

**Gene Therapy: Principles and Applications, Thomas Blankenstein (ed.)  
Birkhauser Verlag, Basel, Boston, Berlin, 1999. ISBN 0-8176-5972-2 (hardcover)**

The book is an introduction to one of the most exciting topics of the contemporary molecular medicine. It is divided into four parts: I. Gene Transfer Methods. II. Gene Therapy of Single Gene Defects. III. Gene Marking. IV. Gene Therapy of Cancer. Each part consists of several chapters written usually by several authors from different countries and laboratories of the U.S.A., Germany, Italy, China, U.K., Netherlands, and Austria. Bibliographical references are found at the end of every chapter, but the index is common for all of them.

The field of gene therapy is being developed rather fast, and it is not easy to keep pace with its progress and all new achievements. Clearly, although from this point of view it is risky to publish books in such an area, this book is a success. However, it is difficult to judge how soon many of the contributed texts will become outdated.

The other challenge to the Editor consisted in the need to include in the book most contemporary knowledge on many different particular topics: from the gene constructions that are usually described in somehow abstract „high-science” language, to the clinical practice. Here too, I think, the proper balance was attained.

Helas, finally one has to ask those rather brutal questions: by whom and how, in what time and for which metabolic disorder, the cure due to gene therapy was ever found? And the truth is that even the authors most enthusiastic do not like this question. Accordingly, the answers can not be found in this book. Since ten years, gene therapy still remains the matter of trials, which, at best leads to a partial success, and – what is more – this success is attained often in....animal clinics. Animals (mostly rodents, specifically –

mice) are very useful medical models, however, they happen to be not perfect, as it was proved in all cases of genetic therapy directed against different kinds of cancer.

Treatment of cancer takes a lot of space in this book (1/3 of the text). The most sophisticated ways of experimenting, treating, analysing and considering by theoretical models were applied, very often including in the protocol modifications of the immune system. Even so, the expected final result – the cure – seemed always distant even for mice, and the more so, for men. The simple truth is, that if a lot of procedures are suggested, this means that there is no one that is really efficient – seems to have been clearly demonstrated in this case. The efficacy of anti-tumour treatment depends on our understanding of this process. At present, and perhaps for some more time to come, surgery and radio- and chemotherapy will remain as the only established and effective therapies.

Several years ago, the most known agencies conferring grants for gene therapy studies turned our attention to the fact that the limiting procedure in this field is to obtain high titres of the ideal vehicle for gene introduction to the patient, with high efficiency, targeted to specific tissues or cells, to specific chromosome position, and with the possibility of further control of gene expression in the body. Though there was an extremely high pressure against this approach from the physicians and prospective patients, the money was transferred from the patient bed to laboratory benches. And still this vector of dreams has not been found up to the present days. The most difficult non-solved task, it seems, remains in targeting genes to cells and chromo-

somes. Perhaps the methods used so far have exhausted their potential and a new approach, a technical flash, is needed.

For all who are watching the incessant war between „the Greens” and „consumers” against plant genetic engineers and biotechnology admirers, it seems striking that counter-arguments, critical discussions, actions and demonstrations were not undertaken against genetic therapy. Until now, perhaps fortunately, not too much social attention has been turned in this direction. However, I would have acknowledged if, in that kind book, some comments were presented concerning the serious ethical problems accompanying development of the above methods. It would have been most appropriate if that the scientists were the first to initiate such a discussion.

This book is of a monographic character. It would be for the scientists working in various fields of molecular biology, perhaps academic teachers, who in this book will get a very contem-

porary treatment of the molecular matters important from the medical point of view.

The book was written by several authors and this multicontributitional character is reflected in its contents and in editorial work. It is rich in topics and in styles. Various ways of presenting data and comments by different authors did not disturb the Editor. So, some, but unfortunately not all of them, offered Introductions and Conclusions, or even Summaries, this making their texts easier to follow. In several different chapters the same pieces of information, ideas and observations were repeated. References were quoted according to various rules. I would think that the Editor had decided to publish the book as fast as possible which brought it up to date, even if it suffered of some editorial imperfections. I think that this was a justified decision.

*Magdalena Fikus  
Institute of Biochemistry and  
Biophysics, Polish Academy of  
Sciences, Warszawa*

**Cytokines in Severe Sepsis and Septic Shock, Redl, H., Schlag, G. (eds.)**  
**Birkhauser, Basel, Boston, Berlin 1999, 369 pages**

All known cytokines are low molecular mass proteins carrying intercellular signals. They are produced in negligible amounts in normal conditions but are easily induced by foreign materials, such as bacterial or viral products. Other inducers include modified own proteins, various external stimulants leading to generation of free radicals, and even such a stimulant as osmotic shock. The general consensus is that cytokines play a pivotal role in generalised inflammatory reaction regarded as the response of the organism to bacterial infection or drastic changes of the environment. Classification of cytokines involved in this reaction is difficult but they can be grouped as proinflammatory cytokines (interleukin-1 or tumour necrosis factor- $\alpha$ ), acute phase response cytokines (interleukin-6 family) and antiinflammatory cytokines (interleukins 4, 10 and 13). The field of research on cytokines is growing rapidly both in respect of studies concerning the mechanism of cytokine action as well as practical applications of cytokines in medicine.

The series of monographs „Progress in Inflammation Research” edited under the supervision of Michael J. Parnham has been recently expanded.

This time the role of cytokines in severe sepsis is being analysed. This is not a trivial problem since, according to Hackam and colleagues, the systematic inflammatory response syndrome causes over 175000 deaths annually in the United States alone.

Under nice cover of the book the reader will find interesting contents of 20 separate chapters written by 35 authors. Somewhat arbitrarily the book has been divided into four sections devoted to cytokine induction, diagnostic aspects of cytokines, mechanism of cytokine action and cytokine application in therapy in septic shock. Consecutive chapters deal with these aspects of cytokines in severe sepsis. Schade and co-workers discuss the role endotoxin as a cytokine inducer whereas Neumann and Holzmann describe the role of bacterial superantigens, and Hackam and colleagues analyze cellular mechanisms of lipopolysaccharide signalling. Starting from the structure of endotoxin, its interaction with LPS-binding protein and various types of receptors the authors come to transmembrane signalling, the role of protein tyrosine kinases and activation of transcription factors such as NF- $\kappa$ B. This part of the book is