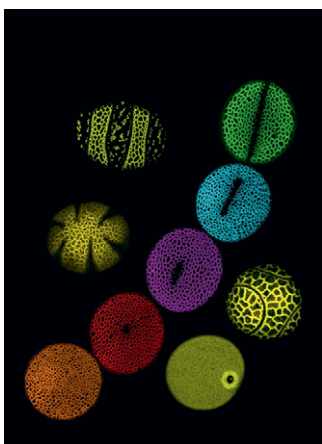


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ON THE COVER



The cell walls of pollen grains, or exines, assemble into beautiful and very diverse species-specific patterns. Apertures, areas where exines are not deposited, are very common elements of exine patterning and also differ widely across species in their number, morphology, and positions. The dramatic variations of exines and apertures in nature are illustrated by four yellow pollen grains (clockwise from top left: *Salvia patens*, *Passiflora* sp., *Salvia leucantha*, and *Brachypodium distachyon*). The presence of apertures suggests the existence of cellular mechanisms that define these areas and prevent exine deposition. Dobritsa and Coerper (pages 4452–4464) describe the function of *Arabidopsis thaliana* *INAPERTURE POLLEN1* (*INP1*), which is shown to specifically control aperture formation. *INP1* protein marks positions of the future apertures and appears to control aperture length in a dosage-dependent manner. The sweeping line (top right to bottom left) of false-colored *Arabidopsis* pollen grains in this image illustrates a gradient of aperture lengths observed in mutant lines with different levels of *INP1*, from the presence of long apertures in wild-type pollen (green) to the complete absence of apertures in the *inp1* null mutants (orange). The three pollen grains in between these two extremes come from the *inp1* lines containing independent insertions of the *INP1* transgene. (Photographs and image design by Anna Dobritsa.)

IN BRIEF

- Open Wide! Exine Patterning and Aperture Formation in *Arabidopsis* Pollen** 4311
Jennifer Mach
- Ubiquitination and Exocytosis in Plant Immunity** 4312
Nancy R. Hofmann
- Polarization of Subsidiary Cell Division in Maize Stomatal Complexes** 4313
Kathleen L. Farquharson

COMMENTARY

- Reevaluation of the Reliability and Usefulness of the Somatic Homologous Recombination Reporter Lines** 4314
Bekir Ülker, Carl Maximilian Hommelsheim, Tobias Berson, Stefan Thomas, Balakumaran Chandrasekar, Ahmet Can Olcay, Kenneth Wayne Berendzen, and Lamprinos Frantzeskakis
- In Planta Somatic Homologous Recombination Assay Revisited: A Successful and Versatile, but Delicate Tool** 4324
Holger Puchta and Barbara Hohn

LARGE-SCALE BIOLOGY ARTICLES

- Genome-Wide Analysis Uncovers Regulation of Long Intergenic Noncoding RNAs in *Arabidopsis*** [C](#)[W](#) 4333
Jun Liu, Choonkyun Jung, Jun Xu, Huan Wang, Shulin Deng, Lucia Bernad, Catalina Arenas-Huertero, and Nam-Hai Chua
- Regulatory Impact of RNA Secondary Structure across the *Arabidopsis* Transcriptome** [W](#)[I](#)[O](#)[A](#) 4346
Fan Li, Qi Zheng, Lee E. Vandivier, Matthew R. Willmann, Ying Chen, and Brian D. Gregory
- Polypyrimidine Tract Binding Protein Homologs from *Arabidopsis* Are Key Regulators of Alternative Splicing with Implications in Fundamental Developmental Processes** [W](#) 4360
Christina Rühl, Eva Stauffer, André Kahles, Gabriele Wagner, Gabriele Drechsel, Gunnar Rättsch, and Andreas Wachter
- Genome-Wide Control of Polyadenylation Site Choice by CPSF30 in *Arabidopsis*** [C](#)[W](#)[I](#)[O](#)[A](#) 4376
Patrick E. Thomas, Xiaohui Wu, Man Liu, Bobby Gaffney, Guoli Ji, Qingshun Q. Li, and Arthur G. Hunt

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The MORPH Algorithm: Ranking Candidate Genes for Membership in *Arabidopsis* and Tomato Pathways [C](#)[W](#)

4389

Oren Tzfadia, David Amar, Louis M.T. Bradbury, Eleanore T. Wurtzel, and Ron Shamir

