

PNAS

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Supplementary Information for

T-box transcription factor 3 governs a transcriptional program for the function of the mouse atrioventricular conduction system

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Detailed Methods

Genetically modified mouse lines

Tbx3^{CreERT2}, *Tbx3^{Venus}*, *Tg(RP23-366H17-Tbx3-egfp)1Vmc* (*BAC-Tbx3-Egfp*) and *BAC-336LK* (*BAC-Nppb-Katushka*) have been described previously (1-4). Genotype was screened by PCR. The *Tbx3^{CreERT2}* and *Tbx3^{wild-type}* alleles were identified using the following primers: forward (AGCGGAGCCAAGCCAGCA), reverse1 (*Tbx3* allele-binding CCTTGGCCTCCAGGTGCAC) and reverse2 (*CreERT2*-binding GCTAGAGCCTGTTTTGCACGTTCA), *Tbx3^{Venus}* and *Tbx3^{wild-type}* alleles using the following primers: forward (AGCGGAGCCAAGCCAGCA), reverse1 (*Tbx3* allele-binding CCTTGGCCTCCAGGTGCAC) and reverse2 (*Venus* allele-binding TTGATGCCGTTCTTCTGCTTGT), *BAC-Tbx3-Egfp* using the following primers: forward (CGACGTAAACGGCCACAAGTT) and reverse (TTGATGCCGTTCTTCTGCTTGT) and finally *BAC-336LK* using the following primers specific for *Luciferase*: forward (ATCTTCTTCAAGGACGACGG) and reverse (CTGAAATCCCTGGTAATCCGTT). Please note that some primer sequences are the same.

RE4-5^{-/-}, *RE4^{-/-}*, *RE5^{-/-}*, and *RE2^{-/-}* mouse lines were generated using CRISPR/Cas9 genome editing. Guide RNA constructs were designed using ZiFiT Targeter (5). The target sequences are the following: guide 1 (GGGCACATCCCTCAGCAGCC), guide 2 (GGCCAACCTCTCACTGCTGA), guide 3 (GGCCCAATTAGAAGCCACCC), guide 4 (GGATCCAGAGTCCAGACAGC), guide 5 (GGCTAAAGGAGACTGCTCTC). *RE4-5* deletion was generated using guides 1 and 3, *RE4* with 1 and 2, *RE5* with 2 and 3, and *RE2* with 4 and 5. The sgRNA constructs were transcribed *in vitro* using MEGAshortscript T7 (Invitrogen AM1354) and mMessage Machine T7 transcription kit (Invitrogen AM1344) according to manufacturer instructions. One-cell FVB/NRj zygotes were microinjected with 10 ng/μL each sgRNA and 25 ng/μL Cas9 mRNA to generate mouse founders. All transgenic mice were maintained on a FVB/NJ background commercially obtained from Jackson laboratory (stock number 100800).

Animal care and experiments were in accordance with guidelines from the European Union, Dutch government and Amsterdam University Medical Centers and approved by the Animal Experimental Committee of the Amsterdam University Medical Centers.

In situ hybridization

Neonates and adults were fixed overnight in 4% paraformaldehyde in PBS, dehydrated in a graded ethanol series, paraffin embedded and sectioned at 12 μm. Methodology of the non-radioactive *in situ* hybridization analysis was described previously.(6) We used probes for the detection of *Hcn4*, *Gja5*, *Tbx3*, and *Cacna1g*. Sections were examined with a Leica DM5000B microscope and photographed with a Leica DFC450 Digital Camera.

3D reconstruction and volume quantification of neonatal and adult AV node and AV bundle

Generating 3D reconstructions of expression patterns has been described previously.(7) In brief, consecutive sections throughout the heart were stained for *Hcn4* and *Gja5* in an alternating fashion. Images were taken of all sections covering the AV conduction system. A set of images covering the entire AV conduction system constituted a 'stack'. In Amira software the AlignSlices module was used to align the sections based on the tissue morphology. The expression domains of *Hcn4* and *Gja5* were labeled. To measure the volumes of *Hcn4⁺* tissue (AV node, AV bundle and BBs)

and *Gja5*⁺ tissue (AV bundle and BBs) the MaterialStatistics module was used. The volume of the AV node, AV bundle and BBs was calculated based on *Hcn4*⁺ expression multiplied by two times (to compensate for the alternate sections used for *Gja5*). The volume of the AV bundle-BBs was calculated based on *Gja5*⁺ expression multiplied by two times (to compensate for the alternate sections used for *Hcn4*). The volume of the AV node was calculated by subtracting the *Gja5*⁺ volume from the *Hcn4*⁺ volume. $P < 0.05$ was considered significant using a two-tailed Student's *t* test.

Immunohistochemistry

P28 hearts were fixed overnight in 4% paraformaldehyde in PBS, dehydrated in a graded ethanol series, paraffin embedded and sectioned at 7 μm . Sections were heated for 30 minutes at 60°C and deparaffinized by incubating three times in xylene for seven minutes. Rehydration was performed in an ethanol series (100% ethanol for 3 minutes, and 100% ethanol, 100% ethanol, 96% ethanol, 90% ethanol, 80% ethanol, 70% ethanol and 50% ethanol for 1 minute). After deparaffination and rehydration, the sections were washed in PBS and pressure cooked for 5 minutes in antigen unmasking solution (Vector H-3300) followed by a 30 minutes incubation in PBS-0.2% Triton X100. Sections were blocked for 30 minutes in PBS-4% BSA followed by an overnight incubation with the primary antibodies diluted in PBS-4% BSA. Sections were washed three times for five minutes in PBS-0.05% Tween buffer before incubation for two hours with the secondary antibodies and Dapi diluted in PBS-4% BSA. Afterwards, the sections were washed three times for five minutes with PBS-0.05% Tween buffer and mounted in glycerol/PBS (1:1). Sections were examined and photographed with a fluorescence microscope Leica DM6000 or confocal microscope Leica TCS SP8 X mounted on a Leica DMI8 inverted microscope.

The primary antibodies used were: rabbit-anti-Hcn4 polyclonal (1:200; Millipore, AB5808), goat-anti-Cx40 polyclonal (1:150; Santa Cruz Biotechnology Inc, sc-20466), mouse-anti-CoxIV monoclonal (1:200; Abcam, Ab14744), rabbit-anti-CC3 polyclonal (1:250; Cell signaling, 9661), goat-anti-cTnl polyclonal (1:400; Hytest, 4T21/2). For WGA an Alexa fluor 555 conjugate (1:500; Invitrogen, W32464) was used. The secondary antibodies used were Alexa Fluor 647 donkey-anti-goat IgG (1:200; Invitrogen, A-21477), Alexa Fluor 555 donkey-anti-mouse IgG (1:200; Invitrogen, A-31570), Alexa Fluor 488 donkey-anti-rabbit IgG (1:200; Invitrogen, R37118). Nuclei were stained using Dapi (1:1000; Sigma, D9542).

CoxIV measurement in AV node and working myocardium

Sections were stained for Hcn4, Cx40, CoxIV and Dapi as described above. Images were acquired and loaded into Amira. The AV node was labeled based on Hcn4⁺-Cx40⁻, and part of the working myocardium was based on Hcn4⁻-Cx40⁻ and morphology. A background label was made within the lumen. CoxIV average staining intensity was measured per label, per heart using the MaterialStatistics module, background subtracted from AV node and working myocardium labels and normalized to working myocardium. Several sections per heart were used for averages.

Recording of *in vivo* and *ex vivo* electrocardiograms

Wild-type and *Tbx3*^{+/*Venus*} 2-month-old mice were measured. Anesthesia was induced with 5% Isoflurane (Pharmachemie B.V.) and maintained with 1.5-2.0% Isoflurane. Electrodes were placed at the right (R) and left (L) armpit and the left groin (F) and an electrocardiogram (ECG) was recorded (PowerLab 26T; AD-Instruments, Colorado Springs, CO, USA) for a period of 5 min. ECG parameters were determined in Lead II (L-R) based on the last 60 seconds of the recording.

To study the electrophysiological properties intrinsic to the heart, ECGs were also recorded *ex vivo*. Adult mice were stunned by inhalation of CO₂ and sacrificed by cervical dislocation. The heart was rapidly excised, cannulated, and mounted on a Langendorff perfusion set-up as described previously.⁽⁸⁾ During perfusion with 37°C Tyrode's solution (128 mmol/L NaCl, 4.7 mmol/L KCl, 1.45 mmol/L CaCl₂, 0.6 mmol/L MgCl₂, 27 mmol/L NaHCO₃, 0.4 mmol/L NaH₂PO₄, and 11 mmol/L glucose (pH maintained at 7.4 with a mixture of 95% O₂ and 5% CO₂), the heart was submerged with the left anterior aspect pointing upward, and electrodes were placed at the right (R) and left (L) side of the base of the heart and at the left side of the apex (F) at an approximately 5 mm distance. ECG parameters were determined in Lead II (L-R) based on the last 30 seconds of the recording using LabChart Pro. *p*<0.05 was considered significant using two-way ANOVA.

To achieve combined beta-adrenergic and muscarinic cholinergic blockade (ANS block), we repeated the ECGs 10 minutes after intraperitoneal injection of 0.5 mg/kg atropine and 1 mg/kg propranolol (A/P). as previously described (9).

Pacing experiments were performed by advancing an octapolar catheter through the esophagus to the site where capture of the atria could be established. The transesophageal stimulation electrodes connected to an isolation unit through which triggered stimulus with variable current output was initiated, and atrial pacing thresholds were determined for each mouse. For sinus node recovery time (SNRT) measurements, a 4-second pacing train with a cycle length of 120 ms was used. SNRT definition: interval between the last pacing stimulus and onset of first sinus return. To control for differences in sinus rate, SNRT was normalized to resting heart rate (cSNRT = SNRT – RR interval). To determine the Wenckebach period (WCL) we applied a 4 second pacing train starting at a cycle length of 100 ms, and decreasing by 2 ms until AV was first observed.

Optical mapping

Adult mice were stunned by inhalation of CO₂ and sacrificed by cervical dislocation. The heart was rapidly excised, cannulated, and mounted on a Langendorff perfusion set-up as described previously (8) and perfused at 37°C with Tyrode's solution containing 10 μM Blebbistatin (Bio-Techne LtD). After approximately 10 minutes recovery, 500 μL Tyrode's solution containing 15 μM Di-4-ANEPPS (Molecular Probes, Eugene, OR) was added to the perfusion solution. Excitation light was provided by a 5-watt power LED (filtered 510 ± 20 nm). Fluorescence light, filtered for >610 nm, was transmitted through a tandem lens system on CMOS sensor (100 x 100 elements, MICAM Ultima). Ventral and dorsal activation patterns were measured during sinus rhythm.

Plasmids

Potential REs (Supplemental Table 1 and 2) were incorporated into a modified pGL2-Basic containing a SV40 minimal promoter and an adjusted multiple cloning site for *in vitro* analysis by a transfection luciferase assay. *Ryr2* RE8, RE9 and RE16 were incorporated into an attB transgenesis vector containing mCherry for a F0 screen in attP^{2B} zebrafish (10).

Transfection luciferase assays

Cos-7 and HEK-293 cells (1.5*10⁶ cells/plate) were grown in 48-well plates in DMEM (ThermoFisher Scientific, 31966-021) supplemented with 10% FBS (ThermoFisher Scientific, 10270-106) and Pen/Strep (ThermoFisher Scientific, 15070-063). Cos-7 and HEK-293 cells were transfected using polyethylenimine 25 kDa (PEI, Brunschwig, 23966-2) at a 1:3 ratio (DNA:PEI). HL1 (2.5*10⁶ cells/plate) cells were grown in 48-well plates in Claycomb medium (Sigma-Aldrich, 51800C) supplemented with chemically defined HL-1 FBS substitute (Lonza, 77227), Glutamax

(ThermoFisher Scientific, 35050-061) and Pen/Strep (ThermoFisher Scientific, 15070-063). HL1 cells were transfected using Lipofectamine 3000 (ThermoFisher Scientific, L3000-015). For 240 ng of vector, 0.5 μ L P3000 reagent and 1.2 μ L Lipofectamine were added. In a transfection assay 200 ng of reporter construct and 40 ng pcDNA3.1⁽⁺⁾-empty vector (ThermoFisher Scientific, V790-20) or 25 ng pcDNA3.1-human TBX3, -Smad1, -Smad4, -Alk3, -Gata4, -Nkx2.5 and -Tbx5 were transfected per well. Forty-eight hours after transfection, cells were lysed using Renilla luciferase assay lysis buffer (Promega, E291A-C) and luciferase activity measured. Luciferase measurements were performed using a GloMax Explorer (Promega, GM3500). During the measurement, 100 μ L D-Luciferin (p.j.k, 102111) was injected (150 μ L/second) followed by a 1 second delay and 5 seconds of measurement. Transfections were carried out at least two times and measured in duplicates.

***In vivo* zebrafish RE assay**

The plasmids containing *Ryr2* RE8 and RE16 were injected in attP^{2B} zebrafish embryos at the 1-cell stage at a final concentration of 15ng/ μ L in the presence of 25 ng/ μ L phiC31 transposase mRNA.(10) Embryos were kept at 28.5°C in E3 medium and analyzed for heart-specific GFP, and subsequently RE-specific RFP at 72 hours post-fertilization. GFP positives were selected to grow to adulthood. Once reached adulthood, genotype was assessed by PCR on DNA from fin clippings. The F1 generation embryos were used to investigate the spatiotemporal activity pattern of the REs. Embryos were kept at 28.5°C in E3 medium and analyzed for heart-specific GFP, and subsequently RE-specific RFP followed by imaging 5 days post-fertilization. Hearts were imaged on a confocal microscope (Leica Microsystems, TSC SP8 X) set up with the correct fluorescence filters.

Quantitative expression analysis

Total RNA was isolated from postnatal day 21 whole hearts and brains according to the manufacturer's protocol of the ReliaPrep RNA Tissue Miniprep System (Promega). cDNA was reverse transcribed with oligo dT primers from 500ng of total RNA according to the manufacturer's protocol of the Superscript II Reverse Transcriptase system (Thermo Fisher Scientific, 18064014). Expression levels of candidate target genes were determined by quantitative real-time PCR using a LightCycler 480 Instrument II (Roche Life Science, 05015243001). Primer sets are listed in Supplemental Table 2. Expression levels were measured using LightCycler 480 SYBR Green I Master (Roche, 04887352001) and the primers had a concentration of 1 pmol/L. The amplification protocol consisted of 5 minutes 95 °C followed by 45 cycles of 10 seconds 95°C, 20 seconds 60°C and 20 seconds 72°C. Relative start concentration (N_0) was calculated using LinRegPCR.(11) Values were normalized to the geometric mean of two reference genes per experiment (*Hprt*, *Ppia*, and *Rpl32*). (12) See Supplemental Table 3 for qPCR primers. Additionally, *Hcn4* and *Tbx3* were used to correct for dissection variability of CCS tissue preparations. $P < 0.05$ was considered significant using an one-way ANOVA.

Differential expression analysis

Reads were mapped to mm10 build of the mouse transcriptome using STAR.(13) Differential expression analysis was performed using EdgeR . First, we filtered out genes that did not have 1 TPM or higher for the majority (>3) of samples in a genotype group and excluded genes with an average transcript level higher than 5000 TPM. Based on the EdgeR generated MDS plot, we excluded 2 *wild-type* and 1 *Tbx3*^{+/-} samples leaving 5 *wild-type* and 6 *Tbx3*^{+/-} AV node samples for differential expression analysis. Multidimensional scaling plot of the samples is given in Supplemental figure 13.

Unsupervised hierarchical clustering

Unsupervised hierarchical clustering was performed on genes differentially expressed between 5 *wild-type* and 6 *Tbx3*^{+/-} AV node samples using the R package pheatmap, version 1.0.8. (<http://cran.r-project.org/web/packages/pheatmap/index.html>). DAVID(16) was used to find overrepresented gene ontology (GO) terms and Kegg pathways in the groups of upregulated and downregulated genes from the set of AV node differentially expressed genes. In DAVID, Benjamini–Hochberg correction was performed for multiple testing-controlled p values. Statistically significant enriched terms were functionally grouped and visualized.

Differential accessibility analysis

AV junction and ventricular ATAC-sequencing reads were mapped to mm9 build of the mouse genome using BWA(17); the default settings were used. The BEDTools suite(18) was used to distribute the genome wide signal into bins of 500bp. To allow for differential peak calling between datasets, quantile normalization was applied using the deepTools2 suite(19).

Overlap with H3K27ac ChIP-sequencing

ATAC-sequencing peaks were cross-referenced with PCM1-sorted H3K27ac ChIP-sequencing data(20). Raw ChIP-sequencing reads were extracted from the Sequence Read Archives (GSM851290) and mapped to the mouse genome (mm9) using BWA(17); the default setting were used. Peaks were called and subsequently overlapped with different categories of ATAC-sequencing peaks using the BEDTools suite(18).

Principal component analysis to compare different cell types

HL-1 RNA sequencing data comes from SRA source PRJNA380279(23) and mouse cardiac fibroblast RNA sequencing data from PRJNA378265(24). RNA sequencing of pacemaker cells and chamber cardiomyocytes from (4) . Data were aligned using STAR(13) and principal component analysis output generated using DeSeq2(14) on the Galaxy server (usegalaxy.org).

Supplemental figure 1

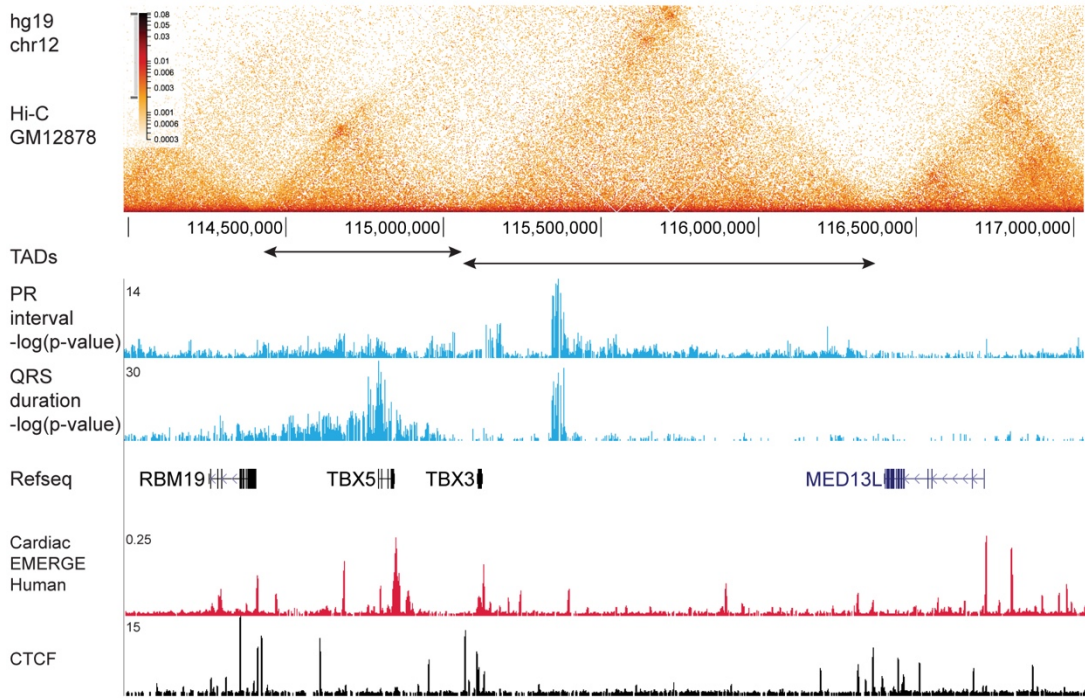


Fig. S1. Hi-C heatmap from human lymphoblastoid line GM12878 of a large genomic region including the *TBX3* TAD. $-\log p$ values of the genetic variants associated with PR interval and QRS duration, human cardiac EMERGE and CTCF ChIP cardiomyocytes.

