

IS-MPMI

Reporter

International Society for
Molecular Plant-Microbe Interactions

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11th International Congress on Molecular Plant-Microbe Interactions



IS-MPMI REPORTER DEADLINE

Deadline for submitting items for the next issue is November 24, 2003.

Submission of materials as electronic files, either on disk or as e-mail attachments, will speed processing. Please submit black-and-white or color photos generated from negatives. If your image was created digitally, please submit a laser print of the image and a disk containing the electronic graphics file (.tif and .eps formats are preferred).

For more information on submitting electronic images contact Joel Berg at jberg@scisoc.org.

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More than 800 scientists from around the world gathered in St. Petersburg July 18-26, 2003 to celebrate its 300th birthday and to share their latest scientific results at the 11th IS-MPMI Congress. The venue was the grand Hotel Pribaltiskaya on the shores of the Baltic Sea. The audiovisual arrangements were flawless. The cultural program was superb, including a private showing of Swan Lake at the Mariinsky Theater, an excursion to the extraordinary art collection of the Hermitage, boat rides on the Neva River, and a final social dinner featuring folk dancers and a balalaika band. The midnight sun contributed a spectacular backdrop.

On behalf of the Society and all plant-microbe scientists, we thank the indefatigable organizing committee, led by Igor Tikhonovich of the All-Russia Research Institute for Agricultural Microbiology, St. Petersburg. Many thanks are also due to the agencies and private companies, including UNESCO, for their sponsorship and financial support. The American Society for Microbiology paid the registration fees for 200 Russian participants. Balt Union, the designated tour facilitator, did a great job arranging excursions.

11th International Congress on Molecular Plant-Microbe Interactions



Poster Awards at the XI IC-MPMI

The presentation of many excellent posters by graduate students and postdoctoral associates made the awards decisions particularly difficult this year for the IS-MPMI Advisory Committee. There were three third prizes, two second prizes, and one first prize.

Third place prizes went to:

E. E. Andronov, M. I. Roumiantseva, Terework, K. Lindström, N. I. Dzyubenko, O. P. Onishchuk, O. N. Kurchak, and B. V. Simarov (All-Russia Institute for Agricultural Microbiology, St. Petersburg, and the University of Helsinki, Department of Applied Chemistry) for “Host plant effects on the diversity of *Sinorhizobium meliloti* and *Rhizobium galegae* populations.”

J. Staal, M. Kaliff, and C. Dixelius (Department of Plant Biology, Uppsala, Sweden) for “Defense responses in *Arabidopsis* to *Leptospaeria maculans*.”

B. Ben Amor, S. Shaw, G. Olroyd, F. Malliet, R. Penmetsa, D. Cook, S. Long, J. Dénarié, and C. Gough (LBM RPM, France, Stanford University, U.S.A., UC Davis, U.S.A., and John Innes Centre, U.K.) for “The NFP locus of *Medicago*

truncatula controls an early step of Nod factor signal transduction.”

Second place prizes went to:

M. M. Saad, H. Kobayashi, C. Marie, W. I. Broughton, and W. J. Deakin (LBMPs, University of Geneva, Switzerland) for “Identification of new proteins secreted by the type III secretion system of *Rhizobium* sp. NGR234.”

B. Schroeder, B. L. House, M. M. Mortimer, S. C. Maloney, K. Warren, S. N. Yurgel, and M. L. Kahn (Institute for Biological Chemistry, Washington State University, Pullman, U.S.A.) for “Genetic manipulation of the *Sinorhizobium meliloti* 1021 genome.”

The first prize went to:

W. Ai-Jiuan, M. Durrant, R. W. Michelmore, and J. P. Rathjen (Sainsbury Lab, U.K., and the Department of Vegetable Crops, UC Davis, U.S.A.) for “Negative regulation of tomato Pto by a patch of surface-exposed residues.”

Congratulations, everybody! Enjoy your prizes.

