"...can offer sustenance to those who still thirst for methods."
—Nature, Fall 1990 New Journals Supplement

Methods in Molecular and Cellular Biology

Editor-in-Chief
Bernard Perbal, Université P. et M. Curie (Paris VI), France

Methods in Molecular and Cellular Biology continues to serve as the definitive source of practical information on the latest methods being employed at the molecular level. An international editorial board ensures rapid publication of original contributions describing new methods and methodologies, improvements of common protocols, troubleshooting guides, and topical reviews related to molecular biology and its application to research problems across the life sciences. This journal incorporates DNA and Protein Engineering Techniques Newsletter.

Special Features:
• Commentaries on Protocols: readers’ opinions and questions
• Nuts and Bolts: readers’ views on the quality of commercial products
• Communications: brief reports of new developments
• Reviews
• New Products for Molecular Biology: supplier information on new products
• Book Reviews

A Selection of Previously Published Papers:
• A Method for Mapping Exons Using Mixed cDNA Probes
• Review: The Use of Gene Vectors in Plant Molecular Biology
• Techniques for Measuring Intracellular Ca²⁺ Concentrations in the Isolated Perfused Heart
• Localization of Proteins in Filamentous Cyanobacteria Using Immunogold Electron Microscopy

Manuscripts describing contemporary methodologies or discussing timely issues bearing on any of the above areas are welcome by the Editor-in-Chief. To obtain a detailed INSTRUCTIONS TO AUTHORS, please write to Professor Bernard Perbal, Laboratoire d’Oncologie Virale et Moleculaire, Institute Curie, Matiment 110, Centre Universitaire, 91405 Orsay, France, Tel: (33)-1-69-86-30-46, FAX (33)-1-69-07-57-59.

Indexed or Abstracted in: Cambridge Scientific Abstracts • Chemical Abstracts • Excerpta Medica

Subscription Information: Volume 3, 1992, Six Issues • ISSN: 0898-7750
Institutional: $125 U.S. • $200 Outside U.S. • Personal: $ 65 U.S. • $95 Outside U.S.

All orders and requests for free sample copies should be sent to: C. Goreinstein, Wiley-Liss, 605 Third Avenue, New York, NY 10158. Payment must be made in U.S. dollars drawn on a U.S. bank. All inquiries concerning subscriptions should be sent to John Wiley & Sons, Inc., Subscriptions Department, 605 Third Avenue, New York, NY 10158-0012, or call (212)850-6543.
The new edition of DNA Replication—an essential addition to your professional library

DNA Replication
Second Edition

ARTHUR KORNBERG
Professor Emeritus, Stanford University

TANIA BAKER
National Institute of Health,
Massachusetts Institute of Technology

"It provides authoritative yet lucid accounts of a dynamic and ever expanding field, and students and experts alike should benefit by having a desk copy."
—J. Wang, Harvard University

"Invaluable to researchers, scientists, and students alike."
—Gertrude B. Elion

DNA Replication, Second Edition is a volume you will turn to again and again, as a general reference and a practical research guide. In this exceptional new edition of a modern science classic, Nobel laureate Arthur Kornberg and his coauthor Tania Baker provide you with practical information on the enzymology of DNA replication—from the classic papers to the most recent breakthroughs.

The Standard Reference in the Field
Like its highly acclaimed predecessor, DNA Replication, Second Edition brings together the many facets of DNA replication and related cellular processes into one authoritative volume, making it the standard reference in the field. Completely revised to reflect current research and interpretations, the new edition includes:

- New chapters on primases and primosomes, helicases, topoisomerases, DNA binding proteins, plasmids and organelles, and chromosomal origins
- The latest on mechanisms of replication in prokaryotic systems and their essential recapitulation in animal viruses
- Summaries of the replication cycles of many prokaryotic and eukaryotic viruses, plasmids, and organelles, presented in the framework of their life cycles
- Related aspects of RNA synthesis, and DNA repair, modification, recombination, and segregation

TO ORDER, complete and mail this form to W. H. Freeman and Company, Order Department, 4419 West 1980 South, Salt Lake City, UT 84104.