Supplemental figure 2

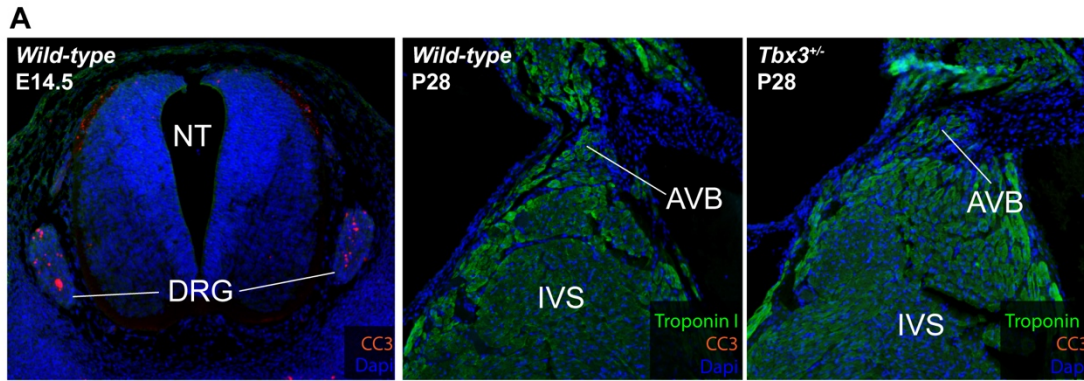


Fig. S2. Apoptosis is not the underlying mechanism of AV bundle-BB hypoplasia in *Tbx3*^{+/-} mice. (A) P28 Hearts (n=3 for *wild-type* and *Tbx3*^{+/-} groups) and E14.5 embryo as positive control stained for nuclei by Dapi (blue) and immunolabeled for cleaved caspase-3 (CC3, red) and Troponin I (green). Apoptotic cells are observed in the DRG of the E14.5 embryo and not detected in the AV bundles of P28 hearts. AVB, AV bundle; DRG, dorsal root ganglia; IVS, interventricular septum; NT, neural tube.

Supplemental figure 3

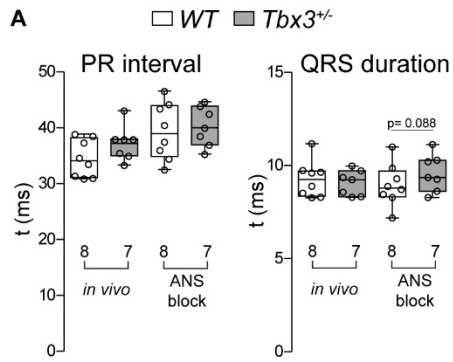


Fig. S3. ANS blockade has no effect in *in vivo* ECG parameters from *Tbx3*^{+/-} mice. (A) Boxplots show average PR interval and QRS duration before and after ANS block. Data was analyzed with 2-way ANOVA.

Supplemental figure 4

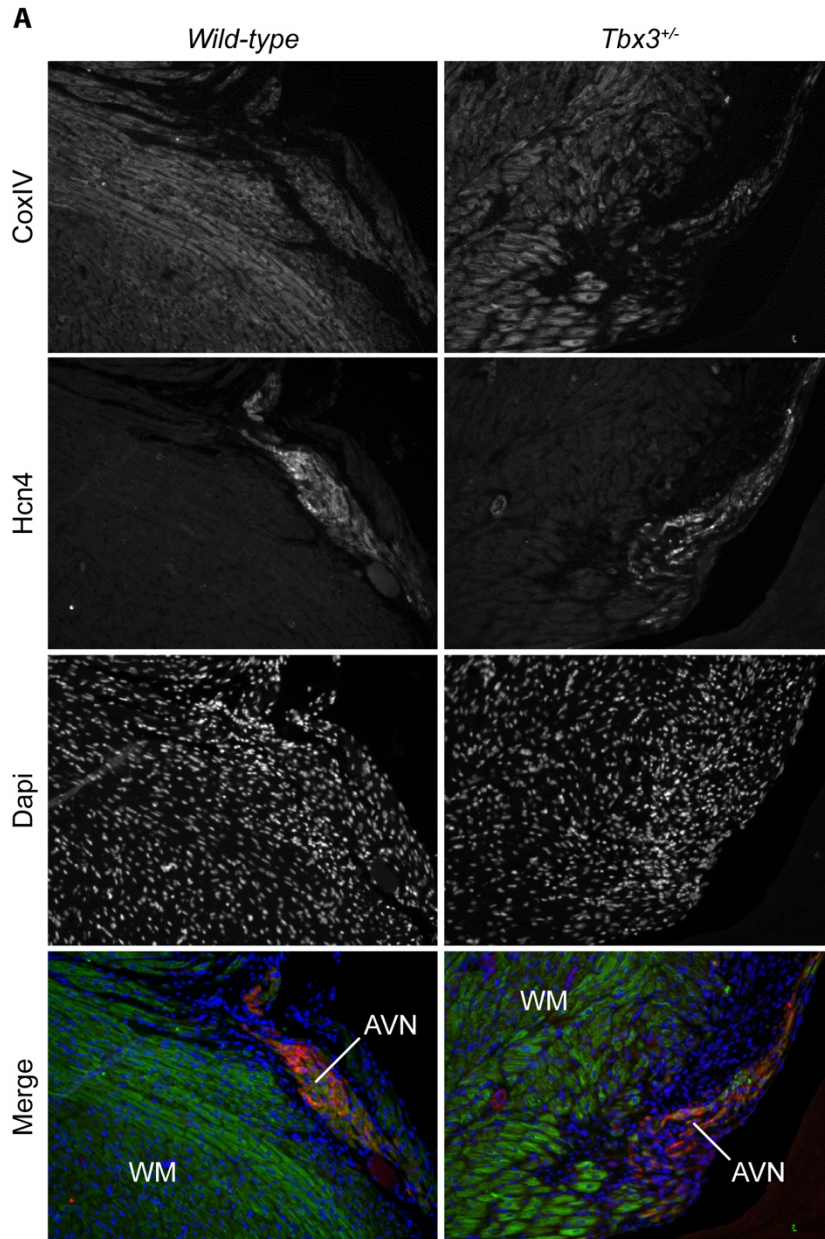


Fig. S4. Mitochondrial marker levels are not changed in *Tbx3^{+/-}* AVN. Representative histological sections from *wild-type* and *Tbx3^{+/-}* hearts immunostained for Hcn4 (red), CoxIV (green) and nuclei (blue). AVN, AV node; WM, working myocardium.

Supplemental figure 5

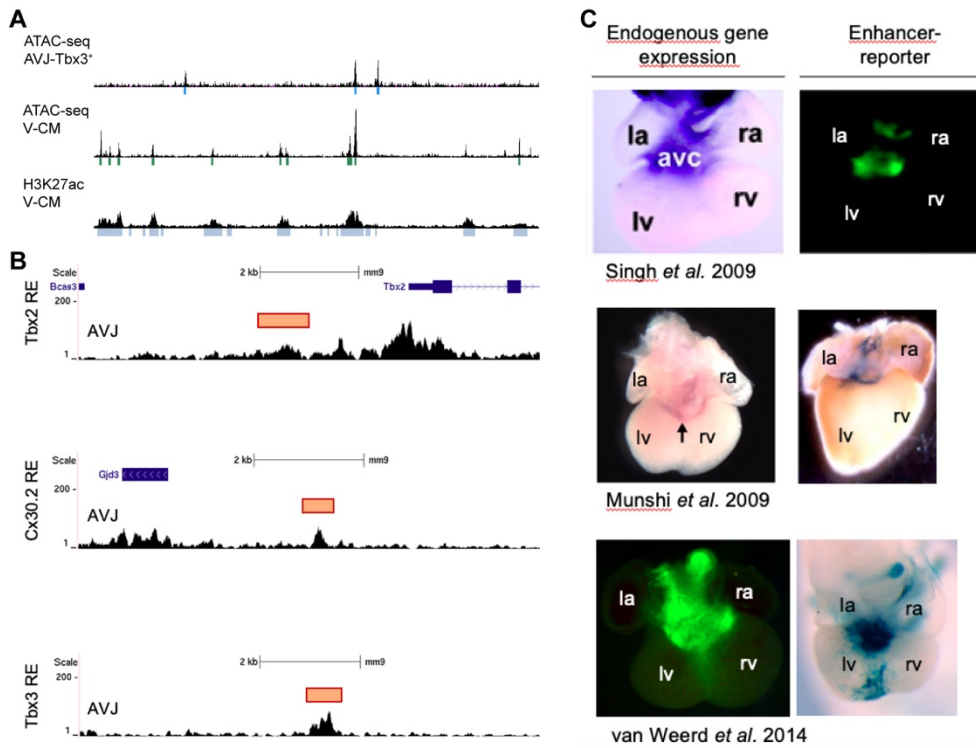


Fig. S5. Established AV conduction system REs are identified in ATAC-sequencing dataset.

(A) Representative example in *Tnni3k* locus showing peaks (black) and called peaks (colored bars) for several ATAC-sequencing and ChIP-sequencing datasets. (B, C) ATAC-sequencing on AV conduction system cardiomyocytes identifies previously established AV conduction system-specific REs for *Tbx2* (top)(25), *Gjd3* (middle)(26) and *Tbx3* (bottom)(27). AVC, atrioventricular canal; AVJ, atrioventricular junction; LA, left atrium; LV, left ventricle; RA, right atrium; RE, regulatory DNA element; RV, right ventricle.

Supplemental figure 6

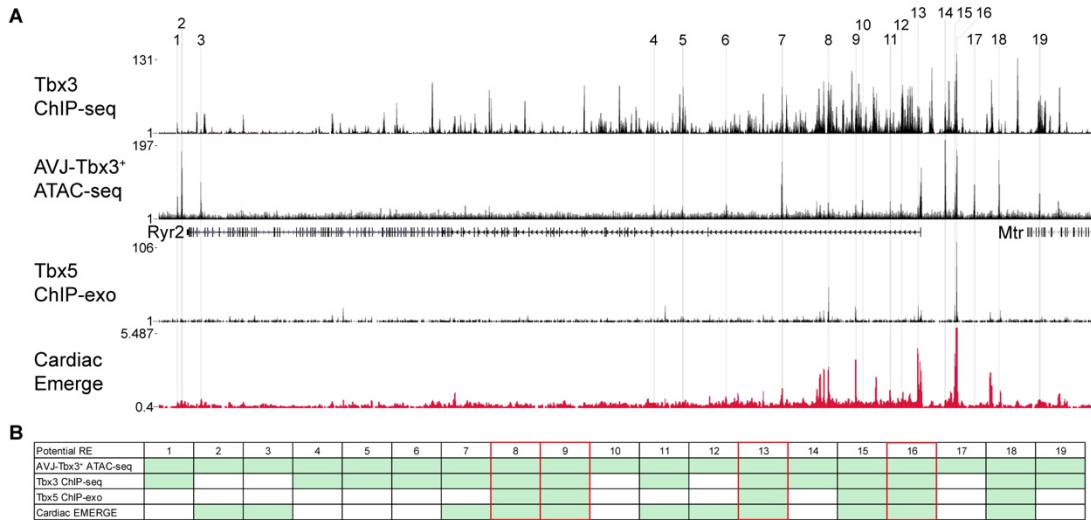
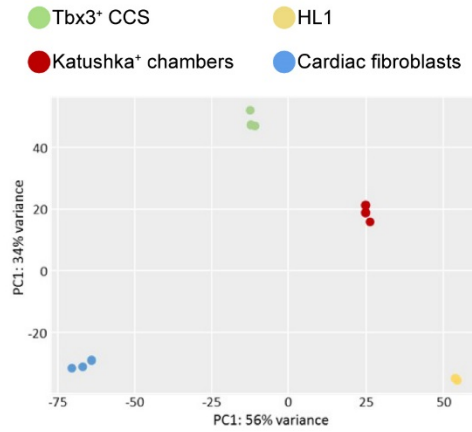


Fig. S6. A large genomic region including *Ryr2* scored for potential AV conduction system REs. (A) Genomic region including *Ryr2* is shown with Tbx3 and Tbx5 ChIP-sequencing signals, cardiac EMERGE and AV conduction system-ATAC-sequencing signals. Potential REs were selected based on accessible chromatin in the AV conduction system and at least one additional peak and are shown above. (B) After the initial screen, we continued by scoring for Tbx3 and Tbx5 occupancy and cardiac EMERGE. Signal strength of Tbx3, Tbx5 ChIP-sequencing and cardiac EMERGE were taken into consideration. Four regions (8, 9, 13 and 16) were selected for analysis.

Supplemental figure 7

A



B

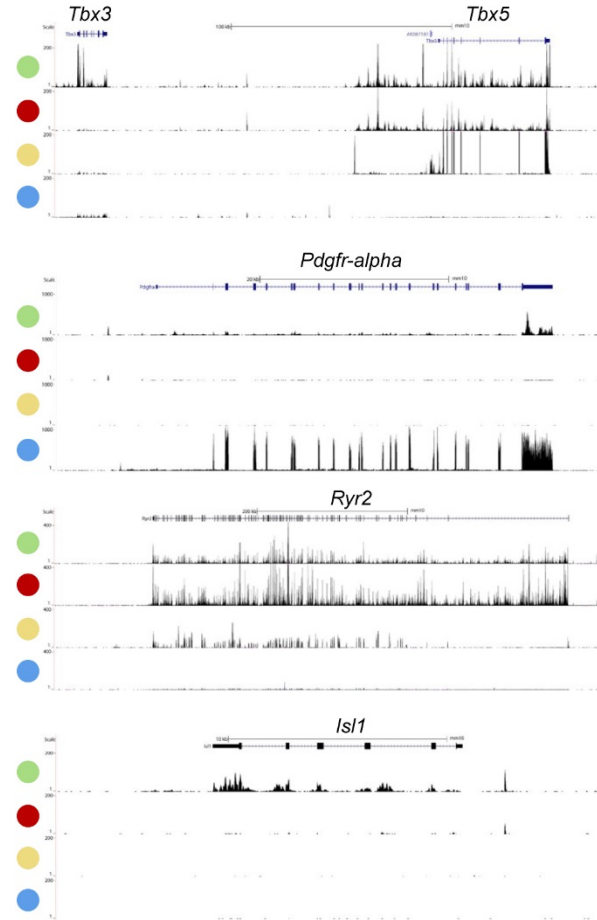


Fig. S7. HL1 cells resemble atrial chamber cardiomyocytes and express *Tbx5* and *Ryr2*. (A) Principal component analysis of RNA-sequencing datasets from HL1 (PRJNA380279), Tbx3⁺ CCS cells, Katushka⁺ chamber cells (V.W.W van Eif, S. Stefanovic, R.A. Mohan, V.M. Christoffels, submitted) and cardiac fibroblasts (PRJNA378265). (B) RNA-sequencing datasets visualized for four genomic locations that contain markers for particular cell types. *Tbx3* marks Tbx3⁺ CCS, *Tbx5* marks cardiomyocytes, *Pdgfr-alpha* marks cardiac fibroblasts, *Ryr2* marks cardiomyocytes and is enriched in Katushka⁺ cardiomyocytes, and *Isl1* marks Tbx3⁺ SAN cells.

Supplemental figure 8

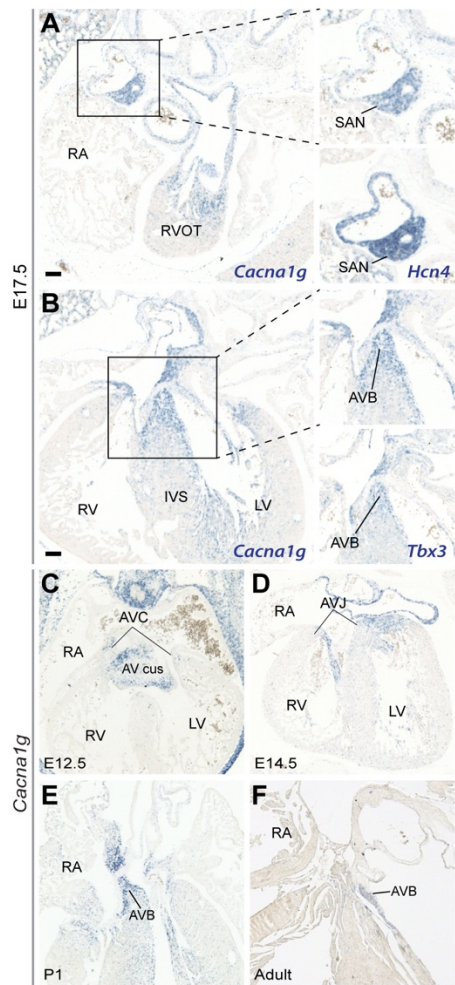


Fig. S8. *Cacna1g* is expressed in the cardiac conduction system during development and adulthood. (A-B) Sections of *wild-type* E17.5 mice showing *Cacna1g* in the SAN (A) and AVJ (B). Adjacent section stained for SAN marker *Hcn4* and *Tbx3*, respectively. Sections stained for *Cacna1g* showing expression in the AVC at E12.5 (C) and the AVJ at E14.5 (D). Initial broader embryonic expression is restricted to the AV conduction system postnatal (E) and expression remains similar in 2-month-old hearts (F). AVC, AV canal; AV cus, AV cushions; AVB, AV bundle; AVJ, AV junction; LA, left atrium; LV, left ventricle; RA, right atrium; RV, right ventricle; RVOT, right ventricular outflow tract; SAN, sinus node.

