

SUPPLEMENTARY FIGURES AND TABLES

Supplementary Table 1. List of abbreviations in alphabetical order

Symbol	Description
<i>A2m</i>	alpha-2-macroglobulin
<i>Abca1</i>	ATP-binding cassette, subfamily A (ABC1), member 1
<i>Abcc1</i>	ATP-binding cassette, subfamily C (CFTR/MRP), member 1
<i>Abcd2</i>	ATP-binding cassette, subfamily D (ALD), member 2
<i>Abhd8</i>	abhydrolase domain containing 8
<i>Acadvl</i>	acyl-CoA dehydrogenase, very long chain
<i>Acbd4</i>	acyl-CoA binding domain containing 4
<i>Ace</i>	angiotensin I converting enzyme (peptidyl-dipeptidase A) 1
<i>Actr2</i>	ARP2 actin-related protein 2 homolog (yeast)
<i>Acyp2</i>	acylphosphatase 2, muscle type
<i>Adam11</i>	ADAM metalloproteinase domain 11
<i>Adcyap1r1</i>	adenylate cyclase activating polypeptide 1 receptor 1
<i>Agpat3</i>	1-acylglycerol-3-phosphate O-acyltransferase 3
<i>Agtbbp1</i>	ATP/GTP binding protein 1
<i>Aig1</i>	androgen-induced 1
<i>Aimp1</i>	aminoacyl tRNA synthetase complex-interacting multifunctional protein 1
<i>Akap2</i>	A kinase (PRKA) anchor protein 2
<i>Akip1</i>	A kinase (PRKA) interacting protein 1
<i>Akt1s1</i>	AKT1 substrate 1 (proline-rich)
<i>Alkbh</i>	alkB, alkylation repair homolog (E. coli)
<i>Amigo2</i>	adhesion molecule with Ig like domain 2
<i>Amn1</i>	antagonist of mitotic exit network 1 homolog (S. cerevisiae)
<i>Amt</i>	aminomethyltransferase
<i>Anapc11</i>	anaphase promoting complex subunit 11
<i>Ank3</i>	ankyrin 3, node of Ranvier
<i>Apc2</i>	adenomatosis polyposis coli 2
<i>Aqp1</i>	aquaporin 1
<i>Arfgap1</i>	ADP-ribosylation factor GTPase activating protein 1
<i>Arhgap32</i>	Rho GTPase activating protein 32
<i>Arhgef26</i>	Rho guanine nucleotide exchange factor (GEF) 26
<i>Arl10</i>	ADP-ribosylation factor-like 10
<i>Arl13b</i>	ADP-ribosylation factor-like 13B
<i>Arl6ip4</i>	ADP-ribosylation-like factor 6 interacting protein 4
<i>Arpp19</i>	cAMP-regulated phosphoprotein 19
<i>Asap1</i>	ArfGAP with SH3 domain, ankyrin repeat and PH domain 1
<i>Ash1l</i>	ash1 (absent, small, or homeotic)-like (Drosophila)
<i>Ate1</i>	arginyltransferase 1
<i>Atox1</i>	ATX1 antioxidant protein 1 homolog (yeast)
<i>Atp2a2</i>	ATPase, Ca ⁺⁺ transporting, cardiac muscle, slow twitch 2
<i>Atp5e</i>	ATP synthase, H ⁺ transporting, mitochondrial F1 complex, epsilon subunit
<i>Atp5l</i>	ATP synthase, H ⁺ transporting, mitochondrial Fo complex, subunit G

<i>B9d1</i>	B9 protein domain 1
<i>Baz2b</i>	bromodomain adjacent to zinc finger domain, 2B
<i>Bckdha</i>	branched chain ketoacid dehydrogenase E1, alpha polypeptide
<i>Bcl2l1</i>	Bcl2-like 1
<i>Bdkrb2</i>	bradykinin receptor B2
<i>Bloc1s1</i>	biogenesis of lysosomal organelles complex-1, subunit 1
<i>C2cd2l</i>	C2 calcium-dependent domain containing 2-like
<i>Cacna1a</i>	calcium channel, voltage-dependent, P/Q type, alpha 1A subunit
<i>Calm3</i>	calmodulin 3
<i>Calm14</i>	calmodulin-like 4
<i>Camsap2</i>	calmodulin regulated spectrin-associated protein family, member 2
<i>Cbfa2t3</i>	core-binding factor, runt domain, alpha subunit 2; translocated to, 3
<i>Ccar1</i>	cell division cycle and apoptosis regulator 1
<i>Ccdc25</i>	coiled-coil domain containing 25
<i>Cd59</i>	CD59 molecule, complement regulatory protein
<i>Cdk10</i>	cyclin-dependent kinase 10
<i>Cdk13</i>	cyclin-dependent kinase 13
<i>Cdk7</i>	cyclin-dependent kinase 7
<i>Cdkn2c</i>	cyclin-dependent kinase inhibitor 2C (p18, inhibits CDK4)
<i>Cdv3</i>	carnitine deficiency-associated gene expressed in ventricle 3 homolog (mouse)
<i>Cerk</i>	ceramide kinase
<i>Ces5a</i>	carboxylesterase 5A
<i>Chd2</i>	chromodomain helicase DNA binding protein 2
<i>Chrm1</i>	cholinergic receptor, muscarinic 1
<i>Chrm4</i>	cholinergic receptor, muscarinic 4
<i>Chst11</i>	carbohydrate (chondroitin 4) sulfotransferase 11
<i>Chst2</i>	carbohydrate sulfotransferase 2
<i>Cldn11</i>	claudin 11
<i>Cldn12</i>	claudin 12
<i>Cldn2</i>	claudin 2
<i>Clptm1l</i>	CLPTM1-like
<i>Cmtm4</i>	CKLF-like MARVEL transmembrane domain containing 4
<i>Cnfn</i>	cornifelin
<i>Cnot6l</i>	CCR4-NOT transcription complex, subunit 6-like
<i>Cntn2</i>	contactin 2 (axonal)
<i>Col8a2</i>	collagen, type VIII, alpha 2
<i>Commd10</i>	COMM domain containing 10
<i>Commd6</i>	COMM domain containing 6
<i>Copg</i>	coatamer protein complex, subunit gamma
<i>Copz1</i>	coatamer protein complex, subunit zeta 1
<i>Cox11</i>	COX11 cytochrome c oxidase assembly homolog (yeast)
<i>Cpox</i>	coproporphyrinogen oxidase
<i>Cpsf3</i>	cleavage and polyadenylation specific factor 3, 73kDa
<i>Crebbp</i>	CREB binding protein
<i>Ctdnep1</i>	CTD nuclear envelope phosphatase 1

<i>Ctdp1</i>	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A) phosphatase, subunit 1
<i>Ctsh</i>	cathepsin H
<i>Cxcr4</i>	chemokine (C-X-C motif) receptor 4
<i>Csnk2a2</i>	casein kinase 2, alpha prime polypeptide
<i>Csrnp2</i>	cysteine-serine-rich nuclear protein 2
<i>Dag1</i>	dystroglycan 1 (dystrophin-associated glycoprotein 1)
<i>Dcaf6</i>	DDB1 and CUL4 associated factor 6
<i>Dck</i>	deoxycytidine kinase
<i>Dclk2</i>	doublecortin-like kinase 2
<i>Dda1</i>	DET1 and DDB1 associated 1
<i>Ddit3</i>	DNA-damage inducible transcript 3
<i>Ddx26b</i>	DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 26B
<i>Ddx27</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 27
<i>Ddx3x</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 3, X-linked
<i>Ddx49</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 49
<i>Ddx58</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 58
<i>Ddx6</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 6
<i>Dhx36</i>	DEAH (Asp-Glu-Ala-His) box polypeptide 36
<i>Dld</i>	dihydrolipoamide dehydrogenase
<i>Dlgap1</i>	discs, large (Drosophila) homolog-associated protein 1
<i>Dlgap3</i>	discs, large (Drosophila) homolog-associated protein 3
<i>Dnaja3</i>	DnaJ (Hsp40) homolog, subfamily A, member 3
<i>Dnmt3a</i>	DNA (cytosine-5-)-methyltransferase 3 alpha
<i>Dohh</i>	deoxyhypusine hydroxylase/monooxygenase
<i>Dos</i>	downstream of Srk11
<i>Dpp8</i>	dipeptidylpeptidase 8
<i>Dtnbp1</i>	distrobrevin binding protein 1
<i>Edc4</i>	enhancer of mRNA decapping 4
<i>Eif3d</i>	eukaryotic translation initiation factor 3, subunit D
<i>Eif3e</i>	eukaryotic translation initiation factor 3, subunit E
<i>Eif3s6ip</i>	eukaryotic translation initiation factor 3, subunit 6 interacting protein
<i>Eif4g1</i>	eukaryotic translation initiation factor 4 gamma, 1
<i>Eif5a2</i>	eukaryotic translation initiation factor 5A2
<i>Elavl3</i>	ELAV (embryonic lethal, abnormal vision, Drosophila)-like 3 (Hu antigen C)
<i>Elfn2-ps1</i>	extracellular leucine-rich repeat and fibronectin type III domain containing 2, pseudogene 1
<i>Elovl6</i>	ELOVL fatty acid elongase 6
<i>Eml4</i>	echinoderm microtubule associated protein like 4
<i>Enpp2</i>	ectonucleotide pyrophosphatase/phosphodiesterase 2
<i>Ensa</i>	endosulfine alpha
<i>Ep400</i>	E1A binding protein p400
<i>Ephb3</i>	Eph receptor B3
<i>Epn2</i>	epsin 2
<i>ErbB4</i>	v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)
<i>F5</i>	coagulation factor V (proaccelerin, labile factor)
<i>Fam134b</i>	family with sequence similarity 134, member B

<i>Fam183b</i>	family with sequence similarity 183, member B
<i>Fam18a</i>	family with sequence similarity 18, member A
<i>Fam195a</i>	family with sequence similarity 195, member A
<i>Fam91a1</i>	family with sequence similarity 91, member A1
<i>Fars2</i>	phenylalanyl-tRNA synthetase 2, mitochondrial
<i>Fbrsl1</i>	fibrosin-like 1
<i>Fbxl6</i>	F-box and leucine-rich repeat protein 6
<i>Fermt2</i>	fermitin family member 2
<i>Fibcd1</i>	fibrinogen C domain containing 1
<i>Fkbp1a</i>	FK506 binding protein 1a
<i>Fkbp2</i>	FK506 binding protein 2
<i>Fmod</i>	fibromodulin
<i>Fnbp1</i>	formin binding protein 1
<i>Fnbp4</i>	formin binding protein 4
<i>Fndc3a</i>	fibronectin type III domain containing 3a
<i>Folr1</i>	folate receptor 1 (adult)
<i>Fos</i>	FBJ osteosarcoma oncogene
<i>Frmd4b</i>	FERM domain containing 4B
<i>Fubp3</i>	far upstream element (FUSE) binding protein 3
<i>Fxyd1</i>	FXD domain-containing ion transport regulator 1
<i>Gapdh</i>	glyceraldehyde-3-phosphate dehydrogenase
<i>Gas5</i>	growth arrest specific 5
<i>Gca</i>	grancalcin
<i>Gga3</i>	golgi associated, gamma adaptin ear containing, ARF binding protein 3
<i>Gigyf1</i>	GRB10 interacting GYF protein 1
<i>Gigyf2</i>	GRB10 interacting GYF protein 2
<i>Gkap1</i>	G kinase anchoring protein 1
<i>Gls</i>	glutaminase
<i>Gltscr1</i>	glioma tumor suppressor candidate region gene 1
<i>Gnb5</i>	guanine nucleotide binding protein (G protein), beta 5
<i>Gng12</i>	guanine nucleotide binding protein (G protein), gamma 12
<i>Gns</i>	glucosamine (N-acetyl)-6-sulfatase
<i>Gpatch4</i>	G patch domain containing 4
<i>Grk6</i>	G protein-coupled receptor kinase 6
<i>Grm1</i>	glutamate receptor, metabotropic 1
<i>Grm8</i>	glutamate receptor, metabotropic 8
<i>Grxcr1</i>	glutaredoxin, cysteine rich 1
<i>Gtf3c6</i>	general transcription factor IIIC, polypeptide 6, alpha
<i>Gtpbp6</i>	GTP binding protein 6 (putative)
<i>Hapln2</i>	hyaluronan and proteoglycan link protein 2
<i>Hars2l</i>	histidyl-tRNA synthetase 2-like
<i>Hcfc1r1</i>	host cell factor C1 regulator 1 (XPO1-dependent)
<i>Hectd1</i>	HECT domain containing 1
<i>Hif1a</i>	hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)
<i>Hip1</i>	huntingtin interacting protein 1

