Whole mount immunolocalization of Arabidopsis roots

Molecular biology: Molecular cloning (DNA extraction, gene cloning, plasmid construction), gene expression study (RNA extraction, Reverse transcription, qRT-PCR, promoter GUS or FP constructs)

Proteomic: Protein extractions, protein fractionation, protein expression, SDS-PAGE and Immunoblotting, 2-D gel

Genetic: Reverse genetics in *Arabidopsis*, T-DNA mutant isolation and characterization, genotypic and phenotypic analysis. *Arabidopsis* plant transformation and tobacco cell suspension culture transformation

Informatic: MS-Office, Adobe Photoshop, Image-J, IMARIS, relevant CLSM imaging and analysis software

Languages: German (native), English (fluent), French (medium level)

- **ATTENDANCE AT COURSES AND WORKSHOPS**

3-5/09/2012	Image analysis for biologists (Nottingham, UK)
23/01/ 2012	VolViewerWorkshop (Norwich, UK);
6/04/ 2011	OMERO in Action (Norwich, UK);
14-23/09/ 2010	FEBS advanced Course: Microspectroscopy (Wageningen, NL);
25-28/05/ 2010	FRET/FLIM workshop (Wageningen, NL)

- **RESEARCH PUBLICATIONS**

Total: 22 publications in peer reviewed journals, 2 book chapters,
Citations > 500
h-index: 9

2014

Beck, M.*, Wyrsh, I., Strutt, J., Wimalasekera, R., Webb, A., Boller, T. and Robatzek, S.* (2014) Expression patterns of FLAGELLIN SENSING 2 map to bacterial entry sites in plant shoots and roots. **J Exp Bot** 65(22):6487-98 * *corresponding authors*

Beck M, Zhou J, Faulkner C, and Robatzek S (2014) High-throughput imaging of plant immune responses, *Methods Mol Biol., Plant-Pathogen Interactions* 1127:67-80, Springer

2013

Spallek T, **Beck M**, Ben Khaled S, Salomon S, Bourdais G, Schellman S., Robatzek S. (2013) ESCRT-I Mediates FLS2 Endosomal Sorting and Plant Immunity. **PLoS Genet** 9(12): e1004035.

Faulkner C., Petutschnig E., Benitez-Alfonso Y, **Beck M.**, Robatzek S., Lipka V., Maule AJ (2013) LYM2 - dependent chitin perception limits molecular flux via plasmodesmata, **PNAS** 28;110(22):9166-70

Du Y, Tejos R, **Beck M**, Himschoot E, Li H, Robatzek S, Vanneste S, Friml J (2013) Salicylic acid interferes with clathrin-mediated endocytic protein trafficking. **PNAS** 7;110 (19):7946-51

Fitzgibbon J, **Beck M**, Zhou J, Faulkner C, Robatzek S, and Oparka K, (2013) A Developmental Framework for Complex Plasmodesmata Formation Revealed by Large-Scale Imaging of the Arabidopsis Leaf Epidermis. **Plant Cell** 25(1):57-70

2012

Beck M, Zhou J, MacLean D and Robatzek S, (2012) Spatio-temporal cellular dynamics of the Arabidopsis flagellin receptor reveal activation status-dependent endosomal sorting **Plant Cell.**;24(10) 4205-19

Beck M, Heard W, Mbengue M and Robatzek S. (2012) The INs and OUTs of pattern recognition receptors at the cell surface **Curr Opin Plant Biol.**;15(4):367-74.

Segonzac C, Nimchuk Z, **Beck M**, Tarr P.T, Robatzek S, Meyerowitz E and Zipfel C (2012) The shoot apical meristem regulatory peptide CLV3 does not activate the immune receptor FLS2. **PlantCell** 24(8):3186-92

Beck M and Robatzek S (2012) Receptor Trafficking in Plants, *in Receptor-like Kinases in Plants, Signaling and Communication in Plants, Volume 13*, 253-274, Springer

2011

Komis G, Illés P, **Beck M**, Šamaj J (2011) Microtubules and mitogen-activated protein kinase signalling. **Curr Opin Plant Biol** 14(6):650-7

Beck M*, Komis G*, Ziemann A, Menzel D and Šamaj J (2011) Mitogen-activated protein kinase 4 is involved in the regulation of mitotic and cytokinetic microtubule transitions in *Arabidopsis thaliana*, **New Phytologist** 189(4):1069-83. * *authors contributed equally*

2010

Malinovsky FG, Brodersen P, Fiil BK, McKinney LV, Thorgrimsen S, **Beck M**, Nielsen HB, Pietra S, Zipfel C, Robatzek S, Petersen M, Hofius D, Mundy J. (2010) Lazarus1, a DUF300 protein, contributes to programmed cell death associated with *Arabidopsis* *acd11* and the hypersensitive response. **PLoS One** 7;5 (9):e12586

Beck M*, Komis G*, Müller J, Menzel D, Samaj J. (2010) *Arabidopsis* homologs of nucleus- and phragmoplast - localized kinase 2 and 3 and mitogen-activated protein kinase 4 are essential for microtubule organization. **Plant Cell** 22(3):755-71. * *authors contributed equally*

