

Supplement for:

**Primate immunodeficiency virus Vpx and Vpr counteract transcriptional repression of proviruses by the HUSH complex**

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Including:

**Supplementary Figure Legends**

**Supplementary Figures 1, 2, and 3**

**Supplementary Table 1**

**Supplementary Figure 1. Transcriptional activation of lentivector reporter genes by *vpx* and *vpr*.**

**a**, Schematic of *vpx*<sup>+</sup> and no *vpx* versions of Lenti 1 and Lenti 2 vectors used in Figs 1 and 2. **b**, Representative live, singlet, lymphoid, GFP<sup>+</sup> flow cytometry gating strategy. **c**, Quantification of results from Fig 1b. Jurkat-*vpx* or Jurkat-*puro*<sup>R</sup> transduced with Lenti-2-*vpx*, or Lenti-2-no *vpx*, were treated with Vpx<sup>+</sup> VLPs, ΔVpx VLPs, or no VLPs, and analyzed three days later. MFI was normalized for each group of VLP treated cells to untreated samples; mean ± S.E.M., n=3 independent experiments. Significance was determined by 1-way ANOVA with Dunnett post-test comparing treated to untreated samples in each group. \*, *P*<0.016 **d**, Representative qPCR analysis of *gfp* expression after Lenti-*gfp-blasti*<sup>R</sup> cells were transduced with SIV<sub>MAC251</sub> Vpx or empty vectors (mean ± S.E.M., n=3 replicates) \*, *P*<0.02 **e**, Jurkat cells were transduced with Lenti-*gfp-blasti*<sup>R</sup> with GFP driven by EF1α or TK promoters and Blast<sup>R</sup> driven by CypA promoter. 3 days after selection cells were transduced with SIV<sub>MAC251</sub> Vpx (white) or control *puro*<sup>R</sup> (red) vectors and selected with blasticidin. Untransduced cells are shown in grey. **f**, Transactivation of Lenti-*gfp-blasti*<sup>R</sup> reporter cells by the the indicated *vpx* and *vpr* expression vectors. Red line indicates 4-fold transactivation, which was used as a cutoff for activity.

