**Table S1. Differential expressed genes in 2 weeks post-ACLT+MMx group**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |
| *Acss2* | acyl-CoA synthetase short-chain family member 2 | 1.0985  | 0.0197  |
| *Acta2* | smooth muscle alpha-actin | 1.1629  | 0.0077  |
| *Ada* | adenosine deaminase | 1.2642  | 0.0221  |
| *Adam15* | ADAM metallopeptidase domain 15 | 1.1282  | 0.0083  |
| *Adamts1* | ADAM metallopeptidase with thrombospondin type 1 motif, 1 | 1.3348  | 0.0371  |
| *Adamts15* | ADAM metallopeptidase with thrombospondin type 1 motif, 15 | 1.5108  | 0.0448  |
| *Adamts4* | ADAM metallopeptidase with thrombospondin type 1 motif, 4 | 1.5927  | 0.0069  |
| *Adap2* | ArfGAP with dual PH domains 2 | 1.3135  | 0.0144  |
| *Adcy4* | adenylate cyclase 4 | 1.3035  | 0.0210  |
| *Aebp1* | AE binding protein 1 | 1.0873  | 0.0306  |
| *Afap1* | actin filament associated protein 1 | 1.2370  | 0.0237  |
| *Agtrap* | angiotensin II receptor-associated protein | 1.1145  | 0.0471  |
| *Akap2* | A kinase (PRKA) anchor protein 2 | 1.1507  | 0.0491  |
| *Alcam* | activated leukocyte cell adhesion molecule | 1.1551  | 0.0460  |
| *Anln* | anillin, actin binding protein | 1.1875  | 0.0111  |
| *Anxa1* | annexin A1 | 1.0584  | 0.0476  |
| *Anxa2* | annexin A2 | 1.0551  | 0.0332  |
| *Ap1s1* | adaptor-related protein complex 1, sigma 1 subunit | 1.0562  | 0.0378  |
| *Apoe* | apolipoprotein E | 1.2425  | 0.0191  |
| *Arf3* | ADP-ribosylation factor 3 | 1.0630  | 0.0332  |
| *Arhgap22* | Rho GTPase activating protein 22 | 1.4080  | 0.0444  |
| *Arhgdia* | Rho GDP dissociation inhibitor (GDI) alpha | 1.0567  | 0.0129  |
| *Arhgef3* | Rho guanine nucleotide exchange factor (GEF) 3 | 1.1347  | 0.0187  |
| *Arl11* | ADP-ribosylation factor-like 11 | 1.4401  | 0.0138  |
| *Arl4a* | ADP-ribosylation factor-like 4A | 1.2125  | 0.0305  |
| *Arl4c* | ADP-ribosylation factor-like 4C | 1.3718  | 0.0174  |
| *Ascc2* | activating signal cointegrator 1 complex subunit 2 | 1.0658  | 0.0396  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |
| *Aspn* | asporin | 1.5997  | 0.0369  |
| *Avpi1* | arginine vasopressin-induced 1 | 1.0933  | 0.0214  |
| *Axl* | Axl receptor tyrosine kinase | 1.1266  | 0.0437  |
| *B3galnt1* | beta-1,3-N-acetylgalactosaminyltransferase 1 (globoside blood group) | 1.2030  | 0.0148  |
| *Baiap2* | BAI1-associated protein 2 | 1.1739  | 0.0410  |
| *Bcl3* | B-cell CLL/lymphoma 3 | 1.3045  | 0.0105  |
| *Bcl7c* | B-cell CLL/lymphoma 7C | 1.0750  | 0.0306  |
| *Bloc1s1* | biogenesis of lysosomal organelles complex-1, subunit 1 | 1.0638  | 0.0262  |
| *Bnc2* | basonuclin 2 | 1.4174  | 0.0160  |
| *Bok* | BCL2-related ovarian killer | 1.1341  | 0.0068  |
| *Bysl* | bystin-like | 1.0635  | 0.0233  |
| *C1qa* | complement component 1, q subcomponent, A chain | 1.2402  | 0.0332  |
| *C1qb* | complement component 1, q subcomponent, B chain | 1.2804  | 0.0418  |
| *C1qc* | complement component 1, q subcomponent, C chain | 1.2212  | 0.0347  |
| *C1qtnf3* | C1q and tumor necrosis factor related protein 3 | 1.6597  | 0.0497  |
| *C1s* | complement component 1, s subcomponent | 1.3013  | 0.0226  |
| *C5ar1* | complement component 5a receptor 1 | 1.2784  | 0.0227  |
| *Cald1* | caldesmon 1 | 1.0959  | 0.0379  |
| *Calml4* | calmodulin-like 4 | 1.4236  | 0.0068  |
| *Capg* | capping protein (actin filament), gelsolin-like | 1.1308  | 0.0085  |
| *Capn5* | calpain 5 | 1.3068  | 0.0435  |
| *Ccl2* | chemokine (C-C motif) ligand 2 | 1.8235  | 0.0174  |
| *Ccl4* | chemokine (C-C motif) ligand 4 | 1.1058  | 0.0348  |
| *Ccnc* | cyclin C | 1.1760  | 0.0460  |
| *Ccnd1* | cyclin D1 | 1.1443  | 0.0135  |
| *Ccnyl1* | cyclin Y-like 1 | 1.1257  | 0.0215  |
| *Cd14* | CD14 molecule | 1.1792  | 0.0180  |
| *Cd180* | CD180 molecule | 1.2605  | 0.0281  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |
| *Cd276* | Cd276 molecule | 1.0914  | 0.0319  |
| *Cd33* | CD33 molecule | 1.1862  | 0.0314  |
| *Cd3eap* | CD3e molecule, epsilon associated protein | 1.1084  | 0.0108  |
| *Cd83* | CD83 molecule | 1.2794  | 0.0186  |
| *Cdh13* | cadherin 13 | 1.3795  | 0.0110  |
| *Cdkn2c* | cyclin-dependent kinase inhibitor 2C (p18, inhibits CDK4) | 1.0867  | 0.0334  |
| *Cdkn3* | cyclin-dependent kinase inhibitor 3 | 1.2210  | 0.0271  |
| *Cenpw* | centromere protein W | 1.3271  | 0.0143  |
| *Ch25h* | cholesterol 25-hydroxylase | 1.4947  | 0.0389  |
| *Chfr* | checkpoint with forkhead and ring finger domains, E3 ubiquitin protein ligase | 1.1860  | 0.0429  |
| *Chsy1* | chondroitin sulfate synthase 1 | 1.1004  | 0.0298  |
| *Cndp2* | CNDP dipeptidase 2 (metallopeptidase M20 family) | 1.1517  | 0.0220  |
| *Col18a1* | collagen, type XVIII, alpha 1 | 1.5647  | 0.0069  |
| *Col2a1* | collagen, type II, alpha 1 | 1.3973  | 0.0068  |
| *Col4a1* | collagen, type IV, alpha 1 | 1.4013  | 0.0169  |
| *Col4a2* | collagen, type IV, alpha 2 | 1.2886  | 0.0248  |
| *Col5a3* | collagen, type V, alpha 3 | 1.8876  | 0.0024  |
| *Col6a2* | collagen, type VI, alpha 2 | 1.0706  | 0.0143  |
| *Col6a3* | collagen, type VI, alpha 3 | 1.0514  | 0.0340  |
| *Comt* | catechol-O-methyltransferase | 1.0983  | 0.0322  |
| *Crat* | carnitine O-acetyltransferase | 1.0754  | 0.0272  |
| *Crip1* | cysteine-rich protein 1 (intestinal) | 1.2067  | 0.0068  |
| *Crispld2* | cysteine-rich secretory protein LCCL domain containing 2 | 1.1186  | 0.0075  |
| *Cryl1* | crystallin, lambda 1 | 1.1168  | 0.0451  |
| *Csf2ra* | granulocyte-macrophage colony stimulating receptor alpha | 1.2051  | 0.0272  |
| *Csrp1* | cysteine and glycine-rich protein 1 | 1.0856  | 0.0374  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |
| *Csrp2* | cysteine and glycine-rich protein 2 | 1.8714  | 0.0068  |
| *Ctsb* | cathepsin B | 1.0728  | 0.0112  |
| *Ctsc* | cathepsin C | 1.2781  | 0.0445  |
| *Ctsd* | cathepsin D | 1.0605  | 0.0372  |
| *Cttn* | cortactin | 1.0764  | 0.0488  |
| *Cxcl16* | chemokine (C-X-C motif) ligand 16 | 1.1396  | 0.0398  |
| *Cystm1* | cysteine-rich transmembrane module containing 1 | 1.2118  | 0.0282  |
| *Dclk1* | doublecortin-like kinase 1 | 1.2324  | 0.0453  |
| *Des* | desmin | 1.3892  | 0.0068  |
| *Dmrt2* | doublesex and mab-3 related transcription factor 2 | 1.2113  | 0.0359  |
| *Dnm1* | dynamin 1 | 1.0638  | 0.0407  |
| *Dock6* | dedicator of cytokinesis 6 | 1.0863  | 0.0340  |
| *Dohh* | deoxyhypusine hydroxylase/monooxygenase | 1.0683  | 0.0238  |
| *Dtnbp1* | dystrobrevin binding protein 1 | 1.1129  | 0.0270  |
| *Ebpl* | emopamil binding protein-like | 1.2613  | 0.0211  |
| *Eci1* | enoyl-CoA delta isomerase 1 | 1.1539  | 0.0173  |
| *Ecm1* | extracellular matrix protein 1 | 1.2971  | 0.0175  |
| *Ehd4* | EH-domain containing 4 | 1.2149  | 0.0380  |
| *Eif4e2* | eukaryotic translation initiation factor 4E family member 2 | 1.0816  | 0.0270  |
| *Emp3* | epithelial membrane protein 3 | 1.0692  | 0.0473  |
| *Eng* | endoglin | 1.2249  | 0.0085  |
| *Enpp3* | ectonucleotide pyrophosphatase/phosphodiesterase 3 | 1.3540  | 0.0217  |
| *Entpd1* | ectonucleoside triphosphate diphosphohydrolase 1 | 1.1472  | 0.0282  |
| *Epb41l3* | erythrocyte membrane protein band 4.1-like 3 | 1.5416  | 0.0392  |
| *Eps8* | epidermal growth factor receptor pathway substrate 8 | 1.1810  | 0.0068  |
| *Errfi1* | ERBB receptor feedback inhibitor 1 | 1.1143  | 0.0323  |
| *Fabp4* | fatty acid binding protein 4, adipocyte | 1.6592  | 0.0128  |
| *Fads3* | fatty acid desaturase 3 | 1.1587  | 0.0371  |
| Fam136a | family with sequence similarity 136, member A | 1.0675  | 0.0491  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |
| *Fam45a* | family with sequence similarity 45, member A | 1.1940  | 0.0264  |
| *Fam46b* | family with sequence similarity 46, member B | 1.7306  | 0.0174  |
