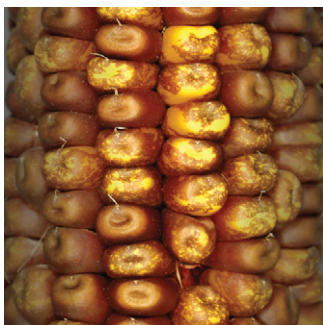


T H E
PLANT
C E L L

Volume 20 Number 8 August 2008

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

ON THE COVER



DNA transposons are efficient chromosome restructurers. Paired transposons, a common transposition outcome, cause chromosome breaks with frequencies inversely related to the distance between them. Huang and Dooner (pages 2019–2032) show that, in addition to breaks, transposon pairs in direct orientation produce many heritable rearrangements, including transposition of a macrotransposon extending from the 5' end of one transposon to the 3' end of the other. Chromosome breaks and rearrangements can be explained by transposition reactions involving either the two internal or two external ends of the macrotransposon. The cover shows the mosaic color of maize kernels undergoing breakage-fusion-bridge cycles, which are initiated by transposition of the macrotransposon's internal ends from one chromatid to its sister. The mosaic pattern results from transposon activity at the *bronze* locus, which is associated with anthocyanin biosynthesis in the kernel (cover artwork by Tanakiat Tungsuchat and Jun Huang).

IN THIS ISSUE

DOT/UFO Emerges as a Key Factor in Inflorescence Patterning 2003
Nancy A. Eckardt

IN BRIEF

A Protein Disulfide Isomerase Plays a Role in Programmed Cell Death 2006
Kathleen L. Farquharson

An Endoplasmic Reticulum Protein Involved in Lipid Transfer to Chloroplasts 2007
Nancy R. Hofmann

Transposon Trouble: Macrotransposition and Chromosome Remodeling in Maize 2008
Jennifer Mach

PERSPECTIVE

From Guard to Decoy: A New Model for Perception of Plant Pathogen Effectors 2009
Renier A.L. van der Hoorn and Sophien Kamoun

RESEARCH ARTICLES

Macrotransposition and Other Complex Chromosomal Restructuring in Maize by Closely Linked Transposons in Direct Orientation 2019
Jun T. Huang and Hugo K. Dooner

Patterning of Inflorescences and Flowers by the F-Box Protein DOUBLE TOP and the LEAFY Homolog ABERRANT LEAF AND FLOWER of Petunia 2033
Erik Souer, Alexandra B. Rebocho, Mattijs Bliet, Elske Kusters, Robert A.M. de Bruin, and Ronald Koes

Functional Diversification of CLAVATA3-Related CLE Proteins in Meristem Maintenance in Rice 2049
Takuya Suzaki, Akiko Yoshida, and Hiro-Yuki Hirano

ARABIDOPSIS THALIANA HOMEBOX GENE1 Establishes the Basal Boundaries of Shoot Organs and Controls Stem Growth 2059
Concepción Gómez-Mena and Robert Sablowski

