

Peptide Analysis Protocols (Methods in Molecular Biology, Vol. 36); Edited by B.M. Dunn and M.W. Pennington; Humana Press; New Jersey 1994; 335 pages. \$64.50. ISBN 0-89603-274-4.

This volume of *Methods in Molecular Biology* contains nine chapters covering techniques for separating/characterizing peptides and additional contributions on specialty topics relating to peptide chemistry and applications. The first six chapters deal with separations; beginning at the macro-scale (gel columns), continuing to HPLC separations, and concluding with capillary electrophoresis. The chapters provide a good starting point for researchers trying to assess the utility of the method for their peptide application. The subsequent chapters deal with methods that are fairly routine at major facilities: NMR, direct sequencing, and mass spectrometry.

The intent of the initial chapters is to provide sufficient information to allow the reader to assess the importance and difficulties associated with the methodologies. This is a valuable collection of material focused on the application rather than the tools. It compliments the existing array of focused technical material available pertaining to a given method. However, the depth of some of the material and the references therein could have been more extensive to guide the reader to specific

sources of detailed information (ranging from texts and reviews to manufacturers literature).

The latter chapters provide a good compliment to the initial material pertaining to analysis methods. These include discussions of peptide conjugation, epitope prediction, epitope mapping, proteinase specificity measurements, recombinant peptides, de novo peptide design, aspartic proteinase synthesis and combinatorial synthesis. They provide sufficient background material where required (e.g. basic immunology) to enable the interested reader to grasp the subject content and understand the application focus.

Overall the goal of the text has been achieved: an overview of tools for peptide analysis is provided in conjunction with more recent application areas. The early tools emphasize the issues of employing the described methods for peptide analysis. It will serve well as a valuable starting point for scientists using peptide molecules in their work.

Michael Albin

Human Papillomaviruses and Cervical Cancer. Biology and Immunology; Edited by P.L. Stern and M.A. Stanley, Oxford University Press, 1994. xiii + 226 pages. £ 60.00. ISBN 0-19854-796-X.

The monograph covers both the basic information on the biology of Human Papillomaviruses and the immunological aspects of the infection including vaccine development. The different chapters are very well written reviews of the state of the art. The first chapter introduces the reader to the pathology of HPV premalignant and malignant lesions and the following review gives an introduction to the molecular structure of the viral genome and to the function of known viral proteins. The following two chapters focus at the epidemiology of the HPV and cervical cancer and a very relevant introduction to the specificity and sensitivity of the different methods available for detection of HPV. The epidemiology is presented in a rather condensed way as the literature on this issue is very large. The chapter has a nice approach to the different kinds of studies, which gives the right perspective of the information obtained in epidemiological studies. The last two chapters of the biological part of the book give the state of the art in transformation of cells with HPV. The interaction of viral proteins with cell cycle controlling proteins is described. The present understanding of the natural history of the virus infection is

summarized in an interesting review on the dependence of HPV growth and differentiation of the keratinocytes.

The immunology of HPV infections is discussed both from the humoral- and the cell immunity point of view as both aspects are relevant for the development of vaccine strategies. The serology is presented with a discussion on viral target proteins available for the different tests. The cellular immunity covers the antigen presentation problems, immunosurveillance and an interesting discussion of HLA antigens and their changes during development of malignancies. The vaccine strategy is very interesting and the final chapters review the natural vaccines as well as recombinant strategies used for development of prophylactic/therapeutic immunotherapy. In summary, the field of HPV biology and immunology is covered in a very relevant way in the monograph and the book will be of great use for both students at a graduate level with knowledge in biology and immunology and for scientists updating their knowledge on HPV.

Bodil Norrild

An Introduction to Membrane Transport and Bioelectricity. Foundations of General Physiology and Electrochemical Signaling. Second edition; Edited by H. Byrne and S.G. Schultz, Raven Press, New York, 1994. ix + 198 pp. \$ 44.00 (pb). \$ 79.50 (hb). ISBN 0 7817 0201 1 (pb).

This is the second edition of a book first published in 1988, intended, in the words of its authors 'to introduce medical and beginning graduate students to the principles of membrane transport and bioelectricity'. For the most part, the present book does so successfully. It is entertaining and easy to read, presenting often a historical perspective that adds an interesting dimension to the text. It has excellent illustrations, many of them modified from the original published figures. The authors emphasize the conceptual approach, making the book accessible even to students who lack a solid mathematical background.

The book opens with a brief introductory chapter on membrane composition and structure, too brief in my opinion since key aspects of membrane organization that incide directly on membrane function,

such as the role of cytoskeletal proteins, are not mentioned. The authors continue with a very good presentation and analysis of diffusion of non-electrolytes and ions, and of carrier-mediated transport; the new chapter added to the second edition describing diffusion of ions through biological channels is timely and easy to follow. Resting potentials and the generation and propagation of action potentials are presented next in an elegant and highly didactic fashion, although a brief description of gating currents would have been desirable. The authors have included an Appendix for those readers who want a more detailed discussion of the Hodgkin and Huxley analysis of the electrical properties of nerve membranes. The book ends with three chapters dealing with synaptic transmission and synaptic plasticity in the nervous system, that are a pleasure to read.