

Supplementary Table 1. Definition of immune cell subsets with markers

Cell name	Markers
<i>Lineage cell</i>	
Monocyte	CD3 ⁻ CD14 ⁺ CD19 ⁻ CD56 ⁻
NK	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁺
CD4 NK	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁺ CD8 ⁻
CD8 NK	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁻ CD8 ⁺
NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺
DC	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD11c ⁺
B	CD3 ⁻ CD14 ⁻ CD19 ⁺ CD56 ⁻
<i>T lymphocyte</i>	
Total T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻
αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻
γδ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁻ TCR _{γδ} ⁺
CD4 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁺ CD8 ⁻
CD8 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁻ CD8 ⁺
Naïve CD4 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁺ CD8 ⁻ CD25 ⁻ CD69 ⁻
Naïve CD8 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁻ CD8 ⁺ CD25 ⁻ CD69 ⁻
CD25 ⁺ CD4 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁺ CD8 ⁻ CD25 ⁺ CD69 ⁻
CD25 ⁺ CD8 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁻ CD8 ⁺ CD25 ⁺ CD69 ⁻
Effector CD4 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁺ CD8 ⁻ CD25 ⁻ CD69 ⁺
Effector CD8 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁻ CD8 ⁺ CD25 ⁻ CD69 ⁺
Immediately activated CD4 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁺ CD8 ⁻ CD27 ⁻ CD28 ⁻
Immediately activated CD8 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁻ CD8 ⁺ CD27 ⁻ CD28 ⁻
Resting CD4 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁺ CD8 ⁻ CD27 ⁺ CD28 ⁺
Resting CD8 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁻ CD8 ⁺ CD27 ⁺ CD28 ⁺
<i>Regulatory cells</i>	
CD4 NKreg	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁺ CD8 ⁻ FoxP3 ⁺ CD25 ⁺

CD8 NKreg	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁻ CD8 ⁺ FoxP3 ⁺ CD25 ⁺
CD4 NKTreg	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁺ CD8 ⁻ FoxP3 ⁺ CD25 ⁺
CD8 NK Treg	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁻ CD8 ⁺ FoxP3 ⁺ CD25 ⁺
CD4 Treg	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁺ CD8 ⁻ FoxP3 ⁺ CD25 ⁺
CD8 Treg	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁻ CD8 ⁺ FoxP3 ⁺ CD25 ⁺
MDSC	CD3 ⁻ CD14 ⁺ CD19 ⁻ CD56 ⁻ CD11b ⁺ HLA-DR ⁻
Myeloid cell	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD11b ⁺ HLA-DR ⁻
AI-MC-1	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD11b ⁺ HLA-DR ⁻ CD33 ⁺ CD39 ⁺ CD13 ^{hi} CD11c ⁺
AI-MC-2	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD11b ⁺ HLA-DR ⁻ CD33 ⁺ CD39 ⁻ CD13 ^{dim} CD11c ⁺
<i>PD-1⁺ cells</i>	
PD-1 ⁺ PBMC	PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ monocyte	CD3 ⁻ CD14 ⁺ CD19 ⁻ CD56 ⁻ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ NK	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁺ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ CD4 NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁺ CD8 ⁻ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ CD8 NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁻ CD8 ⁺ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ DC	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD11c ⁺ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ γδ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁻ TCR _{γδ} ⁺ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ CD4 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁺ CD8 ⁻ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ CD8 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁻ CD8 ⁺ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ naive CD4 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁺ CD8 ⁻ CD25 ⁻ CD69 ⁻ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ naive CD8 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁻ CD8 ⁺ CD25 ⁻ CD69 ⁻ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ CD25 ⁺ CD4 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁺ CD8 ⁻ CD25 ⁺ CD69 ⁻ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ CD25 ⁺ CD8 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁻ CD8 ⁺ CD25 ⁺ CD69 ⁻ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ effector CD4 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁺ CD8 ⁻ CD25 ⁺ CD69 ⁺ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ effector CD8 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁻ CD8 ⁺ CD25 ⁺ CD69 ⁺ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ Immediately activated CD4 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁺ CD8 ⁻ CD27 ⁻ CD28 ⁻ PD-1 ⁺ PD-L1 ⁻

