

Break Through...

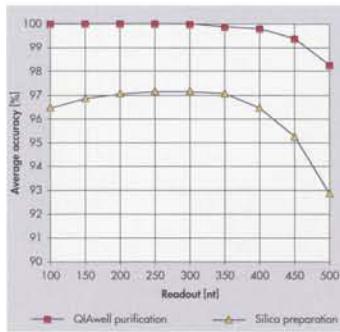
New advances in sequencing technology allow longer reads and higher through-put, but poor quality template can hold you back. QIAGEN Anion-Exchange Resin gives you the template quality you want, in a format to suit your needs.

Unambiguous Results

QIAGEN anion-exchange technology provides the high quality template DNA essential for optimal automated sequencing — free of contaminants that can reduce accuracy, reproducibility (figure) and read length even at low levels.

Proven Performance

QIAGEN Plasmid Mini Kits offer consistently high yields of ultrapure DNA from convenient gravity flow columns. Each column is packed with QIAGEN Anion-Exchange Resin, the most widely used plasmid purification resin in the world.



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Enforcement Cloning System pKF3

(Code No. 6086 for 10 clonings)

Comprised of pKF3 DNA and *E. coli* TH2 Competent Cells.

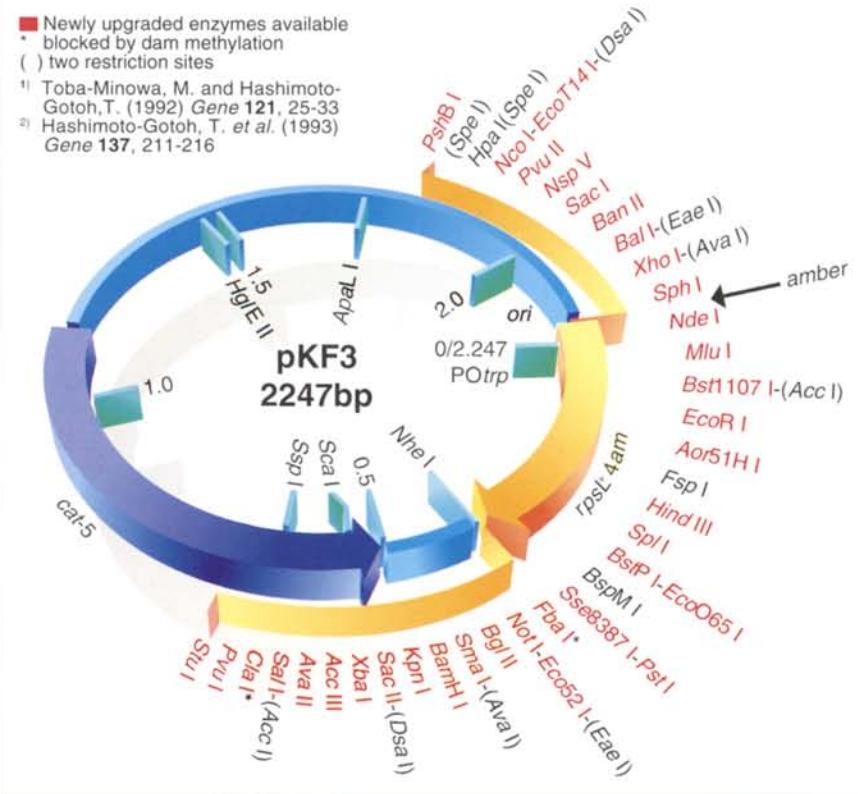
This system has no cumbersome screening steps and is potent in a variety of applications such as library construction from shotgun cloning, subcloning of PCR products and colony hybridization.

pKF3 DNA:

A Cm^RSm^S-enforcement plasmid vector contains 44 multi restriction sites within the PO_{trp}-driven *rpsL*⁺_{am} gene.

E. coli TH2 Competent Cells:

Highly competent cells are prepared from the TH2 *trpR624* strain with *rpsL*⁺, *supE*⁺ and *trpR*⁺, a variant of HB101, for the exclusive use with the pKF3 vector.



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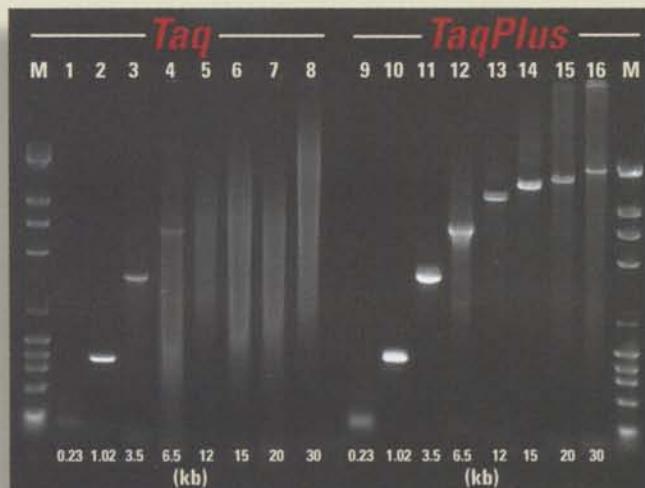
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REFERENCES:
1. Nelson, K.B., Scott, R., Bauer, J.C., and Kroll, K. (1994) *Stratagene* 7: 64-65.
2. Nelson, K.B., Schmitt, W., Bauer, J.C., and Mather, E. (1994) *Stratagene* 7: 27.

FOOTNOTES:

†Purchase of this enzyme is accompanied by a license to use it in the polymerase chain reaction (PCR) process in conjunction with an authentic thermal cycler. This product is sold under licensing agreement with Roche Molecular Systems, Inc., a Hoffman-La Roche Ltd. and Syntex Corporation Corporation.

