GENOME RESEARCH...call for papers!

In August 1995, Cold Spring Harbor Laboratory Press will begin publication of a new, monthly, international, peer-reviewed journal, ***GENOME RESEARCH***. The journal will focus on genome studies in all species, including genetic and physical mapping, DNA sequencing, gene discovery, informatics, statistical and mathematical methods and genome structure and function as well as technological innovations and applications. New data in these areas will be published as research papers, review articles, short reports, and summaries of physical mapping and large-scale sequencing projects.

GENOME RESEARCH will incorporate ***PCR METHODS & APPLICATIONS,*** which for the past 4 years has published practical papers describing amplification techniques and their use.

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* Patents pending

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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
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To our readers . . .

When the next issue of *PCR Methods and Applications* appears, it will have a new name and a new look. The journal will be called *Genome Research* and it will incorporate the current title *PCR Methods and Applications,* which will continue to publish the best of PCR- and amplification-oriented techniques papers. This is not a decision that was taken lightly. Of its kind, *PCR Methods and Applications* has been a most successful publication. However, the Editors and Cold Spring Harbor Laboratory Press have sensed in the last year or so that the many variations of PCR have become quite established in laboratory use and that the interesting work now is predominantly in the application of these techniques to biological questions. PCR now has a much larger context, most notably in the area of genome studies. Conversations with many investigators working in genome research assured us that the PCR journal, like the technique, should evolve into the larger context, and so become an even more valuable component of the biological literature.

Thus, in August 1995, *Genome Research* will begin as a monthly, international, peer-reviewed journal focusing on genome studies in all species, including genetic and physical mapping, DNA sequencing, gene discovery, informatics, statistical and mathematical methods, and genome structure and function, as well as technological innovations and applications. New data in these areas will be published as research papers and review articles. There will also be an electronic dimension to *Genome Research* with large data sets, visual data, and hyperlinked published papers appearing on the Cold Spring Harbor Laboratory World Wide Web site CLIO at http://www.cshl.org

To all of the Editors and Editorial Board members of *PCR Methods and Applications* we extend our sincere thanks for their enthusiasm and advice in helping us produce *PCR Methods and Applications.* We are also extremely grateful to the Perkin-Elmer Corporation for their 5-year sponsorship of *PCR Methods and Applications.* We hope that you, our readers, will continue to support the journal with your papers and subscriptions. You will find much of interest in *Genome Research.*

J.C.

Product News. . . .

Product news features newly available equipment, laboratory equipment, and software that may be of interest to the readers of this journal. Endorsement by *PCR Methods and Applications or Cold Spring Harbor Laboratory is not implied. Readers may obtain further information regarding these products by entering the appropriate numbers on the postage-free Reader Service Card included in this issue.*

Hot Start PCR

HotWax MG^{2+} Beads from Invitrogen are designed to make hot Start PCR easier, faster, and more efficient. The specially prepared wax beads contain $MgCl_2$, which is released into the reaction when the wax bead melts during the first denaturation step. This simple system eliminates excessive manipulations required for a manual hot start. In addition, the melted bead forms an evaporation barrier, making an oil overlay is unnecessary. The beads are available in Low (1.5 mM), Medium (2.5 mM), and High (3.5 mM) $MgCl_2$ concentrations and are provided with one of four Mg^{2+}-free 5× PCR buffers (pH 8.5, 9.0, 9.5, or 10.0).
Contact: Invitrogen, 3985 B Sorrento Valley Boulevard, San Diego, California 92121; (800)955-6288; (619) 597-6200; Fax (619)597-6201. Reader Service No. 471.

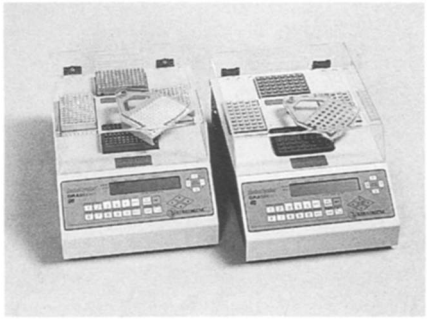
Streptavidin-coated thin-wall polycarbonate plate

Xenopore Corporation has introduced a new streptavidin coated thin-wall polycarbonate plate for use in thermocyclers. These new plates make possible the simultaneous amplification and capture of the amplified product. The captured product can then be quantitated in a simple hybridization step. The immobilized strand can also be used as a template for sequencing. These plates employ a special grade of streptavidin that is stable at the high temperatures used in thermocyclers. The streptavidin is covalently attached to the surface by use of the Xenopore proprietary surface chemistry, which provides exceptional uniformity, extended shelf life and maximum stability during high stringency washes. These new plates are available to fit most thermocyclers.
Contact: Xenopore Corporation, 374 Midland Avenue, Saddle Brook, New Jersey, 07662; (201)796-0200; Fax (201)796-8262. Reader Service No. 472.

