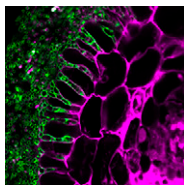


T H E
PLANT
C E L L

Volume 31 Number 10 October 2019

The electronic form of this issue, available at www.plantcell.org, is the journal of record.

ON THE COVER



This image depicts a partial view from transverse cross section of a *Populus* tree root colonized by the ectomycorrhizal fungus *Laccaria bicolor*. The fungus is a symbiont that colonizes the plant in order to obtain photosynthetically-derived carbon from the plant in exchange for mineral nutrients that the fungus mines from the soil. Upon colonizing the plant, the fungus surrounds the outside of the root, forming a “mantle”, and then penetrates between root epidermal cells in order to form a bi-directional nutrient exchange site known as the Hartig net that is shared by the two symbionts. The sample for this image was stained with wheat germ agglutinin alexa-fluor 488 (green) and propidium iodide (magenta), which stain fungal and plant cell walls, respectively. Next, it was imaged on a Zeiss LSM780 confocal microscope at 40x magnification. This imaging method allows for detailed analysis of both the anatomy and colonization efficiency of ectomycorrhizal fungi with their host plant.

EDITOR PROFILE

James A. Birchler^[OPEN] 2277
Margaret Frank, Alex Harkess, and Jacob Washburn

IN BRIEF

Developmental Timing is Everything (Part II): Gating of High Temperature Responses by the Circadian Clock^[OPEN] 2281
Patrice A. Salomé

Perception of Ectomycorrhizal Signals by Poplar Induces Root Colonization^[OPEN] 2283
Gregory Bertoni

Comparative Cell-Specific DNase-Seq Reveals Transcription Factor Binding Landscape in C3 and C4 Grasses^[OPEN] 2285
Sunil Kumar Kenchanmane Raju

Promoting Production: UPL3 Promoter Variation Modulates Seed Size and Crop Yields^[OPEN] 2287
Estee E. Tee

Die Another Way: An EDS1-SAG101 Complex Mediates TNL Immunity in Solanaceous Plants^[OPEN] 2289
Philip Carella

ALIX(ir) of Life: The Pivotal Role of ALIX in Regulating Plant Responses to Abscisic Acid^[OPEN] 2291
Anne C. Rea

Moving on Up: An MCTP-SNARE Complex Mediates Long-Distance Florigen Transport^[OPEN] 2293
Philip Carella

Some Things Never Change: Conserved MYC-Family bHLH Transcription Factors Mediate Dinor-OPDA Signaling in Liverworts^[OPEN] 2295
Philip Carella

LARGE-SCALE BIOLOGY ARTICLES

Genome-Wide Transcription Factor Binding in Leaves from C₃ and C₄ Grasses^[CC-BY] 2297
Steven J. Burgess, Ivan Reyna-Llorens, Sean R. Stevenson, Pallavi Singh, Katja Jaeger, and Julian M. Hibberd

Editor in Chief
Sabeeha Merchant

Senior Features Editor
Nancy A. Eckardt

Features Editor
Mary Williams

Science Editors
Greg Bertoni
Kathleen L. Farquharson
Nancy R. Hofmann
Jennifer Lockhart
Jennifer M. Mach

Managing Editor
Jennifer A. Regala

Production Manager
Susan L. Entwistle

Manuscript Manager
Annette Kessler

Publications Director
Nancy A. Winchester

Publisher
American Society of
Plant Biologists
Executive Director,
Crispin Taylor

Editorial Office
15501 Monona Drive
Rockville, Maryland 20855-2768
Telephone: 301/296-0908

Online at www.plantcell.org

Genome-Wide Reinforcement of DNA Methylation Occurs during Somatic Embryogenesis in Soybean 2315
Lexiang Ji, Sandra M. Mathioni, Sarah Johnson, Donna Tucker, Adam J. Bewick, Kyung Do Kim, Josquin Daron, R. Keith Slotkin, Scott A. Jackson, Wayne A. Parrott, Blake C. Meyers, and Robert J. Schmitz

Transcriptome Analyses of FY Mutants Reveal Its Role in mRNA Alternative Polyadenylation 2332
Zhibo Yu, Juncheng Lin, and Qingshun Quinn Li

Transcriptional Profiling Reveals a Time-of-Day-Specific Role of REVEILLE 4/8 in Regulating the First Wave of Heat Shock-Induced Gene Expression in Arabidopsis 2353
Bingjie Li, Zhihua Gao, Xinye Liu, Daye Sun, and Wenqiang Tang

RESEARCH ARTICLES

Variation in Expression of the HECT E3 Ligase UPL3 Modulates LEC2 Levels, Seed Size, and Crop Yields in *Brassica napus*^[OPEN] 2370
Charlotte Miller, Rachel Wells, Neil McKenzie, Martin Trick, Joshua Ball, Abdelhak Fatihi, Bertrand Dubreucq, Thierry Chardot, Loic Lepiniec, and Michael W. Bevan

The Ectomycorrhizal Fungus *Laccaria bicolor* Produces Lipochitooligosaccharides and Uses the Common Symbiosis Pathway to Colonize *Populus* Roots^[OPEN] 2386
Kevin R. Cope, Adeline Bascaules, Thomas B. Irving, Muthusubramanian Venkateshwaran, Junko Maeda, Kevin Garcia, Tomás A. Rush, Cathleen Ma, Jessy Labbé, Sara Jawdy, Edward Steigerwald, Jonathan Setzke, Emmeline Fung, Kimberly G. Schnell, Yunqian Wang, Nathaniel Schleif, Heike Bücking, Steven H. Strauss, Fabienne Maillet, Patricia Jargeat, Guillaume Bécard, Virginie Puech-Pagès, and Jean-Michel Ané

