

SUPPLEMENTAL DATA FOR

The Genome-wide Transcriptional Response to Neonatal Hyperoxia Identifies Ahr as a Key Regulator.

Soumyaroop Bhattacharya^{1,2}, Zhongyang Zhou¹, Min Yee^{1,3}, Chin-Yi Chu^{1,2}, Ashley M Lopez^{1,2}, Valerie A Lunger^{1,2}, Siva Kumar Solleti^{1,2}, Emily Resseguie^{1,3}, Bradley Buczynski^{1,3}, Thomas J Mariani^{1,2}, Michael A O'Reilly^{1,3}

¹Division of Neonatology, ²Pediatric Molecular and Personalized Medicine Program and ³Perinatal and Pediatric Origins of Disease Program, Department of Pediatrics, University of Rochester Medical Center, Rochester NY

7 Figures

0 Tables

1 Supplemental Table

Address for Correspondence:

Thomas J Mariani, PhD
Division of Neonatology,
Department of Pediatrics,
University of Rochester Medical Center,
601 Elmwood Ave, Box 850,
Rochester, NY 14642,
USA

Running Title: RNA-Seq in Neonatal Hyperoxia

Keywords: RNA-Seq, BPD, AHR

Funding support:

Supplemental Table 1: Genes identified by SAM as differentially expressed (at median FDR =0) in both RPM and TM normalized data and also had a magnitude of change greater than two-fold.

| Symbol | Entrez Gene Name | p-value | Fold Change |
|---------------|--|----------------|--------------------|
| GDF15 | growth differentiation factor 15 | 2.95E-05 | 56.26 |
| SLC6A3 | solute carrier family 6 (neurotransmitter transporter, dopamine), member 3 | 3.99E-06 | 23.74 |
| EDA2R | ectodysplasin A2 receptor | 1.45E-05 | 23.44 |
| CDKN1A | cyclin-dependent kinase inhibitor 1A (p21, Cip1) | 5.88E-06 | 19.79 |
| PSRC1 | proline/serine-rich coiled-coil 1 | 5.47E-06 | 12.24 |
| CCL3 | chemokine (C-C motif) ligand 3 | 5.48E-06 | 10.30 |
| PTPRN | protein tyrosine phosphatase, receptor type, N | 1.36E-05 | 10.01 |
| TREM2 | triggering receptor expressed on myeloid cells 2 | 2.37E-05 | 7.36 |
| APLN | apelin | 7.77E-05 | 7.05 |
| MGMT | O-6-methylguanine-DNA methyltransferase | 6.02E-06 | 6.80 |
| LILRB4 | leukocyte immunoglobulin-like receptor, subfamily B (with TM and ITIM domains), member 4 | 1.05E-05 | 6.59 |
| CCNG1 | cyclin G1 | 5.09E-05 | 6.08 |
| MNDA | myeloid cell nuclear differentiation antigen | 8.21E-05 | 5.92 |
| MSR1 | macrophage scavenger receptor 1 | 7.51E-06 | 5.89 |
| COL5A3 | collagen, type V, alpha 3 | 4.62E-06 | 5.74 |
| SLC19A2 | solute carrier family 19 (thiamine transporter), member 2 | 1.90E-06 | 5.74 |
| NRG1 | neuregulin 1 | 4.56E-05 | 5.70 |
| ATF3 | activating transcription factor 3 | 2.52E-05 | 5.30 |
| GFPT2 | glutamine-fructose-6-phosphate transaminase 2 | 1.77E-05 | 5.11 |
| SULF2 | sulfatase 2 | 1.81E-05 | 4.93 |
| CD80 | CD80 molecule | 2.73E-05 | 4.75 |
| MX2 | myxovirus (influenza virus) resistance 2 (mouse) | 3.47E-05 | 4.75 |
| STEAP4 | STEAP family member 4 | 5.25E-05 | 4.59 |
| PLCD4 | phospholipase C, delta 4 | 8.83E-05 | 4.57 |
| MARCO | macrophage receptor with collagenous structure | 3.92E-05 | 4.50 |
| MS4A7 | membrane-spanning 4-domains, subfamily A, member 7 | 2.04E-05 | 4.35 |
| ZMAT3 | zinc finger, matrin-type 3 | 1.34E-07 | 4.28 |
| TPSAB1/TPSB2 | tryptase alpha/beta 1 | 4.54E-06 | 4.19 |
| TMEM54 | transmembrane protein 54 | 6.70E-05 | 4.17 |
| CMA1 | chymase 1, mast cell | 8.58E-05 | 4.11 |
| ZFYVE28 | zinc finger, FYVE domain containing 28 | 8.49E-06 | 4.10 |
| LOXL4 | lysyl oxidase-like 4 | 4.62E-05 | 3.99 |
| CD68 | CD68 molecule | 1.10E-05 | 3.79 |
| GCLC | glutamate-cysteine ligase, catalytic subunit | 7.45E-05 | 3.42 |
| IGF2BP1 | insulin-like growth factor 2 mRNA binding protein 1 | 1.44E-05 | 3.38 |
| BAX | BCL2-associated X protein | 1.34E-08 | 3.32 |