<i>Hist2h2aa3</i>	histone cluster 2, H2aa3
<i>Hk1</i>	hexokinase 1
<i>Hnrnpf</i>	heterogeneous nuclear ribonucleoprotein F
<i>Hnrnpu</i>	heterogeneous nuclear ribonucleoprotein U
<i>Hnrpd</i>	heterogeneous nuclear ribonucleoprotein D
<i>Hsp90ab1</i>	heat shock protein 90 alpha (cytosolic), class B member 1
<i>Htr2c</i>	5-hydroxytryptamine (serotonin) receptor 2C
<i>Icam5</i>	intercellular adhesion molecule 5, telencephalin
<i>Ide</i>	insulin degrading enzyme
<i>Igf2</i>	insulin-like growth factor 2
<i>Igfbp2</i>	insulin-like growth factor binding protein 2
<i>Il16</i>	interleukin 16
<i>Immt</i>	inner membrane protein, mitochondrial
<i>Inpp5f</i>	inositol polyphosphate-5-phosphatase F
<i>Ints6</i>	integrator complex subunit 6
<i>Irak1</i>	interleukin-1 receptor-associated kinase 1
<i>Isca1</i>	iron-sulfur cluster assembly 1 homolog (S. cerevisiae)
<i>Itsn2</i>	intersectin 2
<i>Kat6a</i>	K(lysine) acetyltransferase 6A
<i>Kbtbd2</i>	kelch repeat and BTB (POZ) domain containing 2
<i>Kcna6</i>	potassium voltage gated channel, shaker related subfamily, member 6
<i>Kcnc2</i>	potassium voltage gated channel, Shaw-related subfamily, member 2
<i>Kcnd3</i>	potassium voltage-gated channel, Shal-related subfamily, member 3
<i>Kcne2</i>	potassium voltage-gated channel, Isk-related family, member 2
<i>Kcnj3</i>	potassium inwardly-rectifying channel, subfamily J, member 3
<i>Kcnk2</i>	potassium channel, subfamily K, member 2
<i>Kcnma1</i>	potassium large conductance calcium-activated channel, subfamily M, alpha member 1
<i>Kctd1</i>	potassium channel tetramerisation domain containing 1
<i>Kctd4</i>	potassium channel tetramerisation domain containing 4
<i>Kdm6a</i>	lysine (K)-specific demethylase 6A
<i>Khsrp</i>	KH-type splicing regulatory protein
<i>Kif1a</i>	kinesin family member 1A
<i>Kl</i>	Klotho
<i>Klc1</i>	kinesin light chain 1
<i>Klc3</i>	kinesin light chain 3
<i>Klf13</i>	Kruppel-like factor 13
<i>Klf3</i>	Kruppel-like factor 3 (basic)
<i>Kpna3</i>	karyopherin alpha 3
<i>Lace1</i>	lactation elevated 1
<i>Lama3</i>	laminin, alpha 3
<i>Ldb2</i>	LIM domain binding 2
<i>Lgals1</i>	lectin, galactoside-binding, soluble, 1
<i>Lin7c</i>	lin-7 homolog C (C. elegans)
<i>LOC100188932</i>	dolichyl-diphosphooligosaccharide--protein glycosyltransferase subunit 4
<i>LOC100294508</i>	dyslexia susceptibility 2-like

<i>LOC100360606</i>	zinc finger, RAN-binding domain containing 1 protein-like
<i>LOC100361182</i>	armadillo repeat containing, X-linked 5
<i>LOC100362458</i>	rCG23949-like
<i>LOC100363114</i>	eukaryotic translation initiation factor 4 gamma, 3-like
<i>LOC100365089</i>	rCG50929-like
<i>LOC100365679</i>	DENN/MADD domain containing 5B-like
<i>LOC294154</i>	similar to chromosome 6 open reading frame 106 isoform a
<i>LOC301124</i>	hypothetical LOC301124
<i>LOC501091</i>	similar to Discs large homolog 5 (Placenta and prostate DLG) (Discs large protein P-dlg)
<i>LOC680835</i>	similar to cullin 7
<i>LOC681251</i>	hypothetical protein LOC681251
<i>LOC681825</i>	similar to Prefoldin subunit 3 (Von Hippel-Lindau-binding protein 1) (VHL-binding protein 1)
<i>LOC682967</i>	similar to Protein disulfide-isomerase precursor (Thioredoxin domain-containing protein 10)
<i>LOC683519</i>	similar to ribosomal protein, mitochondrial, S22
<i>LOC684258</i>	similar to coiled-coil-helix-coiled-coil-helix domain containing 7
<i>LOC686944</i>	similar to Zinc finger protein 45 (BRC1744)
<i>LOC687029</i>	similar to differentially expressed in B16F10 1
<i>LOC688018</i>	similar to SH3-domain binding protein 3
<i>LOC688549</i>	hypothetical protein LOC688549
<i>LOC688786</i>	similar to CG14483-PA
<i>LOC689298</i>	hypothetical protein LOC689298
<i>LOC690769</i>	similar to zinc ring finger protein 1
<i>LOC691468</i>	similar to Zinc finger protein 84 (Zinc finger protein HPF2)
<i>Lrp11</i>	low density lipoprotein receptor-related protein 11
<i>Lrrc4b</i>	leucine rich repeat containing 4B
<i>Lrsam1</i>	leucine rich repeat and sterile alpha motif containing 1
<i>Lsm7</i>	LSM7 homolog, U6 small nuclear RNA associated (<i>S. cerevisiae</i>)
<i>Maged2</i>	melanoma antigen, family D, 2
<i>Map7</i>	microtubule-associated protein 7
<i>Map7d2</i>	MAP7 domain containing 2
<i>Mapk10</i>	mitogen activated protein kinase 10
<i>Mapk8ip2</i>	mitogen-activated protein kinase 8 interacting protein 2
<i>Mapre1</i>	microtubule-associated protein, RP/EB family, member 1
<i>Mars</i>	methionine-tRNA synthetase
<i>Mast3</i>	microtubule associated serine/threonine kinase 3
<i>Mau2</i>	Mau2 chromatid cohesion factor homolog (<i>C. elegans</i>)
<i>Mbp</i>	myelin basic protein
<i>Mcu</i>	mitochondrial calcium uniporter
<i>Mdk</i>	midkine
<i>Med1</i>	mediator complex subunit 1
<i>Mef2bnb</i>	MEF2B neighbor
<i>Mex3b</i>	mex3 homolog B (<i>C. elegans</i>)
<i>Mfrp</i>	membrane frizzled-related protein
<i>Mga</i>	MAX gene associated
<i>Mgea5</i>	meningioma expressed antigen 5 (hyaluronidase)

<i>Mgl</i>	monoglyceride lipase
<i>Mif</i>	macrophage migration inhibitory factor
<i>Mkl1</i>	megakaryoblastic leukemia (translocation) 1
<i>Mlec</i>	malectin
<i>Mllt6</i>	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog); translocated to, 6
<i>Mob1a</i>	MOB kinase activator 1A
<i>Mob1b</i>	MOB kinase activator 1B
<i>Mrpl42</i>	mitochondrial ribosomal protein L42
<i>Mrpl51</i>	mitochondrial ribosomal protein L51
<i>Mrps16</i>	mitochondrial ribosomal protein S16
<i>Mrps27</i>	mitochondrial ribosomal protein S27
<i>Mxd4</i>	Max dimerization protein 4
<i>Myt1</i>	myelin transcription factor 1
<i>Nacad</i>	NAC alpha domain containing
<i>Nasp</i>	nuclear autoantigenic sperm protein (histone-binding)
<i>Nat14</i>	N-acetyltransferase 14
<i>Nbr1</i>	neighbor of Brca1 gene 1
<i>Ncln</i>	nicalin
<i>Ncoa6</i>	nuclear receptor coactivator 6
<i>Ncor1</i>	nuclear receptor co-repressor 1
<i>Ndfip2</i>	Nedd4 family interacting protein 2
<i>Ndufa12</i>	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 12
<i>Ndufv3</i>	NADH dehydrogenase (ubiquinone) flavoprotein 3
<i>Nedd4</i>	neural precursor cell expressed, developmentally down-regulated 4
<i>Nedd9</i>	neural precursor cell expressed, developmentally down-regulated 9
<i>Nek1</i>	NIMA (never in mitosis gene a)-related kinase 1
<i>Neurod1</i>	neurogenic differentiation 1
<i>Nf2</i>	neurofibromin 2 (merlin)
<i>Nfia</i>	nuclear factor I/A
<i>Nfyc</i>	nuclear transcription factor-Y gamma
<i>Nicn1</i>	nicotin 1
<i>Nip30</i>	NEFA-interacting nuclear protein NIP30
<i>Nol4</i>	nucleolar protein 4
<i>Nolc1</i>	nucleolar and coiled-body phosphoprotein 1
<i>Nova2</i>	neuro-oncological ventral antigen 2
<i>Nucks1</i>	nuclear casein kinase and cyclin-dependent kinase substrate 1
<i>Nudcd3</i>	NudC domain containing 3
<i>Nupl1</i>	nucleoporin like 1
<i>Otx2</i>	orthodenticle homeobox 2
<i>Pabpc1</i>	poly(A) binding protein, cytoplasmic 1
<i>Pabpn1</i>	poly(A) binding protein, nuclear 1
<i>Pacrgl</i>	PARK2 co-regulated-like
<i>Padi2</i>	peptidyl arginine deiminase, type II
<i>Paf1</i>	Paf1, RNA polymerase II associated factor, homolog (S. cerevisiae)
<i>Pank2</i>	pantothenate kinase 2 (Hallervorden-Spatz syndrome)

<i>Papolg</i>	poly(A) polymerase gamma
<i>Pbx1</i>	pre-B-cell leukemia homeobox 1
<i>Pbxip1</i>	pre-B-cell leukemia homeobox interacting protein 1
<i>Pcbd2</i>	perin 4 alpha carbinoamine dehydratase/dimerization cofactor of hepacocyte nuclear factor 1 alpha 2
<i>Pde4d</i>	phosphodiesterase 4D, cAMP-specific
<i>Pdia4</i>	protein disulfide isomerase family A, member 4
<i>Pdlim5</i>	PDZ and LIM domain 5
<i>Pdrg1</i>	p53 and DNA damage regulated 1
<i>Pds5b</i>	PDS5, regulator of cohesion maintenance, homolog B (S. cerevisiae)
<i>Pdzd4</i>	PDZ domain containing 4
<i>Pes1</i>	pescadillo homolog 1, containing BRCT domain (zebrafish)
<i>Pfkfb2</i>	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2
<i>Pfn1</i>	profilin 1
<i>Pgrmc2</i>	progesterone receptor membrane component 2
<i>Pias1</i>	protein inhibitor of activated STAT, 1
<i>Pik3ca</i>	phosphoinositide-3-kinase, catalytic, alpha polypeptide
<i>Pitpm2</i>	phosphatidylinositol transfer protein, membrane-associated 2
<i>Pla2g6</i>	phospholipase A2, group VI (cytosolic, calcium-independent)
<i>Plekhh1</i>	pleckstrin homology domain containing, family H (with MyTH4 domain) member 1
<i>Plekho1</i>	pleckstrin homology domain containing, family O member 1
<i>Pls3</i>	plastin 3
<i>Pltp</i>	phospholipid transfer protein
<i>Pnir</i>	PNN-interacting serine/arginine-rich protein
<i>Pnkd</i>	paroxysmal nonkinesigenic dyskinesia
<i>Pnmal2</i>	PNMA-like 2
<i>Polr2b</i>	polymerase (RNA) II (DNA directed) polypeptide B
<i>Pou3f3</i>	POU class 3 homeobox 3
<i>Ppp1r1a</i>	protein phosphatase 1, regulatory (inhibitor) subunit 1A
<i>Prcp</i>	prolylcarboxypeptidase (angiotensinase C)
<i>Prelid1</i>	PRELI domain containing 1
<i>Prkag2</i>	protein kinase, AMP-activated, gamma 2 non-catalytic subunit
<i>Prlr</i>	prolactin receptor
<i>Prpf3</i>	PRP3 pre-mRNA processing factor 3 homolog (S. cerevisiae)
<i>Prrc2c</i>	proline-rich coiled-coil 2C
<i>Psip1</i>	PC4 and SFRS1 interacting protein 1
<i>Psm1</i>	proteasome (prosome, macropain) 26S subunit, non-ATPase, 1
<i>Pspc1</i>	paraspeckle component 1
<i>Ptgds</i>	prostaglandin D2 synthase (brain)
<i>Ptgr2</i>	prostaglandin reductase 2
<i>Ptms</i>	parathymosin
<i>Ptprk</i>	protein tyrosine phosphatase, receptor type, K, extracellular region
<i>Puf60</i>	poly-U binding splicing factor 60
<i>Pvr1</i>	poliovirus receptor-related 1
<i>R3hdm2</i>	R3H domain containing 2
<i>Rab1b</i>	RAB1B, member RAS oncogene family

