

**On the Cover:** Plants are exquisite in their capacity to convert photons of light through photosynthetic fixation of carbon dioxide into sugars that are assimilated and partitioned from source to sink tissues, including roots and flowers. Oxygen is utilized for efficient conversion of sugars to ATP via aerobic respiration in mitochondria. This Focus Issue on Energy: Light and Oxygen Dynamics evaluates the plant's exquisite integration of light and oxygen with sugar sensing to maximize development and fitness. The cover contrasts the canopy of rice in environments that differ in the availability of light and oxygen. On the left, the plant is submerged and on the right solar radiation, oxygen and carbon dioxide are represented. The cover was created by graphic artist Alexander Bailey of Berkeley, California, USA.

## FOCUS ISSUE

### EDITORIAL

The Dynamic Plant: Capture, Transformation, and Management of Energy. *Julia Bailey-Serres, Ronald Pierik, Alexander Ruban, and Astrid Wingler* 961

### UPDATES

[OPEN] Retrograde Signals Navigate the Path to Chloroplast Development. *Tamara Hernández-Verdeja and Åsa Strand*

*Complex signaling networks between the chloroplast and the nucleus mediate the emergence of the seedling into the light and the establishment of photosynthesis.* 967

[OPEN] Fluctuating Light Takes Crop Photosynthesis on a Rollercoaster Ride. *Elias Kaiser, Alejandro Morales, and Jeremy Harbinson*

*Crops are regularly exposed to frequent irradiance fluctuations, which decrease their integrated CO<sub>2</sub> assimilation and affect their phenotype.* 977

[OPEN] The Impacts of Fluctuating Light on Crop Performance. *Rebecca A. Slattery, Berkley J. Walker, Andreas P. M. Weber, and Donald R. Ort*

*Recent advances in understanding photosynthetic responses to dynamic light environments reveal opportunities to improve crop plant photosynthetic efficiency.* 990

[OPEN] Photo-Oxidative Stress during Leaf, Flower and Fruit Development. *Paula Muñoz and Sergi Munné-Bosch*

*Photooxidative stress plays a crucial role in organ growth and development, with some similarities but also important differences in the development of leaves, flowers, and fruits.* 1004

*Continued on next page*

Continued from preceding page

[CC-BY] Shining Light on the Function of NPH3/RPT2-Like Proteins in Phototropin Signaling. *John M. Christie, Noriyuki Suetsugu, Stuart Sullivan, and Masamitsu Wada*

*NRL proteins coordinate different aspects of phototropin signaling through signaling processes that are conserved in land plants and algae.* 1015

[OPEN] Phytochromes and Phytochrome Interacting Factors. *Vinh Ngoc Pham, Praveen Kumar Kathare, and Enamul Huq*

*Recent discoveries focus on the central phytochrome signaling mechanisms that have profound impact on plant growth and development in response to light.* 1025

[CC-BY] Phytochrome, Carbon Sensing, Metabolism, and Plant Growth Plasticity. *Johanna Kraemer, Ashwin Ganpudi, Ammad Abbas, Andrés Romanowski, and Karen J. Halliday*

*Phytochrome signalling controls biomass accumulation, growth plasticity and metabolism.* 1039

[OPEN] Light Signaling, Root Development, and Plasticity. *Kasper van Gelderen, Chiakai Kang, and Ronald Pierik*

*Light signaling can affect root development and plasticity, either directly or through shoot-root communication via sugars, hormones, light, or other mobile factors.* 1049

[OPEN] Seedling Establishment: A Dimmer Switch-Regulated Process between Dark and Light Signaling. *Charlotte M. M. Gommers and Elena Monte*

*A balance between dark and light signaling directs seedling establishment through integrating internal and environmental information.* 1061

[OPEN] Transitioning to the Next Phase: The Role of Sugar Signaling throughout the Plant Life Cycle. *Astrid Wingler*

