

Book reviews

Antibodies: A Laboratory Manual. Edited by ED HARLOW and DAVID LANE. Cold Spring Harbor: Cold Spring Harbor Laboratory. New York. 1988. 726 pages. Paper \$50.00. ISBN 0 87969 314 2.

The use of antibodies to detect antigens either *in situ* or isolated from cell extracts has revolutionised our approach to understanding cell biology. *In situ* staining of antigens using techniques such as immunofluorescence or immunoelectron microscopy allows us to localise antigens within the cell. SDS-PAGE analysis of immunoprecipitated antigens and western blotting procedures enable us to assign molecular sizes to protein antigens. Other techniques allied to immunoprecipitation, such as pulse-chase experiments using radioactively labelled precursors, give us valuable information on the time of antigen synthesis, rates of degradation for given antigens and also antigen processing profiles. In addition antibodies enhance the purification procedures of many antigens through immunoaffinity chromatography and also allow accurate quantitation of antigens within samples through various forms of immunoassay.

These techniques and the need to raise the antibodies necessary to pursue them have universal application throughout cell biology and the laboratory manual edited by Harlow and Lane usefully brings all the required methodology under one cover. The editors state that the idea for this book was inspired by 'the cloning manual', *Molecular Cloning: a Laboratory Manual*, by Maniatis, Fritsch and Sambrook (published by Cold Spring Harbor Laboratory, 1982). In the same way as this book aided scientists to enter the field of molecular biology, Lane and Harlow hope their book will enable scientists to enter the world of antibody methodology. In attempting this they probably set themselves a harder task than Maniatis *et al.* because of immunology's underlying complexity.

A major source of readers will undoubtedly come from the realms of molecular biology and many of these will not be fully acquainted with the vast strides made in our understanding of immunology over the past decade. The first four chapters, therefore, present an overview of our understanding of the immune response, antibody molecules, antibody-antigen interactions and the immune response. These chapters are succinct and clear and are backed up by comprehensive reading lists for those who wish to delve into the theory in more detail.

Following on from these introductory chapters Lane and Harlow proceed to document the immunological procedures required of modern biology. Chapters 5–8 deal with the raising of both polyclonal sera and monoclonal antibodies, the growth of hybridomas and the storage and purification of antibodies. Chapters 9–14 deal with the use of antibodies to detect and purify antigens. Each chapter contains a few introductory pages outlining the general principles and theory underlying the techniques and follows up with detailed protocols on all the standard procedures likely to be encountered, plus a few of the more exotic ones also. The chapters are clearly laid out and this, together with good cross-referencing, makes the book extremely easy to use.

The manual also contains many useful hints to the experimenter contemplating a new technique. For example, in the case of raising antisera to synthetic peptides, not only are the methods and merits of coupling peptides to carrier proteins documented, but sound advice is also given on the type of peptide likely to yield the best results. Similarly, when discussing monoclonal antibody production in a supremely well written chapter, the point is forcibly made that good assays should be available and that sera from the test animals should be of adequate quality before proceeding with fusions to yield hybridomas. A simple point, but one that if not followed may lead to months of fruitless work.

If the manual has a failing it is perhaps that it concentrates on protein antigens to the exclusion of all others. A chapter giving an overview of the use of antibodies to detect non-protein antigens would be a useful addition. However, this criticism is minor when placed in the context of such a useful text. For less than the price of a batch of ^{125}I protein A, this book is well worth the investment for any laboratory contemplating the use of antibodies.

ROBERT G. RIDLEY
Department of Molecular Biology,
University of Edinburgh

Genetics and Alzheimer's Disease. Edited by P. M. SINET, Y. LAMOUR and Y. CHRISTEN pp. 179 Springer-Verlag, Berlin, Heidelberg and New York 1988. Price DM 108

Alzheimer's disease (AD), named after a German neurologist of the last century, is one of the most