**Supplemental Figure 1. The tumor suppressor genes p16 and p53 are down-regulated in BRG1-depleted PanINs.** (**A**) Immunohistochemistry of serial sections for BRG1 and p16 in *Ptf1a-Cre^{ER}; Kras^{G12D}; Brg1^{f/f}* mice. Arrowheads indicated p16-positive cells. Scale bars: 50μm. (**B**) Immunohistochemistry of serial sections for BRG1 and p53 in *Ptf1a-Cre^{ER}; Kras^{G12D}; Brg1^{f/f}* mice. Scale bars: 50μm.
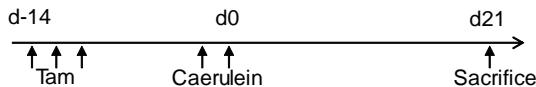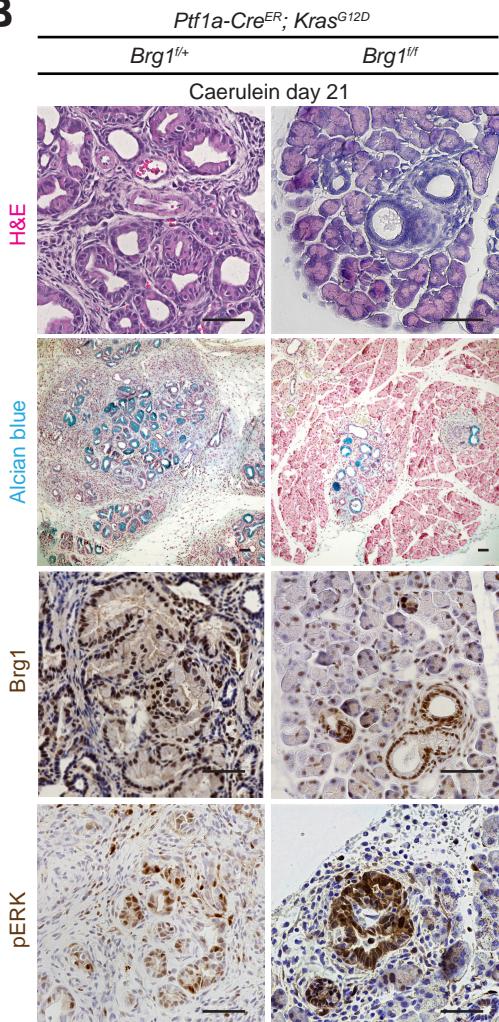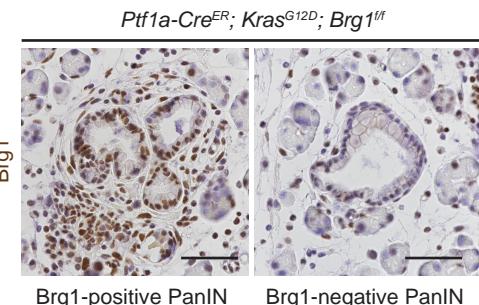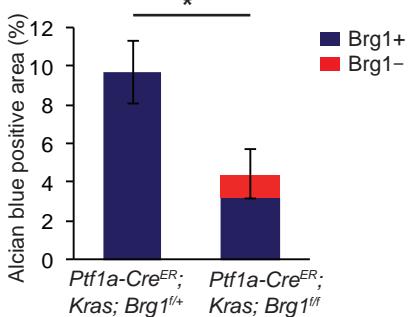
Figure 2. Acinar-specific ablation of *Brg1* attenuates acute pancreatitis-induced PanIN formation in an oncogenic KRAS background. (**A**) Scheme showing experimental design for tamoxifen administration and caerulein-induced acute pancreatitis in *Ptf1a-Cre^ER^; Kras^G12D^; Brg1^f/f^* mice. (**B**) H&E and alcian blue staining and immunohistochemistry for BRG1 and phospho-ERK in *Ptf1a-Cre^ER^; Kras^G12D^; Brg1^f/f^* mice and littermate controls at 21 days after caerulein induction. Scale bars: 50μm. (**C**) Immunohistochemistry for BRG1 in *Ptf1a-Cre^ER^; Kras^G12D^; Brg1^f/f^* mice at 21 days after caerulein induction. Representative BRG1-positive and BRG1-negative PanINs. Scale bars: 50μm. (**D**) Quantification of alcian blue-positive area in *Ptf1a-Cre^ER^; Kras^G12D^; Brg1^f/f^* mice with littermate controls. Red bars show incidence of BRG1-negative late ADMs and PanINs. n=4 mice per genotype; means ± SEM are shown. * P < 0.05, Student's *t* test.
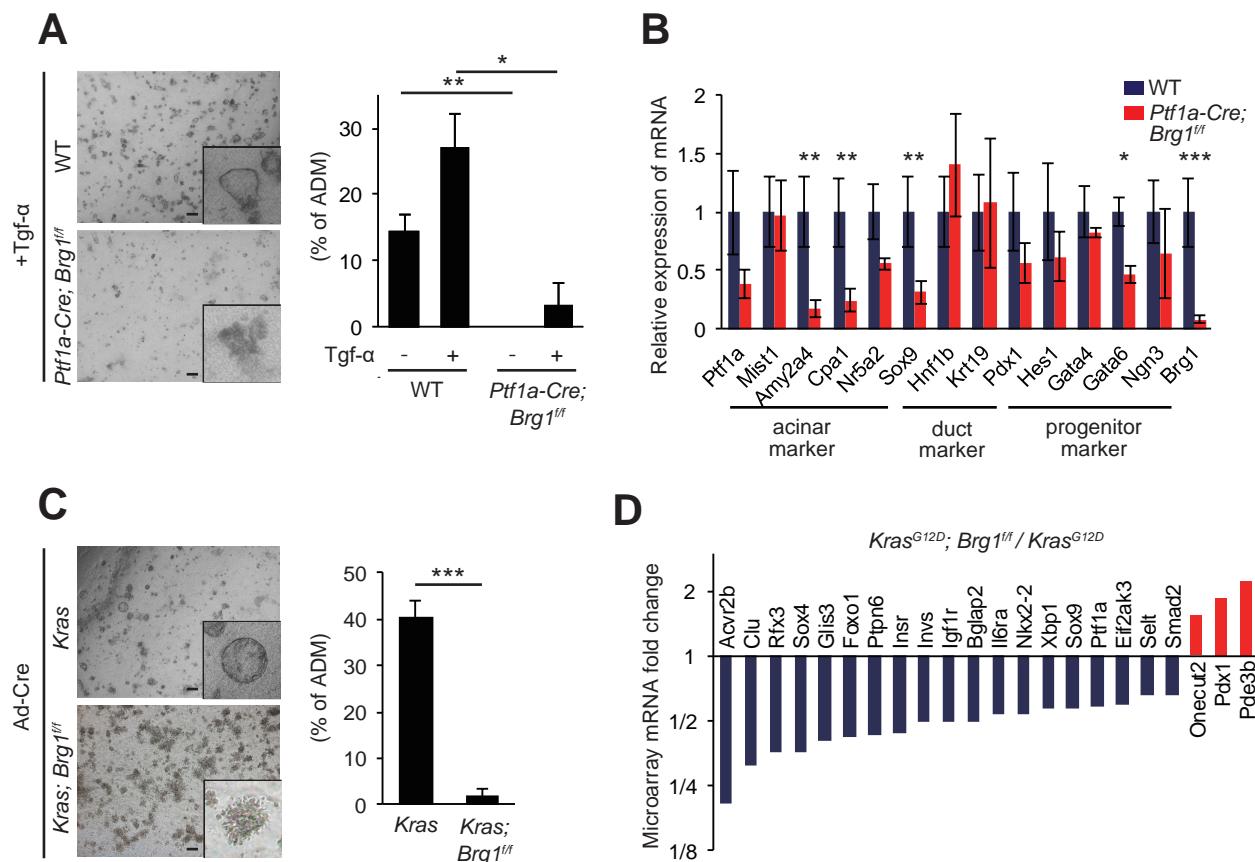
Supplemental Figure 3. Primary acinar cell culture reveals that *Brg1* promotes *Sox9* expression. (A) Left: Brightfield images of acinar cell clusters from WT and *Ptf1a-Cre; Brg1^f/f^* mice after 5 days of culture in collagen gel with TGF-α. Scale bars: 50μm. Right: Quantification of cystic ductal strictures in 3D-cultured acinar cell clusters from WT and *Ptf1a-Cre; Brg1^f/f^* mice after 5 days of culture in collagen gel with or without TGF-α. n=3 per genotype; means ± SEM are shown. * P < 0.05, Student's *t* test. **(B)** RT-PCR analysis of isolated acini from WT and *Ptf1a-Cre; Brg1^f/f^* mice. Genes important for pancreatic development and maintenance of pancreatic lineages are examined. n=3 per genotype; means ± SEM are shown. * P < 0.05, ** P < 0.01, and *** P < 0.001, Student's *t* test. **(C)** Left: Brightfield images of acinar cell clusters from *Kras^G12D^* and *Kras^G12D^; Brg1^f/f^* mice after 5 days of culture in collagen gel. Cells were infected with Ad-Cre on day 0. Scale bars: 50μm. Right: Quantification of cystic ductal strictures in 3D-cultured acinar cell clusters from Ad-Cre-infected *Kras^G12D^* and *Kras^G12D^; Brg1^f/f^* acini after 5 days of culture in collagen gel. n=3 per genotype; means ± SEM are shown. *** P < 0.001, Student's *t* test. **(D)** Fold changes in the expression of genes implicated in pancreas development and maintenance of pancreatic differentiation for Ad-Cre-infected *Kras^G12D^; Brg1^f/f^* acini after 24h of culture relative to control Ad-Cre-infected *Kras^G12D^* acini after 24h of culture.

A
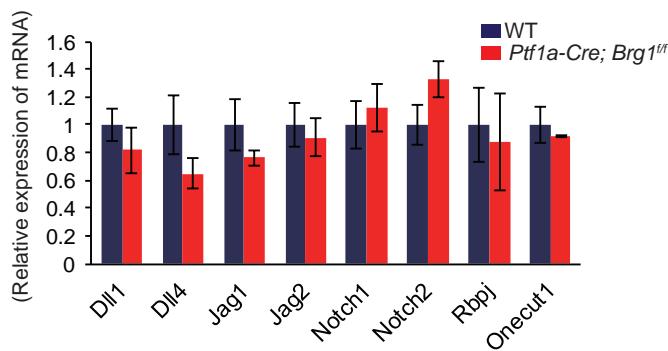
Supplemental Figure 4. Expression of upstream regulators of *Sox9* in the pancreas is not significantly changed in *Brg1*-depleted acinar cells (**A**) RT-PCR analysis of *Sox9* upstream regulators in isolated acini from WT and *Ptf1a-Cre; Brg1^{f/f}* mice. n=3 per genotype; means ± SEM are shown. Student's *t* test.

A

Ptf1a-Cre^ER; Kras^G12D; Sox9OE; Brg1^f/f

Brg1-positive PanIN   Brg1-negative PanIN

B

185-fold change

267-fold change
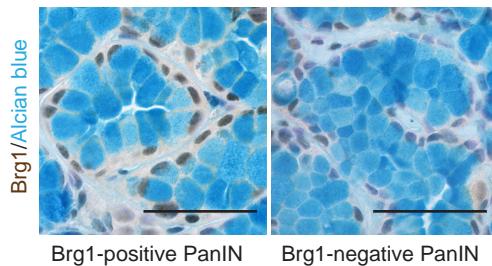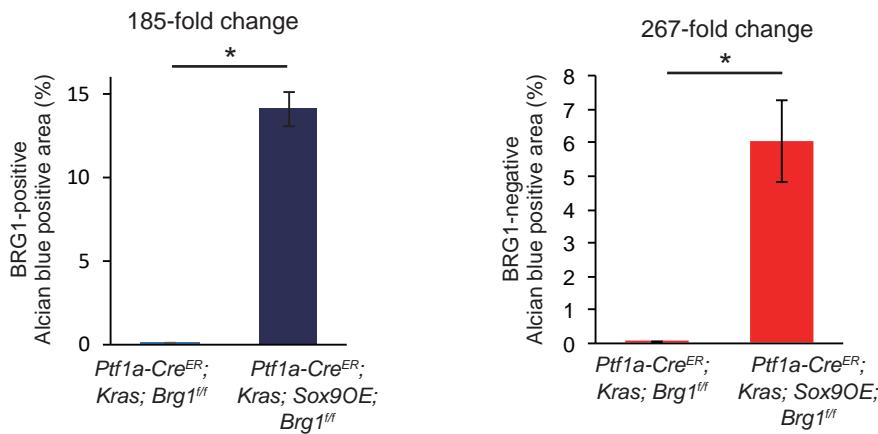
Supplemental Figure 5. *Sox9* overexpression accelerates KRAS-driven PanIN formation in mice. (**A**) Immunohistochemistry for BRG1 and alcian blue staining of *Ptf1a-Cre^ER; Kras^G12D; Sox9OE; Brg1^f/f* mice. Representative BRG1-positive and BRG1-negative PanINs from the same sample are shown. Scale bars: 50μm. (**B**) Quantification of BRG1-positive and BRG1-negative PanINs in *Ptf1a-Cre^ER; Kras^G12D; Brg1^f/f* mice and *Ptf1a-Cre^ER; Kras^G12D; Sox9OE; Brg1^f/f* mice. n=3-4 mice per genotype; means ± SEM are shown. * P<0.05, Student's *t* test.

A

(8-16w old)
day0   day3

Tam   Sacrifice

B
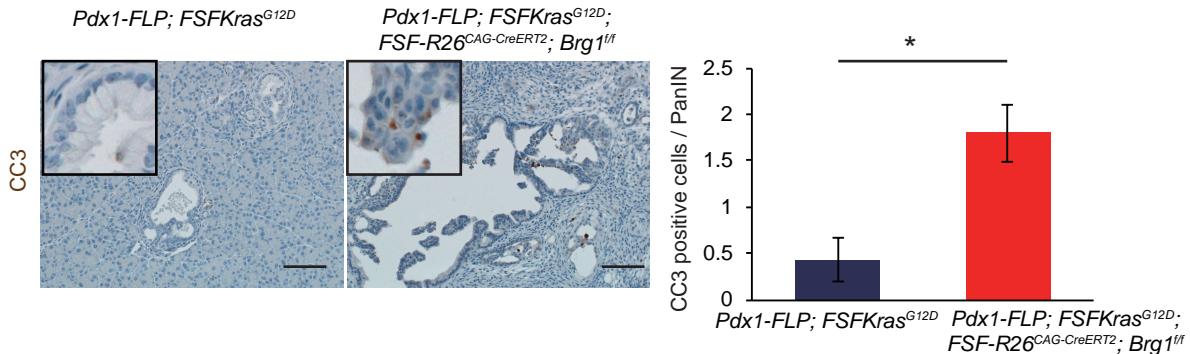
Supplemental Figure 6. Loss of BRG1 in established PanIN results in its apoptosis. (**A**) Experimental design for tamoxifen administration and analysis. (**B**) Immunohistochemistry for cleaved caspase 3 (CC3) in *Pdx1-Flp; FSF-Kras^{G12D}* and *Pdx1-Flp; FSF-Kras^{G12D}; FSF-R26$^{CAG-CreERT2}$; Brg1$^{f/f}$* mice 3 days after tamoxifen injection. Scale bars: 200μm. Right bar graphs are quantification for CC3 positive cells per PanIN lesion. n=3 per genotype; means ± SEM are shown. *P<0.05, Student's *t* test.

A
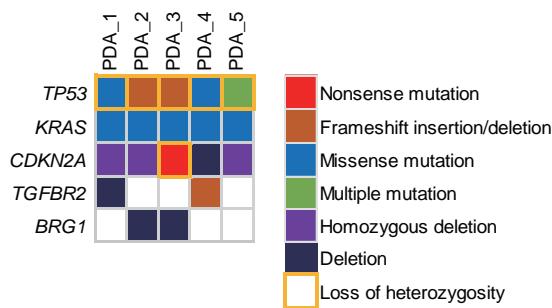
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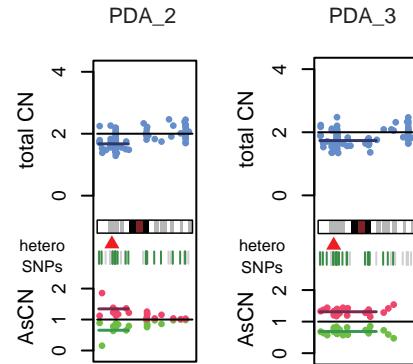
C
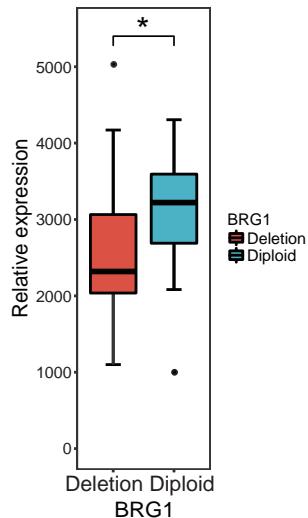
Supplemental Figure 7 Result of targeted sequence of BRG1-low human PDA samples (**A**) Mutational landscape of BRG1-low human PDA samples. *KRAS*, *TP53*, *CDKN2A* and *TGFBR2* are shown as quality controls. Deletion of *BRG1* is detected in 2 of 5 BRG1-low human PDA samples. (**B**) Detail of loss of chromosome 19p in PDA_2 and PDA_3. Total copy number (total CN) and allele specific copy number (AsCN) are shown. Copy number abnormalities are shown as black bar. Red triangle shows where *BRG1* is located on. (**C**) Relationship between deletion of *BRG1* and *BRG1* mRNA expression from a cohort of 76 high purity samples in the TCGA data set. In the box-and-whisker plots, horizontal bars indicate the medians, boxes indicate 25th to 75th percentiles, and whiskers indicate minimum to maximum without outlier. *P<0.05, Mann-Whitney *U* test.

A

B
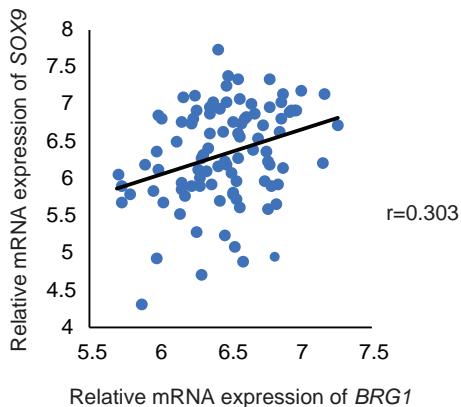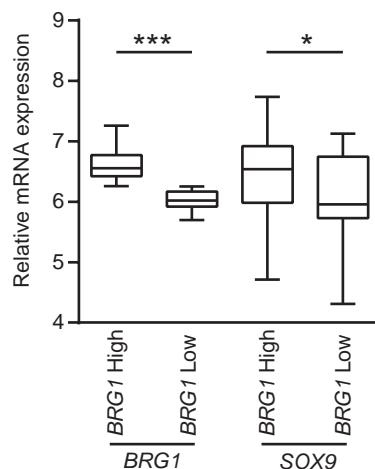
Supplemental Figure 8 BRG1 expression correlates with SOX9 expression in human PDAs. (**A**) Plots of mRNA expression of *BRG1* and *SOX9* from a cohort of 96 patients in QCMG data set. (**B**) The box-and-whisker plot demonstrates the differential expression for *SOX9* between the *BRG1*-high (n =71, the higher 75%) and *BRG1*-low groups (n = 25, the lower 25%) from a cohort of 96 patients in the QCMG data set. In the box-and-whisker plots, horizontal bars indicate the medians, boxes indicate 25th to 75th percentiles, and whiskers indicate minimum to maximum without outlier. * P < 0.05 and *** P < 0.001, Student's *t* test.

Supplemental Table 1: Differently expressed genes in *Kras*^{G12D} vs. *Brg1*$^{f/f}$ acinar cell explants

up		*down*	
gene symbol	fold change (log)	gene symbol	fold change (log)
S100a6	3.7695728	G6pc2	-4.3786884
Krtap16-1	3.4862444	Fgl1	-3.9309574
Pecam1	3.46082	Lgals4	-3.1478798
Plvap	3.3369914	Ncor1	-3.1447362
Vaultrc5	2.9253636	Csrnp1	-3.12215
D8Ertd158e	2.8899298	Pdyn	-3.1156846
Sprr1a	2.8063721	Espn	-3.0293398
Cfb	2.7875106	Scg2	-2.9722324
Pxdn	2.7104712	Cyp2s1	-2.9414282
Zdhhc1	2.7012344	Slc39a10	-2.9306106
Ruvbl2	2.6697236	Zfp207	-2.9113906
Col1a1	2.549479	Rbm25	-2.8066914
Cxxc4	2.5407706	Hif3a	-2.775671
Sprr2b	2.5220404	Ins1	-2.7639676
C5ar2	2.5090246	Ctsc	-2.7582578
Parp3	2.5035262	Cib1	-2.7560214
Crhr1	2.4913382	Nnat	-2.7315292
Tbc1d21	2.4566574	Fxyd3	-2.7256318
Oasl1	2.4398156	Nol3	-2.6992188
Sox15	2.411714	Kif5c	-2.669723
Ecscr	2.3602772	Ins2	-2.6675257
Pglyrp1	2.3591118	Cyp2b10	-2.6431714
Vim	2.3278822	Crem	-2.6197104
Atp1a3	2.317926	Hnrnpu	-2.5793944
Rnase4	2.3134738	Smarca4	-2.5635176
Fhl2	2.3066534	Slco2b1	-2.5530882
Tiam1	2.303306	Espn	-2.5276976
Fut4	2.302178	9530006C21Rik	-2.5276084
Flna	2.2909526	Spock2	-2.5149002
Col4a2	2.283824	Gpr161	-2.507926
Cfb	2.246233	Rlf	-2.5061864
Olfr700	2.237329	Ptprn	-2.4990774
Sprr2k	2.2317066	Camta1	-2.4960784
Zmynd10	2.229248	Spaca6	-2.4613834
Ubash3b	2.21154	Oas1b	-2.4521666

Stk10	2.1982666	Mrpl24	-2.4520208
Spin2c	2.1925564	Iapp	-2.4351277
Lrrc8d	2.1786848	Prdm15	-2.4310014
Mtus1	2.16728	Cela2a	-2.4110698
2810001G20Rik	2.166222	Nupr1	-2.4012832
Bid	2.1643522	Vldlr	-2.3961516
Gipc2	2.1548102	Cobl	-2.3622532
Il1rn	2.1238714	Snapc1	-2.3523216
Plat	2.1196108	Scg3	-2.3399758
Cd59a	2.11433	Acvr2b	-2.2797718
Egfl7	2.1121168	Slc39a8	-2.2697258
Col4a1	2.1093784	1700084E18Rik	-2.2669544
S1pr3	2.1036448	Mier1	-2.2602772
Col6a2	2.0928492	Mdm1	-2.2601092
Tm4sf1	2.0874538	Eif2s3y	-2.255457
Nsun4	2.0869898	Rbm39	-2.2543076
Wtip	2.0839434	Smarca4	-2.2536802
Sparcl1	2.0664082	Zswim8	-2.246276
LOC102641965	2.0548624	E330011O21Rik	-2.235271
S100a4	2.0476074	Mfsd2b	-2.2180882
Cd93	2.0305624	Cep162	-2.2114424
Tspan1	2.0276246	Hmgcs2	-2.2071542
Rgs5	2.0171828	Kbtbd7	-2.184855
Gngt2	2.004294	Brd8	-2.182294
Pax2	1.9997744	Fhad1	-2.1773122
Surf6	1.99900294	Tdp1	-2.1689114
Cpt1c	1.9983368	Tmem27	-2.162126
LOC102640292	1.99394846	Rbm4b	-2.1508708
Kcnj14	1.9867608	Klhl24	-2.1481018
Rusc2	1.9838986	1700084E18Rik	-2.1407912
Plet1	1.96753406	Pi4k2b	-2.1366744
Gulo	1.9661794	Chga	-2.135734
Olfr476	1.9644666	Ctnna1	-2.1309466
Gm2511	1.9583368	B930095G15Rik	-2.1209096
2200002D01Rik	1.9432988	Ttc14	-2.1143394
Fxyd5	1.9411211	Snrnp48	-2.1052262
Ago1	1.9382484	Luc7l2	-2.1039624
Serpinf1	1.930038	Myom1	-2.1031634
Max	1.92498732	Lifr	-2.099176

Ly6c1	1.92486	Baz2b	-2.0925398
Ppp1r16a	1.92407846	Tdp2	-2.0863014
Gm31447	1.9216404	Fam57a	-2.0852142
Kctd12	1.9207878	2310033P09Rik	-2.08079
0610039K10Rik	1.9205532	Tmprss13	-2.0797846
Trpv6	1.9196348	Cdk5r2	-2.0788068
Rdh10	1.9172892	Dtymk	-2.0738898
Sema3f	1.9161796	Smim14	-2.0736356
Gm11237	1.9094429	Cep170	-2.072608
Gm30333	1.9055812	Map3k9	-2.0717116
Cyp3a13	1.8847971	Chgb	-2.0716004
Tdp1	1.8809362	Sik2	-2.0694806
Tcf4	1.87875032	Plin5	-2.069231
Sparc	1.87715674	Sstr3	-2.0581264
C1rb	1.8747015	Wdr44	-2.0448328
S100a13	1.8702006	Gclc	-2.0372309
Psg18	1.86798572	Jmy	-2.034059
A730063M14Rik	1.8672972	Mtmr7	-2.0325704
Spert	1.8583508	Akap13	-2.027761
Adgrl4	1.85728074	Ankrd10	-2.0262828
Rarres2	1.8554392	Ralgapa1	-2.0140496
E330020D12Rik	1.85492372	Mbd1	-2.0023246
Btrc	1.8489218	Ptcd3	-1.9927969
Gart	1.8480649	Rel	-1.9877644
Baiap2	1.84704972	B930041F14Rik	-1.9876664
Cpne2	1.8464384	Rnf38	-1.9814372
Ifit3	1.8460126	Zfp90	-1.978569
Lamb3	1.8449216	Trp53inp1	-1.9780021
Vcan	1.8445788	Apaf1	-1.97766734
Ercc1	1.8435831	Nrf1	-1.97681094
Gm40835	1.8435235	Slc25a25	-1.9758608
Ipw	1.8421588	Syn2	-1.9741664
Arhgap1	1.8417032	Rilpl1	-1.9741502
Ndrg2	1.8356166	Zrsr1	-1.9738462
Tyrobp	1.83470154	Xrn1	-1.9697046
S100a14	1.8204274	Ankrd6	-1.965605
Rn7sk	1.81501341	Cyp2b10	-1.96492052
Emc7	1.81435228	Gm15708	-1.96272088
Cryl1	1.8122802	Zfp292	-1.95819092

LOC102633312	1.8110814	Ccnk	-1.9530487
Rcan2	1.8065679	Loxl2	-1.9494534
Clec2e	1.80333566	Hdac8	-1.94636392
Zfp60	1.80136014	Tanc2	-1.9423838
Gm9948	1.7961822	Paxbp1	-1.93838692
Hcn3	1.7935302	Fgfr1	-1.93818832
Ssh2	1.7903905	Mto1	-1.92901086
Cyp4a31	1.7884965	Vmp1	-1.92567301
Ehbp1l1	1.7874598	Smarca4	-1.92251874
Mia	1.786932	Ppp3cb	-1.9199066
Tmem40	1.78331972	Blm	-1.916286
Ahi1	1.78113652	Smg6	-1.9046092
Sec61a2	1.780479	Fbxw8	-1.8987928
Dpysl2	1.7706184	Caap1	-1.89612126
Ttll6	1.763125	Asap3	-1.890203
Cspp1	1.7621584	Thumpd3	-1.87734032
Gm34717	1.761193	Polr3gl	-1.87164832
Adamts4	1.75832366	Adora2b	-1.8694964
Kcnj9	1.7549748	Adarb1	-1.8664875
Wfdc10	1.75328112	Dixdc1	-1.8661756
Acss2	1.75222612	Asxl1	-1.8639112
Slc35d2	1.7496472	Neil1	-1.8586836
Prkcdbp	1.7489896	Sntb1	-1.85592508
E230016M11Rik	1.74750232	Gtpbp10	-1.8554044
Egr2	1.7434464	Slc17a9	-1.8553018
Krtap7-1	1.74334192	Itgb4	-1.85496
Gm12853	1.7431006	Hist3h2a	-1.851675
Pax6	1.74021388	Luc7l2	-1.8515978
Trip13	1.7401619	Pirt	-1.8477716
Amz1	1.7375212	Gm31166	-1.8465896
Dpp6	1.7359076	Atxn1l	-1.8452864
Fam25c	1.7340302	Gm10134	-1.8443265
Lpar5	1.7235722	1700094D03Rik	-1.8403764
Eml3	1.721488	Adpgk	-1.8311024
Rhoj	1.72088	Tubb3	-1.82923508
Gm35107	1.7194118	LOC102637409	-1.8281922
Ephb4	1.71929694	Tmem170	-1.8225336
Sfi1	1.7185502	Gm21292	-1.8201284
Timp2	1.7175214	Tnfrsf18	-1.8169312