Arabidopsis ALIX Regulates Stomatal Aperture and Turnover of Abscisic Acid Receptors 2411
Marta García-León, Laura Cuyas, Diaa Abd El-Moneim, Lesia Rodriguez, Borja Belda-Palazón, Eva Sanchez-Quant, Yolanda Fernández, Brice Roux, Ángel María Zamarreño, José María García-Mina, Laurent Nussaume, Pedro L. Rodriguez, Javier Paz-Ares, Nathalie Leonhardt, and Vicente Rubio

A Coevolved EDS1-SAG101-NRG1 Module Mediates Cell Death Signaling by TIR-Domain Immune Receptors^[OPEN] 2430
Dmitry Lapin, Viera Kovacova, Xinhua Sun, Joram A. Dongus, Deepak Bhandari, Patrick von Born, Jaqueline Bautor, Nina Guarneri, Jakub Rzemieniewski, Johannes Stuttmann, Andreas Beyer, and Jane E. Parker

An EDS1-SAG101 Complex Is Essential for TNL-Mediated Immunity in *Nicotiana benthamiana*^[OPEN] 2456
Johannes Gantner, Jana Ordon, Carola Kretschmer, Raphaël Guerois, and Johannes Stuttmann

The MCTP-SNARE Complex Regulates Florigen Transport in Arabidopsis 2475
Lu Liu, Chunying Li, Zhi Wei Norman Teo, Bin Zhang, and Hao Yu

Jasmonate-Related MYC Transcription Factors Are Functionally Conserved in *Marchantia polymorpha* 2491
María Peñuelas, Isabel Monte, Fabian Schweizer, Armelle Vallat, Philippe Reymond, Gloria García-Casado, Jose M. Franco-Zorrilla, and Roberto Solano

Heterogeneous Nuclear Ribonucleoprotein H1 Coordinates with Phytochrome and the U1 snRNP Complex to Regulate Alternative Splicing in *Physcomitrella patens*^[OPEN] 2510
Chueh-Ju Shih, Hsiang-Wen Chen, Hsin-Yu Hsieh, Yung-Hua Lai, Fang-Yi Chiu, Yu-Rong Chen, and Shih-Long Tu

- Posttranslational Modification of the NADP-Malic Enzyme Involved in C_4 Photosynthesis Modulates the Enzymatic Activity during the Day** 2525
Anastasiia Bovdilova, Bruno M. Alexandre, Astrid Höppner, Inês Matias Luís, Clarisa E. Alvarez, David Bickel, Holger Gohlke, Christina Decker, Luitgard Nagel-Steger, Saleh Alseekh, Alisdair R. Fernie, Maria F. Drincovich, Isabel A. Abreu, and Veronica G. Maurino

CORRECTIONS

- Pandey, S., Assmann, S.M. (2004). The Arabidopsis putative G protein-coupled receptor GCR1 interacts with the G protein α subunit GPA1 and regulates abscisic acid signaling. *Plant Cell* 16: 1616–1632. 2540
- Choudhury, S.R., Pandey, S. (2015). Phosphorylation-dependent regulation of G-protein cycle during nodule formation in soybean. *Plant Cell* 27: 3260–3276; DOI: <https://doi.org/10.1105/tpc.15.00517>. 2541

[OPEN] Articles can be viewed without a subscription.

[CC-BY] Article free via Creative Commons CC-BY 4.0 license.



The Plant Cell (eISSN 1532-298X) is published monthly (one volume per year) by the American Society of Plant Biologists, 15501 Monona Drive, Rockville, MD 20855-2768, and is produced by Dartmouth Journal Services, Waterbury, VT. The institutional subscription price is based on type of institution; contact institution@aspb.org. Members of the American Society of Plant Biologists may subscribe to *The Plant Cell* for \$240. Nonmember individuals may subscribe for \$500. Students may subscribe for \$165. For matters regarding subscriptions, contact Suzanne Cholwek, ASPB, 15501 Monona Drive, Rockville, MD 20855-2768; telephone 301/296-0926; fax 301/251-6740; e-mail scholwek@aspb.org. Send all inquiries regarding display advertising to FASEB AdNet, 9650 Rockville Pike, Bethesda, MD 20814-3998; telephone 301/634-7791; fax 301/634-7153; e-mail adnet@faseb.org. The online version of *The Plant Cell* is available at www.plantcell.org.

Permission to Reprint: Permission to make digital or hard copies of part or all of a work published in *The Plant Cell* is granted without fee for personal or classroom use provided that copies are not made or distributed for profit or commercial advantage and that copies bear the full citation and the following notice on the first page: "Copyright American Society of Plant Biologists." For all other kinds of copying, request permission in writing from Nancy A. Winchester, Publications Director, ASPB headquarters.

This information is current as of September 18, 2020

Permissions	https://www.copyright.com/ccc/openurl.do?sid=pd_hw1532298X&issn=1532298X&WT.mc_id=pd_hw1532298X
eTOCs	Sign up for eTOCs at: http://www.plantcell.org/cgi/alerts/ctmain
CiteTrack Alerts	Sign up for CiteTrack Alerts at: http://www.plantcell.org/cgi/alerts/ctmain
Subscription Information	Subscription Information for <i>The Plant Cell</i> and <i>Plant Physiology</i> is available at: http://www.aspb.org/publications/subscriptions.cfm