Supplemental figure 9

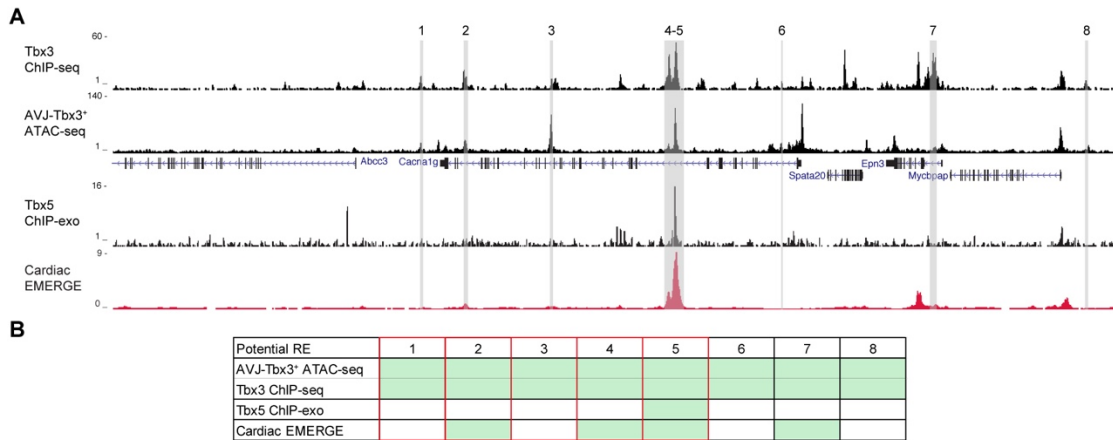


Fig. S9. A large genomic region including *Cacna1g* scored for potential AV conduction system REs. (A) Genomic region including *Cacna1g* is shown with Tbx3 and Tbx5 ChIP-sequencing signals, cardiac EMERGE and AV conduction system-ATAC-sequencing signals. Potential REs were selected based on accessible chromatin in the AV conduction system and at least one additional peak and are shown above. (B) After the initial screen, we continued by scoring for Tbx3 and Tbx5 occupancy and cardiac EMERGE. Signal strength of Tbx3, Tbx5 ChIP-sequencing and cardiac EMERGE were taken into consideration. Five regions (1, 2, 3, 4 and 5) were selected for analysis.

Supplemental figure 10

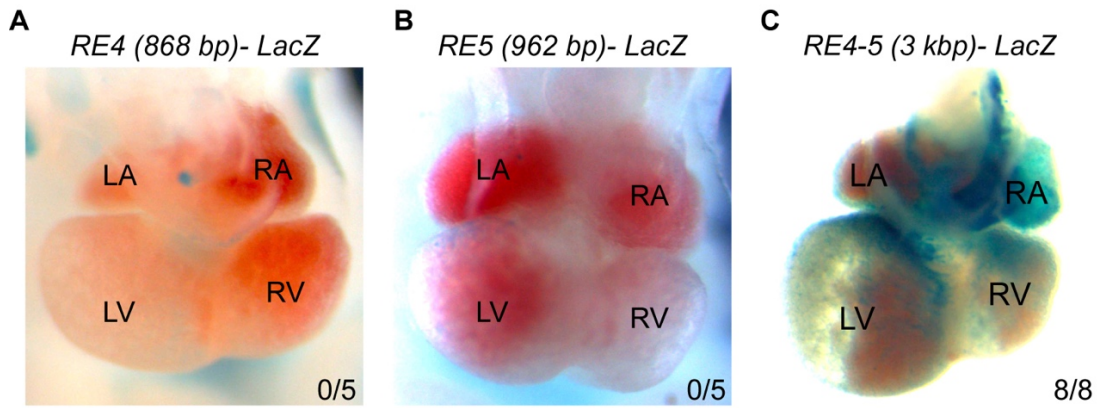
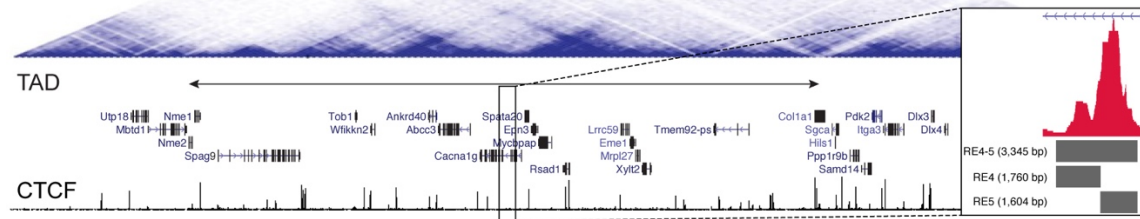


Fig. S10. RE4 and RE5 fragments alone are not sufficient to drive expression of *LacZ*. Whole mount images of E11.5 RE4-*LacZ* and RE5-*LacZ* transient transgenic embryos stained for β -gal. No transgenic embryos were positive for *LacZ* in the heart. RE4-5-*LacZ* sample shown as positive control. Abbreviations: LA, left atrium; LV, left ventricle; RA, right atrium; RV, right ventricle.

Supplemental figure 11

A

HiC



B

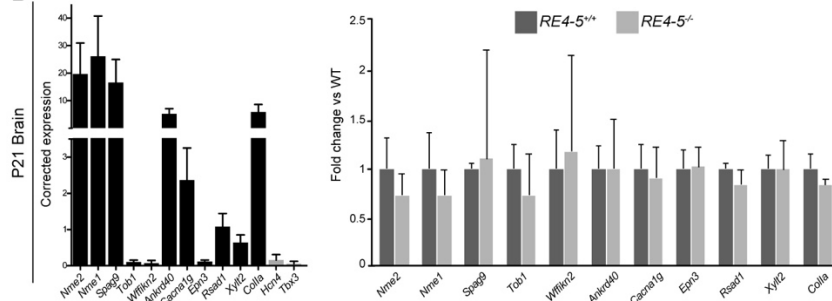


Fig. S11. *Cacna1g* locus overview. (A) Large region depicting all genes within the TAD that includes *Cacna1g*. Approximate TAD span was determined using available mESC HiC and CTCF ChIP datasets. CRISPR/Cas9 deletions denoted in insert. (B) Relative expression of TAD genes from P21 *wild-type* brains (n=8) determined by qPCR (Left) and fold change expression levels of TAD genes in brains from P21 *RE4-5^{-/-}* (n=8) vs *wild-type* littermates (Right).

Supplemental figure 12

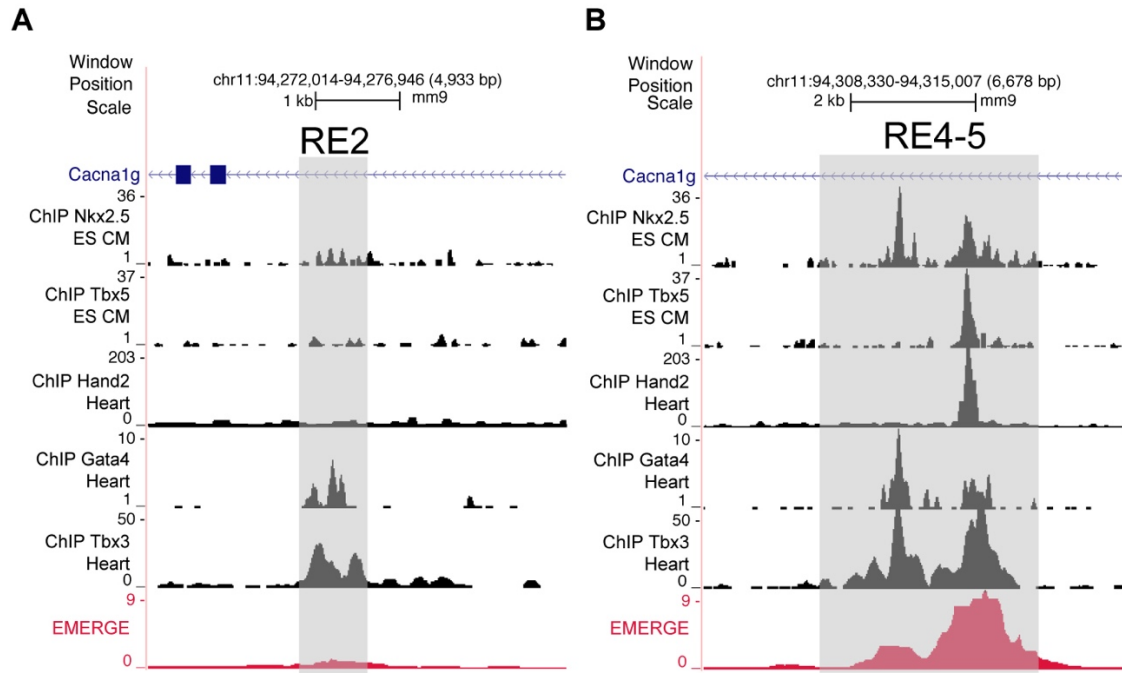


Fig. S12. Cardiac transcription factor occupancy of RE2 and RE4-5. UCSC browser view of RE2 (A) and RE4-5 (B) Showing Nkx2.5, Tbx5, Hand2, Gata4, and Tbx3 ChIP-seq signals, and cardiac EMERGE. Tested fragments shown in grey.

Supplemental figure 13

A

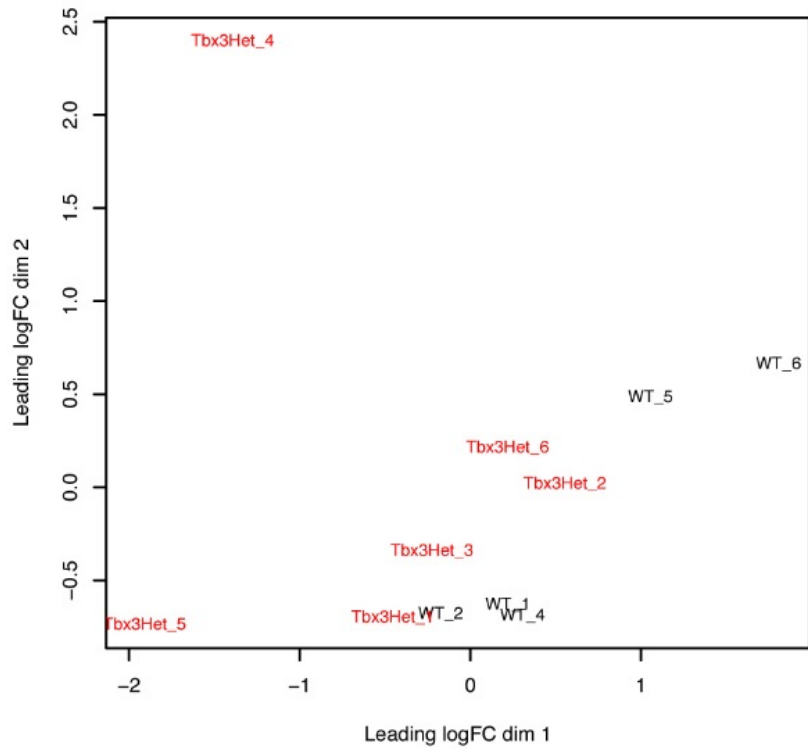


Fig. S13. Multidimensional scaling (MDS) plot of sequenced AV nodes. Isolated AV nodes from *wild-type* (black) and *Tbx3*^{+/-} (red).

Table S1. Differentially expressed genes in *Tbx3*^{+/-} AV nodes.

GeneID	Gene_symbol	logFC	logCPM	F	PValue	FDR
ENSMUSG00000021313	Ryr2	0.918200458	10.58546757	57.24409214	0.0000003	0.003627625
ENSMUSG00000022636	Alcam	-1.301213188	7.323508362	32.06475938	0.0000162	0.097427043
ENSMUSG000000096553	NA	2.609232348	3.755914036	29.91628577	0.0000249	0.099761751
ENSMUSG000000061353	Cxcl12	0.968664167	8.360213485	26.65045981	0.0000496	0.141721938
ENSMUSG000000087047	NA	4.319910424	2.132199539	25.80445707	0.0000599	0.141721938
ENSMUSG000000032338	Hcn4	-1.339126213	7.983787681	25.720939	0.0000712	0.141721938
ENSMUSG000000097290	1300002E11Rik	1.182004221	6.294755067	24.39705033	0.0000824	0.141721938
ENSMUSG00000000167	Pih1d2	5.179416182	2.365583114	23.69450145	0.0000971	0.145272647
ENSMUSG000000030096	Slc6a6	0.70180383	9.430838487	22.83686102	0.0001191	0.145272647
ENSMUSG000000027611	Procr	1.187958582	6.145607793	22.77938048	0.0001207	0.145272647
ENSMUSG000000046743	Fat4	-0.649267918	8.381687777	20.38402812	0.0002187	0.221307323
ENSMUSG000000036138	Acaa1a	2.179888296	3.899852878	20.34852155	0.0002207	0.221307323
ENSMUSG000000043004	Gng2	-2.125359266	3.710807789	18.99670055	0.0003140	0.290681429
ENSMUSG000000010066	Cacna2d2	-1.014179208	10.21941134	18.82874003	0.0003876	0.291647139
ENSMUSG000000052675	Zfp112	2.940037224	2.861222964	18.20130191	0.0003889	0.291647139
ENSMUSG000000029309	Sparcl1	0.816251122	9.855855316	17.78869757	0.0004354	0.291647139
ENSMUSG000000032218	Ccnb2	-2.540603011	4.696101677	18.28818156	0.0004520	0.291647139
ENSMUSG000000018411	Mapt	1.570863778	5.094835791	17.60529607	0.0004580	0.291647139
ENSMUSG000000044337	Ackr3	1.716137736	5.037627461	17.51533396	0.0004695	0.291647139
ENSMUSG000000038349	Plcl1	-1.032662119	5.354859883	17.39833419	0.0004850	0.291647139
ENSMUSG000000039254	Pomt1	1.967472553	3.86281185	17.10519992	0.0005264	0.291647139
ENSMUSG000000054966	Ifltd1	-0.97439903	6.170611509	16.98372854	0.0005447	0.291647139
ENSMUSG000000039639	Kcne1	0.764467753	7.687476142	16.66196719	0.0005967	0.291647139
ENSMUSG000000031409	Tceal6	-3.711618553	1.083355669	16.62974337	0.0006022	0.291647139
ENSMUSG000000032036	Kirrel3	-1.1423029	5.997667825	16.60781133	0.0006059	0.291647139
ENSMUSG000000052369	Tmem106c	-2.055509657	2.813282991	16.3532132	0.0006517	0.294462989
ENSMUSG000000070867	Trabd2b	1.299553215	6.275415161	16.05009769	0.0007112	0.294462989
ENSMUSG000000033965	Slc16a2	-0.955515969	6.089700189	16.00718482	0.0007202	0.294462989
ENSMUSG000000091177	NA	5.225928403	0.022035146	15.94933252	0.0007324	0.294462989
ENSMUSG000000026939	Tmem141	-3.544197972	1.32348091	15.91137466	0.0007405	0.294462989
ENSMUSG000000023235	Ccl25	2.953251359	2.617005464	15.7278268	0.0007812	0.294462989
ENSMUSG000000088843	NA	7.445344141	0.767935127	17.21817975	0.0007831	0.294462989
ENSMUSG000000029386	Tctn2	2.682302822	2.678919926	15.40422718	0.0008593	0.312081182
ENSMUSG000000091881	NA	3.64736946	1.933818128	15.21324788	0.0009093	0.312081182
ENSMUSG00000009555	Cdk9	2.154748721	3.497535517	14.96171226	0.0009803	0.312081182
ENSMUSG000000024392	Bag6	-0.663612204	6.806076479	14.92400102	0.0009915	0.312081182
ENSMUSG000000026648	Dclre1c	1.279927182	4.718006848	14.86313617	0.0010098	0.312081182
ENSMUSG000000027792	Bche	-0.846635856	6.667071832	14.80683953	0.0010270	0.312081182
ENSMUSG000000040740	Slc25a34	2.935418421	3.189261089	14.7734345	0.0010374	0.312081182
ENSMUSG000000002831	Plin4	1.664946074	4.896514406	14.73300913	0.0010502	0.312081182
ENSMUSG000000069516	Lyz2	-1.372992117	5.539255359	14.69148926	0.0010634	0.312081182
ENSMUSG000000074968	Ano3	-0.986783108	5.415279033	14.61216566	0.0010893	0.312081182
ENSMUSG000000079481	Nhsl2	-0.611029145	7.996850272	14.41384499	0.0011570	0.318074784
ENSMUSG000000019278	Dpep1	1.556694067	5.32930278	14.36353725	0.0011750	0.318074784
ENSMUSG000000022231	Sema5a	-0.679289166	8.421785588	14.32333613	0.0011895	0.318074784
ENSMUSG000000022033	Pbk	-2.591871384	2.258791598	14.10095222	0.0012736	0.326683491
ENSMUSG000000087384	NA	2.246696222	3.057345747	14.04187589	0.0012971	0.326683491
ENSMUSG000000098221	NA	5.028658057	-0.085146801	14.02678449	0.0013032	0.326683491
ENSMUSG000000024812	Tjp2	-0.927648987	6.026462302	13.86932461	0.0013683	0.336025443
ENSMUSG000000039542	Ncam1	-0.699168362	6.897717399	13.37791875	0.0015962	0.347405818
ENSMUSG000000022893	Adamts1	-0.872239957	5.890552107	13.35780521	0.0016064	0.347405818
ENSMUSG000000042626	Shc1	-1.037797384	5.072967331	13.28962269	0.0016414	0.347405818
ENSMUSG000000027936	Crtc2	0.910445251	5.468490415	13.25010936	0.0016621	0.347405818
ENSMUSG000000031461	Myom2	1.32971336	6.756555082	13.80281073	0.0016808	0.347405818