| | | | |
|---------|---|----------|------|
| BHLHE40 | basic helix-loop-helix family, member e40 | 2.64E-06 | 3.28 |
| PHLDA3 | pleckstrin homology-like domain, family A, member 3 | 1.07E-05 | 3.23 |
| SLC37A2 | solute carrier family 37 (glycerol-3-phosphate transporter), member 2 | 2.57E-05 | 3.21 |
| DUSP4 | dual specificity phosphatase 4 | 1.60E-07 | 3.18 |
| SCN1B | sodium channel, voltage-gated, type I, beta | 1.77E-05 | 3.12 |
| PDGFC | platelet derived growth factor C | 1.76E-05 | 3.07 |
| TNFAIP2 | tumor necrosis factor, alpha-induced protein 2 | 2.16E-06 | 3.05 |
| AK1 | adenylate kinase 1 | 3.17E-06 | 3.02 |
| TINAG | tubulointerstitial nephritis antigen | 6.11E-06 | 3.01 |
| TTC9 | tetratricopeptide repeat domain 9 | 5.05E-05 | 3.01 |
| DCTD | dCMP deaminase | 1.65E-05 | 3.00 |
| FXYD5 | FXYD domain containing ion transport regulator 5 | 8.40E-08 | 2.99 |
| CFB | complement factor B | 3.30E-05 | 2.98 |
| HS6ST2 | heparan sulfate 6-O-sulfotransferase 2 | 1.47E-05 | 2.95 |
| HP | haptoglobin | 8.24E-05 | 2.94 |
| CASP4 | caspase 4, apoptosis-related cysteine peptidase | 3.66E-05 | 2.90 |
| CCR1 | chemokine (C-C motif) receptor 1 | 1.41E-06 | 2.90 |
| COX6B2 | cytochrome c oxidase subunit VIb polypeptide 2 (testis) | 1.07E-05 | 2.89 |
| PQLC3 | PQ loop repeat containing 3 | 1.34E-07 | 2.88 |
| SESN2 | sestrin 2 | 4.44E-06 | 2.86 |
| PLAUR | plasminogen activator, urokinase receptor | 3.48E-05 | 2.82 |
| SLC11A1 | solute carrier family 11 (proton-coupled divalent metal ion transporters), member 1 | 1.74E-05 | 2.79 |
| EPHX1 | epoxide hydrolase 1, microsomal (xenobiotic) | 2.31E-06 | 2.79 |
| ASS1 | argininosuccinate synthase 1 | 8.84E-05 | 2.71 |
| MAT1A | methionine adenosyltransferase I, alpha | 4.09E-05 | 2.70 |
| C1QB | complement component 1, q subcomponent, B chain | 4.58E-06 | 2.69 |
| ASNS | asparagine synthetase (glutamine-hydrolyzing) | 1.18E-06 | 2.68 |
| BST1 | bone marrow stromal cell antigen 1 | 2.72E-05 | 2.67 |
| CTSH | cathepsin H | 2.32E-05 | 2.65 |
| MDM2 | Mdm2 p53 binding protein homolog (mouse) | 1.52E-05 | 2.64 |
| SCNN1B | sodium channel, nonvoltage-gated 1, beta | 5.02E-05 | 2.64 |
| HSPB8 | heat shock 22kDa protein 8 | 5.65E-05 | 2.60 |
| HSPA9 | heat shock 70kDa protein 9 (mortalin) | 7.00E-06 | 2.59 |
| PLK3 | polo-like kinase 3 | 1.15E-05 | 2.58 |
| RPS27L | ribosomal protein S27-like | 4.11E-05 | 2.58 |
| TBC1D2 | TBC1 domain family, member 2 | 4.16E-06 | 2.57 |
| SORBS2 | sorbin and SH3 domain containing 2 | 3.17E-05 | 2.54 |
| ICAM1 | intercellular adhesion molecule 1 | 6.13E-05 | 2.53 |
| CSTB | cystatin B (stefin B) | 1.58E-05 | 2.52 |
| SLC16A7 | solute carrier family 16, member 7 (monocarboxylic acid transporter 2) | 9.94E-05 | 2.52 |
| MIF | macrophage migration inhibitory factor (glycosylation- | 6.44E-05 | 2.52 |