RapidPrep genomic DNA isolation kits for blood

Pharmacia Biotech has introduced two new RapidPrep Genomic DNA Isolation Kits for Blood. These kits combine a procedure for isolation of nuclear DNA with an anion-exchange resin and spin chromatography to provide fast and high performance genomic DNA isolations kits. The Micro kit is designed specifically for PCR and contains reagents sufficient for 50 purifications from 10–500 μl of whole blood or $1–4\times10^6$ lymphocytes. The Macro kit contains sufficient reagents for 10 purifications from 1–5 ml of whole blood or 5×10^6 to 2×10^7 lymphocytes, yielding genomic DNA of sufficient yield and purity for many subsequent applications, such as PCR, RFLP analysis, restriction analysis and other molecular manipulations.
Contact: Pharmacia Biotech, 800 Centennial Avenue, P.O. Box 1327, Piscataway, New Jersey 08855-1327; (800)526-3593. Reader Service No. 473.

New line of molecular biology products



Savant Instruments, Inc. has introduced a new product line for molecular biology applications—the Gene Runner Temperature Cyclers (GR48/GR96), Gene Roller Hybridization Oven (GRH10), and Gene Transformer Electroporator (GTF100). Gene Runner high-capacity personal cyclers feature simple programming, excellent uniformity, and a choice of three temperature control modes, including direct sample control for highest accuracy and maximum speed. Optional heated lid is available. Gene Roller offers high capacity (10 bottles), uniform temperature between hybridization bottles (±0.25°C), and incorporates safety features that shield 99% of β emissions. Gene Transformer, a light-weight, portable electroporator with built-in power supply and safety cuvette holder, has optimized settings for consistently high transformation efficiencies in bacterial and mammalian cells.
Contact: Savant Instruments, Inc. 100 Colin Drive, Holbrook, New York 11741-4306; (800)634-8886; (516)244-2929; Fax (516)244-0606. Reader Service No. 474.

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New plate for immuno-PCR

Xenopore Corporation has introduced a new covalent binding thin-wall polycarbonate plate for use in thermocyclers. Unlike standard polycarbonate plates, which have very low binding affinity for antibodies, these new plates will covalently attach antibodies to the surface in a simple incubation step. A standard sandwich immunoassay can be carried out in the wells, and then the detection step, which requires a DNA amplification, can be carried out in the same well. These polycarbonate plates are thermally stable up to 135°C and the thin-wall design ensures rapid heat transfer.
Contact: Xenopore Corporation; 374 Midland Avenue, Saddle Brook, New Jersey, 07663; (201)796-0200; Fax (201)796-8262. Reader Service No. 475.

Reduced cycling time with the RoboCycler Gradient 96 temperature cycler

Stratagene's Robocycler Gradient 96 Temperature cycler incorporates all the features of the original RoboCycler Gradient 0 system in a new higher-throughput, 96-well format. All RoboCycler systems use a state-of-the-art robotic arm to move samples from one of four custom-programmed, preset-temperature blocks to another, eliminating the need to ramp block temperature. The result is up to a 30% reduction in cycling time compared to conventional cyclers. The RoboCycler Gradient 96 temperature cycler provides gradient-temperature capability in the second block, which can generate a linear temperature gradient of up to 22°C across all 12 of its rows. This linear gradient allows testing of multiple primer-annealing temperatures in one experiment. After the optimal temperature is determined, the gradient block can also be run in the single-temperature mode. Even the outer wells of the 96-well blocks show a well-to-well temperature uniformity of ±0.1°C, so throughput can be maximized by use of all 96 wells of the RoboCycler 96 system. This temperature uniformity guarantees reproducible results. The RoboCycler 96 system accommodates 96-well plates, 200-µl tubes or 8-tube strips and is available both with and without the gradient feature.
Contact: Stratagene, 11011 North Torrey Pines Road, La Jolla, California, 92037. Reader Service No. 476.

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Celebrating 10 Years of Amplification

A Decade of PCR

Cold Spring Harbor Laboratory and The Perkin-Elmer Corporation celebrate 10 years of amplification with a videotape library in which Nobel prize winners Kary Mullis and James Watson and 19 other distinguished scientists review the applications and evolution of the amplification technique hailed as one of the century's most important scientific tools.

In 1995, the polymerase chain reaction will be 10 years old. The technique that began as a late-night inspiration by an unrenowned scientist is now the bedrock of DNA research, gene discovery, diagnostics development, forensic investigation and environmental science. It has built an industry, provoked a court case, and spawned a dozen books, countless papers and a journal. Along the way, it earned its inventor, Kary Mullis, a Nobel prize.

To mark this anniversary, a conference sponsored by The Perkin-Elmer Corporation was held at Cold Spring Harbor Laboratory in September 1994. Beginning with perspectives from James Watson, famed for the discovery of the structure of DNA, and PCR-inventor Kary Mullis, outstanding scientists from a variety of fields reviewed the impact of the technique on their specialties, discussing the present and future applications of PCR technology.

A day and a half of wide-ranging, highly illustrated talks have been captured in this unique videotape library. The collection will appeal to working scientists from the graduate student level upwards who apply PCR to problems in human, animal and plant genetics, cell biology, diagnostics, forensic science and molecular evolution.

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