Cul9	1.7160268	Slc30a7	-1.80989
Slc22a3	1.716016	Socs6	-1.80802726
C030013E06Rik	1.7159548	Rictor	-1.80703974
Fbxw15	1.7144442	Pcnp	-1.8048968
D6Ertd527e	1.7135604	Cyp2b9	-1.8031678
Gng11	1.7096992	Ackr2	-1.7979806
Tuba4a	1.70723868	Tle4	-1.7948041
Gm4055	1.70326852	Ptprn2	-1.7881084
BC025933	1.70243812	Slc39a8	-1.7838149
Mmp21	1.6997984	Kirrel3	-1.78233766
Chd6	1.6991234	Mybph	-1.78086854
Neurl4	1.69731474	Cwf19l1	-1.7740014
Ubash3b	1.6961336	Ak4	-1.77122353
Best3	1.6950858	Atp5g3	-1.770658
Kalrn	1.69247628	Hmg20a	-1.7683706
Letmd1	1.68513108	Dstyk	-1.7669177
Ufsp1	1.684566	Tor3a	-1.76583886
Gm10378	1.6828122	Pcsk2	-1.763401
Nlrp3	1.68192148	Vldlr	-1.7610364
Fstl1	1.677742	Ccdc58	-1.75910092
Trnau1ap	1.67653632	Stk38	-1.7530918
Nlrp9c	1.6753936	Lrp11	-1.750665
Nrp2	1.6750996	Cd164l2	-1.7497616
Ren1	1.67440986	Accs	-1.74866272
2610020H08Rik	1.67135906	Tox	-1.7480216
Aars	1.668941	Cspp1	-1.7474332
Lce6a	1.66782188	Golgb1	-1.7430448
Impa2	1.66735792	Strn	-1.7410912
Pbld2	1.66490268	Gm16907	-1.7406974
Cxcl5	1.6630964	Pnp	-1.7391672
Rnu3b1	1.6624236	Serinc4	-1.7373164
Lmbr1	1.65731454	Abcg1	-1.73602772
Cdh6	1.6549098	R3hdm1	-1.735244
Rab27b	1.65487766	Nrf1	-1.7346556
1700061N14Rik	1.65315866	Zc3h8	-1.732986
Dhrs4	1.6476274	6430548M08Rik	-1.73165894
Tmem143	1.647129	Arid5b	-1.7287588
Cplx1	1.64645052	Srsf11	-1.72586108
Helz	1.64599228	Fam188a	-1.7233305

Gene	Value	Gene	Value
Gimap3	1.64459228	Arid4b	-1.72082854
Zscan10	1.64259	Itpkc	-1.71879912
A730043L09Rik	1.6420326	Myo9a	-1.7159998
4930458B22Rik	1.642025	Fv1	-1.714242
Tgfb1i1	1.641861	Wrn	-1.713656
Dclk1	1.6383844	Jazf1	-1.7133984
Gm10413	1.6380866	Abca2	-1.7132964
Ptx3	1.63552	Sik2	-1.7126255
Sparc	1.6333437	Dbf4	-1.7090676
Olfr960	1.63275766	Mdp1	-1.708097
Ephx2	1.6300621	Ccnl1	-1.707634
4933432I09Rik	1.6297688	Tapt1	-1.7070136
Idi1	1.62880566	Rab14	-1.70523428
Nrxn3	1.62705994	Lcor	-1.7039122
Mlph	1.62181472	Cpeb1	-1.70170832
Limch1	1.618432	Smoc1	-1.70144748
Cxcl12	1.61839628	Psmd7	-1.6999126
Ccl2	1.61657668	Metrnl	-1.6985991
Esm1	1.6148458	Saxo2	-1.6976194
Slc25a43	1.61351966	Eda2r	-1.6975632
Rcn3	1.612715	Cobll1	-1.69546032
Dut	1.6112704	Apoe	-1.6945858
Alg14	1.6080222	Bsdc1	-1.6911686
Itgb6	1.60698652	Stil	-1.68970966
Vmn1r201	1.60607052	1110019D14Rik	-1.68858146
Gm31359	1.6058874	Foxred2	-1.687685
Scgb2b27	1.6058712	Ogt	-1.6829724
2610316D01Rik	1.6048894	Kansl1	-1.6809964
Vmn1r70	1.60373354	1700012D01Rik	-1.67886972
Eng	1.60000468	Cdk17	-1.6781454
Flna	1.5990405	Lsmem1	-1.6780934
Hemt1	1.5960112	Mterf1a	-1.67666674
Gm33255	1.5954876	Pigv	-1.67464208
Arap3	1.5944376	Mrpl3	-1.67338372
Tesk2	1.5935626	Clu	-1.6732464
Sox7	1.59324194	Hap1	-1.6715732
Gngt2	1.59136772	Nfyb	-1.66943312
Nicn1	1.5883908	Map1b	-1.668592
LOC102642348	1.586997	Snhg11	-1.6662154

Fam83e	1.58220386	Heca	-1.6652188
5830403F22Rik	1.58150386	Nipbl	-1.6627328
Mvk	1.5786478	Ccdc34	-1.66235734
Gimap6	1.5769286	Adra2a	-1.6592622
Olfm1	1.5768692	B4galt6	-1.6589246
Cdhr2	1.57247686	Micu2	-1.65721512
Snx29	1.566329	Lifr	-1.6571278
Olfr635	1.5661078	Eva1c	-1.65687132
Gm13544	1.56551408	Zfp933	-1.6554646
Anxa3	1.5652762	Anxa11	-1.65519952
Tmem176b	1.56466532	1700048O14Rik	-1.6545584
Pdzk1ip1	1.56312752	Vwa5a	-1.6502843
Bcr	1.5625582	Rab23	-1.64795756
Tenm4	1.555906	Heca	-1.64769172
Fbxo46	1.5558936	2610015P09Rik	-1.6442754
Nlrp5	1.55384374	Ankhd1	-1.6438716
2700081O15Rik	1.5522098	Sfxn2	-1.64363288
Gtf2ird1	1.5487056	Ppil6	-1.6388185
Grk1	1.5481453	Vamp4	-1.636539
Kcnn1	1.5449276	Glcci1	-1.6352162
Chd7	1.5427768	Bnip3	-1.6339135
Gm5592	1.542182	Gm36841	-1.6336322
Fcrls	1.5410542	A030001D20Rik	-1.63274812
Vcam1	1.54100514	Hist1h1c	-1.63140534
Gm12298	1.5397448	Sik2	-1.6283803
Slfn5	1.53928972	Akap13	-1.62659932
Mamstr	1.5371552	Tnfrsf26	-1.6249442
Fbln1	1.53593588	Phf12	-1.6244674
S100a10	1.53489828	Rgmb	-1.62060452
Zap70	1.53335952	2610002M06Rik	-1.619071
Gm9866	1.533009	Gcg	-1.6168294
Gfi1	1.53125548	Has1	-1.61623288
Ppnr	1.5301926	Rrbp1	-1.61595512
Slc25a37	1.5296492	Atf7ip	-1.61536788
Pter	1.5263634	Acvr1b	-1.61323834
AI646519	1.52596712	Tshz2	-1.613066
Shisa6	1.5240326	Nanos1	-1.61275672
5-Sep	1.5208492	Cep85	-1.61186552
Tcl1b5	1.52043628	Cd28	-1.611166

Cp	1.5201626	Prelid2	-1.6106534
Pcyt2	1.51987886	Pus3	-1.6103072
Gm10845	1.51615334	A330058E17Rik	-1.606749
Uhrf1	1.513813	Sbk1	-1.60173512
Dusp4	1.5105538	Jmjd1c	-1.6015191
9330188P03Rik	1.5104976	Tmtc3	-1.6012082
Plekhm1	1.50812054	Gabarapl1	-1.6008906
Cdh5	1.5080724	Synj1	-1.6008534
Gm4013	1.50692272	Edem3	-1.5995655
Plet1	1.50637006	Ibtk	-1.5990438
Tsga10	1.50547552	P4ha1	-1.5990248
Olfr901	1.5044842	Rrm2	-1.5974546
Mxra7	1.50241614	3110056K07Rik	-1.5966301
Lrrc16b	1.5016198	Btbd3	-1.5965788
Fdps	1.49921752	Atxn7l3	-1.5955782
9030607L02Rik	1.4978848	Mllt11	-1.591124
LOC102642943	1.4968729	Ptk2b	-1.58984708
Igfbp7	1.4963016	Kctd1	-1.58969
Armcx6	1.4956	Ppm1a	-1.58922052
Sass6	1.4955354	Tmem68	-1.5868178
Pmp22	1.4942744	Zbtb34	-1.58534
Pisd-ps3	1.4924054	Stx3	-1.58398152
1700019O17Rik	1.4895091	Susd1	-1.58339072
Kcnk6	1.4875646	LOC105243338	-1.58317708
Pafah2	1.48661232	Gm30816	-1.58251954
A230045G11Rik	1.4859271	Bbs4	-1.5785642
Bgn	1.4808564	Fam118b	-1.5775032
Nat8	1.47876788	Muc6	-1.57690668
Tmem176a	1.47679	Prpf39	-1.57610512
Btbd2	1.4764466	Nln	-1.5757956
S100a10	1.4763608	Sf1	-1.5743785
Rcan2	1.47618294	Pim1	-1.5735507
Ube2dnl2	1.47437788	4930513N10Rik	-1.5718258
4933439C10Rik	1.4729548	Ptgds	-1.5716152
Ctgf	1.4691172	Asap2	-1.57126
1700037H04Rik	1.4662738	Stk36	-1.57018852
Mmp8	1.4662046	Malt1	-1.5698132
Defa23	1.4592576	Sly	-1.5688529
Cacna1d	1.4592032	Elp2	-1.56795168

Prss23os	1.45319748	Usp32	-1.5666258
1810049I09Rik	1.4510789	Akap13	-1.5658422
Rcan2	1.4510372	Pfkp	-1.56499148
Cyp51	1.4496732	Kdm6a	-1.5618372
Pde4b	1.44868612	Cnot6l	-1.56176568
Bak1	1.44762706	Tef	-1.5540905
Ets1	1.4469614	Utp14a	-1.5497303
Cd276	1.4467258	Ncoa2	-1.5490642
Ucp2	1.4459176	Zfp638	-1.54567194
Slc12a7	1.4452696	Gm5901	-1.5445952
Tuba1a	1.4443545	Mier1	-1.5422892
Myo16	1.4434018	Cep78	-1.54117012
Fuom	1.4431472	Cep192	-1.5322266
Wdr18	1.4392138	Zfc3h1	-1.5319438
Olfr537-ps1	1.43879652	BB166591	-1.53128434
Myo18a	1.43531228	Rad23b	-1.5306735
Gm15343	1.43509412	Cabin1	-1.5302444
Enho	1.43436	Ptbp2	-1.52979708
Fads3	1.4343266	Lcor	-1.5278511
Wdr7	1.43332	Arhgap5	-1.5278392
1700123K08Rik	1.4328842	Insig2	-1.5247478
Cyp17a1	1.4317984	Ppp1r10	-1.5222354
Kng1	1.4314528	Slc39a14	-1.521812
Acta1	1.4308324	Zfp871	-1.5215774
4930570B17Rik	1.4302154	Fbxo30	-1.520946
Rasl12	1.4298444	Hist2h2be	-1.5190778
Gm13889	1.429657	Ak4	-1.51810646
Nipal3	1.4296494	Camk2b	-1.51430274
Copg2	1.42954826	Ngly1	-1.5133142
Ccdc42	1.4273236	Fam114a2	-1.51223612
Camk1d	1.426369	Arfgap2	-1.5119224
Gm30893	1.42490148	Rpap2	-1.51075792
Tuba1a	1.42126893	Rab3a	-1.51056146
Slc14a2	1.4202578	Ccnl1	-1.50827026
Disc1	1.4198482	Ap3m2	-1.5070064
Gm9918	1.4192472	Gm7285	-1.50685572
Lpcat4	1.41889	Celsr2	-1.5058684
Gucy2f	1.41705846	Rab30	-1.5056396
Rdh9	1.41662932	Ptk2b	-1.5042458

Igf2bp2	1.416379	Mlh3	-1.50392866
Sh2d2a	1.416008	D5Ertd579e	-1.50279
Tmod2	1.41473294	Ttc22	-1.50100208
Fads2	1.4140048	Ankrd28	-1.4989953
Xlr4a	1.413178	Neat1	-1.49691868
Gcnt2	1.41272974	Fgb	-1.4967096
Ucp2	1.41186572	Nudt14	-1.4965994
Slc35e1	1.40927886	Tmem74b	-1.4962802
Gm39749	1.4085207	B3galnt2	-1.4956736
Lpar6	1.408081	Btbd9	-1.4947572
Gm33950	1.4063077	Acox3	-1.49449086
Setd3	1.40557528	Casp9	-1.4936876
Cyp51	1.40480566	Adcy6	-1.4930446
Fer1l4	1.40245748	Rfx3	-1.4905796
Mapk11	1.4014382	Wsb1	-1.489018
BC061237	1.4007888	Firre	-1.487143
Gm11757	1.4003162	Aen	-1.48464632
Endod1	1.400281	Ctsh	-1.4828248
4930405J17Rik	1.3992882	Polr3gl	-1.4822784
Catsperd	1.3980966	Bcl11a	-1.480777
Ckb	1.3964028	Itpkc	-1.4798656
Igsf9	1.395786	Foxo4	-1.47849512
Gm8127	1.3956954	Gtpbp8	-1.4767532
Sox17	1.3944878	Miat	-1.4759724
Layn	1.390346	2900005J15Rik	-1.4748674
Gm33318	1.3896654	Sox4	-1.47395134
L3mbtl2	1.38892508	C230096K16Rik	-1.4728932
Ahnak	1.38795232	Slc39a8	-1.4727559
Ltbp2	1.3875244	Pfkp	-1.4722686
Gm10406	1.38594914	Morc3	-1.47051668
Emp3	1.38574028	Zbtb43	-1.4693427
5930435M05Rik	1.3854322	Cbx2	-1.46702432
1700091H14Rik	1.38451	Pisd-ps3	-1.46667672
Pdlim4	1.3836856	Vezf1	-1.4656544
Ggn	1.3826742	Eif4g3	-1.4653616
Trappc1	1.3820715	Ccnl1	-1.46345186
Nrep	1.3805232	Prkab2	-1.4633198
Crxos	1.38036252	H2-Ab1	-1.4624486
Lgals3	1.3795762	Rnf219	-1.4609652

Eno4	1.3794534	Mlh1	-1.45999432
Dnlz	1.3781114	Ube2g2	-1.45954752
Sp7	1.37694788	Mllt10	-1.4594884
Wdr25	1.3758306	Luc7l2	-1.4577308
Cenpb	1.3753602	Atxn7l1	-1.4573164
Ddc	1.3745646	Zmym5	-1.45721388
Gm36269	1.3734646	Lrig2	-1.456408
Cep68	1.37282752	Arf3	-1.4556322
Spock1	1.3710732	Odf2l	-1.4538994
Olfr1513	1.3710222	Arfgef1	-1.4536042
Hivep3	1.37034894	Btbd10	-1.4525442
Eif4ebp2	1.3688912	Dip2b	-1.45225286
Fam189b	1.3679662	Srp54a	-1.45192432
Tpst1	1.3669114	Lrp11	-1.4509396
Ifna9	1.3631778	Syngr1	-1.44786692
2310007L24Rik	1.3631144	Cdkn1a	-1.4471888
Ifitm5	1.3622196	Vmp1	-1.4470858
Trpv4	1.3621216	Anapc16	-1.445262
Itgax	1.36030412	Srgap1	-1.44457674
Amer1	1.3602514	Cry2	-1.443512
Asb13	1.3598518	Zbtb44	-1.44331646
Klhl30	1.3596668	Ric8b	-1.4431458
Tgif2	1.357975	Lpin2	-1.4430146
Zfp953	1.356118	Flrt1	-1.4426122
Gpd1l	1.3557716	Zbtb41	-1.44101428
Apoc2	1.3555231	Uck2	-1.4403792
Tfeb	1.3550486	Chrm3	-1.4387336
Jade2	1.3549638	Mipep	-1.438127
Lppos	1.3530738	Cdc42bpa	-1.43795728
Vps52	1.3519116	Arl5b	-1.4378448
Rin3	1.3509894	H2-Ab1	-1.43747472
Aqp3	1.35041666	Strn4	-1.43741226
Cmbl	1.35033106	Gm9910	-1.43594646
Cmtm7	1.3483744	Arntl2	-1.435718
Rln3	1.34790706	Parp16	-1.4346132
Fkbp6	1.34779454	Ttr	-1.4331718
2410017I17Rik	1.3469844	Akap10	-1.4326592
Hpgd	1.3440792	Vangl1	-1.431443
Creb3	1.3424096	Tmem161b	-1.430316

Gm14496	1.34200572	Capza2	-1.42862654
Ucp3	1.34146834	Nup133	-1.42657566
Jak3	1.3406825	Lsm14b	-1.424887
Tubb2a	1.33916521	Strip1	-1.42487574
Plagl2	1.3387251	Cdkn1a	-1.4236002
Ablim1	1.338377	B3gntl1	-1.42325448
Mboat7	1.33761072	Tmem5	-1.42254352
2310007L24Rik	1.33633708	Luc7l2	-1.4224076
Cilp2	1.3352556	Ndel1	-1.42214394
Srprb	1.3344092	Dock9	-1.42210626
Gba2	1.33308268	2810403A07Rik	-1.4193378
Zcchc6	1.3321076	Gpc4	-1.4188156
LOC102641619	1.3319712	Bach1	-1.41861772
Olfr100	1.3317709	Eps8	-1.4180036
Csf1	1.3310418	Smad3	-1.4176226
Emcn	1.3307867	Dusp16	-1.41723728
Gm7596	1.3307152	Sfpq	-1.4169044
Osbp2	1.3291111	Erich1	-1.416749
Grm4	1.32907534	Wdr31	-1.4158168
Gm29371	1.3289442	Iqgap2	-1.4153466
Pop7	1.32721568	G2e3	-1.41396332
Sla2	1.32406	Zfr	-1.412847
1500009C09Rik	1.32366466	Ints8	-1.41263772
Sort1	1.3228817	Sfpq	-1.41177988
1810073O08Rik	1.3214812	Stk4	-1.407527
Dcx	1.3212356	Kif1b	-1.4062514
Cndp2	1.3190556	Paxbp1	-1.4061914
Il34	1.3188157	Jmjd1c	-1.4059854
A530072M11Rik	1.3171916	Elk4	-1.4054832
Hspb6	1.3170495	Gdap10	-1.40469646
Cdh13	1.3169556	Klhl21	-1.40404368
Ifi27l2b	1.315825	Nsun4	-1.40394354
Man1b1	1.3157568	Leng8	-1.40389634
Il17rd	1.314879	Ttc14	-1.4018478
Rbks	1.3147092	Sprtn	-1.4010076
4930517J16Rik	1.31447052	Scnn1b	-1.4003818
Scmh1	1.3130908	Egln1	-1.3997426
Serpine1	1.31286288	Slc39a3	-1.3995955
Gbf1	1.31248092	Hmx3	-1.3995762

1700052K11Rik	1.31244468	Pak3	-1.39799095
Cylc2	1.3124352	Serpina3n	-1.3971524
LOC102635521	1.3112264	Ube2d1	-1.3968062
Smarcc1	1.31078148	Fam49a	-1.3955674
Il27	1.309854	Unkl	-1.39552688
Atp1a1	1.30958032	1190002N15Rik	-1.39499
Slc37a3	1.3092084	Vps33b	-1.3948174
Adamts7	1.308599	Ppp1r3f	-1.3942442
Arsi	1.3085752	Rtn1	-1.39418412
Chst1	1.3067727	Gfm2	-1.3935168
Atp6v1e2	1.3048656	A430061O12Rik	-1.3927674
Efnb2	1.301887	LOC102631757	-1.390789
Rtn4rl2	1.3015342	Atp6v0a2	-1.3902235
N6amt2	1.3006888	Snx10	-1.3890009
Gm3238	1.29913688	Rnf217	-1.38896226
Arhgap27os1	1.2981258	Eps15	-1.3888984
Pklr	1.29804086	Cdv3	-1.3882832
Mgst1	1.2978234	Safb2	-1.3874488
Vmn1r178	1.2974234	Tacc2	-1.387342
LOC102636792	1.29734706	C330020E22Rik	-1.3864746
Ppp1r14d	1.2953329	Rab9	-1.3858728
5430405H02Rik	1.2948742	Rffl	-1.3854446
Nell2	1.29294252	Hnrnpl	-1.3827162
LOC547349	1.2919416	Cdyl	-1.381504
Gm28209	1.2918902	Mdn1	-1.38142728
Tchp	1.2916184	Tmem56	-1.38096952
Lix1l	1.2905104	Tmem254a	-1.3804316
Gpihbp1	1.2901506	Nr1d2	-1.3799901
Serpinb3c	1.28970766	Phf7	-1.379307
Zfp142	1.2890406	Dhrs13os	-1.37874532
Cideb	1.28819228	Mtmr9	-1.3773198
Olfr1316	1.2878508	Otud3	-1.3772206
Zfp526	1.2872591	Dgkq	-1.3770938
Platr9	1.28717732	Ccdc61	-1.37677432
9030624J02Rik	1.286686	Ctsl	-1.3763938
Bicc1	1.2862389	Mdm2	-1.3762746
5230400M03Rik	1.285361	Sclt1	-1.3755372
3-Sep	1.28486252	Tmem14a	-1.37461234
Nagpa	1.28383208	Zbed6	-1.3730483

Sec63	1.28289748	1700047A11Rik	-1.3729448
Rabl3	1.2826214	Tcf7l2	-1.3729086
Cmtm2b	1.2815485	Map2	-1.37280608
Gm13247	1.28109408	Nf1	-1.37161732
Mc5r	1.28106832	0610010F05Rik	-1.3714218
Knstrn	1.2807202	Btg2	-1.3709454
Zfp367	1.280499	Fem1c	-1.3703656
Lrwd1	1.2795158	Med13	-1.3698526
Plekhh3	1.27893805	Ralgapa1	-1.3691688
Lrrc51	1.2780948	Fam185a	-1.3671875
Cpn1	1.2774792	Fopnl	-1.3669734
Pitpna	1.27688286	Ccdc134	-1.3667164
Tmem41a	1.2767882	Ccdc97	-1.3661804
Xrcc6	1.2765408	Hs2st1	-1.36509752
Cd34	1.276515	Ctu2	-1.3633718
Lysmd2	1.2752376	Slc26a9	-1.3621888
Eprs	1.27506828	Zbtb4	-1.36216832
Ghrl	1.275043	Sec24b	-1.3621154
Ednrb	1.274847	Tgif1	-1.362041
Hemk1	1.27402448	Wnt4	-1.3608532
Mettl7a3	1.27396392	D230025D16Rik	-1.3608436
H2-Q5	1.27370072	Gpr137	-1.36010646
Baiap2l2	1.2732082	Anapc4	-1.35835552
Tmem181a	1.2720995	Flot1	-1.35631728
Toe1	1.271323	Acsl5	-1.3552318
Dcdc2b	1.2712484	Mbd6	-1.3540196
Ankrd52	1.2703404	Gm19818	-1.3536725
Top2a	1.2693934	Gm8300	-1.35295463
Gm35650	1.2691736	Ide	-1.351985
Dcp2	1.268527	Gm42102	-1.35076045
Wdr62	1.268466	Rcn2	-1.35052014
A730062M13Rik	1.268393	Tmtc2	-1.3503108
Jsrp1	1.26838112	Ip6k1	-1.3499274
Apobec1	1.26832532	Polg	-1.3498311
Nasp	1.2674716	Nup133	-1.3496938
4931440J10Rik	1.26695228	2010320M18Rik	-1.34899
Brd9	1.26687288	Arhgap12	-1.348681
Gda	1.2668076	Ccnj	-1.34767866
4930406D18Rik	1.26645088	Usp31	-1.3472681

Itgb6	1.265665	Tssc1	-1.3466218
Vmn2r-ps54	1.2654059	Lcor	-1.3462396
Fancd2os	1.26523137	Sdccag8	-1.34568452
Pld1	1.2651672	B3gnt3	-1.345439
Glycam1	1.26274872	Rprm	-1.34399652
Trp53i11	1.2621942	Mllt6	-1.34349394
Zfp608	1.26201486	Rcor2	-1.3433728
Npw	1.26155568	Dcdc2a	-1.3426352
Abr	1.26111508	Gm14167	-1.3421607
2410141K09Rik	1.2600684	Trim3	-1.341721
Tatdn3	1.259203	Ctsf	-1.3416476
Etv3l	1.2580545	Sufu	-1.3412252
Kif24	1.257577	Smug1	-1.3409872
Hap1	1.25641108	Alkbh8	-1.3383682
Tcte1	1.2564092	Flot1	-1.3373828
Abhd8	1.2559924	Crem	-1.3367734
Ppp6c	1.2550464	Pih1d3	-1.33659648
Gabrr3	1.2550032	Atf3	-1.33495474
Fam109b	1.25243806	Mtmr6	-1.3339376
Fam189b	1.2523172	Gm20747	-1.3337059
Gal3st2	1.2518318	Pdk3	-1.3329764
C79015	1.2477364	Sun1	-1.3323226
Tfip11	1.2471108	Rbm33	-1.3312745
Kcnn2	1.2458548	Gpr146	-1.3311186
Hexb	1.2457416	4931406H21Rik	-1.32934094
Snx24	1.24496412	Stam	-1.3292408
Mis18bp1	1.2445631	Cux1	-1.3286672
1700097N02Rik	1.2445407	Ccdc15	-1.3280392
Cspg4	1.24395514	Dgat1	-1.3272204
Porcn	1.2435916	Zfp638	-1.32679034
Acin1	1.2429438	Ndfip2	-1.3266206
Elovl4	1.2427836	Plin4	-1.3262734
Psmd13	1.2426224	Slc25a36	-1.325491
Il13	1.2418094	Plekhm3	-1.3254128
Gm11961	1.24148632	Wdr3	-1.3253612
Tlx1	1.241005	Pbx2	-1.3247862
Arhgap4	1.2408259	Metap1d	-1.32305788
Chmp6	1.2407208	Vps13c	-1.32291126
Acsf2	1.23998452	Fam133b	-1.32279586

Slc36a2	1.23933792	Setd5	-1.31958294
Setdb2	1.2385578	Sp4	-1.31772232
LOC101056001	1.23832368	Prpf4b	-1.3162002
Gm34028	1.2359116	Bglap3	-1.3142962
Ctnnbl1	1.235754	Cdk19	-1.3139558
Ublcp1	1.2355394	Rasa1	-1.3132701
Gm9510	1.2348518	Pcgf5	-1.31245088
Scgb2b20	1.234065	Pdk4	-1.31214855
Fblim1	1.2339006	Cpeb4	-1.31214046
Tshz3	1.2338059	Zdhhc23	-1.3120823
Dhcr24	1.2331767	Sh3rf1	-1.3114481
Msrb2	1.2331758	Tmem56	-1.3080759
St3gal4	1.2329984	Edrf1	-1.3072386
Myl4	1.232388	Cep170	-1.307117
Gm9916	1.2314158	Nsd1	-1.30639172
Gm10427	1.2303381	5730455P16Rik	-1.30484366
Ppih	1.2302728	Defb1	-1.3044095
Pramel1	1.2298026	Ocln	-1.3039928
Ctse	1.2287817	C1galt1	-1.3039856
Nudt6	1.2285542	Rasgef1a	-1.3034377
Tnpo2	1.22787332	Lipe	-1.3033566
Msmo1	1.22720146	Kdm2a	-1.3025746
Ly6c1	1.22715234	Ctnnb1	-1.30236148
Lats2	1.22655774	Rmnd5a	-1.30226994
Adam1b	1.2257304	Pgm2l1	-1.30107928
Gm35438	1.22554588	Tmem64	-1.3008852
Cuedc1	1.2254262	N4bp2l2	-1.299964
2610528J11Rik	1.22509432	Capn10	-1.299551
Gm32191	1.2233424	4931428F04Rik	-1.2984338
Slc35a2	1.22300148	Slc19a2	-1.2984166
Nr5a1	1.2220521	Gm33558	-1.2978006
Sqstm1	1.2209144	Lpin2	-1.29779292
Gm7337	1.2207294	Zfp607	-1.29775334
Rnf144b	1.2204866	Adamtsl4	-1.29729414
Wnt7b	1.21996188	E330009J07Rik	-1.297184
Nos3	1.2188558	Snx18	-1.2956328
Ano10	1.21866512	Rictor	-1.295198
Gm33778	1.2183256	Glis3	-1.29461432
Fgd3	1.218128	Sdc4	-1.29457615

Gene	Value	Gene	Value
Gtf2i	1.21670246	Mmel1	-1.29420328
Golm1	1.216104	Mmgt1	-1.2938042
Gm10785	1.215476	Snhg20	-1.2930851
4933411K16Rik	1.2149043	Prepl	-1.29251934
Rhobtb3	1.2145372	Zdhhc17	-1.29223346
Slc7a7	1.2139158	Nfat5	-1.29181766
Map3k7	1.2137194	Tbc1d8	-1.2909255
Hmgcs1	1.2136817	Ttll5	-1.29073334
Abcc5	1.21271228	Hoxd9	-1.29030632
2410022M11Rik	1.21269226	Usp53	-1.2902784
Gart	1.2118013	Ptpn14	-1.290185
Utp14b	1.21120548	Qser1	-1.28945828
Gm4319	1.2109404	Rc3h1	-1.2875958
Hsd3b4	1.210686	Arid4b	-1.28534174
8-Sep	1.21041488	Abhd3	-1.2843404
5930412G12Rik	1.2101574	Baz2b	-1.2842012
Gm10183	1.2101345	Rnf39	-1.2829718
Fgd1	1.208766	Neat1	-1.2827292
Gm38407	1.2087102	Kdm5b	-1.28133774
Meis1	1.20767952	Cald1	-1.2806916
Rhbdl1	1.207675	Amz2	-1.2800517
Olfr1375	1.206655	Dyrk1a	-1.27987052
Fcgr4	1.20598888	Arrb2	-1.27962494
Tmem61	1.20591592	Paip1	-1.2795844
Gm29260	1.2056551	AI195381	-1.2794728
AA619741	1.2052393	Catsper1	-1.2792282
Stox2	1.2047238	Ikbkg	-1.2792201
Ophn1	1.2043762	G2e3	-1.2788796
Tmco4	1.2043242	Hmbox1	-1.2787084
Cidea	1.20348454	Cald1	-1.2786408
Map4	1.2020726	Kctd20	-1.2782669
Usp37	1.2019267	Bard1	-1.2781386
Olfr153	1.2013011	Pofut1	-1.2776947
Gm10125	1.2009573	Nt5c3	-1.2773066
Gfm2	1.200428	AI845619	-1.2766094
Cars2	1.199841	Cep41	-1.27655292
AF067063	1.19955348	Txlng	-1.27561474
Neto1	1.1991978	Atp2c1	-1.2750898
1700029F12Rik	1.1975184	Barx2	-1.2746744

