



Supplementary Materials for
A Long Noncoding RNA Mediates Both Activation and Repression of Immune Response Genes

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Materials and Methods

Reagents

LPS, Pam₃CSK₄, Pam₂CSK₄, PolyI:C, DMXAA and poly(dA:dT) were from Sigma-Aldrich (St. Louis, MO). *L. monocytogenes* (clinical isolate 10403s) was from V. Boyartchuk. Customized nCounter gene expression code sets (non-enzymatic RNA profiling using bar-coded fluorescent probes) were obtained from Nanostring Technologies (Seattle, WA). Anti- hnRNP-A/B, anti-hnRNP-A2/B1, β -actin was obtained from Santa Cruz Biotechnology, Inc. (Santa Cruz, CA). NF κ B inhibitor (Bay 11-7083) was obtained from Tocris bioscience.

Mice and *Listeria* infection

C57BL/6 mice were purchased from The Jackson Laboratory (Bar Harbor, ME) and bred at UMASS Medical School. Mouse strains were maintained in specific pathogen-free conditions in UMASS Medical School, and the animal protocols were carried out in accordance with the guidelines set forth by UMASS Medical School Institutional Animal Care and Use Committee. Age- and sex-matched C57BL/6 were infected with 10⁵ cfu/ml *Listeria* (in 300ml) or with PBS as a control (IV via the tail vein). After 24 h spleens were harvested.

Cell Culture and stimulation

Bone marrow cells from wild-type mice were cultured in DMEM with 10% fetal bovine serum and 20% L929 supernatants to generate BMDMs or with recombinant GMCSF (20mg/ml) to generate BMDCs. BMDMs were immortalized with J2 virus. Cells were stimulated for the indicated times with LPS (Tlr4) (100 ng/ml), Pam₃CSK₄ (Tlr2/1) (100 nM), Pam₂CSK₄ (Tlr2/6) (100 ng/ml), PolyI:C (Tlr3) (25 μ g/ml) or poly(dA-dT) (5 μ g/ml) which was transfected with lipofectamine 2000 from Invitrogen (Grand Island, NY).

RNA interference and Plasmids

For RNA interference two separate shRNA specific to lincRNA-Cox2 were cloned into plko vector using the following oligos: 1Forward: 5' CCGGAAGAGTAAGATTCTGAAGA TCCTCGAGGATCTTCAGAATCTTACTCTTTTTTTG 3'. 1Reverse: 5' AATTCAAAAAA GAGTAAGATTCTGAAGATCCTCGAGGATCTTCAGAATCTTACTCTT 3'. 2Forward: 5' CCGGAAGGAATCCAGCCATCTCTCGCTCGAGCGAGAGATGGCTGGATTTCCTTTTTT G 3', 2Reverse: 5' AATTCAAAAAAAGGAATCCAGCCATCTCTCGCTCGAGCGAGAGA TGGCTGGATTTCCTT 3'. 3Forward: 5' CCGGAACCTAAAGGAGGTTGACAACCTCGAG GTTGTAACCTCCTTTAGGTTTTTTT 3'. 3Reverse: 5' AATTCAAAAAAACCTAAAGG AGTTGACAACCTCGAGGTTGTCAACCTCCTTTAGGTT 3'.

>lincRNA-Cox2

gattccctctgcgttgcctccaagatcatgcgcgggacattctgagaacatgccagagacaaaaaggaagcttggcgttgtaaaagccggctt
ttaatgagttgatgtgaaagctgcacgcacattagagagacatgctgtactcttggaaacttctgcacaaaagaaacatgacataagactcctcacctc

shRNA 2

ctgcttgcgccataaaactttcctctgattcaagggaatccagccatctctcgtaactcactcagccttgattcatttaactcctaaagctctgtaagtactgttattgtgctg
gaatgaaactgttgtaagtaacaagcaataaacattgccacttcttaagtgtgtatctaacagccacagggtagtgaaatgagccct

shRNA 3

atggaagagctgtggcagggcaacctaaggaggtgacaacttaatgcaagtaggagagcattttgagagagagtgacttaaaattaccattcaa

shRNA 1

atgtaagaaaacttagactgcaaaagtgggaaggaaggtctttgggagagaagagtaagattctgaagatcttgagatacaagaaaaaatgaaacatttaggataatgg
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Control shRNAs used were EV plko from Open Biosystems (Thermo Fisher Scientific, Waltham, MA) (RHS4080), a non-targeting Ctl (29) or GFP ctl shRNA (Thermo Fisher Scientific, Waltham, MA) (# RHS4459). shRNA to hnRNP A/B (TRCN0000103641, TRCN0000103644) and hnRNP-A2/B1 (TRCN0000071138, TRCN0000071142) were obtained from open biosystems. 4µg of shRNA was transfected into HEK293T cells with packaging vectors pSpax (3µg- Addgene plasmid 12260) and pMD2 (1µg- Addgene plasmid 12259) using genejuice. After 48h media was removed and transduced into immortalized BMDMs and selected using puromycin (3µg/ml).

Full length lincRNA-Cox2 was obtained from Genscript and subsequently cloned into pgemt and pMSCV retro vector (Clontech). mTlr1 was obtained through Prof. Medzhitov (Addgene plasmid 13080) and subcloned into pMSCV vector. Retro vectors were first transfected into HEK293Ts with packaging vectors VsVg (1µg) and Gag-pol (1µg) (both vectors are available from Clontech, Mountain View, CA) using genejuice. After 48h media was removed and transduced into immortalized BMDMs and selected using neomycin (100µg/ml).

RNA Extraction, Real-Time PCR, PCR, RNA Analysis, RNA-Seq

BMDM, BMDCs or splenocytes (2 to 10 × 10⁶ cells/condition), were stimulated for 5 h. RNA was extracted with RNeasy kit (QIAGEN, Valencia, CA), 1mg of total or nuclear RNA was used for cDNA synthesis RNA was extracted from infected BMDMs at indicated time points using the iScript Select cDNA synthesis kit (Bio-Rad), and quantitative RT-PCR analysis was performed with the following primers: lincRNA-Cox2F: 5'AAGGAAGCTTGGCGTTGTGA 3' R: 5'GAGAGGTGAGGAGTCTTATG 3'. *Ptgs2/Cox2* gene F: GCTGTGGGGCAGGAAGTC 3', R:TTGGAATAGTTGCTCATCACC and b-actin F: 5'TTGAACATGGCATTGTTAC CAA3', R: 5'TGGCATAGAGGTCTTTACGGA3'. For splice variant analysis 1mg of total RNA was used for cDNA synthesis, RNA was extracted from primary BMDM or BMDC. Primers used for each confirm each variant are as follows, Variant 1 (JX682706) F:5'AAGGAAGCTTGGCGTTGTGA 3', R5' TGAAATGAGCCCTATGGAAGA 3'. Variant 2 (JX682707) F: 5'TGTCCAGAGGGAGAAGGCAGCCTG 3', R5' TGAAATGAGCCCTATGGAAGA 3'. Variant 3: (JX682708) F 5'CAGATGCTGGCAAGGATATGGAGAA3', R5' TGAAATGAGCCCTATGGAAGA 3'.

For RNA analysis, 100 ng of total RNA was used and hybridized to a custom designed gene codeset (non-enzymatic RNA profiling using bar-coded fluorescent probes) according to the manufacturers protocol (Nanostring technologies). The nCounter® Analysis System is an automated, multi-application, digital detection and counting system which directly profiles up to 100 molecules simultaneously from a single sample using a novel barcoding technology. Heatmaps representing differentially regulated genes were generated using R and scaled by log₂(X-min(X) + 1). RNA-seq 10 µg of total RNA was used and libraries were generated using an illumina mRNA sample preparation kit (#RS-930-1001). Once samples were sized, quantified and proofed they were read on a High-Seq System (Illumina, San Diego, CA) as 100*100 single reads for BMDM experiments.

Analysis of RNA-seq data

RNA-seq 50bp reads were aligned to the mouse genome (assembly NCBI37) using TopHat (30). Gene level read counts based on the resulting alignments were calculated with HTSeq (<http://www-huber.embl.de/users/anders/HTSeq/>). The Ensembl64 gtf was used as the input

annotation file for the program. Subsequent data analysis was performed in R and differential gene expression specific analyses were conducted with the DESeq R package (31). Specifically, DESeq was used to normalize gene counts, calculate fold change in gene expression, estimate pvalues and adjusted pvalues for change in gene expression values, and to perform a variance stabilized transformation on read counts to make them amenable to plotting. Using the GOstats package (32), the top 800 up-regulated genes (using \log_2 FC between base mean counts) were analyzed to detect biological processes with over-represented genes.

Circos plot

The Circos program (33) was used to visualize genome-wide gene expression changes. \log_2 fold-change values were computed by subtracting the \log_2 variance stabilized counts of the unstimulated sample from the \log_2 variance stabilized counts of the Pam₃CSK₄ stimulated sample. All protein coding genes that were annotated with particular GO IDs (GO:0006955, GO:0045088, GO:0009607, GO:0009615, GO:0006952, GO:0006954, GO:0032020, GO:0051707, GO:0051707, GO:0035455, GO:0035457, GO:0006950, GO:0001866, GO:0009611) were classified as immune genes and were colored red.

Accession numbers

All raw data are available for download from NCBI Gene Expression Omnibus (<http://www.ncbi.nlm.nih.gov/geo/>) under accession number GSE40978.

ELISA

Cell culture supernatants were assayed for Ccl5 (Rantes) (RnD), Il6 (eBiosciences) and IL1 β by ELISA (BD Biosciences).

RNA pull-down assay and Mass spectrometry

lincRNA-Cox2 was in vitro transcribed using RiboMAX large scale RNA production systems – T7 (sense) and Sp6 (anti-sense, Ctl) and biotinylated cytosines were incorporated during the in vitro synthesis process. The resulting products were treated with RNase-free DNase I (Promega, Madison, WI) and purified with RNeasy Mini Kit (QIAGEN). BMDMs (10×10^6 cells/condition) were separated into cytosolic and nuclear fractions using a nuclear extraction kit (Active Motif). Lysates (containing Rnasin) were incubated with 1 μ g of Ctl RNA for 1 h at room temperature followed by 1 h incubation with Streptavidin beads (as a pre clearing step). Lysates were then incubated with lincRNA-Cox2 or Ctl RNA (4 μ g) at 4°C overnight. Interacting complexes were immunoprecipitated with streptavidin beads for 3 h at room temp and visualized by silver-staining (Pierce silver stain kit, Thermo Scientific) for mass spectrometry or by immunoblotting using specific antibodies to hnRNP-A/B and hnRNP-A2/B1. For Mass Spectrometry analysis a specific band present in the experimental lane was extracted (corresponding region in the control lane was also extracted). Gel pieces were trypsin digested and 10% of the peptides were injected onto a C18 spray tip and eluted into the Orbitrap and analyzed with a 35 min collision induced dissociated method (UMASS proteomics core facility). The raw data was searched in mascot against the mouse subset of the swissprot database.

Cell Fixation and RNA FISH

Our standard fixation protocols have been detailed previously (34-35). Briefly, cells were permeabilized in CSK buffer, 5% triton, and VRC (vanadyl ribonucleoside complex) for 1-3 min, then fixed in 4% Paraformaldehyde for 10min, and stored in 1XPBS or 70% EtOH. All DNA probes (1 μ g/reaction) were nick-translated using biotin-11-dUTP or digoxigenin-16-dUTP (Roche). Our standard protocols for RNA FISH and for simultaneous RNA/DNA detection have been described previously in detail (34-35). RNA-specific hybridization was carried out under

non-denaturing conditions where the DNA was not accessible. Probes used for FISH were pMSCV vector expressing full-length lincRNA-Cox2 (variant 1).

Microscopy and Image Analysis: Digital imaging analysis was performed using an Axiovert 200 or an Axiophot Zeiss microscope equipped with a 100X PlanApo objective (NA 1.4) and Chroma 83000 multi-bandpass dichroic and emission filter sets (Brattleboro, VT), set up in a wheel to prevent optical shift. Images were captured with an Orca-ER camera (Hamamatsu, NJ) or a cooled charge-coupled device (CCD) camera (200 series, Photometrics). Over 100 cells scored in each experiment. Key results were confirmed by at least two independent investigators. Images were minimally enhanced for brightness and contrast to more closely resemble what was seen by eye through the microscope (unless otherwise noted in the text/legends). Digital imaging software (developed inhouse, described below) was used to quantify signals.

Software development:

Software was developed using Matlab (using Image Processing Toolbox) to select cells and measure mean and standard deviation of cells.

1: Detect cells from blue channel

A: Estimate threshold to separate cells pixels from background.

B: Label pixels with values greater than threshold as belonging to a cell - pixels less than the threshold are labeled as background.

C: Discard connected cell regions with less than 10000 pixels and greater than 30000 pixels (to remove cells undergoing division).

D: Discard cell regions located at the edge of the image (not fully contained by the image).

E: A pixel mask of each valid cell is ready to be used in step 2.

2: In the green channel, measure the Adjusted Mean and Standard Deviation for each valid cell

a: Calculate the adjusted mean for each cell.

i. Calculate the background value of the green channel for the current image - the background value the most frequent value of background pixels in the green channel.

ii: Calculate the mean for each cell, subtracting the background value for that image (calculated in i).

b: Calculate the variance of each cell.

i. Calculate the variance of green channel pixels for each cell.

3: Calculate normalized histograms and cumulative distributions for the adjusted mean and standard deviation of Ctl (128 cells total) and lincRNA-Cox2 shRNA cells (187 cells total).

Chromatin immunoprecipitation (ChIP)

Immortalized BMDMs expressing either control shRNA, or shRNA targeted against lincRNA-Cox2, hnRNP-A2B or hnRNP-AB were treated with the media control or the Tlr2 agonist Pam₃CSK₄ for 5 hr, and were subjected to ChIP assays using the ChIP-IT express chromatin immunoprecipitation kit (Active Motif, Carlsbad, CA) following the manufacturer's instruction. Briefly, 10 million cells were fixed in 1% formaldehyde for 10 min at 37°C to cross-link the DNA/protein complexes, followed by sonication of the isolated nuclear pellet using Bioruptor UCD-200 (Diagenode Inc., Sparta, NJ) to shear the DNA. An aliquot of the chromatin sample (50µl) was reverse cross-linked overnight, treated with RNase A and Proteinase K, followed by

phenol:chloroform extraction of the DNA to confirm DNA shearing to 200-500 bp chromatin fragments by agarose gel electrophoresis, and the DNA quantitation by Nanodrop. Sheared chromatin (5µg/IP) was immunoprecipitated with 2µg anti-RNA pol II (Active Motif; Clone 4H8) or IgG1 isotype control (Imgenex) antibody, and 20µl magnetic beads for 4 hr. After reversal of the cross-linking and protein digestion with proteinase K, immunoprecipitated DNA was purified with the PCR purification kit (Qiagen). Quantitative real-time PCR analysis was performed on the input DNA (diluted 1:10) and the ChIP samples using iQ SYBR Green Supermix reagent (Bio-Rad) using the following parameters (50°C for 2 min, 95°C for 2 min, followed by 45 cycles of 95°C for 15 s, 60°C for 30 sec and 72°C for 45 sec, followed by melting curve analysis). The primer sequences used for detecting the RNA polII recruitment on the murine genes are- *Ccl5* (for: 5'- GCCAACCCATCTTGATACCC -3', and rev: 5'- ACAGTGATGACAGGGTAGCC -3'), *Irf7* (for: 5'- AAGGGCAGTGAAGAGAAGCT -3', and rev: 5'- CCTACCAGTGCAGTCCTCAA -3'), *Il6* (for: 5'- AGACTTCCATCCAGTTGCCT -3', and rev: 5'- CAGGTCTGTTGGGAGTGGTA -3'), *Gapdh* (for: 5'- TAGGACTGGATAAGCAGGGC -3', and rev: 5'-GAACAGGGAGGAGCAGAGAG -3'). All oligo sequences were designed using Primer3web (<http://primer3.wi.mit.edu/>), and were targeted within the 500 nucleotides region downstream of the transcription start site of each gene. The specificity of amplification was assessed for each target gene by melting curve analysis, and the amplicon size was confirmed by agarose gel electrophoresis. RNA polII enrichment in the IgG and RNA polII ChIP samples were normalized to the input DNA, and is represented as % Input. Experiments were performed at least three times with independent chromatin samples and yielded similar results.

Sucrose sedimentation analysis

Macrophages were seeded at 5 million cells in a 100mm dish. After 16 h of culture cells were pretreated with cycloheximide (100 µg.ml⁻¹) for 10 min at 37°C or with harringtonine (2µg.ml⁻¹) for 25 min followed by cycloheximide (100 µg.ml⁻¹) for 10 min. Cells were washed twice in ice-cold PBS+Cycloheximide (100 µg.ml⁻¹) and scraped in 1ml of PBS+Cycloheximide (100 µg.ml⁻¹). Cells were then pelleted at 500g for 5 min at 4°C and lysed in 1ml of lysis buffer (10mM Tris-HCl pH. 7.5; 5mM MgCl₂; 100mM KCl; 1% Triton X-100; 2mM DTT; 100 µg/ml Cycloheximide and 1X Protease-Inhibitor Cocktail EDTA-free (Roche). Lysate was homogenized by gently pipetting up and down for a total of eight strokes using a P1000 pipettor. After incubation at 4°C for 10 min, lysate was cleared at 1300.g for 10 min at 4°C, the supernatant recovered and absorbance at 260nm measured. 10 A₂₆₀ units complemented or not with 35 mM of EDTA were loaded on top of a 10 to 50% (Weight/Volume) sucrose gradient (20mM HEPES-KOH pH. 7.4; 5mM MgCl₂; 100mM KCl; 2mM DTT; 100 µg.ml⁻¹ of Cycloheximide) and centrifuged in a SW-40ti rotor at 35,000 rpm for 2h40min at 4°C. After centrifugation, samples were collected from the top of the gradient into 15 fractions while absorbance at 254nm was measured. Collected fractions were complemented with 0.4 femto moles of a firefly coding RNA (Spike-In), SDS (1% final), proteinase K (200 µg.ml⁻¹) and incubated at 42°C for 45 min. After proteinase K treatment, RNA was extracted using one volume of Phenol (pH 4.5):Chloroform:Iso-amyl alcohol (25:24:1). The recovered aqueous phase was supplemented with 20 µg of glycogen, 300 mM sodium acetate pH 5.2, and 10 mM MgCl₂. RNA was precipitated with 3 volumes of 100% ethanol at -20°C overnight. After a wash with 70% ethanol, RNA was re-suspended in 50 µl of water.

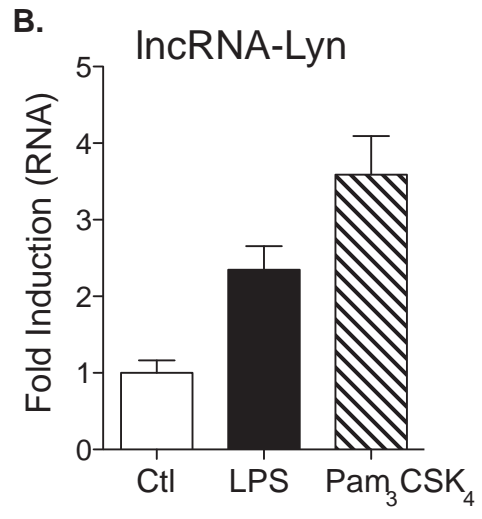
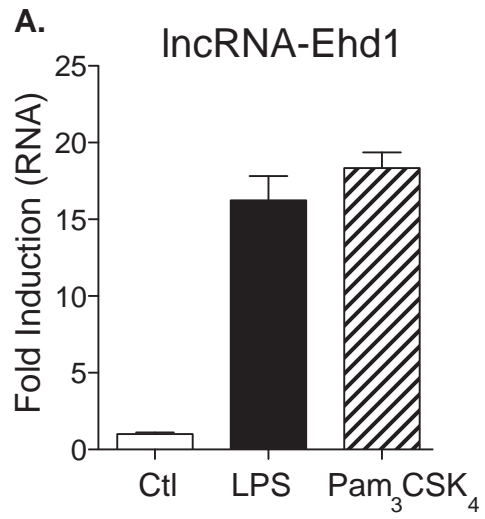


fig. S1

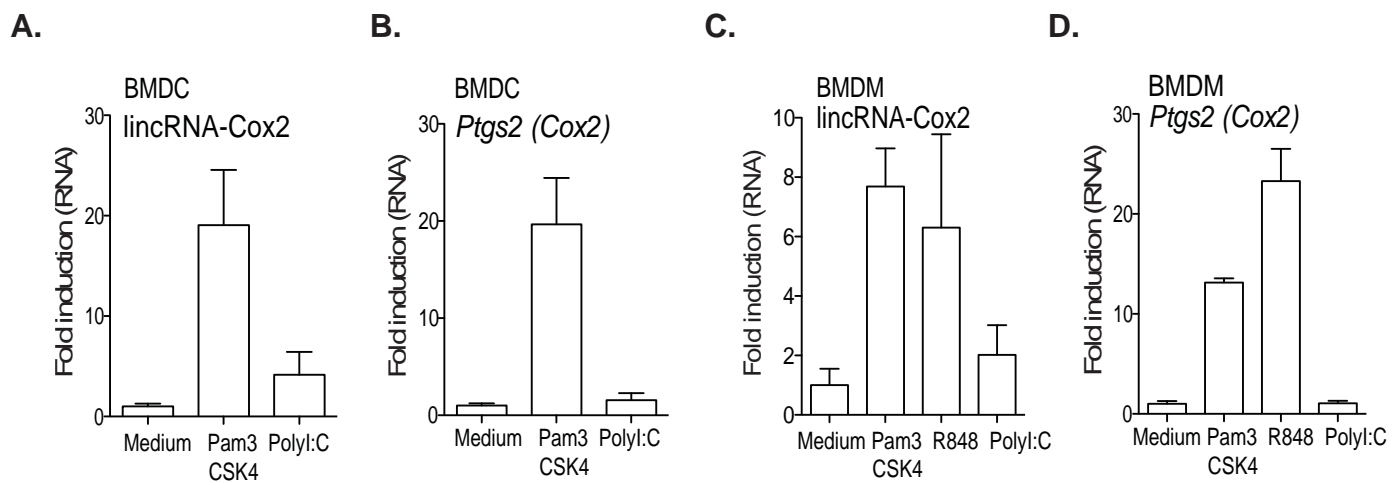


fig. S2

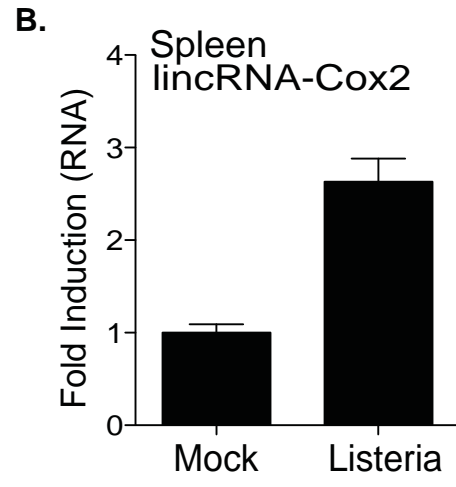
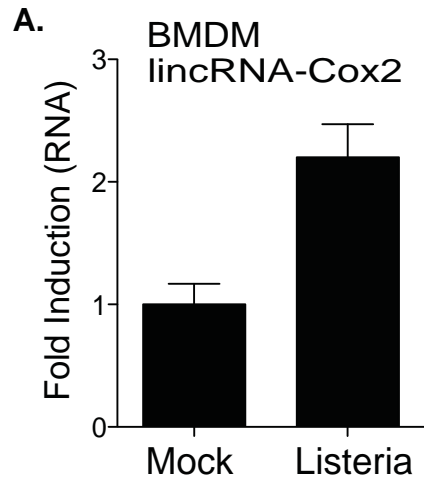


fig. S3

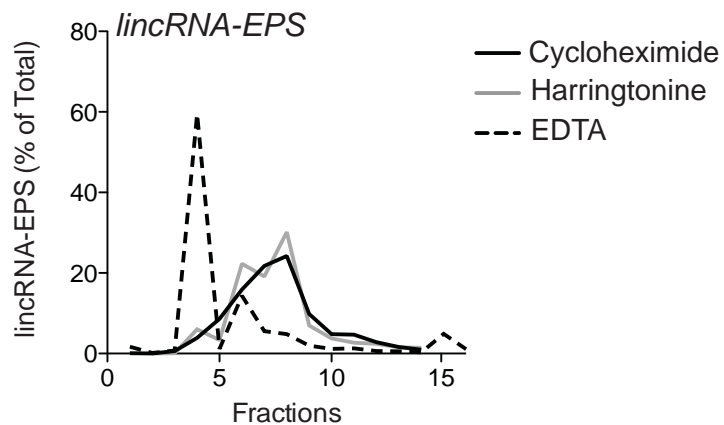
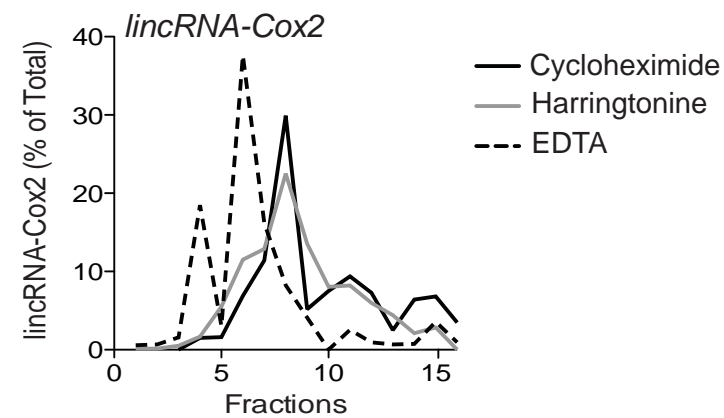
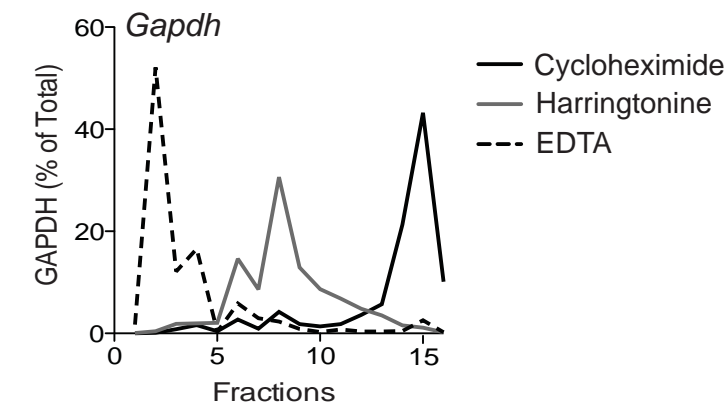
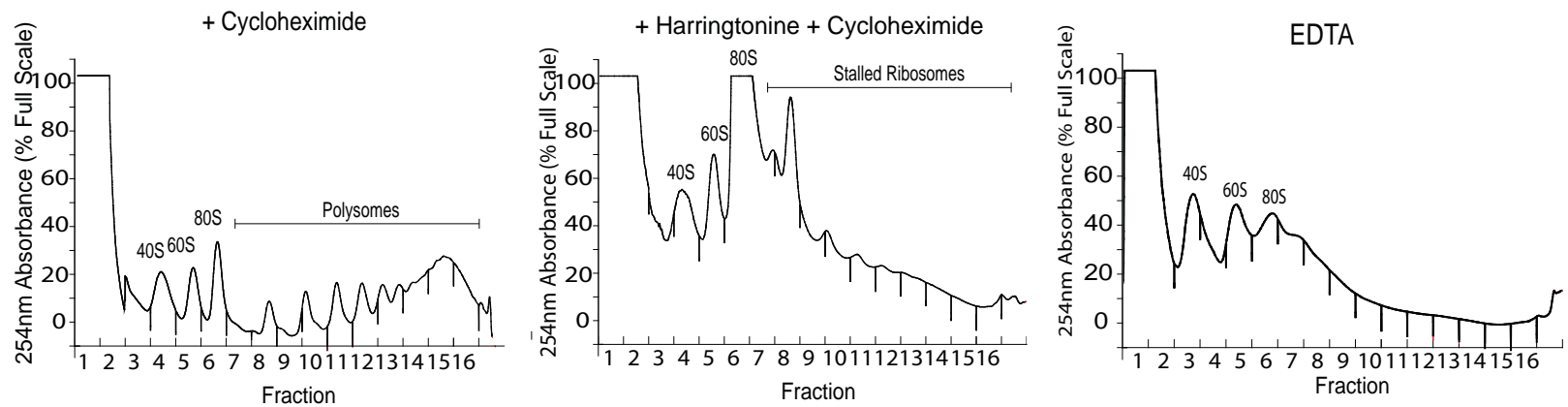
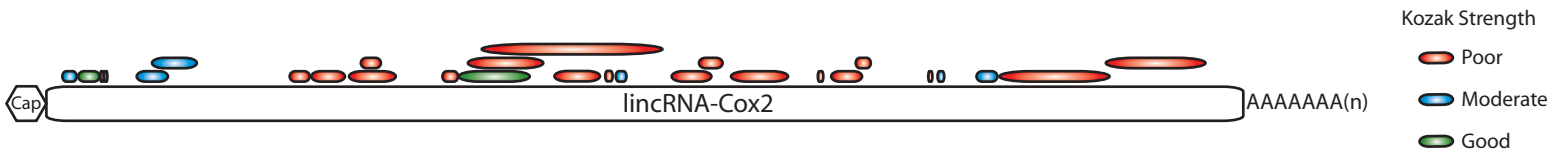


fig. S4

(A)**(B)**

Position	Nucleotide Sequence	Peptide Sequence	Predicted Molecule	Kozak Strength
29-46	atgcgcgggacattctga	MRGTF*		Moderate
53-103	atgccagagacaaaaagga	MPRDKKEAWRCEK		Good
103-111	atgagttga	MS*		Very Poor
111-116	atgtga	M*		Very Poor
142-186	atgctgtactcttgaactttct	MLYSWNFLDKRKH/		Moderate
179-229	atgcataagactcctcacctct	MHKTPHLSASAHKT		Moderate
370-396	atgtggtatctaacaggcaca	MWYLTGTG*		Very Poor
401-448	atgagccctatggaagagctg	MSPMEELWAGQPK		Moderate-Poor
456-524	atggcaagtaggagagcatt	MASRR AFLRESVLK		Moderate-Poor
509-514	atgtaa	M*		Very Poor
600-617	atgaaacatttaggataa	MKHLG*		Poor
617-724	atggctagcagaaaattgaa	MASRK FESQESF		Good
681-746	atgaatctgaatgtatattccc	MNLNVYFPSWKLFT		Poor
691-921	atgtatattcccttctggaaa	MYISLPGNFSLASK		Very Poor
750-833	atgtatgtcagtggtcttgcct	MYVSVLCLSFTHFC		Very Poor
836-850	atgctttcatttaa	MLSF*		Poor
866-898	atgaggctcctcagattgttc	MRLLOIVHSN*		Moderate
942-1004	atgcagatagcttttgcaacta	MQIAFATMWCFLGT		Very Poor
1001-1015	atgatagagccctaa	MIEP*		Very Poor
1029-1115	atgtgcatattgtagttgttg	MCILLVVGWLLLFV		Very Poor
1157-1165	atgccctaa	MP*		Poor
1184-1225	atgataactttatcctttcccc	MITLSFPPQFFLI*		Poor
1222-1239	atgatgttaaaagattga	MMLKD*		Poor
1326-1331	atgtga	M*		Very Poor
1342-1350	atgaactga	MN*		Moderate
1398-1427	atgaggcctcagccctacaca	MRPQPYTRN*		Moderate
1431-1598	atgctgagagtgggagaaat	MLRVGEIVLSREEHI		Very Poor
1574-1723	atgtgtatattatattatatt	MCVYYIILTLHIICIT		Very Poor

fig.S5

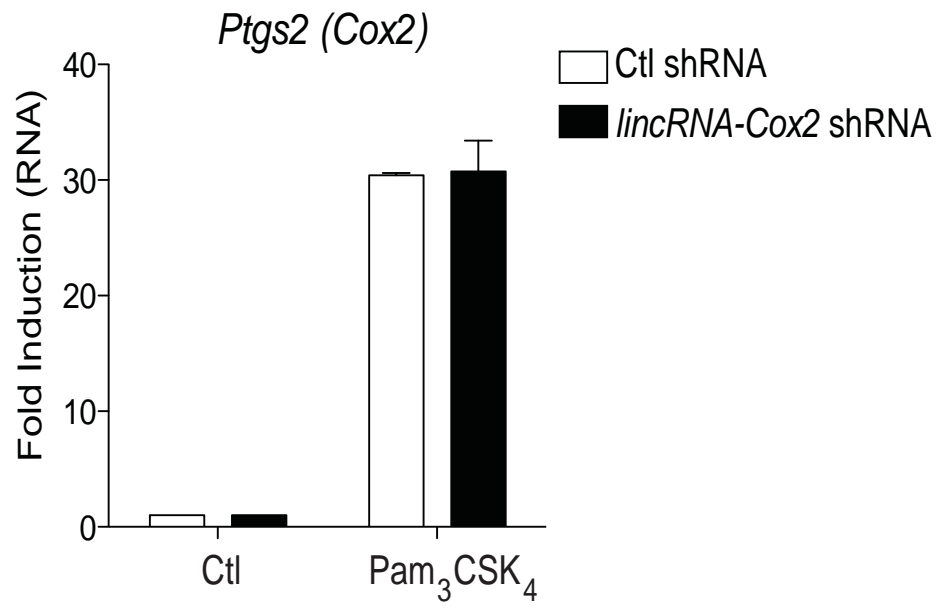


fig.S6

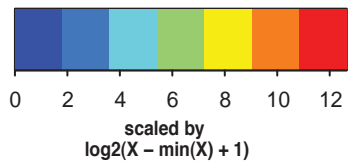
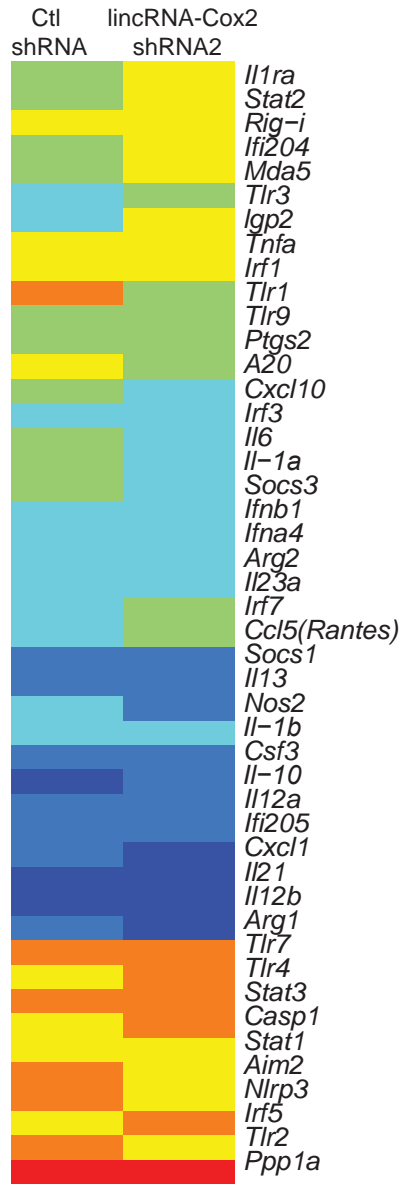


