Retrovirology

BioMed Central

Oral presentation

HERV-K113: The Newest and Most Lively Member of the Human Endogenous Retroviruses

Reinhard Kurth*‡

Address: Robert Koch-Institut, Berlin

Email: Reinhard Kurth* - kurthr@rki.de

* Corresponding author ‡Presenting author

from 2005 International Meeting of The Institute of Human Virology
Baltimore, USA, 29 August – 2 September 2005

Published: 8 December 2005

Retrovirology 2005, **2**(Suppl 1):S25 doi:10.1186/1742-4690-2-S1-S25

Although retroviruses are usually spread horizontally by infecting new somatic cells, entry into cells of the germ line may result in endogenization and hence vertical transmission from generation to generation. Once endogenized, the incorporated proviruses are likely to undergo intra-genomic amplification resulting in high copy numbers. Endogenous Retroviruses can cause significant harm by disrupting or disregulating essential genes. Of considerable interest and a topic of intense investigation is the possible role of endogenous retroviruses in the etiology of malignancies, autoimmune and neurologic diseases. In recent years, striking evidence has accumulated indicating that some proviral sequences and HERV proteins might even serve the needs of the host. In contrast to several other mammals, human endogenous retroviruses (HERVs) are believed to have lost the ability to replicate but HERV-K, the youngest and most conserved family, is able to generate virus-like particles. Following integration almost all known HERVs have suffered extensive deletions and mutations. One exception is HERV-K113 located on chromosome 19p13.11. This young provirus is not yet fixed in the human population and shows an ethnicity dependent allelic prevalence of about 5–30%. A HERV-K113 provirus with preserved open reading frames has been successfully cloned and its transcripts, protein expression and replication potential has been studied.