Curriculum Vitae

Dr. Goetz Hensel
Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)
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Birth Date: February 4, 1967

PROFESSIONAL POSITIONS

2016-present	Senior researcher, officer in charge of biological safety and lab manager at the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Plant Reproductive Biology group, permanent position
2015-2016	Senior researcher and lab manager at the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Plant Reproductive Biology group, position partially funded by the DFG in frame of the SPP 'Flowering time control'
2011-2014	Senior researcher and lab manager at the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Plant Reproductive Biology group, position funded by the Federal Ministry of Education and Research (BMBF) in frame of the research project 'BARLEY-fortress – Targeted exploitation of basal defense genes for pathogen resistance in barley'
2010-2011	Senior researcher and lab manager at the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Plant Reproductive Biology group, position funded by the Leibniz Society in frame of the research project "Development of recombinant minichromosomes of barley as vector for complex traits in cereals"
2008-2010	Senior researcher and lab manager at the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Plant Reproductive Biology group, position funded by the Federal Ministry of Education and Research (BMBF) in frame of the research project "GABI POEM - Initial Mechanisms of Pollen Embryogenesis"
2003-2007	Senior researcher and lab manager at the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Plant Reproductive Biology group, position funded by the BMBF in frame of the research project "A GABI network to identify, characterize and optimize novel promoters from monocotyledonous plants for the genetic engineering of fungal resistance."
2000-2002	Postdoc, Institute of Plant Genetics and Crop Plant Research (IPK), Gene Transfer group, position funded by the BMBF in frame of the research project "Functional analysis of the barley Genome: functional characterization of agronomical relevant genes and their use to improve disease resistance to the genus Fusarium", supervisors: 2000-2001 F. Altpeter, since 2001 J. Kumlehn

EDUCATION

1996-1999	PhD student, Institute of Plant Genetics and Crop Plant Research (IPK), Yeast Genetics group, degree as PhD in Biology, Technical University of Braunschweig, Department of Botany Thesis: The PR-protein CBP20 – Investigations on the induction of synthesis and accumulation as well as the intracellular transport by using *in vitro* cultures of tobacco and yeast.
1989-1994	Engineer for Biotechnology, Technical University of Magdeburg Title of Diploma work: Untersuchung von Probeentnahmesystemen für den Einsatz im Maischprozeß. (Comparison of different sample systems for mash processes.)
1989	High school diploma, Engineer School Koethen
1983-1985	Technician for chemical industry, Jenapharm Company

SKILLS

Cell culture:	Tissue culture and *Agrobacterium*-mediated transformation of barley, triticale, tobacco and wheat, doubled-haploid production of cereals and tobacco, cell penetrating peptides
Computer Experience:	Word, Excel, PowerPoint, Adobe Photoshop, Vector NTI, Clone Manager
Developmental Biology:	Validation of genes involved in senescence, pollen embryogenesis and crop plant domestication
Molecular Biology:	Genome Engineering using TALENs and/or RNA-guided Cas9 nuclease, Northern, Southern and Western blot analysis, ELISA, PCR, RT-PCR, TLC, cloning of large inserts (BACs), cloning by using Gibson assembly or GATEWAY technology, transformation techniques, intracellular localization and transport studies by using reporter genes like *gfp*
Molecular Farming:	Development of endosperm-specific expression system, expression of vaccines and recombinant antibodies in barley grains
Physiology:	Iron uptake und distribution studies in transgenic wheat
Phytopathology:	Interaction of plants with viral and fungal pathogens

MEASURES OF ESTEEM

Since 2011	Member of the editorial board of ISRN Botany
Since 2015	Member of the management board of the German Section of International Association for Plant Biotechnology (IAPB)
Since 2016	Member of the editorial board of Journal of Plant Science and Phytopathology
Since 2016	Member of the editorial board of BMC Plant Biology
2012–2016	Member of the IPK Postdoc Board

MEMBERSHIPS

- Member of the German Botanical Society (DBG)
- Member of the European Plant Science Organization (EPSO)
- Member of the German Section of International Association for Plant Biotechnology (IAPB)
- Member of the International Society for Molecular Plant-Microbe Interactions (IS-MPMI)

REVIEWER

- African Journal of Biotechnology
- African Journal of Plant Science
- Biotechnology Journal
- BMC Plant Biology
- Czech Science Foundation
- Expert Review of Vaccines
- Frontiers in Plant Science, Section Plant Biotechnology
- Frontiers in Plant Science, Section Plant Genetics and Genomics
- ISRN Botany
- Journal of Genetic Engineering and Biotechnology
- Journal of Integrative Plant Biology
- Molecular Biology Reports
- Molecular Breeding
- Molecular Plant Pathology
- New Phytologist
- Plant Biology
- Plant Breeding
- Plant Cell Reports
- Plant Cell, Tissue and Organ Culture
- Plant Molecular Biology
- Plant Molecular Biology Reporter
- Plant Physiology
- Proceedings of the National Academy of Sciences
- Scientific Reports
- The Plant Journal
- Transgenic Research

PEER REVIEWED PUBLICATIONS (*first or last author)

2017 Schedel S, S Pencs, **G Hensel**, A Mueller, and J Kumlehn: RNA-guided endonuclease-induced mutagenesis in tobacco followed by efficient genetic fixation in doubled haploid plants. *Frontiers in Plant Science*, 7:1995.

