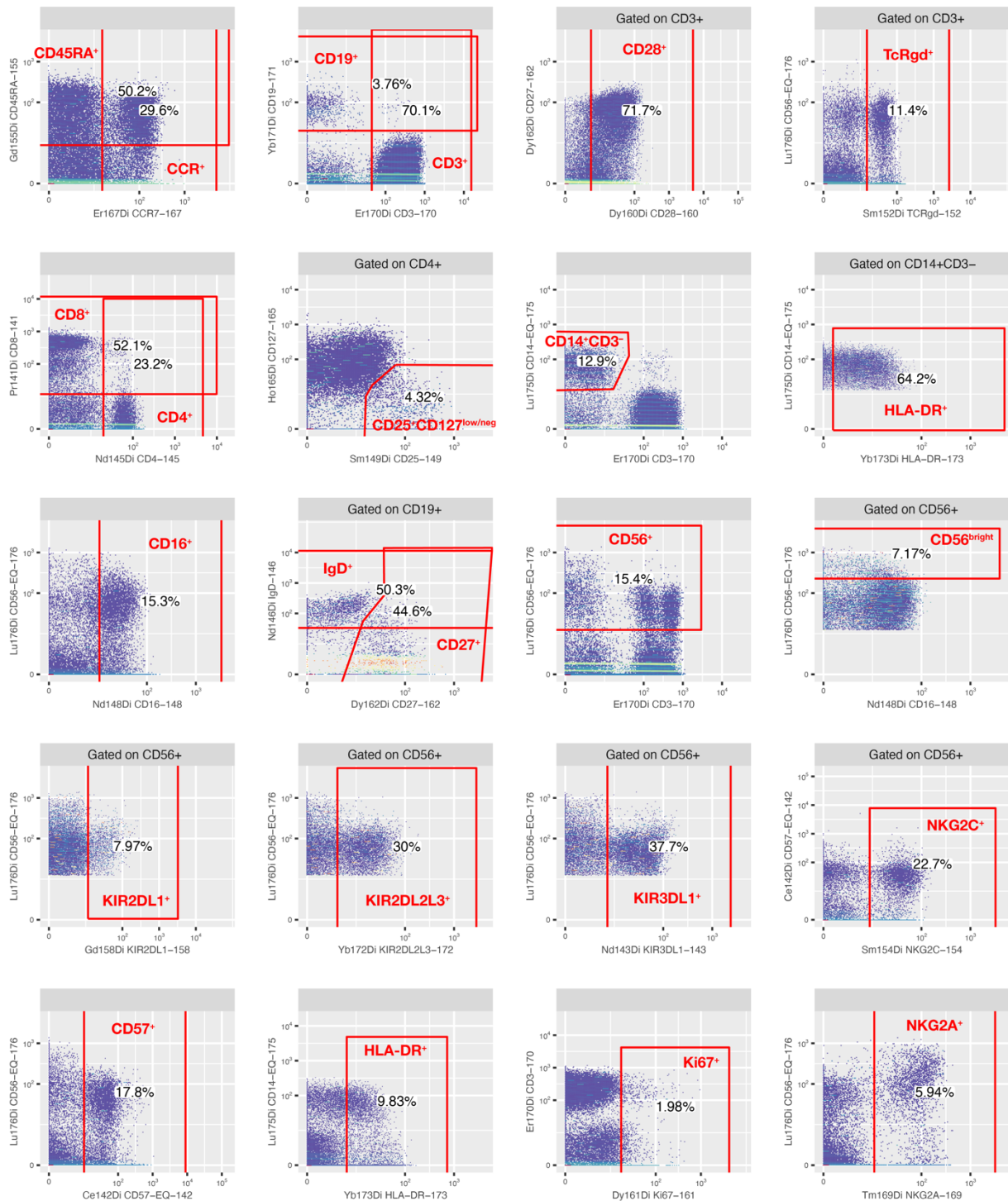


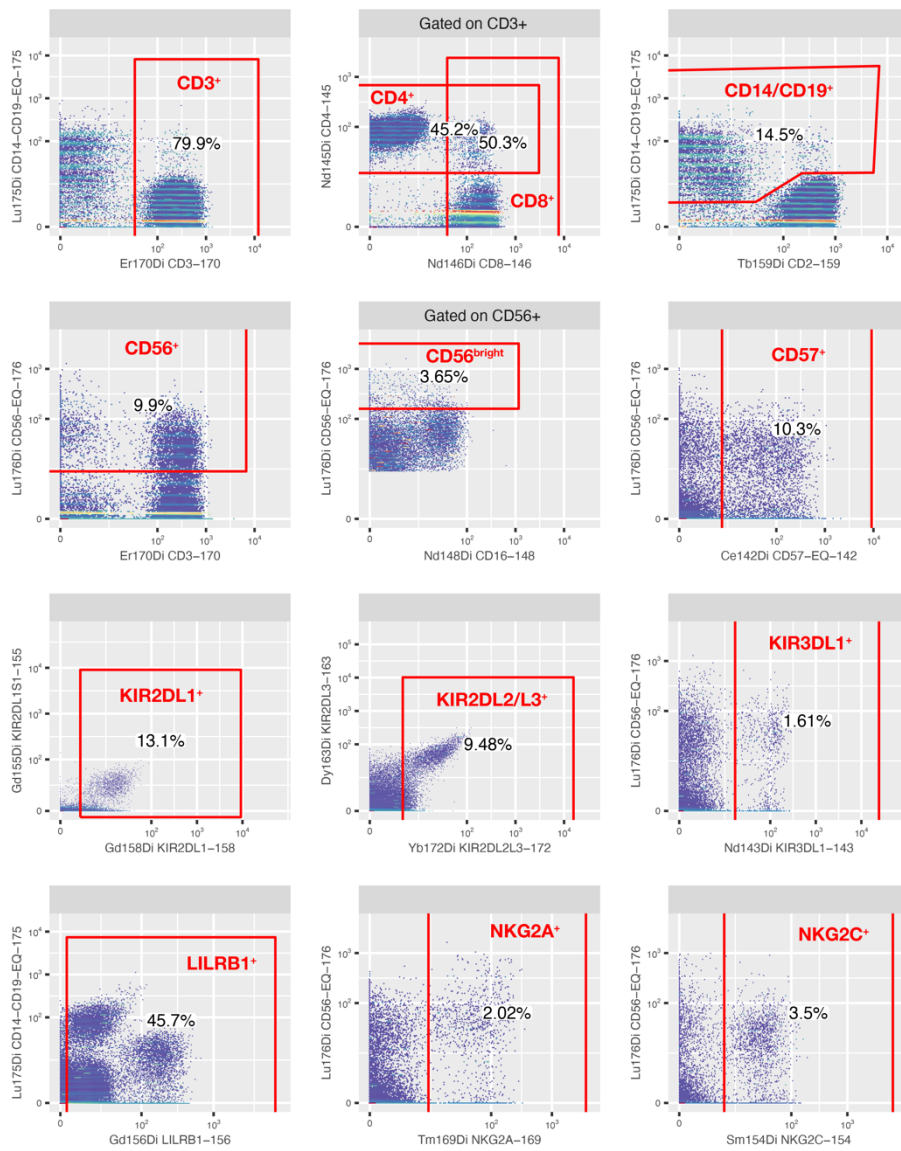
552 **Supplementary Figures**

553 **Supplementary Figure 1. Gating strategy for panel 1.**



554

555 **Supplementary Figure 2. Gating strategy for panel 2.**



556

557 **Supplementary Tables**

558 **Supplementary Table 1. Mass cytometry panel 1.**

Mass	Antigen	Clone	Supplier	Note
89Y	CD45	HI30	Fluidigm	
102Pd	Barcode		Fluidigm	
103Rh	Intercalator		Fluidigm	
104Pd	Barcode		Fluidigm	
105Pd	Barcode		Fluidigm	
106Pd	Barcode		Fluidigm	
108Pd	Barcode		Fluidigm	
110Pd	Barcode		Fluidigm	
141Pr	CD8	RPA-T8	Biologend	
142Nd	CD57	HCD57	Fluidigm	
143Nd	KIR3DL1	DX9	Miltenyi	
144Nd	CD38	REA572	Miltenyi	
145Nd	CD4	RPA-T4	Fluidigm	
146Nd	IgD	IA6-2	Fluidigm	
147Sm	CD71	AC102	Miltenyi	²
148Nd	CD16	3G8	Fluidigm	
149Sm	CD25	2A3	Fluidigm	
150Nd	Anti-GFP, GLUT-1-GFP	FM264G	Biologend	²
151Eu	CD123	AC145	Miltenyi	¹
152Sm	TCRgd	11F2	Fluidigm	
153Eu	CD7	CD7-6B7	Fluidigm	
154Sm	NKG2C	REA205	Miltenyi	
155Gd	CD45RA	HI100	Fluidigm	
156Gd	NKp46	9E2	Miltenyi	
158Gd	KIR2DL1	REA284	Miltenyi	
