Essays in Biochemistry

Essays in Biochemistry: Regulation of Gene Expression

Edited by K Chapman, The University of Edinburgh, UK

1 85578 138 7 Paperback April 2001 132 pages £19.00

In all organisms, precise and exquisite control of the expression of the many thousands of genes comprising their genomes is essential for correct development, growth and function. The essays in this volume have been written by international experts working at the forefront of current research. They provide insights into current work and concepts which are elucidating the mechanisms which lead to protein synthesis in the correct cell, at the precise time and in response to appropriate signals.

The Essays contained in this volume are thought provoking, clearly written, well illustrated and accessible and will enable senior undergraduate and junior postgraduate students to appreciate the amazing subtlety and diversity of gene regulatory mechanisms.

Essays in Biochemistry: Molecular Trafficking

Edited by P Bernstein,
The Journal of Experimental Medicine, New York, USA

1 85578 131 X Paperback October 2000 200 pages £19.00

This volume of Essays in Biochemistry is a collection of review articles describing how molecules (proteins and nucleic acids) are targeted to, and transported across, various membrane-bound organelles within eukaryotic cells.

The 1999 Nobel Prize in Physiology or Medicine was awarded to Dr Gunter Blobel "for the discovery that proteins have intrinsic signals that govern their transport and localization in the cell". The award acknowledges the importance of the study of how newly synthesized protein and RNA find their correct destination within the cell. This volume summarises advances being made in this field of research. Students (and their teachers) who are undertaking advanced studies in cell biology will find this book extremely useful.

Essays in Biochemistry: Molecular Motors

Edited by SJ Higgins, University of Leeds, UK
and G Banting, University of Bristol, UK

1 85578 103 4 Paperback June 2000 200 pages £19.00

"the book on molecular motors makes for a terrific read, while riding in a car, a train, an airplane, or just sitting at your desk" ***Trends in Biochemical Sciences***

Biological systems abound with examples of molecular motors — biological machines for converting the chemical energy of ATP into mechanical movement by cells — they play pivotal roles in diverse cellular function. This volume, covers many of the most exciting developments in the field.

- All of the main motor systems are featured, giving wide coverage.
- Consists of short punchy review articles, making it easy to read.
- The application of gene-cloning methods and the recent advances are described.
- Human disorders involving defects in molecular motor systems such as hearing loss and heart disease are covered.

The Nobel Prize for Chemistry was awarded to John Walker and Paul Boyer in 1997 for their work in elucidating the mechanism of the rotary generator of ATP in the mitochondrion, the F_1-ATPase. This brought the new developments in the field of molecular motors to the attention of the whole scientific community and, via the media, to a wider world audience.

This volume aims to inspire young scientists to want to work in this area.

Essays in Biochemistry: Metalloproteins

Edited by D Ballou, University of Michigan, USA

1 85578 106 9 Paperback December 1999 200 pages £19.00

Metals are involved in most segments of the chemistry of life, including respiration, numerous steps of metabolism, photosynthesis, nitrogen fixation, nerve transmission, signal transduction, muscle contraction, oxygen transport and protection from xenobiotic compounds. In addition, metals are used in medicine as therapeutic agents. This volume describes many of the roles of metals in a variety of circumstances that are used widely in biology.

The 12 chapters of this volume are written by several of the best-known experts in their specialities.

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The Biology of Nitric Oxide Part 7

Edited by S Moncada, The Wolfson Institute for Biomedical Research, London, UK, L Gustafsson, Karolinska Institute, Stockholm, Sweden, P Wiklund, Karolinska Hospital, Stockholm, Sweden and EA Higgs, The Wolfson Institute for Biomedical Research, London, UK

1 85578 142 5 Hardback May 2000 257 pages £110.00

The proceedings of the *Sixth International Meeting on the Biology of Nitric Oxide* held at Stockholm, Sweden on 5-8 September 1999.

This book provides an up-to-date overview of the current status of the field with contributions from over 400 specialists covering the following areas:

Molecular Biology, Biochemistry, Physiology, Pathophysiology, Inflammation, Tumours, Apoptosis, Novel Compounds and Clinical Aspects.

Nitric Oxide and the Peripheral Nervous System

Edited by N Toda, Shiga University of Medical Science, Ohtsu, Japan, S Moncada, The Wolfson Institute for Biomedical Research, London, UK, R Furchgott, State University of New York, USA and EA Higgs, The Wolfson Institute for Biomedical Research, London, UK

1 85578 139 5 Hardback June 2000 200 pages £85.00

This volume provides an overview of NO in the peripheral nervous system, covering aspects ranging from the molecular biology and distribution of neuronal nitric oxide synthase, through the physiological and pathophysiological roles of NO in various nitrergic systems (systems of nerves whose transmitter function depends on the release of NO). They are of major importance in the regulation of certain genitourinary, gastrointestinal and respiratory functions. In addition, nitrergic nerves mediate neurogenic vasodilation of blood vessels in some vascular beds, notably those in the cerebral circulation.

Potential therapies that may arise from our increasing knowledge of this fascinating field of research are also reviewed.

Landmarks in Intracellular Signalling

Edited by RD Burgoyne and OH Petersen, University of Liverpool, UK

1 85578 101 8 Paperback 1997 278 pages £20.00

The idea behind Landmarks in Intracellular Signalling is to provide full reproductions of a set of key papers which have been chosen as landmark papers in the various aspects of intracelllular signalling. The selected papers have all resulted in significant advances in one or other aspect of intracellular signalling.

