Down-regulated genes with annotations

Aebp1	AE binding protein 1	Related Genes	Mus musculus
GOTERM_BP_FAT	transcription, regulation of transcription, DNA-dependent, proteolysis, cell adhesion, biological adhesion, regulation of transcription, regulation of RNA metabolic process,		
GOTERM_CC_FAT	extracellular region,		
GOTERM_MF_FAT	DNA binding, transcription cofactor activity, transcription corepressor activity, carboxype transcription factor binding, peptidase activity, metalloexopeptidase activity, metallopep binding, transcription repressor activity, transcription regulator activity, ion binding, cation binding, peptidase activity, acting on L-amino acid peptides,	tidase activity, exopeptida	se activity, zinc ion
INTERPRO	Coagulation factor 5/8 type, C-terminal, Peptidase M14, carboxypeptidase A, Carboxyp	eptidase, regulatory regio	<u>n</u> ,
SMART	FA58C, Zn_pept,		
SP_PIR_KEYWORDS	alternative splicing, cytoplasm, dna-binding, glycoprotein, nucleus, repressor, Secreted	, signal, Transcription, trar	nscription regulation,
UP_SEQ_FEATURE	chain:Adipocyte enhancer-binding protein 1, compositionally biased region:Glu-rich, colbiased region:Poly-Leu, domain:F5/8 type C, glycosylation site:N-linked (GlcNAc), muMAPK1 and MAPK3, region of interest:Interaction with PTEN, region of interest:Require region of interest:Required for transcriptional repression, sequence conflict, signal pept	utagenesis site, region of i ed for DNA-binding and in	nterest:Interaction with
Dbp	D site albumin promoter binding protein	Related Genes	Mus musculus
GOTERM_BP_FAT	transcription, regulation of transcription, DNA-dependent, circadian rhythm, regulation of cell proliferation, regulation of transcription, rhythmic process, regulation of RNA metabolic process,		
GOTERM_MF_FAT	DNA binding, transcription factor activity, transcription regulator activity, sequence-spec	cific DNA binding, protein	dimerization activity,
INTERPRO	Basic-leucine zipper (bZIP) transcription factor, Basic leucine zipper,		
SMART	BRLZ,		
SP_PIR_KEYWORDS	activator, biological rhythms, dna-binding, nucleus, Transcription, transcription regulation	on,	
UP_SEQ_FEATURE	chain:D site-binding protein, compositionally biased region:Poly-Pro, compositionally biregion:Pro-rich (proline/acidic region (PAR)), DNA-binding region:Basic motif, domain:L		
Gpr116	G protein-coupled receptor 116	Related Genes	Mus musculus
GOTERM_BP_FAT	cell surface receptor linked signal transduction, G-protein coupled receptor protein sign	aling pathway, neuropepti	de signaling pathway,
GOTERM_CC_FAT	plasma membrane, integral to membrane, intrinsic to membrane,		
INTERPRO	GPS, GPCR, family 2, secretin-like, Immunoglobulin subtype, Immunoglobulin-like, GPCR, family 2, Ig-hepta receptor, Immunoglobulin, GPCR, family 2-like, GPCR, family 2, secretin-like, conserved site,		
PIR_SUPERFAMILY	PIRSF038682:probable G protein-coupled receptor 116, PIRSF800007:secretin receptor	or-like G protein-coupled r	eceptors,
SMART	GPS, IG,		
SP_PIR_KEYWORDS	cell membrane, membrane, transmembrane,		
Notch3	Notch gene homolog 3 (Drosophila)	Related Genes	Mus musculus
GOTERM BP FAT	transcription, cell surface receptor linked signal transduction, Notch signaling pathway,	neuron differentiation, fore	ebrain development, cell

Aebp1	AE binding protein 1	Related Genes	Mus musculus
	fate commitment, regulation of transcription, negative regulation of cell differentiation, regulation of neuron differentiation, neuron fate commitment, regulation of neurogenesi regulation of cell development,	egulation of neuron differentis, regulation of nervous sy	ntiation, negative stem development,
GOTERM_CC_FAT	plasma membrane, integral to plasma membrane, integral to membrane, intrinsic to membrane part,	embrane, intrinsic to plasma	a membrane, plasma
GOTERM_MF_FAT	calcium ion binding, ion binding, cation binding, metal ion binding,		
INTERPRO	EGF-type aspartate/asparagine hydroxylation conserved site, EGF-like, type 3, Notch r Ankyrin, EGF, EGF-like, Notch, Notch, NOD region, Notch, NODP region, EGF-like reg extracellular, EGF-like calcium-binding, conserved site,		
KEGG_PATHWAY	Dorso-ventral axis formation, Notch signaling pathway,		
PIR_SUPERFAMILY	PIRSF002279:Notch, PIRSF002279:notch protein,		
SMART	NL, EGF_CA, EGF, ANK,		
SP_PIR_KEYWORDS	activator, ank repeat, cell membrane, developmental protein, differentiation, disulfide be signaling pathway, nucleus, phosphoprotein, receptor, repeat, signal, Transcription, tra		
UP_SEQ_FEATURE	chain:Neurogenic locus notch homolog protein 3, chain:Notch 3 extracellular truncation domain:EGF-like 1, domain:EGF-like 10; calcium-binding, domain:EGF-like 11; calcium domain:EGF-like 13; calcium-binding, domain:EGF-like 14; calcium-binding, domain:EGF-like 18, domain:EGF-like 21; calcium-binding, domain:EGF-like 22; calcium-binding, domain:EGF-like 25; calcium-binding, domain:EGF-like 26, domain:EGF-like 27, domain:EGF-like 28, dolike 3, domain:EGF-like 30; calcium-binding, domain:EGF-like 31, domain:EGF-like 32, domain:EGF-like 4; calcium-binding, domain:EGF-like 5, domain:EGF-like 6; calcium-binding, domain:EGF-like 7, repeat:ANK 2, repeat:ANK 3, repeat:ANK 4, repeat:ANK 5, repeat:LNR 1, repeat:LNR 1, furin-like protease, topological domain:Cytoplasmic, topological domain:Extracellular, tr	n-binding, domain:EGF-like GF-like 15; calcium-binding GF-like 19, domain:EGF-lik GF-like 23; calcium-binding omain:EGF-like 29; calcium domain:EGF-like 33, domainieGF-like 7, sis site, region of interest:P 2, repeat:LNR 3, signal per	12; calcium-binding, domain:EGF-like 16; e 2, domain:EGF-like 20, domain:EGF-like 24, n-binding, domain:EGF- ain:EGF-like 34, domain:EGF-like 8; EST-like, repeat:ANK 1,
2010007H12Rik	RIKEN cDNA 2010007H12 gene	Related Genes	Mus musculus
SP PIR KEYWORDS	phosphoprotein,		
UP SEQ FEATURE	chain:UPF0683 protein C7orf47 homolog, compositionally biased region:Pro-rich, modi	fied residue,	
Agrn	agrin	Related Genes	Mus musculus
BIOCARTA	Agrin in Postsynaptic Differentiation,		
GOTERM_BP_FAT	regulation of transcription, DNA-dependent, regulation of transcription from RNA polym plasma membrane organization, cell surface receptor linked signal transduction, enzym transmembrane receptor protein tyrosine kinase signaling pathway, signal complex assignation pathway, muscarinic acetylcholine receptor signaling pathway, cell-cell signaling, synapskeletal muscle tissue development, neuromuscular junction development, regulation of positive regulation of biosynthetic process, positive regulation of macromolecule biosynmetabolic process, positive regulation of gene expression, striated muscle tissue development, transmission of nerve impulse, positive regulation macromolecular complex subunit organization, cellular macromolecular complex assen	ne linked receptor protein seembly, G-protein coupled obtic transmission, muscle of synaptic growth at neurolathetic process, positive recopment, membrane organic of cellular biosynthetic prodess.	ignaling pathway, receptor protein signaling rgan development, muscular junction, gulation of macromolecule zation, regulation of cess, cellular
	extracellular structure organization, receptor metabolic process, receptor clustering, ce		

Aebp1	AE binding protein 1	Related Genes	Mus musculus
	complex subunit organization, regulation of cellular component biogenesis, neurotransor transcription, positive regulation of transcription, DNA-dependent, positive regulation of acid metabolic process, positive regulation of transcription, positive regulation of transcription of muscle development, regulation of developmental growth, regulation of skeletal muscle development, regulation of skeletal muscle fiber development, muscle fiber development regulation of synapse organization, synapse organization, neurological system process muscle cell differentiation, regulation of striated muscle cell differentiation, positive regulation of RNA metabolic process, positive regulation of RNA metabolic process, regor synaptogenesis, muscle cell development, striated muscle cell development, regulation skeletal muscle organ development, macromolecular complex assembly, protein complex.	nucleobase, nucleoside, r ription from RNA polymera cle tissue development, sk nt, regulation of synapse s , striated muscle cell differ llation of nitrogen compour gulation of nervous system on of cell development, me	se II promoter, regulation eletal muscle fiber tructure and activity, entiation, regulation of metabolic process, development, regulation
GOTERM_CC_FAT	extracellular region, proteinaceous extracellular matrix, basement membrane, basal lan matrix, extracellular matrix part, extracellular region part, synapse,	nina, <u>extracellular space, c</u>	ell surface, extracellular
GOTERM_MF_FAT	receptor regulator activity, acetylcholine receptor regulator activity, laminin binding, extr	racellular matrix binding,	
INTERPRO	SEA, EGF-like, type 3, Laminin G, EGF-like, laminin, Proteinase inhibitor I1, Kazal, Foll Laminin G, subdomain 1, EGF-like region, conserved site, Concanavalin A-like lectin/gl		in NtA, EGF, EGF-like,
KEGG_PATHWAY	ECM-receptor interaction,		
PIR_SUPERFAMILY	PIRSF002277:agrin,		
SMART	EGF_Lam, EGF, SEA, FOLN, KAZAL, LamG,		
SP_PIR_KEYWORDS	alternative splicing, disulfide bond, egf-like domain, extracellular matrix, glycoprotein, hoproteoglycan, repeat, Secreted, signal,	eparan sulfate, laminin egf	-like domain,
UP_SEQ_FEATURE	chain:Agrin, compositionally biased region:Ser/Thr-rich, disulfide bond, domain:EGF-lik domain:EGF-like 4, domain:Kazal-like 1, domain:Kazal-like 2, domain:Kazal-like 3, dom domain:Kazal-like 6, domain:Kazal-like 7, domain:Kazal-like 8, domain:Kazal-like 9, dor 2, domain:Laminin G-like 1, domain:Laminin G-like 2, domain:Laminin G-like 3, domain sequence conflict, signal peptide, splice variant,	nain:Kazal-like 4, domain:k main:Laminin EGF-like 1, d	azal-like 5, domain:Laminin EGF-like
Naglu	alpha-N-acetylglucosaminidase (Sanfilippo disease IIIB)	Related Genes	Mus musculus
GOTERM_MF_FAT	alpha-N-acetylglucosaminidase activity, hexosaminidase activity,		
INTERPRO	Alpha-N-acetylglucosaminidase,		
KEGG PATHWAY	Glycosaminoglycan degradation, Lysosome,		
PIR SUPERFAMILY	PIRSF001091:alpha-N-acetylglucosaminidase,		
SP_PIR_KEYWORDS	glycosidase, hydrolase,		
Capn5	calpain 5	Related Genes	Mus musculus
GOTERM_BP_FAT	proteolysis,		
GOTERM_MF_FAT	endopeptidase activity, cysteine-type endopeptidase activity, calcium-dependent cysteine-type endopeptidase activity, peptidase activity, cysteine-type peptidase activity, peptidase activity, acting on L-amino acid peptides,		
INTERPRO	C2 calcium-dependent membrane targeting, Peptidase, cysteine peptidase active site, Peptidase C2, calpain,		
INTERPRO	C2 calcium-dependent memorane targeting, Peptidase, cysteine peptidase active site,	r eptidase Cz, caipairi,	
PIR_SUPERFAMILY	PIRSF006670:human tissue-specific calpain htra-3,	r eptidase O2, caipairi,	
		r eptidase O2, caipairi,	

Aebp1	AE binding protein 1	Related Genes	Mus musculus
UP_SEQ_FEATURE	chain:Calpain-5, domain:C2, domain:Calpain catalytic, region of interest:Domain III, seq	uence variant,	
Col4a6	collagen, type IV, alpha 6	Related Genes	Mus musculus
GOTERM_BP_FAT	extracellular matrix organization, extracellular structure organization,		
GOTERM_CC_FAT	extracellular region, proteinaceous extracellular matrix, collagen, collagen type IV, baser extracellular matrix, extracellular matr	ment membrane, sheet-fo	orming collagen,
GOTERM_MF_FAT	structural molecule activity, extracellular matrix structural constituent,		
INTERPRO	Type 4 procollagen, C-terminal repeat, Collagen triple helix repeat,		
KEGG_PATHWAY	Focal adhesion, ECM-receptor interaction, Pathways in cancer, Small cell lung cancer,		
PIR_SUPERFAMILY	PIRSF002258:collagen alpha 1(IV) chain,		
SMART	<u>C4,</u>		
SP_PIR_KEYWORDS	collagen,		
H2-Q7, H2-Q2	histocompatibility 2, Q region locus 1; histocompatibility 2, Q region locus 9; similar to H-2 class I histocompatibility antigen, L-D alpha chain precursor; histocompatibility 2, Q region locus 8; histocompatibility 2, Q region locus 2; similar to MHC class Ib antigen; histocompatibility 2, Q region locus 7; histocompatibility 2, Q region locus 6; hypothetical protein LOC100044307; similar to H-2 class I histocompatibility antigen, Q7 alpha chain precursor (QA-2 antigen); RIKEN cDNA 0610037M15 gene	Related Genes	<u>Mus musculus</u>
GOTERM_BP_FAT	regulation of cytokine production, positive regulation of cytokine production, regulation or regulation of leukocyte mediated cytotoxicity, regulation of T cell mediated cytotoxicity, pimmune effector process, antigen processing and presentation of peptide antigen via MHC class I, antigen processing and presentation via MHC class Ib, endogenous peptide antigen via MHC class Ib, antigen processing and presentation of eimmune system process, regulation of immune effector process, positive regulation of immediated immunity, positive regulation of leukocyte mediated immunity, regulation of Iym lymphocyte mediated immunity, regulation of T cell mediated immunity, positive regulation adaptive immune response, positive regulation of adaptive immune response, regulation recombination of immune receptors built from immunoglobulin superfamily domains, positive of cell killing, response to virus, antigen processing and presentation, antigen processing and of cell killing, positive regulation of cell killing, regulation of interferon-gamma production production, antigen processing and presentation of peptide antigen, positive regulation of immune response, positive regulation of multicellular organismal process, defense response immune response, positive regulation of multicellular organismal process, defense response immune response, positive regulation of multicellular organismal process, defense response immune response, positive regulation of multicellular organismal process, defense response.	positive regulation of T ce HC class Ib, antigen processing and pendogenous peptide antigonemune effector process, respective mediated immune of T cell mediated immune of adaptive immune respective regulation of adaptive amily domains, defense read presentation of endogonemus, positive regulation of into fresponse to stimulus, p	Il mediated cytotoxicity, essing and presentation of oresentation of een, positive regulation of regulation of leukocyte nity, positive regulation of munity, regulation of conse based on somatic re immune response esponse, immune enous antigen, regulation referon-gamma
GOTERM_CC_FAT	plasma membrane, external side of plasma membrane, cell surface, integral to membran complex, MHC protein complex, MHC class I protein complex, plasma membrane part,	ne, intrinsic to membrane	, MHC class lb protein
GOTERM_MF_FAT	antigen binding, peptide binding, peptide antigen binding,		
INTERPRO	MHC class I, alpha chain, alpha1 and alpha2, Immunoglobulin/major histocompatibility c Immunoglobulin-like, MHC class I, alpha chain, C-terminal, MHC class I-like antigen reco cell wall anchor,		
KEGG_PATHWAY	Endocytosis, Cell adhesion molecules (CAMs), Antigen processing and presentation, Ty	pe I diabetes mellitus, Au	itoimmune thyroid

Aebp1	AE binding protein 1	Related Genes	Mus musculus
	disease, Allograft rejection, Graft-versus-host disease, Viral myocarditis,		
PIR_SUPERFAMILY	PIRSF001990:class I histocompatibility antigen,		
SMART	IGc1,		
SP_PIR_KEYWORDS	3d-structure, disulfide bond, glycoprotein, immune response, membrane, mhc i, signal, transplantation antigen,	transmembrane, transmer	mbrane protein,
UP_SEQ_FEATURE	chain:class Ib MHC antigen Qa-2, chain:H-2 class I histocompatibility antigen, Q7 alpha Q8 alpha chain, chain:H-2 class I histocompatibility antigen, Q9 alpha chain, disulfide blinked (GlcNAc), helix, region of interest:Alpha-1, region of interest:Alpha-2, region of peptide, sequence conflict, signal peptide, strand, topological domain:Extracellular, transport of the peptide	oond, domain:Ig-like C1-typ interest:Alpha-3, region o	e, glycosylation site:N-
H2-T23	histocompatibility 2, T region locus 23; similar to RT1 class lb, locus H2-Q-like, grc region	Related Genes	Mus musculus
GOTERM_BP_FAT	antigen processing and presentation of peptide antigen via MHC class I, immune response processing and presentation of peptide antigen,	onse, antigen processing a	nd presentation, antigen
GOTERM_CC_FAT	plasma membrane, integral to membrane, intrinsic to membrane, MHC protein complex part,	k, MHC class I protein com	plex, plasma membrane
INTERPRO	MHC class I, alpha chain, alpha1 and alpha2, Immunoglobulin/major histocompatibility complex, conserved site, Immunoglobulin C1-set, Immunoglobulin-like, MHC class I-like antigen recognition, Immunoglobulin-like fold,		
KEGG_PATHWAY	Endocytosis, Cell adhesion molecules (CAMs), Antigen processing and presentation, Natural killer cell mediated cytotoxicity, Type I diabetes mellitus, Autoimmune thyroid disease, Allograft rejection, Graft-versus-host disease, Viral myocarditis,		
PIR_SUPERFAMILY	PIRSF001990:class I histocompatibility antigen,		
SMART	<u>IGc1,</u>		
SP_PIR_KEYWORDS	disulfide bond, glycoprotein, heterodimer, immune response, membrane, mhc i, phospi protein,	noprotein, signal, transmer	nbrane, transmembrane
UP_SEQ_FEATURE	chain:H-2 class I histocompatibility antigen, D-37 alpha chain, disulfide bond, domain:log(GlcNAc), modified residue, region of interest:Alpha-1, region of interest:Alpha-2, region peptide, signal peptide, topological domain:Cytoplasmic, topological domain:Extracellul	ion of interest:Alpha-3, reg	ion of interest:Connecting
C630004H02Rik	hypothetical protein LOC100043986; RIKEN cDNA C630004H02 gene	Related Genes	Mus musculus
GOTERM_BP_FAT	sensory organ development, sensory perception, sensory perception of sound, neuron morphogenesis, mechanoreceptor differentiation, ear development, embryonic organ membryonic morphogenesis, inner ear development, neurological system process, cogni inner ear receptor cell differentiation,	norphogenesis, embryonic	organ development,
GOTERM_CC_FAT	integral to membrane, intrinsic to membrane,		
GOTERM_MF_FAT	identical protein binding, protein homodimerization activity, protein dimerization activity	,	
INTERPRO	High-temperature-induced dauer-formation protein-like,		
SP_PIR_KEYWORDS	alternative splicing, membrane, phosphoprotein, transmembrane,		
UP_SEQ_FEATURE	chain:UPF0663 transmembrane protein C17orf28 homolog, modified residue, sequence	e conflict, splice variant, tra	ansmembrane region,
Nlgn2	neuroligin 2	Related Genes	Mus musculus
COG_ONTOLOGY	Lipid metabolism,		

Aebp1	AE binding protein 1	Related Genes	Mus musculus
GOTERM_BP_FAT	regulation of respiratory gaseous exchange by neurological system process, cell adhes system process, extracellular structure organization, regulation of respiratory gaseous of respiratory system process, regulation of synaptic transmission, synapse organization transmission of nerve impulse,	exchange, regulation of sys	stem process, regulation
