

SUPPLEMENTAL FIGURE AND TABLE LEGENDS

Supplemental Figure 1: IL-23R-mediated signaling induces pathological damage and pro inflammatory cytokine production in the colon during GVHD. (A) Pathological scores of liver, colon, and lung from Balb/c mice transplanted with B6 BM (white bar), B6 BM and B6 spleen cells (black bar), or IL-23R^{-/-} BM and IL-23R^{-/-} spleen cells (hatched bar) 3-4 weeks post transplantation. Data are from 6-12 mice/group and are presented as the mean $\pm$ SEM. Results are from three experiments. (B) Representative sections of the colons of animals transplanted with wild type or IL-23R^{-/-} marrow grafts as in panel C. Original magnification is 50X and 100X for photomicrographs. (C) IFN- γ , IL-6, IL-17 and IL-22 mRNA expression in the colons of Balb/c mice transplanted with B6 Rag-1 BM alone (●, n=6-9) or with purified CD4⁺ T cells from B6 (■, n=9-15) or IL-23R^{-/-} animals (▲, n=9-15) 3 weeks post transplantation. Data are depicted as fold increase relative to 18S rRNA and are from two-three experiments. Statistically significant differences were calculated using the two-tailed Mann-Whitney U test. Statistics: * p<0.05, ** p<0.01, ***p<0.001.

Supplemental Figure 2: Increased expression of the IL-23R on β 2 integrin-expressing CD4⁺ T cells. Representative dot plot depicting IL-23R expression on gated CD4⁺ T cells that did or did not express the β 2 integrins CD11b and/or CD11c in the colon of GVHD animals is depicted. An isotype control is shown for comparative purposes.

Supplemental Figure 3: Constitutive expression of β 2 integrins on human CD4⁺ T cells and up regulation after alloactivation. (A) Representative dot plot depicting constitutive expression of CD11b and CD11c on resting human CD4⁺ T cells and increased expression of β 2 integrins 7 days after activation with allogeneic cells in a mixed lymphocyte culture. (B) Percentage of CD4⁺ T cells expressing CD11b and/or CD11c prior to (●) and after (■) alloactivation. Data are cumulative results

from 11 unique donors. Statistically significant differences were calculated using the two-tailed Mann-Whitney U test. Statistics: *** $p < 0.001$.

Supplemental Figure 4: $CD4^+$ $CD11c^+$ T cells induce pathological damage and the accumulation of pro inflammatory T cells in the colon during GVHD. (A,B) Pathology scores in GVHD target tissues and representative sections of the colons of animals transplanted with wild type ($n=10$) or $CD11c^{-/-}$ ($n=7$) marrow grafts 10 days post transplantation are depicted. Solid arrow denotes apoptotic enterocytes and hatched arrows show crypt abscesses in colons of mice transplanted with whole $CD4^+$ T cells. Original magnification is 50X and 100X for photomicrographs. Data are derived from two experiments. (C-F) Absolute number of total $CD4^+$, $CD4^+$ IL-23R $^+$, $CD4^+$ IFN- γ^+ , and $CD4^+$ T-bet $^+$ T cells in the colons of animals transplanted with purified $CD4^+$ T cells from wild type, $CD11b^{-/-}$, or $CD11c^{-/-}$ mice 5 days post transplantation. Data are from one to three experiments per panel. Statistically significant differences were calculated using the two-tailed Mann-Whitney U test. Statistics: * $p < 0.05$, ** $p < 0.01$; *** $p < 0.001$.

Supplemental Figure 5: Transplantation with $CD4^+$ $CD11c^{-/-}$ T cells results in reduced proinflammatory $CD4^+$ T cell accumulation within the colon. (A-D) Balb/c mice transplanted with B6 Rag-1 BM along with purified $CD4^+$ T cells from wild type (●, $n=5$), $CD11b^{-/-}$ (■, $n=5$), or $CD11c^{-/-}$ (◆, $n=5$) animals. Absolute number of total donor-derived $CD4^+$, $CD4^+$ IL-23R $^+$, $CD4^+$ IFN- γ^+ , and $CD4^+$ TNF- α^+ T cells in the colons of animals when assessed 21 days post transplantation. Statistically significant differences were calculated using the two-tailed Mann-Whitney U test. Statistics: * $p < 0.05$, ** $p < 0.01$.

Supplemental Figure 6: $CD4^+$ $CD11c^{-/-}$ T cells induce less colonic inflammation in an MHC-matched, minor histocompatibility mismatched model of GVHD. Lethally irradiated Balb.B mice were transplanted with B6 Rag-1 BM alone ($n=3$) or together with 4×10^6 purified B6 or $CD11c^{-/-}$ $CD4^+$

T cells (n=5/group). (A) Pathological scores in the colon of animals that received wild type or CD11c^{-/-} marrow grafts. (B,C) The absolute number of total CD4⁺ and CD4⁺ IFN- γ ⁺ T cells in the colons of mice 5 days post transplantation is depicted. Statistically significant differences were calculated using the two-tailed Mann-Whitney U test. Statistics: *p<0.05, **p<0.01.

Supplemental Figure 7: **CD4⁺ T cells from CD11c^{-/-}, CD11b^{-/-} and wild type mice have similar proliferation kinetics and ability to be polarized towards T_H1 and T_H2 cells.** (A) Purified CD4⁺ T cells from the spleens of wild type, CD11b^{-/-} or CD11c^{-/-} mice were labeled with CellTrace Violet and cultured with anti-CD3 and anti-CD28 antibodies along with IL-2 for four days. Representative histograms depicting cell divisions for each population and scatterplots for replicate experiments are shown. (B) Purified CD4⁺ T cells from the spleens of wild type, CD11b^{-/-} or CD11c^{-/-} mice were cultured under T_H1 or T_H2 polarizing conditions (see Methods) for four days. Representative dot plots and scatterplots for replicate experiments are depicted.

Supplemental Figure 8: **Constitutive CD11b and CD11c expression on CD4⁺ T cells from wild type and β 2 integrin-deficient mice.** CD11b and CD11c expression on gated CD4⁺ T cells pooled from the spleen and lymph nodes of wild type, CD11b^{-/-} or CD11c^{-/-} mice is depicted. Numbers in quadrant denote relative percentages. Results are representative of five replicate analyses of individual animals.

Supplemental Figure 9: **Phenotypic characterization of CD4⁺ CD11c⁺ IL-23R⁺ central memory biased T cells.** (A) Representative dot plot and gating strategy depicting IL-23R expression on CD4⁺ CD11c⁺ T cells from naïve CD11b^{-/-} mice with an effector memory, central memory, or naïve T cell phenotype. An isotype control is shown for comparative purposes. (B) Representative dot plots and histograms showing gating strategy to demonstrate CCR9, α 4 β 7, and CCR7 expression on CD4⁺ CD11c⁺ T cells from CD11b^{-/-} mice. Isotype controls (shaded gray) are shown to depict background expression

for each fluorochrome. Representative dot plots depicting CD44 and CD62L expression on gated CD4⁺ CD11c⁺ CCR9⁺, $\alpha 4\beta 7$ ⁺, and CCR7⁺ T cells, respectively. (C) Lethally irradiated Balb/c mice (n=3) were transplanted with B6 Rag-1 BM plus 0.7 x 10⁶ column-purified CD4⁺ IL-23R⁺ T cells from wild type B6 animals. Representative dot plot depicting CD44 and CD62L expression on gated CD4⁺ T cells from the colons of recipients five days post transplantation.

Supplemental Figure 10: CD4⁺ CD11c⁺ T cells produce IFN- γ and are able to respond to alloantigens. (A) CD4⁺ CD11c⁺ and CD4⁺ CD11c⁻ T cells were sorted from the spleens of CD11b^{-/-} mice. CD4⁺ T cells (1 x 10⁵) were then cultured with PMA/ionomycin plus IL-23 (20 ng/ml) overnight and then intracellularly stained for the production of IFN- γ and IL-17. Representative dot plots are depicted. (B) CD4⁺ CD11c⁺ CD62L^{hi} CD44^{hi} (central memory), CD4⁺ CD11c⁺ CD62L^{hi} CD44^{lo} (naïve), CD4⁺ CD11c⁻ CD62L^{hi} CD44^{hi} (central memory), and CD4⁺ CD11c⁻ CD62L^{hi} CD44^{lo} (naïve) T cells (2.5-3 x 10⁴) were sorted from either wild type or IL-23R^{-/-} animals, Cell Trace Violet-labeled and co-cultured with Balb/c CD11c-enriched dendritic cells (1.5 x 10⁴). After four days in culture, cells were analyzed by flow cytometry. Representative dot plots of the percentage of Cell Trace^{lo} cells from each population are depicted from one of two experiments that yielded similar results.

Supplemental Figure 11: Gene Expression analysis of CD4⁺ CD11c⁺ T cells. (A). Hierarchical clustering of 587 genes that were significantly regulated in flow-sorted CD4⁺ CD11c⁺ versus CD4⁺ CD11c⁻ T cells from wild type mice. S1 and S2 refer to independent replicate samples with each replicate derived from pooled spleen and lymph node cells from mice. Z-score denotes standard deviation. (B). Waterfall plot showing log (2) fold difference in gene expression of differentially regulated genes. Red bars denote genes that had increased expression in CD4⁺ CD11c⁺ T cells, while blue bars depict genes with decreased expression relative to CD4⁺ CD11c⁻ T cells.

Supplemental Figure 12: T cell-derived IL-10 production under steady state conditions. Spleen, liver, lung, and colon tissues were harvested from normal B6 10BiT.Foxp3^{EGFP} mice (n=4). (A) Representative dot plots showing the percentage of IL-10-expressing CD4⁺ and CD8⁺ regulatory (Foxp3⁺) and conventional T cells in each of these tissues is depicted. 10BiT.Foxp3^{EGFP} negative littermate controls were used to define flow quadrants for IL-10 expression. (B) Percentage and absolute number of IL-10 expressing CD4⁺ and CD8⁺ regulatory (Treg) and conventional (Tcon) T cells in the specified tissue sites. Data are presented as the mean $\pm$ SEM. Statistically significant differences were calculated using the two-tailed Mann-Whitney U test. Statistics: * p<0.05.

Supplemental Figure 13: IL-10 production in syngeneic marrow transplant recipients. Lethally irradiated B6.SJL mice were transplanted with BM and spleen cells from 10BiT.Foxp3^{EGFP} animals. (A) Representative dot plots showing IL-10 expression in donor-derived CD45.1⁺ CD4⁺, CD8⁺ and CD4⁻ CD8⁻ populations in specified tissues sites. (B) Percentage and absolute number of IL-10-expressing CD4⁺ and CD8⁺ conventional (Tcon) and regulatory (Treg) T cells in the each organ is depicted (n=3). Data are from one of three representative experiments.

Supplemental Figure 14: IL-10 production by CD4⁺ and CD8⁺ T cells in GVHD mice. Balb/c mice were transplanted with B6 Rag-1 BM and spleen cells from 10BiT.Foxp3^{EGFP} animals (adjusted to yield 0.6×10^6 $\alpha\beta$ T cells). Mice were euthanized 10 days post transplantation. CD4⁺ and CD8⁺ T cells were separately sorted from the spleen, liver, lung and colon of individual mice (n=3). Sorted CD4⁺ and CD8⁺ T cells from the colon were pooled from three animals due to a limited number of cells from individual mice. CD4⁺ and CD8⁺ T cells populations were each stimulated overnight with PMA and ionomycin and the supernatants were analyzed for IL-10 by Bioplex.

Supplemental Figure 15: CD4⁺ T cell-derived IL-10 regulates GVHD lethality. (A). Balb/c mice were transplanted with B6 Rag-1 BM alone (●, n= 12), or together with purified B6 CD4⁺ IL-10⁺ (0.7 - $1.0 \times$

10⁶) T cells (■, n=15) or CD4⁺ IL-10⁻ T cells (□, n=15). Data are from three experiments. (B). Balb/c mice were transplanted with B6 Rag-1 BM alone (●, n= 6), or together with purified B6 CD8⁺ IL-10⁺ (1.5-2.0 x 10⁶) T cells (■, n=10) or CD8⁺ IL-10⁻ T cells (□, n=10). Data are from two experiments. Overall survival and serial weight curves in both panels are depicted. Statistically significant differences were calculated using the log rank test. Statistics: ***p<0.001.

Supplemental Figure 16: Proposed model for how central memory-biased CD4⁺ CD11c⁺ T cells mediate gastrointestinal tract GVHD. (1). Tissue damage induced by the chemoradiotherapy conditioning regimen results in disruption of the mucosal barrier and translocation of lipopolysaccharide (LPS) across damaged mucosal surfaces (2). LPS binds to TLR4 on donor antigen presenting cells (APCs) resulting in APC activation and production of IL-23 (3). IL-23 binds to the IL-23R expressed on central memory-biased CD4⁺ CD11c⁺ T cells that home to the GI tract due to expression of CCR9 and $\alpha 4\beta 7$ (4). CD4⁺ CD11c⁺ IL-23R⁺ T cells proliferate in the colon and differentiate into TH1 effector cells that secrete IFN- γ , along with other inflammatory cytokines leading to additional tissue damage (5). The proinflammatory cytokine milieu facilitates that recruitment and proliferation of CD4⁺ T cells that lack expression of the IL-23R, as well as other effector populations, which further potentiates inflammation.

Supplemental Table 1: Differentially regulated genes in CD4⁺ CD11c⁺ versus CD4⁺ CD11c⁻ T cells. Table depicts differentially regulated gene expression values for highly purified, flow sorted (>99%), CD4⁺ CD11c⁻ and CD4⁺ CD11c⁺ T cells. Values in columns represent results derived from the pooled samples of spleen and lymph nodes from independent groups of normal mice (n=4 mice/group). S1 and S2 denote independent sorted samples. Fold change is shown in the far column. Significance was determined using the Bonferroni correction methodology.

Supplemental Table 2: Gene set enrichment analysis of differentially regulated genes in CD4⁺ CD11c⁺ versus CD4⁺ CD11c⁻ T cells. Table depicts ten gene sets that were significantly enriched in CD4⁺ CD11c⁺ T cells using the DAVID pathway analysis (<http://david.abcc.ncifcrf.gov>). Enrichment scores, unadjusted p-values, and p-values adjusted for false discovery rate (FDR) control are shown.

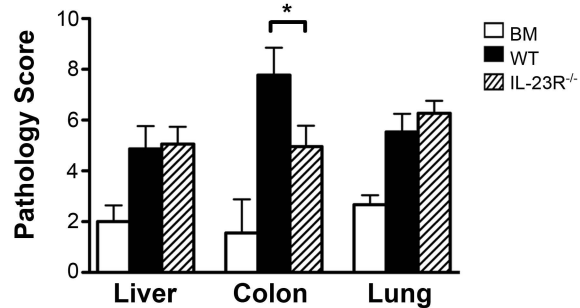
Supplemental Table 3: Differentially regulated genes in CD4⁺ CD11c⁺ versus CD4⁺ CD11c⁻ CM T cells. Table depicts differentially regulated gene expression values for highly purified, flow sorted CD4⁺ CD11c⁻ CD44^{hi} CD62L⁺ and CD4⁺ CD11c⁺ CD44^{hi} CD62L⁺ central memory T cells. Values in columns represent results derived from the pooled samples of spleen and lymph nodes from independent groups of normal mice (n=3-4 mice/group). S1-S3 denote independent sorted samples. Fold change is shown in the far column. Significance was determined using the Bonferroni correction methodology.

Supplemental Table 4: Gene set enrichment analysis of differentially regulated genes in CD4⁺ CD11c⁺ versus CD4⁺ CD11c⁻ CM T cells. Table depicts five gene sets that were significantly enriched in CD4⁺ CD11c⁺ CD44^{hi} CD62L⁺ T cells, and one set (i.e. nucleosome) that was enriched in CD4⁺ CD11c⁻ CD44^{hi} CD62L⁺ T cells using the DAVID pathway analysis (<http://david.abcc.ncifcrf.gov>). Enrichment scores, unadjusted p-values, and p-values adjusted for false discovery rate (FDR) control are shown.

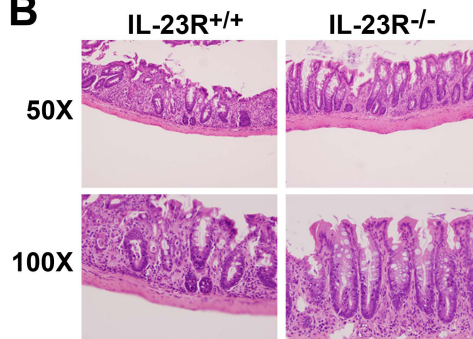
Supplemental Table 5: Monoclonal antibodies employed during these studies.

Figure S1

A



B



C

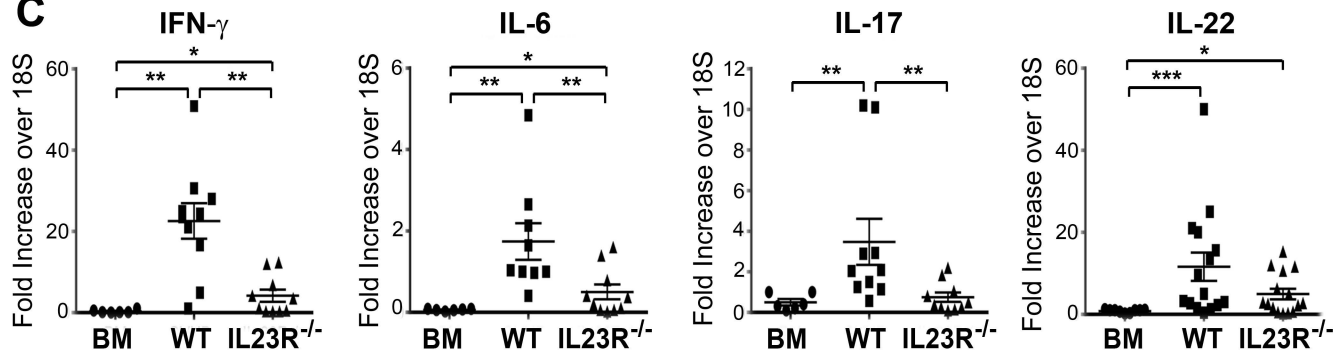


Figure S2

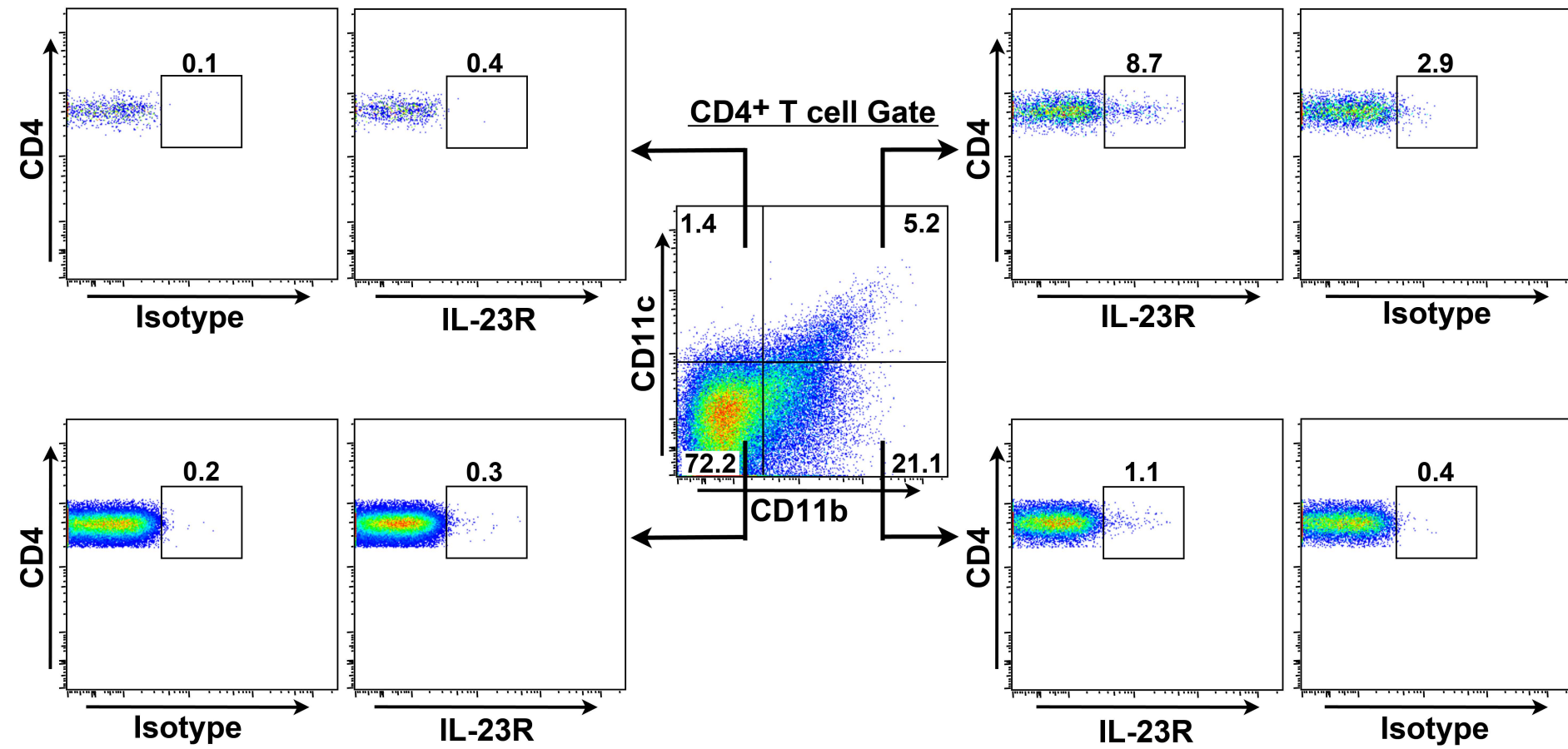
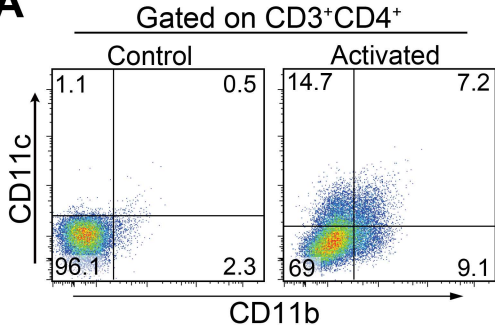


