ON THE COVER

As the sun tracks daily through the sky from east to west, different parts of the canopy are exposed to high light. Rossel et al. (pages 4091–4110) investigated the extent to which leaves exposed to full sunlight could signal to distal shaded leaves that it’s a sunny day. The authors demonstrate that a systemic signal is rapidly transmitted within 15 minutes, resulting in similar global transcriptional and acclimatory responses in both exposed and shaded leaves of Arabidopsis to protect against impending and potentially damaging excess light.

IN THIS ISSUE
Naughty Behavior of Maize Minichromosomes in Meiosis 3835
Arnaud Ronceret, Christopher G. Bozza, and Wojciech P. Pawlowski

IN BRIEF
Chloroplast Intron Splicing Mechanisms 3838
Systemic Acquired Acclimation to High Light
Nancy A. Eckardt

CURRENT PERSPECTIVE ESSAY
The JAZ Proteins Link Jasmonate Perception with Transcriptional Changes 3839
Aaron Santner and Mark Estelle

REVIEW
Exploring the Molecular Etiology of Dominant-Negative Mutations (U) 3843
Reiner A. Veitia

RESEARCH ARTICLES
Minichromosome Analysis of Chromosome Pairing, Disjunction, and Sister Chromatid Cohesion in Maize (U)
Fangpu Han, Zhi Gao, Weichang Yu, and James A. Birchler

A CRM Domain Protein Functions Dually in Group I and Group II Intron Splicing in Land Plant Chloroplasts (U)
Yukari Asakura and Alice Barkan

Gibberellin Regulates Pollen Viability and Pollen Tube Growth in Rice (U)
Tory Chhun, Koichiro Aya, Kenji Asano, Eiji Yamamoto, Yoichi Morinaka, Masao Watanabe, Hidemi Kitano, Motoyuki Ashikari, Makoto Matsuoka, and Miyako Ueguchi-Tanaka

Cytokinins Act Directly on Lateral Root Founder Cells to Inhibit Root Initiation (U)
Laurent Laplaze, Eva Benkova, Ilda Casimiro, Lies Maes, Steffen Vanneste, Ranjan Swarup, Dolf Weijers, Vanessa Calvo, Boris Parizot, Maria Begoña Herrera-Rodríguez, Remko Offringa, Neil Graham, Patrick Doumas, Jiri Friml, Didier Bogusz, Tom Beeckman, and Malcolm Bennett

Cytokinin Regulates Type-A Arabidopsis Response Regulator Activity and Protein Stability via Two-Component Phosphorelay (U)
Jennifer P.C. To, Jean Deruère, Bridey B. Maxwell, Veronica F. Morris, Claire E. Hutchison, Fernando J. Ferreira, G. Eric Schaller, and Joseph J. Kieber
The Basic Helix-Loop-Helix Transcription Factor PIF5 Acts on Ethylene Biosynthesis and Phytochrome Signaling by Distinct Mechanisms
Rajnasiros Khanna, Yu Shen, Colleen M. Marion, Atsunari Tsuchisaka, Athanasios Theologis, Eberhard Schäfer, and Peter H. Quail

P-Glycoprotein4 Displays Auxin Efflux Transporter–Like Action in Arabidopsis Root Hair Cells and Tobacco Cells
Misuk Cho, Sang Ho Lee, and Hyung-Taeg Cho

Plastid Signals Remodel Light Signaling Networks and Are Essential for Efficient Chloroplast Biogenesis in Arabidopsis
Michael E. Ruckle, Stephanie M. DeMarco, and Robert M. Larkin

Two Distinct Forms of M-Locus Protein Kinase Localize to the Plasma Membrane and Interact Directly with S-Locus Receptor Kinase to Transduce Self-Incompatibility Signaling in Brassica rapa
Mitsuaki Kakita, Koji Murase, Megumi Iwano, Tomohito Matsumoto, Masaao Watanabe, Hiroshi Shiba, Akira Isogai, and Seiji Takayama

