

Supporting Information

The tyrosine kinase inhibitor gefitinib restricts *Mycobacterium tuberculosis* growth through increased lysosomal biogenesis and modulation of cytokine signaling

Kimberly M. Sogi¹, Katie A. Lien², Jeffery R. Johnson³, Nevan J. Krogan³, Sarah A. Stanley^{1,2}

¹School of Public Health, Division of Infectious Disease and Vaccinology, University of California Berkeley

²Department of Molecular and Cell Biology, Division of Immunology and Pathogenesis, University of California, Berkeley

³Department of Cellular and Molecular Pharmacology, University of California, San Francisco

Supporting Information Table of Contents

Figure S1. STAT3 western.....	S2
Figure S2. LAMP1 immunofluorescence.....	S3
Figure S3. Model Figure.....	S4
Table S1. Phosphoproteomics data <i>M. tuberculosis</i> and gefitinib changes.....	S5
Table S2. Phosphoproteomics data <i>M. tuberculosis</i> only.....	S6
Table S3. Phosphoproteomics data gefitinib only.....	S7
Table S4. RNAseq data.....	S8-S31

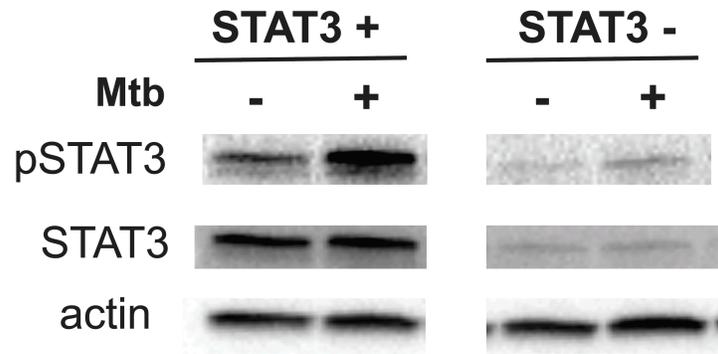


Figure S1. Western blot of pSTAT3, STAT3 and actin from cell lysates of STAT3+ and STAT3- macrophages infected with *M. tuberculosis* at 24 hpi.

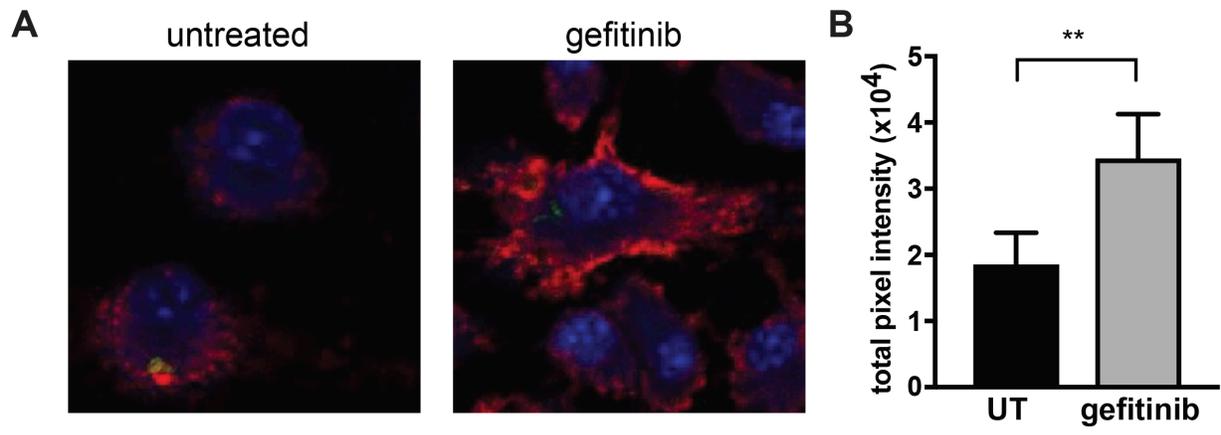


Figure S2. A) Fluorescent images of BMDM infected with *M. tuberculosis* expressing GFP, fixed at 24 hpi and stained with a LAMP1-AF647 antibody. B) Quantification of LAMP1 staining by cell profiler.

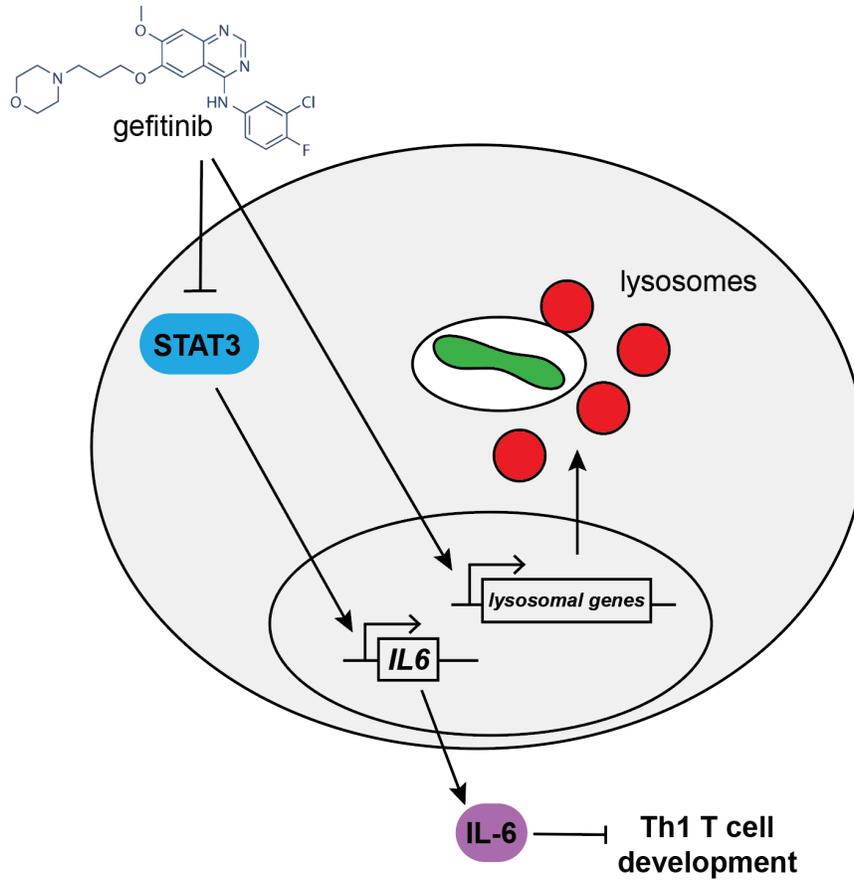


Figure S3. Proposed model for gefitinib activity on Mtb infected macrophages. We have shown that gefitinib influences both cytokine responses of macrophages and cell intrinsic control. Gefitinib inhibits STAT3 signaling, thereby limiting the production of IL-6, which has the potential to enhance Th1 T cell development in vivo. In addition, we have shown that gefitinib treatment enhances transcription of a set of genes involved in lysosomal function, and that functional lysosomes exhibit increased trafficking to Mtb containing phagosomes.

Table S1. Summary of phosphosites significantly changed in *M. tuberculosis* infected macrophages vs mock infected macrophages (green) and *M. tuberculosis* infected macrophages with and without gefitinib (blue). Peptides included in this table were changed under both conditions. Fold change values are given as log base 2.

	Phosphosite	Gef vs unt (4 hr)		Mtb vs mock (4 hr)	
		log2FC	adj pvalue	log2FC	adj pvalue
STAT3	P42227_ph705	-1.947	2.16E-08	3.105	4.75E-12
TDRD1	Q99MV1_ph1019	-1.762	0.031	2.856	0.009
LYN	P25911_ph172	-1.698	0.005	1.532	0.014
PAR12	Q8BZ20_ph460	-1.698	0.003	1.949	1.39E-03
SWP70	Q6A028_ph517	-1.22	0.027	1.42	0.025
VASP	P70460_ph16	-1.072	0.009	1.041	0.019
DDX58	Q6Q899_ph854	-0.983	0.031	1.637	0.005
IFIT1	Q64282_ph277	-0.734	0.005	1.324	2.61E-05
JAK2	Q62120_ph570	-0.704	0.008	1.765	7.49E-09
TLN1	P26039_ph1945	-0.613	0.01	1.373	9.88E-08
PTN18	Q61152_ph381	-0.612	0.007	0.977	6.71E-06
ABI1/2	Q8CBW3_ph428;P62484_ph393	0.691	0.013	-0.747	0.014
SDCB1	O08992_ph92	1.04	3.79E-04	-0.677	0.029
H4	P62806_ph89	1.07	0.016	-1.536	7.86E-05
ENPL	P08113_ph652	1.215	0.004	-1.495	0.002
GDIR1	Q99PT1_ph133	1.425	0.008	-1.67	0.007

Table S2. Summary of all phosphosites significantly changed in *M. tuberculosis* infected macrophages vs mock infected macrophages. Fold change values are given as log base 2.

Protein	Phosphosite	log2FC	adj pvalue
GBLP	P68040_ph140	-1.722	1.03E-02
P85B	O08908_ph422	-1.707	2.25E-02
GDIR1	Q99PT1_ph133	-1.67	6.98E-03
ARAP2	Q8BZ05_ph865	-1.614	5.07E-02
SPB1	Q9DBE9_ph791	-1.578	4.01E-02
H4	P62806_ph89	-1.536	7.86E-05
ENPL	P08113_ph652	-1.495	2.21E-03
HP1B3	Q3TEA8_ph379	-1.315	1.51E-02
H4	P62806_ph52	-1.315	4.01E-02
PCM1	Q9R0L6_ph1173	-1.11	4.01E-02
RIR1	P07742_ph726	-1.099	8.51E-05
VASP	P70460_ph16	1.041	1.88E-02
ACLY	Q91V92_ph672	1.097	6.98E-03
TENS3	Q5SSZ5_ph584	1.117	1.88E-02
MK10	Q61831_ph223	1.161	5.80E-04
FAK2	Q9QVP9_ph444	1.175	7.80E-05
PLEC	Q9QXS1_ph4622	1.206	5.80E-04
ASSY	P16460_ph322	1.207	1.88E-02
NFKB2	Q9WTK5_ph77	1.217	1.88E-02
LPXN	Q99N69_ph62	1.266	5.90E-03
IFIT1	Q64282_ph277	1.324	2.61E-05
TLN1	P26039_ph1945	1.373	9.88E-08
SWP70	Q6A028_ph517	1.42	2.49E-02
LYN	P25911_ph172	1.532	1.35E-02
DDX58	Q6Q899_ph854	1.637	4.58E-03
JAK2	Q62120_ph570	1.765	7.49E-09
DDX3X	Q62167_ph69	1.822	6.68E-05
DEST	Q9R0P5_ph117	1.834	3.59E-02
SHPS1	P97797_ph505	1.896	3.16E-04
PTPRE	P49446_ph695	1.931	1.45E-07
PAR12	Q8BZ20_ph460	1.949	1.39E-03
SLAF5	Q18PI6_ph280	2.035	5.41E-03
ANXA2	P07356_ph275	2.399	1.31E-02
TDRD1	Q99MV1_ph1019	2.856	8.98E-03
STAT1	P42225_ph701	3.101	1.76E-13
STAT3	P42227_ph705	3.105	4.75E-12
STA5B	P42232_ph699	3.618	4.03E-05
SLAF7	Q8BHK6_ph302	3.677	1.67E-11

Table S3. Summary of phosphosites significantly changed in *M. tuberculosis* infected *M. tuberculosis* infected macrophages with and without gefitinib. Fold change values are given as log base 2.

