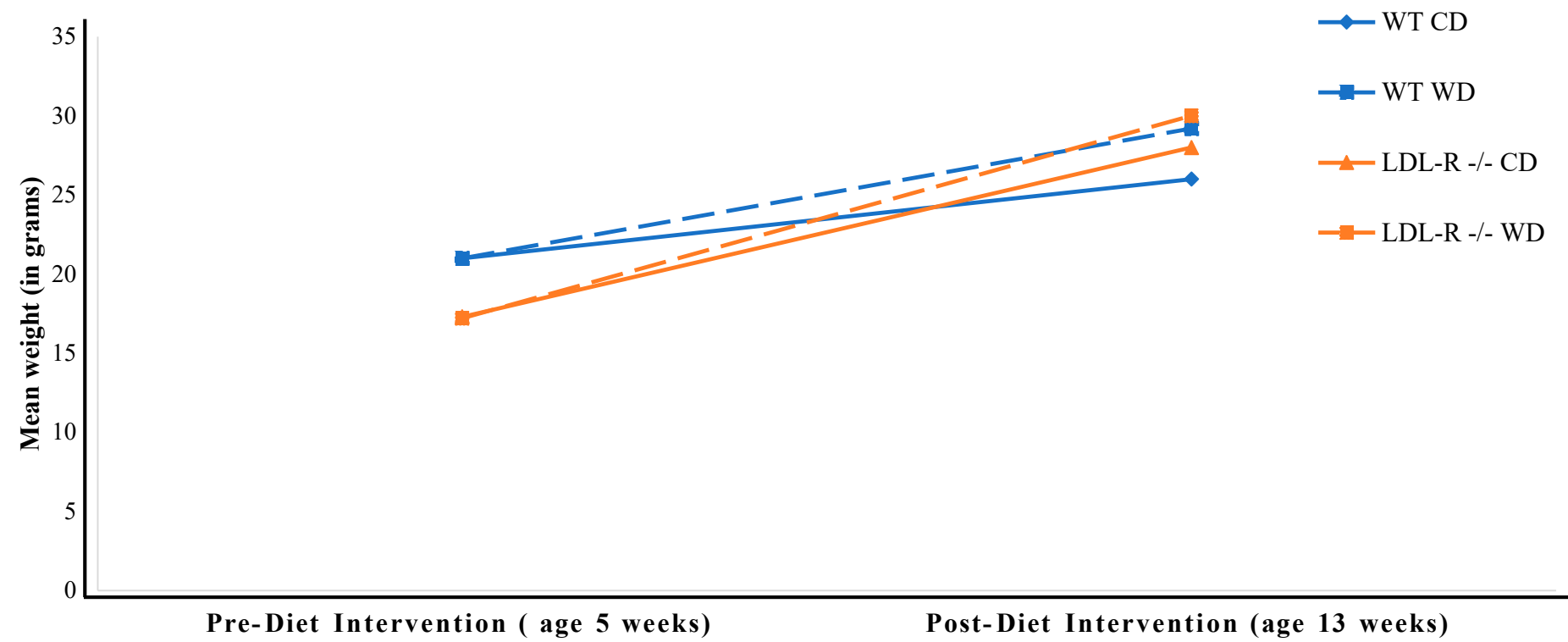
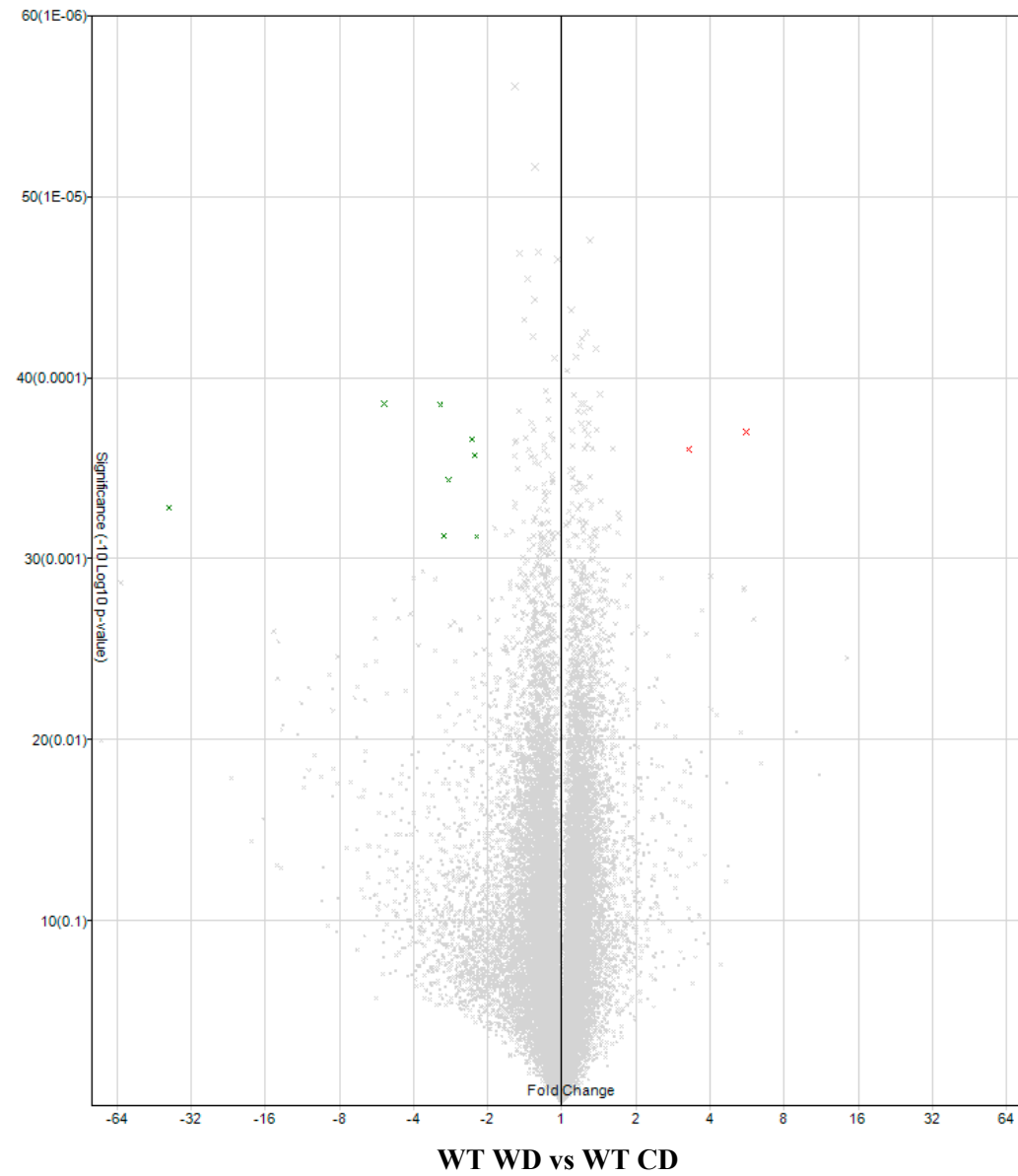


**Supplement Figure S1: Representative images of hippocampal neurons and microvessels dissected by laser capture microdissection.** Neurons in the hippocampus of Western diet (WD)-fed and control diet (CD)-fed low density lipoprotein receptor (LDL-R)  $-/-$  and C57BL/6J (WT) male mice were identified by hematoxylin staining (panel A, pink arrows). Microvessels in the hippocampus were identified by alkaline phosphatase staining and subjected to laser capture microdissection (LCM). The middle panel (panel B) shows the outline of an entire microvessel pre-LCM, and the right panel (panel C) shows the same microvessel post-LCM. Scale bar = 310  $\mu$ m panel A, and 50  $\mu$ m panels B and C.



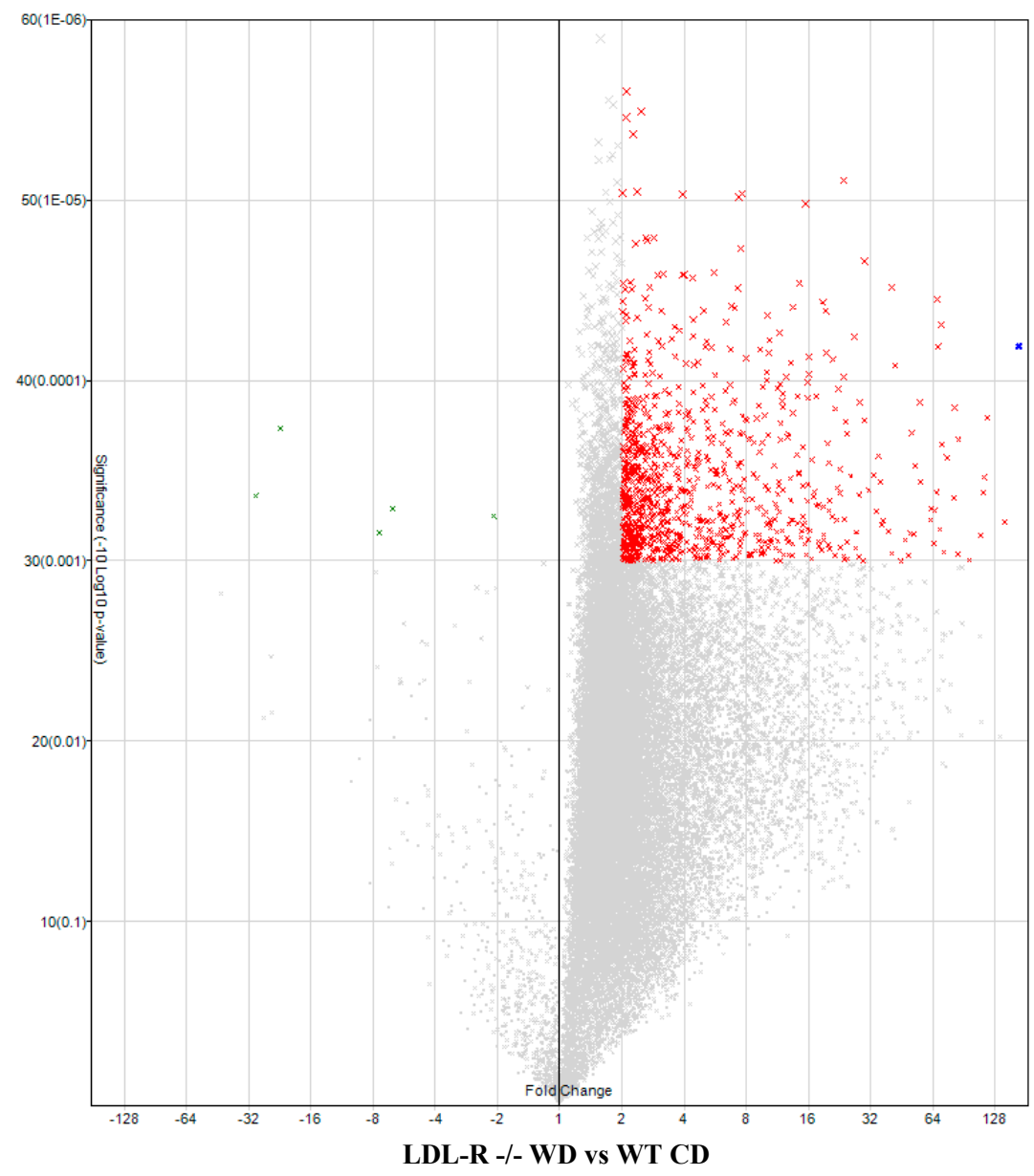
**Supplement Figure S2: Mean body weight of wild type (WT) and LDL-R -/- mice pre- and post-feeding with the control (CD) and western (WD) diets.** Line graph shows mean weight (grams) of wild type (WT) and LDL-R -/- mice before feeding (at age 5 weeks, solid lines) and after feeding (at age 13 weeks, dashed lines) with the control (CD) and western (WD) diets. Weight increased for mice in all the 4 groups (WT CD, WT WD, LDL-R -/- CD and LDL-R -/- WD) post the diet when compared to pre-diet intervention ( $p < 0.05$  for all pre/post comparisons).



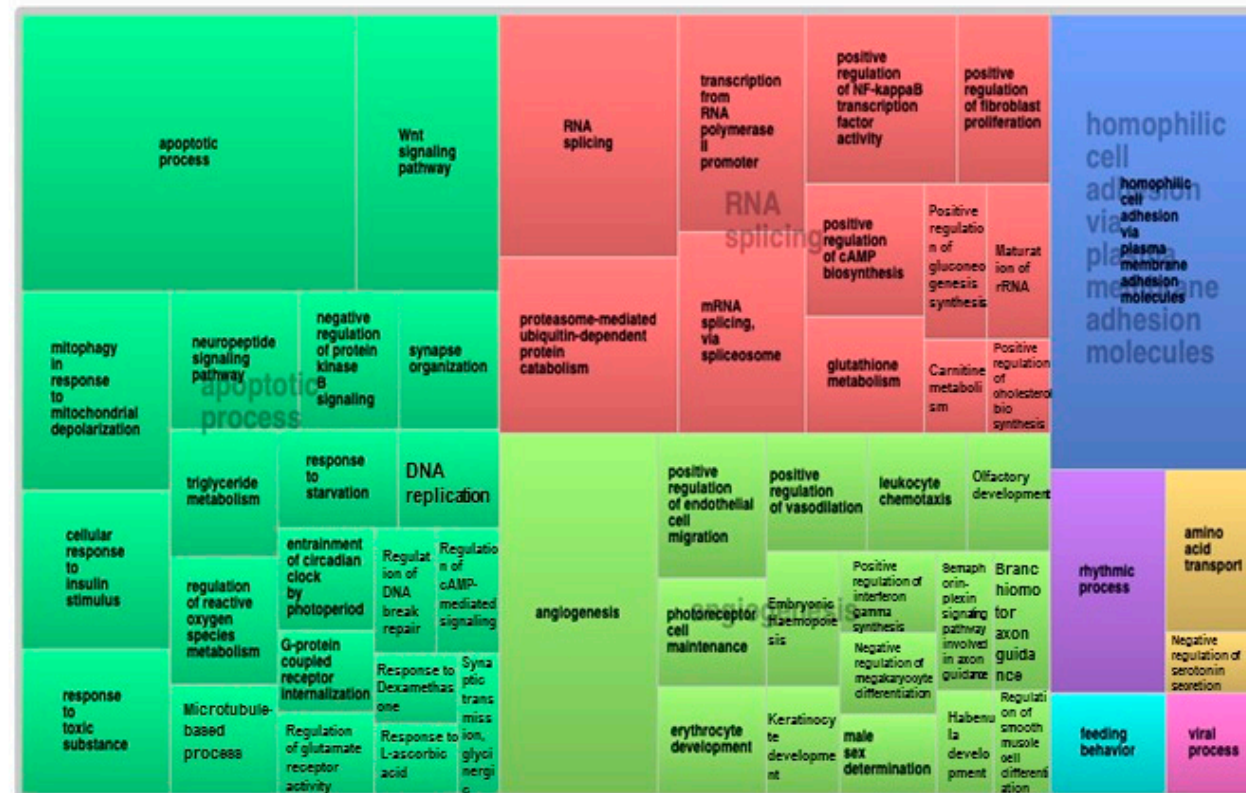
**Supplement Figure S3A: Volcano plot of gene expression changes in hippocampal microvessels in WT WD vs WT CD.** The transcriptome of microvessels from western diet (WD) fed C57BL/6J (WT) compared to microvessels from control diet (CD) fed WT mice. The x-axis specifies the fold-changes (FC) and the y-axis specifies the negative logarithm to the base 10 of the p-values. Red vertical and horizontal lines reflect the filtering criteria (FC = fold change,  $\pm 2.0$  and p-value = 0.05). Red and green dots represent probe sets for transcripts expressed at significantly higher or lower levels than control mice (CD fed WT mice), respectively.



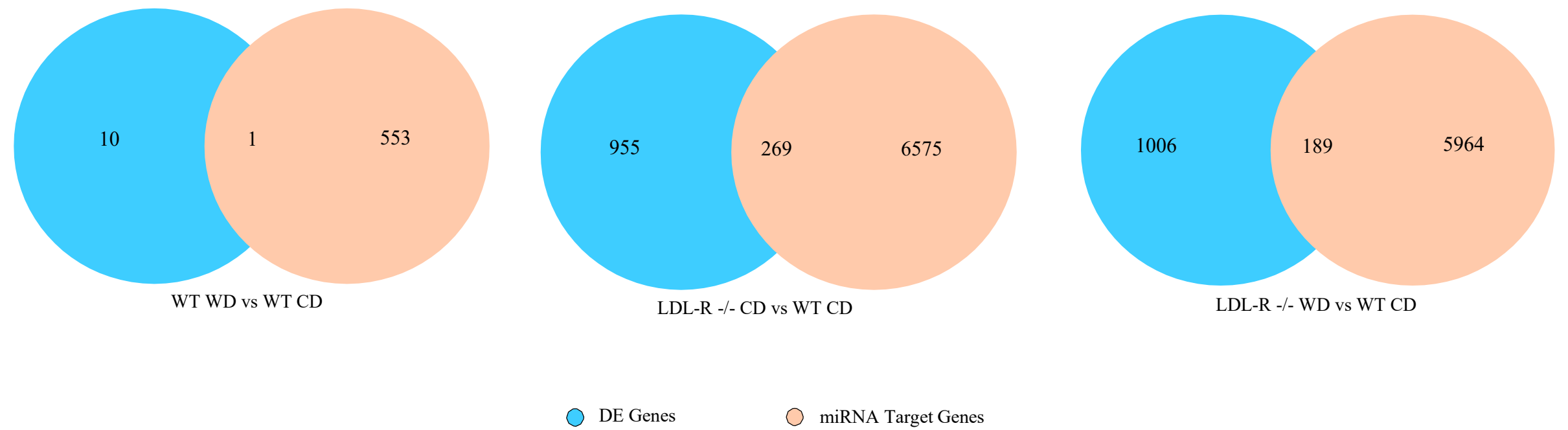
**Supplement Figure S3B: Volcano plot of gene expression changes in hippocampal microvessels in LDL-R -/- CD vs WT CD.** The transcriptome of microvessels from CD fed LDL-R -/- mice compared to microvessels from CD fed WT mice. The x-axis specifies the fold-changes (FC) and the y-axis specifies the negative logarithm to the base 10 of the p-values. Red vertical and horizontal lines reflect the filtering criteria (FC = fold change,  $\pm 2.0$  and p-value = 0.05). Red and green dots represent probe sets for transcripts expressed at significantly higher or lower levels than control mice (CD fed WT mice), respectively.



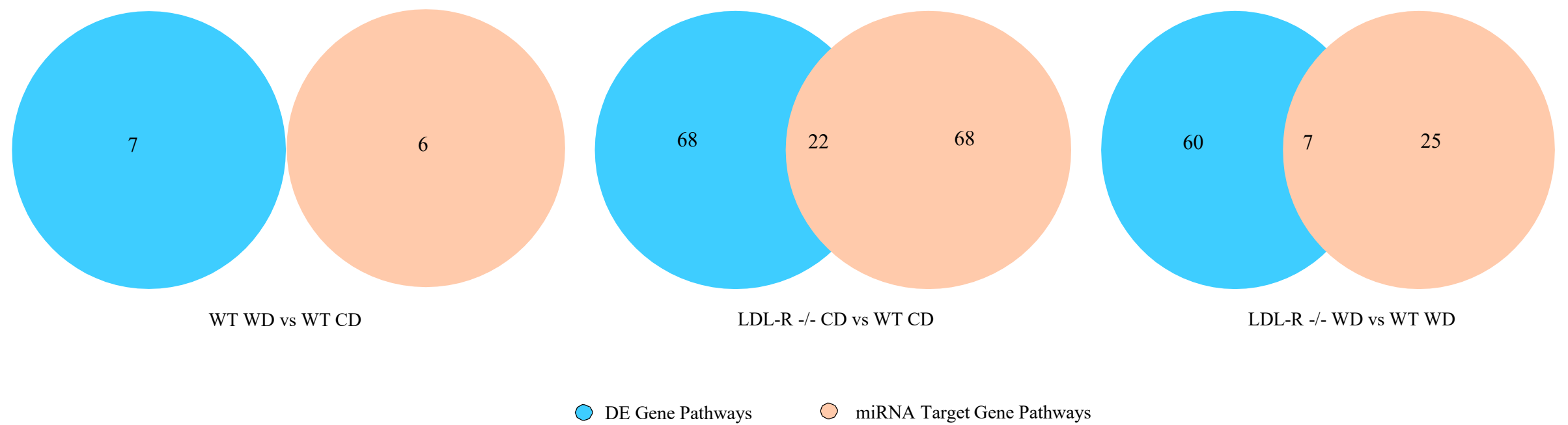
**Supplement Figure S3C: Volcano plot of gene expression changes in hippocampal microvessels in LDL-R -/- WD vs WT CD.** The transcriptome of microvessels from WD fed LDL-R -/- mice compared to microvessels from CD fed WT mice. The x-axis specifies the fold-changes (FC) and the y-axis specifies the negative logarithm to the base 10 of the p-values. Red vertical and horizontal lines reflect the filtering criteria (FC = fold change,  $\pm 2.0$  and p-value = 0.05). Red and green dots represent probe sets for transcripts expressed at significantly higher or lower levels than control mice (CD fed WT mice), respectively.



**Supplement Figure S4: Gene ontology biological processes tree map of differentially expressed protein coding genes in hippocampal microvessels.** Gene ontology (GO) biological processes of differentially expressed genes (DEG) in hippocampus microvessels from Western diet (WD) fed C57BL/6J (WT) mice compared to control diet (CD) fed WT mice, CD fed LDL-R <sup>-/-</sup> mice compared to CD fed WT mice, and WD fed LDL-R <sup>-/-</sup> mice compared to CD fed WT mice was identified using David bioinformatics database and tree map was constructed using Revigo. DEG are involved in various biological functions such as angiogenesis (light green rectangle boxes), apoptotic processes (dark green rectangle boxes), RNA splicing (red rectangle boxes) and cell adhesion (blue rectangle box). Sizes of the rectangle boxes in the tree map are adjusted based on the frequency of the GO biological process.

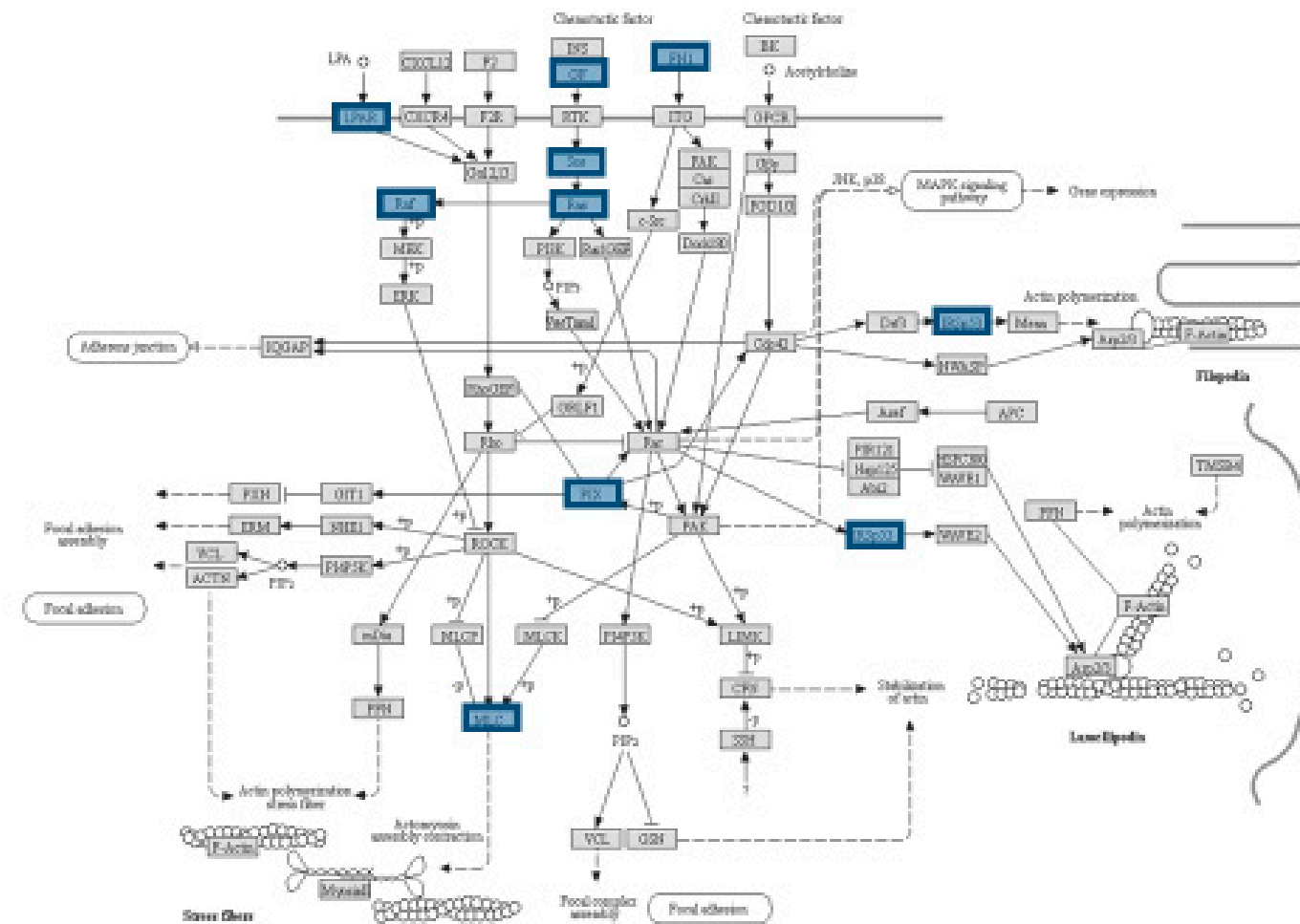


**Supplement Figure S5A: Venn diagrams representing the number of differentially expressed (DE) genes, compared to miRNA target genes, affected by diet and genotype in hippocampal microvessels.** Venn diagrams of differentially expressed (DE) genes and miRNA target genes showing 1, 269, and 189 genes in common for WD fed WT mice, CD fed LDL-R <sup>-/-</sup> mice, and WD fed LDL-R <sup>-/-</sup> mice, respectively, when compared to CD fed WT mice. Genes targeted by miRNAs were identified using the miRWalk database.

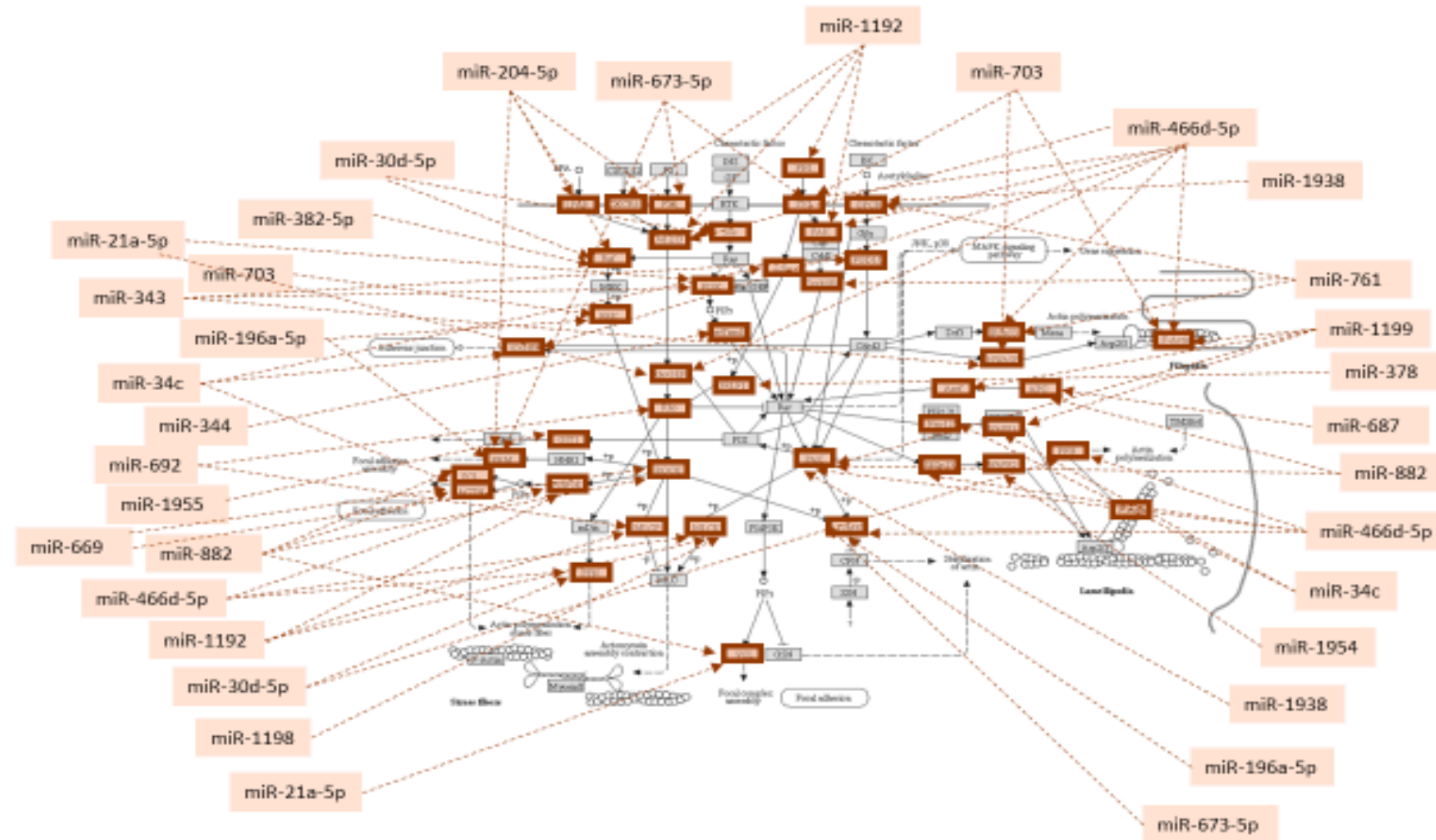


**Supplement Figure S5B: Venn diagrams representing the pathways of differentially expressed (DE) genes, compared to pathways of miRNA target genes, affected by diet and genotype in hippocampal microvessels.** Venn diagrams of differentially expressed (DE) gene pathways and miRNA target gene pathways showing 0, 22, and 7 pathways in common for WD fed WT mice, CD fed LDL-R <sup>-/-</sup> mice, and WD fed LDL-R <sup>-/-</sup> mice, respectively, when compared to CD fed WT mice. Pathways of DE genes and miRNA target genes were identified using the KEGG database and Genetrail2.

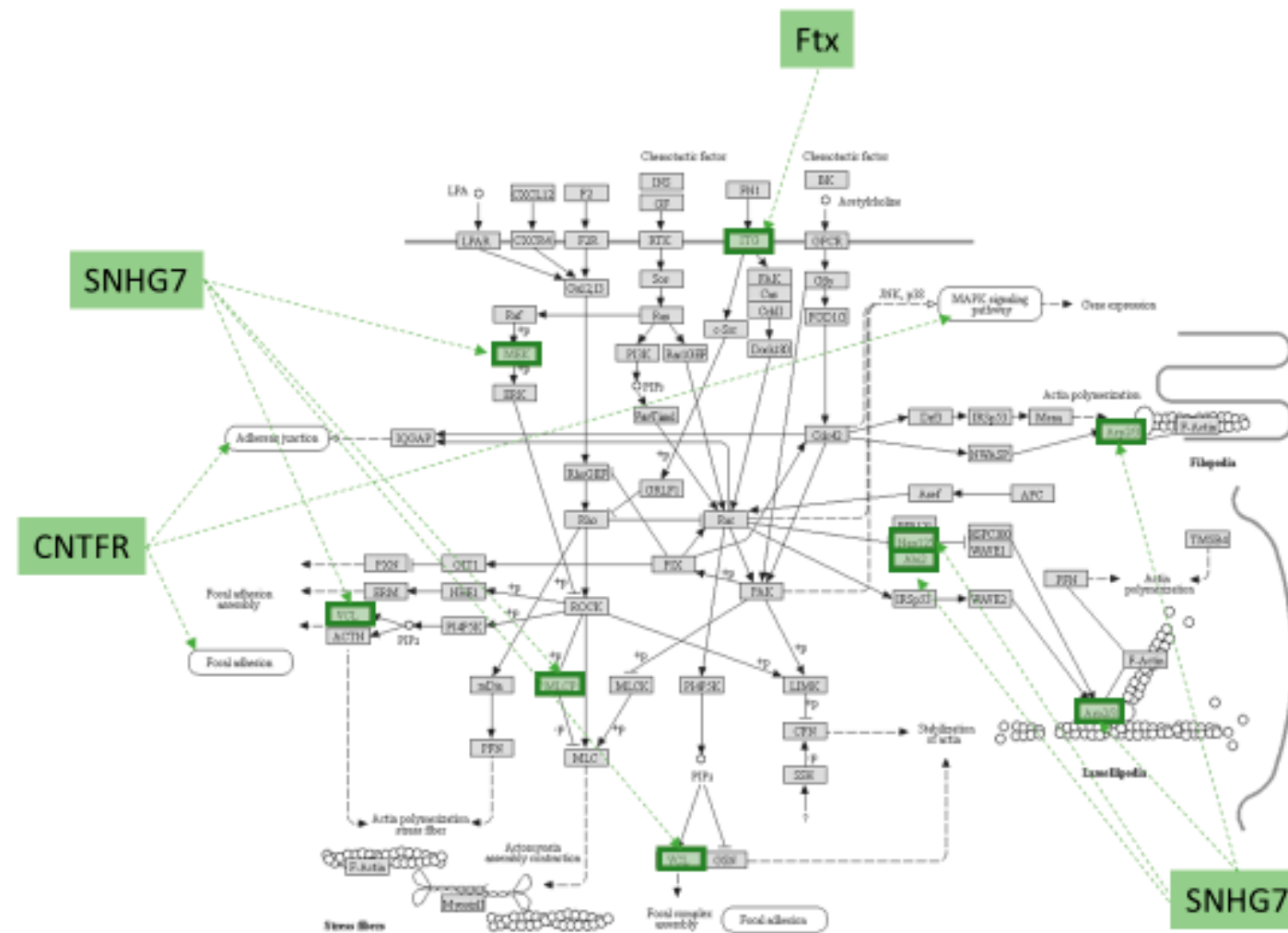




Supplement Figure S6A: Differentially expressed genes in regulation of the actin cytoskeleton pathway. Differentially expressed protein coding genes are shown in the blue boxes.

