markers. These cellular markers are defined in the Preface as molecules which are "not released into serum or other body fluids in any appreciable quantity". The main emphasis is on c-oncogenes and suppressor genes although differentiation antigens and markers of chemotherapy resistance are also discussed. Following a comprehensive Introductory Chapter, selected c-oncogenes and suppressor genes such as *ras*, c-*myc* and p53 are discussed in Chapters 2, 3 and 4. Each of these Chapters focus on basic mechanisms of gene activation as well as on potential clinical applications. As regards possible clinical uses, most of the emphasis is on disease prognosis rather than diagnosis. Surprisingly, no Chapter was devoted to the c-*erb*B-2 gene which is perhaps one of the most widely investigated c-oncogenes from a clinical point of view. Chapters 5–9 discuss molecular alterations in a number of different malignancies such as gynaecological, colorectal, breast and lung cancers as well as melanomas, Hodgkin's and Non-Hodgkin's lymphoma. One common malignancy which is omitted is prostate cancer. These Chapters are of variable quality, especially in the inclusion of up-to-date references Thus, the Chapter on Non-Hodgkin's lymphoma contained references only up to 1992 while the Chapter on breast cancer included publications up to the end of 1994. Chapters 14, 15 and 16 concentrates primarily on the exploitation of the molecular alterations in malignancy for therapy. Thus Chapter 14 discusses P-glycoprotein but not other markers of chemotherapy resistance while Chapters 15 and 16 describe the use of genetically engineerd monoclonal antibodies and antisense oligonucleotides.

In summary, this is a good introduction to what the authors call "cellular cancer markers". The publication is timely and will be of value to cancer researchers, clinical chemists/biochemists and commercial companies interested in exploiting recent advances in molecular carcinogenesis for the development of new diagnostic and management tests. One hopes that in the future, this book will be expanded, updated and revised as molecular markers find increasing clinical applications.

M.J. Duffy

Advances in Second Messenger and Phosphoprotein Research. Molecular and Cellular Mechanisms of Neurotransmitter Release; Edited by L. Stjarne, P. Greengard, S.E. Grillner, T.G.M. Hökfelt and D.R. Ottoson; Raven Press; New York, 1994; xxii + 569 pp. $ 157.00. ISBN 0-7817-0220-8

This volume in the series Adv Sec. Mess. and Phosphoprotein Res. represents the Proceedings from a Wenner–Gren International Symposium on the topic which is the title of the book. It summarizes the recent developments in the understanding of the intricate molecular mechanisms underlying transmitter release. It contains focused reviews on synaptic vesicle proteins, pathways for transmitter release, Ca^{2+} channels and their role in vesicular release and finally an analysis of mechanisms for quantal release both in the central and peripheral nervous systems. The outline of the proteins in the vesicular and plasma membrane of the synaptic complex of docked vesicles is very useful and the discussions of the spatio-temporal relationships between vesicular lease and changes in the intracellular Ca^{2+} concentration are the results of front line research. In this context the chapters on Ca^{2+} signalling and Ca^{2+} channels are highly appropriate. The chapters on mechanisms governing glutamate release from isolated nerve endings or more intact nerve cell preparations provide up-to-date information about its regulation. Discussions of quantal release are useful and the notion of quantal variance receives pertinent attention.

Overall the Editors of the Volume are to be congratulated for the excellent coverage of this rapidly moving area of neuroscience. The multidisciplinary approach by having contributions from neurochemists as well as neurophysiologists has been a success. This book is very useful for everyone working in this area of research. In this regard, the subject index is useful

Arne Schousboe

Micelles, Monolayers, and Biomembranes; Edited by M.N. Jones and D. Chapman; Wiley-Liss; New York, 1994; xii + 252 pp. $ 36.95. ISBN 0-471-56139-8

This book covers a broad spectrum of topics on the structure and organization of living matter that are dependent on hydrophobic interactions. In the first chapter the 'actors' involved in the hydrophobic effect (detergents, membrane lipids, and proteins) are introduced. This is followed by a detailed consideration of the use of the lipid monolayer system as an experimental model of biological membranes. Of particular interest is the current use of fluorescent dyes with which to visualize microheterogeneity (arising from limited free mixing of lipids), analysis of area-pressure curves, and the use of the system to study protein adsorption. In a similar way, chapter 3 introduces us to fundamental aspects of detergents The chapter is centered on bile salts and SDS, whereas non-ionic detergents, which are important for solubilization of membrane proteins in functional form, receives little attention. In the following chapters a wide variety of subjects is reviewed, among which can be mentioned: the various lipid phases, liposomes and the problems attending their use for targeting of substances into cells, detergent solubilization of biological membranes, the role of lipids for membrane protein function, the fluidic-mosaic model of membrane structure, membrane reconstitution, the effect of hydrophobicity in anchoring of signal peptides, membrane dynamics (rotational and lateral diffusion). These chapters contain many interesting illustrative examples, but nevertheless I have to confess that during the reading I felt somewhat unsatisfied. To a large extent, this has to do with what I perceive as a weakness in the overall planning or design of the book. The purely physico-chemical parts are not always well coordinated with their application on biological systems. In the foreword the authors point out that a full treatment of the subject of hydrophobicity would require several book volumes. Alternatively, I propose that this situation would have called for stricter planning. Indeed, the task would have been easier, if the authors has restricted themselves to micelles and membranes, in accordance with the title of the book. Instead they have focused too much on favorite topics, without giving enough consideration how these really fit into a coherent treatment of the subject, based on a set of unifying themes. For instance, there are interesting data on the role of hydrophobicity for assembly of tubulin and β-casein micelles, but the generality of hydrophobicity for association of e.g. membrane proteins is not discussed. In their treatment of the hydrophobic properties of proteins, the authors insist on taking a broad view, with the result, I fear, that the fundamental differences between watersoluble and integral membrane proteins do not clearly emerge. In some places (e.g. detergent solubilization and models of membranes) the treatment is perhaps also too traditional. The strongest parts of the book are those dealing with lipids and the authoritative treatment of the physical chemistry of detergents and lipids. Despite any shortcomings it is, in this area of cellular and structural biology, to be welcomed as an introductory text on the biological significance and physico-chemical basis of hydrophobicity.

Jesper V. Møller.