

Gene ID	Category
CD40LG	Immune-related
THEMIS	Immune-related
PYHIN1	Immune-related
TRAT1	Immune-related
FCRL1	Immune-related
SPIB	Immune-related
GPR174	Immune-related
SH2D1A	Immune-related
CCR4	Immune-related
ITK	Immune-related
FCRL3	Immune-related
C5orf20	Immune-related
FIGF	Immune-related
UBASH3A	Immune-related
MS4A1	Immune-related
CD300LG	Immune-related
SAMD3	Immune-related
ADH1B	Immune-related
GZMK	Immune-related
CHRD1	Immune-related
ABI3BP	Immune-related
FCER2	Immune-related
TIFAB	Immune-related
P2RY12	Immune-related
CLEC10A	Immune-related
RSPO2	Immune-related
PCDH15	Immune-related
HLA-DOA	Immune-related
PLA2G2D	Immune-related
CLEC17A	Immune-related
CD3G	Immune-related
CCL19	Immune-related
PTPRC	Immune-related
C17orf87	Immune-related
GRIA1	Immune-related
CD8A	Immune-related
PRG4	Immune-related
P2RY13	Immune-related
SFTPC	Immune-related
HLA-DPB1	Immune-related
AADAC	Immune-related
EOMES	Immune-related
AOAH	Immune-related
CD1E	Immune-related
CCR2	Immune-related
CCL5	Immune-related

GFRA1	Immune-related
TFEC	Immune-related
CLDN18	Immune-related
FGL2	Immune-related
C4orf7	Immune-related
CD1B	Immune-related
GZMA	Immune-related
HLA-DPA1	Immune-related
SCARA5	Immune-related
PLEK	Immune-related
ZNF683	Immune-related
CD19	Immune-related
HLA-DRA	Immune-related
CD84	Immune-related
PIK3CG	Immune-related
NCKAP1L	Immune-related
CR1	Immune-related
WIF1	Immune-related
CLEC12A	Immune-related
KIAA0408	Immune-related
PIGR	Immune-related
CXCL13	Immune-related
CD74	Immune-related
TLR8	Immune-related
CHIT1	Immune-related
IL7R	Immune-related
HLA-DRB1	Immune-related
HLA-DQA1	Immune-related
COL6A6	Immune-related
LYZ	Immune-related
SFTPA2	Immune-related
CYBB	Immune-related
COL29A1	Immune-related
LCP1	Immune-related
IGJ	Immune-related
UBD	Immune-related
HLA-DQA2	Immune-related
CXCL9	Immune-related
PPYR1	Immune-related
IFNG	Immune-related
MRC1	Immune-related
FAM26F	Immune-related
B2M	Immune-related
CD1A	Immune-related
HLA-B	Immune-related
GBP5	Immune-related
ADAMDEC1	Immune-related

LAPTM5	Immune-related
C1QB	Immune-related
ITGB2	Immune-related
C1QA	Immune-related
SUCNR1	Immune-related
MARCO	Immune-related
HLA-C	Immune-related
VSIG4	Immune-related
F13A1	Immune-related
CXCL10	Immune-related
C1QC	Immune-related
HLA-A	Immune-related
CD163	Immune-related
FCGR3A	Immune-related
TMSL3	Immune-related
MDK	Stromal-related
RPL8	Stromal-related
S100P	Stromal-related
FTH1	Stromal-related
GPR87	Stromal-related
UBC	Stromal-related
CLDN3	Stromal-related
FGL1	Stromal-related
TMSB10	Stromal-related
HSPB1	Stromal-related
ACTB	Stromal-related
ITPKA	Stromal-related
KRT19	Stromal-related
S100A2	Stromal-related
EEF1A2	Stromal-related
PABPC1	Stromal-related
RPLP0	Stromal-related
HSP90AB1	Stromal-related
NMU	Stromal-related
KRT8	Stromal-related
KRT7	Stromal-related
EPCAM	Stromal-related
YWHAZ	Stromal-related
MYH9	Stromal-related
ACTG1	Stromal-related
NPW	Stromal-related
MMP13	Stromal-related
TUBA1B	Stromal-related
ERRFI1	Stromal-related
DSP	Stromal-related
KRT18	Stromal-related
P4HB	Stromal-related

ENO1	Stromal-related
PKM2	Stromal-related
RHOV	Stromal-related
ALDOA	Stromal-related
JUP	Stromal-related
LDHA	Stromal-related
HMGA1	Stromal-related
HSPA1A	Stromal-related
MIF	Stromal-related
TUBB	Stromal-related
HMGB3	Stromal-related
CYP24A1	Stromal-related
TPI1	Stromal-related
FAM83A	Stromal-related
RECQL4	Stromal-related
FN1	Stromal-related
VEGFA	Stromal-related
GAPDH	Stromal-related
TK1	Stromal-related
TUBB3	Stromal-related
UBE2C	Stromal-related
MYBL2	Stromal-related
COL3A1	Stromal-related
COL1A1	Stromal-related
COL1A2	Stromal-related
COL11A1	Stromal-related

Supplementary table6 Immune and stromal gene signatures.