159Tb	CD2	RPA-2.10	eBioscience	
160Gd	CD28	CD28.2	Fluidigm	
161Dy	Ki67	B56	Fluidigm	
162Dy	CD27	L128	Fluidigm	
163Dy	CD98	REA387	Miltenyi	
164Dy	CD161	HP-3G10	Fluidigm	
165Ho	CD127	A019D5	Fluidigm	
166Er	CD11c	B-ly6	BD	¹
167Er	CCR7	G043H7	Fluidigm	
168Er	NKp30	P30-15	Miltenyi	
169Tm	NKG2A	Z199	Fluidigm	
170Er	CD3	UCHT1	Fluidigm	
171Yb	CD19	Æ1	In-house	
172Yb	KIR2DL2L3	GL183	Miltenyi	
173Yb	HLA-DR	AC122	Miltenyi	
174Yb	PD-1	EH12.2H7	Fluidigm	
175Lu	CD14	M5E2	Fluidigm	
176Yb	CD56	NCAM16.2	Fluidigm	
191/193Ir	Intercalator		Fluidigm	

559 ¹ Excluded because the marker is not of relevance to this analysis.

560 ² Excluded due to batch effects.

561

562 **Supplementary Table 1. Mass cytometry panel 2**

Mass	Antigen	Clone	Supplier	Note
89Y	CD45	HI30	Fluidigm	
102Pd	Barcode		Fluidigm	
103Rh	Intercalator		Fluidigm	
104Pd	Barcode		Fluidigm	
105Pd	Barcode		Fluidigm	
106Pd	Barcode		Fluidigm	
108Pd	Barcode		Fluidigm	
110Pd	Barcode		Fluidigm	
141Pr	KIR2DS4	JJC11.6	Miltenyi	
142Nd	CD57	HCD57	Fluidigm	
143Nd	KIR3DL1	DX9	Miltenyi	
144Nd	CD38	REA572	Miltenyi	
145Nd	CD4	RPA-T4	Fluidigm	
