

Supplementary Table 3. List of differentially expressed genes in U251 IDH1 R132C compared with U251 IDH1 WT

Gene Symbol	Entrez Gene Name	Fold Change	FDR
A2M	alpha-2-macroglobulin	3.563	6.56E-133
ABCA1	ATP binding cassette subfamily A member 1	1.722	2.68E-27
ABCA4	ATP binding cassette subfamily A member 4	2.997	0.000469
ABCB11	ATP binding cassette subfamily B member 11	-3.243	0.000775
ABCB4	ATP binding cassette subfamily B member 4	-21.743	1.71E-09
ABHD8	abhydrolase domain containing 8	-1.596	0.0000909
ABI3BP	ABI family member 3 binding protein	-3.192	2E-109
ABTB2	ankyrin repeat and BTB domain containing 2	1.685	6.03E-14
AC0030921		18.291	6.38E-16
AC0041583		-3.434	0.000428
AC0051501		-85.896	2.42E-80
AC0057867		2.821	0.000346
AC0936277		1.939	0.00102
AC0937871		-2.743	1.19E-13
ACKR3	atypical chemokine receptor 3	9.625	5.48E-16
ACP6	acid phosphatase 6, lysophosphatidic	-2.005	9.48E-23
ACSL5	acyl-CoA synthetase long chain family member 5	4.721	3.93E-19
ACSS3	acyl-CoA synthetase short chain family member 3	-1.628	0.00000828
ACTA2	actin alpha 2, smooth muscle	1.784	9.07E-13
ACTG1P19	actin gamma 1 pseudogene 19	-2.781	0.0000283
ACTG2	actin gamma 2, smooth muscle	-7.959	1.86E-14
ADAM22	ADAM metalloproteinase domain 22	1.902	0.000929
ADAMTS10	ADAM metalloproteinase with thrombospondin type 1 motif 10	2.726	0.0000112
ADAMTS12	ADAM metalloproteinase with thrombospondin type 1 motif 12	2.111	7.73E-21
ADAMTS14	ADAM metalloproteinase with thrombospondin type 1 motif 14	7.924	2.08E-16
ADAMTS17	ADAM metalloproteinase with thrombospondin type 1 motif 17	6.937	0.000000166
ADAMTS2	ADAM metalloproteinase with thrombospondin type 1 motif 2	55.763	5.74E-47
ADCY1	adenylate cyclase 1	4.659	0.00000345
ADGRG1	adhesion G protein-coupled receptor G1	1.776	1.13E-27
ADGRG6	adhesion G protein-coupled receptor G6	1.614	0.0000069
ADRA1B	adrenoceptor alpha 1B	-2.075	2.16E-19
ADRA1D	adrenoceptor alpha 1D	-3.194	5.93E-29
ADRB2	adrenoceptor beta 2	3.608	2.78E-11
AFAP1L2	actin filament associated protein 1 like 2	4.946	4.21E-34
AFF3	AF4/FMR2 family member 3	3.108	2.2E-21

AGMAT	agmatinase	-6.154	0.0000249
AGTRAP	angiotensin II receptor associated protein	2.354	4.42E-28
AHNAK	AHNAK nucleoprotein	1.597	2.68E-14
AHNAK2	AHNAK nucleoprotein 2	1.983	2.3E-29
AHRR	aryl-hydrocarbon receptor repressor	1.81	0.000214
AJAP1	adherens junctions associated protein 1	-1.892	0.000267
AK5	adenylate kinase 5	-3.62	1.28E-50
AKAP6	A-kinase anchoring protein 6	-4.078	2.49E-90
AKR1C1/AKR1C2	aldo-keto reductase family 1 member C2	5.096	0.0000729
AKR1C1/AKR1C2	aldo-keto reductase family 1 member C2	4.024	7.95E-49
AKR1C3	aldo-keto reductase family 1 member C3	1.801	4.2E-10
ALDH1A3	aldehyde dehydrogenase 1 family member A3	-2.212	2.04E-73
ALDH1L2	aldehyde dehydrogenase 1 family member L2	-2.141	0.000399
ALK	ALK receptor tyrosine kinase	-3.611	7.55E-17
ALX4	ALX homeobox 4	10.918	1.07E-30
AMOT	angiomotin	-1.883	1.14E-27
AMOTL2	angiomotin like 2	-2.151	7.65E-40
ANGPTL4	angiopoietin like 4	6.849	1.41E-21
ANK1	ankyrin 1	-4.228	1.76E-39
ANKRD1	ankyrin repeat domain 1	-1.892	5.94E-17
ANKRD18DP	ankyrin repeat domain 18D, pseudogene	-10.186	0.000109
ANKRD30B	ankyrin repeat domain 30B	-3.413	0.00000791
ANKS1B	ankyrin repeat and sterile alpha motif domain containing 1B	-5.821	1.21E-29
ANTXR2	ANTXR cell adhesion molecule 2	1.735	1.61E-23
AOC2	amine oxidase copper containing 2	1.822	0.00000216
AOX1	aldehyde oxidase 1	2.29	1.66E-19
AP3B2	adaptor related protein complex 3 subunit beta 2	2.574	3.58E-10
APCDD1	APC down-regulated 1	-1.981	9.45E-11
APCDD1L	APC down-regulated 1 like	3.046	8.92E-91
APLN	apelin	-1.897	0.000000293
APOBEC3F	apolipoprotein B mRNA editing enzyme catalytic subunit 3F	1.831	0.0000216
APOL1	apolipoprotein L1	1.932	4.98E-18
APOL6	apolipoprotein L6	2.056	8.18E-31
ARAP2	ArfGAP with RhoGAP domain, ankyrin repeat and PH domain 2	2.024	0.000469
ARG2	arginase 2	2.982	1.1E-17
ARHGAP24	Rho GTPase activating protein 24	24.153	6.13E-36
ARHGAP25	Rho GTPase activating protein 25	1.913	0.000237

ARHGAP36	Rho GTPase activating protein 36	-5.717	9E-11
ARHGAP4	Rho GTPase activating protein 4	2.338	0.00107
ARHGAP42	Rho GTPase activating protein 42	1.756	4.4E-10
ARHGAP44	Rho GTPase activating protein 44	6.028	0.00000046
ARHGAP45	Rho GTPase activating protein 45	-4.917	1.02E-13
ARHGAP5-AS1	ARHGAP5 antisense RNA 1 (head to head)	-2.443	3.1E-10
ARNT2	aryl hydrocarbon receptor nuclear translocator 2	-2.201	4.78E-46
ARRB1	arrestin beta 1	2.74	3.02E-17
ASIC1	acid sensing ion channel subunit 1	1.884	4.82E-10
ASIC3	acid sensing ion channel subunit 3	2.278	7.88E-10
ASPHD1	aspartate beta-hydroxylase domain containing 1	2.566	5.5E-09
ASS1	argininosuccinate synthase 1	2.585	3.66E-10
ATOH8	atonal bHLH transcription factor 8	-3.426	2.2E-10
ATP10A	ATPase phospholipid transporting 10A (putative)	3.379	1.69E-24
ATP11A	ATPase phospholipid transporting 11A	2.026	4.98E-32
ATP2A1	ATPase sarcoplasmic/endoplasmic reticulum Ca ²⁺ transporting 1	1.984	0.000999
ATP2B1	ATPase plasma membrane Ca ²⁺ transporting 1	1.599	1.43E-17
ATP6V1C2	ATPase H ⁺ transporting V1 subunit C2	-2.653	3.93E-10
ATP8A1	ATPase phospholipid transporting 8A1	4.495	0.00000661
ATRNL1	attractin like 1	1.647	0.0000071
AZGP1	alpha-2-glycoprotein 1, zinc-binding	-7.972	7.84E-140
B3GALT5	beta-1,3-galactosyltransferase 5	3.147	7.43E-09
B4GALNT3	beta-1,4-N-acetyl-galactosaminyltransferase 3	-1.977	7.8E-23
BASP1	brain abundant membrane attached signal protein 1	35.633	8.34E-142
BATF3	basic leucine zipper ATF-like transcription factor 3	-1.889	0.00000313
BBOX1-AS1	BBOX1 antisense RNA 1	3.258	0.000132
BCAR3	BCAR3 adaptor protein, NSP family member	1.87	4.25E-34
BCAT1	branched chain amino acid transaminase 1	-1.565	1.62E-14
BCHE	butyrylcholinesterase	2.344	0.000122
BCL2L11	BCL2 like 11	2.262	2.49E-34
BDH1	3-hydroxybutyrate dehydrogenase 1	-1.635	2.91E-09
BDH2	3-hydroxybutyrate dehydrogenase 2	1.993	0.000161
BEND4	BEN domain containing 4	6.744	2.75E-18
BEND5	BEN domain containing 5	-3.789	0.000369
BEX1	brain expressed X-linked 1	-2.499	0.014
BHLHE40	basic helix-loop-helix family member e40	1.798	3.36E-31
BHLHE41	basic helix-loop-helix family member e41	2.204	2.43E-33

BMP4	bone morphogenetic protein 4	13.466	2.1E-16
BNIP3L	BCL2 interacting protein 3 like	1.575	3.03E-15
BOC	BOC cell adhesion associated, oncogene regulated	1.582	7.94E-12
BRINP1	BMP/retinoic acid inducible neural specific 1	122.851	1.73E-115
BRSK2	BR serine/threonine kinase 2	4.742	1.3E-09
BST2	bone marrow stromal cell antigen 2	3.008	0.000132
BTBD11	BTB domain containing 11	19.687	2.12E-42
BTBD19	BTB domain containing 19	1.641	9.37E-08
BTN3A1	butyrophilin subfamily 3 member A1	1.934	1.78E-15
BTN3A3	butyrophilin subfamily 3 member A3	1.796	6.28E-09
BTNL8	butyrophilin like 8	5.792	1.21E-08
C10orf90	chromosome 10 open reading frame 90	2.127	1.12E-09
C11orf80	chromosome 11 open reading frame 80	1.775	4.02E-09
C11orf87	chromosome 11 open reading frame 87	-6.448	0.000000851
C16orf74	chromosome 16 open reading frame 74	1.96	2.7E-09
C19orf71	chromosome 19 open reading frame 71	2.888	0.00993
C1QTNF6	C1q and TNF related 6	1.822	0.000155
C1R	complement C1r	2.349	8.7E-18
C1RL	complement C1r subcomponent like	2.109	3.68E-11
C1S	complement C1s	4.187	5.35E-39
C20orf204	chromosome 20 open reading frame 204	1.785	0.000187
C3	complement C3	8.149	9.18E-33
C3AR1	complement C3a receptor 1	2.708	0.00015
C3orf14	chromosome 3 open reading frame 14	-1.576	2.49E-10
C3orf70	chromosome 3 open reading frame 70	5.441	9.12E-13
C4orf19	chromosome 4 open reading frame 19	2.523	6.08E-26
C5orf46	chromosome 5 open reading frame 46	-3.031	2.41E-63
CA11	carbonic anhydrase 11	2.021	0.000000021
CA12	carbonic anhydrase 12	1.858	0.000000114
CA8	carbonic anhydrase 8	18.419	3.47E-34
CACNA1A	calcium voltage-gated channel subunit alpha1 A	8.839	2.67E-08
CACNA1E	calcium voltage-gated channel subunit alpha1 E	5.434	0.000000298
CACNA2D3	calcium voltage-gated channel auxiliary subunit alpha2delta 3	2.594	0.000000943
CACNG4	calcium voltage-gated channel auxiliary subunit gamma 4	2.74	1.18E-36
CALB1	calbindin 1	12.998	8.21E-08
CALCRL	calcitonin receptor like receptor	1.813	0.000799
CALHM5	calcium homeostasis modulator family member 5	1.947	7.53E-10

