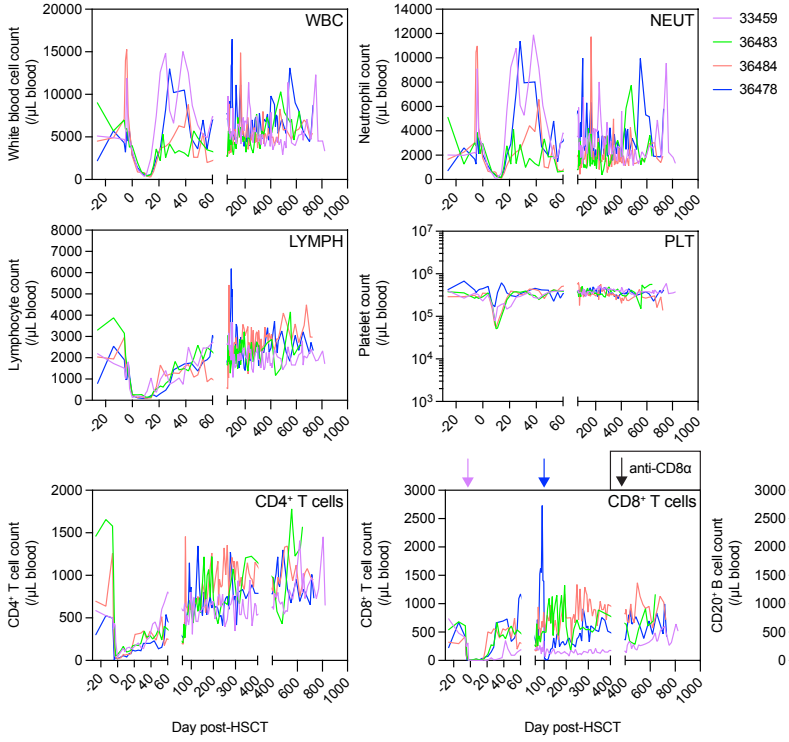
SUPPLEMENTAL INFORMATION

Figure S1. Reduced intensity alloHSCT in SIV/SHIV-infected Mauritian cynomolgus macaques on daily ART, refers to Figures 1, 2, and 7. (A) Summary of all HSCT recipient and control macaques utilized in this study. **(B)** Absolute counts of cell subsets in the four HSCT recipients from Figure 1. **(C)** Donor lymphocyte infusion (DLI) timing and doses in the four HSCT recipients from Figure 1. Note recipient 36484 did not receive any DLIs.

A

Recipient			Donor			HSCT			Infection			Time-matched controls		
Animal ID	MHC haplotypes	Sex	Animal ID	MHC haplotypes	Sex	Total cells transplanted	CD34 dose/kg	CD3 dose/kg	Virus	Dose/route	cART initiation (day post-inf.)	Animal ID	MHC haplotypes	Sex
33459	M3/M3	F	33458	M3/M3	M	7.11×10^9	1.03×10^7	3.70×10^8	SIVmac239	100 TCID50 IV	9	34662	Recomb.	F
36483	M1/M2	F	36482	M1/M2	F	1.98×10^9	7.64×10^6	1.90×10^8	SIVmac239	100 TCID50 IV	9	36487	M1/M2	M
36484	M2/M3	F	36486	M2/M3	M	5.89×10^9	8.58×10^6	3.85×10^8	SIVmac239	100 TCID50 IV	9	34664	Recomb.	F
36478	M2/M4	F	36488	M2/M4	M	4.50×10^9	1.24×10^7	3.15×10^8	SIVmac239	100 TCID50 IV	9	33458	M3/M3	M
33461	M2/M4	M	33460	M2/M4	F	2.68×10^8	5.40×10^6	1.02×10^7	SIVmac239	10,000 TCID50 IR	14			
35133	M1/M3	F	35132	M1/M3	F	1.30×10^9	3.23×10^6	1.29×10^8	SIVmac239	5,000 TCID50 IR	15			
36481	M1/M2	F	36482	M1/M2	F	1.87×10^9	1.35×10^7	1.65×10^8	SIVmac239	100 TCID50 IV	9			
34663	M1/M2	F	36487	M1/M2	M	6.44×10^9	6.12×10^6	6.16×10^8	SIVmac239	100 TCID50 IV	9			
38142	M1/M1	F	38158	M1/M1	M	2.10×10^8	3.01×10^7	5.32×10^8	SHIV-AD8-EOM	10,000 TCID50 IV	14			

