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Fruit growth in Brassicacea species depends on fertilization of the gynoecium and subsequent hormonal activities. In Arabidopsis thaliana, the plant hormone gibberellin is required to degrade the growth-inhibiting DELLA proteins to induce fruit growth. The cover shows the stigmatic tissue of a Brassica rapa gynoecium where pollen will germinate and grow down the ovary to fertilize the ovules. Fuentes et al. (pages 3982–3996) demonstrate that, in addition to DELLA-dependent signaling, gibberellin-induced fruit growth also occurs via a DELLA-independent pathway. (Photo by Thomas Girin.)
LARGE-SCALE BIOLOGY ARTICLES

Systems and Trans-System Level Analysis Identifies Conserved Iron Deficiency Responses in the Plant Lineage

Eugen I. Urzica, David Casero, Hiroaki Yamasaki, Scott I. Hsieh, Lital N. Adler, Steven J. Karpowicz, Crysten E. Blaby-Haas, Steven G. Clarke, Joseph A. Loo, Matteo Pellegrini, and Sabeeha S. Merchant

Conserved Noncoding Sequences Highlight Shared Components of Regulatory Networks in Dicotyledonous Plants

Laura Baxter, Aleksey Jironkin, Richard Hickman, Jay Moore, Christopher Barrington, Peter Krusche, Nigel P. Dyer, Vicky Buchanan-Wollaston, Alexander Tiskin, Jim Beynon, Katherine Denby, and Sascha Ott

RESEARCH ARTICLES

Spatiotemporal Regulation of Lateral Root Organogenesis in Arabidopsis by Cytokinin

Agnieszka Bielach, Kateřina Podlešáková, Peter Marhavý, Jérôme Duclercq, Candela Cuesta, Bruno Müller, Wim Grunewald, Petr Tarkowski, and Eva Benková

Fruit Growth in Arabidopsis Occurs via DELLA-Dependent and DELLA-Independent Gibberellin Responses

Sara Fuentes, Karin Ljung, Karim Sorefan, Elizabeth Alvey, Nicholas P. Harberd, and Lars Østergaard

Arabidopsis bZIP16 Transcription Factor Integrates Light and Hormone Signaling Pathways to Regulate Early Seedling Development

Wen-Ping Hsieh, Hsu-Liang Hsieh, and Shu-Hsing Wu

Arabidopsis MICROTUBULE DESTABILIZING PROTEIN40 Is Involved in Brassinosteroid Regulation of Hypocotyl Elongation

Xianling Wang, Jin Zhang, Ming Yuan, David W. Ehrhardt, Zhiyong Wang, and Tonglin Mao

The Armadillo Repeat Gene ZAK IXIK Promotes Arabidopsis Early Embryo and Endosperm Development through a Distinctive Gametophytic Maternal Effect

Quy A. Ngo, Celia Baroux, Daniela Guthörl, Peter Mozero, Margaret A. Collinge, Venkatesan Sundaresan, and Ueli Grossniklaus

Characterization of a NADH-Dependent Glutamate Dehydrogenase Mutant of Arabidopsis Demonstrates the Key Role of this Enzyme in Root Carbon and Nitrogen Metabolism

Jean-Xavier Fontaine, Thérèse Tercé-Laforgue, Patrick Armengaud, Gilles Clément, Jean-Pierre Renou, Sandra Pelleter, Manuella Catterou, Marianne Azzopardi, Yves Gibon, Peter J. Lea, Bertrand Hirel, and Frédéric Dubois

Mutation of Arabidopsis SPLICEOSOMAL TIMEKEEPER LOCUS1 Causes Circadian Clock Defects

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RETINOBLASTOMA RELATED1 Regulates Asymmetric Cell Divisions in *Arabidopsis*  
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Spatiotemporal Asymmetry of the Meiotic Program Underlies the Predominantly Distal Distribution of Meiotic Crossovers in Barley  

Agrobacterium May Delay Plant Nonhomologous End-Joining DNA Repair via XRCC4 to Favor T-DNA Integration  
Zarir E. Vaghchhipawala, Balaji Vasudevan, Seonghee Lee, Mustafa R. Morsy, and Kirankumar S. Mysore

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Juan Vicente Canet, Albor Dobón, and Pablo Tornero

Nonredundant Regulation of Rice Arbuscular Mycorrhizal Symbiosis by Two Members of the PHOSPHATE TRANSPORTER1 Gene Family

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Bidirectional Secretions from Glandular Trichomes of Pyrethrum Enable Immunization of Seedlings

Aldana M. Ramirez, Geert Stoopen, Tila R. Menzel, Rieta Gols, Harro J. Bouwmeester, Marcel Dicke, and Maarten A. Jongsmá

Arabidopsis Chloroplast RNA Binding Proteins CP31A and CP29A Associate with Large Transcript Pools and Confer Cold Stress Tolerance by Influencing Multiple Chloroplast RNA Processing Steps

Christiane Kuppsch, Hannes Ruwe, Sandra Gusewski, Michael Tillich, Ian Small, and Christian Schmitz-Linneweber

Constitutively Active Mitogen-Activated Protein Kinase Versions Reveal Functions of Arabidopsis MPK4 in Pathogen Defense Signaling

Souha Berriri, Ana Victoria Garcia, Nicolas Frei dit Frey, Wilfried Rozhon, Stéphanie Pateyron, Nathalie Leonhardt, Jean-Luc Montillet, Jeffrey Leung, Heribert Hirt, and Jean Colcombet

The Arabidopsis Mediator Complex Subunit16 Positively Regulates Salicylate-Mediated Systemic Acquired Resistance and Jasmonate/Ethylene-Induced Defense Pathways

Xudong Zhang, Chenggang Wang, Yanping Zhang, Yijun Sun, and Zhonglin Mou

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