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On the Cover: Reactions of diverse plant genotypes to bacterial effector proteins. Pathogenesis by bacterial plant pathogens involves injection of effector proteins into host cells using the type III secretion apparatus. These effector proteins may enhance the pathogen's virulence; however, their recognition by the host triggers resistance responses that are often associated with rapid cell death (the hypersensitive response). The repertoire of effector-encoding genes in potential pathogens and the spectrum of recognition specificities in the host determine compatibility and drive continuous plant-pathogen coevolution. Genes encoding effector proteins can be exchanged by horizontal transfer between strains, resulting in exposure of plant germplasm to overlapping subsets of effectors. In this issue, Wroblewski et al. (pp. 1733–1749) analyzed the reaction of 59 accessions representing four plant families to 171 effector proteins from multiple strains of *Pseudomonas* and *Ralstonia* spp. using *Agrobacterium*-mediated transient assays. Nonhosts often reacted to effectors from nonpathogens. The far right column shows a gradient of reactions to four effector proteins in *Nicotiana benthamiana* with the strongest response, severe necrosis, at the top; the remaining eight images show a variety of reactions in lettuce, tomato, and pepper.

FOCUS ISSUE ON PLANT INTERACTIONS WITH BACTERIAL PATHOGENS

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- [W][OA] Comparative Large-Scale Analysis of Interactions between Several Crop Species and the Effector Repertoires from Multiple Pathovars of *Pseudomonas* and *Ralstonia*. *Tadeusz Wroblewski, Katherine S. Caldwell, Urszula Piskurewicz, Keri A. Cavanaugh, Huaqin Xu, Alexander Kozik, Oswaldo Ochoa, Leah K. McHale, Kirsten Lahre, Joanna Jelenska, Jose A. Castillo, Daniel Blumenthal, Boris A. Vinatzer, Jean T. Greenberg, and Richard W. Michelmore* 1733
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- [W][OA] HORMONOMETER: A Tool for Discerning Transcript Signatures of Hormone Action in the Arabidopsis Transcriptome. *Dina Volodarsky, Noam Leviatan, Andrei Otcheretianski, and Robert Fluhr* 1796
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- [W][OA] Activation of β -Glucan Synthases by Wall-Bound Purple Acid Phosphatase in Tobacco Cells. *Rumi Kaida, Yumi Satoh, Vincent Bulone, Yohko Yamada, Tomomi Kaku, Takahisa Hayashi, and Takako S. Kaneko* 1822
- [W][OA] CYP86B1 Is Required for Very Long Chain ω -Hydroxyacid and α,ω -Dicarboxylic Acid Synthesis in Root and Seed Suberin Polyester. *Vincent Compagnon, Patrik Diehl, Irène Benveniste, Denise Meyer, Hubert Schaller, Lukas Schreiber, Rochus Franke, and Franck Pinot* 1831
- [OA] Evidence for Variation in the Optimal Translation Initiation Complex: Plant eIF4B, eIF4F, and eIF(iso)4F Differentially Promote Translation of mRNAs. *Laura K. Mayberry, M. Leah Allen, Michael D. Dennis, and Karen S. Browning* 1844
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- [C][W][OA] A Novel Cation-Dependent O-Methyltransferase Involved in Anthocyanin Methylation in Grapevine. *Philippe Hugueney, Sofia Provenzano, Clotilde Verriès, Alessandra Ferrandino, Emmanuelle Meudec, Giorgia Batelli, Didier Merdinoglu, Véronique Cheynier, Andrea Schubert, and Agnès Ageorges* 2057

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- [W][OA] Apple Sucrose Transporter SUT1 and Sorbitol Transporter SOT6 Interact with Cytochrome *b5* to Regulate Their Affinity for Substrate Sugars. *Ren-Chun Fan, Chang-Cao Peng, Yan-Hong Xu, Xiao-Fang Wang, Yan Li, Yi Shang, Shu-Yuan Du, Rui Zhao, Xiao-Yan Zhang, Ling-Yun Zhang, and Da-Peng Zhang* 1880
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- [C][W][OA] *AINTEGUMENTA* and *AINTEGUMENTA-LIKE6* Act Redundantly to Regulate Arabidopsis Floral Growth and Patterning. *Beth A. Krizek* 1916
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- [W] Diversity in Expression Patterns and Functional Properties in the Rice HKT Transporter Family. *Mehdi Jabnourne, Sandra Espeout, Delphine Mieulet, Cécile Fizames, Jean-Luc Verdeil, Geneviève Conéjéro, Alonso Rodríguez-Navarro, Hervé Sentenac, Emmanuel Guiderdoni, Chedly Abdelly, and Anne-Aliénor Véry* 1955
- [W][OA] Metabolic Pathways Involved in Cold Acclimation Identified by Integrated Analysis of Metabolites and Transcripts Regulated by DREB1A and DREB2A. *Kyonoshin Maruyama, Migiwa Takeda, Satoshi Kidokoro, Kohji Yamada, Yoh Sakuma, Kaoru Urano, Miki Fujita, Kyouko Yoshitwara, Satoko Matsukura, Yoshihiko Morishita, Ryosuke Sasaki, Hideyuki Suzuki, Kazuki Saito, Daisuke Shibata, Kazuo Shinozaki, and Kazuko Yamaguchi-Shinozaki* 1972
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GENETICS, GENOMICS, AND MOLECULAR EVOLUTION

- [OA] Transcriptional Gene Silencing Mediated by a Plastid Inner Envelope Phosphoenolpyruvate/Phosphate Translocator CUE1 in Arabidopsis. *Jie Shen, Xiaozhi Ren, Rui Cao, Jun Liu, and Zhizhong Gong* 1990
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- [C][OA] Negative Regulation of Systemic Acquired Resistance by Replication Factor C Subunit3 in Arabidopsis. *Shitou Xia, Zhaohai Zhu, Lin Hao, Jin-Gui Chen, Langtao Xiao, Yuelin Zhang, and Xin Li* 2009
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WHOLE PLANT AND ECOPHYSIOLOGY

- ^[OA]Salicylic Acid Transport in *Ricinus communis* Involves a pH-Dependent Carrier System in Addition to Diffusion. *Françoise Rocher, Jean-François Chollet, Sandrine Legros, Cyril Jousse, Rémi Lemoine, Mireille Faucher, Daniel R. Bush, and Jean-Louis Bonnemain* 2081
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- ^[W]Genome-Wide Analysis of Plastid Gene Expression in Potato Leaf Chloroplasts and Tuber Amyloplasts: Transcriptional and Posttranscriptional Control. *Vladimir T. Valkov, Nunzia Scotti, Sabine Kahlau, Daniel MacLean, Stefania Grillo, John C. Gray, Ralph Bock, and Teodoro Cardi* 2030
- ^{[C][W]}The Mechanism of Iron Homeostasis in the Unicellular Cyanobacterium *Synechocystis* sp. PCC 6803 and Its Relationship to Oxidative Stress. *Sigal Shcolnick, Tina C. Summerfield, Lilia Reytman, Louis A. Sherman, and Nir Keren* 2045

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^[W] Indicates Web-only data.

^[OA] Open Access articles can be viewed online without a subscription.