Habp2	1.1972475	Myo5b	-1.27378274
Gm5105	1.1968498	Hif1a	-1.2724152
Gm21637	1.1964126	Nexn	-1.2719068
Obox1	1.1957402	2610005L07Rik	-1.2711058
Gm16096	1.19551992	Dnajb4	-1.2707
6030442E23Rik	1.1953721	AA645497	-1.2706494
Ikbkb	1.19516683	Gcc2	-1.2703438
Ift46	1.1946311	Dusp12	-1.26962
Dleu2	1.1934524	Igsf3	-1.2685018
BC024386	1.1933389	Kansl1l	-1.2678647
Sirt4	1.1925988	4930539E08Rik	-1.2667594
Ifit3b	1.19248985	Kcnh7	-1.26623083
Car11	1.1924806	Mtrf1	-1.2660918
Slc28a1	1.1917782	Ankrd37	-1.26518012
Gnpda1	1.1908307	Gng10	-1.2644878
Phf19	1.1904922	Hivep2	-1.2634316
Tcl1b2	1.190186	Zmat3	-1.2629786
Olfr1168	1.1895228	Plekha1	-1.262825
Gm6934	1.1894812	Brwd1	-1.2623596
Gsto1	1.18668128	Sptbn2	-1.26228332
Kri1	1.1865108	Scn1b	-1.26096154
Rbm5	1.18639946	Lifr	-1.2608285
Itgb7	1.18634654	Ikbkg	-1.26054313
Myo9a	1.18634366	Kazald1	-1.26054
Tspan18	1.18613386	Ddx5	-1.260232
St8sia1	1.1853757	Mllt10	-1.2600112
Prlh	1.1836605	Arvcf	-1.25974608
Agpat2	1.1824784	Plcb3	-1.2596822
Mkrn2os	1.182272	Cish	-1.2593312
Angpt2	1.18005228	Syt13	-1.2589292
4931431B13Rik	1.1798434	Dock1	-1.2585816
Fyco1	1.1796462	Eif4e2	-1.25783968
Olfr1115	1.17962814	Acvrl1	-1.25773048
Lpar6	1.1762138	5830427D02Rik	-1.2572768
AU022793	1.1760388	Tgfbr3	-1.25710488
Sh3tc1	1.1757684	Ssna1	-1.2569976
Narfl	1.1751432	Vsx1	-1.2564907
Nuak2	1.1745114	Efr3a	-1.2563972
Ly6c2	1.1743245	2610005L07Rik	-1.2561593

Icam4	1.1738503	Camsap2	-1.2560358
Trappc12	1.173665	Ugdh	-1.25592852
Fam69c	1.17344687	Txnrd2	-1.255322
Itih4	1.1730742	Lrg1	-1.25522754
Pls3	1.1727528	Trmt13	-1.25504494
P3h4	1.17273426	Zfp617	-1.2549856
Gm32817	1.1720118	Mcoln1	-1.2548752
Zfp296	1.17169666	Mcc	-1.2546711
Specc1	1.1709576	Pkd2l2	-1.2543426
Fads2	1.169846	Rad17	-1.2542558
Lgr6	1.16947032	Dnajb14	-1.25237108
Olfr930	1.1688664	Csnk1e	-1.25071
6430710C18Rik	1.1684122	Smg1	-1.2506423
Bbx	1.16802692	Tbc1d14	-1.2504396
N4bp1	1.1680002	Rbbp6	-1.25011254
Wnt7b	1.1669674	Fam212b	-1.25009632
Doxl2	1.1663594	Fam162a	-1.24982882
1810024B03Rik	1.1661191	Ghr	-1.24965
Mcts1	1.1656766	Ccnt2	-1.2496042
Glb1	1.1654978	Scaper	-1.24869728
Pde3b	1.1651416	Ggnbp1	-1.24852848
Tmem196	1.1650948	Fut1	-1.2468324
Cenpk	1.1650772	Ebf4	-1.245933
Rnase11	1.1647658	Vwa5a	-1.24588108
Ramp1	1.16472768	Znrf1	-1.24551392
Opcml	1.1638341	Llgl1	-1.24526166
Serpinb9	1.163619	Nr1d2	-1.2441196
Ppt1	1.1633792	Mvp	-1.243556
Spats2	1.1629434	Foxo1	-1.2435264
Spag17os	1.1627369	Glg1	-1.242796
Smok3b	1.1614566	Mylpf	-1.24218606
LOC545005	1.1614304	Prkar1b	-1.2420774
Tmprss9	1.1612534	Prss57	-1.2419107
Cep89	1.16092492	Adprh	-1.2411308
Tigar	1.1606054	Mgea5	-1.24101448
Scfd2	1.15948772	Pcf11	-1.2403584
Acss2	1.1592269	Rcan3	-1.24022532
Gm35313	1.1587224	Tnrc6c	-1.23996686
Adck2	1.1582308	Myo5a	-1.2387626

C130063K03Rik	1.1579752	Ybx1	-1.2382584
Fev	1.1575079	Slc9a9	-1.2371538
Gm8884	1.1569214	Fgl2	-1.2369337
Cptp	1.15613032	Ccdc91	-1.236486
Mtap	1.15528012	Tollip	-1.23575186
Rrp1b	1.15518545	Zscan22	-1.2349086
Tmem241	1.15435886	Socs4	-1.2344594
Tmem123	1.153997	Ulk3	-1.23440314
Slc18a1	1.1536734	Ift74	-1.23379994
Cux1	1.15352154	Trib1	-1.2330422
Ncor2	1.153214	Plekhg5	-1.23248076
Gm11733	1.152461	Mat2b	-1.23191834
Mtx1	1.15173006	A930004D18Rik	-1.23171688
Gm21637	1.1512227	BC030336	-1.2316084
Auts2	1.15042686	1110038F14Rik	-1.2315516
Olfr609	1.15038014	Aen	-1.23100613
Pdxk	1.1496658	Zfp169	-1.23040246
Zfp956	1.1487574	Fem1c	-1.2300229
Ablim1	1.1486907	Ypel3	-1.2298665
Slc30a8	1.14821	Svil	-1.2297902
Itih4	1.1474404	Tmc3	-1.228935
Sned1	1.1474214	Lrrcc1	-1.22888852
Ikzf3	1.147121	Rap2a	-1.228414
Gtf2h4	1.1471052	B130052P14Rik	-1.22839928
Dock5	1.1470368	Atp8a1	-1.2282558
BC043934	1.1457553	Zfp940	-1.22745514
Bcar1	1.1456208	Bcor	-1.226593
Dgat2	1.1448412	Nudt5	-1.2252726
Tceal8	1.14455652	Tmem234	-1.2251206
Alg6	1.1444745	Prpf40a	-1.2249279
Cyp1a1	1.14403868	Pou2f1	-1.2234478
Ndrg3	1.1438694	1700017B05Rik	-1.2225676
Defa1	1.1434846	Fbxl16	-1.22249794
Gimap9	1.1431398	Myo1e	-1.2220454
Oprl1	1.14202834	Camk2b	-1.2218518
Cox10	1.1419826	Frat1	-1.2210648
Snx30	1.1406102	Pold3	-1.2209706
Jdp2	1.1394548	Mapk8ip3	-1.220592
Olfr806	1.13896512	Gnb1l	-1.21995354

2700046G09Rik	1.13864088	H2-T24	-1.2196794
Gpr39	1.1385536	Ufl1	-1.217818
Maz	1.13845872	2610319H10Rik	-1.2174926
Wfikkn1	1.1371612	Ptpn6	-1.2167809
Gt(ROSA)26Sor	1.13675308	Rock2	-1.2160554
C330007P06Rik	1.1347537	Ptges	-1.21561025
Olfr139	1.1346574	Lamc2	-1.2154026
Anxa3	1.13464832	Crtc3	-1.2145977
Nme7	1.1343246	1700088E04Rik	-1.214088
Ndufs8	1.13343198	Raet1a	-1.2137442
Phf6	1.133842	Trim23	-1.2134666
Plk3	1.1329064	Dym	-1.21258688
Dolpp1	1.1326499	Pgf	-1.21215772
Th	1.1324029	Fam46c	-1.21199226
Fastkd5	1.13206912	Ing3	-1.2118106
Ctif	1.131701	Pcf11	-1.21073008
Gsn	1.13167334	Enpp2	-1.2105958
Gm3002	1.13139248	Klhl42	-1.20921088
Kcnn3	1.13120412	Trdmt1	-1.2078812
Pkd1l2	1.1301856	Braf	-1.20778132
Lhfp	1.12959052	Insig2	-1.2074046
Speer4a	1.1292968	Prpf4b	-1.2070064
Olfr96	1.1286712	Mbtd1	-1.2058062
Gm10220	1.1283002	Socs2	-1.2045336
Olfr279	1.12826872	Setx	-1.20379686
LOC101055630	1.12745546	Cables1	-1.2034474
9030619P08Rik	1.1273298	AA474331	-1.20319008
Nanos3	1.1272798	Proca1	-1.2031038
Fblim1	1.1272388	Mob1b	-1.2026544
Enho	1.1267986	Ewsr1	-1.20224
Phykpl	1.1264424	Krtcap3	-1.20169327
Tesc	1.1263804	Tbc1d9b	-1.2015853
Lynx1	1.12603808	Eps15l1	-1.20154954
Rnu1a1	1.1259008	Rsbn1l	-1.2003727
Pip5kl1	1.1257124	Cdkn1b	-1.2001824
Serpinb6b	1.12552166	Insr	-1.20003032
Kat6b	1.1253996	Pde7a	-1.1999988
Gstt1	1.1243992	Asxl2	-1.199636
Spata9	1.124248	Tmem135	-1.1988006

Ghrl	1.12413406	Fubp1	-1.1981406
Ncl	1.123786	Kdelc1	-1.19806146
Atp6v1g2	1.1234794	Desi2	-1.19694232
Brdt	1.1232128	Zdhhc24	-1.196876
Galns	1.123147	Card6	-1.1968098
LOC102642189	1.1228294	Pvt1	-1.1957428
Gm31649	1.1206484	Casp3	-1.1946783
Spin2d	1.1205039	Smtnl2	-1.19265128
Msn	1.1200852	Tbc1d20	-1.1923738
Syt6	1.11880494	Dusp8	-1.192205
Syt5	1.11824108	Wdr70	-1.1915708
Gm31493	1.1169448	Fbxw27	-1.1912212
D930007P13Rik	1.11681748	Cep170b	-1.19121026
Pwp1	1.11662292	Tbl2	-1.1911096
Tomm40	1.1165008	Tceb3	-1.19099712
Lag3	1.1162768	2310009B15Rik	-1.190928
Nphp1	1.1161036	Sos1	-1.1902709
Hmgn5	1.1157446	Eps8	-1.1902626
Krt2	1.1141624	Ugdh	-1.18989706
E230006M18Rik	1.11336852	Plekhh1	-1.18949032
Ccdc33	1.11275148	Rnf41	-1.1883226
Ddx55	1.1125546	Nadk2	-1.1879458
Ccdc90b	1.1122188	Fbxl20	-1.1878714
Gm7609	1.1121826	Ang6	-1.18783474
Slc35d2	1.112046	Pitpnm2	-1.18762732
Cdh6	1.1120186	Cxadr	-1.1861396
1600015I10Rik	1.11191368	Slc9a6	-1.18584728
Zbtb9	1.1117196	Dtd1	-1.1855702
Lipt2	1.11110474	Tor1b	-1.1843982
Tspan17	1.11085034	Synj2	-1.18436
Nlgn3	1.1102238	Vegfa	-1.18406152
Olfr1170	1.10969066	Kit	-1.1837106
Fgd3	1.10967494	Usp6nl	-1.1829724
Kncn	1.1093576	Numb	-1.18292428
Tbc1d24	1.1092682	Zcchc3	-1.18289972
Olfr553	1.1090293	Aen	-1.18247845
Gm19705	1.1086595	Papolg	-1.1822443
Gcm2	1.1082325	Psd3	-1.1822033
9630001P10Rik	1.1073594	Cmtm2a	-1.1817346

Gm39121	1.10645628	Arhgef12	-1.1815496
Gm10872	1.10636186	Lcorl	-1.18109608
Klc2	1.1062284	Ilvbl	-1.18079566
Rnf213	1.10580324	Chd1	-1.18046092
Lox	1.1057806	Anxa4	-1.1803524
Sec14l1	1.1056352	Arid5b	-1.1795621
Cr2	1.1055078	Luc7l	-1.17952872
Gm19691	1.10538388	Pik3c3	-1.1786418
Acin1	1.10518215	Kat6b	-1.1782904
Wdr25	1.1040526	Gtf2f2	-1.1778574
Frmpd1	1.10369086	Armc7	-1.1778174
Tex101	1.10343934	Shc4	-1.17645692
Rom1	1.1028428	Limk2	-1.17636346
Hspg2	1.10270452	Runx1	-1.1740384
Fads1	1.1023662	Gm3556	-1.174037
Ncf2	1.1020374	Nlrp4c	-1.17390632
Lck	1.10131406	Brwd1	-1.1729994
A430106A12Rik	1.1007652	Enthd2	-1.17173768
Ccbl1	1.1001072	Zfp959	-1.1716194
Pofut2	1.0998692	1810020O05Rik	-1.1705389
Gm13201	1.0998402	Cep250	-1.1700068
Itih2	1.09974314	Inadl	-1.169548
Cdhr4	1.0994568	Zranb1	-1.1695376
Lrrc51	1.0981989	Trp53inp1	-1.16821814
Plcb1	1.09818554	2310022B05Rik	-1.168004
Tssk1	1.09662008	Meaf6	-1.1673422
2010109A12Rik	1.09639788	Mthfr	-1.1659894
Nqo2	1.0960064	Gm4524	-1.165915
Tbx21	1.0959301	Ctdspl2	-1.1657269
Lcp1	1.0959158	Suz12	-1.16566848
5031415H12Rik	1.09556532	LOC102641428	-1.16535806
Usp19	1.0955334	Ttc14	-1.16532612
Gm32431	1.093833	Cflar	-1.1652074
Gm14296	1.09360745	H2-D1	-1.16457226
Kctd15	1.0922208	Ankib1	-1.16453934
Chaf1b	1.0914011	Brwd1	-1.16440154
Epdr1	1.09131	Snx1	-1.1642022
Zkscan5	1.0910287	Oas1g	-1.1637642
Cbl	1.09094954	Col4a3bp	-1.16370774

E330012B07Rik	1.0908582	Tbc1d10b	-1.16353274
Slc37a3	1.0906138	Slc37a4	-1.1631064
Mbp	1.090404	Polg	-1.1624394
Igbp1	1.0897441	Aff4	-1.1618896
Zc3h3	1.08933354	Lgr4	-1.16181708
Aurkb	1.08907128	Mxi1	-1.161747
2610318M16Rik	1.0877533	Susd2	-1.1615512
Trub1	1.08758212	Kank3	-1.16095734
Mmp17	1.08654928	Myo1b	-1.16023112
Ralb	1.08645675	Unkl	-1.16008234
Pelp1	1.08596706	Tmem141	-1.15979052
Ldb3	1.08541728	Bcas3	-1.1597204
Ffar3	1.0850158	Ccnl1	-1.1596942
Camta2	1.08500672	Usp18	-1.158495
Gm3219	1.08440732	Srsf5	-1.1583982
Mrps27	1.084012	Tpi1	-1.15809773
Pdp2	1.0832572	Vps4b	-1.15748168
Sema3f	1.0830874	Tpi1	-1.1573329
Gm31588	1.0826004	Srrm1	-1.15721988
Tex35	1.0823464	Zfp729a	-1.1567364
Nrxn2	1.0816894	Gm608	-1.1565795
Zfp385c	1.0814762	Rbm26	-1.1562304
Gstm7	1.0813179	Pus7	-1.1556482
Gm36849	1.0811098	Klhdc9	-1.1555738
C1qtnf1	1.08040546	Tmem38a	-1.1554985
C230085N15Rik	1.079988	Gm16049	-1.15499592
A430048G15Rik	1.07992172	Txnip	-1.15489053
Mboat1	1.0795827	Rgs11	-1.1539006
Nt5m	1.07934952	Gzf1	-1.15336752
Zfp827	1.0791554	Nfkbiz	-1.1533408
Gm36365	1.0791354	Ezh1	-1.1531906
Gm35472	1.0791092	Zfp53	-1.15243388
Gm29155	1.0786018	Nup54	-1.1520834
Shcbp1l	1.0783978	Ddx17	-1.15207245
Gm10463	1.07827806	Srp54a	-1.15205288
N4bp3	1.07777166	Gid4	-1.1509614
2900011F02Rik	1.07768488	Zfc3h1	-1.1501908
Tmem62	1.07764912	Tra2b	-1.1489029
Vmn2r97	1.0758238	Uchl1	-1.14876414

Daf2	1.07580852	Mtf1	-1.1486888
Neurog1	1.07535028	Fut2	-1.1485992
Nlrp1a	1.07494405	Syp	-1.1481061
Arhgap9	1.0748238	Ibtk	-1.1479888
LOC105244782	1.0738142	Edn1	-1.14773894
Tssk3	1.0730998	Fut1	-1.1474528
Themis2	1.07307768	Tbc1d23	-1.1470142
LOC102639683	1.07276868	Dhx40	-1.14699412
Olfr1026	1.0723062	Tmtc3	-1.1467142
Lrwd1	1.0721274	Phf3	-1.1425824
Pmepa1	1.071929	Msl1	-1.14224
Psmg3	1.071013	Dyrk3	-1.1413198
LOC552909	1.070889	Rbm15b	-1.14085794
Mei1	1.0702124	Gm12082	-1.1404238
Dsc3	1.06956768	Pcmtd1	-1.14034652
Aspa	1.0690341	Sergef	-1.1403082
Acot7	1.0686374	Emc2	-1.1380754
Obfc1	1.06839252	Gtpbp2	-1.1377564
Homer3	1.0677218	Wwp1	-1.1365776
1700025G04Rik	1.06713772	Vprbp	-1.1361628
Prkd2	1.0670734	Sfxn5	-1.1359778
9230110C19Rik	1.06682586	Gm42035	-1.13561916
Adgrg2	1.0668096	Rpp14	-1.1352262
E2f3	1.0659652	Apobec3	-1.1349716
Phactr2	1.0656424	Rrm2b	-1.1348488
Efr3b	1.0653958	Stxbp5	-1.13461972
Sncb	1.0652642	Slc25a27	-1.1342564
10-Mar	1.0650702	Setx	-1.1342552
Slc28a2	1.0646796	Crebrf	-1.1340475
Tiam1	1.064456	Nol10	-1.13337967
Pld3	1.0641494	Snx14	-1.13328004
Gm35786	1.06383132	Sbno2	-1.1311684
Det1	1.06377554	Dnm2	-1.1311312
LOC105246799	1.0636959	Nat6	-1.130961
Tat	1.0636053	Gdi1	-1.13080454
LOC105243826	1.0632124	Aagab	-1.130693
Snx29	1.0631547	Wee1	-1.1300316
Urm1	1.0631218	Tbc1d15	-1.1300292
4931428F04Rik	1.0626476	Per3	-1.1292882

Tmem97	1.0625462	Igip	-1.1289148
Gm26511	1.0624418	Cipc	-1.1283264
Zbtb12	1.062264	Vcp	-1.1282258
Bspry	1.06221008	Pomt2	-1.12752008
E030025P04Rik	1.0620675	Ggps1	-1.1274328
Fmod	1.06181192	Tbl1xr1	-1.1264982
Msto1	1.0614862	Hook3	-1.1256428
Rragd	1.061285	Arih1	-1.1254768
Olfr885	1.0607972	Ccdc152	-1.12521886
Mtus1	1.05854892	Mettl6	-1.12516594
Pla2g4c	1.0584478	Arid5a	-1.12495708
Cgnl1	1.058331	Il17rd	-1.1239366
Lrrtm4	1.05723668	Zfp148	-1.12358188
Med18	1.0572009	Osbpl11	-1.1234808
Igf2bp2	1.0568657	Pkd2	-1.1230855
Coro7	1.05675294	Dmtf1	-1.122776
Pik3r4	1.0559349	Sbsn	-1.12275266
Nctc1	1.0550246	Brf1	-1.12218714
5330432E05Rik	1.0549941	Wls	-1.1218481
Cxx1a	1.05408192	Wdr47	-1.12178994
Tmem52	1.0527816	9130007G19Rik	-1.1216073
Slc35b2	1.05273866	Stim2	-1.12154532
Sirt7	1.0526152	Pcm1	-1.1212826
Fcor	1.05156612	Vps13a	-1.121016
D1Ertd704e	1.05082512	Rec8	-1.120873
Fbxw25	1.0503826	Fndc3b	-1.1199665
Gm36159	1.0499268	Atp2a2	-1.11976432
Dact2	1.04848935	Sun2	-1.1195855
Rabep1	1.0483394	Gpn3	-1.11951112
1700066C05Rik	1.04789448	Mark3	-1.1183124
Krtap4-16	1.0475884	Tnpo1	-1.1180048
Ptprb	1.04730155	Arhgef12	-1.117909
Usp13	1.0471263	Pkd2l2	-1.117902
Ttc3	1.0463638	Tlcd2	-1.11748886
Pigu	1.04555988	Hist1h1c	-1.1171598
Tmem53	1.0454006	Ankrd17	-1.1169062
3110039I08Rik	1.04533768	Kif9	-1.1162972
Fam149a	1.04515648	Zfr	-1.1162815
Pdpn	1.0444322	Commd8	-1.11600112

Pla2g10os	1.044424	Ptpn13	-1.1160006
Mpv17l2	1.0442944	Mettl21c	-1.1148634
Fmo1	1.04404974	Zbtb16	-1.11477328
LOC545198	1.043756	Fam175b	-1.11350728
Ube4a	1.0432148	Spata5	-1.11329794
Thap1	1.0430236	Fam214a	-1.11175632
Tcp11l2	1.043004	Zfp110	-1.1112728
Rasgrp4	1.04220008	Ankrd10	-1.11120748
Fam101b	1.041508	Sun1	-1.1111426
C4b	1.0411315	Lin7c	-1.11093808
Adcy10	1.040988	Hinfp	-1.1108332
Secisbp2	1.04083774	Papd7	-1.110456
Gm4836	1.0408349	4833420D23Rik	-1.1100984
1500011B03Rik	1.04054094	Sipa1	-1.1097078
Mro	1.04047966	Hip1r	-1.1095128
Mark2	1.0402036	Snora81	-1.1083756
Speer4cos	1.04000568	D17H6S56E-5	-1.1072707
Stab2	1.0399723	Vangl1	-1.1068573
Gm2491	1.0396996	Zfp292	-1.1067605
Gm3896	1.03904008	Me2	-1.1067462
Fstl1	1.0389953	Mettl6	-1.1061654
Slc6a16	1.0389638	Eif4enif1	-1.10562754
Grin2b	1.03874826	Slc35f5	-1.105144
6330566A10Rik	1.0383864	H13	-1.10502672
Barhl1	1.03824974	Rsrp1	-1.10455846
Ttc28	1.0381634	Birc6	-1.10425186
Gm29782	1.03805972	Cnot6	-1.103374
6530403M18Rik	1.0378442	Zbtb16	-1.10330152
Il15ra	1.03755332	Maff	-1.1028376
Lamc2	1.0373282	Ginm1	-1.10236692
Atm	1.0369902	Gnl1	-1.10220932
Vegfc	1.03657628	Phldb3	-1.10175466
Mgl2	1.0364385	Meis3	-1.10165692
Ms4a1	1.0363832	Mb21d1	-1.10096097
Sema4c	1.03623772	Gpatch8	-1.1005969
Ankub1	1.036036	Nuak1	-1.0992332
Gpa33	1.03570652	Eif4a2	-1.0988636
Slc7a12	1.03509426	Heatr1	-1.09870026
Il27ra	1.0345168	Tsr3	-1.0977218

Pdha1	1.0343032	Pnrc1	-1.0976286
D8Ertd82e	1.03299094	Slc7a11	-1.0976062
Esrrb	1.0329166	Arid1b	-1.0973454
Dlat	1.032655	Espn	-1.0973115
Dnmt3b	1.0323444	Tcf12	-1.0967436
Tmem97	1.031919	Per3	-1.0958352
Gm5953	1.0314426	Rabgef1	-1.09582
Nr1h3	1.031043	Myo7a	-1.0956828
Thra	1.03096628	Pdk2	-1.0950384
Ttll5	1.0306974	Gm20740	-1.0949898
Gart	1.0304856	Herc2	-1.094883
Cox18	1.0304513	Rai2	-1.0948739
Slbp	1.0304146	Wdfy3	-1.0940762
Slc36a2	1.02978706	1810041L15Rik	-1.0940642
Ccdc178	1.0296226	Afg3l1	-1.0939608
2310079G19Rik	1.02909326	Pik3r4	-1.092977
Dhx33	1.0290802	Bcl3	-1.0927644
Col17a1	1.0289554	Zdhhc22	-1.092618
1810013A23Rik	1.0289359	Galt	-1.0923548
Foxn1	1.0288816	Uba6	-1.0921607
Ly6f	1.02812	Dgcr8	-1.09199954
Gm30302	1.02789212	Ptprd	-1.0919728
Nup188	1.027637	Arrb2	-1.09084654
Pou2f2	1.0272522	Rad1	-1.0907126
Lmo4	1.0269642	Sox4	-1.09038494
Lars2	1.0260482	Col7a1	-1.0903602
Spaca7	1.026032	Wdr92	-1.0888939
Tbc1d9b	1.0257526	2610201A13Rik	-1.0887752
A930024N18Rik	1.025537	Fam220a	-1.088439
Pign	1.0246844	Sltm	-1.0883584
Isca1	1.02464532	Vwa5a	-1.0882692
Gm17746	1.024344	Fosl2	-1.08808754
Dntt	1.02398634	Agpat6	-1.08804368
Omp	1.0239854	Cyp4f17	-1.0880208
Rangrf	1.02382612	Gm7104	-1.0872106
Ces2a	1.0234971	Gpatch8	-1.0867128
Cdh18	1.0221786	Arid2	-1.0865598
Ppp2r5c	1.02205346	Gtse1	-1.086546
Acacb	1.0215082	Mir22hg	-1.086474

Dock4	1.0212002	Slc33a1	-1.0864162
Cgnl1	1.0207648	Ppid	-1.0861406
Nt5m	1.02042294	Elk4	-1.0859384
Cox6b2	1.0200839	Gm34975	-1.0858598
Gm33058	1.0199051	Rfc3	-1.0854916
Macc1	1.0198174	Gprasp1	-1.0853896
C030009H01Rik	1.01927852	Mpp5	-1.0853386
Tox2	1.0191996	Fam208b	-1.0852666
Cacng3	1.01899554	Ranbp9	-1.0846314
Prss23	1.0184202	P4ha2	-1.0845818
Cdk19	1.0183902	Vbp1	-1.084197
Nfkbie	1.01773426	Smchd1	-1.0837722
Lta4h	1.0176182	Triobp	-1.0835023
Taf1b	1.017396	Trim34a	-1.08320834
Dcun1d3	1.01628112	Ip6k1	-1.082892
Cttn	1.0160513	Phlpp1	-1.0828762
Scrn2	1.01530028	Rsrc2	-1.08281946
Gm27211	1.01523448	Adcy9	-1.0825758
Etv4	1.0151863	Mcf2l	-1.0822084
Ccdc23	1.0147586	Thyn1	-1.08214426
Sgk3	1.0139534	Meis1	-1.0820722
9530026F06Rik	1.0138416	Mfhas1	-1.0819807
Cited4	1.0137758	Pcgf5	-1.0818615
Thap4	1.013505	Gtpbp10	-1.08154774
Wnk2	1.0130458	Gxylt1	-1.0812807
Pkhd1	1.0128388	Ripk4	-1.08095026
4930513D17Rik	1.012248	Uckl1os	-1.08043194
B230354K17Rik	1.01128912	A030001D20Rik	-1.07994772
Ak8	1.0112462	Alox12b	-1.0797491
Cdk5rap2	1.01010106	Ggta1	-1.07933
Lipo1	1.0096674	Lzic	-1.0790382
Lgals3	1.00932168	Wrnip1	-1.0786224
1700037C18Rik	1.0092616	AU024546	-1.078587
Otoa	1.0091896	Rab5a	-1.0785556
Mapt	1.0089588	Dapp1	-1.0784416
Lgalsl	1.0088005	Rgmb	-1.07842494
Igfals	1.0088	Sav1	-1.0783734
Gm29776	1.0087304	Nvl	-1.07805872
Tnfaip8	1.0082688	Lysmd3	-1.07793712

