Supplementary Information for

Molecular codes defining lateral hypothalamic sleep regulating neurons

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This PDF file includes:

Supplementary text

Figs. S1 to S7

Tables S1 to S7

References

Supplementary Information Text

RNA sequencing analysis: Cluster generation was performed with the libraries using the Illumina TruSeq SR Cluster Kit v4 reagents and sequenced on the Illumina HiSeq 2500 using TruSeq SBS Kit v4 reagents. Sequencing data were processed using the Illumina Pipeline Software version 1.84. Purity-filtered reads were adapter- and quality-trimmed with Cutadapt (v. 1.8,(1)). Reads matching to ribosomal RNA sequences were removed with fastq screen (v. 0.9.3). Remaining reads were further filtered for low complexity with reaper (v. 15-065, (2)). Reads were aligned against Mus musculus.GRCm38.86 genome using STAR (v. 2.5.2b, (3)). The number of read counts per gene locus was summarized with htseq-count (v. 0.6.1, (4)) using Mus musculus.GRCm38.86 gene annotation. Quality of the RNA-seq data alignment was assessed using RSeQC (v. 2.3.7, (5)). Statistical analysis was performed in R (version 3.4.1). Genes with low counts were filtered out according to the rule of 1 count per million (cpm) in at least 1 sample. Library sizes were scaled using TMM normalization and log-transformed into counts per million (CPM) (EdgeR package version 3.18.1; (6)). Differential expression was computed with limma (7).

qPCR and RT-PCR: Quantitative-Real Time PCR for the analysis of gene expression was carried out by real time qPCR in an ABI prism HT7900 detection system (in triplicate). Samples were collected and preserved at −80 °C until RNA extraction. Total RNA was isolated using the RNeasy Micro kit (QIAGEN 74004) or Trizol extraction method. Integrity and quality of RNA samples was checked using a Nanodrop (ND- 1000) spectrophotometer and RNA 2100 Bioanalyzer (Agilent). Reverse transcription was carried out based on Promega reverse transcription Kit by random hexamer or oligo-dT

primers according to the manufacturer's instructions. Amplification was carried out with TaqMan assay kit.

Cell culture: For primary neuronal cultures and neurosphere formation for HCRT and MCH cell sorting, E18 pregnant mice were sacrificed and embryos were removed and decapitated in PBS (Thermofisher) on ice. E18 embryonic hypothalami were dissected and cut into small pieces in a dissection solution containing HEPES buffer. After enzymatic digestion for 30 min with 10 U/ml papain (Roche 108014, Roche, Indianapolis, IN), cells were dissociated by 12 to 15 trituration using a 1000µl pipette tip in neurosphere medium which contains DMEM/F12+ glutamax, sodium pyruvate 1%, non-essential amino acids 1% and penicillin/ streptomycin 1%. Isolated cells were centrifuged for 4 minutes at 800 RPM and suspended in neurosphere medium. After addition of appropriate virus (lentivirus particles for MCH and AAV for HCRT cell sorting at MOI=10), cells were seeded in low adherent 96 wells in 80µl neurosphere medium. The same medium containing bFGF (10ng/ml) was added to the neurospheres 24h later. After one week in this medium the cells were dissociated for cell sorting.

Embryonic mouse fibroblasts were prepared from E12.5 day old embryos after removing the head and internal organs. The rest of the body was divided into small pieces and dissociated by passing through a gauge 18 needle for several times. After dissociation, cells were cultured in tissue culture flasks in DMEM medium containing FBS 10%, L-glutamine 1%, penicillin/streptomycin 1% and non-essential amino acids 1%. Establishment of mouse iPSC lines was carried out as described before (8). Briefly, mouse embryonic fibroblasts were transduced with the cocktail of retroviruses containing *Oct4*, *Sox2*, *c-Myc* and *Klf4*. After 3 days in fibroblast culture medium, the medium was

changed to stem cell medium containing leukaemia inhibitory factor (LIF). Medium change was performed every day until two weeks when the colonies were picked up and expanded in feeder free medium. Mouse ES and iPS cells were cultured without MEF, on 0.1% gelatin coated plates. Usually 1:3 ratio of cells passaged in every culture. The medium was DMEM/F12 containing knockout serum replacement (KSR) 10%, L-glutamine 1%, penicillin/streptomycin 1%, non-essential amino acids 1%, sodium pyruvate 1% and LIF 1000U/ml. Differentiation toward neuronal progenitors was carried out based on (9) with some modifications. Mouse iPSCs were dissociated and 3000 cells were seeded in each well of low adherent 96 well plates in gfCDM that contained IMDM (1X)+glutamax and F12 NUT Mix (HAM)(1x) (1:1), CD lipid concentrate 1%, 1-thiglycerol 0.004%, bovine serum albumin (99.9% pure) 0.25 % and penicillin/streptomycin 1%. After several days in this medium based on the different protocols (3-7 days) the medium was changed to DFK medium (DMEM/F12, knockout serum replacement 10%, penicillin streptomycin 1% and glucose monohydrate 7mg/ml). After 12-14 days, the embryonic bodies (EBs) were either collected for RNA extraction and gene expression analysis or dissociated and plated on poly-D-Lysine coated dishes in the mature neuronal medium containing neurobasal medium, B-27 supplement 2%, penicillin/streptomycin 1% and L-glutamine 1%.

Viral vector construction and virus production: The *Oct3/4* (Plasmid #13366), *Sox2* (Plasmid #13367), *c-Myc* (Plasmid #13375) and *Klf4* (Plasmid #13370) retrovectors to establish mouse iPSCs were purchased from Addgene. Retrovirus generation was performed based on current protocol (8). pRRLSIN.cPPT.mmPmch-EGFP-PGK-GFP.WPRE vector that was used to purify MCH cells is based on pRRLSIN.cPPT.PGK-

GFP.WPRE (gift from Dr. Didier Trono - EPFL) which has been modified and the sequences of interest were inserted. AAV-EF1a-DIO mCherry virus used for purification of HCRT cells were purchased from North Carolina University vector core. Lenti and retroviruses were packaged in 293FT and PLAT-E viral packaging cells (10).

Immunofluorescence and Alkaline Phosphatase Activity Staining: Immunofluorescence was performed after fixation of the cultured cells in 4% paraformaldehyde for 10 min, permeabilization with 0.2 % Triton X-100 for 15 min, and blocking in PBS supplemented with 10% serum of the species in which secondary antibody was raised for 1 h. Cells were incubated overnight with the primary antibodies at 4 °C, washed, and incubated with secondary antibodies. Nuclei were counterstained with 1 µg/ml DAPI (Sigma-Aldrich). Alkaline phosphatase (ALP) activity was detected by a commercial kit (Sigma-Aldrich, 86R).

ELISA for neuropeptide secretion quantification: EBs were dissociated and cultured on PDL coated dishes for two to three weeks. For the secretion analysis, the medium was changed the day before. The stimulations with TRH and orexin were performed three hours before cells and medium collection. The medium collected and centrifuged to remove any cell debris and kept at -80 until the day of ELISA. The concentrations of the HCRT and MCH in the medium were quantified by ELISA kits from Phoenix Pharmaceuticals (FEK-003-30 and FEK-070-47).

Morpholino study in zebrafish: The morpholino antisense oligos were purchased from Genetools (http://www.gene-tools.com) (**SI Appendix, Table S7**). Breeding couples were made the day before and the eggs were collected for morpholino injection the next day. Injections of translation blocking morpholino oligo were performed into 1-cell stage
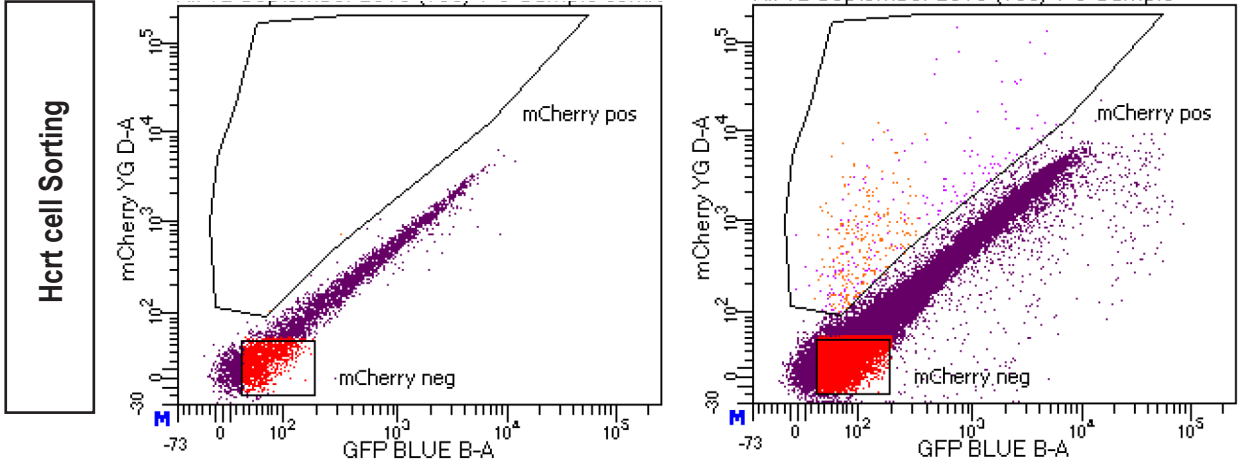
embryos from AB strain. Zebrafish larvae were raised at 28°C on 14/10h light/dark cycle. The fish were fixed for immunostaining either at 48 or 72hpf. Three or four doses of morpholinos were injected (for HCRT neuron analysis: 1.25, 2.5 and 5ng; for MCH neuron analysis: 0.6, 1.25, 2.5 and 5ng). Control embryos were injected with H_2O. Lethality and developmental defects were referenced for each conditions based on standard morphological criteria (11). For immunostaining protocol, embryos were anesthetized with tricaine (MS-222- Sigma). Dissected heads were isolated from 48 or 72hpf embryos and fixed in 2%PFA for 90 min prior to the permeabilization in PBS/Triton1% for 2h. Immunolabelling was performed with rabbit Orexin-A (ab3704, Millipore) and rabbit MCH (H-070-47, Phoenix Pharmaceuticals) and incubated at 1/200 overnight at 4°C. Image acquisition was performed on confocal laser scanning microscope to analyze the presence of HCRT or MCH neurons in wild-type and morphant brains.

Characterization of Peg3+/- (paternal allele deletion) mice. Brains from adult *Peg3+/+* and *Peg3+/-* mice were dissected after perfusion fixation with 10% formalin fixative. The brains were cut at 20 um thickness covering bregma from -0.7 mm to -2.18 mm. Ten slides were prepared from each brain and 9 sections were mounted on each slide. Among 9 sections, 4 sections contained HCRT and MCH neurons from anterior to posterior (-1.06 mm to -1.94 mm around).

Pathway analysis and gene network construction: Protein and pathway data were extracted from Uniprot and KEGG databases. Scripts in Python programming language with bioservices module was used for database connection and data extraction and analysis. Gene network construction was performed using text mining and String (12), Trrust (13) and BioGRID (14) databases.

A Hcrt cell Sorting

mCherry pos
mCherry neg

B Mch cell Sorting

mCherry only
Double +

Ctrl   Transduced

C

LM

59 88 153   1839   4442
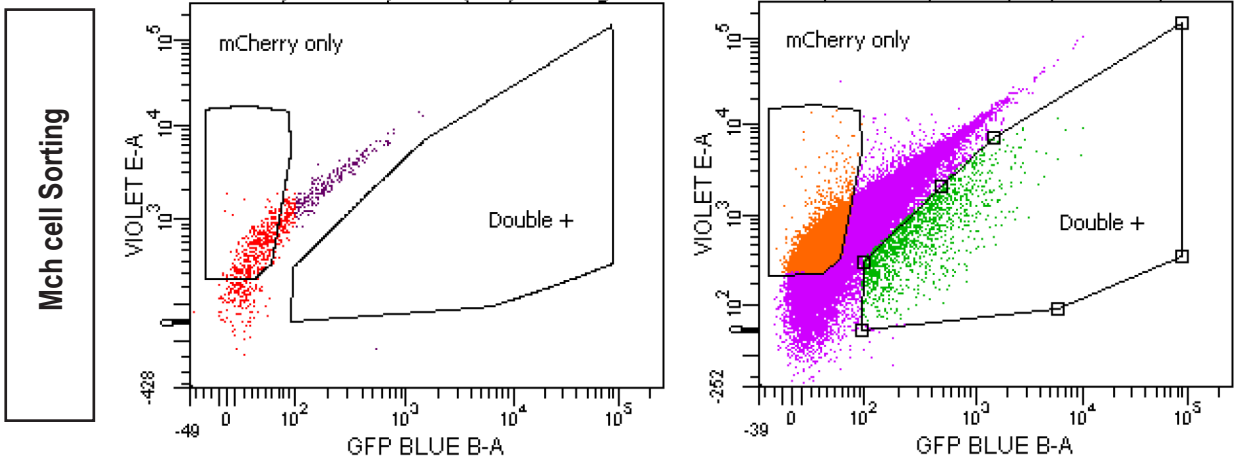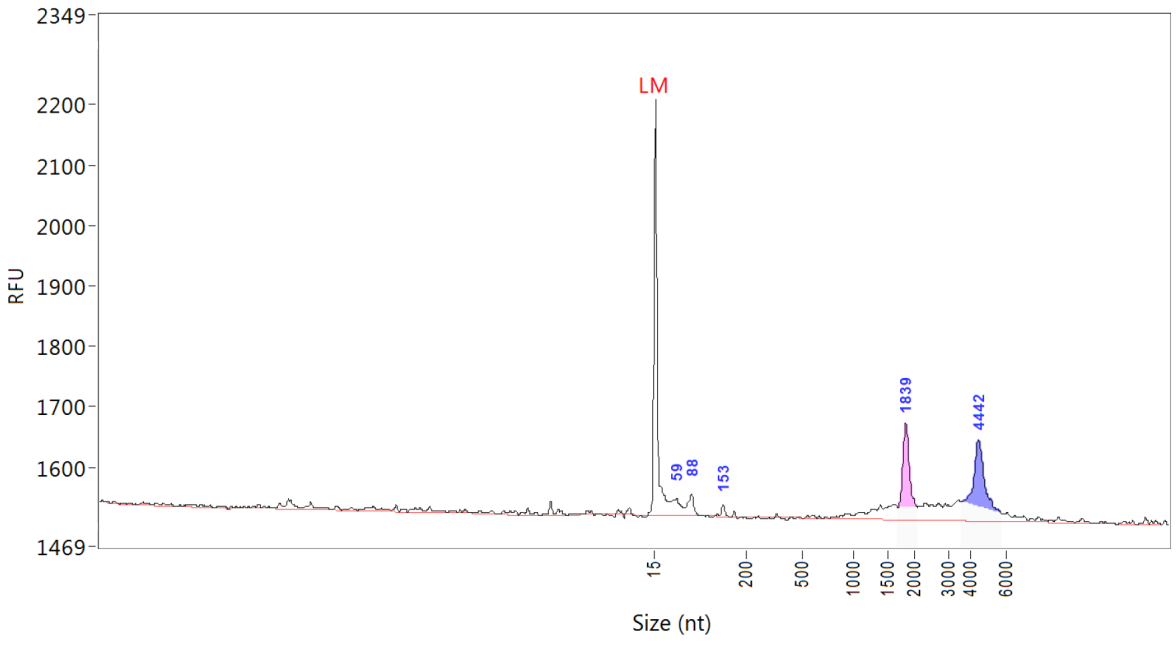
Fig S1. Isolation of Hcrt and Mch cells by FACS sorting. (A) Hcrt cell sorting:

dissociated hypothalamic neurospheres were FACS sorted. Only cells expressing Cre

recombinase (HCRT cells) expressed mCHERRY. The cells were sorted based on florescent

intensity and size. Before the sorting of mCHERRY positive samples, using control cells the

region where mCHERRY positive cells (left, mCherry pos area) and mCHERRY negative cells

(left, mCherry neg area) that should be gated was delineated. mCHERRY positive cells

(mCHERRY pos (HCRT cells), mixed color) were collected and compared with mCHERRY

negative cells (mCHERRY neg (rest of hypothalamic cells), red). Only cells from a small portion

of the mCHERRY negative area that was far from positive cells, were collected for comparisons

(red) (right). (**B**) MCH cell sorting: double positive cells for EGFP and mCHERRY (Double +

(MCH cells), green) were collected and compared with mCHERRY positive cells (mCHERRY

only (rest of hypothalamic cells), red). (**C**) Low amount but high quality RNA was extracted

from purified cells. The purple and blue peaks represent the presence of ribosomal RNA 18S and

28S with the size of 1839 and 4442 nt respectively. Sharp peaks of these ribosomal RNA

indicate that the RNAs are intact and not degraded (degraded RNAs do not exhibit sharp

ribosomal peaks and the peaks shift to the left indicating their smaller size). In general, the

fragment analyzer gives a RNA integrity value (RQN or RIN) which is an indication of the

integrity of the RNA. 10 is completely intact, 0 completely degraded. In this Figure the RQN is

9.

