Sparcl1 promotes nonalcoholic steatohepatitis progression in mice through upregulation of CCL2

Methods

Reagents. Cenicriviroc was purchased from Adooq Bioscience (catalog A13643). CLI-095, JSH-23 and SB225002 were purchased from MedChemExpress (catalog HY-11109, HY-13982 and HY-16711). Recombinant mouse Sparcl1 protein were purchased from R&D (catalog 4547-SL). Enzyme-Linked Immunosorbent Assays (ELISA) kits for measuring plasma levels of human Sparcl1, human CCL2, mouse Sparcl1, mouse HMGB1, and mouse insulin were purchased from R&D (catalog DY2728), Anogen (catalog EL10009), Raybiotech (catalog ELM-SPARCL1-1), IBL International (catalog ST51011), and CrystalChem (catalog 90080), respectively.

Histology analysis, immunostaining, TUNEL staining and Sirius red. For H&E staining, liver tissues were fixed in 10% neutral-buffered formalin, embedded in paraffin, and cut into 5 μm sections. Paraffin embedded tissue sections were subjected to de-paraffinization and rehydration, and then were immersed in 95℃ antigen retrieval buffer (10mM sodium citrate, 0.05% Tween 20, pH6.0) for 30 min. Cells were fixed with 10% buffered formalin for 10 min at room temperature and permeabilized with 0.02% Triton X-100 for 5 min. Tissue sections or cells were blocked with 1% normal donkey serum for 30 min. F4/80 (catalog ab6640, Abcam) and Ly6G staining (catalog 25377, Abcam) were conducted on indicated liver paraffin sections to analyze macrophage accumulation and neutrophils infiltration. Hepatocyte death was determined by TUNEL staining of liver

sections with TUNEL Assay Kit (catalog ab206386, Abcam) according to the manufacturer's instruction. Nuclei were stained with DAPI. Immunostaining was visualized with CaseViewer. For Sirius red staining, paraformaldehyde-fixed samples were embedded in paraffin, cut into 5 µm-thick sections and stained with Sirius Red (saturated picric acid containing 0.1% DirectRed 80 and 0.1% FastGreen FCF; Sigma-Aldrich) according to standard procedures. Sirius Red stained sections were analyzed in a blinded manner by two pathologists. Fibrosis contents were assessed by quantitating histological collagen staining with Image J software in fifteen independent photos per mouse, taking care to avoid major vessels and liver capsule.

Triglyceride quantification. Liver tissues were harvested and homogenized in 5% NP-40 solution and heated up to 100 ℃ and then cooled down to room temperature. The tissue homogenates were centrifuged and the supernatants were processed for measuring triglyceride and cholesterol contents using commercial kits (catalog K622, BioVision, Milpitas, USA).

Hepatic hydroxyproline measurement. Liver tissues were homogenized in distilled water (100ml/10mg tissue). 100ml of 10 mol/L concentrated NaOH was added to each 100 ml samples and hydrolyzed at 120℃ for 1 hour. Supernatants were cooled on ice and neutralized with 10M concentrated HCl, followed by 10,000g centrifugation for 5 min. The supernatants were then collected without lipid content. Hepatic hydroxyproline was measured with Hydroxyproline Assay Kit (Catalog ab222941, Abcam, USA) according to the manufacturer's instruction.

RNA isolation and quantitative real-time PCR. Total RNA was isolated from cell lysates or mouse liver tissues using the standard TRIzol method according to the manufacturer's instructions (Invitrogen). First-strand cDNA was synthesized from each RNA sample using the Reverse Transcription System (Promega). Oligo dT was used to prime cDNA synthesis. To analyze gene expression, quantitative real-time PCR (qRT-PCR) was performed using an SYBR Green Premix Ex Taq (Takara Biotechnology) on LightCycler 480 (Roche, Basel, Switzerland). Relative quantification analysis of gene expression data was calculated according to the $2^{-\triangle\triangle Ct}$ method. The results of relative expression were normalized to mRNA levels of housekeeping gene Rplp0. The primer sequences for qRT-PCR are listed in Supplemental Table 4.

Immunoprecipitation and mass spectrometry. The standard immunoprecipitation (IP) purification procedure has been described in our previous study (1). In brief, Hepa1-6 cells transfected with adenovirus expressing Flag-tagged Sparcl1 or empty vector (control) were lysed in lysis buffer (50 mmol/L Tris-HCl [pH 7.5], 150 mmol/L NaCl, 0.5% Nonidet-P40) with gentle rocking at 4°C for 30 min. The cell clumps were removed via high-speed centrifugation. The supernatant was filtered through a 0.45μm filter membrane and subjected to IP with 50 mL of anti-Mouse lgG beads at 4°C for 4 hour. The samples were centrifuged to remove the beads and then subjected to IP with 50 mL of anti-Flag M2 beads (Catalog M8823, Sigma-Aldrich, USA) overnight at 4°C. Beads containing immune complexes were washed with 1 mL ice-cold lysis buffer. The immune complexes were eluted with 100 mL 3X Flag peptide. The precipitated proteins were subjected to SDS-PAGE and visualized by Coomassie brilliant

blue staining. Proteins were digested in gel with trypsin. Tryptic peptides were extracted from the gel pieces and vacuum centrifuged to dryness. The peptides were then analyzed by an EASY-nLC 1000 system connected to an Orbitrap Fusion mass spectrometer (ThermoFisher Scientific, Waltham, MA, USA). The raw spectra data were processed by Thermo Proteome Discoverer 2.1 and MS/MS spectra data were searched against the Uniprot mouse database by Mascot (v.2.4; Matrix Science, London, U.K.).

Western blots. Proteins from tissues or cells were harvested using radioimmunoprecipitation buffer containing Tris-HCl (50 mmol/L), NaCl (150 mmol/L), $MgCl_2$ (5 mmol/L), EDTA (2 mmol/L), NaF (1 mmol/L), 1% NP40 and 0.1% SDS. Cytoplasmic and nuclear protein fractions were prepared with the NE-PER Nuclear and Cytoplasmic Extraction Kit (Thermo Fisher Scientific) according to the manufacturer's instructions. The protein concentrations were quantified using commercial kits from Thermo Fisher Scientific. All protein samples were equally subjected to 10% SDS polyacrylamide gels, transferred to polyvinylidene difluoride membranes by electrophoresis, incubated with primary and secondary antibodies, and finally visualized by a chemiluminescence detection kit (Millipore). The following primary antibodies were purchased: anti-phospho-P65 at 1:2000 (catalog 3033, Cell Signaling Technology), anti-total P65 at 1:2000 (catalog 8242, Cell Signaling Technology), anti-phospho-Akt at 1:3000 (S473) (catalog 4060, Cell Signaling Technology), anti-total Akt at 1:2000 (catalog 4691, Cell Signaling Technology), anti-histone H3 at 1:5000 (catalog 4499, Cell Signaling Technology), and anti-GAPDH antibody at 1:8000 (catalog KC5G5, Kangchen Technology), anti-α tubulin at 1:3000

(catalog ab7291, Abcam), anti-Flag at 1:5000 (catalog F1804, Sigma-Aldrich), anti-HA at 1:2000 (catalog 3724S, Cell Signaling Technology).

Plasmid construction and luciferase reporter assays. Flag- or HA-tagged full-length mouse Sparcl1 and TLR4 were obtained by PCR amplification of the cDNA from mouse liver and cloned into pCMV vector with HindIII/BamHI restriction sites. pNF-κB-luciferase reporter plasmid containing multiple NF-κB/P65 binding sites was purchased from Beyotime company (catalog D2206, Shanghai, China). For the luciferase reporter assays, transfection experiments were performed on Hepa1-6 or RAW264.7 cells at 70-80% confluence using Lipofectamine 3000 (Invitrogen) and luciferase activity was measured using the Dual Luciferase Reporter Assay System (Promega). All of cell lines were purchased from Cell Bank of Typical Culture Preservation Committee, Chinese Academy of Sciences, Shanghai (Shanghai, China).

Chromatin immunoprecipitation assays. ChIP experiments in Hepa1-6 cells were performed using commercial kits following the manufacturer's protocols (MilliporeSigma). In brief, cells were treated with recombinant Sparcl1 protein or PBS for 4 hours. Then, cells were fixed with 1% formaldehyde and harvested in SDS lysis buffer. DNA was sheared to fragments of 200-1000 bp using sonication. Chromatin was incubated and precipitated with antibodies against P65 (catalog 8242, Cell Signaling Technology) or IgG (catalog ab172730, Abcam). After removing with protein G agarose, the DNA was purified and subjected to quantitative real-time PCR. The primer sequence was used to amplify the distal regulatory region of CCL2 promoter as previously described (2).

Sparcl1 neutralizing antibody. The hybridoma cell lines secreting mouse mAb against mouse Sparcl1 were generated according to the standard hybridoma technique (3). The mouse mAbs were purified by Protein A affinity chromatograph, and its purity was measured by high-pressure liquid chromatography. The Mouse IgG ELISA Kit (Bethyl Laboratories) was used to measure the concentration of the obtained antibody, according to the manufacturer's instructions. A Biacore T100 instrument was used to analyze the kinetic parameters of the antibody. The purified antibody was diluted in saline and injected intravenously into NASH mice (5 mg/kg) twice per week for 4 weeks.

Supplementary Figures 1-16
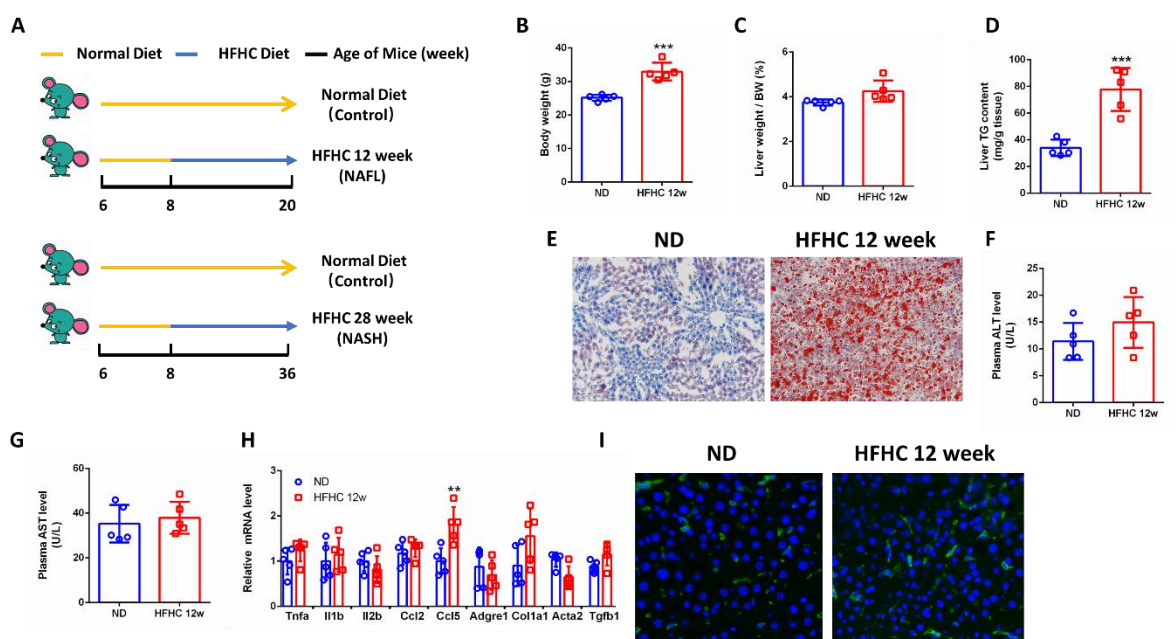
Supplementary Figure 1. Metabolic phenotypes of NAFL mice. C57BL/6 mice were fed a normal diet (ND) or HFHC-diet for 12 or 28 weeks, starting at 8 week of age. n=5 per group. The results of mice fed a HFHC-diet for 12 weeks were shown in Supplementary Figure 1. The results of mice fed a HFHC-diet for 28 weeks were shown in Supplementary Figure 2. (A) Scheme for the experimental strategy. (B) Body weight. (C) Liver/body weight ratio. (D) Liver triglyceride contents. (E) Oil Red O staining of liver sections. (F-G) Plasma ALT (F) and AST (G) levels. (H) Relative mRNA levels of hepatic genes involved in inflammation and fibrosis. (I) F4/80 staining of liver sections. Data are represented as mean ± SEM. ** $P < 0.01$, *** $P < 0.001$. 2-tailed Student's t test (B-D, F-H). (E, I) Original magnification, ×200.
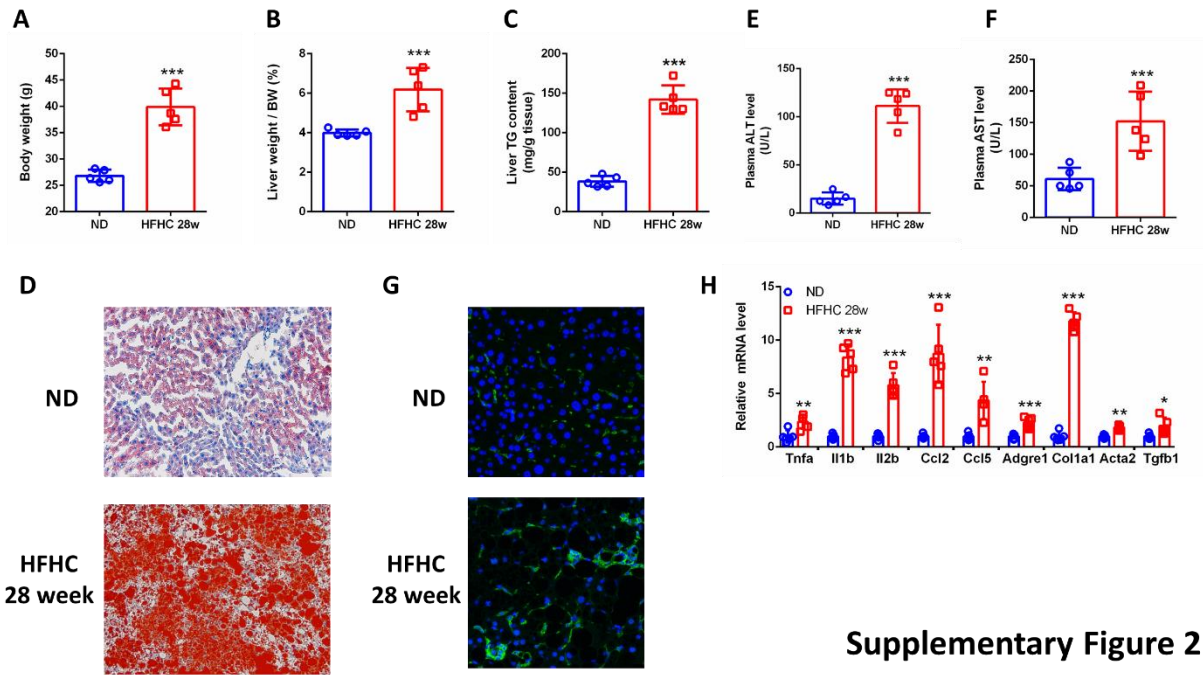
Supplementary Figure 2

Supplementary Figure 2. Metabolic phenotypes of NASH mice. C57BL/6 mice were fed a normal diet (ND) or HFHC-diet for 28 weeks, starting at 8 week of age. n=5 per group. (A) Body weight. (B) Liver/body weight ratio. (C) Liver triglyceride contents. (D) Oil Red O staining of liver sections. (E-F) Plasma ALT (E) and AST (F) levels. (G) F4/80 staining of liver sections. (H) Relative mRNA levels of hepatic genes involved in inflammation and fibrosis. Data are represented as mean ± SEM. * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. 2-tailed Student's t test (A-C, E-F, H). (D, G) Original magnification, ×200.
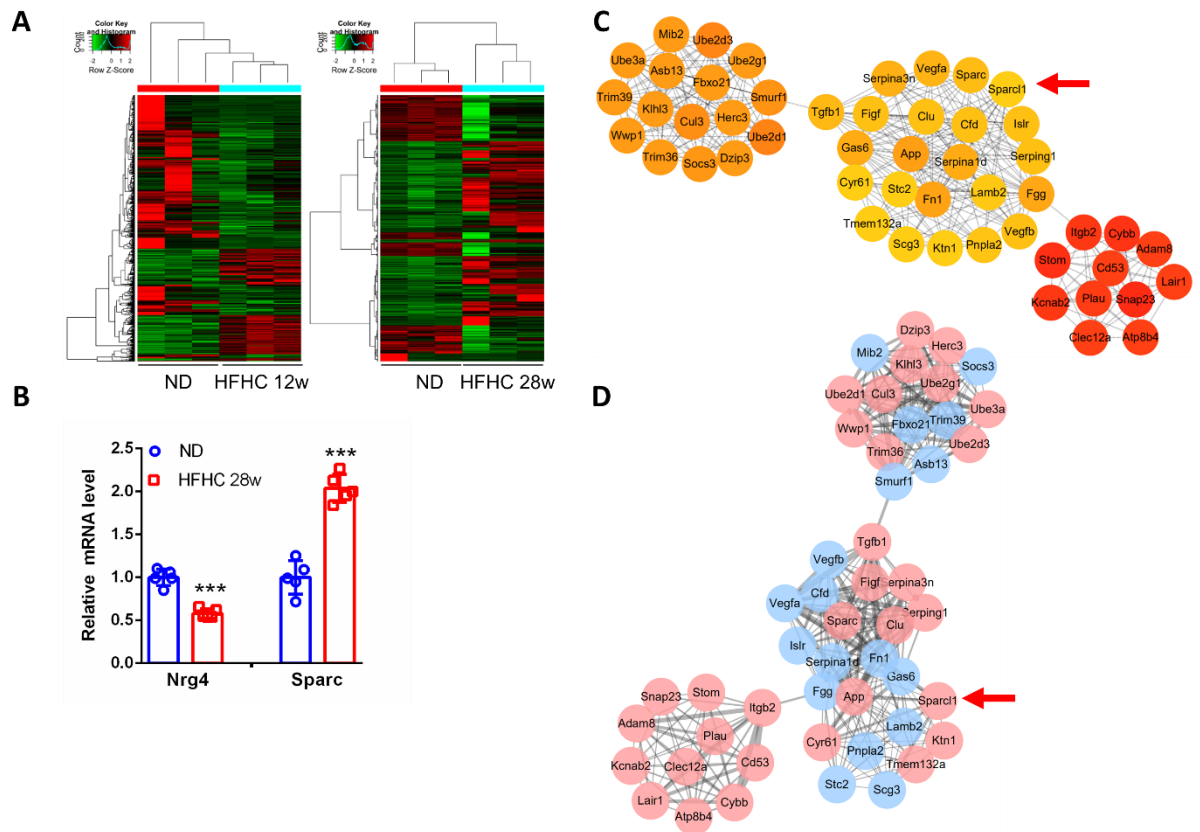
Supplementary Figure 3. RNA-sequencing analysis of the livers from two groups of mice. (A) Heat map of genes in the eWAT from mouse models of NAFL (HFHC diet for 12 weeks) or NASH (HFHC diet for 28 weeks) with their controls (normal diet), respectively. (B) Relative mRNA levels of Nrg4 and Sparc in eWAT of mice fed a normal diet or HFHC diet for 28 weeks. (C) Hub genes analyzed by the cytoHubba plugin in Cytoscape. (D) Correlation between Sparcl1 and the DEGs as illustrated by MCODE based on the PPI network. Data are represented as mean ± SEM. *** $P < 0.001$. 2-tailed Student's t test (B).
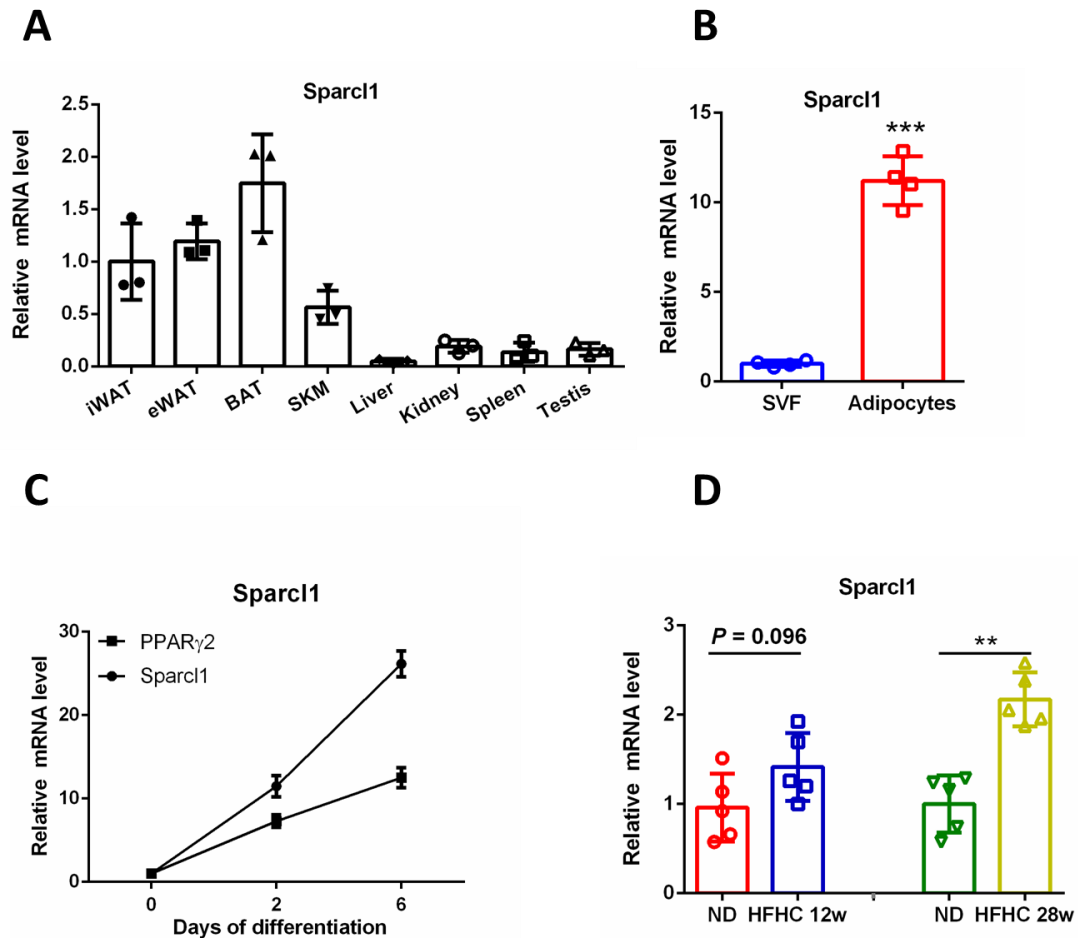
Supplementary Figure 4

Supplementary Figure 4. Sparcl1 expression analysis. (A) Relative mRNA levels of Sparcl1 in various tissues from 10-week-old C57BL/6 male mice. n=3. (B) Relative mRNA levels of Sparcl1 in stromal vascular fractions (SVF) and mature adipocytes from 10-week-old C57BL/6 male mice. n=4. (C) Sparcl1 expression in 3T3-L1 cells during differentiation. n=4. (D) Relative mRNA levels of Sparcl1 in the livers from mice fed with normal diet or HFHC diet for 12 weeks or 28 weeks. n=5 per group. ** $P < 0.01$, *** $P < 0.001$. 1-way ANOVA (A,C). 2-tailed Student's t test (B, D).
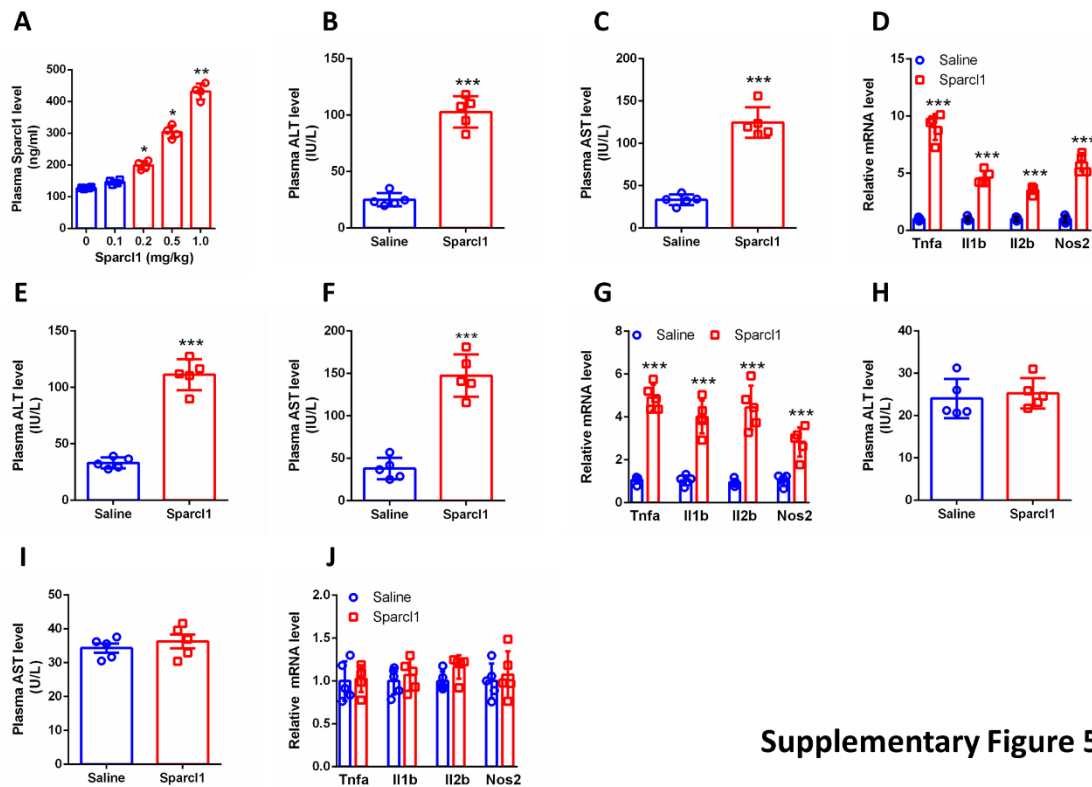
Supplementary Figure 5. Acute treatment of recombinant Sparcl1 protein in mice. (A) Plasma Sparcl1 levels in C57BL/6 male mice injected with different dose of Sparcl1 as indicated. n=4 per group. (B-D) C57BL/6 male mice were fed a HFHC-diet for 12 weeks and then treated with a single dose of recombinant Sparcl1 protein (0.2 mg/kg) or vehicle control (saline) for 8 hr. n=5 per group. (B-C) Plasma ALT (B) and AST (C) levels. (D) Relative mRNA levels of inflammatory genes in the livers. (E-G) C57BL/6 male mice were fed a HFD diet for 12 weeks and then treated with a single dose of recombinant Sparcl1 protein (0.2 mg/kg) or vehicle control (saline) for 8 hr. n=5 per group. (E-F) Plasma ALT (E) and AST (F) levels. (G) Relative mRNA levels of inflammatory genes in the livers. (H-J) C57BL/6 male mice were treated with a single dose of recombinant Sparcl1 protein (0.2mg/kg) or vehicle control (saline) for 8 hr. n=5 per group. (H-I) Plasma ALT (H) and AST (I) levels. (J) Relative mRNA levels of inflammatory genes in the livers. Data are represented as mean ± SEM. * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. 1-way ANOVA (A). 2-tailed Student's t test (B-J).
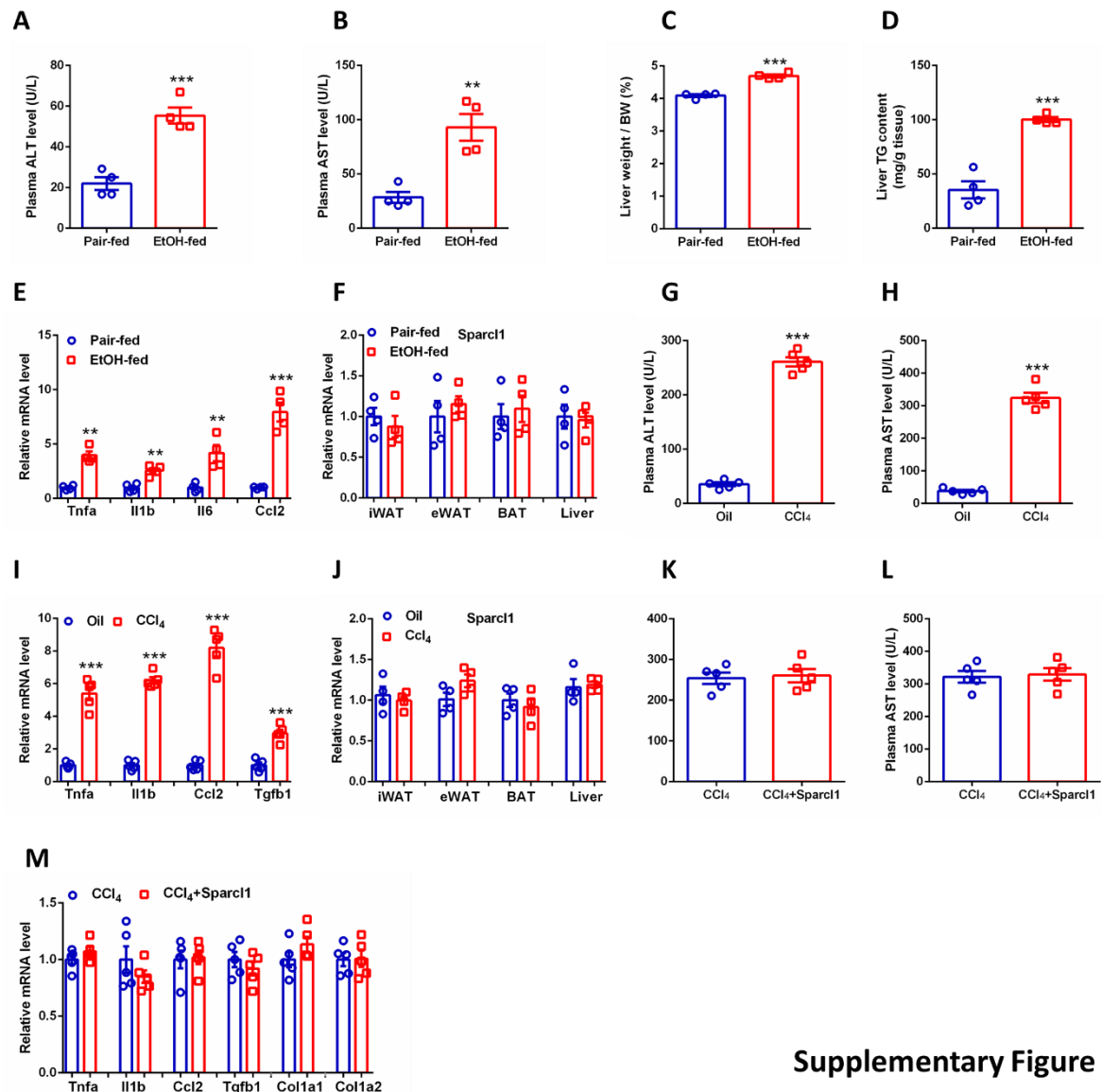
Supplementary Figure 6. Sparcl1 treatment has little effect in the ethanol feeding mice or CCl4-treated mice. (A-F) Mouse model of chronic-plus-binge ethanol feeding was generated according to the NIAAA (National Institute on Alcohol Abuse and Alcoholism) procedure as described previously (4). n=4 per group. (A-B) Plasma ALT (A) and AST (B) levels. (C) Liver/body weight ratio. (D) Liver triglyceride contents. (E) Relative mRNA levels of inflammatory genes in the livers. (F) Relative mRNA levels of Sparcl1 in the iWAT, eWAT, BAT and liver. (G-J) C57BL/6 male mice were intraperitoneal administered with CCl$_4$ (1 ml/kg, 1:4 v/v

in corn oil) twice a week for 6 weeks. Mice were sacrificed 2 days after the last Ccl$_4$ injection. n=5 per group. (G-H) Plasma ALT (G) and AST (H) levels. (I) Relative mRNA levels of inflammatory genes in the livers. (J) Relative mRNA levels of Sparcl1 in the iWAT, eWAT, BAT and liver. (K-M) C57BL/6 male mice were administered with CCl$_4$ for 6 weeks and then treated with a single dose of recombinant Sparcl1 protein (0.2mg/kg) or vehicle control (saline) for 8 hr. n=5 per group. (K-L) Plasma ALT (K) and AST (L) levels. (M) Relative mRNA levels of genes involved in liver inflammation and fibrosis. Data are represented as mean ± SEM. ** $P < 0.01$, *** $P < 0.001$, 2-tailed Student's t test (A-M).
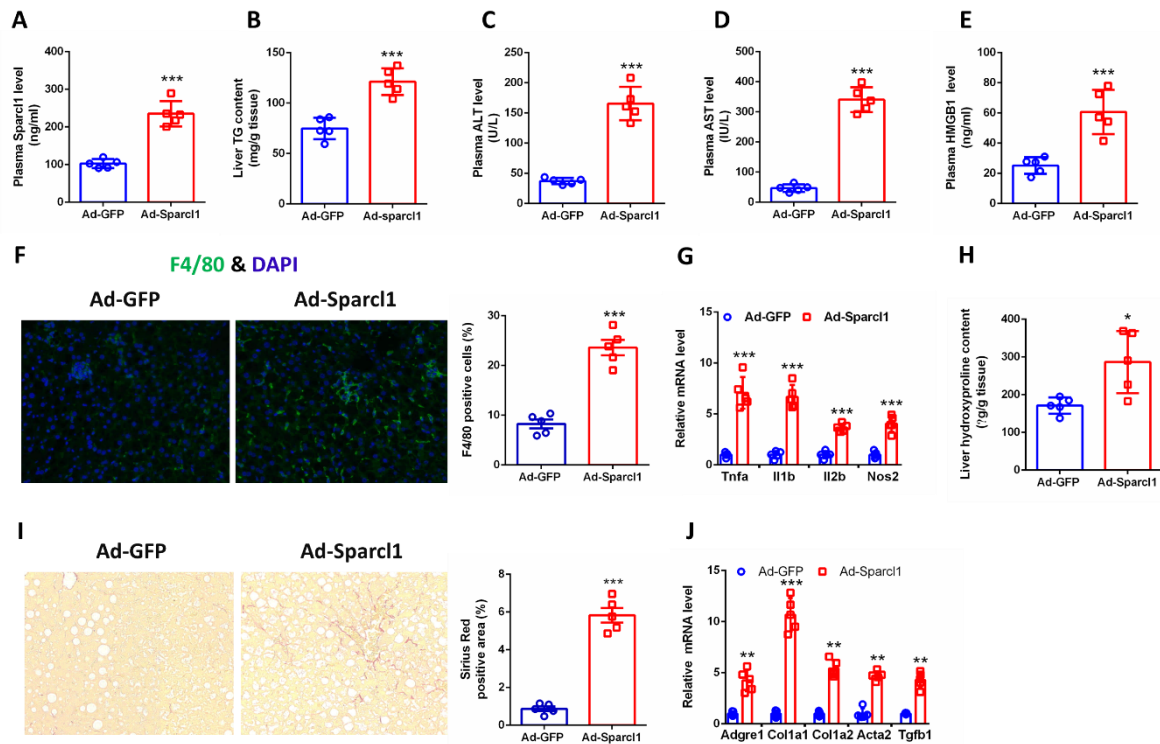
Supplementary Figure 7