| | | | |
|----------|--|----------|------|
| | inhibiting factor) | | |
| ADHFE1 | alcohol dehydrogenase, iron containing, 1 | 3.94E-05 | 2.51 |
| RENBP | renin binding protein | 2.19E-05 | 2.50 |
| A2LD1 | AIG2-like domain 1 | 6.30E-05 | 2.47 |
| COL18A1 | collagen, type XVIII, alpha 1 | 7.27E-05 | 2.45 |
| LPAR2 | lysophosphatidic acid receptor 2 | 1.08E-05 | 2.44 |
| ADSSL1 | adenylosuccinate synthase like 1 | 1.39E-05 | 2.44 |
| CPT1C | carnitine palmitoyltransferase 1C | 4.20E-07 | 2.43 |
| CCND1 | cyclin D1 | 6.65E-05 | 2.43 |
| GLIPR1 | GLI pathogenesis-related 1 | 1.51E-06 | 2.40 |
| IGF2BP3 | insulin-like growth factor 2 mRNA binding protein 3 | 4.99E-06 | 2.39 |
| A4GALT | alpha 1,4-galactosyltransferase | 4.18E-05 | 2.39 |
| TBXAS1 | thromboxane A synthase 1 (platelet) | 2.15E-05 | 2.38 |
| CREG1 | cellular repressor of E1A-stimulated genes 1 | 2.79E-06 | 2.38 |
| AIF1 | allograft inflammatory factor 1 | 7.27E-05 | 2.35 |
| KIF1A | kinesin family member 1A | 1.10E-05 | 2.34 |
| EPHA2 | EPH receptor A2 | 3.36E-06 | 2.34 |
| GRIA3 | glutamate receptor, ionotropic, AMPA 3 | 7.23E-05 | 2.33 |
| NCEH1 | neutral cholesterol ester hydrolase 1 | 9.61E-07 | 2.33 |
| CRLF1 | cytokine receptor-like factor 1 | 4.41E-05 | 2.32 |
| LITAF | lipopolysaccharide-induced TNF factor | 4.89E-06 | 2.32 |
| MAFF | v-maf musculoaponeurotic fibrosarcoma oncogene homolog F (avian) | 3.47E-06 | 2.31 |
| PMAIP1 | phorbol-12-myristate-13-acetate-induced protein 1 | 6.04E-05 | 2.31 |
| LGALS3BP | lectin, galactoside-binding, soluble, 3 binding protein | 7.15E-06 | 2.30 |
| CDC34 | cell division cycle 34 homolog (<i>S. cerevisiae</i>) | 6.97E-05 | 2.30 |
| FUCA2 | fucosidase, alpha-L- 2, plasma | 8.24E-07 | 2.25 |
| SFXN1 | sideroflexin 1 | 3.65E-05 | 2.25 |
| ANO1 | anoctamin 1, calcium activated chloride channel | 1.28E-05 | 2.24 |
| TLR7 | toll-like receptor 7 | 6.74E-05 | 2.24 |
| FTH1 | ferritin, heavy polypeptide 1 | 1.63E-05 | 2.24 |
| INF2 | inverted formin, FH2 and WH2 domain containing | 6.20E-06 | 2.23 |
| SAT1 | spermidine/spermine N1-acetyltransferase 1 | 8.77E-06 | 2.20 |
| CD55 | CD55 molecule, decay accelerating factor for complement (Cromer blood group) | 8.94E-06 | 2.19 |
| CTSD | cathepsin D | 2.52E-05 | 2.18 |
| TMEM43 | transmembrane protein 43 | 3.31E-05 | 2.16 |
| EMR1 | egf-like module containing, mucin-like, hormone receptor-like 1 | 5.18E-07 | 2.16 |
| AOX1 | aldehyde oxidase 1 | 2.62E-05 | 2.15 |
| SLC3A2 | solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2 | 5.31E-06 | 2.15 |
| EYA2 | eyes absent homolog 2 (<i>Drosophila</i>) | 2.25E-06 | 2.14 |
| APRT | adenine phosphoribosyltransferase | 1.22E-06 | 2.14 |