Hcrt

Mch

Adra2a

Thbs2

Trhr

Adcy8

Irs4

Plagl1

Car12
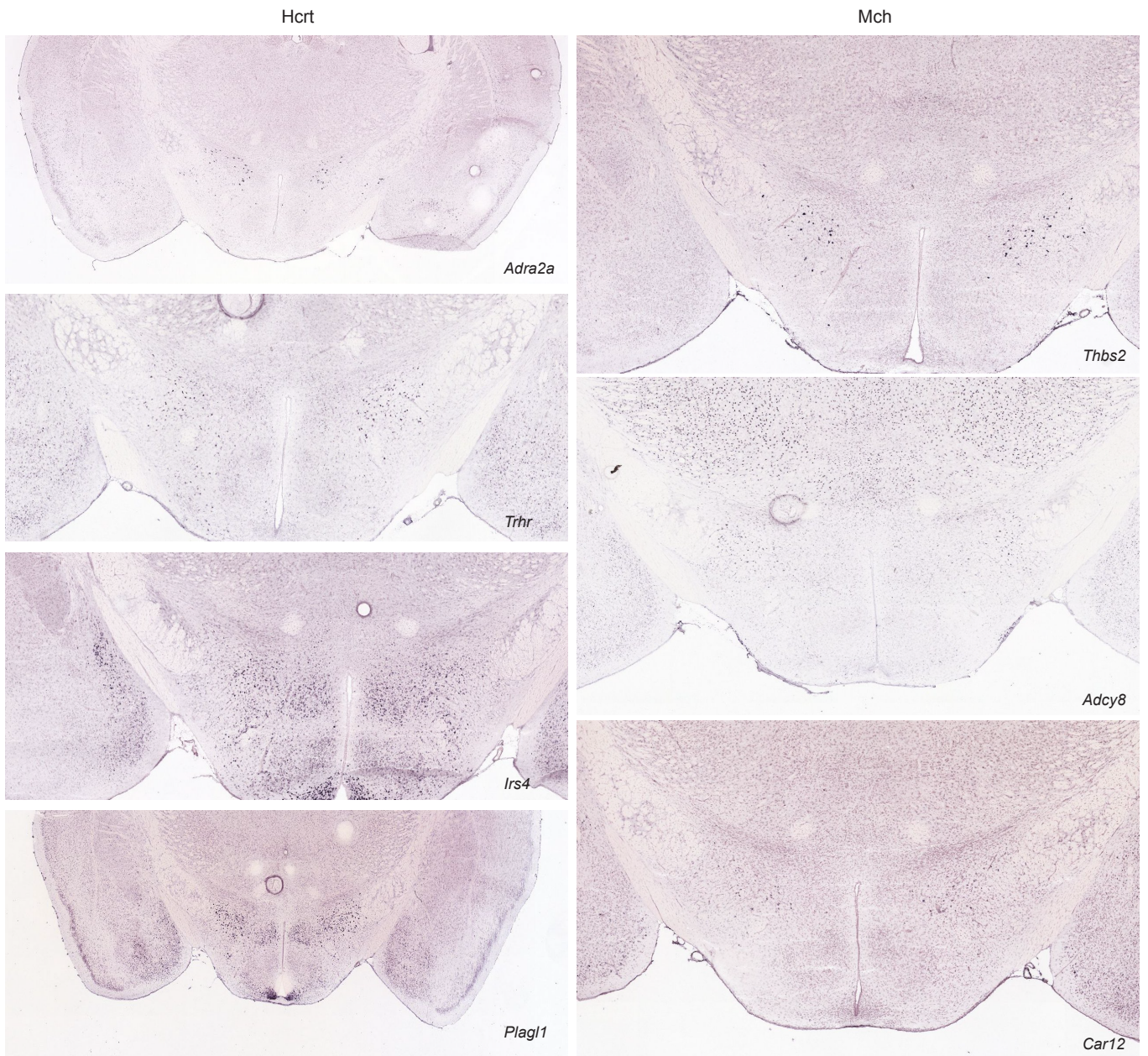
Fig S2. LH distribution of some representative identified genes.
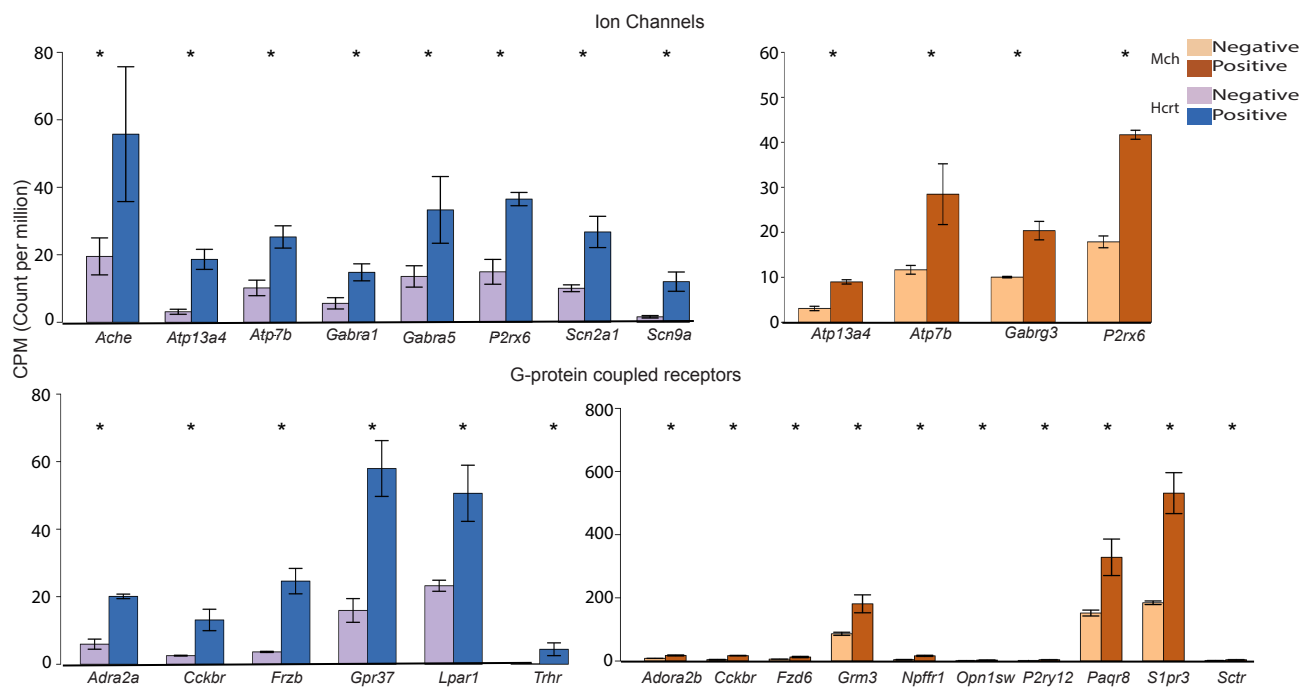
Fig S3. Ion channels and receptors enriched in Hcrt and Mch cells.
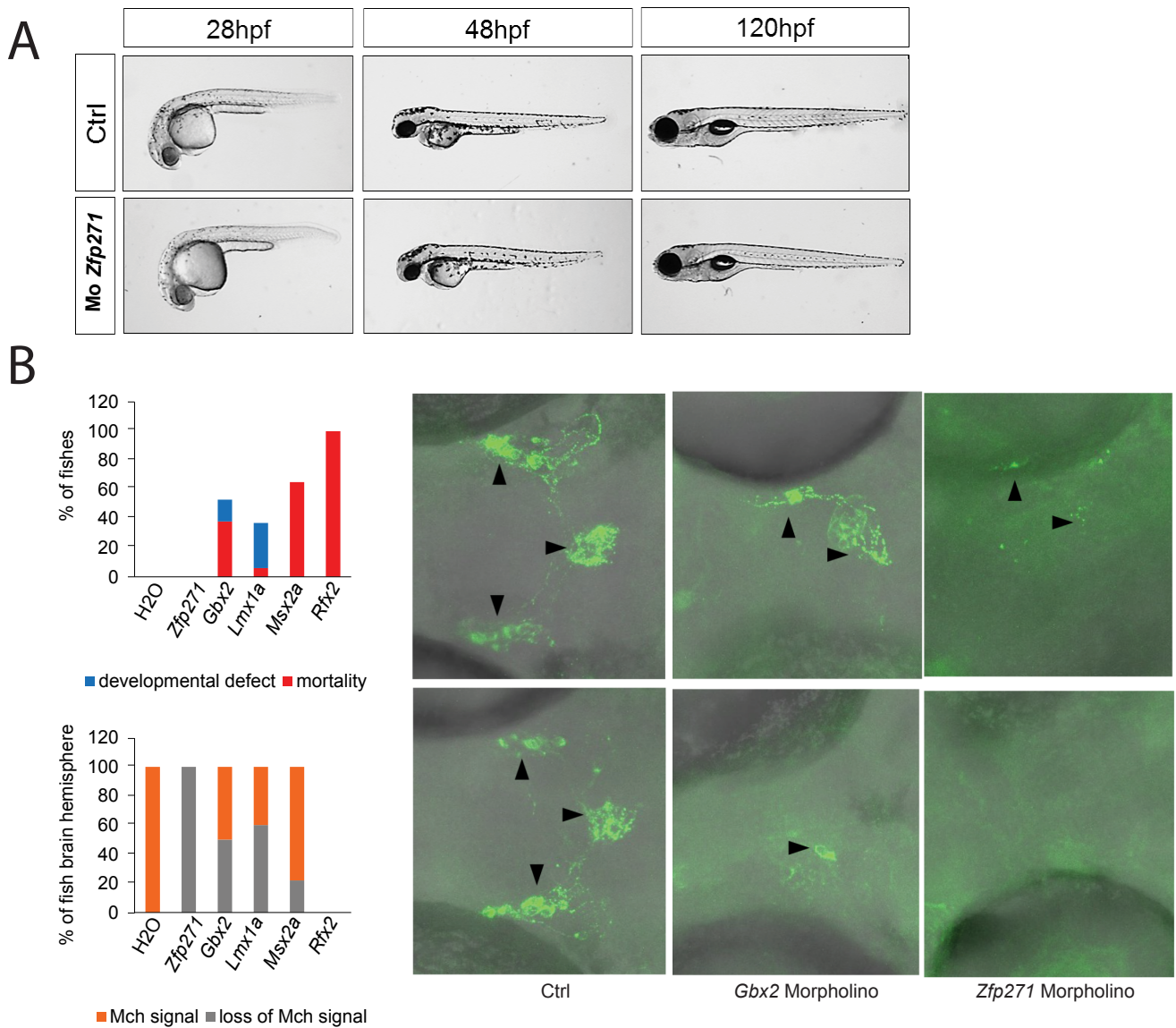
Fig S4. Morpholino knock-down of candidate TFs identified the effective ones for Pmch gene expression. (A) Zfp271 morpholino did not induce any developmental defect. (B) Mortality and developmental defect rate (left up), Loss of MCH signal and its positive signal after immunostaining (left bottom). Representative image of loss of HCRT signal in Zfp271 morpholino-injected zebrafish brains compared to controls (right).
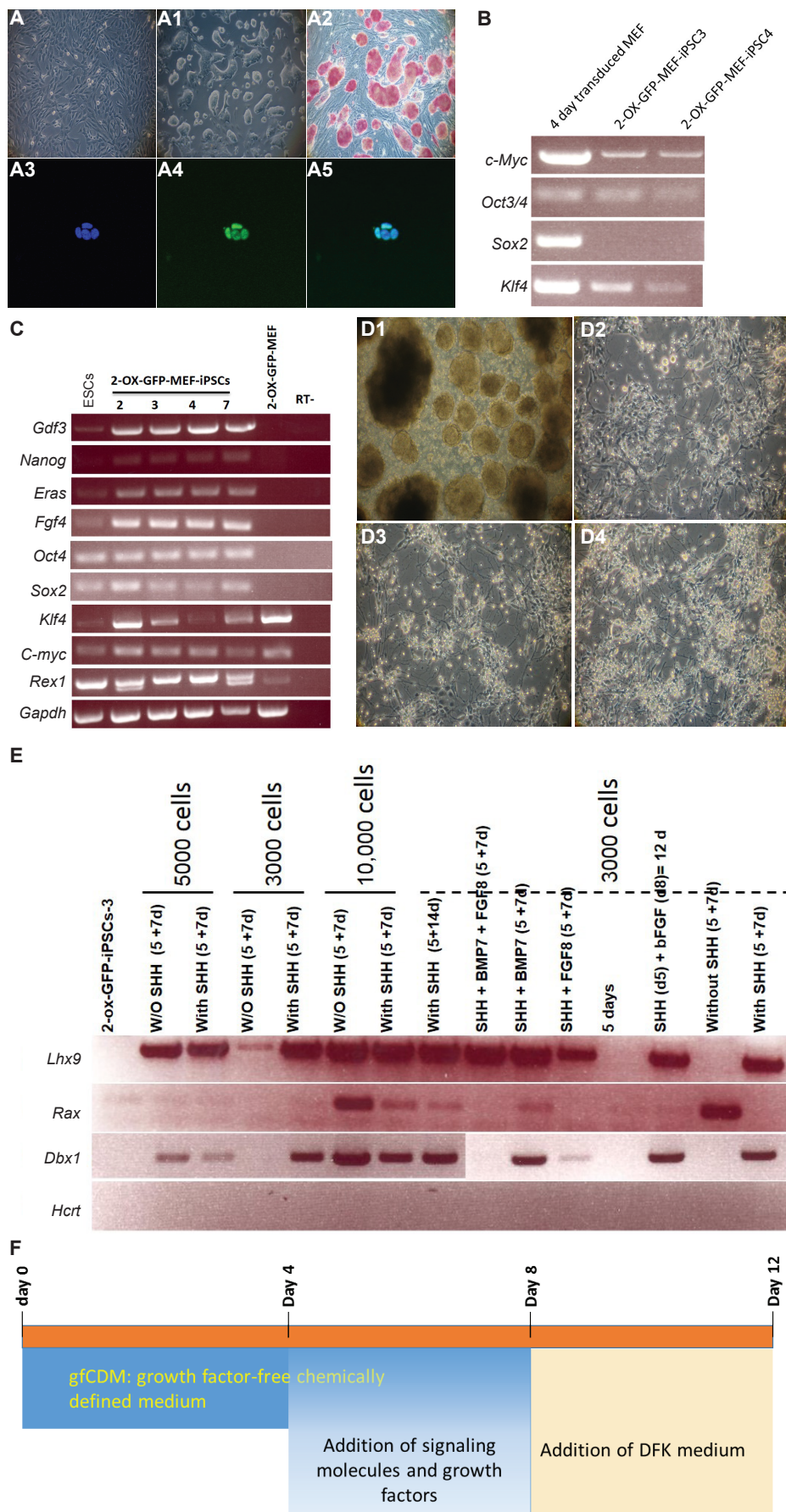
Fig S5. Establishment of iPSCs from mouse embryonic fibroblast. (A-A5) iPSCs were established from orexin-EGFP mouse embryonic fibroblasts (A). Feeder free culture of established iPSCs (A1). Established iPSCs were positive for alkaline phosphatase staining (A2). They strongly expressed NANOG in the nucleus (A3-A5). (B) Established iPSCs silenced their transgenes. (C) RT-PCR analysis of ES cell-marker genes. (D) Differentiation of iPSCs toward neural lineage. (E) Screening of different conditions to induce Hcrt gene expression. (F) Established protocol to generate MCH cells.
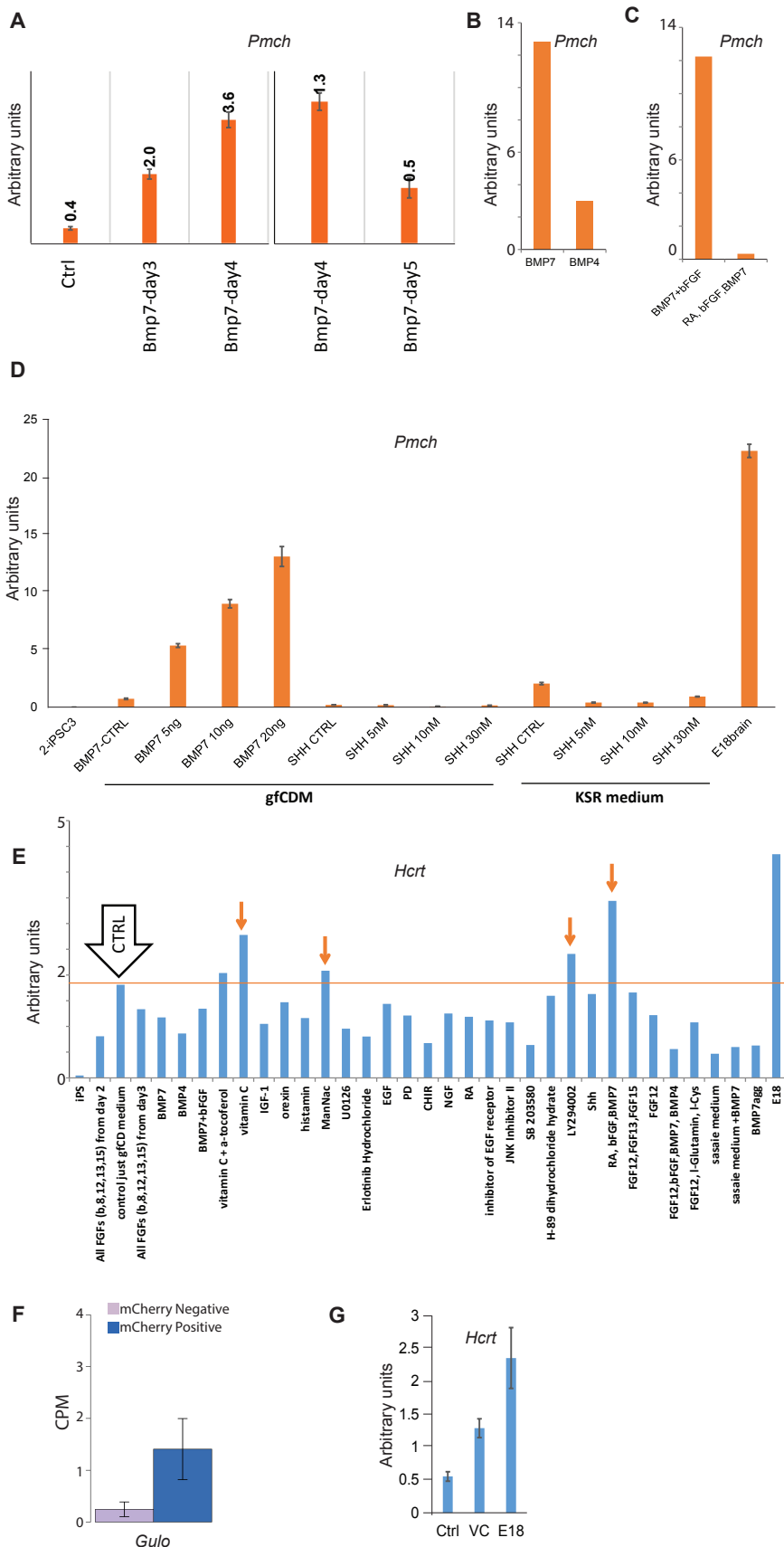
Fig S6. Evaluation of the behavior of different signaling molecule and growth factors to induce Hcrt and Pmch expression. (A) Effect of Bmp7 on Pmch gene expression during different days. (B) Effect of other Bmp family members on Pmch expression. (C) Effect of retinoic acid, a main CNS caudalizing molecule on the expression of Pmch. (D) Effect of Bmp7 is dose dependent and Shh has no effect on the expression of Pmch. (E) Screening of the different molecules to induce Hcrt gene expression. (F) Gulo is among genes upregulated in Hcrt cell RNA sequencing. (G) The effect of vitamin C is the only reproducible one.
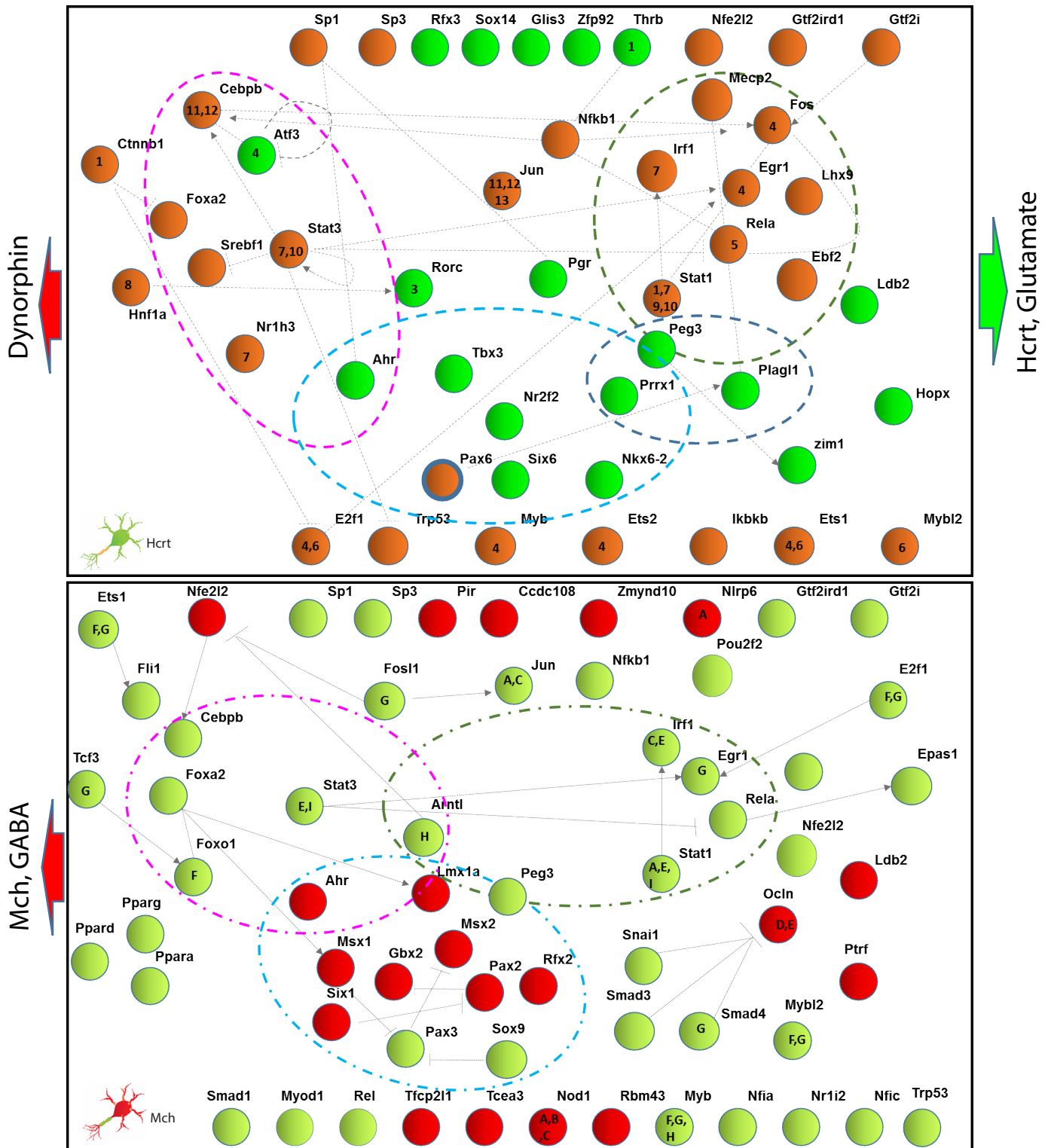
Fig S7. Core Transcriptional Regulatory Circuitry in HCRT and MCH cells. The TFs depicted here are expressed in HCRT and MCH cells. The criteria for inclusion are explained in the text. Due to multi-functionality of HCRT and MCH cells, it is hypothesized that different regulatory TFs might participate in their involvement in different physiological and behavioral phenotypes. In these gene networks, interactions are either activation (arrow head), inhibition (hammer head), or unknown. Only proven interactions are included. Spatial distribution of the TFs does not follow any specific rule except being in the same phenotypical groups and avoiding complexity. TFs directly affecting Hcrt expression such as LHX9, PEG3 and EBF2 affect several phenotypes. For instance: LHX9 (development, sleep), EBF2 (development, sleep), and PEG3 (development, sleep, obesity). How these cells are involved in fatigue and disease-induced hypersomnia might be due to the enrichment of TFs that are part of immune-related pathways. HCRT map: (circles: sleep, obesity, development, feeding phenotypes) (Green balls indicate TFs in our RNA sequencing, brown balls are based on databases). MCH map: (circles: sleep, feeding, development phenotypes) (Red balls indicate our TFs, green balls are based on databases). Numbers and letters inside TFs indicate their involvement in a specific pathway (Table S6). The major known outputs for HCRT map would be HCRT, DYNORPHIN and GLUTAMATE secretion and for MCH map, MCH and GABA.

Table S1. Differentially expressed genes between *Hcrt-ataxin-3, Hcrt*[ko/ko] mice and their respective controls.

OXAt_tg versus OXAt_ctl

Tissue	Fold-Change	stat	pvalue	padj	Gene_ID	Associated_Gene_Name
Brain stem	1.43	7.19742	0.00000	0.00000	ENSMUSG00000029253	Cenpc1
Cortex	-1.329	-7.15342	0.00000	0.00000	ENSMUSG00000006731	B4galnt1
Cortex	1.416	6.80178	0.00000	0.00000	ENSMUSG00000029253	Cenpc1
Cortex	-1.175	-4.54557	0.00001	0.02736	ENSMUSG00000019467	Arhgef25
Hypothalamus	-29.61	-25.21023	0.00000	0.00000	ENSMUSG00000045471	Hcrt
Hypothalamus	1.493	6.37660	0.00000	0.00000	ENSMUSG00000029253	Cenpc1
Hypothalamus	1.296	5.03342	0.00000	0.00229	ENSMUSG00000021379	Id4
Hypothalamus	1.428	4.57806	0.00000	0.01675	ENSMUSG00000070306	Ccdc153
Hypothalamus	-1.858	-4.45447	0.00001	0.02401	ENSMUSG00000043102	Qrfp
Hypothalamus	-1.308	-4.28333	0.00002	0.04380	ENSMUSG00000035202	Lars2
Hypothalamus	-1.411	-4.19752	0.00003	0.05503	ENSMUSG00000021587	Pcsk1

OXKO_ko versus OXKO_ctl

Tissue	Fold-Change	stat	pvalue	padj	Gene_ID	Associated_Gene_Name
Brain stem	1.68554	9.33957	0.00000	0.00000	ENSMUSG00000020926	Adam11
Brain stem	1.66480	7.35145	0.00000	0.00000	ENSMUSG00000045471	Hcrt
Brain stem	-1.46723	-6.87036	0.00000	0.00000	ENSMUSG00000017400	Stac2
Brain stem	-1.57050	-6.05630	0.00000	0.00001	ENSMUSG00000001555	Fkbp10
Brain stem	-1.43584	-5.75912	0.00000	0.00003	ENSMUSG00000017747	Ghdc
Brain stem	-1.63517	-5.65155	0.00000	0.00004	ENSMUSG00000025270	Alas2
Brain stem	1.27546	5.59200	0.00000	0.00005	ENSMUSG00000018160	Med1
Brain stem	-1.52641	-5.40702	0.00000	0.00012	ENSMUSG00000010362	Rdm1
Brain stem	-1.39387	-5.12412	0.00000	0.00050	ENSMUSG00000017493	Igfbp4
Brain stem	1.18158	4.69536	0.00000	0.00401	ENSMUSG00000078676	Casc3
Brain stem	1.34138	4.63686	0.00000	0.00484	ENSMUSG00000034768	Asb16
Brain stem	-1.27875	-4.59500	0.00000	0.00543	ENSMUSG00000045007	Tubg2
Brain stem	-1.48378	-4.27994	0.00002	0.02164	ENSMUSG00000073940	Hbb-bt
Brain stem	-1.26266	-4.24951	0.00002	0.02285	ENSMUSG00000034255	Arhgap27
Brain stem	-1.47625	-4.23581	0.00002	0.02285	ENSMUSG00000069917	Hba-a2
Brain stem	-1.39301	-4.08451	0.00004	0.04154	ENSMUSG00000004043	Stat5a
Brain stem	1.24887	4.03084	0.00006	0.04920	ENSMUSG00000055866	Per2
Cortex	-3.35949	-18.00596	0.00000	0.00000	ENSMUSG00000020912	Krt12
Cortex	-2.46530	-17.92958	0.00000	0.00000	ENSMUSG00000035355	Kcnh4
Cortex	-1.38052	-10.81855	0.00000	0.00000	ENSMUSG00000017400	Stac2
Cortex	-1.36654	-7.95668	0.00000	0.00000	ENSMUSG00000017417	Plxdc1
Cortex	-1.80342	-7.44388	0.00000	0.00000	ENSMUSG00000017747	Ghdc
Cortex	1.20316	7.24904	0.00000	0.00000	ENSMUSG00000020926	Adam11
Cortex	-1.80435	-6.33446	0.00000	0.00000	ENSMUSG00000061086	Myl4
Cortex	-1.40910	-6.25157	0.00000	0.00000	ENSMUSG00000027318	Adam33
Cortex	1.22274	6.06325	0.00000	0.00000	ENSMUSG00000018160	Med1
Cortex	-1.22679	-5.97759	0.00000	0.00000	ENSMUSG00000020932	Gfap
Cortex	-1.26471	-5.90555	0.00000	0.00000	ENSMUSG00000017188	Coa3
Cortex	1.28669	5.66043	0.00000	0.00002	ENSMUSG00000035198	Tubg1
Cortex	1.18338	5.27084	0.00000	0.00016	ENSMUSG00000001313	Rnd2
Cortex	-1.25906	-5.15140	0.00000	0.00028	ENSMUSG00000032128	Robo3
Cortex	1.22948	5.09670	0.00000	0.00035	ENSMUSG00000062151	Unc13c
Cortex	1.19784	4.91036	0.00000	0.00085	ENSMUSG00000024222	Fkbp5
Cortex	-1.21463	-4.89899	0.00000	0.00085	ENSMUSG00000045007	Tubg2
Cortex	1.16788	4.87101	0.00000	0.00092	ENSMUSG00000052373	Mpp3
Cortex	-1.19359	-4.76784	0.00000	0.00147	ENSMUSG00000016763	Scube1
Cortex	-1.34581	-4.72022	0.00000	0.00176	ENSMUSG00000052305	Hbb-bs
Cortex	1.44482	4.63857	0.00000	0.00250	ENSMUSG00000002831	Plin4
Cortex	1.50684	4.43694	0.00001	0.00621	ENSMUSG00000001493	Meox1
Cortex	1.36051	4.24021	0.00002	0.01396	ENSMUSG00000051617	Krt9
Cortex	-1.16723	-4.23980	0.00002	0.01396	ENSMUSG00000028173	Wls
Cortex	-1.21694	-4.22119	0.00002	0.01456	ENSMUSG00000020919	Stat5b
Cortex	1.20405	4.15031	0.00003	0.01864	ENSMUSG00000032946	Rasgrp2
Cortex	1.45606	4.14633	0.00003	0.01864	ENSMUSG00000034768	Asb16
Cortex	-1.34703	-4.13934	0.00003	0.01864	ENSMUSG00000035258	Abi3bp
Cortex	1.50596	4.12255	0.00004	0.01936	ENSMUSG00000019312	Grb7

Cortex	-1.17701	-4.11278	0.00004	0.01952	ENSMUSG00000042834	Nrep
Cortex	-1.14400	-4.05235	0.00005	0.02450	ENSMUSG00000030270	Cpne9
Cortex	-1.15630	-4.04101	0.00005	0.02492	ENSMUSG00000004040	Stat3
Cortex	-1.37244	-3.99325	0.00007	0.02922	ENSMUSG00000091898	Tnnc1
Cortex	1.15054	3.98910	0.00007	0.02922	ENSMUSG00000044352	Sowaha
Cortex	1.15155	3.96770	0.00007	0.03106	ENSMUSG00000038020	Rapgefl1
Cortex	-1.32734	-3.91386	0.00009	0.03780	ENSMUSG00000045246	Kcng4
Cortex	-1.16058	-3.87835	0.00011	0.04258	ENSMUSG00000055409	Nell1
Hypothalamus	-16.00331	-19.27567	0.00000	0.00000	ENSMUSG00000045471	Hcrt
Hypothalamus	-1.83374	-7.08441	0.00000	0.00000	ENSMUSG00000017747	Ghdc
Hypothalamus	-1.51737	-4.98155	0.00000	0.00300	ENSMUSG00000001555	Fkbp10
Hypothalamus	1.66487	4.53692	0.00001	0.02037	ENSMUSG00000002831	Plin4

Table S2. Differentially expressed genes between purified HCRT and MCH neurons and their respective controls (rest of hypothalamic cells).

HCRT GeneID	adj.P.Val	Fold_Change	Gene_Name	MCH GeneID	adj.P.Val	Fold_Change	Gene_Name
ENSMUSG00000038760	0.011781	112.8243454	Trhr	ENSMUSG00000062960	0.0006278	9.028951779	Kdr
ENSMUSG00000004609	0.038685	87.5114262	Cd33	ENSMUSG00000063727	0.01983425	8.091122162	Tnfrsf11b
ENSMUSG00000028859	0.027946	85.95940264	Csf3r	ENSMUSG00000051648	0.00483747	7.575469341	Kctd19
ENSMUSG00000053747	0.027946	52.68240183	Sox14	ENSMUSG00000061808	2.3795E-05	6.323343168	Ttr
ENSMUSG00000031374	0.038685	44.16840033	Zfp92	ENSMUSG00000105096	0.00192927	5.92768175	Gbp10
ENSMUSG00000045648	0.035698	40.06177111	Vwc2l	ENSMUSG00000019232	0.02904416	5.618146853	Etnppl
ENSMUSG00000026483	0.029218	37.68746862	Fam129a	ENSMUSG00000026692	0.02428029	5.607714143	Fmo4
ENSMUSG00000021565	0.042259	37.45866819	Slc6a19	ENSMUSG00000021469	0.00112113	5.502695192	Msx2
ENSMUSG00000059555	0.027946	33.2181237	Tor4a	ENSMUSG00000048108	0.01938401	5.184473628	Tmem72
ENSMUSG00000020865	0.036041	32.38233956	Abcc3	ENSMUSG00000032315	0.03375032	5.109704996	Cyp1a1
ENSMUSG00000036362	0.035698	32.05522123	P2ry13	ENSMUSG00000036594	0.00323251	4.932158256	H2-Aa
ENSMUSG00000082361	0.036097	24.41462214	Btc	ENSMUSG00000072244	0.03971022	4.835081737	Trim6
ENSMUSG00000032523	0.040285	23.16130467	Hhatl	ENSMUSG00000022218	0.01311691	4.764170885	Tgm1
ENSMUSG00000075225	0.036099	21.93674607	Ccdc162	ENSMUSG00000041460	0.02732231	4.636855733	Cacna2d4
ENSMUSG00000093765	0.042183	21.28008362	Gm20658	ENSMUSG00000023885	0.00064512	4.491332379	Thbs2
ENSMUSG00000053025	0.011921	20.9549896	Sv2b	ENSMUSG00000045094	0.04356226	4.442185064	Arhgef37
ENSMUSG00000027857	0.038685	19.48169736	Tshb	ENSMUSG00000032373	0.00748485	4.427580608	Car12
ENSMUSG00000058427	0.038054	18.41045724	Cxcl2	ENSMUSG00000021390	0.03731046	4.373870312	Ogn
ENSMUSG00000052026	0.008932	18.12763584	Slc6a7	ENSMUSG00000022025	4.0532E-05	4.349938527	Lect1
ENSMUSG00000038521	0.034674	16.57644091	C1s1	ENSMUSG00000063975	0.0122573	4.19119284	Slco1a5
ENSMUSG00000032202	0.038685	15.7433368	Rab27a	ENSMUSG00000036961	0.00896875	4.115073171	Wnt8b
ENSMUSG00000046186	0.014089	14.16419203	Cd109	ENSMUSG00000039616	0.01582157	4.092438398	Mocos
ENSMUSG00000041423	0.018452	13.89789214	Paqr6	ENSMUSG00000033542	0.02495599	4.03193076	Arhgef5
ENSMUSG00000026904	0.013211	13.24265349	Slc4a10	ENSMUSG00000039155	0.01339023	3.988617144	Cdh26
ENSMUSG00000027315	0.006447	11.65317843	Spint1	ENSMUSG00000002944	0.00177213	3.983399698	Cd36
ENSMUSG00000056380	0.007551	11.39072965	Gpr50	ENSMUSG00000001508	0.04997179	3.965640202	Sgca
ENSMUSG00000029403	0.014203	11.21483784	Cdkl2	ENSMUSG00000030898	0.00088719	3.95012525	Cckbr
ENSMUSG00000050103	0.040379	11.1755694	Agmo	ENSMUSG00000046186	0.00350053	3.949130587	Cd109
ENSMUSG00000038840	0.029548	10.1905096	Birc7	ENSMUSG00000029843	0.00192927	3.918380917	Slc13a4
ENSMUSG00000060176	0.012683	9.634093958	Kif27	ENSMUSG00000035383	0.00030639	3.89178832	Pmch
ENSMUSG00000000290	0.039811	9.535537144	Itgb2	ENSMUSG00000027713	0.01066366	3.873095394	1810062G17Rik
ENSMUSG00000025887	0.04779	9.449689462	Casp12	ENSMUSG00000097339	0.01523335	3.845290543	Gm26671
ENSMUSG00000042286	0.028923	9.377748476	Stab1	ENSMUSG00000108841	0.00935733	3.840198722	Gm626
ENSMUSG00000056158	0.005537	9.337183623	Car10	ENSMUSG00000020090	0.00080199	3.688313217	Npffr1
ENSMUSG00000029371	0.035055	9.124751341	Cxcl5	ENSMUSG00000074813	0.03304611	3.670304289	Gm14005
ENSMUSG00000028369	0.018824	8.664457023	Svep1	ENSMUSG00000037362	0.00429664	3.667405782	Nov
ENSMUSG00000062151	0.020827	8.217876563	Unc13c	ENSMUSG00000021750	0.00040649	3.665869687	Fam107a
ENSMUSG00000020660	0.033809	8.109482847	Pomc	ENSMUSG00000037440	0.01312684	3.594850403	Vnn1
ENSMUSG00000036198	0.020612	8.073481389	Arhgap36	ENSMUSG00000032006	0.00142489	3.570998182	Pdgfd
ENSMUSG00000070337	0.036321	8.018039233	Gpr179	ENSMUSG00000027074	0.00306624	3.541634088	Slc43a3
ENSMUSG00000027995	0.026269	7.88877889	Tlr2	ENSMUSG00000031351	0.00721496	3.536157264	Zfp185
ENSMUSG00000075316	0.009063	7.800767704	Scn9a	ENSMUSG00000109708	0.04012413	3.534045286	RP23-238C13.2
ENSMUSG00000026395	0.048097	7.526340525	Ptprc	ENSMUSG00000048612	0.00685125	3.512914247	Myof
ENSMUSG00000035697	0.029505	7.444346356	Hmha1	ENSMUSG00000029695	0.02233405	3.498478709	Aass
ENSMUSG00000031870	0.034068	7.347939537	Pgr	ENSMUSG00000032899	0.00656711	3.490526128	Styk1
ENSMUSG00000067578	0.011197	7.310668306	Cbln4	ENSMUSG00000027995	0.00066236	3.488250155	Tlr2
ENSMUSG00000063681	0.008942	7.032070578	Crb1	ENSMUSG00000036962	0.01401052	3.410951618	Cfap221
ENSMUSG00000030748	0.040202	6.968881884	Il4ra	ENSMUSG00000062778	0.02307533	3.330556685	Chia1
ENSMUSG00000002266	0.016674	6.919978478	Zim1	ENSMUSG00000054545	0.02650442	3.326442119	Ugt1a6a
ENSMUSG00000027004	0.005537	6.819464932	Frzb	ENSMUSG00000037738	0.0033025	3.316084047	Nek5
ENSMUSG00000039021	0.047115	6.725043814	Ttc16	ENSMUSG00000028369	0.0099652	3.311109424	Svep1
ENSMUSG00000033966	0.007278	6.684121722	Cdkl4	ENSMUSG00000063681	0.03222193	3.310509708	Crb1
ENSMUSG00000054667	0.005537	6.612798344	Irs4	ENSMUSG00000029084	0.013586	3.304224478	Cd38
ENSMUSG00000019880	0.025164	6.54391789	Rspo3	ENSMUSG00000022780	0.0111831	3.287987623	Mfi2
ENSMUSG00000030500	0.007562	6.332169725	Slc17a6	ENSMUSG00000034579	0.00071574	3.272619274	Pla2g3
ENSMUSG00000038094	0.007278	6.32620348	Atp13a4	ENSMUSG00000038775	0.04338261	3.271100566	Vill
ENSMUSG00000022197	0.029505	6.263902888	Pdzd2	ENSMUSG00000108175	0.03185226	3.270240587	Gm43938
ENSMUSG00000021099	0.021806	6.206992512	Six6	ENSMUSG00000074771	0.00577315	3.251882886	Ankef1
ENSMUSG00000047507	0.006447	6.058828984	Baiap3	ENSMUSG00000105942	0.03725476	3.249567741	Gm43175
ENSMUSG00000062393	0.031382	6.043970047	Dgkk	ENSMUSG00000012428	0.0099652	3.22927343	Steap4
ENSMUSG00000066720	0.043491	5.842124525	Cldn9	ENSMUSG00000028965	0.04609821	3.227845709	Tnfrsf9
ENSMUSG00000047021	0.018824	5.734614903	Ccdc108	ENSMUSG00000037686	0.00282479	3.21308237	Aspg
ENSMUSG00000029084	0.034423	5.701528954	Cd38	ENSMUSG00000028037	0.00095446	3.178055866	Ifi44
ENSMUSG00000024479	0.008738	5.61567748	Mal2	ENSMUSG00000019767	0.01010724	3.171690214	Ccdc170
ENSMUSG00000031558	0.006721	5.55842727	Slit2	ENSMUSG00000031725	0.01059303	3.153941153	Ces1f
ENSMUSG00000030889	0.012683	5.477338545	Vwa3a	ENSMUSG00000035296	0.03893729	3.128173302	Sgcg
ENSMUSG00000043913	0.01995	5.442216504	Ccdc60	ENSMUSG00000056380	0.00590961	3.117992804	Gpr50
ENSMUSG00000028927	0.005537	5.332014084	Padi2	ENSMUSG00000022665	0.00046497	3.087816992	Ccdc80
ENSMUSG00000042453	0.005537	5.311959981	Reln	ENSMUSG00000031075	0.00190514	3.086298915	Ano1
ENSMUSG00000031111	0.005537	5.303470377	Igsf1	ENSMUSG00000022949	0.01034743	3.084448163	Clic6
ENSMUSG00000059336	0.013018	5.259459929	Slc14a1	ENSMUSG00000040329	0.01767902	3.081655671	Il7
ENSMUSG00000035896	0.034674	5.238766613	Rnase1	ENSMUSG00000059336	0.00040084	3.041741305	Slc14a1

