

SUPPLEMENTARY FILE

**Chemical exposure generates DNA copy number variants and impacts gene expression**

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**Supplementary Table 1.** Genes with altered expression following 2 mM EMS exposure.

**Supplementary Table 1. Genes with altered expression following 2 mM EMS exposure.**

Symbol	Entrez Gene Name	Sequence ID	Fold Change
A1CF	APOBEC1 complementation factor	ENSDART00000010358	2.659
AADAT	aminoadipate aminotransferase	ENSDART00000019527	-4.412
AAMP	angio-associated, migratory cell protein	BC067708.1	-7.359
AANAT	aralkylamine N-acetyltransferase	AY349158.1	2.175
AASS	aminoadipate-semialdehyde synthase	ENSDART00000073502	-5.396
ABCC1	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	ENSDART00000083659	-4.524
ABCC4	ATP-binding cassette, sub-family C (CFTR/MRP), member 4	ENSDART00000065500	-8.904
ABCG1	ATP-binding cassette, sub-family G (WHITE), member 1	BC139542.1	2.038
ABI2	abl-interactor 2	NM_001076586	-2.675
ABL1	c-abl oncogene 1, non-receptor tyrosine kinase	ENSDART00000005516	-7.15
ABL2	v-abl Abelson murine leukemia viral oncogene homolog 2	ENSDART00000041697	-4.612
ABTB2	ankyrin repeat and BTB (POZ) domain containing 2	ENSDART00000089113	-10.476
ACAT1	acetyl-CoA acetyltransferase 1	NM_001003746	-7.378
ACLY	ATP citrate lyase	NM_001002649	-16.688
ACN9	ACN9 homolog (S. cerevisiae)	BC083535.1	2.057
ACO1	aconitase 1, soluble	NM_001034983	-9.507
ACOX3	acyl-CoA oxidase 3, pristanoyl	NM_213147	-2.901
ACSBG2	acyl-CoA synthetase bubblegum family member 2	ENSDART00000012120	-16.57
ACSL4	acyl-CoA synthetase long-chain family member 4	BC057476.1	-9.362
ACTA1	actin, alpha 1, skeletal muscle	NM_214784	3.116
ACTN4	actinin, alpha 4	NM_199586	-19.578

ADAR	Double-stranded RNA-specific adenosine deaminase	OTTDART00000026603	-9.121
ADARB1	adenosine deaminase, RNA-specific, B1	ENSDART00000024657	-2.59
ADCY6	adenylate cyclase 6	ENSDART00000038491	-3.664
ADCYAP1	adenylate cyclase activating polypeptide 1 (pituitary)	BC083516.1	2.354
ADPGK	ADP-dependent glucokinase	NM_001079965	-2.441
ADPRHL1	ADP-ribosylhydrolase like 1	NM_001006033	2.538
ADRA2B	adrenoceptor alpha 2B	NM_207638	2.164
AES	amino-terminal enhancer of split	NM_200423	-2.95
AFAP1	actin filament associated protein 1	ENSDART00000077580	-2.223
AFG3L2	AFG3 ATPase family gene 3-like 2 ( <i>S. cerevisiae</i> )	ENSDART00000089834	-4.971
AGAP1	ArfGAP with GTPase domain, ankyrin repeat and PH domain 1	ENSDART00000089445	-4.24
AGL	amylo-alpha-1, 6-glucosidase, 4-alpha-glucanotransferase	ENSDART00000007766	-2.998
AIFM1	apoptosis-inducing factor, mitochondrion-associated, 1	AY423007.1	-13.235
AIM1	absent in melanoma 1	ENSDART00000041721	-15.012
AKAP12	A kinase (PRKA) anchor protein 12	NM_001098184	-6.258
AKAP8L	A kinase (PRKA) anchor protein 8-like	NM_213219	-8.039
AKT3	v-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)	ENSDART00000092596	-8.4
ALDH1L2	aldehyde dehydrogenase 1 family, member L2	ENSDART00000102893	-7.176
ALDOA	aldolase A, fructose-bisphosphate	BC065847.1	-2.022
ALG10	asparagine-linked glycosylation 10, alpha-1,2-glucosyltransferase homolog ( <i>S. pombe</i> )	ENSDART00000076037	-2.666
ALK	anaplastic lymphoma receptor tyrosine kinase	ENSDART00000062907	-6.942
ALKBH2	alkB, alkylation repair homolog 2	OTTDART00000022500	2.191
AMOTL2	angiomin like 2	NM_001080177	-14.231

ANAPC7	anaphase promoting complex subunit 7	ENSDART00000091684	-3.496
ANKRD24	ankyrin repeat domain 24	AI793581	2.367
ANKRD37	ankyrin repeat domain 37	ENSDART00000103236	2.426
ANKRD52	ankyrin repeat domain 52	NM_001018154	-4.03
ANKS1B	ankyrin repeat and sterile alpha motif domain containing 1B	ENSDART00000024367	-3.446
ANKZF1	ankyrin repeat and zinc finger domain containing 1	ENSDART00000061403	-2.327
ANO10	anoctamin 10	NM_001030206	-2.584
ANPEP	alanyl (membrane) aminopeptidase	ENSDART00000053444	-4.646
AP2A2	adaptor-related protein complex 2, alpha 2 subunit	ENSDART00000076469	-23.31
AP4B1	adaptor-related protein complex 4, beta 1 subunit	BC053128.1	-2.518
APC	adenomatous polyposis coli	ENSDART00000044432	-2.958
APOA4	apolipoprotein A-IV	ENSDART00000008651	2.079
APOE	Apolipoprotein E	OTTDART00000026608	3.353
APPL1	adaptor protein, phosphotyrosine interaction, PH domain and leucine zipper containing 1	ENSDART00000085868	-6.667
AQP9	aquaporin 9	NM_001033096	2.122
ARAF	v-raf murine sarcoma 3611 viral oncogene homolog	NM_205743	-8.932
ARAP3	ArfGAP with RhoGAP domain, ankyrin repeat and PH domain 3	ENSDART00000042624	-2.206
ARF4	ADP-ribosylation factor 4	NM_001003590	-5.199
ARF5	ADP-ribosylation factor 5	ENSDART00000103467	-2.745
ARFRP1	ADP-ribosylation factor related protein 1	NM_001013289	-2.822
ARHGAP10	Rho GTPase activating protein 10	NM_001045250	-5.772
ARHGAP29	Rho GTPase activating protein 29	ENSDART00000018037	-4.454
ARHGAP5	Rho GTPase activating protein 5	ENSDART00000086696	-9.812
ARHGEF25	Rho guanine nucleotide exchange factor (GEF) 25	ENSDART00000048694	-10.624

ARHGEF6	Rac/Cdc42 guanine nucleotide exchange factor (GEF) 6	ENSDART00000003345	-3.805
ARHGEF7	Rho guanine nucleotide exchange factor (GEF) 7	ENSDART00000045093	2.705
ARHGEF9	Cdc42 guanine nucleotide exchange factor (GEF) 9	ENSDART00000088408	4.509
ARID4A	AT rich interactive domain 4A (RBP1-like)	ENSDART00000103228	2.152
ARID5B	AT rich interactive domain 5B (MRF1-like)	ENSDART00000054092	-9.299
ARL2BP	ADP-ribosylation factor-like 2 binding protein	BC054678.1	2.05
ARMC1	armadillo repeat containing 1	NM_001008609	-5.863
ARMC10	armadillo repeat containing 10	ENSDART00000091583	-13.012
ASNS	asparagine synthetase (glutamine-hydrolyzing)	BC052127.1	-2.948
ASPSR1	alveolar soft part sarcoma chromosome region, candidate 1	NM_001017575	-2.974
ASS1	argininosuccinate synthase 1	NM_001004603	-5.837
ATE1	arginyltransferase 1	NM_001089468	-3.25
ATG16L1	autophagy related 16-like 1 ( <i>S. cerevisiae</i> )	NM_001017854	-4.102
ATG4A	autophagy related 4A, cysteine peptidase	NM_001024434	-2.697
ATG9A	autophagy related 9A	NM_001083031	-2.694
ATM	ataxia telangiectasia mutated	ENSDART00000086173	-2.005
ATP11A	ATPase, class VI, type 11A	ENSDART00000040284	-6.564
ATP11C	ATPase, class VI, type 11C	ENSDART00000052938	-9.96
ATP2B4	ATPase, Ca <sup>++</sup> transporting, plasma membrane 4	ENSDART00000093117	-2.063
ATP5B	ATP synthase, H <sup>+</sup> transporting, mitochondrial F1 complex, beta polypeptide	NM_001024429	-4.037
ATP6V0C	ATPase, H <sup>+</sup> transporting, lysosomal 16kDa, V0 subunit c	BC093130.1	-2.889
ATP7A	ATPase, Cu <sup>++</sup> transporting, alpha polypeptide	NM_001042720	-3.908
ATRNL1	attractin-like 1	ENSDART00000042514	-9.464
ATXN2	ataxin-2	OTTDART00000022516	-7.033

AURKA	aurora kinase A	BC078304.1	-2.533
AUTS2	autism susceptibility candidate 2	ENSDART00000078920	-4.196
AVEN	apoptosis, caspase activation inhibitor	ENSDART00000019759	-2.077
AVIL	advillin	NM_001040365	2.291
AVP	arginine vasopressin	NM_178293	2.606
AZI2	5-azacytidine induced 2	NM_214733	-4.809
B3GAT3	beta-1,3-glucuronyltransferase 3 (glucuronosyltransferase I)	AF506207.2	-2.428
B4GALT3	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 3	ENSDART00000089999	2.375
BACE1	beta-site APP-cleaving enzyme 1	NM_205704	-2.239
BAZ1A	bromodomain adjacent to zinc finger domain, 1A	AW170939	-17.438
BBS5	Bardet-Biedl syndrome 5	NM_200299	2.184
BCAT2	branched chain amino-acid transaminase 2, mitochondrial	BC076468.1	-5.673
BCKDHB	branched chain keto acid dehydrogenase E1, beta polypeptide	NM_001080653	-3.125
BCL9	B-cell CLL/lymphoma 9	NM_001005604	-4.119
BCL9L	B-cell CLL/lymphoma 9-like	NM_001005575	-2.383
BECN1	beclin 1, autophagy related	NM_200872	-2.347
BICC1	bicaudal C homolog 1 (Drosophila)	ENSDART00000088242	-4.294
BLVRA	biliverdin reductase A	NM_001076601	-2.173
BLZF1	basic leucine zipper nuclear factor 1	BC055578.1	-4.026
BMPER	BMP binding endothelial regulator	ENSDART00000059930	-4.069
BMPR2	bone morphogenetic protein receptor, type II (serine/threonine kinase)	NM_001039807	-2.156
BNIP3	BCL2/adenovirus E1B 19kDa interacting protein 3	NM_001012245	-3.129
BNIP3L	BCL2/adenovirus E1B 19kDa interacting protein 3-like	NM_001012242	-2.861

BUB3	budding uninhibited by benzimidazoles 3 homolog (yeast)	AY391411.1	-2.289
C10orf137	chromosome 10 open reading frame 137	ENSDART00000105322	-4.605
C10orf76	chromosome 10 open reading frame 76	NM_200619	-2.873
C16orf48	chromosome 16 open reading frame 48	ENSDART00000063937	2.538
C16orf5	chromosome 16 open reading frame 5	NM_001099242	-3.03
C17orf70	chromosome 17 open reading frame 70	ENSDART00000044812	-5.521
C18orf1	chromosome 18 open reading frame 1	ENSDART00000077222	-3.528
C19orf10	chromosome 19 open reading frame 10	BC076331.1	2.548
C19orf42	chromosome 19 open reading frame 42	BC142848.1	2.633
C2orf29	chromosome 2 open reading frame 29	NM_001089341	-2.311
C2orf47	chromosome 2 open reading frame 47	NM_001037226	2.403
C7	complement component 7	ENSDART00000061803	-2.44
C9orf64	chromosome 9 open reading frame 64	NM_001083558	-2.678
CA4	carbonic anhydrase IV	ENSDART00000062024	2.654
CA9	carbonic anhydrase IX	ENSDART00000031322	2.558
CABLES2	Cdk5 and Abl enzyme substrate 2	ENSDART00000030811	-5.939
CACHD1	cache domain containing 1	ENSDART00000087964	-4.828
CACNG5	calcium channel, voltage- dependent, gamma subunit 5	ENSDART00000017774	2.336
CADM2	cell adhesion molecule 2	BC057517.1	-3.509
CALCOCO1	calcium binding and coiled-coil domain 1	BC051625.1	2.015
CAMK1	calcium/calmodulin-dependent protein kinase I	ENSDART00000041417	-3.482
CAPN5	calpain 5	NM_001080007	-3.236
CASD1	CAS1 domain containing 1	NM_001045242	-3.344
CASP6	caspase 6, apoptosis-related cysteine peptidase	NM_001020497	-2.336

