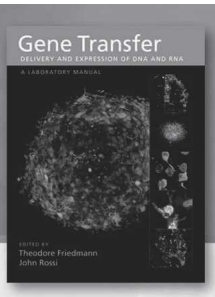
Gene Transfer

Delivery and Expression of DNA and RNA

A Laboratory Manual



Edited by Theodore Friedmann, *University of California, San Diego,* and John Rossi, *Beckman Research Institute of the City of Hope, Duarte, California*

Understanding gene function and regulation requires rigorous testing in live cells and organisms. Recent advances have provided a variety of new strategies for delivering DNA and RNA into cells and probing their expression, as well as new clinical applications that rely upon the introduction of genetic material. The vast number of available techniques for clinical and laboratory research often makes selecting the optimal method a difficult process. *Gene Transfer: Delivery and Expression of DNA and RNA* provides the first comprehensive guide to technical approaches for delivering nucleic acids into cells and organisms and of ensuring (even manipulating) appropriate expression. The detailed, step-by-step protocols cover a variety of methods, both well established and newly evolving. These include viral and nonviral methods of gene delivery, transgenic approaches, strategies for the regulation of transgene expression, and modification of the host response. The introductory matter to each chapter includes concise technical and theoretical discussions with considerations for selection of the appropriate system and strategies for delivery.

2007, 793 pp., illus., appendix, index
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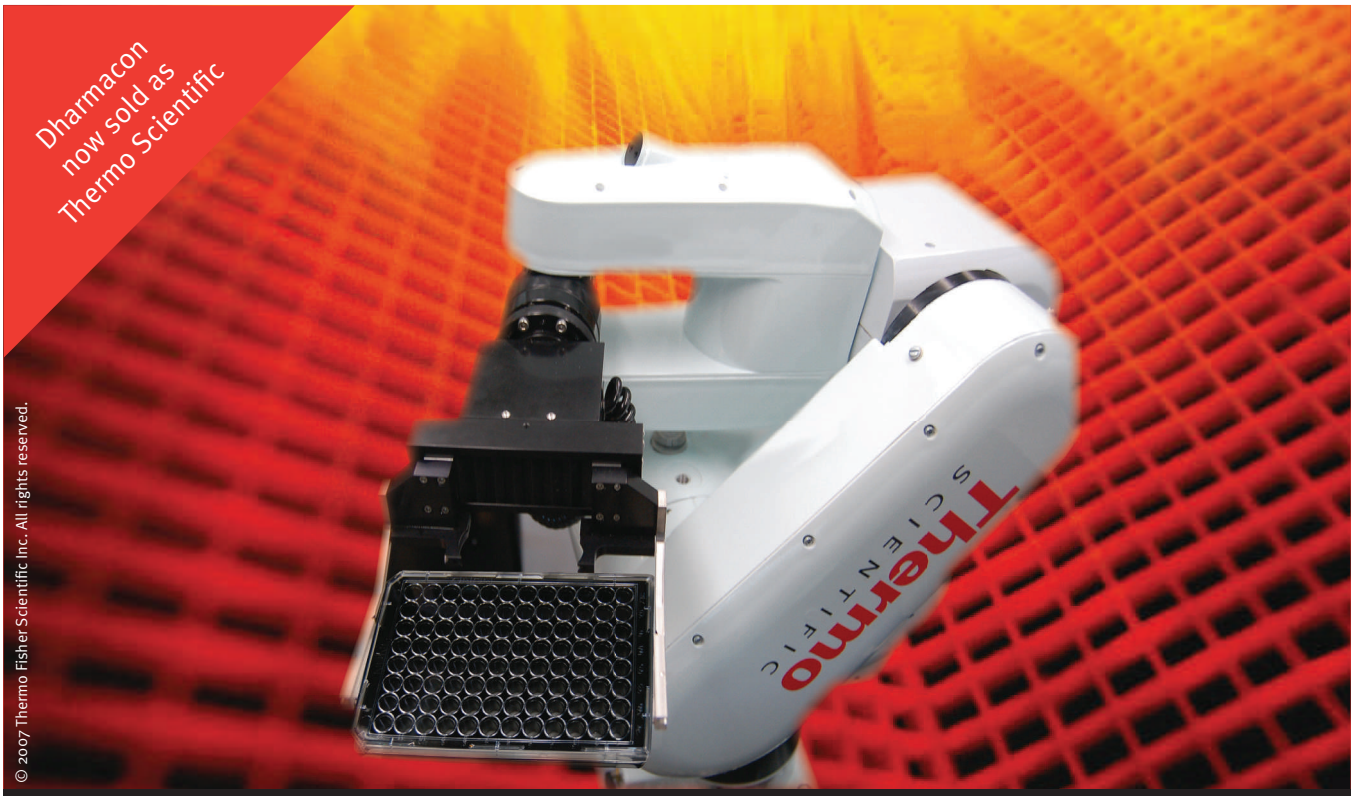

