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On the Cover: Exine, the outer plant pollen wall, has elaborate species-specific patterns, provides a protective barrier for male gametophytes, and serves as a mediator of strong and species-specific pollen-stigma adhesion. Although several genes important for exine development have been identified in recent years, there is still very limited understanding of how exine is developed and its complex patterns are laid out. The systematic identification of the genetic network required for biosynthesis, transport, and assembly of exine components has been largely lacking because of the very limited number of previous genetic screens and the technical challenges associated with these screens. In this issue, Dobritsa et al. (947–970) describe a simple yet effective strategy for screening for exine mutants and present results of a large-scale genetic screen. As a result, multiple mutants exhibiting a large variety of abnormal exine phenotypes were isolated. In this image, two wild-type *Arabidopsis* (*Arabidopsis thaliana*) pollen grains that have a regular reticulate exine pattern and three equally spaced apertures are shown in the middle. These two grains are surrounded by the mutants that have various defects in exine patterning. Isolation of these mutants opens new avenues for genetic, biochemical, developmental, and evolutionary studies of exine production. Photographs and image design by Anna Dobritsa.

ON THE INSIDE

Peter V. Minorsky 533

UPDATES

Chromatin Configuration as a Battlefield in Plant-Bacteria Interactions. Ka-Wai Ma, Cristina Flores, and Wenbo Ma 535

BREAKTHROUGH TECHNOLOGIES

^{[W][OA]}Metabolomics of a Single Vacuole Reveals Metabolic Dynamism in an Alga *Chara australis*. Akira Oikawa, Fumio Matsuda, Munehiro Kikuyama, Tetsuro Mimura, and Kazuki Saito 544

^{[C][W][OA]}The Rice Miniature Inverted Repeat Transposable Element *mPing* Is an Effective Insertional Mutagen in Soybean. C. Nathan Hancock, Feng Zhang, Kristen Floyd, Aaron O. Richardson, Peter LaFayette, Donna Tucker, Susan R. Wessler, and Wayne A. Parrott 552

^[W]Subtissue-Specific Evaluation of Promoter Efficiency by Quantitative Fluorometric Assay in Laser Microdissected Tissues of Rapeseed. Jan Jasik, Silke Schiebold, Hardy Rolletschek, Peter Denolf, Katrien Van Adenhove, Thomas Altmann, and Ljudmilla Borisjuk 563

RESEARCH ARTICLES

BIOCHEMICAL PROCESSES AND MACROMOLECULAR STRUCTURES

^{[W][OA]}Functional Characterization of Evolutionarily Divergent 4-Coumarate:Coenzyme A Ligases in Rice. Jinshan Gui, Junhui Shen, and Laigeng Li 574

^[W]Defining the Protein Complex Proteome of Plant Mitochondria. Jennifer Klodmann, Michael Senkler, Christina Rode, and Hans-Peter Braun 587

^[W]Structural Resolution of the Complex between a Fungal Polygalacturonase and a Plant Polygalacturonase-Inhibiting Protein by Small-Angle X-Ray Scattering. Manuel Benedetti, Claudia Leggio, Luca Federici, Giulia De Lorenzo, Nicolae Viorel Pavel, and Felice Cervone 599

^[W]Seed Storage Oil Mobilization Is Important But Not Essential for Germination or Seedling Establishment in *Arabidopsis*. Amélie A. Kelly, Anne-Laure Quettier, Eve Shaw, and Peter J. Eastmond 866

Continued on next page

- [W][OA] Biosynthesis of the Major Tetrahydroxystilbenes in Spruce, Astringin and Isorhapontin, Proceeds via Resveratrol and Is Enhanced by Fungal Infection. *Almuth Hammerbacher, Steven G. Ralph, Joerg Bohlmann, Trevor M. Fenning, Jonathan Gershenzon, and Axel Schmidt* 876

BIOENERGETICS AND PHOTOSYNTHESIS

- [W][OA] HCF243 Encodes a Chloroplast-Localized Protein Involved in the D1 Protein Stability of the Arabidopsis Photosystem II Complex. *Dongyuan Zhang, Gongke Zhou, Bingbing Liu, Yingzhen Kong, Na Chen, Qiang Qiu, Hongju Yin, Jiaying An, Fang Zhang, and Fan Chen* 608
- [W] Antisense Suppression of the Small Chloroplast Protein CP12 in Tobacco Alters Carbon Partitioning and Severely Restricts Growth. *Thomas P. Howard, Michael J. Fryer, Prashant Singh, Metodi Metodiev, Anna Lytovchenko, Toshihiro Obata, Alisdair R. Fernie, Nicholas J. Kruger, W. Paul Quick, Julie C. Lloyd, and Christine A. Raines* 620