Protein	Phosphosite	log2FC	adj pvalue
FCERG	P20491_ph76	-2.068	0.018
IQGA1	Q9JKF1_ph831	-1.987	0.004
STAT3	P42227_ph705	-1.947	0
RL7	P14148_ph217	-1.768	0.021
TDRD1	Q99MV1_ph1019	-1.762	0.031
EIF3D	O70194_ph50	-1.704	0
LYN	P25911_ph172	-1.698	0.005
LYN	P25911_ph266	-3.693	0.006
PAR12	Q8BZ20_ph460	-1.698	0.003
PERQ2	Q6Y7W8_ph1179	-1.405	0.043
HCK	P08103_ph178	-1.375	0.015
MOES	P26041_ph134	-1.277	0.048
DDX17	Q501J6_ph200;Q61656_ph202;Q61656_ph202;Q501J6_ph200	-1.226	0.004
SWP70	Q6A028_ph517	-1.22	0.027
PLCG2	Q8CIH5_ph759	-1.2	0.002
LCP2	Q60787_ph522	-1.152	0.051
KCY	Q9DBP5_ph49	-1.145	0
RAB2B	P59279_ph3	-1.073	0.043
VASP	P70460_ph16	-1.072	0.009
SDCB1	O08992_ph92	1.04	0
H4	P62806_ph89	1.07	0.016
PTN6	P29351_ph536	1.162	0.013
SHIP1	Q9ES52_ph669	1.192	0.031
MILR1	Q3TB92_ph241	1.197	0.004
ENPL	P08113_ph652	1.215	0.004
SHPS1	P97797_ph464	1.313	0.038
GDIR1	Q99PT1_ph133	1.425	0.008
ADAM8	Q05910_ph761	1.471	0.053
NCK2	O55033_ph110	1.568	0
LPP	Q8BFW7_ph297	1.722	0.054
RHDF2	Q80WQ6_ph199	1.845	0.009

Table S4. RNAseq data listing all genes that were greater than 2x up or down regulated in response to gefitinib in *M. tuberculosis* infected macrophages. The fold change is depicted as Log 2 fold change.

Gene	logFC	P.Value	adj.P.Val
G0s2	-5.072510692	1.22E-06	2.71E-05
Cox6a2	-5.023338728	3.31E-11	3.10E-09
F5	-4.671368697	2.49E-07	6.74E-06
Avil	-4.146588744	5.07E-05	0.000571283
Kcnma1	-3.708335688	2.22E-05	0.000296877
Igfbp6	-3.707294034	0.000179023	0.001593043
Gbp11	-3.294202612	8.29E-05	0.000850339
Trib3	-3.252093245	8.50E-12	1.03E-09
Aldh1l2	-3.017551324	1.46E-11	1.53E-09
Pcdhac2	-2.997833346	0.000629509	0.004371193
Sell	-2.951319757	0.002814348	0.014272767
Rsph1	-2.898301825	0.000306043	0.002465798
Etv4	-2.895560625	0.00091065	0.0058553
Orm1	-2.830905724	3.51E-05	0.000427011
Bcl2a1a	-2.775644393	0.003113616	0.015440774
Slc1a4	-2.737071516	8.25E-13	1.52E-10
Tchh	-2.716890427	0.003637493	0.017395483
Pi16	-2.712310946	1.03E-05	0.000159608
Chac1	-2.686645502	7.10E-09	3.22E-07
Atf5	-2.564142414	2.03E-21	2.73E-17
Soat2	-2.532713312	3.13E-11	2.96E-09
Hsd17b14	-2.438174072	0.000782711	0.005208852
Mgll	-2.402188927	0.002137808	0.011447425
Nfe2	-2.39915563	2.30E-05	0.000304155
Gpr150	-2.373309408	0.020144098	0.064807875
Bean1	-2.361710657	0.013976469	0.048879396
Ccbe1	-2.336182248	0.0095211	0.036598006
Phgdh	-2.325430956	5.74E-20	3.85E-16
Pycr1	-2.311736961	1.73E-05	0.000244209
Aqp9	-2.301411994	5.07E-11	4.39E-09
Tspan7	-2.295201401	0.0004169	0.00314645
Bcat1	-2.289018636	0.027891672	0.082531058
Bc1	-2.287951603	9.91E-06	0.000154285
Bcl2a1d	-2.27791404	3.57E-05	0.000433115
Grin1	-2.262167373	0.011546554	0.042345782
Cdkn1c	-2.22750075	1.10E-10	8.61E-09
Thbs3	-2.226956	0.014322938	0.049805521
Spry1	-2.212651884	0.001646932	0.00924307
AV051173	-2.188327279	0.001624226	0.009153554
4930431P03Rik	-2.172696551	0.04695452	0.12296696
Cstad	-2.167387671	0.023497218	0.072903855
Rnf125	-2.153528004	0.024121483	0.074242147
Mt2	-2.139814426	1.66E-05	0.000236252
Gm4013	-2.139099904	0.005350933	0.023550071
Il1a	-2.090323634	0.122790111	0.249207408
1810010H24Rik	-2.064397412	0.002973707	0.014865802
Fstl1	-2.061703188	0.008013316	0.032165926
9530091C08Rik	-2.047402188	0.046255938	0.121564519
Inhba	-2.04571223	0.003614253	0.017321307
Npm2	-2.042488769	0.005384015	0.023657278
Rasgrp2	-2.035187075	0.02846876	0.083924054
1700003F12Rik	-2.0192048	0.008333495	0.033124162
Ablim2	-2.000533374	0.000773375	0.005155452

Slc7a5	-1.998444659	7.39E-13	1.44E-10
1700084E18Rik	-1.987124691	0.088655047	0.19798693
2700046G09Rik	-1.986577392	0.010297607	0.038768515
GpnmB	-1.985283978	6.42E-14	2.46E-11
Asns	-1.949368525	3.03E-15	2.90E-12
Tbx6	-1.947348337	0.018768488	0.061279127
Sgce	-1.907326221	0.052135021	0.13351142
Dnaic2	-1.899344817	0.040517887	0.109973609
Gstm1	-1.898448205	2.49E-12	3.60E-10
9430083A17Rik	-1.886205764	0.032688139	0.093487241
Ddit3	-1.857781712	1.09E-11	1.25E-09
Slc6a9	-1.850126922	2.94E-08	1.05E-06
Tmem151a	-1.846324458	0.020172963	0.064854096
4933408N05Rik	-1.832261786	0.050954006	0.13113776
Thrb	-1.816763829	0.000193645	0.001696159
Lrrc51	-1.812714365	0.005596233	0.024477135
E130309D14Rik	-1.801306367	0.025943034	0.078276377
Atoh8	-1.799211923	0.049606649	0.128359358
Mir23a	-1.798274053	0.050360586	0.129908234
Ldlrad2	-1.785712262	0.046945108	0.12296696
4930581F22Rik	-1.779030318	0.075517141	0.176023017
Trim9	-1.778443437	0.027526489	0.081594423
Inca1	-1.764754515	0.013870128	0.048621538
Pcdhga8	-1.749302468	0.000333108	0.00264183
A530013C23Rik	-1.743115425	0.025753956	0.077818585
Gm21284	-1.738867023	0.032219767	0.092502578
CcpG1os	-1.738417078	0.000203545	0.001765594
Car11	-1.737755703	0.030990098	0.089620668
Ptger3	-1.730731242	0.023215304	0.072293881
Fabp5	-1.718340812	7.39E-11	6.08E-09
AA792892	-1.717357506	0.116629054	0.240887376
Gm10658	-1.716241459	0.015157956	0.052061586
Hs3st1	-1.715162946	0.027137497	0.080802306
Il6	-1.699224737	0.118024813	0.24283578
Fam174b	-1.690771831	0.0899819	0.20014373
Mmp2	-1.687210048	0.075147869	0.175528155
Klhl35	-1.68711087	0.045036202	0.119175862
Gsta3	-1.68554585	3.40E-05	0.000417342
H2-DMb2	-1.685035278	0.011884866	0.043208622
4831440E17Rik	-1.678675396	0.002143573	0.011469141
2410003L11Rik	-1.677340307	0.037227118	0.103191634
Ntn3	-1.671251099	0.030693887	0.088920828
Ffar2	-1.661448745	0.024716811	0.075500772
Amotl2	-1.657647543	0.06140726	0.150561671
Snora3	-1.642652069	0.034497793	0.097396567
Prkg1	-1.620188014	0.000214121	0.001847773
Slc25a29	-1.613743454	0.024747085	0.075558846
Gata3	-1.597372736	0.034134721	0.096722933
Lrrc66	-1.590853656	0.065119534	0.157761152
Adam4	-1.580624706	0.074105148	0.173560013
Trnp1	-1.576907017	0.004262424	0.0196961
Vldlr	-1.57462621	0.004131787	0.019204865
Fstl3	-1.571336424	0.002786035	0.014155929
Angptl6	-1.567694464	6.25E-06	0.00010678
Mgst1	-1.560440779	3.30E-10	2.23E-08
Col23a1	-1.557506492	0.009368777	0.036167901
Epha4	-1.547021569	0.156923275	0.296794
Psph	-1.538980658	6.81E-11	5.68E-09
Tg	-1.538481579	0.059280037	0.146686117

Lcn2	-1.538422436	0.000127844	0.001203886
Cd24a	-1.532397465	2.25E-06	4.53E-05
Epha7	-1.531041635	0.120987334	0.246607202
Htra1	-1.529292085	7.99E-05	0.000825979
1600023N17Rik	-1.526008921	0.187490062	0.336984884
Sntb1	-1.520875546	0.000973174	0.006174478
Peg12	-1.517466508	0.05757705	0.143512755
BC039771	-1.514898222	0.097437006	0.211263077
Cpeb1	-1.509008833	3.45E-06	6.49E-05
Gm5069	-1.508484835	0.004272563	0.019729359
Dnah17	-1.505867226	0.185672508	0.334704377
Trim46	-1.504613861	1.97E-08	7.62E-07
Mcemp1	-1.498314292	0.007295266	0.030010782
Satb1	-1.494635435	0.011866912	0.043178443
Icam4	-1.489660492	0.10279471	0.219440377
Klk1b11	-1.486113068	0.000714303	0.004840036
Ppapdc1b	-1.465053625	1.44E-11	1.53E-09
Chchd10	-1.45323819	2.47E-10	1.75E-08
Sspn	-1.450338914	0.182093025	0.330069741
Mgl2	-1.448311974	0.036977817	0.102627783
Snord34	-1.448292733	0.094007536	0.206024356
Scd1	-1.4466076	1.57E-08	6.27E-07
4931406B18Rik	-1.441193316	0.083472863	0.189401818
Zglp1	-1.439582158	0.200129824	0.352926526
Mreg	-1.436087725	0.036887613	0.102462197
Stap2	-1.435753456	0.08494012	0.191887453
Cystm1	-1.42918723	0.04018425	0.109311261
Bpifc	-1.427450471	0.190561156	0.340880174
Gbp8	-1.426726401	3.62E-05	0.000437983
Hid1	-1.423739125	0.034995616	0.098326251
Slc25a31	-1.421673157	0.090065144	0.200262497
Samd11	-1.415889861	0.020717816	0.066161916
1700101111Rik	-1.415676427	0.133495265	0.264175338
Tmem150a	-1.413761254	0.000157152	0.001434464
Rps15a-ps6	-1.412119586	0.082716466	0.188258525
Dgkg	-1.405656277	6.59E-08	2.11E-06
Zfp532	-1.404657316	0.124215707	0.251183027
Ak8	-1.404495396	0.024469352	0.075000968
Chadl	-1.402603789	0.066468815	0.160364082
Mir6935	-1.398901265	0.095386191	0.208128016
Slc22a17	-1.387490768	0.163956042	0.306296273
Zswim5	-1.386442139	0.140235424	0.273420241
Bach2os	-1.383972784	4.24E-05	0.000495297
Gnal	-1.366672311	0.030092239	0.087644443
Clec11a	-1.362528783	0.073200391	0.171936995
Trim7	-1.352821845	0.076639514	0.178064682
Ugt1a6a	-1.33977743	0.001384895	0.008111701
D630032N06Rik	-1.334733368	0.021971187	0.069404746
Creg1	-1.333294123	6.25E-13	1.25E-10
Klhl33	-1.324588665	0.038655972	0.105948628
Card14	-1.320973203	0.107499859	0.226874317
Snord37	-1.320213333	0.158216572	0.298592793
Phyhd1	-1.319394407	5.08E-09	2.43E-07
Rragd	-1.316269205	1.42E-05	0.000205339
Tppp3	-1.311772955	0.004479717	0.020453665
Triqk	-1.310107287	0.039576665	0.107942941
Rbpms	-1.3098806	0.000714518	0.004840036
Klhdc9	-1.302522653	0.119306221	0.244319002
Krtcap2	-1.30217934	5.30E-09	2.51E-07