CAMK2N1	calcium/calmodulin dependent protein kinase II inhibitor 1	2.287	1.89E-24
CAND2	cullin associated and neddylation dissociated 2 (putative)	-7.143	3.63E-16
CARD6	caspase recruitment domain family member 6	1.836	1.52E-14
CASP1	caspase 1	1.686	0.000112
CBS/CBSL	cystathionine beta-synthase	-1.611	0.00000209
CC2D2A	coiled-coil and C2 domain containing 2A	-1.702	6.11E-16
CCDC102B	coiled-coil domain containing 102B	-2.558	9.03E-10
CCDC106	coiled-coil domain containing 106	-2.377	5.27E-15
CCDC13	coiled-coil domain containing 13	-4.96	0.0000587
CCDC144A	coiled-coil domain containing 144A	-3.939	1.25E-14
CCDC148	coiled-coil domain containing 148	-2.86	0.0015
CCDC160	coiled-coil domain containing 160	-2.429	0.000428
CCDC184	coiled-coil domain containing 184	-2.426	5.89E-10
CCDC61	coiled-coil domain containing 61	-1.726	5.33E-09
CCDC80	coiled-coil domain containing 80	1.6	5.01E-23
CCN2	cellular communication network factor 2	-1.719	1.31E-41
CCN3	cellular communication network factor 3	8.762	0.000000414
CD101	CD101 molecule	2.039	0.000742
CD180	CD180 molecule	6.58	3.56E-131
CD200	CD200 molecule	-3.566	4.24E-24
CD274	CD274 molecule	-1.775	4.28E-21
CD300C	CD300c molecule	85.504	2.01E-16
CD33	CD33 molecule	31.807	4.48E-182
CD55	CD55 molecule (Cromer blood group)	6.505	7.89E-34
CD82	CD82 molecule	3.469	5.08E-106
CD93	CD93 molecule	5.317	4.73E-13
CDH6	cadherin 6	-5.879	4.13E-90
CDKN1A	cyclin dependent kinase inhibitor 1A	2.463	1.04E-50
CDON	cell adhesion associated, oncogene regulated	1.796	7.47E-29
CDYL2	chromodomain Y like 2	7.753	5.36E-81
CEBPD	CCAAT enhancer binding protein delta	1.822	0.0016
CECR2	CECR2 histone acetyl-lysine reader	16.564	1.45E-10
CECR7	cat eye syndrome chromosome region, candidate 7	2.208	0.0000015
CELSR2	cadherin EGF LAG seven-pass G-type receptor 2	-1.773	6.12E-21
CEMIP	cell migration inducing hyaluronidase 1	2.056	3.7E-15
CEP41	centrosomal protein 41	-1.565	8.76E-12
CERS1	ceramide synthase 1	2.928	0.00041

CERS4	ceramide synthase 4	-1.613	0.0000456
CES1P1	carboxylesterase 1 pseudogene 1	80.492	5.08E-26
CES1P2	carboxylesterase 1 pseudogene 2	135.627	2.91E-42
CFAP45	cilia and flagella associated protein 45	1.909	0.0000193
CFI	complement factor I	1.559	2.36E-16
CGA	glycoprotein hormones, alpha polypeptide	-4.097	6.74E-10
CGNL1	cingulin like 1	-1.576	5.76E-21
CHAF1A	chromatin assembly factor 1 subunit A	-1.544	2.21E-16
CHFR	checkpoint with forkhead and ring finger domains	-2.15	8.44E-14
CHI3L1	chitinase 3 like 1	106.661	0
CHI3L2	chitinase 3 like 2	2.813	2.79E-11
CHST1	carbohydrate sulfotransferase 1	1.606	0.0000284
CHST11	carbohydrate sulfotransferase 11	2.246	9.43E-38
CHST15	carbohydrate sulfotransferase 15	12.731	7.37E-123
CHSY3	chondroitin sulfate synthase 3	-5.651	9.74E-20
CIART	circadian associated repressor of transcription	2.369	4.99E-18
CIB2	calcium and integrin binding family member 2	-1.707	0.0000362
CKB	creatine kinase B	-2.291	1.64E-13
CLCA2	chloride channel accessory 2	7.544	8.21E-17
CLDN1	claudin 1	2.41	3E-19
CLDN15	claudin 15	1.571	8.86E-08
CLU	clusterin	2.3	3.06E-31
CMPK2	cytidine/uridine monophosphate kinase 2	4.407	0.000000933
CMTM8	CKLF like MARVEL transmembrane domain containing 8	-2.096	1.11E-17
CNIH2	cornichon family AMPA receptor auxiliary protein 2	-2.894	0.00000892
CNR1	cannabinoid receptor 1	-4.256	4.75E-127
CNTNAP2	contactin associated protein like 2	4.58	5.84E-22
COBL	cordons-bleu WH2 repeat protein	16.452	2.48E-21
COBLL1	cordons-bleu WH2 repeat protein like 1	1.938	3.96E-30
COL11A1	collagen type XI alpha 1 chain	-1.771	3.56E-30
COL13A1	collagen type XIII alpha 1 chain	1.631	8.38E-10
COL17A1	collagen type XVII alpha 1 chain	3.338	2.25E-76
COL25A1	collagen type XXV alpha 1 chain	-2.458	0.000249
COL8A1	collagen type VIII alpha 1 chain	-1.802	9.58E-16
COL8A2	collagen type VIII alpha 2 chain	2.848	0.00000237
COL9A2	collagen type IX alpha 2 chain	-1.965	0.000000012
COL9A3	collagen type IX alpha 3 chain	-5.761	5.53E-20

COLEC12	collectin subfamily member 12	9.503	1.63E-18
CORO2B	coronin 2B	-1.782	8.28E-15
CP	ceruloplasmin	3.285	5.87E-105
CPA4	carboxypeptidase A4	1.705	9.84E-28
CPA6	carboxypeptidase A6	-1.541	3.39E-08
CPE	carboxypeptidase E	5.737	0.0000189
CPEB1	cytoplasmic polyadenylation element binding protein 1	2.093	2.03E-09
CPM	carboxypeptidase M	-3.12	0.0000149
CPT1C	carnitine palmitoyltransferase 1C	-2.2	6.14E-18
CPVL	carboxypeptidase vitellogenic like	2.028	0.000101
CRACD	capping protein inhibiting regulator of actin dynamics	-1.858	4.96E-09
CRISPLD1	cysteine rich secretory protein LCCL domain containing 1	2.745	1.95E-28
CRLF1	cytokine receptor like factor 1	3.335	0.00000259
CRMP1	collapsin response mediator protein 1	2.615	0.00000184
CRY2	cryptochrome circadian regulator 2	1.628	3.44E-11
CRYAB	crystallin alpha B	-3.99	2.82E-91
CSAG1	chondrosarcoma associated gene 1	3.737	0.000000263
CSF1	colony stimulating factor 1	1.911	2.78E-32
CSF2	colony stimulating factor 2	3.184	3.28E-09
CSGALNACT1	chondroitin sulfate N-acetylgalactosaminyltransferase 1	2.787	1.25E-08
CSPG4P11	chondroitin sulfate proteoglycan 4 pseudogene 11	-1.831	0.000948
CSRNP3	cysteine and serine rich nuclear protein 3	3.155	0.0000504
CTA_384D836		-1.653	0.000162
CTA_390C1010		2.389	0.0000384
CTB_78F12		1.696	0.0000592
CTBS	chitinase	1.815	5.49E-16
CTC_353G131		-11.197	0.0000077
CTD_2017D111		1.793	0.0000183
CTD_2611O126		3.748	0.00017
CTNNA2	catenin alpha 2	-3.887	1.07E-48
CTNND2	catenin delta 2	-2.368	2.61E-26
CTSH	cathepsin H	1.948	7.06E-29
CTSS	cathepsin S	2.789	7.73E-22
CXADR	CXADR Ig-like cell adhesion molecule	1.947	1.92E-19
CXCL12	C-X-C motif chemokine ligand 12	6.535	1.97E-39
CYB5A	cytochrome b5 type A	-1.577	1.09E-11
CYB5R2	cytochrome b5 reductase 2	-1.673	2.75E-09

CYBRD1	cytochrome b reductase 1	1.579	1.66E-20
CYP27C1	cytochrome P450 family 27 subfamily C member 1	2.644	7.21E-17
CYP2C8	cytochrome P450 family 2 subfamily C member 8	4.168	0.0000372
CYP2R1	cytochrome P450 family 2 subfamily R member 1	3.227	0.0000858
CYP46A1	cytochrome P450 family 46 subfamily A member 1	-1.933	0.000000572
CYTL1	cytokine like 1	-12.183	1.62E-17
DAAM2	dishevelled associated activator of morphogenesis 2	2.688	0.000144
DAB1	DAB adaptor protein 1	-2.113	0.000701
DARS-AS1	DARS antisense RNA 1	2.602	0.00014
DBP	D-box binding PAR bZIP transcription factor	1.887	1.57E-08
DDIT4	DNA damage inducible transcript 4	1.64	4.43E-09
DENND2D	DENN domain containing 2D	-3.804	0.000111
DEPP1	DEPP1 autophagy regulator	2.264	1.51E-16
DGAT2	diacylglycerol O-acyltransferase 2	2.068	2.15E-15
DGCR5	DiGeorge syndrome critical region gene 5	2.083	0.0000354
DGKE	diacylglycerol kinase epsilon	1.736	0.0000241
DGKI	diacylglycerol kinase iota	1.564	7.02E-08
DHODH	dihydroorotate dehydrogenase (quinone)	-1.538	9.1E-13
DHRS2	dehydrogenase/reductase 2	3.351	1.67E-17
DHRS9	dehydrogenase/reductase 9	-4.562	2.47E-14
DIO2	iodothyronine deiodinase 2	-2.407	1.51E-27
DIRAS1	DIRAS family GTPase 1	-5.899	4.58E-26
DIRAS3	DIRAS family GTPase 3	-1.689	2.33E-17
DISP2	dispatched RND transporter family member 2	1.897	0.000375
DLC1	DLC1 Rho GTPase activating protein	2.454	5.33E-33
DLL1	delta like canonical Notch ligand 1	3.502	1.33E-14
DMBT1	deleted in malignant brain tumors 1	4.286	0.000000135
DMBX1	diencephalon/mesencephalon homeobox 1	3.814	3.43E-34
DMRTA1	DMRT like family A1	1.705	0.00000353
DNAJB9	DnaJ heat shock protein family (Hsp40) member B9	1.562	0.00000025
DNER	delta/notch like EGF repeat containing	1.602	2.83E-22
DNHD1	dynein heavy chain domain 1	1.939	7.94E-09
DNM1	dynamamin 1	1.585	1.16E-17
DNM3	dynamamin 3	-2.287	8.54E-26
DNPH1	2'-deoxynucleoside 5'-phosphate N-hydrolase 1	-1.659	0.000042
DOCK3	dedicator of cytokinesis 3	1.69	0.000000233
DOCK4	dedicator of cytokinesis 4	2.152	8.42E-37

