

On the cover

Shown is an individual myofiber dissected from the tibialis anterior muscle of a day 18.5 mouse embryo lacking Nesprin 1 α 2 and stained for the nuclear lamin protein Lamin A/C (green), sarcomeric α -actinin (red), and DAPI (blue). Image © 2017 Stroud et al. See page 1915.

In Focus

- 1865 **ATF4 helps mitochondria pass the stress test**
Ben Short

People & Ideas

- 1866 **Andrea Ventura: Decrypting noncoding RNAs**
Melina Casadio

Spotlights

- 1869 **A stitch in time: Replicate early and escape dosage compensation to express more**
María Gómez
- 1871 **KDM5A demethylase: Erasing histone modifications to promote repair of DNA breaks**
Brendan D. Price
- 1875 **SR proteins: To shuttle or not to shuttle, that is the question**
Marie-Louise Hammarskjöld and David Rekosh
- 1879 **RASSF4: Regulator of plasma membrane PI(4,5)P₂**
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- 1883 **mTORC in β cells: more Than Only Recognizing Comestibles**
Kathrin Maedler and Amin Ardestani
- 1887 **Ride the wave: Retrograde trafficking becomes Ca²⁺ dependent with BAIAP3**
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- 1891 **KRS: A cut away from release in exosomes**
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Reviews

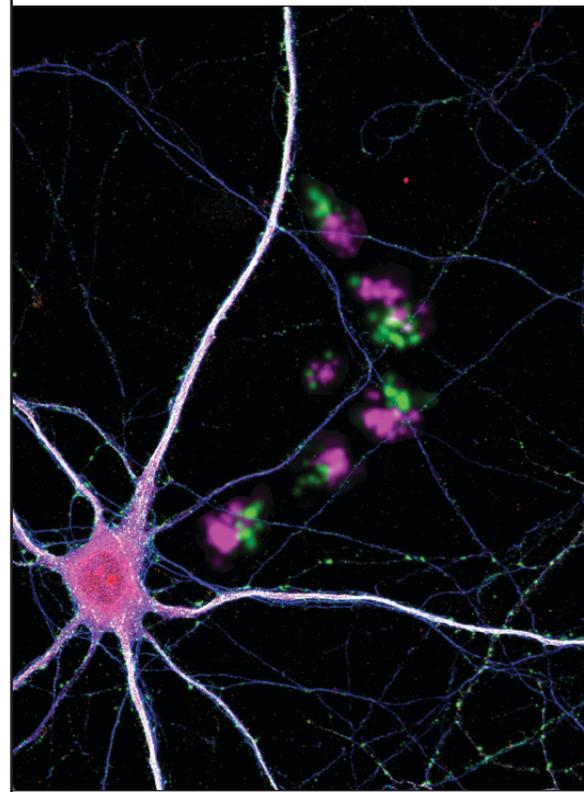
- 1895 **Autophagy in the presynaptic compartment in health and disease**
Vinoj Vijayan and Patrik Verstreken

Reports

- 1907 **DNA replication timing influences gene expression level**
Carolin A. Müller and Conrad A. Nieduszynski
- 1915 **Nesprin 1 α 2 is essential for mouse postnatal viability and nuclear positioning in skeletal muscle**
Matthew J. Stroud, Wei Feng, Jianlin Zhang, Jennifer Veevers, Xi Fang, Larry Gerace, and Ju Chen
- 1925 **Concerted actions of distinct nonmuscle myosin II isoforms drive intracellular membrane remodeling in live animals**
Oleg Milberg, Akiko Shitara, Seham Ebrahim, Andrius Masedunskas, Muhibullah Tora, Duy T. Tran, Yun Chen, Mary Anne Conti, Robert S. Adelstein, Kelly G. Ten Hagen, and Roberto Weigert
- 1937 **Rab2 promotes autophagic and endocytic lysosomal degradation**
Péter Lőrincz, Sarolta Tóth, Péter Benkő, Zsolt Lakatos, Attila Boda, Gábor Glatz, Martina Zobel, Sara Bisi, Krisztina Hegedűs, Szabolcs Takáts, Giorgio Scita, and Gábor Juhász
- 1949 **Persistent mTORC1 signaling in cell senescence results from defects in amino acid and growth factor sensing**
Bernadette Carroll, Glyn Nelson, Yoana Rabanal-Ruiz, Olena Kucheryavenko, Natasha A. Dunhill-Turner, Charlotte C. Chesterman, Qabil Zahari, Tong Zhang, Sarah E. Conduit, Christina A. Mitchell, Oliver D.K. Maddocks, Penny Lovat, Thomas von Zglinicki, and Viktor I. Korolchuk