Rgs7bp	-1.296760453	0.000605224	0.004234359
Apoa2	-1.294547671	0.163324032	0.305243062
Upk1a	-1.291140886	0.131540211	0.261353591
Gm2027	-1.291082193	0.138515916	0.271112177
Ccdc154	-1.288990788	0.17113205	0.316093735
Gbx2	-1.286130026	0.19014168	0.340473873
Rpl39l	-1.282425179	0.158835152	0.299188234
Rnf208	-1.282425179	0.178615711	0.325481291
Pla1a	-1.278500027	0.095519001	0.208350045
B230319C09Rik	-1.270974072	0.135348235	0.266740779
Bcl11a	-1.270974072	0.240108464	0.402919378
Amz1	-1.270717738	0.000130612	0.001227368
2010204K13Rik	-1.270693418	0.017439325	0.058025861
Fbxo43	-1.269978728	0.084777822	0.191633201
Hsd11b1	-1.26992722	0.071738706	0.169452861
Tcte2	-1.269874813	0.043957421	0.117106339
Gpr62	-1.266174681	0.140174	0.273400423
B430319G15Rik	-1.266174681	0.160843222	0.301952322
Cpsf4l	-1.264726411	0.189813823	0.340022919
Ccdc11	-1.264726411	0.241666256	0.404537747
Srgap1	-1.259854678	0.236681248	0.398797798
Nr3c2	-1.259403632	0.11547494	0.239314011
Tubb1	-1.253154431	0.13549211	0.266945915
G6pd2	-1.251296967	0.314968055	0.483919891
Mvd	-1.247075366	2.26E-09	1.19E-07
Ufsp1	-1.246440853	0.005323044	0.023442707
Myoz3	-1.242343047	0.118881465	0.243701555
Dhcr24	-1.239899948	1.49E-11	1.54E-09
Tmem255a	-1.238860217	0.123317966	0.249856344
Adcyap1r1	-1.235007069	0.133439932	0.264104786
Tm7sf2	-1.23165767	1.22E-07	3.62E-06
Slc16a9	-1.230809777	0.078741478	0.181614281
Pomc	-1.222516496	0.14879104	0.285150953
Eif4ebp1	-1.218479949	1.08E-09	6.24E-08
Gm14204	-1.215555527	0.103244356	0.220050193
C030016D13Rik	-1.214938932	0.135662037	0.267172727
3110070M22Rik	-1.210761519	0.163125822	0.305101296
Mrgpre	-1.208196119	4.82E-05	0.000549531
Ptger2	-1.208109624	0.001005541	0.006331938
Ifi27	-1.205143831	0.0001397	0.001300022
Lrrc73	-1.204745072	0.131581956	0.261391306
Serinc4	-1.196730985	0.145146127	0.280085275
Nol3	-1.194906421	0.062309158	0.152355428
Mfsd2b	-1.194534361	0.17611894	0.322684334
Atf4	-1.190977933	1.79E-11	1.81E-09
Orm2	-1.183539327	0.247967606	0.412134632
Gm6402	-1.182041645	0.018193595	0.059882229
Psap	-1.181389394	4.62E-13	9.83E-11
Matn2	-1.180327329	2.23E-05	0.000297586
Mmp28	-1.178024486	0.00447884	0.020453665
Vnn3	-1.173208554	0.121220611	0.246987454
Kif27	-1.173174967	0.037885252	0.104519366
Prss50	-1.172088608	0.007245946	0.029876924
Abtb2	-1.17119102	0.003163519	0.015612823
Cdkn2b	-1.164648348	0.002348778	0.01233591
Ly75	-1.162423263	0.004179112	0.019397958
Mir7062	-1.160947717	0.277427871	0.445205047
Lrrc27	-1.157131954	9.73E-09	4.20E-07
Cyb5r1	-1.155523721	1.13E-13	3.84E-11

Adamts15	-1.153787135	1.97E-08	7.62E-07
Dzank1	-1.149610114	0.213735802	0.370304064
Plcb1	-1.146022033	0.23231701	0.393569241
Neur1a	-1.141590069	0.002130896	0.011433226
A330035P11Rik	-1.140455838	0.108162472	0.227925913
Gclm	-1.13877809	2.87E-06	5.58E-05
2410114N07Rik	-1.135952551	0.264492224	0.430626201
Tnn	-1.135952551	0.275207448	0.442806804
Ehd3	-1.135467585	0.228018519	0.388494223
Snord91a	-1.133354992	0.323309742	0.491954832
Gm10814	-1.130872275	0.068394575	0.163510921
Crybb1	-1.129717458	0.221593298	0.380041065
Pdpn	-1.12960886	7.43E-07	1.75E-05
Rabac1	-1.129313086	3.59E-10	2.39E-08
AA543186	-1.129263521	0.045837567	0.120654044
Zbp2	-1.126596071	0.228852402	0.389469928
Cd1d1	-1.123799328	9.27E-06	0.00014578
Fbln5	-1.123327359	0.034163762	0.096738452
1810021B22Rik	-1.123079911	0.020958865	0.066788652
E330023G01Rik	-1.118644341	0.191818927	0.342654178
Scd2	-1.117299844	3.63E-07	9.32E-06
Glrp1	-1.116622378	2.60E-05	0.000337463
Trem1	-1.114818084	0.019074582	0.06205135
Ccdc116	-1.114579167	0.24595365	0.409790418
Man2c1os	-1.112968028	0.067447899	0.162023007
Fahd1	-1.108322636	0.000705792	0.004800317
Astn2	-1.102681904	0.196368573	0.348646452
B330016D10Rik	-1.09826161	0.044974078	0.119060542
Tet1	-1.096375812	0.243923876	0.407523993
Etold2	-1.095041316	0.067237631	0.161695658
Acss2	-1.094435133	5.71E-08	1.86E-06
Mfge8	-1.094035087	4.81E-11	4.19E-09
Eno1	-1.091026712	0.169777582	0.314240741
Snord72	-1.087851235	0.208079102	0.363474807
Al847159	-1.086956023	0.146244547	0.28167871
Tnfrsf22	-1.08672244	3.65E-05	0.000439659
Gm15663	-1.085028484	0.026574252	0.079643022
Papss2	-1.081948157	0.000637199	0.004416618
Uqcrq	-1.079318941	3.32E-07	8.66E-06
Mcoln3	-1.078243432	0.00157715	0.008963902
4933439K11Rik	-1.077176077	0.02952081	0.08641792
Pkd2l2	-1.075022187	0.178867896	0.325707831
Lss	-1.074412376	5.97E-08	1.93E-06
Klra3	-1.068496475	0.044943565	0.11902461
A830052D11Rik	-1.068165264	0.253265502	0.41828551
Klf4	-1.058355819	6.99E-09	3.19E-07
Pcdhga5	-1.055854908	0.057564635	0.143512755
Ppp1r32	-1.05413863	0.31948853	0.487707621
Dlec1	-1.053528555	0.183083955	0.331194877
Ugt1a6b	-1.053227789	0.110599806	0.231788037
Gm10789	-1.052487693	0.267796239	0.434214322
Emb	-1.051968187	5.49E-06	9.61E-05
Sars	-1.05048034	1.60E-14	8.68E-12
Gm5617	-1.045591954	0.000201261	0.00175144
Adam33	-1.044861356	0.000266739	0.002209486
Ttc25	-1.042744044	0.303029909	0.471183613
Gpr4	-1.041375568	0.258593204	0.424472441
Syt5	-1.040360329	0.319022711	0.487304014
Plp1	-1.039835051	0.164649081	0.307291519

2210417A02Rik	-1.038484364	0.274146173	0.441417046
Ccdc103	-1.034929844	0.278416393	0.446257713
Gm14023	-1.03345362	0.240966992	0.403721984
Aoah	-1.032671111	3.20E-09	1.60E-07
Igfbp7	-1.031439534	0.116444659	0.240667976
Mfsd2a	-1.030886068	0.303338181	0.471449508
Extl1	-1.030439527	0.16173231	0.303112551
Fasn	-1.03013142	3.59E-10	2.39E-08
4930451G09Rik	-1.027126453	0.278656626	0.446429472
Cp	-1.024480591	0.009513159	0.036588442
Reep2	-1.024203342	0.29497364	0.46274843
Itih5	-1.024109831	0.291684334	0.459456753
Gpr111	-1.022515119	0.359039963	0.52793746
Ctsd	-1.022186361	1.15E-11	1.28E-09
Cldn12	-1.021082667	0.000590293	0.004155896
Murc	-1.01775597	0.31561319	0.484356518
Sstr5	-1.01775597	0.387631245	0.556382893
Usp17la	-1.015978082	0.084600275	0.191450342
Krt222	-1.014344099	0.351720195	0.520333097
Scpep1os	-1.011553844	0.087217681	0.195420616
Lck	-1.010483519	0.045714741	0.120491801
Tenm4	-1.010312318	0.308587646	0.477341512
Mettl1	-1.00870235	1.23E-05	0.000183862
1700023L04Rik	-1.006085999	0.318231221	0.486538083
Shmt2	-1.004694311	8.46E-11	6.92E-09
Ntng2	-1.003120698	0.023898788	0.07382547
Tlcd1	-1.001507622	0.019193376	0.062362208
Dennd3	-1.001086795	0.038987226	0.106616995
AB041803	-1.000258708	0.283586924	0.451685807
Nrcam	1.000460867	0.096149518	0.209269074
Efcab11	1.000792921	0.00019515	0.001708234
Mtfr2	1.000936407	0.000338993	0.002675854
Cdbl	1.003400224	0.003663596	0.017482858
Tmem240	1.004285689	0.12281158	0.249207408
Rbl1	1.005636167	5.74E-09	2.67E-07
Cks1b	1.006346364	3.39E-07	8.80E-06
Mbnl3	1.007812354	9.13E-06	0.000144356
Gm9159	1.008339537	0.000172667	0.001548806
Zfand4	1.008712617	1.30E-06	2.86E-05
Nhs1	1.008801146	0.001746501	0.009700454
Phtf1os	1.009279845	0.048892441	0.127074891
Dnajc9	1.013419841	9.26E-09	4.02E-07
A930015D03Rik	1.014116649	0.240861158	0.403610874
Igf2bp2	1.014335192	9.77E-06	0.000152373
Lcat	1.014354297	0.167713489	0.311494438
Enpp5	1.015222814	0.077410563	0.179438995
Snord47	1.015237587	0.250406041	0.415044302
Igsf3	1.015306608	0.068629748	0.163927126
Sptbn2	1.015504456	0.05217681	0.133562743
Gm5141	1.015508632	0.000665378	0.004571788
Rad51b	1.017116325	0.000127177	0.001200131
Cchcr1	1.018412054	2.10E-07	5.83E-06
Gadd45b	1.019085478	7.93E-08	2.47E-06
Clec4a4	1.019394389	0.287224785	0.454781049
Usp49	1.019641319	9.69E-08	2.95E-06
Nrm	1.019857495	2.16E-08	8.21E-07
Gpr183	1.019913998	1.45E-08	5.91E-07
Clec1b	1.021083218	0.047107732	0.123320066
Fen1	1.021859744	1.28E-10	9.86E-09