B



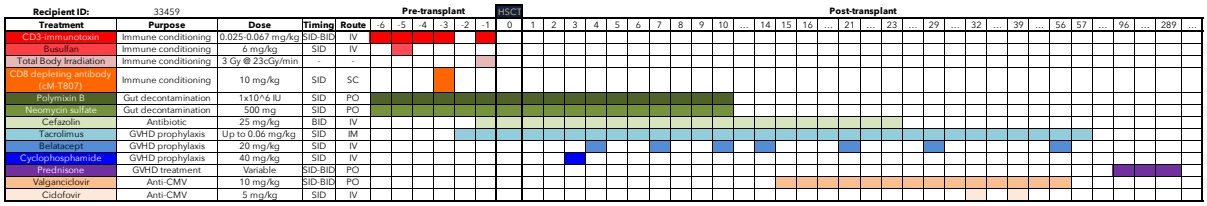
C

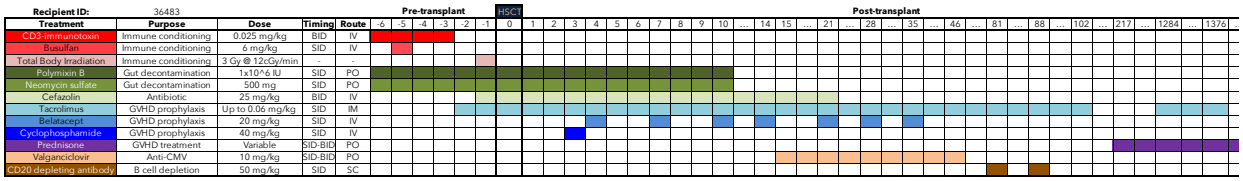
33459		
DLI #	Day post-HSCT	CD3 dose/kg
1	388	4.6×10^6
2	640	4.6×10^6

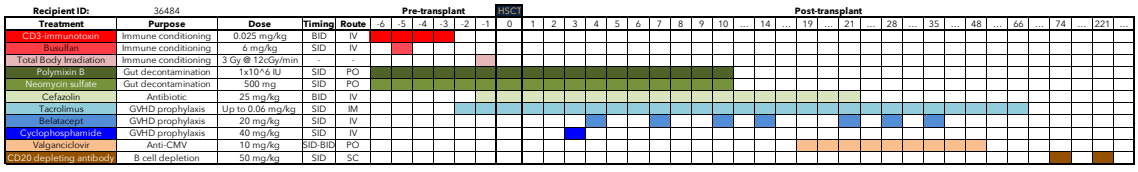
36483		
DLI #	Day post-HSCT	CD3 dose/kg
1	71	1.0×10^7
2	141	3.0×10^7
3	186	4.6×10^7

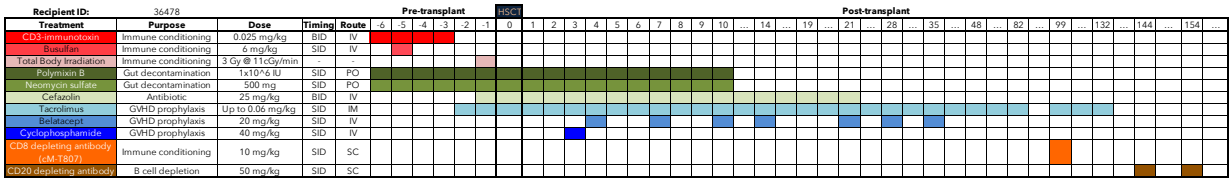
36478		
DLI #	Day post-HSCT	CD3 dose/kg
1	102	1.0×10^7
2	430	2.1×10^7

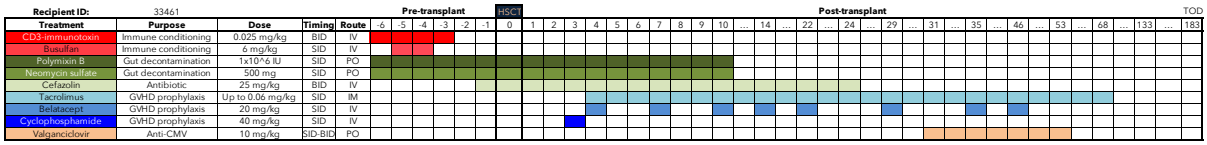
Figure S2. Drug regimens for alloHSCT recipients, refers to Figures 1, 2, and 7. Detailed drug regimens for HSCT recipient macaques. TOD = time of death.