fig. S7

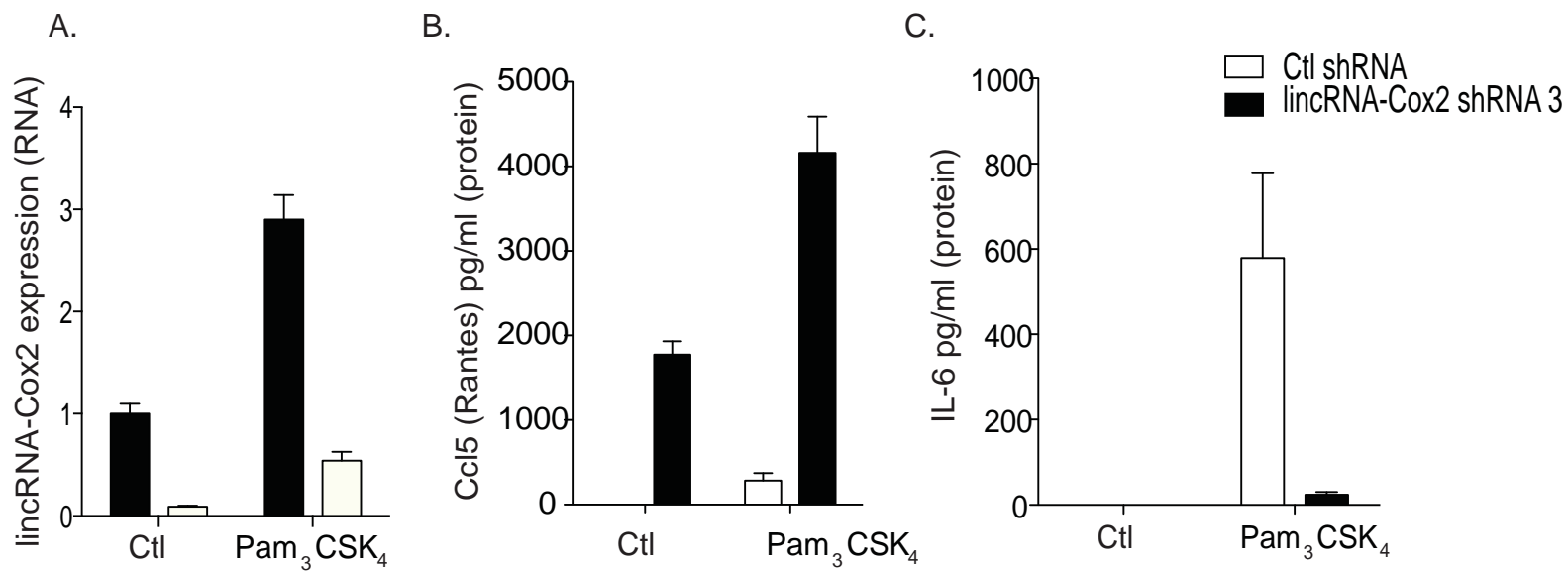


fig. S8

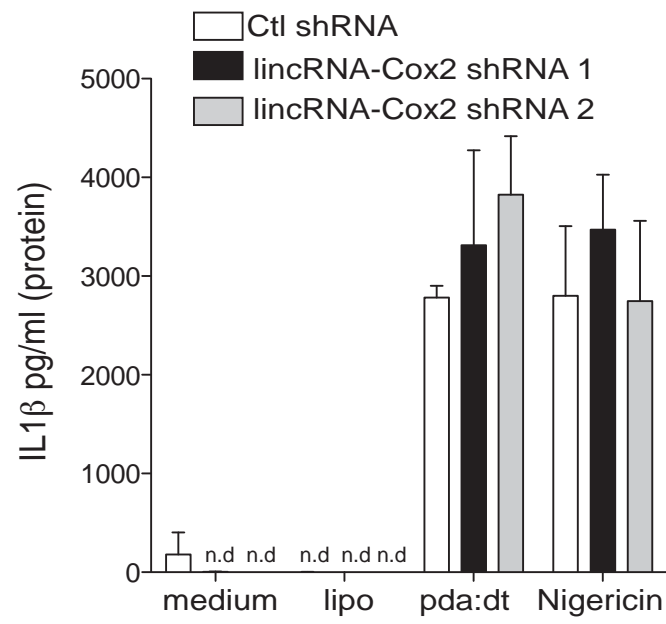


fig. S9

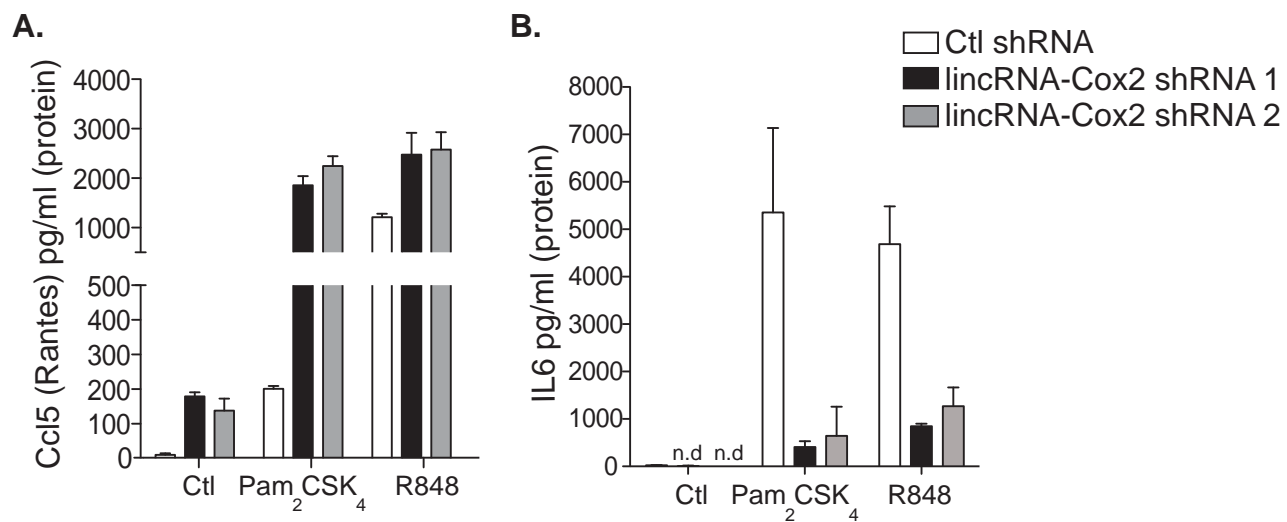
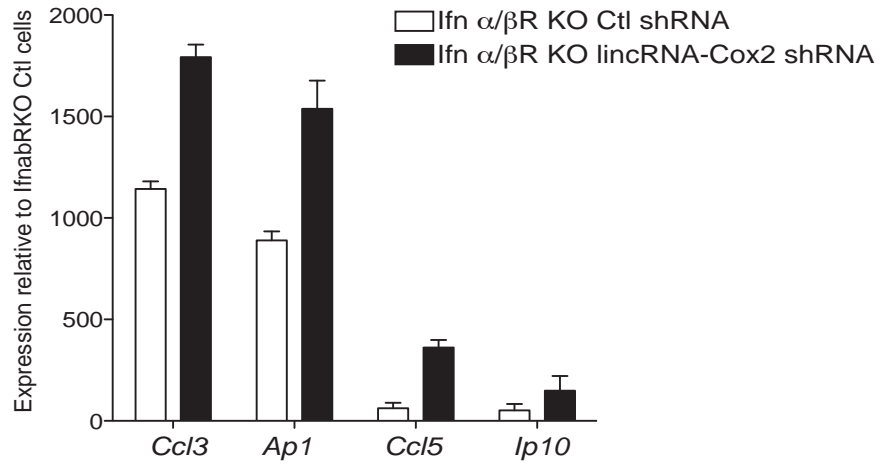


fig. S10

A.



B.

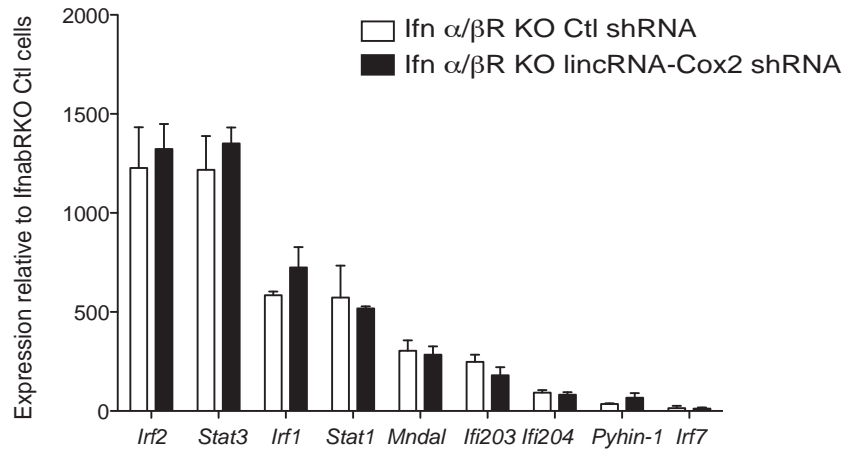


fig. S11

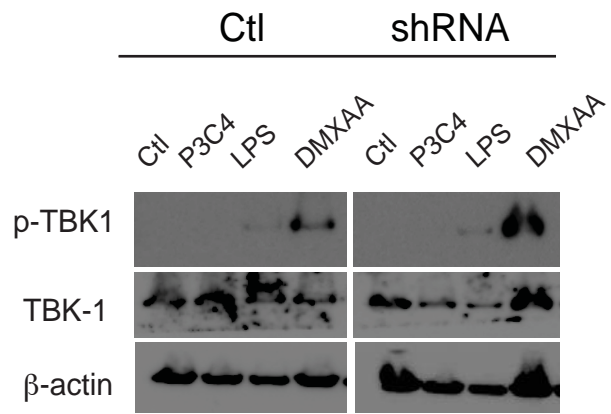
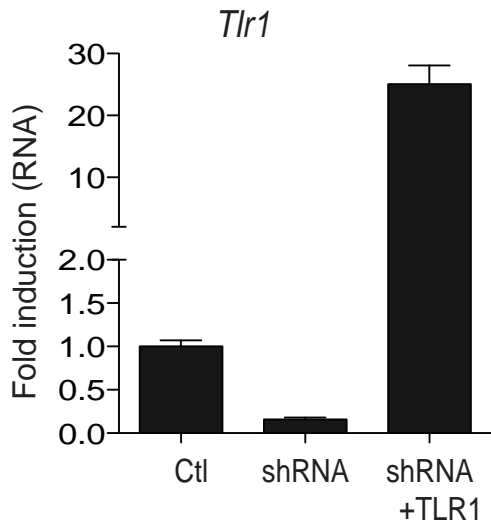
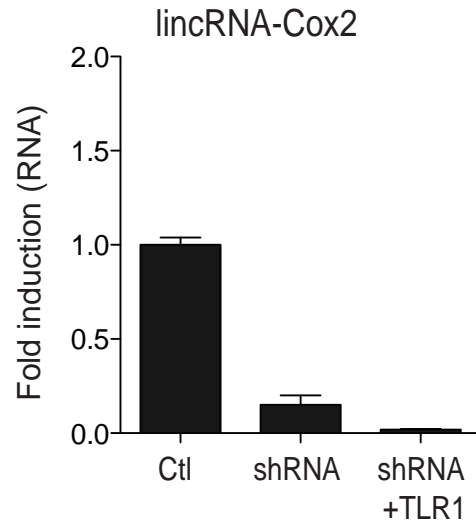
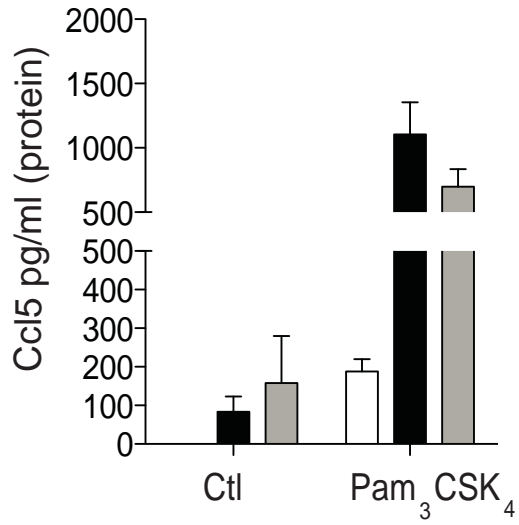
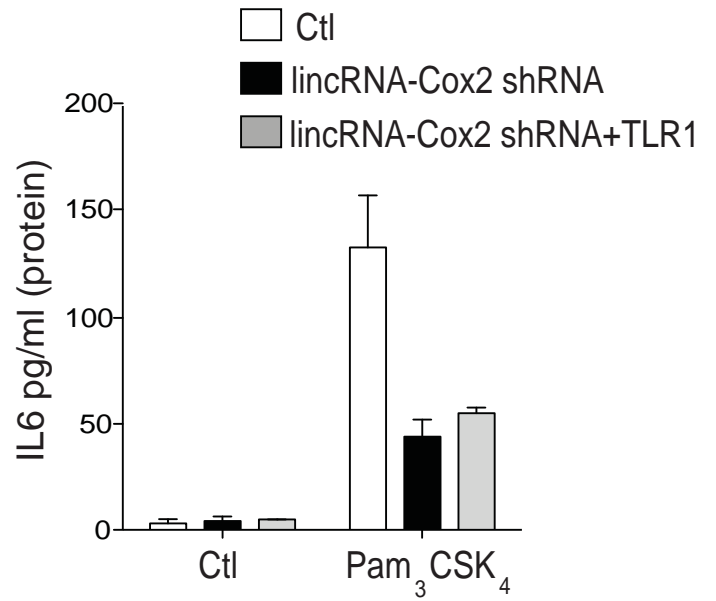


fig. S12

A.**B.****C.****D.****fig.S13**

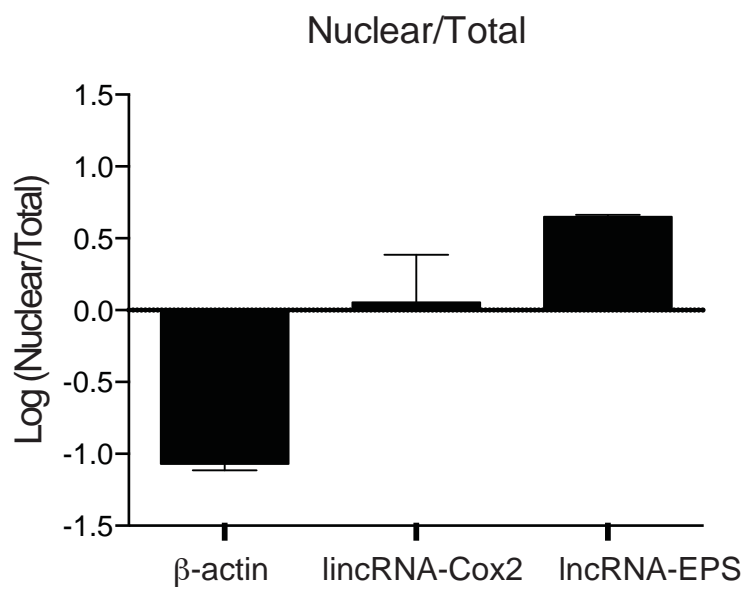


fig. S14

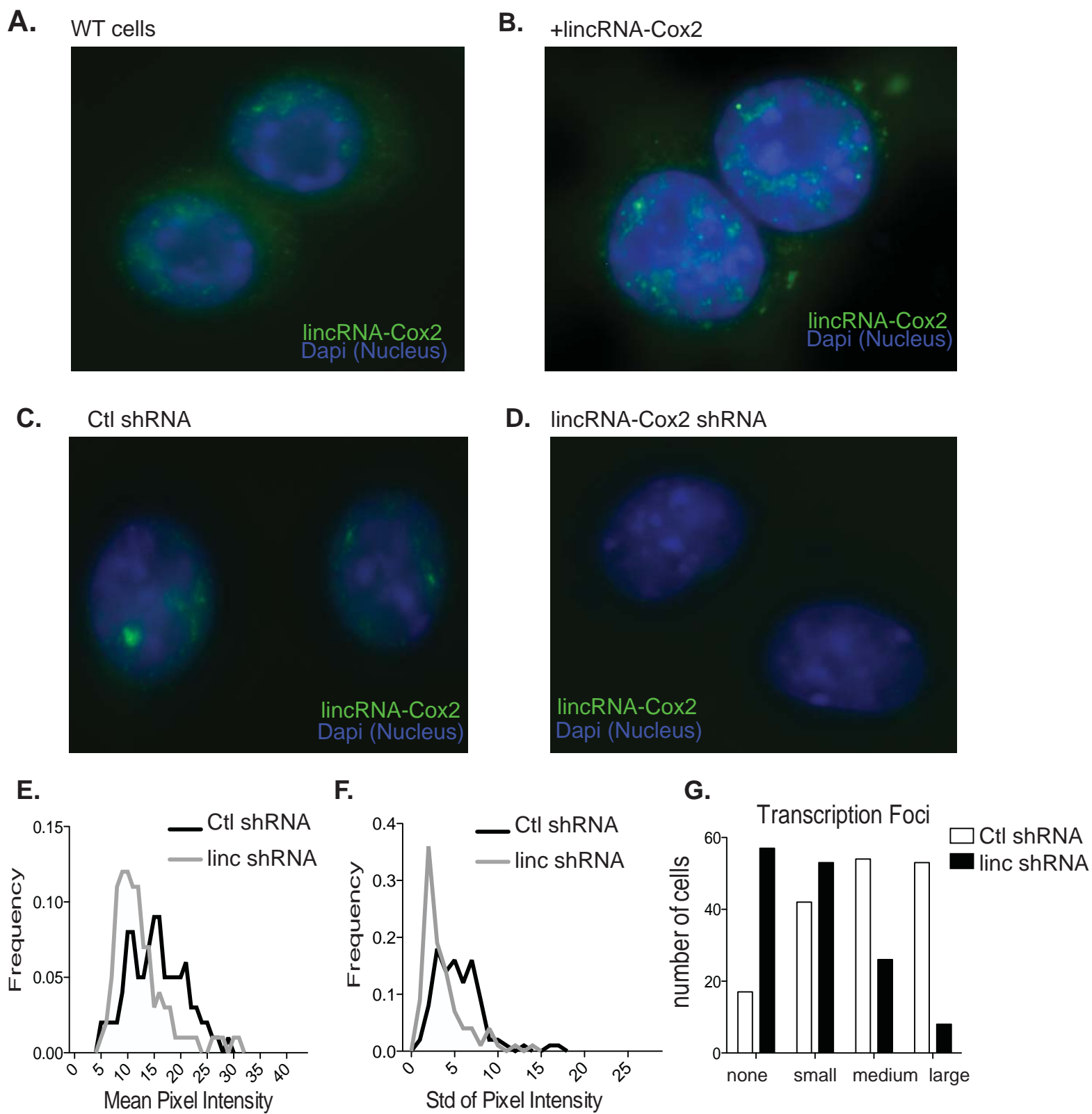
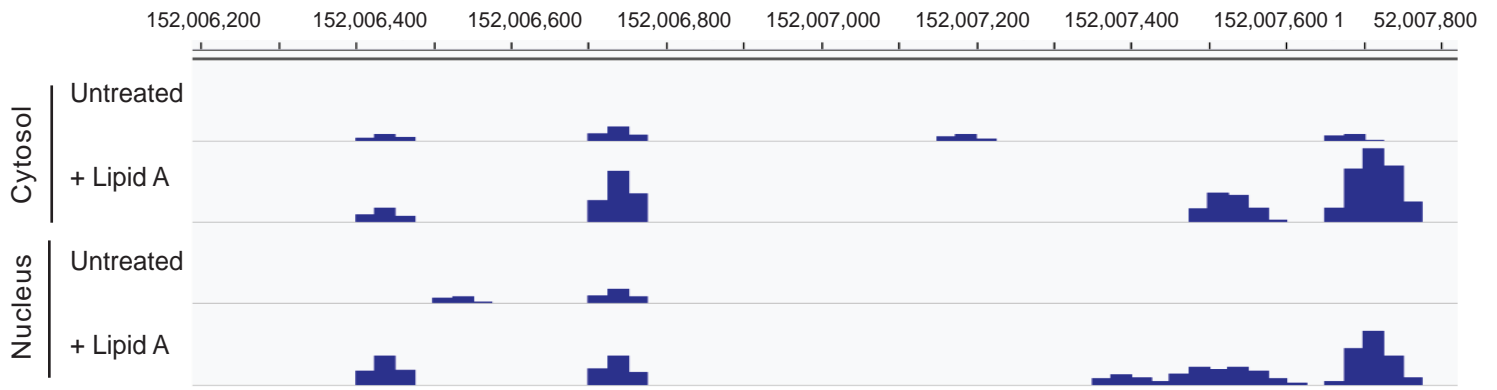


fig. S15

A.

lincRNA-Cox2 Exon 4 (chr1:152006173-152007782)



B.

Neat1 (chr19:5,842,302-5,845,478)

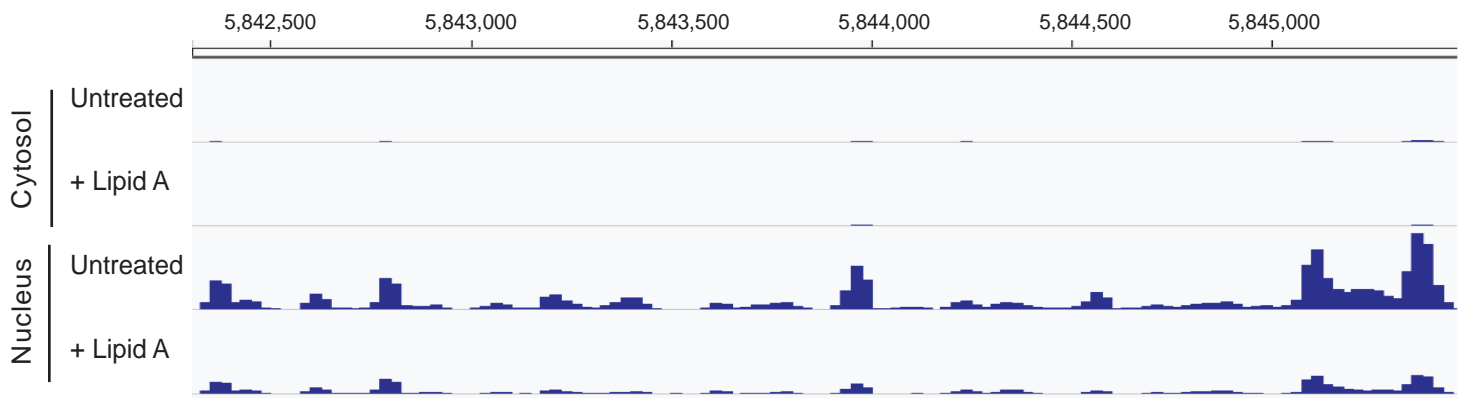
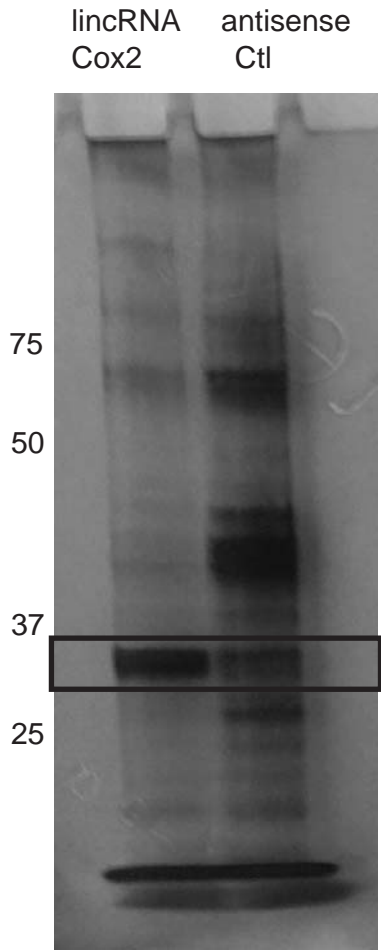
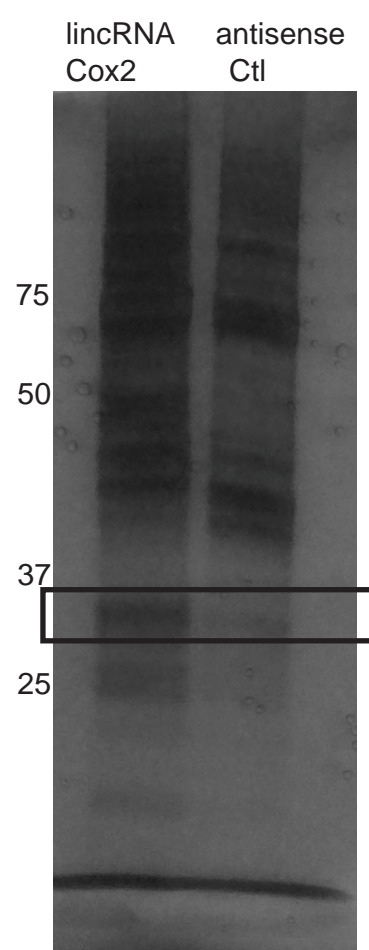
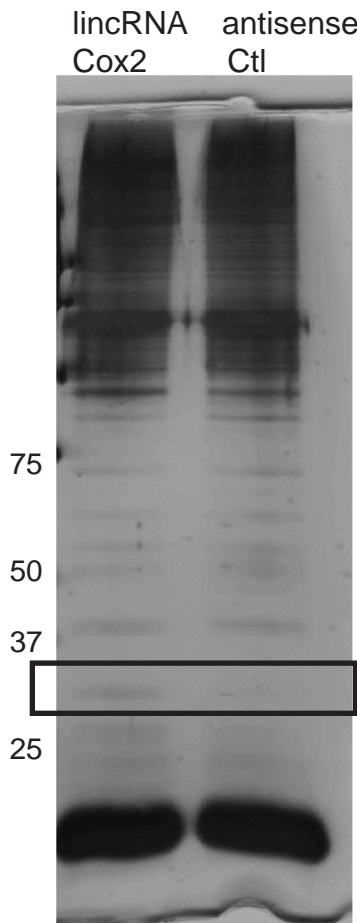
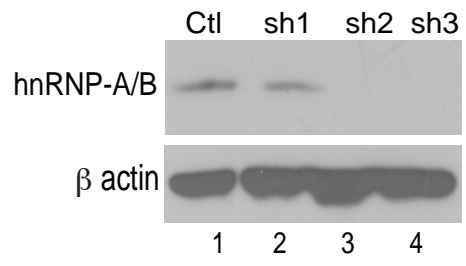


fig. S16

A.*Exp1: BMDM nuclear extracts***B.***Exp2: BMDM nuclear extracts***C.***Exp3: BMDM cytosolic extracts***fig. S17**

A.



B.

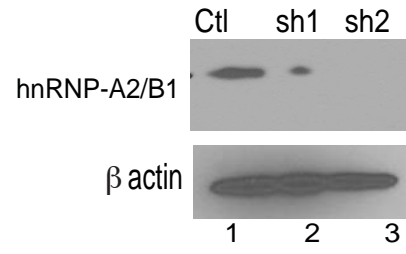


fig. S18

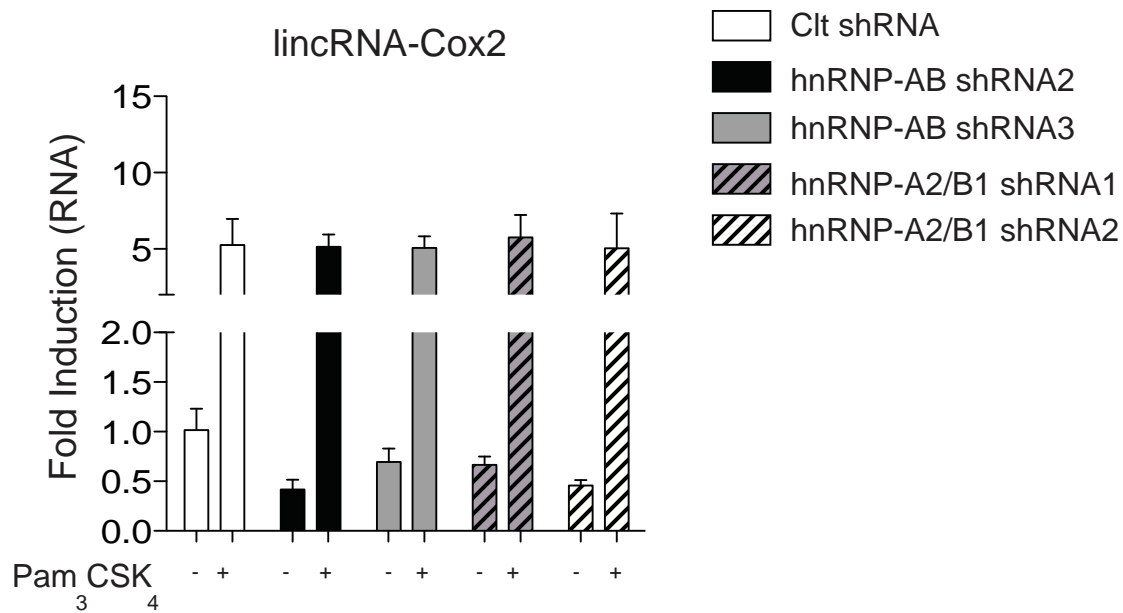
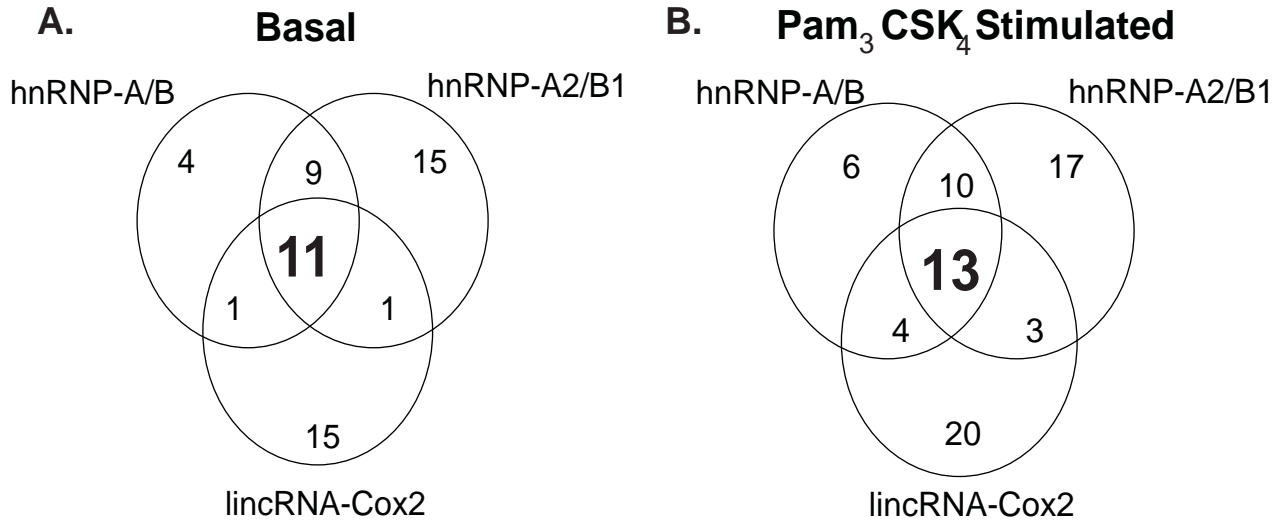


fig.S19



C.

