FEBS Letters 471 (2000) 262–266 FEBS 23538

Book Reviews

Current Methods in Muscle Physiology. Advantages, Problems and Limitations; Edited by H. Sugi, Oxford University Press; Oxford, 1998. viii+376 pp. £ 87.95 (hb). ISBN 0-198-52397-1

One picks up a book on current methods for several reasons; you may wish to bring a new methodology to your work, you may want to improve or update a technology you are already familiar with or perhaps because you teach and are looking for a lucid description or clarifying illustration, of a particular method. In reading this book I tried to wear all three hats and gauge how well the book succeeded. Before discussing this it is of course appropriate to ask what the authors' aims were. This is a multi-author book edited by Haruo Sugi. The contributors are all respected members of the muscle physiology field and thus their input adds to the importance of this methods book. It is published as an 'activity' of the International Union of Physiological Sciences, Muscle Commission and 'with the viewpoint of traditional muscle physiology'. The aim was to describe critically various methods in the field along with results obtained, but not to comprehensively guide or exhaustively survey the literature. The book has 14 chapters divided unequally into three parts: combined biochemical and mechanical experiments (seven chapters), combined structural and mechanical experiments (four chapters) and other experiments (three chapters). This division is helpful although it is unclear why muscle energetics is under 'other' rather than 'biochemical'. After reading this book it is clear that the muscle in the title is skeletal muscle, with few authors paying anything other than the most scant regard to cardiac or smooth muscle. While in some areas this makes sense, e.g. X-ray diffraction, in others, e.g. energetics and Ca^{2+} indicators, it does not. So we assume that non-skeletal muscle physiologists are outside the 'traditional' viewpoint of the book!

As mentioned above, the book is written by experts and the overall quality is high. The coverage of subjects is also good; Part I has two chapters on mechanics, caged compounds, fluorescent nucleotides, peptide mimetics, recombinant molecules and in vivo motility assays; Part II has fluorescent probes, spin probes, X-ray diffraction and electron microscopy and Part III has Ca^{2+} indicators, electrophysiological techniques and muscle energetics. In places the techniques seem not to have been taken to the forefront, e.g. although nuclear magnetic resonance spectroscopy is discussed in the energetics chapter, no mention is made of combining spectroscopy with imaging to obtain localized metabolic and hence energetic information nor of functional magnetic resonance imaging studies, and the chapter on Ca^{2+} indicators does not explore near-membrane Ca^{2+} indicators or measurements of mitochondrial or sarcoplasmic reticulum Ca^{2+}. Thus some may be disappointed with the scope of the chapters.

When I was reading the chapters about technique I was only familiar with in the most rudimentary fashion, they all achieved the aim of describing the techniques with their advantages and disadvantages. In some places further detail would have been helpful. Thus the description of the optical trap as a technique "based on the power of a focused laser beam to draw and trap a small object" does not give any understanding of the actual physical mechanism. Similarly the chapter on the use of spin probes in electron paramagnetic resonance (EPR), while explaining the spin-Hamiltonian operator used to describe EPR spectral lines, talks of 'problems of specific and rigid spin labelling' and 'spin trapping techniques may be useful', without a clear explanation of what is meant by these terms. This is not a book providing step by step instructions for those wanting to pursue a technique – as the editor forewarned.

Reading the chapters on techniques I was familiar with, I thought the authors had covered these fairly and well. As mentioned earlier, in places I would have enjoyed a more adventurous look at up-coming techniques and developments. However, good reference lists are provided, so that further information can readily be obtained. Finally when thinking of good explanations or figures to use in lectures or recommended reading for students, many of the chapters are useful; in particular those on mechanics, peptide mimetics, motility assays and electrophysiological techniques I will find helpful. None of the illustrations are lavish and color would have been helpful in places, e.g. modelling of myosin structure and confocal line scans.

In summary the book succeeds very well in illustrating the applications and data obtained using the techniques. Many chapters have good, short, historical introductions to their techniques. The book also achieved its aim of considering the limitations and problems of techniques, which considerably adds to its usefulness. I am sure all skeletal muscle physiologists will find something useful in this book.

