Materials and Methods

Mice

TCR_{GAG} $Rag2^{-/-}$, Alb:GAG $Rag2^{-/-}$, [TCR_{GAG} $Rag2^{-/-}$ x Alb:GAG $Rag2^{-/-}$]F1, Alb:GAG Thy.1.1, TCR_{GAG} Thy1.1 mice have been described previously (*6*-*8*). C57BL/6 (B6) and Thy1.1 mice were purchased from The Jackson Laboratory. *Il15*$^{-/-}$ mice were provided by Murali-Krishna Kaja. *Il15*$^{-/-}$ mice were crossed to Alb:GAG Thy1.1 mice in our animal facility to generate Alb:GAG *Il15*$^{-/-}$ Thy1.1 mice. Lymphopenia was induced by sublethal total body irradiation (TBI; 5.0 or 5.5Gy). The neutralizing mouse anti-IL7 monoclonal antibody (M25) was a kind gift from Amgen. The antibody was administered intraperitoneally (i.p.) to lymphopenic Alb:GAG *Il15*$^{-/-}$ Thy1.1 mice at 1mg per mouse at 2-day intervals. The treatment was initiated at the day of radiation and continued till termination of the experiment as indicated. All mice were bred and maintained in a specific pathogen-free barrier facility at the University of Washington. Experiments were performed in compliance with the University of Washington Institutional Animal Care and Use Committee regulations.

Antibodies and reagents

The FMuLV GAG peptide (CCLCLTVFL) was purchased from Pi Proteomics. The H2-D^b/GAG-tetramer was synthesized by the Immune Monitoring Core at the Fred Hutchinson Cancer Research Center. The fluorochrome-conjugated antibodies were purchased from BD Biosciences, eBioscience and Biolegend.

Flow cytometric analysis

Flow cytometric analysis was performed using FACSCanto and LSRII; cells were sorted using BD FACS Aria (BD Biosciences, San Jose, CA) at the Cell Analysis Facility, Department of Immunology, University of Washington. Flow data were analyzed with FlowJo7.6 (Tree Star Inc, Ashland, OR).

Listeria infection

Listeria monocytogenes ΔactA, ΔinlB strains expressing the FMuLV GAG epitope (CCLCLTVFL) (LM-GAG) or a control vector (LM-Ø) were provided by Cerus Corporation. *L. monocytogenes* was grown in Brain-Heart Infusion broth (Sigma). At a midlog growth phase, culture samples were measured by OD and diluted in PBS for the desired titer; mice were infected i.p. with $3x10^7$ cfu of LM-GAG or LM-Ø.

Adoptive T cell transfers and generation of memory T cells

Tolerant $CD8^+$ T cells were isolated from spleens of [TCR_{GAG} $Rag2^{-/-}$ x Alb:GAG $Rag2^{-/-}$]F1 (Tolerant) mice. Unless otherwise stated, tolerant T cells were sorted for CD8/$CD44^{hi}$ expression and adoptively transferred (i.v.) into normal hosts or sublethally irradiated, lymphopenic hosts one day post radiation. TCR_{GAG} memory cells were generated by transfer of $1x10^6$ naïve TCR_{GAG} CD8 T cells (Thy1.1) into congenically-marked B6 (Thy1.2) hosts, followed by i.p. infection one day later with $3x10^7$ cfu LM-GAG. Splenic $CD44^{hi}$/$CD62L^{hi}$ memory TCR_{GAG} T cells were sorted at least two months post infection.

BrdU labeling

Beginning 72 hours before analysis, 1mg BrdU (BD Biosciences) was injected i.p. into each mouse every 24 hours for 3 doses. Splenocytes were then analyzed for BrdU incorporation.

Intracellular BrdU staining was performed using APC BrdU Flow Kit (BD Biosciences) as per manufacturer's protocol.

Degranulation assay, intracellular cytokine staining and CFSE labeling

Intracellular cytokine staining was performed using the Cytofix/Cytoperm Plus kit (BD Biosciences) per the manufacturer's instructions. Briefly, approximately 10^5 naïve, tolerant, memory, rescued or re-tolerized TCR_{GAG} $CD8^+$ T cells were mixed with 10^6 congenically marked splenocytes and incubated with 1μg/ml GAG peptide for 5 h at 37°C in the presence of GolgiPlug (brefeldin A). After staining for cell-surface molecules, the cells were fixed, permeabilized, and stained with antibodies to IFN-γ (XMG1.2) and TNF-α (MP6-XT22).

For measurement of cell proliferation *in vivo,* tolerant TCR_{GAG} $CD8^+$ T cells were incubated with 10 μM carboxyfluorescein succinimidyl ester (CFSE; Invitrogen) in serum-free HBSS for 15 min at 37°C. The reaction was quenched with pure FCS and the cells were washed twice with serum-free medium before transfer into indicated hosts.

Microarray sample preparation (mRNA and miRNA)

For mRNA array: Replicate samples were isolated from spleens and sorted as follows: naïve (n=3; $CD8/CD44^{lo}$), tolerant (n=3; $CD8/CD44^{hi}$), central memory (n=3; $CD8/CD90.1/CD44^{hi}/CD62L^{hi}$, >60 days post infection), rescued (n=4; CD8/CD90.2, 22 days post transfer into lymphopenic Alb:GAG Thy.1.1 hosts) and re-tolerized (n=2; CD8/CD90.2, >3-4 months post transfer into lymphopenic B6 Thy.1.1 hosts) TCR_{GAG} $CD8^+$ T cells. After sort, cells were washed twice with cold PBS and cell pellets were frozen and stored at -80°C until all samples were collected. RNA was isolated using Qiagen RNeasy Plus Mini Kit per the manufacturer's instructions and the yield was determined on a NanoDrop ND-1000 spectrophotometer (Thermo Scientific, Wilmington, DE). Samples that had an appropriate yield

(typically >100ng total RNA) were subsequently analyzed for RNA integrity using an Agilent 2100 Bioanalyzer (Agilent Technologies, Inc., Santa Clara, CA). RNA that was determined to be of high quality was converted to cDNA and labeled for subsequent microarray analysis using the MouseRef-8v2.0 Expression BeadChip Kit (Illumina, Inc., San Diego, CA). Sample hybridization scanning and data acquisition was performed by the Genomics Shared Resource at the Fred Hutchinson Cancer Research Center.

For microRNA array: Replicate samples were isolated from spleens and sorted as described above; naïve (n=3; CD8/CD44^{lo}), tolerant (n=3; CD8/CD44^{hi}), central memory (n=3; CD8/CD90.1/CD44^{hi}/CD62L^{hi}, >60 days post infection), rescued (n=3; CD8/CD90.2, 22 days post transfer into lymphopenic Alb:GAG Thy.1.1 hosts) TCR_{GAG} $CD8^+$ T cells. After sort, cells were washed twice with cold PBS and cell pellets were stored at -80°C until all samples were collected. Total RNA of re-tolerized T cell samples was generated at later time points for subsequent qPCR of miR-181a.

Microarray data analysis

The complete dataset consisting of all arrays was processed using the Bioconductor package *lumi* by employing quantile normalization (*32*). The dataset was initially filtered by flagging probes that were below a defined signal "noise floor," which was calculated as the 75th percentile of the negative control probe signals within each array. For each pair-wise comparison (using naïve as the reference), a probe was retained if at least half of the samples in at least one condition were not flagged by the intensity filter. We further filtered each pair-wise comparison through the application of a variance filter, using the "shorth" function of the Bioconductor package *genefilter*. Differential gene expression was determined using the Bioconductor package *limma* (*33*), and a false discovery rate (FDR) method was used to correct for multiple testing

(*34*). Significant differential gene expression was defined as $|\log_2 (\text{ratio})| \geq 1$ (± 2-fold) and FDR ≤ 0.05. K-means cluster analysis was performed for those genes found to be differentially expressed in one or more comparison. The normalized $\log_2$ signal intensities were mean-centered at the probe-level and replicate samples were averaged prior to clustering. The number of clusters was selected using the figure of merit (FOM) method by Yeung et al. (*35*). K-means clustering and cluster number estimation were performed using the TM4 microarray software suite MultiExperimental Viewer (MeV) (*36*). Principal component analysis (PCA) plots were generated using Partek® software version 6.4 (Partek Inc., St. Louis, MO), and probability calculations were determined using the hypergeometric distribution. Gene names were associated with GO biological process domain terms using BioMart within Ensembl (release 62). Gene set enrichment analysis (GSEA; http://www.broadinstitute.org/gsea) was used to determine whether predefined gene sets show enrichment in particular T cell samples (*37, 38*).

The microarray data have been deposited in the Gene Expression Omnibus with accession code GSE32025.

MicroRNA array profiling and analysis

MicroRNA array profiling and analysis were performed by "Exiqon Services", Vedbaek, Denmark. The quality of the total RNA was verified by an Agilent 2100 Bioanalyzer profile. 200 ng total RNA from sample and reference (common reference pool was generated using small amounts of all 9 individual naïve, tolerant and memory T cell samples) was labeled with Hy3™ and Hy5™ fluorescent label, respectively, using the miRCURY™ LNA Array power labeling kit (Exiqon, Denmark) following the procedure described by the manufacturer. The Hy3™-labeled samples and a Hy5™-labeled reference RNA sample were mixed pair-wise and hybridized to the miRCURY™ LNA array version 11.0 mmu (Exiqon, Denmark). The hybridization was

performed according to the miRCURY™ LNA array manual using a Tecan HS4800 hybridization station (Tecan, Austria). After hybridization the microarray slides were scanned and stored in an ozone free environment (ozone level below 2.0 ppb) in order to prevent potential bleaching of the fluorescent dyes. The miRCURY™ LNA array microarray slides were scanned using the Agilent G2565BA Microarray Scanner System (Agilent Technologies, Inc., USA) and the image analysis was carried out using the ImaGene 8.0 software (BioDiscovery, Inc., USA). The quantified signals were background corrected (Normexp with offset value 10 – *Ritchie et al., 2007*) and normalized using the global Lowess (LOcally WEighted Scatterplot Smoothing) regression algorithm. Due to space limitations in Figure 4F the full names for mmu-miR-466 and mmu-miR-297 are mmu-miR-466a-3p/mmu-miR-466b-3p/mmu-miR-466c-3p/m and mmu-miR-297a*/mmu-miR-297b-3p/mmu-miR-297c* respectively.

microRNA real-time qPCR: All microRNA real-time qPCR experiments were performed by "Exiqon Services", Vedbaek, Denmark. 10ng total RNA was reverse transcribed in 10 µl reactions using the miRCURY LNA™ Universal RT microRNA PCR, Polyadenylation and cDNA synthesis kit (Exiqon); each sample was processed in triplicates. cDNA was diluted 100 x and 4 µl was used in 10 µl PCR reactions according to the protocol for miRCURY LNA™ Universal RT microRNA PCR; each microRNA was assayed once by qPCR in triplicate cDNA. The amplification was performed in a LightCycler® 480 Real-Time PCR System (Roche) in 384 well plates. Expression of miR-181a was normalized to miR-34a and miR-let7a. LNATM PCR primer sets for miR-181a: Exiqon Cat.no. 204566.

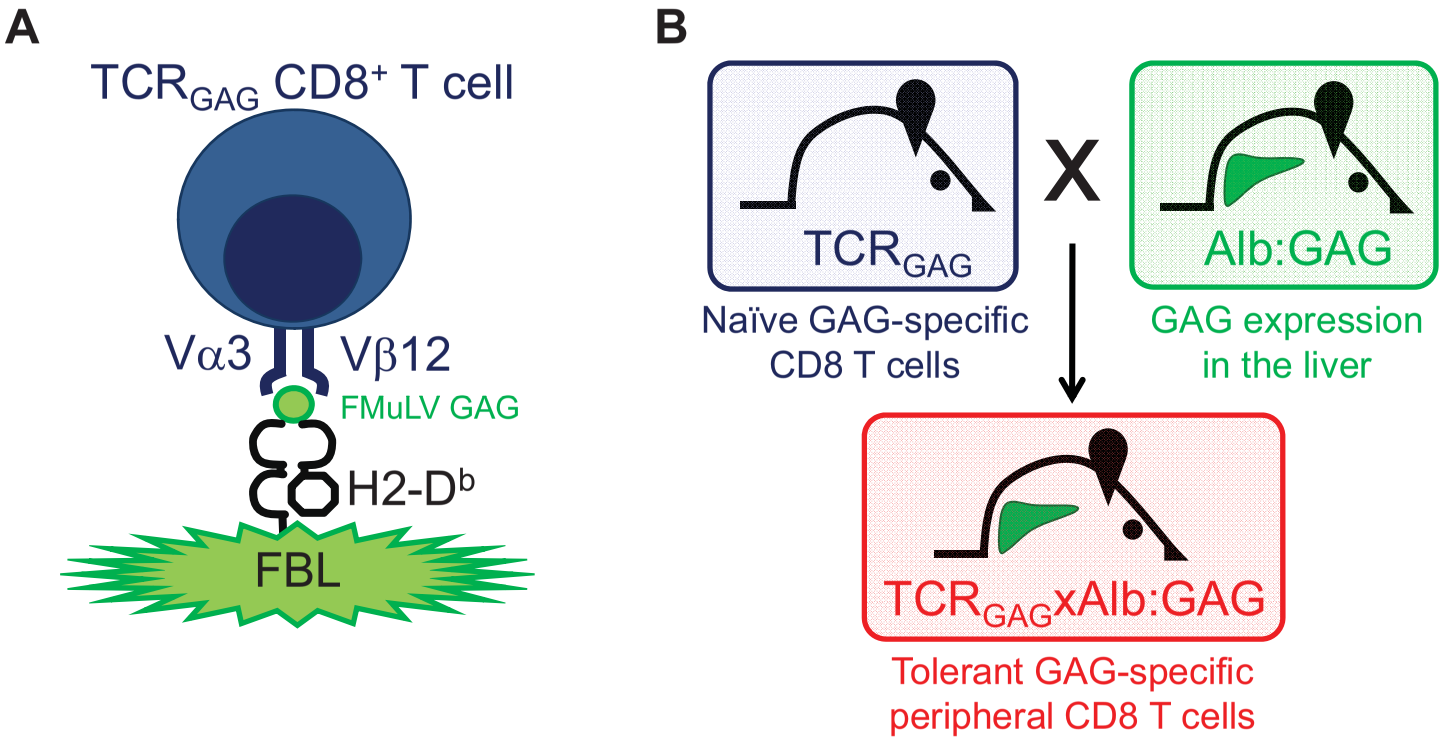
Data pre-processing: The LightCycler® 480 software was used to determine the Cp value, and to generate amplification- and melting curves. LinRegPCR (ver 11.5) software was used to determine the amplification efficiency. The average amplification efficiency was used to correct

the Raw Cp values. Reference miRNAs were analyzed for stability using SLqPCR algorithim (similar to geNorm) and a selection of the most stable reference miRNAs were used to normalize all measurements on a well-to-well basis.

Statistical analyses

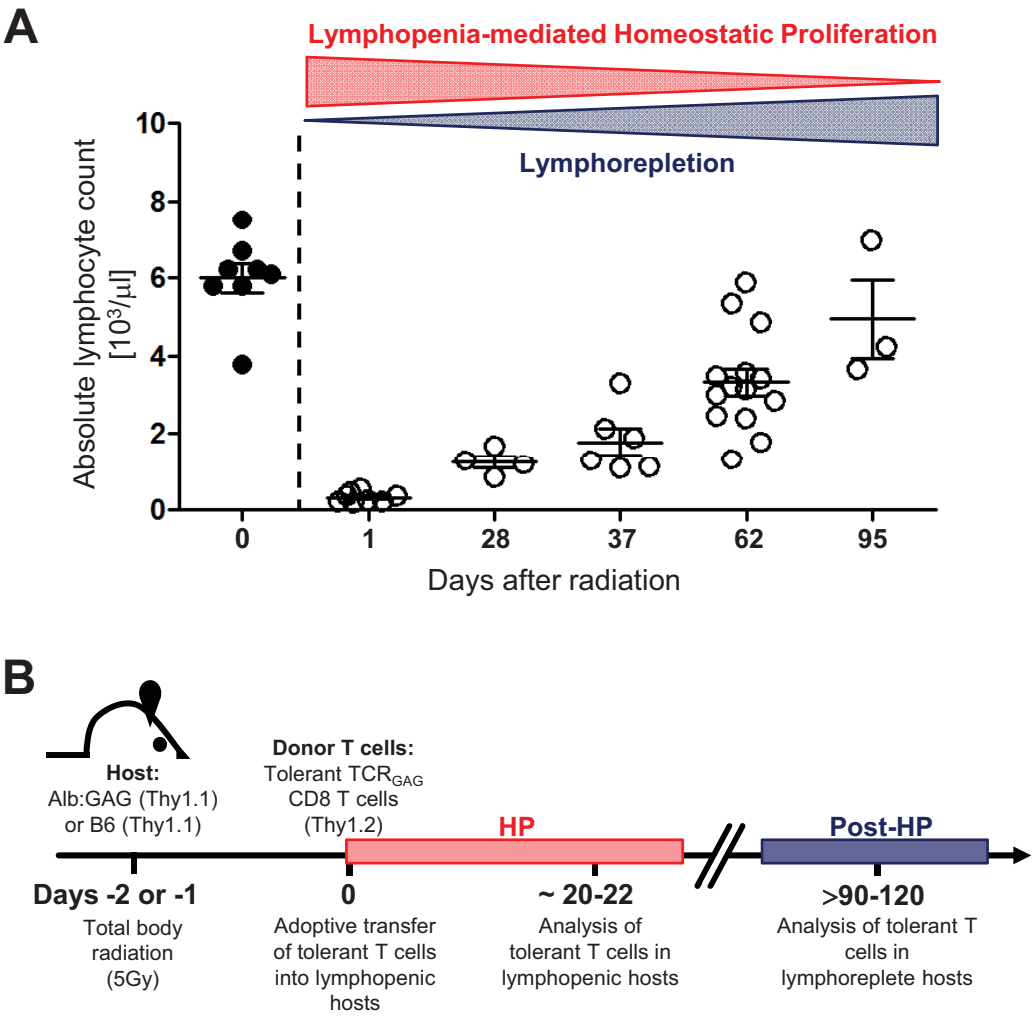
Statistical analyses were performed with Prism version 5.0, GraphPad Software, using unpaired two-tailed Student's *t* tests. A *P* value of <0.05 was considered statistically significant.

Supplementary Figure 1



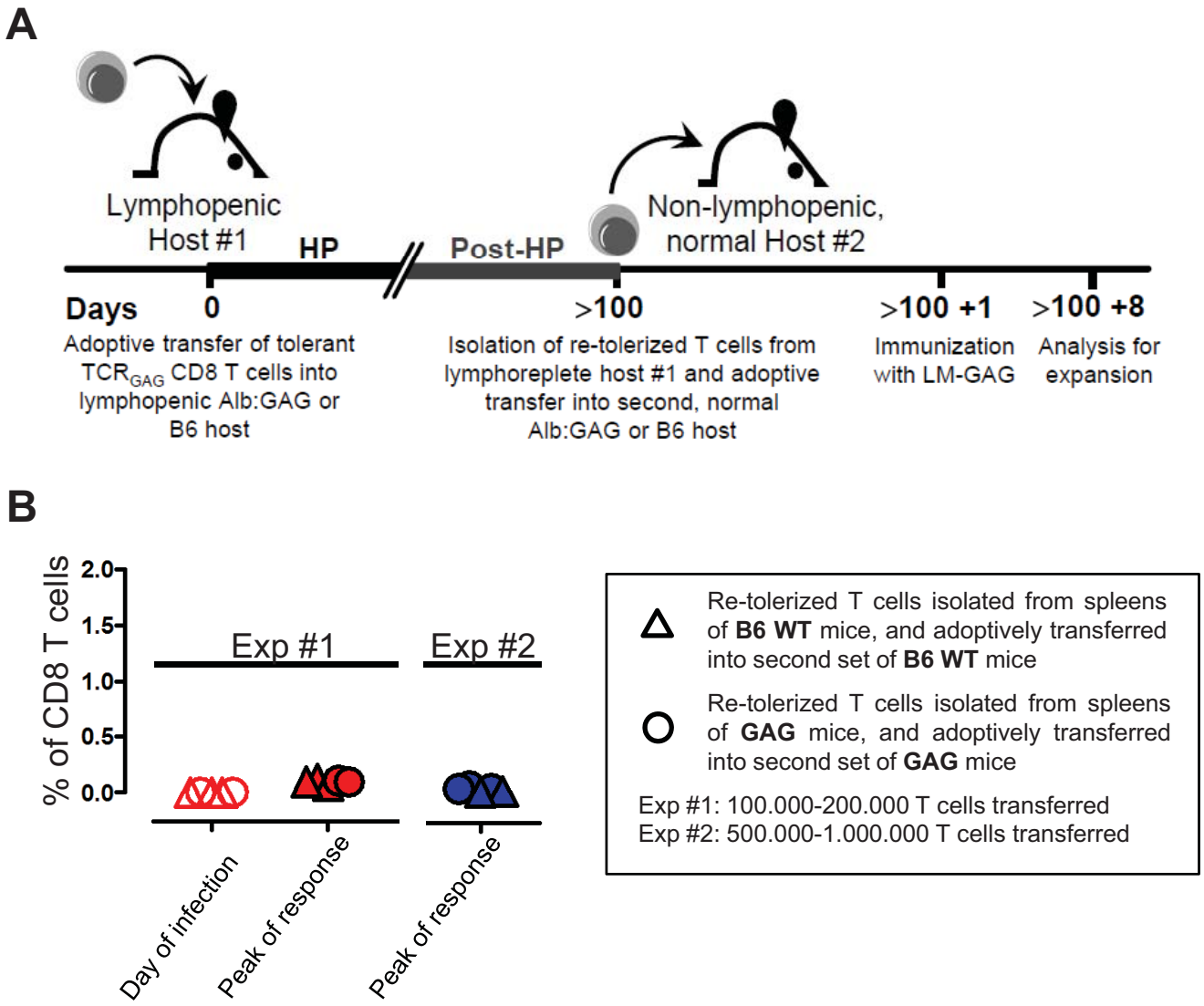
Supplementary Figure 1: Double-transgenic mouse model of peripheral CD8 T cell tolerance. (A) Transgenic mice (TCR_{GAG}) were engineered to have CD8 T cells expressing a D^b-restricted Vα3/Vβ12 receptor specific for the Friend murine leukemia virus (FMuLV) GAG epitope, an immunodominant antigen from the FMuLV-transformed mouse leukemia cell line, FBL. **(B)** TCR_{GAG} transgenic mice were crossed to a second transgenic mouse strain, Alb:GAG, which selectively expresses the *gag* transgene in hepatocytes under control of the albumin promoter. Double-transgenic TCR_{GAG}xAlb:GAG mice have tolerant GAG-specific CD8 T cells in the periphery. The mouse strains were backcrossed onto the $Rag2^{-/-}$ background.

