Mutagenesis is a fundamental tool for studying gene function. One can use clonal deletion methods to eliminate the wild-type allele in a tissue-specific manner, thereby uncovering gene functions in different regions of the organism. Wachsman et al. (pages 2581–2591) report on the Brother of Brainbow system, which creates specific deletion clones of gametophytic essential genes. The cover displays confocal images of fluorescently marked Brother of Brainbow clones in Arabidopsis roots. The middle panel shows a root tip 3 days after long heat-shock induction of CRE, leading to formation of broad clones. The outer roots show the six possible expression combinations as a result of single (cyan fluorescent protein or red fluorescent protein together with yellow fluorescent protein), double (magenta, cyan fluorescent protein, or red fluorescent protein), or no (yellow fluorescent protein) recombination event(s) in the parental germ cells, mediated by CRE recombinase.
Genome-Wide Binding Site Analysis of FAR-RED ELONGATED HYPOCOTYL3 Reveals Its Novel Function in Arabidopsis Development
Xinhao Ouyang, Jigang Li, Gang Li, Bosheng Li, Beibei Chen, Huashun Shen, Xi Huang, Xiaorong Mo, Xiangyuan Wan, Rongcheng Lin, Shigui Li, Haiyang Wang, and Xing Wang Deng

Rice MADS6 Interacts with the Floral Homeotic Genes SUPERWOMAN1, MADS3, MADS58, MADS13, and DROOPING LEAF in Specifying Floral Organ Identities and Meristem Fate
HaiFeng Li, WangQi Liang, Yun Hu, Lu Zhu, Changsong Yin, Jie Xu, Ludovico Dreni, Martin M. Kater, and Dabing Zhang

Arabidopsis Class I KNOTTED-Like Homeobox Proteins Act Downstream in the IDA-HAE/HSL2 Floral Abscission Signaling Pathway
Chun-Lin Shi, Grethe-Elisabeth Stenvik, Ane Kjersti Vie, Atle M. Bones, Veronique Pautot, Marcel Proveniers, Reindunn B. Aalen, and Melinka A. Butenko

Induction of Dormancy in Arabidopsis Summer Annuals Requires Parallel Regulation of DOG1 and Hormone Metabolism by Low Temperature and CBF Transcription Factors
Sarah L. Kendall, Anja Helliwege, Poppy Marriot, Celina Whalley, Ian A. Graham, and Steven Penfield

Distinct Cell-Autonomous Functions of RETINOBLASTOMA-RELATED in Arabidopsis Stem Cells Revealed by the Brother of Brainbow Clonal Analysis System
Guy Wachsman, Renze Heidstra, and Ben Scheres

Differential Regulation of Cellulose Orientation at the Inner and Outer Face of Epidermal Cells in the Arabidopsis Hypocotyl
Elizabeth Faris Crowell, Helene Timpano, Thierry Desprez, Tiny Franssen-Verheijen, Anne-Mie Emrons, Herman Hotive, and Samantha Vennettes

Augmin Plays a Critical Role in Organizing the Spindle and Phragmoplast
Chin-Min Kimmy Ho, Takashi Hotta, Zhaosheng Kong, Cui Jing Tracy Zeng, Jie Sun, Yuh-Ru Julie Lee, and Bo Liu

Control of Hydrogen Photoproduction by the Proton Gradient Generated by Cyclic Electron Flow in Chlamydomonas reinhardtii
Dimitri Tolleter, Bart Ghysels, Jean Alric, Dimitris Petroutosos, Irina Tolstygina, Danuta Krawietz, Thomas Happe, Pascaline Auroy, Jean-Marc Adriano, Audrey Bejly, Stephan Cuine, Julie Plet, Ilja M. Reiter, Bernard Genty, Laurent Courmac, Michael Hippler, and Gilles Pelletier

In Vitro Reconstitution of the Cyanobacterial Photoprotective Mechanism Mediated by the Orange Carotenoid Protein in Synechocystis PCC 6803
Michal Gwizdala, Adelie Wilson, and Diana Kirilovsky

A Monogalactosyldiacylglycerol Synthase Found in the Green Sulfur Bacterium Chlorobaculum tepidum Reveals Important Roles for Galactolipids in Photosynthesis
Shinji Masada, Jiro Harada, Makio Yokono, Yuichi Yuzawa, Mie Shimojima, Kazuhiro Murofushi, Hironori Tanaka, Hanako Masuda, Masato Murakawa, Tsuyoshi Haraguchi, Makio Kondo, Mikio Nishimura, Hideya Yuasa, Masato Noguchi, Hirozo Oh-oka, Ayumi Tanaka, Hitoshi Tamaki, and Hiroyuki Ohta

Arabidopsis Mutants Deleted in the Light-Harvesting Protein Lhcb4 Have a Disrupted Photosystem II Macrostructure and Are Defective in Photoprotection
Silvia de Bianchi, Nico Betterle, Roman Kouril, Stefano Cazzaniga, Egbert Boekema, Roberto Bassi, and Luca Dell’Osto

Recruitment of a Ribosomal Release Factor for Light- and Stress-Dependent Regulation of petB Transcript Stability in Arabidopsis Chloroplasts
Rhea Stoppel, Lina Lezhneva, Serena Schwenkert, Salar Torabi, Susanne Felder, Karin Meierhoff, Peter Westhoff, and Jörg Meurer
A Novel Calcium Binding Site in the Slow Vacuolar Cation Channel TPC1 Senses Luminal Calcium Levels

Beata Dadacz-Narloch, Diana Beyhl, Christina Larisch, Enrique J. López-Sanjurjo, Ralf Reski, Kazuyuki Kuchitsu, Thomas D. Müller, Dirk Becker, Gerald Schönknecht, and Rainer Hedrich

Independent Recruitment of an O-Methyltransferase for Syringyl Lignin Biosynthesis in Selaginella moellendorffii

Jing-Ke Weng, Takuya Akiyama, John Ralph, and Clint Chapple

The FRD3 Citrate Effluxer Promotes Iron Nutrition between Symplastically Disconnected Tissues throughout Arabidopsis Development

Hannetz Roschzttardtz, Mathilde Séguéla-Arnaud, Jean-François Briat, Grégory Vert, and Catherine Curie

Identification of Genes in the Phenylalanine Metabolic Pathway by Ectopic Expression of a MYB Transcription Factor in Tomato Fruit


The Defective Proteasome but Not Substrate Recognition Function Is Responsible for the Null Phenotypes of the Arabidopsis Proteasome Subunit RPN10

Ya-Ling Lin, Shu-Chiun Sung, Hwang-Long Tsai, Ting-Ting Yu, Ramalingam Radjacommare, Raju Usharani, Antony S. Fatimababy, Hsia-Yin Lin, Ya-Ying Wang, and Hongyong Fu

Symbiotic Rhizobia Bacteria Trigger a Change in Localization and Dynamics of the Medicagotranuctaula Receptor Kinase LYK3

Cara H. Haney, Brendan K. Riely, David M. Tricoli, Doug R. Cook, David W. Ehrhardt, and Sharon R. Long

Perturbation of Arabidopsis Amino Acid Metabolism Causes Incompatibility with the Adapted Biotrophic Pathogen Hyaloperonospora arabidopsis

Johannes Stuttmann, Hans-Michael Hubberten, Steffen Rietz, Jagreet Kaur, Paul Muskett, Raphael Gueroids, Pawel Bednarek, Rainer Hoefgen, and Jane E. Parker

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.