**Book Reviews**

Hartmut Franz

Advances in Lectin Research

This very instructive volume consists of four chapters, the first presenting an introduction on history. A hundred years ago, ricin was identified. In 1891, Paul Ehrlich published results of experiments on ricin and abrin. The second section deals with the preparation of plant lectins, offering also the characteristics of the numerous lectins of this sort, stemming from various classes. Best investigated are structure and function of numerous lectins from leguminoses, for some of them analyses of structure and sequences of amino acids are described and discussed. Their biological relevance and activity – in particular the modulating effect in immune reactions, in mediation of cytotoxicity as well as the relationship to receptors – are among the most actual and widely discussed problems. Research on lectins is given much emphasis and will certainly increase in importance. The capacity of binding carbon hydrates – common to all lectins – and of opsonization raise great expectations for the future. The final chapter, brilliantly illustrated, presents those plants which are considered the most important sources of lectins.

H. Wrba, Vienna

In the earlier parts new technologies in molecular biology, such as DNA cloning, in vitro translation assays and so on are described, which are instructive especially for readers who are not familiar with biotechnology. In potential applications to cancer diagnosis and treatment in the later parts, readers can find interesting subjects, such as cancer susceptibility, tumor markers, anti-one protein therapeutics and so on. In the middle part readers are able to obtain a fundamental knowledge on various kinds of oncogenes and related genes. It is noted that throughout this book readers can understand oncogenes and their importance in oncology and in cell biology, further the principle of oncology, such as multistep carcinogenesis, and the nature of malignancy.

Joshua Lederberg concludes his foreword for this book as follows: ‘No one interested in cancer, in viruses, in the cell biology of normal development – whom does that leave out? – can afford to be bereft of the overview of contemporary knowledge that is lucidly and comprehensively surveyed in this book.’

H. Sugano, Tokyo

D. Huhn, K.P. Hellriegel, N. Niederle (eds) Chronic Myelocytic Leukemia and Interferon
Springer, Berlin 1988
XI + 142 pp.; 65 fig.; 22 tables; DM 128.-
ISBN 3-540-19067-8

Kathy B. Burck, Edison T. Liu, James W. Larrick

Oncogenes
An Introduction to the Concept of Cancer Genes
Springer, Berlin 1988  
XV + 300 pp.; DM 54.-  
ISBN 3-540-96423-1

Oncogenes are the most important and exciting subject in current oncology. It is impossible to understand carcinogenesis and the nature of malignant cells without a knowledge of oncogenes and related genes. According to the development of sophisticated technologies, evidence of oncogenes has rapidly accumulated. Thus the concept of oncogene has had a great influence on the fundamental understanding of cancer.

The book presents a fascinating overview on the up-to-date knowledge of oncogenes and related genes. The description is comprehensive, but concise. Tables, figures and bibliography are carefully prepared. The book consists of the following chapters: 1 Introduction; 2 Assays: tools of the new biology; 3 Viruses and oncogenes; 4 Human T cell lymphotropic/leukemia viruses; 5 Cellular proto-oncogenes; 6 Oncogenes and human cancers; 7 src and related protein kinases; 8 Growth factors and receptors; 9 ras family of oncogenes; 10 myc and other nuclear oncogenes; 11 Additional oncogenes; 12 Transgenic mice: direct in vivo assay for oncogenes; 13 Potential diagnostic uses of oncogenes; 14 Potential therapeutic applications of oncogenes; 15 Oncogene paradigm: contribution to a fundamental understanding of malignancy; Appendix: Oncogenes and related genes.

This volume contains contributions to a symposium on chronic myelocytic leukemia (CML) held in Berlin in 1987, organized by Drs. Huhn, Hellriegel and Niederle. The volume can be separated into three sections. In part one cytogenetics of chronic myeloproliferative disorders and molecular genetics of CML are reviewed. In part two results on the in vitro effects of interferon alpha on normal and leukemic myeloid cells are reported, including studies on interferon receptors. Part three is devoted to therapeutic aspects of CML with emphasis on results of trials with interferon alpha and gamma; chapters on the significance of neutralizing antibodies to interferon alpha, on results of chemotherapy and bone marrow transplantation are added. This volume is a useful summary on a number of new developments in CML. It can be recommended to all hematologists.