Supplementary Figure 7. Effects of adenovirus-mediated overexpression of Sparcl1 in mice. C57BL/6 mice were fed a HFHC-diet for 12 weeks, starting at 8 week of age. Then, 4×10^9 pfu of Ad-GFP or Ad-Sparcl1 was injected bilaterally s.c. into the inguinal fat pads of mice. n=5 per group. (A) Plasma Sparcl1 levels. (B) Hepatic triglyceride contents. (C-E) Plasma levels of ALT (C), AST (D), and HMGB1 (E). (F) F4/80 staining of liver sections and quantification of the F4/80 images. (G) Relative mRNA levels of hepatic inflammatory genes. (H) Liver hydroxyproline content. (I) Sirius red staining of liver sections and quantification of the images. (J) Relative mRNA levels of genes involved in liver fibrosis. Data are represented as mean ± SEM. * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. 2-tailed Student's t test (A-J). (F, I) Original magnification, ×200.
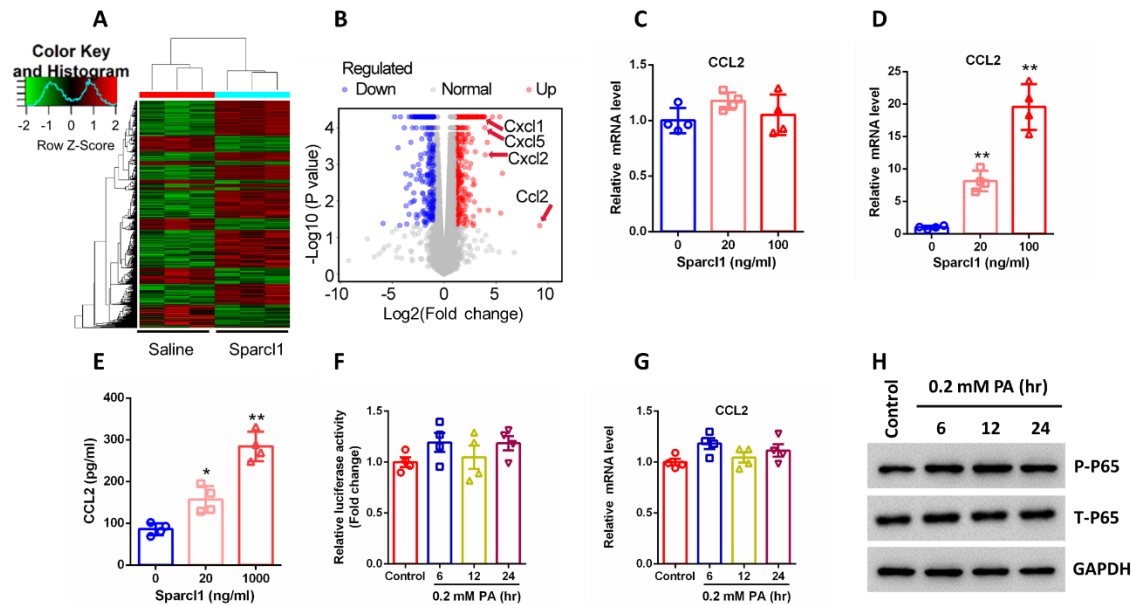
Supplementary Figure 8

Supplementary Figure 8. Analysis of CCL2 expression and inflammatory response by Sparcl1 treatment. (A) Heat map of genes in the livers of HFHC-diet-fed mice chronically treated with recombinant Sparcl1 protein or vehicle control (saline) as described in Figure 3A. (B) Volcano plot of gene expression analysis of livers from Sparcl1- or saline-treated mice. (C) Relative mRNA levels of CCL2 in Hepa1-6 cells exposure to different dose of Sparcl1 protein for 12 hr. n=4 per group. (D) Relative mRNA levels of CCL2 in Hepa1-6 cells. Cells were pre-incubated with palmitate (0.2 mM) for 12 hr, and then treated with Sparcl1 protein for another 12 hr. n=4 per group. (E) CCL2 concentrations in the medium of Hepa1-6 cells. Cells were pre-incubated with palmitate (0.2 mM) for 12 hr, and then treated with Sparcl1 protein for another 24 hr. n=4 per group. (F) Relative luciferase activity in Hepa1-6 cells transfected with pNF-κB-luciferase reporter plasmid. Cells were incubated with palmitate (0.2mM) or vehicle control (BSA) for different hours. n=4 per group. (G) Relative mRNA levels of CCL2 in Hepa1-6 cells treated with palmitate or vehicle control. n=4 per group. (H) Western blot showing the expression of phosphorylated P65 in hepa1-

6 cells treated with palmitate or vehicle control. Data are represented as mean ± SEM. * $P < 0.05$, ** $P < 0.01$. (A-B): n=3 per group. 1-way ANOVA (C-G).
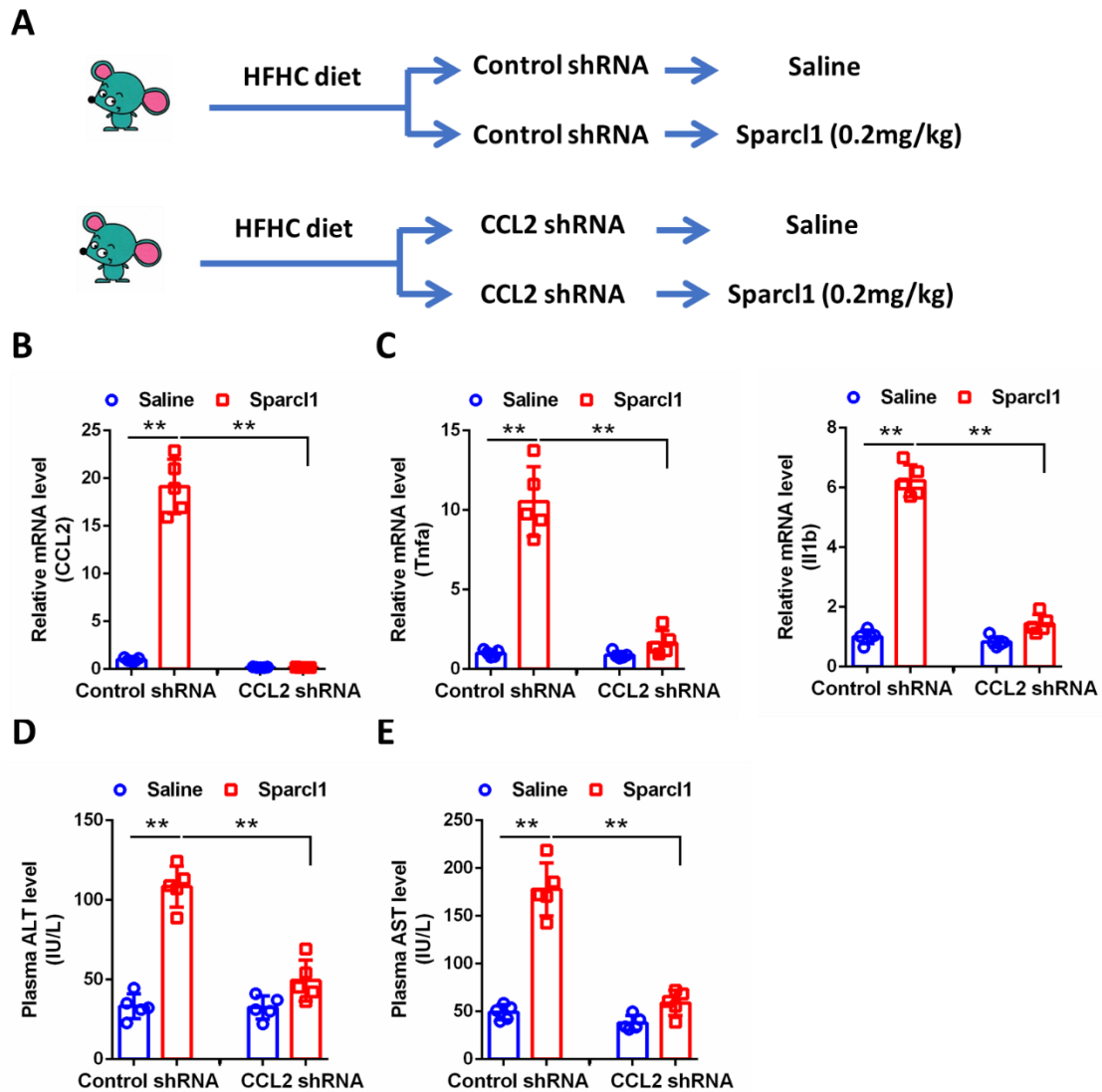
Supplementary Figure 9

Supplementary Figure 9. Knockdown of CCL2 attenuated the role of Sparcl1 treatment. C57BL/6 mice were fed a HFHC-diet for 12 weeks, starting at 8 week of age. n=5 per group. Then, mice were administered with 2×10^9 pfu of CCL2 shRNA adenovirus or control shRNA adenovirus by tail vein injection, respectively. 10 days later, mice were treated with a single dose of Sparcl1 (0.2mg/kg) or vehicle control. (A) Scheme for the experimental strategy. (B) Relative mRNA levels of CCL2 in the liver. (C) Relative mRNA levels of inflammatory genes in the liver (TNFα and IL1β). (D-E) Plasma levels of ALT (D) and AST (E). Data are represented as mean ± SEM. ** P < 0.01. 1-way ANOVA (B-E).
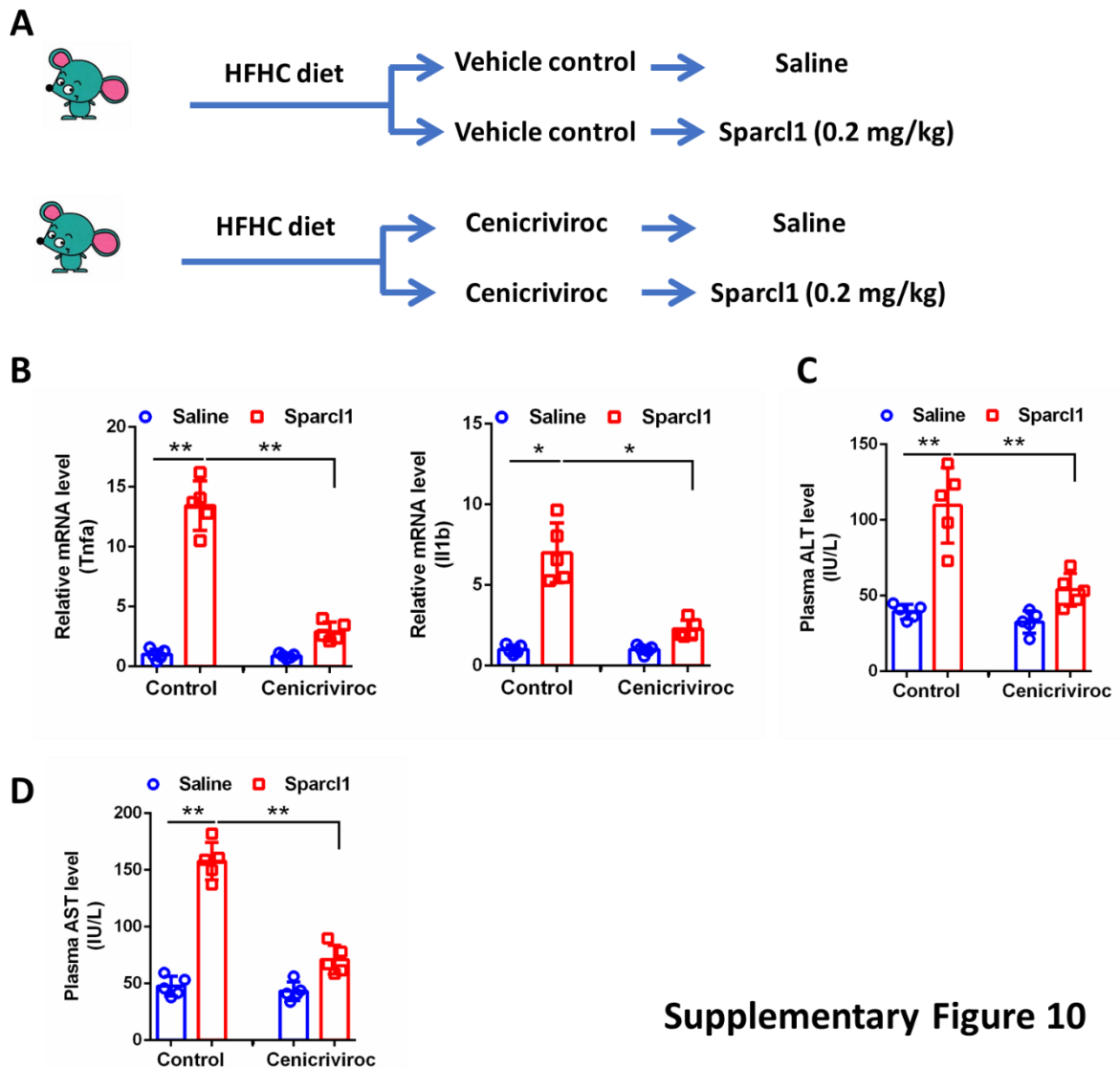
Supplementary Figure 10. Cenicriviroc treatment attenuated the role of Sparcl1. C57BL/6 mice were fed a HFHC-diet for 12 weeks, starting at 8 week of age. Then, mice were daily administered with cenicriviroc (30 mg/kg) or vehicle control by intraperitoneal injections. 6 days later, mice were treated with a single dose of Sparcl1 (0.2 mg/kg) or vehicle control. n=5 per group. (A) Scheme for the experimental strategy. (B) Relative mRNA levels of inflammatory genes in the liver (TNFα and IL1β). (C-D) Plasma levels of ALT (C) and AST (D). Data are represented as mean ± SEM. * $P < 0.05$, ** $P < 0.01$. 1-way ANOVA (B-D).
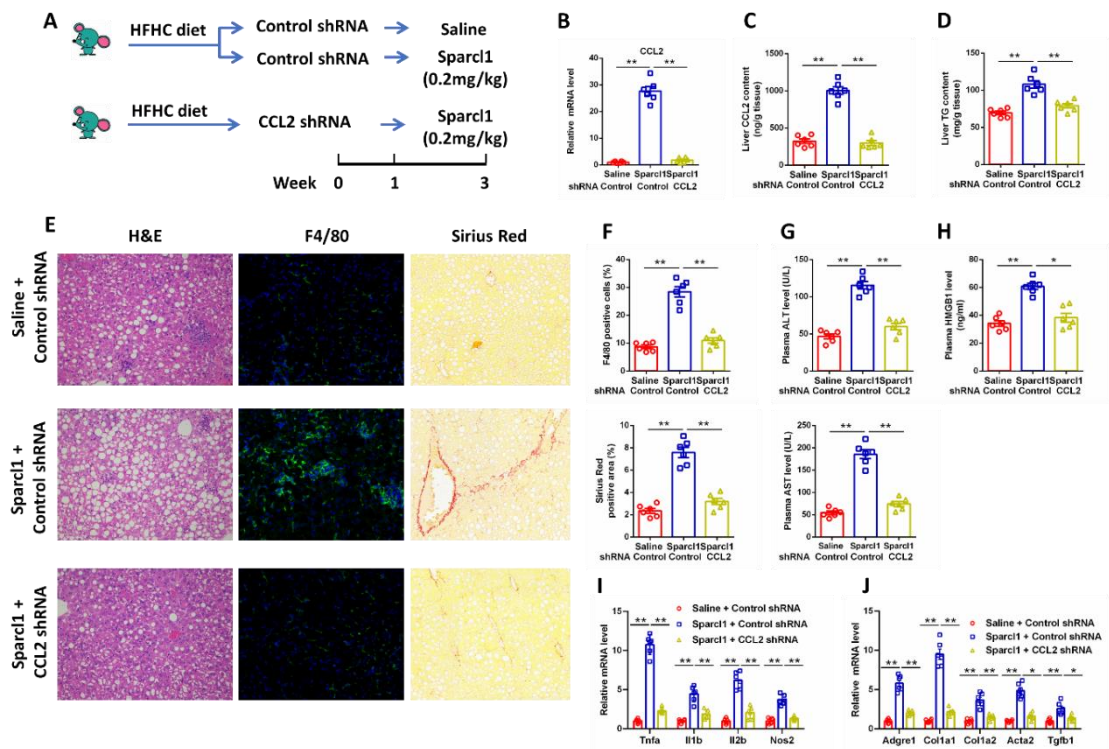
Supplementary Figure 11. Knockdown of CCL2 ameliorated the pathogenic roles of chronic Sparcl1 treatment. C57BL/6 mice were fed a HFHC-diet for 12 weeks, starting at 8 week of age. Then, mice were administered with 2×10^{11} pfu of CCL2 AAV-shRNA or control AAV-shRNA by tail vein injection, respectively. One week later, mice were intraperitoneal injected with saline or recombinant Sparcl1 protein (0.2mg/kg) every other day for another 3 weeks. n=6 per group. (A) Scheme for the experimental strategy. (B) Relative mRNA levels of CCL2 in the livers. (C) Plasma CCL2 concentrations. (D) Hepatic triglyceride contents. (E) H&E staining, F4/80 and Sirius red staining of liver sections. (F) Quantification of the F4/80 and Sirius red images. (G) Plasma ALT and AST levels. (H) Plasma HMGB1 levels. (I-J) Relative mRNA levels of hepatic genes involved in inflammation (I) and fibrosis (J). Data are represented as mean ± SEM. * $P < 0.05$, ** $P < 0.01$. 1-way ANOVA (B-D, F-J). (E) Original magnification, ×200.
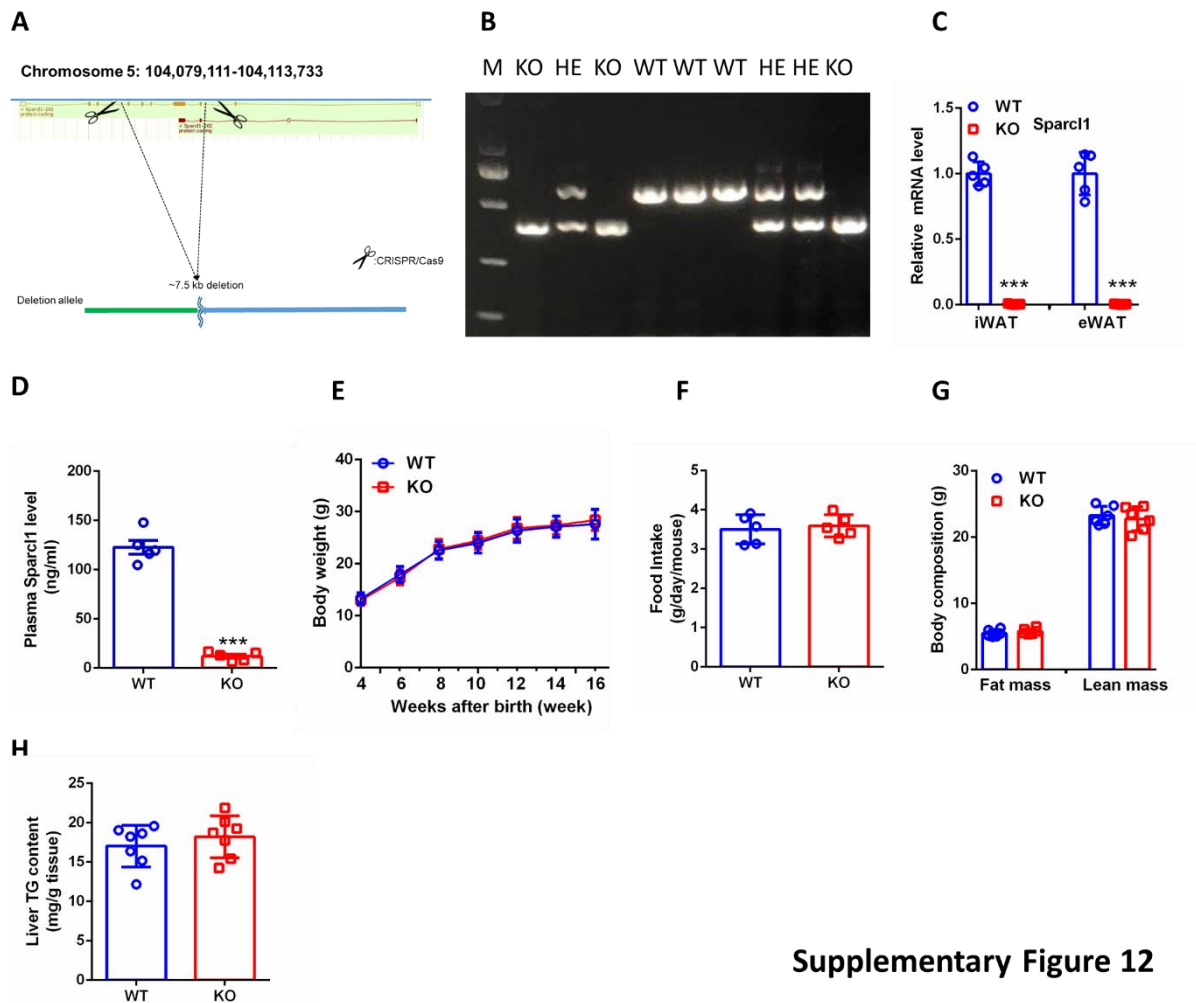
Supplementary Figure 12. Metabolic phenotypes of Sparcl1 wild-type and knockout mice under normal diet. (A) Generation of Sparcl1 knockout mice by the CRISPR/Cas9 system. (B) Genotyping of wild-type (WT), heterozygous (HE) and knockout (KO) mice by PCR. M: DNA marker. (C) Relative mRNA levels of Sparcl1 in the iWAT and eWAT from WT and KO mice. n=5 per group. (D) Plasma Sparcl1 levels from WT and KO mice. n=5 per group. (E-H) Body weights (E), food intake (F), body composition (G), and hepatic triglyceride contents (H) in WT and KO mice. n=5-7 per group. Data are represented as mean ± SEM. *** $P < 0.001$. 2-tailed Student's t test (C-H).
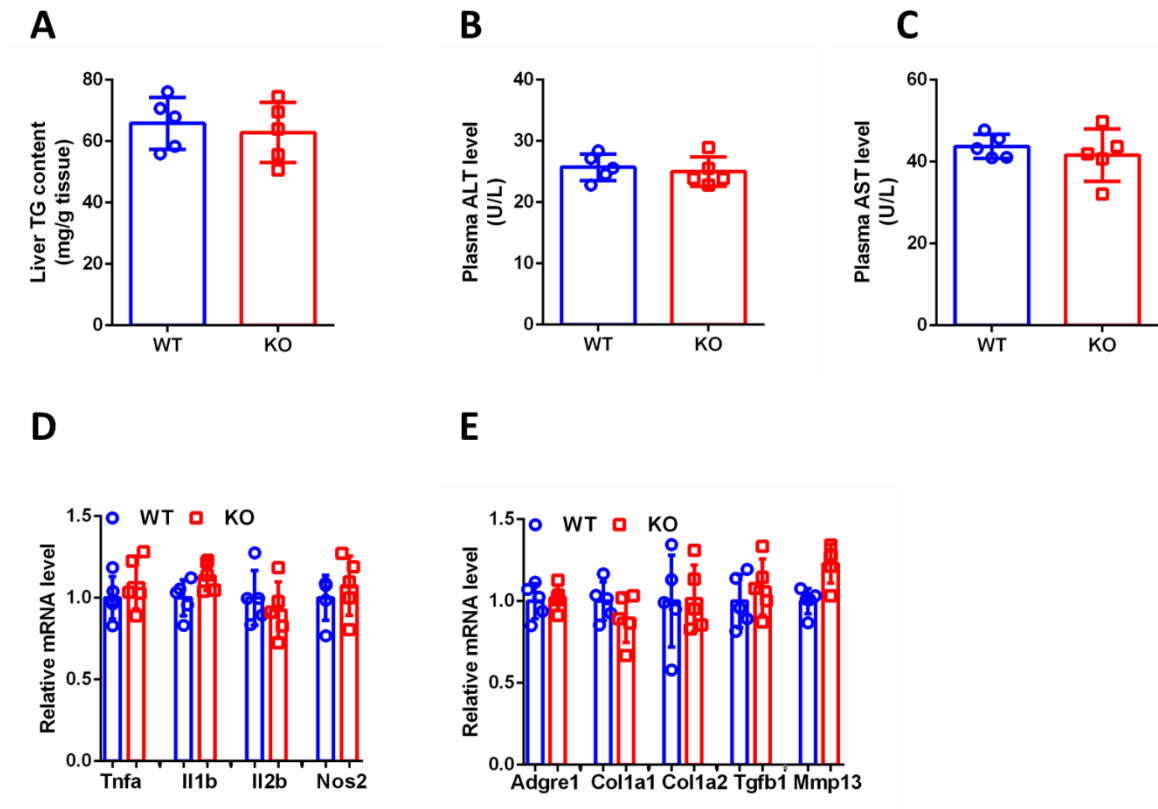
Supplementary Figure 13

Supplementary Figure 13. Metabolic phenotypes of Sparcl1 wild-type and knockout mice under HFHC-diet for 12 weeks. Sparcl1 WT and KO male mice were fed a HFHC-diet for 12 weeks, starting at 8 week of age. n=5 per group. (A-C) Hepatic triglyceride contents (A), plasma ALT (B) and AST (C) levels in WT and KO mice. (D-E) Relative mRNA levels of genes involved in inflammation (D) and fibrosis (E) in the livers of WT and KO mice. Data are represented as mean ± SEM. 2-tailed Student's t test (A-E).
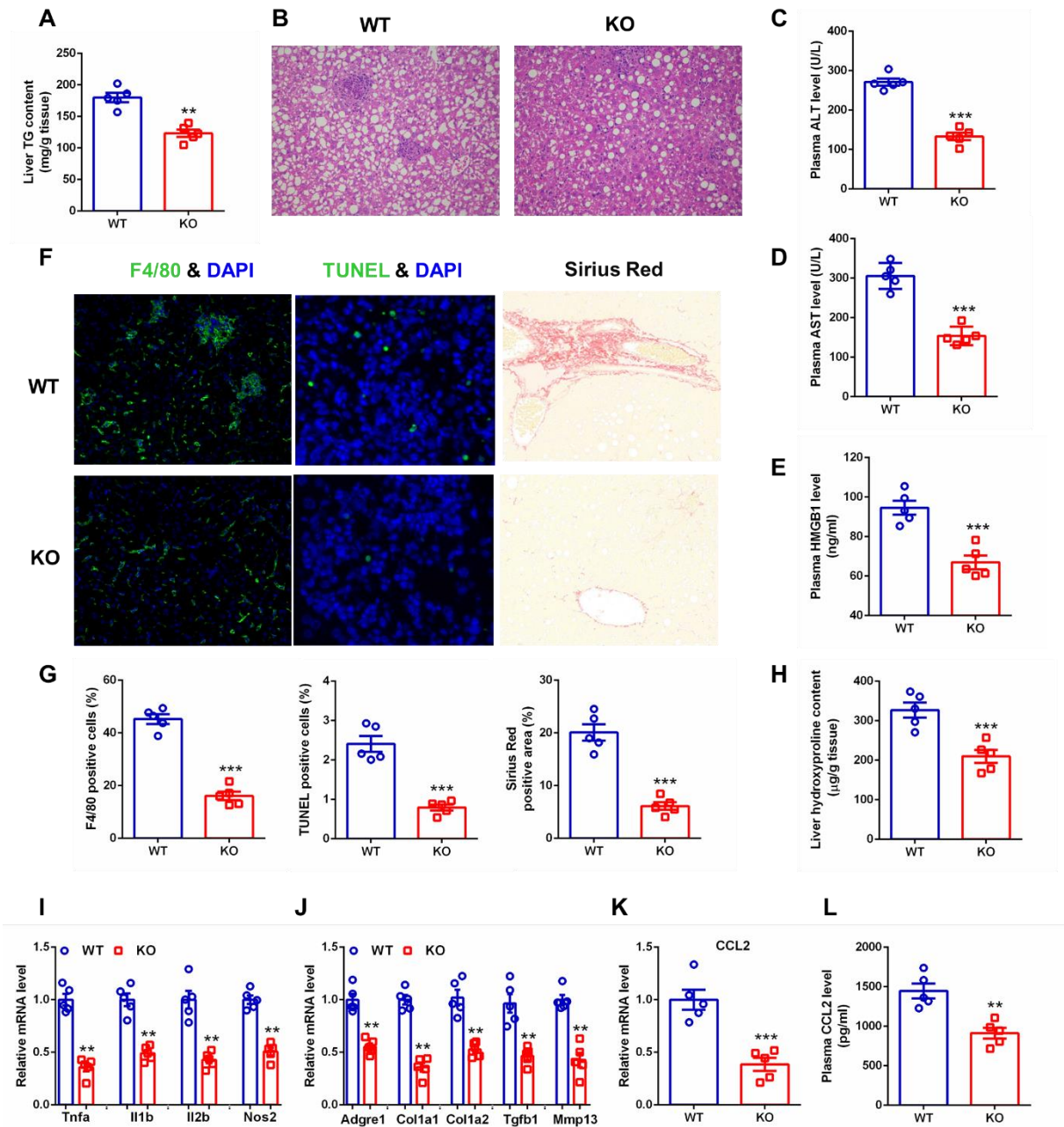
Supplementary Figure 14. Metabolic phenotypes of Sparcl1 wild-type and knockout mice under HFHC-diet for 36 weeks. Sparcl1 wild-type (WT) and knockout (KO) male mice were fed HFHC-diet for 36 weeks, starting at 8 week of age. n=5 per group. (A) Liver triglyceride contents. (B) H&E staining of liver sections. (C-E) Plasma levels of ALT (C), AST (D) and HMGB1 (E). (F) F4/80, TUNEL, and Sirius red staining of liver sections. (G) Quantification of the F4/80, TUNEL and Sirius red staining images. (H) Liver

hydroxyproline content. (I-J) Relative mRNA levels of genes involved in liver inflammation (I) and fibrosis (J). (K) Relative mRNA levels of CCL2 in the livers from two groups of mice. (L) plasma concentrations of CCL2 from two groups of mice. Data are represented as mean ± SEM. ** $P < 0.01$, *** $P < 0.001$, 2-tailed Student's t test (A, C-E, G-L). (B, F) Original magnification, ×200.
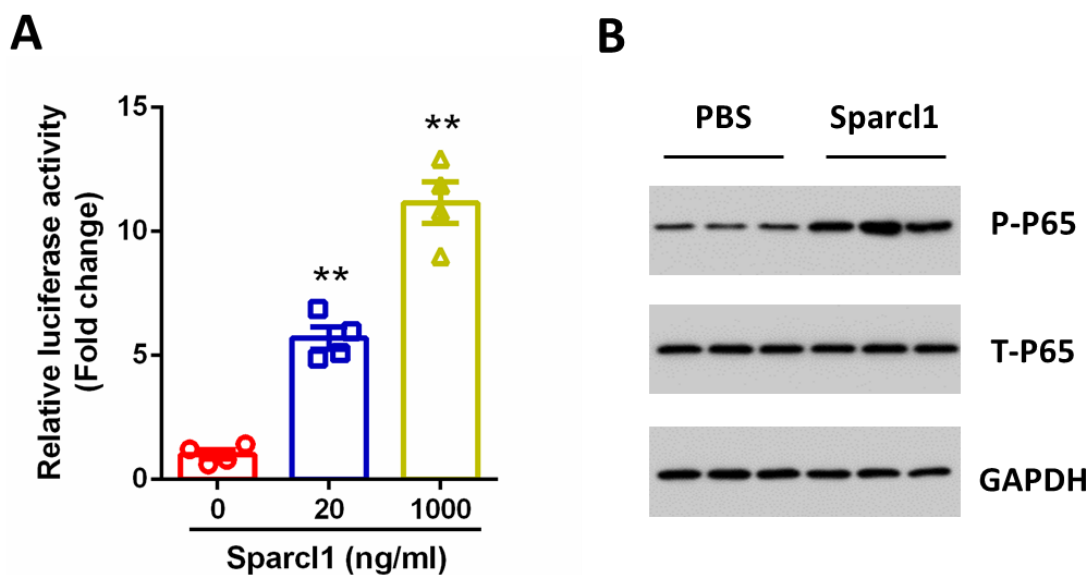
Supplementary Figure 15

Supplementary Figure 15. Inflammatory response induced by Sparcl1 treatment in RAW264.7 cells. (A) Relative luciferase activity in RAW264.7 macrophage cells transfected with pNF-κB-luciferase reporter plasmid. Cells were incubated with Sparcl1 or vehicle control (PBS) for 24 hours. n=4 per group. (B) Western blot showing phosphorylated P65 in RAW264.7 macrophage cells treated with Sparcl1 or vehicle control (PBS). Data are represented as mean ± SEM. ** $P < 0.01$, 1-way ANOVA (A).
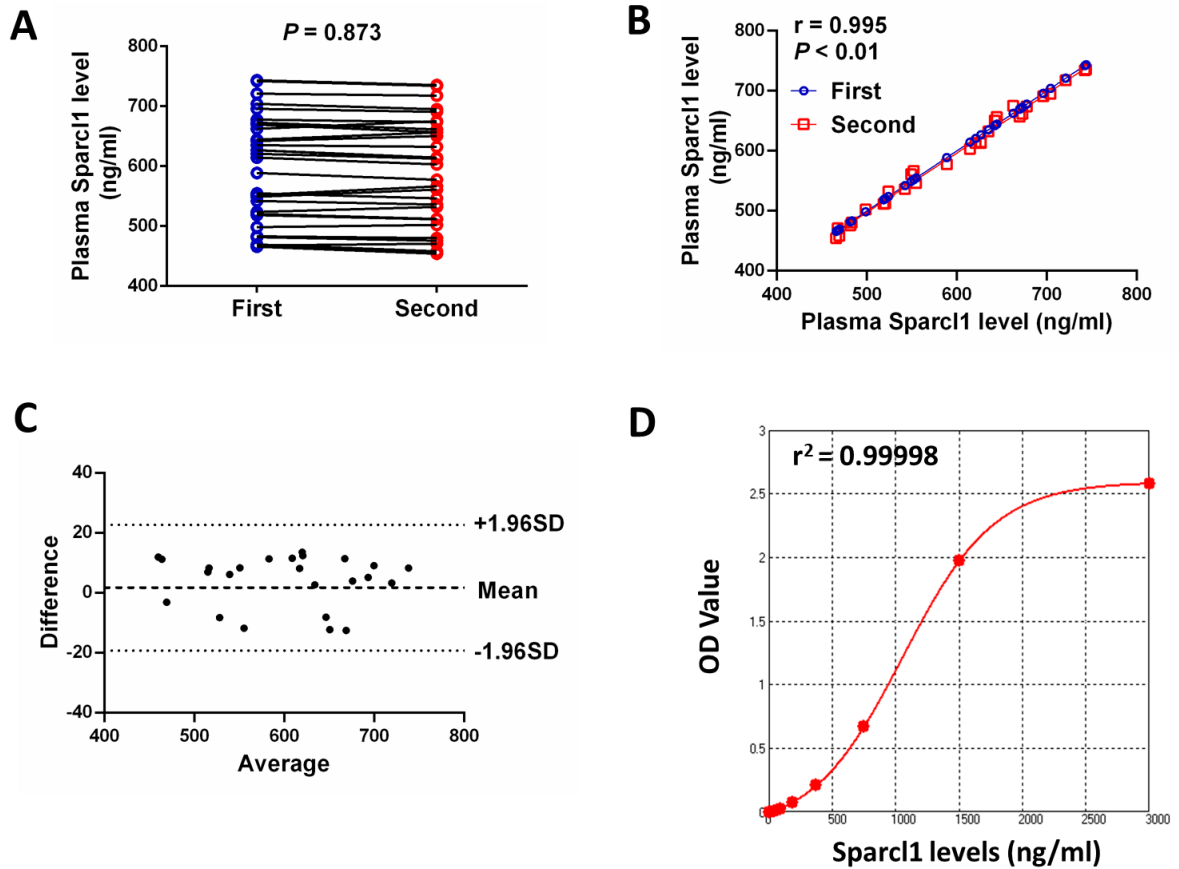
Supplementary Figure 16. ELISA assays of plasma Sparcl1 concentrations in humans. Thirty plasma samples were randomly selected from healthy volunteers to measure Sparcl1 levels twice. The time interval between the two ELISA assays is more than 18 months. (A) Plasma Sparcl1 levels of the first and second assays were analyzed by Student's t test. (B) Spearman correlation analysis of the first and second assays. (C) Bland-Altman analysis of the first and second assays. (D) The standard curve of ELISA analysis.