ENSMUSG00000059456	0.015568	5.210266383	Ptk2b	ENSMUSG00000093765	0.0087239	3.034016534	Gm20658
ENSMUSG00000037738	0.018982	5.191642038	Nek5	ENSMUSG00000026875	0.00039026	3.012476446	Traf1
ENSMUSG00000027171	0.049678	5.058120752	Prrg4	ENSMUSG00000046192	0.00353109	2.996099414	Iqub
ENSMUSG00000030898	0.014203	4.999423383	Cckbr	ENSMUSG00000037225	0.01044467	2.996082346	Fgf2
ENSMUSG00000040856	0.006724	4.961494868	Dlk1	ENSMUSG00000038094	0.00304482	2.991817797	Atp13a4
ENSMUSG00000030554	0.033866	4.959516343	Synm	ENSMUSG00000043020	0.00745392	2.988561534	Wdr63
ENSMUSG00000040998	0.046334	4.912162904	Npnt	ENSMUSG00000033207	0.00248102	2.986727825	Mamdc2
ENSMUSG00000056972	0.006563	4.890916889	Magel2	ENSMUSG00000036598	0.00284035	2.972964868	Ccdc113
ENSMUSG00000031786	0.014089	4.889898682	Drc7	ENSMUSG00000039899	0.00357008	2.960105415	Fgl2
ENSMUSG00000031980	0.004038	4.830066381	Agt	ENSMUSG00000085576	0.0203498	2.958956662	Dpy19l2
ENSMUSG00000079657	0.028732	4.784596754	Rab26	ENSMUSG00000108778	0.00299603	2.956184506	Gm44670
ENSMUSG00000020904	0.026267	4.758214489	Cfap52	ENSMUSG00000001604	0.0036063	2.954352314	Tcea3
ENSMUSG00000021763	0.035698	4.753305074	BC067074	ENSMUSG00000026380	0.00191591	2.929364949	Tfcp2l1
ENSMUSG00000043079	0.035698	4.751818294	Synpo	ENSMUSG00000032122	0.0038262	2.920250049	Slc37a2
ENSMUSG00000019852	0.038994	4.746928986	Arfgef3	ENSMUSG00000046688	0.001119	2.918993768	Tifa
ENSMUSG00000032356	0.006303	4.683627975	Rasgrf1	ENSMUSG00000034842	0.00345169	2.915251011	Art3
ENSMUSG00000058897	0.04664	4.669491813	Col25a1	ENSMUSG00000034486	0.02998029	2.906407745	Gbx2
ENSMUSG00000022103	0.011197	4.662601138	Gfra2	ENSMUSG00000034459	0.0006278	2.893075623	Ifit1
ENSMUSG00000038855	0.009835	4.627094865	Itpkb	ENSMUSG00000022805	0.00801776	2.891920033	Maats1
ENSMUSG00000041323	0.044133	4.577128716	Ak7	ENSMUSG00000031831	0.00483747	2.888140034	Dnaaf1
ENSMUSG00000044349	0.004038	4.555622985	Snhg11	ENSMUSG00000038745	0.03454128	2.882243182	Nlrp6
ENSMUSG00000050315	0.014203	4.522866907	Synpo2	ENSMUSG00000035783	0.00192927	2.878373154	Acta2
ENSMUSG00000032006	0.04664	4.490325863	Pdgfd	ENSMUSG00000042540	0.01117809	2.876072952	Acot5
ENSMUSG00000097348	0.021404	4.45199536	Rmst	ENSMUSG00000031639	0.03846909	2.874344428	Tlr3
ENSMUSG00000020334	0.008885	4.438231096	Slc22a4	ENSMUSG00000022146	0.00746768	2.863658743	Osmr
ENSMUSG00000019899	0.025214	4.423718176	Lama2	ENSMUSG00000067586	0.00040649	2.838993734	S1pr3
ENSMUSG00000018604	0.026267	4.392872349	Tbx3	ENSMUSG00000073409	0.00454845	2.838339923	H2-Q6
ENSMUSG00000019892	0.023461	4.377776924	Lrriq1	ENSMUSG00000053025	0.03197787	2.83057322	Sv2b
ENSMUSG00000016918	0.011921	4.375915765	Sulf1	ENSMUSG00000033033	0.0138726	2.826612263	Calhm2
ENSMUSG00000030043	0.038416	4.275234504	Tacr1	ENSMUSG00000041842	0.00925865	2.815415112	Fhdc1
ENSMUSG00000020014	0.011214	4.264354382	Cfap54	ENSMUSG00000032000	0.02102618	2.809953619	Birc3
ENSMUSG00000041577	0.006721	4.259934574	Prelp	ENSMUSG00000006611	0.00072536	2.809422415	Hfe
ENSMUSG00000032841	0.008568	4.178713918	Prr5l	ENSMUSG00000109367	0.04362411	2.785765019	Gm18782
ENSMUSG00000028294	0.026943	4.178360361	1700003M02Rik	ENSMUSG00000045555	0.04896549	2.771159503	Mettl24
ENSMUSG00000066129	0.006721	4.158203199	Kndc1	ENSMUSG00000034570	0.00025915	2.767883817	Inpp5j
ENSMUSG00000027792	0.046334	4.13645984	Bche	ENSMUSG00000028270	0.00079245	2.762394451	Gbp2
ENSMUSG00000034855	0.013018	4.108924021	Cxcl10	ENSMUSG00000022676	0.03081018	2.756317178	Snai2
ENSMUSG00000051590	0.041234	4.095445757	Map3k19	ENSMUSG00000024107	0.00849479	2.756251797	Lhcgr
ENSMUSG00000039126	0.009835	4.09205681	Prune2	ENSMUSG00000035948	0.005783	2.750904253	Acss3
ENSMUSG00000022025	0.038129	4.063234867	Lect1	ENSMUSG00000061740	0.04644014	2.749291007	Cyp2d22
ENSMUSG00000035653	0.021424	4.049758901	Lrfn5	ENSMUSG00000026637	0.03497302	2.736135508	Traf5
ENSMUSG00000057455	0.005537	4.042543316	Rit2	ENSMUSG00000029032	0.01273538	2.734216909	Arhgef16
ENSMUSG00000036598	0.034858	4.036057484	Ccdc113	ENSMUSG00000085251	0.02234526	2.726578801	Gm12326
ENSMUSG00000039552	0.022556	4.015795726	Rsph4a	ENSMUSG00000046242	0.03278511	2.723921973	Nme9
ENSMUSG00000071398	0.014836	4.009469717	2410004P03Rik	ENSMUSG00000026387	0.01456621	2.71954927	Sctr
ENSMUSG00000036480	0.013018	3.934327357	Prss56	ENSMUSG00000022262	0.00900225	2.714509572	Dnah5
ENSMUSG00000026650	0.011197	3.910402933	Meig1	ENSMUSG00000024164	0.01815307	2.699082898	C3
ENSMUSG00000050711	0.004038	3.907312981	Scg2	ENSMUSG00000039116	0.00267377	2.689151189	Adgrg6
ENSMUSG00000019888	0.030598	3.878013774	Mgat4c	ENSMUSG00000066058	0.01819837	2.68329454	Cldn19
ENSMUSG00000028270	0.032239	3.870257295	Gbp2	ENSMUSG00000027400	0.00339108	2.678467188	Pdyn
ENSMUSG00000046192	0.027668	3.857224746	Iqub	ENSMUSG00000067219	0.04880371	2.667436168	Nipal1
ENSMUSG00000028528	0.015204	3.821795754	Dnajc6	ENSMUSG00000028364	0.00891792	2.666381574	Tnc
ENSMUSG00000033061	0.014097	3.812343384	Resp18	ENSMUSG00000030889	0.00287794	2.656056521	Vwa3a
ENSMUSG00000045394	0.038685	3.79225066	Epcam	ENSMUSG00000032514	0.00260328	2.653205535	Ttc21a
ENSMUSG00000039904	0.005537	3.763259145	Gpr37	ENSMUSG00000041828	0.02249872	2.652740149	Abca8a
ENSMUSG00000068617	0.006563	3.757334627	Efcab1	ENSMUSG00000032841	0.001669	2.652101743	Prr5l
ENSMUSG00000102543	0.026926	3.744783588	Pcdhgc5	ENSMUSG00000034209	0.03222964	2.650337137	Rasl10a
ENSMUSG00000020620	0.038146	3.725494377	Abca8b	ENSMUSG00000074896	0.00022464	2.646973613	Ifit3
ENSMUSG00000019027	0.015568	3.695542779	Dnah1	ENSMUSG00000041577	0.00053853	2.644399464	Prelp
ENSMUSG00000021779	0.026926	3.653937975	Thrb	ENSMUSG00000058831	0.02885984	2.641784578	Opn1sw
ENSMUSG00000050875	0.007961	3.638285595	A730017C20Rik	ENSMUSG00000028159	0.00191591	2.638135958	Dapp1
ENSMUSG00000029309	0.006721	3.62105031	Sparcl1	ENSMUSG00000025993	0.02825556	2.638105105	Slc40a1
ENSMUSG00000033717	0.016817	3.612497933	Adra2a	ENSMUSG00000037143	0.00837206	2.629415863	Cfap61
ENSMUSG00000045827	0.014896	3.593674614	Serpinb9	ENSMUSG00000032380	0.00061578	2.627178501	Dapk2
ENSMUSG00000026185	0.004038	3.587860979	Igfbp5	ENSMUSG00000028497	0.00062463	2.625628789	Hacd4
ENSMUSG00000050967	0.023452	3.587208125	Creg2	ENSMUSG00000022376	0.00103331	2.620586974	Adcy8
ENSMUSG00000019256	0.033698	3.581792782	Ahr	ENSMUSG00000031379	0.00332524	2.610351341	Pir
ENSMUSG00000027878	0.014937	3.572086817	Notch2	ENSMUSG00000038526	0.00571449	2.605362132	Car14
ENSMUSG00000048960	0.018581	3.571571382	Prex2	ENSMUSG00000045613	0.03442622	2.592394794	Chrm2
ENSMUSG00000027188	0.007278	3.568845346	Pamr1	ENSMUSG00000086596	0.02312817	2.58744162	Susd5
ENSMUSG00000033361	0.021994	3.555242007	Prrg3	ENSMUSG00000059049	0.02283965	2.586838964	Frem1
ENSMUSG00000072663	0.026269	3.534445794	Spef2	ENSMUSG00000026676	0.0378318	2.582984099	Ccdc3
ENSMUSG00000055409	0.028702	3.503289082	Nell1	ENSMUSG00000038840	0.02766171	2.58160675	Birc7
ENSMUSG00000030708	0.046109	3.485717316	Dnajb13	ENSMUSG00000062488	0.00118664	2.575291583	Ifit3b
ENSMUSG00000029088	0.032176	3.435557658	Kcnip4	ENSMUSG00000029371	0.00186278	2.572966432	Cxcl5

ENSMUSG00000040543	0.038994	3.432391281	Pitpnm3	ENSMUSG00000036949	0.00115906	2.567931925	Slc39a12
ENSMUSG00000027347	0.023542	3.427551408	Rasgrp1	ENSMUSG00000039391	0.01068942	2.564777964	Ccdc81
ENSMUSG00000025537	0.023452	3.421778623	Phkg1	ENSMUSG00000026874	0.02654834	2.562582803	Hc
ENSMUSG00000073650	0.028145	3.412475308	Catip	ENSMUSG00000086006	0.00335931	2.561131385	Gm13293
ENSMUSG00000032489	0.034732	3.359195095	Kif9	ENSMUSG00000061298	0.02026938	2.556546523	Agbl4
ENSMUSG00000030862	0.037375	3.3508897	Cpxm2	ENSMUSG00000027875	0.00041702	2.55208559	Hmgcs2
ENSMUSG00000040118	0.038685	3.34528413	Cacna2d1	ENSMUSG00000021090	0.00113203	2.544941743	Lrrc9
ENSMUSG00000052942	0.022855	3.341078422	Glis3	ENSMUSG00000030235	0.00060814	2.544907811	Slco1c1
ENSMUSG00000021750	0.039746	3.327522158	Fam107a	ENSMUSG00000027070	0.01623261	2.543287256	Lrp2
ENSMUSG00000006711	0.02735	3.309442421	D130043K22Rik	ENSMUSG00000104713	0.0084246	2.529521525	Gbp6
ENSMUSG00000039543	0.038136	3.304120694	Cfap70	ENSMUSG00000036353	0.00792031	2.52442739	P2ry12
ENSMUSG00000063564	0.026926	3.296801159	Col23a1	ENSMUSG00000020473	0.00168476	2.524148601	Aebp1
ENSMUSG00000027400	0.034068	3.294309989	Pdyn	ENSMUSG00000035394	0.02373004	2.519420172	Cfap53
ENSMUSG00000022665	0.014203	3.284365786	Ccdc80	ENSMUSG00000025355	0.01011059	2.513591702	Mmp19
ENSMUSG00000039372	0.045707	3.268343573	42433	ENSMUSG00000020911	0.00878564	2.511987328	Krt19
ENSMUSG00000026679	0.034068	3.264669436	Enkur	ENSMUSG00000047671	0.01189286	2.511078155	Tctex1d4
ENSMUSG00000015243	0.005537	3.244213312	Abca1	ENSMUSG00000078161	0.001669	2.510025494	Erich3
ENSMUSG00000028159	0.007292	3.242477697	Dapp1	ENSMUSG00000044734	0.00065819	2.505554881	Serpinb1a
ENSMUSG00000037627	0.036789	3.23164148	Rgs22	ENSMUSG00000102543	0.00891792	2.504275669	Pcdhgc5
ENSMUSG00000069833	0.011197	3.222571521	Ahnak	ENSMUSG00000030802	0.00091505	2.498447013	Cpxm2
ENSMUSG00000029330	0.038481	3.216657103	Cds1	ENSMUSG00000005360	0.0004524	2.489626098	Slc1a3
ENSMUSG00000049154	0.02257	3.211305849	Fam183b	ENSMUSG00000036304	0.03553012	2.484285105	Zdhhc23
ENSMUSG00000019817	0.026267	3.196310862	Plagl1	ENSMUSG00000057969	0.00345632	2.481980702	Sema3b
ENSMUSG00000027676	0.028732	3.189882205	Ccdc39	ENSMUSG00000036834	0.01539272	2.480271855	Plch1
ENSMUSG00000025348	0.032762	3.186492513	Itga7	ENSMUSG00000051497	0.00797598	2.479813604	Kcnj16
ENSMUSG00000040978	0.042004	3.184821126	Gm11992	ENSMUSG00000019785	0.01042287	2.478947589	Clvs2
ENSMUSG00000027858	0.016458	3.182654914	Tspan2	ENSMUSG00000001870	0.03228758	2.471137567	Ltbp1
ENSMUSG00000046093	0.006563	3.173025444	Hpcal4	ENSMUSG00000043631	0.03468868	2.463805363	Ecm2
ENSMUSG00000042793	0.039434	3.170476372	Lgr6	ENSMUSG00000027015	0.00392425	2.463408546	Cybrd1
ENSMUSG00000039629	0.049883	3.169683177	Strip2	ENSMUSG00000040483	0.00188956	2.449296702	Xaf1
ENSMUSG00000028150	0.041234	3.161717404	Rorc	ENSMUSG00000020607	0.00014929	2.447285138	Fam84a
ENSMUSG00000030089	0.025214	3.122653738	Slc41a3	ENSMUSG00000027661	0.00087352	2.444686741	Slc2a10
ENSMUSG00000015396	0.044277	3.0941893	Cd83	ENSMUSG00000039720	0.03021956	2.442388733	Got1l1
ENSMUSG00000027220	0.027668	3.081237498	Syt13	ENSMUSG00000020904	0.00329045	2.439371208	Cfap52
ENSMUSG00000029095	0.029505	3.080656003	Ablim2	ENSMUSG00000050103	0.00924829	2.435244966	Agmo
ENSMUSG00000027875	0.012233	3.079726734	Hmgcs2	ENSMUSG00000021638	0.01572527	2.432009098	Ocln
ENSMUSG00000031373	0.028732	3.056960226	Car5b	ENSMUSG00000019892	0.00456679	2.428381501	Lrriq1
ENSMUSG00000053111	0.036097	3.051766276	Fank1	ENSMUSG00000072568	0.00580458	2.426622761	Fam84b
ENSMUSG00000028497	0.036744	3.050098294	Hacd4	ENSMUSG00000087075	0.02393816	2.417509784	A230065H16Rik
ENSMUSG00000004952	0.043475	3.0275006	Rasa4	ENSMUSG00000079014	0.03885884	2.416076285	Serpina3i
ENSMUSG00000037259	0.017211	3.021721737	Dzank1	ENSMUSG00000087150	0.00286345	2.411533191	BC064078
ENSMUSG00000030551	0.014896	3.011766524	Nr2f2	ENSMUSG00000031297	0.00047616	2.409857123	Slc7a3
ENSMUSG00000036502	0.012179	3.002607797	Tmem255a	ENSMUSG00000015533	0.03105082	2.402032995	Itga2
ENSMUSG00000030905	0.006054	3.001921674	Crym	ENSMUSG00000019851	0.01008005	2.395666454	Perp
ENSMUSG00000020806	0.039811	2.996627457	Rhbdf2	ENSMUSG00000026173	0.00047616	2.391325109	Plcd4
ENSMUSG00000071103	0.026926	2.964139386	1700029J07Rik	ENSMUSG00000021091	6.6193E-05	2.391286497	Serpina3n
ENSMUSG00000035256	0.028732	2.960963514	Wdr78	ENSMUSG00000019536	0.03214983	2.389207539	Ahr
ENSMUSG00000078161	0.027668	2.960697406	Erich3	ENSMUSG00000048065	0.00574293	2.389010214	Cyb5r2
ENSMUSG00000035179	0.043972	2.956473589	Ppp1r32	ENSMUSG00000025350	0.00156218	2.388304323	Rdh5
ENSMUSG00000068762	0.026267	2.937954541	Gstm6	ENSMUSG00000029298	0.03820727	2.38796016	Gbp9
ENSMUSG00000026204	0.037885	2.922166758	Ptprn	ENSMUSG00000035472	0.0062189	2.386717761	Slc25a21
ENSMUSG00000003849	0.019552	2.917143147	Nqo1	ENSMUSG00000021791	0.04932664	2.386077014	Dydc2
ENSMUSG00000053702	0.012919	2.878938189	Nebl	ENSMUSG00000068617	0.00058965	2.38527904	Efcab1
ENSMUSG00000021091	0.006721	2.866151335	Serpina3n	ENSMUSG00000026546	0.00361385	2.38285191	Cfap45
ENSMUSG00000045761	0.020544	2.865416855	Fam179a	ENSMUSG00000004951	0.02974212	2.382046037	Hspb1
ENSMUSG00000010803	0.035698	2.86524534	Gabra1	ENSMUSG00000037921	0.00593092	2.379752284	Ddx60
ENSMUSG00000021069	0.031522	2.856283949	Pygl	ENSMUSG00000002885	0.00292564	2.374821735	Adgre5
ENSMUSG00000034463	0.038428	2.852194235	Scara3	ENSMUSG00000045761	0.00099695	2.373000638	Fam179a
ENSMUSG00000096054	0.014089	2.845511109	Syne1	ENSMUSG00000028864	0.03737004	2.364888314	Hgf
ENSMUSG00000010136	0.038258	2.840788751	Pifo	ENSMUSG00000048029	0.00192927	2.364825291	Eno4
ENSMUSG00000066026	0.049169	2.838733433	Dhrs3	ENSMUSG00000032596	0.0054463	2.363796182	Uba7
ENSMUSG00000027737	0.014089	2.808509519	Slc7a11	ENSMUSG00000015568	0.00207093	2.363452432	Lpl
ENSMUSG00000040624	0.020827	2.776867491	Plekhg1	ENSMUSG00000000167	0.00577439	2.361993674	Pih1d2
ENSMUSG00000041548	0.014836	2.769020399	Hspb8	ENSMUSG00000061723	0.01294192	2.356328125	Tnnt3
ENSMUSG00000017009	0.008446	2.729997079	Sdc4	ENSMUSG00000037101	0.00854245	2.351937944	Ttc29
ENSMUSG00000038112	0.011197	2.727361432	AW551984	ENSMUSG00000031111	0.00122666	2.348435772	Igsf1
ENSMUSG00000000308	0.030933	2.721944113	Ckmt1	ENSMUSG00000021280	0.02053813	2.34840989	Exoc3l4
ENSMUSG00000020932	0.006303	2.716856234	Gfap	ENSMUSG00000039519	0.00036547	2.344259848	Cyp7b1
ENSMUSG00000029120	0.026926	2.716614014	Ppp2r2c	ENSMUSG00000022758	0.0008342	2.342730325	P2rx6
ENSMUSG00000033685	0.021657	2.714591434	Ucp2	ENSMUSG00000027956	0.03711628	2.337921241	Tmem144
ENSMUSG00000018593	0.006721	2.711243053	Sparc	ENSMUSG00000055172	0.04962504	2.337660353	C1ra
ENSMUSG00000036949	0.01956	2.706636615	Slc39a12	ENSMUSG00000039851	0.01171148	2.337654532	4932438H23Rik
ENSMUSG00000000266	0.029505	2.703847619	Mid2	ENSMUSG00000073424	0.0006278	2.3347402	Cyp4f15
ENSMUSG00000030123	0.042499	2.702660916	Plxnd1	ENSMUSG00000031786	0.00118664	2.332275427	Drc7
ENSMUSG00000003354	0.048757	2.699642942	Ccdc65	ENSMUSG00000107667	0.0135434	2.331573102	C530044C16Rik

ENSMUSG00000055137	0.033698	2.69637869	Sugct	ENSMUSG00000037762	0.00813616	2.331518791	Slc16a9
ENSMUSG00000032377	0.030749	2.690843587	Plscr4	ENSMUSG00000027386	0.00403406	2.326598969	Fbln7
ENSMUSG00000024521	0.041072	2.689027734	Pmaip1	ENSMUSG00000038508	0.002961	2.323199664	Gdf15
ENSMUSG00000073102	0.014641	2.67945279	Drc1	ENSMUSG00000016918	0.01523335	2.320843956	Sulf1
ENSMUSG00000036395	0.039434	2.677243862	Glb1l2	ENSMUSG00000032489	0.00248102	2.320745153	Kif9
ENSMUSG00000020599	0.035698	2.66704626	Rgs9	ENSMUSG00000044033	0.00353043	2.31947266	Ccdc141
ENSMUSG00000067276	0.047339	2.665455939	Capn6	ENSMUSG00000035208	0.02358541	2.314111865	Slfn8
ENSMUSG00000022758	0.036097	2.663776167	P2rx6	ENSMUSG00000026483	0.01011548	2.313707847	Fam129a
ENSMUSG00000059970	0.013587	2.660138136	Hspa2	ENSMUSG00000020014	0.00376364	2.313028907	Cfap54
ENSMUSG00000017740	0.032239	2.657361017	Slc12a5	ENSMUSG00000026650	0.00283236	2.311739742	Meig1
ENSMUSG00000041309	0.040285	2.640568156	Nkx6-2	ENSMUSG00000104117	0.00577439	2.310214427	Gm20743
ENSMUSG00000030208	0.034068	2.634340422	Emp1	ENSMUSG00000060519	0.00047616	2.309915902	Tor3a
ENSMUSG00000027520	0.022379	2.630998235	Zdbf2	ENSMUSG00000050777	0.00284113	2.308104147	Tmem37
ENSMUSG00000075318	0.038685	2.622053437	Scn2a1	ENSMUSG00000040219	0.00135478	2.307030365	Ttc12
ENSMUSG00000006567	0.032239	2.618158255	Atp7b	ENSMUSG00000109598	0.0397401	2.304470032	RP23-226C6.3
ENSMUSG00000024186	0.047339	2.6180425	Rgs11	ENSMUSG00000068196	0.04230715	2.303383726	Col8a1
ENSMUSG00000047013	0.033362	2.615049498	Fbxo41	ENSMUSG00000039676	0.00382105	2.302925236	Capsl
ENSMUSG00000039706	0.019552	2.614261186	Ldb2	ENSMUSG00000025348	0.00099695	2.300087711	Itga7
ENSMUSG00000028364	0.016674	2.609045216	Tnc	ENSMUSG00000038058	0.04478279	2.29931744	Nod1
ENSMUSG00000002265	0.028761	2.60667137	Peg3	ENSMUSG00000006567	0.02449884	2.298032005	Atp7b
ENSMUSG00000022783	0.034858	2.600902311	Spag6	ENSMUSG00000034853	0.00298869	2.297647786	Acot11
ENSMUSG00000090122	0.008446	2.581776325	Kcne1l	ENSMUSG00000039632	0.01625976	2.296764763	Ccdc151
ENSMUSG00000059325	0.034068	2.580700889	Hopx	ENSMUSG00000040181	0.00050141	2.289705775	Fmo1
ENSMUSG00000027217	0.033362	2.579310124	Tspan18	ENSMUSG00000051048	0.00058965	2.28736154	P4ha3
ENSMUSG00000026831	0.035695	2.576845242	1700007K13Rik	ENSMUSG00000038233	0.00581749	2.286445548	Fam198a
ENSMUSG00000035578	0.01995	2.574840504	Iqcg	ENSMUSG00000029343	0.01090988	2.285682155	Crybb1
ENSMUSG00000063704	0.036097	2.573741836	Mapk15	ENSMUSG00000064179	0.03582646	2.284721003	Tnnt1
ENSMUSG00000022146	0.029966	2.571704826	Osmr	ENSMUSG00000020773	0.00248102	2.283611123	Trim47
ENSMUSG00000023328	0.036015	2.561855235	Ache	ENSMUSG00000090439	0.00337597	2.282994175	Gm17455
ENSMUSG00000026586	0.033048	2.557667878	Prrx1	ENSMUSG00000030921	0.0366907	2.278767874	Trim30a
ENSMUSG00000014361	0.036312	2.55724933	Mertk	ENSMUSG00000068299	0.00129716	2.276473693	Nat8f4
ENSMUSG00000022309	0.038051	2.555359152	Angpt1	ENSMUSG00000037405	0.00472487	2.275891146	Icam1
ENSMUSG00000040848	0.044133	2.554106786	Sft2d2	ENSMUSG00000027962	0.00248102	2.274976657	Vcam1
ENSMUSG00000068566	0.018982	2.553439571	Myadm	ENSMUSG00000006522	0.00118194	2.273466238	Itih3
ENSMUSG00000021281	0.039434	2.551737649	Tnfaip2	ENSMUSG00000079494	0.01088098	2.270355325	Nat8f5
ENSMUSG00000044667	0.021775	2.551667967	Lppr4	ENSMUSG00000031980	0.00018341	2.268970196	Agt
ENSMUSG00000025780	0.030496	2.542995555	Itih5	ENSMUSG00000031027	0.02288949	2.268741989	Stk33
ENSMUSG00000074227	0.039222	2.524321501	Spint2	ENSMUSG00000050315	0.00224012	2.264994151	Synpo2
ENSMUSG00000000058	0.034068	2.519601162	Cav2	ENSMUSG00000056752	0.00555217	2.264478426	Dnah9
ENSMUSG00000027087	0.035698	2.50813991	Itgav	ENSMUSG00000026686	0.0210248	2.261396833	Lmx1a
ENSMUSG00000019820	0.026926	2.506574399	Utrn	ENSMUSG00000021613	0.01320482	2.260804502	Hapln1
ENSMUSG00000026667	0.020377	2.501364953	Uhmk1	ENSMUSG00000030966	0.04180357	2.255500019	Trim21
ENSMUSG00000028167	0.046868	2.4945985	Bdh2	ENSMUSG00000034463	0.00040649	2.254782687	Scara3
ENSMUSG00000062488	0.035694	2.48276497	Ifit3b	ENSMUSG00000031387	0.001669	2.254761166	Renbp
ENSMUSG00000043388	0.026782	2.478653219	Tmem130	ENSMUSG00000039063	0.02607314	2.253174425	Echdc3
ENSMUSG00000025092	0.040834	2.475601352	Hspa12a	ENSMUSG00000003849	0.0007834	2.251297319	Nqo1
ENSMUSG00000003573	0.040726	2.475323562	Man1a	ENSMUSG00000024552	0.00070584	2.250055079	Slc14a2
ENSMUSG00000050199	0.032176	2.469359229	Lgr4	ENSMUSG00000026301	0.00659589	2.249321216	Iqca
ENSMUSG00000032743	0.047822	2.46886181	D430042O09Rik	ENSMUSG00000025666	0.00418899	2.248376258	Tmem47
ENSMUSG00000032735	0.024972	2.468049687	Ablim3	ENSMUSG00000033880	0.00042528	2.244204917	Lgals3bp
ENSMUSG00000015085	0.011725	2.465928873	Entpd2	ENSMUSG00000041771	0.02373756	2.243844985	Slc24a4
ENSMUSG00000005125	0.040834	2.463663462	Ndrg1	ENSMUSG00000071398	0.00081225	2.243082282	2410004P03Rik
ENSMUSG00000040189	0.034466	2.463540215	Ccdc114	ENSMUSG00000055809	0.00769378	2.242552816	Dnaaf3
ENSMUSG00000026944	0.022135	2.456240087	Abca2	ENSMUSG00000024610	0.011359	2.241083961	Cd74
ENSMUSG00000031274	0.026267	2.45591335	Col4a5	ENSMUSG00000028015	0.001669	2.240616317	Ctso
ENSMUSG00000021340	0.028732	2.439784822	Gpld1	ENSMUSG00000060512	0.00183304	2.236047224	0610040J01Rik
ENSMUSG00000026042	0.017603	2.433071488	Col5a2	ENSMUSG00000045655	0.00348316	2.233370845	Fam216b
ENSMUSG00000040936	0.044277	2.414080072	Ulk4	ENSMUSG00000056870	0.02752445	2.23290873	Gulp1
ENSMUSG00000074896	0.038054	2.410808291	Ifit3	ENSMUSG00000040253	0.00144736	2.23258004	Gbp7
ENSMUSG00000049313	0.01995	2.404148186	Sorl1	ENSMUSG00000032902	0.00261392	2.232434407	Slc16a1
ENSMUSG00000007908	0.038054	2.399399432	Hmgcll1	ENSMUSG00000069874	0.02448269	2.23099423	Irgm2
ENSMUSG00000006611	0.029505	2.395396607	Hfe	ENSMUSG00000047361	0.0033701	2.230173627	Gm973
ENSMUSG00000006435	0.024126	2.388713397	Neurl1a	ENSMUSG00000030170	0.02823485	2.229949667	Wnt5b
ENSMUSG00000024411	0.021848	2.387748639	Aqp4	ENSMUSG00000027676	0.00228718	2.225076277	Ccdc39
ENSMUSG00000021451	0.018999	2.385841514	Sema4d	ENSMUSG00000085316	0.01008005	2.224837301	D330050G23Rik
ENSMUSG00000046182	0.034068	2.379662057	Gsg1l	ENSMUSG00000073102	0.001669	2.224167073	Drc1
ENSMUSG00000022055	0.028761	2.368356537	Nefl	ENSMUSG00000030708	0.00138815	2.212982754	Dnajb13
ENSMUSG00000051497	0.03685	2.361659769	Kcnj16	ENSMUSG00000028753	0.00764139	2.211980159	Vwa5b1
ENSMUSG00000039911	0.038685	2.360944771	Spsb1	ENSMUSG00000041143	0.00218929	2.211601882	Tmco4
ENSMUSG00000071424	0.042004	2.353237226	Grid2	ENSMUSG00000038521	0.03409088	2.204815993	C1s1
ENSMUSG00000039007	0.022756	2.350043166	Cpq	ENSMUSG00000024593	0.02512885	2.203414975	Megf10
ENSMUSG00000040612	0.023462	2.342435575	Ildr2	ENSMUSG00000027188	0.00406795	2.198926372	Pamr1
ENSMUSG00000024778	0.04664	2.338660387	Fas	ENSMUSG00000025537	0.00091505	2.198018526	Phkg1
ENSMUSG00000002475	0.03131	2.334379448	Abhd3	ENSMUSG00000039963	0.04221989	2.196919406	Ccdc40
ENSMUSG00000021583	0.021806	2.333499765	Erap1	ENSMUSG00000052911	0.00272778	2.193263073	Lamb2