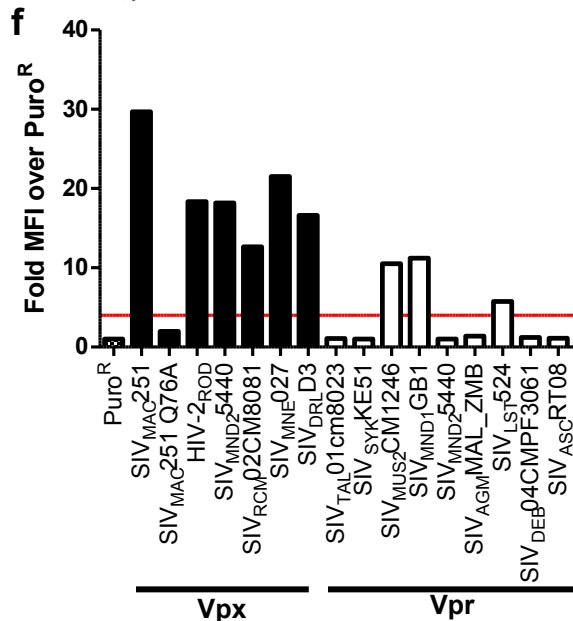
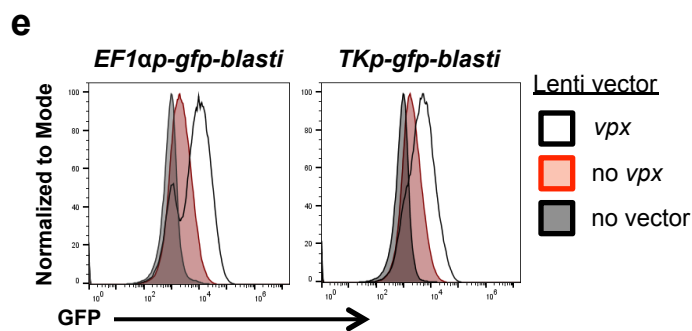
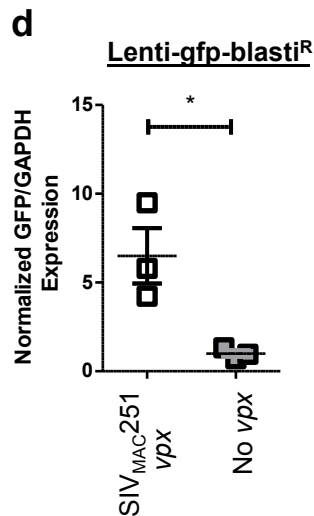
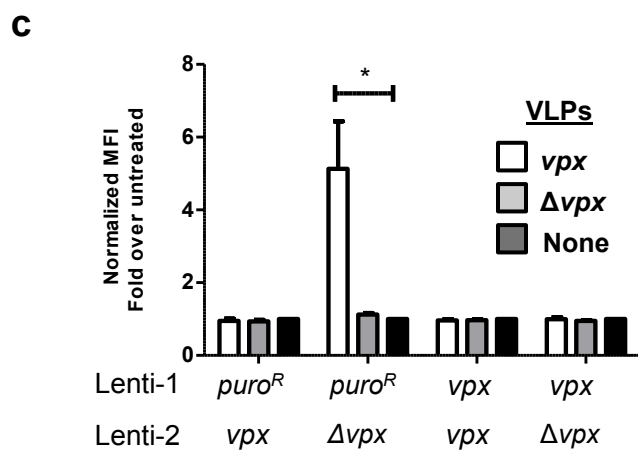
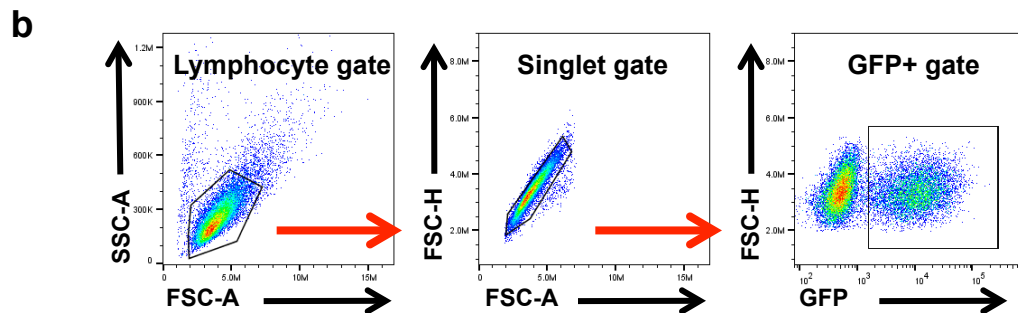
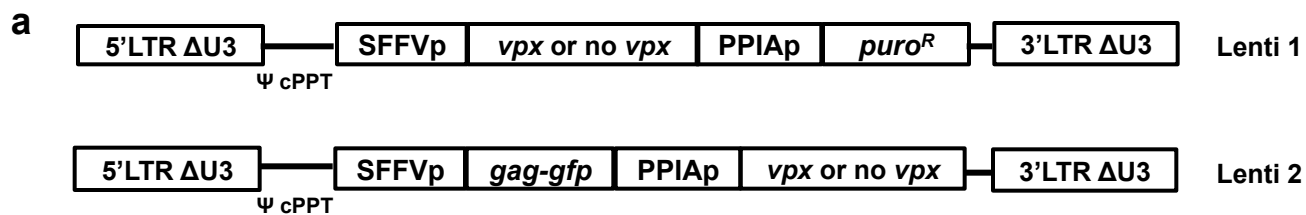
**Supplementary Figure 2. HUSH components inhibit provirus expression in primary CD4<sup>+</sup> T cells; Vpx and Vpr from multiple lentiviral species deplete FAM208A.**

**a**, Quantification of results from Fig. 2d. CD4<sup>+</sup> T cells were positively selected with magnetic beads, activated for 3 days with PHA, transduced with the indicated shRNA-*puro*<sup>R</sup> knockdown or control vectors, and selected with puromycin. Cells were then transduced with a lenti-*gfp* vector in the absence of *vpx*, and analyzed for GFP expression 7 days later (mean ± S.E.M., n=3 donors). **b**, Immunoblotting for FAM208A and Actin using lysate from Jurkat cells stably transduced with lentivectors producing the indicated Vpx proteins. **c**, Immunoblotting for

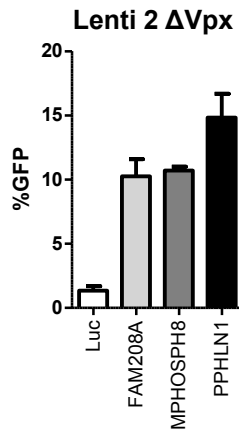
FAM208A, FLAG-Vpx, and FLAG-Vpr in Jurkat cells stably transduced with lentivectors expressing the indicated 3xFLAG tagged Vpx and Vpr constructs.

