HIV-1 Vpu affects the anterograde transport and the glycosylation pattern of NTB-A.

Abstract:
HIV-1 Vpu induces downregulation of cell surface NTB-A to evade lysis of HIV-1 infected cells by NK cells. Here we show that Vpu affects the anterograde transport and the glycosylation pattern of NTB-A by a mechanism that is distinct from the Vpu induced downregulation of CD4 and tetherin. In the presence of Vpu, only the high mannose form of NTB-A was detectable, suggesting that Vpu prevented the formation of the mature form of NTB-A. This phenomenon is associated with the ability of Vpu to downregulate cell surface NTB-A by retention of NTB-A within the Golgi-compartment. Furthermore, the Vpu-mediated effect on NTB-A glycosylation is highly conserved among Vpu proteins derived from HIV-1 and SIV and corresponds to the level of downregulation of NTB-A. Together, these results suggest that the reduction of NTB-A from the cell surface is associated with the Vpu-mediated effect on the glycosylation pattern of newly synthesized NTB-A molecules.