Potato virus X (PVX) is a strong trigger of RNA silencing, producing high levels of small-interfering RNAs (siRNAs). These siRNAs can be derived from the replicating virus itself or via the copying action of an RNA-dependent RNA polymerase, RDR6. In this issue, Vaistij and Jones report that PVX-driven virus-induced gene silencing is compromised in RDR6-deficient plants despite the accumulation of high levels of replicating PVX and PVX-derived primary siRNAs. This effect is unrelated to the accumulation of virus-encoded suppressors of RNA silencing and suggests that the primary siRNAs are ineffective in driving RNA silencing. The cover photograph shows the silencing of a transiently expressed GFP reporter gene in a wild-type Nicotiana benthamiana leaf infected with a vein-restricted PVX vector. Such silencing is not observed in a RDR6-deficient background. Photography by Phil Roberts.
Proteins from Multiple Metabolic Pathways Associate with Starch Biosynthetic Enzymes in High Molecular Weight Complexes: A Model for Regulation of Carbon Allocation in Maize Amyloplasts. Tracie A. Hennen-Bierwagen, Qiaohui Lin, Florent Grimaud, Véronique Planchot, Peter L. Keeling, Martha G. James, and Alan M. Myers

Chloroplast NADPH-Thioredoxin Reductase Interacts with Photoperiodic Development in Arabidopsis. Anna Lepistö, Saajalisa Kangasjärvi, Eeva-Maria Luomala, Günter Brader, Nina Sipari, Mika Keränen, Markku Keinänen, and Eevi Rintamäki


Constitutive Repression and Activation of Auxin Signaling in Arabidopsis. Hanbing Li, Yan Cheng, Angus Murphy, Gretchen Hagen, and Tom J. Guilfoyle

The Signal Peptide Peptidase Is Required for Pollen Function in Arabidopsis. Sungwon Han, Laura Green, and Danny J. Schnell

Trichoderma virens, a Plant Beneficial Fungus, Enhances Biomass Production and Promotes Lateral Root Growth through an Auxin-Dependent Mechanism in Arabidopsis. Hexon Angel Contreras-Cornejo, Lourdes Macías-Rodríguez, Carlos Cortés-Penagos, and José López-Bucio

Nitric Oxide Contributes to Cadmium Toxicity in Arabidopsis by Promoting Cadmium Accumulation in Roots and by Up-Regulating Genes Related to Iron Uptake. Angélique Besson-Bard, Antoine Gravot, Pierre Richaud, Pascaline Auroy, Céline Duc, Frédéric Gaymard, Ludovine Taconnat, Jean-Pierre Renou, Alain Pugin, and David Wendehenne

System Potentials, a Novel Electrical Long-Distance Apoplastic Signal in Plants, Induced by Wounding. Matthias R. Zimmermann, Heiko Maischak, Axel Mithöfer, Wilhelm Boland, and Hubert H. Felle

Highly Diversified Molecular Evolution of Downstream Transcription Start Sites in Rice and Arabidopsis. Tsuyoshi Tanaka, Kanako O. Koyanagi, and Takeshi Itoh

The Proteome of Seed Development in the Model Legume Lotus japonicus. Svend Dam, Brian S. Laursen, Jane H. Ørnfelt, Bjørnar Jochimsen, Hans Henrik Stærfeldt, Carsten Friis, Kasper Nielsen, Nicolas Goffard, Søren Besenbacher, Renee Krusell, Shusei Sato, Satoshi Tabata, Ida B. Thøgersen, Jan J. Engbald, and Jens Stougaard

Molecular and Functional Characterization of PEBP Genes in Barley Reveal the Diversification of Their Roles in Flowering. Rie Kikuchi, Hiroyuki Kawahigashi, Tsuyu Ando, Takuji Tonooka, and Hirokazu Handa