ENSMUSG00000021719	Rgs7bp	-1.0957247	4.72314627	13.21215126	0.0016823	0.347405818
ENSMUSG00000055567	Unc80	-0.701735983	8.036631724	13.19754838	0.0016901	0.347405818
ENSMUSG00000024271	Elp2	0.940133435	5.359650364	13.1974256	0.0016902	0.347405818
ENSMUSG00000000318	Clec10a	4.52897292	1.233742001	13.17110673	0.0017044	0.347405818
ENSMUSG00000033917	Gde1	-1.325479063	4.475214725	13.10775975	0.0017391	0.347405818
ENSMUSG00000037071	Scd1	1.819563952	3.787820199	13.10171615	0.0017425	0.347405818
ENSMUSG00000082503	NA	3.753088206	1.713393276	13.06839482	0.0017611	0.347405818
ENSMUSG00000027238	Frmf5	0.769702357	6.771671843	12.93633228	0.0018372	0.356564206
ENSMUSG00000074207	Adh1	4.651705175	1.962719301	12.86402189	0.0019122	0.365224189
ENSMUSG00000021327	Zkscan3	0.703274749	6.47620393	12.75560845	0.0019472	0.366113292
ENSMUSG00000026100	Mstn	-1.918323372	3.164433373	12.58759013	0.0020562	0.380641527
ENSMUSG00000027510	Rbm38	-0.793228097	6.139007036	12.51286262	0.0021067	0.38409814
ENSMUSG00000084545	NA	5.010453249	-0.034663164	12.39162558	0.0021918	0.388886564
ENSMUSG00000018012	Rac3	4.115900666	0.89263587	12.25996902	0.0022885	0.388886564
ENSMUSG00000020250	Txnrd1	1.604501423	3.929937782	12.25718449	0.0022906	0.388886564
ENSMUSG0000003934	Efnb3	1.309290569	4.623635404	12.22714244	0.0023133	0.388886564
ENSMUSG00000034813	Grip1	-1.195869637	5.834128474	12.21094847	0.0023257	0.388886564
ENSMUSG00000049313	Sorl1	-0.575665441	8.326136468	12.19994055	0.0023341	0.388886564
ENSMUSG00000037519	Ppfia1	0.541268223	7.487216176	12.14281514	0.0023785	0.388886564
ENSMUSG00000041361	Myzap	0.898807656	7.027707976	12.10272841	0.0024102	0.388886564
ENSMUSG00000029660	Tex26	-3.663109412	1.039650808	12.0539139	0.0024495	0.388886564
ENSMUSG00000031530	Dusp4	2.322332916	2.571047102	12.01076287	0.0024847	0.388886564
ENSMUSG00000044086	Lmod3	2.0228267	5.505763191	12.9149745	0.0024885	0.388886564
ENSMUSG00000051396	Hspa14	1.42284068	4.842380797	11.9489292	0.0025363	0.389639757
ENSMUSG0000003848	Nob1	2.065119215	3.428636267	11.90818835	0.0025709	0.389639757
ENSMUSG00000019124	Scrn1	-0.7073401	6.691383656	11.84928861	0.0026218	0.389639757
ENSMUSG00000047867	Gimap6	-1.362179271	3.657759785	11.81507425	0.0026519	0.389639757
ENSMUSG00000031066	Usp11	-0.987390615	5.743937591	11.78614177	0.0026777	0.389639757
ENSMUSG00000026443	Lrrn2	-1.058719119	5.50171726	11.77510237	0.0026876	0.389639757
ENSMUSG00000050511	Oprd1	-1.447402404	5.175380603	11.49191673	0.0029561	0.423465424
ENSMUSG00000030220	Arhgdib	1.634134832	4.592830126	11.33578688	0.0031168	0.429716783
ENSMUSG00000031748	Gnao1	-0.548293048	9.23358799	11.28253219	0.0031738	0.429716783
ENSMUSG00000070100	NA	6.210654325	-0.3064858	12.09875924	0.0031794	0.429716783
ENSMUSG00000014846	Tppp3	-1.11011789	5.115765164	11.23702721	0.0032235	0.429716783
ENSMUSG00000047414	Flrt2	-0.688630089	6.592382824	11.1819273	0.0032847	0.429716783
ENSMUSG00000033396	NA	0.902381657	5.788912149	11.16366925	0.0033053	0.429716783
ENSMUSG00000086328	NA	-3.670104752	1.288437295	11.14650182	0.0033248	0.429716783
ENSMUSG00000042557	Sin3a	-0.557161538	7.371786458	11.14258132	0.0033292	0.429716783
ENSMUSG00000031561	Tenm3	-0.618584104	7.020962609	11.14114664	0.0033309	0.429716783
ENSMUSG00000073388	NA	3.423091333	2.37349316	11.11845	0.0033569	0.429716783
ENSMUSG00000041809	Efhc1	2.196094381	1.884015867	11.00309526	0.0034926	0.434634411
ENSMUSG00000048458	Fam212b	0.695062015	6.560405343	10.98236925	0.0035176	0.434634411
ENSMUSG00000032803	Cdv3	0.966174652	5.092646775	10.96800595	0.0035351	0.434634411
ENSMUSG00000098732	NA	5.697567932	-0.557380659	11.72999096	0.0035556	0.434634411
ENSMUSG00000090088	LOC102638854	3.005630822	0.236886281	10.92278095	0.0035907	0.434634411
ENSMUSG00000098110	NA	2.59261048	1.24226803	10.76809655	0.0037883	0.434634411
ENSMUSG00000020888	Dvl2	2.293694213	3.176894201	10.75250424	0.0038089	0.434634411
ENSMUSG00000039899	Fgl2	-0.603161126	6.793964917	10.7233003	0.0038478	0.434634411
ENSMUSG00000032340	Neo1	-0.434312954	8.645488409	10.70729952	0.0038693	0.434634411
ENSMUSG00000074748	Atxn7l3b	-0.65228592	7.493143177	10.68744279	0.0038962	0.434634411
ENSMUSG00000036242	3632451O06Rik	-1.040236147	5.667552029	10.65434606	0.0039414	0.434634411
ENSMUSG00000018822	Sfrp5	-1.322544087	3.975181523	10.62371231	0.0039838	0.434634411
ENSMUSG00000038195	Rilp	1.38099289	3.441960572	10.62109569	0.0039874	0.434634411
ENSMUSG00000038665	Dgki	-1.827496303	3.183115367	10.61022716	0.0040026	0.434634411
ENSMUSG00000045875	Adra1a	-1.647494661	3.930662814	10.55840907	0.0040758	0.434634411

ENSMUSG00000017897	Eya2	2.807754117	1.966304393	10.54295388	0.0040980	0.434634411
ENSMUSG00000029765	Plxna4	-0.536005504	8.655425354	10.52379432	0.0041256	0.434634411
ENSMUSG00000044224	Dnajc21	0.715069223	6.66074908	10.51312433	0.0041411	0.434634411
ENSMUSG00000074652	Myh7b	0.785814086	7.026450148	10.50699732	0.0041500	0.434634411
ENSMUSG00000032014	Oaf	2.54247982	2.490467599	10.5022126	0.0041570	0.434634411
ENSMUSG00000032640	Chsy1	-0.584050199	7.204926012	10.49585685	0.0041663	0.434634411
ENSMUSG00000030380	Mzf1	2.316840193	2.365278271	10.47474789	0.0041973	0.434634411
ENSMUSG00000032000	Birc3	1.304838696	4.072594026	10.45529804	0.0042261	0.434634411
ENSMUSG00000023150	lvns1abp	0.545912925	8.642477404	10.34003667	0.0044013	0.448821481
ENSMUSG00000035232	Pdk3	-1.579825062	3.475355068	10.28300109	0.0044910	0.449340392
ENSMUSG00000097042	NA	1.954306547	3.779790724	10.2278158	0.0045797	0.449340392
ENSMUSG00000032293	Ireb2	-0.628436679	6.574527632	10.19700333	0.0046301	0.449340392
ENSMUSG00000038319	Kcnh2	-0.610162064	7.296756508	10.19527222	0.0046330	0.449340392
ENSMUSG00000027933	Ints3	0.967372912	5.610092339	10.15135478	0.0047059	0.449340392
ENSMUSG00000040896	Kcnd3	1.405659105	3.653208869	10.14633441	0.0047143	0.449340392
ENSMUSG00000029703	Lrwd1	2.218948667	2.143420121	10.12592318	0.0047487	0.449340392
ENSMUSG00000018263	Tbx5	-0.539343099	9.96307087	10.09997955	0.0047928	0.449340392
ENSMUSG00000025417	Pip4k2c	-0.806302664	6.162154426	10.06857862	0.0048469	0.449340392
ENSMUSG00000051235	Gen1	-1.81185541	2.83588693	10.06362975	0.0048554	0.449340392
ENSMUSG00000033900	Map9	-0.789997538	5.555933296	10.01450259	0.0049415	0.449340392
ENSMUSG00000024871	Doc2g	1.990585281	2.918489771	9.994218496	0.0049775	0.449340392
ENSMUSG00000024854	Polld4	3.283700101	1.501084265	9.992577603	0.0049804	0.449340392
ENSMUSG00000034981	Parm1	-0.529703412	8.958513075	9.97643866	0.0050093	0.449340392
ENSMUSG00000053414	Hunk	-1.098605791	4.401445796	9.936995174	0.0050807	0.449340392
ENSMUSG00000062591	Tubb4a	-1.009300131	6.698972504	10.0582258	0.0050987	0.449340392
ENSMUSG00000038127	Ccdc50	-0.548113784	6.921681097	9.922599117	0.0051070	0.449340392
ENSMUSG00000042302	Ehbp1	0.539853259	7.588951949	9.918024471	0.0051154	0.449340392
ENSMUSG00000028683	Eif2b3	1.480637098	3.657907051	9.899997341	0.0051487	0.449340392
ENSMUSG00000031712	Ii15	-1.268400003	3.71695009	9.897546181	0.0051532	0.449340392
ENSMUSG00000074916	Chst14	1.681575882	3.550149589	9.807696994	0.0053228	0.460785108
ENSMUSG00000021730	Hcn1	-0.732488896	7.712369785	9.746697057	0.0054414	0.461401017
ENSMUSG00000030417	NA	1.131994363	4.773072259	9.743298959	0.0054481	0.461401017
ENSMUSG00000061894	Zscan20	-1.402414968	4.156595816	9.730614632	0.0054732	0.461401017
ENSMUSG00000024959	Bad	1.857963878	2.533119885	9.72553289	0.0054833	0.461401017
ENSMUSG00000021268	Meg3	0.783497966	8.240262433	9.752925922	0.0055588	0.462500365
ENSMUSG00000030869	Ndufab1	0.96431466	4.791207542	9.680652079	0.0055732	0.462500365
ENSMUSG00000038059	Smim3	2.663101983	1.372436436	9.658738722	0.0056177	0.463000793
ENSMUSG00000065544	NA	4.149180666	-0.230810427	9.629961992	0.0056768	0.464684798
ENSMUSG00000032840	2410131K14Rik	1.201648135	4.935655518	9.58116535	0.0057785	0.469771153
ENSMUSG00000069678	Pcgf1	-2.4093399	2.655378416	9.562695198	0.0058175	0.469771153
ENSMUSG00000041439	Mfsd6	-0.539765331	8.406744899	9.544604919	0.0058560	0.469771153
ENSMUSG00000026641	Usf1	2.089820626	1.709879889	9.503116459	0.0059454	0.470866954
ENSMUSG00000038151	Prdm1	1.50858887	3.836782529	9.486392993	0.0059819	0.470866954
ENSMUSG00000018339	Gpx3	-0.44731424	10.11736075	9.484021756	0.0059871	0.470866954
ENSMUSG00000023206	Ii15ra	1.034038721	5.284507353	9.462850994	0.0060337	0.471005235
ENSMUSG00000050410	Tcf19	-1.985072864	3.161882916	9.444780502	0.0060737	0.471005235
ENSMUSG00000036510	Cdh8	-2.079121772	3.469239472	9.43019317	0.0061063	0.471005235
ENSMUSG00000054008	Ndst1	-0.591705947	6.735044548	9.400586871	0.0061730	0.472944269
ENSMUSG00000025316	Banp	1.167844783	4.509873131	9.381623412	0.0062161	0.472944269
ENSMUSG00000037996	Slc24a2	-0.468114311	8.289329905	9.367111428	0.0062493	0.472944269
ENSMUSG00000031393	Mecp2	-0.436406911	7.978615059	9.30805223	0.0063866	0.474815458
ENSMUSG00000033389	Arhgap44	-0.786008516	5.815888683	9.273386852	0.0064688	0.474815458
ENSMUSG00000063108	Zfp26	-0.689636805	6.123048863	9.267030535	0.0064840	0.474815458
ENSMUSG00000010663	Fads1	-0.663946929	5.931841507	9.231987188	0.0065685	0.474815458
ENSMUSG00000028405	Aco1	1.060554822	5.107469304	9.231419923	0.0065699	0.474815458

ENSMUSG00000074646	6430550D23Rik	3.207702163	1.910115111	9.210246041	0.0066215	0.474815458
ENSMUSG00000001768	Rin2	-0.735420424	6.071926996	9.191271291	0.0066682	0.474815458
ENSMUSG000000033436	Armcx2	-0.795699423	5.487789075	9.179139975	0.0066982	0.474815458
ENSMUSG000000093904	Tom20	-0.964197279	5.290000251	9.157662517	0.0067517	0.474815458
ENSMUSG000000038205	Prkab2	0.733150326	5.700910295	9.154712173	0.0067591	0.474815458
ENSMUSG000000034111	Tmed8	-0.828375416	5.281415217	9.149042907	0.0067734	0.474815458
ENSMUSG000000073002	Vamp5	1.335449449	3.955630176	9.14669938	0.0067793	0.474815458
ENSMUSG000000044667	Lppr4	-1.318455827	5.144684802	9.143613067	0.0067870	0.474815458
ENSMUSG000000081219	NA	3.76693088	0.071052827	9.090447151	0.0069224	0.480930769
ENSMUSG000000001525	Tubb5	-0.561060996	7.580143386	9.074327285	0.0069640	0.480930769
ENSMUSG000000027765	P2ry1	1.891157758	2.457252819	9.059973298	0.0070013	0.480930769
ENSMUSG000000028820	Sfpq	0.461145108	7.777709149	9.047363474	0.0070343	0.480930769
ENSMUSG000000037243	Zfp692	2.40174059	2.95978655	8.999058272	0.0071622	0.48690714
ENSMUSG000000067276	Capn6	-0.804400238	5.362012285	8.967340347	0.0072476	0.488211138
ENSMUSG000000027668	Mfn1	0.551059279	7.123827452	8.943824789	0.0073116	0.488211138
ENSMUSG000000005373	Mlxip1	1.784302776	2.878808729	8.933479068	0.0073400	0.488211138
ENSMUSG000000042208	0610010F05Rik	0.896778868	4.990651215	8.923067412	0.0073686	0.488211138
ENSMUSG000000022790	Igsf11	2.32270508	2.963770016	8.913030361	0.0073964	0.488211138
ENSMUSG000000026027	Stradb	0.982449595	4.377633801	8.882242882	0.0074823	0.488211138
ENSMUSG000000092565	NA	3.724927209	0.954092171	8.871352218	0.0075129	0.488211138
ENSMUSG000000001943	Vsig2	2.14419812	1.048701606	8.866427685	0.0075268	0.488211138
ENSMUSG000000050315	Synpo2	-0.531137703	8.060845614	8.85946873	0.0075465	0.488211138
ENSMUSG000000094650	NA	4.057610535	-0.779291778	8.831650501	0.0076258	0.490703779
ENSMUSG000000020260	Pofut2	-0.738068174	5.216990439	8.796513701	0.0077273	0.49078679
ENSMUSG000000057880	Abat	-0.800951601	5.245624012	8.795486008	0.0077303	0.49078679
ENSMUSG000000063576	Klhdc3	-0.830413071	4.990858594	8.788149754	0.0077517	0.49078679
ENSMUSG000000073557	Ppp1r12b	-0.474737531	8.727053882	8.774987693	0.0077903	0.49078679
ENSMUSG000000029093	Sorcs2	-1.286406807	4.321926095	8.686239861	0.0080558	0.504400106
ENSMUSG000000035623	Rsf1	-0.540759969	7.941725911	8.665297752	0.0081199	0.504400106
ENSMUSG000000026163	Sphkap	-0.707399202	6.686738387	8.661348775	0.0081321	0.504400106
ENSMUSG000000013846	St3gal1	-0.522139797	6.569915902	8.586011979	0.0083679	0.508942401
ENSMUSG000000038256	Bcl9	-0.545595387	8.054506741	8.580840831	0.0083844	0.508942401
ENSMUSG000000032511	Scn5a	1.100930559	5.58612603	8.575515303	0.0084014	0.508942401
ENSMUSG000000021994	Wnt5a	-1.298198225	4.771966054	8.573791749	0.0084069	0.508942401
ENSMUSG000000035105	Egln3	-0.620290144	7.01359267	8.536871666	0.0085259	0.508942401
ENSMUSG000000060187	Lrrc10	1.442710579	3.561259662	8.52627051	0.0085604	0.508942401
ENSMUSG000000040659	Efh2	-0.519333778	6.947545842	8.524551222	0.0085660	0.508942401
ENSMUSG000000100398	NA	-2.966983034	-0.33371935	8.520196393	0.0085802	0.508942401
ENSMUSG000000086292	NA	3.498396912	0.671707036	8.518433643	0.0085860	0.508942401
ENSMUSG000000031730	Dhodh	1.560211805	3.561143968	8.504076665	0.0086331	0.509228043
ENSMUSG000000068079	Tcf15	1.59305177	2.611800329	8.454696415	0.0087975	0.512718742
ENSMUSG000000073753	NA	3.269681992	1.843172793	8.447745658	0.0088209	0.512718742
ENSMUSG000000024430	Cabyr	1.838585256	2.791962666	8.445193466	0.0088295	0.512718742
ENSMUSG000000027254	Map1a	-0.40840188	8.974690398	8.43537084	0.0088628	0.512718742
ENSMUSG000000020891	Alox8	-0.544425919	8.271543651	8.39507532	0.0090006	0.513088245
ENSMUSG000000064202	4430402I18Rik	-1.064473763	5.156187329	8.387346554	0.0090273	0.513088245
ENSMUSG000000001334	Fndc5	1.699558059	3.869939239	8.384889447	0.0090358	0.513088245
ENSMUSG000000025489	Ifitm5	3.897890142	0.514589525	8.381848457	0.0090464	0.513088245
ENSMUSG000000099843	NA	-2.674702031	1.920594063	8.34915551	0.0091606	0.513088245
ENSMUSG000000018340	Anxa6	-0.451737448	7.466063225	8.346625515	0.0091695	0.513088245
ENSMUSG000000097242	Gm16907	1.08964398	4.388252803	8.345470687	0.0091736	0.513088245
ENSMUSG000000022656	Pvrl3	-0.58012691	6.780125137	8.334783574	0.0092113	0.513088245
ENSMUSG000000027956	Tmem144	0.981660399	4.591557586	8.323067235	0.0092529	0.513088245
ENSMUSG000000024613	Tcof1	-0.863517712	4.851097747	8.293394416	0.0093592	0.514939156
ENSMUSG000000042514	Klhl14	-1.479747329	3.30346675	8.289871795	0.0093719	0.514939156