Susan Wray

Cytotoxic Drug Resistance Mechanisms. Methods in Molecular Medicine; Edited by R. Brown and U. Böger-Brown, Humana Press; Totowa, 1999. xi+238 pp. $ 89.50 (hb). ISBN 0-896-03603-0

The aim of this book is "to provide protocols that are appropriate for examining the mechanisms of cellular resistance in human tumor samples". It partially succeeds in this objective in that what is presented will be useful to investigators interested in certain aspects of drug resistance; its shortcomings relate to its lack of comprehensiveness, e.g. little information is presented relating to antimetabolite resistance.

The book contains 20 chapters, of which all but the first introductory chapter describe methodology. The first chapter is a good introduction to the status of the understanding of clinical drug resistance. However, it is limited in scope, focusing on MDR, GSH and GSH transferases and DNA repair as resistance mechanisms.

Chapters 2–4 describe assays currently used to assess inhibition of cell growth or cell death. The clonogenic assay and the MTT assay are well described using all lines; it would have been of value to describe the clonogenic assay as used on fresh human tumor samples, and the limitations of this assay. Chapter 4 discusses detection of apoptotic cells in vitro, an assay that is used frequently to assess the effect of a chemotherapeutic agent. As pointed out in chapter 5, however, as apoptotic cells may rapidly disappear, especially in vivo, a small number of apoptotic cells measured at a single time point may not reflect the actual cell death that may occur after exposure to a drug. It is also widely assumed that all or most cell death secondary to chemotherapy is via apoptosis rather than necrosis.

Chapters 6 and 7 deal with measurement of *p*-glycoprotein function and measurement of MDR-1 mRNA by quantitative RT-PCR, respectively. Both chapters are excellent; however, as noted by Broxterman in chapter 6, functional assays of *p*-glycoprotein are limited to 'liquid tumors', mainly leukemia. The chapter by Bates et al. (chapter 7) could be even more useful if a description of the new techniques using fluorescent probe displacement, e.g. by the TAG-MAN method, were included.

Chapters 8 and 9 describe methods for measuring glutathione. The chapters would be more valuable if methods to measure GSTπ were provided.

Chapter 10 describes methods for measuring topoisomerases I and II, the targets of several of the most important drugs used in the clinic to treat cancer. This chapter is first rate, with key illustrations as well as detailed methodology presented.

PII: S0014-5793(00)01401-0

Chapter 11, while describing the assays for the 5-fluorouracil metabolizing enzymes DPD and thymidine phosphorylase, curiously does not describe the assay for OPRT, a key anabolic enzyme for 5-FU, and most importantly, thymidylate synthesis, a target for 5-fluoropyrimidines, whose level has been correlated with response to 5-FU in patients with gastrointestinal cancers.

Chapters 12 and 13 describe the measurement of DNA adducts by immunoassay and in individual cells, and are done well. An important assay that has received more attention recently as a method to measure drug-induced DNA interstrand crosslinking is the single-cell gel electrophoresis ('comet') assay. This chapter will be extremely useful to those investigators studying the relationship of interstrand crosslinks and drug sensitivity because of its wide applicability and sensitivity.

Chapter 15 describes techniques to measure microsatellite instability. Chapter 16 describes the assay for a specific repair enzyme, O^6-alkylguanine DNA alkyltransferase, an enzyme whose evaluation deserves more attention in relationship to prediction of response to the nitrosoureas and temozolamide.

Chapter 17 describes assays for p53 in tumors, a tumor suppressor gene commonly mutated or absent in human tumors, and in some of these tumors associated with universal resistance to some drugs. Measurement of the level of this protein by immunohistochemistry and mutations by DNA sequencing is well described, and these techniques are now commonly used in most academic centers. Clearly, the prediction of response of a tumor to a drug will require more comprehensive assays of tumor suppressor genes and oncogenes, and in this sense, a chapter on measurement of expression of genes by array technologies would have been of interest.

Chapter 18 deals with detecting BCL-2 by immunohistochemistry, and is well done with information on specific antibodies. Again, this chapter would have been more useful if Western blotting to detect levels of BCL-2 in tumors had also been described.

Chapters 19 and 20 describe new technologies that will be used increasingly in the future, fluorescence in situ hybridization and reverse in situ hybridization. Both methods afford clues to genetic changes associated with the acquisition of drug resistance.

