Business Information

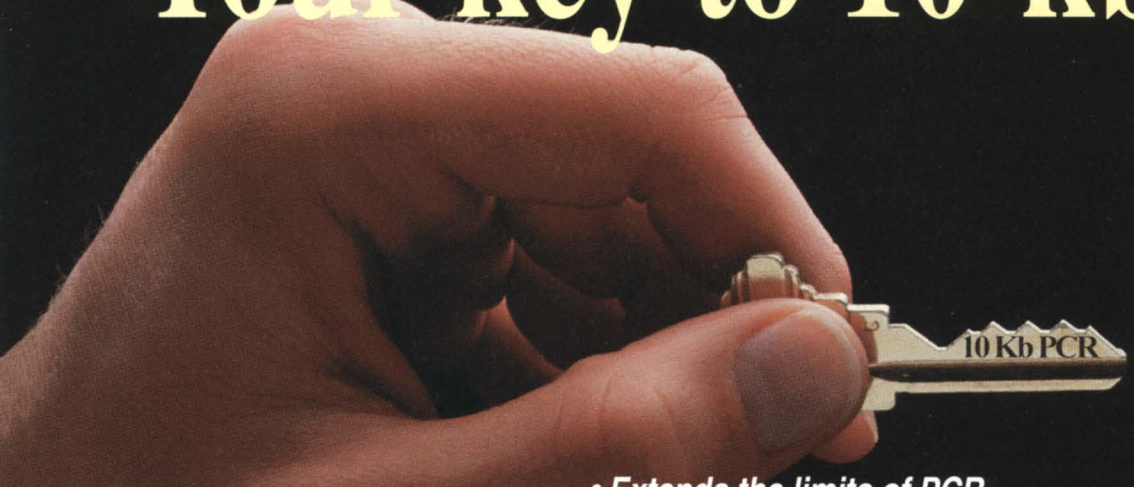
Editorial Office: Cold Spring Harbor Laboratory Press, 1 Bungtown Road, Cold Spring Harbor, New York 11724-2203. Phone: 516-367-8492; FAX 516-367-8532.

PCR Methods and Applications (ISSN 1054-9803) is published bimonthly for $276 (U.S. institutional; $292 R.O.W.), $89.00 (individual making personal payment; $105 R.O.W. surface, $32 additional for airmail) by Cold Spring Harbor Laboratory Press, 1 Bungtown Road, Cold Spring Harbor, New York 11724. Second class postage pending is paid at Cold Spring Harbor and additional mailing offices. POSTMASTER: Send address changes to Cold Spring Harbor Laboratory, 10 Skyline Drive, Plainview, New York 11803-9729.

Subscriptions: Barbara Terry, Subscription Manager. Personal: U.S. $89; R.O.W. $105 surface mail, $32 additional airlift delivery. Institutional: U.S. $276; R.O.W. $292. Orders may be sent to Cold Spring Harbor Laboratory Press, Fulfillment Department, 10 Skyline Drive, Plainview, New York 11803-9729. Telephone: Continental U.S. and Canada 1-800-843-4388; all other locations 516-349-1930. FAX 516-349-1946. Personal subscriptions must be prepaid by personal check, credit card, or money order. Claims for missing issues must be received within 4 months of issue date.

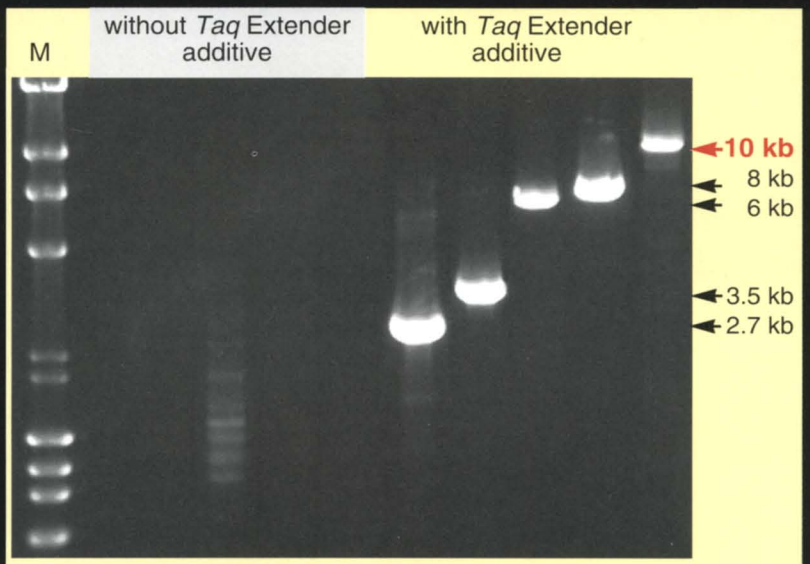
Advertising: Nancy Kuhle, Advertising Manager, Cold Spring Harbor Laboratory Press, 1 Bungtown Road, Cold Spring Harbor, New York, 11724-2203. Phone: 516-367-8351; FAX 516-367-8532.