2017 Kucharewicz W, A Distelfeld, W Bilger, M Müller, S Munné-Bosch, **G Hensel**, and Krupinska K: Acceleration of leaf senescence by light is slowed down in transgenic plants deficient in the DNA/RNA binding protein WHIRLY1. *Journal of Experimental Botany*, in press.

2016 Rajaraman J, D Douchkov, A Himmelbach, **G Hensel**, F Stefanato, Gordon A, Ereful N, O Caldararu, A Petrescu, J Kumlehn, L Boyed, and P Schweizer: An LRR/malectin receptor-like kinase mediates resistance to non-adapted and adapted powdery mildew fungi in barley and wheat. *Frontiers in Plant Science*, 7:1836.

2016 Velasco-Arroyo B, M Diaz-Mendoza J Gandullo, P Gonzalez-Melendi, M Estrella Santamaria, J Dominguez-Figueroa, **G Hensel**, M Martinez, J Kumlehn, and I Diaz: HvPap-1 C1A protease actively participates in barley leaf senescence mediated by darkness. *Journal of Experimental Botany*, 67(14): 4297–4310.

2016 Douchkov D, S Lück, **G Hensel**, J Kumlehn, J Rajaraman, A Johrde, MS Doblin, CT Beahan, M Kopischke, R Fuchs, V Lipka, R Niks, V Bulone, MJ Chowdhury, A Little, R Burton, A Bacic, GB Fincher, and P Schweizer: The *CELULLOSE SYNTHASE-like D2* gene mediates penetration resistance to host-adapted and non-host isolates of the powdery mildew fungus. *New Phytologist*, 212(2): 421-433.

2016* Budhagatapalli N, S Schedel, M Gurushidze, S Pencs, S Hiekel, T Rutten, S Kusch, R Morbitzer, T Lahaye, R Panstruga, J Kumlehn, and **G Hensel**: A simple test for the cleavage activity of customized endonucleases in plants. *Plant Methods*, 12:18.

2016 Diaz-Mendoza M, JD Dominguez-Figueroa, B Velasco-Arroyo, I Cambra, P Gonzalez-Melendi, A Lopez-Gonzalvez, A Garcia, **G Hensel**, Jochen Kumlehn, I Diaz, and M Martinez: HvPap-1 C1A protease and HvCPI-2 cystatin contribute to barley grain filling and germination. *Plant Physiology*, 170(4): 2511–2524.

2016 Staroske N, U Conrad, J Kumlehn, **G Hensel**, R Radchuk, A Erban, J Kopka, W Weschke, and H Weber: Increasing abscisic acid levels by immuno-modulation in barley grains induces premature maturation without changing mature grain composition. *Journal of Experimental Botany*, 67(9): 2675-2687.

2016 Marzin M, A Hanemann, S Sharma, **G Hensel**, J Kumlehn, G Schweizer, and MS Röder: Are *PECTIN ESTERASE INHIBITOR* genes involved in mediating resistance to *Rhynchosporium commune* in barley? *PLoS ONE*, 11(3): e0150485.

2016 Jöst M, **G Hensel**, C Kappel, A Druka, A Sicard, U Hohman, S Beier, A Himmelbach, R Waugh, J Kumlehn, N Stein, and M Lenhard: The INDETERMINATE DOMAIN protein BROAD LEAF1 regulates leaf width during primordium outgrowth by balancing the ratio of longitudinal to transverse cell divisions. *Current Biology*, 26(7): 903–909.

2016 Nakamura S, M Pourkheirandish, H Morishige, Y Kubo, M Nakamura, K Ichimura, S Seo, H Kanamori, J Wu, T Ando, **G Hensel**, M Sameri, N Stein, K Sato, T Matsumoto, M Yano, and T Komatsuda: Mitogen-Activated Protein Kinase Kinase 3 regulates grain dormancy in barley. *Current Biology*, 26(6): 775–781.

2016 Weidenbach D, L Esch, C Möller, **G Hensel**, J Kumlehn, C Höfle, R Hückelhoven, and Ulrich Schaffrath: Polarized defence against fungal pathogens mediated by the jacalin-lectin domain of modular *Poaceae*-specific proteins. *Molecular Plant*, 9: 514–527.

