Contents

RETROSPECTIVE

Recognizing the 35th anniversary of the proposal that snRNPs are involved in splicing
S. M. Mount and S. L. Wolin

3557–3560

BRIEF REPORTS

A phosphoinositide-binding cluster in cavin1 acts as a molecular sensor for cavin1 degradation
V. A. Tillu, O. Kovtun, K.-A. McMahon, B. M. Collins, and R. G. Parton

3561–3569

Cavin1 degradation is primarily mediated by the ubiquitin proteasome system. The phosphoinositide-binding region in cavin1 acts as a molecular switch for cavin1 degradation upon release of cavins in cytosol. This mechanism may help to maintain low levels of free cytosolic cavins at steady state.

Hcm1 integrates signals from Cdk1 and calcineurin to control cell proliferation
H. E. Arsenault, J. Roy, C. E. Mapa, M. S. Cyert, and J. A. Benanti

3570–3577

The transcription factor Hcm1 is a key regulator of chromosome segregation and genome stability. The phosphatase calcineurin directly inactivates Hcm1 in response to environmental stress, which inhibits proliferation. Hcm1 functions as a rheostat, whose phosphorylation state affects the rate of proliferation.

ARTICLES

Cell Biology of Disease

Atypical protein kinase C induces cell transformation by disrupting Hippo/Yap signaling
A. Archibald, M. Al-Masri, A. Liew-Spilger, and L. McCaffrey

3578–3595

aPKC is highly expressed and activated in cancers of epithelial origin. aPKC is sufficient to disrupt apical-basal polarity and overcome contact inhibition of epithelial cell growth to promote a transformed phenotype by deregulating Hippo/Yap signaling.

Cell Motility

Late steps in cytoplasmic maturation of assembly-competent axonemal outer arm dynein in Chlamydomonas require interaction of ODA5 and ODA10 in a complex
A. B. Dean and D. R. Mitchell

3596–3605

In humans, homologues of Chlamydomonas ciliary docking complex subunit DC2 and assembly factor ODA10 are interacting axonemal proteins needed for outer dynein arm assembly. Surprisingly, Chlamydomonas ODA10 does not interact with DC2, localizes to a proximal axonemal domain, and is needed for cytoplasmic steps in dynein assembly, not for docking.

Cell Physiology

Loss of endogenous Nfatc1 reduces the rate of DMBA/TPA-induced skin tumorigenesis
J. Goldstein, E. Roth, N. Roberts, R. Zwick, S. Lin, S. Fletcher, A. Tadeu, C. Wu, A. Beck, C. Zeiss, M. Suárez-Fariñas, and V. Horsley

3606–3614

Mice lacking the transcription factor Nfatc1 develop skin tumors at a decreased rate in response to the carcinogen DMBA. Nfatc1 promotes the expression of DMBA-metabolizing enzymes and DNA damage in DMBA-treated keratinocytes.
The function and dynamics of the apical scaffolding protein E3KARP are regulated by cell-cycle phosphorylation
C. Sauvanet, D. Garbett, and A. Bretscher

The apical scaffolding protein E3KARP, a paralogue of EBP50, is regulated by Ser-303 cell-cycle phosphorylation. This phosphorylation enhances its exchange rate in vivo and reduces its apical localization and function. The dynamics of EB50 and E3KARP are regulated by sites in their tails, which are the most divergent regions between them.

Cytoskeleton

Spindle-to-cortex communication in cleaving, polyspermic Xenopus eggs
C. M. Field, A. C. Groen, P. A. Nguyen, and T. J. Mitchison

Polyspermic Xenopus eggs and a cytokinesis extract system were used to investigate spindle-to-cortex communication, which positions cleavage furrows. Chromosome passenger complex recruitment to microtubule bundles between asters plays a key role and is positively influenced by microtubule stabilization and proximity to chromatin.

Membrane Trafficking

Lipid partitioning at the nuclear envelope controls membrane biogenesis

Cells adjust the flux of lipid intermediates toward membranes or storage in response to their metabolic status. In response to growth cues, spatiotemporal activation of Pah1 at discrete subdomains of the nuclear envelope acts as a switch to promote lipid storage. This lipid rewiring controls organelle morphology.

Signaling

The interaction of Gα13 with integrin β1 mediates cell migration by dynamic regulation of RhoA
Bo Shen, B. Estevez, Zheng Xu, B. Kreutz, A. Karginov, Yanyan Bai, Feng Qian, U. Norifumi, D. Mosher, and Xiaoping Du

Gα13 directly binds to the cytoplasmic-domain ExE motif of the integrin β1 subunit. Gα13–β1 interaction mediates β1 integrin–dependent Src activation and transient RhoA inhibition after adhesion. This binding is critical for cell migration on β1 integrin ligands.

RdgB2 is required for dim-light input into intrinsically photosensitive retinal ganglion cells

Intrinsically photosensitive retinal ganglion cells (ipRGCs) are directly activated by bright light and indirectly by light relayed from rods and cones. This relay depends on RDGB2, and circadian photoentrainment and the pupillary light response are reduced in RdgB2−/− animals under low light. RDGB2 is required to transduce light input from rods to ipRGCs.