



BLOW UP YOUR GENOMICS WORKFLOW.

Automate nucleic acid QC and get on with your life sciences.

If sample QC takes you more than two minutes, it's too manual. Fragment Analyzer™ takes the job off your hands—streamlining lab operations and wiping out errors. Just pipette once and it delivers truly reliable results via automated capillary electrophoresis.

No chips. No tapes. No compromises.

- Setup in seconds
- Get resolution down to 2 base pairs
- Detection starts at 5 pg/μL

DITCH YOUR TIRED OLD WORKFLOW AT FRAGMENTANALYZER.COM.



Join Keystone Symposia for a two-day conference on: **Big Data in Biology**

March 24–25, 2014

Fairmont San Francisco | San Francisco, California | USA

Scientific Organizers: Lincoln D. Stein, Doreen Ware and Michael Schatz

Biology has arrived at an interesting juncture. The last decade has seen an unprecedented explosion in the amount of information generated by the biological research community, and a concomitant rise in the challenges of sharing, archiving, integrating and analyzing it. Consisting of plenary sessions, a panel discussion and a poster session, this conference will:

- Confront the computational, quantitative and logistical challenges resulting from the rapid expansion of high-throughput technologies and high-resolution DNA sequencers, microscopes, microarrays, mass spectrometry instruments and other biological sensors;
- Assess the performance of various platforms for handling the resulting data sets including iPlant Consortium, the Bionimbus effort, cgHub and the Amazon Compute Cloud;
- Make possible new collaborations and problem-solving by bringing together computer scientists, physicists, mathematicians and biologists with expertise in different computational technologies, biotechnologies and biological systems.

Session Topics:

- Keynote Address: Cancer Hub
- Databases and Clouds
- Panel: Big Data Challenges and Solutions: Control Access to Individual Genomes
- Personal Genomes
- Imaging/Pharmacogenomics

CONFIRMED SPEAKERS

(as of December 1, 2013):

Laura Clarke, European Bioinformatics Institute

Mark Gerstein, Yale University

David Haussler*, University of California, Santa Cruz

Jill P. Mesirov, Broad Institute

John Overington, European Molecular Biology Laboratory

Ajay Royyuru, IBM T.J. Watson Research Center

Michael Schatz, Cold Spring Harbor Laboratory

Dan Stanzione, University of Texas at Austin

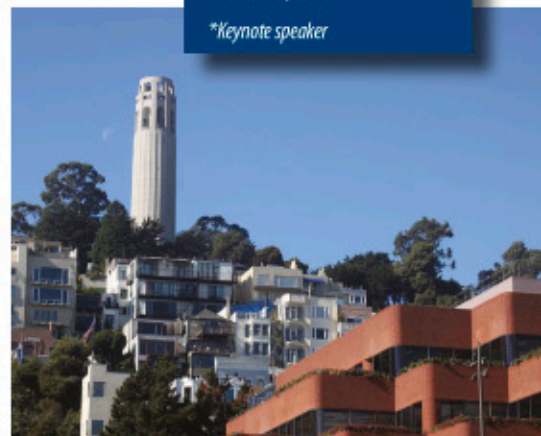
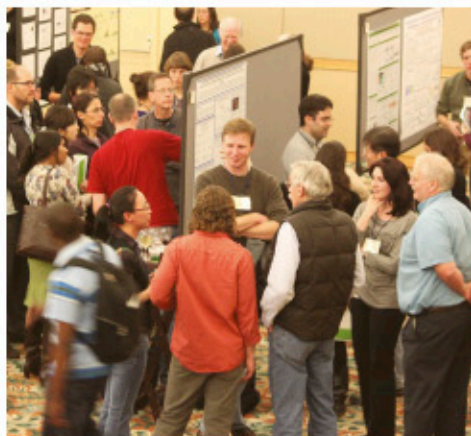
Lincoln D. Stein, Ontario Institute for Cancer Research

Susan Sunkin, Allen Institute for Brain Science

Jason Swedlow, University of Dundee

Matt Wood, Amazon Web Services, Inc.

**Keynote speaker*



Discounted Registration Deadline: **January 21, 2014**
(Abstracts will be accepted on our website through this date.)