Supplementary Figure 2



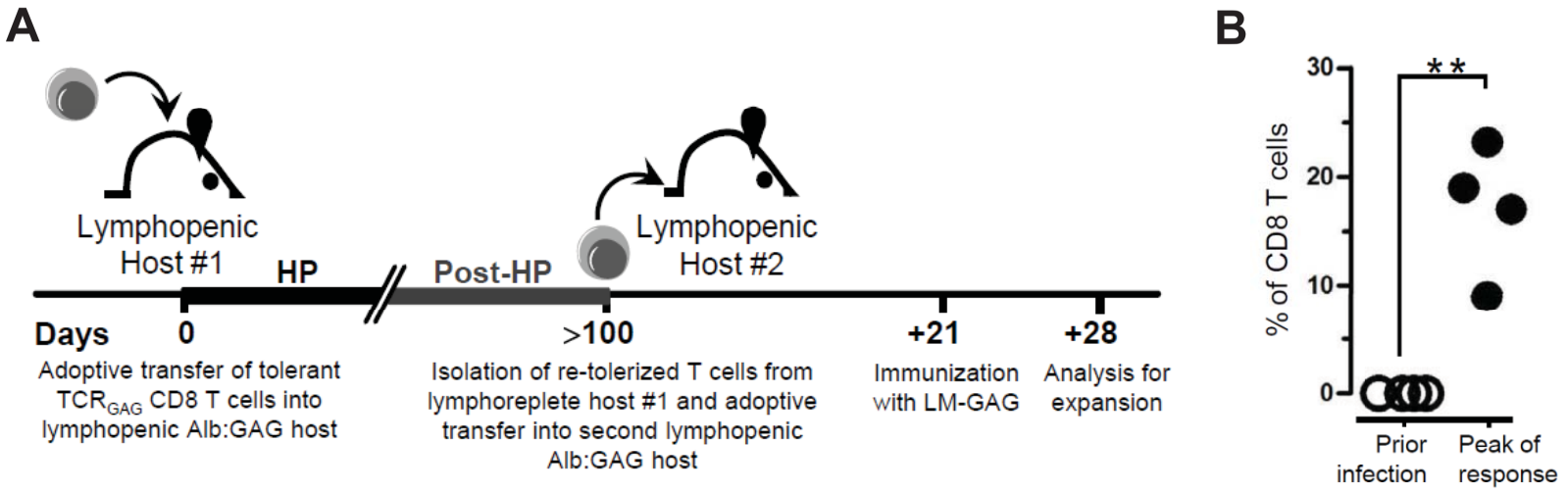
Supplementary Figure 2: Radiation-induced lymphopenia and lymphorepletion. (A) Lymphocyte reconstitution in mice following lymphopenia induced by sublethal total body irradiation (5Gy TBI). Adoptively transferred T cells undergo homeostatic proliferation (HP) in lymphopenic hosts. Once normal cellularity of the lymphoid compartment is restored (lymphorepletion) transferred T cells cease their proliferative drive (post-HP). **(B)** Experimental scheme. Tolerant TCR_{GAG} CD8 T cells (Thy1.2) are transferred into lymphopenic Alb:GAG (Thy1.1) or B6 WT (Thy1.1) mice. Analysis of homeostatically proliferating T cells is performed 20-22 days post transfer (HP, red). 3-4 months post radiation, mice are lymphoreplete and analysis of transferred T cells is carried out (post-HP, blue).

Supplementary Figure 3



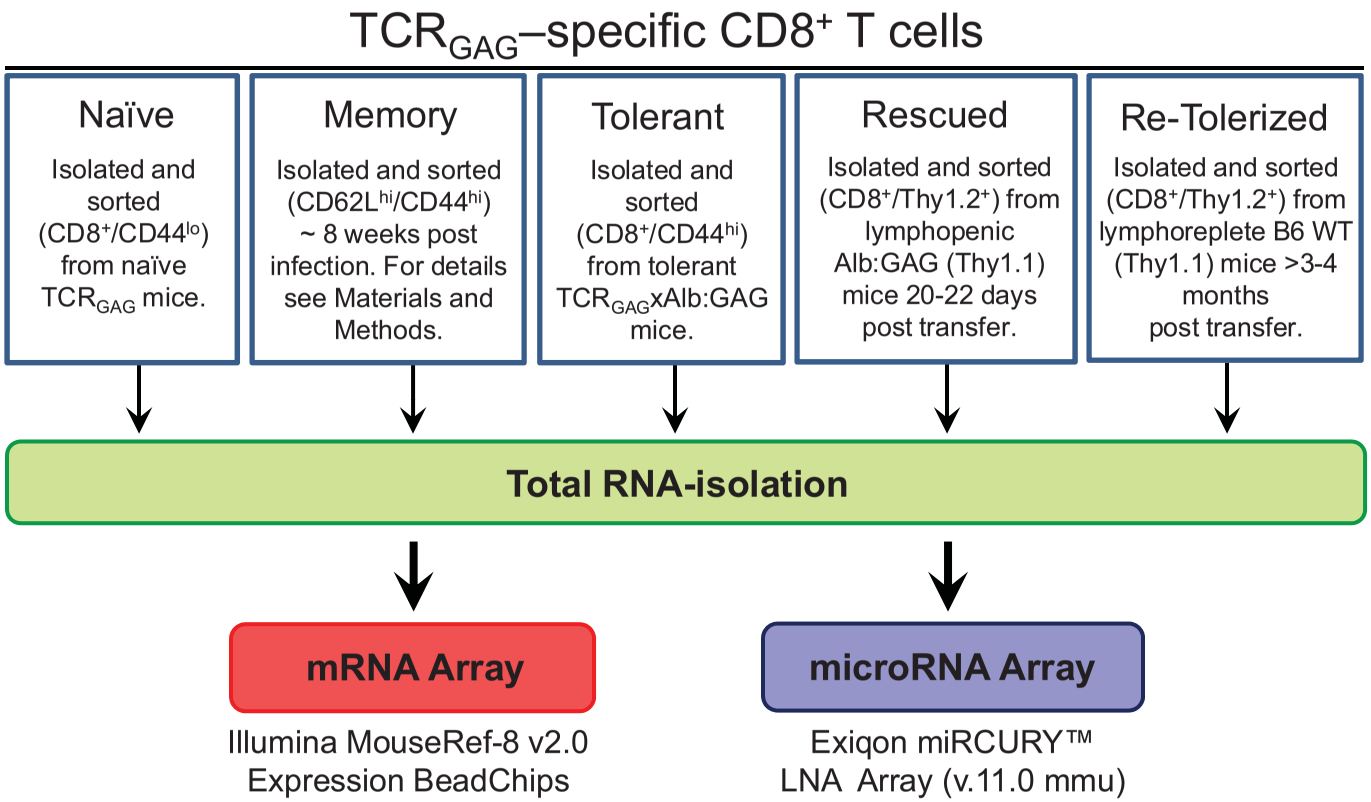
Supplementary Figure 3: Re-tolerized TCR$_{GAG}$ CD8 T cells fail to respond to immunization even in non-tolerogenic hosts. (A) Experimental scheme. Re-tolerized TCR$_{GAG}$ CD8 T cells were isolated and sorted (CD8$^+$ Thy1.2$^+$) from spleens of lymphorepleted Alb:GAG Thy1.1 or B6 Thy1.1 mice and transferred into a second set of normal Alb:GAG Thy1.1 or B6 Thy1.1 mice. One day after secondary transfer mice were immunized with 3x10^7 cfu of LM-GAG and 7 days later spleens assessed for expansion of donor T cells **(B)**. The responsiveness of T cells during HP does not reflect activity of a minor, non-tolerogenic subpopulation since naïve T cells that have undergone HP should have retained their responsive phenotype in the absence of self-antigen *(39)*; furthermore TCR expression levels, in this model, did not correlate with T cell responsiveness since rescued T cells in lymphopenic Alb:GAG mice expressed lower TCR compared to tolerant T cells, and re-tolerized T cells isolated from lymphoreplete B6 hosts expressed significantly higher levels of TCR.

Supplementary Figure 4



Supplementary Figure 4: Replicative senescence (Hayflick limit) is not the cause of unresponsiveness during the post-HP phase. (A) Experimental Scheme. Re-tolerized T cells were isolated and sorted ($CD8^+$ $Thy1.2^+$) from spleens of lymphorepleted Alb:GAG Thy1.1 mice and transferred into a second set of lymphopenic Alb:GAG Thy1.1 mice one day after TBI. 22 days after secondary transfer mice were immunized with $3x10^7$ cfu of LM-GAG and 7 days later peripheral blood analyzed by FACS **(B)**; ** $P = 0.0012$.

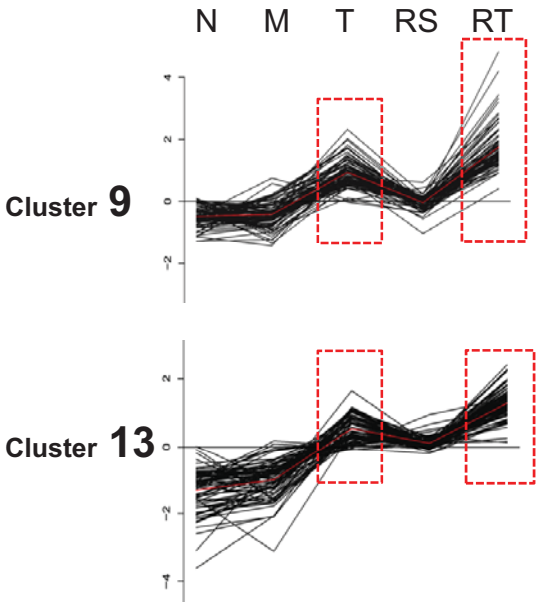
Supplementary Figure 5



Supplementary Figure 5: Scheme for genome-wide mRNA and microRNA expression profiling of naïve, memory, tolerant, rescued and re-tolerized TCR$_{GAG}$ CD8 T cells. For detailed information on isolation, purification of samples and downstream analyses see *Materials and Methods*. Note: microRNA array has not been performed on re-tolerized T cell samples (see text).

Supplementary Figure 6

A Tolerance-specific genes [↑T/RT]



Gene Name	Alternative Name
LAG3	Lymphocyte-activation gene 3
NDRG1	N-myc downstream regulated 1
E2F1 and E2F2	E2F transcription factor 1 and 2
RGS16	Regulator of G protein signaling 16
PTPLA	protein tyrosine phosphatase-like, member A
PTPRS	protein tyrosine phosphatase, receptor type S

Mitotic and spindle assembly checkpoint regulators

CCDC99	Coiled-coil domain containing 99/Spindly
RCC1	Regulator of chromatin condensation
CENPA	Centromere protein A
CENPM	Centromere protein M
CENPH	Centromere protein H
INCENP	Inner centromere protein antigen
BIRC5	Baculoviral IAP repeat containing 5/Survivin
BUB1B	budding uninhibited by benzimidazoles 1 homolog β
MAD2L1	MAD2 mitotic arrest deficient-like 1

Histones

Hist1 H2AB, H2AG, H2AF, H2AN, H2AH, H2AK, H2AD, H2AC, H2AO
Hist1 H2BM, H2BN, H2BH, H2BK, H2BF, H2BJ, H2BN
Hist1 H3A, H3E, H3C, H3D, H3H
Hist2 H2AB, H2AC

Minichromosome maintenance protein complex

MCM10
MCM6
MCM5
MCM2

Cell division cycle proteins

CDCA2
CDCA3
CDCA5
CDCA7
CDC6
CDC45L
CDC20
CDC7
CDC2A

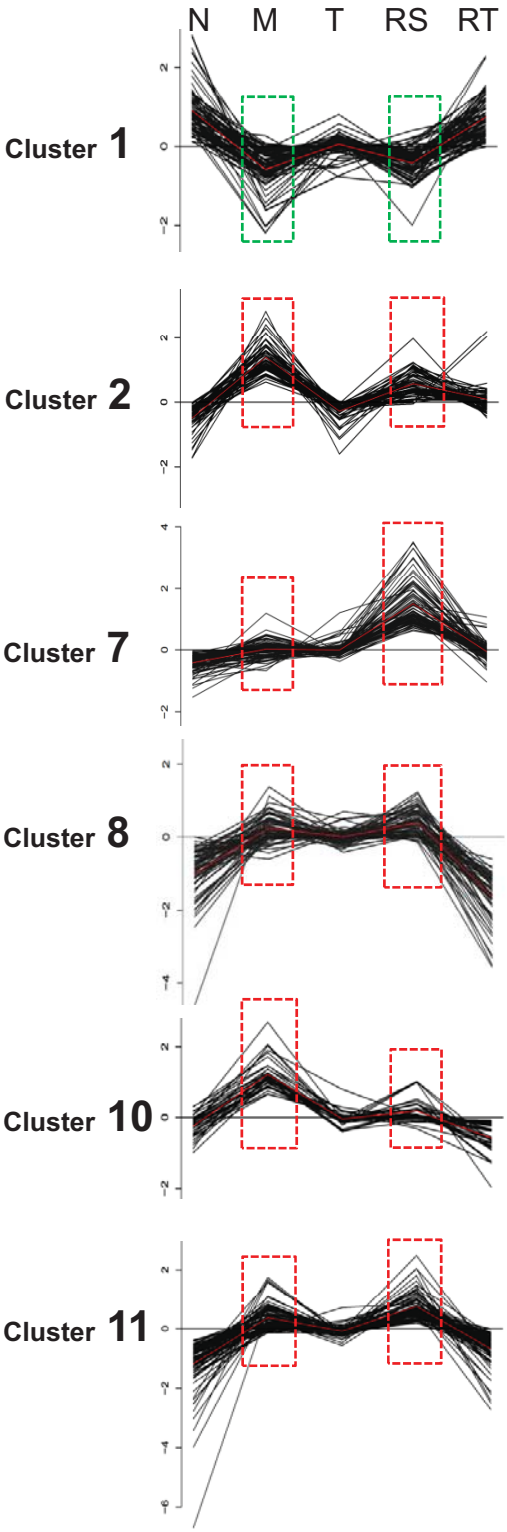
Kinesins

KIF15
KIF2C
KIF22
KIF11
KIF4

B

GO Terms	Genes
Cell Cycle (32)	BIRC5, BUB1B, CDC2A, CDC45L, CDC7, CDCA3, H2AFX, INCENP, KIF11, LIG1, MCM6, UHRF1, PLK1, CDC6, CHAF1A, SPAG5, MAD2L1, SPC25, CDCA5, NCAPD2, ANLN, CCDC99, SGOL1, KIF2C, CDC20, NUSAP1, CDCA2, CHAF1B, KNTC1, FANCD2, CHTF18, CLSPN
Cell Division (25)	CDC7, CDCA3, KIF11, LIG1, MCM5, PLK1, AURKA, CDC6, CENPH, SPAG5, MAD2L1, SPC25, CDCA5, BIRC5, BUB1B, NCAPD2, CCDC99, SGOL1, KIF2C, CDC20, NUSAP1, CDCA2, KNTC1, NCAPH, CCNB1
Nucleosome Assembly (24)	HIST1H3C, HIST1H3D, HIST1H3E, HIST1H3H, HIST1H2AD, HIST1H2AG, HIST1H2AH, HIST1H2AK, HIST1H2AN, HIST1H2AO, HIST1H2AB, HIST1H2AF, HIST2H2AC, HIST1H2BF, HIST1H2BH, HIST1H2BJ, HIST1H2BK, HIST1H2BM, HIST1H2BN, HIST1H3A, HIST2H2AB, H2AFX, CENPA, MCM2
Mitosis (19)	BIRC5, CDCA3, INCENP, PLK1, AURKA, CDC6, SPAG5, MAD2L1, SPC25, CDCA5, NCAPD2, ANLN, CCDC99, SGOL1, KIF2C, CDC20, CDCA2, KNTC1, NCAPH
DNA replication (13)	CDC45L, LIG1, MCM2, MCM5, MCM6, RRM1, RRM2, TK1, CDC6, CHAF1A, MCM10, CHAF1B, CHTF18
DNA repair (12)	FEN1, H2AFX, LIG1, UHRF1, RAD51, CHAF1A, APITD1, KIF22, CHAF1B, FANCD2, CLSPN, E130016E03RIK
Regulation of transcription (8)	E2F1, MCM6, UHRF1, SOX5, CHAF1A, LITAF, CDCA7, CHAF1B

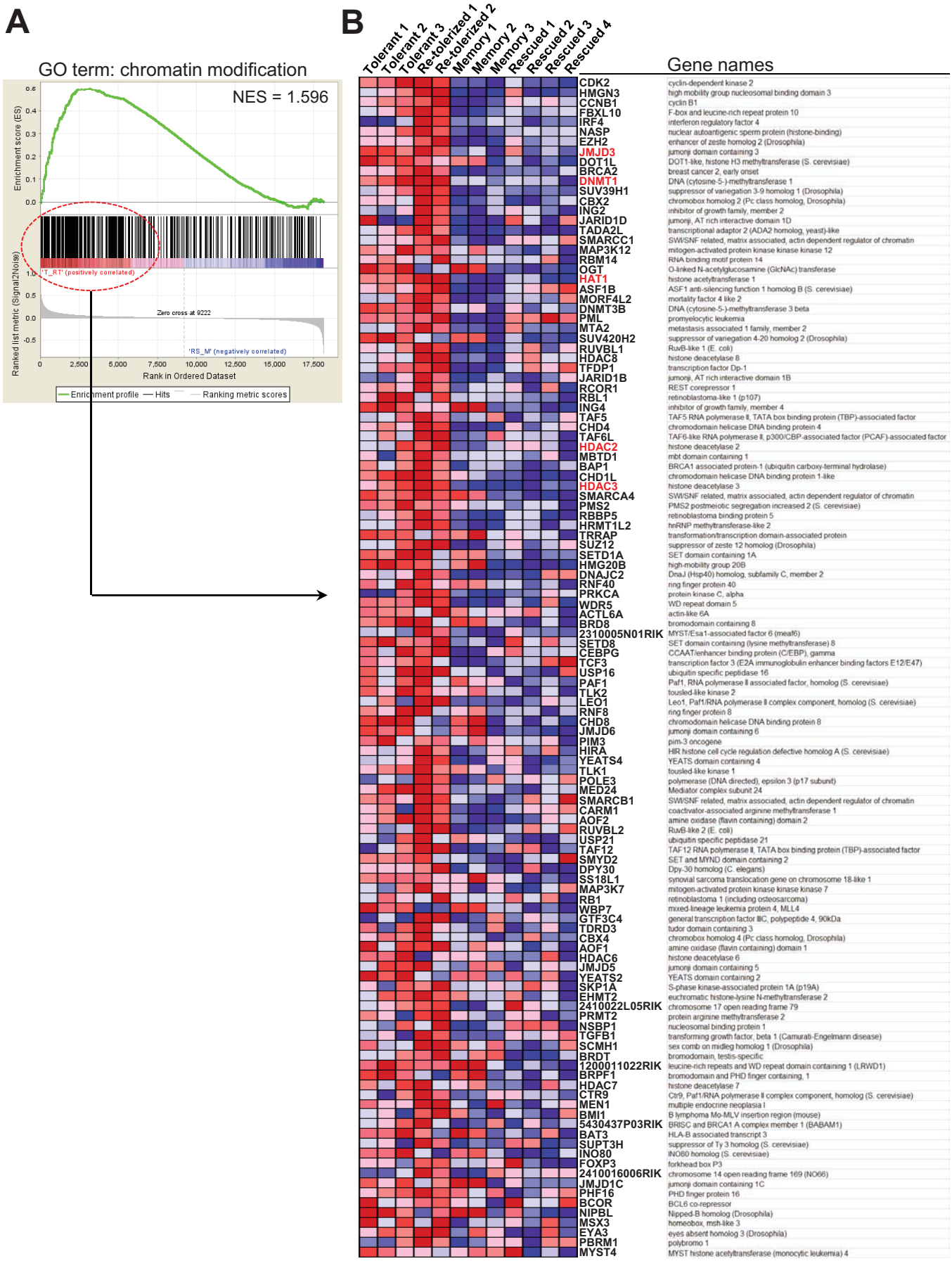
C Rescue-associated genes [↓M/RS and ↑T/RT *or* ↑M/RS and ↓T/RT]



Gene Name	Alternative Name
EGR1	Early growth response protein 1
EGR2	Early growth response protein 2
DUSP2	Dual specific phosphatase 2/PAC-1
JMJD3	Jumonji domain containing 3
GPR83	G protein-coupled receptor 83
Ly86	Lymphocyte antigen 86/MD-1
ID2	Inhibitor of DNA binding 2
GRN	Granulin
FASL	FAS ligand
KLRA7,10,16	Killer cell lectin-like receptor family A members 7, 10, 16
S100A8,9	S100 calcium binding proteins 8 and 9/Mrp8 and Mrp14
CCR5	Chemokine receptor, CC Motif, receptor 5
IFITM2, 3, 6	Interferon induced transmembrane proteins 2, 3 and 6
MMP9	Matrix metalloproteinase 9
CHI3L3	Chitinase 3-like 3
CXCR3	Chemokine (C-X-C motif) receptor 3
IL10Ra	Interleukin 10 receptor, alpha
Ly6C1	Lymphocyte antigen 6 complex, locus C1
STAT4	Signal transducer and activator of transcription 4
AHNAK1	AHNAK1 nucleoprotein
PRF1	Perforin
Ly6A	Lymphocyte antigen 6 complex, locus A
IFNG	Interferon gamma
GZMM	Granzyme M
Ly6E	Lymphocyte antigen 6 complex, locus E
IL12RB1	IL-12 receptor beta 1
KLRK1	Killer cell lectin-like receptor subfamily K, member 1
CCR5	Chemokine receptor, CC Motif, receptor 5
CCL5	Chemokine receptor, CC Motif, ligand 5/RANTES
NRARP	Notch-regulated ankyrin-repeat protein
S100A	S100 calcium binding protein A
EOMES	Eomesodermin
TBX21	T-box 21, T-bet
PLCG2	Phospholipase C, gamma 2
RGS1	Regulator of G protein signaling 1
GATA3	GATA binding protein 3

Supplementary Figure 6: K-means clustering of gene expression profiles for naïve, memory, tolerant, rescued and re-tolerized T cells. K-means clusters show log_2-transformed expression intensities mean-centered at the probe-level. **(A)** Tolerance-specific genes uniquely up-regulated in tolerant and re-tolerized T cells are represented in clusters 9 and 13. **(B)** Gene ontology (GO) analysis of tolerance-specific genes from clusters 9 and 13. Shown are the top 6 GO terms with the identified genes. **(C)** Rescue-associated gene sets, clusters 1, 2, 7, 8, 10 and 11. Clusters represent genes up- or down-regulated in memory and rescued T cells (red or green boxes) but not in tolerant or re-tolerized T cells. Gene names and alternative names are shown.