| *Fam57a* | family with sequence similarity 57, member A | 1.1753  | 0.0288  |
| *Fam64a* | family with sequence similarity 64, member A | 1.6499  | 0.0144  |
| *Fam71e1* | family with sequence similarity 71, member E1 | 1.1928  | 0.0289  |
| *Fbln2* | fibulin 2 | 1.4941  | 0.0101  |
| *Fbn2* | fibrillin 2 | 1.9414  | 0.0445  |
| *Fcgr1a* | Fc fragment of IgG, high affinity Ia, receptor (CD64) | 1.2416  | 0.0430  |
| *Fjx1* | four jointed box 1 (Drosophila) | 1.1672  | 0.0218  |
| *Flna* | filamin A, alpha | 1.1299  | 0.0239  |
| *Flnc* | filamin C, gamma | 1.4352  | 0.0222  |
| *Flrt3* | fibronectin leucine rich transmembrane protein 3 | 1.3572  | 0.0176  |
| *Flt1* | FMS-related tyrosine kinase 1 | 1.2605  | 0.0331  |
| *Fn1* | fibronectin 1 | 1.0331  | 0.0274  |
| *Fndc1* | fibronectin type III domain containing 1 | 1.6890  | 0.0311  |
| *Folr2* | folate receptor 2 (fetal) | 1.3430  | 0.0192  |
| *Fosl1* | fos-like antigen 1 | 1.3569  | 0.0271  |
| *Foxp1* | forkhead box P1 | 1.3002  | 0.0218  |
| *Fpgs* | folylpolyglutamate synthase | 1.2179  | 0.0102  |
| *Frmd6* | FERM domain containing 6 | 1.1515  | 0.0180  |
| *Fzd2* | frizzled family receptor 2 | 1.1722  | 0.0410  |
| *Fzd6* | frizzled family receptor 6 | 1.2034  | 0.0305  |
| *Gadd45a* | growth arrest and DNA-damage-inducible, alpha | 1.2743  | 0.0273  |
| *Galnt4* | UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 4 (GalNAc-T4) | 1.1645  | 0.0265  |
| *Gap43* | growth associated protein 43 | 2.1284  | 0.0211  |
| *Gclc* | glutamate-cysteine ligase, catalytic subunit | 1.1400  | 0.0431  |
| *Gdi2* | GDP dissociation inhibitor 2 | 1.0668  | 0.0292  |
| *Gfra2* | GDNF family receptor alpha 2 | 1.1551  | 0.0211  |
| *Ggt7* | gamma-glutamyltransferase 7 | 1.1062  | 0.0414  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |
| *Glud1* | glutamate dehydrogenase 1 | 1.0893  | 0.0442  |
| *Glul* | glutamate-ammonia ligase | 1.1131  | 0.0347  |
| *Gng12* | guanine nucleotide binding protein (G protein), gamma 12 | 1.0650  | 0.0454  |
| *Gng8* | guanine nucleotide binding protein (G protein), gamma 8 | 1.2666  | 0.0449  |
| *Gnl3* | guanine nucleotide binding protein-like 3 (nucleolar) | 1.0579  | 0.0488  |
| *Gpr176* | G protein-coupled receptor 176 | 1.2992  | 0.0334  |
| *Gpr34* | G protein-coupled receptor 34 | 1.5802  | 0.0459  |
| *Grina* | glutamate receptor, ionotropic, N-methyl D-aspartate-associated protein 1 (glutamate binding) | 1.1163  | 0.0239  |
| *Hmcn1* | hemicentin 1 | 1.6935  | 0.0186  |
| *Hmox1* | heme oxygenase (decycling) 1 | 1.3510  | 0.0205  |
| *Hrasls5* | HRAS-like suppressor family, member 5 | 1.2696  | 0.0197  |
| *Htr2b* | 5-hydroxytryptamine (serotonin) receptor 2B, G protein-coupled | 1.8179  | 0.0068  |
| *Hyal2* | hyaluronoglucosaminidase 2 | 1.0562  | 0.0389  |
| *Icam1* | intercellular adhesion molecule 1 | 1.1506  | 0.0186  |
| *Idi1* | isopentenyl-diphosphate delta isomerase 1 | 1.1387  | 0.0186  |
| *Ier5* | immediate early response 5 | 1.1935  | 0.0371  |
| *Iffo1* | intermediate filament family orphan 1 | 1.0927  | 0.0498  |
| *Il18* | interleukin 18 | 1.3164  | 0.0345  |
| *Iqgap3* | IQ motif containing GTPase activating protein 3 | 1.2991  | 0.0467  |
| *Irf5* | interferon regulatory factor 5 | 1.1986  | 0.0392  |
| *Itga7* | integrin, alpha 7 | 1.2432  | 0.0100  |
| *Itgb4* | integrin, beta 4 | 1.6873  | 0.0135  |
| *Jak3* | Janus kinase 3 | 1.1563  | 0.0189  |
| *Jph2* | junctophilin 2 | 1.2562  | 0.0175  |
| *Kctd10* | potassium channel tetramerization domain containing 10 | 1.0839  | 0.0467  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |
| *Kif20a* | kinesin family member 20A | 1.1657  | 0.0362  |
| *Kif22* | kinesin family member 22 | 1.1627  | 0.0310  |
| *Kif23* | kinesin family member 23 | 1.2469  | 0.0364  |
| *Klhl13* | kelch-like family member 13 | 1.1374  | 0.0493  |
| *Lama4* | laminin, alpha 4 | 1.1828  | 0.0299  |
| *Lamb1* | laminin, beta 1 | 1.4377  | 0.0195  |
| *Lbp* | lipopolysaccharide binding protein | 1.3591  | 0.0044  |
| *Lgals1* | lectin, galactoside-binding, soluble, 1 | 1.2277  | 0.0186  |
| *Lgals3* | lectin, galactoside-binding, soluble, 3 | 1.2223  | 0.0044  |
| *Lima1* | LIM domain and actin binding 1 | 1.1825  | 0.0247  |
| *Lipa* | lipase A, lysosomal acid, cholesterol esterase | 1.1911  | 0.0484  |
| *Lmna* | lamin A/C | 1.1828  | 0.0092  |
| *Lppr5* | lipid phosphate phosphatase-related protein type 5 | 1.2464  | 0.0212  |
| *Lpxn* | leupaxin | 1.2013  | 0.0292  |
| *Lrrc15* | leucine rich repeat containing 15 | 1.6326  | 0.0131  |
| *Lrrc17* | leucine rich repeat containing 17 | 1.8348  | 0.0086  |
| *Lrrc32* | leucine rich repeat containing 32 | 1.4295  | 0.0311  |
| *Lrrc4c* | leucine rich repeat containing 4C | 1.2088  | 0.0471  |
| *Lrrc8c* | leucine rich repeat containing 8 family, member C | 1.1207  | 0.0226  |
| *Lsm7* | LSM7 homolog, U6 small nuclear RNA associated (S. cerevisiae) | 1.0670  | 0.0226  |
| *Lum* | lumican | 1.1068  | 0.0348  |
| *Mab21l3* | mab-21-like 3 (C. elegans) | 1.1789  | 0.0169  |
| *Mafb* | v-maf musculoaponeurotic fibrosarcoma oncogene homolog B (avian) | 1.2856  | 0.0238  |
| *Map6* | microtubule-associated protein 6 | 1.1161  | 0.0410  |
| *Mapk12* | mitogen-activated protein kinase 12 | 1.1039  | 0.0439  |
| *Mcam* | melanoma cell adhesion molecule | 1.5067  | 0.0245  |
| *Mecom* | MDS1 and EVI1 complex locus | 1.4164  | 0.0407  |
| *Megf6* | multiple EGF-like-domains 6 | 1.5804  | 0.0279  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |
| *Meis2* | Meis homeobox 2 | 1.8190  | 0.0165  |
| *Mfap5* | microfibrillar associated protein 5 | 1.4437  | 0.0323  |
| *Mgst2* | microsomal glutathione S-transferase 2 | 1.1097  | 0.0470  |
| *Micall2* | MICAL-like 2 | 1.0750  | 0.0454  |
| *Mkks* | McKusick-Kaufman syndrome | 1.0616  | 0.0306  |
| *Mlf1* | myeloid leukemia factor 1 | 1.7554  | 0.0192  |
| *Mmd* | monocyte to macrophage differentiation-associated | 1.3457  | 0.0162  |
| *Mmp14* | matrix metallopeptidase 14 (membrane-inserted) | 1.1522  | 0.0238  |
| *Mmp19* | matrix metallopeptidase 19 | 1.6874  | 0.0197  |
| *Mocs1* | molybdenum cofactor synthesis 1 | 1.1459  | 0.0329  |
| *Mon1a* | MON1 homolog A (yeast) | 1.0712  | 0.0418  |
| *Mrc1* | mannose receptor, C type 1 | 1.3546  | 0.0319  |
| *Mrpl17* | mitochondrial ribosomal protein L17 | 1.0483 | 0.0251 |
| *Msln* | mesothelin | 1.3723  | 0.0186  |
| *Msn* | moesin | 1.0978  | 0.0279  |
| *Msx1* | msh homeobox 1 | 1.1446  | 0.0227  |
| *Mtap* | methylthioadenosine phosphorylase | 1.0952  | 0.0464  |
| *Mtch2* | mitochondrial carrier 2 | 1.0528  | 0.0491  |
| *Mtmr1* | myotubularin related protein 1 | 1.2248  | 0.0128  |
| *Myh11* | myosin, heavy chain 11, smooth muscle | 1.2943  | 0.0392  |
| *Myof* | myoferlin | 1.2379  | 0.0163  |
| *N6amt1* | N-6 adenine-specific DNA methyltransferase 1 (putative) | 1.1179  | 0.0353  |
| *Nans* | N-acetylneuraminic acid synthase | 1.0852  | 0.0323  |
| *Nbl1* | neuroblastoma 1, DAN family BMP antagonist | 1.2585  | 0.0369  |
| *Nek6* | NIMA-related kinase 6 | 1.0956  | 0.0356  |
| *Nes* | nestin | 1.2042  | 0.0108  |
| *Nfatc4* | nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 4 | 1.1319  | 0.0185  |
|  |  |  |  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |  |
| *Nfkbiz* | nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, zeta | 1.2141  | 0.0087  |
| *Nid2* | nidogen 2 (osteonidogen) | 1.0918  | 0.0299  |
| *Nme2* | NME/NM23 nucleoside diphosphate kinase 2 | 1.0530  | 0.0439  |
| *Nop58* | NOP58 ribonucleoprotein | 1.0485  | 0.0395  |
| *Npy1r* | neuropeptide Y receptor Y1 | 1.5926  | 0.0200  |
| *Nr2f2* | nuclear receptor subfamily 2, group F, member 2 | 1.4750  | 0.0140  |
| *Nsg1* | neuron specific gene family member 1 | 1.2447  | 0.0224  |
| *Nubp2* | nucleotide binding protein 2 | 1.0781  | 0.0295  |
| *Osbp2* | oxysterol binding protein 2 | 1.2501  | 0.0167  |
| *Osr2* | odd-skipped related 2 (Drosophila) | 1.3172  | 0.0197  |
| *P2ry6* | pyrimidinergic receptor P2Y, G-protein coupled, 6 | 1.2881  | 0.0122  |
| *P4ha3* | prolyl 4-hydroxylase, alpha polypeptide III | 2.0298  | 0.0162  |
| *Parva* | parvin, alpha | 1.0673  | 0.0448  |
| *Pbx3* | pre-B-cell leukemia homeobox 3 | 1.1393  | 0.0334  |
| *Pde1a* | phosphodiesterase 1A, calmodulin-dependent | 1.3742  | 0.0172  |
| *Pdlim1* | PDZ and LIM domain 1 | 1.2684  | 0.0314  |
| *Pdyn* | prodynorphin | 1.0790  | 0.0474  |
| *Pea15* | phosphoprotein enriched in astrocytes 15 | 1.2036  | 0.0112  |
| *Pecam1* | platelet/endothelial cell adhesion molecule 1 | 1.2769  | 0.0467  |
| *Pet100* | PET100 homolog (S. cerevisiae) | 1.0751  | 0.0466  |
| *Phlda2* | pleckstrin homology-like domain, family A, member 2 | 1.2249  | 0.0456  |
| *Phyhd1* | phytanoyl-CoA dioxygenase domain containing 1 | 1.1348  | 0.0135  |
| *Pi16* | peptidase inhibitor 16 | 1.3912  | 0.0165  |
| *Pitpnm2* | phosphatidylinositol transfer protein, membrane-associated 2 | 1.2196  | 0.0092  |
| *Pkig* | protein kinase inhibitor, gamma | 1.1075  | 0.0268  |
| *Pkn3* | protein kinase N3 | 1.1592  | 0.0068  |
|  |  |  |  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |  |
| *Pla2g6* | phospholipase A2, group VI (cytosolic, calcium-independent) | 1.1705  | 0.0449  |
| *Pld2* | phospholipase D2 | 1.1026  | 0.0282  |
| *Plec* | plectin | 1.1486  | 0.0158  |
| *Plxdc1* | plexin domain containing 1 | 1.1414  | 0.0426  |
| *Pmm2* | phosphomannomutase 2 | 1.0876  | 0.0269  |
| *Pno1* | partner of NOB1 homolog (S. cerevisiae) | 1.0991  | 0.0424  |
| *Postn* | periostin, osteoblast specific factor | 1.6886  | 0.0107  |
| *Prc1* | protein regulator of cytokinesis 1 | 1.2175  | 0.0271  |
| *Prelid1* | PRELI domain containing 1 | 1.0529  | 0.0307  |
| *Procr* | protein C receptor, endothelial | 1.1850  | 0.0083  |
| *Prph* | peripherin | 1.1960  | 0.0468  |
| *Prss22* | protease, serine, 22 | 1.6534  | 0.0167  |
| *Prss23* | protease, serine, 23 | 1.3946  | 0.0245  |
| *Psmg4* | proteasome (prosome, macropain) assembly chaperone 4 | 1.0519  | 0.0486  |
| *Ptges* | prostaglandin E synthase | 1.3107  | 0.0271  |
| *Ptpro* | protein tyrosine phosphatase, receptor type, O | 1.4532  | 0.0243  |
| *Ptrh1* | peptidyl-tRNA hydrolase 1 homolog (S. cerevisiae) | 1.2288  | 0.0229  |
| *PVR* | poliovirus receptor | 1.2674  | 0.0122  |
| *Pxdn* | peroxidasin homolog (Drosophila) | 1.3271  | 0.0122  |
| *Rab11a* | RAB11a, member RAS oncogene family | 1.0909  | 0.0394  |
| *Rab13* | RAB13, member RAS oncogene family | 1.0722  | 0.0238  |
| *Rab8b* | RAB8B, member RAS oncogene family | 1.1142  | 0.0326  |
| *Ralgds* | ral guanine nucleotide dissociation stimulator | 1.1468  | 0.0085  |
| *Rap1a* | RAP1A, member of RAS oncogene family | 1.0599  | 0.0454  |
| *Rasal2* | RAS protein activator like 2 | 1.2159  | 0.0391  |
| *Rassf1* | Ras association (RalGDS/AF-6) domain family member 1 | 1.0675  | 0.0406  |
| *Recql* | RecQ protein-like (DNA helicase Q1-like) | 1.0471  | 0.0470  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |  |
| *Reep5* | receptor accessory protein 5 | 1.0469  | 0.0372  |
| *Rgs4* | regulator of G-protein signaling 4 | 1.3414  | 0.0464  |
| *Rgs5* | regulator of G-protein signaling 5 | 1.4285  | 0.0298  |
| *Rhoc* | ras homolog family member C | 1.0723  | 0.0270  |
| *Rnls* | renalase, FAD-dependent amine oxidase | 1.0996  | 0.0199  |
| *Rpl28* | ribosomal protein L28 | 1.1521  | 0.0404  |
| *Runx1t1* | runt-related transcription factor 1; translocated to, 1 (cyclin D-related) | 1.1821  | 0.0374  |
| *S100a10* | S100 calcium binding protein A10 | 1.0780  | 0.0122  |
| *S100a11* | S100 calcium binding protein A11 | 1.1131  | 0.0115  |
| *Sbno2* | strawberry notch homolog 2 (Drosophila) | 1.2464  | 0.0138  |
| *Scamp2* | secretory carrier membrane protein 2 | 1.0630  | 0.0375  |
| *Scara5* | scavenger receptor class A, member 5 (putative) | 1.5115  | 0.0226  |
| *Sdccag3* | serologically defined colon cancer antigen 3 | 1.1112  | 0.0459  |
| *Sec14l2* | SEC14-like 2 (S. cerevisiae) | 1.0948  | 0.0486  |
| *Sec61a1* | Sec61 alpha 1 subunit (S. cerevisiae) | 1.0642  | 0.0192  |
| *Sele* | selectin E | 3.1747  | 0.0068  |
| *Sfrp4* | secreted frizzled-related protein 4 | 1.5291  | 0.0174  |
| *Sfxn3* | sideroflexin 3 | 1.1040  | 0.0201  |
| *Sh3bgrl3* | SH3 domain binding glutamic acid-rich protein-like 3 | 1.1172  | 0.0327  |
| *Sirt6* | sirtuin 6 | 1.0707  | 0.0211  |
| *Slc12a2* | solute carrier family 12 (sodium/potassium/chloride transporters), member 2 | 1.0957  | 0.0454  |
| *Slc1a5* | solute carrier family 1 (neutral amino acid transporter), member 5 | 1.1126  | 0.0460  |
| *Slc25a28* | solute carrier family 25 (mitochondrial iron transporter), member 28 | 1.0610  | 0.0295  |
| *Slc28a2* | solute carrier family 28 (sodium-coupled nucleoside transporter), member 2 | 1.3482  | 0.0384  |
|  |  |  |  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |
| **Up-regulated** |  |  |  |
| *Slc2a6* | solute carrier family 2 (facilitated glucose transporter), member 6 | 1.2442  | 0.0163  |
| *Slc2a9* | solute carrier family 2 (facilitated glucose transporter), member 9 | 1.2433  | 0.0186  |
| *Slc35e4* | solute carrier family 35, member E4 | 1.1009  | 0.0473  |
| *Slc39a7* | solute carrier family 39 (zinc transporter), member 7 | 1.0544  | 0.0270  |
| *Slc41a2* | solute carrier family 41, member 2 | 1.0965  | 0.0297  |
| *Slc43a2* | solute carrier family 43, member 2 | 1.1427  | 0.0343  |
| *Slc47a1* | solute carrier family 47, member 1 | 1.7672  | 0.0068  |
| *Slc7a7* | solute carrier family 7 (amino acid transporter light chain, y+L system), member 7 | 1.1480  | 0.0426  |
| *Slc8a1* | solute carrier family 8 (sodium/calcium exchanger), member 1 | 1.4887  | 0.0112  |
| *Slco2a1* | solute carrier organic anion transporter family, member 2a1 | 1.4391  | 0.0143  |
| *Smg9* | smg-9 homolog, nonsense mediated mRNA decay factor (C. elegans) | 1.0692  | 0.0271  |
| *Smyd5* | SMYD family member 5 | 1.0863  | 0.0180  |
| *Sned1* | sushi, nidogen and EGF-like domains 1 | 1.2470  | 0.0128  |
| *Snx8* | sorting nexin 8 | 1.0798  | 0.0449  |
| *Sod2* | superoxide dismutase 2, mitochondrial | 1.1460  | 0.0100  |
| *Sorcs2* | sortilin-related VPS10 domain containing receptor 2 | 1.4390  | 0.0186  |
| *Sox4* | SRY (sex determining region Y)-box 4 | 1.1721  | 0.0323  |
| *Spon1* | spondin 1, extracellular matrix protein | 1.4207  | 0.0454  |
| *Sprr3* | small proline-rich protein 3 | 1.2127  | 0.0454  |
| *Spsb4* | splA/ryanodine receptor domain and SOCS box containing 4 | 1.0809  | 0.0318  |
| *Srek1ip1* | SREK1-interacting protein 1 | 1.0753  | 0.0233  |
| *Srsf11* | serine/arginine-rich splicing factor 11 | 1.0903  | 0.0325  |
| *Srsf6* | serine/arginine-rich splicing factor 6 | 1.0541  | 0.0483  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Up-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Stat3* | signal transducer and activator of transcription 3 (acute-phase response factor) | 1.0971  | 0.0126  |
| *Stmn2* | stathmin-like 2 | 1.7790  | 0.0303  |
| *Stom* | stomatin | 1.0805  | 0.0181  |
| *Tagln* | transgelin | 1.6034  | 0.0083  |
| *Tagln2* | transgelin 2 | 1.0961  | 0.0310  |
| *Tatdn2* | TatD DNase domain containing 2 | 1.0596  | 0.0494  |
| *Tbrg4* | transforming growth factor beta regulator 4 | 1.0624  | 0.0439  |
| *Tgfb1i1* | transforming growth factor beta 1 induced transcript 1 | 1.1504  | 0.0310  |
