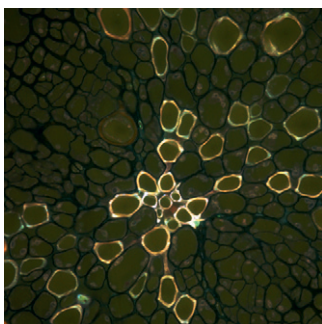


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ON THE COVER



Tracheary element differentiation inhibitory factor (TDIF) peptide signaling plays a crucial role in the maintenance of procambial/cambial stem cells. Hirakawa et al. (pages 2618–2629) show that TDIF functions in the regulation of stem cell proliferation and xylem differentiation by two independent pathways. Activation of the *WUSCHEL*-related *HOMEBOX4* (*WOX4*) gene by TDIF is involved only in the enhancement of procambial cell proliferation, whereas TDIF-mediated inhibition of xylem commitment is independent of *WOX4*. The cover shows a cross section of secondary vascular tissues in a *tdr wox4* double mutant hypocotyl, in which the procambial/cambial stem cells adjacent to the phloem cells (green dots) have differentiated into xylem cells (with orange secondary walls), causing premature growth termination of secondary vascular tissues.



IN BRIEF

- Regulation of Phospholipid Biosynthesis in *Arabidopsis*** 2527
Kathleen L. Farquharson
- Modeling Polar Growth of Plant Cell Walls** 2528
Nancy A. Eckardt
- Vascular Development: Similar Regulators Function in Shoot, Root, and Vascular Meristems** 2529
Nancy R. Hofmann








COMMENTARY

- An International Bioinformatics Infrastructure to Underpin the *Arabidopsis* Community** 2530
International Arabidopsis Informatics Consortium

PERSPECTIVE

- Setaria viridis*: A Model for C₄ Photosynthesis**   2537
Thomas P. Brutnell, Lin Wang, Kerry Swartwood, Alexander Goldschmidt, David Jackson, Xin-Guang Zhu, Elizabeth Kellogg, Joyce Van Eck

RESEARCH ARTICLES

- Structural and Functional Divergence of a 1-Mb Duplicated Region in the Soybean (*Glycine max*) Genome and Comparison to an Orthologous Region from *Phaseolus vulgaris***   2545
Jer-Young Lin, Robert M. Stupar, Christian Hans, David L. Hyten, and Scott A. Jackson
- Hidden Variability of Floral Homeotic B Genes in Solanaceae Provides a Molecular Basis for the Evolution of Novel Functions**   2562
Koen Geuten and Vivian Irish
- Finite Element Model of Polar Growth in Pollen Tubes**   2579
Pierre Fayant, Orlando Girlanda, Youssef Chebli, Carl-Éric Aubin, Isabelle Villemure, and Anja Geitmann
- Phosphoenolpyruvate Provision to Plastids Is Essential for Gametophyte and Sporophyte Development in *Arabidopsis thaliana***   2594
Veena Prabhakar, Tanja Löttgert, Stefan Geimer, Peter Dörmann, Stephan Krüger, Vinod Vijayakumar, Lukas Schreiber, Cornelia Göbel, Kirstin Feussner, Ivo Feussner, Kay Marin, Pia Staehr, Kirsten Bell, Ulf-Ingo Flügge, and Rainer E. Häusler

