Supplemental Methods:

T cell counts were performed using Tritest Reagent with Trucount Tubes and analyzed on a FACSCalibur platform (BD Biosciences).

Viral Loads: Plasma RNA was extracted using the Abbott Sample Preparation System, amplified using Real Time HIV-1 Amplification Reagent Kits (Abbott Molecular, Des Plaines, IL), and run on the M2000 Realtime System (Abbott) with a lower limit of detection of 40 copies/ml.

QVOA: rCD4 (CD4+/CD69−/CD25−/HLA-DR−) were isolated from PBMCs using two steps of negative-selection, plated at limiting dilution, and activated with PHA and γ-irradiated allogenic PBMCs. If the number of CD4+ cells were low after the first isolation, total CD4 counts were plated. Released virus was expanded using MOLT-4 CCR5+ (NIH AIDS reagent program). Culture supernatants were examined for the presence of actively growing virus using a p24 ELISA (PerkinElmer) after 14-21 days (1). Infectious units per million rCD4 cells (IUPM) were calculated using IUPMStats (2). If all culture wells were negative for viral outgrowth, the median posterior estimate of infected cell frequency was used.

Total HIV DNA was quantified by quantitative PCR (qPCR) for a segment of the gag gene, using a previously published protocol adapted for qPCR (3, 4). DNA was extracted from rCD4 cells using the AllPrep DNA/RNA minikit (Qiagen, Valencia, CA) and amplified by qPCR using the TaqMan Fast Advanced Master Mix (Thermo Fisher Scientific, Waltham, MA) and gag targeted primers with the following cycling conditions: 2 minute UNG incubation at 50°C, 20 second enzyme activation at 95°C, 50 cycles of a 1 second denaturation at 95°C followed by 20 seconds of annealing/extension at 60°C. The host cell RNase P/MRP 30-kDa-subunit gene (RPP30) was amplified using the same conditions with respective primers. *gag* copy numbers

were calculated as the mean of triplicate qPCR measurements and were normalized to 1x10^6 rCD4, as determined by RPP30 (which appears in 2 copies/cell) (4).

HIV-1 subtyping was determined from historical data or performed by next-generation amplicon sequencing of viral RNA from wells positive for p24 in the QVOA, using reverse transcriptase (RT) and gp41-targeted primers, as described previously (5). Subtypes for reverse transcriptase (RT) and gp41 were determined phylogenetically, or, if phylogenetic analyses were unclear, using the NCBI HIV subtyping tool (https://www.ncbi.nlm.nih.gov/projects/genotyping/formpage.cgi). Individuals with both RT and gp41 regions identified as the same subtype were classified with a pure subtype, and those with divergent calls were classified as recombinants.

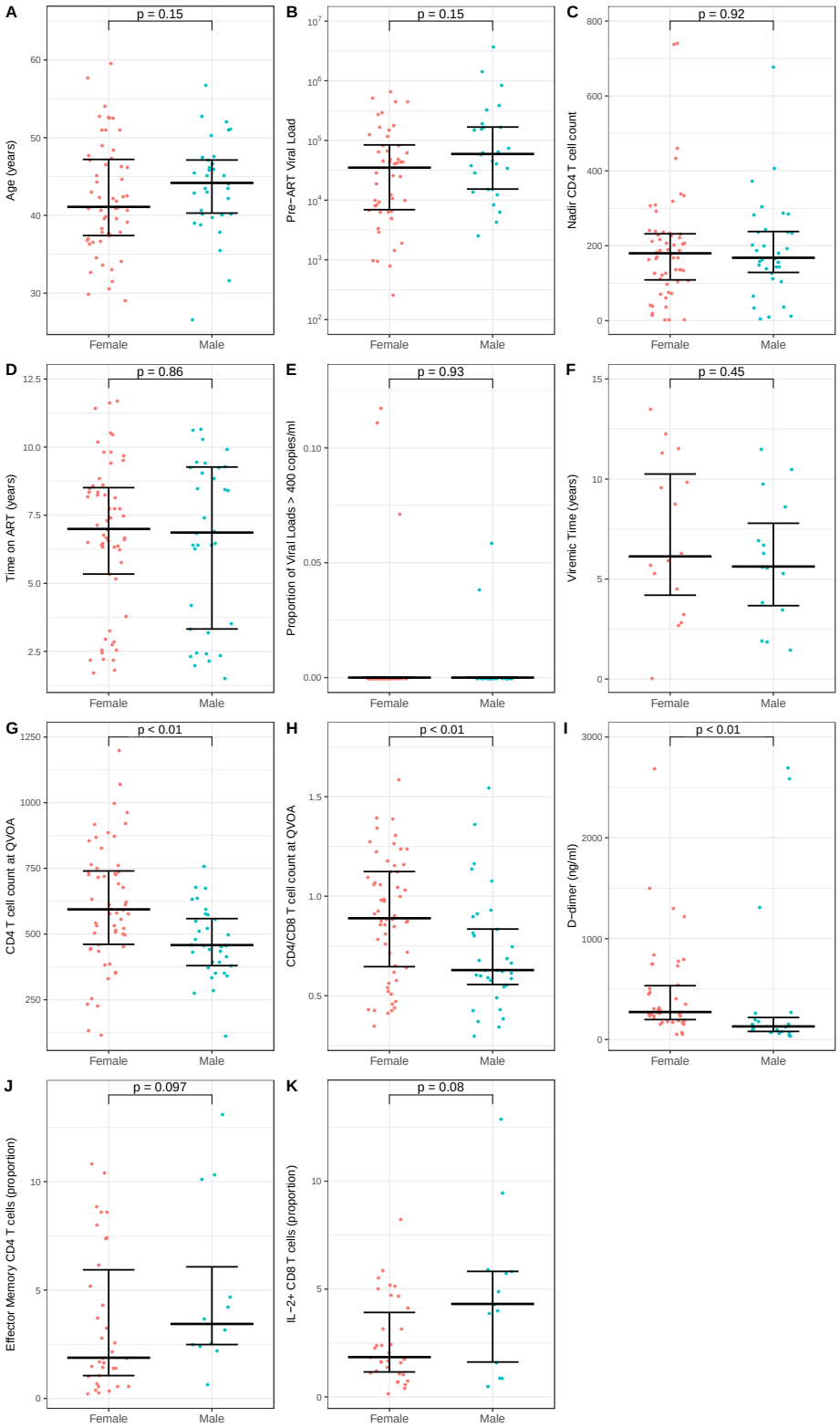
Soluble Immune Analytes: An 8-plex custom Human Ultra-Sensitive kit was used to quantify: IFN-2α (lower limit of quantification (LLOQ) 4·88pg/ml), IL10 (LLOQ 0·62pg/ml), IL15 (LLOQ 1·5pg/ml), IL6 (LLOQ 0·28pg/ml), IL7 (LLOQ 0·42pg/ml), MIG/CXCL9 (78·12pg/ml LLOQ), MIP3α/CCL19 (19·54pg/ml LLOQ), and MIP3β/CCL20 (LLOQ 4·88pg/ml). Additional analytes were measured individually: D-dimer (LLOQ 47·5ng/ml), sCD14 (LLOQ 1·25ng/ml), IP10 (LLOQ 7·8pg/ml), CRP (LLOQ 78·0ng/ml), and CCL21 (LLOQ 32·76pg/ml). Plates were imaged using the Sector Imager 2400A platform.

