Tentative Outline

Current and Emerging Drug Targets for Human Immunodeficiency Virus

Guest Editors: Abdul A. Waheed and Gilda Tachedjian

Aims & Scope

Human Immunodeficiency Virus (HIV) is an etiological agent of Acquired Immunodeficiency Syndrome (AIDS) that has infected more than 75 million people since the beginning of the AIDS epidemic. Nearly half have died, currently more than 35 million people live with HIV, and in 2012 alone there was an estimated 2.3 million new HIV infections. In the absence of an effective vaccine, antiretroviral therapy is used to treat and to prevent new HIV infections.

Currently more than 25 drugs have been approved by the FDA to treat HIV infection. Based on their mechanism of action, these drugs are classified into five classes: entry or fusion inhibitors; nucleos(t)ide reverse transcriptase inhibitors [N(t)RTIs]; non-nucleotide reverse transcriptase inhibitors (NNRTIs); integrase nuclear strand transfer inhibitors (INSTIs); and protease inhibitors. The standard treatment for HIV consists of a combination of at least three drugs known as highly active antiretroviral therapy (HAART).

The main goal of this issue is to discuss the current drugs that control HIV infection and their mode of action against virus replication, emergence of drug-resistant variants and strategies to target these drug-resistant strains. This issue will also discuss unexplored targets of viral proteins as well as targeting host-factors including cellular proteins and lipids involved in HIV replication.

Keywords:
Human immunodeficiency virus, entry inhibitors, reverse transcriptase (RT) inhibitors, integrase inhibitors, protease inhibitors, host factors.

Subtopics:

The subtopics to be covered in this issue are listed below:
1. Important steps involved in HIV replication cycle and role of host proteins.
2. Recent developments in HIV entry and inhibitors of the entry pathway including HIV uncoating.
3. Detailed aspects of reverse transcription and inhibitors of RT.
4. Advances in the integration of viral DNA into host genome and inhibitors of integration.
5. Understanding the molecular mechanism of HIV Gag assembly and potential targets in Gag for antiviral therapy.
6. Maturation process of virions by viral protease and inhibitors of protease as well as maturation inhibitors.
7. Targeting host proteins and lipids for antiretroviral therapy.
8. Significant advances in the development of topical microbicides and other strategies for HIV pre-exposure prophylaxis.
10. Novel strategies to control and eliminate the viral reservoirs and cure HIV.

Schedule:

- Manuscript Submission Deadline: January 31, 2015
- Peer Review Due: March 31, 2015
- Revision Due: April 25, 2015
- Notification of Acceptance by the Guest Editor: May 15, 2015
- Final Manuscript Due: May 31, 2015

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