CAV1	caveolin 1, caveolae protein, 22kDa	NM_001024162	-6.905
CBFB	core-binding factor, beta subunit	NM_199209	-2.387
CBLB	Cbl proto-oncogene, E3 ubiquitin protein ligase B	ENSDART00000047776	-3.135
CCDC41	coiled-coil domain containing 41	ENSDART00000078101	-2.399
CCDC88C	coiled-coil domain containing 88C	BC076506.1	-2.822
CCNC	cyclin C	NM_199951	-5.047
CCNF	cyclin F	BC066425.1	-2.936
CCT2	chaperonin containing TCP1, subunit 2 (beta)	NM_201455	-7.472
CD276	CD276 molecule	ENSDART00000033591	-4.658
CDC42EP4	CDC42 effector protein (Rho GTPase binding) 4	ENSDART00000066211	-2.016
CDCA2	cell division cycle associated 2	ENSDART00000099566	-3.3
CDH7	cadherin 7, type 2	NM_001077448	-2.12
CDK12	cyclin-dependent kinase 12	ENSDART00000093402	-5.87
CDKAL1	CDK5 regulatory subunit associated protein 1-like 1	NM_200627	-9.32
CDR2L	cerebellar degeneration-related protein 2-like	BC065979.1	-4.431
CEBPZ	CCAAT/enhancer binding protein (C/EBP), zeta	NM_001017745	-4.178
CELSR1	cadherin, EGF LAG seven-pass G-type receptor 1 (flamingo homolog, Drosophila)	ENSDART00000043737	-5.95
CENPI	centromere protein I	ENSDART00000074438	-2.9
CENPK	centromere protein K	ENSDART00000057886	2.413
CEP290	centrosomal protein 290kDa	ENSDART00000090921	-3.399
CEP350	centrosomal protein 350kDa	ENSDART00000090254	-3.099
CEP78	centrosomal protein 78kDa	ENSDART00000057315	-2.181
CEPT1	choline/ethanolamine phosphotransferase 1	BC151968.1	-5.615
CERS2	ceramide synthase 2	ENSDART00000081980	-7.935
Ces1d	carboxylesterase 1D	ENSDART00000104492	-2.147
CFL2	cofilin 2 (muscle)	NM_205700	-3.835
CGNL1	cingulin-like 1	ENSDART00000052039	-9.597



CHAF1A	chromatin assembly factor 1, subunit A (p150)	NM_001045013	-3.817
CHCHD7	coiled-coil-helix-coiled-coil-helix domain containing 7	ENSDART00000098373	2.289
CHD6	chromodomain helicase DNA binding protein 6	ENSDART00000028607	-4.711
CHD7	chromodomain helicase DNA binding protein 7	ENSDART00000016208	-2.892
CHD8	chromodomain helicase DNA binding protein 8	ENSDART00000009942	-6.409
CHIA	chitinase, acidic	ENSDART00000104618	2.043
CHPF2	chondroitin polymerizing factor 2	ENSDART00000083967	-2.652
CHRM4	cholinergic receptor, muscarinic 4	ENSDART00000100639	2.029
CHST11	carbohydrate (chondroitin 4) sulfotransferase 11	NM_212824	-3.823
CHSY1	chondroitin sulfate synthase 1	NM_212678	-4.096
CIC	capicua homolog (Drosophila)	ENSDART00000077862	-4.874
CIDEC	cell death-inducing DFFA-like effector c	NM_001045047	2.396
CIR1	corepressor interacting with RBPJ, 1	ENSDART00000065232	2.06
CKS1B	CDC28 protein kinase regulatory subunit 1B	BC077092.1	2.374
CLCA4	chloride channel accessory 4	ENSDART00000047531	2.348
CLCN4	chloride channel, voltage-sensitive 4	NM_001077318	-2.796
CLCN6	chloride channel, voltage-sensitive 6	ENSDART00000047134	-8.411
CLEC16A	C-type lectin domain family 16, member A	BC046010.1	-2.046
CLINT1	clathrin interactor 1	ENSDART00000076806	-7.506
CLIP2	CAP-GLY domain containing linker protein 2	ENSDART00000082983	-3.608
CLPTM1	cleft lip and palate associated transmembrane protein 1	NM_001003647	-9.122
CLTB	clathrin, light chain B	ENSDART00000074208	-2.997
CNOT2	CCR4-NOT transcription complex, subunit 2	NM_001089524	-4.585
CNOT3	CCR4-NOT transcription complex, subunit 3	ENSDART00000102100	-11.253

CNOT4	CCR4-NOT transcription complex, subunit 4	ENSDART00000034714	-19.703
CNTN3	contactin 3 (plasmacytoma associated)	ENSDART00000055035	2.009
COASY	CoA synthase	NM_001004577	-2.363
COL18A1	collagen, type XVIII, alpha 1	ENSDART00000088643	2.683
COL4A2	collagen, type IV, alpha 2	ENSDART00000081513	3.167
COL4A5	collagen, type IV, alpha 5	ENSDART00000073827	-15.689
COL5A1	collagen, type V, alpha 1	ENSDART00000027425	-19.726
COL6A2	collagen, type VI, alpha 2	ENSDART00000087597	-6.793
COMMD3-BMI1	COMMD3-BMI1 readthrough	BC049423.1	2.086
COX5B	cytochrome c oxidase subunit Vb	NM_001045357	2.842
CPD	carboxypeptidase D	ENSDART00000078035	-4.01
CPNE5	copine V	ENSDART00000087656	4.101
CPT1A	carnitine palmitoyltransferase 1A (liver)	ENSDART00000089199	-3.715
CREB3L1	cAMP responsive element binding protein 3-like 1	ENSDART00000024330	-2.947
CREB3L2	cAMP responsive element binding protein 3-like 2	NM_001080651	-8.13
CREBL2	cAMP responsive element binding protein-like 2	NM_001002702	-2.106
CRIM1	cysteine rich transmembrane BMP regulator 1 (chordin-like)	AY151045.1	-5.25
CRYBA2	crystallin, beta A2	NM_001002049	2.303
CRYBB1	crystallin, beta B1	NM_173231	5.862
Cryge	crystallin, gamma E	NM_001024423	2.013
CRYGS	crystallin, gamma S	AY738745.1	2.816
CSDE1	cold shock domain containing E1, RNA-binding	ENSDART00000089532	-6.782
CSK	c-src tyrosine kinase	ENSDART00000104271	-3.632
CSNK2A2	casein kinase 2, alpha prime polypeptide	ENSDART00000045488	-4.182
CSRNP1	cysteine-serine-rich nuclear protein 1	NM_199619	-3.684
CTBS	chitinase, di-N-acetyl-	BC072723.1	2.225
CTC1	CTS telomere maintenance complex component 1	NM_001077745	-2.663

CTNNA1	catenin (cadherin-associated protein), alpha 1, 102kDa	NM_131456	-10.262
CTNBL1	catenin, beta like 1	BC063231.1	-3.798
CTRB2	chymotrypsinogen B2	BC055574.1	2.369
CTTN	cortactin	NM_001004121	-8.012
CXADR	coxsackie virus and adenovirus receptor	BC045286.1	-2.08
CYFIP2	cytoplasmic FMR1 interacting protein 2	NM_001097587	-2.02
CYLD	cylindromatosis (turban tumor syndrome)	ENSDART00000084249	-3.609
CYP26B1	cytochrome P450, family 26, subfamily B, polypeptide 1	NM_212666	-2.004
CYP2U1	cytochrome P450, family 2, subfamily U, polypeptide 1	ENSDART00000048281	-6.754
CYR61	cysteine-rich, angiogenic inducer, 61	BC057506.1	-3.803
CYTH4	cytohesin 4	ENSDART00000028022	2.77
DAAM1	dishevelled associated activator of morphogenesis 1	ENSDART00000024726	-2.942
DAPK2	death-associated protein kinase 2	ENSDART00000008904	2.208
DARS	aspartyl-tRNA synthetase	NM_001077611	-6.907
DARS2	aspartyl-tRNA synthetase 2, mitochondrial	ENSDART00000086197	-2.362
DBNL	drebrin-like	NM_001020700	-3.343
DCHS1	dachsous 1 (Drosophila)	ENSDART00000102424	-9.917
DCPS	decapping enzyme, scavenger	AF510720.1	-2.679
DCT	dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)	NM_131555	2.591
DCTN1	dynactin 1	NM_001077212	-2.184
DCTN4	dynactin 4 (p62)	NM_001017782	-3.65
DDR2	discoidin domain receptor tyrosine kinase 2	ENSDART00000073623	-6.606
DENND1A	DENN/MADD domain containing 1A	ENSDART00000055336	-2.743
DGCR14	DiGeorge syndrome critical region gene 14	ENSDART00000086335	-2.47
DGKE	diacylglycerol kinase, epsilon 64kDa	ENSDART00000083369	-2.191
DGKH	diacylglycerol kinase, eta	ENSDART00000013111	2.25

DGKZ	diacylglycerol kinase, zeta	ENSDART00000093009	-2.258
DHCR24	24-dehydrocholesterol reductase	NM_001008645	-2.743
DHX15	DEAH (Asp-Glu-Ala-His) box polypeptide 15	BC048369.1	-8.496
DHX38	DEAH (Asp-Glu-Ala-His) box polypeptide 38	NM_200876	-11.606
DHX8	DEAH (Asp-Glu-Ala-His) box polypeptide 8	ENSDART00000066282	-5.219
DIP2B	DIP2 disco-interacting protein 2 homolog B (Drosophila)	ENSDART00000044276	-3.665
DIRAS1	DIRAS family, GTP-binding RAS-like 1	ENSDART00000003432	2.574
DIS3	DIS3 mitotic control homolog (S. cerevisiae)	ENSDART00000085454	-2.276
DIS3L	DIS3 mitotic control homolog (S. cerevisiae)-like	BC133136.1	-2.078
DISP1	dispatched homolog 1 (Drosophila)	NM_212800	-2.009
DMGDH	dimethylglycine dehydrogenase	ENSDART00000007672	-2.014
DMRT3	doublesex and mab-3 related transcription factor 3	BC083273.1	2.199
DNAJC16	DnaJ (Hsp40) homolog, subfamily C, member 16	ENSDART00000085855	-2.026
DNAJC27	DnaJ (Hsp40) homolog, subfamily C, member 27	NM_001007162	-2.43
DNAJC5	DnaJ (Hsp40) homolog, subfamily C, member 5	ENSDART00000016515	-11.475
DOCK3	dedicator of cytokinesis 3	ENSDART00000092090	2.202
DOCK5	dedicator of cytokinesis 5	ENSDART00000015126	-2.175
DOM3Z	dom-3 homolog Z (C. elegans)	NM_001009906	-2.083
DPH3	DPH3, KTI11 homolog (S. cerevisiae)	BC095696.1	2.151
DPYSL4	dihydropyrimidinase-like 4	NM_001020516	-3.195
DR1	down-regulator of transcription 1, TBP-binding (negative cofactor 2)	NM_001077314	-5.519
DSCAM	Down syndrome cell adhesion molecule	NM_001030224	2.019

DSCAML1	Down syndrome cell adhesion molecule like 1	ENSDART00000079647	2.042
DTX2	deltex homolog 2 (Drosophila)	ENSDART00000055350	-7.29
DUSP6	dual specificity phosphatase 6	AY278203.1	-2.047
DUSP8	dual specificity phosphatase 8	NM_200880	-14.398
DYM	dymeclin	ENSDART00000062418	-2.371
DYRK1A	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 1A	ENSDART00000054416	-3.738
E2F3	E2F transcription factor 3	NM_001080628	-2.306
ECD	ecdysoneless homolog (Drosophila)	BC055498.1	-3.866
EDC3	enhancer of mRNA decapping 3 homolog (S. cerevisiae)	NM_001018126	-4.631
EEF1A1	eukaryotic translation elongation factor 1 alpha 1	NM_001039985	2.161
EEF1E1	eukaryotic translation elongation factor 1 epsilon 1	ENSDART00000106388	-2.717
EFNA5	ephrin-A5	NM_131026	-2.043
EFNB3	ephrin-B3	ENSDART00000079514	-7.2
EGF	epidermal growth factor	NM_205731	-2.169
EHD1	EH-domain containing 1	NM_212874	-2.294
EHHADH	enoyl-CoA, hydratase/3-hydroxyacyl CoA dehydrogenase	BC066545.1	-3.678
EI24	etoposide induced 2.4 mRNA	NM_001017898	-7.711
EIF2AK2	eukaryotic translation initiation factor 2-alpha kinase 2	ENSDART00000099517	-3.68
EIF2S2	eukaryotic translation initiation factor 2, subunit 2 beta, 38kDa	BC066706.1	-2.129
EIF3A	eukaryotic translation initiation factor 3, subunit A	BC066670.1	-17.632
EIF4EBP2	eukaryotic translation initiation factor 4E binding protein 2	ENSDART00000040926	-9.607
EIF4G1	eukaryotic translation initiation factor 4 gamma, 1	NM_001080200	-8.947
EIF4G2	eukaryotic translation initiation factor 4 gamma, 2	BC059195.1	-31.81

