RETROVIROLOGY

POSTER PRESENTATION Open Access

Efficacy of vaccine-induced Vif-specific CTL responses against SIVmac239 infection: implications for antigen design in AIDS vaccines

N Iwamoto[1*], N Takahashi[1], T Nomura[1], H Yamamoto[2], T Matano[1]

From AIDS Vaccine 2012
Boston, MA, USA. 9-12 September 2012

Background

Optimization of antigens as well as delivery system is crucial for development of an effective T-cell based AIDS vaccine. Our recent results suggested higher antiviral efficacy of Vif- and Nef-specific CTLs as well as Gag-specific ones (JEM 199:1709, 2004; AIDS 24:2777, 2010). Here, we examined efficacy of Gag-specific or Vif/Nef-specific CTL induction by vaccination against SIV infection.

Methods

All 17 animals used in this study were Burmese rhesus macaques sharing MHC-I haplotype 90-010-Ie, which mostly show typical AIDS progression after SIVmac239 challenge (geometric means of setpoint plasma viral loads: 10^5 copies/ml; mean survival periods: 2 years). These animals were divided into three groups consisting of unvaccinated (n = 6), Gag-vaccinated (n = 5), and Vif/Nef-vaccinated (n = 6); the latter two were subjected to DNA-prime/Sendai virus vector-boost vaccination. We compared these three groups after an intravenous SIVmac239 challenge.

Results

After challenge, 3 out of 5 Gag-vaccinated and 3 out of 6 Vif/Nef-vaccinated animals controlled SIV replication. The SIV control was associated with Gag-specific CTL responses in the former and Vif-specific CTL responses in the latter.

Conclusion

This is the first report indicating efficacy of vaccine-induced Vif-specific CTL responses against SIV replication. Our results imply that not only Gag but also Vif may be a promising antigen for T-cell based AIDS vaccines.

Author details
[1]National Institute of Infectious Diseases, & IMS, University of Tokyo, Tokyo, Japan. [2]National Institute of Infectious Diseases, Tokyo, Japan.

Published: 13 September 2012

doi:10.1186/1742-4690-9-S2-P26
Cite this article as: Iwamoto *et al.*: Efficacy of vaccine-induced Vif-specific CTL responses against SIVmac239 infection: implications for antigen design in AIDS vaccines. *Retrovirology* 2012 **9**(Suppl 2):P26.

[1]National Institute of Infectious Diseases, & IMS, University of Tokyo, Tokyo, Japan
Full list of author information is available at the end of the article