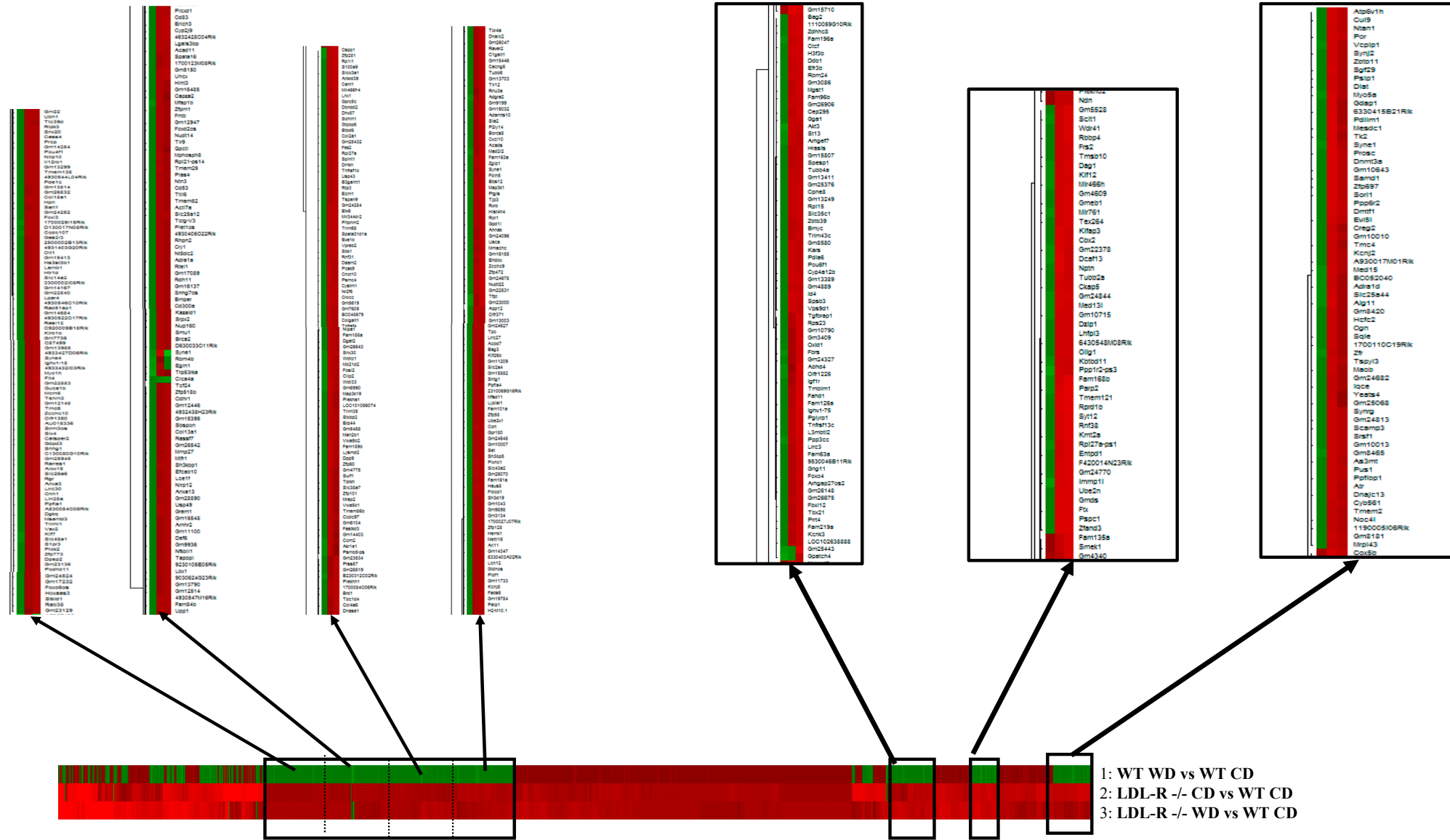


**Supplement Figure S6B: Differentially expressed miRNAs and their targets in regulation of the actin cytoskeleton pathway.** Differentially expressed miRNAs are shown in the brown boxes and their target by the brown broken arrows.

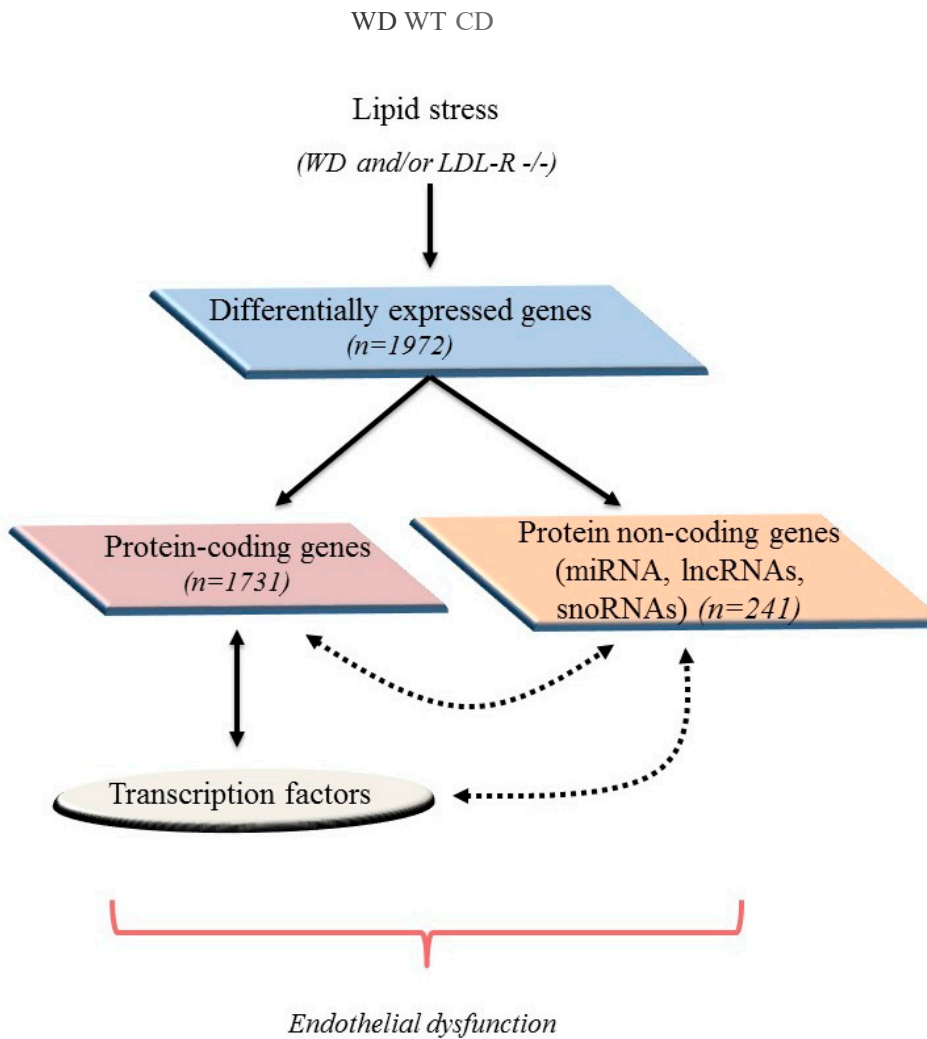


Supplement Figure S6C: Differentially expressed long non coding RNAs (lncRNAs) and their targets in regulation of the actin cytoskeleton pathway. Differentially expressed lncRNAs are shown in the green boxes and their targets by the green broken arrows.

Supplement Figure S7



**Supplement Figure S7: Effect of the western diet and LDL-R <sup>-/-</sup> genotype on differentially expressed protein-coding genes in hippocampal microvessels.** Heat map showing the up-regulation (red) and down-regulation (green) of differentially expressed genes (DEG) compared to control C57BL/6J (WT) mice fed a control diet (CD). Individual DEG are represented in rows, and the three different experimental comparison groups in columns, as follows: column 1: WT mice on the western diet (WD) compared to WT mice on control diet (CD); column 2: LDL-R <sup>-/-</sup> mice on CD compared to WT mice on CD; column 3: LDL-R <sup>-/-</sup> mice on WD compared to WT mice on CD. Black rectangle boxes indicates DEG which are down regulated in the diet group (WT mice on WD compared to WT mice on CD) and up-regulated in the genotype groups (LDL-R <sup>-/-</sup> mice on CD and LDL-R <sup>-/-</sup> mice on WD compared to WT mice on CD).



**Supplement Figure S8: Schematic presentation of genomic modifications and interactions in brain hippocampal microvascular following western diet consumption of LDR knock-out.**

**Table S1: Primer sequences for genes tested by qRT-PCR were prepared by Primer3 software using Affymetrix transcript ID sequences.**

| Gene     | Primer Sequence (5'-3')               |
|----------|---------------------------------------|
| GAPDH    | Sense- GCAACAGGGTGGTGGACCT            |
|          | Antisense- GGATAGGGCCTCTCTTGCTCA      |
| Npy      | Sense- CCGGTGGATCTCTTCTCTCA           |
|          | Antisense- CCCCATTCGCTTGTTACCTA       |
| Taf1d    | Sense- GCATGGTATCTGCACTCAGC           |
|          | Antisense- ATGCACAAAGCCAAGAAACC       |
| Trp53rka | Sense- CCTACGTGGGTGTCTGGAGT           |
|          | Antisense- ACCACACTGGAGTCCTTTGG       |
| Egl1     | Sense- TACAGGATAAACGGCCGAAC           |
|          | Antisense- CGCATCTTCCATCTCCATTT       |
| Arrb1    | Sense- TCCTGGCACAGAGACTTG             |
|          | Antisense- AATTCATTCCCAAGGTGCAG       |
| Aph1a    | Sense- TATGGCCTCCTGATTTTTGG           |
|          | Antisense- GATGCTAAGCCCTCATCTGC       |
| Fabp5    | Sense- TGCAACAAACAGCTTCACTTC          |
|          | Antisense- TCCTGGGTAAACCAAGTTTGA      |
| Slc17a5  | Sense- CCCCTGTTACAGCCACTGTT           |
|          | Antisense- TTTCCCTCGTGCTTGTCTCT       |
| Rap1b    | Sense- GCTCTGAGCCAGGTCTGAAG           |
|          | Antisense- CACCACAGGAAAGTCCGTTT       |
| Clca4a   | Sense- CATCCACTTCACCCCTGACT           |
|          | Antisense- AAATACTCCCCAGCGAAGGT       |
| MAPK8    | Sense- TTTTGCTGTGAACTTTTGATTATCA      |
|          | Antisense- AACTTAACATGTGGTGCAATTTCTGT |

**Table S2A: Plasma lipid levels of wildtype (WT) and LDL-R <sup>-/-</sup> mice fed with control (CD) and western (WD) diet.**

| Plasma Lipids<br>(Mean±SEM) | WT-CD    | WT-WD       | LDL-R <sup>-/-</sup> CD | LDL-R <sup>-/-</sup> WD |
|-----------------------------|----------|-------------|-------------------------|-------------------------|
| TC (mg/dL)                  | 89.3±1.6 | 252.8±21.5* | 285.6±41.1*             | 1151.8±38.1*            |
| TG (mg/dL)                  | 28.3±5.7 | 35.6±7.0    | 171.5±38.6*             | 262.2±59.7*             |
| LDL (mg/dl)                 | 6.1±0.8  | 44.6±7.2*   | 134.9±39.1*             | 983.1±17.0*             |
| HDL (mg/dL)                 | 77.6±1.5 | 201.0±16.7* | 116.4±15.8              | 116.2±16.5              |

\*  $p < 0.05$  for TC, TG, LDL and HDL compared to CD fed WT mice

**Table S2B. Plasma Glucose and Insulin levels of wildtype (WT) and LDL-R <sup>-/-</sup> mice fed with control (CD) and Western (WD) diet.**

| Mean±SEM        | WT-CD      | WT-WD        | LDL-R <sup>-/-</sup> CD | LDL-R <sup>-/-</sup> WD |
|-----------------|------------|--------------|-------------------------|-------------------------|
| Glucose (mg/dL) | 292.1±0.98 | 494.3±2.72*  | 345.1±14.06*            | 360.0±21.47*            |
| Insulin (pg/mL) | 232.0±9.89 | 918.1±57.69* | 349.4±33.62*            | 462.7±80.44*            |

\*  $p < 0.05$  for glucose and insulin compared to CD fed WT mice



**Table S3: Differentially expressed genes in Western diet (WD) fed WT mice when compared to control diet (CD) fed WT mice.**

| <b>Transcript Cluster ID</b> | <b>Gene Symbol</b> | <b>Description</b>  | <b>Fold Change</b> |
|------------------------------|--------------------|---|--------------------|
| 17458514                     | Npy                | neuropeptide Y  | 5.61               |
| 17369948                     | Mir1954            | microRNA 1954   | 3.28               |
| 17514135                     | Egln1              | egl-9 family hypoxia-inducible factor 1   | -2.22              |
| 17356279                     | Rbm4b              | RNA binding motif protein 4B  | -2.25              |
| 17357717                     | Gm25443            | predicted gene, 25443 [Source:MGI Symbol;Acc:MGI:5455220]; (scaRNA from ensembl)              | -2.32              |
| 17400549                     | Gm20634            | predicted gene 20634 [Source:MGI Symbol;Acc:MGI:5313081]; (processed transcript from ensembl) | -2.89              |
| 17398915                     | Gpatch4            | G patch domain containing 4   | -3.03              |
| 17394478                     | Trp53rka           | transformation related protein 53 regulating kinase A   | -3.12              |
| 17514828                     | Taf1d              | TATA box binding protein (Tbp)-associated factor, RNA polymerase I, D                         | -5.27              |
| 17541917                     | Snord61            | small nucleolar RNA, C/D box 61   | -39.34             |

**Table S4: Differentially expressed genes in control diet (CD) fed LDL-R <sup>-/-</sup> mice when compared to control diet (CD) fed WT mice.**

| Transcript Cluster ID | Gene Symbol   | Description  | Fold Change |
|-----------------------|---------------|--|-------------|
| 17278775              | AF357355      | snoRNA AF357355  | 123.27      |
| 17239182              | Gm25635       | predicted gene, 25635 [Source:MGI Symbol;Acc:MGI:5455412]  | 90.8        |
| 17238882              | Syne1         | spectrin repeat containing, nuclear envelope 1   | 73.78       |
| 17238832              | Syne1         | spectrin repeat containing, nuclear envelope 1   | 66.53       |
| 17446058              | Gm24009       | predicted gene, 24009 [Source:MGI Symbol;Acc:MGI:5453786]  | 63.73       |
| 17495541              | Syt17         | synaptotagmin XVII   | 58.05       |
| 17547614              |               |  | 57.35       |
| 17401530              | AI504432      | expressed sequence AI504432  | 56.21       |
| 17531181              |               |  | 56.12       |
| 17278793              | Gm25856       | predicted gene, 25856 [Source:MGI Symbol;Acc:MGI:5455633]  | 55.53       |
| 17238884              | Syne1         | spectrin repeat containing, nuclear envelope 1   | 53.87       |
| 17228860              | Aph1a         | anterior pharynx defective 1a homolog (C. elegans)   | 50.78       |
| 17245700              | Tspan31       | tetraspanin 31   | 50.59       |
| 17548717              | Fabp5         | fatty acid binding protein 5, epidermal  | 49.88       |
| 17244435              | Cep83os       | centrosomal protein 83, opposite strand  | 49.06       |
| 17491632              | Gm22289       | predicted gene, 22289 [Source:MGI Symbol;Acc:MGI:5452066]  | 45.23       |
| 17262193              | Cdk2ap1       | CDK2 (cyclin-dependent kinase 2)-associated protein 1  | 43.66       |
| 17548238              | Fabp5         | fatty acid binding protein 5, epidermal  | 43.16       |
| 17248539              | Gabrb2        | gamma-aminobutyric acid (GABA) A receptor, subunit beta 2  | 42.38       |
| 17378896              |               |  | 40.55       |
| 17287022              | Gm24915       | predicted gene, 24915 [Source:MGI Symbol;Acc:MGI:5454692]  | 38.84       |
| 17291355              | Acot13        | acyl-CoA thioesterase 13   | 37.17       |
| 17308598              | Mir687        | microRNA 687   | 36.93       |
| 17549910              |               |  | 36.31       |
| 17548102              | Gm10053       | predicted gene 10053 [Source:MGI Symbol;Acc:MGI:3704493]   | 35.27       |
| 17548541              | Cyts          | cytochrome c, somatic  | 35.27       |
| 17278789              | Mir882        | microRNA 882   | 35.17       |
| 17366926              | Mir466n       | microRNA 466n  | 32.87       |
| 17538186              | Gm23199       | predicted gene, 23199 [Source:MGI Symbol;Acc:MGI:5452976]  | 32.34       |
| 17525548              | Ei24          | etoposide induced 2.4 mRNA   | 30.98       |
| 17371374              | Cers6         | ceramide synthase 6  | 30.13       |
| 17415971              |               |  | 29.9        |
| 17278852              | Mir382        | microRNA 382   | 29.58       |
| 17516412              | 3110039I08Rik | RIKEN cDNA 3110039I08 gene   | 29.55       |
| 17480568              | Arrb1         | arrestin, beta 1   | 29.42       |
| 17512680              | Chtf8         | CTF8, chromosome transmission fidelity factor 8  | 29.38       |
| 17326814              | Gm25908       | predicted gene, 25908 [Source:MGI Symbol;Acc:MGI:5455685]  | 29.13       |
| 17243469              | Zfp938        | zinc finger protein 938  | 29.1        |
| 17237084              | Ccde59        | coiled-coil domain containing 59   | 28.18       |
| 17248894              | Snord95       | small nucleolar RNA, C/D box 95; guanine nucleotide binding protein (G protein), beta polypeptide 2 like 1 | 27.98       |
| 17248894              | Gnb211        | small nucleolar RNA, C/D box 95; guanine nucleotide binding protein (G protein), beta polypeptide 2 like 1 | 27.98       |
| 17315546              | Hnrnpa1       | heterogeneous nuclear ribonucleoprotein A1   | 27.55       |

|          |                        |  |       |
|----------|------------------------|--|-------|
| 17512752 | LOC102642963           | 40S ribosomal protein S26-like; ribosomal protein S26, pseudogene 1<br>[Source:MGI Symbol;Acc:MGI:3704322]           | 27.41 |
| 17512752 | Rps26-ps1              | 40S ribosomal protein S26-like; ribosomal protein S26, pseudogene 1<br>[Source:MGI Symbol;Acc:MGI:3704322]           | 27.41 |
| 17289551 | Gm16416                | predicted gene 16416 [Source:MGI Symbol;Acc:MGI:3646635]   | 26.74 |
| 17547507 |                        |  | 26.45 |
| 17443752 | Cops6                  | COP9 (constitutive photomorphogenic) homolog, subunit 6 (Arabidopsis thaliana)                                       | 26.39 |
| 17288145 | Habp4                  | hyaluronic acid binding protein 4  | 25.51 |
| 17391373 | 1500011K16Rik          | RIKEN cDNA 1500011K16 gene   | 25.11 |
| 17499682 |                        |  | 25.11 |
| 17280867 | Mir1938                | microRNA 1938  | 24.76 |
| 17465156 | Gm24217                | predicted gene, 24217 [Source:MGI Symbol;Acc:MGI:5453994]  | 24.57 |
| 17287891 |                        |  | 24    |
| 17311152 | Gm24098                | predicted gene, 24098 [Source:MGI Symbol;Acc:MGI:5453875]; predicted gene, 25381 [Source:MGI Symbol;Acc:MGI:5455158] | 23.99 |
| 17316737 | Gm25381                | predicted gene, 24098 [Source:MGI Symbol;Acc:MGI:5453875]; predicted gene, 25381 [Source:MGI Symbol;Acc:MGI:5455158] | 23.99 |
| 17415700 | Gm26154                | predicted gene, 26154 [Source:MGI Symbol;Acc:MGI:5455931]  | 23.81 |
| 17500441 | Purg                   | purine-rich element binding protein G  | 23.5  |
| 17415177 | Rraga                  | Ras-related GTP binding A  | 23.26 |
| 17544734 | Bex1                   | brain expressed gene 1   | 22.92 |
| 17300247 | Trac                   | T cell receptor alpha constant   | 22.83 |
| 17411133 |                        |  | 22.33 |
| 17547779 | Gm2830                 | predicted gene 2830 [Source:MGI Symbol;Acc:MGI:3781002]  | 21.97 |
| 17548428 | Gm16089                | predicted gene 16089 [Source:MGI Symbol;Acc:MGI:3801884]   | 21.75 |
| 17548973 |                        |  | 21.7  |
| 17458514 | Npy                    | neuropeptide Y   | 21.57 |
| 17504074 | Cpne2                  | copine II  | 21.08 |
| 17465449 | Tnpo3                  | transportin 3  | 20.73 |
| 17212080 | Pdcl3                  | phosducin-like 3   | 20.59 |
| 17499279 | Lamp1                  | lysosomal-associated membrane protein 1  | 20.45 |
| 17364251 | Ide                    | insulin degrading enzyme   | 20.43 |
| 17281748 | Trim9                  | tripartite motif-containing 9  | 20.2  |
| 17364986 | Gm24400                | predicted gene, 24400 [Source:MGI Symbol;Acc:MGI:5454177]  | 20.1  |
| 17238834 | Syne1                  | spectrin repeat containing, nuclear envelope 1   | 19.82 |
| 17234192 | Zwint                  | ZW10 interactor  | 19.75 |
| 17363107 | Zfp91; Cntf; Zfp91Cntf | zinc finger protein 91; ciliary neurotrophic factor; Zfp91-Cntf readthrough transcript (NMD candidate)               | 19.36 |
| 17538161 | Prps1                  | phosphoribosyl pyrophosphate synthetase 1  | 19.28 |
| 17248331 | Fbxw11                 | F-box and WD-40 domain protein 11  | 19.24 |
| 17352580 | Ceny                   | cyclin Y   | 18.85 |
| 17478277 | Zdhhc13                | zinc finger, DHHC domain containing 13   | 18.81 |
| 17238908 | Syne1                  | spectrin repeat containing, nuclear envelope 1   | 18.66 |
| 17278751 | Mir1188                | microRNA 1188  | 18.6  |
| 17239401 | Pex3                   | peroxisomal biogenesis factor 3  | 18.46 |
| 17335168 | Snrpc                  | U1 small nuclear ribonucleoprotein C   | 18.38 |
| 17406165 | Glrb                   | glycine receptor, beta subunit   | 18.24 |
| 17506933 | Coa6                   | cytochrome c oxidase assembly factor 6   | 18.14 |

|          |                                       |   |       |
|----------|---------------------------------------|---|-------|
| 17345706 | Tomm6; Prickle4                       | translocase of outer mitochondrial membrane 6 homolog (yeast); prickle homolog 4 ( <i>Drosophila</i> )  | 18.12 |
| 17346311 | 2410015M20Rik                         | RIKEN cDNA 2410015M20 gene  | 17.94 |
| 17308999 | Rps3a2                                | ribosomal protein S3A2  | 17.63 |
| 17536026 | Gm23121                               | predicted gene, 23121 [Source:MGI Symbol;Acc:MGI:5452898]   | 17.62 |
| 17288650 | Mir692-3; Mir692-2                    | microRNA 692-3; microRNA 692-2  | 17.54 |
| 17378856 | Snhg11                                | small nucleolar RNA host gene 11  | 17.47 |
| 17548525 | Hnmpf                                 | heterogeneous nuclear ribonucleoprotein F   | 17.29 |
| 17523472 |                                       |   | 17.21 |
| 17434105 | LOC100041504; Ccl21c; Gm10591; Ccl21b | C-C motif chemokine 21c; chemokine (C-C motif) ligand 21C (leucine) [Source:MGI Symbol;Acc:MGI:1891386]; predicted gene 10591 [Source:MGI Symbol;Acc:MGI:3711256]; chemokine (C-C motif) ligand 21B (leucine) [Source:MGI Symbol;Acc:MGI:1349182] | 17.16 |
| 17463020 | Ing4                                  | inhibitor of growth family, member 4  | 17.04 |
| 17393764 | Gm23134                               | predicted gene, 23134 [Source:MGI Symbol;Acc:MGI:5452911]   | 16.67 |
| 17310530 | Cdh10                                 | cadherin 10   | 16.43 |
| 17491541 | LOC102640399                          | uncharacterized LOC102640399  | 16.41 |
| 17530059 | Mras                                  | muscle and microspikes RAS  | 16.33 |
| 17286575 | Fars2                                 | phenylalanine-tRNA synthetase 2 (mitochondrial)   | 16.11 |
| 17528850 | Tmod3                                 | tropomodulin 3  | 16.05 |
| 17279169 | Mark3                                 | MAP/microtubule affinity regulating kinase 3  | 15.57 |
| 17521681 | Gpx1                                  | glutathione peroxidase 1  | 15.4  |
| 17282268 | Gm26777                               | predicted gene, 26777   | 15.18 |
| 17369948 | Mir1954                               | microRNA 1954   | 15.13 |
| 17318603 | Vps28                                 | vacuolar protein sorting 28 (yeast)   | 14.92 |
| 17547859 | Gm2573                                | predicted gene 2573   | 14.75 |
| 17319783 | Cyb5r3                                | cytochrome b5 reductase 3   | 14.74 |
| 17461423 | Arl8b                                 | ADP-ribosylation factor-like 8B   | 14.45 |
| 17288898 | Lysmd3                                | LysM, putative peptidoglycan-binding, domain containing 3   | 14.41 |
| 17225760 | Stk25                                 | serine/threonine kinase 25 (yeast)  | 14.15 |
| 17290074 | Rpl34-ps2                             | ribosomal protein L34, pseudogene 2 [Source:MGI Symbol;Acc:MGI:3648994]   | 13.93 |
| 17220489 | Rab3gap2                              | RAB3 GTPase activating protein subunit 2  | 13.89 |
| 17242449 | Trappc10                              | trafficking protein particle complex 10   | 13.86 |
| 17519364 | Fam214a                               | family with sequence similarity 214, member A   | 13.74 |
| 17485937 |                                       |   | 13.69 |
| 17242025 | Prmt2; Mir678                         | protein arginine N-methyltransferase 2; microRNA 678  | 13.64 |
| 17327757 | Pam16                                 | presequence translocase-associated motor 16 homolog ( <i>S. cerevisiae</i> )  | 13.57 |
| 17288812 | 2210408I21Rik                         | RIKEN cDNA 2210408I21 gene  | 13.49 |
| 17346461 | Slc25a23                              | solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 23  | 13.34 |
| 17296943 | Gm10410; Gm8281                       | predicted gene 10410; predicted pseudogene 8281   | 13.25 |
| 17222156 | Kansl3                                | KAT8 regulatory NSL complex subunit 3   | 13.22 |
| 17436536 | Gm1673                                | predicted gene 1673   | 12.92 |
| 17308731 |                                       |   | 12.89 |
| 17548879 | Gm14989                               | predicted gene 14989 [Source:MGI Symbol;Acc:MGI:3705366]  | 12.77 |
| 17314604 | Ccdc184                               | coiled-coil domain containing 184   | 12.72 |
| 17516960 | Cadm1                                 | cell adhesion molecule 1  | 12.71 |
| 17417808 | D4Erttd617e                           | DNA segment, Chr 4, ERATO Doi 617, expressed  | 12.6  |
| 17529928 | Gm25607                               | predicted gene, 25607 [Source:MGI Symbol;Acc:MGI:5455384]   | 12.59 |
| 17259235 | Baiap2                                | brain-specific angiogenesis inhibitor 1-associated protein 2  | 12.54 |

|          |                     |  |       |
|----------|---------------------|--|-------|
| 17332766 | Zdhhc14             | zinc finger, DHHC domain containing 14   | 12.31 |
| 17213179 | Ndufb3              | NADH dehydrogenase (ubiquinone) 1 beta subcomplex 3  | 12.28 |
| 17314693 | Tuba1c              | tubulin, alpha 1C  | 12.08 |
| 17492160 | 1810026B05Rik; Chd2 | RIKEN cDNA 1810026B05 gene; chromodomain helicase DNA binding protein 2  | 12.06 |
| 17472364 | Slco1a4             | solute carrier organic anion transporter family, member 1a4  | 12.02 |
| 17383129 | Snora17; Snhg7      | small nucleolar RNA, H/ACA box 17; small nucleolar RNA host gene 7   | 11.93 |
| 17406921 | Gm22935             | predicted gene, 22935 [Source:MGI Symbol;Acc:MGI:5452712]  | 11.9  |
| 17480652 | Pgm211              | phosphoglucomutase 2-like 1  | 11.79 |
| 17278688 | Mir673              | microRNA 673   | 11.7  |
| 17358271 | Gm10053             | predicted gene 10053 [Source:MGI Symbol;Acc:MGI:3704493]   | 11.68 |
| 17548616 | Gm6415              | predicted pseudogene 6415 [Source:MGI Symbol;Acc:MGI:3648526]  | 11.53 |
| 17417697 | Gm25559             | predicted gene, 25559 [Source:MGI Symbol;Acc:MGI:5455336]  | 11.52 |
| 17288948 | 2810049E08Rik       | RIKEN cDNA 2810049E08 gene   | 11.51 |
| 17314910 | Larp4               | La ribonucleoprotein domain family, member 4   | 11.51 |
| 17282484 | Gm5436              | predicted pseudogene 5436 [Source:MGI Symbol;Acc:MGI:3643291]  | 11.39 |
| 17484710 | B4galnt4            | beta-1,4-N-acetyl-galactosaminyl transferase 4   | 11.32 |
| 17467624 | Kdm3a               | lysine (K)-specific demethylase 3A   | 11.21 |
| 17442970 | Vkore111            | vitamin K epoxide reductase complex, subunit 1-like 1  | 11.15 |
| 17505367 | Txn14b              | thioredoxin-like 4B  | 11.13 |
| 17308603 | Itn2b               | integral membrane protein 2B   | 11.09 |
| 17354189 | Mcc                 | mutated in colorectal cancers  | 11.09 |
| 17342999 | Cpne5               | copine V   | 11.06 |
| 17550246 |                     |  | 11.01 |
| 17540332 | Cask                | calcium/calmodulin-dependent serine protein kinase (MAGUK family)  | 10.97 |
| 17474983 | Cadm4               | cell adhesion molecule 4   | 10.93 |
| 17544960 | Psm10               | proteasome (prosome, macropain) 26S subunit, non-ATPase, 10  | 10.89 |
| 17414296 |                     |  | 10.8  |
| 17454049 | Gnb2; Mir6418; Epo  | guanine nucleotide binding protein (G protein), beta 2; microRNA 6418; erythropoietin                                | 10.54 |
| 17243247 | Mrpl54              | mitochondrial ribosomal protein L54  | 10.43 |
| 17550440 |                     |  | 10.4  |
| 17452456 | Camkk2              | calcium/calmodulin-dependent protein kinase kinase 2, beta   | 10.38 |
| 17310808 | Dap                 | death-associated protein   | 10.38 |
| 17322289 | Calcoco1            | calcium binding and coiled coil domain 1   | 10.34 |
| 17366012 | Shtn1               | shootin 1  | 10.3  |
| 17233457 | Ranbp2              | RAN binding protein 2  | 10.27 |
| 17340756 | Qk                  | quaking  | 10.16 |
| 17476641 | Gm25817; Gm24766    | predicted gene, 25817 [Source:MGI Symbol;Acc:MGI:5455594]; predicted gene, 24766 [Source:MGI Symbol;Acc:MGI:5454543] | 10.11 |
| 17476646 | Gm25817; Gm24766    | predicted gene, 25817 [Source:MGI Symbol;Acc:MGI:5455594]; predicted gene, 24766 [Source:MGI Symbol;Acc:MGI:5454543] | 10.11 |
| 17533690 | Araf                | v-raf murine sarcoma 3611 viral oncogene homolog   | 10.1  |
| 17305662 | Fermt2              | fermitin family homolog 2 (Drosophila)   | 10    |
| 17521825 | Qrich1              | glutamine-rich 1   | 9.99  |
| 17270322 | Eftud2              | elongation factor Tu GTP binding domain containing 2   | 9.98  |
| 17501544 | Npy1r               | neuropeptide Y receptor Y1   | 9.96  |