Gpr18	1.022286064	0.066494797	0.16039793
Ctnnal1	1.022441539	0.00135715	0.007977047
9230114K14Rik	1.02360324	0.001087013	0.006721947
Incenp	1.023816593	1.00E-12	1.72E-10
Clec2i	1.024937255	0.027155278	0.080833336
Sult1a1	1.025672354	0.006509065	0.02751028
Mcm4	1.026074356	9.38E-10	5.55E-08
Ifitm5	1.026649043	0.157559282	0.297661271
4930440119Rik	1.027050838	0.323230325	0.491953657
Cntln	1.027902607	8.45E-09	3.73E-07
Loxl3	1.028968344	3.74E-06	6.96E-05
Cyp4f18	1.029698785	4.89E-06	8.70E-05
Tonsl	1.033513612	1.80E-09	9.74E-08
Enah	1.034077443	0.032424161	0.092851007
Wdr76	1.036884396	2.21E-07	6.10E-06
Kcnj10	1.037001139	0.000143978	0.001332441
Oscp1	1.037371019	0.000894781	0.005777314
Slc17a7	1.037930325	0.194429217	0.346119084
Bcl6b	1.038237273	0.033973528	0.096403207
Kitl	1.038814471	1.74E-06	3.65E-05
Snord95	1.038828006	0.201657587	0.354890906
BC068157	1.038901853	0.213362871	0.370055107
2410004P03Rik	1.039238319	0.097790185	0.211708155
1700123I01Rik	1.039775496	0.139060401	0.271903891
Dek	1.039827921	4.76E-11	4.17E-09
Gm11944	1.040409205	0.083001538	0.188779261
Stk32a	1.041028939	0.19820325	0.350651207
Csrp2	1.041445257	0.000513011	0.003697147
Tfcp2l1	1.042432563	0.138359189	0.270844925
A430093F15Rik	1.0428962	0.201245285	0.354444216
Plekha6	1.043106867	0.213202584	0.369824907
Neb	1.043593774	0.178809556	0.325657632
Gimap8	1.044468936	0.290407885	0.458316545
Rad18	1.045023318	2.39E-08	8.88E-07
Shmt1	1.045163365	4.32E-05	0.000501931
Cdc6	1.045273508	2.83E-05	0.000361125
Gm16897	1.045596595	0.182060097	0.330069741
Wfdc18	1.046815976	0.27709709	0.444887036
2310014L17Rik	1.047562302	0.118193244	0.242996039
Ooep	1.048240702	0.205550474	0.360089009
Trim59	1.048475746	1.82E-10	1.37E-08
Ank1	1.048503239	2.03E-05	0.000273892
Nup155	1.048574161	8.83E-10	5.31E-08
Pou3f2	1.049228084	0.139963549	0.273111799
Cntf	1.049228084	0.239031071	0.401999993
Adh7	1.050710752	0.128390376	0.256876465
Plcb4	1.051053358	1.04E-06	2.36E-05
Fn3k	1.051447141	0.125946141	0.253498014
Gm19557	1.053133244	0.011113975	0.041164348
Ifi205	1.053816933	3.23E-05	0.000401482
Celf5	1.054233448	0.115699717	0.239668803
Slc15a2	1.054871829	0.024122197	0.074242147
Lgi4	1.054915479	0.007664588	0.031176448
Mir3082	1.054933809	0.197161276	0.349498965
Txk	1.055366491	0.046572256	0.122156588
Hic1	1.055865669	0.308156326	0.476839222
Mb21d1	1.056772942	3.18E-06	6.05E-05
Ccdc34	1.056858214	4.42E-08	1.49E-06
H2afv	1.057187517	1.21E-07	3.60E-06

Tnfsf14	1.058477591	9.05E-06	0.000143713
Zbtb46	1.058807819	0.162850335	0.304736144
Sgip1	1.060503201	0.221561292	0.380041065
Rfwd3	1.061906724	6.06E-13	1.25E-10
Sorbs1	1.062932783	0.002979344	0.014873442
Ccdc144b	1.063182631	0.023436757	0.072749905
Fbxo48	1.063377695	0.000486515	0.003551982
Cdc45	1.063608033	6.15E-10	3.84E-08
Gm4980	1.064078656	7.41E-05	0.000777618
Mss51	1.064848431	0.016600814	0.055901209
Hmcn1	1.064949546	0.320979188	0.489289983
Hao1	1.065332811	0.045296942	0.11972418
Lipc	1.06729194	0.038438303	0.105603084
Pbx4	1.067771243	0.077019324	0.17868643
Omp	1.068237363	0.044531192	0.118282674
Al427809	1.068710842	0.005221986	0.023088576
Wdr90	1.069254447	2.22E-08	8.37E-07
Rbpms2	1.069655269	0.233230447	0.394668916
Haus3	1.070154407	2.38E-08	8.87E-07
Cenpt	1.070885475	4.88E-07	1.22E-05
Gm5643	1.071412755	0.294312695	0.462284778
Nfatc2ip	1.071423675	7.02E-09	3.19E-07
Mbd4	1.071974022	2.61E-07	7.04E-06
Syt8	1.072002358	0.053696756	0.136365777
Gm20125	1.072381672	0.341617083	0.510371814
F630206G17Rik	1.072915665	0.194517509	0.346227357
Tjp1	1.072915665	0.250365662	0.415028638
Ifnlr1	1.072915665	0.253491646	0.418588467
Hist1h2bn	1.072915665	0.301446882	0.469761433
Siglech	1.072915665	0.329085285	0.497374299
C730036E19Rik	1.072915665	0.347790197	0.516212614
Rufy4	1.072915665	0.360542965	0.529277546
Sox9	1.072915665	0.468106301	0.628322973
Klhl3	1.073147891	0.010910256	0.040555325
Tmem45b	1.073168514	0.007440392	0.030504924
Slc14a1	1.07322339	0.178613299	0.325481291
Cdk15	1.073516481	0.005041592	0.022423971
Lsr	1.076818978	5.00E-08	1.65E-06
BC025920	1.076939256	0.188385313	0.33796023
Rtkn	1.077384333	0.167196744	0.310835842
Zfp382	1.077684754	2.32E-06	4.67E-05
Diras1	1.077845396	0.175876169	0.322371577
Elmo3	1.077936328	0.020442287	0.065547205
Mcm8	1.08029316	2.40E-08	8.91E-07
Dhfr	1.080347541	3.43E-05	0.000419817
BC051142	1.082164073	0.266312309	0.432435246
1700019L03Rik	1.082235007	0.276339264	0.444201795
Cnih2	1.082235007	0.281391938	0.449202761
Dok7	1.082235007	0.355455853	0.524391171
Dtl	1.082730217	7.37E-05	0.000774038
Arhgap19	1.082740274	3.66E-11	3.35E-09
Cxcl10	1.085447528	9.70E-05	0.000962218
Zfp85os	1.085570908	0.122148765	0.248304585
Slc7a3	1.085989694	0.293435066	0.461347997
1600016N20Rik	1.086229186	0.223787065	0.382889025
Sh2d4a	1.086594407	0.2897249	0.457551893
Msx3	1.086767957	0.142395453	0.276527436
Atp7b	1.086767957	0.194870311	0.346674004
Clec2h	1.086777056	0.252863193	0.417878225

Pola1	1.086933498	4.70E-09	2.25E-07
Htr2b	1.087196327	0.007029613	0.029168329
Ccne1	1.087574698	2.30E-09	1.21E-07
Poc1a	1.087582323	1.34E-08	5.51E-07
Nynrin	1.088224102	0.000259769	0.00216646
Hesx1	1.088308553	0.066657641	0.160675208
4933439C10Rik	1.088378632	0.000318713	0.002548751
Cep128	1.08850011	4.11E-10	2.67E-08
Cmah	1.088987863	4.09E-08	1.39E-06
Chd5	1.089293738	0.048131817	0.125560041
Nmral1	1.089328834	1.42E-08	5.78E-07
Myo1a	1.09062193	0.197730989	0.350231029
Trim29	1.091762041	0.118089915	0.24293248
Mcm5	1.093263712	8.68E-11	7.06E-09
Pkmyt1	1.093328637	3.94E-08	1.35E-06
D730005E14Rik	1.093510788	6.23E-05	0.000677353
Gpr21	1.093568512	0.268403491	0.434778664
Tnfsf15	1.093635295	0.00042528	0.003195311
Helis	1.09398945	1.94E-05	0.000267349
Pxylp1	1.094607125	0.000341977	0.002693069
1700128F08Rik	1.09474381	0.265371961	0.431691884
4930525G20Rik	1.095237055	0.282427745	0.450588267
Chaf1a	1.095955914	9.26E-10	5.50E-08
9430015G10Rik	1.096310587	7.05E-08	2.22E-06
Frmf6	1.096812369	0.000127267	0.001200137
Tm4sf19	1.097440799	0.000762399	0.005094933
Mgap	1.098221329	0.296172564	0.464209578
Zfp365	1.098280111	0.023489313	0.072896182
Psip1	1.09919281	2.35E-09	1.23E-07
Dock3	1.102124536	0.025115736	0.07647562
Ndnf	1.103025996	0.010250362	0.038648385
Fanca	1.103118401	2.37E-10	1.70E-08
Cks2	1.103323508	3.94E-08	1.35E-06
C5ar2	1.103396702	5.66E-09	2.64E-07
Oip5	1.103430744	2.81E-07	7.50E-06
Gm14827	1.103644402	0.238450161	0.401224164
Nbl1	1.103644402	0.284164161	0.452080059
Mkrn3	1.103644402	0.333642796	0.502711956
Arhgap8	1.103644402	0.335239503	0.504268456
Xlr4c	1.104669979	0.251215491	0.415983535
Mast1	1.105648195	0.116272777	0.240595898
St3gal6	1.106374977	0.000243017	0.002054849
Hap1	1.10870395	0.001798106	0.009927198
Zfp112	1.109716818	0.128477404	0.256999091
Proca1	1.110659257	0.15839395	0.298774424
Ccdc14	1.110711313	1.27E-06	2.80E-05
Tubb5	1.110958042	1.63E-13	4.96E-11
Traf4	1.11140808	0.02181111	0.06899653
Chrm3	1.111660316	0.134166376	0.265112443
Fancb	1.112275254	1.27E-06	2.80E-05
Calml4	1.113121878	0.039844448	0.108518905
Vegfc	1.113935618	0.000398238	0.003022601
Sh2d1b1	1.114672916	7.40E-07	1.75E-05
Ube2t	1.115372496	3.20E-08	1.13E-06
BC035044	1.117323144	0.274070487	0.441417046
Mir221	1.117640991	0.199763276	0.35262393
Cox4i2	1.119056265	0.332566921	0.501541416
Prdm11	1.119704302	0.040704926	0.110436595
Tcf19	1.120275033	2.89E-09	1.46E-07

Cspg4	1.120412738	6.05E-07	1.46E-05
Srd5a1	1.122435592	5.94E-05	0.000651194
Sptb	1.122613073	0.005765132	0.025076922
Strip2	1.123544527	0.010693569	0.039937936
Sdc1	1.123688611	1.07E-05	0.000164533
F630111L10Rik	1.124456515	0.07859682	0.18135875
Zfp808	1.125549369	0.000385747	0.002951163
Slc5a11	1.125638815	0.019485717	0.063113406
Hspa1l	1.125641156	0.037618096	0.104081903
Nr4a2	1.125718558	0.034587132	0.09750537
Gm12657	1.125998721	0.080393062	0.184270154
Lysmd2	1.126189934	0.169107042	0.313549001
Ak4	1.126847815	0.050814014	0.130852668
Gm10941	1.126937542	0.188342506	0.33796023
Atad2	1.12771394	1.58E-09	8.63E-08
Lrrc39	1.128353291	0.029924896	0.087390516
Ypel1	1.12914174	0.03410162	0.096684901
Doc2a	1.129608725	0.154948807	0.293722
Prr7	1.129677067	0.145096141	0.2800295
Nmrk2	1.130177908	0.176219111	0.322779724
Ska2	1.130229531	3.07E-10	2.11E-08
Ptprk	1.131471359	0.341518908	0.510338778
Spin4	1.131551634	0.004779205	0.021557027
Arc	1.132329825	0.000962992	0.006131825
Mad2l1	1.134724602	1.35E-10	1.04E-08
Xrcc2	1.134923586	5.14E-08	1.69E-06
2610020H08Rik	1.137443208	4.95E-05	0.00055986
Tlr9	1.137859854	8.72E-08	2.68E-06
Dusp9	1.139172792	0.00129418	0.007680936
4930427A07Rik	1.139956231	2.53E-09	1.31E-07
Lipg	1.142007986	0.009508241	0.036580013
Dbpht2	1.143056205	0.305660854	0.47390676
Whsc1	1.144731515	2.42E-11	2.37E-09
Plk4	1.14525906	1.25E-11	1.35E-09
Slc18a1	1.146949111	0.016666849	0.056081355
Ddn	1.149129806	0.192981915	0.34418186
Abca4	1.149129806	0.219174695	0.377016438
Gpr156	1.149129806	0.378491037	0.547657022
Sass6	1.149525713	5.65E-11	4.82E-09
Pmf1	1.151946199	7.16E-10	4.41E-08
Dlg3	1.152377788	2.66E-06	5.26E-05
Cx3cl1	1.153769681	0.032772236	0.093687821
Kif18a	1.154124965	1.89E-06	3.91E-05
Mn1	1.155557724	0.061399109	0.150561671
Maneal	1.155565009	0.35020032	0.518866557
Mcm7	1.155740551	6.32E-11	5.30E-09
Prdm1	1.157390236	1.04E-05	0.000160547
Pde6g	1.157572921	0.28451727	0.452362232
Adcy3	1.158029677	4.30E-05	0.000500232
Serpina3g	1.158232605	0.043802183	0.116808722
D630023F18Rik	1.158884245	0.092507225	0.203868361
Skida1	1.159018566	0.152173868	0.289607309
Rgs12	1.159158477	6.09E-05	0.000663453
Smc4	1.16150445	2.21E-13	5.92E-11
Chrna5	1.162105871	0.28431066	0.45219447
Bora	1.162476906	1.69E-08	6.69E-07
Hyls1	1.162994017	2.90E-06	5.63E-05
Tns4	1.163133589	0.001878514	0.010305716
Olf920	1.164908231	0.043955179	0.117106339