ELL	elongation factor RNA polymerase II	ENSDART00000100642	-2.247
ELMO1	engulfment and cell motility 1	NM_213091	-2.533
ELMO2	engulfment and cell motility 2	ENSDART00000092903	2.486
ELMO3	engulfment and cell motility 3	ENSDART00000061738	-5.64
ELOVL5	ELOVL fatty acid elongase 5	AF532782.1	-4.632
EMG1	EMG1 nucleolar protein homolog (S. cerevisiae)	NM_001040337	2.02
EML2	echinoderm microtubule associated protein like 2	ENSDART00000017268	-2.525
ENGASE	endo-beta-N-acetylglucosaminidase	NM_001080578	-7.907
ENSA	endosulfine alpha	ENSDART00000088146	-5.424
ENTPD4	ectonucleoside triphosphate diphosphohydrolase 4	NM_001002419	-5.627
EP300	E1A binding protein p300	ENSDART00000086768	-2.562
EPB41L2	erythrocyte membrane protein band 4.1-like 2	ENSDART00000085281	-10.662
EPB41L5	erythrocyte membrane protein band 4.1 like 5	NM_200089	-3.243
EPHX2	epoxide hydrolase 2, cytoplasmic	NM_001008642	-2.142
EPT1	ethanolaminephosphotransferase 1 (CDP-ethanolamine-specific)	ENSDART00000085263	-31.462
ERAP1	endoplasmic reticulum aminopeptidase 1	ENSDART00000048874	-3.118
ERC1	ELKS/RAB6-interacting/CAST family member 1	NM_001015065	2.455
ETS2	v-ets erythroblastosis virus E26 oncogene homolog 2 (avian)	NM_001023580	-11.01
EXOC8	exocyst complex component 8	BC134948.1	-4.305
EXOSC1	exosome component 1	ENSDART00000083633	-8.967
EXOSC4	exosome component 4	NM_200739	-2.651
EXT1	exostosin 1	NM_001012369	-24.043
FAM108A1	family with sequence similarity 108, member A1	ENSDART00000063258	-10.418
FAM120C	family with sequence similarity 120C	ENSDART00000065881	-46.873

FAM135A	family with sequence similarity 135, member A	ENSDART00000083641	-4.145
FAM13A	family with sequence similarity 13, member A	ENSDART00000080389	-3.189
FAM208A	family with sequence similarity 208, member A	ENSDART00000009092	-3.715
FAM69A	family with sequence similarity 69, member A	ENSDART00000087440	2.314
FANCI	Fanconi anemia, complementation group I	BC124608.1	-11.975
FARP2	FERM, RhoGEF and pleckstrin domain protein 2	ENSDART00000013400	-15.299
FASTKD1	FAST kinase domains 1	ENSDART00000040229	-3.555
FBLN1	fibulin 1	NM_131042	-13.83
FBN2	fibrillin 2	ENSDART00000008681	-18.103
FBXL5	F-box and leucine-rich repeat protein 5	BC054590.1	-2.105
FBXO28	F-box protein 28	ENSDART00000032262	-4.403
FBXO34	F-box protein 34	ENSDART00000105251	-6.762
FBXO8	F-box protein 8	NM_001040307	-2.198
FBXW7	F-box and WD repeat domain containing 7, E3 ubiquitin protein ligase	ENSDART00000086512	-2.726
FDFT1	farnesyl-diphosphate farnesyltransferase 1	ENSDART00000084724	-7.655
FEM1B	fem-1 homolog b (C. elegans)	ENSDART00000090803	-2.129
FEM1C	fem-1 homolog c (C. elegans)	AY249190.1	-2.815
FERMT2	fermitin family member 2	ENSDART00000049464	-10.609
FEZF2	FEZ family zinc finger 2	NM_131636	2.313
FGD1	FYVE, RhoGEF and PH domain containing 1	ENSDART00000004921	-4.165
FGFR2	fibroblast growth factor receptor 2	NM_178303	-2.587
FH	fumarate hydratase	NM_200963	-2.06
FHL3	four and a half LIM domains 3	ENSDART00000050173	-3.222
FIG4	FIG4 homolog, SAC1 lipid phosphatase domain containing (S. cerevisiae)	ENSDART00000056934	-3.2
FIGF	c-fos induced growth factor (vascular endothelial growth factor D)	NM_001040178	2.179

FKRP	fukutin related protein	NM_001089490	-2.797
FKTN	fukutin	NM_001042694	-3.571
FLII	flightless I homolog (Drosophila)	ENSDART00000083263	-13.959
FLNC	filamin C, gamma	ENSDART00000046218	-18.787
FNBP1	formin binding protein 1	ENSDART00000065862	-3.08
FNDC3B	fibronectin type III domain containing 3B	ENSDART00000089108	-3.044
FOCAD	focadhesin	ENSDART00000037846	-3.776
FO XK1	forkhead box K1	NM_199902	-2.802
Foxk2	forkhead box K2	ENSDART00000045071	-6.293
FO XK2	forkhead box K2	ENSDART00000018159	-2.224
FOXM1	forkhead box M1	NM_201097	-6.604
FOXN2	forkhead box N2	NM_001017555	-3.648
FOXO1	forkhead box O1	NM_001077257	-5.889
FOXO4	forkhead box O4	ENSDART00000078187	-3.258
FRMD6	FERM domain containing 6	ENSDART00000024386	-3.56
FSTL1	follistatin-like 1	NM_001039621	-7.675
FTO	fat mass and obesity associated	ENSDART00000064913	-2.498
FUBP3	far upstream element (FUSE) binding protein 3	NM_001007776	-24.272
FURIN	furin (paired basic amino acid cleaving enzyme)	ENSDART00000091470	-32.947
FXC1	fracture callus 1 homolog (rat)	ENSDART00000064463	2.143
FYN	FYN oncogene related to SRC, FGR, YES	NM_001029969	-4.252
FZD7	frizzled family receptor 7	BC056280.1	-2.03
G6PC3	glucose 6 phosphatase, catalytic, 3	NM_001080066	-3.314
G6PD	glucose-6-phosphate dehydrogenase	ENSDART00000104834	-28.266
GABARAPL2	GABA(A) receptor-associated protein-like 2	AY398351.1	2.106
GADD45A	growth arrest and DNA-damage-inducible, alpha	BC074023.1	3.056
GALNT1	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 1 (GalNAc-T1)	ENSDART00000087368	-7.582



GALNT2	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 2 (GalNAc-T2)	ENSDART00000021360	-23.852
GART	phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosylaminoimidazole synthetase	NM_131617	-5.805
GATAD2A	GATA zinc finger domain containing 2A	BC067707.1	-3.762
GBA2	glucosidase, beta (bile acid) 2	ENSDART00000087691	-2.482
GBP1	guanylate binding protein 1, interferon-inducible	ENSDART00000056461	-4.571
GCFC1	GC-rich sequence DNA-binding factor 1	NM_001080183	-6.046
GCG	glucagon	ENSDART00000059951	4.269
GCHFR	GTP cyclohydrolase I feedback regulator	BC059590.1	2.027
GCN1L1	GCN1 general control of amino-acid synthesis 1-like 1 (yeast)	ENSDART00000081272	-6.629
GFPT1	glutamine--fructose-6-phosphate transaminase 1	NM_001034981	-13.023
GFPT2	glutamine-fructose-6-phosphate transaminase 2	NM_001033921	-12.007
GGH	gamma-glutamyl hydrolase (conjugase, folylpolygammaglutamyl hydrolase)	NM_213322	2.104
GIPC1	GIPC PDZ domain containing family, member 1	NM_001004018	-8.836
GLG1	golgi glycoprotein 1	ENSDART00000087247	-7.584
GLI3	GLI family zinc finger 3	NM_205728	-2.968
GLS2	glutaminase 2 (liver, mitochondrial)	ENSDART00000100266	2.463
GMEB2	glucocorticoid modulatory element binding protein 2	ENSDART00000086248	-3.647
GMPS	guanine monophosphate synthetase	NM_200587	-13.404

GNAI3	guanine nucleotide binding protein (G protein), alpha inhibiting activity polypeptide 3	ENSDART00000047528	-3.898
GNB1	guanine nucleotide binding protein (G protein), beta polypeptide 1	BC044482.1	-4.228
GNS	glucosamine (N-acetyl)-6-sulfatase	NM_001030208	-7.691
GOLGA2	golgin A2	ENSDART00000092087	-6.18
GON4L	gon-4-like (C. elegans)	ENSDART00000088023	-3.836
GPC1	glypican 1	NM_201020	-4.704
GPC6	glypican 6	BC151902.1	-4.786
GPD1L	glycerol-3-phosphate dehydrogenase 1-like	BC083522.1	-9.67
GPD2	glycerol-3-phosphate dehydrogenase 2 (mitochondrial)	NM_001045348	-8.7
GPR155	G protein-coupled receptor 155	ENSDART00000104885	-2.012
GPR161	G protein-coupled receptor 161	ENSDART00000081862	-2.396
GPR180	G protein-coupled receptor 180	ENSDART00000057471	-4.549
GPR98	G protein-coupled receptor 98	NM_001001845	2.17
GPSM1	G-protein signaling modulator 1	NM_001007778	-7.851
GPX7	glutathione peroxidase 7	NM_001020501	2.009
GRIN1	glutamate receptor, ionotropic, N-methyl D-aspartate 1	ENSDART00000034849	2.087
GRIN3A	glutamate receptor, ionotropic, N-methyl-D-aspartate 3A	ENSDART00000058111	2.178
GRIPAP1	GRIP1 associated protein 1	NM_001080632	-2.403
GRWD1	glutamate-rich WD repeat containing 1	NM_001003509	-2.183
GTF2A1L	general transcription factor IIA, 1-like	ENSDART00000093247	-2.253
GTF2H3	general transcription factor IIH, polypeptide 3, 34kDa	ENSDART00000097244	2.12

GTF2IRD1	GTF2I repeat domain containing 1	ENSDART00000074200	-6.759
GTF3A	general transcription factor IIIA	AY648780.1	-3.246
GUCY2C	guanylate cyclase 2C (heat stable enterotoxin receptor)	ENSDART00000058171	2.71
GUSB	glucuronidase, beta	ENSDART00000091932	-4.694
H6PD	hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)	ENSDART00000084466	-14.256
HACE1	HECT domain and ankyrin repeat containing E3 ubiquitin protein ligase 1	ENSDART00000089855	-2.989
HACL1	2-hydroxyacyl-CoA lyase 1	BC066580.1	-4.613
HADHA	hydroxyacyl-CoA dehydrogenase/3-ketoacyl-CoA thiolase/enoyl-CoA hydratase (trifunctional protein), alpha subunit	ENSDART00000079734	-3.918
HAUS2	HAUS augmin-like complex, subunit 2	ENSDART00000053408	2.112
HAUS3	HAUS augmin-like complex, subunit 3	NM_001077171	-2.929
HAUS4	HAUS augmin-like complex, subunit 4	BC076145.1	2.013
HBE1	hemoglobin, epsilon 1	NM_131759	3.358
HBEGF	heparin-binding EGF-like growth factor	BC066705.1	2.347
HCFC1	host cell factor C1 (VP16-accessory protein)	ENSDART00000014945	-10.394
HELQ	helicase, POLQ-like	BM005035	2.294
HGS	hepatocyte growth factor-regulated tyrosine kinase substrate	ENSDART00000019661	-8.7
HHEX	hematopoietically expressed homeobox	NM_130934	3.12
HIPK2	homeodomain interacting protein kinase 2	NM_001080160	-10.547
HIVP3	human immunodeficiency virus type I enhancer binding protein 3	ENSDART00000054020	-4.13
HK1	hexokinase 1	BC048065.1	-2.64