Supplementary Figure 7



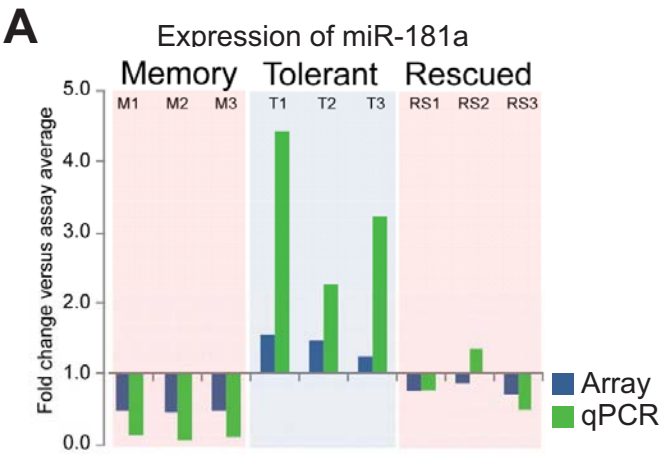
C

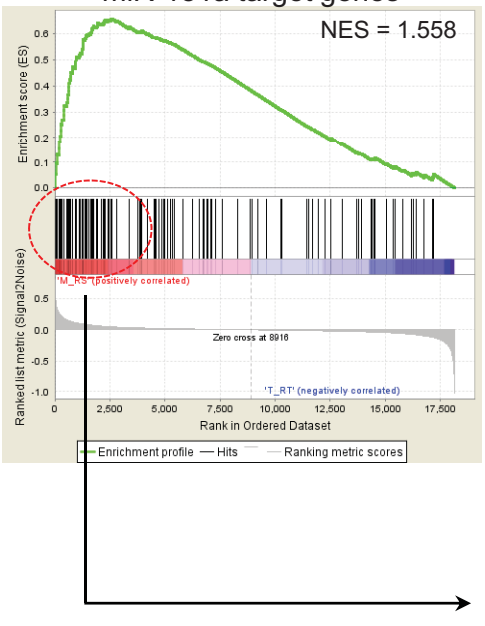
	GENE SYMBOL	GENE TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMENT
1	CDK2	cyclin-dependent kinase 2	83	0.427261323	0.016899513	Yes
2	HMGN3	high mobility group nucleosomal binding domain 3	101	0.398789883	0.036068507	Yes
3	CCNB1	cyclin B1	140	0.340105832	0.05109696	Yes
4	FBXL10	F-box and leucine-rich repeat protein 10	218	0.278510064	0.060827155	Yes
5	IRF4	interferon regulatory factor 4	245	0.264148027	0.0726965	Yes
6	NASP	nuclear autoantigenic sperm protein (histone-binding)	250	0.260947973	0.08563977	Yes
7	EZH2	enhancer of zeste homolog 2 (Drosophila)	254	0.257332504	0.09845674	Yes
8	JMJD3	jumonji domain containing 3	266	0.253666788	0.110639505	Yes
9	DOT1L	DOT1-like, histone H3 methyltransferase (S. cerevisiae)	337	0.2233769	0.11798067	Yes
10	BRCA2	breast cancer 2, early onset	353	0.219625369	0.12822102	Yes
11	DNMT1	DNA (cytosine-5-)-methyltransferase 1	376	0.213249385	0.13774656	Yes
12	SUV39H1	suppressor of variegation 3-9 homolog 1 (Drosophila)	380	0.21253714	0.14830308	Yes
13	CBX2	chromobox homolog 2 (Pc class homolog, Drosophila)	382	0.211818233	0.15893564	Yes
14	ING2	inhibitor of growth family, member 2	389	0.20988822	0.16919003	Yes
15	JARID1D	jumonji, AT rich interactive domain 1D	455	0.192932457	0.17527568	Yes
16	TADA2L	transcriptional adaptor 2 (ADA2 homolog, yeast)-like	489	0.184326738	0.18272403	Yes
17	SMARCC1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily c, member 1	505	0.181631267	0.19104713	Yes
18	MAP3K12	mitogen-activated protein kinase kinase kinase 12	533	0.176455855	0.19843523	Yes
19	RBM14	RNA binding motif protein 14	573	0.165710911	0.20460726	Yes
20	OGT	O-linked N-acetylglucosamine (GlcNAc) transferase	588	0.163274154	0.21206018	Yes
21	HAT1	histone acetyltransferase 1	592	0.16258575	0.22009608	Yes
22	ASF1B	ASF1 anti-silencing function 1 homolog B (S. cerevisiae)	702	0.148330852	0.22146027	Yes
23	MORF4L2	mortality factor 4 like 2	721	0.146211356	0.22782756	Yes
24	DNMT3B	DNA (cytosine-5-)-methyltransferase 3 beta	745	0.142823175	0.23374312	Yes
25	PML	promyelocytic leukemia	746	0.142678365	0.24094291	Yes
26	MTA2	metastasis associated 1 family, member 2	754	0.141108081	0.24767038	Yes
27	SUV420H2	suppressor of variegation 4-20 homolog 2 (Drosophila)	761	0.140796766	0.2544383	Yes
28	RUVBL1	RuvB-like 1 (E. coli)	771	0.139453724	0.26096997	Yes
29	HDAC8	histone deacetylase 8	783	0.137982488	0.26731512	Yes
30	TFDP1	transcription factor Dp-1	806	0.13607043	0.27294606	Yes
31	JARID1B	jumonji, AT rich interactive domain 1B	813	0.13525711	0.27943444	Yes
32	RCOR1	REST corepressor 1	852	0.131043524	0.28391325	Yes
33	RBL1	retinoblastoma-like 1 (p107)	869	0.129746228	0.289562	Yes
34	ING4	inhibitor of growth family, member 4	871	0.129595622	0.29604545	Yes
35	TAF5	TAF5 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 100kDa	896	0.127395883	0.30112636	Yes
36	CHD4	chromodomain helicase DNA binding protein 4	929	0.124236919	0.30559862	Yes
37	TAF6L	TAF6-like RNA polymerase II, p300/CBP-associated factor (PCAF)-associated factor, 65kDa	934	0.123564117	0.31160927	Yes
38	HDAC2	histone deacetylase 2	984	0.1193204	0.3148788	Yes
39	MBTD1	mbt domain containing 1	986	0.11920435	0.32083791	Yes
40	BAP1	BRCA1 associated protein-1 (ubiquitin carboxy-terminal hydrolase)	1071	0.113522656	0.32184947	Yes
41	CHD1L	chromodomain helicase DNA binding protein 1-like	1097	0.11218743	0.3261068	Yes
42	HDAC3	histone deacetylase 3	1104	0.111529015	0.3313978	Yes
43	SMARCA4	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4	1121	0.110351607	0.33606786	Yes
44	PMS2	PMS2 postmeiotic segregation increased 2 (S. cerevisiae)	1137	0.108649857	0.3407082	Yes
45	RBBP5	retinoblastoma binding protein 5	1171	0.10588365	0.34419817	Yes
46	HRMT1L2	hnRNP methyltransferase-like 2	1173	0.105708972	0.34947628	Yes
47	TRRAP	transformation/transcription domain-associated protein	1191	0.10456533	0.35379818	Yes
48	SUZ12	suppressor of zeste 12 homolog (Drosophila)	1199	0.104012631	0.35865375	Yes
49	SETD1A	SET domain containing 1A	1219	0.103118166	0.36279035	Yes
50	HMG20B	high-mobility group 20B	1238	0.102017626	0.36692756	Yes
51	DNAJC2	DnaJ (Hsp40) homolog, subfamily C, member 2	1282	0.099648811	0.36954135	Yes
52	RNF40	ring finger protein 40	1352	0.096495837	0.37053603	Yes
53	PRKCA	protein kinase C, alpha	1387	0.095143177	0.37342787	Yes
54	WDR5	WD repeat domain 5	1402	0.094431467	0.3774069	Yes
55	ACTL6A	actin-like 6A	1434	0.093199909	0.38036913	Yes
56	BRD8	bromodomain containing 8	1441	0.092853881	0.38471776	Yes
57	2310005N01RIK	MYST/Esa1-associated factor 6 (meaf6)	1475	0.090887889	0.38745102	Yes
58	SETD8	SET domain containing (lysine methyltransferase) 8	1488	0.090272427	0.39133248	Yes
59	CEBPG	CCAAT/enhancer binding protein (C/EBP), gamma	1499	0.089827366	0.39530376	Yes
60	TCF3	transcription factor 3 (E2A immunoglobulin enhancer binding factors E12/E47)	1566	0.086825378	0.39597893	Yes
61	USP16	ubiquitin specific peptidase 16	1571	0.086455278	0.40011698	Yes
62	PAF1	Paf1, RNA polymerase II associated factor, homolog (S. cerevisiae)	1588	0.085441738	0.40353006	Yes
63	TLK2	tousled-like kinase 2	1595	0.085189477	0.40749192	Yes
64	LEO1	Leo1, Paf1/RNA polymerase II complex component, homolog (S. cerevisiae)	1605	0.084975943	0.41127458	Yes
65	RNF8	ring finger protein 8	1620	0.08446487	0.41475064	Yes
66	CHD8	chromodomain helicase DNA binding protein 8	1621	0.084430397	0.41901115	Yes
67	JMJD6	jumonji domain containing 6	1646	0.083185405	0.4218611	Yes
68	PIM3	pim-3 oncogene	1659	0.082581855	0.42535448	Yes
69	HIRA	HIR histone cell cycle regulation defective homolog A (S. cerevisiae)	1703	0.080668554	0.4270105	Yes
70	YEATS4	YEATS domain containing 4	1752	0.078448951	0.42827377	Yes
71	TLK1	tousled-like kinase 1	1784	0.077551328	0.43044636	Yes
72	POLE3	polymerase (DNA directed), epsilon 3 (p17 subunit)	1800	0.076944992	0.43348682	Yes
73	MED24	Mediator complex subunit 24	1828	0.075917579	0.43580157	Yes
74	SMARCB1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily b, member 1	1840	0.075437412	0.43899056	Yes
75	CARM1	coactivator-associated arginine methyltransferase 1	1841	0.075392641	0.442795	Yes
76	AOF2	amine oxidase (flavin containing) domain 2	1910	0.073199488	0.4426703	Yes
77	RUVBL2	RuvB-like 2 (E. coli)	1911	0.073160261	0.44636208	Yes
78	USP21	ubiquitin specific peptidase 21	1939	0.072016142	0.44847995	Yes
79	TAF12	TAF12 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 20kDa	1943	0.071849264	0.4519371	Yes
80	SMYD2	SET and MYND domain containing 2	1968	0.071208976	0.45418274	Yes
81	DPY30	Dpy-30 homolog (C. elegans)	1982	0.070794173	0.45702514	Yes
82	SS18L1	synovial sarcoma translocation gene on chromosome 18-like 1	1983	0.070737325	0.46059465	Yes
83	MAP3K7	mitogen-activated protein kinase kinase kinase 7	1996	0.070139818	0.46346018	Yes
84	RB1	retinoblastoma 1 (including osteosarcoma)	2018	0.069372296	0.46578157	Yes
85	WBP7	mixed-lineage leukemia protein 4, MLL4	2040	0.068535268	0.46806073	Yes
86	GTF3C4	general transcription factor IIIC, polypeptide 4, 90kDa	2043	0.068492748	0.4714047	Yes

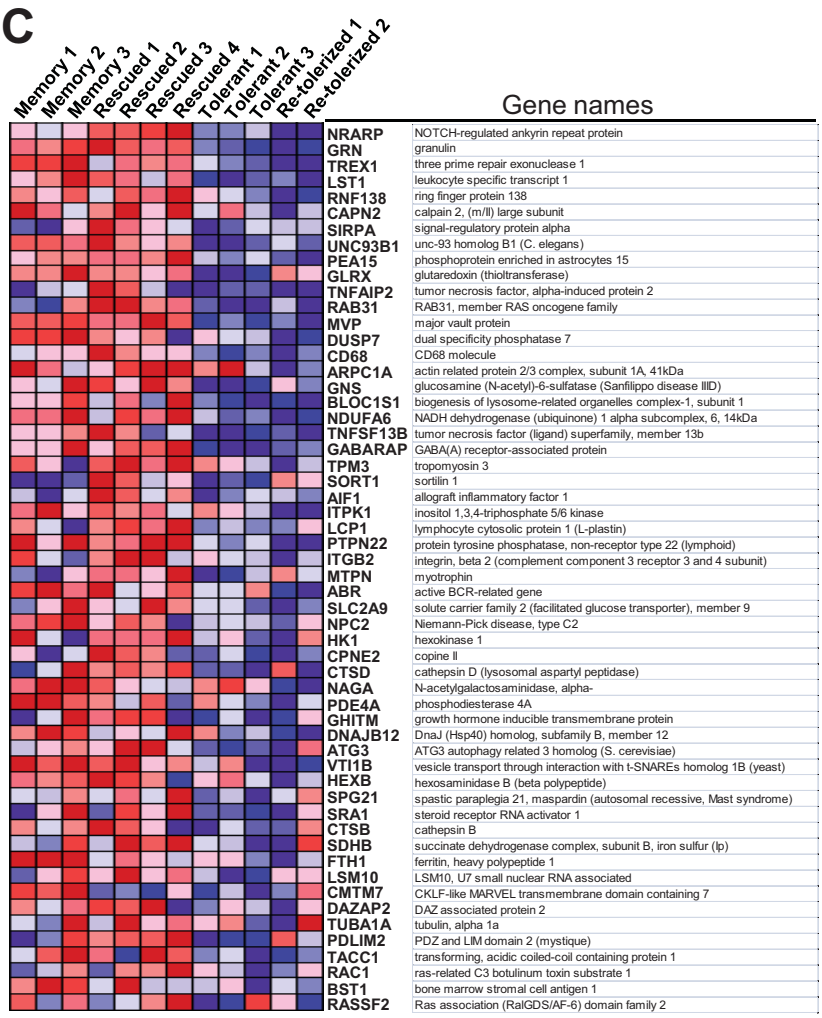
	GENE SYMBOL	GENE TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMENT
87	TDRD3	tudor domain containing 3	2051	0.068233572	0.4744548	Yes
88	CBX4	chromobox homolog 4 (Pc class homolog, Drosophila)	2103	0.066387154	0.47494093	Yes
89	AOF1	amine oxidase (flavin containing) domain 1	2139	0.06513419	0.4762623	Yes
90	HDAC6	histone deacetylase 6	2157	0.06469962	0.47857252	Yes
91	JMJD5	jumonji domain containing 5	2197	0.063398257	0.47958168	Yes
92	YEATS2	YEATS domain containing 2	2253	0.061880447	0.47961578	Yes
93	SKP1A	S-phase kinase-associated protein 1A (p19A)	2256	0.061724737	0.4826182	Yes
94	EHMT2	euchromatic histone-lysine N-methyltransferase 2	2258	0.061604612	0.48567072	Yes
95	2410022L05RIK	chromosome 17 open reading frame 79	2306	0.060063578	0.48606238	Yes
96	PRMT2	protein arginine methyltransferase 2	2311	0.060021173	0.4888665	Yes
97	NSBP1	nucleosomal binding protein 1	2324	0.059738655	0.49120718	Yes
98	TGFB1	transforming growth factor, beta 1 (Camurati-Engelmann disease)	2327	0.059605874	0.4941027	Yes
99	SCMH1	sex comb on midleg homolog 1 (Drosophila)	2379	0.058013704	0.49416628	Yes
100	BRDT	bromodomain, testis-specific	2383	0.057949249	0.49692205	Yes
101	1200011O22RIK	leucine-rich repeats and WD repeat domain containing 1 (LRWD1)	2403	0.057387225	0.49875095	Yes
102	BRPF1	bromodomain and PHD finger containing, 1	2490	0.055479322	0.49672124	Yes
103	HDAC7	histone deacetylase 7	2552	0.054050263	0.4960233	Yes
104	CTR9	Ctr9, Paf1/RNA polymerase II complex component, homolog (S. cerevisiae)	2564	0.053811803	0.49812102	Yes
105	MEN1	multiple endocrine neoplasia I	2611	0.052698862	0.4981972	Yes
106	BMI1	B lymphoma Mo-MLV insertion region (mouse)	2624	0.052405816	0.50016785	Yes
107	5430437P03RIK	BRISC and BRCA1 A complex member 1 (BABAM1)	2669	0.051359221	0.5002887	Yes
108	BAT3	HLA-B associated transcript 3	2804	0.04865548	0.49521923	Yes
109	SUPT3H	suppressor of Ty 3 homolog (S. cerevisiae)	2834	0.048102628	0.49601808	Yes
110	INO80	INO80 homolog (S. cerevisiae)	2844	0.047931623	0.49793142	Yes
111	FOXP3	forkhead box P3	2851	0.047857907	0.5000095	Yes
112	2410016O06RIK	chromosome 14 open reading frame 169 (NO66)	2905	0.046911653	0.49940053	Yes
113	JMJD1C	jumonji domain containing 1C	2933	0.046425451	0.50022703	Yes
114	PHF16	PHD finger protein 16	2953	0.046166502	0.50148976	Yes
115	BCOR	BCL6 co-repressor	3011	0.045348484	0.50057733	Yes
116	NIPBL	Nipped-B homolog (Drosophila)	3049	0.044736922	0.5007571	Yes
117	MSX3	homeobox, msh-like 3	3097	0.044128768	0.50034463	Yes
118	EYA3	eyes absent homolog 3 (Drosophila)	3139	0.043376565	0.50023115	Yes
119	PBRM1	polybromo 1	3145	0.043290898	0.5021349	Yes
120	MYST4	MYST histone acetyltransferase (monocytic leukemia) 4	3164	0.042988345	0.5032934	Yes

Supplementary Figure 7: Gene set enrichment analysis of genes regulating chromatin modification in memory and rescued T cell samples versus tolerant and re-tolerized T cell samples. Expression data were analyzed for genes involved in chromatin modification using gene set enrichment analysis (GSEA). Gene set consists of 330 genes found in the gene ontology term 'chromatin modification' (www.geneontology.org; GO:0016568 chromatin modification; consisting of 376 genes total; 330 genes found on microarray). **(A)** Gene set enrichment plot showing skewing to the left, indicating enrichment of chromatin modifying genes in tolerant and re-tolerized T cells compared to memory and rescued T cells. The distribution of the genes is listed according to rank position. 120 genes were found to be enriched in data set. NES, normalized enrichment score. **(B)** Corresponding heat map displaying the expression levels of the 120 most enriched genes. Expression levels are represented as a gradient from high (red) to low (blue). Gene names listed in red are examples for DNA-methyltransferases (DNMT1), histone demethylases (JMJD3), histone acetyltransferases (HAT1), and histone deacetylases (HDAC2, HDAC3). All 120 genes including ranked metric score and enrichment score (ES) are listed in **(C)**.

Supplementary Figure 8





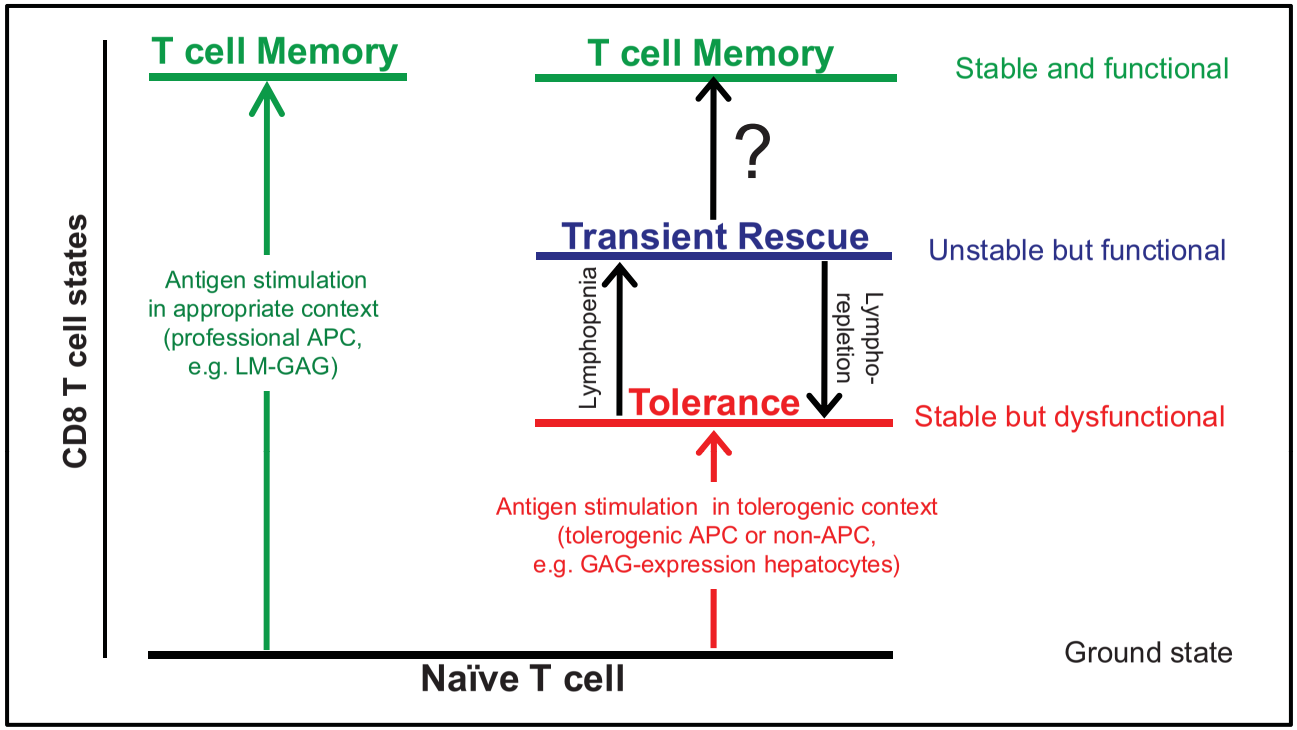


D

	GENE SYMBOL	GENE TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMEN
1	NRARP	NOTCH-regulated ankyrin repeat protein	21	0.52769357	0.054924488	Yes
2	GRN	granulin	58	0.421000153	0.0976755	Yes
3	TREX1	three prime repair exonuclease 1	111	0.327860177	0.12963817	Yes
4	LST1	leukocyte specific transcript 1	185	0.273305655	0.15463631	Yes
5	RNF138	ring finger protein 138	189	0.270939112	0.18326876	Yes
6	CAPN2	calpain 2, (m/II) large subunit	240	0.239159524	0.20591417	Yes
7	SIRPA	signal-regulatory protein alpha	263	0.22981751	0.22912094	Yes
8	UNC93B1	unc-93 homolog B1 (C. elegans)	273	0.224938184	0.25253072	Yes
9	PEA15	phosphoprotein enriched in astrocytes 15	341	0.201225147	0.27020028	Yes
10	GLRX	glutaredoxin (thioltransferase)	393	0.188874766	0.28744525	Yes
11	TNFAIP2	tumor necrosis factor, alpha-induced protein 2	395	0.188079283	0.30738127	Yes
12	RAB31	RAB31, member RAS oncogene family	431	0.18020156	0.32459256	Yes
13	MVP	major vault protein	522	0.165655762	0.33720452	Yes
14	DUSP7	dual specificity phosphatase 7	567	0.158645526	0.35162494	Yes
15	CD68	CD68 molecule	598	0.152968004	0.366219	Yes
16	ARPC1A	actin related protein 2/3 complex, subunit 1A, 41kDa	613	0.150940463	0.3814858	Yes
17	GNS	glucosamine (N-acetyl)-6-sulfatase (Sanfilippo disease IIID)	620	0.149765104	0.39707172	Yes
18	BLOC1S1	biogenesis of lysosome-related organelles complex-1, subunit 1	649	0.145250753	0.41095656	Yes
19	NDUFA6	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 6, 14kDa	692	0.139742091	0.42347866	Yes
20	TNFSF13B	tumor necrosis factor (ligand) superfamily, member 13b	720	0.136379555	0.43647605	Yes
21	GABARAP	GABA(A) receptor-associated protein	725	0.135660012	0.45067302	Yes
22	TPM3	tropomyosin 3	785	0.128673092	0.4610757	Yes
23	SORT1	sortilin 1	805	0.127180308	0.47353935	Yes
24	AIF1	allograft inflammatory factor 1	918	0.116156392	0.4796686	Yes
25	ITPK1	inositol 1,3,4-triphosphate 5/6 kinase	939	0.114958584	0.49077767	Yes
26	LCP1	lymphocyte cytosolic protein 1 (L-plastin)	955	0.114189558	0.5020826	Yes
27	PTPN22	protein tyrosine phosphatase, non-receptor type 22 (lymphoid)	996	0.111047804	0.5116657	Yes
28	ITGB2	integrin, beta 2 (complement component 3 receptor 3 and 4 subunit)	1097	0.104847699	0.51725906	Yes
29	MTPN	myotrophin	1169	0.100758575	0.52402765	Yes
30	ABR	active BCR-related gene	1223	0.097706407	0.531471	Yes
31	SLC2A9	solute carrier family 2 (facilitated glucose transporter), member 9	1256	0.095021479	0.5308004	Yes
32	NPC2	Niemann-Pick disease, type C2	1263	0.095445111	0.5497025	Yes
33	HK1	hexokinase 1	1274	0.094981469	0.55924326	Yes
34	CPNE2	copine II	1289	0.094417147	0.568502	Yes
35	CTSD	cathepsin D (lysosomal aspartyl peptidase)	1291	0.094293579	0.5784692	Yes
36	NAGA	N-acetylgalactosaminidase, alpha-	1386	0.089298509	0.5827429	Yes
37	PDE4A	phosphodiesterase 4A	1399	0.088441409	0.59147745	Yes
38	GHITM	growth hormone inducible transmembrane protein	1471	0.084994152	0.59657043	Yes
39	DNAJB12	DnaJ (Hsp40) homolog, subfamily B, member 12	1565	0.080411144	0.5999549	Yes
40	ATG3	ATG3 autophagy related 3 homolog (S. cerevisiae)	1636	0.077318452	0.60428745	Yes
41	VTI1B	vesicle transport through interaction with t-SNAREs homolog 1B (yeast)	1667	0.076081924	0.6107091	Yes
42	HEXB	hexosaminidase B (beta polypeptide)	1679	0.075786002	0.618154	Yes
43	SPG21	spastic paraplegia 21, maspardin (autosomal recessive, Mast syndrome)	1722	0.074025944	0.6236909	Yes
44	SRA1	steroid receptor RNA activator 1	1743	0.072968312	0.6303367	Yes
45	CTSB	cathepsin B	1913	0.066194147	0.62799114	Yes
46	SDHB	succinate dehydrogenase complex, subunit B, iron sulfur (Ip)	1926	0.065721504	0.6343107	Yes
47	FTH1	ferritin, heavy polypeptide 1	1931	0.065551423	0.64105636	Yes
48	LSM10	LSM10, U7 small nuclear RNA associated	2095	0.060444389	0.6384326	Yes
49	CMTM7	CKLF-like MARVEL transmembrane domain containing 7	2181	0.058230128	0.63990355	Yes
50	DAZAP2	DAZ associated protein 2	2235	0.056818902	0.6430009	Yes
51	TUBA1A	tubulin, alpha 1a	2250	0.056404322	0.6482191	Yes
52	PDLIM2	PDZ and LIM domain 2 (mystique)	2278	0.055888023	0.6526608	Yes
53	TACC1	transforming, acidic coiled-coil containing protein 1	2395	0.052636098	0.6518162	Yes
54	RAC1	ras-related C3 botulinum toxin substrate 1	2480	0.050786909	0.6525515	Yes
55	BST1	bone marrow stromal cell antigen 1	2542	0.0495685	0.654434	Yes
56	RASSF2	Ras association (RalGDS/AF-6) domain family 2	2604	0.048371717	0.6561893	Yes