Microtubule-Associated Protein AtMPB2C Plays a Role in Organization of Cortical Microtubules, Stomata Patterning, and Tobamovirus Infectivity. Pia Ruggenthaler, Daniela Fichtenbauer, Julia Krasensky, Claudia Jonak, and Elisabeth Waigmann

Eternal Youth, the Fate of Developing Arabidopsis Leaves upon *Rhodococcus fascians* Infection. Stephen Depuydt, Lieven De Veylder, Marcelle Holsters, and Danny Vereecke

Compromised Virus-Induced Gene Silencing in RDR6-Deficient Plants. Fabian E. Vaistij and Louise Jones

Molecular Interactions between the Specialist Herbivore *Manduca sexta* (Lepidoptera, Sphingidae) and Its Natural Host *Nicotiana attenuata*. VIII. An Unbiased GCxGC-ToFMS Analysis of the Plant’s Elicited Volatile Emissions. Emmanuel Gaquerel, Alexander Weinhold, and Ian T. Baldwin

Biotic and Abiotic Stimulation of Root Epidermal Cells Reveals Common and Specific Responses to Arbuscular Mycorrhizal Fungi. Andrea Genre, Giuseppe Ortu, Chiara Bertoldo, Elena Martino, and Paola Bonfante


Diel Growth Cycle of Isolated Leaf Discs Analyzed with a Novel, High-Throughput Three-Dimensional Imaging Method Is Identical to That of Intact Leaves. Bernhard Biskup, Hanno Scharr, Andreas Fischbach, Anika Wiese-Klinkenberg, Ulrich Schurr, and Achim Walter


In Vivo Interference with AtTCP20 Function Induces Severe Plant Growth Alterations and Deregulates the Expression of Many Genes Important for Development. Christine Heroé, Patrick Dabos, Claude Bardet, Alain Jaunay, Marie Christine Auriac, Agnès Ramboer, Fabrice Lacout, and Dominique Tremeusagge

A Rice Kinase-Protein Interaction Map. Xiaodong Ding, Todd Richter, Mei Chen, Hiroaki Fujii, Young Su Seo, Mingtang Xie, Xianwu Zheng, Siddhartha Kanrar, Rebecca A. Stevenson, Christopher Dardick, Ying Li, Hao Jiang, Yan Zhang, Fakhang Yu, Laura E. Bartley, Maosheng Chen, Rebecca Bart, Xiuhua Chen, Lihua Zhu, William G. Farmerie, Michael Gribskov, Jian-Kang Zhu, Michael E. Fromm, Pamela C. Ronald, and Wen-Yuan Song

Cell Culture-Induced Gradual and Frequent Epigenetic Reprogramming of Invertedly Repeated Tobacco Transgene Epialleles. Katerina Krizova, Miloslava Fojtova, Ann Depicker, and Ales Kovarik

Gene and Metabolite Regulatory Network Analysis of Early Developing Fruit Tissues Highlights New Candidate Genes for the Control of Tomato Fruit Composition and Development. Fabien Maunet, Amrick Moing, Virginie Garcia, Johann Petit, Michael Maucourt, Catherine Deborde, Stéphane Bernillon, Gwénaëlle Le Gall, Ian Calquhoun, Marianne Defernez, Jean-Luc Giraudel, Dominique Rolin, Christophe Rothan, and Martine Lemaire-Chamley
CORRECTIONS

AtPTR1 and AtPTR5 Transport Dipeptides in Planta.  N.Y. Komarova, K. Thor, A. Gubler, S. Meier, D. Dietrich, A. Weichert, M.S. Grotemeyer, M. Tegeder, and D. Rentsch

The “On the Cover” section of the January 2009 issue did not credit the author responsible for creating the cover image. Andrew Doust (Doust et al., pp. 137–141) created the cover image and key.

[C] Some figures in this article are displayed in color online but in black and white in the print edition.
[W] Indicates Web-only data.
[OA] Open Access articles can be viewed online without a subscription.