ON THE COVER

The mechanisms underlying the polarity establishment in the stamen remain unclear, although those in the leaf are well understood. Toriba et al. (pages 1452–1462) characterized a rod-like lemma (rol) mutant of rice (Oryza sativa), in which the development of the stamen and lemma is severely compromised. The rol phenotype was found to be the result of a weak loss-of-function mutation in SHOOTLESS2, which encodes an RNA-dependent RNA polymerase and functions in trans-acting small interfering RNA (ta-siRNA) production. Thus, ta-siRNA likely plays an important role in regulating the adaxial-abaxial polarity of floral organs in rice. The authors present a detailed description of stamen development using in situ gene expression analysis and scanning electron microscopy and propose a new model for the establishment of adaxial-abaxial polarity in the stamen. The cover shows a scanning electron microscopy image of a partially abaxialized stamen with only one theca in the rol mutant.

IN BRIEF

Got the Blues? A High-Throughput Screen for Cyanogenesis Mutants 1421
Gregory Bertoni

Dissecting cis-Regulation of FLOWERING LOCUS T 1422
Nancy A. Eckardt

A New Thioredoxin Is Involved in Plastid Gene Expression 1423
Nancy R. Hofmann

RESEARCH ARTICLES

cis-Regulatory Elements and Chromatin State Cooperatively Control Temporal and Spatial Expression of FLOWERING LOCUS T in Arabidopsis 1425
Jessika Adrian, Sara Farrona, Julia J. Reimer, Maria C. Albani, George Coupland, and Franziska Turck

ragged seedling2 Encodes an ARGONAUTE7-Like Protein Required for Mediolateral Expansion, but Not Dorsiventrality, of Maize Leaves 1441

Distinct Regulation of Adaxial-Abaxial Polarity in Anther Patterning in Rice 1452
Taiyo Toriba, Takuya Suzuki, Takahiro Yamaguchi, Yoshihiro Ohmori, Hirokazu Tsukaya, and Hiro-Yuki Hirano

Overexpression of Arabidopsis Acyl-CoA Binding Protein ACBP3 Promotes Starvation-Induced and Age-Dependent Leaf Senescence 1463
Shi Xiao, Wei Gao, Qin-Fang Chen, Suk-Wah Chan, Shu-Xiao Zheng, Jinyu Ma, Mingfu Wang, Ruth Welti, and Mee-Len Chye

Two Medicago truncatula Half-ABC Transporters Are Essential for Arbuscule Development in Arbuscular Mycorrhizal Symbiosis 1483
Quan Zhang, Laura A. Blaylock, and Maria J. Harrison
Plastidial Thioredoxin z Interacts with Two Fructokinase-Like Proteins in a Thiol-Dependent Manner: Evidence for an Essential Role in Chloroplast Development in Arabidopsis and Nicotiana benthamiana

Borjana Arsova, Ursula Hoja, Matthias Wimmelbacher, Eva Greiner, Şuayib Üstün, Michael Melzer, Kerstin Petersen, Wolfgang Lein, and Frederik Börnke

Stromal Hsp70 Is Important for Protein Translocation into Pea and Arabidopsis Chloroplasts

Pai-Hsiang Su and Hsou-min Li

A Soluble Guanylate Cyclase Mediates Negative Signaling by Ammonium on Expression of Nitrate Reductase in Chlamydomonas

Amaury de Montaigu, Emanuel Sanz-Luque, Aurora Galván, and Emilio Fernández

Identification of the 2-Hydroxyglutarate and Isovaleryl-CoA Dehydrogenases as Alternative Electron Donors Linking Lysine Catabolism to the Electron Transport Chain of Arabidopsis Mitochondria

Wagner L. Araújo, Kimitsune Ishizaki, Adriano Nunes-Nesi, Tony R. Larson, Takayuki Tohge, Ina Krahmer, Sandra Witt, Toshihiro Obata, Nicolas Schauer, Ian A. Graham, Christopher J. Leaver, and Alisdair R. Fernie

Conserved Alternative Splicing of Arabidopsis Transthyretin-Like Determines Protein Localization and S-Allantoin Synthesis in Peroxisomes

Ilaria Lamberto, Riccardo Percudani, Rita Gatti, Claudia Folli, and Stefania Petrucco

The RNA Binding Protein Tudor-SN Is Essential for Stress Tolerance and Stabilizes Levels of Stress-Responsive mRNAs Encoding Secreted Proteins in Arabidopsis

Nicolas Frei dit Frey, Philippe Muller, Fabien Jammes, Dimosthenis Kizis, Jeffrey Leung, Catherine Perrot-Rechenmann, and Michele Wolfe Bianchi

Alteration of Substrate Specificity: The Variable N-Terminal Domain of Tobacco Ca"2+"-Dependent Protein Kinase Is Important for Substrate Recognition

Takeshi Ito, Masaru Nakata, Jutarou Fukazawa, Sarahmi Ishida, and Yohsuke Takahashi

Genetic Screening Identifies Cyanogenesis-Deficient Mutants of Lotus japonicus and Reveals Enzymatic Specificity in Hydroxynitrile Glucoside Metabolism

Adam Takos, Daniela Lai, Lisbeth Mikkelsen, Maher Abou Hachem, Dale Shelton, Mohammed Saddik Motawia, Carl Erik Olsen, Trevor L. Wang, Cathie Martin, and Fred Rook

The Growth Reduction Associated with Repressed Lignin Biosynthesis in Arabidopsis thaliana Is Independent of Flavonoids

Xu Li, Nicholas D. Bonawitz, Jing-Ke Weng, and Clint Chapple

The Arabidopsis Nitrate Transporter NRT1.8 Functions in Nitrate Removal from the Xylem Sap and Mediates Cadmium Tolerance

Jian-Yong Li, Yan-Lei Fu, Sharon M. Pike, Juan Bao, Wang Tian, Yu Zhang, Chun-Zhu Chen, Yi Zhang, Hong-Mei Li, Jing Huang, Le-Gong Li, Julian I. Schroeder, Walter Gassmann, and Ji-Ming Gong

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