Flow Cytometry: Antibodies and fluorophores (clone, manufacturer) used were as follows: CD3 APC-H7 (Sk7, BD Biosciences), CD4 APC-R700 (RPA-T4, BD Biosciences), CD45RO PerCP-Cy5·5 (UCHL1, BD Biosciences), CD28 PE-CF594 (CD28·2, BD Biosciences), CCR7 BV711 (G043H7, Biolegend), CD57 BB515 (NK-1, BD Biosciences), HLA-DR BV510 (G46-6, BD Biosciences), CD38 BV605 (HB7, BD Biosciences), CD69 BV421 (FN50 BD Biosciences), Ki-67 eFluor660 (20Raj1, eBioscienes), FoxP3 PE (PCH101, eBiosciences, CD25 BV786 (M-A251, BD Biosciences); and one to assess T cell effector function, including markers of T cell

exhaustion (CD3, CD4, CD8 BB515 (RPA-T8, BD Biosciences), CD107a AF647 (H4A3, BD Biosciences), Perforin BV421 (B-D48, Biolegend), IFNγ PerCP-Cy5.5 (B27, BD Biosciences), TNF BV785 (Mab11, Biolegend), IL2 BV510 (5344·111, BD Biosciences), Tim3 PE (344823, R&D Systems), CTLA4 PE-CF594 (BNI3, BD Biosciences), PD1 BV605 (EH12·1, BD Biosciences). Both panels included a viability dye (LIVE/DEAD Fixable Blue Dead Cell Stain Kit, Invitrogen).

PBMCs were thawed, resuspended at 1x10^6 viable cells/ml (trypan blue) in R10 (RPMI 1640 media supplemented with: 10% heat-inactivated FBS, 10U/ml penicillin, 10µg/ml streptomycin, 250ng/ml amphotericin B, and 2mM L-Glutamine) and rested overnight under normal growth conditions (37$_{o}$C, 5% CO_2, humidified atmosphere). The following morning 100µl cell suspension was plated in a round bottom 96-well plate for stimulation and/or staining. To assess cytokine production, one well per participant was stimulated with 1ng/ml phorbol-12-myristate-13-acetate (PMA) and 1µg/ml ionomycin and one well with vehicle (0·1% DMSO), both for 3 hours under normal growth conditions and in the presence of 10µg/ml Brefeldin A, 0·7µg/ml monensin, and anti-CD107a antibody. Cells for CD4 T cell phenotyping were left unstimulated. All samples were then washed with PBS, stained with viability dye for 30 minutes at room temperature, and washed twice more. Cells were then stained with fluorochrome-labeled antibodies against surface antigens in the presence of 2% FBS in PBS for 30 minutes at room temperature. Excess surface antibody was removed by washing with 2% FBS in PBS. Samples for the assessment of T cell phenotype were permeabilized using the eBioscience fixation/permeabilization solution for Treg identification, while samples for the assessment of effector functions were permeabilized with the BD Cytofix/Cytoperm solution (BD Biosciences). Cells were washed in the appropriate permeabilization wash buffer and stained with antibodies against intracellular antigens.

Samples were acquired using an LSRII flow cytometer (BD Systems) and data analysis performed using FlowJo (version 10·6·1, Becton Dickinson). Representative gating images are shown in Supplementary Figure 3.



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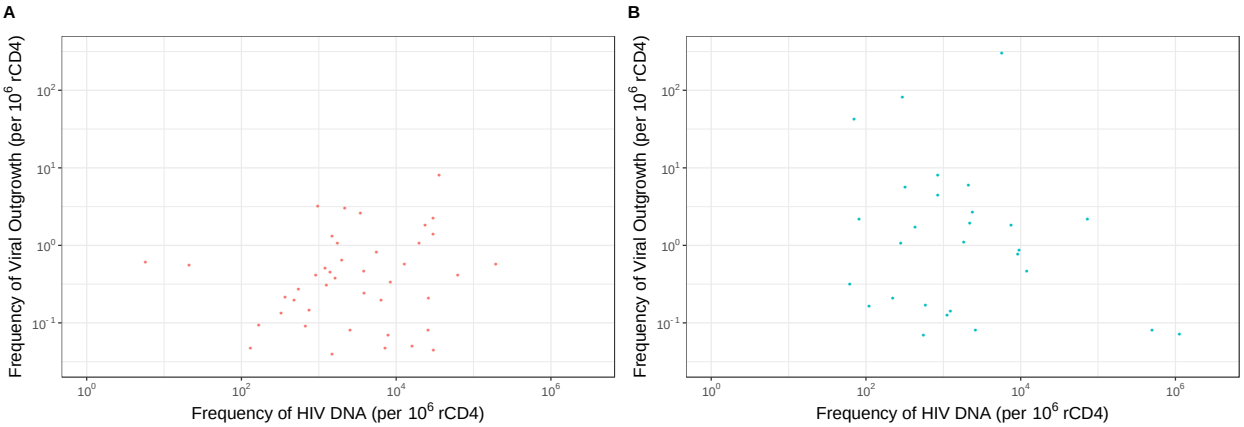
75 **Supplemental Figure 1:** Participant clinical and immunological characteristics, by sex.

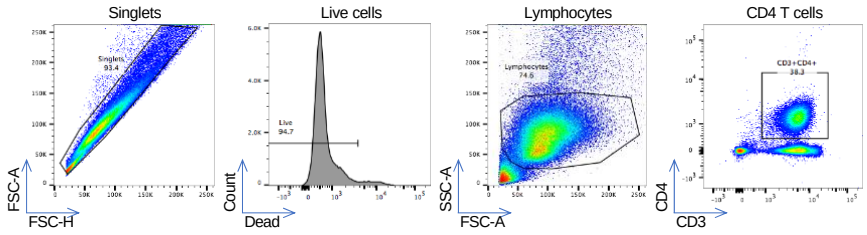


Supplemental Figure 2: No correlation between QVOA and qPCR estimates of the frequency of persistently infected resting CD4 T cells (rCD4), in either females (**A**) or males (**B**). QVOA: Quantitative Viral Outgrowth Assay (QVOA); qPCR: quantitative PCR for total HIV DNA.

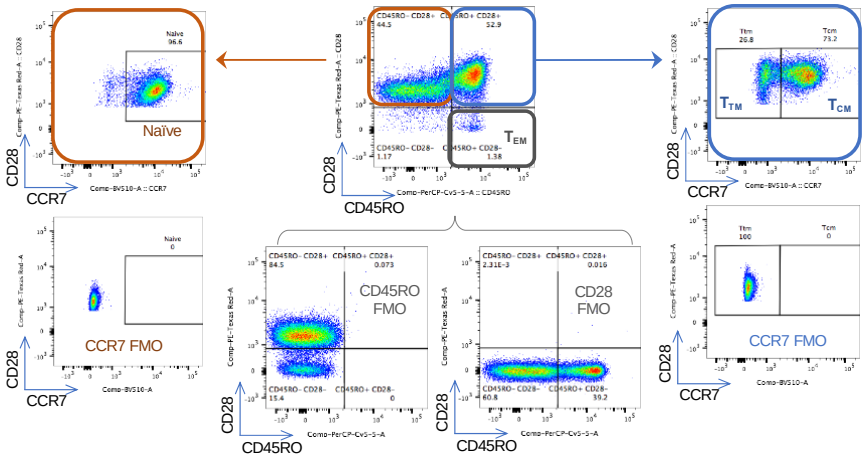
Supplemental Figure 3: Flow cytometry gating strategy and representative plots