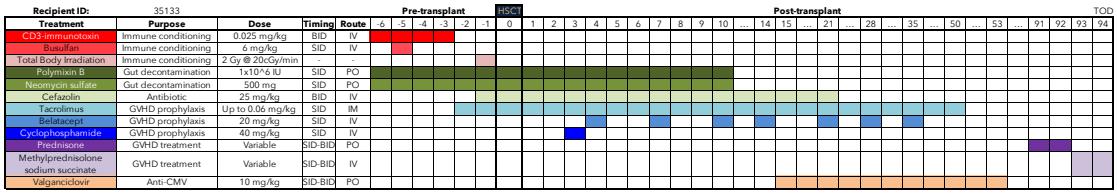


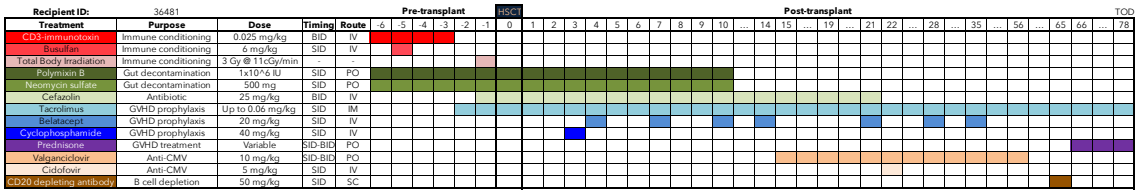


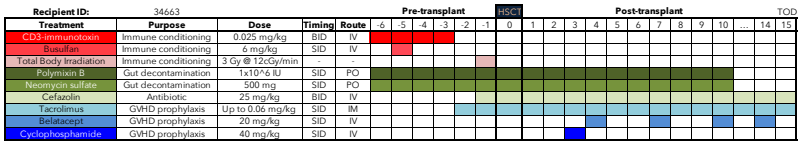












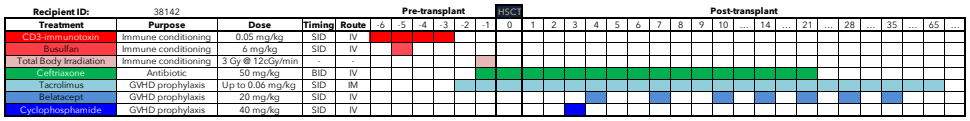


Figure S3. Hepatic GVHD in HSCT recipient 36483, refers to Figure 1. (A) Alkaline phosphatase (ALP), alanine transaminase (ALT), aspartate aminotransferase (AST), and gamma-glutamyl transferase (GGT) levels in serum chemistries during prednisone dose taper in HSCT recipient 36483. Colored horizontal dotted lines indicate the upper limit of reference ranges for each enzyme in a healthy cynomolgus macaque. Black arrowhead denotes liver biopsy timepoint. **(B)** Hematoxylin and eosin stain of HSCT recipient macaque 36483 liver biopsy indicated in A. 40X magnification: bile duct proliferation, cholangiocellular hypertrophy (yellow arrow), disruption of the limiting plate (blue arrow), few portal lymphocytes.