| | | | |
|----------|---|----------|------|
| CHCHD10 | coiled-coil-helix-coiled-coil-helix domain containing 10 | 8.74E-07 | 2.13 |
| IGF2BP2 | insulin-like growth factor 2 mRNA binding protein 2 | 2.09E-06 | 2.12 |
| ECM1 | extracellular matrix protein 1 | 6.70E-06 | 2.11 |
| TBC1D9 | TBC1 domain family, member 9 (with GRAM domain) | 1.25E-05 | 2.11 |
| LIPH | lipase, member H | 2.01E-06 | 2.11 |
| HTATIP2 | HIV-1 Tat interactive protein 2, 30kDa | 6.65E-06 | 2.10 |
| CTSB | cathepsin B | 2.38E-06 | 2.07 |
| PTGS1 | prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase) | 1.06E-05 | 2.07 |
| SNX10 | sorting nexin 10 | 1.16E-05 | 2.07 |
| BEND7 | BEN domain containing 7 | 1.63E-05 | 2.05 |
| LAMB3 | laminin, beta 3 | 2.25E-06 | 2.05 |
| CDH3 | cadherin 3, type 1, P-cadherin (placental) | 1.01E-05 | 2.05 |
| TYROBP | TYRO protein tyrosine kinase binding protein | 1.12E-05 | 2.04 |
| MMRN2 | multimerin 2 | 8.78E-05 | 2.03 |
| MYBL1 | v-myb myeloblastosis viral oncogene homolog (avian)-like 1 | 1.11E-04 | 2.03 |
| LDHB | lactate dehydrogenase B | 1.33E-05 | 2.02 |
| TTYH3 | tweety homolog 3 (Drosophila) | 3.33E-05 | 0.50 |
| GPR64 | G protein-coupled receptor 64 | 5.55E-05 | 0.50 |
| ATP1A2 | ATPase, Na ⁺ /K ⁺ transporting, alpha 2 polypeptide | 5.71E-05 | 0.50 |
| ETV1 | ets variant 1 | 2.32E-05 | 0.50 |
| ZC3HAV1L | zinc finger CCCH-type, antiviral 1-like | 1.21E-05 | 0.50 |
| SH3PXD2A | SH3 and PX domains 2A | 5.92E-05 | 0.49 |
| EPHB4 | EPH receptor B4 | 1.05E-05 | 0.49 |
| SMARCA2 | SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 2 | 5.64E-05 | 0.49 |
| SCUBE1 | signal peptide, CUB domain, EGF-like 1 | 3.16E-05 | 0.49 |
| HOXB5 | homeobox B5 | 8.39E-06 | 0.48 |
| RASGRP1 | RAS guanyl releasing protein 1 (calcium and DAG-regulated) | 2.97E-05 | 0.48 |
| EGFLAM | EGF-like, fibronectin type III and laminin G domains | 3.55E-05 | 0.48 |
| PDLIM3 | PDZ and LIM domain 3 | 2.48E-05 | 0.48 |
| HIGD1B | HIG1 hypoxia inducible domain family, member 1B | 2.21E-06 | 0.48 |
| SHANK3 | SH3 and multiple ankyrin repeat domains 3 | 1.13E-05 | 0.48 |
| ANKRD44 | ankyrin repeat domain 44 | 3.60E-05 | 0.48 |
| DCHS1 | dachsous 1 (Drosophila) | 1.27E-05 | 0.48 |
| PRICKLE2 | prickle homolog 2 (Drosophila) | 2.94E-06 | 0.47 |
| JAM2 | junctional adhesion molecule 2 | 1.08E-05 | 0.47 |
| NOSTRIN | nitric oxide synthase trafficker | 3.59E-05 | 0.47 |
| GUCY1B3 | guanylate cyclase 1, soluble, beta 3 | 6.79E-07 | 0.47 |
| CBFA2T3 | core-binding factor, runt domain, alpha subunit 2; translocated to, 3 | 3.27E-05 | 0.47 |
| PDGFRB | platelet-derived growth factor receptor, beta polypeptide | 1.65E-05 | 0.47 |
| ST8SIA4 | ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 4 | 7.18E-07 | 0.47 |
| ERG | v-ets erythroblastosis virus E26 oncogene homolog (avian) | 1.75E-05 | 0.47 |