|          |                              |   |      |
|----------|------------------------------|---|------|
| 17334902 | Gm23123                      | predicted gene, 23123 [Source:MGI Symbol;Acc:MGI:5452900]                                   | 9.93 |
| 17253376 | Sez6                         | seizure related gene 6  | 9.87 |
| 17242747 | R3hdm4                       | R3H domain containing 4   | 9.87 |
| 17296084 | Zswim6                       | zinc finger SWIM-type containing 6  | 9.86 |
| 17342167 | Gnptg                        | N-acetylglucosamine-1-phosphotransferase, gamma subunit                                     | 9.84 |
| 17332228 | Rcan1                        | regulator of calcineurin 1  | 9.82 |
| 17527806 | Rps11-ps1                    | ribosomal protein S11, pseudogene 1   | 9.77 |
| 17447504 | Gm24878                      | predicted gene, 24878 [Source:MGI Symbol;Acc:MGI:5454655]                                   | 9.74 |
| 17365072 | Bloc1s2                      | biogenesis of lysosomal organelles complex-1, subunit 2                                     | 9.72 |
| 17434095 | LOC100041536;<br>Gm13303     | protein FAM205A-like; predicted gene 13303 [Source:MGI Symbol;Acc:MGI:3705775]              | 9.7  |
| 17287437 | Simc1                        | SUMO-interacting motifs containing 1  | 9.69 |
| 17278882 | Mir377                       | microRNA 377  | 9.62 |
| 17373482 | Mir1955                      | microRNA 1955   | 9.62 |
| 17500808 | Gm6180                       | predicted pseudogene 6180 [Source:MGI Symbol;Acc:MGI:3643972]                               | 9.59 |
| 17322827 | Gm22932                      | predicted gene, 22932 [Source:MGI Symbol;Acc:MGI:5452709]                                   | 9.59 |
| 17550052 |                              |   | 9.59 |
| 17323110 | 2900011O08Rik                | RIKEN cDNA 2900011O08 gene  | 9.5  |
| 17437350 | Gm20475                      | predicted gene 20475 [Source:MGI Symbol;Acc:MGI:5141940]                                    | 9.48 |
| 17540011 | Wdr13                        | WD repeat domain 13   | 9.46 |
| 17431451 | Gm15979                      | predicted gene 15979 [Source:MGI Symbol;Acc:MGI:3801882]                                    | 9.37 |
| 17315349 | Mfsd5                        | major facilitator superfamily domain containing 5   | 9.35 |
| 17318923 | Cacng2                       | calcium channel, voltage-dependent, gamma subunit 2   | 9.27 |
| 17515248 | Carm1                        | coactivator-associated arginine methyltransferase 1   | 9.26 |
| 17483337 | Srcap; Tmem265               | Snf2-related CREBBP activator protein; transmembrane protein 265                            | 9.15 |
| 17413090 | Gm13308; Gm20878;<br>Gm21586 | predicted gene 13308; predicted gene, 20878; predicted gene, 21586                          | 9.1  |
| 17413103 | Gm13308; Gm20878;<br>Gm21586 | predicted gene 13308; predicted gene, 20878; predicted gene, 21586                          | 9.1  |
| 17525892 | Gm25401                      | predicted gene, 25401 [Source:MGI Symbol;Acc:MGI:5455178]                                   | 9.05 |
| 17330373 | Adprh                        | ADP-ribosylarginine hydrolase   | 9.05 |
| 17243604 | Nuak1                        | NUAK family, SNF1-like kinase, 1  | 8.98 |
| 17449958 | Mir703                       | microRNA 703  | 8.96 |
| 17481723 | Snora23                      | small nucleolar RNA, H/ACA box 23   | 8.96 |
| 17550288 |                              |   | 8.95 |
| 17443430 | Polr2j                       | polymerase (RNA) II (DNA directed) polypeptide J  | 8.93 |
| 17382013 | Dnajc1; Gm39761              | DnaJ (Hsp40) homolog, subfamily C, member 1; predicted gene, 39761                          | 8.89 |
| 17406031 | Rapgef2                      | Rap guanine nucleotide exchange factor (GEF) 2  | 8.62 |
| 17253810 | Rab11fip4                    | RAB11 family interacting protein 4 (class II)   | 8.6  |
| 17490481 | Cpt1c                        | carnitine palmitoyltransferase 1c   | 8.6  |
| 17344472 | Atat1                        | alpha tubulin acetyltransferase 1   | 8.59 |
| 17539303 | Phka2                        | phosphorylase kinase alpha 2  | 8.55 |
| 17353923 | Pcdh1                        | protocadherin 1   | 8.47 |
| 17253108 | Ywhae                        | tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, epsilon polypeptide | 8.44 |
| 17324762 | Rnf168                       | ring finger protein 168   | 8.16 |
| 17493034 |                              |   | 8.14 |
| 17360068 | Wbp11                        | WW domain binding protein 1 like  | 7.92 |

|          |                                   |  |      |
|----------|-----------------------------------|--|------|
| 17226435 | Lypd1                             | Ly6/Plaur domain containing 1  | 7.91 |
| 17477424 | Snord88c                          | small nucleolar RNA, C/D box 88C   | 7.89 |
| 17503181 | Trmt1                             | tRNA methyltransferase 1   | 7.88 |
| 17429886 | Maneal                            | mannosidase, endo-alpha-like   | 7.82 |
| 17269246 | Krtap4-13                         | keratin associated protein 4-13  | 7.75 |
| 17343897 | Ppt2                              | palmitoyl-protein thioesterase 2   | 7.74 |
| 17281582 | Sos2                              | son of sevenless homolog 2 (Drosophila)  | 7.73 |
| 17420373 | Eif4g3; Gm32394                   | eukaryotic translation initiation factor 4 gamma, 3; predicted gene, 32394   | 7.61 |
| 17490050 | Zfp141                            | zinc finger protein 141  | 7.59 |
| 17449647 | Gm15710                           | predicted gene 15710 [Source:MGI Symbol;Acc:MGI:3783151]   | 7.57 |
| 17340084 | Dync2li1                          | dynein cytoplasmic 2 light intermediate chain 1  | 7.54 |
| 17399333 | Gba                               | glucosidase, beta, acid  | 7.5  |
| 17457802 | Trbj2-7; Tcrb-J; Trbv13-2; Trbv29 | T cell receptor beta joining 2-7; T cell receptor beta, joining region; T cell receptor beta, variable 13-2; T cell receptor beta, variable 29 | 7.38 |
| 17311199 | Dcaf13                            | DDB1 and CUL4 associated factor 13   | 7.34 |
| 17535390 | Prrg3                             | proline rich Gla (G-carboxyglutamic acid) 3 (transmembrane)  | 7.31 |
| 17280897 | Stxbp6; Gm38487                   | syntaxin binding protein 6 (amisyn); predicted gene, 38487   | 7.29 |
| 17517914 | Nptn                              | neuroplastin   | 7.26 |
| 17366918 | Mir466d                           | microRNA 466d  | 7.15 |
| 17510922 | Pkn1                              | protein kinase N1  | 7.09 |
| 17512151 |                                   |  | 7.08 |
| 17243392 | Gna11                             | guanine nucleotide binding protein, alpha 11   | 7.06 |
| 17302289 | Pcdh17                            | protocadherin 17   | 7    |
| 17257835 | Amz2                              | archaelysin family metallopeptidase 2  | 6.99 |
| 17232444 | Hddc2                             | HD domain containing 2   | 6.96 |
| 17312127 | Ptp4a3                            | protein tyrosine phosphatase 4a3   | 6.96 |
| 17315713 | Atp5h                             | ATP synthase, H+ transporting, mitochondrial F0 complex, subunit D   | 6.95 |
| 17473439 | Zfp524                            | zinc finger protein 524  | 6.94 |
| 17433602 | Tprgl                             | transformation related protein 63 regulated like   | 6.93 |
| 17379011 | Top1                              | topoisomerase (DNA) I  | 6.91 |
| 17335616 | Zfand3                            | zinc finger, AN1-type domain 3   | 6.88 |
| 17268755 | Med1                              | mediator complex subunit 1   | 6.83 |
| 17488752 | Catsperg1                         | catsper channel auxiliary subunit gamma 1  | 6.8  |
| 17301718 | Egr3                              | early growth response 3  | 6.79 |
| 17307080 | Pspc1                             | paraspeckle protein 1  | 6.79 |
| 17246672 | Gm24013                           | predicted gene, 24013 [Source:MGI Symbol;Acc:MGI:5453790]  | 6.77 |
| 17491497 | C230091D08Rik                     | RIKEN cDNA C230091D08 gene   | 6.71 |
| 17457876 | Gstk1                             | glutathione S-transferase kappa 1  | 6.71 |
| 17519384 | Arpp19                            | cAMP-regulated phosphoprotein 19   | 6.69 |
| 17284114 | Ckb                               | creatine kinase, brain   | 6.64 |
| 17248691 | Ebf1                              | early B cell factor 1  | 6.62 |
| 17269194 | Gm14190                           | predicted gene 14190 [Source:MGI Symbol;Acc:MGI:3651811]   | 6.56 |
| 17353171 | Tpgs2                             | tubulin polyglutamylase complex subunit 2  | 6.51 |
| 17525894 | Sorl1                             | sortilin-related receptor, LDLR class A repeats-containing   | 6.51 |
| 17543795 | Ftx                               | Ftx transcript, Xist regulator (non-protein coding)  | 6.43 |
| 17365070 | Gm24336                           | predicted gene, 24336 [Source:MGI Symbol;Acc:MGI:5454113]  | 6.38 |
| 17238936 | Syne1                             | spectrin repeat containing, nuclear envelope 1   | 6.37 |
| 17342483 | Fam195a                           | family with sequence similarity 195, member A  | 6.32 |
| 17318403 | Gm25720                           | predicted gene, 25720 [Source:MGI Symbol;Acc:MGI:5455497]  | 6.28 |

|          |                          |  |      |
|----------|--------------------------|--|------|
| 17400875 | Zfp697                   | zinc finger protein 697  | 6.27 |
| 17300153 | Traj50                   | T cell receptor alpha joining 50   | 6.26 |
| 17262521 | Sec24a                   | Sec24 related gene family, member A ( <i>S. cerevisiae</i> )                           | 6.25 |
| 17271257 | Gm22378                  | predicted gene, 22378 [Source:MGI Symbol;Acc:MGI:5452155]                              | 6.25 |
| 17519965 | Gm25125                  | predicted gene, 25125 [Source:MGI Symbol;Acc:MGI:5454902]                              | 6.24 |
| 17361099 | Aip                      | aryl-hydrocarbon receptor-interacting protein  | 6.21 |
| 17392572 | Cd93                     | CD93 antigen   | 6.21 |
| 17279835 | Gm17541                  | predicted gene, 17541 [Source:MGI Symbol;Acc:MGI:4937175]                              | 6.21 |
| 17273059 | LOC105246895;<br>Gm11772 | uncharacterized LOC105246895; predicted gene 11772 [Source:MGI Symbol;Acc:MGI:3649468] | 6.2  |
| 17489645 | 4931406P16Rik            | RIKEN cDNA 4931406P16 gene   | 6.2  |
| 17515090 | Icam5                    | intercellular adhesion molecule 5, telencephalin                                       | 6.16 |
| 17258947 | Cbx2                     | chromobox 2  | 6.15 |
| 17503043 | Samd1                    | sterile alpha motif domain containing 1  | 6.15 |
| 17286670 | Snrnp48                  | small nuclear ribonucleoprotein 48 (U11/U12)   | 6.08 |
| 17511014 | Gm10643                  | predicted gene 10643 [Source:MGI Symbol;Acc:MGI:3642507]                               | 6.04 |
| 17314085 | Ppp6r2                   | protein phosphatase 6, regulatory subunit 2  | 6.03 |
| 17273652 | Dnmt3a                   | DNA methyltransferase 3A   | 6.03 |
| 17236739 | Ube2n                    | ubiquitin-conjugating enzyme E2N   | 6.02 |
| 17364474 | Pdlim1                   | PDZ and LIM domain 1 (elfin)   | 5.99 |
| 17512181 | Tk2                      | thymidine kinase 2, mitochondrial  | 5.98 |
| 17489420 | Fxyd1                    | FXYD domain-containing ion transport regulator 1                                       | 5.94 |
| 17398903 | Nes                      | nestin   | 5.93 |
| 17380340 | Nelfcd                   | negative elongation factor complex member C/D, Th11                                    | 5.91 |
| 17492943 | Mesdc1                   | mesoderm development candidate 1   | 5.91 |
| 17299518 | Parp2                    | poly (ADP-ribose) polymerase family, member 2  | 5.91 |
| 17302356 | Gm24770                  | predicted gene, 24770 [Source:MGI Symbol;Acc:MGI:5454547]                              | 5.9  |
| 17489713 | Lrp3                     | low density lipoprotein receptor-related protein 3                                     | 5.89 |
| 17526382 | Kmt2a                    | lysine (K)-specific methyltransferase 2A   | 5.88 |
| 17233663 | Mir466j                  | microRNA 466j  | 5.82 |
| 17223277 | Gm6644                   | Akr1b3 pseudogene  | 5.82 |
| 17424850 | Rnf38                    | ring finger protein 38   | 5.81 |
| 17445568 | Dmtf1                    | cyclin D binding myb-like transcription factor 1                                       | 5.77 |
| 17292426 | 1110007C09Rik            | RIKEN cDNA 1110007C09 gene   | 5.72 |
| 17498760 | Evi5l                    | ecotropic viral integration site 5 like  | 5.69 |
| 17210887 | Atp6v1h                  | ATPase, H <sup>+</sup> transporting, lysosomal V1 subunit H                            | 5.67 |
| 17467963 | 6330415B21Rik            | RIKEN cDNA 6330415B21 gene   | 5.62 |
| 17373984 | Immp1l                   | IMP1 inner mitochondrial membrane peptidase-like ( <i>S. cerevisiae</i> )              | 5.58 |
| 17235757 | Tle2                     | transducin-like enhancer of split 2, homolog of <i>Drosophila</i> E(spl)               | 5.57 |
| 17464503 | 2810474O19Rik            | RIKEN cDNA 2810474O19 gene   | 5.55 |
| 17237952 | F420014N23Rik            | RIKEN cDNA F420014N23 gene   | 5.55 |
| 17291767 | Tubb2a                   | tubulin, beta 2A class IIA   | 5.54 |
| 17475231 | Tmem145                  | transmembrane protein 145  | 5.51 |
| 17211294 | Gdap1                    | ganglioside-induced differentiation-associated-protein 1                               | 5.51 |
| 17281607 | Gm24449                  | predicted gene, 24449 [Source:MGI Symbol;Acc:MGI:5454226]                              | 5.46 |
| 17338571 | Kat2b                    | K(lysine) acetyltransferase 2B   | 5.44 |
| 17529307 | Elov14                   | elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3, yeast)-like 4         | 5.4  |



|          |                   |   |      |
|----------|-------------------|---|------|
| 17216010 | Gm17415           | predicted gene, 17415 [Source:MGI Symbol;Acc:MGI:4937049]                             | 5.38 |
| 17441540 | Med13l            | mediator complex subunit 13-like  | 5.35 |
| 17472983 | Gm23456           | predicted gene, 23456 [Source:MGI Symbol;Acc:MGI:5453233]                             | 5.32 |
| 17211850 | Cox5b             | cytochrome c oxidase subunit Vb   | 5.31 |
| 17263011 | Glr1              | glycine receptor, alpha 1 subunit   | 5.3  |
| 17316019 | Gm24844           | predicted gene, 24844 [Source:MGI Symbol;Acc:MGI:5454621]                             | 5.3  |
| 17519394 | Myo5a             | myosin VA   | 5.28 |
| 17373328 | Ckap5             | cytoskeleton associated protein 5   | 5.27 |
| 17345422 | Cul9              | cullin 9  | 5.27 |
| 17483061 | Sgf29             | SAGA complex associated factor 29   | 5.26 |
| 17499849 | Alg11             | asparagine-linked glycosylation 11 (alpha-1,2-mannosyltransferase)                    | 5.25 |
| 17303623 |                   |   | 5.24 |
| 17416811 | Mir761            | microRNA 761  | 5.22 |
| 17326250 | Zbtb11            | zinc finger and BTB domain containing 11  | 5.19 |
| 17319339 | Npcd; Cbx6; Nptxr | neuronal pentraxin chromo domain; chromobox 6; neuronal pentraxin receptor            | 5.17 |
| 17411547 | Chchd7            | coiled-coil-helix-coiled-coil-helix domain containing 7                               | 5.14 |
| 17336906 | Ddah2             | dimethylarginine dimethylaminohydrolase 2   | 5.12 |
| 17514355 | Gm10715           | predicted gene 10715 [Source:MGI Symbol;Acc:MGI:3642376]                              | 5.09 |
| 17258653 | Mettl23; Mfsd11   | methyltransferase like 23; major facilitator superfamily domain containing 11         | 5.07 |
| 17323082 | Ntan1             | N-terminal Asn amidase  | 5.05 |
| 17526861 | Dlat              | dihydrolipoamide S-acetyltransferase (E2 component of pyruvate dehydrogenase complex) | 5.04 |
| 17547933 |                   |   | 5.02 |
| 17233699 | Rpl27a-ps1        | ribosomal protein L27A, pseudogene 1 [Source:MGI Symbol;Acc:MGI:3645354]              | 5.02 |
| 17221177 | Vcpip1            | valosin containing protein (p97)/p47 complex interacting protein 1                    | 5.02 |
| 17222788 |                   |   | 4.99 |
| 17423901 | Zfp292            | zinc finger protein 292   | 4.97 |
| 17430777 | Gmcb1             | glucocorticoid modulatory element binding protein 1                                   | 4.97 |
| 17366932 | Mir466h           | microRNA 466h   | 4.95 |
| 17406752 | Slc25a44          | solute carrier family 25, member 44   | 4.94 |
| 17282171 | Zfyve26           | zinc finger, FYVE domain containing 26  | 4.93 |
| 17266095 | Nxn; Gm36384      | nucleoredoxin; predicted gene, 36384  | 4.93 |
| 17235470 | Sppl2b            | signal peptide peptidase like 2B  | 4.91 |
| 17404616 | Mrpl47            | mitochondrial ribosomal protein L47   | 4.87 |
| 17409953 | Gm4609            | predicted gene 4609 [Source:MGI Symbol;Acc:MGI:3782792]                               | 4.87 |
| 17321351 | Prkag1            | protein kinase, AMP-activated, gamma 1 non-catalytic subunit                          | 4.86 |
| 17257146 | Rprml             | reprimo-like  | 4.85 |
| 17431049 | Sfn               | stratifin   | 4.85 |
| 17506230 | 6430548M08Rik     | RIKEN cDNA 6430548M08 gene  | 4.85 |
| 17283422 | Atxn3             | ataxin 3  | 4.84 |
| 17530742 | Tex264            | testis expressed gene 264   | 4.79 |
| 17514601 | Gm29376           | predicted gene 29376  | 4.78 |
| 17513886 | Vps9d1            | VPS9 domain containing 1  | 4.74 |
| 17370804 | Bloc1s2-ps        | biogenesis of lysosomal organelles complex-1, subunit 2, pseudogene                   | 4.72 |
| 17287081 | Id4               | inhibitor of DNA binding 4  | 4.71 |

|          |                 |  |      |
|----------|-----------------|--|------|
| 17516558 | H2afx           | H2A histone family, member X   | 4.7  |
| 17460958 | Ccdc174         | coiled-coil domain containing 174                                      | 4.7  |
| 17361073 | Gstp1           | glutathione S-transferase, pi 1  | 4.65 |
| 17471274 | Gm10010         | predicted gene 10010 [Source:MGI Symbol;Acc:MGI:3641978]               | 4.65 |
| 17435180 | Lhfp13          | lipoma HMGIC fusion partner-like 3                                     | 4.65 |
| 17255907 | Rpl19           | ribosomal protein L19  | 4.63 |
| 17327035 | Olig1           | oligodendrocyte transcription factor 1                                 | 4.63 |
| 17328756 | Med15           | mediator complex subunit 15  | 4.63 |
| 17250330 | Rai1            | retinoic acid induced 1  | 4.59 |
| 17399302 | Scamp3          | secretory carrier membrane protein 3                                   | 4.59 |
| 17230273 | 4930527J03Rik   | RIKEN cDNA 4930527J03 gene   | 4.58 |
| 17485553 | Tmc4            | transmembrane channel-like gene family 4                               | 4.57 |
| 17222568 | Creg2           | cellular repressor of E1A-stimulated genes 2                           | 4.55 |
| 17248196 | Asb3            | ankyrin repeat and SOCS box-containing 3                               | 4.54 |
| 17499480 | Kbtbd11         | kelch repeat and BTB (POZ) domain containing 11                        | 4.53 |
| 17516613 |                 |  | 4.51 |
| 17498080 | Gm10013         | predicted gene 10013   | 4.51 |
| 17530348 | Dnajc13         | DnaJ (Hsp40) homolog, subfamily C, member 13                           | 4.51 |
| 17391899 | Adra1d          | adrenergic receptor, alpha 1d  | 4.51 |
| 17257937 | Kcnj2           | potassium inwardly-rectifying channel, subfamily J, member 2           | 4.5  |
| 17495851 | Usp31           | ubiquitin specific peptidase 31  | 4.48 |
| 17339079 | Gm24813         | predicted gene, 24813 [Source:MGI Symbol;Acc:MGI:5454590]              | 4.47 |
| 17520490 | Atr             | ataxia telangiectasia and Rad3 related                                 | 4.46 |
| 17254916 | Srsf1           | serine/arginine-rich splicing factor 1                                 | 4.46 |
| 17311441 | A930017M01Rik   | Smg-5 homolog, nonsense mediated mRNA decay factor pseudogene          | 4.45 |
| 17524994 | Rp9             | retinitis pigmentosa 9 (human)   | 4.44 |
| 17530967 | Slc38a3         | solute carrier family 38, member 3                                     | 4.43 |
| 17472063 | Hebp1           | heme binding protein 1   | 4.43 |
| 17254366 | Synrg           | synergyn, gamma  | 4.42 |
| 17371939 |                 |  | 4.4  |
| 17431880 | Pqlc2           | PQ loop repeat containing 2  | 4.38 |
| 17394318 | Zfp335          | zinc finger protein 335  | 4.38 |
| 17328870 | Zdhhc8          | zinc finger, DHHC domain containing 8                                  | 4.37 |
| 17385684 | Rbms1           | RNA binding motif, single stranded interacting protein 1               | 4.35 |
| 17531168 | Dag1            | dystroglycan 1   | 4.35 |
| 17362689 | Sdhaf2          | succinate dehydrogenase complex assembly factor 2                      | 4.34 |
| 17394102 | Kcns1           | K <sup>+</sup> voltage-gated channel, subfamily S, 1                   | 4.34 |
| 17457796 | Tcrb-J; Trbj2-4 | T cell receptor beta, joining region; T cell receptor beta joining 2-4 | 4.33 |
| 17483802 | Wdr11           | WD repeat domain 11  | 4.32 |
| 17374406 | BC052040        | cDNA sequence BC052040   | 4.31 |
| 17497811 | Mir210          | microRNA 210   | 4.3  |
| 17241420 | Kif1bp          | KIF1 binding protein   | 4.29 |
| 17231248 | G0s2            | G0/G1 switch gene 2  | 4.29 |
| 17548277 |                 |  | 4.28 |
| 17548726 | Gm7265          | predicted gene 7265  | 4.25 |
| 17451128 | Pus1            | pseudouridine synthase 1   | 4.25 |
| 17532030 | Cmc1            | COX assembly mitochondrial protein 1                                   | 4.24 |
| 17513209 | Kars            | lysyl-tRNA synthetase  | 4.24 |
| 17474377 | Nova2           | neuro-oncological ventral antigen 2                                    | 4.23 |
| 17366623 | Gm13389         | predicted gene 13389 [Source:MGI Symbol;Acc:MGI:3649902]               | 4.21 |
| 17463709 | Crebl2          | cAMP responsive element binding protein-like 2                         | 4.2  |
| 17266903 | Gas2l2          | growth arrest-specific 2 like 2  | 4.16 |

|          |               |  |      |
|----------|---------------|--|------|
| 17274249 | Pdia6         | protein disulfide isomerase associated 6   | 4.16 |
| 17385374 | Nr4a2         | nuclear receptor subfamily 4, group A, member 2  | 4.15 |
| 17222876 | Gm8420        | predicted gene 8420 [Source:MGI Symbol;Acc:MGI:3645594]                                | 4.15 |
| 17360084 | As3mt         | arsenic (+3 oxidation state) methyltransferase   | 4.15 |
| 17282008 | Zbtb25        | zinc finger and BTB domain containing 25   | 4.14 |
| 17358210 | Mir204        | microRNA 204   | 4.11 |
| 17457555 | Agk           | acylglycerol kinase  | 4.1  |
| 17236487 |               |  | 4.09 |
| 17286998 | Rbm24         | RNA binding motif protein 24   | 4.09 |
| 17319465 | St13          | suppression of tumorigenicity 13   | 4.08 |
| 17515062 | Mrpl4         | mitochondrial ribosomal protein L4   | 4.07 |
| 17333188 | 1700110C19Rik | RIKEN cDNA 1700110C19 gene   | 4.07 |
| 17333076 | Gm8465        | predicted gene 8465  | 4.06 |
| 17253991 | Cdk5r1        | cyclin-dependent kinase 5, regulatory subunit 1 (p35)                                  | 4.05 |
| 17354810 | Afap111       | actin filament associated protein 1-like 1   | 4.04 |
| 17388215 | 1110051M20Rik | RIKEN cDNA 1110051M20 gene   | 4.04 |
| 17321740 | Pou6f1        | POU domain, class 6, transcription factor 1  | 4.04 |
| 17235890 | Hcfc2         | host cell factor C2  | 4.04 |
| 17464367 | Ppfbp1        | PTPRF interacting protein, binding protein 1 (liprin beta 1)                           | 4.03 |
| 17417195 | Cyp4a12b      | cytochrome P450, family 4, subfamily a, polypeptide 12B                                | 4.03 |
| 17287175 | Ogn           | osteo glycin   | 4.02 |
| 17245188 | Frs2          | fibroblast growth factor receptor substrate 2  | 4.01 |
| 17474268 | Gm25068       | predicted gene, 25068 [Source:MGI Symbol;Acc:MGI:5454845]                              | 4    |
| 17548890 | Gm4997        | predicted gene 4997 [Source:MGI Symbol;Acc:MGI:3643651]                                | 3.97 |
| 17287576 |               |  | 3.97 |
| 17404570 | Slc7a14       | solute carrier family 7 (cationic amino acid transporter, y+ system), member 14        | 3.97 |
| 17350166 | Gm8181        | predicted gene 8181 [Source:MGI Symbol;Acc:MGI:3643329]                                | 3.96 |
| 17540378 | Maob          | monoamine oxidase B  | 3.96 |
| 17311807 | Sqle          | squalene epoxidase   | 3.95 |
| 17393032 | Tspy13        | TSPY-like 3  | 3.94 |
| 17230256 | Adss          | adenylosuccinate synthetase, non muscle  | 3.92 |
| 17245202 | Yeats4        | YEATS domain containing 4  | 3.92 |
| 17279764 | Efr3b         | EFR3 homolog B ( <i>S. cerevisiae</i> )  | 3.92 |
| 17444047 | Elfn1         | leucine rich repeat and fibronectin type III, extracellular 1                          | 3.9  |
| 17269498 | Nt5c3b        | 5-nucleotidase, cytosolic IIIB   | 3.9  |
| 17341679 | Gm25092       | predicted gene, 25092 [Source:MGI Symbol;Acc:MGI:5454869]                              | 3.89 |
| 17547552 |               |  | 3.87 |
| 17476528 | Sbsn          | suprabasin   | 3.86 |
| 17514603 | Tmem123       | transmembrane protein 123  | 3.85 |
| 17231287 | Cd46          | CD46 antigen, complement regulatory protein  | 3.85 |
| 17365160 | Mrpl43        | mitochondrial ribosomal protein L43  | 3.85 |
| 17513534 | 1190005I06Rik | RIKEN cDNA 1190005I06 gene   | 3.85 |
| 17451043 | Noc4l         | nucleolar complex associated 4 homolog ( <i>S. cerevisiae</i> )                        | 3.83 |
| 17531671 | Tmie          | transmembrane inner ear  | 3.8  |
| 17444364 | Fam220a       | family with sequence similarity 220, member A  | 3.79 |
| 17255775 | Socs7         | suppressor of cytokine signaling 7   | 3.78 |
| 17230231 | Akt3          | thymoma viral proto-oncogene 3   | 3.78 |
| 17286487 | Bphl          | biphenyl hydrolase-like (serine hydrolase, breast epithelial mucin-associated antigen) | 3.77 |
| 17478789 | Ndn           | neccdin  | 3.77 |

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|----------|-------------------------|---|------|
| 17491642 | Snord107; Gm38393       | small nucleolar RNA, C/D box 107 [Source:MGI Symbol;Acc:MGI:4358283]; predicted gene, 38393 [Source:MGI Symbol;Acc:MGI:5613898] | 3.77 |
| 17500532 | Gm4889                  | predicted gene 4889 [Source:MGI Symbol;Acc:MGI:3647233]   | 3.77 |
| 17358138 | Tmem2                   | transmembrane protein 2   | 3.76 |
| 17219286 | Dedd                    | death effector domain-containing  | 3.74 |
| 17518312 | Snord16a                | small nucleolar RNA, C/D box 16A  | 3.73 |
| 17528274 | Plekho2                 | pleckstrin homology domain containing, family O member 2  | 3.73 |
| 17300390 | Mhrt                    | myosin heavy chain associated RNA transcript  | 3.72 |
| 17373155 | Psmc3; Gm39875          | proteasome (prosome, macropain) 26S subunit, ATPase 3; predicted gene, 39875  | 3.72 |
| 17520396 | Slc9a9                  | solute carrier family 9 (sodium/hydrogen exchanger), member 9   | 3.71 |
| 17268576 | Gm11613                 | predicted gene 11613 [Source:MGI Symbol;Acc:MGI:3651819]  | 3.7  |
| 17298088 | Gm22485                 | predicted gene, 22485 [Source:MGI Symbol;Acc:MGI:5452262]   | 3.66 |
| 17499038 | Arhgef7                 | Rho guanine nucleotide exchange factor (GEF7)   | 3.66 |
| 17442328 | Gm24682                 | predicted gene, 24682 [Source:MGI Symbol;Acc:MGI:5454459]   | 3.65 |
| 17454590 | Iqce                    | IQ motif containing E   | 3.64 |
| 17366359 | Fam171a1                | family with sequence similarity 171, member A1  | 3.63 |
| 17270703 | Cyb561                  | cytochrome b-561  | 3.63 |
| 17422662 | Ssu72                   | Ssu72 RNA polymerase II CTD phosphatase homolog (yeast)   | 3.61 |
| 17444398 | Eif2ak1                 | eukaryotic translation initiation factor 2 alpha kinase 1   | 3.6  |
| 17231680 | Gm22546                 | predicted gene, 22546 [Source:MGI Symbol;Acc:MGI:5452323]   | 3.59 |
| 17346185 | Dpp9                    | dipeptidylpeptidase9  | 3.59 |
| 17280452 | Sntg2                   | syntrophin, gamma 2   | 3.58 |
| 17270721 | Gm11646                 | predicted gene 11646 [Source:MGI Symbol;Acc:MGI:3649612]  | 3.58 |
| 17367683 | Gm13411                 | predicted gene 13411 [Source:MGI Symbol;Acc:MGI:3651013]  | 3.58 |
| 17388406 | Slc35c1                 | solute carrier family 35, member C1   | 3.57 |
| 17475685 | Zfp60                   | zinc finger protein 60  | 3.57 |
| 17310404 | Zfr                     | zinc finger RNA binding protein   | 3.54 |
| 17407396 | Adrm1                   | adhesion regulating molecule 1  | 3.51 |
| 17539626 | Trappc2                 | trafficking protein particle complex 2  | 3.49 |
| 17255335 | Samd14                  | sterile alpha motif domain containing 14  | 3.49 |
| 17519533 | Lysmd2                  | LysM, putative peptidoglycan-binding, domain containing 2   | 3.49 |
| 17323968 | Vwa5b2                  | von Willebrand factor A domain containing 5B2   | 3.48 |
| 17297490 | Fut11                   | fucosyltransferase 11   | 3.46 |
| 17283532 | 9330161L09Rik           | RIKEN cDNA 9330161L09 gene [Source:MGI Symbol;Acc:MGI:1924475]  | 3.45 |
| 17250549 | Kcnj12                  | potassium inwardly-rectifying channel, subfamily J, member 12   | 3.45 |
| 17230166 | Opn3                    | opsin 3   | 3.44 |
| 17548367 | Gm13249                 | predicted gene 13249  | 3.44 |
| 17466386 | Fam131b                 | family with sequence similarity 131, member B   | 3.42 |
| 17531900 | Cnot10                  | CCR4-NOT transcription complex, subunit 10  | 3.42 |
| 17303353 | Gm3558; Gm10406; Gm5796 | predicted gene 3558; predicted gene 10406; predicted gene 5796  | 3.39 |
| 17262478 | Hnrrpab                 | heterogeneous nuclear ribonucleoprotein A/B   | 3.38 |
| 17529290 | Lca5                    | Leber congenital amaurosis 5 (human)  | 3.38 |
| 17488352 | Psmc4                   | proteasome (prosome, macropain) 26S subunit, ATPase, 4  | 3.38 |

