

## Book Reviews

**Growth Factors and Oncogenes in Breast Cancer.** Edited by M. Sluyser. Ellis Horwood Ltd., Chichester, England. 1987. 208 pp. 17 × 24 cm. ISBN 0-89573-581-4. \$57.00.

This comprehensive overview of recent results in research on and treatment of breast cancer represents the efforts of epidemiologists, experimental oncologists, and clinicians. The book provides a unifying view of the disorder and comes at a time when new epidemiological studies continue to report on increased incidence of breast cancer in the world.

The book contains data on possible causes of the disease, aspects of the malignancy involved, and summarizes treatment approaches citing representative literature reports from 1977 to 1986. It is noteworthy that the monograph incorporates chapters on steroid-hormone receptors and oncogenes, and their respective roles in tumor development. Attention is also focused on the effects of growth factors and sex hormones on the development of normal as well as neoplastic tissues.

The monograph includes a brief introduction by the editor, and 10 chapters: (1) structure and function of steroid-hormone receptors, (2) understanding the role of oncogenes in human breast cancer, (3) peptide growth factors, estrogens, and antiestrogens: integrated effects on the proliferation and differentiation of normal and neoplastic breast tissue, (4) epidermal growth factor and its receptor in human cancer, (5) oncogenes and the evolution of tumor phenotypic diversity, (6) oncogenes and hormones in mouse mammary tumors, (7) chromosome alterations in human breast cancer, (8) epidemiology of breast cancer, (9) hormones and dietary lipids in breast cancer, and (10) chemohormonal treatment of breast cancer: the state of the art. Chapter 10 is followed by a very limited index.

All chapters contain brief and generally useful introductions to the subject matter and many, but not all, contain useful conclusion and/or speculation sections. Several of the authors provide suggestions for fresh approaches to the control of neoplastic disease. The tables and figures are generally informative and well-defined. The chapters are well-referenced and contain numerous citations from 1986 with several 1987 references also included.

The logical ordering of the chapters provides an effective overview of the challenges facing basic and clinical investigators. The sections dealing with oncogenes and growth factors offer useful insights into the broader field of oncology in addition to the focus on breast cancer. The closing chapter on "state of the art" chemohormone treatment of breast cancer contains dozens of relatively recent references describing randomized clinical trials. The data from these trials are well summarized by stage of disease, menstrual status of patients, trial entry criteria, treatment arms, patient numbers, remission and survival rates, and comparisons of treatment modalities.

This publication on oncogenes and breast cancer will be of interest to epidemiologists, experimental oncologists, and clinicians. It contains thought-provoking background material that can assist researchers interested in targeting treatment at the level of the gene, gene product, cell, or tissue.

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**Lymphokines and Interferons: A Practical Approach.**

Edited by M. J. Clemens, A. G. Morris, and A. J. H. Gearing. IRL Press, Oxford and Washington, D.C., 1987. xx + 376 pp. 15 × 23 cm. ISBN 0-85221-035-4. \$42.00.

This publication is a further addition to the growing and valuable *Practical Approach* series published by IRL Press. Cytokines, including both interleukins and interferons, are a group of polypeptides with diverse origins and multitudinous biological effects, and the interrelationships among the various cytokines

are numerous and complex. In an attempt to unify the diverse fields of lymphokines and interferons, the editors have put together a series of techniques to enable investigators to establish laboratory investigations of cytokines.

The various contributions include: Induction, Production and Purification of Natural Mouse, IFN- $\alpha$  and - $\beta$  (Watanabe and Kawade); Induction, Production and Purification of Murine Gamma Interferon (Kiener and Spitalny); Production and Purification of Recombinant Mouse Interferon- $\alpha$  from *E. coli* (Nagata et al.); Production of Human Interferon- $\alpha$  (Shuttleworth); Production of Recombinant Interferons by Expression in Heterologous Mammalian Cells (Morris and Ward); Biological Assays for Interferons (Lewis); Quantitation of IRN mRNA (Siggins); Antibodies Against Interferons: Characterization of Interferons and Immunoassays (Meager); Quantification of Interferon by Antiviral Assays and Their Standardization (Meager); Analysis of Anti-viral Mechanisms: Interferon Regulated 2',5'-Oligoadenylate and Protein Kinase Systems (Silverman and Krause); Cell Growth Inhibition by Interferons and Tumor Necrosis Factor (Dealtry and Balkwill); Cytotoxicity Assays for Tumor Necrosis Factor and Lymphotoxin (Matthews and Neale); Anti-microbial and Hydrogen Peroxide Assays for MAFS (Lowrie and Fahmy); In Vitro Tumor Cytotoxicity Assays for Macrophage Activation (Vodinelich and Lennox); Measurement of Interleukin-1 Activity (Symons et al); Production and Assay of Interleukin-2 (Gearing and Bird); Assays for Interleukin-3 and other Myeloid Colony-Stimulating Factors (Garland); Eosinophil Differentiation Factor and Its Associated B Cell Growth Factor Activities (O'Garra and Sanders); Assays For Human B Cell Growth and Differentiation Factors (Callard, Shields and Smith).