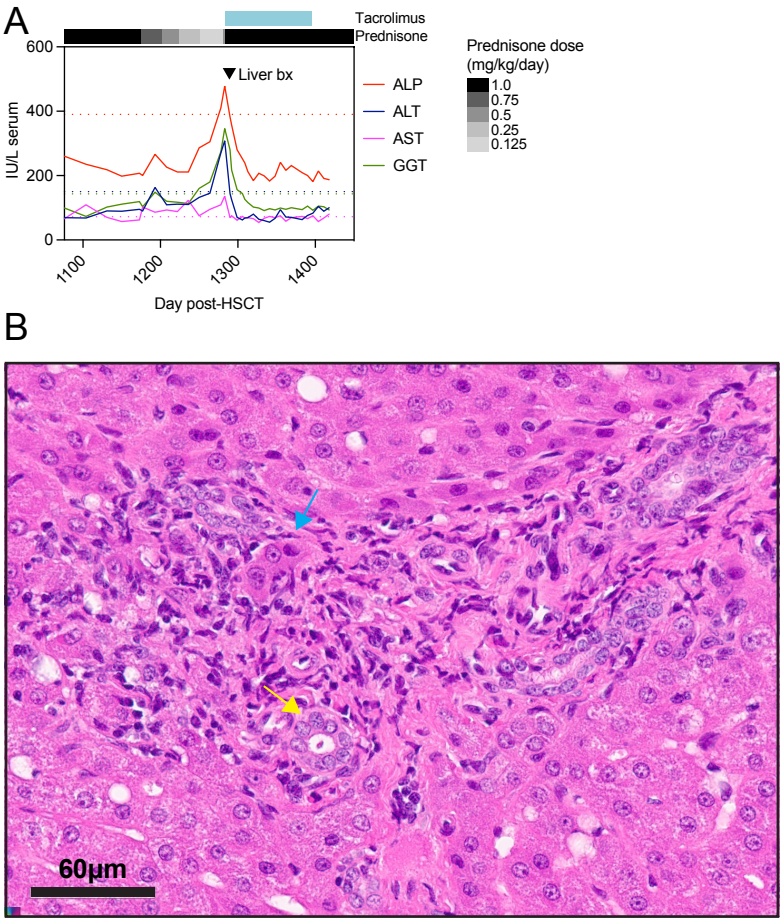


Figure S4. Donor chimerism levels in extensive cell subsets, refers to Figures 1 and 3. (A-C) Donor chimerism in cell subsets sorted from blood and tissues of the four HSCT recipients shown in Figure 1, sampled prior to ATI. PLN = (axillary/inguinal) lymph nodes, MLN = mesenteric lymph nodes, BM = bone marrow. TCM = central memory T cells, TEM = effector memory T cells, TFH = T follicular helper cells, NK = natural killer cells, Mono/mac = monocytes/macrophages. Asterisks (*) indicate measurements that were not performed due to insufficient cell numbers or cell subsets not applicable to that tissue.

