Book reviews

Apoptosis in Immunology. Kroemer G, Martinez C, eds. Vol XII in the series **Current Topics in Microbiology**. (Pp 242; £77.50.) Springer Verlag. 1995. ISBN 3-540-58756-X.

Apoptosis is now recognised as the mechanism by which unwanted cells are tidily eliminated with no messy consequences such as inflammation. This is nowhere more important than in the immune system which is typified by the overproduction of all sorts of cells—particularly self-reactive lymphocytes—which would be a severe embarrassment to the organism if not removed. Autoimmunity and cancer are the consequences of *not* having enough apoptosis. Apoptotic mechanisms also play a role in killing of target cells by immune effector cells, as for example cytotoxic T cells. A volume dealing with apoptosis and immunity is therefore opportune.

This book is a compilation of invited papers by eminent authors who have written ably on the nature of apoptosis in immunology. More accurately, apoptosis in lymphocytes as there is in fact little about the many interesting non-lymphocytic cells of the immune system, or other related haematopoietic cells. There is, in addition, some chapters on apoptosis in AIDS and so we see that this book is somewhat of a pot pourri of topics, all interesting, but neither providing nor presumably aiming to provide a comprehensive coverage. I do not see, for example, substantial sections on apoptosis in cytotoxic cell killing nor is material gathered together on apoptosis induced via the Fas/tumour necrosis factor receptor mediated pathways, although there are many scattered references to these.

The value of such a book as this is rather that you might hope to find some interesting information that would otherwise have eluded you, and in this I for one was not disappointed. For example, I found there is evidence for proteases and the ubiquitin pathway in apoptosis, and I learned that p53 is not necessary for apoptosis induced by anti-CD4 in peripheral T cells. There is of course much solid worth here and some good writing. I particularly valued the chapter by Boise *et al* with its succinct description of Bcl-2-like proteins; that by Harrison *et al*, introducing the concept of the undead cell; and

the good account given by Kabelitz *et al* of apoptosis induced via the TCR.

On the whole, all the main points about the stimuli and pathways of apoptosis, at least in lymphoid cells, are covered in this book, and certainly for an immunologist it is a useful source book. However, this book has the faults of its sort, repetition, as each author introduces the topic afresh, and yet paradoxically the lack of background material to put into context the specialist contributions. Clearly, it is aimed at a scientist who is already pretty knowledgeable and is looking for top-up information. Not for the tyro.

A MORRIS

PCR Applications in Pathology. Principles and Practice. Latchman D, ed. (Pp 269; £29.50.) Oxford Medical Publications. 1995. ISBN 0-19-854354.

Every once in a while, a fundamentally innovative technique appears that is not only clever but also has a significant, even huge, impact on scientific progress. Such it was with DNA sequencing and such it is with the PCR. This technique is elegant and sensitive and has been adopted quickly by biological scientists as one of their basic tools. PCR is inevitably finding its way into the pathology laboratory. Just as inevitably, books devoted to the applications of PCR in pathology were destined to appear and this one, although not fully comprehensive in its scope, addresses some of the method's applications in the practice of clinical pathology.

The book's editor, in the preface, laments the delay in PCR being adopted by pathologists, compared with its rapid application by basic scientists. This he attributes to the technique being "... seen as a complex and difficult procedure beyond the scope of routine diagnostic laboratories". He may be right, but I suspect he underestimates his colleagues in pathology, who strike me as being remarkably alert in recognising and trying new methods, despite their progressively burgeoning routine commitments. Nevertheless, many clinical laboratory staff have relatively little time to evaluate and tinker with a method, to make its potential and drawbacks apparent, as well as ensuring user-friendliness. The lag in a technique being adopted by routine clinical laboratories is probably, therefore, ineluctable. Textbooks assembling the experiences of those who are already familiar with a technique can clearly save valuable time and foster new ideas.

This book has 11 chapters, which might be viewed as representing three main sections. Firstly, the principles of PCR; chapter 1 deals with how the method works and gives an overview of its applications, with chapter 2 describing quantitative PCR. The second 'section', encompassing applications in microbiology, is covered by chapters 3 to 6. The remaining chapters deal with applications of PCR in the fields of inherited diseases and cancer.

Some potential buyers might think that the book is not specialised enough; why should a haematologist, for instance, be interested in the diagnosis of *Toxoplasma*? This attitude would be regrettable. It should be of interest to know what one's colleagues down the corridor are doing. More importantly, cross-fertilisation of ideas is a valuable process. After all, there is an apparently wider gap between basic molecular biology and pathology than there is between each of the disciplines of pathology, but did not basic molecular biology pioneer PCR in the first place?

The book, although of modest size, does cover a fairly wide range of material. Some of the chapters on microbiological applications even include protocols for diagnostic tests. Thus, although not intended as a laboratory manual, this at least gives readers a real feel for the working procedures of the technique and, moreover, an opportunity to have a go themselves.

What about omissions? I was surprised that several major applications were not covered more fully. Firstly, nested PCR is referred to briefly in one or two places but the significance of this variation would be lost on the uninitiated. I should have thought nested PCR warranted a more detailed description, appropriately in chapter 1. Secondly, there is a solitary short paragraph (chapter 1, page 11) devoted to HLA typing. This is certainly one area where PCR has had a major clinical impact, having to date all but replaced serological methods. Thirdly, applications for the histopathologist seem to have been neglected; although the use of *in situ* PCR in viral diagnosis is dealt with in chapter 4, there is no attempt to address its uses for detecting human DNA sequences. Perhaps these areas could be included in future editions, which must be contemplated in view of the assured progress of this technique in pathology.

In summary, this book is readable and should be interesting and useful to those in the various disciplines of pathology who wish to understand the potential of PCR. I should, overall, be pleased to have it on my own bookshelf, where indeed it now is.

D BURNETT

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