Mrgpra4	1.00824334	Nfe2l3	-1.0778442
Akna	1.008204	Tubgcp3	-1.07702208
Prl3b1	1.0081692	Zfyve19	-1.07699012
D17Zt10e	1.007493	2010204K13Rik	-1.0768556
Zfp362	1.0070558	Mrpl1	-1.07670068
Grin1os	1.0069256	Vegfa	-1.07649946
Dnajc13	1.0062449	Tcf7	-1.0764637
Atp6v0a1	1.0053654	Lins	-1.0758152
Mcm4	1.0053339	Fam63b	-1.07565212
Rptor	1.0051732	Mxd4	-1.07553768
Nupr1l	1.0050869	Gdpgp1	-1.07551908
4933416M07Rik	1.00506448	Dohh	-1.0754404
Pms1	1.0046668	Chdh	-1.074976
Gzmk	1.00302268	Cpsf6	-1.0747976
Mpi	1.0029144	Trio	-1.074769
Phf14	1.00231054	Micu1	-1.0745349
Nkx2-1	1.001574	Ccnd1	-1.0743704
Shc3	1.0014982	Trmt2b	-1.07409192
Zfp786	1.0013452	Usp33	-1.0737882
Tbc1d25	1.0007772	C2cd3	-1.0737505
Nhlrc1	1.0004382	Parp6	-1.07374812
Vps13d	1.00031519	Ddb2	-1.07364512
Adam12	0.99930668	Tmppe	-1.0735774
Gck	0.99919796	Clk1	-1.0733848
Cyp2j8	0.99744344	Fbxo28	-1.0728388
Gnrhr	0.9972606	Gm765	-1.0723972
Traf1	0.9968071	Rpap2	-1.07234
Gm11437	0.99646234	Fdxr	-1.07178306
Olfr1362	0.99640608	Mga	-1.0711446
Pls3	0.99635268	Hba-a1	-1.0709138
Snph	0.99577808	Setd1a	-1.0706754
Oaz2	0.99565744	AI839979	-1.0700264
Atp8a2	0.99536228	Taok2	-1.0686626
Tfdp2	0.99372816	Cpt1c	-1.0681534
Rgl3	0.9928026	Pisd	-1.0681057
Tjp3	0.99177694	Serinc5	-1.06789588
Erich6	0.9917488	Pan2	-1.06716012
Dusp5	0.99167634	Esco1	-1.066504
Klf4	0.99136686	Tmem194	-1.0659156

Olfr933	0.9904032	Rassf1	-1.06494066
Gm30948	0.99031544	Sf3b1	-1.0649004
Afap1	0.9902997	Fam71f2	-1.0647988
Flt1	0.9902048	Klhl28	-1.0644684
Rhod	0.99005652	Whamm	-1.0641866
Med22	0.98989392	Rnf103	-1.06407546
H2-M5	0.98942996	Foxo3	-1.0639372
Wfdc13	0.9894042	Wdr41	-1.06304192
Defa24	0.98935032	Vwa1	-1.0626278
LOC102643134	0.9893236	Impad1	-1.0624137
Bmf	0.98907376	Stam	-1.06188106
Speg	0.98871326	Btg2	-1.0616984
Gm30092	0.98863006	Abcc2	-1.06159688
Pgap2	0.98857212	Ralgapb	-1.0606594
1700072I22Rik	0.98838854	Map3k13	-1.06032752
Ltbp3	0.98820972	Efemp1	-1.0600658
Gprc5a	0.98805952	Dgka	-1.0598545
Usp5	0.98785686	Trip4	-1.059823
LOC102643251	0.987443	Inpp5j	-1.0595355
Entpd2	0.98740244	Rabgef1	-1.0593977
2810416G20Rik	0.9870858	Hist1h2bc	-1.0593
Slc22a13	0.98708106	Jag1	-1.05865812
Syt15	0.98680592	Nuak1	-1.05688954
Ptgr1	0.9865732	Prps1l3	-1.055769
Lamb3	0.98642826	Slc16a7	-1.05376672
Odf4	0.9859886	Gm10450	-1.05337572
Gm550	0.9856031	Dirc2	-1.0530348
Tapbp	0.9851532	Cnga1	-1.05291008
9130403I23Rik	0.98511266	Igsf3	-1.05284166
Serpina1b	0.9850521	Mdc1	-1.05219508
Cyp26b1	0.98417234	Zbtb46	-1.0521698
Gxylt2	0.98327732	Sec22b	-1.0519876
Pde6h	0.9832454	Aen	-1.051858
9-Mar	0.98248292	Pga5	-1.05151748
Ntmt1	0.98225928	Abhd15	-1.05091048
Gm1715	0.98225832	Bicd1	-1.05072808
Pla2g4a	0.98205996	Lrp12	-1.0502968
Ttc39a	0.9820304	Casp2	-1.04967928
Fam189a2	0.98196936	Ireb2	-1.0495334

Adamts1	0.9818692	Cebpa	-1.04845952
Vwf	0.98147106	Lincpint	-1.04842854
Sptbn4	0.98139906	Plekhf2	-1.0479402
2810428I15Rik	0.9807763	Hist1h1e	-1.0479164
2810002D19Rik	0.9806552	Cmtm2a	-1.04785872
Prl8a8	0.98045588	Senp6	-1.04754352
Pdgfrl	0.98031234	Cfl2	-1.0472074
Gm17455	0.98030257	Lincpint	-1.04693746
B4galt2	0.97967386	Mmadhc	-1.0469203
Skint5	0.97904872	Bcl9	-1.0462318
Rims4	0.97857428	Helq	-1.0461123
Slc6a13	0.97821	Txnip	-1.0460391
1700039E15Rik	0.9769969	Cdkn2d	-1.045609
Cnst	0.9766078	Ammecr1	-1.04543972
Rnd3	0.97652864	D730003I15Rik	-1.0448876
Disp1	0.97599936	Rnmt	-1.044605
Tuba1c	0.97447538	Samhd1	-1.044158
Rxfp4	0.9743972	Fgfr3	-1.04406214
Gm36394	0.9743886	Ubtd2	-1.043932
Pros1	0.97436904	Pbx1	-1.0434134
Atp1a3	0.9730654	Kitl	-1.043405
Col18a1	0.97247934	Wdr92	-1.0432072
Gm6566	0.97213268	Wrn	-1.0432048
B3galnt2	0.97151994	Gde1	-1.04290246
1700013F07Rik	0.9714856	Uhrf1bp1l	-1.04289914
Cstf2	0.97147226	Usp22	-1.0426288
Birc5	0.97134352	Lmbr1l	-1.0423264
4930570B17Rik	0.97133112	Lcmt2	-1.0419817
Lrrc28	0.9710388	Dusp16	-1.04186488
Vmn1r25	0.97101974	Slc4a4	-1.0417848
Ppp4r1l-ps	0.97081376	Arhgef39	-1.0417738
Tyms	0.97043324	Cep162	-1.04176808
Inhbb	0.97016048	Ripk4	-1.04150534
Itgb2	0.96997452	Gm8221	-1.04138232
P2rx1	0.9699402	Akr1b10	-1.041362
Galt	0.96885634	Zufsp	-1.0412378
Ano7	0.9687338	Slc29a3	-1.0407414
Cyb5rl	0.96844388	Gab2	-1.0401854
Trim41	0.96828652	Kdm5b	-1.039824

Ccdc33	0.9681792	A130088B03Rik	-1.0395846
1700039I01Rik	0.9680548	Usp2	-1.03945208
1500004A13Rik	0.96792174	Pgpep1	-1.0393748
Notch4	0.96724128	Snx16	-1.0387488
Coq7	0.96706056	Epc2	-1.03868532
Ppt1	0.9668355	Arv1	-1.0385132
Dtwd2	0.9667883	Ccdc127	-1.037405
Gm33308	0.9667735	Haus3	-1.0368366
Tbc1d22b	0.96669722	Il6st	-1.03675032
Hp	0.965755	Gm15645	-1.036294
Dlx6os2	0.96567296	Acin1	-1.0357142
Olfr780	0.96559	Eef2k	-1.03563548
Rps6ka1	0.9655862	Rnf44	-1.0350328
Psph	0.96533156	Gm9878	-1.0348835
Cacna1f	0.96490812	Zscan29	-1.034596
Gm8378	0.96486474	Gid4	-1.0345831
Fasl	0.96476794	Psip1	-1.0345182
Flnc	0.96475648	Cldn2	-1.0344677
Defa1	0.9644556	Rsrc2	-1.03384448
Gm41518	0.9643922	Prkaa1	-1.03375768
Sspo	0.96381474	Riok1	-1.0331674
D930015E06Rik	0.96333694	Cflar	-1.0324392
Paqr6	0.9626188	LOC102631979	-1.03135872
6030468B19Rik	0.96246814	Eda	-1.0313068
Tbata	0.9620166	Esyt2	-1.0312424
Palld	0.96150636	Thrap3	-1.03119468
Cyb561a3	0.9612818	Trim56	-1.0311122
Shprh	0.96114636	Chst2	-1.03000405
Snrnp40	0.9611254	Tpi1	-1.02992585
Hrh4	0.96102	Zc3h7a	-1.02972245
Zfr2	0.960958	Camsap1	-1.028502
Bbs5	0.9606466	D830050J10Rik	-1.02776
Dusp23	0.9602332	2310058N22Rik	-1.0276716
Acvr2a	0.9593754	Invs	-1.02746772
Ighmbp2	0.9588418	Brd1	-1.02737188
Eya1	0.958539	Glul	-1.02735328
Polr1a	0.9583044	Wdr75	-1.0269699
Kcnq4	0.9579582	Zbtb14	-1.026649
Tgfbr3l	0.95710039	Klc1	-1.0266452

Prf1	0.95699548	Ncapd2	-1.02598072
Nhlh1	0.95679236	Hipk3	-1.02592086
Lrrc7	0.9567895	Camk2n2	-1.0244975
Gm34464	0.95647096	Ints4	-1.024157
Zmynd19	0.95639896	Gpt	-1.0240526
Mtm1	0.95549726	Hist2h2be	-1.0236316
Rad51c	0.95517254	Ubfd1	-1.02305174
4930432M17Rik	0.95513916	Fgd4	-1.0226636
Krtap5-5	0.95487452	Fndc3a	-1.022202
Fgf3	0.954823	Vti1a	-1.0221529
Gm32914	0.9546833	Stard3nl	-1.02215052
Cwc22	0.95450974	Smg1	-1.02208472
Nrg1	0.9541297	1600019K03Rik	-1.0219174
Med8	0.9538412	Cebpd	-1.0219016
Slc20a1	0.95361996	Bsdc1	-1.02144528
Nfib	0.9535322	Prpf39	-1.02140332
Add3	0.95336724	7-Mar	-1.0211492
Rnf224	0.9527974	Exoc2	-1.0209866
Lgi3	0.9526768	Pigv	-1.0200374
Itpkb	0.95104932	Insig2	-1.0199924
Tnnt1	0.95056056	Fnip1	-1.0198865
Pop7	0.9504566	Ccdc97	-1.01972246
1700063D05Rik	0.9498682	4930402H24Rik	-1.0193782
Gramd2	0.9493885	Nfya	-1.01928092
Mettl3	0.94907712	Cxcl1	-1.0184646
Gm35059	0.9485402	Tcf12	-1.0182266
Slc43a3	0.9479766	Ostm1	-1.01813412
Sema4a	0.94777536	Bivm	-1.0179
Commd4	0.94775868	Gm3227	-1.01781488
Mpped1	0.94622088	Zranb1	-1.0175738
Boc	0.9462123	Zbtb2	-1.0170703
Phka2	0.94580246	Btbd11	-1.0170088
Timm50	0.94577026	Map4k3	-1.0169358
Maoa	0.9455223	Fam134b	-1.01675748
LOC102637854	0.94528246	Fam193b	-1.0164194
Cep63	0.94505548	Fbxo28	-1.0162904
Lif	0.9449954	Klhl7	-1.0162301
Foxh1	0.94361066	Ptp4a1	-1.0161386
Mcur1	0.94334746	Arl4d	-1.0159674

Gm17801	0.94291448	Btg1	-1.0159226
Nfu1	0.94257116	Ces1e	-1.0157094
Gm4354	0.94256544	Morf4l2	-1.0155806
Gm11033	0.9424467	Cog3	-1.0154958
4733401D01Rik	0.94227028	5430440L12Rik	-1.0153546
Zfp385a	0.94188356	Csnk2a2	-1.015049
Ccdc167	0.94187426	Ipo5	-1.014914
Acaca	0.94175004	Senp6	-1.0147214
Adgrb1	0.94167328	2810013P06Rik	-1.014636
C7	0.94123554	Tmx4	-1.0145502
Ccdc93	0.94107628	Mbip	-1.0144014
9930104L06Rik	0.9406166	H2-Ab1	-1.01411152
Tubb2a-ps2	0.93990516	Tmc3	-1.0141077
Duoxa1	0.93978548	Dusp26	-1.01392412
Abhd14a	0.93932008	Nsun6	-1.0134282
Wnk3	0.93929196	Frmd4b	-1.0133424
Ppp1r21	0.93917466	Nsd1	-1.0132804
Aldh8a1	0.93904686	Pcnx	-1.0126328
Fhad1os1	0.93894768	Map2k4	-1.01251412
1600014C10Rik	0.93845368	Appbp2	-1.0122208
Peli3	0.93776226	Arel1	-1.012136
Ttc17	0.9377384	Ptger3	-1.0118198
Xylt2	0.93757724	Cyp4v3	-1.01136232
LOC552877	0.9365902	Ell2	-1.0107598
Psmc3	0.93622542	Brd8	-1.01047612
Atp8a1	0.93610906	Zfp629	-1.0100074
Arhgef33	0.93520116	Nhlrc3	-1.0099816
LOC102635358	0.93445014	Igf1r	-1.0096116
Fam212a	0.93398904	Sin3a	-1.0092912
D14Ertd670e	0.93291616	Mier1	-1.0090756
Lrrc49	0.9327488	Rnf111	-1.008996
Gins2	0.9325528	Slc30a1	-1.00887108
Insrr	0.9321146	Fgfr1	-1.00833512
Fgf11	0.93078804	Suv420h1	-1.0080666
Rrp8	0.93061304	Eif5b	-1.0079656
Penk	0.9301586	Eva1c	-1.0066914
Rhox4e	0.93013764	Zscan26	-1.0066719
Fastkd5	0.9299221	Pigm	-1.0058894
Akap1	0.92984008	Slc35e2	-1.00551986

Adig	0.92965126	Ptcd1	-1.005507
Unc13d	0.9294262	Ptp4a1	-1.0052428
Lman2l	0.92937946	Ankrd50	-1.0050674
B230312C02Rik	0.92912674	Tmc7	-1.00501252
Gm11482	0.92862416	Cbx7	-1.0045562
Gm33115	0.92838954	Bglap2	-1.0044527
C2cd2l	0.92815352	Ccdc84	-1.0043931
Olfr1392	0.9280405	Reep3	-1.0041566
4833419G08Rik	0.9276452	Evi5	-1.0038676
Gm13999	0.92703724	Rab2b	-1.0037365
BC021767	0.92685174	Sobp	-1.0036116
Col13a1	0.926548	Gcnt1	-1.0026212
Cnksr2	0.92595386	D16Ertd472e	-1.0016208
Xpo5	0.92564774	Gmcl1	-1.0012092
Zbtb45	0.92556906	Pgam1	-1.00110866
Ralyl	0.9252262	Prelid2	-1.0006986
Gm29949	0.92510176	Vps72	-1.00061988
Olfr805	0.9250288	Dhx36	-1.0006051
Acss3	0.9246111	LOC102641377	-1.0003152
Ppp2r5a	0.92438173	Snhg18	-1.00007772
Ggt5	0.92413474	Fnbp1l	-1.0000701
Mapk8ip2	0.92406892	Adora1	-0.9995642
Me1	0.92403936	Gga2	-0.9994488
Ssbp2	0.9239049	Dapk1	-0.99935914
C230037L18Rik	0.92344474	Gm9798	-0.99932026
Kcnma1	0.92309643	2210016L21Rik	-0.9992876
Hdc	0.92293454	Klf11	-0.9991956
Dnah8	0.92264652	Nfatc2ip	-0.99888324
Rnu1b6	0.92226744	Lrch3	-0.9983392
Fibp	0.92215728	Pp2d1	-0.9982152
Ptch2	0.9220886	Kcnk5	-0.99712944
Tcf4	0.92208766	Ccnl2	-0.997107
Tob2	0.92174148	Lemd3	-0.996634
Nkain1	0.9216666	Lpin1	-0.99650645
Ppp1r27	0.92126036	Tab3	-0.99648428
Epb4.1l2	0.92109728	Ric1	-0.9961996
4930523C07Rik	0.9210334	Plin5	-0.99575996
4930402H24Rik	0.92079496	Smad5	-0.99546432
A230056J06Rik	0.9199538	Btc	-0.99535656

Tyr	0.9193816	Cckbr	-0.9948468
A630001G21Rik	0.919363	Peak1	-0.9945836
Usp46	0.9185977	Rhbdf2	-0.99449586
Uqcc3	0.91825724	Whsc1l1	-0.9942398
Pusl1	0.9178872	Map4k3	-0.9942126
Gm6567	0.91750526	Tmpo	-0.9941063
Yap1	0.91743612	Cpeb2	-0.99393892
Slc22a8	0.91719914	Hmox1	-0.99384928
Phykpl	0.91685724	Usp32	-0.99362994
Smyd5	0.91667366	Ndrg1	-0.99257517
Dlst	0.91658664	Lppr5	-0.9925306
Klb	0.9165616	Hps5	-0.99226
Gm5486	0.91651655	Fam117b	-0.99183654
Gm32507	0.91622902	Sf3b1	-0.9907026
Sdk1	0.9162178	Pfkp	-0.9902134
E4f1	0.91553354	Patl1	-0.98961306
Amdhd1	0.91526412	Dock7	-0.98945236
D330041H03Rik	0.9148531	Siah2	-0.98922824
Pde1b	0.91465664	Ubtd2	-0.988873
Plcxd3	0.91433764	Cdh11	-0.98883724
Fam210b	0.9142914	Nr2c2	-0.98872232
Ccdc159	0.91423392	Haus3	-0.98855734
Cdc23	0.91371012	Cdc42bpb	-0.988461
1810043G02Rik	0.9131322	Gm17066	-0.9883809
4933433F19Rik	0.91253376	Tbc1d9b	-0.9881847
Lipo4	0.91228486	Snx18	-0.98817803
Mir99ahg	0.9119568	Cacnb1	-0.9879551
Itgb5	0.91159916	Pfdn4	-0.98754048
P3h1	0.91139508	Tspan7	-0.98710156
Chad	0.9111762	Stau2	-0.98674774
Donson	0.9109788	Rorc	-0.98649884
Fcer1g	0.9109652	Leprot	-0.98639726
Depdc5	0.910552	Nap1l1	-0.98621606
0610011F06Rik	0.9105406	Med15	-0.9858613
6430550D23Rik	0.91027832	Nr1d2	-0.98512316
Ocel1	0.910275	Pbrm1	-0.9840336
Gm9789	0.91005992	Zc3h4	-0.9833102
Hrh3	0.90993166	Fpr2	-0.9832282
Myt1	0.90990496	Serpina10	-0.98293496

Phf11d	0.90969992	Rsrp1	-0.9828696
Hes5	0.9092088	Lrrc14	-0.9826231
Eif4e1b	0.90916586	Raet1b	-0.98250436
Slc15a4	0.9086852	Hdgfrp2	-0.9824872
Olfr1251	0.90866994	Rb1cc1	-0.98162915
BC048559	0.9084306	6330575P09Rik	-0.9813752
Stat2	0.908319	Oard1	-0.980988
1700093J21Rik	0.90823746	Ulk1	-0.98019934
Amt	0.908216	Mrgbp	-0.980021
Syne1	0.9078536	Whsc1l1	-0.9796567
Fam83a	0.90766	Cdv3	-0.9795518
Nacc1	0.907074	Polk	-0.9792509
Gpat2	0.90703248	Cttnbp2nl	-0.97897602
Slc25a11	0.90699196	Srgap2	-0.9785881
Gm6729	0.90685654	Hnrnph3	-0.9785476
Atat1	0.9058194	Atp2b1	-0.97847604
Fam168a	0.90526676	Evi5	-0.9780655
Odf2	0.9050536	Fam110c	-0.97772456
Gm7644	0.90495444	Pum2	-0.97749376
Clcn6	0.9046602	Gfm2	-0.9773588
Nqo1	0.90464736	Fam63b	-0.97731828
D130046C19Rik	0.9043536	Lyrm2	-0.97610808
Epb4.1l5	0.9042802	Strm	-0.9759097
Obp1a	0.9036851	Tpgs2	-0.97564364
Sebox	0.90366268	Rp2h	-0.97524976
Notch3	0.90348434	Sdc1	-0.97479392
Gm38569	0.90318394	Hist1h2bb	-0.9747782
Cops8	0.90294694	Mcl1	-0.9743228
8-Sep	0.90253926	Dclre1a	-0.97413254
Wdr44	0.9024129	Trmu	-0.97396708
4930554G24Rik	0.9019942	Myo18a	-0.97392823
Sat2	0.9018388	Zbtb11	-0.97386074
Rac3	0.9017534	Gdpd1	-0.9738164
Kif23	0.90133094	Mllt3	-0.97378444
Pacsin1	0.90130568	Xpa	-0.97376394
Bola3	0.90070056	Arhgap26	-0.97260666
Ypel4	0.89976454	Mcl1	-0.97250128
Pqlc3	0.89931894	Nipal3	-0.97218084
Tns4	0.898952	Tbce	-0.9717102

Meis2	0.8985777	Pgam1	-0.97155523
Fam196a	0.89845992	Ypel5	-0.97146272
Anapc1	0.897769	Xaf1	-0.9711237
Ostc	0.89743328	Kif13a	-0.971107
Nwd1	0.89732456	Nt5c3	-0.97107792
Zbtb26	0.8972783	Btg3	-0.97106886
Cutal	0.8968406	Birc3	-0.97074174
Olfr195	0.8963952	Srsf1	-0.97057008
Hrc	0.8963356	Rae1	-0.9700408
Rgs19	0.89584732	Rpe	-0.96935034
Nubp1	0.89576768	Ctdp1	-0.9693141
Mpzl2	0.89546586	Xylb	-0.9691944
Cnn2	0.89496804	Gm20867	-0.96876336
Mpped1	0.89469146	Tbc1d9	-0.96836328
G630018N14Rik	0.89453888	Rora	-0.96834326
Rac2	0.8938432	Pspc1	-0.96800328
Psmc3	0.89364576	Fbxo11	-0.96786594
Gm15050	0.89342952	Spata5l1	-0.9678545
Utf1	0.89340592	Rnf146	-0.96777796
Gm10471	0.8930936	Nudt22	-0.9673376
Hoxb3	0.8929362	Orc3	-0.96700812
Pax1	0.8928566	Elmsan1	-0.9658165
Gm15800	0.89267396	Parp12	-0.96577454
Platr27	0.8924861	Fpgs	-0.96506024
Suv420h2	0.89166212	Wnk1	-0.9649334
Krt17	0.89162636	Tab2	-0.9648652
Gm26911	0.89158558	Pibf1	-0.9648638
Myo1e	0.8915615	Sdc1	-0.9646101
Gm28505	0.8910575	Itsn1	-0.96456146
AU021092	0.89086294	Tnfsf9	-0.96402788
Acy1	0.89077616	Rpain	-0.96392012
Bysl	0.89067984	Cnot6l	-0.96374608
Gpr156	0.89028882	Jund	-0.96347856
Spata31d1b	0.89005994	Blzf1	-0.9634476
Prss33	0.88962554	Tctn2	-0.96323156
Nfic	0.88959646	Fibp	-0.9629221
Smim10l2a	0.88957406	Dyrk2	-0.96213054
LOC105244659	0.8893676	Gm21975	-0.96203088
Slc4a9	0.88911008	Cenpo	-0.96193552

Gm11545	0.88904048	Rabgap1	-0.96181584
Gm31233	0.8886924	Eif4a2	-0.9617858
Slc9a5	0.88857126	Olfr97	-0.96169568
Mdga1	0.88856554	Snrnp70	-0.96146966
Gm3764	0.8882022	Smim1	-0.9614606
Cnih2	0.8880396	Tlk1	-0.96130228
Tbcd	0.88800048	Hmgb3	-0.96072817
Lims2	0.88791276	Dnajb6	-0.96059608
Cgnl1	0.88771916	Mgll	-0.96041966
Osbpl7	0.88748264	Arhgef26	-0.9595437
Pvrl3	0.8874197	Mtbp	-0.95898772
1700054O19Rik	0.8873682	Hlcs	-0.95877886
Bri3bp	0.88705588	Zfp639	-0.95852804
Tldc2	0.88681174	Dvl2	-0.9584446
Usp19	0.88672304	Dcaf6	-0.958302
Muc3	0.88666964	Smad4	-0.95813894
Krtap10-4	0.88647128	Cdk13	-0.95804072
BC006965	0.8858459	Kbtbd2	-0.95732832
Tctn1	0.8856225	Rsrc2	-0.9571786
Bcs1l	0.88549852	Dnm1l	-0.9569316
Col24a1	0.88495492	Tnks	-0.95686626
Yars	0.88479186	Irak3	-0.95667696
S100pbp	0.884326	Kifap3	-0.95603752
Fan1	0.88423348	Rnf145	-0.95539094
Fam161a	0.8840604	Rpp14	-0.95502614
Olfr1410	0.88398694	Dhx57	-0.95485544
Eif3c	0.8839736	Rarg	-0.95479154
Cacna2d1	0.88390446	Iqgap2	-0.9530282
Helz2	0.8828478	Dnajc24	-0.95290184
0610039H22Rik	0.8822112	Pde4d	-0.95268368
Tdgf1	0.8821254	Pias1	-0.95183372
Orc2	0.8820715	Ccng2	-0.95097924
Ermap	0.88203668	Tfcp2l1	-0.95095492
Psme2b	0.88176394	Nudcd1	-0.95082616
Tmprss9	0.8815887	Herc4	-0.9507036
Pank4	0.8814306	Efna1	-0.95064116
Kcnk3	0.88099	4930512B01Rik	-0.95053626
Stx8	0.88095046	Arvcf	-0.9505348
Chchd3	0.880877	Sp1	-0.9504614

Dock6	0.88058614	Appl2	-0.9503951
Bcar3	0.88040876	Ccdc39	-0.9503536
2810006K23Rik	0.8803892	Eppk1	-0.9498048
Gm15433	0.88015174	Pkm	-0.9495635
Armc12	0.87999534	Ankmy2	-0.94942808
Atp7b	0.87983656	Acbd3	-0.94819784
Plaur	0.8797922	Sp3	-0.94719696
B9d2	0.8785677	Dgkd	-0.94699336
C130033p17rik	0.87840604	Plod3	-0.9469719
Mbnl3	0.87768508	Ash2l	-0.9469094
Sp6	0.87760496	Zfp276	-0.94673634
Dock4	0.8774028	Gm5635	-0.94667196
Itga5	0.8773985	Snx13	-0.9466114
Klhdc7b	0.87715388	Gm28818	-0.94661
Proz	0.8767829	Wdfy1	-0.94635964
Col12a1	0.87674428	Ppip5k1	-0.94603872
Rin2	0.87659264	Cklf	-0.9455776
Gzmm	0.8764596	Upp1	-0.9452028
2810408A11Rik	0.8764553	Csnk1g1	-0.9451318
Caskin1	0.8763132	Stx17	-0.94498586
Olfr329-ps	0.87626124	Rnf135	-0.94498252
Gm30482	0.87619352	Nfyb	-0.94410514
Tmem97	0.87599612	BB114814	-0.94347906
Cachd1	0.87596036	Gltscr1l	-0.94292784
4930488L21Rik	0.87558032	Myo5a	-0.942852
Stbd1	0.87540246	Scrn3	-0.9428148
D230034L24Rik	0.8753426	Olfr24	-0.94273544
Zfp710	0.87528944	Ccdc176	-0.94239712
Smyd3	0.87459088	Poglut1	-0.9412675
Ptges3l	0.873827	Pomk	-0.94126272
Usp17lc	0.87354946	Tmcc3	-0.94117593
Hs3st1	0.87346364	Atf7	-0.9407468
Pycr1	0.87344312	Pisd-ps1	-0.94005824
Rabggta	0.8733406	Dmxl2	-0.93979644
Tmem208	0.87334012	Map1lc3a	-0.93978644
Pdx1	0.87319708	Nasp	-0.93962
Olfr1394	0.87279272	Pik3ca	-0.9395976
Ap1s3	0.87277126	Cul4a	-0.93957948
Rfpl4	0.87271166	Ccnt2	-0.93909454

Micall2	0.87241172	Cobll1	-0.93907308
Tox3	0.87175894	Pfkl	-0.93850852
E030030I06Rik	0.87170648	Pgm1	-0.9381237
Dguok	0.87153388	Abhd4	-0.9379592
Ly6a	0.87134028	Ipo8	-0.93791794
Tmem141	0.87124014	Kdm7a	-0.93748188
Slc8b1	0.87110854	Ptpn2	-0.9374795
Trim52	0.87067556	Rasgef1b	-0.9374018
Apbb3	0.87056494	Btg3	-0.9372058
Top3a	0.8703165	Tifa	-0.9367604
Bcl9l	0.86998892	Cln8	-0.936749
Sqle	0.86969614	Specc1l	-0.93659592
Atm	0.8695698	Clcn2	-0.93606376
Rassf4	0.8692136	Slc38a4	-0.93585634
Erh	0.8686595	Las1l	-0.93567132
Slc6a6	0.86861848	Ric1	-0.93555974
Nlrx1	0.86857366	Evi5	-0.9353914
Ostm1	0.868443	Abhd16a	-0.93517828
4933434E20Rik	0.8684311	Mms19	-0.93508148
Mamld1	0.86822128	Alg1	-0.93455886
Mipol1	0.86806368	Gdf15	-0.93449164
Ttc39b	0.867991	Phf3	-0.9343319
Slc30a5	0.86769008	Gpcpd1	-0.9341464
4930533B01Rik	0.8675132	Rbm33	-0.93405294
Cass4	0.8670058	Zcchc7	-0.9339757
Gm4956	0.8669362	Grhpr	-0.93397092
Bbs9	0.86674143	Ddb2	-0.93362808
Pdf	0.8666811	Fam118a	-0.93360376
Nfya	0.86658144	BC005624	-0.93326854
Tango2	0.8663368	Akap12	-0.9332404
1110017D15Rik	0.86558772	Stk35	-0.93306304
Maged2	0.86543036	Orc3	-0.932529
Gm3704	0.86504888	Creld2	-0.93239832
Nav1	0.86459804	Pus7	-0.93230056
Kank1	0.86437892	Rev3l	-0.93208646
Gna15	0.86407614	Tgs1	-0.93179274
Foxd3	0.86391736	Phka2	-0.9317236
8030411F24Rik	0.86366224	5033417F24Rik	-0.93160772
Slc22a17	0.8636112	Fam178a	-0.9312222