Calendar of Events

REDBIO Meeting of the Cooperation Network on Plant Biotechnology in Latin America

June 21-25, 2004 • Punta Cana, Dominican Republic

The REDBIO Meeting of the Cooperation Network on Plant Biotechnology in Latin America and the Caribbean (REDBIO/FAO) is the largest of its kind in the region in the field of Agricultural Biotechnology. REDBIO/FAO organizes this event every three years in conjunction with national counterparts. REDBIO 2004 is expected to gather approximately 800 biotechnology laboratories, hundreds of universities, and thousands of scientists from more than 40 countries and five continents.

Biotechnology is currently experiencing a very strong surge in Latin America and the Caribbean, and the timeliness and scope of REDBIO 2004 give it a unique position for those wishing to encounter significant scientific and business opportunities in the region. REDBIO 2004, as part of the framework of the REDBIO/FAO network, is an ideal forum for the pursuit of collaborative efforts in hopes of maximizing the access and the sharing of benefits derived from biotechnology.

Main thematic areas of REDBIO 2004 include Nutrition Genomics, Abiotic/Biotic Stress, Molecular Farming, Exploring Biodiversity, Opportunities for Agriculture Competitiveness, Bio-Business and Information, Public Perception, and Regulatory Framework as regional capacity building factors. Furthermore, crop-specific workshops will be developed to spotlight strategic agricultural crops and/or areas of scientific importance. Also, a new feature to be found at REDBIO 2004 will be the BIO-SHOW, an exhibition designed to promote biotechnology as a platform for business in the region. The BIO-SHOW will provide a space where biotech companies can network and link up with regional and extra-regional counterparts for business, science, or other collaborative pursuits.

For information, see: <http://www.redbio.org/> and <http://www.redbio.org/rdominicana/redbio2004rd/welcome.htm>, or contact Dr. Rufino Perez-Brennan, president of the organizing committee at redbio2004@redbio.org.

The 4th International Rothamsted BioMarket BioProducts from Plants and Microbes

November 5-6, 2003 • Harpenden, UK

Go to <http://www.biomarket.rothamsted.ac.uk/programme/programme.php> for this November's Conference Program at BioMarket 2003, our fourth annual international networking event for all those involved in commercializing added-value plant and microbial products with agri-food, health, industrial, and other applications. Activities include delegate presentations, one-to-one delegate partnering meetings and, new for 2003, an academic-industry interface zone. For further information, contact: Amanda King, Rothamsted Research, Harpenden, AL5 2JQ, United Kingdom. Tel: +44 (0)1582 763133 x 2840/2842; E-mail: biomarket@bbsrc.ac.uk. Rothamsted Research is a company limited by guarantee, registered in England under the registration number 2393175 and not-for-profit charity number 802038.

IS-MPMI Reporter gets a new editor

Thomas Baum has agreed to take over the job of editor-in-chief of the *IS-MPMI Reporter* effective January 1, 2004. Thomas is a molecular nematologist in the Department of Plant Pathology at Iowa State University. He can be contacted at tbaum@iastate.edu. On behalf of IS-MPMI, thank you, Thomas, for taking on this important position. Good luck!

News from the USDA-ARS Dale Bumpers National Rice Research Center

The Molecular Plant Pathology Program at the USDA-ARS Dale Bumpers National Rice Research Center (DB NRRC), led by Dr. Yulin Jia (yjia@spa.ars.usda.gov), welcomes three new employees:

Dr. Eugenia Winston joined DB NRRC in June 2003, to work on the molecular mechanisms of rice blast disease resistance. Dr. Winston completed her Ph.D. under Dr. Carole Cramer at Virginia Polytechnic Institute and State University in May 2003. She is currently working on understanding the coevolution of a plant resistance gene and the pathogen avirulence gene.

Hui Lin was an Adair Summer Intern from the Department of Plant Pathology of the University of Arkansas. Hui Lin received her B.S. degree in Biology from University of the Central Arkansas. She was involved in analyzing a rice lesion mimic mutant for understanding rice Pi-ta gene-mediated signal transduction pathways.