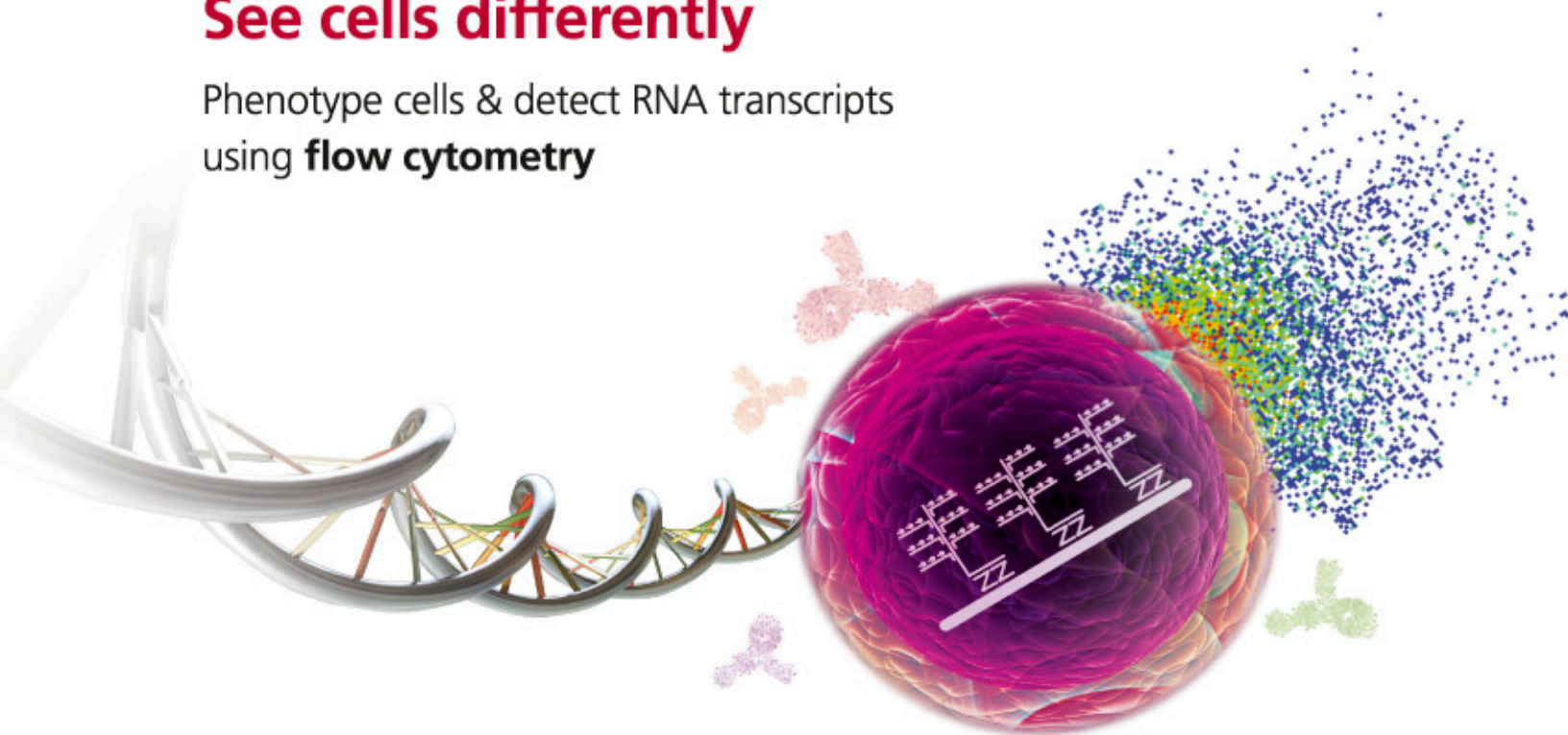


Information current as of December 1, 2013 but subject to possible change. For the most up-to-date information, visit keystonesymposia.org/14F2.

KEYSTONE SYMPOSIA™
on Molecular and Cellular Biology
Accelerating Life Science Discovery

See cells differently

Phenotype cells & detect RNA transcripts
using **flow cytometry**



Need to take a closer look at your cell's signature? Want to understand transcription regulation and patterns? Is RNA expressed intermittently or consistently?

Gain insight into single cell analysis with the QuantiGene® FlowRNA Assay,
a novel multiplex RNA hybridization protocol using a standard flow cytometer. Choose
from a catalog of more than 4,000 probes or request a custom set at no additional charge.