Figure S3

A



B

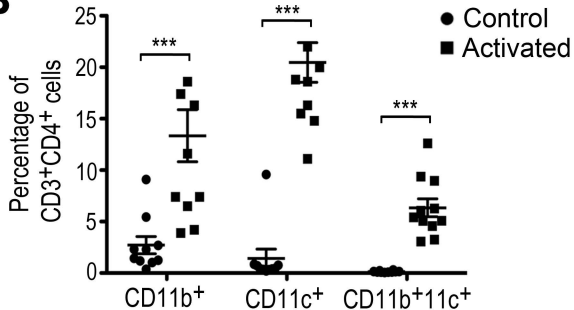
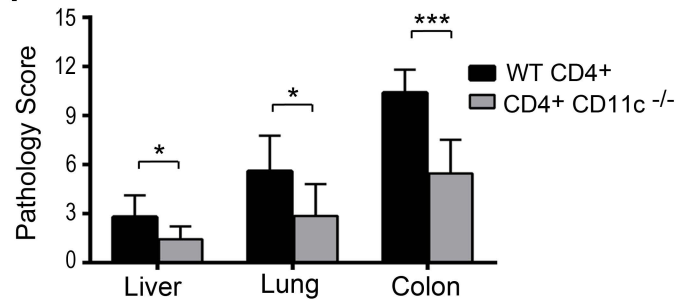
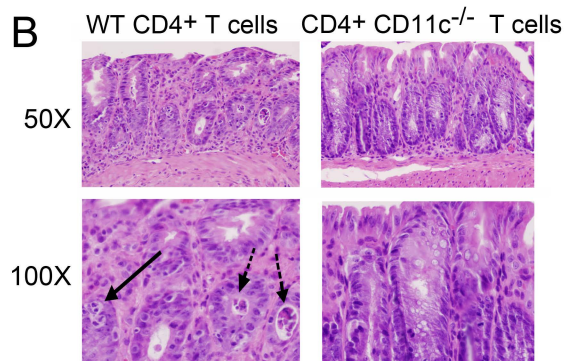


Figure S4

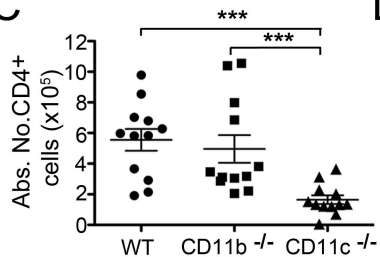
A



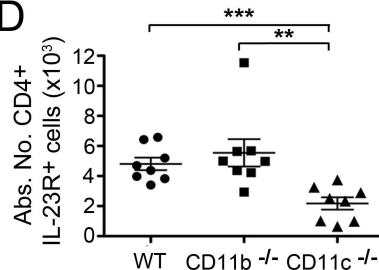
B



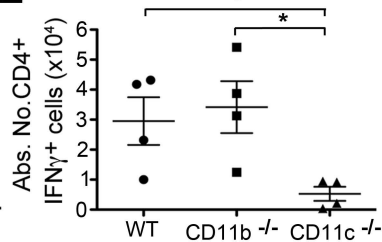
C



D



E



F

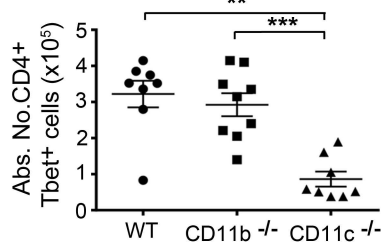
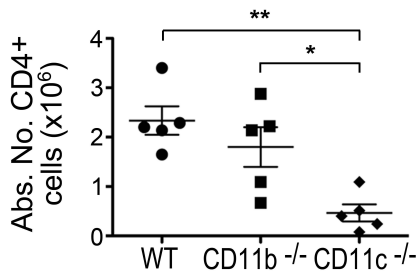
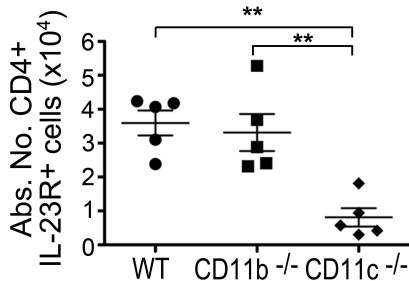


Figure S5

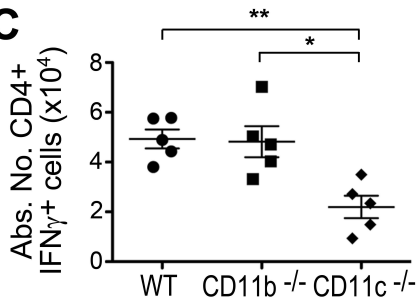
A



B



C



D

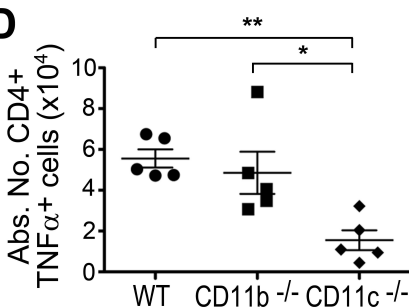


Figure S6

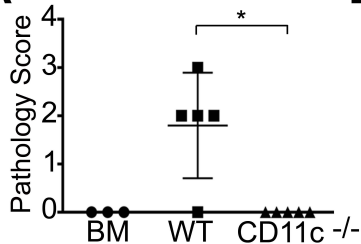
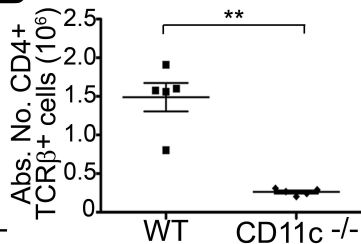
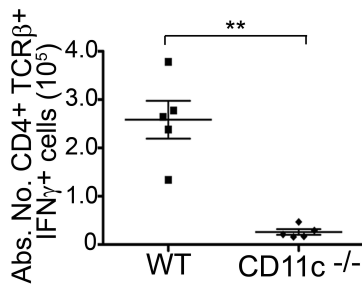
A**B****C**

Figure S7

A

Cell Proliferation

WT

51.8

No. cells

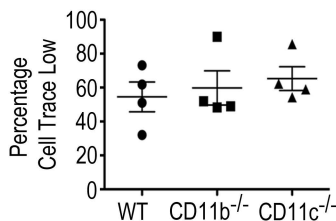
CD11b^{-/-}

53.4

CD11c^{-/-}

63.1

Cell Trace Violet



B

T_H1

T_H2

IL-17A

IFN γ

IFN γ

IL-4

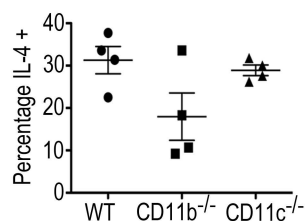
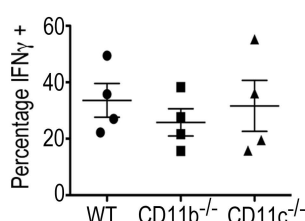


Figure S8

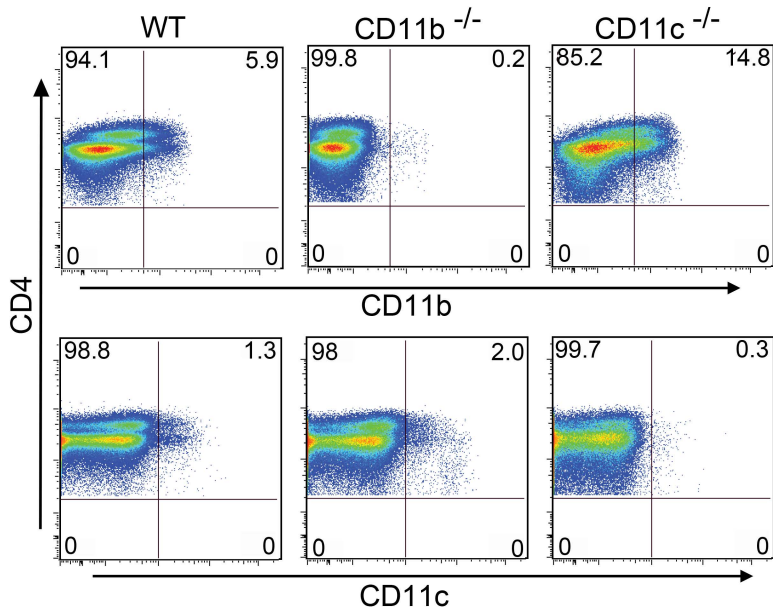
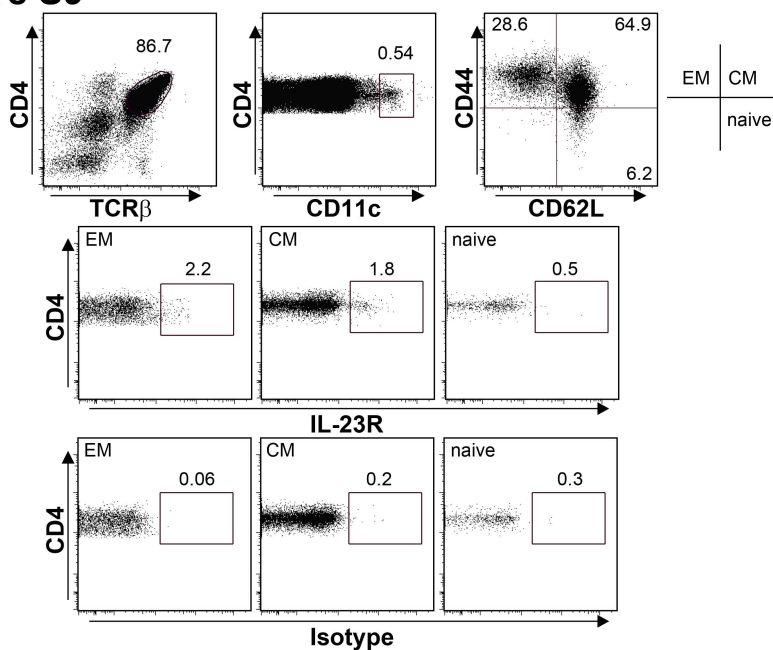
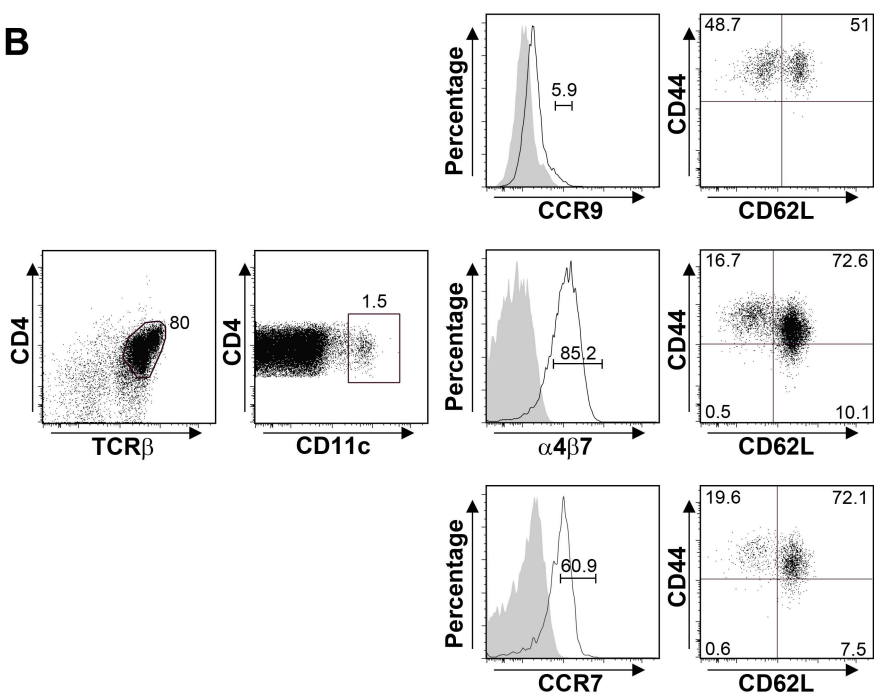


Figure S9

A



B



C

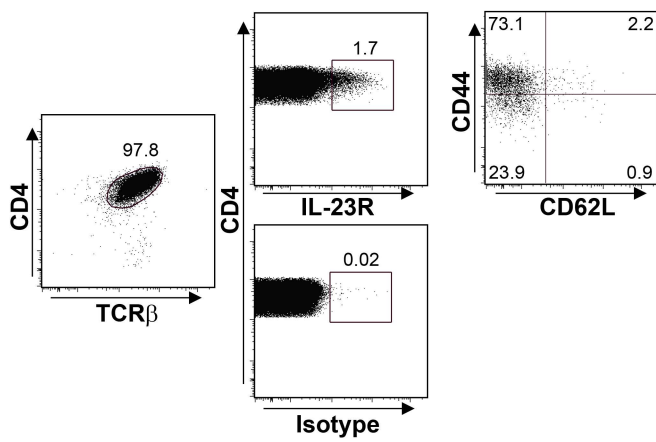
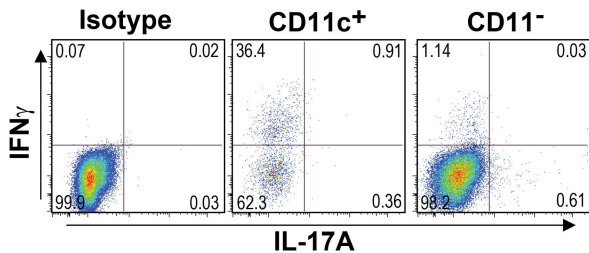


Figure S10

A



B

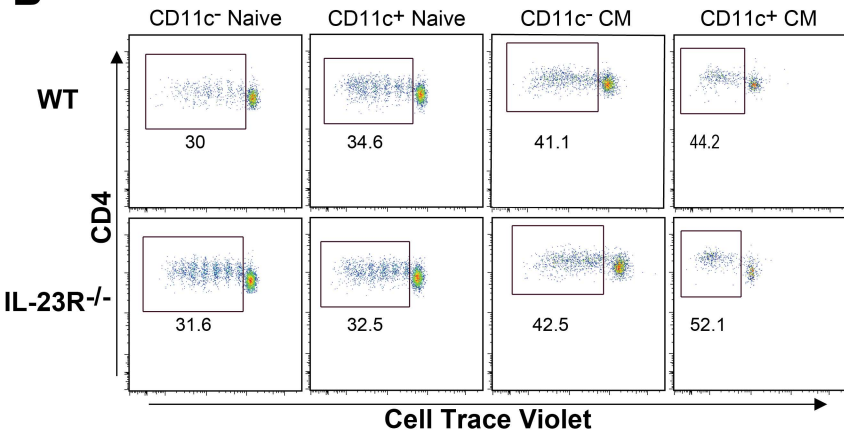
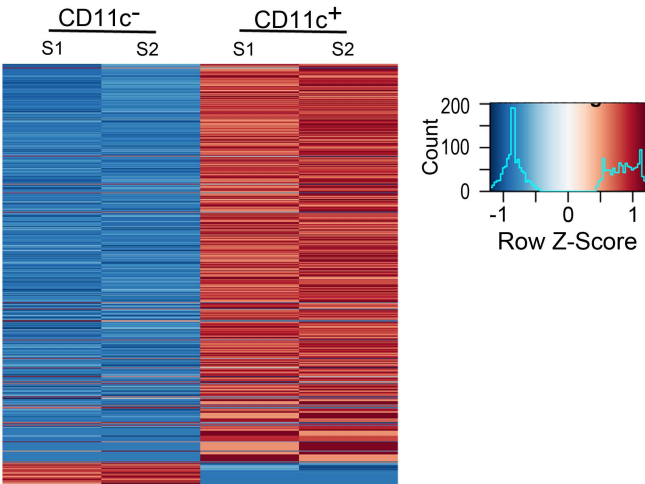


Figure S11

A



B

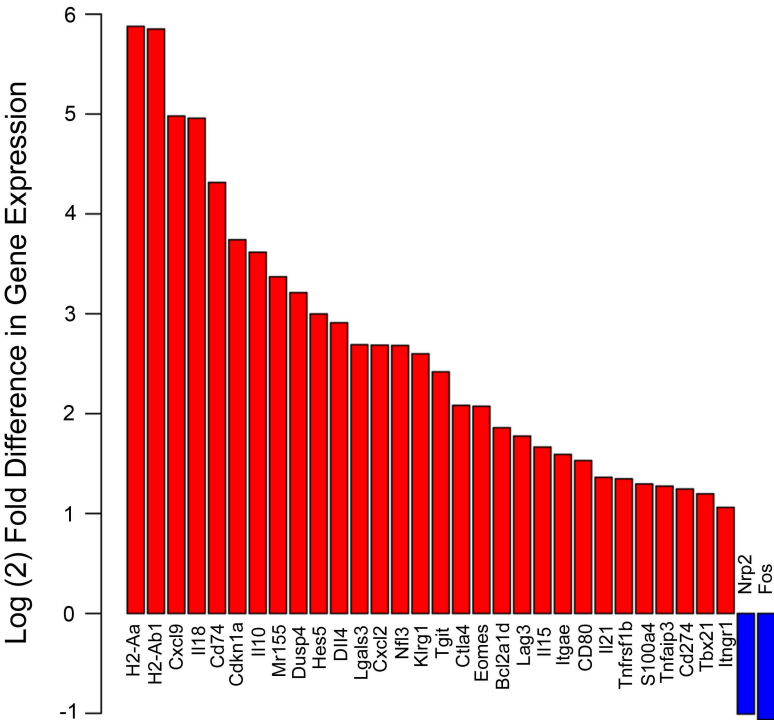


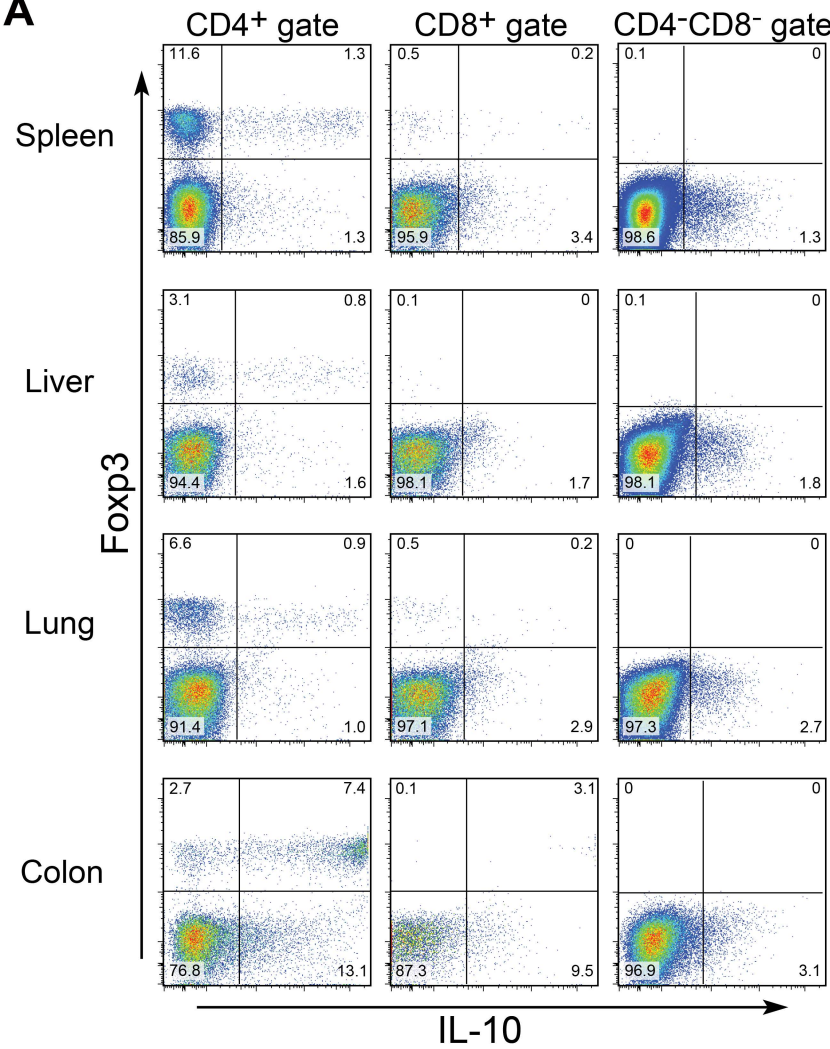
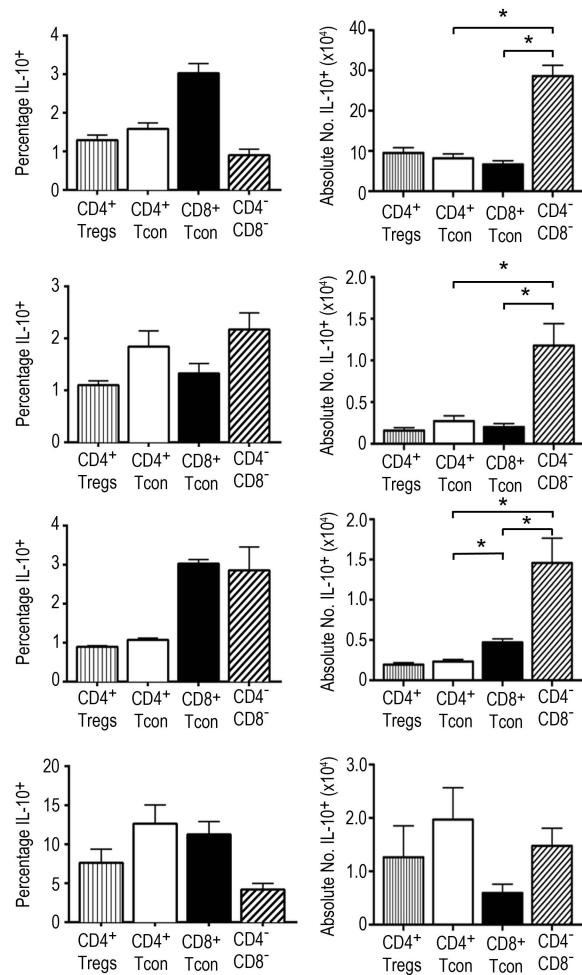
Figure S12**A****B**