A. Flow cytometry panel 1: CD4 T cell subsets and activation status

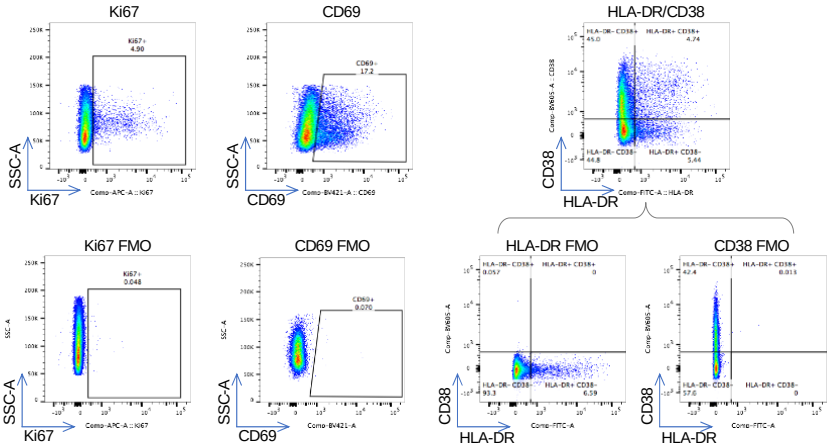
CD4 T Cell Identification



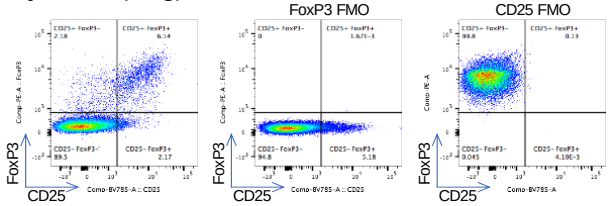
CD4 T Cell Memory Subsets



CD4 T Cell Activation

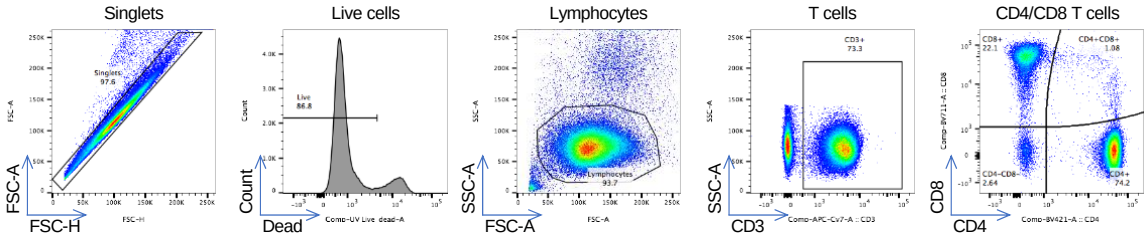


Regulatory T cells (Treg)

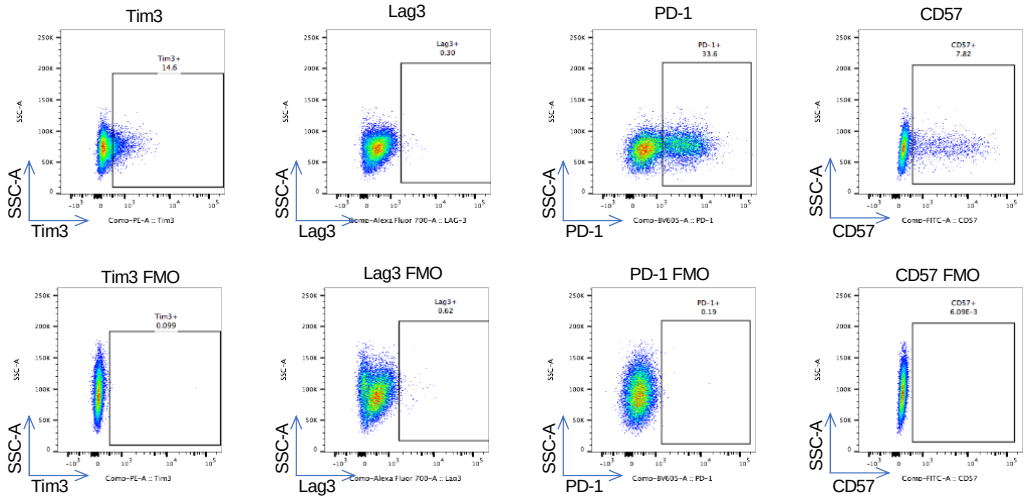


B. Flow cytometry panel 2: CD4 and CD8 T cell immune exhaustion (using unstimulated cells)

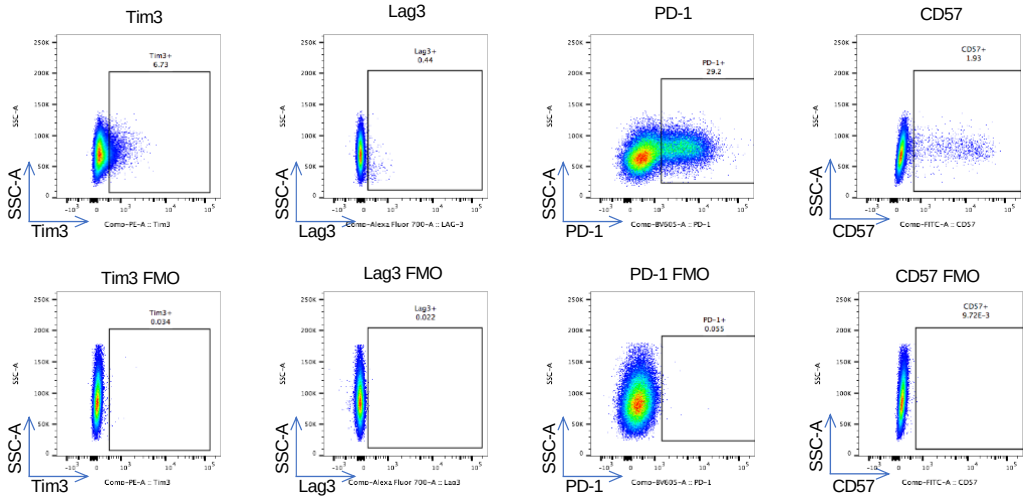
CD4 and CD8 T Cell Identification



CD8 T Cell Exhaustion



CD4 T Cell Exhaustion



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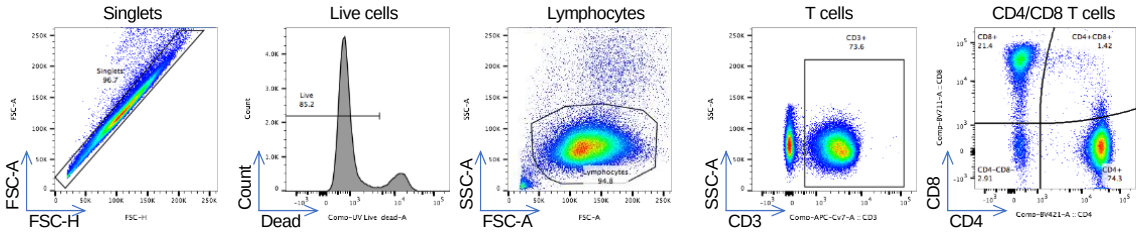
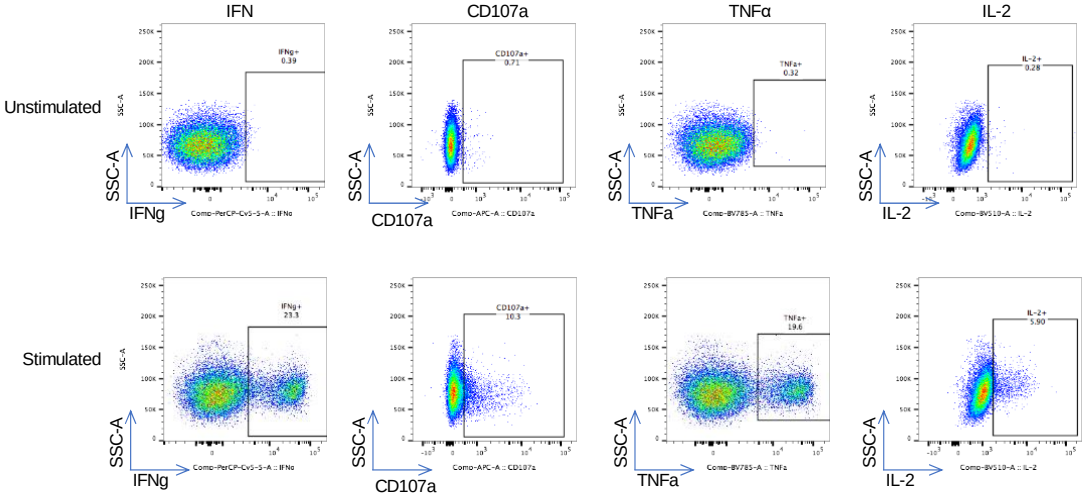
C. Flow cytometry panel 2: CD4 and CD8 T cell immune function