**Show
Me
Data**

Download scientific poster at ebioscience.com/FlowRNA-Genes

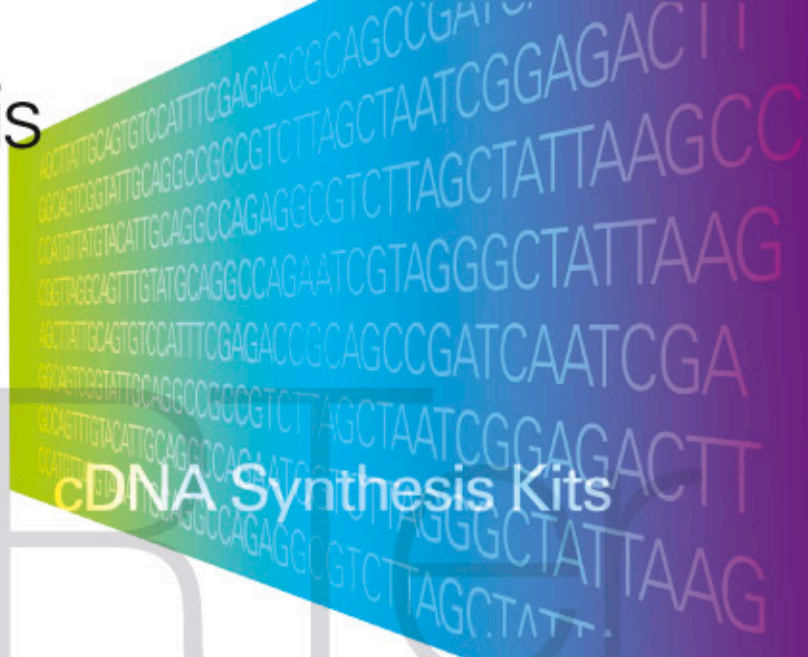
eBioscience, an Affymetrix company, provides innovative solutions to researchers and clinicians worldwide looking to answer questions driving today's life science community.

Biology for a better world.

NORTH AMERICA: 888.999.1371 ■ EUROPE: +43 1 796 40 40-304 ■ JAPAN: +81 (0)3 6430 4020 ■ INQUIRIES: info@ebioscience.com

©Affymetrix, Inc. All rights reserved. For Research Use Only. Not for use in diagnostic or therapeutic procedures.

Transcriptome analysis from as little as 10 pg of RNA?



cDNA SYNTHESIS FOR NEXT GEN SEQUENCING

Sequence the SMARTer® Way!



Capture transcriptome complexity from extremely small samples

Extreme sensitivity. Robust performance. Reproducible data.

SMART™ technology has been adopted as the industry standard for experiments that require exceptional sensitivity and complete transcriptome coverage, because it synthesizes full-length cDNA directly from cells or total RNA. Its single-tube protocol minimizes sample handling errors and creates accurate, full-length cDNA from as little as a single cell or 10 picograms of input RNA.

SMARTer cDNA synthesis kits are ideal for preparing small and unique samples for transcriptome analysis, including stem cells, sorted cells, circulating tumor cells, FFPE-preserved tissues, and brain tissue biopsies.

Order today. Visit www.clontech.com/SMARTer-ngs
or call 1.800.662.2566



Scan to find out more.