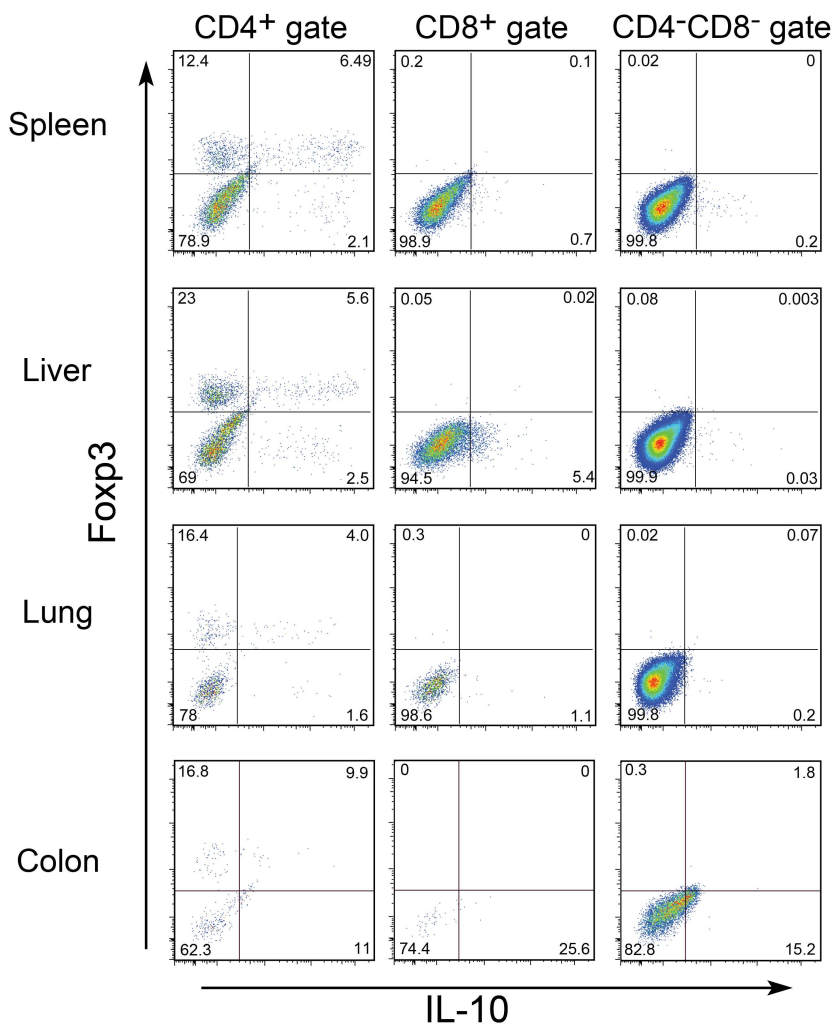
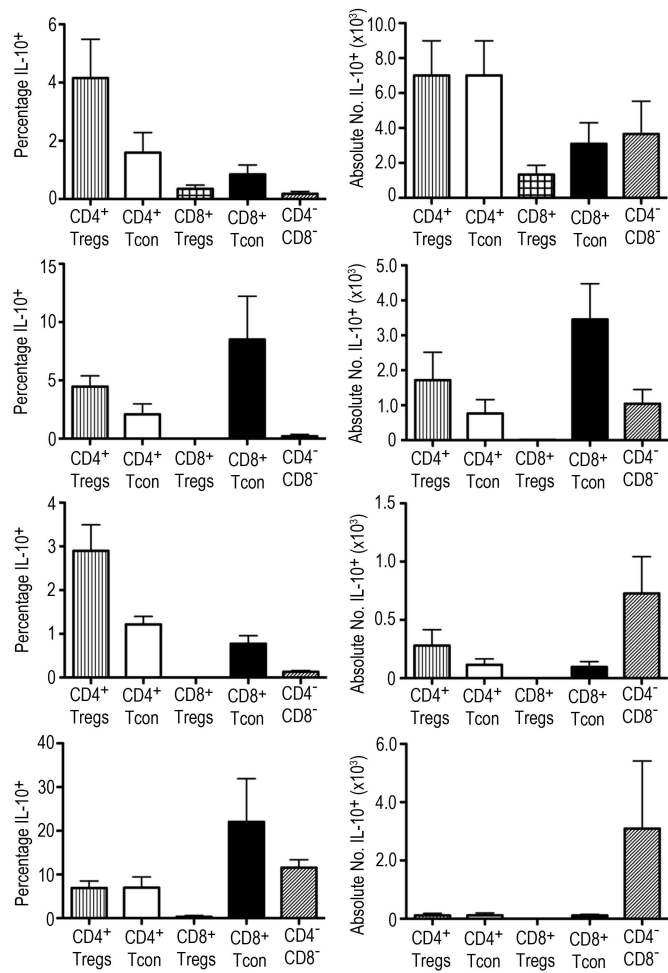
Figure S13**A****B**

Figure S14

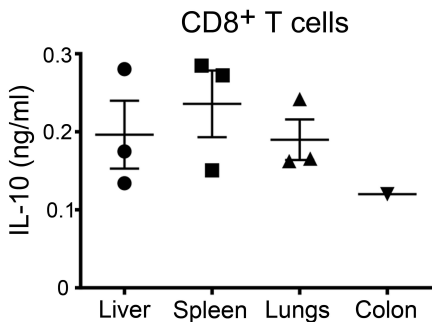
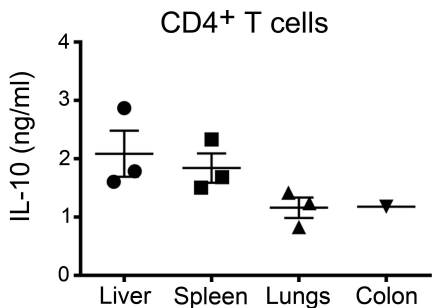
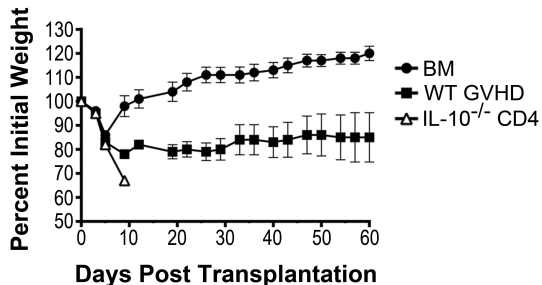
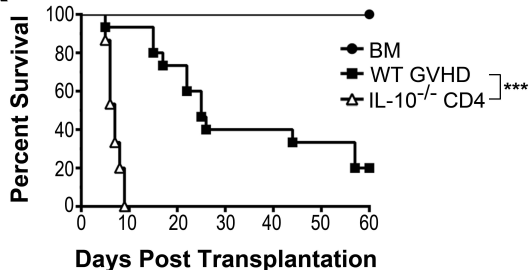


Figure S15

A



B

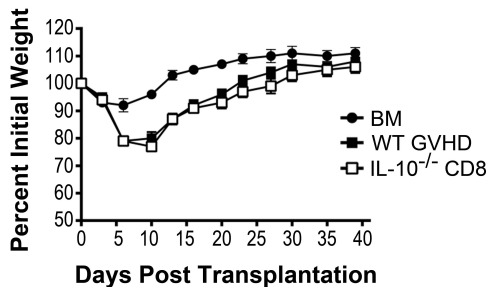
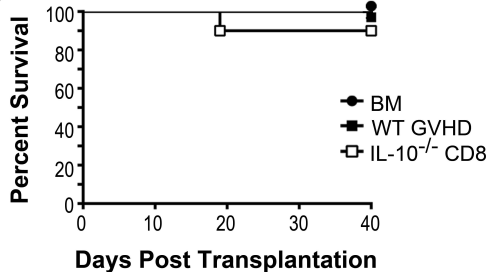
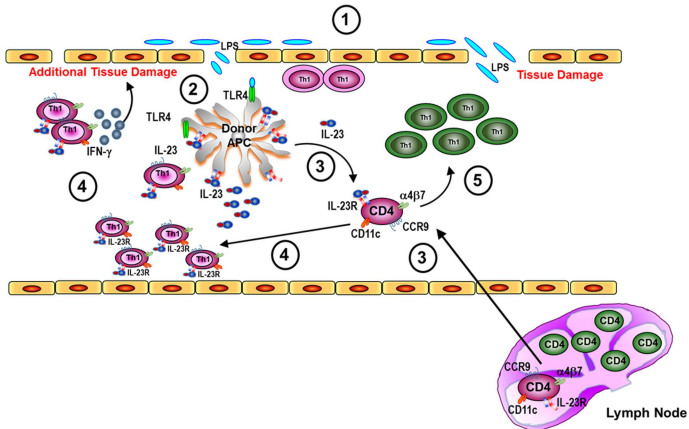


Figure S16



SUPPLEMENTAL TABLE 1. Differentially Regulated Genes in CD4+ CD11c+ versus CD4+ CD11c- T Cells

	CD4+ CD11c- T Cells (S1)	CD4+ CD11c- T Cells (S2)	CD4+ CD11c+ T Cells (S2)	CD4+ CD11c+ T Cells (S1)	Fold Difference
1600029D21Rik	2.8	2.7178	0.1	0.1	0.03624633
1700029J11Rik	10.8999	14.4979	28.9288	35.6781	2.543799069
1700065D16Rik	0.1	1.4089	7.3072	6.4532	9.11949102
1700125D06Rik	0.1	0.1	1.9018	2.6413	22.7155
1810010H24Rik	2.8	2.7178	0.1	0.1	0.03624633
1810011H11Rik	24.3997	47.2204	84.7847	85.2334	2.373888057
2010001M09Rik	0.1	2.7178	68.5685	54.7379	43.75981262
2010107G12Rik	1.45	2.7178	7.3072	6.4532	3.301597965
2210403K04Rik	43.2995	26.278	349.6495	275.8306	8.989689196
2810025M15Rik	0.1	0.1	1.9018	2.6413	22.7155
2810403D21Rik	23.0497	18.4246	5.5054	8.9945	0.349611687
2810459M11Rik	0.1	2.7178	9.109	11.5358	7.326566825
3110043O21Rik	160.748	125.7545	500.4423	410.4685	3.179416584
3230401D17Rik	209.3474	146.6969	490.1901	556.6438	2.940178792
4930506M07Rik	2.8	1.4089	61.3613	44.5727	25.16904654
4930526D03Rik	2.8	2.7178	0.1	0.1	0.03624633
4930528A17Rik	12.2498	15.8199	1.9018	5.208	0.253290915
5430435G22Rik	5.4999	0.1	27.127	31.8662	10.53468812
5730590G19Rik	60.8492	36.7492	254.1541	193.2385	4.584015722
6430548M08Rik	13.5998	19.7335	32.5324	35.6781	2.046317046
6430550D23Rik	5.4999	5.3356	0.1	1.3706	0.135720548
A4galt	0.1	1.4089	3.7036	3.9119	5.047054145
AA465934	14.9498	14.4979	36.136	31.5104	2.297170917
AI450353	12.2498	6.6445	61.4874	52.5524	6.035672134
AI836003	0.1	0.1	5.5054	3.9119	47.0865
Abcb1a	187.7477	166.3304	414.5144	395.2715	2.287026224
Abcd2	5.4999	4.0267	0.1	0.1	0.020993849
Ace	0.1	0.1	3.7036	2.6413	31.7245
Acvr1	8.1999	4.0267	18.118	20.4304	3.152830713
Adam19	1601.18	1475.2309	3191.091	3047.114	2.02775416
Adam23	0.1	0.1	25.3252	22.9717	241.4845
Ahr	85.1489	59.0005	263.1631	232.6286	3.439429509

Alas2	0.1	1.4089	9.109	6.4532	10.31360594
Alcam	27.0997	22.3513	173.073	141.1419	6.354065641
Aldh3b1	0.1	1.4089	9.109	10.2652	12.83994963
Alox8	6.8499	11.8801	41.5414	33.1368	3.98709023
Angptl2	118.2505	99.7073	328.0279	391.0911	3.299349691
Ankrd50	812.7898	832.5607	2277.5775	2338.0924	2.805280638
Anpep	0.1	0.1	48.7486	49.6553	492.0195
Anxa2	279.5465	429.4194	798.2982	912.4253	2.412984179
Aph1b	2.8	11.8801	27.127	26.7836	3.67235918
Apol7c	2.8	0.1	88.3883	114.4583	69.94710345
Apol8	37.8995	19.7335	227.127	250.4177	8.285959433
Aqp1	0.1	0.1	5.5054	5.1826	53.44
Areg	17.6498	9.2623	187.4874	141.1419	12.21120983
Arhgap11a	248.4969	172.8749	452.3523	400.3541	2.023643727
Arhgap21	66.2492	39.367	214.5144	184.344	3.776488834
Arhgef5	41.9495	27.5869	81.1811	69.9856	2.17392186
Asb14	0.1	0.1	9.109	7.7239	84.1645
Aspm	17.6498	15.8068	142.4423	132.2474	8.210329203
Atf3	9.5499	5.3356	364.064	289.8078	43.92676094
Atp2b4	176.9478	221.3042	668.5685	613.823	3.22005037
Atxn1	156.698	132.299	277.5775	326.6565	2.09079679
Aurkb	18.9998	28.8958	122.6225	146.2245	5.61318785
BC013712	10.8999	19.7335	73.9739	54.7379	4.201681824
BC055324	27.3697	30.4796	52.4784	65.9831	2.047760301
Bach1	584.6427	543.2937	1171.2712	1156.3897	2.063645521
Bcat1	20.3497	22.3513	93.7937	94.128	4.400873516
Bcl2a1d	147.2482	128.3723	580.2802	424.4964	3.6455075
Bend4	14.9498	15.8068	86.5865	67.4443	5.008056807
Beta-s	12.2498	10.5712	57.7577	57.2792	5.040835196
Bhlhe40	637.292	630.9901	6807.3072	5787.9018	9.930920731
Birc5	50.0494	53.7649	162.2622	212.2982	3.607984642
Blnk	0.1	0.1	52.3523	38.2194	452.8585
Bnpl	4.1499	4.0267	1.9018	1.3706	0.400215248
Brca1	62.1992	56.3827	230.7306	188.1559	3.532465747

Btk	4.1499	5.3356	21.7216	28.0543	5.247577882
Btnl2	1.45	2.7178	9.109	11.5358	4.953404674
Bub1b	75.6991	48.5293	210.9108	244.0644	3.662408918
Bub1	13.5998	5.3356	99.1991	113.1877	11.21638835
C1qtnf6	35.1996	27.5869	113.6135	122.0822	3.753923216
C3ar1	0.1	0.1	5.5054	3.9119	47.0865
C530028O21Rik	0.1	0.1	5.5054	5.1826	53.44
Cacna1b	0.1	1.4089	7.3072	5.1826	8.277420638
Cacna1s	1.45	5.3356	19.9198	22.9717	6.32095909
Camk2n1	18.9998	14.4979	59.5595	48.3846	3.222433182
Card10	9.5499	10.5712	23.5234	20.4304	2.184463076
Card9	78.399	82.5607	37.9378	39.4901	0.481039043
Carhsp1	182.3477	269.7335	585.6856	594.7633	2.611143529
Casc5	35.1996	31.5136	68.5685	77.6095	2.191140584
Casp3	199.8975	202.9796	519.0189	475.3224	2.468100818
Cbfa2t3	16.2998	4.0267	57.7577	45.8433	5.096844021
Ccdc117	1628.1796	1297.2204	3320.8207	2984.8522	2.155490839
Ccdc158	4.1499	2.7178	0.1	0.1	0.029121831
Ccdc18	9.5499	6.6445	25.3252	26.7836	3.217704886
Ccdc19	0.1	0.1	7.3072	5.1826	62.449
Ccl1	0.1	0.1	18.118	19.1597	186.3885
Ccl6	0.1	1.4089	7.3072	7.7239	9.961627676
Ccna2	78.237	34.8644	303.9559	336.0085	5.6583243
Ccnb2	43.2995	64.2361	171.2712	223.7341	3.673251463
Ccnd1	25.3582	16.6052	105.0009	83.7213	4.497304794
Ccne2	12.0609	7.2073	61.4514	64.2677	6.524693537
Ccr10	0.1	6.6445	25.3252	26.7836	7.726117577
Ccr4	167.4979	188.5817	425.3252	388.9183	2.286689549
Ccr8	74.3491	91.723	519.0189	611.2817	6.806083623
Ccrl2	39.2495	45.9115	257.7577	241.5231	5.862786956
Cct6b	9.5499	11.8801	0.1	0.1	0.009332711
Cd200r3	21.6997	22.3513	9.109	5.1826	0.324433044
Cd207	0.1	0.1	1.9018	2.6413	22.7155
Cd22	56.7993	60.3094	169.4694	185.6146	3.032088991

Cd274	738.5408	725.2309	1904.6045	1569.3503	2.373290042
Cd74	121.5985	193.8173	3099.1991	3213.5689	20.0141147
Cd79b	31.1496	40.6759	111.8117	151.3071	3.663306207
Cd80	18.9998	18.4246	63.1631	48.3846	2.980614252
Cd83	140.4982	193.8173	1207.3072	1238.9818	7.317306556
Cdc45	71.6491	53.7649	169.4694	185.6146	2.831294752
Cdca2	36.5495	34.1314	90.1901	118.2703	2.949317284
Cdh1	8.1999	5.3356	25.3252	20.4304	3.380414466
Cdk14	0.1	1.4089	19.9198	12.8065	21.68884618
Cdk1	23.0497	31.5136	142.4423	202.133	6.315147728
Cdkn1a	18.9998	18.4246	246.9468	275.8306	13.96889195
Cdkn2a	0.1	0.1	3.7036	2.6413	31.7245
Cdkn2c	47.3494	53.7649	126.2261	162.7429	2.857845033
Cdnf	18.9998	18.4246	5.5054	5.1826	0.285589081
Ceacam16	0.1	0.1	9.109	6.4532	77.811
Celsr3	0.1	0.1	3.7036	3.9119	38.0775
Cenpw	20.3497	13.189	54.1541	63.6324	3.511957828
Cep55	32.4996	18.4246	97.3973	128.4355	4.434685277
Chaf1a	149.8266	173.7126	311.9919	360.6591	2.07904019
Chka	163.448	137.5346	587.4874	687.5206	4.236151857
Chrm4	18.9998	14.4979	52.3523	67.4443	3.576263445
Chst2	87.8489	127.0634	519.0189	528.6896	4.875051358
Chst3	12.2498	13.189	39.7396	48.3846	3.464164976
Cit	16.2998	9.2623	64.9649	68.715	5.229613373
Clec9a	0.1	0.1	25.3252	28.0543	266.8975
Clip3	4.1499	1.4089	30.7306	28.0543	10.57510614
Clspn	23.0497	22.3513	153.2532	179.2614	7.323948812
Cobll1	67.5992	78.634	320.8207	273.2893	4.062757295
Col4a2	0.1	0.1	18.118	11.5358	148.269
Col6a4	2.8	2.7178	0.1	0.1	0.03624633
Coq10b	311.9461	159.7859	931.6315	753.5943	3.572422053
Cpd	62.1992	38.0581	252.3523	222.4634	4.735971346
Cr2	1.45	0.1	25.3252	33.1368	37.71741935
Crem	156.698	107.4298	794.6946	749.7823	5.847460585