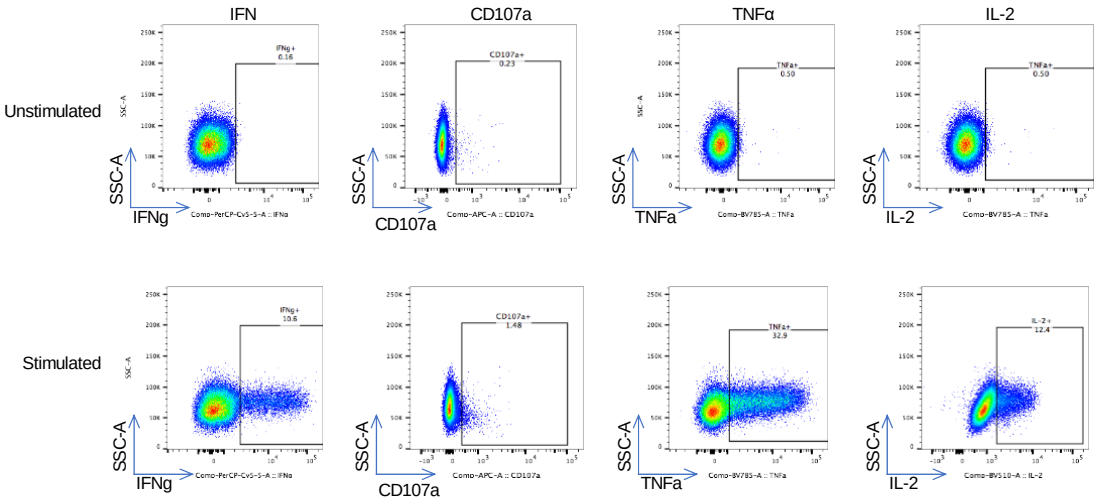
CD4 and CD8 T Cell Identification (3hrs PMA/iono stimulation)



CD8 T Cell Effector Function



CD4 T Cell Effector Function



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Supplementary Table 1. Univariate regression analysis of immunological variables on reservoir outgrowth (IUPM), including both males and females.

	Immune Characteristic	Median (IQR)	Regression Coefficient	P-value
Soluble Immune Analytes (log_{10} pg/ml, unless stated otherwise)	IL-7	0.6 (0.4, 0.8)	0.20	0.44
	IL-15	0.5 (0.4, 0.5)	-0.31	0.61
	CRP (log_{10} ng/ml)	3.2 (2.7, 3.6)	-0.05	0.70
	D-dimer (log_{10} ng/ml)	2.4 (2.2, 2.7)	-0.07	0.72
	IL-10 (binary)	0.3 (0.2, 0.6)	0.00	1.00
	IL-6	-0.1 (-0.3, 0.0)	-0.15	0.63
	IP10	2.0 (1.9, 2.2)	-0.00	0.99
	CCL21	2.3 (1.5, 2.7)	0.07	0.63
	MIG	2.6 (2.4, 2.8)	-0.11	0.70
	MIP-3α (binary)	0.8 (0.7, 1.0)	0.07	0.67
	MIP-3β	1.9 (1.8, 2.0)	-0.17	0.74
T cell subsets (proportion of CD3+ cells)	CD4+	51.7 (42.5, 60.4)	-0.00	0.72
	CD8+	41.1 (33.3, 51.9)	0.00	0.57
CD4 T cell memory subsets (proportion of CD4 T cells)	Naïve (CD28+/CD45RO-/CCR7+)	45.3 (32.3, 54.9)	-0.00	0.69
	Central (CD28+/CD45RO+/CCR7+)	34.0 (24.7, 42.6)	0.00	0.80
	Effector (CD28-/CD45RO+/CCR7-)	2.5 (1.4, 5.9)	0.02	0.49
	Transitional (CD28+/CD45RO+/CCR7-)	7.7 (5.5, 13.0)	0.02	0.22
CD4 T cell activation (proportion of CD4 T cells)	CD69	15.8 (11.6, 19.6)	0.01	0.39
	HLA-DR+/CD38+	2.3 (1.5, 3.4)	0.00	0.97
	CD69+/Ki-67+	0.3 (0.2, 0.4)	0.41	0.26
	CD69- /Ki-67+	1.7 (1.1, 2.2)	0.03	0.62

	Ki-67+	1.9 (1.5, 2.6)	0.03	0.55
	T regulatory cells	1.9 (1.4, 2.7)	0.06	0.46
T cell exhaustion: summary subsets (proportion of parent)	CD57+ CD4 T cells	2.8 (1.6, 5.6)	0.04	0.18
	Lag-3+ CD4 T cells	1.6 (1.0, 2.8)	-0.04	0.54
	PD-1+ CD4 T cells	27.8 (19.5, 33.4)	0.01	0.12
	Tim-3+ CD4 T cells	2.7 (1.8, 3.9)	-0.03	0.47
	CD57+ CD8 T cells	27.6 (15.7, 35.4)	0.01	0.13
	Lag-3+ CD8 T cells	0.5 (0.3, 0.7)	0.30	0.25
	PD-1+ CD8 T cells	21.1 (14.9, 25.8)	-0.01	0.63
	Tim-3+ CD8 T cells	10.4 (6.7, 15.3)	0.01	0.46
T cell exhaustion: specific subsets (proportion of parent)	CD57-/Lag3-/PD1-/Tim3- CD4 T cells	68.3 (61.9, 75.5)	-0.01	0.13
	CD57-/Lag3-/PD1-/Tim3+ CD4 T cells	1.4 (0.7, 2.0)	-0.07	0.21
	CD57-/Lag3-/PD1+/Tim3- CD4 T cells	22.2 (16.8, 27.8)	0.01	0.14
	CD57-/Lag3-/PD1+/Tim3+ CD4 T cells	0.7 (0.5, 1.2)	0.05	0.75
	CD57-/Lag3+/PD1-/Tim3- CD4 T cells	1.4 (0.7, 2.2)	-0.03	0.58
	CD57-/Lag3+/PD1-/Tim3+ CD4 T cells	0.01 (0.00, 0.01)	-9.13	0.41
	CD57-/Lag3+/PD1+/Tim3- CD4 T cells	0.2 (0.1, 0.3)	-0.12	0.86
	CD57-/Lag3+/PD1+/Tim3+ CD4 T cells	0.02 (0.01, 0.03)	-0.47	0.62
	CD57+/Lag3-/PD1-/Tim3- CD4 T cells	0.5 (0.3, 1.4)	0.02	0.78
	CD57+/Lag3-/PD1-/Tim3+ CD4 T cells	0.04 (0.02, 0.08)	0.05	0.93
	CD57+/Lag3-/PD1+/Tim3- CD4 T cells	1.6 (1.1, 4.0)	0.06	0.10
	CD57+/Lag3-/PD1+/Tim3+ CD4 T cells	0.08 (0.03, 0.21)	0.12	0.50
	CD57+/Lag3+/PD1-/Tim3- CD4 T cells	0.01 (0.00, 0.02)	-4.50	0.18
	CD57+/Lag3+/PD1-/Tim3+ CD4 T cells	0.00 (0.00, 0.00)	-6.93	0.79
	CD57+/Lag3+/PD1+/Tim3- CD4 T cells	0.01 (0.00, 0.02)	-0.11	0.97

