– News –

Editorial

Cell biology’s journal gets a new look
I. Mellman

In this Issue

• Long live the pore
• RhoA brings up the rear
• Transcription in tight quarters
• Cataracts and NrCAM
• How Toxoplasma hooks up
• Clumping lysosomes
A.W. Dove

Research Roundup

• Translation in the nucleus
• Algal Rb sets size limits
• Containing the bullet
• Taking tea with actin and microtubules
• Microtubules concentrate
W.A. Wells

Meeting Report

Death and Destruction: The Cold
Spring Harbor Meeting on Proteolysis
and Biological Control. May 2–6, 2001
W.A. Wells

– Reviews –

Comments

Nuclear pore complexes: dynamics in
unexpected places
S.K. Lyman and L. Gerace

Fishing out proteins that bind to titin
J.W. Sanger and J.M. Sanger

Articles

ZNF265—a novel spliceosomal
protein able to induce alternative
splicing
D.J. Adams, L. van der Weyden, A. Mayeda,
S. Stamm, B.J. Morris, and J.E.J. Rasko

Large-scale chromatin decondensation
and recondensation regulated by
transcription from a natural promoter
W.G. Müller, D. Walker, G.L. Hager, and
J.G. McNally

Normal telomere length and
chromosomal end capping in
poly(ADP-ribose) polymerase–deficient
mice and primary cells despite
increased chromosomal instability
E. Samper, F.A. Goyrisolo,
J. Ménessier-de Murcia, E. González-Suárez,
J.C. Cigudosa, G. de Murcia, and M.A. Blasco

A role for nuclear lamins in nuclear
envelope assembly
R.I. Lopez-Soler, R.D. Moir, T.P. Spann,
R. Stick, and R.D. Goldman

Nuclear pore complexes form
immobile networks and have a very
low turnover in live mammalian cells
N. Daigle, J. Beaudouin, L. Hartnell, G. Imreh,
E. Hallberg, J. Lippincott-Schwartz, and
J. Ellenberg

Activity of the APC\(^{Cdh1}\) form of the
anaphase-promoting complex persists
until S phase and prevents the
premature expression of Cdc20p
J.N. Huang, I. Park, E. Ellington,
L.E. Littlepage, and D. Pellman
The *Toxoplasma gondii* protein ROP2 mediates host organelle association with the parasitophorous vacuole membrane  
A.P. Sinai and K.A. Joiner

Human Vam6p promotes lysosome clustering and fusion in vivo  
S. Caplan, L.M. Hartnell, R.C. Aguilar, N. Naslavsky, and J.S. Bonifacino

Obscurin, a giant sarcomeric Rho guanine nucleotide exchange factor protein involved in sarcomere assembly  
P. Young, E. Ehler, and M. Gautel

Myosin II dynamics and cortical flow during contractile ring formation in *Dictyostelium* cells  
S. Yumura

RhoA is required for monocyte tail retraction during transendothelial migration  
R.A. Worthylake, S. Lemoine, J.M. Watson, and K. Burridge

The LD4 motif of paxillin regulates cell spreading and motility through an interaction with paxillin kinase linker (PKL)  

Vav2 is required for cell spreading  
P.A. Marignani and C.L. Carpenter

Targeted ablation of NrCAM or ankyrin-B results in disorganized lens fibers leading to cataract formation  
M.I. Moré, F.-P. Kirsch, and F.G. Rathjen

A novel role for FGF and extracellular signal-regulated kinase in gap junction-mediated intercellular communication in the lens  
A.-C.N. Le and L.S. Musil

Modulation of mouse neural crest cell motility by N-cadherin and connexin 43 gap junctions  

Multiple cadherin extracellular repeats mediate homophilic binding and adhesion  
S. Chappuis-Flament, E. Wong, L.D. Hicks, C.M. Kay, and B.M. Gumbiner

Normal nuclear envelope assembly (top) is disrupted by interfering with lamins (bottom). See page 217.
– News –

In this Issue

• Of coilin and Cajal bodies
• A dystroglycan ligand in the brain
• Matrix patterning of digits
• Bringing channels into the node
• Tenascin turns on the EGFR
  K. Jegalian

Research Roundup

• Fail-safe replication
• Tensegrity lives
• Christmas in July
• Keeping the lid on destruction
  T.M. Powledge

– Reviews –

Comments

Mystery solved: discovery of a novel integrin ligand in the developing kidney
  J.H. Miner

Mini-Reviews

Mitosis, microtubules, and the matrix
  J.M. Scholey, G.C. Rogers, and D.J. Sharp

Hsp90: a specialized but essential protein-folding tool
  J.C. Young, I. Moarefi, and F.U. Hartl

– Research Articles –

Reports

Regulation of limb patterning by extracellular microfibrils
  E. Arteaga-Solís, B. Gayraud, S.Y. Lee, L. Shum, L. Sakai, and F. Ramirez

Articles

The replication timing program of the Chinese hamster β-globin locus is established coincident with its repositioning near peripheral heterochromatin in early G1 phase
  F. Li, J. Chen, M. Izumi, M.C. Butler, S.M. Keezer, and D.M. Gilbert

Residual Cajal bodies in coilin knockout mice fail to recruit Sm snRNPs and SMN, the spinal muscular atrophy gene product

Targeting of an abundant cytosolic form of the protein import receptor at Toc159 to the outer chloroplast membrane

Golgi clusters and vesicles mediate mitotic inheritance independently of the endoplasmic reticulum
  E. Jokitalo, N. Cabrera-Poch, G. Warren, and D.T. Shima

On the Cover

Lack of a matrix component (fibrillin 2) leads to a limb-patterning defect in mice (bottom). The syndactyly in the mutant mice is primarily due to a defect in mesenchyme differentiation rather than a reduction in apoptosis of interdigital tissue. See page 275.

Articles with related stories in the In This Issue section have page numbers in red; articles with Comments have page numbers in blue.
Adenovirus E4orf4 protein inducesPP2A-dependent growth arrestin *Saccharomyces cerevisiae* andinteracts with the anaphase-promotingcomplex/cyclosome

D. Kornitzer, R. Sharf, and T. Kleinberger

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Novel p62dok family members, dok-4and dok-5, are substrates of the c-Retreceptor tyrosine kinase and mediates neuronal differentiation


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Regulation of presynapticphosphatidylinositol 4,5-biphosphate by neuronal activity

K.D. Micheva, R.W. Holz, and S.J. Smith

---

Vitamin D₃ promotes thedifferentiation of colon carcinoma cellsbym the induction of E-cadherin andthe inhibition of β-catenin signaling


---

Vaccinia virus utilizes microtubules for movement to the cell surface


---

MUP-4 is a novel transmembrane protein with functions in epithelial cell adhesion in *Caenorhabditis elegans*


---

*mua-3*, a gene required for mechanical tissue integrity in *Caenorhabditis elegans*, encodes a novel transmembrane protein of epithelial attachment complexes


---

Sodium channel β1 and β3 subunits associate with neurofascin through their extracellular immunoglobulin-like domain

C.F. Ratcliffe, R.E. Westenbrook, R. Curtis,and W.A. Catterall

---

A stoichiometric complex of neurexins and dystroglycan in brain


---

Identification and characterization of a novel extracellular matrix protein nephronectin that is associated with integrin α8β1 in the embryonic kidney


---

Epidermal growth factor (EGF)-like repeats of human tenascin-C as ligands for EGF receptor


---

Additions and corrections

Vitamin D₃ promotes co-lon carcinoma cell differentiation by inducing the expression of E-cadherin (red) and thus the translocation and colocalization of β-catenin (green). See page 369.

---

MUP-4 (red) is required for mechanical coupling of tissues in the worm. See page 403.
On the Cover
A protein interaction map for cell polarity in yeast reveals new connections between cellular processes and new candidate yeast polarity factors such as Ypr171w (localization pictured in overlay). See page 549.

– Research Articles –

Activated platelets mediate inflammatory signaling by regulated interleukin 1β synthesis
S. Lindemann, N.D. Tolley, D.A. Dixon, T.M. McIntyre, S.M. Prescott, G.A. Zimmerman, and A.S. Weyrich

Junctional adhesion molecule (JAM) binds to PAR-3: a possible mechanism for the recruitment of PAR-3 to tight junctions
M. Iroh, H. Sasaki, M. Furuse, H. Ozaki, T. Kita, and S. Tsukita

RNA-mediated interaction of Cajal bodies and U2 snRNA genes
M.R. Frey and A.G. Matera

Barentsz is essential for the posterior localization of oskar mRNA and colocalizes with it to the posterior pole
F.J.M. van Eeden, I.M. Palacios, M. Petronczki, M.J.D. Weston, and D. St Johnston