| | | | |
|---------|--|----------|------|
| STK4 | serine/threonine kinase 4 | 9.33E-06 | 0.47 |
| SRPX | sushi-repeat containing protein, X-linked | 1.87E-07 | 0.47 |
| AHR | aryl hydrocarbon receptor | 1.65E-05 | 0.47 |
| CLEC1A | C-type lectin domain family 1, member A | 5.60E-05 | 0.46 |
| SNN | stannin | 1.42E-05 | 0.46 |
| HOXA3 | homeobox A3 | 4.21E-05 | 0.46 |
| ADAMTS7 | ADAM metallopeptidase with thrombospondin type 1 motif, 7 | 3.50E-05 | 0.46 |
| APC2 | adenomatosis polyposis coli 2 | 5.72E-05 | 0.46 |
| LIFR | leukemia inhibitory factor receptor alpha | 2.08E-06 | 0.46 |
| SEMA3C | sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3C | 2.39E-05 | 0.46 |
| PDE7B | phosphodiesterase 7B | 2.18E-05 | 0.46 |
| HMCN1 | hemicentin 1 | 8.26E-05 | 0.46 |
| ARRB1 | arrestin, beta 1 | 1.33E-05 | 0.46 |
| ARL15 | ADP-ribosylation factor-like 15 | 3.27E-05 | 0.46 |
| TMEFF1 | transmembrane protein with EGF-like and two follistatin-like domains 1 | 2.07E-05 | 0.46 |
| MAP4K2 | mitogen-activated protein kinase kinase kinase kinase 2 | 3.51E-05 | 0.46 |
| PRCP | prolylcarboxypeptidase (angiotensinase C) | 2.18E-05 | 0.46 |
| GPR126 | G protein-coupled receptor 126 | 3.95E-06 | 0.46 |
| RGS9 | regulator of G-protein signaling 9 | 3.07E-06 | 0.46 |
| ANGPTL2 | angiopoietin-like 2 | 5.50E-05 | 0.46 |
| FAM13C | family with sequence similarity 13, member C | 5.85E-06 | 0.45 |
| THBS2 | thrombospondin 2 | 4.20E-05 | 0.45 |
| PCDH18 | protocadherin 18 | 4.71E-05 | 0.45 |
| SLC36A2 | solute carrier family 36 (proton/amino acid symporter), member 2 | 4.79E-05 | 0.45 |
| SLC38A5 | solute carrier family 38, member 5 | 4.73E-05 | 0.45 |
| ADAMTS8 | ADAM metallopeptidase with thrombospondin type 1 motif, 8 | 1.59E-05 | 0.45 |
| AMOT | angiomin | 2.60E-05 | 0.45 |
| CHST2 | carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 2 | 4.49E-05 | 0.45 |
| NR2F1 | nuclear receptor subfamily 2, group F, member 1 | 1.58E-05 | 0.45 |
| ANTXR2 | anthrax toxin receptor 2 | 7.47E-07 | 0.44 |
| ETS1 | v-ets erythroblastosis virus E26 oncogene homolog 1 (avian) | 3.20E-05 | 0.44 |
| FANCC | Fanconi anemia, complementation group C | 3.41E-05 | 0.44 |
| RECK | reversion-inducing-cysteine-rich protein with kazal motifs | 4.26E-05 | 0.44 |
| SPECC1L | sperm antigen with calponin homology and coiled-coil domains 1-like | 5.40E-05 | 0.44 |
| ATP1B2 | ATPase, Na ⁺ /K ⁺ transporting, beta 2 polypeptide | 3.47E-05 | 0.44 |
| SOX13 | SRY (sex determining region Y)-box 13 | 1.21E-05 | 0.43 |
| USHBP1 | Usher syndrome 1C binding protein 1 | 6.34E-05 | 0.43 |
| VWF | von Willebrand factor | 7.96E-05 | 0.43 |
| THSD1 | thrombospondin, type I, domain containing 1 | 3.26E-05 | 0.42 |
| GALNTL1 | UDP-N-acetyl-alpha-D-galactosamine:polypeptide N- | 5.10E-06 | 0.42 |

