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, Huaisun Shen, Xi Huang, Xiaorong Mo, Xiangyuan Wan, Rongcheng Lin, Shiguil Li, Haiyang Wang, and Xing Wang Deng

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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, Wanjie Liang, Yun Hu, Lu Zhu, Changsong Yin, Jie Xu, Ludovic Dreni, Martin M. Kater, and Dabing Zhang

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Arabidopsis Class I KNOTTED-Like Homeobox Proteins Act Downstream in the IDA-HAE/HSIL2 Floral Abscission Signaling Pathway

Chun-Lin Shi, Grethe-Elisabeth Stenvik, Ane Kjersti Vie, Atle O. Bones, Véronique Pautot, Marcel Proveniers, Reidunn B. Aalen, and Melinka A. Butenko

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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 Hellwege, Poppy Marriot, Celine Whalley, Ian A. Graham, and Steven Penfield

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Distinct Cell-Autonomous Functions of RETINOBLASTOMA-RELATED in Arabidopsis Stem Cells Revealed by the Brother of Brainbow Clonal Analysis System

Guy Wachman, Renze Heidstra, and Ben Scheres

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Differential Regulation of Cellulose Orientation at the Inner and Outer Face of Epidermal Cells in the Arabidopsis Hypocotyl

Elizabeth Faris Crowell, Hélène Timpano, Thierry Desprez, Tiny Franssen-Verheijen, Anne-Mie Emrons, Herman Hörte, and Samantha Vennettes

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Augmin Plays a Critical Role in Organizing the Spindle and Phragmoplast Microtubule Arrays in Arabidopsis

Chin-Min Kimmy Ho, Takashi Hotta, Zhaosheng Kong, Cui Jing Tracy Zeng, Jie Sun, Yuh-Ru Julie Lee, and Bo Liu

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In Vitro Reconstitution of the Cyanobacterial Photoprotective Mechanism Mediated by the Orange Carotenoid Protein in Synechocystis PCC 6803

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Arabidopsis Mutants Deleted in the Light-Harvesting Protein Lhcb4 Have a Disrupted Photosystem II Macrostructure and Are Defective in Photoprotection

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Recruitment of a Ribosomal Release Factor for Light- and Stress-Dependent Regulation of petB Transcription Stability in Arabidopsis Chloroplasts

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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

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

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

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

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Symbiotic Rhizobia Bacteria Trigger a Change in Localization and Dynamics of the Medicago truncatula 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 arabidopsidis

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

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