Common Genes	
Basal	Pam ₃ CSK ₄
<i>Mnda</i>	<i>Mnda</i>
<i>Ifi204</i>	<i>Ifi204</i>
<i>Ifit1</i>	<i>Ifit1</i>
<i>Il1RA</i>	<i>Ifit2</i>
<i>Stat1</i>	<i>Stat1</i>
<i>Ccl10</i>	<i>Cxcl10</i>
<i>Ccl5</i>	<i>Ccl5</i>
<i>Tlr8</i>	<i>Nos2</i>
<i>Ccl4</i>	<i>Ifi205</i>
<i>Casp1</i>	<i>Irf5</i>
<i>Prdm1</i>	<i>Prdm1</i>
	<i>Il1b</i>
	<i>Il10</i>

fig. S20

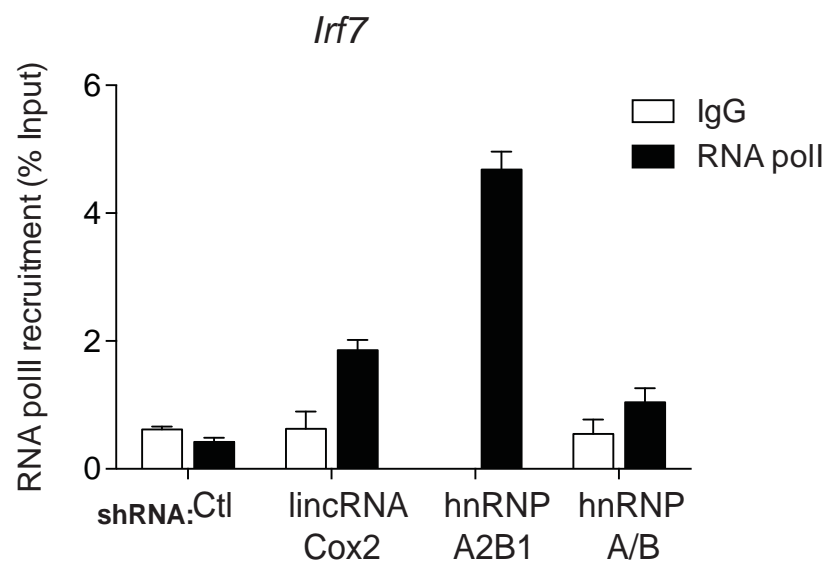


fig.S21

Il6

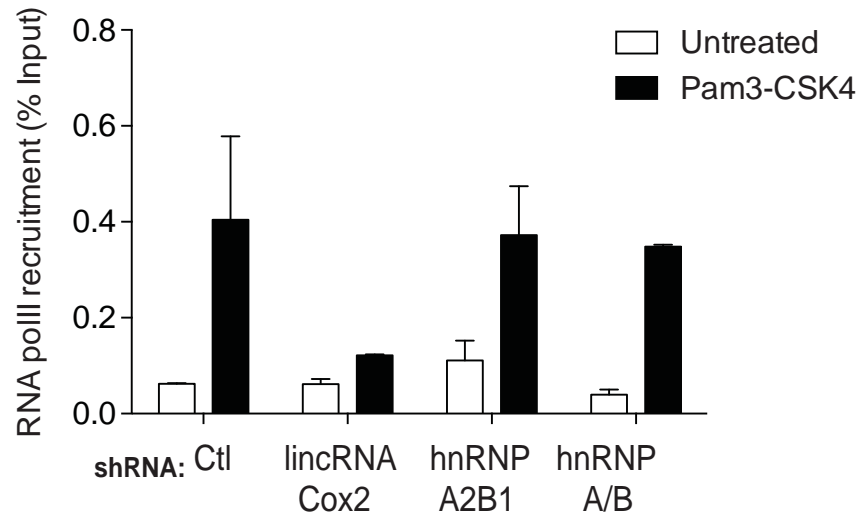


fig.S22

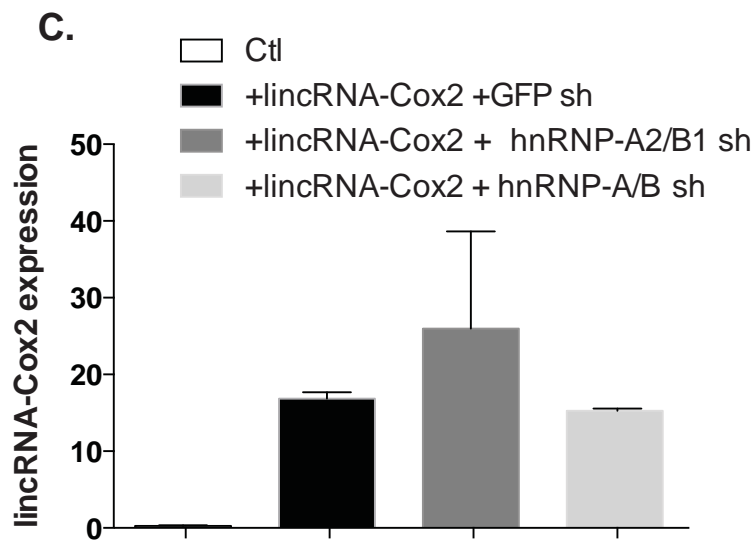
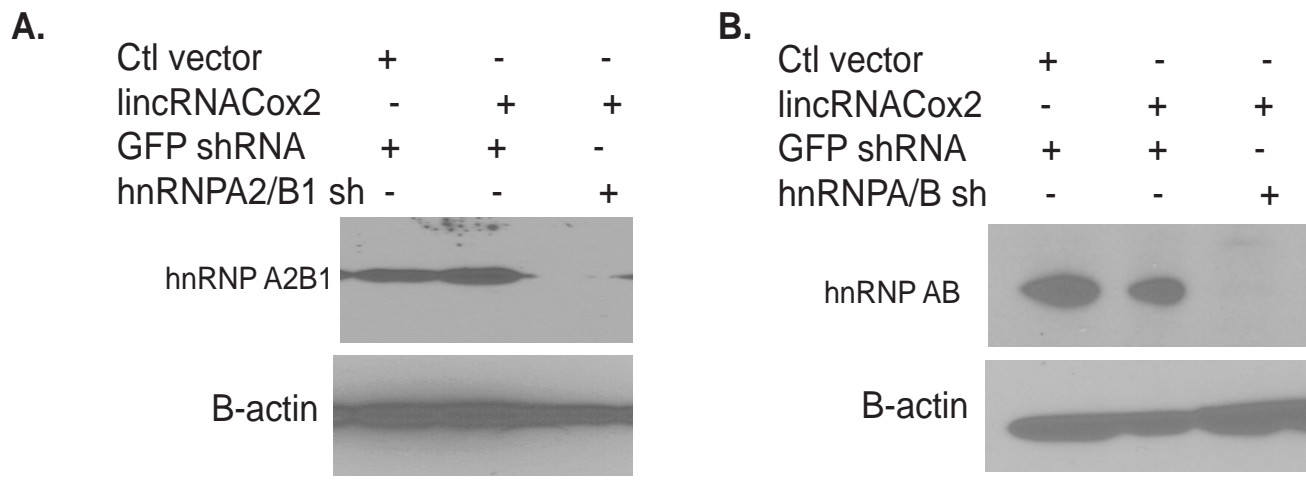


fig.S23

Supplemental Figure legends

Fig. S1. lincRNA-Ehd1 and lincRNA-Lyn are inducible by LPS and Pam3CSK4 in BMDMs.

qRT-PCR was carried out on BMDMs stimulated with LPS (Tlr4) (100ng/ml) and Pam₃CSK₄ (Tlr1/2) (100nM). Expression levels of lincRNA-Ehd1(A) and lincRNA-Lyn (B) were examined, normalized against *Gapdh* and expressed relative to Ctl cells (unstimulated). Results are representative of mean +/- SEM for triplicate determinants.

Fig. S2. lincRNA-Cox2 and Ptgs2 are induced by Pam2CSK4 and R848 but not PolyI:C in BMDC and BMDMs.

qRT-PCR was performed on BMDC (A-B) or BMDM (C-D) after activation with the indicated TLR ligands. Expression levels of lincRNA-Cox2 (A, C) or *Ptgs2* (B, D) were examined, normalized against *Gapdh* and expressed relative to Ctl cells (unstimulated). Data represent mean ±SD from three independent experiments.

Fig. S3. lincRNA-Cox2 is inducible by *Listeria monocytogenes* in vitro and in vivo..

qRT-PCR was carried out on *L. monocytogenes* infected macrophages (BMDM) (A) and on splenocytes ex vivo following infection with *L. monocytogenes* (B) lincRNA-Cox2, expression levels were examined. Data are representative of three separate experiments.

Fig. S4. Sucrose sedimentation analysis of the cytoplasmic fraction of macrophages.

A, Macrophages incubated with cycloheximide (left panel), cycloheximide and harringtonine (middle panel) were lysed and their cytoplasmic fraction loaded on a 10-50% (weight to volume) linear sucrose gradient. The cytoplasmic fraction of untreated cells supplemented with 35 mM EDTA was also loaded on a sucrose gradient (right panel). After sedimentation, samples were fractionated while measuring absorbance at 254nm. Absorbance values are plotted from top to bottom of the sucrose gradient: fraction 1 corresponds to the top of the gradient (lightest fraction containing tRNAs and free mRNPs) while fraction 16 corresponds to the bottom of the gradient (heaviest fraction containing large polysomes). B, Analysis of RNA levels from each fraction by

q-RT-PCR. Relative levels of *Gapdh* (top panel), *lincRNA-Cox2* (middle panel) and *lincRNA-EPS* (bottom panel) are shown for each collected fraction and condition tested.

Fig. S5. Schematic view of *lincRNA-Cox2* Open Reading Frames (ORFs). A, ORFs (defined as sequences starting with an AUG triplet and ending in UAA, UAG or UGA) are depicted relative to their position within the *lincRNA-Cox2* full-length RNA and color coded with respect to the strength of the Kozak sequence surrounding the start codon. “Poor” describes ORFs with a low likelihood of being selected by the ribosome for translation while “Good” describes those with a higher likelihood for translation. B, Position of each ORF relative to the 5' end of *lincRNA-Cox2* followed by nucleotide and amino-acid sequence, the predicted molecular weight (KDa) and the Kozak strength.

Fig. S6: Knockdown of *lincRNA-Cox2* does not affect *Ptgs2* expression. Q-RT PCR analysis was carried out on BMDMs stably expressing lentiviral shRNA specific to *lincRNA-Cox2* or a Ctl shRNA. Expression of *Ptgs2* (*Cox2*) was measured, normalized against housekeeping genes (*Gapdh*, *hprt*, *Gusb*, *Cltc*, *Pgk1* and *Tubb*) and expressed relative to non- stimulated control (Ctl). Data represent mean \pm SD from two independent experiments.

Fig. S7: Knockdown of *lincRNA-Cox2* results in basal increased expression of interferon stimulated genes. Heatmap representation of differentially regulated genes from a custom designed gene codeset performed on RNA extracted from Ctl or *lincRNA-Cox2* knockdown cells.

Fig. S8: Knockdown of *lincRNA-Cox2* affects Pam₃CSK₄ signaling. *lincRNA-Cox2* was knocked down in macrophages using a lentiviral shRNA (shRNA 3). Cells were stimulated with Pam₃CSK₄ (Tlr1/2) for 24 h, *lincRNA-Cox2* (A) Ccl5 (Rantes) (B) and Il6 (C) cytokine levels were examined by ELISA (n.d means not detected). Data represent mean \pm SD for triplicate determinants, one experiment is representative of three independent experiments.

Fig. S9: Knockdown of *lincRNA-Cox2* does not effect IL-1 β production. *lincRNA-Cox2* knockdown cells were primed with LPS (Tlr4) (100ng/ml) for 3h followed by stimulation with

PolydA:dT (5 μ g/ml) for 6h or Nigericin (10mM) for 45min, IL1 β production was measured by ELISA (n.d means not detected). Data are presented as mean \pm S.D of triplicate samples from one experiment representative of three experiments.

Fig. S10: Knockdown of lincRNA-Cox2 results in elevated levels of Ccl5 (Rantes) and reduced levels of Il6. lincRNA-Cox2 stable knockdown cells or their relative control were stimulated with R848 (Tlr7/8) (1 μ g/ml, A and B) or Pam₂CSK₄ (Tlr2/6) (100ng/ml, C and D) for 24 h, Ccl5 (Rantes) (A and C) and Il6 (B and D) production were examined by ELISA. Data are presented as mean \pm S.D of triplicate samples from one experiment representative of three experiments (n.d means not detected).

Fig. S11: Many upregulated ISGs in lincRNA-Cox2 deficient cells are dependent on Type I IFNs. lincRNA-Cox2 was silenced in interferon α/β receptor (IFN α/β R) KO cells, RNA was extracted and subjected to non-enzymatic RNA profiling using bar-coded fluorescent probes (custom designed codeset from Nanostring Technologies). A, Expression of direct targets of lincRNA-Cox2: *Ccl3*, *Ap1*, *Ccl5* and *Ip10* were measured B, Expression levels of indirect targets of lincRNA-Cox2: *Irf2*, *Stat3*, *Irf1*, *Stat1*, *Mndal*, *Ifi203*, *Ifi204*, *Pyhin-1*, *Irf7* were measured. All genes were normalized against housekeeping genes (*Gapdh*, *hppt*, *Gusb*, *Cltc*, *Pgk1* and *Tubb*) and expressed relative to control cells. Results represent mean \pm S.D of three independent samples.

Fig S12: Knockdown of lincRNA-Cox2 does not affect TBK1 phosphorylation. lincRNA-Cox2 knockdown cells or Ctl cells were stimulated with LPS (Tlr4) (100ng/ml), Pam₃CSK₄ (Tlr1/2) (100nM) or DMXAA (1 μ g/ml) for 30 min. Phosphorylated TBK1 (top panels), total TBK1 (middle panels) and b-actin (lower panels) were measured by western blotting.

Fig. S13: Global effects of lincRNA-Cox2 on immune genes are not due to the loss of Tlr1 expression in lincRNA-Cox2 deficient macrophages. lincRNA-Cox2 knockdown cells, or cells stably reconstituted with retroviral mTLR1 were examined by qRT-PCR for expression of *Tlr1*

(A) or lincRNA-Cox2 (B). Cells were stimulated with Pam₃CSK₄ (Tlr1/2) for 24 h, Ccl5 (Rantes) (C) and Il6 (D) cytokine levels were measured by ELISA. Results represent mean ± S.D of triplicate samples.

Fig. S14: lincRNA-Cox2 is localized to the nuclear and cytosolic compartments. RNA extracted from nuclei and cytoplasm (total) or only nuclei (nuclear) of BMDMs was analyzed qRT-PCR for lincRNA-Cox2, a nuclear retained lncRNA-EPS or β-actin mRNA. Values represent the mean of 3 technical replicates ± SD, from one experiment representative of three experiments

Fig. S15: lincRNA-Cox2 is localized to both the cytosolic and nuclear compartments. A, WT BMDMs and BMDMs stably over expressing lincRNA-Cox2 were visualized with a lincRNA-Cox2 probe using RNA FISH, and counterstained with DAPI (DNA). B-C lincRNA-Cox2 stable knockdown cells or Ctl cells were labeled with a lincRNA-Cox2 probe using RNA FISH and counterstained with DAPI (DNA). D-E. Mean pixel intensity (D) and standard deviation of pixel intensity was calculated for over 100 Ctl and lincRNA-Cox2 knockdown cells. F, Transcription foci size for Ctl and lincRNA-Cox2 knockdown cells were determined for over 100 cells.

Fig. S16: RNA-seq reads for lincRNA-Cox2 and Neat 1 in macrophages. The distribution of RNA-seq reads at lincRNA-Cox2 exon 4 region (chr1:152006173-152007782; mouse mm9 genome build, scale 1-10) (A) and Neat 1 (chr19:5,842,302-5,845,478 mouse mm9 genome build, scale 1-1000) (B) is shown for libraries prepared from either cytosolic or nuclear RNA from mouse BMDM stimulated with lipid A (the active moiety of LPS) for 2 hr or unstimulated (Ctl). These libraries were generated by Bhatt et al (20) and are annotated as GSM814832-C1.bam (Cytosol, Ctl), GSM814836-C5.bam (Cytosol, +Lipid A), GSM814837-N1.bam (Nuclear, Ctl), GSM814841-N5.bam (Nuclear, +Lipid A). LincRNA-Cox2 is expressed in both the cytosolic and nuclear fractions, and induction of the lincRNA occurs in both fractions (A). Neat 1 is a nuclear localized lncRNA (B).

Fig. S17: lincRNA-Cox2 interacts with hnRNP-A/B and hnRNP-A2/B1 in BMDMs. In vitro-transcribed biotinylated lincRNA-Cox2 as well as an antisense lincRNA-Cox2 control RNA were incubated with nuclear extracts (A-B) or cytosolic extracts (C). Differentially expressed bands were excised and RNA binding proteins hnRNP-A/B and hnRNP-A2/B1 identified by Mass Spectrometry (A-C).

Fig. S18: Knockdown of hnRNP-A/B and hnRNP-A2/B1 in BMDMs. A-B, hnRNP-A/B and hnRNP-A2/B1 were knocked down using lentiviral shRNA in macrophages. Expression levels of hnRNP-A/B (A) and hnRNP-A2/B1 (B) were determined by western blotting. Results display one experiment representative of three experiments.

Fig. S19: Expression levels of lincRNA-Cox2 are not affected in hnRNP-A/B or hnRNP-A2/B1 knockdown cells. RNA was extracted from BMDMs stably expressing hnRNP-A/B or hnRNP-A2/B1 lentiviral shRNA and expression levels of lincRNA-Cox2 were determined by qRT-PCR. Results represent mean \pm S.D of triplicate samples.

Fig. S20: Genes affected by lincRNA-Cox2, hnRNP-A/B and hnRNP-A2/B1 knockdown in macrophages. A-B, Venn diagrams representing common genes showing 2 fold induction over two RNA analysis experiments in all three cell lines either at basal levels (A) or following Pam₃CSK₄ (Tlr1/2) stimulation (B). C, Table showing common genes between all three cell lines showing 2 fold induction over two separate RNA analysis experiments.

Fig. S21: Knockdown of lincRNA-Cox2, hnRNP-A/B or hnRNP-A2/B1 affects RNA-Pol II recruitment to *Irf7*. RNA Pol II recruitment to the *Irf7* promoter measured using Chromatin immunoprecipitation (ChIP) on cell lines with shRNA targeting lincRNA-Cox2, hnRNP-A/B or hnRNP-A2/B1. Results are representative of three separate experiments.

Fig. S22: Knockdown of lincRNA-Cox2, hnRNP-A/B or hnRNP-A2/B1 affects RNA-Pol II recruitment to *Il6*. RNA Pol II recruitment to the *Il6* promoter measured using Chromatin immunoprecipitation (ChIP) on cell lines with shRNA targeting lincRNA-Cox2, hnRNP-A/B or

hnRNP-A2/B1. The samples were stimulated with Pam₃CSK₄ (Tlr1/2) for 5 h or remained untreated (Medium). Results are representative of three separate experiments.

Fig. S23: Knockdown of hnRNP-A/B or A2/B1 in lincRNA-Cox2 over-expressing cells. A-B, hnRNP-A/B (A) or hnRNP-A2/B1 (B) were knocked down in *lincRNA-Cox2* over-expressing BMDMs using lentiviral shRNA. Knockdown of hnRNP-A/B (A) and A2/B1 (B) were confirmed by western blotting. Expression levels of lincRNA-Cox2 were measured in all cells by q-RT-PCR normalized against *Gapdh* and expressed relative to Ctl cells. Data are representative of three separate experiments.

lncRNAs induced following TLR2 stimulation

Table S1

ensemblGeneId	geneName	unstimulated VarianceStabi lizedCounts(l og2)	Pam3CSK4_5h rsVarianceSta bilizedCounts(log2)	p-value	log2FoldChangeF orVarianceStabili zedCounts	varianceStabili zedCounts_fold Change
ENSMUSG00000085196	Gm14963(IncrRNA-Ehd1)	2.340123032	4.917946495	0.020228444	2.577823462	5.970382913
ENSMUSG00000091875	Mir155	3.462929	5.917155866	0.011970167	2.454226866	5.480193622
ENSMUSG00000091113	Gm17311(lincRNA-Cox2)	4.591756791	7.023787598	0.012757965	2.432030807	5.396525373
ENSMUSG00000087088	Gm16638	3.264319147	5.623673111	0.014849033	2.359353964	5.131405242
ENSMUSG00000091559	Gm17726(IncrRNA-Lyn)	4.449785339	6.798935394	0.016357722	2.349150055	5.095239829
ENSMUSG00000091633	Gm17280	4.995375386	7.291188854	0.015627534	2.295813469	4.910307823
ENSMUSG00000085051	Gm11542	2.340123032	4.472819751	0.12108535	2.132696718	4.385364371
ENSMUSG00000090612	D930030I03Rik	2.340123032	4.223340379	0.10797782	1.883217347	3.688968185
ENSMUSG00000051832	E230016K23Rik	3.892418888	5.687433885	0.096424344	1.795014997	3.470190821
ENSMUSG00000084772	Gm15473	2.340123032	4.024165894	0.385989255	1.684042862	3.21327145
ENSMUSG00000087047	1700110K17Rik	2.340123032	4.024165894	0.255160842	1.684042862	3.21327145
ENSMUSG00000091914	2010015M23Rik	2.340123032	4.024165894	0.272466581	1.684042862	3.21327145
ENSMUSG00000090605	E230013L22Rik	3.892418888	5.556897593	0.071588437	1.664478705	3.169990914
ENSMUSG00000086609	5830432E09Rik	7.061311076	8.722770307	0.087544055	1.66145923	3.163363249
ENSMUSG00000092169	B930082K07Rik	2.999116045	4.615861582	0.143260446	1.616745537	3.066824344
ENSMUSG00000085458	G630030J09Rik	3.264319147	4.862696374	0.114205104	1.598377227	3.028025233
ENSMUSG00000087623	Gm12404	4.522695041	6.114880507	0.098940558	1.592185465	3.015057394
ENSMUSG00000066035	Gm17372	2.340123032	3.910584572	0.326538884	1.57046154	2.969997136
ENSMUSG00000091488	Gm6225	2.340123032	3.910584572	0.359913588	1.57046154	2.969997136
ENSMUSG00000073787	Gm10575	2.340123032	3.784506932	0.267086396	1.4443839	2.721465788
ENSMUSG00000085283	9530027J09Rik	2.340123032	3.784506932	0.406637904	1.4443839	2.721465788
ENSMUSG00000085498	Gm14023	2.340123032	3.784506932	0.379465663	1.4443839	2.721465788
ENSMUSG00000086786	Gm15908	2.340123032	3.784506932	0.535690996	1.4443839	2.721465788
ENSMUSG00000091726	Gm17211	2.340123032	3.784506932	0.400166904	1.4443839	2.721465788
ENSMUSG00000034764	1700006J14Rik	4.290299771	5.718268025	0.167326569	1.427968254	2.690675209
ENSMUSG00000085930	2310001H17Rik	4.372525752	5.777993082	0.143116154	1.40546733	2.64903578
ENSMUSG00000084952	7530420F21Rik	2.999116045	4.394948931	0.272212219	1.395832886	2.631404224
ENSMUSG00000087222	E030042O20Rik	4.004931727	5.374631139	0.156567809	1.369699413	2.584167191
ENSMUSG00000073274	Gm14636	5.457549022	6.784546276	0.178955281	1.326997253	2.508799633
ENSMUSG00000085661	1700034P13Rik	2.999116045	4.312049966	0.24497765	1.31293392	2.484462765
ENSMUSG00000086600	C030005K06Rik	2.999116045	4.312049966	0.288915537	1.31293392	2.484462765
ENSMUSG00000086280	4930540M05Rik	2.340123032	3.642027534	0.589631052	1.301904501	2.46554144
ENSMUSG00000087633	Gm14455	2.340123032	3.642027534	0.508558326	1.301904501	2.46554144
ENSMUSG00000073534	Gm10532	2.999116045	4.223340379	0.37119737	1.224224334	2.336298047
ENSMUSG00000086469	Gm16897	3.462929	4.681962462	0.265302216	1.219033463	2.327907063
ENSMUSG00000085164	Gm16704	3.264319147	4.472819751	0.225596706	1.208500604	2.31097332
ENSMUSG00000072844	G530011O06Rik	8.386691971	9.571858276	0.215489134	1.185166304	2.273896051
ENSMUSG00000087528	9830144P21Rik	5.593804883	6.770011577	0.234603972	1.176206695	2.259818169
ENSMUSG00000090373	Gm17435	5.306640998	6.479562368	0.232227613	1.17292137	2.254677936
ENSMUSG00000087700	Gm15283	3.462929	4.615861582	0.367514293	1.152932583	2.223654401
ENSMUSG00000071332	E230015B07Rik	2.340123032	3.476637034	0.554167526	1.136514001	2.198491571
ENSMUSG00000085886	D030047H15Rik	2.340123032	3.476637034	0.698953104	1.136514001	2.198491571
ENSMUSG00000087237	Gm16703	2.340123032	3.476637034	0.633377066	1.136514001	2.198491571
ENSMUSG00000090648	Gm17446	2.340123032	3.476637034	0.535051563	1.136514001	2.198491571
ENSMUSG00000091637	Gm17281	2.340123032	3.476637034	0.583261666	1.136514001	2.198491571
ENSMUSG00000091852	4930534D22Rik	2.340123032	3.476637034	0.74279433	1.136514001	2.198491571
ENSMUSG00000087484	2900089D17Rik	3.264319147	4.394948931	0.287558791	1.130629784	2.189543002
ENSMUSG00000091302	2310043M15Rik	3.264319147	4.394948931	0.298170296	1.130629784	2.189543002
ENSMUSG00000051844	B230319C09Rik	2.999116045	4.127818518	0.353150327	1.128702473	2.186619922
ENSMUSG00000084841	Gm16712	4.591756791	5.718268025	0.230527727	1.126511234	2.183301293
ENSMUSG00000085184	4933439K11Rik	4.591756791	5.718268025	0.289148344	1.126511234	2.183301293
ENSMUSG00000074151	Nlrc5	9.88466964	10.98749475	0.245103658	1.102825111	2.147748569
ENSMUSG00000087118	Gm16793	3.462929	4.546287643	0.380786813	1.083358643	2.118963362
ENSMUSG00000074813	Gm14005	6.582817202	7.665188223	0.2642495	1.082371021	2.117513285
ENSMUSG00000078821	Gm17414	6.128437102	7.207456678	0.280605021	1.079019576	2.112599917
ENSMUSG00000046808	Atp10d	7.566147312	8.605116092	0.277562522	1.03896878	2.054758413
ENSMUSG00000073593	Gm10544	2.999116045	4.024165894	0.545255519	1.025049849	2.035029699
ENSMUSG00000087551	Gm16912	2.999116045	4.024165894	0.357118621	1.025049849	2.035029699
ENSMUSG00000091100	Gm17626	2.999116045	4.024165894	0.402451999	1.025049849	2.035029699
ENSMUSG00000091810	Gm17442	2.999116045	4.024165894	0.489729168	1.025049849	2.035029699
ENSMUSG00000091912	Gm17468	2.999116045	4.024165894	0.461765245	1.025049849	2.035029699
ENSMUSG00000085088	4931413K12Rik	4.290299771	5.294529046	0.328997924	1.004229274	2.005871621

Upregulated genes following TLR2 stimulation of lincRNA-Cox2 knockdown cells

Table S2

ensemblGeneId	geneName	Pam3CSK4 stimulated no shRNA varianceStabilizedCounts(log2)	Pam3CSK4 stimulated with shRNA varianceStabilizedCounts(log2)	pval	log2FoldChangeForVarianceStabilizedCounts	varianceStabilizedCounts_foldChange
ENSMUSG00000029819	Npy	2.340123032	12.64764529	6.66E-15	10.30752226	1267.282336
ENSMUSG00000053846	Lipg	4.394948931	14.63872574	2.66E-14	10.24377681	1212.506536
ENSMUSG00000058254	Tspan7	3.275780133	12.40915112	3.03E-13	9.133370989	561.5890474
ENSMUSG00000032216	Nedd4	2.340123032	11.43178764	4.78E-13	9.091664606	545.5866774
ENSMUSG00000029189	Sel1l3	2.340123032	11.31787949	6.63E-13	8.977756456	504.1665024
ENSMUSG00000025932	Eya1	3.007424336	11.89829639	5.11E-13	8.890872055	474.6999391
ENSMUSG00000037994	Nhedc2	2.340123032	10.55475785	1.11E-11	8.214634817	297.0649978
ENSMUSG00000023915	Tnfrsf21	2.340123032	10.51592394	1.34E-11	8.175800906	289.1753775
ENSMUSG00000022893	Adamts1	4.223340379	12.29221908	4.26E-11	8.0688787	268.5186902
ENSMUSG00000020315	Spnb2	5.119026678	12.74970658	3.88E-10	7.630679907	198.1816954
ENSMUSG00000063060	Sox7	2.340123032	9.631324802	5.11E-10	7.291201769	156.6283731
ENSMUSG00000031965	Tbx20	2.340123032	9.618550642	3.76E-10	7.278427609	155.2476488
ENSMUSG00000034469	Phyhip	2.340123032	9.502167638	6.24E-10	7.162044605	143.2155768
ENSMUSG00000031389	Arhgap4	4.615861582	11.73205284	1.67E-09	7.116191262	138.7353151
ENSMUSG00000031398	Plkna3	2.340123032	9.364677165	9.14E-10	7.024554132	130.1971567
ENSMUSG00000030231	Plekha5	2.340123032	9.349295578	1.08E-09	7.009172546	128.8164069
ENSMUSG00000076555	Cav1	2.340123032	9.222369792	3.15E-09	6.882246759	117.9675913
ENSMUSG00000069045	Ddx3y	3.642027534	10.13527528	6.58E-09	6.493247742	90.08704457
ENSMUSG00000031383	Dusp9	2.340123032	8.821766484	5.93E-09	6.481643452	89.36533757
ENSMUSG0000004558	Ndrp2	5.335153733	11.76761348	2.71E-08	6.432459743	86.37008134
ENSMUSG00000056673	Kom5d	3.007424336	9.397095582	5.13E-09	6.389671246	83.8460928
ENSMUSG00000033880	Lgals3bp	10.03614826	16.2669892	1.04E-07	6.230840949	75.10520293
ENSMUSG00000031565	Fgfr1	2.340123032	8.482224741	2.18E-08	6.142101709	70.62473818
ENSMUSG00000068457	Uty	2.340123032	8.424672657	4.31E-08	6.084549624	67.86282696
ENSMUSG00000031273	Col4a6	3.007424336	8.911282838	3.26E-08	5.903858503	59.87403123
ENSMUSG00000058056	Palld	10.546287643	16.546287643	1.39E-07	5.89284167	59.41855726
ENSMUSG00000030921	Trim30a	6.961225003	12.82033366	3.12E-07	5.859108658	58.04535262
ENSMUSG00000031379	Pir	2.340123032	8.173314735	8.68E-08	5.833191702	57.01192075
ENSMUSG00000046768	Rhoj	4.546287643	10.35801583	1.54E-07	5.811728184	56.17001115
ENSMUSG00000020638	Cmpk2	10.16368022	15.90688172	5.39E-07	5.743201495	53.56436012
ENSMUSG00000038729	Akap2	2.340123032	8.075189157	1.02E-07	5.735066124	53.26316023
ENSMUSG00000034336	Ina	2.340123032	8.064460714	1.85E-07	5.724337681	52.86854367
ENSMUSG00000050212	Fam176b	4.024165894	9.719420484	2.20E-07	5.69525459	51.81344447
ENSMUSG00000037921	Ddx60	4.971045297	10.65913191	3.50E-07	5.688086609	51.55664962
ENSMUSG00000060206	Zfp462	5.969218447	11.65014182	4.58E-07	5.680923368	51.30129604
ENSMUSG00000021136	Smoc1	4.472819751	10.12627924	2.61E-07	5.653459489	50.33393517
ENSMUSG00000039741	Bahcc1	4.312049966	9.949584935	2.10E-07	5.63753497	49.78140245
ENSMUSG00000033214	Slitrk5	2.340123032	7.969893827	1.01E-07	5.629770795	49.5142127
ENSMUSG00000031778	Cx3cl1	5.806938004	11.26089223	1.07E-06	5.453954224	43.83326454
ENSMUSG00000027890	Gstm4	2.340123032	7.779645819	4.13E-07	5.439522787	43.39698129
ENSMUSG00000035273	Hpse	4.127818518	9.510093798	4.93E-07	5.382275279	41.70866641
ENSMUSG00000071632	2510002D24Rik	3.910584572	9.272159172	4.26E-07	5.3615746	41.11447781
ENSMUSG00000023961	Enpp4	6.868795812	12.22548963	1.69E-06	5.356693816	40.97561836
ENSMUSG00000057596	Trim30d	5.209346918	10.509307446	1.53E-06	5.293527542	39.22026946
ENSMUSG00000001435	Col18a1	5.165025496	10.44016677	1.53E-06	5.275141277	38.72360271
ENSMUSG00000071604	Fam189a2	3.275780133	8.521971096	3.14E-07	5.246190963	37.95428749
ENSMUSG00000038020	Rappgef1	3.784506932	9.015194076	5.76E-07	5.230687144	37.5485982
ENSMUSG00000029298	Gbp9	5.890392305	11.10674235	2.32E-06	5.216350045	37.17729875
ENSMUSG00000052142	Rasal3	5.294529046	10.48408615	1.96E-06	5.189557109	36.49323419
ENSMUSG00000008540	Mgst1	5.022161696	10.19917747	1.83E-06	5.177015779	36.17737382
ENSMUSG00000055723	Rras2	3.784506932	8.929129587	1.04E-06	5.144622655	35.3741274
ENSMUSG00000050370	Ch25h	4.394948931	9.537497342	2.32E-06	5.142548411	35.32330456
ENSMUSG00000029561	Oasl2	9.161073795	14.2402764	4.77E-06	5.0792026	33.8058871
ENSMUSG00000026814	Eng	8.394292293	13.45899145	4.90E-06	5.064699157	33.46773837
ENSMUSG00000033420	Antxr1	7.649416865	12.69339192	5.00E-06	5.043975055	32.99041577
ENSMUSG00000018865	Sult4a1	2.340123032	7.328874754	4.95E-06	4.988751722	31.7514753
ENSMUSG00000034472	Rasd2	5.022161696	9.95685229	4.08E-06	4.934690594	30.58369036
ENSMUSG00000000440	Pparg	5.071444736	9.988400749	4.41E-06	4.916956014	30.21003633
ENSMUSG00000028268	Gbp3	7.756354653	12.64156996	8.78E-06	4.885215304	29.55264397