ENSMUSG00000026672	0.028145	2.327187366	Optn	ENSMUSG00000097877	0.02945507	2.189261637	Gm26703
ENSMUSG00000055078	0.034068	2.326752184	Gabra5	ENSMUSG00000034855	0.00079148	2.188100462	Cxcl10
ENSMUSG00000037405	0.036015	2.326737061	Icam1	ENSMUSG00000084989	0.02647591	2.187375059	Crocc2
ENSMUSG00000038530	0.021424	2.323176598	Rgs4	ENSMUSG00000073418	0.00188956	2.186867787	C4b
ENSMUSG00000092274	0.038416	2.318489097	Neat1	ENSMUSG00000060176	0.00820249	2.183631889	Kif27
ENSMUSG00000059182	0.036097	2.313055595	Skap2	ENSMUSG00000087380	0.02908623	2.183321838	2210408F21Rik
ENSMUSG00000036745	0.04779	2.310570729	Ttll7	ENSMUSG00000024818	0.00741036	2.183138126	Slc25a45
ENSMUSG00000049044	0.046338	2.30660337	Rapgef4	ENSMUSG00000042784	0.0387476	2.180932635	Muc1
ENSMUSG00000071604	0.032239	2.29652165	Fam189a2	ENSMUSG00000086515	0.04466755	2.179737641	Erich2os
ENSMUSG00000030761	0.043005	2.290789572	Myo7a	ENSMUSG00000024338	0.00385188	2.17780134	Psmb8
ENSMUSG00000029086	0.031708	2.279042574	Prom1	ENSMUSG00000073650	0.00598856	2.177350723	Catip
ENSMUSG00000026202	0.040834	2.278204277	Tuba4a	ENSMUSG00000023999	0.01353649	2.177345662	Kif6
ENSMUSG00000040181	0.036097	2.258883079	Fmo1	ENSMUSG00000052560	0.0072865	2.175519481	Cpne8
ENSMUSG00000022565	0.018581	2.255725673	Plec	ENSMUSG00000027702	0.0113081	2.17382766	Lrrc34
ENSMUSG00000025350	0.034674	2.252015865	Rdh5	ENSMUSG00000027737	0.00248102	2.173663768	Slc7a11
ENSMUSG00000073418	0.039434	2.241946182	C4b	ENSMUSG00000014361	0.03600915	2.173529023	Mertk
ENSMUSG00000014846	0.015568	2.241451031	Tppp3	ENSMUSG00000032679	0.00671943	2.173258415	Cd59a
ENSMUSG00000050953	0.038129	2.238700132	Gja1	ENSMUSG00000091415	0.0382905	2.171122216	Ak9
ENSMUSG00000039239	0.021424	2.238342574	Tgfb2	ENSMUSG00000036395	0.00795475	2.165495311	Glb1l2
ENSMUSG00000031451	0.012729	2.216758141	Gas6	ENSMUSG00000075569	0.00996419	2.15975791	Rsph10b
ENSMUSG00000019590	0.041927	2.211065678	Cyb561	ENSMUSG00000026226	0.01438179	2.159265554	Spata3
ENSMUSG00000038860	0.035453	2.184817006	Garnl3	ENSMUSG00000023224	0.00287694	2.158941733	Serping1
ENSMUSG00000097451	0.03899	2.16301292	Rian	ENSMUSG00000008540	0.00072536	2.152044423	Mgst1
ENSMUSG00000006301	0.023856	2.147907488	Tmbim1	ENSMUSG00000024206	0.00139847	2.150745615	Rfx2
ENSMUSG00000022323	0.033866	2.147242183	Hrsp12	ENSMUSG00000026748	0.00183155	2.150712555	Plxdc2
ENSMUSG00000036356	0.033506	2.147163241	Csgalnact1	ENSMUSG00000021756	0.04012413	2.149667926	Il6st
ENSMUSG00000026628	0.047339	2.146759369	Atf3	ENSMUSG00000031893	0.03663411	2.14929411	Tsnaxip1
ENSMUSG00000026495	0.041234	2.146365905	Efcab2	ENSMUSG00000026809	0.01819837	2.146825622	Spaca9
ENSMUSG00000038668	0.028533	2.145052702	Lpar1	ENSMUSG00000001827	0.02179036	2.146350136	Folr1
ENSMUSG00000039782	0.03243	2.126553367	Cpeb2	ENSMUSG00000036249	0.00443065	2.144617045	Rbm43
ENSMUSG00000024261	0.041234	2.118375646	Syt4	ENSMUSG00000064280	0.0087902	2.142993789	Ccdc146
ENSMUSG00000001763	0.026269	2.11077688	Tspan33	ENSMUSG00000021585	0.03150867	2.142973902	Cast
ENSMUSG00000020263	0.033102	2.109320941	Appl2	ENSMUSG00000029561	0.00135478	2.142530917	Oasl2
ENSMUSG00000034494	0.033494	2.104370072	Fam198a	ENSMUSG00000032352	0.00127873	2.142068024	Lrrc1
ENSMUSG00000022037	0.019552	2.094206764	Clu	ENSMUSG00000044350	0.00483747	2.141201131	Lacc1
ENSMUSG00000014602	0.028801	2.092652087	Kif1a	ENSMUSG00000071324	0.03220887	2.139185815	Armc2
ENSMUSG00000020604	0.038129	2.079624534	Arsg	ENSMUSG00000022602	0.00051868	2.13880793	Arc
ENSMUSG00000032849	0.041433	2.078445083	Abcc4	ENSMUSG00000023931	0.01906844	2.138346703	Efhb
ENSMUSG00000001025	0.038812	2.077635709	S100a6	ENSMUSG00000033488	0.00295841	2.138220784	BC026585
ENSMUSG00000019810	0.036342	2.069086843	Fuca2	ENSMUSG00000041548	0.00040649	2.13738572	Hspb8
ENSMUSG00000038077	0.025124	2.057581536	Kcna6	ENSMUSG00000049353	0.00283132	2.136209549	Rd3
ENSMUSG00000046844	0.041927	2.048589768	Vat1l	ENSMUSG00000030321	0.03234608	2.135513761	Efcab12
ENSMUSG00000027221	0.032239	2.047378299	Chst1	ENSMUSG00000052430	0.0387476	2.135491924	Bmpr1b
ENSMUSG00000037509	0.038054	2.041545486	Arhgef4	ENSMUSG00000066196	0.00313962	2.133888704	Spag8
ENSMUSG00000059713	0.02302	2.030125114	Rcan3	ENSMUSG00000026730	0.00095446	2.132840725	Pter
ENSMUSG00000021027	0.034926	2.02893096	Ralgapa1	ENSMUSG00000049811	0.00443065	2.130856272	Fam161a
ENSMUSG00000027215	0.043005	2.02736132	Cd82	ENSMUSG00000085407	0.04983945	2.13072583	1700095J03Rik
ENSMUSG00000035133	0.034068	2.021827297	Arhgap5	ENSMUSG00000015085	0.00075996	2.128671803	Entpd2
ENSMUSG00000021536	0.028207	2.019447719	Adcy2	ENSMUSG00000030847	0.00064512	2.127094772	Bag3
ENSMUSG00000061601	0.049883	2.018742306	Pclo	ENSMUSG00000060224	0.00091505	2.122823963	Pyroxd2
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ENSMUSG00000035686	0.041349	2.004110127	Thrsp	ENSMUSG00000086224	0.03685827	2.118901316	2700069I18Rik
ENSMUSG00000017754	0.029548	2.00323113	Pltp	ENSMUSG00000035896	0.02283965	2.116825527	Rnase1
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ENSMUSG00000025026	0.034466	1.985544134	Add3	ENSMUSG00000050953	0.00601868	2.109638194	Gja1
ENSMUSG00000028552	0.025997	1.984844215	Eps15	ENSMUSG00000020932	2.7782E-05	2.108504666	Gfap
ENSMUSG00000041556	0.022855	1.981672886	Fbxo2	ENSMUSG00000068762	0.00475123	2.108290757	Gstm6
ENSMUSG00000018909	0.040936	1.976682476	Arrb1	ENSMUSG00000028195	0.00018744	2.106648948	Cyr61
ENSMUSG00000020326	0.038685	1.974076326	Ccng1	ENSMUSG00000053702	0.03661102	2.106515392	Nebl
ENSMUSG00000031207	0.031708	1.963001219	Msn	ENSMUSG00000025888	0.00690883	2.105796836	Casp1
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ENSMUSG00000022620	0.032176	1.953920565	Arsa	ENSMUSG00000022783	0.00688988	2.104760787	Spag6l
ENSMUSG00000053819	0.027668	1.941578412	Camk2d	ENSMUSG00000039865	0.04765706	2.104509754	Slc44a3
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ENSMUSG00000072966	0.047339	1.930701258	Gprasp2	ENSMUSG00000025931	0.00744949	2.099999379	Paqr8
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ENSMUSG00000021277	0.036097	1.905733378	Traf3	ENSMUSG00000007908	0.01979683	2.096822432	Hmgcll1
ENSMUSG00000039809	0.031522	1.882226582	Gabbr2	ENSMUSG00000039706	0.00211297	2.096155487	Ldb2
ENSMUSG00000024423	0.038685	1.880714801	Impact	ENSMUSG00000031558	0.02598904	2.095268269	Slit2
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ENSMUSG00000029212	0.04779	1.856008592	Gabrb1	ENSMUSG00000047021	0.04047097	2.08826573	Ccdc108
ENSMUSG00000020841	0.04174	1.85539652	Cpd	ENSMUSG00000079057	0.04982066	2.087879425	Cyp4v3
ENSMUSG00000022505	0.038146	1.85225294	Emp2	ENSMUSG00000052221	0.01539491	2.080676702	Ppp1r36
ENSMUSG00000040929	0.037266	1.834892611	Rfx3	ENSMUSG00000025586	0.00803724	2.08031898	Cpeb1
ENSMUSG00000035847	0.036312	1.833964534	Ids	ENSMUSG00000031538	0.0009878	2.079916329	Plat
ENSMUSG00000030307	0.029505	1.830802391	Slc6a11	ENSMUSG00000097493	0.02517714	2.079691698	9930014A18Rik
ENSMUSG00000053141	0.049104	1.803086434	Ptprt	ENSMUSG00000059970	0.00040649	2.079479665	Hspa2
ENSMUSG00000025203	0.040214	1.778149561	Scd2	ENSMUSG00000020799	0.00857331	2.079408596	Tekt1
ENSMUSG00000020315	0.036908	1.774787622	Sptbn1	ENSMUSG00000059327	0.02732231	2.076059328	Eda
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ENSMUSG00000006800	0.046334	1.698899584	Sulf2	ENSMUSG00000031927	0.02783218	2.071285585	1700012B09Rik
ENSMUSG00000059208	0.047005	-1.652058651	Hnrnpm	ENSMUSG00000043913	0.0059303	2.070457797	Ccdc60
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ENSMUSG00000031311	0.043972	-1.686432115	Nono	ENSMUSG00000030089	0.00342714	2.068955052	Slc41a3
ENSMUSG00000041126	0.047839	-1.707041997	H2afv	ENSMUSG00000022297	0.01420346	2.067794943	Fzd6
ENSMUSG00000015937	0.045748	-1.70724491	H2afy	ENSMUSG00000044122	0.01097502	2.066233348	Proca1
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ENSMUSG00000040209	0.048981	-1.711854968	Zfp704	ENSMUSG00000028167	0.00231438	2.065823414	Bdh2
ENSMUSG00000027405	0.038685	-1.712480515	Nop56	ENSMUSG00000045659	0.0146903	2.065036175	Plekha7
ENSMUSG00000004642	0.048266	-1.724142491	Slbp	ENSMUSG00000037509	0.00891712	2.063461217	Arhgef4
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ENSMUSG00000030978	0.038054	-1.741313255	Rrm1	ENSMUSG00000003974	0.00665252	2.051568518	Grm3
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ENSMUSG00000006728	0.033362	-1.89319307	Cdk4	ENSMUSG00000022323	0.00091505	2.02707181	Rida
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ENSMUSG00000031134	0.024126	-1.900591019	Rbmx	ENSMUSG00000030111	0.03074773	2.025909583	A2m
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ENSMUSG00000027210	0.012683	-2.137842367	Meis2	ENSMUSG00000020334	0.00276459	1.986750079	Slc22a4
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ENSMUSG00000038644	0.018824	-2.140745084	Pold1	ENSMUSG00000038855	0.00323251	1.982202583	Itpkb
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ENSMUSG00000097195	0.036097	-2.146383577	Snhg5	ENSMUSG00000024778	0.00483747	1.981212562	Fas
ENSMUSG00000017386	0.019552	-2.149880384	Traf4	ENSMUSG00000028294	0.01336951	1.980611021	Cfap206
ENSMUSG00000029730	0.011921	-2.155821525	Mcm7	ENSMUSG00000037196	0.00263037	1.980047883	Pacrg
ENSMUSG00000041859	0.02257	-2.156872663	Mcm3	ENSMUSG00000051029	0.02414092	1.979417035	Serpinb1b
ENSMUSG00000022773	0.015344	-2.157484079	Ypel1	ENSMUSG00000100594	0.04285886	1.978474108	2810414N06Rik
ENSMUSG00000020914	0.014089	-2.162533939	Top2a	ENSMUSG00000029182	0.04452246	1.977620011	1700001C02Rik
ENSMUSG00000076437	0.022556	-2.163676927	2700094K13Rik	ENSMUSG00000060675	0.00295911	1.976879187	Pla2g16
ENSMUSG00000038252	0.01369	-2.180044121	Ncapd2	ENSMUSG00000005087	0.00675984	1.975024487	Cd44
ENSMUSG00000031971	0.040834	-2.191162889	Ccsap	ENSMUSG00000035692	0.01181935	1.97467643	Isg15
ENSMUSG00000087006	0.033698	-2.192779814	Gm13889	ENSMUSG00000021710	0.0032211	1.974068214	Nln
ENSMUSG00000047832	0.025164	-2.198284202	Cdca4	ENSMUSG00000105504	0.04141878	1.973615753	Gbp5
ENSMUSG00000016262	0.022855	-2.20140017	Sertad4	ENSMUSG00000035984	0.00688988	1.973216728	Nme5
ENSMUSG00000267071	0.014203	-2.205330849	Tpx2	ENSMUSG00000029994	0.00178269	1.972468352	Anxa4
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ENSMUSG00000001517	0.034423	-2.21167859	Foxm1	ENSMUSG00000025425	0.00353043	1.964918578	St8sia5
ENSMUSG00000028076	0.01369	-2.215072139	Cd1d1	ENSMUSG00000030030	0.02740918	1.964792067	1700003E16Rik
ENSMUSG00000018362	0.033494	-2.222431694	Kpna2	ENSMUSG00000043687	0.02182565	1.964508056	1190005I06Rik
ENSMUSG00000024245	0.033048	-2.23080065	Tmem178	ENSMUSG00000032060	0.01106013	1.964021636	Cryab
ENSMUSG00000000184	0.022135	-2.258659956	Ccnd2	ENSMUSG00000026701	0.00051028	1.963699007	Prdx6
ENSMUSG00000020737	0.011197	-2.261088014	Hn1	ENSMUSG00000034467	0.00668396	1.962633906	Dynlrb2
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ENSMUSG00000048327	0.014089	-2.271755022	Ckap2l	ENSMUSG00000049630	0.03155066	1.957365107	C1ql3
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ENSMUSG00000022332	0.038699	-2.290603541	Khdrbs3	ENSMUSG00000027004	0.02068171	1.954742431	Frzb
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ENSMUSG00000028044	0.025214	-2.301986816	Cks1b	ENSMUSG00000029309	0.00081076	1.945932172	Sparcl1
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ENSMUSG00000003779	0.021806	-2.307499078	Kif20a	ENSMUSG00000020774	0.03202547	1.942066177	Aspa
ENSMUSG00000012443	0.014203	-2.309528405	Kif11	ENSMUSG00000032348	0.00196459	1.939833635	Gsta4
ENSMUSG00000027849	0.038129	-2.311754384	Syt6	ENSMUSG00000033966	0.04997179	1.939022309	Cdkl4
ENSMUSG00000027715	0.011197	-2.312119067	Ccna2	ENSMUSG00000024308	0.0006278	1.938759824	Tapbp

ENSMUSG00000068154	0.033698	-2.312210365	Insm1	ENSMUSG00000040978	0.00502352	1.938198935	Gm11992
ENSMUSG00000033031	0.028732	-2.314467492	C330027C09Rik	ENSMUSG00000087264	0.03023103	1.936840393	Gad1os
ENSMUSG00000002835	0.037129	-2.316713379	Chaf1a	ENSMUSG00000035578	0.00466864	1.935579653	Iqcg
ENSMUSG00000048922	0.026943	-2.31914084	Cdca2	ENSMUSG00000021583	0.04466755	1.935255945	Erap1
ENSMUSG00000090063	0.009835	-2.330403428	Dlx6os1	ENSMUSG00000023249	0.00710375	1.933363129	Parp3
ENSMUSG00000070576	0.026269	-2.333490927	Mn1	ENSMUSG00000068566	0.00623622	1.930287261	Myadm
ENSMUSG00000027654	0.028171	-2.333581718	Fam83d	ENSMUSG00000057596	0.02625888	1.929791126	Trim30d
ENSMUSG00000056296	0.011197	-2.336024195	Synpr	ENSMUSG00000051855	0.00080199	1.929780242	Mest
ENSMUSG00000047604	0.038812	-2.337578244	Frat2	ENSMUSG00000038022	0.00249109	1.928727933	Fam188b
ENSMUSG00000029363	0.021424	-2.339984852	Rfc5	ENSMUSG00000032066	0.03343263	1.92571842	Bco2
ENSMUSG00000028832	0.011214	-2.350682997	Stmn1	ENSMUSG00000032377	0.00490091	1.925208985	Plscr4
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ENSMUSG00000026622	0.048814	-2.390283555	Nek2	ENSMUSG00000015224	0.00262934	1.919708449	Cyp2j9
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ENSMUSG00000049932	0.011197	-2.401914442	H2afx	ENSMUSG00000022759	0.00886318	1.9189756	Lrrc74b
ENSMUSG00000072082	0.027668	-2.402939908	Ccnf	ENSMUSG00000020562	0.03155066	1.917770352	Efcab10
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ENSMUSG00000036306	0.047822	-2.414855236	Lzts1	ENSMUSG00000027007	0.00852741	1.913705751	Ssfa2
ENSMUSG00000032363	0.043554	-2.425877999	Adamts7	ENSMUSG00000032359	0.00638899	1.911660709	Ctsh
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ENSMUSG00000030346	0.027668	-2.476837758	Rad51ap1	ENSMUSG00000031073	0.04362411	1.90190318	Fgf15
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ENSMUSG00000035277	0.011921	-2.499050573	Arx	ENSMUSG00000029380	0.00791339	1.898993963	Cxcl1
ENSMUSG00000028678	0.021806	-2.508023939	Kif2c	ENSMUSG00000025420	0.00350759	1.896984696	Katnal2
ENSMUSG00000048562	0.032239	-2.512750116	Sp8	ENSMUSG00000042228	0.00386411	1.895890903	Lyn
ENSMUSG00000020897	0.014089	-2.517478999	Aurkb	ENSMUSG00000036718	0.01390965	1.895039228	Micall2
ENSMUSG00000024989	0.039972	-2.528545557	Cep55	ENSMUSG00000074215	0.04350988	1.893982748	Gm10643
ENSMUSG00000038457	0.041234	-2.537362922	Tmem255b	ENSMUSG00000024526	0.01595026	1.893807559	Cidea
ENSMUSG00000037466	0.028923	-2.538994822	4930427A07Rik	ENSMUSG00000053279	0.04230269	1.893030989	Aldh1a1
ENSMUSG00000032491	0.043005	-2.547423339	Nradd	ENSMUSG00000016534	0.0068058	1.892996929	Lamp2
ENSMUSG00000045328	0.014836	-2.548639444	Cenpe	ENSMUSG00000062480	0.03562839	1.892589097	Acat3
ENSMUSG00000002870	0.006721	-2.570286482	Mcm2	ENSMUSG00000028139	0.0086231	1.89252396	Riiad1
ENSMUSG00000021569	0.040834	-2.570658602	Trip13	ENSMUSG00000021814	0.00122666	1.891838592	Anxa7
ENSMUSG00000089832	0.01995	-2.584019401	Shkbp1	ENSMUSG00000048218	0.03060978	1.890775281	Amigo2
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ENSMUSG00000041431	0.006721	-2.627457994	Ccnb1	ENSMUSG00000035179	0.01302475	1.888175186	Ppp1r32
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ENSMUSG00000019214	0.035698	-2.654379316	Chtf18	ENSMUSG00000031636	0.01582157	1.886921238	Pdlim3
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ENSMUSG00000026955	0.011921	-2.661635007	Sapcd2	ENSMUSG00000058586	0.00645484	1.886265651	Serhl
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ENSMUSG00000022322	0.01369	-2.673458924	Shcbp1	ENSMUSG00000024900	0.01699896	1.885935849	Cpt1a
ENSMUSG00000027115	0.035055	-2.675934871	Kif18a	ENSMUSG00000042082	0.03155915	1.884937837	Arsb
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ENSMUSG00000031756	0.030749	-2.68596737	Cenpn	ENSMUSG00000028838	0.02000051	1.881769937	Extl1
ENSMUSG00000024791	0.032463	-2.686333209	Cdca5	ENSMUSG00000035275	0.01934179	1.881088758	Raver2
ENSMUSG00000068101	0.024126	-2.689987451	Cenpm	ENSMUSG00000042116	0.00883778	1.880627334	Vwa1
ENSMUSG00000028551	0.014203	-2.692217216	Cdkn2c	ENSMUSG00000032372	0.04073853	1.880315182	Plscr2
ENSMUSG00000034906	0.011197	-2.717666224	Ncaph	ENSMUSG00000109284	0.00844375	1.879154371	B230311B06Rik
ENSMUSG00000005410	0.009811	-2.718614633	Mcm5	ENSMUSG00000039533	0.00018341	1.877834509	Mmd2
ENSMUSG00000062248	0.045707	-2.725691561	Cks2	ENSMUSG00000026679	0.01176963	1.877290978	Enkur
ENSMUSG00000029177	0.007454	-2.732136664	Cenpa	ENSMUSG00000047230	0.04420675	1.875944709	Cldn2
ENSMUSG00000023505	0.007278	-2.738882405	Cdca3	ENSMUSG00000090394	0.04210887	1.875891293	4930523C07Rik
ENSMUSG00000073705	0.044023	-2.755762022	Apitd1	ENSMUSG00000021365	0.02523502	1.874672581	Nedd9
ENSMUSG00000098318	0.034068	-2.766110522	1190002F15Rik	ENSMUSG00000009281	0.01168061	1.874667772	Rarres2
ENSMUSG00000086496	0.011407	-2.767471748	Gm14204	ENSMUSG00000027907	0.02057704	1.874589615	S100a11
ENSMUSG00000027559	0.013018	-2.769611516	Car3	ENSMUSG00000021234	0.00376315	1.87433924	Fam161b
ENSMUSG00000035455	0.028732	-2.771076764	Fignl1	ENSMUSG00000028121	0.00549751	1.874024624	Bcar3
ENSMUSG00000017499	0.029505	-2.773385903	Cdc6	ENSMUSG00000030772	0.00325982	1.874005949	Dkk3
ENSMUSG00000029755	0.011214	-2.774030084	Dlx5	ENSMUSG00000041423	0.01545391	1.873729221	Paqr6
ENSMUSG00000025574	0.017255	-2.82583136	Tk1	ENSMUSG00000073758	0.04372757	1.873532466	Sh3d21
ENSMUSG00000027331	0.014391	-2.830431238	Knstrn	ENSMUSG00000002602	0.00257764	1.873245029	Axl