Neu3	1.165656558	5.01E-05	0.000564984
Rad9b	1.166245887	0.078082342	0.18049732
Btbd8	1.166546622	0.031183026	0.08996883
Phf19	1.167027556	2.83E-09	1.44E-07
Tlr1	1.168608783	1.71E-09	9.30E-08
6720489N17Rik	1.168620965	5.38E-05	0.000599581
Xrcc5	1.170785727	0.001154008	0.007019778
Lin9	1.170809446	1.52E-09	8.35E-08
Pfkfb1	1.17191536	0.000275692	0.002268247
Lox	1.172498586	0.002759123	0.014050667
Gm5577	1.172823739	0.016344639	0.055222382
4930579G24Rik	1.17332613	2.12E-09	1.13E-07
Hmgb3	1.173640741	5.52E-07	1.36E-05
Hirip3	1.17583396	1.31E-09	7.33E-08
Xkrx	1.177113165	0.104709663	0.222642841
Rasd2	1.178154706	0.062329803	0.152360687
Tbx5	1.178556786	0.19454164	0.346227357
Olfm1	1.180353769	3.84E-08	1.33E-06
Ncapd3	1.182902726	2.52E-11	2.44E-09
Rfc5	1.183872017	2.00E-11	2.00E-09
Ssc5d	1.184906415	2.59E-08	9.40E-07
Ankrd37	1.185888257	0.023780219	0.073594732
Mmp15	1.186023611	0.172721997	0.318126012
Wdhd1	1.186235863	9.56E-09	4.14E-07
Hist1h2bm	1.186677613	0.288063165	0.455693899
Pacrg	1.188698232	0.001637183	0.0091999
Gm10416	1.189551621	0.026543272	0.079594227
Prim1	1.189820233	5.73E-10	3.59E-08
Tyr	1.190494655	0.009646623	0.036932392
Pla2r1	1.193541303	2.27E-06	4.57E-05
Mmp24	1.194336065	0.139944501	0.273111799
4921529L05Rik	1.19502474	0.022043973	0.069536454
Btbd11	1.195316519	0.003818266	0.018022272
Lmn2	1.195487337	3.51E-11	3.27E-09
Fancm	1.19587946	2.84E-10	1.97E-08
Gtsf1	1.19700404	0.234281178	0.395946994
Fam46b	1.197306043	0.207785452	0.363198252
Folr1	1.199485236	0.00203392	0.011023093
Pde1c	1.199596463	0.00439436	0.02012557
Snora43	1.199969657	0.151007581	0.288041325
Trim66	1.200689353	0.105353455	0.223779016
Stac3	1.201457564	0.185015584	0.333654632
Ezh2	1.201764071	1.24E-11	1.35E-09
Tgm1	1.202138018	0.012209337	0.04397996
Eri2	1.203424941	5.56E-09	2.60E-07
Pvrl3	1.204771774	0.121530726	0.247431469
Gm6377	1.206527999	9.19E-06	0.000145121
Fos	1.206575684	6.78E-09	3.11E-07
Fcrls	1.209236622	3.92E-10	2.58E-08
Cd79b	1.209368177	0.030433829	0.088415576
Hspb7	1.209512844	0.279823334	0.447605229
Atf7ip2	1.209817018	0.030422493	0.088401782
Sacs	1.209981839	0.000620379	0.004323766
E030024N20Rik	1.21027809	0.075831692	0.176640041
Cdk1	1.211854588	3.67E-11	3.35E-09
Fbxl22	1.212567819	0.111866394	0.233530669
4930558J18Rik	1.212868374	0.014007487	0.04897511
Myo5c	1.215399889	0.131058059	0.260929985
Net1	1.21600234	3.88E-08	1.34E-06

Nsl1	1.21663902	1.95E-10	1.46E-08
Adm	1.216811176	0.203851375	0.357774936
Eno4	1.218324254	0.250243385	0.414877191
Cpt1c	1.218498313	0.020379831	0.065362559
7530416G11Rik	1.218795151	0.123875914	0.250673409
Cenpk	1.219214123	3.97E-07	1.01E-05
Hp	1.219718709	0.017927189	0.059223277
Klhl23	1.22061086	0.000396534	0.003012936
Col14a1	1.222612992	0.055901987	0.140469876
Ets1	1.222980625	1.30E-08	5.41E-07
Aurka	1.223232538	5.45E-10	3.47E-08
Lrig1	1.224676918	0.007973732	0.032026191
Plxnb3	1.224734073	0.000139842	0.001300445
Mmp25	1.225002316	0.000652772	0.004505937
Tomt	1.22660572	0.208688472	0.364207388
Sypl2	1.226681159	0.252687299	0.417690424
Oscar	1.226728726	0.275490248	0.443155555
Celsr2	1.227210792	0.003442349	0.01663003
0610010B08Rik	1.227220063	0.051768465	0.132699336
Siglec15	1.22775567	0.266744566	0.433032341
Fhod3	1.229871776	0.00306117	0.015225291
Dhrs9	1.230494233	6.19E-08	1.99E-06
Siglecg	1.231925248	0.193130864	0.344346941
Mphosph9	1.232753057	1.51E-08	6.11E-07
Nr1h3	1.232789756	3.21E-07	8.40E-06
Cytip	1.233085327	2.36E-07	6.43E-06
Rnf144a	1.234214469	0.015702415	0.053493451
Pdzd2	1.234547127	0.230238871	0.391035996
Cdca8	1.234668696	8.28E-10	5.05E-08
Gsg2	1.235094502	1.98E-10	1.48E-08
Syngr4	1.236060298	0.041099486	0.111203949
Polh	1.23643246	1.03E-11	1.19E-09
Tagln3	1.236532308	0.138294374	0.270757543
Lphn1	1.237046507	0.001226385	0.007340261
Gm7444	1.238446889	0.061372775	0.150532128
Klhl10	1.239415564	0.125134332	0.252545887
Haus5	1.239846411	1.17E-09	6.67E-08
Ccdc36	1.241815274	0.076645175	0.178064682
Pald	1.243580571	8.07E-05	0.000832683
Pif1	1.243742296	9.07E-06	0.000143771
Mmp14	1.244385301	8.59E-07	1.99E-05
Col4a5	1.247625483	4.57E-06	8.26E-05
Gcm2	1.248172816	0.002500038	0.013013194
Enthd1	1.248949909	0.144967331	0.279901671
Tmpo	1.252186185	2.43E-12	3.55E-10
Mir6516	1.253310985	0.056186177	0.140874871
BC055324	1.253780849	6.50E-10	4.04E-08
Ncapg2	1.25466627	1.01E-08	4.33E-07
Tube1	1.255536607	1.45E-06	3.15E-05
Lig1	1.256169786	2.55E-12	3.60E-10
Asf1b	1.256330401	1.03E-10	8.29E-09
Prob1	1.256515897	0.049939377	0.129095839
Syne2	1.257217162	1.21E-09	6.84E-08
Spdl1	1.257708586	8.67E-13	1.57E-10
Hpgd	1.257961232	4.76E-07	1.20E-05
Cenpn	1.259289705	8.20E-09	3.66E-07
Tex14	1.259642185	0.011862753	0.043175014
4933408B17Rik	1.260012816	0.089860951	0.200028367
Tm4sf5	1.260319534	0.099153969	0.214044479

4930529C04Rik	1.260830686	0.197896401	0.350332497
Amot	1.261362688	6.54E-06	0.000110424
Uhrf1	1.262665408	7.06E-11	5.85E-09
Zmynd15	1.263162372	4.09E-08	1.39E-06
Orc1	1.26318761	1.85E-05	0.00025601
1700001L05Rik	1.265019517	0.000761674	0.005092626
Gins3	1.265381093	3.00E-09	1.51E-07
Xlr3b	1.26743138	0.096214577	0.209335836
Haus6	1.268662634	6.64E-08	2.11E-06
Alms1	1.268700752	1.35E-07	3.97E-06
Gimap6	1.272109088	0.118362593	0.243164238
Ccl8	1.272608091	0.131397555	0.261353591
Car15	1.27426436	0.090759484	0.201306036
Col4a1	1.274668947	6.11E-05	0.00066529
Tiam2	1.276025278	0.000700644	0.004777408
Acsbg1	1.278969984	0.000712563	0.004834119
Gm4951	1.283195835	1.88E-07	5.30E-06
B230312C02Rik	1.283442867	0.042781559	0.114794189
Tyms	1.283681108	3.96E-10	2.59E-08
Cyp39a1	1.283948241	0.04695107	0.12296696
Ulbp1	1.284913621	3.72E-08	1.29E-06
Col4a6	1.285496701	0.00015818	0.001441017
Pidd1	1.285769465	2.66E-08	9.61E-07
Cdkn2c	1.285828651	1.15E-10	8.94E-09
Slc25a27	1.285845743	0.007842627	0.031662185
Serpinb6b	1.287295049	3.59E-06	6.72E-05
Itga9	1.287311256	1.86E-06	3.85E-05
Cep72	1.288706707	5.92E-07	1.43E-05
Zgrf1	1.290814797	5.96E-08	1.93E-06
Dsn1	1.292045033	3.66E-09	1.80E-07
Pask	1.293423069	9.06E-09	3.95E-07
Kif17	1.293671463	0.113736179	0.236734262
Sema4f	1.295036893	0.085015912	0.192026346
Tmc3	1.296473933	0.009941219	0.037726589
Penk	1.297605809	0.031585992	0.090955456
Ect2	1.297974947	2.48E-11	2.41E-09
Slc5a3	1.298274799	9.93E-08	3.02E-06
Fam212b	1.298664894	8.65E-06	0.00013835
Tnfrsf4	1.299354954	0.070325023	0.167025042
Fam167b	1.299719891	0.112271295	0.234157368
Gfra2	1.301266163	0.020465983	0.065607507
Nek2	1.301386405	2.18E-10	1.58E-08
G2e3	1.30212715	1.04E-09	6.06E-08
Fsd1l	1.302193406	2.80E-09	1.43E-07
Tacc3	1.303525202	6.61E-13	1.30E-10
Pole	1.304524763	1.11E-11	1.25E-09
Al606473	1.305162015	0.282207293	0.450290091
Trim43b	1.307872761	0.15082503	0.287815853
Pcdhgc4	1.311091135	0.000471666	0.003470003
Mnd1	1.31140695	0.005812521	0.025233974
Slc9b2	1.311416185	2.71E-06	5.33E-05
Lancl3	1.3122008	0.004213809	0.019511768
Cep112	1.313532309	0.000357815	0.00278349
Cdc7	1.317469027	8.94E-10	5.36E-08
Ccdc18	1.317734685	9.67E-06	0.000151069
Cenpa	1.31894391	1.54E-10	1.17E-08
Itgax	1.321273563	5.77E-07	1.41E-05
D830031N03Rik	1.321901663	0.004008949	0.018757352
Prr5	1.324425131	0.150619433	0.287620674

