

Journal of Cell Science

Journal of Cell Science

VOLUME 89 1988

Editors

A. V. GRIMSTONE HENRY HARRIS R. T. JOHNSON

Editorial Board

W. B. AMOS P. BARLOW M. D. BENNETT

V. DEFENDI T. M. DEXTER G. A. DUNN

D. R. GARROD G. GERISCH I. R. GIBBONS

D. M. GLOVER S. GORDON B. E. S. GUNNING

R. C. HUGHES G. L. E. KOCH R. A. LASKEY

H. C. MACGREGOR C. J. MARSHALL R. B. NICKLAS

J. D. PITTS K. ROBERTS N. J. SEVERS

A. M. TARTAKOFF J. TAYLOR-PAPADIMITRIOU J. O. THOMAS

Published by

THE COMPANY OF BIOLOGISTS LIMITED CAMBRIDGE

Typeset, Printed and Published by
The Company of Biologists Limited,
Department of Zoology, University of Cambridge, Downing Street,
Cambridge CB2 3EJ

© The Company of Biologists Limited 1988

Contents

Volume 89 1988

Commentary			
Warner, A.			
The gap junction	1		
Book Reviews	9		
<hr/>			
Europe-Finner, G. N., Ludérus, M. E. E., Small, N. V., Driel, R. van, Reymond, C. D., Firtel, R. A. and Newell, P. C.			
Mutant <i>ras</i> gene induces elevated levels of inositol tris- and hexakisphosphates in <i>Dictyostelium</i>	13		
Small, J. V., Zobeley, S., Rinnerthaler, G. and Faulstich, H.			
Coumarin-phalloidin: a new actin probe permitting triple immunofluorescence microscopy of the cytoskeleton	21		
Sunkel, C. E. and Glover, D. M.			
<i>polo</i> , a mitotic mutant of <i>Drosophila</i> displaying abnormal spindle poles	25		
González, C., Casal, J. and Ripoll, P.			
Functional monopolar spindles caused by mutation in <i>mgr</i> , a cell division gene of <i>Drosophila melanogaster</i>	39		
Zelesco, P. A. and Graves, J. A. M.			
Chromosome segregation from cell hybrids. IV. Movement and position of segregant set chromosomes in early-phase interspecific cell hybrids	49		
Sellitto, C. and Kuriyama, R.			
Distribution of pericentriolar material in multipolar spindles induced by colcemid treatment in Chinese hamster ovary cells	57		
Tamm, S. and Tamm, S. L.			
Development of macrociliary cells in <i>Beroë</i> . I. Actin bundles and centriole migration	67		
Tamm, S. L. and Tamm, S.			
Development of macrociliary cells in <i>Beroë</i> . II. Formation of microcilia	81		
Atherton, B. T. and Behnke, M. M.			
Structure of myofibrils at extra-junctional membrane attachment sites in cultured cardiac muscle cells	97		
Todd, I., Mellor, J. S. and Gingell, D.			
Mapping cell-glass contacts of <i>Dictyostelium</i> amoebae by total internal reflection aqueous fluorescence overcomes a basic ambiguity of interference reflection microscopy		107	
Athanasou, N. A., Quinn, J., Heryet, A. and McGee, J. O'D.			
Localization of platelet antigens and fibrinogen on osteoclasts		115	
<hr/>			
Commentary			
Newell, P. C., Europe-Finner, G. N., Small, N. V. and Liu, G.			
Inositol phosphates, G-proteins and <i>ras</i> genes involved in chemotactic signal transduction of <i>Dictyostelium</i>		123	
Review			
Shotton, D. M.			
Review: Video-enhanced light microscopy and its applications in cell biology		129	
<hr/>			
Grossi de Sa, M.-F., Martins de Sa, C., Harper, F., Coux, O., Akhayat, O., Pal, J. K., Florentin, Y. and Scherrer, K.			
Cytolocalization of prosomes as a function of differentiation		151	
Birkby, C. A., Curtis, A. S. G., McGrath, M. and Ripley, B. D.			
MHC control of cell position <i>in vitro</i>		167	
Ueda, H., Tres, L. L. and Kierszenbaum, A. L.			
Culture patterns and sorting of rat Sertoli cell secretory proteins		175	
Fukumoto, M.			
Fertilization in ascidians: apical processes and gamete fusion in <i>Ciona intestinalis</i> spermatozoa		189	
Bhaud, Y., Soyer-Gobillard, M.-O. and Salmon, J. H.			
Transmission of gametic nuclei through a fertilization tube during mating in a primitive dinoflagellate, <i>Prorocentrum micans</i> Ehr.		197	
Jones, J. C. R.			
Characterization of a 125K glycoprotein associated with bovine epithelial desmosomes		207	