ENSMUSG00000031596	Slc7a2	9.149913889	14.0306222	9.19E-06	4.880708313	29.46046533
ENSMUSG00000028037	Ifi44	6.948379108	11.81076575	8.88E-06	4.862386642	29.08869445
ENSMUSG00000046186	Cd109	6.160307091	10.99610905	8.05E-06	4.835801962	28.55758273
ENSMUSG00000032690	Oas2	8.913021875	13.7094932	1.20E-05	4.796471323	27.78956454
ENSMUSG00000020641	Snas2	11.06402665	15.8442644	1.31E-05	4.778237748	27.44055485
ENSMUSG00000066861	Oas1g	6.740493392	11.49854329	1.21E-05	4.7580499	27.05924911
ENSMUSG00000027074	Slc43a3	6.566312297	11.21979922	1.62E-05	4.653486925	25.1674462
ENSMUSG00000037625	Cldn11	2.340123032	6.986108783	1.95E-05	4.64598575	25.03692972
ENSMUSG00000053835	H2-T24	7.550981633	12.16653488	2.04E-05	4.615553242	24.51432686
ENSMUSG00000074671	Tspyl3	4.917946495	9.519940645	1.48E-05	4.60199415	24.28500957
ENSMUSG00000039304	Tnfsf10	3.476637034	8.048216851	1.36E-05	4.571579817	23.77840131
ENSMUSG00000038007	Acer2	2.340123032	6.879823588	1.20E-05	4.539700555	23.25873221
ENSMUSG00000031373	Car5b	3.784506932	8.320331279	9.71E-06	4.535824347	23.19632492
ENSMUSG00000034997	Htr2a	2.340123032	6.829939964	4.11E-05	4.489816932	22.46826676
ENSMUSG00000021062	Rab15	4.744943019	9.212688112	1.69E-05	4.467745093	22.12714011
ENSMUSG00000074896	Ifit3	9.127331665	13.5949222	3.51E-05	4.467590533	22.1247697
ENSMUSG00000038486	Sv2a	3.477637034	7.917198847	7.33E-06	4.440561814	21.7141235
ENSMUSG00000028223	Decr1	3.007424336	7.441013551	5.43E-06	4.433589215	21.60943153
ENSMUSG00000024238	Zeb1	5.119026678	9.54330241	3.09E-05	4.424275733	21.47037869
ENSMUSG00000032661	Oas3	11.26983701	15.6861422	4.17E-05	4.416305193	21.35208714
ENSMUSG00000040264	Gbp5	6.999088182	11.41500047	4.05E-05	4.415912283	21.3462728
ENSMUSG00000027646	Src	7.778272757	12.17821821	4.24E-05	4.397945449	21.08208207
ENSMUSG0000004267	Eno2	4.127818518	8.518045394	1.71E-05	4.390226876	20.96959184
ENSMUSG00000033287	Kctd17	7.071949333	11.41500047	4.71E-05	4.343051132	20.29498167
ENSMUSG00000031639	Tir3	3.737909846	11.7115774	5.22E-05	4.33166755	20.13547428
ENSMUSG00000024909	Efemp2	4.615861582	8.94383503	2.81E-05	4.327973448	20.08398222
ENSMUSG00000037386	Rims2	3.476637034	7.792707444	1.92E-05	4.31607041	19.91895988
ENSMUSG00000062488	H30012016Rik	7.196639198	11.49904118	5.76E-05	4.302401983	19.7311342
ENSMUSG00000035692	Isg15	9.021094099	13.30592361	6.27E-05	4.284829506	19.49226054
ENSMUSG00000033355	Rtp4	8.806889319	13.04340513	7.20E-05	4.236515807	18.85030298
ENSMUSG00000034226	Rhov	5.590680285	9.818491053	5.72E-05	4.227810768	18.7369051
ENSMUSG00000047242	Taf9b	3.910584572	8.137935442	3.11E-05	4.22735087	18.73093316
ENSMUSG00000021587	Pcsk1	2.340123032	6.565999918	8.14E-05	4.225876886	18.71180576
ENSMUSG00000070047	Fat1	2.340123032	6.550667486	4.85E-05	4.210544454	18.51399656
ENSMUSG00000008734	Gprc5b	4.024165894	8.202963855	2.77E-05	4.17879796	18.11104593
ENSMUSG00000039236	Isg20	8.97441018	13.13658777	9.26E-05	4.162177586	17.90359729
ENSMUSG00000033389	Arhgap44	3.784506932	7.940856967	2.94E-05	4.156350035	17.83142425
ENSMUSG00000057346	Apol9b	6.247043702	10.40020918	8.82E-05	4.153165477	17.79210716
ENSMUSG00000043903	Gm22	3.910584572	8.053651834	4.59E-05	4.143067262	17.66800526
ENSMUSG00000073489	Ifi204	8.862641599	12.99886238	0.000100198	4.136220777	17.58435823
ENSMUSG00000049670	Morn4	4.394948931	8.506203762	5.93E-05	4.111254831	17.28267742
ENSMUSG00000022656	Pvr13	3.784506932	7.880967276	3.60E-05	4.096460343	17.10635338
ENSMUSG00000022014	Epsti1	8.186046336	12.27662263	0.000113752	4.090576294	17.03672699
ENSMUSG00000025498	Irf7	11.8741765	15.95981294	0.000118902	4.085636441	16.97849223
ENSMUSG00000030107	Usp18	10.66970541	14.7493715	0.000120984	4.079666093	16.9083748
ENSMUSG00000079363	Gbp4	5.071444736	9.145579863	0.000108663	4.074135128	16.84367604
ENSMUSG00000020312	Shc2	5.071444736	9.143033403	6.90E-05	4.071588667	16.81397196
ENSMUSG00000040483	Xaf1	8.291388018	12.33829987	0.000131434	4.046911848	16.52882022
ENSMUSG00000051579	Tceal8	3.007424336	7.052837894	6.83E-05	4.045413559	16.51166337
ENSMUSG00000018381	Abi3	6.948379108	10.96689237	0.00013438	4.018513264	16.20664169
ENSMUSG00000017667	Zfp334	4.744943019	8.759953833	9.21E-05	4.015010814	16.16734433
ENSMUSG00000037820	Tgm2	13.11875609	17.09841793	0.000165499	3.979661837	15.77602499
ENSMUSG00000046442	Ppm1e	5.374631139	9.353707079	0.000111964	3.979075939	15.76961944
ENSMUSG00000002108	Nr1h3	8.718999275	12.68159716	0.000170633	3.962597883	15.590528
ENSMUSG00000017830	Dhx58	9.804924244	13.74560724	0.000184938	3.940682994	15.35549371
ENSMUSG00000024942	Capn1	7.896547066	11.81916371	0.000185348	3.922616639	15.16440134
ENSMUSG00000068245	D14Ertd668e	8.507930987	12.4170764	0.000201007	3.90914541	15.0234621
ENSMUSG00000054000	Tusc1	3.007424336	6.904130843	4.63E-05	3.896706508	14.89448677
ENSMUSG00000057948	Unc13d	3.642027534	7.529523877	0.000108767	3.887496344	14.79970325
ENSMUSG00000017400	Stac2	5.165025496	9.042777706	0.000156847	3.87775221	14.70008111
ENSMUSG00000032232	Cgnl1	9.969476877	13.84304945	0.000226355	3.873572569	14.65755504
ENSMUSG00000028270	Gbp3	8.835034823	12.70810872	0.000230397	3.873073893	14.65248945
ENSMUSG00000075254	Heg1	3.275780133	7.147464004	6.11E-05	3.871683872	14.63837873
ENSMUSG00000041936	Agrn	9.379845588	13.23551389	0.000239896	3.855668307	14.47677464
ENSMUSG00000029798	Herc6	8.281193494	12.1364488	0.000239412	3.855255304	14.47263094

ENSMUSG00000006205	Htra1	3.642027534	7.489964788	0.000146336	3.847937254	14.3994046
ENSMUSG00000040253	Gbp7	9.008792043	12.80229255	0.00029221	3.79350051	13.86619943
ENSMUSG00000091649	Gm4902	6.695046423	10.48106502	0.000291102	3.786018599	13.79447456
ENSMUSG00000072324	Gm8420	2.340123032	6.122702158	0.000689405	3.782579125	13.76162685
ENSMUSG00000026815	Gf1b	2.340123032	6.101762152	0.000944548	3.76163912	13.56332624
ENSMUSG00000056032	BC018473	2.340123032	6.101762152	0.001439332	3.76163912	13.56332624
ENSMUSG00000027257	Pacsin3	3.007424336	6.765047004	0.000120599	3.757622669	13.52561856
ENSMUSG00000001123	Lgals9	10.81189322	14.55153165	0.000345539	3.739638431	13.35805848
ENSMUSG00000056144	Trim34a	4.917946495	8.645865599	0.000307081	3.727919105	13.2499876
ENSMUSG00000000317	Bcl6b	4.024165894	7.746464254	0.000316848	3.72229836	13.19846604
ENSMUSG00000045875	Adra1a	5.687433885	9.40136351	0.000286623	3.713929625	13.12212646
ENSMUSG00000028517	Ppap2b	7.49029339	11.20156101	0.000370616	3.711267623	13.09793638
ENSMUSG00000029710	Ephb4	4.127818518	7.837512851	0.000148801	3.709694333	13.08366058
ENSMUSG00000029409	U90926	4.024165894	7.719357696	0.000463824	3.695191802	12.95279739
ENSMUSG00000048498	Cd300e	6.267929796	9.95685229	0.000396188	3.688922493	12.89663243
ENSMUSG00000079017	Ifi2712a	9.086941573	12.73393038	0.000447765	3.646988805	12.52717153
ENSMUSG00000020178	Adora2a	4.681962462	8.315815503	0.00053763	3.633853041	12.4136291
ENSMUSG00000040296	Ddx58	10.41157574	14.04168584	0.00048079	3.630110108	12.38146488
ENSMUSG0000002602	Axl	5.071444736	8.698845055	0.000400485	3.62740032	12.35823082
ENSMUSG00000031144	Syp	3.275780133	6.892028594	0.000180413	3.616248461	12.26307145
ENSMUSG00000019478	Rab4a	6.160307091	9.761529728	0.000428494	3.601222637	12.13601305
ENSMUSG00000038507	Parp12	11.4574667	15.05036832	0.000538896	3.59290162	12.06621777
ENSMUSG00000079362	Gbp6	5.556897593	9.143033403	0.000558539	3.586135809	12.00976328
ENSMUSG00000032596	Uba7	10.37010417	13.94505293	0.000566798	3.57494876	11.91699644
ENSMUSG00000042826	Fgf11	6.288515281	9.854734299	0.000489815	3.566219017	11.84510447
ENSMUSG00000072812	Ahnak2	8.633439634	12.19938025	0.000573924	3.565940611	11.84281886
ENSMUSG00000036564	Ndrq4	7.48895011	12.31133875	0.000569663	3.562443741	11.81414845
ENSMUSG00000022899	Slc15a2	2.340123032	5.898023123	0.001812465	3.557900091	11.77699929
ENSMUSG00000002227	Mov10	10.08237142	13.63023611	0.000613459	3.547864691	11.69536264
ENSMUSG00000026536	Mnda	7.550981633	11.09625053	0.00062459	3.5452689	11.6743385
ENSMUSG00000024671	Ms4a14	4.917946495	8.457840255	0.000553087	3.53989376	11.63092361
ENSMUSG00000062794	Zfp599	2.340123032	5.873475059	0.001168274	3.533352026	11.57830392
ENSMUSG00000078853	Igtp	7.889852036	11.41605541	0.000654087	3.526203369	11.5210745
ENSMUSG00000054404	Sfn5	7.22885075	10.74475335	0.000674574	3.515902601	11.43910759
ENSMUSG00000028601	Echdc2	3.275780133	6.791356949	0.000243514	3.515576816	11.43652474
ENSMUSG00000027624	Epb4.111	7.703877529	11.21919498	0.000643853	3.515317453	11.4344689
ENSMUSG00000021303	Gng4	3.910584572	7.407429957	0.000739982	3.496845385	11.28996683
ENSMUSG00000046879	Irgm1	10.1027706	13.57238905	0.000778125	3.469618447	11.07794554
ENSMUSG00000022037	Ciu	7.785505335	11.252058	0.000772899	3.466552665	11.05442948
ENSMUSG00000021363	Mak	2.340123032	5.797178647	0.001427953	3.457055615	10.98189878
ENSMUSG00000040033	Stat2	11.13414693	14.55978825	0.000887873	3.42564132	10.74535558
ENSMUSG00000022494	Shisa9	3.784506932	7.207258843	0.000203456	3.422751911	10.72385648
ENSMUSG00000067925	Cxx1a	3.910584572	7.328874754	0.000525369	3.418290182	10.69074274
ENSMUSG00000026896	Ifih1	9.684417983	13.09766874	0.000919806	3.413250755	10.65346442
ENSMUSG00000036206	Sh3bp4	3.784506932	7.187601981	0.000962858	3.403095049	10.57873377
ENSMUSG00000066258	Trim12a	5.335153733	8.733113499	0.000940273	3.397959766	10.54114564
ENSMUSG00000044485	Klk1b1	3.275780133	6.654705152	0.000524416	3.378925019	10.40289049
ENSMUSG00000051851	Cxx1c	3.275780133	6.625741746	0.000674414	3.349961614	10.19621372
ENSMUSG00000055322	Tns1	4.024165894	7.373044461	0.000339188	3.348878567	10.18856219
ENSMUSG00000034522	Zfp395	7.49029339	10.83822425	0.001004092	3.34793086	10.18187151
ENSMUSG00000027580	BC006779	13.21542507	16.55934945	0.001129858	3.343924372	10.15363481
ENSMUSG00000052776	Oas1a	9.449766849	12.77226574	0.001177825	3.327498892	10.03868847
ENSMUSG00000046152	Fut10	4.615861582	7.93497874	0.000707325	3.319117158	9.980535036
ENSMUSG00000034422	Parp14	11.51023378	14.81667321	0.001260357	3.306439432	9.893215013
ENSMUSG00000029158	Yipf7	5.806938004	9.106902723	0.001087671	3.299964719	9.848914452
ENSMUSG00000050439	Enthd1	3.007424336	6.298511735	0.001122778	3.2910874	9.788497308
ENSMUSG00000005397	Nid1	2.340123032	5.631042181	0.002778029	3.290919148	9.787355809
ENSMUSG00000023959	Clic5	2.340123032	5.631042181	0.005698818	3.290919148	9.787355809
ENSMUSG00000034855	Cxcl10	13.98237344	17.27252254	0.001322756	3.290149102	9.782133149
ENSMUSG00000039960	Rhou	4.546287643	7.831196729	0.001030998	3.284909086	9.74666789
ENSMUSG00000063564	Col23a1	8.036478976	11.31957172	0.001302299	3.283092745	9.734404632
ENSMUSG00000006930	Hap1	6.22584801	9.506136161	0.001310828	3.280288152	9.715499372
ENSMUSG00000075010	AW112010	3.275780133	6.550667486	0.002085778	3.274887354	9.679196927
ENSMUSG00000034898	Filip1	3.007424336	6.280011482	0.000512013	3.272587147	9.663776886
ENSMUSG00000032013	Trim29	5.413026059	8.681400584	0.001110383	3.268374524	9.635600132

ENSMUSG00000027848	Olfml3	6.160307091	9.424614036	0.001185299	3.264306945	9.608471485
ENSMUSG00000087645	F630040L22Rik	2.340123032	5.601351907	0.002244028	3.261228875	9.587993127
ENSMUSG00000048142	Nat8l	4.127818518	7.373044461	0.000558203	3.245225943	9.482227078
ENSMUSG00000017943	Gdap111	3.910584572	7.147464004	0.000826922	3.236879432	9.427527361
ENSMUSG00000057132	Rrgrip1	3.007424336	6.242277209	0.000738958	3.234852954	9.414294302
ENSMUSG00000078606	Gm4070	3.910584572	7.137252114	0.001710261	3.226667542	9.361031705
ENSMUSG00000034853	Acot11	3.784506932	7.008697566	0.001195959	3.224190628	9.344973859
ENSMUSG00000036986	Pml	10.91601427	14.12517223	0.001668829	3.209157963	9.248106185
ENSMUSG00000022629	Klf21a	5.806938004	9.015194076	0.001378891	3.208256072	9.242326602
ENSMUSG00000058624	Gda	6.04390885	9.239157927	0.001525297	3.195249077	9.159374486
ENSMUSG00000054203	Ifi205	6.22584801	9.409861669	0.001978377	3.184013659	9.088320165
ENSMUSG00000063268	Parp10	10.97332093	14.15549189	0.001805506	3.182170965	9.076719442
ENSMUSG0000002885	Cd97	7.657324122	10.83349439	0.001725643	3.176170265	9.039044431
ENSMUSG00000023341	Mx2	7.163690196	10.33588988	0.001888306	3.17219968	9.014201375
ENSMUSG00000026222	Sp100	9.639245753	12.81033869	0.001865026	3.171092935	9.007288901
ENSMUSG00000042810	Krba1	2.340123032	5.508337048	0.001890245	3.168214016	8.989332643
ENSMUSG00000026104	Stat1	11.16911183	14.310931776	0.002031854	3.141205934	8.822612578
ENSMUSG00000069874	Irgm2	7.726602119	10.86241786	0.002048669	3.135815737	8.789711033
ENSMUSG00000071722	Spin4	2.340123032	5.475914986	0.00353612	3.135791954	8.789566136
ENSMUSG00000070327	Rnf213	14.09384387	17.21506114	0.002151895	3.121217267	8.701217267
ENSMUSG00000030137	Tube8	4.312049966	7.432690785	0.001799371	3.120640819	8.697741421
ENSMUSG00000078616	Trim30c	4.472819751	7.590642186	0.002747749	3.117822436	8.680766496
ENSMUSG00000044703	Phf11	5.890392305	9.001201898	0.002280414	3.110809592	8.638672266
ENSMUSG00000036381	P2ry14	3.642027534	6.751709093	0.001258649	3.109681559	8.631920391
ENSMUSG00000030319	Cand2	9.671045297	8.069834915	0.001577196	3.098789618	8.566997207
ENSMUSG00000029223	Uchl1	7.961840705	11.06026652	0.00226047	3.098425815	8.564837149
ENSMUSG00000052749	Trim30b	3.007424336	6.101762152	0.003660765	3.094337817	8.54060231
ENSMUSG00000090231	Cfb	4.024165894	7.116608313	0.003284944	3.092442419	8.52938912
ENSMUSG00000046798	Cldn12	8.845449384	11.93666001	0.002321376	3.091210626	8.522109722
ENSMUSG00000063506	Arhgap22	7.22885075	10.31681227	0.002240404	3.087961518	8.502938589
ENSMUSG00000029417	Cxcl9	3.007424336	6.080510309	0.004929743	3.073085973	8.41571573
ENSMUSG00000037321	Tap1	10.75779113	13.82856388	0.002484955	3.070772745	8.40223272
ENSMUSG00000028654	Mycl1	4.805102295	7.874839136	0.003274027	3.069736841	8.396201796
ENSMUSG00000039943	Picb4	7.550981633	10.6129576	0.002491441	3.06197597	8.351156316
ENSMUSG00000051790	Nlgn2	8.024304549	11.0790369	0.002545181	3.054732348	8.309331117
ENSMUSG00000019779	Frk	6.328818459	9.377732087	0.002641932	3.048913628	8.275885172
ENSMUSG00000025743	Sdc3	13.34736499	16.39033637	0.002685914	3.042971375	8.241868099
ENSMUSG00000022790	Igfsf11	6.247043702	9.288380923	0.002470749	3.041337221	8.232537741
ENSMUSG00000040522	Tlr8	6.725503643	9.766501224	0.002583037	3.040997581	8.230599862
ENSMUSG00000079491	H2-T10	4.615861582	7.656436757	0.002746274	3.040575174	8.228190379
ENSMUSG00000024766	Lipo1	2.340123032	5.37390112	0.009666884	3.033778088	8.189515414
ENSMUSG00000040875	Osbpl10	3.007424336	6.037032521	0.001314068	3.029608186	8.165878973
ENSMUSG00000022906	Parp9	10.26542009	13.28658738	0.002856007	3.021167288	8.118241668
ENSMUSG00000055639	Dach1	3.007424336	6.014786132	0.004705308	3.007361796	8.040926797
ENSMUSG0000003882	Ilf7r	6.479562368	9.480143431	0.002788915	3.000581063	8.003222747
ENSMUSG00000079845	Xlr4a	2.340123032	5.338176935	0.007529839	2.998053903	7.989215819
ENSMUSG00000069793	Sifn9	8.130341345	11.12622119	0.003019682	2.995869845	7.977130312
ENSMUSG00000030742	Lat	6.784546276	9.778035183	0.002915722	2.993488908	7.963976189
ENSMUSG00000040327	Cul9	7.719067003	10.71248663	0.002966319	2.993419628	7.963593761
ENSMUSG00000056313	1810011010Rik	4.4781819751	7.457516175	0.002367979	2.984696424	7.915587455
ENSMUSG00000030966	Trim21	7.987151953	10.96184449	0.003263166	2.974692532	7.860889294
ENSMUSG00000027078	Ube2l6	9.633248052	12.58077841	0.003496671	2.947530358	7.714273835
ENSMUSG00000026077	Npas2	3.476637034	6.421721802	0.001193647	2.945084768	7.70120803
ENSMUSG00000044447	Dock5	9.48571713	12.42731459	0.003541807	2.941597462	7.682615022
ENSMUSG00000059089	Fcgr4	9.65314417	12.59365629	0.003582703	2.94051212	7.676837552
ENSMUSG00000046598	Bdh1	3.007424336	5.945883595	0.003218505	2.93845926	7.665921686
ENSMUSG00000014599	Csf1	9.46560545	12.0224716	0.003624922	2.936641707	7.656269994
ENSMUSG00000021213	Akr1c13	6.328818459	9.265150758	0.003282852	2.936332299	7.65462817
ENSMUSG00000034413	Neur11b	4.805102295	7.739735266	0.002375098	2.93463297	7.645617206
ENSMUSG0000002992	Apoc2	7.185739798	10.11462986	0.003440972	2.928890063	7.615242944
ENSMUSG00000034459	Ifit1	10.58212988	13.51101491	0.003719406	2.928885033	7.615216394
ENSMUSG00000021846	Pel12	6.922337799	9.846932423	0.003833373	2.924594624	7.592603257
ENSMUSG00000043263	Pyhin1	6.882369434	9.80244459	0.004072106	2.920075156	7.568855457
ENSMUSG00000047735	Samd9l	9.487934551	12.3998496	0.003887263	2.911915053	7.526165701
ENSMUSG00000023830	Igf2r	11.99212362	14.89702534	0.003950846	2.90490172	7.489667745

ENSMUSG00000035279	A430110N23Rik	6.798935394	6.967028065	0.00382698	2.898092671	7.454402248
ENSMUSG00000031712	Il15	5.556897593	8.453735784	0.003830988	2.896838191	7.447923169
ENSMUSG00000023571	Fam132a	5.022161696	7.917198847	0.003009246	2.895037152	7.438631096
ENSMUSG00000091549	Gm6548	8.684608806	11.57892566	0.004061656	2.894316855	7.434917126
ENSMUSG00000020023	Tmcc3	7.244931491	10.14421556	0.003802139	2.89428407	7.434747917
ENSMUSG00000019761	Krt10	2.340123032	5.225170689	0.014446074	2.885047657	7.387302507
ENSMUSG00000071064	Zfp827	6.368017762	9.241540361	0.004226317	2.873522599	7.328523679
ENSMUSG00000075271	Ttc30a1	3.007424336	5.873475059	0.00275341	2.866050723	7.290666569
ENSMUSG00000032841	Prr5l	5.294529046	8.158258359	0.005105434	2.863729313	7.278944745
ENSMUSG00000022231	Sema5a	3.642027534	6.503661461	0.002994491	2.861633927	7.2683804
ENSMUSG00000067297	2010002M12Rik	4.615861582	7.473831855	0.005855047	2.857970273	7.249946119
ENSMUSG00000019866	Aim1	10.0853033	12.94140646	0.004512968	2.856103154	7.240569393
ENSMUSG00000038235	F11r	6.770011577	9.625864007	0.004405081	2.855852429	7.23931117
ENSMUSG00000020826	Nos2	10.72620797	13.57428031	0.004659296	2.848072343	7.20037649
ENSMUSG00000031595	Pdgfrl	3.642027534	6.487643992	0.004354909	2.845616459	7.188129791
ENSMUSG00000022074	Tnfrsf10b	7.408308967	10.24738841	0.004679957	2.839079445	7.155633243
ENSMUSG00000001036	Epn2	7.641465975	10.47803755	0.004607296	2.836571575	7.143205249
ENSMUSG00000033249	Hsf4	4.917946495	7.753161969	0.003525921	2.835215474	7.13649395
ENSMUSG00000024066	Xdh	10.30745643	13.14169854	0.0047781	2.834242103	7.131680655
ENSMUSG00000027843	Ptpn22	5.623673111	8.457840255	0.004180339	2.834167114	7.13131012
ENSMUSG00000042842	Serpinc6b	5.522285386	8.347132925	0.004710671	2.824847539	7.085391346
ENSMUSG00000056116	H2-T22	8.958506962	11.77749745	0.005054815	2.818990492	7.056684416
ENSMUSG00000020961	Ston2	2.340123032	5.144389383	0.004926573	2.804266351	6.985030189
ENSMUSG00000074259	Gramd2	2.340123032	5.144389383	0.007472743	2.804266351	6.985030189
ENSMUSG00000088025	RNaseP_nuc	2.340123032	5.144389383	0.014946001	2.804266351	6.985030189
ENSMUSG00000005973	Rcn1	7.665188223	10.46789984	0.00521757	2.802711621	6.97750678
ENSMUSG00000032589	Bsn	9.384613935	12.18398028	0.005231674	2.799366342	6.963164284
ENSMUSG00000037852	Cpe	8.845449384	11.64204971	0.005253676	2.796600323	6.948012374
ENSMUSG00000056214	Pard6g	3.007424336	5.797178647	0.003533221	2.789754312	6.915120117
ENSMUSG00000047414	Firt2	9.215613832	12.00169892	0.005462196	2.786085091	6.897555169
ENSMUSG00000010461	Eya4	7.035980049	9.821679037	0.004990875	2.785698989	6.895709454
ENSMUSG00000043953	Ccrl2	9.169387427	11.93959745	0.005824999	2.770210021	6.822072188
ENSMUSG00000029608	Rph3a	3.642027534	6.404756224	0.004729075	2.762728691	6.786786789
ENSMUSG00000042726	Trafd1	11.65539389	14.41296053	0.005925131	2.757566635	6.76254662
ENSMUSG00000029605	Oas1b	6.328818459	9.085842884	0.005962785	2.757024425	6.760005522
ENSMUSG00000084110	Gm4992	5.777993082	8.529790585	0.006298127	2.751797503	6.735558157
ENSMUSG00000026435	Slc45a3	5.209546918	7.952541993	0.005689235	2.742995075	6.694587087
ENSMUSG00000024985	Tcf7l2	7.633470966	10.37221783	0.006050994	2.738746869	6.674902987
ENSMUSG00000024228	Nudt12	4.744943019	7.481920908	0.005052547	2.736977789	6.666723483
ENSMUSG00000024672	Ms4a7	8.095855098	10.82954095	0.006273563	2.733685857	6.651528275
ENSMUSG00000039057	Myo16	6.182489779	8.914272674	0.005880261	2.731782894	6.642760474
ENSMUSG00000027669	Gnb4	4.127818518	6.855098193	0.007752255	2.727279675	6.622058128
ENSMUSG00000062515	Fabp4	10.07206262	12.79602579	0.006479653	2.723963162	6.606852615
ENSMUSG00000019539	Rcn3	5.486800881	8.207846637	0.005144776	2.721045756	6.593505792
ENSMUSG00000057254	Zfp870	2.340123032	5.058601395	0.01699839	2.718478362	6.581782546
ENSMUSG00000024675	Ms4a4c	4.127818518	6.842574132	0.009230802	2.714755613	6.564820722
ENSMUSG00000079419	Ms4a6c	9.676662861	12.38807054	0.006758073	2.711407675	6.54960397
ENSMUSG00000035208	Sfrn8	8.417747729	11.12621119	0.006836965	2.708463462	6.536251344
ENSMUSG00000049502	Dtx3l	9.971062888	12.67764404	0.006797255	2.706581155	6.527728957
ENSMUSG000000571143	Trim12c	6.387222177	9.080529528	0.007062003	2.693307351	6.467944731
ENSMUSG00000071723	Gsp12	7.060059224	9.751535042	0.006811522	2.691475818	6.459738741
ENSMUSG00000028497	Ptplad2	6.328818459	9.017976297	0.006270104	2.689157838	6.449368206
ENSMUSG00000000386	Mx1	6.479562368	9.165791314	0.008014196	2.686228947	6.436288286
ENSMUSG00000061981	Flot2	9.978966898	12.66172237	0.007221429	2.682755473	6.420810735
ENSMUSG00000051043	Gprc5c	3.007424336	5.688614567	0.00682861	2.681190232	6.4138483
ENSMUSG00000081409	Gm8215	3.007424336	5.688614567	0.008180145	2.681190232	6.4138483
ENSMUSG00000045639	Zfp629	6.160307091	8.840748451	0.006569646	2.68044136	6.410519876
ENSMUSG00000021338	Lrrc16a	7.876367955	10.55475785	0.007357025	2.678389894	6.4014108
ENSMUSG00000014361	Mertk	6.137744446	8.812180991	0.005939955	2.674406546	6.383760584
ENSMUSG00000079339	Gm14446	8.265765279	10.93412915	0.007791523	2.668363869	6.357078348
ENSMUSG00000083623	Gm7224	3.476637034	6.143339437	0.007405744	2.666702403	6.349761493
ENSMUSG00000039835	Nhs1	5.556897593	8.222369547	0.006495961	2.665498954	6.344466938
ENSMUSG00000045932	Ifit2	10.9060997	13.55249957	0.008022878	2.646399867	6.261029363
ENSMUSG00000027639	Samhd1	12.30321893	14.94723752	0.008035886	2.64401859	6.250703583
ENSMUSG00000039501	Znfx1	13.06426138	15.70025635	0.008210175	2.635994972	6.216036485

ENSMUSG00000085149	Gm16825	4.805102295	7.432690785	0.007752947	2.627588489	6.179921401
ENSMUSG00000034107	Ano7	3.275780133	5.898023123	0.007323196	2.622242991	6.157065817
ENSMUSG00000037849	Gm4955	5.119026678	7.739735266	0.010116273	2.620708588	6.150520848
ENSMUSG00000073490	Al607873	9.401180109	12.01881324	0.008641539	2.617633134	6.137423488
ENSMUSG00000045868	Gvin1	4.862696374	7.457516175	0.011408651	2.5948198	6.041135728
ENSMUSG00000027803	Wwtr1	3.007424336	5.601351907	0.009024463	2.593927572	6.037400768
ENSMUSG00000010358	Ifi35	9.571858276	12.16276897	0.009254656	2.590910695	6.024788909
ENSMUSG00000026946	Nmi	7.916447571	10.50704035	0.009376126	2.590592779	6.023461418
ENSMUSG00000039997	Ifi203	9.846991768	12.43045024	0.009492075	2.583458477	5.993748199
ENSMUSG00000085501	Gm11772	2.340123032	4.918971921	0.025327535	2.578848889	5.974627999
ENSMUSG00000073643	Wdfy1	9.726341588	12.30309416	0.009563887	2.576752568	5.965952817
ENSMUSG00000038390	Gpr162	7.095438741	9.66898229	0.008601004	2.573543549	5.952697362
ENSMUSG00000038058	Nod1	8.449957321	11.02336197	0.009898011	2.573404646	5.952124264
ENSMUSG00000085081	A430071A18Rik	3.275780133	5.848495556	0.00623385	2.572715423	5.949281416
ENSMUSG00000037997	Parp11	9.611040641	12.17060354	0.010071187	2.559562902	5.895290483
ENSMUSG00000013367	Iglon5	4.394948931	6.951546072	0.010063655	2.55659714	5.883183928
ENSMUSG00000049422	Chchd10	8.351085063	10.89985063	0.010208188	2.548764202	5.851328447
ENSMUSG00000049191	Rgag4	5.413026059	7.958349176	0.010077052	2.545323117	5.837388617
ENSMUSG00000019990	Pde7b	6.461564239	9.006815067	0.010237571	2.545250828	5.837096132
ENSMUSG00000031897	Psmb10	11.62398277	14.1619518	0.010633571	2.537969027	5.807708432
ENSMUSG00000086866	4930512H18Rik	2.340123032	4.869609107	0.066815901	2.528946074	5.771499014
ENSMUSG00000044468	Fam46c	8.370449027	10.89607515	0.010929715	2.525626127	5.758262841
ENSMUSG00000060923	Acyp2	3.275780133	5.797178647	0.008146077	2.521398514	5.741383857
ENSMUSG00000029366	Dck	9.350899682	11.86082294	0.011380615	2.509923258	5.695897791
ENSMUSG00000024079	Eif2ak2	8.244934127	10.74978277	0.011684116	2.504848639	5.675897905
ENSMUSG00000038068	Rnf144b	7.04807002	9.547159518	0.010561187	2.499089499	5.65328527
ENSMUSG00000048827	Pkd1l3	3.784506932	6.280011482	0.011215241	2.49550455	5.639254878
ENSMUSG00000028337	Coro2a	11.71339621	14.20660758	0.011934064	2.493211375	5.630298357
ENSMUSG00000030088	Aldh1l1	7.696222326	10.18439432	0.011945059	2.488171997	5.610665861
ENSMUSG00000043811	Rtn4r	2.340123032	4.81726305	0.019830471	2.477140018	5.567925924
ENSMUSG00000052516	Robo2	2.340123032	4.81726305	0.084285592	2.477140018	5.567925924
ENSMUSG00000056290	M5444b	3.476637034	5.945883595	0.019421975	2.469246561	5.537545168
ENSMUSG00000081056	Gm13998	3.476637034	5.945883595	0.01468325	2.469246561	5.537545168
ENSMUSG00000031465	Angpt2	8.291388018	10.7371762	0.013043253	2.445788179	5.448232153
ENSMUSG00000043670	Diras1	3.275780133	5.716545382	0.009143372	2.44076525	5.429296411
ENSMUSG00000031925	Maml2	6.04390885	8.482224741	0.013481305	2.438315892	5.420086559
ENSMUSG00000044986	Tst	5.486800881	7.923149879	0.011489977	2.436348999	5.412702139
ENSMUSG00000038527	C1rl	4.472819751	6.904130843	0.014510249	2.431311092	5.393833889
ENSMUSG00000090272	Mndal	8.351086431	10.78205342	0.014239767	2.430966989	5.392547537
ENSMUSG00000039157	Fam102a	10.72620797	13.15566052	0.013999993	2.429452549	5.386889789
ENSMUSG00000025372	Baiap2	8.745191757	11.17376397	0.013918802	2.428572209	5.383603683
ENSMUSG00000015222	Mtap2	5.748445129	8.173314735	0.013776067	2.424869605	5.369804652
ENSMUSG00000009588	St6galnac1	2.340123032	4.763393193	0.067097604	2.423270161	5.363854715
ENSMUSG00000034071	Zfp551	2.340123032	4.763393193	0.027179672	2.423270161	5.363854715
ENSMUSG00000039200	Atf7ip2	2.340123032	4.763393193	0.027110829	2.423270161	5.363854715
ENSMUSG00000054957	Gm9959	2.340123032	4.763393193	0.051572116	2.423270161	5.363854715
ENSMUSG00000021250	Fos	9.870976325	12.29422855	0.014343679	2.423252228	5.36378804
ENSMUSG00000038179	Slamf7	7.04807002	9.470020178	0.015249986	2.421950158	5.358949267
ENSMUSG00000024679	Ms4a6d	9.578116158	11.9943016	0.014680093	2.416185446	5.337587735
ENSMUSG00000080767	Gm15595	3.275780133	5.688614567	0.022436615	2.412834435	5.325195292
ENSMUSG00000032528	Vipr1	4.744943019	7.157603937	0.009444651	2.412660919	5.324554858
ENSMUSG00000020589	Fam49a	9.797792161	12.20213487	0.015126733	2.404342705	5.293943159
ENSMUSG00000028495	Rps6	7.389438582	9.792730333	0.015781844	2.403291751	5.290088107
ENSMUSG00000037995	Igsf9	7.703877529	10.10681102	0.015285017	2.402933488	5.28877459
ENSMUSG00000028555	Ttc39a	5.071444736	7.473831855	0.010345159	2.40238712	5.286772037
ENSMUSG00000033781	Asb13	6.368017762	8.759953833	0.01530019	2.391936071	5.248612435
ENSMUSG00000080283	Gm14806	3.275780133	5.66012136	0.029174343	2.384341227	5.221054531
ENSMUSG00000028111	Ctsk	9.436051103	11.81796699	0.015831068	2.381915884	5.212284686
ENSMUSG00000028977	Cas21	6.479562368	8.859483848	0.017132237	2.379921148	5.205084123
ENSMUSG00000019823	Mical1	7.291188854	9.670751216	0.015085606	2.379562362	5.203788624
ENSMUSG00000090222	Gm16340	4.805102295	7.177671947	0.019935535	2.372569652	5.17862701
ENSMUSG00000036862	Dchs1	7.703877529	10.07510486	0.015735296	2.371227327	5.173810908
ENSMUSG00000027223	Mapk8ip1	3.910584572	6.280011482	0.014110351	2.36942691	5.167358256
ENSMUSG00000041261	Car8	2.340123032	4.707276535	0.026843251	2.367153503	5.159221914
ENSMUSG00000061544	Zfp229	2.340123032	4.707276535	0.050310798	2.367153503	5.159221914