**Supplementary Figure 3. Expression from the HIV-1 LTR is activated by diverse Vpx and Vpr proteins**

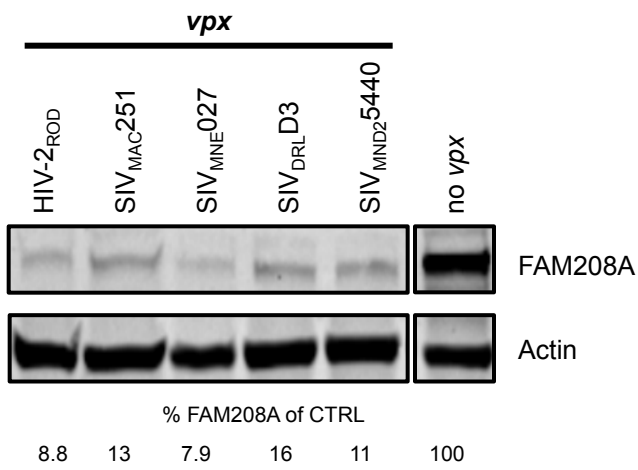
**a**, J-Lat A1 cells were transduced with Lenti 1 encoding Vpx from SIV<sub>MAC251</sub>, SIV<sub>RCM02CM8081</sub>, or SIV<sub>MND25440</sub>, Vpr from SIV<sub>MND1GB1</sub>, or SIV<sub>AGMTAN1</sub>, or control no *vpx* Lenti 1. Transduced cells were selected with puromycin, activated for 24 hrs with 10 ng/ml of TNF $\alpha$ , and GFP was assessed by flow cytometry. **b**, Jurkat LTR-*gfp* cells were activated for 24 hrs with either 10 ng/ml TNF $\alpha$  or 1  $\mu$ g/ml each of soluble  $\alpha$ -CD3 and  $\alpha$ -CD28 antibodies. GFP was then assessed by flow cytometry. **c**, Jurkat LTR-*gfp* cells were transduced with Lenti 1 vector encoding Vpx from SIV<sub>MAC251</sub>, SIV<sub>RCM02CM8081</sub>, or SIV<sub>MND25440</sub>, Vpr from SIV<sub>MND1GB1</sub>, or SIV<sub>AGMTAN1</sub>, or control no *vpx* Lenti 1, selected with puromycin, and activated for 24 hrs with 10 ng/ml TNF $\alpha$ . GFP expression was assessed by flow cytometry.