CELL BIOLOGY AND SIGNAL TRANSDUCTION

- [C][W][OA] The Small GTPase Rab5a Is Essential for Intracellular Transport of Proglutelin from the Golgi Apparatus to the Protein Storage Vacuole and Endosomal Membrane Organization in Developing Rice Endosperm. *Masako Fukuda, Mio Satoh-Cruz, Liuying Wen, Andrew J. Crofts, Aya Sugino, Haruhiko Washida, Thomas W. Okita, Masahiro Ogawa, Yasushi Kawagoe, Masayoshi Maeshima, and Toshihiro Kumamaru* 632
- [W][OA] An Arabidopsis Prenylated Rab Acceptor 1 Isoform, AtPRA1.B6, Displays Differential Inhibitory Effects on Anterograde Trafficking of Proteins at the Endoplasmic Reticulum. *Myoung Hui Lee, Chanjin Jung, Junho Lee, Soo Youn Kim, Yongjik Lee, and Inhwan Hwang* 645

DEVELOPMENT AND HORMONE ACTION

- [W][OA] Adenosine Kinase Contributes to Cytokinin Interconversion in Arabidopsis. *Sarah Schoor, Scott Farrow, Hanna Blaschke, Sanghyun Lee, Gregory Perry, Klaus von Schwartzenberg, Neil Emery, and Barbara Moffatt* 659
- [C][W][OA] Zinc Finger Protein5 Is Required for the Control of Trichome Initiation by Acting Upstream of Zinc Finger Protein8 in Arabidopsis. *Zhongjing Zhou, Lijun An, Lili Sun, Shuijin Zhu, Wanyan Xi, Pierre Broun, Hao Yu, and Yinbo Gan* 673
- [W][OA] miR393 and Secondary siRNAs Regulate Expression of the TIR1/AFB2 Auxin Receptor Clade and Auxin-Related Development of Arabidopsis Leaves. *Azeddine Si-Ammour, David Windels, Estelle Arn-Boulidoires, Claudia Kutter, Jérôme Ailhas, Frederick Meins, and Franck Vazquez* 683
- [W][OA] The Arabidopsis bZIP Gene AtbZIP63 Is a Sensitive Integrator of Transient Abscisic Acid and Glucose Signals. *Cleverson Carlos Matioli, Juarez Pires Tomaz, Gustavo Turqueto Duarte, Fernanda Manso Prado, Luiz Eduardo Vieira Del Bem, Amanda Bortolini Silveira, Luciane Gauer, Luiz Gustavo Guedes Corrêa, Rodrigo Duarte Drumond, Américo José Carvalho Viana, Paolo Di Mascio, Christian Meyer, and Michel Vincentz* 692
- [C][W] Mutations in MYB3R1 and MYB3R4 Cause Pleiotropic Developmental Defects and Preferential Down-Regulation of Multiple G2/M-Specific Genes in Arabidopsis. *Nozomi Haga, Kosuke Kobayashi, Takamasa Suzuki, Kenichiro Maeo, Minoru Kubo, Misato Ohtani, Nobutaka Mitsuda, Taku Demura, Kenzo Nakamura, Gerd Jürgens, and Masaki Ito* 706
- [C][W][OA] Low-Fluence Red Light Increases the Transport and Biosynthesis of Auxin. *Xing Liu, Jerry D. Cohen, and Gary Gardner* 891

ENVIRONMENTAL STRESS AND ADAPTATION TO STRESS

- [W][OA] A Common Genetic Determinism for Sensitivities to Soil Water Deficit and Evaporative Demand: Meta-Analysis of Quantitative Trait Loci and Introgression Lines of Maize. *Claude Welcker, Walid Sadok, Grégoire Dignat, Morgan Renault, Silvio Salvi, Alain Charcosset, and François Tardieu* 718
- [W] Inhibition of Protein Synthesis by TOR Inactivation Revealed a Conserved Regulatory Mechanism of the BiP Chaperone in *Chlamydomonas*. *Sandra Díaz-Troya, María Esther Pérez-Pérez, Marta Pérez-Martín, Suzette Moes, Paul Jenő, Francisco J. Florencio, and José L. Crespo* 730
- [W][OA] Arabidopsis Cys2/His2 Zinc-Finger Proteins AZF1 and AZF2 Negatively Regulate Abscisic Acid-Repressive and Auxin-Inducible Genes under Abiotic Stress Conditions. *Ken-Suke Kodaira, Feng Qin, Lam-Son Phan Tran, Kyonoshin Maruyama, Satoshi Kidokoro, Yasunari Fujita, Kazuo Shinozaki, and Kazuko Yamaguchi-Shinozaki* 742

