



## P04-27. Monoclonal neutralizing antibodies inhibit HIV-1 transfer from immature dendritic cells to human primary CD4 T-lymphocytes

K Xu, Vincent Holl, Maryse Peressin, Thomas Decoville, Sylvie Schmidt,  
Anne-Marie Aubertin, Christiane Moog

### ► To cite this version:

K Xu, Vincent Holl, Maryse Peressin, Thomas Decoville, Sylvie Schmidt, et al.. P04-27. Monoclonal neutralizing antibodies inhibit HIV-1 transfer from immature dendritic cells to human primary CD4 T-lymphocytes. AIDS Vaccine 2009, Oct 2009, Paris, France. pp.P55, 10.1186/1742-4690-6-S3-P55 . inserm-00668482

HAL Id: inserm-00668482

<https://inserm.hal.science/inserm-00668482>

Submitted on 9 Feb 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

## P04-27. Monoclonal neutralizing antibodies inhibit HIV-1 transfer from immature dendritic cells to human primary CD4 T-lymphocytes

K Xu, V Holl, M Peressin, T Decoville, S Schmidt, A Aubertin and C Moog\*

Address: Institute of Virology, 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):P55 doi:10.1186/1742-4690-6-S3-P55

This abstract is available from: <http://www.retrovirology.com/content/6/S3/P55>

© 2009 Xu et al; licensee BioMed Central Ltd.

### Background

Dendritic cells (DCs) present on the mucosa site are considered as one of the first target cells of HIV-1 following sexual transmission. It has been demonstrated that immature DCs could transfer infectious HIV-1 particles to CD4 T-lymphocytes via a virological synapse in *trans*. The aim of this study was to investigate the capacity of monoclonal neutralizing antibodies to inhibit HIV-1 transfer from immature DCs to CD4 T-lymphocytes.

### Methods

Immature DCs were generated from purified human blood monocytes. They were infected with HIV-1BaL for 2 hours and then washed extensively before exposure to purified primary PHA-activated CD4 T-lymphocytes in the presence or in the absence of monoclonal neutralizing antibodies. At different time-points, the percentage of HIV-infected DCs and CD4 T-lymphocytes were measured by flow cytometry detection of intracellular viral p24 antigen. The quantity of virus particles released in the supernatant was determined by p24 ELISA.

### Results

In the presence of CD4 T-lymphocytes, we found a strong enhancement of the percentage of p24-positive immature DCs. Monoclonal neutralizing IgG1b12, 2F5, 2G12 or 4E10 added 2 hours after infection of immature DCs could totally inhibit HIV-1 replication in the CD4 T-lymphocytes. Nevertheless, due to the efficient HIV-1 replication in DCs in the presence of CD4 T-lymphocytes, HIV-1

p24 released in the supernatant of the co-culture was only reduced in presence of antibodies.

### Conclusion

Here we clearly demonstrated that neutralizing antibodies are efficient inhibitors of HIV transfer to CD4 T lymphocytes and that HIV-1 replication becomes very efficient in DCs when they are co-cultured with primary CD4 T-lymphocytes. These results suggest that antibodies should thus be induced rapidly at the mucosal site to prevent DC infection and transfer to CD4 T-lymphocytes.