DOK5	docking protein 5	-9.578	1.68E-54
DPYSL5	dihydropyrimidinase like 5	8.562	1.5E-149
DRD2	dopamine receptor D2	1.596	2.41E-17
DSE	dermatan sulfate epimerase	2.15	1.46E-24
DSP	desmoplakin	4.858	6.88E-14
DTX3	deltex E3 ubiquitin ligase 3	-2.117	1.4E-20
DUSP1	dual specificity phosphatase 1	1.538	7.83E-12
DUSP10	dual specificity phosphatase 10	1.904	5.14E-19
DUSP5	dual specificity phosphatase 5	2.144	3.6E-28
DUXAP10	double homeobox A pseudogene 10	7	3.89E-24
DUXAP8	double homeobox A pseudogene 8	14.656	3.15E-31
DUXAP9	double homeobox A pseudogene 9	7.291	3.17E-16
DYRK3	dual specificity tyrosine phosphorylation regulated kinase 3	1.856	0.00208
E2F8	E2F transcription factor 8	-1.612	8.19E-14
EBF1	EBF transcription factor 1	1.756	0.0000748
ECSCR	endothelial cell surface expressed chemotaxis and apoptosis regulator	5.299	5.33E-13
EDIL3	EGF like repeats and discoidin domains 3	2.962	5.07E-58
EDIL3-DT		2.544	0.0000264
EDN1	endothelin 1	-2.198	4.08E-37
EDNRB	endothelin receptor type B	-1.653	1.8E-10
EEF1A2	eukaryotic translation elongation factor 1 alpha 2	2.135	1.18E-22
EEFSEC	eukaryotic elongation factor, selenocysteine-tRNA specific	-2.121	4.63E-17
EFEMP2	EGF containing fibulin extracellular matrix protein 2	-3.334	1.67E-21
EFNA1	ephrin A1	2.769	1.33E-12
EFNA4	ephrin A4	1.642	0.0000207
EHD3	EH domain containing 3	2.26	3.85E-28
ELFN2	extracellular leucine rich repeat and fibronectin type III domain containing 2	2.166	4.57E-30
ELMO1	engulfment and cell motility 1	1.675	1.11E-12
ELOVL2	ELOVL fatty acid elongase 2	-2.215	0.000000304
ELOVL7	ELOVL fatty acid elongase 7	1.717	2.17E-08
EN1	engrailed homeobox 1	-1.664	4.09E-08
ENPP2	ectonucleotide pyrophosphatase/phosphodiesterase 2	8.436	9.52E-10
ENPP5	ectonucleotide pyrophosphatase/phosphodiesterase family member 5	1.806	0.000997
EPAS1	endothelial PAS domain protein 1	2.353	4.19E-62
EPB41L4A	erythrocyte membrane protein band 4.1 like 4A	2.263	2.06E-21
EPB41L4B	erythrocyte membrane protein band 4.1 like 4B	2.883	4.79E-37
EPHA3	EPH receptor A3	-2.238	3.18E-61

EPHA4	EPH receptor A4	-1.887	5E-10
EPHA5	EPH receptor A5	3.216	2.23E-41
EPHB2	EPH receptor B2	2.672	7.39E-82
EPHX1	epoxide hydrolase 1	1.816	2.84E-24
EPHX4	epoxide hydrolase 4	1.72	0.00000156
EPST11	epithelial stromal interaction 1	-1.775	0.00000341
ERAP1	endoplasmic reticulum aminopeptidase 1	1.659	1.85E-22
ERAP2	endoplasmic reticulum aminopeptidase 2	2.21	3.84E-54
ERCC2	ERCC excision repair 2, TFIIH core complex helicase subunit	-1.974	2.29E-29
ERFE	erythroferrone	2.313	2.14E-24
ERICH3	glutamate rich 3	-8.581	1.45E-09
ERMP1	endoplasmic reticulum metalloproteinase 1	1.988	2.38E-25
ERP29	endoplasmic reticulum protein 29	1.608	3.1E-21
ETV1	ETS variant transcription factor 1	1.885	1.44E-13
EVC	EvC ciliary complex subunit 1	-1.57	8.82E-15
EVI2A	ecotropic viral integration site 2A	1.999	3.88E-10
EXTL1	exostosin like glycosyltransferase 1	-9.48	5.62E-16
EYA2	EYA transcriptional coactivator and phosphatase 2	2.641	0.000207
F11R	F11 receptor	-2.053	6.97E-15
F2RL2	coagulation factor II thrombin receptor like 2	1.854	3.48E-13
F3	coagulation factor III, tissue factor	-1.814	6.8E-26
FABP7	fatty acid binding protein 7	-1.763	7.25E-25
FAM106C	family with sequence similarity 106 member C	-3.448	0.000144
FAM131A	family with sequence similarity 131 member A	-1.968	1.98E-15
FAM131B	family with sequence similarity 131 member B	1.994	0.0000479
FAM13A-AS1	FAM13A antisense RNA 1	1.87	0.000559
FAM160A1	family with sequence similarity 160 member A1	1.65	0.000000769
FAM166C	family with sequence similarity 166 member C	2.653	0.000409
FAM167A	family with sequence similarity 167 member A	3.374	0.0000133
FAM171B	family with sequence similarity 171 member B	1.583	4.19E-08
FAM189A1	family with sequence similarity 189 member A1	16.445	1.06E-95
FAM20C	FAM20C golgi associated secretory pathway kinase	1.6	8.45E-12
FAM229B	family with sequence similarity 229 member B	2.006	0.000000011
FAM89A	family with sequence similarity 89 member A	3.648	4.36E-24
FAP	fibroblast activation protein alpha	3.139	1.05E-26
FAS	Fas cell surface death receptor	1.58	1.88E-11
FAT2	FAT atypical cadherin 2	55.643	1.27E-52

FAT3	FAT atypical cadherin 3	-2.128	1.11E-29
FBLN1	fibulin 1	1.808	1.06E-19
FBLN5	fibulin 5	8.105	3.81E-10
FBN1	fibrillin 1	1.662	7.59E-24
FBXO2	F-box protein 2	4.151	0.000000687
FBXO4	F-box protein 4	-1.595	2.18E-08
FCGRT	Fc fragment of IgG receptor and transporter	-2.166	1.01E-11
FCRLA	Fc receptor like A	3.263	0.0000468
FENDRR	FOXF1 adjacent non-coding developmental regulatory RNA	31.188	6.63E-08
FER	FER tyrosine kinase	-1.906	1.42E-19
FER1L4	fer-1 like family member 4 (pseudogene)	3.348	4.31E-25
FERMT3	fermitin family member 3	-2.183	0.0000879
FEZF1	FEZ family zinc finger 1	-3.705	0.00000267
FEZF1-AS1	FEZF1 antisense RNA 1	-4.052	1.14E-19
FGD6	FYVE, RhoGEF and PH domain containing 6	2.125	1.33E-11
FGFBP2	fibroblast growth factor binding protein 2	-18.816	0.000000114
FHL1	four and a half LIM domains 1	1.569	2.12E-17
FIBCD1	fibrinogen C domain containing 1	3	4.69E-15
FIGN	fidgetin, microtubule severing factor	-1.581	1.8E-13
FILIP1	filamin A interacting protein 1	-2	5.94E-08
FKBP10	FKBP prolyl isomerase 10	-1.61	1.28E-11
FKBP14	FKBP prolyl isomerase 14	1.629	2.08E-15
FLJ22447	uncharacterized LOC400221	4.887	3.58E-40
FLRT2	fibronectin leucine rich transmembrane protein 2	2.523	5.77E-47
FLRT3	fibronectin leucine rich transmembrane protein 3	-2.591	4.48E-40
FMN2	formin 2	-2.078	2.37E-36
FMNL1	formin like 1	3.06	2.09E-77
FN1	fibronectin 1	1.697	9.78E-28
FOSB	FosB proto-oncogene, AP-1 transcription factor subunit	2.626	1.07E-08
FOXA1	forkhead box A1	-1.943	1.24E-13
FOXF1	forkhead box F1	9.586	7.82E-33
FOXF2	forkhead box F2	2.32	2.83E-14
FOXG1	forkhead box G1	-1.723	2.56E-10
FOXQ1	forkhead box Q1	3.167	1.43E-13
FOXRED2	FAD dependent oxidoreductase domain containing 2	-1.55	6.58E-14
FOXS1	forkhead box S1	9.543	5.26E-08
FPR1	formyl peptide receptor 1	9.942	2.2E-53

FRAS1	Fraser extracellular matrix complex subunit 1	2.04	0.000294
FRMD3	FERM domain containing 3	-1.778	1.17E-19
FSCN1	fascin actin-bundling protein 1	3.05	2.99E-26
FSCN1P1	fascin actin-bundling protein 1 pseudogene 1	4.125	0.0000015
FSIP1	fibrous sheath interacting protein 1	-1.808	0.000116
GABBR2	gamma-aminobutyric acid type B receptor subunit 2	-1.682	0.00000111
GABRA3	gamma-aminobutyric acid type A receptor alpha3 subunit	2.966	0.00000669
GABRE	gamma-aminobutyric acid type A receptor epsilon subunit	6.304	3.84E-63
GACAT2	gastric cancer associated transcript 2	-2.708	0.0000538
GAL3ST4	galactose-3-O-sulfotransferase 4	-2.252	0.0000359
GALNT12	polypeptide N-acetylgalactosaminyltransferase 12	-2.864	0.00119
GALNT18	polypeptide N-acetylgalactosaminyltransferase 18	11.63	1.76E-13
GALNT6	polypeptide N-acetylgalactosaminyltransferase 6	-3.171	3.65E-08
GAP43	growth associated protein 43	-2.792	2.47E-37
GAREM2	GRB2 associated regulator of MAPK1 subtype 2	-3.312	2.31E-14
GAS1	growth arrest specific 1	2.653	3.98E-16
GAS6-DT	GAS6 divergent transcript	2.79	4.33E-09
GAS7	growth arrest specific 7	2.09	5.69E-34
GATA2	GATA binding protein 2	-1.565	0.0000426
GATA3	GATA binding protein 3	-1.869	3.06E-18
GBP4	guanylate binding protein 4	4.338	7.62E-26
GCNT1	glucosaminyl (N-acetyl) transferase 1	1.863	1.68E-30
GDPD5	glycerophosphodiester phosphodiesterase domain containing 5	2.645	3.1E-17
GFPT2	glutamine-fructose-6-phosphate transaminase 2	1.89	8.84E-42
GGT5	gamma-glutamyltransferase 5	4.015	0.000145
GIMAP2	GTPase, IMAP family member 2	2.521	6.06E-12
GIMAP5	GTPase, IMAP family member 5	36.918	2.29E-12
GIMAP6	GTPase, IMAP family member 6	16.724	1.1E-63
GJA1	gap junction protein alpha 1	1.752	3.97E-37
GJA3	gap junction protein alpha 3	2.378	1.97E-11
GJB2	gap junction protein beta 2	2.138	5.13E-51
GLDC	glycine decarboxylase	2.071	1.16E-17
GLDN	gliomedin	-6.874	8.27E-17
GLIS1	GLIS family zinc finger 1	-2.254	6.55E-08
GLP2R	glucagon like peptide 2 receptor	12.327	2.63E-09
GLT8D2	glycosyltransferase 8 domain containing 2	1.597	0.000000135
GLYATL1	glycine-N-acyltransferase like 1	2.351	0.000962

GNAL	G protein subunit alpha L	5.46	2.26E-25
GNAO1	G protein subunit alpha o1	2.712	1.68E-24
GNG7	G protein subunit gamma 7	-3.954	5.1E-09
GOPC	golgi associated PDZ and coiled-coil motif containing	1.625	2.46E-19
GPC4	glypican 4	-1.591	6.39E-20
GPM6A	glycoprotein M6A	-6.968	2.93E-213
GPM6B	glycoprotein M6B	-1.915	2.23E-26
GPR1	G protein-coupled receptor 1	3.746	0.00000465
GPR156	G protein-coupled receptor 156	-2.638	2.02E-08
GPR160	G protein-coupled receptor 160	1.923	0.00000297
GPR63	G protein-coupled receptor 63	2.205	5.08E-11
GPRC5B	G protein-coupled receptor class C group 5 member B	-1.988	1.22E-17
GPRC5C	G protein-coupled receptor class C group 5 member C	15.858	0.000000102
GPX3	glutathione peroxidase 3	-2.987	9.17E-12
GRAMD1B	GRAM domain containing 1B	1.758	0.000000263
GRIK4	glutamate ionotropic receptor kainate type subunit 4	2.258	2.41E-11
GRIN2A	glutamate ionotropic receptor NMDA type subunit 2A	3.569	1.16E-12
GRIP1	glutamate receptor interacting protein 1	1.73	0.000000472
GRK5	G protein-coupled receptor kinase 5	1.568	2.1E-11
GRPR	gastrin releasing peptide receptor	-3.668	9.52E-25
GSDMC	gasdermin C	5.254	4.43E-11
GSN	gelsolin	-1.654	1.25E-13
GULP1	GULP PTB domain containing engulfment adaptor 1	-3.132	2.59E-56
GYG2	glycogenin 2	-3.188	5.56E-13
H1-2	H1.2 linker histone, cluster member	-1.618	2.57E-08
H1FX-AS1	H1FX antisense RNA 1	-1.786	0.000147
H2AC6	H2A clustered histone 6	-1.967	3.62E-12
H3C4	H3 clustered histone 4	-2.702	0.00501
HAS3	hyaluronan synthase 3	3.73	4.34E-100
HBEGF	heparin binding EGF like growth factor	1.54	1.97E-13
HCFC1R1	host cell factor C1 regulator 1	1.604	1.67E-10
HCN2	hyperpolarization activated cyclic nucleotide gated potassium and sodium channel 2	2.797	3.76E-19
HDAC9	histone deacetylase 9	-1.874	1.02E-30
HEPH	hephaestin	1.657	1.78E-10
HERC5	HECT and RLD domain containing E3 ubiquitin protein ligase 5	1.907	3.14E-19
HERC6	HECT and RLD domain containing E3 ubiquitin protein ligase family member 6	1.754	0.000000399
HES4	hes family bHLH transcription factor 4	-2.308	0.000202