Continued on next page

- [W][OA] Increased Thermostability of Thylakoid Membranes in Isoprene-Emitting Leaves Probed with Three Biophysical Techniques. *Violeta Velikova, Zsuzsanna Várkonyi, Milán Szabó, Liliana Maslenkova, Isabel Nogues, László Kovács, Violeta Peeva, Mira Busheva, Győző Garab, Thomas D. Sharkey, and Francesco Loreto* 905
- [W][OA] The ZmASR1 Protein Influences Branched-Chain Amino Acid Biosynthesis and Maintains Kernel Yield in Maize under Water-Limited Conditions. *Laetitia Virilouvet, Marie-Pierre Jacquemot, Denise Gerentes, Hélène Corti, Sophie Bouton, Françoise Gilard, Benoît Valot, Jacques Trouverie, Guillaume Tcherkez, Matthieu Falque, Catherine Damerval, Peter Rogowsky, Pascual Perez, Graham Noctor, Michel Zivy, and Sylvie Coursol* 917

GENETICS, GENOMICS, AND MOLECULAR EVOLUTION

- [W][OA] Genome-Wide Comparison of Nucleotide-Binding Site-Leucine-Rich Repeat-Encoding Genes in *Arabidopsis*. *Ya-Long Guo, Joffrey Fitz, Korbinian Schneeberger, Stephan Ossowski, Jun Cao, and Detlef Weigel* 757
- [W][OA] The Tomato Terpene Synthase Gene Family. *Vasiliki Falara, Tariq A. Akhtar, Thuong T.H. Nguyen, Eleni A. Spyropoulou, Petra M. Bleeker, Ines Schauvinhold, Yuki Matsuba, Megan E. Bonini, Anthony L. Schillmiller, Robert L. Last, Robert C. Schuurink, and Eran Pichersky* 770
- [C][W] Genome-Wide Characterization of the HD-ZIP IV Transcription Factor Family in Maize: Preferential Expression in the Epidermis. *Marie Javelle, Catherine Klein-Cosson, Vanessa Vernoud, Véronique Boltz, Chris Maher, Marja Timmermans, Nathalie Depège-Fargeix, and Peter M. Rogowsky* 790
- [C][W] Evolution of the S-Locus Region in Arabidopsis Relatives. *Ya-Long Guo, Xuan Zhao, Christa Lanz, and Detlef Weigel* 937

PLANTS INTERACTING WITH OTHER ORGANISMS

- [W] Arabidopsis MPK3 and MPK6 Play Different Roles in Basal and Oligogalacturonide- or Flagellin-Induced Resistance against *Botrytis cinerea*. *Roberta Galletti, Simone Ferrari, and Giulia De Lorenzo* 804
- [W][OA] Cytokinins Mediate Resistance against *Pseudomonas syringae* in Tobacco through Increased Antimicrobial Phytoalexin Synthesis Independent of Salicylic Acid Signaling. *Dominik K. Großkinsky, Muhammad Naseem, Usama Ramadan Abdelmohsen, Nicole Plickert, Thomas Engelke, Thomas Griebel, Jürgen Zeier, Ondřej Novák, Miroslav Strnad, Hartwig Pfeifhofer, Eric van der Graaff, Uwe Simon, and Thomas Roitsch* 815
- [C][W][OA] Phytoplasma Effector SAP54 Induces Indeterminate Leaf-Like Flower Development in Arabidopsis Plants. *Allyson M. MacLean, Akiko Sugio, Olga V. Makarova, Kim C. Findlay, Victoria M. Grieve, Réka Tóth, Mogens Nicolaisen, and Saskia A. Hogenhout* 831

SYSTEMS BIOLOGY, MOLECULAR BIOLOGY, AND GENE REGULATION

- [C][W][OA] Male Sterile2 Encodes a Plastid-Localized Fatty Acyl Carrier Protein Reductase Required for Pollen Exine Development in Arabidopsis. *Weiwei Chen, Xiao-Hong Yu, Kaisi Zhang, Jianxin Shi, Sheron De Oliveira, Lukas Schreiber, John Shanklin, and Dabing Zhang* 842
- [W][OA] An AP2 Domain-Containing Gene, *ESE1*, Targeted by the Ethylene Signaling Component EIN3 Is Important for the Salt Response in Arabidopsis. *Lixia Zhang, Zhuofu Li, Ruidang Quan, Guojing Li, Ruigang Wang, and Rongfeng Huang* 854
- [C][W][OA] A Large-Scale Genetic Screen in Arabidopsis to Identify Genes Involved in Pollen Exine Production. *Anna A. Dobritsa, Aliza Geanconteri, Jay Shrestha, Ann Carlson, Nicholas Kooyers, Daniel Coerper, Ewa Urbanczyk-Wochniak, Bennie J. Bench, Lloyd W. Sumner, Robert Swanson, and Daphne Preuss* 947

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