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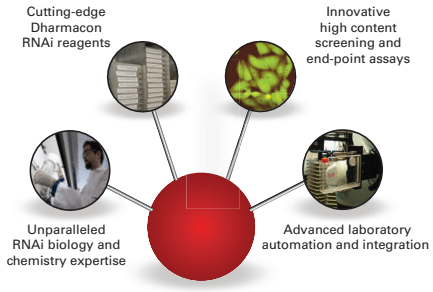

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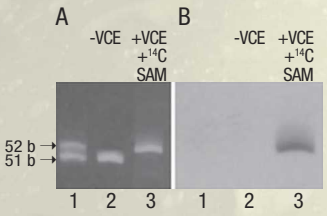

RNA capping and methylation to Cap 0 by the ScriptCap™ m7G Capping System. Ethidium bromide (A) and autoradiograph (B) of a 51-base RNA with (3) and without (2) vaccinia capping enzyme (VCE) and 14C SAM.

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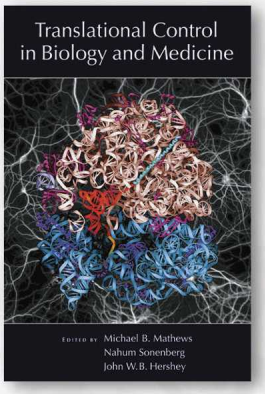

Edited by Michael B. Mathews, *UMDNJ-New Jersey Medical School, Newark,* Nahum Sonenberg, *McGill University, Montreal, Canada,* and John W. B. Hershey, *University of California, Davis*

The new edition of this successful monograph has been both updated and broadened. Since the previous (second) edition was published in 2000, the structures of the bacterial and eukaryotic ribosomes have been published, advancing our basic understanding of translation and mechanisms involving protein and RNA regulators. In addition, as the title indicates, this edition has a new focus on the role of translational control in human development and disease. This book, with 30 chapters written by experts in the field, is essential reading for anyone interested in the process of translation, its regulation, and how its failure can be the cause of disease.

2007, 934 pp., illus., appendix, index
Hardcover $135 **ISBN 0-87969-767-9**

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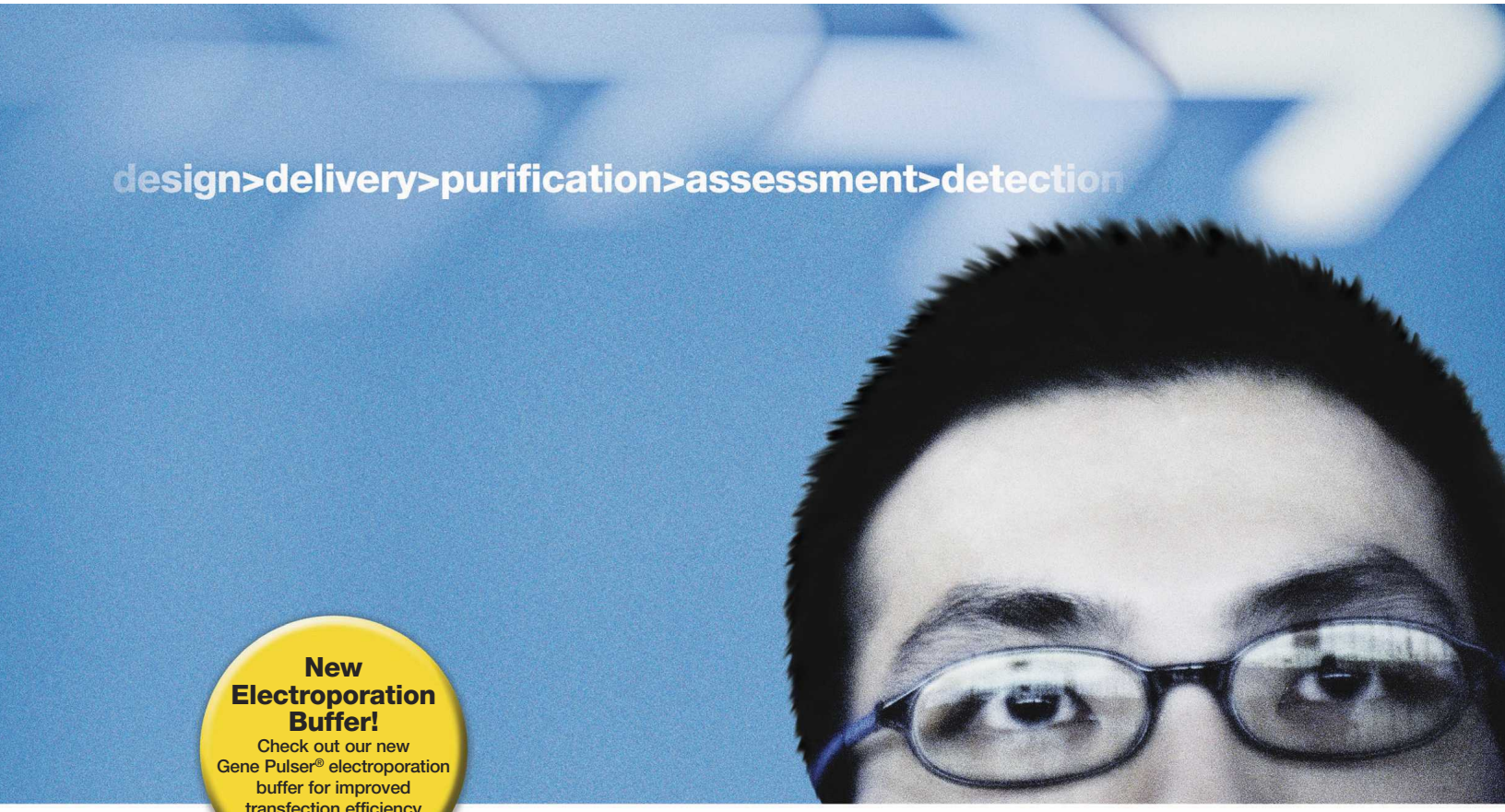