YES! Please send me:

☑ DNA REPLICATION, 2 e (2003-5) at $64.95

Please include $1.95 postage for the first book and $1.25 for each additional book

☑ CA, UT, and NY add appropriate sales tax

Canadian residents add 7%, GST

TOTAL

METHOD OF PAYMENT

☑ Check ☑ Money Order ☑ MasterCard ☑ Visa

Credit card account number

Expiration date

Cardholder’s signature

Name

Address

City State Zip

Make checks payable to W. H. Freeman and Company. All orders must be prepaid. Foreign orders: credit card or M.O., U.S. funds only. Please allow 6-8 weeks for delivery.

W. H. Freeman and Company
The book publishing arm of Scientific American
41 Madison Avenue, New York, New York 10010
CELL GROWTH & DIFFERENTIATION
The Molecular Biology Journal of the American Association for Cancer Research

Every month. Pioneering research spanning the fields of molecular biology, molecular genetics, biochemistry, cell biology, developmental biology, and cancer research. Subscribe now!

SCOPE

- Original in vitro and in vivo studies of mechanisms underlying normal and abnormal cell behavior and cell growth control
- Research Capsules: updates of changing concepts in the field
- Viewpoints: comments on published articles

FROM RECENT ISSUES

Mutant p53 DNA Clones from Human Colon Carcinomas Cooperate with ras in Transforming Primary Rat Cells: A Comparison of the “Hot Spot” Mutant Phenotypes

The Human Multidrug-Resistance Gene: Sequences Upstream and Downstream of the Initiation Site Influence Transcription
M. M. Cornwell

Tyrosine Phosphorylation of a Gap Junction Protein Correlates with Inhibition of Cell-to-Cell Communication
A. J. Filson, R. Azarnia, E. C. Beyer, W. R. Loewenstern, and J. S. Brugge

Cloning Expression of the Human Substance-K Receptor and Analysis of Its Role in Mitogenesis

Mechanism of Activation of the vav Protooncogene
J. Coppola, S. Bryant, T. Koda, D. Coury, and M. Barbacid

Research Capsules

- Oncogenes at Viral Integration Sites
  G. Peters

- Molecular Characterization of Protein Tyrosine Phosphatases
  H. Saito and M. Streuli

A DISTINGUISHED EDITORIAL BOARD

George F. Vande Woude, Ph.D.
Editor-in-Chief

- Mariano Barbacid, Ph.D.
- Webster K. Cavenee, Ph.D.
- Suzanne Cory, Ph.D.
- Sara Courtneidge, Ph.D.
- Tom Curran, Ph.D.

- Raymond L. Erikson, Ph.D.
- Nancy A. Jenkins, Ph.D.
- Frank McCormick, Ph.D.
- Harold L. Moses, M.D.
- Yasutomi Nishizuka, M.D., Ph.D.
- Gordon G. Peters, Ph.D.
- Joseph Schlessinger, Ph.D.

MANUSCRIPT INFORMATION

- Average peer review time—3 weeks. To accelerate process, mail manuscripts to Editorial Board member of your choice.
- Average time from acceptance to publication—10 weeks.
- Indexed by Index Medicus, MEDLINE, CancerLit, BIOSIS, and Current Contents

ORDER TODAY!

Rates in US $*
$150 Institutional
$90 Individual non-member
Members, American Association for Cancer Research: For rates, call 215-440-9300.
*Add $20 for delivery outside US

Order by mail or phone:
Cell Growth & Differentiation
c/o Wilkins & Wilkins
P.O. Box 6475
Baltimore, MD 21208-0475
1-800-658-423; 1-800-658-400 in MD
Sample copy upon request

For further details about manuscript submission, contact:
Dr. George F. Vande Woude, Editor-in-Chief,
301-846-1581, FAX 301-696-1549, or the American Association for Cancer Research.
E. COLI WALL MAP AVAILABLE

A limited supply of the following will be available from ASM: reprints of the article "Linkage Map of Escherichia coli K-12, Edition 8," by Barbara J. Bachmann (Microbiol. Rev. 54:130–197, 1990) and wall charts (ca. 21 × 24½") of the E. coli linkage map. Shipped together in a mailing tube. $10.50, U.S.; $11.24, Canada; $12.50, other countries (surface).