ENSMUSG00000082815	Gm5678	2.340123032	4.707276535	0.087560259	2.367153503	5.159221914
ENSMUSG00000024339	Tap2	9.889545516	12.25261195	0.016713192	2.363066435	5.144626834
ENSMUSG00000078349	AW011738	4.744943019	7.106174272	0.020546583	2.361231253	5.138086766
ENSMUSG00000044037	Als2cl	9.095692309	11.451471797	0.016812984	2.355779662	5.118707834
ENSMUSG00000018986	Sifn3	8.072677614	10.427667774	0.017196261	2.349370125	5.096017123
ENSMUSG00000004952	Rasa4	11.64201564	13.98957954	0.017320668	2.347563905	5.089641022
ENSMUSG00000023947	Nfkbie	7.955442836	10.30090963	0.017828154	2.345466793	5.082248057
ENSMUSG00000045382	Cxcr4	5.623673111	7.964133059	0.012631279	2.340459948	5.064640786
ENSMUSG00000024338	Psemb8	10.76786294	13.09996808	0.018000799	2.332105143	5.035395657
ENSMUSG00000029816	Gpnmb	15.89360216	18.2208211	0.018218548	2.327218945	5.018370353
ENSMUSG00000029163	Emilin1	4.615861582	6.939838055	0.01518697	2.323976472	5.007104178
ENSMUSG00000034917	Tjp3	6.137774446	8.457840255	0.016687075	2.320065809	4.993549973
ENSMUSG00000046718	Bst2	13.22924174	15.54458056	0.018771805	2.315338818	4.977215378
ENSMUSG00000024589	Nedd4l	9.249990135	11.56282252	0.01873747	2.312832389	4.968575848
ENSMUSG00000038213	Tapbpl	8.440827756	10.75145535	0.019143714	2.310627594	4.960988435
ENSMUSG00000000409	Lck	6.479562368	8.78956395	0.019981674	2.310001582	4.958836238
ENSMUSG00000045636	Mtus1	6.406172478	8.716081052	0.018214252	2.309908574	4.958516359
ENSMUSG00000016128	Stard13	2.340123032	4.648703026	0.049403614	2.308579993	4.953952354
ENSMUSG00000078965	Gm12033	2.340123032	4.648703026	0.01966369	2.308579993	4.953952354
ENSMUSG00000021451	Sema4d	13.14639145	15.45385099	0.019139495	2.30745954	4.950106416
ENSMUSG00000045136	Tubb2b	7.533901451	9.839088124	0.019794468	2.305186673	4.942314001
ENSMUSG00000039217	Il18	7.22885075	9.531668819	0.020185206	2.302818069	4.934206413
ENSMUSG00000085906	Gm16882	5.022161696	7.31987586	0.020161411	2.297714165	4.91678123
ENSMUSG00000049588	Ccdc69	4.744943019	7.041929148	0.016858638	2.296986129	4.914300674
ENSMUSG00000044716	Dok7	4.862696374	7.157603937	0.018226373	2.294907563	4.907225482
ENSMUSG00000023206	Il15ra	7.270707967	9.560578755	0.020459712	2.289870788	4.890123118
ENSMUSG00000025268	Maged2	6.67056277	8.967056277	0.020145981	2.287484209	4.882040315
ENSMUSG00000021725	Parp8	8.202346633	10.48910736	0.020303396	2.286760726	4.879592684
ENSMUSG00000028364	Tnc	4.744943019	7.030937041	0.030059459	2.285994022	4.877000168
ENSMUSG00000042659	Arrdc4	6.648113797	8.929129587	0.020621468	2.28101579	4.862003036
ENSMUSG00000001166	Oas1c	6.798935394	9.077865492	0.020546215	2.278930098	4.853179088
ENSMUSG00000039853	Trim14	9.85731973	12.13067689	0.020863496	2.273357163	4.834486077
ENSMUSG00000024308	Tapbp	13.50332873	15.77567546	0.020887796	2.272346731	4.831083308
ENSMUSG00000020541	Tom1l1	7.249931491	9.521901974	0.021058586	2.271970483	4.829823549
ENSMUSG00000032122	Slc37a2	10.33111491	12.60225536	0.020796463	2.271140456	4.8270456
ENSMUSG00000020340	Cyfp2	11.39562744	13.65981615	0.021302656	2.264188712	4.803842036
ENSMUSG00000037224	Tllye28	5.687433885	7.94671132	0.016951584	2.259277435	4.787516421
ENSMUSG00000074000	Gm10606	4.546287643	6.804333414	0.025349966	2.258045771	4.783430945
ENSMUSG00000023903	Mmp25	3.007424336	5.263866142	0.060275333	2.256441806	4.778115758
ENSMUSG00000035929	H2-O4	7.862756536	10.11852345	0.021947363	2.255766912	4.775881076
ENSMUSG00000052688	5430435G22Rik	10.24458932	12.49925853	0.021723181	2.254669204	4.772248616
ENSMUSG00000079625	Tm4sf19	6.632122288	8.884091719	0.022319235	2.251969431	4.763326466
ENSMUSG00000020681	Ace	2.340123032	4.587429668	0.086300064	2.247306636	4.747956232
ENSMUSG00000022085	Pebp4	2.340123032	4.587429668	0.062041472	2.247306636	4.747956232
ENSMUSG00000045659	Plekha7	2.340123032	4.587429668	0.044619126	2.247306636	4.747956232
ENSMUSG00000085165	Gm12089	2.340123032	4.587429668	0.07308869	2.247306636	4.747956232
ENSMUSG00000092605	Gm19980	2.340123032	4.587429668	0.117409265	2.247306636	4.747956232
ENSMUSG00000057234	Mettl15	5.252686104	7.497963996	0.021372692	2.245277891	4.74128426
ENSMUSG00000039852	Rere	11.83159791	14.07546202	0.022361512	2.243864113	4.736640283
ENSMUSG00000068631	Gm7676	5.863115281	8.106903626	0.025402562	2.243788346	4.736391532
ENSMUSG00000025876	Unc5a	5.294529046	7.537306981	0.019001648	2.242777936	4.7330755
ENSMUSG00000035517	Tdrd7	10.96538599	13.20684654	0.022571698	2.241460553	4.728755512
ENSMUSG00000079057	Cyp4v3	8.84890426	11.07970277	0.023159156	2.230798512	4.693937108
ENSMUSG00000040613	Apobec1	10.01477774	12.23448751	0.02363296	2.219709768	4.657997187
ENSMUSG00000070822	Zscan18	3.007424336	5.225170689	0.020095884	2.217746353	4.651662265
ENSMUSG00000032377	Plscr4	4.223340379	6.438488823	0.018131783	2.215148443	4.643293936
ENSMUSG00000030256	Bhlhe41	9.494566436	11.70899741	0.024017931	2.214430974	4.640984805
ENSMUSG00000067924	Cxx1b	3.910584572	6.122702158	0.026227412	2.212117586	4.633548863
ENSMUSG00000037172	E330009J07Rik	9.14148693	11.35135264	0.024326769	2.209865708	4.626322078
ENSMUSG00000020415	Pttg1	8.463544206	10.67243602	0.024591733	2.208891811	4.623200116
ENSMUSG00000071657	Bscl2	9.860746018	12.06662145	0.024477365	2.205875433	4.613544055
ENSMUSG00000027204	Fbn1	3.910584572	6.101762152	0.040610277	2.19117758	4.566780916
ENSMUSG00000024770	Lipn	6.566312297	8.74994715	0.026665079	2.183634852	4.542967083
ENSMUSG00000024565	Sall3	2.340123032	4.523172851	0.098392154	2.183049819	4.541125219
ENSMUSG00000026490	Cdc42bpa	2.340123032	4.523172851	0.117055153	2.183049819	4.541125219

ENSMUSG00000043648	Pld6	2.340123032	4.523172851	0.064555139	2.183049819	4.541125219
ENSMUSG00000060314	Zfp941	2.340123032	4.523172851	0.062908764	2.183049819	4.541125219
ENSMUSG00000061356	Gm600	2.340123032	4.523172851	0.161427257	2.183049819	4.541125219
ENSMUSG00000009739	Pou6f1	6.7246287643	6.7246287643	0.027658958	2.178368197	4.526412911
ENSMUSG00000052229	Gpr17	3.007424336	5.1853677	0.040485618	2.177943364	4.525080207
ENSMUSG00000024677	Ms4a6b	7.218193462	9.394956874	0.027491234	2.176763411	4.521380742
ENSMUSG00000025888	Casp1	8.665142603	10.83901106	0.026841503	2.173868452	4.512317089
ENSMUSG00000024036	Slc37a1	8.030404614	10.20284971	0.026679347	2.172445099	4.507867463
ENSMUSG00000030630	Fah	4.394948931	6.565999918	0.027837491	2.171050987	4.503513503
ENSMUSG00000020709	Adap2	6.137774446	8.306741302	0.026171268	2.168966857	4.497012384
ENSMUSG00000059013	Sh2d3c	10.35195908	12.5205036	0.026877844	2.168544522	4.495696121
ENSMUSG00000024538	Ppic	7.726602119	9.885526587	0.027692667	2.158924468	4.465818035
ENSMUSG00000035561	Aldh1b1	7.163690196	9.320287207	0.028341739	2.156597011	4.458619271
ENSMUSG00000024395	Lims2	9.002601445	11.15871693	0.027850647	2.156115488	4.457131382
ENSMUSG00000029998	Pcyox1	9.750553792	11.89980544	0.028007014	2.149251644	4.435976257
ENSMUSG00000092564	BC051226	6.182489779	8.324832957	0.029877244	2.142343178	4.414784992
ENSMUSG00000090881	Gm6904	3.007424336	5.144389383	0.058852861	2.136965048	4.398358037
ENSMUSG00000002307	Daxx	11.67304074	13.80389181	0.029535392	2.130851066	4.379757722
ENSMUSG00000023993	Tremf1	3.910584572	6.037032521	0.016444984	2.126447949	4.366411045
ENSMUSG00000025934	Gsta3	3.910584572	6.037032521	0.028862058	2.126447949	4.366411045
ENSMUSG00000032076	Cadm1	11.5211009	13.64161999	0.029839352	2.125069087	4.362239822
ENSMUSG00000031239	Ihm2a	3.407637034	5.601351907	0.033243429	2.124714873	4.361168927
ENSMUSG00000035914	Cd276	10.2692926	12.39102433	0.030037441	2.121731736	4.352160422
ENSMUSG00000050347	Gm9844	10.60580387	12.72693382	0.030245272	2.121129943	4.350345381
ENSMUSG00000072572	Slc39a2	5.943425194	8.064460714	0.02983223	2.12103552	4.350060663
ENSMUSG00000063286	Gm8905	8.922890154	11.0412487	0.030927163	2.118358549	4.341996459
ENSMUSG00000026080	Chst10	2.340123032	4.455598204	0.065894107	2.115475172	4.333327189
ENSMUSG00000027801	Tm4sf4	2.340123032	4.455598204	0.133756854	2.115475172	4.333327189
ENSMUSG00000031594	Fgl1	2.340123032	4.455598204	0.10416606	2.115475172	4.333327189
ENSMUSG00000034059	Ypel4	2.340123032	4.455598204	0.037582736	2.115475172	4.333327189
ENSMUSG00000061740	Cyp2d2	2.340123032	4.455598204	0.079822327	2.115475172	4.333327189
ENSMUSG00000067928	Zfp760	2.340123032	4.455598204	0.084554193	2.115475172	4.333327189
ENSMUSG00000074603	Gm10729	2.340123032	4.455598204	0.090752083	2.115475172	4.333327189
ENSMUSG00000086513	9130208D14Rik	2.340123032	4.455598204	0.060546721	2.115475172	4.333327189
ENSMUSG00000031227	Magee1	4.127818518	6.24227729	0.033313934	2.114458771	4.33027537
ENSMUSG00000035158	Mitf	11.76596227	13.87954802	0.030722236	2.113585755	4.327655787
ENSMUSG00000036854	Hspb6	6.725602643	8.837602088	0.029670121	2.112098445	4.323196597
ENSMUSG00000027371	Fahd2a	5.890392305	7.998357321	0.029793829	2.107965016	4.310828045
ENSMUSG00000069892	993011J21Rik	5.450397817	7.552748161	0.033995406	2.102350344	4.294083794
ENSMUSG00000082401	Gm14328	7.14129749	9.241540361	0.031000872	2.100242871	4.287815623
ENSMUSG00000020707	Rnf135	7.889852036	9.989818507	0.031780414	2.099966471	4.286994216
ENSMUSG00000080542	U4atac	3.275780133	5.37390112	0.022007671	2.098120988	4.281513836
ENSMUSG00000086109	Gm13391	3.275780133	5.37390112	0.019158686	2.098120988	4.281513836
ENSMUSG00000018341	Ii12rb2	7.34115156	9.437139945	0.031996185	2.095988385	4.275189545
ENSMUSG00000084050	Gm14439	3.007424336	5.102161293	0.055287454	2.094736958	4.271482755
ENSMUSG00000020732	Rab37	3.476637034	5.571023731	0.033162651	2.094386697	4.27044584
ENSMUSG00000070388	Fbxo39	3.476637034	5.571023731	0.049339517	2.094386697	4.27044584
ENSMUSG00000010051	Hyal1	4.223340379	6.316775831	0.021799538	2.093435452	4.267631037
ENSMUSG00000079037	Prnp	6.855092779	8.946758213	0.031676594	2.091665434	4.262398365
ENSMUSG00000050967	Creg2	5.917155866	8.003983195	0.033460039	2.086827329	4.248128272
ENSMUSG00000015312	Gadd45b	10.80479577	12.88671301	0.033213794	2.081917248	4.233694731
ENSMUSG00000024593	Megf10	4.394948931	6.471445531	0.035902781	2.0764966	4.217817286
ENSMUSG00000029771	Irf5	11.70239554	13.77344986	0.034034132	2.070514318	4.20036389
ENSMUSG00000068551	Zfp467	8.024304549	10.0897234	0.034153632	2.065418849	4.185554749
ENSMUSG00000061731	Ext1	9.879446508	11.94362668	0.034809076	2.064180175	4.181962644
ENSMUSG00000039911	Spsb1	6.114880507	8.178298788	0.035452326	2.063418281	4.179754715
ENSMUSG00000004872	Pax3	8.499162252	10.56049382	0.034496395	2.061331565	4.173713479
ENSMUSG00000030539	Sema4b	9.538016541	11.59205342	0.035651478	2.054036882	4.152663241
ENSMUSG00000059495	Arhgef12	8.89642321	10.94878251	0.035803466	2.052359305	4.1478373
ENSMUSG00000040428	Plekha4	7.47247367	9.517976645	0.038123662	2.045502975	4.128171695
ENSMUSG00000074785	Plxnc1	10.99608848	13.0408428	0.036101977	2.044754328	4.12603005
ENSMUSG00000010830	Kdelr3	2.340123032	4.384306928	0.196141719	2.044183896	4.124398965
ENSMUSG00000014303	Gli2	2.340123032	4.384306928	0.109767879	2.044183896	4.124398965
ENSMUSG00000040564	Apoc1	2.340123032	4.384306928	0.103442726	2.044183896	4.124398965
ENSMUSG00000044628	Rnf208	2.340123032	4.384306928	0.119554529	2.044183896	4.124398965

ENSMUSG00000064371	mt-Tt	2.340123032	4.384306928	0.151169083	2.044183896	4.124398965
ENSMUSG00000079164	Tlr5	2.340123032	4.384306928	0.028778586	2.044183896	4.124398965
ENSMUSG00000085119	Gm13644	2.340123032	4.384306928	0.147222117	2.044183896	4.124398965
ENSMUSG00000040328	Olfir56	3.784506932	5.823068939	0.065945051	2.038562007	4.108358299
ENSMUSG00000027800	Tm4af1	7.649416885	9.686574685	0.03784935	2.037157826	4.10361555
ENSMUSG00000036249	Rbm43	7.507895349	9.539434961	0.037320589	2.031539613	4.088409236
ENSMUSG00000035042	Ccl5	10.49441744	12.51263496	0.038714403	2.018217518	4.050829934
ENSMUSG00000015947	Fcgr1	12.2404926	14.25619492	0.038724078	2.015702317	4.043773853
ENSMUSG00000003534	Ddr1	5.590680285	7.598102836	0.041114584	2.007422551	4.020632713
ENSMUSG00000027533	Fabp5	11.16772938	13.17339307	0.039592264	2.005663685	4.015733933
ENSMUSG00000024900	Cpt1a	10.00397259	12.0087089	0.0395373	2.00473631	4.013153418
ENSMUSG00000031788	Kifc3	9.346018387	11.34471985	0.039870024	1.998701465	3.996401316
ENSMUSG00000074280	Gm6166	5.890392305	7.88706947	0.038309592	1.996677165	3.990797746
ENSMUSG00000041115	lqsec2	9.750553792	11.74554346	0.040699356	1.994989669	3.986132508
ENSMUSG00000027698	Nceh1	10.54959407	12.5424068	0.040673014	1.992812728	3.980122207
ENSMUSG00000019768	Esr1	6.813181831	8.805755088	0.040783006	1.992573256	3.979461604
ENSMUSG00000042607	Asb4	7.936077064	9.927560595	0.039633339	1.991483531	3.976456991
ENSMUSG00000018899	Irf1	10.09551825	12.08066035	0.041613502	1.985142101	3.959016556
ENSMUSG00000027951	Adar	12.43948642	14.4226375	0.041751598	1.983151081	3.935356605
ENSMUSG00000012519	Mkl1	9.54229043	11.51832604	0.042762505	1.976035613	3.934105409
ENSMUSG00000041000	Trim62	5.655912891	7.627564997	0.03898652	1.971652106	3.922170104
ENSMUSG00000021253	Tgfb3	2.340123032	4.308816956	0.060017484	1.968693924	3.914136107
ENSMUSG00000040289	Hey1	2.340123032	4.308816956	0.051460612	1.968693924	3.914136107
ENSMUSG00000062257	Opcml	2.340123032	4.308816956	0.081546117	1.968693924	3.914136107
ENSMUSG00000085335	Gm12384	2.340123032	4.308816956	0.142856017	1.968693924	3.914136107
ENSMUSG00000086566	2810429104Rik	2.340123032	4.308816956	0.103555101	1.968693924	3.914136107
ENSMUSG00000087692	Gm11940	2.340123032	4.308816956	0.148413578	1.968693924	3.914136107
ENSMUSG00000044708	Kcnj10	3.476637034	5.442727489	0.03855201	1.966090455	3.907079076
ENSMUSG00000031391	L1cam	8.239678974	10.20284971	0.043609349	1.963170739	3.899179954
ENSMUSG00000050138	Kcnk12	3.784506932	5.743935965	0.040551206	1.959429033	3.889080325
ENSMUSG00000060519	Tor3a	12.50061037	14.45981417	0.044151547	1.959203807	3.88847323
ENSMUSG00000071068	Trem12	9.578116158	11.53493069	0.044574298	1.956814536	3.882038795
ENSMUSG00000048200	Efcab4a	3.275780133	5.225170689	0.029982206	1.949390556	3.862113483
ENSMUSG00000078247	Airn	3.275780133	5.225170689	0.048052732	1.949390556	3.862113483
ENSMUSG00000031934	Panx1	6.922161696	6.963159525	0.042487197	1.940997829	3.839711266
ENSMUSG00000069072	Slc7a14	3.784506932	5.716545382	0.047155922	1.93203845	3.815939902
ENSMUSG00000066235	C85492	8.118937341	10.05085939	0.046237828	1.931922053	3.815632042
ENSMUSG00000049401	Ogfr	12.42827298	14.35301277	0.047727987	1.92473979	3.796683637
ENSMUSG00000071350	Setdb2	7.533901451	9.457777748	0.048346515	1.923876297	3.794411896
ENSMUSG00000042734	Ttc9	4.024165894	5.945883595	0.061493352	1.921717701	3.78873885
ENSMUSG00000050382	Kif7	5.623673111	7.54504826	0.045881474	1.921375149	3.787839362
ENSMUSG00000082292	Gm12250	6.922337799	8.840748451	0.052399731	1.918410652	3.780063978
ENSMUSG00000029103	Lrpap1	12.15969602	14.07362474	0.04890427	1.913928718	3.7683389
ENSMUSG00000040616	Tmem51	8.095855098	10.00952219	0.04778923	1.91366709	3.767655588
ENSMUSG00000061751	Kalrn	3.007424336	4.918971921	0.105629566	1.911547586	3.762124482
ENSMUSG00000063382	Bcl9l	9.166621537	11.07703743	0.048865988	1.91041589	3.75917451
ENSMUSG00000010307	Tmem86a	6.514894574	8.424672657	0.045477667	1.909778083	3.757512968
ENSMUSG00000042097	Zfp239	4.127818518	6.037032521	0.048143998	1.909214003	3.756044102
ENSMUSG00000055633	Zfp580	7.49029339	9.394956874	0.049250212	1.904663483	3.744215528
ENSMUSG00000040093	Bmf	5.99455279	7.8991969	0.043966678	1.90464411	3.74416525
ENSMUSG00000042500	Eif2c4	6.986577563	8.887138392	0.048703976	1.900560829	3.733583065
ENSMUSG00000024897	Apba1	5.374631139	7.274017854	0.064727044	1.899386714	3.730545785
ENSMUSG00000030108	Slc6a13	9.210251695	11.10935343	0.050658616	1.899101731	3.729808943
ENSMUSG00000022534	Mefv	4.024165894	5.922154605	0.085424171	1.897988711	3.72632554
ENSMUSG0000002325	Irf9	9.911187143	11.80513983	0.051287626	1.893952687	3.716520813
ENSMUSG00000043895	S1pr2	10.53679991	12.42888327	0.051310296	1.892083364	3.711708377
ENSMUSG00000007682	Dio2	2.340123032	4.228536321	0.153929302	1.888413288	3.70227815
ENSMUSG00000014609	Chrne	2.340123032	4.228536321	0.259353224	1.888413288	3.70227815
ENSMUSG00000018417	Myo1b	2.340123032	4.228536321	0.106781743	1.888413288	3.70227815
ENSMUSG00000022938	Fam3b	2.340123032	4.228536321	0.263894132	1.888413288	3.70227815
ENSMUSG00000028971	Cort	2.340123032	4.228536321	0.128103178	1.888413288	3.70227815
ENSMUSG00000030711	Slt1a1	2.340123032	4.228536321	0.123402318	1.888413288	3.70227815
ENSMUSG00000038156	Spon1	2.340123032	4.228536321	0.263894132	1.888413288	3.70227815
ENSMUSG00000050064	Zfp697	2.340123032	4.228536321	0.148945278	1.888413288	3.70227815
ENSMUSG00000051067	Lingo3	2.340123032	4.228536321	0.118430817	1.888413288	3.70227815

ENSMUSG00000074336	Apoc4	2.340123032	4.228536321	0.263894132	1.888413288	3.70227815
ENSMUSG00000083581	Gm14186	2.340123032	4.228536321	0.223380735	1.888413288	3.70227815
ENSMUSG00000038578	Susd1	9.242129543	11.1287873	0.051998881	1.886657755	3.697775798
ENSMUSG00000091144	Gm6907	4.744943019	6.625741746	0.058817583	1.880798728	3.682788962
ENSMUSG00000079523	Tmsb10	10.617322927	10.49710511	0.053154148	1.879782183	3.680194927
ENSMUSG00000052512	Nav2	11.51350252	13.38064154	0.054233828	1.867139022	3.648084185
ENSMUSG00000034220	Gpc1	3.476637034	5.338176935	0.104478801	1.861539901	3.633953354
ENSMUSG00000083964	Gm14122	3.476637034	5.338176935	0.053062001	1.861539901	3.633953354
ENSMUSG00000038256	Bcl9	10.0838381	11.94326085	0.055323273	1.859422749	3.628624446
ENSMUSG00000074364	Ehd2	6.566312297	8.424672657	0.05890348	1.858360359	3.625953338
ENSMUSG00000027087	Itgav	10.86915198	12.72246373	0.056011908	1.853311743	3.613286729
ENSMUSG00000026204	Ptprn	7.060059224	8.911282838	0.060703527	1.851223614	3.608607111
ENSMUSG00000031497	Tnfsf13b	5.522285386	7.373044461	0.050872575	1.850759075	3.606899125
ENSMUSG00000029581	Fscn1	6.348552274	8.198064481	0.066574219	1.849512208	3.603783162
ENSMUSG00000022508	Bcl6	10.98749475	12.83500029	0.056783694	1.84750554	3.598774086
ENSMUSG00000030109	Slc6a12	11.40738941	13.25214948	0.05713757	1.844760066	3.59193207
ENSMUSG00000022235	Cmb1	5.777993082	7.612990224	0.052929182	1.834916142	3.567506708
ENSMUSG00000055172	C1ra	7.174757225	9.009613482	0.058376609	1.834856257	3.567358625
ENSMUSG00000022885	St6gal1	7.763697789	9.592657881	0.05661862	1.828960092	3.552808933
ENSMUSG00000061991	Hist1h2af	5.835304397	7.663565198	0.054314464	1.828260801	3.551087204
ENSMUSG00000034685	Fam171a2	3.275780133	5.102161293	0.056743455	1.826381161	3.546463651
ENSMUSG00000056219	Gm5423	3.275780133	5.102161293	0.112990622	1.826381161	3.546463651
ENSMUSG00000081998	Gm13245	3.275780133	5.102161293	0.087808771	1.826381161	3.546463651
ENSMUSG00000083718	Cenb2-ps	3.275780133	5.102161293	0.067281821	1.826381161	3.546463651
ENSMUSG00000037816	Fbxw17	10.34585964	12.17216536	0.059613768	1.826305725	3.546278218
ENSMUSG00000059901	Adams14	3.476637034	5.30151598	0.05359023	1.824878946	3.542772797
ENSMUSG00000048120	Entpd1	8.601024079	10.42347721	0.059276431	1.822453135	3.536820826
ENSMUSG00000028755	Cda	5.022161696	6.842574132	0.053813114	1.820412436	3.531821514
ENSMUSG00000030102	Itpr1	11.32172525	13.1386662	0.060782061	1.816940955	3.523333294
ENSMUSG00000046031	Fam26f	5.252686104	7.063664537	0.059920825	1.810978433	3.50880174
ENSMUSG00000026764	Kif5c	4.394948931	6.203520215	0.047239193	1.808571284	3.502952157
ENSMUSG00000002847	Pla1a	8.204333316	8.009587198	0.071440617	1.805253882	3.494906555
ENSMUSG00000027253	Lrp4	9.833105118	11.63708209	0.062608372	1.803976975	3.491814636
ENSMUSG00000040552	C3ar1	13.28784263	15.09069046	0.062661874	1.802847826	3.489082778
ENSMUSG00000008489	Elavl2	2.340123032	4.142724344	0.242066525	1.802601312	3.488486648
ENSMUSG00000020081	Tacr2	2.340123032	4.142724344	0.29913057	1.802601312	3.488486648
ENSMUSG00000036292	Gramd1c	2.340123032	4.142724344	0.133742573	1.802601312	3.488486648
ENSMUSG00000053467	A530088E08Rik	2.340123032	4.142724344	0.324031123	1.802601312	3.488486648
ENSMUSG00000058152	Chsy3	2.340123032	4.142724344	0.179103072	1.802601312	3.488486648
ENSMUSG00000063488	Zfp167	2.340123032	4.142724344	0.257804145	1.802601312	3.488486648
ENSMUSG00000065778	SNORA55	2.340123032	4.142724344	0.195520246	1.802601312	3.488486648
ENSMUSG00000073988	Ttpa	2.340123032	4.142724344	0.224115806	1.802601312	3.488486648
ENSMUSG00000082002	Gm6568	2.340123032	4.142724344	0.257804145	1.802601312	3.488486648
ENSMUSG00000083693	Gm11971	2.340123032	4.142724344	0.324031123	1.802601312	3.488486648
ENSMUSG00000092277	RP23-108F2.4	2.340123032	4.142724344	0.324031123	1.802601312	3.488486648
ENSMUSG00000057897	Camk2b	5.655912891	7.457516175	0.058210848	1.801603284	3.486074216
ENSMUSG00000027322	Siglec1	14.6499444	16.4510692	0.062902488	1.801124804	3.484918228
ENSMUSG00000026809	170026L06Rik	3.642027534	5.442724289	0.051973541	1.800699955	3.483892129
ENSMUSG00000078920	Ifi47	8.3314603	10.1314267	0.06485825	1.799966399	3.482121151
ENSMUSG00000085052	Gm16675	5.209546918	7.00869756	0.068317985	1.799150642	3.48015278
ENSMUSG00000036957	Lrn3	12.70669076	10.07243095	0.063654784	1.796361876	3.473432053
ENSMUSG00000002944	Cd36	8.200340485	13.7968223	0.064014605	1.793417453	3.466350291
ENSMUSG00000034118	Tpst1	11.32668901	13.11612397	0.064578224	1.78943496	3.456794786
ENSMUSG00000087562	Gm16754	4.394948931	6.183740302	0.068232606	1.788791371	3.455253047
ENSMUSG00000054065	Pkp3	3.476637034	5.263866142	0.073030806	1.787229108	3.451513453
ENSMUSG00000074277	Phldb3	6.406172478	8.193148403	0.063476034	1.786975924	3.450907789
ENSMUSG00000004902	Slc25a18	5.374631139	7.157603937	0.068300506	1.782972798	3.441345636
ENSMUSG00000001168	Oas1h	3.275780133	5.058601395	0.091496867	1.782821262	3.440984187
ENSMUSG00000035852	9130017N09Rik	3.275780133	5.058601395	0.128169374	1.782821262	3.440984187
ENSMUSG00000020464	Pnpt1	10.0437045	11.82513246	0.065956503	1.781427952	3.437662595
ENSMUSG00000051379	Firt3	5.294529046	7.074410307	0.085104433	1.779881261	3.433979105
ENSMUSG00000000204	Sifn4	9.728218561	11.50747911	0.066837921	1.779260554	3.432501983
ENSMUSG00000043415	Otdud1	7.023787598	8.799300427	0.066273631	1.775512829	3.423596859
ENSMUSG00000062960	Kdr	7.785505335	9.558669347	0.067650821	1.773164012	3.418027517
ENSMUSG00000025207	Sema4g	5.556897593	7.328874754	0.062867056	1.771977161	3.415216792

ENSMUSG00000078532	Nkain1	9.039352664	10.81121431	0.067009773	1.771861648	3.414943355
ENSMUSG00000027428	Rbbp9	7.207456678	8.978528198	0.066119808	1.771071521	3.413073589
ENSMUSG00000020658	Efr3b	8.538208374	10.30888286	0.066478198	1.770674486	3.412134429
ENSMUSG00000043155	Hpd1	4.472819751	6.242277279	0.05747465	1.769457539	3.409257427
ENSMUSG00000059479	B3gnt8	5.294529046	7.063664537	0.056466831	1.769135491	3.408496475
ENSMUSG00000048721	C030019I05Rik	4.394948931	6.163682705	0.083336541	1.768733774	3.407547514
ENSMUSG0000001095	Slc13a2	6.20433316	7.969893827	0.06684381	1.765560511	3.40060657
ENSMUSG00000058163	Gm5431	6.182489779	7.94671132	0.073448592	1.764221541	3.396906576
ENSMUSG00000022390	Zc3h7b	11.45293378	13.21626391	0.068281038	1.76333013	3.394808348
ENSMUSG00000079457	Gm7609	5.687433885	7.449288498	0.076814303	1.761854614	3.391338082
ENSMUSG00000050002	5133401N09Rik	6.387222177	8.148132708	0.072239551	1.760910531	3.389119557
ENSMUSG00000048916	Gm5540	6.599594561	8.360342228	0.068681585	1.760754667	3.388753427
ENSMUSG00000033538	Casp4	9.124483866	10.88392679	0.070176877	1.759442927	3.385673676
ENSMUSG00000024457	Trim26	11.19105268	12.95017208	0.069013517	1.759119402	3.384914522
ENSMUSG00000026640	Plxna2	9.647204095	11.40440841	0.069030873	1.757204319	3.380424251
ENSMUSG00000090387	Gm17056	3.007424336	4.763393193	0.118029693	1.755968858	3.377530641
ENSMUSG00000037661	Gpr160	3.784506932	5.540029001	0.068987023	1.755522069	3.376484814
ENSMUSG00000038352	Arl5c	10.57066872	12.3251631	0.070103527	1.754494377	3.374080459
ENSMUSG00000014773	Dll1	3.476637034	5.225170689	0.139860347	1.748533655	3.360168673
ENSMUSG00000055567	Unc80	3.476637034	5.225170689	0.14628715	1.748533655	3.360168673
ENSMUSG00000081769	Gm12716	3.476637034	5.225170689	0.097525427	1.748533655	3.360168673
ENSMUSG00000026200	Glb1l	5.943425194	7.691731458	0.071382875	1.748306264	3.359639102
ENSMUSG00000044864	Ankrd50	11.1524344	12.90053488	0.070672289	1.748100481	3.359159924
ENSMUSG00000029923	Rab19	5.99455279	7.739735266	0.068910244	1.745182476	3.352372529
ENSMUSG00000044340	Phlpp1	9.086941573	10.82694095	0.071000686	1.742599382	3.346375596
ENSMUSG00000078486	2310042D19Rik	7.71149228	9.45367374	0.073206688	1.74218146	3.345406353
ENSMUSG00000028459	Cd72	12.17732096	13.91561223	0.072172729	1.738291275	3.336397715
ENSMUSG00000069893	9930111J21Rik	5.252686104	6.986108783	0.078682345	1.733422678	3.325157503
ENSMUSG00000029392	Rilpl1	6.387222177	8.117321955	0.073998732	1.730099778	3.317507617
ENSMUSG00000032733	Snx33	8.072397279	9.800830083	0.073793104	1.728432804	3.313676589
ENSMUSG00000017652	Cd40	11.94246201	13.66681273	0.074556169	1.724350719	3.304313841
ENSMUSG00000085873	Gm12750	4.127818518	5.848495556	0.063865485	1.720677037	3.295910343
ENSMUSG00000025466	1810014F10Rik	4.024165894	5.743935965	0.075439167	1.71977007	3.293839071
ENSMUSG00000019558	Slc6a8	11.83769595	13.55609279	0.075187214	1.718396844	3.290705328
ENSMUSG00000000058	Cav2	8.909717388	10.62669236	0.075430497	1.716974974	3.287463723
ENSMUSG00000037344	Slc12a9	10.71773068	12.43279752	0.07585436	1.715066843	3.283118545
ENSMUSG00000018983	E2f2	10.27058112	11.98224399	0.076214513	1.711662864	3.275381295
ENSMUSG00000026088	Mitd1	8.817508349	10.52865998	0.077019525	1.711151629	3.274220832
ENSMUSG00000090170	Tnfsf12	8.244934127	9.955401745	0.076184979	1.710467617	3.272668825
ENSMUSG00000070427	I118bp	5.374631139	7.085076406	0.088998248	1.710445267	3.272618124
ENSMUSG00000024245	Tmem178	2.340123032	4.05043303	0.235223371	1.710309997	3.272311292
ENSMUSG00000036760	Kcnk9	2.340123032	4.05043303	0.260199452	1.710309997	3.272311292
ENSMUSG00000048292	Olfrr1417	2.340123032	4.05043303	0.35173788	1.710309997	3.272311292
ENSMUSG00000055044	Pdlim1	2.340123032	4.05043303	0.24033465	1.710309997	3.272311292
ENSMUSG00000055313	Pgbd1	2.340123032	4.05043303	0.246973707	1.710309997	3.272311292
ENSMUSG00000055629	B4galnt4	2.340123032	4.05043303	0.286070992	1.710309997	3.272311292
ENSMUSG00000059852	Kcng2	2.340123032	4.05043303	0.374460413	1.710309997	3.272311292
ENSMUSG00000072707	Olfrr31	2.340123032	4.05043303	0.374460413	1.710309997	3.272311292
ENSMUSG00000073738	Gm10567	2.340123032	4.05043303	0.223718061	1.710309997	3.272311292
ENSMUSG00000079420	Gm17418	2.340123032	4.05043303	0.180391239	1.710309997	3.272311292
ENSMUSG00000082956	Naip3	2.340123032	4.05043303	0.24033465	1.710309997	3.272311292
ENSMUSG00000090836	Gm17475	2.340123032	4.05043303	0.374460413	1.710309997	3.272311292
ENSMUSG00000092021	Gbp11	2.340123032	4.05043303	0.260199452	1.710309997	3.272311292
ENSMUSG00000086615	Gm16862	3.476637034	5.1853677	0.090523161	1.708730666	3.268731023
ENSMUSG00000031453	Rasa3	11.14472566	12.85322372	0.076658537	1.708498055	3.268204037
ENSMUSG00000075122	Cd80	5.623673111	7.328874754	0.092621695	1.705201644	3.260745048
ENSMUSG00000021306	Gpr137b	10.33111491	12.03332279	0.077999522	1.702207879	3.253985628
ENSMUSG00000022353	Mtss1	11.68129954	13.3830712	0.077939184	1.701771661	3.253001891
ENSMUSG00000044167	Foxo1	7.436158877	9.137926956	0.076665887	1.701768079	3.252993814
ENSMUSG00000062082	Cd200r4	7.49029339	9.190663779	0.077903947	1.700370389	3.249843823
ENSMUSG00000026564	Dusp27	3.642027534	5.338176935	0.061207423	1.696149401	3.240349438
ENSMUSG00000050821	Fam131a	3.642027534	5.338176935	0.063285978	1.696149401	3.240349438
ENSMUSG00000060002	Chpt1	8.637440827	10.33254152	0.079233309	1.695100692	3.237994852
ENSMUSG00000049580	Tsku	8.52962236	10.22107199	0.079338951	1.691449627	3.229810737
ENSMUSG00000035355	Kcnn4	3.784506932	5.475914986	0.12308999	1.691408054	3.229717668

