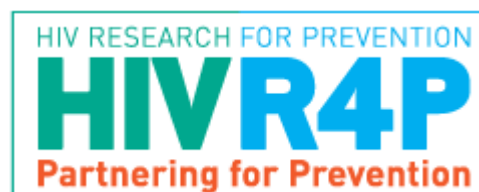


HIV R4P Highlights: $\alpha 4\beta 7$ antibody and ART: a novel HIV therapy



For the following weeks, Immunupaedia will be showcasing highlights from the HIV Research for Prevention Conference 2016 in Chicago.



Dr Anthony Fauci presented data at a plenary session at the HIV R4P conference on antibody targeting of the $\alpha 4\beta 7$ integrin in a novel mechanism to control HIV infection. Antiretroviral therapy (ART) has been widely used to control HIV replication. Antiretroviral therapy (ART) may be effective in reducing death and morbidity in HIV infected individuals; but treatment is life-long and ART is not a cure.

$\alpha 4\beta 7$ is an integrin that is used by T cells to home into the gut. HIV has been shown to bind to the $\alpha 4\beta 7$ integrin, enhancing viral entry into cells. This phenomenon may explain why early on in HIV infection, the gut T cells are quickly infected and depleted.

Fauci described the study recently published in *Science*, where rhesus macaques were infected with SIV and then treated for 90 days with ART from 5 weeks post infections. An antibody, known as Vedolizumab, that targets the $\alpha 4\beta 7$ was given to the macaques after 9 weeks post infection. These antibody infusions were repeated every 3 weeks up until week 32.

The results of the study showed that the antibody was able to control HIV replication after ART interruption for up to 2 years. The macaques had low to undetectable viral loads and their CD4 T cell counts were comparable to healthy controls. The mechanism is still not fully understood and more work is being done to address this.

The outstanding results of this study have initiated a small human clinical trial (15-25 people) to see if the results can be reproduced in humans. If so, this antibody may be used as a novel therapy for HIV treatment.

Journal article: [Byrareddy et al., 2016 Sustained virologic control in SIV+ macaques after antiretroviral and \$\alpha\$ 4 \$\beta\$ 7 antibody therapy, *Science*](#)

Presentation webcast: [HIV Research for Prevention 2016 webcasts](#)

Article by Thandeka Moyo