Gene ID	p-value	log2FC	Symbol
ENSMUSG00000078453	0.033698	-2.843802387	Abracl
ENSMUSG00000027496	0.013587	-2.875831058	Aurka
ENSMUSG00000017716	0.011407	-2.876420298	Birc5
ENSMUSG00000044813	0.043708	-2.882715664	Shb
ENSMUSG00000006398	0.005537	-2.910094192	Cdc20
ENSMUSG00000037544	0.022756	-2.910233297	Dlgap5
ENSMUSG00000019942	0.006721	-2.917683314	Cdk1
ENSMUSG00000051378	0.011407	-2.927459752	Kif18b
ENSMUSG00000027306	0.006447	-2.937429489	Nusap1
ENSMUSG00000030677	0.006303	-2.938123607	Kif22
ENSMUSG00000027490	0.011197	-2.943453114	E2f1
ENSMUSG00000000028	0.015195	-2.949719299	Cdc45
ENSMUSG00000046295	0.0267	-2.961893379	Ankle1
ENSMUSG00000020808	0.009835	-2.978656824	Fam64a
ENSMUSG00000032218	0.009591	-2.98384271	Ccnb2
ENSMUSG00000039396	0.032239	-3.013306282	Neil3
ENSMUSG00000035683	0.018581	-3.022154902	Melk
ENSMUSG00000055612	0.006265	-3.035136385	Cdca7
ENSMUSG00000062510	0.021994	-3.045081973	Nsl1
ENSMUSG00000020649	0.005537	-3.067570572	Rrm2
ENSMUSG00000018169	0.011197	-3.106831106	Mfng
ENSMUSG00000021965	0.023014	-3.12338142	Ska3
ENSMUSG00000001403	0.005537	-3.138006696	Ube2c
ENSMUSG00000048251	0.012919	-3.152386057	Bcl11b
ENSMUSG00000044201	0.011921	-3.16093019	Cdc25c
ENSMUSG00000040204	0.011197	-3.171703617	2810417H13Rik
ENSMUSG00000068859	0.008446	-3.185460525	Sp9
ENSMUSG00000021485	0.016984	-3.193529309	Mxd3
ENSMUSG00000005470	0.015204	-3.215246748	Asf1b
ENSMUSG00000022945	0.018581	-3.218778844	Chaf1b
ENSMUSG00000028873	0.005537	-3.2260937	Cdca8
ENSMUSG00000022422	0.034305	-3.239593191	Dscc1
ENSMUSG00000028702	0.021848	-3.239925042	Rad54l
ENSMUSG00000022033	0.006054	-3.263688151	Pbk
ENSMUSG00000003436	0.005537	-3.279086579	Dll3
ENSMUSG00000038379	0.013018	-3.299372519	Ttk
ENSMUSG00000032783	0.018676	-3.348536216	Troap
ENSMUSG00000030867	0.006303	-3.356068592	Plk1
ENSMUSG00000035551	0.005537	-3.362338909	Igfbpl1
ENSMUSG00000036223	0.044277	-3.371441459	Ska1
ENSMUSG00000086308	0.034068	-3.371490547	G630016G05Rik
ENSMUSG00000024056	0.011921	-3.38637704	Ndc80
ENSMUSG00000047171	0.036097	-3.431750286	Helt
ENSMUSG00000039748	0.019552	-3.460109357	Exo1
ENSMUSG00000034883	0.038994	-3.475195456	Lrr1
ENSMUSG00000041064	0.034732	-3.476565916	Pif1
ENSMUSG00000074476	0.007374	-3.752119842	Spc24
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ENSMUSG00000035946	0.034732	-3.857529107	Gsx2
ENSMUSG00000068614	0.045873	-3.884837381	Actc1
ENSMUSG00000027750	0.044277	-4.139722115	Postn
ENSMUSG00000021933	0.047221	-4.222115807	Gucy1b2
ENSMUSG00000041406	0.026577	-4.917325039	BC055324
ENSMUSG00000102548	0.034858	-4.9942358	Gm16701
ENSMUSG00000060735	0.026267	-5.38508721	Rxfp3
ENSMUSG00000075304	0.04086271	1.87295999	Sp5
ENSMUSG00000035805	0.00024784	1.871693814	Mlc1
ENSMUSG00000037348	0.00100138	1.870594512	Paqr7
ENSMUSG00000039904	0.00744949	1.870436934	Gpr37
ENSMUSG00000073411	0.00071429	1.870229481	H2-D1
ENSMUSG00000042429	0.00064512	1.869635474	Adora1
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ENSMUSG00000027360	0.01393294	1.868541591	Hdc
ENSMUSG00000036585	0.00691041	1.866348352	Fgf1
ENSMUSG00000031561	0.04559083	1.865997256	Tenm3
ENSMUSG00000022893	0.02650442	1.865622662	Adamts1
ENSMUSG00000063600	0.04723367	1.86154547	Egfem1
ENSMUSG00000075273	0.00573187	1.861098151	Ttc30b
ENSMUSG00000052861	0.02980274	1.860494085	Dnah6
ENSMUSG00000026880	0.00235269	1.860264043	Stom
ENSMUSG00000005951	0.02351554	1.859687517	Shpk
ENSMUSG00000042684	0.00486948	1.859048415	Npl
ENSMUSG00000041343	0.00432246	1.859041563	Ankrd42
ENSMUSG00000000058	0.02691782	1.858461061	Cav2
ENSMUSG00000041660	0.01625976	1.858224022	Bbox1
ENSMUSG00000041809	0.00925865	1.85664931	Efhc1
ENSMUSG00000020604	0.00350759	1.855759941	Arsg
ENSMUSG00000031767	0.02130535	1.855309916	Nudt7
ENSMUSG00000110408	0.03989423	1.855302593	RP23-357C16.1
ENSMUSG00000038570	0.00719295	1.855281802	Saxo2
ENSMUSG00000030560	0.00677475	1.855141865	Ctsc
ENSMUSG00000002688	0.0130654	1.85503196	Prkd1
ENSMUSG00000034227	0.00263037	1.851657502	Foxj1
ENSMUSG00000055541	0.03231324	1.85061012	Lair1
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ENSMUSG00000069170	0.0099652	1.848818418	Adgrv1
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ENSMUSG00000037852	0.00022283	1.848708074	Cpe
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ENSMUSG00000026896	0.03942037	1.847069455	Ifih1
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ENSMUSG00000036879	0.03965034	1.845851277	Phkb
ENSMUSG00000027488	0.03716966	1.84488962	Snta1
ENSMUSG00000029186	0.02446945	1.843833769	Pi4k2b
ENSMUSG00000031808	0.00040649	1.842915086	Slc27a1
ENSMUSG00000045275	0.02935461	1.842409485	Lca5l
ENSMUSG00000040624	0.04556868	1.841736487	Plekhg1
ENSMUSG00000021760	0.00649738	1.841336233	Gpx8
ENSMUSG00000070436	0.00041048	1.840229001	Serpinh1
ENSMUSG00000002808	0.00058524	1.839626003	Epdr1
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ENSMUSG00000018648	0.00450928	1.834293612	Dusp14
ENSMUSG00000026956	0.00194956	1.833959901	Uap1l1
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ENSMUSG00000053783	0.03747537	1.833516677	1700016K19Rik
ENSMUSG00000066258	0.04094488	1.833402357	Trim12a
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ENSMUSG00000002332	0.00069784	1.830129935	Dhrs1
ENSMUSG00000006784	0.02531486	1.829176405	Ttc25
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ENSMUSG00000031373	0.0205984	1.795966469	Car5b
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ENSMUSG00000028927	0.00453503	1.794965019	Padi2
ENSMUSG00000022912	0.02837062	1.794213041	Pros1
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ENSMUSG00000049929	0.02504188	1.793111495	Lpar4
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ENSMUSG00000032281	0.00069784	1.780549633	Acsbg1
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ENSMUSG00000032369	0.01147224	1.770763464	Plscr1
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ENSMUSG00000071103	0.00908042	1.769864856	1700029J07Rik
ENSMUSG00000040147	0.03560162	1.769251064	Maob
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ENSMUSG00000020415	0.01221763	1.763750018	Pttg1
ENSMUSG00000037902	0.00265725	1.763362059	Sirpa
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ENSMUSG00000028132	0.04722538	1.761671941	Tmem56
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ENSMUSG00000110080	0.00530593	1.743805281	RP23-4P23.1
ENSMUSG00000026586	0.00843706	1.743315571	Prrx1
ENSMUSG00000026946	0.01699732	1.742552128	Nmi
ENSMUSG00000035778	0.0298118	1.742473343	Ggta1
ENSMUSG00000025780	0.00533041	1.740673215	Itih5
ENSMUSG00000033192	0.04807108	1.738782695	Lpcat2
ENSMUSG00000030986	0.00235269	1.736987558	Dhx32
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ENSMUSG00000054612	0.04534381	1.728718757	Mgmt
ENSMUSG00000027977	0.03540411	1.727970704	Ndst3
ENSMUSG00000048332	0.00203034	1.727790727	Lhfp
ENSMUSG00000029781	0.00340342	1.72696968	Fkbp9
ENSMUSG00000036356	0.03005392	1.726709297	Csgalnact1
ENSMUSG00000021884	0.00385188	1.726627685	Hacl1
ENSMUSG00000020728	0.0244491	1.726043434	Cep112
ENSMUSG00000022763	0.00544791	1.725838885	Aifm3
ENSMUSG00000059482	0.00385188	1.724476837	2610301B20Rik
ENSMUSG00000056458	0.00872196	1.724107535	Mok
ENSMUSG00000075702	0.0206928	1.722624118	Selm
ENSMUSG00000033282	0.03762654	1.722072206	Rpgrip1l
ENSMUSG00000007872	0.00563236	1.721942096	Id3
ENSMUSG00000029167	0.00319626	1.720205703	Ppargc1a
ENSMUSG00000055676	0.04251673	1.719457978	Gm5069
ENSMUSG00000038296	0.01509473	1.719391635	Galnt18
ENSMUSG00000036611	0.001966	1.718380506	Eepd1
ENSMUSG00000036292	0.04202162	1.71545836	Gramd1c
ENSMUSG00000023809	0.02933789	1.714494321	Rps6ka2
ENSMUSG00000020733	0.00102768	1.713848251	Slc9a3r1
ENSMUSG00000022565	0.00406795	1.713401863	Plec
ENSMUSG00000047407	0.01152573	1.713006245	Tgif1
ENSMUSG00000029095	0.00769378	1.712914832	Ablim2

ENSMUSG00000026185	0.00739191	1.712449153	Igfbp5
ENSMUSG00000035032	0.04396298	1.712270025	Nek11
ENSMUSG00000037892	0.02505064	1.71105746	Pcdh18
ENSMUSG00000020937	0.02750923	1.708760029	Plcd3
ENSMUSG00000035095	0.01427324	1.708415261	Fam167a
ENSMUSG00000024180	0.03725476	1.707774455	Tmem8
ENSMUSG00000000958	0.02703484	1.707690012	Slc7a7
ENSMUSG00000029212	0.00764139	1.70664379	Gabrb1
ENSMUSG00000030276	0.01254275	1.706497723	Ttll3
ENSMUSG00000072762	0.02823485	1.706172961	4930522L14Rik
ENSMUSG00000072946	0.01833628	1.705957366	Ptgr2
ENSMUSG00000043629	0.01474809	1.705630771	1700019D03Rik
ENSMUSG00000060268	0.04880371	1.705257683	Gm1661
ENSMUSG00000030770	0.01339023	1.70458938	Parva
ENSMUSG00000021071	0.00753273	1.701822819	Trim9
ENSMUSG00000026227	0.00564044	1.701576368	2810459M11Rik
ENSMUSG00000053161	0.04123624	1.700194357	Daw1
ENSMUSG00000001918	0.01131733	1.699359289	Slc1a5
ENSMUSG00000026042	0.01539491	1.699260383	Col5a2
ENSMUSG00000032285	0.02963886	1.699030733	Dnaja4
ENSMUSG00000020930	0.02094303	1.698514444	Ccdc103
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ENSMUSG00000005803	0.01333338	1.696790164	Sqrdl
ENSMUSG00000051439	0.04045433	1.693787281	Cd14
ENSMUSG00000056144	0.02314095	1.693365892	Trim34a
ENSMUSG00000051427	0.02844867	1.69304437	Ccdc157
ENSMUSG00000055782	0.0479567	1.692752803	Abcd2
ENSMUSG00000060961	0.00192927	1.692604615	Slc4a4
ENSMUSG00000024782	0.00208953	1.692410038	Ak3
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ENSMUSG00000033016	0.01227483	1.689743147	Nfatc1
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ENSMUSG00000052397	0.00355916	1.688711573	Ezr
ENSMUSG00000020388	0.00846325	1.687729548	Pdlim4
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ENSMUSG00000017756	0.02849925	1.685963446	Slc12a7
ENSMUSG00000003526	0.00676738	1.685547932	Prodh
ENSMUSG00000028597	0.03355158	1.685118704	Gpx7
ENSMUSG00000048794	0.01427324	1.684230439	Cfap100
ENSMUSG00000027562	0.00249109	1.683655589	Car2
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ENSMUSG00000029386	0.00395612	1.683018593	Tctn2
ENSMUSG00000040697	0.03863099	1.68162904	Dnajc16
ENSMUSG00000025453	0.01794561	1.681211632	Nnt
ENSMUSG00000000693	0.01090348	1.680683145	Loxl3
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ENSMUSG00000025351	0.00665252	1.679048666	Cd63
ENSMUSG00000028278	0.03600915	1.678425528	Rragd
ENSMUSG00000031207	0.01179044	1.677259744	Msn
ENSMUSG00000022620	0.0087283	1.677081681	Arsa
ENSMUSG00000001942	0.01346914	1.676453595	Siae
ENSMUSG00000047992	0.01068942	1.676410954	Fam69c
ENSMUSG00000031880	0.04384094	1.67635247	Rrad
ENSMUSG00000029769	0.00398118	1.67614213	Ccdc136
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ENSMUSG00000086502	0.02753037	1.674569848	B130055M24Rik
ENSMUSG00000063704	0.01407668	1.674261846	Mapk15
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ENSMUSG00000026223	0.00095895	1.674080519	Itm2c
ENSMUSG00000030894	0.00190265	1.673989119	Tpp1
ENSMUSG00000030428	0.00061578	1.673416224	Ttyh1
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ENSMUSG00000028214	0.00742829	1.672895819	Gem
ENSMUSG00000052062	0.01096649	1.672667379	Pard3b
ENSMUSG00000059182	0.00679845	1.671937026	Skap2
ENSMUSG00000061758	0.00824714	1.67027275	Akr1b10
ENSMUSG00000015090	0.01090121	1.670086042	Ptgds
ENSMUSG00000044037	0.00924829	1.669266242	Als2cl
ENSMUSG00000024059	0.00530593	1.669132804	Clip4
ENSMUSG00000049571	0.02533527	1.668783849	Cfap46
ENSMUSG00000021130	0.01067882	1.667976052	Galnt16

ENSMUSG00000017390	0.00040802	1.667768418	Aldoc
ENSMUSG00000026200	0.01509715	1.667731801	Glb1l
ENSMUSG00000029153	0.01071782	1.667167218	Ociad2
ENSMUSG00000020777	0.01411979	1.665532963	Acox1
ENSMUSG00000010051	0.0188068	1.665163109	Hyal1
ENSMUSG00000014846	0.02144054	1.664901561	Tppp3
ENSMUSG00000024812	0.02487994	1.663470518	Tjp2
ENSMUSG00000037656	0.00474303	1.663078702	Slc20a2
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ENSMUSG00000028199	0.00688988	1.662440041	Cryz
ENSMUSG00000019820	0.00778061	1.662069675	Utrn
ENSMUSG00000028420	0.01461137	1.661481562	Tmem38b
ENSMUSG00000029178	0.00287794	1.661159824	Klf3
ENSMUSG00000030849	0.03697605	1.660626721	Fgfr2
ENSMUSG00000043164	0.01712795	1.660400819	Tmem212
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ENSMUSG00000013275	0.0279032	1.658152551	Slc41a1
ENSMUSG00000020263	0.00414814	1.657195987	Appl2
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ENSMUSG00000002980	0.03060077	1.654947985	Bcam
ENSMUSG00000018672	0.02892559	1.654876999	Copz2
ENSMUSG00000020175	0.00403406	1.654773965	Rab36
ENSMUSG00000033276	0.01819837	1.653656404	Stk36
ENSMUSG00000035133	0.04137633	1.652986113	Arhgap5
ENSMUSG00000019789	0.01955725	1.651645668	Hey2
ENSMUSG00000030323	0.01481122	1.65123854	Ift122
ENSMUSG00000026003	0.00161647	1.651007591	Acadl
ENSMUSG00000055137	0.01237583	1.648980943	Sugct
ENSMUSG00000021318	0.024525	1.648098777	Gli3
ENSMUSG00000024302	0.00993475	1.647850231	Dtna
ENSMUSG00000048581	0.01724946	1.647368264	E130311K13Rik
ENSMUSG00000040006	0.00514272	1.646175193	Ginm1
ENSMUSG00000020389	0.02828691	1.645828799	Cdkl3
ENSMUSG00000001555	0.01179044	1.645605985	Fkbp10
ENSMUSG00000029710	0.01117141	1.64365649	Ephb4
ENSMUSG00000028391	0.01241479	1.643189902	Wdr31
ENSMUSG00000040997	0.00080814	1.643086296	Abhd4
ENSMUSG00000000567	0.00096426	1.642988792	Sox9
ENSMUSG00000055254	0.00069784	1.64270965	Ntrk2
ENSMUSG00000038023	0.02810537	1.642640879	Atp6v0a2
ENSMUSG00000028128	0.00282479	1.641968486	F3
ENSMUSG00000060703	0.01189399	1.641296753	Cd302
ENSMUSG00000036908	0.03981601	1.640030069	Unc93b1
ENSMUSG00000042745	0.00866271	1.639896436	Id1
ENSMUSG00000057103	0.0212265	1.639795036	Nat8f1
ENSMUSG00000007097	0.0006278	1.639754495	Atp1a2
ENSMUSG00000049555	0.01359707	1.63948669	Tmie
ENSMUSG00000025937	0.04542783	1.639467265	Lactb2
ENSMUSG00000021848	0.00652254	1.639398796	Otx2
ENSMUSG00000037523	0.03054428	1.639388036	Mavs
ENSMUSG00000028691	0.00186278	1.638619787	Prdx1
ENSMUSG00000015312	0.03748546	1.638001284	Gadd45b
ENSMUSG00000057766	0.01768529	1.637985091	Ankrd29
ENSMUSG00000043065	0.01106013	1.63751058	Spice1
ENSMUSG00000027765	0.03069262	1.636949662	P2ry1
ENSMUSG00000036854	0.02711157	1.636462732	Hspb6
ENSMUSG00000030087	0.01387536	1.635746139	Klf15
ENSMUSG00000025757	0.02286122	1.633998374	Hspa4l
ENSMUSG00000024665	0.00091529	1.633194416	Fads2
ENSMUSG00000025283	0.00601868	1.632739226	Sat1
ENSMUSG00000039234	0.02505064	1.632597383	Sec24d
ENSMUSG00000020044	0.04241046	1.632053871	Timp3
ENSMUSG00000010663	0.00684376	1.630310659	Fads1
ENSMUSG00000025498	0.02891573	1.629875693	Irf7
ENSMUSG00000010095	0.00129716	1.629827197	Slc3a2
ENSMUSG00000036095	0.02740917	1.629218771	Dgkb
ENSMUSG00000030605	0.00054477	1.628747499	Mfge8
ENSMUSG00000016664	0.00938757	1.62874068	Pacsin2
ENSMUSG00000034573	0.03113354	1.62850819	Ptpn13
ENSMUSG00000062646	0.01312108	1.628417207	Ganc
ENSMUSG00000002108	0.03224458	1.628405782	Nr1h3
ENSMUSG00000021785	0.04375782	1.628163195	Ngly1
ENSMUSG00000093460	0.00423308	1.627838832	Six3os1

ENSMUSG00000038213	0.02022429	1.626358436	Tapbpl
ENSMUSG00000056938	0.02724292	1.626080548	Acbd4
ENSMUSG00000033083	0.03685737	1.626015881	Tbc1d4
ENSMUSG00000032246	0.04047325	1.625953213	Calml4
ENSMUSG00000037016	0.04249995	1.625309429	Frem2
ENSMUSG00000032609	0.00474474	1.625197854	Klhdc8b
ENSMUSG00000047793	0.04329834	1.624386032	Sned1
ENSMUSG00000020889	0.00649787	1.624279526	Nr1d1
ENSMUSG00000028064	0.02393816	1.623460057	Sema4a
ENSMUSG00000027078	0.01887026	1.623388411	Ube2l6
ENSMUSG00000028576	0.0041561	1.622906482	Ift74
ENSMUSG00000028573	0.02377325	1.622885631	Fggy
ENSMUSG00000031119	0.00883752	1.62285064	Gpc4
ENSMUSG00000055652	0.00656711	1.622654499	Klhl25
ENSMUSG00000024805	0.03550302	1.622547198	Pcgf5
ENSMUSG00000027221	0.00456679	1.622471582	Chst1
ENSMUSG00000028378	0.04793006	1.622398271	Ptgr1
ENSMUSG00000040549	0.04277122	1.6216042	Ckap5
ENSMUSG00000021186	0.02342767	1.620986887	Fbln5
ENSMUSG00000030107	0.00738958	1.620129618	Usp18
ENSMUSG00000099907	0.04308083	1.619816062	Gm10421
ENSMUSG00000026482	0.00501476	1.619739634	Rgl1
ENSMUSG00000028047	0.0111831	1.619263406	Thbs3
ENSMUSG00000026827	0.00392732	1.618172519	Gpd2
ENSMUSG00000063605	0.03480872	1.617530645	Ccdc102a
ENSMUSG00000027560	0.01072221	1.615861548	Dok5
ENSMUSG00000073600	0.02888953	1.614492084	Prob1
ENSMUSG00000078451	0.02524514	1.614376552	Ppil6
ENSMUSG00000021408	0.03409088	1.614126212	Ripk1
ENSMUSG00000035279	0.04012413	1.613854696	Ssc5d
ENSMUSG00000097756	0.02904416	1.613442099	A730056A06Rik
ENSMUSG00000034235	0.03317495	1.613357954	Usp54
ENSMUSG00000053334	0.01113632	1.613088029	Ficd
ENSMUSG00000049624	0.02452035	1.611152975	Slc17a5
ENSMUSG00000032224	0.02453443	1.609307874	Fam81a
ENSMUSG00000074063	0.03186319	1.60928594	Osgin1
ENSMUSG00000067818	0.01887502	1.608572001	Myl9
ENSMUSG00000029093	0.04307345	1.60795923	Sorcs2
ENSMUSG00000028893	0.00291773	1.607827935	Sesn2
ENSMUSG00000026893	0.04391688	1.607735015	Gca
ENSMUSG00000007891	0.00142379	1.607548904	Ctsd
ENSMUSG00000041598	0.00209395	1.606927157	Cdc42ep4
ENSMUSG00000031539	0.009183	1.605714002	Ap3m2
ENSMUSG00000030281	0.03503753	1.603673165	Il17rc
ENSMUSG00000061533	0.04908223	1.603515754	Cep128
ENSMUSG00000060802	0.00530593	1.60293669	B2m
ENSMUSG00000026728	0.00326378	1.6023205	Vim
ENSMUSG00000024892	0.00263037	1.60217898	Pcx
ENSMUSG00000023067	0.01295487	1.602113495	Cdkn1a
ENSMUSG00000032350	0.01581481	1.601380201	Gclc
ENSMUSG00000044786	0.00382871	1.600934643	Zfp36
ENSMUSG00000053646	0.02480646	1.599482214	Plxnb1
ENSMUSG00000097789	0.04005573	1.595123527	Gm2115
ENSMUSG00000030545	0.01077342	1.595107009	Pex11a
ENSMUSG00000021420	0.00530593	1.595088508	Fars2
ENSMUSG00000020432	0.00542181	1.594770595	Tcn2
ENSMUSG00000022440	0.00816641	1.594388766	C1qtnf6
ENSMUSG00000011154	0.04575233	1.594221502	Cfap161
ENSMUSG00000040759	0.01572527	1.593870185	Cmtm5
ENSMUSG00000025492	0.03341388	1.593867859	Ifitm3
ENSMUSG00000010660	0.00748485	1.5934181	Plcd1
ENSMUSG00000028530	0.01090882	1.592936385	Jak1
ENSMUSG00000039745	0.04865198	1.592460065	Htatip2
ENSMUSG00000035910	0.03525234	1.591164174	Dcdc2a
ENSMUSG00000041654	0.00475123	1.59002487	Slc39a11
ENSMUSG00000033350	0.04668643	1.588669779	Chst2
ENSMUSG00000029156	0.024525	1.588455918	Sgcb
ENSMUSG00000024357	0.01031914	1.588220775	Sil1
ENSMUSG00000036972	0.00677734	1.588022488	Zic4
ENSMUSG00000029778	0.02264697	1.587884983	Adcyap1r1
ENSMUSG00000040260	0.02795149	1.587299869	Daam2
ENSMUSG00000037624	0.00897408	1.58623057	Kcnk2
ENSMUSG00000021013	0.01988762	1.586066166	Ttc8
ENSMUSG00000022382	0.00263041	1.585562565	Wnt7b
ENSMUSG00000021796	0.02536675	1.585503525	Bmpr1a

ENSMUSG00000037966	0.03185226	1.58462795	Ninj1
ENSMUSG00000020319	0.0153772	1.584304351	Wdpcp
ENSMUSG00000028517	0.00052082	1.583612752	Plpp3
ENSMUSG00000017009	0.00474303	1.583339772	Sdc4
ENSMUSG00000042797	0.01934179	1.583064216	Aqp11
ENSMUSG00000045817	0.01292639	1.582358752	Zfp36l2
ENSMUSG00000021474	0.00589724	1.581691243	Sfxn1
ENSMUSG00000056737	0.04326056	1.580815141	Capg
ENSMUSG00000000751	0.00403406	1.57950925	Rpa1
ENSMUSG00000055737	0.04216091	1.579086458	Ghr
ENSMUSG00000067279	0.011359	1.578912364	Ppp1r3c
ENSMUSG00000020707	0.01711666	1.578298621	Rnf135
ENSMUSG00000026672	0.01171148	1.577410995	Optn
ENSMUSG00000048388	0.01900633	1.577138994	Fam171b
ENSMUSG00000018849	0.02892559	1.576756352	Wwc1
ENSMUSG00000020638	0.04152255	1.575555483	Cmpk2
ENSMUSG00000021094	0.01132879	1.574876921	Dhrs7
ENSMUSG00000007987	0.01096649	1.57319279	Ift22
ENSMUSG00000034903	0.03971022	1.572727217	Cobll1
ENSMUSG00000018217	0.00414814	1.572577861	Pmp22
ENSMUSG00000002459	0.00392425	1.572297613	Rgs20
ENSMUSG00000020570	0.01249461	1.571542115	Sypl
ENSMUSG00000044986	0.02014805	1.57151751	Tst
ENSMUSG00000053070	0.03110128	1.569007973	9230110C19Rik
ENSMUSG00000007041	0.01188729	1.567799449	Clic1
ENSMUSG00000032470	0.00508501	1.566778183	Mras
ENSMUSG00000016526	0.04998263	1.56511672	Dyrk3
ENSMUSG00000024588	0.01113632	1.564859004	Fech
ENSMUSG00000020085	0.02310113	1.564853722	Aifm2
ENSMUSG00000028944	0.00475123	1.564495464	Prkag2
ENSMUSG00000036120	0.01241479	1.564358039	Rfxank
ENSMUSG00000053113	0.00650062	1.564274138	Socs3
ENSMUSG00000039934	0.01780071	1.563722696	Gsap
ENSMUSG00000037594	0.01237583	1.563315362	BC022687
ENSMUSG00000023909	0.00296363	1.562576006	Paqr4
ENSMUSG00000024661	0.01728734	1.561637323	Fth1
ENSMUSG00000040370	0.00509793	1.561038867	Lyrm5
ENSMUSG00000022508	0.03977258	1.559837495	Bcl6
ENSMUSG00000025008	0.01524139	1.558838837	Tctn3
ENSMUSG00000052102	0.0091453	1.55857641	Gnpda1
ENSMUSG00000036606	0.03731046	1.557854173	Plxnb2
ENSMUSG00000003559	0.0205984	1.557379882	As3mt
ENSMUSG00000017754	0.00512643	1.557328529	Pltp
ENSMUSG00000028108	0.03519057	1.556855227	Ecm1
ENSMUSG00000063145	0.02781703	1.556731702	Bbs5
ENSMUSG00000036368	0.03206237	1.555329537	Rmdn2
ENSMUSG00000028124	0.00812425	1.554713105	Gclm
ENSMUSG00000020895	0.0365532	1.554610885	Tmem107
ENSMUSG00000040618	0.00816641	1.554261948	Pck2
ENSMUSG00000036995	0.02114009	1.55397873	Asap3
ENSMUSG00000028607	0.00656711	1.552405392	Cpt2
ENSMUSG00000021728	0.01068942	1.551370832	Emb
ENSMUSG00000025006	0.00202431	1.550975913	Sorbs1
ENSMUSG00000030225	0.01828578	1.550348295	Dera
ENSMUSG00000031024	0.02599926	1.549714535	St5
ENSMUSG00000037060	0.03821136	1.549356995	Prkcdbp
ENSMUSG00000066643	0.04151084	1.548871884	Wdr35
ENSMUSG00000019437	0.01273538	1.548197173	Tlcd1
ENSMUSG00000058486	0.01611275	1.548179534	Wdr91
ENSMUSG00000027739	0.02777518	1.547678292	Rab33b
ENSMUSG00000026664	0.00601868	1.547174998	Phyh
ENSMUSG00000032010	0.01093232	1.547052947	Usp2
ENSMUSG00000021871	0.01794616	1.54693784	Pnp
ENSMUSG00000022340	0.00993495	1.54681841	Sybu
ENSMUSG00000074158	0.04896549	1.54592891	Zfp976
ENSMUSG00000064036	0.01312108	1.545824541	Mro
ENSMUSG00000032121	0.01887502	1.545815228	Tmem218
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ENSMUSG00000021508	0.01562252	1.544905938	Cxcl14
ENSMUSG00000026433	0.02409	1.544560513	Rab29
ENSMUSG00000031765	0.01819837	1.543287854	Mt1
ENSMUSG00000072066	0.04516171	1.543221026	6720489N17Rik
ENSMUSG00000053931	0.00087352	1.542964945	Cnn3
ENSMUSG00000028766	0.00620711	1.5425833	Alpl
ENSMUSG00000040138	0.01124839	1.542132066	Ndp