Crip2	29.7996	28.8958	64.9649	67.4443	2.255870136
Crispld2	0.1	0.1	1.9018	2.6413	22.7155
Csda	239.047	248.7911	486.5865	587.1394	2.200988197
Csf1	64.8992	68.1628	169.4694	156.3897	2.448926816
Csf2rb2	0.1	0.1	52.3523	62.3618	573.5705
Csf3r	0.1	0.1	7.3072	5.1826	62.449
Ctla2b	17.6498	13.189	72.1721	59.8205	4.280082234
Ctla4	2640.667	1485.7021	9798.2982	7695.1445	4.239427515
Ctnnal1	16.2998	11.8801	28.9288	30.5956	2.112299902
Ctsh	5.4999	1.4089	86.5865	75.0682	23.39837598
Cwc25	417.2448	420.2571	983.8838	1132.2474	2.526718089
Cxcl16	5.4999	6.6445	33.7396	44.7506	6.463077632
Cxcl2	8.1999	9.2623	64.9649	57.2792	7.000498219
Cxcl9	0.1	0.1	30.7306	30.5956	306.631
Cyb5r3	394.2951	418.9482	893.7937	888.283	2.191320482
Cyfip1	214.0858	197.6785	503.5775	456.1102	2.330672426
Dab2ip	17.6498	24.9691	75.7757	66.1737	3.330667849
Dact1	9.5499	13.189	35.3072	29.3249	2.84235825
Dand5	99.9988	115.2832	46.9468	43.302	0.41921201
Dbx1	0.1	0.1	5.5054	5.1826	53.44
Dcbld2	10.8999	7.9534	25.3252	25.513	2.696514669
Dear1	4.1499	4.3408	0.1	0.1	0.023555184
Dgat1	201.2475	223.922	450.5505	432.1203	2.076044495
Dhrs3	39.2495	27.5869	84.7847	105.5638	2.847976552
DIk1	0.1	0.1	3.7036	5.1826	44.431
DII4	0.1	0.1	5.5054	7.7239	66.1465
Dnase1l3	1.45	1.4089	263.1631	219.9221	168.9758998
Dst	282.2465	312.9272	657.7577	570.621	2.063899497
Dtl	23.0497	24.9691	311.8117	284.7252	12.42298641
Dtx4	102.6987	129.6812	475.7757	366.0466	3.622612369
Dusp10	2687.9164	1680.7283	9998.2982	14152.5778	5.528230758
Dusp16	40.5995	34.1314	210.9108	156.3897	4.91497493
Dusp4	259.2968	180.7283	1891.9919	2199.5917	9.298523198
E2f7	17.6498	6.6445	59.5595	47.114	4.390885928

E2f8	18.9998	27.5869	124.4243	151.3071	5.918672067
Echdc2	2.8	4.0267	12.7126	14.0771	3.9242533
Eea1	191.7976	202.9796	807.3072	649.4011	3.689950433
Efcab5	8.1999	6.6445	0.1	1.3706	0.099067662
Efhc1	4.1499	6.6445	10.9108	11.5358	2.079467131
Efnb2	2.8	17.1157	86.5865	80.1508	8.372153628
Egln3	86.4989	45.9115	225.3252	230.0873	3.439401286
Egr4	0.1	0.1	7.3072	8.9945	81.5085
Ehd4	125.6484	120.5188	288.3883	274.56	2.286853407
Eif2ak3	876.239	757.9534	1499.1991	1800.6083	2.019228213
Elane	0.1	0.1	3.7036	5.1826	44.431
Ell2	64.8992	59.0005	174.8748	141.1419	2.550584868
Emilin2	0.1	0.1	3.7036	2.6413	31.7245
Enpp2	0.1	1.4089	14.5144	14.0771	18.94857181
Eomes	145.8982	108.7387	555.055	522.3363	4.23108866
Epcam	43.2995	49.8382	126.2261	104.2931	2.475036425
Eppk1	2.8	2.7178	5.5054	6.4532	2.167276813
Ercc6l	66.2492	43.2937	124.4243	122.0822	2.250319281
Errfi1	171.5479	106.1209	596.4964	601.1165	4.313098555
Ets2	1470.2316	1182.0372	3794.6946	4423.2258	3.098449297
Exoc3l	17.6498	21.6052	7.3072	7.7239	0.382909184
Faim3	21.6997	5.3356	54.1541	61.0911	4.262767567
Fam129a	413.1948	399.3147	998.2982	1012.8065	2.475176844
Fam149a	0.1	0.1	10.9108	14.0771	124.9395
Fam160a1	16.2998	18.4246	55.9559	76.3389	3.809851286
Fam164c	12.2498	17.1157	55.9559	64.903	4.115676559
Fam183b	0.1	0.1	10.9108	12.8065	118.5865
Fam83d	59.4993	19.7335	237.9378	269.4774	6.404105371
Fasl	256.5968	294.6026	1066.7667	773.9247	3.339429252
Fbxo32	353.7956	383.6079	792.8928	786.6311	2.142007598
Fbxo33	1352.7831	994.8644	3331.6315	2616.3643	2.533598336
Fcrl1	37.8995	40.6759	97.3973	101.7518	2.534496802
Fgf1	0.1	0.1	10.9108	8.9945	99.5265
Fgfr1	2.8	5.3356	16.3162	20.4304	4.516765819

Fhdc1	16.2998	22.3513	43.3432	44.5727	2.274602793
Fignl1	23.0497	35.4403	140.6405	142.4126	4.839341768
Flt3	2.8	4.0267	48.7486	61.0911	16.08972124
Fmn1	0.1	0.1	3.7036	3.9119	38.0775
Fmnl2	0.1	4.0267	52.3523	38.2194	21.94773063
Fndc3b	6.8499	6.6445	23.5234	24.2423	3.539668307
Fosl2	639.992	344.3408	4701.0009	5269.4774	10.1291741
Fos	17101.6862	18937.2728	7857.7577	9387.6476	0.478521183
Foxa1	0.1	0.1	7.3072	5.1826	62.449
Foxq1	2.8	0.1	10.9108	8.9945	6.863896552
Frmd4b	83.799	133.6079	630.7306	500.7353	5.204369779
Frmd5	2.8	7.9534	23.5234	21.701	4.20559079
Frs3	23.0497	31.5136	9.109	7.7239	0.308502235
Fscn1	0.1	0.1	55.9559	52.1966	540.7625
Fst	1.45	2.7178	14.5144	21.701	8.689332502
Fus	4267.3967	3574.7073	8830.7306	7188.1559	2.042677131
Fzd5	108.0987	65.545	266.7667	313.9501	3.344301003
Fzd7	16.2998	2.7178	50.5505	49.6553	5.269108615
Gas2l3	16.2998	10.5712	97.3973	67.4443	6.13455398
Gcnt1	33.8496	26.278	91.9919	76.3389	2.799559603
Gem	125.6484	85.1785	681.1811	643.0479	6.281119724
Gla	158.048	123.1366	722.6225	696.4151	5.046640534
Gli1	40.5995	44.6026	10.9108	21.701	0.382758171
Glt28d2	1.9495	6.6445	18.118	19.1597	4.337642541
Gm11711	0.1	0.1	1.9018	2.6413	22.7155
Gm11978	0.1	0.1	1.9018	2.6413	22.7155
Gm13275	0.1	0.1	3.7036	2.6413	31.7245
Gm13889	8.1999	5.3356	0.1	0.1	0.01477596
Gm14548	0.1	0.1	7.3072	5.1826	62.449
Gm15645	5.4999	2.7178	18.118	19.1597	4.536269272
Gm1995	0.1	0.1	3.7036	5.1826	44.431
Gm5124	1.45	0.1	7.3072	5.1826	8.057935484
Gm5796	2.8	1.4089	25.3252	26.7836	12.38062202
Gm614	122.9485	87.7963	263.1631	226.2753	2.32242219

Gm6377	0.1	0.1	14.5144	14.0771	142.9575
Gm6498	0.1	0.1	1.9018	2.6413	22.7155
Gm8221	0.1	9.2623	73.9739	63.6324	14.69791611
Gm8348	28.4496	14.4979	70.3703	61.0911	3.060979102
Gmnn	101.3487	121.8277	255.9559	207.2156	2.075360567
Gna13	4090.1304	3443.2283	8271.9739	7021.9297	2.030157359
Gnaq	89.1989	60.3094	189.2892	172.9081	2.422589916
Got1	540.0933	502.7178	1338.8387	1546.4787	2.766864871
Gpr114	74.3491	59.0005	164.064	138.6006	2.269707596
Gpr141	0.1	0.1	3.7036	5.1826	44.431
Gpr15	6.8499	10.5712	23.5234	20.4304	2.523020934
Gpr3	4.1499	0.1	23.5234	24.2423	11.23925269
Gprc5a	8.1999	0.1	70.3703	62.3618	15.99201195
Gramd3	2849.9144	2348.2675	11275.7757	10377.4825	4.165544534
Grb10	0.1	0.1	3.7036	3.9119	38.0775
Grb7	20.3497	17.1157	86.5865	118.2703	5.467893043
Grhl1	52.7493	62.9272	210.9108	155.1191	3.164254624
Grip2	6.8499	5.3356	1.9018	1.3706	0.268548685
Gucy2e	1.45	6.6445	18.118	17.8891	4.448341466
H2-Aa	18.9998	23.6602	1497.3973	1115.729	61.25471871
H2-Ab1	18.9998	11.8801	906.4063	978.499	61.03987707
H2-DMb1	4.5954	0.1	54.1541	61.0911	24.54427738
H2-DMb2	2.3545	7.9534	52.3523	44.5727	9.402982179
H2-Eb1	4.1499	10.5712	846.9468	949.2741	122.0167583
Hdac9	14.9498	24.9691	111.8117	91.5867	5.095290702
Hdc	12.2498	9.2623	23.5234	28.0543	2.397613436
Hes5	1.45	0.1	10.9108	14.0771	16.12122581
Hey1	60.8492	24.9691	232.5324	240.2525	5.509138494
Hist1h3e	6.8499	5.3356	0.1	0.1	0.01641295
Hk2	16.2998	19.7335	160.4604	111.917	7.559046771
Hmgb2	465.8442	412.4037	1003.7036	912.4253	2.181763145
Hmmr	27.0997	22.3513	90.1901	103.0225	3.907152535
Hs3st1	0.1	0.1	3.7036	2.6413	31.7245
Hspa2	31.1496	32.8225	124.4243	146.2245	4.230731835

Htr2a	0.1	0.1	3.7036	3.9119	38.0775
I830077J02Rik	0.1	2.7178	14.5144	19.1597	11.95049329
Ifitm1	1.45	1.4089	12.7126	10.2652	8.037287068
Ifngr1	1807.7274	2110.0476	3960.4604	4216.1102	2.087044458
Ifrd1	1001.7875	523.6471	3297.2171	2857.025	4.034418847
Igfals	0.1	0.1	3.7036	2.6413	31.7245
Igsf9b	2.8	6.6445	19.9198	17.8891	4.003271745
Il10	71.6491	44.6026	767.6676	678.626	12.44105334
Il15	0.1	0.1	1.9018	2.6413	22.7155
Il17a	0.1	0.1	9.109	10.2652	96.871
Il17rd	14.9498	10.5712	30.7306	26.7836	2.253602915
Il18	0.1	0.1	36.136	24.2423	301.8915
Il1b	0.1	0.1	14.5144	16.6184	155.664
Il1r2	5.4999	23.6602	183.8838	127.1648	10.66692501
Il20rb	27.0997	26.278	106.4063	114.4583	4.137769143
Il21	29.7996	28.8958	81.1811	72.5269	2.61874014
Il31ra	0.1	1.4089	7.3072	6.4532	9.11949102
Ing3	969.3879	790.6759	2012.7126	1676.0848	2.09583164
Insig1	600.8425	429.4194	1666.7667	1528.6896	3.101596109
Ipmk	374.0453	411.0948	1205.5054	1092.8573	2.927328129
Irf4	718.291	398.0058	2493.7937	2203.4037	4.20783917
Itgae	149.9481	188.5817	547.8477	476.593	3.026146295
Itgav	359.1955	323.3984	866.7667	676.0848	2.260277304
Itpripl2	54.0993	83.8696	165.8658	151.3071	2.298872427
Jmy	554.9431	476.5398	1250.5505	1312.6794	2.484995049
Kcnc3	0.1	0.1	3.7036	3.9119	38.0775
Kcnh6	2.8	2.7178	0.1	0.1	0.03624633
Kcnj14	2.8	2.7178	0.1	0.1	0.03624633
Kcnk3	0.1	0.1	1.9018	2.6413	22.7155
Kdelr3	0.1	0.1	5.5054	6.4532	59.793
Kif11	131.0484	83.8696	729.8297	583.3274	6.110037782
Kif14	31.1496	13.189	73.9739	77.6095	3.418768297
Kif15	36.5495	23.6602	192.8928	189.4266	6.349797458
Kif26b	0.1	1.4089	7.3072	7.7239	9.961627676

Klf4	39.2495	15.8068	129.8297	164.0136	5.337142162
Klf10	232.2971	206.9063	974.8748	693.8738	3.799489257
Klf11	434.7946	280.2047	924.4243	803.1496	2.416189638
Klf12	4.1499	5.3356	21.7216	28.0543	5.247577882
Klf4	1189.4351	644.0791	2974.8748	3110.6464	3.319047761
Klf9	62.1992	22.3513	273.9739	221.1928	5.856460932
Klhdc5	514.4436	459.5241	189.2892	284.7252	0.486683901
Klk15	0.1	0.1	3.7036	2.6413	31.7245
Klk1b9	0.1	1.4089	9.109	8.9945	11.99781298
Klrg1	70.2991	103.5031	600.1	462.6159	6.11451351
Klri1	0.1	0.1	7.3072	6.4532	68.802
Kntc1	43.2995	27.5869	111.8117	95.3986	2.923131941
Kpna2	105.3987	107.4298	216.3162	235.1699	2.121361096
Kynu	0.1	0.1	18.118	21.701	199.095
Ky	4.1499	0.1	27.127	26.7836	12.68514553
LOC100504473	10.8324	2.0241	37.3252	34.1407	5.558736826
Lamc1	101.3487	127.0634	477.5775	594.7633	4.694763544
Lat2	13.5998	19.7335	50.5505	53.4672	3.120534121
Ldhal6b	6.8499	5.3356	0.1	1.3706	0.12068442
Lgals3	12.2498	55.0738	252.3523	191.9679	6.599768877
Lhfpl3	6.8499	10.5712	0.1	0.1	0.011480331
Litaf	66.2492	98.2675	299.1991	230.0873	3.217219893
Lmnbl	765.5404	709.5241	1594.6946	1700.2271	2.233747541
Lphn2	9.5499	9.2623	61.3613	64.903	6.711830621
Lrrc25	0.1	0.1	18.118	15.3478	167.329
Lrrc49	2.8	0.1	16.3162	15.3478	10.91862069
Lrrk1	23.0497	32.8225	70.3703	67.4443	2.466604143
Lrrk2	1.45	0.1	72.1721	58.5498	84.33670968
Lrrtm2	8.1999	1.4089	27.127	29.3249	5.875020814
Lsr	12.3308	27.9272	63.5955	77.2919	3.499612499
Ly6d	8.1999	5.3356	48.7486	58.5498	7.927184072
Mafb	6.8499	4.0267	64.9649	53.4672	10.88870603
Maff	453.6943	201.6707	1439.7396	1967.0632	5.19832887
Mapk6	1302.8337	1009.2623	2760.4604	2282.1839	2.180983964

Matn1	0.1	0.1	5.5054	7.7239	66.1465
Matn2	14.9498	35.4403	73.9739	86.5041	3.18471287
Mcm10	18.9998	19.7335	113.6135	83.9628	5.100941567
Mcoln2	16.2998	11.8801	41.5414	34.4075	2.695144411
Mfrp	0.1	0.1	14.9108	11.3325	131.2165
Mfsd2a	25.7497	17.1157	68.5685	59.8205	2.995166265
Mfsd9	21.6997	24.9691	7.3072	10.2652	0.376534216
Mgll	5.4999	6.6445	19.9198	19.1597	3.217902902
Mir155	12.2498	0.1	84.7847	59.8205	11.7091127
Mki67	631.8921	403.2414	3459.5595	2951.8154	6.193766215
Mllt4	55.4493	64.2361	133.4333	124.6235	2.156125977
Mmachc	58.1493	73.3984	28.9288	33.1368	0.471810606
Mmp10	1.45	0.1	16.3162	20.4304	23.70748387
Mmp9	23.0497	24.9691	50.5505	53.4672	2.166186993
Mms22l	131.0484	102.1942	270.3703	228.8166	2.140204662
Mnda	1.45	0.1	21.7216	15.3478	23.91574194
Mreg	0.1	1.4089	23.5234	21.701	29.97176751
Ms4a1	5.4999	0.1	41.5414	54.7379	17.19303916
Mt2	0.1	0.1	7.3072	7.7239	75.1555
Myb	831.6896	714.7597	1776.6766	1914.9666	2.387173766
Mycl1	0.1	0.1	48.7486	44.5727	466.6065
Myh13	0.1	0.1	3.7036	2.6413	31.7245
Myl10	6.8499	7.9534	0.1	0.1	0.013510501
Myo15	4.1499	5.3356	0.1	1.3706	0.155036635
Myo18b	4.1499	2.7178	19.9198	17.8891	5.505322015
Myo1d	6.8499	7.9534	19.9198	16.6184	2.468246945
Myo1e	101.3487	141.4613	306.4063	360.964	2.748528891
Myo1f	282.2465	422.8749	859.5595	789.1724	2.33822417
Naip5	45.9994	52.456	153.2532	142.4126	3.003043002
Naip7	0.613	0.1	22.3523	19.1216	58.16816269
Nap1l3	0.1	0.1	3.7036	5.1826	44.431
Napsa	0.1	1.4089	63.1631	49.6553	74.76863941
Nasp	1248.8344	1125.7545	2906.4063	2424.4964	2.244979205
Ncapg	43.2995	31.5136	108.2081	132.2474	3.214082828

Neb	147.2482	134.9168	607.3072	489.2995	3.886402282
Nedd4	220.1472	259.2623	693.7937	541.3961	2.576481693
Nek6	2.8	1.4089	41.5414	43.302	20.15809356
Nfe2	2.8	1.4089	5.5054	5.1826	2.539380836
Nfil3	228.2471	179.4194	1194.6946	1432.1203	6.443538775
Nkg7	140.4982	256.6445	470.3703	463.8865	2.352446111
Nkx2-3	0.1	0.1	7.3072	5.1826	62.449
Nlrp6	0.1	0.1	3.7036	2.6413	31.7245
Nos1	2.8	2.7178	0.1	0.1	0.03624633
Nr3c2	8.1999	9.2623	0.1	2.6413	0.156984801
Nr4a2	338.9458	120.5188	1616.3162	1851.4342	7.547372311
Nr6a1	47.3494	41.9848	102.8027	99.2105	2.261319853
Nrn1	99.9988	93.0319	223.5234	277.1013	2.593497822
Nrp2	27.0997	24.9691	10.9108	14.0771	0.479901592
Nsl1	21.6997	13.189	39.7396	40.7607	2.307345931
Nuf2	9.5499	21.0424	110.0099	85.2334	6.382105955
Nusap1	77.049	32.8225	252.0279	204.6743	4.156693956
Nxnl1	16.2998	13.189	0.1	2.6413	0.092960717
Odc1	1092.2363	750.1	5104.6045	4939.1089	5.451617818
Ogfrl1	10.8999	9.2623	25.3252	33.1368	2.899584371
Olfm1	0.1	0.1	3.7036	5.1826	44.431
Olfr56	19.0133	15.833	3.7036	7.7239	0.327940126
Orc1	8.1999	17.1157	93.7937	99.2105	7.623923589
Osbpl3	89.1989	158.477	389.2892	366.0466	3.049694379
Osgin2	174.2478	183.3461	405.5054	321.574	2.033254482
Padi6	1.45	2.7178	5.5054	5.1826	2.564422477
Pank1	23.0497	14.4979	41.5414	48.3846	2.39498663
Parva	0.1	0.1	3.7036	2.6413	31.7245
Parvb	0.1	0.1	5.5054	5.1826	53.44
Pcdh7	0.1	0.1	5.5054	5.1826	53.44
Pcdhgc5	8.7399	6.5005	0.1	0.1	0.013123015
Pcna	1071.9866	1150.6236	2207.3072	2340.6337	2.046216156
Pde4b	2903.9137	2314.2361	6670.3703	5519.795	2.33610873
Pde4d	1962.9755	1849.5764	5765.8658	5678.626	3.001793051

Pde5a	4.1499	2.7178	25.3252	20.4304	6.662434294
Pdia5	0.1	0.1	12.7126	12.8065	127.5955
Penk	129.6984	158.477	414.5144	503.2766	3.184834653
Perp	8.1999	4.0267	64.9649	49.6553	9.374658531
Phlda1	233.6471	188.5817	445.145	484.2169	2.201085999
Pid1	6.8499	4.0267	19.9198	22.9717	3.943465789
Pik3ap1	10.8999	9.2623	82.9829	81.4215	8.154090327
Pipox	6.8499	7.9534	0.1	2.6413	0.185181682
Pkdcc	2.8	0.1	10.9108	15.3478	9.054689655
Pkig	9.5499	17.1157	50.5505	40.7607	3.424306972
Plac8	10.8999	41.9848	131.6315	165.2842	5.614396981
Plagl1	56.7993	31.5136	174.8748	184.344	4.067568838
Plcd1	0.1	5.3356	27.127	20.4304	8.749245713
Plcd4	1.45	0.1	12.7126	8.6515	13.78329032
Plcg2	6.8499	13.189	81.1811	63.6324	7.226619226
Pld4	4.1499	7.9534	169.4694	156.3897	26.92316145
Plk2	533.3433	269.7335	1030.7306	1031.8662	2.568368056
Pls3	2.8	1.4089	14.5144	15.3478	7.095012949
Pltp	2.8	0.1	21.8838	25.513	16.34372414
Polq	87.8489	85.1785	176.6766	189.4266	2.115868354
Postn	0.1	0.1	3.7036	3.9119	38.0775
Ppfia4	0.1	1.4089	39.7396	34.4075	49.13983697
Ppfibp2	10.8999	2.7178	27.127	30.5956	4.23879216
Prc1	78.399	64.2361	246.9468	211.0276	3.210811364
Prdx6b	1.45	4.0267	9.109	10.2652	3.537568244
Prr11	20.3497	6.6445	86.5865	73.7976	5.941428159
Prr5	4.1499	0.1	12.7126	14.0771	6.303607144
Ptger4	698.0413	807.6916	1598.2982	1438.4736	2.016806434
Ptgis	0.1	0.1	5.5054	6.4532	59.793
Ptpn13	225.5472	271.0424	510.0099	608.7404	2.252866955
Ptprj	77.049	70.7806	446.9468	357.1521	5.439363294
Rabl2	4.1499	1.4089	10.9108	11.5358	4.038029791
Rad51ap1	6.8499	13.189	46.9468	47.114	4.693910344
Rad51	13.5998	15.8068	131.6315	118.2703	8.498153476