Andrew Gibbons, a graduate of Stuttgart High School, was an ARS summer trainee. He worked on identification of the rice blast resistance gene by PCR-based molecular marker analysis. He was recently admitted into Hendrix College on a Minister's Dependent Scholarship.

Three (3) Postdoctoral/Visiting Scientist Positions in Maize Signal Transduction Research

Pioneer Hi-Bred International, Inc. is the world leader in the discovery, development, and delivery of elite crop genetics, headquartered in Johnston, Iowa. We are seeking Postdoctoral Research Fellows/Visiting Scientists for a multi-disciplinary program aimed at elucidating signaling pathways controlling key traits, including kernel development, disease resistance and plant architecture in maize. Candidates with research records and hands-on experience in areas of signal transduction, including protein-protein interaction, subcellular localization of proteins using fluorescent tags, and cloning technology are encouraged to apply. A Ph.D. in plant molecular biology, biochemistry or related area is required. The Program has significant internal support and technological infrastructure in an interactive research environment. The program has an external scientific advisory board consisting of: Nam-Hai Chua (Rockefeller University), Jeff Dangl (University of North Carolina), Nick Harberd (John Innes Center), Ken Neet (Chicago Medical School), and Natasha Raikhel (UC Riverside). For information on individual positions, see below or visit www.pioneer.com for more complete descriptions.

Biochemist/Molecular Biologist - Job Code RES/QP48/WIS - Educational Qualifications Desired: Ph.D. in plant molecular biology, biochemistry, or related area. Position Description: Molecular Biologist to study the interaction of different hormone signal transduction pathways on vegetative and reproductive growth patterns in maize, using molecular and cytochemical markers. Experience in microscopy, plant or animal molecular biology, use of expression markers, and signal transduction pathway dissection would be an asset. Relevant references for this project: Peng, J. et al. (1999) *Nature* 400:256-261; Gubler, F. et al. (2002) *Plant Physiology* 129:191-200; Chandler, P. et al. (2002) *Plant Physiology* 129:180-190; Hadden, P. (2002). *Trends in Genetics* 19:5-9; Fu, X. and Harberd, N. (2003). *Nature* 421:740-743; Fu, X. et al. (2002). *Plant Cell* 14:3191-3200; Zentella, R. et al. 2002. *Plant Cell* 14:2289-2301.

Protein Biochemist/Molecular Biologist - Job Code RES/QP49/WIS - Educational Qualifications Desired: Ph.D. in plant molecular biology, biochemistry, or related area. Position Description: Protein Biochemist/Molecular Biologist to study the signaling pathways leading to disease resistance response in maize. The successful candidate will characterize early events during response to *R*-gene activation in maize, using biochemical and molecular tools. Experience in protein-protein interaction cloning, signal transduction pathway dissection, and plant molecular biology would be an asset. Relevant references for this project: Bogdanove, A. (2002). *Plant Molecular Biology* 50:989; Mackey, D., et al. (2003). *Cell* 108:743; Jia, Y., et al. (2000). *EMBO Journal* 19(15):4004-4014.

Cell Biologist/Molecular Biologist - Job Code RES/QP51/WIS - Educational Qualifications Desired: Ph.D. in plant molecular biology, biochemistry or related area. Position Description: Cell Biologist/Molecular Biologist to study the subcellular location and interaction of newly isolated members of the signal transduction pathway regulating aleurone cell fate

specification in maize endosperm. Experience with fluorescence-tagged proteins and different forms of microscopy is required. Experience with confocal microscopy would be an asset. Relevant references for this project: Olsen, O.-A. (2001). *Annu. Rev. Plant Physiol.; Plant Mol. Biol.* 52, 233-267; Lid, S. et al. (2002). *PNAS* 99, 5460-5465; Shen, B. et al. (2003). *PNAS* 100, 6552-6557; Wang, C. et al., *J. Biol. Chem.*: Online M300745200. You must reference the relevant Job Code(s) above in order to be considered. Please send a resume/cover letter to: Employment Services, Pioneer Hi-Bred International, P.O. Box 14454, Des Moines, IA 50306-3454, or E-mail: apply@pioneerjobs.com. EOE.