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| 17547656 |                  |  | 3.37 |
| 17509146 | Snx25            | sorting nexin 25   | 3.35 |
| 17399314 | Fam189b          | family with sequence similarity 189, member B  | 3.35 |
| 17427769 | Pcsk9            | proprotein convertase subtilisin/kexin type 9  | 3.33 |
| 17519009 | Gtf2a2           | general transcription factor II A, 2   | 3.32 |
| 17333672 | Riok2            | RIO kinase 2 (yeast)   | 3.31 |
| 17320583 | Cpne8            | copine VIII  | 3.31 |
| 17349181 | Wdr33            | WD repeat domain 33  | 3.31 |
| 17458718 | Prr15            | proline rich 15  | 3.3  |
| 17222878 | Gm3940           | predicted gene 3940 [Source:MGI Symbol;Acc:MGI:3782114]                                      | 3.29 |
| 17510280 | Nr2f6            | nuclear receptor subfamily 2, group F, member 6  | 3.29 |
| 17289860 | Gm15323; Gm15322 | predicted gene 15323; predicted gene 15322   | 3.28 |
| 17550422 |                  |  | 3.28 |
| 17280247 | LOC101056074     | zinc finger protein 124-like   | 3.27 |
| 17360331 | Mxi1             | MAX interactor 1, dimerization protein   | 3.27 |
| 17451223 | Sez6l            | seizure related 6 homolog like   | 3.26 |
| 17324998 | Osbp11           | oxysterol binding protein-like 11  | 3.25 |
| 17349634 | Cystm1           | cysteine-rich transmembrane module containing 1  | 3.25 |
| 17483891 | Plekha1          | pleckstrin homology domain containing, family A (phosphoinositide binding specific) member 1 | 3.24 |
| 17506249 | Gse1             | genetic suppressor element 1   | 3.23 |
| 17425160 | Erp44            | endoplasmic reticulum protein 44   | 3.23 |
| 17238150 | Zbtb39           | zinc finger and BTB domain containing 39   | 3.23 |
| 17394349 | Ncoa5            | nuclear receptor coactivator 5   | 3.22 |
| 17482021 | Pde3b            | phosphodiesterase 3B, cGMP-inhibited   | 3.22 |
| 17360004 | Tmem180; Gm36493 | transmembrane protein 180; predicted gene, 36493   | 3.22 |
| 17498699 | Stxbp2           | syntaxin binding protein 2   | 3.22 |
| 17345830 | Daam2            | dishevelled associated activator of morphogenesis 2  | 3.21 |
| 17409721 | Hiat1            | hippocampus abundant gene transcript 1   | 3.2  |
| 17380555 | Gm14403          | predicted gene 14403   | 3.2  |
| 17423939 | Lingo2           | leucine rich repeat and Ig domain containing 2   | 3.19 |
| 17231619 | Gm10944          | predicted gene 10944 [Source:MGI Symbol;Acc:MGI:3779154]                                     | 3.19 |
| 17550192 |                  |  | 3.18 |
| 17527988 | Spesp1           | sperm equatorial segment protein 1   | 3.18 |
| 17338103 | Crip3            | cysteine-rich protein 3  | 3.16 |
| 17263506 | Med9os           | mediator complex subunit 9, opposite strand  | 3.15 |
| 17261016 | Commd1           | COMM domain containing 1   | 3.15 |
| 17301478 | Trim35           | tripartite motif-containing 35   | 3.15 |
| 17310816 | Cmbl             | carboxymethylenebutenolide-like (Pseudomonas)  | 3.14 |
| 17414482 | Snx30            | sorting nexin family member 30   | 3.14 |
| 17391670 | Fastkd5; Ubox5   | FAST kinase domains 5; U box domain containing 5   | 3.13 |
| 17226489 | Map3k19          | mitogen-activated protein kinase kinase kinase 19  | 3.13 |
| 17251516 | Gm25371          | predicted gene, 25371 [Source:MGI Symbol;Acc:MGI:5455148]                                    | 3.12 |
| 17548587 |                  |  | 3.12 |
| 17515058 | Ppan             | peter pan homolog (Drosophila)   | 3.11 |
| 17256323 | Krtap31-1        | keratin associated protein 31-1  | 3.11 |
| 17368171 | Bmyc             | brain expressed myelocytomatosis oncogene  | 3.11 |
| 17492803 | BC048679         | cDNA sequence BC048679   | 3.11 |
| 17284426 | Ighv2-9          | immunoglobulin heavy variable 2-9  | 3.1  |
| 17511927 | Kifc3            | kinesin family member C3   | 3.1  |
| 17268210 | Ngfr             | nerve growth factor receptor (TNFR superfamily, member 16)                                   | 3.1  |
| 17474529 | Gpr4             | G protein-coupled receptor 4   | 3.1  |
| 17487249 | Mark4            | MAP/microtubule affinity regulating kinase 4   | 3.09 |

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|----------|-----------------------|--|------|
| 17502280 | Colgalt1              | collagen beta(1-O)galactosyltransferase 1  | 3.09 |
| 17418560 | Eva1b                 | eva-1 homolog B (C. elegans)   | 3.09 |
| 17351482 |                       |  | 3.09 |
| 17334275 | Caskin1               | CASK interacting protein 1   | 3.08 |
| 17293258 | Spata31d1a            | spermatogenesis associated 31 subfamily D, member 1A   | 3.08 |
| 17287889 | Gm24284               | predicted gene, 24284 [Source:MGI Symbol;Acc:MGI:5454061]                                      | 3.07 |
| 17491699 | Mir344d-2             | microRNA 344d-2  | 3.07 |
| 17463673 | Etv6                  | ets variant 6  | 3.07 |
| 17288370 | Fastkd3               | FAST kinase domains 3  | 3.07 |
| 17431772 | Vwa5b1                | von Willebrand factor A domain containing 5B1  | 3.07 |
| 17473155 | Cacng7                | calcium channel, voltage-dependent, gamma subunit 7  | 3.07 |
| 17435660 | Nom1                  | nucleolar protein with MIF4G domain 1  | 3.06 |
| 17313322 | L3mbtl2               | l(3)mbt-like 2 (Drosophila)  | 3.06 |
| 17389736 | Ankrd63               | ankyrin repeat domain 63   | 3.05 |
| 17499087 |                       |  | 3.05 |
| 17424674 | Tln1                  | talin 1  | 3.04 |
| 17324576 | Hrasls                | HRAS-like suppressor   | 3.04 |
| 17349884 | Pcdhb6                | protocadherin beta 6   | 3.03 |
| 17284645 | Ighv1-75              | immunoglobulin heavy variable 1-75   | 3.03 |
| 17485943 | Shisa7                | shisa family member 7  | 3.02 |
| 17266146 | Gosr1                 | golgi SNAP receptor complex member 1   | 3.02 |
| 17503397 | Man2b1                | mannosidase 2, alpha B1  | 3.02 |
| 17430997 | Wdtd1                 | WD and tetratricopeptide repeats 1   | 3.02 |
| 17491454 | Nipa1                 | non imprinted in Prader-Willi/Angelman syndrome 1 homolog (human)                              | 3.01 |
| 17332133 | Dnajc28               | DnaJ (Hsp40) homolog, subfamily C, member 28   | 3    |
| 17436237 | Fosl2                 | fos-like antigen 2   | 3    |
| 17309905 | Snord72               | small nucleolar RNA, C/D box 72  | 2.99 |
| 17221093 | Gm6104                | predicted gene 6104 [Source:MGI Symbol;Acc:MGI:3648587]  | 2.99 |
| 17480041 | AI314278              | expressed sequence AI314278  | 2.98 |
| 17323627 | Vpreb2                | pre-B lymphocyte gene 2  | 2.98 |
| 17549488 |                       |  | 2.98 |
| 17362717 | Tkfc                  | triokinase, FMN cyclase  | 2.97 |
| 17432783 | Zfp933                | zinc finger protein 933  | 2.96 |
| 17309347 | Gm4775                | predicted gene 4775 [Source:MGI Symbol;Acc:MGI:3647362]  | 2.96 |
| 17318428 | Oplah                 | 5-oxoprolinase (ATP-hydrolysing)   | 2.94 |
| 17242316 | Gm3238                | predicted gene 3238  | 2.93 |
| 17240971 | Edar                  | ectodysplasin-A receptor   | 2.93 |
| 17452741 | Pitpnm2               | phosphatidylinositol transfer protein, membrane-associated 2                                   | 2.93 |
| 17444930 | Gm15409               | predicted gene 15409 [Source:MGI Symbol;Acc:MGI:3705229]                                       | 2.92 |
| 17489039 | Lrln3; Gm42382        | leucine rich repeat and fibronectin type III domain containing 3; predicted gene, 42382        | 2.92 |
| 17485849 | Tmem86b               | transmembrane protein 86B  | 2.92 |
| 17504878 | Rltpr                 | RGD motif, leucine rich repeats, tropomodulin domain and proline-rich containing               | 2.91 |
| 17356356 | Rin1                  | Ras and Rab interactor 1   | 2.9  |
| 17359008 | 5-Mar                 | membrane-associated ring finger (C3HC4) 5  | 2.9  |
| 17548369 | LOC102637947; Gm13035 | 60S acidic ribosomal protein P1-like; predicted gene 13035 [Source:MGI Symbol;Acc:MGI:3650251] | 2.9  |
| 17529218 | Htr1b                 | 5-hydroxytryptamine (serotonin) receptor 1B  | 2.89 |
| 17221923 | n-R5s209              | nuclear encoded rRNA 5S 209 [Source:MGI Symbol;Acc:MGI:4422074]                                | 2.89 |
| 17488001 | Ccdc97                | coiled-coil domain containing 97   | 2.89 |

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|----------|--------------------------|--|------|
| 17217373 | Fmod                     | fibromodulin   | 2.88 |
| 17388284 | Mdk                      | midkine  | 2.88 |
| 17453383 | Clip2                    | CAP-GLY domain containing linker protein 2   | 2.88 |
| 17437850 | LOC102635521;<br>Gm26725 | uncharacterized LOC102635521; predicted gene, 26725 [Source:MGI Symbol;Acc:MGI:5477219]                              | 2.87 |
| 17288946 | Mir9-2; C130071C03Rik    | microRNA 9-2; RIKEN cDNA C130071C03 gene   | 2.87 |
| 17422859 | Tnfrsf4                  | tumor necrosis factor receptor superfamily, member 4   | 2.87 |
| 17477930 | Rasip1; Izumo1           | Ras interacting protein 1; izumo sperm-egg fusion 1  | 2.86 |
| 17381752 | Fam188a                  | family with sequence similarity 188, member A  | 2.86 |
| 17329527 | Mb21d2                   | Mab-21 domain containing 2   | 2.86 |
| 17357213 | Zbtb3                    | zinc finger and BTB domain containing 3  | 2.85 |
| 17211090 | Cspp1                    | centrosome and spindle pole associated protein 1   | 2.85 |
| 17247158 | Ccm2                     | cerebral cavernous malformation 2  | 2.85 |
| 17230127 | Grem2                    | gremlin 2 homolog, cysteine knot superfamily ( <i>Xenopus laevis</i> )   | 2.84 |
| 17432790 | Miip                     | migration and invasion inhibitory protein  | 2.84 |
| 17540584 | Gm26593                  | predicted gene, 26593 [Source:MGI Symbol;Acc:MGI:5477087]  | 2.84 |
| 17275869 |                          |  | 2.84 |
| 17350088 |                          |  | 2.84 |
| 17393110 | Cdk5rap1                 | CDK5 regulatory subunit associated protein 1   | 2.83 |
| 17518342 | Megf11                   | multiple EGF-like-domains 11   | 2.83 |
| 17512088 | Slc38a7                  | solute carrier family 38, member 7   | 2.83 |
| 17213548 | Nrp2                     | neuropilin 2   | 2.82 |
| 17494117 | Trim68                   | tripartite motif-containing 68   | 2.82 |
| 17483048 | Apobr                    | apolipoprotein B receptor  | 2.81 |
| 17462872 | C1ra                     | complement component 1, r subcomponent A   | 2.81 |
| 17447451 | Tbc1d14                  | TBC1 domain family, member 14  | 2.81 |
| 17520063 | Mrap2                    | melanocortin 2 receptor accessory protein 2  | 2.8  |
| 17493632 | Dgat2                    | diacylglycerol O-acyltransferase 2   | 2.8  |
| 17333946 | Zfp948                   | zinc finger protein 948  | 2.79 |
| 17447610 | Msx1                     | msh homeobox 1   | 2.79 |
| 17383173 | Surf1                    | surfeit gene 1   | 2.79 |
| 17424263 | Fam219a                  | family with sequence similarity 219, member A  | 2.79 |
| 17333709 | Spaca6                   | sperm acrosome associated 6  | 2.78 |
| 17486223 | Vmn2r33                  | vomer nasal 2, receptor 33   | 2.78 |
| 17400072 | Tdrkh                    | tudor and KH domain containing protein   | 2.78 |
| 17327262 |                          |  | 2.77 |
| 17415764 | LOC102643030             | uncharacterized LOC102643030   | 2.77 |
| 17343568 | Zfp101                   | zinc finger protein 101  | 2.77 |
| 17547016 | Gm37044; Gm38369         | predicted gene, 37044 [Source:MGI Symbol;Acc:MGI:5610272]; predicted gene, 38369 [Source:MGI Symbol;Acc:MGI:5611597] | 2.76 |
| 17284554 | Ighv1-37                 | immunoglobulin heavy variable 1-37   | 2.75 |
| 17363156 | Gm22323                  | predicted gene, 22323 [Source:MGI Symbol;Acc:MGI:5452100]  | 2.75 |
| 17363158 | Gm23931                  | predicted gene, 23931 [Source:MGI Symbol;Acc:MGI:5453708]  | 2.75 |
| 17411352 | Tyw3                     | tRNA-yW synthesizing protein 3 homolog ( <i>S. cerevisiae</i> )  | 2.75 |
| 17334113 | 9530082P21Rik            | RIKEN cDNA 9530082P21 gene   | 2.75 |
| 17290301 | Akr1e1                   | aldo-keto reductase family 1, member E1  | 2.75 |
| 17345666 | Gm16494                  | predicted gene 16494 [Source:MGI Symbol;Acc:MGI:3641930]   | 2.74 |
| 17530669 | Acy1                     | aminoacylase 1   | 2.72 |
| 17248470 | Gm26070                  | predicted gene, 26070 [Source:MGI Symbol;Acc:MGI:5455847]  | 2.72 |

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|----------|---|--|------|
| 17317930 | Mroh5   | maestro heat-like repeat family member 5   | 2.71 |
| 17545291 | Tmem29  | transmembrane protein 29   | 2.71 |
| 17248406 | Gm12121   | predicted gene 12121   | 2.7  |
| 17270303 | Psmb5-ps  | proteasome (prosome, macropain) subunit, beta type 5, pseudogene   | 2.7  |
| 17212406 | Bivm  | basic, immunoglobulin-like variable motif containing   | 2.69 |
| 17244439 | Plxnc1  | plexin C1  | 2.69 |
| 17510264 | Haus8   | 4HAUS augmin-like complex, subunit 8   | 2.69 |
| 17521469 |   |  | 2.69 |
| 17424515 | Fancg   | Fanconi anemia, complementation group G  | 2.68 |
| 17413213 | Gm26643   | predicted gene, 26643 [Source:MGI Symbol;Acc:MGI:5477137]  | 2.68 |
| 17452038 | Dtx1  | deltex 1 homolog (Drosophila)  | 2.67 |
| 17517576 | Hmg20a  | high mobility group 20A  | 2.66 |
| 17497953 | Polr2l  | polymerase (RNA) II (DNA directed) polypeptide L   | 2.66 |
| 17266830 | Nle1  | notchless homolog 1 (Drosophila)   | 2.66 |
| 17390424 | Lcmt2   | leucine carboxyl methyltransferase 2   | 2.65 |
| 17493824 | Relt  | RELT tumor necrosis factor receptor  | 2.65 |
| 17383798 | Fibcd1  | fibrinogen C domain containing 1   | 2.65 |
| 17300839 | Mphosph8  | M-phase phosphoprotein 8   | 2.64 |
| 17349807 | Pcdhac1; Pcdhac2;<br>Gm37013; Gm38666;<br>Pcdha4; Pcdha6; Pcdha7;<br>Pcdha5; Pcdha11;<br>Pcdha10; Pcdhgb1;<br>Pcdhgb2; Pcdhgb4;<br>Pcdhgb5; Pcdhgb6;<br>Pcdhgb7; Pcdhgb8;<br>Pcdhgc3; Pcdhgc4;<br>Pcdhgc5; Pcdhga1;<br>Pcdhga2; Pcdhga3;<br>Pcdhga4; Pcdhga5;<br>Pcdhga6; Pcdhga7;<br>Pcdhga8; Pcdhga9;<br>Pcdhga10; Pcdhga11;<br>Pcdhga12; Pcdha1;<br>Pcdha9; Pcdha3; Pcdha12;<br>Pcdha2; Pcdha8 | protocadherin alpha subfamily C, 1; protocadherin alpha subfamily C, 2; predicted gene, 37013; predicted gene, 38666; protocadherin alpha 4; protocadherin alpha 6; protocadherin alpha 7; protocadherin alpha 5; protocadherin alpha 11; protocadherin alpha 10; protocadherin gamma subfamily B, 1; protocadherin gamma subfamily B, 2; protocadherin gamma subfamily B, 4; protocadherin gamma subfamily B, 5; protocadherin gamma subfamily B, 6; protocadherin gamma subfamily B, 7; protocadherin gamma subfamily B, 8; protocadherin gamma subfamily C, 3; protocadherin gamma subfamily C, 4; protocadherin gamma subfamily C, 5; protocadherin gamma subfamily A, 1; protocadherin gamma subfamily A, 2; protocadherin gamma subfamily A, 3; protocadherin gamma subfamily A, 4; protocadherin gamma subfamily A, 5; protocadherin gamma subfamily A, 6; protocadherin gamma subfamily A, 7; protocadherin gamma subfamily A, 8; protocadherin gamma subfamily A, 9; protocadherin gamma subfamily A, 10; protocadherin gamma subfamily A, 11; protocadherin gamma subfamily A, 12; protocadherin alpha 1; protocadherin alpha 9; protocadherin alpha 3; protocadherin alpha 12; protocadherin alpha 2; protocadherin alpha 8 | 2.64 |
| 17433023 | Cort  | cortistatin  | 2.64 |
| 17308280 | Ppp3cc  | protein phosphatase 3, catalytic subunit, gamma isoform  | 2.64 |
| 17364828 | Crtac1  | cartilage acidic protein 1   | 2.63 |
| 17448880 | Lnx1  | ligand of numb-protein X 1   | 2.63 |
| 17292562 | Sema4d  | sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4D   | 2.62 |
| 17342042 | Nubp2   | nucleotide binding protein 2   | 2.62 |
| 17279427 | Btbd6   | BTB (POZ) domain containing 6  | 2.62 |
| 17548394 | Gm1043  | predicted gene 1043  | 2.62 |
| 17471252 | Tspan9  | tetraspanin 9  | 2.62 |
| 17498872 | Rpl21-ps14  | ribosomal protein L21, pseudogene 14 [Source:MGI Symbol;Acc:MGI:3648110]   | 2.61 |
| 17264363 | Usp43   | ubiquitin specific peptidase 43  | 2.6  |



|          |                                    |   |      |
|----------|------------------------------------|---|------|
| 17296836 | Gm10410; Gm3047;<br>Gm8159; Gm3239 | predicted gene 10410; predicted gene 3047; predicted gene 8159; predicted gene 3239 | 2.6  |
| 17405819 | B3galnt1                           | UDP-GalNAc:betaGlcNAc beta 1,3-galactosaminyltransferase, polypeptide 1             | 2.59 |
| 17217566 | Ptpn7                              | protein tyrosine phosphatase, non-receptor type 7                                   | 2.58 |
| 17355058 | Gm24504                            | predicted gene, 24504 [Source:MGI Symbol;Acc:MGI:5454281]                           | 2.57 |
| 17240529 | Foxo3; Gm38485                     | forkhead box O3; predicted gene, 38485  | 2.57 |
| 17317015 | Ext1                               | exostosin (multiple) 1  | 2.56 |
| 17409594 | Rnpc3                              | RNA-binding region (RNPI, RRM) containing 3   | 2.56 |
| 17248666 | Rnf145                             | ring finger protein 145   | 2.56 |
| 17247675 | Fam161a                            | family with sequence similarity 161, member A                                       | 2.56 |
| 17455748 | Gm8579                             | spermatogenesis associated glutamate (E)-rich protein 4a pseudogene                 | 2.55 |
| 17343628 | Angptl4                            | angiopoietin-like 4   | 2.55 |
| 17386477 |                                    |   | 2.55 |
| 17288440 | Mir466f-4                          | microRNA 466f-4   | 2.55 |
| 17213894 | Cps1                               | carbamoyl-phosphate synthetase 1  | 2.54 |
| 17221122 | Sntg1                              | syntrophin, gamma 1   | 2.54 |
| 17293988 | Zfp58                              | zinc finger protein 58  | 2.54 |
| 17398634 | Sh3d19                             | SH3 domain protein D19  | 2.54 |
| 17254089 | Zfp830                             | zinc finger protein 830   | 2.53 |
| 17397497 | Foxo1                              | forkhead box O1   | 2.52 |
| 17253937 | Rhbd13                             | rhomboid, veinlet-like 3 (Drosophila)   | 2.52 |
| 17442173 | A930024E05Rik                      | RIKEN cDNA A930024E05 gene  | 2.52 |
| 17465740 | 3110062M04Rik                      | RIKEN cDNA 3110062M04 gene  | 2.52 |
| 17548090 |                                    |   | 2.52 |
| 17302675 | Gpr180                             | G protein-coupled receptor 180  | 2.52 |
| 17407850 | Ecm1                               | extracellular matrix protein 1  | 2.52 |
| 17448577 | Gabra2                             | gamma-aminobutyric acid (GABA) A receptor, subunit alpha 2                          | 2.51 |
| 17548197 |                                    |   | 2.5  |
| 17299849 | Trav12d-2; Trav12n-2               | T cell receptor alpha variable 12D-2; T cell receptor alpha variable 12N-2          | 2.5  |
| 17299926 | Trav12d-2; Trav12n-2               | T cell receptor alpha variable 12D-2; T cell receptor alpha variable 12N-2          | 2.5  |
| 17429840 | 1700021L23Rik;<br>4933435F18Rik    | RIKEN cDNA 1700021L23 gene; RIKEN cDNA 4933435F18 gene                              | 2.5  |
| 17514541 | Mmp10                              | matrix metalloproteinase 10   | 2.5  |
| 17260855 | Cep68                              | centrosomal protein 68  | 2.5  |
| 17394718 | Ube2v1                             | ubiquitin-conjugating enzyme E2 variant 1   | 2.5  |
| 17230823 | Lyplal1                            | lysophospholipase-like 1  | 2.5  |
| 17497633 | Olfir522                           | olfactory receptor 522  | 2.49 |
| 17268445 | Tbx21                              | T-box 21  | 2.49 |
| 17545904 |                                    |   | 2.48 |
| 17503862 | Capns2                             | calpain, small subunit 2  | 2.48 |
| 17501905 | Gdf1; Cers1                        | growth differentiation factor 1; ceramide synthase 1                                | 2.48 |
| 17224395 | Mir375                             | microRNA 375  | 2.47 |
| 17481770 | Adm                                | adrenomedullin  | 2.47 |
| 17531693 | Rtp3                               | receptor transporter protein 3  | 2.47 |
| 17445303 | Mterf1a                            | mitochondrial transcription termination factor 1a                                   | 2.46 |
| 17503810 | Irx5                               | Iroquois related homeobox 5 (Drosophila)  | 2.46 |
| 17389962 | Rpap1                              | RNA polymerase II associated protein 1  | 2.46 |
| 17347267 | Fez2                               | fasciculation and elongation protein zeta 2 (zygin II)                              | 2.46 |
| 17481673 | Rpl27a                             | ribosomal protein L27A  | 2.46 |
| 17214578 | Tmem198                            | transmembrane protein 198   | 2.45 |

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| 17452018 | Rital1; Gm38700;<br>Gm38465 | RBPJ interacting and tubulin associated 1; predicted gene, 38700;<br>predicted gene, 38465                   | 2.45 |
| 17292541 | 9430083A17Rik               | RIKEN cDNA 9430083A17 gene   | 2.45 |
| 17445543 | Crot                        | carnitine O-octanoyltransferase  | 2.45 |
| 17442701 | Fam101a                     | family with sequence similarity 101, member A  | 2.45 |
| 17301108 | Arl11                       | ADP-ribosylation factor-like 11  | 2.44 |
| 17426230 | Gm11209                     | predicted gene 11209 [Source:MGI Symbol;Acc:MGI:3650632]   | 2.44 |
| 17369060 | Set                         | SET nuclear oncogene   | 2.44 |
| 17320240 | 1810021B22Rik               | RIKEN cDNA 1810021B22 gene   | 2.43 |
| 17458885 | Ppp1r17                     | protein phosphatase 1, regulatory subunit 17   | 2.43 |
| 17341044 | Tcte2                       | t-complex-associated testis expressed 2  | 2.43 |
| 17545051 | Acsl4                       | acyl-CoA synthetase long-chain family member 4   | 2.43 |
| 17504632 | Ces4a                       | carboxylesterase 4A  | 2.43 |
| 17285157 | Heatr1                      | HEAT repeat containing 1   | 2.43 |
| 17304740 | Sh3bp5                      | SH3-domain binding protein 5 (BTK-associated)  | 2.43 |
| 17523161 | Slc25a38                    | solute carrier family 25, member 38  | 2.42 |
| 17521171 | Tlr9                        | toll-like receptor 9   | 2.42 |
| 17284280 | Nudt14                      | nudix (nucleoside diphosphate linked moiety X)-type motif 14   | 2.41 |
| 17219997 | Kif26b                      | kinesin family member 26B  | 2.41 |
| 17296705 | Gm3095; Gm3029              | predicted gene 3095; predicted gene 3029   | 2.41 |
| 17510351 | Tmem221                     | transmembrane protein 221  | 2.4  |
| 17241137 | Unc5b                       | unc-5 homolog B (C. elegans)   | 2.4  |
| 17222566 | Gm23722                     | predicted gene, 23722 [Source:MGI Symbol;Acc:MGI:5453499]  | 2.4  |
| 17311437 | 2310069G16Rik               | RIKEN cDNA 2310069G16 gene   | 2.4  |
| 17532710 | Gm14347                     | predicted gene 14347   | 2.4  |
| 17237701 | Wif1                        | Wnt inhibitory factor 1  | 2.39 |
| 17227105 | Ppfia4                      | protein tyrosine phosphatase, receptor type, f polypeptide (PTPRF),<br>interacting protein (liprin), alpha 4 | 2.39 |
| 17424057 | Smu1                        | smu-1 suppressor of mec-8 and unc-52 homolog (C. elegans)  | 2.39 |
| 17363828 | Ermp1                       | endoplasmic reticulum metalloproteinase 1  | 2.38 |
| 17369974 | Tor2a                       | torsin family 2, member A  | 2.38 |
| 17218233 | Colgalt2                    | collagen beta(1-O)galactosyltransferase 2  | 2.38 |
| 17341595 | Kremen2                     | kringle containing transmembrane protein 2   | 2.38 |
| 17260440 | Snora5c; Tbrg4              | small nucleolar RNA, H/ACA box 5C; transforming growth factor beta<br>regulated gene 4                       | 2.38 |
| 17412879 | Gm12404                     | predicted gene 12404   | 2.37 |
| 17235211 | Midn                        | midnolin   | 2.37 |
| 17231229 | Hsd11b1                     | hydroxysteroid 11-beta dehydrogenase 1   | 2.36 |
| 17341712 | Amdhd2                      | amidohydrolase domain containing 2   | 2.36 |
| 17437803 | N4bp2                       | NEDD4 binding protein 2  | 2.36 |
| 17484353 | Lrrc27                      | leucine rich repeat containing 27  | 2.36 |
| 17374765 | Spint1                      | serine protease inhibitor, Kunitz type 1   | 2.36 |
| 17332966 | Gm1604b                     | predicted gene 1604b   | 2.35 |
| 17445162 | Bra2                        | breast cancer 2, early onset   | 2.35 |
| 17265096 | Slc2a4                      | solute carrier family 2 (facilitated glucose transporter), member 4  | 2.35 |
| 17398565 | Gm6525                      | ribosomal protein L36a pseudogene  | 2.34 |
| 17501314 | Gm15882                     | predicted gene 15882 [Source:MGI Symbol;Acc:MGI:3801770]   | 2.34 |
| 17444309 | Grid2ip                     | glutamate receptor, ionotropic, delta 2 (Grid2) interacting protein 1  | 2.33 |
| 17378035 | Bpifb6                      | BPI fold containing family B, member 6   | 2.33 |
| 17483733 | Bag3                        | BCL2-associated athanogene 3   | 2.33 |