Your key to 10-kb PCR†



- *Extends the limits of PCR*
- *Makes reactions more robust*
- *Amplifies tough templates up to 10 kb*
- *Boosts success rate, yield and reliability*
- *Enhances efficiency of* Taq *extensions*
- *Easy to use*

Stratagene's *Taq* Extender™ PCR Additive



2.7-kb band is from a lambda clone, 3.5-kb band is from archaebacterium genomic DNA, 6-kb band is from human genomic DNA, 8-kb band is from a plasmid, 10-kb band is from transgenic mouse genomic DNA.

Unlock your PCR potential!

Call Stratagene or your Stratagene distributor to order this breakthrough product.

Taq Extender PCR additive
Catalog # 600148

Internet Mail
tech_services@stratagene.com

USA
Corporate Headquarters
Telephone: (619) 535-5400
Toll free: (800) 424-5444
Telefax: (619) 535-0045

Germany
Stratagene GmbH
Telephone: (06221) 400634
Telefax: (06221) 400639

United Kingdom
Stratagene Ltd.
Telephone: (0223) 420955
Telefax: (0223) 420234

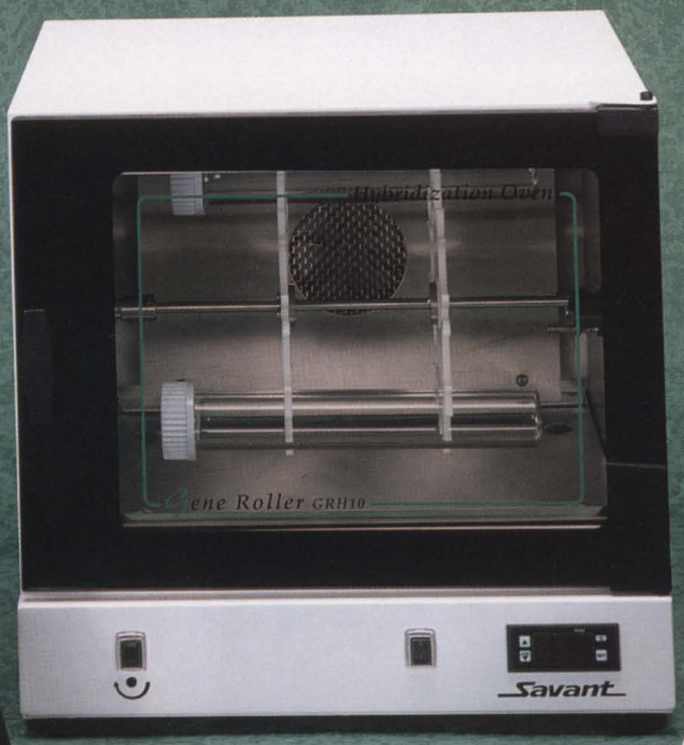
Switzerland
Stratagene GmbH
Telephone: (01) 3641106
Telefax: (01) 3657707

† The Polymerase Chain Reaction (PCR) process is covered by patents owned by Hoffmann-La Roche. Use of the PCR process requries a license.

Savant

The Next *Gene*ration in Molecular Biology Products!

Introducing....



