Title
Sensory Physiology: Somatosensory Mechanisms. Curt von Euler, Ove Franzén, Ulf Lindblom, and David Ottoson, Eds. Plenum, New York, 1984. xiv, 396 pp., illus. $55. Wenner-Gren Center International Symposium Series, vol. 41. From a symposium, Stockholm...

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Vitamin A and Its Derivatives

The Retinoids. MICHAEL B. SPORN, ANITA B. ROBERTS, and DEWITT S. GOODMAN, Eds. Academic Press, New York, 1984. In two volumes. Vol. 1, xiv, 424 pp., illus. $46. Vol. 2, xiv, 446 pp., illus. $48.

These two volumes are a timely and comprehensive treatise on the chemical and biological functions of vitamin A and its natural and synthetic derivatives (retinoids). Following an introductory chapter, 15 dense, encyclopedic chapters cover in detail the chemistry, biochemistry, biology, and clinical applications of these compounds. The two volumes in toto convey the strong message that re-

tinoids are important molecules with multiple functions.

The synthesis of new derivatives of vitamin A and the testing of their functions in biological systems have increased our understanding of the native compound and moved consideration of the retinoids from their nutritional aspects to their molecular ones. Although the importance of vitamin A and its molecular interaction in vision have been appreciated for some time, the metabolic interactions of vitamin A, the serum and cellular retinol-binding proteins, and the pleiotropic biochemical effects of retinoids have only recently been appreciated. All these topics are covered extremely well in these two volumes.

Retinoids have been used in the past decade to probe the process of differentiation and maturation. What has become clear is that these compounds affect biological responses in a wide variety of normal and malignant cells, both in vitro and in vivo, and may in certain instances regulate oncogene expression. These themes are presented and discussed well in chapters by Roberts and Sporn and Moon and Itri. Molecular biology has developed rapidly in the past year, and I suspect that if the chapter concerning differentiation and maturation were being written today it would include a large section on the regulation of genes and growth factors. The retinoids may function to regulate the immune systems, and the book contains a current, balanced review of the subject by Dennert.

The nutritional role and the clinical aspects of vitamin A are fairly discussed. The role of vitamin A in classical nutrition is dealt with in a highly readable chapter by Underwood that is perhaps the best review of this topic that I have read.

The preclinical and clinical toxicology of selected retinoids is fairly discussed by Kamm, Ashenfelter, and Ehmann, although the important teratogenic effects of retinoids in humans, which were recognized largely in the past year, are necessarily not covered. A chapter on retinoids and cancer by Moon and Itri succeeds admirably in the very difficult task of integrating animal and clinical studies. The authors provide a firm base for understanding a subject in which there has been an explosion of interest in the past year or two that has generated a large number of human trials. The potentials and pitfalls of the subject are well considered.

The major impact that the retinoids have had on a whole series of serious, largely untreatable dermatological conditions is concisely presented in a 17-page chapter by Peak. Three pairs of before-and-after photographs of three different serious cutaneous diseases dramatically show why almost all dermatologists consider the use of retinoids to be the most important advance in the treatment of skin diseases in the 20th century. Many investigators suspect that retinoids will come to play important roles in the treatment of other diseases, including cancer and rheumatological diseases.

The Retinoids will likely be viewed as a classic for decades. It will certainly serve as an important reference for years to come.

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