



P04-36. HIV-1-specific antibody dependant cellular cytotoxicity (ADCC) mediated by primary NK cells

M Delaporte, Vincent Holl, Thomas Decoville, J Penichon, Christiane Moog

► To cite this version:

M Delaporte, Vincent Holl, Thomas Decoville, J Penichon, Christiane Moog. P04-36. HIV-1-specific antibody dependant cellular cytotoxicity (ADCC) mediated by primary NK cells. AIDS Vaccine 2009, Oct 2009, Paris, France. pp.P64, 10.1186/1742-4690-6-S3-P64 . inserm-00663916

HAL Id: inserm-00663916

<https://inserm.hal.science/inserm-00663916>

Submitted on 27 Jan 2012

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Poster presentation

Open Access

P04-36. HIV-1-specific antibody dependant cellular cytotoxicity (ADCC) mediated by primary NK cells

M Delaporte*, V Holl, T Decoville, J Penichon and C Moog

Address: UMR INSERM/UDS, Strasbourg, France

* Corresponding author

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

Published: 22 October 2009

Retrovirology 2009, 6(Suppl 3):P64 doi:10.1186/1742-4690-6-S3-P64

This abstract is available from: <http://www.retrovirology.com/content/6/S3/P64>

© 2009 Delaporte et al; licensee BioMed Central Ltd.

Background

Natural killer (NK) cells play an important role in antiviral immune responses; they kill HIV-1-infected cells either by direct lysis or through an antibody-dependent cellular cytotoxicity (ADCC) mechanism. HIV-1-specific ADCC were mainly detected using the CEM-NK target cell line. The aim of our study was to analyze the ADCC activity of various HIV-1-specific antibodies with an assay involving primary activated NK cells and autologous infected CD4 T-lymphocytes.

Methods

NK cells were purified from PBMC by magnetic bead selection. Autologous lymphocytes were stimulated by PHA for 3 days before being infected with different R5 HIV-1 strains for 3 additional days. NK cells previously activated with IL-2 or IL-15 were added to infected lymphocytes for 4 hours in the presence of different concentrations of anti-HIV-1-specific antibodies. The percentages of HIV-1-infected CD4 T-lymphocytes were measured by the detection of intracellular viral p24 antigen using flow cytometry. The immuno-phenotype of NK cells and the expression of CD107a (marker of NK cell degranulation) were determined in parallel.

Results

Our results show that in the absence of anti-HIV-1-specific antibodies, activated NK cells reduce by up to 50% the number of infected CD4 T-lymphocytes by direct lysis. In the presence of antibodies, the percentage of HIV-1-infected CD4 T-lymphocytes was further reduced and the percentage of NK cell degranulation was increased indi-

cating HIV-1-specific ADCC activity. This activity was compared to other antibody inhibitory activities i.e. HIV-1 neutralization and Fcγ receptors-mediated HIV-1 inhibition. Moreover, a correlation between the HIV-1-specific ADCC and the immuno-phenotype of NK cells was analyzed.

Conclusion

These results demonstrate that HIV-1-specific antibodies can inhibit HIV-1 replication *in vitro* by different mechanisms, including ADCC. If ADCC participates in HIV-1 protection, antibodies displaying ADCC should be induced by vaccination together with a stimulation of an innate NK immune response.