D.K. Hossfeld, Hamburg
XIV + 134 pp.; SFr. 54.-/DM 65.-/US $ 36-
ISBN 3-8055-4889-3

The volume contains the Proceedings of the Symposium held in May 1988, Hamburg, by the Medical Oncologic Group of the German Cancer Society. Fifteen reports are devoted to all pathophysiologic, diagnostic and therapeutic aspects of the malignant exudate of the pericardium, pleura and peritoneum. The descriptions represent a high level and refer to the difficulties in the aetio logic clarification and the objective evaluation of response. In the majority of malignancies the development of exudate suggests an advanced stage of disease, thus influencing the clarification of aetiology. Consequently, the therapy applied is mostly of a palliative character. In addition, the specific antitumour effect of the drugs administered cannot always be proved, and mainly secondary sclerotizing effect occurs. Unfortunately the references
in several reports are inaccurate. All in all, the book provides an excellent theoretical and practical overview with oncologists who may have to treat malignant exudates.

S. Eckhardt, Budapest


In recent years malignant lymphomas represent a group of diseases in which major progress of understanding of their patho-mechanism and important developments in their treatment could be achieved. It is therefore of great importance that a panel of distinguished scientists and clinicians, all from the University of Texas MD Anderson hospital and Tumor Institute in Houston, summarized their views and experience gained in this field.

The book consists of three sections. The first is concerned with the morphological and immunobiological characterization of the various pathological entities. Other major issues are the discussion of recent cytogenetic and flow cytometric findings. Emphasis is put on how to determine the extent of the disease and how to predict therapeutic response. A chapter is devoted to the role of current imaging techniques.

Section two describes the management of Hodgkin’s disease. Treatment data are analyzed according to stage of disease and the impact of risk factor determinants on treatment policy is discussed. The therapeutic strategy of Hodgkin’s disease in children is separately dealt with. The third section summarizes therapeutic knowledge accumulated in the treatment of non-Hodgkin’s lymphomas, all considered individually. Controversies in the management of follicular or nodular lymphomas are examined. New data are presented in defining the effect of tumor burden and promising aspects of new therapeutic techniques (salvage drug regimens, autologous bone marrow transplantation, short distance electron beam irradiation, etc.) are amply discussed. The final chapter provides the reader with new information on AIDS and AIDS-related diseases.

The volume is well written, structured and edited. The excellent illustrations, however, would have deserved a better quality of paper. All in all, the book is an outstanding review of our present knowledge in the management of malignant lymphomas.

S. Eckhardt, Budapest


The 51st volume of the series entitled ‘Advances in Cancer Research’, edited by G. Klein and S. Weinhouse, comprises 437 pages and contains 8 chapters on carefully selected topics, all of which are in the frontline of today’s oncology.

The first and largest chapter, written by M.C. Bosland (New York), deals with the etiopathogenesis of prostatic cancer with special reference to environmental factors. After a condensed presentation of the data on the descriptive epidemiology of the prostatic cancer, the animal systems which proved to be helpful in studies on prostatic carcinogenesis are introduced. This is followed by an extensive overview of environmental – particularly life-style -factors positively associated with human prostatic cancer risk. The involvement of the endocrine system is also discussed. Finally a well-established hypothesis of humam prostatic carcinogenesis and the most promising areas of future research are delineated.

The second chapter, written by A. Roberts and M.B. Sporn (Bethesda, USA), is an outstanding review of the present knowledge concerning the ‘transforming growth factor (3, TGF-(3’. The
structure, physical properties, biological activity of TGF-β, assays employed for its isolation and its potential therapeutic uses are discussed in detail.

The chapter entitled: ‘Oncogene Activation in Chemical Carcinogenesis’ (A. Balmain and K. Brown, Glasgow, Scotland) is a bright and concise presentation of the major advances in our understanding of carcinogenesis at the molecular level initiated by the discovery of oncogenes. The next chapter by E.K. Kuff and K.K. Lueders (Bethesda, USA) is a profound review on the intracisternal A-particles (IAPs) and on their encoding gene family. Beside the structural and functional aspects of IAPs the possible role of these defective retrovirus in tumor induction and/or progression is also fully discussed.