HLCS	holocarboxylase synthetase (biotin-(propionyl-CoA-carboxylase (ATP-hydrolysing)) ligase)	ENSDART00000058411	-3.462
HNRNPU	heterogeneous nuclear ribonucleoprotein U (scaffold attachment factor A)	ENSDART00000020598	-9.553
HNRNPUL1	heterogeneous nuclear ribonucleoprotein U-like 1	BC068436.1	-4.866
HNRPUL1	Heterogeneous nuclear ribonucleoprotein U-like 1	BC068436.1	-4.866
HPD	4-hydroxyphenylpyruvate dioxygenase	NM_001003742	-2.045
HPS4	Hermansky-Pudlak syndrome 4	BC052117.1	-2.723
HPS5	Hermansky-Pudlak syndrome 5	NM_001089539	-4.676
HRSP12	heat-responsive protein 12	BC079492.1	2.041
HS3ST3B1	heparan sulfate (glucosamine) 3-O-sulfotransferase 3B1	NM_001080568	-7.264
HS6ST1	heparan sulfate 6-O-sulfotransferase 1	NM_001080203	-2.793
HSPA13	heat shock protein 70kDa family, member 13	NM_001089479	-3.157
HSPB8	heat shock 22kDa protein 8	BC057441.1	-2.48
HTR1F	5-hydroxytryptamine (serotonin) receptor 1F, G protein-coupled	ENSDART00000040449	2.798
HTR2C	5-hydroxytryptamine (serotonin) receptor 2C, G protein-coupled	ENSDART00000024191	-3.897
HTRA1	HtrA serine peptidase 1	ENSDART00000012318	-14.861
HVCN1	hydrogen voltage-gated channel 1	NM_001002346	2.765
HYAL4	hyaluronoglucosaminidase 4	ENSDART00000073508	-2.411
IARS	isoleucyl-tRNA synthetase	NM_199896	-40.228
IDH2	isocitrate dehydrogenase 2 (NADP+), mitochondrial	NM_199564	-2.393
IDI1	isopentenyl-diphosphate delta isomerase 1	NM_001025475	-7.423
IDUA	iduronidase, alpha-L-	ENSDART00000091463	-4.578

IFI30	interferon, gamma-inducible protein 30	BC083267.1	2.004
IFI44	interferon-induced protein 44	AW019056	2.197
IFNAR1	interferon (alpha, beta and omega) receptor 1	NM_001034185	-2.438
IFRD2	interferon-related developmental regulator 2	BC078215.1	-2.469
IGSF8	immunoglobulin superfamily, member 8	NM_207099	-2.234
IHH	Indian hedgehog	NM_001034993	-6.784
IKBKE	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase epsilon	NM_001002751	-4.782
IL6ST	interleukin 6 signal transducer (gp130, oncostatin M receptor)	ENSDART00000046045	-3.424
INPP5B	inositol polyphosphate-5-phosphatase, 75kDa	ENSDART00000061706	-2.57
INPPL1	inositol polyphosphate phosphatase-like 1	NM_001039804	-2.497
INSIG2	insulin induced gene 2	NM_212804	-2.56
INSR	insulin receptor	AF400271.1	-16.001
INTS4	integrator complex subunit 4	ENSDART00000093103	-3.881
INTS9	integrator complex subunit 9	NM_001077270	-6.63
IP6K2	inositol hexakisphosphate kinase 2	NM_001002389	-7.017
IPO13	importin 13	ENSDART00000085624	-8.648
IPO5	importin 5	ENSDART00000058876	-78.034
IQCJ-SCHIP1	IQCJ-SCHIP1 readthrough	ENSDART00000102125	-2.875
IQSEC1	IQ motif and Sec7 domain 1	ENSDART00000043091	-10.892
IRAK4	interleukin-1 receptor-associated kinase 4	NM_200163	-2.53
IRF2BP2	Interferon regulatory factor 2 binding protein 1	OTTDART00000016209	-28.571
ISCU	iron-sulfur cluster scaffold homolog (E. coli)	NM_001003632	2.279
ISM1	isthmin 1 homolog (zebrafish)	NM_001012376	-2.614
ISY1-RAB43	ISY1-RAB43 readthrough	ENSDART00000093148	-2.16
ITGA10	integrin, alpha 10	ENSDART00000011224	-2.224
ITGA11	integrin, alpha 11	ENSDART00000022861	-8.873
ITGAV	integrin, alpha V	NM_001033721	-8.666

ITGB1	integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)	NM_001034971	-12.08
ITGB3	integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)	NM_001082948	-5.377
IVNS1ABP	influenza virus NS1A binding protein	BC066513.1	-3.996
JOSD1	Josephin domain containing 1	NM_001076595	-5.73
KANSL3	KAT8 regulatory NSL complex subunit 3	NM_001034176	-5.405
KAT6A	K(lysine) acetyltransferase 6A	NM_001001588	-3.603
KAT6B	K(lysine) acetyltransferase 6B	ENSDART00000077775	-4.832
KCNA1	potassium voltage-gated channel, shaker-related subfamily, member 1 (episodic ataxia with myokymia)	ENSDART00000009653	2.47
KCNJ2	potassium inwardly-rectifying channel, subfamily J, member 2	ENSDART00000022533	-5.07
KCNQ1	potassium voltage-gated channel, KQT-like subfamily, member 1	ENSDART00000083514	2.23
KCTD17	potassium channel tetramerisation domain containing 17	ENSDART00000078476	-3.338
KDEL2	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention receptor 2	BC056694.1	-2.333
KDM3B	lysine (K)-specific demethylase 3B	ENSDART00000089845	-10.917
KDM4A	lysine (K)-specific demethylase 4A	ENSDART00000065583	-2.295
KDR	Kinase insert domain receptor, a type III receptor tyrosine kinase (also known as VEGFR-2)	OTTDART00000005370	-2.264

KHSRP	KH-type splicing regulatory protein	NM_001089428	-5.831
KIAA0141	KIAA0141	NM_001080086	-6.406
KIAA0196	KIAA0196	BC045490.1	-3.65
KIAA2022	KIAA2022	ENSDART00000047816	-2.033
KIF13B	kinesin family member 13B	ENSDART00000026264	-2.672
KIF15	kinesin family member 15	ENSDART00000099866	-4.775
KIF1B	kinesin family member 1B	AY029411.1	-4.708
KIF20B	kinesin family member 20B	ENSDART00000104718	-5.608
KIF26A	kinesin family member 26A	ENSDART00000035152	2.205
KIF3A	kinesin family member 3A	NM_001017604	-2.38
KLC2	kinesin light chain 2	NM_001083550	-4.703
KLF8	Kruppel-like factor 8	NM_001080003	-3.701
KLHDC3	kelch domain containing 3	NM_213269	-4.529
KLHL2	kelch-like 2, Mayven (Drosophila)	ENSDART00000088545	-10.429
KLHL9	kelch-like 9 (Drosophila)	NM_001099229	-4.681
KPNA1	karyopherin alpha 1 (importin alpha 5)	ENSDART00000025348	-8.364
KPNA5	karyopherin alpha 5 (importin alpha 6)	NM_001018153	-2.1
KRIT1	KRIT1, ankyrin repeat containing	BC055149.1	-5.755
LAMP1	lysosomal-associated membrane protein 1	NM_199702	-2.754
Lao1	L-amino acid oxidase 1	ENSDART00000079363	2.068
LARGE	like-glycosyltransferase	NM_001004537	-2.589
LARP1B	La ribonucleoprotein domain family, member 1B	ENSDART00000025096	-5.961
LARP4B	La ribonucleoprotein domain family, member 4B	NM_001077562	-3.387
LARS	leucyl-tRNA synthetase	ENSDART00000026064	-35.598
LARS2	leucyl-tRNA synthetase 2, mitochondrial	BC151831.1	-2.269
Ldhb	lactate dehydrogenase B	ENSDART00000104866	2.53
LDLR	low density lipoprotein receptor	NM_001030283	-6.004
LEPR	leptin receptor	ENSDART00000104616	-5.442
LEPREL2	leprecan-like 2	ENSDART00000080631	-3.143
LETMD1	LETM1 domain containing 1	ENSDART00000044658	-5.455
LGI1	leucine-rich, glioma inactivated 1	BC056753.1	-6.75

LHFPL2	lipoma HMGIC fusion partner-like 2	ENSDART00000005260	-2.953
LIG3	ligase III, DNA, ATP-dependent	NM_001030174	-2.742
LIMS1	LIM and senescent cell antigen-like domains 1	NM_001024389	-2.724
LIN54	lin-54 homolog (C. elegans)	NM_001076567	-6.159
LMBR1	limb region 1 homolog (mouse)	ENSDART00000044497	-4.752
LNPEP	leucyl/cystinyl aminopeptidase	NM_199621	-8.045
LOX	lysyl oxidase	BC066465.1	-3.79
LOXL3	lysyl oxidase-like 3	ENSDART00000054866	2.394
LOXL4	lysyl oxidase-like 4	ENSDART00000044963	-7.771
LPAR2	lysophosphatidic acid receptor 2	NM_001003578	-2.876
LPHN2	latrophilin 2	ENSDART00000091550	-13.896
LRIF1	ligand dependent nuclear receptor interacting factor 1	ENSDART00000101616	-2.016
LRP10	low density lipoprotein receptor-related protein 10	ENSDART00000076735	-3.076
LRR1	leucine rich repeat protein 1	NM_207085	-2.733
LRRC1	leucine rich repeat containing 1	NM_001013445	-2.949
LRRC23	leucine rich repeat containing 23	BC083278.1	2.415
LRRC58	leucine rich repeat containing 58	ENSDART00000092884	-4.851
LRRC8A	leucine rich repeat containing 8 family, member A	NM_001029949	-12.703
LRRC8C	leucine rich repeat containing 8 family, member C	ENSDART00000083330	-2.124
LRRTM1	leucine rich repeat transmembrane neuronal 1	ENSDART00000074618	-2.805
LUC7L2	LUC7-like 2 (S. cerevisiae)	NM_001089547	-3.05
LYRM4	LYR motif containing 4	BC057512.1	2.283
MADD	MAP-kinase activating death domain	ENSDART00000047208	3.485
MAN2A2	mannosidase, alpha, class 2A, member 2	ENSDART00000091894	-2.016
MAP1B	microtubule-associated protein 1B	ENSDART00000085142	-3.273



MAP2K2	mitogen-activated protein kinase kinase 2	ENSDART00000099839	-2.155
MAP2K5	mitogen-activated protein kinase kinase 5	ENSDART00000052404	-2.14
MAP2K7	mitogen-activated protein kinase kinase 7	ENSDART00000048191	-2.5
MAP3K3	mitogen-activated protein kinase kinase kinase 3	ENSDART00000084932	-8.678
MAP4K2	mitogen-activated protein kinase kinase kinase kinase 2	NM_001040358	-2.506
MAP4K3	mitogen-activated protein kinase kinase kinase kinase 3	ENSDART00000093004	-2.17
MAPK7	mitogen-activated protein kinase 7	NM_001013451	-2.714
MAPK8	mitogen-activated protein kinase 8	ENSDART00000049180	-2.098
MAPRE2	microtubule-associated protein, RP/EB family, member 2	BC151983.1	-2.724
MARK1	MAP/microtubule affinity-regulating kinase 1	ENSDART00000013234	-3.064
MARK2	MAP/microtubule affinity-regulating kinase 2	ENSDART00000005329	-5.126
MARS	methionyl-tRNA synthetase	AY423024.1	-26.29
MARVELD2	MARVEL domain containing 2	ENSDART00000006772	-2.325
MAT2A	methionine adenosyltransferase II, alpha	NM_001014296	-6.507
MATR3	Matrin 3	OTTDART00000002114	-5.241
MBNL1	muscleblind-like splicing regulator 1	NM_001076634	-4.719
MBTD1	mbt domain containing 1	ENSDART00000086087	-4.955
MCHR1	melanin-concentrating hormone receptor 1	AY161857.1	4.601
MCM10	minichromosome maintenance complex component 10	NM_001024813	-2.158
MCM2	minichromosome maintenance complex component 2	BC048026.1	-7.419

MCM5	minichromosome maintenance complex component 5	NM_178436	-3.193
MDN1	MDN1, midasin homolog (yeast)	ENSDART00000004209	-2.089
ME2	malic enzyme 2, NAD(+)-dependent, mitochondrial	NM_001003627	-17.169
MED10	mediator complex subunit 10	NM_001017699	2.005
MED12	mediator complex subunit 12	NM_001039461	-6.194
MED16	mediator complex subunit 16	ENSDART00000059752	-7.612
MED17	mediator complex subunit 17	NM_001077574	-2.78
MED21	mediator complex subunit 21	BC049042.1	2.056
MED24	mediator complex subunit 24	BC068408.1	-8.644
MET	met proto-oncogene (hepatocyte growth factor receptor)	NM_001007124	-12.641
MFN1	mitofusin 1	NM_200647	-3.348
MFSD1	major facilitator superfamily domain containing 1	NM_001037426	-3.878
MGAT1	mannosyl (alpha-1,3)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase	NM_200676	-2.469
MIB1	mindbomb E3 ubiquitin protein ligase 1	NM_173286	-2.974
MICAL3	microtubule associated monooxygenase, calponin and LIM domain containing 3	BC059615.1	-4.929
MICU1	mitochondrial calcium uptake 1	NM_001083833	-2.031
MIS18BP1	MIS18 binding protein 1	ENSDART00000062430	-2.501
MKX	mohawk homeobox	NM_001098733	-4.16
MLEC	malectin	ENSDART00000083068	-4.79
MLL	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila)	ENSDART00000104525	-19.76
MLLT1	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 1	ENSDART00000063400	-2.438

