ON THE COVER

Photoperiodic floral initiation involves a leaf-derived signal, termed florigen, which is transported in the phloem and acted upon by meristematic cells within the shoot apex. On pages 1488–1506, Lin et al. present an analysis of the phloem sap collected from photoperiodically induced and noninduced cucurbit species that shows that the presence of FT-Like protein, but not $FT^{-}\mathrm{Like}$ mRNA, is highly correlated with the onset of flowering. The use of the normally day-neutral Cucurbita system for this analysis depended on the isolation of an obligate short-day accession, which was found in the undomesticated species $C. moschata$. The cover image shows a flowering $C. moschata$ plant, overlaid by mass spectrometry traces of the two FT-like proteins with florigenic activity found in the phloem sap.

EDITORIAL

The Freedom to Innovate: A Privilege or a Right?
Rich Jorgensen 1433

IN THIS ISSUE

Phloem-Borne FT Signals Flowering in Cucurbits
Nancy A. Eckardt 1435

IN BRIEF

A CLASSY RNA Silencing Signaling Mutant in Arabidopsis
Bigfoot Genes and Plant Response to Environmental Change
Nancy A. Eckardt 1439

RESEARCH ARTICLES

G-Boxes, Bigfoot Genes, and Environmental Response: Characterization of Intragenomic Conserved Noncoding Sequences in Arabidopsis
Michael Freeling, Lakshmi Rapaka, Eric Lyons, Brent Pedersen, and Brian C. Thomas 1441

The Two AGPase Subunits Evolve at Different Rates in Angiosperms, yet They Are Equally Sensitive to Activity-Altering Amino Acid Changes When Expressed in Bacteria
Nikolaos Georgelis, Edward L. Braun, Janine R. Shaw, and L. Curtis Hannah 1458

CYP703 Is an Ancient Cytochrome P450 in Land Plants Catalyzing In-Chain Hydroxylation of Lauric Acid to Provide Building Blocks for Sporopollenin Synthesis in Pollen
Marc Morant, Kirsten Jørgensen, Hubert Schaller, Franck Pinot, Birger Lindberg Møller, Danièle Werck-Reichhart, and Søren Bak 1473

FLOWERING LOCUS T Protein May Act as the Long-Distance Florigenic Signal in the Cucurbits

An SNF2 Protein Associated with Nuclear RNA Silencing and the Spread of a Silencing Signal between Cells in Arabidopsis
Lisa M. Smith, Olga Pontes, Iain Searle, Nataliya Yelina, Faridoon K. Yousafzai, Alan J. Herr, Craig S. Pikaard, and David C. Baulcombe 1507
TIME FOR COFFEE Encodes a Nuclear Regulator in the Arabidopsis thaliana Circadian Clock
Zhaojun Ding, Andrew J. Millar, Amanda M. Davis, and Seth J. Davis

NUCLEAR PORE ANCHOR, the Arabidopsis Homolog of Tpr/Mlp1/Mlp2/Megator, Is Involved in mRNA Export and SUMO Homeostasis and Affects Diverse Aspects of Plant Development
Xianfeng Morgan Xu, Annkatrin Rose, Sivaramakrishnan Muthuswamy, Sun Yong Jeong, Somiya Venkatakrishnan, Qiao Zhao, and Iris Meier

Components of the Arabidopsis mRNA Decapping Complex Are Required for Early Seedling Development
David C. Goeres, Jaimie M. Van Norman, Weiping Zhang, Nellie A. Fauver, Mary Lou Spencer, and Leslie E. Sieburth

UDP-Glucose 4-Epimerase Isoforms UGE2 and UGE4 Cooperate in Providing UDP-Galactose for Cell Wall Biosynthesis and Growth of Arabidopsis thaliana
Johannes Rösti, Christopher J. Barton, Sandra Albrecht, Paul Dupree, Markus Pauly, Kim Findlay, Keith Roberts, and Georg J. Seifert