<i>Rab3gap2</i>	RAB3 GTPase activating protein subunit 2
<i>Raly</i>	RNA binding protein, autoantigenic (hnRNP-associated with lethal yellow homolog (mouse))
<i>Ramp2</i>	receptor (G protein-coupled) activity modifying protein 2
<i>Ranbp2</i>	RAN binding protein 2
<i>Ranbp6</i>	RAN binding protein 6
<i>Rasip1</i>	Ras interacting protein 1
<i>Rbbp5</i>	retinoblastoma binding protein 5
<i>Rbm15b</i>	RNA binding motif protein 15B
<i>Reps1</i>	RALBP1 associated Eps domain containing 1
<i>Rev3l</i>	REV3-like, catalytic subunit of DNA polymerase zeta (yeast)
<i>RGD1304884</i>	similar to RIKEN cDNA 6430548M08
<i>RGD1305793</i>	similar to hypothetical protein FLJ20154
<i>RGD1306151</i>	similar to hypothetical protein DKFZp761D0211
<i>RGD1306556</i>	similar to hypothetical protein A530094D01
<i>RGD1307752</i>	similar to RIKEN cDNA 1110008F13
<i>RGD1308143</i>	similar to D330021B20 protein
<i>RGD1309079</i>	similar to Ab2-095
<i>RGD1309735</i>	similar to CG14977-PA
<i>RGD1560871</i>	similar to plexin 1
<i>RGD1561963</i>	similar to Dedicator of cytokinesis protein 10 (Protein zizimin 3)
<i>RGD1564964</i>	similar to WD repeat domain 11 protein
<i>RGD1565257</i>	similar to zinc finger protein 650
<i>RGD1565675</i>	similar to RIKEN cDNA 2410022L05
<i>Rgp1</i>	RGP1 retrograde golgi transport homolog (S. cerevisiae)
<i>Rilpl1</i>	Rab interacting lysosomal protein-like 1
<i>Rnd3</i>	Rho family GTPase 3
<i>Rnf126</i>	ring finger protein 126
<i>Rnf166</i>	ring finger protein 166
<i>Rpa1</i>	replication protein A1
<i>Rpia</i>	ribose 5-phosphate isomerase A
<i>Rpl36a1</i>	ribosomal protein L36a-like
<i>Rps17</i>	ribosomal protein S17
<i>Rps21</i>	ribosomal protein S21
<i>Rps24</i>	ribosomal protein S24
<i>Rpsa</i>	ribosomal protein SA
<i>Rsbn1</i>	round spermatid basic protein 1
<i>Rsbn1l</i>	round spermatid basic protein 1-like
<i>RT1-CE16</i>	RT1 class I, locus CE16
<i>Rtkn</i>	rhotekin
<i>Rtp4</i>	receptor (chemosensory) transporter protein 4
<i>Rufy3</i>	RUN and FYVE domain containing 3
<i>Scamp5</i>	secretory carrier membrane protein 5
<i>Scgb1c1</i>	secretoglobin, family 1C, member 1
<i>Sdccag1</i>	serologically defined colon cancer antigen 1
<i>Sdccag3</i>	serologically defined colon cancer antigen 3

<i>Sec23a</i>	Sec23 homolog A (<i>S. cerevisiae</i>)
<i>Sec3l1</i>	SEC3-like 1 (<i>S. cerevisiae</i>)
<i>Sec61a1</i>	Sec61 alpha 1 subunit (<i>S. cerevisiae</i>)
<i>Sec63</i>	SEC63 homolog (<i>S. cerevisiae</i>)
<i>Sesn1</i>	sestrin 1
<i>Sfxn1</i>	sideroflexin 1
<i>Sgta</i>	small glutamine-rich tetratricopeptide repeat (TPR)-containing, alpha
<i>Sh3gl2</i>	SH3-domain GRB2-like 2
<i>Shank2</i>	SH3 and multiple ankyrin repeat domains 2
<i>Shc2</i>	SHC (Src homology 2 domain containing) transforming protein 2
<i>Slbp</i>	stem-loop binding protein
<i>Slc11a2</i>	solute carrier family 11 (proton-coupled divalent metal ion transporters), member 2
<i>Slc13a4</i>	solute carrier family 13 (sodium/sulfate symporters), member 4
<i>Slc27a4</i>	solute carrier family 27 (fatty acid transporter), member 4
<i>Slc39a7</i>	solute carrier family 39 (zinc transporter), member 7
<i>Slc9a1</i>	solute carrier family 9 (sodium/hydrogen exchanger), member 1
<i>Slco1a5</i>	solute carrier organic anion transporter family, member 1a5
<i>Smarca4</i>	SMN/SMN-related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4
<i>Smarca5</i>	SMN/SMN-related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 5
<i>Smyd3</i>	SET and MYND domain containing 3
<i>Snap29</i>	synaptosomal-associated protein 29
<i>Snapc2</i>	small nuclear RNA activating complex, polypeptide 2
<i>Sncb</i>	synuclein, beta
<i>Snrpf</i>	small nuclear ribonucleoprotein polypeptide F
<i>Snrpg</i>	small nuclear ribonucleoprotein polypeptide G
<i>Snx16</i>	sorting nexin 16
<i>Snx27</i>	sorting nexin family member 27
<i>Sostdc1</i>	sclerostin domain containing 1
<i>Spns1</i>	spinster homolog 1 (<i>Drosophila</i>)
<i>Sptbn4</i>	spectrin, beta, non-erythrocytic 4
<i>Srek1ip1</i>	SREK1-interacting protein 1
<i>Srf</i>	serum response factor (c-fos serum response element-binding transcription factor)
<i>Srrm1</i>	serine/arginine repetitive matrix 1
<i>Srrm2</i>	serine/arginine repetitive matrix 2
<i>Srsf11</i>	serine/arginine-rich splicing factor 11
<i>Ssr1</i>	signal sequence receptor, alpha
<i>Stk11</i>	serine/threonine kinase 11
<i>Stk25</i>	serine/threonine kinase 25
<i>Stk39</i>	serine threonine kinase 39
<i>Stx18</i>	syntaxin 18
<i>Stx6</i>	syntaxin 6
<i>Sv2b</i>	synaptic vesicle glycoprotein 2b
<i>Sybu</i>	syntabulin (syntaxin-interacting)
<i>Synj2bp</i>	synaptojanin 2 binding protein
<i>Syt16</i>	synaptotagmin XVI

<i>Syt7</i>	synaptotagmin VII
<i>Taf1d</i>	TATA box binding protein (Tbp)-associated factor, RNA polymerase I, D
<i>Taf9b</i>	TAF9B RNA polymerase II, TATA box binding protein (TBP)-associated factor
<i>Tars2</i>	threonyl-tRNA synthetase 2, mitochondrial (putative)
<i>Tbc1d15</i>	TBC1 domain family, member 15
<i>Tbl1x</i>	transducin (beta)-like 1 X-linked
<i>Tcf12</i>	transcription factor 12
<i>Tcn2</i>	transcobalamin 2
<i>Tcta</i>	T-cell leukemia translocation altered gene
<i>Tef</i>	thyrotrophic embryonic factor
<i>Thoc2</i>	THO complex 2
<i>Timm13</i>	translocase of inner mitochondrial membrane 13 homolog (yeast)
<i>Tlx3</i>	T-cell leukemia, homeobox 3
<i>Tm9sf4</i>	transmembrane 9 superfamily protein member 4
<i>Tmem33</i>	transmembrane protein 33
<i>Tmx4</i>	thioredoxin-related transmembrane protein 4
<i>Tollip</i>	toll interacting protein
<i>Tpm3</i>	tropomyosin 3, gamma
<i>Tpr</i>	translocated promoter region (to activated MET oncogene)
<i>Trim47</i>	tripartite motif-containing 47
<i>Trio</i>	triple functional domain (PTPRF interacting)
<i>Trpm7</i>	transient receptor potential cation channel, subfamily M, member 7
<i>Ttl</i>	tubulin tyrosine ligase
<i>Ttr</i>	transferrin
<i>Txn1</i>	thioredoxin 1
<i>Ttyh1</i>	tweety homolog 1 (Drosophila)
<i>Uba5</i>	ubiquitin-like modifier activating enzyme 5
<i>Uba6</i>	ubiquitin-like modifier activating enzyme 6
<i>Ubl3</i>	ubiquitin-like 3
<i>Ubr2</i>	ubiquitin protein ligase E3 component n-recognin 2
<i>Ucma</i>	upper zone of growth plate and cartilage matrix associated
<i>Ugp2</i>	UDP-glucose pyrophosphorylase 2
<i>Upf3a</i>	UPF3 regulator of nonsense transcripts homolog A (yeast)
<i>Usp25</i>	ubiquitin specific peptidase 25
<i>Usp46</i>	ubiquitin specific peptidase 46
<i>Vps45</i>	vacuolar protein sorting 45 homolog (S. cerevisiae)
<i>Vps4a</i>	vacuolar protein sorting 4 homolog A (S. cerevisiae)
<i>Vrk1</i>	vaccinia related kinase 1
<i>Wbp1</i>	WW domain binding protein 1
<i>Wdr7</i>	WD repeat domain 7
<i>Whsc1l1</i>	Wolf-Hirschhorn syndrome candidate 1-like 1 (human)
<i>Wwc1</i>	WW and C2 domain containing 1
<i>Xylt2</i>	xylosyltransferase II
<i>Yaf2</i>	YY1 associated factor 2
<i>Yip1</i>	Yip1 domain family, member 1

<i>Ythdf2</i>	YTH domain family, member 2
<i>Zfand5</i>	zinc finger, AN1-type domain 5
<i>Zfp26</i>	zinc finger protein 26
<i>Zfp329</i>	zinc finger protein 329
<i>Zfp523</i>	zinc finger protein 523
<i>Zfp61</i>	zinc finger protein 61
<i>Zfp709l2</i>	zinc finger protein 709-like 2
<i>Zmym6</i>	zinc finger, MYM-type 6
<i>Zscan10</i>	zinc finger and SCAN domain containing 10

Supplemetray Table 2. List of up- and downregulated genes in the hippocampal formation after chronic DPN treatment. P Adj, P Adjusted; FC, fold change.