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| 17364150 | Pank1                 | pantothenate kinase 1  | 2.32 |
| 17349894 | Pcdhb9                | protocadherin beta 9   | 2.32 |
| 17337895 | Aars2                 | alanyl-tRNA synthetase 2, mitochondrial (putative)                 | 2.32 |
| 17503705 | Gm3134                | predicted gene 3134  | 2.32 |
| 17371964 | Sp3os                 | trans-acting transcription factor 3, opposite strand               | 2.31 |
| 17526633 | Gm10680               | predicted gene 10680 [Source:MGI Symbol;Acc:MGI:3704335]           | 2.31 |
| 17499436 | Cln8                  | ceroid-lipofuscinosis, neuronal 8                                  | 2.31 |
| 17487161 | Qpctl                 | glutaminyl-peptide cyclotransferase-like                           | 2.31 |
| 17280721 | 4921508M14Rik         | RIKEN cDNA 4921508M14 gene [Source:MGI Symbol;Acc:MGI:1918094]     | 2.3  |
| 17526978 | Mir34c                | microRNA 34c   | 2.3  |
| 17516434 | D630033O11Rik         | RIKEN cDNA D630033O11 gene   | 2.3  |
| 17295649 | Gtf2h2                | general transcription factor II H, polypeptide 2                   | 2.29 |
| 17527678 | Pml                   | promyelocytic leukemia   | 2.29 |
| 17383723 | Tor1a                 | torsin family 1, member A (torsin A)                               | 2.29 |
| 17439922 | Lrrc8d; D830014E11Rik | leucine rich repeat containing 8D; RIKEN cDNA D830014E11 gene      | 2.29 |
| 17549204 |                       |  | 2.28 |
| 17426251 | Kif12                 | kinesin family member 12   | 2.27 |
| 17387742 | Olfir259              | olfactory receptor 259   | 2.27 |
| 17536997 | Zcchc13               | zinc finger, CCHC domain containing 13                             | 2.27 |
| 17537878 | Bex4                  | brain expressed gene 4   | 2.27 |
| 17233032 | 1700027J07Rik         | RIKEN cDNA 1700027J07 gene   | 2.27 |
| 17341758 | Ntn3                  | netrin 3   | 2.27 |
| 17222072 | Ccdc115               | coiled-coil domain containing 115                                  | 2.26 |
| 17318140 |                       |  | 2.26 |
| 17501855 | Sugp2; Gm38427        | SURP and G patch domain containing 2; predicted gene, 38427        | 2.25 |
| 17528741 |                       |  | 2.25 |
| 17537592 | Srpx2                 | sushi-repeat-containing protein, X-linked 2                        | 2.25 |
| 17243198 | Pias4                 | protein inhibitor of activated STAT 4                              | 2.25 |
| 17517752 | Ulk3                  | unc-51-like kinase 3   | 2.24 |
| 17239136 | Gm25410               | predicted gene, 25410 [Source:MGI Symbol;Acc:MGI:5455187]          | 2.24 |
| 17497729 | Sigirr                | single immunoglobulin and toll-interleukin 1 receptor (TIR) domain | 2.24 |
| 17520607 | 4921534H16Rik         | RIKEN cDNA 4921534H16 gene   | 2.24 |
| 17499739 | Defa22                | defensin, alpha, 22  | 2.24 |
| 17372984 | Nup160                | nucleoporin 160  | 2.24 |
| 17390614 | Mfap1b                | microfibrillar-associated protein 1B                               | 2.24 |
| 17333686 | Lix1                  | limb expression 1 homolog (chicken)                                | 2.23 |
| 17308796 | Gm1587                | predicted gene 1587  | 2.23 |
| 17234744 | 1700009J07Rik         | RIKEN cDNA 1700009J07 gene   | 2.23 |
| 17302955 | 1700024B18Rik         | RIKEN cDNA 1700024B18 gene   | 2.23 |
| 17440633 | Mn1                   | meningioma 1   | 2.23 |
| 17403806 | Erich3                | glutamate rich 3   | 2.23 |
| 17290121 | Paip1                 | polyadenylate binding protein-interacting protein 1                | 2.23 |
| 17313852 | AU022754              | expressed sequence AU022754  | 2.22 |
| 17295005 | Bhmt                  | betaine-homocysteine methyltransferase                             | 2.22 |
| 17284288 | Gm26583               | predicted gene, 26583  | 2.22 |
| 17359816 | Kazald1               | Kazal-type serine peptidase inhibitor domain 1                     | 2.22 |
| 17442203 | Setd1b; Gm38488       | SET domain containing 1B; predicted gene, 38488                    | 2.22 |
| 17481634 | Olfir512              | olfactory receptor 512   | 2.21 |
| 17339840 | Gpatch11              | G patch domain containing 11                                       | 2.21 |
| 17258771 | Gm11733               | predicted gene 11733   | 2.21 |
| 17346666 | 4930405O22Rik         | RIKEN cDNA 4930405O22 gene   | 2.21 |

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| 17398428 | Gm22531                    | predicted gene, 22531 [Source:MGI Symbol;Acc:MGI:5452308]            | 2.21 |
| 17288548 | Slc12a7                    | solute carrier family 12, member 7                                   | 2.2  |
| 17434705 | Gm8906                     | predicted gene 8906 [Source:MGI Symbol;Acc:MGI:3779820]              | 2.2  |
| 17214731 | 1700016L21Rik              | RIKEN cDNA 1700016L21 gene   | 2.2  |
| 17238549 | Pym1                       | PYM homolog 1, exon junction complex associated factor               | 2.2  |
| 17384202 | 9430024E24Rik              | RIKEN cDNA 9430024E24 gene   | 2.2  |
| 17215879 | Aqp12                      | aquaporin 12   | 2.2  |
| 17391909 | 5330413P13Rik              | RIKEN cDNA 5330413P13 gene   | 2.19 |
| 17410127 | Gm15551                    | predicted gene 15551   | 2.19 |
| 17430037 | Tekt2                      | tektin 2   | 2.19 |
| 17439842 | Pkd2                       | polycystic kidney disease 2  | 2.19 |
| 17322026 | Krt2                       | keratin 2  | 2.19 |
| 17439021 | Ereg                       | epiregulin   | 2.19 |
| 17258107 | Cd300a                     | CD300A antigen   | 2.19 |
| 17271842 | Fads6                      | fatty acid desaturase domain family, member 6                        | 2.19 |
| 17260236 | Myl7                       | myosin, light polypeptide 7, regulatory                              | 2.18 |
| 17397120 | Bbs12                      | Bardet-Biedl syndrome 12 (human)                                     | 2.18 |
| 17476752 | Rhpn2                      | rhophilin, Rho GTPase binding protein 2                              | 2.18 |
| 17328124 | Litaf; Gm9861              | LPS-induced TN factor; predicted gene 9861                           | 2.17 |
| 17386396 | Slc25a12                   | solute carrier family 25 (mitochondrial carrier, Aralar), member 12  | 2.17 |
| 17422565 | Tmem52                     | transmembrane protein 52   | 2.17 |
| 17515869 | Gm23702                    | predicted gene, 23702 [Source:MGI Symbol;Acc:MGI:5453479]            | 2.16 |
| 17509985 | Armc6                      | armadillo repeat containing 6  | 2.16 |
| 17464704 | Dlx6os2                    | distal-less homeobox 6, opposite strand 2                            | 2.16 |
| 17265062 | 2810408A11Rik              | RIKEN cDNA 2810408A11 gene   | 2.16 |
| 17469412 |                            |  | 2.16 |
| 17408960 | Cd53                       | CD53 antigen   | 2.16 |
| 17212888 | Mob4                       | MOB family member 4, phocein   | 2.15 |
| 17252635 | Shpk                       | sedoheptulokinase  | 2.15 |
| 17549576 |                            |  | 2.15 |
| 17526809 | Plet1os                    | placenta expressed transcript 1, opposite strand                     | 2.15 |
| 17255511 | Ttl6                       | tubulin tyrosine ligase-like family, member 6                        | 2.15 |
| 17527206 | Gldnos                     | gliomedin, opposite strand   | 2.15 |
| 17506356 | Zfpml                      | zinc finger protein, multitype 1                                     | 2.15 |
| 17430521 | Tmem39b                    | transmembrane protein 39b  | 2.14 |
| 17350790 | Prrc1                      | proline-rich coiled-coil 1   | 2.14 |
| 17433942 | Gm25982                    | predicted gene, 25982 [Source:MGI Symbol;Acc:MGI:5455759]            | 2.14 |
| 17235243 | Efna2                      | ephrin A2  | 2.14 |
| 17463169 | Scnn1a                     | sodium channel, nonvoltage-gated 1 alpha                             | 2.14 |
| 17429331 | 4930538K18Rik;<br>AU022252 | RIKEN cDNA 4930538K18 gene; expressed sequence AU022252              | 2.14 |
| 17355231 | Ptpn2                      | protein tyrosine phosphatase, non-receptor type 2                    | 2.14 |
| 17440361 | Plexd1                     | phosphatidylinositol-specific phospholipase C, X domain containing 1 | 2.14 |
| 17230457 | 6330403A02Rik              | RIKEN cDNA 6330403A02 gene   | 2.14 |
| 17509801 | Lzts1                      | leucine zipper, putative tumor suppressor 1                          | 2.13 |
| 17344626 | C920025E04Rik              | RIKEN cDNA C920025E04 gene   | 2.13 |
| 17232763 | Ddo                        | D-aspartate oxidase  | 2.13 |
| 17538452 | Gm15080                    | predicted gene 15080   | 2.13 |
| 17376883 | Gm14061                    | predicted gene 14061   | 2.13 |
| 17387210 | Cwc22                      | CWC22 spliceosome-associated protein homolog (S. cerevisiae)         | 2.13 |

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| 17285527 | Terg-V3                 | T cell receptor gamma, variable 3   | 2.13 |
| 17323816 | Gm10088                 | predicted gene 10088 [Source:MGI Symbol;Acc:MGI:3641695]                                      | 2.12 |
| 17490218 | 1700008O03Rik           | RIKEN cDNA 1700008O03 gene  | 2.12 |
| 17524590 | Zglp1                   | zinc finger, GATA-like protein 1  | 2.12 |
| 17314562 |                         |   | 2.12 |
| 17365718 | Gm16299                 | predicted gene 16299  | 2.11 |
| 17538431 | Mir1912                 | microRNA 1912   | 2.11 |
| 17254547 | Bcas3                   | breast carcinoma amplified sequence 3   | 2.11 |
| 17501919 | Comp                    | cartilage oligomeric matrix protein   | 2.11 |
| 17392317 | Pesk2os2                | proprotein convertase subtilisin/kexin type 2, opposite strand 2                              | 2.11 |
| 17274310 | Hpcal1                  | hippocalcin-like 1  | 2.11 |
| 17414327 | Actl7a                  | actin-like 7a   | 2.11 |
| 17474676 | Gm16175                 | predicted gene 16175 [Source:MGI Symbol;Acc:MGI:3801805]                                      | 2.1  |
| 17337497 | Zfp57                   | zinc finger protein 57  | 2.1  |
| 17368359 | Snhg7os                 | small nucleolar RNA host gene 7, opposite strand  | 2.1  |
| 17274963 | Gm24429                 | predicted gene, 24429 [Source:MGI Symbol;Acc:MGI:5454206]                                     | 2.09 |
| 17515703 | Adams8                  | a disintegrin-like and metallopeptidase (reprolysin type) with thrombospondin type 1 motif, 8 | 2.09 |
| 17414385 | Musk                    | muscle, skeletal, receptor tyrosine kinase  | 2.09 |
| 17407522 | Gm10697; Tdpoz5; Gm9107 | predicted gene 10697; TD and POZ domain containing 5; predicted gene 9107                     | 2.09 |
| 17407529 | Gm10697; Tdpoz5         | predicted gene 10697; TD and POZ domain containing 5  | 2.09 |
| 17525964 | Gm26272                 | predicted gene, 26272 [Source:MGI Symbol;Acc:MGI:5456049]                                     | 2.09 |
| 17409994 |                         |   | 2.09 |
| 17476311 | Thap8                   | THAP domain containing 8 [Source:MGI Symbol;Acc:MGI:1922879]                                  | 2.08 |
| 17405057 | 1700027H10Rik           | RIKEN cDNA 1700027H10 gene  | 2.08 |
| 17220866 | Rd3                     | retinal degeneration 3  | 2.08 |
| 17501270 | Gm25992                 | predicted gene, 25992 [Source:MGI Symbol;Acc:MGI:5455769]                                     | 2.08 |
| 17394582 | Prex1                   | phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange factor 1                      | 2.08 |
| 17444389 | D130017N08Rik           | RIKEN cDNA D130017N08 gene  | 2.08 |
| 17327602 | 1700037C18Rik           | RIKEN cDNA 1700037C18 gene  | 2.07 |
| 17403255 | Gbp2b                   | guanylate binding protein 2b  | 2.07 |
| 17342308 | Chtf18                  | CTF18, chromosome transmission fidelity factor 18   | 2.07 |
| 17289656 | Htr1a                   | 5-hydroxytryptamine (serotonin) receptor 1A   | 2.07 |
| 17319029 | Sstr3                   | somatostatin receptor 3   | 2.07 |
| 17311128 | Gm16137                 | predicted gene 16137 [Source:MGI Symbol;Acc:MGI:3802136]                                      | 2.07 |
| 17276622 | Fntb                    | farnesyltransferase, CAAX box, beta   | 2.07 |
| 17243644 | Cry1                    | cryptochrome 1 (photolyase-like)  | 2.07 |
| 17240045 | Hint3                   | histidine triad nucleotide binding protein 3  | 2.07 |
| 17380631 | 4930591A17Rik           | RIKEN cDNA 4930591A17 gene  | 2.06 |
| 17417107 | Foxd2os                 | forkhead box D2, opposite strand  | 2.06 |
| 17394012 | Gm14254                 | predicted gene 14254 [Source:MGI Symbol;Acc:MGI:3650986]                                      | 2.06 |
| 17380969 | Rtel1                   | regulator of telomere elongation helicase 1   | 2.06 |
| 17514653 | Gm16485                 | predicted gene 16485 [Source:MGI Symbol;Acc:MGI:3642771]                                      | 2.06 |
| 17459449 | Foxi3                   | forkhead box I3   | 2.06 |

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| 17493378 | Gm25860                      | predicted gene, 25860 [Source:MGI Symbol;Acc:MGI:5455637]  | 2.05   |
| 17267443 | Gdpd1                        | glycerophosphodiester phosphodiesterase domain containing 1  | 2.05   |
| 17322642 | Ubn1                         | ubiquitin 1  | 2.05   |
| 17292828 | Mxd3                         | Max dimerization protein 3   | 2.04   |
| 17513281 | Gm16118                      | predicted gene 16118   | 2.04   |
| 17337945 | Gm17080                      | predicted gene 17080 [Source:MGI Symbol;Acc:MGI:4937907]   | 2.04   |
| 17533755 | Slc6a14                      | solute carrier family 6 (neurotransmitter transporter), member 14  | 2.04   |
| 17440134 | Gm26387                      | predicted gene, 26387 [Source:MGI Symbol;Acc:MGI:5456164]  | 2.04   |
| 17430231 | Gm12947                      | predicted gene 12947 [Source:MGI Symbol;Acc:MGI:3649527]   | 2.04   |
| 17282158 | Rdh11                        | retinol dehydrogenase 11   | 2.04   |
| 17380119 | Cass4                        | Cas scaffolding protein family member 4  | 2.04   |
| 17267329 | Vmp1; Mir21a                 | vacuole membrane protein 1; microRNA 21a   | 2.04   |
| 17471990 | Gm17089                      | predicted gene 17089   | 2.04   |
| 17247225 | Upp1                         | uridine phosphorylase 1  | 2.04   |
| 17515103 | 1700084C06Rik                | RIKEN cDNA 1700084C06 gene [Source:MGI Symbol;Acc:MGI:1923868]   | 2.04   |
| 17456204 | Capza2                       | capping protein (actin filament) muscle Z-line, alpha 2  | 2.04   |
| 17289031 | Rps23                        | ribosomal protein S23  | 2.04   |
| 17416481 | Ndc1                         | NDC1 transmembrane nucleoporin   | 2.03   |
| 17305198 | Sh2d4b                       | SH2 domain containing 4B   | 2.03   |
| 17306906 | Ripk3                        | receptor-interacting serine-threonine kinase 3   | 2.03   |
| 17506353 | Gm22                         | predicted gene 22  | 2.03   |
| 17418057 | Gm24678                      | predicted gene, 24678 [Source:MGI Symbol;Acc:MGI:5454455]  | 2.03   |
| 17515478 | Bmper                        | BMP-binding endothelial regulator  | 2.03   |
| 17354356 | Hdhd1a                       | haloacid dehalogenase-like hydrolase domain containing 1A  | 2.02   |
| 17316754 | Lrp12                        | low density lipoprotein-related protein 12   | 2.02   |
| 17504207 | Adgrg3                       | adhesion G protein-coupled receptor G3   | 2.02   |
| 17549536 |                              |  | 2.02   |
| 17549700 |                              |  | 2.02   |
| 17378387 | LOC102636309; Gssos2; Gssos1 | uncharacterized LOC102636309; glutathione synthase, opposite strand 2 [Source:MGI Symbol;Acc:MGI:3702171]; glutathione synthase, opposite strand 1 [Source:MGI Symbol;Acc:MGI:1915623] | 2.02   |
| 17269785 | Plekhh3                      | pleckstrin homology domain containing, family H (with MyTH4 domain) member 3   | 2.02   |
| 17327524 | Igsf5                        | immunoglobulin superfamily, member 5   | 2.02   |
| 17314699 | Prph                         | peripherin   | 2.02   |
| 17547569 |                              |  | 2.02   |
| 17332932 | Syt13                        | synaptotagmin-like 3   | 2.02   |
| 17301502 | Adra1a                       | adrenergic receptor, alpha 1a  | 2.02   |
| 17309287 | Pou4f1                       | POU domain, class 4, transcription factor 1  | 2.02   |
| 17298364 | Nt5dc2                       | 5-nucleotidase domain containing 2   | 2.02   |
| 17353271 | Myo7b                        | myosin VIIb  | 2.01   |
| 17257599 | Milr1                        | mast cell immunoglobulin like receptor 1   | 2.01   |
| 17441924 | Tmem116                      | transmembrane protein 116  | 2.01   |
| 17241840 | Lrrc75b                      | leucine rich repeat containing 75B   | 2.01   |
| 17339923 | Ttc39d                       | tetratricopeptide repeat domain 39D  | 2.01   |
| 17494822 | Nlrp10                       | NLR family, pyrin domain containing 10   | 2.01   |
| 17338231 | Gm26216                      | predicted gene, 26216 [Source:MGI Symbol;Acc:MGI:5455993]  | -15.55 |

|          |         |                                 |       |
|----------|---------|---------------------------------|-------|
| 17541917 | Snord61 | small nucleolar RNA, C/D box 61 | -27.1 |
|----------|---------|---------------------------------|-------|

**Table S5: Differentially expressed genes in western diet (WD) fed LDL-R -/- mice when compared to control diet (CD) fed WT mice.**

| Transcript Cluster ID | Gene Symbol  | Description  | Fold Change |
|-----------------------|--------------|--|-------------|
| 17320842              | Gm24668      | predicted gene, 24668 [Source:MGI Symbol;Acc:MGI:5454445]  | 167.27      |
| 17350916              | Gm4951       | predicted gene 4951  | 142.6       |
| 17348840              | Rnf125       | ring finger protein 125  | 117.1       |
| 17278822              | Mir679       | microRNA 679   | 113.69      |
| 17285225              | LOC105245453 | nidogen-1-like; predicted gene 2399 [Source:MGI Symbol;Acc:MGI:3780567]  | 112.35      |
| 17285225              | Gm2399       | nidogen-1-like; predicted gene 2399 [Source:MGI Symbol;Acc:MGI:3780567]  | 112.35      |
| 17472192              | Mgp          | matrix Gla protein   | 109.3       |
| 17345664              |              |  | 96.35       |
| 17308731              |              |  | 85.21       |
| 17245302              | Rap1b        | RAS related protein 1b   | 84.68       |
| 17312829              | Lgals1       | lectin, galactose binding, soluble 1   | 81.38       |
| 17278688              | Mir673       | microRNA 673   | 81.06       |
| 17423289              | Gm22940      | predicted gene, 22940 [Source:MGI Symbol;Acc:MGI:5452717]  | 75.5        |
| 17385902              | Slc38a11     | solute carrier family 38, member 11  | 72.21       |
| 17324110              | Snord66      | small nucleolar RNA, C/D box 66  | 70.95       |
| 17245700              | Tspan31      | tetraspanin 31   | 70.47       |
| 17317708              | Mir30d       | microRNA 30d   | 69.19       |
| 17401999              | Mir669n      | microRNA 669n  | 67.85       |
| 17318403              | Gm25720      | predicted gene, 25720 [Source:MGI Symbol;Acc:MGI:5455497]  | 67.3        |
| 17384173              | Gm23546      | predicted gene, 23546 [Source:MGI Symbol;Acc:MGI:5453323]  | 66.56       |
| 17446058              | Gm24009      | predicted gene, 24009 [Source:MGI Symbol;Acc:MGI:5453786]  | 65.3        |
| 17383129              | Snora17      | small nucleolar RNA, H/ACA box 17; small nucleolar RNA host gene 7   | 64.98       |
| 17383129              | Snhg7        | small nucleolar RNA, H/ACA box 17; small nucleolar RNA host gene 7   | 64.98       |
| 17355437              | Gm23119      | predicted gene, 23119 [Source:MGI Symbol;Acc:MGI:5452896]  | 63.09       |
| 17494221              | Hbb-bt       | hemoglobin, beta adult t chain; hemoglobin, beta adult minor chain   | 62.45       |
| 17494221              | Hbb-b2       | hemoglobin, beta adult t chain; hemoglobin, beta adult minor chain   | 62.45       |
| 17400549              | Gm20634      | predicted gene 20634 [Source:MGI Symbol;Acc:MGI:5313081]   | 55.73       |
| 17348602              | Gm36490      | predicted gene, 36490  | 55.42       |
| 17476641              | Gm25817      | predicted gene, 25817 [Source:MGI Symbol;Acc:MGI:5455594]; predicted gene, 24766 [Source:MGI Symbol;Acc:MGI:5454543] | 52.55       |
| 17476646              | Gm24766      | predicted gene, 25817 [Source:MGI Symbol;Acc:MGI:5455594]; predicted gene, 24766 [Source:MGI Symbol;Acc:MGI:5454543] | 52.55       |
| 17532509              | Slc6a20a     | solute carrier family 6 (neurotransmitter transporter), member 20A   | 51.93       |
| 17287022              | Gm24915      | predicted gene, 24915 [Source:MGI Symbol;Acc:MGI:5454692]  | 50.66       |
| 17238882              | Syne1        | spectrin repeat containing, nuclear envelope 1   | 49.88       |
| 17238860              | Syne1        | spectrin repeat containing, nuclear envelope 1   | 48.94       |
| 17480568              | Arrb1        | arrestin, beta 1   | 47.16       |
| 17408021              | Hist2h4      | histone cluster 2, H4  | 44.97       |
| 17547859              | Gm2573       | predicted gene 2573  | 42.31       |
| 17233294              | Nus1         | nuclear undecaprenyl pyrophosphate synthase 1 homolog (S. cerevisiae)  | 40.45       |
| 17340599              | Dynl1f       | dynein light chain Tctex-type 1F   | 40.33       |
| 17291355              | Acot13       | acyl-CoA thioesterase 13   | 39          |
| 17548983              |              |  | 36.88       |
| 17328895              | Gm25777      | predicted gene, 25777 [Source:MGI Symbol;Acc:MGI:5455554]  | 36.23       |
| 17378896              |              |  | 35.71       |
| 17512752              | LOC102642963 | 40S ribosomal protein S26-like; ribosomal protein S26, pseudogene 1 [Source:MGI Symbol;Acc:MGI:3704322]              | 34.97       |
| 17512752              | Rps26-ps1    | 40S ribosomal protein S26-like; ribosomal protein S26, pseudogene 1 [Source:MGI Symbol;Acc:MGI:3704322]              | 34.97       |
| 17329079              | Par1         | presenilin associated, rhomboid-like   | 33.99       |
| 17365070              | Gm24336      | predicted gene, 24336 [Source:MGI Symbol;Acc:MGI:5454113]  | 33.24       |
| 17238908              | Syne1        | spectrin repeat containing, nuclear envelope 1   | 31.35       |
| 17287891              |              |  | 29.93       |
| 17418211              | Gm25788      | predicted gene, 25788 [Source:MGI Symbol;Acc:MGI:5455565]  | 29.72       |
| 17458514              | Npy          | neuropeptide Y   | 29.5        |
| 17273562              | Gm12590      | predicted gene 12590 [Source:MGI Symbol;Acc:MGI:3650370]   | 28.43       |
| 17430140              | Ncdn         | neurochondrin  | 28.14       |
| 17238884              | Syne1        | spectrin repeat containing, nuclear envelope 1   | 28.05       |
| 17254508              | Car4         | carbonic anhydrase 4   | 27.29       |



|          |                 |   |       |
|----------|-----------------|---|-------|
| 17363107 | Zfp91           | zinc finger protein 91; ciliary neurotrophic factor; Zfp91-Cntf readthrough transcript (NMD candidate)              | 27.1  |
| 17363107 | Cntf            | zinc finger protein 91; ciliary neurotrophic factor; Zfp91-Cntf readthrough transcript (NMD candidate)              | 27.1  |
| 17363107 | Zfp91Cntf       | zinc finger protein 91; ciliary neurotrophic factor; Zfp91-Cntf readthrough transcript (NMD candidate)              | 27.1  |
| 17236800 | Den             | decorin   | 26.62 |
| 17483190 | Kctd13          | potassium channel tetramerisation domain containing 13  | 25.72 |
| 17250365 | Gid4            | GID complex subunit 4, VID24 homolog ( <i>S. cerevisiae</i> )   | 24.87 |
| 17303433 | Fam107a         | family with sequence similarity 107, member A   | 24.58 |
| 17547507 |                 |   | 24.53 |
| 17306856 | Dhrs1           | dehydrogenase/reductase (SDR family) member 1   | 24.18 |
| 17336896 | Clic1           | chloride intracellular channel 1  | 23.97 |
| 17547931 |                 |   | 23.85 |
| 17542392 | Idh3g           | isocitrate dehydrogenase 3 (NAD <sup>+</sup> ), gamma   | 23.71 |
| 17382361 | Gm24328         | predicted gene, 24328 [Source:MGI Symbol;Acc:MGI:5454105]   | 23.68 |
| 17347953 | Fbxo11          | F-box protein 11  | 23.63 |
| 17289787 | Rps3a3          | ribosomal protein S3A3; ribosomal protein S3A1  | 22.78 |
| 17289787 | Rps3a1          | ribosomal protein S3A3; ribosomal protein S3A1  | 22.78 |
| 17282104 | Atp6v1d         | ATPase, H <sup>+</sup> transporting, lysosomal V1 subunit D   | 22.75 |
| 17549910 |                 |   | 22.72 |
| 17266038 | Fam101b         | family with sequence similarity 101, member B   | 22.29 |
| 17335168 | Snrpc           | U1 small nuclear ribonucleoprotein C  | 22.09 |
| 17488951 | Zfp146          | zinc finger protein 146   | 21.94 |
| 17213189 | Gm20257         | caspase 8 pseudogene  | 21.53 |
| 17340629 | Mir692-1        | microRNA 692-1  | 21.43 |
| 17308999 | Rps3a2          | ribosomal protein S3A2  | 20.98 |
| 17338872 | Ndufa11         | NADH dehydrogenase (ubiquinone) 1 alpha subcomplex 11   | 20.91 |
| 17392718 | Platr15         | pluripotency associated transcript 15 [Source:MGI Symbol;Acc:MGI:3650105]   | 20.31 |
| 17340522 | Gm15590         | predicted gene 15590 [Source:MGI Symbol;Acc:MGI:3831433]; predicted gene, 22774 [Source:MGI Symbol;Acc:MGI:5452551] | 20.29 |
| 17340522 | Gm22774         | predicted gene 15590 [Source:MGI Symbol;Acc:MGI:3831433]; predicted gene, 22774 [Source:MGI Symbol;Acc:MGI:5452551] | 20.29 |
| 17418483 | Mir692-3        | microRNA 692-3; microRNA 692-2; ferritin light polypeptide 1; ferritin light polypeptide 2, pseudogene              | 20.29 |
| 17418483 | Mir692-2        | microRNA 692-3; microRNA 692-2; ferritin light polypeptide 1; ferritin light polypeptide 2, pseudogene              | 20.29 |
| 17418483 | Ftl1            | microRNA 692-3; microRNA 692-2; ferritin light polypeptide 1; ferritin light polypeptide 2, pseudogene              | 20.29 |
| 17418483 | Ftl2-ps         | microRNA 692-3; microRNA 692-2; ferritin light polypeptide 1; ferritin light polypeptide 2, pseudogene              | 20.29 |
| 17369948 | Mir1954         | microRNA 1954   | 20.12 |
| 17340197 | Epas1           | endothelial PAS domain protein 1  | 20.12 |
| 17327757 | Pam16           | presequence translocase-associated motor 16 homolog ( <i>S. cerevisiae</i> )  | 19.91 |
| 17468520 | Snmp27          | small nuclear ribonucleoprotein 27 (U4/U6.U5)   | 19.79 |
| 17391373 | 1500011K16Rik   | RIKEN cDNA 1500011K16 gene  | 19.57 |
| 17505673 | St3gal2         | ST3 beta-galactoside alpha-2,3-sialyltransferase 2  | 19.43 |
| 17281748 | Trim9           | tripartite motif-containing 9   | 18.95 |
| 17522430 | Ccdc12          | coiled-coil domain containing 12  | 18.92 |
| 17216777 | Gm23734         | predicted gene, 23734 [Source:MGI Symbol;Acc:MGI:5453511]   | 18.87 |
| 17495667 | Thumpd1         | THUMP domain containing 1   | 18.79 |
| 17289551 | Gm16416         | predicted gene 16416 [Source:MGI Symbol;Acc:MGI:3646635]  | 18.55 |
| 17548131 | Gm10862         | predicted gene 10862 [Source:MGI Symbol;Acc:MGI:3641622]  | 18.49 |
| 17548190 |                 |   | 18.01 |
| 17548525 | Hnrnpf          | heterogeneous nuclear ribonucleoprotein F   | 17.99 |
| 17237978 | Ddit3           | DNA-damage inducible transcript 3   | 17.89 |
| 17325719 | BC002163        | NADH dehydrogenase Fe-S protein 5 pseudogene; NADH dehydrogenase (ubiquinone) Fe-S protein 5                        | 17.57 |
| 17325719 | Ndufs5          | NADH dehydrogenase Fe-S protein 5 pseudogene; NADH dehydrogenase (ubiquinone) Fe-S protein 5                        | 17.57 |
| 17550288 |                 |   | 17.46 |
| 17373776 | Gm22757;Gm13875 | predicted gene, 22757 [Source:MGI Symbol;Acc:MGI:5452534]; predicted gene 13875 [Source:MGI Symbol;Acc:MGI:3649350] | 17.11 |
| 17393764 | Gm23134         | predicted gene, 23134 [Source:MGI Symbol;Acc:MGI:5452911]   | 16.89 |

|          |                  |   |       |
|----------|------------------|---|-------|
| 17437043 | Cytl1            | cytokine-like 1   | 16.61 |
| 17514122 | 2810004N23Rik    | RIKEN cDNA 2810004N23 gene  | 16.61 |
| 17300381 | Cmtm5            | CKLF-like MARVEL transmembrane domain containing 5  | 16.23 |
| 17379873 | 1500012F01Rik    | RIKEN cDNA 1500012F01 gene  | 16.11 |
| 17248331 | Fbxw11           | F-box and WD-40 domain protein 11   | 16.07 |
| 17548238 | Fabp5            | fatty acid binding protein 5, epidermal   | 15.99 |
| 17273292 | Dexr             | dicarbonyl L-xylulose reductase   | 15.91 |
| 17361988 | Arl2             | ADP-ribosylation factor-like 2  | 15.91 |
| 17282905 | Snw1             | SNW domain containing 1   | 15.86 |
| 17238842 | Syne1            | spectrin repeat containing, nuclear envelope 1  | 15.83 |
| 17490791 | Snmp70           | small nuclear ribonucleoprotein 70 (U1)   | 15.8  |
| 17499279 | Lamp1            | lysosomal-associated membrane protein 1   | 15.64 |
| 17494408 | Trim30d          | tripartite motif-containing 30D   | 15.5  |
| 17493730 | Rnfl69           | ring finger protein 169   | 15.49 |
| 17311179 | Fzd6             | frizzled homolog 6 (Drosophila)   | 15.34 |
| 17547767 |                  |   | 15.12 |
| 17216010 | Gm17415          | predicted gene, 17415 [Source:MGI Symbol;Acc:MGI:4937049]   | 15.06 |
| 17358219 | Mir1192          | microRNA 1192   | 15.06 |
| 17497718 | Ifitm3           | interferon induced transmembrane protein 3  | 15.04 |
| 17516607 | Rps25            | ribosomal protein S25   | 14.89 |
| 17532597 | mt-Tv            | mitochondrially encoded tRNA valine [Source:MGI Symbol;Acc:MGI:102472]  | 14.78 |
| 17391903 |                  |   | 14.47 |
| 17349713 | Ankhd1           | ankyrin repeat and KH domain containing 1   | 14.44 |
| 17367438 | Gm23970          | predicted gene, 23970 [Source:MGI Symbol;Acc:MGI:5453747]   | 14.37 |
| 17245445 | Gm15961          | predicted gene 15961 [Source:MGI Symbol;Acc:MGI:3802142]  | 14.25 |
| 17300119 | Trdv2-2          | T cell receptor delta variable 2-2  | 14.18 |
| 17334819 | 0610011F06Rik    | RIKEN cDNA 0610011F06 gene  | 14.05 |
| 17346311 | 2410015M20Rik    | RIKEN cDNA 2410015M20 gene  | 13.54 |
| 17474983 | Cadm4            | cell adhesion molecule 4  | 13.48 |
| 17340500 | Atp5g2           | ATP synthase, H+ transporting, mitochondrial F0 complex, subunit C2 (subunit 9)                                     | 13.46 |
| 17475671 | Ttc9b            | tetratricopeptide repeat domain 9B  | 13.42 |
| 17288145 | Habp4            | hyaluronic acid binding protein 4   | 13.38 |
| 17402981 | Emcn             | endomucin   | 13.19 |
| 17287454 | Arl10            | ADP-ribosylation factor-like 10   | 13.15 |
| 17452456 | Camkk2           | calcium/calmodulin-dependent protein kinase kinase 2, beta  | 13.1  |
| 17320474 | Sco2; Tymp       | SCO cytochrome oxidase deficient homolog 2 (yeast); thymidine phosphorylase   | 13.09 |
| 17547933 |                  |   | 12.92 |
| 17223277 | Gm6644           | Akr1b3 pseudogene   | 12.85 |
| 17257175 | Crhr1            | corticotropin releasing hormone receptor 1  | 12.79 |
| 17262990 | Sparc            | secreted acidic cysteine rich glycoprotein  | 12.73 |
| 17294338 | Exoc3            | exocyst complex component 3   | 12.68 |
| 17438969 | Pf4              | platelet factor 4   | 12.58 |
| 17400682 | Ankrd35          | ankyrin repeat domain 35  | 12.49 |
| 17479450 | 9330171B17Rik    | RIKEN cDNA 9330171B17 gene [Source:MGI Symbol;Acc:MGI:3696417]  | 12.15 |
| 17279835 | Gm17541          | predicted gene, 17541 [Source:MGI Symbol;Acc:MGI:4937175]   | 12.08 |
| 17304512 | Gm24916          | predicted gene, 24916 [Source:MGI Symbol;Acc:MGI:5454693]   | 11.99 |
| 17388599 | Ttc17            | tetratricopeptide repeat domain 17  | 11.97 |
| 17218377 | Acbd6            | acyl-Coenzyme A binding domain containing 6   | 11.96 |
| 17227278 | Rnpep            | arginyl aminopeptidase (aminopeptidase B)   | 11.95 |
| 17516030 | Tmem218          | transmembrane protein 218   | 11.75 |
| 17514601 | Gm29376          | predicted gene 29376  | 11.73 |
| 17481863 | Mical2           | microtubule associated monooxygenase, calponin and LIM domain containing 2  | 11.71 |
| 17378596 | Gm22759; Gm14251 | predicted gene, 22759 [Source:MGI Symbol;Acc:MGI:5452536]; predicted gene 14251 [Source:MGI Symbol;Acc:MGI:3650992] | 11.66 |
| 17339989 | Rpl21-ps7        | ribosomal protein L21, pseudogene 7 [Source:MGI Symbol;Acc:MGI:3646135]   | 11.65 |
| 17269246 | Krtap4-13        | keratin associated protein 4-13   | 11.59 |
| 17515248 | Carm1            | coactivator-associated arginine methyltransferase 1   | 11.55 |
| 17269638 | Rab5c            | RAB5C, member RAS oncogene family   | 11.51 |
| 17472983 | Gm23456          | predicted gene, 23456 [Source:MGI Symbol;Acc:MGI:5453233]   | 11.45 |
| 17424075 | Gm12396          | predicted gene 12396 [Source:MGI Symbol;Acc:MGI:3649201]  | 11.37 |
| 17295212 | Polk             | polymerase (DNA directed), kappa  | 11.35 |
| 17242842 | Gamt             | guanidinoacetate methyltransferase  | 11.32 |
| 17497811 | Mir210           | microRNA 210  | 11.24 |
| 17494643 | Gm4070           | predicted gene 4070   | 11.22 |

