

# MOLECULAR AND CELLULAR BIOLOGY

Volume 14

April 1994

No. 4

## GENE EXPRESSION

- Multiple *cis*-Acting Targeting Sequences Are Required for *orb* mRNA Localization during *Drosophila* Oogenesis** Valerie Lantz and Paul Schedl 2235-2242
- The Translation Initiation Factor eIF-4B Contains an RNA-Binding Region That Is Distinct and Independent from Its Ribonucleoprotein Consensus Sequence** Nathalie Méthot, Arnim Pause, John W. B. Hershey, and Nahum Sonenberg 2307-2316
- The 58,000-Dalton Cellular Inhibitor of the Interferon-Induced Double-Stranded RNA-Activated Protein Kinase (PKR) Is a Member of the Tetratricopeptide Repeat Family of Proteins** Tae Gyu Lee, Norina Tang, Samantha Thompson, James Miller, and Michael G. Katze 2331-2342
- A Segment of mRNA Encoding the Leader Peptide of the *CPA1* Gene Confers Repression by Arginine on a Heterologous Yeast Gene Transcript** Pascal Delbecq, Michel Werner, André Feller, Robert K. Filipkowski, Francine Messenguy, and André Piérard 2378-2390
- Expression of the Plasmodial *pfmdr1* Gene in Mammalian Cells Is Associated with Increased Susceptibility to Chloroquine** Helmuth H. G. van Es, Steve Karcz, Fan Chu, Alan F. Cowman, Silvia Vidal, Philippe Gros, and Erwin Schurr 2419-2428
- Structure and Function of Ribosomal Protein S4 Genes on the Human and Mouse Sex Chromosomes** Andrew R. Zinn, Raaji K. Alagappan, Laura G. Brown, Ira Wool, and David C. Page 2485-2492
- Developmental and Cell Type Specificity of LINE-1 Expression in Mouse Testis: Implications for Transposition** Dan Branciforte and Sandra L. Martin 2584-2592
- Purification, Reconstitution, and I $\kappa$ B Association of the c-Rel-p65 (RelA) Complex, a Strong Activator of Transcription** Stig K. Hansen, Patrick A. Baeuerle, and Francesco Blasi 2593-2603
- Requirements for Intercistronic Distance and Level of Eukaryotic Initiation Factor 2 Activity in Reinitiation on *GCN4* mRNA Vary with the Downstream Cistron** Chris M. Grant, Paul F. Miller, and Alan G. Hinnebusch 2616-2628
- Assembly of Mitochondrial Ribonucleoprotein Complexes Involves Specific Guide RNA (gRNA)-Binding Proteins and gRNA Domains but Does Not Require Preedited mRNA** Laurie K. Read, H. Ulrich Göringer, and Kenneth Stuart 2629-2639
- Faithful Degradation of the Soybean *rbcS* mRNA In Vitro** Matthew M. Tanzer and Richard B. Meagher 2640-2650
- His-154 Is Involved in the Linkage of the *Saccharomyces cerevisiae* L-A Double-Stranded RNA Virus Gag Protein to the Cap Structure of mRNAs and Is Essential for M<sub>1</sub> Satellite Virus Expression** Antony Blanc, Juan Carlos Ribas, Reed B. Wickner, and Nahum Sonenberg 2664-2674
- Identification and Characterization of a Novel Yeast Gene: the *YGPI* Gene Product Is a Highly Glycosylated Secreted Protein That Is Synthesized in Response to Nutrient Limitation** Monika Destruelle, Helmut Holzer, and Daniel J. Klionsky 2740-2754
- Cholesterol and Bile Acids Regulate Cholesterol 7 $\alpha$ -Hydroxylase Expression at the Transcriptional Level in Culture and in Transgenic Mice** Maria I. Ramirez, Denise Karaoglu, Diego Haro, Carmen Barillas, Roya Bashirzadeh, and Gregorio Gil 2809-2821