Cmss1	0.8633766	Wrb	-0.9311962
Nosip	0.86306906	Nedd9	-0.93111848
Vti1a	0.86296654	Zbtb2	-0.9310851
Krtap10-10	0.8628888	Apba1	-0.9310484
Tpk1	0.862216	Plekha7	-0.93073606
Ephb1	0.86205196	Zbtb49	-0.9304831
2210013O21Rik	0.8620248	Ccnl1	-0.93047332
Gja5	0.86154128	Gm42151	-0.93036508
Nova2	0.8612094	Ubxn2a	-0.93009376
Hcfc1r1	0.8610959	C030004G16Rik	-0.92884088
Cgn	0.8603358	Wdfy2	-0.9285946
Stap2	0.86018324	Zranb1	-0.92818356
Acss2	0.8601458	Plekha1	-0.92744732
Spink5	0.86011886	Cyp4f13	-0.92665052
Saal1	0.859998	Entpd7	-0.92662812
Senp1	0.85953856	Dusp8	-0.92658472
5730416F02Rik	0.85893726	Zfp493	-0.92597532
Zfyve1	0.8588128	Dennd4c	-0.92583466
Hapln4	0.8587904	Slc25a34	-0.92568708
Coq6	0.8587322	Stk38	-0.92557334
Srp72	0.85850524	D930016D06Rik	-0.92552472
Pnldc1	0.8584628	Herpud1	-0.92522668
Sh2d6	0.8584299	Kmt2c	-0.92423772
Nprl3	0.85831452	Prrc2b	-0.92422486
Glud1	0.85817432	Rpl12	-0.92369748
Tmsb10	0.8576026	Nt5dc3	-0.92366314
Zfp593	0.85754132	Iba57	-0.92316436
Gm33700	0.857388	Phf8	-0.9230547
Taf2	0.85725164	Trnt1	-0.9230118
Phkb	0.85723924	Naa60	-0.92272783
Zfp64	0.85700608	Marcks	-0.92251826
Proc	0.8568888	Snapc4	-0.92244196
Olfr32	0.8567741	Immp2l	-0.92227626
Snx29	0.8564954	Dcun1d1	-0.92221784
Eif2d	0.85641908	Arhgef28	-0.922102
Ogfod3	0.8562665	Nktr	-0.92182208
Knop1	0.8561616	Rab6b	-0.9217572
D430042O09Rik	0.85605668	Btg1	-0.92146444
Gm19733	0.85596896	Cnot10	-0.9214325

Trmt10b	0.85569144	Mup3	-0.92141532
Lst1	0.8554368	Psd3	-0.92114114
Gm6209	0.8553362	Cnot7	-0.92065286
Tbx20	0.85525156	Rbbp6	-0.92017984
Epn3	0.85503912	Snx11	-0.91989708
Pdlim7	0.85502768	Slk	-0.91980076
Acsf2	0.8549924	Fam114a2	-0.91969347
Smim12	0.85487556	Paip2b	-0.91958856
Ywhab	0.8544698	Casp6	-0.91919374
Zmiz1os1	0.85440254	Utp20	-0.91915036
Lyrm1	0.85408592	Sorbs1	-0.91904784
Gbp5	0.853868	Ddr1	-0.91873121
Guca1b	0.85357047	Golga1	-0.91863204
H2-T23	0.8534174	Lias	-0.91840792
Map9	0.85288	Thrap3	-0.91828776
Gm10325	0.85181046	Orc4	-0.91826772
Wnt5b	0.85159684	Kdm5b	-0.91824008
Gm14707	0.8515692	Klf9	-0.91814852
Ndrg3	0.851213	Snora52	-0.91806936
Ak1	0.85120392	Fbxl8	-0.9179716
Gm32645	0.85111761	Cetn4	-0.9174948
C030006K11Rik	0.85090112	Kars	-0.91720628
Pou5f1	0.85088634	Psme4	-0.9164939
4930524C18Rik	0.85069704	Arap2	-0.91643668
Ptpn1	0.8505783	D3Ertd254e	-0.91615344
Nlrc5	0.850472	Shoc2	-0.9161234
Tuba1c	0.85026788	Nek3	-0.9160404
9530020I12Rik	0.85005188	Mat2b	-0.91586066
Ankfy1	0.84954548	Peli1	-0.9156766
Igf1os	0.84945344	Atg10	-0.91552544
1700061J23Rik	0.84941626	Crcp	-0.91510248
Lgi4	0.8484397	Zfp455	-0.9148698
Tnfsf12	0.84801006	Atg4b	-0.9145446
Abcc3	0.8478222	Rabepk	-0.9144654
Krt16	0.84766054	Ugcg	-0.91423559
Six1	0.84708548	Mark3	-0.91414928
Aqp4	0.847023	LOC100862466	-0.91392374
Hspa12b	0.84689092	Ppp1r12a	-0.91379308
Myoz3	0.84670496	Rdh11	-0.913352

Gm2102	0.84655284	Pxmp4	-0.91261148
Ttc4	0.84607076	Tmem216	-0.91253566
4932443L11Rik	0.84603786	5830469G19Rik	-0.9123702
Nrsn2	0.84586048	Prmt6	-0.9122844
Gjc3	0.84575128	Ccnt2	-0.9120488
Arhgap17	0.84534692	Cflar	-0.9119687
Ciapin1	0.8453269	1700084J12Rik	-0.91181326
Elfn1	0.8449578	Ints10	-0.9117794
A730017C20Rik	0.8446188	Uhrf2	-0.91161584
Olfr544	0.84440374	Zmym2	-0.91121436
Micall1	0.84374714	Abhd2	-0.91118956
Klk4	0.8435712	D030028A08Rik	-0.91082192
F830016B08Rik	0.84322787	Gna14	-0.91039134
Olfr649	0.84303808	Arid4b	-0.9103842
Coq5	0.84296608	Sp1	-0.91016626
Gm6557	0.8429513	Map1b	-0.910069
G6pdx	0.8426509	Arglu1	-0.90974904
AA617406	0.84238244	Ccpg1	-0.909616
Elac2	0.8419008	Enah	-0.90914392
Trim2	0.8417101	Gm15939	-0.90896344
Ncf1	0.8415513	Il6ra	-0.90887928
1700025L06Rik	0.84144974	Gm10792	-0.90856696
Hgsnat	0.84144448	F8a	-0.9078822
Lim2	0.84108282	Plk4	-0.90754032
Msmo1	0.84083796	Apbb2	-0.90742732
Pcdhga9	0.84081126	Atf2	-0.9071331
Cyp4f18	0.8406682	Ldlrad4	-0.90709185
Tecr	0.84059572	Seh1l	-0.907042
St3gal1	0.84043264	Mbtd1	-0.9068792
Pih1d1	0.840178	Pias3	-0.90684796
Txn2	0.83984304	Aftph	-0.90664244
Fzd5	0.83974028	Map4k4	-0.90657234
Acot13	0.8395786	Arih2	-0.90633726
Rfx5	0.83949614	Stag1	-0.90612746
Plscr1	0.8392148	Hdhd2	-0.90609026
Mis18bp1	0.83919812	Mgea5	-0.90603446
Mrpl12	0.8387408	Ankrd50	-0.90538884
Ikzf3	0.8386631	Rock1	-0.9052992
Cd37	0.8386078	Gosr1	-0.90527916

5730416F02Rik	0.8385806	Pard6g	-0.90514184
Nsmf	0.83827066	Tmem199	-0.90492868
Pnkp	0.8381748	Ankfy1	-0.90480376
Lce1j	0.83764792	Fam60a	-0.90478944
Nagk	0.83750534	Tmem181a	-0.90465974
Mrpl48	0.83736468	Ivd	-0.90465068
Mad2l1	0.83730912	Dcun1d4	-0.90458632
Gm26881	0.83710146	Msl2	-0.90428686
Slco4a1	0.83705234	Chd9	-0.90388536
Hoxa11os	0.83689976	Senp6	-0.9027262
2700038G22Rik	0.8366282	Hook1	-0.90250254
Tbc1d23	0.83662724	Tor1aip2	-0.90233088
Tmco3	0.8363724	Plxnb1	-0.90212774
Mical1	0.83622694	Nkx2-2	-0.90187692
Zcchc17	0.83595848	Ube2g1	-0.9016328
8430426J06Rik	0.83592558	Gm5907	-0.901597
Gm5591	0.83573484	Dyrk2	-0.90156364
Cthrc1	0.83563996	Hamp	-0.90148354
Sssca1	0.83530236	Clock	-0.90129614
Cflar	0.83498716	Gabra4	-0.9012866
4933432I09Rik	0.83488988	Oxsr1	-0.9010129
Ang2	0.83451652	Erbb3	-0.90084886
Lin28a	0.83448648	Abhd17b	-0.90053988
Alkbh4	0.83397294	Ggps1	-0.89997196
Rbpms	0.83347034	Fbxo3	-0.89992856
Xdh	0.83300876	Ints2	-0.89980888
Otor	0.832659	Actr5	-0.89971208
Gm15850	0.83260298	Abcd1	-0.89924288
0610007P14Rik	0.83243132	Rsph3a	-0.89921712
Gon4l	0.83241034	Syde1	-0.8990779
Gm11211	0.8323302	Liph	-0.89878464
Psd4	0.8322754	Fosb	-0.8979144
Gm3772	0.83224296	Spc25	-0.89784812
Parva	0.83224106	Ppp2r5c	-0.8977008
Tyw1	0.8319454	Wdsub1	-0.8976712
Trip6	0.83183766	Mex3d	-0.89766216
Pcdh15	0.83162594	Hcfc2	-0.8975439
Prcp	0.83151436	Srrm2	-0.89747096
Gm12216	0.83149672	Bri3	-0.8974235

Prap1	0.83145236	Rnf146	-0.8973918
Tmem102	0.83141136	Rela	-0.89738321
Kitl	0.83112764	Zfp62	-0.8971939
Lhx3	0.83080244	Gins4	-0.89679384
Rapsn	0.83077384	Gtf2h2	-0.89664506
Nlrp5	0.83045674	Rnf169	-0.89616632
Mlkl	0.83036136	Ptdss2	-0.89607716
Zeb2	0.8302336	Fmr1	-0.89607144
Gpr157	0.83022642	Itfg2	-0.89602756
Zdhhc2	0.82940054	Nr1h4	-0.89592766
Sh2d5	0.82932854	Brca1	-0.8958025
LOC100049077	0.82902146	Tgfbr2	-0.8957181
Gm34433	0.8288021	Snn	-0.89569616
Bzw2	0.8287487	Ppp2r2d	-0.89560366
Stim2	0.82857252	Eogt	-0.8954992
Slc44a3	0.82844066	Btbd1	-0.8953638
LOC105242553	0.82840728	Oxr1	-0.8952656
Best1	0.8281951	Mbtps1	-0.89368248
Gm35525	0.82810688	Ddx59	-0.89328432
S100a3	0.82808732	Spata5	-0.8927002
Aebp1	0.8277235	Acad8	-0.8924942
Aste1	0.82761336	Abl2	-0.8924222
4921516I12Rik	0.82727336	Casp9	-0.89230346
Kat2a	0.8271327	Cdr1	-0.89221405
Nudt3	0.8266878	Abtb1	-0.892035
Gm34657	0.82656288	Ptar1	-0.89186692
Zfhx2	0.8262043	Ggnbp1	-0.8915782
Nms	0.82576466	Smek1	-0.89155054
Tubb5	0.82558774	Pnpt1	-0.8912544
Rab34	0.82546806	A930004J17Rik	-0.89125156
Robo1	0.82469224	D030018L15Rik	-0.89076614
Myg1	0.824636	Tspyl1	-0.8905282
Chchd3	0.82443714	Wdr82	-0.8903222
Selenbp2	0.82442713	Rabgef1	-0.89019966
Tox2	0.82434607	Map3k6	-0.89003706
2310045N01Rik	0.82421876	Mon2	-0.88984346
Panx2	0.8240948	Trpm7	-0.88967228
Faah	0.82397986	Rap2b	-0.8896141
Clmp	0.82376384	Rnf111	-0.88947916

Gm7967	0.82324552	Galnt6	-0.8894
Tmem41b	0.8232379	Plekha5	-0.88920546
Spryd3	0.82317304	Rbm39	-0.88901568
Ppp6r2	0.8230138	Rps6kc1	-0.8887782
Sptlc3	0.82276248	Rdx	-0.88841534
Rtp2	0.8227534	Taf5	-0.88815164
Myo18b	0.82272196	Pxk	-0.8879938
Cd248	0.82258796	Rcor3	-0.88779068
Pbld1	0.82222366	Spaca6	-0.8877468
Naa25	0.8222194	E330017A01Rik	-0.88734936
Gm10436	0.82217788	Rbm39	-0.8860917
Gm30455	0.8214288	Eppk1	-0.8858695
Gm39463	0.8213992	Ddx28	-0.8857608
Appbp2os	0.82093334	Fcho2	-0.88542414
Slx1b	0.82092046	Arhgap29	-0.88534976
Lgals1	0.82072687	Socs6	-0.885108
Fuca2	0.8202138	Zcchc7	-0.88493968
Acot7	0.8197274	Mbd1	-0.88488436
Slc38a5	0.81970454	Foxj2	-0.88438844
1700084C01Rik	0.8191204	Ddx6	-0.88434648
Pcsk7	0.81908512	Prkar2a	-0.88397312
Cldn18	0.8185091	Usp12	-0.8839407
Mdfic	0.8183334	Tmc7	-0.88389348
Hk3	0.8183179	Taz	-0.883698
Ubxn8	0.81793594	Micall1	-0.8832097
Enpp2	0.81784392	Zfp655	-0.88283444
Slpi	0.81679868	Zbtb39	-0.88280868
Patz1	0.8167944	Gpcpd1	-0.88227654
Matn4	0.8160434	Pcgf3	-0.8819752
Med27	0.8160286	Lpin2	-0.8818736
Gm14762	0.81540156	Acadl	-0.88161516
1700066B19Rik	0.8153987	Cask	-0.8813777
Osbpl10	0.81529	Fam63b	-0.88125372
Olfr1242	0.81473828	Brwd1	-0.88108968
Man2b2	0.81471252	Il13ra1	-0.88079644
Fcho1	0.81443786	Csrp2bp	-0.88068246
Gm35521	0.81421996	Nbr1	-0.87998676
D030024E09Rik	0.81392695	Arrb2	-0.87986994
Dact3	0.81309914	Hdgfrp2	-0.8798623

Gm5478	0.81304788	Gmfb	-0.8798456
Auh	0.81263066	Zfand6	-0.8798146
Hsd17b14	0.8122158	Smurf2	-0.8797717
Foxd2os	0.8121412	Klf9	-0.8786874
Sprr2j-ps	0.81197024	Acp5	-0.87851524
Ttll8	0.81182645	Wdr5	-0.87837886
Fcrl5	0.81176614	Mctp2	-0.87823152
Def8	0.81151486	Oxct1	-0.87755156
Oas1d	0.81123494	Csgalnact2	-0.87716628
Mlycd	0.8111248	Gm20324	-0.87703848
Cs	0.8107543	Kdm3a	-0.87695694
Fam35a	0.81040596	Abcf3	-0.87675286
4930519F16Rik	0.81031228	Sec24b	-0.8764162
Bzw2	0.8098979	Fbxo45	-0.8762598
Il20rb	0.80989694	Ghr	-0.8761754
Pcdhga9	0.80975867	Cdkal1	-0.8753514
Slc26a6	0.8097544	Olfr948	-0.87525416
AA416453	0.80941344	Wtap	-0.87484288
Jade2	0.80930972	Kbtbd4	-0.87419986
Trpm8	0.80926132	Xpo4	-0.87400532
Tmem123	0.8090482	Sh3d21	-0.8739362
Alkbh3	0.80875588	Ralgapb	-0.87367774
Rrp1b	0.80872536	Paip2b	-0.87333106
Usp36	0.80867576	Ptpn3	-0.87308406
Olfr572	0.8086729	Fam135a	-0.8725686
Cfhr2	0.8085232	Rora	-0.8722882
Mcmdc2	0.80844068	Zc3hav1	-0.87208032
Prr19	0.8083806	Ptger3	-0.87174844
Arhgap27	0.8081784	Asah1	-0.8716793
Ropn1l	0.80786348	Ccdc9	-0.87165594
2610021A01Rik	0.80765914	Anapc10	-0.87124776
Sva	0.8076396	Lrrc57	-0.870944
Camp	0.80763864	Zfp454	-0.8706064
Fntb	0.80755044	Lrrc8c	-0.87054848
1700028J19Rik	0.8074026	Shroom3	-0.87009906
Il17rd	0.80700016	Plekhh1	-0.8697672
Olfr187	0.80696727	Trappc6b	-0.86976576
Bok	0.80684186	Lrrc8e	-0.86967326
Naa25	0.8067429	Ppp1r10	-0.86923934

Klhl1	0.80659676	Fus	-0.86921548
Gm13580	0.8065882	5930403L14Rik	-0.8691821
2210018M11Rik	0.8065796	Mbtd1	-0.868978
Ap5b1	0.80617856	Eftud1	-0.8687382
Gm32762	0.80616236	Neu3	-0.86863614
4930560O18Rik	0.80604648	Nup155	-0.8682132
Lig1	0.80573988	Clcn3	-0.868093
Klhl33	0.8053031	Gpx2-ps1	-0.86794996
Peg3os	0.8051138	Ankrd42	-0.86790395
Gm12977	0.8045783	Efna3	-0.867347
AI854703	0.8044224	Adar	-0.86704064
Pet117	0.80441188	Sdcbp	-0.86691808
Pam16	0.80411864	Prr15	-0.86672116
Pde1a	0.80381966	Mapkapk3	-0.866693
Zfp934	0.80379724	2810427A07Rik	-0.8666208
Snx17	0.80364274	Erbb2ip	-0.8657279
Terf2	0.80359412	Atad2b	-0.86545896
Scube2	0.8033533	Acss1	-0.8649688
Cnep1r1	0.80275107	Large	-0.86462306
Muc5b	0.80273914	Cxadr	-0.86455012
Asnsd1	0.80250788	Gnat2	-0.86396195
Olfr324	0.80241584	Impad1	-0.86387252
Atp6v1g2	0.80209494	Pds5a	-0.86371804
Rnf180	0.80200434	Wdr74	-0.86347866
Pip4k2c	0.80193948	Rab18	-0.86342573
Cspp1	0.8019247	Spata7	-0.863379
Npas4	0.8016858	Klf7	-0.8633156
Rhbdl2	0.80153466	Kif1b	-0.86298752
Kat6b	0.80137396	Ddi2	-0.8626318
Krtap21-1	0.80124808	Glod4	-0.86232566
Nudt7	0.80119228	Eya3	-0.86225844
Gid8	0.80101252	Wbp1l	-0.86217546
Zfp277	0.8005934	Ndor1	-0.8619456
H2-T9	0.8005681	Gm17344	-0.86173486
Tuba1b	0.80036212	Grhl1	-0.86144304
Wdr83os	0.8002901	Gnpnat1	-0.86113166
Cnbp	0.8002081	Whsc1	-0.8599286
Zfp939	0.8002038	Tmem161a	-0.8595562
Wwc1	0.8000388	AI415730	-0.85863686

Gene	Value	Gene	Value
Gm36877	0.79983044	Rab28	-0.85771226
Cpe	0.79977942	Paip2b	-0.85734416
Fanca	0.79970788	Stmn1	-0.85710764
Kcnq1ot1	0.79936456	Pnn	-0.8563752
Cd4	0.7991395	Atf7	-0.85627652
E130308A19Rik	0.79898692	Depdc5	-0.85626412
Map6	0.7988615	Gpatch11	-0.85619592
Tonsl	0.7986102	Gm34368	-0.8560853
Fam166a	0.79843474	Mical2	-0.85602188
Armt1	0.79842854	Def6	-0.855834
Olfr56	0.79809	Mob1b	-0.85574008
Slc20a1	0.7978568	Traf3ip1	-0.85535764
Gm31169	0.79745508	Cklf	-0.85512066
Csdc2	0.79728746	Agps	-0.85481214
3110035E14Rik	0.7972231	Vbp1	-0.85481024
Sertad3	0.79696226	Enpp5	-0.85464286
Inpp5e	0.79683066	Ncoa4	-0.85449696
Ajap1	0.79670334	Vamp1	-0.85432316
Trav6-3	0.79659366	Gtf2h2	-0.85397624
Fam222b	0.79656028	Ccnt2	-0.85373688
BC049762	0.79654216	Tiam2	-0.85363984
D7Ertd443e	0.7961712	Gm20877	-0.85359764
Speer5-ps1	0.79616786	Trf	-0.85335874
Aspa	0.79613208	Atr	-0.85321
A930005H10Rik	0.7958579	Card10	-0.8525276
Cyb561a3	0.7957697	Tex30	-0.8525033
Klhdc8a	0.79520034	Slc4a7	-0.8522334
Vps39	0.79512834	Pkdcc	-0.85180426
Ranbp3	0.79494428	Gm19269	-0.8516612
Rhod	0.7944789	Swt1	-0.8513808
Lcn2	0.79417562	Nfil3	-0.8512664
Morn3	0.79383636	Naa30	-0.8511653
Gm5797	0.79383088	AW549877	-0.85113
Gstm5	0.79361296	Tcerg1	-0.851048
Id3	0.79344272	9930021J03Rik	-0.8509908
1700064F23Rik	0.79299832	Elk4	-0.85073472
Akt1	0.79278994	Cacfd1	-0.85067988
Gm33700	0.79269266	1600014C10Rik	-0.85048724
Chmp6	0.79252148	Plaa	-0.84991168

Rmdn1	0.79160786	Ccdc34	-0.84988356
Epha7	0.79160548	Tnks2	-0.84986496
Spns1	0.79157734	Camsap1	-0.849668
Cbfa2t2	0.79136824	Mccc1os	-0.8493185
Nme7	0.79133868	Plekhm1	-0.84927654
Gm16677	0.79092264	Dnajc21	-0.8492694
Efna2	0.79066896	Ralgapb	-0.84897994
1700027A15Rik	0.7905705	Krit1	-0.8484268
Ccni	0.79052306	Smad3	-0.84838628
Hint2	0.7904725	Olfr1155	-0.84838271
Tal1	0.79032588	Hsdl1	-0.84791756
Arhgap1	0.79032088	Ptprj	-0.8478961
Mybl2	0.79022216	Gm12059	-0.84770346
Gm10536	0.78996134	Mepce	-0.84712934
Caap1	0.78978968	Mtdh	-0.8469615
1810041L15Rik	0.78961324	Eif2ak4	-0.84681272
Adgrl2	0.78934144	Usp24	-0.8466134
D430041D05Rik	0.78918792	Entpd1	-0.8466096
Pdc	0.78916932	Dync1li1	-0.8465662
Muc20	0.7890978	BC029214	-0.8465204
1600010M07Rik	0.78896046	Zwint	-0.846457
Stc2	0.7887602	Yars	-0.8464241
Cpne5	0.78867816	AU040320	-0.8463726
2310035C23Rik	0.7885432	Clk1	-0.84635592
A430010J10Rik	0.78848172	Bsdc1	-0.8460393
Ercc4	0.7884624	Acbd6	-0.8460002
Esam	0.7882495	Creb1	-0.84586286
Ppp1r12b	0.78796864	Ccl11	-0.84549
Gm32664	0.78789448	Zfp869	-0.84541464
Prkrir	0.7876396	Atf7ip	-0.84521246
3300002I08Rik	0.78750706	Mbd1	-0.84509707
Wrap53	0.7874532	Meaf6	-0.84458876
Neurl1a	0.7872114	Lbh	-0.84418344
Gm11149	0.7870848	Sbno1	-0.84395648
Zfp646	0.78694678	Fam208a	-0.84390784
Fxyd3	0.7866216	Acp2	-0.84383392
Cldn2	0.78640986	Nck2	-0.8438058
Mfap4	0.78639794	Gcc1	-0.84347772
Lpl	0.7862992	Tubgcp4	-0.8434019

LOC328066	0.7862711	Cd3e	-0.84335566
Adat1	0.78598928	Ica1l	-0.84297324
Ndufaf7	0.7857504	Ddx19b	-0.8426318
Gm12633	0.78566884	Epc2	-0.8425498
Gcsh	0.7856412	Srcin1	-0.84192109
Slfn9	0.78501272	Itsn1	-0.84173584
Medag	0.78481795	Alg11	-0.84166194
Sh2d6	0.7847917	Smarca5-ps	-0.841517
Gm9706	0.7846904	Bnip3l	-0.84132528
Enpp7	0.78402376	Tank	-0.84127284
Isoc2b	0.78398324	Ykt6	-0.8404069
Olfr1443	0.78394174	D10Bwg1070e	-0.8403511
Tlr8	0.7837968	Sirt1	-0.84021616
Map7d1	0.78376626	Fam120c	-0.84018136
Mef2b	0.78346968	Clic4	-0.84012652
P2rx1	0.78316736	Sars	-0.84010172
Gm10427	0.78313064	Ptp4a1	-0.83999587
Gmnn	0.78313064	Polr3d	-0.83961772
Prepl	0.78307796	Dnajc19	-0.83952952
Rrp9	0.782969	H2-Q7	-0.83840418
Sgms1	0.78268384	Hist1h1d	-0.83791828
Zfp600	0.7826102	Glce	-0.83762216
Tmbim4	0.7823782	N6amt1	-0.83721114
Wbscr16	0.78235674	Plac9a	-0.83681632
Cyp4f18	0.7823491	Sord	-0.83616256
Olfr570	0.78223992	Ubp1	-0.83584594
Gm10101	0.78209304	Tceal6	-0.83573436
4930543I03Rik	0.78190636	Gmeb2	-0.8350024
Snhg7os	0.78170872	Ski	-0.83497476
Sh3d19	0.78158712	Ttc33	-0.8346591
Vmn1r65	0.7813139	Pyy	-0.83454276
A26c2	0.78129434	Taf1d	-0.83445596
Mrps26	0.781198	Tmem181a	-0.83425
B430010I23Rik	0.78101348	Mms19	-0.83422136
Net1	0.78060388	Acvr1b	-0.83391666
Tuba1c	0.7805314	Tmem42	-0.8338504
AU040972	0.78046846	Fbxw17	-0.8337412
1700019O17Rik	0.7804408	Lrba	-0.83231306
Ppdpf	0.7804074	Itsn1	-0.83230066

Tmem206	0.7803564	Rab40c	-0.8322954
Atp8b4	0.7803049	Hiatl1	-0.83220244
Lrrc46	0.7801008	Mkks	-0.83209944
Sh3kbp1	0.77972508	Anp32a	-0.83149387
Ppp1r18	0.7797222	Tmem116	-0.83148288
Osbpl10	0.77939414	Etohd2	-0.83141566
Trim39	0.779263	Dnah17	-0.8314004
Fen1	0.779212	Fip1l1	-0.83128404
Phc1	0.7791276	Gls	-0.83112908
Adam17	0.7790456	Slc16a3	-0.83093644
Gm15624	0.7787094	Foxo3	-0.83077574
Glb1	0.7784233	Trio	-0.8307142
Gsg1	0.778409	Dapp1	-0.8304782
Ddx31	0.7781434	Fgfr1	-0.8302145
Olfr536	0.77788352	Rest	-0.82941532
Fam178b	0.7776208	Tdg	-0.82937336
H2-T3	0.77754856	Thap7	-0.82935954
Hmg20a	0.777421	Zw10	-0.82933712
Me1	0.77734136	Zfyve1	-0.82932376
Fam78a	0.7771816	Zhx2	-0.82927704
Selenbp1	0.77696372	Aga	-0.82915926
Elavl3	0.7768724	Arap2	-0.8291502
Gm35688	0.77674008	Mfhas1	-0.8289895
Slc22a18	0.7767048	Jmjd6	-0.82897472
Dnaaf1	0.7765069	Pdgfc	-0.82889986
Pola1	0.7764635	Krt85	-0.82875872
Taar4	0.77636004	Prkcd	-0.82853412
Gm8232	0.77632428	R3hcc1l	-0.82834983
Chmp6	0.7761922	Sox13	-0.82827544
4930483O08Rik	0.7757478	Ip6k2	-0.8280492
E430018J23Rik	0.77574348	Tns3	-0.82799196
4930573I07Rik	0.7754874	Zkscan3	-0.82773114
Slc2a6	0.77537632	AI846148	-0.8276582
2410152P15Rik	0.775321	Xpnpep3	-0.82763528
Slc25a30	0.77532006	Sema6c	-0.8275924
4930563H03Rik	0.7752218	Heatr6	-0.82757186
Olfr1229	0.7751622	Mical3	-0.82741594
Pgap1	0.7750783	Socs4	-0.82720136
Ltbp1	0.77473212	Abhd5	-0.82704734