ENSMUSG00000026202	0.02437787	1.541954128	Tuba4a
ENSMUSG00000030538	0.03074773	1.541281627	Cib1
ENSMUSG00000056116	0.0134619	1.540830479	H2-T22
ENSMUSG00000029049	0.0291493	1.539974006	Morn1
ENSMUSG00000006301	0.00748485	1.537868348	Tmbim1
ENSMUSG00000001418	0.01123193	1.537296745	Glmp
ENSMUSG00000029570	0.00562651	1.537159295	Lfng
ENSMUSG00000095362	0.04391688	1.536597321	Gm14325
ENSMUSG00000022272	0.00665113	1.535109183	Myo10
ENSMUSG00000054196	0.01438179	1.535007645	Cthrc1
ENSMUSG00000024251	0.02980274	1.534597983	Thada
ENSMUSG00000022106	0.01072402	1.53447577	Rcbtb2
ENSMUSG00000041801	0.01819837	1.532915119	Phlda3
ENSMUSG00000022453	0.00617533	1.532269626	Naga
ENSMUSG00000041028	0.00514272	1.531734004	Ghitm
ENSMUSG00000000202	0.02102618	1.52920971	Btbd17
ENSMUSG00000021676	0.03305518	1.527165178	Iqgap2
ENSMUSG00000073725	0.01382109	1.527101491	Lmbrd1
ENSMUSG00000029469	0.01249461	1.526528538	Ift81
ENSMUSG00000028273	0.03343263	1.526389554	Pdlim5
ENSMUSG00000022175	0.00426595	1.526305988	Lrp10
ENSMUSG00000028494	0.01619934	1.525592881	Plin2
ENSMUSG00000019039	0.02167174	1.525546912	Dalrd3
ENSMUSG00000028480	0.00657936	1.52522473	Glipr2
ENSMUSG00000018548	0.0387476	1.524295082	Trim37
ENSMUSG00000059824	0.04465944	1.524082175	Dbp
ENSMUSG00000004207	0.01112402	1.522371538	Psap
ENSMUSG00000041544	0.02283965	1.522290367	Ptchd2
ENSMUSG00000057329	0.0099652	1.521166386	Bcl2
ENSMUSG00000024558	0.02022429	1.520216984	Mapk4
ENSMUSG00000028923	0.00676738	1.51814147	Necap2
ENSMUSG00000034707	0.02298575	1.518096422	Gns
ENSMUSG00000026104	0.0293788	1.51766491	Stat1
ENSMUSG00000038286	0.03509283	1.5161575	Bphl
ENSMUSG00000026932	0.0036604	1.512272592	Nacc2
ENSMUSG00000024143	0.0387476	1.51211658	Rhoq
ENSMUSG00000017144	0.0160706	1.511588302	Rnd3
ENSMUSG00000090386	0.03935635	1.511525354	Mir99ahg
ENSMUSG00000038650	0.01393294	1.511471623	Rnh1
ENSMUSG00000027452	0.01887502	1.511015221	Acss1
ENSMUSG00000062753	0.04519257	1.510216411	AI413582
ENSMUSG00000025475	0.0205984	1.509445048	Adgra1
ENSMUSG00000033355	0.02196142	1.508746557	Rtp4
ENSMUSG00000055003	0.03761758	1.508164582	Lrtm2
ENSMUSG00000047786	0.0317916	1.507847898	Lix1
ENSMUSG00000044768	0.01325837	1.506666182	D1Ertd622e
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ENSMUSG00000030246	0.0028921	1.504363591	Ldhb
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ENSMUSG00000029070	0.01094364	1.502569217	Mxra8
ENSMUSG00000030339	0.00984099	1.502204625	Ltbr
ENSMUSG00000037287	0.0277014	1.501018747	Tbcel
ENSMUSG00000030495	0.03375032	1.500973604	Slc7a10
ENSMUSG00000045257	0.04419991	1.500810559	Morn2
ENSMUSG00000033174	0.02256888	1.500611145	Mgll
ENSMUSG00000074166	0.0476406	1.500364594	AW146154
ENSMUSG00000026958	0.01597992	1.500191915	Dpp7
ENSMUSG00000043964	0.02963886	1.499656301	Orai3
ENSMUSG00000052688	0.04529276	1.499142274	Rab7b
ENSMUSG00000040010	0.00474072	1.498248189	Slc7a5
ENSMUSG00000032515	0.04670723	1.497435463	Csrnp1
ENSMUSG00000050530	0.02258808	1.496127557	Fam171a1
ENSMUSG00000021792	0.00577439	1.495395466	Fam213a
ENSMUSG00000032320	0.00250504	1.494545553	Rcn2
ENSMUSG00000025810	0.03967527	1.493411957	Nrp1
ENSMUSG00000053398	0.00339108	1.492225316	Phgdh
ENSMUSG00000003420	0.03276344	1.491957155	Fcgrt
ENSMUSG00000024993	0.02883424	1.491889841	Fam45a
ENSMUSG00000026051	0.04608838	1.491473329	1500015O10Rik
ENSMUSG00000071637	0.02442841	1.489551981	Cebpd
ENSMUSG00000031347	0.01503955	1.489296517	Cetn2
ENSMUSG00000027668	0.01984664	1.488314946	Mfn1
ENSMUSG00000055401	0.03993353	1.487030596	Fbxo6

ENSMUSG00000073889	0.03909941	1.486994855	Il11ra1
ENSMUSG00000009291	0.00448939	1.486693619	Pttg1ip
ENSMUSG00000025911	0.00866271	1.486478011	Adhfe1
ENSMUSG00000028988	0.02963907	1.48637331	Ctnnbip1
ENSMUSG00000027230	0.04420675	1.48468513	Creb3l1
ENSMUSG00000025647	0.01820394	1.48379715	Shisa5
ENSMUSG00000035673	0.02945507	1.483052707	Sbno2
ENSMUSG00000026817	0.01044467	1.481718793	Ak1
ENSMUSG00000035356	0.03893729	1.480873461	Nfkbiz
ENSMUSG00000022756	0.04420675	1.480362147	Slc7a4
ENSMUSG00000036775	0.02234368	1.480200021	Decr2
ENSMUSG00000079418	0.04534381	1.479911363	Atg4a
ENSMUSG00000031755	0.0453348	1.478715764	Bbs2
ENSMUSG00000078670	0.02151903	1.478219074	Fam174b
ENSMUSG00000031565	0.00930991	1.477768647	Fgfr1
ENSMUSG00000001039	0.0329931	1.476206908	B9d1
ENSMUSG00000018340	0.00466864	1.47382499	Anxa6
ENSMUSG00000032231	0.00835533	1.472990011	Anxa2
ENSMUSG00000024538	0.01419251	1.471861239	Ppic
ENSMUSG00000021477	0.00502352	1.471460417	Ctsl
ENSMUSG00000028542	0.01588441	1.47114302	Slc6a9
ENSMUSG00000009772	0.04716066	1.470325358	Nuak2
ENSMUSG00000085793	0.04362411	1.469921259	Lin52
ENSMUSG00000040811	0.024525	1.469430133	Eml2
ENSMUSG00000001750	0.02781703	1.468997488	Tcirg1
ENSMUSG00000048915	0.02823485	1.468787725	Efna5
ENSMUSG00000062590	0.02873135	1.467931614	Armc9
ENSMUSG00000034926	0.03305518	1.467447011	Dhcr24
ENSMUSG00000034201	0.0122667	1.467339837	Gas2l1
ENSMUSG00000024187	0.00599045	1.466787698	Fam234a
ENSMUSG00000021900	0.01757191	1.466417764	Btd
ENSMUSG00000023921	0.02599926	1.465543434	Mut
ENSMUSG00000039908	0.04249995	1.465203074	Slc26a11
ENSMUSG00000017670	0.02045264	1.46385143	Elmo2
ENSMUSG00000028249	0.01429242	1.463230626	Sdcbp
ENSMUSG00000036503	0.00929746	1.463066261	Rnf13
ENSMUSG00000030555	0.02978757	1.462927617	Ttc23
ENSMUSG00000031785	0.00776572	1.462823663	Adgrg1
ENSMUSG00000021112	0.03122063	1.462818673	Mpp5
ENSMUSG00000008035	0.00677734	1.461808712	Mid1ip1
ENSMUSG00000031604	0.00345831	1.460419006	Msmo1
ENSMUSG00000026207	0.03576511	1.460334279	Speg
ENSMUSG00000026988	0.0462589	1.45842385	Wdsub1
ENSMUSG00000015843	0.04331518	1.457309636	Rxrg
ENSMUSG00000027122	0.04136016	1.456815043	Arl14ep
ENSMUSG00000029470	0.02094303	1.456602829	P2rx4
ENSMUSG00000025792	0.03196892	1.456590847	Slc25a10
ENSMUSG00000044252	0.03074773	1.456162802	Osbpl1a
ENSMUSG00000030739	0.02868497	1.456134781	Myh14
ENSMUSG00000032715	0.04924565	1.456060082	Trib3
ENSMUSG00000022108	0.00180348	1.455973454	Itm2b
ENSMUSG00000032018	0.01699732	1.4547942	Sc5d
ENSMUSG00000019823	0.04491319	1.454653884	Mical1
ENSMUSG00000031584	0.01603883	1.4517222	Gsr
ENSMUSG00000079235	0.04121643	1.451224469	Ccdc13
ENSMUSG00000030103	0.00713695	1.450843617	Bhlhe40
ENSMUSG00000026356	0.01096649	1.450589249	Dars
ENSMUSG00000019856	0.03893729	1.449703473	Fam184a
ENSMUSG00000025232	0.00643711	1.448741909	Hexa
ENSMUSG00000031819	0.00677734	1.448392066	Emc8
ENSMUSG00000038178	0.02309759	1.448367328	Slc43a2
ENSMUSG00000028223	0.01312108	1.447121529	Decr1
ENSMUSG00000014232	0.0387476	1.446811512	Cluap1
ENSMUSG00000024431	0.03095279	1.444949036	Nr3c1
ENSMUSG00000032314	0.01429242	1.444550346	Etfa
ENSMUSG00000004558	0.00192927	1.444525798	Ndrg2
ENSMUSG00000029752	0.00899775	1.444346941	Asns
ENSMUSG00000046182	0.04419991	1.444232923	Gsg1l
ENSMUSG00000033965	0.01411245	1.44384026	Slc16a2
ENSMUSG00000020284	0.03653674	1.442145197	1810043G02Rik
ENSMUSG00000019874	0.0178136	1.441613471	Fabp7
ENSMUSG00000022793	0.0150035	1.441541521	B4galt4
ENSMUSG00000010025	0.04420675	1.440209163	Aldh3a2
ENSMUSG00000039047	0.0151336	1.439370389	Pigk
ENSMUSG00000022132	0.02859135	1.437825706	Cldn10

ENSMUSG00000028657	0.01780071	1.436551771	Ppt1
ENSMUSG00000059248	0.01336951	1.436097823	42987
ENSMUSG00000017760	0.00573187	1.436053427	Ctsa
ENSMUSG00000022253	0.02147976	1.435920064	Nadk2
ENSMUSG00000075415	0.01820052	1.43591151	Fnbp1
ENSMUSG00000024534	0.03952269	1.435281241	Sncaip
ENSMUSG00000028962	0.0473114	1.434570503	Slc4a2
ENSMUSG00000022476	0.02615581	1.434555544	Polr3h
ENSMUSG00000025245	0.03022858	1.434414377	Lztfl1
ENSMUSG00000037706	0.00941464	1.433670824	Cd81
ENSMUSG00000021483	0.02775895	1.43351039	Cdk20
ENSMUSG00000024909	0.02258808	1.433372833	Efemp2
ENSMUSG00000041915	0.01611275	1.432935369	Ammecr1l
ENSMUSG00000046949	0.0370051	1.432764497	Nqo2
ENSMUSG00000036555	0.03185226	1.432652606	Iqce
ENSMUSG00000002325	0.01759069	1.43217286	Irf9
ENSMUSG00000022210	0.03870685	1.431929106	Dhrs4
ENSMUSG00000010755	0.00871879	1.431595961	Cars
ENSMUSG00000040289	0.01233657	1.431114506	Hey1
ENSMUSG00000004040	0.02363373	1.43064975	Stat3
ENSMUSG00000026509	0.01847436	1.429409254	Capn2
ENSMUSG00000025823	0.00910234	1.429241795	Pdia4
ENSMUSG00000040151	0.03870685	1.428282409	Hs2st1
ENSMUSG00000096753	0.04577328	1.427782035	Fam181a
ENSMUSG00000010064	0.00703788	1.427427377	Slc38a3
ENSMUSG00000036880	0.01070579	1.427335733	Acaa2
ENSMUSG00000065954	0.02068171	1.42723077	Tacc1
ENSMUSG00000031428	0.00637137	1.426980537	Zcchc18
ENSMUSG00000031156	0.02781703	1.42598698	Slc35a2
ENSMUSG00000053644	0.01489461	1.425630518	Aldh7a1
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ENSMUSG00000020644	0.01340719	1.422586699	Id2
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ENSMUSG00000016256	0.02258808	1.421731227	Ctsz
ENSMUSG00000028063	0.02775417	1.421001164	Lmna
ENSMUSG00000029175	0.01854227	1.420564108	Slc35f6
ENSMUSG00000070498	0.03501936	1.419807524	Tmem132b
ENSMUSG00000034908	0.01367885	1.419486994	Sidt2
ENSMUSG00000029446	0.01631379	1.419184247	Psph
ENSMUSG00000027559	0.03221732	1.418197981	Car3
ENSMUSG00000015889	0.01157827	1.417568434	Lta4h
ENSMUSG00000032349	0.0470436	1.417296429	Elovl5
ENSMUSG00000027168	0.04362411	1.417077988	Pax6
ENSMUSG00000021615	0.03060077	1.416897191	Xrcc4
ENSMUSG00000023259	0.03838607	1.416316156	Slc26a6
ENSMUSG00000062908	0.02256811	1.415686339	Acadm
ENSMUSG00000028048	0.01523335	1.414978886	Gba
ENSMUSG00000030352	0.04768148	1.414010681	Tspan9
ENSMUSG00000068923	0.00265725	1.413825795	Syt11
ENSMUSG00000026576	0.01188729	1.413667212	Atp1b1
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ENSMUSG00000037257	0.01427324	1.410193578	Aagab
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ENSMUSG00000020111	0.01206687	1.409372933	Micu1
ENSMUSG00000029455	0.01747473	1.408116963	Aldh2
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ENSMUSG00000028256	0.04722538	1.406138072	Odf2l
ENSMUSG00000032965	0.01611275	1.405917693	Ift57
ENSMUSG00000056698	0.02149767	1.405857485	Elmod3
ENSMUSG00000027303	0.04202162	1.405157057	Ptpra
ENSMUSG00000087408	0.03128166	1.404673015	Cers1
ENSMUSG00000068742	0.03178861	1.40343894	Cry2
ENSMUSG00000026773	0.03214983	1.402471138	Pfkfb3
ENSMUSG00000042616	0.04040399	1.402257428	Oscp1
ENSMUSG00000029209	0.02945507	1.402194676	Gnpda2
ENSMUSG00000039887	0.0149748	1.401749541	Alg14
ENSMUSG00000022899	0.01763386	1.401709841	Slc15a2
ENSMUSG00000027257	0.01738532	1.400833308	Pacsin3
ENSMUSG00000024039	0.02242552	1.400493739	Cbs
ENSMUSG00000030341	0.02151903	1.398041202	Tnfrsf1a

ENSMUSG00000017765	0.0298118	1.398023279	Slc12a4
ENSMUSG00000042210	0.04289028	1.395511972	Abhd14a
ENSMUSG00000027378	0.04452246	1.394539895	Nphp1
ENSMUSG00000031232	0.02998029	1.394276566	Magt1
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ENSMUSG00000019295	0.0229382	1.391470283	Tmem129
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ENSMUSG00000054226	0.04202162	1.389471942	Tprkb
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ENSMUSG00000023092	0.04437303	1.388077506	Fhl1
ENSMUSG00000021759	0.03499242	1.385679892	Plpp1
ENSMUSG00000043496	0.02683046	1.382839078	Tril
ENSMUSG00000040813	0.03685827	1.382348434	Tex264
ENSMUSG00000054477	0.04000427	1.381665068	Kcnn2
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ENSMUSG00000047090	0.03202547	1.378224899	Tmem198b
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ENSMUSG00000033629	0.03326716	1.376623133	Hacd3
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ENSMUSG00000025579	0.01653246	1.376001469	Gaa
ENSMUSG00000037031	0.01920318	1.372738478	Tspan15
ENSMUSG00000075590	0.02862111	1.371781777	Nrbp2
ENSMUSG00000031342	0.00262934	1.371677821	Gpm6b
ENSMUSG00000037747	0.01013024	1.371288466	Phyhipl
ENSMUSG00000022898	0.01851799	1.371226174	Dscr3
ENSMUSG00000024026	0.01279521	1.370228243	Glo1
ENSMUSG00000031451	0.03656242	1.368866943	Gas6
ENSMUSG00000003644	0.03826061	1.368722233	Rps6ka1
ENSMUSG00000031431	0.02181554	1.367994404	Tsc22d3
ENSMUSG00000015837	0.00606196	1.365798962	Sqstm1
ENSMUSG00000028673	0.04519257	1.364397078	Fuca1
ENSMUSG00000031983	0.0147692	1.363007089	2310022B05Rik
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ENSMUSG00000029575	0.04940982	1.361873225	Mmab
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ENSMUSG00000022537	0.02741469	1.339925184	Tmem44
ENSMUSG00000034210	0.03404733	1.338155009	Efcab14
ENSMUSG00000058254	0.00564044	1.33720866	Tspan7
ENSMUSG00000023010	0.01562252	1.336486456	Tmbim6
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ENSMUSG00000005667	0.03304611	1.334920442	Mthfd2
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ENSMUSG00000026421	0.03891515	1.331850098	Csrp1
ENSMUSG00000027286	0.03968727	1.331387488	Lrrc57
ENSMUSG00000048807	0.04687309	1.32923183	Slc35e4
ENSMUSG00000031960	0.04936709	1.327299118	Aars
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ENSMUSG00000026615	0.04329933	1.31239041	Eprs
ENSMUSG00000027423	0.03179303	1.312006995	Snx5
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ENSMUSG00000021417	0.04466684	1.299057811	Eci2
ENSMUSG00000022708	0.02971659	1.298914388	Zbtb20
ENSMUSG00000036752	0.02945753	1.297434029	Tubb4b
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ENSMUSG00000022186	0.02890272	1.289782134	Oxct1
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ENSMUSG00000038936	0.03679177	1.277758929	Sccpdh
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ENSMUSG00000061981	0.03931097	1.275694948	Flot2
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ENSMUSG00000024654	0.03480872	1.242624666	Asrgl1
ENSMUSG00000025268	0.04794295	1.228927916	Maged2
ENSMUSG00000028194	0.04975518	1.221887521	Ddah1
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ENSMUSG00000052727	0.02051058	-1.272890558	Map1b
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ENSMUSG00000058886	0.04787489	-1.276854481	Deaf1
ENSMUSG00000021288	0.04883723	-1.27686187	Klc1
ENSMUSG00000001034	0.04988529	-1.285943228	Mapk7
ENSMUSG00000064351	0.01819837	-1.2860973	mt-Co1
ENSMUSG00000024772	0.03935756	-1.287135703	Ehd1
ENSMUSG00000039194	0.04289028	-1.28965514	Rlbp1
ENSMUSG00000063511	0.03540411	-1.291027585	Snrnp70
ENSMUSG00000025575	0.04509472	-1.291893115	Cant1
ENSMUSG00000029126	0.03080815	-1.292876924	Nsg1
ENSMUSG00000038628	0.0462589	-1.294057205	Polr3k
ENSMUSG00000053477	0.01439482	-1.299345618	Tcf4
ENSMUSG00000004980	0.0129979	-1.299366004	Hnrnpa2b1
ENSMUSG00000001016	0.02380285	-1.303984821	Ilf2
ENSMUSG00000041740	0.04230269	-1.307803316	Rnf10
ENSMUSG00000026434	0.04485975	-1.309181547	Nucks1

ENSMUSG00000034165	0.04038958	-1.316217041	Ccnd3
ENSMUSG00000039218	0.03425628	-1.316486972	Srrm2
ENSMUSG00000057406	0.03156284	-1.317112458	Whsc1
ENSMUSG00000037750	0.04247916	-1.318907869	Fam222b
ENSMUSG00000064367	0.03771402	-1.319137833	mt-Nd5
ENSMUSG00000006398	0.03714371	-1.321795121	Cdc20
ENSMUSG00000006728	0.04883723	-1.324132814	Cdk4
ENSMUSG00000034377	0.04037579	-1.324262439	Tulp4
ENSMUSG00000043940	0.02624196	-1.327509581	Wdfy3
ENSMUSG00000022557	0.03989423	-1.328065153	Bop1
ENSMUSG00000026764	0.03375032	-1.329485288	Kif5c
ENSMUSG00000028926	0.04162416	-1.329918265	Cdk14
ENSMUSG00000046157	0.03818488	-1.331381915	Tmem229b
ENSMUSG00000023988	0.04180892	-1.332031441	Bysl
ENSMUSG00000022619	0.02945507	-1.335133485	Mapk8ip2
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ENSMUSG00000037742	0.0174796	-1.33696497	Eef1a1
ENSMUSG00000026797	0.04429453	-1.338462825	Stxbp1
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ENSMUSG00000040896	0.0430665	-1.339104498	Kcnd3
ENSMUSG00000042078	0.0497418	-1.339796995	Svop
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ENSMUSG00000001062	0.04961646	-1.341658357	Vps9d1
ENSMUSG00000061689	0.02810537	-1.342982814	Dlgap4
ENSMUSG00000032872	0.04644014	-1.343156881	Cyb5r4
ENSMUSG00000045411	0.02740917	-1.343447354	2410002F23Rik
ENSMUSG00000026890	0.03484597	-1.343621824	Lhx6
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ENSMUSG00000031730	0.04194091	-1.346494885	Dhodh
ENSMUSG00000030096	0.02964449	-1.346881696	Slc6a6
ENSMUSG00000009418	0.03711628	-1.348427136	Nav1
ENSMUSG00000061666	0.02980274	-1.349786299	Gdpd1
ENSMUSG00000042354	0.04308044	-1.349791962	Gnl3
ENSMUSG00000044528	0.03704656	-1.35008013	Tram1l1
ENSMUSG00000079036	0.04202028	-1.353712464	Alkbh1
ENSMUSG00000028833	0.0296512	-1.354292649	Ncdn
ENSMUSG00000003808	0.03156284	-1.354595397	Farsa
ENSMUSG00000078851	0.04799372	-1.356762581	Hist3h2a
ENSMUSG00000025237	0.02504188	-1.357032593	Parp6
ENSMUSG00000039361	0.03501936	-1.358863309	Picalm
ENSMUSG00000033326	0.04519257	-1.359351605	Kdm4a
ENSMUSG00000028826	0.0366907	-1.359775193	Tmem57
ENSMUSG00000050132	0.04743766	-1.364554787	Sarm1
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ENSMUSG00000007850	0.02022429	-1.365906856	Hnrnph1
ENSMUSG00000029755	0.03968727	-1.369732584	Dlx5
ENSMUSG00000040722	0.00987111	-1.371004039	Scamp5
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ENSMUSG00000066705	0.02958307	-1.373995112	Fxyd6
ENSMUSG00000020086	0.02423189	-1.376491731	H2afy2
ENSMUSG00000056296	0.04561971	-1.377346006	Synpr
ENSMUSG00000026424	0.01223708	-1.380172185	Gpr37l1
ENSMUSG00000024785	0.03562839	-1.382995382	Rcl1
ENSMUSG00000068735	0.01382792	-1.384027777	Trp53i11
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ENSMUSG00000017943	0.03181224	-1.38493303	Gdap1l1
ENSMUSG00000067336	0.04608838	-1.38588213	Bmpr2
ENSMUSG00000020524	0.03820727	-1.386251574	Gria1
ENSMUSG00000020740	0.0472345	-1.386286974	Gga3
ENSMUSG00000014773	0.04251673	-1.386806951	Dll1
ENSMUSG00000028488	0.04374477	-1.387248228	Sh3gl2
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ENSMUSG00000004530	0.04827624	-1.38851997	Coro1c
ENSMUSG00000022812	0.01355805	-1.389317705	Gsk3b
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ENSMUSG00000020069	0.01683497	-1.390750663	Hnrnph3
ENSMUSG00000035199	0.01530151	-1.391808208	Arl6ip5
ENSMUSG00000079111	0.04237637	-1.394687368	Kdelr2
ENSMUSG00000003810	0.04687617	-1.394989309	Mast2
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ENSMUSG00000027603	0.02190227	-1.402185519	Ggt7

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ENSMUSG00000021066	0.04350988	-1.403733494	Atl1
ENSMUSG00000025261	0.02523502	-1.404149133	Huwe1
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ENSMUSG00000036054	0.02804332	-1.408822716	Sugp2
ENSMUSG00000062380	0.01016015	-1.40902616	Tubb3
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ENSMUSG00000024969	0.01971269	-1.412541322	Mark2
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ENSMUSG00000025068	0.0336174	-1.415496656	Gsto1
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ENSMUSG00000005057	0.04274669	-1.416858665	Sh2b2
ENSMUSG00000024896	0.02095193	-1.416957299	Minpp1
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ENSMUSG00000002012	0.0387476	-1.41809835	Pnck
ENSMUSG00000031728	0.03208979	-1.419030463	Zfp821
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ENSMUSG00000017478	0.03846767	-1.430134574	Zc3h18
ENSMUSG00000036934	0.03202547	-1.43074294	4921524J17Rik
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ENSMUSG00000029581	0.01126574	-1.440117395	Fscn1
ENSMUSG00000017132	0.03617534	-1.440235581	Cyth1
ENSMUSG00000030268	0.0187273	-1.440407644	Bcat1
ENSMUSG00000036036	0.04599138	-1.440748672	Zfp57
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ENSMUSG00000048562	0.03196748	-1.444787663	Sp8
ENSMUSG00000001248	0.00588564	-1.444906043	Gramd1a
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ENSMUSG00000073293	0.04466755	-1.446946875	Nudt10
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ENSMUSG00000045128	0.04880371	-1.448270607	Rpl18a
ENSMUSG00000036377	0.02454084	-1.448667111	C530008M17Rik
ENSMUSG00000032666	0.02831062	-1.449109678	1700025G04Rik
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ENSMUSG00000011832	0.00833138	-1.450343945	Evi5l
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ENSMUSG00000056962	0.01475837	-1.460779947	Jmjd6
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ENSMUSG00000024897	0.04644094	-1.463140308	Apba1
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ENSMUSG00000033307	0.03509283	-1.481390199	Mif
ENSMUSG00000047888	0.01900102	-1.48352912	Tnrc6b
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ENSMUSG00000026623	0.03468868	-1.483772561	Lpgat1
ENSMUSG00000028639	0.02523502	-1.483776933	Ybx1
ENSMUSG00000027932	0.04255631	-1.483837321	Slc27a3
ENSMUSG00000025221	0.04961621	-1.484644426	Kcnip2
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ENSMUSG00000028974	0.03022858	-1.486515672	Dffa
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ENSMUSG00000033565	0.02314144	-1.493548802	Rbfox2
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ENSMUSG00000030209	0.04971717	-1.516102868	Grin2b
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ENSMUSG00000019841	0.02011393	-1.523301986	Rev3l
ENSMUSG00000064345	0.0149748	-1.524039377	mt-Nd2
ENSMUSG00000020262	0.03304611	-1.524377142	Adarb1
ENSMUSG00000064368	0.03328992	-1.524987242	mt-Nd6
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ENSMUSG00000044533	0.02312817	-1.526029992	Rps2
ENSMUSG00000007021	0.0086611	-1.528755589	Syngr3
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ENSMUSG00000029836	0.01891256	-1.529940673	Cbx3
ENSMUSG00000004933	0.02520224	-1.53033777	Matk
ENSMUSG00000007880	0.01852366	-1.530610077	Arid1a
ENSMUSG00000015766	0.04908223	-1.530637991	Eps8
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ENSMUSG00000028820	0.03156284	-1.533520408	Sfpq
ENSMUSG00000006442	0.01712795	-1.534226646	Srm
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ENSMUSG00000025855	0.00738181	-1.535806239	Prkar1b
ENSMUSG00000038861	0.04152255	-1.535905347	Pi4kb
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ENSMUSG00000039852	0.01132469	-1.538127919	Rere
ENSMUSG00000023033	0.04568435	-1.539384621	Scn8a
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ENSMUSG00000038984	0.02149767	-1.541604224	Tspyl5
ENSMUSG00000061589	0.01887502	-1.541950547	Dot1l
ENSMUSG00000044117	0.0054888	-1.543214727	2900011O08Rik
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ENSMUSG00000038900	0.04121643	-1.546451938	Rpl12
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ENSMUSG00000059273	0.011414	-1.54821614	Zc3h4
ENSMUSG00000045589	0.01268313	-1.54847843	Frrs1l
ENSMUSG00000045348	0.02000573	-1.548938608	Nyap1
ENSMUSG00000024044	0.03513546	-1.549868107	Epb41l3
ENSMUSG00000014837	0.01847436	-1.550729569	4931428F04Rik
ENSMUSG00000039735	0.01088098	-1.551153317	Fnbp1l
ENSMUSG00000029714	0.03176152	-1.55188912	Gigyf1
ENSMUSG00000028399	0.01164877	-1.552293799	Ptprd
ENSMUSG00000048355	0.0178517	-1.55255626	Arxes1
ENSMUSG00000037846	0.01599636	-1.552849761	Rtkn2
ENSMUSG00000035934	0.01887419	-1.553092303	Pknox2
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ENSMUSG00000029712	0.01761165	-1.560808377	Actl6b
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ENSMUSG00000022358	0.03938439	-1.56401709	Fbxo32
ENSMUSG00000029814	0.02945753	-1.564234745	Igf2bp3
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ENSMUSG00000069495	0.03866454	-1.564952622	Epc2
ENSMUSG00000034595	0.02756754	-1.565764725	Ppp1r18
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ENSMUSG00000029673	0.01456621	-1.580657008	Auts2
ENSMUSG00000037217	0.00454373	-1.580839374	Syn1
ENSMUSG00000022844	0.01486301	-1.580861313	Pdia5
ENSMUSG00000020520	0.00521016	-1.581360275	Galnt10
ENSMUSG00000038342	0.02404902	-1.582218344	Mlxip
ENSMUSG00000040631	0.04215538	-1.583012094	Dok4
ENSMUSG00000058756	0.00688789	-1.583345675	Thra
ENSMUSG00000028524	0.04152255	-1.584380597	Sgip1
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ENSMUSG00000033208	0.01154933	-1.584975842	S100b

