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CellSeT: Novel Software to Extract and Analyze Structured Networks of Plant Cells from Confocal Images 1353
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Stromules are tentacle-like protrusions of plastids that have been hypothesized to connect individual plastids and shuttle molecules between them. Schattat et al. (pages 1465–1477) re-examine this hypothesis using a photoconvertible fluorescent protein, which enabled differential coloring of the plastids in a cell, and directly monitoring the putative transfer of fluorescent proteins between plastids. Using this technique, the authors show that stromules extended by independent plastids do not fuse or allow exchange of fluorescent proteins between plastids. The cover image shows the differential coloring of plastids and their stromules in leaf epidermal cells. Chlorophyll autofluorescence is rendered in blue.
Gene-Sharing Networks Reveal Organizing Principles of Transcriptomes in Arabidopsis and Other Multicellular Organisms

Song Li, Sona Pandey, Timothy E. Gookin, Zhixin Zhao, Liza Wilson, and Sarah M. Assmann

Patterns and Evolution of Nucleotide Landscapes in Seed Plants

Laurana Serres-Giardi, Khalid Belkhir, Jacques David, and Sylvain Glémin

Dynamic Antagonism between Phytochromes and PIF Family Basic Helix-Loop-Helix Factors Induces Selective Reciprocal Responses to Light and Shade in a Rapidly Responsive Transcriptional Network in Arabidopsis

Pablo Leivar, James M. Tepperman, Megan M. Cohn, Elena Monte, Bassem Al-Sady, Erika Erickson, and Peter H. Quail

Disruption of OPR7 and OPR8 Reveals the Versatile Functions of Jasmonic Acid in Maize Development and Defense

Yuanxin Yan, Shawn Christensen, Tom Isakeit, Jürgen Engelberth, Robert Meeley, Allison Hayward, R.J. Neil Emery, and Michael V. Kolomiets

NAP1 Family Histone Chaperones Are Required for Somatic Homologous Recombination in Arabidopsis

Juan Gao, Yan Zhu, Wangbin Zhou, Jean Molinier, Aiwu Dong, and Wen-Hui Shen

The Fanconi Anemia Ortholog FANCM Ensures Ordered Homologous Recombination in Both Somatic and Meiotic Cells in Arabidopsis

Alexander Knoll, James D. Higgins, Katharina Seeliger, Sarah J. Reha, Natalie J. Dangel, Markus Bauknecht, Susan Schröpfer, F. Christopher H. Franklin, and Holger Puchta

Differential Coloring Reveals That Plastids Do Not Form Networks for Exchanging Macromolecules

Martin H. Schattat, Sarah Griffiths, Neeta Mathur, Kiah Barton, Michael R. Wozny, Natalie Dunn, John S. Greenwood, and Jaideep Mathur

An Inducible RNA Interference System in Physcomitrella patens Reveals a Dominant Role of Augmin in Phragmoplast Microtubule Generation

Yuki Nakaoka, Tomohiro Miki, Ryuta Fujioka, Ryota Uehara, Akiko Tomioka, Chikashi Obuse, Minoru Kubo, Yuji Hiwatashi, and Gohta Goshima

Characterization of the Arabidopsis Augmin Complex Uncovers Its Critical Function in the Assembly of the Acentrosomal Spindle and Phragmoplast Microtubule Arrays

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Fern and Lycophyte Guard Cells Do Not Respond to Endogenous Abscisic Acid

Scott A.M. McAdam and Timothy J. Brodribb
NADPH Thioredoxin Reductase C Is Localized in Plastids of Photosynthetic and Nonphotosynthetic Tissues and Is Involved in Lateral Root Formation in Arabidopsis
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De Novo Pyrimidine Nucleotide Synthesis Mainly Occurs outside of Plastids, but a Previously Undiscovered Nucleobase Importer Provides Substrates for the Essential Salvage Pathway in Arabidopsis
Sandra Witz, Benjamin Jung, Sarah Fürst, and Torsten Möhlmann

A Transit Peptide–Like Sorting Signal at the C Terminus Directs the Bienertia sinuspersici Preprotein Receptor Toc159 to the Chloroplast Outer Membrane
Shiu-Cheung Lung and Simon D.X. Chuong

Alternative Oxidases (AOX1a and AOX2) Can Functionally Substitute for Plastid Terminal Oxidase in Arabidopsis Chloroplasts
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Biochemical and Structural Characterization of the Arabidopsis Bifunctional Enzyme Dethiobiotin Synthetase–Diaminopelargonic Acid Aminotransferase: Evidence for Substrate Channeling in Biotin Synthesis
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CDKF;1 and CDKD Protein Kinases Regulate Phosphorylation of Serine Residues in the C-Terminal Domain of Arabidopsis RNA Polymerase II
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Root-Derived Oxylipins Promote Green Peach Aphid Performance on Arabidopsis Foliage
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Oleic Acid–Dependent Modulation of NITRIC OXIDE ASSOCIATED1 Protein Levels Regulates Nitric Oxide–Mediated Defense Signaling in Arabidopsis
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Lotus japonicus E3 Ligase SEVEN IN ABSENTIA4 Destabilizes the Symbiosis Receptor-Like Kinase SYMRK and Negatively Regulates Rhizobial Infection

Griet Den Herder, Satoko Yoshida, Meritxell Antolín-Llovera, Martina K. Ried, and Martin Parniske

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