*Developmental transitions depend on the availability of sufficient carbon resources, which is sensed by sugar signaling pathways for high and low carbon availability.* 1075

[OPEN] The SnRK1 Kinase as Central Mediator of Energy Signaling between Different Organelles. *Bernhard Wurzinger, Ella Nukarinen, Thomas Nägele, Wolfram Weckwerth, and Markus Teige*

*SnRK1 is a central integrator of energy signalling in different subcellular locations with emerging roles in organellar and hormone metabolism.* 1085

[OPEN] Recent Discoveries on the Role of TOR (Target of Rapamycin) Signaling in Translation in Plants. *Mikhail Schepetilnikov and Lyubov A. Ryabova*

*TOR signaling regulates plant translation via a specific translation initiation mechanism.* 1095

Continued on next page

[<sup>OPEN</sup>]Signal Dynamics and Interactions during Flooding Stress. *Rashmi Sasidharan, Sjon Hartman, Zeguang Liu, Shanice Martopawiro, Nikita Sajeev, Hans van Veen, Elaine Yeung, and Laurentius A. C. J. Voeselek*

*Flooding triggers several internal changes in plant cells, and interactions between these signals can provide critical information for downstream beneficial gene expression, stress acclimation, and survival.* 1106

[<sup>OPEN</sup>]Regulation of Root Traits for Internal Aeration and Tolerance to Soil Waterlogging-Flooding Stress. *Takaki Yamauchi, Timothy D. Colmer, Ole Pedersen, and Mikio Nakazono*

*Knowledge of the genetic regulation of adventitious roots, aerenchyma, and radial oxygen loss barrier formation, and the signaling for acclimation, will assist the development of waterlogging-tolerant crops.* 1118

[<sup>OPEN</sup>]Oxygen Sensing and Integrative Stress Signaling in Plants. *Romy R. Schmidt, Daan A. Weits, Claudio F. J. Feulner, and Joost T. van Dongen*

*Integration of multiple cellular signals provides new opportunities in understanding oxygen sensing and response mechanisms in plants.* 1131

[<sup>OPEN</sup>]Group VII Ethylene Response Factors in Arabidopsis: Regulation and Physiological Roles. *Beatrice Giuntoli and Pierdomenico Perata*

*The role of ERF-VII TFs in higher plants is to coordinate their signature response to oxygen deficiency, but additional layers of modulation of ERF-VII activity enrich their regulatory range.* 1143

[<sup>OPEN</sup>]Mitochondrial Energy Signaling and Its Role in the Low-Oxygen Stress Response of Plants. *Stephan Wagner, Olivier Van Aken, Marlene Elsässer, and Markus Schwarzländer*

*Cellular responses to low oxygen stress and to respiratory inhibitors share common mitochondrial energy signaling pathways.* 1156

[<sup>OPEN</sup>]Roles for Light, Energy, and Oxygen in the Fate of Quiescent Axillary Buds. *Santiago Signorelli, Patricia Agudelo-Romero, Karlia Meitha, Christine H. Foyer, and Michael J. Considine*

*The decision of a quiescent axillary bud to commit to regrowth is governed by both metabolic and signaling functions, driven by light, energy, and oxygen availability.* 1171

## RESEARCH ARTICLES

### BIOCHEMISTRY AND METABOLISM

Phosphoglycerate Kinases Are Co-Regulated to Adjust Metabolism and to Optimize Growth. *Sara Rosa-Téllez, Armand Djoro Anoman, María Flores-Tornero, Walid Toujani, Saleh Alseek, Alisdair R. Fernie, Sergio G. Nebauer, Jesús Muñoz-Bertomeu, Juan Segura, and Roc Ros*

*Photosynthetic and glycolytic phosphoglycerate kinase mutants are transcriptionally co-regulated to achieve metabolic homeostasis and to optimize growth in Arabidopsis.* 1182