Head-to-tail oligomerization of calsequestrin: a novel mechanism for heterogeneous distribution of endoplasmic reticulum luminal proteins
G. Gatti, S. Trifari, N. Mesaeli, J.M.R. Parker, M. Michalak, and J. Meldolesi

– News –

In this Issue
• Putting cell polarity on the map
• How to survive a macrophage attack
• Deleting keratins to find one
• ARNO gets things moving
• The hidden power of platelets
A.W. Dove

Research Roundup
• Sudden bacterial death syndrome
• A nurse for bicooid
• Formin a link to microtubules
• Transcription gets a licence
• Touching cells transform
W.A. Wells

Meeting Report
Biotechnology on Parade: BIO 2001
San Diego, CA June 24–27, 2001
W.A. Wells

Articles with related stories in the In This Issue section have page numbers in red.
Clathrin-dependent and -independent internalization of plasma membrane sphingolipids initiates two Golgi targeting pathways

A protein interaction map for cell polarity development

Expression of α-catenin in α-catenin–deficient cells increases resistance to sphingosine-induced apoptosis
S. Matsubara and M. Ozawa

Neuronal survival induced by neurotrophins requires calmodulin

Activation of ARF6 by ARNO stimulates epithelial cell migration through downstream activation of both Rac1 and phospholipase D
L.C. Santy and J.E. Casanova

Myosin light chain kinase binding to a unique site on F-actin revealed by three-dimensional image reconstruction
V. Hatch, G. Zhi, L. Smith, J.T. Stull, R. Craig, and W. Lehman

Discovery of a novel murine keratin 6 (K6) isoform explains the absence of hair and nail defects in mice deficient for K6a and K6b
S.M. Wojcik, M.A. Longley, and D.R. Roop

Role of phosphatidylinositol 3-kinase and Rab5 effectors in phagosomal biogenesis and mycobacterial phagosome maturation arrest
R.A. Fratti, J.M. Backer, J. Gruenberg, S. Corvera, and V. Deretic

High resolution mapping of mast cell membranes reveals primary and secondary domains of FceRI and LAT
B.S. Wilson, J.R. Pfeiffer, Z. Surviladze, E.A. Gaudet, and J.M. Oliver

Coordinated expression of matrix Gla protein is required during endochondral ossification for chondrocyte survival

Barentsz colocalizes with oskar mRNA (see above) and is necessary for oskar mRNA’s polar localization. See page 511.
– News –

In this Issue

• Cross-linking can be good
• CENP-E falls off
• Zones and rings in wound healing
• Making virus in the axon
• Compartmentalized insulin signaling

W.A. Wells

Research Roundup

• Garbage in, garbage out
• Running interference
• Cell cycling with Rac
• The (formerly) missing link
• Shedding light on protein folding

T. Powledge

– Reviews –

Mini-Reviews

Abp1p and cortactin, new “hand-holds” for actin

I.M. Olazabal and L.M. Machesky

– Research Articles –

Reports

Centromere identity in Drosophila is not determined in vivo by replication timing

B. Sullivan and G. Karpen

The BPAG1 locus: alternative splicing produces multiple isoforms with distinct cytoskeletal linker domains, including predominant isoforms in neurons and muscles


Regulation of cytokine-independent survival kinase (CISK) by the Phox homology domain and phosphoinositides

J. Xu, D. Liu, G. Gill, and Z. Songyang

Articles

Elevating the level of Cdc34/Ubc3 ubiquitin-conjugating enzyme in mitosis inhibits association of CENP-E with kinetochores and blocks metaphase alignment of chromosomes

L.M. Topper, H. Bastians, J.V. Ruderman, and G.J. Gorbsky

Thylakoid ΔpH-dependent precursor proteins bind to a cpTatC–Hcf106 complex before Tha4-dependent transport

K. Cline and H. Mori

Articles with related stories in the In This Issue section have page numbers in red.
The discrepancy between presenilin subcellular localization and γ-secretase processing of amyloid precursor protein
P. Cupers, M. Bentahir, K. Craessaerts, I. Orlans, H. Vanderstichele, P. Saftig, B. De Strooper, and W. Annaert

A conserved α-herpesvirus protein necessary for axonal localization of viral membrane proteins
M.J. Tomishima and L.W. Enquist

Disruption of cytoskeletal integrity impairs Gβ-medicated signaling due to displacement of Gβi proteins

Simple epithelium keratins 8 and 18 provide resistance to Fas-mediated apoptosis. The protection occurs through a receptor-targeting modulation
S. Gilbert, A. Loranger, N. Daigle, and N. Marceau