This book will clearly be useful for those investigators who find in its chapters methodology specific for their purpose. However, as a comprehensive methods book for drug resistance, it has important omissions.

Joseph R. Bertino

Heme Peroxidases; Edited by H.B. Dunford, Wiley; Chichester, 1999. xiii+507 pp. £ 126.00 (hb). ISBN 0-471-24244-6

Heme peroxidases are enzymes that have been studied since the early days of biochemistry. These nicely colored proteins were an obvious choice to study at that time since some of these enzymes were readily available and optical spectroscopy in the visible region could be used to monitor the formation of enzyme intermediates.

The presence of heme iron has aroused the interest of many researchers and also triggered the development of modern biophysical methods such as resonance Raman, EXAFS and MCD to study the various oxidation and spin states.

This book gives a detailed description of the properties of the large class of these enzymes and it describes the explosive increase in knowledge that has occurred over the past 25 years. The emphasis of the writer is on kinetics, spectroscopic methods and structure and mechanism and this is not surprising since the author started his research in these directions. Dunford has been for decades and still is a leading expert in the peroxidase chemistry and he has witnessed the rapid proliferation of this field.

The book is a very useful compilation and overview for those working in the peroxidase area and in particular for those trying to enter the perplexing complexity of heme peroxidases. Each peroxidase discussed has its own history and its own heroes and for an outsider it is difficult to get a clear picture from the data present in the literature. However, coverage is not complete; for example, despite the statement on the cover of the book, the commercial and industrial applications and potentials of the various peroxidases are not discussed. This is a pity since a very large number of patent applications on peroxidases can be found in the databases and a chapter on some of these applications would have been desirable. Similarly there is very little on enantioselective oxygen transfer reactions catalyzed by these enzymes. This would have been useful for workers using these enzymes in organic conversions. Also the very different physiological roles of these enzymes are discussed only briefly.

However, the book contains more than sufficient material on the other aspects.

Chapter 1 gives the introduction and some historical background in relation to the study of other heme-containing enzymes. Peroxidase properties are highlighted using the intensively studied horseradish peroxidase and yeast peroxidases in chapter 2 and the family and superfamily classification is introduced in chapter 3 together with a detailed discussion of structural data on yeast cytochrome *c* peroxidase and mutants. Horseradish peroxidase is discussed in detail in chapters 4–8 reviewing the wealth of information on this enzyme. Since peroxidases cannot be understood without the application of spectroscopic techniques there is also a very useful chapter 7 on the methods used in the study of peroxidases. Chapters 9–14 deal with detailed discussions on yeast cytochrome *c* peroxidase, ascorbate peroxidase, bacterial catalase, the other plant peroxidases, lignin peroxidase, manganese peroxidases, *Coprinus cinereus* peroxidase, chloroperoxidase and *Pseudomonas* cytochrome *c* peroxidase. In the remaining chapters the animal peroxidases are discussed: myeloperoxidase, eosinophil peroxidase, lactoperoxidase, thyroid peroxidases, and chapter 17 gives an interesting review discussing the properties of the related prostaglandin H synthase. The last chapter deals with the reaction mechanisms of the tetrameric heme catalases. Finally there is also an appendix on the peroxidase sequences currently known. However, no clues are given as to the conserved active site residues and as such this appendix is less useful.

In conclusion, this book contains lots of thorough information and reviews nicely the peroxidase field. The book is instructive for novices and it has much to offer for experts who will find it a very nice work of reference. The color plates to highlight the various peroxidase structures, the heme environments and substrate channels are a useful addition.

E. Wever

Gene Therapy. Principles and Applications; Edited by T. Blankeinstein, Birkhäuser; Basel, 1999. xii+379 pp. ChF 168.00 (hb). ISBN 3-764-35972-2

The burst in gene therapy research over the last decade has depended upon input from a wide range of fields within molecular biology, virology, immunology, pathology and clinical research, thereby creating a natural demand for publications helping to present the information from these diverse areas in a coherent picture of the current status of and future developments towards gene therapy.

Given the strong interest among professionals and students there must be expected to be a market for books that provide an introduction and a timely update of developments in this new research area.

