

Table S1 Immune genes downloaded from InnateDB and Immunology Database and Analysis Portal System (ImmPort)

AZGP1	PPP3CC	TNFRSF19	P2RX7	Ddx41	HDGF
B2M	CHP1	TNFRSF1A	Zfp423	DDX41	PIAS3
CALR	PPP3R1	TNFRSF1B	Rel	Tax1bp1	REG1A
CANX	PPP3R2	TNFRSF4	Irf5	TAX1BP1	FGF5
CD1B	CHP2	TNFRSF6B	SLC22A3	Neu1	IGHD3-3
CD1C	NFAT5	TNFRSF8	TPP2	NEU1	TLR8
CD1D	NFATC1	TRHR	RPS6KA5	Aqp3	CD300E
CD1E	NFATC2	VIPR2	IFITM3	AQP3	C7
CD4	NFATC3	PTPN11	INSIG1	Elf1	LCN6
CD8A	HRAS	ITGB2	AMFR	ELF1	PLXNB3
CD8B	KRAS	NCR2	Eif4ebp2	Cd8a	CARD16
CD74	NRAS	LCK	Eif4ebp1	Muc1	AQP9
CREB1	BCL10	NCR1	Anxa1	MUC1	FOS
CTSB	MALT1	NCR3	Sirpa	Il1r2	LIFR
CTSE	CHUK	CD247	Itgam	Rpl19	TMSB15A
CTSL	IKBKB	ZAP70	Clec7a	RPL19	IGLV7-43
CTSS	IKBKG	LCP2	Ptpn11	Selk	CAT
FCGRT	NFKBIA	LAT	Irak4	BCL2	SAA1
HFE	NFKBIB	PLCG1	Cd40	Il4ra	TFR2
HLA-A	NFKBIE	SH3BP2	Cd86	Sftpd	IGKV1-8
HLA-B	CR2	FYN	Icam1	Ifit3	CD27
HLA-C	PIK3R1	SHC2	Tmem126a	mmu-mir-29b-1	INSL4
HLA-DMA	PIK3R2	SHC4	TP53	Pltp	IGLV1-36
HLA-DMB	PIK3R3	SHC1	Atg7	PLUNC	IGHV3-64
HLA-DOA	PIK3CA	GRB2	Arl5b	Ltbr	PRF1
HLA-DOB	PIK3CB	SOS1	MIR548G	Rag1	FCER1G
HLA-DPA1	PIK3CD	SOS2	Cxcl2	RAG1	IL12RB2
HLA-DPB1	AKT3	ARAF	Cebpa	Tnfsf9	CXCR1
HLA-DQA1	AKT1	BRAF	TLR6	Tnfrsf9	GPR17
HLA-DQA2	AKT2	RAF1	Cxcr6	Snca	MUC4
HLA-DQB1	GSK3B	HCST	Cxcl16	Tnfrsf1a	IGHV3-43
HLA-DRA	INPP5D	CD48	Il1r2	Trem12	THPO
HLA-DRB1	CD22	PRKCA	Il1r1	TREML2	IGKV1-33
HLA-DRB3	CD72	SH2D1A	Adam17	Cbl	MIR23B
HLA-DRB4	PTPN6	FAS	Il15	Hspd1	IGKV1-9
HLA-DRB5	FCGR2B	GZMB	Il28ra	Pml	TRAV1-1
HLA-F	RASGRP3	CASP3	Nlrc4	Pin1	IL31RA
HLA-G	PLCG2	BID	Nod1	PIN1	TNFRSF13C
HLA-H	PRKCB	CD3D	SMAD4	Hrg	SELE
MR1	IGH	CD3E	SMAD3	Notch1	IGHV1-24

HSPA1A	IGHD1-1	CD3G	MIR181A2	NOTCH1	TSHR
HSPA1B	IGHD1-14	PTPRC	Tyrobp	Gbp2	PGF
HSPA1L	IGHD1-20	ITK	Relb	Hspa14	PDGFB
HSPA2	IGHD1-26	TEC	Nfkb1	HSPA14	BMP8B
HSPA4	IGHD1-7	NCK1	Ripk3	Tgtp1	IGHJ1
HSPA8	IGHD2-15	NCK2	ATF2	Igtp	LST1
HSP90AA1	IGHD2-21	GRAP2	SCN5A	Edn1	PGLYRP4
HSP90AB1	IGHD2-8	PAK2	ECSIT	Socs1	ENDOU
ICAM1	IGHD3-10	PAK3	Slc11a1	Nras	IGHV1-45
IFNA1	IGHD3-16	PAK4	USP2	Irgm1	IGLV10-54
IFNA2	IGHD4-11	PAK5	Prl	Aimp1	IGHV4-34
IFNA4	IGHD4-17	RHOA	Myc	Gm16379	CAMK2A
IFNA5	IGHD4-23	CDC42	ARG1	Duox2	PTGFR
IFNA6	IGHD4-4	CD28	PTEN	Rarres2	IL36G
IFNA7	IGHD5-12	ICOS	Pik3cg	RARRES2	SFTPA1
IFNA8	IGHD5-18	MAP3K8	Rab8a	Kcnj8	OAS1
IFNA10	IGHD5-24	MAP3K14	PRKX	Nfatc4	GDNF
IFNA13	IGHD5-5	CBL	PRKACA	Nfatc3	CLEC9A
IFNA14	IGHD6-13	CBLB	S1pr1	Clec1b	ITGAL
IFNA16	IGHD6-19	RASGRP1	MIR124-1	CLEC1B	EDN2