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

- The *milkweed pod1* Gene Encodes a KANADI Protein That Is Required for Abaxial/Adaxial Patterning in Maize Leaves** [W](#) 2073
Héctor Candela, Robyn Johnston, Abigail Gerhold, Toshi Foster, and Sarah Hake
- The MADS Domain Protein DIANA Acts Together with AGAMOUS-LIKE80 to Specify the Central Cell in *Arabidopsis* Ovules** [W](#) 2088
Marian Bemer, Mieke Wolters-Arts, Ueli Grossniklaus, and Gerco C. Angenent
- Type B Response Regulators of *Arabidopsis* Play Key Roles in Cytokinin Signaling and Plant Development** [W](#) 2102
Rebecca D. Argyros, Dennis E. Mathews, Yi-Hsuan Chiang, Christine M. Palmer, Derek M. Thibault, Naomi Etheridge, D. Aaron Argyros, Michael G. Mason, Joseph J. Kieber, and G. Eric Schaller
- The Cold-Inducible CBF1 Factor-Dependent Signaling Pathway Modulates the Accumulation of the Growth-Repressing DELLA Proteins via Its Effect on Gibberellin Metabolism** [W](#) 2117
Patrick Achard, Fan Gong, Soizic Cheminant, Malek Alioua, Peter Hedden, and Pascal Genschik
- Brassinosteroids Regulate Grain Filling in Rice** [W](#) [OA](#) 2130
Chuan-yin Wu, Anthony Trieu, Parthiban Radhakrishnan, Shing F. Kwok, Sam Harris, Ke Zhang, Jiulin Wang, Jianmin Wan, Huqu Zhai, Suguru Takatsuto, Shogo Matsumoto, Shozo Fujioka, Kenneth A. Feldmann, and Roger I. Pennell
- Arabidopsis* TONNEAU1 Proteins Are Essential for Preprophase Band Formation and Interact with Centrin** [W](#) 2146
Juliette Azimzadeh, Philippe Nacry, Anna Christodoulidou, Stéphanie Drevensek, Christine Camilleri, Nardjis Amour, François Parcy, Martine Pastuglia, and David Bouchez
- Comprehensive Flavonol Profiling and Transcriptome Coexpression Analysis Leading to Decoding Gene-Metabolite Correlations in *Arabidopsis*** [W](#) [OA](#) 2160
Keiko Yonekura-Sakakibara, Takayuki Tohge, Fumio Matsuda, Ryo Nakabayashi, Hiromitsu Takayama, Rie Niida, Akiko Watanabe-Takahashi, Eri Inoue, and Kazuki Saito
- Molecular Remodeling of Photosystem II during State Transitions in *Chlamydomonas reinhardtii*** [W](#) 2177
Masakazu Iwai, Yuichiro Takahashi, and Jun Minagawa
- Lipid Trafficking between the Endoplasmic Reticulum and the Plastid in *Arabidopsis* Requires the Extraplasmidic TGD4 Protein** [W](#) 2190
Changcheng Xu, Jilian Fan, Adam J. Cornish, and Christoph Benning
- Arabidopsis* Protein Disulfide Isomerase-5 Inhibits Cysteine Proteases during Trafficking to Vacuoles before Programmed Cell Death of the Endothelium in Developing Seeds** [W](#) 2205
Christine Andème Ondzighi, David A. Christopher, Eun Ju Cho, Shu-Choeng Chang, and L. Andrew Staehelin
- Rpl33, a Nonessential Plastid-Encoded Ribosomal Protein in Tobacco, Is Required under Cold Stress Conditions** [W](#) [OA](#) 2221
Marcelo Rogalski, Mark A. Schöttler, Wolfram Thiele, Waltraud X. Schulze, and Ralph Bock
- The *Arabidopsis* NFYA5 Transcription Factor Is Regulated Transcriptionally and Posttranscriptionally to Promote Drought Resistance** [W](#) 2238
Wen-Xue Li, Youko Oono, Jianhua Zhu, Xin-Jian He, Jian-Min Wu, Kei Iida, Xiao-Yan Lu, Xiping Cui, Hailing Jin, and Jian-Kang Zhu

RD19, an *Arabidopsis* Cysteine Protease Required for RRS1-R-Mediated Resistance, Is Relocalized to the Nucleus by the *Ralstonia solanacearum* PopP2 Effector 


2252

Maud Bernoux, Ton Timmers, Alain Jauneau, Christian Brière,
Pierre J.G.M. de Wit, Yves Marco, and Laurent Deslandes

RACK1 Functions in Rice Innate Immunity by Interacting with the Rac1 Immune Complex  

2265

Ayako Nakashima, Letian Chen, Nguyen Phuong Thao, Masayuki Fujiwara,
Hann Ling Wong, Masayoshi Kuwano, Kenji Umemura, Ken Shirasu,
Tsutomu Kawasaki, and Ko Shimamoto

 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 April 16, 2021

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