Although it is expected that some day gene therapy may find its place in the regular clinic, this research is still young and the approaches are diverse in terms of strategies and disease targets. The current situation may most clearly be reflected if presented as a patchwork of basic concepts and strategies as well as data from pre-clinical and clinical successes and failures in a series of reviews by different authors. This book is basically designed in this way with a brief introductory chapter, six chapters on gene transfer methods, four chapters on gene therapy of single gene defects, three chapters on gene marking and eight chapters on the gene therapy of cancer. However, while overall the topics chosen cover most important aspects of the area, there is an almost complete lack of coverage of gene therapy approaches for viral and other infectious diseases. On the other hand, immunotherapeutic strategies for cancer are covered in five chapters with some overlap.

However, this book suffers from one serious problem. Although the publication year is 1999 almost all of the chapters cover their topics only up to around the end of 1995. While I enjoyed reading the chapters on some of the basic concepts of, e.g. vector design and immunotherapy and these will be worthwhile introductory reading for newcomers to the field, the reader with some previous knowledge cannot help but feel puzzled throughout the book about the fact that no mention is made of new tools such as lentiviral vectors for gene transfer and green fluorescent protein for gene marking, new developments in the chemistry of antisense oligonucleotides, current definitions of human hematopoietic stem cells, the current status of suicide gene therapy trials, etc.

Although the basic plans laid down for this book could have led to a useful volume of reading and reference for people with diverse backgrounds, three to four years delay in publication is simply not acceptable in this area, and potential readers should be advised to turn to more recent publications. Moreover, the book has been insufficiently checked for typographical and other technical errors.

Finn Skou Pedersen

DNA Vaccines. Methods and Protocols; Edited by D.B. Lowrie and R.G. Whalen, Humana Press; Totowa, NJ, 2000. xix+529 pp. $ 99.50 (hc). ISBN 0-896-03580-8

Vaccination has been practised for over 200 years and has been extremely successful in that it has saved more lives and reduced human and animal suffering from infectious diseases to a greater extent than all other treatments combined. One of the most recent developments in vaccination, also called the third generation of vaccination, is that of using plasmids to express antigens of interest in vivo. These expressed antigens then induce protective immune responses to the pathogen of interest. Since the initial reports of DNA immunization in 1992, there have been over 600 articles describing this approach not only for vaccination, but also in better dissecting immune responses and factors which influence antigen presentation. Unfortunately, there are so many factors that must be considered for success in this field, that much time and energy may be wasted by the novice unless they are guided by an authoritative collection of articles and recipes of how to conduct the experiments in the most efficacious manner.

The present book contains 41 chapters by experts in the field not only describing the state-of-the-art thinking on each topic, but, more importantly, providing a step-by-step recipe for constructing the most effective plasmids and measuring host immune responses, both humoral and cellular, as well as all the steps in between including delivery, etc. Since there are 41 chapters, each chapter will not be summarized in detail but the major themes of groups of chapters will be described. The first four chapters deal with production of plasmids, the initial starting point in all DNA vaccination. Since the methods of purification, level of purity, and state of the plasmid (supercoiled) all influence the efficacy of DNA vaccination, these initial chapters provide an excellent background of what issues are important and how reproducible plasmid preparations can be achieved and monitored for laboratory or commercial production.

The next six chapters describe specific vaccines that have been developed and tested in various species including rodents, livestock, fish, and primates. These chapters specifically identify protocols for delivery of the plasmids and assays for monitoring both humoral and cell-mediated immunity in these different species. These chapters should provide anyone interested in initiating studies on DNA vaccination with an excellent roadmap as to how to proceed.