I have reviewed in particular detail one specific chapter most closely related to my own research interests; namely that on Analysis of Antiviral Mechanisms (Silverman and Krause). I have found this to be a most rewarding contribution to the literature. It deals with most relevant and useful approaches for looking at the 2-5A synthetase, the 2-5A-dependent endonuclease, the 2',5'-phosphodiesterase, the detection of 2-5A, and finally the interferon-induced dsRNA-activated protein kinase. All procedures are spelled out in abundant detail with appropriate caveats. Beyond any doubt, these descriptions would enable a novice experimentalist in this field to establish functioning assays in a relatively short time.

In general, the other chapters in this book have been written with the same attention to detail and should be valuable to anyone wishing to begin laboratory activity in the given area. While probably a matter of personal preference, I would question the wide-ranging value of the first five chapters on interferon production and purification. While this represents important and impressive scientific work, I feel that most folks would tend to try to buy, beg, borrow or steal the needed interferons rather than going into the production and purification business themselves. I think this, at most, detracts little from a very worthwhile book which should be considered by anyone considering entrance into the study of a fascinating assortment of molecules involved in cell regulation and communication.

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**Biochemical Mechanisms of Platinum Antitumor Drugs.**

Edited by D. C. H. McBrien and T. F. Slater. IRL Press Ltd., Oxford, U.K. 1986. xiv + 423 pp. 16 × 23 cm. \$63.00.

This book is based on the proceedings of a symposium held at Brunel University, July 3-5, 1986 and was fourth in a series of symposia of the Association for International Cancer Research. The book contains 18 chapters which are subdivided into five sections, including Antitumor Activity, Metabolism, Renal Toxicity, Clinical Survey, and Analytical Techniques. After each

chapter and at the end of the book, the editors have included excerpts of discussion that took place during the Symposium which are informative and provide important insights into each topic.

DNA damage by cisplatin has been the topic of countless papers and reviews. Although its importance in the cytotoxic and antitumor action of the drug are appreciated by many in this area of research, the precise biochemical and molecular mechanism underlying DNA-Pt interaction in a cell are not clearly defined. The four chapters relating to DNA damage by cisplatin provide a good background and go beyond the *in vitro* effects and address issues relating to the consequences of this damage in cells and *in vivo*. One paper in particular reviews work in a murine teratocarcinoma model aimed at shedding light on the mechanisms of therapy-related differentiation in testicular germ cell tumors.

The remainder of the book contains chapters dealing with metabolism, toxicity, clinical applications, and analytical techniques used to detect Pt complexes *in vivo*. While this seems a bit diverse, the variety of the topics are the strengths of this particular symposium volume. For example, the emphasis is on the biochemical nature underlying the metabolism, pharmacokinetics, and renal toxicities of platinum drugs including discussions of methods to ameliorate nephrotoxicity, comparisons of the pharmacokinetics of nephrotoxic cisplatin with the non-nephrotoxic second generation compound carboplatin, roles for glutathione and metallothionein in determining renal handling of cisplatin, and functional changes in the rat kidney induced by cisplatin.

As with any symposium volume dealing with extensively studied topics as cisplatin, the timeliness of the information can be short-lived and sometimes found in other symposia review. However, due to the diversity of the topics dealt with here and its emphasis on model systems and techniques to study the pharmacology and toxicity of platinum drugs, this book should serve as a useful reference to those in the related areas of research for some time to come.

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#### **Books of Interest**

**Molecular Pathology.** J. Kay. Biochemical Society Book Depot, 1987. xiv + 182 pp. 16 × 25 cm. ISBN 0-904498-20-4. \$55.00.

**Managing Safety in the Chemical Laboratory.** James P. Dux. Van Nostrand Reinhold, 1988. ix + 154 pp. 16 × 24 cm. ISBN 0-442-21869-9. \$28.95.

**Chemistry and Toxicology of Pyrrolizidine Alkaloids.** A. R. Mattocks. Academic Press, 1986. x + 393 pp. 15 × 23 cm. ISBN 0-12-480570-1. \$88.00.