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Sent: Thur 7/8/2010 4:58:29 PM
Subject: cool stuff/biofilms

<http://en.wikipedia.org/wiki/Biofilm> (general summary)

viruses (virii?) and biofilms - really the only decent story (in nature this year)

Biofilm-like extracellular viral assemblies mediate HTLV-1 cell-to-cell transmission at virological synapses.

Nat Med. 2010 Jan;16(1):83-9. Epub 2009 Dec 20.

Pais-Correia AM, Sachse M, Guadagnini S, Robbiati V, Lasserre R, Gessain A, Gout O, Alcover A, Thoulouze M.

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Comment in:

- Nat Med. 2010 Jan;16(1):25-7.

Abstract

Human T cell leukemia virus type 1 (HTLV-1) is a lymphotropic retrovirus whose cell-to-cell transmission requires cell contacts. HTLV-1-infected T lymphocytes form 'virological synapses', but the mechanism of HTLV-1 transmission remains poorly understood. We show here that HTLV-1-infected T lymphocytes transiently store viral particles as carbohydrate-rich extracellular assemblies that are held together and attached to the cell surface by virally-induced extracellular matrix components, including collagen and agrin, and cellular linker proteins, such as tetherin and galectin-3. Extracellular viral assemblies rapidly adhere to other cells upon cell contact, allowing virus spread and infection of target cells. Their removal strongly reduces the ability of HTLV-1-producing cells to infect target cells. Our findings unveil a novel virus transmission mechanism based on the generation of extracellular viral particle assemblies whose structure, composition and function resemble those of bacterial biofilms. HTLV-1 biofilm-like structures represent a major route for virus transmission from cell to cell.