Supplementary Table 1. RNA-Seq analysis showed the dysregulated genes in the eWAT of NAFL mice (NAFL vs Control) and NASH mice (NASH vs Control).

392 genes were dysregulated in the eWAT of both mouse models.

Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value
Actc1	6.75421	0.00005	Ehd3	1.33155	0.00025	Vnn3	-0.86794	0.01920
Tph2	6.22562	0.00005	Polr3g	1.32312	0.00450	Rbp4	-0.89178	0.00735
Ttn	6.17360	0.00005	Ctsl	1.32180	0.00020	Actn3	-0.89302	0.02875
Myl2	6.11599	0.00005	Mmrn1	1.31698	0.00860	Pcsk5	-0.89862	0.00820
Myoz2	5.58051	0.00005	Pdk4	1.30800	0.00005	Nupr1	-0.90227	0.00630
Ubd	5.40639	0.00005	Duoxa1	1.30254	0.02440	Fam210b	-0.91156	0.02540
Grem1	5.33672	0.02755	Abcg3	1.29177	0.01840	Coq10a	-0.91481	0.01730
Slc5a7	5.18457	0.00005	Cap2	1.28299	0.04390	Vit	-0.92231	0.02715
Lrrc2	4.86746	0.00045	Serpinf1	1.28251	0.00025	Syde2	-0.92314	0.00870
Pex5l	4.85667	0.00005	Nedd4l	1.28143	0.00010	Cox8b	-0.92601	0.02410
Ank3	4.68146	0.00005	Lpgat1	1.27565	0.00045	Hlf	-0.93522	0.02740
Csrp3	4.66841	0.00005	Snx7	1.27282	0.00330	Macrod1	-0.96515	0.01230
Atp6v0d2	4.35000	0.00005	Mme	1.26248	0.00025	Tmem38a	-0.96668	0.04730
Lipf	4.21641	0.00005	Palld	1.25857	0.00050	Aldh2	-0.97435	0.02150
Lmod2	4.12413	0.00005	Lcp2	1.25721	0.01195	Drap1	-0.97465	0.00520
Smpx	3.99658	0.01425	Tuba1a	1.22440	0.02680	Pkhd1l1	-0.98472	0.02355
Gpnmb	3.88689	0.00005	Slc7a2	1.22092	0.02570	Osr1	-0.99535	0.00570
Trdn	3.74491	0.00005	Pkia	1.21221	0.00160	Wt1	-0.99601	0.03560
Xirp2	3.51203	0.00005	Pde4d	1.19970	0.01405	Zfp462	-1.00980	0.04080
Ppp1r3a	3.48877	0.00005	Paqr9	1.19420	0.00055	Dido1	-1.01945	0.00210
Kcnj14	3.45995	0.00005	Serpinb9	1.19301	0.00035	Gdf10	-1.03041	0.00270
Rnf128	3.42156	0.00005	Mdfic	1.18980	0.00020	Gstt1	-1.03272	0.00240
S100a8	3.31546	0.00005	Ret	1.18603	0.00080	Ppl	-1.06460	0.00555
Atp1a4	3.30654	0.00005	Jph1	1.18349	0.01045	Upk1b	-1.07772	0.01690
Sel1l3	3.17623	0.00095	Robo1	1.18184	0.03275	Vwa1	-1.08309	0.00465
Gtse1	3.13560	0.00015	Mef2c	1.18090	0.00085	Eln	-1.09518	0.00590
Tfr2	3.02731	0.00005	Gbp4	1.16784	0.03530	Rhbdd2	-1.10020	0.00740
Shroom2	2.98629	0.00010	Cd44	1.16653	0.00105	Nbl1	-1.10227	0.00215
Oxtr	2.95219	0.00005	Dclk1	1.16251	0.00435	Cd209d	-1.10791	0.00665
Mrc2	2.91749	0.00005	Uhrf1	1.16182	0.02875	Sox7	-1.13613	0.00270
Fam83d	2.91268	0.00005	Pfkfb4	1.16080	0.01045	Dnah3	-1.14863	0.01960
D3Bwg0562e	2.89534	0.00015	Col4a5	1.15955	0.02065	Ebf2	-1.15209	0.00105
Mstn	2.88841	0.00855	Slamf9	1.15674	0.02125	Meis1	-1.15422	0.03400
Cadm1	2.86181	0.00005	Trp53i11	1.15342	0.00825	Podxl	-1.15656	0.00040
Itgax	2.81031	0.00005	Nos1	1.15019	0.01905	Rnaset2a	-1.15790	0.02180
Mypn	2.74714	0.00035	Alcam	1.13517	0.00935	Tmem120a	-1.16825	0.00025

Gene	Value	p	Gene	Value	p	Gene	Value	p
Clca1	2.72504	0.00025	Nsdhl	1.13294	0.00060	Itga3	-1.16830	0.00835
Camk2b	2.69670	0.00395	Sash3	1.09608	0.01425	Agpat6	-1.17268	0.00045
Sorbs2	2.68888	0.00005	Ugt3a2	1.09592	0.03295	Mylk4	-1.17730	0.02275
Spc25	2.59689	0.00005	Enah	1.08911	0.02215	Thbs1	-1.17841	0.00035
Dock8	2.56796	0.00005	Aplnr	1.08383	0.01545	Pdk2	-1.19746	0.00050
Scd2	2.55774	0.00005	Phf16	1.08037	0.00910	Klhl2	-1.20213	0.00015
Kif2c	2.55494	0.00015	Hmgcs1	1.05960	0.00095	Chac1	-1.20232	0.00300
Crisp2	2.54819	0.00215	Dck	1.05270	0.02220	Rnf144b	-1.21100	0.00025
Actn2	2.49379	0.00035	Mal2	1.04782	0.03375	Apln	-1.23107	0.00600
Dclk3	2.44742	0.00005	Ephx1	1.04186	0.00115	Prodh	-1.23897	0.00785
Txlnb	2.40947	0.00020	Adamts5	1.03553	0.00080	Col4a6	-1.24338	0.03775
Tnc	2.40946	0.00005	Nexn	1.03045	0.00740	Vmp1	-1.25415	0.00120
Art1	2.40136	0.00560	March7	1.02511	0.02905	Slc27a1	-1.28465	0.00015
Specc1	2.34646	0.00005	Fam111a	1.01240	0.01325	Chdh	-1.30547	0.00025
Sez6l	2.28107	0.00025	Maoa	1.01194	0.00190	Rasd1	-1.31284	0.00075
Fgf13	2.24289	0.00005	Cd52	0.99796	0.01065	Lrrn4	-1.31786	0.00815
Tfpi2	2.21637	0.00005	Tnfrsf21	0.98995	0.00810	Bcat2	-1.34113	0.00060
Saa3	2.20788	0.00005	Klhl13	0.98525	0.01415	Spock2	-1.34913	0.00245
Marc1	2.20116	0.00005	Gadd45a	0.97189	0.03705	Sbsn	-1.36238	0.00180
Cela1	2.19726	0.00005	Col6a5	0.96822	0.00955	Inmt	-1.38757	0.00005
Cpa2	2.17804	0.00085	Adssl1	0.96434	0.02610	Jph2	-1.39761	0.01070
Klhl41	2.17555	0.00170	Dhcr7	0.96008	0.02080	Gm10282	-1.42959	0.01845
Fam198b	2.16785	0.00005	Zfyve28	0.95037	0.03570	Camk2n1	-1.43181	0.00010
Lcp1	2.14038	0.00005	Arhgap18	0.93595	0.00870	Stk36	-1.43705	0.03560
Ncan	2.08159	0.00010	Ptger3	0.93463	0.00545	Igf2	-1.43891	0.00160
Cdca7l	2.05053	0.00455	Arhgef6	0.93204	0.04105	Pkdcc	-1.44683	0.00190
Fap	2.04322	0.00185	Trp53inp2	0.93025	0.00525	Upk3b	-1.46349	0.00125
Nrap	2.03113	0.00080	Rad50	0.92495	0.00520	Nmnat3	-1.46648	0.00230
Ccr5	2.02545	0.00005	Vgll3	0.91562	0.00525	Id1	-1.47751	0.00020
Rab27b	2.01671	0.00685	Tjp2	0.90237	0.00825	Klhdc8b	-1.49115	0.00015
Tpx2	2.01157	0.00010	Ptgr1	0.89330	0.03220	P2rx1	-1.50031	0.03610
Fbxo40	2.00091	0.01660	Fam107b	0.89181	0.02220	Asns	-1.52101	0.00005
3425401B19Rik	1.99914	0.00380	Slc6a6	0.89092	0.00330	Fam188b	-1.53488	0.00640
Mki67	1.99130	0.00005	Megf9	0.89047	0.01060	Rpp25	-1.55796	0.03810
Prkcq	1.96979	0.00330	Paqr7	0.88348	0.02315	Adam11	-1.60154	0.00965
Lrrn1	1.95640	0.00655	Ptprk	0.87987	0.01110	Rspo1	-1.60176	0.00155
Trim63	1.95132	0.00220	mt-Co2	0.87173	0.01625	Shisa4	-1.60196	0.02315
Hdac9	1.92729	0.00020	Ass1	0.86419	0.04525	Adra1b	-1.62057	0.02815
Mest	1.91801	0.00005	Zc2hc1a	0.85038	0.01295	Cxadr	-1.62369	0.00350
Emr1	1.87972	0.00005	Vldlr	0.85027	0.02895	S100a1	-1.63522	0.00005
Npnt	1.87204	0.04700	Aldh1a7	0.84603	0.00545	Cidea	-1.63726	0.03310
Cdkn1a	1.85332	0.00005	Prps1	0.84306	0.00575	Sfxn1	-1.67365	0.00005
Gm9696	1.83520	0.00710	Igf2bp2	0.84296	0.04070	Slc43a1	-1.69003	0.00005
Rcan2	1.82602	0.00015	Cyp4v3	0.83483	0.00695	Adrb2	-1.69743	0.00005

Lamb3	1.81432	0.00050	Fabp5	0.82004	0.01390	Mmp9	-1.71208	0.00075
Perp	1.80554	0.00900	Col6a2	0.81127	0.01890	Cabp4	-1.73408	0.03760
Esco2	1.80237	0.03315	Sc5d	0.81014	0.04425	Wfdc1	-1.75004	0.02880
Cpxm1	1.79040	0.00205	Fgl2	0.79535	0.03850	Ston2	-1.77116	0.02990
Smarca1	1.77500	0.01490	Cpe	0.79302	0.02145	Net1	-1.80107	0.00005
Hmmr	1.76278	0.00970	Lnx2	0.79001	0.03580	Krt18	-1.80230	0.01190
Fmr1	1.75909	0.00005	Syp	0.78819	0.01730	Krt8	-1.83272	0.01500
Sema4d	1.75804	0.00010	Fgf1	0.78710	0.03480	Echdc2	-1.87254	0.00035
Eya4	1.75753	0.00780	Cxcr4	0.78563	0.03610	Gpr64	-1.91195	0.00005
Lep	1.74852	0.00015	Anxa1	0.76589	0.01920	Il17rb	-1.91930	0.00365
Gm7694	1.74330	0.00115	Sfrp5	0.76136	0.02000	Acot4	-1.94048	0.00030
Clec4b1	1.73910	0.00835	Sema3c	0.75174	0.02160	Slc38a4	-1.95233	0.00500
Ckmt2	1.72956	0.00505	Gbp2	0.74405	0.01755	Slc1a3	-1.95645	0.00005
Pm20d1	1.72341	0.03055	Lhfpl2	0.73884	0.01570	Stx1b	-1.96105	0.00315
Fbp2	1.70058	0.01565	Vac14	0.72523	0.03635	Acsm5	-1.98582	0.00005
Scd4	1.70039	0.00970	B4galt6	0.72513	0.03995	Acacb	-2.02496	0.00005
Pam	1.69988	0.00440	S100a4	0.71243	0.04905	Agt	-2.06853	0.00005
Pak3	1.66227	0.00370	Nkd1	0.70875	0.04520	Ucp1	-2.10832	0.00005
Peg10	1.65643	0.00020	Col6a1	0.70852	0.03545	Usp35	-2.12827	0.00260
Cenpe	1.64860	0.00295	Rnf11	0.69599	0.03875	Adcyap1r1	-2.13199	0.00005
Insig1	1.62385	0.00005	Fam114a1	0.68821	0.03685	Wnt2b	-2.13759	0.00880
Tmem252	1.62067	0.00215	Hn1l	0.68014	0.03670	Rorc	-2.14456	0.00905
Lctl	1.60067	0.00005	Mylip	0.67530	0.04510	Gpx3	-2.16907	0.00005
Myom2	1.58631	0.00905	Dse	0.66001	0.04860	Ces1f	-2.21142	0.00005
Mfge8	1.55518	0.00005	Dap	0.63087	0.03800	Slc2a3	-2.21400	0.00005
Ckap2	1.54965	0.02595	Cryab	0.62920	0.04420	Fam13a	-2.21699	0.00005
Folh1	1.54280	0.00040	Pea15a	0.61954	0.04540	Tmem88b	-2.25176	0.00005
Prune2	1.54052	0.00100	Cdr2	0.60890	0.04805	Kank4	-2.26148	0.00190
Mreg	1.53819	0.02775	Fbn1	-0.60186	0.04625	2810459M11Rik	-2.26481	0.00195
Sept9	1.53481	0.01790	Tusc5	-0.65934	0.03785	Cyp2e1	-2.27334	0.00005
Iigp1	1.53342	0.00075	Arxes2	-0.66741	0.02865	1700024P16Rik	-2.30334	0.00130
Xkr4	1.52368	0.02490	Myh4	-0.68123	0.04120	Tst	-2.31019	0.00005
March1	1.52248	0.00090	St3gal1	-0.68424	0.04385	Olfr1034	-2.33845	0.00520
Gbp6	1.50176	0.00055	Pgm2	-0.69122	0.03125	Mycl	-2.35761	0.00005
Setbp1	1.49889	0.00230	Myl1	-0.69759	0.03385	Zyg11a	-2.38170	0.00620
Col12a1	1.48871	0.02055	Lpin1	-0.72180	0.02845	Col20a1	-2.40014	0.03760
Lum	1.48130	0.00005	Slc6a13	-0.74487	0.02730	Mrgprg	-2.52505	0.00970
Scd3	1.46293	0.00840	Chchd10	-0.75054	0.04705	Cyp1a1	-2.61707	0.00035
Angpt1	1.44537	0.00530	Klhl21	-0.76645	0.03500	Irf4	-2.67947	0.00005
Esrrg	1.43926	0.04745	G0s2	-0.76734	0.02240	Olfr1033	-2.80674	0.00005
Kcnt2	1.43054	0.03365	Tinagl1	-0.77846	0.02735	Dok7	-2.88559	0.00080
St8sia4	1.42920	0.00050	Abi3bp	-0.77998	0.02805	Gm454	-2.94042	0.00005
Kif11	1.42196	0.01435	Dennd2a	-0.78920	0.02760	Slc27a2	-2.96566	0.00030
Adamtsl1	1.42150	0.02720	Ppp1r12b	-0.79092	0.02220	Drd1a	-3.05742	0.00385

Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value
Pi15	1.42005	0.02110	Sult1e1	-0.80239	0.03465	Fn3k	-3.18904	0.00090
Igfals	1.41987	0.00005	Irs2	-0.80406	0.04925	Grem2	-3.37006	0.00005
Ccser2	1.41029	0.03095	Trip10	-0.81135	0.01535	Acsm3	-4.11177	0.00355
Cfh	1.40343	0.00025	Zbtb16	-0.81608	0.01430	Cyp2f2	-4.38540	0.00005
Gbp5	1.40319	0.00670	Mlxipl	-0.82073	0.04310	Cyp3a11	-6.20470	0.02155
Fam49a	1.39420	0.00005	Apold1	-0.85794	0.04200	Fabp1	-6.33308	0.02265
Lbp	1.36790	0.00020	Gpd2	-0.85846	0.02940			

823 genes were selectively dysregulated in the eWAT of NAFL mice.

Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value
mt-Atp8	17.27980	0.03815	Ube2w	0.62125	0.00455	Mup14	-1.56376	0.03715
Pkp1	4.21818	0.00155	Gltp	0.61845	0.00215	Gadd45g	-1.58617	0.00005
Grid1	4.04006	0.02690	Hsp90aa1	0.61755	0.03165	Clic6	-1.59124	0.00175
Hephl1	3.45101	0.01285	Gm16515	0.61243	0.01720	Gm9396	-1.59424	0.04305
Ear11	3.44296	0.00005	Slc48a1	0.61094	0.00625	Atp1b2	-1.60549	0.00005
Bpifb6	3.20620	0.01030	Tpm4	0.61042	0.01215	Lcn2	-1.60705	0.00005
Mogat2	3.01991	0.00025	Plxna1	0.60958	0.00700	Nt5e	-1.61198	0.00005
Serpina3a	2.67352	0.02240	Hsd17b12	0.60537	0.00640	Schip1	-1.61334	0.00015
Pla2g2e	2.33914	0.00010	Kcnj15	0.60473	0.00715	4921507P07Rik	-1.61392	0.02375
Klf14	2.32302	0.00025	Hebp1	0.59996	0.00380	Col8a2	-1.61712	0.01615
Ache	2.31590	0.02105	Kcnj8	0.59974	0.02520	Serpina3k	-1.63113	0.00025
Rpl9-ps6	2.27863	0.00005	Col5a2	0.59923	0.00330	Prrt1	-1.63887	0.01200
Il13ra2	2.27188	0.02440	Pkp2	0.59857	0.00380	Cox7a1	-1.64862	0.00140
Chga	2.24295	0.04960	Kpna2	0.59635	0.00820	Syngr1	-1.65805	0.03170
Golga7b	2.20440	0.00140	Sucnr1	0.59619	0.00555	Bhmt	-1.66951	0.00190
Fbxo48	2.19334	0.03885	Tuba1b	0.59538	0.01530	Got1	-1.66978	0.00010
Srp54b	2.17203	0.00510	Palmd	0.59334	0.01325	2810408A11Rik	-1.67067	0.03385
Fam20c	2.15858	0.00005	Tubg1	0.59314	0.04650	Egf	-1.67138	0.01310
Ttc30a2	2.06497	0.02220	Casp12	0.59307	0.01230	4930571K23Rik	-1.67214	0.00895
Map1a	1.98046	0.02270	Parp3	0.59092	0.01875	Shisa9	-1.67254	0.00255
Tnfrsf17	1.97161	0.04020	Nln	0.59027	0.00570	Cfi	-1.67267	0.04005
Ptchd4	1.96345	0.00010	Dock5	0.59021	0.02395	Cetn1	-1.67419	0.03685
Cxx1b	1.90531	0.00005	Gtf2h5	0.58852	0.01070	Elmod1	-1.67569	0.00370
Krt79	1.89141	0.01080	Kirrel	0.58802	0.00410	Smox	-1.67711	0.00005
Cadps	1.86438	0.00135	Edem1	0.58742	0.00565	Amd1	-1.68466	0.00005
Glrb	1.78911	0.02175	Tfg	0.58523	0.00715	Cacna2d1	-1.69043	0.00005
Mageb18	1.75711	0.00630	Cblb	-0.58681	0.00620	2610318N02Rik	-1.69166	0.03615
Odf3l1	1.73902	0.00185	Gata6	-0.58814	0.03550	Usp2	-1.70248	0.00090
Gabrr2	1.73678	0.00065	Fads1	-0.59058	0.00560	Mup7	-1.70606	0.00295
4933427G17Rik	1.71900	0.03745	Cd14	-0.59364	0.04180	Cacna1h	-1.71510	0.02605
Fam83a	1.71844	0.00090	Kctd6	-0.59816	0.01705	Pde4dip	-1.74716	0.00005
Siglecg	1.70306	0.02170	Dusp18	-0.59834	0.03675	Ttll7	-1.75392	0.00005
Srpx2	1.66214	0.00005	Arhgap42	-0.60109	0.00965	Maats1	-1.76867	0.03705

Gene	Value	p	Gene	Value	p	Gene	Value	p
Lag3	1.65121	0.00450	Limk2	-0.60266	0.03540	Rsph1	-1.76873	0.00895
Nek6	1.64430	0.00015	Pabpn1	-0.60894	0.04625	Gfra1	-1.77074	0.00720
Pcolce2	1.62592	0.00005	Crebzf	-0.60968	0.03175	1700019M22Rik	-1.78094	0.02460
Ephb2	1.58283	0.00090	Man2a1	-0.61258	0.00490	C7	-1.79632	0.00005
Ppp1r3d	1.57252	0.00010	Btg1	-0.61845	0.00395	Hook1	-1.80638	0.00215
Unc119	1.56277	0.00005	Map3k7cl	-0.62116	0.03675	Cldn10	-1.81469	0.01225
Dgat2	1.55865	0.00010	Rif1	-0.62665	0.01340	Dcdc2a	-1.82135	0.04865
Dnajb13	1.53282	0.01235	Dnal1	-0.62861	0.03680	Cdhr4	-1.83159	0.02590
Acss2	1.52230	0.00005	Fmo2	-0.63143	0.00545	Rnf157	-1.83586	0.04900
Hist1h1e	1.50844	0.02450	Bmp4	-0.63281	0.04500	Pde11a	-1.84107	0.01005
Unc79	1.50508	0.02995	Jhdm1d	-0.63772	0.00255	Cxcl13	-1.84663	0.00055
Bmp3	1.49814	0.00005	Ccnj	-0.64076	0.03615	Rgs2	-1.85783	0.00005
Cox4i2	1.47050	0.00880	Tead1	-0.64950	0.00540	Kif2b	-1.86048	0.01720
Esm1	1.45693	0.03190	Penk	-0.65100	0.00280	Ankrd9	-1.88256	0.00535
Lypd6b	1.45363	0.04350	Vdac3-ps1	-0.65262	0.02560	Spata18	-1.89377	0.00810
Wscd2	1.45253	0.01085	Slc16a7	-0.65300	0.00525	Fam71d	-1.89791	0.03960
Sgol2	1.44134	0.03255	Grhl1	-0.65444	0.03380	Bmpr1b	-1.90994	0.00035
Lonrf2	1.42200	0.02725	Synpo	-0.66017	0.02730	Fbxo32	-1.91538	0.00005
Tmem45b	1.41516	0.00005	Mpi	-0.66424	0.03225	Tnnt1	-1.93171	0.00525
Aldh3b2	1.41244	0.00005	Ahr	-0.66587	0.02465	Scnn1a	-1.93907	0.00580
Cd209e	1.40060	0.03760	Ugp2	-0.66789	0.00645	Pdlim3	-1.96397	0.00005
Snx20	1.39844	0.03215	Otud1	-0.67280	0.02615	Rab15	-1.97849	0.01305
C130026I21Rik	1.38463	0.02555	Slc16a2	-0.67482	0.03425	Cdh19	-1.98310	0.00435
Mmp3	1.37113	0.03740	Hmgb1	-0.67576	0.01250	Cabs1	-1.98378	0.01905
Tstd3	1.36970	0.03240	Fzd7	-0.67629	0.01795	Atp1b1	-1.99395	0.00005
Prdm8	1.36769	0.03525	Srrm2	-0.67769	0.00455	Iglc2	-1.99502	0.00005
Olfm1	1.36735	0.00005	Ogfrl1	-0.67957	0.00810	4933411K16Rik	-2.00599	0.04355
Grtp1	1.36694	0.00325	Dnajb5	-0.67959	0.02090	Enkur	-2.01462	0.00465
Orm1	1.34706	0.00540	Ivns1abp	-0.67975	0.02120	Plp1	-2.03639	0.00030
Ptx3	1.34512	0.03215	Nxn	-0.67997	0.04230	Eif4ebp3	-2.04600	0.01490
Cxcl1	1.32705	0.04910	Odf2	-0.68103	0.03715	Calml3	-2.04841	0.01470
Bcar3	1.30583	0.00005	Slc46a3	-0.68279	0.04740	Nr4a1	-2.05755	0.00035
Rasgrp1	1.26310	0.02090	Bin1	-0.68748	0.00535	Smcp	-2.06187	0.00015
Nuf2	1.26098	0.02490	Golga4	-0.69246	0.00155	Gm10032	-2.06268	0.02230
Hfe	1.23768	0.00005	Tarsl2	-0.69467	0.03295	Wwc1	-2.07576	0.01915
Trim14	1.23314	0.02375	Adamts15	-0.69957	0.01045	Fhl4	-2.08851	0.00090
Hist1h2bc	1.23107	0.00005	Pck2	-0.70208	0.00795	Prss39	-2.09714	0.04375
Col6a3	1.22834	0.01000	L2hgdh	-0.70544	0.00625	Hoxa9	-2.09773	0.03210
Slc2a10	1.19674	0.01715	Ccp110	-0.70595	0.02025	Spem1	-2.10041	0.02610
Tlcd2	1.19630	0.02620	St3gal5	-0.70751	0.01790	Mapt	-2.10052	0.00010
Sgms2	1.19363	0.00080	Sgpl1	-0.70872	0.00095	Serpina1e	-2.10215	0.00110
Tspan17	1.18933	0.00005	Hif1an	-0.71555	0.00365	Pmfbp1	-2.11859	0.01380
Atp10a	1.18772	0.00010	C6	-0.71675	0.00195	Rwdd3	-2.13190	0.00160

Rasl12	1.17460	0.00045	Maob	-0.71908	0.00060	Ttll13	-2.13385	0.02830
Ppfia3	1.16726	0.04525	Pde1a	-0.71933	0.01090	Hnf4a	-2.16642	0.00610
Crtac1	1.15964	0.00005	Lrig3	-0.72325	0.02100	Plekhb1	-2.16684	0.00005
Fdps	1.15955	0.00050	Upf3b	-0.72526	0.00360	4922502D21Rik	-2.17341	0.00130
Tspan6	1.15345	0.00285	Scn1b	-0.72603	0.00875	2010300C02Rik	-2.17450	0.01860
Diras2	1.15056	0.04085	Tfb2m	-0.72709	0.04315	1700003E16Rik	-2.17710	0.03790
Sdsl	1.14697	0.03675	Fam214a	-0.72992	0.01930	Txndc2	-2.18897	0.00120
Anxa2	1.14668	0.00075	2410002F23Rik	-0.73097	0.01190	Phka1	-2.19768	0.00005
Dtl	1.14288	0.04485	Zkscan3	-0.73321	0.00285	Flnc	-2.20079	0.00005
Rab11fip4	1.14007	0.04130	Kcnc3	-0.73948	0.01315	Sult1d1	-2.20852	0.03140
Mgl2	1.13143	0.00005	Nampt	-0.74048	0.00220	Prm2	-2.21008	0.00005
Pcbd1	1.10810	0.00110	Nr2f2	-0.74104	0.00165	Tdo2	-2.21198	0.00170
Dmtn	1.10361	0.00005	Prkab2	-0.74128	0.00185	Ccdc19	-2.21897	0.04425
Hist1h2be	1.09659	0.00020	Plec	-0.74212	0.00780	Alox15	-2.22036	0.00265
Cdsn	1.09309	0.00005	Acvr1c	-0.74334	0.00180	Epcam	-2.22086	0.01045
Myl4	1.09087	0.01105	Satb1	-0.74417	0.01950	Odf1	-2.22588	0.00085
Sfrp4	1.08963	0.00240	Slc25a4	-0.74469	0.00470	Tuba4a	-2.22625	0.00430
Sgsh	1.08917	0.00360	Ednra	-0.74500	0.00585	Tsnaxip1	-2.24415	0.04720
Unc5a	1.08541	0.04065	Mertk	-0.74796	0.00080	Pipox	-2.24788	0.03175
Itpk1	1.07494	0.01835	Ppp1cc	-0.75021	0.01545	Ppm1l	-2.25165	0.00025
Npr3	1.07463	0.00495	Got2	-0.75124	0.00150	Cdh16	-2.26434	0.00625
Cfb	1.06889	0.01310	Foxc1	-0.75134	0.02425	Rassf6	-2.27901	0.00765
Tnfrsf10b	1.06596	0.00665	Srcap	-0.75770	0.03730	4930544G11Rik	-2.27953	0.04915
Atp2a3	1.05884	0.00005	Pnpla7	-0.76482	0.04920	Nr4a3	-2.28110	0.00005
Col5a1	1.05577	0.00005	Tob2	-0.77003	0.00040	Me3	-2.28790	0.00610
Mmd	1.05362	0.01460	Tfpi	-0.77014	0.00480	Spata19	-2.28834	0.00525
Ccdc64	1.03945	0.04620	Rfx3	-0.77104	0.01925	Acsl6	-2.28893	0.00605
Htra3	1.03771	0.00005	Ano1	-0.77434	0.00575	H1fnt	-2.30162	0.00580
Klb	1.03721	0.00005	Fkbp5	-0.77662	0.00415	Dio2	-2.30658	0.00090
Dusp10	1.03298	0.00215	Fem1a	-0.78004	0.00205	1700015G11Rik	-2.31728	0.04335
Lss	1.02341	0.00825	Slc12a2	-0.78040	0.00045	Col6a4	-2.33009	0.04155
9030617O03Rik	1.02276	0.00870	Cdc14a	-0.78279	0.01815	Prdx6b	-2.33628	0.03290
Tuba1c	1.01984	0.00010	Pank1	-0.78926	0.03780	Synm	-2.34527	0.00005
Clmp	1.01546	0.00005	Foxred2	-0.78928	0.02260	Clip4	-2.35001	0.00015
Kcnc2	1.01405	0.01590	Cdkn1c	-0.79561	0.00140	4933402P03Rik	-2.36677	0.04155
Itga7	1.01320	0.00005	Scara5	-0.80681	0.00045	Tmem52	-2.36776	0.00440
Serpinh1	1.01122	0.00005	Zfp39	-0.81596	0.01990	Cacnb1	-2.37005	0.03575
I830012O16Rik	1.01060	0.00925	Il6ra	-0.81616	0.00100	Tmod1	-2.37155	0.01970
Igsf10	1.00791	0.02855	Cep85l	-0.81864	0.02195	Padi2	-2.37336	0.00010
Col5a3	1.00703	0.00005	Myo1b	-0.82725	0.01160	Gprasp2	-2.37622	0.00005
Gpc1	1.00694	0.00005	1700029J07Rik	-0.83465	0.03070	Ak7	-2.39182	0.00780
Zbed4	1.00302	0.01480	Cnr1	-0.83728	0.00520	Angpt4	-2.39399	0.00280
Elmo3	1.00285	0.00585	Efcab2	-0.84167	0.04415	Prm1	-2.40086	0.00335
Hspb7	1.00172	0.00005	Arhgap28	-0.84642	0.03865	Foxj1	-2.40489	0.02685

Rbm28	0.99899	0.01355	Trp53inp1	-0.84976	0.00005	Rarres1	-2.40794	0.00070
Col18a1	0.99861	0.00045	4931406P16Rik	-0.85017	0.00380	Csnka2ip	-2.41848	0.04560
Thnsl1	0.99783	0.04530	Pfn2	-0.85102	0.00200	Ctnna3	-2.42390	0.01765
Map6	0.99742	0.00160	Cyp2d22	-0.85144	0.00015	Ddx25	-2.42980	0.03660
Rab9b	0.98310	0.00785	Adamts12	-0.85456	0.00035	Hspa1l	-2.44386	0.01325
Myom3	0.97061	0.03065	Ildr2	-0.85555	0.00235	Acsbg1	-2.44641	0.00005
C130074G19Rik	0.96946	0.00005	Polr3gl	-0.85796	0.00155	Lrrc46	-2.44919	0.00810
Abcg1	0.96647	0.00005	Hif3a	-0.86215	0.00840	Cypt12	-2.46728	0.00385
Slc35g1	0.96406	0.00455	Gm6768	-0.86263	0.00195	2010015L04Rik	-2.46779	0.01255
Agpat2	0.96140	0.00140	Spon1	-0.86606	0.00085	Des	-2.48235	0.00005
Col15a1	0.95637	0.00095	Gata2	-0.86681	0.01455	4933415F23Rik	-2.48244	0.04250
Prkcdbp	0.95067	0.00005	Gapdh	-0.87813	0.00035	Smtnl2	-2.50285	0.00005
Degs1	0.95022	0.00005	Amigo2	-0.88013	0.00475	Lsmem1	-2.52139	0.01305
Rarres2	0.94872	0.00005	Gpm6a	-0.89484	0.00245	1700016K19Rik	-2.53885	0.04275
Itgb5	0.94616	0.00325	Ddo	-0.89924	0.02805	4933402J07Rik	-2.55000	0.03065
Rab7l1	0.94498	0.00130	Gpcpd1	-0.90577	0.00060	Epb4.1l4b	-2.55268	0.00215
Me1	0.93988	0.00070	Arrdc2	-0.90793	0.00180	Slc30a2	-2.58470	0.00105
Cmc2	0.93929	0.02665	Gpr126	-0.90804	0.02250	Slc16a3	-2.58510	0.00010
Fam110c	0.93743	0.00145	Aox3	-0.91301	0.01910	Tpm2	-2.64295	0.00005
Sod3	0.93368	0.00005	Bcl2l1	-0.92228	0.00230	Pah	-2.64372	0.00385
Hspa12a	0.93358	0.00005	Slc4a4	-0.92351	0.00010	Akap6	-2.64633	0.00050
Rap1gap2	0.92954	0.00055	1700025G04Rik	-0.92776	0.03725	Akap3	-2.66827	0.02860
Comt	0.92833	0.00140	4833403I15Rik	-0.93077	0.03870	Mup11	-2.68437	0.01215
Sdk1	0.92438	0.02805	Coro6	-0.93175	0.00570	1700013G24Rik	-2.69973	0.03430
Tiam1	0.92148	0.00315	Vnn1	-0.93218	0.00310	1500015O10Rik	-2.74242	0.00315
Tubb2a	0.92077	0.00055	Sfrp2	-0.93414	0.00255	Cldn11	-2.74577	0.00005
Mmp15	0.92047	0.03975	Tgfb2	-0.93479	0.00425	Ccdc113	-2.75207	0.03175
Adam12	0.91696	0.00005	2700097O09Rik	-0.93632	0.03160	Ptgds	-2.75521	0.00075
Abat	0.91603	0.00005	Cyp1b1	-0.94063	0.00005	Hpca	-2.78669	0.00010
Itga6	0.91529	0.00030	Amica1	-0.95565	0.04115	A330021E22Rik	-2.79066	0.00005
Vstm4	0.91123	0.00550	Rps6ka2	-0.96047	0.01085	Mael	-2.79156	0.02060
Cdkn2b	0.90935	0.02890	Amot	-0.96286	0.00130	Fam134b	-2.86928	0.00005
Pgd	0.90535	0.00010	Lmod1	-0.96743	0.00245	Mlf1	-2.88755	0.00005
N6amt2	0.89929	0.01390	Prom1	-0.96768	0.00930	Trim72	-2.92537	0.00210
Mgmt	0.89912	0.03830	Cd46	-0.96860	0.04075	Cmtm2b	-2.92955	0.02040
Dhx32	0.89686	0.03535	Fam107a	-0.97736	0.00005	Abcb4	-2.93751	0.00005
S100a11	0.89588	0.00015	Dixdc1	-0.97968	0.00890	Wnk2	-2.96021	0.00145
Akap17b	0.89002	0.01625	Myl9	-0.97973	0.00015	Ccdc153	-2.99860	0.01605
Ppic	0.88916	0.00005	St3gal6	-0.98214	0.02210	Mt3	-2.99895	0.04815
Tspan18	0.88390	0.01235	Prlr	-0.98289	0.00915	Cobl	-3.02652	0.02205
Cd59a	0.88136	0.00005	Cbx7	-0.98782	0.03095	Syce1	-3.05334	0.02340
Cd209a	0.87873	0.00880	Gstm5	-0.98829	0.00020	Tmco2	-3.09621	0.01445
Cystm1	0.87682	0.00100	Dnajc27	-0.99040	0.00465	Tmem56	-3.10415	0.00005
Prelp	0.87580	0.00455	Rbp1	-0.99596	0.02020	Pfkm	-3.15028	0.00005