HEY2	hes related family bHLH transcription factor with YRPW motif 2	3.85	4.08E-09
HHIP	hedgehog interacting protein	26.124	0.000000186
HIP1R	huntingtin interacting protein 1 related	1.554	1.73E-08
HIVEP2	HIVEP zinc finger 2	1.89	2.4E-26
HLA-DPA1	major histocompatibility complex, class II, DP alpha 1	11.46	3E-21
HMGN5	high mobility group nucleosome binding domain 5	8.616	2.14E-53
HMOX1	heme oxygenase 1	2.063	8.58E-43
HOPX	HOP homeobox	-1.747	0.00014
HOXA7	homeobox A7	-2.562	0.0000462
HPS1	HPS1 biogenesis of lysosomal organelles complex 3 subunit 1	-1.67	1.66E-10
HRAT17	heart tissue-associated transcript 17	-4.25	7.52E-09
HRH2	histamine receptor H2	22.904	2.61E-11
HS3ST1	heparan sulfate-glucosamine 3-sulfotransferase 1	-2.187	0.000477
HS3ST3B1	heparan sulfate-glucosamine 3-sulfotransferase 3B1	1.699	7.8E-16
HSPA6	heat shock protein family A (Hsp70) member 6	1.858	0.000000367
HTRA1	HtrA serine peptidase 1	1.637	1.22E-20
ICOSLG/LOC102723996	inducible T cell costimulator ligand	2.463	2.05E-36
ID3	inhibitor of DNA binding 3, HLH protein	-1.602	1.42E-09
ID4	inhibitor of DNA binding 4, HLH protein	1.543	9.97E-11
IDO1	indoleamine 2,3-dioxygenase 1	5.39	2.38E-16
IFI44L	interferon induced protein 44 like	-1.643	7.91E-11
IFIT1	interferon induced protein with tetratricopeptide repeats 1	1.868	0.000000132
IFIT3	interferon induced protein with tetratricopeptide repeats 3	1.629	3.6E-10
IFITM10	interferon induced transmembrane protein 10	1.919	8.72E-21
IFRD2	interferon related developmental regulator 2	-1.574	6.25E-09
IGFBP2	insulin like growth factor binding protein 2	-1.651	1.1E-12
IGFBP3	insulin like growth factor binding protein 3	3.696	3.52E-125
IGFBP4	insulin like growth factor binding protein 4	11.214	0
IGFBP5	insulin like growth factor binding protein 5	-2.43	1.78E-64
IGFBP6	insulin like growth factor binding protein 6	1.699	3.04E-08
IGSF10	immunoglobulin superfamily member 10	2.182	0.0000729
IKBIP	IKBKB interacting protein	1.589	2.89E-14
IKZF2	IKAROS family zinc finger 2	2.064	0.0000183
IL11	interleukin 11	2.713	1.05E-38
IL13RA2	interleukin 13 receptor subunit alpha 2	2.714	1.73E-60
IL15	interleukin 15	1.911	0.00000469
IL15RA	interleukin 15 receptor subunit alpha	2.697	4.51E-12

IL24	interleukin 24	11.493	0.000000015
IL27RA	interleukin 27 receptor subunit alpha	1.964	1.95E-15
IL4R	interleukin 4 receptor	5.355	2.26E-51
IL7	interleukin 7	2.553	5.47E-10
IMPDH1P10	inosine monophosphate dehydrogenase 1 pseudogene 10	-2.311	0.000641
INAVA	innate immunity activator	-2.805	0.000121
INPP1	inositol polyphosphate-1-phosphatase	-1.551	4.03E-10
INPP5J	inositol polyphosphate-5-phosphatase J	-2.114	0.000592
IQGAP2	IQ motif containing GTPase activating protein 2	-2.482	2.78E-08
IRF1	interferon regulatory factor 1	2.014	6.06E-22
IRX1	iroquois homeobox 1	-1.913	0.00000314
ITGA1	integrin subunit alpha 1	2.22	6.49E-24
ITGA11	integrin subunit alpha 11	1.932	0.00000194
ITGA2	integrin subunit alpha 2	2.636	3.65E-71
ITGA9	integrin subunit alpha 9	-1.728	1.47E-10
ITGB2	integrin subunit beta 2	2.405	0.00000294
ITGB3	integrin subunit beta 3	1.576	6.47E-13
ITGB4	integrin subunit beta 4	1.548	3.65E-10
ITGB6	integrin subunit beta 6	3.69	0.000102
ITGB8	integrin subunit beta 8	-1.584	1.01E-15
ITGBL1	integrin subunit beta like 1	-2.171	1.12E-21
JAG2	jagged canonical Notch ligand 2	5.436	3.04E-17
JAKMIP3	Janus kinase and microtubule interacting protein 3	1.586	1.81E-08
JDP2	Jun dimerization protein 2	2.568	0.000000059
JMJD8	jumonji domain containing 8	-1.64	5.28E-09
JUP	junction plakoglobin	-2.291	5.02E-09
KALRN	kalirin RhoGEF kinase	1.784	3.52E-12
KCNAB2	potassium voltage-gated channel subfamily A regulatory beta subunit 2	3.027	1.04E-48
KCNB1	potassium voltage-gated channel subfamily B member 1	18.182	1.5E-31
KCND3	potassium voltage-gated channel subfamily D member 3	-9.741	4.78E-26
KCNH5	potassium voltage-gated channel subfamily H member 5	-5.17	0.00000209
KCNIP3	potassium voltage-gated channel interacting protein 3	2.718	4.02E-19
KCNIP4	potassium voltage-gated channel interacting protein 4	-2.48	1.04E-08
KCNJ2	potassium inwardly rectifying channel subfamily J member 2	1.66	8.81E-10
KCNK3	potassium two pore domain channel subfamily K member 3	3.288	0.00000167
KCNK5	potassium two pore domain channel subfamily K member 5	78.236	7.63E-40
KCNMA1	potassium calcium-activated channel subfamily M alpha 1	2.784	8.59E-119

KCNN4	potassium calcium-activated channel subfamily N member 4	2.002	3.57E-29
KCTD12	potassium channel tetramerization domain containing 12	-1.591	8.17E-17
KCTD15	potassium channel tetramerization domain containing 15	-2.164	2.66E-44
KDEL3	KDEL endoplasmic reticulum protein retention receptor 3	2.249	6.64E-40
KDM5B	lysine demethylase 5B	1.675	2.3E-22
KIAA0319	KIAA0319	1.699	0.0000179
KIF17	kinesin family member 17	-2.513	0.000101
KIF7	kinesin family member 7	-1.6	0.000000174
KIRREL3	kirre like nephrin family adhesion molecule 3	-1.586	0.000000167
KITLG	KIT ligand	2.171	2.84E-29
KLF17	Kruppel like factor 17	5.808	1.86E-18
KLHDC7A	kelch domain containing 7A	7.596	0.0000237
KLHL13	kelch like family member 13	-1.612	5.86E-14
KRT13	keratin 13	-3.086	0.00169
KRT18	keratin 18	-1.756	1.48E-11
KRT81	keratin 81	-1.78	1.36E-11
KSR1	kinase suppressor of ras 1	1.763	1.55E-21
L1CAM	L1 cell adhesion molecule	4.844	1.93E-99
LAIR1	leukocyte associated immunoglobulin like receptor 1	14.254	3.1E-21
LAMA1	laminin subunit alpha 1	2.639	0.000093
LAMA2	laminin subunit alpha 2	2.611	1.1E-14
LAMC2	laminin subunit gamma 2	2.977	2.54E-21
LAPTM5	lysosomal protein transmembrane 5	1.929	9.31E-16
LBH	LBH regulator of WNT signaling pathway	2.17	0.000000162
LCP1	lymphocyte cytosolic protein 1	1.71	7.12E-15
LDHA	lactate dehydrogenase A	1.667	2.89E-13
LGR4	leucine rich repeat containing G protein-coupled receptor 4	3.779	8.68E-63
LGR5	leucine rich repeat containing G protein-coupled receptor 5	-3.714	3.42E-23
LHFPL4	LHFPL tetraspan subfamily member 4	3.295	0.0000641
LIN7A	lin-7 homolog A, crumbs cell polarity complex component	-2.969	0.00149
LINC00327	long intergenic non-protein coding RNA 327	-1.893	0.000236
LINC00460	long intergenic non-protein coding RNA 460	-1.81	0.00000666
LINC00461	long intergenic non-protein coding RNA 461	-2.049	1.01E-36
LINC00565	long intergenic non-protein coding RNA 565	3.33	0.0000132
LINC00632	long intergenic non-protein coding RNA 632	-2.134	0.00000176
LINC00639	long intergenic non-protein coding RNA 639	-3.302	2.41E-25
LINC00707	long intergenic non-protein coding RNA 707	-1.53	8.08E-13

LINC00963	long intergenic non-protein coding RNA 963	1.633	3.63E-15
LINC01111	long intergenic non-protein coding RNA 1111	-3.11	3.18E-10
LINC01303	long intergenic non-protein coding RNA 1303	2.979	9.37E-08
LINC01503	long intergenic non-protein coding RNA 1503	2.152	0.00000788
LINC01551	long intergenic non-protein coding RNA 1551	-1.748	0.000000147
LINC02454	long intergenic non-protein coding RNA 2454	2.163	0.000235
LINC02535	long intergenic non-protein coding RNA 2535	1.913	0.0000379
LINC02547	long intergenic non-protein coding RNA 2547	2.387	0.000648
LINC02582	long intergenic non-protein coding RNA 2582	10.845	0.0000069
LINC02732		-3.118	8.02E-17
LINGO2	leucine rich repeat and Ig domain containing 2	-4.671	6.03E-08
LIPE	lipase E, hormone sensitive type	-2.664	4.79E-11
LIPG	lipase G, endothelial type	2.63	0.0000533
LLGL2	LLGL scribble cell polarity complex component 2	-3.339	2.3E-15
LMCD1	LIM and cysteine rich domains 1	-2.107	1.33E-22
LMO3	LIM domain only 3	-2.687	4.14E-45
LNCAROD	lncRNA activating regulator of DKK1	-1.769	2.05E-18
LNCOG	lncRNA osteogenesis associated	5.653	0.00000919
LOC100129534	small nuclear ribonucleoprotein polypeptide N pseudogene	3.424	3.51E-08
LOC100130283	uncharacterized LOC100130283	2.185	0.0000899
LOC100507516	uncharacterized LOC100507516	-5.124	4.29E-48
LOC101927533	uncharacterized LOC101927533	5.909	0.000000504
LOC101928663	uncharacterized LOC101928663	2.373	3.44E-20
LOC102723834	uncharacterized LOC102723834	1.916	0.000043
LOC102724814	uncharacterized LOC102724814	1.671	0.000000487
LOC105369203		-2.467	2.98E-28
LOC105371795		2.256	0.000000856
LOC107984895	uncharacterized LOC107984895	2.228	0.000645
LOC107984948		2.913	2.1E-14
LOC283335	uncharacterized LOC283335	1.856	0.0000729
LOC339192	uncharacterized LOC339192	3.409	6.47E-10
LOC643201	centrosomal protein 192kDa pseudogene	3.523	1.53E-44
LOX	lysyl oxidase	9.077	1.32E-160
LOXL1	lysyl oxidase like 1	2.736	2.92E-17
LOXL1-AS1	LOXL1 antisense RNA 1	4.089	4.66E-27
LOXL4	lysyl oxidase like 4	-1.776	1.09E-15
LPAL2	lipoprotein(a) like 2, pseudogene	10.188	6.68E-09