	CD57+/Lag3+/PD1+/Tim3+ CD4 T cells	0.00 (0.00, 0.01)	-4.06	0.81
	CD57-/Lag3-/PD1-/Tim3- CD8 T cells	51.2 (41.9, 61.0)	-0.01	0.27
	CD57-/Lag3-/PD1-/Tim3+ CD8 T cells	5.3 (2.8, 9.8)	0.00	0.91
	CD57-/Lag3-/PD1+/Tim3- CD8 T cells	12.2 (9.1, 16.3)	-0.03	0.12
	CD57-/Lag3-/PD1+/Tim3+ CD8 T cells	0.8 (0.5, 1.5)	0.11	0.32
	CD57-/Lag3+/PD1-/Tim3- CD8 T cells	0.2 (0.1, 0.3)	0.21	0.62
	CD57-/Lag3+/PD1-/Tim3+ CD8 T cells	0.03 (0.01, 0.04)	3.05	0.40
	CD57-/Lag3+/PD1+/Tim3- CD8 T cells	0.09 (0.05, 0.17)	0.85	0.33
	CD57-/Lag3+/PD1+/Tim3+ CD8 T cells	0.01 (0.00, 0.02)	12.78	0.07
	CD57+/Lag3-/PD1-/Tim3- CD8 T cells	17.1 (9.6, 22.9)	0.01	0.13
	CD57+/Lag3-/PD1-/Tim3+ CD8 T cells	2.0 (0.8, 3.3)	0.02	0.48
	CD57+/Lag3-/PD1+/Tim3- CD8 T cells	5.2 (3.0, 7.5)	0.02	0.42
	CD57+/Lag3-/PD1+/Tim3+ CD8 T cells	0.5 (0.3, 1.3)	0.05	0.57
	CD57+/Lag3+/PD1-/Tim3- CD8 T cells	0.05 (0.02, 0.08)	2.79	0.09
	CD57+/Lag3+/PD1-/Tim3+ CD8 T cells	0.00 (0.00, 0.02)	11.23	0.17
	CD57+/Lag3+/PD1+/Tim3- CD8 T cells	0.04 (0.02, 0.06)	2.19	0.31
	CD57+/Lag3+/PD1+/Tim3+ CD8 T cells	0.00 (0.00, 0.01)	8.11	0.36
T cell effector functions: summary subsets (proportion of parent)	CD107+ CD4 T cells	4.4 (2.4, 9.3)	0.02	0.22
	IFNγ+ CD4 T cells	6.7 (2.9, 10.6)	0.02	0.13
	IL-2+ CD4 T cells	8.4 (4.7, 15.7)	0.02	0.23
	TNF+ CD4 T cells	20.1 (9.5, 33.5)	0.01	0.22
	CD107+ CD8 T cells	6.9 (3.7, 11.5)	0.00	0.86
	IFNγ+ CD8 T cells	15.4 (8.1, 22.8)	0.00	0.55
	IL-2+ CD8 T cells	2.3 (1.2, 4.8)	0.00	0.89
	TNF+ CD8 T cells	9.0 (3.3, 19.5)	0.01	0.45

T cell effector functions: specific subsets (proportion of parent)	CD107-/IFNγ-/IL2-/TNF- CD4 T cells	71.7 (59.9, 77.7)	-0.01	0.11
	CD107-/IFNγ-/IL2-/TNF+ CD4 T cells	8.9 (4.6, 13.7)	0.01	0.45
	CD107-/IFNγ-/IL2+/TNF- CD4 T cells	1.4 (0.8, 1.9)	0.16	0.15
	CD107-/IFNγ-/IL2+/TNF+ CD4 T cells	5.2 (2.3, 10.0)	0.02	0.43
	CD107-/IFNγ+/IL2-/TNF- CD4 T cells	1.0 (0.4, 1.9)	0.04	0.46
	CD107-/IFNγ+/IL2-/TNF+ CD4 T cells	2.7 (1.2, 4.9)	0.03	0.20
	CD107-/IFNγ+/IL2+/TNF- CD4 T cells	0.08 (0.03, 0.15)	0.30	0.56
	CD107-/IFNγ+/IL2+/TNF+ CD4 T cells	1.3 (0.5, 2.6)	0.06	0.20
	CD107+/IFNγ-/IL2-/TNF- CD4 T cells	3.2 (1.9, 59)	0.02	0.47
	CD107+/IFNγ-/IL2-/TNF+ CD4 T cells	0.3 (0.1, 0.9)	0.29	0.04
	CD107+/IFNγ-/IL2+/TNF- CD4 T cells	0.1 (0.07, 0.3)	-0.00	1.00
	CD107+/IFNγ-/IL2+/TNF+ CD4 T cells	0.1 (0.06, 0.4)	0.27	0.21
	CD107+/IFNα+/IL2-/TNF- CD4 T cells	0.04 (0.02, 0.09)	1.30	0.33
	CD107+/IFNγ+/IL2-/TNF+ CD4 T cells	0.1 (0.04, 0.4)	0.29	0.09
	CD107+/IFNγ+/IL2+/TNF- CD4 T cells	0.01 (0.00, 0.01)	-1.54	0.74
	CD107+/IFNγ+/IL2+/TNF+ CD4 T cells	0.05 (0.02 0.15)	0.55	0.12
	CD107-/IFNγ-/IL2-/TNF- CD8 T cells	72.8 (66.5, 83.8)	-0.00	0.53
	CD107-/IFNγ-/IL2-/TNF+ CD8 T cells	1.2 (0.8, 2.8)	0.04	0.43
	CD107-/IFNγ-/IL2+/TNF- CD8 T cells	0.8 (0.5, 1.4)	0.09	0.50
	CD107-/IFNγ-/IL2+/TNF+ CD8 T cells	0.4 (0.1, 0.9)	0.04	0.72
	CD107-/IFNγ+/IL2-/TNF- CD8 T cells	5.8 (2.7, 8.6)	0.00	0.95
	CD107-/IFNγ+/IL2-/TNF+ CD8 T cells	4.8 (1.6, 10.1)	0.01	0.54
	CD107-/IFNγ+/IL2+/TNF- CD8 T cells	0.3 (0.1, 0.4)	0.20	0.53
	CD107-/IFNγ+/IL2+/TNF+ CD8 T cells	0.5 (0.2, 1.1)	-0.01	0.91
	CD107+/IFNγ-/IL2-/TNF- CD8 T cells	4.6 (2.5, 7.8)	-0.00	0.86

	CD107+/IFNγ-/IL2-/TNF+ CD8 T cells	0.06 (0.02, 0.22)	0.25	0.62
	CD107+/IFNγ-/IL2+/TNF- CD8 T cells	0.08 (0.05, 0.12)	-0.17	0.43
	CD107+/IFNγ-/IL2+/TNF+ CD8 T cells	0.01 (0.00, 0.03)	-0.29	0.76
	CD107+/IFNγ+/IL2-/TNF- CD8 T cells	0.4 (0.2, 0.8)	0.15	0.42
	CD107+/IFNγ+/IL2-/TNF+ CD8 T cells	0.4 (0.2, 1.9)	0.07	0.25
	CD107+/IFNγ+/IL2+/TNF- CD8 T cells	0.03 (0.01, 0.04)	-0.73	0.66
	CD107+/IFNγ+/IL2+/TNF+ CD8 T cells	0.01 (0.00, 0.16)	-0.03	0.85

Supplementary Table 2. Univariate regression analysis of immunological variables on reservoir outgrowth (IUPM), among females only.

	Immune Characteristic	**Median (IQR)**	**Regression Coefficient**	**P-value**
Soluble Immune Analytes (log_{10} pg/ml, unless otherwise stated	IL-7	0.6 (0.4, 0.8)	0.47	0.09
	IL-15	0.5 (0.4, 0.5)	-0.29	0.66
	CRP (log_{10} ng/ml)	3.0 (2.6, 3.6)	-0.09	0.48
	D-dimer (log_{10} ng/ml)	2.4 (2.3, 2.8)	0.05	0.85
	IL-10 (binary)	0.3 (0.2, 0.6)	-0.16	0.43
	IL-6	-0.1 (-0.3, 0.1)	-0.14	0.67
	IP10	2.0 (1.9, 2.1)	0.50	0.25
	CCL21	2.3 (1.5, 2.6)	-0.07	0.65
	MIG	2.6 (2.4, 2.7)	0.01	0.98
	MIP-3α (binary)	5.8 (3.7, 10.0)	0.03	0.85
	MIP-3β	1.9 (1.8, 2.0)	0.05	0.93
T cell subsets (proportion CD3+ cells)	CD4+	51.7 (42.7, 59.8)	0.01	0.48
	CD8	42.2 (32.8, 51.9)	0.00	0.53
CD4 T cell memory	Naïve (CD28+/CD45RO-/CCR7+)	47.1 (32.6, 58.2)	0.00	0.97

