

# The Journal of Cell Biology

Volume 161 | No. 3  
May 12, 2003

## – News –

### In This Issue

- Stressed cells dance on a bright stage
- Cut protein to boost fibers
- Breaking down barriers
- Getting a handle on centrosomes
- The neutrophil as firefighter

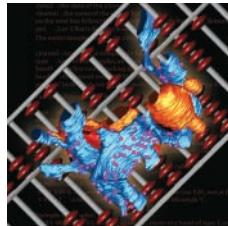
A.W. Dove

### Research Roundup

- MicroRNAs make big splash in apoptosis
- Shared amyloid oligomer structure proves toxic
- Math connects vascular network to the universe
- Turning RacGAP into a RhoGAP
- Crm1 locks up replication factors

R.S. Tuma

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### On the Cover

A composition by Conn Peterson (San Francisco, CA) includes a tomographic reconstruction by Mark S. Ladinsky and Kathryn E. Howell (University of Colorado, Boulder, CO) showing a close association of a portion of the ER (blue) with Golgi cisternae (gold and red). See the special section on computational biology in this issue, starting on page 463.

## – Reviews –

### Comments

- Holey barrier: claudins and the regulation of brain endothelial permeability**

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K. Matter and M.S. Balda

- Amyloid as a natural product**

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J.W. Kelly and W.E. Balch

- Computational cell biology**

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I. Mellman and T. Misteli

### Mini-Reviews

- Inventories to insights**

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J.D. Aitchison and T. Galitski

- Modeling network dynamics: the lac operon, a case study**

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J.M.G. Vilar, C.C. Guet, and S. Leibler

- Computational imaging in cell biology**

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R. Eils and C. Athale

## – Research Articles –

### Reports

- Spindle orientation in *Saccharomyces cerevisiae* depends on the transport of microtubule ends along polarized actin cables**

483

E. Hwang, J. Kusch, Y. Barral, and T.C. Huffaker

- Neurofilament heavy chain side arm phosphorylation regulates axonal transport of neurofilaments**

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S. Ackerley, P. Thornhill, A.J. Grierson, J. Brownlee, B.H. Anderton, P.N. Leigh, C.E. Shaw, and C.C.J. Miller

This issue of the JCB  
Special Mini-Review series on  
**Computational Biology**

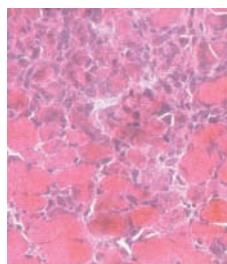
Articles with related stories in the *In This Issue* section have page numbers in red; articles with *Comments* or *Mini-Reviews* have page numbers in blue; the computational biology section is indicated by yellow.

## Articles

**Oscillatory nucleocytoplasmic shuttling of the general stress response transcriptional activators Msn2 and Msn4 in *Saccharomyces cerevisiae***

M. Jacquet, G. Renault, S. Lallet, J. De Mey, and A. Goldbeter

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**Mitochondria to nucleus stress signaling: a distinctive mechanism of NF $\kappa$ B/Rel activation through calcineurin-mediated inactivation of I $\kappa$ B $\beta$** 

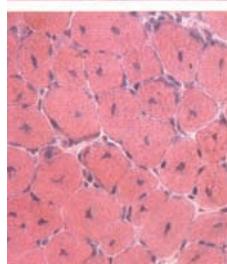
G. Biswas, H.K. Anandatheerthavarada, M. Zaidi, and N.G. Avadhani

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**Proprotein convertase cleavage liberates a fibrillogenic fragment of a resident glycoprotein to initiate melanosome biogenesis**

J.F. Berson, A.C. Theos, D.C. Harper, D. Tenza, G. Raposo, and M.S. Marks

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Satellite cells improve the survival and motor performance of mutant mice suffering from chronic myopathy (top) by aiding in skeletal muscle regeneration (bottom). See page 571.

**A novel human protein of the maternal centriole is required for the final stages of cytokinesis and entry into S phase**

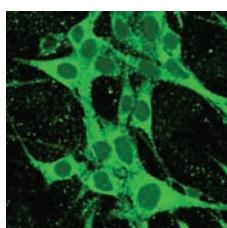
A. Gromley, A. Jurczyk, J. Sillibourne, E. Halilovic, M. Mogensen, I. Groisman, M. Blomberg, and S. Doxsey

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**Androgen-stimulated DNA synthesis and cytoskeletal changes in fibroblasts by a nontranscriptional receptor action**

G. Castoria, M. Lombardi, M.V. Barone, A. Bilancio, M. Di Domenico, D. Bottero, F. Vitale, A. Migliaccio, and F. Auricchio

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 **$\alpha$ -Adducin dissociates from F-actin and spectrin during platelet activation**

K.L. Barkalow, J.E. Italiano, Jr., D.E. Chou, Y. Matsuoka, V. Bennett, and J.H. Hartwig

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Mitochondrial stress-induced activation of NF $\kappa$ B depends on calcineurin-mediated dephosphorylation and inactivation of I $\kappa$ B $\beta$  (green). See page 507.

**Intact satellite cells lead to remarkable protection against *Smn* gene defect in differentiated skeletal muscle**

S. Nicole, B. Desforges, G. Millet, J. Lesbordes, C. Cifuentes-Diaz, D. Vertes, M.L. Cao, F. De Backer, L. Languille, N. Roblot, V. Joshi, J.-M. Gillis, and J. Melki

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**Essential functions of p21-activated kinase 1 in morphogenesis and differentiation of mammary glands**

R.-A. Wang, R.K. Vadlamudi, R. Bagheri-Yarmand, I. Beuvink, N.E. Hynes, and R. Kumar

***deep-orange* and *carnation* define distinct stages in late endosomal biogenesis in *Drosophila melanogaster***

V. Sriram, K.S. Krishnan, and Satyajit Mayor

**Role of *Drosophila* Rab5 during endosomal trafficking at the synapse and evoked neurotransmitter release**

T. Wucherpennig, M. Wilsch-Bräuninger, and M. González-Gaitán

**Neural cell adhesion molecule (NCAM) association with PKC $\beta_2$  via  $\beta$ I spectrin is implicated in NCAM-mediated neurite outgrowth**

I. Leshchyns'ka, V. Sytnyk, J.S. Morrow, and M. Schachner

**PMN transendothelial migration decreases nuclear NF $\kappa$ B in IL-1 $\beta$ -activated endothelial cells: role of PECAM-1**

G. Cepinskas, J. Savickiene, C.V. Ionescu, and P.R. Kviety

**Size-selective loosening of the blood-brain barrier in claudin-5-deficient mice**

T. Nitta, M. Hata, S. Gotoh, Y. Seo, H. Sasaki, N. Hashimoto, M. Furuse, and S. Tsukita

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