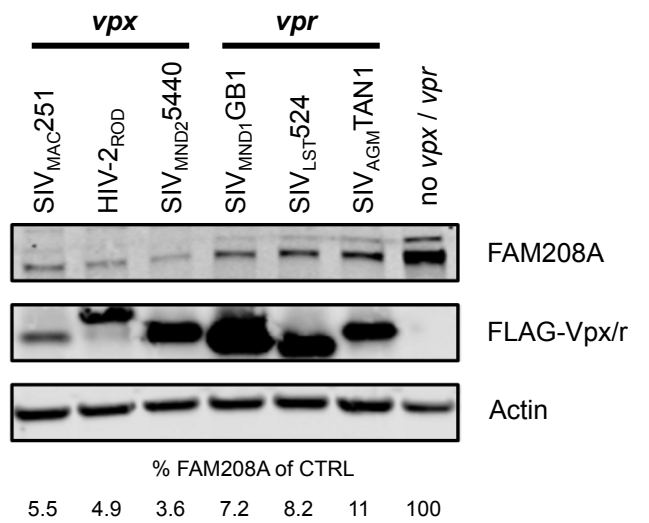
**a** Primary CD4 T cells

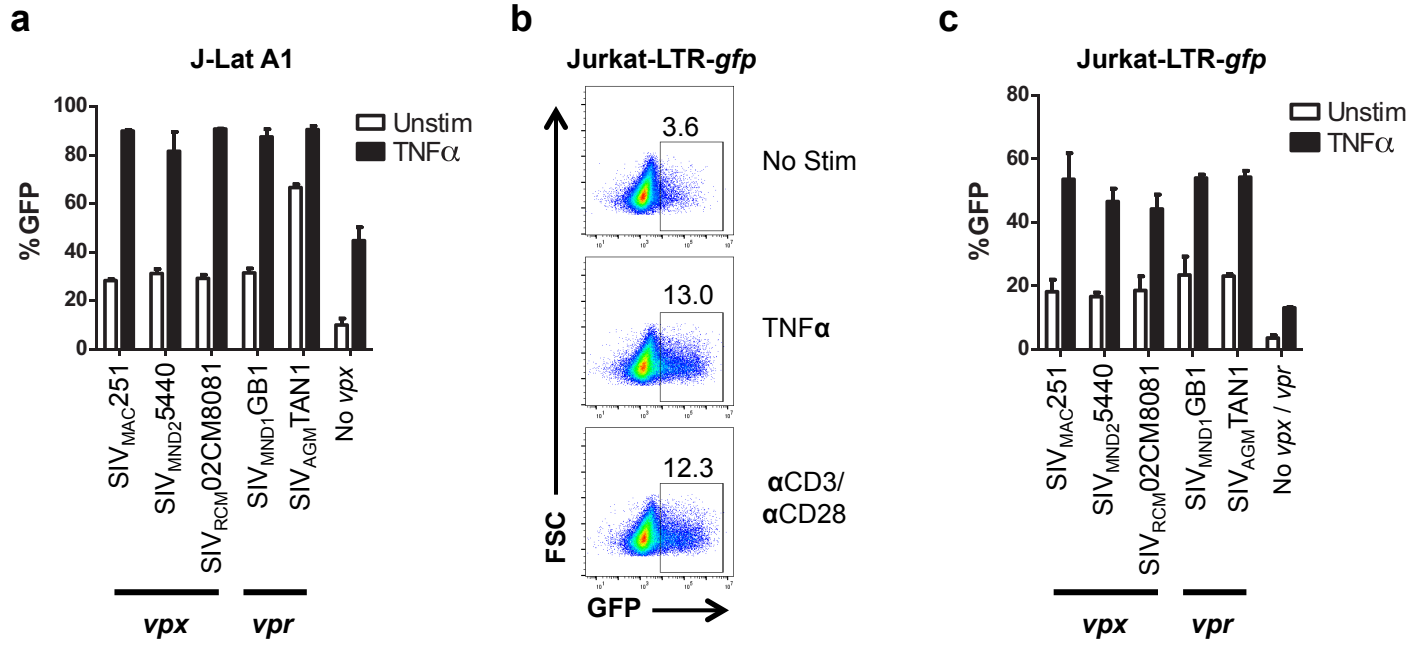


**b**



**c**





**Supplementary Table 1. Plasmids used in this study.**

Plasmid Name	Purpose	Notes	Source
HIV1-ZsGreen	Replication competent HIV-1	HIV-1 NL4-3 in pBluescript with flanking host sequences deleted. ZsGreen in place of <i>nef</i>	Pending NIH AIDS Reagent Repository
SIV <sub>mac239</sub> SpX	Replication competent SIV	Molecular clone of SIV <sub>MAC239</sub> proviral DNA	NIH AIDS Reagent #12249
SIV <sub>mac239</sub> SpX ΔVpx	SIV Δvpx	Molecular clone of SIV <sub>MAC239</sub> Δvpx proviral DNA	NIH AIDS Reagent #12252
pGL-AN	Replication competent HIV-2	Molecular clone of HIV-2	Gift from Dr. Mikako Fujita
pGL-St	HIV-2 ΔVpx full length wt	Molecular clone of HIV-2 with disruption of <i>vpx</i> ORF	Gift from Dr. Mikako Fujita
pMD2.G	VSV G	Pseudotype HIV-1 vectors with VSV Glycoprotein	Addgene #12259
psPAX2	HIV-1 <i>gag-pol</i>	Encodes <i>gag</i> structural proteins and <i>pol</i> enzymes to generate virion particles	Addgene #12260
SIV3+	SIV <sub>MAC251</sub> <i>gag-pol/vpx</i>	Production of SIV VLPs containing Vpx protein	Addgene pending
SIV3+ Δvpx	SIV <sub>MAC251</sub> <i>gag-pol/Δvpx</i>	Production of SIV VLPs without Vpx protein.	Addgene pending
pscALPS <i>gag-gfp/blasti</i>	Lenti-gfp- <i>blasti</i>	SFFV promoter expresses <i>gag-gfp</i> fusion with CypA promoter driving blasticidin resistance gene	Addgene pending
pscALPS <i>gag-gfp/vpx</i>	Lenti-gfp- <i>vpx</i>	SFFV promoter expresses <i>gag-gfp</i> fusion with CypA promoter driving expression of SIV <sub>MAC251</sub> <i>vpx</i>	Addgene pending
pscALPS <i>gag-gfp/Δvpx</i>	Lenti-gfp-Δvpx	SFFV promoter expresses <i>gag-gfp</i> fusion with no ORF after CypA promoter	Addgene pending
pecALPS <i>gag-gfp/blasti</i>	Lenti-gfp- <i>blasti</i>	EIF1a promoter expresses <i>gag-gfp</i> fusion and CypA promoter expresses blasticidin resistance gene	Addgene pending
pkcALPS- <i>gag-gfp/blasti</i>	Lenti-gfp- <i>blasti</i>	TK promoter expresses <i>gag-gfp</i> fusion and CypA promoter expresses blasticidin resistance gene	Addgene pending
HIV-1 LTR-gfp	HIV-1 LTR-gfp	HIV-1 LTR driven reporter vector that retains complete LTRs, <i>tat</i> , and <i>rev</i> , but has a frameshift mutation in <i>env</i> , an <i>ngfr</i> reporter gene in place of <i>nef</i> , and <i>gfp</i> in place of <i>gag</i> , <i>pol</i> , <i>vif</i> , and <i>vpr</i>	Addgene pending
pscALPS-SIV <sub>MAC251</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-Vpx <sub>MAC251</sub> and puromycin resistance protein	Addgene pending
pscALPS SIV <sub>MND2</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>MND2</sub> Vpx (AY159322) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>RCM</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>RCM</sub> Vpx (AF349680) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>MNE</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>MNE</sub> Vpx (U79412) and puromycin resistance protein	Addgene pending

pscALPS-SIV <sub>DRL</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>DRL</sub> Vpx (KM378563) and puromycin resistance protein	Addgene Addgene pending