| *Tgm2* | transglutaminase 2, C polypeptide | 1.0897  | 0.0450  |
| *Thy1* | Thy-1 cell surface antigen | 1.1509  | 0.0443  |
| *Tie1* | tyrosine kinase with immunoglobulin-like and EGF-like domains 1 | 1.2607  | 0.0313  |
| *Timm44* | translocase of inner mitochondrial membrane 44 homolog (yeast) | 1.1284  | 0.0122  |
| *Timp1* | TIMP metallopeptidase inhibitor 1 | 1.1108  | 0.0170  |
| *Tk1* | thymidine kinase 1, soluble | 1.0642  | 0.0471  |
| *Tlr2* | toll-like receptor 2 | 1.4007  | 0.0238  |
| *Tlr8* | toll-like receptor 8 | 1.3382  | 0.0251  |
| *Tm4sf1* | transmembrane 4 L six family member 1 | 1.0560  | 0.0470  |
| *Tm4sf4* | transmembrane 4 L six family member 4 | 1.1924  | 0.0488  |
| *Tmem106a* | transmembrane protein 106A | 1.3859  | 0.0105  |
| *Tmem176a* | transmembrane protein 176A | 1.1545  | 0.0128  |
| *Tmem176b* | transmembrane protein 176B | 1.1758  | 0.0170  |
| *Tmem37* | transmembrane protein 37 | 1.2089  | 0.0454  |
| *Tnfaip2* | tumor necrosis factor, alpha-induced protein 2 | 1.1841  | 0.0383  |
| *Tnfrsf1a* | tumor necrosis factor receptor superfamily, member 1a | 1.1152  | 0.0167  |
| *Tnn* | tenascin N | 3.2457  | 0.0012  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Up-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Tnnt2* | troponin T type 2 (cardiac) | 1.4597  | 0.0418  |
| *Tpm3* | tropomyosin 3 | 1.1774  | 0.0102  |
| *Traf3ip2* | Traf3 interacting protein 2 | 1.2670  | 0.0115  |
| *Trem2* | triggering receptor expressed on myeloid cells 2 | 1.5574  | 0.0092  |
| *Trpc6* | transient receptor potential cation channel, subfamily C, member 6 | 1.3445  | 0.0068  |
| *Tstd3* | thiosulfate sulfurtransferase (rhodanese)-like domain containing 3 | 1.1252  | 0.0488  |
| *Ttc9* | tetratricopeptide repeat domain 9 | 1.2150  | 0.0110  |
| *Tubb3* | tubulin, beta 3 class III | 1.3954  | 0.0255  |
| *Tubb6* | tubulin, beta 6 class V | 1.2252  | 0.0112  |
| *Tusc5* | tumor suppressor candidate 5 | 1.2627  | 0.0445  |
| *Twistnb* | TWIST neighbor | 1.0973  | 0.0460  |
| *Txnrd1* | thioredoxin reductase 1 | 1.1060  | 0.0334  |
| *Uba5* | ubiquitin-like modifier activating enzyme 5 | 1.0594  | 0.0310  |
| *Ubxn1* | UBX domain protein 1 | 1.0529  | 0.0441  |
| *Uchl1* | ubiquitin carboxyl-terminal esterase L1 (ubiquitin thiolesterase) | 1.1747  | 0.0090  |
| *Vash2* | vasohibin 2 | 1.3859  | 0.0279  |
| *Vat1* | vesicle amine transport protein 1 homolog (T californica) | 1.1483  | 0.0373  |
| *Vegfc* | vascular endothelial growth factor C | 1.3740  | 0.0283  |
| *Vipr1* | vasoactive intestinal peptide receptor 1 | 1.2378  | 0.0211  |
| *Vwa1* | von Willebrand factor A domain containing 1 | 1.1673  | 0.0206  |
| *Vwf* | von Willebrand factor | 1.2565  | 0.0459  |
| *Wdfy1* | WD repeat and FYVE domain containing 1 | 1.0861  | 0.0335  |
| *Wdr43* | WD repeat domain 43 | 1.1049  | 0.0248  |
| *Wisp2* | WNT1 inducible signaling pathway protein 2 | 1.4097  | 0.0143  |
| *Zak* | sterile alpha motif and leucine zipper containing kinase AZK | 1.1125  | 0.0488  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Up-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Zfand2a* | zinc finger, AN1-type domain 2A | 1.1416  | 0.0228  |
| *Zfhx3* | zinc finger homeobox 3 | 1.0720  | 0.0490  |
| *Zfp428* | zinc finger protein 428 | 1.1158  | 0.0474  |
| *Znhit3* | zinc finger, HIT-type containing 3 | 1.1440  | 0.0162  |
| **Down-regulated** |
| *Abhd14a* | abhydrolase domain containing 14A | 0.8772  | 0.0143  |
| *Ablim3* | actin binding LIM protein family, member 3 | 0.8058  | 0.0471  |
| *Acp5* | acid phosphatase 5, tartrate resistant | 0.8323  | 0.0220  |
| *Adamts10* | ADAM metallopeptidase with thrombospondin type 1 motif, 10 | 0.9527  | 0.0488  |
| *Adm* | adrenomedullin | 0.8871  | 0.0352  |
| *Aff4* | AF4/FMR2 family, member 4 | 0.9370  | 0.0181  |
| *Aftph* | aftiphilin | 0.8524  | 0.0068  |
| *Agfg1* | ArfGAP with FG repeats 1 | 0.9412  | 0.0498  |
| *Agl* | amylo-alpha-1, 6-glucosidase, 4-alpha-glucanotransferase | 0.8439  | 0.0280  |
| *Agpat5* | 1-acylglycerol-3-phosphate O-acyltransferase 5 | 0.9367  | 0.0348  |
| *Agt* | angiotensinogen (serpin peptidase inhibitor, clade A, member 8) | 0.8582  | 0.0482  |
| *Agtpbp1* | ATP/GTP binding protein 1 | 0.8943  | 0.0392  |
| *Ahi1* | Abelson helper integration site 1 | 0.8683  | 0.0435  |
| *Ahsp* | alpha hemoglobin stabilizing protein | 0.7404  | 0.0334  |
| *Akap7* | A kinase (PRKA) anchor protein 7 | 0.8608  | 0.0304  |
| *Akt3* | v-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma) | 0.9483  | 0.0460  |
| *Alas1* | aminolevulinate, delta-, synthase 1 | 0.8657  | 0.0110  |
| *Alas2* | aminolevulinate, delta-, synthase 2 | 0.6238  | 0.0071  |
| *Aldh6a1* | aldehyde dehydrogenase 6 family, member A1 | 0.8886  | 0.0260  |
| *Arhgap39* | Rho GTPase activating protein 39 | 0.8730  | 0.0195  |
| *Arhgap5* | Rho GTPase activating protein 5 | 0.9328  | 0.0311  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Arhgap6* | Rho GTPase activating protein 6 | 0.8048  | 0.0069  |
| *Arih1* | riadne homolog, ubiquitin-conjugating enzyme E2 binding protein, 1 (Drosophila) | 0.9326  | 0.0122  |
| *Armcx4* | armadillo repeat containing, X-linked 4 | 0.9355  | 0.0426  |
| *Arsb* | arylsulfatase B | 0.7742  | 0.0136  |
| *Ash1l* | ash1 (absent, small, or homeotic)-like (Drosophila) | 0.8963  | 0.0255  |
| *Asrgl1* | asparaginase like 1 | 0.8977  | 0.0307  |
| *Atoh8* | atonal homolog 8 (Drosophila) | 0.8629  | 0.0090  |
| *Atp5s* | ATP synthase, H+ transporting, mitochondrial Fo complex, subunit s (factor B) | 0.8985  | 0.0427  |
| *Atp6ap2* | ATPase, H+ transporting, lysosomal accessory protein 2 | 0.8714  | 0.0478  |
| *Bambi* | BMP and activin membrane-bound inhibitor, homolog (Xenopus laevis) | 0.7887  | 0.0068  |
| *Bank1* | B-cell scaffold protein with ankyrin repeats 1 | 0.8522  | 0.0482  |
| *Bbs1* | Bardet-Biedl syndrome 1 | 0.8856  | 0.0110  |
| *Bbs5* | Bardet-Biedl syndrome 5 | 0.8956  | 0.0112  |
| *Bcar3* | breast cancer anti-estrogen resistance 3 | 0.6560  | 0.0275  |
| *Bckdhb* | branched chain keto acid dehydrogenase E1, beta polypeptide | 0.9260  | 0.0412  |
| *Bhlhb9* | basic helix-loop-helix domain containing, class B, 9 | 0.8225  | 0.0440  |
| *Blm* | Bloom syndrome, RecQ helicase-like | 0.8924  | 0.0324  |
| *Bmp3* | bone morphogenetic protein 3 | 0.7391  | 0.0067  |
| *Bmp5* | bone morphogenetic protein 5 | 0.8024  | 0.0347  |
| *Bmp8a* | bone morphogenetic protein 8a | 0.7533  | 0.0068  |
| *Brd1* | bromodomain containing 1 | 0.9402  | 0.0464  |
| *C2cd3* | C2 calcium-dependent domain containing 3 | 0.8615  | 0.0186  |
| *Cadm1* | cell adhesion molecule 1 | 0.6748  | 0.0180  |
| *Calcr* | calcitonin receptor | 0.5895  | 0.0069  |
| *Calhm2* | calcium homeostasis modulator 2 | 0.9343  | 0.0208  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Camp* | cathelicidin antimicrobial peptide | 0.6967  | 0.0491  |
| *Camsap2* | calmodulin regulated spectrin-associated protein family, member 2 | 0.9227  | 0.0359  |
| *Cbfa2t2* | core-binding factor, runt domain, alpha subunit 2; translocated to, 2 | 0.9139  | 0.0373  |
| *Ccni* | cyclin I | 0.9628  | 0.0352  |
| *Ccr1* | chemokine (C-C motif) receptor 1 | 0.7465  | 0.0144  |
| *Cd52* | CD52 antigen | 0.8101  | 0.0299  |
| *Cd79b* | Cd79b molecule, immunoglobulin-associated beta | 0.6773  | 0.0069  |
| *Cdc73* | cell division cycle 73 | 0.9464  | 0.0437  |
| *Cdca7* | cell division cycle associated 7 | 0.8372  | 0.0306  |
| *Cdcp1* | CUB domain containing protein 1 | 0.8030  | 0.0217  |
| *Cdip1* | cell death-inducing p53 target 1 | 0.9073  | 0.0156  |
| *Cfd* | complement factor D (adipsin) | 0.8085  | 0.0326  |