In the next chapter L. Chieco-Bianchi and his co-workers (Padua, Italy) describe the interesting phenomenon of immunologic unresponsiveness to murine leukemia virus and discuss its mechanism and role in tumor development.

In the next chapter the rapidly increasing knowledge about human retroviruses is summarized by A. Dalgleish and M. Malkov-sky (England). A large part of the chapter is devoted to the HIV virus and AIDS problem.

In the chapter entitled: ‘Homing Receptors and Metastasis’ Beverly Taylor Sher and co-workers (Stanford, Calif.) review the data available concerning the role of adhesion and cell surface in the metastatic process. Then they thoroughly discuss our present knowledge about the lymphocyte homing receptors, and present data indicating that previously nonmetastatic cells can acquire metastatic capacity from fusion with normal lymphocytes. The possibility arises that antibodies against these lymphocyte homing receptors could therefore be useful for diagnosis and treatment of metastatic disease.

In the last chapter of this volume A. G. Schwartz and co-workers (Philadelphia and Chester, Pa., Greenville, N.C., USA) introduce a new class of cancer chemopreventive agents: the dehydroepiandrosterone (DHEA) and its structural analogs. Beside enlightening their mechanism of effect they review also the other therapeutic effects of DHEA and its analogs.

By thoughtful reading of this substantial volume the reader obtains the feeling of getting into the mainstream of contemporary cancer research. The reading of this volume – I think – is equally useful for clinicians and researchers interested in learning the new trends and results of cancer research today.

Finally I have to mention that in the preface of this volume Professor S. Weinhouse announced his retreat from the editorship. May I take the liberty to express to him the grateful thanks of generations of readers of this series for his devoted contribution. The new member of the editor’s double is Dr. George Vande Woude.

K. Lapis, Budapest
R. Spier, W. Hennessen

Developments in Biological
Standardization, vol. 66
Advances in Animal Cell Technology: Cell Engineering,
Evaluation and Exploitation
Karger, Basel 1987
XII+ 586 pp.; SFr. 250.- / DM 299.- / US$ 166.75
ISBN 3-8055-4556-8
Standardization in biological systems seems to be a paradoxon. This is an experience everyone shares who tries to introduce standards with respect to biological products of plants, animals or even cellular or molecular systems.

The growing introduction of biotechnology for the production of biological products leads to real problems concerning standardization if economical parameters are considered. The European Society for Animal Cell Technology (ESACT) has the object to bring together all researchers in this field at regular intervals.

In 1985 there was a conference on ‘Advances in Animal Cell Technology: Cell Engineering, Evaluation and Exploitation’. All contributions are published in the present volume. The programm comprises five complexes: (1) Safety; (2) Genetic Engineering of Animal Cells; (3) Cell Biology and Physiology; (4) Technology of Cell Production, and (5) Products of Animal Cells.

The first complex is represented by 3 contributions to the topic of safety of primate and human cell cultures and also of cells of other species as productive systems for vaccines or other products (retroviruses, oncogenes etc.). A much more realistic view of the problems is presented now, especially on the basis of improved methods for detection of contaminants. The third contribution refers to prophylaxis of contamination by antibodies, which will not work, however, in the case of viral and genetic contaminants.

Genetic engineering of animal cell systems is only in its beginnings and it may be of interest to learn about possibilities and problems of handling such systems. Examples presented are: Expression of genes and processing of proteins of herpes simplex virus, vaccinia virus as a vector, amplification of glutamin synthetase gene in hamsters, new genes in manipulated animal cells, hybridomas for production of monoclonal antibodies and human interferon in polyhedrosis viral vector of bombyx mori.

Knowledge of biology and physiology of cell systems is one of the prerequisites for usage in a biotechnological system. So the complexes 2 and 4 bring a lot of information, especially on the methodology of scaling up. Complex 5 gives examples of products isolated from the productive systems and refers to the second set of problems, the separation of the product from numerous unspecific compounds. A poster session is represented by abstracts; each complex contains the whole discussion of the contributions.

This very informative volume helps to introduce a new field in biology – biotechnology.

D. Bierwolf, Berlin-Buch