Supplementary Figure 8: miR-181a expression and enrichment of miR-181a predicted target genes in TCR_{GAG} CD8 T cells. (A) Comparison of miR-181a expression determined by microRNA array (blue) and qRT-PCR (green). The diagram shows the average fold change between average for each assay and the different T cell samples [memory (M1, M2, M3), tolerant (T1, T2, T3), rescued (RS1, RS2, RS3)]. A fold change higher than one indicates up-regulation, and a fold change less than one a down-regulation in the samples compared to the assay average. **(B)-(D)** Gene set enrichment analysis (GSEA) of miR-181a predicted target genes. Predicted target genes were compiled from published reports *(27, 40, 41).* A total of 124 target genes were compared to microarray data from memory, tolerant, rescued and re-tolerized TCR_{GAG} CD8 T cell samples. **(B)** Gene set enrichment plot showing skewing to the left, indicating enrichment of predicted target genes for memory, tolerant, rescued and re-tolerized T cells. NES, normalized enrichment score. Nominal p-value 0.015. **(C)** Corresponding heat map displaying the correlation of the 56 most enriched genes with mRNA target expression levels inversely correlated with miR-181a expression levels. Expression levels are represented as a gradient from high (red) to low (blue). Individual genes including ranked metric score and ES are listed in **(D)**.

Supplementary Figure 9



Supplementary Figure 9: Model for peripheral CD8 T cell tolerance. Naive peripheral CD8 T cells, when triggered by antigen, can transition into distinct T cell states depending on the conditions as indicated: (Left) A first encounter with (foreign) antigen presented on professional antigen presenting cells (APC) frequently results in the generation of long-lived memory CD8 T cells (e.g. naïve TCR_{GAG} CD8 T cells become memory T cells after LM-GAG infection). Memory CD8 T cells are functional. (Right) Peripheral naïve CD8 T cells that encounter (self-) antigen under tolerogenic conditions can be deleted (not shown) or become tolerant and dysfunctional. The initial encounter(s) with (self-) antigen in the periphery results in the establishment of a tolerance-specific program associated with functional unresponsiveness. The tolerance-program can be temporarily overridden under lymphopenic conditions and tolerant T cells become transiently rescued, but it is eventually reasserted in lymphoreplete hosts and rescued T cells return to their imprinted, tolerant state (epigenetic memory). The model of stable and unstable T cell states and T cell plasticity has been adapted from the review by K.M. Murphy and B. Stockinger *(42)*.

Supplementary Table S1: Full list of genes in each K-means cluster. Log_2-transformed expression intensities that were mean-centered at the probe level for naïve, memory, tolerant, rescued and re-tolerized T cells are shown.

Supplementary Table 1

Cluster	Probe ID	Target ID	Naïve	Memory	Tolerant	Rescued	Re-tolerized
1	2970132	PLEKHG2	0.8018009	-0.428892	0.0632551	-0.8980818	0.13529004
1	3190731	PRICKLE1	0.48148066	-0.7762711	0.1907616	-0.5478571	1.0437983
1	5700017	ITGAE	2.3588505	-0.7984876	-0.448296	0.22592299	0.7723071
1	5700632	TRAT1	1.1955078	-0.4532592	-0.036097	-0.0587368	0.46185258
1	5720239	INPP5F	0.37912115	-0.3214806	0.1053727	-0.6270103	0.61737794
1	6450471	ITGAE	2.377154	-0.4853267	-0.155947	0.39544135	0.7843138
1	20553	CEP97	0.8881087	-0.0094054	0.0070132	-0.1768393	0.75109833
1	150372	RASL11B	0.8388532	-0.3278843	0.1029604	-0.7017528	1.1419865
1	290341	RASL11B	1.008759	-0.2487633	0.2905285	-0.5563425	1.3037854
1	540202	TTC3	0.41567135	-0.621565	0.1060438	-0.3854678	0.632823
1	610274	FADS1	0.57673985	0.06997927	-0.11154	-0.5858762	0.7615062
1	630091	NFKBID	0.11534373	-0.1858197	0.0853166	-1.0431087	0.3689468
1	1110719	FRMD6	0.70148575	-0.1312694	0.0285966	-0.6324747	1.1053064
1	1570373	CSNK1E	0.86376375	-0.1502244	0.220851	-0.3526485	0.45887974
1	1660474	CSNK1E	0.7679985	-0.420868	0.1520601	-0.4162918	0.51179487
1	2140706	ACVR2B	1.2439562	-0.181673	0.0289042	-0.1405826	0.5859289
1	2470465	MDK	0.9085245	-0.0945939	0.7964716	-0.4163674	0.41895178
1	2480475	SESN1	0.6792052	-0.5229772	0.0950666	-0.6338139	0.2633572
1	2570008	IVNS1ABP	0.24770916	-0.8085313	0.2112749	-0.2887533	0.13935125
1	2570131	DLG3	0.7153892	-0.1023802	0.0798123	-0.3108139	1.1832613
1	2570435	4631426J05RIK	0.4041749	-0.66827	-0.019188	-0.1815527	0.6812899
1	2690070	FBLN1	0.25331283	-0.7516553	0.2650927	-0.386355	0.62971485
1	2810280	LOC100047856	1.1529646	-0.2418921	-0.017605	-0.4092597	1.5026354
1	2900373	1190002H23RIK	1.9152033	-0.6983159	0.1665595	-1.9895834	1.3779511
1	2900474	LTA	0.39848736	-0.1225137	0.1566144	-0.6079359	0.15211368
1	3170739	CCL27	0.41318882	-0.0965137	0.0117217	-0.8505808	0.15105592
1	3190681	SV2A	1.0624876	-0.568151	0.4314072	-0.4123106	0.27742603
1	3370487	EXT1	0.9045303	-0.0179992	0.0472379	-0.3331347	1.1021596
1	3390341	TMEM87A	0.66798925	-0.4641398	-0.009678	-0.0161636	0.46247116
1	3440397	MATK	1.3003168	0.07529158	-0.146828	-0.6216791	0.50897247
1	3460142	BACH2	0.56303596	-0.0388804	0.0473324	-0.5100122	0.6632082
1	4010243	RAMP1	1.3666203	-2.0124867	0.0684826	-0.8998017	1.5443537
1	4060239	PLEKHG2	0.8181907	-0.2411259	0.1241456	-0.8904056	0.10640948
1	4060593	VANGL2	0.25841668	-0.9743664	0.1583713	-0.5227124	1.2285708
1	4180491	KCNMB4	0.75762504	-0.1304188	0.0898311	-0.2618802	0.73865366
1	4280402	EPHX1	0.46725988	-2.1699574	0.0925976	-1.0510663	1.3071985
1	4290273	AMPD1	1.5937355	-1.4370389	0.3381265	-0.424187	-0.01637838
1	4290609	ADCY6	1.1193453	-0.7183687	0.2438435	-0.6426052	0.6348519
1	4860379	DUSP2	1.0882053	-0.1765012	0.1190957	-0.3112592	0.3267282
1	4880253	JMJD3	0.67533094	-0.7289099	0.2122255	-0.5422794	0.3827848
1	4890022	TTC3	0.4105568	-0.6851057	0.0072602	-0.1482116	0.97230566
1	4900632	RCAN3	1.3034546	-0.0158006	-0.078364	-0.4264614	0.6695535
1	4920424	JMJD3	0.60211265	-0.6318017	0.0780334	-0.5121642	0.5364411
1	5130450	USP6NL	0.11843861	-0.9211223	0.1628048	-0.8130905	1.225298
1	5390398	JARID1D	0.52076924	-0.5319055	-0.049998	0.07200626	0.83284116
1	5550356	GTF2IRD1	0.77324176	-0.3510335	0.1195403	-0.095476	0.5986678
1	5860296	RASGRP1	0.5368891	-0.4803597	0.2490036	-0.338333	0.41579652
1	5910239	ENG	0.31544235	-0.7465336	0.1902012	-0.7338076	0.27234238
1	6060646	PBX2	0.9127204	-0.0798587	0.1491135	-0.1369453	0.33154312
1	6200619	XKRX	1.7736167	-0.7302726	0.1131985	-0.6641933	0.95774525
1	6450056	SQLE	0.45867026	0.26307464	-0.776443	-0.975629	0.31528988
1	6620079	EGR1	0.70591086	-1.5391787	0.1556476	-0.9305695	1.4714879
1	7040195	GPR83	2.4719543	-1.273799	0.1672676	-0.4477192	1.1957731
1	7100687	ITGAE	2.8026774	-1.6096157	-0.750379	0.02768894	1.462209
1	7210072	IRF6	0.96485806	-0.3722287	0.0603718	-0.2804379	0.9294641
1	7320139	IFT80	0.54156303	-0.7262937	0.232917	-0.8732254	0.84522814
1	7330026	EGR2	0.8951821	-0.9712015	0.3365504	-0.4925921	2.2748318
1	7610239	2510009E07RIK	0.5211278	-0.6094481	-0.533715	0.14082666	1.4153204
1	130634	DDIT4	1.3910939	-0.376381	-0.524397	0.04905623	0.18583256
1	160484	SV2A	1.3043916	-0.5354812	0.5616949	-0.2063511	0.36696762
1	520196	ITGAE	2.754341	-1.6254517	-0.758647	0.08013526	1.4379636
1	580379	TTC3	0.4571378	-0.6701853	0.0610247	-0.2303334	0.8513744
1	610671	AMPD1	1.3727782	-1.1203685	0.2678575	-0.3533559	0.08436439
1	650609	TPCN1	0.79683894	-0.1228108	0.1640049	-0.3226422	0.4562145
1	780671	TRAT1	1.4428408	-1.5288825	-0.289439	-0.3111985	1.3345236
1	1010296	TUBB2B	1.127433	-0.5559389	0.0601501	-0.2327091	1.0204176
1	1030133	TUBB2B	0.33474636	-2.1921475	0.3739117	-0.9374247	2.2369561
1	1090093	TTC3	0.4309545	-0.6357225	0.1022983	-0.2496075	0.83661926
1	1170521	DUSP2	0.79973185	-0.0998848	0.0866004	-0.4418083	0.29515368
1	1190592	PARD6G	0.38368946	-0.7071417	0.0787735	-0.2156478	0.83156675
1	1240551	LRRC1	0.76732934	-0.0667942	0.0113038	-0.2957105	0.40964842
1	1300059	ITGAE	2.112571	-0.2512685	-0.164225	0.1924351	0.7106191
1	1340349	SSBP3	0.65441585	-0.7839968	0.2742478	-0.3910944	1.3391068
1	1430368	ST6GAL1	0.33645725	-0.8654459	0.1479386	-0.1456489	0.3160385
1	1440286	HECTD2	0.4734605	-0.6300688	0.1630988	-0.3674138	0.18034273
1	4050626	TNF	0.22615589	-0.2202564	0.1186467	-0.9994846	0.23995203
1	1440739	RNF19A	0.38635588	-0.665993	0.0491247	-0.5695642	1.4024066
1	1570725	DSCR1L2	1.1976281	0.03311677	-0.081498	-0.394302	0.65766925
1	1770519	TCF25	0.3103668	-0.3150619	0.1692824	-0.7878287	0.08553292
1	1850082	CSRNP2	1.3399237	-0.2319983	0.1286378	-0.3358237	0.5415284
1	2070152	TIMP2	0.83782583	-2.035937	-0.25034	0.02270594	1.1515279
1	2100243	KIF1B	0.747985	-0.8084226	-0.072465	-0.0886659	0.0579876
1	2230070	TMEM108	0.90322965	-0.4530796	0.0202815	0.06964189	-0.00441309
1	2350440	GPR68	0.88460803	0.03224373	-0.369587	-0.1343798	0.27359274
2	1030519	ID2	-0.2621223	0.99765503	-0.221017	0.7049803	-0.35680678
2	1110326	FCGR2B	-0.2118132	1.0683037	-0.033943	0.4979016	-0.07451714
2	3310189	CST7	-0.4580198	0.79344386	-0.170302	0.629477	-0.306268
2	3440132	SMPDL3B	-1.4734874	2.408794	-0.277435	1.0382475	-0.19338875
2	5560754	LY6D	-0.3947854	1.9181828	-0.807915	0.40375826	0.2749083
2	6940187	NRP1	-0.3426279	1.5092454	-0.124975	0.03320022	2.1929953
2	20465	SRPK3	-0.0669757	1.5948634	-0.11548	0.095549	0.058498394
2	650707	H2-AA	-1.415979	2.1624398	-0.772342	1.0818133	0.3881212
2	670703	FCRLA	-0.2301906	2.1462042	-0.269809	0.832072	0.30071986
2	1010132	CCR6	-0.2223467	1.5125874	-0.139576	0.3936404	0.1924398
2	1240538	P2RY14	-0.2296907	0.8078909	-0.041186	0.3505406	-0.02666731
2	1260164	ASNS	-0.5263515	1.1578513	-0.0953	0.6562173	-0.25614932
2	1260477	FCRLA	-0.2862084	1.7769675	-0.167592	0.5822335	0.15625635
2	1340553	LOC100047815	-0.6041209	1.7042191	-0.546491	0.3009582	0.13599828
2	1440307	H2-AB1	-1.7295977	1.9574854	-1.091012	1.1458714	-0.3441888
2	1820037	RASL12	-0.5077106	1.4098238	-0.059175	1.0288979	-0.34990352
2	1980411	ARRDC3	-0.1125518	1.1020321	0.0238553	-0.0094436	0.24767856
2	1990546	FAIM3	-1.7088625	2.8155851	-1.604732	0.8459365	0.41579634
2	2120392	CYP4F18	-0.2008844	1.017208	-0.178501	0.5616507	-0.04888338
2	2510646	LY6D	-0.3294037	1.747707	-0.521821	0.2164593	0.37087592
2	2630463	CIITA	-0.453339	0.984656	-0.138047	0.38650793	0.028498165
2	2710520	TNFRSF13C	-0.4102783	1.3086666	-0.138885	0.2683429	-0.08096335
2	2750706	FCER2A	-0.1285973	1.5857992	0.0073374	0.27013367	-0.03153205
2	3140491	BLK	-0.1423258	1.058905	-0.166872	0.21020935	0.11049039
2	3290279	BLK	-0.3626047	1.3716393	-0.409875	0.30958217	-0.05890627
2	3310438	GNPTAB	-0.5737653	0.7114746	-0.068477	0.46949828	-0.21315351
2	3450482	H2-DMB2	-0.0404825	1.2876958	-0.20531	0.39583564	0.01219363
2	3870047	CTSH	-0.7626274	1.1615129	-0.514242	1.0820864	-0.10897806
2	3890274	SCD1	-0.2795542	2.3059523	-0.23519	0.52314526	0.2767346
2	4050093	FCRLA	-0.181744	1.7749143	-0.166073	0.38291737	0.14887759
2	4290180	CASP4	-0.5262026	1.2127475	-0.199162	0.0816417	0.5802786
2	4490709	GZMK	-0.0101881	1.4531571	-0.112855	-0.0206572	0.34173152
2	4570463	KCNK5	-1.0010993	2.610963	-0.403864	0.85898405	-0.02591835
2	4760241	CD40	-0.1539865	1.2544303	-0.021475	0.38139403	0.045563955
2	4780047	B3GNT8	-0.1294624	1.192972	-0.174633	0.42042917	0.089328215
2	4830551	NAPSA	-0.5826257	1.0228887	-0.470186	0.7909786	-0.29851174
2	4900500	VPREB3	-0.180333	1.0937319	-0.003091	0.3036207	-0.09495229
2	5050343	BTK	-0.7616357	0.84919864	-0.261026	0.3315098	0.41688955
2	5690500	NAPSA	-1.26133	1.3939451	-0.857593	1.1156901	-0.02403077
2	5720255	PLD4	-0.6252016	0.8111941	-0.16847	0.9153461	-0.1691315
2	5810273	EDG8	-0.411778	0.6169949	-0.204772	0.62753326	-0.13772082
2	5820369	MEF2C	-0.2618962	1.0496873	-0.079871	0.16346051	0.024000822
2	5910372	TCTEX1D2	-0.2223214	0.82501596	-0.112511	0.05369149	0.32044384

