

# HIV Chemotherapy

## A Critical Review



Edited by: **Salvatore T. Butera**

National Center for HIV, STD, and TB Prevention, Centers for Disease Control and Prevention, Atlanta, GA 30333, USA

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Since the beginning of the AIDS pandemic in the early 1980's nearly 50 million people have been infected and over 16 million of those have died of AIDS. Combination anti-HIV therapy has dramatically reduced mortality rates and increased life expectancy in infected individuals. However it has not eradicated AIDS: the endemic is merely contained in industrialized nations and continues unabated in developing countries, e.g. Africa and parts of Asia. Since current anti-HIV drugs are virostatic rather than virotoxic, infected individuals must remain on drug therapy for life. This is a major problem since all of the existing anti-HIV drugs have side effects, some of which are serious and potentially fatal. In addition, the naturally occurring and extensive genetic variation found in HIV has led to the emergence of drug-resistant viruses. These challenges have prompted the urgent search for novel, molecular-based drugs and therapeutic strategies that target the different stages of viral infection of and interaction with the host.

This is a book aimed at the scientist in the research laboratory. Written by expert international authors, the book is an essential reference for scientists working on AIDS, HIV and other retroviruses. Expert AIDS researchers critically review every aspect of this highly topical subject. The opening chapters deal with the management of HIV infections and include a fascinating review of current molecular strategies to protect and strengthen the host immune system at the cellular level. Chapters 6 and 7 summarises the strategies required for the implementation of effective anti-HIV therapies in developing countries (90% of worldwide AIDS cases). Two excellent chapters (4 and 5) comprehensively review the genetics of viral drug resistance, and current drug-resistance testing technologies. The remaining chapters provide cutting-edge reviews of the latest viral and cellular targets for anti-HIV chemotherapy, the development of iRNA based therapeutics and molecular based strategies that target latent virus reservoirs in infected individuals.

Essential reading for scientists and clinicians working on AIDS, HIV, and other retroviruses as well as all health care professionals interested in expanding their current understanding of the subject.

**Chapter 1.** Progress in HIV Clinical Management. *Kristen Marks and Roy M. Gulick*

**Chapter 2.** Immune Based Therapies in the Treatment of HIV-1 Infection. *Sarah M. Wynne and Richard T. Davey, Jr.*

**Chapter 3.** Treatment Interruption Strategies for the Management of HIV-1 Infection. *Marybeth Daucher and Mark Dybul*

**Chapter 4.** HIV-1 Mutation Rate: Implications for Drug Resistance and Viral Fitness. *Miguel E. Quiñones-Mateu and Louis M. Mansky*

**Chapter 5.** HIV-1 Phenotypic and Genotypic Drug Resistance. *Sarah Palmer*

**Chapter 6.** Implementing Antiretroviral Therapy in Developing Countries: Logistic Issues and Lessons Learned. *John Nkengasong and Paul Weidle*

**Chapter 7.** Use of Antiretroviral Drugs to Prevent Mother-to-Child HIV-1 Transmission in High-Prevalence, Resource-Poor Settings. *Marc Bulterys*

**Chapter 8.** Entry Inhibitors and Beyond. *Cynthia A. Derdeyn and Eric Hunter*

**Chapter 9.** Cellular Factors as Targets for Anti-HIV-1 Chemotherapy. *Masanori Baba*

**Chapter 10.** RNA Interference and HIV: From Here to Therapy. *Premalata Shankar and Judy Lieberman*

**Chapter 11.** Clearance of Latent Reservoirs. *David G. Brooks and Jerome A. Zack*

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