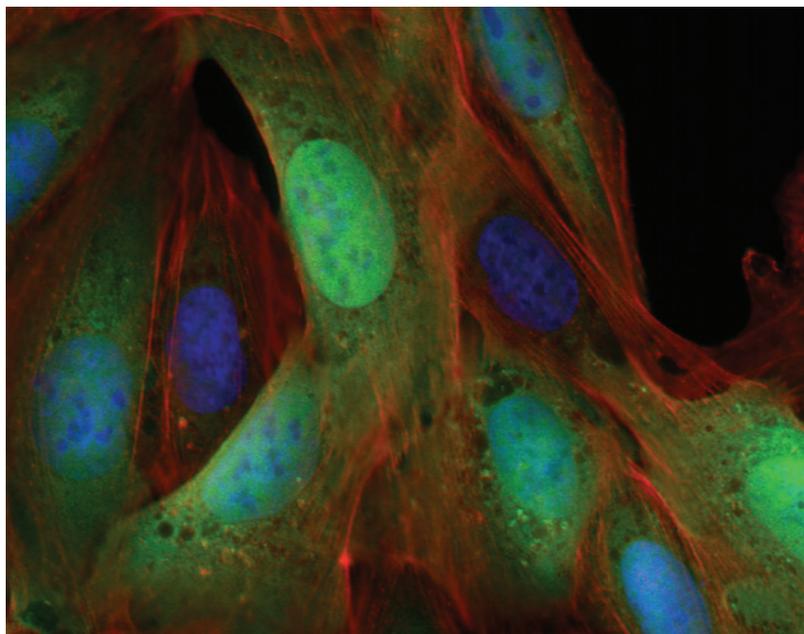


The Editorial Board of *Molecular Biology of the Cell* has highlighted the following articles from the March 2012 issues. From among the many fine articles in the journal, the Board selects for these Highlights articles that are of broad interest and significantly advance knowledge or provide new concepts or approaches that extend our understanding.



Localization of GFP-JMY (green) in HeLa cells after DNA damage by neocarzinostatin. Nuclei are labeled with DAPI (blue). DNA damage induces polymerization of actin filaments (red). This exposes a nuclear localization signal embedded within JMY's WH2 domains, normally blocked by actin monomers. Competition between importins and actin monomers for binding to this region allows localization of JMY to be dependent on the cytoplasmic concentration of actin monomer, so JMY moves to the nucleus after DNA damage-induced actin polymerization. See *Mol. Biol. Cell* 23 (5), 853–863. (Image: J. Bradley Zuchero, University of California, San Francisco)

Fer kinase regulates cell migration through α -dystroglycan glycosylation

T. Yoneyama, K. Angata, X. Bao, S. Courtneidge, S. K. Chanda, and M. Fukuda

This is the first report on the role of Fer kinase in down-regulating the expression of laminin-binding glycans that suppress cell migration. The data show a novel biochemical interaction between glycan-based adhesion and cell migration, mediated by a tyrosine kinase.

Mol. Biol. Cell 23 (5), 771–780

Desmoplakin controls microvilli length but not cell adhesion or keratin organization in the intestinal epithelium

K. D. Sumigra and T. Lechler

Desmosomes are cell–cell adhesion structures whose canonical functions are control of intermediate filament organization and tissue strength. In the intestinal epithelium, desmosomes do not mediate these functions but instead control the brush border architecture of the enterocytes.

Mol. Biol. Cell 23 (5), 792–799

Inhibition of fatty acid oxidation enhances oxidative protein folding and protects hepatocytes from endoplasmic reticulum stress

H. M. Tyra, D. R. Spitz, and D. T. Rutkowski

The unfolded protein response regulates lipid metabolism, but the functional benefit of this regulation to ER function is not clear. This work shows that inhibition of fatty acid oxidation raises cellular oxidation potential, facilitates ER oxidative folding, and protects hepatocytes from ER stress.

Mol. Biol. Cell 23 (5), 811–819

Actin retrograde flow and actomyosin II arc contraction drive receptor cluster dynamics at the immunological synapse in Jurkat T cells

J. Yi, X. S. Wu, T. Crites, and J. A. Hammer III

Actin and myosin IIA have been implicated in the inward movement of receptor clusters at the immunological synapse of T lymphocytes. This study defines their spatial organization and quantifies their relative contributions to the dynamics of receptor clusters at the immunological synapse.

Mol. Biol. Cell 23 (5), 834–852

Actin binding to WH2 domains regulates nuclear import of the multifunctional actin regulator JMY

J. B. Zuchero, B. Belin, and R. D. Mullins

In the cytoplasm, JMY regulates actin assembly, whereas in the nucleus, it promotes DNA damage-induced apoptosis. This study demonstrates that nuclear translocation of JMY is controlled by the concentration of monomeric actin in the cytoplasm.