Comparisons of CapG and gelsolin-null macrophages: demonstration of a unique role for CapG in receptor-mediated ruffling, phagocytosis, and vesicle rocketing
W. Witke, W. Li, D.J. Kwiatkowski, and F.S. Southwick

Contraction and polymerization cooperate to assemble and close actomyosin rings around Xenopus oocyte wounds
C.A. Mandato and W.M. Bement

Impaired skin wound healing in peroxisome proliferator–activated receptor (PPAR)α and PPARβ mutant mice

v-Src phosphorylation of connexin 43 on Tyr247 and Tyr265 disrupts gap junctional communication
R. Lin, B.J. Warn-Cramer, W.E. Kurata, and A.F. Lau

Lipid raft microdomain compartmentalization of TC10 is required for insulin signaling and GLUT4 translocation

LAD-1, the Caenorhabditis elegans L1CAM homologue, participates in embryonic and gonadal morphogenesis and is a substrate for fibroblast growth factor receptor pathway-dependent phosphotyrosine-based signaling
L. Chen, B. Ong, and V. Bennett

The AP2 binding site of synaptotagmin 1 is not an internalization signal but a regulator of endocytosis
N. Jarousse and R.B. Kelly

CRYP-2/cPTPRO is a neurite inhibitory repulsive guidance cue for retinal neurons in vitro
L. Stepanek, Q.L. Sun, J. Wang, C. Wang, and J.L. Bixby

Tyrosine cross-linking of extracellular matrix is catalyzed by Duox, a multidomain oxidase/peroxidase with homology to the phagocyte oxidase subunit gp91phox

Additions and Corrections
Centromeric chromatin (on a minichromosome indicated by the arrow) is functional despite replicating neither early (red) or late (green) in S phase. See page 683.

An amyloid precursor protein (APP) derivative (green) that is retained in the ER colocalizes with presenilin 1 (PS1; red) but shows little or no processing. This is further evidence that PS1 may not be sufficient for APP processing. See page 731.

Additions and Corrections
Impaired skin wound healing in peroxisome proliferator–activated receptor (PPAR)α and PPARβ mutant mice
Volume 154 | No. 5
September 3, 2001

– News –

In this Issue

• Collagen reveals a hidden talent
• The spindle assembly checkpoint gets a complex
• Two new ways to eat beans
• Chk1, Chk2, is the amplifier on?
• Flight of the titins

A.W. Dove

Research Roundup

• All skin and brain
• An organelle knockout
• Cohesin’s cohesion
• Squeezing in with sugar
• Rafts to the front; rafts to the rear

W.A. Wells

Meeting Report

Histones Rule! The FASEB Conference on Chromatin and Transcription. July 7–12, 2001

W.A. Wells

– Reviews –

Comments

A new view of the spindle checkpoint

M.A. Hoyt

– Research Articles –

Articles

Activation of mammalian Chk1 during DNA replication arrest: a role for Chk1 in the intra-S phase checkpoint monitoring replication origin firing

C. Feijoo, C. Hall-Jackson, R. Wu, D. Jenkins, J. Leitch, D.M. Gilbert, and C. Smythe

Checkpoint inhibition of the APC/C in HeLa cells is mediated by a complex of BUBR1, BUB3, CDC20, and MAD2

V. Sudakin, G.K.T. Chan, and T.J. Yen

The nucleoporin Nup60p functions as a Gsp1p–GTP-sensitive tether for Nup2p at the nuclear pore complex

D. Denning, B. Mykytka, N.P.C. Allen, L. Huang, A. Burlingame, and M. Rexach

Calcineurin-dependent nuclear import of the transcription factor Crz1p requires Nmd5p