Evx2	0.77459716	Eif2s3y	-0.82702732
4930447J18Rik	0.77454806	Zc3h11a	-0.82658768
Rpl26	0.7745328	Mnt	-0.82610416
Akt1	0.7744312	Mib1	-0.82606792
Zfp618	0.7744274	Tug1	-0.82605792
Aloxe3	0.77429628	Snx4	-0.82601166
Trappc1	0.7742548	Gt(ROSA)26Sor	-0.82592774
4930564C03Rik	0.77390646	Itch	-0.82586766
Pip5k1b	0.7736559	Amn1	-0.8258352
Limd1	0.7736416	Inip	-0.82551814
Eri3	0.7730813	Ahcy	-0.82548857
Fam107b	0.77302312	Upf2	-0.82545996
Rps6ka3	0.77252912	2610034B18Rik	-0.8252568
Pde4a	0.7717185	Serpine2	-0.8251996
Dkkl1	0.77123308	4930455C13Rik	-0.8249526
1700112E06Rik	0.7709825	Arcn1	-0.82485152
Prep	0.77072096	Ttc27	-0.8247094
Rgs7bp	0.770607	Ptprk	-0.82412386
Cxcr4	0.77059888	Rnf146	-0.82397986
Itgb3	0.7703614	Smc4	-0.82363606
Mov10	0.77023888	Acaa1b	-0.8232994
Agfg2	0.7700615	Ankrd11	-0.82315375
Oprm1	0.7695098	Diap2	-0.8229518
Dbndd1	0.7693744	Cacnb3	-0.8228302
Gm31932	0.7693677	Csnk1g3	-0.8226538
Mcm3	0.76888776	Tnip3	-0.82239104
Gm32280	0.76876592	Mfsd7b	-0.82238388
Hrsp12	0.76860952	Gm9856	-0.8218126
Pygm	0.76848936	Pcgf3	-0.82152748
Adap1	0.7681656	Rbm39	-0.82104588
Cask	0.76805067	Sharpin	-0.82033968
Bmp4	0.76791096	Btg1-ps2	-0.820189
A430035B10Rik	0.767725	Cpne3	-0.8196778
Pdzd2	0.7672782	Fbxl4	-0.8196416
Olfr1030	0.76671744	Odc1	-0.81941652
Fat2	0.76661826	Dot1l	-0.81941604
Rhot2	0.7666173	Magohb	-0.81922484
Ndufa11	0.76656914	Sap30	-0.81913996
Mrpl36	0.76578188	Mturn	-0.81852984

Gm20362	0.76578	Xbp1	-0.81852007
Fam110b	0.76567388	Klhl2	-0.81835604
Gm28178	0.7653854	Alcam	-0.81817388
Myh14	0.76534128	Capza2	-0.8180375
Mboat7	0.7651448	Tab1	-0.81740428
Tgds	0.76513434	Zfp595	-0.8173933
Tuba8	0.76510096	Rnf24	-0.8169279
Ints4	0.76505136	Kdm1b	-0.81692172
Gm26588	0.76492833	Pan3	-0.81692076
Ccny	0.76491308	Ppard	-0.81683112
Chrnb1	0.7648058	Fam13b	-0.8165741
Tas2r109	0.76476812	Srsf5	-0.81600523
Pqlc2	0.76476192	Mbnl2	-0.8156004
Wnt5b	0.7643528	Fktn	-0.815588
Ager	0.76416826	Sgol1	-0.81524134
Bbs9	0.76384926	Ptp4a1	-0.81511068
Kcna7	0.7637639	Dlg1	-0.81371594
Gm5860	0.76375866	Ago4	-0.813694
Cyp4x1	0.76356364	Lin9	-0.81346274
2210015D19Rik	0.76323652	Epb4.1l4a	-0.81327152
Gm10510	0.7631371	Synj1	-0.8129206
4632433K11Rik	0.76288796	Mob2	-0.8128953
Zfp668	0.7627964	Upb1	-0.81283044
Olfr229	0.76247788	Fbxw11	-0.81275702
Fgf2os	0.76236964	Ppp1r14c	-0.81261348
Gm19956	0.76229096	4933411E08Rik	-0.81236268
Fam136a	0.76196432	Man1a	-0.81215334
Nr1h2	0.76195336	Chic1	-0.811841
Bin2	0.76192308	Pip5kl1	-0.8115592
Ccdc50	0.76177216	Mtus1	-0.81104088
Tmem176b	0.761703	Dnajb9	-0.81073141
Atrx	0.761642	Gm29992	-0.8103442
Olfr46	0.7613034	Rnf103	-0.810143
Gemin4	0.76127004	Pycr2	-0.80955124
Aanat	0.76125192	Ubxn7	-0.80943012
Poc1a	0.7610631	Stag2	-0.80942916
Ppif	0.7607546	Ttc39aos1	-0.80931568
Gm2977	0.7606721	C230099D08Rik	-0.80930328
Tsc2	0.7606654	Cltb	-0.809278

Nif3l1	0.7606206	Tbc1d9	-0.80895424
Ighmbp2	0.76033974	Zfp692	-0.8088994
Slfn5	0.76030469	2810474O19Rik	-0.80880212
Cacna1h	0.76027108	Ltn1	-0.80867434
Ctnna2	0.7601037	Iars2	-0.80853606
4930549C15Rik	0.7600875	Slc9a7	-0.8082161
Dspp	0.76005554	Peli1	-0.80788326
Gm3952	0.7596464	Igf1r	-0.80742884
Sppl2c	0.75944448	Zkscan6	-0.80688524
Tdh	0.7593441	Dgkh	-0.80685424
Ikzf1	0.75920344	Dnajb14	-0.80681514
Cherp	0.75888586	Eps15l1	-0.806787
Ppp2r2a	0.75875807	Uts2	-0.80617046
Skint9	0.75841904	Foxn2	-0.80597306
Aldh16a1	0.75839376	Pdxp	-0.8059654
LOC100862431	0.75835752	Gan	-0.80592204
Coq7	0.75791264	Cdkl4	-0.80586457
Cgnl1	0.75789546	LOC101056219	-0.8055744
Gm12863	0.757833	Sbno2	-0.80537748
Tti1	0.75748634	Abtb2	-0.80532932
Txn2	0.75724412	Smim14	-0.80515624
Fam71e1	0.75712442	Crebl2	-0.805151
Btbd10	0.7570038	Hmgn2	-0.8048878
Ly6g	0.7566762	Pomgnt2	-0.804883
Gm3740	0.7564964	Cir1	-0.80487586
Efr3a	0.7560468	Slc31a2	-0.80451108
Gm3161	0.75602388	Scd1	-0.80401754
Defb15	0.75587988	Cpeb4	-0.8037114
C3	0.75586748	Cbl	-0.8036556
Tubb4b	0.7550311	Tex30	-0.80358172
Gulp1	0.75476456	Maml1	-0.803144
Carkd	0.7547512	Snhg5	-0.803128
Gm10142	0.75469924	Elp6	-0.80305886
Gm14149	0.75469208	Ctxn1	-0.8029728
Olfr571	0.75461722	Pcnp	-0.8029256
Cd68	0.7543926	N4bp2l1	-0.80273772
Ovch2	0.75389194	0610030E20Rik	-0.80228328
LOC102638475	0.75369406	Tmod3	-0.80179644
Cblc	0.75314856	Atp6v1g2	-0.8017554

Hivep3	0.75313044	Tmem167b	-0.80173826
Magel2	0.75279188	Rnf19a	-0.801733
Hist3h2ba	0.75269104	Lrrc8b	-0.8016896
Tead4	0.75267506	Unc119	-0.8016038
Olfr1252	0.7526393	Sox9	-0.8015399
Plekhd1	0.75245952	Fam32a	-0.8013215
Bmyc	0.75208234	Mpc2	-0.80101634
Krtap5-1	0.7520294	Arfgef3	-0.80098676
Gm35058	0.7519698	Qser1	-0.80012464
Slc25a23	0.7517986	Ankrd13b	-0.79993772
Pkig	0.7516241	Mocs2	-0.79947376
Vwa1	0.75152016	Gpatch2	-0.7992692
Atp9b	0.751421	Gnl3l	-0.7990594
LOC100505025	0.75132274	Vwa9	-0.79871034
Acy3	0.75128508	Ube2g1	-0.79847288
Mkrn1	0.7511234	Pdcd6ip	-0.79828072
2700094K13Rik	0.7510972	Marf1	-0.7982359
Kcnc4	0.7510114	Dr1	-0.7980914
Twsg1	0.75097752	L3mbtl3	-0.798069
Coro2b	0.750607	BB557941	-0.7980242
Eva1b	0.7504592	Fam13b	-0.79776668
Ly6g6c	0.7502246	Speer4f	-0.7973356
Arhgef38	0.7500384	Fbxl3	-0.79732894
Dpp10	0.74996138	Slc35f5	-0.7968545
Mdk	0.74986268	Lin54	-0.79680586
Pdx1	0.74961472	Angel1	-0.7962842
Micu1	0.7495842	Nup50	-0.79577636
1700001K19Rik	0.74948406	Abcc1	-0.7957492
Ifi204	0.7494426	Purb	-0.79530668
Abhd12	0.74934768	Fndc3a	-0.79519988
2310075K07Rik	0.74928712	Atp2c1	-0.79492044
Olfr360	0.74921226	Anapc16	-0.79489184
Zfp691	0.7488699	Rock1	-0.794775
Spryd4	0.74881744	Gm34463	-0.7946944
Capn1	0.74880504	D11Wsu47e	-0.79456568
Trmt5	0.74841308	Dnajb4	-0.79429054
E2f6	0.74799776	Supt20	-0.7942858
D730045A05Rik	0.74755454	Uck2	-0.79404116
Flt3l	0.74731636	8-Mar	-0.793942

Nfyc	0.74706172	Setd1b	-0.79394054
Slc47a2	0.74701214	Extl1	-0.79359484
Setd3	0.7465944	Zkscan6	-0.7933078
Ppfibp1	0.7459974	Unc5a	-0.7930188
Coq6	0.7459855	Sft2d1	-0.7927599
Cir1	0.74562264	Higd1a	-0.79247808
Rrp15	0.74552488	Tnks	-0.7923584
LOC102641065	0.74545812	Slc16a7	-0.7921958
Kcp	0.74527788	Mex3c	-0.7921872
Aqp4	0.74524688	Map2k1	-0.7921734
Ruvbl2	0.7450166	Rgs9	-0.79202176
Cryab	0.74475718	Hmgxb3	-0.7919674
AU024581	0.74452066	Rpf1	-0.79175686
4931428A05Rik	0.74439288	3-Mar	-0.79168034
Zfp940	0.74429464	1700064E03Rik	-0.79156112
Mcu	0.74414206	Itpkb	-0.79139424
Grasp	0.74407292	Fam196a	-0.79125214
Myh7	0.74395872	Zfp111	-0.7909908
5330411J11Rik	0.74382376	Brd8	-0.79093934
Gm13657	0.74374724	Ankrd52	-0.79089976
C9	0.74345684	Srxn1	-0.79070807
C030011L09Rik	0.74340772	Eif4a2	-0.79044199
Gm33301	0.7433672	Padi2	-0.78992652
G0s2	0.74335408	Dido1	-0.78977252
Pik3cd	0.74334	Smarca5-ps	-0.78976012
Inpp4a	0.7431817	Mtif2	-0.78973294
1810062O18Rik	0.742764	Uggt1	-0.78964996
6330415G19Rik	0.74264144	Cbll1	-0.78944684
Sult5a1	0.74239874	Jade3	-0.78933144
Kcnh1	0.74234486	Ndfip1	-0.78923274
Vps13c	0.74218464	Cited2	-0.78859996
Crlf2	0.74195384	Ets2	-0.7884126
Rars2	0.74194146	Rbm25	-0.78809166
Grtp1	0.74190568	Lmtk2	-0.78790474
Aars	0.74189186	Stag1	-0.7874875
4930519P11Rik	0.741694	Glul	-0.7874775
Gcm1	0.74157953	Ern1	-0.7874465
Pogz	0.7414818	Camk2n1	-0.7872844
Erh	0.74138976	Polr1c	-0.78724

Zfp692	0.7412162	Herpud1	-0.7870307
Pde11a	0.74110556	Pard3	-0.78682708
Gm6252	0.74100924	Irf2bpl	-0.7866998
Olfr868	0.74098444	BC027231	-0.78621292
Gm33619	0.74081516	Ugcg	-0.7861066
Angptl6	0.74035454	Slfn2	-0.78580046
Scrn1	0.7400031	Il6st	-0.78532172
Mettl6	0.73976516	Ccdc71	-0.7845578
Xpo7	0.73956824	Arhgap5	-0.78446484
Ephb2	0.7395196	Gatm	-0.78418446
Gm15800	0.73944664	Usp49	-0.78415752
Galnt12	0.73930216	Acadsb	-0.78399944
Tti1	0.73916626	Wdr33	-0.78386784
Map2k5	0.7386186	Mbtd1	-0.7838049
Gm16793	0.7382803	Kmt2a	-0.7836242
Map6	0.73804616	2700081O15Rik	-0.78353452
Slc4a3	0.7380426	Ptk2	-0.7835331
Pik3r6	0.7379074	2010111I01Rik	-0.78351164
Bcap29	0.7371998	Wfdc12	-0.78322554
Cryba4	0.73718404	Socs7	-0.78303957
Gabrr1	0.7371807	Zfp664	-0.7828636
Gm31531	0.7370362	Tmem106a	-0.78278876
Sssca1	0.7368264	Cep162	-0.78271676
A930037O16Rik	0.73675108	Top2b	-0.78257894
Abcg8	0.7365532	Serpinb1c	-0.7824459
4933402N03Rik	0.73620963	Phlda3	-0.78237868
Ppdpf	0.73593664	Ccng2	-0.78232
Ankrd66	0.73578501	Haus4	-0.7821212
Tsen54	0.73577214	Eri1	-0.78172016
4930444G20Rik	0.73566246	Parp16	-0.78164292
Nme3	0.73473072	Coil	-0.7815666
Abcd4	0.73452472	Nol8	-0.78149844
Elfn2	0.73443604	Lrrc40	-0.7814822
Trim35	0.7343607	Iws1	-0.7812605
Smpd4	0.73435974	Dpp3	-0.781127
4833420G17Rik	0.73423528	Nap1l3	-0.78090572
Klrg2	0.7341294	Tars2	-0.78081608
Cldn15	0.7340703	Ankhd1	-0.78081226
1700080G11Rik	0.7340455	Cyth1	-0.78075456

Vmn1r30	0.7339444	Itsn2	-0.7805486
Ehf	0.73388768	Ptf1a	-0.78048276
Lmod3	0.73369074	Ei24	-0.780272
Hsbp1l1	0.73355436	Srek1	-0.78024768
Akt1	0.73353148	Dnajb2	-0.7800832
Uba2	0.73351336	Trak1	-0.7798028
Wbp1	0.73324966	Zfp322a	-0.77956056
Ldlr	0.7331114	Slco3a1	-0.77955628
Fbxo25	0.73310804	1700030A11Rik	-0.7795024
Gm36254	0.73284864	Pak2	-0.7794938
Arid4a	0.73280192	Chm	-0.77947474
U2af1l4	0.73260641	Tax1bp1	-0.77946806
Gm33990	0.732563	C87436	-0.77911472
Gm13177	0.73243046	Ppfia1	-0.77871608
4930412O13Rik	0.73227834	Ezh1	-0.778646
Rnf8	0.73221684	Galnt7	-0.77843714
Mtap	0.73203516	Esco1	-0.77826166
Gpt2	0.7319608	8430419K02Rik	-0.778245
Nxpe2	0.7318635	Nphp4	-0.77772403
Sspn	0.73172616	Aldh3a2	-0.7777152
Yif1b	0.7315488	Ccl27a	-0.77763414
Cplx2	0.73152399	2900093K20Rik	-0.77760888
Cep83	0.73119974	Csnk1g1	-0.7775774
Olfr61	0.73108363	Eif3a	-0.77744626
Fads1	0.7310419	Usf1	-0.77702714
2810471M01Rik	0.73067808	Sh3bgrl2	-0.7768798
Chrng	0.73067069	Fbxw9	-0.7767005
Ccdc144b	0.730433	Ypel3	-0.7761464
1700006H21Rik	0.730412	Zfp58	-0.77610254
Zfp329	0.73026132	2410016O06Rik	-0.7759347
Chmp7	0.73011684	Sec23a	-0.77519608
Timm9	0.73002434	1810026B05Rik	-0.77467536
Ninj1	0.7299509	Dgka	-0.774652
Ppih	0.72970152	Pim3	-0.77453852
Lmntd2	0.72955514	Csnk1e	-0.77438164
Nphs1	0.7294922	Nrp	-0.774312
Rnasek	0.72945547	Tnip2	-0.7742734
Wwc2	0.728642	Slc30a9	-0.7741375
D930030F02Rik	0.7284627	Far2	-0.77400732

Cfap44	0.72834803	Rgs12	-0.77399516
Hmgcr	0.7283354	Skor2	-0.77398372
3110079O15Rik	0.7280922	Mettl21a	-0.7739754
Tnrc18	0.72807836	Mtrf1l	-0.77385688
Rhno1	0.7279556	Hp1bp3	-0.77366018
Lig3	0.7278404	Pcif1	-0.7734375
Man1c1	0.7276306	Brwd1	-0.7726531
LOC105243184	0.72759914	Ppapdc2	-0.7725401
Acads	0.7271352	Ppid	-0.7724638
Coa6	0.72699452	Lpin2	-0.77234792
Fgd5	0.72697544	Msh6	-0.77177668
Casz1	0.72669744	Acsl1	-0.77149964
Dnajc16	0.72654486	Tsc22d2	-0.77143526
1600023N17Rik	0.7261014	Ptpn14	-0.77117968
Cd209d	0.7260971	Tbp	-0.77116632
Mxd1	0.72601414	Kcnq5	-0.77113724
Ranbp17	0.72581196	Pacs1	-0.7710066
Gm9292	0.72577428	Tctn3	-0.77037357
Scd4	0.72561408	Dnmbp	-0.77033424
Ica1l	0.72552156	Mthfs	-0.7702656
Naa35	0.72523356	4932438A13Rik	-0.76969146
Tatdn1	0.72517776	Orc3	-0.76967168
Nbas	0.7251761	Mysm1	-0.7696142
Agpat2	0.72499276	Stxbp3	-0.76953364
Gm10869	0.7249408	Marveld3	-0.7694268
Abca7	0.7247596	Pitpnc1	-0.76941824
Mrs2	0.7247	Iqcc	-0.7690487
Olfr128	0.72460604	LOC102641500	-0.7689042
Slc44a1	0.7243042	Tmtc4	-0.76815748
Med12	0.72411632	Ccl27a	-0.7678399
Atp9a	0.72406816	9430015G10Rik	-0.76757526
LOC105243337	0.72388648	Lyrm4	-0.76733304
Dok7	0.72373868	Elf2	-0.76730776
Apod	0.7235894	Sdhaf2	-0.7669158
5430401F13Rik	0.72357464	Kif2a	-0.76677132
Papss1	0.72340966	Eid2	-0.76674986
Kifc1	0.72338557	Ttc3	-0.76656724
Ccbl2	0.7233472	Snhg12	-0.7664156
Zdhhc3	0.7233052	Nudt2	-0.76622676

Snrpd3	0.72305584	Abcf1	-0.7658644
Apba2	0.72305346	Zmym4	-0.765862
Cxx1c	0.72295666	6330416G13Rik	-0.765862
Nog	0.7229228	Adipor2	-0.7655282
Lamb1	0.7228484	Gm4737	-0.76544713
Trmt1	0.72277784	Rab10	-0.765223
Tmem74bos	0.72259426	B4galt1	-0.76521636
6720473M11Rik	0.72242688	Med13l	-0.7650609
Hand1	0.72240805	Trim8	-0.76501036
Ndufaf7	0.7223649	Fam134b	-0.76474428
AU022751	0.72221612	Nap1l4	-0.76439952
Prkch	0.72220994	Ifi27	-0.76428032
Tom1	0.72218848	Hmgb3	-0.7641988
Slc11a2	0.72191716	Nt5dc3	-0.76413394
Smco1	0.72190476	Phf20l1	-0.76398564
Psmd1	0.7218518	Lrrc16a	-0.7637596
Fam20c	0.72145844	Mdm2	-0.76375628
1810044D09Rik	0.72131204	Zfp263	-0.76343154
Msi1	0.72097492	Wac	-0.76338912
Gsn	0.7209673	Gm9855	-0.763031
Acsl5	0.72080756	Ccpg1	-0.76293992
Gm34616	0.720201	Nop56	-0.76254224
Cst6	0.72018432	Glyr1	-0.76228
Cops3	0.72015286	Cachd1	-0.76226426
Nrg1	0.7199826	Dync1i2	-0.76223612
Habp2	0.71976424	Mtor	-0.76184988
Mettl7a1	0.71972228	Harbi1	-0.7617912
Ybx2	0.7195344	Rcan1	-0.76167822
Tprn	0.71934796	Nfxl1	-0.7614322
Sars2	0.7193389	Zfp654	-0.7610178
Prss37	0.7193265	Ndfip1	-0.76032304
Txnrd2	0.71929168	Itsn1	-0.7602954
Mrps22	0.7191014	Olfr446	-0.76007224
2810405F17Rik	0.71900296	Pgk1	-0.75978993
Cxx1b	0.71891308	Bcl2l11	-0.75962352
Olfr711	0.7188878	Glul	-0.7595725
Usp20	0.71887064	Eif2ak3	-0.75952672
Tnfrsf1b	0.7187314	Dennd4c	-0.75948572
Mrgprx2	0.71814156	Npepps	-0.75941228

Gm41515	0.7172203	Serinc4	-0.75882388
Plxna2	0.71706272	LOC105243204	-0.75852204
Tbc1d30	0.71693754	Abl2	-0.75833416
Ptpdc1	0.71686888	Chd8	-0.75742054
Gm10615	0.7165642	4930503L19Rik	-0.7574091
Tmsb15a	0.71639156	Ppp1r10	-0.75695944
4930579G18Rik	0.71632432	Sucla2	-0.7567806
Dgcr2	0.71627188	Epb4.1l5	-0.75627708
Mvd	0.71624566	Ppp2r3a	-0.75623704
Mirc35hg	0.71596956	Tmem68	-0.7561946
Armc10	0.71594668	Paqr3	-0.7558775
Smarcal1	0.71580314	Osmr	-0.7558408
Gm10997	0.71542644	Flad1	-0.75575876
Hif1an	0.7153778	Zfp426	-0.75575256
Prkca	0.7153344	Ift57	-0.75573348
Psmd3	0.71533347	Lamp3	-0.7556772
3010003L21Rik	0.71521616	Snx1	-0.75549412
1810012K16Rik	0.71502686	Tlk1	-0.75546312
Gm34735	0.71482038	Fbxw11	-0.75542688
Bdkrb1	0.71468354	Uhrf2	-0.75533676
Elovl1	0.7143526	Fam132b	-0.75515604
Atp5g1	0.7141385	LOC102643033	-0.7547555
Noxo1	0.7141094	Mpzl3	-0.75461674
Rangap1	0.71408607	Stx4a	-0.7543564
Ptprs	0.7140627	Sgce	-0.75383664
Anks6	0.71399928	Hbs1l	-0.75377846
Slc25a24	0.7139344	Apol9b	-0.753633
Rbp3	0.71382952	H2-Q2	-0.75351
Mapk6	0.71379708	Sipa1l3	-0.7534194
Zfpm1	0.7137008	Wdr92	-0.75333024
AI844869	0.71365834	Pink1	-0.7533288
Entpd1	0.7134266	Clic1	-0.75325632
Gm4969	0.7133851	Mdn1	-0.75313712
Scml2	0.71313954	Rps6kc1	-0.7530856
Gm13598	0.7130866	Fam174a	-0.75304412
Olfr744	0.71308566	Armc8	-0.75287008
Lrp8	0.71297074	Rab5b	-0.75235272
Fxyd3	0.71293974	Rab3gap2	-0.75204896
Tulp3	0.71266746	Cdh2	-0.752007

Gm31896	0.7126193	Elf1	-0.75165654
Sell	0.7125163	Zc3h7a	-0.75150204
BC029214	0.7123728	Golga4	-0.7509427
Park2	0.71229028	Cnnm3	-0.75093936
Slc12a4	0.7122717	Myo1b	-0.7508588
LOC102638515	0.711463	Sst	-0.75083112
Stim1	0.71098328	Ddx19a	-0.7505808
Sdhaf2	0.71041728	Irak2	-0.750267
Mpdu1	0.71023988	Sptlc2	-0.7499013
Ppfia3	0.71003008	Cdkl2	-0.74980212
Xylt2	0.70983196	Fignl1	-0.74972392
Plcb2	0.70981836	Xbp1	-0.74969816
Tbc1d31	0.70938492	Me2	-0.7495122
8430408G22Rik	0.70926904	Dmd	-0.74948884
Ppdpf	0.7090926	Dnase1l2	-0.74946928
5430403N17Rik	0.709075	Iqgap1	-0.74932814
Ccdc82	0.70902586	Ifrd1	-0.74926996
Hrasls5	0.7086334	Cdk19	-0.7492242
Celf4	0.7086277	Sbds	-0.74907636
Inpp5e	0.70826148	Bcl6	-0.7489996
Dpp8	0.7081704	Rrm1	-0.74866104
Tmem28	0.7076936	Nop16	-0.7485342
Kdm5a	0.70763492	Zbtb42	-0.7484994
Dnajc18	0.70751906	Fam60a	-0.74843264
Aven	0.70747614	Snx14	-0.74814128
Pja1	0.7074394	Ralgapa2	-0.74811984
Gm19576	0.70658826	Ago2	-0.748075
Gm2837	0.70652104	Phyhd1	-0.7475414
Chfr	0.70641708	Aph1c	-0.7474022
Tulp1	0.70637036	Ncor1	-0.74713516
Guk1	0.7061982	Raet1c	-0.74700976
Zfp672	0.70610666	Dnajc21	-0.746511
Impact	0.70598675	Dusp12	-0.7462506
H2-Q4	0.7059865	Tmem254c	-0.74619246
Tbx10	0.70596886	Szrd1	-0.7461114
Apex1	0.7059679	Tsen15	-0.74608374
Cdc20	0.70590306	Gm34786	-0.74592066
E130304I02Rik	0.7057271	Alg8	-0.74578952
Thnsl2	0.70535994	Nmnat3	-0.7457552

Gm30423	0.7053404	Pik3cb	-0.7456374
Lrrc45	0.705266	Ncoa6	-0.74538564
Plcd4	0.70480323	Eif2ak1	-0.74531746
Gripap1	0.70473146	Tmem181b-ps	-0.7452402
Nkiras2	0.70469188	Klc1	-0.7449894
Actl6a	0.70469046	Blzf1	-0.74488473
Pak6	0.7045884	Cd81	-0.74465608
LOC102638913	0.7043891	Rap1a	-0.7443876
4632404H12Rik	0.70433688	Ankrd17	-0.74431204
Zfp433	0.704154	Sec62	-0.7441964
Tnfsf8	0.70401716	Gm6654	-0.7440424
Gm4208	0.70376348	Rap2c	-0.7439971
Il1f8	0.703527	Nipbl	-0.7439232
Olfr801	0.70338774	Frmd8	-0.7439132
Polr2c	0.7032304	Cd81	-0.7438178
Fam78a	0.7029667	Serp1	-0.74353361
Rrp1b	0.70277786	Amn1	-0.7433648
Enoph1	0.70275974	H2-Q8	-0.742846
Tjp3	0.70266152	Mapk12	-0.7427306
Ift27	0.7026572	Ldlrad3	-0.7427058
Rbakdn	0.70249366	Unkl	-0.74228096
Uaca	0.70207334	Rbbp6	-0.74206304
Elmo3	0.70206786	Zfyve1	-0.7419882
Rbms2	0.7019956	Nucks1	-0.74194384
Scd4	0.70192766	Sfpq	-0.7416892
Atp6ap1	0.70183898	Rpp38	-0.7413626
Tbc1d17	0.70179224	Glt28d2	-0.74067116
D630028G08Rik	0.70173264	Pced1a	-0.74063492
Gm10129	0.70166277	Magi3	-0.740283
Gm7168	0.7014122	Prpf38b	-0.74018908
Nxph4	0.7013607	Wdr36	-0.74012708
4930415O20Rik	0.701282	Ern1	-0.7399626
Inpp5b	0.7011986	Fnip2	-0.7398362
Il34	0.7011628	Wdsub1	-0.73955346
Rnf41	0.70056534	Fnbp1l	-0.7395525
Taar7f	0.7005544	Slc7a6	-0.73934174
Gm36236	0.7005334	Terf2ip	-0.73920536
Hgfac	0.700459	Gpatch4	-0.73908186
Crhr2	0.7002034	Tle3	-0.7389965