2016 Watanabe K, U Breier, S Hoehmann, **G Hensel**, J Kumlehn, I Schubert, and Bernd Reiss: Double-strand break induction allows highly efficient gene replacement in barley. *Journal of Experimental Botany*, 67(5):1433–1445.

2015* **Hensel G**, D Floss, E Arcalis, M Sack, S Melnik, F Altmann, T Rutten, J Kumlehn, E Stoeger, and U Conrad: Transgenic production of an anti HIV antibody in the barley endosperm. *PLoS ONE*, 10(10): e0140476.

2015 Chauhan H, R Boni, R Bucher, B Kuhn, G Buchmann, J Sucher, LL Selter, **G Hensel**, J Kumlehn, L Bilger, T Wicker, SG Krattinger, and B Keller: The wheat resistance gene *Lr34* results in the constitutive induction of multiple defense pathways in transgenic barley. *Plant Journal*, 84:202–215.

2015* Budhagatapalli N, T Rutten, M Gurushidze, J Kumlehn, and **G Hensel**: Targeted modification of gene function exploiting homology-directed repair of TALEN-mediated double strand breaks in barley. *G3 Journal*, 5:1857–1863.

2015 Pourkheirandish M, **G Hensel**, B Kilian, N Senthil, G Chen, M Sameri, P Azhaguvel, S Sakuma, S Dhanagond, R Sharma, M Mascher, A Himmelbach, S Gottwald, S Nair, A Tagiri, F Yukuhiro, Y Nagamura, H Kanamori, T Matsumoto, G Willcox, C Middleton, T Wicker, A Walther, R Waugh, GB

Fincher, N Stein, J Kumlehn, K Sato, and T Komatsuda: Evolution of the grain dispersal system in barley. *Cell*, 162:527–539.

2015 Hiekel S, S Schedel, **G Hensel**, M Gurushidze, N Budhagatapalli, and J Kumlehn: Synthetic endonucleases: Novel tools for the site-directed genetic modification of plants. *Acta Horticulturae*, 1087:71–81.

2015 Hemetsberger C, AN Mueller, C Herrberger, A Matei, **G Hensel**, J Kumlehn, R Sharma, M Thines, R Hückelhoven, and G Doehlemann: The fungal core effector Pep1 is conserved across smuts of dicots and monocots. *New Phytologist,* 206:1116–1126.

2014* Daghma ESD, **G Hensel**, T Rutten, J Kumlehn, and M Melzer: Cellular dynamics during early barley pollen embryogenesis revealed by time-lapse imaging. *Frontiers in Plant Science*, 5:675.

2014 Weidenbach D, M Jansen, RB Franke, S Ulferts, I Jansen, F Fiorani, L Schreiber, W Weissgerber, R Pontzen, **G Hensel**, J Kumlehn, K Pillen, and U Schaffrath: Evolutionary conserved function of a barley and Arabidopsis *3-KETOACYL-CoA SYNTHASE*-gene in providing wax signals for germination of powdery mildew fungi. *Plant Physiology*, 166:1621–1633.

2014* Krupinska K, S Oetke, C Desel, M Mulisch, A Schäfer, J Hollmann, J Kumlehn, and **G Hensel**: WHIRLY1 is a major organizer of chloroplast nucleoids. *Frontiers in Plant Science*, 5:432.

2014 Vu GTH, HX Cao, K Watanabe, **G Hensel**, F Blattner, J Kumlehn, and I Schubert: Repair of site-specific DNA double-strand breaks in barley occurs via diverse pathways, mostly involving the sister chromatid. *Plant Cell*, 26(5):2156–2167.

2014 Seiler C, VT Harshavardhan, PS Reddy, **G Hensel**, J Kumlehn, G Selvaraj, L Eschen-Lippold, K Rajesh, V Korzun, U Wobus, J Lee, and N Sreenivasulu: Abscisic acid flux alterations result in differential abscisic acid signaling responses and impact assimilation efficiency in barley under terminal drought stress. *Plant Physiology*, 164:1677–1696.

2014 Gurushidze M, **G Hensel**, S Hiekel, S Schedel, V Valkov, and J Kumlehn: True-breeding targeted gene knock-out in barley using designer TALE-nuclease in haploid cells. *PLoS ONE*, 9(3):e92046.

2014 Gawroński P, R Ariyadasa, A Himmelbach, N Poursarebani, B Kilian, N Stein, B Steuernagel, **G Hensel**, J Kumlehn, SK Segahl, BS Gill, P Gould, A Hall, T Schnurbusch: Distorted oscillation of delayed fluorescence and temperature-dependent spike development in circadian clock mutant of Einkorn wheat KT3-5. *Genetics*, 196(4):1253–1261.

