

BOOK REVIEWS

VITAMINS

Walter de Gruyter, Berlin and New York, 1988

ISBN 0-89925-273-7 (U.S.) 1001 pages + Literature Supplement and Subject
Index (1058 pages incl.); DM 380.-; approx US \$225.-

The leaflet announces this treatise as a comprehensive, authoritative Handbook and reference source of all aspects of vitamins. And indeed it is. The motto at the outset is a quote from Albert L. Lehningers's "Principles of Biochemistry" (1962): "Discovery of the vitamins and their life-saving value in the prevention and cure of nutritional deficiency diseases is one of the most important contributions of biochemistry to medicine and human welfare". Friedrich, from the Institut für Physiologische Chemie, Universität Hamburg, FRG, has done an excellent job in compiling and integrating a huge amount of information in this active field.

This topic is of interest to Free Radical Research because major vitamins are directly involved in radical reactions, and it is widely accepted that biological functions of the tocopherols and of ascorbate reside in their reactivity in radical reactions. Further, carotenoids and related compounds are among the best known biological quenchers of singlet oxygen, and beta-carotene is of biological importance as provitamin A. Several others of the vitamins bear on reactions which are related to prooxidant and antioxidant activities in biological systems, e.g. the compounds derived from niacin, NADPH and NADH, of central importance in oxidation-reduction reactions and others such as ADP-ribosylation etc.

The first chapter gives a useful set of color charts with molecular models, structural formulae and crystal photos as well as appearance of the vitamin preparations to the human eye. It also addresses all of the aspects, often in tabular form, that are spelled out in detail in each of the subsequent chapters for the individual vitamins. The tables will be of value in teaching and for overviews in general. Historical aspects are also given.

I have read in detail only two or three of the chapters, and I can say without any hesitation that the writing is up-to-date, clear, complete and also interesting to follow. In summary, I can fully recommend this treatise to a large readership of interdisciplinary nature.

Prof. Dr. Helmut Sies
Institut für Physiologische Chemie I,
Universität Düsseldorf, FRG

MEDICAL, BIOCHEMICAL AND CHEMICAL ASPECTS OF FREE RADICALS

Edited by O. Hayaishi, E. Niki, M. Kondo and T. Yoshikawa Elsevier Science Publishers, Amsterdam, New York, 1989

ISBN 0-444-87482-8, Volume 1, 766 pages, Volume 2, continuing up to 1536 pages, and a subject and author index, 1559 pages inclusive

The two volumes constitute the Proceedings of the 4th Biennial General Meeting of the Society for Free Radical Research (SFRR), held in Kyoto, Japan, April 9-13, 1988. For me as one of those who had the opportunity to attend this meeting, it is quite gratifying to see what excellent outcome the meeting has generated. In fact, in large international meetings it is surely impossible to become acquainted with all of the material presented. Especially the many posters which contain the newest and often most interesting results do not get the coverage that they deserve during the meeting (this in spite of the fact that the Kyoto meeting did very well in scheduling the poster sessions). Therefore, the two volumes presented here are a good venue of exposure to the many contributions.

The scope of the meeting was broad, and it would be difficult to appropriately present the topics here. Just to name the sections into which the proceedings are organised: Overview, Iron, Active Oxygen, Vitamin E, Antioxidants, Superoxide Dismutase: then Vol. II: Assay Methods, Lipid Peroxidation, Lipid Peroxide, Prostaglandins, Ischemia-Reperfusion, Pathology, Cancer.

The quality of paper and of reproduction is excellent, and the exotic pink Flamingo colour makes the book stand out on the bookshelf.

The Japanese colleagues can be congratulated to a very good job! Active groups in Free Radical Research will profit from the timely content of the book.

Prof. Dr. Helmut Sies
Institut für Physiologische Chemie I,
Universität Düsseldorf,
Düsseldorf, FRG

PHARMACOLOGY OF MICRONUTRIENTS
NESTOR W. FLODIN

Current Topics in Nutrition and Disease, Vol. 20, Alan R. Liss, Inc., New York
ISBN 0-8451-1619-3: 342 pages, \$69.50

This book may be viewed as a state-of-the-art summary of what is known about the pharmacological properties of the vitamins and some trace elements, chromium, copper, selenium and zinc. In its seventeen chapters, the book discusses studies of the clinical effects of the four fat-soluble vitamins, A, D, E and K, and the nine water-soluble vitamins. Of the trace elements, iron and fluorine as well as iodine were not included as their clinical uses are well covered in existing textbooks. Other trace and (new term for me) "ultra-trace" elements (manganese, molybdenum, nickel, arsenic

and vanadium) are under active investigation but to date no clear-cut clinical applications were identified.

Each chapter opens with an introductory section summarizing the chemical and physical properties, biochemical and biophysical functions, signs and symptoms of deficiency, food sources, and recommended daily allowances (RDAs). This is followed by sections on absorption, metabolism, excretion, available dosage forms, clinical studies, toxicity and side-effects, and interactions. The authors states that the book represents quite complete surveys of the peer-reviewed biomedical literature through 1987; as far as I can tell, this certainly holds.

In the preface, some mention is made of the dietetics and nutritional biochemistry, in particular with respect to physicians who wish to try micronutrient therapy. One aspect of interest may be that micronutrients, in comparison with most drugs, unless grossly abused have low toxicity and few side-effects, and so they may often safely be given a trial to determine whether a beneficial clinical response may be obtained.

The term 'micronutrients' is coming into focus in Free Radical circles more and more, as some of the compounds listed under this heading exert their biological function via undergoing radical reactions, in general a protective fashion. I recommend this book for interesting and comprehensive reading.

Prof. Dr. Helmut Sies
Institut für Physiologische Chemie I
Universität Düsseldorf, FRG