Retrovirology

Poster presentation

P16-46. CD8+ T cells from nonlymphoid tissues exhibit superior control of SIV replication

JM Greene*, JJ Lhost, BJ Burwitz, SL O'Connor and DH O'Connor

Address: Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, USA
* Corresponding author

from AIDS Vaccine 2009
Paris, France. 19–22 October 2009

Published: 22 October 2009

Retrovirology 2009, **6**(Suppl 3):P275 doi:10.1186/1742-4690-6-S3-P275

This abstract is available from: http://www.retrovirology.com/content/6/S3/P275

Background

CD8+ T cells are vital to controlling HIV replication in humans and SIV infection in nonhuman primates. However, several studies provided conflicting evidence about the role of CD8+ T cells in effective or complete control of viral replication. The vast majority of these studies use lymphocytes isolated from blood in assays that provide indirect measures of CD8+ T cell function including ELISpot or ICS. Here we assess lymphocyte function using ex vivo viral suppression assays that directly test the ability of lymphocytes to suppress viral replication.

Methods

Unlike several previous studies using cell lines or clonally derived cells, we assess CD8+ T cell function from freshly isolated lymphocytes. We isolated CD8+ T cells from lung bronchoalveolar lavage or blood and used them as effector cells combined with CD8-depleted, SIV-infected target cells. After several days in culture we assessed each well by flow cytometry for p27+ cells to determine which effector cells were the most functional ex vivo.

Results

Lung CD8+ T cells isolated from infected animals suppressed viral replication better than CD8+ T cells isolated from the blood. Sufficient numbers of cells were always collected from brochoalveolar lavage during these experiments. Even though, by the end of the assay, there were generally fewer CD8+ T cells in the wells using lung lymphocytes, they were still the most effective at suppressing viral replication.

Conclusion

We demonstrate that there are significant differences in the ability of cells to suppress viral replication depending on their tissue of origin. These results further emphasize the need to understand the mucosal immune response, and suggest researchers may be missing important correlates of protection by focusing on assays using cells isolated from the blood.