Rab33a	1.324429306	0.078075689	0.18049732
Gm3893	1.324614768	0.166601639	0.310030148
Rcvrn	1.324614768	0.203662075	0.357527653
Dbn1	1.325000487	0.019241573	0.062485474
Dpy19l3	1.325387104	6.73E-06	0.000112843
5031426D15Rik	1.32668584	0.092005776	0.203030012
Zbtbd6	1.327501688	7.58E-05	0.000791125
Cdc20	1.327918065	1.48E-11	1.54E-09
Ctla2b	1.327936203	1.03E-10	8.29E-09
Slc4a11	1.328407344	0.158320509	0.298678885
Ccdc141	1.3291109	0.122756244	0.249207408
Fnbp1l	1.329183309	2.03E-05	0.000273892
Tvp23a	1.330201589	0.089228326	0.198896165
Rad54l	1.330494058	3.36E-13	8.20E-11
Exo1	1.330617444	1.42E-09	7.89E-08
Ager	1.332548853	0.040341485	0.109611228
2900092D14Rik	1.332940295	0.139561807	0.272602605
Rgs9bp	1.332940295	0.182762223	0.330880501
Acox1	1.335256481	0.168515901	0.312638584
Gm4841	1.337190417	0.0185496	0.060815313
Nup210	1.337920124	2.68E-10	1.88E-08
Clic6	1.339235343	0.153695453	0.29184085
Frmf7	1.339235343	0.215770253	0.372593106
Lrrn4cl	1.340247315	0.139738622	0.272908247
Spink2	1.340672576	0.138115161	0.270655552
Pkd1l2	1.34274076	2.58E-08	9.40E-07
Arnt2	1.343162821	0.206829054	0.361667849
Prtg	1.343694594	0.139459104	0.272481321
Bmpr1b	1.344416503	0.158814226	0.299188234
Tpx2	1.345765038	3.70E-13	8.86E-11
Ube2c	1.346022109	2.11E-11	2.10E-09
Zdhhc23	1.346052807	0.164987024	0.30753728
Vwa7	1.349853551	0.001037379	0.006492811
Slc36a2	1.350045088	0.034574856	0.09750537
Trip13	1.350102342	3.66E-11	3.35E-09
Ramp2	1.350164724	0.248947792	0.413393197
Ccne2	1.350689947	1.17E-06	2.62E-05
Hmgb2	1.35241895	3.92E-12	5.21E-10
Chtf18	1.35259	1.68E-11	1.72E-09
Nr0b2	1.353530846	0.040954032	0.110955411
5730480H06Rik	1.353768957	0.007543234	0.030785481
Lrr1	1.354647037	7.44E-05	0.000780102
Slfn4	1.355329484	3.00E-06	5.77E-05
Adamts17	1.356675901	0.164724348	0.307303772
Hist1h3g	1.356675901	0.168408864	0.312483205
Henmt1	1.356675901	0.183075146	0.331194877
Ptpdc1	1.357792202	4.01E-05	0.000471518
Sh2d2a	1.358102653	0.212518768	0.369115887
Rad54b	1.360387571	4.07E-10	2.65E-08
Mcm10	1.360957573	1.72E-11	1.75E-09
Bmpr1a	1.36239633	0.001653588	0.009276545
Lpar1	1.362821557	0.009252177	0.035841503
Mgam	1.36322316	0.061661752	0.151047653
Cenpu	1.363842016	1.99E-08	7.64E-07
Cx3cr1	1.364987045	3.56E-08	1.25E-06
Diap3	1.365378539	2.41E-10	1.72E-08
Ccnb1	1.366662725	1.07E-10	8.46E-09
Cdca3	1.366669592	4.47E-10	2.88E-08
Traip	1.366879618	4.92E-07	1.23E-05

Col7a1	1.366880325	0.091888836	0.202879415
Eme1	1.367164684	3.65E-10	2.41E-08
Rab3b	1.368723175	0.035201403	0.098766074
Rad51	1.369257122	3.99E-12	5.25E-10
Masp1	1.369985064	0.105360744	0.223779016
Mmp27	1.370076786	0.004359553	0.019993452
Zfp820	1.370099809	0.002543478	0.013193247
Ms4a4b	1.370797156	0.000150162	0.001378267
Kifc1	1.371498645	2.52E-12	3.60E-10
Brca2	1.37173426	1.05E-10	8.35E-09
Sgol1	1.37320942	4.68E-11	4.14E-09
Gatm	1.374369579	4.13E-11	3.67E-09
Cmklr1	1.375012366	2.79E-05	0.000357091
Gm10069	1.376846878	0.002467662	0.012889667
Mpz	1.381102693	0.146356689	0.281824054
Clhc1	1.382692873	7.35E-10	4.51E-08
Ccdc39	1.383943407	0.08583363	0.193210661
Cxcl3	1.385865723	0.125189888	0.252602519
Smim5	1.388406769	0.239490315	0.402419302
Pi15	1.389209455	0.05725979	0.142925804
Mybl2	1.391763445	2.53E-09	1.31E-07
Tspan15	1.39192563	0.081762645	0.18666844
Iigp1	1.393456341	1.19E-08	5.03E-07
Rad51c	1.393543618	3.13E-06	5.98E-05
Recql4	1.395023914	4.81E-07	1.20E-05
Il1rn	1.397749291	4.40E-08	1.48E-06
Cenph	1.398165306	1.16E-08	4.93E-07
Cenpl	1.400109391	7.08E-08	2.23E-06
Blm	1.402542492	1.72E-12	2.62E-10
2610028H24Rik	1.403895385	0.086800173	0.194871711
Trem14	1.405755228	0.003225202	0.015818341
Cdkl4	1.40606251	0.078040068	0.180492878
Pla2g5	1.40763591	0.021514898	0.068236448
Plekha4	1.409731218	0.01950869	0.063122452
Slc3a1	1.410174388	0.159461305	0.30002962
Gm17762	1.413512273	0.12674751	0.254386536
Neur1b	1.417122	3.28E-10	2.23E-08
Ly6a	1.417217936	5.71E-07	1.40E-05
Cit	1.41918168	2.91E-12	4.03E-10
Pdlim5	1.421419118	4.93E-12	6.31E-10
Parpbp	1.421446932	4.19E-09	2.05E-07
Col15a1	1.421683672	4.98E-06	8.84E-05
4933408J17Rik	1.42187321	0.206683186	0.361506997
Met	1.424006033	0.001356772	0.007977047
Knstrn	1.424560569	9.30E-12	1.10E-09
Brip1	1.425518074	1.81E-13	5.11E-11
Mir1249	1.425621633	0.160114993	0.300964153
Slfn9	1.426416411	6.24E-11	5.27E-09
Polq	1.426641993	9.27E-12	1.10E-09
Rrm1	1.428532604	1.62E-14	8.68E-12
Rdh18-ps	1.42922279	0.008939945	0.034954873
Racgap1	1.436612467	1.14E-13	3.84E-11
Dnmt3aos	1.437156479	0.00173092	0.00963385
Spta1	1.439457471	0.04020846	0.10935495
Mtap7d3	1.440793104	0.064645927	0.156897033
Zfp296	1.440812297	0.000452519	0.003360771
Tmem51os1	1.441434294	0.117182822	0.241510718
Atad5	1.442118589	1.43E-10	1.09E-08
Dynl1f	1.442450935	0.007836079	0.031655443

Kif23	1.443266602	1.65E-12	2.57E-10
Nphp4	1.443269761	5.84E-06	0.000100952
Anln	1.447585265	9.28E-13	1.66E-10
Fam83d	1.44765122	1.13E-09	6.46E-08
Mdfi	1.448660697	0.126274686	0.253738977
Cand2	1.453451012	0.00644909	0.027334282
Nox1	1.456052575	5.79E-05	0.000639381
Kif24	1.457768137	2.64E-12	3.69E-10
Gm10785	1.458636234	0.014775269	0.050955881
1500017E21Rik	1.459505991	0.001672327	0.009358199
BC147527	1.460104659	1.06E-09	6.11E-08
Poln	1.461921812	0.066687276	0.160688914
Abcc9	1.46675304	0.050872798	0.130978909
Stmn1	1.467324406	1.38E-12	2.20E-10
Fbxo5	1.468705518	1.12E-11	1.25E-09
Cacng8	1.470859485	0.002249468	0.011902845
Vangl1	1.471883685	0.134539575	0.265556677
Lag3	1.473231817	0.039208569	0.10713496
Ccnb2	1.473338266	4.03E-13	9.33E-11
Smc2	1.474449504	1.83E-13	5.11E-11
Gtse1	1.477872188	4.11E-13	9.34E-11
Hmmr	1.478684903	2.32E-13	6.10E-11
Hist1h1e	1.480191572	0.08508313	0.192113498
Fanci	1.480703648	4.92E-12	6.31E-10
Il1r2	1.480768046	0.163229686	0.305115645
Troap	1.480869177	2.09E-10	1.53E-08
Trim55	1.481201183	0.160358392	0.301295051
Rep15	1.482649976	0.044545652	0.118297665
Eya4	1.483307517	2.38E-08	8.87E-07
Grik3	1.483519343	0.21882853	0.376565791
Ccrn4l	1.485042523	2.15E-06	4.38E-05
Brca1	1.48564883	1.10E-13	3.84E-11
L3hypdh	1.486173487	0.026945356	0.080426621
Ddx11	1.486465875	5.44E-09	2.55E-07
Gm6307	1.488623162	0.065330376	0.15821482
Hpx	1.4887439	0.131768468	0.261684338
Vcam1	1.489081218	0.033495126	0.095368364
Rasl2-9	1.489493626	0.008974173	0.035017592
Cntd1	1.490057382	0.000838563	0.005481092
E2f8	1.490424627	4.52E-13	9.78E-11
Mis18bp1	1.490634004	6.43E-12	7.84E-10
Gnat3	1.491343929	0.034919106	0.098152384
Ppbp	1.495101225	0.197037162	0.349463611
H2-M2	1.495187379	0.001560972	0.008896558
Gm16523	1.495725144	0.134549508	0.265556677
Ypel4	1.495725144	0.222358742	0.380880647
Dgat2	1.496703405	0.004442371	0.020324642
Espnl	1.496739642	0.098042596	0.212130539
Gm6251	1.496739642	0.146952458	0.28267704
Tnfrsf9	1.498303132	0.014478143	0.050228076
Arhgap33	1.498538919	6.90E-06	0.00011542
Ncaph	1.500998654	7.45E-15	5.87E-12
Dlgap5	1.501585053	6.70E-14	2.50E-11
Myb	1.501746945	0.061275507	0.150415825
2700099C18Rik	1.502590418	1.57E-06	3.36E-05
Art3	1.505823437	0.209732006	0.365458225
Kif2c	1.50659973	1.69E-12	2.61E-10
Ticrr	1.506779894	4.57E-12	5.95E-10
Pla2g4c	1.507309633	0.005217176	0.023088576

