

T H E
PLANT
C E L L

Volume 28 Number 11 November 2016

The electronic form of this issue, available at www.plantcell.org, is the journal of record.

ON THE COVER



Zinsmeister et al. demonstrated that in legumes, ABI5 is a prominent regulator of late seed maturation. The cover image shows dry mature seeds of pea where the seed coat has been removed. In the wild-type Cameor line (first two columns on the left), seeds lost their chlorophyll, resulting in yellow cotyledons. In contrast, *Ps-abi5* mature seeds (last two columns on the right) retained chlorophyll in their cotyledons. In these mutants, the impaired degreening during seed maturation was accompanied by reduced seed longevity and a decreased amount in raffinose family oligosaccharides. Similar data were found for the model legume *Medicago truncatula*, suggesting that degreening cannot be uncoupled from long-term survival in the dry state, an important aspect of seed vigor and seedling establishment.

IN BRIEF

Metabolic Signaling Regulates Alternative Splicing during Photomorphogenesis [OPEN](#) 2697

Kathleen L. Farquharson

Do Phytochromes and Phytochrome-Interacting Factors Need to Interact? [OPEN](#) 2698

Nancy R. Hofmann

LARGE-SCALE BIOLOGY ARTICLES

Draft Assembly of Elite Inbred Line PH207 Provides Insights into Genomic and Transcriptome Diversity in Maize [OPEN](#) 2700

Candice N. Hirsch, Cory D. Hirsch, Alex B. Brohammer, Megan J. Bowman, Ilya Soifer, Omer Barad, Doron Shem-Tov, Kobi Baruch, Fei Lu, Alvaro G. Hernandez, Christopher J. Fields, Chris L. Wright, Klaus Koehler, Nathan M. Springer, Edward Buckler, C. Robin Buell, Natalia de Leon, Shawn M. Kaepler, Kevin L. Childs, and Mark A. Mikel

Alternative Splicing Substantially Diversifies the Transcriptome during Early Photomorphogenesis and Correlates with the Energy Availability in Arabidopsis 2715

Lisa Hartmann, Philipp Drewe-Boß, Theresa Wießner, Gabriele Wagner, Sascha Geue, Hsin-Chieh Lee, Dominik M. Obermüller, André Kahles, Jonas Behr, Fabian H. Sinz, Gunnar Rättsch, and Andreas Wachter

EDITORIAL BOARD

Editor in Chief

Sabeeha Merchant

Senior Editors

Sebastian Bednarek

James Birchler

Ralph Bock

George Coupland

Pascal Genschik

Jean Greenberg

Joseph Kieber

Daniel J. Kliebenstein

Barry Pogson

Reviewing Editors

Michael Axtell

Magdalena Bezanilla

Siobhan Brady

Robin Buell

XiaoFeng Cao

Kent Chapman

Clint Chapple

Sean Cutler

Dean Della Penna

Xinnian Dong

Herman R. Hofte

Inwhan Hwang

Regine Kahmann

Ute Kraemer

Barbara Kunkel

J. Clark Lagarias

Zach Lippman

Tesfaye Mengiste

Blake Meyers

Harvey Millar

Ortrun Mittelsten Scheid

Giles E. Oldroyd

Naomi Ori

Markus Pauly

Eugenia (Jenny) Russinova

Dale Sanders

Karin Schumacher

Keiko Sugimoto

Tai-ping Sun

Marja Timmermans

Michael Udvardi

Andreas Weber

Guest Editors

Alice Barkan

Andrea Barta

Judy Callis

Ram Dixit

Elizabeth Haswell

Liwen Jiang

Jinsheng Lai

Jim Leebens-Mack

Yonghua Li-Beisson

Damon Lisch

Hongtao Liu

Peter Nagy

Erik Nielsen

Michael Palmgren

Hitoshi Sakakibura

David Smyth

Klaas van Wijk

Jeanmarie Verchot

Dan Voytas

Sam Zeeman

Xiaoyu Zhang

Consulting Editors

Volker Brendel

Erin Connolly

RESEARCH ARTICLES

ABI5 Is a Regulator of Seed Maturation and Longevity in Legumes

2735

Julia Zinsmeister, David Lalanne, Emmanuel Terrasson, Emilie Chatelain, Céline Vandecasteele, Benoit Ly Vu, Cécile Dubois-Laurent, Emmanuel Geoffriau, Christine Le Signor, Marion Dalmais, Katharina Gutbrod, Peter Dörmann, Karine Gallardo, Abdelhafid Bendahmane, Julia Buitink, and Olivier Leprince

Blue Light- and Low Temperature-Regulated COR27 and COR28 Play Roles in the Arabidopsis Circadian Clock

2755

Xu Li, Dingbang Ma, Sheen X. Lu, Xinyi Hu, Rongfeng Huang, Tong Liang, Tongda Xu, Elaine M. Tobin, and Hongtao Liu

Epidermal Phytochrome B Inhibits Hypocotyl Negative Gravitropism Non-Cell-Autonomously