UPREGULATED GENES				
logFC	FC	P Adj	Symbol	Description
4.863	29.10	0.005	<i>Ttr</i>	transferrin
3.991	15.89	0.013	<i>Cldn2</i>	claudin 2
3.143	8.834	0.031	<i>Kl</i>	Klotho
3.105	8.602	0.015	<i>Igfbp2</i>	insulin-like growth factor binding protein 2
2.852	7.219	0.017	<i>Scgb1c1</i>	secretoglobin, family 1C, member 1
2.730	6.635	0.014	<i>Folr1</i>	folate receptor 1 (adult)
2.670	6.366	0.018	<i>Prlr</i>	prolactin receptor
2.640	6.235	0.031	<i>Sostdc1</i>	sclerostin domain containing 1
2.325	5.009	0.008	<i>Snrpg</i>	small nuclear ribonucleoprotein polypeptide G
2.313	4.968	0.007	<i>Ptgds</i>	prostaglandin D2 synthase (brain)
2.305	4.940	0.032	<i>Igf2</i>	insulin-like growth factor 2
2.279	4.854	0.013	<i>Mlec</i>	malectin
2.185	4.547	0.006	<i>Sec63</i>	SEC63 homolog (S. cerevisiae)
2.173	4.509	0.047	<i>Mfrp</i>	membrane frizzled-related protein
2.136	4.397	0.006	<i>Sptbn4</i>	spectrin, beta, non-erythrocytic 4
2.068	4.193	0.013	<i>Mdk</i>	midkine
2.061	4.173	0.036	<i>Ace</i>	angiotensin I converting enzyme (peptidyl-dipeptidase A) 1
2.055	4.156	0.007	<i>Pvr1</i>	poliovirus receptor-related 1
1.913	3.767	0.014	<i>Hnrnpf</i>	heterogeneous nuclear ribonucleoprotein F
1.911	3.760	0.040	<i>Slc13a4</i>	solute carrier family 13 (sodium/sulfate symporters), member 4
1.891	3.710	0.005	<i>Hist2h2aa3</i>	histone cluster 2, H2aa3
1.838	3.575	0.061	<i>F5</i>	coagulation factor V (proaccelerin, labile factor)
1.836	3.570	0.005	<i>Gigyf2</i>	GRB10 interacting GYF protein 2
1.833	3.562	0.005	<i>Ccar1</i>	cell division cycle and apoptosis regulator 1
1.827	3.548	0.011	<i>Sec3l1</i>	SEC3-like 1 (S. cerevisiae)
1.746	3.354	0.008	<i>Yip1</i>	Yip1 domain family, member 1
1.745	3.351	0.005	<i>Mllt6</i>	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog); translocated to, 6
1.721	3.296	0.007	<i>Arhgap32</i>	Rho GTPase activating protein 32
1.680	3.204	0.030	<i>Rpsa</i>	ribosomal protein SA
1.669	3.180	0.006	<i>Tbl1x</i>	transducin (beta)-like 1 X-linked
1.658	3.155	0.010	<i>Stx6</i>	syntaxin 6
1.655	3.150	0.078	<i>Kcne2</i>	potassium voltage-gated channel, Isk-related family, member 2
1.655	3.149	0.012	<i>Pds5b</i>	PDS5, regulator of cohesion maintenance, homolog B (S. cerevisiae)
1.627	3.089	0.006	<i>Klc3</i>	kinesin light chain 3
1.611	3.055	0.006	<i>Ssr1</i>	signal sequence receptor, alpha
1.590	3.010	0.003	<i>Inpp5f</i>	inositol polyphosphate-5-phosphatase F
1.586	3.003	0.009	<i>Phip</i>	Pleckstrin homology domain interacting protein
1.577	2.984	0.008	<i>Agtpbp1</i>	ATP/GTP binding protein 1
1.571	2.972	0.016	<i>Hapln2</i>	hyaluronan and proteoglycan link protein 2
1.571	2.971	0.020	<i>Fibcd1</i>	fibrinogen C domain containing 1
1.570	2.970	0.010	<i>Mrps27</i>	mitochondrial ribosomal protein S27
1.561	2.950	0.010	<i>Nupl1</i>	nucleoporin like 1
1.536	2.900	0.010	<i>Baz2b</i>	bromodomain adjacent to zinc finger domain, 2B
1.528	2.883	0.008	<i>Adam11</i>	ADAM metalloproteinase domain 11
1.527	2.881	0.014	<i>Hk1</i>	hexokinase 1
1.501	2.830	0.005	<i>Prkag2</i>	protein kinase, AMP-activated, gamma 2 non-catalytic subunit
1.499	2.826	0.009	<i>Slc9a1</i>	solute carrier family 9 (sodium/hydrogen exchanger), member 1
1.498	2.824	0.010	<i>Pcbd2</i>	pterin 4 alpha carbinolamine dehydratase/dimerization cofactor of hepatocyte nuclear factor 1
1.484	2.797	0.006	<i>Gtpbp6</i>	GTP binding protein 6 (putative)
1.483	2.796	0.005	<i>Lrrc4b</i>	leucine rich repeat containing 4B

2.794	0.006	<i>Acbd4</i>	acyl-CoA binding domain containing 4
2.792	0.010	<i>Atp5l</i>	ATP synthase, H+ transporting, mitochondrial Fo complex, subunit G
2.782	0.024	<i>Elf3d</i>	eukaryotic translation initiation factor 3, subunit D
2.778	0.049	<i>Col8a2</i>	collagen, type VIII, alpha 2
2.734	0.009	<i>Adcyap1r1</i>	adenylate cyclase activating polypeptide 1 receptor 1
2.731	0.007	<i>Stk25</i>	serine/threonine kinase 25
2.719	0.006	<i>Pbx1</i>	pre-B-cell leukemia homeobox 1
2.717	0.024	<i>Pgrmc2</i>	progesterone receptor membrane component 2
2.716	0.005	<i>Amt</i>	aminomethyltransferase
2.698	0.053	<i>Slco1a5</i>	solute carrier organic anion transporter family, member 1a5
2.695	0.011	<i>Pfn1</i>	profilin 1
2.681	0.033	<i>Slc39a7</i>	solute carrier family 39 (zinc transporter), member 7
2.676	0.010	<i>Tm9sf4</i>	transmembrane 9 superfamily protein member 4
2.676	0.005	<i>Myt1</i>	myelin transcription factor 1
2.672	0.030	<i>Prpf3</i>	PRP3 pre-mRNA processing factor 3 homolog (S. cerevisiae)
2.660	0.008	<i>Cdk10</i>	cyclin-dependent kinase 10
2.657	0.009	<i>Icam5</i>	intercellular adhesion molecule 5, telencephalin
2.648	0.001	<i>Sdccag3</i>	serologically defined colon cancer antigen 3
2.643	0.015	<i>Clptm1l</i>	CLPTM1-like
2.632	0.015	<i>Ubr2</i>	ubiquitin protein ligase E3 component n-recogin 2
2.631	0.007	<i>Sncb</i>	synuclein, beta
2.625	0.017	<i>Pabpn1</i>	poly(A) binding protein, nuclear 1
2.616	0.009	<i>Abcc1</i>	ATP-binding cassette, subfamily C (CFTR/MRP), member 1
2.615	0.038	<i>Raly</i>	RNA binding protein, autoantigenic (hnRNP-associated with lethal yellow homolog (mouse))
2.612	0.015	<i>RT1-CE16</i>	RT1 class I, locus CE16
2.607	0.007	<i>Fnbp4</i>	formin binding protein 4
2.597	0.021	<i>Arfgap1</i>	ADP-ribosylation factor GTPase activating protein 1
2.595	0.008	<i>Mbp</i>	myelin basic protein
2.593	0.005	<i>Taf1d</i>	TATA box binding protein (Tbp)-associated factor, RNA polymerase I, D
2.593	0.011	<i>LOC688786</i>	similar to CG14483-PA
2.588	0.011	<i>Srsf11</i>	serine/arginine-rich splicing factor 11
2.586	0.014	<i>Alkbh</i>	alkB, alkylation repair homolog (E. coli)
2.586	0.009	<i>Lrsam1</i>	leucine rich repeat and sterile alpha motif containing 1
2.584	0.014	<i>Rab1b</i>	RAB1B, member RAS oncogene family
2.578	0.011	<i>Gltscr1</i>	glioma tumor suppressor candidate region gene 1
2.553	0.013	<i>Xylt2</i>	xylosyltransferase II
2.553	0.070	<i>Ephb3</i>	Eph receptor B3
2.539	0.020	<i>Ncor1</i>	nuclear receptor co-repressor 1
2.535	0.011	<i>Mcu</i>	mitochondrial calcium uniporter
2.534	0.007	<i>Irak1</i>	interleukin-1 receptor-associated kinase 1
2.530	0.022	<i>Tpm3</i>	tropomyosin 3, gamma
2.521	0.007	<i>LOC301124</i>	hypothetical LOC301124
2.517	0.008	<i>Mapk8ip2</i>	mitogen-activated protein kinase 8 interacting protein 2
2.513	0.021	<i>Calm4</i>	calmodulin-like 4
2.508	0.007	<i>Mkl1</i>	megakaryoblastic leukemia (translocation) 1
2.507	0.015	<i>LOC100365679</i>	DENN/MADD domain containing 5B-like
2.502	0.011	<i>Rps21</i>	ribosomal protein S21
2.498	0.008	<i>Dlgap3</i>	discs, large (Drosophila) homolog-associated protein 3
2.497	0.008	<i>Sh3gl2</i>	SH3-domain GRB2-like 2
2.497	0.028	<i>Mau2</i>	Mau2 chromatid cohesion factor homolog (C. elegans)
2.493	0.022	<i>Pitpm2</i>	phosphatidylinositol transfer protein, membrane-associated 2
2.492	0.011	<i>Immt</i>	inner membrane protein, mitochondrial
2.483	0.009	<i>Srf</i>	serum response factor (c-fos serum response element-binding transcription factor)

2.466	0.006	<i>Shank2</i>	SH3 and multiple ankyrin repeat domains 2
2.449	0.015	<i>Ash1l</i>	ash1 (absent, small, or homeotic)-like (Drosophila)
2.448	0.021	<i>Map7d2</i>	MAP7 domain containing 2
2.447	0.017	<i>Pnmal2</i>	PNMA-like 2
2.439	0.016	<i>Dos</i>	downstream of Stk11
2.438	0.015	<i>LOC294154</i>	similar to chromosome 6 open reading frame 106 isoform a
2.423	0.008	<i>Tcf12</i>	transcription factor 12
2.420	0.017	<i>Anapc11</i>	anaphase promoting complex subunit 11
2.418	0.008	<i>Ppp1r1a</i>	protein phosphatase 1, regulatory (inhibitor) subunit 1A
2.415	0.017	<i>Cacna1a</i>	calcium channel, voltage-dependent, P/Q type, alpha 1A subunit
2.413	0.023	<i>Nova2</i>	neuro-oncological ventral antigen 2
2.411	0.026	<i>Grm1</i>	glutamate receptor, metabotropic 1
2.406	0.022	<i>Ptms</i>	parathyromosin
2.401	0.009	<i>Dtnbp1</i>	distrobrein binding protein 1
2.398	0.006	<i>Grk6</i>	G protein-coupled receptor kinase 6
2.398	0.026	<i>Smarca4</i>	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, 4
2.396	0.016	<i>Bloc1s1</i>	biogenesis of lysosomal organelles complex-1, subunit 1
2.395	0.006	<i>Ranbp6</i>	RAN binding protein 6
2.394	0.023	<i>Upf3a</i>	UPF3 regulator of nonsense transcripts homolog A (yeast)
2.391	0.011	<i>Rps17</i>	ribosomal protein S17
2.386	0.008	<i>Csnk2a2</i>	casein kinase 2, alpha prime polypeptide
2.384	0.017	<i>Pou3f3</i>	POU class 3 homeobox 3
2.375	0.008	<i>RGD1309735</i>	similar to CG14977-PA
2.374	0.005	<i>Akip1</i>	A kinase (PRKA) interacting protein 1
2.368	0.006	<i>Rps24</i>	ribosomal protein S24
2.367	0.006	<i>Cldn12</i>	claudin 12
2.365	0.014	<i>Fbxl6</i>	F-box and leucine-rich repeat protein 6
2.365	0.016	<i>RGD1304884</i>	similar to RIKEN cDNA 6430548M08
2.364	0.008	<i>Cdv3</i>	carnitine deficiency-associated gene expressed in ventricle 3 homolog (mouse)
2.358	0.008	<i>Mapk10</i>	mitogen activated protein kinase 10
2.344	0.006	<i>Rnf126</i>	ring finger protein 126
2.344	0.007	<i>Cd59</i>	CD59 molecule, complement regulatory protein
2.343	0.018	<i>Isca1</i>	iron-sulfur cluster assembly 1 homolog (S. cerevisiae)
2.343	0.022	<i>R3hdm2</i>	R3H domain containing 2
2.342	0.009	<i>Plekho1</i>	pleckstrin homology domain containing, family O member 1
2.339	0.021	<i>Epn2</i>	epsin 2
2.339	0.007	<i>Vps45</i>	vacuolar protein sorting 45 homolog (S. cerevisiae)
2.337	0.069	<i>Htr2c</i>	5-hydroxytryptamine (serotonin) receptor 2C
2.335	0.007	<i>Snap29</i>	synaptosomal-associated protein 29
2.335	0.010	<i>Fnbp1</i>	formin binding protein 1
2.330	0.014	<i>Hnrpd</i>	heterogeneous nuclear ribonucleoprotein D
2.328	0.008	<i>Sec61a1</i>	Sec61 alpha 1 subunit (S. cerevisiae)
2.323	0.020	<i>Pes1</i>	pescadillo homolog 1, containing BRCT domain (zebrafish)
2.317	0.018	<i>Mef2bnb</i>	MEF2B neighbor
2.316	0.018	<i>Cntn2</i>	contactin 2 (axonal)
2.315	0.016	<i>Hsp90ab1</i>	heat shock protein 90 alpha (cytosolic), class B member 1
2.311	0.023	<i>Prelid1</i>	PRELI domain containing 1
2.311	0.010	<i>Gga3</i>	golgi associated, gamma adaptin ear containing, ARF binding protein 3
2.300	0.012	<i>Timm13</i>	translocase of inner mitochondrial membrane 13 homolog (yeast)
2.299	0.010	<i>Pdlim5</i>	PDZ and LIM domain 5
2.295	0.018	<i>Nfyc</i>	nuclear transcription factor-Y gamma
2.294	0.077	<i>Fmod</i>	fibromodulin
2.292	0.011	<i>Reps1</i>	RALBP1 associated Eps domain containing 1