Rtn4rl1	0.87510	0.00055	Isyna1	-0.99667	0.01745	Serpina3j	-3.15609	0.01735
Gale	0.86941	0.03745	Slc35e4	-0.99706	0.01740	Alpk3	-3.16024	0.00005
Slc25a19	0.86803	0.03945	Lamc2	-1.00399	0.04535	Tcea3	-3.16408	0.00005
Akap2	0.86485	0.00015	Shisa2	-1.01568	0.00615	Murc	-3.17734	0.00005
Dagla	0.86260	0.03795	Dzip1l	-1.02187	0.03805	Dusp13	-3.19232	0.00155
Irs3	0.86227	0.00310	Epha4	-1.03010	0.02585	Tnp2	-3.19509	0.00005
Fscn1	0.85425	0.03450	Nr6a1	-1.03214	0.03880	4930503B20Rik	-3.20345	0.00655
Ubtd1	0.85236	0.01530	Ppp2r3a	-1.03623	0.00005	Mlip	-3.20398	0.00005
Syt12	0.84970	0.03295	Usp54	-1.04397	0.04500	1700092M07Rik	-3.20773	0.03935
G6pdx	0.84921	0.00070	Map1b	-1.04569	0.00005	Cdh1	-3.22210	0.04820
Sept4	0.84829	0.00410	Sox9	-1.04915	0.03800	Bdh1	-3.22501	0.00030
Phf8	0.84755	0.00010	Spata24	-1.05206	0.01845	Srl	-3.24015	0.00005
Ear2	0.84409	0.00070	Myh11	-1.05400	0.00005	4921530L21Rik	-3.26641	0.03690
Rab38	0.84369	0.03240	Arrdc3	-1.06352	0.00005	Gm15440	-3.29804	0.03285
Sqle	0.84341	0.02215	Ttyh1	-1.06535	0.03350	Ddit4l	-3.31125	0.00035
Trabd2b	0.83847	0.00030	Itgb4	-1.06801	0.03120	Gdap1	-3.31207	0.00105
Large	0.82955	0.00055	Lrrc20	-1.06801	0.00810	Mup17	-3.34883	0.00070
Pcyox1	0.81520	0.00085	Slpi	-1.07922	0.01995	Ldb3	-3.38083	0.00005
C1qtnf1	0.81371	0.00030	Gpr157	-1.08143	0.00130	Tssk2	-3.40126	0.01905
Gcsh	0.81097	0.00015	Eps8l2	-1.08144	0.03295	Klhl33	-3.40926	0.03055
Acaa1b	0.80918	0.00585	Il33	-1.08532	0.00025	Stac3	-3.45819	0.00140
Atp9a	0.80706	0.00005	Nt5dc3	-1.08616	0.00090	Asb2	-3.47445	0.00015
Pmepa1	0.79984	0.00030	Ropn1l	-1.08808	0.02060	Tspan8	-3.47451	0.00035
Pafah2	0.79722	0.00595	Colec11	-1.09243	0.04350	Asb10	-3.54496	0.00020
Lgals1	0.79393	0.01380	Efhc1	-1.10503	0.02440	Erich2	-3.58295	0.00350
Dhcr24	0.78978	0.00790	Prkaa2	-1.10740	0.00005	Pon1	-3.58813	0.00005
Optn	0.78895	0.00035	Steap2	-1.10839	0.00015	Tpm1	-3.58965	0.00050
Acbd4	0.78775	0.01645	Gas1	-1.11013	0.00005	Trank1	-3.60008	0.00015
Synpo2	0.78766	0.00790	Fmod	-1.11285	0.00020	Asb16	-3.62290	0.00115
Ppia	0.78722	0.00290	Errfi1	-1.12839	0.00005	1700008F21Rik	-3.64330	0.00690
Lurap1l	0.78551	0.01195	Col6a6	-1.13287	0.00035	Nme5	-3.64478	0.00015
Ttll1	0.78381	0.03635	Ism1	-1.13506	0.00555	Ip6k3	-3.66486	0.01935
Nudcd2	0.76859	0.00385	Ybx2	-1.14153	0.03520	Kctd14	-3.68268	0.00165
Aen	0.76829	0.00420	Dusp26	-1.14489	0.04160	Slc8a3	-3.69055	0.00015
Trhde	0.76436	0.03790	Syt2	-1.14857	0.03970	Clcn1	-3.80511	0.00165
Gramd3	0.75995	0.00320	Pdlim5	-1.15315	0.00280	Sh3bgr	-3.82586	0.00005
Sardh	0.75762	0.03235	Bmp2	-1.15549	0.00060	Car14	-3.83849	0.04185
Ltc4s	0.75179	0.02635	Clic5	-1.15681	0.00005	Wdr52	-3.86906	0.03835
Msrb2	0.75153	0.00685	Susd4	-1.16128	0.02465	Asb14	-3.89789	0.00010
Ccr2	0.74890	0.00050	Itm2a	-1.16157	0.01985	Capn3	-3.90290	0.01050
Ctsd	0.74853	0.01480	Bmper	-1.16425	0.00005	Fabp3	-3.92858	0.04875
Eif1a	0.74785	0.00055	Susd2	-1.16737	0.00370	Bex4	-3.94617	0.03955
Sh2d4a	0.74561	0.03430	Gulp1	-1.17027	0.00005	Synpo2l	-4.01449	0.00090

Gene	Value	p	Gene	Value	p	Gene	Value	p
Mxra8	0.74506	0.00685	Ptp4a3	-1.17805	0.00005	Alpk2	-4.01814	0.00010
Fam149a	0.74495	0.00360	Fst	-1.18080	0.00400	Impg2	-4.03642	0.00645
Pigs	0.74002	0.00420	Ppp1r3c	-1.18471	0.00005	Casq1	-4.10069	0.00005
Kif21a	0.73803	0.00335	Cdh11	-1.18771	0.00210	Rragd	-4.12535	0.00005
Ccl11	0.73595	0.04065	Mal	-1.19132	0.03035	Trim55	-4.14690	0.03075
Slc25a10	0.73391	0.00060	Tbx3	-1.19401	0.00080	Cnksr1	-4.17431	0.00005
Tenm4	0.73176	0.00090	Myo5b	-1.19476	0.03615	Fndc5	-4.21897	0.00420
Fam213b	0.73096	0.00165	Enpp6	-1.19886	0.02070	Itgb1bp2	-4.22237	0.04310
E2f3	0.72427	0.02105	Espn	-1.20632	0.02545	Asb11	-4.29117	0.00005
Gpt	0.72383	0.00100	Adck3	-1.21180	0.02805	Jsrp1	-4.29226	0.00030
Chek2	0.72081	0.02320	Fam180a	-1.21187	0.01390	Scn4b	-4.32645	0.00005
Plekhm3	0.71974	0.01620	Dennd3	-1.21510	0.01290	Lmod3	-4.36282	0.00005
Epb4.1l2	0.71943	0.00390	Slco2a1	-1.21979	0.01330	Hfe2	-4.37799	0.00005
Fam174b	0.71767	0.01100	F830016B08Rik	-1.22406	0.00415	Eno3	-4.42548	0.00005
Hr	0.71721	0.01295	Npy1r	-1.22982	0.00410	Rbm24	-4.45234	0.00015
Als2cr12	0.71620	0.02060	Kcnab1	-1.23322	0.00270	Mup9	-4.46035	0.00030
Pamr1	0.71455	0.01280	Osbp2	-1.23332	0.00670	Tmem116	-4.48300	0.00015
Adora1	0.70820	0.00255	Mettl22	-1.23968	0.03300	Ankrd23	-4.51917	0.00005
Manba	0.70809	0.04735	Pfas	-1.24025	0.00555	Camk2a	-4.55291	0.00005
Gypc	0.70776	0.00360	Xk	-1.24221	0.03685	Plcd4	-4.55932	0.00640
Ubap2	0.70590	0.02630	Pdgfrl	-1.24647	0.04165	Klhl31	-4.65020	0.00005
Inhbb	0.70563	0.00235	Stard10	-1.24652	0.01325	Ampd1	-4.70466	0.02940
Itih5	0.70443	0.02000	Ccbe1	-1.25490	0.00005	Smtnl1	-4.71242	0.01725
Myo1d	0.70307	0.00440	Fmo3	-1.25661	0.03865	Sypl2	-4.78870	0.00005
Nedd8	0.70144	0.00130	Thsd4	-1.27942	0.01185	Cacna1s	-4.79010	0.00005
Creb3l2	0.69811	0.01235	Sgk1	-1.28282	0.00005	Hrc	-4.81630	0.00005
Gfra2	0.69778	0.04770	Hoxb9	-1.28995	0.02945	Mybpc1	-4.86297	0.02505
Rab3il1	0.69742	0.01370	Mamstr	-1.29375	0.04795	Ankrd2	-4.86489	0.01135
Stim2	0.69712	0.01485	Ankrd33b	-1.29546	0.04915	Pvalb	-4.86655	0.00005
Kcnk3	0.69503	0.01445	Ccl28	-1.30941	0.01985	Tbx15	-4.87635	0.00005
Fads3	0.69308	0.00235	Lipg	-1.32209	0.04835	Cox6a2	-4.88252	0.03510
Fcrls	0.69227	0.00950	Fga	-1.32398	0.04000	Pygm	-4.88939	0.00005
Nid2	0.69129	0.03370	Cnn1	-1.33900	0.00035	Neb	-4.90516	0.00005
Higd1a	0.69080	0.00190	Plxnb1	-1.34317	0.00830	Ryr1	-4.94504	0.00005
Tmem205	0.68946	0.01120	Gm4980	-1.34716	0.01360	Mylpf	-4.96638	0.00005
Sncg	0.68407	0.01580	Crispld1	-1.34805	0.01955	Mettl21c	-4.97965	0.00325
Cspg4	0.68256	0.01865	Spa17	-1.34970	0.00150	Lrrc30	-4.98595	0.01455
Anxa5	0.68053	0.01865	1700019G17Rik	-1.35749	0.03930	Tnnc2	-5.01756	0.00005
Cldn5	0.67968	0.00335	2610018G03Rik	-1.37533	0.00240	Kcna7	-5.04082	0.00090
Kif3a	0.67892	0.02025	Fhl3	-1.37546	0.00680	Ank1	-5.05053	0.00005
Cib2	0.67881	0.00135	Cd24a	-1.39752	0.00005	Asb5	-5.05609	0.03410
Phlda3	0.67456	0.00710	Hspb6	-1.40243	0.00005	Cacng6	-5.05990	0.00460
Atp6v0a1	0.67224	0.02445	Phf7	-1.41877	0.00220	Rbfox1	-5.06101	0.00005
Cilp	0.66624	0.00735	Gm216	-1.42256	0.02360	Abra	-5.07431	0.00005

Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value
Scarb1	0.66601	0.00160	Hrasls5	-1.42538	0.03160	Obscn	-5.15626	0.00005
Eno1	0.66141	0.00530	Pgk2	-1.44063	0.01845	Apobec2	-5.16246	0.03180
Metrnl	0.65976	0.03145	Rps18-ps3	-1.44246	0.02785	Myoz1	-5.20615	0.00005
Dera	0.65919	0.01355	Adam5	-1.44561	0.02135	2310042D19Rik	-5.21594	0.00235
Cdk14	0.65661	0.00415	Emx2	-1.45388	0.03140	Rpl3l	-5.21835	0.00005
Ttc7b	0.65259	0.00145	Ociad2	-1.45544	0.02365	Tnnt3	-5.23356	0.00005
Pmvk	0.65240	0.01170	Cabyr	-1.47562	0.03290	Atp2a1	-5.24112	0.00005
Anxa6	0.64931	0.00515	Slco1b2	-1.48255	0.02635	Tcap	-5.27237	0.00005
Rexo2	0.64761	0.00205	Fgfr3	-1.49841	0.00020	Myh1	-5.30815	0.00005
Atox1	0.64709	0.00805	Pknox2	-1.51517	0.00225	Gm8226	-5.32053	0.00010
Ppp2r5a	0.64542	0.03320	Tpsb2	-1.52127	0.00705	Tnni2	-5.34138	0.00005
Mien1	0.64268	0.00960	Sptb	-1.52222	0.00620	Myo18b	-5.36968	0.00100
Lrrc39	0.64159	0.02715	Kcnma1	-1.52251	0.03885	Mylk2	-5.38465	0.00005
Plxnd1	0.64076	0.00295	Slc6a17	-1.53246	0.01005	Myot	-5.46705	0.00005
Ccnd2	0.63912	0.00345	Osbpl6	-1.53307	0.00295	Eef1a2	-5.49702	0.00005
Atg12	0.63814	0.00255	Epha3	-1.53373	0.01150	Myh2	-5.51072	0.00005
Htatip2	0.63628	0.00765	Tnik	-1.53731	0.00065	2310002L09Rik	-5.53646	0.00005
Mc2r	0.63613	0.00760	Pcp4l1	-1.54165	0.00045	Mybpc2	-5.62973	0.00005
Cd55	0.63553	0.00365	Dkk3	-1.54641	0.00100	Ckm	-5.66541	0.00005
Zfp931	0.63458	0.02265	Cpt1b	-1.54880	0.02435	Trim54	-5.75953	0.00405
Stam2	0.62643	0.01875	Agl	-1.55292	0.00005	Myf6	-5.92166	0.03935
Blvra	0.62518	0.00500	Amph	-1.55661	0.01990	Scn4a	-6.26408	0.00145
B3galtl	0.62446	0.00935	Rilpl1	-1.55774	0.00005			
Kctd3	0.62276	0.00580	Cand2	-1.56116	0.00805			

1420 genes were selectively dysregulated in the eWAT of NASH mice.

Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value
Myh6	10.29220	0.00020	Cep128	1.14712	0.03860	Lrrn4cl	-0.86062	0.01190
Mybpc3	7.80933	0.03715	Cd53	1.14684	0.00110	Chchd6	-0.86195	0.01725
Ryr2	6.60232	0.01250	Ly6c2	1.14228	0.04420	Trpv4	-0.86260	0.04745
Myh7	6.31324	0.00005	Gm5431	1.14195	0.03360	1810011O10Rik	-0.86286	0.00720
Itgad	5.96893	0.00580	Tmem184c	1.14104	0.00165	Flywch1	-0.86333	0.02105
Ankrd1	5.93003	0.00005	Dpy19l3	1.13757	0.02955	Flnb	-0.86372	0.00675
Nebl	5.70910	0.00005	Man1a2	1.13450	0.04480	Ackr3	-0.86378	0.00650
Sptlc3	5.58554	0.02860	Ube2d3	1.13358	0.00265	Lypla2	-0.86393	0.02595
Faxc	5.58274	0.00005	Cyfip2	1.13175	0.02045	Fam117a	-0.86530	0.02515
Casq2	5.27567	0.00005	Ica1	1.12764	0.02670	Zdhhc18	-0.86539	0.04100
Arl14epl	4.95089	0.01715	Lrif1	1.12719	0.01510	Tmem201	-0.86541	0.02280
Gdf3	4.74314	0.00540	Cul3	1.12578	0.03035	Alkbh3	-0.86555	0.03345

Gm15448	4.71678	0.00045	Ccl5	1.12502	0.04920	Oplah	-0.86687	0.02610
Tm4sf19	4.49052	0.00260	Cxcl14	1.12379	0.03215	1600014C10Rik	-0.86729	0.00585
Dsp	4.25098	0.00005	Ifi30	1.12200	0.02515	S100a10	-0.86792	0.00690
Cdkl4	4.22781	0.00005	Scai	1.11729	0.01540	Jag2	-0.86919	0.03625
Hist1h4d	4.20481	0.00020	Tmem176a	1.11673	0.00155	Farp1	-0.86990	0.02160
Pla2g5	4.11559	0.00005	P2rx7	1.11636	0.00170	Ppp1r37	-0.87061	0.00865
Rgs1	3.91132	0.00005	Emb	1.11598	0.00730	Fcgrt	-0.87130	0.01925
Car12	3.90301	0.00005	H2-Q7	1.11173	0.03415	Islr	-0.87211	0.01080
Myl3	3.87304	0.00005	Ppfibp2	1.11118	0.01635	Mrpl36	-0.87352	0.02645
Sycp3	3.83675	0.00040	Ccdc41	1.11111	0.00285	Plcd1	-0.87379	0.03020
Eya1	3.83171	0.00005	Rock1	1.11009	0.00130	Retsat	-0.87450	0.01485
Htr1b	3.81877	0.02980	Capza2	1.10715	0.04135	Ndufa2	-0.87462	0.01365
Kcnj12	3.75422	0.00020	Lrrc25	1.10641	0.01350	Klf2	-0.87778	0.00795
Lonrf3	3.69672	0.00010	Fbln7	1.10489	0.04895	2510002D24Rik	-0.87943	0.03285
Pgbd5	3.61781	0.00190	Rgs10	1.10320	0.00430	Repin1	-0.87963	0.02020
Cd180	3.56565	0.02010	Strn	1.10275	0.01045	Gng11	-0.87995	0.02130
Trem2	3.52121	0.00005	Ptpro	1.09633	0.01760	Tspan2	-0.88068	0.03465
Dusp27	3.48796	0.00015	Rmdn2	1.09625	0.01595	Ilkap	-0.88142	0.01675
Gm10184	3.48373	0.00725	Brwd3	1.08255	0.02795	Ndufb8	-0.88199	0.01285
Ngef	3.47530	0.00125	Pola1	1.08151	0.01285	Vamp2	-0.88220	0.01000
Faim3	3.46075	0.00155	Pgap1	1.07899	0.00845	Ndufb9	-0.88271	0.00635
Adh6b	3.45663	0.03085	Plxnc1	1.07742	0.01860	Klhl12	-0.88337	0.03075
Depdc1a	3.42262	0.00090	Mad2l1	1.07140	0.03555	Flad1	-0.88478	0.01110
4930502E18Rik	3.39232	0.00125	Il2rb	1.07094	0.04640	Enc1	-0.88554	0.00495
Vsig8	3.25914	0.03745	Sparc	1.07014	0.01735	H2afj	-0.88627	0.00940
Tlr13	3.24225	0.00005	Ywhae	1.06618	0.01340	Ndufa12	-0.88650	0.01935
Adam8	3.23098	0.00005	Dlg3	1.06595	0.01170	Cyc1	-0.88755	0.00725
Zranb3	3.16640	0.00275	Arhgap15	1.06518	0.02630	Eif1	-0.88862	0.01675
Art4	3.16527	0.00395	Wdr44	1.06512	0.01040	Atp2b4	-0.88966	0.00285
Hist1h2bb	3.15443	0.00010	Col28a1	1.06468	0.03455	Akap8l	-0.89065	0.01075
Brca1	3.15012	0.00005	Fam73a	1.06379	0.03265	Prr24	-0.89159	0.02460
Ogdhl	3.11871	0.00005	Tifab	1.06341	0.03185	Dmwd	-0.89206	0.01750
Slc37a2	3.11276	0.00005	Npl	1.06204	0.03400	Insig2	-0.89236	0.00520
Olfr558	3.08193	0.00020	Mrc1	1.06049	0.00160	Atp5k	-0.89585	0.00955
Mmp12	3.02748	0.00005	Ms4a6c	1.06025	0.00465	Eci1	-0.89667	0.00495
Kif15	3.02189	0.00020	Pla2g2d	1.05608	0.01350	Amacr	-0.89745	0.04330
Dhrs9	2.99852	0.00005	Ifi203	1.05399	0.03735	Phyh	-0.90002	0.00295
Clec12a	2.97753	0.00005	Kcnab2	1.05245	0.01320	Gpr153	-0.90175	0.03045
Rsad2	2.96271	0.00005	Rbm41	1.05048	0.04120	Mib2	-0.90267	0.03235
St14	2.95757	0.00005	Dmxl1	1.04792	0.00935	BC003965	-0.90338	0.01040
Ms4a4c	2.94825	0.00195	Slc11a1	1.04644	0.00535	Uqcrq	-0.90487	0.01090
Fcgr4	2.94762	0.00220	Irx3	1.04225	0.03760	Met	-0.90495	0.01285
BC030867	2.92235	0.00370	Ubtd2	1.04019	0.03650	Amotl2	-0.90590	0.02495
Lect1	2.91786	0.00480	Cobll1	1.03692	0.03745	Mmaa	-0.90615	0.01690

Gene	Value	p-value	Gene	Value	p-value	Gene	Value	p-value
Tlr8	2.90479	0.00005	Plin2	1.03663	0.03125	Mrpl38	-0.90616	0.01025
Tekt1	2.85260	0.00245	Slmap	1.03563	0.01250	Zmym6	-0.90661	0.02015
Ccne2	2.84775	0.03300	Fgd3	1.03205	0.03440	Safb2	-0.90669	0.03415
Mybl1	2.81947	0.00800	Tbc1d8b	1.02677	0.01170	Atp5e	-0.90692	0.00980
Efcab11	2.81145	0.01480	Sipa1l1	1.02672	0.00180	Josd2	-0.90704	0.03550
Dcstamp	2.79644	0.00130	Nedd1	1.02321	0.00760	Tspan7	-0.90808	0.00520
Gm4952	2.78028	0.00345	Erg	1.02209	0.02040	Fn1	-0.91040	0.00605
Slc29a4	2.75933	0.00370	Gsap	1.01917	0.03870	Rfx1	-0.91305	0.03350
Ccdc141	2.74996	0.00090	Col1a1	1.01728	0.00120	Bckdha	-0.91442	0.00475
Pbx3	2.74675	0.00005	Adcy7	1.01503	0.00305	Mettl7a1	-0.91488	0.00340
F7	2.74569	0.00035	Naip6	1.01452	0.04050	Ppp1r15b	-0.91544	0.00720
Klrb1c	2.73520	0.00215	Kalrn	1.01207	0.04920	Mcat	-0.91810	0.01790
Tcerg1l	2.73206	0.00200	Gusb	1.00916	0.00130	Atp5sl	-0.92024	0.03180
Pik3ap1	2.71715	0.00005	Btc	1.00902	0.00725	Cox8a	-0.92285	0.00595
Sgip1	2.70690	0.00855	Snap23	1.00847	0.01715	Sdad1	-0.92321	0.01840
Prf1	2.69156	0.00800	Cacna1e	1.00736	0.01255	Nova1	-0.92350	0.00930
Gas2l2	2.68410	0.00025	Adra1d	1.00554	0.04190	Idh3b	-0.92362	0.00850
Lair1	2.65384	0.00010	Parp14	1.00383	0.00110	Gstp1	-0.92434	0.01050
Il1rn	2.65359	0.00005	Sirpa	1.00278	0.01470	Ddx19b	-0.92518	0.02115
Pianp	2.64928	0.00015	Ube2d1	1.00099	0.00665	Zfp865	-0.92609	0.02770
Ska3	2.64427	0.02430	Dbf4	1.00097	0.04830	Tspo	-0.92643	0.00710
Nrip2	2.62043	0.00200	Bod1l	1.00001	0.00845	Shpk	-0.92743	0.03335
Cd22	2.59816	0.00315	Cd48	0.99884	0.01195	Ell	-0.92855	0.00815
Cd84	2.59541	0.00005	Tank	0.99849	0.00650	Aatk	-0.92910	0.01490
Ccdc88a	2.58728	0.00060	Aoah	0.99737	0.03930	Cebpa	-0.93060	0.01205
Cd72	2.58325	0.00675	Ogn	0.99621	0.02805	Gstt2	-0.93374	0.00980
Gm14409	2.55806	0.00050	Hif1a	0.99349	0.00250	Dact1	-0.93420	0.01535
Gm14403	2.52763	0.01135	Rab27a	0.99309	0.03095	Stk40	-0.93457	0.00615
Pkib	2.52132	0.00155	Ccng1	0.98987	0.00115	Dhx16	-0.93532	0.03855
Plxdc1	2.51634	0.00030	Gpc6	0.98898	0.01455	Acad10	-0.93573	0.03325
Arhgap25	2.51315	0.00010	Cpa3	0.98556	0.04785	Clpp	-0.93611	0.00680
Mbnl3	2.51231	0.00245	Stk3	0.98543	0.01250	Gpx1	-0.93987	0.00730
Dlgap5	2.50463	0.00750	Frrs1	0.98538	0.02690	Sulf1	-0.94209	0.00815
Tnfsf10	2.50280	0.00005	Pter	0.98329	0.02910	Ccdc85b	-0.94250	0.03220
Card11	2.50206	0.00095	Tpcn2	0.98214	0.03660	Sgta	-0.94567	0.00410
Wisp2	2.49901	0.00005	Pgm2l1	0.98139	0.03205	Pfkfb1	-0.94642	0.01765
Ddx4	2.48111	0.00425	Sh3bp2	0.98138	0.02690	Car5b	-0.94762	0.00215
Mmp27	2.47780	0.00330	Plscr4	0.98056	0.00590	Pi16	-0.94832	0.01800
Tnip3	2.47097	0.00055	P2ry6	0.97999	0.01115	Pygb	-0.94846	0.04785
Calr4	2.45803	0.00245	Hspb11	0.97811	0.04850	Mgst3	-0.94969	0.00425
Aff2	2.44779	0.00185	Tsc22d2	0.97684	0.02525	Mettl20	-0.94998	0.03005
Slfn9	2.44503	0.00015	Map2k4	0.97545	0.04655	Tut1	-0.95183	0.02900
Lat2	2.43848	0.00005	Epsti1	0.97524	0.03025	Bok	-0.95305	0.01765
9930111J21Rik2	2.43705	0.00865	Twistnb	0.97455	0.02475	Dak	-0.95373	0.04770

Mis18bp1	2.43670	0.00160	Hltf	0.97415	0.04095	Hsd3b7	-0.96030	0.02060
Melk	2.43570	0.00185	Mycbp2	0.97271	0.00595	Asb13	-0.96220	0.02035
AF251705	2.43537	0.00010	Arhgap9	0.97167	0.02685	Trip6	-0.96257	0.00790
Dpep2	2.43187	0.02920	Arid4a	0.97148	0.01035	Lrig1	-0.96276	0.02585
Kif20b	2.40656	0.00020	Ptpre	0.96873	0.02220	Rgma	-0.96411	0.00420
Il7r	2.39883	0.00005	Ifit2	0.96791	0.01920	Ifrd2	-0.96488	0.01850
Olfml3	2.39276	0.00005	Crebrf	0.96618	0.02835	Hsd17b10	-0.96779	0.00400
Slc15a3	2.39018	0.00235	Atad2	0.96433	0.02115	Mmp28	-0.96782	0.00515
Cenph	2.37248	0.02180	Ets2	0.96406	0.03265	A530016L24Rik	-0.96844	0.00265
Rasgef1a	2.36788	0.00275	Cyp51	0.96406	0.00570	Slc4a3	-0.96850	0.03500
Mpeg1	2.36429	0.00005	Malt1	0.96132	0.00630	Als2cl	-0.96884	0.01870
Nos1ap	2.36246	0.01865	Sept7	0.96044	0.00400	Mapk12	-0.96979	0.02125
Myo1e	2.36056	0.00005	Eps8	0.95905	0.01700	Med28	-0.97258	0.00700
Nceh1	2.35903	0.00005	Phtf2	0.95667	0.02065	Rarb	-0.97274	0.04890
Htr2a	2.35762	0.00530	Pik3cg	0.95522	0.02830	Rras	-0.97315	0.00150
Gm5150	2.35259	0.03720	Prps1l3	0.95457	0.03920	Pla1a	-0.97677	0.00590
Rasgef1b	2.35151	0.00040	Taok3	0.95188	0.00845	Trim28	-0.97726	0.03210
Evi2b	2.33650	0.01665	Wwp1	0.95028	0.02010	Isoc2a	-0.97802	0.00370
Emr4	2.31795	0.00145	App	0.94876	0.01970	Adcy4	-0.97852	0.01165
Glipr1	2.31628	0.04040	Abcg2	0.94308	0.00970	Safb	-0.97934	0.04885
Xcl1	2.29973	0.04165	Pltp	0.94119	0.04490	Zfp213	-0.97958	0.04785
Myo1f	2.29623	0.00005	Ap1s2	0.93504	0.01770	Rrs1	-0.98035	0.00490
Gli2	2.29548	0.02930	Rsrc1	0.93370	0.04635	Gas6	-0.98152	0.00235
Zbp1	2.29546	0.00050	Mlkl	0.93369	0.03605	Syne3	-0.98282	0.00770
Hpgds	2.28679	0.00005	A530054K11Rik	0.93307	0.02465	Tbrg4	-0.98310	0.00925
Tmem47	2.28585	0.00730	Fkbp7	0.93292	0.01080	Uqcr11	-0.98486	0.00460
Etv1	2.27347	0.00435	Tmem38b	0.93190	0.03665	Ndufa13	-0.98509	0.00385
Gzma	2.26690	0.01850	Ncf2	0.93184	0.01210	Fxyd2	-0.98748	0.02980
Stap1	2.26101	0.00370	Calcrl	0.93026	0.04090	Gtf2h4	-0.98756	0.03235
Rel	2.25803	0.00205	Fblim1	0.92892	0.00580	Nip7	-0.98909	0.03785
Itga4	2.25291	0.00105	Dtx4	0.92676	0.00975	Irs1	-0.99037	0.00530
Angptl1	2.24099	0.01590	Zeb2	0.92653	0.00740	Phldb1	-0.99224	0.01020
Gm10521	2.23870	0.00160	Tmed5	0.92653	0.02345	Derl1	-0.99442	0.00300
Tk1	2.23487	0.04390	Zfp51	0.92529	0.04875	Hspa12b	-0.99536	0.00260
Ccdc37	2.22395	0.00460	C5ar1	0.92423	0.00765	Mrps16	-0.99681	0.01555
Cux2	2.20947	0.00135	Ptprj	0.92282	0.00925	Mief2	-0.99715	0.04900
Cd3e	2.20056	0.00445	1110059E24Rik	0.92070	0.03180	Adprhl2	-0.99929	0.01600
Fhl2	2.19636	0.00025	Plekhf2	0.91722	0.03475	Emp2	-1.00048	0.01055
Xlr	2.17644	0.00640	Dnmt3a	0.91629	0.01110	Pdpn	-1.00050	0.01040
Ppp4r1	2.17566	0.02860	Rnf149	0.91587	0.00690	Scara3	-1.00147	0.00665
Atp8b4	2.17507	0.00005	Herc3	0.91387	0.01725	Atp5g2	-1.00405	0.01115
Fam167b	2.17137	0.00985	Selplg	0.91170	0.00990	Cpsf3l	-1.00567	0.04300
Rgs6	2.16174	0.04280	Pip4k2a	0.90992	0.00515	Plk3	-1.00623	0.04745
Igsf21	2.16152	0.00405	Cxcl9	0.90878	0.00865	Zfp503	-1.00687	0.00275

Gene			Gene			Gene		
Arl11	2.15166	0.00060	Glrx	0.90781	0.04505	Socs3	-1.00800	0.03285
Pde7a	2.15116	0.00005	Iqgap1	0.90750	0.00310	Cacnb3	-1.01015	0.04000
Aspm	2.14723	0.00045	Galc	0.90541	0.00860	Pcbp4	-1.01021	0.00930
Clec5a	2.14455	0.00540	Xrn2	0.90409	0.04805	1110001J03Rik	-1.01084	0.03205
Pvrl4	2.13979	0.00260	Sfr1	0.90037	0.00490	Ngdn	-1.01173	0.01140
Emid1	2.12755	0.01975	Prrx1	0.89921	0.01220	Cecr5	-1.01377	0.02610
Gm5900	2.11887	0.01930	Ehd4	0.89752	0.00405	Csad	-1.01635	0.00205
A630033H20Rik	2.11867	0.00085	Apc	0.89519	0.02680	Hic1	-1.01818	0.03755
Dnajc6	2.11125	0.00005	P2ry1	0.89442	0.03435	Proca1	-1.02106	0.00465
F10	2.10248	0.00250	Ifih1	0.89380	0.00990	Fmo5	-1.02156	0.00240
Gm13212	2.09881	0.01770	Map9	0.89335	0.01450	Bckdhb	-1.02380	0.00180
Gas2l3	2.09773	0.00020	Ssb	0.89136	0.02845	Pdlim1	-1.02441	0.03615
Slc25a13	2.09095	0.00240	Birc3	0.89103	0.02800	Dpysl3	-1.02474	0.03180
Tll1	2.08803	0.00295	Lmbrd2	0.89101	0.03630	Id3	-1.02976	0.01025
Map2k6	2.08654	0.00185	Gmpr	0.89086	0.04625	Npdc1	-1.03272	0.00955
Havcr2	2.08354	0.00340	Pirb	0.89014	0.01145	Ackr2	-1.03411	0.03370
Zfp37	2.06620	0.00120	Figf	0.88955	0.01005	Adc	-1.03542	0.03355
Panx1	2.06567	0.00360	Plcl2	0.88912	0.02365	Ier3	-1.03764	0.03865
Zim1	2.05514	0.00470	Plk2	0.88796	0.01820	Pitpnm3	-1.03913	0.04215
Blm	2.04055	0.03160	Cd93	0.88744	0.00525	Wnt9a	-1.04196	0.04725
Top2b	2.03554	0.01195	Abcc9	0.88695	0.00830	Angptl2	-1.04260	0.00210
Lrp4	2.03522	0.00105	Cotl1	0.88440	0.00925	Zfp703	-1.04305	0.00220
Lox	2.03452	0.00005	Vav3	0.88076	0.03695	Spryd4	-1.04377	0.04820
C3ar1	2.03284	0.00005	Mical2	0.87842	0.01120	Pycrl	-1.04606	0.01660
Gm14410	2.02574	0.01895	Slc4a7	0.87712	0.00760	Rplp2	-1.04674	0.00880
Ifit1	2.02324	0.00005	Dek	0.87492	0.01275	Eif4ebp1	-1.04813	0.00180
Gnao1	2.01984	0.01495	Phactr2	0.87233	0.02335	Fam193b	-1.04878	0.00305
Hk3	2.01332	0.02355	Mblac2	0.86909	0.04315	Tmem159	-1.04899	0.00195
Gm13139	2.00469	0.01295	Usp12	0.86651	0.04745	Pnpla2	-1.05054	0.03885
Armc2	2.00244	0.03440	Pqbp1	0.86432	0.02625	Grb10	-1.05443	0.00075
Gm13154	1.99091	0.01655	Filip1l	0.86420	0.02380	BC029214	-1.05795	0.04125
Tlr1	1.98953	0.00495	Ikzf1	0.86376	0.03100	Slc9a3r2	-1.06217	0.00245
Slc16a14	1.97630	0.01895	Cstb	0.86217	0.00865	Six5	-1.06637	0.01500
Klhl3	1.96902	0.01555	Chm	0.86052	0.04260	Trim8	-1.06650	0.00225
Ntm	1.96871	0.00285	Gmfb	0.85762	0.00400	Dnajb2	-1.06698	0.01635
Slfn3	1.96305	0.00645	Gimap4	0.85739	0.04050	Vegfb	-1.06895	0.00145
Cdk1	1.95706	0.00985	Slc41a2	0.85708	0.03010	Hint3	-1.07038	0.01535
Cd200r4	1.95621	0.01455	Tmem37	0.85602	0.03965	Lzts2	-1.07042	0.00585
Lepr	1.95076	0.00110	Fam124a	0.85474	0.02680	Ddhd2	-1.07052	0.00125
Btla	1.94602	0.00675	Nrep	0.85371	0.04025	Hint2	-1.07351	0.00425
Cd300lb	1.94011	0.00005	Psme4	0.84891	0.01800	Mfng	-1.07468	0.00840
Cd68	1.92605	0.00005	Zfp943	0.84554	0.04975	Grhpr	-1.07745	0.00325
Acsl3	1.92477	0.00385	Slc40a1	0.84469	0.03245	Zbtb5	-1.08005	0.00265
Lgals3	1.92281	0.00005	Cpeb2	0.84248	0.01425	Mknk2	-1.08524	0.00155

