Retrovirology

BioMed Central

Oral presentation

The human I-mfa domain containing protein, HIC, interacts with HIV-1 Tat and Rev and sequesters them in the cytoplasm

L Gu*, VW Gautier, N Sheehy, T Tsuji, H Hayakawa and WW Hall

Address: Centre for Research in Infectious Diseases, Conway Institute, University College Dublin, Dublin, Ireland
* Corresponding author

from 2006 International Meeting of The Institute of Human Virology
Baltimore, USA. 17–21 November, 2006

Published: 21 December 2006

Retrovirology 2006, **3**(Suppl 1):S106 doi:10.1186/1742-4690-3-S1-S106

Tat and Rev are equally critical for HIV-1 replication and work in a sequential manner: first, transactivation of the HIV-1 LTR by Tat, followed by nuclear export of partially spliced and unspliced viral transcripts by Rev. Both functions require Tat and Rev to be imported to the nucleus, a process mediated by molecular recognition of their homologous arginine-rich NLS domains by importin-β.

Here, we report the interaction of the human I-mfa domain containing protein, HIC, with Tat and Rev resulting in the cytoplasmic redistribution of Tat and Rev with a concomitant reduction in their nuclear accumulation. We will discuss our data resulting from colocalisation studies and competitive in vitro nuclear import assays, which collectively support a model where HIC would mask Tat and Rev NLS domains, thereby impairing their nuclear import via rendering the NLS inaccessible to importin-β.

Functionally, this cytoplasmic sequestration could appear to represent a novel mechanism for the control of Tat and Rev activities and ultimately the regulation of HIV-1 replication.