ENSMUSG00000022216	Psme1	11.58048888	13.26771912	0.080499175	1.687230243	3.220378456
ENSMUSG00000006611	Hfe	8.550992304	10.23189588	0.080950298	1.680903581	3.206287026
ENSMUSG00000054951	9130008F23Rik	5.071444736	6.751709093	0.083420126	1.680264358	3.204866712
ENSMUSG00000042423	Fbns	10.73183195	12.41179772	0.081916407	1.679965774	3.204203494
ENSMUSG00000054008	Ndst1	8.627960641	10.33923048	0.083399261	1.666269838	3.173929861
ENSMUSG00000002475	Abhd3	4.024165894	5.688614567	0.08893624	1.664448673	3.169924926
ENSMUSG00000022947	Cbr3	5.718268025	7.381718115	0.078487684	1.663450089	3.167731526
ENSMUSG00000067889	Spnb3	6.841257833	8.502234844	0.08717734	1.660977011	3.162306076
ENSMUSG00000028167	Bdh2	7.218193462	8.877978998	0.084543444	1.659785536	3.159695507
ENSMUSG00000070691	Runx3	10.33234941	11.98863998	0.085652933	1.656290576	3.15205034
ENSMUSG00000007613	Tgfb1	9.163850333	10.82000828	0.085138983	1.656157946	3.151760581
ENSMUSG00000059108	Ifitm6	9.301327109	10.95677887	0.08669734	1.655451764	3.150218208
ENSMUSG00000085611	Ap3s1-ps1	7.559446378	9.212688112	0.087491443	1.653241733	3.145396157
ENSMUSG00000038151	Prdm1	7.507895349	9.160764939	0.092560631	1.65286959	3.144584907
ENSMUSG00000025492	Ifitm3	14.51993513	16.17046658	0.086901873	1.650531451	3.139492685
ENSMUSG00000044927	H1fx	4.223340379	5.873475059	0.108997226	1.650134679	3.138629377
ENSMUSG00000036273	Lrrk2	9.433752413	11.08036834	0.088049754	1.646615927	3.130983546
ENSMUSG00000022867	Usp25	12.37356067	14.01964657	0.087803352	1.646085903	3.129833482
ENSMUSG00000031310	Zmym3	8.767269979	10.4108321	0.087838168	1.643562124	3.124363093
ENSMUSG00000060594	Layn	3.275780133	4.918971921	0.109975644	1.643191789	3.123561182
ENSMUSG00000085977	Gm5970	3.275780133	4.918971921	0.185773563	1.643191789	3.123561182
ENSMUSG00000032623	Oas1d	3.007424336	4.648703026	0.118310417	1.64127869	3.119421901
ENSMUSG00000003420	Fcgrt	7.49029339	9.130233229	0.088229098	1.639939839	3.116528355
ENSMUSG00000074796	Sic4a11	5.071444736	6.710935675	0.095777537	1.63949094	3.115558788
ENSMUSG00000052911	Lamb2	4.024165894	5.66012136	0.103679323	1.635955465	3.107933135
ENSMUSG00000024242	Map4k3	9.4566576126	11.09229635	0.089912404	1.63572022	3.107426398
ENSMUSG00000062196	Fabp5l2	7.312049966	5.945883595	0.098166557	1.63383363	3.103365519
ENSMUSG00000028773	Fabp3	4.917946495	6.550667486	0.100219739	1.632720992	3.100973058
ENSMUSG00000047264	Zfp358	6.855092779	8.486249036	0.089055281	1.631156257	3.097611593
ENSMUSG00000038545	Cul7	8.945656924	10.57662296	0.090438535	1.630966033	3.09720319
ENSMUSG00000019806	Aig1	8.459029453	10.0897234	0.090718902	1.630693946	3.096619123
ENSMUSG00000005533	Igf1r	8.389555074	10.01510723	0.090273201	1.625547659	3.085592745
ENSMUSG00000031503	Col4a2	7.961840705	9.587048446	0.096220671	1.625207741	3.084865824
ENSMUSG00000021457	Syk	13.05419625	14.67800657	0.091932918	1.623810314	3.081879199
ENSMUSG00000074151	Nlrc5	10.98749475	12.61034272	0.092425889	1.622847965	3.079824121
ENSMUSG00000052861	Dnahc6	3.642027534	5.263866142	0.101165592	1.621838608	3.077670127
ENSMUSG00000084160	Gm13345	3.642027534	5.263866142	0.152745776	1.621838608	3.077670127
ENSMUSG00000046157	Tmem229b	10.93320247	12.55443307	0.092479901	1.6212306	3.076373351
ENSMUSG00000047798	Cd300lf	10.37130577	11.9921811	0.092614211	1.620875332	3.075615877
ENSMUSG00000035473	Galm	8.202346633	9.821679037	0.092772371	1.619332405	3.072328339
ENSMUSG00000022587	Ly6e	15.1391556	16.75645015	0.093130137	1.617294547	3.067991631
ENSMUSG00000041440	Gk5	7.417652238	9.034557861	0.093557799	1.616905623	3.067164668
ENSMUSG00000062300	Pvrl2	8.42239338	10.03858213	0.09412631	1.616188745	3.065640967
ENSMUSG00000061436	Hipk2	14.0712858	15.68698913	0.093440876	1.615703327	3.064609655
ENSMUSG00000060012	Kif13b	9.458838761	11.07369881	0.093300627	1.614860045	3.062818858
ENSMUSG00000033450	Tagap	8.152882259	9.766501224	0.095282701	1.613618965	3.060185197
ENSMUSG00000040584	Abcb1a	7.609216257	9.219955457	0.096415678	1.6107392	3.05408285
ENSMUSG00000014776	Nol3	2.340123032	3.950414567	0.250239976	1.610291534	3.053135321
ENSMUSG00000023931	Efhh	2.340123032	3.950414567	0.300007133	1.610291534	3.053135321
ENSMUSG00000035121	Neil2	2.340123032	3.950414567	0.180855269	1.610291534	3.053135321
ENSMUSG00000038537	Mc3r	2.340123032	3.950414567	0.400276982	1.610291534	3.053135321
ENSMUSG00000038602	Sic35f1	2.340123032	3.950414567	0.300007133	1.610291534	3.053135321
ENSMUSG00000042873	Lhfp14	2.340123032	3.950414567	0.178461601	1.610291534	3.053135321
ENSMUSG00000045467	Thl13	2.340123032	3.950414567	0.384369512	1.610291534	3.053135321
ENSMUSG00000051652	Lrrc3	2.340123032	3.950414567	0.316331861	1.610291534	3.053135321
ENSMUSG00000061637	Olf1r1457	2.340123032	3.950414567	0.2812907	1.610291534	3.053135321
ENSMUSG00000065686	Snora5c	2.340123032	3.950414567	0.322140765	1.610291534	3.053135321
ENSMUSG00000082315	Gm16523	2.340123032	3.950414567	0.282621274	1.610291534	3.053135321
ENSMUSG00000082402	Gm15621	2.340123032	3.950414567	0.400276982	1.610291534	3.053135321
ENSMUSG00000083177	Gm7820	2.340123032	3.950414567	0.184645902	1.610291534	3.053135321
ENSMUSG00000085788	4930470G03Rik	2.340123032	3.950414567	0.433347647	1.610291534	3.053135321
ENSMUSG00000090695	Gm17379	2.340123032	3.950414567	0.33704368	1.610291534	3.053135321
ENSMUSG00000091576	Trim30b	2.340123032	3.950414567	0.433347647	1.610291534	3.053135321
ENSMUSG00000040907	Atp1a3	12.9022592	14.51069789	0.094830256	1.608438687	3.049216709
ENSMUSG00000054582	Pabpc1l	4.024165894	5.631042181	0.121551703	1.606876286	3.045916276

ENSMUSG00000041695	Kcnj2	9.180398255	10.78695469	0.09565663	1.606556431	3.04524105
ENSMUSG00000074652	Myh7b	3.910584572	5.508337048	0.069509243	1.597752476	3.026714247
ENSMUSG00000031385	Plxnb3	5.071444736	6.668970601	0.090983213	1.597525865	3.026238864
ENSMUSG00000029426	Scarb2	10.3224437	11.91853652	0.097193418	1.596092815	3.023234348
ENSMUSG00000030762	Aqp8	6.267929796	7.862504136	0.114119949	1.594574339	3.020053986
ENSMUSG00000003134	Tbc1d8	5.943425194	7.537306981	0.089988006	1.593881787	3.018604586
ENSMUSG00000042797	Aqp11	3.275780133	4.869069107	0.068108831	1.593288974	3.017364476
ENSMUSG00000024352	Spata24	5.718268025	7.310820368	0.098714018	1.592552343	3.015824221
ENSMUSG00000025647	Shisa5	14.07202497	15.66366812	0.098200434	1.591643143	3.013924219
ENSMUSG00000034751	Mast4	4.744943019	6.334809769	0.091945002	1.58986675	3.010215453
ENSMUSG00000004328	Hif3a	3.784506932	5.37390112	0.145738262	1.589394188	3.009229604
ENSMUSG00000032741	Tpcn1	11.8281017	13.41587285	0.098883838	1.587771143	3.005846096
ENSMUSG00000016283	H2-M2	7.249931491	8.837602088	0.106760722	1.587670597	3.005636616

GO enrichment analysis of the top 800 upregulated genes

Table S3

GO ID (BP)	P-value	Odds ratio	Expected number of genes	Observed number of genes	Size	Term
GO:0006955	2.17E-13	3.582161422	17.05798116	53	452	immune response
GO:0002376	7.20E-12	2.646762862	31.58745626	74	837	immune system process
GO:0002682	1.34E-07	2.904932055	13.69921938	36	363	regulation of immune system process
GO:0009615	4.91E-07	6.153257839	2.754939435	14	73	response to virus
GO:0043067	6.01E-07	2.215154452	26.53044415	54	703	regulation of programmed cell death
GO:0042981	9.15E-07	2.198891104	26.19079408	53	694	regulation of apoptosis
GO:0006917	1.02E-06	3.553917718	7.245868102	23	192	induction of apoptosis
GO:0010941	1.06E-06	2.170015456	27.0210498	54	716	regulation of cell death
GO:0012502	1.12E-06	3.532812771	7.283606999	23	193	induction of programmed cell death
GO:0001816	1.50E-06	3.587150221	6.868479139	22	182	cytokine production
GO:0006952	1.67E-06	2.386078614	19.13362046	42	507	defense response
GO:0043065	1.75E-06	2.805476068	12.11418573	31	321	positive regulation of apoptosis
GO:0032020	2.01E-06	Inf	0.150955585	4	4	ISG15-protein conjugation
GO:0043068	2.13E-06	2.776277316	12.22740242	31	324	positive regulation of programmed cell death
GO:0045087	2.65E-06	3.720159429	6.038223419	20	160	innate immune response
GO:0010942	3.13E-06	2.719637598	12.4538358	31	330	positive regulation of cell death
GO:0048583	3.79E-06	2.446766967	16.41641992	37	435	regulation of response to stimulus
GO:0019882	5.30E-06	7.376059541	1.698250336	10	45	antigen processing and presentation
GO:0023034	7.33E-06	1.837322331	41.66374159	71	1104	intracellular signaling pathway
GO:0035556	8.58E-06	1.953237261	31.96484522	58	847	intracellular signal transduction
GO:0051707	8.87E-06	2.914003064	9.396985195	25	249	response to other organism
GO:0031347	1.01E-05	3.653779283	5.509878869	18	146	regulation of defense response
GO:0050776	1.30E-05	2.99780236	8.41577389	23	223	regulation of immune response
GO:0008283	1.54E-05	1.921675598	31.85162853	57	844	cell proliferation
GO:0007155	2.22E-05	2.082115267	22.68107672	44	601	cell adhesion
GO:0022610	2.22E-05	2.082115267	22.68107672	44	601	biological adhesion
GO:0048584	2.63E-05	2.853434471	8.793162853	23	233	positive regulation of response to stimulus
GO:0042127	2.86E-05	2.006650634	25.09636608	47	665	regulation of cell proliferation
GO:0007264	3.77E-05	2.445065284	12.79348587	29	339	small GTPase mediated signal transduction
GO:0002684	4.20E-05	2.760293898	9.057335128	23	240	positive regulation of immune system process
GO:0050896	4.69E-05	1.49773677	96.98896366	134	2570	response to stimulus
GO:0051249	4.84E-05	3.340576821	5.623095559	17	149	regulation of lymphocyte activation
GO:0048518	5.28E-05	1.57293083	69.74148048	102	1848	positive regulation of biological process
GO:0002694	5.33E-05	3.178115756	6.2269179	18	165	regulation of leukocyte activation
GO:0002483	6.43E-05	34.18651363	0.264172275	4	7	antigen processing and presentation of endogenous peptide antigen
GO:0019883	6.43E-05	34.18651363	0.264172275	4	7	antigen processing and presentation of endogenous antigen
GO:0050863	6.73E-05	3.773835517	4.1512786	14	110	regulation of T cell activation
GO:0002474	7.54E-05	16.04346264	0.490605653	5	13	antigen processing and presentation of peptide antigen via MHC class I
GO:0048514	8.39E-05	2.625485173	9.472462988	23	251	blood vessel morphogenesis
GO:0050865	8.51E-05	3.052450263	6.453351279	18	171	regulation of cell activation
GO:0048522	8.57E-05	1.584265157	62.19370121	92	1648	positive regulation of cellular process
GO:0048731	9.37E-05	1.505670508	83.62939435	117	2216	system development
GO:0002252	9.55E-05	2.823533167	7.698734859	20	204	immune effector process

Downregulated genes following TLR2 stimulation of lincRNA-Cox2 knockdown cells

ensemblGeneId	geneName	Pam3CSK4 stimulated no shRNA varianceStabilizedCounts(log2)	Pam3CSK4 stimulated with shRNA varianceStabilizedCounts(log2)	pval	log2FoldChangeForVarianceStabilizedCounts	varianceStabilizedCounts_foldChange
ENSMUSG00000017002	Slpi	14.24610916	4.142724344	2.95641E-14	-10.10338481	0.00090903
ENSMUSG00000027562	Car2	14.3665332	4.308816956	4.0866E-14	-10.05771624	0.000938265
ENSMUSG00000021806	Nid2	11.94971951	2.340123032	4.49908E-14	-9.609596473	0.001280039
ENSMUSG00000025278	Flnb	14.61194715	5.688614567	5.88616E-12	-8.923332578	0.002059725
ENSMUSG00000032373	Car12	10.9614021	2.340123032	1.53436E-12	-8.621279063	0.002539431
ENSMUSG00000052727	Mtap1b	11.78050674	3.231972817	1.9433E-12	-8.548533925	0.00267076
ENSMUSG00000024427	Spry4	10.82861105	2.340123032	2.90321E-12	-8.488488017	0.002784264
ENSMUSG00000008206	Lass4	11.43982174	2.975693565	1.85291E-12	-8.46412817	0.002831676
ENSMUSG00000020303	Slc2	10.76603692	2.340123032	3.53479E-12	-8.425913891	0.002907684
ENSMUSG00000021423	Ly86	11.16980256	3.424201757	3.74515E-11	-7.745600798	0.004659527
ENSMUSG00000025555	Farp1	11.66718241	4.142724344	2.29568E-10	-7.524458067	0.005431408
ENSMUSG00000061524	Zic2	9.507739433	2.340123032	3.11296E-10	-7.1676164	0.006955566
ENSMUSG00000070407	Hs3st3b1	10.71110262	3.582794738	4.60766E-10	-7.128307878	0.007147687
ENSMUSG00000001588	Acap1	11.85669513	4.763393193	1.91762E-09	-7.093301935	0.007323241
ENSMUSG00000021676	Iqgap2	10.511956	3.424201757	4.95163E-09	-7.087754246	0.007351456
ENSMUSG00000029534	St17	11.32420926	4.384306928	2.58644E-09	-6.939902334	0.008144815
ENSMUSG00000021508	Cxcl14	9.244754503	2.340123032	6.27509E-09	-6.904631471	0.008346393
ENSMUSG00000087579	1500017E21Rik	9.218287444	2.340123032	1.35056E-09	-6.878164412	0.008500925
ENSMUSG00000020396	Nefh	10.07943356	3.424201757	1.89717E-09	-6.655231799	0.00992146
ENSMUSG00000029084	Cd38	8.961701664	2.340123032	6.66145E-09	-6.621578632	0.010155615
ENSMUSG00000035413	Tmem98	8.945656924	2.340123032	6.01422E-09	-6.605533891	0.010269189
ENSMUSG00000000184	Ccnd2	13.41490807	6.892028594	3.09679E-08	-6.522879474	0.010874708
ENSMUSG00000022505	Emp2	11.87840831	5.37390112	2.0679E-08	-6.504507192	0.01101408
ENSMUSG00000037999	Arap2	8.824544516	2.340123032	4.49489E-09	-6.484241484	0.011168494
ENSMUSG00000026380	Tcfcp2l1	9.886187029	3.424201757	4.94234E-09	-6.461985272	0.01134354
ENSMUSG00000023982	Guca1a	10.70158082	4.308816956	1.55038E-08	-6.392763863	0.011901079
ENSMUSG00000042249	Adrbk2	8.688470716	2.340123032	7.58837E-09	-6.348347684	0.012273175
ENSMUSG00000084883	Ccdc85c	8.661217634	2.340123032	6.44651E-09	-6.321094602	0.012507224
ENSMUSG00000041193	Pla2g5	13.12161497	6.892028594	8.6774E-08	-6.22958638	0.01332624
ENSMUSG00000022440	C1qtnf6	8.563663907	2.340123032	1.27621E-08	-6.223540874	0.0133822
ENSMUSG00000024232	Bambi	9.196758492	2.975693565	4.72731E-09	-6.221064927	0.013405186
ENSMUSG00000062345	Serpinb2	12.01613571	5.823068939	8.27861E-08	-6.193066773	0.013667879
ENSMUSG00000042807	Hecw2	10.47442829	4.384306928	5.65726E-08	-6.09012136	0.014678808
ENSMUSG00000018916	Csf2	9.927616393	3.840967246	4.43814E-08	-6.086649147	0.014714179
ENSMUSG00000029330	Cds1	9.80136261	3.719660268	2.47647E-08	-6.081702342	0.014764718
ENSMUSG000000041797	Abca9	9.904562694	3.840967246	2.49487E-08	-6.063595448	0.014951194
ENSMUSG00000004383	Large	10.24327736	4.228536321	5.75441E-08	-6.014741037	0.015466161
ENSMUSG00000032012	Pvr11	8.971243533	2.975693565	6.70796E-09	-5.995549967	0.01567327
ENSMUSG00000024913	Lrp5	10.44733782	4.455598204	6.40069E-08	-5.991739612	0.01571472
ENSMUSG00000006221	Hspb7	11.55163053	5.631042181	1.73771E-07	-5.920588352	0.016509173
ENSMUSG00000025938	Slco5a1	8.186046336	2.340123032	3.86534E-08	-5.845923303	0.017386082
ENSMUSG00000031563	Wwc2	9.48571713	3.719660268	7.57E-08	-5.766056863	0.018375702
ENSMUSG00000019987	Arg1	10.57380353	4.81726305	2.23268E-07	-5.756540483	0.018497313
ENSMUSG00000034205	Loxl2	9.881134594	4.142724344	1.57014E-07	-5.738410249	0.018731234
ENSMUSG00000000753	Serpinf1	11.24383201	5.508337048	3.0016E-07	-5.735494961	0.018769123
ENSMUSG00000070476	9030418K01Rik	8.641430949	2.975693565	4.7426E-08	-5.665737384	0.019698951
ENSMUSG00000000244	Tspan32	9.084012824	3.424201757	8.0119E-08	-5.659811067	0.019780037
ENSMUSG00000020605	Slc9a4	9.697889931	4.05043303	1.98402E-07	-5.647456902	0.019950146
ENSMUSG00000020601	Trib2	7.961840705	2.340123032	9.45115E-08	-5.621717673	0.020309272
ENSMUSG00000036459	Wtip	7.84901535	2.340123032	1.43288E-07	-5.508892317	0.021961306
ENSMUSG00000063873	Slc24a3	7.828154765	2.340123032	1.51318E-07	-5.488031732	0.022281162
ENSMUSG00000001504	Irx2	7.814078057	2.340123032	1.46643E-07	-5.473955025	0.022499628
ENSMUSG00000002489	Tiam1	10.51630753	5.058601395	6.75536E-07	-5.457706135	0.022754471
ENSMUSG00000045532	C1ql1	7.785505335	2.340123032	2.31649E-07	-5.445382303	0.022949678
ENSMUSG00000029112	Nkx1-1	7.763697789	2.340123032	3.37348E-07	-5.423574757	0.023299216
ENSMUSG00000021262	Evl	11.13131279	5.716545382	1.10146E-06	-5.414767403	0.023441888
ENSMUSG00000047759	Hs3st3a1	8.384802242	2.975693565	2.66143E-07	-5.409108677	0.023534016
ENSMUSG00000028356	Ambp	8.817508349	3.424201757	2.80134E-07	-5.393306592	0.023793205
ENSMUSG00000085092	Gm16867	8.806889319	3.424201757	2.75143E-07	-5.382687562	0.023968982
ENSMUSG00000039109	F13a1	9.086941573	3.719660268	3.47676E-07	-5.367281305	0.024226313
ENSMUSG00000039115	Itna9	9.927616393	4.587429668	8.26451E-07	-5.340186725	0.024685596
ENSMUSG00000000202	Itihd17	7.633470966	2.340123032	4.13043E-07	-5.293347933	0.025500195
ENSMUSG00000045095	Magi1	7.609216257	2.340123032	5.54718E-07	-5.269093225	0.02593253
ENSMUSG00000020105	Lrig3	7.576228104	2.340123032	3.91736E-07	-5.236105072	0.026532325
ENSMUSG00000021411	1300014106Rik	9.174903347	4.05043303	1.20584E-06	-5.124470318	0.028666899
ENSMUSG00000052435	Cebye	8.964889306	3.840967246	9.91697E-07	-5.12392206	0.028677796
ENSMUSG00000029490	Mfsd7a	7.445323775	2.340123032	3.45114E-06	-5.105200743	0.029052362
ENSMUSG00000041703	Zic5	8.060523667	2.975693565	4.87392E-07	-5.084830102	0.029465487
ENSMUSG00000037754	Ppp1r16b	7.417652238	2.340123032	1.39759E-06	-5.077529205	0.029614977
ENSMUSG00000079554	Aox3l1	7.408308967	2.340123032	2.5358E-06	-5.068185935	0.029807394
ENSMUSG00000029648	Flt1	11.95654045	6.916132057	4.81107E-06	-5.040408389	0.030386864
ENSMUSG00000021536	Adcy2	7.379909846	2.340123032	1.98604E-06	-5.039786813	0.030399959

Table S4

ENSMUSG00000021880	Rnase6	8.413087063	3.424201757	9.81393E-07	-4.988885306	0.031491683
ENSMUSG00000031553	Adam3	8.202346633	3.231972817	9.04088E-07	-4.970373816	0.031898363
ENSMUSG00000002808	Epdr1	7.270707967	2.340123032	2.93997E-06	-4.930584935	0.032790349
ENSMUSG00000002690	2010300C02Rik	7.185739798	2.340123032	5.00447E-06	-4.845616766	0.034779554
ENSMUSG00000007474	Gm807	7.814078057	2.975693565	1.47219E-06	-4.838384492	0.034954342
ENSMUSG00000002786	Tbx15	7.174757225	2.340123032	4.27288E-06	-4.834634193	0.035045325
ENSMUSG00000005744	Mpp7	7.174757225	2.340123032	2.69123E-06	-4.834634193	0.035045325
ENSMUSG00000000615	Eps811	7.806987808	2.975693565	1.82553E-06	-4.831294243	0.035126551
ENSMUSG000000050106	Tmc8	9.767081166	5.01361896	8.74663E-06	-4.753462206	0.037073645
ENSMUSG000000043613	Mmp3	9.937384876	5.225170689	1.2818E-05	-4.712214187	0.038148914
ENSMUSG000000092171	4833427F1ORik	8.255387321	3.582794738	7.70536E-06	-4.672592583	0.039211141
ENSMUSG000000020872	Tac4	8.072397279	3.424201757	2.57929E-06	-4.648195522	0.039879869
ENSMUSG000000021675	F2r12	6.973957154	2.340123032	1.19713E-05	-4.633834121	0.040278838
ENSMUSG000000053931	Cnn3	6.973957154	2.340123032	1.67713E-05	-4.633834121	0.040278838
ENSMUSG000000059606	Ear5	6.973957154	2.340123032	2.8422E-05	-4.633834121	0.040278838
ENSMUSG000000030500	Slc17a6	6.948379108	2.340123032	1.25925E-05	-4.608256075	0.040999324
ENSMUSG000000022303	Tm7sf4	10.19523399	5.66012136	2.04182E-05	-4.5351112629	0.04313155
ENSMUSG000000035441	Myo1d	12.07188919	7.552748161	2.87577E-05	-4.51914103	0.043611698
ENSMUSG000000062028	Irgc1	6.855092779	2.340123032	5.865E-05	-4.514969746	0.043737975
ENSMUSG000000022912	Pros1	9.419882814	4.918971921	1.72167E-05	-4.500910893	0.044166279
ENSMUSG000000002799	Jag2	12.59851303	8.122503023	3.17571E-05	-4.476010011	0.044935205
ENSMUSG000000059900	Tmem40	8.306545924	3.840967246	1.09916E-05	-4.465578678	0.045261284
ENSMUSG000000032578	Cish	11.72189887	7.264668323	3.53239E-05	-4.457230549	0.04523947
ENSMUSG000000024421	Lama3	7.426935284	2.975693565	2.39577E-06	-4.451241718	0.045713316
ENSMUSG000000066456	Hmgn3	6.784546276	2.340123032	2.06611E-05	-4.444423243	0.045929878
ENSMUSG000000055538	Zchc24	8.657281954	4.228536321	1.17079E-05	-4.428745634	0.046431715
ENSMUSG000000028078	Dclt2	7.389438582	2.975693565	7.3967E-06	-4.413745017	0.046917013
ENSMUSG000000038236	Hoxa7	6.740493392	2.340123032	9.79827E-06	-4.400370359	0.047353985
ENSMUSG000000036904	Fzd8	7.625431346	3.231972817	7.23221E-06	-4.393458529	0.047581398
ENSMUSG000000022747	St3gal6	10.18022913	5.797178647	3.86193E-05	-4.383050487	0.047925906
ENSMUSG000000022584	Ly6c2	7.341151556	2.975693565	1.03685E-05	-4.365457995	0.048513901
ENSMUSG000000061013	Mkx	6.695046423	2.340123032	2.42995E-05	-4.354923391	0.048869448
ENSMUSG000000090698	Apold1	7.576228104	3.231972817	1.98458E-05	-4.344255288	0.049232155
ENSMUSG000000043079	Synpo	6.679572068	2.340123032	5.13313E-05	-4.339449036	0.049396443
ENSMUSG000000047786	Lix1	10.15672842	5.823068939	4.86154E-05	-4.33365948	0.04959507
ENSMUSG000000053101	Gpr141	6.648113797	2.340123032	3.76536E-05	-4.307990765	0.050485372
ENSMUSG000000029781	Fkbp9	7.726602119	3.424201757	1.23927E-05	-4.302400362	0.050861381
ENSMUSG000000029322	Plac8	6.632122288	2.340123032	6.22183E-05	-4.291999256	0.051048088
ENSMUSG000000049999	Ppp1r3d	6.615950586	2.340123032	4.15258E-05	-4.275827553	0.051623524
ENSMUSG000000028415	Spink4	6.566312297	2.340123032	6.44272E-05	-4.226189265	0.053430626
ENSMUSG000000048349	Pou4f1	7.174757225	2.975693565	1.10358E-05	-4.19906366	0.054444735
ENSMUSG000000028874	Fgr	10.41740411	6.223030098	7.77724E-05	-4.194374013	0.054622001
ENSMUSG000000005800	Mmp8	9.363031141	5.1853677	7.86306E-05	-4.177663441	0.05525836
ENSMUSG000000006179	Prss16	10.6180003	6.487643992	9.12622E-05	-4.130359012	0.057100255
ENSMUSG000000021263	Degs2	7.360661102	3.231972817	5.29318E-05	-4.128688286	0.057166418
ENSMUSG000000029442	Wdr66	10.96935891	6.842574132	9.46002E-05	-4.126784783	0.057241894
ENSMUSG000000026414	Tnnt2	6.461564239	2.340123032	0.000155546	-4.121441206	0.057454304
ENSMUSG000000029090	Gpr125	7.814078057	3.719660268	2.89439E-05	-4.094417789	0.058540635
ENSMUSG000000039693	5730528L13Rik	6.424875349	2.340123032	0.000243737	-4.084752317	0.05893415
ENSMUSG000000041180	Hectd2	6.387222177	2.340123032	0.000202606	-4.047099145	0.060492532
ENSMUSG000000026069	Il1r1	11.29030869	7.255257672	0.000130118	-4.035051016	0.060999828
ENSMUSG000000033960	9430020K01Rik	7.748973909	3.719660268	5.6177E-05	-4.029313641	0.061242898
ENSMUSG000000025324	Atp10a	9.651166862	5.66012136	0.000133968	-3.991045502	0.06288913
ENSMUSG000000038349	Plcl1	6.328818459	2.340123032	0.000254562	-3.988695427	0.062991657
ENSMUSG000000063568	Jazf1	7.936077064	3.950414567	6.38643E-05	-3.985662498	0.063124222
ENSMUSG000000032359	Ctsh	9.124483866	5.144389383	0.000108227	-3.980094483	0.063368317
ENSMUSG000000025277	Abhd6	8.968069918	5.01361896	9.65069E-05	-3.954450958	0.064504742
ENSMUSG000000024011	Pl16	7.993410927	4.05043303	6.93487E-05	-3.942977898	0.065019763
ENSMUSG000000026712	Mrc1	11.4636763	7.521698493	0.000168031	-3.941977806	0.065064851
ENSMUSG000000041544	Ptchd2	6.267929796	2.340123032	0.000149402	-3.927806764	0.065707107
ENSMUSG000000087128	Gm12655	7.855902319	3.950414567	0.000117276	-3.905487752	0.0662731523
ENSMUSG000000072115	Ang	9.086941573	5.1853677	0.000142695	-3.901573873	0.066912805
ENSMUSG000000038859	Baiap211	9.124483866	5.225170689	0.000194898	-3.8993131177	0.067011739
ENSMUSG000000004633	Chn2	7.32137404	3.424201757	4.34127E-05	-3.897172283	0.067117264
ENSMUSG000000081650	Gm16181	6.841257833	2.975693565	0.000103136	-3.865564268	0.068603963
ENSMUSG000000028358	Zfp168	6.204333316	2.340123032	7.14555E-05	-3.864210284	0.06868379
ENSMUSG0000000026721	Rabgap11	7.280984832	3.424201757	9.07902E-05	-3.856783075	0.06922806
ENSMUSG000000001247	Lsr	10.40220108	6.550667486	0.000197595	-3.851533593	0.069274414
ENSMUSG000000009945	Kcnq1	9.447489928	5.601351907	0.000178057	-3.846138021	0.06953398
ENSMUSG000000050493	Fam167b	8.85235088	5.01361896	0.000160237	-3.83873192	0.069891852
ENSMUSG000000030789	Itgac	10.44391546	6.625741746	0.000262262	-3.818173711	0.070894931
ENSMUSG000000035860	Cdhr3	7.763697789	3.950414567	8.91711E-05	-3.813283223	0.07113566
ENSMUSG000000032725	Folr2	9.177653418	5.37390112	0.000215653	-3.803752297	0.071607162
ENSMUSG000000029830	Svopl	6.137774446	2.340123032	0.00017661	-3.797651413	0.071910616