Dallai, R. and Vegni Talluri, M. Evidence for septate junctions in the syzygy of the protozoan <i>Gregarina polymorpha</i> (Protozoa, Apicomplexa)	217	Stearns, M. E. and Tew, K. D. Estramustine binds MAP-2 to inhibit microtubule assembly <i>in vitro</i>	331
Gudima, G. O., Vorobjev, I. A. and Chentsov, Yu. S. Centriolar location during blood cell spreading and motion <i>in vitro</i> : an ultrastructural analysis	225	Hagan, I. M. and Hyams, J. S. The use of cell division cycle mutants to investigate the control of microtubule distribution in the fission yeast <i>Schizosaccharomyces pombe</i>	343
Stoilov, L. M., Zlatanova, J. S., Vassileva, A. P., Ivanchenko, M. G., Krachmarov, Ch. P. and Genchev, D. D. Supercoils in plant DNA: nucleoid sedimentation studies	243	Dover, R. and Potten, C. S. Heterogeneity and cell cycle analyses from time-lapse studies of human keratinocytes <i>in vitro</i>	359
Gaertig, J., Kiersnowska, M. and Iftode, F. Induction of cybrid strains of <i>Tetrahymena thermophila</i> by electrofusion	253	Loneragan, T. A. and Williamson, L. C. Regulation of cell shape in <i>Euglena gracilis</i> . V. Time-dependent responses to Ca ²⁺ agonists and antagonists	365
Chen, J. D. and Yew, F. H. DNA replication and repair of <i>Tilapia</i> cells. II. Effects of temperature on DNA replication and ultraviolet repair in <i>Tilapia</i> ovary cells	263	Watt, F. M. Effect of seeding density on stability of the differentiated phenotype of pig articular chondrocytes in culture	373
Denning, G. M., Kim, I. S. and Fulton, A. B. Shedding of cytoplasmic actins by developing muscle cells	273	Okuda, A. and Kimura, G. Elongation of G ₁ phase by transient exposure of rat 3Y1 fibroblasts to caffeine during the previous and present generations	379
Announcements			
List of Supplements			
<hr/>			
Commentary Nicklas, R. B. Chance encounters and precision in mitosis	283	Gibson, F. P. and Hames, B. D. Characterization of a spore protein inducing factor from <i>Dictyostelium discoideum</i>	387
Slominski, A., Moellmann, G., Kuklinska, E., Bomirski, A. and Pawelek, J. Positive regulation of melanin pigmentation by two key substrates of the melanogenic pathway, L-tyrosine and L-dopa	287	Nicholl, D. S. T., Schloss, J. A. and John, P. C. L. Tubulin gene expression in the <i>Chlamydomonas reinhardtii</i> cell cycle: elimination of environmentally induced artifacts and the measurement of tubulin mRNA levels	397
Bowser, S. S., Travis, J. L. and Rieder, C. L. Microtubules associate with actin-containing filaments at discrete sites along the ventral surface of <i>Allogromia</i> reticulopods	297	Overton, J. Response of aggregating chick corneal cells to modifiers of N-linked oligosaccharides, endoglycosidase H and deoxymannojirimycin	405
Turner, C. E., Newton, M. R. and Shotton, D. M. Cytoskeletal involvement in the sequential capping of rat thymocyte surface glycoproteins	309	Zerlauth, G., Wesierska-Gadek, J. and Sauer mann, G. Fibronectin observed in the nuclear matrix of HeLa tumour cells	415
Prescott, A. R., Comerford, J. F., Magrath, R., Lamb, N. J. C. and Warn, R. M. Effects of elevated intracellular magnesium on cytoskeletal integrity	321	Weinberg, W. C. and Iannaccone, P. M. Clonality of preneoplastic liver lesions: histological analysis in chimeric rats	423
		Novak, B., Halbauer, J. and László, E. The effect of CO ₂ on the timing of cell cycle events in fission yeast <i>Schizosaccharomyces pombe</i>	433