ENSMUSG00000032667	Pon2	0.975248288	5.901621972	8.277786645	0.0094156	0.514990595
ENSMUSG00000020009	lfngr1	0.851909734	5.117126171	8.254786059	0.0094995	0.515927261
ENSMUSG00000037148	Arhgap10	-0.590480634	6.295108289	8.244130105	0.0095386	0.515927261
ENSMUSG00000064390	NA	5.040944917	-0.994985928	8.68886437	0.0096079	0.515927261
ENSMUSG00000033342	Lppr5	-1.236635163	4.794772686	8.202872138	0.0096918	0.515927261
ENSMUSG00000040752	Myh6	0.417447384	14.03296203	8.180449437	0.0097763	0.515927261
ENSMUSG00000046179	E2f8	-1.385658187	4.503983676	8.178581422	0.0097834	0.515927261
ENSMUSG00000083000	NA	2.883850391	1.922767378	8.145596132	0.0099092	0.515927261
ENSMUSG00000040037	Negr1	-0.912250263	4.87162146	8.140995174	0.0099268	0.515927261
ENSMUSG00000038022	Fam188b	1.740320462	2.529455728	8.135286792	0.0099488	0.515927261
ENSMUSG00000064366	NA	2.153931283	3.982821683	8.282532597	0.0099937	0.515927261
ENSMUSG00000025781	Atp5c1	0.463632877	7.03573502	8.122290065	0.0099991	0.515927261
ENSMUSG00000086465	NA	3.846334968	-0.36284859	8.104679864	0.0100677	0.515927261
ENSMUSG00000019818	Cd164	-0.420028686	7.997652133	8.077991559	0.0101727	0.515927261
ENSMUSG00000086953	NA	2.318186305	1.32355481	8.064947247	0.0102244	0.515927261
ENSMUSG00000097075	NA	2.167253739	2.005591141	8.051785747	0.0102769	0.515927261
ENSMUSG00000088990	NA	-3.25133153	1.348697859	8.043919365	0.0103085	0.515927261
ENSMUSG00000045659	Plekha7	0.895227691	5.643172266	8.025936457	0.0103810	0.515927261
ENSMUSG00000026017	Carf	0.872881812	4.5698174	8.019630123	0.0104065	0.515927261
ENSMUSG00000024661	Fth1	-0.82411202	4.959793168	8.008538853	0.0104516	0.515927261
ENSMUSG00000027624	Epb4.1l1	-0.605174987	7.364533912	8.008227974	0.0104529	0.515927261
ENSMUSG00000026833	Olfm1	-0.926380064	4.311272784	8.006385059	0.0104604	0.515927261
ENSMUSG00000079465	Col4a3	0.873363679	5.217616546	8.001124748	0.0104819	0.515927261
ENSMUSG00000037089	Slc35b2	-1.907089001	2.269462348	7.98810776	0.0105353	0.515927261
ENSMUSG00000033458	Fan1	2.037421559	3.019354172	7.960305931	0.0106503	0.515927261
ENSMUSG00000059571	NA	3.684164195	1.960691202	8.045650695	0.0106700	0.515927261
ENSMUSG00000096547	NA	-3.42276486	-0.746526575	7.955537114	0.0106702	0.515927261
ENSMUSG00000025092	Hspa12a	-0.609520889	6.524828171	7.947809999	0.0107025	0.515927261
ENSMUSG00000083844	2210015D19Rik	0.854500897	5.157332984	7.946963559	0.0107061	0.515927261
ENSMUSG00000025050	Pcgf6	1.388105056	3.621789315	7.946403954	0.0107084	0.515927261
ENSMUSG00000034462	Pkd2	0.543778539	6.609063954	7.9355737	0.0107539	0.515927261
ENSMUSG00000026455	Klhl12	1.10131674	4.515868873	7.927930646	0.0107861	0.515927261
ENSMUSG00000058006	Mdn1	0.469369745	7.181650721	7.915628306	0.0108382	0.515927261
ENSMUSG00000034247	Plekhm1	0.67918663	5.85305219	7.911317618	0.0108565	0.515927261
ENSMUSG00000024601	Isoc1	-0.658373243	6.429812791	7.900666976	0.0109019	0.515927261
ENSMUSG0000003235	Eif2b5	0.93265881	4.408209097	7.890761302	0.0109444	0.515927261
ENSMUSG0000004939	Nmrk2	1.08478087	4.563520802	7.883341523	0.0109763	0.515927261
ENSMUSG00000027656	Wisp2	2.449222449	2.257648555	7.865017272	0.0110555	0.517629421
ENSMUSG00000098230	1700095B10Rik	2.861788729	0.909480872	7.81667749	0.0112676	0.522527997
ENSMUSG00000039176	Polg	1.169118397	3.336409944	7.809302839	0.0113003	0.522527997
ENSMUSG00000049299	Trappc1	-0.611476648	6.227238025	7.808344198	0.0113046	0.522527997
ENSMUSG00000009378	Slc16a12	-1.625104748	3.237850909	7.799737236	0.0113430	0.522527997
ENSMUSG00000059623	Olftr39	1.885053777	2.831725483	7.792084677	0.0113772	0.522527997
ENSMUSG00000085925	Rtl1	1.747420841	2.956979093	7.769937848	0.0114770	0.525105709
ENSMUSG00000007670	Khsrp	-0.579063321	6.221006774	7.740986857	0.0116089	0.529128327
ENSMUSG00000089185	NA	4.884579243	-1.032590647	8.113703666	0.0117882	0.533549745
ENSMUSG00000090105	NA	2.817732885	0.455892867	7.700846057	0.0117946	0.533549745
ENSMUSG00000073684	2610002J02Rik	-1.849485601	2.059164508	7.68594852	0.0118643	0.534695211
ENSMUSG00000026694	Mettl13	1.637603369	3.162180099	7.659706248	0.0119883	0.536509663
ENSMUSG00000056167	Cnot10	0.905284888	4.399698577	7.656760677	0.0120024	0.536509663
ENSMUSG00000087362	Gm13710	2.784804618	1.223728122	7.643183665	0.0120672	0.536509663
ENSMUSG00000022103	Gfra2	-0.752007099	5.699860653	7.639889367	0.0120829	0.536509663
ENSMUSG00000025921	Rdh10	1.436704464	2.943527929	7.613389389	0.0122108	0.539522379
ENSMUSG00000021614	Vcan	-0.411742525	9.689718555	7.60120541	0.0122700	0.539522379
ENSMUSG00000032782	Cntrob	1.5532186	3.251211712	7.595061451	0.0123000	0.539522379

ENSMUSG00000086040	Wipf3	-0.515054963	8.107058887	7.588916419	0.0123301	0.539522379
ENSMUSG00000005442	Cic	-0.560437424	7.526928183	7.578452846	0.0123816	0.539810311
ENSMUSG000000033676	Gabrb3	-0.843848297	5.860013932	7.558635731	0.0124797	0.54212238
ENSMUSG000000060073	Psma3	1.547857796	3.678645136	7.542124934	0.0125621	0.542288545
ENSMUSG000000027447	Cst3	-0.440313961	7.294175695	7.532585859	0.0126099	0.542288545
ENSMUSG000000088230	NA	4.161675689	-1.367260663	7.912030919	0.0126828	0.542288545
ENSMUSG000000013629	Cad	-1.152401179	3.837690233	7.515102058	0.0126982	0.542288545
ENSMUSG000000080723	NA	2.927548415	0.030568776	7.49830956	0.0127837	0.542288545
ENSMUSG000000033543	Gtf2a2	0.710729214	5.188436222	7.4797732	0.0128787	0.542288545
ENSMUSG000000028343	Erp44	-0.894779599	4.499584387	7.473319609	0.0129120	0.542288545
ENSMUSG000000064814	NA	3.034405689	-0.540874359	7.461139208	0.0129751	0.542288545
ENSMUSG000000034165	Ccnd3	-0.728354099	5.533745866	7.460087406	0.0129805	0.542288545
ENSMUSG000000026442	Nfasc	-0.557863908	8.632966835	7.452447198	0.0130203	0.542288545
ENSMUSG000000027628	Aar2	1.516647929	3.297803039	7.446622983	0.0130507	0.542288545
ENSMUSG000000052727	Map1b	-0.34456379	10.95344327	7.444224414	0.0130632	0.542288545
ENSMUSG000000037572	Wdhd1	-1.34741182	3.192996017	7.443054016	0.0130694	0.542288545
ENSMUSG000000030889	Vwa3a	1.72495121	2.494229375	7.429063321	0.0131428	0.543463137
ENSMUSG000000020271	Fbxw11	-0.548606548	6.410037262	7.408993824	0.0132490	0.544800565
ENSMUSG000000056962	Jmjd6	1.332435237	3.344096969	7.391787302	0.0133409	0.544800565
ENSMUSG000000053930	Shisa6	-0.666105866	6.441138718	7.387040549	0.0133663	0.544800565
ENSMUSG000000025591	Tma16	-1.07747051	3.984826878	7.372396362	0.0134452	0.544800565
ENSMUSG000000011382	Dhdh	-0.834589517	5.8124311	7.357138627	0.0135279	0.544800565
ENSMUSG000000059554	Ccdc28a	2.129394858	2.82934184	7.354427469	0.0135427	0.544800565
ENSMUSG000000066621	Tecpr1	1.109461579	4.356021631	7.353891841	0.0135456	0.544800565
ENSMUSG000000020700	Map3k3	-0.873093073	4.714408398	7.349781305	0.0135680	0.544800565
ENSMUSG000000029648	Flt1	0.534712213	6.825129344	7.342905648	0.0136056	0.544800565
ENSMUSG000000020648	Dus4l	1.777930974	2.629551869	7.338834378	0.0136279	0.544800565
ENSMUSG000000068686	Cd59b	-2.627657772	1.405880334	7.316192365	0.0137528	0.5463919
ENSMUSG000000044067	Gpr22	-0.536071686	7.745361466	7.315152307	0.0137586	0.5463919
ENSMUSG000000024978	Gpam	0.768774028	5.241360697	7.283245376	0.0139368	0.550127511
ENSMUSG000000053774	Ubxn7	-0.488099064	7.0303078	7.2819497	0.0139441	0.550127511
ENSMUSG000000038267	Slc22a23	1.258136711	3.685997075	7.26022894	0.0140669	0.551037359
ENSMUSG000000039115	Itga9	0.910022548	8.005313328	7.654241169	0.0140671	0.551037359
ENSMUSG000000006717	Acot13	0.587193381	6.176941169	7.235540562	0.0142081	0.551037359
ENSMUSG000000037965	Zc3h7a	0.525476635	6.69669305	7.235051431	0.0142109	0.551037359
ENSMUSG000000035864	Syt1	-2.445323216	2.651321502	7.202969618	0.0144245	0.551037359
ENSMUSG000000038403	Hfe2	-0.679548751	5.323216486	7.186933569	0.0144906	0.551037359
ENSMUSG000000024604	Rbm22	0.85563354	5.264567524	7.186480203	0.0144932	0.551037359
ENSMUSG000000036087	Slain2	0.49252982	8.041880908	7.186305257	0.0144943	0.551037359
ENSMUSG000000002395	Use1	1.231812493	3.443608225	7.171430942	0.0145820	0.551037359
ENSMUSG000000052760	A630001G21Rik	1.749733323	1.767875032	7.149909497	0.0147100	0.551037359
ENSMUSG000000058402	Zfp420	1.309072145	3.685434847	7.145128554	0.0147386	0.551037359
ENSMUSG000000007080	Pole	-0.789592219	5.020319044	7.141393794	0.0147610	0.551037359
ENSMUSG000000058997	Vwa8	-0.44161378	7.352755258	7.141192298	0.0147622	0.551037359
ENSMUSG000000074243	NA	2.968842493	0.750696754	7.140025617	0.0147692	0.551037359
ENSMUSG000000016206	H2-M3	2.445788038	2.061656791	7.137445935	0.0147847	0.551037359
ENSMUSG000000026360	Rgs2	-0.848383163	5.080755057	7.132796194	0.0148127	0.551037359
ENSMUSG000000043822	Adamts15	0.870604758	5.690865477	7.126095905	0.0148531	0.551037359
ENSMUSG000000020460	NA	1.639564293	3.255103448	7.122099183	0.0148773	0.551037359
ENSMUSG000000018326	Ywhab	-0.365574278	8.915787283	7.114801558	0.0149215	0.551037359
ENSMUSG000000030871	Ears2	1.281264086	4.10348568	7.104972413	0.0149813	0.551037359
ENSMUSG000000010048	Ifrd2	1.403035146	3.230476058	7.095100357	0.0150417	0.551037359
ENSMUSG000000007817	Zmiz1	-0.386257629	9.430051489	7.090266538	0.0150714	0.551037359
ENSMUSG000000035566	Pcdh17	-0.675099186	6.080278961	7.086242053	0.0150961	0.551037359
ENSMUSG000000022883	Robo1	-0.74408764	9.028352189	7.338336462	0.0151030	0.551037359

ENSMUSG00000100672	NA	2.650267048	0.374044916	7.065702793	0.0152231	0.551037359
ENSMUSG00000039960	Rhou	1.038422798	4.344969447	7.048230191	0.0153320	0.551037359
ENSMUSG000000081679	NA	-3.279051861	-0.615731078	7.035811761	0.0154100	0.551037359
ENSMUSG000000031239	ltn2a	-1.00405576	4.631734438	7.016482944	0.0155322	0.551037359
ENSMUSG000000028348	Murc	1.553362026	4.065646259	7.015157491	0.0155407	0.551037359
ENSMUSG000000072852	NA	2.570165628	3.978276785	7.456138893	0.0156480	0.551037359
ENSMUSG000000039470	Zdhhc2	-0.824871442	5.093160965	6.994006464	0.0156757	0.551037359
ENSMUSG000000036461	Elf1	0.624371757	5.35734525	6.979867336	0.0157668	0.551037359
ENSMUSG000000020256	Aldh1l2	-0.504349595	6.864180439	6.964986455	0.0158633	0.551037359
ENSMUSG000000026974	Zmynd19	1.557991613	2.634260235	6.964188684	0.0158684	0.551037359
ENSMUSG000000020340	Cyfp2	-0.904579391	5.002122244	6.951239334	0.0159530	0.551037359
ENSMUSG000000040283	Btnl9	0.721136237	5.882117752	6.942324437	0.0160114	0.551037359
ENSMUSG000000026005	Rpe	-0.825830734	4.712589607	6.941210334	0.0160187	0.551037359
ENSMUSG000000090399	NA	1.605498352	2.447415009	6.937502103	0.0160432	0.551037359
ENSMUSG000000049134	Nrap	0.483354799	8.450281617	6.934958651	0.0160599	0.551037359
ENSMUSG000000022561	Gpaa1	1.564920222	2.278131041	6.925999101	0.0161191	0.551037359
ENSMUSG000000030138	Bms1	0.654218478	6.372859862	6.925528209	0.0161222	0.551037359
ENSMUSG000000024098	Twsg1	-0.387815403	8.276639116	6.920518111	0.0161555	0.551037359
ENSMUSG000000024758	Rtn3	-0.437588275	7.813943935	6.919270472	0.0161638	0.551037359
ENSMUSG000000027993	Trim2	-0.520131612	6.576092567	6.917987901	0.0161723	0.551037359
ENSMUSG000000074629	NA	1.355199552	3.1873792	6.900684518	0.0162877	0.551037359
ENSMUSG000000083112	NA	2.824558722	-0.237660477	6.894810576	0.0163272	0.551037359
ENSMUSG000000019945	1700040L02Rik	-0.912296091	4.496723689	6.891124381	0.0163519	0.551037359
ENSMUSG000000073117	Gm7347	-1.745699647	3.188631831	6.890960363	0.0163530	0.551037359
ENSMUSG000000041571	Sepw1	-0.903266186	4.615389509	6.876548771	0.0164504	0.551037359
ENSMUSG000000020263	Appl2	0.696347184	6.621874952	6.872985015	0.0164745	0.551037359
ENSMUSG000000013921	Clip3	-0.487082408	6.975068343	6.870642607	0.0164904	0.551037359
ENSMUSG000000078779	Zfp59	2.254751703	1.733340608	6.865183453	0.0165276	0.551037359
ENSMUSG000000056978	Hamp2	3.073099823	-0.375563717	6.828552688	0.0167792	0.551037359
ENSMUSG000000038677	Scube3	1.522770102	3.617174404	6.826508167	0.0167933	0.551037359
ENSMUSG000000058441	Panx2	-1.34020802	3.845390258	6.824569144	0.0168068	0.551037359
ENSMUSG000000097577	NA	1.217817022	3.143404319	6.814412618	0.0168774	0.551037359
ENSMUSG000000064595	NA	2.917279963	-0.429812962	6.799220561	0.0169838	0.551037359
ENSMUSG000000002870	Mcm2	-0.854177881	4.537383371	6.796784447	0.0170009	0.551037359
ENSMUSG000000084552	NA	2.956180145	-0.195935393	6.795197119	0.0170120	0.551037359
ENSMUSG000000045594	Glb1	-1.325916201	3.919692236	6.792912733	0.0170281	0.551037359
ENSMUSG000000024395	Lims2	1.266815863	4.111825213	6.789927951	0.0170491	0.551037359
ENSMUSG000000019868	Vta1	-1.14177404	3.584683483	6.788520364	0.0170591	0.551037359
ENSMUSG000000028986	Klhl7	-0.52263328	6.405655285	6.778871666	0.0171273	0.551037359
ENSMUSG000000050471	Fam118b	0.723808726	4.967005479	6.776079794	0.0171471	0.551037359
ENSMUSG000000003032	Klf4	0.859810597	4.668271698	6.770825906	0.0171845	0.551037359
ENSMUSG000000085782	NA	1.787362304	2.244896897	6.770212168	0.0171888	0.551037359
ENSMUSG000000032680	6820408C15Rik	1.838446835	2.463777445	6.769525637	0.0171937	0.551037359
ENSMUSG000000096807	Hist1h2bm	-2.276461693	1.435008067	6.769027165	0.0171973	0.551037359
ENSMUSG000000023249	Parp3	1.315971218	3.225574069	6.768693422	0.0171996	0.551037359
ENSMUSG000000038936	Sccpdh	0.628346541	5.581982623	6.75077696	0.0173278	0.551037359
ENSMUSG000000081123	NA	1.974856841	1.416352992	6.750646281	0.0173287	0.551037359
ENSMUSG000000048429	1810026J23Rik	0.919320446	4.743823983	6.736123663	0.0174334	0.551037359
ENSMUSG000000080237	NA	2.077559599	1.262981005	6.735983527	0.0174344	0.551037359
ENSMUSG000000021747	4930452B06Rik	-1.401585952	2.740178394	6.735763304	0.0174360	0.551037359
ENSMUSG000000050592	Fam78a	-0.875776786	6.635825	6.827235931	0.0174389	0.551037359
ENSMUSG000000086877	NA	1.831956196	3.028219645	6.734178515	0.0174475	0.551037359
ENSMUSG000000028488	Sh3gl2	-1.498569273	3.666585564	6.721653877	0.0175384	0.552458653
ENSMUSG000000092274	NA	0.569446033	9.338229874	6.717499524	0.0175994	0.552932399
ENSMUSG000000024246	Thumpd2	1.843727226	2.556939492	6.688136031	0.0177843	0.557199747