IFNA17	IGHD6-6	TRAC	MIR203	Dhx36	PTGES
IFNA21	IGHD7-27	TRAJ2	Trem1	DHX36	OLFM4
KIR2DL1	IGHE	TRAJ3	Cxcr2	Ddx21	LTA
KIR2DL2	IGHJ4	TRAJ4	Adrbk1	DDX21	NOS1
KIR2DL3	IGHJ5	TRAJ5	MIR122	Ddx1	SHC3
KIR2DL4	IGHJ6	TRAJ6	hsa-mir-146a	DDX1	PLA2G4A
KIR2DS1	IGHV1-8	TRAJ7	RIPK2	Cd97	HSP90B1
KIR2DS3	IGHV1-38-4	TRAJ8	Il20rb	CD97	F2RL3
KIR2DS4	IGHV1-69-2	TRAJ9	Il20ra	Adrb2	IL1RL2
KIR2DS5	IGHV3-30-3	TRAJ10	Il19	Jam3	MCHR1
KIR3DL1	IGHV3-30-5	TRAJ11	Ptges	AHR	IGKV2D-28
KIR3DL2	IGHV3-9	TRAJ12	MFF	Hif1a	CD244
KLRC1	IGHV3-38-3	TRAJ13	DNM1L	Ubqln1	NLRP11
KLRC2	IGHV3-69-1	TRAJ14	Mir302b	UBQLN1	IGLV9-49
KLRC3	IGHV4-30-1	TRAJ15	MAPK9	Pmaip1	CXCR2
KLRD1	IGHV4-30-2	TRAJ16	MAP2K7	Ip6k1	GATA6
CIITA	IGHV4-30-4	TRAJ17	Il5	IP6K1	SIGLEC1
MICA	IGHV4-38-2	TRAJ18	Il13	Khsrp	IGKV5-2
MICB	IGHV5-10-1	TRAJ19	Kdm4a	KHSRP	HSPD1
NFYA	IGHV7-4-1	TRAJ20	Vegfc	Ifnar1	C8G
NFYB	IGK	TRAJ21	Flt4	Tpst1	CTSG
NFYC	IGKDEL	TRAJ22	Nlrp1a	TPST1	BCL2A1
LGMN	IGKJ	TRAJ23	Hdac1	Plec	PTHLH

PSMB8	IGKJ1	TRAJ24	Daxx	PLEC	IGKV1-17
PSMC1	IGKJ2	TRAJ25	Ii12b	VENTX	PTGER4
PSMC2	IGKJ3	TRAJ26	Prdm1	Ccr3	CLEC4D
PSMC3	IGKJ4	TRAJ27	MYH9	Vldlr	IGKV2D-24
PSMC4	IGKV@	TRAJ28	HNRNPL	VLDLR	CFP
PSMC5	IGL	TRAJ29	IFIT1	Cflar	IL5RA
PSMC6	IGLC1	TRAJ30	TRIM14	CFLAR	ANGPTL7
PSMD1	IGLJ	TRAJ31	Mir149	Havcr2	RAC3
PSMD2	IGLJ4	TRAJ32	Sykb	Cdk6	TRAF2
PSMD3	IGLJ5	TRAJ33	TXNIP	CDK6	RLN3
PSMD4	IGLJ6	TRAJ34	Krt16	MIR107	CORT
PSMD5	IGLJ7	TRAJ35	Cd51	Gpr77	IGLV5-45
PSMD7	IGLV@	TRAJ36	MIR208B	GPR77	CTSK
PSMD8	IGLV3-22	TRAJ37	IL28B	Lilrb3	IGHV3-48
PSMD10	IGLV5-39	TRAJ38	Fscn1	Pik3ap1	CTLA4
PSMD11	C3	TRAJ39	AICDA	PIK3AP1	IGLC7
PSMD13	C5	TRAJ40	PARD3	Avp	SFTPA2
PSME1	CCL3P1	TRAJ41	TICAM2	Casp8	UCHL1
PSME2	CKLF	TRAJ42	TICAM1	CASP8	PRKCQ
RELB	CX3CL1	TRAJ43	Cd36	SREBF1	ACVRL1
RFX5	CXCL17	TRAJ44	BGN	Srebf1	TNFSF4
RFXAP	LECT2	TRAJ45	TIRAP	Zc3hav1	IGKV2-24
SLC10A2	PPBPP1	TRAJ46	C3ar1	ATG5	TRIM58
TAP1	SBDS	TRAJ47	Rheb	Atg12	IGHM
TAP2	SEMA3C	TRAJ48	Tsc1	ATG12	NR2F6
TAPBP	SEMA3E	TRAJ49	Mtor	MIR373	PRKCE
THBS1	SEMA3F	TRAJ50	Kdr	MIR372	IGKV1D-39
KLRC4	SEMA4A	TRAJ52	Mir126	Akna	IGKV1D-42
AP3B1	SEMA4D	TRAJ53	Stat4	AKNA	MMP7
RFXANK	SEMA4F	TRAJ54	ARF6	IRAK2	IGHG1
PSMD6	SEMA4G	TRAJ56	Dusp16	Pglyrp4	TRIM45
PSME3	SEMA5B	TRAJ57	CTSL1	Pglyrp1	SCT
PSMD14	SEMA6B	TRAJ58	GNB2L1	Gbp10	ARRB1
CLEC4M	SEMA6C	TRAJ59	Rnasel	Gbp7	WFDC2
IFI30	SLIT1	TRAJ61	Mapk8	Gbp6	BPIFA1
PROCR	TYMP	TRAV1-2	ELF4	Gbp1	FABP5
ADRM1	CCR9	TRAV2	Dhx58	Tnfsf11	TGFBR3
ECPAS	CMKLR1	TRAV3	TNK1	Arhgap15	CDKN2A