Gene Roller™

- Hybridization Oven; 10 bottle capacity
- Digital temperature control
- Uniform temperature within and between bottles

Gene Transformer™

- "Personal" Electroporation System
- Built-in power supply and cuvette holder
- Consistently high transformation efficiencies

Gene Runner™

- High-capacity, "personal" Temperature Cycler
- Supports direct transfer of block controlled protocols
- Accurate, sample-driven temperature control

For special introductory pricing, call today:

1-800-634-8886

Savant Instruments, Inc.
100 Colin Drive, Holbrook, NY 11741-4306
Tel: 516-244-2929 Fax: 516-244-0606

Reader Service No. 471

PCR Primer:
A Laboratory Manual

Edited by Carl Dieffenbach, *National Institute of Allergy and Infectious Diseases,* Gabriela Dveksler, *Uniformed Services University of the Health Sciences*

From its first-published account in 1985, the polymerase chain reaction has become a standard research tool in a wide range of laboratories. Its impact has been felt in basic molecular biological research, clinical research, forensics, evolutionary studies, and the Human Genome Project. The PCR technique originally conceived by Nobel laureate Kary Mullis has proven to be exceptionally adaptable and has been transformed into a myriad array of methods, each with different applications.

PCR Primer: A Laboratory Manual introduces the complex world of PCR by beginning at an accessible level and then moving to more advanced levels of application. First, the practical requirements for performing PCR and other amplification techniques in the lab are introduced and then the basic aspects of the technique are explained by exploring important issues such as sample preparation, primer design, efficiency, detection of products, and quantitation. Protocols for a wide range of PCR and amplification techniques–each written by an expert investigator–are presented for cloning, sequencing, mutagenesis, footprinting, library construction and screening, exon trapping, differential display, and expression, and these include RT-PCR, RNA PCR, LCR, multiplex PCR, panhandle PCR, capture PCR, expression PCR, 3′ and 5′ RACE, immune PCR, in situ PCR, and ligation-mediated PCR. Each protocol is augmented by analysis and troubleshooting sections and complete references.

CONTENTS

Due second quarter 1995, 350 pp. (approx.), illus. appendix, index

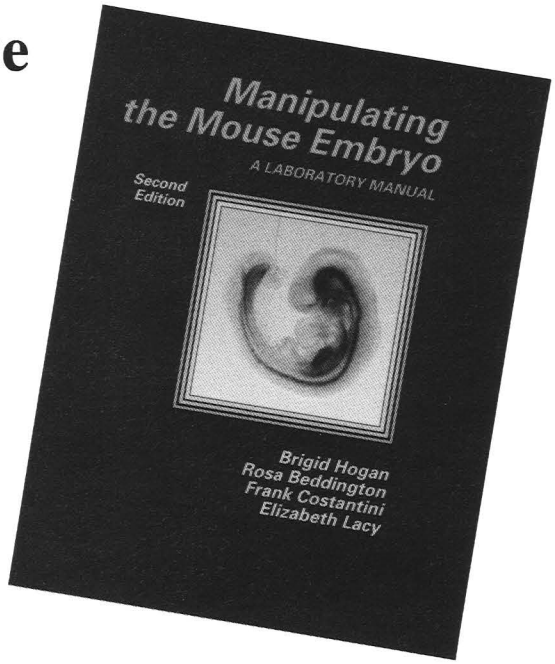
Cloth $160 **ISBN 0-87969-447-5**

Plastic comb binding $80 **ISBN 0-87969-448-3**

Manipulating the Mouse Embryo

A Laboratory Manual, Second Edition

By Brigid Hogan, *Vanderbilt University Medical School;* Rosa Beddington, *National Institute for Medical Research, London;* Frank Costantini, *Columbia University;* Elizabeth Lacy, *Memorial Sloan-Kettering Cancer Center*



The 1986 publication of *Manipulating the Mouse Embryo* catalyzed the interaction between molecular biology and mammalian embryology. For the first time, detailed instructions on how to begin applying recombinant DNA technology to important questions about mammalian embryonic development were made available to a broad audience. The gathering pace of such studies in recent years has brought improvements to existing methods and fueled the creation of new and powerful technologies. The second edition of this classic manual has been completely revised and expanded to incorporate these advances. It contains new sections on the production and analysis of transgenic mice, the manipulation of preimplantation embryos to generate chimeras, the culture and manipulation of embryonic stem cells, including gene "knockouts," and techniques for visualizing genes, gene products, and specific cell types. As before, included with the protocols is a summary of current understanding of mouse development at a molecular level. In its new edition, this manual of proven distinction is again an authoritative and comprehensive source of technical guidance for experienced investigators and an essential resource for newcomers to mammalian genetics and embryology.