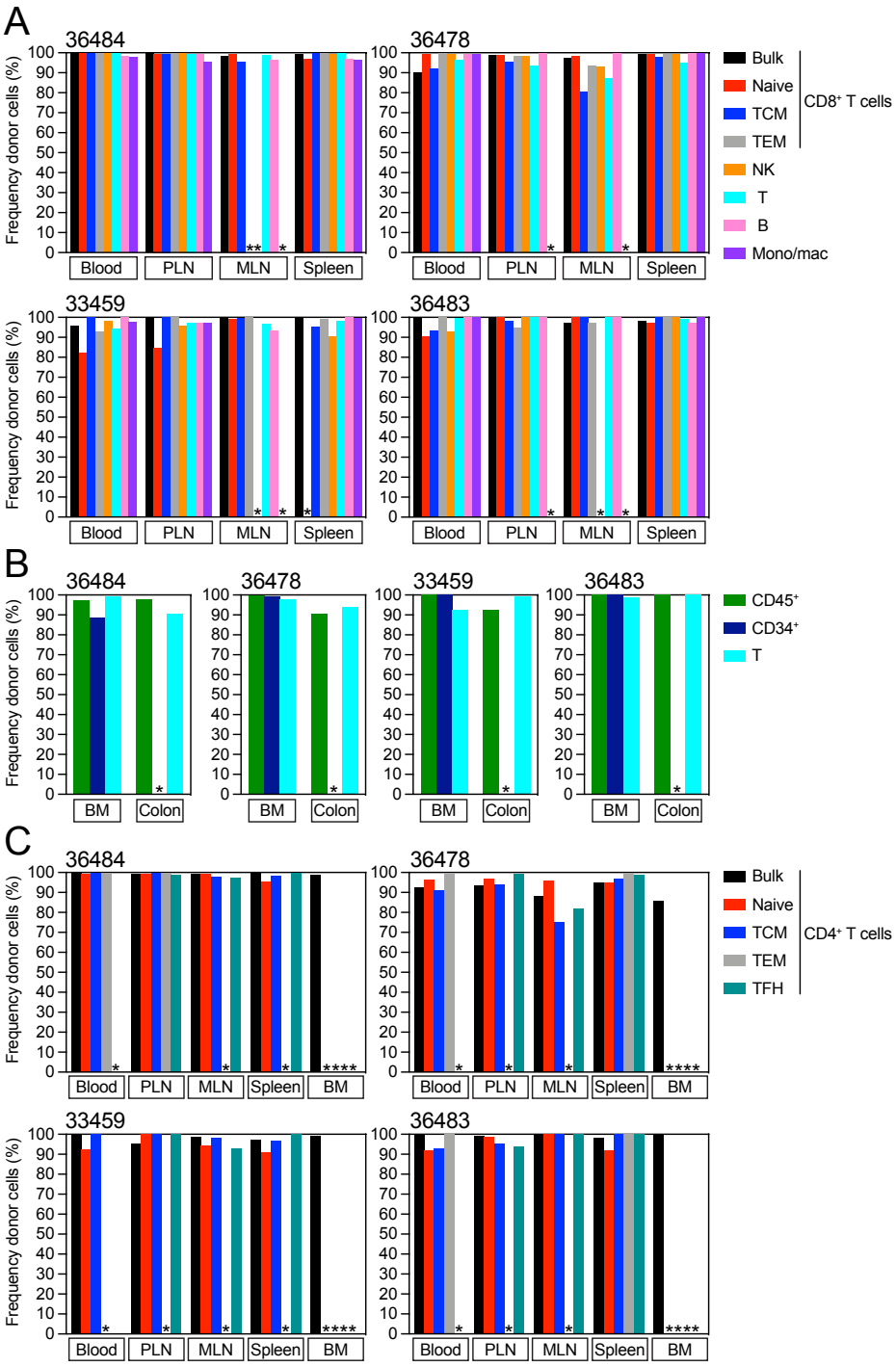


Figure S5. Post-ATI CD8α⁺ cell depletion, refers to Figure 5. Absolute counts of CD8α⁺ T cell and NK cell subsets in HSCT recipient and control macaques from Figure 5 during the period of antibody-mediated CD8α⁺ cell depletion post-ATI. Orange arrows indicate doses of anti-CD8α depleting antibody.