Montesano, R. and Orci, L. Intracellular diaphragmed fenestrae in cultured capillary endothelial cells	441	Tiedtke, A., Hünseler, P., Florin-Christensen, J. and Florin-Christensen, M. Exocytosis, endocytosis and membrane recycling in <i>Tetrahymena thermophila</i>	515
Announcements			
List of Supplements			
<hr/>			
Commentary		Reinhart, F. D. and Bloodgood, R. A. Membrane-cytoskeleton interactions in the flagellum: a 240 000 M_r surface-exposed glycoprotein is tightly associated with the axoneme in <i>Chlamydomonas moewusii</i>	521
Lackie, J. M. The behavioural repertoire of neutrophils requires multiple signal transduction pathways	449		
Book Reviews	453	Doonan, J. H., Cove, D. J. and Lloyd, C. W. Microtubules and microfilaments in tip growth: evidence that microtubules impose polarity on protonemal growth in <i>Physcomitrella patens</i>	533
<hr/>			
Roth, K. E., Rieder, C. L. and Bowser, S. S. Flexible-substratum technique for viewing cells from the side: some <i>in vivo</i> properties of primary (9+0) cilia in cultured kidney epithelia	457	O'Neill, P., Singh, M. B. and Knox, R. B. Cell biology of the stigma of <i>Brassica campestris</i> in relation to CO ₂ effects on self-pollination	541
Whitfield, W. G. F., Millar, S. E., Saumweber, H., Frasch, M. and Glover, D. M. Cloning of a gene encoding an antigen associated with the centrosome in <i>Drosophila</i>	467	Pennell, R. I. and Bell, P. R. Insemination of the archegonium and fertilization in <i>Taxus baccata</i> L.	551
Miranda, A. F., Duigou, G. J., Hernandez, E. and Fisher, P. B. Characterization of mutant human fibroblast cultures transformed with simian virus 40	481	Foa, C., Mège, J.-L., Capo, C., Benoliel, A.-M., Galindo, J.-R. and Bongrand, P. T-cell-mediated cytolysis: analysis of killer and target cell deformability and deformation during conjugate formation	561
Menco, B. Ph. M. Tight-junctional strands first appear in regions where three cells meet in differentiating olfactory epithelium: a freeze-fracture study	495	Index of Authors	575
Edwards, J. G., Hameed, H. and Campbell, G. Induction of fibroblast spreading by Mn ²⁺ : a possible role for unusual binding sites for divalent cations in receptors for proteins containing Arg-Gly-Asp	507	Index of Subjects	579
		Announcements	
		List of Supplements	

Journal of Cell Science Supplements

1 *Higher Order Structure in the Nucleus*

Edited by P. R. Cook and R. A. Laskey (£12/US\$23.00)

2 *The Cell Surface in Plant Growth and Development*

Edited by K. Roberts, A. W. B. Johnston, C. W. Lloyd, P. Shaw and H. W. Woolhouse (£15/US\$30.00)

3 *Growth Factors: Structure and Function*

Edited by C. R. Hopkins and R. C. Hughes (£15/US\$30.00)

4 *Prospects in Cell Biology*

Edited by A. V. Grimstone, Henry Harris and R. T. Johnson (£15/US\$30.00)

5 *The Cytoskeleton: Cell Function and Organization*

Edited by C. W. Lloyd, J. S. Hyams and R. M. Warn (£15/US\$30.00)

6 *Molecular Biology of DNA Repair*

Edited by A. R. S. Collins, R. T. Johnson and J. M. Boyle (£40/US\$70.00)

7 *Virus Replication and Genome Interactions*

Edited by J. W. Davies *et al.* (£40/US\$70.00)

8 *Cell Behaviour: Shape, Adhesion and Motility*

Edited by J. Heaysman, A. Middleton and F. Watt (£35/US\$60.00)

These are provided free to subscribers to *Journal of Cell Science*. They may be purchased separately from:

The Biochemical Society Book Depot
PO Box 32
Commerce Way
Colchester CO2 8HP
UK