CONTENTS

1994, 497 pp., illus., color plates, appendices, glossary index

Plastic comb binding $95 **ISBN 0-87969-384-3**
Cloth $190 **ISBN 0-87969-392-4**

Instructions for Authors

Submission of Papers

PCR Methods and Applications welcomes high-quality research papers that describe improvements in PCR methodology, new amplification methods, or the results of PCR application. The journal also publishes review and commentary articles, technical tips, and reader correspondence. All submissions to the journal will be peer-reviewed.

The journal accepts primary research papers and technical tips that present original research which has not previously been published. Submission to the journal implies that a paper is not currently being considered for another journal or book. It is also understood that investigators who submit research papers to the journal are prepared to make available to qualified academic researchers materials needed to duplicate their research results.

Review articles are commissioned. Authors wishing to submit review articles should first contact the Editor.

Contributors should submit their papers to:

Judy Cuddihy, Editor
PCR Methods and Applications
Cold Spring Harbor Laboratory
POB 100, 1 Bungtown Road
Cold Spring Harbor, New York 11724-2203
USA
Phone 516-367-8492
FAX 516-367-8532

One original and two copies of the manuscript should be submitted. Original photographs should be supplied with each copy.

Manuscript preparation

Papers accepted by the journal will occupy between 2 and 10 journal pages. A manuscript of 5 to 25 typed, double-spaced pages total (including methods, references, and figure legends) will translate to this length. Computer printouts should be of letter quality, and each page should be labeled with the first author's name and a page number. All figures should be labeled with the first author's name, the figure number, and an indication of the top. The size of figures will be adjusted to fit the journal format; therefore, please try to keep labels, symbols, and other call-out devices in proportion to the figure size and detail. Figures should be supplied as high-quality glossy prints. Authors wishing to publish four-color art must pay part of the costs; price estimates will be provided on acceptance of a paper.

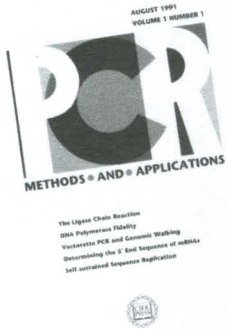
The following order of manuscript sections is preferred: Title page, abstract, introduction, methods, results, discussion, acknowledgments, references, tables, figure legends. The methods presented should be detailed enough to allow any qualified researcher to duplicate the results. References are cited by number in the text and the reference list should be numbered in the order the references are cited in the text. Bibliographic information should be supplied in the following order. For journal articles: Authors, year, article title, journal title, volume inclusive page numbers. For books: Authors, year, chapter title, book title, editors' names, volume, inclusive page numbers, publisher, city of publication.

Accepted manuscripts

Accepted manuscripts should be supplied on 3 1/2- or 5 1/4-inch discs to expedite typesetting. Please supply the manuscript as an ASCII file if possible. If a word-processing file is being sent, please do not use any underscoring, italic, or boldface; spell out special characters (Greek, math); use two carriage returns at the end of each paragraph, subheads, and list items. Indicate on the disc: computer brand name, type of file (text or word-processing), name of software, and disc format.

Proofs are considered the final form of the paper and correction can be made only in the case of factual errors. If additional information must be added at this stage, it should be in the form of "Note added in proof," subject to the approval of the editors.

Reprints may be ordered; a form will be included with the proofs.



ORDER FORM

For Fastest Service–
Call:
1-800-843-4388
–Continental U.S.
and Canada
516-349-1930
–All other locations
FAX:
516-349-1946

COLD SPRING HARBOR LABORATORY PRESS
Plainview, NY 11803-2500

PCR METHODS•AND•APPLICATIONS

VOLUME 4, 1994/95,BIMONTHLY
(Six issues beginning August, 1994)

- ❑ Individual price (U.S.) - $89
- ❑ Individual price (R.O.W. Surface Delivery) - $105
- ❑ Individual price (R.O.W. Airlift Delivery) - $137
- ❑ Student price (U.S.) - $65*
- ❑ Student price (R.O.W. Surface Delivery) - $85*
- ❑ Institutional price (U.S.) - $276
- ❑ Institutional price (R.O.W. Surface Delivery) - $292
- ❑ Institutional price (R.O.W. Airlift Delivery) - $324
- ❑ Please send me a sample issue.

*Those who qualify must provide student I.D.