|          |                                 |  |       |
|----------|---------------------------------|--|-------|
| 17358225 | Gm22144                         | predicted gene, 22144 [Source:MGI Symbol;Acc:MGI:5451921]                          | 11.18 |
| 17324436 |                                 |  | 11.05 |
| 17311058 | Gm24771                         | predicted gene, 24771 [Source:MGI Symbol;Acc:MGI:5454548]                          | 11.03 |
| 17488179 | Ltbp4                           | latent transforming growth factor beta binding protein 4                           | 11    |
| 17450527 | Rps15a-ps5                      | ribosomal protein S15A, pseudogene 5   | 10.93 |
| 17493034 |                                 |  | 10.57 |
| 17332447 | Hmgn1                           | high mobility group nucleosomal binding domain 1                                   | 10.54 |
| 17440998 | Ankrd13a                        | ankyrin repeat domain 13a  | 10.5  |
| 17436427 | Maca                            | macrophage erythroblast attacher   | 10.49 |
| 17548616 | Gm6415                          | predicted pseudogene 6415 [Source:MGI Symbol;Acc:MGI:3648526]                      | 10.48 |
| 17360068 | Wbp1l                           | WW domain binding protein 1 like   | 10.42 |
| 17238862 | Syne1                           | spectrin repeat containing, nuclear envelope 1                                     | 10.33 |
| 17415292 | Gm13271                         | predicted gene 13271   | 10.33 |
| 17262836 | Cdc42se2                        | CDC42 small effector 2   | 10.28 |
| 17427117 | Gm16686                         | predicted gene, 16686 [Source:MGI Symbol;Acc:MGI:4439610]                          | 10.26 |
| 17383199 | Rexo4                           | REX4, RNA exonuclease 4 homolog (S. cerevisiae)                                    | 10.24 |
| 17470597 | Slc2a3                          | solute carrier family 2 (facilitated glucose transporter), member 3                | 10.21 |
| 17483337 | Srcap; Tmem265                  | Snf2-related CREBBP activator protein; transmembrane protein 265                   | 10.1  |
| 17402604 | Gm9396                          | predicted gene 9396 [Source:MGI Symbol;Acc:MGI:3645563]                            | 10.09 |
| 17521681 | Gpx1                            | glutathione peroxidase 1   | 10.07 |
| 17224071 | Fn1                             | fibronectin 1  | 10.07 |
| 17356401 | Eif1ad                          | eukaryotic translation initiation factor 1A domain containing                      | 9.96  |
| 17290074 | Rpl34-ps2                       | ribosomal protein L34, pseudogene 2 [Source:MGI Symbol;Acc:MGI:3648994]            | 9.91  |
| 17513603 | Zcchc14                         | zinc finger, CCHC domain containing 14   | 9.88  |
| 17229451 |                                 |  | 9.79  |
| 17457876 | Gstk1                           | glutathione S-transferase kappa 1  | 9.76  |
| 17301582 | Nefl                            | neurofilament, light polypeptide   | 9.72  |
| 17274471 | Iah1                            | isoamyl acetate-hydrolyzing esterase 1 homolog (S. cerevisiae)                     | 9.58  |
| 17279169 | Mark3                           | MAP/microtubule affinity regulating kinase 3                                       | 9.57  |
| 17257085 | Hexim1                          | hexamethylene bis-acetamide inducible 1  | 9.56  |
| 17476637 | Gm5116                          | predicted gene 5116 [Source:MGI Symbol;Acc:MGI:3649164]                            | 9.5   |
| 17405174 | Cog6                            | component of oligomeric golgi complex 6  | 9.49  |
| 17435867 | Tmem214                         | transmembrane protein 214  | 9.43  |
| 17520492 | Xrn1                            | 5-3 exoribonuclease 1  | 9.43  |
| 17333092 | Sft2d1                          | SFT2 domain containing 1   | 9.35  |
| 17463298 | Gm16303                         | predicted gene 16303 [Source:MGI Symbol;Acc:MGI:3826584]                           | 9.3   |
| 17429976 | Thrap3                          | thyroid hormone receptor associated protein 3                                      | 9.29  |
| 17394292 | Neurl2                          | neuralized E3 ubiquitin protein ligase 2   | 9.18  |
| 17550246 |                                 |  | 9.15  |
| 17463031 | Acrbp                           | proacrosin binding protein   | 9.02  |
| 17238866 | Syne1                           | spectrin repeat containing, nuclear envelope 1                                     | 9     |
| 17333932 | Zfp53                           | zinc finger protein 53   | 8.99  |
| 17269206 | Gm14180                         | predicted gene 14180 [Source:MGI Symbol;Acc:MGI:3650017]                           | 8.9   |
| 17326394 | Filip1l                         | filamin A interacting protein 1-like   | 8.89  |
| 17234667 | Pttg1ip                         | pituitary tumor-transforming 1 interacting protein                                 | 8.7   |
| 17271531 | Gm11677                         | predicted gene 11677   | 8.68  |
| 17374045 |                                 |  | 8.54  |
| 17494574 | Gm22504                         | predicted gene, 22504 [Source:MGI Symbol;Acc:MGI:5452281]                          | 8.42  |
| 17323909 | Dvl3                            | dishevelled 3, dsh homolog (Drosophila)  | 8.4   |
| 17382822 | Nacc2                           | nucleus accumbens associated 2, BEN and BTB (POZ) domain containing                | 8.37  |
| 17222096 | Fam168b                         | family with sequence similarity 168, member B                                      | 8.3   |
| 17338637 | Zfp959                          | zinc finger protein 959  | 8.23  |
| 17500808 | Gm6180                          | predicted pseudogene 6180 [Source:MGI Symbol;Acc:MGI:3643972]                      | 8.19  |
| 17378784 | Rprd1b                          | regulation of nuclear pre-mRNA domain containing 1B                                | 8.1   |
| 17304162 | Tmem254b; Tmem254c;<br>Tmem254a | transmembrane protein 254b; transmembrane protein 254c; transmembrane protein 254a | 8.09  |
| 17279528 | Tmem121                         | transmembrane protein 121  | 7.99  |
| 17355825 | Cndp2                           | CNDP dipeptidase 2 (metallopeptidase M20 family)                                   | 7.96  |
| 17437702 | Mir574                          | microRNA 574   | 7.94  |
| 17387514 | Gm19426                         | predicted gene, 19426  | 7.93  |
| 17424850 | Rnf38                           | ring finger protein 38   | 7.85  |
| 17231248 | G0s2                            | G0/G1 switch gene 2  | 7.8   |
| 17500876 | Sorbs2                          | sorbin and SH3 domain containing 2   | 7.73  |
| 17263837 | Epn2                            | epsin 2  | 7.69  |

|          |                |   |      |
|----------|----------------|---|------|
| 17526382 | Kmt2a          | lysine (K)-specific methyltransferase 2A                                      | 7.68 |
| 17301899 | Sucla2;Gm41209 | succinate-Coenzyme A ligase, ADP-forming, beta subunit; predicted gene, 41209 | 7.67 |
| 17540521 | Cfp            | complement factor properdin   | 7.67 |
| 17460405 | Tia1           | cytotoxic granule-associated RNA binding protein 1                            | 7.59 |
| 17320457 | Lmf2           | lipase maturation factor 2  | 7.55 |
| 17495412 | Snord14a;Rps13 | small nucleolar RNA, C/D box 14A; ribosomal protein S13                       | 7.54 |
| 17311796 | Ndufb9         | NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 9                          | 7.52 |
| 17361285 | Syt12          | synaptotagmin XII   | 7.49 |
| 17399333 | Gba            | glucosidase, beta, acid   | 7.47 |
| 17240164 | Rwdd1          | RWD domain containing 1   | 7.45 |
| 17294368 | Pcdc6          | programmed cell death 6   | 7.45 |
| 17341769 | 1600002H07Rik  | RIKEN cDNA 1600002H07 gene  | 7.45 |
| 17289239 | Tbca           | tubulin cofactor A  | 7.36 |
| 17328810 | Dgcr14         | DiGeorge syndrome critical region gene 14                                     | 7.36 |
| 17537722 | HnrnpH2        | heterogeneous nuclear ribonucleoprotein H2                                    | 7.33 |
| 17356897 | Rasgrp2        | RAS, guanyl releasing protein 2   | 7.29 |
| 17449958 | Mir703         | microRNA 703  | 7.27 |
| 17535296 | n-R5s8         | nuclear encoded rRNA 5S 8 [Source:MGI Symbol;Acc:MGI:4421742]                 | 7.26 |
| 17353962 | Fgfl           | fibroblast growth factor 1  | 7.24 |
| 17366338 |                |   | 7.15 |
| 17359344 | Entpd1         | ectonucleoside triphosphate diphosphohydrolase 1                              | 7.14 |
| 17233699 | Rpl27a-ps1     | ribosomal protein L27A, pseudogene 1 [Source:MGI Symbol;Acc:MGI:3645354]      | 7.07 |
| 17406908 | Fdps           | farnesyl diphosphate synthetase   | 7.05 |
| 17327950 | AU021092       | expressed sequence AU021092   | 7    |
| 17422521 | Cfap74         | cilia and flagella associated protein 74                                      | 6.93 |
| 17430354 | Rbbp4          | retinoblastoma binding protein 4  | 6.93 |
| 17474143 | Slc1a5         | solute carrier family 1 (neutral amino acid transporter), member 5            | 6.92 |
| 17289249 | Wdr41          | WD repeat domain 41   | 6.9  |
| 17496397 | Ppp4c          | protein phosphatase 4, catalytic subunit                                      | 6.9  |
| 17237952 | F420014N23Rik  | RIKEN cDNA F420014N23 gene  | 6.86 |
| 17271763 | Cd300lh        | CD300 antigen like family member H  | 6.81 |
| 17302356 | Gm24770        | predicted gene, 24770 [Source:MGI Symbol;Acc:MGI:5454547]                     | 6.8  |
| 17478883 | Mcee           | methylmalonyl CoA epimerase   | 6.8  |
| 17243247 | Mrp154         | mitochondrial ribosomal protein L54   | 6.74 |
| 17216659 | 3110009E18Rik  | RIKEN cDNA 3110009E18 gene  | 6.74 |
| 17303623 |                |   | 6.72 |
| 17250549 | Kcnj12         | potassium inwardly-rectifying channel, subfamily J, member 12                 | 6.71 |
| 17456736 | Ahcy12         | S-adenosylhomocysteine hydrolase-like 2                                       | 6.68 |
| 17405021 | Sc1t1          | sodium channel and clathrin linker 1  | 6.62 |
| 17296943 | Gm10410;Gm8281 | predicted gene 10410; predicted pseudogene 8281                               | 6.6  |
| 17474377 | Nova2          | neuro-oncological ventral antigen 2   | 6.56 |
| 17492066 | Nr2f2          | nuclear receptor subfamily 2, group F, member 2                               | 6.56 |
| 17513995 | Acta1          | actin, alpha 1, skeletal muscle   | 6.51 |
| 17275555 | PsmA6          | proteasome (prosome, macropain) subunit, alpha type 6                         | 6.49 |
| 17237074 | Gm4340         | predicted gene 4340   | 6.44 |
| 17496338 | Il27           | interleukin 27  | 6.39 |
| 17214023 | Gm5528         | predicted gene 5528 [Source:MGI Symbol;Acc:MGI:3643453]                       | 6.38 |
| 17388803 | Cat            | catalase  | 6.37 |
| 17373984 | Imp11          | IMP1 inner mitochondrial membrane peptidase-like (S. cerevisiae)              | 6.36 |
| 17362111 | Esrra;Mir6990  | estrogen related receptor, alpha; microRNA 6990                               | 6.36 |
| 17548806 | Gm14567        | predicted gene 14567 [Source:MGI Symbol;Acc:MGI:3705732]                      | 6.33 |
| 17236739 | Ube2n          | ubiquitin-conjugating enzyme E2N  | 6.31 |
| 17233394 | Smpd13a        | sphingomyelin phosphodiesterase, acid-like 3A                                 | 6.31 |
| 17221792 | Fam135a        | family with sequence similarity 135, member A                                 | 6.28 |
| 17283345 | Smek1          | SMEK homolog 1, suppressor of mek1 (Dictyostelium)                            | 6.25 |
| 17334902 | Gm23123        | predicted gene, 23123 [Source:MGI Symbol;Acc:MGI:5452900]                     | 6.21 |
| 17362689 | Sdhaf2         | succinate dehydrogenase complex assembly factor 2                             | 6.17 |
| 17409953 | Gm4609         | predicted gene 4609 [Source:MGI Symbol;Acc:MGI:3782792]                       | 6.16 |
| 17550412 |                |   | 6.15 |
| 17274389 |                |   | 6.14 |
| 17400630 | Rbm8a          | RNA binding motif protein 8a  | 6.12 |
| 17448021 | Dhx15          | DEAH (Asp-Glu-Ala-His) box polypeptide 15                                     | 6.11 |
| 17342038 | Fahd1          | fumarylacetoacetate hydrolase domain containing 1                             | 6.05 |
| 17366536 | Ccdc3          | coiled-coil domain containing 3   | 6.04 |

|          |                       |   |      |
|----------|-----------------------|---|------|
| 17269210 |                       |   | 6.02 |
| 17446100 | Fam126a               | family with sequence similarity 126, member A   | 6.02 |
| 17242025 | Prmt2; Mir678         | protein arginine N-methyltransferase 2; microRNA 678                                    | 6.01 |
| 17300251 | Abhd4                 | abhydrolase domain containing 4   | 6    |
| 17341619 | Flywch2               | FLYWCH family member 2  | 5.97 |
| 17291653 | Gm5                   | GDP-mannose 4, 6-dehydratase  | 5.94 |
| 17324420 | St6gal1               | beta galactoside alpha 2,6 sialyltransferase 1  | 5.94 |
| 17323138 | Abcc1                 | ATP-binding cassette, sub-family C (CFTR/MRP), member 1                                 | 5.92 |
| 17235597 | Atcayos               | ataxia, cerebellar, Cayman type homolog (human), opposite strand                        | 5.91 |
| 17449647 | Gm15710               | predicted gene 15710 [Source:MGI Symbol;Acc:MGI:3783151]                                | 5.86 |
| 17309099 | Klf12                 | Kruppel-like factor 12  | 5.77 |
| 17467831 | Tmsb10                | thymosin, beta 10   | 5.75 |
| 17474371 | Pglyrp1               | peptidoglycan recognition protein 1   | 5.71 |
| 17366932 | Mir466h               | microRNA 466h   | 5.7  |
| 17224270 | Tmbim1                | transmembrane BAX inhibitor motif containing 1  | 5.7  |
| 17284645 | Ighv1-75              | immunoglobulin heavy variable 1-75  | 5.68 |
| 17470029 | Gm23527               | predicted gene, 23527 [Source:MGI Symbol;Acc:MGI:5453304]                               | 5.66 |
| 17235511 | Gadd45b               | growth arrest and DNA-damage-inducible 45 beta  | 5.6  |
| 17314164 | Mapk8ip2              | mitogen-activated protein kinase 8 interacting protein 2                                | 5.58 |
| 17319588 | Tnfrsf13c             | tumor necrosis factor receptor superfamily, member 13c                                  | 5.57 |
| 17335060 | Itrp3                 | inositol 1,4,5-triphosphate receptor 3  | 5.54 |
| 17479099 | Igf1r                 | insulin-like growth factor I receptor   | 5.53 |
| 17392414 | Dzank1                | double zinc ribbon and ankyrin repeat domains 1   | 5.51 |
| 17387912 | Olfrl1226             | olfactory receptor 1226   | 5.45 |
| 17353169 | Gm9955                | predicted gene 9955 [Source:MGI Symbol;Acc:MGI:3642397]                                 | 5.44 |
| 17361344 | Gm21992; Rbm14        | predicted gene 21992; RNA binding motif protein 14                                      | 5.43 |
| 17431049 | Sfn                   | stratifin   | 5.42 |
| 17399044 | Smg5                  | Smg-5 homolog, nonsense mediated mRNA decay factor (C. elegans)                         | 5.4  |
| 17313322 | L3mbtl2               | l(3)mbt-like 2 (Drosophila)   | 5.38 |
| 17328870 | Zdhhc8                | zinc finger, DHHC domain containing 8   | 5.37 |
| 17515062 | Mrpl4                 | mitochondrial ribosomal protein L4  | 5.36 |
| 17541493 | Enox2                 | ecto-NOX disulfide-thiol exchanger 2  | 5.29 |
| 17266074 | Gemin4; Glod4         | gem (nuclear organelle) associated protein 4; glyoxalase domain containing 4            | 5.27 |
| 17279737 | Rab10                 | RAB10, member RAS oncogene family   | 5.24 |
| 17527421 | Tspan3                | tetraspanin 3   | 5.24 |
| 17443430 | Polr2j                | polymerase (RNA) II (DNA directed) polypeptide J  | 5.22 |
| 17338571 | Kat2b                 | K(lysine) acetyltransferase 2B  | 5.21 |
| 17218765 | Kifap3                | kinesin-associated protein 3  | 5.21 |
| 17246790 | Gatsl3                | GATS protein-like 3   | 5.2  |
| 17361683 | Sipa1                 | signal-induced proliferation associated gene 1  | 5.2  |
| 17289031 | Rps23                 | ribosomal protein S23   | 5.17 |
| 17550192 |                       |   | 5.16 |
| 17286808 | Gm10790               | predicted gene 10790  | 5.16 |
| 17504861 | Ctcf                  | CCCTC-binding factor  | 5.16 |
| 17308280 | Ppp3cc                | protein phosphatase 3, catalytic subunit, gamma isoform                                 | 5.14 |
| 17222020 | Bag2                  | BCL2-associated athanogene 2  | 5.14 |
| 17309457 | Dzip1                 | DAZ interacting protein 1   | 5.14 |
| 17222625 | Tgfbrap1              | transforming growth factor, beta receptor associated protein 1                          | 5.13 |
| 17497303 | Fam196a               | family with sequence similarity 196, member A   | 5.13 |
| 17548012 | Gm6594                | predicted pseudogene 6594 [Source:MGI Symbol;Acc:MGI:3643873]                           | 5.12 |
| 17514355 | Gm10715               | predicted gene 10715 [Source:MGI Symbol;Acc:MGI:3642376]                                | 5.1  |
| 17320854 | LOC102634389; Gm17546 | uncharacterized LOC102634389; predicted gene, 17546 [Source:MGI Symbol;Acc:MGI:4937180] | 5.08 |
| 17418177 | Heyl                  | hairy/enhancer-of-split related with YRPW motif-like                                    | 5.06 |
| 17441540 | Med13l                | mediator complex subunit 13-like  | 4.98 |
| 17532455 | 1110059G10Rik         | RIKEN cDNA 1110059G10 gene  | 4.97 |
| 17463909 | Mgst1                 | microsomal glutathione S-transferase 1  | 4.93 |
| 17512329 | Fam96b                | family with sequence similarity 96, member B  | 4.93 |
| 17400291 | Fam63a                | family with sequence similarity 63, member A  | 4.91 |
| 17483325 | Fbrs                  | fibrosin  | 4.9  |
| 17444778 | Gm3409                | predicted gene 3409   | 4.89 |
| 17502525 | Mir28b                | microRNA 28b  | 4.87 |
| 17275976 | Gm3086                | RuvB-like protein 1 pseudogene  | 4.83 |
| 17357529 | Ddb1                  | damage specific DNA binding protein 1   | 4.82 |

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|----------|---------------------|---|------|
| 17352985 | B4galt6             | UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 6  | 4.81 |
| 17218277 | Nmnat2              | nicotinamide nucleotide adenyltransferase 2   | 4.8  |
| 17430319 | S100pbp             | S100P binding protein   | 4.79 |
| 17242330 | Lrrc3               | leucine rich repeat containing 3  | 4.76 |
| 17273116 | Oxld1               | oxidoreductase like domain containing 1   | 4.75 |
| 17424276 | Enho                | energy homeostasis associated   | 4.74 |
| 17394765 | Gm24327             | predicted gene, 24327 [Source:MGI Symbol;Acc:MGI:5454104]   | 4.73 |
| 17402025 | Dbt                 | dihydrolipoamide branched chain transacylase E2   | 4.72 |
| 17547610 |                     |   | 4.69 |
| 17272095 | H3f3b               | H3 histone, family 3B   | 4.68 |
| 17287576 |                     |   | 4.67 |
| 17533469 | Cypt8; Cypt7; Cypt1 | cysteine-rich perinuclear theca 8; cysteine-rich perinuclear theca 7; cysteine-rich perinuclear theca 1 | 4.67 |
| 17354101 | Dpysl3              | dihydropyrimidinase-like 3  | 4.66 |
| 17319770 | Poldip3             | polymerase (DNA-directed), delta interacting protein 3  | 4.65 |
| 17524170 | Cep295              | centrosomal protein 295   | 4.64 |
| 17432790 | Miip                | migration and invasion inhibitory protein   | 4.62 |
| 17536657 | Foxo4               | forkhead box O4   | 4.62 |
| 17549270 |                     |   | 4.61 |
| 17549306 |                     |   | 4.61 |
| 17439741 | Aff1                | AF4/FMR2 family, member 1   | 4.6  |
| 17423461 | Gm26148             | predicted gene, 26148 [Source:MGI Symbol;Acc:MGI:5455925]   | 4.58 |
| 17549928 |                     |   | 4.56 |
| 17283955 | Gm26906             | predicted gene, 26906 [Source:MGI Symbol;Acc:MGI:5477400]   | 4.55 |
| 17312780 | Gga1                | golgi associated, gamma adaptin ear containing, ARF binding protein 1                                   | 4.55 |
| 17455793 | Gng11               | guanine nucleotide binding protein (G protein), gamma 11  | 4.54 |
| 17257140 | Arhgap27os2         | Rho GTPase activating protein 27, opposite strand 2 [Source:MGI Symbol;Acc:MGI:3650160]                 | 4.51 |
| 17256607 | Ramp2               | receptor (calcitonin) activity modifying protein 2  | 4.5  |
| 17261825 | Mat2b               | methionine adenosyltransferase II, beta   | 4.48 |
| 17517914 | Nptn                | neuroplastin  | 4.46 |
| 17499480 | Kbtbd11             | kelch repeat and BTB (POZ) domain containing 11   | 4.46 |
| 17363893 | Ppp1r2-ps3          | protein phosphatase 1, regulatory (inhibitor) subunit 2, pseudogene 3                                   | 4.46 |
| 17528079 | 2300009A05Rik       | RIKEN cDNA 2300009A05 gene  | 4.46 |
| 17382681 | Gm996               | predicted gene 996  | 4.44 |
| 17441361 | 9530046B11Rik       | RIKEN cDNA 9530046B11 gene [Source:MGI Symbol;Acc:MGI:1925671]  | 4.42 |
| 17304147 | Zcchc24             | zinc finger, CCHC domain containing 24  | 4.41 |
| 17524426 | Fbxl12              | F-box and leucine-rich repeat protein 12  | 4.41 |
| 17322473 | Gm26675             | predicted gene, 26675 [Source:MGI Symbol;Acc:MGI:5477169]   | 4.4  |
| 17252969 | Rilp                | Rab interacting lysosomal protein   | 4.33 |
| 17338200 | Tbcc                | tubulin-specific chaperone C  | 4.33 |
| 17445713 |                     |   | 4.33 |
| 17245661 | Mir378d             | microRNA 378d   | 4.28 |
| 17237033 | Gm25376             | predicted gene, 25376 [Source:MGI Symbol;Acc:MGI:5455153]   | 4.27 |
| 17403237 | Gbp3                | guanylate binding protein 3   | 4.27 |
| 17360004 | Tmem180; Gm36493    | transmembrane protein 180; predicted gene, 36493  | 4.26 |
| 17311199 | Dcaf13              | DDB1 and CUL4 associated factor 13  | 4.24 |
| 17444047 | Elfn1               | leucine rich repeat and fibronectin type III, extracellular 1   | 4.24 |
| 17535191 | Gm23000             | predicted gene, 23000 [Source:MGI Symbol;Acc:MGI:5452777]   | 4.21 |
| 17527993 | LOC102638888        | uncharacterized LOC102638888  | 4.19 |
| 17390424 | Lcmt2               | leucine carboxyl methyltransferase 2  | 4.16 |
| 17371912 | Zak                 | sterile alpha motif and leucine zipper containing kinase AZK  | 4.16 |
| 17539611 | Gpm6b               | glycoprotein m6b  | 4.16 |
| 17435811 | Kcnk3               | potassium channel, subfamily K, member 3  | 4.15 |
| 17269218 | Gm14188             | predicted gene 14188 [Source:MGI Symbol;Acc:MGI:3651817]  | 4.14 |
| 17465365 | Prrt4               | proline-rich transmembrane protein 4  | 4.13 |
| 17215817 | Olfir12             | olfactory receptor 12   | 4.11 |
| 17482719 | Ubf1                | ubiquitin family domain containing 1  | 4.11 |
| 17214433 | Ankzf1              | ankyrin repeat and zinc finger domain containing 1  | 4.09 |
| 17303636 | Rpl15               | ribosomal protein L15   | 4.09 |
| 17304049 | Dlg5                | discs, large homolog 5 (Drosophila)   | 4.08 |
| 17362216 | Nudt22              | nudix (nucleoside diphosphate linked moiety X)-type motif 22  | 4.07 |
| 17531671 | Tmie                | transmembrane inner ear   | 4.05 |
| 17533282 | Mid1ip1             | Mid1 interacting protein 1 (gastrulation specific G12-like (zebrafish))                                 | 4.05 |

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|----------|------------------------|---|------|
| 17294318 | Gm10126                | predicted gene 10126 [Source:MGI Symbol;Acc:MGI:3809072]  | 4.02 |
| 17297913 | Arf4                   | ADP-ribosylation factor 4   | 4.01 |
| 17520146 | Trim43c                | tripartite motif-containing 43C   | 4    |
| 17336036 | Zfp472                 | zinc finger protein 472   | 3.94 |
| 17383540 | Zdhhc12                | zinc finger, DHHC domain containing 12  | 3.94 |
| 17544779 | Rab9b                  | RAB9B, member RAS oncogene family   | 3.94 |
| 17353796 | Taf7                   | TAF7 RNA polymerase II, TATA box binding protein (TBP)-associated factor                        | 3.93 |
| 17498867 | Gm6410                 | predicted gene 6410   | 3.92 |
| 17341631 | Prss33                 | protease, serine 33   | 3.9  |
| 17388901 | D430041D05Rik          | RIKEN cDNA D430041D05 gene  | 3.9  |
| 17418057 | Gm24678                | predicted gene, 24678 [Source:MGI Symbol;Acc:MGI:5454455]                                       | 3.88 |
| 17255949 | Ppp1r1b                | protein phosphatase 1, regulatory (inhibitor) subunit 1B  | 3.87 |
| 17533002 | Mir1198                | microRNA 1198   | 3.86 |
| 17244369 | Gm8580                 | ribosomal protein L29 pseudogene  | 3.83 |
| 17539519 | Pir                    | pirin   | 3.83 |
| 17549564 |                        |   | 3.83 |
| 17549720 |                        |   | 3.83 |
| 17500532 | Gm4889                 | predicted gene 4889 [Source:MGI Symbol;Acc:MGI:3647233]   | 3.82 |
| 17340323 | Foxn2                  | forkhead box N2   | 3.82 |
| 17377621 | Tmem74b                | transmembrane protein 74B   | 3.81 |
| 17222205 | Ankrd39                | ankyrin repeat domain 39  | 3.79 |
| 17451886 | Fbxw8                  | F-box and WD-40 domain protein 8  | 3.79 |
| 17490532 | Scaf1                  | SR-related CTD-associated factor 1  | 3.79 |
| 17309172 | Mycbp2                 | MYC binding protein 2   | 3.78 |
| 17215291 | 3110079015Rik          | RIKEN cDNA 3110079015 gene  | 3.77 |
| 17271719 | Cd300c                 | CD300C antigen  | 3.77 |
| 17447610 | Msx1                   | msh homeobox 1  | 3.76 |
| 17499255 | Cul4a                  | cullin 4A   | 3.76 |
| 17510986 | 2210011C24Rik; Mir1199 | RIKEN cDNA 2210011C24 gene; microRNA 1199   | 3.76 |
| 17294805 | Zcche9                 | zinc finger, CCHC domain containing 9   | 3.75 |
| 17336086 | Adamts10               | a disintegrin-like and metalloproteinase (reprolysin type) with thrombospondin type 1 motif, 10 | 3.74 |
| 17259157 | Endov                  | endonuclease V  | 3.73 |
| 17419718 | E130218I03Rik          | RIKEN cDNA E130218I03 gene  | 3.7  |
| 17236705 | Gm16155                | predicted gene 16155 [Source:MGI Symbol;Acc:MGI:3801971]  | 3.68 |
| 17547769 |                        |   | 3.68 |
| 17268846 | LOC102634154; Gm12356  | uncharacterized LOC102634154; predicted gene 12356 [Source:MGI Symbol;Acc:MGI:3651195]          | 3.67 |
| 17372894 | Olfrl158               | olfactory receptor 1158   | 3.67 |
| 17476620 | Gm6669                 | predicted pseudogene 6669 [Source:MGI Symbol;Acc:MGI:3646884]                                   | 3.67 |
| 17343688 | B3galt4                | UDP-Gal:betaGlcNAc beta 1,3-galactosyltransferase, polypeptide 4                                | 3.66 |
| 17269845 | Becn1                  | beclin 1, autophagy related   | 3.64 |
| 17301849 | Gm16549                | predicted gene 16549 [Source:MGI Symbol;Acc:MGI:4414969]  | 3.62 |
| 17272798 | Cant1                  | calcium activated nucleotidase 1  | 3.61 |
| 17295005 | Bhmt                   | betaine-homocysteine methyltransferase  | 3.6  |
| 17334474 | Spsb3                  | splA/ryanodine receptor domain and SOCS box containing 3  | 3.59 |
| 17431053 | Zdhhc18;Gm13213        | zinc finger, DHHC domain containing 18; predicted gene 13213                                    | 3.58 |
| 17468895 | Chst13                 | carbohydrate (chondroitin 4) sulfotransferase 13  | 3.56 |
| 17328333 | Gm15807                | predicted gene 15807 [Source:MGI Symbol;Acc:MGI:3802044]  | 3.53 |
| 17309345 | Gm6219                 | predicted gene 6219   | 3.5  |
| 17344221 | Csnk2b                 | casein kinase 2, beta polypeptide   | 3.49 |
| 17280315 | Rnf144a                | ring finger protein 144A  | 3.48 |
| 17485528 | Tfpt                   | TCF3 (E2A) fusion partner   | 3.48 |
| 17523279 |                        |   | 3.48 |
| 17374669 | Bahd1                  | bromo adjacent homology domain containing 1   | 3.47 |
| 17393579 | Sla2                   | Src-like-adaptor2   | 3.46 |
| 17460861 | Slc41a3                | solute carrier family 41, member 3  | 3.45 |
| 17448880 | Lnx1                   | ligand of numb-protein X 1  | 3.44 |
| 17405062 | Pabpc4l                | poly(A) binding protein, cytoplasmic 4-like   | 3.44 |
| 17443286 | Por                    | P450 (cytochrome) oxidoreductase  | 3.43 |
| 17388284 | Mdk                    | midkine   | 3.42 |
| 17372013 | Chn1os3                | chimerin 1, opposite strand 3   | 3.42 |
| 17228490 | Fam163a                | family with sequence similarity 163, member A   | 3.4  |
| 17346503 | Tubb4a                 | tubulin, beta 4A class IVA  | 3.4  |