Takara

Clontech

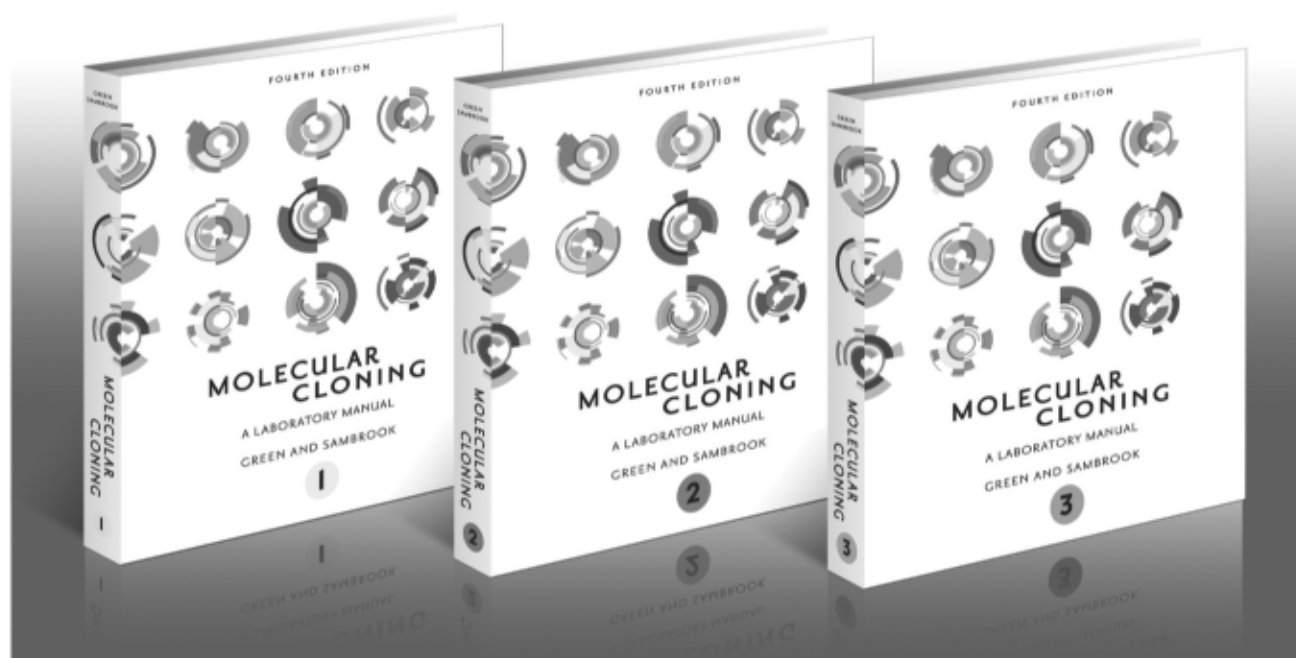
Clontech Laboratories, Inc. • A Takara Bio Company

United States/Canada: +1.800.662.2566 • Asia Pacific: +1.650.919.7300 • Europe: +33.(0)1.3904.6880 • Japan: +81.(0)77.543.7247
For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale. Clontech®, the Clontech logo, SMARTer, SMARTer, and that's GOOD science! are trademarks of Clontech Laboratories, Inc. Takara and the Takara logo are trademarks of TAKARA HOLDINGS, Kyoto, Japan. All other marks are the property of their respective owners. Certain trademarks may not be registered in all jurisdictions. © 2013 Clontech Laboratories, Inc.

www.clontech.com 12.13 US 633648



MOLECULAR CLONING 4



By Michael R. Green, *Howard Hughes Medical Institute, University of Massachusetts Medical School* and Joseph Sambrook, *Peter MacCallum Cancer Institute, Melbourne, Australia*

Molecular Cloning: A Laboratory Manual has always been the one indispensable molecular biology laboratory manual for protocols and techniques. The fourth edition of this classic manual preserves the detail and clarity of previous editions as well as the theoretical and historical underpinnings of the techniques presented. Ten original core chapters reflect developments and innovation in standard techniques and introduce new cutting-edge protocols. Twelve entirely new chapters are devoted to the most exciting current research strategies, including epigenetic analysis, RNA interference, genome sequencing, and bioinformatics. This manual is essential for both the inexperienced and the advanced user.

2012, 2,028 pp., illus., appendices, index

Cloth (three-volume set)

\$395

ISBN 978-1-936113-41-5

Paperback (three-volume set)

\$365

ISBN 978-1-936113-42-2



WWW.CSHLPRESS.ORG

Contents

VOLUME 1

Part 1 Essentials

1. Isolation and Quantification of DNA
2. Analysis of DNA
3. Cloning and Transformation with Plasmid Vectors
4. Gateway Recombinational Cloning
5. Working with Bacterial Artificial Chromosomes and Other High-Capacity Vectors
6. Extraction, Purification, and Analysis of RNA from Eukaryotic Cells
7. Polymerase Chain Reaction
8. Bioinformatics

VOLUME 2

Part 2 Analysis and Manipulation of DNA and RNA

9. Quantification of DNA and RNA by Real-Time Polymerase Chain Reaction
10. Nucleic Acid Platform Technologies
11. DNA Sequencing
12. Analysis of DNA Methylation in Mammalian Cells
13. Preparation of Labeled DNA, RNA, and Oligonucleotide Probes
14. Methods for In Vitro Mutagenesis