ENSMUSG00000045327	6330549D23Rik	0.95178245	4.253562541	6.681371972	0.0178344	0.557199747
ENSMUSG00000020832	Eral1	1.066320446	3.94610361	6.666128388	0.0179479	0.557199747
ENSMUSG00000033542	Arhgef5	0.779051065	5.230367532	6.656294606	0.0180215	0.557199747
ENSMUSG00000034334	Fam151b	2.394987169	1.639138296	6.655339709	0.0180287	0.557199747
ENSMUSG00000004698	Hdac9	-0.594594146	6.840774153	6.655167862	0.0180300	0.557199747
ENSMUSG00000006564	Mirlet7b	4.26389416	-1.324136488	6.958724709	0.0181166	0.557199747
ENSMUSG000000032452	Clstn2	-1.218286342	4.437069068	6.641523703	0.0181328	0.557199747
ENSMUSG000000064343	NA	1.416875931	3.864124947	6.637028139	0.0181668	0.557199747
ENSMUSG000000032735	Ablim3	0.626955786	5.864108001	6.632877368	0.0181982	0.557199747
ENSMUSG000000040721	Zfhx2	0.720786782	5.253942935	6.624992161	0.0182582	0.557439263
ENSMUSG000000027030	Stk39	0.864147588	6.610146136	6.673898967	0.0183787	0.557439263
ENSMUSG000000051627	Hist1h1e	-0.87971803	5.278059942	6.607096356	0.0183951	0.557439263
ENSMUSG000000034255	Arhgap27	1.423924101	3.862091898	6.603398718	0.0184235	0.557439263
ENSMUSG000000015090	Ptgds	1.330679845	3.960655254	6.600895904	0.0184428	0.557439263
ENSMUSG000000006221	Hspb7	0.348503513	11.16149568	6.595364248	0.0184854	0.557439263
ENSMUSG000000036061	Smug1	1.238206104	3.570933644	6.589555406	0.0185304	0.557439263
ENSMUSG000000043557	Mdga1	-0.832452152	6.624262866	6.628617019	0.0187136	0.560328536
ENSMUSG000000078349	NA	1.282635607	3.703658362	6.565266031	0.0187195	0.560328536
ENSMUSG000000048040	NA	-1.759135146	1.328585526	6.534998241	0.0189583	0.562481778
ENSMUSG000000028040	Efna4	1.892642464	2.952441205	6.527657694	0.0190167	0.562481778
ENSMUSG000000093404	NA	4.224076384	-1.352049287	6.830986384	0.0190306	0.562481778
ENSMUSG000000041203	2310036O22Rik	-1.157029444	3.503223037	6.522506707	0.0190579	0.562481778
ENSMUSG000000097391	Mirg	1.229851208	3.635047787	6.516870644	0.0191030	0.562481778
ENSMUSG000000021936	Mapk8	0.520050511	6.100447056	6.51648178	0.0191061	0.562481778
ENSMUSG000000030339	Ltbr	1.230956638	2.876398498	6.514909974	0.0191187	0.562481778
ENSMUSG000000020044	Timp3	-0.382996222	9.788335469	6.505186493	0.0191968	0.563404085
ENSMUSG000000032565	Nudt16	1.2152023	3.998843217	6.498752125	0.0192488	0.563553522
ENSMUSG000000020381	3010026O09Rik	3.652164086	2.801067162	6.863345202	0.0195214	0.568932689
ENSMUSG000000025871	4833439L19Rik	-0.465513657	6.986089827	6.464596751	0.0195271	0.568932689
ENSMUSG000000020718	Polg2	1.495496309	3.30395999	6.458788468	0.0195748	0.568947007
ENSMUSG000000032259	Drd2	-1.799280144	3.717535269	6.472248396	0.0197234	0.571884185
ENSMUSG000000028397	Kdm4c	-0.499930176	6.50771743	6.423648083	0.0198667	0.572611309
ENSMUSG000000086212	Mkln1os	1.345225587	3.109465999	6.421767614	0.0198824	0.572611309
ENSMUSG000000032666	1700025G04Rik	0.611059793	6.807033443	6.419863504	0.0198984	0.572611309
ENSMUSG000000031618	Nr3c2	-0.573395233	6.277426881	6.415049724	0.0199388	0.572611309
ENSMUSG000000032898	Fbxo21	-0.595611376	5.990219896	6.404238471	0.0200300	0.572758719
ENSMUSG000000027326	Casc5	-1.033336478	4.662580305	6.399467907	0.0200704	0.572758719
ENSMUSG000000039536	Stau1	-0.512348111	6.926659608	6.392553128	0.0201290	0.572758719
ENSMUSG000000042529	Kcnj12	-0.765292962	4.664068059	6.391924176	0.0201344	0.572758719
ENSMUSG000000028470	Hint2	1.336173218	2.84923661	6.370418485	0.0203181	0.576623208
ENSMUSG000000034275	Igsf9b	-0.854158812	6.03907682	6.342437811	0.0205601	0.576698998
ENSMUSG000000020866	Cacna1g	-0.486157592	9.564513441	6.335002731	0.0206249	0.576698998
ENSMUSG000000055271	NA	-2.483086582	1.745534433	6.33436276	0.0206305	0.576698998
ENSMUSG000000064365	NA	2.24243811	1.592473729	6.332344065	0.0206481	0.576698998
ENSMUSG000000048794	Ccdc37	2.118872719	2.225920325	6.329747822	0.0206709	0.576698998
ENSMUSG000000045414	1190002N15Rik	-0.557002007	6.957008097	6.329578231	0.0206723	0.576698998
ENSMUSG000000047123	Ticam1	-0.667880862	5.464543702	6.329571005	0.0206724	0.576698998
ENSMUSG000000088344	NA	3.913587989	-1.44117012	6.611805931	0.0207251	0.576698998
ENSMUSG000000027459	Fam110a	-1.643912685	2.970001116	6.320485293	0.0207522	0.576698998
ENSMUSG000000058192	Zfp846	1.184395572	3.317332566	6.291251771	0.0210111	0.581920784
ENSMUSG000000021518	Ptdss1	-0.777418984	4.922049152	6.288372717	0.0210368	0.581920784
ENSMUSG000000007589	Tinf2	-1.287958376	2.682227974	6.261573288	0.0212777	0.586398339
ENSMUSG000000087331	1810021B22Rik	-2.185517736	1.703928676	6.259536548	0.0212961	0.586398339
ENSMUSG000000031145	Prickle3	1.089762568	4.07668116	6.252679446	0.0213583	0.586459669
ENSMUSG000000047731	Wbp1l	-0.53522679	6.32800549	6.243456792	0.0214423	0.586459669

ENSMUSG00000025465	Echs1	1.086241463	4.032675472	6.243208126	0.0214445	0.586459669
ENSMUSG00000091587	NA	2.376511267	1.773331911	6.213427256	0.0217183	0.591100668
ENSMUSG00000027244	Atg13	0.811427459	6.062686753	6.205337553	0.0217933	0.591100668
ENSMUSG00000032026	Rexo2	0.564349189	6.477974242	6.194694844	0.0218925	0.591100668
ENSMUSG00000045045	Lrfn4	-1.643659837	2.433180069	6.187163814	0.0219630	0.591100668
ENSMUSG00000020777	Acox1	0.523282622	6.289888295	6.168952379	0.0221345	0.591100668
ENSMUSG00000041261	Car8	1.619901886	2.93636382	6.165745763	0.0221648	0.591100668
ENSMUSG00000019923	Zwint	-0.613203895	6.48082191	6.164168626	0.0221798	0.591100668
ENSMUSG00000098453	NA	3.216308195	-1.154276152	6.163838373	0.0221829	0.591100668
ENSMUSG00000083606	NA	-1.660549958	1.995181179	6.154567135	0.0222710	0.591100668
ENSMUSG00000087231	E230016M11Rik	1.865980475	2.764703393	6.150786326	0.0223070	0.591100668
ENSMUSG00000077360	NA	2.919341759	0.22075309	6.138543017	0.0224242	0.591100668
ENSMUSG00000027217	Tspan18	-0.337711002	9.097590387	6.137173442	0.0224373	0.591100668
ENSMUSG00000020496	Rnf187	-0.619628009	6.683866272	6.135348871	0.0224549	0.591100668
ENSMUSG00000031523	Dlc1	-0.371197164	9.067395252	6.133112763	0.0224764	0.591100668
ENSMUSG00000052889	Prkcb	1.958763401	2.212404443	6.130351314	0.0225029	0.591100668
ENSMUSG00000038296	Galnt18	-1.226115662	3.706648744	6.126500893	0.0225401	0.591100668
ENSMUSG00000065943	NA	3.177281047	0.256805209	6.126122857	0.0225437	0.591100668
ENSMUSG00000044707	Ccnjl	-0.975011276	4.62810644	6.124901375	0.0225555	0.591100668
ENSMUSG00000035004	Igsf6	1.45138117	2.603128284	6.122213258	0.0225815	0.591100668
ENSMUSG00000018189	Uchl5	-1.013825421	4.554123555	6.117676077	0.0226255	0.591100668
ENSMUSG00000032648	Pygm	-0.403660906	7.442357559	6.110525693	0.0226949	0.591100668
ENSMUSG00000035835	Lppr3	0.665649026	5.513639922	6.110517964	0.0226950	0.591100668
ENSMUSG00000087692	NA	-2.877670856	0.457671924	6.102476659	0.0227733	0.591860939
ENSMUSG00000004929	Thop1	1.573220085	2.957756256	6.095462163	0.0228420	0.592326696
ENSMUSG00000029426	Scarb2	-0.605703946	5.861160543	6.085514045	0.0229397	0.592326696
ENSMUSG00000029875	Ccdc184	-1.496674108	5.185148447	6.36492186	0.0230050	0.592326696
ENSMUSG00000039485	Tspyl4	-1.180045915	4.18632136	6.075927565	0.0230343	0.592326696
ENSMUSG00000056492	Gpr116	0.431884962	7.920784225	6.075613559	0.0230374	0.592326696
ENSMUSG00000016262	Sertad4	-0.406508044	7.55657773	6.064060633	0.0231520	0.594004439
ENSMUSG00000044938	Klhl31	0.379237608	8.626346811	6.045308658	0.0233394	0.597488108
ENSMUSG00000041329	Atp1b2	-0.392780707	7.481642971	6.030326063	0.0234904	0.597488108
ENSMUSG00000084983	NA	-1.465469449	2.765268206	6.02998921	0.0234938	0.597488108
ENSMUSG00000085902	NA	1.905991076	1.931466778	6.025932973	0.0235349	0.597488108
ENSMUSG00000034807	Glt25d1	0.845591706	4.550601035	6.025814553	0.0235361	0.597488108
ENSMUSG00000020902	Ntn1	0.991005347	4.645973674	6.012184106	0.0236747	0.597824238
ENSMUSG00000030880	Polr3e	1.3671579	3.340006497	6.008066412	0.0237167	0.597824238
ENSMUSG00000027722	Spata5	0.61877799	5.167744147	5.997646192	0.0238235	0.597824238
ENSMUSG0000002486	Tchp	1.339809618	3.246397824	5.996231005	0.0238380	0.597824238
ENSMUSG00000024556	Me2	-1.127045849	3.950597724	5.987832883	0.0239246	0.597824238
ENSMUSG00000080434	NA	-2.61039065	-0.13591287	5.986865878	0.0239346	0.597824238
ENSMUSG00000004865	Srpk1	0.498817959	6.734093429	5.985919096	0.0239443	0.597824238
ENSMUSG00000029474	Rnf34	1.069665228	3.793819859	5.983474616	0.0239696	0.597824238
ENSMUSG00000083280	NA	-1.950784539	-0.02888359	5.976671855	0.0240401	0.597824238
ENSMUSG00000055963	Triqk	-1.515065928	2.241413308	5.972636687	0.0240820	0.597824238
ENSMUSG00000064179	Tnnt1	1.115182448	3.566211066	5.968327407	0.0241269	0.597824238
ENSMUSG00000019880	Rspo3	-0.592530222	7.095993709	5.966545217	0.0241455	0.597824238
ENSMUSG00000020182	Ddc	-0.819486682	6.770695073	6.043068022	0.0243016	0.600454835
ENSMUSG00000075590	Nrbp2	0.536412126	6.776065048	5.943110021	0.0243913	0.600489312
ENSMUSG00000036613	Tssc1	-1.846413533	1.988521958	5.942021244	0.0244028	0.600489312
ENSMUSG00000024829	Mrpl21	1.403143173	2.839053822	5.921149283	0.0246243	0.604702355
ENSMUSG00000052459	Atp6v1a	-0.502556926	6.896068432	5.915806926	0.0246813	0.604868899
ENSMUSG00000033943	Mga	0.320457814	8.416811011	5.911064868	0.0247321	0.604881039
ENSMUSG00000045409	Trim39	0.800510914	5.074316937	5.905069899	0.0247965	0.605208386
ENSMUSG00000096472	Cdkn2d	-1.929071135	2.152417944	5.899280312	0.0248588	0.605208386

ENSMUSG00000084821	Gm15880	1.422833979	3.556930646	5.893130436	0.0249252	0.605208386
ENSMUSG00000037007	Zfp113	0.833085239	4.318898692	5.886887725	0.0249928	0.605208386
ENSMUSG00000054459	Vsnl1	-1.337251019	6.425179663	6.411238451	0.0249970	0.605208386
ENSMUSG00000009079	Ewsr1	0.387537855	7.406728488	5.874471081	0.0251278	0.605517497
ENSMUSG00000020918	Kat2a	0.801201794	5.50237597	5.870327948	0.0251731	0.605517497
ENSMUSG00000098624	NA	2.798267185	-1.005199104	5.866320737	0.0252169	0.605517497
ENSMUSG00000042743	Sgtb	-1.146263948	4.481943726	5.864656057	0.0252352	0.605517497
ENSMUSG00000023960	Enpp5	-0.795549973	4.140147486	5.859199122	0.0252951	0.605517497
ENSMUSG00000024457	Trim26	0.631140189	5.674295865	5.857691553	0.0253117	0.605517497
ENSMUSG00000014856	Tmem208	1.491348775	2.176077556	5.851015229	0.0253852	0.606072497
ENSMUSG00000038708	Golga4	0.382301159	9.44724947	5.828173532	0.0256388	0.607004453
ENSMUSG00000054640	Slc8a1	-0.415968141	8.778260986	5.827888677	0.0256419	0.607004453
ENSMUSG00000045871	Slitrk6	-0.714680001	6.570430039	5.823566775	0.0256902	0.607004453
ENSMUSG00000044244	Il20rb	1.682245276	2.521773621	5.822022025	0.0257075	0.607004453
ENSMUSG00000093561	NA	1.575414172	3.033722542	5.820288994	0.0257269	0.607004453
ENSMUSG00000083100	NA	2.308688554	1.755865656	5.819606175	0.0257346	0.607004453
ENSMUSG00000093132	NA	2.992700443	-0.609785417	5.808911211	0.0258548	0.607004453
ENSMUSG00000096995	2810029C07Rik	-2.877433991	1.570141228	5.819431576	0.0258936	0.607004453
ENSMUSG00000039725	2810408M09Rik	-1.489120878	3.457390704	5.802714231	0.0259247	0.607004453
ENSMUSG00000000184	Ccnd2	-0.355850404	8.802723059	5.802359926	0.0259287	0.607004453
ENSMUSG00000026014	Raph1	0.343325186	8.766928342	5.796000118	0.0260007	0.607508206
ENSMUSG00000070520	Ndnf2	-1.570454106	3.768114444	5.782570284	0.0261781	0.610454946
ENSMUSG00000036327	Qsox2	1.429507897	2.967743459	5.774216718	0.0262491	0.610454946
ENSMUSG00000027206	Cops2	-0.477302501	6.128665721	5.765287291	0.0263516	0.610454946
ENSMUSG00000051844	B230319C09Rik	1.620932729	1.849444132	5.743808808	0.0266002	0.610454946
ENSMUSG00000069601	Ank3	-0.421783197	9.731099294	5.739887579	0.0266459	0.610454946
ENSMUSG00000032009	Sesn3	-0.754752542	4.893604466	5.737685866	0.0266716	0.610454946
ENSMUSG00000090389	NA	1.207035405	2.451103586	5.736968933	0.0266799	0.610454946
ENSMUSG00000073535	NA	1.315834833	3.862678434	5.73596172	0.0266917	0.610454946
ENSMUSG00000086847	Tbx3os2	1.982527161	2.73687743	5.730486389	0.0267558	0.610454946
ENSMUSG00000028614	Ndc1	0.87476815	4.77238661	5.726612833	0.0268012	0.610454946
ENSMUSG00000050244	Heatr1	0.862630238	4.549365749	5.724197434	0.0268295	0.610454946
ENSMUSG00000086855	NA	2.22431862	1.255231256	5.720217086	0.0268763	0.610454946
ENSMUSG00000066043	Phactr4	0.581816277	6.986837361	5.719743357	0.0268819	0.610454946
ENSMUSG00000065661	NA	3.151691846	-0.241743767	5.719658827	0.0268829	0.610454946
ENSMUSG00000060477	Irak2	1.482879842	3.133176744	5.715940448	0.0269267	0.610454946
ENSMUSG00000027263	Tubgcp4	0.789341601	5.067769317	5.711418071	0.0269801	0.610454946
ENSMUSG00000049807	Arhgap23	-0.55465745	6.282806105	5.701826094	0.0270938	0.610454946
ENSMUSG00000014602	Kif1a	-0.464977505	8.880603924	5.697307897	0.0271475	0.610454946
ENSMUSG00000024542	Cep192	-0.46509234	6.468574753	5.688521663	0.0272524	0.610454946
ENSMUSG00000048582	Gja3	-0.8897506	4.923667559	5.685964978	0.0272830	0.610454946
ENSMUSG00000027078	Ube2l6	-1.058892896	3.608266641	5.685736095	0.0272857	0.610454946
ENSMUSG00000001786	Fbxo7	0.77901428	4.70972869	5.680095836	0.0273533	0.610454946
ENSMUSG00000040596	Pogk	-0.550513105	6.369509158	5.675041979	0.0274141	0.610454946
ENSMUSG00000028393	Alad	-1.218443716	2.996708235	5.672226569	0.0274480	0.610454946
ENSMUSG00000015668	Pdzd11	-0.900628805	5.210479554	5.671132312	0.0274612	0.610454946
ENSMUSG00000024423	Impact	-0.709901763	5.116585301	5.668118015	0.0274976	0.610454946
ENSMUSG00000018796	Acsl1	0.354237307	8.847042826	5.658213748	0.0276175	0.610454946
ENSMUSG00000038351	Sgsm2	-0.813250838	4.104749132	5.653396201	0.0276761	0.610454946
ENSMUSG00000078201	Tmem203	2.130702607	0.745372214	5.651261598	0.0277021	0.610454946
ENSMUSG00000064801	NA	3.146157132	-0.807666512	5.650916536	0.0277063	0.610454946
ENSMUSG00000063052	Lrrc40	-0.982207038	3.960435434	5.650226108	0.0277147	0.610454946
ENSMUSG00000024803	Ankrd1	0.815696932	9.757386592	6.041302989	0.0277743	0.610454946
ENSMUSG00000033054	Npat	-0.4638344	6.315570823	5.643156926	0.0278010	0.610454946
ENSMUSG00000044894	Uqcrq	1.49419102	2.808296043	5.634143736	0.0279115	0.610676217