| *Chd1* | chromodomain helicase DNA binding protein 1 | 0.9202  | 0.0474  |
| *Chd6* | chromodomain helicase DNA binding protein 6 | 0.9283  | 0.0269  |
| *Chd9* | chromodomain helicase DNA binding protein 9 | 0.9225  | 0.0418  |
| *Chit1* | chitinase 1 (chitotriosidase) | 0.8560  | 0.0310  |
| *Chmp4c* | charged multivesicular body protein 4C | 0.8039  | 0.0366  |
| *Chrdl2* | chordin-like 2 | 0.7649  | 0.0100  |
| *Chtf8* | CTF8, chromosome transmission fidelity factor 8 homolog (S. cerevisiae) | 0.9423  | 0.0445  |
| *Cit* | citron (rho-interacting, serine/threonine kinase 21) | 0.8734  | 0.0226  |
| *Cited2* | Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 2 | 0.8365  | 0.0068  |
| *Ckap5* | cytoskeleton associated protein 5 | 0.9388  | 0.0259  |
| *Ckb* | creatine kinase, brain | 0.8914  | 0.0166  |
| *Clasp2* | cytoplasmic linker associated protein 2 | 0.9283  | 0.0326  |
| *Cldn10* | claudin 10 | 0.7104  | 0.0344  |
| *Cldn11* | claudin 11 | 0.7681  | 0.0085  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Cldn12* | claudin 12 | 0.9167  | 0.0180  |
| *Cmpk2* | cytidine monophosphate (UMP-CMP) kinase 2, mitochondrial | 0.9010  | 0.0407  |
| *Cnksr3* | Cnksr family member 3 | 0.9241  | 0.0274  |
| *Cnpy2* | canopy 2 homolog (zebrafish) | 0.9462  | 0.0351  |
| *Coa5* | cytochrome C oxidase assembly factor 5 | 0.9148  | 0.0090  |
| *Cobl* | cordon-bleu WH2 repeat protein | 0.8881  | 0.0201  |
| *Col13a1* | collagen, type XIII, alpha 1 | 0.7321  | 0.0012  |
| *Col9a1* | collagen, type IX, alpha 1 | 0.8762  | 0.0428  |
| *Colec12* | collectin sub-family member 12 | 0.9397  | 0.0195  |
| *Copg2* | coatomer protein complex, subunit gamma 2 | 0.9387  | 0.0431  |
| *Cp* | ceruloplasmin (ferroxidase) | 0.8760  | 0.0314  |
| *Cpox* | coproporphyrinogen oxidase | 0.9301  | 0.0437  |
| *Cpsf6* | cleavage and polyadenylation specific factor 6, 68kDa | 0.9005  | 0.0198  |
| *Cpz* | carboxypeptidase Z | 0.7767  | 0.0266  |
| *Crebbp* | CREB binding protein | 0.9314  | 0.0395  |
| *Cryab* | isheveled, alpha B | 0.8239  | 0.0126  |
| *Csrnp3* | cysteine-serine-rich nuclear protein 3 | 0.8012  | 0.0295  |
| *Cst3* | cystatin C | 0.9368  | 0.0338  |
| *Ctdspl* | CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A) small phosphatase-like | 0.8276  | 0.0211  |
| *Ctsf* | cathepsin F | 0.9539  | 0.0371  |
| *Ctsk* | cathepsin K | 0.8763  | 0.0334  |
| *Cxcl14* | chemokine (C-X-C motif) ligand 14 | 0.9012  | 0.0138  |
| *Cyb5a* | cytochrome b5 type A (microsomal) | 0.9332  | 0.0286  |
| *Cybrd1* | cytochrome b reductase 1 | 0.9320  | 0.0493  |
| *Cyfip2* | cytoplasmic FMR1 interacting protein 2 | 0.6801  | 0.0186  |
| *Dact1* | isheveled-binding antagonist of beta-catenin 1 | 0.6710  | 0.0019  |
| *Dag1* | dystroglycan 1 (dystrophin-associated glycoprotein 1) | 0.9478  | 0.0407  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Dapk2* | death-associated kinase 2 | 0.7086  | 0.0083  |
| *Ddit4* | DNA-damage-inducible transcript 4 | 0.9111  | 0.0348  |
| *Ddx26b* | DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 26B | 0.8894  | 0.0128  |
| *Degs2* | delta(4)-desaturase, sphingolipid 2 | 0.6730  | 0.0197  |
| *Dennd5a* | DENN/MADD domain containing 5A | 0.9623  | 0.0497  |
| *Dhtkd1* | dehydrogenase E1 and transketolase domain containing 1 | 0.8544  | 0.0383  |
| *Dirc2* | disrupted in renal carcinoma 2 | 0.9495  | 0.0389  |
| *Dmp1* | dentin matrix acidic phosphoprotein 1 | 0.7074  | 0.0083  |
| *Dnaja1* | DnaJ (Hsp40) homolog, subfamily A, member 1 | 0.9318  | 0.0186  |
| *Dnajc27* | DnaJ (Hsp40) homolog, subfamily C, member 27 | 0.9173  | 0.0208  |
| *Dnase2b* | deoxyribonuclease II beta | 0.7039  | 0.0116  |
| *Dock5* | dedicator of cytokinesis 5 | 0.8901  | 0.0264  |
| *Dok5* | docking protein 5 | 0.8527  | 0.0092  |
| *Dstyk* | dual serine/threonine and tyrosine protein kinase | 0.9211  | 0.0424  |
| *Dusp14* | dual specificity phosphatase 14 | 0.8865  | 0.0429  |
| *Eaf2* | ELL associated factor 2 | 0.7953  | 0.0421  |
| *Eif4ebp2* | eukaryotic translation initiation factor 4E binding protein 2 | 0.9178  | 0.0291  |
| *Eln* | elastin | 0.8139  | 0.0083  |
| *Eml4* | echinoderm microtubule associated protein like 4 | 0.8588  | 0.0309  |
| *Enpp1* | ectonucleotide pyrophosphatase/phosphodiesterase 1 | 0.9595  | 0.0392  |
| *Enpp6* | ectonucleotide pyrophosphatase/phosphodiesterase 6 | 0.7090  | 0.0285  |
| *Entpd3* | ectonucleoside triphosphate diphosphohydrolase 3 | 0.7438  | 0.0090  |
| *Epn2* | epsin 2 | 0.9024  | 0.0144  |
| *Epx* | eosinophil peroxidase | 0.6240  | 0.0135  |
| *Ergic1* | endoplasmic reticulum-golgi intermediate compartment (ERGIC) 1 | 0.9307  | 0.0332  |
| *Ermp1* | endoplasmic reticulum metallopeptidase 1 | 0.8787  | 0.0283  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Faim3* | Fas apoptotic inhibitory molecule 3 | 0.7397  | 0.0090  |
| *Fam117a* | family with sequence similarity 117, member A | 0.8559  | 0.0486  |
| *Fam13c* | family with sequence similarity 13, member C | 0.7932  | 0.0172  |
| *Fam180a* | family with sequence similarity 180, member A | 0.9121  | 0.0319  |
| *Fam189a2* | family with sequence similarity 189, member A2 | 0.8249  | 0.0163  |
| *Fam193a* | family with sequence similarity 193, member A | 0.8950  | 0.0440  |
| *Fam213a* | family with sequence similarity 213, member A | 0.9366  | 0.0264  |
| *Fam214a* | family with sequence similarity 214, member A | 0.7587  | 0.0187  |
| *Fam3c* | family with sequence similarity 3, member C | 0.9512  | 0.0474  |
| *Fam46a* | family with sequence similarity 46, member A | 0.8446  | 0.0372  |
| *Fam65b* | family with sequence similarity 65, member B | 0.5273  | 0.0200  |
| *Fbp1* | fructose-1,6-bisphosphatase 1 | 0.7545  | 0.0468  |
| *Fbp2* | fructose-1,6-bisphosphatase 2 | 0.8120  | 0.0123  |
| *Fbxl4* | F-box and leucine-rich repeat protein 4 | 0.9088  | 0.0115  |
| *Fbxo11* | F-box protein 11 | 0.9305  | 0.0206  |
| *Fcrla* | Fc receptor-like A | 0.7555  | 0.0360  |
| *Fibin* | fin bud initiation factor homolog (zebrafish) | 0.8901  | 0.0279  |
| *Fmo1* | flavin containing monooxygenase 1 | 0.7025  | 0.0105  |
| *Fndc5* | fibronectin type III domain containing 5 | 0.8774  | 0.0337  |
| *Frzb* | frizzled-related protein | 0.8028  | 0.0150  |
| *Fut2* | fucosyltransferase 2 (secretor status included) | 0.8534  | 0.0083  |
| *Fzd5* | frizzled family receptor 5 | 0.8414  | 0.0247  |
| *Gal* | galanin/GMAP prepropeptide | 0.6410  | 0.0021  |
| *Gal3st4* | galactose-3-O-sulfotransferase 4 | 0.8622  | 0.0359  |
| *Galm* | galactose mutarotase (aldose 1-epimerase) | 0.8810  | 0.0068  |
| *Gcnt1* | glucosaminyl (N-acetyl) transferase 1, core 2 | 0.9099  | 0.0477  |
| *Gfi1* | growth factor independent 1 transcription repressor | 0.7749  | 0.0103  |
| *Ggh* | gamma-glutamyl hydrolase (conjugase, folylpolygammaglutamyl hydrolase) | 0.8835  | 0.0167  |
| *Glcci1* | glucocorticoid induced transcript 1 | 0.7580  | 0.0083  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Gldc* | glycine dehydrogenase (decarboxylating) | 0.7788  | 0.0211  |
| *Gmpr* | guanosine monophosphate reductase | 0.8837  | 0.0180  |
| *Gnai1* | guanine nucleotide binding protein (G protein), alpha inhibiting activity polypeptide 1 | 0.8419  | 0.0354  |
| *Golim4* | golgi integral membrane protein 4 | 0.9470  | 0.0410  |
| *Gpbp1* | GC-rich promoter binding protein 1 | 0.8905  | 0.0162  |
| *Gpihbp1* | glycosylphosphatidylinositol anchored high density lipoprotein binding protein 1 | 0.9003  | 0.0319  |
| *Gpr115* | G protein-coupled receptor 115 | 0.7385  | 0.0069  |
| *Gprasp1* | G protein-coupled receptor associated sorting protein 1 | 0.8546  | 0.0068  |