Postdoctoral Position in Molecular Plant Nematode Interaction Research

One postdoctoral position is available starting July 2003 to conduct molecular studies of the interactions between Heterodera cyst nematodes and their host plants. We have at our disposal nematode parasitism proteins as well as plant (soybean and Arabidopsis) genes that change expression following cyst nematode infection. The successful candidate will conduct research to explore the functions of nematode and plant proteins in allowing successful parasitism using a variety of molecular biology and reverse genetics approaches. These approaches will include transgenic plant technologies, RNAi, in situ immunodetection, as well as biochemical methodologies. Candidates must have excellent knowledge of molecular biology tools and should demonstrate an interest in plant-microbe interactions. Prior nematology experience is not a prerequisite. Please send a hard copy of your application containing i) cover letter, ii) CV, iii) list of publications and reprints, and iv) list of contact addresses for three reference persons to Dr. Thomas J. Baum, Iowa State University, Department of Plant Pathology, 351 Bessey Hall, Ames, IA 50011 USA. Additional information can be obtained at <http://www.baumlab.org>.

Postdoctoral Scientist

University of Wisconsin-Madison. A postdoctoral position is available to study the molecular basis of pathogen recognition and defense activation in plants. We are examining NB-LRR *R* gene products, R-like transmembrane LRR-kinases, the pathogen-derived ligands that elicit defenses, and the proteins with which these *R* gene products and pathogen ligands interact. We work primarily with Arabidopsis but also with Brassica and soybean. Long-term goals are to understand structure-function relationships that govern plant defense activation, and generation of genes that encode novel pathogen recognition capacity. One position is available in late Summer 2003; an additional position may be available in the next year. Our laboratory is part of a large and very dynamic biological sciences research community at UW-Madison, and Madison is a great place to live! Please supply a detailed CV, names of three references (including phone, address, and E-mail information), and a brief description of your present work, timetable for taking a new position, and reasons for applying. Send to: Andrew Bent, Department of Plant Pathology, University of Wisconsin-Madison, Madison, WI 53706; +1.608.265.3034 (voice); <http://www.plantpath.wisc.edu/fac/afb.htm>; E-mail: afb@plantpath.wisc.edu.

Postdoctoral Research Associate

The USDA, Agricultural Research Service, Root Disease and Biological Control Research Unit in Pullman, WA, is seeking a Postdoctoral Research Associate (Research Plant Pathologist/Microbiologist/Molecular Biologist). Ph.D. is required. Salary is commensurate with experience (\$46,469 - \$72,400 per annum), plus benefits. There are some citizenship restrictions. USDA is currently unable to sponsor H-1B or TN visas. The incumbent will investigate rhizosphere ecology and biological control of cereal root diseases by fluorescent *Pseudomonas* spp., focusing on genes involved in microbial competitiveness, rhizosphere fitness, and interactions with the host plant and with fungal root pathogens. Skills in microbiological and molecular genetic techniques and knowledge of bioinformatic approaches to gene identifi-

cation, comparative genomics, and data management and analysis are required. Knowledge of plant-microbe interactions is highly desirable. Refer to www.ars.usda.gov for the full text announcement (RA-03-022H) and for complete application instructions. Send application materials and references to Dr. Linda Thomashow, USDA/ARS, P.O. Box 646430, Washington State University, Pullman, WA 99164-6430 or E-mail thomasho@mail.wsu.edu. USDA/ARS is an equal opportunity provider and employer.

Postdoctoral Opportunity

Postdoctoral position to study the mechanism of attachment of pathogenic *E. coli* to plant surfaces. Experience in molecular biology or bacterial genetics desirable. Available September 1, 2003. Contact ann_matthysse@unc.edu.

Welcome New Members

The following members joined IS-MPMI between March 1, 2003 and August 31, 2003. Please join us in welcoming them to the Society!

