

## Book Reviews

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**Trace Elements, Micronutrients, and Free Radicals.** Edited by I. V. Dreosti. Humana Press, Clifton, NJ. 1991. viii + 231 pp. 16 × 23.5 cm. ISBN 0-89603-188-8. \$69.50.

This book is the latest volume in the series *Contemporary Issues in Biomedicine, Ethics, and Society*. As the field of free-radical biology rapidly advances and the endogenous antioxidant mechanisms are becoming elucidated, it has become apparent that diet and nutritional status play a major role in the ability of the body to handle oxygen-derived free radicals. This book depicts many of the key issues pertaining to free-radical damage and micronutrient protection and is divided into the following subject areas: free radicals in biological systems; free radicals as mediators of tissue injury, dietary prooxidants, vitamins and other dietary antioxidants; free-radical biology of iron; free radicals in cancer and aging; free radicals and malnutrition; and free radical pathology and the genome. Although the topics in the first two chapters and the chapter on iron have been exhaustively reviewed in the literature, the editor has clearly demanded strict adherence to the nutritional viewpoint. In addition, the first two chapters, highlighted by extremely informative figures and tables, were well-written by Martyn C. R. Symons and by Rolando Del Maestro, respectively. In the second chapter, the author provides some strong suggestions as to how studies should be designed so that hypotheses can be adequately tested so that the field of free-radical research will be continually advanced. It appears that the author is addressing the issue whereby free radicals are casually ascribed a role in a wide range of pathobiological conditions, thus diluting the impact when free radicals are definitely involved. The antioxidant properties of each of the vitamins were discussed in detail. An interesting correlation was drawn among the physicochemical properties of vitamins, their subcellular distribution, and site-specific free-radical generation which provided a rationale as to why certain vitamins protect in certain experimental models and not in others. The effects of nutritional deficiencies of the trace elements zinc, copper, iron, and manganese on enzymatic and nonenzymatic antioxidant defenses were discussed in detail. Due to space constraints selenium was not included. In the chapter on free radicals and malnutrition the authors provide a thought-provoking epidemiological definition of malnutrition and relate this to decreased antioxidant defenses. Special reference is made to malnutrition in children and the diseases marasmus and kwashiorkor. This book is well-written. Each chapter contains an average of 100 references, although references from 1989–1991 are lacking. A useful subject index is included. I highly recommend this book for a departmental library.

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**Methods in Molecular Biology. Volume 8. Practical Molecular Virology.** Edited by Mary K. L. Collins. Humana Press, Clifton, NJ. 1991. x + 330 pp. 16 × 23.5 cm. ISBN 0-89603-191-8. \$69.50.

This volume represents the contributions of almost fifty researchers, primarily from the UK, who are actively engaged in developing strategies for heterologous gene expression. It is a generally well-written and well-illustrated compendium of nine currently used eukaryotic viral vector systems. Retroviral vectors are extensively covered and comprise 12 of the 28 chapters. Non-viral and prokaryotic vectors are not considered. Particularly refreshing is the inclusion in this volume of the less well-exploited Ty-FLP and poliovirus vector systems, along with others including vaccinia and baculovirus, which have been reviewed elsewhere.

The discussion of each vector system is organized to first provide the reader with a brief introduction to the virus life cycle, emphasizing those aspects of the life cycle which can be exploited to develop viral vectors. Additional chapters or chapter sections provide details of both the construction of specific vectors and the necessary cell culture methods. Potential applications are illustrated by specific examples.

For the most part, this volume avoids the impulse to provide the reader with basic molecular biology protocols. Any researcher contemplating the use of retroviral vectors to study cell lineage, or as insertional mutagens, must be aware of the excellent protocol manuals already in print. Furthermore, several chapters, such as those on PCR or the analysis of proteins that interact with adenovirus early promoters, while well-written, provide details of ancillary techniques and seem to dilute the intended purpose of the volume.

Two additional features, which typically plague methods books as broad in scope as this volume, are apparent. Firstly, most of the cited reference literature is at least 2 years old. Secondly, and more importantly, several of the viral vectors discussed have improved significantly during the editing period. As a result, the failure to indicate the availability of both HSV vectors and baculovirus transfer vectors incorporating a simple blue-white screening assay for the recombinants is an unfortunate omission. Similarly, in view of the extensive page allocation to retroviral vectors, it would have been helpful to have included a discussion of the more recent and exciting replication-competent RSV vectors developed by Hughes (NCI).

While this volume has both strengths and minor weaknesses, it nevertheless is a useful description of the methods and potential applications of most of the currently accessible viral vector systems. It would seem especially useful for those researchers who wish to directly compare alternate strategies of gene expression.

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