ON THE COVER

Reyes et al. (pages 769–784) use a combination of molecular approaches, in vivo imaging of fluorescent proteins, and structural analysis by electron tomography to study storage proteins, such as zeins, in maize seed tissue. They investigate patterns of gene transcription and protein transport in aleurone cells and describe an atypical autophagic mechanism for the delivery of these proteins to the vacuole that may be common to cereals. The cover shows an electron tomographic reconstruction of a developing maize aleurone cell containing vacuoles with large aggregates of storage proteins (red) and intravacuolar membranes (green); mitochondria (gold), plastids (green), lipid bodies (blue), and ribosomes (gray) are abundant in the cytoplasm.
The R2R3 MYB Transcription Factor DUO1 Activates a Male Germline-Specific Regulon Essential for Sperm Cell Differentiation in Arabidopsis

Michael Borg, Lynette Brownfield, Hoda Khatab, Anna Sidorova, Melanie Lingaya, and David Twell

vanishing tassel2 Encodes a Grass-Specific Tryptophan Aminotransferase Required for Vegetative and Reproductive Development in Maize

Kimberly A. Phillips, Andrea L. Skirpan, Xing Liu, Ashley Christensen, Thomas L. Slewinski, Christopher Hudson, Solmaz Barazesh, Jerry D. Cohen, Simon Malcomber, and Paula McSteen

A Per-ARNT-Sim-Like Sensor Domain Uniquely Regulates the Activity of the Homeodomain Leucine Zipper Transcription Factor REVOLUTA in Arabidopsis

Enrico Magnani and M. Kathryn Barton

12-Oxo-Phytodienoic Acid Accumulation during Seed Development Represses Seed Germination in Arabidopsis

Anuja Dave, M. Luisa Hernández, Zhesi He, Vasilios M.E. Andriotis, Fabián E. Vaistij, Tony R. Larson, and Ian A. Graham

Antisense Inhibition of the Iron-Sulphur Subunit of Succinate Dehydrogenase Enhances Photosynthesis and Growth in Tomato via an Organic Acid–Mediated Effect on Stomatal Aperture

Wagner L. Araújo, Adriano Nunes-Nesi, Sonia Osorio, Björn Uzadel, Daniela Fuentes, Réka Nagy, Ilse Balbo, Martin Lehmann, Claudia Studart-Witkowski, Takayuki Tohge, Enrico Martinoina, Xavier Jordana, Fábio M. DaMatta, and Alisdair R. Fernie

Mutation of Rice BC12/GDD1, Which Encodes a Kinesin-Like Protein That Binds to a GA Biosynthesis Gene Promoter, Leads to Dwarfism with Impaired Cell Elongation

Juan Li, Jiafu Jiang, Qian Qian, Yunyuan Xu, Cui Zhang, Jun Xiao, Cheng Du, Wei Luo, Guoxing Zou, Minglan Chen, Yunging Huang, Yuqi Feng, Zhukuan Cheng, Ming Yuan, and Kang Chong

The Arabidopsis D-Type Cyclin CYCD2;1 and the Inhibitor ICK2/KRP2 Modulate Auxin-Induced Lateral Root Formation

Luis Sanz, Walter Dewitte, Celine Forzani, Farah Patell, Jeroen Nieuwland, Bo Wen, Pedro Quelhas, Sarah De Jager, Craig Titmus, Aurélio Campilho, Hong Ren, Mark Estelle, Hong Wang, and James A.H. Murray

BENT UPPERMOST INTERNODE1 Encodes the Class II Formin FH5 Crucial for Actin Organization and Rice Development

Weibing Yang, Sulin Ren, Xiaoming Zhang, Mingjun Gao, Shenghai Ye, Yongbin Qi, Yiyuan Zheng, Juan Wang, Longjun Zeng, Qun Li, Shanjun Huang, and Zuhua He

RICE MORPHOLOGY DETERMINANT Encodes the Type II Formin FH5 and Regulates Rice Morphogenesis

Zheng Zhang, Yi Zhang, Hexin Tan, Ying Wang, Gang Li, Wanqi Liang, Zheng Yuan, Jianping Hu, Haiyun Ren, and Dabing Zhang

The Arabidopsis bHLH Transcription Factors MYC3 and MYC4 Are Targets of JAZ Repressors and Act Additively with MYC2 in the Activation of Jasmonic Responses

Patricia Fernández-Calvo, Andrea Chini, Gemma Fernández-Barbero, José-Manuel Chico, Selena Gimenez-Ibanez, Jan Geerinck, Dominique Eeckhout, Fabian Schweizer, Marta Godoy, José Manuel Franco-Zorrilla, Laurents Pauwels, Erwin Witters, María Isabel Puga, Javier Paz-Ares, Alain Goossens, Philippe Reymond, Geert De Jaeger, and Roberto Solano
Metabolic Engineering in *Nicotiana benthamiana* Reveals Key Enzyme Functions in *Arabidopsis* Indole Glucosinolate Modification
Marina Pfalz, Michael Dalgaard Mikkelsen, Pawel Bednarek, Carl Erik Olsen, Barbara Ann Halkier, and Juergen Kroymann

An *Arabidopsis* Dual-Localized Pentatricopeptide Repeat Protein Interacts with Nuclear Proteins Involved in Gene Expression Regulation
Kamel Hammani, Anthony Gobert, Kamal Hleibieh, Laurence Choulier, Ian Small, and Philippe Giege

Crosstalk between Hsp90 and Hsp70 Chaperones and Heat Stress Transcription Factors in Tomato
Alexander Hahn, Daniela Bublak, Enrico Schleiff, and Klaus-Dieter Scharf

Rice Two-Pore K+ Channels Are Expressed in Different Types of Vacuoles
Stanislaw Isayenkov, Jean-Charles Isner, and Frans J.M. Maathuis

Delivery of Prolamins to the Protein Storage Vacuole in Maize Aleurone Cells
Francisca C. Reyes, Taijoon Chung, David Holding, Rudolf Jung, Richard Vierstra, and Marisa S. Otegui

The *Arabidopsis* Multistress Regulator TSPO Is a Heme Binding Membrane Protein and a Potential Scavenger of Porphyrins via an Autophagy-Dependent Degradation Mechanism
Celine Vanhee, Grzegorz Zapotoczny, Danièle Masquelier, Michel Ghislain, and Henri Batoko

Oxidative DNA Damage Bypass in *Arabidopsis thaliana* Requires DNA Polymerase λ and Proliferating Cell Nuclear Antigen 2
Alessandra Amoroso, Lorenzo Concia, Caterina Maggio, Cécile Raynaud, Catherine Bergounioux, Emmanuelle Crespan, Rino Cella, and Giovanni Maga

Proteomics and Functional Analyses of Pepper Abscisic Acid–Responsive 1 (*ABR1*), Which Is Involved in Cell Death and Defense Signaling
Du Seok Choi and Byung Kook Hwang

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