PD-1 ⁺ Immediately activated CD8 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁻ CD8 ⁺ CD27 ⁻ CD28 ⁻ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ Resting CD4 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁺ CD8 ⁻ CD27 ⁺ CD28 ⁺ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ Resting CD8 αβ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ TCR _{αβ} ⁺ TCR _{γδ} ⁻ CD4 ⁻ CD8 ⁺ CD27 ⁺ CD28 ⁺ PD-1 ⁺ PD-L1 ⁻
PD-1 ⁺ B	CD3 ⁻ CD14 ⁻ CD19 ⁺ CD56 ⁻ PD-1 ⁺ PD-L1 ⁻
PD-L1⁺ cells	
PD-L1 ⁺ PBMC	PD-1 ⁻ PD-L1 ⁺
PD-L1 ⁺ monocyte	CD3 ⁻ CD14 ⁺ CD19 ⁻ CD56 ⁻ PD-1 ⁻ PD-L1 ⁺
PD-L1 ⁺ NK	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁺ PD-1 ⁻ PD-L1 ⁺
PD-L1 ⁺ NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ PD-1 ⁻ PD-L1 ⁺
PD-L1 ⁺ CD4 NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁺ CD8 ⁻ PD-1 ⁻ PD-L1 ⁺
PD-L1 ⁺ CD8 NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁻ CD8 ⁺ PD-1 ⁻ PD-L1 ⁺
PD-L1 ⁺ DC	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD11c ⁺ PD-1 ⁻ PD-L1 ⁺
PD-L1 ⁺ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ PD-1 ⁻ PD-L1 ⁺
PD-L1 ⁺ CD4 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁺ CD8 ⁻ PD-1 ⁻ PD-L1 ⁺
PD-L1 ⁺ CD8 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁻ CD8 ⁺ PD-1 ⁻ PD-L1 ⁺
PD-L1 ⁺ B	CD3 ⁻ CD14 ⁻ CD19 ⁺ CD56 ⁻ PD-1 ⁻ PD-L1 ⁺
PD1⁺PD-L1⁺ cells	
PD-1 ⁺ PD-L1 ⁺ PBMC	PD-1 ⁺ PD-L1 ⁺
PD-1 ⁺ PD-L1 ⁺ monocyte	CD3 ⁻ CD14 ⁺ CD19 ⁻ CD56 ⁻ PD-1 ⁺ PD-L1 ⁺
PD-1 ⁺ PD-L1 ⁺ NK	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁺ PD-1 ⁺ PD-L1 ⁺
PD-1 ⁺ PD-L1 ⁺ NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ PD-1 ⁺ PD-L1 ⁺
PD-1 ⁺ PD-L1 ⁺ CD4 NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁺ CD8 ⁻ PD-1 ⁺ PD-L1 ⁺
PD-1 ⁺ PD-L1 ⁺ CD8 NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁻ CD8 ⁺ PD-1 ⁺ PD-L1 ⁺
PD-1 ⁺ PD-L1 ⁺ DC	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD11c ⁺ PD-1 ⁺ PD-L1 ⁺
PD-1 ⁺ PD-L1 ⁺ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ PD-1 ⁺ PD-L1 ⁺
PD-1 ⁺ PD-L1 ⁺ CD4 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁺ CD8 ⁻ PD-1 ⁺ PD-L1 ⁺
PD-1 ⁺ PD-L1 ⁺ CD8 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁻ CD8 ⁺ PD-1 ⁺ PD-L1 ⁺
PD-1 ⁺ PD-L1 ⁺ B	CD3 ⁻ CD14 ⁻ CD19 ⁺ CD56 ⁻ PD-1 ⁺ PD-L1 ⁺
MHC II⁺ cells	
MHC II ⁺ monocyte	CD3 ⁻ CD14 ⁺ CD19 ⁻ CD56 ⁻ MHC II ⁺
MHC II ⁺ NK	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁺ MHC II ⁺
MHC II ⁺ NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ MHC II ⁺
MHC II ⁺ CD4 NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁺ CD8 ⁻ MHC II ⁺
MHC II ⁺ CD8 NKT	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁺ CD4 ⁻ CD8 ⁺ MHC II ⁺
MHC II ⁺ DC	CD3 ⁻ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD11c ⁺ MHC II ⁺

MHC II ⁺ T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ MHC II ⁺
MHC II ⁺ CD4 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁺ CD8 ⁻ MHC II ⁺
MHC II ⁺ CD8 T	CD3 ⁺ CD14 ⁻ CD19 ⁻ CD56 ⁻ CD4 ⁻ CD8 ⁺ MHC II ⁺
MHC II ⁺ B	CD3 ⁻ CD14 ⁻ CD19 ⁺ CD56 ⁻ MHC II ⁺

DC, dendritic cell; MHC II, major histocompatibility complex class II; NK, natural killer cell; NKT, natural killer T cell; PD-1, programmed cell death 1; PD-L1, programmed cell death ligand 1; TCR, T cell receptor.