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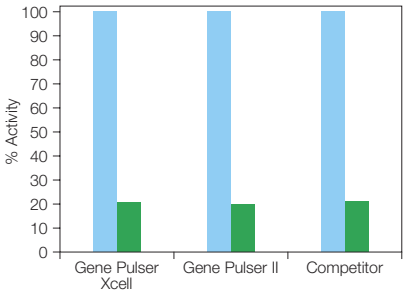

Electroporation with Gene Pulser electroporation buffer in different instruments. The Gene Pulser Xcell™, Gene Pulser II, and a competitor instrument were used to demonstrate the Gene Pulser electroporation buffer's flexibility across various instrument platforms. CHO cells were transfected in 0.4 cm cuvettes with a scramble siRNA (■) or a luciferase siRNA (■). Similar transfection efficiencies were observed across all platforms.

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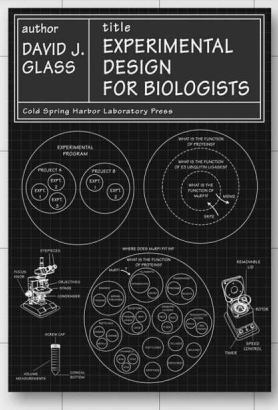
Experimental Design for Biologists

By David J. Glass, M.D., *Novartis Institutes for Biomedical Research*



The effective design of scientific experiments is critical to success, yet graduate students receive very little formal training in how to do it. Based on a well–received course taught by the author, *Experimental Design for Biologists* fills this gap.

Experimental Design for Biologists explains how to establish the framework for an experimental project, how to set up a system, design experiments within that system, and how to determine and use the correct set of controls. Separate chapters are devoted to negative controls, positive controls, and other categories of controls that are perhaps less recognized, such as "assumption controls," and "experimentalist controls." Furthermore, there are sections on establishing the experimental system, which include performing critical "system controls."

Should all experimental plans be hypothesis–driven? Is a question/answer approach more appropriate? What was the hypothesis behind the Human Genome Project? What color is the sky? How does one get to Carnegie Hall? The answers to these kinds of questions can be found in *Experimental Design for Biologists*. Written in an engaging manner, the book provides compelling lessons in framing an experimental question, establishing a validated system to answer the question, and deriving verifiable models from experimental data. *Experimental Design for Biologists* is an essential source of theory and practical guidance in designing a research plan.

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Sylvester Comprehensive Cancer Center
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Email: egilboa@med.miami.edu

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Qualifications: B.A. or B.S. plus 3 months of related research experience preferred. Experience with molecular techniques that include DNA purification, PCR, and cloning. Basic computing skills, light microscopy skills, and ability to manipulate small objects under a stereomicroscope are required. Excellent communication, organizational, and interpersonal skills; ability to work some nights and weekends; ability to lift and move items of 50lbs or less. The technician should not have any allergies to fish or aquarium related things. **Preferred Skills:** Some academic and laboratory experience in Developmental Biology and/or Neurobiology. Experience with zebrafish embryology. Skills in website design, filemaker pro, Adobe photoshop, Final Cut, and Microsoft office are desired.

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San Francisco, CA

MOL000206 - Senior Director, RNA Therapeutics

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Requirements include a Ph.D. with managerial experience and an established international research reputation in nucleic acid structure/function. Greater than ten years of post-Ph.D. work in industry or as an independent investigator preferred. Must be an accomplished scientist, recognized by peers as a leader in your field.

SCI003232 - Director, In Vivo Biology
MOL000190 - Sr. Methods Developer
MOL000187 - Research Molecular Biologist
MOL000188 - Research Chemist
MOL000189 - Associate Program Coordinator
MOL000192 - Automation Associate
MOL000196 - Sr. Systems Analyst
MOL000197 - LIMS Analyst/LIMS Programmer
MOL000204 - Sr. Research Scientist/Data Analyst
MOL000205 - Research Scientist, Bioinformatics

West Point, PA

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BIO001507 - Biologist, Microscopy Cell Based Assay Support
BIO001508 - Biologist, siRNA Biology & Pharmacology
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Division of Tumor Biology
Netherlands Cancer Institute

Jens Kurreck
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Institute for Chemistry and Biochemistry
Free University of Berlin

Judy Lieberman
Professor of Pediatrics
Harvard Medical School

Dmitry Samarsky
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