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ENSMUSG00000027273	0.01096649	-1.587487034	Snap25
ENSMUSG00000006731	0.01988762	-1.587557732	B4galnt1
ENSMUSG00000031904	0.011359	-1.587784944	Slc7a6
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ENSMUSG00000053825	0.03285088	-1.590004732	Ppfia2
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ENSMUSG00000059005	0.03540411	-1.595039936	Hnrnpa3
ENSMUSG00000034883	0.02825556	-1.595416669	Lrr1
ENSMUSG00000046806	0.04983945	-1.596780924	3110062M04Rik
ENSMUSG00000037111	0.02869071	-1.598667592	Setd7
ENSMUSG00000037243	0.01854227	-1.599197297	Zfp692
ENSMUSG00000041040	0.02945507	-1.599394328	Fam117b
ENSMUSG00000036046	0.01331504	-1.599529935	5031439G07Rik
ENSMUSG00000040249	0.0036063	-1.601698185	Lrp1
ENSMUSG00000020190	0.04559083	-1.602106745	Mknk2
ENSMUSG00000028051	0.02890272	-1.602435344	Hcn3
ENSMUSG00000061411	0.01137193	-1.602478982	Nol4l
ENSMUSG00000036533	0.03347988	-1.606295363	Cdc42ep3
ENSMUSG00000020785	0.03208979	-1.607610064	Camkk1
ENSMUSG00000041417	0.00443352	-1.60815564	Pik3r1
ENSMUSG00000020547	0.00202661	-1.609105609	Bzw2
ENSMUSG00000069114	0.04391688	-1.609385668	Zbtb10
ENSMUSG00000022456	0.00795475	-1.609474157	42981
ENSMUSG00000009927	0.01938401	-1.611786137	Rps25
ENSMUSG00000042757	0.00517399	-1.612130109	Tmem108
ENSMUSG00000027577	0.0187273	-1.613366925	Chrna4
ENSMUSG00000029757	0.0277014	-1.6137147	Dync1i1
ENSMUSG00000028545	0.01592057	-1.615812118	Bend5
ENSMUSG00000005447	0.02963159	-1.616178661	Pafah1b3
ENSMUSG00000005442	0.02409	-1.617478221	Cic
ENSMUSG00000029108	0.01419251	-1.618631485	Pcdh7
ENSMUSG00000000915	0.01331947	-1.619818848	Hip1r
ENSMUSG00000047446	0.00287694	-1.62044843	Arl4a
ENSMUSG00000027669	0.0104998	-1.621312277	Gnb4
ENSMUSG00000014786	0.02607539	-1.621405834	Slc9a5
ENSMUSG00000059796	0.00272778	-1.622331533	Eif4a1
ENSMUSG00000034254	0.00993475	-1.627073588	Agpat1
ENSMUSG00000019843	0.00248102	-1.627197876	Fyn
ENSMUSG00000057897	0.00871879	-1.628836626	Camk2b
ENSMUSG00000030683	0.03357446	-1.629880522	Sez6l2
ENSMUSG00000056679	0.04542383	-1.630521562	Gpr173
ENSMUSG00000058761	0.04644014	-1.631207051	Rnf169
ENSMUSG00000000823	0.01428512	-1.631588246	Zfp512b
ENSMUSG00000041907	0.031082	-1.63175338	Gpr45
ENSMUSG00000041570	0.02234368	-1.631842711	Camsap2
ENSMUSG00000030000	0.00385188	-1.633997378	Add2
ENSMUSG00000011884	0.00361286	-1.634029269	Gltp
ENSMUSG00000039716	0.01339023	-1.634084308	Dock3
ENSMUSG00000060314	0.04537405	-1.636043385	Zfp941
ENSMUSG00000003863	0.02452035	-1.637063411	Ppfia3
ENSMUSG00000037126	0.00656711	-1.637432683	Psd
ENSMUSG00000031642	0.0411698	-1.63810127	Sh3rf1
ENSMUSG00000037896	0.04189791	-1.638196193	Rcor1
ENSMUSG00000046330	0.03967527	-1.639534235	Rpl37a
ENSMUSG00000027966	0.03605386	-1.641499605	Col11a1
ENSMUSG00000051243	0.01745585	-1.641512974	Islr2
ENSMUSG00000087620	0.03961972	-1.641922449	5330434G04Rik
ENSMUSG00000021936	0.02523502	-1.642706357	Mapk8
ENSMUSG00000021754	0.00502352	-1.643207966	Map3k1
ENSMUSG00000058230	0.02504188	-1.643275867	Arhgap35
ENSMUSG00000046449	0.02026938	-1.643902851	C77370
ENSMUSG00000055670	0.01359707	-1.644324927	Zzef1
ENSMUSG00000023495	0.0034695	-1.645509453	Pcbp4

ENSMUSG00000038538	0.00993285	-1.645777927	Ubn2
ENSMUSG00000029120	0.04865198	-1.647615414	Ppp2r2c
ENSMUSG00000030600	0.01819837	-1.64797177	Lrfn1
ENSMUSG00000061601	0.03409088	-1.648175056	Pclo
ENSMUSG00000106019	0.01456621	-1.648973848	Gm43672
ENSMUSG00000028137	0.03986873	-1.649956805	Celf3
ENSMUSG00000034248	0.0317176	-1.6501127	Slc25a37
ENSMUSG00000032288	0.01572527	-1.650444912	Imp3
ENSMUSG00000032724	0.01999568	-1.651332312	Abtb2
ENSMUSG00000038002	0.04216091	-1.654681174	Cramp1l
ENSMUSG00000044433	0.02015632	-1.65647404	Camsap3
ENSMUSG00000033419	0.03305518	-1.657334969	Snap91
ENSMUSG00000053693	0.04104244	-1.659426883	Mast1
ENSMUSG00000060780	0.01382792	-1.661777633	Lrrtm1
ENSMUSG00000029438	0.00769637	-1.662201611	Bcl7a
ENSMUSG00000021303	0.013718	-1.663392653	Gng4
ENSMUSG00000036948	0.01188729	-1.663404074	BC037034
ENSMUSG00000046699	0.04827438	-1.665356114	Slitrk4
ENSMUSG00000031840	0.00474065	-1.667474731	Rab3a
ENSMUSG00000047675	0.03748817	-1.668339559	Rps8
ENSMUSG00000032265	0.03967527	-1.668362741	Fam46a
ENSMUSG00000030795	0.00357088	-1.669255068	Fus
ENSMUSG00000043895	0.01215153	-1.669981762	S1pr2
ENSMUSG00000004383	0.01359707	-1.670624222	Large
ENSMUSG00000036466	0.04391777	-1.670892523	Megf11
ENSMUSG00000097451	0.04230269	-1.672483646	Rian
ENSMUSG00000043388	0.00801069	-1.673747057	Tmem130
ENSMUSG00000050822	0.00414279	-1.674006466	Slc29a4
ENSMUSG00000005533	0.01162396	-1.674270777	Igf1r
ENSMUSG00000054737	0.04210887	-1.675026253	Zfp182
ENSMUSG00000019878	0.01339023	-1.675865981	Hsf2
ENSMUSG00000082229	0.027393	-1.67698378	Nap1l2
ENSMUSG00000053199	0.02290499	-1.677660704	Arhgap20
ENSMUSG00000038486	0.00677475	-1.678203055	Sv2a
ENSMUSG00000026344	0.01988762	-1.679656755	Lypd1
ENSMUSG00000025451	0.04344242	-1.680433031	Paip1
ENSMUSG00000031012	0.00328632	-1.68218335	Cask
ENSMUSG00000023019	0.00386411	-1.6831029	Gpd1
ENSMUSG00000027584	0.01722102	-1.687893185	Oprl1
ENSMUSG00000029478	0.01167308	-1.688049586	Ncor2
ENSMUSG00000041268	0.02504188	-1.689622996	Dmxl2
ENSMUSG00000027293	0.03593691	-1.689654129	Ehd4
ENSMUSG00000031790	0.00531806	-1.691075926	Mmp15
ENSMUSG00000020173	0.01615997	-1.692632069	Cobl
ENSMUSG00000061436	0.00474303	-1.693705743	Hipk2
ENSMUSG00000034818	0.03150867	-1.693926837	Celf5
ENSMUSG00000097767	0.02625888	-1.696176785	Miat
ENSMUSG00000097195	0.01382109	-1.697437263	Snhg5
ENSMUSG00000056812	0.01130047	-1.697875684	St8sia3
ENSMUSG00000037887	0.01072221	-1.698009871	Dusp8
ENSMUSG00000075028	0.0462589	-1.698354653	Prdm11
ENSMUSG00000037029	0.03820727	-1.698722601	Zfp146
ENSMUSG00000018411	0.00331774	-1.698914633	Mapt
ENSMUSG00000015202	0.01179285	-1.699128984	Cnksr3
ENSMUSG00000042460	0.01638503	-1.70094751	C1galt1
ENSMUSG00000052372	0.02446945	-1.701482764	Il1rapl1
ENSMUSG00000033578	0.0036604	-1.701582507	Tmem35a
ENSMUSG00000086290	0.02758395	-1.702811755	Snhg12
ENSMUSG00000040653	0.00795475	-1.702924153	Ppp1r14c
ENSMUSG00000038020	0.04559083	-1.7029965	Rapgefl1
ENSMUSG00000003657	0.00445236	-1.704708027	Calb2
ENSMUSG00000053046	0.04420675	-1.706553309	Brsk2
ENSMUSG00000079481	0.04583538	-1.707907302	Nhsl2
ENSMUSG00000074461	0.02945507	-1.707914438	Gm10699
ENSMUSG00000005125	0.02582963	-1.712432213	Ndrg1
ENSMUSG00000025576	0.01854227	-1.713451388	Rbfox3
ENSMUSG00000001786	0.00302478	-1.713454934	Fbxo7
ENSMUSG00000041729	0.0054119	-1.717359783	Coro2b
ENSMUSG00000037110	0.03223586	-1.719050393	Ralgapa2
ENSMUSG00000098234	0.04793499	-1.719184555	Snhg6
ENSMUSG00000028634	0.03549521	-1.719289373	Hivep3
ENSMUSG00000038648	0.01847436	-1.71956753	Creb3l2
ENSMUSG00000045007	0.02461703	-1.719875001	Tubg2
ENSMUSG00000024084	0.01274075	-1.720250575	Qpct
ENSMUSG00000052551	0.01621044	-1.721578127	Adarb2

ENSMUSG00000055421	0.00746768	-1.721755062	Pcdh9
ENSMUSG00000029765	0.01325837	-1.721847107	Plxna4
ENSMUSG00000073557	0.02891573	-1.723610775	Ppp1r12b
ENSMUSG00000028572	0.0398016	-1.724178348	Hook1
ENSMUSG00000042401	0.00895634	-1.724559622	Crtac1
ENSMUSG00000026558	0.00714131	-1.724898945	Uck2
ENSMUSG00000031409	0.04391688	-1.726881931	Tceal6
ENSMUSG00000094910	0.00544791	-1.727373877	D430019H16Rik
ENSMUSG00000004626	0.03846909	-1.727835172	Stxbp2
ENSMUSG00000026812	0.00661108	-1.728301675	Tsc1
ENSMUSG00000046546	0.01123193	-1.730401206	Fam43a
ENSMUSG00000027581	0.00793891	-1.730884541	Stmn3
ENSMUSG00000068373	0.01887502	-1.731882413	D430041D05Rik
ENSMUSG00000033214	0.04012413	-1.733640631	Slitrk5
ENSMUSG00000026278	0.00532416	-1.734679785	Bok
ENSMUSG00000007944	0.02022759	-1.735414013	Ttc9b
ENSMUSG00000109321	0.02130535	-1.735416294	A330076H08Rik
ENSMUSG00000024260	0.0117712	-1.735933518	Sap130
ENSMUSG00000042388	0.01518916	-1.739549034	Dlgap3
ENSMUSG00000050022	0.01073947	-1.739760239	Amz1
ENSMUSG00000034269	0.00774959	-1.741977827	Setd5
ENSMUSG00000005045	0.01293665	-1.74288601	Chd5
ENSMUSG00000042390	0.00692083	-1.743838506	Gatad2b
ENSMUSG00000056413	0.03685827	-1.746131433	Adap1
ENSMUSG00000040003	0.00486166	-1.746217709	Magi2
ENSMUSG00000029580	0.00344228	-1.74667949	Actb
ENSMUSG00000025870	0.02505064	-1.750123203	Arl10
ENSMUSG00000069601	0.00385188	-1.752180606	Ank3
ENSMUSG00000058006	0.01011956	-1.753435019	Mdn1
ENSMUSG00000025889	0.00793891	-1.753936985	Snca
ENSMUSG00000007207	0.01273538	-1.755049811	Stx1a
ENSMUSG00000039328	0.00142779	-1.756992579	Rnf122
ENSMUSG00000098702	0.03301028	-1.75811154	1500015A07Rik
ENSMUSG00000030657	0.00402041	-1.75841435	Xylt1
ENSMUSG00000051331	0.03536083	-1.75966313	Cacna1c
ENSMUSG00000051242	0.01540233	-1.76352096	Pcdhb9
ENSMUSG00000008153	0.00837206	-1.76388648	Clstn3
ENSMUSG00000022935	0.01707207	-1.764793144	Grik1
ENSMUSG00000053519	0.00577439	-1.764990992	Kcnip1
ENSMUSG00000051550	0.00422517	-1.767989884	Zfp579
ENSMUSG00000036882	0.00322412	-1.76829275	Arhgap33
ENSMUSG00000017376	0.00908995	-1.768803355	Nlk
ENSMUSG00000059146	0.00536411	-1.769850454	Ntrk3
ENSMUSG00000089809	0.00250272	-1.769971946	A930011G23Rik
ENSMUSG00000024240	0.00430873	-1.772881383	Epc1
ENSMUSG00000004366	0.03540411	-1.773433263	Sst
ENSMUSG00000110523	0.01304152	-1.773546677	RP24-94F12.2
ENSMUSG00000006930	0.001669	-1.775043437	Hap1
ENSMUSG00000042594	0.01767902	-1.775674868	Sh2b3
ENSMUSG00000042744	0.01072382	-1.779579611	Gm15800
ENSMUSG00000049804	0.01146311	-1.779803195	Armcx4
ENSMUSG00000058966	0.0323242	-1.780892621	Fam57b
ENSMUSG00000042364	0.00344228	-1.781515368	Snx18
ENSMUSG00000022994	0.01573475	-1.782460228	Adcy6
ENSMUSG00000028358	0.01562252	-1.782573566	Zfp618
ENSMUSG00000052852	0.01428512	-1.782774271	Reep1
ENSMUSG00000030435	0.00657936	-1.785681796	U2af2
ENSMUSG00000052364	0.04384094	-1.786424237	B630019K06Rik
ENSMUSG00000041235	0.00224911	-1.786963109	Chd7
ENSMUSG00000046691	0.00738181	-1.787399148	Chtf8
ENSMUSG00000030852	0.00256581	-1.788730938	Tacc2
ENSMUSG00000008658	0.02094303	-1.790323797	Rbfox1
ENSMUSG00000079523	0.03224458	-1.790445148	Tmsb10
ENSMUSG00000060568	0.03846767	-1.790465473	Fam78b
ENSMUSG00000050071	0.01768529	-1.790579823	Bex1
ENSMUSG00000048978	0.01312108	-1.79411419	Nrsn1
ENSMUSG00000037172	0.01603883	-1.795196406	E330009J07Rik
ENSMUSG00000028804	0.01091424	-1.795545557	Csmd2
ENSMUSG00000024299	0.00742829	-1.796917898	Adamts10
ENSMUSG00000050954	0.02599926	-1.797039597	Zfp169
ENSMUSG00000020121	0.02553223	-1.79904286	Srgap1
ENSMUSG00000028937	0.00339108	-1.799719789	Acot7
ENSMUSG00000075700	0.01998249	-1.803032494	Selt
ENSMUSG00000038453	0.01146401	-1.803765905	Srcin1
ENSMUSG00000070476	0.01359707	-1.805243432	Fam217b

ENSMUSG00000028654	0.00224529	-1.806467634	Mycl
ENSMUSG00000041351	0.00096426	-1.807948367	Rap1gap
ENSMUSG00000085385	0.00388182	-1.809687468	Snhg17
ENSMUSG00000042436	0.01179285	-1.810371108	Mfap4
ENSMUSG00000019235	0.01623261	-1.810481225	Rps6kl1
ENSMUSG00000025427	0.03094331	-1.810968606	Rnf165
ENSMUSG00000030223	0.04325823	-1.811214238	Ptpro
ENSMUSG00000040907	0.00091505	-1.811236181	Atp1a3
ENSMUSG00000055761	0.01475837	-1.8122091	Nkain3
ENSMUSG00000033762	0.02039199	-1.812826067	Recql4
ENSMUSG00000108414	0.01540233	-1.814450404	Snhg1
ENSMUSG00000027238	0.0036063	-1.816041193	Frmd5
ENSMUSG00000032503	0.00677734	-1.816636248	Arpp21
ENSMUSG00000021258	0.04627028	-1.8191637	Ccnk
ENSMUSG00000039838	0.02372143	-1.828016633	Slc45a1
ENSMUSG00000025743	0.0036063	-1.828920027	Sdc3
ENSMUSG00000038576	0.00202686	-1.828974777	Susd4
ENSMUSG00000075284	0.00501029	-1.830544914	Wipf1
ENSMUSG00000040797	0.01712795	-1.831081025	Iqsec3
ENSMUSG00000022211	0.0117712	-1.831225238	Lrrc16b
ENSMUSG00000101599	0.03516646	-1.833799086	Gm20342
ENSMUSG00000048899	0.02375854	-1.83733957	Rimkla
ENSMUSG00000021892	0.00708484	-1.841810281	Sh3bp5
ENSMUSG00000097545	0.03202547	-1.84334622	Mir124a-1hg
ENSMUSG00000022332	0.01524139	-1.844859341	Khdrbs3
ENSMUSG00000063142	0.04568435	-1.847857358	Kcnma1
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ENSMUSG00000064125	0.00685125	-1.849869832	Prr36
ENSMUSG00000020431	0.03293598	-1.853807195	Adcy1
ENSMUSG00000099478	0.02746066	-1.854699716	Gm28370
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ENSMUSG00000104389	0.02272894	-1.856678443	Gm37034
ENSMUSG00000071659	0.03553012	-1.85891588	Hnrnpul2
ENSMUSG00000025478	0.00071753	-1.861306918	Dpysl4
ENSMUSG00000033705	0.00918785	-1.863991788	Stard9
ENSMUSG00000031605	0.01096649	-1.867876475	Klhl2
ENSMUSG00000035969	0.00555141	-1.868075563	Rusc2
ENSMUSG00000028468	0.02959645	-1.870577485	Rgp1
ENSMUSG00000048707	0.00357008	-1.87214097	Tprn
ENSMUSG00000029510	0.01999568	-1.873157316	Gpc2
ENSMUSG00000023755	0.00705237	-1.876301186	Rhebl1
ENSMUSG00000059791	0.00783601	-1.876536716	Nrm
ENSMUSG00000063455	0.00583142	-1.876804952	D630045J12Rik
ENSMUSG00000024174	0.02037466	-1.876960078	Pot1b
ENSMUSG00000046574	0.03704656	-1.878848121	Prr12
ENSMUSG00000037855	0.0178517	-1.880045824	Zfp365
ENSMUSG00000028906	0.00795475	-1.880809568	Epb41
ENSMUSG00000039470	0.00413988	-1.881524486	Zdhhc2
ENSMUSG00000032297	0.01096649	-1.882210582	Celf6
ENSMUSG00000042579	0.03591691	-1.882653651	4632404H12Rik
ENSMUSG00000024501	0.00066549	-1.885940978	Dpysl3
ENSMUSG00000027612	0.02837062	-1.887068911	Mmp24
ENSMUSG00000060206	0.02414092	-1.887085878	Zfp462
ENSMUSG00000025161	0.00126758	-1.887909218	Slc16a3
ENSMUSG00000032531	0.02846861	-1.889198335	Amotl2
ENSMUSG00000026447	0.01953262	-1.889480053	Pik3c2b
ENSMUSG00000020181	0.00797598	-1.889522356	Nav3
ENSMUSG00000030401	0.00355916	-1.891313406	Rtn2
ENSMUSG00000020483	0.00665252	-1.892467592	Dynll2
ENSMUSG00000041642	0.00142489	-1.893154089	Kif21b
ENSMUSG00000021730	0.04230715	-1.893654213	Hcn1
ENSMUSG00000031028	0.01498165	-1.900030405	Tub
ENSMUSG00000034891	0.02194771	-1.900522827	Sncb
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ENSMUSG00000033615	0.00122666	-1.903279003	Cplx1
ENSMUSG00000052889	0.00689121	-1.904272927	Prkcb
ENSMUSG00000067889	0.00392425	-1.90474775	Sptbn2
ENSMUSG00000051065	0.0041561	-1.91181052	Mb21d2
ENSMUSG00000042751	0.00319626	-1.913417126	Nmnat2
ENSMUSG00000026955	0.00205647	-1.915994359	Sapcd2
ENSMUSG00000020354	0.03685737	-1.919788998	Sgcd
ENSMUSG00000050914	0.00598856	-1.921184979	Ankrd37
ENSMUSG00000063434	0.02923802	-1.923735765	Sorcs3
ENSMUSG00000049148	0.01117809	-1.923765126	Plcxd3
ENSMUSG00000025612	0.00689121	-1.924868509	Bach1

ENSMUSG00000060882	0.00249109	-1.925371157	Kcnd2
ENSMUSG00000005672	0.03060077	-1.926688064	Kit
ENSMUSG00000009216	0.02314144	-1.929985832	Fam163b
ENSMUSG00000030350	0.02991228	-1.930061899	Prmt8
ENSMUSG00000100826	0.01649236	-1.930114734	Snhg14
ENSMUSG00000024042	0.01176963	-1.93142603	Sik1
ENSMUSG00000025876	0.01509473	-1.932081218	Unc5a
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ENSMUSG00000030351	0.02494615	-1.934234796	Tspan11
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ENSMUSG00000020812	0.00880098	-1.937159184	1810032O08Rik
ENSMUSG00000062995	0.00385188	-1.937480855	Ica1
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ENSMUSG00000029219	0.01318629	-1.953212543	Slc10a4
ENSMUSG00000058297	0.00492948	-1.954012662	Spock2
ENSMUSG00000052949	0.04600273	-1.954111246	Rnf157
ENSMUSG00000074873	0.0462589	-1.957625709	AI606181
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ENSMUSG00000025892	0.01250087	-1.971992143	Gria4
ENSMUSG00000089726	0.04221989	-1.973045282	Mir17hg
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ENSMUSG00000020241	0.00530593	-1.980728449	Col6a2
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ENSMUSG00000097769	0.02267807	-1.982422918	Snhg4
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ENSMUSG00000025468	0.01090348	-1.985079747	Caly
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ENSMUSG00000040721	0.0134251	-1.986352569	Zfhx2
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ENSMUSG00000079020	0.00466864	-1.990680136	Slc45a4
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ENSMUSG00000104597	0.03820727	-1.995012723	B230334C09Rik
ENSMUSG00000017386	0.00066549	-1.995903577	Traf4
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ENSMUSG00000092203	0.00862775	-1.999728256	1110038B12Rik
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ENSMUSG00000073164	0.04528502	-2.112513553	2410018L13Rik
ENSMUSG00000041774	0.01672434	-2.119362006	Ydjc
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ENSMUSG00000036242	0.013586	-2.137045577	3632451O06Rik
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ENSMUSG00000052581	0.01407668	-2.140211684	Lrrtm4
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ENSMUSG00000051790	0.02606456	-2.235671466	Nlgn2
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ENSMUSG00000023473	0.0028921	-2.263287382	Celsr3
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ENSMUSG00000020312	0.00821173	-2.273877858	Shc2
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ENSMUSG00000038608	0.00339108	-2.290009049	Dock10
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ENSMUSG00000091475	0.00031923	-2.361700969	2810468N07Rik
ENSMUSG00000025318	0.00068656	-2.363723005	Jph3
ENSMUSG00000056158	0.02891573	-2.375981548	Car10
ENSMUSG00000026147	0.00211085	-2.383633633	Col9a1
ENSMUSG00000021263	0.02781703	-2.384471268	Degs2
ENSMUSG00000051062	0.02215048	-2.384676238	Fbll1
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ENSMUSG00000044349	0.00261392	-2.392189023	Snhg11
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ENSMUSG00000067028	0.01616315	-2.399940232	Cntnap5b
ENSMUSG00000034771	0.00067425	-2.4005524	Tle2
ENSMUSG00000029608	0.00373229	-2.403891004	Rph3a
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ENSMUSG00000057315	0.03059861	-2.448355166	Arhgap24
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ENSMUSG00000047507	0.0086231	-2.451314967	Baiap3
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ENSMUSG00000046321	0.03276344	-2.460694328	Hs3st2
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ENSMUSG00000037872	0.03329512	-2.476335604	Ackr1
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ENSMUSG00000036913	0.00067628	-2.543702913	Trim67
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ENSMUSG00000097755	0.03711628	-2.589372703	2010110K18Rik
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ENSMUSG00000091754	0.03082084	-2.601239624	Gm3636
ENSMUSG00000032035	0.00272778	-2.609360072	Ets1
ENSMUSG00000032268	0.00787326	-2.611494993	Tmprss5
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ENSMUSG00000013415	0.0493856	-2.636212233	Igf2bp1
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ENSMUSG00000039452	0.00040084	-2.770108636	Snx22
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ENSMUSG00000076439	0.04662594	-2.813757533	Mog

