

10<sup>th</sup> Euro Global Summit and Expo on

# Vaccines & Vaccination

June 16-18, 2016 Rome, Italy

## HIV replication is suppressed by CD8+T regulatory cells in elite controllers

Jean-Marie Andrieu

Paris Descartes University, France

We previously demonstrated in the Chinese macaque model that an oral vaccine made of inactivated SIV and *Lactobacillus plantarum* induced CD8+T regulatory cells which suppressed the activation of SIV+CD4+T cells, prevented SIV replication and protected macaques from SIV challenges. Here, we sought whether a similar population of CD8+T-regs would induce HIV replication suppression in Human Elite Controllers (ECs), a small population (3%) of patients without HIV replication. For that purpose, we investigated the *in vitro* antiviral activity of fresh CD8+T cells on HIV infected CD4+T cells taken from 10 ECs. The 10 ECs had a classical genomic profile: All of them carried the KIR3DL1 gene and 9/10 carried at least one allele of HLA-B:BW4-80Ile (i.e., with an isoleucine residue at position 80). In the 9 HLA-B:BW4-80Ile positive patients, we demonstrated a strong viral suppression by fresh KIR3DL1 expressing CD8+T cells that required cell to cell contact to switch off the activation signals in infected CD4+T cells. The neutralization of KIR3DL1 by an adequate anti-KIR antibody completely inhibited viral replication suppression. Our findings provide the first evidence for an instrumental role of KIR expressing CD8+T regulatory cells in the natural control of HIV-1 infection.

### Biography

Jean-Marie Andrieu is a Professor of Medicine (Hematology) since 1982. He is the Director of the Institute of Research on Vaccines and Immunotherapy of Cancer and AIDS (IRVICS) at Paris-Descartes University. He is interested in the modulation of the immune system in HIV infection.

[prof.jmandrieu@orange.fr](mailto:prof.jmandrieu@orange.fr)

### Notes: