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Poster presentation

P11-13. Antigen presentation and immune priming of CCR5-ECL1 receptor in Peyer's patches B cells

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Background

HIV protective downregulating CCR5-ECL1 IgA have been found in mucosal fluids from uninfected sexual partners of HIV-positive individuals and in a subset of HIV-seropositve HIV-controlling subjects. This finding concurred to the hypothesis that lack of expression of CCR5 might play a role in HIV protection. We induced and reproduced this immune status in animal models such as mouse and characterized the immune responses in Peyer's patches.

Methods

Balb/c mice were immunized by mucosal routes with murine and human CCR5-ECL1 sequence. Thus, we generated chimeric immunogens containing the relevant CCR5 mouse and human peptide in the context of the capsid protein of Flock House Virus (FHV), an epitope presentation system in which it is possible to engineer conformationally constrained peptide in a highly immunogenic form. Specific antibody to CCR5-ECL1 have been characterized in plasma, vaginal washes and Peyer's patches. Antibodies to CCR5 have been quantified in all biologic fluids and the kinetics of CCR5 down-regulation in vivo in mice PBMC have been performed.

Results

High level of CCR5 specific sIgA and IgG were found upon single immunization in Peyer's patches similar to that obtained at mucosal sites under at least 3 immunizations. Moreover, increased frequencies of transgene-specific T cells were measured at mucosal sites such as in intestinal epithelium and in Peyer's patches. A specific antibody response to CCR5 was also found at systemic level. Immunization with linear peptide did not induced CCR5 specific antibodies.

Conclusion

These findings demonstrate that B cell tolerance can be formally broken by specific antigenic system, and efficacious immune priming could be induced in central lynfoid organs with association of increased level of memory T cells.