pscALPS-SIV <sub>AGI</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>AGI</sub> Vpx (HM803690) and puromycin resistance protein	Addgene pending
pscALPS- HIV2 <sub>ROD</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-HIV2 <sub>ROD</sub> Vpx (M15390) and puromycin resistance protein	Addgene pending
pscALPS- SIV <sub>MND1</sub> <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>MND1</sub> Vpr (M27470) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>LST</sub> <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>LST</sub> Vpr (AF188116) and puromycin resistance protein	Addgene pending
pscALPS- SIV <sub>AGM</sub> TAN1 <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>AGM</sub> Vpr (TAN1) (U58991) with repaired premature stop codon and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>TAL</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>TAL</sub> Vpr (AM182197) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>SYK</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>SYK</sub> Vpr (L06042) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>SAB</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>SAB</sub> Vpr (U04005) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>DEB</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>DEB</sub> Vpr (FJ919724) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>ASC</sub> <i>vpx</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>ASC</sub> Vpr (KJ461715) and puromycin resistance protein	Addgene pending
pscALPS- SIV <sub>AGM</sub> VER9063 <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>AGM</sub> Vpr (Ver 9063) (L40990) and Puro resistance marker	Addgene pending
pscALPS- SIV <sub>AGM</sub> VERAGM 3 <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>AGM</sub> Vpr (Ver AGM3) (M30931) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>GRV</sub> <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>GRV</sub> Vpr (M66437) and puromycin resistance protein	Addgene pending
pscALPS- SIV <sub>AGM</sub> MAL <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>AGM</sub> Vpr (MAL_ZMB) (LC114462) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>DEN</sub> <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG SIV <sub>DEN</sub> Vpr (AJ580407) and puromycin resistance protein	Addgene pending
pscALPS- SIV <sub>GSN</sub> CN71 <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG SIV <sub>GSN-CN71</sub> Vpr (AF468658) and puromycin resistance protein	Addgene pending
pscALPS- SIV <sub>GSN</sub> CN166 <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG SIV <sub>GSN-CN166</sub> Vpr (AF468659) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>SUN</sub> <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>SUN</sub> Vpr (AF131870) and puromycin resistance protein	Addgene pending
pscALPS- SIV <sub>CPZ</sub> TAN3 <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>CPZ-TAN3</sub> Vpr (DQ374658) and puromycin resistance protein	Addgene pending
pscALPS- SIV <sub>CPZ</sub> LB7 <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>CPZ-LB7</sub> Vpr (DQ373064) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>GOR</sub> <i>-vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>GOR</sub> Vpr (FJ424871) and puromycin resistance protein	Addgene pending