## CELL BIOLOGY

Establishment of Photosynthesis through Chloroplast Development Is Controlled by Two Distinct Regulatory Phases. Carole Dubreuil, Xu Jin, Juan de Dios Barajas-López, Timothy C. Hewitt, Sandra K. Tanz, Thomas Dobrenel, Wolfgang P. Schröder, Johannes Hanson, Edouard Pesquet, Andreas Grönlund, Ian Small, and Åsa Strand

*The establishment of photosynthesis is a two-phase process with a clear checkpoint associated with the second regulatory phase allowing coordination of the activities of the nuclear and plastid genomes.* 1199

## ECOPHYSIOLOGY AND SUSTAINABILITY

<sup>[OPEN]</sup>Chlorophyll Can Be Reduced in Crop Canopies with Little Penalty to Photosynthesis. Berkley J. Walker, Darren T. Drewry, Rebecca A. Slattery, Andy VanLoocke, Young B. Cho, and Donald R. Ort

*An empirically parameterized model of canopy photosynthesis in soybeans reveals that leaf chlorophyll can be reduced with significant nitrogen savings and only minor reductions in daily carbon gain.* 1215

<sup>[CC-BY]</sup>Suboptimal Acclimation of Photosynthesis to Light in Wheat Canopies. Alexandra J. Townsend, Renata Retkute, Kannan Chinnathambi, Jamie W. P. Randall, John Foulkes, Elizabete Carmo-Silva, and Erik H. Murchie

*High-resolution 3D reconstruction and ray tracing combined with an empirical model of photosynthesis reveals suboptimal photosynthetic acclimation in wheat canopies.* 1233

## MEMBRANES, TRANSPORT, AND BIOENERGETICS

<sup>[OPEN]</sup>In Silico Analysis of the Regulation of the Photosynthetic Electron Transport Chain in C3 Plants. Alejandro Morales, Xinyou Yin, Jeremy Harbinson, Steven M. Driever, Jaap Molenaar, David M. Kramer, and Paul C. Struik

*A model-based analysis of photosynthetic electron transport chain identifies several mechanisms by which photosynthetic metabolic hubs may be coordinated under a range of environmental conditions.* 1247

## SIGNALING AND RESPONSE

<sup>[OPEN]</sup>OsbZIP48, a HY5 Transcription Factor Ortholog, Exerts Pleiotropic Effects in Light-Regulated Development. Naini Burman, Akanksha Bhatnagar, and Jitendra P. Khurana

*The OsbZIP48 gene from rice can complement the hy5 mutant of Arabidopsis but exerts pleiotropic effects and causes semidwarfism when overexpressed in rice, and its mutant/RNAi lines are seedling lethal.* 1262

<sup>[OPEN]</sup>Gene Regulation and Survival under Hypoxia Requires Starch Availability and Metabolism. Elena Loreti, Maria Cristina Valeri, Giacomo Novi, and Pierdomenico Perata

*The induction of genes involved in the anaerobic response is repressed if the sugar status of the plant is low.* 1286

<sup>[CC-BY]</sup>The Energy-Signaling Hub SnRK1 Is Important for Sucrose-Induced Hypocotyl Elongation. Noriane M. L. Simon, Jelena Kusakina, Ángela Fernández-López, Anupama Chembath, Fiona E. Belbin, and Antony N. Dodd

*An energy signaling pathway, photoperiod, and light intensity regulate sugar-induced hypocotyl elongation.* 1299

Continued on next page

Light Signaling-Dependent Regulation of Photoinhibition and Photoprotection in Tomato. *Feng Wang, Nan Wu, Luyue Zhang, Golam Jalal Ahammed, Xiaoxiao Chen, Xun Xiang, Jie Zhou, Xiaojian Xia, Kai Shi, Jingquan Yu, Christine H. Foyer, and Yanhong Zhou*

*Far-red light alleviates cold-induced photoinhibition and enhances photoprotection in shade leaves via activation of phyA-dependent HY5-ABI5-RBOH1 signaling pathways.* 1311