LPL	lipoprotein lipase	-2.39	3.25E-20
LPXN	leupaxin	2.047	2.71E-36
LRAT	lecithin retinol acyltransferase	-3.106	1.9E-33
LRATD2	LRAT domain containing 2	-1.809	6.1E-23
LRP1	LDL receptor related protein 1	1.567	1.15E-11
LRP4-AS1	LRP4 antisense RNA 1	3.621	0.0000407
LRRC17	leucine rich repeat containing 17	6.193	1.96E-60
LRRC2	leucine rich repeat containing 2	-2.526	2.34E-21
LRRC45	leucine rich repeat containing 45	-1.941	0.000000315
LRRC8B	leucine rich repeat containing 8 VRAC subunit B	-2.349	2.9E-36
LSAMP	limbic system associated membrane protein	-1.89	0.000000359
LSMEM1	leucine rich single-pass membrane protein 1	1.869	0.000379
LSP1	lymphocyte specific protein 1	5.478	0.000000169
LTBP1	latent transforming growth factor beta binding protein 1	2.53	6.61E-52
LTBP2	latent transforming growth factor beta binding protein 2	1.662	2.59E-08
LYPD1	LY6/PLAUR domain containing 1	-1.737	2.93E-37
MAFB	MAF bZIP transcription factor B	2.972	0.000243
MAGEA12	MAGE family member A12	3.893	0.0000242
MAGEB6	MAGE family member B6	8.736	0.00000148
MAGEH1	MAGE family member H1	7.705	1.44E-66
MAGI2	membrane associated guanylate kinase, WW and PDZ domain containing 2	-1.734	1.11E-12
MAMDC2	MAM domain containing 2	2.101	4.41E-50
MAN1A1	mannosidase alpha class 1A member 1	1.757	2.05E-23
MAOA	monoamine oxidase A	4.884	0.00000178
MAP1A	microtubule associated protein 1A	1.568	1.37E-18
MAP3K7CL	MAP3K7 C-terminal like	2.061	0.000273
MAP6	microtubule associated protein 6	-2.76	0.0001
MARCHF1	membrane associated ring-CH-type finger 1	-2.174	8.82E-18
MARCHF10	membrane associated ring-CH-type finger 10	-2.905	0.00000788
MAST4	microtubule associated serine/threonine kinase family member 4	2.215	7.04E-27
MATN2	matrilin 2	3.153	6.26E-108
MATN3	matrilin 3	-2.846	0.00000142
MBL1P	mannose binding lectin 1, pseudogene	5.46	0.00000131
MBNL3	muscleblind like splicing regulator 3	-1.572	0.00000665
MC1R	melanocortin 1 receptor	2.066	2.06E-08
MCF2	MCF.2 cell line derived transforming sequence	-5.678	0.0000211
MCM5	minichromosome maintenance complex component 5	-1.858	2.79E-28

MCTP1	multiple C2 and transmembrane domain containing 1	2.688	6.78E-27
MDGA1	MAM domain containing glycosylphosphatidylinositol anchor 1	2.486	3.48E-48
MDK	midkine	-4.537	3.19E-33
MEF2C	myocyte enhancer factor 2C	-1.722	2.54E-10
MEG3	maternally expressed 3	1.899	4.77E-11
MEIS2	Meis homeobox 2	-1.623	2.27E-16
MEIS3P1	Meis homeobox 3 pseudogene 1	-4.505	1.19E-21
MEIS3P2	Meis homeobox 3 pseudogene 2	-2.907	0.000167
MELTF	melanotransferrin	-1.943	1.67E-08
MEST	mesoderm specific transcript	2.089	6.43E-47
MEX3B	mex-3 RNA binding family member B	1.696	0.000000166
MGC12916	uncharacterized protein MGC12916	2.336	9.33E-08
MGLL	monoglyceride lipase	2.107	4.07E-53
MGP	matrix Gla protein	2.171	3.23E-39
MGST1	microsomal glutathione S-transferase 1	1.541	1.79E-21
MIR100HG	mir-100-let-7a-2-mir-125b-1 cluster host gene	2.035	4.77E-29
MIR503HG	MIR503 host gene	1.963	1.15E-08
MIRLET7BHG	MIRLET7B host gene	-1.588	6.55E-08
MKLN1-AS	MKLN1 antisense RNA	1.84	0.00034
MME	membrane metalloendopeptidase	4.053	1.72E-72
MMP1	matrix metallopeptidase 1	9.258	1.88E-08
MMP14	matrix metallopeptidase 14	2.842	2.19E-100
MMP17	matrix metallopeptidase 17	-3.875	1.58E-09
MMP2	matrix metallopeptidase 2	1.663	7.65E-23
MMP3	matrix metallopeptidase 3	6.528	6.1E-21
MMP7	matrix metallopeptidase 7	2.754	6.64E-38
MOXD1	monooxygenase DBH like 1	-2.299	9.44E-71
MPP2	membrane palmitoylated protein 2	-2.045	2.89E-16
MPP4	membrane palmitoylated protein 4	1.933	1.63E-08
MPP7	membrane palmitoylated protein 7	2.112	0.000011
MROCK1	MARCKS cis regulating lncRNA promoter of cytokines and inflammation	-3.483	3.81E-31
MSANTD2	Myb/SANT DNA binding domain containing 2	-1.692	2.13E-15
MSX2	msh homeobox 2	1.804	0.000000333
MT-ND5	NADH dehydrogenase, subunit 5 (complex I)	1.533	5.74E-17
MT-RNR1	s-rRNA	2.141	7.48E-32
MT-RNR2	l-rRNA	2.438	3.38E-90
MT-TT	tRNA	2.442	0.000000839

MT1E	metallothionein 1E	-2.018	3.57E-16
MTCL1	microtubule crosslinking factor 1	-1.794	5.13E-31
MTMR1	myotubularin related protein 1	-2.111	1.39E-30
MTRNR2L1	MT-RNR2 like 1	2.725	3.41E-15
MTRNR2L10	MT-RNR2 like 10	3.155	5.89E-17
MTRNR2L12	MT-RNR2 like 12	2.419	5.64E-37
MTRNR2L2	MT-RNR2 like 2	2.107	1.31E-18
MTRNR2L8	MT-RNR2 like 8	2.166	6.05E-15
MTSS1	MTSS I-BAR domain containing 1	12.624	9.27E-67
MTUS1	microtubule associated scaffold protein 1	6.961	0.000000487
MUC1	mucin 1, cell surface associated	1.92	0.0000115
MYBL2	MYB proto-oncogene like 2	-1.58	4.97E-15
MYD88	MYD88 innate immune signal transduction adaptor	-1.525	3.33E-14
MYEOV	myeloma overexpressed	-2.16	1.42E-23
MYH15	myosin heavy chain 15	2.364	3.76E-10
MYH16	myosin heavy chain 16 pseudogene	3.412	0.000175
MYH3	myosin heavy chain 3	2.483	0.000000769
MYLK2	myosin light chain kinase 2	2.415	9.16E-13
MYO1D	myosin ID	1.646	8.93E-10
MYO5C	myosin VC	-2.038	1.6E-14
MYOM1	myomesin 1	-3.455	0.0000616
MYOSLID		1.815	0.000181
MYRF	myelin regulatory factor	1.792	1.52E-18
MZF1-AS1	MZF1 antisense RNA 1	2.525	7.41E-09
NACAD	NAC alpha domain containing	-1.793	0.000000152
NALCN	sodium leak channel, non-selective	-2.354	6.78E-10
NANOS1	nanos C2HC-type zinc finger 1	4.114	0.000151
NAP1L2	nucleosome assembly protein 1 like 2	4.014	1.3E-20
NAT8L	N-acetyltransferase 8 like	2.338	0.002
NCEH1	neutral cholesterol ester hydrolase 1	1.592	1.17E-25
NDRG1	N-myc downstream regulated 1	1.766	9.39E-22
NDUFV2	NADH:ubiquinone oxidoreductase core subunit V2	2.969	8.38E-09
NEDD4	NEDD4 E3 ubiquitin protein ligase	-1.565	3.45E-19
NEDD9	neural precursor cell expressed, developmentally down-regulated 9	-1.63	3.14E-19
NEGR1	neuronal growth regulator 1	-1.797	8.82E-13
NEO1	neogenin 1	2.588	5.02E-55
NES	nestin	-3.165	1.02E-132

NEUROG2	neurogenin 2	-4.847	0.000000577
NFASC	neurofascin	2.207	9.76E-42
NHS	NHS actin remodeling regulator	-1.787	9.47E-09
NIPAL2	NIPA like domain containing 2	-1.941	0.000114
NIPSNAP1	nipsnap homolog 1	-2.235	5.17E-25
NISCH	nischarin	-1.712	4.62E-18
NKAIN3	sodium/potassium transporting ATPase interacting 3	-6.854	6.71E-12
NME3	NME/NM23 nucleoside diphosphate kinase 3	-2.837	0.00000532
NNMT	nicotinamide N-methyltransferase	1.944	7.01E-26
NOG	noggin	5.035	0.000000414
NOL6	nucleolar protein 6	-1.549	6.97E-17
NOTCH1	notch receptor 1	-1.972	0.00000429
NPAS1	neuronal PAS domain protein 1	2.012	0.00664
NPAS2	neuronal PAS domain protein 2	2.581	1.87E-37
NPTXR	neuronal pentraxin receptor	3.57	7.34E-13
NPY1R	neuropeptide Y receptor Y1	-3.858	2.11E-22
NR1D1	nuclear receptor subfamily 1 group D member 1	1.54	2.64E-14
NR1H4	nuclear receptor subfamily 1 group H member 4	-23.037	1.32E-49
NRG2	neuregulin 2	-1.876	5.2E-14
NRIP3	nuclear receptor interacting protein 3	1.64	5.85E-15
NRSN2-AS1	NRSN2 antisense RNA 1	2.599	0.00000168
NRXN3	neurexin 3	-2.553	3.14E-11
NSUN5	NOP2/Sun RNA methyltransferase 5	-1.648	0.00000189
NT5C	5', 3'-nucleotidase, cytosolic	-1.705	3.28E-08
NT5DC2	5'-nucleotidase domain containing 2	-1.875	9.09E-30
NTN1	netrin 1	3.519	7.4E-35
NTN4	netrin 4	2.895	2.11E-59
NTNG1	netrin G1	4.845	6.59E-71
NTNG2	netrin G2	2.751	3.37E-09
NTRK2	neurotrophic receptor tyrosine kinase 2	1.889	0.000000121
NTRK3	neurotrophic receptor tyrosine kinase 3	-3.101	1.15E-40
NUDT11	nudix hydrolase 11	3.194	1.02E-09
NUDT16	nudix hydrolase 16	-1.559	1.06E-16
NUDT16L1	nudix hydrolase 16 like 1	-1.655	0.00000947
NUDT4	nudix hydrolase 4	-1.546	5E-17
NUP210	nucleoporin 210	-1.827	2.9E-36
NXPH4	neurexophilin 4	2.286	2.25E-11

