Conformational changes in gp120 exposes gp41

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Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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Literature references

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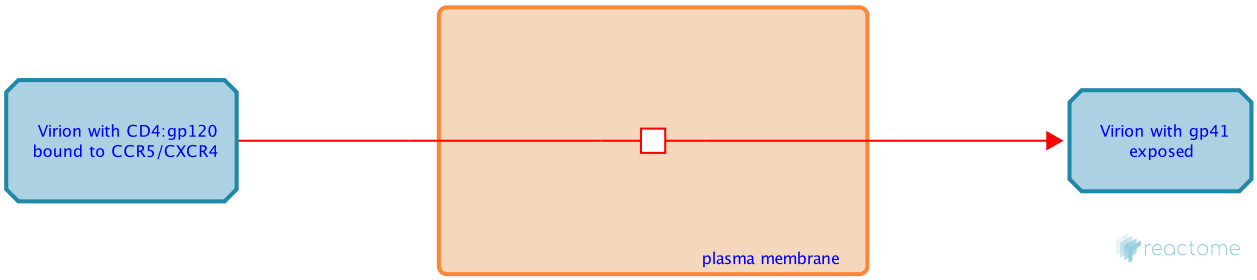
Stable identifier: R-HSA-164500

Type: transition

Compartments: plasma membrane

Diseases: Human immunodeficiency virus infectious disease



The HIV protein known as gp41 is a transmembrane protein which is considered the major mediator of fusion of extracellular virions to the target cells in the host. HIV gp120 and gp41 proteins form non-covalently linked oligomers on the surface of virions. The gp41 subunit of the oligomer is anchored in the viral membrane and contains a non-polar fusion peptide at its N-terminus. Upon CD4 and receptor binding, gp120 undergoes a second conformation change. The conformation change exposes gp41 which continues to mediate fusion of the viral envelope with the host plasma membrane. Electron microscopy and circular dichroism measurements of the gp41 protein suggest a rod-like conformation with a high alpha-helical content. Although some studies suggest that gp41must dissociate from gp120 in order to cause fusion between HIV envelope and the target cell plasma membrane, evidence on this point is not conclusive.

Literature references

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Editions

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