The Transcription Factor COL12 Is a Substrate of the COP1/SPA E3 Ligase and Regulates Flowering Time and Plant Architecture. *Natalia Ordoñez-Herrera, Laura Trimborn, Melanie Menje, Monique Henschel, Lennart Robers, David Kaufholdt, Robert Hänsch, Jessika Adrian, Jathish Ponnu, and Ute Hoecker*

*COL12 is a substrate of the COP1/SPA ubiquitin ligase and regulates flowering time and plant architecture.* 1327

[OPEN]Linking PHYTOCHROME-INTERACTING FACTOR to Histone Modification in Plant Shade Avoidance. *Maolin Peng, Zepeng Li, Nana Zhou, Mengmeng Ma, Yupei Jiang, Aiwu Dong, Wen-Hui Shen, and Lin Li*

*The transcription factor PIF7 recruits the H3K4me3/H3K36me3-reader protein MRG1/MRG2 to promote histone acetylations in activating genes to promote stem elongation in plant shade response.* 1341

[OPEN]Control of Adventitious Root Architecture in Rice by Darkness, Light, and Gravity. *Chen Lin and Margret Sauter*

*Ethylene and light are major determinants of an altered root system architecture in flooded rice plants.* 1352

[CC-BY]Converging Light, Energy and Hormonal Signaling Control Meristem Activity, Leaf Initiation, and Growth. *Binish Mohammed, Sara Farahi Bilooei, Róbert Dóczy, Elliot Grove, Saana Railo, Klaus Palme, Franck Anicet Ditengou, László Bögre, and Enrique López-Juez*

*Development of leaves requires photoreceptors to initiate auxin export, cytokinin action and sugar-dependent signaling at leaf primordia, energy signaling further adjusting growth to available light.* 1365

## REGULAR ISSUE

### ON THE INSIDE

*Peter V. Minorsky* 1382

### FOUNDERS' REVIEW

[OPEN]Vacuolar Transporters – Companions on a Longtime Journey. *Enrico Martinoia*

*By storing and releasing a multitude of compounds, vacuoles play a multifaceted role in the plant development and response to environment Al changes.* 1384

### COMMENTARY

Sugar Coating the Phloem Sieve Element Wall. *Kim L. Johnson*

*Relating glycan structures in the wall to their cellular function can be achieved by combining methods for visualization of glycan epitopes, identification of their precise chemistry, and measurement of wall mechanics.* 1408

Continued on next page

## BREAKTHROUGH TECHNOLOGIES

[OPEN] **LTR\_retriever: A Highly Accurate and Sensitive Program for Identification of Long Terminal Repeat Retrotransposons.** Shujun Ou and Ning Jiang

*LTR\_retriever is an accurate and sensitive program that identifies LTR retrotransposons and generates nonredundant exemplars from DNA sequences for whole-genome annotation and evolutionary studies.* 1410

## RESEARCH REPORT

[OPEN] **Alternative Oxidase Isoforms Are Differentially Activated by Tricarboxylic Acid Cycle Intermediates.** Jennifer Selinski, Andreas Hartmann, Gabriele Deckers-Hebestreit, David A. Day, James Whelan, and Renate Scheibe

*In Arabidopsis, alternative oxidase activation is isoform specific with AOX1A activated by oxaloacetate and 2-oxoglutarate, AOX1D solely by 2-oxoglutarate, and AOX1C insensitive to both.* 1423

## RESEARCH ARTICLES

### BIOCHEMISTRY AND METABOLISM

[OPEN] **Molecular Mechanisms of Photoadaptation of Photosystem I Supercomplex from an Evolutionary Cyanobacterial/Algal Intermediate.** Patrycja Haniewicz, Mateusz Abram, Lukáš Nosek, Joanna Kirkpatrick, Eithar El-Mohsnawy, Julian D. Janna Olmos, Roman Kouřil, and Joanna M. Kargul