TRPC4AP	CXCR3	TRAV4	Reg3g	ARHGAP15	IGHD6-25
CD209	CXCR5	TRAV5	Nlr1	Bid	ANGPT1
UBXN1	ACKR3	TRAV7	SLX4	Thbs1	IGHV3-53
ERAP1	CYSLTR1	TRAV8-1	Bcl211	Tecpr1	TRIM6
TAPBPL	CYSLTR2	TRAV8-2	Bcl2	TECPR1	LILRB3

KIR2DL5A	EDNRA	TRAV8-3	Ii17c	HMG2	HMGB3
ERAP2	GPR32	TRAV8-4	Ii27	Map3k5	BPHL
ULBP3	GPR33	TRAV8-6	Gata3	MAP3K5	IGKV3D-20
ULBP2	PTGDR2	TRAV8-7	EGLN2	Grn	IGLC3
ULBP1	C5AR2	TRAV9-1	HIF1AN	Tlr6	VIP
KIR3DL3	LTB4R2	TRAV9-2	Ifi202b	Cd46	MIR23A
RAET1E	PLAUR	TRAV10	Ii9	CD46	HTR3C
UBR1	PLXNA1	TRAV12-1	CRKL	Nr1h3	SPI1
RAET1G	PLXNA2	TRAV12-2	Numb	Nr4a3	ADCY8
PI3	PLXNA4	TRAV12-3	XRCC5	H2-Ab1	PF4
DEFB4A	PLXNB1	TRAV13-1	XRCC6	H2-Aa	IGKV1D-8
REG3G	PLXNB2	TRAV13-2	Ifit1	Srxn1	XDH
CXCL16	PLXNC1	TRAV14DV4	Mfn2	Gp2	CST4
CXCL8	PLXND1	TRAV16	Msr1	GP2	NR4A1
CXCL5	PTAFR	TRAV17	Marco	Ripk2	ANGPT4
CXCL11	ROBO1	TRAV19	CEBPB	Hrh4	DCN
CXCL6	RXFP3	TRAV20	Nos2	HRH4	APLNR
CXCL1	XCR1	TRAV21	IL28A	Plg	IGHV1-3
XCL1	ADM	TRAV22	Nfe2l2	PLG	UTS2
DEFB103B	AMBN	TRAV23DV6	Keap1	Ccl2	IGLV3-10
CCL13	AMELX	TRAV24	Cebpb	Impdh2	GFAP
DEFB1	AREG	TRAV25	TRIM25	IMPDH2	IGKV1-5
CCL8	CDNF	TRAV26-1	RNF135	C1qc	SOCS3
ELANE	AVP	TRAV26-2	Traf5	C1QC	ARG2
DEFB103A	BMP1	TRAV27	Mertk	C1qb	IGHV3-33
DEFA1	BMP10	TRAV29DV5	Axl	C1qa	IGLV3-27
TMSB10	BMP15	TRAV30	Tyro3	Ccbp2	EDN3
DEFA6	BMP3	TRAV34	LGALS9	CCBP2	S100A16
DEFA5	BMP4	TRAV35	HDAC11	Nfkbia	CRIM1
DEFA4	BMP5	TRAV36DV7	MIR145	Xiap	IGHV4-28
LCN1	BMP6	TRAV38-1	PARK2	XIAP	FLI1
BPI	BMP7	TRAV38-2DV8	POLR2F	Birc3	FGFR2
S100A9	BTC	TRAV39	MIR141	Birc2	INSL3
S100A8	MYDGF	TRAV40	MIR21	BIRC2	MDK
DCD	CALCA	TRAV41	UCP2	Hspa1a	HTR3A
HTN3	CCK	TRBC1	MIR133A1	Pglyrp2	TRGJP1
LCN8	CD320	TRBC2	RNF125	Defb3	OXT
DEFA1B	ADA2	TRBD1	Zbtb20	Raet1c	IFNE
CCR10	CER1	TRBD2	ASCC3	Raet1a	CXCL14
CELA1	CGB3	TRBJ1-1	WNT9B	Crp	P2RY14
DEFB106A	CGB1	TRBJ1-2	WNT2B	Lgmn	S100A5
PENK	CGB2	TRBJ1-3	VPS45	SREBF2	IGLV6-57
BPIFC	CGB5	TRBJ1-4	Sarm1	Cops5	IGKV2-30

BPIFB6	CGB8	TRBJ1-5	TLR9	COP55	OTUB2
LEAP2	CHGA	TRBJ1-6	ANKRD17	Xbp1	VEGFD
LCN9	CLEC11A	TRBJ2-1	Klf4	XBP1	TNFSF11
TMSB4X	CMTM3	TRBJ2-2	ERN1	NFIL3	UCN
ZC3HAV1	CMTM4	TRBJ2-3	Coch	Mbl2	DEFA3
S100A13	CMTM5	TRBJ2-4	Cdc42	Ccr6	S100A7
S100A6	CMTM6	TRBJ2-5	MIR15B	Trp63	FCN3
DEFB119	CMTM7	TRBJ2-6	Lgr4	TP63	ACE2
DEFB107A	CMTM8	TRBJ2-7	Ppp1cc	MTOR	CALCRL
DEFB105A	CNTF	TRBV2	PPP1CC	Cltc	RCAN1
SERPIND1	CRH	TRBV3-1	Ppp1ca	CLTC	C8B
DEFB129	CSF1	TRBV4-1	PPP1CA	Fgf7	S100A2
DEFB127	CSF2	TRBV4-2	Mir203	Cebpe	ACKR1
DEFB104A	CSH1	TRBV4-3	Psmb8	MoleculeID 216094	IGLV1-40