2	6020224	Il4l1	-0.2491837	1.5663941	-0.164792	0.3208465	0.21153186
2	6020487	LOC100044439	-0.4931661	1.9471418	-0.274344	1.1974484	0.067621484
2	6370164	KCNK5	-0.3708322	1.0385724	-0.249377	0.05963286	0.04440363
2	7210672	2010001M09RIK	-1.1343588	1.5712336	-1.150187	0.93860483	0.2661818
2	7320576	MANSC1	-0.1505263	0.8738996	-0.135422	0.40203646	-0.19124858
2	7570537	LMO2	-0.6314372	1.2627714	-0.30072	0.82397294	-0.18432428
2	360743	NRP1	-0.4310794	1.3842376	-0.167403	-0.0627898	2.0274916
2	380369	NAPSA	-0.9241345	1.3810921	-0.555122	0.9852623	-0.10882019
2	430167	LY86	-0.6814998	1.1986059	-0.333129	1.0600072	-0.25186363
2	430703	RNASE6	-0.4948967	0.85991704	-0.050702	0.70473105	-0.08491256
2	460692	BCL11A	-0.1846274	1.118038	-0.041085	0.405334	0.030720105
2	1740692	FASL	-0.7786429	1.690161	-0.044532	1.9688598	-0.48861217
2	2000246	GRN	-0.3281204	1.0666877	-0.09861	1.2257752	-0.42830566
3	7610451	BZRAP1	0.00521939	0.30231687	1.4806492	-0.263243	-0.20873709
3	3360520	TMEM49	-0.749862	0.582163	0.4618087	-0.0960062	0.051072903
3	3370452	HIST1H4K	-0.2992219	0.719589	0.9265488	-0.3091306	0.42811868
3	3450373	XIST	0.28981265	1.8143076	1.7328439	-0.0069916	-0.3319327
3	3870630	HIST1H4J	-0.6692572	0.43044913	0.9731709	-0.8916195	0.6521201
3	4040187	HIST1H4C	-0.2185195	0.8687187	0.4270525	-0.4192862	-0.087669
3	5690358	MAPK11	-0.7549804	0.53758186	0.3637483	-0.7555864	0.7361259
3	6860347	HIST1H4F	-0.6653771	0.05770238	0.6328816	-0.4650026	0.45305437
3	150291	HIST1H4M	-0.4037668	0.6911619	0.8555322	-0.3311033	0.26476002
3	1990021	ENSMUSG00000068790	-0.4093004	0.85440373	1.526336	-0.3458625	0.50053626
3	2850403	MID1	-0.4478229	0.16124372	0.6500887	-0.2353573	-0.30264094
3	6250541	HIST1H4I	-0.5963997	0.13346857	0.6900402	-0.528684	0.6829517
4	6200598	8430432M10RIK	0.14245045	-0.4535564	0.1540216	-1.8876606	-1.6154451
4	6220044	DENND1C	0.18989293	-0.2302207	0.226657	-1.0960276	-1.3946998
4	6400551	ANKS3	0.24555436	-0.6532263	0.0587213	-2.2482784	-2.1185284
4	6450059	BC037034	0.37763274	0.06054187	0.2586939	-0.6540876	-1.4405936
4	6650458	NFKBIZ	0.37463903	-0.4535304	0.1650257	-1.1409076	-0.7962871
4	6660292	SPO11	0.14801171	-0.5086518	0.1846568	-1.562006	-1.5020666
4	6760706	NISCH	0.09782045	-0.5671967	0.0999389	-1.6892773	-0.901912
4	6770630	MIB2	0.14923905	0.34866953	0.2745731	-0.9484683	-1.3498807
4	6860082	SNAPC3	0.28442764	-0.1985661	0.1005345	-1.2420337	-1.2763355
4	6940132	A230050P20RIK	0.03057565	-0.0601639	0.3765081	-1.2150489	-0.8310828
4	6960095	OGT	0.25181246	-0.1691399	0.2220724	-1.3854883	-0.97099745
4	6960377	LRRFIP1	0.2327682	-0.0651147	0.20185	-1.3796861	-1.9488506
4	7000324	2410002F23RIK	0.05626963	-0.1561088	0.2787953	-1.2165091	-1.1600354
4	7050113	LRRC45	0.09908281	-0.2055515	0.0436706	-0.9904573	-0.6444452
4	7050577	CLK4	0.34992138	-0.4276781	0.2059236	-1.321965	-1.2209005
4	7100292	ATP13A1	0.15406197	-0.0772497	0.2427935	-1.0780927	-1.0204582
4	7150315	ZFP692	0.1445636	-0.2571031	0.2040362	-1.5836259	-1.6146104
4	7160192	1600016N20RIK	0.09681431	0.16837981	0.5641888	-1.4365605	-1.5617807
4	7560097	NARG2	0.24790609	0.04325955	0.2112325	-0.9405766	-0.7762265
4	7610390	TRPC2	0.583308	-0.3943833	0.3258455	-1.256312	-1.1399654
4	7650167	CHKB	0.27622867	-0.5294365	0.2035658	-1.5170431	-1.2956282
4	50368	RBM5	0.3196106	-0.308735	0.1348492	-0.7092502	-0.37792128
4	60041	IL11RA1	0.44539836	-0.4771768	0.0611847	-2.0899909	-1.1174476
4	110577	TARDBP	0.6041564	-0.2024324	0.271651	-1.3018173	-1.3623227
4	150136	RAB24	0.16336012	0.10374112	0.0591854	-0.9174655	-1.1293597
4	290520	OGT	0.10958798	-0.4611552	0.3178518	-1.6256772	-1.5985354
4	360097	SNORA65	0.27885124	-0.1953662	0.1054768	-1.5720088	-1.8201658
4	380196	HNRPDL	0.46345115	-0.5305883	0.3082635	-1.9384363	-1.5622095
4	450333	RTEL1	0.20371969	-0.1916214	0.0901614	-1.0777204	-0.9665457
4	510093	SFXN4	0.27445635	0.10255134	0.128567	-1.0095037	-0.31459036
4	510524	SBF1	0.32016593	-0.0899564	0.2942771	-0.7680644	-0.6385918
4	520189	ZC3H7A	0.13969289	-0.2478331	0.2871344	-0.9830587	-1.1577289
4	540239	TNRC6A	0.422179	-0.0801111	0.1122977	-1.1293911	-0.90101796
4	580341	SLC35B3	0.40912402	-0.1717453	0.0634955	-0.9553856	-0.73833644
4	730300	2810403A07RIK	0.4532161	-0.3545948	0.0768697	-1.0023334	-0.86234456
4	730725	AKAP9	0.30451706	-0.3641129	0.1292992	-0.9581112	-0.69545084
4	770349	ATP2A2	0.20622288	-0.2342213	0.2449611	-0.9294675	-0.6061665
4	830523	LOC386486	0.08545493	-0.4474909	0.0880475	-1.074397	-0.10970717
4	940730	ATP2A2	0.36557433	-0.1884212	0.3876212	-0.6890965	-0.32926768
4	1030471	A930025D01RIK	0.19329938	-0.2232873	0.2138064	-0.9779376	-0.89459324
4	1030630	RCCD1	0.15933195	0.12449355	0.2035504	-1.0137616	-0.9984959
4	1070341	4933439C20RIK	0.42997253	0.19604406	0.1498891	-1.8016914	-1.973195
4	1090162	4833420G17RIK	0.16125073	-0.3138399	0.0809485	-1.3572246	-1.3718821
4	1170022	RMND1	0.29060188	-0.1450856	0.1468585	-1.0633713	-1.056687
4	1230368	CCDC84	0.61467767	-0.083854	0.2177654	-1.4082085	-0.99995965
4	1240575	BC021381	0.21330096	-0.5488974	0.2142508	-1.9443914	-1.4022663
4	1260709	OGT	0.10839459	-0.3702143	0.2850997	-1.4612406	-1.580309
4	1450639	AKAP8L	0.5648483	-0.2964305	0.2188849	-1.7587665	-2.012761
4	1470519	EG433224	0.304867	-0.1385136	0.1677864	-1.0571885	-1.0067463
4	1690121	USP52	0.43946272	-0.1402438	0.2530504	-0.8573989	-0.79692686
4	1740139	CCDC134	0.30110267	-0.1780719	0.0470429	-0.9429262	-0.7047336
4	1740500	PANK4	0.67385477	-0.5060238	0.2808142	-1.5802193	-1.0912808
4	1850382	XLR4C	0.28426185	0.04507157	0.3726558	-1.0173037	-0.6177896
4	2000692	ABCA7	0.5396763	-0.0964691	0.0468187	-1.1396177	-1.5498984
4	2030523	5033414D02RIK	0.20276864	-0.1122839	0.1580103	-0.9189044	-0.12599514
4	2100563	PRPF40B	0.25406185	-0.0900538	0.304489	-0.7708391	-0.5932897
4	2190220	CLK1	0.49675754	-0.3382387	0.1239695	-1.4421034	-1.5152093
4	2230010	GDI1	0.19106229	-0.0332444	0.1390111	-1.5269861	-1.6944598
4	2230626	WDR9	0.4391827	-0.1613003	0.1748893	-0.8018231	-0.85576797
4	2340093	DVL1	0.35762563	-0.3889193	0.2433419	-1.915898	-1.939921
4	2340750	ANKZF1	0.21346031	-0.2237695	0.129371	-0.9553186	-1.1085457
4	2370093	CLK2	0.17864044	-0.3345491	0.1910623	-1.1285567	-1.0418106
4	2370390	KRTCAP3	0.09890349	-0.246439	0.1965481	-1.0176257	-0.63591
4	2480170	ABCA7	0.31657824	0.16193582	0.1769278	-0.9886055	-1.1941575
4	2490367	2410002F23RIK	0.08955514	-0.0735459	0.3688986	-1.0866699	-0.8953552
4	2510068	BTBD12	0.16524182	-0.4491321	0.1479003	-1.1682944	-0.8242158
4	2570343	ZFP692	0.09309216	-0.1174521	0.2059429	-1.6168541	-1.6572464
4	2600253	A930025D01RIK	0.13197568	-0.2711419	0.1560364	-1.0466955	-1.1523033
4	2710400	DDX26B	0.46724138	-0.148274	0.1031303	-1.182154	-1.2288185
4	2710767	ARGLU1	0.12019938	-0.5761066	0.289327	-1.6093715	-0.47408265
4	2750114	NCAPD3	0.3790743	-0.2618491	0.2534978	-0.9486504	-0.29880995
4	2810274	ORF61	0.14630923	-0.0189954	0.2804365	-1.0351257	-0.78935283
4	2810326	FAM116B	0.24451445	-0.2421226	0.4456023	-2.1593766	-1.8169833
4	2810725	E4F1	0.3001272	0.18149318	0.3012346	-0.7644843	-0.26570585
4	2850064	ANKRD23	0.2310462	-0.3307141	0.1898981	-1.0887249	-1.1401409
4	2900739	SKIV2L	0.2523401	-0.017058	0.1396101	-0.8984705	-1.2744701
4	2940372	SH2B1	0.19066957	0.04041898	0.1749732	-0.8926296	-1.2784199
4	2940564	9430015G10RIK	0.36967635	-0.1994721	0.2537221	-1.0441254	-0.72663933
4	2940661	WHRN	0.3991914	-0.337542	0.7438012	-0.7892256	-0.06492108
4	2970646	CLK2	0.22362897	-0.3562391	0.2092706	-1.0211323	-0.9938925
4	3120037	LOC100045877	0.09826824	-0.1981873	0.0367219	-0.9609824	-1.2956779
4	3120681	RAB24	0.21931334	0.16600391	0.099298	-0.8679967	-0.9190473
4	3140326	MDN1	0.11319094	-0.3757136	0.4578207	-0.8873544	-0.46652177
4	3180445	OAS1B	0.4098541	-0.1889286	0.0895656	-0.7568442	-0.87746024
4	3190092	HNRPDL	0.19127873	-0.0751099	0.3803869	-1.1191188	-0.74642175
4	3310315	TCEA2	0.09494206	0.05404457	0.1536219	-1.1249228	-1.4217932
4	3310575	ANKS3	0.28712577	-0.3223082	0.0619779	-1.2057086	-1.0612948
4	3360279	EXDL2	0.26011646	-0.1695979	0.0420589	-0.7603518	-0.82310665
4	3360343	PDE1B	0.48485157	-0.3331116	0.2134225	-1.914331	-1.8909643
4	3370647	RGL2	0.36938575	-0.5979612	0.0743314	-1.6529688	-1.5741419
4	3370692	USP52	0.1934326	-0.4205985	0.0427724	-1.3165617	-1.0437351
4	3460279	SFRS14	0.2510345	-0.4779911	0.0642366	-1.8099672	-1.7543526
4	3610435	2700097O09RIK	0.18204632	-0.1469585	0.1737003	-0.8756512	0.11411448
4	3850142	GTPBP2	0.35421285	-0.1178343	0.1544	-1.2131938	-1.5380048
4	3870438	GTPBP6	0.18151295	-0.0608372	0.1302306	-1.138776	-0.898587
4	3870706	RTEL1	0.18198922	-0.1369636	0.1882273	-0.8799635	-0.7996894
4	3940242	SAMD9L	0.1995723	-0.2843536	0.1254122	-0.8683441	-1.1162461
4	4010626	SLC35B3	0.36889642	-0.1127867	0.1567626	-0.9220253	-0.69023746
4	4060471	SFRS5	0.28673536	-0.2264428	0.2885093	-0.8414645	-1.2679998
4	4070075	ASB13	0.3871258	0.04964635	0.1494435	-0.9008612	-1.4241849
4	4120392	ZFP276	0.5418183	-0.0653954	0.1009853	-1.0011753	-1.1767099
4	4260279	5730453I16RIK	0.40043792	-0.0440079	0.1313292	-0.7495247	-0.8079505
4	4260307	SFRS16	0.08492063	-0.358655	0.1543361	-1.2016859	-1.0681237
4	4260397	ADCK5	0.03743744	-0.3173193	0.122791	-1.1757908	-0.72360027
4	4260674	AW540478	0.16105689	-0.3143848	0.1634738	-1.0248522	-0.88714695
4	4280053	SEC61A2	0.31878987	-0.2028843	0.2211562	-0.7838795	-0.30237898

4	4280167	NXF1	0.24059163	-0.2455351	0.3478729	-1.073202	-0.54999775
4	4280193	IRF3	0.19078383	-0.0191621	0.1036511	-1.008185	-1.0537564
4	4490014	KLHL17	0.4122383	-0.0720705	0.0286471	-1.3768477	-2.1437428
4	4540138	LGALS4	0.33274734	-0.0956443	0.0545661	-1.8139999	-1.9449354
4	4540682	USP52	0.30599588	-0.0880256	0.182329	-0.7760599	-0.5993868
4	4570739	BRF1	0.41610464	-0.316984	0.1199781	-1.0253791	-0.8618158
4	4640692	SFI1	0.07698136	-0.2574678	0.1761052	-1.2982622	-1.7539208
4	4670689	2410025L10RIK	0.21664128	-0.0421616	0.2395607	-0.912401	-1.0332341
4	4780445	LUC7L	0.2412557	-0.4061011	0.1633073	-0.9245075	0.068673745
4	4850594	HMHA1	0.3743372	0.09655586	0.4364435	-0.8132285	-0.94387275
4	4880091	DDB2	0.3980279	-0.1069174	0.1351056	-0.6268593	-1.2257727
4	4880630	2400010D15RIK	0.33255446	-0.1810196	0.066963	-0.88024	-1.1748848
4	4900474	DDB2	0.42592892	-0.0856597	0.3169548	-0.9616565	-1.2870698
4	5090543	RGL2	0.46235004	-0.5609056	0.1820015	-1.7626181	-1.8595898
4	5130066	UBE1L	0.36882117	-0.0558996	0.1853109	-0.8643156	-1.7969769
4	5130138	APPL2	0.65082294	-0.3349317	0.2025718	-0.9883144	-1.3984991
4	5220601	SPNS1	0.32210362	0.3021401	0.1877899	-0.8508745	-0.73224986
4	5270110	DIDO1	0.5056458	-0.300972	0.1330745	-1.0957726	-0.59555566
4	5270563	TCOF1	0.31422487	-0.2889321	0.1853607	-0.7193237	-0.23814498
4	5310167	ANKZF1	0.12443334	-0.1972951	0.0404666	-1.2217488	-1.4097521
4	5310397	DALRD3	0.1008103	-0.069003	0.1270692	-1.1454223	-1.0453807
4	5310674	TIA1	0.40371004	-0.1898727	0.1953613	-0.8008323	-0.16116357
4	5340639	ZFC3H1	0.26540148	-0.5231384	0.118585	-1.4837335	-1.1517582
4	5360349	TRIM11	0.46491557	0.11572367	0.136733	-0.8257616	-1.1439414
4	5360619	GDI1	0.4393506	0.06659373	0.2516301	-1.4236783	-1.655393
4	5390364	APBB3	0.14441144	-0.1531379	0.0640524	-0.9543262	-0.63757604
4	5390372	AOC2	0.16631444	-0.1527216	0.2101495	-0.9411903	-0.72875
4	5560040	D4WSU114E	0.15572245	-0.1014706	0.237465	-0.973846	-0.57338554
4	5570541	3300001P08RIK	0.40700528	-0.2868315	0.111822	-1.011098	0.016560338
4	5700424	CCNL1	0.40701666	-0.178086	0.1431043	-0.9771043	-1.1599271
4	5810255	AKAP9	0.26033667	-0.4114471	0.0951021	-0.9485708	-0.7764445
4	5810280	PRR14	0.33244637	0.10180815	0.0574024	-0.6735334	-1.040034
4	5820270	SLCO4A1	0.18340228	-0.1574401	-0.00429	-0.9308066	0.15765409
4	5860707	METT11D1	0.17825536	-0.4782057	0.1934019	-1.0575179	-0.05475572
4	5870021	XLR4A	0.37506154	-0.2680008	0.3359591	-1.0595113	-0.37813798
4	5890025	RDH5	0.473133	-0.0469837	0.052208	-0.9982612	-0.9539481
4	6020554	ZFP653	0.18007398	-0.1344791	0.1052661	-1.1172495	-0.9640152
4	6060040	PCTK1	0.34978262	-0.1755647	0.2838322	-1.1219649	-0.9707998
4	6100630	NDOR1	0.24908203	-0.1263781	0.1633692	-0.8552891	-0.9623607
4	6270092	RPS15A	0.6354717	-0.1088195	0.0691099	-1.193546	-0.8190084
4	6330161	SNAPC4	0.29368183	-0.2554247	0.2796998	-1.0673956	-0.8672532
4	6350561	BRWD1	0.48506826	-0.2470886	0.0549105	-0.7732623	-0.8381169
4	6380121	ZFYVE27	0.41172534	-0.0492933	0.0526335	-0.7377119	-0.8592808
4	6450278	LGALS4	0.37635604	0.06310671	0.1028545	-1.2012337	-1.317813
4	6550349	BRWD1	0.40447485	-0.2215614	0.1658045	-0.8327835	-0.93553156
4	6550408	ING4	0.11413664	-0.1777783	0.0695077	-0.9037007	-0.28819382
4	6580079	UBP1	0.35480723	-0.2261737	0.0867765	-1.0854212	-0.8527942
4	6620397	LMBR1L	0.5116764	-0.1361091	0.1931174	-0.6943267	-0.5484352
4	6760025	KRBA1	0.4376474	0.00497683	0.1253297	-1.2161673	-0.9116583
4	7570475	TMC6	0.3297129	-0.2570631	0.0528868	-0.7437328	-0.11676871
4	150736	CLK4	0.51014555	-0.1636758	0.2505169	-0.7993701	-0.9137766
4	380187	CXXC1	0.4862547	-0.1234272	0.0311507	-0.6571096	-1.0717877
4	540609	1700019H03RIK	0.6210329	-0.1264334	0.2114936	-0.7037664	-1.4779814
4	780524	STX1A	0.48562866	0.94108945	0.1484345	-1.3671575	-1.383183
4	830598	CBX7	0.5412538	0.45981476	0.1203195	-1.0302721	-2.257623
4	940630	CCDC137	0.39749518	-0.2350397	0.2542709	-0.7333434	-0.47423798
4	1010168	DNASE1L2	0.61027443	-0.2161954	0.0888838	-0.784247	-0.68883353
4	1450075	METAPL1	0.39139265	0.22713679	0.2194336	-0.8745722	-0.5944643
4	1470561	MYCBP2	0.48400918	-0.1876743	0.2668087	-0.5308152	-0.720508
4	1500056	WBP7	0.47433537	-0.0249173	0.1773334	-0.771225	-0.7792241
4	1820470	KRBA1	0.44686866	0.12304487	0.0900559	-0.8587866	-0.6231247
4	1980609	NDOR1	0.44010675	-0.073721	0.3578109	-0.7860322	-0.81933326
4	2030397	TMOD4	0.4710895	0.04396801	0.1115619	-0.9452227	-0.93429744
4	2490209	GOLGA1	0.58803666	0.02084046	0.109756	-0.7722108	-0.8932049
4	2600079	2610207I05RIK	0.46939328	-0.1607986	0.4265247	-0.733669	-1.064584
4	2690114	ZC3H7A	0.49771014	0.00703464	0.3523646	-0.8445697	-1.0146798
4	2970092	OVGP1	0.83092743	-0.0039654	0.1488741	-1.18174	-1.1868912
4	3120544	PARP6	0.77287084	-0.3214862	0.3547405	-0.7548787	-0.9216371
4	3400632	SIRT7	0.38539225	0.06127751	0.1444461	-0.6276996	-0.9532933
4	3940672	DGKA	0.62026966	-0.1228447	0.1575206	-0.6643384	-0.8900772
4	4010021	AW549877	0.57180893	0.12673143	0.2044632	-0.6840929	-0.94665194
4	4150440	FBXL12	0.54431826	0.49973148	0.1775443	-1.0065787	-1.8993006
4	4260647	FBXL12	0.43330306	0.47958183	0.2021039	-0.7230222	-1.2980968
4	4730148	MAN2C1	0.61254215	0.5258533	0.2632964	-0.8992698	-1.3443035
4	4880278	TRIM39	0.76737034	0.11684041	0.1321404	-1.0267897	-1.3685368
4	4900343	RHEBL1	0.6555798	0.01485679	0.1652009	-0.8914403	-0.6001502
4	5490646	JMJD1A	0.56773925	-0.0620472	0.1181623	-0.6802958	-0.65224236
4	5700343	3300001P08RIK	0.5787612	-0.2985997	0.1752739	-1.013476	0.013549935
4	5860333	FYCO1	0.67242384	0.346075	0.1280962	-0.9589475	-1.5537034
4	5910598	DMTF1	0.5680408	-0.133507	0.259303	-0.7343473	-0.44641134
4	6130121	TBX6	0.947415	-0.1992931	0.0620826	-1.0775219	-1.1206837
4	6130767	IKBKE	0.84354585	-0.2321354	0.5056509	-0.8371061	-0.98933005
4	6590646	TMEM63B	0.5516942	0.14485945	0.2408211	-0.7186381	-0.80232364
4	6620553	MAP4K2	0.9049679	-0.2686061	0.4720172	-0.980044	-0.75888526
4	7100300	TMC6	0.46420178	-0.1864464	0.1685596	-0.6550536	-0.10195686
4	7550110	LOC100047816	0.56438166	-0.1817123	0.2046267	-0.6151601	-0.64684343
4	7560475	ABCC5	0.741916	0.07462292	0.2116994	-0.9263908	-0.77904284
4	50286	DGKA	0.75745267	-0.0050231	0.1100779	-0.6805017	-1.0557908
4	290369	KIFC2	0.7225139	0.08422422	0.2235614	-0.7795977	-0.9726294
4	510669	CYP4F13	0.51971334	0.49504146	0.2895333	-0.7038621	-1.2740248
4	1240484	ARID3B	0.5264488	0.4093872	-0.128484	-0.5695981	-1.1116763
4	2490646	FRAP1	0.5089955	-0.0641237	0.0567708	-0.5231964	-0.5480936
4	3290259	CDC23	0.4449271	-0.0330879	0.1093207	-0.5716378	-0.38587263
4	4760474	PSG23	0.39244705	0.25598907	0.0542057	-0.6224598	-0.31182197
4	5080136	SH3GL1	0.64764607	0.32702368	0.1710527	-0.6319862	-0.9717912
4	5490079	TMC6	0.4613269	-0.1804999	0.2084812	-0.641943	-0.0728887
4	5720424	RFX1	0.51990765	0.11471245	0.1456245	-0.6775925	-0.5295124
4	6280326	TNRC6A	0.5880353	0.10130817	0.2151383	-0.6398164	-0.69243985
4	6290598	ZFP579	0.6109614	0.07550961	0.1805835	-0.6415793	-0.7678394
4	6370367	JMJD6	0.5757648	-0.146124	0.140514	-0.6306441	-0.38691735
4	6480056	VAMP2	0.70446986	0.21701103	0.1485361	-0.804507	-0.9517567
4	6520600	CLCF1	0.75760424	-0.1064551	0.172886	-0.3543769	-1.1814574
4	6550370	CLCF1	0.81128865	-0.1516624	0.1713553	-0.5073884	-1.0967417
4	6860408	ZFP187	0.5592779	0.5748101	0.1872281	-0.512014	-1.1491474
4	50079	HIST1H1C	0.58955157	0.35783723	-0.220361	-0.4836575	-1.1141647
4	1240368	IL6RA	0.7536404	-0.2703415	-0.277956	0.02198264	-1.6228257
4	2120619	DOS	0.5797393	-0.01804	0.3117134	-0.4547517	-0.63109607
4	2350504	THRA	0.6036007	0.38245067	-0.011147	-0.4328695	-1.1123848
4	2450678	URM1	0.6621028	0.00614691	0.1130986	-0.7947153	-0.4913493
4	3450440	ADRB2	0.63561916	0.10316813	-0.371518	-0.2130852	-1.3360114
4	160433	2700050L05RIK	0.53268135	0.03550018	0.0848145	-0.5231465	-0.47728956
5	70601	WFDC2	0.69741786	-0.3214808	0.1307825	-0.0382406	-0.53654546
5	1010050	LMO4	0.91098857	0.2783301	-0.095495	-0.3491927	-0.10776678
5	1990520	EPM2AIP1	0.82528293	0.05209591	0.1747866	-0.5943757	-0.4638807
5	2100398	PTPRK	0.93688685	1.0375055	-0.262701	-0.5936187	0.03754232
5	2340608	CYP2D22	1.0701426	0.8048461	-0.011446	-0.4361563	-0.8826068
5	2470242	HSD3B7	0.7841078	-0.1012377	0.6070964	-0.6070605	-0.17052975
5	2630719	NPFF	0.68270844	0.11812698	0.2768392	-0.3674097	-0.47916725
5	4590497	CSTF3	0.6710235	-0.0742939	0.0853279	-0.5189306	-0.16488338
5	6060113	SCML4	1.0037525	-0.0621689	-0.052935	0.1846942	-0.7797142
5	6840382	TSC22D3	1.3816634	0.27914724	-0.096085	-0.1840514	-2.008986
5	160086	VAMP1	0.9179637	0.14068083	0.1820256	-0.8558155	-0.34178367
5	360088	VAMP1	0.9352833	-0.0288504	0.0961725	-0.8990339	-0.62858826
5	380133	SEPP1	0.62392783	0.29871106	-0.112277	-0.3812227	-0.36470234
5	430768	GDI1	0.67684674	-0.1033546	0.2433213	-0.4361378	-0.65762085
5	460056	ORAOV1	0.64278495	0.31933907	0.2223379	-0.4878534	-0.49945962
5	510441	RAD9	0.60796124	0.26458648	0.00253	-0.4731629	-0.61419785
5	510687	PACS2	0.82276946	0.07525303	0.2096427	-0.6738849	-0.8361176
5	540753	TRIB2	1.0920628	0.23173714	-0.464239	-0.6402835	-0.08262223
5	610092	GRM6	1.8787929	0.37012726	-0.006375	-0.1793804	-0.20460033
5	610341	TLE1	0.6622862	0.7665267	-0.305928	-0.4357549	-0.12254744