pscALPS-HIV-1 Group O- <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-HIV1 Group O Vpr (L20571) and puromycin resistance protein	Addgene pending
pscALPS-HIV-1 Group P- <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-HIV1 Group P Vpr (HQ179987) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>RCM</sub> - <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>RCM</sub> Vpr (HM803689) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>WRC</sub> - <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>WRC</sub> Vpr (AM713177) and puromycin resistance protein	Addgene pending
pscALPS-SIV <sub>MUS21246</sub> - <i>vpr</i>	Lentivector expressing <i>vpx</i>	Encodes codon optimized 3xFLAG-SIV <sub>MUS21246</sub> Vpr (EF070329) and puromycin resistance protein	Addgene pending
pcDNA3.1 FLAG-SIV <sub>MAC251</sub> -Vpx	Expression plasmid	Encodes codon optimized FLAG tagged SIV <sub>MAC251</sub> -Vpx	Addgene pending
pcDNA3.1 FLAG-SIV <sub>MAC251</sub> -Vpx-Q76A	Expression plasmid	Encodes codon optimized FLAG tagged SIV <sub>MAC251</sub> -Vpx-Q76A mutant	Addgene pending
pcDNA3.1 FLAG-SIV <sub>RCM</sub> -Vpx	Expression plasmid	Encodes codon optimized FLAG tagged SIV <sub>RCM</sub> -Vpx	Addgene pending
pcDNA3.1 HA-FAM208A	Expression plasmid	Encodes codon optimized HA tagged FAM208A	Addgene pending
pAPM-D4-miR30-L1221	Lentivector luciferase knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-CTTGTCGATGAGAGCGTTTGT-3'; negative control for other knockdowns	Addgene pending
pAPM-D4 miR30-HDAC1 ts1	Lentivector HDAC1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TATGAGTCATGCGGATTCG-3'	Addgene pending
pAPM-D4 miR30-HDAC1 ts2	Lentivector HDAC1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TAAGAACGGGAAGAATGGG-3'	Addgene pending
pAPM-D4 miR30-HDAC1 ts3	Lentivector HDAC1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTAATGTAGTCATCGCTGT-3'	Addgene pending
pAPM-D4 miR30-AGO1 ts1	Lentivector AGO1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTCTGCTTCAAATACTGTG-3'	Addgene pending
pAPM-D4 miR30-AGO1 ts2	Lentivector AGO1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TGATATCAGAGATTTCTGG-3'	Addgene pending
pAPM-D4 miR30-AGO1 ts3	Lentivector AGO1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTGACATTGATCTTGAGGC-3'	Addgene pending
pAPM-D4 miR30-AGO2 ts1	Lentivector AGO2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TAATACATCTTTGTCCTGC-3'	Addgene pending
pAPM-D4 miR30-AGO2 ts2	Lentivector AGO2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TCATCTGCACGCACTGCGT-3'	Addgene pending
pAPM-D4 miR30-AGO2 ts3	Lentivector AGO2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTGCTAATCTCTTCTTGCC-3'	Addgene pending
pAPM-D4 miR30-AGO3 ts1	Lentivector AGO3 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TGAATTGAACACATTGTGT-3'	Addgene pending
pAPM-D4 miR30-AGO3 ts2	Lentivector AGO3 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TCTGAACTACAATGTAGGT-3'	Addgene pending