2014 Yang P, T Lüpken, A Habekuß, **G Hensel**, B Steuernagel, B Kilian, R Ariyadasa, A Himmelbach, J Kumlehn, U Scholz, F Ordon, and N Stein: *PROTEIN DISULFIDE ISOMERASE LIKE 5-1* is a novel susceptibility factor to plant viruses. *Proceedings of the National Academy of Sciences USA*, 111(6):2104–2109.

2014 Yeo FKS, **G Hensel**, T Vozábová, A Martin-Sanz, TC Marcel, J Kumlehn and RE Niks: Golden SusPtrit – a genetically well transformable barley line for studies on the resistance to rust fungi. *Theoretical and Applied Genetics*, 127:325–337.

2013 Malik ZA, **G Hensel**, JA Qureshi, S Mansoor, N Sreenivasulu, J Kumlehn, and NA Saeed: Improved agronomic and physiological performance of cultivar “Punjab 11” derived transgenic wheat under drought stress. *Jokull*, 63(9):136–156.

2013 Corral JM, H Vogel, OM Aliyu, **G Hensel**, T Thiel, J Kumlehn, and T Sharbel: Apomixis-specific DEDDh exonuclease expression in premeiotic ovules of *Boechera*. *Plant Physiology*, 163(4):1660–1672.

2013 Risk JM, LL Selter, H Chauhan, SG Krattinger, J Kumlehn, **G Hensel**, LA Viccars, TM Richardson, G Buesing, A Troller, ES Lagudah, and B Keller: The wheat *Lr34* gene provides resistance against multiple fungal pathogens in barley. *Plant Biotechnology Journal*, 11(7):847–854.

2013 Sakuma S, M Pourkheirandish, T Wicker, **G Hensel**, J Kumlehn, N Stein, H Ichikawa, N Mitsuda, M Ohme-Takagi, A Tagiri, H Kanamori, T Matsumoto, T Koba, and T Komatsuda: Divergence of expression pattern contributed to neofunctionalization of duplicated HD-Zip I transcription factor in barley. *New Phytologist*, 197(3):939–948.

2013 Kapusi E, **G Hensel**, MJ Coronado, S Broeders, C Marthe, I Otto, and J Kumlehn: Elimination of selectable marker genes via segregation of uncoupled T-DNAs in populations of doubled haploid barley. *Plant Molecular Biology*, 81:149–160.

2012* **Hensel G**, S Oleszczuk, DE Daghma, J Zimny, M Melzer, and J Kumlehn: Analysis of T-DNA integration and generative segregation in transgenic winter triticale (x *Triticosecale* Wittmack).*BMC Plant Biology*, 12:171.

2012 Daghma DS, J Kumlehn, **G Hensel**, T Rutten, and M Melzer: Time-lapse imaging of the initiation of pollen embryogenesis in barley (*Hordeum vulgare* L.). *Journal of Experimental Botany*, 63:6017–6021.

2012 Kapusi E, L Ma, CH Teo, **G Hensel**, I Schubert, MF Mette, J Kumlehn, and A Houben: Telomere-mediated truncation of barley chromosomes. *Chromosoma*, 121:181–190.

2011 Teo CH, L Ma, E Kapusi, **G Hensel**, J Kumlehn, I Schubert, A Houben, and MF Mette: Towards construction of engineered minichromosomes in *Arabidopsis thaliana* via telomere-mediated chromosomal truncation. *Plant Journal*, 68:28–39.

2011 Hoefle C, C Huesmann, H Schultheiss, F Börnke, **G Hensel**, J Kumlehn, and R Hückelhoven: A novel barley ROP GTPase ACTIVATING PROTEIN associates with microtubules and regulates entry of the barley powdery mildew fungus into leaf epidermal cells. *Plant Cell*, 23:2422–2439.

2011* **Hensel G**, A Himmelbach, W Chen, DK Douchkov and J Kumlehn: Transgene expression systems in *Triticeae* cereals. *J Plant Physiol*, 168:30–44.

2010 Proels RK, K Oberhollenzer, IP Pathuri, **G Hensel**, J Kumlehn, and R Hückelhoven: RBOHF2 of barley is required for normal development of basal penetration resistance to the parasitic fungus *Blumeria graminis* f.sp. *hordei*. *Mol Plant-Microbe Interact*, 23:1143–1150.

2010 Nowara D, A Gay, C Lacomme, J Shaw, D Douchkov, **G Hensel**, J Kumlehn, and P Schweizer: Host-induced gene silencing in the obligate biotrophic fungal pathogen *Blumeria graminis*. *Plant Cell*, 22:3130–3141.