Rad54l	31.7841	29.5241	77.5595	63.518	2.301119589
Rapgef5	13.5998	4.0267	32.5324	33.1368	3.725594985
Rasgef1b	9.5499	17.1157	281.1811	268.2067	20.60286661
Rdh5	63.5492	77.3251	28.9288	35.6781	0.458613814
Rel	533.3433	430.7283	2430.7306	1834.9158	4.424615765
Rgs16	355.1456	371.8277	1147.8477	1294.8903	3.360148165
Rgs9	68.9491	51.1471	149.6495	142.4126	2.431901259
Rhobtb1	0.1	0.1	3.7036	2.6413	31.7245
Rmrp	29.7996	36.7492	3.7036	7.7239	0.171716094
Rnase6	1.45	4.0267	28.9288	30.5956	10.86866179
Rnf125	563.043	467.3775	2396.4964	1759.9475	4.033735645
Rnf183	0.1	0.1	9.109	6.4532	77.811
Rnf19a	1728.0784	1437.2728	4481.1811	3782.8192	2.610768846
Rnf19b	785.7902	867.901	1728.0279	2077.6095	2.301298695
Rnf24	68.3956	71.9586	230.2081	223.8484	3.235075972
Rnf39	1.45	0.1	14.5144	11.5358	16.80658065
Rnf4	1981.8752	1977.8487	4239.7396	4053.4672	2.094390167
Rnu11	4.1499	5.3356	1.9018	1.3706	0.344989721
Rora	72.9991	72.0895	351.4514	386.377	5.085364391
Rpl27	4.1499	4.0267	7.3072	8.9945	1.993701539
Rpp38	71.6491	72.0895	16.3162	31.8662	0.335208497
Rrm1	661.5917	582.5607	1490.1901	1255.5003	2.206876264
Rrm2	120.2485	128.3723	576.6766	505.8179	4.353998137
S100a4	267.3967	387.5346	850.5505	759.9475	2.459033489
S100a6	202.5975	247.4822	679.3793	676.0848	3.011609055
S100a8	0.1	0.1	3.7036	2.6413	31.7245
Sall3	0.1	0.1	1.9018	2.6413	22.7155
Samd8	492.8438	369.2099	1216.3162	965.7925	2.531290916
Sccpdh	23.0497	24.9691	68.5685	53.4672	2.541415029
Scin	0.1	1.4089	9.109	6.4532	10.31360594
Scml2	8.1999	10.5712	0.1	0.1	0.010654677
Sdc1	2.8	1.4089	21.7216	20.4304	10.01496828
Sdcbp2	159.398	168.9482	338.8387	324.1152	2.019069811
Sema4c	4.1499	6.6445	54.1541	76.3389	12.08895353

Sema7a	21.6997	36.7492	77.5775	83.9628	2.763786829
Sepn1	56.7993	103.5031	185.6856	179.2614	2.276615946
Serpina3f	30.1776	39.956	131.6315	111.5994	3.468108011
Serpina9	5.4999	1.4089	12.7126	15.3478	4.061544697
Serpinc1	6.8499	6.6445	23.5234	19.1597	3.16302318
Setbp1	10.8999	21.0424	86.5865	64.903	4.742598373
Sfpi1	2.8	1.4089	34.3342	33.1368	16.0305543
Sgtb	0.1	1.4089	12.7126	12.8065	16.91238651
Sh2b2	4.1499	1.4089	12.7126	10.2652	4.133589983
Sh3pxd2b	0.1	0.1	3.7036	3.9119	38.0775
Sirpb1b	0.1	0.1	7.3072	5.1826	62.449
Six1	0.1	0.1	23.5234	16.6184	200.709
Six4	0.1	1.4089	16.3162	22.9717	26.0374445
Ska1	6.8499	1.4089	28.9288	21.701	6.130406354
Slamf7	122.9485	130.9901	347.8477	358.4227	2.781264447
Slamf8	0.1	0.1	25.3252	22.9717	241.4845
Slc15a3	10.1169	16.3304	59.4333	58.1051	4.444249508
Slc16a1	405.0949	327.3251	1308.2081	1301.2436	3.562780508
Slc16a5	746.6407	809.0005	311.8117	421.9551	0.471681259
Slc18a2	17.6498	9.2623	37.9378	36.9488	2.782636806
Slc22a15	68.9491	74.7073	218.118	181.8027	2.783869706
Slc26a1	4.1499	2.7178	0.1	0.1	0.029121831
Slc35d1	291.6964	233.0843	691.9919	587.1394	2.437458733
Slc38a2	6504.3187	4679.4194	12255.9559	10470.2398	2.032075098
Slc41a2	0.1	4.0267	21.7216	20.4304	10.21445707
Slc6a9	5.4999	5.2178	1.9018	2.6413	0.423887588
Slc7a4	8.1999	6.6445	3.7036	2.6413	0.427427178
Slco4a1	27.0997	47.2204	110.0099	139.8713	3.362229061
Snx18	824.9397	524.9691	2281.1811	2453.7213	3.507572067
Sowahc	6.8499	19.7335	73.9739	57.2792	4.937408307
Spag5	37.8995	32.8225	191.091	195.7798	5.470303442
Spc25	25.7497	9.2623	54.1541	53.4672	3.073840398
Spib	6.8499	0.1	57.7577	76.3389	19.29475244
Spint1	0.1	0.1	12.7126	8.9945	108.5355

Spon2	0.1	0.1	3.7036	2.6413	31.7245
Spry2	25.7497	18.4246	81.1811	96.6693	4.026105677
Src	13.5998	38.0581	106.4063	134.7887	4.66908256
Srgap3	4.1499	11.8801	97.3973	76.3389	10.83819089
St6galnac2	2.8	4.0267	12.7126	12.8065	3.738131161
Stom	5.4999	6.6445	84.7847	66.1737	12.43028886
Stx11	86.4989	124.4455	414.5144	505.8179	4.362914114
Suv39h2	62.1992	25.7283	149.6495	142.4126	3.321624065
Syde2	4.1499	15.8068	50.5505	50.9259	5.084828654
Syk	29.7996	13.189	228.9288	188.1559	9.702216402
Taf5	237.697	175.4927	441.5414	465.1572	2.194388195
Tbx21	99.9988	150.6236	288.3883	288.5371	2.301970614
Tceal1	2.8	0.1	9.109	7.7239	5.804448276
Tcf4	55.4493	24.9691	147.8477	123.3529	3.372370005
Tgif1	779.0403	463.4508	3574.8748	3479.1343	5.677311572
Tie1	0.1	0.1	5.5054	6.4532	59.793
Tifab	0.1	1.4089	50.5505	45.8433	63.88349129
Tigit	151.2981	209.5241	962.2622	974.687	5.368154177
Timp1	4.1499	2.7178	0.1	0.1	0.029121831
Tln2	0.1	0.1	3.7036	2.6413	31.7245
Tlr9	0.1	0.1	23.5234	28.0543	257.8885
Tm4sf1	0.1	0.1	1.9018	2.6413	22.7155
Tmbim1	25.7497	22.3513	73.9739	81.4215	3.230606432
Tmem151b	8.1999	7.9534	0.1	0.1	0.012381371
Tmem176a	13.5998	14.4979	37.9378	42.0314	2.846111959
Tmem181d-ps	1.45	0.1	25.3252	39.4901	41.81632258
Tmem205	0.1	0.1	5.5054	6.4532	59.793
Tmem2	54.0993	85.1785	347.8477	260.5828	4.368467193
Tmem64	1437.832	1179.4194	3279.3793	2949.2741	2.379845283
Tnfaip3	31527.6059	19746.1733	62510.0099	61556.6438	2.419690057
Tnfrsf13c	6.8499	9.2623	37.9378	33.1368	4.411228758
Tnfrsf1b	1263.6842	1670.2571	3360.4604	4111.917	2.546873518
Tnfrsf9	286.2964	466.0686	891.9919	1073.7976	2.612813594
Tnfsf11	214.7473	174.1838	810.9108	622.7175	3.686072675

Tnfsf13b	1.45	1.4089	7.3072	8.9945	5.702088216
Top2a	469.8941	285.4403	1832.5324	1505.8179	4.419698481
Tpx2	62.1992	40.6759	284.7847	245.3351	5.153042865
Trib1	793.8901	594.3408	1616.3162	1869.2233	2.510777926
Trim36	104.0487	56.3827	383.8838	319.0327	4.381414736
Trim7	12.2498	11.8801	36.136	38.2194	3.081463247
Trp53inp2	234.9971	66.8539	1059.5595	1227.546	7.576935309
Tspan17	2.8	2.7178	12.7126	11.5358	4.394577549
Tssk4	37.8995	40.6759	14.5144	22.9717	0.477071704
Ttc30b	2.8	6.6445	16.3162	21.701	4.02532691
Ttc39c	54.0993	94.3408	286.5865	265.6654	3.720368687
Ttn	47.3494	23.6602	255.9559	217.3808	6.665812792
Tyms	105.3987	86.4874	239.7396	275.8306	2.686855379
Tyrobp	0.1	2.7178	117.2171	85.2334	71.8470083
Ube2ql1	0.1	0.1	3.7036	2.6413	31.7245
Unc93b1	99.9988	127.0634	308.2081	352.0695	2.9079151
Usp2	58.1493	56.3827	243.3432	305.0555	4.788170118
Usp50	0.1	0.1	3.7036	2.6413	31.7245
Utp14b	115.9421	79.4848	792.8928	602.9081	7.142317153
Vsig10	10.8999	9.2623	32.5324	39.4901	3.572154824
Wdfy4	4.1499	5.3356	266.7667	289.8078	58.67634811
Wdr86	0.1	0.1	3.7036	5.1826	44.431
Whsc1	579.2428	524.9691	1333.4333	1119.5409	2.221470535
Xbp1	799.29	725.2309	3052.3523	2603.6578	3.710024638
Xcl1	47.3494	79.9429	277.5775	298.7023	4.527216493
Xkr5	2.8	0.1	12.7126	10.2652	7.92337931
Xkr6	5.4999	6.6445	16.3162	15.3478	2.60729225
Xk	29.7996	17.1157	54.1541	64.903	2.537703052
Xrcc2	31.1496	59.0005	128.0279	110.6464	2.64752119
Zbtb10	205.2974	66.8539	1194.6946	995.0174	8.045936213
Zbtb16	110.7986	129.6812	284.7847	265.6654	2.288966059
Zbtb32	40.5995	56.3827	135.2351	138.6006	2.823566593
Zc3h12c	17.6498	23.6602	70.3703	77.6095	3.582178649
Zcchc3	12.2498	14.4979	34.3342	44.5727	2.950044303

Zfand2a	1101.6862	788.0581	3263.1631	4158.931	3.92756528
Zfhx2as	0.1	2.8487	13.6135	17.2283	10.45945671
Zfp295	862.7392	613.9743	2218.118	2583.3274	3.2514440039
Zfp366	0.1	0.1	19.9198	17.8891	189.0445
Zfp534	2.8	4.0267	0.1	0.1	0.029296732
Zfp647	33.8496	35.4403	16.3162	8.9945	0.365287004
Zfp658	310.5961	315.545	156.8568	150.0365	0.490134412
Zfp93	28.4496	30.2047	16.3162	10.2652	0.453187575
Zfp940	89.1989	76.0162	203.7036	162.7429	2.217996418
Zscan2	421.2947	472.6131	200.1	238.9818	0.491193611
Zxda	37.8995	28.8958	81.1811	66.1737	2.206065397

SUPPLEMENTAL TABLE 2. Gene Sets Enriched in Genes with Increased Expression in CD4+ CD11c+ vs. CD4+CD11c- T cells.

Cluster Rank	Representative Gene Set	Enrichment Score	P Value	FDR
1	GO:0007049 cell cycle	7.17	2.8e-11	5.7e-8
2	GO:0048514 blood vessel morphogenesis	3.04	4.8e-4	2.4e-2
3	GO:0051249 regulation of lymphocyte activation	2.99	1.2e-7	2.3e-5
4	GO:0006935 chemotaxis	2.82	5.5e-5	4.8e-3
5	GO:0002495 MHC class II presentation	2.73	3.0e-6	4.3e-4
6	GO:0048534 lymphoid organ development	2.59	1.5e-5	1.8e-3
7	GO:0002684 positive regulation of immune system	2.36	2.1e-5	2.2e-3
8	GO:0032653 regulation of interleukin 10 production	2.30	1.1e-4	7.5e-3
9	GO:0010604 macromolecule metabolic process	1.63	9.7e-4	4.0e-2
10	GO:0050870 positive regulation of T cell activation	1.56	5.0e-4	2.5e-2

SUPPLEMENTAL TABLE 3. Differentially Regulated Genes in CD4+CD11c+ CD44hi CD62L+ versus CD4+ CD11c- CD44hi CD62L+ T Cells

Gene Name	Sample 4 (CD11c- POOL #1)	Sample 5(CD11c- POOL #2)	Sample 6 (CD11c- POOL #3)	Sample 1 (CD11c+ POOL #1)	Sample 2 (CD11c+ POOL #2)	Sample 3 (CD11c+ POOL #3)	Fold Difference
Gm7030	16.6485	33.3681	29.0658	0.1	0.1	0.1	0.003793512
Echdc2	19.0125	23.5834	18.8425	0.1	0.1	0.1	0.00488294
2410004A20Rik	11.9203	5.9708	8.6193	0.1	0.1	0.1	0.011316314
Hist2h2ab	4.8281	5.9708	6.9155	0.1	0.1	0.1	0.016935375
Ripk4	4.8281	5.9708	3.5077	0.1	0.1	0.1	0.020969343
Dynlrb2	2.4641	4.0139	5.2116	0.1	0.1	0.1	0.025663838
Tmem130	2.4641	4.0139	3.5077	0.1	0.1	0.1	0.030042961
1700092M07Rik	2.4641	2.0569	3.5077	0.1	0.1	0.1	0.03736595
1700017D01Rik	2.4641	2.0569	1.8039	0.1	0.1	0.1	0.04743158
2010005H15Rik	2.4641	2.0569	1.8039	0.1	0.1	0.1	0.04743158
Abcc8	2.4641	2.0569	1.8039	0.1	0.1	0.1	0.04743158
Dbndd1	2.4641	2.0569	1.8039	0.1	0.1	0.1	0.04743158
Hmgb1-rs17	2.4641	2.0569	1.8039	0.1	0.1	0.1	0.04743158
Izumo1	2.4641	2.0569	1.8039	0.1	0.1	0.1	0.04743158
Snora78	2.4641	2.0569	1.8039	0.1	0.1	0.1	0.04743158
Gm5409	677.6414	360.1	711.0899	22.6189	0.1	61.3778	0.048087371
Tnp2	28.4688	21.6264	29.0658	5.1378	0.1	0.1	0.067429669
Iqcg	15.1827	15.8339	10.7833	3.9539	0.1	0.1	0.099375836
Pde11a	30.8329	25.5403	32.4735	7.6567	12.6	0.1	0.229121622
Hist1h2ak	26.1047	35.325	29.0658	2.6189	12.6	5.6556	0.230668928
U05342	184.9936	157.2624	136.3413	31.7121	15.6	63.8778	0.232324545
Slc22a2	130.1236	129.2585	98.9243	15.2134	37.6	38.9889	0.256211723
Il2	66.2939	72.507	68.2547	30.3267	12.6	11.2111	0.261465036
Nhedc2	290.8801	368.0061	313.6117	75.6668	131.35	77.8778	0.292951378
Atcay	158.4924	152.7419	197.7487	50.4778	75.1	27.8778	0.301494549
Kifc1	477.6414	501.0785	456.7366	138.639	181.35	116.7667	0.304262581
Hist1h2an	94.6626	84.2487	95.5166	22.77	31.35	33.4333	0.319039354
Prss2	30.8329	43.1528	39.289	7.6567	12.6	16.7667	0.326846154
4930486L24Rik	210.5019	148.828	187.5255	60.5534	37.6	83.4333	0.332056152
Ms4a4d	113.5752	82.2918	100.6282	32.8456	50.1	16.7667	0.336303252
Gm4371	37.9251	43.1528	46.1044	10.1756	12.6	22.3222	0.354591795
Sh3gl3	269.6035	258.417	219.8989	65.5912	93.85	111.2111	0.361873619
Mboat4	99.3908	109.689	117.6669	65.5912	25.1	27.8778	0.362877422
Gm6907	1210.2182	790.9023	911.6522	339.5962	341.1	387.4333	0.366705408
Ms4a6b	31101.7548	28293.6421	28032.1327	8027.8078	11025.1	14277.8778	0.381239019
Ccdc164	170.3128	164.4836	214.7873	52.9967	100.1	61.2111	0.389945699
Hist1h2ai	2560.3837	2673.2898	3501.5483	750.7297	1381.35	1277.8778	0.390368737
Melk	683.3151	506.9493	673.1278	191.5358	218.85	333.4333	0.399174742
Ppic	338.1615	264.2879	342.5774	93.299	150.1	138.9889	0.404631805
Hopx	3770.7856	3013.7986	3494.7328	1176.4224	1493.85	1544.5444	0.410028876
Gimap7	9253.0551	7369.963	8860.2125	2979.9489	3406.35	4277.8778	0.418478209
Oas1c	697.4995	667.419	633.9388	204.1302	293.85	338.9889	0.418723788

Synj2	534.379	520.6479	494.2217	103.3746	300.1	250.1	0.421865542
Pdcd4	5647.7123	4971.0002	5462.3253	1340.4778	2435.85	3120.2667	0.428865014
Krt10	158.4924	156.6558	155.152	42.9212	81.35	77.8778	0.429829713
Ces2c	198.6816	160.5697	184.1177	103.3746	87.6	44.5444	0.433442099
Rpl35	732.9605	765.2663	722.5399	234.3569	312.6	416.7667	0.433959857
Acyp1	574.5681	491.2937	514.6681	272.1403	212.6	211.2111	0.440327893
Ahi1	274.3317	205.5795	245.457	90.7801	112.6	116.7667	0.441357644
Lrrc56	99.3908	68.5932	83.5895	35.3645	31.35	44.5444	0.442252065
Itgb1	16903.1733	12264.2879	13431.6897	5098.3368	6768.85	7050.1	0.444076617
Nt5e	2792.0622	2780.9219	2975.0531	934.6088	1662.6	1200.1	0.444231665
Ifi27l2a	23725.8683	26651.7634	26864.9833	10682.7196	12962.6	10933.4333	0.447664193
Timm23	73.3861	64.6793	66.5508	32.8456	31.35	27.8778	0.449980989
Slamf6	17806.2466	14964.875	15469.5156	4791.032	8018.85	9000.1	0.452108083
Capn3	1759.178	1900.4718	1711.0899	705.3897	1125.1	617.3222	0.455768113
Cd96	10042.6532	9998.1431	8321.7902	3385.4904	5400.1	4255.6556	0.459804539
Tes	8749.509	10095.9904	9454.8623	3405.6416	5100.1	4811.2111	0.470557685
Batf	5605.3009	5475.6382	5765.9886	1806.1453	3200.1	3050.1	0.478208576
Cd3g	37300.3364	39972.7027	38352.4599	16090.7801	19762.6	19527.8778	0.478970974
Pfdn4	375.9865	368.0061	366.4316	158.7902	175.1	200.1	0.480888475
Lcmt1	945.7265	996.1861	826.4759	418.236	443.85	477.8778	0.484023034
A430093F15Rik	1130.1236	896.3818	1001.9743	433.3494	556.35	477.8778	0.484592055
Hist1h2ao	16773.1496	15019.6695	19039.1186	5453.5005	9887.6	9322.3222	0.485195407
Mns1	822.795	645.8926	852.0339	342.6693	362.6	422.3222	0.485879715
Nmb	510.7383	516.7341	596.4537	251.9892	287.6	250.1	0.486283951
Hmgb2	11153.7643	9810.2761	12424.7039	4027.8078	5281.35	7094.5444	0.491294373
Ccdc72	3267.2395	3240.8045	3225.5217	1279.697	1350.1	2155.6556	0.491644352
1500031L02Rik	1030.8329	1094.0335	1019.0129	466.095	500.1	583.4333	0.492903242
Zc4h2	160.8565	158.6127	121.0746	70.629	68.85	77.8778	0.493382951
Ppp1r12a	1338.1615	1097.9474	1225.1809	471.1327	681.35	655.6556	0.493852822
Mrps9	1879.5326	1508.9063	1610.2551	632.3418	868.85	977.8778	0.49594346
Tesc	2723.5043	2964.875	2463.8928	1012.6945	1787.6	1244.5444	0.496160929
Slc7a10	47.3813	54.8945	52.9199	30.3267	18.85	27.8778	0.496498937
S100a10	29948.0905	24117.5168	24198.4302	9309.9237	15006.35	14616.7667	0.497457602
Hsd11b1	7314.5208	5900.2957	7386.3668	3330.0748	3268.85	3688.9889	0.499384601
Dapl1	1990.6437	1937.4777	2233.8707	869.1176	1150.1	1061.2111	0.499907928
Ccnd2	16097.0267	16293.6421	19374.7805	6680.2008	9868.85	9494.5444	0.503107682
Shisa5	138978.8234	150391.4894	133815.06	64816.2209	76868.85	72283.4333	0.50561413
Msl3l2	484.7336	420.8436	482.2946	269.6214	243.85	188.9889	0.506142066
Unc5cl	933.9061	757.4386	971.3046	335.1126	512.6	505.6556	0.508278803
H2afz	14553.2915	13959.0041	14108.1252	4823.7776	7081.35	9794.5444	0.509137911
Ccnb2	3628.9416	3039.2389	4149.018	1639.8985	1962.6	1944.5444	0.512798476
Ccl25	111.2111	115.5599	146.6326	63.0723	56.35	72.3222	0.51350469
Arxes2	208.1378	215.3642	170.4868	83.2234	106.35	116.7667	0.515733798
Preli2	189.2253	195.7947	223.3067	108.4123	100.1	105.6556	0.516446015
Ubash3a	4744.7809	5033.3681	4990.7287	2020.2511	2862.6	2750.1	0.516826753