Gene	Value	p	Gene	Value	p	Gene	Value	p
Etohi1	1.92070	0.00030	Amer1	0.84216	0.02750	Mafg	-1.08668	0.01545
Clec4n	1.91532	0.04090	Abhd17b	0.83794	0.01640	1810043H04Rik	-1.08793	0.02075
Syt15	1.91000	0.00295	Rasal2	0.83653	0.03630	Thrsp	-1.09068	0.00155
Lrrc3b	1.90424	0.01535	Map7	0.83572	0.02925	Mapk8ip3	-1.09152	0.01205
Blnk	1.90350	0.00010	Fgd6	0.83316	0.03340	Glipr2	-1.09162	0.00650
Clec4a2	1.90056	0.00005	Erlec1	0.83139	0.02425	Akr1c14	-1.09305	0.01365
Tpd52	1.89418	0.00015	Dennd4a	0.82918	0.01410	Snhg11	-1.09863	0.00045
Hapln3	1.87287	0.00930	Lamp2	0.82699	0.04590	Ltbp4	-1.09909	0.01430
Lilrb4	1.87187	0.00025	Mbnl2	0.82477	0.01225	Sema4a	-1.10009	0.00205
Ckap2l	1.86698	0.00210	Smarca5	0.82358	0.02335	Klf15	-1.10091	0.00105
Lrch2	1.86549	0.00465	KCTD12	0.82266	0.00845	Sdr39u1	-1.10094	0.00825
Acpl2	1.86459	0.02050	Lars2	0.82174	0.03625	Dusp28	-1.10192	0.02285
Gm2058	1.86078	0.00215	Rngtt	0.81766	0.04285	Dusp4	-1.10210	0.00995
Limch1	1.86066	0.00005	Hcls1	0.81164	0.01800	Sox13	-1.10325	0.01490
Zfp59	1.85705	0.00825	Mier1	0.80930	0.04785	Hspa1b	-1.10445	0.00680
Gys2	1.85658	0.02765	Cyth4	0.80927	0.01910	Chrd	-1.10801	0.02020
F2r	1.85478	0.00005	Mmp2	0.80847	0.02205	Slc1a5	-1.10855	0.00995
Mfap3l	1.85278	0.00005	Ap3s1	0.80752	0.01490	Slc22a23	-1.11180	0.00300
Fam64a	1.85091	0.00950	Prps2	0.80544	0.02025	Prpf40b	-1.11224	0.03145
Tmem144	1.83984	0.01205	Tmem106b	0.80538	0.04780	Trim39	-1.11278	0.00530
Gm11127	1.83350	0.02235	Creg1	0.80455	0.02660	Cd248	-1.11547	0.00090
Ppfia4	1.83097	0.00295	Nxt2	0.80437	0.02920	Arsi	-1.11583	0.04000
Clec1a	1.83029	0.00055	Ptpn2	0.80357	0.04765	Trmu	-1.11635	0.03665
Cd79b	1.82942	0.00845	Ppp1cb	0.80187	0.03140	Eci3	-1.11655	0.00530
Nlrc3	1.81965	0.00270	Tnfrsf1b	0.80058	0.02110	Dalrd3	-1.12357	0.03980
Nxpe2	1.80998	0.03535	Rgs5	0.79684	0.01235	Rccd1	-1.12518	0.01640
Adh6-ps1	1.80950	0.03895	Pdcl	0.79527	0.04755	Elmod3	-1.12540	0.00305
Ly9	1.80828	0.00040	Atf7ip	0.79359	0.01950	Zxdb	-1.12650	0.03975
Adam23	1.80097	0.00120	Nucb2	0.79272	0.02910	Tef	-1.12692	0.00210
Gbp9	1.79781	0.00085	Man1c1	0.79217	0.01965	2300009A05Rik	-1.12887	0.01140
Apobec1	1.78885	0.00030	Abr	0.79054	0.03095	Dhtkd1	-1.13465	0.00500
Gm14305	1.78873	0.00305	Fam63b	0.78573	0.01615	Timp4	-1.13526	0.00110
Bcat1	1.78823	0.00115	Rrm1	0.78128	0.03730	Tkt	-1.13881	0.00060
Bcl2a1b	1.78420	0.04630	Tpm3-rs7	0.77776	0.04435	Kctd15	-1.14026	0.00565
Apod	1.78157	0.00005	Hmox1	0.77662	0.02090	Rnft2	-1.14037	0.03130
Spdl1	1.77856	0.00830	Prkch	0.77605	0.04255	Cyp26b1	-1.14817	0.03320
Bdnf	1.77740	0.00075	Larp7	0.77582	0.04730	Opn3	-1.15020	0.00160
Itga8	1.77388	0.02815	Sh3kbp1	0.77436	0.02655	Slc2a4	-1.15183	0.00050
Evl	1.77372	0.00665	Sparcl1	0.77358	0.04240	Wdr34	-1.15442	0.01265
Dach1	1.77315	0.00120	Nap1l1	0.77118	0.04020	Lzts3	-1.16021	0.02475
Lipa	1.77046	0.00005	AI607873	0.76903	0.01535	Hmcn2	-1.16147	0.03175
Snca	1.76750	0.00455	Ube2g1	0.76722	0.02875	Cd2	-1.16153	0.03470
Pramef8	1.76677	0.01135	Efhd2	0.76645	0.02150	Lrrc51	-1.16643	0.01630
Apobec3	1.76445	0.04255	Nek7	0.76338	0.01655	Sfxn4	-1.16925	0.04505

Gene	Value	p	Gene	Value	p	Gene	Value	p
Rab19	1.74610	0.02180	Xpr1	0.75928	0.02440	Gfpt2	-1.17058	0.00095
Wdfy4	1.73843	0.00045	Aldh3b1	0.75875	0.04450	Ivd	-1.17226	0.01130
Ect2	1.73672	0.00135	Samhd1	0.75826	0.01785	Gcat	-1.17279	0.02365
Adam22	1.73653	0.00065	Qk	0.75783	0.03335	Fam132a	-1.17547	0.00155
Grk4	1.73480	0.04650	H2-K1	0.75740	0.03510	Sertad1	-1.17828	0.01720
Slamf7	1.72961	0.00955	Trim30a	0.75392	0.03590	Pygl	-1.17837	0.00025
Gm14326	1.72091	0.00560	Eif2ak2	0.75375	0.04350	Nr4a2	-1.17878	0.04115
Rab8b	1.71582	0.00025	Bgn	0.75330	0.01445	Ccdc69	-1.18001	0.00890
Sh3bgrl2	1.71546	0.00110	Gbp7	0.75308	0.03665	Rgs3	-1.18513	0.00095
Asf1b	1.71506	0.01225	Clu	0.75176	0.03980	Ephb6	-1.18999	0.04410
Egr2	1.71340	0.00690	Pla2g7	0.75076	0.02355	Aacs	-1.20005	0.00010
Runx2	1.71174	0.03030	Dock9	0.75056	0.04570	Sept5	-1.20039	0.00425
Marveld2	1.70647	0.01300	Cdc42ep3	0.75050	0.04100	Tenc1	-1.20240	0.00030
Tc2n	1.70613	0.01625	Stk10	0.74522	0.03195	Zfp692	-1.20457	0.02860
Gpr65	1.69199	0.00110	Serinc1	0.74426	0.02470	B4galt1	-1.20905	0.00010
Arfgef1	1.68667	0.04920	2510009E07Rik	0.74294	0.03805	Stx1a	-1.20911	0.04480
Pik3cd	1.68140	0.01810	Sh3bgrl3	0.74239	0.02565	Ephx2	-1.21004	0.00015
Tlr6	1.67543	0.01440	Vma21	0.74217	0.04230	Spon2	-1.21188	0.01400
Slc9a4	1.67132	0.01215	Hmgn5	0.73717	0.04535	Slc20a2	-1.21227	0.01690
Zc3h12d	1.66965	0.01375	Ptpn12	0.73640	0.04610	Ring1	-1.21891	0.00775
C5ar2	1.66930	0.00365	Atp6v1a	0.73480	0.01600	Ddah2	-1.22215	0.00365
Tlr7	1.66754	0.00020	Zbtb1	0.73476	0.04170	Adam15	-1.22249	0.00810
Zfp69	1.66567	0.00840	Eif5	0.73274	0.03780	Rprml	-1.22451	0.00320
Fos	1.66548	0.00005	Stk24	0.73250	0.02485	Chrnb1	-1.23351	0.00240
H2-DMb1	1.66361	0.00025	Csnk1g3	0.73083	0.03720	Gys1	-1.23624	0.00060
Efr3b	1.66338	0.00140	Gimap6	0.73052	0.03400	Zfp598	-1.23671	0.00020
Nlrp3	1.66318	0.01270	Nrp2	0.73015	0.03375	C2cd2l	-1.23944	0.00085
Srgap1	1.66243	0.02725	Arhgap5	0.73003	0.02880	Thbd	-1.24147	0.00010
Flt3	1.66045	0.02785	Serping1	0.72771	0.02325	Lgals12	-1.24247	0.00005
Plekha6	1.65752	0.00040	Tns3	0.72731	0.02830	Clec3b	-1.24263	0.00015
Rgs18	1.65383	0.00470	Top1	0.72302	0.02915	Gsn	-1.24317	0.02435
Klhl4	1.65289	0.00660	Clock	0.72194	0.02515	Map10	-1.24421	0.04390
Fam122b	1.65262	0.00090	Tab2	0.71994	0.02675	Clmn	-1.24465	0.00305
Fignl1	1.64550	0.01230	Daglb	0.71987	0.04560	Tmem231	-1.24610	0.01785
Ulbp1	1.64471	0.02085	Plau	0.71768	0.02710	Lman2l	-1.24703	0.00135
Cdca3	1.64402	0.02130	Tecr	0.71707	0.02345	H2-Ke6	-1.25006	0.04405
Dnmt3l	1.63625	0.03470	Sash1	0.71523	0.02200	Acaca	-1.25052	0.00020
Kcnj2	1.63451	0.00460	Myo10	0.71451	0.02880	Ptprr	-1.25220	0.03110
Tacc3	1.63015	0.01240	Myof	0.71395	0.02965	Cd209f	-1.25230	0.00190
Acer3	1.62875	0.00010	Serpina3n	0.71167	0.02705	Gpr133	-1.25271	0.00530
P2ry10	1.62846	0.00600	Map4k4	0.70878	0.04380	Smoc1	-1.25288	0.00005
Soat1	1.62145	0.00020	Ube3a	0.70125	0.03900	Rfx2	-1.25521	0.00605
Birc5	1.62094	0.01250	Mdm2	0.70114	0.04515	Igfbp6	-1.25722	0.00025
Ncaph	1.62076	0.00230	Osbpl8	0.70041	0.02640	Msln	-1.26118	0.01555

Gene	Value	p	Gene	Value	p	Gene	Value	p
Ptchd1	1.62003	0.03555	Krcc1	0.69983	0.03985	Sh3glb2	-1.26250	0.00155
Tbx21	1.61725	0.03630	Lyz2	0.69961	0.03965	Ifi27l2a	-1.26436	0.00605
Arhgap19	1.61691	0.00020	Tgfbr1	0.69889	0.03390	Bhlhe40	-1.27386	0.00080
Hck	1.61040	0.00115	Eltd1	0.69421	0.02900	Lysmd2	-1.28065	0.00465
Anpep	1.60923	0.00005	Cd9	0.69152	0.02940	BC067074	-1.28466	0.01215
Kcnn4	1.60634	0.00155	Tgfb1	0.68693	0.04020	Kcne4	-1.28494	0.01015
Zfp455	1.60356	0.01550	Ktn1	0.68191	0.04530	Larp6	-1.28871	0.04495
Serpinb6b	1.60206	0.00045	Txndc16	0.67886	0.04490	Adamts4	-1.28923	0.04740
Slamf8	1.59503	0.00980	Phf20l1	0.67801	0.04810	Cd209g	-1.29059	0.00460
Apbb2	1.58785	0.02535	Pcm1	0.67472	0.04550	Gabre	-1.29105	0.00330
Ptpn22	1.58479	0.01080	Kpna3	0.67366	0.03600	Ecm1	-1.29111	0.00310
Fyb	1.58211	0.00355	Tmx3	0.67158	0.04315	Ppara	-1.29379	0.02505
Pydc4	1.57995	0.03750	Stom	0.65805	0.03710	Arid5a	-1.29414	0.01285
Cd200r1	1.57825	0.04970	Fcho2	0.65108	0.04190	Gng7	-1.29572	0.01110
A530099J19Rik	1.57635	0.02605	Smpdl3a	0.65105	0.03990	Gpt2	-1.29962	0.00005
Brca2	1.57492	0.00605	Rap1b	0.64062	0.04845	Hk2	-1.30280	0.02435
Nat1	1.57467	0.03450	Ablim3	0.62867	0.04785	Tnxb	-1.30390	0.00010
Gm4951	1.57044	0.02580	Atp13a3	0.62458	0.04740	Mapk8ip1	-1.30554	0.00670
Trim36	1.56541	0.00870	Wwtr1	0.61676	0.04350	Tbx6	-1.30821	0.04890
C330027C09Rik	1.56241	0.00985	Nus1	0.60293	0.04460	Prr5l	-1.30916	0.00150
Evi2a	1.56066	0.04865	Nadk	-0.60675	0.04235	Agpat9	-1.31078	0.00010
Gm14412	1.56017	0.01905	Tdrp	-0.61665	0.04570	Mall	-1.31085	0.00380
Gm20939	1.55658	0.04795	Atp5c1	-0.61902	0.03930	Slc9b2	-1.32508	0.03560
Btk	1.54900	0.00130	Lamb2	-0.62310	0.04605	Adamtsl3	-1.32756	0.01275
Nckap1l	1.54900	0.00005	Ndrg1	-0.62365	0.03805	Per3	-1.33714	0.01870
Epb4.1l3	1.54594	0.00325	Cox7a2	-0.62497	0.04350	Alad	-1.33913	0.00040
Gm8923	1.54496	0.03650	Dgkd	-0.62622	0.04845	Echdc3	-1.34019	0.00050
Scoc	1.54488	0.00010	Sh3pxd2a	-0.63368	0.04805	Ccnl2	-1.34245	0.00020
Hbegf	1.54352	0.00815	Mat2a	-0.63452	0.03165	Zfr2	-1.34266	0.03800
Racgap1	1.54097	0.02515	Eif4a2	-0.64114	0.04870	Nrg4	-1.34361	0.00090
Cit	1.54092	0.00625	Man2a2	-0.64268	0.03830	Slc13a3	-1.34380	0.03560
Zfp286	1.53920	0.04025	Dlc1	-0.64315	0.03460	Gm9992	-1.34444	0.04485
Ppig	1.53556	0.02005	Lims2	-0.64527	0.03960	BC068281	-1.34854	0.03425
Csf2rb2	1.53216	0.00045	Insr	-0.65251	0.02825	Tmem216	-1.35092	0.02205
Cdk18	1.53159	0.00310	Pgrmc1	-0.65796	0.02605	Niacr1	-1.35639	0.00050
Peg3	1.53080	0.00005	U2af2	-0.65848	0.04930	Nov	-1.36342	0.00280
Samd9l	1.53049	0.00005	Gas7	-0.66286	0.03380	Lgi4	-1.36356	0.03425
Ccnb2	1.53022	0.01100	Prdx3	-0.66359	0.03405	Actr5	-1.36376	0.01195
Lpar3	1.53003	0.02820	Etfb	-0.66583	0.04200	Lyve1	-1.36411	0.00005
Gmnn	1.52999	0.00470	L3hypdh	-0.66760	0.04765	Hdc	-1.36461	0.03245
Cd28	1.52633	0.01815	Uqcrc1	-0.66830	0.03430	Pacsin3	-1.36721	0.03795
Zdhhc21	1.52288	0.00180	Ypel3	-0.66863	0.04255	Gpam	-1.38408	0.00005
Stmn1	1.52271	0.00040	Elk4	-0.67079	0.04770	Hdac10	-1.38521	0.00355
Lpar5	1.51829	0.03435	Hist1h1c	-0.67131	0.03995	Sft2d3	-1.38836	0.00480

Gene	Value	p	Gene	Value	p	Gene	Value	p
Gm13157	1.51815	0.00135	Aldh6a1	-0.67210	0.03110	Hspb8	-1.39974	0.00005
Thoc2	1.51100	0.00430	Nr1h3	-0.67323	0.04410	Upp2	-1.40009	0.01520
Tyrobp	1.50983	0.00005	Dtnbp1	-0.67552	0.03090	Acot2	-1.40689	0.00315
Tnfrsf26	1.50824	0.02900	Kmt2d	-0.67555	0.03085	Sh2b2	-1.40726	0.00015
Cyp2r1	1.50528	0.01810	Acvr1b	-0.67614	0.04825	Ppp1r1a	-1.40853	0.00005
Ms4a7	1.50506	0.00095	Sod1	-0.67760	0.02880	Retn	-1.41641	0.00010
Krt222	1.49584	0.01875	Mccc2	-0.68369	0.03210	Sdcbp2	-1.41741	0.01100
Cybb	1.49548	0.00005	Clec2d	-0.68603	0.03145	Ppargc1b	-1.42432	0.02145
Adamtsl2	1.49330	0.01900	Hmgn1	-0.68791	0.03520	Myrf	-1.42471	0.00710
Vangl2	1.49204	0.00630	Rpl36	-0.68890	0.02975	Tnfrsf11b	-1.43625	0.01315
Ncoa7	1.49139	0.00135	Smurf1	-0.69366	0.04570	Pim3	-1.44048	0.00010
Pde7b	1.48353	0.00120	Hyal2	-0.69585	0.04630	Ptges	-1.44515	0.01145
Smc2	1.48304	0.00175	Nol6	-0.69866	0.03255	Nrbp2	-1.44538	0.00005
Bub1	1.48090	0.04790	Bap1	-0.70193	0.04055	Gsta3	-1.45406	0.00005
Itgbl1	1.48073	0.00225	Adcy5	-0.70214	0.02885	Uap1	-1.46580	0.00005
Nek2	1.47326	0.03785	Pex14	-0.70367	0.04130	Pcsk6	-1.47039	0.00015
2610305D13Rik	1.47160	0.00110	Ndufb7	-0.70403	0.03020	Dact2	-1.47420	0.00615
Inpp4b	1.47078	0.00735	Rnps1	-0.70649	0.04225	Rpsa-ps10	-1.47495	0.00105
Galnt12	1.46805	0.04355	Rgcc	-0.70768	0.02580	Krt19	-1.48691	0.01345
H2-Ob	1.46181	0.02095	P4ha2	-0.71132	0.04495	Cyp2s1	-1.48812	0.00410
Gatm	1.46072	0.00240	Ech1	-0.71278	0.03015	Car1	-1.48855	0.01995
Fam60a	1.45834	0.02240	Marc2	-0.71287	0.04150	Adam33	-1.49596	0.00720
Fgd4	1.45730	0.00535	Rnf187	-0.71472	0.02320	Trpv2	-1.50010	0.00005
Vcam1	1.45727	0.00010	Nod1	-0.71482	0.04360	Tppp	-1.50057	0.00005
Naip2	1.45495	0.00395	Scaf4	-0.71752	0.04340	Abca4	-1.50097	0.02490
Gpr35	1.45377	0.01610	Tcta	-0.71788	0.04430	Nog	-1.50255	0.00200
Ammecr1	1.45247	0.00690	Hibadh	-0.71845	0.02140	Plekha4	-1.50678	0.00415
Dzip3	1.44700	0.02310	Elof1	-0.71998	0.04610	Mst1r	-1.51103	0.00015
Pramef12	1.44527	0.03210	Slc25a28	-0.72107	0.03775	Ccl24	-1.52303	0.00095
Pmaip1	1.44492	0.02795	Slc29a1	-0.72124	0.03405	P4htm	-1.52633	0.01390
Sncaip	1.44286	0.00360	Slc25a44	-0.72136	0.03220	Abcg4	-1.55475	0.01780
Pde9a	1.44250	0.04550	S100a13	-0.72175	0.02825	Chst1	-1.56802	0.00005
Rnf180	1.44129	0.04060	Dvl1	-0.72233	0.04670	Serpina1a	-1.57207	0.01520
H2-M9	1.43786	0.03840	Uqcr10	-0.72358	0.03050	Pth1r	-1.58311	0.00055
Msr1	1.43703	0.00245	Tmem242	-0.72375	0.03410	Rbp7	-1.58910	0.00005
Itgb2	1.43676	0.00005	Eif3g	-0.72438	0.03900	Chst4	-1.60155	0.02600
Cnr2	1.43418	0.03100	Pfkfb3	-0.72496	0.03005	St3gal4	-1.60285	0.00105
Adra1a	1.42960	0.00190	Txnip	-0.72599	0.04970	Dtna	-1.60342	0.03635
Atrx	1.42885	0.00155	Anxa3	-0.72612	0.01600	Efhd1	-1.60886	0.00145
Pik3c2b	1.42453	0.01675	Glb1l2	-0.72650	0.01670	Amt	-1.61554	0.02355
D17H6S56E-5	1.41559	0.00070	Ptms	-0.72910	0.02660	AI661453	-1.62298	0.04975
Slfn2	1.41465	0.00040	Kctd21	-0.72975	0.04995	Atoh8	-1.62489	0.00070
Plek	1.41402	0.00260	Csrp1	-0.73148	0.02085	Gm5617	-1.63041	0.00080
Vsig4	1.41084	0.00880	Sun1	-0.73166	0.02590	Cldn1	-1.63617	0.03880

Gene	Value	p	Gene	Value	p	Gene	Value	p
Galnt6	1.40906	0.01115	Mgst1	-0.73389	0.03225	Fign	-1.63672	0.00905
AI987944	1.40709	0.00745	Amy1	-0.73551	0.03145	Tmem53	-1.63825	0.00205
Gp49a	1.40658	0.03645	Unc119b	-0.73569	0.04620	Hs3st3b1	-1.63830	0.03825
Gm11710	1.40516	0.04255	Tmem140	-0.73570	0.04705	Rin1	-1.64645	0.01310
B2m	1.40428	0.00310	Zfp395	-0.73598	0.03570	Vegfa	-1.66386	0.00245
Prr11	1.40311	0.01690	Timm50	-0.73728	0.04570	Ces1d	-1.66916	0.00005
Ift74	1.40277	0.00315	Slit3	-0.73912	0.01940	Twist2	-1.67176	0.00275
Siglec1	1.39735	0.00040	Smg5	-0.73932	0.04120	Il17re	-1.67546	0.00220
Rassf9	1.39021	0.02060	Prkd2	-0.73935	0.03855	Ms4a8a	-1.68035	0.01020
Zdhhc2	1.38477	0.04785	Serpine2	-0.74090	0.02095	Arg1	-1.68100	0.03160
Pik3r5	1.38245	0.00030	Chd7	-0.74211	0.04725	Sctr	-1.68257	0.00100
Pde3a	1.38181	0.02065	Acadvl	-0.74368	0.02290	Grik5	-1.68332	0.00045
Zfp946	1.38115	0.00280	Mier3	-0.74600	0.04875	Nnat	-1.69302	0.00020
Tex9	1.37947	0.01510	Atp1a2	-0.74782	0.04000	Celsr2	-1.70061	0.00400
Plk1	1.37826	0.04535	Plat	-0.74836	0.04385	Rundc3b	-1.70108	0.02110
5430435G22Rik	1.37679	0.00035	Rapgef1	-0.74858	0.02605	Dnase1l2	-1.70290	0.03985
Gucy1a3	1.37672	0.00030	Glrx5	-0.75027	0.02330	Mogat1	-1.70410	0.00160
Dock2	1.37429	0.00035	2410015M20Rik	-0.75090	0.02605	Arl4d	-1.71278	0.00195
Casp3	1.37324	0.00675	Pts	-0.75182	0.03200	Ffar4	-1.72656	0.00020
Prcp	1.37129	0.00015	Ephb4	-0.75430	0.04205	Gprc5a	-1.73574	0.00625
Fosb	1.36897	0.03395	Snx33	-0.75486	0.03795	Hoxa7	-1.73849	0.00940
Basp1	1.36252	0.00095	Mrps30	-0.75655	0.02775	Nr1d1	-1.74163	0.00005
Cd300a	1.35823	0.00030	Tomm7	-0.75752	0.02130	Slc16a11	-1.74429	0.01040
Prkcb	1.35272	0.01825	Letmd1	-0.75835	0.03575	Cish	-1.77402	0.00045
Hmga1	1.34889	0.00645	Adhfe1	-0.75845	0.02085	Itgb3	-1.78655	0.00075
Slfn8	1.34635	0.00580	Ndufb4	-0.75888	0.03740	Ephx4	-1.78819	0.01500
Tnfrsf13b	1.34282	0.01055	Dab2ip	-0.76064	0.01930	Asphd2	-1.79963	0.04020
Ifit3	1.34081	0.00135	Fdx1	-0.76233	0.03120	Xpnpep2	-1.80418	0.01105
Cd300ld	1.33589	0.00035	Txn2	-0.76260	0.04640	Efs	-1.80803	0.00115
Hmga1-rs1	1.33479	0.04315	Rere	-0.76265	0.01220	Ifitm6	-1.81458	0.00495
Zfp62	1.33060	0.02265	Nr1h2	-0.76338	0.02540	Dcst1	-1.81868	0.00290
Ntf3	1.32615	0.02675	Per1	-0.76422	0.02170	Wnt10b	-1.83229	0.01305
Mgp	1.32265	0.00005	Egln2	-0.76449	0.02065	Adig	-1.83858	0.00005
Ccdc109b	1.30857	0.01505	Rnase4	-0.76559	0.01570	Hspa1a	-1.83996	0.00215
Clec4a3	1.30813	0.00235	Zbed3	-0.76617	0.04580	Tppp3	-1.84728	0.00005
2810474O19Rik	1.30732	0.00015	Fgf10	-0.76811	0.02040	Dhh	-1.84787	0.02560
4930506M07Rik	1.30437	0.00035	Zyx	-0.76874	0.01895	Gjb5	-1.85447	0.04185
Gdpd1	1.30120	0.02365	Use1	-0.77054	0.04120	Retnla	-1.85523	0.00005
Zfp758	1.30015	0.00950	Grina	-0.77416	0.02585	Scg3	-1.87481	0.00480
Prc1	1.29946	0.02330	Kdsr	-0.77417	0.01390	Matn4	-1.90721	0.03790
Egr1	1.29861	0.00315	Abhd5	-0.77469	0.02835	Rhpn2	-1.91570	0.02655
Pdcd10	1.29835	0.00425	Rplp1	-0.77583	0.02195	Rasl11b	-1.92045	0.00005
Cmpk1	1.29353	0.00540	Ndufb10	-0.77680	0.01415	Gfra4	-1.92340	0.00560
Lpxn	1.28889	0.00585	Fbl	-0.77795	0.04340	Smpd3	-1.94546	0.02295

Pak1	1.28878	0.01485	Rnf121	-0.78035	0.04125	Gsta4	-1.98706	0.00010
Tec	1.28723	0.00365	Mpst	-0.78062	0.02680	Slc6a4	-1.99446	0.00400
Pawr	1.28372	0.00240	Bag4	-0.78128	0.01865	Gpr81	-2.02815	0.00005
Pyhin1	1.28085	0.01205	Tom1l2	-0.78362	0.02050	Cgn	-2.07197	0.00880
Sp100	1.28012	0.00310	Usp19	-0.78390	0.01745	Fam131b	-2.07526	0.01330
Iqgap2	1.27817	0.00025	Slc7a10	-0.78587	0.00970	Lyz1	-2.08863	0.00005
Ifi44	1.27571	0.03190	Imp3	-0.78588	0.02975	Nupr1l	-2.12734	0.01105
AW112010	1.27516	0.00835	Cacfd1	-0.78738	0.03350	Prtn3	-2.14597	0.03080
G2e3	1.27047	0.02395	Kcns3	-0.78773	0.01490	Pck1	-2.15278	0.00005
Smc4	1.27034	0.00065	Ndufs2	-0.78848	0.02260	Slc38a3	-2.16360	0.00070
Pcdh17	1.26845	0.02505	Taf8	-0.79320	0.04765	4933406P04Rik	-2.19446	0.02330
Plscr2	1.26702	0.00535	Flcn	-0.79340	0.02120	Rasgrf1	-2.19799	0.00140
Lrrcc1	1.26411	0.00315	Aco1	-0.79386	0.00910	Mfsd7c	-2.20927	0.00810
Ptprc	1.26119	0.00035	Jund	-0.79462	0.01645	1700001J03Rik	-2.22106	0.04935
Phf21a	1.25956	0.03770	Pex5	-0.79473	0.04280	Pthlh	-2.23520	0.01495
Runx1	1.25884	0.00570	Zfand1	-0.79508	0.04135	Slc25a47	-2.25810	0.00035
Svep1	1.25688	0.00015	D10Jhu81e	-0.79615	0.01265	Pcsk4	-2.26393	0.03805
Samd4	1.25607	0.01320	Enpp2	-0.79677	0.01060	Adrb3	-2.28237	0.00005
Haus3	1.25157	0.01875	Zdhhc1	-0.79798	0.02890	Efcc1	-2.28746	0.00315
Tlr9	1.25147	0.02770	Stc2	-0.80016	0.01785	Slc5a6	-2.28963	0.01570
Bora	1.24936	0.03760	Mrpl9	-0.80132	0.02000	Ccdc30	-2.29164	0.00645
Eif5a2	1.24516	0.00335	Fam43a	-0.80155	0.02635	Disp2	-2.30021	0.00005
Pcdh12	1.24454	0.01465	Mrpl12	-0.80191	0.02475	Mfsd2a	-2.30180	0.01555
Oas1a	1.24381	0.01880	Crls1	-0.80254	0.02085	Nat8l	-2.31957	0.00005
Lyn	1.23492	0.01800	Ndufs6	-0.80392	0.02850	Dbp	-2.34340	0.00660
Tnfrsf11a	1.23406	0.00630	Foxk1	-0.80418	0.02305	Islr2	-2.36554	0.00065
Cyr61	1.23386	0.00330	Sema4b	-0.80637	0.04820	Fcna	-2.43419	0.00105
Ly86	1.23385	0.00290	Cluh	-0.81011	0.01140	Kcp	-2.44988	0.00030
Ttc39a	1.23376	0.03860	Zbtb46	-0.81085	0.04975	Barx2	-2.55034	0.01100
Rnaset2b	1.23255	0.00555	Loxl1	-0.81104	0.01215	Hand2	-2.69499	0.02520
Foxp2	1.23135	0.00725	Leng8	-0.81224	0.01030	Morn4	-2.71190	0.00390
Atp1a3	1.23091	0.00125	Hsf1	-0.81256	0.02345	F2rl1	-2.71372	0.00010
Tlr3	1.22836	0.00255	Myadm	-0.81292	0.01015	Gpr114	-2.80714	0.00115
Kcnh2	1.22691	0.01685	Suox	-0.81445	0.04420	Lypd1	-2.81594	0.04045
Parp8	1.22355	0.00930	H2afx	-0.81723	0.04315	Gm10419	-2.85547	0.01240
Msi2	1.22092	0.01060	Osbpl11	-0.81825	0.00800	Hpx	-2.86613	0.00005
0610010F05Rik	1.21985	0.03250	Ctdspl	-0.82026	0.00650	Cfd	-2.93009	0.00145
Sla	1.21912	0.00705	Xpc	-0.82215	0.02220	Padi4	-2.99671	0.04540
Tmem132a	1.21811	0.03770	Acp5	-0.82222	0.01095	Serpina1d	-3.04324	0.00885
Ms4a6d	1.21775	0.00205	Acss3	-0.82620	0.01035	Gm129	-3.04535	0.01025
Ccdc55	1.21644	0.00185	Ppan	-0.82670	0.04410	Asphd1	-3.06839	0.04630
Trim59	1.21463	0.04000	Fitm2	-0.83369	0.01515	Cd163l1	-3.23311	0.00150
Tril	1.21038	0.00220	Timm13	-0.83481	0.02045	Mamdc4	-3.29111	0.02910
Fnip2	1.20817	0.00335	Ercc2	-0.84175	0.03940	Itih4	-3.37199	0.00010

Gene	Value	p-value	Gene	Value	p-value	Gene	Value	p-value
Gla	1.20745	0.00410	Fbxo45	-0.84192	0.00970	Saa4	-3.37429	0.02965
Lgmn	1.20373	0.00070	Ndufa3	-0.84498	0.01995	Hist1h4a	-3.49612	0.01605
Ldb2	1.20326	0.00990	Fbxo21	-0.84643	0.00860	Smim5	-3.60470	0.02505
Gcnt1	1.20283	0.00575	Ankrd16	-0.84647	0.04905	Gm14434	-3.66428	0.01060
Sdc3	1.19888	0.00185	Rps6kb2	-0.84749	0.03130	Alb	-4.04204	0.00005
Nedd9	1.19767	0.00035	Sdhb	-0.84796	0.00895	Apoc3	-4.39925	0.00005
Arhgap11a	1.19763	0.00775	Vgll4	-0.84825	0.04805	Apoh	-4.46341	0.04060
Efnb2	1.19443	0.02205	Atp5j2	-0.84922	0.01465	Serpina1b	-4.49917	0.00030
Plekhh2	1.18975	0.00165	Sorbs3	-0.85134	0.01250	Nr1i3	-4.86369	0.00935
Ttpa	1.18282	0.01265	Apba3	-0.85158	0.02395	Rgn	-4.92201	0.03485
Bub1b	1.18240	0.02110	Dnajb1	-0.85426	0.01615	Cml2	-4.97923	0.02650
Capg	1.18199	0.00670	Bcam	-0.85454	0.03460	Azgp1	-5.06445	0.00515
Pld3	1.18166	0.03825	Klf4	-0.85477	0.00695	Plg	-5.16141	0.01795
Gm13152	1.17541	0.04615	Il15ra	-0.85479	0.03190	Apoa1	-5.27900	0.00005
Phf6	1.17342	0.01605	Adipor2	-0.85494	0.00995	Fgg	-5.43087	0.00350
Spaca1	1.16600	0.01730	Tmem43	-0.85558	0.00630	Apoa2	-5.43329	0.00005
Btnl9	1.16442	0.00125	Plin1	-0.85564	0.02070	Mup20	-5.94374	0.00525
Cd86	1.15979	0.03450	Ddx27	-0.85643	0.01175	Ttr	-6.45777	0.03925
Il18rap	1.15576	0.04550	Cxxc1	-0.85756	0.01345	Gc	-6.48820	0.00170
Mfsd12	1.15515	0.01380	Tnks1bp1	-0.85778	0.00795	Mat1a	-6.50783	0.04355
Casp1	1.15367	0.00705	Echs1	-0.85796	0.01150			
Tmtc3	1.14819	0.00240	Ttc38	-0.85965	0.03785			

Supplementary Table 2 Clinical characteristics of NAFL/NASH patients and normal subjects. NAFL and NASH patients were diagnosed by the FLIP algorithm.