R.S. Polizotto and M.S. Cyert

Functional specialization of calreticulin domains


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<td>Cotyledon cells of <em>Vigna mungo</em> seedlings use at least two distinct autophagic machineries for degradation of starch granules and cellular components</td>
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<td>Physiological regulation of β-catenin stability by Tcf3 and CK1ε</td>
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<td>E. Lee, A. Salic, and M.W. Kirschner</td>
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<td>Role of PI 3-kinase, Akt and Bcl-2–related proteins in sustaining the survival of neurotrophic factor–independent adult sympathetic neurons</td>
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<td>N. Orike, G. Middleton, E. Borthwick, V. Buchman, T. Cowen, and A.M. Davies</td>
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<td>Phosphatidylinositol 4,5-bisphosphate and Arl6-regulated membrane traffic</td>
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<td>F.D. Brown, A.L. Rozelle, H.L. Yin, T. Balla, and J.G. Donaldson</td>
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<td>Protein kinase B phosphorylates AHNAK and regulates its subcellular localization</td>
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<td>An effector region in Eps8 is responsible for the activation of the Rac-specific GEF activity of Sos-1 and for the proper localization of the Rac-based actin–polymerizing machine</td>
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<td>Kettin, a major source of myofibrillar stiffness in <em>Drosophila</em> indirect flight muscle</td>
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<td>M. Kulke, C. Neagoe, B. Kolmerer, A. Minajeva, H. Hinssen, B. Bullard, and W.A. Linke</td>
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<td>Deficiency of triad junction and contraction in mutant skeletal muscle lacking junctophilin type 1</td>
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<td>Proteolytic exposure of a cryptic site within collagen type IV is required for angiogenesis and tumor growth in vivo</td>
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<td>A novel fibronectin binding site required for fibronectin fibril growth during matrix assembly</td>
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<td>J.L. Sechler, H. Rao, A. Marie Cumiskey, I. Vega-Colón, M.S. Smith, T. Murata, and J.E. Schwarzbauser</td>
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Excess β-catenin can cause axis duplication (above). The transcriptional coactivator Tcf3 leads to high β-catenin levels by inhibiting β-catenin turnover. See page 983.

Eps8 (green) activates Rac in ruffles. See page 1031.
In this Issue

- Joined at the Hip
- Sticky utrophin messages
- Cooperation in the cerebellum
- Mitosis without wind
- From nuclear pore to kinetochore

W.A. Wells

Research Roundup

- Antagonistic drivers share BuMPy pathway
- Tales from the crypt
- Desmosomes sort it out
- Tagged from birth
- Arp bent out of shape

V. Glaser

Feature

- Searching for a spindle matrix

W.A. Wells

On the Cover

A nuclear pore component (green) colocalizes with kinetochore antigens stained with CREST serum (red). See page 1147.

Research Articles

Reports

S-Nitrosylation of mitochondrial caspases


The tandem C2 domains of synaptotagmin contain redundant Ca\(^{2+}\) binding sites that cooperate to engage t-SNAREs and trigger exocytosis

C.A. Earles, J. Bai, P. Wang, and E.R. Chapman

Articles

Eg5 is static in bipolar spindles relative to tubulin: evidence for a static spindle matrix

T.M. Kapoor and T.J. Mitchison

The chromokinesin Kid is necessary for chromosome arm orientation and oscillation, but not congression, on mitotic spindles

A.A. Levesque and D.A. Compton

An evolutionarily conserved NPC subcomplex, which redistributes in part to kinetochores in mammalian cells

N. Belgareh, G. Rabut, S.W. Bai, M. van Overbeeck, J. Beaudouin, N. Daigle, O.V. Zatsepina, F. Pasteau, V. Labas, M. Fromont-Racine, J. Ellenberg, and V. Doye

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<td>HES6 acts as a transcriptional repressor in myoblasts and can induce the myogenic differentiation program</td>
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<td>Distinct regions in the 3’ untranslated region are responsible for targeting and stabilizing utrophin transcripts in skeletal muscle cells</td>
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<td>E-cadherin regulates cell growth by modulating proliferation-dependent β-catenin transcriptional activity</td>
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<td>Vps34p differentially regulates endocytosis from the apical and basolateral domains in polarized hepatic cells</td>
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<td>Essential control of an endothelial cell $I_{SOCE}$ by the spectrin membrane skeleton</td>
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<td>Histamine treatment induces rearrangements of orthogonal arrays of particles (OAPs) in human AQP4-expressing gastric cells</td>
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<td>The erbB2 gene is required for the development of terminally differentiated spinal cord oligodendrocytes</td>
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<td>S.-K. Park, R. Miller, I. Krane, and T. Vartanian</td>
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<td>Overlapping functions of the cell adhesion molecules Nr-CAM and L1 in cerebellar granule cell development</td>
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The lack of erbB2 signaling causes a failure in the terminal differentiation of oligodendrocyte progenitors (red) to form mature oligodendrocytes (green), and therefore a failure in the ensheathment of axons. See page 1245.

Speckles of polymerized tubulin (top) move over time (top to bottom), whereas speckles of the kinesin motor Eg5 (bottom) stay stationary relative to the spindle. This may provide evidence for a spindle matrix. See pages 1102 and 1125.