ENSMUSG00000004347	Pde1c	7.633470966	3.840967246	0.00013929	-3.79250372	0.07216766
ENSMUSG00000069873	4930438A08Rik	6.114880507	2.340123032	0.001184132	-3.774757474	0.073060859
ENSMUSG00000029373	PF4	13.57951167	9.80888461	0.00031106	-3.770627064	0.073270331
ENSMUSG000000085133	B930095G15Rik	6.740493392	2.975693565	0.000131003	-3.764799827	0.073566878
ENSMUSG00000029378	Areg	6.067960538	2.340123032	0.00153447	-3.727837506	0.075476038
ENSMUSG00000030409	Dmpk	11.51241376	7.792707444	0.000334102	-3.719706316	0.07590263
ENSMUSG00000066170	E230001N04Rik	6.019444463	2.340123032	0.000492714	-3.67932143	0.078057365
ENSMUSG00000024039	Cbs	8.427024113	4.763393193	0.000251552	-3.66363092	0.078910937
ENSMUSG00000030854	Ptpn5	8.306545924	4.648703026	0.000297536	-3.657842899	0.07922816
ENSMUSG00000020689	Itgb3	8.291388018	4.648703026	0.000258094	-3.642684993	0.080064971
ENSMUSG00000034783	Cd207	5.969218447	2.340123032	0.001162522	-3.629095415	0.080822713
ENSMUSG00000020838	Sic6a4	8.641430949	5.01361896	0.000500434	-3.627811989	0.080894645
ENSMUSG00000048895	Cdk5r1	10.60682442	7.00869756	0.00046981	-3.598126856	0.082576389
ENSMUSG00000040929	Rfx3	6.827288401	3.231972817	0.000122584	-3.595315584	0.082737456
ENSMUSG00000029372	Ppbb	7.734098038	4.142724344	0.00051562	-3.591373694	0.08296383
ENSMUSG00000044827	Tlrl	11.87332865	8.283802783	0.000527121	-3.589525867	0.083070159
ENSMUSG00000028940	Hes2	5.917155866	2.340123032	0.000826839	-3.577032833	0.08379263
ENSMUSG00000026458	Ppfla4	7.862756536	4.308816956	0.0002121	-3.55393958	0.085144693
ENSMUSG00000026768	Itga8	5.890392305	2.340123032	0.000245014	-3.550269273	0.085361582
ENSMUSG00000041923	Nol4	5.890392305	2.340123032	0.002336217	-3.550269273	0.085361582
ENSMUSG00000007440	Pcdha11	11.39739786	7.856296822	0.000614762	-3.54110104	0.085905777
ENSMUSG00000023800	Tiam2	8.596920422	5.058601395	0.000421723	-3.538319027	0.086071593
ENSMUSG00000013974	1810033B17Rik	7.916447571	4.384306928	0.000600769	-3.532140643	0.086440987
ENSMUSG00000040447	Spns2	6.75532831	3.231972817	0.000317062	-3.523355494	0.086968967
ENSMUSG00000025014	Dntt	5.863115281	2.340123032	0.000236101	-3.522992248	0.086990867
ENSMUSG00000086652	Gm14029	5.863115281	2.340123032	0.000803143	-3.522992248	0.086990867
ENSMUSG00000028965	Tnfrsf9	10.19115721	6.668970601	0.000666525	-3.522186608	0.087039459
ENSMUSG00000047632	Fgfbp3	7.463480449	3.950414567	0.000264257	-3.513065883	0.087591465
ENSMUSG00000031844	Hsd17b2	6.479562368	2.975693565	0.000587441	-3.503868803	0.088151639
ENSMUSG00000003059	Rem1	5.835304397	2.340123032	0.00109333	-3.495181365	0.08868406
ENSMUSG00000000562	Adora3	5.806938004	2.340123032	0.003251939	-3.466814971	0.090445029
ENSMUSG00000020205	Phlda1	13.44603358	9.981290986	0.000794399	-3.464742595	0.090575044
ENSMUSG00000028518	Prkaa2	8.202346633	4.763393193	0.000610273	-3.438953439	0.092208692
ENSMUSG00000032281	Acsbg1	10.69391787	7.264668323	0.000853952	-3.429249552	0.092830999
ENSMUSG000000041754	Trem3	10.00861328	6.596181747	0.000860682	-3.412431537	0.093919495
ENSMUSG00000074147	Bcl2a1a	7.249931491	3.840967246	0.001180876	-3.408964245	0.094145487
ENSMUSG00000033227	Wnt6	9.15271197	5.743935965	0.000994466	-3.408776006	0.094157772
ENSMUSG00000037892	Pcdh18	5.748445129	2.340123032	0.000300892	-3.408322097	0.094187401
ENSMUSG00000073632	Gm15433	6.986577563	3.582794738	0.000907639	-3.403782825	0.094484218
ENSMUSG00000004891	Nes	13.56080684	10.15815359	0.000946644	-3.402653253	0.094558224
ENSMUSG00000046719	Nxph3	7.10704118	3.719660268	0.000412612	-3.387380912	0.09564532
ENSMUSG00000032262	Elov14	5.718268025	2.340123032	0.001137328	-3.378144993	0.096178285
ENSMUSG00000037624	Kcnk2	5.718268025	2.340123032	0.001049337	-3.378144993	0.096178285
ENSMUSG00000019699	Akt3	9.476813204	6.101762152	0.000870742	-3.375051052	0.096384766
ENSMUSG00000047344	Lancl3	8.472531529	5.102161293	0.000955754	-3.370370236	0.096697994
ENSMUSG00000028128	F3	8.601024079	5.263866142	0.001295183	-3.337157937	0.0989499
ENSMUSG00000023047	Amhr2	7.04807002	3.719660268	0.000509562	-3.328409752	0.099551734
ENSMUSG00000026193	Fn1	5.655912891	2.340123032	0.002208091	-3.315789858	0.100426377
ENSMUSG00000038227	Hoxa9	5.655912891	2.340123032	0.001117591	-3.315789858	0.100426377
ENSMUSG00000062661	Ncs1	9.516455073	6.203520215	0.001040174	-3.312934858	0.100625311
ENSMUSG00000021759	Ppap2a	12.23191919	8.935029767	0.001292391	-3.29688942	0.101750697
ENSMUSG000000091371	Gm17397	6.247043702	2.975693565	0.001036656	-3.271350137	0.103567974
ENSMUSG00000025993	Slc40a1	10.3844577	7.116608313	0.001302922	-3.267849383	0.103819591
ENSMUSG00000030671	Pde3b	7.567861677	4.308816956	0.00076635	-3.259044721	0.104455132
ENSMUSG00000020604	Arsfg	10.48556755	7.226650863	0.001328435	-3.258916685	0.104464402
ENSMUSG00000022528	Hes1	5.590680285	2.340123032	0.001610157	-3.250557253	0.105071459
ENSMUSG00000028195	Cyr61	5.590680285	2.340123032	0.005743253	-3.250557253	0.105071459
ENSMUSG00000020844	Nxn	7.533901451	4.308816956	0.000830507	-3.225084495	0.106943115
ENSMUSG00000040189	Ccdc114	5.556897593	2.340123032	0.001390178	-3.216774561	0.107560885
ENSMUSG00000054423	Cadps	10.20739566	6.99744752	0.001557537	-3.209948137	0.108071039
ENSMUSG00000032547	Ryk	11.59855721	8.39928654	0.001664083	-3.199270667	0.108873846
ENSMUSG00000039633	Lonr1f	9.476813204	6.280011482	0.001639152	-3.196801722	0.109060326
ENSMUSG00000030737	Slico2b1	7.129969095	3.950414567	0.000388271	-3.179554528	0.11037195
ENSMUSG00000023349	Clec4n	7.481411087	4.308816956	0.002187754	-3.172594131	0.110905735
ENSMUSG00000003411	Rab3b	5.486800881	2.340123032	0.001297287	-3.146677848	0.112916025
ENSMUSG00000036523	Greb1	6.710355783	3.582794738	0.001201178	-3.127561045	0.114422205
ENSMUSG000000085129	5031425F14Rik	6.710355783	3.582794738	0.001053606	-3.127561045	0.114422205
ENSMUSG00000025746	Il6	10.07796238	6.951546072	0.002261094	-3.126416308	0.114513032
ENSMUSG00000044645	Gm7334	7.260357211	4.142724344	0.00202064	-3.117632866	0.115212338
ENSMUSG00000038418	Egr1	11.4574667	8.342700435	0.002180686	-3.114766263	0.11544149
ENSMUSG00000031024	St5	9.215613832	6.101762152	0.0018267	-3.11385168	0.115514697
ENSMUSG00000043085	Tmem82	5.450397817	2.340123032	0.00248591	-3.110274785	0.115801449
ENSMUSG00000031722	Hp	11.46142135	8.351551832	0.00228909	-3.109869522	0.115833983
ENSMUSG00000047415	Cpr68	8.286299766	5.1853677	0.001731668	-3.100932066	0.116553799

ENSMUSG00000072437	Nanos1	8.609196527	5.508337048	0.001410769	-3.100859479	0.116559663
ENSMUSG00000000942	Hoxa4	6.813181831	3.719660268	0.000976478	-3.093521563	0.117154026
ENSMUSG000000041481	Serpina3g	6.514894574	3.424201757	0.002932325	-3.090692817	0.11738396
ENSMUSG000000030785	Cox6a2	9.365445238	6.280011482	0.002246431	-3.085433756	0.117812641
ENSMUSG000000026915	Strpb	8.653335505	5.571023731	0.001925812	-3.082311774	0.118067862
ENSMUSG000000020583	Matn3	6.04390885	2.975693565	0.001088754	-3.068215285	0.119227151
ENSMUSG000000020798	Spns3	6.04390885	2.975693565	0.001267824	-3.068215285	0.119227151
ENSMUSG000000047562	Mmp10	8.649378228	5.601351907	0.002982416	-3.048026321	0.120907335
ENSMUSG000000092362	Gm20392	5.374631139	2.340123032	0.016360653	-3.034508107	0.122045575
ENSMUSG000000032204	Aqp9	9.859033891	6.829939964	0.002903494	-3.029093927	0.122504451
ENSMUSG000000031543	Ank1	6.443337212	3.424201757	0.001643238	-3.019135455	0.123352986
ENSMUSG000000070873	Llra5	5.99455279	2.975693565	0.002855925	-3.018859225	0.123376606
ENSMUSG000000027082	Trpl	6.247043702	3.231972817	0.002133849	-3.015070886	0.123701004
ENSMUSG000000067629	Syngap1	6.58304994	3.582794738	0.000889845	-3.000255202	0.124977789
ENSMUSG000000026639	Lamb3	5.335153733	2.340123032	0.008891468	-2.9950307	0.125431299
ENSMUSG000000070576	Mn1	5.335153733	2.340123032	0.001241379	-2.9950307	0.125431299
ENSMUSG000000004668	Abca13	6.935417411	3.950414567	0.002242072	-2.985002845	0.126306182
ENSMUSG000000037979	Ccdc92	9.275886988	6.298511735	0.002642516	-2.977375253	0.126975737
ENSMUSG000000072494	Ppp1r3e	9.234225882	6.261268831	0.00293174	-2.972957051	0.127365191
ENSMUSG000000085126	Gm12589	7.270707967	4.308816956	0.003571378	-2.961891011	0.128345889
ENSMUSG000000083307	AA414768	11.15313315	8.193148403	0.003393356	-2.959984751	0.128515587
ENSMUSG000000046841	Ckap4	12.67251136	9.712567456	0.003359588	-2.9599439	0.128519226
ENSMUSG000000062822	4833420G17Rik	10.31496953	7.355538829	0.003137366	-2.959430701	0.128564951
ENSMUSG000000054263	Lifr	7.260357211	4.308816956	0.001381372	-2.951540255	0.12927003
ENSMUSG000000052353	9930013L23Rik	8.737756602	5.797178647	0.004169563	-2.940577955	0.130256028
ENSMUSG000000051747	Ttn	7.32137404	4.384306928	0.003476054	-2.937067112	0.130573396
ENSMUSG000000051984	Sec31b	6.348552274	3.424201757	0.001774273	-2.924350517	0.131729419
ENSMUSG000000015854	Cd5l	6.973957154	4.05043303	0.001946661	-2.923524124	0.131804897
ENSMUSG000000006445	Epha2	8.913021875	5.992186954	0.003120393	-2.920834921	0.132050812
ENSMUSG000000068697	Myoz1	8.060523667	5.144389383	0.003264934	-2.916134284	0.132481766
ENSMUSG000000021765	Fst	5.252686104	2.340123032	0.020790394	-2.912563072	0.132810115
ENSMUSG000000051236	Msrb3	5.252686104	2.340123032	0.004780411	-2.912563072	0.132810115
ENSMUSG000000084190	Gm11869	5.252686104	2.340123032	0.00168594	-2.912563072	0.132810115
ENSMUSG000000022228	Ppm1j	9.348461099	6.438488823	0.003592698	-2.909972276	0.13304883
ENSMUSG000000056004	9330182L06Rik	6.137774446	3.231972817	0.001804975	-2.905801629	0.133434013
ENSMUSG000000031410	Nxf7	5.209546918	2.340123032	0.006304473	-2.869423886	0.136841347
ENSMUSG000000053617	Sh3pxd2k	12.88406497	10.04268617	0.0046986	-2.8413788	0.139527481
ENSMUSG000000040086	Tnni3k	5.806938004	2.975693565	0.003054471	-2.831244439	0.140511056
ENSMUSG000000055561	Spink5	5.806938004	2.975693565	0.007487289	-2.831244439	0.140511056
ENSMUSG000000021565	Slc6a19	5.165025496	2.340123032	0.017180742	-2.824902464	0.141133092
ENSMUSG000000032035	Ets1	5.165025496	2.340123032	0.010246271	-2.824902464	0.141133092
ENSMUSG000000092572	Serpinp10-ps	5.165025496	2.340123032	0.013758886	-2.824902464	0.141133092
ENSMUSG000000036902	Neto2	8.580388023	5.770807169	0.004436037	-2.809580854	0.142636899
ENSMUSG000000001249	Hpn	8.281193494	5.475914986	0.005999483	-2.805278508	0.14306629
ENSMUSG000000023046	Igfbp6	5.777993082	2.975693565	0.005632464	-2.802299517	0.143358612
ENSMUSG000000027546	Atp9a	6.22584801	3.424201757	0.004416595	-2.801646253	0.143423541
ENSMUSG000000037868	Egr2	10.78329146	7.987039276	0.005330407	-2.79625218	0.143960789
ENSMUSG000000026073	Il1r2	8.440827756	5.66012136	0.004769222	-2.780706396	0.145520429
ENSMUSG000000056643	Chst13	5.119026678	2.340123032	0.007645896	-2.778903645	0.145702381
ENSMUSG000000021403	Serpinp9b	9.966299612	7.19746397	0.005745235	-2.768835642	0.146722737
ENSMUSG000000010142	Tnfrsf13b	6.182489779	3.424201757	0.002773554	-2.758288022	0.147799365
ENSMUSG000000003452	Bidc1	6.973957154	4.228536321	0.003806118	-2.745420833	0.149123462
ENSMUSG000000052364	B630019K06Rik	8.968069918	6.223030098	0.005540809	-2.74503982	0.149162851
ENSMUSG000000058908	Pla2g2a	5.718268025	2.975693565	0.008845037	-2.74257446	0.149417967
ENSMUSG000000019944	Rhobtb1	7.04807002	4.308816956	0.005144091	-2.739253063	0.149762356
ENSMUSG0000000014164	Klhl3	5.071444736	2.340123032	0.026284229	-2.731321703	0.150587956
ENSMUSG000000027864	Ptfrn	5.071444736	2.340123032	0.016643052	-2.731321703	0.150587956
ENSMUSG000000054200	O3far1	5.071444736	2.340123032	0.009582634	-2.731321703	0.150587956
ENSMUSG000000067879	3110035E14Rik	5.071444736	2.340123032	0.018068734	-2.731321703	0.150587956
ENSMUSG000000066510	Ankdd1a	6.443337212	3.719660268	0.006528461	-2.723676944	0.151388031
ENSMUSG0000000025422	Agap2	6.288515281	3.582794738	0.005877121	-2.705720543	0.153284046
ENSMUSG000000031442	Mcf2l	5.917155866	3.231972817	0.002177567	-2.685183049	0.155481728
ENSMUSG000000020908	Myh3	5.022161696	2.340123032	0.026237482	-2.682038663	0.155820973
ENSMUSG000000039385	Cdh6	5.022161696	2.340123032	0.032640722	-2.682038663	0.155820973
ENSMUSG000000052013	Btla	5.022161696	2.340123032	0.005853401	-2.682038663	0.155820973
ENSMUSG000000072653	Zfp783	5.022161696	2.340123032	0.012345474	-2.682038663	0.155820973
ENSMUSG000000014782	Plekha4	6.909138098	4.228536321	0.009146696	-2.680601778	0.155976244
ENSMUSG000000033863	Klf9	11.34392891	8.663742531	0.007149341	-2.680186381	0.156021161
ENSMUSG000000034394	Lif	10.82861105	8.153204422	0.007690988	-2.675406627	0.15638928
ENSMUSG000000021200	Asb2	11.52380494	8.859483848	0.007722174	-2.664321092	0.157746391
ENSMUSG000000055027	Smyd1	6.247043702	3.582794738	0.010616468	-2.664248965	0.157754278
ENSMUSG000000027833	Shox2	7.311382463	4.648703026	0.006054491	-2.662679438	0.157925994
ENSMUSG000000022178	Jub	8.899758259	6.24227729	0.006862508	-2.657480969	0.158496076
ENSMUSG000000076720	Gm16633	6.798935394	4.142724344	0.005540101	-2.65621105	0.158635653

ENSMUSG00000059336	Slc14a1	5.623673111	2.975693565	0.006876303	-2.647979546	0.159543358
ENSMUSG00000023032	Slc4a8	8.306545924	5.66012136	0.006635624	-2.646424565	0.159715411
ENSMUSG00000073802	Cdkn2b	11.55216042	8.914272674	0.008110587	-2.637887742	0.160663293
ENSMUSG00000027210	Meis2	4.971045297	2.340123032	0.01108438	-2.630922264	0.161440867
ENSMUSG00000029059	2810405K02Rik	4.971045297	2.340123032	0.0211725357	-2.630922264	0.161440867
ENSMUSG00000037129	Tmprss13	4.971045297	2.340123032	0.039539297	-2.630922264	0.161440867
ENSMUSG00000069805	Fbp1	4.971045297	2.340123032	0.037215329	-2.630922264	0.161440867
ENSMUSG00000079445	B3gnt7	6.348552274	3.719660268	0.005740055	-2.628892006	0.161668218
ENSMUSG00000054843	Atrn1l	11.13556192	8.514108977	0.00841035	-2.621452942	0.162503991
ENSMUSG00000046794	Ppp1r3b	10.57275935	7.958349176	0.008742719	-2.614410176	0.163299222
ENSMUSG00000009376	Met	6.328818459	3.719660268	0.011430084	-2.609158191	0.16389478
ENSMUSG00000059674	Cdh24	7.961840705	5.37390112	0.009031502	-2.587939585	0.166323095
ENSMUSG00000047712	Ust	10.27058112	7.684741341	0.009407119	-2.585839783	0.16656535
ENSMUSG00000004105	Angptl2	12.04465838	9.459825381	0.009207503	-2.584832997	0.166681628
ENSMUSG00000027221	Chst1	6.424875349	3.840967246	0.003653538	-2.583908103	0.16678852
ENSMUSG00000025494	Sigirr	5.556897593	2.975693565	0.004034638	-2.581204028	0.167101429
ENSMUSG00000029864	Gstk1	4.917946495	2.340123032	0.024120098	-2.577823462	0.167493445
ENSMUSG00000055301	Adh7	4.917946495	2.340123032	0.02579376	-2.577823462	0.167493445
ENSMUSG00000003484	Cyp4f18	9.054393548	6.487643992	0.009122558	-2.566749555	0.168784046
ENSMUSG00000038042	Ptpdc1	8.375249324	5.823068939	0.009129221	-2.552180385	0.17049716
ENSMUSG00000037991	A63005G03Rik	6.599594561	4.05043303	0.007607676	-2.549161531	0.170854301
ENSMUSG00000035228	Ccdc106	9.244754503	6.697083154	0.010258026	-2.547671349	0.17103087
ENSMUSG00000024610	Cd74	16.19503703	13.64841593	0.010392891	-2.546621099	0.171155422
ENSMUSG00000064427	SNORA42	5.77793082	3.231972817	0.014265944	-2.546020265	0.171226717
ENSMUSG00000022218	Tgm1	8.490339873	5.945883595	0.011700452	-2.544456278	0.17141244
ENSMUSG00000017724	Etv4	8.389555074	5.848495556	0.008959653	-2.541059519	0.171816498
ENSMUSG00000036019	Tmtc2	8.04252785	5.508337048	0.009548499	-2.534190802	0.172636473
ENSMUSG00000026475	Rgs16	6.986577563	4.455598204	0.011439856	-2.530979359	0.17302119
ENSMUSG00000024486	Hbegf	9.011877407	6.487643992	0.011509538	-2.524233415	0.17383212
ENSMUSG00000009093	Gstt4	7.814078057	5.30151598	0.014754569	-2.512562077	0.175244118
ENSMUSG00000074272	Ceacam1	9.578116158	7.074410307	0.011933629	-2.503705851	0.176323192
ENSMUSG00000053338	Tarm1	11.20796476	8.709211351	0.012102173	-2.498753411	0.176929509
ENSMUSG00000021822	Plau	14.68871461	12.19662036	0.011941112	-2.492094255	0.177478063
ENSMUSG00000031101	Sash3	9.937384876	7.449288498	0.011734578	-2.488096378	0.178241307
ENSMUSG00000033565	Rbfox2	9.288663131	6.804333414	0.011266792	-2.484329717	0.178707276
ENSMUSG00000074657	Klf5a	7.398904683	4.918971921	0.009655228	-2.479932762	0.17925276
ENSMUSG00000031451	Gas6	13.64344322	11.16500561	0.012330117	-2.478437605	0.179438627
ENSMUSG00000027784	Ppm1l	10.21812063	7.746464254	0.012172263	-2.471656372	0.180284045
ENSMUSG00000085316	D33005G23Rik	6.855092779	4.384306928	0.012630811	-2.470785851	0.180392861
ENSMUSG00000053395	Cacng8	8.130341345	5.66012136	0.011816296	-2.470219986	0.18046363
ENSMUSG00000015852	Fcrls	9.40822207	6.939838055	0.01167345	-2.468384016	0.180693434
ENSMUSG00000022220	Adcy4	4.805102295	2.340123032	0.052652454	-2.464979263	0.181120373
ENSMUSG00000029406	Pitpnm2	11.20594575	8.743237248	0.01269611	-2.462708501	0.181405676
ENSMUSG00000027199	Gatm	12.37176074	9.915675332	0.013048961	-2.45608541	0.182240383
ENSMUSG00000025150	Cbr2	11.14402282	8.702308772	0.013501362	-2.441714052	0.184064837
ENSMUSG00000048416	Mlf1	5.863115281	3.424201757	0.01180908	-2.438913524	0.184422486
ENSMUSG00000042439	Zfp532	6.019444463	3.582794738	0.013353139	-2.436649725	0.184712099
ENSMUSG00000025804	Ccr1	8.781803244	6.352619322	0.014794975	-2.429183922	0.185670443
ENSMUSG00000050578	Mmp13	13.49453361	11.06565445	0.014173933	-2.428879159	0.18570967
ENSMUSG00000078816	Prkcc	9.613073682	7.19746397	0.014997814	-2.415609712	0.187425647
ENSMUSG00000032109	Nlrx1	10.7252685	8.315815503	0.014613293	-2.409452999	0.188227197
ENSMUSG00000022208	Jph4	4.744943019	2.340123032	0.020784747	-2.404819986	0.188832633
ENSMUSG00000030653	Pde2a	11.47210109	9.072522615	0.015162839	-2.399578477	0.189519936
ENSMUSG00000055675	Kbtbd11	8.16955965	5.770807169	0.011258168	-2.398752481	0.189628474
ENSMUSG00000025140	Pycr1	10.29611291	7.8991969	0.015090592	-2.396916014	0.189870014
ENSMUSG00000025383	Il23a	7.311382463	4.918971921	0.021218714	-2.392410542	0.190463897
ENSMUSG00000041268	Dmxl2	10.64010364	8.255786018	0.015701133	-2.384317617	0.191535323
ENSMUSG00000085282	Gm15663	5.806938004	3.424201757	0.019788544	-2.382736247	0.191745384
ENSMUSG00000015846	Rxra	7.993410927	5.631042181	0.014267463	-2.362368747	0.194471582
ENSMUSG00000054385	Ceacam2	5.335153733	2.975693565	0.029258556	-2.359460168	0.194864046
ENSMUSG00000000915	Hip1r	8.538208374	6.183740302	0.018715329	-2.354468072	0.195539494
ENSMUSG00000030745	Il21r	8.97441018	6.625741746	0.016387554	-2.348668433	0.196327145
ENSMUSG00000055945	Prr18	6.067960538	3.719660268	0.01673642	-2.34830027	0.196377253
ENSMUSG00000000938	Hoxa10	4.681962462	2.340123032	0.059127848	-2.34183943	0.197258664
ENSMUSG00000036528	Ppifbp2	4.681962462	2.340123032	0.09066191	-2.34183943	0.197258664
ENSMUSG00000046747	Gm9B12	4.681962462	2.340123032	0.051058663	-2.34183943	0.197258664
ENSMUSG00000082920	Gm13864	4.681962462	2.340123032	0.040550203	-2.34183943	0.197258664
ENSMUSG00000091089	A930018M24Rik	4.681962462	2.340123032	0.017615977	-2.34183943	0.197258664
ENSMUSG00000082740	Gm14127	6.648113797	4.308816956	0.016519331	-2.339296841	0.197606617
ENSMUSG00000023826	Park2	6.566312297	4.228536321	0.014875625	-2.337775977	0.19781504
ENSMUSG00000015968	Cacna1d	8.990139966	6.654705152	0.016172021	-2.335434815	0.198136309
ENSMUSG00000074635	311070M22Rik	6.04390885	3.719660268	0.014855685	-2.324248582	0.199678571
ENSMUSG00000050711	Scg2	5.748445129	3.424201757	0.026243525	-2.324243372	0.199679292
ENSMUSG00000020836	Caro6	6.549377051	4.228536321	0.009583725	-2.320840731	0.200150798

ENSMUSG00000001507	Itga3	6.160307091	3.840967246	0.021182223	-2.319339845	0.20035913
ENSMUSG000000037940	Inpp4b	10.78058074	8.461933077	0.018545113	-2.318647661	0.200455282
ENSMUSG000000092133	Gm17399	6.961225003	4.648703026	0.018313151	-2.312521977	0.201308225
ENSMUSG000000004113	Cacna1b	9.598781851	7.292536705	0.019472043	-2.306245146	0.202185978
ENSMUSG000000069920	B3gnt9-ps	7.936077064	5.631042181	0.019196601	-2.305034884	0.202355661
ENSMUSG000000043300	B3galnt1	9.664951444	7.364318247	0.018751994	-2.300633197	0.202973994
ENSMUSG000000046733	Gprc5a	7.673009635	5.37390112	0.022690811	-2.299108515	0.203188617
ENSMUSG000000028751	Pla2g2e	7.771003698	5.475914986	0.01766631	-2.295088712	0.203755554
ENSMUSG000000026121	Sema4c	12.43690643	10.14294176	0.019887111	-2.293964661	0.203914368
ENSMUSG000000071537	Klrg2	8.239678974	5.945883595	0.017187207	-2.293795379	0.203938296
ENSMUSG000000080950	Gm7278	9.121630434	6.829939964	0.021073961	-2.29169047	0.204236062
ENSMUSG000000049515	Espnl	10.28212638	7.992709406	0.019606197	-2.289416973	0.204558165
ENSMUSG000000015709	Arnt2	9.445209408	7.157603937	0.021030847	-2.287605471	0.204815177
ENSMUSG000000021758	Ddx4	4.615861582	2.340123032	0.088304434	-2.27573855	0.206506837
ENSMUSG000000030206	Gsg1	4.615861582	2.340123032	0.044981173	-2.27573855	0.206506837
ENSMUSG000000041954	Tnfrsf18	4.615861582	2.340123032	0.05076903	-2.27573855	0.206506837
ENSMUSG000000081565	Rps12-ps5	4.615861582	2.340123032	0.013783177	-2.27573855	0.206506837
ENSMUSG000000085431	4930440119Rik	4.615861582	2.340123032	0.122487983	-2.27573855	0.206506837
ENSMUSG000000091586	Cyp4f17	4.615861582	2.340123032	0.042640579	-2.27573855	0.206506837
ENSMUSG000000082718	Gm14928	6.114880507	3.840967246	0.02794227	-2.273913261	0.206768273
ENSMUSG000000020407	Upp1	8.641430949	6.370210048	0.024165392	-2.271220901	0.207154505
ENSMUSG000000036339	6720456H20Rik	11.2012237	8.932082694	0.020932666	-2.269141006	0.207453369
ENSMUSG000000020256	Aldh112	12.12521191	9.86867222	0.021668769	-2.256539685	0.209273322
ENSMUSG000000018927	Ccl6	9.8760644	7.620255746	0.02241587	-2.255808655	0.20937939
ENSMUSG000000042770	Hebp1	9.767081166	7.513830366	0.021246901	-2.2532508	0.209750943
ENSMUSG000000029814	Igf2bp3	5.835304397	3.582794738	0.018144777	-2.252509659	0.209858724
ENSMUSG000000028188	Spata1	6.091613373	3.840967246	0.018992668	-2.250646127	0.210129974
ENSMUSG000000060568	Fam78b	11.9577408	9.707406235	0.02195416	-2.250334566	0.210175358
ENSMUSG000000022269	39517	6.387222177	4.142724344	0.029019824	-2.244497833	0.21102739
ENSMUSG000000044052	Ccr10	6.549377051	4.308816956	0.01985207	-2.240560095	0.211604161
ENSMUSG000000037989	Wnk2	5.209546918	2.975693565	0.044620045	-2.233853353	0.212590148
ENSMUSG000000024867	Pip5k1b	9.516455073	7.283307056	0.022736795	-2.233148017	0.212694109
ENSMUSG000000021265	Slc25a29	8.086941573	6.855098193	0.023373479	-2.23184338	0.212886537
ENSMUSG000000049532	Sall2	5.655912891	3.424201757	0.021348491	-2.231711134	0.212906052
ENSMUSG000000025348	Itga7	6.615950586	4.384306928	0.026601431	-2.231643658	0.21291601
ENSMUSG000000054855	Rnd1	11.6335282	9.411978409	0.023912204	-2.221549792	0.214410908
ENSMUSG000000017969	Ptgis	4.546287643	2.340123032	0.046230951	-2.206164661	0.216709663
ENSMUSG000000037846	Rtkn2	4.546287643	2.340123032	0.042250985	-2.206164661	0.216709663
ENSMUSG000000084922	9330179D12Rik	4.546287643	2.340123032	0.060370392	-2.206164661	0.216709663
ENSMUSG000000089822	Gm15759	4.546287643	2.340123032	0.083624394	-2.206164661	0.216709663
ENSMUSG000000030410	Dmwd	11.764591118	9.564390006	0.024638567	-2.200201171	0.217607295
ENSMUSG000000026883	Dab2ip	7.463480449	5.263866142	0.020948522	-2.199614308	0.217695832
ENSMUSG000000078821	Gm17414	7.207456678	5.01361896	0.026989336	-2.193837718	0.21856924
ENSMUSG000000026357	Rgs18	5.165025496	2.975693565	0.009287031	-2.189331931	0.219252936
ENSMUSG000000038168	Leprel1	5.165025496	2.975693565	0.067913637	-2.189331931	0.219252936
ENSMUSG000000029761	Cald1	11.74340294	9.558669347	0.025942663	-2.184733591	0.219952882
ENSMUSG000000047880	Cxcr5	6.999088182	4.81726305	0.033097326	-2.181825132	0.220396752
ENSMUSG000000024670	Cd6	5.413026059	3.231972817	0.049155011	-2.181053243	0.220514703
ENSMUSG000000054418	2900041M22Rik	5.413026059	3.231972817	0.015403131	-2.181053243	0.220514703
ENSMUSG000000069792	Gm11428	10.69391787	8.514108977	0.027031648	-2.179808897	0.220704982
ENSMUSG000000090523	Gypc	7.32137404	5.144389383	0.022978806	-2.176984657	0.221137461
ENSMUSG000000037606	Osbpl5	5.890392305	3.719660268	0.018096777	-2.170732037	0.222097947
ENSMUSG000000047409	Ctdspl	8.996384163	6.829939964	0.0247291	-2.166444199	0.222759027
ENSMUSG000000006682	Cd52	13.9559871	11.80191514	0.027919996	-2.154071962	0.224677574
ENSMUSG000000027261	Hao1	5.119026678	2.975693565	0.023402224	-2.143333113	0.226356225
ENSMUSG000000082160	Gm11578	5.119026678	2.975693565	0.072116736	-2.143333113	0.226356225
ENSMUSG000000083488	Gm8534	5.119026678	2.975693565	0.010269341	-2.143333113	0.226356225
ENSMUSG0000000086712	Al427809	5.374631139	3.231972817	0.040179128	-2.142658323	0.226462123
ENSMUSG000000060621	Nkpd1	7.01149091	4.869069107	0.022230267	-2.142421804	0.226499253
ENSMUSG000000080774	Gm9143	6.368017762	4.228536321	0.026226623	-2.139481442	0.226961353
ENSMUSG000000085116	Gm2735	6.784546276	4.648703026	0.02266161	-2.13584325	0.227534426
ENSMUSG000000022094	Slc39a14	13.86465975	11.73120548	0.029323817	-2.133454274	0.227911516
ENSMUSG000000025185	Loxl4	4.472819751	2.340123032	0.080895399	-2.132696718	0.228031223
ENSMUSG000000035275	Raver2	4.472819751	2.340123032	0.082959735	-2.132696718	0.228031223
ENSMUSG000000083661	Gm11473	4.472819751	2.340123032	0.0788557	-2.132696718	0.228031223
ENSMUSG000000085378	Gm11415	4.472819751	2.340123032	0.075526276	-2.132696718	0.228031223
ENSMUSG000000046908	Ltb4r1	5.556897593	3.424201757	0.039147177	-2.132695836	0.228031362
ENSMUSG000000064841	SNORA47	7.174757225	5.058601395	0.028712127	-2.11615583	0.230660707
ENSMUSG000000029468	P2rx7	12.90080375	10.78776995	0.030703367	-2.113033807	0.231160403
ENSMUSG000000031026	Trim66	6.75532831	4.648703026	0.030980999	-2.106625285	0.232189513
ENSMUSG000000026068	Il18rap	10.18433687	8.080523587	0.031235839	-2.103813282	0.232642522
ENSMUSG000000089818	Gm15950	9.600832231	7.505919027	0.033205263	-2.094913204	0.234082144
ENSMUSG000000083807	Gm13466	8.296458379	6.203520215	0.030347185	-2.092938164	0.234402821
ENSMUSG000000024530	Slmo1	7.688526236	5.601351907	0.028834902	-2.087174329	0.235341177

