The Plant Cell
Volume 19 Number 2 February 2007

ON THE COVER

A shoot axillary bud will either grow out to produce a branch or remain dormant in the leaf axil, depending on the integration of endogenous and environmental stimuli mediated by hormonal signals. Aguilar-Martinez et al. (pages 458–472) report on Arabidopsis BRANCH1 (BRC1), which encodes a TCP transcription factor closely related to maize teosinte branched1 (tb1). The authors show that, like tb1, BRC1 constitutes a key point at which signals controlling branching are integrated within axillary buds. BRC1 is expressed in developing axillary buds and functions to arrest bud development in response to developmental and environmental stimuli. It has previously been found that long-range signaling promoting axillary bud arrest is controlled both by auxin produced in the shoot apex and by a novel carotenoid derivative called the MAX-dependent signal synthesized in the root. Mutant and expression analyses show that BRC1 functions downstream of the MAX pathway and also is required for auxin-induced apical dominance. The cover image shows a scanning electron micrograph of a young axillary bud in the axil of a wild-type Arabidopsis rosette leaf.

EDITORIAL

21st Century Plant Biology: Viva la Revolución?
Rich Jorgensen 389

IN THIS ISSUE

Two Tales of Chromatin Remodeling Converge on HUB1
Nancy A. Eckardt 391

IN BRIEF

Chromatin Remodeling ATPases and Plant Development
Two Protein Kinases Required for ABA Signaling in Arabidopsis
Nancy A. Eckardt 394

HISTORICAL PERSPECTIVE ESSAY

The Gene Balance Hypothesis: From Classical Genetics to Modern Genomics
James A. Birchler and Reiner A. Veitia 395

RESEARCH ARTICLES

Unique, Shared, and Redundant Roles for the Arabidopsis SWI/SNF Chromatin Remodeling ATPases BRAHMA and SPLEYED
Staver Bezhani, Cara Winter, Steve Hershman, John D. Wagner, John F. Kennedy, Chang Seob Kwon, Jennifer Pfluger, Yanhui Su, and Doris Wagner 403

The Arabidopsis thaliana Homolog of Yeast BRE1 Has a Function in Cell Cycle Regulation during Early Leaf and Root Growth
Delphine Fleury, Kristiina Himanen, Gerda Cnops, Hilde Nelissen, Tommaso Matteo Boccardi, Steven Maere, Gerrit T.S. Beemster, Pia Neyt, Sylvester Anami, Pedro Robles, José Luis Micol, Dirk Inze, and Mieke Van Lijsebettens 417

The Absence of Histone H2B Monoubiquitination in the Arabidopsis hub1 (rdo4) Mutant Reveals a Role for Chromatin Remodeling in Seed Dormancy
Yongxiu Liu, Maarten Koornneef, and Wim J.J. Soppe 433

Histone Deacetylases and ASYMMETRIC LEAVES2 Are Involved in the Establishment of Polarity in Leaves of Arabidopsis
Yoshihisa Ueno, Takaaki Ishikawa, Keiko Watanabe, Shinji Terakura, Hidekazu Iwakawa, Kiyotaka Okada, Chiyoko Machida, and Yasunori Machida 445

Arabidopsis BRANCH1 Acts as an Integrator of Branching Signals within Axillary Buds
José Antonio Aguilar-Martinez, César Poza-Carrion, and Pilar Cubas 458
TCP Transcription Factors Control the Morphology of Shoot Lateral Organs via Negative Regulation of the Expression of Boundary-Specific Genes in Arabidopsis

Identification of Two Protein Kinases Required for Abscisic Acid Regulation of Seed Germination, Root Growth, and Gene Expression in Arabidopsis

KANADI and Class III HD-Zip Gene Families Regulate Embryo Pattering and Modulate Auxin Flow during Embryogenesis in Arabidopsis

Arabidopsis MYB26/MALE STERILE35 Regulates Secondary Thickening in the Endothecium and Is Essential for Anther Dehiscence

Arabidopsis irregular xylem8 and irregular xylem9: Implications for the Complexity of Glucuronoxylan Biosynthesis

Role of the MPN Subunits in COP9 Signalosome Assembly and Activity, and Their Regulatory Interaction with Arabidopsis Cullin3-Based E3 Ligases

Tapetosomes in Brassica Tapetum Accumulate Endoplasmic Reticulum–Derived Flavonoids and Alkanes for Delivery to the Pollen Surface

Arabidopsis Vacular Sorting Mutants (green fluorescent seed) Can Be Identified Efficiently by Secretion of Vacuole-Targeted Green Fluorescent Protein in Their Seeds

NUCLEOPORIN85 Is Required for Calcium Spiking, Fungal and Bacterial Symbioses, and Seed Production in Lotus japonicus

Dominant-Negative Modification Reveals the Regulatory Function of the Multimeric Cysteine Synthase Protein Complex in Transgenic Tobacco

Lack of Respiratory Chain Complex I Impairs Alternative Oxidase Engagement and Modulates Redox Signaling during Elicitor-Induced Cell Death in Tobacco

Light-Induced Energy Dissipation in Iron-Starved Cyanobacteria: Roles of OCP and IsiA Proteins

Thioredoxin h5 Is Required for Victorin Sensitivity Mediated by a CC-NBS-LRR Gene in Arabidopsis

Online at www.plantcell.org
A Conserved Carboxylesterase Is a SUPPRESSOR OF AVRBST-ELICITED RESISTANCE in Arabidopsis

Sebastien Cunnac, Ariane Wilson, Jamie Nuwer, Angela Kirik, Gayathri Baranage, and Mary Beth Mudgett

Roles for Rice Membrane Dynamics and Plasmodesmata during Biotrophic Invasion by the Blast Fungus

Prasanna Kankanala, Kirk Czymmek, and Barbara Valent

CORRECTIONS


Online version contains Web-only data.

Open Access articles can be viewed online without a subscription.