pAPM-D4 miR30-AGO3 ts3	Lentivector AGO3 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TAGCTTCTTGATACATCGT-3'	Addgene pending
pAPM-D4 miR30-SETDB1 ts1	Lentivector SETDB1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTCGCATGCTGACTATCAG-3'	Addgene pending
pAPM-D4 miR30-SETDB1 ts2	Lentivector SETDB1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-ACACAATCCATCTTCTCCA-3'	Addgene pending
pAPM-D4 miR30-SETDB1 ts3	Lentivector SETDB1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTGTTGTCAAATTTACCT-3'	Addgene pending
pAPM-D4 miR30-TRIM28 ts1	Lentivector TRIM28 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-AAGGTTGTAGTCCTCAGT-3'	Addgene pending
pAPM-D4 miR30-TRIM28 ts2	Lentivector TRIM28 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TCAATAACAATAAGGTTGT-3'	Addgene pending
pAPM-D4 miR30-TRIM28 ts3	Lentivector TRIM28 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TGAGTAGGATCATCTCCT-3'	Addgene pending
pAPM-D4 miR30-DNMT3a ts1	Lentivector DNMT3a knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TAATCTCCTTGACCTTGGG-3'	Addgene pending
pAPM-D4 miR30-DNMT3a ts2	Lentivector DNMT3a knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TATCATTCACAGTGGATGC-3'	Addgene pending
pAPM-D4 miR30-DNMT3a ts3	Lentivector DNMT3a knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-AGAACTCAAAGAAGAGCCG-3'	Addgene pending
pAPM-D4 miR30-PIWIL2 ts1	Lentivector PIWIL2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-CGAACATTGACAACCTGGG-3'	Addgene pending
pAPM-D4 miR30-PIWIL2 ts2	Lentivector PIWIL2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-AGCAGACAAGCCTCGACCT-3'	Addgene pending
pAPM-D4 miR30-PIWIL2 ts3	Lentivector PIWIL2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-AGATTAGTACTGATTTTCT-3'	Addgene pending
pAPM-D4 miR30-FAM208A ts1	Lentivector FAM208A knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTCTTCTACTGGTTCCCGG-3'	Addgene pending
pAPM-D4 miR30-FAM208A ts2	Lentivector FAM208A knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TGAATTGCTGTTCTCTCCT-3'	Addgene pending
pAPM-D4 miR30-FAM208A ts3	Lentivector FAM208A knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-ATCTTAGCACCAGAATCGT-3'	Addgene pending
pAPM-D4 miR30- MPHOSPH8 ts1	Lentivector MPHOSPH8 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-AAATCTCTTATTTACCCT-3'	Addgene pending

pAPM-D4 miR30- MPHOSPH8 ts2	Lentivector MPHOSPH8 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTGCTTCTGTCTTGATTCC-3'	Addgene pending
pAPM-D4 miR30- MPHOSPH8 ts3	Lentivector MPHOSPH8 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTCTCTTCTCTGCTGTCGG-3'	Addgene pending
pAPM-D4 miR30-PPHLN1 ts1	Lentivector PPHLN1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TCATCTGATTTCTCTAGCT-3'	Addgene pending
pAPM-D4 miR30-PPHLN1 ts2	Lentivector PPHLN1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTCATATTCATATCGTCCC-3'	Addgene pending
pAPM-D4 miR30-PPHLN1 ts3	Lentivector PPHLN1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TGAGTTCTTCAACACACCG-3'	Addgene pending
pAPM-D4 miR30-SUV39h1 ts1	Lentivector SUV39h1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TGAGGATACGCACACACTT-3'	Addgene pending
pAPM-D4 miR30-SUV39h1 ts2	Lentivector SUV39h1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-AGAGCAGGTAGGAGCAGGT-3'	Addgene pending
pAPM-D4 miR30-SUV39h1 ts3	Lentivector SUV39h1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-CATTCTCTACAGTGATGCG-3'	Addgene pending
pAPM-D4 miR30-SUV39h2 ts1	Lentivector SUV39h2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TCATCAGACTCATAGTCCA-3'	Addgene pending
pAPM-D4 miR30-SUV39h2 ts2	Lentivector SUV39h2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TAAATTTCTTTATCATTGA-3'	Addgene pending
pAPM-D4 miR30-SUV39h2 ts3	Lentivector SUV39h2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-ACATTATCAGCTTAACGCT-3'	Addgene pending
pAPM-D4 miR30-MORC2 ts1	Lentivector SUV39h2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TGAGATTGAAGATGATCAC-3'	Addgene pending
pAPM-D4 miR30-MORC2 ts2	Lentivector MORC2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TTTTCCACAGAACTCAGCT-3'	Addgene pending
pAPM-D4 miR30-MORC2 ts3	Lentivector MORC2 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-TGTCTGTGACAGGTTCCCG-3'	Addgene pending
pAPM-miR30- DCAF1	Lentivector DCAF1 knockdown	SFFV promoter expressing puromycin resistance protein and miR30-shRNA target site: 5'-AGCACTTCAGATTATCATCAAT- 3'	Addgene pending