2010 Melonek J, M Mulisch, C Schmitz-Linneweber, E Grabowski, **G Hensel**, and K Krupinska: Whirly1 in barley chloroplasts associates with intron containing RNAs and rarely co-localizes with nucleoids. *Planta*, 232:471–481.

2010 Himmelbach A, L Luo, U Zierold, L Altschmied, H Maucher, F Beier, D Müller, **G Hensel**, A Heise, A Schützendübel, J Kumlehn and P Schweizer: Promoters of the barley Germin-like *GER4* gene cluster enable strong transgene expression in response to pathogen attack. *Plant Cell*, 22:937–952.

2010 Eichmann R, M Bischof, C Weis, J Shaw, C Lacomme, P Schweizer, D Douchkov, **G Hensel**, J Kumlehn and R Hückelhoven: BAX-INHIBITOR-1 is required for full susceptibility of barley to powdery mildew. *Mol Plant-Microbe Interact*, 23:1217-1227.

2009* Kumlehn J and **G Hensel:** Genetic transformation technology in the *Triticeae*. *Breed Sci*, 59: 553–560.

2009* **Hensel G**, C Kastner, S Oleszczuk, J Riechen, and J Kumlehn: *Agrobacterium*-mediated gene transfer to cereal crop plants: Current protocols for barley, wheat, triticale and maize. *Int J of Plant Genomics*, Article ID 835608, 9 pages, 2009, DOI:10.1155/2009/835608.

2008 Pathuri IP, N Zellerhoff, U Schaffrath, **G Hensel**, J Kumlehn, K-H Kogel, R Eichmann, R Hueckelhoven: Barley constitutively activated ROPs modulate epidermal cell size, defense reactions and interaction with fungal leaf pathogens. *Plant Cell Rep*, 27:1877–1887.

2008* **Hensel G**, V Valkov, J Middlefell-Williams and J Kumlehn: Efficient generation of transgenic barley: the way forward to modulate plant-microbe interactions. *J Plant Physiol*, 165:71–82.

2007 Himmelbach A, U Zierold, **G Hensel**, J Riechen, D Douchkov, P Schweizer and J Kumlehn: A set of modular binary vectors for the transformation of cereals. *Plant Physiol*, 145: 1192–1200.

2007 Goedeke S, **G Hensel**, E Kapusi, M Gahrtz and J Kumlehn: Transgenic barley in fundamental research and biotechnology. *Transgenic Plant J*, 1 (1): 104–117.

2006 Kumlehn J, L Serazetdinova, **G Hensel**, D Becker and H Lörz: Genetic transformation of barley (*Hordeum vulgare* L.) via infection of androgenetic pollen cultures with *Agrobacterium tumefaciens*. *Plant Biotechnol J*, 4: 251–261.

2005* Schultheiss H, **G Hensel**, J Imani, S Broeders, U Sonnewald, K-H Kogel, J Kumlehn, and R Hueckelhoven: Ectopic Expression of Constitutively Activated *RACB* in Barley Enhances Susceptibility to Powdery Mildew and Abiotic Stress. *Plant Physiol*, 139 (1): 353–362.

2005 Coronado M-J, **G Hensel**, S Broeders, I Otto, J Kumlehn: Immature pollen-derived doubled haploid formation in barley cv. Golden Promise as a tool for transgene recombination. *Acta Phys Plantarum*, 27 (4B): 591–599.

2002* **Hensel G**, G Kunze, and I Kunze: The influence of 2,4-dichlorophenoxy-acetic acid on localization of the PR-proteins CBP20 and class I chitinase in tobacco suspension cell cultures. *Plant Sci*, 163: 1099–1106.

1999 Kunze I, **G Hensel**, K Adler, J Bernard, B Neubohn, C Nilsson, R Stoltenburg, SD Kohlwein, and G Kunze: The green fluorescent protein targets secretory proteins to the yeast vacuole. *Biochim Biophys Acta*, 1410: 287–298.

1999* **Hensel G**,G Kunze, and I Kunze: Expression of the tobacco gene *CBP20* in response to developmental stage, wounding, salicylic acid and heavy metals. *Plant Sci*, 148: 165–174.

1997* **Hensel G**, M Brosius, I Maeting, T Wartmann, C Horstmann, G Kunze, and I Kunze: Cloning of the wound-inducible protein CBP20 and expression in suspension cultures of tobacco. *Plant Sci*, 128: 199–206.

