

Book Reviews

The Genome; By R.S. Verma; VCH Publishers; New York, Weinheim and Cambridge, 1990; xix + 327 pages; £48.00, DM 136.00

This book is part of the series *Frontiers in Molecular and Cellular Biology* edited by E.E. Bittar. Following a short introduction with a historical look at chromosome studies, chapter 2 deals with chromosomal order, a range of differential staining techniques and the importance of chromosome banding patterns. An overview of the structural and functional aspects of chromatin and heterochromatin is presented in chapter 3. Chapters 4 and 5 are concerned with meiosis and describe the structure of centromeres and kinetochores, chromosome movement, crossing over and synaptonemal complexes. The intriguing questions of dosage compensation, sex determination, sex reversal and abnormalities of the sex chromosomes are discussed in chapter 6. Chapter 7 describes the composition, organisation and evolution of mitochondrial DNA and discusses mitochondrial genetic diseases. Sister-chromatid exchanges and their biological implications are considered in chapter 8. Various types of chromosome abnormalities and their implications in medicine are discussed in the next chapter.

The role of chromosomes, oncogenes and retroviruses in the transformation of a normal cell to the neoplastic state are considered in chapter 10. The final chapter discusses the application of recombinant DNA technology in the mapping and sequencing of human and non-human genomes, the diagnosis and prevention of genetic diseases and the prospects for gene therapy. Each of the eleven chapters contains a good and up-to-date list of references which is a useful supplement to the general text.

The book is good, informative and written in a clear style which is very easy to follow. The theories and hypotheses are certainly presented very well. This very good book should prove useful both to those already in the field and to those considering entering it; it is recommended to both molecular and cell biologists. However, this reviewer wonders whether a better title might have been 'Chromosomes' as the book gives a good account of chromosomes with very little information on the genome.

D. Savva

A Laboratory Guide for In vivo Studies of DNA Methylation and Protein/DNA Interactions; By H.P. Saluz and J.P. Jost; Birkhäuser Verlag; Basel, 1990; 286 pages; SFr 98.00

Those scientists familiar with the work of Jost's group will not be surprised to find that this laboratory manual provides a very thorough and meticulous account of the methodology involved in genomic footprinting and sequencing. At a time when a plethora of molecular biology recipe books are jostling for the Maniatis (now Sambrook) crown, the need for more specialised methods books is becoming apparent. Indeed, the IRL Practical Approach Series has been an excellent adjunct to these more general manuals.

Saluz and Jost have set themselves the task of providing the inexperienced molecular biologist with the necessary information to complete a genomic sequencing experiment from start to finish with very few theoretical or practical assumptions. The text is well-organised and user-friendly and has been improved upon after the first edition by the inclusion of a new section on a PCR-based approach to genomic sequencing, the expansion of the trouble-shooting

section and by the addition of material and practical hints from other laboratories which have been brave enough to apply genomic sequencing to their particular problems.

In my laboratory, the first edition provided an excellent practical guide to the isolation of 'high-quality' genomic DNA and made graduate students think about quantitative aspects of biochemistry, something which is seldom encountered in modern molecular biology. The revised edition maintains the high standards set by the first and adds a detailed account of Saluz and Jost's PCR-based method which circumvents the difficulties of transferring sequencing gel fragments to nylon.

Genomic sequencing, as the authors point out is the only way in which all specific methylation changes in the genetic material can be observed. It is therefore a technique of immense value to workers in the field. Now, with the aid of this book, Saluz and Jost bring the technique within the grasp

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