Personal orders must be prepaid by personal check, credit card or money order.
❑ Check or money order enclosed (U.S. Bank Checks Only)

Charge to: ❑MASTERCARD ❑VISA ❑AMERICAN EXPRESS ❑ DISCOVER

ACCOUNT NO._____EXP. _____

SIGNATURE_____TEL. _____

NAME _____

ADDRESS_____

_____

CITY/STATE/ZIP _____

COUNTRY_____

TEL: Continental U.S. and Canada: 1-800-843-4388 **ISSN 1054-9803**
All other locations: 516-349-1930 FAX: 516-349-1946

All prices subject to change without notice.

Orders for Japan: Maruzen Company Ltd., 3 - 10, Nihonbashi 2-Chome, Chuo-ku, Tokyo, 103 Japan. **Orders for Taiwan:** Unimed Healthcare, Inc., 3F, No. 74, Songte Road, Taiwan, R.O.C.

Please check title(s) that most closely describe(s) your position:

____(1) Professor
____(2) Graduate student
____(3) Postdoctoral scientist
____(4) Lab director
____(5) Lab technician
____(6) Medical student
____(7) Undergraduate student
____(8) Librarian
____(9) Publisher

Please check your employment category:

____(1) University/college
____(2) Research institute/foundation
____(3) Hospital
____(4) Medical school
____(5) Industry
____(6) Government
____(7) Library/information center

Please check your primary field of interest:

____(1) Biochemistry
____(2) Cell biology
____(3) Developmental biology
____(4) Epidemiology
____(5) Genetics
____(6) Immunology
____(7) Microbiology
____(8) Molecular biology
____(9) Neurobiology
____(10) Plant biology
____(11) Pharmacology
____(12) Virology
____(13) Oncology
____(14) Other_____

PCR METHODS•AND•APPLICATIONS

VOLUME 4, 1994/95,BIMONTHLY
(Six issues beginning August, 1994)

- ❑ Individual price (U.S.) - $89
- ❑ Individual price (R.O.W. Surface Delivery) - $105
- ❑ Individual price (R.O.W. Airlift Delivery) - $137
- ❑ Student price (U.S.) - $65*
- ❑ Student price (R.O.W. Surface Delivery) - $85*
- ❑ Institutional price (U.S.) - $276
- ❑ Institutional price (R.O.W. Surface Delivery) - $292
- ❑ Institutional price (R.O.W. Airlift Delivery) - $324
- ❑ Please send me a sample issue.

*Those who qualify must provide student I.D.

Personal orders must be prepaid by personal check, credit card or money order.
❑ Check or money order enclosed (U.S. Bank Checks Only)

Charge to: ❑MASTERCARD ❑VISA ❑AMERICAN EXPRESS ❑ DISCOVER

ACCOUNT NO._____EXP. _____

SIGNATURE_____TEL. _____

NAME _____

ADDRESS_____

_____

CITY/STATE/ZIP _____

COUNTRY_____

TEL: Continental U.S. and Canada: 1-800-843-4388 **ISSN 1054-9803**
All other locations: 516-349-1930 FAX: 516-349-1946

All prices subject to change without notice.

Orders for Japan: Maruzen Company Ltd., 3 - 10, Nihonbashi 2-Chome, Chuo-ku, Tokyo, 103 Japan. **Orders for Taiwan:** Unimed Healthcare, Inc., 3F, No. 74, Songte Road, Taiwan, R.O.C.

Please check title(s) that most closely describe(s) your position:

____(1) Professor
____(2) Graduate student
____(3) Postdoctoral scientist
____(4) Lab director
____(5) Lab technician
____(6) Medical student
____(7) Undergraduate student
____(8) Librarian
____(9) Publisher

Please check your employment category:

____(1) University/college
____(2) Research institute/foundation
____(3) Hospital
____(4) Medical school
____(5) Industry
____(6) Government
____(7) Library/information center

Please check your primary field of interest:

____(1) Biochemistry
____(2) Cell biology
____(3) Developmental biology
____(4) Epidemiology
____(5) Genetics
____(6) Immunology
____(7) Microbiology
____(8) Molecular biology
____(9) Neurobiology
____(10) Plant biology
____(11) Pharmacology
____(12) Virology
____(13) Oncology
____(14) Other_____

PCR METHODS•AND•APPLICATIONS

VOLUME 4, 1994/95,BIMONTHLY
(Six issues beginning August, 1994)

Please pass this order form to your librarian so that your colleagues can see *PCR METHODS AND APPLICATIONS* in your library.

