

**Supplemental Figure 1:** VSV-G pseudotyped virus did not cause the appearance of Annexin V<sup>+</sup> 7AAD<sup>-</sup> Memory CD4<sup>+</sup> T cells. VSV-G pseudotyped virus was normalized to X4 virus at the level of p24 antigen. Cells were analyzed at 4 hr post infection.

**Supplemental Figure 2:** Purification of memory CD4<sup>+</sup> T cells. Highly purified memory CD4<sup>+</sup> T cells were isolated from fresh PBMCs with the negative selection kit from Miltenyi Biotec. Purity of the resulting population was assessed by flow cytometry.

**Supplemental Figure 3:** HIV-1-induced cell death at MOI 0.1, 0.2, and 0.4. Results from virus titration in the three independent experiments presented in Fig. 2A were plotted individually. Cell death was analyzed at 4 hr post infection by monitoring  $\Delta\Psi_m$  dissipation.