OLFM1	olfactomedin 1	3.971	0.000229
OLFML2B	olfactomedin like 2B	1.821	2.77E-19
ONECUT1	one cut homeobox 1	-4.508	0.000161
OPLAH	5-oxoprolinase, ATP-hydrolysing	-1.943	0.000318
OPN3	opsin 3	-1.607	0.000000451
OSBPL10	oxysterol binding protein like 10	-1.537	1.15E-17
OTOGL	otogelin like	-2.51	2.95E-18
OTULINL	OTU deubiquitinase with linear linkage specificity like	2.152	8.2E-11
P3H2	prolyl 3-hydroxylase 2	1.872	2.43E-35
P4HA1	prolyl 4-hydroxylase subunit alpha 1	1.613	1.17E-19
P4HA2	prolyl 4-hydroxylase subunit alpha 2	1.842	1.71E-29
P4HA3	prolyl 4-hydroxylase subunit alpha 3	3.319	0.0000226
P4HTM	prolyl 4-hydroxylase, transmembrane	-1.746	5.83E-13
PADI2	peptidyl arginine deiminase 2	-3.142	0.00145
PALM2AKAP2	PALM2 and AKAP2 fusion	1.637	4.96E-09
PAPPA	pappalysin 1	1.582	6.52E-11
PAQR6	progesterone and adipoQ receptor family member 6	1.757	0.00000128
PARM1	prostate androgen-regulated mucin-like protein 1	29.036	4.38E-154
PAWR	pro-apoptotic WT1 regulator	-1.615	1.46E-13
PAX8	paired box 8	3.03	1.07E-29
PAX8-AS1	PAX8 antisense RNA 1	6.171	3.22E-23
PBX4	PBX homeobox 4	-2.588	4.27E-09
PBXIP1	PBX homeobox interacting protein 1	1.822	2.91E-21
PCDH1	protocadherin 1	2.063	2.03E-12
PCDH10	protocadherin 10	-2.038	2.25E-28
PCDH18	protocadherin 18	-1.713	0.00000656
PCDH20	protocadherin 20	-15.77	2.73E-265
PCDHGC3	protocadherin gamma subfamily C, 3	2.026	7.14E-37
PCDHGC5	protocadherin gamma subfamily C, 5	2.403	1.96E-17
PDE1C	phosphodiesterase 1C	-1.636	3.07E-28
PDE2A	phosphodiesterase 2A	4.094	4.79E-11
PDE3A	phosphodiesterase 3A	4.803	0.000108
PDE4A	phosphodiesterase 4A	-3.09	5.34E-41
PDE4D	phosphodiesterase 4D	1.666	2.5E-11
PDE5A	phosphodiesterase 5A	6.322	6.2E-10
PDGFD	platelet derived growth factor D	1.913	1.48E-23
PDGFRL	platelet derived growth factor receptor like	12.268	3.72E-17

PDK4	pyruvate dehydrogenase kinase 4	6.046	3.77E-30
PDPN	podoplanin	-2.411	0.000481
PDZD4	PDZ domain containing 4	2.672	8.04E-17
PEG10	paternally expressed 10	-2.047	1.61E-65
PEG3	paternally expressed 3	14.946	3.46E-52
PER1	period circadian regulator 1	1.652	3.05E-13
PER3	period circadian regulator 3	1.701	2.18E-21
PGM5	phosphoglucomutase 5	-2.547	0.00000413
PI3	peptidase inhibitor 3	14.175	0.00000337
PICK1	protein interacting with PRKCA 1	-2.245	2.59E-24
PIEZO2	piezo type mechanosensitive ion channel component 2	-3.945	1.4E-25
PIGZ	phosphatidylinositol glycan anchor biosynthesis class Z	3.724	1.16E-13
PIK3CD-AS2	PIK3CD antisense RNA 2	-3.207	0.000198
PIK3CG	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma	6.096	7.61E-09
PINK1	PTEN induced kinase 1	1.621	3.66E-12
PITPNM3	PITPNM family member 3	1.937	1.02E-12
PKN1	protein kinase N1	-1.643	1.49E-13
PKP2	plakophilin 2	-1.845	1.47E-20
PKP3	plakophilin 3	-4.249	0.000000994
PLAAT4	phospholipase A and acyltransferase 4	1.843	0.00000234
PLAC8	placenta associated 8	-5.335	3.99E-08
PLAT	plasminogen activator, tissue type	-2.06	4.11E-39
PLAUR	plasminogen activator, urokinase receptor	1.826	4.73E-29
PLCB4	phospholipase C beta 4	2.301	1.54E-16
PLEKHA7	pleckstrin homology domain containing A7	-2.138	1.31E-11
PLEKHG4B	pleckstrin homology and RhoGEF domain containing G4B	3.545	2.51E-11
PLP1	proteolipid protein 1	-3.082	0.00005
PLPP4	phospholipid phosphatase 4	-1.586	0.000000109
PLSCR1	phospholipid scramblase 1	-1.537	8.56E-14
PLSCR4	phospholipid scramblase 4	1.673	0.00000789
PLXNA4	plexin A4	3.621	5.71E-17
PLXND1	plexin D1	-1.575	2.03E-13
PNMA2	PNMA family member 2	2.731	3.43E-09
PODXL	podocalyxin like	1.662	2.52E-30
PODXL2	podocalyxin like 2	2.079	7.8E-16
POLR2J4	RNA polymerase II subunit J4, pseudogene	3.691	0.00000864
POM121L9P	POM121 transmembrane nucleoporin like 9, pseudogene	12.677	0.00000296

POSTN	periostin	-31.228	4.96E-40
POU3F2	POU class 3 homeobox 2	-1.668	4.05E-20
PPFIA2	PTPRF interacting protein alpha 2	-2.108	3.57E-09
PPM1H	protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent 1H	8.865	5.95E-24
PPM1M	protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent 1M	-2.315	1.12E-15
PPP1R35	protein phosphatase 1 regulatory subunit 35	-1.584	0.00000506
PPP1R3B	protein phosphatase 1 regulatory subunit 3B	1.815	3.88E-15
PPP1R9A	protein phosphatase 1 regulatory subunit 9A	-1.641	9.62E-13
PPP2R2B	protein phosphatase 2 regulatory subunit Bbeta	-2.134	1.04E-49
PPP2R2C	protein phosphatase 2 regulatory subunit Bgamma	13.437	1.03E-40
PPP4R4	protein phosphatase 4 regulatory subunit 4	5.002	4.21E-10
PREX1	phosphatidylinositol-3,4,5-trisphosphate dependent Rac exchange factor 1	1.946	6.53E-26
PRKCZ	protein kinase C zeta	2.462	1.12E-23
PRKD1	protein kinase D1	-1.613	8.21E-13
PRKG1	protein kinase cGMP-dependent 1	6.935	1.61E-13
PRLR	prolactin receptor	-1.819	2.93E-08
PROM2	prominin 2	5.333	1.53E-08
PROX1	prospero homeobox 1	-2.021	5.96E-12
PRR16	proline rich 16	2.149	6.96E-15
PRSS23	serine protease 23	1.863	5.64E-37
PRSS35	serine protease 35	-2.011	4.01E-27
PRTN3	proteinase 3	8.726	0.000713
PRUNE2	prune homolog 2 with BCH domain	-3.102	1.55E-27
PSD4	pleckstrin and Sec7 domain containing 4	2.519	2.16E-26
PSG5	pregnancy specific beta-1-glycoprotein 5	-5.356	0.000000121
PSG9	pregnancy specific beta-1-glycoprotein 9	-2.526	0.0000565
PSMA2	proteasome subunit alpha 2	1.601	0.00000489
PTCH1	patched 1	-2.251	1.47E-09
PTK7	protein tyrosine kinase 7 (inactive)	-1.628	7.96E-13
PTN	pleiotrophin	-1.615	4.31E-16
PTPRB	protein tyrosine phosphatase receptor type B	-2.343	1.51E-48
PTPRD	protein tyrosine phosphatase receptor type D	-2.278	0.00000198
PTPRE	protein tyrosine phosphatase receptor type E	2.33	1.4E-33
PTPRG-AS1	PTPRG antisense RNA 1	-1.904	0.000000046
PTPRU	protein tyrosine phosphatase receptor type U	4.707	5.61E-64
PTPRZ1	protein tyrosine phosphatase receptor type Z1	-2.066	3.21E-17
PTTG1IP	PTTG1 interacting protein	1.52	6.67E-23

PTX3	pentraxin 3	1.716	1.38E-17
PXMP4	peroxisomal membrane protein 4	-1.726	1.09E-10
PXYLP1	2-phosphoxylose phosphatase 1	1.675	0.000000181
PYCR1	pyrroline-5-carboxylate reductase 1	-1.792	2.75E-15
RAB11FIP1	RAB11 family interacting protein 1	3.243	0.000129
RAB11FIP4	RAB11 family interacting protein 4	-2.026	0.0000712
RAB29	RAB29, member RAS oncogene family	1.553	3.23E-14
RAB3IL1	RAB3A interacting protein like 1	1.738	0.00000104
RAB42	RAB42, member RAS oncogene family	-2.78	0.000011
RAB9B	RAB9B, member RAS oncogene family	1.74	0.00000273
RAC3	Rac family small GTPase 3	-1.66	0.000057
RADIL	Rap associating with DIL domain	4.819	0.0000861
RADX	RPA1 related single stranded DNA binding protein, X-linked	1.978	0.000000385
RAET1G	retinoic acid early transcript 1G	2.661	1.66E-09
RANGRF	RAN guanine nucleotide release factor	-2.267	3.79E-31
RAP1GAP2	RAP1 GTPase activating protein 2	3.607	7.98E-39
RAPGEF3	Rap guanine nucleotide exchange factor 3	1.897	0.000535
RAPGEF4	Rap guanine nucleotide exchange factor 4	-2.171	6.56E-08
RARB	retinoic acid receptor beta	-1.562	3.38E-11
RASGRP3	RAS guanyl releasing protein 3	-1.759	2.84E-15
RBM47	RNA binding motif protein 47	1.615	0.00000142
RCAN1	regulator of calcineurin 1	1.76	5.64E-27
REEP1	receptor accessory protein 1	2.165	0.000000235
RFTN1	raftlin, lipid raft linker 1	2.015	1.35E-11
RFX8	RFX family member 8, lacking RFX DNA binding domain	2.273	5.99E-25
RGMA	repulsive guidance molecule BMP co-receptor a	-3.467	6.98E-29
RGS20	regulator of G protein signaling 20	2.161	6.93E-18
RGS3	regulator of G protein signaling 3	1.604	1.92E-19
RGS7	regulator of G protein signaling 7	-2.269	6.01E-24
RHBDL2	rhomboid like 2	1.717	0.000233
RHOBTB1	Rho related BTB domain containing 1	-1.594	1.39E-12
RHOBTB3	Rho related BTB domain containing 3	-1.526	1.12E-14
RHOJ	ras homolog family member J	-2.328	7.48E-50
RHOU	ras homolog family member U	1.91	6.94E-20
RHOV	ras homolog family member V	3.036	1.88E-08
RIMBP2	RIMS binding protein 2	19.767	2.35E-97
RIMKLA	ribosomal modification protein rimK like family member A	1.814	0.000581

RIMS3	regulating synaptic membrane exocytosis 3	-2.057	5.57E-15
RIN2	Ras and Rab interactor 2	1.604	4.16E-19
RIPOR2	RHO family interacting cell polarization regulator 2	-4.657	1.62E-118
RN7SL689P	RNA, 7SL, cytoplasmic 689, pseudogene	2.649	0.000257
RNF112	ring finger protein 112	-3.492	2.85E-11
RNF144A	ring finger protein 144A	1.575	2.5E-11
RNF152	ring finger protein 152	2.16	0.000000102
RNF157	ring finger protein 157	-2.092	5.96E-26
RNF24	ring finger protein 24	2.335	4.89E-59
ROR1	receptor tyrosine kinase like orphan receptor 1	2.115	6.3E-17
RORA	RAR related orphan receptor A	4.863	2.14E-08
ROS1	ROS proto-oncogene 1, receptor tyrosine kinase	9.621	2.31E-95
RP11_1246C191		1.833	1.04E-08
RP11_134G810		1.976	0.0000147
RP11_159D122		1.82	6.91E-08
RP11_21L232		2.674	0.000046
RP11_284F2110		4.138	2.04E-73
RP11_284F217		3.318	1.08E-11
RP11_284F219		5.106	5.46E-12
RP11_320M162		-4.077	4.44E-08
RP11_364B143		-1.951	0.00159
RP11_404J231		-1.663	0.000000347
RP11_4C204		2.795	0.000606
RP11_541N103		1.873	0.000283
RP11_77H95		5.426	0.0000502
RP11_888D104		2.477	0.000768
RP1_140K85		2.846	0.000256
RP4_773N104		1.59	1.63E-08
RP4_791C191		-2.379	0.000187
RPS6KA2	ribosomal protein S6 kinase A2	3.774	9.82E-55
RRAS2	RAS related 2	1.552	5.77E-11
RRBP1	ribosome binding protein 1	1.54	5.59E-14
RTL9	retrotransposon Gag like 9	2.219	2.84E-23
RTN2	reticulum 2	2.505	9.4E-17
RTN4RL1	reticulum 4 receptor like 1	6.044	0.000000329
RTN4RL2	reticulum 4 receptor like 2	3.527	0.0000504
RUVBL1	RuvB like AAA ATPase 1	-1.766	7.89E-21