- ❑ Institutional price (U.S.) - $276
- ❑ Institutional price (R.O.W. Surface Delivery) - $292
- ❑ Institutional price (R.O.W. Airlift Delivery) - $324
- ❑ Please send me a sample issue.

PURCHASE ORDER NO. _____

NAME _____

ORGANIZATION _____

ADDRESS_____

_____

CITY/STATE/ZIP _____

COUNTRY_____

TEL: Continental U.S. and Canada: 1-800-843-4388 **ISSN 1054-9803**
All other locations: 516-349-1930 FAX: 516-349-1946

All prices subject to change without notice.

Orders for Japan: Maruzen Company Ltd., 3 - 10, Nihonbashi 2-Chome, Chuo-ku, Tokyo, 103 Japan. **Orders for Taiwan:** Unimed Healthcare, Inc., 3F, No. 74, Songte Road, Taiwan, R.O.C.

Please check title(s) that most closely describe(s) your position:

____(1) Professor
____(2) Graduate student
____(3) Postdoctoral scientist
____(4) Lab director
____(5) Lab technician
____(6) Medical student
____(7) Undergraduate student
____(8) Librarian
____(9) Publisher

Please check your employment category:

____(1) University/college
____(2) Research institute/foundation
____(3) Hospital
____(4) Medical school
____(5) Industry
____(6) Government
____(7) Library/information center

Please check your primary field of interest:

____(1) Biochemistry
____(2) Cell biology
____(3) Developmental biology
____(4) Epidemiology
____(5) Genetics
____(6) Immunology
____(7) Microbiology
____(8) Molecular biology
____(9) Neurobiology
____(10) Plant biology
____(11) Pharmacology
____(12) Virology
____(13) Oncology
____(14) Other_____

PCR METHODS AND APPLICATIONS

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 150 HICKSVILLE, NY

POSTAGE WILL BE PAID BY ADDRESSEE

COLD SPRING HARBOR LABORATORY PRESS
10 SKYLINE DRIVE
PLAINVIEW, NY 11803-2500

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 150 HICKSVILLE, NY

POSTAGE WILL BE PAID BY ADDRESSEE

COLD SPRING HARBOR LABORATORY PRESS
10 SKYLINE DRIVE
PLAINVIEW, NY 11803-2500

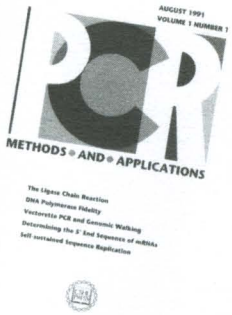
NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 150 HICKSVILLE, NY

POSTAGE WILL BE PAID BY ADDRESSEE

COLD SPRING HARBOR LABORATORY PRESS
10 SKYLINE DRIVE
PLAINVIEW, NY 11803-2500

RESEARCH METHODS REVIEWS COMMENT



For fastest service, call:

1-800-843-4388
Continental U.S. and Canada

516-349-1930
All other locations

FAX: 516-349-1946

CSHL PRESS

COLD SPRING HARBOR LABORATORY PRESS

COLD SPRING HARBOR

LABORATORY PRESS

READER SERVICE CARD

Please print clearly:

NAME

POSITION TEL.

ORGANIZATION

ADDRESS

CITY STATE ZIP CODE

POSTAL CODE COUNTRY

Are you a subscriber?
YES ☐ NO ☐
Is this a pass-along copy?
YES ☐ NO ☐
For further information WRITE assigned key numbers in boxes below

Offer valid for 6 mos. from issue date.

For further information about advertisements and new products, write the number(s) corresponding to the number at the base of the item(s) of interest. Enter the issue date, your name and address, and return this card.