Ndufa12	1423.2678	1135.1294	1218.3655	639.8985	612.6	705.6556	0.518474221
Fas	1761.3293	1690.9023	1385.3445	662.5685	812.6	1038.9889	0.519714284
N6amt2	3217.5941	2626.3231	2438.3348	1219.2436	1462.6	1633.4333	0.521026998
Fkbp3	6778.0433	5953.0159	5947.4675	2645.0874	3095.35	4008.4889	0.521932295
Mrs2	383.0787	389.5325	410.7321	143.6768	218.85	255.6556	0.522403262
4921524J17Rik	862.9842	749.6108	737.8747	342.6693	418.85	466.7667	0.522570446
Tnfrsf18	10718.7761	12941.3916	12426.4077	5922.0144	8012.6	4927.8778	0.522701087
Cd2	26193.9534	27557.8299	29519.6093	14143.6768	15556.35	13861.2111	0.523123687
Tnfaip8l1	1650.2182	1397.3603	1492.6882	750.7297	825.1	800.1	0.523301792
Ppil3	1544.4735	1199.9239	1229.8666	667.6063	603.9125	815.6556	0.52517256
BC021614	2011.9203	1651.7634	1608.5512	811.1831	1112.6	855.6556	0.527184155
Dut	2870.0764	2638.0648	2816.5934	1093.299	1468.85	1833.4333	0.528014707
Gm4907	61.5657	62.7223	63.1431	32.8456	43.85	22.3222	0.528289062
Cd3d	30309.7927	28483.4659	28890.8821	13617.2285	16806.35	16133.4333	0.530962742
Mboat1	621.8494	555.873	647.5698	322.5181	343.85	305.6556	0.532530463
Spc24	1267.2395	1189.9239	1533.581	597.0773	725.1	805.6556	0.533191978
Gimap5	5718.7761	5706.5579	6064.1654	2629.8229	3400.1	3322.3222	0.534734865
Cd27	11250.691	8984.4444	9512.7938	5604.634	5193.85	5111.2111	0.534816894
Mgst2	2189.2253	2281.9004	2010.664	1060.5534	1218.85	1188.9889	0.535097938
Gstt3	165.5846	182.0961	207.9719	80.7045	106.35	111.2111	0.536784315
1110001J03Rik	669.1307	692.8593	746.3941	335.1126	337.6	461.2111	0.537816473
Uqcrh	6071.022	5949.2194	5692.7223	2357.7826	3118.85	4055.6556	0.538153206
Sdcbp2	1345.2537	1624.3661	1644.3324	886.7499	925.1	672.3222	0.538404386
Nmi	3730.5965	2986.4014	3118.178	1644.9363	1612.6	2050.1	0.539658503
Psph	1626.5775	1458.0256	1719.3026	843.9287	893.85	855.6556	0.539859536
Fam103a1	2432.7241	2679.1607	2469.0044	1196.5736	1212.6	1688.9889	0.540591267
Pycard	10361.8021	10135.1294	11218.3655	4760.8053	6381.35	6016.7667	0.541029838
Gimap9	4659.6745	4677.2037	4348.3706	2105.8935	2475.1	2838.9889	0.542188345
Tmem149	4145.0882	4474.1313	4389.076	2758.2864	2694.6625	1634.9333	0.544874015
Cdc42ep3	1716.4121	1352.3505	1499.5036	886.7499	775.1	827.8778	0.545004952
Tspan32	17397.2631	18733.9552	16882.022	10738.1353	10293.85	7900.1	0.545752064
Oip5	239.7454	207.5364	230.1222	113.4501	106.35	150.1	0.546055382
Itm2a	6078.1142	6700.6871	6384.4926	3317.4804	3887.6	3261.2111	0.546163491
Syt11	2276.6957	2050.9806	2284.9867	1073.1479	1431.35	1116.7667	0.54762576
Tipin	2936.2702	2444.327	2584.8674	1393.0471	1400.1	1577.8778	0.548747012
Ptpn7	7886.6248	7420.8436	8147.9957	3662.5685	4987.6	4233.4333	0.549279338
1110001A16Rik	565.1118	497.1646	530.0029	337.6315	231.35	305.6556	0.549298795
Tmem18	657.3104	581.3133	586.2305	292.2914	300.1	411.2111	0.549963115
3110003A17Rik	3011.9203	2831.8025	3051.7272	1375.4149	1506.35	2038.9889	0.553176489
Ccdc109b	827.5232	851.372	800.9179	420.7549	506.35	450.1	0.55536641
Tmem71	3198.6816	2512.8202	2736.5117	1758.2864	1400.1	1544.5444	0.55669073
BC094916	1792.0622	1501.0785	1598.328	906.901	743.85	1072.3222	0.556698482
Gimap6	36167.9487	31990.3153	30530.0029	17085.7423	17806.35	20088.9889	0.557118723
Cenpa	4189.2253	3730.0413	4484.68	2194.0547	2306.35	2411.2111	0.557211025
Dennd2d	6440.1946	5706.5579	5656.941	2655.0118	3625.1	3683.4333	0.559633601

Rab19	1988.2797	1685.0315	1979.9944	990.0244	1012.6	1161.2111	0.559643459
Rps18	4997.7359	5610.6675	5702.9455	2544.1806	3500.1	3111.2111	0.561295804
Mcoln3	130.1236	168.3975	151.7442	75.6668	93.85	83.4333	0.561780133
Traf3ip3	8242.8896	7362.7027	8444.4176	4640.7045	4753.225	4147.9889	0.563073298
1810037117Rik	2449.2726	2295.599	2549.0862	1234.3569	1231.35	1644.5444	0.563514544
Ccdc126	319.2489	289.7282	323.8349	133.6013	193.85	200.1	0.565549435
Paip2	10706.9558	10152.7419	10533.4106	5639.8985	5193.85	6927.8778	0.565781067
Cdk17	3542.1804	3089.0824	2985.9579	1511.435	2080.35	1866.7667	0.567580996
Myl12a	19182.1331	21078.3779	20001.8039	9385.4904	10918.85	13905.6556	0.567684731
Gmfg	1399.6272	1184.053	1310.3743	607.1529	731.35	877.8778	0.569170437
Ezh2	2153.7643	1992.2722	2124.8231	952.2411	1362.6	1261.2111	0.570265072
Rpl18a	4153.7643	4604.7967	4454.0104	1911.9388	2625.1	3011.2111	0.571293026
Arpc5	18566.0102	14633.6616	14890.7458	9009.1932	8157.2875	10314.7111	0.571448392
Rps19	11541.4712	12047.0667	10918.4847	5372.896	7237.6	7155.6556	0.572815332
Taf13	888.9889	888.554	756.6173	418.236	500.1	533.4333	0.572879844
Hmgb3	662.0385	520.6479	587.9344	297.3292	362.6	355.6556	0.57357555
Ccdc28a	766.0574	767.2233	702.0935	350.2259	487.6	444.5444	0.573671424
Sumo1	7368.8943	6792.6636	6812.1634	3796.0698	3612.6	4627.8778	0.573887076
Tmem154	4078.1142	4025.5403	3757.1285	1932.0899	2675.1	2205.6556	0.57440099
Erh	3458.7288	3305.3838	3913.8843	2105.8935	1893.85	2138.9889	0.574895503
Ccdc53	2751.873	2377.7908	2356.5491	1158.7902	1406.35	1738.9889	0.574940782
Nudcd2	1383.0787	1272.1157	1398.9754	599.5962	781.35	950.1	0.57497498
Gins2	600.5728	585.2272	695.2781	365.3393	325.1	394.5444	0.576788226
Polr3k	2056.8376	1921.8221	2256.0209	954.7599	1181.35	1461.2111	0.576985612
Ldha	56633.6697	64440.4131	65239.4934	27267.1025	41343.85	38894.5444	0.577013759
Itgb1bp1	3198.6816	3446.284	3615.6904	1639.8985	1968.7875	2344.5444	0.580199784
Dph3	1224.6863	1422.8006	1325.7091	617.2285	762.6	927.8778	0.580818641
Il2rb	16742.4168	14360.1783	17786.7758	8214.2058	11206.35	9011.2111	0.581553135
Nsmce1	5297.9723	5062.7223	4813.5265	2647.4552	3018.85	3172.3222	0.582476513
Rnaseh2c	1427.996	1397.3603	1620.4783	710.4275	975.1	911.2111	0.584083492
Nfyb	2097.0267	1810.2761	2078.8187	1015.2134	1243.85	1250.1	0.586216534
Taf12	2586.3884	2596.9689	2658.1337	1171.3846	1531.35	1894.5444	0.58627613
Ndc80	1326.3411	1109.689	1410.9025	788.5131	681.35	788.9889	0.58718263
Fam96a	3477.6414	3268.2018	3542.4411	1614.7096	1881.35	2555.6556	0.588214227
2700029M09Rik	1732.9605	1479.5521	1688.633	886.7499	837.6	1161.2111	0.588752352
H2afv	7080.4783	6849.4151	8214.4466	4549.2184	4525.1	4000.1	0.590418066
Jmjd7	502.7241	578.0843	522.8637	297.9841	370.35	279.1556	0.590825082
Rnf7	2056.8376	1823.9748	1734.6374	962.3166	1118.85	1238.9889	0.591253705
Agfg1	5645.4901	5465.8534	5783.0272	2667.6063	3843.85	3500.1	0.592597172
Gcat	846.4357	802.4483	948.575	524.0295	587.6	427.8778	0.59269744
0610037P05Rik	2617.1213	2211.4503	2240.6861	1330.0748	1243.85	1622.3222	0.593590894
2310003F16Rik	3191.5894	2955.0902	3646.377	1987.5055	1806.35	2022.3222	0.593908311
Syp	201.0456	246.6753	190.9332	121.0068	125.1	133.4333	0.594281161
Ephx1	7527.2868	8608.7106	7178.495	4166.3469	4862.6	4861.2111	0.595773554
Pde6d	1068.6579	974.6597	1148.5069	639.8985	537.6	727.8778	0.596955221

Pydc3	5224.6863	4497.1646	4373.9286	2604.634	2737.6	3100.1	0.598926367
Hace1	643.126	526.5188	519.7797	289.7725	356.35	366.7667	0.599546887
Sell	46196.3175	43587.1841	44315.9971	22274.6592	28737.6	29577.8778	0.600972694
Psm10	2690.4073	2366.0491	2559.3094	1521.5106	1275.1	1788.9889	0.60211929
Rpp30	888.9889	726.1274	766.8405	539.1428	406.35	488.9889	0.60222826
Endod1	1628.9416	1422.8006	1603.4396	748.2108	1068.85	988.9889	0.602779831
Ndufb2	1643.126	1393.4464	1758.4915	848.9665	975.1	1066.7667	0.602876888
Psm14	6123.0314	5127.3016	5275.2746	2738.1353	3406.35	3827.8778	0.603449104
A430005L14Rik	1768.4215	1663.5051	2090.7458	1211.6869	975.1	1150.1	0.604215977
Dynlrb1	7728.2324	7238.8476	7064.3358	3760.8053	4206.35	5366.7667	0.605223111
Rassf5	12680.9511	11225.1489	11966.3634	5652.4929	7612.6	8450.1	0.605344346
Slamf1	1896.0811	2054.8945	1836.8695	959.7977	1356.35	1205.6556	0.608482646
Mcm6	9718.7761	8988.3583	10857.1455	4896.8254	6562.6	6550.1	0.609165028
Uqcr10	4137.2158	4469.7673	5082.7376	2405.6416	2906.35	3033.4333	0.609612503
Mrpl33	2089.9345	1765.2663	2003.8485	1037.8834	1156.35	1377.8778	0.609674201
Dek	5004.8281	4164.4836	4530.6844	2461.0572	2650.1	3277.8778	0.612338495
Atp5e	3092.2986	2712.4288	3060.2465	1534.105	1968.85	1944.5444	0.614496947
Sigirr	3940.9983	4047.0667	4380.7441	2594.5584	3006.35	2000.1	0.614530335
Dnajc8	5640.7619	4816.147	5050.3641	3246.9514	2700.1	3605.6556	0.616014627
Ccs	4047.3813	4859.1998	4503.4225	2279.697	3187.6	2822.3222	0.618166814
Tceb2	2784.97	2970.7458	3375.4621	1660.0496	2081.35	1922.3222	0.620261905
Pthr1	182.1331	148.828	173.8945	90.7801	106.35	116.7667	0.621755607
Dcun1d2	974.0953	827.8886	823.0681	466.095	593.85	572.3222	0.621803759
Ubr7	1156.1284	949.2194	1022.4207	569.3695	637.6	744.5444	0.623931694
Rbks	451.6366	436.4992	407.3244	267.1025	225.1	316.7667	0.624464727
Fxyd5	25442.1804	30567.6147	26858.1678	14884.231	18800.1	18083.4333	0.624701784
Pdcl3	1959.9109	1945.3055	2210.0165	1541.6617	1093.85	1233.4333	0.632673369
Fbxo31	633.6697	653.7204	708.909	471.1327	450.1	350.1	0.636844799
Cox7a2	4158.4924	4346.4796	4731.7408	2241.9136	3043.85	3144.5444	0.636888337
Hif1a	4253.0551	4469.7673	4179.6706	2214.2058	3100.1	3000.1	0.644403047
Cdc42se2	10470.5492	10773.0941	10013.7309	5377.9338	7868.85	7005.6556	0.647925167
Slc15a4	940.9983	728.0843	884.4074	1294.8103	1287.6	1538.9889	1.61402598
Tmem57	290.8801	246.6753	209.6757	453.5005	375.1	422.3222	1.674077404
Sp140	1047.3813	790.7067	763.4328	1549.2184	1325.1	1527.8778	1.6921626
Atf7	137.2158	115.5599	110.8514	234.3569	193.85	188.9889	1.69733169
Snhg12	85.2064	113.6029	88.7011	148.7146	181.35	161.2111	1.708723232
Atat1	118.3033	105.7751	139.8172	183.9791	231.35	211.2111	1.721758109
Xbp1	3598.2087	3990.3153	3487.9173	7297.3292	5868.85	5938.9889	1.72484714
Man1b1	392.535	448.2409	407.3244	813.702	656.35	688.9889	1.729861695
Fam108b	666.7667	538.2605	470.3675	1015.2134	987.6	900.1	1.732674336
Hmgxb3	787.334	555.873	603.2692	1007.6567	1237.6	1127.8778	1.732944127
Ctnna1	449.2726	418.8867	473.7752	685.2385	868.85	811.2111	1.76260436
Rnf19b	829.8872	1009.8847	746.3941	1450.9816	1643.85	1488.9889	1.772438621
Tmed3	1621.8494	1364.0922	1557.4352	3017.7322	2325.1	2766.7667	1.784927656
Twf1	323.9771	324.9532	289.7575	521.5106	618.85	550.1	1.800876287

Trex1	1952.5823	2384.8554	2030.3948	3842.5433	4220.6625	3407.9333	1.80141973
Uvrag	1267.0504	1166.4405	1174.3716	1984.9866	2536.5375	1994.5444	1.806074511
Ralgps2	820.431	681.1176	683.351	1304.8859	1418.85	1244.5444	1.816230046
Oas2	127.7596	141.0002	119.3707	199.0924	256.35	266.7667	1.860737819
Naga	1030.8329	1166.4405	1065.0174	1924.5332	1912.6	2238.9889	1.862532335
Spsb2	89.9345	64.6793	100.6282	163.828	143.85	172.3222	1.880569029
Prkcd	1784.97	1798.5344	1998.7369	3964.8355	3387.6	3200.1	1.890376093
Foxk2	290.8801	260.374	248.8647	503.8783	550.1	466.7667	1.900649004
Grina	1080.4783	1082.2918	1003.6781	1939.6466	2156.35	1927.8778	1.902407372
Herpud1	3163.2206	3571.5286	3406.1317	6831.3343	6368.85	6122.3222	1.905407103
Usp37	281.4239	172.3114	187.5255	393.0471	443.85	388.9889	1.911680864
Ccnk	52.1095	41.1959	47.8083	93.299	100.1	83.4333	1.961767709
Cnpy3	1236.5066	1137.0863	1221.7732	2675.163	1906.35	2477.8778	1.963469256
Fahd1	52.1095	60.7654	46.1044	118.4879	87.6	111.2111	1.995851032
Fbrs	111.2111	142.9571	165.3752	294.8103	312.6	233.4333	2.004187409
SyngR2	4572.204	4377.7908	4627.8049	8954.7599	8706.35	9650.1	2.011460657
Neat1	792.0622	690.9023	742.9864	1778.4375	1393.85	1333.4333	2.024177982
9430060I03Rik	54.7099	45.599	65.7671	110.9312	110.225	119.0444	2.048463354
Tmprss3	9.5563	9.8847	5.2116	15.2134	18.85	16.7667	2.061855545
Bmp2k	265.4664	283.8769	229.168	453.3494	610.35	541.4889	2.06186898
Golgb1	264.8754	201.6656	138.1133	413.1982	400.1	433.4333	2.061891398
H2-Oa	1437.4522	1160.5697	1237.108	3040.4023	2462.6	2427.8778	2.067956055
Pafah1b3	529.6508	418.8867	507.8526	1178.9413	1025.1	905.6556	2.13520876
Gsn	1853.5279	1857.2429	1859.0197	4259.5458	3943.85	3761.2111	2.148125122
Repin1	113.5752	68.5932	88.7011	211.6869	187.6	183.4333	2.151294996
5430417L22Rik	234.1426	117.5168	192.6371	377.9338	443.85	350.1	2.153024684
Ldoc1l	193.9534	176.2252	219.8989	352.7448	487.6	433.4333	2.158662379
Cdh23	9.5563	7.9278	8.6193	15.2134	18.85	22.3222	2.160086426
Luc7l2	248.327	201.6656	187.5255	531.5861	462.6	388.9889	2.169624674
DbnDd2	236.5066	205.5795	185.8216	423.2738	450.1	488.9889	2.169686245
Rnf157	293.2442	187.9669	165.3752	491.2839	506.35	416.7667	2.18748928
Atp1b1	1071.022	882.6832	846.9223	2138.639	2187.6	1866.7667	2.211292184
Arhgap17	884.2608	714.3857	768.5444	1705.3897	1793.85	1766.7667	2.224580367
Igfbp4	2411.4475	3287.7712	1826.6463	6234.3569	5775.1	5011.2111	2.261622817
Snx9	432.7241	352.3505	490.8139	934.6088	812.6	1177.8778	2.292587949
Sorcs2	26.1047	31.4112	30.7696	55.5156	81.35	66.7667	2.306520323
Bst2	2704.5917	2812.2331	3135.2167	5516.4728	7206.35	7416.7667	2.327726872
Kctd12b	21.3766	31.4112	23.9541	60.5534	62.6	55.6556	2.33000486
GabbR1	82.8423	72.507	68.2547	206.6491	143.85	172.3222	2.338157189
Gaa	860.6201	624.3661	753.2096	1995.0622	1468.85	1827.8778	2.364310576
Cpsf7	361.8021	377.7908	334.0581	886.7499	781.35	883.4333	2.376501489
Ssfa2	125.3955	99.9043	80.1818	241.9136	262.6	222.3222	2.379311225
Adpgk	695.1355	692.8593	652.6814	1871.6365	1568.85	1416.7667	2.380217498
Bcr	56.8376	49.0237	71.6624	148.7146	143.85	133.4333	2.399667763
Tcirg1	787.334	822.0178	911.6693	2168.8657	2018.85	1966.7667	2.441265724