5	620240	RARG	0.8174503	-0.0247781	0.0203418	-0.2476942	-0.24551311
5	630309	LRRC8	1.0652859	-0.1570342	0.3783772	-0.4464175	-0.32878745
5	670386	LRRC23	0.73271793	0.03416468	0.1386665	-0.5160832	-0.647465
5	870372	METTL8	0.6806369	0.30808336	-0.081186	-0.3734601	-0.25461924
5	870379	RNF167	0.81273395	-0.1737714	-0.212298	0.05195592	-0.91766316
5	1030754	MTHFSD	0.6647047	0.16346988	0.2080717	-0.3631284	-0.41324803
5	1050678	ACTN2	3.0243533	1.998897	-0.131787	-0.1545687	-0.25431222
5	1450367	ANKRD12	0.5849315	0.20941165	0.1266536	-0.5344091	-0.28467458
5	1470632	TRAF4	0.6138379	0.08968527	0.0358338	-0.4042626	-0.08694711
5	1690600	AI646023	2.0337467	0.98206836	-0.023715	-0.0631801	-0.9882382
5	1740615	TMED1	0.65350676	0.10567255	0.1280174	-0.3516573	-0.33726394
5	2030546	DAG1	1.090792	-0.0668998	0.2175458	-0.5277401	-0.4350865
5	2070594	DNAJC6	1.0334866	0.40941995	-0.39143	-0.2776579	-0.20860843
5	2100215	IRS2	0.9693018	0.11601484	-0.044201	-0.4024893	-0.23705846
5	2120187	FAM113B	1.0287884	-0.0227343	0.0391425	-0.1892037	-0.26583785
5	2260332	TNRC6C	0.5422694	0.01797776	0.0417928	-0.4864722	-0.3918851
5	2320017	ACRBP	0.57388836	-0.0488319	0.1230151	-0.5192942	-0.45562828
5	2340682	V1RD6	0.78305864	0.02509533	0.1501704	-0.736438	-0.55826753
5	2450717	4921505C17RIK	0.8943998	0.05620503	0.2481781	-0.3355289	-0.4838997
5	2490242	LOC100045950	0.8449063	-0.0222418	-0.285011	0.03707981	-0.19280918
5	2490577	CD1D1	0.75941837	0.27301905	-0.052419	-0.260659	-0.22763266
5	2510390	IDH2	0.56646127	-0.016462	-0.233502	-0.4624634	-0.16690657
5	2570725	CDC2L1	0.6979662	-0.1169349	0.3894029	-0.4222122	-0.43942472
5	2630255	SLC6A19	1.7573209	0.9294929	-0.30286	-0.4356907	-0.13232145
5	3060450	OAS2	1.5169309	-0.4026736	1.5151006	-0.1086604	-0.7094621
5	3060600	RAB6B	1.1039687	0.7060807	-0.081767	-0.5080982	-0.48312727
5	3060672	JMJD1A	0.8624433	-0.1688579	0.0963323	-0.2284055	-0.83267194
5	3290240	GPR34	0.8203205	0.04472056	0.0287295	-0.2023759	-0.34914282
5	3310240	EG665378	0.652679	0.4232695	-0.164058	-0.3739288	-0.3268251
5	3400450	PRICKLE3	0.67730653	0.18800746	0.2513281	-0.3277335	-0.6822874
5	3520689	9030612M13RIK	0.52414536	0.00803588	0.1574853	-0.490119	-0.13106371
5	3610139	DDR1	1.3156106	0.7191873	0.0624246	-0.1233429	-0.24292251
5	3780139	UNC84A	0.64613545	0.0178838	0.138747	-0.4433636	-0.7332998
5	3800647	ABCA3	1.1339408	0.0033012	0.1248797	-1.1544248	-0.29641744
5	3870487	PLK3	0.55497825	0.02278981	0.1723372	-0.4719821	-0.07344373
5	3940201	DND1	0.82891715	-0.0592933	0.2595401	-0.4031332	-0.43688366
5	4010411	LOC100047606	1.4395704	0.24047074	0.049294	-0.2442312	-0.25246173
5	4070278	SLC12A6	0.67092377	0.02067352	0.1140183	-0.3333088	-0.4487834
5	4120750	SLC15A2	1.00249	0.04358478	0.54646	-0.4282067	-0.25803736
5	4200162	RBX1	0.601836	0.03785051	0.0806889	-0.5297593	-0.55792046
5	4210022	BC038822	0.9275349	0.00420638	0.1177067	-0.1209681	-0.14771344
5	4490164	E330018D03RIK	0.5599729	0.10504995	-0.061145	-0.4655505	-0.41954058
5	4590136	ACTN1	0.83286524	-0.0030647	0.043394	-0.5647929	-0.40785432
5	4810358	TSC22D3	1.41796	0.15232182	-0.139687	-0.0515766	-1.3561279
5	4830059	LRRC23	0.6765782	-0.0346121	0.0632594	-0.3481093	-0.4757975
5	4880537	YPEL3	0.67648166	0.3011557	0.0699601	-0.4439331	-0.83264446
5	4920600	C230071H18RIK	0.8663763	0.13927257	0.0149924	-0.4221129	-0.1072362
5	5050437	CCRK	0.68445367	0.25658828	0.0810325	-0.8117009	-0.43164977
5	5080301	REV3L	0.79410946	-0.1019185	0.2166924	-0.3848589	-0.76851565
5	5220132	MBTPS1	0.6412978	0.02226223	0.1315541	-0.4116429	-0.42970145
5	5550035	RRAD	0.5632931	0.13518552	-0.445224	-0.0310763	-0.8175117
5	5690220	MAP3K14	0.8294851	0.20222664	0.1315732	-0.2029876	-0.2780629
5	5690431	LOC547323	1.3717598	0.6867768	-0.363598	0.02307862	-0.4180731
5	5690445	CCRK	0.47979355	0.13356195	0.0371937	-0.5711035	-0.29138806
5	5890221	FAS	0.4000922	0.21516882	0.029896	-0.6234909	-0.0794512
5	6110717	USP28	1.7509075	-0.4360943	0.8672102	-0.0137667	-0.5641107
5	6380112	ALS2CL	1.2446936	0.2138931	0.0764959	-0.6609878	-0.768961
5	6400672	KIF1B	1.0903708	-0.2329678	0.1343602	0.21671714	-0.83527255
5	6450619	HSDL1	0.623109	0.18571115	-0.072802	-0.3915085	-0.7480564
5	6510681	KCNC1	0.71768713	0.38715208	-0.369807	-0.6348887	0.08342058
5	6660470	JMJD1A	0.78242284	-0.0797328	0.1472078	-0.4952452	-0.6817839
5	6760575	ZFP809	0.8278123	0.13502237	-0.002153	-0.3797665	-0.61010325
5	6760661	SIPA1L1	0.97590756	0.02780715	0.1332098	-0.3781493	-0.16804318
5	6840494	SLC23A3	0.60606647	-0.0541499	0.2484934	-0.4135452	-0.4852363
5	6860022	DTX1	0.69003654	0.16251084	-0.708189	0.05539841	-1.3845552
5	6900600	H2AFJ	0.79231113	0.14870998	0.0226068	-0.4695052	-0.30549935
5	6940537	DNAJC6	0.927516	0.49157685	-0.288748	-0.1233947	-0.14959642
5	6980544	IHPK1	0.65250444	0.06358422	0.0585148	-0.4557456	-0.512311
5	7000356	TCF25	0.7574177	0.11178095	0.0280122	-0.7362196	-0.50507903
5	7050600	MAP3K3	0.8359932	0.30841896	-0.108307	-0.1674212	-0.35335246
5	7100519	CLK4	0.9141075	-0.0434338	0.1706976	-0.0964342	-0.4834113
5	7160603	SEPP1	1.0453744	0.1920568	-0.181124	-0.127236	-0.06808604
5	7200086	PLEKHG2	0.75091857	-0.1890334	0.0413658	-0.2789237	-0.18883951
5	7200471	DMTF1	0.74690264	-0.0692013	0.3059415	-0.3683142	-0.7380561
5	7400400	LOC100041103	0.9986436	0.07728579	0.0472019	-0.2664951	-0.77359927
5	7400735	IQCB1	0.5821788	0.16121018	-0.018416	-0.5371041	0.07041841
5	7510333	GPR34	0.9260462	0.09842968	0.1116765	-0.2293894	-0.43705913
5	7510369	LOC100047911	0.53411746	-0.0831272	0.1720363	-0.5256278	-0.24471158
5	7550403	SLC12A7	1.1823488	0.19702993	0.1115122	-0.8509346	-1.1370426
5	7560121	LOC100041463	0.83397424	0.2044563	0.0184523	-0.3634565	-0.17242827
5	7610612	RFX1	0.7701681	-0.0086244	0.1906572	-0.4367717	-0.471424
5	160392	CXCR4	1.0677584	0.04462484	-0.113517	0.29712614	-0.12449604
5	2470753	AMIGO2	1.2412778	0.10564172	-0.059005	-0.1534326	0.054051496
5	2760382	DAG1	0.7517487	-0.142874	0.0501715	-0.2577456	-0.06584578
5	4180465	ART4	0.39242193	0.8062627	-0.777541	-0.7087353	0.17237829
5	4880187	ERDR1	2.7329066	-1.5728704	3.0135288	-0.4721546	-0.74884605
5	5390632	TMIE	1.8459253	0.16353469	-0.138401	-1.8810009	0.32810977
5	6550019	SERTAD1	0.5700729	0.00990022	-0.503666	-0.0855315	0.009550156
5	150022	NFKBIA	0.8551677	-0.3533776	0.1228609	-0.0939793	-0.15228468
5	990221	2300002D11RIK	2.0018516	-0.1523686	0.3080829	-0.0813868	0.000924526
5	1110035	RAB3IP	1.2711544	0.08871289	-0.027479	-0.3077178	0.12551449
5	1770541	TNFRSF12A	0.74952143	-0.0538582	0.0606397	-0.4057791	0.033221323
5	1940646	MATK	2.0113137	0.3207753	-0.045488	-1.1875263	0.4123556
5	2070291	LEF1	0.89191073	-0.197213	-0.090606	0.01789068	-0.00833405
5	2710286	LEF1	1.0703988	-0.3089136	-0.125381	-0.0181809	-0.06958959
5	4540020	DNAJB1	1.0427408	-0.0289349	-0.29365	-0.0450509	0.034445737
5	6550593	ARNTL	0.58692265	-0.0920688	0.2058766	-0.4515921	0.06770063
5	6580376	ZFHX3	0.9366513	-0.1634955	0.0381298	-0.0188224	0.024502488
5	510722	TGFBR3	1.1979189	0.23289709	-0.278471	-0.2409492	0.2899332
5	580682	IFNGR2	1.046172	-0.15623	-0.080303	0.0781649	0.10787537
5	6370435	GORASP1	0.6931623	0.04368828	-0.128183	-0.3319446	0.18591413
5	50037	BBS4	0.7860567	-0.4652004	0.4109646	-0.0758306	-0.10212678
6	3130246	SNURF	0.1530917	-1.6943094	0.243141	0.3299422	-2.149858
6	630725	TMEM66	0.48911485	-0.3305185	-0.548761	0.4470418	-1.4086844
6	670711	RBBP7	0.39677498	-0.6107169	-0.155808	0.45419478	-0.1228529
6	1260554	COX7A2L	0.39413315	-0.3517286	-0.611716	0.29664195	-0.94626015
6	1570288	DAPL1	0.26736262	-2.712944	0.2061205	-0.1296655	-1.9228724
6	1570487	TLR7	-0.0986226	-0.8246896	0.2136227	1.1194584	-0.5885524
6	1580114	BAI2	0.16912052	-0.9971731	0.2132438	0.08540321	-0.8293034
6	2350243	DDX6	0.37916735	-0.9239073	0.0221501	0.10685618	-0.108381
6	3400747	IGFBP4	1.0877856	-2.2824435	-0.180479	0.50320077	-1.3957181
6	4830543	IFI27	0.21792783	-1.0617174	-0.031993	0.13604718	-0.4128132
6	5080435	IGFBP4	1.1312107	-1.6229016	-0.030567	0.7288968	-0.9960932
6	5560474	RSAD2	-0.3415327	-1.0871274	0.1065226	0.9964011	-0.71681416
6	6520241	CD247	0.8852251	-0.6012352	-0.309469	0.41617653	-1.2219399
6	610601	DDC	0.08542934	-1.1252394	-0.102627	0.25253654	0.10658433
6	4780446	CCDC117	0.4194021	-1.7642095	0.1028372	-0.2190907	-0.13199002
6	940102	PSCD3	0.10942791	-1.8229259	-0.001041	-0.2880521	0.121670775
6	4200605	ATP1B1	0.6495356	-2.584756	0.3825215	-0.3166961	0.19480094
6	4760356	CAT	0.01561703	-1.0698916	-0.164607	0.31107402	0.29844952
6	5690156	PES1	-0.0549901	-1.0851258	0.0165097	-0.0810015	0.16072415
6	3520192	SRPR	-0.1568841	-1.1930313	-0.051488	0.10920852	0.26572022
6	2650326	PML	-0.2137418	-1.2575167	0.02488	0.13226175	0.27261016
7	290097	LRG1	-0.3132556	0.25394717	-0.109838	1.7696799	-0.17438379
7	450670	CAMP	-0.6866639	-0.3760031	0.2599801	3.3087115	0.23003958
7	610414	CTSA	-0.1090541	0.38346517	-0.102501	1.1387609	-0.25753573
7	3780224	E430002D04RIK	-0.4197874	-0.6762417	1.2076273	1.9582747	-0.53896695
7	3850497	SLC11A1	-0.2220596	0.18927635	-0.025913	0.8594083	-0.07807794
7	5910164	EMILIN2	-0.1789584	-0.0312816	-0.013757	1.0290439	0.024466753
7	6760762	SDC3	-0.7745718	-0.1853577	0.1663984	0.96445125	-0.15047577
7	6940324	RASSF4	-0.4693509	0.10708489	-0.268886	0.6595825	0.17507951

7	7000114	1190020J12RIK	-0.3462033	0.13967265	-0.035829	1.2397964	-0.2665819
7	7050487	CD63	-0.1819311	-0.0647265	-0.125862	0.91613114	0.11934906
7	7200341	FCNA	-0.6874492	0.15927385	-0.109283	1.4905627	-0.43621403
7	7560114	OSBPL3	-0.4773614	-0.1486169	0.1439854	1.4730624	0.20124619
7	150114	CHI3L1	-0.1795396	-0.0397884	0.0183006	1.4883622	0.054136306
7	240474	LTF	-0.1367287	-0.0512088	0.0788015	1.123851	-0.05685555
7	290110	PFKP	-0.1785406	-0.1585597	-0.238813	0.96215457	-0.1849942
7	290315	RAB31	-0.3809762	0.17991172	-0.087976	0.72804004	0.04211511
7	450133	TGFBI	-0.5039915	0.23014206	-0.103911	1.2769077	-0.1543792
7	450739	TYROBP	-0.2878133	0.3614074	-0.021431	1.1116204	-0.11233914
7	580332	C1QB	-0.5871905	0.01662213	-0.042978	1.1954226	-0.27063477
7	620379	KLRA7	-0.518905	-0.1617642	0.0846112	1.0759279	-0.20566873
7	670452	CD177	-0.1109949	-0.1427194	-0.012607	0.9111147	-0.06452789
7	730138	RASSF4	-0.3120447	0.3073629	-0.224797	0.71436375	0.16843177
7	730487	NGP	-0.2652513	-0.2702007	0.113757	3.3208282	0.1391414
7	830240	LYZ2	-0.398827	0.50081193	-0.069377	3.0250614	-0.16649812
7	840044	HP	-0.236252	0.24225877	-0.029308	2.1952353	-0.28050756
7	840349	IFITM2	-0.5792978	0.05876725	-0.089446	1.4505012	0.83508956
7	940398	KLRE1	-0.6835511	-0.2591836	0.4542099	2.979387	-0.08565807
7	940504	CD22	-0.9209346	1.1918752	-0.08286	1.8177465	-0.17334932
7	1030142	PYGL	-0.3489762	0.21376763	-0.046672	1.2328418	-0.22968978
7	1030411	EMR1	-0.3491119	-0.0128003	-0.019769	0.7792685	-0.03216767
7	1170564	HP	-0.0643338	-0.100103	-0.196304	1.2469848	-0.10959411
7	1190546	S100A8	-1.2380153	0.01340475	-0.095638	3.3240829	-0.3726376
7	1230435	SLC4A1	-1.1401355	-0.4989605	0.5140929	2.2392213	0.20833042
7	1230612	AQP1	-0.1712663	-0.0356509	-0.002173	1.6959586	-0.14978014
7	1240646	CCR5	-0.5598539	0.5085506	-0.071896	1.23864	-0.30606365
7	1340634	CEBPE	-0.001318	-0.0585413	-0.047399	1.1689298	-0.02880259
7	1470091	SORT1	-0.4460371	-0.2231081	-0.11758	1.1429197	0.7230461
7	1570551	MMP9	-0.2569481	0.04552055	-0.06047	1.5302651	-0.07303507
7	1580519	ANXA3	-0.1667999	0.09052088	-0.077748	1.1060402	-0.09766016
7	1770468	ADSSL1	-0.5124462	0.23942158	-0.178898	0.9388658	0.12260695
7	1780068	PRTN3	-0.065045	0.02798636	-0.014867	1.5029836	0.08485401
7	1940608	LYZS	-0.5544975	0.475618	-0.034239	2.1786222	-0.1911271
7	1980603	S100A9	-1.5286818	-0.2058173	-0.103658	2.8087184	-0.6064446
7	2190743	OSBPL3	-0.5914367	-0.3269243	0.1345234	1.8305265	-0.04357786
7	2320093	SPIN2	-0.7346126	-0.2441865	-0.091361	1.1510912	0.07286238
7	2570240	CHI3L3	-0.1837716	0.11013442	0.0140136	2.411226	-0.03623754
7	2810468	SORT1	-0.3041441	-0.0387027	-0.035118	1.0012684	0.7651058
7	2850575	VCAM1	-0.9449562	-0.2618096	-0.159005	1.3468426	0.025443347
7	2970324	HDC	-0.5015109	-0.0322166	-0.138486	1.3387754	0.19987184
7	3130681	EAR2	-0.2049402	0.01560235	-0.025153	0.88589364	0.006613956
7	3390484	SCLY	-0.4621109	0.14179048	-0.090833	0.62246597	0.23495261
7	3420754	IL1B	-0.2699103	0.10711706	-0.273534	0.7692631	0.060587026
7	3450059	KLRA10	-0.342207	-0.3563047	0.0729246	1.7482568	-0.08554404
7	3710170	C1QC	-0.5289037	0.10224597	-0.137502	1.1830677	-0.22340861
7	3710673	KLRA16	-0.2066168	-0.0824471	0.0587621	1.1228503	0.044110946
7	3840292	IFITM3	-0.5231222	-0.0412155	0.076998	2.0768723	-0.05095995
7	3870242	CHI3L3	-0.5517907	-0.1893099	0.0095589	2.5500345	-0.17776988
7	3940687	MYO6	-0.3678814	-0.1903508	0.6344066	1.155236	-0.48396894
7	4010446	BLVRB	-0.4630705	0.46818095	-0.367575	0.8421004	-0.04620076
7	4070762	CDKN2C	-0.2337972	0.00184619	0.0555128	1.1208802	-0.3129162
7	4210139	AQP1	-0.1951098	-0.0215562	-0.043383	1.1624392	0.23618074
7	4230402	LTB4R1	-0.276038	0.05668356	-0.014781	1.239704	0.006345185
7	4290035	TREM3	-0.1702273	0.07561843	-0.084869	1.4353752	0.29268172
7	4390113	HP	-0.1508467	-0.029979	0.0612683	1.3636369	-0.09242918
7	4540082	SERPINA3F	-0.8108837	0.3439971	-0.022966	1.9302925	-0.24933961
7	4610468	CYB5R4	-0.1967989	0.16793685	-0.116463	0.80913204	-0.07308664
7	4730220	MRC1	-0.2548443	0.00828954	0.0417641	0.7753296	-0.02863146
7	4830138	GAS7	-0.5334426	0.01415653	-0.086198	0.8697765	-0.12762165
7	4890626	LCN2	-0.7391623	-0.218912	-0.118333	3.5254283	-0.33841392
7	5090184	ANXA3	-0.1226181	-0.0183901	-0.042938	1.0950334	-0.03244469
7	5130059	IFITM6	-0.2656761	0.017841	0.0501359	1.7597774	-0.08698165
7	5220279	MT1	-0.6575177	0.24676375	-0.126761	1.5397288	-0.03455177
7	5270279	ALOX5AP	-0.5531371	0.45086995	-0.114628	1.9023474	0.19540592
7	5490608	CD22	-0.4177773	0.3901783	-0.158193	1.0074228	-0.15978286
7	5720609	LYZ	-1.1050686	0.49819943	-0.158349	2.6139	-0.01946144
7	5820753	SLC38A5	-0.115926	-0.0356415	0.0545147	1.2562256	-0.02551514
7	5860347	C3	-0.3393385	0.09254649	-0.019052	1.62108	-0.04855823
7	6040601	ELA2	-0.0750229	-7.94E-06	-0.018869	1.160247	0.048439357
7	6370010	CHI3L3	-0.0420609	-0.0613803	-0.051666	1.0376841	-0.07950581
7	6510487	HEBP1	-0.294412	0.15828876	-0.023409	0.78874344	-0.10688646
7	6580021	MPO	-0.2306158	-0.0685233	0.0760643	2.1342444	-0.09902813
7	6900440	ERAF	-0.8615739	-0.3284571	-0.00325	2.1974592	-0.14187288
7	6940037	LTF	-0.9176502	-0.5968004	0.573813	3.4771574	0.23466805
7	7000187	TGM2	-0.3297397	-0.0329354	-0.001288	0.9656653	-0.02664762
7	7000224	CD177	-0.5174152	-0.353656	-0.117208	2.2479527	-0.17896831
7	7040044	TRF	-0.0724893	0.1223834	0.0317639	1.0087618	-0.09536416
7	7050538	CCL9	-0.1679216	0.19332723	-0.028438	1.0632023	0.1729755
7	7160364	FNDC3B	-0.2155604	-0.1624142	0.2773912	0.845595	-0.10718816
7	7160711	RETNLG	-0.3477787	0.30266914	-0.101823	2.4051073	0.035067435
7	7610114	MGST1	-0.1719475	0.05872526	-0.164715	0.95770514	0.13324398
7	7650048	FPR2	-0.4639461	0.05474476	0.0902525	2.2425528	0.11658897
7	160463	LGALS3BP	-0.3324739	0.0280057	0.0933683	0.9907285	-0.4886171
7	380438	TSHZ3	-0.0907667	-0.2286186	0.5092101	0.90963316	-0.3121102
7	830632	FCGR4	-0.6672739	0.00399934	-0.161074	1.4956118	1.0656455
7	1410348	F2RL1	-0.2447086	-0.4464697	0.2326347	1.1096992	-1.0356369
7	1780324	CCR5	-0.7095836	0.6530227	-0.130389	1.588515	-0.6489743
8	7650242	IL18R1	-1.2998232	0.9557844	0.4906226	-0.1487946	-3.570936
8	240451	ZFHX2	-0.8681081	-0.0062756	0.2831529	0.05245756	-1.0357064
8	380102	AHNAK	-1.2370245	0.3025006	-0.119441	0.2588598	-1.2057147
8	430446	IL18RAP	-1.4282902	0.20061274	0.0700727	-0.0027059	-1.5483001
8	450615	BBC3	-1.0831835	0.4074011	-0.081939	0.02974466	-1.3889426
8	510020	PDE2A	-1.6692827	-0.0575639	0.0389181	0.46923956	-2.6365736
8	830521	ZFP296	-1.7430537	0.08555754	-0.097059	0.40210608	-1.6223383
8	1030152	IFNGR1	-1.1116544	0.0822158	0.0025841	0.18785697	-2.1181624
8	1340193	PHF11	-2.117206	0.45081195	-0.253399	0.6012085	-2.4935677
8	1570133	CTSW	-1.1435405	0.19960079	0.1180296	0.11824072	-1.2083821
8	1660504	IL7R	-0.4076632	0.7046573	0.0051273	0.14752693	-3.2466295
8	2340288	RNF138	-0.795514	0.29552224	-0.19797	0.42933336	-1.0898359
8	2340301	HSD11B1	-0.5558236	0.5000708	-0.046634	0.36095068	-1.7046098
8	2370520	AHNAK	-1.7893364	0.12860087	0.136086	0.18258865	-2.2260437
8	2470086	SLC39A4	-1.0360161	0.48639482	-0.156065	0.14139569	-1.0502567
8	2570154	NOD1	-1.0833634	0.47265032	0.0238071	0.08668211	-1.3929484
8	2600377	EBI2	-0.9526837	0.69404227	-0.238426	0.01670894	-2.1743455
8	2690014	ZSCAN12	-0.7061687	0.363101	0.0488739	-0.0209931	-0.5981091
8	2760274	EPSTI1	-1.2483171	0.1135494	-0.287937	0.08422271	-1.7207627
8	2940504	NCF4	-0.6605783	0.55357265	-0.154364	0.23528482	-1.4324349
8	3610619	NT5E	-0.9970095	0.00977474	0.0865844	0.40398622	-1.1677839
8	3710563	SYTL2	-1.9818813	0.06960003	-0.050469	0.18616313	-1.7146442
8	3780390	ACSBG1	-0.7579086	0.44578284	-0.029511	0.07863466	-1.1201009
8	3850692	AMICA1	-1.1207377	0.2985003	-0.139417	0.8405063	-2.4003522
8	3990474	IL10RA	-1.44859	0.2856614	-0.095496	0.47054097	-1.5992172
8	4150739	CDC42EP3	-0.7615382	0.36462373	0.1041205	0.02572594	-1.5650055
8	4220189	APOB48R	-1.4422323	0.19637422	0.028262	0.34801725	-1.1425418
8	4830487	GAB3	-0.5659086	0.20774047	-0.045932	0.4523278	-1.6403457
8	4860719	MYO1F	-1.8353581	0.13817532	-0.056577	0.31591627	-2.9272084
8	5550671	LY6C1	-2.475055	0.12682974	-0.11505	0.4784985	-3.5152028
8	5560066	STAT4	-0.7644578	0.24379782	-0.069365	0.3457686	-1.202107
8	5810576	CXCR3	-4.6376305	1.1316578	-0.089144	0.49762127	-3.3137364
8	5820184	CDH1	-1.256679	0.6942598	-0.413405	0.0411258	-1.1817852
8	5870047	PLEKHG3	-0.9054085	0.0261693	0.0637276	0.1770026	-0.9412191
8	5870692	PLEKHG3	-1.9987658	0.02318303	0.1335257	0.2728544	-1.6823145
8	6040142	POU6F1	-1.2842953	0.7996707	0.2149331	0.11842267	-2.6105173
8	6330575	DENND3	-0.5630956	0.52214295	-0.07291	0.07034957	-1.45331
8	6380634	ZFHX2	-0.895081	-0.0469755	0.2154356	-0.0010446	-1.254639
8	6660327	PHF11	-2.011708	0.5010375	-0.296378	0.49641412	-2.176142
8	270431	GAB3	-0.526354	0.13842963	-0.02814	0.48061174	-1.8426675
8	870156	SIDT1	-0.852334	0.17025645	0.1526751	-0.1048018	-2.7128417
8	4880360	LMNA	-0.4213782	-0.1414411	0.7130063	0.4631174	-1.2598116
8	5670154	ZFP296	-2.1910958	-0.0021099	-0.0496	0.2532021	-1.605982