Continued on following page

## TRANSCRIPTIONAL REGULATION

<b>Identification and Characterization of <i>Drosophila</i> Relatives of the Yeast Transcriptional Activator SNF2/SWI2</b>	Lisa K. Elfring, Renate Deuring, Claire M. McCallum, Craig L. Peterson, and John W. Tamkun	2225–2234
<b>Sequences Containing the Second-Intron Enhancer Are Essential for Transcription of the Human Apolipoprotein B Gene in the Livers of Transgenic Mice</b>	Alan R. Brooks, Brian P. Nagy, Stacy Taylor, W. Scott Simonet, John M. Taylor, and Beatriz Levy-Wilson	2243–2256
<b>Distinct Binding Determinants for 9-<i>cis</i> Retinoic Acid Are Located within AF-2 of Retinoic Acid Receptor <math>\alpha</math></b>	Bonnie F. Tate, Gary Allenby, Reinhold Janocha, Sonja Kazmer, Jeffrey Speck, Laurie J. Sturzenbecker, Patricio Abarzúa, Arthur A. Levin, and Joseph F. Grippo	2323–2330
<b>A Cellular Factor Stimulates Ligand-Dependent Release of hsp90 from the Basic Helix-Loop-Helix Dioxin Receptor</b>	Jacqueline McGuire, Murray L. Whitelaw, Ingemar Pongratz, Jan-Åke Gustafsson, and Lorenz Poellinger	2438–2446
<b>The <i>Aspergillus nidulans abaA</i> Gene Encodes a Transcriptional Activator That Acts as a Genetic Switch To Control Development</b>	Alex Andrianopoulos and William E. Timberlake	2503–2515
<b>Characterization of <i>cis</i>-Acting Elements in Light Regulation of the Nuclear Gene Encoding the A Subunit of Chloroplast Isozymes of Glyceraldehyde-3-Phosphate Dehydrogenase from <i>Arabidopsis thaliana</i></b>	Terry R. Conley, Soo-Chul Park, Hawk-Bin Kwon, Hsiao-Ping Peng, and Ming-Che Shih	2525–2533
<b>MCM1 Point Mutants Deficient in Expression of <math>\alpha</math>-Specific Genes: Residues Important for Interaction with <math>\alpha 1</math></b>	Laurakay Bruhn and George F. Sprague, Jr.	2534–2544
<b>The Human <math>\beta 2</math> Integrin CD18 Promoter Consists of Two Inverted Ets <i>cis</i> Elements</b>	Erwin P. Böttinger, C. Simon Shelley, Omid C. Farokhzad, and M. Amin Arnaout	2604–2615
<b>Stimulation of Polyomavirus DNA Replication by Wild-Type p53 through the DNA-Binding Site</b>	Teru Kanda, Kaoru Segawa, Noriaki Ohuchi, Shozo Mori, and Yoshiaki Ito	2651–2663
<b>Modulating the Potency of an Activator in a Yeast In Vitro Transcription System</b>	Yasuhiro Ohashi, Joshua M. Brickman, Eric Furman, Blake Middleton, and Michael Carey	2731–2739
<b>The DNA-Binding Specificity of the Hepatocyte Nuclear Factor 3/forkhead Domain Is Influenced by Amino Acid Residues Adjacent to the Recognition Helix</b>	David G. Overdier, Anna Porcella, and Robert H. Costa	2755–2766
<b>FTZ-F1-Related Orphan Receptors in <i>Xenopus laevis</i>: Transcriptional Regulators Differentially Expressed during Early Embryogenesis</b>	Heidrun Ellinger-Ziegelbauer, Abdelmadjid K. Hihi, Vincent Laudet, Hansjörg Keller, Walter Wahli, and Christine Dreyer	2786–2797
<b>Identical Components of Yeast Transcription Factor III B Are Required and Sufficient for Transcription of TATA Box-Containing and TATA-Less Genes</b>	Cláudio A. P. Joazeiro, George A. Kassavetis, and E. Peter Geiduschek	2798–2808

## CELL GROWTH AND DEVELOPMENT

<b>A Dominant Negative Erythropoietin (EPO) Receptor Inhibits EPO-Dependent Growth and Blocks F-gp55-Dependent Transformation</b>	Dwayne L. Barber, John C. DeMartino, Mark O. Showers, and Alan D. D'Andrea	2257–2265
<b>A Constitutively Activated Erythropoietin Receptor Stimulates Proliferation and Contributes to Transformation of Multipotent, Committed Nonerythroid and Erythroid Progenitor Cells</b>	Gregory D. Longmore, Pamela N. Pharr, and Harvey F. Lodish	2266–2277

