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.
TDF1 Peptide Signaling Regulates Vascular Stem Cell Proliferation via the WOX4 Homeobox Gene in Arabidopsis

Yuki Hirakawa, Yuki Kondo, and Hiroi Fukuda

Abscisic Acid Increases Arabidopsis ABI5 Transcription Factor Levels by Promoting KEG E3 Ligase Self-Ubiquitination and Proteasomal Degradation

Hongxia Liu and Sophia L. Stone

Nonspecific Phospholipase C NPC4 Promotes Responses to Abscisic Acid and Tolerance to Hyperosmotic Stress in Arabidopsis

Carlootta Peters, Maoyin Li, Rama Narasimhan, Mary Roth, Ruth Welti, and Xuemin Wang

Perturbation of Indole-3-Butyric Acid Homeostasis by the UDP-Glucosyltransferase UGT74E2 Modulates Arabidopsis Architecture and Water Stress Tolerance

Venissa B. Tognotti, Olivier Van Aken, Kris Morreel, Korneel Vandenbroucke, Brigitte van de Cotte, Inge De Clercq, Sheila Chiwocha, Ricardo 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

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 TEK1 Are Involved in the Production of Endogenous and Exogenous Small Interfering RNA in Arabidopsis

Vincent Jauvion, Taline Elmayan, and Hervé Vaucheret

The Type II Arabidopsis Formin14 Interacts with Microtubules and Microfilaments to Regulate Cell Division

Yanhua Li, Yuan Shen, Chao Cai, Chenhun Zhong, Lei Zhu, Ming Yuan, and Haiyun Ren

Arabidopsis VILLIN1 and VILLIN3 Have Overlapping and Distinct Activities in Actin Bundle Formation and Turnover

Parul Khurana, Jessica L. Henty, Shanjin Huang, Andrew M. Staiger, Laurent Blanchoin, and Christopher J. Staiger

Arabidopsis VILLIN5, an Actin Filament Bundling and Severing Protein, Is Necessary for Normal Pollen Tube Growth

Hua Zhang, Xiaolu Qu, Chanchan Bao, Parul Khurana, Qiannan Wang, Yurong Xie, Yiyun 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 Arabidopsis thaliana

Iva Mozgová, Petr Mokros, and Jiří Fajkus

Tobacco GTBP1, a Homolog of Human Heterogeneous Nuclear Ribonucleoprotein, Protects Telomeres from Aberrant Homologous Recombination

Yong Woo Lee and Woo Taek Kim

PHOSPHATIDIC ACID PHOSPHOHYDROLASE1 and 2 Regulate Phospholipid Synthesis at the Endoplasmic Reticulum in Arabidopsis

Peter J. Eastmond, Anne-Laure Quettier, Johan T.M. Kroon, Christian Craddock, Nicolette Adams, and Antoni R. Slabas

The AP-3 β1 Adaptor Mediates the Biogenesis and Function of Lytic Vacuoles in Arabidopsis

Elena Feraru, Tomasz Paciorek, Mugurel I. Feraru, Marta Zwiewka, Ruth De Groodt, 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

Bruno Saint-Jean, Emilie Sevono-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 Arabidopsis

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)  
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Redox Regulation of the NPR1-TGA1 System of Arabidopsis thaliana by Nitric Oxide  
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  
Kai Heimel, Mario Scherer, David Schuler, and Jörg Kämper

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