

NEWS

In This Issue

462

- Kicking MiD51 out of the enzyme club
- Polarity proteins duel in *Drosophila*
- Ndc1 catches the shuttle

Mitch Leslie

In Focus

463

- Career guidance for stem cells

Mitch Leslie

People & Ideas

464

- Amy Gladfelter: Fungi with a streak of individuality

Caitlin Sedwick

REVIEWS

Reviews

467

- Protecting the proteome: Eukaryotic cotranslational quality control pathways

Jens Lykke-Andersen and Eric J. Bennett

RESEARCH ARTICLES

Reports

477

- Structural and functional analysis of MiD51, a dynamin receptor required for mitochondrial fission

Viviane Richter, Catherine S. Palmer, Laura D. Osellame, Abeer P. Singh, Kirstin Elgass, David A. Stroud, Hiromi Sesaki, Marc Kvensakul, and Michael T. Ryan

487

- A bidirectional antagonism between aPKC and Yurt regulates epithelial cell polarity

Clémence L. Gamblin, Émilie J.-L. Hardy, François J.-M. Chartier, Nicolas Bisson, and Patrick Laprise

497

- PIP₃-dependent macropinocytosis is incompatible with chemotaxis

Douwe M. Veltman, Michael G. Lemieux, David A. Knecht, and Robert H. Insall

Articles

507

- CDK phosphorylation of SLD-2 is required for replication initiation and germline development in *C. elegans*

Vincent Gaggioli, Eva Zeiser, David Rivers, Charles R. Bradshaw, Julie Ahringer, and Philip Zegerman

523

- The SUN protein Mps3 controls Ndc1 distribution and function on the nuclear membrane

Jingjing Chen, Christine J. Smoyer, Brian D. Slaughter, Jay R. Unruh, and Sue L. Jaspersen

541

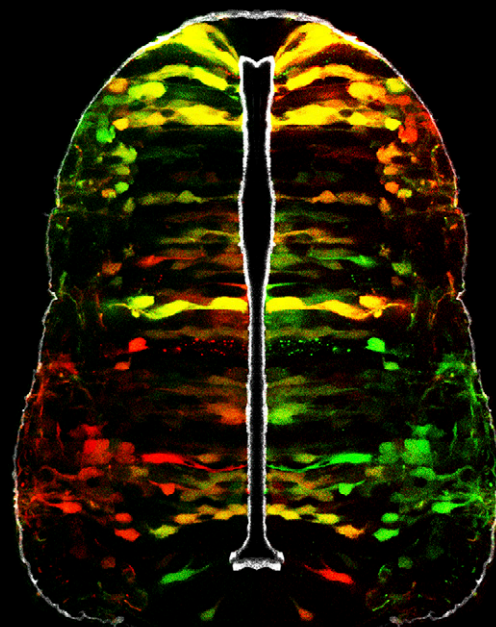
- Peroxisomal Atg37 binds Atg30 or palmitoyl-CoA to regulate phagophore formation during pexophagy

Taras Y. Nazarko, Katharine Ozeki, Andreas Till, Geetha Ramakrishnan, Pouya Lotfi, Mingda Yan, and Suresh Subramani

JCB

THE JOURNAL OF CELL BIOLOGY

VOL. 204, NO. 4, FEBRUARY 17, 2014



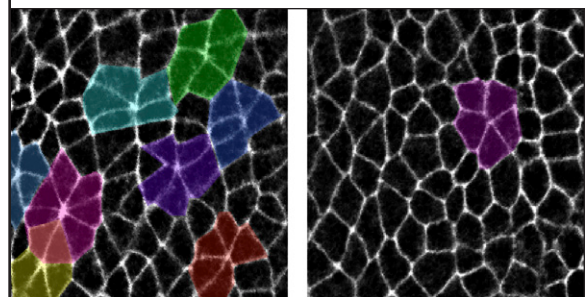
On the cover

Le Dréau et al. report that the activity levels of the canonical BMP effectors SMAD1 and SMAD5 dictate the mode of stem cell division—self-expanding, self-renewing, or self-consuming—during spinal cord formation. A mirror-reconstruction image of a transverse section through the developing spinal cord of a chick embryo shows the expression patterns of the reporters pSox2:eGFP (green) and pTis21:RFP (red), which are active during progenitor-generating and neuron-generating divisions, respectively. The apical and basal membranes of the neural tube are labeled white.

Image © 2014 Le Dréau et al.

See page 591.

- 559** Aggregation state determines the localization and function of M1- and M23-aquaporin-4 in astrocytes
Alex J. Smith, Byung-Ju Jin, Julien Ratelade, and Alan S. Verkman
- 575** Rho GTPase and Shroom direct planar polarized actomyosin contractility during convergent extension
Sérgio de Matos Simões, Avantika Mainieri, and Jennifer A. Zallen
- 591** The strength of SMAD1/5 activity determines the mode of stem cell division in the developing spinal cord
Gwenvael Le Dréau, Murielle Saade, Irene Gutiérrez-Vallejo, and Elisa Martí
- 607** TAK1 kinase switches cell fate from apoptosis to necrosis following TNF stimulation
Sho Morioka, Peter Broglie, Emily Omori, Yuka Ikeda, Giichi Takaesu, Kunihiro Matsumoto, and Jun Ninomiya-Tsuji



Simões et al. reveal how Rho GTPase and the actin-binding protein Shroom promote the planar polarized localization of myosin II during the convergent extension of *Drosophila* embryos. In a wild-type embryo undergoing convergent extension (left), germ-band cells expressing the plasma membrane marker Spider (white) rearrange into multicellular rosettes (highlighted in various colors). Rosette formation is reduced when myosin II is mislocalized in embryos lacking Shroom (right).
Image © 2014 Simões et al.
See page 575.