S100A2	S100 calcium binding protein A2	3.807	4.46E-68
S100A3	S100 calcium binding protein A3	2.288	0.000000338
S100A4	S100 calcium binding protein A4	3.119	4.4E-26
S100B	S100 calcium binding protein B	-3.54	6.36E-78
SAA1	serum amyloid A1	9.709	6.01E-11
SALL4	spalt like transcription factor 4	-17.198	0.0000015
SAMD10	sterile alpha motif domain containing 10	-1.711	0.00000168
SAMD11	sterile alpha motif domain containing 11	-1.862	0.00000126
SAMD5	sterile alpha motif domain containing 5	-3.018	4.55E-32
SAMD9L	sterile alpha motif domain containing 9 like	1.728	3.58E-18
SCAP	SREBF chaperone	-1.624	3.7E-13
SCD	stearoyl-CoA desaturase	1.643	1.63E-24
SCNN1A	sodium channel epithelial 1 alpha subunit	4.96	1.39E-27
SCNN1B	sodium channel epithelial 1 beta subunit	3.244	9.33E-08
SCPEP1	serine carboxypeptidase 1	1.675	2.76E-26
SDC1	syndecan 1	1.705	1.49E-18
SEL1L3	SEL1L family member 3	2.012	2.08E-41
SELENOP	selenoprotein P	3.23	7.1E-11
SELL	selectin L	2.228	0.000827
SEMA3B	semaphorin 3B	-5.284	1.92E-45
SEMA3C	semaphorin 3C	1.751	7.87E-30
SEMA3F	semaphorin 3F	15.338	2.24E-62
SEMA4B	semaphorin 4B	1.7	7.73E-21
SEMA7A	semaphorin 7A (John Milton Hagen blood group)	2.073	2.46E-42
SEPTIN3	septin 3	1.808	1.42E-08
SEPTIN6	septin 6	2.095	1.84E-19
SERBP1P1	SERPINE1 mRNA binding protein 1 pseudogene 1	-1.705	0.000000138
SERINC2	serine incorporator 2	8.826	1.28E-112
SERPINA1	serpin family A member 1	2.641	2.26E-18
SERPINA5	serpin family A member 5	3.492	2.07E-15
SERPINE1	serpin family E member 1	1.891	7.97E-34
SERPINE2	serpin family E member 2	1.944	2.14E-43
SERPINH1	serpin family H member 1	-2.076	7.29E-23
SESN2	sestrin 2	1.631	9.92E-08
SETBP1	SET binding protein 1	1.558	3.77E-10
SEZ6L2	seizure related 6 homolog like 2	2.524	1.64E-18
SFRP1	secreted frizzled related protein 1	1.72	1.57E-15

SFTA1P	surfactant associated 1, pseudogene	100.677	2.21E-08
SGSH	N-sulfoglucosamine sulfohydrolase	-2.181	1.42E-30
SH3BGRL2	SH3 domain binding glutamate rich protein like 2	2.066	2.15E-10
SH3D21	SH3 domain containing 21	-2.999	8.97E-37
SH3GL3	SH3 domain containing GRB2 like 3, endophilin A3	4.54	2.29E-08
SH3PXD2A	SH3 and PX domains 2A	2.046	6.73E-42
SHC2	SHC adaptor protein 2	-3.209	0.000000399
SHISA2	shisa family member 2	2.003	0.00000164
SHISAL1	shisa like 1	6.728	3.75E-16
SIAE	sialic acid acetyltransferase	1.562	5.89E-12
SIGLEC22P	sialic acid binding Ig like lectin 22, pseudogene	10.781	1.06E-10
SIK1/SIK1B	salt inducible kinase 1	1.721	5.58E-13
SIPA1	signal-induced proliferation-associated 1	-2.071	0.000000153
SLAIN1	SLAIN motif family member 1	-1.562	3.86E-14
SLC12A7	solute carrier family 12 member 7	4.334	5.59E-31
SLC12A8	solute carrier family 12 member 8	-2.565	4.65E-09
SLC15A2	solute carrier family 15 member 2	2.545	0.0000289
SLC16A14	solute carrier family 16 member 14	-2.293	0.00000167
SLC16A2	solute carrier family 16 member 2	1.628	2.51E-23
SLC16A7	solute carrier family 16 member 7	-2.334	0.000309
SLC16A9	solute carrier family 16 member 9	-3.059	3.69E-68
SLC17A5	solute carrier family 17 member 5	1.595	3.12E-08
SLC1A1	solute carrier family 1 member 1	1.91	2.79E-10
SLC20A1	solute carrier family 20 member 1	1.519	5.97E-22
SLC22A4	solute carrier family 22 member 4	2.126	2.09E-13
SLC25A23	solute carrier family 25 member 23	2.019	4.32E-35
SLC25A27	solute carrier family 25 member 27	7.436	2.27E-12
SLC25A28	solute carrier family 25 member 28	-1.667	7.94E-15
SLC25A29	solute carrier family 25 member 29	1.731	2.86E-15
SLC26A11	solute carrier family 26 member 11	-2.256	1.2E-16
SLC27A6	solute carrier family 27 member 6	-3.04	0.000208
SLC29A4	solute carrier family 29 member 4	1.723	0.000791
SLC2A12	solute carrier family 2 member 12	7	8.06E-51
SLC2A13	solute carrier family 2 member 13	6.809	5.66E-27
SLC2A3	solute carrier family 2 member 3	1.608	7.01E-12
SLC30A3	solute carrier family 30 member 3	4.602	5.92E-10
SLC35F1	solute carrier family 35 member F1	-1.837	0.00012

SLC37A2	solute carrier family 37 member 2	2.422	7.71E-09
SLC38A11	solute carrier family 38 member 11	3.982	2.47E-28
SLC38A2	solute carrier family 38 member 2	1.714	6.14E-22
SLC38A3	solute carrier family 38 member 3	4.593	3.58E-29
SLC39A8	solute carrier family 39 member 8	1.825	2.95E-18
SLC40A1	solute carrier family 40 member 1	-2.673	0.000000272
SLC43A1	solute carrier family 43 member 1	1.772	0.00041
SLC44A3	solute carrier family 44 member 3	2.381	0.00106
SLC44A5	solute carrier family 44 member 5	-7.144	1.28E-24
SLC7A11	solute carrier family 7 member 11	-2.003	2.7E-25
SLC8A1	solute carrier family 8 member A1	4.034	3.02E-87
SLCO4A1	solute carrier organic anion transporter family member 4A1	5.766	7.93E-91
SLCO5A1	solute carrier organic anion transporter family member 5A1	-2.195	9.25E-17
SLIT2	slit guidance ligand 2	-1.801	1.23E-38
SLIT3	slit guidance ligand 3	-1.789	2.3E-15
SLPI	secretory leukocyte peptidase inhibitor	151.869	2.22E-154
SMAD1	SMAD family member 1	-1.569	0.000000554
SMIM25	small integral membrane protein 25	2.735	8.86E-10
SMPDL3B	sphingomyelin phosphodiesterase acid like 3B	3.108	0.0000339
SMTN	smoothelin	-1.607	5.75E-08
SNHG19	small nucleolar RNA host gene 19	-1.706	0.00000245
SNHG25		-2.296	0.00000186
SNHG9	small nucleolar RNA host gene 9	-1.671	0.000048
SOCS2	suppressor of cytokine signaling 2	-2.038	1.84E-31
SOCS2-AS1	SOCS2 antisense RNA 1	-1.882	2.54E-10
SOCS5	suppressor of cytokine signaling 5	1.565	4.54E-16
SORBS2	sorbin and SH3 domain containing 2	-1.556	5.96E-10
SORBS3	sorbin and SH3 domain containing 3	-1.589	2.27E-16
SORCS2	sortilin related VPS10 domain containing receptor 2	12.847	4.26E-94
SOX13	SRY-box transcription factor 13	-1.897	2.16E-32
SOX2	SRY-box transcription factor 2	-1.684	2.25E-16
SOX2-OT	SOX2 overlapping transcript	-5.92	1.18E-191
SPAG17	sperm associated antigen 17	-2.195	2.2E-22
SPATC1L	spermatogenesis and centriole associated 1 like	-2.395	6.71E-10
SPINT1	serine peptidase inhibitor, Kunitz type 1	-1.966	0.000272
SPOCK1	SPARC (osteonectin), cwcv and kazal like domains proteoglycan 1	-1.736	3.34E-30
SPP1	secreted phosphoprotein 1	-2.283	4.95E-61

SPSB1	splA/ryanodine receptor domain and SOCS box containing 1	3.28	1.33E-51
SPTB	spectrin beta, erythrocytic	1.621	0.000000256
SPTBN4	spectrin beta, non-erythrocytic 4	-3.629	0.000141
SQOR	sulfide quinone oxidoreductase	1.871	1.33E-14
SRSF12	serine and arginine rich splicing factor 12	-3.288	6.53E-08
SSBP3	single stranded DNA binding protein 3	1.551	1.91E-13
SSC5D	scavenger receptor cysteine rich family member with 5 domains	3.656	3.28E-16
SSH3	slingshot protein phosphatase 3	-1.571	1.58E-08
ST8SIA1	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 1	2.597	0.000362
ST8SIA4	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 4	2.396	0.000125
STAC	SH3 and cysteine rich domain	-1.687	7.87E-23
STAMBPL1	STAM binding protein like 1	-1.612	2.52E-13
STARD4	StAR related lipid transfer domain containing 4	1.764	0.000000331
STC1	stanniocalcin 1	1.966	1.43E-40
STEAP1	STEAP family member 1	4.484	1.5E-20
STEAP2	STEAP2 metalloredutase	2.513	0.00000971
STK17A	serine/threonine kinase 17a	1.798	1.21E-29
STK32B	serine/threonine kinase 32B	-1.905	1.88E-11
STMN3	stathmin 3	2.641	1.76E-25
STOM	stomatin	-1.907	1.26E-34
STON2	stonin 2	1.753	3.78E-12
STRA6	stimulated by retinoic acid 6	-2.502	2.43E-25
STX1A	syntaxin 1A	1.555	4.99E-09
STXBP6	syntaxin binding protein 6	1.755	0.0000001
SULF1	sulfatase 1	-6.024	7.78E-106
SULF2	sulfatase 2	1.628	3.75E-21
SURF2	surfeit 2	-1.647	0.00195
SUSD1	sushi domain containing 1	-2.177	7.78E-09
SUSD2	sushi domain containing 2	4.342	5.75E-16
SUSD4	sushi domain containing 4	2.333	0.00000178
SUSD6	sushi domain containing 6	1.553	1.31E-09
SV2A	synaptic vesicle glycoprotein 2A	-1.557	2.88E-11
SYNC	syncoilin, intermediate filament protein	1.591	4.69E-14
SYNE3	spectrin repeat containing nuclear envelope family member 3	-2.172	0.000118
SYNGR1	synaptogyrin 1	-2.895	2.01E-11
SYNPO	synaptopodin	2.261	3.17E-47
SYTL2	synaptotagmin like 2	2.276	5.05E-19

