



POSTER PRESENTATION

Open Access

Frequency and function of KIR⁺ CD8⁺ T cells in HTLV-1 infection

Katie Twigger^{1*}, Aileen Rowan¹, Nafisa-Katrin Seich al Basatena¹, Aidan MacNamara¹, Christelle Retiere³, Keith Gould¹, Graham P Taylor², Becca Asquith¹, Charles RM Bangham¹

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

An efficient antiviral cytotoxic T lymphocyte (CTL) response to HTLV-1 infection maintains a low proviral load (PVL), reducing the risk of HAM/TSP. Host genotype, particularly of HLA class I, is a major determinant of CTL efficiency, and the influence of specific HLA class I alleles on HTLV-1 immunity is well documented. We recently showed that killer immunoglobulin-like receptor (KIR) genotype also influences CTL efficiency, by affecting HLA class I-mediated HTLV-1 immunity. Possession of the KIR2DL2 gene enhanced the effect of known protective or detrimental HLA class I alleles on PVL and HAM/TSP risk. This study aims to profile the frequency and function of CD8⁺ T cells expressing KIR2DL2 and other KIRs in HTLV-1 infection. Analysing total KIR expression showed the presence of KIR⁺CD8⁺ T cells, NK cells and CD4⁺ T cells in PBMCs from uninfected and HTLV-1⁺ donors. A subset of HTLV-1⁺ donors had high frequencies of total KIR⁺CD8⁺ T cells. Analysing individual KIRs revealed the presence of KIR2DL2⁺CD8⁺ T cells in HTLV-1⁺ donors. Preliminary data from PBMCs stimulated with Tax peptides indicates that KIR2DL2⁺CD8⁺ T cells constitute a very small proportion of the IFN γ -producing Tax-specific CD8⁺ T cell population. HTLV-1⁺ asymptomatic carriers had higher frequencies of IFN γ -producing Tax-specific KIR2DL2⁺CD8⁺ T cells than donors with HAM/TSP did. Further work is underway to characterise the function of Tax-specific CD8⁺ T cells by staining with anti-CD107a, anti-IFN γ and the HLA-A2/Tax₁₁₋₁₉ pentamer, and to compare the frequency and function of KIR2DL2⁺CD8⁺ T cells with those expressing other 2-domain KIRs.

Authors' details

¹Section of Immunology, Imperial College London, UK. ²Department of Genito-Urinary Medicine and Communicable Diseases, Imperial College London, UK. ³Immunovirologie et polymorphisme génétique, Etablissement Français du Sang, Université de Nantes, Nantes, France.

Published: 7 January 2014

doi:10.1186/1742-4690-11-S1-P79

Cite this article as: Twigger *et al.*: Frequency and function of KIR⁺ CD8⁺ T cells in HTLV-1 infection. *Retrovirology* 2014 11(Suppl 1):P79.

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



* Correspondence: katie.twigger09@imperial.ac.uk

¹Section of Immunology, Imperial College London, UK

Full list of author information is available at the end of the article