Miles R. Armstrong

Scottish Crop Research Inst,
Dundee
Tayside, UNITED KINGDOM

Thomas J. Baum

Iowa State Univ, Ames IA, U.S.A.

Paul R. J. Birch

Scottish Crop Research Inst
Dundee, UNITED KINGDOM

Augusta Benine Bonnema

Wageningen Agricultural Univ
Wageningen, NETHERLANDS

Constance W. Brown

Howard Univ, Washington DC,
U.S.A.

Darby G. Brown

Univ of Wisconsin, Madison WI,
U.S.A.

Claude Bruand

CNRS INRA,
Castanet Tolosan, FRANCE

Min-Wen Cheng

Academia Sinica
Taipei, TAIWAN REP OF CHINA

Alfredo Morales Cravador

Univ De Algarve, Faro
Algarve, PORTUGAL

Ian C. Dodd

Lancaster Univ
Lancaster, UNITED KINGDOM

Catherine Dogimont

INRA, Montfavet, FRANCE

Sharon L. Doty

Univ of Washington, Seattle WA,
U.S.A.

Sophia K. H. Ekengren

Boyce Thompson Inst
Ithaca NY, U.S.A.

Lauber Emmanuelle

CNRS INRA, Castanet Tolosan,
FRANCE

Amit Gal-On

ARO The Volcani Center
Bet Dagan, ISRAEL

Stephane Genin

CNRS INRA, Castanet
Tolosan, FRANCE

Saskia A. Hogenhout

Ohio State Univ, Wooster OH,
U.S.A.

Bridget V. Hogg

Univ Paul Sabatier (UMR CNRS)
Toulouse, FRANCE

Xiang Huang

BASF Corp
Res Triangle Park NC, U.S.A.

Jonathan Jones

John Innes Centre, Colney Lane
Norwich, UNITED KINGDOM

Kathryn M. Jones

Cambridge MA, U.S.A.

Mathieu Joosten

Wageningen Agricultural Univ
Wageningen, NETHERLANDS

Veronique Lefebvre

INRA, Montfavet, FRANCE

Yu-Zu Lin

Academia Sinica
Taipei, TAIWAN REP OF CHINA

Steven E. Lindow

Univ of California, Berkeley CA,
U.S.A.

Yoshinori Matsuda

Kinki Univ, Nara, JAPAN

Arlat Matthieu

CNRS INRA
Castanet Tolosan, FRANCE

Dmitri V. Mavrodi

Washington State Univ
Pullman WA, U.S.A.

Olga V. Mavrodi

Washington State Univ
Pullman WA, U.S.A.

Eliane Meilhoc

INSA CNRS INRA
Castanet Tolosan, FRANCE

Matthew A. Metz

USAID, Washington DC, U.S.A.

Richard W. Michelmore

Univ of California, Davis CA,
U.S.A.

Benoit Moury

INRA, Montfavet Cedex, FRANCE

Yaacov Okon

Hebrew Univ of Jerusalem
Rehovot, ISRAEL

Maria Sanchez-Contreras

John Innes Centre, Norwich
Norfolk, UNITED KINGDOM

Marianne Sela

De Ruyter Zonen Seeds
Bergschenhoek, NETHERLANDS

Jurriaan Ton

Univ of Neuchatel
Neuchatel, SWITZERLAND

Ian K. Toth

Scottish Crop Research Inst
Dundee, UNITED KINGDOM

Toshiki Uchiumi

Kagoshima Univ, Kagoshima,
JAPAN

Paola Veronese

Purdue Univ, West Lafayette IN,
U.S.A.

Julia A. Vorholt

INRA, Castanet Tolosan, FRANCE

Jack Vossen

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Amsterdam, NETHERLANDS

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Valerie M. Williamson

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U.S.A.

Eugenia M. Winston

USDA ARS DB NRRC
Stuttgart AR, U.S.A.

Bingyu Zhao

Kansas State Univ, Manhattan KS,
U.S.A.