subsets (proportion CD4 T cells)	Central (CD28+/CD45RO+/CCR7+)	33.3 (22.0, 42.6)	0.00	0.88
	Effector (CD28-/CD45RO+/CCR7-)	1.88 (1.1, 5.9)	0.03	0.34
	Transitional (CD28+/CD45RO+/CCR7-)	6.97 (5.6, 11.5)	0.01	0.62
CD4 T cell activation (proportion CD4 T cells)	CD69	15.8 (12.3, 19.3)	-0.01	0.66
	HLA-DR+/CD38+	2.3 (1.6, 3.1)	0.13	0.11
	CD69+/Ki-67+	0.3 (0.2, 0.4)	-0.02	0.94
	CD69- /Ki-67+	1.7 (1.1, 2.2)	0.03	0.57
	Ki-67+	1.9 (1.5, 2.5)	0.03	0.63
	T regulatory cells	1.9 (1.5, 2.7)	0.06	0.51
T cell exhaustion: summary subsets (proportion of parent)	CD57+ CD4 T cells	2.3 (1.3, 5.6)	0.03	0.25
	Lag-3+ CD4 T cells	1.7 (1.0, 2.6)	-0.03	0.57
	PD-1+ CD4 T cells	27.8 (19.5, 33.5)	0.00	0.55
	Tim-3+ CD4 T cells	2.9 (1.7, 4.5)	-0.04	0.36
	CD57+ CD8 T cells	26.1 (16.4, 36.8)	0.00	0.67
	Lag-3+ CD8 T cells	0.4 (0.3, 0.6)	0.36	0.15
	PD-1+ CD8 T cells	22.0 (14.9, 26.9)	-0.01	0.17
	Tim-3+ CD8 T cells	12.4 (6.7, 16.6)	0.01	0.38
T cell exhaustion: specific subsets (proportion of parent)	CD57-/Lag3-/PD1-/Tim3- CD4 T cells	68.4 (62.1, 76.9)	0.00	0.63
	CD57-/Lag3-/PD1-/Tim3+ CD4 T cells	1.5 (0.7, 2.6)	-0.06	0.23
	CD57-/Lag3-/PD1+/Tim3- CD4 T cells	21.6 (16.8, 27.8)	0.00	0.67
	CD57-/Lag3-/PD1+/Tim3+ CD4 T cells	0.8 (0.6, 1.3)	-0.10	0.55
	CD57-/Lag3+/PD1-/Tim3- CD4 T cells	1.5 (0.6, 2.0)	-0.03	0.64
	CD57-/Lag3+/PD1-/Tim3+ CD4 T cells	0.01 (0.00, 0.01)	-10.79	0.30
	CD57-/Lag3+/PD1+/Tim3- CD4 T cells	0.2 (0.1, 0.3)	-0.53	0.44
	CD57-/Lag3+/PD1+/Tim3+ CD4 T cells	0.03 (0.01, 0.04)	-0.44	0.60

	CD57+/Lag3-/PD1-/Tim3- CD4 T cells	0.5 (0.3, 1.4)	0.04	0.73
	CD57+/Lag3-/PD1-/Tim3+ CD4 T cells	0.04 (0.02, 0.07)	-0.88	0.43
	CD57+/Lag3-/PD1+/Tim3- CD4 T cells	1.5 (0.7,4.0)	0.04	0.20
	CD57+/Lag3-/PD1+/Tim3+ CD4 T cells	0.08 (0.03, 0.23)	0.13	0.41
	CD57+/Lag3+/PD1-/Tim3- CD4 T cells	0.01 (0.00 0.02)	-3.70	0.21
	CD57+/Lag3+/PD1-/Tim3+ CD4 T cells	0.000 (0.000, 0.002)	51.47	0.29
	CD57+/Lag3+/PD1+/Tim3- CD4 T cells	0.01 (0.00, 0.02)	-0.08	0.98
	CD57+/Lag3+/PD1+/Tim3+ CD4 T cells	0.00 (0.00, 0.01)	-14.03	0.36
	CD57-/Lag3-/PD1-/Tim3- CD8 T cells	50.0 (41.4, 61.8)	0.00	0.89
	CD57-/Lag3-/PD1-/Tim3+ CD8 T cells	6.6 (2.6, 9.6)	0.01	0.59
	CD57-/Lag3-/PD1+/Tim3- CD8 T cells	13.1 (8.5, 18.4)	-0.03	0.04
	CD57-/Lag3-/PD1+/Tim3+ CD8 T cells	0.8 (0.4, 1.5)	0.02	0.90
	CD57-/Lag3+/PD1-/Tim3- CD8 T cells	0.2 (0.1, 0.3)	0.41	0.28
	CD57-/Lag3+/PD1-/Tim3+ CD8 T cells	0.03 (0.01, 0.04)	5.04	0.16
	CD57-/Lag3+/PD1+/Tim3- CD8 T cells	0.09 (0.05, 0.14)	0.79	0.43
	CD57-/Lag3+/PD1+/Tim3+ CD8 T cells	0.007 (0.003, 0.011)	19.45	0.04
	CD57+/Lag3-/PD1-/Tim3- CD8 T cells	16.9 (9.6, 22.5)	0.00	0.68
	CD57+/Lag3-/PD1-/Tim3+ CD8 T cells	2.1 (0.8, 3.9)	0.02	0.46
	CD57+/Lag3-/PD1+/Tim3- CD8 T cells	5.2 (3.0, 7.6)	-0.01	0.75
	CD57+/Lag3-/PD1+/Tim3+ CD8 T cells	0.4 (0.3, 1.2)	0.05	0.55
	CD57+/Lag3+/PD1-/Tim3- CD8 T cells	0.04 (0.02, 0.07)	3.12	0.09
	CD57+/Lag3+/PD1-/Tim3+ CD8 T cells	0.005 (0.000, 0.014)	13.70	0.17
	CD57+/Lag3+/PD1+/Tim3- CD8 T cells	0.04 (0.02, 0.05)	1.97	0.38
	CD57+/Lag3+/PD1+/Tim3+ CD8 T cells	0.002 (0.000, 0.009)	10.61	0.32
T cell effector function:	CD107+ CD4 T cells	4.2 (2.7, 9.0)	0.03	0.17

summary subsets (proportion of parent)	IFNγ+ CD4 T cells	6.6 (2.7, 10.4)	0.02	0.08
	IL-2+ CD4 T cells	8.4 (2.9, 13.1)	0.03	0.05
	TNF+ CD4 T cells	20.0 (7.6, 31.9)	0.12	0.01
	CD107+ CD8 T cells	7.7 (3.8, 12.1)	0.02	0.20
	IFNγ+ CD8 T cells	15.0 (7.8, 23.1)	0.01	0.31
	IL-2+ CD8 T cells	1.9 (1.2, 3.9)	0.12	0.01
	TNF+ CD8 T cells	8.5 (3.2, 19.2)	0.02	0.05
T cell effector functions: specific subsets (proportion of parent)	CD107-/IFNγ-/IL2-/TNF- CD4 T cells	72.6 (61.6, 79.9)	-0.01	0.02
	CD107-/IFNγ-/IL2-/TNF+ CD4 T cells	8.9 (4.2, 13.7)	0.03	0.07
	CD107-/IFNγ-/IL2+/TNF- CD4 T cells	1.1 (0.7, 1.9)	0.17	0.13
	CD107-/IFNγ-/IL2+/TNF+ CD4 T cells	5.2 (1.3, 8.1)	0.03	0.11
	CD107-/IFNγ+/IL2-/TNF- CD4 T cells	1.0 (0.5, 1.9)	-0.01	0.85
	CD107-/IFNγ+/IL2-/TNF+ CD4 T cells	2.8 (0.1, 4.6)	0.04	0.08
	CD107-/IFNγ+/IL2+/TNF- CD4 T cells	0.08 (0.03, 0.14)	-0.16	0.77
	CD107-/IFNγ+/IL2+/TNF+ CD4 T cells	1.3 (0.4, 2.6)	0.10	0.06
	CD107+/IFNγ-/IL2-/TNF- CD4 T cells	3.2 (2.1, 5.5)	0.01	0.65
	CD107+/IFNγ-/IL2-/TNF+ CD4 T cells	0.3 (0.1, 0.9)	0.35	0.01
	CD107+/IFNγ-/IL2+/TNF- CD4 T cells	0.1 (0.1, 0.2)	1.69	0.05
	CD107+/IFNγ-/IL2+/TNF+ CD4 T cells	0.1 (0.0, 0.4)	0.43	0.04
	CD107+/IFNγ+/IL2-/TNF- CD4 T cells	0.04 (0.01, 0.10)	-0.16	0.90
	CD107+/IFNγ+/IL2-/TNF+ CD4 T cells	0.15 (0.04, 0.42)	0.35	0.02
	CD107+/IFNγ+/IL2+/TNF- CD4 T cells	0.007 (0.002, 0.013)	-3.84	0.73
	CD107+/IFNγ+/IL2+/TNF+ CD4 T cells	0.04 (0.02, 0.21)	0.67	0.03
	CD107-/IFNγ-/IL2-/TNF- CD8 T cells	74.9 (67.3, 85.1)	-0.01	0.13
	CD107-/IFNγ-/IL2-/TNF+ CD8 T cells	1.2 (0.8, 2.5)	0.15	0.02

