ON THE COVER

Maize ears form at the axils of leaves. In the barren stalk fastigiate1 (baf1) mutant, ears either do not form, or if they do, they develop fused to the internode. This defective organ separation causes the formation of notches along the internode, as seen in the cover image (leaves were removed to show the ear). Gallavotti et al. (pages 1756–1771) show that Baf1 encodes an AT-hook DNA binding protein involved in the initiation of axillary meristems.

IN BRIEF

Whole-Genome Duplications: Does Metabolic Connectivity Influence Gene Retention? 1683
Jennifer Mach

LOY1 Functions in Maintenance of Photosystem II 1684
Nancy A. Eckardt

REVIEW

How Can Research on Plants Contribute to Promoting Human Health? 1685
Cathie Martin, Eugenio Buteili, Katia Petroni, and Chiara Tonelli

LARGE-SCALE BIOLOGY ARTICLES

Extending SILAC to Proteomics of Plant Cell Lines 1701
Wolfgang Schütz, Niklas Hausmann, Karsten Krug, Rüdiger Hampp, and Boris Macek

Frequent Gene Movement and Pseudogene Evolution Is Common to the Large and Complex Genomes of Wheat, Barley, and Their Relatives 1706
Thomas Wicker, Klaus F.X. Mayer, Heidrun Gundlach, Mihaela Martis, Burkhard Steuernagel, Uwe Scholz, Hana Šimková, Marie Kubaláková, Frédéric Choulet, Stefan Taudien, Matthias Platzer, Catherine Feuillet, Tzion Fahima, Hikmet Budak, Jaroslav Doležel, Beat Keller, and Nils Stein

RESEARCH ARTICLES

Two-Phase Resolution of Polyploidy in the Arabidopsis Metabolic Network Gives Rise to Relative and Absolute Dosage Constraints 1719
Michaël Bekaert, Patrick P. Edger, J. Chris Pires, and Gavin C. Conant

cis- and trans-Regulation of miR163 and Target Genes Confers Natural Variation of Secondary Metabolites in Two Arabidopsis Species and Their Allopolyploids 1729
Danny W-K. Ng, Changqing Zhang, Marisa Miller, Gregory Palmer, Marvin Whiteley, Dorothea Tholl, and Z. Jeffrey Chen

Os-GIGANTEA Confers Robust Diurnal Rhythms on the Global Transcriptome of Rice in the Field 1741
Takeshi Izawa, Motohiro Mihara, Yuji Suzuki, Meenu Gupta, Hironori Itoh, Atsushi J. Nagano, Ritsuko Motoyama, Yuji Sawada, Masahiro Yano, Masami Yokota Hirai, Amane Makino, and Yoshiaki Nagamura
BARREN STALK FASTIGIATE1 Is an AT-Hook Protein Required for the Formation of Maize Ears

Andrea Gallavotti, Simon Malcomber, Craig Gaines, Sharon Stanfield, Clinton Whipple, Elizabeth Kellogg, and Robert J. Schmidt

The Arabidopsis C2H2 Zinc Finger INDETERMINATE DOMAIN1/ENHYDROUS Promotes the Transition to Germination by Regulating Light and Hormonal Signaling during Seed Maturation

J. Allan Feurtado, Daiqing Huang, Leigh Wicki-Stordeur, Laura E. Hemstock, Mireille S. Potentier, Edward W.T. Tsang, and Adrian J. Cutler

The Jasmonate-ZIM-Domain Proteins Interact with the WD-Repeat/bHLH/MYB Complexes to Regulate Jasmonate-Mediated Anthocyanin Accumulation and Trichome Initiation in Arabidopsis thaliana

Tiancong Qi, Susheng Song, Qingcuo Ren, Dewei Wu, Huang Huang, Yan Chen, Meng Fan, Wen Peng, Chunmei Ren, and Daxin Xie

Interaction between the bHLH Transcription Factor FIT and ETHYLENE INSENSITIVE3/ETHYLENE INSENSITIVE3-LIKE1 Reveals Molecular Linkage between the Regulation of Iron Acquisition and Ethylene Signaling in Arabidopsis

