

BOOK REVIEWS

Hormones and Fetal Pathophysiology. Edited by J. R. PASQUALINI and R. SCHOLLER. Published 1992 by Marcel Dekker Inc., New York. No. of pages: 808. ISBN: 0-8247-8651-3. Price: US\$ 185.00.

This book is a timely reference volume offering up-to-date information on the pathological alterations that occur in the biosynthesis of hormones during fetal development. Elucidating the methods of detecting diseases in the embryo using molecular biology techniques, this book provides exhaustive discussions of the following:

- Sex differentiation abnormalities, including genetic control and the role of anti-Mullerian hormone.
- Surfactant-associated proteins during fetal lung development.
- Pathological problems of the placenta.
- α -Fetoprotein and its implications in fetal pathology.
- The effects of prenatally administered sex steroids and anti-steroids on the hormonal responses of offspring.
- Oncogenes and growth factors during pregnancy.

This book constitutes an incomparable resource with around 3000 literature citations and is indispensable to endocrinologists, gynecologists and obstetricians, pediatricians, pathologists, molecular and cellular biologists and biochemists, physiologists, oncologists, histologists, as well as upper-level undergraduates, graduates, and medical school students in these disciplines.

Gene Rearrangement. Edited by B. D. HAMES and D. M. GLOVER. Published 1990 by Oxford University Press, New York. ISBN: 0-19-963050-X. No. of pages: 154.

This volume is one of a series of books on *Frontiers in Molecular Biology* reporting on rapidly evolving key areas of molecular biology research.

DNA sequence rearrangements are widespread in both prokaryotes and eukaryotes and are the subject of intense current research. The scope of this topic is now so vast that it cannot be contained in a single book. An earlier volume in this series, *Molecular Immunology*, was devoted solely to the reorganization and expression of genes of the immune system, whereas this volume covers the latest developments in several other important and related areas of recent progress, contained in the following chapters:

- Genomic rearrangements in prokaryotes;
 - homologous recombination and genome organization,
 - site-specific recombination,
 - transposition,
 - illegitimate recombination.
- Antigenic variations in African trypanosomes: genetic recombination and transcriptional control of VSG genes;
 - African trypanosomes and immune-evasion,
 - ploidy, life-cycle, and chromosome structure,
 - DNA recombinational mechanisms in differential VSG gene expression,
 - identification of transcriptional initiation sites,
 - trypanosomes in the insect vector and expression site,
 - evolution of the VSG gene repertoire.
- DNA amplification in eukaryotes;
 - developmentally regulated rDNA amplification,
 - gene amplification during the development of Dipteran flies,
 - amplification of genes mediating resistance to toxic agents in whole organisms,
 - amplification in mammalian cells in culture,
 - mammalian gene amplification *in vivo*,
 - stimulation of amplification,
 - forms and structures of amplified DNA,
 - evolution of amplified DNA,
 - mechanisms of amplification in mammalian cells.

This book would be useful for biochemists, biologists, molecular biologists, and advanced students.

Ribosomes and Protein Synthesis. A Practical Approach. Edited by G. SPEDDING. The Practical Approach Series. Series Editors: D. RICKWOOD and B. D. HAMES. Published August 1990 by Oxford University Press, New York. ISBN: 0-19-963104-2. No. of pages: 318. Price at May 1991: US\$ 75.00.

This volume has been designed to provide an up-to-date, concise, and self-contained introductory guide to the methodology and many of the techniques currently being used in the analysis of the events of protein biosynthesis and in the elucidation of the structure and function of ribosomes.

Ribosomes and the events of protein synthesis have provided a stimulating challenge to biochemists, geneticists, molecular biologists, and biophysical chemists for more than 30 years, and many fundamental questions still remain unanswered. In recent years, an increasing emphasis on the potential capability of RNA molecules to act as molecular

catalysts has led to a major resurgence of interest in the ribosome. This book aims to provide an important and timely introduction to many of the tools now required to enable both the newcomer and the established scientist to enter this exciting and challenging field.

The following main topics are covered in this volume:

- Isolation and analysis of ribosomes from prokaryotes, eukaryotes, and organelles.
- Initiation of protein synthesis.
- Purification of elongation factors from *Artemia salina*.
- Peptidyltransferase: the soluble protein EF-P restores the efficiency of 70S ribosome-catalysed peptide-bond synthesis.
- Termination of protein synthesis.
- Design and use of a fast and accurate *in vitro* translation system.
- New techniques for the analysis of intra-RNA and RNA-protein cross-linking data from ribosomes.
- Reconstitution of ribosomes.
- Coupled transcription-translation or ribosomal proteins.
- A hybrid selection technique for analysing *E. coli* mRNA: applications to the study of ribosomal protein operons.
- Analysis of ribosomal RNA structure: experimental and theoretical considerations.
- Site-directed mutagenesis of *E. coli* ribosomal RNA.
- Electron microscopy of ribosomes.

This volume would be very useful for biologists, physiologists, molecular biologists, and advanced students.

Peptide Hormone Action. A Practical Approach. Edited by K. SIDDLE and J. C. HUTTON. The Practical Approach Series. Series Editors: D. RICKWOOD and B. D. HAMES. Published February 1991 by Oxford University Press, New York. ISBN: 0-19-963070-4. No. of pages: 256. Price at May 1991. US\$ 78.00.

A full understanding of all the cellular processes involved in the biosynthesis, secretion, and action of peptide hormone requires familiarity with almost every branch of biochemistry. However, it is possible in this volume to cover only a few topics specifically relevant to endocrinology and it is perhaps fortunate that secretion and action are frequently reflections of similar processes. The stimuli for secretion are most often other hormones and neurotransmitters, which may themselves be polypeptides. In one instance diverse stimuli converge on the regulation of one process, exocytosis, whereas in the other a single molecular event, the binding of a hormone to a specific receptor, may result in a cascade of the cellular responses.

The following main topics are covered in this volume:

- Peptide hormone receptors.
- Receptor characterization.
- Cyclic nucleotides.
- Cytoplasmic free calcium: measurement and manipulation in living cells.
- Inositol phosphate second messengers.
- Lipid-related second messengers.
- The insulin receptor tyrosine kinase.

This volume would be very useful for endocrinologists, physiologists, biologists, biophysicists, and advanced students.