ON THE COVER

Lignins are highly complex polymers in plant cell walls formed by precursor monolignols. Peroxidases are known to be involved in lignin polymerization. Now, Berthet et al. (pages 1124–1137) show using mutational analysis that two laccases, LAC4 and LAC17, participate in the polymerization of lignins in Arabidopsis stems. These findings suggest that the genetic engineering of lignin-specific laccases is a potential tool for the fine-tuning of lignin content and structure. The cover shows a cross section from wild-type Arabidopsis stem tissue stained with Maule’s reagent to show syringyl lignin content.

IN BRIEF

Will the Real Florigen Please Stand Up? Sorting FT Homologs in Maize
Jennifer Mach

A Revised Function for ACCUMULATION OF PHOTOSYSTEM ONE1
Nancy R. Hofmann

Indolebutyric Acid–Derived Auxin and Plant Development
Gregory Bertoni

LETTERS TO THE EDITOR

ARF1 Localizes to the Golgi and the Trans-Golgi Network
David G. Robinson, David Scheuring, Satoshi Naramoto, and Jiří Friml

Reply: On ARF1 Localizes to the Golgi and the Trans-Golgi Network: Future Challenge in Plant Multivesicular Body Studies
Hans Thordal-Christensen, Henrik Böhlenius, Sara M. Mørch, and Mads E. Nielsen

COMMENTARY

An Evolutionarily Conserved Pseudokinase Mediates Stem Cell Production in Plants
Zachary L. Tarr and Paul T. Meyerowitz

REVIEWS

Intercellular Communication during Plant Development
Jaimie M. VanNorman, Natalie W. Breakfield, and Philip N. Benfey

The Emerging Importance of Type I MADS Box Transcription Factors for Plant Reproduction
Simona Masiero, Lucia Colombo, Paul E. Grini, Arp Schnittger, and Martin M. Kater

LARGE-SCALE BIOLOGY ARTICLES

High-Resolution Temporal Profiling of Transcripts during Arabidopsis Leaf Senescence Reveals a Distinct Chronology of Processes and Regulation
Emily Breeze, Elizabeth Harrison, Stuart McHattie, Linda Hughes, Richard Hickman, Claire Hill, Steven Kiddle, Youn-sung Kim, Christopher A. Penfold, Dafyd Jenkins, Cunjin Zhang, Karl Morris, Carol Jenner, Stephen Jackson, Brian Thomas, Alexandra Tabrett, Roxane Legae, Jonathan D. Moore, David L. Wild, Sascha Ott, David Rand, Jim Beynon, Katherine Denby, Andrew Mead, and Vicky Buchanan-Wollaston
PlaNet: Combined Sequence and Expression Comparisons across Plant Networks Derived from Seven Species

Marek Mutwil, Sebastian Klie, Takayuki Tohge, Federico M. Giorgi, Olivia Wilkins, Malcolm M. Campbell, Alisdair R. Fernie, Björn Usadel, Zoran Nikoloski, and Staffan Persson

The Predicted Arabidopsis Interactome Resource and Network Topology-Based Systems Biology Analyses

Mingzhi Lin, Xi Zhou, Xueling Shen, Chuanzao Mao, and Xin Chen

RESEARCH ARTICLES

Transcriptome and Metabolite Profiling Show That APETALA2a Is a Major Regulator of Tomato Fruit Ripening

Rumyana Karlova, Faye M. Rosin, Jacqueline Busscher-Lange, Violeta Parapounova, Phuc T. Do, Alisdair R. Fernie, Paul D. Fraser, Charles Baxter, Gerco C. Angenent, and Ruud A. de Maagd

The FT-Like ZCN8 Gene Functions as a Floral Activator and Is Involved in Photoperiod Sensitivity in Maize

Xin Meng, Michael G. Muszynski, and Olga N. Danilevskaya

BROTHER OF LUX ARRHYTHMO Is a Component of the Arabidopsis Circadian Clock

Shunhong Dai, Xiaoping Wei, Liping Pei, Rebecca L. Thompson, Yi Liu, Jacqueline E. Heard, Thomas G. Ruff, and Roger N. Beachy

AUXIN RESPONSE FACTOR8 Regulates Arabidopsis Petal Growth by Interacting with the bHLH Transcription Factor BIGPETALp

Emilie Varaud, Florian Brioudes, Judit Szécsi, Julie Leroux, Spencer Brown, Catherine Perrot-Rechenmann, and Mohammed Bendahmane