DEFB126	CSH2	TRBV5-1	MIR517C	CEBPE	DUOX1
DEFB106B	CSHL1	TRBV5-4	MIR517A	CEBPD	SLC11A1
DEFB104B	CSPG5	TRBV5-5	Ifne	Coro2a	CGB7
DEFB107B	CTF1	TRBV5-6	Csf2	CORO2A	PIK3R5
PGLYRP2	DKK1	TRBV5-7	Ii21	Hmox1	IGKV1D-33
S100A10	EBI3	TRBV5-8	Mfge8	Irak2	ZBP1
DEFB125	EPGN	TRBV6-1	MIR3148	TBKBP1	AGTR2
DEFB123	EPO	TRBV6-2	Plunc	SIAH2	IGLV8-61
DEFB105B	EREG	TRBV6-3	Serpinb2	CD37	IGKV1-27
DEFB132	ESM1	TRBV6-4	SFTPA1B;SFTPA1	SLC15A4	CGA
BPIFB3	FAM3B	TRBV6-5	TRIM63	SYP	IGLV5-52
S100A11	FAM3D	TRBV6-6	TRIM61	MERTK	TRAV18
S100A1	FGF1	TRBV6-7	TRIM60	NLRP12	FGF14
DEFB128	FGF12	TRBV6-8	TRIM55	NLRP2	JAM3
DEFB108B	FGF16	TRBV6-9	TRIM49	NLRP9	PLAU
HTN1	FGF17	TRBV7-2	TRIM42	NLRP13	VIPR1
LMBR1L	FGF18	TRBV7-3	TRIM38	NLRP8	RASGEF1B
S100A7A	FGF21	TRBV7-4	TRIM37	NLRP5	DES
DEFB118	FGF22	TRBV7-6	TRIM36	PSMA7	UNC5CL
TMSB4Y	FGF23	TRBV7-7	TRIM24	CDK9	IGKV1-39
DEFB131A	FGF3	TRBV7-8	TRIM23	C8A	IGKC
DEFB134	FGF4	TRBV7-9	MID2	C4A	IL20RB
DEFB130A	FGF6	TRBV9	TRIM67	Mbl1	CCRL2
DEFB124	FGF7	TRBV10-1	TRIM66	Apcs	SH2D1B
DEFB121	FGF8	TRBV10-2	TRIM65	Cfh	PAEP
DEFB116	FGF9	TRBV10-3	TRIM56	PTPN2	GPI
DEFB115	FLT3LG	TRBV11-1	TRIM50	SMAD7	CRLF2
DEFB114	FSHB	TRBV11-2	TRIM13	SOCS6	IRF7
DEFB113	GALP	TRBV11-3	TRIM8	LGALS2	RHBDF2

DEFB112	GAST	TRBV12-3	TRIM32	MAP3K7IP1	AGRP
DEFB110	GCG	TRBV12-4	TRIM26	MLST8	GMFG
TMSB15B	GDF1	TRBV12-5	TRIM21	TCEB2	TRIB3
DEFB133	GDF11	TRBV13	MID1	AMACR;C1QTNF3	IGHA1
S100Z	GDF2	TRBV14	TRIM7	SCARF1	CBLC
MAVS	GDF3	TRBV15	STAT2	CLEC4C	IGKV6D-21
TMSB4XP8	GDF5	TRBV16	MUL1	SIGIRR	CD79A
S100A14	GDF6	TRBV17	Creb1	C19orf29	CCL1
LCN10	GDF7	TRBV18	Lgals9	C9	CXCL9
DEFB136	GDF9	TRBV19	Gabarap	PIAS4	FGF2
DEFB135	GH1	TRBV20-1	MIRLET7B	Pias4	FAM3C
DEFB117	GH2	TRBV24-1	Mir135b	TOLLIP	IGHV3-13
S100A7L2	GHRH	TRBV25-1	Tlr1	ARRB2	IGLV2-33
MBL3P	GHRL	TRBV27	Scaf11	REST	TPSB2
DEFB4B	GIP	TRBV28	Naip5	RCOR1	ANOS1
IFNAR1	GKN1	TRBV29-1	Fer	KAT2B	IGKV6-21
AZU1	GMFB	TRBV30	Rad23a	NLRP1	TNFRSF25
DEFA1A3	GNRH1	TRDC	RAD23A	MTA1	IGHV3-30
LCN1P1	GNRH2	TRDD1	Lum	Mta1	IGHV1-18
S100G	GPHA2	TRDD2	Tacr1	IL8	IGLV1-47
DEFA7P	GPHB5	TRDD3	Nr1h4	CD180	NCKAP1L
DEFB130B	GREM2	TRDJ1	Siglecg	TCEB1	IGKV1D-16
DEFB108F	GRP	TRDJ2	CNOT8	IRAK4	PRKCG
DEFB131C	GUCA2A	TRDJ3	Chat	ITGAM	MSR1
TCHHL1	HDGFL3	TRDJ4	COX5B	SIAH1	IGLV2-18
TINAGL1	IAPP	TRDV1	Ab11	LPCAT2	GAB1
IFNGR1	IFNK	TRDV2	ABL1	MoleculeID 32847	UCN2
SLC22A17	IFNW1	TRDV3	Prkcd	TRADD	MIA
WFIKKN1	IGF1	TRGV9	Tbx21	TNIP3	IGHG3
TGFB1	IGF2	TRGV8	Mir212	MAP3K12	C6