MLLT4	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 4	ENSDART00000039754	-2.191
MMD	monocyte to macrophage differentiation-associated	NM_001037419	-11.241
MMP11	matrix metalloproteinase 11 (stromelysin 3)	ENSDART00000010160	2.157
MOGS	mannosyl-oligosaccharide glucosidase	NM_001080190	-2.57
MORC2	MORC family CW-type zinc finger 2	BC080267.1	-8.476
MOV10L1	Mov10l1, Moloney leukemia virus 10-like 1, homolog (mouse)	NM_001077327	2.617
MPPED2	metallophosphoesterase domain containing 2	NM_001017735	-11.139
MRPL14	mitochondrial ribosomal protein L14	NM_201147	2.064
MRPL2	mitochondrial ribosomal protein L2	ENSDART00000090644	-11.355
MRPL20	mitochondrial ribosomal protein L20	NM_001045359	-2.185
MRPL39	mitochondrial ribosomal protein L39	BC053133.1	-2.166
MRPL53	mitochondrial ribosomal protein L53	BC081525.1	2.397
MRPS14	mitochondrial ribosomal protein S14	NM_001045358	2.165
MRPS21	mitochondrial ribosomal protein S21	BC139896.1	2.459
MRPS26	mitochondrial ribosomal protein S26	BC076154.1	2.04
MRPS27	mitochondrial ribosomal protein S27	NM_001003778	-4.209
MRPS6	mitochondrial ribosomal protein S6	NM_001045456	2.314
MSH3	mutS homolog 3 (E. coli)	ENSDART00000092285	-2.679
MST4	serine/threonine protein kinase MST4	ENSDART00000085039	-4.845
MTA1	metastasis associated 1	ENSDART00000045583	-14.656

MTFP1	mitochondrial fission process 1	NM_200686	-2.666
MTHFR	methylenetetrahydrofolate reductase (NAD(P)H)	ENSDART00000075068	-3.703
MTR	5-methyltetrahydrofolate-homocysteine methyltransferase	NM_198072	-11.742
MTUS1	microtubule associated tumor suppressor 1	ENSDART00000048855	-4.071
MUL1	mitochondrial E3 ubiquitin protein ligase 1	NM_001098760	-3.964
MVP	major vault protein	BC049344.1	-5.651
MXD4	MAX dimerization protein 4	ENSDART00000059264	-2.43
MYBBP1A	MYB binding protein (P160) 1a	AY648744.1	-14.824
MYBPH	myosin binding protein H	ENSDART00000026359	4.738
MYCBP2	MYC binding protein 2, E3 ubiquitin protein ligase	NM_001012247	-8.598
MYH10	myosin, heavy chain 10, non-muscle	ENSDART00000046359	-15.324
MYH14	myosin, heavy chain 14, non-muscle	ENSDART00000047409	-21.63
MYH7	myosin, heavy chain 7, cardiac muscle, beta	AY333451.1	2.811
MYH9	myosin, heavy chain 9, non-muscle	ENSDART00000092373	-41.998
MYLPF	myosin light chain, phosphorylatable, fast skeletal muscle	NM_001004668	3.074
MYO1B	myosin IB	BC095271.1	-2.19
MYO1C	myosin IC	ENSDART00000087926	-3.775
MYO1D	myosin ID	ENSDART00000067762	-11.12
MYO9A	myosin IXA	ENSDART00000039810	2.996
MYOF	myoferlin	ENSDART00000026000	-34.569
NAA35	N(alpha)-acetyltransferase 35, NatC auxiliary subunit	BC053286.1	-2.603
NAGPA	N-acetylglucosamine-1-phosphodiester alpha-N-acetylglucosaminidase	BC152498.1	-2.386
NAP1L4	nucleosome assembly protein 1-like 4	NM_001007453	-2.287
NARS	asparaginyl-tRNA synthetase	ENSDART00000086746	-12.18

NAT10	N-acetyltransferase 10 (GCN5-related)	BC057462.1	-3.086
NCAPD2	non-SMC condensin I complex, subunit D2	ENSDART00000027088	-15.021
NCOA6	nuclear receptor coactivator 6	ENSDART00000105284	-17.266
NCOR1	nuclear receptor co-repressor 1	OTTDART00000022495	-2.844
NDUFAF3	NADH dehydrogenase (ubiquinone) complex I, assembly factor 3	NM_001080615	-3.044
Neb	nebulin	ENSDART00000032130	2.542
NECAP2	NECAP endocytosis associated 2	BC095287.1	-8.466
Nedd4	neural precursor cell expressed, developmentally down-regulated 4	NM_001034186	-3.571
NFAT5	nuclear factor of activated T-cells 5, tonicity-responsive	NM_199895	-5.195
NFIC	nuclear factor I/C (CCAAT-binding transcription factor)	ENSDART00000088668	-5.741
NFKBIB	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, beta	ENSDART00000045036	-6.484
NID1	nidogen 1	ENSDART00000099475	-53.821
NIPA1	non imprinted in Prader-Willi/Angelman syndrome 1	NM_001006062	2.002
NIPBL	Nipped-B homolog (Drosophila)	ENSDART00000086861	-2.27
NISCH	nischarin	ENSDART00000067426	-7.643
NKD1	naked cuticle homolog 1 (Drosophila)	NM_001043333	-3.43
Nlk	nemo like kinase	ENSDART00000047248	-2.75
NMD3	NMD3 homolog ( <i>S. cerevisiae</i> )	NM_001013569	-5.383
NMT2	N-myristoyltransferase 2	ENSDART00000012157	-3.71
NOD1	nucleotide-binding oligomerization domain containing 1	ENSDART00000052749	-8.669
NOD2	Novel NACHT domain containing protein	OTTDART00000030544	-4.227
NOP58	NOP58 ribonucleoprotein homolog (yeast)	BC151884.1	-2.162

NOXO1	NADPH oxidase organizer 1	ENSDART00000078860	2.208
NPDC1	neural proliferation, differentiation and control, 1	ENSDART00000078592	-2.545
NPRL3	nitrogen permease regulator-like 3 ( <i>S. cerevisiae</i> )	NM_001040371	-2.882
NR1H3	nuclear receptor subfamily 1, group H, member 3	NM_001017545	-2.622
NR2C2	nuclear receptor subfamily 2, group C, member 2	ENSDART00000011597	-3.682
NR2F6	nuclear receptor subfamily 2, group F, member 6	BC065330.1	-3.238
NRARP	NOTCH-regulated ankyrin repeat protein	BC077081.1	-10.084
NRP1	neuropilin 1	AY064213.1	-2.212
NRP2	neuropilin 2	NM_212965	-11.484
NRSN1	neurensin 1	ENSDART00000102977	-3.582
NSMAF	neutral sphingomyelinase (N- SMase) activation associated factor	NM_001017808	-3.624
NUAK1	NUAK family, SNF1-like kinase, 1	ENSDART00000039383	-67.422
NUDT7	nudix (nucleoside diphosphate linked moiety X)-type motif 7	ENSDART00000103222	-2.595
NUFIP2	nuclear fragile X mental retardation protein interacting protein 2	ENSDART00000100214	-11.051
NUMA1	nuclear mitotic apparatus protein 1	ENSDART00000005194	-2.562
NUMB	numb homolog ( <i>Drosophila</i> )	NM_001040406	2.608
NUP153	nucleoporin 153kDa	ENSDART00000039415	-2.776
NUP160	nucleoporin 160kDa	NM_200662	-21.337
NUP188	nucleoporin 188kDa	ENSDART00000043431	-17.791
NUP85	nucleoporin 85kDa	BC078318.1	-3.478
NUP98	nucleoporin 98kDa	NM_001077797	-2.082
NXF1	nuclear RNA export factor 1	ENSDART00000077381	-4.048
OCRL	oculocerebrorenal syndrome of Lowe	NM_001077764	-3.149
OLFML2A	olfactomedin-like 2A	ENSDART00000078436	-2.029
OPLAH	5-oxoprolinase (ATP- hydrolysing)	ENSDART00000066359	-2.062
ORAI1	ORAI calcium release-activated calcium modulator 1	ENSDART00000018401	-2.038

ORC2	origin recognition complex, subunit 2	NM_001077304	-2.753
OSBP	oxysterol binding protein	ENSDART00000031301	-4.519
OSTF1	osteoclast stimulating factor 1	NM_212857	-5.161
OSTM1	osteopetrosis associated transmembrane protein 1	ENSDART00000101887	-2.219
OTUD4	OTU domain containing 4	BC142849.1	-2.021
OXSRI	oxidative-stress responsive 1	BC044183.1	-3.624
P2RY11	purinergic receptor P2Y, G-protein coupled, 11	AW777710	3.02
PACSLN2	protein kinase C and casein kinase substrate in neurons 2	NM_207069	-9.167
PAF1	Paf1, RNA polymerase II associated factor, homolog (S. cerevisiae)	ENSDART00000064444	-2.528
PAIP2B	poly(A) binding protein interacting protein 2B	BC059597.1	-2.318
PAM	peptidylglycine alpha-amidating monooxygenase	ENSDART00000061639	-17.965
PANK1	pantothenate kinase 1	NM_001083841	-2.347
PANK4	pantothenate kinase 4	NM_200515	-2.461
PAPOLA	poly(A) polymerase alpha	AY394948.1	-2.904
PAPSS1	3'-phosphoadenosine 5'-phosphosulfate synthase 1	ENSDART00000024984	-12.202
PAQR6	progesterone and adipoQ receptor family member VI	ENSDART00000060814	-2.096
PAQR7	progesterone and adipoQ receptor family member VII	ENSDART00000043291	-5.392
PARL	presenilin associated, rhomboid-like	ENSDART00000055978	-2.399
PAWR	PRKC, apoptosis, WT1, regulator	NM_001006015	-2.825
PAXIP1	PAX interacting (with transcription-activation domain) protein 1	BC083530.1	-2.796
PCCA	propionyl CoA carboxylase, alpha polypeptide	BC076408.1	-2.299
PCCB	propionyl CoA carboxylase, beta polypeptide	BC067640.1	-2.531
PCDH7	protocadherin 7	ENSDART00000085612	-3.349
PCGF5	polycomb group ring finger 5	ENSDART00000104715	-2.46

PCSK5	proprotein convertase subtilisin/kexin type 5	NM_001083829	-2.548
PCYOX1	prenylcysteine oxidase 1	NM_001017626	-5.34
PCYT2	phosphate cytidyltransferase 2, ethanolamine	NM_001006037	-2.878
PDE6H	phosphodiesterase 6H, cGMP-specific, cone, gamma	NM_200837	2.579
PDE8A	phosphodiesterase 8A	NM_001080627	-3.991
PDGFB	platelet-derived growth factor beta polypeptide	ENSDART00000055607	2.111
PDK2	pyruvate dehydrogenase kinase, isozyme 2	ENSDART00000008010	-2.45
PDK3	pyruvate dehydrogenase kinase, isozyme 3	ENSDART00000022555	-8.793
PDLIM4	PDZ and LIM domain 4	NM_001042696	-12.606
PDLIM7	PDZ and LIM domain 7 (enigma)	NM_200840	-3.163
PDPK1	3-phosphoinositide dependent protein kinase-1	NM_205699	-3.838
PDS5B	PDS5, regulator of cohesion maintenance, homolog B (S. cerevisiae)	ENSDART00000087246	-5.051
PDXK	pyridoxal (pyridoxine, vitamin B6) kinase	ENSDART00000053102	-2.51
PDXP	pyridoxal (pyridoxine, vitamin B6) phosphatase	ENSDART00000055882	-3.014
PEMT	phosphatidylethanolamine N-methyltransferase	ENSDART00000059207	-3.513
PEPD	peptidase D	ENSDART00000004023	-2.134
PER1	period homolog 1 (Drosophila)	NM_212439	-3.005
PERP	PERP, TP53 apoptosis effector	BC045901.1	-13.919
PEX14	peroxisomal biogenesis factor 14	ENSDART00000078171	-19.57
PEX5L	peroxisomal biogenesis factor 5-like	ENSDART00000104293	2.475
PFKFB3	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3	BC060925.1	-2.286
PFKL	phosphofructokinase, liver	ENSDART00000085284	-6.847