Structure and Function of a Mitochondrial Late Embryogenesis Abundant Protein Are Revealed by Desiccation
Dimitri Tolleter, Michel Jaquinod, Cécile Mangavel, Catherine Passirani, Patrick Saulnier, Stephen Manon, Emeline Teyssier, Nicole Payet, Marie-Hélène Avelange-Macherel, and David Macherel

The Arabidopsis ATNRT2.7 Nitrate Transporter Controls Nitrate Content in Seeds
Franck Chopin, Mathilde Orsel, Marie-France Dorbe, Fabien Chardon, Hoai-Nam Truong, Anthony J. Miller, Anne Krapp, and Françoise Daniel-Vedele

Increasing Plasma Membrane Phosphatidylinositol(4,5)Bisphosphate Biosynthesis Increases Phosphoinositide Metabolism in Nicotiana tabacum
Yang Ju Im, Imara Y. Perera, Irena Brglez, Amanda J. Davis, Jill Stevenson-Paulik, Brian Q. Phillippy, Eva Johannes, Nina S. Allen, and Wendy F. Boss

Arabidopsis Protein Kinase PKS5 Inhibits the Plasma Membrane H+-ATPase by Preventing Interaction with 14-3-3 Protein

Canonical Signal Recognition Particle Components Can Be Bypassed for Posttranslational Protein Targeting in Chloroplasts

The Senescence-Induced Staygreen Protein Regulates Chlorophyll Degradation
So-Yon Park, Jae-Woong Yu, Jong-Sung Park, Jinjie Li, Soo-Cheul Yoo, Na-Yeoun Lee, Sang-Kyu Lee, Seok-Won Jeong, Hak Soo Seo, Hee-Jong Koh, Jong-Seong Jeon, Youn-Il Park, and Nam-Chon Paek

ABA Is an Essential Signal for Plant Resistance to Pathogens Affecting JA Biosynthesis and the Activation of Defenses in Arabidopsis
Bruce A.T. Adie, Julián Pérez-Pérez, Manuel M. Pérez-Pérez, Marta Godoy, José-J. Sánchez-Serrano, Eric A. Schmelz, and Roberto Solano

Physical Association of the NB-LRR Resistance Protein Rx with a Ran GTPase–Activating Protein Is Required for Extreme Resistance to Potato virus X
Wladimir I.L. Tameling and David C. Baulcombe
Arabidopsis VIRE2 INTERACTING PROTEIN2 Is Required for Agrobacterium T-DNA Integration in Plants 1695
Ajith Anand, Alexander Krichevsky, Sebastian Schornack, Thomas Lahaye, Tzvi Tzfira, Yuhong Tang, Vitaly Citovsky, and Kirankumar S. Mysore

Tomato BRASSINOSTEROID INSENSITIVE1 Is Required for Systemin-Induced Root Elongation in Solanum pimpinellifolium but Is Not Essential for Wound Signaling 1709
Nicholas Holton, Ana Caño-Delgado, Kate Harrison, Teresa Montoya, Joanne Chory, and Gerard J. Bishop

Online version contains Web-only data.
Open Access articles can be viewed online without a subscription.
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>eTOCs</td>
<td>Sign up for eTOCs at: <a href="http://www.plantcell.org/cgi/alerts/ctmain">http://www.plantcell.org/cgi/alerts/ctmain</a></td>
</tr>
<tr>
<td>CiteTrack Alerts</td>
<td>Sign up for CiteTrack Alerts at: <a href="http://www.plantcell.org/cgi/alerts/ctmain">http://www.plantcell.org/cgi/alerts/ctmain</a></td>
</tr>
<tr>
<td>Subscription Information</td>
<td>Subscription Information for <em>The Plant Cell</em> and <em>Plant Physiology</em> is available at: <a href="http://www.aspb.org/publications/subscriptions.cfm">http://www.aspb.org/publications/subscriptions.cfm</a></td>
</tr>
</tbody>
</table>