

Molecular Aspects of Cellular Regulation

Vol. 4: Molecular Mechanisms of Transmembrane Signalling

Edited by P. Cohen and M.D. Houslay

Elsevier; Amsterdam, 1985

vii + 487 pp. \$116.75, Dfl.315.00

Elsevier books are usually beautifully crafted and this is no exception. The paper and the type-face are of fine quality. It is therefore not cheap to buy and the main question to be answered is whether its scientific content justifies this elegant packaging. Notwithstanding the fact that P.C. is a Departmental colleague and that M.D.H. and I have been friends for many years, I have to admit that the Editors have gathered together an impressive array of authors whom they have persuaded to write some well-chosen reviews. The Editors remind us that the Series, of which this volume is a part, is an occasional one, and that this 4th Volume (which is in 6 sections) is intended to complement the 3 previous volumes and to show how the themes of the earlier volumes are beginning to merge into a unified concept of transmembrane signalling.

Section A covers events which cause activation of protein kinase C and Ca^{2+} mobilization via activation of phosphoinositidase C (Downs and Michel) and it explores the ways in which cells exploit the large electrochemical gradient of Ca^{2+} across plasma- and reticular membranes to control intracellular Ca^{2+} levels via agonist-receptor complexes which are independent of PIP_2 hydrolysis (Huggins and England).

Section B considers current views on guanine nucleotide-dependent regulatory proteins, with contributions by Northup, Klee and the Birnbaumer/Lefkowitz ensemble, the latter authors discussing G_i and G_s in respect of adenylate cyclase regulation and speculating on the roles of G_o and related proteins. Fung describes the retinal system

of rhodopsin, transducin and cyclic GMP phosphodiesterase.

Section C is concerned with tyrosine kinases, insulin receptors and epidermal growth factor receptors (Foulkes and Rosner; Houslay; Russo et al.).

Section D covers receptor regulation via endocytosis (Hopkins) and desensitization (Lefkowitz).

Section E addresses the problems of understanding cell activation, with specific reference to mast cells (Gomperts and Fewtrell), lymphocytes (Zanders) and 3T3 cells (Rozengurt), while section F is a review by MacNab on transmembrane signalling in bacterial chemotaxis.

All in all, the book is well-written and tightly edited. I should, however, have liked to see a comprehensive subject index for those occasions when one does not wish to read 3 chapters but to look up quickly specific points of information. Furthermore, numbered and non-alphabetical reference lists make it difficult to answer questions like "Have they included Bloggs et al. (1983)?" when an overall alphabetical reference list of author citations would have facilitated the search. Such a large and expensive book should have offered its readers such aids to information retrieval. The equally impressive, and partially overlapping, 'Mechanisms of receptor regulation' (Editors, Poste and Crooke; Plenum Press, New York, 1985) manages to provide both a comprehensive index *and* alphabeticised references at the end of each chapter.

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