Dennd3	99.3908	43.1528	95.5166	183.9791	181.35	222.3222	2.468498724
Man1c1	297.9723	227.1059	267.6072	801.1076	550.1	605.6556	2.468650489
Acsl1	158.4924	135.1294	127.8901	274.6592	368.85	405.6556	2.489051436
1700021K19Rik	248.327	193.8378	225.0105	508.9161	631.35	550.1	2.533616128
Golim4	340.5255	178.1822	204.5641	589.5207	718.85	527.8778	2.538808371
Ccdc6	153.7643	94.0335	131.2978	322.5181	275.1	372.3222	2.558563856
Pmepa1	153.7643	129.2585	156.8558	443.4249	375.1	311.2111	2.568290433
Bsn	68.6579	47.0667	61.4392	128.5635	168.85	161.2111	2.588703787
Fam161a	42.6532	13.7986	34.1774	88.2612	75.1	72.3222	2.600523893
2010002N04Rik	94.6626	88.1626	143.2249	319.9992	225.1	305.6556	2.609276304
BC024582	14.7099	28.3779	14.5147	48.4375	47.1	58.0444	2.666236708
Hs6st1	219.9582	276.0295	267.6072	828.8154	581.35	661.2111	2.712664136
Gm6710	50.5019	26.1665	33.7343	106.7751	91.1	101.6556	2.713074046
Zbed3	92.2986	43.1528	66.5508	173.9035	225.1	172.3222	2.828314246
Gpr137	127.7596	92.0765	83.5895	340.1504	243.85	275.5444	2.832802506
Rpgrip1	323.8116	119.3955	215.3326	552.2914	572.975	740.6556	2.83342371
Mcts2	14.2844	7.9278	17.1387	30.3267	37.6	44.5444	2.858158263
Kcnp3	19.0125	7.9278	12.0271	30.3267	43.85	38.9889	2.904109589
Ggt5	165.5846	276.0295	189.2293	637.3796	537.6	661.2111	2.910691782
Dak	146.5775	95.1294	111.567	400.0496	345.9125	284.6	2.91717588
Dennd5a	305.0645	283.8573	245.457	874.1554	881.35	683.4333	2.923059287
Zfp318	111.2111	52.9376	68.2547	214.2058	206.35	261.2111	2.933549595
Rrbp1	432.7241	381.7047	385.1741	1178.9413	1243.85	1100.1	2.936714558
Xkrx	248.327	94.0335	121.0746	448.4627	425.1	511.2111	2.988064132
Zfp81	316.8849	321.0393	279.5343	889.2688	1025.1	827.8778	2.988959828
Gas2l1	26.1047	21.6264	56.3276	88.2612	112.6	116.7667	3.052391583
Tep1	193.9534	164.9532	209.6757	546.6995	475.1	716.7667	3.057721283
H2-DMa	3014.2844	2283.8573	2557.6055	8262.0647	6400.1	9433.4333	3.067257307
Plxdc1	186.8612	101.8613	127.8901	415.7171	531.35	338.9889	3.086934961
Cpt1c	16.6485	13.7986	20.5464	45.4401	62.6	50.1	3.101181523
Tmem170b	125.3955	97.9474	127.8901	438.3872	287.6	372.3222	3.127010845
41156	59.2017	45.1098	59.7354	178.9413	162.6	177.8778	3.166284154
Tmtc3	16.6485	9.8847	5.2116	30.3267	31.35	38.9889	3.171089438
Rnf122	468.1851	262.3309	327.2426	967.3544	1337.6	1066.7667	3.187609252
Wdr60	54.4735	66.6362	46.1044	168.8657	218.85	150.1	3.216329843
Tgfb1	678.587	499.1215	436.2902	1647.4552	2081.35	1483.4333	3.229394485
B3gnt7	16.6485	7.9278	12.0271	42.9212	43.85	33.4333	3.283970888
Il17re	16.6485	13.7986	12.0271	45.4401	56.35	38.9889	3.31445913
Litaf	974.0953	868.9845	1059.9058	2977.43	2706.35	3944.5444	3.316697265
Kctd11	37.9251	21.6264	39.289	131.0824	81.35	122.3222	3.386816133
Trove2	59.2017	39.2389	68.2547	158.7902	225.1	188.9889	3.436684178
Rhbdf2	210.5019	172.3114	177.3022	765.8431	618.85	583.4333	3.51378671
Fam43a	264.8754	401.2742	359.6161	1151.2335	1193.85	1266.7667	3.521125926
Nucb2	598.2087	440.4131	490.8139	1896.8254	1850.1	1972.3222	3.739449524
4831440E17Rik	35.561	17.7125	25.658	73.1479	112.6	111.2111	3.762236876

Pde4a	89.9345	45.1098	73.3663	191.5358	281.35	311.2111	3.762269769
Bicd1	80.4783	58.8084	42.6967	181.4602	293.85	211.2111	3.772439135
Hsd3b7	95.0409	107.1059	92.6371	458.5383	275.1	383.4333	3.789459329
Fkbp7	23.7407	13.7986	17.1387	75.6668	56.35	77.8778	3.83873953
Scpep1	810.9747	506.9493	753.2096	2707.9086	2037.6	3211.2111	3.841722089
Acvr2a	16.6721	19.7282	20.6316	80.8053	56.7875	83.4333	3.875481967
2810442I21Rik	75.7501	52.9376	63.1431	204.1302	262.6	277.8778	3.881587315
Vcl	82.8423	37.282	52.9199	229.3191	231.35	211.2111	3.88270858
Nod2	19.0125	9.8847	12.0271	47.9589	50.1	61.2111	3.891819775
Igj	8489.4617	2189.9239	3886.6224	20524.0295	17000.1	19661.2111	3.92594461
Serpinf1	21.3766	23.5834	23.9541	78.1856	87.6	105.6556	3.938833998
Wfs1	78.1142	27.4973	58.0315	234.3569	225.1	188.9889	3.962563629
Alpk2	23.7407	7.9278	12.0271	48.6642	68.85	55.6556	3.963094682
Evi5	40.2891	37.282	27.3619	128.5635	112.6	177.8778	3.993417705
B230206F22Rik	87.5704	64.6793	86.9973	239.3947	312.6	405.6556	4.002768269
Abat	42.6532	17.7125	17.1387	78.1856	118.85	116.7667	4.048832066
Pfkfb4	66.2939	45.1098	86.9973	340.1504	200.1	277.8778	4.123609256
Adamts14	19.0125	7.9278	15.4348	50.4778	68.85	55.6556	4.129392025
Kiss1r	0.1	4.0139	8.6193	17.7322	18.85	16.7667	4.18974806
Cldn5	0.1	9.8847	5.2116	22.77	18.85	22.3222	4.207747939
Fstl3	63.7407	37.282	12.6234	197.304	151.0375	131.7111	4.224100959
Nostrin	7.1922	17.7125	5.2116	45.4401	37.6	44.5444	4.236393581
Tulp1	2.4641	2.0569	0.1	7.6567	6.35	5.6556	4.254988098
Khk	177.405	274.0726	185.8216	1047.9589	806.35	861.2111	4.260981341
Fbxo39	7.1922	2.0569	1.8039	17.7322	12.6	16.7667	4.261187008
Zfp532	45.0173	7.9278	12.0271	85.7423	81.35	111.2111	4.283422756
4930528A17Rik	0.1	5.9708	6.9495	15.2134	18.85	22.3222	4.330591461
Pbx3	52.1095	35.325	44.4006	138.639	193.85	238.9889	4.334793238
Cd40	189.2253	74.464	146.6326	657.5307	487.6	644.5444	4.361636803
Slc30a4	33.1969	21.6264	29.0658	95.8179	137.6	133.4333	4.373049657
Nid1	14.2844	15.7556	13.7309	80.7045	62.6	50.1	4.418563475
5031439G07Rik	387.8069	295.599	305.0923	1733.0975	1325.1	1327.8778	4.437110052
Pls3	35.561	5.9708	20.5464	108.4123	75.1	94.5444	4.479135993
E330017A01Rik	4.8281	4.0139	1.8039	17.7322	18.85	11.2111	4.489362102
Dapk1	26.1047	54.8945	39.289	178.9413	200.1	161.2111	4.491316688
Pkig	276.6957	168.3975	257.384	1272.1403	756.35	1155.6556	4.532739141
Rogdi	454.0007	553.916	608.3808	2730.5786	2456.35	2155.6556	4.54284202
Abhd15	177.405	123.3877	139.8172	544.1806	775.1	688.9889	4.55793095
Cabyr	16.6485	9.8847	12.0271	47.9589	56.35	72.3222	4.580646416
Pak1	167.9487	121.4307	100.6282	637.3796	456.35	705.6556	4.613718297
Crispld2	23.7407	11.8417	10.3232	70.629	68.85	72.3222	4.61384232
Hhex	262.5113	90.1196	131.2978	816.2209	568.85	894.5444	4.710642911
D5Erttd605e	7.1922	13.7986	6.9155	50.4778	37.6	44.5444	4.752410746
0610038B21Rik	29.8872	13.7986	10.5617	78.639	81.35	100.1	4.794488225
Fcgr2b	191.5894	78.3779	153.4481	743.173	543.85	750.1	4.81116889

Ankmy1	7.1922	2.0569	5.2116	22.77	25.1	22.3222	4.853997386
Tmem221	149.0362	68.5932	199.4525	826.2965	625.1	577.8778	4.865409647
Dennd2c	63.9298	37.282	35.8812	209.168	231.35	227.8778	4.875491819
Bank1	794.4262	313.2115	339.1697	2546.6995	1762.6	2783.4333	4.902333787
Serpind1	0.1	2.0569	6.9155	15.2134	12.6	16.7667	4.913815528
Tsc22d1	305.0645	413.0159	306.7962	1672.6441	1800.1	1583.4333	4.933449939
Rasgrp3	165.5846	60.7654	98.9243	634.8607	418.85	555.6556	4.947720432
Tas1r1	0.1	2.0569	1.8039	7.6567	6.35	5.6556	4.964224399
Cybasc3	2160.9511	1597.8299	1790.1494	10244.9866	9004.2875	8326.7111	4.969603728
Trim7	35.561	43.1528	42.6967	249.4703	193.85	161.2111	4.97923491
Tlr12	132.4877	41.1959	95.5166	448.4627	381.35	522.3222	5.022785644
Tmem144	7.1922	5.9708	3.5077	30.3267	31.35	22.3222	5.038714631
Rilpl1	52.1095	31.4112	40.9928	178.9413	237.6	211.2111	5.041641268
Cpne2	40.2891	41.1959	71.6624	335.1126	243.85	194.5444	5.050735435
Phldb1	4.8281	7.9278	6.9155	40.4023	31.35	27.8778	5.064718322
Cib2	19.0125	5.9708	13.7309	73.1479	75.1	50.1	5.123388834
Peli2	45.0173	27.4973	22.2503	176.4224	150.1	161.2111	5.146773753
Tlr7	172.6768	135.1294	139.8172	717.9841	618.85	977.8778	5.171114602
Sh3bp4	99.3908	62.7223	83.5895	370.3771	550.1	361.2111	5.21642099
Capn5	101.7548	27.4973	46.1044	282.2159	306.35	327.8778	5.226174678
Stx3	87.5704	54.8945	30.7696	309.9237	362.6	233.4333	5.22965691
Clec2l	9.5563	4.0139	6.9155	37.8834	43.85	27.8778	5.350620189
Zfp957	14.2844	5.9708	6.9155	40.4023	43.85	61.2111	5.35368614
1600021P15Rik	2.4641	2.0569	1.8039	10.1756	12.6	11.2111	5.37347626
Gm996	14.2844	13.7986	6.9155	50.4778	56.35	83.4333	5.436264411
Hist1h2ac	66.2939	58.8084	51.216	292.2914	400.1	277.8778	5.502940988
B230118H07Rik	23.7407	25.5403	15.4348	115.969	125.1	116.7667	5.529340594
Cacnb3	23.7407	15.7556	13.7309	123.5257	106.35	66.7667	5.57313554
Zfp105	14.2844	5.9708	0.1	42.9212	37.6	33.4333	5.598299206
Rab30	85.2064	27.4973	58.0315	330.0748	343.85	288.9889	5.639807726
4732471J01Rik	12.1567	4.4249	6.0465	36.7247	38.5375	53.8222	5.70460622
Ceacam1	167.9487	95.9904	126.1862	695.3141	781.35	755.6556	5.722058272
Lrtm2	0.1	5.9708	5.2116	22.77	25.1	16.7667	5.728984968
2010001M09Rik	480.0054	176.2252	388.5819	2576.9262	1456.35	2005.6556	5.779919172
Triml1	54.4735	11.8417	20.5464	168.8657	175.1	161.2111	5.815881817
Naaa	307.4286	232.9767	233.5299	1576.9262	1037.6	1888.9889	5.818982132
Cnr1	54.4735	19.6695	18.8425	168.8657	212.6	161.2111	5.836144345
Cr2	222.3222	92.0765	138.1133	881.7121	962.6	800.1	5.843849666
Acy3	4.8281	5.9708	3.5077	25.2889	25.1	33.4333	5.858988159
Fcrl5	118.3033	31.4112	54.6238	529.0673	306.35	377.8778	5.93767835
Blnk	704.5917	217.3211	419.2515	2861.561	2243.85	2950.1	6.006356566
Arhgap22	14.2844	9.8847	10.3232	63.0723	56.35	88.9889	6.042252909
Fam171a1	7.1922	2.0569	6.9155	37.8834	37.6	22.3222	6.050604407
Lilra6	33.1969	19.6695	29.0658	206.6491	112.6	177.8778	6.06753999
Fcrla	539.1071	197.7517	293.1653	2448.4627	1606.35	2211.2111	6.083375913

Rin1	0.1	2.0569	5.2116	15.2134	18.85	11.2111	6.144330596
Rarb	2.4641	2.0569	1.8039	15.2134	12.6	11.2111	6.169978972
Cd59a	26.1047	25.5403	17.1387	98.3368	143.85	183.4333	6.187804669
Gm4925	9.5563	2.0569	0.1	25.2889	25.1	22.3222	6.207620462
1700017N19Rik	4.8281	4.0139	0.1	15.2134	18.85	22.3222	6.305703422
Spib	506.0102	133.1724	201.1564	1652.4929	1768.85	1900.1	6.332495457
Hsd17b3	2.4641	0.1	1.8039	10.1756	6.35	11.2111	6.349977106
Ldlrad3	49.7454	27.4973	22.2503	156.2713	218.85	261.2111	6.395750455
Ccl17	2.4641	0.1	0.1	5.1378	6.35	5.6556	6.434968657
Ncf1	418.5397	232.9767	347.689	2738.0597	1718.85	2144.5444	6.606703787
Fndc5	45.0173	7.9278	13.7309	133.6013	162.6	144.5444	6.610260064
Plcg2	305.0645	72.507	247.1608	1335.1126	1162.6	1638.9889	6.621558546
Plcd4	2.4641	2.0569	7.1029	17.7322	31.5375	27.8778	6.636972101
Cst3	3874.8045	3414.9728	4060.4169	27672.6441	18243.85	29833.4333	6.673888223
Fbln7	9.5563	0.1	0.1	17.7322	25.1	22.3222	6.678187428
Slco4a1	92.2986	70.5501	122.7785	884.231	593.85	500.1	6.925744467
Snx21	56.8376	17.7125	27.3619	259.5458	237.6	211.2111	6.950672149
Napsa	888.9889	381.7047	676.5355	4984.9866	3750.1	4916.7667	7.010912737
9430070O13Rik	23.7407	4.0139	6.9155	55.5156	87.6	100.1	7.015139847
Myzap	37.9251	25.5403	37.5851	317.4804	181.35	216.7667	7.081579012
Pnpla3	120.6674	52.9376	52.9199	357.7826	668.85	577.8778	7.083152448
Rhob	58.8943	99.9043	58.0315	502.1403	430.7875	615.9333	7.14320152
Plcd3	7.1922	2.0569	1.8039	20.2511	31.35	27.8778	7.190708405
D630003M21Rik	14.2844	2.0569	3.5077	45.4401	43.85	55.6556	7.302418258
Odz4	21.3766	4.0139	17.1387	79.5207	133.35	100.1	7.358960432
Abca5	28.4688	11.8417	18.8425	98.3368	181.35	155.6556	7.359599682
Barhl1	2.4641	0.1	0.1	7.6567	6.35	5.6556	7.380466199
Magi1	26.1047	15.7556	17.1387	151.2335	156.35	127.8778	7.380825099
Xirp1	19.0125	0.1	1.8039	52.9967	62.6	44.5444	7.656245817
Dusp16	47.3813	19.6695	22.2503	257.027	250.1	177.8778	7.670731939
Psd3	30.8329	4.0139	1.8039	85.7423	81.35	116.7667	7.744981678
Gm4951	68.6579	31.4112	56.3276	264.5836	475.1	472.3222	7.749561212
Ces2g	33.1969	29.4542	13.7309	178.9413	225.1	188.9889	7.764004608
Muc5ac	2.4641	0.1	1.8039	10.1756	12.6	11.2111	7.780837912
Ppp1r9a	45.0173	11.8417	12.0271	126.0446	200.1	211.2111	7.800640478
Dntt	52.1095	146.871	88.7011	544.1806	856.35	861.2111	7.861961627
Foxa3	7.1922	2.0569	5.2116	42.9212	37.6	33.4333	7.880289336
BC037032	101.8494	35.462	41.0439	315.3141	530.35	564.3222	7.905491454
Kit	45.0173	11.8417	32.4735	229.3191	243.85	233.4333	7.909802144
Cacnb4	37.9251	2.1157	3.5418	103.3746	131.35	111.2111	7.937472753
Ctbp2	37.9251	4.0139	8.6193	121.0068	106.35	177.8778	8.01519434
Ppm1e	14.2844	0.1	1.8039	32.8456	50.1	50.1	8.218627033
Srgap3	28.4688	11.8417	15.4348	126.0446	187.6	144.5444	8.219329701
Rac3	0.1	2.0569	6.9155	27.8078	25.1	22.3222	8.292182884
Arpp21	94.6626	33.3681	39.289	347.7071	581.35	461.2111	8.30905267

Cyp7b1	4.8281	0.1	0.1	12.6945	12.6	16.7667	8.365227422
Pls1	49.7454	7.9278	17.1387	224.2814	268.85	144.5444	8.523721494
Dsc1	2.4641	2.0569	0.1	10.1756	12.6	16.7667	8.557087211
AY074887	2.4641	0.1	5.2116	25.2889	25.1	16.7667	8.636598634
Cd36	160.8565	50.9806	115.963	889.2688	731.35	1216.7667	8.655840862
Unc93b1	1872.4404	1209.4933	1768.7148	16367.8582	9525.1	16488.9889	8.737377507
Ccr9	501.282	377.7908	247.1608	2435.1126	3766.7875	3702.8778	8.794603446
Ctnnd1	68.6579	21.6264	30.7696	370.3771	318.85	377.8778	8.815122024
4930483J18Rik	35.561	5.9708	22.2503	244.4325	168.85	150.1	8.832924912
Ly6d	2144.308	939.4346	1860.7236	17141.1579	14406.35	12150.1	8.837679566
Slc2a6	40.2891	47.0667	56.3276	425.7927	462.6	383.4333	8.851586196
1700028K03Rik	2.4641	7.9278	1.8039	43.3494	37.6	27.8778	8.923334263
Arhgap6	78.1142	9.8847	13.7309	264.5836	412.6	244.5444	9.060550596
BC028528	87.5704	21.6264	44.4006	544.0798	325.1	538.9889	9.16792016
Rasa4	101.7548	35.325	85.2934	874.1554	487.6	677.8778	9.172117863
Gm12824	14.2844	4.0139	3.5077	65.5912	68.85	66.7667	9.227180592
Pax3	28.4688	17.7125	3.5077	115.969	187.6	155.6556	9.241977098
Thbd	9.5563	5.9708	5.2116	68.1101	68.85	55.6556	9.28774224
Lifr	73.3861	52.9376	46.1044	544.1806	512.6	550.1	9.319134178
Olfr75-ps1	16.6485	4.0139	6.9155	68.1101	93.85	100.1	9.502540077
Cntnap2	21.3766	11.8417	3.5077	143.6768	125.1	83.4333	9.590211294
1110017F19Rik	11.9203	2.0569	5.2116	50.4778	56.35	77.8778	9.625698324
Adamts12	2.4641	0.1	1.8039	12.6945	12.6	16.7667	9.629395604
Hpse	73.3861	59.3564	86.9973	824.9615	567.9125	751.1556	9.757129114
Apba1	7.1922	2.0569	5.2116	47.9589	37.6	55.6556	9.765398632
Olfr745	9.5563	2.0569	0.1	42.9212	43.85	27.8778	9.788016938
Gm9767	2.4641	0.1	1.8039	12.6945	18.85	11.2111	9.788369963
Pik3r6	16.6485	5.9708	18.8425	133.6013	156.35	116.7667	9.809463169
Pvrl4	28.4688	7.9278	6.9155	158.7902	93.85	172.3222	9.811632315
Pik3ap1	175.0409	92.0765	170.4868	1508.9161	1231.35	1588.9889	9.89308375
Drd5	9.5563	2.0569	1.8039	32.8456	50.1	50.1	9.916121964
Kctd12	94.6626	27.4973	49.5122	463.5761	518.85	755.6556	10.12442732
H2-Aa	6810.9747	2784.8358	4382.4479	42040.4023	35337.6	64738.9889	10.16700272
Snora74a	11.9203	2.0569	1.9061	48.9917	68.85	44.5444	10.22370036
H2-Eb1	4002.4641	1528.4757	2676.8763	28075.6668	22050.1	34294.5444	10.28535608
Mab21l3	4.8281	4.0139	0.1	35.3645	25.1	33.4333	10.50076046
Zcchc24	33.1969	23.5834	22.2503	287.2537	250.1	300.1	10.59657525
Gpr137b	87.5704	47.0667	92.1089	743.173	612.6	1055.6556	10.63493336
Rtn1	21.3766	4.0139	5.2116	100.8557	106.35	122.3222	10.76814663
Pkib	66.2939	23.5834	69.9586	604.634	412.6	711.2111	10.81387285
Acvr1	0.1	5.9708	3.5077	27.8078	37.6	38.9889	10.89906562
Zdhhc14	40.2891	17.7125	20.5464	347.7071	275.1	233.4333	10.90085553
H2-Eb2	42.6532	11.8417	1.8039	166.3469	281.35	177.8778	11.11168799
Prss34	9.5563	4.0139	5.2116	65.5912	93.85	50.1	11.15660906
Cd74	25898.4452	12714.3857	22755.2542	265032.8456	175156.35	247166.7667	11.20054441