PFKP	phosphofructokinase, platelet	ENSDART00000033394	-2.869
PGGT1B	protein geranylgeranyltransferase type I, beta subunit	ENSDART00000081505	-4.009
PGM2L1	phosphoglucomutase 2-like 1	ENSDART00000101937	-3.624
PHACTR3	phosphatase and actin regulator 3	NM_001020537	2.551
PHACTR4	phosphatase and actin regulator 4	BC058052.1	-11.891
PHEX	phosphate regulating endopeptidase homolog, X-linked	BC078428.1	-2.537
PHF3	PHD finger protein 3	ENSDART00000100352	-2.974
PHF8	PHD finger protein 8	ENSDART00000026314	-8.258
PHKA1	phosphorylase kinase, alpha 1 (muscle)	ENSDART00000083190	-2.414
PI4KA	phosphatidylinositol 4-kinase, catalytic, alpha	NM_001034972	-3.878
PI4KB	phosphatidylinositol 4-kinase, catalytic, beta	NM_001034977	-4.824
PIGS	phosphatidylinositol glycan anchor biosynthesis, class S	NM_001076614	-3.935
PIK3R4	phosphoinositide-3-kinase, regulatory subunit 4	ENSDART00000085228	-7.817
PINK1	PTEN induced putative kinase 1	NM_001008628	-4.408
PIP4K2A	phosphatidylinositol-5-phosphate 4-kinase, type II, alpha	ENSDART00000014787	-7.211
PIP5K1A	phosphatidylinositol-4-phosphate 5-kinase, type I, alpha	NM_001089353	-7.914
PKDCC	protein kinase domain containing, cytoplasmic homolog (mouse)	ENSDART00000050934	-5.254
PLA2G4F	phospholipase A2, group IVF	ENSDART00000104608	2.949
PLCD1	phospholipase C, delta 1	BC152502.1	-11.032
PLCD3	phospholipase C, delta 3	ENSDART00000079784	-2.706
PLCG1	phospholipase C, gamma 1	NM_194407	-16.606
PLD1	phospholipase D1, phosphatidylcholine-specific	ENSDART00000079726	-4.628

PLGRKT	plasminogen receptor, C-terminal lysine transmembrane protein	NM_001033098	-3.035
PLOD2	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 2	NM_001089464	-3.979
PLP2	proteolipid protein 2 (colonic epithelium-enriched)	ENSDART00000053203	-3.519
PLXDC2	plexin domain containing 2	ENSDART00000083929	-7.322
PLXNA1	plexin A1	ENSDART00000086317	-19.202
PLXNA2	plexin A2	ENSDART00000084985	-6.689
PMP2	peripheral myelin protein 2	NM_001004682	3.042
PMPCA	peptidase (mitochondrial processing) alpha	NM_001007442	-3.858
PNKD	paroxysmal nonkinesigenic dyskinesia	ENSDART00000104768	-3.946
POC1A	POC1 centriolar protein homolog A (Chlamydomonas)	NM_213049	-3.922
POLR1D	polymerase (RNA) I polypeptide D, 16kDa	NM_001003888	2.085
POLR2A	polymerase (RNA) II (DNA directed) polypeptide A, 220kDa	ENSDART00000077495	-8.168
POLR2K	polymerase (RNA) II (DNA directed) polypeptide K, 7.0kDa	BC150398.1	2.021
POLR3A	polymerase (RNA) III (DNA directed) polypeptide A, 155kDa	ENSDART00000105273	-6.021
POMT2	protein-O-mannosyltransferase 2	NM_001045033	-2.622
POR	P450 (cytochrome) oxidoreductase	NM_001034982	-7.38
PPARG	Peroxisome proliferator-activated receptor gamma	OTTDART00000002116	-3.394
PPIA	peptidylprolyl isomerase A (cyclophilin A)	BC100002.1	3.576
PPIC	peptidylprolyl isomerase C (cyclophilin C)	ENSDART00000055579	-2.856
PPM1B	protein phosphatase, Mg <sup>2+</sup> /Mn <sup>2+</sup> dependent, 1B	BC079530.1	-2.134
PPM1F	protein phosphatase, Mg <sup>2+</sup> /Mn <sup>2+</sup> dependent, 1F	ENSDART00000051666	-2.531

PPM1G	protein phosphatase, Mg <sup>2+</sup> /Mn <sup>2+</sup> dependent, 1G	NM_201488	-3.409
PPP1R13B	protein phosphatase 1, regulatory subunit 13B	NM_001044824	-2.915
PPP1R37	Protein phosphatase 1, regulatory subunit 37	OTTDART00000016283	-2.365
PPP2CA	protein phosphatase 2, catalytic subunit, alpha isozyme	NM_200911	-2.752
PPP3CC	protein phosphatase 3, catalytic subunit, gamma isozyme	NM_001080594	-3.526
PPP4R2	protein phosphatase 4, regulatory subunit 2	BC060912.1	-2.747
PRAF2	PRA1 domain family, member 2	OTTDART00000028679	3.723
PREP	prolyl endopeptidase	NM_001020753	-7.131
PREX1	phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange factor 1	ENSDART00000078022	-2.051
PRKACA	protein kinase, cAMP-dependent, catalytic, alpha	NM_001082840	-5.631
PRKACB	protein kinase, cAMP-dependent, catalytic, beta	NM_001034976	-8.962
PRKAG1	protein kinase, AMP-activated, gamma 1 non-catalytic subunit	ENSDART00000022179	-3.025
PRKCD	protein kinase C, delta	ENSDART00000103943	-5.849
PRKRA	protein kinase, interferon-inducible double stranded RNA dependent activator	NM_001089361	-3.522
PROSC	proline synthetase co-transcribed homolog (bacterial)	ENSDART00000084792	-20.11
PRPF4	PRP4 pre-mRNA processing factor 4 homolog (yeast)	BC056720.1	-2.513
PRRC2C	proline-rich coiled-coil 2C	ENSDART00000080289	-3.688
Prss2	protease, serine, 2	NM_199605	3.346
PRSS23	protease, serine, 23	ENSDART00000078186	-3.765
PSEN1	presenilin 1	BC054639.1	-4.742

PSMD2	proteasome (prosome, macropain) 26S subunit, non-ATPase, 2	NM_200546	-38.028
PSME4	proteasome (prosome, macropain) activator subunit 4	ENSDART00000003143	-2.65
PSMG2	proteasome (prosome, macropain) assembly chaperone 2	BC059607.1	2.251
PTDSS1	phosphatidylserine synthase 1	ENSDART000000052430	-2.333
PTDSS2	phosphatidylserine synthase 2	ENSDART000000092023	-6.977
PTGDS	prostaglandin D2 synthase 21kDa (brain)	NM_001045415	2.92
PTPN12	protein tyrosine phosphatase, non-receptor type 12	NM_200669	-4.913
PTPN13	protein tyrosine phosphatase, non-receptor type 13 (APO-1/CD95 (Fas)-associated phosphatase)	NM_001089543	-4.71
PTPN21	protein tyrosine phosphatase, non-receptor type 21	ENSDART000000097705	-11.479
PTPN23	protein tyrosine phosphatase, non-receptor type 23	ENSDART000000102649	-2.822
PTPRE	protein tyrosine phosphatase, receptor type, E	ENSDART000000004122	-6.393
PTPRG	protein tyrosine phosphatase, receptor type, G	ENSDART000000092552	-13.504
PUM1	pumilio homolog 1 (Drosophila)	BC055197.1	-14.441
PVRL3	poliovirus receptor-related 3	ENSDART000000031205	-27.458
PXN	paxillin	ENSDART000000085993	-2.479
RAB21	RAB21, member RAS oncogene family	ENSDART000000088465	-12.655
RAB22A	RAB22A, member RAS oncogene family	AY398404.1	-2.138
RAB23	RAB23, member RAS oncogene family	NM_001020743	-3.138
RAB3IP	RAB3A interacting protein (rabin3)	ENSDART000000059404	-3.789
RAB6A	RAB6A, member RAS oncogene family	BC058059.1	-2.397

RAB8B	RAB8B, member RAS oncogene family	NM_001099259	-4.463
RAB9A	RAB9A, member RAS oncogene family	NM_001045466	-2.536
RABGAP1	RAB GTPase activating protein 1	ENSDART00000021208	-2.356
RABGEF1	RAB guanine nucleotide exchange factor (GEF) 1	BC061953.1	-7.615
RABGGTA	Rab geranylgeranyltransferase, alpha subunit	NM_001076663	-2.228
RAD21	RAD21 homolog (S. pombe)	NM_199595	-4.872
RAD51B	RAD51 homolog B (S. cerevisiae)	NM_213412	-2.68
RAF1	v-raf-1 murine leukemia viral oncogene homolog 1	ENSDART00000082519	-2.711
RAI14	retinoic acid induced 14	NM_001002737	-3.226
RALBP1	ralA binding protein 1	NM_207080	-4.162
RANBP10	RAN binding protein 10	NM_001045050	-11.652
RANBP3	RAN binding protein 3	BC059200.1	-7.149
RANGAP1	Ran GTPase activating protein 1	NM_001076616	-2.429
RAPGEF2	Rap guanine nucleotide exchange factor (GEF) 2	ENSDART00000003826	-8.904
RASA3	RAS p21 protein activator 3	ENSDART00000092524	-2.937
RBL1	retinoblastoma-like 1 (p107)	ENSDART00000073865	-3.581
RBM25	RNA binding motif protein 25	ENSDART00000044784	-4.725
RBM45	RNA binding motif protein 45	ENSDART00000093415	-2.118
RBMS1	RNA binding motif, single stranded interacting protein 1	ENSDART00000064860	-3.789
RBMS3	RNA binding motif, single stranded interacting protein 3	NM_001076716	-4.409
RCAN1	regulator of calcineurin 1	NM_001003616	-3.245
RECQL5	RecQ protein-like 5	ENSDART00000082886	-3.321
REST	RE1-silencing transcription factor	NM_001039820	-2.269
RFC5	replication factor C (activator 1) 5, 36.5kDa	NM_001003862	-3.117
RFK	riboflavin kinase	ENSDART00000085371	-2.206
RGL1	ral guanine nucleotide dissociation stimulator-like 1	ENSDART00000010604	-5.846

RGMB	RGM domain family, member B	NM_001001727	-14.971
RGS7	regulator of G-protein signaling 7	NM_001002541	-2.98
RHBDF1	rhomboid 5 homolog 1 (Drosophila)	NM_001002228	-9.094
RICTOR	RPTOR independent companion of MTOR, complex 2	ENSDART00000058311	-5.545
RILPL1	Rab interacting lysosomal protein-like 1	NM_001079664	-13.927
RIPK2	receptor-interacting serine-threonine kinase 2	AF487540.1	-2.104
RND1	Rho family GTPase 1	NM_001044396	-2.096
RNF103	ring finger protein 103	BC081585.1	2.61
RNF139	ring finger protein 139	ENSDART00000053622	-4.261
RNF167	ring finger protein 167	ENSDART00000009893	-4.076
RNF170	ring finger protein 170	NM_214750	-2.406
RNF19A	ring finger protein 19A, E3 ubiquitin protein ligase	ENSDART00000024193	-3.016
RPL37	ribosomal protein L37	NM_001002069	2.287
RPS6KA3	ribosomal protein S6 kinase, 90kDa, polypeptide 3	NM_001083026	-2.117
RPS6KA5	ribosomal protein S6 kinase, 90kDa, polypeptide 5	ENSDART00000085438	-2.105
RRAGD	Ras-related GTP binding D	NM_001099424	-2.234
RUNX2	runt-related transcription factor 2	AY380819.1	-4.399
RXRA	retinoid X receptor, alpha	ENSDART00000080481	-12.934
SACM1L	SAC1 suppressor of actin mutations 1-like (yeast)	NM_001080624	-5.519
SAMHD1	SAM domain and HD domain 1	ENSDART00000105316	-2.758
SAP130	Sin3A-associated protein, 130kDa	ENSDART00000079457	-4.914
SAPCD2	suppressor APC domain containing 2	NM_212911	-2.22
SAR1A	SAR1 homolog A (S. cerevisiae)	ENSDART00000099280	2.645
SATB2	SATB homeobox 2	ENSDART00000088876	-11.304
SBF2	SET binding factor 2	ENSDART00000082664	-6.224