ENSMUSG0000007039	Ddah2	-1.661897264	2.062724792	5.633825746	0.0279154	0.610676217
ENSMUSG00000024472	Dcp2	-0.452932789	6.643594633	5.623285879	0.0280452	0.610676217
ENSMUSG00000027613	Eif6	-1.071785389	3.755083866	5.623231464	0.0280459	0.610676217
ENSMUSG00000021668	Polk	0.684819551	5.073223135	5.621699699	0.0280648	0.610676217
ENSMUSG00000024436	Mrps18b	1.720824724	1.602167537	5.606910935	0.0282483	0.611795966
ENSMUSG00000039377	Hlx	-1.147287041	3.630922974	5.601113216	0.0283206	0.611795966
ENSMUSG00000029468	P2rx7	2.196680304	3.963551594	5.874778309	0.0283348	0.611795966
ENSMUSG00000025878	Uimc1	0.846743424	4.998484607	5.596443688	0.0283790	0.611795966
ENSMUSG00000086964	NA	2.084382507	0.935260072	5.59115143	0.0284453	0.611795966
ENSMUSG00000046982	Tshz1	-0.425026802	7.191256296	5.590274801	0.0284563	0.611795966
ENSMUSG00000028173	Wls	-0.755816435	5.145346406	5.586774512	0.0285003	0.611795966
ENSMUSG00000098202	NA	1.276893101	4.099672373	5.584636694	0.0285272	0.611795966
ENSMUSG00000030629	Zfand6	-1.020491033	3.440799284	5.576996431	0.0286236	0.611795966
ENSMUSG00000028318	Polr1e	1.186517837	3.200320358	5.576661137	0.0286278	0.611795966
ENSMUSG00000035949	Fbxw2	0.627636261	5.958558777	5.572465592	0.0286809	0.611795966
ENSMUSG00000044149	Nkrf	-0.891612094	3.800957532	5.568880464	0.0287264	0.611795966
ENSMUSG00000059975	Zfp74	0.626013277	5.613284332	5.564578584	0.0287810	0.611876984
ENSMUSG00000024276	Zfp397	0.470114679	6.049560967	5.55839316	0.0288598	0.612469936
ENSMUSG00000035184	Fam124a	1.732108161	2.45414446	5.522969696	0.0293158	0.620730042
ENSMUSG00000080662	NA	1.732082219	0.995217814	5.502103154	0.0295882	0.620730042
ENSMUSG00000092973	NA	3.164907864	-1.167296469	5.496004061	0.0296683	0.620730042
ENSMUSG00000070003	Ssbp4	1.208033278	3.749077444	5.492439355	0.0297153	0.620730042
ENSMUSG00000025558	Dock9	0.606017626	6.340627953	5.492254153	0.0297177	0.620730042
ENSMUSG00000097131	NA	1.284315942	3.341892096	5.485743287	0.0298037	0.620730042
ENSMUSG00000010175	Prox1	-0.424916063	8.739908239	5.47870936	0.0298970	0.620730042
ENSMUSG000000102006	NA	2.489280635	-0.225902011	5.476842802	0.0299218	0.620730042
ENSMUSG00000033377	Palmd	0.566098784	7.031612454	5.475812662	0.0299355	0.620730042
ENSMUSG00000086933	NA	2.148722051	2.859705277	5.484490534	0.0299985	0.620730042
ENSMUSG00000020844	Nxn	-1.050778354	3.17928531	5.459544957	0.0301527	0.620730042
ENSMUSG00000025785	Exosc7	1.370195615	3.488339614	5.459481431	0.0301535	0.620730042
ENSMUSG00000032194	Kank2	0.494721806	8.12846987	5.455831785	0.0302025	0.620730042
ENSMUSG00000024112	Cacna1h	-0.552308657	7.473862839	5.440804473	0.0304051	0.620730042
ENSMUSG00000043252	Tmem64	-0.596822972	6.377834656	5.438637799	0.0304344	0.620730042
ENSMUSG00000078517	Emc1	-0.773332964	4.504814038	5.434481677	0.0304908	0.620730042
ENSMUSG00000044835	Ankrd45	-0.708527469	5.188983849	5.43325702	0.0305074	0.620730042
ENSMUSG00000047371	Zfp768	-0.954790528	3.991895853	5.429519156	0.0305582	0.620730042
ENSMUSG00000097151	NA	1.008596499	4.041667017	5.429504825	0.0305584	0.620730042
ENSMUSG00000033257	Ttll4	0.559942527	5.883868512	5.426729668	0.0305962	0.620730042
ENSMUSG00000016940	Kctd2	1.542493123	2.83455374	5.426431213	0.0306003	0.620730042
ENSMUSG00000028016	Ints12	-0.594899725	5.313739449	5.425205052	0.0306170	0.620730042
ENSMUSG00000089663	NA	1.470706338	3.445083956	5.409192168	0.0308363	0.620730042
ENSMUSG00000022617	Chkb	0.752725945	5.712688531	5.40914753	0.0308369	0.620730042
ENSMUSG00000078794	Dact3	-0.463172478	5.957493864	5.405347867	0.0308892	0.620730042
ENSMUSG00000016541	Atxn10	-0.52963577	6.272210356	5.401825718	0.0309378	0.620730042
ENSMUSG00000021234	Fam161b	1.226987586	2.709352703	5.401417746	0.0309434	0.620730042
ENSMUSG00000022999	Lmbr1l	1.016717566	3.643654283	5.398586524	0.0309825	0.620730042
ENSMUSG00000090290	Gm17296	1.744531972	3.180522193	5.398445868	0.0309845	0.620730042
ENSMUSG00000022261	Sdc2	-0.359986774	7.312254257	5.397070918	0.0310035	0.620730042
ENSMUSG00000097365	C030034L19Rik	2.265005772	1.941375793	5.37958714	0.0312464	0.620730042
ENSMUSG00000038143	Stox2	-0.338645908	7.412382904	5.378033796	0.0312681	0.620730042
ENSMUSG00000030068	NA	1.064591601	4.406550276	5.374564555	0.0313166	0.620730042
ENSMUSG00000029480	Dhx37	1.736964418	2.873892433	5.368699207	0.0313988	0.620730042
ENSMUSG00000022865	Cxadr	-0.481655314	6.838259798	5.365256161	0.0314472	0.620730042
ENSMUSG00000046186	Cd109	-1.048364369	4.326814571	5.364993557	0.0314509	0.620730042
ENSMUSG00000040331	Nsmce4a	-1.21393884	3.048475331	5.361825563	0.0314955	0.620730042

ENSMUSG00000061458	Nol10	1.070044814	3.715712204	5.361798869	0.0314958	0.620730042
ENSMUSG00000050697	Prkaa1	0.664294273	5.645153414	5.358954947	0.0315359	0.620730042
ENSMUSG00000098608	NA	2.793325362	0.049361066	5.356072527	0.0315766	0.620730042
ENSMUSG00000097451	NA	0.548959699	6.339033342	5.354663865	0.0315965	0.620730042
ENSMUSG00000042305	Tmem183a	-0.775868303	4.633063902	5.345457783	0.0317269	0.620730042
ENSMUSG00000027341	Tmem230	-0.821609965	4.015876206	5.335673275	0.0318662	0.620730042
ENSMUSG00000032184	Lysmd2	1.938212756	2.199836699	5.332999468	0.0319044	0.620730042
ENSMUSG00000025858	Get4	1.533649622	2.183179684	5.325560613	0.0320109	0.620730042
ENSMUSG00000090523	Gypc	-0.694425104	5.503584608	5.324156464	0.0320311	0.620730042
ENSMUSG00000082507	NA	2.454133847	0.003100739	5.323262518	0.0320439	0.620730042
ENSMUSG00000022971	lfnar2	1.077792932	5.36517582	5.364743159	0.0320697	0.620730042
ENSMUSG00000046546	Fam43a	-0.565998744	6.135939873	5.313606209	0.0321829	0.620730042
ENSMUSG00000099746	NA	0.830914904	4.571816687	5.312022548	0.0322058	0.620730042
ENSMUSG00000045658	Pid1	0.807781428	6.039826947	5.310937367	0.0322482	0.620730042
ENSMUSG00000019863	Qrsl1	-0.948603394	3.753381959	5.307422661	0.0322723	0.620730042
ENSMUSG00000040640	Erc2	-0.728278445	4.907171319	5.306382376	0.0322874	0.620730042
ENSMUSG00000074743	Thbd	0.663746535	5.719261965	5.306104238	0.0322914	0.620730042
ENSMUSG00000055026	Gabrg3	-0.961012979	6.58509231	5.534445566	0.0322930	0.620730042
ENSMUSG00000025790	Slco3a1	-0.472528287	8.299830367	5.299170115	0.0323920	0.620730042
ENSMUSG00000079487	Med12	0.421847561	7.150531716	5.299109637	0.0323929	0.620730042
ENSMUSG00000031090	Nadsyn1	1.422442757	2.654244623	5.292822619	0.0324845	0.620730042
ENSMUSG00000015747	Vps45	0.980263495	4.233658644	5.289263648	0.0325364	0.620730042
ENSMUSG00000029313	Aff1	0.440098198	7.84805183	5.284949361	0.0325995	0.620730042
ENSMUSG00000048703	Speer4b	-1.76619598	2.060548271	5.282840225	0.0326304	0.620730042
ENSMUSG00000001053	N4bp3	-1.945629911	1.982295982	5.282800296	0.0326310	0.620730042
ENSMUSG00000028687	Mutyh	1.796570022	2.000159126	5.276625902	0.0327217	0.620730042
ENSMUSG00000036902	Neto2	-0.786618111	4.199910966	5.272898647	0.0327765	0.620730042
ENSMUSG00000019813	Cep57l1	1.126432039	3.456644753	5.270183679	0.0328166	0.620730042
ENSMUSG00000026181	Ppm1f	0.843476963	4.52481808	5.267635968	0.0328542	0.620730042
ENSMUSG00000021221	Dpf3	0.715868464	4.504951018	5.263643717	0.0329132	0.620730042
ENSMUSG000000101191	NA	1.872905401	0.975693517	5.25745698	0.0330049	0.620730042
ENSMUSG00000003929	Zfp81	-0.545032264	5.781766614	5.251866547	0.0330881	0.620730042
ENSMUSG00000026628	Atf3	1.791933979	2.365326507	5.248460395	0.0331388	0.620730042
ENSMUSG00000056014	A430033K04Rik	0.909665879	3.934355716	5.241411034	0.0332442	0.620730042
ENSMUSG00000007564	Ppp2r1a	-0.393939415	6.496945491	5.241294134	0.0332459	0.620730042
ENSMUSG00000031075	Ano1	1.347413927	3.435508572	5.240342998	0.0332602	0.620730042
ENSMUSG00000060166	Zdhhc8	-0.561057246	5.768678003	5.240072501	0.0332642	0.620730042
ENSMUSG00000050705	2310061I04Rik	1.223475875	3.060685747	5.239906893	0.0332667	0.620730042
ENSMUSG00000066407	NA	-2.450001829	-0.505626403	5.239732046	0.0332693	0.620730042
ENSMUSG00000038542	Pcid2	1.031992228	3.590501965	5.231977031	0.0333858	0.620730042
ENSMUSG00000029208	Guf1	0.613360776	5.382366397	5.231349796	0.0333952	0.620730042
ENSMUSG00000028645	Slc2a1	-0.622114821	6.038957197	5.230084131	0.0334143	0.620730042
ENSMUSG00000036879	Phkb	-0.496832652	6.818348766	5.226466143	0.0334688	0.620730042
ENSMUSG00000038055	Dexi	1.412152371	3.271937593	5.224843737	0.0334933	0.620730042
ENSMUSG00000025374	Nabp2	0.703699107	5.905606281	5.220266024	0.0335625	0.620730042
ENSMUSG00000003134	Tbc1d8	-0.716566484	4.6665601	5.219383349	0.0335759	0.620730042
ENSMUSG00000019699	Akt3	-0.376502172	7.408805787	5.218961446	0.0335823	0.620730042
ENSMUSG00000009575	Cbx5	-0.439478861	9.438993863	5.207898095	0.0337503	0.622245843
ENSMUSG00000028060	2810403A07Rik	0.38388717	7.278161649	5.202929632	0.0338261	0.622245843
ENSMUSG00000098328	NA	0.946590439	3.832868229	5.202270405	0.0338361	0.622245843
ENSMUSG00000047749	Zc3hav1l	-0.595522321	6.835639411	5.195541772	0.0339391	0.622245843
ENSMUSG00000020741	Cluh	0.424538938	7.113189531	5.195191094	0.0339445	0.622245843
ENSMUSG00000027219	Slc28a2	1.654928731	2.281638577	5.193229969	0.0339745	0.622245843
ENSMUSG00000057766	Ankrd29	-0.842728393	4.002828115	5.174926654	0.0342567	0.624265228
ENSMUSG000000101995	NA	1.750800719	1.616166383	5.17455188	0.0342625	0.624265228

ENSMUSG00000043458	Pcdhb12	-1.290359433	3.063673215	5.171014198	0.0343174	0.624265228
ENSMUSG00000022438	Parvb	-0.36007352	7.639211638	5.168558555	0.0343555	0.624265228
ENSMUSG00000070939	Tgfrap1	0.653145615	6.233659698	5.167372736	0.0343740	0.624265228
ENSMUSG00000073154	9330158H04Rik	-0.750603151	5.589017748	5.165952047	0.0343961	0.624265228
ENSMUSG00000003559	As3mt	-1.120606019	3.592369337	5.162055691	0.0344568	0.624424971
ENSMUSG000000054469	Lclat1	-0.304996372	9.134511935	5.153039304	0.0345977	0.62443289
ENSMUSG00000023018	Smarcd1	-0.737492812	4.925786704	5.150023634	0.0346450	0.62443289
ENSMUSG00000042834	Nrep	-0.395797938	8.43624699	5.148707501	0.0346656	0.62443289
ENSMUSG00000029913	Prdm5	-0.632084982	5.674339643	5.147292718	0.0346878	0.62443289
ENSMUSG00000003184	Irf3	0.91408977	4.488472689	5.139748043	0.0348066	0.62443289
ENSMUSG00000048495	Tyw5	0.835945553	4.307627002	5.129190674	0.0349736	0.62443289
ENSMUSG000000036596	Cpz	-1.088420019	4.003910374	5.127167733	0.0350057	0.62443289
ENSMUSG00000019578	Ubxn6	0.632365274	5.195336698	5.124859936	0.0350423	0.62443289
ENSMUSG00000039005	Tlr4	0.967375162	5.042173401	5.124606816	0.0350463	0.62443289
ENSMUSG000000053091	Lins	0.962697776	3.613486812	5.122154073	0.0350854	0.62443289
ENSMUSG00000073725	Lmbrd1	-0.579986763	5.198004259	5.119654322	0.0351252	0.62443289
ENSMUSG00000037894	H2afz	-0.573182607	5.831614688	5.110559532	0.0352704	0.62443289
ENSMUSG00000017314	Mpp2	-0.791927732	4.941765645	5.109709705	0.0352841	0.62443289
ENSMUSG00000029394	Cdk2ap1	1.85955702	1.326664935	5.107134758	0.0353253	0.62443289
ENSMUSG00000008140	Emc10	-0.4581804	6.319016135	5.106268202	0.0353392	0.62443289
ENSMUSG000000082529	NA	2.474609958	0.570803934	5.102804647	0.0353949	0.62443289
ENSMUSG00000028282	Casp8ap2	-0.381861553	6.585678927	5.102222133	0.0354042	0.62443289
ENSMUSG00000020814	Mxra7	0.711880203	5.577328635	5.102058933	0.0354068	0.62443289
ENSMUSG00000029518	Rab35	1.072077925	3.330679942	5.099590359	0.0354466	0.62443289
ENSMUSG00000007877	Tcap	0.754790687	4.440419862	5.094295816	0.0355319	0.62443289
ENSMUSG000000086602	NA	1.287795812	3.235669354	5.093149217	0.0355505	0.62443289
ENSMUSG000000082872	NA	-0.842331552	3.724609299	5.087651961	0.0356394	0.62443289
ENSMUSG00000042035	Igfbp3	-0.446455551	6.665098605	5.080325119	0.0357583	0.62443289
ENSMUSG000000054226	Tprkb	0.947153741	4.309424653	5.079703647	0.0357684	0.62443289
ENSMUSG000000025266	Gnl3l	-0.426452588	6.813814011	5.077495847	0.0358044	0.62443289
ENSMUSG000000041889	Shisa4	-1.149166605	4.2462043	5.077369389	0.0358064	0.62443289
ENSMUSG000000027858	Tspan2	-0.696494434	4.890009695	5.069699563	0.0359316	0.62510573
ENSMUSG00000070423	Olfm58	1.355227975	3.199598931	5.067594761	0.0359660	0.62510573
ENSMUSG000000069793	Slnf9	-0.786048864	4.688768403	5.065468573	0.0360009	0.62510573
ENSMUSG00000028136	Snx27	0.385681713	6.831009586	5.048476785	0.0362805	0.626137802
ENSMUSG000000098714	Mir7663	3.648515593	-1.545890688	5.23859294	0.0363176	0.626137802
ENSMUSG00000022427	Tomm22	0.830244129	4.143270282	5.037165333	0.0364681	0.626137802
ENSMUSG00000016984	Etaa1	-1.034886678	4.086402558	5.036951176	0.0364717	0.626137802
ENSMUSG00000002227	Mov10	0.823265891	4.048760391	5.03658145	0.0364778	0.626137802
ENSMUSG000000030602	Pak4	-0.368962805	7.450130991	5.036004919	0.0364874	0.626137802
ENSMUSG00000021222	Dcaf4	-1.309522669	2.655685102	5.027730327	0.0366254	0.626137802
ENSMUSG00000040624	Plekhg1	-0.625506522	5.650682092	5.027355828	0.0366316	0.626137802
ENSMUSG000000088958	NA	2.834378757	-0.333385392	5.026837452	0.0366403	0.626137802
ENSMUSG000000025141	Myadml2	-1.761891493	2.235816172	5.024975116	0.0366714	0.626137802
ENSMUSG000000026207	Speg	0.438252287	7.462586654	5.024726537	0.0366756	0.626137802
ENSMUSG000000089072	NA	-2.736179873	-0.467901089	5.024182664	0.0366847	0.626137802
ENSMUSG000000032579	Hemk1	-1.669998733	2.261856062	5.017045558	0.0368044	0.627291211
ENSMUSG000000032405	Pias1	-0.44436105	6.486687384	5.012081218	0.0368879	0.627825557
ENSMUSG000000035851	Ythdc1	0.400250798	7.276541601	5.008272017	0.0369522	0.628030552
ENSMUSG000000034161	Scx	1.912910538	1.143603477	4.999259249	0.0371047	0.629169595
ENSMUSG000000020099	Unc5b	-0.401665702	7.261078652	4.996923633	0.0371443	0.629169595
ENSMUSG000000054435	Gimap4	0.660315074	5.362548513	4.995054604	0.0371761	0.629169595
ENSMUSG000000065049	NA	2.102910616	0.105444827	4.98838794	0.0372896	0.630025293
ENSMUSG00000027333	Smox	-0.946402274	3.832510512	4.98594034	0.0373313	0.630025293
ENSMUSG000000034574	Daam1	0.369197822	8.461220296	4.978080311	0.0374658	0.630829415