Hoxa7	16.6485	9.8847	1.8039	121.0068	118.85	88.9889	11.60477607
Greb1	16.6485	2.0569	1.8039	60.5534	100.1	77.8778	11.63039207
1700029F12Rik	2.4641	0.1	1.8039	15.2134	18.85	16.7667	11.63692766
Tcf4	212.866	107.7321	207.9719	1924.5332	2356.35	1877.8778	11.65174149
A830082N09Rik	4.8281	0.1	0.1	17.7322	18.85	22.3222	11.71504147
Olfr803	2.4641	0.1	0.1	7.6567	12.6	11.2111	11.81179385
Enpp2	33.1969	9.8847	18.8425	239.3947	187.6	305.6556	11.83142428
Gpr77	14.2844	4.0139	6.9155	85.7423	118.85	94.5444	11.86400701
Sowahc	26.1047	9.8847	13.7309	136.1202	250.1	205.6556	11.90410758
Pid1	47.3813	29.4542	39.289	350.2259	437.6	605.6556	11.99989236
Vmn2r82	63.9298	19.6695	10.3232	302.367	443.85	411.2111	12.323225
Nipal4	4.8281	5.9708	6.9155	78.1856	75.1	66.7667	12.42222711
Irf8	1366.5303	923.7791	1366.602	19843.9287	13818.85	11877.8778	12.45331142
1700013N18Rik	7.1922	2.0569	1.8039	55.5156	43.85	38.9889	12.51737085
Tmem150c	59.2017	7.9278	18.8425	269.6214	468.85	350.1	12.66192947
Cbfa2t3	23.7407	15.7556	17.1387	259.5458	243.85	216.7667	12.71585592
Acsn5	2.4641	0.1	0.1	10.1756	12.6	11.2111	12.75729139
Vmn2r42	2.4641	0.1	0.1	10.1756	12.6	11.2111	12.75729139
Rgs18	23.7407	11.8417	22.2503	254.5081	168.85	316.7667	12.79768712
Apol6	21.3766	4.0139	1.8039	85.7423	125.1	138.9889	12.86408967
Hs3st3a1	2.4641	0.1	0.1	11.6869	15.1625	8.0444	13.09778161
Fut4	4.8281	2.0569	5.2116	52.9967	56.35	50.1	13.18111701
Eepd1	45.0173	74.464	64.847	677.6819	1068.85	683.4333	13.18281132
Bcl11a	75.7501	21.6264	56.3276	607.1529	768.85	661.2111	13.2541292
Fmn2	14.2844	2.0569	0.1	50.4778	75.1	94.5444	13.38836953
Aoah	21.3766	21.6264	15.4348	274.6592	181.35	333.4333	13.50910712
Il12b	30.8329	9.8847	3.5077	136.1202	212.6	255.6556	13.66583833
Mep1b	4.8281	2.0569	10.3232	88.2612	93.85	55.6556	13.81706396
Mir1941	78.1142	17.7125	22.2503	413.1982	500.1	727.8778	13.89920137
Grn	1567.4759	1238.8476	1637.5169	19911.9388	16893.85	25122.3222	13.93571898
Tox3	4.8281	4.0139	0.1	37.8834	43.85	44.5444	14.1218743
Asph	36.5066	21.6264	20.5464	312.4426	337.6	461.2111	14.12382021
Itgax	89.9345	27.4973	54.6238	755.7675	743.85	944.5444	14.20565155
Mreg	11.9203	4.0139	8.6193	156.2713	100.1	94.5444	14.29188099
AW551984	2.4641	0.1	3.5077	27.8078	37.6	22.3222	14.44876313
Gas7	63.9298	23.5834	63.1431	639.8985	1000.1	550.1	14.53705222
Cxcl16	19.0125	27.2429	10.3232	287.2537	200.1	350.1	14.80159813
Ptprf	14.2844	29.4542	8.6193	216.7247	281.35	283.4333	14.9262671
Fads2	21.3766	2.0569	10.3232	141.1579	168.85	194.5444	14.94673057
Cd180	75.7501	5.9708	13.7309	332.5937	568.85	527.8778	14.97427497
Kmo	189.2253	62.7223	133.0017	2166.3469	1893.85	1850.1	15.35344239
Gm12839	4.8281	2.0569	1.8039	40.4023	43.85	50.1	15.46252115
Psm8	4.8281	2.0569	1.8039	30.3267	50.1	55.6556	15.66162575
Cpn2	0.1	0.1	1.8039	7.6567	12.6	11.2111	15.70327861
Fam57b	0.1	0.1	1.8039	7.6567	12.6	11.2111	15.70327861

Glis1	2.4641	0.1	0.1	12.6945	12.6	16.7667	15.78814609
A530064D06Rik	21.3766	21.6264	15.4348	355.2637	206.35	361.2111	15.79157326
4833424O15Rik	4.8281	0.1	1.8039	25.2889	37.6	44.5444	15.95860071
Pnck	23.7407	7.9278	13.7309	325.037	256.35	161.2111	16.35700252
Eif2c4	14.2844	2.0569	1.8039	85.7423	87.6	127.8778	16.60053899
Nek6	63.9298	70.5501	104.0359	1350.2259	1187.6	1433.4333	16.64987896
Slc16a7	9.5563	5.9708	8.6193	105.8935	118.85	183.4333	16.90425074
Ano2	14.2844	4.0139	1.8039	108.4123	125.1	111.2111	17.14854096
Folr2	2.4641	0.1	1.8039	22.77	18.85	33.4333	17.18253205
Rgs4	2.4641	0.1	0.1	10.1756	18.85	16.7667	17.18865658
Micall2	2.4641	2.0569	1.8039	32.8456	31.35	44.5444	17.19236668
Slco1c1	4.8281	2.0569	3.5077	60.5534	75.1	44.5444	17.3388821
Ctsl	439.8163	397.3603	432.8824	4949.7222	7956.35	9494.5444	17.63746141
Scrn1	11.9203	0.1	0.1	75.6668	62.6	77.8778	17.83327145
Cox7b2	7.1922	0.1	3.5077	70.629	62.6	61.2111	18.00387967
Plxna4	59.2017	15.7556	13.7309	440.906	718.85	438.9889	18.02657964
Tcf7l2	63.9298	13.7986	18.8425	667.6063	437.6	644.5444	18.11881944
Ankrd45	11.9203	0.1	1.8039	110.9312	75.1	72.3222	18.6884883
Fndc7	19.0125	5.9708	5.2116	173.9035	162.6	233.4333	18.87526702
Spns3	45.0173	45.1098	58.0315	889.2688	1062.6	866.7667	19.02444745
Rnase6	333.4333	117.5168	252.2724	3765.8431	4606.35	5088.9889	19.1421378
Vmn1r193	4.8281	4.0139	0.1	65.5912	50.1	55.6556	19.16202192
Aldh3b1	78.1142	15.7556	73.3663	1241.9136	693.85	1288.9889	19.28263395
Csf2rb	75.7501	41.1959	73.3663	891.7877	1318.85	1550.1	19.76087568
Slc41a2	21.3766	25.5403	25.658	317.4804	550.1	566.7667	19.76368001
Sh2b2	16.6485	4.0139	12.0271	259.5458	225.1	172.3222	20.09721776
Lefty1	19.0125	35.325	15.4348	513.9539	468.85	422.3222	20.13873844
Arg2	2.4641	0.1	0.1	12.6945	18.9125	22.3222	20.24293382
Ctsh	612.3931	328.8671	512.9642	11302.367	7400.1	10794.5444	20.28367245
Hs3st1	26.1047	35.325	44.4006	723.0219	787.6	672.3222	20.62683466
Wdfy4	33.1969	25.5403	42.6967	801.1076	625.1	705.6556	21.01726543
A430084P05Rik	104.1189	23.5834	54.6238	1589.5207	975.1	1300.1	21.19674967
Adap2	35.561	7.9278	8.6193	332.5937	325.1	455.2667	21.3586832
Tspyl5	9.5563	4.0139	0.1	68.1101	118.85	105.6556	21.40537081
Stxbp5l	19.0125	2.0569	3.5077	113.4501	212.6	205.6556	21.63419199
Bst1	9.5563	2.0569	0.1	93.299	56.35	105.6556	21.79631527
Nav1	61.5657	13.7986	25.658	717.9841	887.6	627.8778	22.10860275
Pappa	14.2844	2.0569	3.5077	126.0446	193.85	122.3222	22.2790468
Al182371	2.4641	2.0569	8.6193	110.9312	100.1	83.4333	22.40926767
Vmn2r81	2.4641	0.1	1.8039	22.77	43.85	33.4333	22.90597527
Gm15645	9.5563	4.0139	8.6193	108.4123	200.1	200.1	22.92130512
B4galt6	7.1922	2.0569	5.2116	93.299	112.6	133.4333	23.46582807
Pld4	555.6556	287.7712	671.4239	12362.8204	10031.35	13650.1	23.79394247
Fam83f	15.6319	0.1	1.9402	180.8053	142.225	98.5444	23.85538221
Prss30	11.9203	7.9278	17.1387	284.7348	306.35	305.6556	24.24487655

Mefv	2.4641	0.1	5.2116	65.5912	75.1	50.1	24.53685199
Rhbdf1	4.8281	4.0139	0.1	60.5534	87.6	72.3222	24.6561843
Gapf	71.022	9.8847	32.4735	695.3141	1025.1	1116.7667	25.02360024
O3far1	2.4641	2.0569	1.8039	55.5156	37.6	66.7667	25.27823365
2810432L12Rik	0.1	0.1	3.5077	35.3645	25.1	33.4333	25.32508024
Arhgef10l	0.1	2.0569	8.6193	68.1101	112.6	94.5444	25.54281658
Gcm2	4.8281	0.1	3.5077	63.0723	81.35	77.8778	26.35198796
Aatk	2.4641	2.0569	3.5077	63.0723	56.35	94.5444	26.6502298
Gm8221	80.4783	19.6695	17.1387	846.4476	943.85	1366.7667	26.91754209
2610034B18Rik	11.9203	0.1	0.1	121.0068	68.85	138.9889	27.13181192
Tmem72	2.4641	0.1	1.8039	30.3267	50.1	38.9889	27.33873626
Rhobtb1	11.9203	4.0139	1.8039	141.1579	175.1	200.1	29.11010198
Fbxl13	4.8281	0.1	0.1	60.5534	50.1	38.9889	29.76120204
Snph	0.1	4.0139	0.1	50.4778	50.1	27.8778	30.48377987
Nkain2	0.1	0.1	5.2116	50.4778	50.1	66.7667	30.9232944
Rims1	0.1	2.0569	0.1	25.2889	25.1	22.3222	32.21724489
Mrgpra4	2.4641	0.1	0.1	30.3267	25.1	33.4333	33.35460381
Lphn3	14.2844	5.9708	5.2116	259.5458	287.6	305.6556	33.48679065
1300002K09Rik	0.1	0.1	3.5077	42.9212	31.35	50.1	33.54402999
Pdia5	7.1922	9.8847	18.8425	461.0572	387.6	377.8778	34.14686771
Zfp353	2.4641	0.1	0.1	32.8456	37.6	22.3222	34.82144064
Fes	19.0125	25.5403	29.0658	838.8909	725.1	1016.7667	35.0557821
Gria3	4.8281	4.0139	3.5077	173.9035	181.35	88.9889	35.97191835
Aph1c	30.8329	11.8417	8.6193	508.9161	668.85	688.9889	36.39331382
Gm1965	4.8281	0.1	0.1	47.9589	75.1	66.7667	37.75294843
Slamf9	26.1047	15.7556	49.5122	848.9665	1331.35	1305.6556	38.15121727
Cd300c	4.8281	0.1	8.6193	191.5358	187.6	138.9889	38.24532383
Frmpd3	2.4641	4.0139	5.2116	105.8935	200.1	144.5444	38.54177217
Gpr35	19.0125	13.7986	27.3619	687.7574	775.1	922.3222	39.63870174
Adam11	11.9203	2.0569	10.3232	312.4426	437.6	244.5444	40.92883245
Pgam2	9.5563	9.8847	8.6193	362.8204	493.85	316.7667	41.81840893
Fads3	4.8281	7.9278	8.6193	312.4426	337.6	244.5444	41.8516318
Cds1	4.8281	2.0569	3.5077	156.2713	175.1	111.2111	42.58589202
Tifab	33.1969	13.7986	17.1387	1068.1101	681.35	1011.2111	43.04522704
Pltp	134.8754	33.3681	143.259	4504.4073	5387.6625	4346.7667	45.71018371
Alox5ap	19.0125	25.5403	39.289	1269.6214	1206.35	1361.2111	45.76693845
Upb1	2.4641	11.8417	34.1774	609.6718	868.85	788.9889	46.76899833
Fscn1	2.4641	0.1	1.8039	63.0723	81.35	61.2111	47.07724359
Ido1	0.1	0.1	1.8039	37.8834	25.1	33.4333	48.11452667
Cd209a	54.4735	35.325	49.5122	2302.367	2556.35	2038.9889	49.51310919
Foxr1	2.4641	0.1	0.1	32.8456	56.35	55.6556	54.3715326
Tbc1d8	16.743	15.7947	25.8966	1086.1453	1011.6625	1161.7667	55.78186955
Tyrbp	238.8707	115.5599	453.3288	14554.2562	10662.6	20672.3222	56.8104542
Cntn3	0.1	0.1	0.1	5.1378	6.35	5.6556	57.14466667
Igdcc3	0.1	0.1	0.1	5.1378	6.35	5.6556	57.14466667

Olfr1038-ps	0.1	0.1	0.1	5.1378	6.35	5.6556	57.14466667
Olfr147	0.1	0.1	0.1	5.1378	6.35	5.6556	57.14466667
Slc6a15	0.1	0.1	0.1	5.1378	6.35	5.6556	57.14466667
Tekt3	0.1	0.1	0.1	5.1378	6.35	5.6556	57.14466667
Olfr698	9.5563	4.0139	0.1	206.6491	356.35	227.8778	57.85408407
Tnni2	2.4641	0.1	3.5077	161.3091	106.35	88.9889	58.73843012
Magea1	2.4641	0.1	0.1	37.8834	68.85	61.2111	63.03986337
Atp2a1	2.4641	11.8417	6.9155	466.901	584.5375	311.7667	64.23759148
Cox6a2	14.2844	9.8847	54.6238	2020.2511	1837.6	1272.3222	65.10958855
4921510H08Rik	0.1	0.1	0.1	7.6567	6.35	5.6556	65.541
Trpv6	0.1	0.1	0.1	7.6567	6.35	5.6556	65.541
Vmn2r112	0.1	0.1	0.1	7.6567	6.35	5.6556	65.541
Procr	0.1	2.0569	1.8039	78.1856	100.1	88.9889	67.4799283
Spag17	0.1	0.1	0.1	7.8834	6.475	6.1	68.19466667
Sh3bgr	0.1	5.9708	1.8039	221.7625	181.35	150.1	70.25188261
I830077J02Rik	4.8281	2.0569	3.5077	249.4703	162.6	344.5444	72.80251523
Mpeg1	47.3813	19.6695	39.289	2194.0547	2143.85	3600.1	74.64754212
Gpr4	4.8281	2.0569	0.1	239.3947	137.6	172.3222	78.6423622
Mycl1	11.9203	4.0139	15.4348	906.901	1000.1	666.7667	82.04812713
Foxl1	0.1	0.1	0.1	7.6567	6.35	11.2111	84.05933333
Siglech	160.8565	125.3446	231.826	11947.2033	16625.1	15144.5444	84.39104383
Rnd3	2.4641	2.0569	15.4348	823.7776	468.85	488.9889	89.27812967
Csf2rb2	9.5563	13.7986	6.9155	934.6088	1112.6	666.7667	89.65773495
Flt3	11.9203	7.9278	34.1774	1186.498	1656.35	2033.4333	90.25888331
Pinc	0.1	0.1	0.1	10.1756	6.35	11.2111	92.45566667
Snord123	0.1	0.1	0.1	10.1756	6.35	11.2111	92.45566667
Paqr5	7.1922	0.1	10.3232	566.8506	531.35	566.7667	94.51771177
Klk1	37.9251	45.1098	52.9199	2604.634	5312.6	5322.3222	97.38204315
Ppfia4	14.2844	5.9708	22.2503	1390.5282	1137.6	1622.3222	97.64502006
Havcr1	0.1	2.0569	5.2116	176.4224	275.1	311.2111	103.5127231
Arhgef38	0.1	0.1	0.1	7.6567	12.6	11.2111	104.8926667
Zar1	0.1	0.1	0.1	7.6567	12.6	11.2111	104.8926667
2210020M01Rik	9.5563	7.9278	20.5464	1274.6592	1243.85	1516.7667	106.1063068
Gm14207	0.1	2.0569	0.1	63.0723	106.35	77.8778	109.5751252
Vmn2r-ps54	0.1	0.1	0.1	10.1756	12.6	11.2111	113.289
Muc19	0.1	0.1	0.1	12.6945	12.6	11.2111	121.6853333
Cd207	2.4641	0.1	0.1	100.8557	87.6	150.1	127.0807027
Angptl7	0.1	4.0139	0.1	161.3091	218.85	233.4333	145.6115238
Notch3	0.1	0.1	0.1	20.2511	12.6	11.2111	146.874
Cd209d	2.4641	17.7125	20.5464	1922.0144	2337.6	1755.6556	147.7118582
Leprel1	0.1	0.1	1.8039	126.0446	87.6	88.9889	151.0222566
Vmn2r43	0.1	0.1	0.1	17.7322	12.6	16.7667	156.9963333
Gm4847	0.1	0.1	0.1	20.2511	12.6	16.7667	165.3926667
Mybphl	0.1	0.1	0.1	20.2511	18.85	11.2111	167.7073333
Prdm13	0.1	0.1	0.1	20.2511	25.1	16.7667	207.0593333

Obox2	0.1	0.1	0.1	20.2511	25.1	22.3222	225.5776667
Olfr957	0.1	0.1	0.1	15.2134	25.1	27.8778	227.304
Calml4	0.1	0.1	0.1	22.77	31.35	16.7667	236.289
Cnga2	0.1	0.1	0.1	20.2511	31.35	27.8778	264.9296667
F630028O10Rik	0.1	0.1	0.1	20.2511	31.35	27.8778	264.9296667
Kitl	0.1	0.1	0.1	32.8456	25.1	22.3222	267.5593333
Olfr613	0.1	0.1	0.1	27.8078	37.6	22.3222	292.4333333
P2rx5	0.1	0.1	0.1	37.8834	25.1	27.8778	302.8706667
Gpx8	0.1	0.1	0.1	30.3267	43.85	22.3222	321.663
Igsf11	0.1	0.1	0.1	27.8078	31.35	38.9889	327.1556667
1810065E05Rik	0.1	0.1	0.1	27.8078	43.85	44.5444	387.3406667
Clec9a	0.1	0.1	0.1	201.6113	168.85	250.1	2068.537667

SUPPLEMENTAL TABLE 4. Gene Sets Enriched in Genes with Increased or Decreased Expression in CD4+ CD11c+CD44hi CD62L+ vs. CD4+CD11c- CD44hi CD62L+ CM T cells.

Cluster Rank	GO Term	Enrichment Score	P Value	FDR
1	Antigen Processing and Presentation of Exogenous Peptide Antigen via MHC Class II	20.2	6.4e-7	1.1e-3
2	Antigen Processing and Presentation of Peptide or Polysaccharide Antigen via MHC Class II	19.5	8.1e-8	1.1e-4
3	Antigen Processing and Presentation of Exogenous Peptide Antigen	14.1	7.1e-6	1.2e-2
4	Antigen Processing and Presentation of Exogenous Antigen	11.6	2.4e-5	4.1e-2
5	Immune Response	2.6	1.1e-5	1.9e-2
6	Nucleosome	11.8	2.6e-5	3.2e-2

SUPPLEMENTAL TABLE 5. Antibodies used within these studies

Target	Clone	Vendor
CD4-PE	GK1.5	BD Pharmingen
CD4-V450	RM4-5	BD Pharmingen
CD4-FITC	RM4-5	BD Pharmingen
TCR β –APC	H57-597	BD Pharmingen
TCR β –APCefluor780	H57-597	eBiosciences
TCR β -FITC	H57-597	BD Pharmingen
CD8-PE-Cy7	53-6.7	BD Pharmingen
CD8- APC	53-6.7	BD Pharmingen
CD11c- PE-Cy7	HL3	BD Pharmingen
CD11b-PE	M1/70	BD Pharmingen
Thy1.1-PE	OX-7	BD Pharmingen
Thy1.2-APC	53-2.1	BD Pharmingen
H-2Kb-FITC	AF6-88.5	BD Pharmingen
H-2Kb-APC	AF6-88.5.5.3	eBiosciences
IFN- γ -AF700	XMG1.2	BD Pharmingen
IFN- γ –FITC	XMG1.2	BD Pharmingen
IL-17-PE	TC11-18H10	BD Pharmingen
IL-4-PE	11B11	BD Pharmingen
Foxp3-PE	FJK-16s	eBiosciences
CD44-APC	IM7	BD Pharmingen
CD62L-FITC	MEL-14	BD Pharmingen
α 4 β 7-APC	DATK32	eBiosciences
CCR9-efluor450	CW-1.2	eBiosciences
CCR9-APC	CW-1.2	eBiosciences
CD69-FITC	H1.2F3	BD Pharmingen
IL-23R-AF700	753317	R&D systems
Rat IgG1 Isotype-AF700	43414	R&D systems
T-Bet-PE-Cy7	4B10	eBiosciences
Gata 3-PE	TWAI	eBiosciences
Mouse IgG1 Isotype-PE-Cy7	P3.6.2.8.1	eBiosciences
Rat IgG2a Isotype-APC	eBR2a	eBiosciences
Rat IgG2b Isotype-PE	A95-1	BD Pharmingen

*PE= Phycoerythrin, FITC=Fluorescein isothiocyanate, APC=Allophycocyanin, AF=AlexaFluor