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☐ 1: Arch Virol. 1988;100(3-4):255-66.

Links

4.1

The organization of the envelope projections on the surface of HIV.**Ozel M, Pauli G, Gelderblom HR.**

Robert Koch-Institut des Bundesgesundheitsamtes, Berlin.

The organization of envelope projections (knobs) of four different isolates of the human immunodeficiency virus types 1 and 2 (HIV-1 and -2) was studied using surface replica and thin section electron microscopy (EM) in combination with rotational image enhancement. All HIV strains show an identical organization of knobs on the virus envelope. The surface of an "ideal", well-preserved HIV particle is studded with 72 knobs arranged in a T = 7 laevo symmetry. The role of the p 17 protein, which is coating the inner leaflet of the viral envelope, is discussed as a matrix protein functioning as a scaffold for the envelope and its projections during morphogenesis as well as with mature virions.

PMID: 3401118 [PubMed - indexed for MEDLINE]

Related Links

Fine structure of human immunodeficiency virus (HIV) and immunolocalization of structural proteins. [Virology. 1987]

Morphogenesis and morphology of HIV. Structure-function relations. [Virology. 1989]

Computer emulation of thin section electron microscopy predicts an envelope-associated icosadeltahedral capsid for human immunodeficiency virus. [Invest. 1988]

Ultrastructure of human retrovirus. [Electron Microsc. Tech. 1988]

Envelope glycoprotein incorporation, not shedding of surface envelope glycoprotein (gp120/SU), is the primary determinant of SU content of purified human immunodeficiency virus type 1 and simian immunodeficiency virus. [J Virol. 2002]

☐ 1: Arch Virol. 1989;106(1-2):1-13.

Links

4.2

Morphogenesis and morphology of HIV. Structure-function relations.**Gelderblom HR, Ozel M, Pauli G.**

Robert Koch-Institut, Berlin.

Fine structure and antigenic make-up analysis of HIV were combined in a 2D model, from which functional aspects can be deduced. On the envelope 72 probably trimeric surface knobs (gp120) are connected to the virion via the transmembrane protein gp41. Gp120 is shed during ageing of the virion, but host cell antigens stay firmly anchored to the envelope. Underneath the envelope, p17 forms the matrix protein layer, while the capsid of the double cone shaped core is built up of p24. The relation between biochemical findings and morphogenesis and maturation of HIV as well as aspects of pathogenesis and vaccination are discussed.

Related Links

LAV/HTLV-III: fine-structure analysis, localization of structural proteins, and detection of envelope antigen. [Symptom. 1987]

Fine structure of human immunodeficiency virus (HIV) and immunolocalization of structural proteins. [Virology. 1987]

Structural biology of HIV. [J Mol Biol. 1999]

The organization of the envelope projections on the surface of HIV. [Virology. 1988]

HIV-1 replication. [Somat Cell Mol Genet. 2001]

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