	CD107-/IFNγ-/IL2+/TNF- CD8 T cells	0.7 (0.5, 1.1)	0.29	0.04
	CD107-/IFNγ-/IL2+/TNF+ CD8 T cells	0.3 (0.1, 0.7)	0.26	0.04
	CD107-/IFNγ+/IL2-/TNF- CD8 T cells	6.0 (2.5, 8.8)	-0.01	0.52
	CD107-/IFNγ+/IL2-/TNF+ CD8 T cells	4.6 (1.7, 9.7)	0.02	0.17
	CD107-/IFNγ+/IL2+/TNF- CD8 T cells	0.3 (0.1, 0.4)	0.42	0.30
	CD107-/IFNγ+/IL2+/TNF+ CD8 T cells	0.5 (0.1, 1.0)	0.33	0.04
	CD107+/IFNγ-/IL2-/TNF- CD8 T cells	4.5 (2.6, 7.9)	0.01	0.67
	CD107+/IFNγ-/IL2-/TNF+ CD8 T cells	0.06 (0.02, 0.19)	0.78	0.13
	CD107+/IFNγ-/IL2+/TNF- CD8 T cells	0.08 (0.05, 0.11)	0.77	0.62
	CD107+/IFNγ-/IL2+/TNF+ CD8 T cells	0.01 (0.00, 0.02)	4.42	0.09
	CD107+/IFNγ+/IL2-/TNF- CD8 T cells	0.4 (0.2, 1.0)	0.17	0.33
	CD107+/IFNγ+/IL2-/TNF+ CD8 T cells	0.3 (0.1, 1.7)	0.10	0.04
	CD107+/IFNγ+/IL2+/TNF- CD8 T cells	0.02 (0.01, 0.04)	1.94	0.46
	CD107+/IFNγ+/IL2+/TNF+ CD8 T cells	0.04 (0.01, 0.16)	0.63	0.08

Supplementary Table 3. Univariate regression analysis of immunological variables on reservoir outgrowth (IUPM), among males only.

	Immune Characteristic	**Median**	**Regression Coefficient**	**P-value**
Soluble Immune Analytes (log_{10} pg/ml, unless stated otherwise)	IL-7	0.6 (0.3, 0.8)	-0.28	0.60
	IL-15	0.5 (0.4, 0.5)	-0.55	0.66
	CRP (log_{10} ng/ml)	3.3 (2.8, 3.5)	-0.02	0.96
	D-dimer (log_{10} ng/ml)	2.1 (1.9, 2.3)	0.04	0.92
	IL-10 (binary)	0.5 (0.2, 0.7)	0.17	0.64
	IL-6	-0.1 (-0.3, 0.0)	-0.18	0.82
	IP10	2.0 (1.9, 2.2)	-1.03	0.23

	CCL21	2.3 (1.5, 2.8)	0.34	0.24
	MIG	2.6 (2.4, 2.8)	-0.30	0.57
	MIP-3α (binary)	6.4 (4.8, 12.8)	0.08	0.82
	MIP-3β	1.9 (1.8, 2.0)	-0.50	0.64
T cell subsets (proportion CD3+ cells)	CD4+	52.2 (42.6, 63.4)	-0.02	0.20
	CD8	39.2 (33.4, 51.3)	0.03	0.11
CD4 T cell memory subsets (proportion CD4 T cells)	Naïve (CD28+/CD45RO-/CCR7+)	40.3 (23.2, 47.3)	0.00	0.94
	Central (CD28+/CD45RO+/CCR7+)	34.6 (30.4, 39.1)	0.01	0.73
	Effector (CD28-/CD45RO+/CCR7-)	3.4 (2.5, 6.1)	-0.03	0.64
	Transitional (CD28+/CD45RO+/CCR7-)	9.8 (7.3, 15.5)	0.03	0.44
CD4 T cell activation (proportion CD4 T cells)	CD69	14.9 (9.9, 19.5)	0.03	0.20
	HLA-DR+/CD38+	2.2 (1.5, 3.7)	-0.28	0.09
	CD69+/Ki-67+	0.3 (0.2, 0.6)	1.90	0.04
	CD69- /Ki-67+	1.7 (1.2, 2.4)	0.02	0.93
	Ki-67+	2.0 (1.4, 3.0)	0.07	0.69
	T regulatory cells	1.8 (1.4, 2.7)	0.01	0.96
T cell exhaustion: summary subsets (proportion of parent)	CD57+ CD4 T cells	4.1 (2.4, 5.5)	0.04	0.64
	Lag-3+ CD4 T cells	1.5 (1.0, 3.2)	-0.03	0.87
	PD-1+ CD4 T cells	28.2 (21.0, 32.7)	0.04	0.03
	Tim-3+ CD4 T cells	2.6 (1.9, 3.2)	0.24	0.31
	CD57+ CD8 T cells	29.7 (15.2, 33.6)	0.02	0.10
	Lag-3+ CD8 T cells	0.6 (0.4, 0.9)	-0.15	0.84
	PD-1+ CD8 T cells	20.0 (16.1, 22.0)	0.05	0.13
	Tim-3+ CD8 T cells	8.6 (7.4, 10.2)	0.02	0.58
T cell exhaustion:	CD57-/Lag3-/PD1-/Tim3- CD4 T cells	66.4 (61.4, 74.4)	-0.04	0.03

