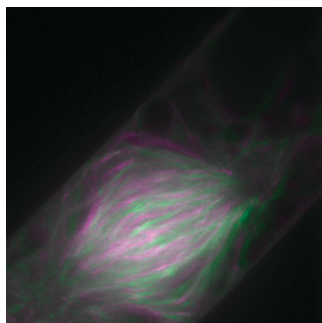


T H E
PLANT
C E L L

Volume 20 Number 11 November 2008

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

ON THE COVER



In plant cells, the phragmoplast is a key feature that orchestrates cell plate formation and the final stages of cell division. Hiwatashi et al. (pages 3094–3106) investigate the function of two novel plant-specific kinesins in phragmoplast formation in the moss *Physcomitrella patens*. These kinesins are found to play a key role in cross-linking antiparallel microtubules in the phragmoplast. The cover shows a merged image of a phragmoplast of transgenic *P. patens* expressing a GFP- α -tubulin fusion protein taken at two intervals during cell division (green, first frame; magenta, 40-s interval), showing interdigitation of antiparallel microtubules at the phragmoplast equator.

IN BRIEF

- Will Remodel to Suit: Cellulose Binding Protein Secreted by a Parasitic Nematode Interacts with *Arabidopsis* Pectin Methylesterase** 2927
Jennifer Mach
- New Role for ACC in Cell Wall Biosynthesis** 2928
Nancy R. Hofmann
- LORELEI: Guiding the Fate of Male Gametes** 2929
Nancy A. Eckardt

RESEARCH ARTICLES

- A Genomic Scan for Selection Reveals Candidates for Genes Involved in the Evolution of Cultivated Sunflower (*Helianthus annuus*)** 2931
Mark A. Chapman, Catherine H. Pashley, Jessica Wenzler, John Hvala, Shunxue Tang, Steven J. Knapp, and John M. Burke
- Independent Losses of Function in a Polyphenol Oxidase in Rice: Differentiation in Grain Discoloration between Subspecies and the Role of Positive Selection under Domestication** 2946
Yanchun Yu, Tian Tang, Qian Qian, Yonghong Wang, Meixian Yan, Dali Zeng, Bin Han, Chung-I Wu, Suhua Shi, and Jiayang Li
- Circadian Clock Proteins LHY and CCA1 Regulate SVP Protein Accumulation to Control Flowering in *Arabidopsis*** 2960
Sumire Fujiwara, Atsushi Oda, Riichiro Yoshida, Kanae Niinuma, Kana Miyata, Yusuke Tomozoe, Takeomi Tajima, Mayu Nakagawa, Kounosuke Hayashi, George Coupland, and Tsuyoshi Mizoguchi
- HAB1–SWI3B Interaction Reveals a Link between Abscisic Acid Signaling and Putative SWI/SNF Chromatin-Remodeling Complexes in *Arabidopsis*** 2972
Angela Saez, Americo Rodrigues, Julia Santiago, Silvia Rubio, and Pedro L. Rodriguez
- Arbuscular Mycorrhiza–Specific Signaling in Rice Transcends the Common Symbiosis Signaling Pathway** 2989
Caroline Gutjahr, Mari Banba, Vincent Croset, Kyungsook An, Akio Miyao, Gynheung An, Hirohiko Hirochika, Haruko Imaizumi-Anraku, and Uta Paszkowski

EDITORIAL BOARD

Editor in Chief

Cathie Martin

Coeditors

Sarah M. Assmann
Jody Banks
Alice Barkan
Kathy Barton
David Baum
Sebastian Bednarek
James Birchler
Ulla Bonas
Christopher Bowler
Nigel Crawford
Xing Wang Deng
Allan Downie
Mark Estelle
Alisdair Fernie
Pascal Genschik
Jean T. Greenberg
Thomas Guilfoyle
Ann Hirsch
David Jackson
Patricia Leon
Clive Lloyd
William Lucas
Marjori Matzke
Blake Meyers
Joseph Noel
Michael Palmgren
Markus Pauly
Scott C. Peck
Barry Pogson
David Smyth
Chris J. Staiger
Keiko Sugimoto
Nicholas J. Talbot

Managing Editor

John Long

News and Reviews Editor

Nancy A. Eckardt

Science Editors

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

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
Fax: 301/279-2996
<http://www.aspb.org>