Prices are subject to change without notice. All orders must be accompanied by payment in U.S. dollars, drawn on a U.S. bank located within the continental United States, or charged to MasterCard, VISA, or American Express. ASM does not accept wire transfers. Charge card orders may be placed by telephone (202-737-3600) or by fax (202-737-0368). Mail orders should be addressed to: American Society for Microbiology, Publication Sales, 1325 Massachusetts Ave., N.W., Washington, DC 20005-4171.

COMMON MECHANISMS OF TRANSFORMATION BY SMALL DNA TUMOR VIRUSES

Edited by Luis P. Villarreal, Cancer Research Institute, University of California, Irvine

Small DNA tumor viruses, i.e., polyomavirus, papillomavirus, and adenovirus, have long been of major interest, primarily because they have been shown to cause cancers. An in-depth examination of their common mechanisms of cell transformation is the focus of this volume, arising from the 1989 ICN-UCI International Conference on Virology.

November 1989
270 pages, illustrated, index
Member: $39.00; Nonmember: $54.00

Publication Sales
American Society for Microbiology
1325 Massachusetts Avenue, N.W.
Washington, DC 20005

ADP-Ribosylating Toxins and G Proteins

Insights into Signal Transduction

Edited by Joel Moss and Martha Vaughan, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland

The contents of this important synthesis and the expert contributors span the disciplines of microbiology, biochemistry, molecular biology, and pharmacology to review current knowledge about ADP-ribosylating toxins, guanine nucleotide-binding proteins, receptors, and signal transduction.

Hardcover (ISBN 1-55581-017-9)
March 1990
585 pages, illustrated, color plate, index
Member: $69.00; Nonmember: $79.00
When ordering, specify catalog number MCB 11/91-017-9.

Publication Sales
American Society for Microbiology
1325 Massachusetts Avenue, N.W.
Washington, DC 20005
THE LATEST INFORMATION ON SOME VIRUS "SUPERFAMILIES"—
NEW ASPECTS OF POSITIVE-STRAND RNA VIRUSES

EDITED BY MARGO A. BRINTON
AND FRANZ X. HEINZ

THIS BOOK presents the latest thinking on positive-strand RNA viruses. These include the majority of plant viruses, insect viruses, and animal viruses, including picornavirus, coronavirus, togavirus, flavivirus, poliovirus, and rhinovirus. Arising from the 2nd International Symposium on Positive-Strand RNA Viruses, held in Vienna, Austria, in June 1989, the book is a compendium of reviews of exciting research in this dynamic field currently being performed at over 40 laboratories.

At one time considered divergent in structure, the viruses of the sindbis, polio, and coronavirus superfamilies are increasingly known to share important similarities which allow them to shuffle conserved amino acid units to form new viruses. The implications for plant, animal, and human viral studies, including vaccine and antiviral-compound development, are serious. In addition, the book gives new insight into the diversity of the structure of picornaviruses. The first animal viruses to be crystallized, the picornaviruses have had enormous influence on subsequent discussions of viral structure. Several color plates illustrate the structural projections of these viruses and add to the book's overall usefulness.

The book will be valued both as an update for virologists, molecular biologists, viral immunologists, medical virologists, and researchers in vaccine development and antiviral compounds and as supplemental reading for basic virology courses in medical schools and universities. In addition, it is highly recommended for advanced courses in positive-strand RNA virology.

Condensed Contents
Overview: Positive-Stranded RNA Viruses: Early History and the Role of Model Viruses (Kaesberg)

Ordering Information
June 1990, hardcover (ISBN 1-55559-022-5), 405 pages, illustrated, color plates, index. Member: $59.00; Nonmember: $75.00. To order, complete the form below and mail to ASM. Institutional purchase order forms should include the order number below. Credit card orders for ASM books may also be placed by phone (202-673-3600) or by fax (202-737-3068).

Yes, send me _______ copy(ies) of New Aspects of Positive-Strand RNA Viruses at $59.00 (Member); $75.00 (Nonmember)

If ordering at member price, give member number: ________

Check one:
☐ Payment enclosed
☐ MasterCard ☐ VISA ☐ American Express

Card Number ____________________________ Expires __________

Signature ____________________________ Date __________

ASM Publication Sales/American Society for Microbiology

1225 Massachusetts Ave., N.W., Washington, DC 20005-4171
An elegant view of a complex macromolecule . . .

THE RIBOSOME
STRUCTURE, FUNCTION, & EVOLUTION

Edited by Walter E. Hill, University of Montana, Missoula; Albert Dahlberg, Brown University, Providence, R.I.; Roger A. Garrett, University of Copenhagen, Copenhagen, Denmark; Peter B. Moore, Yale University, New Haven, Conn.; David Schlessinger, Washington University School of Medicine, St. Louis, Mo.; and Jonathan R. Warner, Albert Einstein College of Medicine, Bronx, N.Y.