PF4V1	IL12A	TRGV5	MIR212	ELMOD2	BTK
SPAG11B	IL16	TRGV4	Mir132	RNF41	STAP2
NFKB1	IL17B	TRGV3	hsa-mir-132	BCAR1	OSMR
APOBEC3G	IL17F	TRGV2	Cryab	ZMYND11	IGLV1-50
FABP6	IL19	TRGJP	Drd2	CD274	CCL24
NOD2	IL1F10	TRGJ2	Tph1	PDCD1LG2	IGLJ1
MBL2	IL36A	TRGJ1	ITGB3	SMARCE1	IGKV1-6
RBP1	IL36B	TRGC2	Fcnb	NKIRAS2	UBD
TLR2	IL1RN	TRGC1	Fcna	NUMBL	RBP4
SLC40A1	IL20	TRAV6	Glrx	CCDC88A	FCN1
IL1B	IL21	Id2	Hspa1b	RPS19	CCL22
HJV	IL24	Iltifb	Mir497	Camk2a	IL36RN
PLTP	IL25	PRKRA	MOV10	ANXA4	PDIA3

MX1	IL26	DDX3X	Daglb	RIPK1	APOBEC3B
DDX58	IFNL3	MIR136	Eif2ak2	TRAFD1	OBP2A
IFNL1	IL3	Mir146	AXL	ITGA3	SLAMF9
IRF3	IL31	Nod2	MIR187	IRF2BP1	NR1I3
LPA	IL32	Il1a	Pparg	RANBP9	CLEC6A
IFNB1	IL5	EFTUD2	TRIM62	NUP153	JAK3
RBP5	IL6ST	Tlr2	Mir4661	OTUD5	IL17C
FABP3	IL7	Ap3b1	AI607873	LILRA4	DUSP1
FABP2	IL9	Tlr9	Pydc3	BIRC3	IGHV3-15
R3HDML	INHBA	Ifnb1	Pyhin1	CARD18	SSTR1
BPIFA3	INHBC	Atf3	BC094916	CYTIP	NDP
BPIFB1	INS	Nlrp3	Gm4955	MAFB	FGFR4
OASL	INS-IGF2	IL29	TRIM28	Sirt1	ROBO2
RBP7	INSL5	TRAF6	CALCOCO2	SIRT1	PMAIP1
OBP2B	INSL6	Irf3	Foxo3	NFE2L2	GNRHR
LCN15	JAG1	Tbk1	FOXO3	PTCH1	SLPI
FABP12	JAG2	Ppp4c	VTRNA2-1	STAT4	IGKV6D-41
FABP9	FGF7P6	Myd88	Adipoq	IL8RB	CCL14
LCNL1	FGF7P3	Tlr7	Trim56	AAMP	AHNAK
SPAG11A	KITLG	Tslp	Tnfaip8l2	COPS8	TNC
PMP2	LACRT	Chuk	TNFAIP8L2	LRRFIP1	PDF
APOD	LEFTY1	IFIT5	Abca1	NFKB2	SIGLEC7
ORM2	LIF	Stat2	ABCA1	NUP214	LBP
ORM1	LRSAM1	Stat1	Mir467b	MFN2	IGHV4-59
TNF	LTB	Adar	Trp73	GPSM1	MEFV
PRTN3	LTBP2	Ticam1	TP73	CARD9	CAV1
MAPK1	LTBP3	Casp2	MIR10B	FBXW5	CCR8
PML	MLN	Mavs	IRF8	IRAK1BP1	UMODL1
AEN	MSTN	Pcbp2	Calcoco2	KDM1	NPR3
ISG20	NAMPT	Ube2i	SQSTM1	RUNX3	ANGPTL4
BCL3	NENF	Baiap2l1	Mcpt4	MAP3K7IP2	CYBB
ISG20L2	NGF	CASP1	SCAF11	MKNK1	BDNF
NOX3	NMB	PELI3	Txnip	MAP3K4	IGKV1-12
DUOX2	NODAL	Tlr4	Il12a	GNAI3	GALR2
TLR3	CCN3	Peli3	Tlr13	Gnai3	SERPING1
TFRC	NPFF	Atf7	Nlrc3	CD53	GPER1
IFIH1	NPPA	MIR223	NLRC3	SNX27	IGLC6
LRP1	NPPB	Traf6	MIR378	FCGR2A	NR1I2
TRIM5	NPY	Traf3	Cftr	CFH	NR5A2
IDO1	NRG2	Usp25	Mmp9	hsa-mir-146b	IGLV3-12
NEDD4	NRG4	Irf1	Ahsg	MFN1	CASP6
ADIPOQ	NRTN	Cxcl10	AHSG	Mfn1	TRIM71
STAT3	NTF3	Ccl5	Map3k7	Cd14	IGKV3-20

STAT1	NTF4	ITGB1	Olfm4	Gpsm1	IGHV3-7
IFNL2	NTS	DDX60L	Itgb2	Ccdc88a	PROC
SEMG1	NUDT6	HDAC2	Itgax	Mknk1	IL3RA
TNFSF10	OSGIN1	TET2	ITGAX	Spp1	HLA-E
SOCS1	OSM	Hdac2	Ikbke	Vegfa	WDR62
RNASEL	OSTN	Nfkbiz	Masp2	C4bp	SIGLEC5
IRF1	PDGFA	Il6	Ms4a8a	C4BPA	TRAIP
IL15	PDGFC	Tet2	MS4A8B	APCS	CALCB
APOBEC3F	PDGFD	2003/5/1	Casp7	Kitl	MET
PLAAT4	POMC	Bnip3l	CASP7	Pdcd1	MAP1LC3C
