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## Mechanisms Contributing to Control of Viremia

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from 2005 International Meeting of The Institute of Human Virology  
Baltimore, USA, 29 August – 2 September 2005

Published: 8 December 2005

*Retrovirology* 2005, **2**(Suppl 1):S145 doi:10.1186/1742-4690-2-S1-S145

Comparison of different cohorts of SIV-infected rhesus macaques that control viremia may help to identify the mechanisms that prevent progression towards AIDS. We study 3 groups of macaques able to control viremia to various extents. Group 1 was infected with live-attenuated Rev-independent SIV is able to persistently control viremia over more than 7 years. Group 2 are live-attenuated SIV-infected macaques additionally challenged with pathogenic SIVmac251 and controls the challenge to various levels ( $<10^5$  copies/ml) for more than 4 years. Group 3 are SIVmac251-infected animals therapeutically immunized using DNA vectors during ART. These animals control viremia after release from ART for more than 18 months ( $<10^4$  copies/ml). Animals in groups 1 and 2 developed long-lasting humoral and cellular immune responses. Animals in group 3 have persistent increases in cellular and humoral responses leading to virus containment and slower onset of disease. The understanding of the underlying mechanism leading to protective immune responses of these 3 cohorts of 'controllers' will be useful for rational vaccine design.