2.289	0.019	<i>Tmx4</i>	thioredoxin-related transmembrane protein 4
2.288	0.007	<i>Yaf2</i>	YY1 associated factor 2
2.288	0.012	<i>Ramp2</i>	receptor (G protein-coupled) activity modifying protein 2
2.286	0.009	<i>Pias1</i>	protein inhibitor of activated STAT, 1
2.283	0.023	<i>Ensa</i>	endosulfine alpha
2.281	0.007	<i>LOC100294508</i>	dyslexia susceptibility 2-like
2.279	0.020	<i>Mast3</i>	microtubule associated serine/threonine kinase 3
2.277	0.022	<i>Uba5</i>	ubiquitin-like modifier activating enzyme 5
2.274	0.005	<i>Klf13</i>	Kruppel-like factor 13
2.273	0.006	<i>Hip1</i>	huntingtin interacting protein 1
2.270	0.008	<i>Cerk</i>	ceramide kinase
2.270	0.006	<i>Dpp8</i>	dipeptidylpeptidase 8
2.270	0.015	<i>Fkbp1a</i>	FK506 binding protein 1a
2.269	0.008	<i>Ptpkr</i>	protein tyrosine phosphatase, receptor type, K, extracellular region
2.269	0.013	<i>Psmd1</i>	proteasome (prosome, macropain) 26S subunit, non-ATPase, 1
2.268	0.012	<i>Kif1a</i>	kinesin family member 1A
2.268	0.009	<i>Stk39</i>	serine threonine kinase 39
2.267	0.011	<i>LOC100360606</i>	zinc finger, RAN-binding domain containing 1 protein-like
2.263	0.010	<i>Maged2</i>	melanoma antigen, family D, 2
2.261	0.007	<i>Smyd3</i>	SET and MYND domain containing 3
2.261	0.010	<i>Srrm1</i>	serine/arginine repetitive matrix 1
2.259	0.015	<i>Eif4g1</i>	eukaryotic translation initiation factor 4 gamma, 1
2.249	0.006	<i>Cnot6l</i>	CCR4-NOT transcription complex, subunit 6-like
2.247	0.031	<i>Nacad</i>	NAC alpha domain containing
2.240	0.043	<i>Ddit3</i>	DNA-damage inducible transcript 3
2.239	0.008	<i>Txn1</i>	thioredoxin 1
2.239	0.006	<i>Rnf166</i>	ring finger protein 166
2.237	0.007	<i>A2m</i>	alpha-2-macroglobulin
2.235	0.007	<i>ErbB4</i>	v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)
2.234	0.015	<i>Tars2</i>	threonyl-tRNA synthetase 2, mitochondrial (putative)
2.234	0.008	<i>RGD1565675</i>	similar to RIKEN cDNA 2410022L05
2.233	0.068	<i>Aqp1</i>	aquaporin 1
2.233	0.010	<i>Pik3ca</i>	phosphoinositide-3-kinase, catalytic, alpha polypeptide
2.232	0.019	<i>Calm3</i>	calmodulin 3
2.232	0.008	<i>Nip30</i>	NEFA-interacting nuclear protein NIP30
2.232	0.006	<i>Mapre1</i>	microtubule-associated protein, RP/EB family, member 1
2.230	0.007	<i>Syt7</i>	synaptotagmin VII
2.228	0.017	<i>Atox1</i>	ATX1 antioxidant protein 1 homolog (yeast)
2.227	0.011	<i>Apc2</i>	adenomatosis polyposis coli 2
2.227	0.009	<i>Ctdp1</i>	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A) phosphatase, subunit 1
2.226	0.024	<i>LOC686944</i>	similar to Zinc finger protein 45 (BRC1744)
2.226	0.015	<i>Nbr1</i>	neighbor of Brca1 gene 1
2.219	0.020	<i>Ank3</i>	ankyrin 3, node of Ranvier
2.216	0.013	<i>Cldn11</i>	claudin 11
2.215	0.013	<i>Fkbp2</i>	FK506 binding protein 2
2.213	0.011	<i>Gnb5</i>	guanine nucleotide binding protein (G protein), beta 5
2.210	0.020	<i>Ddx27</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 27
2.209	0.023	<i>Bcl2l1</i>	Bcl2-like 1
2.209	0.014	<i>Pdrg1</i>	p53 and DNA damage regulated 1
2.208	0.022	<i>Dnmt3a</i>	DNA (cytosine-5-)-methyltransferase 3 alpha
2.204	0.012	<i>Slc27a4</i>	solute carrier family 27 (fatty acid transporter), member 4
2.203	0.008	<i>Hcfc1r1</i>	host cell factor C1 regulator 1 (XPO1-dependent)
2.203	0.009	<i>Snopc2</i>	small nuclear RNA activating complex, polypeptide 2

2.200	0.101	<i>Otx2</i>	orthodenticle homeobox 2
2.200	0.022	<i>Ddx49</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 49
2.195	0.006	<i>Sfxn1</i>	sideroflexin 1
2.195	0.006	<i>Abhd8</i>	abhydrolase domain containing 8
2.192	0.006	<i>Kctd1</i>	potassium channel tetramerisation domain containing 1
2.190	0.037	<i>Arl6ip4</i>	ADP-ribosylation-like factor 6 interacting protein 4
2.189	0.018	<i>Tpr</i>	translocated promoter region (to activated MET oncogene)
2.188	0.029	<i>Mars</i>	methionine-tRNA synthetase
2.183	0.011	<i>Ndufa12</i>	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 12
2.182	0.019	<i>Elovl6</i>	ELOVL fatty acid elongase 6
2.181	0.006	<i>Zfp523</i>	zinc finger protein 523
2.174	0.016	<i>Nicn1</i>	nicolin 1
2.172	0.011	<i>Fxyd1</i>	FXD domain-containing ion transport regulator 1
2.172	0.031	<i>Ttyh1</i>	tweety homolog 1 (Drosophila)
2.171	0.007	<i>Snx27</i>	sorting nexin family member 27
2.170	0.026	<i>Nucks1</i>	nuclear casein kinase and cyclin-dependent kinase substrate 1
2.169	0.011	<i>Akap2</i>	A kinase (PRKA) anchor protein 2
2.168	0.007	<i>LOC100188932</i>	dolichyl-diphosphooligosaccharide--protein glycosyltransferase subunit 4
2.168	0.028	<i>Rpl36a1</i>	ribosomal protein L36a-like
2.167	0.006	<i>Tef</i>	thyrotrophic embryonic factor
2.164	0.013	<i>Aig1</i>	androgen-induced 1
2.159	0.037	<i>Gns</i>	glucosamine (N-acetyl)-6-sulfatase
2.156	0.006	<i>Atp2a2</i>	ATPase, Ca++ transporting, cardiac muscle, slow twitch 2
2.152	0.006	<i>Sv2b</i>	synaptic vesicle glycoprotein 2b
2.152	0.034	<i>Thoc2</i>	THO complex 2
2.148	0.022	<i>Padi2</i>	peptidyl arginine deiminase, type II
2.146	0.008	<i>Gtf3c6</i>	general transcription factor IIIC, polypeptide 6, alpha
2.146	0.017	<i>Paf1</i>	Paf1, RNA polymerase II associated factor, homolog (S. cerevisiae)
2.146	0.005	<i>Chrm4</i>	cholinergic receptor, muscarinic 4
2.146	0.009	<i>Kcnc2</i>	potassium voltage gated channel, Shaw-related subfamily, member 2
2.146	0.015	<i>Itsn2</i>	intersectin 2
2.144	0.013	<i>Copg</i>	coatamer protein complex, subunit gamma
2.143	0.012	<i>Nat14</i>	N-acetyltransferase 14
2.142	0.025	<i>Spns1</i>	spinster homolog 1 (Drosophila)
2.142	0.014	<i>RGD1306556</i>	similar to hypothetical protein A530094D01
2.142	0.010	<i>Stx18</i>	syntaxin 18
2.140	0.013	<i>Slc11a2</i>	solute carrier family 11 (proton-coupled divalent metal ion transporters), member 2
2.137	0.012	<i>Sgta</i>	small glutamine-rich tetratricopeptide repeat (TPR)-containing, alpha
2.137	0.011	<i>Pls3</i>	plastin 3
2.134	0.014	<i>Pnir</i>	PNN-interacting serine/arginine-rich protein
2.134	0.019	<i>Kcnd3</i>	potassium voltage-gated channel, Shal-related subfamily, member 3
2.134	0.010	<i>Pde4d</i>	phosphodiesterase 4D, cAMP-specific
2.133	0.018	<i>Dcaf6</i>	DDB1 and CUL4 associated factor 6
2.131	0.017	<i>Hnrnpu</i>	heterogeneous nuclear ribonucleoprotein U
2.128	0.017	<i>Pbxip1</i>	pre-B-cell leukemia homeobox interacting protein 1
2.127	0.015	<i>Mrpl42</i>	mitochondrial ribosomal protein L42
2.127	0.016	<i>Lace1</i>	lactation elevated 1
2.127	0.016	<i>Kcna6</i>	potassium voltage gated channel, shaker related subfamily, member 6
2.124	0.018	<i>Kcnma1</i>	potassium large conductance calcium-activated channel, subfamily M, alpha member 1
2.124	0.027	<i>Ddx3x</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 3, X-linked
2.121	0.007	<i>Nedd4</i>	neural precursor cell expressed, developmentally down-regulated 4
2.119	0.011	<i>Dohh</i>	deoxyhypusine hydroxylase/monooxygenase
2.112	0.005	<i>Nfia</i>	nuclear factor I/A