*Zeaxanthin accumulation and antenna remodeling protect the extremophilic red alga Cyanidioschyzon merolae PSI supercomplex from light stress.* 1433

**Biochemical and Structural Analysis of Substrate Specificity of a Phenylalanine Ammonia-Lyase.** Se-Young Jun, Steven A. Sattler, Gabriel S. Cortez, Wilfred Vermerris, Scott E. Sattler, and ChulHee Kang

*The major phenylalanine ammonia-lyases from Sorghum bicolor yield information on substrate specificity through crystal structures, molecular docking, site-directed mutagenesis, and kinetic and thermodynamic analyses.* 1452

[OPEN] **A Single Oxidosqualene Cyclase Produces the Seco-Triterpenoid  $\alpha$ -Onocerin.** Aldo Almeida, Lemeng Dong, Bekzod Khakimov, Jean-Etienne Bassard, Tessa Moses, Frederic Lota, Alain Goossens, Giovanni Appendino, and Søren Bak

*In Ononis spinosa, a single oxidosqualene cyclase interacts with squalene epoxidases to produce  $\alpha$ -onocerin from squalene-dioxide, demonstrating that  $\alpha$ -onocerin pathways evolved convergently in plants.* 1469

[OPEN] **Temporal Proteomics of Inducible RNAi Lines of Clp Protease Subunits Identifies Putative Protease Substrates.** Juan C. Moreno, Silvia Martínez-Jaime, Joram Schwartzmann, Daniel Karcher, Michael Tillich, Alexander Graf, and Ralph Bock

*Generation of inducible knockdown mutants for components of the plastid Clp protease system and time-resolved analysis of changes in their proteome allows the identification of a set of putative protease substrates.* 1485

[OPEN] **Flavodiiron Protein Substitutes for Cyclic Electron Flow without Competing CO<sub>2</sub> Assimilation in Rice.** Shinya Wada, Hiroshi Yamamoto, Yuji Suzuki, Wataru Yamori, Toshiharu Shikanai, and Amane Makino

*A moss flavodiiron protein can substitute the function of cyclic electron transport around photosystem I without any decrease in CO<sub>2</sub> assimilation or biomass production in rice.* 1509

Continued on next page

[<sup>OPEN</sup>] Revisiting the Algal “Chloroplast Lipid Droplet”: The Absence of an Entity That Is Unlikely to Exist. Takashi Moriyama, Masakazu Toyoshima, Masakazu Saito, Hajime Wada, and Naoki Sato

*Despite previous arguments on chloroplast lipid droplets, all lipid droplets are present in the cytosolic compartment and not in the chloroplast in Chlamydomonas reinhardtii.*

1519

## CELL BIOLOGY

SEIPIN Proteins Mediate Lipid Droplet Biogenesis to Promote Pollen Transmission and Reduce Seed Dormancy. Marco Taurino, Sara Costantini, Stefania De Domenico, Francesco Stefanelli, Guillermo Ruano, María Otilia Delgadillo, José Juan Sánchez-Serrano, Maite Sanmartín, Angelo Santino, and Enrique Rojo

*Genetic disruption of Arabidopsis SEIPINs reveals the relevance of lipid droplets in pollen transmission and in adjusting seed dormancy levels.*

1531

[<sup>CC-BY</sup>] Branched Pectic Galactan in Phloem-Sieve-Element Cell Walls: Implications for Cell Mechanics. Thomas A. Torode, Rachel O’Neill, Susan E. Marcus, Valérie Cornuault, Sara Pose, Rebecca P. Lauder, Stjepan K. Kračun, Maja Gro Rydahl, Mathias C. F. Andersen, William G. T. Willats, Siobhan A. Braybrook, Belinda J. Townsend, Mads H. Clausen, and J. Paul Knox

*Branched pectic galactan is identified as a component of the cell walls of phloem sieve elements.*