146Nd	CD8	RPA-T8	Fluidigm	
147Sm	CD137	4B4-1	Miltenyi	²
148Nd	CD16	3G8	Fluidigm	
149Sm	Syk	4D10.2	Fluidigm	
150Nd	MIP-1 β	D21-1351	Fluidigm	¹
151Eu	CD107a	H4A3	Fluidigm	¹
152Sm	TNF α	Mab11	Fluidigm	¹
153Eu	TIM-3	F38-2E2	Miltenyi	
154Sm	NKG2C	REA205	Miltenyi	
155Gd	KIR2DL1/S1	11PB6	Miltenyi	
156Gd	LILRB1	GHI/75	Fluidigm	
158Gd	KIR2DL1	REA284	Miltenyi	
159Tb	CD2	RPA-2.10	eBioscience	
160Gd	Fc ϵ R1 γ -FITC, anti-FITC	Polyclonal, FIT-22	Millipore, Fluidigm	
161Dy	Ki67	B56	Fluidigm	
162Dy	LFA-1 (open)	m24	Biolegend	¹
163Dy	KIR2DL3	REA147	Miltenyi	
164Dy	CD96	NK92.39	Biolegend	
165Ho	KSP37	TDA3	Biolegend	¹
166Er	NKG2D	ON72	Fluidigm	²
167Er	TIGIT	4E1.2	Miltenyi	
168Er	IFN- γ	B27	Fluidigm	¹
169Tm	NKG2A	Z199	Fluidigm	
170Er	CD3	UCHT1	Fluidigm	
171Yb	DNAM-1	DX11	Fluidigm	
172Yb	KIR2DL2L3	GL183	Miltenyi	
173Yb	Granzyme B	GB11	Fluidigm	
174Yb	PD-1	EH12.2H7	Fluidigm	
175Lu	CD14, CD19	M5E2, \AA E1	Fluidigm, in-house	
176Yb	CD56	NCAM16.2	Fluidigm	
191/193Ir	Intercalator		Fluidigm	

563 ¹ Excluded because the marker is not of relevance to this analysis.

