

Nijkamp FP, Parnham MJ, editors. Principles of Immunopharmacology. 2nd revised and extended edition. Basel: Birkhäuser Verlag; 2005. 662 pages; ISBN-10: 3-7643-5804-1; €78.11.

Field of medicine: Immunology, pharmacology.

Format: Soft cover.

Audience: Scientists, graduate students, specialists in medicine and pharmacology.

Purpose: To provide in a single volume the basic understanding of immunological mechanisms, a review of selected immunodiagnostic tools, and description of the main pharmacological agents which modify the immune response.

Content: The book is divided into four major sections: Mechanisms of immunity, Immunodiagnosics, Immunotherapeutics, and Immunotoxicology. In addition, the book contains several appendices and a glossary.

The first section consists of ten chapters and provides an overview of the structure and organization of the immune system. Although comprehensive and up-to-date, the authors seem to assume that the reader is familiar with the basic concepts of immunity, so the text is not so suitable for the "beginners." Interestingly, the authors decided first to describe the development and function of T cells and B cells, and then to discuss the innate immunity. I have particularly enjoyed the detailed description of phagocytosis and killing of microorganisms by the phagocytes, because this topic somewhat neglected by most standard textbooks. After the chapters on the physiology of the immune system, the authors cover the immune response in the context of human pathology, ie infections, hypersensitivity and autoimmunity, and cancer immunity. It is

also important to note that the authors included a chapter on neuroimmunoendocrinology, ie the interplay of the nervous and the immune system. On the other hand, I was rather disappointed by the fact that the role of catecholamines in the immune reactions was not discussed at all. This is a pity, especially if we have in mind the possibility to pharmacologically target the cholinergic anti-inflammatory pathway in order to achieve the control of sepsis.

The second section of the book is focused on immunodiagnosics. The authors discuss principles of work and various research and clinical applications of antibody detection and immunoassays. As a contrast to the first edition of the book, this edition contains a very fine chapter on flow cytometry. However, I do not understand the lack of information on cell separation and sorting techniques. The remaining two chapters of the section are concerned with gene arrays and proteomics. I particularly welcome the chapter on proteomics and its applications within the drug development pipeline, because that topic is also not a frequent guest in other textbooks of immunology.

Section three, "Immunotherapeutics", is central and the largest section of the book. It contains 14 chapters dealing with various therapeutic strategies to modulate the immune response, from vaccines and sera, through antimicrobial drugs, to biological therapies. In addition to the topics usually covered by texts on pharmacology

gy (such as pharmacokinetics, indications, and side effects), each chapter provides detailed discussion on the mode of action of the respective drugs, with particular emphasis on the molecular pathways. Furthermore, what I found quite exciting is that most of the chapters include a section on the new approaches and perspectives in particular fields. I also believe that most readers will find the chapter Mild Plant and Dietary Immunomodulators quite interesting. Although folklore remedies have become unbelievably popular in the recent decades, the firm evidence that they are really beneficial, as discussed by the authors, are still quite scarce. Finally, the chapter on anti-rheumatic drugs does contain a section on biological anti-rheumatic therapy, but I find the section somewhat superficial and too short.

The final section, Immunotoxicology, deals with various ways through which drugs can impair the function of the immune system. After discussing possible mechanisms of immune side effects of drugs, the authors provide an extensive overview of procedures used for preclinical and clinical testing of immunotoxicity. The authors explain the interpretation of many common tests and give an insight into legal aspects from the perspective of new drug development.

The book is concluded by a collection of ten appendices, which actually supplement the respective chapters. Many readers would find the appendices quite useful, because they include information on vaccines registered in the US, marketed anti-allergic products, a list of cytokines licensed for clinical use, high yield information

on non-steroid anti-inflammatory drugs and an overview of disease-modifying anti-rheumatic drugs used in the treatment of rheumatoid arthritis. Those pieces of information are sometimes very difficult to find and, in any case, it is almost impossible to find them all in one place.

Highlights: The book contains an excellent list of abbreviations. The abbreviations used in the book are actually quite common in other related texts, so I believe that many readers will frequently consult those pages. The book is also accompanied by an outstanding glossary of key terms. In addition, all words included in the glossary are highlighted in the body text, so the reader will find it very easy to look for explanations when necessary.

Limitations: There are some minor problems in the text. For example, the section on pattern-recognition receptors in the immune system includes some oversimplifications. In addition, I also noticed some problems with figure legends, ie explanation in the text does not match the actual content of the figure. However, the major problem of the book, and I could only strongly recommend the editors to take care of it, are the figures. On some of them, shading is so poor that it actually obscures the text embedded in the figure. Even worse, some photos are clearly out of focus (for example, most of the patient photos and some of the photos showing plants).

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