

Poster presentation

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PII-19. Altered mucosal distribution of SIV-specific T cells in Rhesus macaques infected with the live-attenuated Rev-independent SIV

A Valentin^{*1}, A von Gegerfelt¹, C Alicea², V Patel¹, ML Marthas³, K Van Rompay³, GN Pavlakis¹ and BK Felber²

Address: ¹Center for Cancer Research, HRS, VB, NCI-Frederick, Frederick, USA, ²HRPS, VB, NCI-Frederick, Frederick, USA and ³California National Regional Primate Research Center, Davis, CA, USA

* Corresponding author

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Background

Infection of rhesus macaques with live-attenuated SIV strains provides the best known protection against challenge with pathogenic SIV. A cohort of 10 Indian rhesus macaques infected by Rev-independent live-attenuated SIV was monitored for up to 10 years. After the initial acute phase, virus replication was controlled and plasma viral loads were persistently below the threshold of the assay. None of the animals showed any signs of immune dysfunction.

Methods

SIV-specific T cells were monitored in peripheral blood, bronchoalveolar lavage (BAL) and rectal biopsies by multiparametric flow cytometry after stimulation with gag or env peptide pools. The results were compared with those obtained from similar samples taken from macaques infected with the pathogenic SIVmac251.

Results

Macaques infected with SIVmac251 had significantly higher SIV-specific T cells in BAL than blood (5 to 10-fold higher). No responses were detected in gastrointestinal samples. In contrast, animals infected with the Rev-independent SIV had similar or lower T cell responses in BAL compared to blood. In addition, the presence of SIV-specific T cells after peptide stimulation was detected in rectal samples from 60% of the animals infected with the atten-

uated SIV, and these responses were consistently higher than those present in BAL. Responses against env were mediated preferentially by CD8⁺ T cells with effector phenotype (CD28-CD95+CCR7⁻) whereas gag responses were mediated mainly by CD4⁺ T cells. Antigen-specific T cells in both mucosal compartments were characterized by the lack of CCR7 and CD45RA.

Conclusion

The distribution of SIV-specific T cells in mucosal sites is different in macaques infected with WT or with the live-attenuated Rev-independent SIV. Preservation of cellular immunity in the GALT could be related to the efficient control of viral replication associated with live-attenuated SIV infection.