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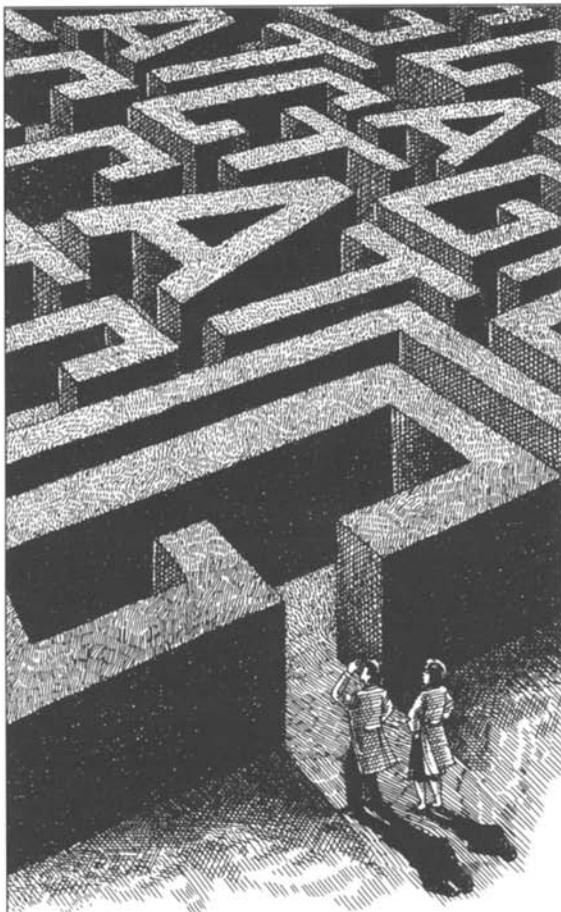
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Hadi Abderrahim, Bruce Birren,
Harold Riehman

Protein Purification and Characterization

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Richard Burgess, Al Courey,
Sue-Hwa Lin, Sheenah Misra

Early Development of *Xenopus Laevis*

April 12 - 21

Robert Grainger, Hazel Sive

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Richard Behringer, Virginia Papaioannou

Genetic-Epidemiologic Studies of Complex Diseases

June 11 - 18

Neil Risch, Elizabeth Squires-Wheeler

Neurobiology of Human Neurological Disease: Mechanisms of Neurodegeneration

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Computational Neuroscience: Vision

June 28 - July 11

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Eero Simoncelli

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Xing-Wang Deng, Robert Last, Daphne Preuss

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July 1 - 21

Instructors to be announced

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July 14 - 27

Ronald McKay, Erin Schuman

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Imaging Structure & Function in the Nervous System

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Rick Morimoto
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Michael Mathews, Marvin Wickens
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Molecular Approaches to the Control of Infectious Diseases

September 9 - 13

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John Mekalanos, Erling Norrby
Abstract Deadline, June 26, 1996

Molecular Biology of Hepatitis B Viruses

September 18 - 22

Robert Lanford, Michael Nassal
Abstract Deadline, July 3, 1996

Gene Therapy

September 25 - 29

Theodore Friedmann,
Richard Mulligan, Gary Nabel,
David Weatherall
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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, 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, *in situ* PCR, and ligation-mediated PCR. Each protocol is augmented by analysis and troubleshooting sections and complete references.

CONTENTS

Introduction to PCR

Setting Up a PCR Laboratory (C.W. Dieffenbach et al.); A Standard PCR Protocol: Rapid Isolation of DNA and PCR Assay for β -Globin (M.T. Vahey et al.); Enzymatic Control of Carryover Contamination in PCR (J.L. Hartley, A. Rashchian); Ultraviolet Irradiation of Surfaces to Reduce PCR Contamination (R.W. Cone, M.R. Fairfax); Specificity, Efficiency, and Fidelity of the PCR (R.S. Cha, W.G. Thilly); Optimization and Troubleshooting in PCR (K.H. Roux); Long-Distance PCR (O.S. Foord, E.A. Rose)

Sample Preparation

Rapid Preparation of DNA for PCR Amplification with Gene ReleaserTM (E.P. Dawson et al.); PCR Amplification from Paraffin-

embedded Tissues: Sample Preparation and the Effects of Fixation (C.E. Greer et al.); RNA Purification (J.J. Adamovicz, W.C. Gause)

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General Concepts for PCR Primer Design (C.W. Dieffenbach et al.); Design and Use of Mismatched and Degenerate Primers (S. Kwok et al.); Multiplex PCR (M.C. Edwards, R.A. Gibbs)

Detection of PCR Products: Quantitation and Analysis

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PCR Starting from RNA

Use of the PCR to Quantitate Relative Differences in Gene Expression (W.C. Gause, J.J. Adamovicz); Quantitative Liquid Hybridization PCR Method Employing Storage Phosphor Technology (M.T. Vahey, M.T. Wong); Use of the SNuPE Assay to Quantitate Allele-specific Sequences Differing by a Single Nucleotide (J. Singer-Sam); Trapping Internal and 3'-Terminal Exons (P.E. Nisson et al.); Expression-PCR (D.E. Lanar, K.C. Kain)

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Alternative Amplification Technologies

Ligase Chain Reaction (M. Weidmann et al.); Optimization and Characterization of 3SR-based Assays (T.R. Gingera et al.); One-tube Quantitative HIV-1 RNA NASBA (B. van Gemen et al.)

Appendices

Computer Software for Selecting Primers; Reagents and Equipment

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