BOOK CHAPTERS (*first or last author)

2017 Gurushidze M, S Hiekel, I Otto, **G Hensel**, and J Kumlehn: Site directed mutagenesis in barley by expression of TALE nuclease in embryogenic pollen. In: From mutation to phenotype: practical guidelines for crop improvement. Till B, Jankowicz-Cieslak J, Tai T, Kumlehn J (Eds) Springer: Berlin Heidelberg

2015* Marthe C, J Kumlehn, and **G Hensel**: Barley (*Hordeum vulgare* L.) transformation using immature embryos. In: *Agrobacterium* Protocols, Third Edition. K Wang (Ed.), Humana Press, pp. 71–83.

2014* Kumlehn J, M Gurushidze, and **G Hensel**: Genetic Transformation. In: Biotechnological approaches to barley improvement. J Kumlehn and N Stein (Eds.), (Series: Biotechnology in agriculture and forestry, Vol. 69) Springer, pp. 393–407.

2011* **Hensel G**: Genetic transformation of *Triticeae* cereals for molecular farming. In: Genetic Transformation. M Alvarez (Ed.), InTech, ISBN 978-953-307-364-4.

2010* Kumlehn J, G Zimmermann, C Berger, C Marthe, and **G Hensel**: Characters of transgenic plants and their application in plant production – *Triticeae* cereals. In: Genetic modification of plants – agriculture, horticulture & forestry. Part C: Applications, F Kempken and C Jung (Eds.), Springer, vol. 64; pp 287–306.

2007* **Hensel G**, V Valkov, C Marthe and J Kumlehn: Efficient *Agrobacterium*-mediated transformation of various barley (*Hordeum vulgare* L.) genotypes. In: Biotechnology and Sustainable Agriculture 2006 and Beyond. Z Xu; J Li; Y Xue; W Yang(Eds.), Springer, pp 143–145.

2004* **Hensel G**, and J Kumlehn: Genetic transformation of barley (*Hordeum vulgare* L.) by co-culture of immature embryos with *Agrobacteria*. In: Transgenic Crops of the World - Essential Protocols. IS Curtis (Ed.), Kluwer Academic Publishers, pp 35–43.

2003 Altpeter F, J Xu, Y-D Fang, X Ma, J Schubert, **G Hensel**, H Baeumlein, V Valkov: Molecular Improvement of perennial ryegrass by stable genetic transformation. In: Plant Biotechnology 2002 and Beyond. I Vasil (Ed.), Kluwer Academic Publishers, pp 519–524.

OTHER PUBLICATIONS (*first or last author)

2015* **Hensel G**: Süßkartoffel: Ein Beispiel für eine natürliche, transgene Feldfrucht. *Biologie in unserer Zeit*,45(6): 55.

2014* **Hensel G**, and J Kumlehn: Domestikation im Zeitraffer: Wiederherstellung der Fruchtbarkeit von Seitenährchen der zweizeiligen Gerste durch Abregulierung des *Vrs1* Gens. *Biologie in unserer Zeit*, 44(1): 11–12.

2013* Junker A, A Matros, R Radchuk, M Nagel, F Ceballos, M Kuhlmann, D Nowara, and **G Hensel**: First BARLOMICS Summer School 2013 - IPK PostDocs organize lectures and tutorials on methods for barl(ey)-omics. *IPK Journal*, 22: 18-19.

2013* **Hensel G**: Rezension: Gentechnik – Möglichkeiten und Grenzen. Kritik der reinen Vernunft?*Laborjournal*,10/2013: ….

PATENTS

2009 Schweizer P, **G Hensel**, A Gay, J Kumlehn. (Inventors): WO 2009/112270 'Method for creating broad-spectrum resistance to fungi in transgenic plants'

GRANTS

2007 IPK ideas competition (1 PhD student for 1 year)

TEACHING

2015 2nd*BARLOMICS* Summer School, lecture and practical course, September 14–17

2013 1st*BARLOMICS* Summer School, lecture and practical course, September 9–12

2012 Anhalt University of Applied Sciences, course 'Trends in Biotechnology', WS, 2 lectures

LECTURES

2016 **Hensel G**: Homology-directed genome editing with customized endonucleases in barley and tobacco. International Powdery Mildew Symposium, July 16, Portland/USA

2016 **Hensel G**: Allele mining in wild barley: finding new exotic genes controlling flowering time in the barley nested association mapping (NAM) population HEB-25. Plant Biology Europe EPSO / FESPB Congress, June 26–30, Prague/Czech Republic

2016 **Hensel G:** Targeted modification of gene function via homology-directed genome editing in barley. Christian Albrechts University, February 8, Kiel/Germany

2015 **Hensel G**: Targeted modification of gene function via homology-directed genome editing in barley. IPMB Congress, October 25–30, Iguazu/Brazil

2015 **Hensel G**: Targeted modification of gene function via homology-directed genome editing in barley. Advances in Plant Genomics – Online Event, October 21