ENSMUSG00000043068	0.01268313	-2.818324694	Fam89a
ENSMUSG00000023017	0.00209924	-2.822604295	Asic1
ENSMUSG00000021194	0.00036934	-2.826673805	Chga
ENSMUSG00000030450	0.03095279	-2.827372539	Oca2
ENSMUSG00000029231	0.0041561	-2.830288373	Pdgfra
ENSMUSG00000048304	0.00128622	-2.832131139	Slitrk3
ENSMUSG00000097109	0.03935635	-2.832813148	Gm26580
ENSMUSG00000105753	0.01634392	-2.834972652	Gm43847
ENSMUSG00000025912	0.00857514	-2.849672313	Mybl1
ENSMUSG00000041773	0.01333067	-2.85336954	Enc1
ENSMUSG00000022263	0.0005587	-2.868043188	Trio
ENSMUSG00000034265	0.00095611	-2.871150238	Zdhhc14
ENSMUSG00000050830	0.00589724	-2.886457717	Vwc2
ENSMUSG00000050321	0.00086449	-2.904686896	Neto1
ENSMUSG00000024672	0.01767902	-2.911071153	Ms4a7
ENSMUSG00000039830	0.00795475	-2.916220243	Olig2
ENSMUSG00000050295	0.0479567	-2.921227208	Foxc1
ENSMUSG00000089941	0.00791052	-2.931325081	Gm16168
ENSMUSG00000031952	0.01331504	-2.94165875	Chst5
ENSMUSG00000035131	0.00071574	-2.948054749	Brinp3
ENSMUSG00000007594	0.02214022	-2.953029808	Hapln4
ENSMUSG00000001985	0.00248102	-2.967601179	Grik3
ENSMUSG00000055022	0.00373119	-2.980464049	Cntn1
ENSMUSG00000022096	0.00454929	-2.989649341	Hr
ENSMUSG00000056481	0.00487832	-2.994181445	Cd248
ENSMUSG00000062591	2.7812E-05	-3.008673023	Tubb4a
ENSMUSG00000033007	0.00256915	-3.015146682	Asic4
ENSMUSG00000097823	0.03074773	-3.02333453	Gm16701
ENSMUSG00000069516	0.00033801	-3.028594518	Lyz2
ENSMUSG00000022231	0.00040649	-3.028660854	Sema5a
ENSMUSG00000042195	0.00237976	-3.030670886	Slc35f2
ENSMUSG00000002799	0.01815307	-3.035119208	Jag2
ENSMUSG00000001988	0.00688988	-3.04358013	Npas1
ENSMUSG00000062044	0.02276075	-3.045240521	Lmtk3
ENSMUSG00000025909	0.00514272	-3.045280305	Sntg1
ENSMUSG00000048537	0.00019681	-3.059158631	Phldb1
ENSMUSG00000021662	0.00494935	-3.059757698	Arhgef28
ENSMUSG00000087365	0.00162078	-3.060967465	C430049B03Rik
ENSMUSG00000002190	0.00452302	-3.078303871	Clgn
ENSMUSG00000031383	0.02453443	-3.08350427	Dusp9
ENSMUSG00000022311	0.00091123	-3.089304882	Csmd3
ENSMUSG00000106826	0.00904787	-3.096021218	Gm42583
ENSMUSG00000030638	0.00051868	-3.098365662	Sh3gl3
ENSMUSG00000032911	0.00100695	-3.110403771	Cspg4
ENSMUSG00000064225	0.01625976	-3.115923646	Paqr9
ENSMUSG00000029999	0.001669	-3.117187131	Tgfa
ENSMUSG00000043460	0.00022265	-3.11903175	Elfn2
ENSMUSG00000069920	0.00568552	-3.134623262	B3gnt9
ENSMUSG00000047747	0.02945753	-3.139505742	Rnf150
ENSMUSG00000040447	0.00202661	-3.150945639	Spns2
ENSMUSG00000038704	0.03866454	-3.15499228	Aspdh
ENSMUSG00000003436	0.01004103	-3.177986441	Dll3
ENSMUSG00000100147	0.0136601	-3.18019935	1700047M11Rik
ENSMUSG00000026778	0.00022265	-3.18621694	Prkcq
ENSMUSG00000032773	0.002961	-3.187193976	Chrm1
ENSMUSG00000068615	0.00787326	-3.192956963	Gjd2
ENSMUSG00000048988	0.00040084	-3.195664417	Elfn1
ENSMUSG00000039954	0.00074892	-3.207194578	Stk32a
ENSMUSG00000090358	0.04483784	-3.211009527	Gm2822
ENSMUSG00000043753	0.02924996	-3.221118956	Dmrta1
ENSMUSG00000029123	0.01263178	-3.228594585	Stk32b
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ENSMUSG00000024990	0.0178517	-3.241538003	Rbp4
ENSMUSG00000086171	0.00441784	-3.243546728	Pcsk2os1
ENSMUSG00000030287	0.00022265	-3.245815276	Itpr2
ENSMUSG00000075555	0.02404724	-3.247870036	Gm10863
ENSMUSG00000027434	0.00040084	-3.248377994	Nkx2-2
ENSMUSG00000030220	0.01767902	-3.260899901	Arhgdib
ENSMUSG00000066720	0.00715111	-3.262008934	Cldn9
ENSMUSG00000026109	4.0133E-05	-3.267401165	Tmeff2
ENSMUSG00000020701	0.00514272	-3.283317825	Tmem132e
ENSMUSG00000031104	0.0006278	-3.294294521	Rab33a
ENSMUSG00000104378	0.01653246	-3.297948701	Gm37510
ENSMUSG00000105726	0.03271116	-3.325803564	Gm42443

ENSMUSG00000031380	0.00508501	-3.327156328	Vegfd
ENSMUSG00000069072	0.00283352	-3.333315194	Slc7a14
ENSMUSG00000040265	0.00011041	-3.334781467	Dnm3
ENSMUSG00000035226	0.02094303	-3.335457007	Rims4
ENSMUSG00000027082	0.00665252	-3.338593543	Tfpi
ENSMUSG00000041605	0.00017004	-3.356284048	5730559C18Rik
ENSMUSG00000041607	9.2733E-06	-3.376832564	Mbp
ENSMUSG00000046523	0.00058965	-3.377094814	Kctd4
ENSMUSG00000034177	0.01171148	-3.39088615	Rnf43
ENSMUSG00000104852	0.01579326	-3.393061796	Gm43201
ENSMUSG00000040254	0.01874607	-3.403006585	Sema3d
ENSMUSG00000060988	0.00688988	-3.412982341	Galnt13
ENSMUSG00000087230	0.00376364	-3.436047532	Mroh3
ENSMUSG00000008136	0.00022294	-3.441035855	Fhl2
ENSMUSG00000036545	0.0104998	-3.442580385	Adamts2
ENSMUSG00000053550	0.001669	-3.486466959	Shisa7
ENSMUSG00000106757	0.03891515	-3.532440708	Gm43482
ENSMUSG00000032854	0.00107355	-3.537725505	Ugt8a
ENSMUSG00000048782	0.02000051	-3.537933051	Insc
ENSMUSG00000007480	0.03082633	-3.54958264	Mc5r
ENSMUSG00000031425	2.3795E-05	-3.55478616	Plp1
ENSMUSG00000046922	0.04135785	-3.568991756	Gpr6
ENSMUSG00000049721	0.00041045	-3.580230752	Gal3st1
ENSMUSG00000042846	0.00079245	-3.58139768	Lrrtm3
ENSMUSG00000032313	0.01188729	-3.592315248	Tmem266
ENSMUSG00000021998	0.01044467	-3.602233241	Lcp1
ENSMUSG00000104524	0.03600915	-3.620238625	Gm37333
ENSMUSG00000050121	0.00899775	-3.642614006	Opalin
ENSMUSG00000041836	0.00040649	-3.650046924	Ptpre
ENSMUSG00000039115	0.00178269	-3.651867043	Itga9
ENSMUSG00000028023	0.00219458	-3.658102538	Pitx2
ENSMUSG00000106379	0.00019681	-3.668112227	Lhfpl3
ENSMUSG00000040121	0.04451359	-3.672403398	Rep15
ENSMUSG00000075596	0.01649236	-3.672551819	B130006D01Rik
ENSMUSG00000029832	0.01171148	-3.681428646	Nfe2l3
ENSMUSG00000073680	0.00031923	-3.691240499	Tmem88b
ENSMUSG00000032796	0.0081218	-3.697797765	Lama1
ENSMUSG00000032517	0.00235517	-3.701995706	Mobp
ENSMUSG00000078235	0.01126342	-3.717142791	Fam43b
ENSMUSG00000028610	0.00022265	-3.726773402	Dmrtb1
ENSMUSG00000040552	0.00744949	-3.727900778	C3ar1
ENSMUSG00000017344	0.00039826	-3.759669334	Vtn
ENSMUSG00000025314	0.00040084	-3.779941823	Ptprj
ENSMUSG00000017897	0.00224911	-3.791451188	Eya2
ENSMUSG00000015829	5.7919E-05	-3.796246383	Tnr
ENSMUSG00000026347	0.00031738	-3.796410131	Tmem163
ENSMUSG00000029304	0.00080814	-3.804741063	Spp1
ENSMUSG00000061082	0.02769985	-3.813788066	Plac1
ENSMUSG00000048126	0.00193789	-3.824119854	Col6a3
ENSMUSG00000099924	0.03783789	-3.831755015	Gm28320
ENSMUSG00000024598	0.00071429	-3.844080849	Fbn2
ENSMUSG00000026437	0.00028679	-3.876959867	Cdk18
ENSMUSG00000029334	0.00086677	-3.90434674	Prkg2
ENSMUSG00000063446	0.00014964	-3.904857259	Plppr1
ENSMUSG00000026934	0.02891573	-3.910088166	Lhx3
ENSMUSG00000092210	0.00105002	-3.931614443	A930009A15Rik
ENSMUSG00000023992	0.01272183	-3.935051079	Trem2
ENSMUSG00000027358	0.00744881	-3.946811485	Bmp2
ENSMUSG00000045871	0.01382109	-3.946947489	Slitrk6
ENSMUSG00000029661	0.00040649	-3.9524872	Col1a2
ENSMUSG00000038457	0.00044372	-3.982834819	Tmem255b
ENSMUSG00000067879	0.00040649	-3.995481815	3110035E14Rik
ENSMUSG00000051335	0.04991951	-4.000415659	Gfod1
ENSMUSG00000040533	0.03891515	-4.043851247	Matn1
ENSMUSG00000093561	0.04577328	-4.049642644	Gm20699
ENSMUSG00000000792	0.03826061	-4.065299498	Slc5a5
ENSMUSG00000034145	0.04364854	-4.082627566	Tmem63c
ENSMUSG00000038173	0.00033492	-4.132163118	Enpp6
ENSMUSG00000107352	0.03022858	-4.145171223	Gm43660
ENSMUSG00000024479	0.01863304	-4.148469577	Mal2
ENSMUSG00000049577	0.030309	-4.154802104	Zfpm1
ENSMUSG00000021506	0.04687309	-4.177121047	Pitx1
ENSMUSG00000093668	0.02329507	-4.180013633	Pou5f2
ENSMUSG00000031385	0.00022941	-4.198107854	Plxnb3
ENSMUSG00000025189	0.00783421	-4.206585618	Cnnm1

ENSMUSG00000006344	0.04860037	-4.207370203	Ggt5
ENSMUSG00000024935	0.00033801	-4.255545616	Slc1a1
ENSMUSG00000024395	2.5005E-05	-4.278824379	Lims2
ENSMUSG00000105380	0.02068864	-4.294512306	Trav12-4
ENSMUSG00000004266	0.01113632	-4.320051477	Ptpn6
ENSMUSG00000052613	0.00013273	-4.340269333	Pcdh15
ENSMUSG00000105740	0.03864294	-4.373484666	Gm42685
ENSMUSG00000022754	0.00245429	-4.385204743	Tmem45a
ENSMUSG00000025701	0.00618277	-4.404403938	Alox5
ENSMUSG00000002007	0.00101359	-4.407068586	Srpk3
ENSMUSG00000058715	0.00671491	-4.407199046	Fcer1g
ENSMUSG00000037754	2.7812E-05	-4.458034112	Ppp1r16b
ENSMUSG00000024647	0.00015258	-4.46296497	Cbln2
ENSMUSG00000078721	0.0160706	-4.486635962	Fam205a1
ENSMUSG00000084959	0.01633974	-4.510990961	4933407I08Rik
ENSMUSG00000036098	5.4551E-05	-4.52998101	Myrf
ENSMUSG00000026365	0.03243804	-4.537701681	Cfh
ENSMUSG00000013523	9.2733E-06	-4.542506579	Bcas1
ENSMUSG00000025650	0.00187217	-4.578023052	Col7a1
ENSMUSG00000103693	0.04924565	-4.60220735	Gm37529
ENSMUSG00000062593	0.04308083	-4.622937681	Lilrb4a
ENSMUSG00000048583	0.0006278	-4.662900374	Igf2
ENSMUSG00000034310	0.00121771	-4.680783216	Tmem132d
ENSMUSG00000056966	0.00046105	-4.688792009	Gjc3
ENSMUSG00000034000	0.00033492	-4.729588898	Neu4
ENSMUSG00000023945	0.00564044	-4.733492566	Slc5a7
ENSMUSG00000028339	0.02480646	-4.748213581	Col15a1
ENSMUSG00000105289	0.01520694	-4.759795451	Gm43483
ENSMUSG00000065485	0.01073947	-4.773163747	Mir219a-2
ENSMUSG00000086040	0.02283965	-4.795906005	Wipf3
ENSMUSG00000021835	2.7812E-05	-4.814584099	Bmp4
ENSMUSG00000033006	9.2733E-06	-4.846003347	Sox10
ENSMUSG00000078190	0.01566334	-4.911975236	Dnm3os
ENSMUSG00000063234	0.03826061	-4.92360469	Gpr84
ENSMUSG00000102009	0.02821594	-4.967365344	4933400F21Rik
ENSMUSG00000039883	0.00332524	-4.975055764	Lrrc17
ENSMUSG00000026574	0.02312817	-4.993606632	Dpt
ENSMUSG00000052229	0.00023797	-5.012327827	Gpr17
ENSMUSG00000045394	0.00089104	-5.028858452	Epcam
ENSMUSG00000035493	0.00230942	-5.036908044	Tgfbi
ENSMUSG00000108752	0.02494615	-5.080364423	Gm45191
ENSMUSG00000015950	0.04717088	-5.085465906	Ncf1
ENSMUSG00000044519	5.4018E-05	-5.1180349	Zfp488
ENSMUSG00000033579	3.7822E-05	-5.130710591	Fa2h
ENSMUSG00000028298	0.00041045	-5.207429248	Cga
ENSMUSG00000029718	0.00033801	-5.237592218	Pcolce
ENSMUSG00000064293	0.01129321	-5.23887031	Cntn4
ENSMUSG00000050272	0.00022265	-5.327437138	Dscam
ENSMUSG00000000982	0.02351554	-5.350395298	Ccl3
ENSMUSG00000086999	0.00313962	-5.353948526	Bcas1os2
ENSMUSG00000027857	0.00031923	-5.360762591	Tshb
ENSMUSG00000027750	0.03564966	-5.401476914	Postn
ENSMUSG00000109555	0.02781703	-5.430721029	Gm44891
ENSMUSG00000023828	0.02690315	-5.432537375	Slc22a3
ENSMUSG00000043903	0.00286345	-5.439199913	Gm22
ENSMUSG00000040747	0.01722102	-5.46053133	Cd53
ENSMUSG00000034275	2.7812E-05	-5.491647006	Igsf9b
ENSMUSG00000076858	0.01133599	-5.579249156	Trav3-4
ENSMUSG00000036634	1.6803E-05	-5.614190819	Mag
ENSMUSG00000051212	0.01283997	-5.61646821	Gpr183
ENSMUSG00000030579	0.00224529	-5.624168075	Tyrobp
ENSMUSG00000086970	0.00267875	-5.673684511	Bcas1os1
ENSMUSG00000024529	0.00509774	-5.745625653	Lox
ENSMUSG00000027524	0.00757542	-5.790971842	Edn3
ENSMUSG00000026548	0.02837062	-5.851163952	Slamf9
ENSMUSG00000049723	0.0381654	-5.854943096	Mmp12
ENSMUSG00000022548	0.00023797	-5.883066611	Apod
ENSMUSG00000103225	0.00194369	-5.885661471	Gm37731
ENSMUSG00000036896	0.00068656	-5.944276675	C1qc
ENSMUSG00000026751	0.00361286	-5.957235946	Nr5a1
ENSMUSG00000044811	0.01933438	-5.957645888	Cd300c2
ENSMUSG00000036887	0.00047616	-5.994177654	C1qa
ENSMUSG00000050473	0.04135785	-6.018070549	Slc35d3
ENSMUSG00000037625	0.00041087	-6.034375119	Cldn11
ENSMUSG00000031775	0.00048959	-6.076874746	Pllp

ENSMUSG00000048163	0.01439482	-6.11339564	Selplg
ENSMUSG00000038642	0.00047616	-6.278041524	Ctss
ENSMUSG00000036905	0.00058939	-6.344618685	C1qb
ENSMUSG00000032502	0.02558849	-6.419753378	Stac
ENSMUSG00000029255	0.011359	-6.479391773	Gnrhr
ENSMUSG00000032419	0.00904883	-6.648471703	Tbx18
ENSMUSG00000028581	0.00101046	-6.714185765	Laptm5
ENSMUSG00000003309	0.02198359	-6.71776727	Ap1m2
ENSMUSG00000036938	0.00818374	-6.777860849	Try5
ENSMUSG00000024679	0.0497418	-6.824381254	Ms4a6d
ENSMUSG00000026840	0.00248102	-6.872404274	Lamc3
ENSMUSG00000022696	0.00799339	-7.064620515	Sidt1
ENSMUSG00000013584	0.00105085	-7.315080315	Aldh1a2
ENSMUSG00000051367	0.00849859	-7.325189865	Six1
ENSMUSG00000103192	0.01054015	-7.405488344	Gm37645
ENSMUSG00000024397	0.00474034	-7.442599517	Aif1
ENSMUSG00000052160	0.00987741	-7.512127924	Pld4
ENSMUSG00000046805	0.01179044	-7.620518654	Mpeg1
ENSMUSG00000021423	0.00996123	-7.626870095	Ly86
ENSMUSG00000097736	2.7812E-05	-7.844588953	9530059O14Rik
ENSMUSG00000001281	0.00224529	-7.985495888	Itgb7
ENSMUSG00000061353	0.0003418	-8.019965941	Cxcl12
ENSMUSG00000079293	0.00650062	-8.246987381	Clec7a
ENSMUSG00000028111	0.00361385	-8.6138016	Ctsk
ENSMUSG00000035352	0.0050662	-8.883630704	Ccl12
ENSMUSG00000000682	0.00192927	-8.884479886	Cd52
ENSMUSG00000009687	0.00115906	-8.916949089	Fxyd5
ENSMUSG00000001506	2.3795E-05	-9.224667697	Col1a1
ENSMUSG00000040026	0.00368259	-9.342744639	Saa3
ENSMUSG00000026043	0.00014625	-9.546321667	Col3a1
ENSMUSG00000094832	0.00287694	-9.689648871	Gm21846
ENSMUSG00000002111	0.00346857	-10.01483743	Spi1
ENSMUSG00000059498	0.00255309	-10.28476112	Fcgr3
ENSMUSG00000046610	0.00564044	-11.09115421	Oacyl
ENSMUSG00000054675	0.00282479	-11.31513767	Tmem119
ENSMUSG00000020660	2.7812E-05	-11.5091213	Pomc
ENSMUSG00000030108	0.005783	-11.76095604	Slc6a13
ENSMUSG00000015340	0.00230942	-12.08649151	Cybb
ENSMUSG00000036446	0.00369366	-13.10987037	Lum
ENSMUSG00000019929	2.3795E-05	-13.35463001	Dcn
ENSMUSG00000024621	0.002961	-15.47232932	Csf1r
ENSMUSG00000027315	0.001669	-16.3471698	Spint1
ENSMUSG00000052336	0.00041045	-17.29298284	Cx3cr1

Table S3. TFs enriched in Hcrt and Mch cells. Gene ontology analysis showed that they mainly have TF and DNA binding activity.

Gene name	Gene ontology	Fold change
Pir	transcription cofactor activity	2.61
Gbx2	transcription factor activity, sequence-specific DNA binding	2.91
Nod1	transcription cofactor activity	2.30
Ldb2	enzyme binding and transcription factor activity, transcription factor binding	2.10
Tfcp2l1	transcription factor activity, sequence-specific DNA binding and transcription corepressor activity	2.93
Ahr	transcription factor activity, sequence-specific DNA bindingand protein heterodimerization activity	2.39
Ptrf	regulation of transcription, DNA-templated	2.03
Nfe2l2	transcription factor activity, sequence-specific DNA binding and protein domain specific binding	2.03
Tcea3	nucleic acid binding	2.95
Rbm43	nucleic acid binding and nucleotide binding	2.14
Msx1	sequence-specific DNA binding and p53 binding	2.04
Ocln	structural molecule activity and S-adenosylmethionine-dependent methyltransferase activity	2.43
Msx2	sequence-specific DNA binding and RNA polymerase II core promoter proximal region sequence-specific DNA binding	5.50
Nlrp6	sequence-specific DNA binding transcription factor activity, transcription cofactor activity	2.88
Rfx2	transcription factor activity, sequence-specific DNA binding and RNA polymerase II core promoter proximal region sequence-specific DNA binding	2.15
Ccdc108	sequence-specific DNA binding transcription factor activity	2.09
Zmynd10	sequence-specific DNA binding transcription factor activity	2.01
Lmx1a	regulation of transcription from RNA polymerase II promoter	2.26

Gene name	Gene ontology	Fold change
Sox14	sequence specific DNA binding and chromatin binding	52.68
Prrx1	sequence-specific DNA binding and HMG box domain binding	2.56
Ldb2	enzyme binding and transcription factor activity, transcription factor binding	2.61
Plagl1	RNA polymerase II transcription factor activity, sequence-specific DNA binding and transcriptional activator activity, RNA polymerase II transcription regulatory region sequence-specific binding	3.20
Six6	transcriptional activator activity, RNA polymerase II distal enhancer sequence-specific binding	6.21
Zim1	nucleic acid binding and RNA polymerase II transcription factor activity, sequence-specific DNA binding	6.92
Peg3	nucleic acid binding and RNA polymerase II transcription factor activity, sequence-specific DNA binding	2.61
Nkx6-2	transcription factor activity, sequence-specific DNA binding and sequence-specific DNA binding	2.64
Thrb	transcription factor activity, sequence-specific DNA binding and enzyme binding	3.65
Nr2f2	transcription factor activity, sequence-specific DNA binding and sequence-specific DNA binding	3.01
Rorc	transcription factor activity, sequence-specific DNA binding and steroid hormone receptor activity	3.16
Pgr	transcription factor activity, sequence-specific DNA binding and receptor binding	7.35
Zfp92	nucleic acid binding	44.17
Ahr	transcription factor activity, sequence-specific DNA bindingand protein heterodimerization activity	3.58
Atf3	transcription factor activity, sequence-specific DNA binding and sequence-specific DNA binding	2.15
Hopx	DNA binding transcription factor activity, Protein binding	2.58
Tbx3	transcription factor activity, sequence-specific DNA bindingand RNA polymerase II core promoter proximal region sequence-specific DNA binding	4.39
Glis3	transcription factor activity, sequence-specific DNA binding and transcriptional activator activity, RNA polymerase II core promoter proximal region sequence-specific binding	3.34

Mch

Hcrt

Table S4. Genes and pathways dysregulated between Hcrt and Mch cell types.

Gene ID	GO (bp)	pathways
Ache	acetylcholine catabolic process, regulation of receptor recycling , osteoblast development, DNA replication	Cholinergic synapse, Glycerophospholipid metabolism
Baiap3	G-protein coupled receptor signaling pathway, neurotransmitter secretion	Transcriptional misregulation in cancer
Car10		
Car3	one-carbon metabolic process, response to oxidative stress, bicarbonate transport, response to ethanol	Nitrogen metabolism
Cldn9	viral entry into host cell, viral process, calcium-independent cell-cell adhesion via plasma membrane cell-adhesion molecules, cell-cell junction organization	Cell adhesion molecules, Hepatitis C, Leukocyte transendothelial migration, Tight junction
Epcam	negative regulation of apoptotic process, positive regulation of cell proliferation, positive regulation of transcription from RNA polymerase II promoter	
Mal2	myelination, transcytosis, membrane raft polarization, protein localization	
Ndrg1	peripheral nervous system myelin maintenance, response to metal ion , negative regulation of cell proliferation ,	
Nefl	MAPK cascade, anterograde axonal transport , microtubule cytoskeleton organization , response to toxic substance	Amyotrophic lateral sclerosis (ALS)
Pclo	cAMP-mediated signaling, regulation of exocytosis, synaptic vesicle exocytosis, synapse assembly, cytoskeleton organization	Insulin secretion
Ppp2r2c	peptidyl-serine dephosphorylation, regulation of catalytic activity, developmental process, mitotic cell cycle	Adrenergic signaling in cardiomyocytes, AMPK signaling pathway, Chagas disease (American trypanosomiasis), Dopaminergic synapse, Hepatitis C
Resp18	in utero embryonic development	
Rian		
Scg2	inflammatory response, positive regulation of endothelial cell proliferation, angiogenesis, MAPK cascade	
Slc12a5	cellular ion homeostasis, chloride transport, potassium ion transport, ion transport	GABAergic synapse
Slc17a6	transmembrane transport, neurotransmitter transport, sodium ion transport, ion transport	Glutamatergic synapse, Nicotine addiction, Retrograde endocannabinoid signaling, Synaptic vesicle cycle
Snhg11		
Spint1	positive regulation of glial cell differentiation, extracellular matrix organization, negative regulation of endopeptidase activity, neural tube closure	Transcriptional misregulation in cancer
Tmem130		
Tshb	peptide hormone processing, hormone-mediated signaling pathway, anatomical structure morphogenesis, G-protein coupled receptor signaling pathway	Autoimmune thyroid disease, Neuroactive ligand-receptor interaction, Regulation of lipolysis in adipocytes, Thyroid hormone synthesis
Pomc	generation of precursor metabolites and energy, signal transduction, neuropeptide signaling pathway	Adipocytokine signaling pathway, Melanogenesis

Table S5. Material used for inducing *Hcrt* gene expression.

	#	Material	Conc.		#	Material	Conc.
From day 2	1	bFGF, FGF12,FGF13,FGF15,FGF8	10ng /ml		17	CHIR	3uM
	2	CTRL (just gfCDM)			18	NGF	50ng/ml
	3	bFGF, FGF12,FGF13,FGF15,FGF8	10ng /ml		19	RA	100ng/ml
	4	BMP7	10ng /ml		20	inhibitor of EGF receptor AG1478	2.5ug/ml
	5	BMP4	10ng /ml	day3	21	JNK Inhibitor II	10uM
	6	BMP7+bFGF	10ng /ml		22	SB 203580	10uM
	7	VC +a-tocoferol	50ug/ml 100uM		23	H-89 dihydrochloride hydrate	10uM
	8	VC	50ug/ml		24	LY294002	10uM
From day 3	9	igf-1	10ng/ml		25	Shh	5nM
	10	Orexin	0.01 uM		26	RA, bFGF,BMP7	100ng,50ng,20ng/ml
	11	Histamin	100ng/ml		27	FGF12,FGF13,FGF15	20ng/ml
	12	Mannac	1mM		28	FGF12	20ng/ml
	13	U0126	10uM	day4	29	FGF12,bFGF,BMP7, BMP4	20ngml
	14	Erlotinib Hydrochloride	1ug/ml		30	FGF12, l-Glutamin, l-Cys	20ng, 30uM, 30uM
	15	EGF	20ng/ml		31	KSR method	
	16	PD	1uM	day3	32	KSR + BMP7 from day 3	

Table S6. Pathways in which TFs upregulated in Hcrt and Mch cells are involved.

	Hcrt pathways		Mch pathways
1	Thyroid hormone signaling pathway	a	NOD-like receptor signaling pathway
2	Th17 cell differentiation	b	Shigellosis
3	Circadian rhythm	c	Pertussis
4	HTLV-I infection	d	Pathogenic Escherichia coli infection
5	NF-kappa B signaling pathway	e	Hepatitis C
6	Cellular senescence	f	Cellular senescence
7	Hepatitis C	g	HTLV-I infection
8	Maturity onset diabetes of the young	h	Circadian rhythm
9	Influenza A	i	Necroptosis
10	Necroptosis		
11	IL-17 signaling pathway		
12	TNF signaling pathway		
13	Lysosome		

Table S7. The sequence of morpholinos used in this study. For Peg3 we used its ortholog in zebrafish (si:ch211-266d19.4, Zfp271) based on Genecards and Ensemble databases.

Morpholinos used to screen TFs enriched in Hcrt cells

Number	Name	Séquence (5'--> 3')	Mw	Quantity (nmol)	stock (ng/nl)	Injection (ng)	Volume (nl)
1	ahr1a_ATG	ATCTCCAAAGAAACAGATTCGTGGT	8476	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
2	Idb2b_ATG	TCATGGTTTCTGTTACCGACAGCGC	8426	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
3	nkx6.2_ATG	CCATCTGTCCCACCGCTAACATTGG	8340	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
4	nr2f2_ATG	CCTCTCCACACTACCATTGCCATAT	8259	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
5	Peg3_ATG	CTCTTCAGAAAATCATCATGCACGT	8387	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
6	pgr_ATG	GTGTTCACCGTGTCCATTCTAATGT	8416	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
7	prrx1a_ATG	ACATGAGCATAGCTGGAAGTCATGA	8541	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
8	six6a_ATG	TGTAATGTCTCTCCTTTGGTCCT	8358	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
9	tbx3a_ATG	CTCTCATCGGGAAGTCCAGATTGCA	8444	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
10	thrb_ATG	CATTTGTCTGCTTGCTCTGACATAC	8376	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4

Morpholinos used to screen TFs enriched in Mch cells

Number	Name	Séquence (5'--> 3')	Mw	Quantity (nmol)	stock (ng/nl)	Injection (ng)	Volume (nl)
5	Peg3_ATG	CTCTTCAGAAAATCATCATGCACGT	8387	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
11	Gbx2_ATG	GTGTGCTGAAAGCTGCACTCATAT	8144	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
12	Lmx1a_ATG	GGCACATCATTATCCAGAGAGTCAT	8452	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
13	Msx2a_ATG	CATTAACCTGTAAACGCGCTCGCTC	8364	300	1,25	1,25 / 2,5 / 5	1 / 2 / 4
14	Rfx2_ATG	CATCGTTTCTCCTCAGCCTTGTG	7682	300	1,25	0,6/1,25 / 2,5 / 5	0,5/1 / 2 / 4

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