CHIT1	PPBPP2	Bnip3	MIR1275	Rftn1	PTH1R
CD40	PPY	Isg15	MIR200C	RFTN1	TSLP
TLR7	PRL	Cdkn1a	MIRLET7C	Hspbp1	IGKV2D-29
PPIA	PRLH	Nfia	Pura	HSPBP1	SEMA3G
ZYX	PROK1	JMJD6	PURA	Akap10	YJEFN3
NLRX1	PSPN	PRMT1	Ace2	AKAP10	IGKV3D-11
PGC	PTH	Lcn2	Eif4e	Ptges2	IGLC2
VEGFA	PTH2	Ireb2	EIF4E	PTGES2	TNFRSF11A
DHX58	PTN	Aco1	Edil3	Stim1	ACKR4
TNFAIP3	PYY	TMEM173	EDIL3	STIM1	IGHD3-22
FCN2	QRFP	Nrip1	NLRP4	Orai1	FLT4
F2R	RABEP1	Bcl11b	NRIP1	ORAI1	TRAF5
ELN	RABEP2	Map3k8	Btk	Itpr3	MIR499A
IL27	RLN1	Egfr	Zc3h12a	ITPR3	KL
MAPT	RLN2	Areg	ZC3H12A	Itpr1	IGHV4-4
LYZ	SCGB3A1	Il33	P2ry14	ITPR1	IGHV3-20
CCL5	AIMP1	Card9	Dusp10	Bcl3	C1QB
LEP	SECTM1	Ikbkb	DUSP10	Lrrfip2	CCL7
CYLD	SLURP1	Nlre5	E2f1	LRRFIP2	IGHV3-38
KLKB1	SST	NLRC5	Rb1	Trib3	MARCO
CSRP1	STC1	NLRP3	RB1	Chga	ALB
MAPK14	STC2	C2	Angpt1	Siglech	CD1A
JUN	TAC1	C4B	Dok3	Siglece	TRGJP2
IRF5	TDGF1	Ddx58	DOK3	Siglec5	SCG2
CCR6	TDGF1P3	Mir485	Dicer1	Siglec1	KCNJ8
GNLY	TG	MIR485	DICER1	SIGLEC15	IL20RA
CD81	TGFB2	Cd47	NLRP6	SIGLEC9	IGHV6-1
EIF2AK2	TGFB3	IFI27	Trim32	SIGLEC8	FPR2
APOM	TNFRSF11B	Clec4n	Tufm	SIGLEC10	IGHJ3
CACYBP	TNFSF13B	Pik3cd	TUFM	Rgmb	IGKV1D-37
NOD1	TNFSF14	IFIT3	mmu-mir-29a	RGMB	SNCA
MAPK8	TNFSF15	MIR146A	Gnai2	4432412L15Rik	IGKV3D-7
MAPK3	TNFSF18	HACE1	GNAI2	Oas3	TNFSF13

BST2	TNFSF8	Casp1	Spink5	Oas2	C1QA
PLA2G2A	TNFSF9	Retnla	Lst1	Oas1h	OPRD1
GRN	TOR2A	Ifngr1	Scarb1	Oas1g	EGR1
NEWENTRY	TSHB	Cxcl13	SCARB1	Oas1f	TRPM2
PDGFRA	TXLNA	Mrc1	Spag11a	Oas1e	BMP8A
GNAI1	UCN3	Ifih1	Tsc22d3	Oas1d	IGHV1-2
WNT5A	UTS2B	Il2rb	TSC22D3	Oas1c	PPARGC1B
ADAR	VEGFB	Ezh2	CLEC7A	Oas1b	INHBE
TYK2	VEGFC	Ifng	Hamp	Oas1a	F2RL2
NOS2	ACVR1B	Irf8	Rhbf2	OAS2	CXCL3
TRAF3	ACVR1C	Sppl3	Plscr1	Ctss	CASP12
TPT1	ACVR2A	Ahr	Ly96	Ctsb	SAMHD1
TPM2	ACVR2B	Ido1	LY96	Lair1	CEACAM1
NEO1	ADIPOR1	Lgals3	LILRA2	LAIR1	ANGPTL3
TLR1	ADIPOR2	Trpm5	Trim21	NLRP10	NPR1
TK2	AMHR2	Il25	Clec9a	DUSP16	PDCD1
PRDX2	ANGPTL2	Rorc	Pacsin1	OTUD7B	COLEC12
FGA	ANGPTL6	Mb21d1	Irak3	ADAM10	A2M
TCF7L2	AR	Tmem173	IRAK3	MAP3K3	F2RL1
TKFC	AVPR1A	TLR5	Eps8	NKIRAS1	IGHG4
NFKBIZ	AVPR1B	Stat6	EPS8	KLK1	IGLV3-9
LMBR1	BMPR1A	Dhcr7	Atf4	C1S	IGKV3-11
EPPIN	BMPR1B	Sc4mol	ATF4	MAP3K1	AMH
SRC	BRD8	Idi1	Nfat5	KPNA1	RBP2
MPO	C3AR1	Srebf2	Ehmt2	C1R	SIRPA
ELAVL1	CALCR	Mir342	EHMT2	LY9	IGLV1-44
ROBO3	CRHR1	Tgfb1	TSC1	Ptch1	PTX3
SP1	CRHR2	Sod1	Sftpa1	ELP2	FGF13
SOD1	CRLF3	LGALS3	1700021K19Rik	HOXA9	AVPR2
DLL4	CSF1R	LGALS1	KIAA0226	GSTP1	IL6
ECD	CSF2RA	Aim2	RIPK3	WDR34	GRK5