RESEARCH ARTICLES

Identification and Characterization of an Epi-Allele of *FIE1* Reveals a Regulatory Linkage between Two Epigenetic Marks in Rice [C](#)[W](#)[O](#)[A](#)

4407

Liguo Zhang, Zhijun Cheng, Ruizhen Qin, Yang Qiu, Jiu-Lin Wang, Xiekui Cui, Lianfeng Gu, Xin Zhang, Xiuping Guo, Dan Wang, Ling Jiang, Chuan-yin Wu, Haiyang Wang, Xiaofeng Cao, and Jianmin Wan

Genome-Wide Characterization of Nonreference Transposons Reveals Evolutionary Propensities of Transposons in Soybean [C](#)[W](#)

4422

Zhixi Tian, Meixia Zhao, Maoyun She, Jianchang Du, Steven B. Cannon, Xin Liu, Xun Xu, Xinpeng Qi, Man-Wah Li, Hon-Ming Lam, and Jianxin Ma

The Tomato FRUITFULL Homologs TDR4/FUL1 and MBP7/FUL2 Regulate Ethylene-Independent Aspects of Fruit Ripening [W](#)

4437

Marian Bemer, Rумына Karlova, Ana Rosa Ballester, Yury M. Tikunov, Arnaud G. Bovy, Mieke Wolters-Arts, Priscilla de Barros Rossetto, Gerco C. Angenent, and Ruud A. de Maagd

The Novel Plant Protein INAPERTURATE POLLEN1 Marks Distinct Cellular Domains and Controls Formation of Apertures in the *Arabidopsis* Pollen Exine [C](#)[W](#)

4452

Anna A. Dobritsa and Daniel Coerper

Protein-Protein and Protein-Membrane Associations in the Lignin Pathway [W](#)[O](#)[A](#)

4465

Jean-Etienne Bassard, Ludovic Richert, Jan Geerinck, Hugues Renault, Frédéric Duval, Pascaline Ullmann, Martine Schmitt, Etienne Meyer, Jérôme Mutterer, Wout Boerjan, Geert De Jaeger, Yves Mely, Alain Goossens, and Danièle Werck-Reichhart

A Triantagonistic Basic Helix-Loop-Helix System Regulates Cell Elongation in *Arabidopsis* [W](#)[O](#)[A](#)

4483

Miho Ikeda, Sumire Fujiwara, Nobutaka Mitsuda, and Masaru Ohme-Takagi

NODULE ROOT and *COCHLEATA* Maintain Nodule Development and Are Legume Orthologs of *Arabidopsis* *BLADE-ON-PETIOLE* Genes [W](#)[O](#)[A](#)

4498

Jean-Malo Couzigou, Vladimir Zhukov, Samuel Mondy, Ghada Abu el Heba, Viviane Cosson, T.H. Noel Ellis, Mike Ambrose, Jiangqi Wen, Million Tadege, Igor Tikhonovich, Kirankumar S. Mysore, Joanna Putterill, Julie Hofer, Alexei Y. Borisov, and Pascal Ratet

A Galacturonic Acid-Containing Xyloglucan Is Involved in *Arabidopsis* Root Hair Tip Growth [W](#)

4511

Maria J. Peña, Yingzhen Kong, William S. York, and Malcolm A. O'Neill

Crystal Structure of an Indole-3-Acetic Acid Amido Synthetase from Grapevine Involved in Auxin Homeostasis [W](#)

4525

Thomas S. Peat, Christine Böttcher, Janet Newman, Del Lucent, Nathan Cowieson, and Christopher Davies

FIMBRIN1 Is Involved in Lily Pollen Tube Growth by Stabilizing the Actin Fringe [C](#)[W](#)[O](#)[A](#)

4539

Hui Su, Jinsheng Zhu, Chao Cai, Weike Pei, Jiaojiao Wang, Huaijian Dong, and Haiyun Ren

Phosphatidic Acid Regulates Microtubule Organization by Interacting with MAP65-1 in Response to Salt Stress in *Arabidopsis* [C](#)[W](#)

4555

Qun Zhang, Feng Lin, Tonglin Mao, Jianing Nie, Min Yan, Ming Yuan, and Wenhua Zhang


Identification of PAN2 by Quantitative Proteomics as a Leucine-Rich Repeat-Receptor-Like Kinase Acting Upstream of PAN1 to Polarize Cell Division in Maize [C](#)[W](#)[O](#)[A](#)

4577

Xiaoguo Zhang, Michelle Facette, John A. Humphries, Zhouxin Shen, Yeri Park, Dena Sutimantapani, Anne W. Sylvester, Steven P. Briggs, and Laurie G. Smith