SBNO2	strawberry notch homolog 2 (Drosophila)	ENSDART00000056032	-8.449
SCAMP1	secretory carrier membrane protein 1	NM_205692	-3.183
SCAMP4	secretory carrier membrane protein 4	NM_001025525	-8.627
SCAMP5	secretory carrier membrane protein 5	NM_205547	-3.521
SCD5	stearoyl-CoA desaturase 5	AY217090.1	-8.152
SCP2	sterol carrier protein 2	BC063230.1	-3.817
SCYL1	SCY1-like 1 (S. cerevisiae)	ENSDART00000074038	-3.355
SDC2	syndecan 2	BC081509.1	-4.806
SDHD	succinate dehydrogenase complex, subunit D, integral membrane protein	NM_001002489	2.95
SDK2	sidekick cell adhesion molecule 2	ENSDART00000085121	-20.283
SDPR	serum deprivation response	BC081627.1	-2.951
SEC16A	SEC16 homolog A (S. cerevisiae)	ENSDART00000092348	-6.451
SEC24A	SEC24 family, member A (S. cerevisiae)	ENSDART00000099278	-25.507
SEC24B	SEC24 family, member B (S. cerevisiae)	ENSDART00000106708	-6.623
SEC24C	SEC24 family, member C (S. cerevisiae)	ENSDART00000085476	-6.19
SEC24D	SEC24 family, member D (S. cerevisiae)	ENSDART00000058763	-7.121
SEC63	SEC63 homolog (S. cerevisiae)	NM_001002588	-2.951
SEMA3B	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3B	ENSDART00000027301	-22.383
SEMA3G	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3G	ENSDART00000010393	2.048

SEMA5B	sema domain, seven thrombospondin repeats (type 1 and type 1-like), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 5B	ENSDART00000087663	3.173
SEMA6B	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6B	ENSDART00000089024	-7.93
SENP1	SUMO1/sentrin specific peptidase 1	BC054703.1	-12.051
SEPN1	selenoprotein N, 1	AY221262.1	-8.997
SEPT2	septin 2	BC055230.1	-2.01
SERINC2	serine incorporator 2	ENSDART00000075462	-4.369
SETDB1	SET domain, bifurcated 1	NM_001077277	-13.298
SF3A2	splicing factor 3a, subunit 2, 66kDa	BC066469.1	-4.992
SFI1	Sfi1 homolog, spindle assembly associated (yeast)	ENSDART00000076097	-3.521
SFMBT1	Scm-like with four mbt domains 1	ENSDART00000041725	-3.88
SFRP2	secreted frizzled-related protein 2	NM_001077384	-4.205
SGCB	sarcoglycan, beta (43kDa dystrophin-associated glycoprotein)	NM_001034973	2.529
SH3PXD2B	SH3 and PX domains 2B	ENSDART00000031308	-14.307
SHC3	SHC (Src homology 2 domain containing) transforming protein 3	ENSDART00000080479	2.023
SIK2	salt-inducible kinase 2	ENSDART00000089953	3.136
SIKE1	suppressor of IKBKE 1	ENSDART00000086491	-2.62
SIN3A	SIN3 transcription regulator homolog A (yeast)	ENSDART00000083539	-2.157
SKIV2L2	superkiller viralicidic activity 2-like 2 (S. cerevisiae)	NM_214768	-9.197
SLC12A2	solute carrier family 12 (sodium/potassium/chloride transporters), member 2	NM_001002080	-3.258



SLC16A1	solute carrier family 16, member 1 (monocarboxylic acid transporter 1)	ENSDART00000023506	-2.286
SLC16A3	solute carrier family 16, member 3 (monocarboxylic acid transporter 4)	ENSDART00000001907	-2.208
SLC19A1	solute carrier family 19 (folate transporter), member 1	ENSDART00000049465	-3.636
SLC1A5	solute carrier family 1 (neutral amino acid transporter), member 5	ENSDART00000039780	-10.156
SLC20A1	solute carrier family 20 (phosphate transporter), member 1	BC057497.1	-11.099
SLC25A12	solute carrier family 25 (aspartate/glutamate carrier), member 12	NM_212782	-17.002
SLC25A17	solute carrier family 25 (mitochondrial carrier; peroxisomal membrane protein, 34kDa), member 17	ENSDART00000088238	-3.275
SLC25A20	solute carrier family 25 (carnitine/acylcarnitine translocase), member 20	BC062851.1	-2.648
SLC29A1	solute carrier family 29 (nucleoside transporters), member 1	NM_001030177	-4.625
SLC2A1	solute carrier family 2 (facilitated glucose transporter), member 1	ENSDART00000013872	-2.86
SLC30A1	solute carrier family 30 (zinc transporter), member 1	BC063939.1	-5.215
SLC31A1	solute carrier family 31 (copper transporters), member 1	AY077715.1	-2.134
SLC33A1	solute carrier family 33 (acetyl-CoA transporter), member 1	NM_201108	-5.699
SLC34A2	solute carrier family 34 (sodium phosphate), member 2	NM_182877	-4.467

SLC35A1	solute carrier family 35 (CMP-sialic acid transporter), member A1	ENSDART00000058777	-8.298
SLC35A2	solute carrier family 35 (UDP-galactose transporter), member A2	ENSDART00000081983	-2.267
SLC35C1	solute carrier family 35, member C1	NM_001008590	-3.03
SLC38A3	solute carrier family 38, member 3	ENSDART00000062385	-2.908
SLC39A10	solute carrier family 39 (zinc transporter), member 10	NM_200671	-2.915
SLC43A3	solute carrier family 43, member 3	NM_001039922	-2.73
SLC4A8	solute carrier family 4, sodium bicarbonate cotransporter, member 8	ENSDART00000047416	-9.923
SLC52A2	solute carrier family 52, riboflavin transporter, member 2	BC055241.1	-4.045
SLC6A6	solute carrier family 6 (neurotransmitter transporter, taurine), member 6	NM_001037661	-16.209
SLC6A8	solute carrier family 6 (neurotransmitter transporter, creatine), member 8	ENSDART00000037922	-3.133
SLC7A3	solute carrier family 7 (cationic amino acid transporter, y+ system), member 3	ENSDART00000087918	-13.512
SLC7A5	solute carrier family 7 (amino acid transporter light chain, L system), member 5	ENSDART00000073595	-12.987
SLC7A8	solute carrier family 7 (amino acid transporter light chain, L system), member 8	ENSDART00000010124	-6.675
SLC9A6	solute carrier family 9, subfamily A (NHE6, cation proton antiporter 6), member 6	NM_001098256	-4.947

SLC9A8	solute carrier family 9, subfamily A (NHE8, cation proton antiporter 8), member 8	ENSDART00000021062	-3.182
SLCO2B1	solute carrier organic anion transporter family, member 2B1	NM_001037678	-2.376
SLK	STE20-like kinase	ENSDART00000087786	-9.776
SMARCA1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 1	ENSDART00000020725	-3.276
SMARCD3	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily d, member 3	ENSDART00000006724	-2.211
SMCR8	Smith-Magenis syndrome chromosome region, candidate 8	ENSDART00000074746	-2.393
SMEK2	SMEK homolog 2, suppressor of mek1 (Dictyostelium)	NM_200001	-9.284
SMG5	smg-5 homolog, nonsense mediated mRNA decay factor (C. elegans)	NM_001024923	-5.102
SMTN	smoothelin	ENSDART00000082614	-2.529
SMURF2	SMAD specific E3 ubiquitin protein ligase 2	ENSDART00000055491	-5.789
SMYD1	SET and MYND domain containing 1	NM_001039636	2.622
SNCB	synuclein, beta	NM_200969	3.67
SNIP1	Smad nuclear interacting protein 1	BC097166.1	-2.192
SNRK	SNF related kinase	NM_001002388	-2.364
SNRPA	small nuclear ribonucleoprotein polypeptide A	NM_199671	-2.78
SNRPB	small nuclear ribonucleoprotein polypeptides B and B1	NM_205667	-5.804
SNTB2	syntrophin, beta 2 (dystrophin-associated protein A1, 59kDa, basic component 2)	ENSDART00000073441	-8.999

SNX13	sorting nexin 13	NM_001013311	-4.494
SNX16	sorting nexin 16	ENSDART00000067734	-5.181
SNX24	sorting nexin 24	NM_001033731	-2.108
SOCS3	suppressor of cytokine signaling 3	BC066573.1	-2.656
SOCS5	suppressor of cytokine signaling 5	ENSDART00000091097	-2.569
SOCS6	suppressor of cytokine signaling 6	ENSDART00000081449	-5.145
SORBS1	sorbin and SH3 domain containing 1	ENSDART00000043870	-3.421
SORBS2	sorbin and SH3 domain containing 2	ENSDART00000088004	2.215
SORL1	sortilin-related receptor, L(DLR class) A repeats containing	ENSDART00000011416	-7.884
SOS2	son of sevenless homolog 2 (Drosophila)	ENSDART00000085319	-6.089
SP3	Sp3 transcription factor	NM_001089498	-3.218
SPAST	spastin	NM_212915	-3.069
SPATA2	spermatogenesis associated 2	NM_001080191	-4.666
SPDEF	SAM pointed domain containing ets transcription factor	ENSDART00000050483	2.274
SPHK2	sphingosine kinase 2	ENSDART00000084037	-7.227
SPR	sepiapterin reductase (7,8-dihydrobiopterin:NADP+ oxidoreductase)	ENSDART00000007827	-8.766
SPRED1	sprouty-related, EVH1 domain containing 1	BC068365.1	-12.292
SPRY1	sprouty homolog 1, antagonist of FGF signaling (Drosophila)	ENSDART00000032739	-5.189
SPTAN1	spectrin, alpha, non-erythrocytic 1	BC108293.1	-3.312
SREBF2	sterol regulatory element binding transcription factor 2	NM_001089466	-6.227
SRGAP2	SLIT-ROBO Rho GTPase activating protein 2	NM_001048235	-3.319
SRP68	signal recognition particle 68kDa	NM_001005401	-4.359
SRPR	signal recognition particle receptor (docking protein)	ENSDART00000086823	-2.764

SRSF9	serine/arginine-rich splicing factor 9	NM_212899	-3.362
SSBP3	single stranded DNA binding protein 3	BC068380.1	-3.369
SSRP1	structure specific recognition protein 1	ENSDART00000100268	-5.749
ST7	suppression of tumorigenicity 7	NM_001040336	-2.354
STAG1	stromal antigen 1	ENSDART00000089376	-9.564
STAMBPL1	STAM binding protein-like 1	ENSDART00000106035	-2.034
STARD3NL	STARD3 N-terminal like	ENSDART00000066789	-2.083
STAT1	signal transducer and activator of transcription 1, 91kDa	BC045863.1	-2.008
STK10	serine/threonine kinase 10	NM_201133	-8.143
STK11IP	serine/threonine kinase 11 interacting protein	BC049433.1	2.178
STK40	serine/threonine kinase 40	ENSDART00000084855	-3.055
STRN	striatin, calmodulin binding protein	NM_001080642	-4.358
STX16	syntaxin 16	ENSDART00000002693	-5.037
STX2	syntaxin 2	ENSDART00000098525	2.597
STXBP6	syntaxin binding protein 6 (amisyn)	NM_001002063	-2.263
SUN1	Sad1 and UNC84 domain containing 1	NM_001018135	-4.802
SUPT16H	suppressor of Ty 16 homolog (S. cerevisiae)	NM_001097584	-11.97
SV2B	synaptic vesicle glycoprotein 2B	ENSDART00000085816	2.228
SVEP1	sushi, von Willebrand factor type A, EGF and pentraxin domain containing 1	ENSDART00000076882	-9.117
SYNGR2	synaptogyrin 2	ENSDART00000074285	-11.117
SYNJ1	synaptojanin 1	NM_001007030	-4.807
SYPL1	synaptophysin-like 1	AY394944.1	2.295
TAF1	TAF1 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 250kDa	BC077097.1	-4.067

TAF5	TAF5 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 100kDa	BC067651.1	-5.14
TAF5L	TAF5-like RNA polymerase II, p300/CBP-associated factor (PCAF)-associated factor, 65kDa	BC056820.1	-2.894
TAF6	TAF6 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 80kDa	BC081612.1	-4.062
TAOK3	TAO kinase 3	ENSDART00000085943	-5.644
TAP2	transporter 2, ATP-binding cassette, sub-family B (MDR/TAP)	ENSDART00000039510	-14.952
TARS	threonyl-tRNA synthetase	BC083525.1	-2.016
TBC1D10A	TBC1 domain family, member 10A	ENSDART00000084353	-2.565
TBC1D16	TBC1 domain family, member 16	NM_001006076	-4.104
TBC1D23	TBC1 domain family, member 23	BC055235.1	-3.607
TBC1D7	TBC1 domain family, member 7	NM_200777	-5.105
TBCD	tubulin folding cofactor D	ENSDART00000058645	-7.998
TBCEL	tubulin folding cofactor E-like	ENSDART00000005696	-3.494
TBCK	TBC1 domain containing kinase	NM_001080637	-9.085
TBK1	TANK-binding kinase 1	ENSDART00000093347	-2.379
TBL3	transducin (beta)-like 3	NM_001007402	-5.457
TCEB2	transcription elongation factor B (SIII), polypeptide 2 (18kDa, elongin B)	BC054698.1	-2.749
TCF3	transcription factor 3 (E2A immunoglobulin enhancer binding factors E12/E47)	ENSDART00000074228	-12.506
TCF7L1	transcription factor 7-like 1 (T- cell specific, HMG-box)	NM_131269	-9.469
TCIRG1	T-cell, immune regulator 1, ATPase, H <sup>+</sup> transporting, lysosomal V0 subunit A3	ENSDART00000033405	3.01