specific subsets (proportion of parent)	CD57-/Lag3-/PD1-/Tim3+ CD4 T cells	1.3 (1.0, 1.7)	0.09	0.84
	CD57-/Lag3-/PD1+/Tim3- CD4 T cells	24.3 (18.9, 27.7)	0.04	0.04
	CD57-/Lag3-/PD1+/Tim3+ CD4 T cells	0.9 (0.4, 1.0)	0.63	0.13
	CD57-/Lag3+/PD1-/Tim3- CD4 T cells	1.1 (0.8, 2.7)	-0.05	0.80
	CD57-/Lag3+/PD1-/Tim3+ CD4 T cells	0.003 (0.000, 0.011)	38.85	0.41
	CD57-/Lag3+/PD1+/Tim3- CD4 T cells	0.2 (0.1, 0.3)	1.79	0.42
	CD57-/Lag3+/PD1+/Tim3+ CD4 T cells	0.01 (0.00, 0.02)	5.90	0.51
	CD57+/Lag3-/PD1-/Tim3- CD4 T cells	1.0 (0.5, 1.4)	-0.06	0.69
	CD57+/Lag3-/PD1-/Tim3+ CD4 T cells	0.06 (0.02, 0.12)	-0.05	0.95
	CD57+/Lag3-/PD1+/Tim3- CD4 T cells	3.0 (1.6, 3.9)	0.29	0.10
	CD57+/Lag3-/PD1+/Tim3+ CD4 T cells	0.08 (0.04, 0.15)	1.08	0.41
	CD57+/Lag3+/PD1-/Tim3- CD4 T cells	0.01 (0.007, 0.02)	-15.44	0.46
	CD57+/Lag3+/PD1-/Tim3+ CD4 T cells	0 (0, 0.001)	-32.64	0.40
	CD57+/Lag3+/PD1+/Tim3- CD4 T cells	0.01 (0.01, 0.02)	11.76	0.61
	CD57+/Lag3+/PD1+/Tim3+ CD4 T cells	0.002 (0.000, 0.005)	101.14	0.10
	CD57-/Lag3-/PD1-/Tim3- CD8 T cells	53.0 (49.7, 57.1)	-0.04	0.02
	CD57-/Lag3-/PD1-/Tim3+ CD8 T cells	4.42 (3.4, 5.0)	0.04	0.75
	CD57-/Lag3-/PD1+/Tim3- CD8 T cells	10.9 (9.8, 13.9)	0.01	0.76
	CD57-/Lag3-/PD1+/Tim3+ CD8 T cells	0.9 (0.6, 1.4)	0.27	0.29
	CD57-/Lag3+/PD1-/Tim3- CD8 T cells	0.2 (0.1, 0.3)	-1.47	0.37
	CD57-/Lag3+/PD1-/Tim3+ CD8 T cells	0.03 (0.01, 0.05)	-5.52	0.59
	CD57-/Lag3+/PD1+/Tim3- CD8 T cells	0.09 (0.05, 0.24)	0.56	0.75
	CD57-/Lag3+/PD1+/Tim3+ CD8 T cells	0.01 (0.00, 0.03)	4.53	0.72
	CD57+/Lag3-/PD1-/Tim3- CD8 T cells	20.1 (9.9, 23.9)	0.03	0.14
	CD57+/Lag3-/PD1-/Tim3+ CD8 T cells	1.9 (1.3, 2.9)	0.01	0.80

	CD57+/Lag3-/PD1+/Tim3- CD8 T cells	5.1 (3.8, 7.0)	0.14	0.04
	CD57+/Lag3-/PD1+/Tim3+ CD8 T cells	0.7 (0.4, 1.4)	0.16	0.72
	CD57+/Lag3+/PD1-/Tim3- CD8 T cells	0.07 (0.05, 0.14)	0.84	0.83
	CD57+/Lag3+/PD1-/Tim3+ CD8 T cells	0.002 (0.000, 0.017)	6.58	0.66
	CD57+/Lag3+/PD1+/Tim3- CD8 T cells	0.05 (0.03, 0.09)	0.71	0.90
	CD57+/Lag3+/PD1+/Tim3+ CD8 T cells	0.004 (0.000, 0.007)	3.19	0.85
T cell effector functions: summary subsets (proportion of parent)	CD107+ CD4 T cells	4.4 (2.2, 9.4)	0.01	0.88
	IFNγ+ CD4 T cells	6.8 (4.1, 11.0)	0.01	0.75
	IL-2+ CD4 T cells	11.1 (6.6, 17.7)	-0.03	0.35
	TNF+ CD4 T cells	24.6 (10.9, 36.7)	-0.01	0.44
	CD107+ CD8 T cells	6.6 (3.8, 8.8)	-0.03	0.35
	IFNγ+ CD8 T cells	15.5 (8.2, 21.7)	-0.01	0.72
	IL-2+ CD8 T cells	4.3 (1.6, 5.8)	-0.13	0.02
	TNF+ CD8 T cells	14.3 (3.7, 24.3)	-0.02	0.28
T cell effector functions: specific subsets (proportion of parent)	CD107-/IFNγ-/IL2-/TNF- CD4 T cells	69.0 (54.8, 74.3)	0.01	0.52
	CD107-/IFNγ-/IL2-/TNF+ CD4 T cells	9.5 (5.8, 13.0)	-0.03	0.39
	CD107-/IFNγ-/IL2+/TNF- CD4 T cells	1.6 (1.0, 1.8)	-0.03	0.94
	CD107-/IFNγ-/IL2+/TNF+ CD4 T cells	7.1 (2.9, 11.8)	-0.05	0.27
	CD107-/IFNγ+/IL2-/TNF- CD4 T cells	0.9 (0.3, 1.9)	0.30	0.05
	CD107-/IFNγ+/IL2-/TNF+ CD4 T cells	2.5 (1.3, 5.9)	-0.01	0.87
	CD107-/IFNγ+/IL2+/TNF- CD4 T cells	0.09 (0.02, 0.14)	1.07	0.35
	CD107-/IFNγ+/IL2+/TNF+ CD4 T cells	1.0 (0.5, 2.6)	-0.01	0.90
	CD107+/IFNγ-/IL2-/TNF- CD4 T cells	3.0 (1.5, 7.5)	0.01	0.78
	CD107+/IFNγ-/IL2-/TNF+ CD4 T cells	0.4 (0.2, 0.6)	0.11	0.77
	CD107+/IFNγ-/IL2+/TNF- CD4 T cells	0.3 (0.1, 0.3)	-0.62	0.28

	CD107+/IFNγ-/IL2+/TNF+ CD4 T cells	0.2 (0.1, 0.4)	-0.48	0.43
	CD107+/IFNγ+/IL2-/TNF- CD4 T cells	0.05 (0.03, 0.06)	6.07	0.07
	CD107+/IFNγ+/IL2-/TNF+ CD4 T cells	0.12 (0.04, 0.35)	0.12	0.92
	CD107+/IFNγ+/IL2+/TNF- CD4 T cells	0.01 (0.01, 0.016)	-3.89	0.56
	CD107+/IFNγ+/IL2+/TNF+ CD4 T cells	0.07 (0.04, 0.11)	-0.47	0.89
	CD107-/IFNγ-/IL2-/TNF- CD8 T cells	67.6 (66.0, 82.6)	0.02	0.27
	CD107-/IFNγ-/IL2-/TNF+ CD8 T cells	2.3 (0.8, 3.2)	-0.11	0.25
	CD107-/IFNγ-/IL2+/TNF- CD8 T cells	1.0 (0.5, 2.0)	-0.42	0.11
	CD107-/IFNγ-/IL2+/TNF+ CD8 T cells	0.6 (0.2, 0.9)	-0.31	0.11
	CD107-/IFNγ+/IL2-/TNF- CD8 T cells	5.2 (3.9, 6.9)	0.04	0.37
	CD107-/IFNγ+/IL2-/TNF+ CD8 T cells	6.4 (1.4, 12.1)	-0.01	0.61
	CD107-/IFNγ+/IL2+/TNF- CD8 T cells	0.4 (0.1, 0.6)	-0.22	0.69
	CD107-/IFNγ+/IL2+/TNF+ CD8 T cells	0.8 (0.4, 1.7)	-0.40	0.04
	CD107+/IFNγ-/IL2-/TNF- CD8 T cells	4.7 (1.7, 7.2)	-0.03	0.47
	CD107+/IFNγ-/IL2-/TNF+ CD8 T cells	0.09 (0.04, 0.23)	-1.19	0.29
	CD107+/IFNγ-/IL2+/TNF- CD8 T cells	0.10 (0.05, 0.31)	-0.32	0.25
	CD107+/IFNγ-/IL2+/TNF+ CD8 T cells	0.03 (0.01, 0.05)	-1.36	0.29
	CD107+/IFNγ+/IL2-/TNF- CD8 T cells	0.3 (0.2, 0.7)	0.40	0.59
	CD107+/IFNγ+/IL2-/TNF+ CD8 T cells	0.6 (0.2, 2.1)	-0.20	0.35
	CD107+/IFNγ+/IL2+/TNF- CD8 T cells	0.02 (0.02, 0.06)	-3.20	0.20
	CD107+/IFNγ+/IL2+/TNF+ CD8 T cells	0.08 (0.04, 0.27)	-0.25	0.30

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