Continued from preceding page

<b>Overexpression of C-Terminally but Not N-Terminally Truncated Myb Induces Fibrosarcomas: a Novel Nonhematopoietic Target Cell for the <i>myb</i> Oncogene</b>	Richard D. Press, E. Premkumar Reddy, and Donald L. Ewert	2278–2290
<b>A Gene Involved in Control of Human Cellular Senescence on Human Chromosome 1q</b>	Patrick J. Hensler, Lois A. Annab, J. Carl Barrett, and Olivia M. Pereira-Smith	2291–2297
<b>Acetylcholine Muscarinic m1 Receptor Regulation of Cyclic AMP Synthesis Controls Growth Factor Stimulation of Raf Activity</b>	Marijane Russell, Sim Winitz, and Gary L. Johnson	2343–2351
<b>The Novel Primary Response Gene <i>MyD118</i> and the Proto-oncogenes <i>myb</i>, <i>myc</i>, and <i>bcl-2</i> Modulate Transforming Growth Factor <math>\beta</math>1-Induced Apoptosis of Myeloid Leukemia Cells</b>	Muthu Selvakumaran, Hsueh-Kung Lin, Robert Tjin Tham Sjin, John C. Reed, Dan A. Liebermann, and Barbara Hoffman	2352–2360
<b>The <i>gadd</i> and <i>MyD</i> Genes Define a Novel Set of Mammalian Genes Encoding Acidic Proteins That Synergistically Suppress Cell Growth</b>	Qimin Zhan, Kenneth A. Lord, Isaac Alamo, Jr., M. Christine Hollander, France Carrier, David Ron, Kurt W. Kohn, Barbara Hoffman, Dan A. Liebermann, and Albert J. Fornace, Jr.	2361–2371
<b>Activation of the Ras/Mitogen-Activated Protein Kinase Signaling Pathway Alone Is Not Sufficient To Induce Glucose Uptake in 3T3-L1 Adipocytes</b>	Nina van den Berghe, D. Margriet Ouwens, J. Antonie Maassen, Michelle G. H. van Mackelenbergh, Hetty C. M. Sips, and H. Michiel J. Krans	2372–2377
<b><i>NHP6A</i> and <i>NHP6B</i>, Which Encode HMG1-Like Proteins, Are Candidates for Downstream Components of the Yeast <i>SLT2</i> Mitogen-Activated Protein Kinase Pathway</b>	Christine Costigan, David Kolodrubetz, and Michael Snyder	2391–2403
<b>Efficient and Sustained Gene Expression in Primary T Lymphocytes and Primary and Cultured Tumor Cells Mediated by Adeno-Associated Virus Plasmid DNA Complexed to Cationic Liposomes</b>	Ramila Philip, Elisa Brunette, Lydia Kilinski, Deepa Muruges, Maureen A. McNally, Kalust Ucar, Joseph Rosenblatt, Thomas B. Okarma, and Jane S. Lebkowski	2411–2418
<b>Oncogenic Activation of the Lck Protein Accompanies Translocation of the <i>LCK</i> Gene in the Human HSB2 T-Cell Leukemia</b>	Dwaine D. Wright, Bartholomew M. Sefton, and Mark P. Kamps	2429–2437
<b><i>rac</i> p21 Is Involved in Insulin-Induced Membrane Ruffling and <i>rho</i> p21 Is Involved in Hepatocyte Growth Factor- and 12-<i>O</i>-Tetradecanoylphorbol-13-Acetate (TPA)-Induced Membrane Ruffling in KB Cells</b>	Takayuki Nishiyama, Takuya Sasaki, Kenji Takaishi, Masaki Kato, Hideaki Yaku, Keishi Araki, Yoshiharu Matsuura, and Yoshimi Takai	2447–2456
<b>Loss of p53 Protein during Radiation Transformation of Primary Human Mammary Epithelial Cells</b>	David E. Wazer, Qiuming Chu, Xiao-Long Liu, Qingshen Gao, Homa Safaii, and Vimla Band	2468–2478
<b>Continued Functioning of the Secretory Pathway Is Essential for Ribosome Synthesis</b>	Keiko Mizuta and Jonathan R. Warner	2493–2502
<b>Transcription Inhibits the Replication of Autonomously Replicating Plasmids in Human Cells</b>	Steven B. Haase, Scott S. Heinzel, and Michele P. Calos	2516–2524
<b>Bcl-2 Blocks p53-Dependent Apoptosis</b>	Shiun-Kwei Chiou, Lakshmi Rao, and Eileen White	2556–2563
<b>Molecular Genetic Analyses of a 376-Kilodalton Golgi Complex Membrane Protein (Giantin)</b>	Hans Peter Seelig, Peter Schranz, Henrik Schröter, Claudia Wiemann, Gareth Griffiths, and Manfred Renz	2564–2576
<b>Direct Association of p110<math>\beta</math> Phosphatidylinositol 3-Kinase with p85 Is Mediated by an N-Terminal Fragment of p110<math>\beta</math></b>	Patrick Hu and Joseph Schlessinger	2577–2583