Issue date: Month 1994

PCR METHODS AND APPLICATIONS

Please check title(s) that most closely describe(s) your position:
____(1) Professor
____(2) Graduate student
____(3) Postdoctoral scientist
____(4) Lab director
____(5) Lab technician
____(6) Medical student
____(7) Undergraduate student
____(8) Librarian
____(9) Publisher

Please check your employment category:
____(1) University/college
____(2) Research institute/foundation
____(3) Hospital
____(4) Medical school
____(5) Industry
____(6) Government
____(7) Library/information center

Please check your primary field of interest:
____(1) Biochemistry
____(2) Cell biology
____(3) Developmental biology
____(4) Epidemiology
____(5) Genetics
____(6) Immunology
____(7) Microbiology
____(8) Molecular biology
____(9) Neurobiology
____(10) Plant biology
____(11) Pharmacology
____(12) Virology
____(13) Oncology
____(14) Other_____

READER SERVICE CARD

Please print clearly:

NAME

POSITION TEL.

ORGANIZATION

ADDRESS

CITY STATE ZIP CODE

POSTAL CODE COUNTRY

Are you a subscriber?
YES ☐ NO ☐
Is this a pass-along copy?
YES ☐ NO ☐
For further information WRITE assigned key numbers in boxes below

Offer valid for 6 mos. from issue date.

For further information about advertisements and new products, write the number(s) corresponding to the number at the base of the item(s) of interest. Enter the issue date, your name and address, and return this card.

Issue date: Month 1994

PCR METHODS AND APPLICATIONS

Please check title(s) that most closely describe(s) your position:
____(1) Professor
____(2) Graduate student
____(3) Postdoctoral scientist
____(4) Lab director
____(5) Lab technician
____(6) Medical student
____(7) Undergraduate student
____(8) Librarian
____(9) Publisher

Please check your employment category:
____(1) University/college
____(2) Research institute/foundation
____(3) Hospital
____(4) Medical school
____(5) Industry
____(6) Government
____(7) Library/information center

Please check your primary field of interest:
____(1) Biochemistry
____(2) Cell biology
____(3) Developmental biology
____(4) Epidemiology
____(5) Genetics
____(6) Immunology
____(7) Microbiology
____(8) Molecular biology
____(9) Neurobiology
____(10) Plant biology
____(11) Pharmacology
____(12) Virology
____(13) Oncology
____(14) Other_____

READER SERVICE CARD

Please print clearly:

NAME

POSITION TEL.

ORGANIZATION

ADDRESS

CITY STATE ZIP CODE

POSTAL CODE COUNTRY

Are you a subscriber?
YES ☐ NO ☐
Is this a pass-along copy?
YES ☐ NO ☐
For further information WRITE assigned key numbers in boxes below

Offer valid for 6 mos. from issue date.

For further information about advertisements and new products, write the number(s) corresponding to the number at the base of the item(s) of interest. Enter the issue date, your name and address, and return this card.

Issue date: Month 1994

PCR METHODS AND APPLICATIONS

Please check title(s) that most closely describe(s) your position:
____(1) Professor
____(2) Graduate student
____(3) Postdoctoral scientist
____(4) Lab director
____(5) Lab technician
____(6) Medical student
____(7) Undergraduate student
____(8) Librarian
____(9) Publisher

Please check your employment category:
____(1) University/college
____(2) Research institute/foundation
____(3) Hospital
____(4) Medical school
____(5) Industry
____(6) Government
____(7) Library/information center

Please check your primary field of interest:
____(1) Biochemistry
____(2) Cell biology
____(3) Developmental biology
____(4) Epidemiology
____(5) Genetics
____(6) Immunology
____(7) Microbiology
____(8) Molecular biology
____(9) Neurobiology
____(10) Plant biology
____(11) Pharmacology
____(12) Virology
____(13) Oncology
____(14) Other_____

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT #5 COLD SPRING HARBOR, N.Y.

POSTAGE WILL BE PAID BY ADDRESSEE

Advertising Manager
Library Building
COLD SPRING HARBOR LABORATORY PRESS
PO Box 100
Cold Spring Harbor, NY 11724-2300

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT #5 COLD SPRING HARBOR, N.Y.

POSTAGE WILL BE PAID BY ADDRESSEE

Advertising Manager
Library Building
COLD SPRING HARBOR LABORATORY PRESS
PO Box 100
Cold Spring Harbor, NY 11724-2300

COLD SPRING HARBOR

CSHL PRESS

LABORATORY PRESS

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT #5 COLD SPRING HARBOR, N.Y.

POSTAGE WILL BE PAID BY ADDRESSEE

Advertising Manager
Library Building
COLD SPRING HARBOR LABORATORY PRESS
PO Box 100
Cold Spring Harbor, NY 11724-2300