Articles

- 1959 **Histone demethylase KDM5A regulates the ZMYND8–NuRD chromatin remodeler to promote DNA repair**
Fade Gong, Thomas Clouaire, Marion Aguirrebengoa, Gaëlle Legube, and Kyle M. Miller
- 1975 **Histone chaperone HIRA regulates neural progenitor cell proliferation and neurogenesis via β -catenin**
Yanxin Li and Jianwei Jiao
- 1993 **Cellular differentiation state modulates the mRNA export activity of SR proteins**
Valentina Botti, François McNicoll, Michaela C. Steiner, Florian M. Richter, Anfisa Solovyeva, Marius Wegener, Oliver D. Schwich, Ina Poser, Kathi Zarnack, Ilka Wittig, Karla M. Neugebauer, and Michaela Müller-McNicoll
- 2011 **RASSF4 controls SOCE and ER–PM junctions through regulation of PI(4,5)P₂**
Yu-Ju Chen, Chi-Lun Chang, Wan-Ru Lee, and Jen Liou
- 2027 **Multi-omics analysis identifies ATF4 as a key regulator of the mitochondrial stress response in mammals**
Pedro M. Quirós, Miguel A. Prado, Nicola Zamboni, Davide D'Amico, Robert W. Williams, Daniel Finley, Steven P. Gygi, and Johan Auwerx
- 2047 **Dynein is regulated by the stability of its microtubule track**
Cassi Estrem, Colby P. Fees, and Jeffrey K. Moore
- 2059 **Hsc70 chaperone activity is required for the cytosolic slow axonal transport of synapsin**
Archan Ganguly, Xuemei Han, Utpal Das, Lina Wang, Jonathan Loi, Jichao Sun, Daniel Gitler, Ghislaine Caillol, Christophe Letierrier, John R. Yates III, and Subhojit Roy
- 2075 **Early protection to stress mediated by CDK-dependent PI3,5P₂ signaling from the vacuole/lysosome**
Natsuko Jin, Yui Jin, and Lois S. Weisman
- 2091 **mTOR controls ChREBP transcriptional activity and pancreatic β cell survival under diabetic stress**
Gia Cac Chau, Dong Uk Im, Tong Mook Kang, Jeong Mo Bae, Won Kim, Suhkneung Pyo, Eun-Yi Moon, and Sung Hee Um
- 2107 **TRPM8 inhibits endothelial cell migration via a non-channel function by trapping the small GTPase Rap1**
Tullio Genova, Guillaume P. Grolez, Chiara Camillo, Michela Bernardini, Alexandre Bokhobza, Elodie Richard, Marco Scianna, Loic Lemonnier, Donatella Valdembri, Luca Munaron, Mark R. Philips, Virginie Mattot, Guido Serini, Natalia Prevarskaya, Dimitra Gkika, and Alessandra Fiorio Pla
- 2131 **BLOC-1 is required for selective membrane protein trafficking from endosomes to primary cilia**
William J. Monis, Victor Faundez, and Gregory J. Pazour
- 2151 **BAIAP3, a C2 domain-containing Munc13 protein, controls the fate of dense-core vesicles in neuroendocrine cells**
Xingmin Zhang, Shan Jiang, Kelly A. Mitok, Lingjun Li, Alan D. Attie, and Thomas F.J. Martin
- 2167 **ESCRT-mediated vesicle concatenation in plant endosomes**
Rafael Andrade Buono, André Leier, Julio Paez-Valencia, Janice Pennington, Kaija Goodman, Nathan Miller, Paul Ahlquist, Tatiana T. Marquez-Lago, and Marisa S. Otegui
- 2179 **Polarity of varicosity initiation in central neuron mechanosensation**
Yuanzheng Gu, Peter Jukkola, Qian Wang, Thomas Esparza, Yi Zhao, David Brody, and Chen Gu



A composite image showing a hippocampal neuron with chaperone-linked protein complexes (magenta and green clusters) being conveyed via slow axonal transport. Image © 2017 Ganguly et al. See page 2059.

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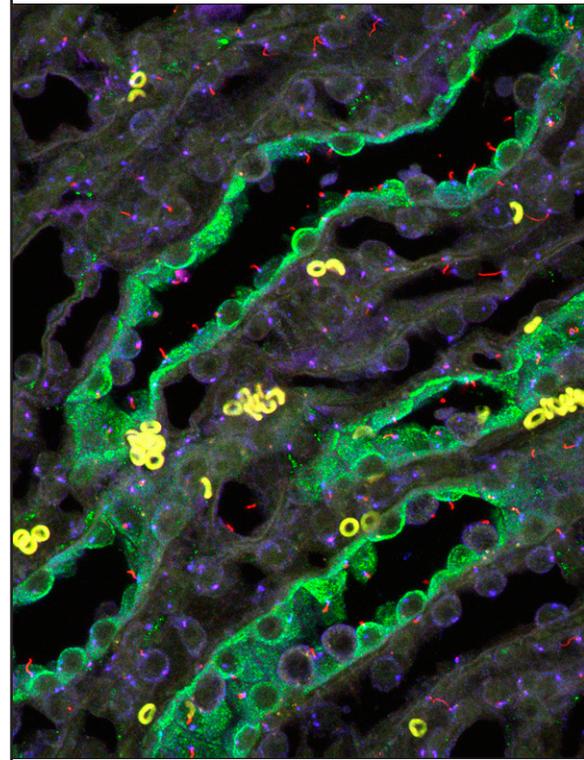
Caspase-8 controls the secretion of inflammatory lysyl-tRNA synthetase in exosomes from cancer cells

Sang Bum Kim, Hye Rim Kim, Min Chul Park, Seongmin Cho, Peter C. Goughnour, Daeyoung Han, Ina Yoon, YounHa Kim, Taehee Kang, Eunjoo Song, Pilhan Kim, Hyosun Choi, Ji Young Mun, Chihong Song, Sangmin Lee, Hyun Suk Jung, and Sunghoon Kim

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Extracellular vesicles of stromal origin target and support hematopoietic stem and progenitor cells

Gregoire Stik, Simon Crequit, Laurence Petit, Jennifer Durant, Pierre Charbord, Thierry Jaffredo, and Charles Durand



The BLOC-1 *Dtnbp1^{sdyl/sdyl}* mouse has a cystic kidney phenotype. Confocal image of a 12-mo-old sandy (*Dtnbp1^{sdyl/sdyl}*) mouse kidney section stained with antibodies specific to the cilia marker Arl13b (red), collecting duct marker AQP2 (green), and basal body marker γ tubulin (blue). Note the distended collecting ducts, which indicate a cystic kidney phenotype. 40 \times magnification. Image \copyright 2017 Monis et al. See page 2131.