Retrovirology

Oral presentation

T Cell Complicity in HIV Spread

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Background

The human immunodeficiency virus type-1 (HIV-1) can spread between target cells via release of cell-free virions or by direct cell-cell transmission across a virological synapse. Virus is released from T cells in a polarized manner from regions of the plasma membrane rich in raft-associated lipids and proteins.

Materials and methods

We have established a model system in which conjugate formation between HIV-1-infected (effector) and unifected (target) T cells results in the assembly of a virological synapse (VS) at the intercellular interface.

Results

Env-receptor and adhesion molecule interactions are required for functional VS formation. Gag transits to the plasma membrane in a CD63/CD81+ compartment. Polarization of HIV-1 Env and Gag on effector cells and subsequent viral release depends on actin and tubulin remodelling and lipid raft and PIP2 integrity.

Conclusion

We hypothesize that viral infection triggers pre-existing T cell programs that activate elements of the T cell secretory apparatus to deliver Gag, allowing efficient virus assembly.