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MOLECULAR BIOLOGY

PROBLEM SOLVER

A LABORATORY GUIDE



Edited by ALAN S. GERSTEIN

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Alan S. Gerstein

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For Daniel and his Mom.

Tis better to ask some of the questions than to know all of the answers.

Unknown, Indiana

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Preface

This book celebrates the importance of the question; it is not meant to be a collection of facts or procedures. The writing of this book was inspired by 16 years of queries from the research community. The contributors and I have tried to meet two primary objectives:

- Enhance the reader's ability to identify the critical elements of any technique, reagent, or procedure, in order to address questions for which documented answers might be unavailable.
- Clarify theory and practice that is taken for granted yet frequently misapplied.

Why is this book organized as a series of questions? For one, the researchers (and people in general) who greatly impress me are those who when faced with a seemingly impassible dilemma, can identify the question(s) that point the way to an eventual solution. Second, I'm fairly certain that I was most useful to others when all I did was to help them identify the questions that enabled them to solve their own problems.

Who should read this book? I can only say that the contributing authors, many of whom work within a technical support group or have previously done so, were asked to compose their chapters based on questions that they were chronically asked, or based on questions that they wish had been asked by those requesting assistance.

What are the strategies for working with this book? While I've been harping on the importance of the question, you might only have time to locate an answer. For readers in search of quick information, you might want to begin your search with a review of the index. A second approach would be to review the tables of content at the beginning of each chapter, which list the questions addressed within them.

I strongly recommend that at some point you read through a chapter of interest, focusing only on the questions being asked and the sub-headings contained in the answer. The authors and I would like to think that this information and the questions they inspire will provide insight and perspective to help you solve problems that go beyond the content of this book.

So many friends, colleagues, and others who could have been classified as competitors gave selflessly to make this project a reality. It is all too likely that someone will be forgotten, and to all those individuals whose help I have not acknowledged, I sincerely apologize.

Among those that I remember are Peter Herzer, Billi Herzer, Martha Booz, Alice Marcy, Bob Dunst, Mary Ann Fink, George Donzella, Kathie Gorski, Lou Hosta, Claire Wheeler John Graziadei, Joseph Stencel, Phil Franciskovich, Tom Myers, Holly Hogrefe, Carl Baker, John SantaLucia, Patti Taranto, Phil Beckett (Cheers, me old mucker), Howard Coyer, Anita Gradowski, David Remeta, Cica Minetti, Peter Chiang, Martha Cole, Matt Szap, Barb Kaboard, Julie DeGregaro, and Paul Hoderlein for the invaluable service they provided by reviewing manuscripts. I am grateful to Terri Sunquist and colleagues at Promega Biotech for data on RNA polymerases, Bengt Bjellqvist for data on agarose, to Bjorn Lundgren for centrifugation data, to Bronwen Harvey and her research team for providing intriguing hybridization data, to Carl Fuller for sharing his contacts and enzyme expertise, and to Gene Stircak for access to search services. I am especially grateful to my colleagues at Amersham Pharmacia Biotech for their support, good wishes and collective sense of humor. With such a talented group of supporters and contributing authors, you can blame me for any inadequacies you note within these pages.

There are probably innumerable people at John Wiley and Sons that I should include, but I can only name a few. Ann Boyle and Virginia Benson Chanda have my sincere gratitude for their roles in converting an idea into a publication. Special thanks go to my editor, Luna Han, for her bottomless well of patience and professional guidance.

I wish I could thank my parents, Bernard and Florence, who urged me to focus on learning, not test scores. I'm glad I can thank my wife Sharon for her love and ability to ignore my mood swings during this project, and my son Daniel, whose uncanny knack for getting me out of bed before dawn hastened me to the finish line.

Alan Gerstein

P.S. Several authors (listed on page xi–xiii) provide their electronic mail address to receive your inquiries and comments. I would greatly appreciate your forwarding me (mbproblemsolver@earthlink.net) a copy of any correspondence you send to an author. Thank you in advance.

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