Continued on following page

Continued from preceding page

**The Interaction of Small Domains between the Subunits of Phosphatidylinositol 3-Kinase Determines Enzyme Activity**

Anke Klippel, Jaime A. Escobedo, Michiko Hirano, and Lewis T. Williams 2675–2685

**Induction versus Progression of Brain Tumor Development: Differential Functions for the pRB- and p53-Targeting Domains of Simian Virus 40 T Antigen**

M. T. Sáenz Robles, H. Symonds, J. Chen, and T. Van Dyke 2686–2698

**Regulation of Cyclin D-Dependent Kinase 4 (cdk4) by cdk4-Activating Kinase**

Jun-Ya Kato, Masaaki Matsuoka, David K. Strom, and Charles J. Sherr 2713–2721

**In Vitro Mutagenesis of *Caenorhabditis elegans* Cuticle Collagens Identifies a Potential Subtilisin-Like Protease Cleavage Site and Demonstrates that Carboxyl Domain Disulfide Bonding Is Required for Normal Function but Not Assembly**

Jie Yang and James M. Kramer 2722–2730

**Specific Motifs Recognized by the SH2 Domains of Csk, 3BP2, fps/fes, GRB-2, HCP, SHC, Syk, and Vav**

Z. Songyang, S. E. Shoelson, J. McGlade, P. Olivier, T. Pawson, X. R. Bustelo, M. Barbacid, H. Sabe, H. Hanafusa, T. Yi, R. Ren, D. Baltimore, S. Ratnofsky, R. A. Feldman, and L. C. Cantley 2777–2785

## CELL AND ORGANELLE STRUCTURE AND ASSEMBLY

**Subcellular Locations of *MOD5* Proteins: Mapping of Sequences Sufficient for Targeting to Mitochondria and Demonstration that Mitochondrial and Nuclear Isoforms Commingle in the Cytosol**

Magdalena Boguta, Leslie A. Hunter, Wu-Cheng Shen, Edwin C. Gillman, Nancy C. Martin, and Anita K. Hopper 2298–2306

**A Nuclear Encoded tRNA of *Trypanosoma brucei* Is Imported into Mitochondria**

André Schneider, Jay Martin, and Nina Agabian 2317–2322

**Identification of I-Plastin, a Human Fimbrin Isoform Expressed in Intestine and Kidney**

Ching-Shwun Lin, Wenyan Shen, Zong Ping Chen, Ya-Huei Tu, and Paul Matsudaira 2457–2467

**Complementation of Mutant and Wild-Type Human Mitochondrial DNAs Coexisting since the Mutation Event and Lack of Complementation of DNAs Introduced Separately into a Cell within Distinct Organelles**

Makoto Yoneda, Tadashi Miyatake, and Giuseppe Attardi 2699–2712

## DNA DYNAMICS AND CHROMOSOME STRUCTURE

**Targeting Frequency for Deletion Vectors in Embryonic Stem Cells**

Hongbing Zhang, Paul Hasty, and Allan Bradley 2404–2410

**Non-Mendelian Inheritance of Macronuclear Mutations Is Gene Specific in *Paramecium tetraurelia***

Jill M. Scott, Kazuyuki Mikami, Charles L. Leeck, and James D. Forney 2479–2484

**Cellular Protein Interactions with Herpes Simplex Virus Type 1 oriS**

Christine E. Dabrowski, Paul J. Carmillo, and Priscilla A. Schaffer 2545–2555

**A Unique Subpopulation of Murine DNA Polymerase  $\alpha$ /Primase Specifically Interacts with Polyomavirus T Antigen and Stimulates DNA Replication**

K. Moses and C. Prives 2767–2776

**Histone H1 Expressed in *Saccharomyces cerevisiae* Binds to Chromatin and Affects Survival, Growth, Transcription, and Plasmid Stability but Does Not Change Nucleosomal Spacing**

Caroline Linder and Fritz Thoma 2822–2835