

HIV-1 Envelope Glycoproteins: Neutralizing Antibodies, Structure and Immunogen Design

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Abstract

Neutralizing antibodies appear to be an important constituent in the host immune response to HIV. Although some neutralizing antibodies capable of neutralizing diverse strains of HIV have been characterized, such antibodies have proven difficult to elicit by experimental immunization. Richard Wyatt is a key collaborator in the elucidation of the crystal structure of the HIV Envelope glycoprotein in a complex with its cellular receptor, CD4, and a neutralizing antibody (Ref. 1 and 2). Richard Wyatt is currently engaged in exploiting the evolving structural information on HIV Envelope structure to determine if rational modification of gp120 glycoproteins will influence the exposure and presentation of conserved, functional structures to the immune system. The elicitation of antibodies with an expanded breadth of neutralization capacity may thereby be enhanced. This rational approach to improve gp120 HIV-1 envelope glycoprotein immunogenicity may have a significant impact on HIV-1 vaccine design.

For more information on the research activities of Richard Wyatt, please visit www.vrc.nih.gov/VRC/labs_wyatt.htm

References

- 1) Wyatt R, Kwong P, Desjardins E, Sweet R, Robinson J, Hendrickson W and Sodroski J. The antigenic structure of the human immunodeficiency virus gp120 envelope glycoprotein. *Nature* 1998;393:705-11.
- 2) Wyatt R and Sodroski J. The HIV-1 envelope glycoproteins: fusogens, antigens and immunogens. *Science* 1998;280:1884-88.

On behalf of Danish Society for Virology

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