This comprehensive overview is a major new addition to literature on the ribosome, covering the structure, function, and evolution of this complex macromolecule in both prokaryotic and eukaryotic systems. The authors, an international group of leading experts representing 13 countries, have written and illustrated their chapters for use by all scientists, including those outside the field.

The book opens with a personal, historical retrospective and summary by Masayasu Nomura, followed by historical insights on ribosome preparation by Alexander S. Spirin. From there, chapters turn to recent developments in every arena of research into the ribosome. Much of the current knowledge about the detailed mechanisms by which the ribosome is involved in protein biosynthesis has only recently been delineated thanks to a host of new research techniques. Additional information about how antibiotics and ribosomes interact and a view of the ribosome in its evolutionary context are also included.

Arising from the August 1989 International Conference on Ribosomes, this reference will be extremely useful to advanced students as well as investigators whose work either directly or indirectly touches on this subject.

CONDENSED CONTENTS

Historical (2 chapters by Nomura and Spirin). Structure of Ribosomes and rRNA (12 chapters by Noller et al.; Brimacombe et al.; Frank et al.; Boublik, Mandiyan, and Tummino; Stoffler-Melilicke and Stoffler; Yonath et al.; Ehresmann et al.; Draper; Egebjerg, Larsen, and Garrett; Oakes et al.; Serdyuk et al.; and Wool et al.). Probing rRNA Function (4 chapters by Rauf et al.; Tappich et al.; Cunningham et al.; and Hill et al.). Initiation (5 chapters by Van Kuppenberg, Harr, McPeeters, and Gold; Gualerzi et al.; Merrick; and Munroe and Jacobson). Elongation (8 chapters by Litjar; Rhoenberger et al.; Zimmermann, Thomas, and Wower; Wintermeyer, Lill, and Robertson; Barra, Kuechler, and Steiner; Hardesty, Odorn, and Czworkowski; Ehrenberg et al.; and Möller). Termination (2 chapters by Tate, Brown, and Kastner and Murgola et al.). Ribosome Formation (7 chapters by Nilsson et al.; Pace and Burgin; Srivastava and Schlesinger; Musters et al.; Warner et al.; Gerbi et al.; and Ware and Khanna-Gupta). Antibiotic Mechanisms and Probes (3 chapters by Cundliffe; Cooperman, Weitzmann, and Fernandez; and Ballesta and Lazarro). Translational Fidelity (6 chapters by Kurland et al.; Dix, Thomas, and Thompson; Weiss et al.; Buckingham et al.; Bogosian et al.; and Culbertson et al.). Evolution of Ribosomes (8 chapters by Gouy and Li; Lake; Gray and Schnare; Wittmann-Liebold et al.; Matheson et al.; Finley, Bartel, and Varshavsky; Amils et al.; and Subramanian, Smooker, and Giese).

August 1990
Hardcover (ISBN 1-55581-020-9)
696 pages, large format, illustrated, color plates, index

To order, complete the form below and mail to ASM. Institutional purchase orders should include the offer number below. Credit card orders for ASM books may also be placed by phone (202-737-3600) or by fax (202-737-3668).

Please send me ______ copy(ies) of The Ribosome at
□ $87.00 (Member) / □ $104.00 (Nonmember) per copy (offer number MCB 11/91-020-9).