2.111	0.005	<i>Eml4</i>	echinoderm microtubule associated protein like 4
2.111	0.011	<i>Synj2bp</i>	synaptojanin 2 binding protein
2.108	0.026	<i>Arl10</i>	ADP-ribosylation factor-like 10
2.107	0.013	<i>Mxd4</i>	Max dimerization protein 4
2.107	0.022	<i>LOC681825</i>	similar to Prefoldin subunit 3 (Von Hippel-Lindau-binding protein 1, VBP-1)
2.106	0.022	<i>Klc1</i>	kinesin light chain 1
2.105	0.017	<i>LOC683519</i>	similar to ribosomal protein, mitochondrial, S22
2.105	0.007	<i>Srek1p1</i>	SREK1-interacting protein 1
2.105	0.015	<i>Pnkd</i>	paroxysmal nonkinesigenic dyskinesia
2.104	0.010	<i>Nedd9</i>	neural precursor cell expressed, developmentally down-regulated 9
2.101	0.007	<i>Eif3s6ip</i>	eukaryotic translation initiation factor 3, subunit 6 interacting protein
2.100	0.010	<i>Eif3e</i>	eukaryotic translation initiation factor 3, subunit E
2.100	0.015	<i>Chst2</i>	carbohydrate sulfotransferase 2
2.098	0.013	<i>Ctsh</i>	cathepsin H
2.098	0.007	<i>Ptgr2</i>	prostaglandin reductase 2
2.097	0.010	<i>Snrpf</i>	small nuclear ribonucleoprotein polypeptide F
2.096	0.012	<i>Vps4a</i>	vacuolar protein sorting 4 homolog A (<i>S. cerevisiae</i>)
2.095	0.011	<i>Dag1</i>	dystroglycan 1 (dystrophin-associated glycoprotein 1)
2.093	0.015	<i>LOC688018</i>	similar to SH3-domain binding protein 3
2.093	0.018	<i>LOC501091</i>	similar to Discs large homolog 5 (Placenta and prostate DLG) (Discs large protein P-dlg)
2.091	0.019	<i>Wbp1</i>	VW domain binding protein 1
2.090	0.011	<i>Sybu</i>	syntabulin (syntaxin-interacting)
2.090	0.006	<i>Commd6</i>	COMM domain containing 6
2.090	0.005	<i>Cxcr4</i>	chemokine (C-X-C motif) receptor 4
2.088	0.049	<i>Nf2</i>	neurofibromin 2 (merlin)
2.088	0.010	<i>Amigo2</i>	adhesion molecule with Ig like domain 2
2.088	0.013	<i>Fam18a</i>	family with sequence similarity 18, member A
2.087	0.009	<i>RGD1561963</i>	similar to Dedicator of cytokinesis protein 10 (Protein zizimin 3)
2.085	0.020	<i>Pla2g6</i>	phospholipase A2, group VI (cytosolic, calcium-independent)
2.082	0.041	<i>RGD1560871</i>	similar to plexin 1
2.081	0.025	<i>Map7</i>	microtubule-associated protein 7
2.080	0.017	<i>Cbfa2t3</i>	core-binding factor, runt domain, alpha subunit 2; translocated to, 3
2.079	0.014	<i>Copz1</i>	coatamer protein complex, subunit zeta 1
2.079	0.009	<i>Gng12</i>	guanine nucleotide binding protein (G protein), gamma 12
2.077	0.023	<i>LOC691468</i>	similar to Zinc finger protein 84 (Zinc finger protein HPF2)
2.074	0.006	<i>Srrm2</i>	serine/arginine repetitive matrix 2
2.073	0.018	<i>Pltp</i>	phospholipid transfer protein
2.070	0.011	<i>Ttl</i>	tubulin tyrosine ligase
2.070	0.024	<i>Puf60</i>	poly-U binding splicing factor 60
2.069	0.011	<i>Prrc2c</i>	proline-rich coiled-coil 2C
2.069	0.017	<i>Khrrp</i>	KH-type splicing regulatory protein
2.067	0.008	<i>Cpsf3</i>	cleavage and polyadenylation specific factor 3, 73kDa
2.066	0.008	<i>Cdk7</i>	cyclin-dependent kinase 7
2.065	0.015	<i>Lsm7</i>	LSM7 homolog, U6 small nuclear RNA associated (<i>S. cerevisiae</i>)
2.063	0.006	<i>Rab3gap2</i>	RAB3 GTPase activating protein subunit 2
2.063	0.008	<i>Rbbp5</i>	retinoblastoma binding protein 5
2.060	0.015	<i>Atp5e</i>	ATP synthase, H ⁺ transporting, mitochondrial F1 complex, epsilon subunit
2.059	0.013	<i>Acadvl</i>	acyl-CoA dehydrogenase, very long chain
2.059	0.014	<i>Sdccag1</i>	serologically defined colon cancer antigen 1
2.057	0.008	<i>Rtkn</i>	rhotekin
2.056	0.005	<i>Hars2l</i>	histidyl-tRNA synthetase 2-like
2.054	0.011	<i>Pdia4</i>	protein disulfide isomerase family A, member 4
2.054	0.008	<i>Tcta</i>	T-cell leukemia translocation altered gene

2.054	0.007	<i>Ide</i>	insulin degrading enzyme
2.052	0.008	<i>Polr2b</i>	polymerase (RNA) II (DNA directed) polypeptide B
2.049	0.008	<i>Wdr7</i>	WD repeat domain 7
2.047	0.028	<i>Mrps16</i>	mitochondrial ribosomal protein S16
2.047	0.062	<i>Enpp2</i>	ectonucleotide pyrophosphatase/phosphodiesterase 2
2.045	0.009	<i>Gapdh</i>	glyceraldehyde-3-phosphate dehydrogenase
2.045	0.009	<i>Pdzd4</i>	PDZ domain containing 4
2.044	0.014	<i>Ncln</i>	nicalin
2.043	0.010	<i>Fam183b</i>	family with sequence similarity 183, member B
2.043	0.012	<i>Zfp61</i>	zinc finger protein 61
2.042	0.005	<i>Actr2</i>	ARP2 actin-related protein 2 homolog (yeast)
2.041	0.014	<i>Ndufv3</i>	NADH dehydrogenase (ubiquinone) flavoprotein 3
2.041	0.021	<i>Med1</i>	mediator complex subunit 1
2.039	0.018	<i>Gpatch4</i>	G patch domain containing 4
2.037	0.022	<i>Lgals1</i>	lectin, galactoside-binding, soluble, 1
2.037	0.019	<i>Fermt2</i>	fermitin family member 2
2.036	0.010	<i>Kcnj3</i>	potassium inwardly-rectifying channel, subfamily J, member 3
2.036	0.010	<i>RGD1565257</i>	similar to zinc finger protein 650
2.034	0.009	<i>Nolc1</i>	nucleolar and coiled-body phosphoprotein 1
2.034	0.013	<i>B9d1</i>	B9 protein domain 1
2.032	0.008	<i>Sesn1</i>	sestrin 1
2.030	0.005	<i>Akt1s1</i>	AKT1 substrate 1 (proline-rich)
2.027	0.009	<i>Agpat3</i>	1-acylglycerol-3-phosphate O-acyltransferase 3
2.025	0.028	<i>Pank2</i>	pantothenate kinase 2 (Hallervorden-Spatz syndrome)
2.025	0.019	<i>Edc4</i>	enhancer of mRNA decapping 4
2.024	0.008	<i>Ubl3</i>	ubiquitin-like 3
2.023	0.011	<i>Dnaja3</i>	DnaJ (Hsp40) homolog, subfamily A, member 3
2.023	0.009	<i>RGD1307752</i>	similar to RIKEN cDNA 1110008F13
2.022	0.017	<i>Rgp1</i>	RGP1 retrograde golgi transport homolog (S. cerevisiae)
2.021	0.058	<i>Zfp709l2</i>	zinc finger protein 709-like 2
2.018	0.013	<i>Il16</i>	interleukin 16
2.016	0.033	<i>Ctdnep1</i>	CTD nuclear envelope phosphatase 1
2.015	0.009	<i>Ddx6</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 6
2.014	0.008	<i>Dda1</i>	DET1 and DDB1 associated 1
2.014	0.005	<i>Mgea5</i>	meningioma expressed antigen 5 (hyaluronidase)
2.013	0.014	<i>Gas5</i>	growth arrest specific 5
2.013	0.022	<i>Nudcd3</i>	NudC domain containing 3
2.013	0.016	<i>Chd2</i>	chromodomain helicase DNA binding protein 2
2.012	0.006	<i>Dlgap1</i>	discs, large (Drosophila) homolog-associated protein 1
2.012	0.012	<i>LOC687029</i>	similar to differentially expressed in B16F10 1
2.011	0.013	<i>Scamp5</i>	secretory carrier membrane protein 5
2.011	0.011	<i>Mif</i>	macrophage migration inhibitory factor
2.010	0.023	<i>Hectd1</i>	HECT domain containing 1
2.010	0.012	<i>Rufy3</i>	RUN and FYVE domain containing 3
2.009	0.028	<i>RGD1306151</i>	similar to hypothetical protein DKFZp761D0211
2.008	0.005	<i>Mob1b</i>	MOB kinase activator 1B
2.007	0.009	<i>Chrm1</i>	cholinergic receptor, muscarinic 1
2.006	0.011	<i>Fars2</i>	phenylalanyl-tRNA synthetase 2, mitochondrial
2.006	0.013	<i>Mgll</i>	monoglyceride lipase
2.004	0.009	<i>Ep400</i>	E1A binding protein p400
2.004	0.008	<i>Tcn2</i>	transcobalamin 2
2.003	0.019	<i>Pfkfb2</i>	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2
2.002	0.006	<i>Tollip</i>	toll interacting protein

1.001	2.001	0.013
1.000	2.000	0.012
1.000	2.000	0.011

<i>Aimp1</i>	aminoacyl tRNA synthetase complex-interacting multifunctional protein 1
<i>RGD1305793</i>	similar to hypothetical protein FLJ20154
<i>LOC690769</i>	similar to zinc ring finger protein 1

DOWNREGULATED GENES

logFC	FC	P Adj	Symbol	Description
-0.999	0.500	0.008	<i>Bdkrb2</i>	bradykinin receptor B2
-1.002	0.499	0.007	<i>Kctd4</i>	potassium channel tetramerisation domain containing 4
-1.002	0.499	0.013	<i>Gls</i>	glutaminase
-1.004	0.499	0.047	<i>Fndc3a</i>	fibronectin type III domain containing 3a
-1.006	0.498	0.014	<i>LOC100365089</i>	rCG50929-like
-1.007	0.498	0.045	<i>Rtp4</i>	receptor (chemosensory) transporter protein 4
-1.008	0.497	0.013	<i>Fam134b</i>	family with sequence similarity 134, member B
-1.011	0.496	0.007	<i>LOC100363114</i>	eukaryotic translation initiation factor 4 gamma, 3-like
-1.012	0.496	0.018	<i>Eif5a2</i>	eukaryotic translation initiation factor 5A2
-1.014	0.495	0.016	<i>Snx16</i>	sorting nexin 16
-1.014	0.495	0.007	<i>Dclk2</i>	doublecortin-like kinase 2
-1.015	0.495	0.008	<i>Trim47</i>	tripartite motif-containing 47
-1.016	0.494	0.011	<i>Elavl3</i>	ELAV (embryonic lethal, abnormal vision, Drosophila)-like 3 (Hu antigen C)
-1.016	0.494	0.024	<i>Uba6</i>	ubiquitin-like modifier activating enzyme 6
-1.016	0.494	0.008	<i>Chst11</i>	carbohydrate (chondroitin 4) sulfotransferase 11
-1.018	0.494	0.122	<i>Nek1</i>	NIMA (never in mitosis gene a)-related kinase 1
-1.018	0.494	0.013	<i>Csrnp2</i>	cysteine-serine-rich nuclear protein 2
-1.019	0.494	0.021	<i>Gca</i>	granulocitin
-1.019	0.493	0.007	<i>Gigyf1</i>	GRB10 interacting GYF protein 1
-1.020	0.493	0.010	<i>Rev3l</i>	REV3-like, catalytic subunit of DNA polymerase zeta (yeast)
-1.022	0.492	0.005	<i>Kcnk2</i>	potassium channel, subfamily K, member 2
-1.024	0.492	0.005	<i>Cmtm4</i>	CKLF-like MARVEL transmembrane domain containing 4
-1.025	0.492	0.006	<i>LOC680835</i>	similar to cullin 7
-1.031	0.490	0.007	<i>Asap1</i>	ArlGAP with SH3 domain, ankyrin repeat and PH domain 1
-1.031	0.490	0.032	<i>Ddx58</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 58
-1.032	0.489	0.006	<i>Pspc1</i>	paraspeckle component 1
-1.033	0.489	0.007	<i>Mga</i>	MAX gene associated
-1.035	0.488	0.027	<i>Hif1a</i>	hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)
-1.035	0.488	0.007	<i>Arpp19</i>	cAMP-regulated phosphoprotein 19
-1.036	0.488	0.011	<i>Fam195a</i>	family with sequence similarity 195, member A
-1.036	0.488	0.074	<i>Smarca5</i>	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, 5
-1.037	0.487	0.018	<i>Bckdha</i>	branched chain ketoacid dehydrogenase E1, alpha polypeptide
-1.039	0.487	0.007	<i>LOC682967</i>	similar to Protein disulfide-isomerase precursor (Thioredoxin domain-containing protein 10)
-1.046	0.484	0.016	<i>Neurod1</i>	neurogenic differentiation 1
-1.047	0.484	0.036	<i>RGD1308143</i>	similar to D330021B20 protein
-1.051	0.483	0.020	<i>RGD1309079</i>	similar to Ab2-095
-1.051	0.483	0.051	<i>Fos</i>	FBJ osteosarcoma oncogene
-1.052	0.482	0.005	<i>Usp46</i>	ubiquitin specific peptidase 46
-1.054	0.482	0.006	<i>LOC688549</i>	hypothetical protein LOC688549
-1.056	0.481	0.007	<i>Rilpl1</i>	Rab interacting lysosomal protein-like 1
-1.057	0.480	0.018	<i>Arhgef26</i>	Rho guanine nucleotide exchange factor (GEF) 26
-1.061	0.479	0.006	<i>Kbtbd2</i>	kelch repeat and BTB (POZ) domain containing 2
-1.069	0.477	0.015	<i>Ndfip2</i>	Nedd4 family interacting protein 2
-1.073	0.475	0.080	<i>Papalg</i>	poly(A) polymerase gamma
-1.075	0.475	0.015	<i>Comm10</i>	COMM domain containing 10
-1.081	0.473	0.019	<i>Rasip1</i>	Ras interacting protein 1
-1.083	0.472	0.041	<i>Fbrsl1</i>	fibrosin-like 1
-1.084	0.472	0.024	<i>Prpc</i>	prolylcarboxypeptidase (angiotensinase C)
-1.087	0.471	0.008	<i>Shc2</i>	SHC (Src homology 2 domain containing) transforming protein 2
-1.089	0.470	0.007	<i>Cox11</i>	COX11 cytochrome c oxidase assembly homolog (yeast)
-1.089	0.470	0.021	<i>Mob1a</i>	MOB kinase activator 1A
-1.092	0.469	0.080	<i>Frm4b</i>	FERM domain containing 4B