ENSMUSG00000031004	Mki67	-0.506509333	8.359993691	4.977031072	0.0374838	0.630829415
ENSMUSG00000020523	Fam114a2	0.698708187	5.428131283	4.971188699	0.0375842	0.631635445
ENSMUSG00000059278	Naa38	-1.280190723	2.38937796	4.967956941	0.0376399	0.631688623
ENSMUSG00000079057	Cyp4v3	-1.421694365	3.218866269	4.9566073	0.0378361	0.632826206
ENSMUSG00000084139	NA	2.084594648	0.194448564	4.954926592	0.0378653	0.632826206
ENSMUSG00000028289	Epha7	-0.344222093	7.344018879	4.954916042	0.0378654	0.632826206
ENSMUSG00000060862	Zbtb40	0.79379615	4.20213805	4.950902054	0.0379352	0.633112332
ENSMUSG00000064372	NA	1.228041729	4.137775857	4.947239149	0.0379989	0.633298135
ENSMUSG00000060224	Pyroxd2	-1.180975609	4.462933839	4.938812343	0.0381746	0.634520948
ENSMUSG00000028969	Cdk5	-1.231740844	2.842356334	4.937003064	0.0381778	0.634520948
ENSMUSG00000015932	Dstn	-0.279287702	8.466450778	4.930259125	0.0382961	0.634953971
ENSMUSG00000069565	Dazap1	0.603562077	5.217724895	4.925336658	0.0383828	0.634953971
ENSMUSG00000020901	Pik3r5	-1.013159521	4.433388009	4.925313261	0.0383832	0.634953971
ENSMUSG00000045503	Sys1	1.217130964	3.690543168	4.920526409	0.0384677	0.634953971
ENSMUSG00000095205	NA	2.310797339	-0.617102523	4.920525436	0.0384677	0.634953971
ENSMUSG00000000555	Itga5	0.521384449	7.684488942	4.912114378	0.0386166	0.636060762
ENSMUSG00000030168	Adipor2	0.691965145	6.084708984	4.910771939	0.0386404	0.636060762
ENSMUSG00000035849	Krt222	-0.56701604	5.63236278	4.896832484	0.0388889	0.63887384
ENSMUSG00000031230	Fgf16	1.325229084	2.547357338	4.895233001	0.0389175	0.63887384
ENSMUSG00000027067	Ssrp1	-0.582709551	5.471873716	4.890652825	0.0389996	0.639349385
ENSMUSG00000051177	Plcb1	0.520429288	6.571176033	4.886826737	0.0390684	0.639604809
ENSMUSG00000051811	Cox6b2	2.021016096	2.005396946	4.878416262	0.0392199	0.639686435
ENSMUSG00000021796	Bmpr1a	-0.30573085	9.365625213	4.873592389	0.0393072	0.639686435
ENSMUSG00000000881	Dlg3	1.092383656	3.588402567	4.871224504	0.0393501	0.639686435
ENSMUSG00000096045	NA	-1.933565472	2.301662613	4.870380062	0.0393654	0.639686435
ENSMUSG00000024258	Polr2d	-1.526611851	2.079945149	4.870087499	0.0393707	0.639686435
ENSMUSG00000023973	Cnpy3	-1.193541155	3.895828035	4.868885622	0.0393925	0.639686435
ENSMUSG00000032582	Rbm6	0.480305859	6.800234742	4.862141899	0.0395151	0.639686435
ENSMUSG00000087579	1500017E21Rik	1.176034299	3.380038267	4.854443312	0.0396557	0.639686435
ENSMUSG00000022364	Tbc1d31	0.825588712	5.26608246	4.853648177	0.0396702	0.639686435
ENSMUSG00000035696	Rnf38	-0.343348428	7.550693012	4.845581995	0.0398181	0.639686435
ENSMUSG00000026600	Soat1	-0.541864638	5.680867196	4.845422247	0.0398211	0.639686435
ENSMUSG00000034324	Tmem132c	-1.441024788	3.294614448	4.842241352	0.0398796	0.639686435
ENSMUSG00000024084	Qpct	1.578054281	2.838312952	4.842138014	0.0398815	0.639686435
ENSMUSG00000085819	NA	1.456612634	1.580065374	4.83844696	0.0399495	0.639686435
ENSMUSG00000022899	Slc15a2	0.758921365	4.600964264	4.83687229	0.0399785	0.639686435
ENSMUSG00000061079	Zfp143	-0.756082159	4.596412266	4.835279682	0.0400079	0.639686435
ENSMUSG00000026208	Des	0.362798294	10.83985733	4.830355733	0.0400990	0.639686435
ENSMUSG00000040128	Pnrc1	-0.471801124	6.26514491	4.828618186	0.0401312	0.639686435
ENSMUSG00000019797	1700021F05Rik	1.019394028	4.663218454	4.823706788	0.0402224	0.639686435
ENSMUSG00000037343	Taf2	0.484592924	6.578295428	4.823529587	0.0402257	0.639686435
ENSMUSG00000050751	Pgbd5	1.593002588	2.701236945	4.822511318	0.0402446	0.639686435
ENSMUSG00000075324	Fign	-0.573235787	6.807895856	4.821430186	0.0402648	0.639686435
ENSMUSG00000037395	Rcor3	-0.49981098	6.091764422	4.818480951	0.0403197	0.639686435
ENSMUSG00000029158	Yipf7	1.567975408	0.993879799	4.81666196	0.0403536	0.639686435
ENSMUSG00000065433	Mir370	2.983708168	-0.864456885	4.809709308	0.0404836	0.639686435
ENSMUSG00000028150	Rorc	1.189071439	2.821566805	4.808427027	0.0405076	0.639686435
ENSMUSG00000023809	Rps6ka2	-0.56748442	5.599916672	4.808367559	0.0405087	0.639686435
ENSMUSG00000037583	Nr0b2	-1.710468208	2.783370502	4.802026745	0.0406277	0.639938332
ENSMUSG00000006205	Htra1	-0.743477668	4.549863851	4.801851294	0.0406310	0.639938332
ENSMUSG00000064342	NA	1.708971326	1.879944286	4.797191085	0.0407187	0.640409122
ENSMUSG00000023089	Ndufa5	0.723210071	4.569542966	4.791838371	0.0408198	0.640409122
ENSMUSG00000036792	Mbd5	-0.331296983	7.244252909	4.791796878	0.0408206	0.640409122
ENSMUSG00000026333	Gin1	0.978477394	4.273912221	4.775003305	0.0411394	0.644571074
ENSMUSG00000005034	Prkacb	-0.477650916	7.041504088	4.764954721	0.0413316	0.644942543

ENSMUSG00000039178	Tbc1d19	-0.523497309	5.625127344	4.764524373	0.0413398	0.644942543
ENSMUSG00000046916	Myct1	0.815814567	4.262504602	4.764196828	0.0413461	0.644942543
ENSMUSG00000039461	Tcta	0.83817033	3.759700825	4.762559301	0.0413775	0.644942543
ENSMUSG00000032462	Pik3cb	1.120890416	3.590468781	4.751065045	0.0415988	0.645353437
ENSMUSG00000085003	NA	1.522452003	1.867148773	4.750775112	0.0416044	0.645353437
ENSMUSG00000074405	Zfp865	-0.866478932	5.387548891	4.750052112	0.0416184	0.645353437
ENSMUSG00000034216	Vps18	1.230664729	3.16313954	4.748819512	0.0416422	0.645353437
ENSMUSG00000040003	Magi2	-0.629147702	5.382339253	4.744915688	0.0417178	0.645353437
ENSMUSG00000034903	Cobll1	0.360554768	7.241118835	4.74450946	0.0417257	0.645353437
ENSMUSG00000059475	Zfp426	0.562045208	5.580397397	4.737748899	0.0418569	0.64655251
ENSMUSG00000026842	Abl1	-0.436654586	6.661790703	4.7203867	0.0421962	0.650957205
ENSMUSG00000039737	Prkrip1	1.144943585	4.004523272	4.714654464	0.0423089	0.651810042
ENSMUSG00000057098	Ebf1	0.573819506	6.904667896	4.711149325	0.0423779	0.651810042
ENSMUSG00000027522	Stx16	0.462978987	6.473899718	4.703647283	0.0425262	0.651810042
ENSMUSG00000031604	Msmo1	-0.923448758	4.24220382	4.702563896	0.0425477	0.651810042
ENSMUSG00000028884	Rpa2	1.15454181	2.393876981	4.701319869	0.0425724	0.651810042
ENSMUSG00000042607	Asb4	-1.126949492	4.195371198	4.698473238	0.0426288	0.651810042
ENSMUSG00000037306	Man1c1	-0.398499187	7.184886694	4.69838253	0.0426306	0.651810042
ENSMUSG00000022822	Abcc5	0.415249096	6.652115301	4.687846957	0.0428405	0.653164201
ENSMUSG00000054894	Atp5s	-0.855172932	3.843080911	4.687483923	0.0428477	0.653164201
ENSMUSG00000025485	Ric8	-1.070696201	3.312915966	4.684949445	0.0428984	0.653164201
ENSMUSG00000077846	NA	1.870040515	0.520586652	4.683044432	0.0429365	0.653164201
ENSMUSG00000029486	Mrpl1	0.939187603	4.593208697	4.677864223	0.0430404	0.653164201
ENSMUSG00000035783	Acta2	0.434685014	8.548008583	4.676868796	0.0430604	0.653164201
ENSMUSG00000092889	NA	2.684794259	-0.823169598	4.67493716	0.0430992	0.653164201
ENSMUSG00000025413	Ttc4	-1.088313263	3.966711314	4.671667717	0.0431650	0.653338576
ENSMUSG00000019952	Poc1b	-0.892979698	4.470003313	4.665856347	0.0432822	0.654290156
ENSMUSG00000085162	Gm12295	0.532198819	6.925819278	4.651706632	0.0435692	0.656162079
ENSMUSG00000086741	Gm15816	0.712995097	5.013188759	4.647788728	0.0436491	0.656162079
ENSMUSG00000021745	Ptprg	0.385058637	7.344667667	4.646162823	0.0436822	0.656162079
ENSMUSG00000021585	Cast	0.57930968	5.84821038	4.643820508	0.0437301	0.656162079
ENSMUSG00000053510	Nrd1	0.290391763	8.455761705	4.634057383	0.0439302	0.656162079
ENSMUSG00000037692	Ahdcd1	-0.49372908	6.027675969	4.631825774	0.0439761	0.656162079
ENSMUSG00000032251	Irak1bp1	-1.17688833	3.425893709	4.631279476	0.0439874	0.656162079
ENSMUSG00000015290	NA	-0.558650113	5.126457466	4.629745101	0.0440189	0.656162079
ENSMUSG00000035049	Rrp12	0.927885967	3.932515661	4.62947119	0.0440246	0.656162079
ENSMUSG00000015882	Lcorl	-0.61990909	5.809282125	4.628281106	0.0440491	0.656162079
ENSMUSG00000065663	NA	2.020319944	0.285797989	4.624849199	0.0441199	0.656162079
ENSMUSG00000028048	Gba	-0.73072284	4.067861111	4.624323347	0.0441308	0.656162079
ENSMUSG00000019877	Serinc1	-0.409203336	7.144552972	4.622544777	0.0441676	0.656162079
ENSMUSG00000036768	Kif15	-0.980457132	4.482471059	4.62186442	0.0441816	0.656162079
ENSMUSG00000030341	Tnfrsf1a	-0.686687545	4.518245377	4.619816577	0.0442240	0.656162079
ENSMUSG00000068855	Hist2h2ac	-1.096222564	2.85953868	4.612870538	0.0443681	0.656377246
ENSMUSG00000041920	Slc16a6	0.912239153	3.390609558	4.611890121	0.0443885	0.656377246
ENSMUSG00000029267	Mtf2	0.566642252	5.32779192	4.607147542	0.0444872	0.656377246
ENSMUSG00000025089	Gfra1	-0.824702773	4.6125892	4.607016322	0.0444900	0.656377246
ENSMUSG00000056602	Fry	-0.343915151	8.66956282	4.605996589	0.0445112	0.656377246
ENSMUSG00000086451	NA	1.021064575	3.296155921	4.600540588	0.0446252	0.65725266
ENSMUSG00000043295	NA	1.668660577	1.16684618	4.595854751	0.0447234	0.657765775
ENSMUSG00000004056	Akt2	-0.422508522	6.759337329	4.593662718	0.0447694	0.657765775
ENSMUSG00000021763	BC067074	-0.450671707	6.758452221	4.588906029	0.0448694	0.658431276
ENSMUSG00000039328	Rnf122	-0.843199915	4.206219631	4.579323366	0.0450717	0.659794985
ENSMUSG00000033544	Angptl1	-0.875127689	3.626219757	4.579307555	0.0450720	0.659794985
ENSMUSG00000054013	Tmem179	1.863694766	1.987047169	4.5750012	0.0451632	0.660327204
ENSMUSG00000026828	Galnt5	-1.837310963	2.330189045	4.569320331	0.0452839	0.661288083

ENSMUSG00000086769	NA	1.557914883	2.515338616	4.564621996	0.0453840	0.661946268
ENSMUSG00000021281	Tnfaip2	1.954304865	2.304599828	4.555878152	0.0455709	0.662240857
ENSMUSG00000041483	Zfp281	-0.580961315	5.15177687	4.554095159	0.0456092	0.662240857
ENSMUSG00000032580	Rbm5	0.285578627	8.876696018	4.55346091	0.0456228	0.662240857
ENSMUSG00000038619	Ensa	0.722917352	4.736186322	4.553387445	0.0456243	0.662240857
ENSMUSG00000009566	Fpgs	1.599118238	1.530653613	4.550185036	0.0456931	0.66244004
ENSMUSG00000056124	B4galt6	-0.430557322	6.756504402	4.545636628	0.0457910	0.663060256
ENSMUSG00000023284	Zfp605	-1.037294422	3.190459375	4.53985035	0.0459159	0.664069268
ENSMUSG00000097316	Gm10516	0.958665133	3.613923656	4.531682119	0.0460928	0.665649095
ENSMUSG00000050538	NA	-1.020501656	2.991866782	4.520110559	0.0463448	0.665649095
ENSMUSG00000067194	Eif1ax	-0.526884386	5.568210377	4.517877342	0.0463936	0.665649095
ENSMUSG00000017386	Traf4	-0.984742009	3.915304047	4.51617503	0.0464309	0.665649095
ENSMUSG00000030047	Arhgap25	1.329632632	3.114081347	4.505408635	0.0466672	0.665649095
ENSMUSG00000038119	Cdon	-0.380854594	7.514650468	4.50516892	0.0466725	0.665649095
ENSMUSG00000034881	Tbxa2r	-1.199043755	2.849553436	4.505095973	0.0466741	0.665649095
ENSMUSG00000069633	Pex11g	1.055652266	4.818517447	4.506122777	0.0466972	0.665649095
ENSMUSG00000032279	Idh3a	-0.343645234	6.98611159	4.503978113	0.0466987	0.665649095
ENSMUSG00000035305	Ror1	0.583722747	5.728056786	4.502586335	0.0467294	0.665649095
ENSMUSG00000062210	Tnfaip8	-1.321583903	2.9691652	4.500483585	0.0467758	0.665649095
ENSMUSG00000021103	Mnat1	-0.967197682	3.910292306	4.499397399	0.0467998	0.665649095
ENSMUSG00000047248	C2cd3	-0.66850323	5.37676469	4.496592072	0.0468618	0.665649095
ENSMUSG00000032294	Pkm	-0.38050488	6.897678865	4.496178802	0.0468709	0.665649095
ENSMUSG00000025138	Sirt7	0.915243779	3.890785883	4.494519568	0.0469077	0.665649095
ENSMUSG00000037242	Clic4	-0.382487128	8.790567367	4.49243361	0.0469539	0.665649095
ENSMUSG00000031290	Lrch2	-0.840171445	3.821289833	4.491783564	0.0469683	0.665649095
ENSMUSG00000070942	Il1rl2	1.36474986	2.874766275	4.487165683	0.0470709	0.665649095
ENSMUSG00000037364	Srrt	0.517646184	5.984567367	4.486101674	0.0470945	0.665649095
ENSMUSG00000065979	Cpped1	0.351411965	7.081987547	4.484442292	0.0471315	0.665649095
ENSMUSG00000022941	Ripply3	2.112613731	1.917057573	4.480251383	0.0472249	0.665922141
ENSMUSG00000019188	H13	-0.75757311	5.414489044	4.475979651	0.0473204	0.665922141
ENSMUSG00000063594	Gng8	1.563916792	1.34386322	4.470688902	0.0474389	0.665922141
ENSMUSG00000074579	Lekr1	1.232473468	3.594410542	4.47066576	0.0474394	0.665922141
ENSMUSG00000097180	2700038G22Rik	1.237207887	2.798604674	4.469904812	0.0474565	0.665922141
ENSMUSG00000027823	Gmps	-0.362637325	7.106334781	4.468729601	0.0474829	0.665922141
ENSMUSG00000020620	Abca8b	0.643903897	4.700626362	4.464593612	0.0475758	0.666449519
ENSMUSG00000089224	NA	2.324467183	0.336798217	4.459797803	0.0476839	0.666744932
ENSMUSG00000035385	Ccl2	2.301471161	1.700020994	4.456157871	0.0477662	0.666744932
ENSMUSG00000044365	Cxxc4	-0.885622622	4.743597464	4.456071657	0.0477681	0.666744932
ENSMUSG00000031990	Jam3	-0.805859247	4.098880336	4.452701799	0.0478444	0.666744932
ENSMUSG00000026200	Glb1l	-0.960862286	4.274962439	4.451395031	0.0478740	0.666744932
ENSMUSG00000070737	Gm12942	2.256316978	1.491658285	4.444292301	0.0480353	0.668218295
ENSMUSG00000014859	E2f4	0.601548583	4.832203395	4.44099508	0.0481104	0.668490194
ENSMUSG00000075391	NA	-1.242823142	2.397238225	4.432817277	0.0482972	0.669773742
ENSMUSG00000053286	Trmt1l	0.470517898	5.871159558	4.432047841	0.0483149	0.669773742
ENSMUSG00000033578	Tmem35	-1.516412973	2.225777721	4.428556861	0.0483949	0.669773742
ENSMUSG00000074264	Amy1	1.739660905	2.871151649	4.424867002	0.0484797	0.669773742
ENSMUSG00000028613	Lrp8	1.100597183	3.630980898	4.424690247	0.0484838	0.669773742
ENSMUSG00000025209	Peo1	1.402963519	3.226316876	4.422387556	0.0485367	0.669773742
ENSMUSG00000086928	NA	1.68376827	2.996487342	4.414492625	0.0487189	0.671143485
ENSMUSG00000097859	NA	0.884324807	3.733733383	4.411548879	0.0487871	0.671143485
ENSMUSG00000043602	Zfp3	0.779741061	4.580487987	4.407627974	0.0488780	0.671143485
ENSMUSG00000049090	Zadh2	-0.486233593	5.85958125	4.406138697	0.0489126	0.671143485
ENSMUSG00000024953	Prdx5	-1.189128507	3.534747466	4.406039554	0.0489149	0.671143485
ENSMUSG00000065563	NA	1.516117414	1.748481469	4.399521237	0.0490666	0.672207324
ENSMUSG00000068747	Sort1	-0.389397708	7.137431466	4.397911308	0.0491042	0.672207324

ENSMUSG00000028518	Prkaa2	0.381833862	7.389317315	4.39071292	0.0492725	0.673034029
ENSMUSG00000044562	Rasip1	1.211889372	3.560828219	4.38884557	0.0493162	0.673034029
ENSMUSG00000051674	Dcun1d4	-0.582768741	5.736681775	4.388158876	0.0493323	0.673034029
ENSMUSG00000034024	Cct2	-0.464766799	6.495293872	4.385028695	0.0494058	0.673173368
ENSMUSG00000023830	Igf2r	-0.30141133	9.383607035	4.380676705	0.0495082	0.673173368
ENSMUSG00000004393	Ddx56	1.660436199	2.079023777	4.377871703	0.0495744	0.673173368
ENSMUSG00000034579	Pla2g3	1.122932983	3.170786397	4.374011056	0.0496655	0.673173368
ENSMUSG00000051232	Tmem199	1.465062993	2.24022946	4.372419977	0.0497032	0.673173368
ENSMUSG00000031918	Mtmr2	-0.479541964	5.863667749	4.370651583	0.0497450	0.673173368
ENSMUSG00000036777	Anln	-0.71958496	5.547420381	4.368740386	0.0497903	0.673173368
ENSMUSG00000049670	Morn4	-0.749163486	4.768642232	4.367873798	0.0498109	0.673173368
ENSMUSG00000016559	NA	-0.626890187	4.403055421	4.362392691	0.0499411	0.673173368
ENSMUSG00000018845	Unc45b	0.566853615	5.295203196	4.361766297	0.0499560	0.673173368

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