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TDIF Peptide Signaling Regulates Vascular Stem Cell Proliferation via the <i>WOX4</i> Homeobox Gene in <i>Arabidopsis</i>	2618
Yuki Hirakawa, Yuki Kondo, and Hiroo Fukuda	
Abscisic Acid Increases <i>Arabidopsis</i> ABI5 Transcription Factor Levels by Promoting KEG E3 Ligase Self-Ubiquitination and Proteasomal Degradation	2630
Hongxia Liu and Sophia L. Stone	
Nonspecific Phospholipase C NPC4 Promotes Responses to Abscisic Acid and Tolerance to Hyperosmotic Stress in <i>Arabidopsis</i>	2642
Carlotta Peters, Maoyin Li, Rama Narasimhan, Mary Roth, Ruth Welti, and Xuemin Wang	
Perturbation of Indole-3-Butyric Acid Homeostasis by the UDP-Glucosyltransferase <i>UGT74E2</i> Modulates <i>Arabidopsis</i> Architecture and Water Stress Tolerance	2660
Vanesa B. Tognetti, Olivier Van Aken, Kris Morreel, Korneel Vandenbroucke, Brigitte van de Cotte, Inge De Clercq, Sheila Chiwocha, Ricarda Fenske, Els Prinsen, Wout Boerjan, Bernard Genty, Keith A. Stubbs, Dirk Inzé, and Frank Van Breusegem	
Characterization of the Molecular Mechanism Underlying Gibberellin Perception Complex Formation in Rice	2680
Ko Hirano, Kenji Asano, Hiroyuki Tsuji, Mayuko Kawamura, Hitoshi Mori, Hidemi Kitano, Miyako Ueguchi-Tanaka, and Makoto Matsuoka	
The Conserved RNA Trafficking Proteins HPR1 and TEX1 Are Involved in the Production of Endogenous and Exogenous Small Interfering RNA in <i>Arabidopsis</i>	2697
Vincent Jauvion, Taline Elmayan, and Hervé Vaucheret	
The Type II <i>Arabidopsis</i> Formin14 Interacts with Microtubules and Microfilaments to Regulate Cell Division	2710
Yanhua Li, Yuan Shen, Chao Cai, Chenchun Zhong, Lei Zhu, Ming Yuan, and Haiyun Ren	
<i>Arabidopsis</i> VILLIN1 and VILLIN3 Have Overlapping and Distinct Activities in Actin Bundle Formation and Turnover	2727
Parul Khurana, Jessica L. Henty, Shanjin Huang, Andrew M. Staiger, Laurent Blanchoin, and Christopher J. Staiger	
<i>Arabidopsis</i> VILLIN5, an Actin Filament Bundling and Severing Protein, Is Necessary for Normal Pollen Tube Growth	2749
Hua Zhang, Xiaolu Qu, Chanchan Bao, Parul Khurana, Qiannan Wang, Yurong Xie, Yiyan Zheng, Naizhi Chen, Laurent Blanchoin, Christopher J. Staiger, and Shanjin Huang	
Dysfunction of Chromatin Assembly Factor 1 Induces Shortening of Telomeres and Loss of 45S rDNA in <i>Arabidopsis thaliana</i>	2768
Iva Mozgová, Petr Mokroš, and Jiří Fajkus	
Tobacco GTBP1, a Homolog of Human Heterogeneous Nuclear Ribonucleoprotein, Protects Telomeres from Aberrant Homologous Recombination	2781
Yong Woo Lee and Woo Taek Kim	
PHOSPHATIDIC ACID PHOSPHOHYDROLASE1 and 2 Regulate Phospholipid Synthesis at the Endoplasmic Reticulum in <i>Arabidopsis</i>	2796
Peter J. Eastmond, Anne-Laure Quettier, Johan T.M. Kroon, Christian Craddock, Nicolette Adams, and Antoni R. Slabas	
The AP-3 β Adaptin Mediates the Biogenesis and Function of Lytic Vacuoles in <i>Arabidopsis</i>	2812
Elena Feraru, Tomasz Paciorek, Mugurel I. Feraru, Marta Zwiewka, Ruth De Groot, Riet De Rycke, Jürgen Kleine-Vehn, and Jiří Friml	
The Cytosolic Tail Dipeptide Ile-Met of the Pea Receptor BP80 Is Required for Recycling from the Prevacuole and for Endocytosis	2825
Bruno Saint-Jean, Emilie Seveno-Carpentier, Carine Alcon, Jean-Marc Neuhaus, and Nadine Paris	
Y3IP1, a Nucleus-Encoded Thylakoid Protein, Cooperates with the Plastid-Encoded Ycf3 Protein in Photosystem I Assembly of Tobacco and <i>Arabidopsis</i>	2838
Christin A. Albus, Stephanie Ruf, Mark Aurel Schöttler, Wolfgang Lein, Julia Kehr, and Ralph Bock	

- Functional Differentiation of the Glycosyltransferases That Contribute to the Chemical Diversity of Bioactive Flavonol Glycosides in Grapevines (*Vitis vinifera*)** [W](#) [OA](#) 2856
Eiichiro Ono, Yu Homma, Manabu Horikawa, Satoshi Kunikane-Doi, Haruna Imai, Seiji Takahashi, Yosuke Kawai, Masaji Ishiguro, Yuko Fukui, and Toru Nakayama
- Network Analysis of Enzyme Activities and Metabolite Levels and Their Relationship to Biomass in a Large Panel of *Arabidopsis* Accessions** [C](#) [W](#) [OA](#) 2872
Ronan Sulpice, Sandra Trenkamp, Matthias Steinfath, Bjorn Usadel, Yves Gibon, Hanna Witucka-Wall, Eva-Theresa Pyl, Hendrik Tschöep, Marie Caroline Steinhauser, Manuela Guenther, Melanie Hoehne, Johann M. Rohwer, Thomas Altmann, Alisdair R. Fernie, and Mark Stitt
- Redox Regulation of the NPR1-TGA1 System of *Arabidopsis thaliana* by Nitric Oxide** [W](#) [OA](#) 2894
Christian Lindermayr, Simone Sell, Bernd Müller, Dario Leister, and Jörg Durner
- The *Ustilago maydis* Clp1 Protein Orchestrates Pheromone and *b*-Dependent Signaling Pathways to Coordinate the Cell Cycle and Pathogenic Development** [W](#) 2908
Kai Heimel, Mario Scherer, David Schuler, and Jörg Kämper

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