Multiple Facets of Arabidopsis Seedling Development Require Indole-3-Butyric Acid–Derived Auxin

Lucia C. Strader, Dorthea L. Wheeler, Sarah E. Christensen, John C. Berens, Jerry D. Cohen, Rebekah A. Rampey, and Bonnie Bartel

The Jasmonate-ZIM Domain Proteins Interact with the R2R3-MYB Transcription Factors MYB21 and MYB24 to Affect Jasmonate-Regulated Stamen Development in Arabidopsis

Susheng Song, Tiancong Qi, Huang Huang, Qingsuo Ren, Dewei Wu, Changqiong Chang, Wen Peng, Yule Liu, Jinrong Peng, and Daxiong Xie

Geminiviruses Subvert Ubiquitination by Altering CSN-Mediated Derublylation of SCF E3 Ligase Complexes and Inhibit Jasmonate Signaling in Arabidopsis thaliana

Rosa Lozano-Durán, Tabata Rosas-Díaz, Giuliana Gusmaroli, Ana P. Luna, Ludivine Taconnat, Xing Wang Deng, and Eduardo R. Bejarano

The Anaphase-Promoting Complex Is a Dual Integrator That Regulates Both MicroRNA-Mediated Transcriptional Regulation of Cyclin B1 and Degradation of Cyclin B1 during Arabidopsis Male Gametophyte Development

Binglian Zheng, Xuemei Chen, and Sheila McCormick

The CHD3 Chromatin Remodeler PICKLE and Polycomb Group Proteins Antagonistically Regulate Meristem Activity in the Arabidopsis Root

Ernst Aichinger, Corina B.R. Villar, Riccardo Di Mambro, Sabrina Sabatini, and Claudia Köhler

Sphingolipids in the Root Play an Important Role in Regulating the Leaf Ionom in Arabidopsis thaliana

Dai-Yin Chao, Kenneth Gable, Ming Chen, Ivan Baxter, Charles R. Dietrich, Edgar B. Cahoon, Mary Lou Guerinot, Brett Lahner, Shiyou Lü, Jonathan E. Markham, Joe Morrissey, Gongshe Han, Sita D. Gupta, Jeffrey M. Harmon, Jan G. Jaworski, Teresa M. Dunn, and David E. Salt

APO1 Promotes the Splicing of Chloroplast Group II Introns and Harbors a Plant-Specific Zinc-Dependent RNA Binding Domain

Kenneth P. Watkins, Margarita Rojas, Giulia Friso, Klaas J. van Wijk, Jörg Meurer, and Alice Barkan
Arabidopsis Kinesin KP1 Specifically Interacts with VDAC3, a Mitochondrial Protein, and Regulates Respiration during Seed Germination at Low Temperature
Xue-Yong Yang, Zi-Wei Chen, Tao Xu, Zhe Qu, Xiao-Di Pan, Xing-Hua Qin, Dong-Tao Ren, and Guo-Qin Liu

Patatin-Related Phospholipase pPLAIIIβ-Induced Changes in Lipid Metabolism Alter Cellulose Content and Cell Elongation in Arabidopsis
Maoyin Li, Sung Chul Bahn, Liang Guo, William Musgrave, Howard Berg, Ruth Welti, and Xuemin Wang

Disruption of LACCASE4 and 17 Results in Tissue-Specific Alterations to Lignification of Arabidopsis thaliana Stems
Serge Berthet, Nathalie Demont-Caullet, Brigitte Pollet, Przemyslaw Bidzinski, Laurent Cezard, Phillippe Le Bris, Nero Borrega, Jonathan Herve, Eddy Blondet, Sandrine Balzergue, Catherine Lapiere, and Lise Jouanin

The MYB96 Transcription Factor Regulates Cuticular Wax Biosynthesis under Drought Conditions in Arabidopsis
Pil Joon Seo, Saet Buyl Lee, Mi Chung Suh, Mi-Jeong Park, Young Sam Go, and Chung-Mo Park

Phosphorylation of the Nicotiana benthamiana WRKY8 Transcription Factor by MAPK Functions in the Defense Response
Nobuaki Ishihama, Reiko Yamada, Miki Yoshioka, Shinpei Katou, and Hirofumi Yoshioka

The Membrane Mucin Msb2 Regulates Invasive Growth and Plant Infection in Fusarium oxysporum
Elena Pérez-Nadales and Antonio Di Pietro

Some figures in this article are displayed in color online but in black and white in the print edition.
Online version contains Web-only data.
Open Access articles can be viewed online without a subscription.