Prrg4	1.510127531	3.92E-11	3.50E-09
Fsip1	1.511707005	0.055070369	0.138881654
Prc1	1.512042301	4.38E-13	9.74E-11
Pcyt1b	1.51334187	1.92E-08	7.45E-07
Fam83g	1.513466544	0.126262515	0.253738977
Clspn	1.513497626	8.63E-15	5.87E-12
Ccdc63	1.513654466	0.045477674	0.120059986
H60c	1.514612647	0.172657553	0.318126012
Smtn	1.515676702	3.36E-08	1.18E-06
Ggt7	1.516261669	0.047643399	0.124455278
Zwilch	1.519064328	1.04E-12	1.76E-10
Tgfb3	1.519246925	0.002456316	0.012835401
Adrbk2	1.519808751	7.18E-08	2.26E-06
Cdc25c	1.521496287	8.38E-09	3.72E-07
Gm19510	1.523528413	0.098226121	0.212424869
Pcdh17	1.523528413	0.206479589	0.361245059
BC030867	1.525399916	1.12E-11	1.25E-09
Cbr2	1.525521283	1.23E-05	0.000183862
Cd38	1.52780838	0.101484631	0.217647797
Map1a	1.528272407	0.099998961	0.215391021
Tmem178	1.528818379	0.006106156	0.026170078
Lamc2	1.529222723	0.083103391	0.18888286
Gm14378	1.529555389	0.035259884	0.09890309
Zfp334	1.530859443	0.000619036	0.00431973
Fam170b	1.533197147	0.118662927	0.243402296
Zfp750	1.533717043	0.060167339	0.148252941
Fbn1	1.534156072	0.000305112	0.002461992
Plk1	1.536442108	1.25E-12	2.05E-10
Snora7a	1.536618676	0.153204643	0.291156083
Klhdc8b	1.536686184	0.003734925	0.01771614
Gria3	1.539533922	0.071334562	0.168706115
Arhgef39	1.540061677	2.55E-09	1.32E-07
Flrt3	1.542372931	0.000455113	0.003375989
Kntc1	1.54467755	2.64E-15	2.90E-12
Pecam1	1.544715661	0.184329999	0.33273127
Fpr1	1.547071417	7.52E-05	0.000785668
Spc24	1.549749661	1.19E-08	5.03E-07
Bub1b	1.55225954	7.93E-13	1.50E-10
Mboat2	1.553935844	0.001895917	0.010371509
Tead1	1.556242955	0.082632826	0.188163904
Prss22	1.556242955	0.190419485	0.340780257
Matn3	1.556242955	0.21029965	0.366114556
Casp12	1.556911625	0.068905242	0.164468062
Zfp184	1.557944073	0.093267134	0.205004368
Piwil4	1.558161563	0.045126159	0.119366831
Mns1	1.561854295	7.84E-08	2.45E-06
Gbp4	1.562169501	3.10E-07	8.16E-06
Fancd2	1.563178101	9.86E-13	1.72E-10
Cd5l	1.563835587	1.67E-08	6.63E-07
Plagl1	1.564152522	0.03711463	0.102922343
Cenpi	1.566170256	1.06E-10	8.45E-09
Cenpm	1.566782348	7.40E-07	1.75E-05
Mxd3	1.568513966	8.79E-08	2.70E-06
Bdh2	1.569032379	4.06E-06	7.49E-05
Rbm20	1.569947876	0.035148729	0.098673806
Grin2b	1.57042448	0.10240644	0.218994745
Smo	1.57042448	0.105926898	0.224625954
Lmnb1	1.570539313	1.13E-14	6.89E-12
Wnk2	1.572900409	0.090538818	0.200950317

Mybl1	1.573265159	9.46E-10	5.55E-08
Gfpt2	1.578400333	0.137821777	0.270345042
Ska1	1.580895458	2.35E-08	8.82E-07
Cenpq	1.581287814	2.67E-10	1.88E-08
Kifc5b	1.582942732	2.68E-08	9.66E-07
1110032F04Rik	1.583671767	0.157085921	0.296976045
Foxm1	1.584925545	2.45E-15	2.90E-12
Mmp8	1.584952223	3.98E-05	0.000470203
A930004D18Rik	1.585705606	0.005852329	0.025365117
Rbm3os	1.587424511	0.03361053	0.095636069
Figl1	1.587583322	5.65E-12	7.02E-10
Bard1	1.588568953	9.68E-13	1.71E-10
Kif20b	1.588656936	3.29E-13	8.17E-11
Cep55	1.589021518	2.33E-12	3.44E-10
Prr11	1.590875755	8.63E-14	3.13E-11
Melk	1.591427175	5.47E-12	6.87E-10
Psrc1	1.591734849	5.62E-08	1.83E-06
Cdca2	1.593621362	2.24E-14	1.12E-11
Urah	1.594557155	0.119607372	0.244666361
Nrg2	1.594638245	0.017849602	0.059035369
Zfp781	1.595485152	0.031120437	0.089884879
Gm6682	1.596330392	0.029966528	0.087433395
Nap1l2	1.596508002	0.004660841	0.021136809
Nrip3	1.598852717	0.15501556	0.293769398
Tmem163	1.599228503	0.026048017	0.078495024
Ccdc89	1.599295949	0.107893774	0.227462401
Haao	1.600992063	0.001027425	0.006442533
Ccnf	1.601441239	5.49E-14	2.17E-11
0610038B21Rik	1.602823059	0.066230822	0.159876129
Psg28	1.603174921	0.123100124	0.249453423
Wasf1	1.603380337	0.125335039	0.25279887
5430425K12Rik	1.603536114	0.083074256	0.188848625
Tk1	1.603914203	1.19E-09	6.76E-08
Spns2	1.604198529	0.056833375	0.142125803
Gna14	1.605011876	0.106294893	0.225233445
Folr2	1.607840566	7.79E-13	1.49E-10
A430107P09Rik	1.60887225	0.004396447	0.020128258
C330027C09Rik	1.610036327	1.48E-14	8.63E-12
Ska3	1.610562313	2.04E-10	1.51E-08
4632434I11Rik	1.611049945	8.58E-12	1.03E-09
Xkr5	1.613055284	1.77E-06	3.70E-05
Mei4	1.615960075	0.075077738	0.175407791
C530008M17Rik	1.615960075	0.090321452	0.200732622
Nedd4	1.615960075	0.144965117	0.279901671
9530077C05Rik	1.616771901	0.020881071	0.066556555
Rsg1	1.617966003	0.004539976	0.020672526
Usp43	1.61843193	0.055823431	0.140388175
Rpp25	1.618913847	0.055171669	0.139058721
Kif20a	1.620234753	5.46E-16	7.53E-13
Rnf223	1.620770225	0.086302039	0.194114492
Spc25	1.621920297	1.22E-13	3.99E-11
Tal2	1.622273057	0.000639085	0.004427403
Kif18b	1.622426508	3.24E-12	4.43E-10
Dusp1	1.623791889	1.14E-06	2.55E-05
Ckap2l	1.623899118	4.03E-14	1.69E-11
Ms4a4c	1.624403261	2.92E-06	5.65E-05
Rad51ap1	1.625189824	1.21E-12	2.01E-10
Mmp17	1.625528095	0.041247522	0.111502921
Clcnkb	1.625593156	0.101123488	0.217012007

Cd8a	1.626822738	0.093609614	0.205336667
Ccl24	1.63034636	0.116298411	0.240611838
Tnfsf4	1.630885401	0.002717534	0.013886746
Vsig10	1.633523198	4.55E-06	8.24E-05
Pmaip1	1.635710587	3.53E-10	2.37E-08
Tpbp	1.635757133	0.082176652	0.187350093
Esp1	1.635853985	5.21E-15	4.37E-12
Cenpe	1.636606733	1.36E-13	4.29E-11
Kif22	1.638292106	3.80E-14	1.65E-11
Ncapd2	1.641156775	2.06E-16	4.05E-13
Nuf2	1.644374914	1.82E-13	5.11E-11
Dixdc1	1.648248382	0.172730168	0.318126012
Kif4	1.648651674	1.81E-13	5.11E-11
Rrm2	1.651080087	2.15E-12	3.20E-10
Cdca5	1.652547612	1.36E-12	2.20E-10
Slc39a2	1.65260223	0.026652906	0.079780357
Stil	1.653132609	2.03E-13	5.57E-11
Spag5	1.657447244	3.88E-15	3.47E-12
2810442I21Rik	1.657931383	2.29E-05	0.00030326
Pclo	1.659425522	0.054403459	0.137483995
Fam64a	1.659571622	2.91E-11	2.79E-09
Shcbp1	1.664628945	1.53E-12	2.41E-10
Itgb1bp2	1.666825759	0.161256414	0.30253278
Gm13710	1.669167629	0.009300637	0.035977298
Tex15	1.670972249	0.018150146	0.059783211
Hsh2d	1.673441243	7.34E-05	0.000772006
Aurkb	1.674002609	2.13E-14	1.10E-11
A230028O05Rik	1.674013503	4.31E-06	7.88E-05
Apol9b	1.680213344	9.33E-08	2.86E-06
Drp2	1.680672906	0.029662295	0.086720795
Hspa1b	1.682560768	0.002766394	0.014077454
Xirp1	1.683706748	0.123002044	0.249338008
Kcnk12	1.683909118	3.80E-05	0.000452663
Pear1	1.684324176	0.009974012	0.03781895
Vipr2	1.685405546	0.116594846	0.240853793
3-Sep	1.687077568	0.048704732	0.126783472
Mycbpap	1.69044354	0.020650051	0.066045369
Usp44	1.690520668	0.087328604	0.195636483
Cxcl11	1.695500045	0.007605243	0.030991422
Sgol2	1.696367238	1.25E-11	1.35E-09
Depdc1b	1.697357623	2.21E-08	8.34E-07
Ly6c1	1.700283032	0.113348373	0.236110186
Birc5	1.70329735	2.94E-13	7.59E-11
E2f7	1.703756588	2.04E-12	3.07E-10
Grap2	1.70551766	1.84E-06	3.82E-05
Cadps	1.706251962	0.004657817	0.021130238
Vwa1	1.708721373	0.020529017	0.06574675
Erc6l	1.708729429	1.37E-13	4.29E-11
Cenpf	1.722551405	5.27E-13	1.11E-10
Impg2	1.7234865	0.042701098	0.114693614
Zfyve28	1.728053294	1.95E-07	5.45E-06
Slc25a34	1.731010181	0.045763692	0.120577848
Rtkn2	1.731855966	0.000306135	0.002465798
Ccna2	1.732198954	1.63E-16	4.05E-13
Aspm	1.732421589	6.23E-13	1.25E-10
Ildr2	1.73721244	0.0534231	0.135850783
F830016B08Rik	1.737259727	5.37E-09	2.53E-07
Sec1	1.738986034	0.044616434	0.118391917
BC030499	1.740562058	0.016481347	0.055540733

Ncapg	1.741196684	8.15E-15	5.87E-12
Hipk4	1.741958004	0.009144376	0.035547038
Rbm44	1.74577346	4.08E-05	0.000477644
Kif14	1.74631564	4.43E-13	9.74E-11
Ndc80	1.74729428	3.00E-15	2.90E-12
Serpine1	1.748304882	0.005197539	0.023026006
Gm13889	1.750693363	0.011654909	0.042626663
Bub1	1.752258786	8.76E-15	5.87E-12
Prss30	1.752838468	0.087119898	0.19529935
Gm5531	1.755517049	0.084647852	0.191485086
Ankle1	1.759913283	5.70E-08	1.86E-06
Gprc5a	1.761369896	0.026623421	0.079745467
Angpt2	1.762750994	1.12E-05	0.00017
Gpr55	1.76342904	0.0380622	0.104878165
Acpp	1.770374329	0.000247898	0.002089537
Antxr1	1.770692029	0.003480421	0.016787837
Gbgt1	1.776435908	2.13E-06	4.35E-05
Arg1	1.777436044	0.033814666	0.096094665
Pbid2	1.779255853	0.024394943	0.074898102
Klc3	1.779393058	0.034315371	0.097065337
Rasal1	1.781763269	0.016328476	0.055198622
Mki67	1.784710321	2.41E-16	4.05E-13
Dnase1l3	1.797943489	0.019245284	0.062485474
Apon	1.797943489	0.034748733	0.097878517
Sapcd2	1.800522651	1.39E-05	0.000201898
Stmn4	1.800722603	0.07241871	0.170588878
Ckap2	1.801628432	1.18E-12	1.98E-10
Cenpp	1.810768383	3.10E-08	1.10E-06
Neto2	1.812598731	3.26E-05	0.000403145
Mybpc3	1.813944118	0.003053574	0.015193142
C430002E04Rik	1.814007919	0.04933466	0.1278528
Siglec5	1.814636973	0.013914961	0.048702364
Gen1	1.823267964	1.02E-11	1.19E-09
4930519F09Rik	1.82553427	0.015498752	0.053001467
Khdrbs3	1.827184378	0.027138832	0.080802306
Depdc1a	1.83037471	5.28E-11	4.54E-09
Top2a	1.832647018	5.07E-18	2.27E-14
Hip1r	1.834578171	0.023324219	0.072534808
Ttk	1.837997117	8.27E-13	1.52E-10
Neil3	1.846644236	3.06E-13	7.74E-11
Kif11	1.848273763	7.49E-18	2.51E-14
Wdr93	1.85013679	0.04268937	0.114693614
Cks1brt	1.850419448	0.029033553	0.085307916
Ccl22	1.851063524	0.10308574	0.219884001
Hook1	1.851547572	2.37E-06	4.74E-05
Iqgap3	1.851831525	2.62E-14	1.21E-11
Asb4	1.852732556	6.32E-05	0.000684977
2810417H13Rik	1.853013796	2.29E-16	4.05E-13
Mir25	1.853617249	0.053875194	0.13663792
Myh15	1.853617249	0.086439403	0.194358301
Htra4	1.860112952	0.026318515	0.07909701
Nusap1	1.864485744	2.42E-14	1.16E-11
Bhlhb9	1.864755244	0.000904684	0.005822521
Dyx1c1	1.864854098	0.055669854	0.140149054
Fcrlb	1.868347414	0.08552115	0.192731462
Mastl	1.872064294	4.59E-10	2.95E-08
Adam19	1.876253811	0.01063961	0.03981398
Ankrd66	1.876798901	0.001657539	0.009290942
Ly6i	1.877833864	0.036059231	0.10066129

