Melamed et al. Retrovirology 2014, 11(Suppl 1):P138
http://www.retrovirology.com/content/11/S1/P138

RETROVIROLOGY

POSTER PRESENTATION Open Access

Clonality of HTLV-2 in natural infection

Anat Melamed[1*], Aviva D Witkover[1], Rachael Brown[1], Kristin Ladell[2], Niall Gormley[3], Edward L Murphy[4], Graham P Taylor[5], David A Price[2], Charles RM Bangham[1]

From 16th International Conference on Human Retroviruses: HTLV and Related Viruses
Montreal, Canada. 26-30 June 2013

We recently developed a high-throughput sequencing method for analysis and quantification of HTLV-1 integration sites in the host genome (Gillet et al, 2011, Blood). Using this method we investigated the effect of the genomic environment on integration targeting, clonal expansion and spontaneous HTLV-1 proviral expression (Gillet et al, 2011, Blood, Melamed et al, 2013, PLoS Pathogens). HTLV-2 preferentially infects CD8+ T cells, with a minority of the proviral load in CD4+ T cells. Here we describe the use of our high-throughput technique to investigate the distribution of HTLV-2 proviral integration sites in the host genome, in peripheral blood mononuclear cell (PBMC) DNA of HTLV-2 infected individuals (n=28). We also mapped and quantified proviral integration sites separately in flow-sorted CD4+CD8- and CD4-CD8+ populations. We quantified the clone frequency distribution and clonal survival over time in 10 individuals, using samples from 2 time points separated by a median of 10 years. The results show that the clone frequency distribution of HTLV-2 in PBMCs is distinct from that of HTLV-1 and resembles that of HTLV-1-infected CD8+ T cells. These results suggest that in both HTLV-1 and HTLV-2 infections, there is a greater degree of selective oligoclonal clonal expansion in infected CD8+ T cells than in CD4+ T cells. We are now investigating the selection forces that underlie this dichotomy between T cell lineages.

Authors' details
[1]Section of Immunology, Imperial College London, Wright-Fleming Institute, Norfolk Place, London, UK. [2]Institute of Infection and Immunity, Cardiff University School of Medicine, Cardiff, Wales, UK. [3]Illumina, Chesterford Research Park, Essex, Little Chesterford, UK. [4]University of California San Francisco, California, USA. [5]Section of Infectious Diseases, Imperial College London, Wright-Fleming Institute, Norfolk Place, London, UK.

[1]Section of Immunology, Imperial College London, Wright-Fleming Institute, Norfolk Place, London, UK
Full list of author information is available at the end of the article

Published: 7 January 2014

doi:10.1186/1742-4690-11-S1-P138
Cite this article as: Melamed *et al.*: Clonality of HTLV-2 in natural infection. *Retrovirology* 2014 **11**(Suppl 1):P138.