TACR1	tachykinin receptor 1	1.902	4.9E-14
TAGLN	transgelin	-1.707	0.00000949
TBC1D4	TBC1 domain family member 4	2.196	3.21E-35
TBC1D8	TBC1 domain family member 8	1.693	8.46E-10
TBC1D8B	TBC1 domain family member 8B	1.988	1.71E-09
TCHH	trichohyalin	2.622	0.000124
TCN1	transcobalamin 1	2.896	4.33E-23
TDP1	tyrosyl-DNA phosphodiesterase 1	-1.652	1.41E-15
TDRP	testis development related protein	1.634	0.0000115
TEF	TEF transcription factor, PAR bZIP family member	2.278	3.33E-38
TENM2	teneurin transmembrane protein 2	1.597	3.26E-23
TENM4	teneurin transmembrane protein 4	1.556	1.97E-13
TESK2	testis associated actin remodelling kinase 2	1.863	0.000000481
TEX15	testis expressed 15, meiosis and synapsis associated	3.867	0.00000574
TEX9	testis expressed 9	1.614	0.00000617
TFAP2B	transcription factor AP-2 beta	-2.351	0.000808
TFAP2C	transcription factor AP-2 gamma	-1.655	7.95E-28
TFB1M	transcription factor B1, mitochondrial	-1.576	9.48E-11
TFCP2L1	transcription factor CP2 like 1	2.958	8.95E-10
TFEB	transcription factor EB	2.023	8.39E-15
TFPI	tissue factor pathway inhibitor	1.613	3.24E-13
TGFB2	transforming growth factor beta 2	1.642	2.78E-14
TGFB3	transforming growth factor beta 3	2.487	3E-27
TGFBR3	transforming growth factor beta receptor 3	2.115	0.00228
TGM2	transglutaminase 2	-1.531	9.53E-13
THEMIS2	thymocyte selection associated family member 2	-4.431	0.000000736
THNSL2	threonine synthase like 2	-5.221	1.42E-14
THSD1	thrombospondin type 1 domain containing 1	2.725	6.68E-40
TIAM1	T cell lymphoma invasion and metastasis 1	1.752	3.87E-16
TIMP3	TIMP metalloproteinase inhibitor 3	1.564	1.79E-11
TIMP4	TIMP metalloproteinase inhibitor 4	1.767	0.000000222
TKTL1	transketolase like 1	4.137	2.4E-41
TLR1	toll like receptor 1	2.275	3.33E-09
TLR3	toll like receptor 3	2.388	0.000318
TLR4	toll like receptor 4	-1.777	9.19E-29
TLR6	toll like receptor 6	1.794	1.24E-14
TM4SF18	transmembrane 4 L six family member 18	2.881	7.03E-25

TMC7	transmembrane channel like 7	1.924	0.00000016
TMEFF2	transmembrane protein with EGF like and two follistatin like domains 2	1.873	8.99E-08
TMEM100	transmembrane protein 100	-4.2	1.13E-10
TMEM143	transmembrane protein 143	1.773	0.000000305
TMEM158	transmembrane protein 158 (gene/pseudogene)	3.944	7.84E-121
TMEM171	transmembrane protein 171	-3.871	1.06E-09
TMEM173	transmembrane protein 173	1.702	3.7E-09
TMEM179	transmembrane protein 179	4.897	3.82E-15
TMEM200A	transmembrane protein 200A	-2.303	0.000799
TMEM200C	transmembrane protein 200C	-2.099	1.28E-22
TMEM205	transmembrane protein 205	-1.701	1.46E-13
TMEM220	transmembrane protein 220	-2.363	0.000000766
TMEM229B	transmembrane protein 229B	-3.001	0.00000127
TMEM25	transmembrane protein 25	-3.12	1.18E-13
TMEM255A	transmembrane protein 255A	2.295	8.73E-08
TMEM255B	transmembrane protein 255B	9.693	9.56E-27
TMEM26	transmembrane protein 26	-2.605	0.00015
TMEM38A	transmembrane protein 38A	1.694	0.00000191
TMEM45A	transmembrane protein 45A	-1.532	1.14E-14
TMEM51	transmembrane protein 51	1.553	1.38E-09
TMEM63C	transmembrane protein 63C	-6.501	7.19E-08
TMEM71	transmembrane protein 71	2.699	5.45E-22
TMSB15A	thymosin beta 15a	4.421	2.51E-18
TMTC1	transmembrane O-mannosyltransferase targeting cadherins 1	2.138	8.45E-35
TMTC4	transmembrane O-mannosyltransferase targeting cadherins 4	-1.9	6.69E-24
TNC	tenascin C	1.697	6.6E-25
TNFAIP3	TNF alpha induced protein 3	1.55	5.86E-10
TNFAIP6	TNF alpha induced protein 6	3.289	0.000000937
TNFRSF11B	TNF receptor superfamily member 11b	222.216	5.42E-18
TNFRSF21	TNF receptor superfamily member 21	3.604	2.06E-118
TNFSF10	TNF superfamily member 10	3.24	2.4E-41
TNFSF4	TNF superfamily member 4	-11.65	3.61E-140
TNNT1	troponin T1, slow skeletal type	2.432	1.62E-16
TOX	thymocyte selection associated high mobility group box	2.204	1.1E-13
TP53I11	tumor protein p53 inducible protein 11	3.572	1.11E-82
TPPP	tubulin polymerization promoting protein	4.229	9.65E-22
TPRG1	tumor protein p63 regulated 1	3.311	4.12E-10

TRABD2A	TraB domain containing 2A	4.818	3.55E-57
TRAPPC9	trafficking protein particle complex 9	-1.818	2.01E-18
TRERF1	transcriptional regulating factor 1	1.58	2.58E-13
TRIM24	tripartite motif containing 24	-1.534	5.75E-18
TRIM29	tripartite motif containing 29	57.105	3.16E-17
TRIM38	tripartite motif containing 38	-1.82	1.85E-09
TRIM6	tripartite motif containing 6	3.217	6.42E-13
TRNP1	TMF1 regulated nuclear protein 1	1.853	1.16E-12
TRPM3	transient receptor potential cation channel subfamily M member 3	-4.248	2.79E-27
TSHZ2	teashirt zinc finger homeobox 2	6.009	3.59E-15
TSKU	tsukushi, small leucine rich proteoglycan	1.908	1.98E-15
TSPAN1	tetraspanin 1	3.103	2.66E-08
TSPAN12	tetraspanin 12	8.052	3.53E-13
TSPAN13	tetraspanin 13	1.602	4.77E-16
TSPAN15	tetraspanin 15	-1.618	1.19E-14
TSPAN2	tetraspanin 2	-1.736	3.54E-13
TSPAN9	tetraspanin 9	1.594	8.68E-18
TSTD1	thiosulfate sulfurtransferase like domain containing 1	-2.546	3.29E-15
TTBK1	tau tubulin kinase 1	-4.513	4.79E-29
TTC39A	tetratricopeptide repeat domain 39A	-2.705	0.000397
TTC3P1	tetratricopeptide repeat domain 3 pseudogene 1	2.416	6.44E-34
TTC6	tetratricopeptide repeat domain 6	-5.327	1.66E-09
TTYH2	tweety family member 2	1.961	0.000311
TUBB2B	tubulin beta 2B class IIb	-2.6	4.38E-27
TUBB4A	tubulin beta 4A class IVa	2.371	5.68E-09
TXK	TXK tyrosine kinase	-3.695	6.4E-16
TYMSOS	TYMS opposite strand	-2.258	0.00000234
UBE2L6	ubiquitin conjugating enzyme E2 L6	1.581	0.000000032
UCA1	urothelial cancer associated 1	161.643	6.16E-47
UCP2	uncoupling protein 2	1.622	2.21E-11
UNC5B	unc-5 netrin receptor B	2.1	0.000144
USP43	ubiquitin specific peptidase 43	3.451	0.0000197
VAC14-AS1	VAC14 antisense RNA 1	3.813	0.0000133
VAT1L	vesicle amine transport 1 like	-6.721	2.55E-21
VCAM1	vascular cell adhesion molecule 1	-2.68	9.51E-08
VCAN	versican	-1.625	1.96E-19
VDR	vitamin D receptor	2.198	1.79E-21

VEGFA	vascular endothelial growth factor A	2.153	9.84E-61
VEGFC	vascular endothelial growth factor C	1.619	1.88E-17
VEPH1	ventricular zone expressed PH domain containing 1	1.862	5.55E-13
VGLL3	vestigial like family member 3	-1.815	0.0000268
VIT	vitrin	-3.433	3.5E-33
VMAC	vimentin type intermediate filament associated coiled-coil protein	-1.648	1.92E-09
VPS35L	VPS35 endosomal protein sorting factor like	-2.131	4.57E-19
VSIG10L	V-set and immunoglobulin domain containing 10 like	2.263	0.0000763
VSNL1	visinin like 1	-1.793	3.62E-12
VSTM4	V-set and transmembrane domain containing 4	4.545	0.0000423
VWA5A	von Willebrand factor A domain containing 5A	2.46	8.12E-11
VWCE	von Willebrand factor C and EGF domains	3.982	2.19E-08
VWDE	von Willebrand factor D and EGF domains	-2.023	6.44E-16
WIPI1	WD repeat domain, phosphoinositide interacting 1	1.774	1.87E-11
WNT5B	Wnt family member 5B	2.005	8.21E-23
WNT7B	Wnt family member 7B	2.028	0.0000648
WWC3	WWC family member 3	-1.529	2E-14
XAF1	XIAP associated factor 1	2.54	0.000000137
XBP1	X-box binding protein 1	1.565	9.34E-15
XDH	xanthine dehydrogenase	4.296	3.26E-65
XKR4	XK related 4	-2.449	1.9E-14
XPC	XPC complex subunit, DNA damage recognition and repair factor	-1.529	3.52E-10
YPEL3	yippee like 3	-2.222	0.00000198
ZBTB20	zinc finger and BTB domain containing 20	-1.786	0.000229
ZBTB46	zinc finger and BTB domain containing 46	1.746	0.000716
ZBTB47	zinc finger and BTB domain containing 47	-1.599	0.0000187
ZC3H12B	zinc finger CCCH-type containing 12B	2.843	1.51E-08
ZCWPW1	zinc finger CW-type and PWWP domain containing 1	1.905	0.00000949
ZDHHC23	zinc finger DHHC-type containing 23	-1.554	1.06E-10
ZEB1	zinc finger E-box binding homeobox 1	1.534	1.12E-14
ZFHX4-AS1	ZFHX4 antisense RNA 1	-3.914	7.41E-26
ZFPM2-AS1	ZFPM2 antisense RNA 1	-1.913	0.00000706
ZFYVE28	zinc finger FYVE-type containing 28	2.372	0.000000808
ZIC2	Zic family member 2	8.119	1.08E-11
ZIC5	Zic family member 5	4.072	0.000000228
ZMAT1	zinc finger matrin-type 1	9.174	0.000000246
ZMIZ1	zinc finger MIZ-type containing 1	1.556	1.42E-15

ZMIZ1-AS1	ZMIZ1 antisense RNA 1	2.293	4.25E-11
ZNF239	zinc finger protein 239	-1.603	0.000019
ZNF467	zinc finger protein 467	10.496	0.00000151
ZNF506	zinc finger protein 506	-2.025	1.9E-12
ZNF512	zinc finger protein 512	2.105	1.97E-26
ZNF536	zinc finger protein 536	3.378	0.000000185
ZNF620	zinc finger protein 620	-1.966	1.41E-10
ZNF660	zinc finger protein 660	-5.464	1.3E-09
ZNF665	zinc finger protein 665	-2.087	0.000482
ZNF702P	zinc finger protein 702, pseudogene	-2.699	3.03E-09
ZNF793	zinc finger protein 793	-2.513	2.09E-10
ZNF853	zinc finger protein 853	-3.612	2.92E-29
ZNF879	zinc finger protein 879	1.973	0.0000116
ZP1	zona pellucida glycoprotein 1	3.13	0.00000888
ZSCAN5A	zinc finger and SCAN domain containing 5A	1.955	0.000000373
ZSWIM4	zinc finger SWIM-type containing 4	1.774	6.64E-14
ZSWIM5	zinc finger SWIM-type containing 5	-1.744	1.32E-09