1547

[<sup>OPEN</sup>] Vacuolar Trafficking Protein VPS38 Is Dispensable for Autophagy. Han Nim Lee, Xavier Zarza, Jeong Hun Kim, Min Ji Yoon, Sang-Hoon Kim, Jae-Hoon Lee, Nadine Paris, Teun Munnik, Marisa S. Otegui, and Taijoon Chung

*Arabidopsis VPS38 is required for the intracellular localization of PI3P, an important lipid regulator of endosomal and vacuolar trafficking.*

1559

## ECOPHYSIOLOGY AND SUSTAINABILITY

Evidence That Isoprene Emission Is Not Limited by Cytosolic Metabolites. Exogenous Malate Does Not Invert the Reverse Sensitivity of Isoprene Emission to High [CO<sub>2</sub>]. Bahtijor Rasulov, Eero Talts, Irina Bichele, and Ülo Niinemets

*Reduction of MEP/DOXP pathway activity under elevated CO<sub>2</sub> is not due to limited cytosolic metabolite availability.*

1573

## GENES, DEVELOPMENT AND EVOLUTION

Identification of a New Host Factor Required for Antiviral RNAi and Amplification of Viral siRNAs. Zhongxin Guo, Xian-Bing Wang, Ying Wang, Wan-Xiang Li, Amit Gal-On, and Shou-Wei Ding

*A transmembrane protein conserved broadly in plants and animals promotes antiviral silencing by enhancing the amplification of virus-derived small interfering RNAs.*

1587

[<sup>OPEN</sup>] The Brassicaceae Family Displays Divergent, Shoot-Skewed NLR Resistance Gene Expression. David Munch, Vikas Gupta, Asger Bachmann, Wolfgang Busch, Simon Kelly, Terry Mun, and Stig Uggerhøj Andersen

*The majority of plant species preferentially express NLRs in root tissues, but the Brassicaceae family displays consistent shoot-skewed NLR expression across different phylogenetic NLR clades.*

1598

Continued on next page

[<sup>OPEN</sup>]Stage-Specific Gene Profiling of Germinal Cells Helps Delineate the Mitosis/Meiosis Transition.  
Ting-Lu Yuan, Wei-Jie Huang, Juan He, Dong Zhang, and Wei-Hua Tang

*Stage- and cell type-specific gene expression profiling reveals dynamics and characteristics of the mitosis to meiosis transition in male germinal cells of maize.* 1610

[<sup>OPEN</sup>]Parental DNA Methylation States Are Associated with Heterosis in Epigenetic Hybrids.  
Kathrin Lauss, René Wardenaar, Rurika Oka, Marieke H. A. van Hulten, Victor Guryev, Joost J. B. Keurentjes, Maike Stam, and Frank Johannes

*DNA methylation differences between isogenic parental lines can directly or indirectly trigger heterosis in Arabidopsis hybrids.* 1627

[<sup>OPEN</sup>]Loss of LOFSEP Transcription Factor Function Converts Spikelet to Leaf-Like Structures in Rice.  
Di Wu, Wanqi Liang, Wanwan Zhu, Mingjiao Chen, Cristina Ferrándiz, Rachel A. Burton, Ludovico Dreni, and Dabing Zhang

*The LOFSEP transcription factors OsMADS1, OsMADS5, and OsMADS34 regulate rice spikelet morphogenesis, form higher order complexes, and promote the expression of other floral homeotic genes.* 1646

[<sup>OPEN</sup>]SUPPRESSOR OF GAMMA RESPONSE1 Links DNA Damage Response to Organ Regeneration.  
Ross A. Johnson, Phillip A. Conklin, Michelle Tjahjadi, Victor Missirian, Ted Toal, Siobhan M. Brady, and Anne B. Britt

*SOG1 governs the programmed breakdown and reconstruction of the root stem cell niche after acute DNA damage.* 1665