DMBT1	CSF2RB	Irf7	Tmed7	ACAP1	LHB
STING1	CSF3R	Cxcr3	TMED7;TICAM2	Cxcl11	IGLV2-14
SKIV2L	EGFR	Cd48	Il1rap	Cxcl9	ICAM2
SEMG2	EPOR	Tnfsf4	Sdc4	S100a10	CRLF1
DCK	ESR1	Clec4e	Tlr8	Anxa2	TAFA3
DAXX	ESR2	Clec4d	Hmgb1	ANXA2	RXRG
TNFRSF10A	ESRRA	Mtap1s	Cd209a	Tlr11	WNT3A
TNFRSF10B	ESRRB	Il1b	Samhd1	Il23a	IL23A
EED	ESRRG	Il18	Ntn1	Sema3a	AGER
CCL4	FGFR1	Nlrp6	NTN1	Plxna4	CX3CR1
LIMS1	FGFR3	Atg5	Nampt	Defa20	S100B
LALBA	FGFRL1	MIR29A	Jak3	PELI2	CXCL2

APOBEC3H	FLT1	Trim12c	Sharpin	hsa-mir-126	TNFRSF9
SPINK5	FLT3	Lyn	SHARPIN	FFAR2	IGLJ2
BECN1	FSHR	Dhx15	Camkk2	hsa-mir-98	COLEC10
KNG1	GALR3	Il17a	CAMKK2	CISH	SEM1
CSK	GCCR	Ern1	Was	hsa-let-7e	IGHV2-5
KLRK1	GHRHR	Zbp1	WAS	SIVA1	NOX4
KCNH2	GHSR	Hs2st1	MIR16-2	SNAP23	IGHV3-66
JAK1	GIPR	Zfp36	MIR16-1	IRF2	FABP7
RNASE3	GLP1R	Dusp1	PYCARD	TRAF1	NLRP7
RN7SL1	GLP2R	Cxcr4	Frem1	PKN1	INHBB
IREB2	HNF4A	Nfkb2	FREM1	FXR1	SAA2
ILK	HTR3B	Ybx1	Usp4	ERBB2IP	NLRC4
IL18	HTR3D	Il7	USP4	RBCK1	TIE1
IL17A	HTR3E	Tlr5	PRKCD	RNF31	CXCL12
LTB4R	IFNGR2	AIP	Fstl1	PIAS1	GDF10
MASP2	IGF1R	Ager	FSTL1	DAB2IP	CSF3
TRIM27	IGF2R	S100a9	Trib2	RP5-1000E10.4	BPIFB4
RELA	IL10RA	S100a8	TRIB2	Trim30	IGHV1-46
IL1A	IL10RB	Lcp2	Apoa1	AZI2	PLXNA3
IFNAR2	IL11RA	Ticam2	APOA1	MAP3K7IP3	CHGB
IFN1@	IL12RB1	Tirap	Jak2	GLRX	CD70
SYTL1	IL13RA1	Il17rd	Hsp90b1	APOBEC3G;APOBEC3F	IGLV4-60
APOBEC3C	IL13RA2	DHX33	Trpm2	hsa-mir-152	TGFA
DDX17	IL15RA	MIR362	Cyld	hsa-mir-148b	ABCG1
PTGS2	IL2RB	Uvrag	Itch	hsa-mir-148a	LEFTY2
HTR1A	IL17RA	Mir125a	ITCH	TRAT1	IGKV3-15
2009/7/1	IL17RB	Ptpn6	Il17re	Slc15a4	EGF
CD40LG	IL17RC	Mir328	Lrrk2	FCGR1A	IGHV3-49
CD14	IL17RE	MIR328	PIK3C3	CASP10	TRIM15
MAP2K2	IL18RAP	Camp	Arf6	IRF6	SMAD6
MAP2K1	IL1R1	Il4	Hp	VASP	IGLV3-25
HRG	IL1R2	Nlrp12	HP	IFITM2	CDK4
NDRG1	IL1RAP	DEFB4	Unc5cl	RAD21	LCN12
IRF9	IL21R	Mapk14	Plcg2	CYBA	SIGLEC11
TRIM22	IL23R	Trem14	Cnot4	OPTN	RETN
LANCL1	IL27RA	SPHK1	CNOT4	LGALS4	AGTR1
PPP4C	IL2RG	Peli1	Unc93b1	LGALS8	IGKV1D-17
HMGB1	IL4R	Icosl	Serpnb9	HERC5	MX2
RNASE7	IL6R	Smpdl3b	SERPINB9	Abcg1	BMPR2
ABCC4	IL9R	Ctnnb1	Igf1	Inpp5d	IGKV1-13
HGF	INSR	Gsk3a	Hsf1	CNPY3	CCN1
HDAC1	KDR	Gsk3b	HSF1	DHCR24	SSTR2
IFNLR1	LGR5	CTNNB1	Pros1	Gpr33	HSPA5

PLSCR1	LGR6	GSK3A	Gas6	MIF;SLC2A11	LEPR
BACH2	LHCGR	UBE2V2	Cd300lf	ILF3	TLR10
TANK	LTBR	UBE2N	Cd300a	ATG9A	CCNA2
PIK3CG	MC2R	UBE2W	CD300A	SLAMF1	MMP9
RSAD2	MC3R	Pycard	Rictor	GOPC	RAET1L
TBK1	MC4R	Psen2	RICTOR	YWHAE	STAB2
PDYN	MCHR2	Stmn1	Ccl17	BTN3A3	SEMA3A
PDGFRB	MLNR	MAP3K7	Ifit2	BTN3A2	VGF