Mol. Biol. Cell 23 (5), 853–863

Cell-free reconstitution of vacuole membrane fragmentation reveals regulation of vacuole size and number by TORC1

L. Michailat, T. L. Baars, and A. Mayer

The size and copy number of an organelle depend on an equilibrium of membrane fusion and fission. In vitro reconstitution of yeast vacuole fission and fusion shows that TORC1 selectively stimulates fission but does not change fusion activity. This explains the morphological transitions of yeast vacuoles in response to nutrient availability.

Mol. Biol. Cell 23 (5), 881–895

Dissection of the NUP107 nuclear pore subcomplex reveals a novel interaction with spindle assembly checkpoint protein MAD1 in *Caenorhabditis elegans*

E. Ródenas, C. González-Aguilera, C. Ayuso, and P. Askjaer

Nuclear pore complex assembly and kinetochore function depend on the NUP107 subcomplex, but the roles of each of its nine constituents are unknown. NUP107 itself is shown to be dispensable for NPC assembly but needed for proper localization of kinetochore protein NUF2 and Aurora B kinase. Moreover, a novel interaction is found with SAC protein MAD1.

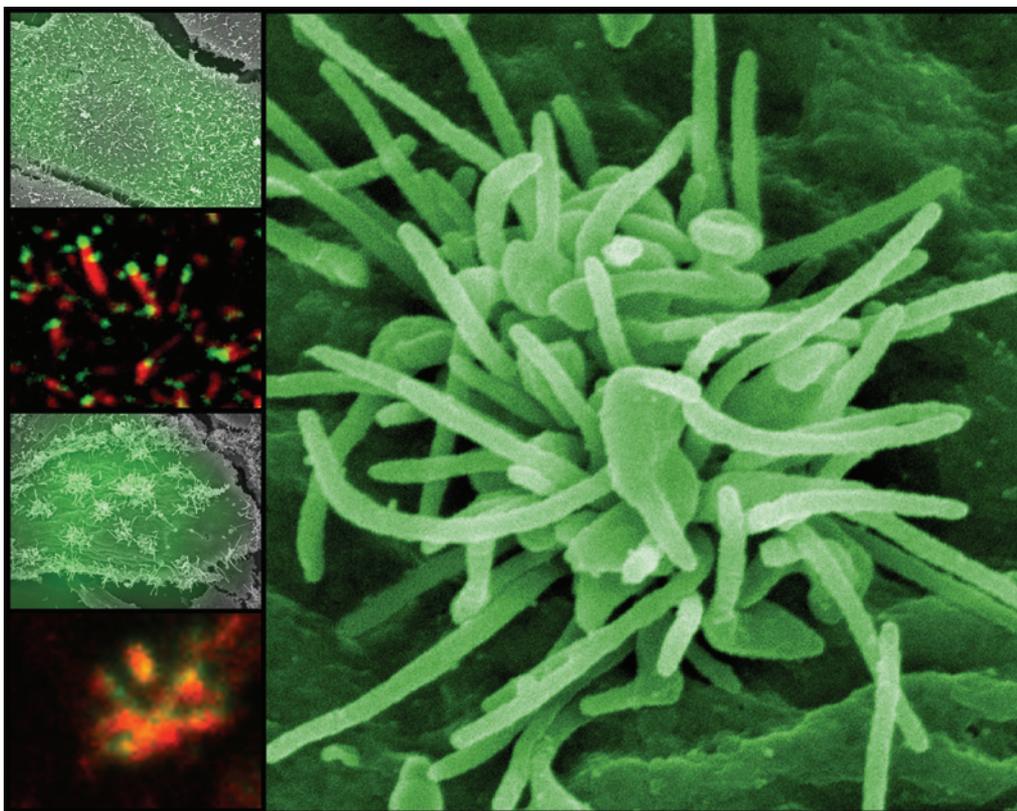
Mol. Biol. Cell 23 (5), 930–944

GARP regulates the bioavailability and activation of TGF β

R. Wang, J. Zhu, X. Dong, M. Shi, C. Lu, and T. A. Springer

GARP disulfide links to latent TGF β on the cell surface, which serves as a reservoir for TGF β and activation by α V β 6 and to a lesser extent α V β 8. Activation requires the RGD motif of latent TGF β , disulfide linkage between GARP and latent TGF β , and membrane association of GARP.

Mol. Biol. Cell 23 (6), 1129–1139 ■



In the microvilli of normal LLC-PK1 cells (second image from top, left panel) Eps8L1a (green) is concentrated at the tips of the microvilli where actin monomers are added at the barbed ends of actin filaments. In contrast, ezrin (red) is distributed along the microvilli. Co-expression of ezrin and Eps8L1a results in the formation of clustered actin structures (bottom two images, left panel) that comprise enlarged membrane extensions likely due to Eps8L1a capping activity. Microvilli emerge from some but not from all of these enlarged structures (right panel). See *Mol. Biol. Cell* 23 (6), 1080–1094. (Images: Marcel Menezes Lyra da Cunha, Ingrid Zwaenepoel, and Alexandra Naba, Institut Curie.)