2770

Jaewook Kim, Kijong Song, Eunae Park, Keunhwa Kim, Gabyong Bae, and Giltso Choi

DNA Methylation Influences the Expression of *DICER-LIKE4* Isoforms, Which Encode Proteins of Alternative Localization and Function

2786

Nathan Pumplin, Alexis Sarazin, Pauline E. Jullien, Nicolas G. Bologna, Stefan Oberlin, and Olivier Voinnet

The Reverse Transcriptase/RNA Maturase Protein MatR Is Required for the Splicing of Various Group II Introns in Brassicaceae Mitochondria

2805

Laure D. Sultan, Daria Milesheva, Felix Grewe, Katarzyna Rolle, Sivan Abudraham, Paweł Glodowicz, Adnan Khan Niazi, Ido Keren, Sofia Shevtsov, Liron Klipcan, Jan Barciszewski, Jeffrey P. Mower, André Dietrich, and Oren Ostersehter-Biran

The Minimum Open Reading Frame, AUG-Stop, Induces Boron-Dependent Ribosome Stalling and mRNA Degradation

2830

Mayuki Tanaka, Naoyuki Sotta, Yusuke Yamazumi, Yui Yamashita, Kyoko Miwa, Katsunori Murota, Yukako Chiba, Masami Yokota Hirai, Tetsu Akiyama, Hitoshi Onouchi, Satoshi Naito, and Toru Fujiwara

GOLGI TRANSPORT 1B Regulates Protein Export from the Endoplasmic Reticulum in Rice Endosperm Cells ^{OPEN}

2850

Yihua Wang, Feng Liu, Yulong Ren, Yunlong Wang, Xi Liu, Wuhua Long, Di Wang, Jianping Zhu, Xiaopin Zhu, Ruonan Jing, Mingming Wu, Yuanyuan Hao, Ling Jiang, Chunming Wang, Haiyang Wang, Yiqun Bao, and Jianmin Wan

Alisdair Fernie
 Oliver Jensen
 Nathan Nelson
 Scott Peck
 Pam Soltis
 Frances-Andre Wollman

Senior Features Editor
 Nancy A. Eckardt

Features Editor
 Mary Williams

Science Editors
 Greg Bertoni
 Kathleen L. Farquharson
 Nancy R. Hofmann
 Jennifer Lockhart
 Jennifer M. Mach

Managing Editor
 Patti Lockhart

Issue Manager
 Felicia Dadak

Production Manager
 Susan L. Entwistle

Manuscript Manager
 Annette Kessler

Publications Director
 Nancy A. Winchester

Publisher
 American Society of
 Plant Biologists
 Executive Director,
 Crispin Taylor

Editorial Office
 15501 Monona Drive
 Rockville, Maryland 20855-2768
 Telephone: 301/296-0908
Online at www.plantcell.org

**MYB75 Phosphorylation by MPK4 Is Required for
 Light-Induced Anthocyanin Accumulation
 in Arabidopsis** [OPEN](#)

Shengnan Li, Wenyi Wang, Jinlan Gao, Kangquan Yin, Rui Wang,
 Chengcheng Wang, Morten Petersen, John Mundy,
 and Jin-Long Qiu

[OPEN](#) Articles can be viewed without a subscription.



The Plant Cell (eISSN 1532-298X) is published monthly (one volume per year) by the American Society of Plant Biologists, 15501 Monona Drive, Rockville, MD 20855-2768, and is produced by Dartmouth Journal Services, Waterbury, VT. The institutional subscription price is based on type of institution; contact institution@aspb.org. Members of the American Society of Plant Biologists may subscribe to *The Plant Cell* for \$240. Nonmember individuals may subscribe for \$500. Students may subscribe for \$165. For matters regarding subscriptions, contact Suzanne Cholwek, ASPB, 15501 Monona Drive, Rockville, MD 20855-2768; telephone 301/296-0926; fax 301/251-6740; e-mail scholwek@aspb.org. Send all inquiries regarding display advertising to FASEB AdNet, 9650 Rockville Pike, Bethesda, MD 20814-3998; telephone 301/634-7791; fax 301/634-7153; e-mail adnet@faseb.org. The online version of *The Plant Cell* is available at www.plantcell.org.

Permission to Reprint: Permission to make digital or hard copies of part or all of a work published in *The Plant Cell* is granted without fee for personal or classroom use provided that copies are not made or distributed for profit or commercial advantage and that copies bear the full citation and the following notice on the first page: "Copyright American Society of Plant Biologists." For all other kinds of copying, request permission in writing from Nancy A. Winchester, Publications Director, ASPB headquarters.

This information is current as of August 21, 2019

Permissions	https://www.copyright.com/ccc/openurl.do?sid=pd_hw1532298X&issn=1532298X&WT.mc_id=pd_hw1532298X
eTOCs	Sign up for eTOCs at: http://www.plantcell.org/cgi/alerts/ctmain
CiteTrack Alerts	Sign up for CiteTrack Alerts at: http://www.plantcell.org/cgi/alerts/ctmain
Subscription Information	Subscription Information for <i>The Plant Cell</i> and <i>Plant Physiology</i> is available at: http://www.aspb.org/publications/subscriptions.cfm