564 ² Excluded due to batch effects.

565 **Supplementary Table 3. Population definitions for panel 1.**

Name	Definition
Lymphocytes	Lymphocytes
T cells	CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
CD4+ T cells	CD4+, NOT CD8+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
Naive CD4+ T cells	CCR7+, CD45RA+, CD4+, NOT CD8+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
Central memory CD4+ T cells	CCR7+, NOT CD45RA+, CD4+, NOT CD8+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
Transitional memory CD4+ T cells	CD3+ => CD28+, NOT CCR7+, NOT CD45RA+, CD4+, NOT CD8+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
Effector memory CD4+ T cells	NOT CD3+ => CD28+, NOT CCR7+, NOT CD45RA+, CD4+, NOT CD8+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
EMRA CD4+ T cells	NOT CCR7+, CD45RA+, CD4+, NOT CD8+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
Regulatory T cells	CD4+ => CD25+CD127lowneg, NOT CD8+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
CD8+ T cells	CD8+, NOT CD4+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
Naive CD8+ T cells	CCR7+, CD45RA+, CD8+, NOT CD4+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
Central memory CD8+ T cells	CCR7+, NOT CD45RA+, CD8+, NOT CD4+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
Transitional memory CD8+ T cells	CD3+ => CD28+, NOT CCR7+, NOT CD45RA+, CD8+, NOT CD4+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
Effector memory CD8+ T cells	NOT CD3+ => CD28+, NOT CCR7+, NOT CD45RA+, CD8+, NOT CD4+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
EMRA CD8+ T cells	NOT CCR7+, CD45RA+, CD8+, NOT CD4+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
gd T cells	CD3+ => TCRgd+, NOT CD8+, NOT CD4+, CD3+, NOT CD19+, NOT CD14+CD3-, NOT CD56+
B cells	CD19+, NOT CD3+, NOT CD56+, NOT CD14+CD3-
Naive B cells	NOT CD19+ => CD27+, CD19+, NOT CD3+, NOT CD56+, NOT CD14+CD3-
Memory B cells	CD19+ => CD27+, NOT CD3+, NOT CD56+, NOT CD14+CD3-
IgD+ memory B cells	CD19+ => IgD+, CD19+ => CD27+, NOT CD3+, NOT CD56+, NOT CD14+CD3-
IgD- memory B cells	NOT CD19+ => IgD+, CD19+ => CD27+, NOT CD3+, NOT CD56+, NOT CD14+CD3-
NK cells	CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+
CD56dim NK cells	NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+
NKG2A+ KIR+ CD57+ CD56dim NK cells	NKG2A+, CD56+ => KIR+, CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+
NKG2A- KIR+ CD57+ CD56dim NK cells	NOT NKG2A+, CD56+ => KIR+, CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+
NKG2A+ KIR- CD57+ CD56dim NK cells	NKG2A+, NOT CD56+ => KIR+, CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+
NKG2A- KIR- CD57+ CD56dim NK cells	NOT NKG2A+, NOT CD56+ => KIR+, CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+
NKG2A+ KIR+ CD57- CD56dim NK cells	NKG2A+, CD56+ => KIR+, NOT CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+
NKG2A- KIR+ CD57- CD56dim NK cells	NOT NKG2A+, CD56+ => KIR+, NOT CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+
NKG2A+ KIR- CD57- CD56dim NK cells	NKG2A+, NOT CD56+ => KIR+, NOT CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+
NKG2A- KIR- CD57- CD56dim NK cells	NOT NKG2A+, NOT CD56+ => KIR+, NOT CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+
NKG2C+ CD56dim NK cells	CD56+ => NKG2C+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+CD3-, NOT CD19+

