The Protein Protocols Handbook

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Second Edition

Edited by

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Preface

The Protein Protocols Handbook, Second Edition aims to provide a cross-section of analytical techniques commonly used for proteins and peptides, thus providing a benchtop manual and guide for those who are new to the protein chemistry laboratory and for those more established workers who wish to use a technique for the first time.

All chapters are written in the same format as that used in the *Methods in Molecular Biology*™ series. Each chapter opens with a description of the basic theory behind the method being described. The Materials section lists all the chemicals, reagents, buffers, and other materials necessary for carrying out the protocol. Since the principal goal of the book is to provide experimentalists with a full account of the practical steps necessary for carrying out each protocol successfully, the Methods section contains detailed step-by-step descriptions of every protocol that should result in the successful execution of each method. The Notes section complements the Methods material by indicating how best to deal with any problem or difficulty that may arise when using a given technique, and how to go about making the widest variety of modifications or alterations to the protocol.

Since the first edition of this book was published in 1996 there have, of course, been significant developments in the field of protein chemistry. Hence, for this second edition I have introduced 60 chapters/protocols not present in the first edition, significantly updated a number of chapters remaining from the first edition, and increased the overall length of the book from 144 to 164 chapters. The new chapters particularly reflect the considerable developments in the use of mass spectrometry in protein characterization. Recognition of the now well-established central role of 2-D PAGE in proteomics has resulted in an expansion of chapters on this subject, and I have also included a number of new techniques for staining and analyzing protein blots. The section on glycoprotein analysis has been significantly expanded, and aspects of single chain antibodies and phage-displayed antibodies have been introduced in the section on antibodies.

We each, of course, have our own favorite, commonly used methods, be it a gel system, gel-staining method, blotting method, and so on; I'm sure you will find yours here. However, I have, as before, also described alternatives for some of these techniques; though they may not be superior to the methods you commonly use, they may nevertheless be more appropriate in a particular situation. Only by knowing the range of techniques that are available to you, and the strengths and limitations of these techniques, will you be able to choose the method that best suits your purpose. Good luck in your protein analysis!

John M. Walker

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