Cdk17	0.70015716	Serpinb6c	-0.73888016
Scarletltr	0.6989255	Mccc2	-0.73882365
Pak3	0.69883012	Klf7	-0.7385664
Gm10426	0.69867087	1700031C06Rik	-0.7385516
Ttll7	0.6986594	Mettl14	-0.73844624
Nck1	0.69855546	Nbea	-0.73844123
2310009A05Rik	0.6985254	Map2	-0.73821068
Cks1b	0.69844746	1110059G10Rik	-0.73795796
Cd300e	0.6982789	Svil	-0.7378602
Rps6ka4	0.69811868	Mbp	-0.7376952
Prss28	0.6979108	Cdkn2aip	-0.73740864
Map2k3os	0.69763828	Gm13375	-0.73733092
Rarg	0.69728566	Map3k5	-0.7371874
Nr3c1	0.696856	Ccdc13	-0.73714304
Htt	0.69658946	Map7	-0.73704672
Neil2	0.6965618	Gnas	-0.73698854
Taf5l	0.69644928	Thoc2	-0.7369094
Tubb4b	0.69644404	Usp54	-0.73676156
D2Wsu81e	0.69640732	Gna13	-0.73655748
Tcn2	0.69574976	Lrrc58	-0.73651124
Gm6328	0.69571686	Susd6	-0.73649836
Mcm5	0.69571448	Mcat	-0.7364235
Pprc1	0.69549752	Edem1	-0.73618984
Zfp111	0.6954689	Uhrf1bp1	-0.73617316
1700012L04Rik	0.69525814	Rnf19a	-0.73609114
1810022K09Rik	0.69512892	Zfp106	-0.73589134
Dhrsx	0.6949978	Herc4	-0.73588944
Hnrnpr	0.69493532	Bax	-0.73585654
Cipc	0.69491672	P4ha1	-0.7358146
Olfr60	0.69480992	Haus6	-0.73570872
Vax2	0.69479322	Itm2c	-0.73561668
Gm38733	0.6947918	Rock1	-0.73555184
AI662168	0.69468116	Itpripl2	-0.7354145
Npr2	0.69371604	Dopey2	-0.73537732
Gm5458	0.69346094	Rbm26	-0.735363
Pdik1l	0.6934562	Chic2	-0.73512126
Lcn2	0.6933398	Sestd1	-0.7349515
Hint2	0.69309474	Krt7	-0.73482704
Mtfr1l	0.6930566	Brd8	-0.7347641

Tmem120b	0.69296884	Spire2	-0.73472166
1700123O20Rik	0.69290686	Aqp11	-0.73463488
Hsd17b7	0.6919036	Shmt2	-0.73448134
Mtfr1l	0.69176722	Tmem106b	-0.7343836
Crispld2	0.6916287	Zfp212	-0.73434734
Grhl2	0.6915307	Rbbp7	-0.73430014
Mup20	0.69138026	Zgpat	-0.73428106
Pifo	0.6912708	Epc1	-0.73406934
Tnfsf10	0.6912408	Gnai3	-0.73395587
Muc19	0.69112254	Exosc7	-0.7339058
Ttll4	0.69092608	Tap1	-0.73385334
Ndufa3	0.6909032	R3hdm1	-0.73350192
Gm16287	0.69064474	Gemin4	-0.7330501
Ttc17	0.6905613	Trim27	-0.73287964
Zfp950	0.6904502	Gpatch1	-0.73284793
Rhox3h	0.690434	Letmd1	-0.7327776
Mmaa	0.69033528	Zdhhc13	-0.73230172
Klf12	0.69007254	8430419L09Rik	-0.73188924
Slc1a5	0.69005776	Actl6a	-0.7318139
Gm31980	0.69001054	Ahcyl1	-0.7312918
Clstn3	0.68996287	Guf1	-0.73088074
Sult4a1	0.6898904	Rbm18	-0.7304392
4921507G05Rik	0.68979406	Ggps1	-0.73042774
Hace1	0.68979072	Zfp507	-0.73036814
Arhgef10	0.6897297	Aoc2	-0.73022174
Ralgps2	0.6897211	Mtmr6	-0.7301035
Necab2	0.68945694	Trit1	-0.7296982
Gpt2	0.68917704	Fam210a	-0.7294135
Olfr1420	0.68888236	Slc25a22	-0.7291689
Dennd4b	0.68878316	Gga1	-0.7289028
1700120C14Rik	0.6887288	Stat6	-0.7288251
Ppp2r1b	0.68860292	Arhgef10l	-0.72877264
Matn2	0.6885953	Dnmt3b	-0.7287302
Tenm2	0.68846654	Ccdc109b	-0.72867632
Gtf2f1	0.68840646	Brms1	-0.728559
Cttnbp2nl	0.68834734	Slc39a9	-0.72853994
Tbc1d10c	0.68833972	Ankhd1	-0.7284522
Slc2a13	0.6881919	Rnf138	-0.72842836
Gm20063	0.68816614	Osbpl9	-0.7282028

Lamtor1	0.68803072	Srf	-0.7281394
Tlx2	0.68796014	Usp25	-0.72811174
Rnu1b1	0.687932	Uimc1	-0.7277684
Gm14243	0.6877208	Zfp236	-0.7277484
R74862	0.6877084	Mesdc1	-0.72755
Dtnb	0.687377	Mrgpra9	-0.72737264
Arl4c	0.687376	Marcks	-0.72635317
2310005E17Rik	0.6872201	Mrrf	-0.7262516
Rab44	0.6872196	Pde7a	-0.72612452
Umps	0.68705105	Rela	-0.72605944
Ccdc116	0.68697166	Fndc3a	-0.72604608
Sema6d	0.68662429	Mphosph10	-0.725976
Reep6	0.6864953	Scrn3	-0.72595644
Obsl1	0.68640996	Taf4a	-0.72571612
Tgfb1	0.68620563	Cggbp1	-0.72545004
Zfp64	0.68615294	Mafk	-0.7251272
Daxx	0.6861391	Ahcyl1	-0.7249522
Msto1	0.6858902	Scnm1	-0.7249403
Evi5l	0.68567132	Mapk1ip1l	-0.72481393
1700031M16Rik	0.6854396	Stx1a	-0.72472954
Polr1e	0.6850426	Atpaf2	-0.72469092
Sdhaf1	0.6847949	Pnisr	-0.72467994
Tssk5	0.684793	Gm15350	-0.72443317
LOC102642673	0.68475104	Mthfsl	-0.7242508
Sema5a	0.68462896	Wee1	-0.72407008
Tnfaip1	0.6845541	Uprt	-0.723927
Sh2d4b	0.68447709	Cldn23	-0.723866
Aamdc	0.68445254	Olfr207	-0.7238617
Vcp	0.6844201	Sorbs3	-0.72374916
Wash1	0.6843605	Atxn7l3b	-0.72373534
LOC102632383	0.6843314	Upf3b	-0.72359992
Gm38409	0.68417024	Stmn1	-0.72358179
Gm32232	0.68415832	Peg13	-0.7234616
Ern2	0.68399906	Hist1h4j	-0.7232709
Vcl	0.68395376	Carhsp1	-0.72297144
Bcar1	0.68379068	Scamp1	-0.72292184
Cd44	0.68360614	Cdc42ep4	-0.72290946
Grik1	0.68334628	Tmem70	-0.722878
4930442B02Rik	0.6832924	Larp1b	-0.72278548

Efna4	0.6830864	Ppat	-0.7227583
Dnah6	0.68293357	Cgrrf1	-0.72257184
Chst3	0.6827216	Smn1	-0.72233844
2210022D18Rik	0.6827102	Scn11a	-0.72222685
Osgep	0.68267632	Sema7a	-0.72209692
Ly6g5b	0.68255092	Mast3	-0.72179556
D1Ertd622e	0.6824384	1110038B12Rik	-0.721766
5830415F09Rik	0.68214464	Cand1	-0.721653
Golt1b	0.6818738	Atp5sl	-0.7216172
Ccdc59	0.68180084	Tmem29	-0.7214923
Bst2	0.6817794	Naa16	-0.7214017
Wapal	0.68139934	Mmadhc	-0.72137308
Hmbs	0.68123912	Phldb1	-0.72132968
4930519L02Rik	0.68111848	Trim16	-0.72125912
Vmn1r175	0.6810756	Ube2t	-0.72116614
Klk10	0.68089104	Tbc1d30	-0.72110224
Abcc3	0.68041944	Dync1li2	-0.72090196
Col1a2	0.6802864	Accs	-0.72074174
Pld2	0.68002414	Tdp2	-0.720696
Plod1	0.68001556	Glp1r	-0.72049808
Stard5	0.679945	Nfat5	-0.7201328
Akap1	0.67991352	Zfp62	-0.72003316
Pygb	0.6798372	H2-K2	-0.71998072
Nckap5l	0.6798277	Gpld1	-0.7198801
D2Bwg0886e	0.6797452	Nup153	-0.71975756
Rcor1	0.6796379	Ubr1	-0.7196088
Shpk	0.679584	Gsk3b	-0.7194295
Gm33104	0.67945528	Ipo8	-0.71929454
Tmem179	0.6793976	Gm13315	-0.7192302
4932411N23Rik	0.67937232	Parp4	-0.7191224
Spata17	0.67919492	Ranbp2	-0.71897554
Gsto1	0.67919016	Arhgap12	-0.71890688
Slc9a1	0.67902994	Zfp318	-0.7184167
BE949265	0.67893076	Nae1	-0.71812486
Gm15217	0.67888116	Calcoco1	-0.7178192
Wdr13	0.67885708	Gm4737	-0.7177892
Mroh3	0.6787996	Gm4907	-0.71778346
Mecp2	0.67874288	4932438A13Rik	-0.7177298
0610010K14Rik	0.678637	Pik3r1	-0.71762896

Gpr52	0.6786251	Gucd1	-0.71739244
Mrps36	0.6785126	Klf10	-0.7173066
Magi2	0.67844868	Mettl6	-0.71715308
Bbs9	0.6783042	Atp8b1	-0.71638536
Zfp553	0.6780212	Wnt7a	-0.71618032
Nwd2	0.6779542	Phxr1	-0.71613408
Zbtb7c	0.67764234	Arfip1	-0.71583032
Mlana	0.6774788	Cep63	-0.71579552
Zfp846	0.67735528	Skap2	-0.71547174
Aebp1	0.67732668	Bsnd	-0.7152624
Olfr809	0.67721892	Pdk1	-0.71511126
Nprl3	0.67687606	Cnot3	-0.71497726
Rian	0.6768522	Atf7	-0.7148938
6820426E19Rik	0.67626334	Phf23	-0.71485568
Fbxw2	0.67625236	Ppcdc	-0.71470166
Gkn3	0.6761651	Otud4	-0.71463776
Ifi47	0.67611456	Pax5	-0.7145753
Eya1	0.67597056	Faxc	-0.71456004
Gm26777	0.67579936	Zfp341	-0.714551
Capg	0.6755395	Osgin2	-0.71455
Olfr1197	0.67549944	Zbtb20	-0.7145386
Khdrbs1	0.67538786	Zdhhc21	-0.71427488
BC017158	0.67521954	Esyt1	-0.71378612
Rnf212	0.67495156	Pgk1	-0.71370746
Cacna1b	0.67491532	Klhl12	-0.71300888
Luc7l2	0.6748321	Foxn3	-0.71290206
Dhx33	0.674736	Herpud2	-0.71284246
Ccdc15	0.6745682	Npepps	-0.71262694
Atp9a	0.6743264	Ndfip2	-0.7125788
Hipk4	0.67432212	Exd2	-0.71253776
Cracr2b	0.6741271	Rtn4ip1	-0.7120328
C230057M02Rik	0.67401266	Klf5	-0.71188354
Gm8801	0.67399836	Gak	-0.71174764
Pdlim7	0.6735554	Cebpg	-0.71164274
Dcst1	0.67317152	Tm9sf1	-0.711514
Adamts20	0.67290736	LOC105245970	-0.71149254
Tmem26	0.6727624	Sgms2	-0.71148252
Dcst2	0.67276	Gramd1a	-0.71118928
Ubap2l	0.6726146	Map2k5	-0.710104

Exog	0.6725502	Pkn1	-0.71002532
Car10	0.6724882	Tmem203	-0.70979166
A930018P22Rik	0.6724763	Tmem55b	-0.70961524
Cphx1	0.67242432	Ccdc6	-0.70940256
C87499	0.6721549	Gm11110	-0.70924472
Cdkal1	0.672122	Cxxc1	-0.70901536
Hira	0.6720586	Appl1	-0.7089343
Ass1	0.67154836	Snrpn	-0.70878792
Cdhr4	0.67125892	Cldn6	-0.7087245
Gm4984	0.6707134	Rab11fip3	-0.70841408
Sesn3	0.6703448	Slc25a45	-0.708405
Tm6sf1	0.67031526	Hist1h2bm	-0.70804834
Gm32854	0.6701703	1700069L16Rik	-0.707952
Cdk5	0.6698022	Polg	-0.7076826
Kat2b	0.6697488	2210018M11Rik	-0.7073574
Sh3glb2	0.66954373	Fam58b	-0.7069478
Deptor	0.66935492	Acvr2a	-0.7064214
Zfp346	0.6691029	Cadm1	-0.70639468
Junb	0.66909314	Tmpo	-0.70626164
Kif24	0.66882228	Mecom	-0.7060628
Mafa	0.66874074	Calm2	-0.70590162
B930078G14Rik	0.6685853	Uspl1	-0.705626
Mapk13	0.6684966	Vps9d1	-0.70556592
Gbf1	0.66840934	Xbp1	-0.7055316
Sf3a1	0.66831636	Avl9	-0.70524884
Caprin1	0.6682968	Rdm1	-0.7050953
Pigq	0.668067	Asap2	-0.7050767
Lcn12	0.66799784	Glis2	-0.70501852
Mpzl1	0.6677947	Matr3	-0.7048912
Lhfpl1	0.66771746	Fam57a	-0.70484972
Slc25a23	0.6677103	Egr1	-0.70442628
Etv5	0.66765786	Gpr161	-0.70437146
Gm8232	0.66762232	Dhx38	-0.70435572
Fxyd6	0.66758872	Tctex1d1	-0.7043452
Zbtb7c	0.6670842	Brd7	-0.7043314
Supv3l1	0.66704416	Wdr83	-0.7040458
Tmbim4	0.66679333	6430411K18Rik	-0.70390796
Otub2	0.66669154	Gabpb1	-0.7036128
Smpd1	0.66662454	Apbb3	-0.70354032

Bpifa1	0.66651774	Uvssa	-0.70324134
Cgn	0.66642808	Anp32a	-0.70293473
Agap3	0.66635656	Gna13	-0.7028613
Ece1	0.66606808	Skil	-0.70285224
Tinf2	0.66598082	Cd3e	-0.7027173
Vprbp	0.66556692	Epb4.1l5	-0.70260096
Plxnd1	0.66547584	Nfil3	-0.7025914
1810008I18Rik	0.6652136	Gm40177	-0.70248126
Neu1	0.66502714	Irf2bp2	-0.70215368
Cby1	0.66475129	Ankrd13c	-0.7021384
Slc41a3	0.6642704	Tmem245	-0.70203376
Gm561	0.66412496	B230118H07Rik	-0.70203256
Atp6v0c	0.66402388	Rhobtb1	-0.70193244
Txn2	0.6639371	AI597479	-0.70186614
Lrrc28	0.66334345	Rbak	-0.7018466
Mal2	0.66337824	Yod1	-0.7015548
Prrx2	0.663259	Nrp1	-0.70141364
Ube2m	0.6629944	4930455G09Rik	-0.70125246
Sf3a2	0.66291904	Arfgap3	-0.70112372
Gm16026	0.66277886	Acsbg1	-0.70101308
Olfr821	0.66267586	A830080D01Rik	-0.70091296
Tlcd1	0.6625743	Crlf3	-0.70079708
Helz	0.66251111	Rest	-0.70070314
Mrpl54	0.66249228	Sun1	-0.7004776
Eftud1	0.66231536	Sesn1	-0.7004447
Pmf1	0.66225576	Gm17769	-0.70034576
Nagk	0.66199231	Sugp1	-0.70018006
Slfn8	0.66197634	Hnrnpa1	-0.70011472
Gm35593	0.6611986	Dyrk1a	-0.69997644
Zfp414	0.6611104	Chic2	-0.699944
Alg14	0.66107726	Cox16	-0.69990444
Kbtbd2	0.66083	Jmjd1c	-0.69985676
Cops6	0.6608238	Micall1	-0.69967986
Rnaseh2b	0.66066456	Pnpla8	-0.6996293
Krr1	0.66050864	Uri1	-0.6995878
Klk1b9	0.6603546	Afg3l1	-0.6989794
4933434E20Rik	0.6603446	Dicer1	-0.69894886
Xrcc5	0.66026544	Galnt7	-0.69888688
Taf1b	0.6602216	Lmbrd2	-0.6984968

Coro7	0.66014432	Csnk1a1	-0.69845772
Rbmx	0.65995884	0610037L13Rik	-0.69836188
Tspan11	0.65988803	Tmem89	-0.6983576
Npy1r	0.65983104	Sorbs3	-0.6981411
4933417G07Rik	0.65980816	Ppm1n	-0.69807457
Cd247	0.6597991	Pard3	-0.6978712
Gm1661	0.6594496	Nmd3	-0.6978688
Trmt61b	0.65941716	Pgd	-0.6978116
Adal	0.65923834	Mtss1	-0.69779872
Zfp827	0.65923024	6720475J19Rik	-0.69762612
Psmd3	0.6591878	Rgs2	-0.69740724
Gm33800	0.6590004	Slc25a51	-0.6973319
1700003F12Rik	0.6588502	Tshz2	-0.69726324
BC037034	0.6587677	Ninj2	-0.6971588
Npr3	0.65875673	Zbtb2	-0.69710206
Acox1	0.65859652	Ncor1	-0.696887
D830005E20Rik	0.6582141	Taf4a	-0.6967001
Bmp1	0.658134	Gfpt1	-0.69638634
Slc14a2	0.65786696	Spin1	-0.696331
Sepn1	0.657774	Mtmr3	-0.696089
0610010K14Rik	0.65736628	Cep170b	-0.6953912
Kif1bp	0.6573396	Numbl	-0.69526816
Ankrd13d	0.65719556	Dhps	-0.6952238
Gm19710	0.65712214	Zkscan3	-0.69492388
Gm10779	0.65685534	Tgs1	-0.69482804
Slc6a8	0.6565895	Chmp3	-0.6947627
Fam69c	0.6564708	Myh10	-0.6946137
Abhd16a	0.6563492	2610029K11Rik	-0.69459272
9130011E15Rik	0.65620994	Trim24	-0.6943016
Zfp46	0.6561012	Gm5039	-0.6941595
1700049E22Rik	0.65604544	Ankrd24	-0.693861
Mink1	0.6558356	Abcb1a	-0.69354248
Olfr1198	0.65499496	Crebl2	-0.6935029
Tmem253	0.654706	Zfp429	-0.69345403
Utrn	0.6546416	Nek7	-0.69329452
Nudt19	0.65437316	Cyp2c67	-0.69320488
Atg2b	0.65422392	Poldip2	-0.6931796
Gas6	0.65383434	Hacd1	-0.69305944
Tnnt2	0.6536727	Slc19a1	-0.69280196

Olfr482	0.653667	Gm5136	-0.69247674
H2-T22	0.65362692	Ccdc40	-0.692472
Gm19966	0.653532	Rere	-0.6921649
9430078K24Rik	0.65347624	Usp3	-0.69203806
Rbm38	0.65334416	Supt16	-0.69168472
Gm38398	0.65319728	Rint1	-0.69164514
Atp6v1a	0.6529317	2010107G23Rik	-0.69119168
Gm34014	0.65250636	Tomm70a	-0.6911378
Trp73	0.65226746	Mib1	-0.69110156
Tysnd1	0.65222644	Abi1	-0.69089984
Mest	0.6520977	2610001J05Rik	-0.6908736
Olfr373	0.65208388	Ier3	-0.69084024
Tradd	0.65202952	Nfasc	-0.6907425
Pnpla1	0.652019	Npepps	-0.69068146
Klk11	0.65199804	Gm16253	-0.69034052
Cmtm8	0.65171958	Rad50	-0.690269
Sdr42e1	0.65140248	Aebp2	-0.6902647
Slc39a13	0.65137244	Rbbp6	-0.69004632
Rock2	0.65120458	Lrrc14b	-0.690011
Mink1	0.65116644	Pcbp3	-0.68989276
Adrbk1	0.65109492	Nin	-0.6898494
Gm3264	0.65097476	Epb4.1	-0.6895962
Nkiras1	0.65089368	Tnfsf15	-0.68925906
Rhobtb3	0.65085412	Snx27	-0.6891494
Sstr5	0.65083552	Cwc27	-0.68896628
Lppr3	0.65074872	Cdc42se1	-0.68891048
Gm16499	0.6506386	Pxn	-0.68890286
Med19	0.6506095	Tango2	-0.6886127
Fcer2a	0.65058303	Sart3	-0.68850946
Hps6	0.6503477	Ddit4	-0.68829202
Myof	0.65025712	Hilpda	-0.68829012
Nup93	0.65023374	Mycbp2	-0.68776082
Eno3	0.65018224	Mtmr1	-0.68774844
Sqrdl	0.65015506	Phf8	-0.68773794
Nbea	0.6501136	Kmt2c	-0.68767786
1700020L24Rik	0.6499934	Ltbp3	-0.6875596
Vmn2r4	0.6498914	Camsap1	-0.68713904
Dpagt1	0.64985752	Masp2	-0.6868949
Ptov1	0.6498194	Cdc42bpg	-0.686605

Dusp14	0.6496253	Tap1	-0.68648196
Adgrf4	0.64960528	Arl3	-0.6863594
Gm9112	0.64952588	Ppp6r3	-0.6862216
Otx2	0.64924764	Tm2d1	-0.68614912
Ccdc124	0.64916754	Ei24	-0.686049
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Gml	0.6487422	Gnas	-0.68575192
Gm9933	0.6486888	Errfi1	-0.68542146
Fam98a	0.64859152	Rbm45	-0.68540334
Mettl20	0.64856887	Nemf	-0.68534756
Pdlim7	0.64847612	Dppa5a	-0.685266
Chchd3	0.6483574	Spred1	-0.6851878
Crnde	0.6483178	Exoc6b	-0.68500328
Elovl5	0.6483059	Bet1l	-0.6846938
Zfp457	0.64826584	Taf1d	-0.68447423
Adamtsl5	0.64814996	Ppp2ca	-0.6841569
Cacna2d2	0.64809273	9030025P20Rik	-0.68393205
Setd1b	0.6479502	Tmem230	-0.68391324
LOC102634429	0.64792346	Stx12	-0.683897
Mtl5	0.647892	Zbtb18	-0.68377734
Bad	0.6478467	Myo1d	-0.68363714
Gm10674	0.6478076	1600012H06Rik	-0.68362046
LOC102641621	0.64765788	Peak1	-0.68351316
Igdcc3	0.6476345	Sec22a	-0.68322896
Usp39	0.6474595	Cdc73	-0.68281126
Nipsnap1	0.6474154	Fam46a	-0.6826911
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Rgs17	0.6471939	Son	-0.68232584
Zfp568	0.6471524	Ivd	-0.68204546
Ggnbp1	0.64714098	Sap130	-0.6820278
Gm5751	0.64710092	Ralgds	-0.6818657
M1ap	0.6470251	Gm4221	-0.68184519
Spidr	0.64681626	Kif13b	-0.6816726
Ptcd2	0.6467433	Gxylt1	-0.6815834
Vamp1	0.64666604	Atp6v1h	-0.6811676
Olfr374	0.6461892	Zc3h12c	-0.68108464
Dact2	0.64594888	Sytl1	-0.68098688
Celf3	0.64586974	Cdc42se2	-0.68091106
1700034H15Rik	0.64551544	Ppp1r21	-0.6807661

Tubb6	0.64547396	Bnip3l	-0.68062354
A730017L22Rik	0.64512348	Ptpn2	-0.6803584
Gm16861	0.64446544	Trit1	-0.6802654
Tmem151a	0.6442628	Stxbp3-ps	-0.68020964
C330021F23Rik	0.64417314	Ccdc127	-0.68014812
Gm12472	0.64388156	Fam204a	-0.68013716
Wnk2	0.64386416	Reep4	-0.680006
Ikzf4	0.64385604	Brsk2	-0.67977
Pira6	0.64380074	Pvr	-0.6797576
Mgat5b	0.64360093	Trim34b	-0.67973756
Tpgs2	0.6435411	Akap7	-0.67971086
Fbxl19	0.6434436	Nupl1	-0.67969466
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Cnnm4	0.64320374	Pdk1	-0.67964792
Mybpc3	0.64318848	Chd2	-0.67962884
Col11a2	0.64318466	Myo9b	-0.67945146
Ndufaf6	0.6431074	Fbxw2	-0.67943526
Adam15	0.64279986	Il3ra	-0.67930604
Hpn	0.64278316	Tmbim4	-0.67888904
Atp6v0e	0.64268112	Arap3	-0.678849
1700030J22Rik	0.6426773	Irgq	-0.6787696
E130119H09Rik	0.6425438	Gtpbp3	-0.67847634
Thap3	0.64219094	Cnot10	-0.67839288
Nudt5	0.6421094	Gm20420	-0.67827272
Erbb4	0.64205312	AU022252	-0.67826652
Irx6	0.6417241	Phka2	-0.67814517
4930438E09Rik	0.64164066	Tbl1xr1	-0.67809486
Nck2	0.641562	Herpud2	-0.67807436
Abhd17a	0.64148092	Ccser2	-0.67763614
Pold2	0.64147616	Por	-0.67747832
Rdh1	0.64140653	Ndst1	-0.67740964
Lrmp	0.641376	2310030G06Rik	-0.6773548
1700021L22Rik	0.64133716	Stk-ps1	-0.67712997
4933406I18Rik	0.64119292	Erdr1	-0.67708158
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Gm20752	0.64075756	Pnpla8	-0.67671632

Poc5	0.64072752	Setd3	-0.67648577
Pcnxl3	0.64068746	Atp5a1	-0.67594576
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Fasn	0.63851548	Ilf2	-0.67278194
Lce3d	0.63798714	Hibadh	-0.6727109
1700113A16Rik	0.6377027	Lpp	-0.672524
Slc11a2	0.6376972	Itgb1	-0.67232276
Aebp2	0.63765096	Prkar2a	-0.672317
Tlr2	0.6376338	Agpat9	-0.67220688
D5Ertd579e	0.6375599	Wipi2	-0.6717887
A630095N17Rik	0.63755274	Amn1	-0.67163848
Cacna1i	0.63728952	Cul3	-0.6716342
Mpp1	0.63701152	Tet3	-0.6716013
Gm34780	0.63675452	Hdlbp	-0.67149043
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Urah	0.63661432	Bzw1	-0.67140054
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Dlk2	0.6358714	Smc5	-0.6712799
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Retn	0.6355195	Eno1b	-0.67092466
Fgd1	0.63548232	Vps4a	-0.67086076
Glmp	0.63537312	Mtss1	-0.67084026
Iqsec1	0.6351638	Pmm1	-0.67073632
Tarsl2	0.63506032	Tmc8	-0.6707072
Kif19a	0.6349988	Zfp617	-0.67053556
1110006E14Rik	0.6349788	Rnf44	-0.67025614

Cdkal1	0.63476086	Nat6	-0.67004824
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C330018D20Rik	0.63451766	Dnmt3a	-0.66976928
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Cpne7	0.63419676	Tgif1	-0.66810274
Ccdc169	0.6341944	Tgif1	-0.66805124
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Prdm11	0.63392544	6330564D18Rik	-0.66789532
Zfand1	0.63382292	Fbxl12	-0.6676822
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Pomgnt1	0.63364554	Sec22c	-0.66734648
Rabep2	0.63364028	Mapkapk2	-0.66733264
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Prl3a1	0.63335704	Hist1h4d	-0.66714526
Fkbp4	0.63334656	LOC102638888	-0.66712808
Murc	0.63303136	Uxs1	-0.66689206
Tuba1b	0.63301897	Lysmd4	-0.66688824
Atcay	0.6326952	Bglap	-0.6667242
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Casz1	0.6326256	Ddit3	-0.66653014
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Scn8a	0.63047696	Maml3	-0.6639309
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Onecut2	0.6303277	Sbno1	-0.6635928
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Commd5	0.6288619	Ccdc30	-0.66245532
Brd9	0.62875366	Arsg	-0.662395
Capns1	0.6285176	Wdr75	-0.6623168
Rab43	0.6283016	Rab28	-0.66226816
9330159M07Rik	0.62819624	Phf2	-0.66220046
Itfg2	0.62814426	Baz1a	-0.66220046
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Rita1	0.62695694	Prpf4	-0.6603632
Pou2f1	0.62662936	Exosc7	-0.66029644
Traf5	0.62660862	Rbpj	-0.6602621
Nkx2-6	0.62638712	Larp4b	-0.66023588
Stip1	0.62599564	Ralgps2	-0.6601682
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Mrps25	0.6256299	Wasl	-0.6601424
Gramd1b	0.62548208	Ing4	-0.66010952
Ssh1	0.6254492	Cnot1	-0.66010904
Apbb2	0.6253953	Ccdc43	-0.65996694
Zeb2	0.6253767	Coq10b	-0.65991784
Vmn2r60	0.62505866	Man2a1	-0.65984488
Cfap46	0.62502432	Kansl1l	-0.65960454
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Il4ra	0.62468387	Grsf1	-0.65903426
Khdc1c	0.6244426	Dxo	-0.6588912
Trim71	0.62436532	Csnk1g1	-0.65868568
4930565D16Rik	0.6242702	Tmem125	-0.6586466
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Ahnak	0.62406016	Kpna3	-0.6584468
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Pop4	0.6229105	Rbm39	-0.6570096
Ocel1	0.62262392	Psmd9	-0.65664816
Mut	0.6225662	Nanp	-0.65626336
Fam217a	0.62253	Prdm2	-0.65606928
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Cdh16	0.62225676	Rxrb	-0.6557951
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Lmna	0.6220355	Tcp11l1	-0.65562486
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Ndufa3	0.62186956	Ralgds	-0.65534592
Sptbn1	0.6218424	Fra10ac1	-0.65525436
Mospd2	0.62183666	Itch	-0.6550164
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Lars2	0.62161016	C130068B02Rik	-0.6549554
Lrp4	0.62155008	Thoc2	-0.6548667
Taf12	0.6212764	Rbm27	-0.65481568
Csrp2	0.62105036	Hist1h4d	-0.65471696
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Tfpt	0.62091446	Scaf8	-0.6545124
Ccnf	0.6209073	Zbtb33	-0.65398026
5031425F14Rik	0.6207366	Wnt9a	-0.65394688
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Tprn	0.6205034	Fam179b	-0.6539192
Hes6	0.6203532	Dnajc21	-0.6538768
B3gat1	0.62028312	Firre	-0.6538048
4833415N18Rik	0.61986208	Arap2	-0.6535678
Zfp511	0.61982536	Pqlc1	-0.6535573
Gm13021	0.6194358	Sez6l	-0.65337514
Cdc16	0.61915588	Trafd1	-0.653203
Mmp19	0.6191058	Rlf	-0.6531606
Slc44a5	0.619102	Gm34786	-0.65307664
Rasa4	0.61881686	Ggct	-0.65303708
Ube2l6	0.6186662	Brd7	-0.65298224
Adk	0.61857366	Gmds	-0.65279866
Gm35678	0.61854888	Smad5	-0.65241336
Plscr3	0.618464	Ythdf2	-0.6523862
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Slc15a2	0.61832094	Klf3	-0.65219832
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Swsap1	0.61762286	Gpbp1	-0.65133906
Htatip2	0.61762094	Taf6	-0.6510534
Nop56	0.61755848	Mast4	-0.65090274
Aif1l	0.61755228	Arih1	-0.6508708
Cd151	0.61747932	Fam114a2	-0.65065574
Olfm3	0.61744546	Ccdc58	-0.6505456
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Sema3a	0.61723804	Acbd5	-0.65025664