Readers of *Landmarks in Intracellular Signalling* will now have easy, ready available access to the original literature from one source. The papers are accompanied by commentaries that describe why the papers were significant, how the work came about and summarize the advances that have been made up to the present time as a consequence of the original paper.

Essays in Biochemistry: Cell Signalling

Edited by DJ Bowles, University of York, UK

1 85578 071 2 Paperback 1997 192 pages £19.00

The subject of this volume of Essays is cell signalling – the molecular events of information transfer, occurring within or between cells, that link external changes to internal responses. A broad range of topics have been chosen, to provide insights on a variety of processes in a range of cells and organisms.

Illustrated through-out with clear diagrams which convey complex information in a more accessible way.

The extensive bibliographies and further reading lists will provide undergraduates and postgraduates with a valuable bridge between textbooks and research papers. Serves as a useful teaching aid for lecturers in biochemistry and molecular biology.

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Robert Furchgott was awarded the Nobel Prize for Physiology or Medicine in 1998, along with Louis Ignarro and Ferid Murad for their pioneering work on nitric oxide as a signalling molecule in the cardiovascular system.

Protein Targeting and Translocation

Edited by D A Phoenix, University of Central Lancashire, UK

1 85578 121 2 Hardback 1998 304 pages £70.00

Protein Targeting and Translocation provides an overview of protein targeting, with experts reviewing developments in their area. By offering coverage of all the major eukaryotic and prokaryotic systems plus background information on protein membrane interaction, the book not only provides readers with coverage of their main areas of interest, but also affords them the opportunity to compare and contrast targeting to different organelles.

"This monograph arrives at a good time. It can serve as a primer for the uninitiated without the fear that the landscape will change significantly in the near future... There is a wealth of detail, and in many cases useful overviews of the status of the field and what mysteries lie waiting to be solved... as a single reference for prokaryotic translocation it will do quite nicely."
Australian Biochemist

Eicosanoids and Related Compounds in Plants and Animals

Edited by A F Rowley, University of Wales, Swansea, UK, H Kühn, Humboldt University of Berlin, Germany and T Schewe, Free University of Berlin, Germany

1 85578 108 5 Hardback 1998 240 pages £65.00

This book provides an up-to-date overview of the nature, modes of biosynthesis and functions of eicosanoids and related compounds in plants and animals. No other volume has attempted to draw together such a diverse approach in a single volume. The uniformity of presentation is an unusual feature with the volume divided into two main sections; biochemical and functional aspects.

The first section deals with the diversity of eicosanoids generated and the nature of the enzymes and other factors associated with their biosynthesis. The second section largely deals with the more functional aspects of eicosanoids.

"This volume draws together for the first time overviews describing the importance of eicosanoids in plants and animals. No other volume has attempted to combine such a diverse approach in a single volume. The uniformity of presentation is an unusual feature with the volume divided into two main sections: biochemical and functional aspects"
Journal of Investigational Allergology and Clinical Immunology

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Plant Science Titles

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Recent Advances in the Biochemistry of Plant Lipids

Edited by JL Harwood, University of Wales, Cardiff and PJ Quinn, King's College, London

1 85578 146 8 February 2001 Hardback 480 pages £75.00

The symposium covers the full range of biochemical, chemical and molecular biological aspects of plant lipids (including lipid structure and analysis, fatty acid biosynthesis, lipid metabolism and oxidation, isoprenoids and steroids, signalling, environmental aspects and biotechnology). Contents include 200 short papers as well as longer papers.

Plant Systematics for the 21st Century

Edited by B Nordenstam, G El-Ghazaly, Swedish Museum of Natural History, Sweden and M Kassas, Cairo University, Egypt

1 85578 135 2 September 2000 Hardback 300 pages £75.00

The book provides a unique insight into the biology and evolution of flowering plants as a whole. The first part of the book deals *inter alia* with an updated classification of the monocotyledons, phylogenetic nomenclature and a new ordinal system for the angiosperms (flowering plants), and an overview of the plant kingdom from a molecular perspective. The study of pollen and its contribution to systematic and evolutionary studies is one of the themes of the second part, which also focuses on areas of plant anatomy and biological significance of floral odours.

Engineering Crop Plants for Industrial End Uses

Edited by P R Shewry, J A Napier, IACR Long Ashton Research Station, University of Bristol, UK and P Davis, Unilever Research Colworth Laboratory, Bedford, UK

1 85578 113 1 October 1998 Hardback 236 pages £75.00

There is increasing interest in using crop plants as bioreactors, to produce compounds ranging from high volume, low cost feedstocks to high value, low volume pharmaceuticals. This is facilitated by the development of transformation systems for crop plants.
This book is the first to be devoted entirely to the use of crop plants to produce such compounds, and includes contributions on modified starches, plastics, fibres, industrial and pharmaceutical oils and proteins including antibodies and antigens. Wider aspects of industrial crops are also considered including the agricultural context and the development of crop fractionation procedures.

Plant Cell Division

Edited by D Francis, University of Wales, Cardiff, D Dudits, Institute of Plant Biology, Hungary and D Inzé, Ghent University, Belgium

1 85578 089 5 1997 Hardback 362 pages £75.00

This book is about the control of the plant cell cycle at the molecular level. Each chapter is a consolidated review of what is known about plant cell cycle genes (cyclin–dependent kinases and cyclins), cell cycle–dependent gene expression, cell cycle genes and development, plant histones, DNA replication and the structural components of plant cell division.

"In my view, there is no better book from which to gain an overview of current plant cell cycle research and the key questions that it addresses. This book has a clarity and content that is ideal for both advanced undergraduates and researchers."
Trends in Plant Science

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