The next 10 chapters describe various methods that can be used to enhance the magnitude of the immune response or to redirect the response to a Th1- or Th2-like response. Chapters 14–16 specifically address the role of CpG sequences in both DNA vaccines as well as their possible use as adjuvants with conventional vaccines. As with all the chapters, chapter 14 provides a very comprehensive description of the importance of CpGs and their immunomodulatory role. Chapters 18–22 demonstrate the use of molecular adjuvants (genes encoding cytokines or co-stimulatory molecules) incorporated into the plasmid to augment or redirect immune response, and chapter 23 describes the delivery of plasmids in the presence of a conventional adjuvant (monophosphoral lipid A). The next important aspect of DNA vaccination, once the plasmids are constructed with the appropriate immunostimulatory sequences, etc., is that of delivery to the host to enhance the most appropriate immune responses. Chapters 24–27 specifically deal with different methods of delivering plasmids to induce either mucosal immune responses or systemic immunity. Chapters 28–36 continue in describing different ways of constructing plasmids for maximal expression of single antigens or multiple genes including genes encoding tumors or hormones, etc. Finally, the last three chapters focus more on the regulatory aspects of DNA vaccines including requirements for preclinical safety testing DNA vaccines, quality assurance, and requirements by the regulatory agencies for licensing of DNA vaccines.

This comprehensive collection of chapters is the first of its kind in this rapidly moving field to provide an excellent update of all of the recent advances and, more importantly, the actual technical approaches to developing vaccines. This is a book that should be in everyone's library who is interested in pursuing studies employing DNA immunization and for graduate students interested in an up-to-date understanding of DNA vaccination.

L.A. Babiuk

Essentials of Glycobiology; Edited by A. Varki et al., Cold Spring Harbor Laboratory Press; Cold Spring Harbor, NY, 1999. xvii+653 pp. $ 95.00 (hc). ISBN 0-879-69560-9

Glycobiology, a new term that came into vogue during the last decade, describes a subject that started to evolve in the early 1970s (see my book *Complex Carbohydrates*, Addison Wesley, 1975). It deal40s with the structure, biosynthesis and function of carbohydrates, especially those that are parts of glycoproteins or glycolipids (collectively known as glycoconjugates). A fast-growing branch of molecular biology, it has become a subject of utmost importance and of intense activity. A major reason for this is the realization that such carbohydrates (also known as glycans) often play a crucial role in cell recognition in a wide range of biological systems, both normal and pathological. The study of these systems has demonstrated that carbohydrates may prove to be useful drugs for the treatment of a variety of diseases, infectious, inflammatory and malignant ones. Another reason is that a large part of the drugs produced by the bio-

technological industry are glycoproteins, among them the widely used erythropoietin, tissue plasminogen activator, and colony stimulating factors. The importance of glycobiology will undoubtedly increase in the post human genome era. That is not only because the majority of proteins in nature are glycoproteins. It is also because glycoproteins are gene interaction products, the formation of which requires genes encoding both their protein part and the many glycosylation enzymes needed for the synthesis of their glycans. *Essentials of Glycobiology* is an excellent and up-to-date book that summarizes in a masterly way the current status of the area and tries to point out its future directions. It is clearly written and succeeds in conveying the sense of excitement and fascination that permeates the research on the biology of carbohydrates. Special attention is paid to glycoconjugates of higher animals that are better known than those from other sources. *Essentials of Glycobiology* is aimed both at students interested in the subject, and at experts wishing to learn more about it. It has its origins in a graduate course given for several years at the University of California at San Diego, and the didactic approach is apparent throughout. It has been written and edited jointly by six of the leading researchers in glycobiology, and has benefited from contributions of several other experts on the subject. The result is a uniform and well-integrated presentation, without the unnecessary overlaps from which many multi-author treatises suffer.

The 41 chapters of *Essentials of Glycobiology* are arranged in five parts, the first of which is devoted to general principles (68 pages). This part starts with the historical background, followed by a chapter on saccharide structure and nomenclature, which contains the essential chemical information required for using the book. Then come chapters on the evolution of glycan diversity, on protein–glycan interactions and on the biological role of glycans; the two latter chapters contain concise descriptions of methods for the study of these phenomena.

The second and longest part of the book (chapters 6–21, 262 pages) is on biosynthesis, metabolism, and function, starting with those of monosaccharides and then dealing mainly with glycoproteins (proteoglycans included). Several chapters are devoted to trafficking of glycoproteins in the Golgi and to glycosyltransferases, currently among the most active areas of glycobiological research. Another chapter focuses on lysosomal diseases of glycoprotein and glycolipid degradation. This part concludes with chapters on the glycobiology of plant cells and of bacteria, organisms that produce unusual glycans not found in animals.