Part 3 Introducing Genes into Cells

15. Introducing Genes into Cultured Mammalian Cells
16. Introducing Genes into Mammalian Cells: Viral Vectors

VOLUME 3

Part 4 Gene Expression

17. Analysis of Gene Regulation Using Reporter Systems
18. RNA Interference and Small RNA Analysis
19. Expressing Cloned Genes for Protein Production, Purification, and Analysis

Part 5 Interaction Analysis

20. Cross-Linking Technologies for Analysis of Chromatin Structure and Function
21. Mapping of In Vivo RNA-Binding Sites by UV-Cross-Linking Immunoprecipitation (CLIP)
22. Gateway-Compatible Yeast One-Hybrid and Two-Hybrid Assays

Appendices

1. Reagents and Buffers
2. Commonly Used Techniques
3. Detection Systems
4. General Safety and Hazardous Material

Index



New Manuals from Cold Spring Harbor Laboratory Press!

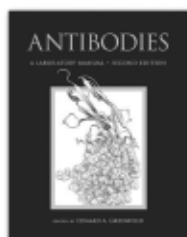


Molecular Cloning: A Laboratory Manual, Fourth Edition

Molecular Cloning has served as the foundation of technical expertise in labs worldwide for thirty years. No other manual has been so popular, or so influential. Building on thirty years of trust, reliability, and authority, the fourth edition of *Molecular Cloning* is the new gold standard—the one indispensable molecular biology laboratory manual and reference source.

2012, 2028 pp., illus., appendices, index

Hardcover (3-volume set) \$395 Paperback (3-volume set) \$365



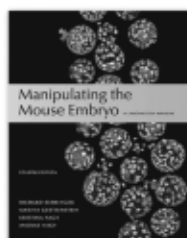
Antibodies: A Laboratory Manual, Second Edition

The classic lab manual *Antibodies*, by Harlow and Lane, has been revised, extended, and updated by Edward Greenfield of the Dana-Farber Cancer Center, with contributions from other leaders in the field. It is an essential resource for molecular biology, immunology, and cell culture labs, providing clear and authoritative protocols with background information and troubleshooting advice for the novice as well as the experienced investigator.

2013, 847 pp., illus., index

Hardcover \$260

Paperback \$175



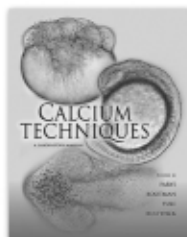
Manipulating the Mouse Embryo: A Laboratory Manual, Fourth Edition

This fourth edition of the “Mouse Manual” once again is the definitive reference source on mouse development, transgenesis techniques, and molecular biology. The authors, pre-eminent leaders in their fields, have reorganized and updated this edition to include new information and protocols. This classic manual remains the essential practical and theoretical guide for anyone working with mice—students, lab technicians, and investigators.

2014, 814 pp., illus., index

Hardcover \$240

Paperback \$165



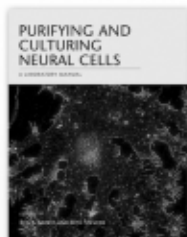
Calcium Techniques: A Laboratory Manual

Calcium ions regulate muscle contraction, nerve impulses, fertilization, and numerous other cellular processes. This manual provides step-by-step protocols for studying many facets of Ca^{2+} signaling, as well as background information on the principles and applications of the techniques. Chapters are devoted to Ca^{2+} signaling techniques in non-mammalian systems, such as plants, yeast, zebrafish, and *Xenopus*. This manual is a comprehensive resource for biochemists, cell and developmental biologists, and physiologists.

2014, 608 pp., illus., index

Hardcover \$150

Paperback \$95



Purifying and Culturing Neural Cells: A Laboratory Manual

Cell culture systems for specific neural cell types are essential for studies of their development and function. This laboratory manual provides step-by-step protocols for isolating specific cell populations from rodent tissues and culturing them under conditions that closely resemble those *in vivo*. It is an essential laboratory companion for all neurobiologists, from the graduate student level upwards.

2014, 216 pp., illus., index

Hardcover \$135

Paperback \$89



Mouse Models of Cancer: A Laboratory Manual

The laboratory mouse is an important model for studying cancer and its treatment. This laboratory manual provides cutting-edge methods for generating and characterizing mouse models that accurately recapitulate many features of human cancer.