2015 **Hensel G**: Targeted modification of gene function via homology-directed genome editing in barley. 2nd *BARLOMICS* Summer School, September 14–17, Gatersleben/Germany

2015 **Hensel G**, M Pourkheirandish, T Komatsuda, and J Kumlehn: Functional validation of major barley domestication genes by transgenic complementation: deletions in *Btr1* and *Btr2* independently caused the non-brittle rachis. Botanikertagung, August 30–September 3, Freising/Germany

2015 **Hensel G**: Gezielte Veränderung von Genfunktionalität mittels Homologie-abhängiger Genom-Editierung bei Gerste. Workshop Molecular Breeding, Society of Plant Biotechnology, May11–12, Einbeck/Germany

2014 **Hensel G**: Genetic engineering of cereals – basic methods and new applications by designer nuclease-mediated gene targeting. Department of Molecular Biology, Palacký University, November 18, Olomouc/Czech Republic

2014 **Hensel G**, S Sakuma, M Pourkheirandish, N Stein, T Komatsuda, and J Kumlehn: Restoration of lateral spikelet fertility in two-rowed barley by RNA-interference of *Vrs1*. International Association of Plant Biotechnology Congress, August 10-15, Melbourne/Australia

2014 Gurushidze M, **G Hensel**, S Hiekel, S Schedel, V Valkov, and J Kumlehn: True-breeding targeted gene knock-out in barley using designer TALE-nuclease in haploid cells. International Association of Plant Biotechnology Congress, August 10-15, Melbourne/Australia

2013 **Hensel G**: Genetic engineering of cereals – basic methods and new applications by designer nuclease-mediated gene targeting. Biozentrum Kleinflottbeck, November 6, Hamburg/Germany

2013 Gurushidze M, **G Hensel**, S Hiekel, S Schedel, V Valkov, and J Kumlehn: Designerendonuclease-mediated gene targeting in barley. Deutsche Botanikertagung, September 30–October 4, Tübingen/Germany

2013 **Hensel G**, S Sakuma, M Pourkheirandish, N Stein, T Komatsuda, and J Kumlehn: Restoration of lateral spikelet fertility in two-rowed barley by RNA-interference of *Vrs1*. Deutsche Botanikertagung, September 30–October 4, Tübingen/Germany

2013 **Hensel G**: Transgenic barley in applied research and biotechnology. AgriGenomics World Congress, September 24–25, Norwich/UK

2013 **Hensel G**: Expression systems for the production of pharmaceutical or technical proteins in barley. 1st *BARLOMICS* Summer School, September 9–12, Gatersleben/Germany

2013 **Hensel G**: TALE-nuclease-mediated gene targeting in barley. 3rd International Powdery Mildew Workshop, August 29–30, Copenhagen/Denmark

2012 **Hensel G**: Utilization of different methods to decipher pathways and genes involved in the barley – powdery mildew interaction. AgriGenomics Congress, September 4–5, Frankfurt a.M./Germany

2012 **Hensel G**, S Goedeke, A Bruchmueller, C Bollmann, C Marthe, S Broeders, T Rutten, and J Kumlehn: Expression systems for the production of pharmaceutical or technical proteins in barley. BIT's 5th Annual World Congress of Industrial Biotechnology, April 25–28, Xi'an/China

2012 **Hensel G**, C Berger, S Bieri, C Bollmann, A Bruchmüller, D Douchkov, S Friedel, S Goedeke, E Grützemann, M Gurushidze, A Himmelbach, S Lück, C Marthe, A Müller, I Otto, J Riechen, P Schweizer and J Kumlehn: Genetic engineering of barley – methods and applications. BIT's 3rd World DNA and Genome Day 2012, April 25–28, Xi'an/China

2011 **Hensel G**: Genetic engineering of barley – methods and applications. Meeting Centromeres and Artificial Chromosomes, October 31–November 3, Gatersleben/Germany

2011 **Hensel G**: Expressionssysteme für die Herstellung pharmazeutisch oder technisch relevanter Proteine in Gerste. Workshop Gentechnik, Gesellschaft für Pflanzenbiotechnologie, August 22–23, Quedlinburg/Germany

2011 **Hensel G**, A Himmelbach, D Nowara, C Kastner, J Riechen, D Douchkov, P Schweizer J Kumlehn: A toolbox for the study of plant-pathogen interactions in cereals. AgriGenomics World Congress, June 30–July 1, Hamburg/Germany

2011 **Hensel G**, C Berger, S Bieri, C Bollmann, A Bruchmüller, D Douchkov, S Friedel, S Goedeke, E Grützemann, M Gurushidze, A Himmelbach, S Lück, C Marthe, A Müller, I Otto, J Riechen, P Schweizer and J Kumlehn: Recent advances in genetic transformation of *Triticeae* cereals. Plant Transformation Technologies II, February 19–22, Vienna/Austria

