Plasmids for Therapy and Vaccination. Edited by *Martin Schleef.* Wiley-VCH, Weinheim 2001. xix + 287 pp., hardcover € 109.00.—ISBN 3-527-30269-7

Gene therapy and nucleic acid based vaccines are the most recent and well-known terms in the rapidly growing field of biotechnology. This book describes the use of plasmids for therapy and vaccination. The editor's aim was to reach a large readership with this complex field of innovation, and he has succeeded through the selection of a broad range of topics arranged in a logical structure.

The first three chapters give a detailed description of the discovery of plasmids, their function, their structure, and their suitability as vaccine vectors.

After this introduction the next chapters describe detailed examples of the use of vectors in animal models for possible or future applications in humans. In Chapter 4 a gene therapeutic approach to avoiding complications during heart surgery, using pigs as a model, is reported. Chapter 5 describes very clearly the immunotherapy of chronic Hepatitis B in primates and transgenic mice, but clinical trials in humans are only mentioned without any detailed information. Chapter 6 gives a very good overview of the complex process of the development, preparation, preclinical testing, and regulatory requirements of a first generation DNA vaccine vector against malaria.

Recent advances in genetic research and the application of new technologies such as informatics have made it possible to construct modified vector systems for specific uses. Examples are the coexpression of multiple genes (Chapter 7), MIDGE constructs (Minimalistic Immunogenically Defined Gene Expression) which are vectors used for somatic gene therapy, which combines higher safety with higher efficacy (Chapter 8), and synthetic genes for prevention and therapy (Chapter 9). This chapter is unique in its critical view of safety and efficacy of DNA vaccines and the use of retroviral vectors.

In Chapter 10 the practical use of plasmids for vaccination of fish in veterinary science is described thoroughly. Chapter 11 gives an overview of the manufacture and purification of plasmids and the recommended quality control tests to ensure their safe application in humans. Chapter 12 complements Chapter 11 by describing in detail the quality control of plasmids in terms of regulatory recommendations and requirements, supported by graphic examples.

The progression from laboratory research to clinical testing is described in Chapter 13, with a clear overview of the regulatory requirements that must be met for clinical trials. The book ends with a look into the future, describing the most important milestones in biotechnology and the market potential of DNA therapeutics (Chapter 14).

Each chapter has an easily understandable structure, with an introduction at the beginning and a conclusion or perspectives at the end. The lists of references which allow the reader to get more detailed information on topics of interest vary greatly in length. Sometimes less is better than more; some authors just accumulate references rather than helping the reader's understanding by concentrating on key papers.

Readers who start with the editor's preface are in the lucky position of understanding the book more easily, as this describes the chapters and their relation to each other. The use of numerous terms such as plasmid, plasmid DNA, plasmid vector, retroviral vector, gene therapy, or DNA vaccination may initially confuse a reader who is not familiar with plasmid technologies, but his or her understanding should develop by reading on. Some chapters are difficult to understand because of the use of abbreviations which are only explained somewhere later in the text or in tables, and sometimes never. On the other hand, one must commend the use of cross-references; for example, during the description of the different plasmid structures in Chapter 2, the reader is referred to Chapter 12 which describes how they affect the production and purification process.

The overall message of this book seems to be too euphoric, and one feels there may be a need for a more critical appraisal in some chapters; only Chapters 6 and 9 fulfill that need adequately.

Finally, one would like to agree with the editor's hope that this book will be "a recent overview on the field and a guide through an area of useful innovation". And indeed, it is!

Otfried Kistner
Baxter Vaccine AG
Orth/Donau (Austria)

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