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## Preface

There are several books on HIV/AIDS and retrovirology dedicated to either basic virology, immunology or the clinical and social aspects of this pandemic infectious disease. So, why another book on this subject! Because, this is the first collection of articles dedicated to the key experimental protocols that are at the basis of all the major discoveries of the field since pathogenic human retroviruses came under the limelight with human T-cell leukemia/lymphoma virus type 1 (HTLV-1) in 1980—a virus causing the rare adult T cell leukemia and tropical spastic paraparesis—and, especially, with the discovery of the human immunodeficiency virus type 1 (HIV-1) in 1983–1984 and HIV-2 (1986) as the etiological agents of the acquired immunodeficiency syndrome (AIDS), still a major threat to mankind with more than 34 millions infections worldwide and 7,500 new infections daily.

The current book is organized in 5 blocks of chapters focusing on the following: “Mapping the HIV life cycle” (14 chapters), “Isolation, co-receptor use, and cell tropism of HIV-1” (5 chapters), “In vivo quantification of HIV-1” (2 chapters), “Biological aspects of HIV-1” (2 chapters) and, last, but not least, to “HTLVs” (3 chapters).

Of course, most of the chapters are dedicated to HIV-1, the big killer, but there are also issues dedicated to HIV-2 and to the HTLVs, including the still “disease-less” HTLV-2. In addition, some articles explore “assay and function of accessory genes,” largely involving the interface between retroviral and host factors, the extracellular role of Tat and Tax, resembling the function of cytokines, and the biotechnological exploitation of HIV as lentiviral vector to carry foreign genes with therapeutic value.

Although the “core business” of the book and of its individual chapters is to provide state-of-art methodological protocols from world leaders in human retrovirology, the book is not meant to be a just a collection of “cook-book recipes.” In fact, each chapter provides an updated, though synthetic, review of the fundamental knowledge concerning a single retroviral life step.

Enjoy reading!

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