



CD1a association with HIV-1 during transinfection by activated Langerhans cells.

Seyoum Ayehunie¹, Kelly Fahrbach², Sheila Barry², and Thomas J. Hope², and Mitchell Klausner¹; ¹MatTek Corporation, 200 Homer Avenue, Ashland, MA 01721 and ²Department of Cell and Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, Illinois 60611

ABSTRACT:

Langerhans cells (LCs) are a subset of dendritic cells (DCs) that reside within skin, mucosal, and lymphoid tissues which are potentially the first cells to encounter infectious agents such as HIV. We report that activated LCs generated from umbilical cord blood derived CD34+ progenitor cells can facilitate HIV transinfection of target cells. The generated LC express surface markers such as CD1a and Langerin, and Birbeck granules (unique marker of LC). FACS sorted CD1a^{high} and CD1a^{low} cells were activated and used for HIV infection studies. HIV virions were observed in an intracellular compartment that contains the LC markers langerin and CD1a and virions transfer from LC to TC were associated with the CD1a molecule. The correlation of HIV with CD1a and the CD1a mediated transinfection was associated with the activation stage of LC suggesting an inherent difference in the ways in which unactivated and activated LCs interact with HIV.

To be presented at the 10th International Workshop on Langerhans Cells, September 2-4, 2007, Bern, Switzerland.