Sivasenkar Lingam, Julia Mohrbacher, Tzvetina Brumbarova, Thomas Potuschak, Claudia Fink-Straube, Eddy Blondet, Pascal Geschick, and Petra Bauer

An Arabidopsis E3 Ligase, SHOOT GRAVITROPISM9, Modulates the Interaction between Statoliths and F-Actin in Gravity Sensing

Moritaka Nakamura, Masatsugu Toyota, Masao Tasaka, and Miyo Terao Morita

DELLAs Regulate Chlorophyll and Carotenoid Biosynthesis to Prevent Photooxidative Damage during Seedling Deetiolation in Arabidopsis

Soizic Cheminant, Michael Wild, Florence Bouvier, Sandra Pelletier, Jean-Pierre Renou, Mathieu Erhardt, Scott Hayes, Matthew J. Terry, Pascal Geschick, and Patrick Achard

A Small Zinc Finger Thylakoid Protein Plays a Role in Maintenance of Photosystem II in Arabidopsis thaliana

Yan Lu, David A. Hall, and Robert L. Last

Pause-and-Stop: The Effects of Osmotic Stress on Cell Proliferation during Early Leaf Development in Arabidopsis and a Role for Ethylene Signaling in Cell Cycle Arrest

Aleksandra Skirycz, Hannes Claeyts, Stefanie De Bodt, Akira Oikawa, Shoko Shinoda, Megan Andriankaja, Katrien Maleux, Nubia Barbosa Eloy, Frederik Coppens, Sang-Dong Yoo, Kazuki Saito, and Dirk Inze

Microtubule-Associated Proteins MAP65-1 and MAP65-2 Positively Regulate Axial Cell Growth in Etiolated Arabidopsis Hypocotyls

Jessica R. Lucas, Stephanie Courtney, Mathew Hassfurder, Sonia Dhingra, Adam Bryant, and Sidney L. Shaw

Phloem-Specific Expression of Yang Cycle Genes and Identification of Novel Yang Cycle Enzymes in Plantago and Arabidopsis

Benjamin Pommerrenig, Kirstin Feussner, Wolfgang Zierer, Valentina Rabinovych, Franz Kleibi, Ivo Feussner, and Norbert Sauer

Clathrin Mediates Endocytosis and Polar Distribution of PIN Auxin Transporters in Arabidopsis

Saeko Kitakura, Steffen Vanneste, Stéphanie Robert, Christian Löfke, Thomas Teichmann, Hirokazu Tanaka, and Jiří Friml
Identification of an *Arabidopsis* Plasma Membrane–Located ATP Transporter Important for Anther Development

Benjamin Rieder and H. Ekkehard Neuhaus

*Arabidopsis* Nitrate Transporter NRT1.9 Is Important in Phloem Nitrate Transport

Ya-Yun Wang and Yi-Fang Tsay

A Member of the PLEIOTROPIC DRUG RESISTANCE Family of ATP Binding Cassette Transporters Is Required for the Formation of a Functional Cuticle in *Arabidopsis*

Michael Bessire, Sandra Borel, Guillaume Fabre, Luis Carraça, Nadia Efremova, Alexander Yephremov, Yan Cao, Reinhard Jetter, Anne-Claude Jacquat, Jean-Pierre Métraux, and Christiane Nawrath

The Plant Cuticle Is Required for Osmotic Stress Regulation of Abscisic Acid Biosynthesis and Osmotic Stress Tolerance in *Arabidopsis*

Zhen-Yu Wang, Liming Xiong, Wenbo Li, Jian-Kang Zhu, and Jianhua Zhu

DOLICHOL PHOSPHATE MANNOSE SYNTHASE1 Mediates the Biogenesis of Isoprenyl-Linked Glycans and Influences Development, Stress Response, and Ammonium Hypersensitivity in *Arabidopsis*

Nurul Jadid, Alexis Samba Mialoundama, Dimitri Heintz, Daniel Ayoub, Mathieu Erhardt, Jérôme Mutterer, Denise Meyer, Abdelmalek Aloua, Alain Van Dorselaer, Alain Rahier, Bilal Camara, and Florence Bouvier

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.