ENSMUSG00000032413	Rasa2	11.16565323	9.085842884	0.033125393	-2.079810343	0.236545506
ENSMUSG00000032724	Abtb2	12.07999595	10.00111069	0.033760979	-2.078885268	0.236697231
ENSMUSG00000083282	Ctsf	11.7577161	9.679563454	0.033298153	-2.078152648	0.236817459
ENSMUSG00000063851	Rnf183	8.113201333	6.037032521	0.0371208	-2.076168812	0.237143329
ENSMUSG00000004709	Cd244	6.770011577	4.707276535	0.024036135	-2.062735042	0.23936182
ENSMUSG00000054409	Tmem74	5.486800881	3.424201757	0.037582175	-2.062599124	0.239384372
ENSMUSG00000025213	Kazald1	5.294529046	3.231972817	0.030818119	-2.062556229	0.23939149
ENSMUSG00000021872	Rnase10	4.394948931	2.340123032	0.194611017	-2.054825899	0.240677653
ENSMUSG00000024354	Slc23a1	4.394948931	2.340123032	0.04176995	-2.054825899	0.240677653
ENSMUSG00000035451	Foxa1	4.394948931	2.340123032	0.089800212	-2.054825899	0.240677653
ENSMUSG00000052281	Gm15024	4.394948931	2.340123032	0.120118099	-2.054825899	0.240677653
ENSMUSG00000021362	Gcm2	8.507930987	6.455061911	0.037610692	-2.052869076	0.241004322
ENSMUSG00000005413	Hmox1	17.01856412	14.96703202	0.035598606	-2.051532097	0.24122777
ENSMUSG00000063447	1700013N18Rik	5.022161696	2.975693565	0.071247053	-2.046468131	0.242075985
ENSMUSG00000046668	Cxxc5	7.060059224	5.01361896	0.027985896	-2.046440264	0.242080661
ENSMUSG00000039116	Gpr126	6.091613373	4.05043303	0.062351974	-2.041180343	0.242964873
ENSMUSG00000030162	Olr1	5.623673111	3.582794738	0.075013755	-2.040878373	0.243015734
ENSMUSG00000027111	Itpga	12.03445506	9.99688647	0.036419171	-2.03756859	0.243573892
ENSMUSG00000060036	Rpl3	13.72219031	11.68556754	0.036822264	-2.036622777	0.243733629
ENSMUSG00000029304	Spp1	19.21451423	17.1783845	0.036899029	-2.036129737	0.243816939
ENSMUSG00000021876	Rnase4	11.32420926	9.292982399	0.036942918	-2.031226863	0.244646939
ENSMUSG00000037211	Spry1	5.450397817	3.424201757	0.058860281	-2.02619606	0.245501533
ENSMUSG00000020712	Tcam1	9.14148693	7.116608313	0.036811434	-2.024878617	0.245725823
ENSMUSG00000031502	Col4a1	5.252686104	3.231972817	0.030673618	-2.020713288	0.246436305
ENSMUSG00000020377	Ltc4s	8.613265451	6.596181747	0.036806973	-2.017083704	0.247057078
ENSMUSG00000062270	Morf411	9.639245753	7.627564997	0.038816162	-2.011680756	0.247984051
ENSMUSG00000022272	Myo10	15.5774457	13.57132412	0.039582203	-2.006121575	0.248941459
ENSMUSG00000071757	Zhx2	7.445323775	5.442727489	0.045213959	-2.002596287	0.249550502
ENSMUSG00000055523	Gucy2g	7.260357211	5.263866142	0.039979629	-1.996491069	0.250608791
ENSMUSG00000073519	Gm10524	6.58304994	4.587429668	0.037214886	-1.995620271	0.250760102
ENSMUSG00000022114	Spry2	10.92176645	8.926170422	0.041021172	-1.995596031	0.250764316
ENSMUSG00000068735	Trp53i11	4.971045297	2.975693565	0.019308273	-1.995351732	0.250806782
ENSMUSG00000028121	Bcar3	11.60827178	9.613041184	0.040652613	-1.995230598	0.250827842
ENSMUSG00000030156	Cd69	10.68331442	8.688403712	0.04203821	-1.994910707	0.250883465
ENSMUSG00000021913	Ogdhl	5.943425194	3.950414567	0.041827381	-1.993010627	0.251214105
ENSMUSG00000062785	Kcnc3	8.380033694	6.387587296	0.039427619	-1.992446397	0.251312372
ENSMUSG00000042216	Sgsm1	8.090026329	6.101762152	0.040345618	-1.988264177	0.252041957
ENSMUSG00000027254	Mtap1a	6.695046423	4.707276535	0.028661826	-1.987769888	0.252128325
ENSMUSG00000073854	Al427809	9.249990135	7.264668323	0.0417533	-1.985321813	0.252556519
ENSMUSG00000039891	Txinb	5.163690196	5.1853677	0.047690939	-1.978322496	0.253378479
ENSMUSG00000026994	Gaint3	9.901239027	7.923149879	0.043843193	-1.978089147	0.253282584
ENSMUSG00000083019	Gm6222	5.209546918	3.231972817	0.027471232	-1.977574102	0.253916473
ENSMUSG00000084202	Gm5398	5.209546918	3.231972817	0.050084051	-1.977574102	0.253916473
ENSMUSG00000027200	Sema6d	7.118550806	5.144389383	0.047289915	-1.974161422	0.254517821
ENSMUSG00000004568	Arhgef18	4.312049966	2.340123032	0.040073954	-1.971926933	0.254912331
ENSMUSG00000009614	Sardh	4.312049966	2.340123032	0.110996833	-1.971926933	0.254912331
ENSMUSG00000019489	Cd70	4.312049966	2.340123032	0.22820172	-1.971926933	0.254912331
ENSMUSG00000021636	Marveld2	4.312049966	2.340123032	0.180724182	-1.971926933	0.254912331
ENSMUSG00000024388	Myo7b	4.312049966	2.340123032	0.067830742	-1.971926933	0.254912331
ENSMUSG00000026580	Selp	4.312049966	2.340123032	0.213844891	-1.971926933	0.254912331
ENSMUSG00000029909	Prss37	4.312049966	2.340123032	0.171370512	-1.971926933	0.254912331
ENSMUSG00000043398	Gpr135	4.312049966	2.340123032	0.077386781	-1.971926933	0.254912331
ENSMUSG00000051159	Cited1	4.312049966	2.340123032	0.12210359	-1.971926933	0.254912331
ENSMUSG00000064023	Klk8	4.312049966	2.340123032	0.158365928	-1.971926933	0.254912331
ENSMUSG00000005803	Sqrdl	12.10187653	10.13014155	0.043051486	-1.971173498	0.25494625
ENSMUSG00000047747	Rnf150	8.596920422	6.625741746	0.039742741	-1.971178676	0.255044576
ENSMUSG00000074570	Cass4	8.756273114	6.791356949	0.04359529	-1.964916165	0.25615409
ENSMUSG00000046245	Pilra	13.80132511	11.83975065	0.044020251	-1.961574458	0.256748107
ENSMUSG00000042265	Trem1	11.16842077	9.217537074	0.045851628	-1.950883697	0.258657746
ENSMUSG00000024140	Epas1	10.36044552	8.41203546	0.044481738	-1.948419735	0.259099882
ENSMUSG00000076617	Ighm	12.28834785	10.34145326	0.045096584	-1.946894592	0.259373934
ENSMUSG00000038518	Jarid2	13.07000794	11.12363048	0.045446521	-1.94637746	0.259466923
ENSMUSG00000047867	Gimap6	6.532239451	4.587429668	0.063737712	-1.944809783	0.259749021
ENSMUSG00000046814	Gchfr	7.408308967	5.475914986	0.042599027	-1.932393981	0.261994062
ENSMUSG00000043017	Ptgir	13.97122311	12.03983899	0.047048001	-1.931384119	0.262177518
ENSMUSG00000060791	Gmfg	8.512295441	6.581170201	0.049611183	-1.931112524	0.262224567
ENSMUSG00000038894	Irs2	9.752399545	7.824852806	0.047440146	-1.927546739	0.262875804
ENSMUSG00000021785	Ngly1	9.726341588	7.805651752	0.049714631	-1.920689836	0.264128185
ENSMUSG00000032786	Alas1	14.98727096	13.06861341	0.04842868	-1.918657548	0.264500518
ENSMUSG00000063354	Slc39a4	11.43695545	9.525816651	0.049642937	-1.911138802	0.265882586
ENSMUSG00000087610	Gm16253	5.335153733	3.424201757	0.047330338	-1.910951976	0.26591702
ENSMUSG00000087041	Gm16295	5.748445129	3.840967246	0.02843986	-1.907477883	0.266558135
ENSMUSG00000079179	1700012B15Rik	12.17215947	10.28020237	0.051329423	-1.891957101	0.269441298
ENSMUSG00000022150	Dab2	15.05515266	13.16353367	0.051424868	-1.891618982	0.269504453

ENSMUSG00000048285	FrmD6	10.936455333	9.045507278	0.051986169	-1.890946047	0.269630191
ENSMUSG00000043939	A530064D06Rik	4.862696374	2.975693565	0.101136331	-1.887002809	0.270368164
ENSMUSG00000006651	Alp1p	8.824544416	6.939838055	0.052062066	-1.884706462	0.270798854
ENSMUSG000000008658	Rbfox1	4.223340379	2.340123032	0.125665809	-1.883217347	0.27107851
ENSMUSG000000031364	Grpr	4.223340379	2.340123032	0.268232818	-1.883217347	0.27107851
ENSMUSG000000032915	Emr4	4.223340379	2.340123032	0.157350484	-1.883217347	0.27107851
ENSMUSG000000033316	Gaint9	4.223340379	2.340123032	0.072354606	-1.883217347	0.27107851
ENSMUSG000000038048	Ctnnap5c	4.223340379	2.340123032	0.251210881	-1.883217347	0.27107851
ENSMUSG000000038173	Enpp6	4.223340379	2.340123032	0.054995336	-1.883217347	0.27107851
ENSMUSG000000038253	Hoxa5	4.223340379	2.340123032	0.139269782	-1.883217347	0.27107851
ENSMUSG000000073534	Gm10532	4.223340379	2.340123032	0.19705638	-1.883217347	0.27107851
ENSMUSG000000074052	BC048644	4.223340379	2.340123032	0.177736783	-1.883217347	0.27107851
ENSMUSG000000079018	Ly6c1	4.223340379	2.340123032	0.21225189	-1.883217347	0.27107851
ENSMUSG000000081751	Gm14251	4.223340379	2.340123032	0.074554079	-1.883217347	0.27107851
ENSMUSG000000084686	SNORA19	4.223340379	2.340123032	0.102969541	-1.883217347	0.27107851
ENSMUSG000000087292	Gm13832	4.223340379	2.340123032	0.128576108	-1.883217347	0.27107851
ENSMUSG000000053318	Slamf8	10.6559668	8.773188988	0.053394301	-1.882777811	0.27116111
ENSMUSG000000022602	Arc	8.16955965	6.298511735	0.054341133	-1.871047914	0.273374785
ENSMUSG000000080845	Gm9115	6.514894574	4.648703026	0.063581467	-1.866191548	0.274296563
ENSMUSG000000049848	Ceacam19	7.04807002	5.1853677	0.071472835	-1.862702232	0.274960766
ENSMUSG000000050965	Prkca	9.14430139	7.283307056	0.055320483	-1.860994334	0.275286481
ENSMUSG000000020598	Nrcam	7.625431346	5.770807169	0.050730156	-1.854624176	0.276504684
ENSMUSG000000053559	Smagp	8.82804977	6.974679934	0.055050643	-1.853369836	0.276745193
ENSMUSG000000067577	A430093F15Rik	7.592816595	5.743935965	0.066521943	-1.848880631	0.277607677
ENSMUSG000000043157	Ar11	10.80657341	8.95839206	0.056569542	-1.848181347	0.277742268
ENSMUSG000000074141	Il4i1	10.64904812	8.802531368	0.058277104	-1.84651675	0.278062915
ENSMUSG000000028073	Pear1	6.948379108	5.102161293	0.056710857	-1.846217814	0.278120537
ENSMUSG000000017607	Tns4	6.22584801	4.384306928	0.046159592	-1.841541082	0.279023573
ENSMUSG000000032679	Cd59a	5.071444736	3.231972817	0.060763772	-1.839471919	0.279424046
ENSMUSG000000034227	Foxj1	5.071444736	3.231972817	0.059830486	-1.839471919	0.279424046
ENSMUSG000000073650	Gm216	5.071444736	3.231972817	0.073442893	-1.839471919	0.279424046
ENSMUSG000000020599	Rgs9	7.436158877	5.601351907	0.073088557	-1.834806969	0.280329025
ENSMUSG000000034557	Zfyve9	4.805102295	2.975693565	0.046188565	-1.82940873	0.281379917
ENSMUSG000000073529	F830208F22Rik	4.805102295	2.975693565	0.087676514	-1.82940873	0.281379917
ENSMUSG000000090252	Gm16028	4.805102295	2.975693565	0.052399272	-1.82940873	0.281379917
ENSMUSG000000037260	Hgsnat	13.09094573	11.26441083	0.059500087	-1.826534904	0.28194098
ENSMUSG000000031129	Sic9a9	8.952096253	7.126967235	0.057445688	-1.825129018	0.282215862
ENSMUSG000000037926	Ssh2	13.20518563	11.38190871	0.059866648	-1.823276915	0.282578398
ENSMUSG000000031780	Ccl17	6.58304994	4.763393193	0.089603297	-1.819656746	0.283288365
ENSMUSG000000053442	4930597021Rik	6.04390885	4.228536321	0.074144058	-1.815372529	0.284130868
ENSMUSG000000041895	Wipi1	8.449957321	6.640296507	0.058456521	-1.809660814	0.285257987
ENSMUSG000000001552	Jup	8.711427502	6.904130843	0.05953359	-1.807296659	0.285725824
ENSMUSG000000027583	Zbtb46	6.114880507	4.308816956	0.053677931	-1.806063551	0.285970146
ENSMUSG000000035274	Tpbg	7.436158877	5.631042181	0.075844221	-1.805116696	0.286157893
ENSMUSG000000031097	Tnni2	9.697889931	7.89314594	0.062018644	-1.804743992	0.286231828
ENSMUSG000000031770	Herpud1	13.49260251	11.69863108	0.064019258	-1.793971428	0.288377112
ENSMUSG000000032507	Fbxl2	5.022161696	3.231972817	0.064387028	-1.790188879	0.28913419
ENSMUSG000000020083	2010107G23Rik	4.127818518	2.340123032	0.262384502	-1.787695486	0.289634329
ENSMUSG000000021097	Climn	4.127818518	2.340123032	0.273359408	-1.787695486	0.289634329
ENSMUSG000000021708	Rasgrf2	4.127818518	2.340123032	0.131091177	-1.787695486	0.289634329
ENSMUSG000000024987	Cyp26a1	4.127818518	2.340123032	0.244599891	-1.787695486	0.289634329
ENSMUSG000000027931	Npr1	4.127818518	2.340123032	0.175104836	-1.787695486	0.289634329
ENSMUSG000000028476	Reck	4.127818518	2.340123032	0.268773453	-1.787695486	0.289634329
ENSMUSG000000030446	Zfp273	4.127818518	2.340123032	0.192047425	-1.787695486	0.289634329
ENSMUSG000000030730	Atp2a1	4.127818518	2.340123032	0.258162558	-1.787695486	0.289634329
ENSMUSG000000034391	Fbxo15	4.127818518	2.340123032	0.113792944	-1.787695486	0.289634329
ENSMUSG000000042671	Rgs8	4.127818518	2.340123032	0.156208052	-1.787695486	0.289634329
ENSMUSG000000048562	Sp8	4.127818518	2.340123032	0.079059944	-1.787695486	0.289634329
ENSMUSG000000051669	AU021092	4.127818518	2.340123032	0.201168312	-1.787695486	0.289634329
ENSMUSG000000057157	Gm6054	4.127818518	2.340123032	0.124417165	-1.787695486	0.289634329
ENSMUSG000000069170	Gpr98	4.127818518	2.340123032	0.225946004	-1.787695486	0.289634329
ENSMUSG000000085976	Gm13816	4.127818518	2.340123032	0.316011143	-1.787695486	0.289634329
ENSMUSG000000087196	Gm13373	4.127818518	2.340123032	0.111930266	-1.787695486	0.289634329
ENSMUSG000000089683	4930570N18Rik	4.127818518	2.340123032	0.290483155	-1.787695486	0.289634329
ENSMUSG000000090599	A730068I03Rik	4.127818518	2.340123032	0.174290995	-1.787695486	0.289634329
ENSMUSG000000025375	Aatk	11.50695761	9.719420484	0.065031801	-1.787537128	0.289666123
ENSMUSG000000078850	Gm2348	5.209546918	3.424201757	0.071326289	-1.785345161	0.290106563
ENSMUSG000000079602	9230102O04Rik	5.209546918	3.424201757	0.07756658	-1.785345161	0.290106563
ENSMUSG000000033644	Pilw12	9.084012824	7.30170756	0.066949363	-1.782305264	0.29071849
ENSMUSG000000021959	Lats2	10.9062852	9.125081185	0.065546368	-1.781847339	0.290810781
ENSMUSG000000041075	Fzd7	12.7131183	10.93265559	0.065662797	-1.780462708	0.291090022
ENSMUSG000000074743	Thbd	7.379909846	5.601351907	0.058335773	-1.778557938	0.291474598
ENSMUSG000000029108	Pcdh7	14.00925096	12.2311948	0.06616813	-1.778056158	0.291575992
ENSMUSG000000027508	Pag1	12.72020868	10.94293902	0.06632769	-1.777269664	0.29173499

ENSMUSG00000001741	I116	11.27626567	9.502167638	0.067006165	-1.77409803	0.292377049
ENSMUSG00000022849	Hspbap1	9.394103603	7.620255746	0.068247305	-1.773847858	0.292427753
ENSMUSG00000025986	Sic39a10	13.732395888	11.95890835	0.066807471	-1.773487528	0.292500799
ENSMUSG00000033147	Sic22a15	6.479562368	4.707276535	0.066669269	-1.772285832	0.29274454
ENSMUSG00000017314	Mpp2	4.744943019	2.975693565	0.156159468	-1.769249454	0.293361316
ENSMUSG00000029596	Sdsl	4.744943019	2.975693565	0.128429966	-1.769249454	0.293361316
ENSMUSG00000037447	Arid5a	10.46207493	8.695373	0.069311363	-1.766701935	0.293879792
ENSMUSG00000074148	Bcl2a1d	11.38138532	9.614880009	0.06879154	-1.766505312	0.293919847
ENSMUSG00000036106	Prr5	5.99455279	4.228536321	0.061387982	-1.766016469	0.294019456
ENSMUSG00000090266	1110005A03Rik	8.748895011	6.986108783	0.068065617	-1.762786228	0.294678513
ENSMUSG00000002250	Ppard	12.65658383	10.89909633	0.069510164	-1.7574875	0.295762798
ENSMUSG00000081695	Rpsa-ps5	7.095438741	5.338176935	0.057912533	-1.757261806	0.295880907
ENSMUSG00000082829	Gm15780	6.137774446	4.384306928	0.066585772	-1.753467518	0.296588072
ENSMUSG00000022836	Mylk	7.896547066	6.143339437	0.070307937	-1.753207629	0.296641504
ENSMUSG00000079173	Zan	8.889729887	7.137252114	0.066104301	-1.752477773	0.296791613
ENSMUSG00000038260	Trpm4	7.719067003	5.969223473	0.077364324	-1.74984353	0.297334025
ENSMUSG00000021356	Irf4	7.806987808	6.058937093	0.070257731	-1.748050715	0.297703747
ENSMUSG00000041911	Dlx1	7.04807002	5.30151598	0.065840638	-1.746554039	0.29801275
ENSMUSG00000037884	1700017G19Rik	4.971045297	3.231972817	0.119239316	-1.73907248	0.299562205
ENSMUSG00000026748	Pixdc2	7.559446378	5.823068939	0.06618584	-1.73637744	0.300122328
ENSMUSG00000084345	Rpl17-ps4	6.443337212	4.707276535	0.06794856	-1.736060677	0.300188231
ENSMUSG0000003824	Syce2	10.93482881	9.20049391	0.07274739	-1.734334905	0.300547536
ENSMUSG00000042622	Maff	11.15522739	9.42251577	0.073867316	-1.732711623	0.300885894
ENSMUSG00000085433	Gm16001	8.04855145	6.316775831	0.073291509	-1.731775619	0.301081168
ENSMUSG00000031762	Mt2	13.58793436	11.85694381	0.073276806	-1.730990542	0.301245054
ENSMUSG00000079455	Gm16026	7.270707967	5.540029001	0.079146277	-1.730678966	0.30131012
ENSMUSG00000048191	Muc6	5.777993082	4.05043303	0.065584296	-1.727560052	0.301962217
ENSMUSG00000092023	Gm17496	6.424875349	4.707276535	0.081131496	-1.717598814	0.304054361
ENSMUSG00000026833	Olfm1	14.60653656	12.88994365	0.075529422	-1.716592905	0.304266434
ENSMUSG00000085812	Gm15843	6.58304994	4.869069107	0.070073462	-1.713980833	0.304817823
ENSMUSG00000013562	4833413E03Rik	5.294529046	3.582794738	0.071826974	-1.711734308	0.305292847
ENSMUSG00000084821	Gm15880	5.294529046	3.582794738	0.07766688	-1.711734308	0.305292847
ENSMUSG00000037375	Hhat	7.01149091	5.30151598	0.070681331	-1.70997493	0.305665381
ENSMUSG00000030589	Rasgrp4	8.748895011	7.041929148	0.078196272	-1.706965862	0.306303581
ENSMUSG00000084925	1810062O18Rik	4.681962462	2.975693565	0.098932332	-1.706268897	0.306451592
ENSMUSG00000040747	Cd53	14.24627289	12.54216525	0.077623275	-1.704107646	0.30691102
ENSMUSG00000078954	Arhgap8	10.75870966	9.056374204	0.077520237	-1.702335457	0.307288257
ENSMUSG00000005125	Ndrp1	12.96727314	11.26850504	0.078545458	-1.698768096	0.308049031
ENSMUSG00000004296	I112b	7.071949333	5.37390112	0.104235199	-1.698048213	0.308202781
ENSMUSG00000030068	Eif4e3	9.008792043	7.310820368	0.07733962	-1.697971675	0.308219133
ENSMUSG00000051457	Spn	12.61737147	10.92155568	0.079287691	-1.695815791	0.308680063
ENSMUSG00000025515	Muc2	5.119026678	3.424201757	0.105918315	-1.694824921	0.308892143
ENSMUSG00000037493	Cib2	5.119026678	3.424201757	0.094966096	-1.694824921	0.308892143
ENSMUSG00000059333	Gm10063	5.119026678	3.424201757	0.064820685	-1.694824921	0.308892143
ENSMUSG00000011179	Odc1	15.12275067	13.43551388	0.080473123	-1.687236791	0.3105211
ENSMUSG00000030825	Hsd17b14	4.917946495	3.231972817	0.081867307	-1.685973678	0.310793088
ENSMUSG00000014704	Hoxa2	4.024165894	2.340123032	0.129372968	-1.684042862	0.311209313
ENSMUSG00000020183	Cpm	4.024165894	2.340123032	0.245181229	-1.684042862	0.311209313
ENSMUSG00000022687	Boc	4.024165894	2.340123032	0.373087129	-1.684042862	0.311209313
ENSMUSG00000025780	Ithi5	4.024165894	2.340123032	0.203654364	-1.684042862	0.311209313
ENSMUSG00000030205	Gprc5d	4.024165894	2.340123032	0.203654364	-1.684042862	0.311209313
ENSMUSG00000036062	N28178	4.024165894	2.340123032	0.277117609	-1.684042862	0.311209313
ENSMUSG00000040998	Npnt	4.024165894	2.340123032	0.277117609	-1.684042862	0.311209313
ENSMUSG00000043089	Mmp1a	4.024165894	2.340123032	0.373087129	-1.684042862	0.311209313
ENSMUSG00000049353	Rd3	4.024165894	2.340123032	0.212666796	-1.684042862	0.311209313
ENSMUSG00000050473	Sic35d3	4.024165894	2.340123032	0.342973611	-1.684042862	0.311209313
ENSMUSG00000050762	Prrs27	4.024165894	2.340123032	0.239395055	-1.684042862	0.311209313
ENSMUSG00000053481	F930015N05Rik	4.024165894	2.340123032	0.212666796	-1.684042862	0.311209313
ENSMUSG00000056383	Al987944	4.024165894	2.340123032	0.218270506	-1.684042862	0.311209313
ENSMUSG00000058897	Col25a1	4.024165894	2.340123032	0.222695559	-1.684042862	0.311209313
ENSMUSG00000062464	Gm9705	4.024165894	2.340123032	0.205597785	-1.684042862	0.311209313
ENSMUSG00000073593	Gm10544	4.024165894	2.340123032	0.342973611	-1.684042862	0.311209313
ENSMUSG00000082057	Gm15789	4.024165894	2.340123032	0.373087129	-1.684042862	0.311209313
ENSMUSG00000082233	Gm6506	4.024165894	2.340123032	0.13737878	-1.684042862	0.311209313
ENSMUSG00000084772	Gm15473	4.024165894	2.340123032	0.373087129	-1.684042862	0.311209313
ENSMUSG00000090709	Gm17173	4.024165894	2.340123032	0.373087129	-1.684042862	0.311209313
ENSMUSG00000090721	Gm17632	4.024165894	2.340123032	0.248196325	-1.684042862	0.311209313
ENSMUSG00000091366	Gm17040	4.024165894	2.340123032	0.342973611	-1.684042862	0.311209313
ENSMUSG00000091665	Gm17101	4.024165894	2.340123032	0.373087129	-1.684042862	0.311209313
ENSMUSG00000031137	Fgf13	6.599594561	4.918971921	0.08124565	-1.680622639	0.311947977
ENSMUSG00000081723	Gm15931	6.443337212	4.763393193	0.089704741	-1.679944018	0.312094747
ENSMUSG00000026478	Lamc1	14.97314448	13.29449641	0.081931875	-1.678648067	0.312375223
ENSMUSG00000023045	Soat2	9.490148569	7.812080569	0.083650368	-1.678068	0.312500846
ENSMUSG00000079227	Ccr5	7.821133597	6.143339437	0.08715056	-1.67779416	0.312560168

ENSMUSG00000058216	BC021614	5.252686104	3.582794738	0.129501141	-1.669891366	0.314277008
ENSMUSG00000030592	Ryr1	5.718268025	4.05043303	0.103545601	-1.667834996	0.314725287
ENSMUSG00000058755	Osm	11.73222342	10.06572442	0.084981159	-1.666498999	0.315016871
ENSMUSG00000058173	BC017612	11.72941496	10.06303306	0.084112145	-1.666381897	0.315042442
ENSMUSG00000009876	Cox4i2	5.806938004	4.142724344	0.088209952	-1.664213659	0.315516277
ENSMUSG00000043644	O61009L18Rik	6.424875349	4.763393193	0.087411315	-1.661482156	0.316114221
ENSMUSG00000043051	Disc1	8.89642321	7.236249773	0.086636835	-1.660173437	0.316401109
ENSMUSG00000054256	Msi1	6.247043702	4.587429668	0.082494672	-1.659614034	0.316523817
ENSMUSG00000034881	Tbxa2r	6.182489779	4.523172851	0.070915703	-1.659316928	0.316589008
ENSMUSG00000052125	F730043M19Rik	7.60103976	5.945883595	0.084942308	-1.655156165	0.317503376
ENSMUSG00000024222	Fkbp5	13.04387204	11.38891048	0.086060608	-1.654961567	0.317546205
ENSMUSG00000055782	Abcd2	8.158462851	6.503661461	0.081825353	-1.654801391	0.317581463
ENSMUSG00000025283	Sat1	11.74293885	10.08840054	0.086588139	-1.654538307	0.317639381
ENSMUSG00000066800	Rnasel	8.84890426	7.19746397	0.082252867	-1.65144029	0.318322207
ENSMUSG00000031861	Lpar2	9.674717549	8.026269672	0.086963623	-1.648447877	0.31898315
ENSMUSG00000086622	Gm16701	5.071444736	3.424201757	0.099515793	-1.647242979	0.319249667
ENSMUSG00000026107	Obfc2a	11.93191408	10.28598426	0.088164078	-1.645929822	0.319540384
ENSMUSG00000090862	Rps13	10.1427235	8.498254974	0.086493576	-1.644468525	0.319864209
ENSMUSG00000000320	Alox12	5.590680285	3.950414567	0.139588218	-1.640265719	0.320797384
ENSMUSG00000016349	Eef1a2	4.615861582	2.975693565	0.127718851	-1.640168017	0.320819109
ENSMUSG00000031737	Irx5	4.615861582	2.975693565	0.070530315	-1.640168017	0.320819109
ENSMUSG00000032502	Stac	4.615861582	2.975693565	0.1439329	-1.640168017	0.320819109
ENSMUSG00000032531	Amotl2	4.615861582	2.975693565	0.060983571	-1.640168017	0.320819109
ENSMUSG00000040276	Pacsin1	4.615861582	2.975693565	0.043772207	-1.640168017	0.320819109
ENSMUSG00000044744	1700001G17Rik	4.615861582	2.975693565	0.111084509	-1.640168017	0.320819109
ENSMUSG00000082605	Gm16148	4.615861582	2.975693565	0.067632597	-1.640168017	0.320819109
ENSMUSG00000087700	Gm15283	4.615861582	2.975693565	0.168993421	-1.640168017	0.320819109
ENSMUSG00000049960	Mrps16	10.40337625	8.763274025	0.088683694	-1.640102223	0.320833741
ENSMUSG00000034308	Sdr42e1	7.436158877	5.797178647	0.092673602	-1.638980203	0.321083352
ENSMUSG00000047443	Fam132b	6.22584801	4.587429668	0.085975076	-1.638418342	0.321208429
ENSMUSG00000029379	Cxcl3	9.286116939	7.649272873	0.095751911	-1.636844066	0.321559125
ENSMUSG00000038067	Csf3	14.72570701	13.09107892	0.089974751	-1.634628093	0.322053418
ENSMUSG00000078495	Gm13157	6.648113797	5.01361896	0.09646957	-1.634494837	0.322083166
ENSMUSG00000032131	Abcg4	6.497337312	4.869069107	0.097029795	-1.628268206	0.323476272
ENSMUSG00000030309	Caprin2	6.443337212	4.81726305	0.082736125	-1.626074162	0.323968587
ENSMUSG00000081350	Gm5388	6.999088182	5.37390112	0.094184143	-1.625187062	0.324167854
ENSMUSG00000030523	Trpm1	8.427024113	6.804333414	0.090733556	-1.622690699	0.324729262
ENSMUSG00000060166	Zdhc8	10.62204657	9.004011213	0.092270476	-1.618035353	0.325778804
ENSMUSG00000032318	Isl2	7.584546225	5.969223473	0.095425856	-1.615322752	0.32639192
ENSMUSG00000024669	Cd5	10.43474927	8.828121604	0.096000632	-1.60662767	0.328365015
ENSMUSG00000030281	I117rc	5.556897593	3.950414567	0.103147277	-1.606483027	0.328397938
ENSMUSG00000074634	Gm7120	8.649378228	7.052837894	0.097112509	-1.596540334	0.330668991
ENSMUSG00000028982	Sic25a33	11.7209566	10.12627924	0.097938063	-1.594677362	0.331096264
ENSMUSG00000079671	2610203C22Rik	7.778272757	6.183740302	0.096214435	-1.594532455	0.331129522
ENSMUSG00000075502	Gm5465	7.696222326	6.101762152	0.095278371	-1.594460174	0.331146112
ENSMUSG00000044231	Nhirc1	8.580388023	6.986108783	0.096570994	-1.59427924	0.331187645
ENSMUSG00000022864	D16Ert472e	9.692131638	8.101666093	0.099436084	-1.590465545	0.332064282
ENSMUSG00000027765	P2ry1	6.999088182	5.408736534	0.097574603	-1.590351648	0.332090499

Common genes affected by lincRNA-Cox2, hnRNP-A/B or hnRNPA2/B1 knockdown in macrophages

Table S5

	lincRNA-Cox2 shRNA	hnRNPA/B shRNA	hnRNPA2/B1 shRNA	lincRNA-Cox2 Pam3CSK4	hnRNPA/B Pam3CSK4	hnRNPA2/B1 Pam3CSK4
<i>Casp1</i>	2.156061029	3.549137482	5.231451008	3.28037863	1.928446762	3.187909274
<i>Ccl4</i>	2.465384505	3.567578904	4.706882358	1.212051196	2.305107985	3.270149706
<i>Ccl5 (Rantes)</i>	4.914741696	17.46662405	14.21106486	7.462458219	5.674351606	5.888764267
<i>Cxcl10</i>	4.16227372	10.05921037	5.680229913	6.618478823	5.422503505	2.527572461
<i>Ifi204</i>	19.90623086	5.779619183	3.494671173	13.06889027	6.453969272	4.297519419
<i>Ifi205</i>	1.598019816	3.337892148	2.151517054	13.95506363	7.291071638	4.704444071
<i>Ifit1</i>	11.01809765	7.484446974	3.259632977	5.79048004	6.052463309	2.900361849
<i>Ifit2</i>	4.690979024	1.90853062	1.990310958	4.856257303	5.169952127	3.230627248
<i>Il10</i>	0.645402089	1.04373998	2.472812144	8.494497191	21.3966283	37.6205053
<i>Il1β</i>	1.039912015	2.025511654	3.29687999	3.424750522	2.407641004	4.126435565
<i>Il1ra</i>	7.538089136	2.338132493	4.938514251	4.950761038	0.733859612	1.364975952
<i>Irf5</i>	1.737210175	2.528851016	3.375144449	3.348779749	3.582631507	4.240113565
<i>Mnda</i>	19.08955815	6.091112361	5.502653688	12.92946085	7.623598022	6.474677505
<i>Nos2</i>	0.275694017	1.203824017	1.357040812	9.57723353	2.015401394	2.20601291
<i>Prdm1</i>	2.69014014	3.651329764	3.315803363	2.256670218	2.609884457	6.825791764
<i>Stat1</i>	4.496749494	2.288809856	2.726582643	5.940537616	2.030372769	2.408927393
<i>Tlr8</i>	11.12056033	2.119900054	2.131430717	12.80089912	1.654925678	1.308745259

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