

VOL. 205, NO. 5, JUNE 9, 2014

Plants Flash their KASH

Talin Promotes Invasion

A Fresh Look at Endocytosis

CNTD1 at the Crossroads of Crossovers

NEWS

In This Issue

608

- Harvesting a new KASH crop
- Endocytosis in its natural state
- Talin's invasive side
 Ben Short

In Focus

609

CNTD1's crossover act
 Ben Short

People & Ideas

610

 Adam Cohen: Visualizing cellular voltage Caitlin Sedwick

REVIEWS

Comments

613

Poly(ADP-ribose): An organizer of cellular architecture Anthony K.L. Leung

Reviews

621

The cell biology of asthma David J. Erle and Dean Sheppard

RESEARCH ARTICLES

Reports

633

Mammalian CNTD1 is critical for meiotic crossover maturation and deselection of excess precrossover sites
J. Kim Holloway, Xianfei Sun, Rayka Yokoo, Anne M. Villeneuve, and Paula E. Cohen

Articles

643

A selfish DNA element engages a meiosis-specific motor and telomeres for germ-line propagation

Soumitra Sau, Michael N. Conrad, Chih-Ying Lee, David B. Kaback, Michael E. Dresser, and Makkuni Jayaram

663

BRCA1 establishes DNA damage signaling and pericentric heterochromatin of the X chromosome in male meiosis Tyler J. Broering, Kris G. Alavattam, Ruslan I. Sadreyev, Yosuke Ichijima, Yasuko Kato, Kazuteru Hasegawa, R. Daniel Camerini-Otero, Jeannie T. Lee, Paul R. Andreassen, and Satoshi H. Namekawa

677

Identification of unique SUN-interacting nuclear envelope proteins with diverse functions in plants

Xiao Zhou, Katja Graumann, Lennart Wirthmueller, Jonathan D.G. Jones, and Iris Meier

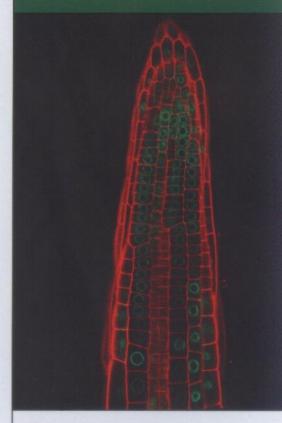
693

Regulation of cargo recognition, commitment, and unloading drives cotranslational protein targeting

Ishu Saraogi, David Akopian, and Shu-ou Shan



VOL. 205, NO. 5, JUNE 9, 2014



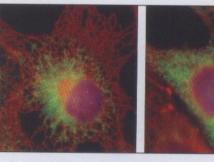
On the cover

An Arabidopsis root tip expresses GFP-tagged SINE1 (green), one of many new outer nuclear membrane KASH proteins that Zhou et al. identify in plants. The plant cell walls are labeled with propidium iodide (red). Image © 2014 Zhou et al. See page 677.

- Rab18 and a Rab18 GEF complex are required for normal ER structure
 Andreas Gerondopoulos, Ricardo Nunes Bastos, Shin-ichiro Yoshimura,
 Rachel Anderson, Sarah Carpanini, Irene Aligianis, Mark T. Handley,
 and Francis A. Barr
- Actin and dynamin2 dynamics and interplay during clathrin-mediated endocytosis

 Alexandre Grassart, Aaron T. Cheng, Sun Hae Hong, Fan Zhang, Nathan Zenzer, Yongmei Feng, David M. Briner, Gregory D. Davis, Dmitry Malkov, and David G. Drubin
- Talin regulates moesin—NHE-1 recruitment to invadopodia and promotes mammary tumor metastasis

 Brian T. Beaty, Yarong Wang, Jose Javier Bravo-Cordero, Ved P. Sharma, Veronika Miskolci, Louis Hodgson, and John Condeelis



Gerondopoulos et al. reveal that the Rab3GAP complex, which is mutated in the neurological disorder Warburg Micro syndrome, is a guanine nucleotide exchange factor that activates the small GTPase Rab18 to control ER morphology. Compared to a control cell (left), cells lacking Rab18 (right) contain expanded regions of ER sheets (marked by CLIMP-63, green) and smaller networks of ER tubules (labeled by reticulon 4, red). Image © 2014 Gerondopoulos et al. See page 707.