

SUPPLEMENTARY TABLE

Supplementary Table 1. The gene marker of the 23 types of immune cell.

Activated B cell:	ADAM28	CD180	CD79B	BLK	CD19	MS4A1	TNFRSF17	IGHM	
	GNG7	MICAL3	SPIB	HLA-DOB	IGKC	PNOC	FCRL2	BACH2	CR2
	AKNA	ARHGAP25	CCL21	CD27	CD38	CLEC17A	CLEC9A	CLECL1	
Activated CD4 T cell:	AIM2	BIRC3	BRIP1	CCL20	CCL4	CCL5	CCNB1	CCR7	
	DUSP2	ESCO2	ETS1	EXO1	EXOC6	IARS	ITK	KIF11	KNTC1
	PSAT1	RGS1	RTKN2	SAMSN1	SELL	TRAT1		NUF2	PRC1
Activated CD8 T cell:	ADRM1	AHSA1	C1GALT1C1	CCT6B	CD37	CD3D	CD3E		
	CD3G	CD69	CD8A	CETN3	CSEIL	GEMIN6	GNLY	GPT2	GZMA
	GZMK	IL2RB	LCK	MPZL1	NKG7	PIK3IP1	PTRH2	TIMM13	ZAP70
Activated dendritic cell:	ABCD1	C1QC	CAPG	CCL3L3	CD207	CD302	ATP5B	ATP5L	
	ATP6V1A	BCL2L1	C1QB	SNURF	SPCS3	CCNA1	CEACAM8	NOS2	SRA1
	TNFRSF6B	TREM1	TREML1	RHOA	SLC25A37	TNFSF14	TREML4	VNN2	XPO6
	CLEC4C	TNFAIP2	UBD	ACTR3	RAB1A	SLA	HLA-DQA2	SIGLEC5	SLAMF9
CD56bright natural killer cell:	ABAT	C11orf75	C5orf15	CDHR1	DCAF12	DYNLL1			
	GPR137B	HCP5	HDGFRP2	KRT86	MLST8	ELMOD3	ENTPD5	FAM119A	FAM179A
	CLIC2	COX7A2L	CREB3L4	CSF1	CSNK2A2	CSTA	CSTB	CTPS	CTSD
	GATA2	GMPR	HDC	HEY1	HOXA1	HS2ST1	HS3ST1	BCL11B	CDH3
	NAA16	CIQA	CIQB	CYP27B1	EIF3M				MYL6B
CD56dim natural killer cell:	CYP27A1	DDX55	DYRK2	RPL37A	NOTCH3	AKR7A3			
	GPRC5C	GRIN1	HLA-E	PORCN	PSMC4	UPP1	IL21R	KIR2DS1	KIR2DS2
	KIR2DS5								
Eosinophil:	GIPR	KRT18P50	LRMP	FOSB	RRP12	GPR183	NR4A3	ST3GAL6	
	DEPDC5	PDE6C	PKD2L2	GPR65	IL5RA	P2RY14	DACH1	DAPK2	EMR3
Gamma delta T cell:	ACP5	AQP9	BTN3A2	C1orf54	CARD8	CCL18	CD209	CD33	
	CD36	CDK5	IL10RB	KLRF1	LGALS1	MAPK7	KLHL7	KRT80	LAMC1
	LMNB1	MEIS3P1	MPL	FABP1	FABP5	FADD	MFAP3L	MINPP1	RPS24
	RPS9	DBNL	CCL13						RPS7
Immature B cell:	CD22	CYBB	FAM129C	FCRL1	FCRL3	FCRL5	FCRLA	HDAC9	
	HLA-DQA1	HVCN1	KIAA0226	NCF1	NCF1B	P2RY10	SP100	TXNIP	STAP1
	TAGAP	ZCCHC2							
Immature dendritic cell:	ACADM	AHCYL1	ALDH1A2	ALDH3A2	ALDH9A1	ALOX15			
	AMT	ARL1	ATIC	ATP5A1	CAPZA1	LILRA5	RDX	RRAGD	TACSTD2
	RAB38	PLAU	CSF3R	SLC18A2	AMPD2	CLTB	C1orf162		INPP5F
MDSC:	CCR2	CD14	CD2	CD86	CXCR4	FCGR2A	FCGR2B	FCGR3A	FERMT3
	GPSM3	IL18BP	IL4R	ITGAL	ITGAM	PARVG	PSAP	PTGER2	PTGES2
	S100A9								S100A8
Macrophage:	AIF1	CCL1	CCL14	CCL23	CCL26	CD300LB	CNR1	CNR2	EIF1
	EIF4A1	FPR1	FPR2	FRAT2	GPR27	GPR77	RNASE2	MS4A2	BASP1
	HK3	VNN1	FES	NPL	FZD2	FAM198B	HNMT	SLC15A3	CD4
	FRMD4A	CRYBB1	HRH1	WNT5B					TXNDC3
Mast cell:	ADAMTS3	CPA3	CMA1	CTSG	ARHGAP15	CPM	FCN1	FTL	HSPA6