| | | | |
|-----------|--|----------|------|
| | acetylgalactosaminyltransferase-like 1 | | |
| LTBP2 | latent transforming growth factor beta binding protein 2 | 6.11E-05 | 0.42 |
| PRRT2 | proline-rich transmembrane protein 2 | 5.47E-05 | 0.42 |
| HOXA5 | homeobox A5 | 2.42E-05 | 0.42 |
| ADAMTS5 | ADAM metalloproteinase with thrombospondin type 1 motif, 5 | 2.34E-05 | 0.41 |
| ELN | elastin | 3.93E-05 | 0.40 |
| CD248 | CD248 molecule, endosialin | 2.86E-05 | 0.40 |
| SPON2 | spondin 2, extracellular matrix protein | 1.99E-05 | 0.40 |
| C1QTNF7 | C1q and tumor necrosis factor related protein 7 | 9.83E-06 | 0.40 |
| TRIM36 | tripartite motif containing 36 | 4.91E-05 | 0.40 |
| PTPRB | protein tyrosine phosphatase, receptor type, B | 3.28E-05 | 0.39 |
| NTN3 | netrin 3 | 5.79E-05 | 0.39 |
| NCALD | neurocalcin delta | 3.46E-05 | 0.39 |
| MCF2L | MCF.2 cell line derived transforming sequence-like | 1.03E-05 | 0.38 |
| ARHGAP20 | Rho GTPase activating protein 20 | 6.53E-06 | 0.38 |
| NPNT | nephronectin | 8.97E-06 | 0.38 |
| CDKN2C | cyclin-dependent kinase inhibitor 2C (p18, inhibits CDK4) | 2.07E-06 | 0.38 |
| FAM129A | family with sequence similarity 129, member A | 3.96E-05 | 0.38 |
| IL17RD | interleukin 17 receptor D | 9.69E-06 | 0.38 |
| ACE | angiotensin I converting enzyme (peptidyl-dipeptidase A) 1 | 3.52E-05 | 0.38 |
| EMID1 | EMI domain containing 1 | 3.78E-05 | 0.38 |
| PCSK5 | proprotein convertase subtilisin/kexin type 5 | 1.34E-05 | 0.38 |
| LDB2 | LIM domain binding 2 | 5.65E-06 | 0.37 |
| LEPR | leptin receptor | 3.78E-05 | 0.37 |
| ASTN2 | astrotactin 2 | 8.62E-06 | 0.37 |
| CD2 | CD2 molecule | 1.49E-05 | 0.37 |
| CLEC2D | C-type lectin domain family 2, member D | 2.12E-05 | 0.37 |
| GUCY1A3 | guanylate cyclase 1, soluble, alpha 3 | 3.64E-06 | 0.37 |
| NUP210 | nucleoporin 210kDa | 6.87E-05 | 0.37 |
| THBD | thrombomodulin | 2.77E-06 | 0.37 |
| SEMA3G | sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3G | 2.41E-05 | 0.36 |
| PODXL2 | podocalyxin-like 2 | 6.75E-05 | 0.36 |
| ABI3BP | ABI family, member 3 (NESH) binding protein | 8.34E-05 | 0.36 |
| PCOLCE2 | | | |
| (includes | | | |
| EG:26577) | procollagen C-endopeptidase enhancer 2 | 5.63E-05 | 0.36 |
| RNF144A | ring finger protein 144A | 1.73E-05 | 0.36 |
| CCDC85A | coiled-coil domain containing 85A | 6.60E-05 | 0.36 |
| KCNK3 | potassium channel, subfamily K, member 3 | 2.38E-05 | 0.36 |
| PDE5A | phosphodiesterase 5A, cGMP-specific | 4.65E-06 | 0.36 |
| RGS3 | regulator of G-protein signaling 3 | 2.45E-05 | 0.36 |
| NTN1 | netrin 1 | 7.30E-05 | 0.35 |