8	6980064	GRAMD3	-0.5704612	-0.0210276	-0.046912	0.72470474	-1.8960617
8	7050112	RNF138	-0.6972936	0.4953279	0.1716631	0.01309761	-0.79964733
8	160291	BBS9	-0.6350608	0.04553672	0.152845	0.4898401	-1.0877718
8	1580528	USP18	-0.3835686	-0.078936	0.0922077	0.68224925	-1.6937002
8	2490452	LOC100048346	-0.3123585	-0.1829248	0.0719189	0.9159425	-1.8075445
8	4050524	RNF138	-0.7163357	0.25396883	-0.20566	0.46636412	-1.0189986
8	430332	DSTN	-0.751438	0.3227994	-0.171675	0.5105777	-1.0697868
8	1400168	LOC100046608	-0.1195448	-0.2218111	0.0958963	0.9114525	-1.6555644
8	3180521	TDRD7	-0.9813576	-0.260986	0.5206843	0.75289416	-1.1516742
8	3520020	LOC100046608	-0.1891596	-0.3311587	-0.053021	0.8494455	-1.58559
8	4880747	EPSTI1	-0.5110741	0.6633337	0.068036	0.33315966	-0.99126595
8	5570358	BCL2	-0.3555002	-0.2409018	0.4982612	0.7016852	-0.96140534
8	7040333	SOAT2	-1.5219274	1.3824075	0.0587809	-0.0728516	-1.5521995
8	7050047	FCGRT	-0.2450512	0.26982903	-0.343294	1.1935313	-2.292588
8	7320239	RECK	-1.0035657	0.00628709	0.164528	0.6670806	-1.0877208
8	7400328	ACPL2	-0.4263801	0.6523212	-0.065077	0.64155555	-1.4878875
8	7510020	IFIT3	-0.3561207	-0.5988764	0.1579622	0.9376123	-1.3572607
8	1990427	CD7	-0.3876257	0.18727806	-0.148593	0.67544365	-1.1488056
8	3800670	ANK	-0.5175393	0.7979525	-0.217738	0.5461669	-1.3131096
8	4050390	OTTMUSG00000005737	-0.8320254	0.12754907	0.051888	0.7611806	-1.1709393
8	4610139	USP18	0.00871308	-0.4301906	0.1641003	1.0737284	-1.3535166
8	5860243	PLAC8	-0.2655203	0.8327393	-0.076408	1.245675	-2.2656713
8	7100040	STAT4	-0.271383	0.09933791	-0.097421	0.8770251	-1.1824715
8	3990053	F2R	-0.9792303	0.71406555	-0.037115	1.0121216	-1.6209121
8	2260474	D8ERTD82E	-0.4339025	0.21209756	-0.126752	0.7526553	-0.850753
9	2370364	CD81	-0.3348952	-0.1060962	0.9030281	0.04937842	2.538164
9	2600019	CLSPN	-0.5852103	-0.8290236	1.0859618	0.17197435	1.5614772
9	4570088	CDC20	-0.3732595	-0.5459932	0.6716548	0.07323027	1.337247
9	6330114	KIF15	-0.8399719	-0.7925321	1.4205556	0.11113067	1.960467
9	6330725	TCF19	-0.6387444	-0.0283047	0.7488937	0.16858086	1.1265393
9	7150431	LOC237877	-0.4895431	-0.4768923	0.8393204	-0.0181991	1.5333719
9	130608	LAG3	-1.2935183	-1.2518674	0.977634	0.24468951	4.193698
9	290132	TNFRSF9	-0.1225336	-0.9245967	1.1652893	0.02679482	2.7943757
9	380520	AURKA	-0.5585745	-0.5168086	0.5310111	0.00388442	1.5227621
9	430561	BCAT1	0.00015611	-0.3523037	1.8126001	-0.0039614	3.2057753
9	620110	TFRC	-0.0019073	-1.024319	0.6909407	-0.2739445	1.3710964
9	630634	INCENP	-0.3296609	-0.41205	0.7090595	0.07824992	1.3265277
9	650121	MCM10	-0.3911234	-0.3331082	0.6503247	0.02286694	1.0596557
9	670133	HMGN3	-0.5668284	-0.2269102	0.5663862	0.17423639	2.1238961
9	1030577	SNN	-0.4670868	0.74998367	0.0628077	-0.3880003	1.9378284
9	1050400	ESPL1	-0.6192246	-0.5538389	1.0969312	0.03706059	1.5426407
9	1190047	HIST1H3E	-1.1546432	0.17343163	1.6994715	-0.2119655	1.807487
9	1260022	CHTF18	-0.0575247	-0.1158079	0.9633614	-0.0086395	1.4222394
9	1260605	HIST1H2BN	-0.5367541	0.13667409	0.902873	-0.1950991	1.0040975
9	1300373	TNFRSF9	-0.2725343	-1.2751533	1.0683141	-0.0935522	2.6638591
9	1410070	KNTC1	-0.7796684	-0.6401292	0.6967137	0.0245262	1.3267441
9	1500148	GTSE1	-0.6721363	-0.4032179	0.8391426	-0.1201531	1.2986226
9	1580626	SGOL1	-0.5323208	-0.478423	0.5987933	0.02960397	1.2885709
9	1710242	ECM1	0.04953754	-0.9512837	0.1118773	-0.2087196	0.91783637
9	1710368	3000004C01RIK	-0.6114221	-0.5203227	0.6299859	0.03846245	1.3105897
9	1740487	HIST1H3A	-1.0076512	0.16553046	1.5944427	-0.2517212	1.6327704
9	1780524	TFRC	-0.0169164	-1.1599969	0.7968738	-0.3457989	1.3783798
9	1780543	KIF2C	-1.2980975	-0.9926971	1.1675448	-0.0345238	2.2751327
9	1820274	CDCA2	-0.949976	-0.804891	1.0868939	0.13428079	1.676918
9	1940020	FANCD2	-0.3367442	-0.4245866	0.9359296	-0.0013705	1.5231521
9	1980446	2410015N17RIK	-0.5833063	-0.3061238	0.5415108	-0.2578825	1.3911556
9	2030026	CDC6	-0.6387879	-0.6015564	0.970435	0.08823093	1.3675996
9	2030068	CHAF1A	-1.1191069	-0.8094093	1.0198354	0.07857486	1.9702903
9	2060544	CHST2	-0.3425783	-0.292782	0.9394068	0.01997452	2.688783
9	2190064	SPAG5	-1.0194156	-0.8444105	1.5323291	-0.0068008	1.5939565
9	2230619	HIST1H2BM	-0.5035781	0.08792359	0.8092253	-0.5775214	0.908444
9	2340056	CLDN10	-0.3425432	-0.9027998	0.7900625	0.6162398	2.6416068
9	2340131	IGF2BP3	-0.0577611	-0.2092742	1.3628126	-0.0026302	1.3112456
9	2360121	NHEDC2	-0.1293509	-0.091669	1.3515508	-0.0846097	2.3154635
9	2570398	APITD1	-0.3278037	-0.3638123	0.7187753	0.07595997	1.9523815
9	2650521	CCDC99	-0.151226	-0.3935691	0.9529505	0.11087116	1.688338
9	3060767	LIG1	-0.868197	-0.7500369	0.8977131	-0.0499475	1.7022771
9	3120392	STMN1	-0.6317185	-0.5831705	0.7664508	-0.1186408	1.6941395
9	3140731	ZRANB3	-0.0582722	-0.1181047	0.9434628	-0.1683014	1.4603107
9	3400754	CDC45L	-0.7019122	-0.5837786	0.9364289	0.00275357	1.879271
9	3840446	MARCKSL1	-0.2538045	-0.3779081	1.1089073	0.23672992	2.8536797
9	3890528	RGS16	-0.0655206	-0.2348166	1.0062193	-0.0142541	3.3244667
9	3930156	PTPLA	0.10203128	-1.0203831	0.544171	-0.5167866	1.8976005
9	4050437	CHST3	-1.028754	0.5750173	-0.022836	-0.3602807	1.4392912
9	4120452	CENPM	-0.6953176	-0.4071097	0.4382917	-0.0098972	1.3672067
9	4250121	HMGN3	-0.4590402	-0.1399858	0.6113073	0.15173712	1.816884
9	4390228	CDC20	-0.7719579	-0.6031199	0.8467649	0.06122774	1.4331465
9	4390639	PTPRS	0.0575087	-0.3387082	1.4525787	-0.2964127	2.083189
9	4480070	NCAPD2	-0.5746698	-0.73693	0.763842	0.03889231	1.3032583
9	4570189	NRGN	-0.4547499	-0.3800307	2.3192456	0.23023006	3.4258573
9	4570440	CENPM	-0.464937	-0.3248576	0.6713181	0.16893575	1.562618
9	4860209	HIST1H3C	-0.2561637	-0.2130275	1.4648103	0.04216893	1.8873585
9	4880553	SOX5	-0.0124591	-1.0809534	0.4191218	-0.2651737	1.505002
9	4890382	HIST1H3D	-1.1356908	0.17718549	1.731253	-0.2244249	1.7923189
9	4920487	CKB	-0.6814721	-0.025506	0.0333362	0.43914747	1.4013859
9	5050471	NRN1	-0.3039367	-0.046686	1.9753327	-0.057897	4.8227763
9	5420451	HIST1H2BH	-0.606554	0.20843351	1.1823401	-0.310873	1.1571044
9	5720626	RCC1	-0.3640301	-0.4187147	0.6710252	-0.0393655	1.3175701
9	5910528	BUB1B	-0.6903874	-0.6359716	0.8057371	0.06195759	1.5200329
9	6040634	HIST1H2BJ	-0.7530632	0.16136505	1.3222367	-0.3812829	1.3345364
9	6100113	HIST1H2AB	-0.2104462	-0.1372	1.2430927	0.04542914	1.5260333
9	6110170	TPI1	-0.8364089	-0.283465	0.5165882	0.08102498	1.1977725
9	6220270	MCM5	-0.4668911	-0.7817145	0.9009676	0.03347137	1.7091849
9	6220692	PTPRS	0.00294026	-0.1313766	1.1892868	-0.2909011	1.444452
9	6450072	NMRAL1	-0.7949411	-0.3548082	0.4920779	0.06816848	1.6077566
9	6480739	RAD51	-0.5432778	-0.4277962	0.5992427	0.00155036	0.9039202
9	6510500	CDCA7	-1.158222	-1.4348507	1.2621017	0.0287212	2.5545373
9	6620184	SPC25	-0.5106553	-0.4176675	0.4907682	0.06815397	1.2490512
9	6620187	NDRG1	-0.20773	-1.3636293	0.5001772	-0.0034087	1.781365
9	6660050	KIF4	-0.755963	-0.7107785	0.6979001	0.07815366	1.500641
9	6840685	RILPL2	-0.5992769	-0.498834	0.4196205	0.07075403	1.8303981
9	6940411	PIF1	-0.5688895	-0.2976013	1.064339	0.03950789	1.0059048
9	7040475	CENPM	-0.5636495	-0.4622669	0.557921	0.08283655	1.2189958
9	7200519	CENPA	0.00202942	-0.4858617	1.0855374	-0.0673817	1.3620943
9	7560373	RAD54L	-0.8422056	-0.6396153	1.3682638	0.12804893	2.3294125
9	7610152	HIST1H3H	-0.2147034	0.05256721	1.0159496	-0.1394012	1.491447
9	7650195	2610510J17RIK	-0.4405084	-0.3099116	0.7204342	0.06801587	1.3130301
9	130754	HIST1H2BK	-0.5623823	0.22687514	1.7395928	-0.2105462	1.89056
9	150148	HIST1H2BF	-0.6568048	0.1770213	1.1606034	-0.3886055	1.1746311
9	610039	E130016E03RIK	-0.5395269	-0.5282331	2.0287364	0.05379494	2.132137
9	110259	CDC7	-0.027526	-0.4282315	0.7127674	-1.0541297	0.40485877
10	7650435	VKORC1	-0.0298742	1.2075281	-0.338464	0.20225775	-0.6413111
10	380368	ZC3H6	-0.0544277	0.95019984	-0.035445	0.0569838	-0.8121603
10	6960577	SORL1	-0.714142	1.2556125	-0.156267	0.38349462	-1.2781966
10	7570630	CXCR6	-0.3752102	0.98733073	-0.158996	0.07371905	-0.7265596
10	240445	DMRTA1	-0.6352922	1.0616304	-0.065232	0.3821554	-0.63202685
10	1510497	HCST	-0.2184995	0.85472965	-0.126003	0.39274812	-1.2343808
10	1690187	LY6A	-0.877124	2.0240533	-0.216378	0.9832025	-1.9629965
10	2070196	EG218444	-0.4390438	1.0547813	-0.037532	0.46125126	-0.60517895
10	2480450	BCLP2	-0.3738845	0.6678264	0.0303789	0.05241394	-0.79138654
10	2850092	IFNG	-0.9920387	1.0114313	0.0344186	-0.0008872	-0.6986869
10	3140041	2310046K01RIK	-0.5143738	0.87547606	-0.119344	0.38111454	-0.906136
10	3180730	ABHD14B	0.16180259	1.445508	0.1921171	-0.2455572	-0.7344051
10	3610465	VKORC1	-0.0030695	1.202864	-0.408232	0.17947045	-0.60872674
10	5090673	BCLP2	-0.497528	0.8527649	0.0056583	0.2382029	-0.8359352
10	5570091	SNTB2	-0.4707108	0.74364954	0.0313305	0.09177155	-0.8590687
10	5670039	C1QTNF4	-0.2903987	1.1503389	-0.036245	0.07231683	-0.37064034
10	5670477	CAR11	-0.1715244	1.897089	0.7874301	0.02872951	-0.62986225
10	6280477	IFNG	-0.778523	1.1326851	0.0671757	-0.0306657	-0.38870823
10	6400014	DKKL1	-0.1774332	0.88518786	-0.028144	0.06358563	-0.24336223
10	6420465	VKORC1	-0.0313431	1.0765884	-0.385314	0.18732727	-0.6327098

