

the contributions in this particular volume are well worth the reading. How to procure it is, to use a popular phrase, 'beyond the scope of this review'.

JOHN H. FREER

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### Biochemical Analysis of Membranes

A. H. MADDY (Editor)

*Chapman and Hall, London, 1976, pp. 513, £16.50*

The stated intention of the book is to provide 'practical guidance in current techniques' used in membrane biochemistry, together with a 'sufficient theoretical background to these techniques'. As a result the articles in it have an unusual format, with the qualities of both a laboratory manual and a collection of detailed reviews of the literature.

The volume consists of a set of long articles covering two major aspects of membrane biochemistry: the isolation of various membranes, and techniques used in characterizing membranes. The first section includes chapters on the isolation and manipulation of mycoplasma membranes (Razin & Rottem), plasma membranes (Neville), mitochondrial membranes (Sottocasa), endoplasmic reticulum (DePierre & Dallner) and the nuclear envelope (Harris & Agutter). These are detailed articles, which, not surprisingly in a methodologically orientated volume of this sort, concentrate mainly on the fairly specialized interests of the authors. As such they will be of particular interest to workers with a direct interest in these topics, but it seems a pity that there is no chapter in this section to give a general view of the current state of membrane isolation techniques and their application to the wide variety of tissues that are nowadays under biochemical study.

The second half of the book deals with membrane solubilization (Maddy & Dunn), analysis of membrane proteins (Dunn & Maddy), lipids (Neukamp & Broekhuysse) and carbohydrates (Cook), with further chapters on the use of phospholipases (Zwall & Roelofsen), immunochemical gel techniques (Bjerrum & Bog-Hansen) and specific labelling methods (Hubbard & Cohn). This section should prove to be very useful to workers with a general interest in membranes. The collection of analytical methods covering proteins, lipids and carbohydrates in the same volume is unusual and helpful, and the articles on phospholipases, specific labelling and immunochemical techniques are critical and authoritative. The latter provide good descriptions of the advantages and pitfalls of these techniques and will be of interest to workers considering using these methods, as well as those who already use them. Taken as a whole, this is a worth-while well-produced volume that will, I imagine, have an appeal as a laboratory-based text.

M. J. A. TANNER

The biochemical properties of the rat protein, a 699 amino acids long polypeptide, have been analyzed. Four polyclonal antibodies raised against distinct parts of the channel immunoprecipitated a glycosylated protein of 96 kDa after cRNA expression in oocytes as well as after in vitro translation. When expressed alone into oocytes, the protein was not stable; most of it remains stacked into the endoplasmic reticulum. Relaxation analysis of the amiloride-sensitive current after voltage steps suggested that the channels were activated by membrane hyperpolarization. Ion selectivity sequence of the Na<sup>+</sup> conductance was Li<sup>+</sup> > Na<sup>+</sup> >> K<sup>+</sup> = N-methyl-d-glucamine<sup>+</sup> (NMDG<sup>+</sup>). Membrane-bound proteases are involved in various regulatory functions. The N-terminal region of PH1510p (1510-N) from the hyperthermophilic archaeon *Pyrococcus horikoshii* is a serine protease with a catalytic Ser-Lys dyad (Ser97 and Lys138), and specifically cleaves the C-terminal hydrophobic region of the p-stomatin PH1511p. In a form of human hemolytic anemia known as hereditary stomatocytosis, the stomatin protein is deficient in the erythrocyte membrane due to mis-trafficking. In order to understand the catalytic mechanism of 1510-N in more detail, here the structural and biochemical analysis... Biochemical analysis of trafficking within the secretory pathway remains an important approach to assess the functioning of this pathway. With the advent of technologies that can ablate the function of specific gene products, such as RNA interference or mutagenesis with zinc-finger nucleases, together with the development of increasing numbers of small molecule inhibitors, it is more important than ever that we can sensitively and quantitatively assess rates of protein trafficking within cells. The use of established biochemical approaches such as those described here affords this possibility ... Markers of the apical membrane of the particular cells used for isolation should be determined in advance. Figure 6 shows a verification of the purity of isolated cilia.