S.D.) are from one representative experiment of 2, with a different donor in each experiment.

Fig. 7. **Flow cytometry analysis of 2D7, HGS004 and HGS101 binding to MVC-bound and free CCR5 on CD4+ T cells**. 10-day IL-2 stimulated PBMCs ($1x10^6$) were treated with and without 10 µM MVC, incubated with 10 µg of unconjugated CCR5 antibody or isotype, and stained with the corresponding secondary detection antibody. Lymphocyte subsets were identified using fluorochrome-labeled antibodies for detection of CD3, CD4 and CD8. CCR5 detection in the CD4+ T cell subset was analyzed by comparing percentages of CCR5 positive cells (*upper panels)* or Mean Fluorescence Intensities (MFI) of the CCR5+ gated populations (*lower panels*). Representative data from two different donors are shown.

Fig. S1. **Inhibition of MVCsens and MVCres HIV-1 by the combination of MVC and ROAb14 in PBMCs**. PHA-activated PBMCs were incubated with serial dilutions of MVC for 1 h, followed by incubation with the indicated concentration of CCR5 mAb ROAb14 for an additional hour. Cells were infected with replication-competent MVCsens or MVCres HIV-1 for 3 h at a MOI of 0.001. Infected cells were cultured in the presence of inhibitors at the same concentrations as before. Data are p24 levels on day 7, normalized to p24 levels in the absence of MVC. Experimental p24 levels (ng/ml) in the absence of MVC were as follows: 470 $\pm$ 64 (no Ab), 200 $\pm$ 38 (ROAb14) for MVCsens HIV-1; and 376 $\pm$ 59 (no Ab) and 229 $\pm$ 38 (ROAb14) for MVCres HIV-1.

Data (means ± S.D.) are from one representative experiment of 2, with a different donor in each experiment.

Fig. S2. **CCR5 mAb HGS004, but not 2D7, sensitizes MVCres HIV-1 to MVC in CD8-depleted PBMCs**. CD8-depleted PBMCs were activated with PHA for 3 days, incubated with 10-fold serial dilutions of MVC for 1 h, followed by incubation with the indicated concentration of each CCR5 mAb for an additional hour. Cells were infected with replication-competent MVCsens or MVCres HIV-1 for 3 h at a MOI of 0.001. Infected cells were cultured in the presence of inhibitors at the same concentrations as before. Data are p24 levels on day 7, normalized to p24 levels in the absence of MVC. Experimental p24 levels (ng/ml) in the absence of MVC were as follows: 554 ± 74 (no Ab), 395 ± 49 (2D7) and 406 ± 62 (HGS004) for MVCsens HIV-1; 479 ± 60 (no Ab), 294 ± 42 (2D7) and 221 ± 36 (HGS004) for MVCres HIV-1. Data (means ± S.D. of duplicates) are from one single experiment.