Variables	Normal	NAFL	NASH	*P*-value	*P*-value§
Sample size	228	76	141	-	-
Age (years)	41.57±11.87	41.45±12.54	43.16±10.02	-	-
Gender (male n, %)	176 (77.2)	61 (80.3)	110 (78.0)	-	-
BMI (kg/m^2)	21.5 (20.1-22.9)	26.0(24.0-28.2)	26.6(24.7-29.1)	-	-
Systolic BP (mmHg)	111.6±10.2	126.7±15.0	130.1±14.4	<0.001	<0.001
Diastolic BP (mmHg)	74.9±7.6	82.5±9.9	85.1±10.3	<0.001	<0.001
Triglycerides (mmol/L) [a]	0.88 (0.69-1.13)	1.81(1.13-2.48)	1.94(1.49-2.98)	<0.001	<0.001
Total cholesterol (mmol/L)	4.46±0.63	4.73±1.01	5.51±1.22	<0.001	<0.001
LDL-c (mmol/L)	2.49±0.53	2.75±0.78	3.17±0.97	<0.01	<0.01
HDL-c (mmol/L)	1.57±0.38	1.00±0.23	0.99±0.19	<0.001	<0.001
FPG (mmol/L) [a]	4.7(4.4-5.0)	5.2(4.8-5.9)	5.3(4.9-6.2)	<0.01	<0.01
HbA1c (%) [a]	5.3(5.0-5.4)	5.7(5.3-6.4)	5.9(5.5-6.7)	<0.01	<0.01
HOMA-IR	0.78 (0.6-1.03)	2.50(1.64-4.03)	3.75(2.32-5.17)	<0.001	<0.001
ALT (U/L) [a]	14 (11-17)	44(27-72)	52(29-80)	<0.001	<0.001
AST (U/L) [a]	19 (16-21)	31(24-40)	32(24-52)	<0.01	<0.01
TBIL (µmol/L) [a]	12.3 (9.4-16.4)	13(11-18)	13(10-17)	0.21	0.39
DBIL (µmol/L) [a]	2.6 (2.0-3.7)	5(4-7)	4(3-5)	<0.01	<0.01
ALP (U/L) [a]	59.5 (49-72)	74(67-90)	84(68-95)	<0.001	<0.001
GGT (U/L) [a]	14(10-21)	43(27-76)	55(37-97)	<0.001	<0.001
Sparcl1 (ng/mL) [a]	622.58±109.97	624.56±102.54	859.11±203.29	<0.001	<0.001
Hepatocellular Ballooning	-	0.47±0.66	1.40±0.49	-	-
Steatosis	-	1.74±0.68	1.87±0.79	-	-
Lobular inflammation	-	0.63±0.61	1.31±0.46	-	-

BMI=body mass index; BP=blood pressure; LDL-c=low density lipoprotein cholesterol; HDL-c=high density lipoprotein cholesterol; FPG=fasting plasma glucose; HbA1c= glycated hemoglobin; HOMA-IR=homeostasis model assessment of insulin resistance; ALT=alanine transaminase; AST=aspartate aminotransferase; TBIL=total bilirubin; DBIL=direct bilirubin; ALP=alkaline phosphatase; GGT=γ-

glutamyl transpeptidase;

Data are presented as the mean ± SD or median (interquartile range).

[a]: Analysis performed on log-transformed data. §: adjusted for age, gender and BMI.

Supplementary Table 3. RNA-Seq analysis showed the dysregulated genes in the livers of chronic recombinant Sparcl1 protein or saline- treated mice (Sparcl1 versus Saline, Fold change > 1.5, *P* < 0.05).

1888 upregulated genes.

Gene name	log2 (fold change)	*P* value	Gene name	log2 (fold change)	*P* value	Gene name	log2 (fold change)	*P* value
Ccl2	9.21942	0.04715	Slc30a10	1.07214	0.00005	Rgn	0.75320	0.00005
Hspa1a	5.61582	0.00175	Il1a	1.07154	0.00005	C6	0.75306	0.00020
Hsd3b5	5.45247	0.02145	Wfdc17	1.07115	0.00005	Smdt1	0.75228	0.00005
Tnfaip3	5.35473	0.00005	Pea15a	1.06879	0.00005	Vnn3	0.75170	0.00005
Derl3	4.65708	0.00005	Acyp2	1.06773	0.04495	Cbr1	0.75150	0.00005
Dzank1	4.24225	0.01780	Morf4l2	1.06767	0.00005	Afm	0.75085	0.00005
Slc22a28	4.16053	0.00025	Rtn4ip1	1.06758	0.00005	St3gal1	0.75047	0.00005
Cxcl5	4.09247	0.00010	Fam107b	1.06704	0.00035	Depdc7	0.74985	0.00005
Cxcl2	3.96879	0.00055	Hnrnpc	1.06623	0.00005	Mettl7b	0.74974	0.00010
Cxcl10	3.93775	0.00005	Lrrc25	1.06266	0.00140	Adprh	0.74972	0.00705
Idi1	3.82554	0.00005	Ubfd1	1.06218	0.00025	Cpsf3l	0.74936	0.00740
Car3	3.81879	0.00005	Ubxn4	1.06153	0.00005	Vwa9	0.74896	0.00210
Cxcl1	3.78056	0.00005	Morn2	1.06104	0.03025	Ube2l6	0.74849	0.00005
Gbp10	3.71001	0.00005	Fabp2	1.05944	0.00005	Psmd1	0.74835	0.00005
Pcsk9	3.65200	0.00005	Pm20d2	1.05915	0.04095	Sh3glb2	0.74762	0.00095
Hspb1	3.57806	0.00005	Wdsub1	1.05906	0.00580	Alkbh6	0.74762	0.00350
Cyp2c69	3.54545	0.00005	Srebf2	1.05727	0.00005	Uqcc2	0.74643	0.00050
Fdps	3.54366	0.00005	Rnf186	1.05551	0.02380	Pus7	0.74600	0.00870
Cyp2c55	3.54057	0.00005	Fez2	1.05326	0.00005	Dpagt1	0.74562	0.00010
Gstp2	3.40491	0.01790	Ufm1	1.05324	0.00320	Tubgcp4	0.74550	0.01565
Gstm3	3.32073	0.00005	Rhbg	1.05288	0.00025	Sh3bgrl2	0.74549	0.00005
Tlr2	3.31687	0.00005	Bicd2	1.05277	0.00005	Stx4a	0.74501	0.00230
Sdf2l1	3.29016	0.00005	Dhx37	1.05266	0.00005	Gm9923	0.74486	0.03290
Sqle	3.22842	0.00005	Spry4	1.05151	0.00025	1700024P16Rik	0.74425	0.00055
Creld2	3.15544	0.00005	Dak	1.05141	0.00005	Rbm8a	0.74418	0.00005
Aacs	3.14081	0.00005	Opa3	1.04749	0.00005	Bcl7b	0.74372	0.00930
Hmgcs1	3.13446	0.00005	Lgr5	1.04570	0.00855	Gm6563	0.74343	0.00020
Slfn4	3.10084	0.00005	Focad	1.04488	0.01190	Tstd2	0.74321	0.01450
Elovl6	3.06089	0.00005	Prex1	1.04441	0.00425	Dpp9	0.74309	0.00005
Tubb2b	3.00153	0.00045	Tmem39a	1.04426	0.00295	Mrps14	0.74199	0.00065
Cml5	2.99831	0.00005	Slc36a1	1.04379	0.00005	Nop58	0.74193	0.00005
Cyp51	2.92389	0.00005	Pde12	1.04034	0.02900	Frrs1	0.74157	0.00090
Ifitm5	2.91339	0.01055	Ero1lb	1.04028	0.00005	Zbtb18	0.74154	0.00005
Cys1	2.90685	0.00340	Mbd1	1.03966	0.00005	Pwp2	0.74133	0.00075

Cyp26a1	2.86784	0.00005	Mob3a	1.03956	0.00100	Pgp	0.74109	0.00210
Cyp2c40	2.85543	0.00005	Pklr	1.03873	0.00005	Atxn7l1	0.74072	0.01820
Park2	2.83604	0.04155	Ifit3	1.03843	0.00020	Ap2a2	0.74063	0.00005
Slc22a30	2.83435	0.00005	Stat2	1.03795	0.00005	Tmem214	0.74050	0.00035
Sc4mol	2.81913	0.00005	Gstm2	1.03699	0.00005	Sel1l	0.74040	0.00005
Clec4d	2.81605	0.04755	Elp6	1.03675	0.00150	Slc50a1	0.74033	0.00950
Ppp1r42	2.81130	0.02640	Sarnp	1.03635	0.00190	Amd1	0.74016	0.00005
Fam47e	2.81076	0.00005	Cep85	1.03603	0.00065	Tmem143	0.74009	0.01875
Ier3	2.81051	0.00005	Trappc9	1.03590	0.00075	Zfp710	0.73999	0.00085
Afp	2.80786	0.00260	Mal2	1.03526	0.00005	Tmem70	0.73998	0.00005
Gck	2.80181	0.00370	Setd4	1.03496	0.00340	Usp5	0.73987	0.00005
Serpina3f	2.78965	0.00005	Lmbrd2	1.03480	0.00005	Dck	0.73981	0.01365
Cyp2a4	2.78965	0.00005	Gemin8	1.03451	0.04315	Dhx16	0.73968	0.00360
Gale	2.75453	0.00005	Lad1	1.03395	0.00200	Asb13	0.73946	0.00005
Bach2	2.74470	0.00005	Gls	1.03356	0.01470	Mpp1	0.73825	0.00340
Ces2c	2.72141	0.00020	BC031181	1.03296	0.00685	Gpr39	0.73774	0.00395
Gbp6	2.66408	0.00005	Pctp	1.03225	0.00005	Iars	0.73760	0.00025
Keg1	2.63598	0.00005	Acad12	1.03019	0.00275	Psmd10	0.73740	0.00110
Niacr1	2.58025	0.00025	Lnp	1.02937	0.00950	Ecsit	0.73737	0.00020
Thrsp	2.57716	0.00005	Ift172	1.02919	0.00005	Mpv17	0.73721	0.01135
Atp4a	2.55955	0.00095	Aspa	1.02881	0.00015	Rad23b	0.73685	0.00185
Gm5828	2.53607	0.00690	Leap2	1.02867	0.00005	Necab1	0.73645	0.00010
Zfp566	2.52241	0.03865	Mphosph6	1.02855	0.00420	Ascc2	0.73637	0.00030
Nucb2	2.49658	0.00005	Lyz2	1.02829	0.00005	BC021614	0.73582	0.00545
Gsta4	2.49204	0.00005	Actn1	1.02761	0.00005	Gramd1c	0.73582	0.00005
Hsp90aa1	2.44373	0.00005	Dalrd3	1.02704	0.00005	Nacc1	0.73493	0.01135
Fasn	2.44052	0.00005	Ddx55	1.02575	0.00115	Cyp2c68	0.73493	0.00005
Mest	2.41460	0.00125	Erp29	1.02521	0.00025	Pnkd	0.73488	0.00640
Kbtbd8	2.41391	0.00005	Med24	1.02426	0.00360	Xrcc5	0.73485	0.00020
Tubb2a	2.41004	0.00005	Dopey2	1.02409	0.00005	Rps19bp1	0.73464	0.00165
Srd5a1	2.39871	0.00005	Coa3	1.02283	0.00015	Anxa3	0.73444	0.01090
Hspa1b	2.39693	0.00005	2810006K23Rik	1.02247	0.00005	Ddo	0.73442	0.00155
Ttll3	2.39435	0.00950	Polr2i	1.02225	0.00055	Gm5786	0.73425	0.03855
Ccdc111	2.39050	0.00650	Gadd45gip1	1.02172	0.00200	Comt	0.73408	0.00045
Steap4	2.38391	0.00005	Gpd2	1.02145	0.00005	Rptor	0.73377	0.00015
Srebf1	2.38303	0.00005	Pnrc1	1.02123	0.00005	Tarbp2	0.73366	0.00075
Hyou1	2.38262	0.00005	Ttll1	1.01952	0.01865	Ptgr2	0.73330	0.00030
Pfkfb3	2.38054	0.00005	Eid1	1.01735	0.00005	Atp5g1	0.73308	0.00010
Spsb4	2.36652	0.00015	Anks4b	1.01719	0.00005	Zfp335	0.73307	0.02250
Mid1ip1	2.36330	0.00005	Sc5d	1.01711	0.00005	Senp7	0.73267	0.03310
Nsdhl	2.35933	0.00005	Tcf21	1.01709	0.01960	Capza1	0.73184	0.00160
Nans	2.32732	0.00005	Mup14	1.01506	0.00005	Psmg1	0.73179	0.00035
Pdia6	2.32611	0.00005	Onecut2	1.01498	0.00005	Denr	0.73175	0.00605
Nudt7	2.31500	0.00005	Tfpi2	1.01453	0.00090	Gbp2	0.73108	0.01460

Manf	2.29327	0.00005	Sec11c	1.01382	0.00005	Zmym6	0.73076	0.04630
Nrep	2.28426	0.00005	Copg1	1.01361	0.00005	Pkp4	0.73069	0.00725
Aqp8	2.27082	0.00005	Trappc4	1.01360	0.00005	Dis3	0.73066	0.02235
Fblim1	2.26528	0.00010	Ier5	1.01303	0.00005	Smim11	0.73058	0.00340
Inhba	2.26147	0.00005	Neurl3	1.01233	0.00025	Fam65b	0.72998	0.03865
Hsd3b3	2.25043	0.00005	Tpm4	1.00774	0.00005	Pex13	0.72990	0.03620
Fkbp4	2.23271	0.00005	Fas	1.00710	0.01240	Ces1e	0.72986	0.00005
Cyp4f14	2.22810	0.00005	Mogs	1.00690	0.00005	Slc35d2	0.72977	0.00005
Serpina7	2.22498	0.00005	Tram1	1.00674	0.00005	Alg2	0.72880	0.00080
Tmem14a	2.22103	0.00015	Ralb	1.00647	0.00010	Aarsd1	0.72848	0.00545
Mroh6	2.21928	0.00225	Fam149a	1.00516	0.00005	Cs	0.72846	0.00005
Atp2b2	2.21694	0.00005	Stxbp4	1.00430	0.01940	Hemk1	0.72805	0.00630
Ms4a4c	2.21378	0.00765	Pik3ap1	1.00353	0.00005	Fpr1	0.72771	0.00435
Cyp4a12a	2.20923	0.00005	Gtf2f1	1.00347	0.00005	Socs5	0.72768	0.00505
Hsph1	2.19618	0.00005	Hsd17b7	1.00316	0.00005	Lipa	0.72763	0.00005
Prdm10	2.19295	0.00005	Erp44	1.00274	0.00005	Mbl2	0.72753	0.00005
Hsp90b1	2.17297	0.00005	Dusp19	1.00117	0.00845	Mrpl21	0.72746	0.00095
Nid2	2.17126	0.03290	Ccrn4l	1.00111	0.00005	AI597468	0.72724	0.03100
Insig1	2.16286	0.00005	Aars	1.00105	0.00005	Sept7	0.72650	0.00005
Gmds	2.15441	0.00045	Ifit1	1.00060	0.00005	Slc16a12	0.72633	0.00005
Zfp692	2.15331	0.00005	Marco	1.00013	0.00005	Eif2s1	0.72572	0.00005
Adh6-ps1	2.13467	0.00005	Slc22a1	1.00003	0.00005	Snrpd2	0.72550	0.00020
Slc17a3	2.13194	0.00005	Cdh1	0.99996	0.00005	Ndufa11	0.72487	0.00005
Tubb4b	2.12844	0.00005	Gtf3c6	0.99886	0.00005	Hbb-bs	0.72475	0.00040
Srsf7	2.12241	0.00005	Golt1b	0.99863	0.01350	Neurl4	0.72467	0.02965
Fdft1	2.11269	0.00650	Gm7694	0.99635	0.00005	Commd7	0.72462	0.00220
Col27a1	2.10842	0.04730	Heatr6	0.99630	0.01150	Ppp1r11	0.72364	0.00550
Pdia4	2.10818	0.00005	Zfp428	0.99470	0.04145	2700089E24Rik	0.72335	0.00005
Apoa4	2.09964	0.00005	Ndufaf7	0.99371	0.00005	S100a9	0.72287	0.00025
Slc39a10	2.09766	0.00005	Skp2	0.99366	0.01005	Map4	0.72276	0.01420
Fkbp11	2.09365	0.00005	Fmo5	0.99349	0.00005	Preb	0.72270	0.00190
Nipa1	2.08968	0.01365	Zfp809	0.99192	0.00995	Wdr41	0.72256	0.00055
Stip1	2.08227	0.00005	Tfe3	0.99190	0.00005	Ippk	0.72250	0.01500
Mvk	2.07748	0.00005	Ppib	0.99173	0.00005	Strip1	0.72240	0.00140
Tdrkh	2.07304	0.00085	Pdxk	0.99103	0.00005	Elavl1	0.72236	0.00005
Syvn1	2.06462	0.02640	Myef2	0.99019	0.00030	Pomt1	0.72136	0.03230
Hes6	2.06224	0.00005	Mmp9	0.98919	0.02905	Ccnc	0.72130	0.02515
Ccnd1	2.05750	0.00020	Tmem37	0.98886	0.00005	Gtf2h4	0.72114	0.00730
Stard4	2.05336	0.00005	Saa4	0.98881	0.00005	Pdhx	0.72089	0.00650
Gadd45a	2.05245	0.00010	Gstm1	0.98796	0.00005	Sugp2	0.72042	0.02815
Gm6484	2.04445	0.00005	Echdc1	0.98792	0.00115	Mrpl34	0.71995	0.00025
Tuba1a	2.04425	0.00025	Fam89a	0.98745	0.01145	Chst13	0.71993	0.00785
Pdia3	2.03670	0.00005	Ptprc	0.98716	0.00005	Rhob	0.71972	0.00010

Clec2h	2.03544	0.00020	Mup6	0.98706	0.00010	Gspt1	0.71966	0.00285
Car1	2.02985	0.00190	Rccd1	0.98622	0.03255	Lsm12	0.71957	0.00025
Icos	2.02594	0.03415	Ppil1	0.98618	0.00025	Csf2ra	0.71941	0.03485
Asb2	2.02198	0.00585	Siglece	0.98613	0.00070	Cwc27	0.71890	0.02930
Ces1f	2.01967	0.00005	B3galnt2	0.98469	0.00075	Asph	0.71887	0.00015
Pdilt	2.01906	0.00005	Mettl16	0.98450	0.00980	Ywhah	0.71874	0.00255
Lss	2.01565	0.00005	Spata22	0.98282	0.00805	Rheb	0.71698	0.00060
Tgfb1i1	2.00364	0.00005	Ints6	0.98249	0.00005	Pebp1	0.71693	0.00005
Egln3	2.00254	0.00005	Snx3	0.98085	0.00005	Dpy30	0.71693	0.00070
Gm14322	1.99428	0.00460	Atp7a	0.97945	0.00330	Ube2n	0.71686	0.00005
Dusp6	1.99169	0.00005	Ficd	0.97859	0.00005	Rab1b	0.71634	0.00005
Pglyrp1	1.99158	0.02740	Lect2	0.97750	0.00005	Ralbp1	0.71633	0.00005
Rd3	1.98632	0.01775	Maged1	0.97716	0.00005	Tff3	0.71607	0.00540
Adh4	1.97580	0.00005	Sgms1	0.97656	0.00015	B4galt1	0.71600	0.00005
Odc1	1.97066	0.00005	Scfd1	0.97593	0.00005	Cog6	0.71584	0.00010
Olfr1033	1.96917	0.00005	Dapk3	0.97527	0.00005	Bin1	0.71579	0.00260
Tuba1c	1.96231	0.00005	Rap2a	0.97514	0.00005	Nmi	0.71571	0.00115
Adra1b	1.96006	0.00005	Kpna4	0.97433	0.00005	Dna2	0.71562	0.02745
9130409I23Rik	1.95721	0.00005	Tssc1	0.97383	0.00055	Vcp	0.71518	0.00005
Nfkbia	1.94990	0.00005	Snupn	0.97360	0.00055	Srgap2	0.71515	0.00060
Rcan1	1.94743	0.00005	Kdelc2	0.97237	0.00030	Ptov1	0.71515	0.00120
Loxl4	1.94583	0.00005	Mcfd2	0.97234	0.00005	Alcam	0.71496	0.00255
Esm1	1.94017	0.00120	Cstf2	0.97148	0.00005	Katna1	0.71477	0.00095
Gpr98	1.91007	0.01200	Wdr13	0.97128	0.00080	Pawr	0.71461	0.00205
Adh1	1.89560	0.00005	Isy1	0.96977	0.00005	Psmb2	0.71397	0.00005
Rnd3	1.89517	0.00005	Ccdc134	0.96976	0.00125	Nudc	0.71379	0.00040
Ngfr	1.88948	0.00005	Lrrc59	0.96851	0.00005	Rbmxl1	0.71378	0.00060
Selenbp2	1.88942	0.00005	Neil1	0.96822	0.02105	Ckb	0.71336	0.01750
Tubb4b-ps1	1.88772	0.00035	Tmem173	0.96587	0.00275	Zfp143	0.71254	0.00780
Cd4	1.87888	0.04205	Fam102a	0.96483	0.00005	Gsr	0.71204	0.00005
Hspa5	1.87709	0.00005	Mettl1	0.96473	0.00010	Mrto4	0.71140	0.00125
Slco1a1	1.87549	0.00005	Epb4.1l3	0.96455	0.00725	Uhrf2	0.71101	0.00250
Ralgps1	1.87125	0.00020	Tbc1d25	0.96441	0.00415	Lsg1	0.71064	0.01805
Pter	1.86876	0.00005	Crem	0.96428	0.00005	Rasip1	0.71051	0.01170
Hist1h2bk	1.86674	0.00970	Oasl1	0.96424	0.00075	Ccdc157	0.70868	0.01020
Jun	1.86127	0.00005	Ssr2	0.96305	0.00005	Med31	0.70855	0.02485
Cacybp	1.86023	0.00005	Tdrd7	0.96293	0.00005	Alkbh7	0.70848	0.00340
Asprv1	1.85903	0.00935	Rfx1	0.96241	0.00110	Ndufaf3	0.70833	0.00220
Dpy19l3	1.85775	0.00010	Efnb2	0.96173	0.01530	Smyd2	0.70827	0.00390
Dhcr7	1.85441	0.00005	Npl	0.96042	0.04675	Ak2	0.70807	0.00005
Calr	1.84541	0.00005	Mrpl1	0.95798	0.00005	Hmgn1	0.70787	0.00010
Ugt2b1	1.84354	0.00005	Nr1h3	0.95777	0.00005	Txnrd1	0.70610	0.00005
P4ha1	1.84293	0.00005	Akr1c19	0.95709	0.00005	Ccdc162	0.70500	0.03845
Tuba1b	1.84139	0.00005	Mesdc1	0.95648	0.00075	Nsun2	0.70453	0.00215

Gene	Value	p	Gene	Value	p	Gene	Value	p
Marcksl1	1.83598	0.00005	Dab2	0.95632	0.00015	Mrpl53	0.70425	0.00020
Mylpf	1.82492	0.04085	Ndufaf6	0.95580	0.00100	Kank2	0.70372	0.00080
Cyp2c29	1.82484	0.00005	Tfg	0.95518	0.00015	Itpk1	0.70300	0.02110
Hmgcr	1.82366	0.00005	Vars	0.95509	0.00245	Mfsd8	0.70272	0.01435
Chordc1	1.82103	0.00005	Prss36	0.95508	0.01300	Nbn	0.70207	0.00065
Tes	1.82093	0.00010	Inip	0.95492	0.00585	Acot4	0.70156	0.00195
Hn1l	1.81749	0.00005	Apold1	0.95415	0.01905	Lactb2	0.70121	0.00055
Icam1	1.80586	0.00005	Fastkd5	0.95290	0.00405	Rarb	0.70111	0.03830
Sept11	1.80155	0.00005	Dusp12	0.95210	0.00105	2610034B18Rik	0.70109	0.00530
Tifa	1.79093	0.00005	Sh2b2	0.95002	0.02035	Shmt2	0.70088	0.00005
Dnajb1	1.77667	0.00005	Snrpd1	0.94940	0.00005	Fam188a	0.70065	0.01200
Aldh1a7	1.77533	0.00005	Pdhb	0.94910	0.00005	Hspa13	0.70049	0.00005
Tuba4a	1.76968	0.00005	Ssr1	0.94858	0.00005	Txnl1	0.70020	0.00005
Mmab	1.76752	0.00005	Gm6793	0.94846	0.00005	Phf6	0.70014	0.00865
Ints1	1.76091	0.02155	Ugdh	0.94801	0.00005	Tssc4	0.70001	0.00155
Dhrs9	1.76061	0.00025	Ttc27	0.94784	0.00005	Cdc37l1	0.69948	0.00270
Darc	1.76041	0.00820	Apba3	0.94769	0.00035	Letm1	0.69918	0.00005
Synj2	1.75495	0.00040	Abca2	0.94759	0.00025	Sept4	0.69911	0.03055
Mtss1l	1.74967	0.00195	Mup11	0.94718	0.00340	Wars	0.69868	0.00040
Cmah	1.74864	0.00005	Farsb	0.94692	0.00005	1190007I07Rik	0.69759	0.02830
Dhx29	1.74650	0.00005	Rint1	0.94614	0.00010	Mrps12	0.69745	0.00005
Etv5	1.74550	0.00015	Eef2k	0.94557	0.02035	Clpp	0.69733	0.00010
Basp1	1.73988	0.00020	Mdm4	0.94497	0.02435	Zfp36	0.69702	0.00010
1810033B17Rik	1.73921	0.01795	Gas2	0.94426	0.00005	Gtf2h2	0.69675	0.01230
Ppih	1.73711	0.00025	Exoc1	0.94303	0.00430	Dis3l	0.69670	0.00180
Ppcdc	1.73703	0.00565	Sirt5	0.94263	0.00005	Pigu	0.69636	0.00080
Cyp2a22	1.73369	0.00195	Pigh	0.94131	0.00075	Dctn5	0.69635	0.00010
Phlda1	1.73060	0.00005	Alg6	0.94123	0.00300	Anxa2	0.69625	0.00280
Gm5549	1.72476	0.00015	Rangap1	0.94116	0.00005	Nek4	0.69582	0.00295
Hspe1	1.72285	0.00015	Tuft1	0.94090	0.00095	Pus1	0.69574	0.00475
Sgsm1	1.71564	0.00955	P4hb	0.94088	0.00005	Wdr33	0.69565	0.00685
Fam120b	1.70945	0.00470	Fastkd2	0.94066	0.00020	Abhd14a	0.69513	0.01010
Dynll1	1.70847	0.00005	Cenpc1	0.94000	0.00490	Naprt1	0.69508	0.00005
Gm14399	1.70796	0.00775	Atic	0.93940	0.00005	Zc3h12a	0.69494	0.00635
Zbtb40	1.70183	0.00005	Clpb	0.93937	0.00295	Skiv2l2	0.69485	0.00385
Nfkb2	1.70163	0.00055	Esr1	0.93903	0.00005	Pdcd5	0.69424	0.00285
Isg15	1.69839	0.00005	Ift88	0.93842	0.01395	Tmem53	0.69383	0.00070
Inmt	1.69609	0.00005	Gfm1	0.93831	0.00005	Nfu1	0.69351	0.00015
Hist1h2be	1.69599	0.00270	Psma1	0.93782	0.00005	Pitpnc1	0.69349	0.04645
Spata5	1.68228	0.00065	Smim14	0.93780	0.00010	Gpatch11	0.69299	0.00190
Serpina12	1.68074	0.00055	Sae1	0.93711	0.00005	Mrpl16	0.69292	0.00005

Gene	Value	P	Gene	Value	P	Gene	Value	P
Per2	1.68064	0.00005	Krit1	0.93697	0.00255	Prmt3	0.69274	0.00785
Gclc	1.67658	0.00005	Timmdc1	0.93675	0.00005	Apip	0.69256	0.00365
Lst1	1.67589	0.00300	Mipep	0.93621	0.00005	Msn	0.69167	0.00015
Nfkbiz	1.66710	0.00005	Eef1e1	0.93532	0.00005	Txn1	0.69159	0.00005
Dzip3	1.66429	0.00070	Cldn14	0.93453	0.03160	Gtf2e2	0.69066	0.00250
Cyp2d37-ps	1.66217	0.00010	0610040J01Rik	0.93352	0.00005	Abhd8	0.69065	0.03395
E2f3	1.65687	0.02270	Abca3	0.93308	0.00005	Vamp5	0.69061	0.02130
Serpine2	1.65265	0.00005	Ran	0.93048	0.00240	Prdx1	0.69057	0.01325
Shank2	1.65161	0.00005	Serpine1	0.92985	0.00015	Tmem50b	0.69042	0.00970
Cep97	1.64263	0.00105	Xrcc6bp1	0.92964	0.01910	Ppan	0.68936	0.02050
Cxcr2	1.64101	0.00005	Selk	0.92919	0.00005	Cops7a	0.68904	0.00085
Gm17296	1.63681	0.00305	1810043H04Rik	0.92877	0.00005	Vnn1	0.68881	0.00010
I7Rn6	1.63618	0.00005	Taf12	0.92873	0.00700	Dynll2	0.68784	0.00005
Hspa4l	1.63259	0.00005	Psmc2	0.92757	0.00005	Sirpa	0.68745	0.00245
Prim1	1.62548	0.00010	Zmat5	0.92723	0.00145	Zeb2	0.68718	0.04410
Tubb5	1.62193	0.00005	Dhodh	0.92627	0.01755	Nif3l1	0.68714	0.02075
Acat2	1.62169	0.00005	Lrrc28	0.92568	0.02980	Parp14	0.68713	0.00005
Dapk2	1.62103	0.03305	Spidr	0.92548	0.00180	Alas1	0.68701	0.00070
Naa16	1.62009	0.00005	Mgll	0.92493	0.00280	Irf2bp1	0.68647	0.00130
Hist1h2bq	1.61707	0.00210	Ces2g	0.92457	0.00005	Chmp5	0.68614	0.00005
Ccl9	1.61462	0.00005	Ipo4	0.92455	0.03465	Ipo11	0.68563	0.00730
Exog	1.60827	0.00045	Fktn	0.92429	0.00030	Lsr	0.68559	0.00015
Ttll12	1.60269	0.00005	Smarca4	0.92358	0.00005	0610030E20Rik	0.68536	0.00025
Olfm2	1.59765	0.00815	Rpp30	0.92345	0.00180	Dguok	0.68536	0.00630
Xkr9	1.59716	0.00005	Rfc3	0.92170	0.00740	Arrb2	0.68528	0.00635
Bdh2	1.59594	0.00005	Mlxipl	0.92106	0.00025	Gipc1	0.68525	0.00185
Kctd7	1.59289	0.00335	Bhlhe40	0.92106	0.00005	Stt3a	0.68512	0.01575
Slc26a10	1.58752	0.00335	Ptcd2	0.92101	0.00005	Cope	0.68511	0.00005
Cyp4a12b	1.58255	0.00005	Tubb6	0.92093	0.04025	Rpp38	0.68495	0.02670
Tsku	1.58228	0.00005	Gm4950	0.91957	0.00070	Nvl	0.68481	0.00085
Ldlr	1.58193	0.00005	Nol3	0.91911	0.00470	Chd1l	0.68443	0.00300
Uxs1	1.57371	0.00005	C5ar1	0.91904	0.00795	Tsc22d1	0.68442	0.00070
Csf3r	1.57363	0.00005	Fam114a1	0.91871	0.00005	Mtfp1	0.68405	0.00195
Myl9	1.57167	0.01540	Cox15	0.91827	0.01535	A1cf	0.68339	0.00005
Zfp9	1.56816	0.00005	Cd55	0.91772	0.00005	Uggt1	0.68336	0.00050
Dusp8	1.56719	0.00820	Klhl36	0.91757	0.00485	Abce1	0.68311	0.00005
Serpina3g	1.56678	0.00005	Dut	0.91740	0.00095	Psma3	0.68310	0.00005
Csf1	1.56510	0.00005	Parp1	0.91706	0.00005	Nprl2	0.68291	0.00305
Gstm4	1.56501	0.00005	Chka	0.91489	0.00605	Coil	0.68273	0.04580
Gm379	1.56408	0.00005	Ccdc30	0.91481	0.03535	Mcm3ap	0.68264	0.00105
Akap12	1.56383	0.01065	Commd10	0.91456	0.00155	Pno1	0.68237	0.00715
Flywch2	1.56083	0.02115	1700021F05Rik	0.91319	0.00005	Chac2	0.68189	0.00250