Although lectins are mentioned briefly in earlier parts in the book (e.g. those of plants, pp. 316–317) these carbohydrate binding proteins are the sole topic of the fourth part of the book (eight chapters, 134 pages). Their importance stems from the fact that they are endowed with the unique ability to decode the biological information carried by the carbohydrates. After a chapter on the short history of animal lectins come chapters dealing with individual families of these lectins, of which the selectins (chapter 26) are among the best known, because of their involvement in the control of leukocyte trafficking to sites of inflammation. This part also has a chapter on microbial lectins, the role of which in microbial adhesion and initiation of infection was already established more than 20 years ago. Another chapter deals with plant lectins, the century-old study of which has laid the foundation for the research on lectins from other sources, has helped to catapult the field of glycobiology into the modern era, and has made an enormous contribution to modern biochemistry (p. 456).

The topic of part four (seven chapters, 112 pages) is glycans in genetic disorders. Its first three chapters deal, respectively, with such defects in cultured cells (mainly lectin resistant mutants), in intact animals with a focus on the emerging group of carbohydrate deficient glycoprotein syndromes (CDGS), and in genetically modified mice; all these are invaluable sources for our knowledge of the biosynthesis and functions of glycoconjugates. Three of the following chapters summarize the glycosylation changes in ontogeny, in cancer and in other human diseases. Another chapter is on glycobiology of protozoal and helminthic parasites. The fifth and final part of the book, on methods and applications, is the shortest of all (54 pages). One of its four chapters surveys the techniques for the structural analysis of glycans and the other describes in a nutshell methods for their chemical and enzymatic synthesis. The third chapter deals with the properties and application of inhibitors of glycosylation and their use as potential therapeutics, and the fourth deals with glycobiology in biotechnology and gives examples of carbohydrate based therapeutics.

The book closes with a useful glossary of commonly used terms and an index, which, although quite extensive, is incomplete: among the missing entries are extensin, glycoprotein, influenza virus, peanut agglutinin and soybean agglutinin.

Each chapter of *Essentials of Glycobiology* contains a reading list, typically of 40–60 references. Many of these are from the 1990s, and a few as recent as last year. The literature survey is up to date, and includes discussions of the very recent exciting discoveries in the area. Examples are the extremely rare carbohydrate–protein linking group C-mannosyltryptophan (p. 168); the demonstration that certain clostridial toxins are glycosyltransferases that act by attaching a monosaccharide to a critical amino acid in Rho proteins (p. 177); the successful application of orally administered mannose for the therapy of patients with the life threatening phosphomannose isomerase deficiency (CDGS type Ib, pp. 484–485); and relenza (zanamavir), a rationally designed inhibitor of influenza virus sialidase (pp. 618–620 and 632) introduced last year for treatment of the disease.

The book is beautifully produced, with numerous figures, some in color, and many tables. The number of errors, mostly of a minor nature, is negligible. An irritating one is the repeated use of the terms lactosamine, and polylactosamine, for *N*-acetyllactosamine and poly-*N*-acetyllactosamine. Further, I cannot refrain from commenting on several inaccuracies in the chapter on plant lectins, a subject close to my heart. For instance, the term lectin was not generally adopted in 1954, since in that year it was first proposed by Boyd and Shapley (not Shyleigh, as in Table 30.1, p. 456) for the blood type specific plant agglutinins, and gained wide use only after Halina Lis and I generalized it to include all cell agglutinating and sugar specific proteins of non-immune origin (*Science* 177 (1972) 949959); the circular homology of concanavalin A is not the result of a reaction in which two halves of the molecule are transposed (p. 458), but of a transpeptidation that occurs in the folded protein; plant lectins do not acquire high affinity via the multivalency they display in dimeric and tetrameric forms (p. 459); and soybean agglutinin constitutes about 1% of the total protein content of the seed, not 1015% (p. 459).

Minor grumbles aside, *Essentials of Glycobiology* is an extremely useful and valuable book. Its back cover carries advance praise by five Nobel laureates, George E. Palade, Michael S. Brown, Joseph L. Goldstein, Edwin G. Krebs and Richard Roberts. I am pleased to join them and to compliment both the authors and the publisher on their remarkable achievement in producing such an outstanding book. It should be found in every library of science, and on the shelf of each and every biochemist with even a passing interest in glycobiology.