| *Gprc5c* | G protein-coupled receptor, family C, group 5, member C | 0.8674  | 0.0180  |
| *Gpsm1* | G-protein signaling modulator 1 | 0.8892  | 0.0354  |
| *Grhpr* | glyoxylate reductase/hydroxypyruvate reductase | 0.8797  | 0.0122  |
| *Gria2* | glutamate receptor, ionotropic, AMPA 2 | 0.7940  | 0.0213  |
| *Gsta4* | glutathione S-transferase alpha 4 | 0.6049  | 0.0068  |
| *Hbb* | hemoglobin, beta | 0.8175  | 0.0069  |
| *Hemgn* | hemogen | 0.6320  | 0.0448  |
| *Herc1* | HECT and RLD domain containing E3 ubiquitin protein ligase family member 1 | 0.9130  | 0.0426  |
| *Herpud1* | homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1 | 0.9300  | 0.0336  |
| *Hey1* | hairy/enhancer-of-split related with YRPW motif 1 | 0.7736  | 0.0290  |
| *Hipk1* | homeodomain interacting protein kinase 1 | 0.9165  | 0.0105  |
| *Hp* | haptoglobin | 0.7667  | 0.0087  |
| *Hs3st1* | heparan sulfate (glucosamine) 3-O-sulfotransferase 1 | 0.7745  | 0.0197  |
| *Hs6st1* | heparan sulfate 6-O-sulfotransferase 1 | 0.9018  | 0.0162  |
| *Ibsp* | integrin-binding sialoprotein | 0.8589  | 0.0379  |
|  |  |  |  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Ift81* | intraflagellar transport 81 homolog (Chlamydomonas) | 0.9008  | 0.0309  |
| *Igf2* | insulin-like growth factor 2 | 0.7795  | 0.0103  |
| *Ihh* | Indian hedgehog | 0.8034  | 0.0474  |
| *Il12a* | interleukin 12A | 0.7332  | 0.0069  |
| *Il17b* | interleukin 17B | 0.7849  | 0.0386  |
| *Irak1bp1* | interleukin-1 receptor-associated kinase 1 binding protein 1 | 0.9376  | 0.0353  |
| *Irf2bpl* | interferon regulatory factor 2 binding protein-like | 0.9563  | 0.0472  |
| *Irs2* | insulin receptor substrate 2 | 0.8993  | 0.0245  |
| *Irx5* | iroquois homeobox 5 | 0.8214  | 0.0122  |
| *Itgb7* | integrin, beta 7 | 0.8482  | 0.0348  |
| *Itpr1* | inositol 1,4,5-trisphosphate receptor, type 1 | 0.9206  | 0.0215  |
| *Kat6a* | K(lysine) acetyltransferase 6A | 0.9243  | 0.0144  |
| *Kazald1* | Kazal-type serine peptidase inhibitor domain 1 | 0.8965  | 0.0294  |
| *Kcnk2* | potassium channel, subfamily K, member 2 | 0.6530  | 0.0068  |
| *Kdm5a* | lysine (K)-specific demethylase 5A | 0.9433  | 0.0314  |
| *Kdm6a* | lysine (K)-specific demethylase 6A | 0.9299  | 0.0491  |
| *Kel* | Kell blood group, metallo-endopeptidase | 0.8559  | 0.0126  |
| *Kif3c* | kinesin family member 3C | 0.8248  | 0.0339  |
| *Klf1* | Kruppel-like factor 1 (erythroid) | 0.8350  | 0.0326  |
| *Klf15* | Kruppel-like factor 15 | 0.7419  | 0.0138  |
| *Klf2* | Kruppel-like factor 2 (lung) | 0.8426  | 0.0163  |
| *Klf7* | Kruppel-like factor 7 (ubiquitous) | 0.8247  | 0.0283  |
| *Klhl12* | kelch-like family member 12 | 0.9287  | 0.0228  |
| *Klhl7* | kelch-like family member 7 | 0.9062  | 0.0103  |
| *Lats2* | large tumor suppressor 2 | 0.9518  | 0.0410  |
| *Ldhb* | lactate dehydrogenase B | 0.9081  | 0.0190  |
| *Ldhc* | lactate dehydrogenase C | 0.6467  | 0.0068  |
|  |  |  |  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Ldlrad4* | low density lipoprotein receptor class A domain containing 4 | 0.8685  | 0.0187  |
| *Lect1* | leukocyte cell derived chemotaxin 1 | 0.6518  | 0.0194  |
| *Lemd3* | LEM domain containing 3 | 0.8703  | 0.0464  |
| *Limch1* | LIM and calponin homology domains 1 | 0.8124  | 0.0167  |
| *Lipc* | lipase, hepatic | 0.6529  | 0.0068  |
| *Lmcd1* | LIM and cysteine-rich domains 1 | 0.8566  | 0.0380  |
| *Lmtk2* | lemur tyrosine kinase 2 | 0.8559  | 0.0068  |
| *Lox* | lysyl oxidase | 0.9238  | 0.0313  |
| *Lppr4* | lipid phosphate phosphatase-related protein type 4 | 0.6738  | 0.0122  |
| *Lrba* | LPS-responsive vesicle trafficking, beach and anchor containing | 0.9290  | 0.0353  |
| *Lrp4* | low density lipoprotein receptor-related protein 4 | 0.7264  | 0.0275  |
| *Lrrn2* | leucine rich repeat neuronal 2 | 0.8648  | 0.0382  |
| *Lsamp* | limbic system-associated membrane protein | 0.7471  | 0.0277  |
| *Lsm14a* | LSM14A, SCD6 homolog A (S. cerevisiae) | 0.9010  | 0.0353  |
| *Ltbp1* | latent transforming growth factor beta binding protein 1 | 0.8753  | 0.0282  |
| *Magi2* | membrane associated guanylate kinase, WW and PDZ domain containing 2 | 0.8283  | 0.0197  |
| *Mal* | mal, T-cell differentiation protein | 0.8048  | 0.0484  |
| *Manba* | mannosidase, beta A, lysosomal | 0.9002  | 0.0108  |
| *Map1b* | microtubule-associated protein 1B | 0.6884  | 0.0126  |
| *Map2k6* | mitogen-activated protein kinase kinase 6 | 0.9112  | 0.0487  |
| *Mapre3* | microtubule-associated protein, RP/EB family, member 3 | 0.9389  | 0.0353  |
| *Max* | MYC associated factor X | 0.9407  | 0.0180  |
| *Mbd1* | methyl-CpG binding domain protein 1 | 0.9441  | 0.0350  |
| *Mbd6* | methyl-CpG binding domain protein 6 | 0.9332  | 0.0395  |
| *Mdh1* | malate dehydrogenase 1, NAD (soluble) | 0.9619  | 0.0360  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Med31* | mediator complex subunit 31 | 0.9190  | 0.0271  |
| *Mepe* | matrix extracellular phosphoglycoprotein | 0.6897  | 0.0044  |
| *Metap1* | methionyl aminopeptidase 1 | 0.9632  | 0.0427  |
| *Mib2* | mindbomb E3 ubiquitin protein ligase 2 | 0.9275  | 0.0458  |
| *Mical3* | microtubule associated monooxygenase, calponin and LIM domain containing 3 | 0.9316  | 0.0152  |
| *Mier3* | mesoderm induction early response 1, family member 3 | 0.9239  | 0.0272  |
| *Mllt4* | myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 4 | 0.8606  | 0.0410  |
| *Mme* | membrane metallo-endopeptidase | 0.7054  | 0.0224  |
| *Mphosph8* | M-phase phosphoprotein 8 | 0.9430  | 0.0235  |
| *Ms4a1* | membrane-spanning 4-domains, subfamily A, member 1 | 0.5658  | 0.0012  |
| *Msl1* | male-specific lethal 1 homolog (Drosophila) | 0.9487  | 0.0466  |
| *Msrb2* | methionine sulfoxide reductase B2 | 0.9002  | 0.0094  |
| *Mta3* | metastasis associated 1 family, member 3 | 0.8984  | 0.0266  |
| *Mtfr1* | mitochondrial fission regulator 1 | 0.9388  | 0.0297  |
| *Mtss1l* | metastasis suppressor 1-like | 0.8798  | 0.0235  |
| *Mtus1* | microtubule associated tumor suppressor 1 | 0.9087  | 0.0312  |
| *Mut* | methylmalonyl CoA mutase | 0.9082  | 0.0410  |
| *Mxi1* | MAX interactor 1 | 0.9341  | 0.0389  |
| *Myo1d* | myosin ID | 0.9262  | 0.0392  |
| *Myoc* | myocilin, trabecular meshwork inducible glucocorticoid response | 0.7152  | 0.0139  |
| *Nadk2* | NAD kinase 2, mitochondrial | 0.8170  | 0.0068  |
| *Nap1l3* | nucleosome assembly protein 1-like 3 | 0.7741  | 0.0342  |
| *Napb* | N-ethylmaleimide-sensitive factor attachment protein, beta | 0.8069  | 0.0474  |
| *Neo1* | neogenin 1 | 0.8659  | 0.0192  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Net1* | neuroepithelial cell transforming 1 | 0.8772  | 0.0239  |
| *Nf2* | neurofibromin 2 (merlin) | 0.8385  | 0.0380  |
| *Nfe2* | nuclear factor, erythroid derived 2 | 0.5143  | 0.0122  |
| *Nipbl* | Nipped-B homolog (Drosophila) | 0.8349  | 0.0424  |
| *Nkg7* | natural killer cell group 7 sequence | 0.6971  | 0.0068  |
| *Nrep* | neuronal regeneration related protein | 0.9432  | 0.0380  |
| *Nrxn1* | neurexin 1 | 0.7113  | 0.0222  |
| *Nubp2* | nucleotide binding protein 2 | 1.0781  | 0.0295  |
| *Nucks1* | nuclear casein kinase and cyclin-dependent kinase substrate 1 | 0.8894  | 0.0462  |
| *Otud1* | OTU domain containing 1 | 0.8804  | 0.0023  |
| *Otud7b* | OTU domain containing 7B | 0.8938  | 0.0181  |
| *Oxr1* | oxidation resistance 1 | 0.9434  | 0.0227  |
| *Pacsin1* | protein kinase C and casein kinase substrate in neurons 1 | 0.7396  | 0.0085  |
| *Pacsin2* | protein kinase C and casein kinase substrate in neurons 2 | 0.9143  | 0.0283  |
| *Panx3* | pannexin 3 | 0.6135  | 0.0237  |
| *Papd7* | PAP associated domain containing 7 | 0.9177  | 0.0282  |
| *Papss1* | 3'-phosphoadenosine 5'-phosphosulfate synthase 1 | 0.9444  | 0.0490  |