Lecong Zhou

VPI & State Univ, Blacksburg VA,
U.S.A.

October 2003, Volume 16, Number 10

Induced Systemic Resistance in *Arabidopsis thaliana* in Response to Root Inoculation with *Pseudomonas fluorescens* CHA0. A. Iavicoli, E. Boutet, A. Buchala, and J.-P. Métraux.

Fungal Biology and Agriculture: Revisiting the Field. O. Yarden, D. J. Ebbole, S. Freeman, R. J. Rodriguez, and M. B. Dickman.

Analysis of Gene Expression in Two Growth States of *Xylella fastidiosa* and Its Relationship with Pathogenicity. A. A. de Souza, M. A. Takita, H. D. Coletta-Filho, C. Caldana, G. H. Goldman, G. M. Yanai, N. H. Muto, R. C. de Oliveira, L. R. Nunes, and M. A. Machado.

Inhibition of Plant-Pathogenic Fungi by the Barley Cystatin Hv-CPI (Gene *Icy*) Is Not Associated with Its Cysteine-Proteinase Inhibitory Properties. M. Martínez, E. López-Solanilla, P. Rodríguez-Palenzuela, P. Carbonero, and I. Díaz.

Identical Accumulation and Immobilization of Sulfated and Nonsulfated Nod Factors in Host and Nonhost Root Hair Cell Walls. J. Goedhart, J.-J. Bono, T. Bisseling, and T. W. J. Gadella, Jr.

Differential Defense Reactions in Leaf Tissues of Barley in Response to Infection by *Rhynchosporium secalis* and to Treatment with a Fungal Avirulence Gene Product. S. Steiner-Lange, A. Fischer, A. Boettcher, I. Rouhara, H. Liedgens, E. Schmelzer, and W. Knogge.

The *Medicago truncatula* Sucrose Synthase Gene *MtSucS1* Is Activated Both in the Infected Region of Root Nodules and in the Cortex of Roots Colonized by Arbuscular Mycorrhizal Fungi. N. Hohnjec, A. M. Perlick, A. Pühler, and H. Küster.

Development of a Lesion-Mimic Phenotype in a Transgenic Wheat Line Overexpressing Genes for Pathogenesis-Related (PR) Proteins Is Dependent on Salicylic Acid Concentration. A. Anand, E. A. Schmelzer, and S. Muthukrishnan.

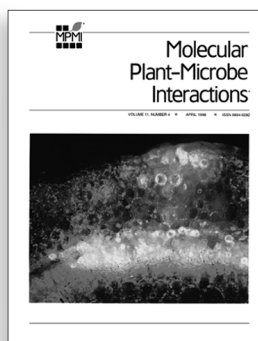
A Mating-Induced Protein of *Phytophthora infestans* Is a Member of a Family of Elicitors with Divergent Structures and Stage-Specific Patterns of Expression. A.-L. Fabritius and H. S. Judelson.

Cucumber mosaic virus Infection Transiently Breaks dsRNA-Induced Transgenic Immunity to *Potato virus Y* in Tobacco. N. Mitter, E. Sulistyowati, and R. G. Dietzgen.

Differences in the Methyl Ester Distribution of Homogalacturonans from Near-Isogenic Wheat Lines Resistant and Susceptible to the Wheat Stem Rust Fungus. N. Wiethölter, B. Graebner, M. Mierau, A. J. Mort, B. M. Moerschbacher.

September 2003, Volume 16, Number 9

Characterization of Nops, Nodulation Outer Proteins, Secreted Via the Type III Secretion System of NGR234. C. Marie, W. J.



Deakin, V. Viprey, J. Kopcińska, W. Golinowski, H. B. Krishnan, X. Perret, and W. J. Broughton.

Organ-Specificity in a Plant Disease Is Determined Independently of *R* Gene Signaling. M. Hermanns, A. J. Slusarenko, and N. L. Schlaich.