2014, 536 pp., illus., index

Hardcover \$240

Paperback \$165



www.cshlpress.org

ALBUQUERQUE NEW MEXICO MARCH 22-25, 2014

**WORLD CLASS
PLENARY SPEAKERS
INCLUDE:**

- ▶ **PHILIP E. BOURNE**
Innovation and
Industrial Alliances
- ▶ **ALBERT J.R. HECK**
Utrecht University
- ▶ **RAFAEL YUSTE**
Columbia University



**ABRF
2014
ANNUAL MEETING**

**Register
Early
and
Save**

ABRF 2014 "TEAM SCIENCE AND BIG DATA:

CORES AT THE FRONTIER" will bring together leaders in these emerging disciplines to address the role that core facilities are playing in the information revolution. At the meeting, facility directors and managers, staff scientists, administrators, government sponsors and industrial partners will convene to present their latest research results, technologies, programs and products aimed at facilitating Team Science and Big Data initiatives.


4 NEW CONCURRENT TRACKS

that include sessions, workshops and tutorials devoted to:

- ▶ Genomics
- ▶ Light Microscopy and other technologies
- ▶ Proteomics
- ▶ Core Facility Administration and Operations



FOR MORE INFORMATION:

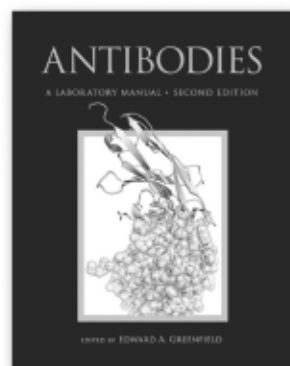
 <https://conf.abrf.org/>

The Association of Biomolecular Resource Facilities is an international society dedicated to advancing core and research biotechnology laboratories through research, communication, and education.



ANTIBODIES

A Laboratory Manual, Second Edition



Edited by Edward A. Greenfield, *Dana-Farber Cancer Institute*

The second edition of the now-classic lab manual *Antibodies*, by Harlow and Lane, has been revised, extended, and updated by Edward Greenfield of the Dana-Farber Cancer Center, with contributions from other leaders in the field. This manual continues to be an essential resource for molecular biology, immunology, and cell culture labs on all matters relating to antibodies. The chapters on hybridomas and monoclonal antibodies have been recast with extensive new information and there are additional chapters on characterizing antibodies, antibody engineering, and flow cytometry. As in the original book, the emphasis in this second edition is on providing clear and authoritative protocols with sufficient background information and troubleshooting advice for the novice as well as the experienced investigator.

2013, 847 pp., illus. (32 4C, 103 B&W), appendices, index

Hardcover \$260

Paperback \$175

ISBN 978-1-936113-80-4

ISBN 978-1-936113-81-1

Contents

Preface

- 1 Antibody Production by the Immune System
Stefanie Sarantopoulos
- 2 The Antibody Molecule
Stefanie Sarantopoulos
- 3 Antibody-Antigen Interactions
Stefanie Sarantopoulos
- 4 Antibody Responses
Stefanie Sarantopoulos
- 5 Selecting the Antigen
Edward A. Greenfield, James DeCaprio, and Mohan Brahmandam
- 6 Immunizing Animals
Edward A. Greenfield
- 7 Generating Monoclonal Antibodies
Edward A. Greenfield
- 8 Growing Hybridomas
Edward A. Greenfield
- 9 Characterizing Antibodies
Frances Weis-Garcia and Robert H. Carnahan
- 10 Antibody Purification and Storage
Jordan B. Fishman and Eric A. Berg

- 11 Engineering Antibodies
James Dasch and Amy Dasch
- 12 Labeling Antibodies
Eric A. Berg and Jordan B. Fishman
- 13 Immunoblotting
Larisa Litovchick
- 14 Immunoprecipitation
James DeCaprio and Thomas O. Kohl
- 15 Immunoassays
Thomas O. Kohl and Carl A. Ascoli
- 16 Cell Staining
Scott J. Rodig
- 17 Antibody Screening Using High Throughput Flow Cytometry
Thomas D.L. Duensing and Susan R. Watson
- Appendix I: Electrophoresis
- Appendix II: Protein Techniques
- Appendix III: General Information
- Appendix IV: Bacterial Expression
- Appendix V: Cautions
- Index



www.cshlpress.org