

The Editorial Board of *Molecular Biology of the Cell* has highlighted the following articles from the June 1 and 15, 2011, issues. From among the many fine articles in the journal, the Board selects for these Highlights articles that are of broad interest and significantly advance knowledge or provide new concepts or approaches that extend our understanding.

Deconstructing the β -catenin destruction complex: mechanistic roles for the tumor suppressor APC in regulating Wnt signaling

D. M. Roberts, M. I. Pronobis, J. S. Poulton, J. D. Waldmann, E. M. Stephenson, S. Hanna, and M. Peifer

APC is a key tumor suppressor and Wnt signaling regulator, but its mechanism of action remains mysterious. We combined parallel assays in *Drosophila* and cultured human colon cancer cell lines to test hypotheses regarding APC function and to develop novel hypotheses by the use of mutants altering its structure in specific ways.

Mol. Biol. Cell 22 (11), 1845–1863

Nuclear localization of the meiosis-specific transcription factor Ndt80 is regulated by the pachytene checkpoint

Y. Wang, C.-Y. Chang, J.-F. Wu, and K.-S. Tung

We have identified an internal deletion mutation of *NDT80* that can completely bypass the pachytene checkpoint, indicating that posttranslational control is the primary means of regulation for Ndt80. More importantly, we have shown that the pachytene checkpoint controls nuclear localization of Ndt80 in response to recombination or synapsis defects.

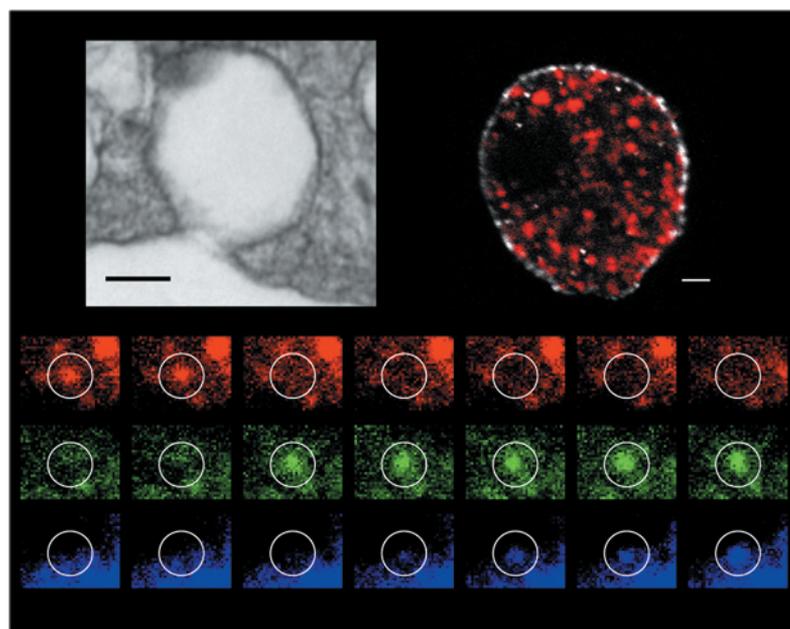
Mol. Biol. Cell 22 (11), 1878–1886

Interleukin-15 regulates proliferation and self-renewal of adult neural stem cells

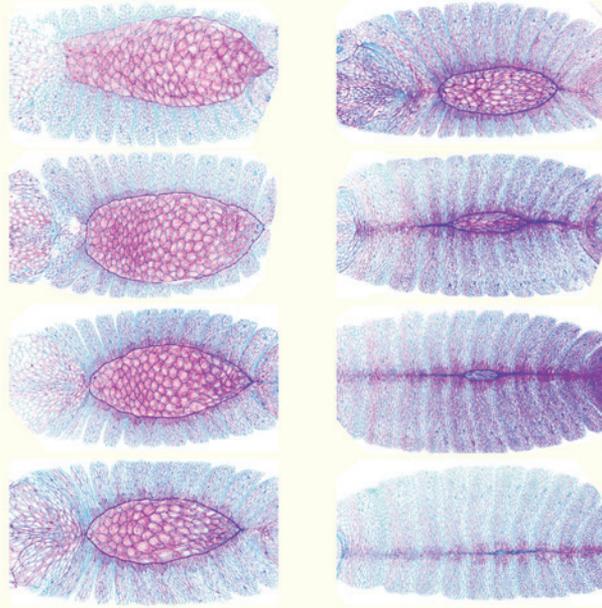
D. Gómez-Nicola, B. Valle-Argos, N. Pallas-Bazarra, and M. Nieto-Sampedro