CZK3, a MAP Kinase Kinase Kinase Homolog in *Cercospora zea-maydis*, Regulates Cercosporin Biosynthesis, Fungal Development, and Pathogenesis. W.-B. Shim and L. D. Dunkle.

RNA Silencing in the Phytopathogenic Fungus *Magnaporthe oryzae*. N. Kadotani, H. Nakayashiki, Y. Tosa, and S. Mayama.

The Dual Role of the Potyvirus P3 Protein of *Turnip mosaic virus* as a Symptom and Avirulence Determinant in Brassicas. C. E. Jenner, X. Wang, K. Tomimura, K. Ohshima, F. Ponz, and J. A. Walsh.

The *Sclerotinia sclerotiorum pac1* Gene Is Required for Sclerotial Development and Virulence. J. A. Rollins. Distinct Patterns of Symbiosis-Related Gene Expression in Actinorhizal Nodules from Different Plant Families. K. Pawlowski, S. Swensen, C. Guan, A.-E. Hadri, A. M. Berry, and T. Bisseling.

Comparison of Nodule Induction in Legume and Actinorhizal Symbioses: The Induction of Actinorhizal Nodules Does Not Involve ENOD40. C. Santi, U. von Groll, A. Ribeiro, M. Chiurazzi, F. Auguy, D. Bogusz, C. Franche, and K. Pawlowski.

Genetic and Physical Localization of the Soybean *Rpg1-b* Disease Resistance Gene Reveals a Complex Locus Containing Several Tightly Linked Families of NBS-LRR Genes. T. Ashfield, A. Bocian, D. Held, A. D. Henk, L. F. Marek, D. Danesh, S. Peñuela, K. Meksem, D. A. Lightfoot, N. D. Young, R. C. Shoemaker, and R. W. Innes.

Production of Substances by *Medicago truncatula* that Affect Bacterial Quorum Sensing. M. Gao, M. Teplitski, J. B. Robinson, and W. D. Bauer.

cDNAs Generated from Individual Epidermal Cells Reveal that Differential Gene Expression Predicting Subsequent Resistance or Susceptibility to Rust Fungal Infection Occurs Prior to the Fungus Entering the Cell Lumen. M. J. R. Mould, T. Xu, M. Barbara, N. N. Iscove, and M. C. Heath.

August 2003, Volume 16, Number 8

Gene Silencing by Expression of Hairpin RNA in *Lotus japonicus* Roots and Root Nodules. H. Kumagai and H. Kouchi. Targeted Activation Tagging of the *Arabidopsis* NBS-LRR gene, *ADRI*, Conveys Resistance to Virulent Pathogens. J. J. Grant, A. Chini, D. Basu, and G. J. Loake.

Tobacco mosaic virus Induced Alterations in the Gene Expression Profile of *Arabidopsis thaliana*. S. Golem and J. N. Culver.

The ABC Transporter MgAtr4 Is a Virulence Factor of *Mycosphaerella graminicola* that Affects Colonization of Substomatal Cavities in Wheat Leaves. I. Stergiopoulos, L.-H. Zwiers, and M. A. De Waard.

Aphid-Induced Defense Responses in *Mi-1*-Mediated Compatible and Incompatible Tomato Interactions. O. Martinez de Ilarduya, Q. Xie, and I. Kaloshian.

The *Sinorhizobium meliloti* Glycine Betaine Biosynthetic Genes (*betICBA*) Are Induced by Choline and Highly Expressed in Bacteroids. K. Mandon, M. Østerås, E. Boncompagni, J. C. Trinchant, G. Spennato, M. C. Poggi, and D. Le Rudulier.

The Parasitome of the Phytonematode *Heterodera glycines*. B. Gao, R. Allen, T. Maier, E. L. Davis, T. J. Baum, and R. S. Hussey.

Identification of Extracytoplasmic Proteins in *Bradyrhizobium japonicum* Using Phage Display. A. Rosander, L. Frykberg, N. Ausmees, and P. Müller.

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Membrane Lipids in Plant-Associated Bacteria: Their Biosyntheses and Possible Functions. I. M. López-Lara, C. Sohlenkamp, and O. Geiger.

