
In this first edition of Models of Protection Against HIV/SIV: Avoiding AIDS in Humans and Monkeys, various authors review the current understanding of the factors involved in one’s propensity towards HIV/SIV acquisition and the immune responses invoked. As indicated in the Foreward, this book focuses on those individuals and primates who mount immune responses which allow them to escape from HIV/SIV infection in the face of repeated exposures and 2) those who acquire HIV/SIV but who experience a slowly progressive disease course. Individuals in the former category include Highly Exposed, Seronegative (HESN) subjects while individuals in the latter category include Elite Controllers (EC) and Long-term Nonprogressors (LTNP).

The information in this book is compiled into four major sections: I) Simian models of non-pathogenic SIV infection, II) HIV-1 exposed seronegative individuals, III) HIV controllers and IV) Genetic basis of protection against HIV. Following a discussion of the origins of HIV-1 and HIV-2, and the initial infections involving humans, key virological properties of HIV and SIV are underscored. A solid review of the SIV strains employed in macaques for pathogenesis and vaccine studies is provided. This enables the reader to acquire the necessary background knowledge for interpretation and appreciation of current studies of therapeutic agents and vaccines involving primates, as well as the strengths and limitations of these animal models.

The sections discussing genetic susceptibility to HIV infection and disease progression are a highlight of this book. Well-known cases, such as that of the “Berlin patient,” are reviewed. Furthermore, the immunological controls at play in ECs and LTNP are discussed and the overlap in immune responses between these two groups of individuals is outlined. Findings from key epidemiological studies which have shaped the field, such as those led by Dr Francis Plummer involving the Pumwani sex workers in Nairobi, Kenya, are also presented. In addition to Dr Francis Plummer, many of the chapters in this book are co-authored by individuals who have pioneered work in various domains of HIV research and include distinguished scientists such as Francoise Barre-Sinoussi and Bruce Walker.

Some of the most useful features of this book are its figures and tables comparing and contrasting various topics. Examples include the immunological parameters between progressive and non-progressive infection and polymorphisms in host genes influencing the HIV life cycle. References to the literature are provided within many of these tables and figures, allowing the reader to access original studies if desired.

This book concludes with a succinct summary of themes common to the various models of HIV pathogenesis presented throughout the book. A discussion of future directions for the field is also provided. Taken together, this up-to-date book provides essential background knowledge on issues in virology and immunology related to HIV/SIV infection while highlighting implications for the design of therapeutic agents and vaccines against these infections.

Cecilia Costiniuk
Division of Infectious Diseases, University of Ottawa, Ottawa, Canada
E-mail address: ccostiniuk@ottawahospital.on.ca

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