4930402H24Rik	1.56068	0.00005	Dnajb9	0.91279	0.00370	Yipf6	0.68177	0.02815
Map3k13	1.55813	0.00005	Tbcel	0.91279	0.00005	Tnfaip2	0.68137	0.01695
Irf1	1.55575	0.00005	Nkd1	0.91273	0.00665	Pelo	0.68136	0.01100
Palld	1.55531	0.00005	Ces2e	0.91264	0.00005	Fam35a	0.68133	0.00005
3110062M04Rik	1.55522	0.01535	Trmt10a	0.91261	0.02060	Ndufaf1	0.68049	0.00040
Tead2	1.55501	0.02360	Tmco3	0.91158	0.03350	Tecpr2	0.68008	0.01625
Cmpk2	1.55187	0.00005	Wdyhv1	0.91117	0.00320	Usp39	0.67987	0.00040
Cyp1a2	1.55116	0.00005	Mrpl38	0.90958	0.00005	Mrpl44	0.67981	0.01620
Cyb5b	1.54588	0.00005	Mbd3	0.90878	0.00005	Hdac10	0.67940	0.00855
Phldb2	1.54496	0.00875	Srr	0.90801	0.00210	Wdr1	0.67933	0.00015
Akr1c14	1.53649	0.00005	Msr1	0.90670	0.00005	Nupl1	0.67932	0.00405
Mmd2	1.53644	0.00005	Abcg3	0.90532	0.00350	Smg5	0.67925	0.00015
Relb	1.53633	0.00265	1700066M21Rik	0.90531	0.00005	Cacul1	0.67910	0.00005
Alad	1.53530	0.00005	Ercc8	0.90495	0.01415	Elac2	0.67860	0.00080
Pwwp2b	1.53478	0.00200	Golga1	0.90474	0.00805	Bysl	0.67851	0.02005
Raph1	1.52764	0.00005	Fer	0.90472	0.00060	Nhp2l1	0.67832	0.00015
Tnip1	1.52662	0.00005	Fndc3a	0.90465	0.00015	Rprd1a	0.67809	0.00120
Rpn1	1.52130	0.00005	Nadk2	0.90371	0.00005	Acnat1	0.67794	0.00080
Adgb	1.52050	0.00060	Pgs1	0.90350	0.00005	Nop2	0.67756	0.00050
Apol9a	1.51609	0.00005	Gfm2	0.90345	0.00005	Spp2	0.67749	0.01675
Mmp15	1.51568	0.00005	Pcbd1	0.90292	0.00005	0610007P14Rik	0.67745	0.00005
Tuba8	1.51377	0.00005	Tfrc	0.90212	0.00005	Cdk5	0.67728	0.00210
Col15a1	1.51034	0.00210	Bpnt1	0.90176	0.00005	Nol11	0.67713	0.00490
Psph	1.50927	0.00005	Hspbp1	0.90122	0.00005	Rsad2	0.67668	0.01260
Slc5a3	1.50621	0.00185	Pak4	0.90072	0.00720	G3bp1	0.67658	0.00070
Cad	1.50577	0.00060	Ost4	0.90022	0.00005	Arf5	0.67643	0.00055
Slc39a4	1.50149	0.00005	Zfp579	0.90011	0.01940	Clp1	0.67623	0.00055
Uba5	1.49940	0.01875	Rab20	0.89967	0.00030	Chic1	0.67593	0.00525
Mup17	1.49890	0.00005	Thoc5	0.89913	0.00005	Edem2	0.67589	0.00005
Hn1	1.49442	0.00005	Tert	0.89895	0.02090	Nqo1	0.67572	0.00305
Mrps27	1.48339	0.00005	Thnsl2	0.89765	0.00005	Cfdp1	0.67563	0.00005
Gm14420	1.48138	0.00005	Dhcr24	0.89758	0.00005	Exosc10	0.67516	0.00115
Serpina6	1.47763	0.00005	Traf2	0.89661	0.00015	Dexi	0.67499	0.04275
Ahsa2	1.47231	0.00040	Rai14	0.89613	0.00005	Shroom3	0.67497	0.04650
Nup35	1.47157	0.00035	Larp7	0.89532	0.00065	BC026585	0.67456	0.00155
Tars2	1.47090	0.00005	Ide	0.89507	0.00045	Skiv2l	0.67421	0.00140
Lifr	1.46995	0.00005	Ldb2	0.89474	0.01075	Mocos	0.67380	0.00005
Cd274	1.46966	0.00155	Acsm1	0.89345	0.00005	Impact	0.67374	0.00045
Insc	1.46955	0.00050	Xk	0.89280	0.00110	Sec14l2	0.67337	0.00010
Tgm2	1.46747	0.00005	Spcs3	0.89274	0.00005	Psmd7	0.67257	0.00005

F11	1.46406	0.00005	Ern1	0.89264	0.00005	Mien1	0.67248	0.00005
Chid1	1.45966	0.00175	Nabp1	0.89083	0.00025	Ikbkg	0.67226	0.00195
Tnfrsf14	1.45691	0.00205	Exosc3	0.89078	0.02025	Cyp2j5	0.67171	0.00020
Dnajb2	1.45669	0.00005	Mlx	0.88990	0.00005	Mrpl10	0.67133	0.00020
Actb	1.45577	0.00005	Slc7a8	0.88974	0.00070	E2f4	0.67043	0.00075
Mlec	1.45238	0.00005	Apol9b	0.88967	0.00005	Psmd3	0.67020	0.00005
Tlr1	1.45078	0.00445	Psmd2	0.88934	0.00005	Atf6b	0.66979	0.00060
Wwc1	1.45012	0.00005	Ncbp2	0.88879	0.00160	Psmb4	0.66959	0.00010
Tbcb	1.45001	0.00005	Mpp6	0.88760	0.00005	Rmdn2	0.66920	0.00010
Gm21887	1.44205	0.02580	Hnrnpa3	0.88714	0.00055	Ethe1	0.66906	0.00005
Gm9396	1.44163	0.00005	Mical2	0.88701	0.00005	Rybp	0.66899	0.00030
Gm527	1.43789	0.00155	Gm5150	0.88688	0.04170	2810428I15Rik	0.66829	0.00020
Nbas	1.43707	0.00005	Tle4	0.88630	0.00010	Pikfyve	0.66809	0.00265
Mgme1	1.43110	0.02330	S100a10	0.88625	0.00005	Dnpep	0.66798	0.00005
Hmox1	1.42004	0.00005	Zfhx3	0.88596	0.00040	Cse1l	0.66730	0.01240
Gbp7	1.41846	0.00005	Tmem199	0.88584	0.00050	Casp1	0.66683	0.03540
Cyp2c70	1.41777	0.00005	Bcl6	0.88575	0.00005	Heatr5a	0.66678	0.00120
Aox1	1.41722	0.00005	Pet112	0.88511	0.04930	Cmtr1	0.66621	0.00895
Dbn1	1.41674	0.03615	Edem1	0.88485	0.00005	Zfp846	0.66601	0.04915
Senp8	1.41478	0.00085	Snap23	0.88398	0.00010	Smyd5	0.66587	0.03110
Slc25a37	1.41393	0.00005	Usp21	0.88338	0.00120	Psmg2	0.66587	0.00315
Ikbke	1.41125	0.00005	Ablim1	0.88289	0.00370	Derl2	0.66488	0.00105
Tcea3	1.40334	0.00005	Psmc6	0.88253	0.00005	Wdr83	0.66440	0.01905
Spc24	1.40259	0.00005	Casp4	0.88246	0.04225	D19Bwg1357e	0.66433	0.00045
Acly	1.40163	0.00005	Dnm1l	0.88221	0.00005	Pepd	0.66415	0.00010
N6amt2	1.40134	0.00005	Bin2	0.88219	0.00915	Srbd1	0.66403	0.00530
Rdm1	1.39899	0.00225	Gnai3	0.88216	0.00005	Timm10b	0.66386	0.02330
Unkl	1.39701	0.00005	Rnf213	0.88181	0.00065	Fam162a	0.66353	0.00015
Slc41a2	1.39670	0.00005	Slc6a13	0.88142	0.00005	Rap1gds1	0.66352	0.00035
Nrxn1	1.39352	0.02365	Abhd6	0.88139	0.00005	Acy3	0.66322	0.00010
Ddit3	1.39300	0.01375	Alg3	0.88132	0.00075	Snx6	0.66170	0.00070
Ehhadh	1.39265	0.00005	Pyroxd2	0.88111	0.00005	Mctp2	0.66127	0.00050
Lman2l	1.39186	0.00005	Timm22	0.88078	0.00550	Arf4	0.66117	0.00150
Lpl	1.39082	0.00005	Sec23b	0.88076	0.00005	Srcap	0.66115	0.02560
Ndufaf5	1.38658	0.00035	Tufm	0.87913	0.00005	1110008P14Rik	0.66039	0.00915
Pdzk1	1.38653	0.00005	Gm8991	0.87860	0.01840	Fam45a	0.66029	0.00040
Papss1	1.38372	0.00015	Ptpn1	0.87815	0.01225	Nsfl1c	0.66005	0.00010
Slx4ip	1.38177	0.02980	Tmem101	0.87634	0.00585	Gcsh	0.65983	0.00005
Igfals	1.37854	0.00005	Ugt2b37	0.87614	0.00170	Psmc4	0.65979	0.00005
Mfhas1	1.37620	0.02865	Acot13	0.87541	0.00005	Tbc1d1	0.65958	0.03640
Zfp931	1.37590	0.00010	Rdh11	0.87503	0.00010	Nup155	0.65958	0.00095

Sucnr1	1.37530	0.00005	Ube2m	0.87493	0.00005	Acat3	0.65954	0.00880
Ddost	1.37423	0.00005	Gm10053	0.87438	0.00040	Kti12	0.65950	0.02250
Alas2	1.37397	0.00005	Cd52	0.87408	0.00485	Ssbp1	0.65942	0.00055
Gsta2	1.37028	0.00005	Usp14	0.87364	0.00005	Naa15	0.65885	0.00005
Myl6b	1.36954	0.04350	Stim2	0.87291	0.00110	1110058L19Rik	0.65872	0.00105
Gbe1	1.36926	0.00005	Acaa1b	0.87243	0.00005	Chn2	0.65846	0.00480
Slc17a9	1.36786	0.00020	Rslcan18	0.87192	0.02200	Pdlim5	0.65839	0.00005
Nek6	1.36704	0.00150	D3Ertd751e	0.87135	0.01425	Vwa5a	0.65810	0.00035
Ahsa1	1.36517	0.00005	Mrpl22	0.87132	0.00005	Trappc6a	0.65796	0.01005
Bst2	1.35561	0.00005	Amt	0.87017	0.00005	Agps	0.65789	0.02110
Serf1	1.35554	0.00025	Nup107	0.86996	0.00595	Psmb5	0.65776	0.00005
Dhx58	1.35548	0.01220	Rnf145	0.86932	0.00005	Arhgef3	0.65763	0.00410
Paqr9	1.35531	0.00005	Adsl	0.86812	0.00005	Tmpo	0.65747	0.00030
Cct3	1.35365	0.00005	Bop1	0.86746	0.00185	Lrpprc	0.65733	0.00005
Dnajc3	1.35137	0.00005	Emc1	0.86714	0.04885	Rnf7	0.65664	0.00055
Zbtb45	1.35036	0.00110	Tsfm	0.86711	0.00045	Scamp4	0.65652	0.00150
Sel1l3	1.34994	0.00005	Gm9755	0.86638	0.04460	Arpc5l	0.65598	0.00025
Nup205	1.34739	0.00005	Alpl	0.86624	0.00045	Lace1	0.65597	0.00655
Gdf15	1.34718	0.00005	Echdc3	0.86445	0.00005	Ndufb10	0.65531	0.00005
Krt8	1.34660	0.00005	2310045N01Rik	0.86135	0.00050	Sh3bp5l	0.65380	0.01575
Mgst3	1.34409	0.00005	Plxna2	0.86102	0.00070	Stk38l	0.65379	0.00075
Fstl1	1.34224	0.00300	Tmem180	0.86029	0.04860	Adrm1	0.65362	0.00005
Erlin1	1.33950	0.00005	Nol12	0.85955	0.00125	Cyb561a3	0.65350	0.01685
Junb	1.33877	0.00005	Zfp628	0.85906	0.00355	Copa	0.65337	0.00155
Dnaja1	1.33852	0.00005	Ppp1r14b	0.85904	0.00005	Nol9	0.65297	0.00065
Bcl3	1.33641	0.00005	Itpa	0.85882	0.00005	Ift20	0.65283	0.00075
Acsl3	1.33573	0.00005	Gmcl1	0.85858	0.00005	9930021J03Rik	0.65280	0.00605
Stat1	1.33346	0.02370	Kdm1b	0.85705	0.00050	Noc3l	0.65277	0.00575
Aqp4	1.32889	0.00010	Plscr1	0.85702	0.00005	Irf2bpl	0.65239	0.00115
Gstm6	1.32821	0.00005	Mageh1	0.85632	0.01775	N4bp1	0.65220	0.00090
Fpr2	1.32733	0.00200	Polb	0.85602	0.00010	Cenpj	0.65163	0.04885
BC030307	1.32600	0.00200	Trmt1l	0.85512	0.00005	Irak2	0.65149	0.00235
Ncf4	1.32471	0.00390	Tmed3	0.85444	0.00005	Nudcd1	0.65113	0.04645
Hmbs	1.32442	0.00005	Trmt61a	0.85409	0.00095	Adamts1	0.65104	0.00440
Bco2	1.32343	0.00005	Gtf3a	0.85373	0.04060	Pofut1	0.65101	0.03145
Plekha2	1.32189	0.00250	Xbp1	0.85327	0.00660	Phb	0.65087	0.00195
Sec61b	1.32153	0.00005	Ezr	0.85310	0.02645	Psmb6	0.65037	0.00025
Hk3	1.31704	0.00055	Plek	0.85293	0.00155	1190002N15Rik	0.65024	0.00020
Aldh3a2	1.31624	0.00005	Acn9	0.85276	0.00070	Coasy	0.65000	0.00005
Slco3a1	1.31429	0.00385	Rexo2	0.85164	0.00005	Pbdc1	0.64861	0.01550
Mmaa	1.31393	0.00005	Cox14	0.85149	0.00010	Nr2f6	0.64843	0.00175

Gene	Value	p	Gene	Value	p	Gene	Value	p
Gsap	1.31118	0.00005	Mme	0.85061	0.00740	Psma2	0.64817	0.00010
Car2	1.31108	0.00015	Pdss2	0.84995	0.00035	Cldn2	0.64735	0.00010
Gsta3	1.30934	0.00005	Zc3hc1	0.84923	0.00540	Plekhj1	0.64733	0.03080
Mup20	1.30915	0.00005	Aptx	0.84922	0.00350	Stra13	0.64662	0.00150
Tatdn1	1.30775	0.03980	Vps33b	0.84830	0.00985	Coq2	0.64641	0.00040
Mypop	1.30520	0.02305	Ptpn21	0.84812	0.00005	Farsa	0.64606	0.00450
Noa1	1.30488	0.00025	Azin1	0.84804	0.00040	Cers6	0.64531	0.00145
Bcl6b	1.30467	0.00240	Ifi35	0.84798	0.00005	Tmem109	0.64493	0.00175
Bag3	1.30248	0.00005	Cct5	0.84713	0.00005	Rbm28	0.64467	0.02030
Ngf	1.29964	0.00390	Etnk1	0.84712	0.00005	Rwdd1	0.64458	0.00025
Thop1	1.29917	0.00005	Slc22a15	0.84662	0.00070	Dpm3	0.64453	0.00365
Kctd2	1.29806	0.00005	Xpo1	0.84618	0.00005	Arhgef19	0.64395	0.01565
St6gal1	1.29786	0.00005	Gcnt2	0.84609	0.00265	Pqlc1	0.64363	0.00045
Hdhd3	1.29405	0.00005	Nfkbie	0.84554	0.03990	Polr3e	0.64279	0.00140
Bdh1	1.29346	0.00005	Set	0.84521	0.00005	Zcrb1	0.64237	0.00145
Btbd10	1.29308	0.00125	Rpa3	0.84442	0.00740	Col3a1	0.64234	0.01270
Cyp2c67	1.29286	0.00005	Rpe	0.84345	0.00005	Ywhag	0.64219	0.00020
Cela1	1.28929	0.00005	Slc26a1	0.84311	0.00015	Ugt2b5	0.64176	0.00050
Trim65	1.28924	0.00005	Tmem55a	0.84300	0.00020	Hsf1	0.64172	0.00500
Lasp1	1.28491	0.00005	Hgf	0.84254	0.00060	Babam1	0.64161	0.00015
Adora2a	1.28426	0.00620	Lsm2	0.84217	0.00045	Lcp1	0.64159	0.00070
Dus2l	1.28391	0.01820	Pir	0.84177	0.00005	Hck	0.64141	0.00705
Snrpa	1.28383	0.00005	Psen2	0.84148	0.00005	Top1	0.64123	0.00015
Ccr1	1.28343	0.00530	Slirp	0.84102	0.02455	BC052040	0.64086	0.04675
Cstf3	1.28340	0.00045	Mcph1	0.84100	0.03115	Ajuba	0.64077	0.01375
Cxcl9	1.28276	0.00055	Gja1	0.84088	0.00050	Eif2b5	0.64024	0.00150
Pcp4l1	1.28223	0.00235	Leo1	0.84039	0.00005	Zfp148	0.64013	0.00045
Gmpr2	1.28079	0.00005	Plod3	0.83802	0.02350	Aldh4a1	0.63997	0.00020
Ccdc85c	1.27970	0.00040	Tnfrsf21	0.83732	0.00110	Cpsf1	0.63987	0.00390
Egr1	1.27929	0.00005	Mrpl50	0.83726	0.00005	Lilrb4	0.63977	0.02280
Adrb2	1.27924	0.00245	Lap3	0.83724	0.00005	Eed	0.63890	0.00090
Pkdcc	1.27767	0.00005	Mrpl35	0.83691	0.00005	Lamtor2	0.63876	0.00055
Meiob	1.27754	0.00025	Immp1l	0.83685	0.00035	Slc35a1	0.63837	0.00230
Fabp1	1.27434	0.00005	Fam213b	0.83684	0.00025	Nsmce1	0.63810	0.00260
Mettl22	1.27370	0.00005	Gtf2h3	0.83592	0.00730	Foxa1	0.63804	0.00645
Gm14403	1.27183	0.00130	Ssr3	0.83492	0.00005	Armcx3	0.63757	0.00670
2010003K11Rik	1.27157	0.00005	Slco2b1	0.83487	0.00050	Diablo	0.63728	0.00070
Lmnb2	1.27154	0.00005	Rasgrp3	0.83425	0.00100	Nagk	0.63726	0.00595
Tnfrsf11b	1.27049	0.00045	Aco1	0.83405	0.00005	2510009E07Rik	0.63722	0.00470
Olfr1034	1.27008	0.00315	Hipk2	0.83241	0.00380	Ube2s	0.63716	0.00090
Cnpy4	1.26814	0.00005	Slc15a3	0.83238	0.00265	Scamp3	0.63706	0.00030
Onecut1	1.26808	0.00015	Pcbd2	0.83203	0.00045	Tst	0.63706	0.00015

Gene	Value	p	Gene	Value	p	Gene	Value	p
Cebpe	1.26770	0.00005	Ubqln1	0.83134	0.00005	Yif1a	0.63658	0.00030
Spred1	1.26728	0.00005	Mrpl45	0.83047	0.00005	Cebpg	0.63586	0.00095
Ears2	1.26647	0.00340	Pstpip2	0.83040	0.00735	Cyp2a5	0.63571	0.00040
2700029M09Rik	1.26637	0.00060	Msrb2	0.83015	0.00050	Psma5	0.63549	0.00005
Wdr76	1.26472	0.00205	Prr16	0.83004	0.00005	Klhl28	0.63530	0.02835
Aldh1a1	1.26266	0.00005	Ercc1	0.82971	0.04065	Dnajb14	0.63508	0.00075
Hao1	1.25983	0.00005	BC037034	0.82964	0.00130	Cyp2r1	0.63484	0.00405
Slc35b1	1.25677	0.00005	Ndufa12	0.82951	0.00005	Snx27	0.63472	0.00100
Ddx58	1.25660	0.00005	Slmo2	0.82903	0.00005	Sort1	0.63460	0.00960
Cenpt	1.25652	0.02250	Psmc5	0.82848	0.00005	Ebna1bp2	0.63446	0.01120
Nudt13	1.25518	0.00010	Osbpl8	0.82724	0.00005	Cmas	0.63419	0.00020
Ccl25	1.25241	0.01120	Zfp873	0.82692	0.03460	Mdh1	0.63358	0.01130
Yars2	1.25150	0.00005	Osbp	0.82578	0.00005	Ccdc58	0.63314	0.00070
Cdk2ap2	1.25100	0.00005	Clptm1l	0.82511	0.00005	Cyc1	0.63310	0.00010
Alg12	1.25060	0.00005	Ftsj2	0.82503	0.01145	Cetn3	0.63297	0.00095
Tmem41b	1.24980	0.00005	Isg20	0.82491	0.02425	Sec22b	0.63233	0.00055
8430408G22Rik	1.24952	0.00135	Syde1	0.82480	0.02585	Ubqln4	0.63182	0.00055
Abcb11	1.24930	0.00005	Gm21967	0.82470	0.03460	Rell1	0.63174	0.00490
Dip2a	1.24687	0.01250	Apol7a	0.82452	0.00005	Epb4.1l4b	0.63168	0.00005
Osgin1	1.24687	0.00005	Aif1	0.82430	0.01520	Rabggta	0.63167	0.00095
Smarcb1	1.24613	0.00005	Aldh1b1	0.82428	0.00005	Tubg1	0.63152	0.00070
Alg8	1.24521	0.00050	Srrt	0.82420	0.00005	Abhd16a	0.63149	0.01780
Paox	1.24397	0.00005	Pcbp1	0.82348	0.00005	Sfxn5	0.63141	0.00280
Mrps6	1.24385	0.00020	Ampd2	0.82340	0.02735	Dusp16	0.63063	0.00035
Sdr9c7	1.24223	0.00005	Thap2	0.82297	0.00060	Serpind1	0.63048	0.00130
Nav2	1.24014	0.00575	Ranbp1	0.82272	0.00155	Surf4	0.63001	0.00115
Akr1c6	1.23985	0.00005	Ifi47	0.82241	0.00990	Yipf5	0.62980	0.00025
Serp1	1.23939	0.00005	3830406C13Rik	0.82235	0.00010	Pigyl	0.62970	0.00190
Ddx17	1.23921	0.00035	Hist1h2bc	0.82232	0.00005	Smim15	0.62930	0.00050
Hist1h4i	1.23838	0.01780	Pip4k2b	0.82225	0.00040	Siva1	0.62930	0.04725
Dtymk	1.23758	0.00005	Sh3pxd2a	0.82132	0.00005	Qprt	0.62914	0.00010
Magt1	1.23715	0.00005	Agl	0.82122	0.00005	Prrc2a	0.62913	0.01265
Pnpla7	1.23713	0.00005	Ino80e	0.82117	0.00880	Mrpl28	0.62910	0.00070
Pnpt1	1.23649	0.00005	Ergic1	0.82074	0.00005	4930430F08Rik	0.62895	0.04570
Ecscr	1.23644	0.00165	Vac14	0.82045	0.00015	Xiap	0.62840	0.00030
Tgfa	1.23433	0.00005	Nol10	0.82039	0.00145	Trmt6	0.62835	0.00545
Gtf3c5	1.23366	0.00005	Ncor2	0.82039	0.00930	Smarcc1	0.62812	0.00140
Ido2	1.22895	0.00005	Oxnad1	0.81912	0.00535	Pim1	0.62801	0.00905
Ppp1r3b	1.22775	0.00005	Psmb3	0.81908	0.00005	Psme2	0.62670	0.00125
Slc9a3r1	1.22627	0.00005	Syt1	0.81907	0.00220	Qrsl1	0.62670	0.02260
Smyd3	1.22375	0.03275	Limk1	0.81862	0.04415	Pus3	0.62631	0.03605

Gene	Value	p	Gene	Value	p	Gene	Value	p
Maged2	1.22138	0.00010	Fam136a	0.81802	0.00005	Usp12	0.62625	0.00035
Gda	1.22121	0.00005	Habp4	0.81780	0.00005	Eef1g	0.62606	0.00005
Entpd6	1.21937	0.00005	Ndufab1	0.81759	0.00005	Tmed2	0.62598	0.00080
Mrps22	1.21653	0.00005	Snrnp48	0.81749	0.00035	Cbwd1	0.62585	0.03690
Gm14327	1.21623	0.00130	Gm10146	0.81749	0.03885	Lipg	0.62549	0.02040
Creld1	1.21527	0.00005	Rgs3	0.81672	0.02040	Hars	0.62539	0.00260
Ccl24	1.21390	0.00360	Tvp23b	0.81671	0.00025	Cped1	0.62503	0.00485
P4ha2	1.21274	0.00275	Map1s	0.81610	0.01410	Mrpl46	0.62500	0.01150
Rpia	1.21195	0.01370	Ppa1	0.81609	0.00005	Riok2	0.62442	0.00035
Fam26f	1.21124	0.04465	Usf1	0.81460	0.00560	Nolc1	0.62417	0.00040
Ifitm1	1.21109	0.00005	Ifih1	0.81394	0.00005	Rtkn	0.62408	0.02880
Alpk1	1.21050	0.00290	Ddhd1	0.81386	0.00080	Fip1l1	0.62401	0.02610
Srm	1.20952	0.00005	Mllt1	0.81366	0.00005	Nab1	0.62398	0.00030
Canx	1.20916	0.00005	Exoc6b	0.81336	0.00515	Siah2	0.62371	0.00185
Zcchc10	1.20902	0.00110	Grtp1	0.81317	0.00005	Tmem242	0.62357	0.00070
Cxx1a	1.20782	0.00810	Mrpl37	0.81266	0.00005	Tsen2	0.62342	0.02755
Ints3	1.20684	0.00005	Kdelr2	0.81238	0.00005	Acyp1	0.62271	0.01995
Ostc	1.20573	0.00005	Krr1	0.81175	0.00150	Ndufs1	0.62267	0.00040
Snai2	1.20442	0.00005	Cdc34	0.81168	0.00005	Abca9	0.62258	0.02140
3110052M02Rik	1.20382	0.00545	Szrd1	0.81135	0.00260	Nat8	0.62237	0.03950
Hagh	1.20234	0.00005	Gstm7	0.81069	0.00005	Mup15	0.62197	0.00610
1110057K04Rik	1.20181	0.00005	Smad2	0.81066	0.02080	Inpp5f	0.62121	0.00065
Tbc1d2b	1.20108	0.00005	Cxcl16	0.81054	0.03345	Mrpl41	0.62107	0.00280
Igtp	1.19920	0.00005	Aars2	0.81038	0.00025	Mrpl42	0.62105	0.00080
Xxylt1	1.19908	0.01460	Ugp2	0.81030	0.00005	Snrpf	0.62081	0.01230
Slc11a2	1.19853	0.00005	Med28	0.81014	0.00035	Mrpl55	0.62067	0.00840
BC029214	1.19763	0.00005	Serpinh1	0.80983	0.00125	Lactb	0.62035	0.00020
Fubp1	1.19761	0.00005	Sema6a	0.80972	0.01050	Ptpla	0.62019	0.02750
Gimap9	1.19745	0.00005	Fam98a	0.80968	0.00005	Hccs	0.62016	0.00825
Sec61g	1.19745	0.00005	Rel	0.80918	0.01455	St5	0.62013	0.00215
Actg1	1.19517	0.00005	Impa1	0.80870	0.00005	Cebpb	0.61945	0.00105
Lama4	1.19381	0.04280	Ipo13	0.80827	0.00250	Spty2d1	0.61924	0.00130
Pycr2	1.19317	0.00005	Ppil3	0.80820	0.03840	Rnf141	0.61901	0.02040
Gcat	1.19162	0.00005	Nars	0.80806	0.00005	Rin3	0.61897	0.00475
Pmvk	1.19150	0.00005	Ppp1r35	0.80744	0.00480	Fabp5	0.61870	0.00830
2700097O09Rik	1.19103	0.00070	Prpf19	0.80741	0.00005	Usp6nl	0.61847	0.00110
Scimp	1.19081	0.03375	Ngdn	0.80728	0.00005	Bcr	0.61840	0.00040
Nme6	1.19068	0.00005	Fam220a	0.80668	0.00330	Irf6	0.61836	0.00150
Umps	1.19062	0.00005	Arap3	0.80650	0.00030	Rfng	0.61818	0.00510
Ddah1	1.18985	0.00005	Exoc3	0.80625	0.00005	Uba6	0.61749	0.02520
Apobec1	1.18983	0.00005	Fam149b	0.80573	0.00020	Ctnnb1	0.61639	0.00015

Gene	Value	p	Gene	Value	p	Gene	Value	p
Bank1	1.18979	0.00430	Tmcc1	0.80554	0.00230	Anapc11	0.61636	0.00875
Tmx2	1.18932	0.00020	Plekhg1	0.80524	0.04180	Slc9a6	0.61615	0.04570
Josd2	1.18859	0.00005	Gdi1	0.80468	0.00160	Snx19	0.61565	0.00085
Alox5ap	1.18802	0.00275	Tmem150a	0.80461	0.00080	Pkm	0.61542	0.00120
Sebox	1.18730	0.00420	Cwf19l1	0.80433	0.00115	Hinfp	0.61528	0.03525
Coq5	1.18671	0.00005	H2afx	0.80370	0.00020	Tti1	0.61528	0.02910
Ankrd26	1.18661	0.00720	Cml2	0.80359	0.00025	Ap1b1	0.61526	0.00145
Fntb	1.18438	0.03985	Mccc1	0.80330	0.00005	Glyat	0.61517	0.00835
Slc16a6	1.18400	0.01165	Mrps16	0.80297	0.00025	Zc3h11a	0.61471	0.02095
Cxadr	1.18387	0.00005	Stoml2	0.80223	0.00210	Stard3nl	0.61470	0.00530
Zranb2	1.18374	0.00005	Ttc32	0.80154	0.00040	Rtp3	0.61464	0.00090
Ccnd2	1.18294	0.00015	Pvr	0.80138	0.00115	Ap2b1	0.61404	0.00170
Dhrs11	1.18126	0.00005	Exoc4	0.79945	0.00010	Spag7	0.61397	0.00080
Ugt2b34	1.18022	0.00005	Mical3	0.79911	0.03580	Mavs	0.61392	0.00015
Trp53	1.18009	0.00020	Sec61a1	0.79856	0.00545	Rpn2	0.61349	0.00005
Sars2	1.17963	0.00005	Aip	0.79856	0.00005	Slc9a8	0.61318	0.00075
Dcun1d2	1.17891	0.00005	Mad1l1	0.79758	0.01760	Zscan22	0.61315	0.02005
Tjp3	1.17766	0.00595	Nqo2	0.79720	0.00040	Smpd4	0.61303	0.03880
Psmd14	1.17413	0.00005	Pilrb1	0.79575	0.04640	Fam43a	0.61285	0.02015
Fermt2	1.17347	0.00005	Pygl	0.79518	0.00005	Hnrnpf	0.61194	0.00065
Tlr12	1.17265	0.00910	Als2	0.79502	0.00005	Snx18	0.61190	0.00045
Rgs19	1.17197	0.01145	Camkk2	0.79495	0.00065	Ghitm	0.61188	0.00035
Uchl3	1.17148	0.00005	Polr2d	0.79479	0.01410	Zbtb20	0.61186	0.00615
Tra2a	1.17127	0.00005	Thrb	0.79451	0.00005	Zfp146	0.61169	0.00165
Gng11	1.16934	0.00020	Mrps36	0.79344	0.00730	Nudt2	0.61141	0.01165
Dock8	1.16750	0.00005	Nr2c2ap	0.79336	0.02505	Hspa9	0.61135	0.00040
Traf3	1.16725	0.00030	Nadk	0.79280	0.00005	Edf1	0.61093	0.00005
Fam185a	1.16253	0.00030	Clec16a	0.79257	0.00355	Psma6	0.61092	0.00010
Nupr1	1.16143	0.02205	Ly6a	0.79124	0.01200	Nudt1	0.61080	0.01360
Clcn6	1.16110	0.01460	Gstt1	0.79119	0.00005	Cars	0.61064	0.00805
Pycrl	1.16058	0.00005	Atf5	0.79092	0.00005	Mtg1	0.60999	0.00375
Far1	1.16046	0.01120	Tmed9	0.79038	0.00005	Rnf5	0.60957	0.00050
Ints2	1.15992	0.04710	Uspl1	0.79031	0.01435	Rock2	0.60952	0.00635
Mmp19	1.15912	0.00005	Bet1	0.79004	0.00005	Cog4	0.60947	0.00575
Ncald	1.15599	0.00395	Ces3a	0.78984	0.00030	Rmdn3	0.60926	0.00035
Gm5422	1.15562	0.02460	Elk3	0.78966	0.04415	Dnajc2	0.60920	0.00075
1810009A15Rik	1.15542	0.00005	Prkd2	0.78889	0.00360	Eif4g1	0.60903	0.00085
Fam96b	1.15502	0.00015	Znrd1	0.78858	0.00195	Pfdn1	0.60901	0.00225
Armcx4	1.15468	0.00005	Ppcs	0.78845	0.00045	Grlf1	0.60856	0.00010
Gtpbp8	1.15435	0.00285	2410127L17Rik	0.78805	0.00055	Acsl4	0.60823	0.00150
Hpgd	1.15435	0.00005	3110040N11Rik	0.78754	0.01010	Zswim7	0.60816	0.01045
Psmd5	1.15217	0.00005	Cdkal1	0.78744	0.00795	Dars	0.60815	0.00005
Mthfd2	1.15176	0.01740	Hbb-bt	0.78649	0.00015	Srxn1	0.60804	0.00025

Ggcx	1.15065	0.00005	Sema3f	0.78541	0.00640	Daam1	0.60800	0.00055
Hip1r	1.15010	0.00005	Tmem167	0.78507	0.00195	Gopc	0.60793	0.00055
Stk40	1.14981	0.00005	Usp48	0.78453	0.00165	Ric8b	0.60779	0.01915
Polr3g	1.14906	0.00910	Hdc	0.78406	0.02930	Slc39a7	0.60720	0.00485
Ociad2	1.14641	0.00005	Rabepk	0.78350	0.02625	Ccdc41	0.60671	0.01925
Ptges3	1.14635	0.00005	Rrbp1	0.78287	0.00070	Ube3c	0.60630	0.00635
Pinx1	1.14597	0.00105	Rnf121	0.78235	0.00005	Fkbp2	0.60625	0.00065
Prpsap2	1.14491	0.00005	Ak4	0.78215	0.00005	Olfml1	0.60603	0.02315
Lamb1	1.14475	0.01310	Ints5	0.78202	0.00050	Arf6	0.60591	0.00030
Idh1	1.14328	0.00005	Mtap	0.78198	0.00005	Anxa5	0.60545	0.02400
Slc25a17	1.14269	0.00005	Bcdin3d	0.78167	0.04915	Kptn	0.60542	0.00985
Tada3	1.14228	0.00010	Plxnd1	0.78132	0.00020	Rbm15	0.60535	0.01265
Acaca	1.14198	0.00010	Vcl	0.78118	0.04400	Mup21	0.60521	0.00050
Robo1	1.14183	0.00010	Copz1	0.78096	0.00005	Tm2d3	0.60511	0.01080
Lacc1	1.14113	0.00005	Psma4	0.78096	0.00005	Luc7l	0.60494	0.00250
Me1	1.14041	0.00005	Gm10036	0.78070	0.04855	Top1mt	0.60468	0.00240
Cbx5	1.14023	0.00030	Gart	0.78029	0.00095	Akt2	0.60446	0.00035
Camsap1	1.13935	0.00200	Slc25a21	0.78009	0.00415	Trmt5	0.60435	0.02125
Ruvbl2	1.13916	0.00005	Ddc	0.77974	0.00020	Alkbh2	0.60431	0.03305
Polr3k	1.13870	0.00005	Cgn	0.77964	0.00030	Pdrg1	0.60430	0.00760
Calm1	1.13868	0.00010	Krtcap2	0.77885	0.00005	Bcar3	0.60408	0.00085
P2ry6	1.13767	0.00380	Uso1	0.77870	0.00030	Tomm6	0.60408	0.00620
Nutf2	1.13622	0.00005	Yif1b	0.77864	0.00320	Hspa8	0.60405	0.01215
Isoc2b	1.13564	0.00005	Zfp706	0.77789	0.00005	Slc30a5	0.60393	0.00015
Psd3	1.13532	0.00005	Xrcc6	0.77770	0.04705	Cldn5	0.60393	0.04290
Htt	1.13469	0.00005	Gpn1	0.77730	0.00920	Sympk	0.60334	0.00035
Hsp90ab1	1.13395	0.00005	Ccdc51	0.77682	0.00070	Ndufs6	0.60294	0.00170
Cct7	1.13315	0.00005	Pgap1	0.77590	0.00010	Rab32	0.60264	0.00030
Gpam	1.13302	0.00005	Mrps28	0.77584	0.00555	Ap1g1	0.60242	0.00390
S1pr1	1.13253	0.00005	St13	0.77566	0.00010	Cltb	0.60234	0.00095
Agtpbp1	1.13246	0.00150	Slc10a5	0.77542	0.00005	Mtif2	0.60219	0.00045
Ppid	1.13164	0.00005	Slc22a18	0.77475	0.00005	Bloc1s4	0.60215	0.00380
Erc2	1.12727	0.00005	Cdk5rap3	0.77441	0.03815	Mpst	0.60194	0.00025
Magee1	1.12694	0.00745	Eral1	0.77393	0.00045	Fbl	0.60181	0.00100
Scly	1.12561	0.00005	Lman1	0.77389	0.00005	Rtp4	0.60156	0.00820
Sipa1l3	1.12553	0.00945	Nostrin	0.77388	0.00020	Ube2f	0.60147	0.00255
Ormdl2	1.12475	0.00005	Dtx3l	0.77384	0.01770	Mrps18c	0.60012	0.00130
Hsd17b12	1.12289	0.00005	Nktr	0.77360	0.00110	Arpp19	0.59991	0.00705
Parp11	1.12231	0.01465	Rpl22l1	0.77287	0.00010	Cetn2	0.59969	0.01105
Zc3h8	1.12018	0.00515	Smad6	0.77181	0.03705	Tbl1x	0.59960	0.00045
Pilra	1.11910	0.02265	Selt	0.77129	0.00005	Pdzd11	0.59956	0.00465
I830012O16Rik	1.11531	0.00340	Pacsin2	0.77037	0.00005	Timm13	0.59956	0.00065
Foxk2	1.11482	0.00005	Fgl2	0.77018	0.00470	Grwd1	0.59913	0.00975