CD56bright NK cells	CD56+ => CD56bright, NOT CD3+, NOT CD14+CD3-, NOT CD19+
Monocytes	CD14+CD3- => HLA-DR+, NOT CD19+, NOT CD56+
Classical monocytes	NOT CD16+, CD14+CD3- => HLA-DR+, NOT CD19+, NOT CD56+
Int./non-class. monocytes	CD16+, CD14+CD3- => HLA-DR+, NOT CD19+, NOT CD56+
M-MDSC	CD14+CD3-, NOT CD14+CD3- => HLA-DR+, NOT CD19+, NOT CD56+
CCR7+	CCR7+
CD3+	CD3+
CD28+ (CD3+)	CD3+ => CD28+
TCRgd+ (CD3+)	CD3+ => TCRgd+
CD4+	CD4+
CD25+ CD127low/neg (CD4+)	CD4+ => CD25+CD127lowneg
CD8+	CD8+
CD14+ CD3-	CD14+CD3-
HLA-DR+ (CD14+ CD3-)	CD14+CD3- => HLA-DR+
CD16+	CD16+
CD19+	CD19+
CD27+ (CD19+)	CD19+ => CD27+
IgD+ (CD19+)	CD19+ => IgD+
CD45RA+	CD45RA+
CD56+	CD56+
CD56bright	CD56+ => CD56bright
KIR+ (CD56+)	CD56+ => KIR+
KIR2DL1+ CD56+	CD56+ => KIR2DL1+
KIR2DL2L3+ (CD56+)	CD56+ => KIR2DL2L3+
KIR3DL1+ (CD56+)	CD56+ => KIR3DL1+
NKG2C+ (CD56+)	CD56+ => NKG2C+
CD57+	CD57+
HLA-DR+	HLA-DR+
Ki-67+	Ki-67+
NKG2A+	NKG2A+

566

567 **Supplementary Table 4. Population definitions for panel 2.**

Name	Definition
T cells	CD3+, NOT CD14+ or CD19+, NOT CD56+
CD4+ T cells	CD3+ => CD4+, NOT CD3+ => CD8+, CD3+, NOT CD14+ or CD19+, NOT CD56+
CD8+ T cells	CD3+ => CD8+, NOT CD3+ => CD4+, CD3+, NOT CD14+ or CD19+, NOT CD56+
NK cells	CD56+, NOT CD3+, NOT CD14+ or CD19+
CD56dim NK cells	NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+ or CD19+
NKG2A+ KIR+ CD57+ CD56dim NK cells	NKG2A+, KIR+, CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+ or CD19+
NKG2A- KIR+ CD57+ CD56dim NK cells	NOT NKG2A+, KIR+, CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+ or CD19+
NKG2A+ KIR- CD57+ CD56dim NK cells	NKG2A+, NOT KIR+, CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+ or CD19+
NKG2A- KIR- CD57+ CD56dim NK cells	NOT NKG2A+, NOT KIR+, CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+ or CD19+
NKG2A+ KIR+ CD57- CD56dim NK cells	NKG2A+, KIR+, NOT CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+ or CD19+
NKG2A- KIR+ CD57- CD56dim NK cells	NOT NKG2A+, KIR+, NOT CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+ or CD19+
NKG2A+ KIR- CD57- CD56dim NK cells	NKG2A+, NOT KIR+, NOT CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+ or CD19+
NKG2A- KIR- CD57- CD56dim NK cells	NOT NKG2A+, NOT KIR+, NOT CD57+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+ or CD19+
NKG2C+ CD56dim NK cells	NKG2C+, NOT CD56+ => CD56bright, CD56+, NOT CD3+, NOT CD14+ or CD19+
CD56bright NK cells	CD56+ => CD56bright, NOT CD3+, NOT CD14+ or CD19+
CD3+	CD3+
CD4+	CD3+ => CD4+
CD8+	CD3+ => CD8+
CD14+ or CD19+	CD14+ or CD19+
CD56+	CD56+
CD56bright	CD56+ => CD56bright
CD57+	CD57+
KIR+	KIR+
KIR2DL1+	KIR2DL1+
KIR2DL2L3+	KIR2DL2L3+
KIR3DL1+	KIR3DL1+
LILRB1+	LILRB1+
NKG2A+	NKG2A+
NKG2C+	NKG2C+

568

569 **Supplementary Table 5. Peripheral blood immune cell abundances in healthy donors and**
 570 **patients before therapy.**

