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 Bliek, 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
The milkweed pod1 gene encodes a KANADI protein that is required for abaxial/adaxial patterning in maize leaves.

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.

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.

Rebecca D. Argyros, Dennis E. Mathews, Yi-Hsuan Chiang, 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.

Patrick Achard, Fan Gong, Soizic Cheminant, Malek Alioua, Peter Hedden, and Pascal Genschik

Brassinosteroids regulate grain filling in rice.

Chuan-yin Wu, Anthony Trieu, Parthiban Radhakrishnan, Shing F. Kwok, Sam Harris, Ke Zhang, Jiulin Wang, Jianmin Han, Huqiu 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.

Juliette Azimzadeh, Philippe Nacry, Anna Christodoulidou, Stéphanie Drevensek, Christine Camilleri, Nardjis Amiour, François Parcy, Martine Pastuglia, and David Bouchez

Comprehensive flavonol profiling and transcriptome coexpression analysis leading to decoding gene–metabolite correlations in Arabidopsis.

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.

Masakazu Iwai, Yuichiro Takahashi, and Jun Minagawa

Lipid trafficking between the endoplasmic reticulum and the plastid in Arabidopsis requires the extraplastidic TGD4 protein.

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.

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.

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.

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

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

Ayako Nakashima, Letian Chen, Nguyen Phuong Thao, Masayuki Fujiwara, Harn 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.