0.468	0.021	<i>Whsc1l1</i>	Wolf-Hirschhorn syndrome candidate 1-like 1 (human)
0.467	0.013	<i>Zfp329</i>	zinc finger protein 329
0.467	0.010	<i>Plekhh1</i>	pleckstrin homology domain containing, family H (with MyTH4 domain) member 1
0.467	0.014	<i>Nasp</i>	nuclear autoantigenic sperm protein (histone-binding)
0.467	0.023	<i>Crebbp</i>	CREB binding protein
0.466	0.005	<i>Cdk13</i>	cyclin-dependent kinase 13
0.466	0.006	<i>Zfand5</i>	zinc finger, AN1-type domain 5
0.465	0.016	<i>Wwc1</i>	WW and C2 domain containing 1
0.463	0.029	<i>Ddx26b</i>	DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 26B
0.462	0.006	<i>Lrp11</i>	low density lipoprotein receptor-related protein 11
0.461	0.010	<i>Nol4</i>	nucleolar protein 4
0.461	0.021	<i>LOC100361182</i>	armadillo repeat containing, X-linked 5
0.460	0.015	<i>Ncoa6</i>	nuclear receptor coactivator 6
0.459	0.011	<i>Ugp2</i>	UDP-glucose pyrophosphorylase 2
0.459	0.085	<i>Arl13b</i>	ADP-ribosylation factor-like 13B
0.458	0.011	<i>Grxcr1</i>	glutaredoxin, cysteine rich 1
0.457	0.011	<i>Ucma</i>	upper zone of growth plate and cartilage matrix associated
0.457	0.008	<i>Ccdc25</i>	coiled-coil domain containing 25
0.456	0.009	<i>Dld</i>	dihydrolipoamide dehydrogenase
0.456	0.007	<i>Stk11</i>	serine/threonine kinase 11
0.456	0.011	<i>Kat6a</i>	K(lysine) acetyltransferase 6A
0.455	0.015	<i>Ythdf2</i>	YTH domain family, member 2
0.454	0.010	<i>Ces5a</i>	carboxylesterase 5A
0.454	0.027	<i>Fubp3</i>	far upstream element (FUSE) binding protein 3
0.454	0.005	<i>Zscan10</i>	zinc finger and SCAN domain containing 10
0.451	0.008	<i>Elfn2-ps1</i>	extracellular leucine-rich repeat and fibronectin type III domain containing 2, pseudogene
0.451	0.009	<i>LOC681251</i>	hypothetical protein LOC681251
0.450	0.006	<i>C2cd2l</i>	C2 calcium-dependent domain containing 2-like
0.446	0.013	<i>Rpa1</i>	replication protein A1
0.445	0.006	<i>Ldb2</i>	LIM domain binding 2
0.442	0.006	<i>Zmym6</i>	zinc finger, MYM-type 6
0.442	0.006	<i>Pabpc1</i>	poly(A) binding protein, cytoplasmic 1
0.442	0.012	<i>Amn1</i>	antagonist of mitotic exit network 1 homolog (S. cerevisiae)
0.440	0.009	<i>Camsap2</i>	calmodulin regulated spectrin-associated protein family, member 2
0.440	0.014	<i>Cdkn2c</i>	cyclin-dependent kinase inhibitor 2C (p18, inhibits CDK4)
0.439	0.031	<i>Abca1</i>	ATP-binding cassette, subfamily A (ABC1), member 1
0.437	0.013	<i>LOC684258</i>	similar to coiled-coil-helix-coiled-coil-helix domain containing 7
0.432	0.014	<i>Syt16</i>	synaptotagmin XVI
0.429	0.011	<i>Abcd2</i>	ATP-binding cassette, subfamily D (ALD), member 2
0.426	0.005	<i>Rsbm1</i>	round spermatid basic protein 1
0.424	0.020	<i>Kdm6a</i>	lysine (K)-specific demethylase 6A
0.422	0.008	<i>Ate1</i>	arginyltransferase 1
0.422	0.049	<i>Taf9b</i>	TAF9B RNA polymerase II, TATA box binding protein (TBP)-associated factor
0.421	0.008	<i>Mex3b</i>	mex3 homolog B (C. elegans)
0.419	0.006	<i>Dck</i>	deoxycytidine kinase
0.418	0.006	<i>LOC689298</i>	hypothetical protein LOC689298
0.418	0.045	<i>Psip1</i>	PC4 and SFRS1 interacting protein 1
0.417	0.010	<i>Tlx3</i>	T-cell leukemia, homeobox 3
0.416	0.042	<i>Tmem33</i>	transmembrane protein 33
0.416	0.007	<i>Cnfn</i>	cornifelin
0.412	0.007	<i>Gkap1</i>	G kinase anchoring protein 1
0.407	0.005	<i>Rbm15b</i>	RNA binding motif protein 15B
0.406	0.012	<i>Rnd3</i>	Rho family GTPase 3

0.405	0.041	<i>Dhx36</i>	DEAH (Asp-Glu-Ala-His) box polypeptide 36
0.401	0.013	<i>Ints6</i>	integrator complex subunit 6
0.401	0.060	<i>Zfp26</i>	zinc finger protein 26
0.399	0.013	<i>Rsbn1l</i>	round spermatid basic protein 1-like
0.398	0.028	<i>Lin7c</i>	lin-7 homolog C (C. elegans)
0.392	0.008	<i>Kpna3</i>	karyopherin alpha 3
0.391	0.026	<i>Usp25</i>	ubiquitin specific peptidase 25
0.390	0.008	<i>Vrk1</i>	vaccinia related kinase 1
0.389	0.006	<i>Rpia</i>	ribose 5-phosphate isomerase A
0.384	0.013	<i>Trio</i>	triple functional domain (PTPRF interacting)
0.383	0.015	<i>Pik3ca</i>	phosphoinositide-3-kinase, catalytic, alpha polypeptide
0.376	0.011	<i>Pacrgl</i>	PARK2 co-regulated-like
0.373	0.010	<i>Tbc1d15</i>	TBC1 domain family, member 15
0.366	0.025	<i>Trpm7</i>	transient receptor potential cation channel, subfamily M, member 7
0.366	0.011	<i>Grm8</i>	glutamate receptor, metabotropic 8
0.363	0.011	<i>Sec23a</i>	Sec23 homolog A (S. cerevisiae)
0.352	0.007	<i>Ranbp2</i>	RAN binding protein 2
0.337	0.009	<i>Klf3</i>	Kruppel-like factor 3 (basic)
0.328	0.018	<i>Fam91a1</i>	family with sequence similarity 91, member A1
0.312	0.007	<i>Acyp2</i>	acylphosphatase 2, muscle type
0.265	0.013	<i>Mrpl51</i>	mitochondrial ribosomal protein L51
0.220	0.020	<i>Slbp</i>	stem-loop binding protein

Supplementary Table 3 Functional annotation clustering. DPN-regulated genes were analyzed by DAVID v6.7 (12) bioinformatics tool. Functional annotation clustering was performed at high stringency. The annotation clusters were ranked based on their enrichment scores (ES). Top clusters indicate modulation of transcription, mRNA splicing, protein transport and neurotransmission.

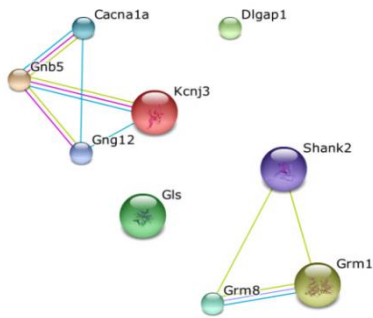
Cluster	ES	Count	P	Benjamini
Membrane-enclosed lumen Atp5e, Bcl2l, Crebbp, Ctdp1, Dnmt3a, Dnaja3, ep400, Fos, Mga, Paf1, Taf9b, Acadvl, A2m, Anapc11, Bckd4a, Calm1, F5, Cpox, Cdk7, Dld, Eif3sbip, Eif3e, Gtf3c6, Glis, Hnrnpf, Hif1a, Ide, Ints6, Med1, Mrpl51, Mrps16, Nf2, Ncor1, Ncoa6, Nfyc, Nolc1, Pspc1, Fars2, Polr2b, Pbx1, Pdia4, Rpa1, Rbbp5, Pes1, Snrpf, Sptbn4, Tars2, Tcf12, Tbl1x, Timm13, Tpr, Utx	4.39	53	2.1E-05	8.2E-03
mRNA metabolic process Bcl2l, Khsrp, Sfrs12ip1, Ccar1, Cpsf3, Eif3e, Hnrnpd, Hnrnpf, Hnrnpu, Pabpc1, Polr2b, Srrm1, Siahbp1, Slbp, Snrpf, Sfrs11	3.16	16	4.3E-04	2.6E-01
Protein transport Akap2, Arfgap1, Abca1, Rab1b, Sec23a, Sec61a1, Copg, Copz1, Kpna3, Mgea5, Nedd4, Nasp, Nupl1, Ramp2, Rtp4, Scamp5, Snx16, Snx27, Synj2bp, Snap29, Stx18, Stx6, Timm13, Vps4a, Vps45	2.24	24	3.4E-03	5.0E-01
Nuclear mRNA splicing Bcl2l2, Ccar1, Cpsf3, Hnrnpf, Hnrnpu, Polr2b, Srrm1, Snrpf, Sfrs11	2.18	9	6.5E-03	5.3E-01
Regulation of transcription Abca1, Crebbp, Ddit3, Fos, Fkbp1a, Klf13, Ndfip2, Smarca4, Yaf2, Anapc11, Bckdha, Arpp19, Cdk7, Csrnp2, Hif1a, Irak1, Mif, Med1, Mkl1, Mgea5, Nedd4, Neurod1, Nfia, Ncor1, Ncoa6, Nfyc, Nolc1, Otx2, Pbx1, Psmd1, Pias1, Stk11, Srf, Tbl1x	1.92	23	5.0E-03	5.8E-01
Fatty acid transport Ace, Abcc1, Bdkrb2, Slc27a4, Slco1a5	1.47	5	2.3E-02	6.6E-01
Regulation of carbohydrate metabolism Pfkfb2, Arpp19, Mif, Mgea5, Stk11	1.45	5	2.3E-02	6.6E-01
Nucleotide binding Pfkfb2, Arl13b, Actr2, Abca1, Abcd2, Atp2a2, Ddx49, Elavl3, Ephb3, Grk6, Gtpbp6, Rab1b, Rev3l, Rbm15b, Raly, Rnd3, Smarca4, Smarca5, Ugp2, Upf3a, Acadvl, Csnk2a2, Cdc2l5, Chd2, Cdk10, Cdk7, Dld, Dclk2, Hnrnpd, Hnrnpf, Ide, Irak1, Kif1a, Lace1, Mars, Mast3, Mapk10, Nolc1, Pspc1, Fars2, Pde4d, Pabpc1, Polr2b, Rtkn, Rbs24, Stk11, Stk2r, Stk39, Siahbp1, Abcc1, Ddx27, Hsp90ab1, Spast, Sfrs11, Tars2, Trpm7, Ttl, Erbb4, Vrk1, Vps4a, Hars2l	1.44	60	1.6E-02	8.4E-01
Potassium channel complex Cacna1a, Kctd1, Kcnk2, Kcnma1, Kcnd3, Kcnc2, Kcna6, Kcne2, Trpm7	1.41	7	2.0E-03	5.8E-02
Macromolecular complex assembly Akap2, Abca1, Fkbp1a, Taf9b, Cacna1a, Cdk7, Eif3d, Hip1, Ide, Irak1, Mif, Med1, Nrc06, Polr2b, Kcnma1, Prlr, Pias1, Stk11, Hist2h2aa3, Snrpf, Spast	1.41	21	2.3E-02	6.6E-01
Vesicle coating Arfgap1, CopG, Copz1, Hip1, Synj2bp	1.39	5	5.2E-03	5.6E-01
DNA-dependent transcription Ddit3, Fos, Taf9b, Cdk7, Gtf3c6, Med1, Ncoa6, Polr2b	1.30	8	4.1E-02	7.4E-01