Dcstamp	1.886339843	0.003194106	0.01571753
Mtmr7	1.887236817	0.007747192	0.031410471
Rgs16	1.890139932	0.110810299	0.232056313
Nt5e	1.89469637	0.00503387	0.022401868
Mrv1	1.894941519	0.00020405	0.001768829
Epor	1.895175799	0.037057683	0.102806915
Hist1h3d	1.895175799	0.08969493	0.199737184
Kcnk5	1.896654072	0.00204251	0.011057122
Ppm1n	1.900443189	0.007196028	0.029721807
Cngb1	1.915487462	0.054398447	0.137483995
Klrb1c	1.923463315	0.020378591	0.065362559
Bik	1.925846286	0.000127693	0.001203312
Gm5150	1.931002629	2.05E-07	5.70E-06
Mab21I3	1.9394284	0.03631035	0.10119389
Mycl	1.944689797	0.116158887	0.240397302
4931402G19Rik	1.95147186	0.072250342	0.170331665
Coro2b	1.951663932	0.003551162	0.017073901
2810454H06Rik	1.955113546	0.024370253	0.074885373
Hist1h1d	1.960069136	0.009147714	0.035549719
Sema6d	1.961026709	0.001706245	0.00952021
Gm10791	1.962334363	0.028799224	0.084767885
Il10	1.962345372	0.000180541	0.001601312
Ptprn	1.965345827	1.75E-05	0.000246027
Ccdc30	1.967826134	0.078065252	0.18049732
Arhgef19	1.968492022	0.031492125	0.090743574
Snora21	1.968648482	0.063843571	0.155343042
Nxf7	1.973139152	0.036800386	0.102339377
Card11	1.979820139	1.28E-11	1.38E-09
Adcy6	1.981251987	0.019294657	0.062615479
Noxred1	1.984624563	0.006544112	0.027570123
Esco2	1.985596177	2.75E-14	1.23E-11
Kif15	1.987268401	5.61E-16	7.53E-13
Pbk	1.994181793	4.56E-14	1.85E-11
Aif1	2.00540632	3.89E-11	3.50E-09
2010300C02Rik	2.006471972	0.059296968	0.14670096
Serpinb12	2.007012732	0.002883238	0.014525924
Dusp27	2.008950552	0.016275961	0.055097658
Stag3	2.011445242	1.35E-05	0.000197172
Snord17	2.015294146	0.017875282	0.059091969
Gabbr2	2.015721771	0.110340444	0.231497564
Casc5	2.020581283	9.53E-15	6.09E-12
Amica1	2.032245562	0.022614293	0.071051555
Pgm5	2.033524561	3.11E-05	0.000390968
4930549G23Rik	2.035828911	0.054397747	0.137483995
Stab2	2.04037619	0.051568435	0.132338273
Plxdc2	2.042140472	4.70E-09	2.25E-07
Ndst3	2.042706489	0.004830633	0.021705679
Gpx2-ps1	2.043923709	0.037845846	0.104485677
Rpl14-ps1	2.046827331	0.011737843	0.042859897
Pitpnm2	2.050336109	0.000108648	0.001050396
Gm15421	2.052917635	0.003135164	0.015518543
Clec4b1	2.054393843	0.001305443	0.007727279
C1q1	2.054413411	0.038494046	0.105655882
Fndc7	2.058078976	0.007219275	0.029798663
Rd3	2.060559538	0.000544209	0.003884464
Ccdc151	2.065805076	0.088539484	0.197817624
Cacna2d4	2.068723581	0.012114599	0.043747523
Rltpr	2.081941604	0.007825125	0.031655443
Fgd1	2.08389778	0.000202168	0.001757057

Gm11545	2.085873648	4.53E-05	0.000522934
Trim69	2.086824447	0.032663414	0.093436442
Hist1h1b	2.094695097	0.021005646	0.066905951
Fam189a2	2.095170373	0.03803217	0.104838474
Fsd2	2.100774802	0.017852711	0.059035369
5430437J10Rik	2.104429034	0.000186354	0.001641946
Ifitm10	2.106625477	0.013096437	0.046414977
Tbx2	2.106625477	0.025707352	0.07770425
Tnxb	2.106625477	0.035299912	0.098973991
Htra3	2.110240934	3.80E-05	0.000452663
Lhx2	2.1254898	0.000264914	0.002198444
Ptpn13	2.141443615	0.010814051	0.040269901
Asb10	2.149763423	0.007689857	0.031253953
Cacnb2	2.154765405	0.029976562	0.087433395
Lrrc4	2.174153237	0.000656947	0.004525449
Notch4	2.18425059	3.84E-05	0.000455962
C9	2.188042023	0.035199839	0.098766074
Mast4	2.191180101	0.013927548	0.048733706
Ryr1	2.201758792	0.007339227	0.030154652
Scml2	2.205540942	1.85E-05	0.000256784
Slit1	2.20587946	0.000102142	0.001001198
Itgb8	2.219712785	0.048160986	0.125611715
Asb2	2.22002828	0.000112909	0.00108069
Nexn	2.220128699	0.004893835	0.02192667
Ranbp17	2.222236948	0.01521071	0.052229405
Wdr31	2.234656359	0.002805365	0.01423797
F13a1	2.240785203	0.000596579	0.004189581
Zan	2.250952335	0.030002759	0.087485229
Xcr1	2.254071081	0.015979721	0.054259078
Fat2	2.262956332	0.006402822	0.027172509
Cd300c	2.272172425	0.005651171	0.024661158
Serpinc1	2.273471915	0.02291931	0.071690961
Clec9a	2.278274855	0.062580972	0.152825125
Marveld2	2.280597372	0.011214381	0.04146756
Tdgf1	2.282313761	0.00565795	0.024682715
Gm6583	2.290598429	0.029702269	0.086778738
Tmem26	2.292844129	9.99E-05	0.000983205
Apol9a	2.297810221	1.95E-06	4.02E-05
Gfi1b	2.302988667	0.003224297	0.015818341
Fam132b	2.316936256	0.006925984	0.028885492
Gm15471	2.316936256	0.045819607	0.120630431
Snora31	2.334616223	0.031056907	0.089740016
Icam5	2.335099286	0.005935323	0.025626158
Gpr34	2.337330328	7.09E-05	0.000751999
Derl3	2.349343233	0.002960083	0.014815872
Cacnb4	2.34948926	0.006238581	0.026601688
Slc4a8	2.352548366	0.003636289	0.017395483
Peg10	2.352808663	0.049445545	0.128016548
B3galt5	2.364337463	0.032071924	0.09211754
Odf3l1	2.367949569	0.004943546	0.022097751
Bzrap1	2.373498507	2.13E-07	5.90E-06
Ecscr	2.37807079	0.009202653	0.03571151
2410141K09Rik	2.378789504	0.013880478	0.048632412
Olfml3	2.381277836	2.94E-11	2.80E-09
Mefv	2.38368676	0.001244594	0.007429361
Riiad1	2.387402227	0.003799725	0.017953701
Mif1	2.393478971	0.000187027	0.001646791
4930415F15Rik	2.397935196	0.003099671	0.015388267
Spdya	2.406218011	0.004043326	0.018878705

Plac8	2.408897506	0.004854599	0.021787244
Bex6	2.415660519	0.000176555	0.001574217
Mustn1	2.417799739	0.018649992	0.061025176
Dmkn	2.429307068	0.007749179	0.031410471
Tnfrsf18	2.433224697	0.00549736	0.024091795
Ccr5	2.433267393	5.39E-12	6.82E-10
Zfp575	2.445517251	0.00321728	0.015816261
Slco2b1	2.470540089	1.43E-11	1.52E-09
Tgm4	2.479343885	0.01546388	0.052909182
Arsi	2.481149066	0.007431801	0.030479014
Atp8b1	2.503648529	0.005249044	0.023185291
Enho	2.507045	0.001898543	0.010381641
Npnt	2.514977056	0.011523837	0.042297145
Camsap3	2.524825435	1.75E-05	0.000246027
Zbtb32	2.531108369	0.002203292	0.011727876
Trim34b	2.534309112	0.012033552	0.043560353
Slc26a9	2.546438557	0.045353659	0.119826885
Lrrc32	2.546533339	0.012430149	0.044515659
Tnc	2.548409356	0.038277512	0.105341661
Shisa9	2.576568376	2.63E-07	7.06E-06
Sdk1	2.581007617	0.009458596	0.036441256
Gldc	2.585817032	0.014268563	0.049642169
Mmp9	2.588428642	6.92E-05	0.000735629
Serinc2	2.603452309	0.013894079	0.048667358
Ocstamp	2.606683888	0.001543683	0.008829789
Pcdhgc5	2.610366443	0.012188048	0.043941811
Bok	2.619425916	0.017590506	0.058427474
Naaladl1	2.633609496	0.014877482	0.051242539
Syt6	2.636104835	0.025982173	0.078349389
Ksr2	2.638732653	0.001960001	0.010682882
Bend7	2.639520542	0.00406223	0.018953598
Cldn23	2.645251134	0.015443092	0.052865014
C4b	2.651115282	0.006899484	0.028797567
Rgs11	2.65178339	0.000794042	0.005254069
Bcar1	2.707537131	0.000819348	0.005376443
Spats2l	2.718576203	0.001207762	0.007261184
Apof	2.73323008	0.001551284	0.008865704
Cd207	2.768963387	0.003293853	0.016055289
Kcnh2	2.785799514	0.001670579	0.009355069
Hr	2.799928392	0.003153733	0.015570253
Trim17	2.841661155	0.007948344	0.031972072
Enpp6	2.857265075	3.89E-05	0.000460158
Tnfaip8l3	2.862378331	0.002740803	0.013984347
Ndrp2	2.867057839	4.21E-06	7.70E-05
Hrh1	2.876043209	0.000485335	0.003545298
Marco	2.905268487	1.75E-07	4.98E-06
Sectm1a	2.911673622	0.002174401	0.011610939
Cdcp1	2.915499116	0.00071337	0.004837147
Cyp2s1	2.928340058	2.32E-05	0.0003073
Plek2	2.952105905	0.001440528	0.00837178
Nptx1	2.961742899	4.34E-07	1.10E-05
Npas4	2.997802102	0.000609978	0.004260955
Gm12522	3.049253674	0.001613308	0.009107812
Apold1	3.056735585	2.20E-05	0.000294919
Ccr2	3.084376084	2.40E-11	2.37E-09
Prkcdp	3.088894375	0.000203187	0.001763625
Rasgrp1	3.132046574	0.000783185	0.005208852
Emr4	3.196228564	3.29E-05	0.000407024
Ccr11l	3.246676143	0.000181077	0.001603876

F830045P16Rik	3.273513484	9.56E-06	0.000149704
Map2	3.297508634	2.56E-06	5.07E-05
Slc25a18	3.307176895	0.001067995	0.00662878
Heph	3.336710133	0.000214743	0.001851739
Slc13a3	3.373238117	9.00E-10	5.37E-08
Snord83b	3.38866911	0.000258167	0.002154444
Matn1	3.572571862	0.00010385	0.001013499
Megf10	3.652950269	0.000448865	0.003344428
Scin	3.829420347	0.001170689	0.007095519
Ccr3	4.285169913	3.84E-13	9.04E-11
Slc6a4	4.699341763	1.74E-05	0.000246027