

**Gene Expression in Recombinant Microorganisms;** Edited by A. Smith, Marcel Dekker, Inc.; New York, 1994; xii + 410 pp. \$175.00. ISBN 0 8247 9543 1

'Gene Expression in Recombinant Organisms' is the 22nd in a series of books covering bio-process technology. The book consists of seven chapters of which the first six are devoted to expression of genes in various microorganisms and the seventh to safety and regulatory aspects.

All chapters in the book are written by specialists and give a comprehensive and excellent description of the state-of-the-art for each organism. The topics covered go from a chapter on expression in *E. coli* (written by Joan Stader) and a chapter on expression in *Bacillus* (written by Matti Sarvas) through gene expression in different yeasts, with a chapter on *S. cerevisiae* (by A. Hinnen et al.) and methylotrophic yeast (by Gerd Gelissen et al.) to expression in filamentous fungi (by Jaap Visser et al.), and ends with a chapter on expression in *Streptomyces* (by Richard H. Baltz).

Each chapter includes description of the various aspects of expression in the particular microorganism, with focus on vector systems, selectable markers, elements involved in transcription and translation regulation, as well as signals for secretion. All chapters give

examples of peptides and proteins that have been successfully expressed, but also problems and limitations in the expression systems are dealt with. The very last chapter of the book focuses on the safety and regulatory aspects related to the use of recombinant organisms. An excellent summary is given of the legislations that have been introduced in different countries in order to control the work with GMO.

The editor's intention of presenting a book that provides the documentation of gene expression in the most important classes of recombinant microorganisms has no doubt been accomplished. The Book is recommendable to both specialists, who want to get an update on less familiar systems, and to scientists with general interest in the area. Considering the fast development of new systems for expression and the speed with which review books become outdated, a minor criticism should be that there are no chapters describing new potential systems as e.g. alternative yeasts that may evolve in the future.

Henrik Dalbøge

**Peptides: Design, Synthesis and Biological Activity;** Edited by C. Basava and G.M. Anantharamaiah, Birkhauser; Boston, 1994; 352 pp. DM 198.00. ISBN 0 8176 3703 6

The continued vigorous growth in peptide research over the past twenty years has shown no signs of abating. This is in large part due to the development of new instrumentation and techniques as well as the sustained evolution of long-established methods. Major annual peptide conferences, each spawning comprehensive proceedings publications, are now supplemented by a wide variety of specialist meetings covering all aspects of peptide chemistry, biology, immunology and physiology. In addition, several new journals dedicated to the reporting of peptide research have been established in recent times. Taking this into account, it is indeed a brave editor or two who is prepared to compile a collection of review articles touching on just some of the wide range of subjects involving peptides.

This book is one such compilation and was printed in honour of the contributions to peptide research by Professor Sivanandaiah of Bangalore University, India. This well-presented tome consists of eighteen chapters, seventeen of which are divided into four principal sections. The first of these, Peptide Synthesis and Methodology, covers a suitably diverse range of subjects from the chemical synthesis of cyclic peptides, both homodetic and heterodetic, and of cysteine-containing peptides, and glycopeptides. Enzymatic semi-synthesis is also discussed as is the use of catalytic transfer hydrogenation and hydrogenolysis.

The second section of the book, Peptide Design and Application, also has five chapters, three of which have a para-medical orientation. These include the synthesis and study of bioelastic materials and of apolipoprotein peptides associated with coronary artery disease. The development of potential peptide vaccines by de novo engineering

constitutes an increasingly important branch of peptide research and this is well-reviewed in one chapter. The remainder of this section describes the use of molecular mechanics to study peptide conformational space and bond length, as well as a discussion of the intriguing subject of complementary peptides and their potential application in molecular recognition strategies.

Section three, Studies of Peptide Hormones, consists of just three chapters with the first being in the style of a research paper detailing the synthesis and activity of oxytocin antagonists. Another chapter is an excellent, up-to-date mini-review of calcitonin, and the final chapter covers conformational aspects of calcium binding to synthetic peptides.

The four chapters comprising the final section of the book, which is entitled Other Biologically Active Peptides, are diverse in their subject matter. These range from modelling analyses of various folding patterns of the HIV-1 loop to the binding of peptides to acid lipid membranes.

The production quality of the book is excellent. It is beautifully edited, remarkably free of typographical errors, and has a pleasingly comprehensive index. The list of authors include several who are much respected in peptide research. While most of the chapters are topical and well-written, others are less so. For this reason, while it would be a good book for the shelf of a university's chemistry or medical library, its contents may become obsolete sooner than desirable. Consequently, it is better suited for the practising peptide researcher's personal collection, and slowly read and thoroughly enjoyed.

John D. Wade

**Immunotoxicology and Immunopharmacology, Second Edition;** Edited by J.H. Dean, M.I. Luster, A.E. Munson and I. Kimber, Raven Press; New York, 1994; xxii + 761 pp. \$170.50. ISBN 0 7817 0219 4

The emphasis in this second edition is slightly different to that of the first. With the development of immunotoxicology from a 'hanger-on' of toxicology and immunology to a subject in its own right, various chapters have now been added on, for example, the immune system of the skin and the lungs, immunosuppression mediated by UV light, and immunotoxicological studies in non-mammals.

There are now three distinct sections: immunosuppression, autoimmunity, and hypersensitivity reactions, as corresponding to the definition of adverse side effects on the immune system. While the chapters about substance-induced autoimmunity and hypersensitivity reactions have been considerably expanded, some review and

introductory articles have been left out. However, these three sections (immunosuppression, autoimmunity, and hypersensitivity reactions) are quite different in structure.

Five articles introduce the section about immunosuppression. The first, by E.S. Tucker, gives a very good overview of possible interactions of substances with the immune system (dysregulation), including a helpful and extensive list of references.

Three articles (J.G. Vos et al., R.E. Biagini et al. and M.I. Luster et al.) are about the (risk) assessment of findings from immunotoxicological studies: suitable animal models, the value of epidemiological and clinical studies, and an evaluation of animal studies