Supplementary Table 4. Selected literature. The role and impact of estrogen receptor beta signaling in the hippocampal formation with special emphasis on learning, memory, synaptic plasticity, depression, anxiety, fear, neuroprotection and neurogenesis.

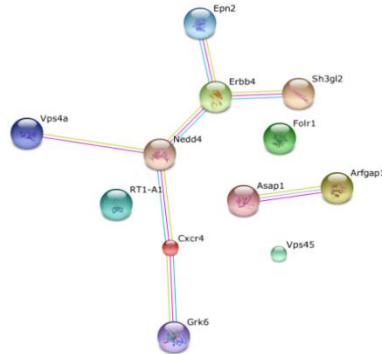
Learning/Memory/Synaptic plasticity			
Activation of estrogen receptor beta regulates synaptic plasticity and improves memory	Liu, F et al.	Nature Neuroscience	11:334-343, 2008
Estrogen receptor alpha and beta specific agonists regulate expression of synaptic proteins in rat hippocampus	Waters, EM et al.	Brain Research	1290:1-11, 2009
Estradiol and ERbeta agonists enhance recognition memory, and DPN, an ERbeta agonist, alters brain monoamines	Jacome, L F	Neurobiol Learn Mem	94:488-498, 2010
Role of estrogen receptor alpha and beta expression and signaling on cognitive function during aging	Foster, TC	Hippocampus	22:656-669, 2012
Estradiol acts via estrogen receptors alpha and beta on pathways important for synaptic plasticity in the mouse hippocampal formation	Spencer-Segal, J L et al.	Neuroscience	202:131-146, 2012
Oestradiol-induced synapse formation in the female hippocampus: roles of oestrogen receptor subtypes	Zhou, L et al	J Neuroendocrinol	26:439-477, 2014
Bidirectional modulatory effect of 17beta-estradiol on NMDA receptors via ERalpha and ERbeta in the dentate gyrus of juvenile male rats	Tanaka, M and Sokabe, M	Neuropharmacology	75:262-273, 2013
Signaling mechanisms involved in the acute effects of estradiol on 5-HT clearance	Benmansour, S et al.	Int J Neuropsychopharmacol	17:765-777, 2014
Estradiol responsiveness of synaptopodin in hippocampal neurons is mediated by estrogen receptor beta	Fester, L et al.	J Steroid Biochem Mol Biol	138:455-461, 2013
Estradiol acutely potentiates hippocampal excitatory synaptic transmission through a presynaptic mechanism	Smejkalova,T & Woolley, C	J Neuroscience	30:16137-48, 2010
Estrogen receptor (ER) subtype agonists alter monoamine levels in the female rat brain	Lubbers, L S et al.	J Steroid Biochem Mol Biol	122:310-317, 2010
Estradiol targets synaptic proteins to induce glutamatergic synapse formation in cultured hippocampal neurons: critical role of estrogen receptor-alpha	Jelks, KB et al.	J Neuroscience	27:6903-6913, 2007
Androgens' effects to enhance learning may be mediated in part through actions at estrogen receptor-beta in the hippocampus	Edinger, KL and Frye, CA	Neurobiol Learn Mem	87:78-85, 2007
Increased estrogen receptor beta expression correlates with decreased spine formation in the rat hippocampus	Szymczak, S et al.	Hippocampus	16:453-463, 2006
Contribution of estrogen receptor subtypes, ERa, ERb, and GPER1 in rapid estradiol-mediated enhancement of hippocampal synaptic transmission in mice	Kumar, A et al	Hippocampus	25:1556-66,2015
Estrogen receptor-selective agonists modulate learning in female rats in a dose- and task-specific manner.	Pisani SL, et al.	Endocrinology	157:292-303, 2016
Re-Opening the Critical Window for Estrogen Therapy.	Bean, LA et al.	J Neuroscience	35:16077-93, 2015
Depression/anxiety/synaptic plasticity			
Administration of estrogen receptor beta-specific selective estrogen receptor modulators to the hippocampus decrease anxiety and depressive behavior of ovariectomized rats	Walf, AA and Frye,CA	Pharmacol Biochem Behavior	86:407-414, 2007
Antisense oligodeoxynucleotides for estrogen receptor-beta and alpha attenuate estradiol's modulation of affective and sexual behavior, respectively	Walf, AA et. Al.	Neuropsychopharmacology	33:431-440, 2007
Rapid and estrogen receptor beta mediated actions in the hippocampus mediate some functional effects of estrogen	Walf, AA and Frye,CA	Steroids	73:9-10, 2008
Selective estrogen receptor-beta (SERM-beta) compounds modulate raphe nuclei tryptophan hydroxylase-1 (TPH-1) mRNA expression and cause antidepressant-like effects in the forced swim test	Clark, J A et al.	Neuropharmacology	63:151-1063, 2012
Effect of oestrogen receptor alpha and beta agonists on brain N-methyl-D-aspartate receptors	Morissette, M et al	J Neuroendocrinol	20:1006-1014, 2008
Estrogen, predominantly via estrogen receptor alpha, attenuates postpartum-induced anxiety- and depression-like behaviors in female rats	Furuta, M et al.	Endocrinology	154:38017-3816, 2013
Kalirin-7, an important component of excitatory synapses, is regulated by estradiol in hippocampal neurons	Ma, XM et al.	Hippocampus	21:661-677, 2011
Oestrogen receptor beta is involved in the actions of oestrogens in the brain for affective behaviour, but not trophic effects in peripheral tissues	Walf, AA	J Neuroendocrinol	22:141-151, 2010
Contextual fear			
Estrogen modulates sexually dimorphic contextual fear extinction in rats through estrogen receptor beta	Chang,YJ et al.	Hippocampus	11:1142-1150, 2009
Neuroprotection/neurogenesis			
Ovariectomy and subsequent treatment with estrogen receptor agonists tune the innate immune system of the hippocampus in middle-aged female rats	Sárvári, M et al.	Plos One	9:e88540, 2014
Age-dependent Effects of 17beta-estradiol on the dynamics of estrogen receptor beta (ERbeta) protein-protein interactions in the ventral hippocampus	Mott, NN et al.	Mol Cell Proteomics	13:760-779, 2014

Periodic Estrogen Receptor-Beta Activation: A Novel Approach to Prevent Ischemic Brain Damage	Cue, L et al	Neurochem Res	2014 (epub)
De novo synthesized estradiol protects against methylmercury-induced neurotoxicity in cultured rat hippocampal slices	Yamazaki, T et al.	PLoS One	8:e55559, 2013
Estrogen receptor beta treats Alzheimer's disease	Tian, Z et al.	Neural Regen Res	8:420-426,2013
Selective oestrogen receptor modulators differentially potentiate brain mitochondrial function	Irwin, RW et al.	J Neuroendocrinol	24:236-248, 2012
Neuroprotective role of estradiol against neuronal death induced by glucose deprivation in cultured rat hippocampal neurons	Hernandez-Fonseca, K et al.	Neuroendocrinology	96:41-50,2012
A priming role of local estrogen on exogenous estrogen-mediated synaptic plasticity and neuroprotection	Chamniansawat, S and Chongthammakun, S	Exp Mol Med	44:403-411, 2012
Adult hippocampal cell proliferation is suppressed with estrogen withdrawal after a hormone-simulated pregnancy	Green, A.D and Galea, LA	Horm Behav	54:203-211, 2008
Neurosteroid estradiol rescues ischemia-induced deficit in the long-term potentiation of rat hippocampal CA1 neurons	Dai, X et al.	Neuropharmacology	52:1124-1138, 2007
Activation of estrogen receptor alpha increases and estrogen receptor beta decreases apolipoprotein E expression in hippocampus in vitro and in vivo	Wang, JM et al.	Proc Natl Acad Sci U S A	103:16983-16988, 2006
Both estrogen receptor alpha and estrogen receptor beta agonists enhance cell proliferation in the dentate gyrus of adult female rats	Mazzucco, CA et al.	Neuroscience	141:1793-1800, 2006
Neuroprotection by ovarian hormones in animal models of neurological disease	Hoffman, GE et al.	Endocrine	29:217-231, 2006
Estrogen can act via estrogen receptor alpha and beta to protect hippocampal neurons against global ischemia-induced cell death	Miller, NR et al.	Endocrinology	146:3070-3079, 2005
Estrogen receptor subtypes alpha and beta contribute to neuroprotection and increased Bcl-2 expression in primary hippocampal neurons	Zhao, L et al.	Brain Research	1010:22-34, 2004

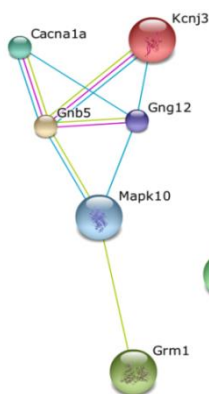
Glutamatergic synapse



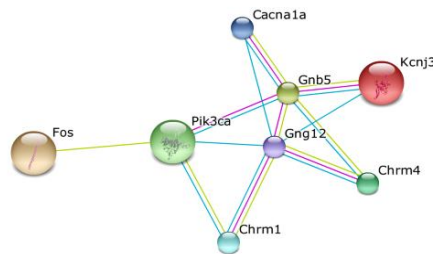
Cholinergic synapse



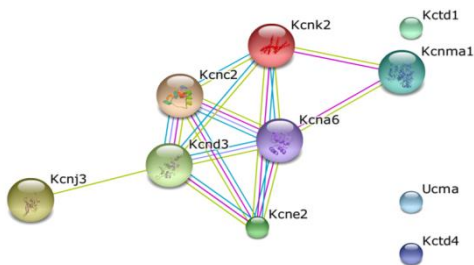
Endocannabinoid signaling



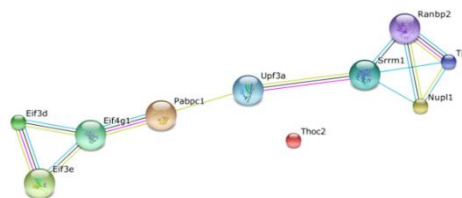
Endocytosis



Potassium channels



RNA transport



Supplementary Figure 1. Visualization of protein clusters encoded by DPN-regulated genes. The functional GO terms were generated by the KEGG pathway analysis (**Table 2**) and its members were plotted by the STRING program.