Member number (if applicable) ____________________________

Check payment method:
□ Check enclosed
□ MasterCard □ VISA □ American Express

Card Number ____________________________ Expires ____________
Signature ____________________________ Date ____________

Complete shipping information
Name ____________________________
Address ____________________________
City/State/Zip or Postal code ____________
Country ____________________________

Send to:
ASM
Publication Sales
American Society for Microbiology
1325 Massachusetts Avenue, N.W.
Washington, DC 20005-4171
Molecular Aspects of Picornavirus Infection and Detection

Edited by Bert L. Semler, University of California, Irvine, and Ellie Ehrenfeld, University of Utah Medical School, Salt Lake City

In the past two years, giant strides have been made in our knowledge of the molecular biology and structure of picornaviruses. The complete three-dimensional structures of rhinovirus and poliovirus have now been solved through X-ray crystallographic studies, yielding much important information about the antigenic regions of viral proteins and the relationship of viral structure to antibody accessibility, with important implications for vaccine design. These three-dimensional structures have provided new insight into the mechanism of action of several antiviral compounds.

This very timely book presents our current understanding of the biology of these viruses in the context of clinical implications. Virologists, molecular biologists, and clinical researchers will all find this book useful and interesting reading. Based on the 1988 ICN-UCI International Conference on Virology, Newport Beach, Calif.

CONTENTS

I. Molecular Biology of Viral Replication: Use of Mutagenesis Cartridges in Molecular Genetic Analyses of Poliovirus (Bradley et al.); Replication of Hepatitis A Virus (Ticehurst et al.); Comparison of Encephalomyocarditis Virus and Poliovirus Translation Initiation and Processing In Vitro (Jackson); Molecular Biology and Genetics of Poliovirus Protein Processing (Dewalt and Semler); Poliovirus RNA Polymerase Expressed in E. coli (Ehrenfeld and Richards); A Large Segment of Poliovirus 5’ Noncoding Region Allows Cap-Independent Translation of Downstream Sequences in Mammalian Cells (Trono et al.)

II. Virion Structure and Cell Surface Interactions: Structural Basis for Serotypic Differences and Thermostability in Poliovirus (Hogle et al.); Conformational Adaptations by Picornaviruses to Antiviral Agents and pH Changes (Rossmann); Neutralization of Picornaviruses (Mosser et al.); Molecular and Biochemical Aspects of Human Rhinovirus Attachment to Cellular Receptors (Colonna et al.); Towards a Molecular Vaccine for Foot-and-Mouth Disease (Brown); Antigenic Structure of Hepatitis A Virus (Lemon and Ping)

III. Genetic Determinants of Viral Disease and Applications to Diagnosis: Sequence Alignments of Picornaviral Capsid Proteins (Palmenberg); Human Enterovirus Infections (Rotbart); Modification of Six Amino Acids in the VP1 Capsid Protein of Poliovirus Type 1, Mahoney Strain (Girard et al.); Genetic Analysis of Neurovirus, Using a Mouse Model for Poliomyelitis (Racaniello et al.); Expression of the Attenuation Phenotype of Poliovirus Type 1 (Nomoto et al.); Attenuation and Reversion of the Sabin Type 3 Vaccine Strain (Minor et al.)

Hardcover (ISBN 1-55581-009-8)
Publication date: March 1989
Member: $49.00; Nonmember: $68.00
335 pages, illustrated, color plates, index
Ever had the tables turned on you? If the answer is yes, you need the new

his newly revised and updated edition will assist every author who submits papers to ASM. Prepared by ASM’s professional editorial staff specifically for the ASM journals and books, the manual incorporates all of the information you need to ensure stylistically and grammatically correct manuscripts.

The new edition includes two new chapters, “Proofreading” and “Books.” In addition, it features in-depth instructions for assembling and editing the new References section, which recently replaced the Literature Cited section in ASM journal articles.

Publication Sales
American Society for Microbiology

CONTENTS
1. Preparation of Manuscripts
2. Numbers and Measurements
3. Scientific Nomenclature
4. English
5. Sources for Materials
6. Abbreviations
7. References
8. Illustrations
9. Tables
10. Proofreading
11. Books
12. Words, Abbreviations, and Designations
Appendix A. Journal Specifications
Appendix B. Journal Production Cycle
Bibliography
Index


copy(ies) at the member price of $23.00 copy(ies) at the nonmember price of $28.00
Total amount of purchase: $ Canadian residents add 7% to cover the GST.

Check one: Payment enclosed MasterCard VISA American Express

Card Number Name
Expires Address
Signature City, State/Province
Member number Zip/Postal Code, Country

Send order to Publication Sales, American Society for Microbiology, 1325 Massachusetts Ave., NW, Washington, DC 20005-4171.