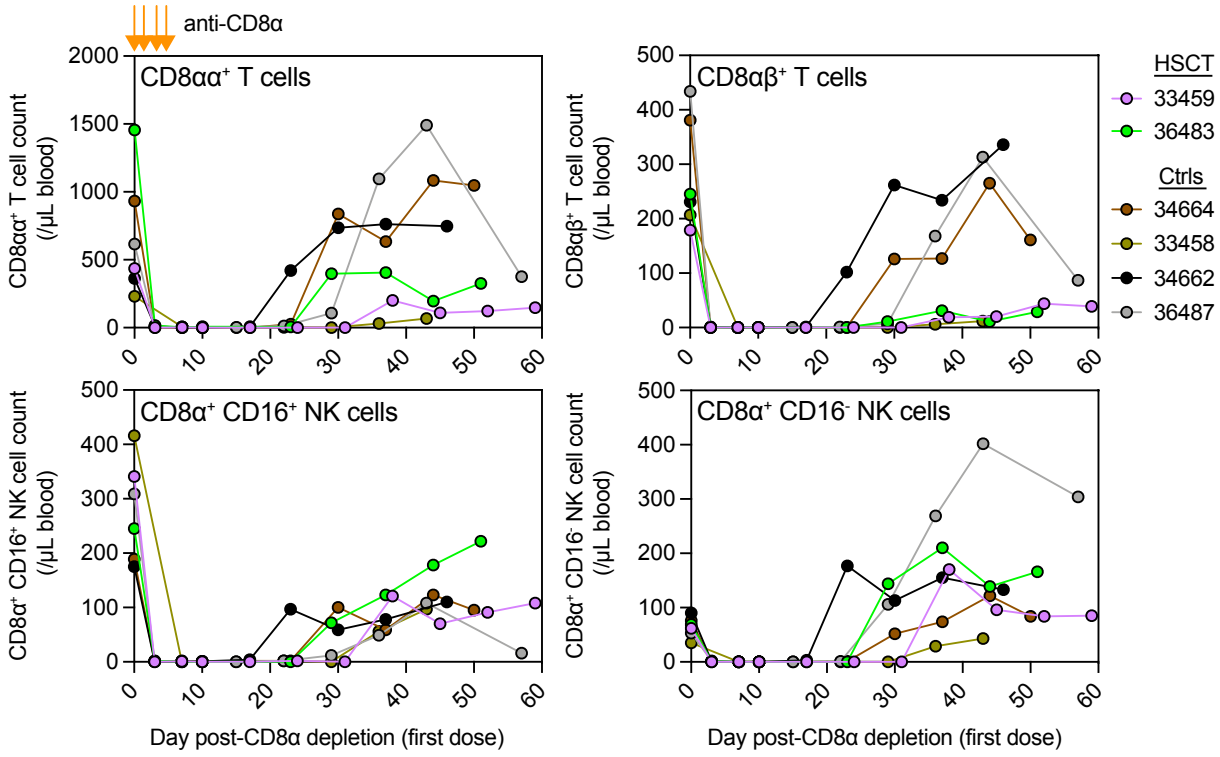


Figure S6. Statistical analyses, refers to Figure 6. (A-B) Plasma titers of SIV Env-binding antibodies in the HSCT recipients (blue, n=4) and controls (black, n=4) from Figure 1, prior to HSCT (A) and prior to ATI (B). Bars show mean ±SD. p-values calculated by Mann-Whitney test: ns = not significant, *p ≤ 0.05, ** p ≤ 0.01, ***p ≤ 0.001, ****p ≤ 0.0001. **(C)** Correlation of plasma SIV Env-binding antibody titer and time to SIV rebound post-ATI in control macaques. r and p-values calculated by Pearson test: *p ≤ 0.05, ** p ≤ 0.01, ***p ≤ 0.001, ****p ≤ 0.0001.

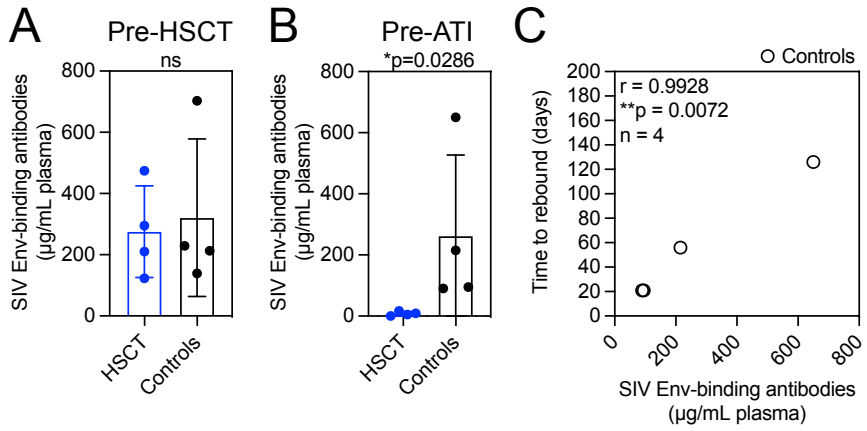


Figure S7. TSPY1 DNAscope validation, refers to figure 7. (A) Representative images from TSPY1 DNAscope cytospin validation assays of isolated $CD4^+$ lymph node cells from Mauritian cynomolgus macaques. Panels show staining of female cells only (left), male cells only (right), or defined mixtures of female and male cells (middle panels). DAPI nuclear staining is shown in blue, and TSPY1 DNA staining is shown in white. **(B)** $TSPY1^+$ quantification of $CD4^+$ cell mixtures described in panel A. Two slides containing >$2x10^4$ cells were evaluated per mixture (black dots). Graph bars show mean ±SEM.