Müller J*, **Beck M***, Mettbach U, Komis G, Hause G, Menzel D, Samaj J. (2010) *Arabidopsis* MPK6 is involved in cell division plane control during early root development, and localizes to the pre-prophase band, phragmoplast, trans-Golgi network and plasma membrane. **Plant Journal** 61(2):234-48 * *authors contributed equally*

Ovečka M., Berson T., **Beck M.**, Derksen J., Šamaj J., Baluška F. and Lichtscheidl I.K. (2010) Structural sterols are involved both in the initiation and in the tip growth of root hairs in *Arabidopsis thaliana* **Plant Cell** 22(9):2999-3019

Kriegs B, Jansen M, Hahn K, Peisker H, Samajová O, **Beck M**, Braun S, Ulbrich A, Baluška F, Schulz M (2010) Cyclic monoterpene mediated modulations of *Arabidopsis thaliana* phenotype: Effects on the cytoskeleton and on the expression of selected genes. **Plant Signal Behav** 5(7) 832-8

2009

Zheng M, **Beck M**, Müller J, Chen T, Wang X, Wang F, Wang Q, Wang Y, Baluska F, Logan DC, Samaj J, Lin J (2009) Actin turnover is required for myosin-dependent mitochondrial movements in *Arabidopsis* root hairs. **PLoS One** 4(6):e5961

2008

Hoefer R, Briesen I., Pinot F., **Beck M.**, Schreiber L., Franke R. (2008) The *Arabidopsis* cytochrome P450 CYP86A1 encodes a fatty acid & [omega]-hydroxylase involved in suberin monomer biosynthesis. **J. Exp. Bot.** 59(9):2347-60

2006

Šamaj J, Müller J, **Beck M**, Böhm N, Menzel D (2006) Vesicular trafficking, cytoskeleton and signalling in root hairs and pollen tubes. **Trends in Plant Science** 11: 594-600

2000-2006

Co-authored paper as Research assistant: (Grommes C., *et al*, 2006 **Mol Pharmacol**; KrausJA *et al*, 2001; **J Neurooncol**; Kraus JA *et al*, 2001 **Acta Neuropathol**; Kraus JA *et al*, 2000 **J Neurooncol**.)

• PRESENTATION AT INTERNATIONAL CONFERENCES

Oral presentations:

- 2013: (i) Botanical Meeting, (Tübingen, DE)
 (ii) Invited speaker, Institute seminar, LIPM (Toulouse, F)
 (iii) 1st European Workshop on Peptide Signalling in Plants (Oslo, N),
 2012: (i) JIC Annual Science Meeting (Norwich, UK),
 (ii) SEB Annual Main Meeting (Salzburg, AT)

Posters Presentations:

- 2013: Keystone Symposium: Plant Immunity: Pathways and Translation (Big Sky, USA)
 2012: International Workshop on Image Analysis Methods for Plant Sciences (Nottingham, UK)
 2011: (i) Botanical Meeting (Berlin, DE),
 (ii) Botanical Microscopy (Wageningen, NL)

- 2009: Tri-National Arabidopsis Meeting (Cologne, DE)
 2005: FEBS/ESF advanced Workshop Integrated Approaches in Cytoskeleton Research (Luxembourg)

- **SUPERVISION OF UNDERGRADUATE AND GRADUATE STUDENTS**

- 2006-2009 Supervision of 6 graduate students during their lab internship and Master thesis
 2010-2014 Supervision of 3 undergraduate students during their lab internship (incl 1 year industrial internship), 2 graduate students during their PhD thesis

- **TEACHING ACTIVITIES**

- 06/2012 Organisation and teaching of practical session for **Live Cell Imaging in Cellular defence** during EMBO course: Plant Microbe Interaction, 18-29 June, TSL, Norwich, UK
 2005-2009 Teaching position at University Bonn, DE
 - **Plant cell biology for graduate student** (4 weeks practical course per term): Advanced microscopy course focused on GFP live cell imaging
 - **Marine Biology for graduate student:** (2 weeks practical course including field trip): Cytology and development of marine Algae
 - **Plant Anatomy for undergraduate students** (2 weeks practical course per term): Basic microscopy, Staining and visualization methods, Plant anatomy, Basic Plant Cell Biology

- **FELLOWSHIPS AND AWARDS**

- 12/2014 **AgreenSkills** awarded for “ Cell-to-Cell signalling and communication during the establishment of rhizobial nitrogen-fixing symbionts “ (2ys) Toulouse, France
 12/ 2014 **TULIP LabEX Postdoctoral fellowship** (2ys) , Toulouse, France
 10/2011-09/2013 **Postdoctoral research fellowship** (2ys) by German Research Council (DFG)
 10/2008- 09/2009 **Postgraduate scholarship** (1y) by University Bonn
 09/2010 **FEBS Young researcher travel grant** for FEBS advanced Course: Microspectroscopy
 05/2005 **FEBS Young researcher travel grant** for FEBS/ESF: Integrated Approaches in Cytoskeleton Research