- Arabidopsis* FHY3 and HY5 Positively Mediate Induction of *COP1* Transcription in Response to Photomorphogenic UV-B Light** [C](#)[W](#)[O](#)[A](#) 4590
Xi Huang, Xinhao Ouyang, Panyu Yang, On Sun Lau, Gang Li, Jigang Li, Haodong Chen, and Xing Wang Deng
- The *ARC1* E3 Ligase Gene Is Frequently Deleted in Self-Compatible Brassicaceae Species and Has a Conserved Role in *Arabidopsis lyrata* Self-Pollen Rejection** [W](#) 4607
Emily Indriolo, Pirashaanthu Tharmapalan, Stephen I. Wright, and Daphne R. Goring
- Cysteine-Generated Sulfide in the Cytosol Negatively Regulates Autophagy and Modulates the Transcriptional Profile in *Arabidopsis*** [W](#) 4621
Consolación Álvarez, Irene García, Inmaculada Moreno, María Esther Pérez-Pérez, José L. Crespo, Luis C. Romero, and Cecilia Gotor
- Degradation of the Endoplasmic Reticulum by Autophagy during Endoplasmic Reticulum Stress in *Arabidopsis*** [C](#)[W](#) 4635
Yimo Liu, Junmarie Soto Burgos, Yan Deng, Renu Srivastava, Stephen H. Howell, and Diane C. Bassham
- Metabolic Interactions between the Lands Cycle and the Kennedy Pathway of Glycerolipid Synthesis in *Arabidopsis* Developing Seeds** [W](#) 4652
Liping Wang, Wenyun Shen, Michael Kazachkov, Guanqun Chen, Qilin Chen, Anders S. Carlsson, Sten Stymne, Randall J. Weselake, and Jitao Zou
- A Galactoglycerolipid Lipase Is Required for Triacylglycerol Accumulation and Survival Following Nitrogen Deprivation in *Chlamydomonas reinhardtii*** [C](#)[W](#) 4670
Xiaobo Li, Eric R. Moellering, Bensheng Liu, Cassandra Johnny, Marie Fedewa, Barbara B. Sears, Min-Hao Kuo, and Christoph Benning
- Phototropin Influence on Eyespot Development and Regulation of Phototactic Behavior in *Chlamydomonas reinhardtii*** [W](#) 4687
Jessica Trippens, Andre Greiner, Jana Schellwat, Martin Neukam, Theresa Rottmann, Yinghong Lu, Suneel Kateriya, Peter Hegemann, and Georg Kreimer
- The Ubiquitin Ligase PUB22 Targets a Subunit of the Exocyst Complex Required for PAMP-Triggered Responses in *Arabidopsis*** [C](#)[W](#) 4703
Martin Stegmann, Ryan G. Anderson, Kazuya Ichimura, Tamara Pecenkova, Patrick Reuter, Viktor Žárský, John M. McDowell, Ken Shirasu, and Marco Trujillo
- The KEEP ON GOING Protein of *Arabidopsis* Regulates Intracellular Protein Trafficking and Is Degraded during Fungal Infection** [C](#)[W](#)[O](#)[A](#) 4717
Yangnan Gu and Roger W. Innes
- XTH31*, Encoding an in Vitro XEH/XET-Active Enzyme, Regulates Aluminum Sensitivity by Modulating in Vivo XET Action, Cell Wall Xyloglucan Content, and Aluminum Binding Capacity in *Arabidopsis*** [W](#) 4731
Xiao Fang Zhu, Yuan Zhi Shi, Gui Jie Lei, Stephen C. Fry, Bao Cai Zhang, Yi Hua Zhou, Janet Braam, Tao Jiang, Xiao Yan Xu, Chuan Zao Mao, Yuan Jiang Pan, Jian Li Yang, Ping Wu, and Shao Jian Zheng
- The *Magnaporthe oryzae* Effector AvrPiz-t Targets the RING E3 Ubiquitin Ligase API6 to Suppress Pathogen-Associated Molecular Pattern-Triggered Immunity in Rice** [W](#)[O](#)[A](#) 4748
Chan-Ho Park, Songbiao Chen, Gautam Shirsekar, Bo Zhou, Chang Hyun Khang, Pattavipha Songkumarn, Ahmed J. Afzal, Yuese Ning, Ruyi Wang, Maria Bellizzi, Barbara Valent, and Guo-Liang Wang

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