Endophytic Fungal Mutualists: Seed-Borne *Stagonospora* Spp. Enhance Reed Biomass Production in Axenic Microcosms. M. Ernst, K. W. Mendgen, and S. G. R. Wirsel.

Ethylene and Jasmonic Acid Signaling Affect the NPR1-Independent Expression of Defense Genes Without Impacting Resistance to *Pseudomonas syringae* and *Peronospora parasitica* in the *Arabidopsis ssi1* Mutant. A. Nandi, P. Kachroo, H. Fukushige, D. F. Hildebrand, D. F. Klessig, and J. Shah.

cg12 Expression Is Specifically Linked to Infection of Root Hairs and Cortical Cells during *Casuarina glauca* and *Allocauarina verticillata* Actinorhizal Nodule Development. S. Svistoonoff, L. Laplaze, F. Auguy, J. Runions, R. Duponnois, J. Haseloff, C. Franche, and D. Bogusz.

Multiple Resistance Phenotypes to *Lettuce mosaic virus* Among *Arabidopsis thaliana* Accessions. F. Revers, T. Guiraud, M.-C. Houvenaghel, T. Mauduit, O. Le Gall, and T. Candresse.

Extracellular Proteins Involved in Soybean Cultivar-Specific Nodulation Are Associated with Pilus-Like Surface Appendages and Exported by a Type III Protein Secretion System in *Sinorhizobium fredii* USDA257. H. B. Krishnan, J. Lorio, W. S. Kim, G. Jiang, K. Y. Kim, M. DeBoer, and S. G. Pueppke.

Cytological and Molecular Analysis of the *Hordeum vulgare*-*Puccinia triticina* Nonhost Interaction. C. Neu, B. Keller, and C. Feuillet.

GacS Sensor Domains Pertinent to the Regulation of Exoproduct Formation and to the Biocontrol Potential of *Pseudomonas fluorescens* CHA0. S. Zuber, F. Carruthers, C. Keel, A. Mattart, C. Blumer, G. Pessi, C. Gigot-Bonnefoy, U. Schnider-Keel, S. Heeb, C. Reimann, and D. Haas.

The Root-Knot Nematode Resistance Gene *Mi-1.2* of Tomato Is Responsible for Resistance Against the Whitefly *Bemisia tabaci*. G. Nombela, V. M. Williamson, and M. Muñoz.

A *luxR* Homolog, *aviR*, in *Agrobacterium vitis* Is Associated with Induction of Necrosis on Grape and a Hypersensitive Response on Tobacco. D. Zheng, H. Zhang, S. Carle, G. Hao, M. R. Holden, and T. J. Burr.

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Molecular Evidence that the Extracellular Cutinase Pbc1 Is Required for Pathogenicity of *Pyrenopeziza brassicae* on Oilseed Rape. D. Li, A. M. Ashby, and K. Johnstone.

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The Endopolygalacturonase 1 from *Botrytis cinerea* Activates Grapevine Defense Reactions Unrelated to Its Enzymatic Activity. B. Poinssot, E. Vandelle, M. Bentéjac, M. Adrian, C. Levis, Y. Brygoo, J. Garin, F. Sicilia, P. Coutos-Thévenot, and A. Pugin.

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Nitrogen Comes Down to Earth: Report from the 5th European Nitrogen Fixation Conference. P. De Hoff and A. M. Hirsch.

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The *sypA*, *sypB*, and *sypC* Synthetase Genes Encode Twenty-Two Modules Involved in the Nonribosomal Peptide Synthesis of Syringopeptin by *Pseudomonas syringae* pv. *syringae* B301D. B. K. Scholz-Schroeder, J. D. Soule, and D. C. Gross.

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The *Arabidopsis* Genes *RPW8.1* and *RPW8.2* Confer Induced Resistance to Powdery Mildew Diseases in Tobacco. S. Xiao, P. Charoenwattana, L. Holcombe, and J. G. Turner.

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