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|----------|-----------------|--|------|
| 17366244 | LOC100041057    | sp110 nuclear body protein-like  | 3.39 |
| 17363156 | Gm22323         | predicted gene, 22323 [Source:MGI Symbol;Acc:MGI:5452100]                              | 3.36 |
| 17363158 | Gm23931         | predicted gene, 23931 [Source:MGI Symbol;Acc:MGI:5453708]                              | 3.36 |
| 17455801 | Col1a2          | collagen, type I, alpha 2  | 3.36 |
| 17458385 | Gimap5          | GTPase, IMAP family member 5   | 3.36 |
| 17492196 | Slco3a1         | solute carrier organic anion transporter family, member 3a1                            | 3.36 |
| 17549488 |                 |  | 3.35 |
| 17301262 | Rp111           | retinitis pigmentosa 1 homolog (human)-like 1  | 3.35 |
| 17358043 | D030056L22Rik   | RIKEN cDNA D030056L22 gene   | 3.35 |
| 17362753 | Cd5             | CD5 antigen  | 3.35 |
| 17382574 | BC029214        | cDNA sequence BC029214   | 3.35 |
| 17238898 | Syne1           | spectrin repeat containing, nuclear envelope 1   | 3.34 |
| 17296174 | Map3k1          | mitogen-activated protein kinase kinase kinase 1                                       | 3.34 |
| 17324303 |                 |  | 3.34 |
| 17407363 | S100a9          | S100 calcium binding protein A9 (calgranulin B)  | 3.34 |
| 17476521 | Tmem147os; Sbsn | transmembrane protein 147, opposite strand; suprabasin                                 | 3.34 |
| 17549792 |                 |  | 3.34 |
| 17367683 | Gm13411         | predicted gene 13411 [Source:MGI Symbol;Acc:MGI:3651013]                               | 3.32 |
| 17377744 | Rem1            | rad and gem related GTP binding protein 1  | 3.32 |
| 17390980 | Shc4            | SHC (Src homology 2 domain containing) family, member 4                                | 3.32 |
| 17446832 | Ucn             | urocortin  | 3.32 |
| 17413191 | Dnajb5          | DnaJ (Hsp40) homolog, subfamily B, member 5  | 3.31 |
| 17217821 | Zfp281          | zinc finger protein 281  | 3.3  |
| 17394679 | Ptgis           | prostaglandin I2 (prostacyclin) synthase   | 3.3  |
| 17273948 | Sdc1            | syndecan 1   | 3.29 |
| 17393743 | Ghrh            | growth hormone releasing hormone   | 3.28 |
| 17421571 | Mad2l2          | MAD2 mitotic arrest deficient-like 2   | 3.28 |
| 17248406 | Gm12121         | predicted gene 12121   | 3.27 |
| 17236733 | 5730420D15Rik   | RIKEN cDNA 5730420D15 gene   | 3.27 |
| 17283380 | Fbln5           | fibulin 5  | 3.27 |
| 17434087 | LOC100043918    | C-C motif chemokine 19-like  | 3.27 |
| 17531001 | Sema3f          | sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3F | 3.25 |
| 17405463 | P2ry14          | purinergic receptor P2Y, G-protein coupled, 14   | 3.24 |
| 17459960 | Rtkn            | roctekin   | 3.23 |
| 17467527 | Gm24096         | predicted gene, 24096 [Source:MGI Symbol;Acc:MGI:5453873]                              | 3.22 |
| 17501818 | Borcs8          | BLOC-1 related complex subunit 8   | 3.22 |
| 17313647 | Bik             | BCL2-interacting killer  | 3.21 |
| 17449718 | Cxcl10          | chemokine (C-X-C motif) ligand 10  | 3.21 |
| 17397120 | Bbs12           | Bardet-Biedl syndrome 12 (human)   | 3.2  |
| 17508775 | Gm16793         | predicted gene, 16793  | 3.2  |
| 17356425 | Gm25432         | predicted gene, 25432  | 3.18 |
| 17428702 | Mmachc          | methylmalonic aciduria cblC type, with homocystinuria                                  | 3.18 |
| 17350790 | Prrc1           | proline-rich coiled-coil 1   | 3.17 |
| 17289860 | Gm15323;Gm15322 | predicted gene 15323; predicted gene 15322   | 3.16 |
| 17357389 | Ahnak           | AHNAK nucleoprotein (desmoyokin)   | 3.16 |
| 17231188 | Diexf           | digestive organ expansion factor homolog (zebrafish)                                   | 3.15 |
| 17320337 | Plxnb2          | plexin B2  | 3.15 |
| 17513965 | Dbn1d1          | dysbindin (dystrobrevin binding protein 1) domain containing 1                         | 3.15 |
| 17483007 | Sbk1            | SH3-binding kinase 1   | 3.14 |
| 17243252 | Tjp3            | tight junction protein 3   | 3.13 |
| 17347505 | Dhx57           | DEAH (Asp-Glu-Ala-Asp/His) box polypeptide 57  | 3.13 |
| 17518109 | Uaca            | uveal autoantigen with coiled-coil domains and ankyrin repeats                         | 3.13 |
| 17547998 |                 |  | 3.13 |
| 17384008 | Cfap157         | cilia and flagella associated protein 157  | 3.12 |
| 17549368 |                 |  | 3.12 |
| 17549746 |                 |  | 3.12 |
| 17301061 | Mipep           | mitochondrial intermediate peptidase   | 3.11 |
| 17406433 | Prss48          | protease, serine 48  | 3.11 |
| 17326844 | Gm25715         | predicted gene, 25715 [Source:MGI Symbol;Acc:MGI:5455492]                              | 3.1  |
| 17242531 | Gm9978          | predicted gene 9978 [Source:MGI Symbol;Acc:MGI:3641806]                                | 3.09 |
| 17336322 | Rxb             | retinoid X receptor beta   | 3.09 |
| 17490282 | Pold1           | polymerase (DNA directed), delta 1, catalytic subunit                                  | 3.09 |
| 17548561 | Hist4h4         | histone cluster 4, H4  | 3.09 |



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| 17415835 | Ror1                  | receptor tyrosine kinase-like orphan receptor 1  | 3.07 |
| 17451952 | Gm10390               | predicted gene 10390   | 3.07 |
| 17224395 | Mir375                | microRNA 375   | 3.06 |
| 17379427 | Dbnnd2                | dysbindin (dystrobrevin binding protein 1) domain containing 2                                 | 3.06 |
| 17270684 | 10-Mar                | membrane-associated ring finger (C3HC4) 10   | 3.05 |
| 17451649 | Acads                 | acyl-Coenzyme A dehydrogenase, short chain   | 3.05 |
| 17256323 | Krtap31-1             | keratin associated protein 31-1  | 3.04 |
| 17531939 | Gpd1l                 | glycerol-3-phosphate dehydrogenase 1-like  | 3.03 |
| 17343672 |                       |  | 3.02 |
| 17258093 | Gpre5c                | G protein-coupled receptor, family C, group 5, member C  | 3.01 |
| 17432347 | Fhad1                 | forkhead-associated (FHA) phosphopeptide binding domain 1                                      | 3.01 |
| 17461312 | Trnt1                 | tRNA nucleotidyl transferase, CCA-adding, 1  | 3.01 |
| 17506949 | Pard3                 | par-3 family cell polarity regulator   | 3.01 |
| 17476443 | Arhgap33os            | Rho GTPase activating protein 33, opposite strand  | 3    |
| 17432082 | Crocc                 | ciliary rootlet coiled-coil, rootletin   | 2.99 |
| 17548369 | LOC102637947; Gm13035 | 60S acidic ribosomal protein P1-like; predicted gene 13035 [Source:MGI Symbol;Acc:MGI:3650251] | 2.98 |
| 17397497 | Foxo1                 | forkhead box O1  | 2.98 |
| 17300565 | Rnf31                 | ring finger protein 31   | 2.98 |
| 17395640 | B230312C02Rik         | RIKEN cDNA B230312C02 gene   | 2.98 |
| 17439897 | Gm26519               | predicted gene, 26519  | 2.98 |
| 17450952 | Gtpbp6                | GTP binding protein 6 (putative)   | 2.97 |
| 17324619 | 4632428C04Rik         | RIKEN cDNA 4632428C04 gene   | 2.96 |
| 17500060 | Mir486                | microRNA 486   | 2.96 |
| 17529358 | Gm5619                | predicted gene 5619 [Source:MGI Symbol;Acc:MGI:3643807]  | 2.96 |
| 17293961 | Zfp429                | zinc finger protein 429  | 2.95 |
| 17313998 | Creld2                | cysteine-rich with EGF-like domains 2  | 2.95 |
| 17227532 | Gm23534               | predicted gene, 23534 [Source:MGI Symbol;Acc:MGI:5453311]                                      | 2.94 |
| 17321094 | Col2a1                | collagen, type II, alpha 1   | 2.94 |
| 17547682 |                       |  | 2.94 |
| 17320163 | Brd1                  | bromodomain containing 1   | 2.93 |
| 17299196 |                       |  | 2.92 |
| 17273276 | Gm17178               | predicted gene 17178 [Source:MGI Symbol;Acc:MGI:4938005]                                       | 2.91 |
| 17247064 | Gm11967               | predicted gene 11967   | 2.9  |
| 17309118 | Tbc1d4                | TBC1 domain family, member 4   | 2.89 |
| 17380199 | Rbm38                 | RNA binding motif protein 38   | 2.89 |
| 17279427 | Btbd6                 | BTB (POZ) domain containing 6  | 2.88 |
| 17242700 | Prss57                | protease, serine 57  | 2.88 |
| 17276743 | Plekhh1               | pleckstrin homology domain containing, family H (with MyTH4 domain) member 1                   | 2.88 |
| 17301852 | Gm9199                | glycine cleavage system protein H (aminomethyl carrier) pseudogene                             | 2.88 |
| 17322507 | Dnase1                | deoxyribonuclease I  | 2.88 |
| 17382767 | Sohlh1                | spermatogenesis and oogenesis specific basic helix-loop-helix 1                                | 2.88 |
| 17407716 | Tnfaip8l2             | tumor necrosis factor, alpha-induced protein 8-like 2  | 2.88 |
| 17427767 | Gm26047               | predicted gene, 26047 [Source:MGI Symbol;Acc:MGI:5455824]                                      | 2.88 |
| 17432674 | Tnfrsf1b              | tumor necrosis factor receptor superfamily, member 1b  | 2.88 |
| 17403806 | Erich3                | glutamate rich 3   | 2.87 |
| 17234711 | Gm10142               | predicted gene 10142   | 2.87 |
| 17382384 | Tor4a                 | torsin family 4, member A  | 2.87 |
| 17480566 | n-R5s156              | nuclear encoded rRNA 5S 156 [Source:MGI Symbol;Acc:MGI:4422019]                                | 2.87 |
| 17544969 | Col4a6                | collagen, type IV, alpha 6   | 2.86 |
| 17266424 | Foxn1                 | forkhead box N1  | 2.85 |
| 17500301 | Adgra2                | adhesion G protein-coupled receptor A2   | 2.85 |
| 17545075 | Gm15032               | predicted gene 15032   | 2.85 |
| 17339079 | Gm24813               | predicted gene, 24813 [Source:MGI Symbol;Acc:MGI:5454590]                                      | 2.84 |
| 17258041 | Dnaic2                | dynein, axonemal, intermediate chain 2   | 2.84 |
| 17336681 | Tnxb                  | tenascin XB  | 2.84 |
| 17398571 | Tmem154               | transmembrane protein 154  | 2.83 |
| 17491699 | Mir344d-2             | microRNA 344d-2  | 2.82 |
| 17232800 | Gm25526               | predicted gene, 25526 [Source:MGI Symbol;Acc:MGI:5455303]                                      | 2.81 |
| 17295981 | Fam159b               | family with sequence similarity 159, member B  | 2.81 |
| 17418976 | Sync                  | syncollin  | 2.81 |
| 17476535 | Dmkn                  | dermokine  | 2.81 |
| 17286905 | Cd83                  | CD83 antigen   | 2.8  |
| 17374632 | Knstrn                | kinetochore-localized astrin/SPAG5 binding   | 2.8  |

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| 17510462 | Cyp4f18                        | cytochrome P450, family 4, subfamily f, polypeptide 18   | 2.8  |
| 17224614 | Gm15178                        | predicted gene 15178 [Source:MGI Symbol;Acc:MGI:3705132]   | 2.78 |
| 17408088 |                                |  | 2.78 |
| 17264363 | Usp43                          | ubiquitin specific peptidase 43  | 2.77 |
| 17248646 | Gm12153                        | predicted gene 12153   | 2.77 |
| 17418271 | Fhl3                           | four and a half LIM domains 3  | 2.77 |
| 17427401 | Cyp2j9                         | cytochrome P450, family 2, subfamily j, polypeptide 9  | 2.77 |
| 17500289 | Prosc                          | proline synthetase co-transcribed  | 2.77 |
| 17494117 | Trim68                         | tripartite motif-containing 68   | 2.76 |
| 17232731 | Rnu3a                          | U3A small nuclear RNA  | 2.76 |
| 17548398 |                                |  | 2.76 |
| 17415897 | Raver2                         | ribonucleoprotein, PTB-binding 2   | 2.75 |
| 17357914 | Olfrl467                       | olfactory receptor 1467  | 2.74 |
| 17371990 | Gm13703                        | predicted gene 13703 [Source:MGI Symbol;Acc:MGI:3651307]   | 2.74 |
| 17440342 | Gm15446                        | predicted gene 15446   | 2.73 |
| 17339499 | Snord53                        | small nucleolar RNA, C/D box 53  | 2.72 |
| 17430270 | Tlr12                          | toll-like receptor 12  | 2.72 |
| 17516617 | LOC102641249;<br>C030014I23Rik | uncharacterized LOC102641249; RIKEN cDNA C030014I23 gene [Source:MGI Symbol;Acc:MGI:1924631]                     | 2.72 |
| 17341803 | Abca17                         | ATP-binding cassette, sub-family A (ABC1), member 17   | 2.71 |
| 17379533 | Snx21                          | sorting nexin family member 21   | 2.71 |
| 17444027 | Unx                            | UNC homeobox   | 2.71 |
| 17455962 | C1galt1                        | core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1                              | 2.71 |
| 17351465 | Tubb6                          | tubulin, beta 6 class V  | 2.7  |
| 17404230 | Gm5150                         | predicted gene 5150  | 2.7  |
| 17450989 | Pxmp2                          | peroxisomal membrane protein 2   | 2.7  |
| 17549366 |                                |  | 2.7  |
| 17549760 |                                |  | 2.7  |
| 17306625 | Zfhx2                          | zinc finger homeobox 2   | 2.68 |
| 17547141 | Gm20994                        | predicted gene, 20994  | 2.68 |
| 17292562 | Sema4d                         | sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4D | 2.67 |
| 17253937 | Rhbdl3                         | rhomboid, veinlet-like 3 (Drosophila)  | 2.67 |
| 17309011 | Gm24127                        | predicted gene, 24127 [Source:MGI Symbol;Acc:MGI:5453904]  | 2.67 |
| 17352114 |                                |  | 2.67 |
| 17352116 |                                |  | 2.67 |
| 17457892 | Casp2                          | caspase 2  | 2.67 |
| 17548456 |                                |  | 2.67 |
| 17326814 | Gm25908                        | predicted gene, 25908 [Source:MGI Symbol;Acc:MGI:5455685]  | 2.66 |
| 17547656 |                                |  | 2.66 |
| 17248992 | Flt4                           | FMS-like tyrosine kinase 4   | 2.66 |
| 17461112 |                                |  | 2.66 |
| 17547652 |                                |  | 2.66 |
| 17271158 | Cacng5                         | calcium channel, voltage-dependent, gamma subunit 5  | 2.65 |
| 17348666 | 4933424G05Rik                  | RIKEN cDNA 4933424G05 gene   | 2.65 |
| 17401345 | Ppm1j                          | protein phosphatase 1J   | 2.65 |
| 17547475 |                                |  | 2.65 |
| 17548553 |                                |  | 2.65 |
| 17365566 |                                |  | 2.64 |
| 17525836 | Gm16095                        | predicted gene 16095 [Source:MGI Symbol;Acc:MGI:3801984]   | 2.63 |
| 17538281 | Gm15295                        | predicted gene 15295 [Source:MGI Symbol;Acc:MGI:3705286]   | 2.63 |
| 17485943 | Shisa7                         | shisa family member 7  | 2.62 |
| 17245044 | Tmem19                         | transmembrane protein 19   | 2.62 |
| 17319150 | Baiap212                       | BAI1-associated protein 2-like 2   | 2.62 |
| 17438903 | Afp                            | alpha fetoprotein  | 2.62 |
| 17440361 | Plcx1                          | phosphatidylinositol-specific phospholipase C, X domain containing 1   | 2.6  |
| 17219182 |                                |  | 2.6  |
| 17474544 | 1700058P15Rik                  | RIKEN cDNA 1700058P15 gene [Source:MGI Symbol;Acc:MGI:1920627]   | 2.6  |
| 17355139 | Gm19784                        | predicted gene, 19784  | 2.59 |
| 17415375 | Gm12603                        | predicted gene 12603   | 2.59 |
| 17550442 |                                |  | 2.59 |
| 17221934 | Gm9898                         | predicted gene 9898 [Source:MGI Symbol;Acc:MGI:3642391]  | 2.58 |
| 17411871 | 1700123M08Rik                  | RIKEN cDNA 1700123M08 gene   | 2.57 |
| 17487249 | Mark4                          | MAP/microtubule affinity regulating kinase 4   | 2.56 |

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| 17255626 | Skap1; Gm38448        | src family associated phosphoprotein 1; predicted gene, 38448                          | 2.56 |
| 17267482 | Gm22883               | predicted gene, 22883 [Source:MGI Symbol;Acc:MGI:5452660]                              | 2.56 |
| 17365690 | Gm10197               | predicted gene 10197 [Source:MGI Symbol;Acc:MGI:3704501]                               | 2.56 |
| 17526923 | Hspb2                 | heat shock protein 2   | 2.56 |
| 17341712 | Amdhd2                | amidohydrolase domain containing 2   | 2.55 |
| 17459327 | Igkv2-116             | immunoglobulin kappa variable 2-116  | 2.55 |
| 17466386 | Fam131b               | family with sequence similarity 131, member B  | 2.54 |
| 17272785 | Lgals3bp              | lectin, galactoside-binding, soluble, 3 binding protein                                | 2.54 |
| 17392549 | 9030622O22Rik         | RIKEN cDNA 9030622O22 gene   | 2.54 |
| 17402410 |                       |  | 2.54 |
| 17444851 | D5Erd605e             | DNA segment, Chr 5, ERATO Doi 605, expressed   | 2.54 |
| 17299575 | Ang; Rnase4           | angiogenin, ribonuclease, RNase A family, 5; ribonuclease, RNase A family 4            | 2.53 |
| 17327450 | Kcnj15                | potassium inwardly-rectifying channel, subfamily J, member 15                          | 2.53 |
| 17396349 | Spata16               | spermatogenesis associated 16  | 2.53 |
| 17293465 |                       |  | 2.52 |
| 17361558 | Sart1                 | squamous cell carcinoma antigen recognized by T cells 1                                | 2.52 |
| 17425384 | Gm12514               | predicted gene 12514   | 2.52 |
| 17521014 | Acad11                | acyl-Coenzyme A dehydrogenase family, member 11  | 2.52 |
| 17545904 |                       |  | 2.51 |
| 17301108 | Arl11                 | ADP-ribosylation factor-like 11  | 2.51 |
| 17265062 | 2810408A11Rik         | RIKEN cDNA 2810408A11 gene   | 2.51 |
| 17344728 | H2-M10.1              | histocompatibility 2, M region locus 10.1  | 2.51 |
| 17428223 | Dmrta2os              | doublesex and mab-3 related transcription factor like family A2, opposite strand       | 2.51 |
| 17471270 | 9330102E08Rik         | RIKEN cDNA 9330102E08 gene   | 2.51 |
| 17538141 | Pih1h3b               | PIH1 domain containing 3B  | 2.51 |
| 17233032 | 1700027J07Rik         | RIKEN cDNA 1700027J07 gene   | 2.5  |
| 17458669 | 9430076C15Rik; Creb5  | RIKEN cDNA 9430076C15 gene; cAMP responsive element binding protein 5                  | 2.5  |
| 17365106 | Sec31b                | Sec31 homolog B (S. cerevisiae)  | 2.49 |
| 17425855 | Inip                  | INTS3 and NABP interacting protein   | 2.49 |
| 17492495 | Cib1                  | calcium and integrin binding 1 (calmyrin)  | 2.49 |
| 17530884 | Hemk1                 | HemK methyltransferase family member 1   | 2.48 |
| 17305738 | Gm10101               | predicted gene 10101 [Source:MGI Symbol;Acc:MGI:3641713]                               | 2.47 |
| 17326905 | 2810407A14Rik         | RIKEN cDNA 2810407A14 gene [Source:MGI Symbol;Acc:MGI:1917461]                         | 2.47 |
| 17407452 | Lce1f                 | late cornified envelope 1F   | 2.47 |
| 17473779 | Zfp128                | zinc finger protein 128  | 2.47 |
| 17509315 | Tenm3                 | teneurin transmembrane protein 3   | 2.47 |
| 17532409 | Cyp8b1                | cytochrome P450, family 8, subfamily b, polypeptide 1                                  | 2.47 |
| 17235211 | Midn                  | midnolin   | 2.46 |
| 17252800 | Mettl16               | methyltransferase like 16  | 2.46 |
| 17280287 | 9030624G23Rik         | RIKEN cDNA 9030624G23 gene   | 2.46 |
| 17321811 | Figl2                 | figletin-like 2  | 2.46 |
| 17365193 | Lbx1                  | ladybird homeobox homolog 1 (Drosophila)   | 2.46 |
| 17485497 | Nlrp12                | NLR family, pyrin domain containing 12   | 2.46 |
| 17284105 | Gm10425               | predicted gene 10425 [Source:MGI Symbol;Acc:MGI:3642471]                               | 2.45 |
| 17320553 | LOC105246018; Gm15609 | uncharacterized LOC105246018; predicted gene 15609 [Source:MGI Symbol;Acc:MGI:3783055] | 2.45 |
| 17426890 | Psip1                 | PC4 and SFRS1 interacting protein 1  | 2.45 |
| 17427792 | Tmem61                | transmembrane protein 61   | 2.45 |
| 17218736 | Vamp4                 | vesicle-associated membrane protein 4  | 2.44 |
| 17527694 | Loxl1                 | lysyl oxidase-like 1   | 2.44 |
| 17214899 | Gm7609                | predicted pseudogene 7609  | 2.43 |
| 17237681 | 9230105E05Rik         | RIKEN cDNA 9230105E05 gene   | 2.43 |
| 17250855 | 9630013K17Rik         | RIKEN cDNA 9630013K17 gene   | 2.43 |
| 17266882 | LOC102635154          | uncharacterized LOC102635154   | 2.43 |
| 17312260 | Rhpn1                 | rhophilin, Rho GTPase binding protein 1  | 2.43 |
| 17454627 | Card11                | caspase recruitment domain family, member 11   | 2.43 |
| 17516915 | Apoa5                 | apolipoprotein A-V   | 2.43 |
| 17519898 | Sh3bgrl2              | SH3 domain binding glutamic acid-rich protein like 2                                   | 2.43 |
| 17305105 | 4930596D02Rik         | RIKEN cDNA 4930596D02 gene   | 2.42 |
| 17332804 | Synj2                 | synaptojanin 2   | 2.42 |
| 17440971 | Gm13790               | predicted gene 13790   | 2.42 |
| 17467040 | Crhr2                 | corticotropin releasing hormone receptor 2   | 2.42 |
| 17485932 | Tmem238               | transmembrane protein 238  | 2.42 |
| 17221923 | n-R5s209              | nuclear encoded rRNA 5S 209 [Source:MGI Symbol;Acc:MGI:4422074]                        | 2.41 |

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| 17365718 | Gm16299        | predicted gene 16299  | 2.41 |
| 17274942 | Efcab10        | EF-hand calcium binding domain 10   | 2.41 |
| 17338286 | Usp49          | ubiquitin specific peptidase 49   | 2.41 |
| 17502583 | Mcm5           | minichromosome maintenance deficient 5, cell division cycle 46 (S. cerevisiae)      | 2.41 |
| 17224386 | Cryba2         | crystallin, beta A2   | 2.4  |
| 17300591 | Irf9           | interferon regulatory factor 9  | 2.4  |
| 17338245 | Guca1b         | guanylate cyclase activator 1B  | 2.4  |
| 17414348 | Gm12536        | predicted gene 12536  | 2.4  |
| 17221197 | Tcf24          | transcription factor 24   | 2.39 |
| 17265277 | Vmol           | vitelline membrane outer layer 1 homolog (chicken)                                  | 2.39 |
| 17272174 | Trim65; Trim47 | tripartite motif-containing 65; tripartite motif-containing 47                      | 2.39 |
| 17250089 | Olfir322       | olfactory receptor 322  | 2.38 |
| 17267446 | Smg8           | smg-8 homolog, nonsense mediated mRNA decay factor (C. elegans)                     | 2.38 |
| 17389467 | Grem1          | gremlin 1   | 2.38 |
| 17255372 | Fam117a        | family with sequence similarity 117, member A                                       | 2.37 |
| 17272509 | Mxra7          | matrix-remodelling associated 7   | 2.37 |
| 17284527 | Ighv1-18       | immunoglobulin heavy variable V1-18   | 2.37 |
| 17301576 | Gnrh1          | gonadotropin releasing hormone 1  | 2.37 |
| 17317284 | Anxa13         | annexin A13   | 2.37 |
| 17382603 | Lcn12          | lipocalin 12  | 2.37 |
| 17382737 | Fcna           | ficolin A   | 2.37 |
| 17447689 | Zfp518b        | zinc finger protein 518B  | 2.37 |
| 17472530 | Kcnj8          | potassium inwardly-rectifying channel, subfamily J, member 8                        | 2.37 |
| 17378035 | Bpifb6         | BPI fold containing family B, member 6  | 2.36 |
| 17309157 | 4933432I03Rik  | RIKEN cDNA 4933432I03 gene  | 2.36 |
| 17325044 | Slc12a8        | solute carrier family 12 (potassium/chloride transporters), member 8                | 2.36 |
| 17471062 | Tapbpl         | TAP binding protein-like  | 2.36 |
| 17492051 | Arcdc4         | arrestin domain containing 4  | 2.36 |
| 17505934 | Gm15395        | predicted gene 15395  | 2.36 |
| 17546620 | Gm28890        | predicted gene 28890 [Source:MGI Symbol;Acc:MGI:5579596]                            | 2.36 |
| 17406358 | 4930565D16Rik  | RIKEN cDNA 4930565D16 gene  | 2.35 |
| 17489441 | Hpn            | hepsin  | 2.35 |
| 17474676 | Gm16175        | predicted gene 16175 [Source:MGI Symbol;Acc:MGI:3801805]                            | 2.34 |
| 17283303 | Ccdc88c        | coiled-coil domain containing 88C   | 2.34 |
| 17315422 | Amhr2          | anti-Mullerian hormone type 2 receptor  | 2.34 |
| 17332107 | 4932438H23Rik  | RIKEN cDNA 4932438H23 gene  | 2.34 |
| 17365861 | Gm6990         | predicted pseudogene 6990 [Source:MGI Symbol;Acc:MGI:3648860]                       | 2.34 |
| 17454659 | Gm16036        | predicted gene 16036  | 2.34 |
| 17489813 | Pcdc5          | programmed cell death 5   | 2.34 |
| 17545179 | Gm26151        | predicted gene, 26151 [Source:MGI Symbol;Acc:MGI:5455928]                           | 2.34 |
| 17435660 | Nom1           | nucleolar protein with MIF4G domain 1   | 2.33 |
| 17229162 | Gm16548        | predicted gene 16548  | 2.33 |
| 17344322 | Nkfbil1        | nuclear factor of kappa light polypeptide gene enhancer in B cells inhibitor like 1 | 2.33 |
| 17440885 | Myo1h          | myosin 1H   | 2.33 |
| 17476349 | Syne4          | spectrin repeat containing, nuclear envelope family member 4                        | 2.33 |
| 17515869 | Gm23702        | predicted gene, 23702 [Source:MGI Symbol;Acc:MGI:5453479]                           | 2.32 |
| 17242232 | Col18a1        | collagen, type XVIII, alpha 1   | 2.32 |
| 17354463 | 3-Mar          | membrane-associated ring finger (C3HC4) 3   | 2.32 |
| 17232112 | C920009B18Rik  | RIKEN cDNA C920009B18 gene  | 2.31 |
| 17282932 |                |   | 2.31 |
| 17302376 | Pibf1          | progesterone immunomodulatory binding factor 1                                      | 2.31 |
| 17381617 | Gm13261        | predicted gene 13261  | 2.31 |
| 17389672 | Gm13985        | predicted gene 13985  | 2.31 |
| 17425010 | Gm12446        | predicted gene 12446 [Source:MGI Symbol;Acc:MGI:3651433]                            | 2.31 |
| 17444016 | Gper1          | G protein-coupled estrogen receptor 1   | 2.31 |
| 17447646 | Slc2a9         | solute carrier family 2 (facilitated glucose transporter), member 9                 | 2.31 |
| 17549848 |                |   | 2.31 |
| 17391909 | 5330413P13Rik  | RIKEN cDNA 5330413P13 gene  | 2.3  |
| 17305198 | Sh2d4b         | SH2 domain containing 4B  | 2.3  |
| 17305143 | Cdhr1          | cadherin-related family member 1  | 2.3  |
| 17454915 | Gm17135        | predicted gene 17135 [Source:MGI Symbol;Acc:MGI:4937962]                            | 2.3  |
| 17456285 | Lsm8           | LSM8 homolog, U6 small nuclear RNA associated (S. cerevisiae)                       | 2.3  |
| 17549252 |                |   | 2.3  |
| 17329774 | 0610012G03Rik  | RIKEN cDNA 0610012G03 gene  | 2.29 |