TEAD4	TEA domain family member 4	BC151979.1	-2.848
TEP1	telomerase-associated protein 1	ENSDART00000056536	2.162
TESK2	testis-specific kinase 2	BC128846.1	-2.114
TFAP2C	transcription factor AP-2 gamma (activating enhancer binding protein 2 gamma)	NM_001008576	-3.269
TFAP2E	transcription factor AP-2 epsilon (activating enhancer binding protein 2 epsilon)	NM_200821	2.001
TFCP2	transcription factor CP2	ENSDART00000084848	-3.01
TFDP2	transcription factor Dp-2 (E2F dimerization partner 2)	AY391466.1	-2.43
TFRC	transferrin receptor (p90, CD71)	NM_001009918	-11.64
TGFB1	transforming growth factor, beta 1	NM_182873	-2.51
TGFB3	transforming growth factor, beta 3	NM_194386	-4
TGFR1	transforming growth factor, beta receptor 1	ENSDART00000061973	-2.098
THOC5	THO complex 5	BC045980.1	-3.369
THRAP3	thyroid hormone receptor associated protein 3	NM_214815	-3.975
TIMM17B	translocase of inner mitochondrial membrane 17 homolog B (yeast)	ENSDART00000084417	-3.836
TIMM8A	translocase of inner mitochondrial membrane 8 homolog A (yeast)	BC077084.1	2.555
TIPRL	TIP41, TOR signaling pathway regulator-like ( <i>S. cerevisiae</i> )	ENSDART00000040240	-17.365
TJAP1	tight junction associated protein 1 (peripheral)	ENSDART00000058238	-3.259
TJP2	tight junction protein 2 (zona occludens 2)	ENSDART00000092343	-2.575
TKT	transketolase	ENSDART00000045888	3.157
TMBIM1	transmembrane BAX inhibitor motif containing 1	NM_001005992	-5.959

TMED7	transmembrane emp24 protein transport domain containing 7	NM_212912	-3.207
TMEM161A	transmembrane protein 161A	ENSDART00000027605	-2.016
TMEM164	transmembrane protein 164	ENSDART00000097663	-11.707
TMEM167B	transmembrane protein 167B	NM_001003761	-5.257
TMEM180	transmembrane protein 180	NM_001008654	-2.05
TMEM187	transmembrane protein 187	ENSDART00000073712	-3.244
TMEM222	transmembrane protein 222	NM_001013316	-2.604
TMEM245	transmembrane protein 245	ENSDART00000103407	-5.488
TMEM248	transmembrane protein 248	NM_001013530	-3.098
TMEM38A	transmembrane protein 38A	ENSDART00000035560	2.041
TMEM39A	transmembrane protein 39A	NM_199632	-11.759
TMEM43	transmembrane protein 43	NM_213238	-5.115
TMF1	TATA element modulatory factor 1	BC077134.1	-5.503
TNFRSF1B	tumor necrosis factor receptor superfamily, member 1B	NM_001089510	-2.267
TNIP1	TNFAIP3 interacting protein 1	NM_001079952	-7.667
TNNC2	troponin C type 2 (fast)	BC152238.1	5.182
TNNI2	troponin I type 2 (skeletal, fast)	BC071462.1	4.105
TNPO1	transportin 1	ENSDART00000051278	-8.46
TONSL	tonsoku-like, DNA repair protein	ENSDART00000105326	-2.743
TOPBP1	topoisomerase (DNA) II binding protein 1	BC067694.1	-3.56
TOX2	TOX high mobility group box family member 2	NM_212908	-2.714
TP53BP1	tumor protein p53 binding protein 1	NM_001080170	-20.156
TPBG	trophoblast glycoprotein	ENSDART00000054077	-5.201
TPI1	triosephosphate isomerase 1	BC049500.1	2.234
TPP1	tripeptidyl peptidase I	ENSDART00000062806	-3.336
TRAF2	TNF receptor-associated factor 2	ENSDART00000043466	-21.585
TRAFD1	TRAF-type zinc finger domain containing 1	NM_001089515	-2.084
TRAPPC8	trafficking protein particle complex 8	ENSDART00000077095	-8.911



TRIB2	tribbles homolog 2 (Drosophila)	ENSDART00000098424	-6.127
TRIM16	tripartite motif containing 16	ENSDART00000008009	-2.759
TRIM35	tripartite motif containing 35	ENSDART00000036309	2.323
TRIM8	tripartite motif containing 8	ENSDART00000085888	-8.946
TRIP6	thyroid hormone receptor interactor 6	ENSDART00000100798	-3.956
TRPS1	trichorhinophalangeal syndrome I	ENSDART00000098145	-2.688
TSPAN1	tetraspanin 1	NM_001045441	2.324
TSPAN4	tetraspanin 4	NM_001002348	-2.036
TSPAN7	tetraspanin 7	ENSDART00000002691	-3.216
TTC1	tetratricopeptide repeat domain 1	NM_001007382	-4.023
TTI1	TELO2 interacting protein 1	ENSDART00000022498	-2.397
TTL	tubulin tyrosine ligase	NM_001076625	-4.839
TTYH3	tweety homolog 3 (Drosophila)	ENSDART00000083111	-6.199
TUBGCP2	tubulin, gamma complex associated protein 2	BC054908.1	-3.578
TUBGCP4	tubulin, gamma complex associated protein 4	ENSDART00000009649	-4.428
TXLNA	taxilin alpha	NM_001099230	-2.696
TXNL4A	thioredoxin-like 4A	BC083448.1	2.176
TYK2	tyrosine kinase 2	ENSDART00000055124	-2.974
U2AF2	U2 small nuclear RNA auxiliary factor 2	BC065869.1	-2.295
UACA	uveal autoantigen with coiled- coil domains and ankyrin repeats	ENSDART00000074729	-4.572
UBAC1	UBA domain containing 1	ENSDART00000083340	-5.37
UBAC2	UBA domain containing 2	NM_001080561	-5.047
UBAP2	ubiquitin associated protein 2	NM_001082838	-5.838
UBE2J2	ubiquitin-conjugating enzyme E2, J2	NM_001089535	-2.598
UBE2Q2	ubiquitin-conjugating enzyme E2Q family member 2	ENSDART00000017798	-4.114
UBIAD1	UbiA prenyltransferase domain containing 1	ENSDART00000015554	-3.372
UBR2	ubiquitin protein ligase E3 component n-recognin 2	ENSDART00000102748	-6.382

UGT2A1	UDP glucuronosyltransferase 2 family, polypeptide A1, complex locus	ENSDART00000081791	2.795
UHK1	U2AF homology motif (UHM) kinase 1	NM_001076659	-5.171
UPF1	UPF1 regulator of nonsense transcripts homolog (yeast)	NM_213474	-6.571
USP13	ubiquitin specific peptidase 13 (isopeptidase T-3)	NM_001098386	-2.358
USP22	ubiquitin specific peptidase 22	NM_001045248	-2.699
USP33	ubiquitin specific peptidase 33	BC066557.1	-2.465
USP36	ubiquitin specific peptidase 36	ENSDART00000047503	-4.287
USP40	ubiquitin specific peptidase 40	ENSDART00000105098	-7.695
USP5	ubiquitin specific peptidase 5 (isopeptidase T)	BC066694.1	-25.688
USP8	ubiquitin specific peptidase 8	ENSDART00000093376	-29.587
USP9X	ubiquitin specific peptidase 9, X-linked	NM_001077449	-4.85
UTP18	UTP18 small subunit (SSU) processome component homolog (yeast)	NM_001076764	-3.932
UTRN	utrophin	ENSDART00000105287	-4.266
VAC14	Vac14 homolog ( <i>S. cerevisiae</i> )	BC078425.1	-8.859
VANGL2	vang-like 2 (van gogh, <i>Drosophila</i> )	NM_153674	-4.06
VAT1	vesicle amine transport protein 1 homolog ( <i>T. californica</i> )	NM_001007051	-9.314
VAV2	vav 2 guanine nucleotide exchange factor	ENSDART00000065717	-4.125
VAX1	ventral anterior homeobox 1	NM_194410	4.148
VAX2	ventral anterior homeobox 2	NM_194409	-2.979
VCL	vinculin	ENSDART00000039828	-2.843
VEZF1	vascular endothelial zinc finger 1	NM_001079963	-2.411
VIPR1	vasoactive intestinal peptide receptor 1	ENSDART00000046127	2.379
VPS11	vacuolar protein sorting 11 homolog ( <i>S. cerevisiae</i> )	NM_001037708	-2.36
VPS16	vacuolar protein sorting 16 homolog ( <i>S. cerevisiae</i> )	ENSDART00000083820	-25.112

VPS33B	vacuolar protein sorting 33 homolog B (yeast)	NM_001014348	-2.091
VPS37C	vacuolar protein sorting 37 homolog C ( <i>S. cerevisiae</i> )	NM_001077785	-3.499
VPS4A	vacuolar protein sorting 4 homolog A ( <i>S. cerevisiae</i> )	NM_001076609	-5.417
WAPAL	wings apart-like homolog ( <i>Drosophila</i> )	ENSDART00000064817	-17.841
WARS	tryptophanyl-tRNA synthetase	BC049526.1	-2.034
WASL	Wiskott-Aldrich syndrome-like	NM_001083006	-5.933
WBP1	WW domain binding protein 1	NM_205634	-2.217
WBP2	WW domain binding protein 2	NM_001020544	-3.714
WDFY1	WD repeat and FYVE domain containing 1	NM_001007057	-2.248
WDHD1	WD repeat and HMG-box DNA binding protein 1	ENSDART00000002176	-5.149
WDR19	WD repeat domain 19	ENSDART00000034477	-2.735
WDR26	WD repeat domain 26	ENSDART00000029894	-15.668
WDR35	WD repeat domain 35	ENSDART00000100663	-5.977
WHSC1	Wolf-Hirschhorn syndrome candidate 1	NM_001082551	-3.357
WHSC2	Wolf-Hirschhorn syndrome candidate 2	BC054683.1	-2.288
WIPF1	WAS/WASL interacting protein family, member 1	ENSDART00000104884	-3.481
WNT2B	wingless-type MMTV integration site family, member 2B	NM_001044344	-4.026
WNT9A	wingless-type MMTV integration site family, member 9A	NM_001045363	-3.334
WRN	Werner syndrome, RecQ helicase-like	ENSDART00000074986	-2.667
WWP2	WW domain containing E3 ubiquitin protein ligase 2	NM_001099448	-3.935
XPO1	exportin 1 (CRM1 homolog, yeast)	ENSDART00000092188	-25.54
XPO7	exportin 7	ENSDART00000027612	-7.865

XRCC1	X-ray repair complementing defective repair in Chinese hamster cells 1	ENSDART00000020033	-3.823
XRCC5	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining)	NM_001017360	-3.148
XYLT2	xylosyltransferase II	ENSDART00000082902	-2.769
YME1L1	YME1-like 1 ( <i>S. cerevisiae</i> )	NM_001089514	-2.429
YTHDF2	YTH domain family, member 2	BC047846.1	-20.442
ZBTB11	zinc finger and BTB domain containing 11	NM_212650	-2.21
ZBTB20	zinc finger and BTB domain containing 20	NM_001080604	-7.407
ZC3H10	zinc finger CCCH-type containing 10	BC066420.1	-3.043
ZCCHC2	zinc finger, CCHC domain containing 2	ENSDART00000097939	-6.019
ZDHHC20	zinc finger, DHHC-type containing 20	ENSDART00000080997	-5.709
ZDHHC3	zinc finger, DHHC-type containing 3	ENSDART00000081779	-3.635
ZDHHC9	zinc finger, DHHC-type containing 9	ENSDART00000085335	-3.911
ZER1	zer-1 homolog ( <i>C. elegans</i> )	NM_212901	-2.695
ZMYM2	zinc finger, MYM-type 2	ENSDART00000102045	-6.851
ZNF281	zinc finger protein 281	ENSDART00000000595	-4.926
ZNF367	zinc finger protein 367	NM_001017726	-36.806
ZNF410	zinc finger protein 410	NM_205653	-9.916
ZNF644	zinc finger protein 644	ENSDART00000074082	-2.663
ZNF711	zinc finger protein 711	ENSDART00000106654	-9.594
ZNHIT3	zinc finger, HIT-type containing 3	BC049063.1	2.301
ZW10	ZW10, kinetochore associated, homolog ( <i>Drosophila</i> )	BC044489.1	-2.013
ZYX	zyxin	BC151921.1	-4.753