Online at www.plantcell.org

- A SNARE Complex Unique to Seed Plants Is Required for Protein Storage Vacuole Biogenesis and Seed Development of *Arabidopsis thaliana*** [W](#) [OA](#) 3006
Kazuo Ebine, Yusuke Okatani, Tomohiro Uemura, Tatsuki Goh, Keiko Shoda, Mitsuru Niihama, Miyo Terao Morita, Christoph Spitzer, Marisa S. Otegui, Akihiko Nakano, and Takashi Ueda
- Protein Repair L-Isoaspartyl Methyltransferase1 Is Involved in Both Seed Longevity and Germination Vigor in *Arabidopsis*** [W](#) 3022
Laurent Ogé, Gildas Bourdais, Jérôme Bove, Boris Collet, Béatrice Godin, Fabienne Granier, Jean-Pierre Boutin, Dominique Job, Marc Jullien, and Philippe Grappin
- Maternal Control of Male-Gamete Delivery in *Arabidopsis* Involves a Putative GPI-Anchored Protein Encoded by the *LORELEI* Gene** [W](#) 3038
Arnaud Capron, Mathieu Gourgues, Lissiene S. Neiva, Jean-Emmanuel Faure, Frederic Berger, Gabriela Pagnussat, Anjali Krishnan, Cesar Alvarez-Mejia, Jean-Philippe Vielle-Calzada, Yuh-Ru Lee, Bo Liu, and Venkatesan Sundaresan
- Arabidopsis* Phosphatidylinositol-4-Monophosphate 5-Kinase 4 Regulates Pollen Tube Growth and Polarity by Modulating Membrane Recycling** [W](#) 3050
Eva Sousa, Benedikt Kost, and Rui Malhó
- Two Leucine-Rich Repeat Receptor Kinases Mediate Signaling, Linking Cell Wall Biosynthesis and ACC Synthase in *Arabidopsis*** [W](#) 3065
Shou-Ling Xu, Abidur Rahman, Tobias I. Baskin, and Joseph J. Kieber
- Cellulose Binding Protein from the Parasitic Nematode *Heterodera schachtii* Interacts with *Arabidopsis* Pectin Methyltransferase: Cooperative Cell Wall Modification during Parasitism** [W](#) 3080
Tarek Hewezi, Peter Howe, Tom R. Maier, Richard S. Hussey, Melissa Goellner Mitchum, Eric L. Davis, and Thomas J. Baum
- Kinesins Are Indispensable for Interdigitation of Phragmoplast Microtubules in the Moss *Physcomitrella patens*** [W](#) 3094
Yuji Hiwatashi, Mari Obara, Yoshikatsu Sato, Tomomichi Fujita, Takashi Murata, and Mitsuyasu Hasebe
- Arabidopsis* bZIP60 Is a Proteolysis-Activated Transcription Factor Involved in the Endoplasmic Reticulum Stress Response** [W](#) 3107
Yuji Iwata, Nina V. Fedoroff, and Nozomu Koizumi
- The *Arabidopsis* GRAS Protein SCL14 Interacts with Class II TGA Transcription Factors and Is Essential for the Activation of Stress-Inducible Promoters** [C](#) [W](#) 3122
Benjamin Fode, Tanja Siemsen, Corinna Thurow, Ralf Weigel, and Christiane Gatz
- The Transcriptional Activator Pti4 Is Required for the Recruitment of a Repressome Nucleated by Repressor SEBF at the Potato *PR-10a* Gene** [W](#) 3136
Rocío González-Lamothe, Patrick Boyle, Annie Dulude, Vicky Roy, Cyr Lezin-Doumbou, Gidda Satinder Kaur, Kamal Bouarab, Charles Després, and Normand Brisson

A Heterocomplex of Iron Superoxide Dismutases Defends Chloroplast Nucleoids against Oxidative Stress and Is Essential for Chloroplast Development in *Arabidopsis* 3148

Fumiyoshi Myouga, Chieko Hosoda, Taishi Umezawa, Haruko Iizumi, Takashi Kuromori, Reiko Motohashi, Yuriko Shono, Noriko Nagata, Masahiko Ikeuchi, and Kazuo Shinozaki

An Inositolphosphorylceramide Synthase Is Involved in Regulation of Plant Programmed Cell Death Associated with Defense in *Arabidopsis* 3163

Wenming Wang, Xiaohua Yang, Samantha Tangchaiburana, Roland Ndeh, Jonathan E. Markham, Yoseph Tsegaye, Teresa M. Dunn, Guo-Liang Wang, Maria Bellizzi, James F. Parsons, Danielle Morrissey, Janis E. Bravo, Daniel V. Lynch, and Shunyuan Xiao

☐ Some figures in this article are displayed in color online but in black and white in the print edition.

☒ Online version contains Web-only data.

☐ Open Access articles can be viewed online without a subscription.



© 2008 American Society of Plant Biologists. All rights reserved. Printed on acid-free paper effective with Volume 1, Number 1, January 1989.

Printed in the United States of America.

The Plant Cell (ISSN 1040-4651, online ISSN 1531-298X) 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 price for the print and online versions is based on type of institution; contact institution@aspb.org. A subscription includes both *The Plant Cell* and *Plant Physiology*; single copies may be purchased for \$75 each, plus \$7 shipping (U.S.) or \$9 (outside U.S.). Members of the American Society of Plant Biologists may subscribe to *The Plant Cell* for \$185. Nonmember individuals may subscribe for \$375. 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. Notify ASPB in writing within 3 months (domestic) or 6 months (foreign) of issue date, and defective copies or copies lost in the mail will be replaced. 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. Periodicals postage paid at Rockville, MD 20850, and at additional mailing offices.

Postmaster: Send address changes to *The Plant Cell*, American Society of Plant Biologists, 15501 Monona Drive, Rockville, MD 20855-2768. 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 October 26, 2020

| | |
|---------------------------------|---|
| Permissions | https://www.copyright.com/ccc/openurl.do?sid=pd_hw1532298X&iissn=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 |