2010 **Hensel G**, D Nowara, G Zimmermann, A Gay, J Kumlehn, and P Schweizer: Resistenzerhöhung bei Gerste und Weizen mittels pflanzlicher Expression von RNAi-Konstrukten mit konservierten Sequenzen pathogener Pilze. Tagung Gesellschaft für Pflanzenbiotechnologie, September 13–15, Hannover/Germany

2009 **Hensel G**: Genetic engineering of barley – methods and applications. BioConference Live, November 17–19

2009 **Hensel G**, D Nowara, G Zimmermann, A Gay, J Kumlehn and P Schweizer: Plant-expressed RNAi constructs to induce knock-down of fungal genes. AgriGenomics World Congress, July 2–3, London/England

2009 **Hensel G**: Development of experimental tools for the investigation of the barley-powdery mildew pathosystem. Annual Conference of the Association for General and Applied Microbiology (VAAM), March 8–11, Bochum/Germany

2008 Gay A, G Zimmermann, D Nowara, J Kumlehn, P Schweizer and **G Hensel**: Triple RNAi-constructs for broad-range resistance against fungal leaf diseases. 9th International Congress of Plant Pathology, August 24–29, Torino/Italy

2007 **Hensel G**, C Marthe, A Kusserow, A Himmelbach, N Borisjuk, S Goedeke, E Kapusi, I Otto, C Kaydamov, S Broeders, T Czauderna, N Stein, I Saalbach, P Schweizer and J Kumlehn: Transgenic barley in applied research and biotechnology. Workshop AK Gentechnik, July 12–13, Neustadt/Weinstraße/Germany

2003 **Hensel G**, V Valkov, C Marthe and J Kumlehn: Efficient *Agrobacterium*-mediated transformation of various barley (*Hordeum vulgare* L.) genotypes. 11th IAPTC&B Congress, August 13–18, Beijing/China

2003 **Hensel G**: *Agrobacterium*-mediated transformation of barley and its applications. Scottish Crop Research Institute, Mai 9, Invergowrie/UK

2001 **Hensel G**, G Koch, UW Stephan, and F Altpeter: Ectopic expression of*NAS-hor1* in transgenic wheat (*Triticum aestivum* L.). Symposium Pflanzlicher Eisenstoffwechsel, Berlin/Germany

AWARDS

2016 Schedel S, S Pencs, **G Hensel**, M Gurushidze, S Hiekel, R Karimi-Ashtiyani, T Ishii, M Nießen, K Schmidt, A Houben and J Kumlehn: Establishment of genome engineering in tobacco aiming to develop novel haploid technology. (Travel Award) Annual Conference of the German Society of Plant Biotechnology e.V., May 2–4, Gatersleben/Germany

2013 Schedel S, M Gurushidze, S Hiekel, **G Hensel**, S Pencs, R Karimi, A Houben, and J Kumlehn: Uni-parental genome elimination in tobacco via modification of the centromere-specific histone CENH3. (Best poster award) 9th Plant Science Student Conference, May 28-31, Halle S./Germany

2012 Sakuma S, M Pourkheirandish, T Wicker, **G Hensel**, J Kumlehn, N Stein, H Ichikawa, N Mitsuda, M Ohme-Takagi, A Tagiri, H Kanamori, T Matsumoto, T Koba, T Komatsuda: Divergence of expression pattern contributed to neofunctionalization of duplicated HD-Zip I transcription factor in barley. (Best oral presentation) Award of the Japanese Society of Breeding

2012 Gurushidze M, R Karimi, S Pencs, S Hiekel, **G Hensel**, K Schmidt, N Stein, A Houben, and J Kumlehn: Novel haploid technology based on uniparental genome elimination. (Best poster award) PLANT 2030 Status Seminar, March 6–8 Potsdam/Germany

2009 Harshavardhan VT, C Seiler, **G Hensel**, J Kumlehn, U Wobus, N Sreenivasulu: A transgenic strategy for improved seed filling under drought stress altering the ABA metabolism in barley. (Best poster award) 9th GABI Status Seminar, March 3–5, Potsdam/Germany

2008 Kastner C, **G Hensel**, M Gahrtz & J Kumlehn: *Agrobacterium*-mediated transformation of maize. (2nd best conference poster) Plant Science Student Conference, July 1–4, Gatersleben/Germany

2007 Himmelbach A, D Müller, **G Hensel**, L Liu, J Kumlehn and P Schweizer: Isolation and characterization of pathogen-regulated promoters in barley. (Best poster award) 7. GABI Status Seminar, March 6–8, Potsdam/Germany