Readout	Population	Median value		Subject count		log2 FC	p value
		Healthy	Patients	Healthy	Patients		
% T cells	Bulk	54.63 %	30.61 %	17	28	-0,8358211	2,96E-07
% B cells	Bulk	8.58 %	4.76 %	17	28	-0,8504041	0,01527325
% NK cells	Bulk	11.74 %	13.63 %	17	28	0,21558804	0,15823181
% Monocytes	Bulk	8.26 %	15.01 %	17	28	0,86163219	0,00098764
% M-MDSC	Bulk	0.9 %	12.43 %	17	28	3,79518518	1,68E-07
% CD4+ T cells	T cells	55.73 %	41.48 %	17	28	-0,4261842	0,00931575
% CD8+ T cells	T cells	39.18 %	49.8 %	17	28	0,34586705	0,01748529
% gd T cells	T cells	1.77 %	1.31 %	17	28	-0,4353878	0,68515824
% Naive CD4+ T cells	CD4+ T cells	33.25 %	18.42 %	17	28	-0,8518818	0,03309576
% Central memory CD4+ T cells	CD4+ T cells	32.55 %	22.05 %	17	28	-0,5619033	0,0471276
% Transitional memory CD4+ T cells	CD4+ T cells	25.39 %	42.61 %	17	28	0,74687297	0,06931965
% Effector memory CD4+ T cells	CD4+ T cells	2.08 %	3.18 %	17	28	0,61297435	0,07700709
% EMRA CD4+ T cells	CD4+ T cells	1.05 %	2.57 %	17	28	1,28319028	0,03959916
% Regulatory T cells	CD4+ T cells	4.47 %	5.68 %	17	28	0,34762981	0,4649239
% Naive CD8+ T cells	CD8+ T cells	18.92 %	4.21 %	17	28	-2,1674409	0,00098764
% Central memory CD8+ T cells	CD8+ T cells	5.89 %	5.95 %	17	28	0,01480148	0,37131182
% Transitional memory CD8+ T cells	CD8+ T cells	20.31 %	22.48 %	17	28	0,14646699	0,77219008
% Effector memory CD8+ T cells	CD8+ T cells	7.5 %	11.44 %	17	28	0,60868413	0,06571372
% EMRA CD8+ T cells	CD8+ T cells	30.48 %	45.76 %	17	28	0,58592034	0,04198928
% Naive B cells	B cells	83.76 %	81.87 %	17	28	-0,0328609	0,58595842
% Memory B cells	B cells	16.24 %	18.13 %	17	28	0,15853257	0,58595842
% IgD+ memory B cells	Memory B cells	21.84 %	13.52 %	17	23	-0,6915886	0,04803052
% IgD- memory B cells	Memory B cells	78.16 %	86.48 %	17	23	0,14588778	0,04803052
% CD56bright NK cells	NK cells	6.24 %	2.81 %	17	28	-1,1521417	2,91E-05
% CD56dim NK cells	NK cells	93.76 %	97.19 %	17	28	0,05189189	2,91E-05
% NKG2A+ KIR+ CD57+ CD56dim NK cells	CD56dim NK cells	3.49 %	4.82 %	17	28	0,46470857	0,71955557
% NKG2A- KIR+ CD57+ CD56dim NK cells	CD56dim NK cells	12.96 %	16.15 %	17	28	0,31661505	0,75451763
% NKG2A+ KIR- CD57+ CD56dim NK cells	CD56dim NK cells	10.44 %	9.38 %	17	28	-0,1539872	0,91701338
% NKG2A- KIR- CD57+ CD56dim NK cells	CD56dim NK cells	8.62 %	8.53 %	17	28	-0,0149587	0,73697003
% NKG2A+ KIR+ CD57- CD56dim NK cells	CD56dim NK cells	4.52 %	4.37 %	17	28	-0,0461083	0,88036026
% NKG2A- KIR+ CD57- CD56dim NK cells	CD56dim NK cells	10.74 %	11.97 %	17	28	0,15730461	0,50865543
% NKG2A+ KIR- CD57- CD56dim NK cells	CD56dim NK cells	19.81 %	19.32 %	17	28	-0,0358563	0,93540976
% NKG2A- KIR- CD57- CD56dim NK cells	CD56dim NK cells	22.08 %	16.9 %	17	28	-0,385279	0,09440922
% NKG2C+ CD56dim NK cells	CD56dim NK cells	3.56 %	5 %	17	28	0,48672765	0,35894261
% Classical monocytes	Monocytes	87.76 %	85.08 %	17	28	-0,0448749	0,38393621
% Int./non-class. monocytes	Monocytes	12.24 %	14.92 %	17	28	0,28647881	0,38393621

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