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BOOK REVIEWS

Nuclear Hormone Receptors. *Molecular Mechanisms, Cellular Functions, Clinical Abnormalities.* Edited by MALCOLM G. PARKER. Published 1991 by Academic Press–Harcourt Brace Jovanovich, London. No. of pages: 404. ISBN 0-12-545072-9.

In the past decade there has been remarkable progress in the field of endocrinology due in large part to advances in molecular and cell biology. This book describes the family of proteins responsible for mediating the action not only of steroid and thyroid hormones but also different types of ligand such as retinoic acid and others predicted to exist but not yet discoverd. In view of the similarities in receptor structure it seems likely that they function by similar mechanisms to stimulate or repress the expression of specific genes and thereby play a crucial role in cell growth and morphogenesis, as well as differentiation. It is now also clear that disruption of hormone receptor function is implicated in oncogenesis and a number of endocrine disorders and further understanding will lead to new rational therapeutic and preventive approaches.

The different chapters, written by internationally acclaimed researchers, cover the following topics:

—overview of the nuclear receptor family;
—the oestrogen receptor: from perception to mechanism;
—structure and function of the glucocorticoid receptor;
—nuclear thyroid hormone receptors;
—the steroid receptor superfamily: transactivators of gene expression;
—characterization of hormone response elements;
—co-operative transactivation of steroid receptors;
—repression of gene expression by steroid and thyroid hormones;
—characterization of DNA receptor interactions;
—the interaction of steroid receptors with chromatin;
—ontogeny of sex steroid receptors in mammals;
—retinoic acid receptors and vertebrate limb morphogenesis;
—the role of steroid hormones and growth factors in the control of normal and malignant breast;
—genetic defects of receptors involved in disease;
—avian erythroleukaemia: possible mechanisms involved in v-*erb*A oncogene function;
—nuclear hormone receptors: concluding remarks.

This book would be useful for endocrinologists, biophysicists, biologists, molecular biologists, geneticians, clinicians, and pharmacologists, as well as for advanced students.

The Genome. RAM S. VERMA. *'Frontiers in Molecular and Cellular Biology' series.* Edited by E. E. BITTAR. Published 1990 by VCH, New York. No. of pages: 327. Price 1991 (hardback): $75.00. ISBN 1-56081-043-2.

Cell biology, as we know it today, is primarily an outgrowth of the extraordinary successes of biomedical research. It is a rapidly developing discipline which brings together many of the branches of the biological sciences that have in the past been separate. The main streams of thought that have contributed to the making of this discipline and to nourishing it, are molecular biology and the study of the regulation of subcellular reactions, as well as the study of the fine structure, organization and function of membranes and subcellular organelles. Suffice it to say that what molecular biology has succeeded in establishing is an article of faith that none of the existing medical and biological problems are insoluble and that there are no limitations to the knowledge attainable by the scientific method.

The information contained within the genome provides a precise programme on which all biological processes depend. Although creative ideas are essential to any field of research, their exploration is usually limited by the technical tools available. As new technology becomes available, a rapid increase in knowledge generally transpires, exactly what has occurred with our understanding of the structural and functional aspects of the genome. Nevertheless, research pertaining to the genome has been ongoing for a century now. This book provides an overview of the recent advances in staining techniques that have enhanced the biologists' ability to determine the structural organization of the genome. Today, the eukaryotic genome is primarily described according to the structural and functional aspects of euchromatin and heterochromatin. Much debate has been generated regarding the function of heterochromatin and an illuminating overview of the molelcular biology pertaining to this intriguing topic is also included.

This volume is divided into the following main sections:

—anatomy of the genome;
—molecular biology of heterochromatin;
—kinetochore and centromere;
—the meiotic chromosome;
—dosage compensation and sex determination;
—mitochondrial genome;
—sister chromatid exchanges (SCEs);
—aberrant human genome;
—genomic diversity in neoplasia and the retroviral genome;
—the unfolding genome.

This book would be useful for people working in the fields of biology, biochemistry, cell culture, histology, and molecular biology.