Gpr125	1.11447	0.00005	Lman2	0.77006	0.00005	Ube2l3	0.59903	0.00015
Ripk2	1.11368	0.00005	Wbp1	0.76967	0.00050	Sgpl1	0.59894	0.00065
Zfp324	1.11184	0.00005	Rbm45	0.76942	0.00100	Nubp2	0.59887	0.00090
Nhej1	1.11166	0.01930	Eif1b	0.76933	0.00005	Ccdc90b	0.59819	0.01610
Bcs1l	1.11042	0.00005	Snrpd3	0.76874	0.00005	Nlrp6	0.59798	0.00015
Tubd1	1.10822	0.00150	Pxdc1	0.76821	0.00005	Nt5e	0.59790	0.00825
Farp1	1.10817	0.00005	Atp2a2	0.76778	0.00020	Ugt2b38	0.59742	0.00040
Samd9l	1.10652	0.00005	D17Wsu104e	0.76756	0.00005	Zfml	0.59739	0.00095
Homer1	1.10442	0.00005	Eif3j1	0.76739	0.00045	Abcd2	0.59638	0.01175
2810007J24Rik	1.10408	0.00005	Tpm1	0.76710	0.00155	Pak1ip1	0.59621	0.00620
Tmem258	1.10351	0.00005	Cct6a	0.76663	0.00005	Ifrd2	0.59601	0.00075
Lyrm7	1.10333	0.04355	Med21	0.76605	0.04955	Tceb1	0.59568	0.00080
Map3k4	1.10145	0.00005	Acsl5	0.76554	0.00005	Prpf31	0.59483	0.01695
Krt18	1.10113	0.00005	Vasp	0.76495	0.00045	Mboat7	0.59456	0.01710
G630090E17Rik	1.10102	0.00005	Hars2	0.76486	0.04760	Tns3	0.59455	0.01460
Svip	1.10093	0.00005	Ddx39	0.76482	0.00920	Nip7	0.59448	0.01295
Gfpt1	1.10054	0.00005	Sf3a1	0.76469	0.01350	Rlf	0.59431	0.00085
Mid1	1.10019	0.01080	Capn2	0.76446	0.00005	Snrpa1	0.59424	0.00520
0610012H03Rik	1.09942	0.00005	Ptprf	0.76439	0.00005	Dnajb4	0.59400	0.00065
Rala	1.09780	0.00005	Rxrg	0.76360	0.02020	Asxl2	0.59377	0.01030
Tcaim	1.09714	0.00005	Usp37	0.76310	0.04190	Snrnp27	0.59354	0.00280
Nit2	1.09559	0.00005	Tppp	0.76259	0.04005	Pmpcb	0.59279	0.00030
Neu3	1.09391	0.00090	Gss	0.76246	0.00595	Cep135	0.59255	0.02505
Xlr3a	1.09390	0.02115	Cks1b	0.76232	0.00605	Hsd17b2	0.59235	0.00020
Zc4h2	1.09298	0.01480	Klra2	0.76200	0.00995	Pomk	0.59234	0.01845
Nthl1	1.09203	0.00535	Memo1	0.76078	0.00005	Utp6	0.59219	0.03305
Papd7	1.09183	0.03050	Aox3	0.76042	0.00005	Bloc1s5	0.59166	0.00150
4931406C07Rik	1.09093	0.00005	Rnpep	0.75961	0.00025	Ndufa8	0.59161	0.00035
Hspd1	1.09077	0.00005	Mrpl52	0.75961	0.00005	Hdac2	0.59149	0.00185
Dars2	1.08999	0.00030	Ptcd3	0.75952	0.00005	Sod2	0.59147	0.00030
Cyp7b1	1.08981	0.00005	Impdh2	0.75934	0.00005	Ddt	0.59097	0.00140
Mblac2	1.08938	0.00005	Irgm2	0.75891	0.00065	Fam173b	0.59069	0.01080
Tmem33	1.08914	0.00005	Cotl1	0.75885	0.00035	Psma7	0.59054	0.00010
Ugt2b35	1.08826	0.00005	Commd6	0.75838	0.00010	Polr3d	0.59052	0.00910
Cpeb1	1.08697	0.03730	Rpl3	0.75831	0.00005	Eif2ak2	0.59050	0.01880
Oma1	1.08687	0.00005	Nrn1	0.75634	0.00005	Eif4e	0.58969	0.00035
Ccbl2	1.08629	0.00005	Atp11a	0.75611	0.03520	Ccbl1	0.58901	0.00135
Morc3	1.08511	0.00005	Lin7a	0.75606	0.00010	Bcmo1	0.58858	0.03070
Spcs2	1.08440	0.00005	Galm	0.75606	0.00005	Mmgt1	0.58825	0.00055
Kifc3	1.08388	0.00005	Epha1	0.75583	0.00135	1810022K09Rik	0.58802	0.00465

Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value
Ola1	1.08307	0.00960	Tpm3	0.75573	0.00005	Agfg1	0.58709	0.01575
Inhbc	1.08169	0.00005	Mcu	0.75564	0.00060	Hltf	0.58694	0.01885
Abcc5	1.08107	0.04545	Mrps18b	0.75517	0.00125	Map2k1	0.58694	0.00370
Pfn2	1.08103	0.00120	Znhit1	0.75469	0.00925	Hspa4	0.58620	0.03850
BC004004	1.08054	0.00005	Ogfod1	0.75415	0.00335	Cpsf6	0.58606	0.03185
Txndc5	1.08009	0.00005	2210016F16Rik	0.75387	0.00005	Rhbdf2	0.58562	0.01155
Setd8	1.07719	0.00005	Paqr7	0.75382	0.00040	Pomp	0.58549	0.00020
Sept9	1.07713	0.00005	Mlh1	0.75371	0.04725	Wipf2	0.58524	0.03335
Homer2	1.07689	0.00005	Klhdc7a	0.75349	0.00010			
Flywch1	1.07428	0.00005	Tmem205	0.75332	0.00005			

624 downregulated genes.

Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value	Gene name	log2 (fold change)	P value
Tnnt2	-5.88913	0.04125	Hand2	-1.31938	0.00025	Ttc33	-0.84098	0.00755
A2m	-4.76644	0.00005	Prob1	-1.31847	0.00015	Xpa	-0.84066	0.04105
Hist1h1e	-4.44818	0.00035	Tram2	-1.31620	0.00005	Zfand6	-0.84013	0.00005
Psrc1	-4.27959	0.04665	Slc4a4	-1.31380	0.00005	Kctd13	-0.83834	0.00655
Fam107a	-4.20698	0.00005	Phf11c	-1.31209	0.01015	Gtf2a2	-0.83828	0.00005
Sult1e1	-3.84316	0.00010	Pla2g7	-1.31054	0.00005	Ubox5	-0.83771	0.04950
Fmo3	-3.69727	0.00180	Asl	-1.30606	0.00005	Kifc2	-0.83737	0.01365
Ptges3l	-3.66518	0.01360	Twist1	-1.30453	0.02755	Nox4	-0.83711	0.00005
Mup8	-3.63873	0.00445	Dkk3	-1.30361	0.00555	Zbtb16	-0.83687	0.00005
E030018B13Rik	-3.60028	0.04285	Sulf2	-1.30035	0.00040	Ndst2	-0.83409	0.00005
Slc13a5	-3.38539	0.00005	Dusp1	-1.29778	0.00005	Fbxo21	-0.83275	0.00005
Camp	-3.38431	0.02325	Apoa5	-1.29193	0.00005	Fbxl20	-0.83260	0.01640
Tmem100	-3.33224	0.00350	Cep110	-1.29052	0.00005	G0s2	-0.83213	0.00005
Sbsn	-3.23542	0.01110	Mfsd7c	-1.28814	0.00010	Slc38a4	-0.82344	0.00035
Ntf3	-3.21424	0.00025	Gpr56	-1.28128	0.00360	Tiparp	-0.82292	0.01920
Slc10a6	-3.20877	0.00200	Scara5	-1.27429	0.00005	Hal	-0.82200	0.00230
Grb10	-3.16304	0.00005	Atp6v0d2	-1.27121	0.00155	Gskip	-0.82165	0.00010
Slc41a3	-3.12535	0.00005	Tbc1d16	-1.26816	0.00005	Gpx3	-0.81614	0.00140
Ngp	-3.03636	0.00010	Cabyr	-1.26673	0.01515	Fam222a	-0.81442	0.00225
Ly6d	-2.98331	0.00005	Pdk4	-1.25987	0.00345	Gpr116	-0.81416	0.00005
Tmem158	-2.98196	0.01030	Setd7	-1.25564	0.00005	Fbxo44	-0.80770	0.01620
Fgf21	-2.97817	0.00115	Lgals4	-1.25314	0.00005	Cd63	-0.80746	0.01910
Ccnb2	-2.92383	0.00600	1500012F01Rik	-1.24904	0.01810	Ass1	-0.80735	0.00080
Fbxo32	-2.87663	0.00005	Dcaf6	-1.24650	0.00005	Gne	-0.80692	0.00015
Il20rb	-2.86042	0.00970	Ctgf	-1.24631	0.00005	Naip5	-0.80563	0.00810
Cyp7a1	-2.80459	0.00005	Gng2	-1.24353	0.02915	Gm6768	-0.80512	0.00005
Nipal1	-2.80135	0.00005	Gnat1	-1.23738	0.00005	Rcan2	-0.80458	0.00820
Sftpa1	-2.79300	0.00005	Reep4	-1.23354	0.00005	Vcam1	-0.80337	0.00005

Mycl	-2.78849	0.00005	Slc27a1	-1.23209	0.00010	Tob1	-0.80208	0.00005
Fst	-2.77693	0.00005	Tmem87b	-1.22656	0.00005	Chd6	-0.80173	0.04470
Got1	-2.76459	0.00005	Gm4737	-1.22240	0.00005	Aspg	-0.79995	0.00005
Col1a1	-2.70357	0.00010	Ucp2	-1.21034	0.00070	Rnf144a	-0.79862	0.00650
Eif4ebp3	-2.69766	0.00005	Cyp3a59	-1.21030	0.00005	Haus4	-0.79813	0.01495
Map3k6	-2.67610	0.02345	S100pbp	-1.20883	0.00005	Naga	-0.79541	0.00005
Mcoln2	-2.67601	0.00255	Insig2	-1.20829	0.00005	Cnppd1	-0.79343	0.00005
Cxcl14	-2.65732	0.02915	Plin5	-1.20567	0.00005	Vopp1	-0.79034	0.03845
Fmo2	-2.64559	0.00005	Ect2	-1.20292	0.02395	Ano10	-0.78930	0.00025
Nrm	-2.59245	0.04185	Enc1	-1.20076	0.00005	Ctif	-0.78765	0.00005
Upp2	-2.57247	0.00005	Caln1	-1.18860	0.00200	Eef2	-0.78703	0.00030
Sorbs3	-2.53539	0.00005	Fgb	-1.18613	0.01945	D16Ertd472e	-0.78615	0.00255
Ddit4	-2.47569	0.00100	Odf2	-1.18492	0.00135	5031439G07Rik	-0.78454	0.02455
Gpcpd1	-2.46507	0.00005	Itpripl1	-1.18279	0.00055	Tmem62	-0.78410	0.00070
Cirbp	-2.44329	0.02450	Emb	-1.18037	0.02685	Ankrd16	-0.78346	0.00335
Pbx3	-2.44118	0.00180	Fuca2	-1.18022	0.00255	Rab27a	-0.78283	0.01425
Mfsd2a	-2.42180	0.00005	Brap	-1.17845	0.00005	Cfh	-0.78238	0.00250
Limk2	-2.41017	0.00005	Agpat9	-1.17400	0.00015	Pold4	-0.78194	0.02090
Cyp2b10	-2.37909	0.00005	Gm3839	-1.16499	0.00165	Ranbp10	-0.78151	0.00005
Sult1d1	-2.37787	0.00005	Slc45a3	-1.15847	0.00005	Snx21	-0.78134	0.03520
Serpina3n	-2.37569	0.00005	Cntfr	-1.15770	0.02440	Il22ra1	-0.78016	0.00275
Wipi1	-2.36340	0.00005	Slc6a8	-1.15765	0.00015	Arhgef37	-0.77965	0.00385
Arntl2	-2.36222	0.00145	Nrbp2	-1.15681	0.00005	Rbl2	-0.77933	0.00100
Chac1	-2.34464	0.00005	Klf4	-1.15365	0.00645	Txnrd3	-0.77868	0.00845
Ppbp	-2.28271	0.00250	Bbs4	-1.15245	0.00070	Abhd15	-0.77456	0.01220
Bmf	-2.27297	0.00055	Glt1d1	-1.15163	0.00005	Dirc2	-0.77148	0.00030
Tmtc2	-2.25512	0.00005	Fga	-1.14770	0.01665	Pdpr	-0.76807	0.01270
Slc22a26	-2.22278	0.00070	Omd	-1.14622	0.01500	Cbx4	-0.76727	0.00360
Lpin1	-2.20947	0.00005	Ppm1k	-1.14453	0.00005	Asrgl1	-0.76617	0.04720
Clcf1	-2.19361	0.00205	Rdh9	-1.13811	0.00005	Zfp871	-0.76604	0.00010
Sox12	-2.18135	0.00005	Bmyc	-1.13393	0.01065	Chp2	-0.76164	0.03510
Hist1h4m	-2.16191	0.00020	Cox6b2	-1.13387	0.02525	Cpb2	-0.75994	0.00005
Fkbp5	-2.14996	0.00005	Hmga1-rs1	-1.12590	0.03140	Klf11	-0.75937	0.02555
Cyp8b1	-2.14663	0.00005	Trib3	-1.12529	0.00040	Zscan25	-0.75898	0.00765
Btbd11	-2.13999	0.00005	Hykk	-1.12046	0.00005	Tymp	-0.75885	0.00445
Rab30	-2.13266	0.00005	Cyp2e1	-1.11885	0.00280	Adcy9	-0.75837	0.00035
Adcy1	-2.12260	0.00010	Ly6c2	-1.11879	0.01220	Ncoa4	-0.75792	0.00005
Dpysl3	-2.10337	0.00295	Grn	-1.11532	0.00005	Phldb3	-0.75268	0.01870
Ppargc1a	-2.10286	0.00005	Nnmt	-1.11343	0.00005	AA474331	-0.75180	0.01225
6330408A02Rik	-2.08551	0.01955	Cenpa	-1.11295	0.00680	Acot12	-0.75160	0.00005
Ubash3b	-2.07379	0.00610	Hmgb2	-1.11071	0.00090	Slc25a32	-0.75141	0.00045
Rpgrip1	-2.06169	0.00630	Soat2	-1.10926	0.00005	Gm9938	-0.74883	0.04610
Cyp26b1	-2.06034	0.00005	Morc4	-1.10884	0.02750	Zfp36l2	-0.74801	0.00005
Tmem88b	-2.05976	0.00005	Myo1g	-1.10522	0.03365	Tmem56	-0.74781	0.00005

Cdkn2c	-2.01903	0.00005	Zkscan17	-1.10204	0.00005	Fam13a	-0.74613	0.00460
Gm8923	-1.96414	0.01830	mt-Co2	-1.10192	0.00005	Gm5424	-0.74417	0.00320
Peg3	-1.95821	0.00005	Dyrk1b	-1.10130	0.00040	Pptc7	-0.74261	0.00015
Saa2	-1.94396	0.00005	Sned1	-1.09881	0.02420	Trpm2	-0.73791	0.03375
Kcnt2	-1.93025	0.00005	Ankrd33b	-1.09832	0.00005	Dgka	-0.73733	0.00515
Rfx4	-1.92934	0.00880	Txnip	-1.09567	0.00005	Slc25a12	-0.73690	0.00750
Atoh8	-1.91944	0.00005	Arl2bp	-1.09205	0.00035	Arl6ip6	-0.73416	0.03870
Cdkn1a	-1.91815	0.00005	Abca6	-1.09078	0.00005	Wdr45	-0.73378	0.00035
Sez6l2	-1.91710	0.02185	N4bp2	-1.09037	0.00110	Amn1	-0.73330	0.03110
Hamp	-1.91464	0.00005	4930546H06Rik	-1.09013	0.01445	Ulk1	-0.73234	0.00005
Tmprss2	-1.91405	0.03475	Gapdh	-1.08749	0.00005	Tango2	-0.72608	0.00005
Fam71e1	-1.90629	0.03750	Fam109a	-1.08701	0.00030	Zfp703	-0.72153	0.00630
Wdr62	-1.89551	0.01065	Fbf1	-1.08458	0.00320	Ocln	-0.72112	0.00345
Slc8b1	-1.89379	0.00005	Fgg	-1.08441	0.00915	Sla	-0.72074	0.00625
Adra1a	-1.89064	0.00005	Tfdp2	-1.08198	0.00005	Ntmt1	-0.72009	0.02710
St3gal5	-1.89004	0.00005	Mxra8	-1.08009	0.01510	Atl2	-0.71905	0.00005
Rnf125	-1.88086	0.00005	Sgk1	-1.07361	0.00005	Nr2c2	-0.71858	0.00395
Tcp11l2	-1.87463	0.00005	Tmed5	-1.07302	0.00035	Slc25a15	-0.71615	0.00015
Birc5	-1.87083	0.02390	Lgalsl	-1.06632	0.00005	Cyp2d9	-0.71358	0.00040
Rgs1	-1.85714	0.00005	Hmga1	-1.06237	0.00155	Eif4ebp1	-0.71077	0.00010
Adora1	-1.85168	0.00005	Gmnn	-1.06112	0.00060	Mbtd1	-0.70984	0.00895
Nlrp12	-1.84641	0.00005	Lrrc20	-1.05842	0.00045	Ptbp2	-0.70860	0.00415
Isyna1	-1.84399	0.00005	Cep70	-1.05403	0.01915	Csf2rb2	-0.70686	0.01325
Ppargc1b	-1.83547	0.00300	Nudt18	-1.05373	0.00005	Cyp39a1	-0.70614	0.00010
Defb1	-1.83350	0.00050	Sall2	-1.05311	0.00270	Lrfn3	-0.70517	0.00280
Fam134b	-1.82210	0.00005	Enpp3	-1.05295	0.00005	Bbs10	-0.70491	0.01645
Wnk4	-1.81864	0.04645	Obp2a	-1.05287	0.01055	Terf2	-0.70490	0.04840
Setdb2	-1.81825	0.00005	Gde1	-1.05068	0.00005	Dsc2	-0.70364	0.00005
Apcs	-1.81743	0.00005	Klhl3	-1.04569	0.00580	Arl4a	-0.70316	0.00075
Arl4d	-1.80704	0.00005	Cisd1	-1.04143	0.00005	Hoga1	-0.70268	0.00005
Extl1	-1.80056	0.03760	Baiap2	-1.04124	0.00005	Arl16	-0.70039	0.03520
Serpina3c	-1.80046	0.00820	Cbx2	-1.03770	0.00045	Slc25a42	-0.70037	0.00010
Fzd8	-1.80030	0.00005	Gm10762	-1.03769	0.00205	Pmm1	-0.69851	0.03010
Ms4a8a	-1.79570	0.00010	Il6ra	-1.03440	0.00005	D19Ertd737e	-0.69719	0.03315
Slco1a4	-1.76862	0.00005	Klf1	-1.03426	0.00465	Dgcr14	-0.69708	0.02110
G6pc	-1.76614	0.00005	Gjc3	-1.03375	0.00715	Prodh	-0.69496	0.00025
Pnpla2	-1.75371	0.00005	Ttll7	-1.03258	0.01200	Eci2	-0.69492	0.00025
Pdzrn3	-1.75363	0.00005	Fam25c	-1.03161	0.00005	Abca5	-0.69402	0.01450
Osbpl5	-1.75319	0.00200	Rmnd5a	-1.02825	0.00005	Cyp4a31	-0.69283	0.00245
Map2k6	-1.75067	0.00005	Ada	-1.02820	0.01540	Gpc1	-0.69011	0.01300
Ctsl	-1.73670	0.00005	Slc43a2	-1.02701	0.00265	Timp3	-0.68896	0.00065
Cbx7	-1.72977	0.00015	Limd2	-1.01521	0.00215	Tbc1d15	-0.68823	0.00005
Cux2	-1.72957	0.02515	Snapc2	-1.01310	0.00010	Fam84b	-0.68510	0.01105
Saa1	-1.72703	0.00005	Msrb3	-1.01074	0.00030	Nucks1	-0.68440	0.00005

Mat1a	-1.72540	0.00005	Dixdc1	-1.00881	0.00930	Kremen1	-0.67872	0.00165
Cyp2j9	-1.72453	0.00005	Trp53inp1	-1.00723	0.00005	Ppp2r2d	-0.67590	0.00045
Tmem41a	-1.70457	0.03975	Stard8	-1.00447	0.00105	Dpyd	-0.67561	0.00015
Fmo4	-1.69585	0.00005	Arl15	-1.00252	0.00005	Syne4	-0.67436	0.04495
Calcoco1	-1.69478	0.00005	Izumo4	-1.00089	0.00930	AB124611	-0.67094	0.00915
Cpne8	-1.67183	0.00005	Eif4b	-0.99763	0.00005	Erlec1	-0.66942	0.00135
Cdip1	-1.64390	0.00005	Cdk1	-0.99102	0.03420	Nedd1	-0.66838	0.00020
Iffo1	-1.63648	0.00005	Nek2	-0.99024	0.02965	2810474O19Rik	-0.66753	0.00485
Cpsf4l	-1.61778	0.02225	Ahcy	-0.98765	0.00005	Tab2	-0.66716	0.00005
Bhlhb9	-1.61342	0.00190	Col1a2	-0.98735	0.00165	Lyve1	-0.66654	0.00060
Top2a	-1.61308	0.02155	Inca1	-0.98463	0.00005	Zfp810	-0.66364	0.01120
Mylip	-1.60773	0.00005	Inpp5k	-0.98190	0.00095	2410131K14Rik	-0.66260	0.00205
Gabbr1	-1.60465	0.00190	Itih4	-0.98090	0.00260	Gcnt4	-0.66222	0.00540
Mup13	-1.59073	0.00005	Mt2	-0.97956	0.00005	Ccdc28a	-0.66211	0.03475
Ldb1	-1.58017	0.00005	Cdk19	-0.97953	0.00060	Gnpda1	-0.66108	0.04950
Mt1	-1.57532	0.00005	Ccnf	-0.97862	0.00005	Erg	-0.65845	0.02870
Tmem161b	-1.57332	0.00225	Tmem106b	-0.97783	0.00040	Ppp1cc	-0.65793	0.00230
Bcl2l11	-1.57047	0.00010	Ccng2	-0.97739	0.00020	Bin3	-0.65544	0.01190
Tox	-1.56923	0.00015	Fam46c	-0.97372	0.00060	Dlg3	-0.65535	0.04430
Rasl11b	-1.56709	0.00195	Mllt6	-0.96900	0.00010	Clmn	-0.65113	0.00010
Fam115a	-1.54582	0.01435	Gm2058	-0.96882	0.03355	Ccl6	-0.65109	0.00100
Bik	-1.54367	0.00050	Nceh1	-0.96877	0.00005	Cited2	-0.65057	0.00455
Klhl24	-1.54318	0.00005	Bnip3	-0.96578	0.00005	Cep57	-0.64938	0.02060
Mcf2l	-1.53733	0.02230	Ankrd44	-0.96513	0.01155	Serping1	-0.64835	0.00130
Slc43a1	-1.53000	0.00010	Fzd6	-0.96502	0.00430	Zfp358	-0.64751	0.00745
Crebrf	-1.52705	0.00005	Slc16a5	-0.96429	0.00030	Tmem219	-0.64712	0.00055
Por	-1.52341	0.00005	Rdh13	-0.96227	0.00025	Ip6k2	-0.64425	0.00055
Kcnn2	-1.52275	0.00005	Spry1	-0.96128	0.00415	Atg16l2	-0.64205	0.04700
Zfp629	-1.52004	0.01075	Arg1	-0.96082	0.00020	Stmn1	-0.64110	0.02765
Cadm4	-1.51896	0.00005	Ttpa	-0.95937	0.00005	Dyrk2	-0.64095	0.00745
Mvb12b	-1.51149	0.02670	Mthfd1l	-0.95757	0.03095	Cblb	-0.64050	0.01190
Cd14	-1.50975	0.00005	Cyp3a25	-0.95588	0.00005	F830016B08Rik	-0.64037	0.00010
Cyp2d12	-1.50844	0.00115	Odf3b	-0.95446	0.02035	Hmgb3	-0.63971	0.04000
Moxd1	-1.50472	0.00910	Pros1	-0.95406	0.00005	Ssh1	-0.63910	0.03265
Mafb	-1.49843	0.00005	Ctdsp2	-0.94821	0.00005	Cps1	-0.63675	0.03480
8430419L09Rik	-1.49694	0.00005	Abcd4	-0.94771	0.00070	Snx33	-0.63543	0.00350
Slc25a29	-1.49462	0.00090	Zfp777	-0.93898	0.00335	Crcp	-0.63496	0.00100
Cln6	-1.49084	0.00095	Cd163	-0.93792	0.00005	Slc25a20	-0.63386	0.00010
Cpt1a	-1.48848	0.00005	Tmc6	-0.93689	0.01915	Ube2u	-0.63376	0.04280
Smim22	-1.48174	0.00345	Gbp2b	-0.93492	0.03170	Arrdc2	-0.63354	0.02340
Saa3	-1.47811	0.00005	Sufu	-0.93444	0.03695	Rnf217	-0.63221	0.01420
Sds	-1.47762	0.00005	Rbp1	-0.93246	0.00005	Dennd4a	-0.63158	0.00030
Hamp2	-1.47460	0.00005	Poc1a	-0.93199	0.02960	Slc27a5	-0.63126	0.00570
Dact2	-1.46763	0.00005	Sh2d4a	-0.93021	0.02465	Ddx28	-0.63026	0.00420

Gene	Value	p	Gene	Value	p	Gene	Value	p
Lpin2	-1.46753	0.00005	Rgs16	-0.92812	0.00265	Slc25a25	-0.62995	0.00035
Sesn2	-1.46316	0.00005	Cdo1	-0.92731	0.00010	Tm4sf1	-0.62988	0.00135
Cyp3a13	-1.46230	0.00005	Serinc3	-0.92711	0.00005	Fn1	-0.62778	0.00595
Dynlt1c	-1.45814	0.03105	Agtr1a	-0.92522	0.00005	Acsm3	-0.62649	0.00055
Smpd3	-1.45586	0.01250	Stard5	-0.92218	0.00005	Tnfsf12	-0.62648	0.00745
Itgb3	-1.45254	0.00005	Hgsnat	-0.92024	0.00005	Slc36a4	-0.62357	0.00685
Olfm1	-1.44695	0.00035	Fam214a	-0.92016	0.00795	Cth	-0.62193	0.00180
Slc7a2	-1.44289	0.00005	Kng1	-0.91735	0.00040	Gyk	-0.62162	0.00005
Rasl2-9	-1.43875	0.03430	Mug1	-0.91627	0.00305	Rnf103	-0.61916	0.00025
Bmper	-1.43417	0.00030	Hist1h1c	-0.91610	0.00005	Manea	-0.61753	0.00430
Tdo2	-1.41961	0.00065	Nudt4	-0.91314	0.00005	Golgb1	-0.61666	0.01380
Socs2	-1.41875	0.00005	Npc1	-0.91292	0.00005	Fetub	-0.61639	0.00045
Rbm3	-1.41835	0.00005	Kng2	-0.91288	0.00005	Zfand4	-0.61565	0.01185
Erbb3	-1.41683	0.00005	Klf9	-0.91100	0.00005	Tns1	-0.61484	0.00020
Gfra1	-1.41603	0.00005	Hilpda	-0.91017	0.00875	Tat	-0.61368	0.02125
AA986860	-1.41479	0.00005	Ttc30b	-0.90721	0.00700	Pank1	-0.61325	0.00020
Angptl4	-1.41224	0.00005	Chpf2	-0.90346	0.00005	Gna12	-0.61135	0.00005
Slc25a47	-1.40965	0.00005	Ccdc82	-0.89487	0.02035	Zbtb44	-0.61134	0.02605
D17H6S56E-5	-1.40953	0.00020	Nos3	-0.89383	0.00605	Tgfbr3	-0.61057	0.01810
Spata24	-1.40871	0.00180	Ei24	-0.89263	0.00005	Mmp14	-0.61028	0.00030
Zfp108	-1.40725	0.01245	Slc25a30	-0.89173	0.00080	Pdk1	-0.60936	0.02755
Itih3	-1.40691	0.00005	Lmbr1l	-0.89152	0.00195	H2-Q7	-0.60927	0.00135
Patz1	-1.39993	0.00075	Dhtkd1	-0.88964	0.00070	Sertad3	-0.60883	0.04290
Tbc1d30	-1.39758	0.00020	Adam23	-0.88929	0.00005	Fam160b2	-0.60836	0.01130
Fam214b	-1.38850	0.00310	Zkscan14	-0.88387	0.00310	March6	-0.60728	0.00030
Rgs12	-1.38511	0.00565	Igfbp1	-0.88344	0.00005	Fbxo46	-0.60669	0.03660
Marveld3	-1.38434	0.00695	Slc22a5	-0.88224	0.00005	Nxt2	-0.60651	0.00065
Cyp17a1	-1.38274	0.00005	Ube2cbp	-0.88175	0.03790	Mxi1	-0.60643	0.00220
Dcp1b	-1.38236	0.00250	Rhbdd2	-0.88158	0.00190	Mif4gd	-0.60190	0.04530
Heca	-1.38035	0.00005	Csnk1g1	-0.87638	0.01790	Ccpg1	-0.60182	0.00120
Cyp2c39	-1.37732	0.00005	Rhoq	-0.87579	0.00360	Zfp707	-0.60085	0.00930
Zfp956	-1.37700	0.00705	1810055G02Rik	-0.87423	0.00005	Igfbp3	-0.60057	0.00635
Des	-1.36999	0.00045	Il17rb	-0.87414	0.00040	Scd1	-0.59856	0.00270
Btg3	-1.36855	0.00005	Clasp2	-0.87187	0.00075	Khnyn	-0.59827	0.01700
Slc25a22	-1.36753	0.00005	Tmco4	-0.87003	0.00385	Qsox1	-0.59660	0.00090
Hrg	-1.35735	0.00005	Adrb3	-0.86749	0.01185	Gm9846	-0.59590	0.00270
Galnt15	-1.35264	0.00065	Slc37a4	-0.86597	0.00005	Il18	-0.59577	0.04900
Nim1	-1.35096	0.00095	Nudt16	-0.86201	0.00565	Pfkfb2	-0.59503	0.00465
Ipmk	-1.34780	0.00005	Wbp1l	-0.86176	0.00005	Casp6	-0.59430	0.00325
Slc25a34	-1.34706	0.00005	Gltscr2	-0.85926	0.00005	Arhgap23	-0.59338	0.01310
B3galt1	-1.34364	0.00005	Gpt2	-0.85839	0.00005	Rnase4	-0.59335	0.04120
Acpp	-1.34357	0.00005	Camk1d	-0.85798	0.02685	Inpp4a	-0.59233	0.00620
Smim13	-1.34229	0.00005	Miip	-0.85793	0.00215	Gab1	-0.59166	0.01815
Kcnj16	-1.33973	0.02805	P2ry2	-0.85567	0.00010	Oplah	-0.58928	0.00350

Gene	Value	p	Gene	Value	p	Gene	Value	p
Rad18	-1.33517	0.00200	Ddx26b	-0.85427	0.00530	Kynu	-0.58798	0.00105
Aim1	-1.32969	0.00005	Slc27a2	-0.84937	0.00030	Zfp746	-0.58632	0.00185
Cdca3	-1.32757	0.01660	Clec1b	-0.84697	0.00030	Armc10	-0.58616	0.03360
Ypel3	-1.32326	0.00005	Fgl1	-0.84396	0.00065	Sco2	-0.58598	0.04865

Supplementary Table 4. The primer sequences for qRT-PCR analysis.

Gene name	Species	Primer sequences (5' -> 3')
Sparcl1	Mus musculus	Forward: GGCAATCCCGACAAGTACAAG
		Reverse: TGGTTTTCTATGTCTGCTGTAGC
Sparc	Mus musculus	Forward: GTGGAAATGGGAGAATTTGAGGA
		Reverse: CTCACACACCTTGCCATGTTT
Nrg4	Mus musculus	Forward: CACGCTGCGAAGAGGTTTTTC
		Reverse: CGCGATGGTAAGAGTGAGGA
Tnfa	Mus musculus	Forward: CCCTCACACTCAGATCATCTTCT
		Reverse: GCTACGACGTGGGCTACAG
IL1b	Mus musculus	Forward: GCAACTGTTCCTGAACTCAACT
		Reverse: ATCTTTTGGGGTCCGTCAACT
IL2b	Mus musculus	Forward: GTGCTCCTTGTCAACAGCG
		Reverse: GGGGAGTTTCAGGTTCCTGTA
Ccl2	Mus musculus	Forward: TTAAAAACCTGGATCGGAACCAA
		Reverse: GCATTAGCTTCAGATTTACGGGT
Ccl5	Mus musculus	Forward: GCTGCTTTGCCTACCTCTCC
		Reverse: TCGAGTGACAAACACGACTGC
Adgre1	Mus musculus	Forward: TGACTCACCTTGTGGTCCTAA
		Reverse: CTTCCCAGAATCCAGTCTTTCC
Col1a1	Mus musculus	Forward: GCTCCTCTTAGGGGCCACT
		Reverse: CCACGTCTCACCATTGGGG
Col1a2	Mus musculus	Forward: GTAACTTCGTGCCTAGCAACA
		Reverse: CCTTTGTCAGAATACTGAGCAGC
Acta2	Mus musculus	Forward: CCCAACTGGGACCACATGG
		Reverse: TACATGCGGGGGACATTGAAG
Tgfb1	Mus musculus	Forward: CTCCCGTGGCTTCTAGTGC
		Reverse: GCCTTAGTTTGGACAGGATCTG
Nos2	Mus musculus	Forward: GTTCTCAGCCCAACAATACAAGA
		Reverse: GTGGACGGGTCGATGTCAC
Rplp0	Mus musculus	Forward: AGATTCGGGATATGCTGTTGGC
		Reverse: TCGGGTCCTAGACCAGTGTTC

References

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