| *Parp16* | poly (ADP-ribose) polymerase family, member 16 | 0.9056  | 0.0152  |
| *Pbrm1* | polybromo 1 | 0.8538  | 0.0068  |
| *Pcdh18* | protocadherin 18 | 0.7969  | 0.0215  |
| *Pcmtd1* | protein-L-isoaspartate (D-aspartate) O-methyltransferase domain containing 1 | 0.9420  | 0.0407  |
| *Pcmtd2* | protein-L-isoaspartate (D-aspartate) O-methyltransferase domain containing 2 | 0.9019  | 0.0279  |
| *Pdcd7* | programmed cell death 7 | 0.9149  | 0.0428  |
| *Pdgfrl* | platelet-derived growth factor receptor-like | 0.8855  | 0.0138  |
| *Pdk4* | pyruvate dehydrogenase kinase, isozyme 4 | 0.7456  | 0.0172  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Penk* | proenkephalin | 0.7262  | 0.0238  |
| *Perp* | PERP, TP53 apoptosis effector | 0.7683  | 0.0215  |
| *Pgf* | placental growth factor | 0.9070  | 0.0391  |
| *Pglyrp1* | peptidoglycan recognition protein 1 | 0.8140  | 0.0090  |
| *Phex* | phosphate regulating endopeptidase homolog, X-linked | 0.5588  | 0.0083  |
| *Phf3* | PHD finger protein 3 | 0.9064  | 0.0192  |
| *Phf8* | PHD finger protein 8 | 0.9090  | 0.0162  |
| *Pik3ap1* | phosphoinositide-3-kinase adaptor protein 1 | 0.8327  | 0.0211  |
| *Pik3ca* | phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit alpha | 0.9214  | 0.0129  |
| *Pip5k1b* | phosphatidylinositol-4-phosphate 5-kinase, type I, beta | 0.8256  | 0.0445  |
| *Pja2* | praja ring finger 2, E3 ubiquitin protein ligase | 0.9554  | 0.0394  |
| *Pkd2* | polycystic kidney disease 2 (autosomal dominant) | 0.9405  | 0.0460  |
| *Pkdcc* | protein kinase domain containing, cytoplasmic | 0.9393  | 0.0460  |
| *Pkib* | protein kinase (cAMP-dependent, catalytic) inhibitor beta | 0.7182  | 0.0138  |
| *Pkp1* | plakophilin 1 | 0.8836  | 0.0484  |
| *Pla2g5* | phospholipase A2, group V | 0.7643  | 0.0024  |
| *Plac9* | placenta-specific 9 | 0.8933  | 0.0096  |
| *Plbd1* | phospholipase B domain containing 1 | 0.7354  | 0.0195  |
| *Plcb2* | phospholipase C, beta 2 | 0.8952  | 0.0448  |
| *Plekhh1* | pleckstrin homology domain containing, family H (with MyTH4 domain) member 1 | 0.8735  | 0.0410  |
| *Plxna3* | plexin A3 | 0.9207  | 0.0334  |
| *Plxnb1* | plexin B1 | 0.8469  | 0.0203  |
| *Pnpla8* | patatin-like phospholipase domain containing 8 | 0.9388  | 0.0245  |
| *Pold3* | polymerase (DNA-directed), delta 3, accessory subunit | 0.9339  | 0.0431  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Pom121* | POM121 transmembrane nucleoporin | 0.9467  | 0.0410  |
| *Pou2af1* | POU class 2 associating factor 1 | 0.5200  | 0.0068  |
| *Ppfibp2* | PTPRF interacting protein, binding protein 2 (liprin beta 2) | 0.8602  | 0.0102  |
| *Ppp1r2* | protein phosphatase 1, regulatory (inhibitor) subunit 2 | 0.9533  | 0.0367  |
| *Ppp1r26* | protein phosphatase 1, regulatory subunit 26 | 0.8721  | 0.0406  |
| *Ppp1r3b* | protein phosphatase 1, regulatory subunit 3B | 0.6358  | 0.0090  |
| *Ppp3r1* | protein phosphatase 3, regulatory subunit B, alpha | 0.9550  | 0.0399  |
| *Prdx4* | peroxiredoxin 4 | 0.9442  | 0.0353  |
| *Prom1* | prominin 1 | 0.7871  | 0.0372  |
| *Prpf4b* | PRP4 pre-mRNA processing factor 4 homolog B (yeast) | 0.9138  | 0.0486  |
| *Prr12* | proline rich 12 | 0.8853  | 0.0143  |
| *Psip1* | PC4 and SFRS1 interacting protein 1 | 0.9398  | 0.0427  |
| *Pth1r* | parathyroid hormone 1 receptor | 0.8771  | 0.0199  |
| *Ptpn21* | protein tyrosine phosphatase, non-receptor type 21 | 0.9043  | 0.0195  |
| *Ptprk* | protein tyrosine phosphatase, receptor type, K | 0.8547  | 0.0271  |
| *Ptprz1* | protein tyrosine phosphatase, receptor-type, Z polypeptide 1 | 0.6430  | 0.0110  |
| *Pxdc1* | PX domain containing 1 | 0.9024  | 0.0352  |
| *Rab3a* | RAB3A, member RAS oncogene family | 0.8716  | 0.0167  |
| *Rab40b* | Rab40b, member RAS oncogene family | 0.7272  | 0.0282  |
| *Rabep1* | rabaptin, RAB GTPase binding effector protein 1 | 0.9326  | 0.0297  |
| *Rac2* | ras-related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2) | 0.8283  | 0.0339  |
| *Ralbp1* | ralA binding protein 1 | 0.9395  | 0.0462  |
| *Ranbp10* | RAN binding protein 10 | 0.9495  | 0.0378  |
| *Rapgef2* | Rap guanine nucleotide exchange factor (GEF) 2 | 0.9078  | 0.0068  |
|  |  |  |  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Rarres1* | retinoic acid receptor responder (tazarotene induced) 1 | 0.8439  | 0.0084  |
| *Rasd1* | RAS, dexamethasone-induced 1 | 0.9026  | 0.0253  |
| *Rasgrp2* | RAS guanyl releasing protein 2 (calcium and DAG-regulated) | 0.7696  | 0.0274  |
| *Rasl12* | RAS-like, family 12 | 0.8498  | 0.0226  |
| *Rbm12b* | RNA binding motif protein 12B | 0.8704  | 0.0346  |
| *Rbm38* | RNA binding motif protein 38 | 0.8332  | 0.0379  |
| *Rbp7* | retinol binding protein 7, cellular | 0.6831  | 0.0202  |
| *Rcan2* | regulator of calcineurin 2 | 0.6574  | 0.0189  |
| *Rdh14* | retinol dehydrogenase 14 (all-trans/9-cis/11-cis) | 0.9160  | 0.0410  |
| *Rdx* | radixin | 0.8944  | 0.0410  |
| *Reep6* | receptor accessory protein 6 | 0.8737  | 0.0436  |
| *Ren* | renin | 0.8133  | 0.0363  |
| *Rgs3* | regulator of G-protein signaling 3 | 0.9299  | 0.0399  |
| *Rhd* | Rh blood group, D antigen | 0.7707  | 0.0292  |
| *Rhod* | ras homolog family member D | 0.8926  | 0.0240  |
| *Rhoh* | ras homolog family member H | 0.8571  | 0.0313  |
| *Rhpn2* | rhophilin, Rho GTPase binding protein 2 | 0.6030  | 0.0012  |
| *Rnase2* | ribonuclease, RNase A family, 2 (liver, eosinophil-derived neurotoxin) | 0.4729  | 0.0068  |
| *Rnasek* | ribonuclease, RNase K | 0.9451  | 0.0209  |
| *Rnpc3* | RNA-binding region (RNP1, RRM) containing 3 | 0.9286  | 0.0379  |
| *Robo2* | roundabout homolog 2 (Drosophila) | 0.6770  | 0.0179  |
| *Rprd1b* | regulation of nuclear pre-mRNA domain containing 1B | 0.9255  | 0.0292  |
| *Rsad2* | radical S-adenosyl methionine domain containing 2 | 0.6972  | 0.0119  |
| *Runx3* | runt-related transcription factor 3 | 0.8617  | 0.0245  |
| *Rybp* | RING1 and YY1 binding protein | 0.9306  | 0.0386  |
| *S100a8* | S100 calcium binding protein A8 | 0.7230  | 0.0437  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *S100a9* | S100 calcium binding protein A9 | 0.7404  | 0.0474  |
| *S100pbp* | S100P binding protein | 0.9029  | 0.0184  |
| *Satb1* | SATB homeobox 1 | 0.6727  | 0.0186  |
| *Sbno1* | strawberry notch homolog 1 (Drosophila) | 0.8701  | 0.0162  |
| *Sclt1* | sodium channel and clathrin linker 1 | 0.9143  | 0.0256  |
| *Sdc3* | syndecan 3 | 0.8227  | 0.0126  |
| *Sec62* | SEC62 homolog (S. cerevisiae) | 0.9592  | 0.0417  |
| *Selenbp1* | selenium binding protein 1 | 0.7998  | 0.0148  |
| *Sema4d* | sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4D | 0.7859  | 0.0189  |
| *Senp1* | SUMO1/sentrin specific peptidase 1 | 0.8139  | 0.0044  |
| *Senp7* | SUMO1/sentrin specific peptidase 7 | 0.9257  | 0.0271  |
| *Sephs1* | selenophosphate synthetase 1 | 0.9315  | 0.0394  |
| *Serpinb10* | serpin peptidase inhibitor, clade B (ovalbumin), member 10 | 0.5740  | 0.0102  |
| *Setmar* | SET domain without mariner transposase fusion | 0.9439  | 0.0496  |
| *Sfpq* | splicing factor proline/glutamine-rich | 0.9226  | 0.0096  |
| *Sfxn1* | sideroflexin 1 | 0.9087  | 0.0197  |
| *Sh3d19* | SH3 domain containing 19 | 0.9085  | 0.0083  |
| *Shox2* | short stature homeobox 2 | 0.8407  | 0.0086  |
| *Shq1* | SHQ1, H/ACA ribonucleoprotein assembly factor | 0.8272  | 0.0350  |
| *Shroom2* | shroom family member 2 | 0.7359  | 0.0086  |
| *Sipa1l2* | signal-induced proliferation-associated 1 like 2 | 0.9091  | 0.0212  |
| *Six4* | SIX homeobox 4 | 0.9010  | 0.0251  |
| *Slc10a2* | solute carrier family 10 (sodium/bile acid cotransporter family), member 2 | 0.6755  | 0.0024  |