| | | | |
|---------|--|----------|------|
| TMEM100 | transmembrane protein 100 | 2.57E-05 | 0.34 |
| MFAP2 | microfibrillar-associated protein 2 | 4.18E-06 | 0.34 |
| PDGFRA | platelet-derived growth factor receptor, alpha polypeptide | 2.19E-05 | 0.34 |
| TUBB4 | tubulin, beta 4 | 1.54E-05 | 0.34 |
| MAPT | microtubule-associated protein tau | 8.80E-06 | 0.33 |
| COX4I2 | cytochrome c oxidase subunit IV isoform 2 (lung) | 2.66E-05 | 0.33 |
| PLCB1 | phospholipase C, beta 1 (phosphoinositide-specific) | 9.81E-06 | 0.33 |
| SOX17 | SRY (sex determining region Y)-box 17 | 1.18E-05 | 0.33 |
| GPIHBP1 | glycosylphosphatidylinositol anchored high density lipoprotein binding protein 1 | 4.72E-05 | 0.33 |
| HS3ST1 | heparan sulfate (glucosamine) 3-O-sulfotransferase 1 | 3.81E-05 | 0.33 |
| SGCG | sarcoglycan, gamma (35kDa dystrophin-associated glycoprotein) | 1.48E-05 | 0.33 |
| P2RY14 | purinergic receptor P2Y, G-protein coupled, 14 | 3.64E-07 | 0.33 |
| CLSTN2 | calysntenin 2 | 2.50E-06 | 0.32 |
| COL24A1 | collagen, type XXIV, alpha 1 | 8.79E-06 | 0.32 |
| TMEM2 | transmembrane protein 2 | 2.77E-07 | 0.32 |
| ENPEP | glutamyl aminopeptidase (aminopeptidase A) | 8.21E-06 | 0.32 |
| ASPN | asporin | 5.05E-05 | 0.31 |
| PALMD | palmdelphin | 6.39E-07 | 0.31 |
| TEK | TEK tyrosine kinase, endothelial | 1.03E-05 | 0.31 |
| CAMK4 | calcium/calmodulin-dependent protein kinase IV | 5.33E-05 | 0.30 |
| PRSS35 | protease, serine, 35 | 7.59E-06 | 0.30 |
| TNFSF10 | tumor necrosis factor (ligand) superfamily, member 10 | 1.54E-06 | 0.30 |
| SOX11 | SRY (sex determining region Y)-box 11 | 1.41E-05 | 0.30 |
| KIF26A | kinesin family member 26A | 1.26E-05 | 0.30 |
| NTRK3 | neurotrophic tyrosine kinase, receptor, type 3 | 9.62E-06 | 0.29 |
| ADAM33 | ADAM metallopeptidase domain 33 | 6.49E-05 | 0.29 |
| SEMA6A | sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6A | 8.87E-06 | 0.29 |
| KCNQ4 | potassium voltage-gated channel, KQT-like subfamily, member 4 | 5.88E-05 | 0.29 |
| PGM5 | phosphoglucomutase 5 | 1.29E-05 | 0.29 |
| GCOM1 | GRINL1A complex locus | 5.62E-05 | 0.29 |
| PDZD2 | PDZ domain containing 2 | 1.11E-05 | 0.27 |
| CHST8 | carbohydrate (N-acetylgalactosamine 4-O) sulfotransferase 8 | 2.38E-05 | 0.27 |
| SCN7A | sodium channel, voltage-gated, type VII, alpha | 1.50E-05 | 0.26 |
| ECM2 | extracellular matrix protein 2, female organ and adipocyte specific | 1.93E-05 | 0.26 |
| CD28 | CD28 molecule | 2.86E-05 | 0.25 |
| DAB1 | disabled homolog 1 (Drosophila) | 5.69E-05 | 0.24 |
| CHAD | chondroadherin | 4.17E-05 | 0.23 |
| KCNQ5 | potassium voltage-gated channel, KQT-like subfamily, member 5 | 2.67E-05 | 0.23 |
| NMNAT2 | nicotinamide nucleotide adenylyltransferase 2 | 7.24E-06 | 0.23 |