The role of IL-15 in the regulation of neural stem cell biology appears to be a key mechanism in the control of adult neurogenesis, with direct implications for the development of pathologies with a neuroimmune component.

Mol. Biol. Cell 22 (12), 1960–1970



During Ca^{2+} -triggered exocytosis in adrenal chromaffin cells, secretory granules fuse with the plasma membrane. The fused granule sometimes appears as an Ω -shaped deformation at the plasma membrane (upper left). The persistence of this deformation is regulated by the GTPase activity of dynamin (upper right; white). A role for dynamin in regulating post-fusion membrane deformations is shown in a time sequence of live-cell images that combine polarization and total internal reflection fluorescence microscopy of dil embedded in the plasma membrane. Cells were co-transfected with a fluorescent granule protein (NPY; red) and a dynamin-1 mutant (T65A) with reduced GTPase activity. (Image: Arun Anantharam, Department of Pharmacology, University of Michigan, Ann Arbor, MI)



Drosophila embryos undergoing dorsal closure. Cells are outlined by staining for fly β -catenin (cyan). Amnioserosal cells are covered by an apical network of actin and myosin (magenta; merged colors are dark blue). (Image: Wangsun Choi, University of North Carolina at Chapel Hill)

A yeast model for polyaniline-expansion aggregation and toxicity

C. A. Konopka, M. N. Locke, P. S. Gallagher, N. Pham, M. P. Hart, C. J. Walker, A. D. Gitler, and R. G. Gardner

Polyalanine expansions can result in aggregation and cause cytotoxicity. We have created the first yeast model of polyaniline-expansion aggregation and toxicity using the poly(Ade)-binding protein Pab1.

Mol. Biol. Cell 22 (12), 1971–1984

Coupling among growth rate response, metabolic cycle, and cell division cycle in yeast

N. Slavov and D. Botstein

We discovered that the relative durations of the phases of the yeast metabolic cycle change with the growth rate. These changes can explain mechanistically the transcriptional growth-rate responses of all yeast genes (25% of the genome) that we find to be the same across all studied nutrient limitations in either ethanol or glucose media.

Mol. Biol. Cell 22 (12), 1997–2009

The single *Drosophila* ZO-1 protein Polychaetoid regulates embryonic morphogenesis in coordination with Canoe/afadin and Enabled

W. Choi, K.-C. Jung, K. S. Nelson, M. A. Bhat, G. J. Beitel, M. Peifer, and A. S. Fanning

Analysis of the function of the fly ZO-1 homologue Polychaetoid shows that it is not essential for junctional assembly or maintenance but does play an important role in embryonic morphogenesis. The data suggest that it works with Canoe/afadin and the actin regulator Enabled to regulate actin anchoring at junctions.

Mol. Biol. Cell 22 (12), 2010–2030

Distinct roles of cadherin-6 and E-cadherin in tubulogenesis and lumen formation

L. Jia, F. Liu, S. H. Hansen, M. B.A. ter Beest, and M. M.P. Zegers

Epithelial cadherins are shown to have distinct functions. By means of a three-dimensional culture system of epithelial kidney cells, it is shown that cadherin-6 acts as an inhibitor of tubulogenesis, whereas E-cadherin controls lumen formation.

Mol. Biol. Cell 22 (12), 2031–2041 ■