Pycr1	0.6168308	Gpi1	-0.65000487
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Rabep1	0.61656952	Sh2b3	-0.64965296
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Piezo1	0.61605454	Atp6v1b2	-0.64930487
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Gabrp	0.61520052	Aqp8	-0.64903926
Ecsit	0.61482	Dnajb6	-0.64894008
Mmp24	0.6146784	Tmtc3	-0.64827824
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Cks2	0.61452532	Plcxd1	-0.64813328
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Cdon	0.61439896	Aldh3a2	-0.64811992
Lamtor4	0.61435366	Cbfb	-0.648087
Siglec1	0.61433435	8-Mar	-0.647882
Zfp444	0.6141658	Hbp1	-0.647841
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Gja5	0.61380768	Plg	-0.6475754
Slurp1	0.61377906	Eif2ak3	-0.6473651
Dlx3	0.6137128	Setd5	-0.6472454
Casp8	0.61351728	Zfp866	-0.647182
Bche	0.61350728	Slc25a36	-0.6471338
Wars	0.61348534	Map4k5	-0.6470022
C730014E05Rik	0.61344386	Aldh2	-0.64690494
Abca5	0.6134186	Armcx2	-0.64667416
Ppan	0.6132989	Sugp2	-0.64660788
Gm10406	0.6132493	Zdhhc20	-0.64660216
Fam46c	0.6131158	Naa30	-0.6464634
Coq7	0.61300374	Alkbh5	-0.6460185
Rab31	0.61283494	Ccdc14	-0.64589166
Vmn1r219	0.6127238	Bptf	-0.645874
4833419F23Rik	0.61240054	Snx10	-0.64563656
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Emc10	0.6121354	Ptpn14	-0.64534426

Gramd3	0.6114416	Slc35g1	-0.64523316
Elavl3	0.61142396	Ppap2c	-0.64522886
Lmo4	0.611341	Trp53rka	-0.64503956
Fscn3	0.61133814	Klc1	-0.64491892
Heatr6	0.61130952	Rbbp6	-0.64473772
Ryr1	0.6111584	Ostf1	-0.64468146
4930429D17Rik	0.6110544	Crebbp	-0.64453888
Suds3	0.611001	Ino80d	-0.64452934
Gm15614	0.61074496	Mkx	-0.64438104
Tmem14c	0.61062288	A430105I19Rik	-0.64437866
Polr2k	0.61050653	Bbc3	-0.6441598
Prss48	0.61028624	Anxa11	-0.6441474
Cacng8	0.6100416	Kdm1a	-0.64414454
Cytip	0.60996008	Fdx1	-0.6440978
Ppfia4	0.60982132	Hmgcl	-0.6440234
Atp6ap1	0.6093488	2010111I01Rik	-0.64400912
Syt2	0.609323	Olfr398	-0.64389992
Timeless	0.6091504	Ddx17	-0.64387846
Nup205	0.60897874	Ergic2	-0.64380312
Ube2f	0.60896396	Nup37	-0.64357614
Rab5c	0.60887384	B4galt5	-0.6433854
Vmn1r139	0.6087339	Tbc1d20	-0.6433463
Gm32464	0.60872746	Prrc2c	-0.64328528
Espnl	0.608448	Rbm25	-0.64312934
Psmg4	0.6084318	Ppp1cc	-0.64282084
Rbm48	0.60800744	Kctd13	-0.64248132
Mtx1	0.60793352	4930512B01Rik	-0.642467
Stambp	0.6078572	Zfp36	-0.6423049
Nsf	0.60773516	Ccdc92	-0.6422987
Lmna	0.60764266	Nf1	-0.64228083
Swap70	0.60758162	Ttl	-0.6421218
Dcaf4	0.60745216	Fastkd1	-0.64211464
Tns2	0.60741806	Mturn	-0.6419244
Fig4	0.60719132	C030034L19Rik	-0.6415081
Hps1	0.60708666	Zfp160	-0.64149714
Aars2	0.60707426	Cebpb	-0.6414952
Uba7	0.6070628	Gapdh	-0.64094592
Gm19327	0.60680532	2610015P09Rik	-0.64053536
Lgals3bp	0.60680056	Zmym2	-0.6405268

Cd74	0.60664606	Eogt	-0.64042616
Olfr1218	0.6066451	Fosl2	-0.64042186
Rpusd3	0.60639716	Glce	-0.64024734
Pclo	0.60627746	Fitm2	-0.64009572
Baiap2	0.60622836	Dync1i2	-0.640038
Gpr180	0.60619354	9530077C05Rik	-0.63982106
Neu2	0.60609674	Cldn9	-0.6396508
Sh3bp5	0.60599136	Pex5	-0.63932944
Hmgn5	0.60589886	Tgfbr1	-0.63888932
Ebp	0.60570526	Arhgef2	-0.63882256
Emc6	0.60560274	Bsg	-0.63876487
Vps29	0.6055174	BC003331	-0.6384878
Rictor	0.6054802	Esrp1	-0.63841772
Jakmip1	0.60547448	Fam60a	-0.63825894
BC106175	0.60544372	Kmt2e	-0.6378789
Atg10	0.60535574	Ptpmt1	-0.6377158
4930449C09Rik	0.60526276	Erbb3	-0.63745546
Mthfr	0.60515214	Arrdc3	-0.637413
Fam120aos	0.6050978	Ccar1	-0.6372194
Tm9sf1	0.60496712	Ttc33	-0.63708066
Fam216a	0.6048126	Ubxn2a	-0.6369381
4922502B01Rik	0.6046896	P2rx4	-0.6369262
Ccnd3	0.60468912	Zfp503	-0.63677406
Ptgr2	0.60459232	Fam168b	-0.63630056
Ldlr	0.60414076	Snrk	-0.63628292
Zscan25	0.60388612	Bbx	-0.63623714
Bcl7c	0.60380172	Sbf1	-0.63622808
Iqce	0.60379696	Rest	-0.63601064
Abca17	0.6037898	Tfb2m	-0.6358094
Gnptab	0.60378266	Erp29	-0.63577986
Psmb8	0.60372734	Map2k4	-0.6356702
4930442J19Rik	0.60365248	Wtap	-0.63542604
Sms	0.60346794	Elmo3	-0.6353946
Pold1	0.603467	Zswim4	-0.63533688
Acap3	0.6034627	Nr1d1	-0.63528824
Psmc2	0.6033349	Osbpl1a	-0.635211
Alad	0.60333204	Bmpr1a	-0.63517094
Ushbp1	0.60331344	Suv420h1	-0.6350069
Gm34093	0.60323334	Vwa1	-0.63471388

Igkv4-72	0.60317564	Mpzl3	-0.6344962
Pcnp	0.60313034	Gm35778	-0.63443708
9130011E15Rik	0.60281276	Snx16	-0.634429
Jph4	0.6026969	Hnrnpul1	-0.6341858
Gm2696	0.60251092	Paqr5	-0.63417244
Ccl25	0.60228872	Ift52	-0.63393688
1810030O07Rik	0.60226012	Fggy	-0.63390112
Rbms1	0.60221004	Tjp2	-0.6337886
Sh3glb2	0.60220956	Gm9872	-0.6337347
Stradb	0.60198736	Shoc2	-0.6336818
Zfp688	0.6019218	Ccdc117	-0.63354206
Gm32117	0.6016836	Rnf130	-0.63317417
Scgb3a1	0.6014528	Zfp710	-0.6330905
Gm20125	0.60126448	Arhgap29	-0.6330738
Haus1	0.60122966	Zbtb14	-0.633008
Gpr149	0.6009841	Gm4876	-0.63300514
Cd80	0.6005306	Ddx31	-0.6328678
Dexi	0.60044528	R3hdm1	-0.6328492
Gm17296	0.6003566	Hprt	-0.63268804
Stag2	0.59992742	Zc3h11a	-0.63262272
Sqrdl	0.59991694	Pigb	-0.6321578
C76332	0.59986972	Hsph1	-0.63205576
Foxp3	0.59986926	Nabp1	-0.63190794
A130014A01Rik	0.59974766	Hist1h2ao	-0.63179446
Gm16524	0.59958506	Atxn7l3b	-0.63176108
D930028M14Rik	0.5994582	Dnttip1	-0.6315236
9030417H13Rik	0.59937048	Tmem131	-0.6313286
Scml4	0.5993514	Calm2	-0.6310668
Slc44a2	0.5992055	Pitpnm1	-0.63085794
Slc5a8	0.59913492	Ankrd11	-0.6307764
Drd2	0.59882688	Fam214b	-0.63074732
LOC102634852	0.5988078	Osmr	-0.6307092
Clcn7	0.59874796	Fgfr3	-0.63035346
Exoc5	0.5987215	Bcl2l1	-0.63023234
Gm6287	0.59871244	Ube2q2	-0.63022376
Golga3	0.59863568	Mtss1	-0.63021326
Nt5c	0.59846736	Dgcr2	-0.630208
Csnk2b	0.5984435	Tnfrsf4	-0.63017464
Hs1bp3	0.59836864	4930453N24Rik	-0.63003588

Gabbr1	0.5982709	Rpa1	-0.62992526
Klhl40	0.59826804	Pnpo	-0.62968444
B430319G15Rik	0.59818435	Mms19	-0.62967492
Selm	0.59806966	Parp6	-0.6290684
5430431A17Rik	0.59806014	Pfdn2	-0.62899256
Ndufaf4	0.598032	Dnajc14	-0.6286459
Gm41496	0.5980234	Trim34a	-0.6285224
Syt15	0.5979252	Sema4d	-0.6281934
Ccnd2	0.59786892	Rab23	-0.62814044
Lpo	0.59771966	Slc25a32	-0.62798548
Vasn	0.59748412	Gtf2a1	-0.62797452
Nccrp1	0.5974741	Med15	-0.62785912
Ict1	0.59745168	Cdh24	-0.6277945
Cp	0.59742594	Homer1	-0.62756872
Metap1d	0.5973344	Chd7	-0.62744712
Gm10845	0.5973258	Zbtb20	-0.6272836
Mrpl48	0.59730196	Plcxd2	-0.62689256
Bsn	0.59719134	Mybph	-0.62673257
Lpl	0.5970712	Arl4a	-0.62669516
Faim2	0.59706926	Gatad1	-0.6264038
4930556J02Rik	0.59695148	Rnf11	-0.62639
Mycbp	0.59686852	Lnp	-0.62630414
C3	0.5968518	Cdc42	-0.62624454
Thoc5	0.5968466	Ppip5k2	-0.6262207
Gm4117	0.596745	Trmt61a	-0.6260886
Fcho1	0.59669494	Sun1	-0.62606288
Defa2	0.5966706	Gm36022	-0.62597228
Wdfy3	0.5966406	B630005N14Rik	-0.62591886
Vmn2r111	0.59631586	Kif21a	-0.6258788
Cldn20	0.5962486	Cep57l1	-0.62533808
Rab1b	0.5962324	Pggt1b	-0.62531376
Cox19	0.5961461	Senp7	-0.62525606
Slc18a3	0.59613276	Ythdc1	-0.62513208
Npb	0.5960803	Mmadhc	-0.62480592
Robo4	0.59598828	Setd1b	-0.62447166
Ifi27l2a	0.59588933	Mark4	-0.62437726
8430428J23Rik	0.595783	Serpinb1c	-0.62434626
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4930430M16Rik	0.5954528	H2afy3	-0.62393808

Rwdd4a	0.5953455	Hnrnpa0	-0.62393426
Pid1	0.59527874	Hspb8	-0.62385988
Ccl5	0.59513568	Hltf	-0.62381268
Nrros	0.59506677	Msl1	-0.6237607
Fadd	0.59482908	Prkra	-0.62372876
1700030J22Rik	0.59482312	Cited2	-0.62356376
Pfkfb2	0.59479046	Mga	-0.62349654
Cops6	0.5947032	Pitpnm2	-0.62344884
Otof	0.59451914	Fam175b	-0.62333774
Rab11fip4os1	0.5944638	Fxr2	-0.6226158
Tgm2	0.5943265	Mtpap	-0.62258768
Oraov1	0.5942664	Hspa5	-0.6225133
Vamp5	0.59425116	Rnaseh1	-0.62250209
BC024978	0.5942359	Cdc123	-0.621871
A230050P20Rik	0.59422636	Gm14431	-0.6217699
Fosl1	0.59401416	Ank3	-0.6216631
Tmem229b	0.5939145	Itga6	-0.6211138
LOC102641570	0.59367084	Minpp1	-0.62099456
Nrarp	0.5936494	2410127L17Rik	-0.62096166
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Wars	0.59358454	Fsbp	-0.62089872
Ipcef1	0.59352016	Vamp4	-0.6204915
Ube2c	0.5933986	Olfml2b	-0.6204729
Phf12	0.59336234	Fam160a2	-0.62030744
Cep162	0.59308004	Dcaf10	-0.6203065
Uncx	0.59268426	Ank3	-0.62027096
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Smarcal1	0.5919986	Braf	-0.61947728
Cald1	0.59189176	Gtf3c1	-0.61940288
Gm5124	0.5918822	Galnt1	-0.61929894
Oscar	0.59184694	Slc25a37	-0.6191945
Morc2a	0.5918164	Rbm47	-0.6191306
Dnajc14	0.59173727	Aurka	-0.6189656
Topors	0.5916872	Selt	-0.618865

Dhx34	0.59167814	Ssfa2	-0.618834
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Tmem201	0.59143114	Eci2	-0.61874246
Pxt1	0.5913534	Pdcd10	-0.6185436
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Zfp608	0.59107876	Fam73a	-0.6183486
Ndufs7	0.59087228	Hnrnpc	-0.61826563
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Kcnip1	0.5907836	BC046401	-0.61803054
Phf1	0.5907731	Itsn1	-0.61785794
Abcg4	0.59063864	Rgmb	-0.61756015
Wbp2	0.59063482	Epb4.1l4aos	-0.6175504
Gspt1	0.5905137	Zfp217	-0.6174798
Krtap9-1	0.5903888	Aqp6	-0.61746836
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Lrrc75a	0.590322	Rbm12	-0.61737632
Lhb	0.59030294	Adam33	-0.61736036
Mob1b	0.59025812	Acot4	-0.61725044
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Cep250	0.5900202	Per1	-0.6171198
Ccdc155	0.58995676	Gm5092	-0.61700534
Olfr123	0.5897422	Prdm2	-0.61690044
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Pusl1	0.58941556	Arfgef1	-0.61661196
Tuba3a	0.5891881	Map3k10	-0.61660814
Ctsw	0.5889473	Tmem229a	-0.61656284
Ctnnd1	0.5889468	Sncg	-0.6165142
Nabp2	0.58893252	Nxt2	-0.6164684
Bcl10	0.58892108	Irf2bp2	-0.61635828
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Lrp3	0.58845854	Nif3l1	-0.6159997
Vmn2r3	0.5882044	Mia3	-0.61598874
Ptpn14	0.58819008	Scg5	-0.61596108
Zc3h3	0.58802366	Atxn1	-0.61580372
Gle1	0.58795596	Pycr2	-0.6157422

Syne1	0.5879216	Ythdf3	-0.61539746
Ctrcos	0.58791732	Gm10386	-0.61505126
Elavl4	0.58789396	Stard3	-0.6149268
Gm28321	0.58787488	Tars2	-0.61476136
H2afy	0.58784008	Tpd52l2	-0.614748
Ttll5	0.58753968	Aaed1	-0.6147151
Ensa	0.58740568	Zc3h7a	-0.6145358
Cmip	0.58734012	Arv1	-0.61417914
Gcm2	0.5871248	Ppp1r15b	-0.6141305
Eef2kmt	0.5870657	Nipsnap3b	-0.6137824
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Mboat7	0.58668088	Ptbp2	-0.6133342
Kctd2	0.58655787	Insr	-0.61320114
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Ssmem1	0.58638048	Ndfip1	-0.61302232
Olfr287	0.58622884	Nelfe	-0.6129694
Ctxn2	0.58612204	Vasp	-0.6129117
Dclk3	0.58607603	Fam135a	-0.61289834
Bspry	0.58601808	Golga4	-0.61283064
Gm6116	0.58597136	Pik3cb	-0.6128216
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Dhodh	0.58569146	Rnf125	-0.6127982
Cox5a	0.58555556	Larp4	-0.61256074
Lhx8	0.5851774	Srsf2	-0.6122198
Fbxo6	0.5851469	Ppox	-0.61206674
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Ptcd3	0.58491516	Srp68	-0.61165286
Myh4	0.58476114	Hist1h2bb	-0.6115546
Acd	0.5847292	Lrp6	-0.61118794
Npat	0.58453656	Tmem168	-0.61112834
Gm32474	0.58449172	Rad54l2	-0.61049318
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Ephb6	0.5843134	Drg2	-0.61033964
Cdh22	0.58413648	Ncoa2	-0.61014176
Dbi	0.58411168	Stat5a	-0.60978412

Slc25a4	0.58391524	Sugt1	-0.60974264
Sympk	0.5837722	Ggnbp2	-0.60971736
Ercc6l2	0.5836806	Scrn3	-0.60941554
Ccbe1	0.5835252	Dync1li1	-0.60934926
Svep1	0.58346366	Ppm1a	-0.60912084
Ribc1	0.5834012	Hnrnph3	-0.60895396
Mecom	0.5833516	Clcn3	-0.60860634
Kctd13	0.58314848	Kat8	-0.60842466
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Tbata	0.5830257	2-Sep	-0.608336
Myo18a	0.5826273	Nrp1	-0.60832024
Entpd4	0.58251906	Pate2	-0.60831428
Slirp	0.5824666	Gapdh	-0.60807752
Mogat2	0.58231568	Ears2	-0.60805583
Pmvk	0.5820465	Shc1	-0.60795928
Cmtm5	0.5817194	Spata13	-0.6078348
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Bhmt	0.58127212	Wdr89	-0.60755229
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Ptpn6	0.58122826	Kctd12b	-0.6072612
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Kcnq1	0.580987	4930402H24Rik	-0.60712814
Oscar	0.58093572	Serpinb1a	-0.6067071
Tom1	0.58084392	Polk	-0.60665226
Olfr149	0.58067894	Rtn4	-0.60617018
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		Pex13	-0.6051564
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		Ahcyl1	-0.60469532
		Exosc3	-0.60465002
		Npy	-0.60462808
		Zdhhc16	-0.6042595

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Serinc1	-0.6027398
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Cox11	-0.6005683
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Selo	-0.60006332
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Ap3s1	-0.5983243
Junb	-0.59821988
Cradd	-0.59792328
Sft2d2	-0.59791852
Ywhag	-0.59782933
Phf13	-0.59780264
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Jak2	-0.5936732
Nbn	-0.59349204
Tanc2	-0.59337806

Zfp654	-0.59326554
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Vgll4	-0.59300756
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Cd247	-0.59219932
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Proser2	-0.5913415
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Hyi	-0.59125804
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Osbpl9	-0.58762788
Slc6a6	-0.58731508
Krcc1	-0.58727217
Thop1	-0.58718204
Nrip2	-0.58715605
Ei24	-0.5870099
Gm10767	-0.58695364
Tpcn1	-0.586905
Cyb5d1	-0.5868063
Bace1	-0.58679294
Zfyve16	-0.58667564
Rnf19b	-0.58638716
Cdc42se2	-0.58636666
Btbd7	-0.5862832
Prkcd	-0.58624792
Mgea5	-0.5861783
Hmg20b	-0.58617496
Magi1	-0.58609772
Rasip1	-0.58605194
Rbm22	-0.58603192
Unc13a	-0.5856662
Fnbp4	-0.58554124
Sytl4	-0.58528996
Synj2	-0.58527946
Ldb1	-0.58525514
Gm8709	-0.58511019
Cpeb3	-0.58510352
Tmod1	-0.58503628
Psmd5	-0.58496428
Rbbp9	-0.58473206
Eps15	-0.58457326
Adm2	-0.58431196
Cbr4	-0.5843091
Tardbp	-0.58420754
Sirt4	-0.5841656
Tom1l2	-0.58413888
Hepacam2	-0.5839808
Rpl36al	-0.58392668
Plekha5	-0.58390092

Ttc37	-0.5837674
U2surp	-0.58364486
Gm13238	-0.58358908
Nhsl1	-0.5835066
Afap1	-0.58347368
Larp1b	-0.58347272
Arf3	-0.58324576
Zak	-0.5831561
Cpxm1	-0.5831275
Dync1li2	-0.58305884
Eed	-0.5830054
Gm33790	-0.58289624
Ccdc136	-0.58288384
Fbxo3	-0.58260012
Leprotl1	-0.5824461
Gm34786	-0.58241988
Mbd3l1	-0.58238244
Aco1	-0.5823388
Gm38488	-0.58224726
Lamc1	-0.5821352
Reep3	-0.58201504
Gm38448	-0.5819192
Arhgef2	-0.5818777
Zfp874a	-0.58182574
Pura	-0.5813246
Cep83	-0.58093644
Cript	-0.58084726
Krr1	-0.58084607
Usp10	-0.58073877
0610009E02Rik	-0.5803952
Gm14295	-0.58024884
Ctdsp2	-0.58021688
Dgcr8	-0.5801358
Eps15l1	-0.58000516

Supplemental Table 2: Significantly enriched mechanisms
by pathway enrichment analysis of Gene Ontorogy

Term	Fold Enrichment	FDR
GO:0006351~transcription, DNA-templated	1.401768117	4.29E-22
GO:0006355~regulation of transcription, DNA-templated	1.282915668	4.27E-13
GO:0045944~positive regulation of transcription from RNA polymerase II promoter	1.374946501	1.29E-08
GO:0016310~phosphorylation	1.488145294	1.09E-08
GO:0000122~negative regulation of transcription from RNA polymerase II promoter	1.436971326	1.75E-08
GO:0016569~covalent chromatin modification	1.719273866	1.25E-07
GO:0006468~protein phosphorylation	1.45221904	6.11E-07
GO:0007049~cell cycle	1.413270975	3.84E-06
GO:0006357~regulation of transcription from RNA polymerase II promoter	1.506405042	1.04E-05
GO:0006915~apoptotic process	1.385215525	9.22E-05
GO:0001525~angiogenesis	1.602761904	1.64E-04
GO:0006974~cellular response to DNA damage stimulus	1.433218043	2.75E-04
GO:0048511~rhythmic process	1.801701659	5.83E-04
GO:0045893~positive regulation of transcription, DNA-templated	1.343641915	9.82E-04
GO:0015031~protein transport	1.333737921	0.001278
GO:0043065~positive regulation of apoptotic process	1.446830697	0.001727
GO:0035556~intracellular signal transduction	1.397387592	0.002499
GO:0048813~dendrite morphogenesis	2.363446244	0.002539
GO:0010628~positive regulation of gene expression	1.391093384	0.003163
GO:0030336~negative regulation of cell migration	1.806887241	0.003219
GO:0030335~positive regulation of cell migration	1.559659581	0.003517
GO:0018105~peptidyl-serine phosphorylation	1.645800623	0.016811
GO:0016567~protein ubiquitination	1.371311086	0.016975
GO:0009749~response to glucose	1.854163202	0.021039
GO:0010977~negative regulation of neuron projection development	1.95438824	0.020589
GO:0009790~embryo development	1.830692782	0.026884
GO:0030512~negative regulation of transforming growth factor beta receptor signaling pathway	2.02677299	0.027812
GO:0006397~mRNA processing	1.371713485	0.03614
GO:0030154~cell differentiation	1.227756715	0.038533
GO:0006511~ubiquitin-dependent protein catabolic process	1.548281593	0.042934

GO:0034097~response to cytokine   1.785490491   0.041842

Supplemental Table 3: List of single nucleotid variants detected by targeted sequence

Sample	Chr	Start	End	Ref	Alt	Func.refGene	Gene.refGene	ExonicFunc.refGene	depth	variantNum
PDA_1	3	77638049	77638049	G	A	exonic	ROBO2	nonsynonymous SNV	279	52
PDA_1	12	25398285	25398285	C	G	exonic	KRAS	nonsynonymous SNV	475	174
PDA_1	17	7578190	7578190	T	C	exonic	TP53	nonsynonymous SNV	196	54
PDA_1	17	56435476	56435476	C	T	exonic	RNF43	nonsynonymous SNV	73	5
PDA_1	20	57484787	57484787	T	G	exonic	GNAS	nonsynonymous SNV	290	49
PDA_2	12	25398284	25398284	C	A	exonic	KRAS	nonsynonymous SNV	318	117
PDA_2	17	7577537	7577537	C	-	exonic	TP53	frameshift deletion	336	107
PDA_3	9	21971186	21971186	G	A	exonic	CDKN2A	stopgain	135	52
PDA_3	12	25398285	25398285	C	G	exonic	KRAS	nonsynonymous SNV	563	257
PDA_3	17	7578474	7578474	-	G	exonic	TP53	frameshift insertion	312	78
PDA_3	17	8792115	8792115	A	T	exonic	PIK3R5	nonsynonymous SNV	119	7
PDA_4	3	30729962	30729962	C	-	exonic	TGFBR2	frameshift deletion	571	94
PDA_4	12	25398284	25398284	C	A	exonic	KRAS	nonsynonymous SNV	439	68
PDA_4	12	56488334	56488334	C	T	exonic	ERBB3	nonsynonymous SNV	244	41
PDA_4	17	7577548	7577548	C	A	exonic	TP53	nonsynonymous SNV	258	48
PDA_5	5	1.12E+08	1.12E+08	C	A	exonic	APC	nonsynonymous SNV	414	38
PDA_5	12	25398285	25398285	C	G	exonic	KRAS	nonsynonymous SNV	603	259
PDA_5	17	7578263	7578263	G	A	exonic	TP53	stopgain	274	105
PDA_5	17	7579542	7579542	C	G	exonic	TP53	nonsynonymous SNV	265	59
PDA_5	18	19752082	19752082	A	G	exonic	GATA6	nonsynonymous SNV	231	23

Supplemental Table 4: Primer sequence used for RT-PCR analysis

	Fw	Rv
Ptf1a	TCCCATCCCCTTACTTTGATGA	GTAGCAGTATTCGTGTAGCTGG
Mist1	GCTGACCGCCACCATACTTAC	TGTGTAGAGTAGCGTTGCAGG
Amy2a4	TTGCCAAGGAATGTGAGCGAT	CCAAGGTCTTGATGGGTTATGAA
Cpa1	CAGTCTTCGGCAATGAGAACT	GGGAAGGGCACTCGAACATC
Nr5a2	TGTGTGGCGATAAAGTGTCTG	TCGACAGTAGGGACATCGTTT
Sox9	AGTACCCGCATCTGCACAAC	ACGAAGGGTCTCTTCTCGCT
Hnf1b	GTTACTGCCGTCCCCGAATTT	CGGCTTGGTGTCGAGATCC
Krt19	GGGGGTTCAGTACGCATTGG	GAGGACGAGGTCACGAAGC
Pdx1	TTCCCGAATGGAACCGAGC	GCGTGAGCTTTGGTGGATT
Hes1	ATAGCTCCCGGCATTCCAAG	GCGCGGTATTTCCCCAACA
Gata4	CCCTACCCAGCCTACATGG	ACATATCGAGATTGGGGTGTCT
Gata6	TTGCTCCGGTAACAGCAGTG	GTGGTCGCTTGTGTAGAAGGA
Ngn3	AGTGCTCAGTTCCAATTCCAC	CGGCTTCTTCGCTTTTTGCTG
Brg1	CAAAGACAAGCATATCCTAGCCA	CACGTAGTGTGTGTTAAGGACC
Dll1	CAGGACCTTCTTTCGCGTATG	AAGGGGAATCGGATGGGGTT
Dll4	TTCCAGGCAACCTTCTCCGA	ACTGCCGCTATTCTTGTCCC
Jag1	CCTCGGGTCAGTTTGAGCTG	CCTTGAGGCACACTTTGAAGTA
Jag2	CTGTGCAGCGTGTTCAGTG	GTGTCCACCATACGCAGATAAC
Notch1	GATGGCCTCAATGGGTACAAG	TCGTTGTTGTTGATGTCACAGT
Notch2	ATGTGGACGAGTGTCTGTTGC	GGAAGCATAGGCACAGTCATC
Rbpj	CTCCACCCAAACGACTCACTA	TCCAACCACTGCCCATAAGATA
Onecut1	GGCTATGCCCACCGACAAG	GCCCTGAATTACTTCCATTGCT