In 1975 Köhler and Milstein made the spectacular discovery of monoclonal antibodies and devised a sophisticated technique for their production. Since then monoclonals (MAb) have become most important tools in immunological research, clinical diagnosis and therapy (e.g. bone marrow transplantation). In the present volume, all aspects of production and use of MAbs are briefly but expertly discussed. As Milstein points out in his foreword, ‘no prior immunological knowledge is necessary to understand the well written text’. Understanding has been made easier by very instructive schematic illustrations. The most important literature is quoted. MAbs presently in use are of mouse or rat origin. The last chapter summarizes the results of the efforts to produce human MAbs. The difficulties are tremendous, but the area is most important and promising. This book will guide experimental research and clinical work in this exciting field and is warmly recommended.

Paul Kallós, Helsingborg

G. Möller

T Cell Hybrids
Immunological Reviews, vol. 76 Munksgaard, Copenhagen 1984 145 pp.; Kr. 158.60 ISBN 87-16-09671-1

As a logical extension of the successful use of B cell hybridomas, T cell hybridomas have been established in several research centres. The present volume contains 6 scholarly reviews, dealing with different applications of this new technique. Antigen-specific T cell clones have been grown in the presence of antigen, antigen-presenting cells (APC) and T cell growth factor (interleukin 2, IL 2). This technique was fruitful, but complex and tedious. T cell hybridomas have been developed by fusion of single T cells from different clones with known activity with cells of a HAT-sensitive lymphoma. Such T cell hybrids grow indefinitely without the presence of antigen, APCs and IL 2. After stimulation with mitogens (e.g. Con-A) or antigen they produce great amounts of lympho-kines. The rapidly growing antigen-specific hybridomas are suitable for the study of surface structures, i.e. the antigen receptor, MHC products and the interrelationship of these, that lies at the bottom of MHC restriction.

Kramer et al. showed that the progeny of a single T cell was able to produce a number of chemically and functionally distinct lymphokines, such as gamma-interferon (gamma-IF), macrophage-stimulating factors (MSF) and colony-stimulating factor (CSF). Schrader et al. present similar results. They studied another lymphokine, persisting (P) cell stimulating factor, in great detail. PSF stimulates a heterogenous population of myeloid cells which develop in vitro to mast cells (similar to mucosal mast cells) or to mega-karyocytes. PSF exerts most probably important activities in vivo.

Rock and Benacerraf contributed a most stimulating review, entitled ‘MHC-restricted T cell activation: analysis with T cell hybridomas’. They conclude that antigen is taken up by an APC
and associated with a specific genetically polymorph region of the la molecule. ‘The genetically polymorphic T cell specificity is constrained to private la determinants. This, in conjunction with molecular orientation of the presenting antigen, results in MHC-restriction’. Class II MHC products play a ‘pivotal role’. The underlying mechanism, however, could not be entirely clarified. Samelson and Schwartz used a new technique for measuring T cell activity, namely the release of IL 2. They produced monoclonal antibodies against the cytochrome c specific MHC-restricted surface receptor of T cell clones. Monoclonals obtained against a number of such clones ‘specifically bound to and inhibited the IL 2 release only from the immunizing cell’. The receptor could be characterized as a heterodimeric glycoprotein, composed of two chains of 45,000-50,000 and 40,000-44,000 dalton MW respectively, linked by disulfide bonds. Similar results have been obtained by Marrack et al., who stress in their important review the similarities between the antigen-specific T cell receptor structure and that of immuno-globulins. Suva et al. obtained rat × mouse T cell hybrids with in-ducible specific cytolytic activity and discuss the advantages of this system. The study of this volume is most rewarding.

Paul Kallós, Helsingborg

M.M. Dale, J.C. Foreman Textbook of Immunopharmacology

Who would have thought, only some 10 years ago, that we should today have a Textbook of Immunopharmacology available for the world to buy? After the introduction of one or two journals on this new subject, we now have a textbook, and a good one at that. The merging together of the two disciplines of Immunology and Pharmacology is not a shock, for the two have overlapped in several areas for some long time. What is so valuable about this textbook is that the two expert editors have first given us an Introductory Course to open discussion of the subject. Hats off to them! Needless to say, the book has arisen from that great stronghold of experimental pharmacology, namely University College London, where that great old maestro Heinz Schild was once Chairman of the responsible department.

This book, which is based on the immunopharmacology course for final year students at UCL, covers the mechanisms involved in the formation, release, and subsequent actions of the chemical mediators of inflammatory and immune reactions. In several places in the book, the reminder is made about the criteria which a mediator should fulfil, based on Dale’s original concept of 1933. This is particularly relevant as new factors are reported in the literature almost every month and one must determine how important the actions of such a new factor really are. It is in this area that the editors have made the reader consider for himself what is the relevance of the finding to clinical medicine. I found the book most stimulating

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Book Reviews

and can recommend it for all who work or will work in the field of immunopharmacology. It is easy to read and includes most of the modern viewpoints in this rapidly expanding discipline. This is not surprising as it is written by a host of experts. The role of cells involved in the interaction between host and pathogen or noxious agent (cells such as mast cells, neutrophils, eosinophils, macro-phages, lymphocytes and platelets) are covered in the first section of 6 chapters. The second section discusses mediators involved in these interactions and uses histamine release from mast cells as a model system (7 chapters). Thirdly, the main local and systemic phenomena of inflammation are dealt with in 5 chapters. The vascular responses, chemotaxis and cell accumulation, fever (and the possible involvement of interleukin 1), as well
as the increase in numbers of white cells in the blood (leucocytosis) are thought-provoking
events. Finally, in the fourth section, drugs used to control inflammatory and immune responses
are spelt out in some 10 chapters. I particularly liked the 2 Section Summaries, one for mediators
and one for drugs, and only wished that the editors had done a similar job for the other two.
There is one whole chapter on anti-allergic drugs, giving the story of cromoglycate and some of
the reasons for the non-appearance to date of successors to it. Very many compounds are now
known to inhibit anaphylactic release of mediators from tissue mast cells of different species.
Yet, not one of these has finally succeeded in long-term prophylaxis of either allergic rhinitis or
asthma. Anti-allergic drugs inhibit calcium-gate opening and so prevent the flux of calcium ions
across the cell membrane. But this may not be the only important action of cromoglycate.
The book is good value for money. References for further reading are given with most chapters
and there is a good Index. There
are very few errors in the text. On page 118, for example, I cannot see why Riley and West
should be split by 2 ands (line 3 up), and in the next line the spelling of principal is incorrect.
The word opposite is also incorrectly spelt on page 119 (line 7 up), as is the term in vivo on page
196. The title of chapter 20 in the Contents List has unfortunately been mispelt and why have 7
authors in the Contents List lost their second, or even third, initial; they must be the same authors
as in the text (e.g. L. Youlten and L.J.F. Youlten).
G.B. West, London
F.J. Dixon, D.W. Fisher(eds)
The Biology of Immunologic Disease
This volume contains 35 contributions by 43 authors, all of them well-known research workers
and/or clinicians. The chapters have been published during the past few years in the journal
‘Hospital Practice’ and have been collected, updated and edited by the scientific editor Frank J.
Dixon. The chapters cover basic and applied immunology in brief easily readable and very
informative presentations. Moreover, the book is lavishly illustrated with excellent, multicolored
drawings and microphotographs. It is the most beautiful medical book I have ever seen. It is
warmly recommended as a comprehensive introduction to this timely and difficult area of
science. It will provide help for students, teachers and clinicians as well.
Paul Kallós, Helsingborg