The SICBL10 Calcineurin B-Like Protein Ensures Plant Growth under Salt Stress by Regulating Na<sup>+</sup> and Ca<sup>2+</sup> Homeostasis. Isabel Egea, Benito Pineda, Ana Ortíz-Atienza, Félix A. Plasencia, Stéphanie Drevensek, Begoña García-Sogo, Fernando J. Yuste-Lisbona, Javier Barrero-Gil, Alejandro Atarés, Francisco B. Flores, Fredy Barneche, Trinidad Angosto, Carmen Capel, Julio Salinas, Wim Vriezen, Elisabeth Esch, Chris Bowler, Maria C. Bolarín, Vicente Moreno, and Rafael Lozano

*Tomato CALCINEURIN B-LIKE PROTEIN 10 (SICBL10) ensures plant growth by regulating proper distribution of Na<sup>+</sup> and Ca<sup>2+</sup> in the shoot apical meristem and developing organs under salt stress.* 1676

Spatial Control of Gene Expression by miR319-Regulated TCP Transcription Factors in Leaf Development.  
Edgardo G. Bresso, Uciel Chorostecki, Ramiro E. Rodríguez, Javier F. Palatnik, and Carla Schommer

*microRNA319-regulated TCP transcription factors influence leaf development in distinct ways in central and marginal parts of the organ.* 1694

[<sup>OPEN</sup>]Regulation of Hormonal Control, Cell Reprogramming, and Patterning during De Novo Root Organogenesis. Estefano Bustillo-Avendaño, Sergio Ibáñez, Oscar Sanz, Jessica Aline Sousa Barros, Inmaculada Gude, Juan Perianez-Rodríguez, José Luis Micol, Juan Carlos Del Pozo, Miguel Angel Moreno-Risueno, and José Manuel Pérez-Pérez

*Distinctive developmental stages lead to de novo root organogenesis in leaves guide genetically dissection of the primary developmental pathways.* 1709



## MEMBRANES, TRANSPORT AND BIOENERGETICS

NDH-PSI Supercomplex Assembly Precedes Full Assembly of the NDH Complex in Chloroplast.  
Yoshinobu Kato, Kazuhiko Sugimoto, and Toshiharu Shikanai

*The chloroplast NDH complex is built up with the aid of an assembly factor, CRR3, triggering the NDH-PSI supercomplex formation via Lhca6 before the completion of the entire NDH assembly.* 1728

[<sup>OPEN</sup>] Preferential Distribution of Boron to Developing Tissues Is Mediated by the Intrinsic Protein OsNIP3.  
Ji Feng Shao, Naoki Yamaji, Xin Wei Liu, Kengo Yokosho, Ren Fang Shen, and Jian Feng Ma

*Boron is preferentially delivered in rice to developing tissues by OsNIP3;1 located in the nodes, which is regulated at both transcriptional and protein level in response to external boron concentration.* 1739

Mineral Deposits in *Ficus* Leaves: Morphologies and Locations in Relation to Function. Maria Pierantoni, Ron Tenne, Batel Rephael, Vlad Brumfeld, Adam van Casteren, Kornelius Kupczik, Dan Oron, Lia Addadi, and Steve Weiner

*Mineral deposition in Ficus leaves is highly regulated, and some of the minerals function in light distribution to enhance photosynthesis, depending upon the mineral location in the leaf.* 1751

## SIGNALING AND RESPONSE

[<sup>OPEN</sup>] Dynamics of Ethylene Production in Response to Compatible Nod Factor. Dugald Reid, Huijun Liu, Simon Kelly, Yasuyuki Kawaharada, Terry Mun, Stig U. Andersen, Guilhem Desbrosses, and Jens Stougaard

*The host plant Lotus japonicus produces ethylene in response to compatible Nod-factor to regulate nitrogen-fixing symbiosis.* 1764

