Angiosperm trees produce a specialized type of xylem, tension wood, in response to gravity. Tension wood forms on the upper side of leaning branches and creates strong contractile force to “pull” the stem upwards against gravity. The article by Gerttula et al. (pages 2800–2813) describes the development of tension wood in Populus, including how the stems perceive and respond to gravity, as well as the transcriptional networks underlying tension wood development. The cover shows in situ imaging of XET activity in a tangential section of tension wood in Populus. Red signal is from XET incorporation of XXXG-SR into the specialized gelatinous layer of tension wood fibers, while blue signal is from UV autofluorescence of lignified cell walls. XET activity is believed to be important in force generation in tension wood fibers and serves as a marker for tension wood fiber development.
Inference of Longevity-Related Genes from a Robust Coexpression Network of Seed Maturation Identifies Regulators Linking Seed Storability to Biotic Defense-Related Pathways

Karima Righetti, Joseph Ly Vu, Sandra Pelletier, Benoit Ly Vu, Enrico Glaab, David Lalanne, Asher Pasha, Rohan V. Patel, Nicholas J. Provert, Jerome Verdier, Olivier Leprince, and Julia Buitink

Proteomic Analysis of Microtubule Interacting Proteins over the Course of Xylem Tracheary Element Formation in Arabidopsis

Paul Derbyshire, Delphine Ménard, Pornpip Green, Gerhard Saalbach, Henrik Buschmann, Clive W. Lloyd, and Edouard Pesquet

Cyclin-Dependent Kinase Regulation of Diurnal Transcription in Chlamydomonas

Frej Tulin and Frederick R. Cross

High-Resolution Profiling of a Synchronized Diurnal Transcriptome from Chlamydomonas reinhardtii Reveals Continuous Cell and Metabolic Differentiation

James Matt Zones, Ian K. Blaby, Sabeeha S. Merchant, and James G. Umen

RESEARCH ARTICLES

A Time-Calibrated Road Map of Brassicaceae Species Radiation and Evolutionary History

Nora Hofmann, Eva M. Wolf, Martin A. Lysak, and Marcus A. Koch

Divergence in Patterns of Leaf Growth Polarity Is Associated with the Expression Divergence of miR396

Mainak Das Gupta and Utpal Nath

Transcriptional and Hormonal Regulation of Gravitropism of Woody Stems in Populus

Suzanne Gerttula, Matthew Zinkgraf, Gloria K. Muday, Daniel R. Lewis, Farid M. Ibatullin, Harry Brumer, Foster Hart, Shawn D. Mansfield, Vladimir Filkov, and Andrew Groover

Transcriptional Mechanism of Jasmonate Receptor COI1-Mediated Delay of Flowering Time in Arabidopsis

Qingzhe Zhai, Xin Zhang, Fangming Wu, Hailong Feng, Lei Deng, Li Xu, Min Zhang, Qiaomei Wang, and Chuanyou Li

VLN2 Regulates Plant Architecture by Affecting Microfilament Dynamics and Polar Auxin Transport in Rice

Shengyang Wu, Yurong Xie, Junjie Zhang, Yulong Ren, Xin Zhang, Julin Wang, Xiuping Guo, Fuqing Wu, Pelke Sheng, Juan Wang, Chuanyin Wu, Haiyang Wang, Shanjin Huang, and Jianmin Wan

Remobilization of Phytol from Chlorophyll Degradation Is Essential for Tocopherol Synthesis and Growth of Arabidopsis

Katharina vom Dorp, Georg Hözl, Christian Plohmann, Marion Eisenhut, Marion Abraham, Andreas P.M. Weber, Andrew D. Hanson, and Peter Dörmann

The Transcriptional Repressor MYB2 Regulates Both Spatial and Temporal Patterns of Proanthocyanidin and Anthocyanin Pigmentation in Medicago truncatula

Ji Hyung Jun, Chenggang Liu, Xirong Xiao, and Richard A. Dixon

Arabidopsis CBP1 Is a Novel Regulator of Transcription Initiation in Central Cell-Mediated Pollen Tube Guidance

Hong-Ju Li, Shan-Shan Zhu, Meng-Xia Zhang, Tong Wang, Liang Liang, Yong Xue, Dong-Qiao Shi, Jie Liu, and Wei-Cai Yang

GLABRA2 Directly Suppresses Basic Helix-Loop-Helix Transcription Factor Genes with Diverse Functions in Root Hair Development

Qing Lin, Yohei Ohashi, Mariko Kato, Tomohiko Tsuge, Hongya Gu, Li-Jia Qu, and Takashi Aoyama
The RECG1 DNA Translocase Is a Key Factor in Recombination Surveillance, Repair, and Segregation of the Mitochondrial DNA in Arabidopsis
Clémente Wallet, Monique Le Ret, Marc Bergdoll, Marc Bichara, André Dietrich, and José M. Gualberto

CELLULOSE SYNTHASE INTERACTIVE1 Is Required for Fast Recycling of Cellulose Synthase Complexes to the Plasma Membrane in Arabidopsis
Lei Lei, Abhishek Singh, Logan Bashline, Shundai Li, Yaroslava G. Yingling, and Ying Gu

Arabidopsis TRIGALACTOSYLDIACYLGlycerol5 Interacts with TGD1, TGD2, and TGD4 to Facilitate Lipid Transfer from the Endoplasmic Reticulum to Plastids
Jilian Fan, Zhiyang Zhai, Chengshi Yan, and Changcheng Xu

Fibrillin 5 Is Essential for Plastoquinone-9 Biosynthesis by Binding to Solanesyl Diphosphate Synthases in Arabidopsis
Eun-Ha Kim, Yongjik Lee, and Hyun Uk Kim

CYP76C1 (Cytochrome P450)-Mediated Linalool Metabolism and the Formation of Volatile and Soluble Linalool Oxides in Arabidopsis

Multiple Avirulence Loci and Allele-Specific Effector Recognition Control the Pm3 Race-Specific Resistance of Wheat to Powdery Mildew

CORRECTION

OPEN Articles can be viewed online without a subscription.