PCSK2	MPL	MYD88	IFIT2	BTN3A1	CXCL13
FASLG	MTNR1B	PELI1	Yy1	IFI6	CCL23
APOH	NGFR	TIFA	YY1	PTMA	ARTN
ANXA6	NMBR	Rora	mmu-mir-10a	Rxra	IGKV3-7
IL22	NR0B1	Irak1	MIR10A	Nfatc2	C5AR1
VTN	NR0B2	IFRD1	MRGPRX2	GNB2	LRRK2
VCAM1	NR1D1	PDE12	Rgs2	GLI1	CD19
PRDX1	NR1D2	MB21D1	RGS2	TOMM70A	IGHD3-9
GBP2	NR1H2	PQBP1	Nox1	USP17	IGHV4-39
SLC29A3	NR1H3	IFI16	Ppp3r1	Ace	AGT
UNC93B1	NR1H4	Pten	PCBP2	RAB11A	IGLV3-32
ACTG1	NR2C1	Tnfaip3	Pcbp1	FZD1	OGN
ACTA1	NR2C2	Sqstm1	PCBP1	Fzd1	IGHA2
ACO1	NR2E1	TREM1	Trp53	DHX9	HAMP
SERPINA3	NR2E3	Il17f	Fancc	DDIT3	JUND
CCL15	NR2F1	Cxcl1	FANCC	ATG16L1	GHR
CCL16	NR2F2	Defb1	Pglyrp3	OTUB1	IGHV2-70
CCL17	NR3C1	Dnase2a	Cdkn2a	Padi4	CD5L
CCL4L1	NR3C2	PPARGC1A	Dcn	CD200	NRG3
ACKR2	NR4A2	MIR130A	MIR125B2	ANXA1	EDN1
CCR7	NR5A1	Tollip	MIR125B1	IFNAR2;IL10RB	CMTM2
CCL27	NR6A1	Pik3c3	Bst2	Foxa2	ENG
CCL21	NRP1	Tnf	Dlk1	FOXA2	FPR1
CCL3	NRP2	Cav1	DLK1	Defb14	ITGAV
CCL11	OGFR	Mir199a-1	Tnip1	Defb4	IGLV4-3
CCR5	OPRK1	Akt1	TNIP1	Fcrl5	FGR
CCL3L3	OPRL1	DR1	Rac2	Ly86	BIRC5
CCL4L2	OPRM1	Il10	Pklr	ING4	GJA1
CCL3L1	OXTR	CASP4	PKLR	Ing4	IL1RL1
CCR1	PGRMC2	Myo18a	Senp2	Calm1	CCL25
XCL2	PPARA	Rac1	SEN2	CALM1	IGHV3-11
CXCR4	PPARD	Cd81	STAT6	NXN	IGHV1-58
CXCR6	PRLHR	CAPRIN1	Fadd	SPON2	CNTRF
CCR4	PRLR	G3BP1	FADD	CTCF	CTNNAL1
TAFA5	PTGER1	ULK1	Pla2g4a	RNF5	GDF15

TAFA4	PTGER2	Nfil3	P2rx7	PIAS2	TRH
TAFA1	PTGER3	Anpep	Plaur	TCF4	HNF4G
TAFA2	PTH2R	WFDC12	Gzmm	TYRO3	ANGPTL1
CCL15-CCL14	RARA	Ctnnd1	GZMM	USP7	TYROBP
PTK2B	RARB	Ly6g	SELK	CARD6	MTNR1A
IL4	RARG	Rela	Aire	BDKRB2	ISG15
LTBP1	RORA	Il1rl1	AIRE	CTSD	FURIN
IL13	RORB	HAVCR2	Apoh	C1QBP	IGLV3-21
IL10	RORC	HIF1A	Ppargc1b	PSTPIP1	SKP2
IL2	RXFP2	Mapk3	Ppargc1a	CTSH	ADRB2
CRP	RXRA	Mapk1	Mapkapk2	SMARCA4	FCGR3B
JAK2	RXRB	Csf1r	MAPKAPK2	NLRP14	IGKV1-37
PTK2	S1PR2	Traf2	Zfpm2	CCNT1	IGHV5-51
PTGDR	SCTR	Cfp	ZFPM2	MAP2K4	IL11
CD86	SDC1	Hc	Zfpm1	MAP2K3	HMGB2
VDR	SDC2	Tlr3	ZFPM1	SUGT1	IGKV2-40
GRK2	SDC3	Wdfy1	Gata6	SARM1	TNFSF12
TXK	SDC4	Ear11	Gata4	CD63	CRABP1
RNASE2	SORT1	Tnfrsf13c	GATA4	SMARCA2	IGHV3-73
CD79B	SSTR5	Ptx3	Tyk2	STAT5B	IGHJ2
LYN	ST2	Osm	Nr3c1	STAT5A	SEMA5A
SYK	TACR1	Cxcl5	Stub1	SOCS5	PII5
BLNK	TGFBR1	Stat3	STUB1	REL	CCR3
VAV3	THRA	Atm	Serpine1	RPS6KA4	MANF
VAV1	THRB	IL1RAPL1	SERPINE1	SLAMF8	ANGPTL5
VAV2	TNFRSF10C	IL1F7	Tank	SLAMF6	HCK
RAC1	TNFRSF10D	Sf3a1	NAIP	MUC5AC	BMX
RAC2	TNFRSF12A	Cd200r1	Naip2	IGHV7-81	MMP12
PPP3CA	TNFRSF13B	Cd200	Trem2	IFNG	PGLYRP3
PPP3CB	TNFRSF14	ANO6	TREM2	IGKV2D-30	SRXN1