[<sup>OPEN</sup>] STOREKEEPER RELATED1/G-Element Binding Protein (STKR1) Interacts with Protein Kinase SnRK1. Madlen Nietzsche, Tiziana Guerra, Saleh Alseekh, Marcel Wiermer, Sophia Sonnewald, Alisdair R. Fernie, and Frederik Börnke

*STKR1-overexpressing plants show many phenotypic changes that have previously been associated with SnRK1 overexpression, and thus STKR1 could act as a downstream component of SnRK1 signaling.* 1773

[<sup>OPEN</sup>] Glucose-Induced Trophic Shift in an Endosymbiont Dinoflagellate with Physiological and Molecular Consequences. Tingting Xiang, Robert E. Jinkerson, Sophie Clowez, Cawa Tran, Cory J. Krediet, Masayuki Onishi, Phillip A. Cleves, John R. Pringle, and Arthur R. Grossman

*Glucose induces dramatic physiological changes in the dinoflagellate Symbiodinium strain SSB01, although there is very little modulation of nuclear gene expression.* 1793

[<sup>OPEN</sup>] Laccase GhLac1 Modulates Broad-Spectrum Biotic Stress Tolerance via Manipulating Phenylpropanoid Pathway and Jasmonic Acid Synthesis. Qin Hu, Ling Min, Xiyan Yang, Shuangxia Jin, Lin Zhang, Yaoyao Li, Yizan Ma, Xuewei Qi, Dongqin Li, Hongbo Liu, Keith Lindsey, Longfu Zhu, and Xianlong Zhang

*Modification of GhLac1 expression leads to redirection of phenylpropanoid metabolism and alteration of JA synthesis to confer broad spectrum resistance to both pathogens and pests.* 1808

Continued from preceding page

[<sup>OPEN</sup>] Involvement of Adapter Protein Complex 4 in Hypersensitive Cell Death Induced by Avirulent Bacteria. Noriyuki Hatsugai, Aya Nakatsuji, Osamu Unten, Kimi Ogasawara, Maki Kondo, Mikio Nishimura, Tomoo Shimada, Fumiaki Katagiri, and Ikuko Hara-Nishimura

*The adapter protein 4 is involved in plant immunity associated with vacuolar-plasma membrane fusion and in hypersensitive cell death triggered by type-III effector recognition on the plasma membrane.* 1824

[<sup>OPEN</sup>] The Kinase OsCPK4 Regulates a Buffering Mechanism That Fine-Tunes Innate Immunity. Jiyang Wang, Shanzhi Wang, Ke Hu, Jun Yang, Xiaoyun Xin, Wenqing Zhou, Jiangbo Fan, Fuhao Cui, Baohui Mou, Shiyong Zhang, Guoliang Wang, and Wenxian Sun

*OsCPK4 has dual functions in rice in promoting the degradation and stability of OsRLCK176 to fine-tune plant immunity through modulating the phosphorylation state of OsRLCK176.* 1835

TCP Transcription Factors Regulate Shade Avoidance via Directly Mediating the Expression of Both *PHYTOCHROME INTERACTING FACTORS* and Auxin Biosynthetic Genes. Yu Zhou, Dongzhi Zhang, Jiaying An, Hongju Yin, Shuang Fang, Jinfang Chu, Yunde Zhao, and Jia Li

*TCP17 acts as a key factor in regulating shade-induced hypocotyl rapid growth by directly promoting the transcriptional levels of PIFs and auxin biosynthesis genes.* 1850

## SYSTEMS AND SYNTHETIC BIOLOGY

[<sup>OPEN</sup>] Transcription Factor-Mediated Control of Anthocyanin Biosynthesis in Vegetative Tissues. Nikolay S. Outchkourov, Rumyana Karlova, Matthijs Hölscher, Xandra Schrama, Ikram Blilou, Esmer Jongedijk, Carmen Diez Simon, Aalt D. J. van Dijk, Dirk Bosch, Robert D. Hall, and Jules Beekwilder

*Plants accumulate secondary metabolites to adapt to environmental conditions.* 1862

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