|          |                      |   |      |
|----------|----------------------|---|------|
| 17335281 | Def6                 | differentially expressed in FDCP 6  | 2.29 |
| 17473985 | Obox4-ps33           | oocyte specific homeobox 4, pseudogene 33   | 2.29 |
| 17539210 | Sh3kbp1              | SH3-domain kinase binding protein 1   | 2.29 |
| 17549006 |                      |   | 2.29 |
| 17549134 |                      |   | 2.29 |
| 17389962 | Rpap1                | RNA polymerase II associated protein 1  | 2.28 |
| 17243379 | S1pr4                | sphingosine-1-phosphate receptor 4  | 2.28 |
| 17376856 | Gm14055              | predicted gene 14055  | 2.28 |
| 17381457 | Echdc3               | enoyl Coenzyme A hydratase domain containing 3  | 2.28 |
| 17422764 | Cpsf3l               | cleavage and polyadenylation specific factor 3-like                                   | 2.28 |
| 17427081 | C87499               | expressed sequence C87499   | 2.28 |
| 17454687 | Papolb               | poly (A) polymerase beta (testis specific)  | 2.28 |
| 17471464 | Klrb1b               | killer cell lectin-like receptor subfamily B member 1B                                | 2.28 |
| 17514566 | Mmp27                | matrix metalloproteinase 27   | 2.28 |
| 17297189 | Gm11100              | predicted gene 11100  | 2.27 |
| 17460707 | 4933427D06Rik        | RIKEN cDNA 4933427D06 gene  | 2.27 |
| 17484789 | Rass7                | Ras association (RalGDS/AF-6) domain family (N-terminal) member 7                     | 2.27 |
| 17511534 | Snx20                | sorting nexin 20  | 2.27 |
| 17304740 | Sh3bp5               | SH3-domain binding protein 5 (BTK-associated)   | 2.26 |
| 17306906 | Ripk3                | receptor-interacting serine-threonine kinase 3  | 2.26 |
| 17217789 | Kif14                | kinesin family member 14  | 2.26 |
| 17241257 | Col13a1              | collagen, type XIII, alpha 1  | 2.26 |
| 17248249 | Mpg                  | N-methylpurine-DNA glycosylase  | 2.26 |
| 17249168 | Gm26542              | predicted gene, 26542 [Source:MGI Symbol;Acc:MGI:5477036]                             | 2.26 |
| 17300149 | Traj52               | T cell receptor alpha joining 52  | 2.26 |
| 17302213 | Mtrf1                | mitochondrial translational release factor 1  | 2.26 |
| 17333891 | Gm7736               | predicted gene 7736 [Source:MGI Symbol;Acc:MGI:3647086]                               | 2.26 |
| 17413847 | Gm16731              | predicted gene, 16731   | 2.26 |
| 17451622 | Gm9936               | predicted gene 9936   | 2.26 |
| 17497313 | Gm24581              | predicted gene, 24581 [Source:MGI Symbol;Acc:MGI:5454358]                             | 2.26 |
| 17549066 |                      |   | 2.26 |
| 17413339 | Ccdc107              | coiled-coil domain containing 107   | 2.25 |
| 17509537 | Palld                | palladin, cytoskeletal associated protein   | 2.25 |
| 17535627 | Abcd1                | ATP-binding cassette, sub-family D (ALD), member 1                                    | 2.25 |
| 17352401 | Map3k8               | mitogen-activated protein kinase kinase kinase 8                                      | 2.24 |
| 17360731 | Gm10007              | predicted gene 10007  | 2.24 |
| 17396205 | Mtfr1                | mitochondrial fission regulator 1   | 2.24 |
| 17405746 | Rarres1              | retinoic acid receptor responder (tazarotene induced) 1                               | 2.24 |
| 17469016 | Wnt7a                | wingless-type MMTV integration site family, member 7A                                 | 2.24 |
| 17252038 | Zmynd15              | zinc finger, MYND-type containing 15  | 2.23 |
| 17347896 | Gm24648              | predicted gene, 24648 [Source:MGI Symbol;Acc:MGI:5454425]                             | 2.23 |
| 17378216 | Cbfa2t2              | core-binding factor, runt domain, alpha subunit 2, translocated to, 2 (human)         | 2.23 |
| 17395182 | Gm14617              | predicted gene 14617 [Source:MGI Symbol;Acc:MGI:3705092]                              | 2.23 |
| 17427441 | Gm10192              | predicted gene 10192 [Source:MGI Symbol;Acc:MGI:3642867]                              | 2.23 |
| 17433461 | Hes3                 | hairy and enhancer of split 3 (Drosophila)  | 2.23 |
| 17439464 | Anxa3                | annexin A3  | 2.23 |
| 17492179 | Gm10619              | predicted gene 10619  | 2.23 |
| 17549920 |                      |   | 2.23 |
| 17280431 | Tpo                  | thyroid peroxidase  | 2.22 |
| 17305585 | Ptgdr                | prostaglandin D receptor  | 2.22 |
| 17390561 | Catsper2             | cation channel, sperm associated 2  | 2.22 |
| 17518563 | Rasl12               | RAS-like, family 12   | 2.22 |
| 17384202 | 9430024E24Rik        | RIKEN cDNA 9430024E24 gene  | 2.21 |
| 17217232 | Tmem81               | transmembrane protein 81  | 2.21 |
| 17221436 | Sbspon               | somatomedin B and thrombospondin, type 1 domain containing                            | 2.21 |
| 17252995 | Slc43a2              | solute carrier family 43, member 2  | 2.21 |
| 17341365 | Zfp820               | zinc finger protein 820   | 2.21 |
| 17439092 | Gm23031              | predicted gene, 23031 [Source:MGI Symbol;Acc:MGI:5452808]                             | 2.21 |
| 17459449 | Foxi3                | forkhead box I3   | 2.2  |
| 17312418 | Hgh1                 | HGH1 homolog  | 2.2  |
| 17357126 | Snhg1                | small nucleolar RNA host gene 1   | 2.2  |
| 17400885 | Wars2; Gm38468       | tryptophanyl tRNA synthetase 2 (mitochondrial); predicted gene, 38468                 | 2.2  |
| 17420811 | LOC102636380; Gm1667 | uncharacterized LOC102636380; predicted gene 1667 [Source:MGI Symbol;Acc:MGI:2686513] | 2.2  |

|          |                        |   |      |
|----------|------------------------|---|------|
| 17431166 | Lin28a                 | lin-28 homolog A (C. elegans)   | 2.2  |
| 17457685 | Trbv12-1               | T cell receptor beta, variable 12-1   | 2.2  |
| 17476618 | Gm29627                | predicted gene 29627 [Source:MGI Symbol;Acc:MGI:5580333]  | 2.2  |
| 17503254 | Klf1                   | Kruppel-like factor 1 (erythroid)   | 2.2  |
| 17523985 | 4930568E12Rik          | RIKEN cDNA 4930568E12 gene  | 2.2  |
| 17369060 | Set                    | SET nuclear oncogene  | 2.19 |
| 17374373 | C130080G10Rik          | RIKEN cDNA C130080G10 gene  | 2.19 |
| 17414184 | 4930522O17Rik          | RIKEN cDNA 4930522O17 gene  | 2.19 |
| 17522955 | Gm16295                | predicted gene 16295 [Source:MGI Symbol;Acc:MGI:3826546]  | 2.19 |
| 17323968 | Vwa5b2                 | von Willebrand factor A domain containing 5B2   | 2.18 |
| 17265329 | Spag7                  | sperm associated antigen 7  | 2.18 |
| 17291074 | Vmn1r193               | vomer nasal 1 receptor 193  | 2.18 |
| 17293265 | Spata31d1d             | spermatogenesis associated 31 subfamily D, member 1D  | 2.18 |
| 17319707 | Cyp2d26                | cytochrome P450, family 2, subfamily d, polypeptide 26  | 2.18 |
| 17421187 | Pramef8                | PRAME family member 8   | 2.18 |
| 17459801 | Gcfc2                  | GC-rich sequence DNA binding factor 2   | 2.18 |
| 17220866 | Rd3                    | retinal degeneration 3  | 2.17 |
| 17291635 | A530084C06Rik          | RIKEN cDNA A530084C06 gene [Source:MGI Symbol;Acc:MGI:3704402]  | 2.17 |
| 17355722 | Sall3                  | sal-like 3 (Drosophila)   | 2.17 |
| 17366393 | Acbd7                  | acyl-Coenzyme A binding domain containing 7   | 2.17 |
| 17399162 | Gm25945                | predicted gene, 25945 [Source:MGI Symbol;Acc:MGI:5455722]   | 2.17 |
| 17535445 | Gm14684                | predicted gene 14684 [Source:MGI Symbol;Acc:MGI:3705272]  | 2.17 |
| 17540116 | Ssxb3                  | synovial sarcoma, X member B, breakpoint 3  | 2.17 |
| 17211885 | Vwa3b                  | von Willebrand factor A domain containing 3B  | 2.16 |
| 17256513 | Hsd17b1                | hydroxysteroid (17-beta) dehydrogenase 1  | 2.16 |
| 17265229 | Alox15                 | arachidonate 15-lipoxygenase  | 2.16 |
| 17276800 | Rad51b                 | RAD51 homolog B   | 2.16 |
| 17325132 | Gm15829                | predicted gene 15829 [Source:MGI Symbol;Acc:MGI:3801893]  | 2.16 |
| 17454278 | Gm454                  | predicted gene 454  | 2.16 |
| 17480216 | Prep                   | prolylcarboxypeptidase (angiotensinase C)   | 2.16 |
| 17502051 | Il12rb1                | interleukin 12 receptor, beta 1   | 2.16 |
| 17505009 | Gm16156                | predicted gene 16156 [Source:MGI Symbol;Acc:MGI:3801720]  | 2.16 |
| 17512611 | Dpep2                  | dipeptidase 2   | 2.16 |
| 17514592 | Mmp7                   | matrix metalloproteinase 7  | 2.16 |
| 17518316 | Gm23136                | predicted gene, 23136 [Source:MGI Symbol;Acc:MGI:5452913]   | 2.16 |
| 17549072 |                        |   | 2.16 |
| 17281885 | Six4                   | sine oculis-related homeobox 4  | 2.15 |
| 17314556 | Slc48a1                | solute carrier family 48 (heme transporter), member 1   | 2.15 |
| 17318807 | Apol10b                | apolipoprotein L 10B  | 2.15 |
| 17328573 | Vpreb1                 | pre-B lymphocyte gene 1   | 2.15 |
| 17422404 | Ttc34                  | tetratricopeptide repeat domain 34  | 2.15 |
| 17469455 | Prok2                  | prokineticin 2  | 2.15 |
| 17483772 | Sec23ip                | Sec23 interacting protein   | 2.15 |
| 17498426 | Ppfia1                 | protein tyrosine phosphatase, receptor type, f polypeptide (PTPRF), interacting protein (liprin), alpha 1 | 2.15 |
| 17521971 | Slc26a6                | solute carrier family 26, member 6  | 2.15 |
| 17549016 |                        |   | 2.15 |
| 17217562 | Gm10535                | predicted gene 10535 [Source:MGI Symbol;Acc:MGI:3642442]  | 2.14 |
| 17287325 | S1pr3                  | sphingosine-1-phosphate receptor 3  | 2.14 |
| 17349082 |                        |   | 2.14 |
| 17431667 | Gm13003                | predicted gene 13003  | 2.14 |
| 17433009 | Pex14                  | peroxisomal biogenesis factor 14  | 2.14 |
| 17486145 | Zfp773                 | zinc finger protein 773   | 2.14 |
| 17499436 | Cln8                   | ceroid-lipofuscinosis, neuronal 8   | 2.13 |
| 17434705 | Gm8906                 | predicted gene 8906 [Source:MGI Symbol;Acc:MGI:3779820]   | 2.13 |
| 17211087 | Gm15818                | predicted gene 15818 [Source:MGI Symbol;Acc:MGI:3801960]  | 2.13 |
| 17305133 | Rgr                    | retinal G protein coupled receptor  | 2.13 |
| 17317574 | Hhla1                  | HERV-H LTR-associating 1  | 2.13 |
| 17320811 | Gm23129                | predicted gene, 23129 [Source:MGI Symbol;Acc:MGI:5452906]   | 2.13 |
| 17344608 | H2-T3; Gm38417; H2-T18 | histocompatibility 2, T region locus 3; predicted gene, 38417; histocompatibility 2, T region locus 18    | 2.13 |
| 17355270 | 4930546C10Rik          | RIKEN cDNA 4930546C10 gene  | 2.13 |
| 17362708 | Tmem138                | transmembrane protein 138   | 2.13 |
| 17363666 | Gm24252                | predicted gene, 24252 [Source:MGI Symbol;Acc:MGI:5454029]   | 2.13 |

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|----------|--------------------------------|--|------|
| 17483098 | Gdpd3                          | glycerophosphodiester phosphodiesterase domain containing 3                                  | 2.13 |
| 17274310 | Hpcal1                         | hippocalcin-like 1   | 2.12 |
| 17256051 | Zpbp2                          | zona pellucida binding protein 2   | 2.12 |
| 17308759 | 4930444M15Rik                  | RIKEN cDNA 4930444M15 gene   | 2.12 |
| 17356305 | Zdhhc24                        | zinc finger, DHHC domain containing 24   | 2.12 |
| 17412689 | Gm12364                        | predicted gene 12364 [Source:MGI Symbol;Acc:MGI:3649785]                                     | 2.12 |
| 17503429 | Olfir371                       | olfactory receptor 371   | 2.12 |
| 17537112 | Lpar4                          | lysophosphatidic acid receptor 4   | 2.12 |
| 17275950 | 4931403G20Rik                  | RIKEN cDNA 4931403G20 gene   | 2.11 |
| 17285386 | Psm2                           | proteasome (prosome, macropain) subunit, alpha type 2  | 2.11 |
| 17303685 | Gm5458                         | predicted gene 5458  | 2.11 |
| 17392828 | Gm14167                        | predicted gene 14167   | 2.11 |
| 17447041 | Gm15614                        | predicted gene 15614   | 2.11 |
| 17461080 | Gm22840                        | predicted gene, 22840 [Source:MGI Symbol;Acc:MGI:5452617]                                    | 2.11 |
| 17471201 | Rad51ap1                       | RAD51 associated protein 1   | 2.11 |
| 17497003 | Etos1                          | ectopic ossification 1   | 2.11 |
| 17511806 | 4930488L21Rik                  | RIKEN cDNA 4930488L21 gene   | 2.11 |
| 17524703 | Ap1m2                          | adaptor protein complex AP-1, mu 2 subunit   | 2.11 |
| 17215879 | Aqp12                          | aquaporin 12   | 2.1  |
| 17289977 | Mcidas                         | multiciliate differentiation and DNA synthesis associated cell cycle protein                 | 2.1  |
| 17332287 | LOC102633000;<br>2310043M15Rik | uncharacterized LOC102633000; RIKEN cDNA 2310043M15 gene [Source:MGI Symbol;Acc:MGI:1919180] | 2.1  |
| 17406682 | 1700113A16Rik                  | RIKEN cDNA 1700113A16 gene   | 2.1  |
| 17450802 | Dgkq                           | diacylglycerol kinase, theta   | 2.1  |
| 17457683 | Trbv10                         | T cell receptor beta variable 10   | 2.1  |
| 17463451 | Gm26656                        | predicted gene, 26656 [Source:MGI Symbol;Acc:MGI:5477150]                                    | 2.1  |
| 17473635 | Olfir1350                      | olfactory receptor 1350  | 2.1  |
| 17486764 | Obox6                          | oocyte specific homeobox 6   | 2.1  |
| 17536759 | Itgb1bp2                       | integrin beta 1 binding protein 2  | 2.1  |
| 17244057 | Gas2l3                         | growth arrest-specific 2 like 3  | 2.09 |
| 17249483 | Zcchc10                        | zinc finger, CCHC domain containing 10   | 2.09 |
| 17305953 | Olfir734                       | olfactory receptor 734   | 2.09 |
| 17306344 | Slc7a7                         | solute carrier family 7 (cationic amino acid transporter, y+ system), member 7               | 2.09 |
| 17310395 | Gm5144                         | predicted gene 5144  | 2.09 |
| 17346894 | Lrrc30                         | leucine rich repeat containing 30  | 2.09 |
| 17373778 | Lincrd1                        | long intergenic non-protein coding RNA of erythroid differentiation 1                        | 2.09 |
| 17467072 | Pde1c                          | phosphodiesterase 1C   | 2.09 |
| 17484225 | 4930544L04Rik                  | RIKEN cDNA 4930544L04 gene [Source:MGI Symbol;Acc:MGI:1926057]                               | 2.09 |
| 17550396 |                                |  | 2.09 |
| 17229851 | Casq1                          | calsequestrin 1  | 2.08 |
| 17303442 | Oit1                           | oncprotein induced transcript 1  | 2.08 |
| 17412045 |                                |  | 2.08 |
| 17424384 | Gm13299                        | predicted gene 13299 [Source:MGI Symbol;Acc:MGI:3701133]                                     | 2.08 |
| 17527914 | 4933433G08Rik                  | RIKEN cDNA 4933433G08 gene   | 2.08 |
| 17538437 | Gm24627                        | predicted gene, 24627 [Source:MGI Symbol;Acc:MGI:5454404]                                    | 2.08 |
| 17214578 | Tmem198                        | transmembrane protein 198  | 2.07 |
| 17410127 | Gm15551                        | predicted gene 15551   | 2.07 |
| 17222354 | 4930594C11Rik                  | G1 to S phase transition pseudogene  | 2.07 |
| 17255556 | Mir196a-1                      | microRNA 196a-1  | 2.07 |
| 17260438 | Gm24313                        | predicted gene, 24313 [Source:MGI Symbol;Acc:MGI:5454090]                                    | 2.07 |
| 17267430 | Gdpd1                          | glycerophosphodiester phosphodiesterase domain containing 1                                  | 2.07 |
| 17269229 | Krtap4-8                       | keratin associated protein 4-8   | 2.07 |
| 17292477 | Cenpp                          | centromere protein P   | 2.07 |
| 17317393 | Fam84b                         | family with sequence similarity 84, member B   | 2.07 |
| 17329475 | AU015336                       | expressed sequence AU015336 [Source:MGI Symbol;Acc:MGI:2146536]                              | 2.07 |
| 17338355 | Gm15556                        | predicted gene 15556 [Source:MGI Symbol;Acc:MGI:3783005]                                     | 2.07 |
| 17377258 | A930019D19Rik                  | RIKEN cDNA A930019D19 gene   | 2.07 |
| 17443717 | Smok3a;Smok3b                  | sperm motility kinase 3A; sperm motility kinase 3B   | 2.07 |
| 17455652 | Gm7682                         | predicted gene 7682  | 2.07 |
| 17480030 | Rab38                          | RAB38, member RAS oncogene family  | 2.07 |
| 17486912 |                                |  | 2.07 |
| 17500242 | 1700047A11Rik                  | RIKEN cDNA 1700047A11 gene   | 2.07 |
| 17501288 | 2500002B13Rik                  | RIKEN cDNA 2500002B13 gene   | 2.07 |
| 17548904 | Gm6489                         | predicted gene 6489 [Source:MGI Symbol;Acc:MGI:3646684]                                      | 2.07 |

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|----------|-----------------------|--|------|
| 17549260 |                       |  | 2.07 |
| 17219643 | Aim2                  | absent in melanoma 2   | 2.06 |
| 17277161 | Acot5                 | acyl-CoA thioesterase 5  | 2.06 |
| 17311789 | Rnfl39                | ring finger protein 139  | 2.06 |
| 17349902 | Pcdhb11               | protocadherin beta 11  | 2.06 |
| 17377210 | Cfap61                | cilia and flagella associated protein 61   | 2.06 |
| 17393095 | Sun5                  | Sad1 and UNC84 domain containing 5   | 2.06 |
| 17417985 | Foxo6os               | forkhead box O6, opposite strand   | 2.06 |
| 17434864 | Speer8-ps1            | spermatogenesis associated glutamate (E)-rich protein 8, pseudogene 1                    | 2.06 |
| 17438464 | Thegl                 | theg spermatid protein like  | 2.06 |
| 17508986 | Triml1                | tripartite motif family-like 1   | 2.06 |
| 17512888 | Gm26832               | predicted gene, 26832  | 2.06 |
| 17515402 | Cnn1                  | calponin 1   | 2.06 |
| 17224724 | BC035947              | cDNA sequence BC035947   | 2.05 |
| 17247494 |                       |  | 2.05 |
| 17248589 | Gm12148               | predicted gene 12148 [Source:MGI Symbol;Acc:MGI:3649953]                                 | 2.05 |
| 17258664 | Mfsd11                | major facilitator superfamily domain containing 11                                       | 2.05 |
| 17261177 | LOC102636777; Gm12665 | uncharacterized LOC102636777; predicted gene 12665 [Source:MGI Symbol;Acc:MGI:3652165]   | 2.05 |
| 17272555 | Tmc6                  | transmembrane channel-like gene family 6   | 2.05 |
| 17301232 | Gm17232               | predicted gene 17232   | 2.05 |
| 17327714 | 4930455F16Rik         | RIKEN cDNA 4930455F16 gene   | 2.05 |
| 17327862 | 12-Sep                | septin 12  | 2.05 |
| 17368401 | Stkl1                 | serine/threonine kinase-like domain containing 1   | 2.05 |
| 17373501 | 1700029I15Rik         | RIKEN cDNA 1700029I15 gene   | 2.05 |
| 17397746 | Gm22269               | predicted gene, 22269 [Source:MGI Symbol;Acc:MGI:5452046]                                | 2.05 |
| 17415424 | Gm12637               | predicted gene 12637 [Source:MGI Symbol;Acc:MGI:3650764]                                 | 2.05 |
| 17422546 | Cfap74; C030017K20Rik | cilia and flagella associated protein 74; RIKEN cDNA C030017K20 gene                     | 2.05 |
| 17458605 | Hoxaas3               | Hoxa cluster antisense RNA 3   | 2.05 |
| 17460099 | Vax2                  | ventral anterior homeobox 2  | 2.05 |
| 17510264 | Haus8                 | 4HAUS augmin-like complex, subunit 8   | 2.04 |
| 17258155 | Otop2                 | otopetrin 2  | 2.04 |
| 17264102 | Hs3st3b1              | heparan sulfate (glucosamine) 3-O-sulfotransferase 3B1                                   | 2.04 |
| 17294694 |                       |  | 2.04 |
| 17373513 | Gm13814               | predicted gene 13814   | 2.04 |
| 17392652 | 3300002I08Rik         | RIKEN cDNA 3300002I08 gene   | 2.04 |
| 17400732 | Pdzk1                 | PDZ domain containing 1  | 2.04 |
| 17414009 | Msantd3               | Myb/SANT-like DNA-binding domain containing 3  | 2.04 |
| 17420113 | Htr1d                 | 5-hydroxytryptamine (serotonin) receptor 1D  | 2.04 |
| 17433305 | 1700045H11Rik         | RIKEN cDNA 1700045H11 gene   | 2.04 |
| 17492385 | Kif7                  | kinesin family member 7  | 2.04 |
| 17493390 | Gm15413               | predicted gene 15413   | 2.04 |
| 17548711 |                       |  | 2.04 |
| 17392317 | Pesk2os2              | proprotein convertase subtilisin/kexin type 2, opposite strand 2                         | 2.03 |
| 17232724 | 4930547M16Rik         | RIKEN cDNA 4930547M16 gene [Source:MGI Symbol;Acc:MGI:1922549]                           | 2.03 |
| 17250392 | Myo15                 | myosin XV  | 2.03 |
| 17274775 | Lamb1                 | laminin B1   | 2.03 |
| 17373943 | Pax6                  | paired box 6   | 2.03 |
| 17398338 | Fstl5                 | folliculin-like 5  | 2.03 |
| 17414173 | Nipsnap3b             | nipsnap homolog 3B (C. elegans)  | 2.03 |
| 17438597 | Gm24524               | predicted gene, 24524 [Source:MGI Symbol;Acc:MGI:5454301]                                | 2.03 |
| 17453647 | Srrm3os               | serine/arginine repetitive matrix 3, opposite strand [Source:MGI Symbol;Acc:MGI:1918907] | 2.03 |
| 17506353 | Gm22                  | predicted gene 22  | 2.02 |
| 17237599 | 1700064J06Rik         | RIKEN cDNA 1700064J06 gene   | 2.02 |
| 17263223 | Obscn                 | obscurin, cytoskeletal calmodulin and titin-interacting RhoGEF                           | 2.02 |
| 17284607 | Ighv1-62-2; Tnpo3     | immunoglobulin heavy variable 1-62-2; transportin 3                                      | 2.02 |
| 17284631 | Ighv1-71; Tnpo3       | immunoglobulin heavy variable 1-71; transportin 3  | 2.02 |
| 17355579 | Slc14a2               | solute carrier family 14 (urea transporter), member 2                                    | 2.02 |
| 17404941 | 5430434I15Rik         | RIKEN cDNA 5430434I15 gene   | 2.02 |
| 17405352 |                       |  | 2.02 |
| 17443024 | Tyw1                  | tRNA-yW synthesizing protein 1 homolog (S. cerevisiae)                                   | 2.02 |
| 17334052 | Vmn2r116              | vomer nasal 2, receptor 116  | 2.01 |
| 17344331 | Gm11131               | predicted gene 11131 [Source:MGI Symbol;Acc:MGI:3779386]                                 | 2.01 |



|          |               |  |        |
|----------|---------------|--|--------|
| 17368286 | Gm13562       | predicted gene 13562                           | 2.01   |
| 17449437 | 1700066N21Rik | RIKEN cDNA 1700066N21 gene                     | 2.01   |
| 17458544 | C530044C16Rik | RIKEN cDNA C530044C16 gene                     | 2.01   |
| 17410921 | Clca4a        | chloride channel accessory 4A                  | -2.09  |
| 17238878 | Syne1         | spectrin repeat containing, nuclear envelope 1 | -6.44  |
| 17479485 |               |  | -7.44  |
| 17278761 | AF357425      | snoRNA AF357425                                | -22.59 |
| 17541917 | Snord61       | small nucleolar RNA, C/D box 61                | -29.61 |

**Table S6: Transcription factors affected by Western diet and LDL-R -/- in hippocampal microvascular endothelium.**

| M WT WD vs WT CD  |                | M LDL-R -/- CD vs WT CD  |                | M LDL-R -/- WD vs WT CD  |                |
|-------------------|----------------|--------------------------|----------------|--------------------------|----------------|
| <i>Network</i>    | <i>p-Value</i> | <i>Network</i>           | <i>p-Value</i> | <i>Network</i>           | <i>p-Value</i> |
| GATA-2            | 7.64E-14       | ETS1                     | 0              | ETS1                     | 0              |
| ETS1              | 7.64E-14       | FOXP3                    | 0              | FOXP3                    | 0              |
| FOXP3             | 7.64E-14       | E2F1                     | 0              | E2F1                     | 0              |
| GABP alpha        | 7.64E-14       | Oct-3/4                  | 0              | Oct-3/4                  | 0              |
| Oct-3/4           | 2.55E-09       | GABP alpha               | 0              | CREB1                    | 0              |
| c-Myc             | 2.55E-09       | CREB1                    | 0              | GABP alpha               | 0              |
| E2F1              | 2.55E-09       | SOX2                     | 0              | SOX2                     | 0              |
| CREB1             | 2.55E-09       | NANOG                    | 0              | NANOG                    | 0              |
| YY1               | 2.55E-09       | c-Myc                    | 0              | c-Myc                    | 0              |
| SP1               | 0.000063       | GLIS3                    | 0              | GLIS3                    | 0              |
| SOX2              | 0.000063       | GATA-2                   | 0              | N-Myc                    | 1.85E-277      |
| ESR2              | 0.000063       | ZFX                      | 0              | HNF4-alpha               | 8.79E-250      |
| HNF4-alpha        | 0.000063       | HNF4-alpha               | 0              | KLF4                     | 3.01E-242      |
| SMAD1             | 0.000063       | KLF4                     | 0              | GATA-2                   | 3.01E-242      |
| BMAL1             | 0.000063       | ESR1 (nuclear)           | 1.13E-300      | ZFX                      | 9.73E-240      |
| POU3F2 (BRN2)     | 0.000063       | LBP9                     | 8.74E-296      | p53                      | 1.08E-224      |
| PU.1              | 0.000063       | N-Myc                    | 1.87E-288      | Androgen receptor        | 3.52E-217      |
| AP-1              | 0.000063       | GATA-1                   | 1.87E-288      | SP1                      | 3.52E-217      |
| SRF               | 0.000063       | SP1                      | 3.95E-281      | RelA (p65 NF-kB subunit) | 3.59E-207      |
| AML1 (RUNX1)      | 0.000063       | E2F4                     | 1.09E-278      | ESR1 (nuclear)           | 1.13E-199      |
| PPAR-gamma        | 0.000063       | p53                      | 7.02E-252      | LBP9                     | 1.12E-194      |
| HIF1A             | 0.000063       | Androgen receptor        | 1.02E-239      | E2F4                     | 1.08E-184      |
| GLIS3             | 0.000063       | RelA (p65 NF-kB subunit) | 2.75E-237      | GATA-1                   | 8.81E-160      |
| AP-2A             | 0.000063       | GATA-3                   | 7.42E-235      | STAT3                    | 8.29E-155      |
| LBP9              | 0.000063       | YY1                      | 1.99E-232      | TCF7L2 (TCF4)            | 5.54E-130      |
| KLF4              | 0.000063       | STAT3                    | 1.44E-227      | TCF7L1 (TCF3)            | 5.54E-130      |
| ESR1 (nuclear)    | 0.000063       | GCR                      | 1.38E-210      | GATA-3                   | 5.54E-130      |
| c-Jun/c-Fos       | 0.000063       | HIF1A                    | 1.25E-193      | HIF1A                    | 1.67E-127      |
| PEA3              | 0.000063       | c-Jun                    | 2.26E-186      | c-Jun                    | 1.67E-127      |
| Androgen receptor | 0.000063       | HNF3-beta                | 5.93E-184      | HNF3-beta                | 4.5E-120       |

**Table S7: Effect of the Western diet on the expression of microRNAs (miRNAs) in male hippocampal microvessels.**

| MiRNAs    | WT WD vs WT CD | LDL-R -/- CD vs WT CD | LDL-R -/- WD vs WT CD |
|-----------|----------------|-----------------------|-----------------------|
| Mir1954   | 3.28           |                       |                       |
| Mir687    |                | 36.93                 |                       |
| Mir882    |                | 35.17                 |                       |
| Mir466n   |                | 32.87                 |                       |
| Mir382    |                | 29.58                 |                       |
| Mir1938   |                | 24.76                 |                       |
| Gm24098   |                | 23.99                 |                       |
| Gm25381   |                | 23.99                 |                       |
| Mir1188   |                | 18.6                  |                       |
| Mir692-3  |                | 17.54                 | 20.29                 |
| Mir692-2  |                | 17.54                 | 20.29                 |
| Mir1954   |                | 15.13                 | 20.12                 |
| Mir678    |                | 13.64                 | 6.01                  |
| Mir673    |                | 11.7                  | 81.06                 |
| Mir6418   |                | 10.54                 |                       |
| Mir377    |                | 9.62                  |                       |
| Mir1955   |                | 9.62                  |                       |
| Mir703    |                | 8.96                  | 7.27                  |
| Mir466d   |                | 7.15                  |                       |
| Mir466j   |                | 5.82                  |                       |
| Mir761    |                | 5.22                  |                       |
| Mir466h   |                | 4.95                  | 5.7                   |
| Mir210    |                | 4.3                   | 11.24                 |
| Mir204    |                | 4.11                  |                       |
| Mir344d-2 |                | 3.07                  | 2.82                  |
| Mir9-2    |                | 2.87                  |                       |
| Mir5097   |                | 2.84                  |                       |
| Mir466f-4 |                | 2.55                  |                       |
| Mir375    |                | 2.47                  | 3.06                  |
| Mir34c    |                | 2.3                   |                       |
| Mir343    |                | 2.28                  |                       |
| Mir1912   |                | 2.11                  |                       |
| Mir21a    |                | 2.04                  |                       |
| Gm23134   |                | 16.67                 | 16.89                 |
| Gm25559   |                | 11.52                 |                       |
| Gm25817   |                | 10.11                 | 52.55                 |
| Gm24766   |                | 10.11                 | 52.55                 |
| Gm22932   |                | 9.59                  |                       |
| Gm24813   |                | 4.47                  | 2.84                  |
| Gm25068   |                | 4                     |                       |
| Gm22323   |                | 2.75                  | 3.36                  |
| Gm23931   |                | 2.75                  | 3.36                  |
| Gm25992   |                | 2.08                  |                       |
| Gm26154   |                | 23.81                 |                       |
| Mir679    |                |                       | 113.69                |
| Mir30d    |                |                       | 69.19                 |
| Mir669n   |                |                       | 67.85                 |
| Mir692-1  |                |                       | 21.43                 |
| Gm15590   |                |                       | 20.29                 |
| Gm22774   |                |                       | 20.29                 |
| Mir1192   |                |                       | 15.06                 |
| Mir574    |                |                       | 7.94                  |
| Mir6990   |                |                       | 6.36                  |
| Mir28b    |                |                       | 4.87                  |
| Mir5109   |                |                       | 4.33                  |
| Mir378d   |                |                       | 4.28                  |
| Mir1198   |                |                       | 3.86                  |
| Mir1199   |                |                       | 3.76                  |
| Mir486    |                |                       | 2.96                  |
| Mir196a-1 |                |                       | 2.07                  |
| Gm24328   |                |                       | 23.68                 |
| Gm22757   |                |                       | 17.11                 |
| Gm22759   |                |                       | 11.66                 |
| Gm24327   |                |                       | 4.73                  |
| Gm24096   |                |                       | 3.22                  |
| Gm24627   |                |                       | 2.08                  |
| Gm24541   |                |                       | -7.44                 |