| *Slc18a2* | solute carrier family 18 (vesicular monoamine), member 2 | 0.8846  | 0.0285  |
|  |  |  |  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Slc22a3* | solute carrier family 22 (extraneuronal monoamine transporter), member 3 | 0.6440  | 0.0163  |
| *Slc35a5* | solute carrier family 35, member A5 | 0.9168  | 0.0433  |
| *Slc36a2* | solute carrier family 36 (proton/amino acid symporter), member 2 | 0.6710  | 0.0181  |
| *Slc44a1* | solute carrier family 44, member 1 | 0.9483  | 0.0295  |
| *Slc6a1* | solute carrier family 6 (neurotransmitter transporter, GABA), member 1 | 0.6707  | 0.0488  |
| *Slc6a15* | solute carrier family 6 (neutral amino acid transporter), member 15 | 0.5701  | 0.0068  |
| *Slc6a17* | solute carrier family 6 (neurotransmitter transporter), member 17 | 0.8861  | 0.0453  |
| *Slc9a2* | solute carrier family 9, subfamily A (NHE2, cation proton antiporter 2), member 2 | 0.8471  | 0.0068  |
| *Slc9b2* | solute carrier family 9, subfamily B (NHA2, cation proton antiporter 2), member 2 | 0.7848  | 0.0371  |
| *Slco4a1* | solute carrier organic anion transporter family, member 4a1 | 0.6743  | 0.0394  |
| *Slit2* | slit homolog 2 (Drosophila) | 0.6609  | 0.0244  |
| *Slit3* | slit homolog 3 (Drosophila) | 0.8082  | 0.0463  |
| *Smad7* | SMAD family member 7 | 0.8847  | 0.0135  |
| *Smim3* | small integral membrane protein 3 | 0.9068  | 0.0410  |
| *Smim8* | small integral membrane protein 8 | 0.9091  | 0.0283  |
| *Smo* | smoothened, frizzled family receptor | 0.8629  | 0.0148  |
| *Smpd1* | sphingomyelin phosphodiesterase 1, acid lysosomal | 0.9448  | 0.0307  |
| *Snai1* | snail family zinc finger 1 | 0.9179  | 0.0238  |
| *Snx10* | sorting nexin 10 | 0.7830  | 0.0129  |
| *Socs2* | suppressor of cytokine signaling 2 | 0.8747  | 0.0344  |
| *Sorbs2* | sorbin and SH3 domain containing 2 | 0.9234  | 0.0220  |
| *Sparc* | secreted protein, acidic, cysteine-rich (osteonectin) | 0.9488  | 0.0430  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Spn* | sialophorin | 0.8076  | 0.0389  |
| *Spp1* | secreted phosphoprotein 1 | 0.9075  | 0.0186  |
| *Srgap2* | SLIT-ROBO Rho GTPase activating protein 2 | 0.8570  | 0.0394  |
| *Srgn* | serglycin | 0.7617  | 0.0222  |
| *Sspn* | sarcospan | 0.9125  | 0.0203  |
| *Sstr1* | somatostatin receptor 1 | 0.7773  | 0.0470  |
| *St3gal6* | ST3 beta-galactoside alpha-2,3-sialyltransferase 6 | 0.8545  | 0.0118  |
| *St6gal1* | ST6 beta-galactosamide alpha-2,6-sialyltranferase 1 | 0.9136  | 0.0306  |
| *Stag2* | stromal antigen 2 | 0.9402  | 0.0197  |
| *Stim1* | stromal interaction molecule 1 | 0.9448  | 0.0428  |
| *Strn* | striatin, calmodulin binding protein | 0.9404  | 0.0279  |
| *Sun2* | Sad1 and UNC84 domain containing 2 | 0.9398  | 0.0192  |
| *Synj2bp* | synaptojanin 2 binding protein | 0.9224  | 0.0206  |
| *Taf3* | TAF3 RNA polymerase II, TATA box binding protein (TBP)-associated factor | 0.8849  | 0.0410  |
| *Tceal1* | transcription elongation factor A (SII)-like 1 | 0.8509  | 0.0218  |
| *Tenm3* | teneurin transmembrane protein 3 | 0.6796  | 0.0454  |
| *Tfdp2* | transcription factor Dp-2 (E2F dimerization partner 2) | 0.8022  | 0.0412  |
| *Tfrc* | transferrin receptor | 0.7999  | 0.0364  |
| *Thsd4* | thrombospondin, type I, domain containing 4 | 0.9058  | 0.0470  |
| *Tiparp* | TCDD-inducible poly(ADP-ribose) polymerase | 0.8679  | 0.0468  |
| *Tle1* | transducin-like enhancer of split 1 (E(sp1) homolog, Drosophila) | 0.8774  | 0.0471  |
| *Tle2* | transducin-like enhancer of split 2 (E(sp1) homolog, Drosophila) | 0.9374  | 0.0421  |
| *Tle4* | transducin-like enhancer of split 4 (E(sp1) homolog, Drosophila) | 0.8780  | 0.0151  |
| *Tmcc2* | transmembrane and coiled-coil domain family 2 | 0.8772  | 0.0439  |
| *Tmem200c* | transmembrane protein 200C | 0.6735  | 0.0135  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Tmem38b* | transmembrane protein 38B | 0.9036  | 0.0238  |
| *Tmem67* | transmembrane protein 67 | 0.8478  | 0.0366  |
| *Tmem91* | transmembrane protein 91 | 0.9112  | 0.0372  |
| *Tmie* | transmembrane inner ear | 0.8602  | 0.0247  |
| *Tnpo1* | transportin 1 | 0.9581  | 0.0449  |
| *Tnrc6a* | trinucleotide repeat containing 6a | 0.9201  | 0.0186  |
| *Tpr* | translocated promoter region, nuclear basket protein | 0.9199  | 0.0227  |
| *Tpst1* | tyrosylprotein sulfotransferase 1 | 0.9093  | 0.0211  |
| *Tra2a* | transformer 2 alpha homolog (Drosophila) | 0.9294  | 0.0295  |
| *Trappc10* | trafficking protein particle complex 10 | 0.9417  | 0.0481  |
| *Trdmt1* | tRNA aspartic acid methyltransferase 1 | 0.8654  | 0.0135  |
| *Treml1* | triggering receptor expressed on myeloid cells-like 1 | 0.8865  | 0.0396  |
| *Trpm7* | transient receptor potential cation channel, subfamily M, member 7 | 0.9324  | 0.0146  |
| *Tspan13* | tetraspanin 13 | 0.9286  | 0.0308  |
| *Tspan33* | tetraspanin 33 | 0.8404  | 0.0162  |
| *Tsr2* | TSR2, 20S rRNA accumulation, homolog (S. cerevisiae) | 0.9107  | 0.0453  |
| *Tube1* | tubulin, epsilon 1 | 0.9175  | 0.0460  |
| *Tusc2* | tumor suppressor candidate 2 | 0.9246  | 0.0470  |
| *Twsg1* | twisted gastrulation homolog 1 (Drosophila) | 0.9242  | 0.0481  |
| *Txnrd3* | thioredoxin reductase 3 | 0.9022  | 0.0204  |
| *Uaca* | uveal autoantigen with coiled-coil domains and ankyrin repeats | 0.8855  | 0.0192  |
| *Ube2b* | ubiquitin-conjugating enzyme E2B | 0.9383  | 0.0306  |
| *Ube2o* | ubiquitin-conjugating enzyme E2O | 0.9076  | 0.0435  |
| *Ube3a* | ubiquitin protein ligase E3A | 0.8686  | 0.0271  |
| *Unc119* | UNC-119 homolog (C. elegans) | 0.9330  | 0.0180  |
| *Unc119b* | unc-119 homolog B (C. elegans) | 0.9367  | 0.0192  |
| Unc5b | unc-5 homolog B (C. elegans) | 0.8918  | 0.0270  |

**Table S1. (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Description | FC | FDR |

**Down-regulated**

|  |  |  |  |
| --- | --- | --- | --- |
| *Unkl* | unkempt homolog (Drosophila)-like | 0.9309  | 0.0292  |
| *Usf2* | upstream transcription factor 2, c-fos interacting | 0.8961  | 0.0488  |
| *Usp42* | ubiquitin specific peptidase 42 | 0.9270  | 0.0430  |
| *Vasn* | vasorin | 0.9354  | 0.0247  |
| *Vegfa* | vascular endothelial growth factor A | 0.9225  | 0.0489  |
| *Vezf1* | vascular endothelial zinc finger 1 | 0.9249  | 0.0345  |
| *Vldlr* | very low density lipoprotein receptor | 0.8520  | 0.0369  |
| *Vpreb3* | pre-B lymphocyte 3 | 0.7817  | 0.0474  |
| *Vstm4* | V-set and transmembrane domain containing 4 | 0.8947  | 0.0283  |
| *Wnt16* | wingless-type MMTV integration site family, member 16 | 0.7205  | 0.0284  |
| *Wrb* | tryptophan rich basic protein | 0.9087  | 0.0453  |
| *Wtip* | Wilms tumor 1 interacting protein | 0.9404  | 0.0472  |
| *Xpr1* | xenotropic and polytropic retrovirus receptor 1 | 0.8323  | 0.0214  |
| *Yipf4* | Yip1 domain family, member 4 | 0.9301  | 0.0235  |
| *Zbtb11* | zinc finger and BTB domain containing 11 | 0.9091  | 0.0460  |
| *Zbtb20* | zinc finger and BTB domain containing 20 | 0.8226  | 0.0318  |
| *Zbtb4* | zinc finger and BTB domain containing 4 | 0.9359  | 0.0155  |
| *Zcchc11* | zinc finger, CCHC domain containing 11 | 0.9241  | 0.0394  |
| *Zfp131* | zinc finger protein 131 | 0.9111  | 0.0340  |
| *Zfp180* | zinc finger protein 180 | 0.9400  | 0.0389  |
| *Zfp365* | zinc finger protein 365 | 0.8211  | 0.0079  |
| *Zfp609* | zinc finger protein 609 | 0.9069  | 0.0182  |
| *Zfp638* | zinc finger protein 638 | 0.8328  | 0.0137  |
| *Zfyve27* | zinc finger, FYVE domain containing 27 | 0.9160  | 0.0474  |
| *Zhx2* | zinc fingers and homeoboxes 2 | 0.8838  | 0.0238  |
| *Zkscan3* | zinc finger with KRAB and SCAN domains 3 | 0.8750  | 0.0295  |

Ranked by Gene symbol; FC: fold change; FDR: false discovery rate