

Preface

The HIV epidemic has brought renewed attention to the immune system and an enhanced understanding of its mechanisms for defending against infection. Despite the development of potent chemotherapeutic agents against HIV, chronic HIV infection cannot be cured over the long term with this approach. Chronic exposure to these medications is limited by debilitating toxicities and the development of drug resistance. Hence, there is a need to understand how the immune system can be manipulated to effect better control of viral replication and disease progression. This effort is proceeding in tandem with progress toward development of an effective vaccine.

Other infections, particularly those for which the development of safe, effective chemotherapy has proved difficult, have been targeted with specific immunotherapeutic approaches, from monoclonal antibodies to vaccines to interferons and cytokines.

Immunotherapy for Infectious Diseases is intended to review the state-of-the-art developments of this rapidly emerging and evolving field. Much of the work in this area is only beginning to be appreciated by clinicians and medical scientists. We hope *Immunotherapy for Infectious Diseases* will not only serve as a useful guide to current knowledge of the field, but will also stimulate readers to contribute to its further development. As such, the book should be of interest to basic scientists and clinicians active in the fields of immunology and infectious diseases, particularly HIV infection.

Immunotherapy for Infectious Diseases is divided into four sections. The first section provides an overview of the basic principles of immune defense, as seen in the context of developing strategies of immunotherapy. Humoral and cellular immunity are reviewed. Because many infectious agents enter and exit through mucosal surfaces, there has been growing appreciation of the role of mucosal immunity in protection against infection and immunopathogenesis. Therefore, a chapter on mucosal immunity is included.

The second section discusses the principles of immunotherapy on a molecular level. There are discussions of monoclonal antibodies, types of vaccines, methods of antigen presentation, cytokines, and cytokine antagonists.

The third section reviews the current state of anti-HIV immunotherapy. The current knowledge of HIV immunopathogenesis is reviewed, as is the degree of immune reconstitution that occurs as a result of anti-HIV chemotherapy. Chapters dealing with HIV-specific passive and active immunization strategies, gene therapy, and host cell-targeted approaches for treating HIV infection and restoring immune function are presented.

The fourth section reviews immunotherapy for additional infections and virus-associated malignancies.

I am grateful to all of our experts who contributed chapters to the book. They represent some of the finest minds working in this area, and did superb jobs in reviewing the latest information in their areas of expertise. I am deeply appreciative of Dr. Vassil St. Georgiev, the series editor, for inviting me to edit this book, and Thomas Lanigan, Sr., Elyse O'Grady, Craig Adams and Diana Mezzina, at Humana Press for their support in compiling it. Thanks also to the secretaries and copy editors who diligently worked to put together the elements of the book. Finally, I wish to thank the readers, who I hope will use the knowledge gained from this book to advance our ability to treat infectious diseases.

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