Oral Session 1: Mini-Symposium Novel Targets for HIV Therapy

1
APOBEC 3G: Innate Defense Against Retroviruses and Retroelements

Warner Greene

Gladstone Institute of Virology and Immunology, San Francisco, CA, USA

doi:10.1016/j.antiviral.2008.01.015

2
LEDGF/P75 as a Co-factor of HIV-1 Integrase and as a New Antiviral Target

Zeger Debyser

IRC, KULAK and KULeuven, Leuven, Belgium

doi:10.1016/j.antiviral.2008.01.016

3
Trim 5 Alpha-mediated Late Restriction on HIV-1 Production

Yasuhiro Ikeda

Mayo College of Medicine, Rochester, MN, USA

doi:10.1016/j.antiviral.2008.01.017

4
Assembly of the Immature and Mature Viral Structure as Potential Antiviral Target

Hans-Georg Krausslich

University of Heidelberg, Heidelberg, Germany

doi:10.1016/j.antiviral.2008.01.018

5
Late Stages of the HIV-1 Replication Cycle as Targets for Novel Antiviral Agents

Eric Freed

HIV Drug Resistance Program, National Cancer Institute, Frederick, MD, USA

doi:10.1016/j.antiviral.2008.01.019

6
The Role of Vpu Protein in HIV-1 Pathogenesis

Edward Stephens

University of Kansas Medical Center, Kansas City, KS, USA

doi:10.1016/j.antiviral.2008.01.020

Oral Session 2: Respiratory and Emerging Viruses

7
Peptide-based Entry Inhibitors for Influenza

Thomas Voss [1,*], Christopher LeBlanc [1], Joseph Barbercheck [1], Bryan Kaplan [1], Russell Wilson [2], Garry Robert [1]

[1] Tulane School of Medicine, New Orleans, USA; [2] Autoimmune Technologies, LLC, New Orleans, USA

Influenza infections are responsible for seasonal epidemics and less frequent pandemics responsible for millions of infections and thousands of deaths annually worldwide. Currently available influenza therapeutics target later stages of virus replication and while there are effective in many cases, there is increased resistance to these inhibitors in clinical settings is being observed and there is little evidence that they are effective in reducing transmission of virus to susceptible individuals. We have developed a peptide-based therapeutic platform targeting viral envelope glycoproteins for a number of human viruses including influenza viruses. In vitro studies show the prototype peptide to be effective at inhibiting a wide variety of Influenza A and Influenza B viruses at nM concentrations using a plaque inhibition assay. In vivo studies using the ferret model shows robust antiviral activity in therapeutic or post-exposure prophylaxis regimens treating by intranasal administration. In addition, the lead therapeutic peptide candidate was shown to be active in reducing transmission when infected ferrets are treated and co-housed with naïve untreated cage mates and when treated, naïve ferrets are co-housed with infected cage mates. Taken together, these data support the advanced development of entry inhibitors for seasonal and pandemic influenza, adding a broad-spectrum therapeutic to currently approved influenza therapeutics.

doi:10.1016/j.antiviral.2008.01.021

8
Factors Affecting Susceptibility of H5N1 Influenza Viruses to Neuraminidase Inhibitor Oseltamivir

Elena Govorkova [1,*], Natalia Ilyushina [1], Jennifer McClaren [1], Tri Naipospos [2], Neziha Yilmas [3], Bounlom Douangngeun [4], Robert Webster [1]

[1] St. Jude Children's Research Hospital, Memphis, USA; [2] Indonesia National Committee on Avian Flu Control and Pandemic Influenza Preparedness, Jakarta, Indonesia; [3] Virology and NIC of Turkey Refik Saydam Hygiene Institute, Ankara, Turkey; [4] National Animal Health Centre, Vientiane, Laos

The pandemic potential of the avian H5N1 influenza viruses for humans is well documented. Effective antiviral drugs are essential for early control of an influenza pandemic although a number of factors may determine their effectiveness against highly pathogenic viruses. We evaluated infectivity, pathogenicity and production of cytokines in mice, and susceptibility to neuraminidase (NA) inhibitors *in vitro* and *in vivo* of five influenza A (H5N1) viruses representing different clades/subclades. All viruses were characterized by high virus