| | | | |
|---------|---|----------|------|
| AGT | angiotensinogen (serpin peptidase inhibitor, clade A, member 8) | 1.73E-06 | 0.23 |
| PRKCQ | protein kinase C, theta | 1.65E-05 | 0.23 |
| CALCRL | calcitonin receptor-like | 2.07E-07 | 0.22 |
| SCN3B | sodium channel, voltage-gated, type III, beta | 1.10E-05 | 0.22 |
| HLF | hepatic leukemia factor | 4.45E-05 | 0.22 |
| VTN | vitronectin | 1.66E-06 | 0.21 |
| PTPN5 | protein tyrosine phosphatase, non-receptor type 5 (striatum-enriched) | 1.15E-05 | 0.21 |
| PLXDC1 | plexin domain containing 1 | 3.71E-06 | 0.21 |
| GRIA1 | glutamate receptor, ionotropic, AMPA 1 | 6.02E-05 | 0.19 |
| HPGD | hydroxyprostaglandin dehydrogenase 15-(NAD) | 3.63E-06 | 0.19 |
| FMO1 | flavin containing monooxygenase 1 | 1.86E-05 | 0.18 |
| RSPO2 | R-spondin 2 homolog (<i>Xenopus laevis</i>) | 2.98E-06 | 0.18 |
| ENPP1 | ectonucleotide pyrophosphatase/phosphodiesterase 1 | 6.14E-06 | 0.18 |
| THSD7B | thrombospondin, type I, domain containing 7B | 7.06E-05 | 0.18 |
| HSD11B2 | hydroxysteroid (11-beta) dehydrogenase 2 | 1.99E-05 | 0.18 |
| APLNR | apelin receptor | 4.04E-07 | 0.17 |
| HAVCR1 | hepatitis A virus cellular receptor 1 | 6.19E-05 | 0.17 |
| FAM124B | family with sequence similarity 124B | 5.32E-06 | 0.16 |
| A2M | alpha-2-macroglobulin | 6.64E-06 | 0.15 |
| KIT | v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog | 1.70E-07 | 0.14 |
| NRXN1 | neurexin 1 | 4.76E-05 | 0.14 |
| VSNL1 | visinin-like 1 | 8.10E-05 | 0.12 |
| ADCY8 | adenylate cyclase 8 (brain) | 6.96E-07 | 0.08 |
| GLP1R | glucagon-like peptide 1 receptor | 3.68E-05 | 0.07 |
| RGS8 | regulator of G-protein signaling 8 | 8.09E-05 | 0.06 |