

## Book reviews

### *Advanced Methods in Protein Microsequence Analysis.*

Edited by BRIGITTE WITTMANN-LIEBOLD, JOHAN SALNIKOW and VOLKER A. ERDMANN. Berlin: Springer-Verlag. 1986. 423 pages. DM 198. ISBN 3 540 16997 0.

The scope and role of protein sequencing has changed in the last ten years or so. Up to 1977 it was the only method for elucidating the exact primary structure of a protein. When the methods for rapid DNA sequencing became available, amino acid sequencing was avoided whenever possible, as being tedious, unreliable for large proteins, and requiring more material than could often be obtained. More recently the balance has again changed, with the development of extremely sensitive methods and instruments for protein sequencing, and it is now possible to combine DNA and protein sequencing in designing rapid and highly efficient strategies for tackling a wide variety of biological problems. Moreover, there is an absolute requirement to adopt a protein approach to investigate such topics as active-site labelling, or post-synthetic modification, or isoenzyme expression, to name but a few.

The determination of protein sequences is a field which has traditionally shared the details of its methods by word of mouth and informal lab notes. There has long been a great need for a practical manual – a ‘Maniatis’ of protein sequencing. I am therefore very pleased to be able to report that this book does indeed go at least part of the way towards satisfying this need. However, it is a remarkably variable book, and there are several disappointing omissions as well as the inclusion of quite a bit of material of marginal relevance.

The book is derived from a FEBS Advanced Course on Microsequence Analysis held in September 1985. The course was apparently heavily oversubscribed, and this book is an attempt to satisfy the ever-increasing demand for highly sensitive methods for the analysis of proteins. The title of the book has logically been derived from that of the course, but in fact seems quite misleading as many of the methods are not advanced, and many are not even concerned with protein sequencing. The editors state in the introduction that some of the ‘...experimental protocols are suitable for use in the laboratory for student courses...’, as well as for use by researchers who are new to the field of protein microsequence

analysis’. The sections dealing with methods for protein cleavage, separation of peptides by HPLC and manual microsequencing are truly excellent in this respect. How useful it is, for example, to have it explained that ammonium acetate buffers for HPLC separations should be prepared from ammonia and acetic acid, because the salt is not pure enough – and that the buffer once prepared is only stable for a few days.

The availability of rapid and high sensitivity protein sequencing techniques means that these should be the methods of choice for many applications. However, it is frequently the case that a scientist requiring these techniques has little experience with handling proteins. There is an obvious need for advice concerning the pros and cons of the different sequencing methods and the different types of equipment available. It is disappointing that there is no section of this sort in the book. Moreover, the sections on automated sequencing are heavily biased towards descriptions of instruments constructed in the laboratories concerned, and there is little mention of the commercially available machines. There can only be relatively few laboratories which have both the capability and inclination to construct their own instruments – a statement which is justified when one considers the phenomenal success of the Applied Biosystems gas-phase sequencer.

In summary, the main strength of this book is as an excellent laboratory manual for many of the high sensitivity methods required for the analysis of proteins. With this in mind, it would be more useful (and presumably much cheaper!) if the book had a soft cover/spiral-bound format.

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*Cancer Cells 5: Papillomaviruses.* Edited by B. STEINBERG, J. BRANDSMA and L. TAICHMAN. New York: Cold Spring Harbor Laboratory 1987. 423 pages. Paper, \$80.00. ISBN 0 87969 301 0.

This book is a collection of papers delivered at the annual scientific meeting entitled ‘The Papillomaviruses’, which was held at Cold Spring Harbor in the summer of 1986.

In keeping with the Cancer Cells series the presentations are related to molecular mechanisms