3-Hydroxy-3-Methylglutaryl Coenzyme A Reductase1 Interacts with NORK and Is Crucial for Nodulation in Medicago truncatula
Zoltán Kevei, Géraldine Lougnon, Peter Mergaert, Gábor V. Horváth, Attila Kereszti, Dhileepkumar Jayaraman, Najia Zaman, Fabian Marcel, Krzysztof Regel, György B. Kiss, Adam Kondorosi, Gabriella Endre, Eva Kondorosi, and Jean-Michel André

A Naturally Occurring Mutation in an Arabidopsis Accession Accesses a β-1,3-Galactosidase That Increases the Hydrophilic Potential of Rhamnogalacturonan I in Seed Muclugle
Audrey Macquet, Marie-Christine Ralet, Olivier Loutet, Jocelyne Kronenberg, Gregory Mouille, Annie Marion-Poll, and Helen M. North

The Arabidopsis MUM2 Gene Encodes a β-1,3-Galactosidase Required for the Production of Seed Coat Muclugle with Correct Hydration Properties
Gillian H. Dean, Huanquan Zheng, Jagdish Tewari, Jun Huang, Diana S. Young, Yen-Ying Hung, Tamara L. Western, Nicholas C. Carpita, Maureen C. McCann, Shawn D. Mansfield, and George W. Haughn

Regulation of Rice NADPH Oxidase by Binding of Rac GTPase to Its N-Terminal Extension
Hann Ling Wong, Reinhard Pinontoan, Kokoro Hayashi, Ryo Tabata, Takashi Yaeno, Kana Hasegawa, Chojiro Kojima, Hirofumi Yoshioka, Koh Iba, Tsutomu Kawasaki, and Ko Shimamoto

RAR1 and HSP90 Form a Complex with Rac/Rop GTase and Function in Innate-Immune Responses in Rice

Natural Variation in RPS2-Mediated Resistance among Arabidopsis Accessions: Correlation between Gene Expression Profiles and Phenotypic Responses
Remco M.P. Van Poecke, Masanao Sato, Lisa Lenarz-Wyatt, Sanford Weisberg, and Fumiaki Katagiri

Interaction between SGT1 and Cytosolic/Nuclear HSC70 Chaperones Regulates Arabidopsis Immune Responses
Laurent D. Noël, Giuseppe Cagna, Johannes Stuttmann, Lennart Wirthmüller, Shigeyuki Betsuyaku, Claus-Peter Witte, Riyaz Bhat, Nathalie Pochon, Thomas Colby, and Jane E. Parker

The Downy Mildew Effector Proteins ATR1 and ATR13 Promote Disease Susceptibility in Arabidopsis thaliana
Kee Hoon Sohn, Rita Lei, Adnane Namri, and Jonathan D.G. Jones

Systemic and Intracellular Responses to Photoxidative Stress in Arabidopsis
Jan Bart Rossel, Pip B. Wilson, Dawar Hussain, Nick S. Woo, Matthew J. Gordon, Osman P. Mewett, Katharine A. Howell, Jim Whelan, Kemal Kazan, and Barry J. Pogson

An Endoplasmic Reticulum Stress Response in Arabidopsis Is Mediated by Proteolytic Processing and Nuclear Relocation of a Membrane-Associated Transcription Factor, bZIP28
Jian-Xiang Liu, Renu Srivastava, Ping Che, and Stephen H. Howell
S-Nitrosylation of Peroxiredoxin II E Promotes Peroxynitrite-Mediated Tyrosine Nitration

Maria C. Romero-Puertas, Miriam Laxa, Alessandro Mattè, Federica Zaninotto, Iris Finkemeier, Alex M.E. Jones, Michele Perazzolli, Elodie Vandelle, Karl-Josef Dietz, and Massimo Delledonne

CORRECTION


Online version contains Web-only data.

Open Access articles can be viewed online without a subscription.