

8th Conference on Retroviruses and Opportunistic Infections



Chicago, IL - February 4 - 8, 2001

BERNARD FIELDS MEMORIAL LECTURE: AVOIDANCE OF ANTIBODY RECOGNITION BY SIV- AND HIV-ENCODED ENVELOPE PROTEINS

Conf Retroviruses Opportunistic Infect 2001 Feb 4-8; 8:279 (abstract no. L1)

Desrosiers R

Harvard Med Sch, Southborough, MA

It is now clear that HIV has evolved a variety of specific strategies for immune evasion that allow persistent, unrelenting viral replication. These strategies include:

- i. emergence of genetic variants that are immune escape variants;
- ii. destruction of CD4+ T-cell helper activity;
- iii. accessibility of envelope proteins on virions to antibodies;
- iv. *nef*-induced down-regulation of MHC class I molecules;
- v. latency and reactivation.

My laboratory has become interested over the last few years in how HIV envelope has configured itself to avoid antibody-mediated neutralization. We have studied four types of envelope modifications, using SIV or SHIV, for their effects on antibody mediated neutralization, ability to elicit antibodies capable of neutralizing viral infectivity, dependence on CD4 for viral infectivity, and ability to be controlled by the host immune response. We have been studying the effects of:

- i. N-linked carbohydrate attachment mutations in the V1-V2 region of gp120;
- ii. deletion of the entire V1-V2 region of gp120;
- iii. N-linked carbohydrate attachment mutations in the ectodomain of gp41;
- iv. point mutations in gp120 that confer high replicative capacity to tissue macrophages.

Our results indicate that a variety of mutational changes can impart neutralization sensitivity and that these changes result in more effective immunological control. These results are important at a

fundamental level for better understanding of how immune evasion strategies contribute to pathogenesis. They may also be important at a practical level for improving envelope-based vaccine approaches.

Keywords: AEGIS, SIV, Antigens, CD4, Virus Replication, HIV Envelope Protein gp120, Gene Products, nef, HIV-1, Antibodies, Antigens, Viral, Gene Products, env, HIV Antibodies, Viral Proteins, HIV Infections, HIV, HIV Envelope Protein gp160, Down-Regulation, Variation (Genetics), virology, genetics, AIDS

2001-02-04

L1

Copyright © 2001 - [Foundation for Retrovirology and Human Health](#). Reproduction of this abstract (other than one copy for personal reference) must be cleared through the Foundation for Retrovirology and Human Health. Licensed (AIDSLINE) from National Library of Medicine.