Nathan Sharon

Booklist No. 154

1. Zollner, H. Handbook of Enzyme Inhibitors. Wiley; Chichester, 1999. xi+2316 pp. (4 volumes). £ 340.00 (hc).
2. Ishikawa, E. Ultrasensitive and Rapid Enzyme Immunoassay. Laboratory Techniques in Biochemistry and Molecular Biology, Vol. 27. Pillai, S. and Van der Vliet, P.C. (eds.). Elsevier; Amsterdam, 1999. xvi+334 pp. $ 91.50 (pb).
3. Lacal, J.C., Perona, R. and Feramisco, J. (eds.) Microinjection. Birkhäuser Verlag; Basel, 1999. 248 pp. ChF 128.00 (pb).
4. White, D. The Physiology and Biochemistry of Prokaryotes. Oxford University Press; Oxford, 2000. xxiii+565 pp. £ 37.95 (hc).
5. Picard, D. (ed.) Nuclear Receptors. A Practical Approach. Oxford University Press; Oxford, 1999. xviii+285 pp. £ 31.95 (pb).
6. Haynes, S.R. (ed.) RNA–Protein Interaction Protocols. Methods in Molecular Biology, Vol. 118. Humana Press; Totowa, 1999. xix+481 pp. $ 74.50 (hc).
7. Ellis, R.W. (ed.) Combination Vaccines. Development, Clinical Research, and Approval. Humana Press; Totowa, 1999. xvi+279 pp. $ 125.00 (hc).
8. Cornely, K. Cases in Biochemistry. Wiley; Chichester, 1999. 125 pp. £ 15.50 (pb).
9. Hooper, N.M. Alzheimer's Disease. Methods and Protocols. Methods in Molecular Medicine. Humana Press; Totowa, 2000. xiv+408 pp. $ 99.50 (hc).
10. Sampson, A.P. and Church, M.K. (eds.) Anti-Inflammatory Drugs in Asthma. Birkhäuser Verlag; Basel, 1999. viii+276 pp. ChF 198.00 (hc).
11. Baulieu, E.-E., Robel, P. and Schumacher, M. (eds.) Neurosteroids. A New Regulatory Function in the Nervous System. Humana Press; Totowa, 1999. xvi+378 pp. $ 135.00 (hc).
12. Guille, M. (ed.) Molecular Methods in Developmental Biology. Xenopus and Zebrafish. Methods in Molecular Biology, Vol. 127. Humana Press; Totowa, 1999. xii+217 pp. $ 89.50 (hc).
13. Hatti-Kaul, R. (ed.) Aqueous Two-Phase Systems. Methods and Protocols. Humana Press; Totowa, 2000. xiii+440 pp. $ 89.50 (hc).
14. Cantor, C.R. and Smith, C.L. Genomics. The Science and Technology Behind the Human Genome Project. Wiley; Chichester, 1999. xviii+596 pp. £ 58.50 (hc).
15. Baker, A.H. (ed.) Vascular Disease. Molecular Biology and Gene Therapy Protocols. Methods in Molecular Medicine. Humana Press; Totowa, 1999. xiv+441 pp. $ 99.50 (hc).
16. Evans, T.J. (ed.) Septic Shock. Methods and Protocols. Methods in Molecular Medicine. Humana Press; Totowa, 2000. x+208 pp. $ 89.50 (hc).
17. Turk, V. (ed.) Proteases. New Perspectives. Molecular and Cell Biology Updates. Birkhäuser Verlag; Basel, 1999. ix+231 pp. ChF 198.00 (hc).
18. Lacey, A.J. (ed.) Light Microscopy in Biology. A Practical Approach. Oxford University Press; Oxford, 1999. xxii+452 pp. £ 35.00 (pb).
19. Kochanowski, B. and Reischl, U. (eds.) Quantitative PCR Protocols. Methods in Molecular Medicine. Humana Press; Totowa, 1999. x+304 pp. $ 69.50 (hc).
20. Kotyk, A. (ed.) Quantities, Symbols, Units, and Abbreviations in the Life Sciences. Humana Press; Totowa, 1999. xv+130 pp. $ 19.50 (pb).