10	6480201	MOCOS	-0.2111002	0.89232504	-0.040485	0.3540286	-0.36018276
10	6520075	IER3	-0.0810658	1.3497391	0.1729744	-0.3171764	-1.2738388
10	6650170	PRF1	-0.18064	1.0731124	-0.042522	1.0122825	-0.66869164
10	6940068	X99384	-0.7164375	1.3614513	-0.12154	0.51424086	-0.55599016
10	1050711	CDK5RAP1	0.08876862	1.2402722	-0.36876	-0.1091678	-0.3336512
10	1510669	ACY1	-0.2312906	0.82656693	0.2842086	-0.0330854	-0.08181964
10	1850725	SDCBP2	0.08801642	1.8291116	-0.060793	-0.0293171	-0.32626045
10	1940221	DKKL1	-0.1147339	1.1056691	-0.0581	0.07213236	-0.2249223
10	2450259	9130422G05RIK	-0.5418192	0.646387	0.1496138	0.1852825	-0.18990251
10	2490612	C85492	0.1837858	1.2503039	-0.081554	-0.1400839	-0.16826522
10	6330195	CAMK2N1	-0.174093	2.0578465	-0.119899	0.2533234	-0.3365877
10	780678	SDCBP2	0.04760199	2.67759	-0.048961	0.03404709	-0.32340968
10	940010	SDCBP2	-0.0775694	1.0443549	-0.063081	0.023185	-0.19590601
10	1430497	C85492	0.30632842	1.4584951	-0.030927	-0.1007836	-0.13094567
10	1690255	SUSD3	-0.1306676	1.0514752	-0.111412	0.24162894	-0.22639081
10	1820706	SCN2B	-0.012077	1.1733516	-0.009515	-0.054861	-0.14166595
10	3360753	CDK5RAP1	0.29377717	1.7013819	-0.064936	-0.0485389	-0.10830775
10	2190475	MS4A6D	-0.3052654	0.85346884	-0.132573	1.0013032	-0.92643315
11	50253	GZMM	-2.326643	1.7475541	-0.216131	2.0412817	-2.4139516
11	6550376	LY6E	-0.6110438	0.59248203	-0.123847	0.7145477	-0.50643164
11	130598	OAS1G	-0.5353351	-0.0291086	-0.04548	1.1628896	-0.9095337
11	1820075	PLEK	-1.6386354	0.43616602	-0.059084	1.3064214	-1.23723
11	2810040	D14ERTD668E	-0.5827893	-0.074462	0.0186495	0.54072607	-0.35882404
11	2810487	SLPI	-1.1043729	0.30720282	-0.563594	1.0061632	-1.1280528
11	3180025	MS4A6D	-0.7521795	0.8457629	-0.164153	1.0100653	-1.0860966
11	3840521	LOC100046232	-0.5817232	0.32705802	-0.13438	0.7628773	-0.7606646
11	3890328	OAS1G	-1.1161572	-0.0271437	0.0628541	1.1055411	-0.7551746
11	4040035	NKG7	-0.3813671	0.30441138	-0.032264	0.69550866	-0.69508433
11	4290014	KLRK1	-0.6036368	0.4028507	-0.108803	0.5822956	-0.52923113
11	4810328	NRARP	-1.4170791	0.38383174	-0.168006	1.6258821	-1.3388091
11	4850672	4930434E21RIK	-0.8408336	0.70573354	-0.073259	0.60557353	-0.6591107
11	5690192	A630077B13RIK	-0.5135777	0.4979071	-0.22829	0.4929957	-0.61666244
11	5810452	AQP9	-2.7816396	1.6749226	-0.24184	1.8078489	-2.505471
11	6130543	NAIP2	-0.6825757	0.28451627	-0.137601	0.62449193	-0.64727616
11	6580646	KLRK1	-1.109293	1.0660231	-0.072787	0.98471177	-0.84940785
11	7650615	EOMES	-1.3359905	0.08482761	0.1204967	1.2148632	-0.8510953
11	450735	GVIN1	-1.0018518	-0.0580251	0.7093564	0.8539882	-0.6715495
11	540288	PTPN12	-0.6400365	0.22460291	0.1260474	0.40603703	-0.5452726
11	1110458	SAMD3	-0.8000685	-0.0743745	0.2729368	0.98844373	-0.5365082
11	1580008	AIM1	-1.4758222	0.5364586	-0.042779	1.2466923	-0.9190911
11	1690091	VIM	-0.9734549	-0.1068682	0.2104798	1.001911	-0.58627075
11	1940255	PLCG2	-0.8706399	0.8407024	-0.150422	0.7739858	-0.5925376
11	2030767	KLRK1	-0.4886469	0.46324936	-0.055174	0.7127015	-0.32301414
11	4260300	ARFL4	-0.5087921	0.18964505	0.0055753	0.59913146	-0.31331927
11	5340292	NUDT4	-0.5743086	-0.0168319	-0.071549	0.7063502	-0.3795428
11	6550647	LRRK1	-2.5167398	0.8089982	-0.213728	1.4712458	-2.2016802
11	6660653	BAG3	-0.4163595	0.50381684	-0.032702	0.67255735	-0.31014642
11	650386	ITGAD	-0.5840267	-0.0589136	0.2734782	0.58883035	-0.23284881
11	2120397	CCR5	-1.2974348	1.5768918	-0.051282	2.4675891	-0.8468936
11	2850112	1700025G04RIK	-2.107915	0.16934785	-0.00758	1.3413111	-1.5325258
11	2850398	ASB2	-0.6824218	0.39101648	-0.022473	0.6136681	-0.36069548
11	4290709	IFI30	-0.5969726	0.37198547	-0.096792	0.7413066	-0.17035815
11	4810575	HK3	-0.4231804	0.30021414	-0.083224	0.5864427	-0.15964682
11	6620521	KCNK6	-1.0569944	0.8008776	-0.046792	0.51401764	-0.7974044
11	510041	EPB4.1L3	-0.5680583	0.13184571	-0.059305	0.53780466	-0.25124446
11	630025	MLKL	-0.601047	0.33921322	-0.041329	0.7001887	-0.181516
11	940138	ST6GALNAC4	-0.589672	0.02231347	-0.182394	0.50169146	-0.32756022
11	1010435	GSTO1	-1.2369081	0.18564805	-0.372713	0.7887907	-0.87779343
11	2450053	SMAD3	-1.285328	0.17789239	-0.001869	0.56275964	-0.9284641
11	3060332	TM6SF1	-0.7406098	-0.0312994	0.0860055	0.40744737	-0.4232805
11	3180019	GNG2	-1.0270603	0.92836595	-0.133019	0.4312319	-1.0624764
11	3460026	LOC100047167	-1.5804853	0.24208055	-0.099698	0.86469996	-0.9630498
11	3890750	ZCCHC18	-1.828179	-0.0541106	0.2639497	1.0439856	-0.8957572
11	5050463	HMOX1	-0.5838834	0.16757768	-0.123314	0.5916535	-0.1758763
11	6180427	DAPK2	-2.5453503	1.1157223	-0.141181	1.3301003	-1.5287243
11	6380672	RYK	-0.599421	0.22556624	-0.116713	0.46837962	-0.29768315
11	6840594	RGS1	-0.9526999	0.11018237	-0.092884	0.70671386	-0.3483704
11	110064	SLA	-0.6733007	0.12922116	-0.130013	0.4339575	-0.31589642
11	130735	ARSB	-1.2568856	0.35316268	-0.478666	1.4938745	-0.21586123
11	2140221	SLC40A1	-1.5670632	-0.037353	-0.238684	1.3891402	-0.58502555
11	2340241	ST6GALNAC4	-0.7501282	0.00409247	-0.097788	0.65669185	-0.12856314
11	3400279	COBLL1	-0.9467288	0.0709075	-0.039765	0.4599457	-0.48447117
11	3450167	SNX10	-1.2486122	0.7545133	-0.012982	0.9514448	-0.35557535
11	4200747	SLAMF7	-1.2269337	0.38966128	-0.164123	0.79448175	-0.539909
11	4730050	KCNJ8	-0.7373281	0.587779	-0.070664	0.27248114	-0.49157405
11	5340138	FGF13	-1.3989375	0.76164436	-0.182169	0.6725847	-0.7789146
11	5900070	GATA3	-1.0155456	0.31155956	-0.073303	0.37610403	-0.53320473
11	6520392	CSPRS	-0.7892281	0.19993694	-0.188846	0.45905507	-0.38066077
11	6940451	MYADM	-0.5187165	0.20588082	-0.086647	0.49134025	-0.13326536
11	7570209	STARD10	-0.8840743	0.39250875	-0.335742	0.9514005	-0.12319579
11	2260162	MFSD10	-1.1835266	0.00432218	0.1443587	0.26191252	-0.58998
11	2750594	TMEM51	-1.0521642	0.3151587	-0.058879	0.8773769	-0.16237381
11	3420433	IL12RB1	-0.752845	0.22324511	-0.085143	0.3393546	-0.34660283
11	4200176	ZFP3	-0.7567272	0.6798045	0.0835319	0.400701	-0.26436052
11	5820056	SERPINB6B	-0.6972597	0.0569534	-0.037081	0.30763403	-0.24232954
11	6370553	LAT2	-0.8222237	0.30399096	0.0135109	0.43446338	-0.18959615
11	7040181	2410008K03RIK	-0.6789154	0.627624	-0.160607	0.23206425	-0.43945658
11	1940154	COBLL1	-1.4085056	0.13500641	-0.078881	0.575112	-0.4740254
11	1990440	INPPL1	-1.0961415	0.6649205	0.0055741	0.47439212	-0.41050032
11	1990564	TXNDC5	-1.1300812	0.79023486	-0.084986	0.28805238	-0.6397091
11	5080326	S100A6	-3.4317393	1.6137261	-0.207226	0.9710497	-1.7487891
11	5670072	INPPL1	-1.146106	0.58783567	0.0143428	0.45482987	-0.4295762
11	1470408	CXCR5	-1.5689836	-0.1384336	-0.110623	0.24090374	-0.74909383
11	4230348	CEBPB	-0.8742819	0.3177172	-0.255484	0.38370425	-0.35665476
11	4730367	IFI30	-0.7022082	0.19617644	-0.130323	0.37867236	-0.16467972
11	6860543	MAPRE2	-1.2778932	0.3506472	-0.113	0.18759856	-0.62189656
11	50091	CXCR5	-1.5614064	0.00206366	0.0253804	0.29427794	-0.5667293
11	1050092	SERPINA3G	-3.9786162	0.737345	-0.208721	2.0292928	-0.6722695
11	1410113	UAP1L1	-0.9322789	0.02803838	-0.045141	0.24023601	-0.2576184
11	1690768	CCL5	-6.6927257	0.6510022	-0.030798	0.6216512	-2.7222006
11	4150670	ST3GAL6	-2.3762949	0.2886797	-0.1398	0.67604893	-1.7296188
11	4570368	ERRFI1	-0.7992786	0.08407915	-0.218891	0.6179204	-0.02416804
11	6380209	TBX21	-3.0225856	0.46912214	-0.136036	0.7369357	-2.1200452
11	6380431	RAB19	-0.7842387	0.16501945	-0.111713	0.30671763	-0.15392525
11	450368	RGS1	-1.6685504	0.19300638	-0.212263	0.6455933	-0.39045298
11	1440040	GARNL4	-1.1035163	0.02289705	-0.061363	0.73496705	-1.1008164
11	1690475	GBP3	-0.8519365	0.0986696	-0.25403	0.6430872	-0.0259692
11	2100524	THTPA	-1.4835364	-0.1296756	0.0362604	0.6157791	-1.1457641
11	60553	GBP3	-0.6527522	0.21350572	-0.273202	0.62268645	-0.0069448
12	990682	PSEN2	-0.9731697	-0.402585	0.1174789	0.36149824	-0.04562488
12	510338	1810015A11RIK	-0.9157328	-0.0261331	0.0967451	0.15556511	0.124860235
12	510474	LGALS3	-2.1225412	-0.3897019	0.0198138	1.7712147	0.009741766
12	1240546	BCL2L1	-0.6013047	-0.1659413	-0.023679	0.53096354	0.22420967
12	1580044	VARS	-1.00154	0.01059109	0.1175132	-0.1318501	0.19269878
12	1940482	HPRT1	-0.9301558	-0.3469166	-0.376289	0.07989012	0.3292778
12	2000398	HBA-A1	-2.8816464	-1.1949313	0.6514995	1.3988298	0.7524203
12	2340349	ALDH2	-0.7685452	0.09549547	-0.414444	0.88186127	0.9190573
12	2470315	ACOT7	-1.7597207	-0.6384506	-0.0115	0.41623974	0.28506926
12	2490044	CRTAM	-0.7121865	-0.1007578	-0.072718	0.3216934	0.4541041
12	2600240	IL3RA	-1.1276588	0.02290699	0.1386972	0.03001805	0.1973804
12	3140246	PGLYRP1	-2.5557127	0.02804158	0.0225012	1.0820919	0.016278803
12	3140500	H2AFZ	-0.7155286	-0.0865096	0.3278407	0.56033343	0.1579395
12	3310187	ST6GALNAC4	-0.9882648	-0.1344547	-0.064311	0.41216484	0.35441226
12	3400646	SIRPA	-1.1467316	-0.1585744	-0.243651	1.1126833	0.039254542
12	3610228	CSDA	-1.0344958	-0.18544	-0.023897	0.28299704	0.5964321
12	4010735	TNFSF14	-1.1800798	-0.4137776	-0.031384	0.4704258	0.6707116
12	4040484	LUZP1	-0.6253995	-0.387007	0.0501957	0.50528276	-0.04799061
12	4050246	BCAP29	-0.5478534	-0.1484353	0.0296837	0.47932115	0.14027299
12	4260687	DAP	-0.6434597	-0.1856479	-0.069773	0.4263104	0.2245912
12	4480541	ALAS2	-0.7694263	-0.406429	0.1397101	1.1085857	0.636131
12	4560114	RGS3	-0.5443876	-0.3460531	0.0820006	0.50026053	0.08109265

12	4610373	IRF8	-1.2045448	-0.0566713	-0.348639	0.46020573	0.72978264
12	4890162	MFSD10	-1.1696024	-0.0948689	0.0700103	0.4497516	-0.15853187
12	5130372	SNCA	-0.6388399	-0.3046654	0.1941647	0.989606	0.6435047
12	5290333	ME2	-0.5420332	-0.1676381	0.0001279	0.7155484	0.30628622
12	5290561	PRR13	-1.0919147	-0.0478929	-0.044221	0.11178415	-0.00054477
12	6250619	TNFSF14	-1.6750062	-0.4389952	-0.143651	0.3990472	0.51335937
12	6420215	GSG2	-1.3073226	-0.1769822	0.1043409	0.09945016	0.10898194
12	7050717	VWA5A	-0.9217248	-0.3938511	0.0121657	0.6104084	0.19719541
12	7100338	IL2RB	-1.5271692	-0.2508189	0.0929132	0.7676064	-0.28076372
12	7610392	ACOT7	-1.0883043	-0.4221861	0.2362604	0.9323963	-0.22470073
12	70753	CTNNA1	-0.9026763	-0.2181727	-0.08686	0.334281	0.47542262
12	240373	D14ERTD449E	-0.7210965	-0.1272814	-0.054027	0.58330745	0.35121864
12	670403	HBB-B1	-1.4235101	-0.4556943	0.8178855	1.2605786	0.8641423
12	1070487	NLRX1	-0.6430908	0.02772594	-0.109494	0.35748756	0.47757325
12	1170170	NFE2	-0.7725834	-0.4134155	0.0708085	0.8829693	0.657127
12	1400377	SYPL	-1.3172567	-0.1886001	0.1588695	0.14958896	0.7437655
12	2060669	SYPL	-1.2277737	-0.2305906	-0.032308	0.4388202	0.9796422
12	3460296	ANXA2	-3.7256997	-1.235061	0.2783055	0.4741966	-0.11955031
12	6840392	ACOT7	-1.8707272	-0.7478653	-0.043299	0.35495338	0.37590876
12	6380164	CLDND1	-0.9617169	-0.6474133	0.1613775	0.40782332	-0.14917277
12	7150528	CDKN2C	-1.2668574	-0.5963473	0.0028661	0.5684591	0.77776396
12	730129	ACOT7	-2.2621589	-0.9511862	0.0340236	0.08448366	0.42683828
12	2000338	LUZP1	-1.0231282	-0.690319	0.0492488	0.43569735	0.16544275
12	3130707	PDGFB	-1.6172872	-1.1232256	0.9759956	1.5055923	-0.03237513
12	6330377	GADD45G	-0.4834442	-0.6504151	0.2124933	0.5417737	-0.11042683
12	1570564	CD160	-1.5598472	-0.7504547	0.0945853	0.21968877	0.62847364
12	1780619	RAB32	-0.5159394	-0.4596837	0.0220303	0.6317199	0.45054471
12	4070142	GADD45G	-0.8138824	-0.792621	0.2072534	0.39741904	0.006910993
12	5290279	HMGB2	-0.8739579	-0.4607145	0.2598586	0.38661838	0.48023522
12	5420224	TFDP1	-1.3765826	-0.644336	0.1756398	0.09653757	0.51492566
12	2260059	BMP7	-1.1678914	-1.1461341	-0.011877	0.24930781	0.16221945
12	5340577	XDH	-0.7542729	-0.954174	1.01463	0.8794042	-0.09123938
12	2350368	MFSD2	-0.9559146	-0.9704826	0.3073699	0.30687058	0.1592429
12	4210192	EHD4	-0.8455741	-0.8071548	-0.067723	0.20731343	0.3623373
12	2230039	FCER1G	-1.5579079	-0.3966765	-0.072562	1.6778316	0.016574029
12	6220386	OLFM1	-0.5278961	-0.2522052	0.0961878	0.4755349	-0.2044087
13	4390538	ITM2A	-1.5941601	-1.6401962	0.1775825	0.4363968	1.0458014
13	2510468	FIBCD1	-0.7897431	-0.7550026	0.2266081	0.05427107	0.25663447
13	3850202	XCL1	-3.618219	-2.0694716	1.1617788	0.0472394	2.2144942
13	4200204	SH3BP2	-1.0246757	-0.7116935	0.163162	0.09648942	0.792348
13	4250403	TOP2A	-2.157228	-1.7767743	0.3367526	0.12724786	0.95820135
13	4250711	HIST1H2AF	-2.0447493	-1.044982	1.1163139	0.18292366	1.2663
13	4480333	PPIC	-1.5734206	-3.1179645	0.4127669	0.10515865	0.15715249
13	4610129	HIST1H2AN	-2.2406652	-1.1368979	1.025893	-0.032911	1.0346707
13	6060379	CDC2A	-1.451523	-1.2547721	0.3065058	0.03141673	1.2626917
13	7400215	BIRC5	-1.9634094	-1.6979129	0.4349198	0.12155451	1.1449862
13	70546	HIST1H2AG	-2.0554554	-1.2120196	0.6769035	0.17539223	1.3571525
13	110039	HIST2H2AB	-1.664143	-0.785445	0.7084205	-0.0856052	1.2052323
13	110706	PPIC	-1.0232191	-1.6982138	0.4039708	0.32471332	0.12750761
13	150019	LITAF	-1.5993534	-1.5501829	0.1455315	0.2975369	1.7973932
13	770162	E2F2	-1.1159225	-1.0952038	0.8325691	0.1275882	0.90313846
13	780475	PRC1	-2.1105464	-1.5699309	0.7193904	0.24640936	1.5137392
13	1050170	CDCA3	-1.7716234	-1.2330785	1.1001537	0.01629733	1.4709579
13	1090327	H2AFX	-1.1018144	-0.6077089	-0.075624	0.05314143	1.0426824
13	1240446	BIRC5	-2.4075906	-2.0983467	0.7741442	0.02884809	1.7165598
13	1470341	HIST1H2AH	-2.275559	-1.2953122	0.8092663	0.22612578	1.086515
13	1500491	NUSAP1	-2.591729	-2.0765285	0.6687306	-0.1088957	1.6238749
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13	2100026	TYMS	-1.4361969	-0.7171215	0.2410098	0.06262621	0.8123017
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13	2190164	CCNB1	-1.1598772	-0.9169021	0.3456282	0.02529775	0.96379364
13	2260010	PSAT1	-0.9052368	-0.9706687	0.0338059	0.28632548	1.2207346
13	2810612	BIRC5	-1.8343174	-1.5281113	0.3457334	0.18959764	1.1853174
13	2900300	PBK	-1.8225656	-1.4440961	0.8214402	0.11755432	1.9240046
13	3130609	HIST1H2AK	-2.2369103	-1.3016876	0.914618	0.24675743	1.2009321
13	3290437	MCM6	-0.9450043	-0.7633171	0.1396371	0.21144295	1.2446214
13	3520717	HIST1H2AD	-2.0352352	-1.1972477	1.0546601	0.29756027	1.2396905
13	3830735	TYMS-PS	-1.490701	-0.6577432	0.2634034	-0.0006138	1.4126583
13	3990477	TPI1	-1.1515313	-0.5247411	0.2501124	0.05995714	1.0873128
13	4560397	UHRF1	-1.821557	-1.6830806	1.1593695	0.02212613	1.9089408
13	6100184	KLRB1C	-0.6777135	-0.637663	-0.033766	0.6612918	1.1356187
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13	6550164	E2F2	-0.8242882	-1.0811796	0.8687724	0.24912517	1.1130025
13	6560204	TNFRSF21	-0.8350597	-0.5498024	0.09904	0.5060997	0.92965996
13	7100301	2810417H13RIK	-2.0034602	-1.5856661	1.0510473	0.13781138	2.2410605
13	7550156	CCNB1	-0.8542936	-0.7285548	0.3357866	-0.0514457	0.9554938
13	160240	SCAMP1	0.01320697	-1.0684391	0.0614183	-0.0487184	0.6757116
13	240348	CHN2	-0.8342466	-0.7905526	0.0378148	0.9414832	1.4236475
13	840673	LMNB1	-1.0762743	-0.8380178	0.5737065	0.06115005	1.335033
13	1190201	ANLN	-1.0054375	-0.9049031	0.7014079	0.15123756	1.1347903
13	3440725	RRM2	-1.0448292	-0.8526796	0.5605371	-0.028993	1.2005897
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13	6200367	NCAPH	-1.2347803	-1.3917984	1.006512	0.06217913	1.9766662
13	60369	E2F1	-1.426535	-0.8412483	0.946645	-0.0498445	1.692104
13	240450	HIST2H2AC	-1.2278252	-0.4434526	0.8455102	0.08603879	1.2684923
13	3990243	MCM6	-0.640049	-0.4988052	0.5658465	-0.1785563	0.79001313
13	7400142	TK1	-1.5462611	-0.771556	1.0056343	0.0445016	1.8253162
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13	1770612	MCM2	-0.8915938	-0.5886559	0.4669901	0.02958543	1.4260246
13	2360189	KIF11	-0.9447571	-0.8125672	0.7747464	0.08234409	1.5322081
13	3310196	CDCA5	-0.742332	-0.699049	0.3077358	0.09679332	1.4903071
13	4610722	CDC20	-1.0163532	-0.8385389	0.8324314	0.03216901	1.6036934
13	7200270	CHAF1B	-0.6964932	-0.1066535	0.3508559	-0.0390247	0.75103635
13	20064	CAPG	-1.0373274	0.16989125	0.0099593	0.13790333	1.1986092
13	2680010	3000004C01RIK	-1.0146477	-0.8416767	0.7148934	0.00013468	1.7859044
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13	4230717	GALK1	-0.9488193	-0.3900287	0.1080154	0.15161476	0.57091343
13	3310132	SWAP70	-1.1983396	0.08309604	-0.059453	-0.219015	0.73034614
13	5220440	LOC100047651	-1.2827624	-0.1413969	0.2396298	0.00490397	0.6851482
13	7050138	GFOD1	-0.9732739	-0.0489872	0.0007252	0.0743428	0.6632452
14	7050433	LPXN	-1.2819521	0.11287406	-0.718172	0.3058022	-0.28306082
14	10630	MRPL52	-0.7656061	0.39050207	-0.14036	0.15777558	-0.1112823
14	670204	GIMAP7	-1.2659446	0.5071645	-0.409543	0.56171185	-0.26956427
14	940129	4930486L24RIK	-1.0602587	0.38727254	-0.078282	0.35823828	-0.02173948
14	2100689	UNC93B1	-1.2145232	0.37229782	-0.535025	0.27017352	-0.17742518
14	4880138	CD44	-2.3840535	0.45327124	-0.686747	0.2983284	-0.16057587
14	6770195	CD74	-3.1090903	1.2189977	-2.006477	0.4580238	0.20348667
14	7210039	GPC1	-1.1319054	0.8263893	0.0102759	-0.0231907	-0.27525365
14	60544	SNX8	-0.959383	0.60464764	0.0026803	-0.0661714	-0.07212859
14	1090008	ABCB9	-0.8114682	0.17390619	-0.042091	0.2527092	-0.00651109
14	1440451	RAB19	-0.7773533	0.1348329	-0.186674	0.4113846	-0.0169008
14	2570487	H2-AB1	-2.703411	1.7177281	-1.638656	0.73197836	-0.09114578
14	3360338	CD74	-2.916534	1.2632029	-1.990104	0.48089805	0.39381048
14	3930307	ITGB1	-0.6482601	0.42914099	-0.418456	0.33656847	-0.02687164
14	4260215	GNG2	-1.675698	0.27297574	-0.221915	0.6497514	0.009332444
14	5890523	PQLC3	-0.5729756	0.4323464	-0.145105	0.35786963	-0.01246097
14	6550603	SEPN1	-0.791404	0.27936026	-0.472965	0.49390352	0.094898716

14	520072	H2-EB1	-2.4750953	1.6946348	-1.473489	0.69848496	0.010201382
14	780315	LOC641240	-2.4132752	1.5944964	-1.384942	0.6980989	0.08465149
14	1230341	BHLHB2	-1.9044964	0.1715965	-0.642711	0.5272908	-0.04714324
14	1340148	PLSCR1	-0.6358942	0.32364956	-0.242106	0.4391541	0.14608346
14	1940722	CASP1	-3.086959	1.9996727	-1.636938	0.13193846	0.60856575
14	2510561	MYL4	-1.5307268	0.3244423	-0.290115	0.2625834	0.24217679
14	4050112	GLRX	-0.6505902	0.36185995	-0.870185	0.15022142	0.04454369
14	4290072	BC021614	-0.704818	0.16994987	-0.131143	0.3114001	0.08121721
14	4900754	H2-DMB1	-0.9764614	0.75561696	-0.606823	0.2831886	0.1966451
14	5860435	H2-AB1	-1.7752495	1.5075976	-1.109511	0.6336766	-0.02063688
14	6520598	SAS	-1.0721793	0.825757	-0.410674	0.06756089	-0.07817687
14	7100577	AXL	-1.4257165	0.20108071	-0.313653	0.3562797	0.27729142
14	7560338	ASS1	-1.0233951	0.64011866	-0.069469	-0.0016077	0.32440454
14	670463	UBLCP1	-0.8792934	0.14241102	-0.134276	0.10687156	0.15382534
14	2190056	MDFIC	-0.4804679	0.5208581	-0.078208	-0.1001019	-0.0952549
14	4730392	SWAP70	-1.1193863	0.28116643	-0.007144	-0.2119041	0.3320802
14	110192	PKIG	-0.8535621	0.20600891	-0.260617	0.0187409	0.33800498
14	2510037	ALAD	-1.1839281	0.16680315	-0.215419	0.13361987	0.36033797
14	6280504	MED7	-1.1732823	0.23534875	-0.126612	0.01022214	0.50247747
14	7150500	CCL4	-1.6416757	0.33137903	-0.619937	0.14049253	1.1512742
14	1770592	NUAK2	-0.6504894	0.67898864	-0.624883	0.48470137	-0.15236588
14	6580379	P2RY14	-0.7507824	0.8102004	-0.562656	0.25020885	-0.0969725
14	60050	INSL6	-1.1784225	1.2816058	-0.872524	0.06866918	0.5761647
14	5290017	CASP4	-1.1470085	1.3319254	-0.555609	0.21224393	1.1848031
14	6940184	CCL4	-2.9095013	0.27327687	-0.244272	0.06468661	1.4883376

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