ITGA9 RNASE3 S100A4 SIGLEC8 SLC6A4 PTGS2 EGR3 PILRA
 Monocyte: ASGR2 CFP ASGR1 CD1D UPK3A ACTG1 ANXA5 ATP6V1B2
 CFL1 DAZAP2 CTBS EMR4P HIVEP2 MARCKSL1 MBP MMP15 PNPLA6
 TMBIM6 PQBP1 TEX264 IKZF1
 Natural killer T cell: BTN2A2 CD101 CD109 CNPY3 CNPY4 CREB1 CRTC2 CRTC3
 CSF2 KLRC1 FUT4 ICAM2 IL32 LAMP2 LILRB5 KLRG1 HSPA4 HSPB6
 ISM2 ITIH2 KDM4C KIR2DS4 KIRREL3 SDCBP NFATC2IP MICB KIR2DL1
 KIR2DL3 KIR3DL1 KIR3DL2 NCR1 FOSL1 TSLP SLC7A7 SPP1 TREM2
 UBASH3A YBX2 CCDC88A CLEC1A THBD PDPN VCAM1 EMR1
 Natural killer cell: AKT3 AXL BST2 CDH2 CRTAM CSF2RA CTSZ CXCL1
 CYTH1 DAXX DGKH DLL4 DPYD ERBB3 F11R FAM27A FAM49A FASLG
 FCGR1A FN1 FSTL1 FUCA1 GBP3 GLS2 GRB2 LST1 BCL2 CDC5L FGF18
 FUT5 FZR1 GAGE2 IGFBP5 KANK2 LDB3
 Neutrophil: CREB5 CDA CHST15 S100A12 APOBEC3A CASP5 MMP25 HAL
 Clorf183 FFAR2 MAK CXCR1 STEAP4 MGAM BTNL8 CXCR2 TNFRSF10C
 VNN3
 Plasmacytoid dendritic cell: CBX6 DAB2 DDX17 HIGD1A IDH3A IL3RA MAGED1
 NUCB2 OFD1 OGT PDIA4 SERTAD2 SIRPA TMED2 ENG FCAR IGF1
 ITGA2B GABARAP GPX1 KRT23 PROK2 RALB RETNLB RNF141 SEC14L1
 SEPX1 EMP3 CD300LF ABTB1 KLHL21 PHRF1
 Regulatory T cell: CCL3L1 CD72 CLEC5A FOXP3 ITGA4 L1CAM LIPA LRP1
 LRRC42 MARCO MMP12 MNDA MRC1 MS4A6A PELO PLEK PRSS23 PTGIR
 ST8SIA4 STAB1
 T follicular helper cell: B3GAT1 CDK5R1 PDCD1 BCL6 CD200 CD83 CD84 FGF2
 GPR18 CEBPA CECR1 CLEC10A CLEC4A CSF1R CTSS DMN DPP4 LRRC32
 MC5R MICA NCAM1 NCR2 NRP1 PDCD1LG2 PDCD6 PRDX1 RAE1 RAET1E
 SIGLEC7 SIGLEC9 TYRO3 CHST12 CLIC3 IVNS1ABP KIR2DL2 LGMN
 Type 1 T helper cell: CD70 TBX21 ADAM8 AHCYL2 ALCAM B3GALNT1 BBS12
 BST1 CD151 CD47 CD48 CD52 CD53 CD59 CD6 CD68 CD7 CD96
 CFHR3 CHRM3 CLEC7A COL23A1 COL4A4 COL5A3 DAB1 DLEU7 DOC2B
 EMP1 F12 FURIN GAB3 GATM GFPT2 GPR25 GREM2 HAVCR1 HSD11B1
 HUNK IGF2 RCSD1 RYR1 SAV1 SELE SELP SH3KBP1 SIT1 SLC35B3
 SIGLEC10 SKAP1 THUMP2 TIGIT ZEB2 ENC1 FAM134B FBXO30 FCGR2C
 STAC LTC4S MAN1B1 MDH1 MMD RGS16 IL12A P2RX5 CD97 ITGB4
 ICAM3 METRNL TNFRSF1A IRF1 HTR2B CALD1 MOCOS TRAF3IP2 TLR8
 TRAF1 DUSP14
 Type 17 T helper cell: IL17A IL17RA C2CD4A C2CD4B CA2 CCDC65 CEACAM3
 IL17C IL17F IL17RC IL17RE IL23A ILDR1 LONRF3 SH2D6 TNIP2 ABCA1
 ABCB1 ADAMTS12 ANK1 ANKRD22 B3GALT2 CAMTA1 CCR9 CD40 GPR44
 IFT80
 Type 2 T helper cell: ASB2 CSRP2 DAPK1 DLC1 DNAJC12 DUSP6 GNAI1 LAMP3
 NRP2 OSBPL1A PDE4B PHLDA1 PLA2G4A RAB27B RBMS3 RNF125 Tmprss3
 GATA3 BIRC5 CDC25C CDC7 CENPF CXCR6 DHFR EVI5 GSTA4 HELLS
 IL26 LAIR2