

8th Conference on Retroviruses and Opportunistic Infections



Chicago, IL - February 4 - 8, 2001

CLOSING THE DOOR ON HIV ENTRY

Conf Retroviruses Opportunistic Infect 2001 Feb 4-8; 8:280 (abstract no. L4)

Doms R

Univ of Pennsylvania, Philadelphia

A series of interactions between the HIV-1 envelope (Env) protein and cell surface molecules dictate not only which cells are susceptible to virus entry, but also the efficiency with which entry occurs. Rapid advances in understanding these interactions and the conformational changes in Env that ensue have led to the identification of promising new drug targets and have also suggested new strategies for the generation of vaccine candidates. Infection by primary HIV-1 strains is dependent upon the presence of the CD4 molecule and chemokine-receptors, most often CCR5 and CXCR4. The surface density of these receptors is an important variable that affects the efficiency of virus entry. Equally important is simple attachment of virus to the cell surface, which can involve interactions with many cell surface molecules. As the details of the virus entry process have been revealed, it is apparent that structural intermediates of the fusion process represent attractive drug targets. Highly conserved, functionally important domains in Env become exposed upon receptor binding, making virus susceptible to entry inhibitors such as T20. Details of the entry process suggest that the use of coreceptor antagonists may slow the rate of membrane fusion by reducing receptor density, thereby prolonging exposure of conserved, critically important domains such as those on the surface of the triple stranded coiled-coil in the gp41 subunit of Env. Combination chemotherapy with different classes of entry inhibitors may therefore result in synergistic inhibition of virus infection.

Keywords: AEGIS, HIV-1, Antigens, CD4, Receptors, Chemokine, Membrane Fusion, Anti-HIV Agents, Protein Binding, AIDS

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.