GOTERM_CC_FAT	integral to membrane, intrinsic to membrane, synapse,		
INTERPRO	Neuroligin, Carboxylesterase, type B, Carboxylesterase type B, conserved site,		
KEGG_PATHWAY	Cell adhesion molecules (CAMs),		
SP_PIR_KEYWORDS	3d-structure, cell adhesion, disulfide bond, glycoprotein, membrane, phosphoprotein, si	gnal, transmembrane,	
UP_SEQ_FEATURE	chain:Neuroligin-2, disulfide bond, glycosylation site:N-linked (GlcNAc), helix, modifier topological domain:Cytoplasmic, topological domain:Extracellular, transmembrane region		ct, signal peptide, strand,
Pltp	phospholipid transfer protein	Related Genes	Mus musculus
GOTERM_BP_FAT	lipid transport, lipid localization,		
GOTERM_CC_FAT	extracellular region,		
GOTERM_MF_FAT	lipid binding,		
INTERPRO	Lipid-binding serum glycoprotein, C-terminal, Lipid-binding serum glycoprotein, N-termin site,	nal, Lipid-binding serum gl	ycoprotein, conserved
KEGG_PATHWAY	PPAR signaling pathway,		
PIR_SUPERFAMILY	PIRSF002417:lipopolysaccharide-binding protein,		
SMART	BPI1, BPI2,		
SP_PIR_KEYWORDS	disulfide bond, glycoprotein, lipid transport, phosphoprotein, Secreted, signal, transport,	,	
UP_SEQ_FEATURE	chain:Phospholipid transfer protein, disulfide bond, glycosylation site:N-linked (GlcNAc. peptide,), modified residue, sequ	ence conflict, signal
Pcsk9	proprotein convertase subtilisin/kexin type 9	Related Genes	Mus musculus
GOTERM_BP_FAT	urogenital system development, kidney development, liver development, proteolysis, ne process, triglyceride metabolic process, phospholipid metabolic process, glycerol ether metabolic process, cholesterol metabolic process, macromolecule catabolic process, ce endogenous stimulus, response to hormone stimulus, regulation of catabolic process, reorganic substance, regulation of cell death, positive regulation of cell death, induction or protein processing, protein autoprocessing, organic ether metabolic process, organophic process, neuron differentiation, regulation of cellular catabolic process, response to nut stimulus, cellular response to nutrient levels, regulation of cellular protein metabolic process, receptor catabolic process, low-density lipoprotein receptor catabolic process, catabolic process, response to insulin stimulus, cellular response to insulin stimulus, ce response to stress, lipoprotein metabolic process, regulation of protein catabolic process cholesterol homeostasis, regulation of apoptosis, positive regulation of apoptosis, regulation of neuron apoptosis, negative regulation of neuron apoptosis, negative regulation of neuron apoptosis, negative regulation of process, cellular macromolecule catabolic process, glycerolipid metabolic process, chematuration by peptide bond cleavage, lipid homeostasis, sterol homeostasis,	metabolic process, inductive llular response to starvative esponse to extracellular starvative esponse to extracellular starvative esponse to extracellular starvative esponse to extracellular starvative esponse televels, cellular responses, low-density lipoprote regulation of low-density llular response to hormoness, homeostatic process, reation of programmed cell crocess, response to peptidition of molecular function,	on of apoptosis, steroid on, response to imulus, response to steroid metabolic process, s, protein catabolic ase to extracellular ein receptor metabolic ipoprotein receptor e stimulus, cellular esponse to starvation, death, positive regulation e hormone stimulus, cellular protein catabolic

Aebp1	AE binding protein 1	Related Genes	Mus musculus
GOTERM_MF_FAT	endopeptidase activity, serine-type endopeptidase activity, calcium ion binding, peptidase hydrolase activity, identical protein binding, ion binding, cation binding, metal ion binding peptidase activity, acting on L-amino acid peptides, lipoprotein receptor binding,		
INTERPRO	Peptidase S8 and S53, subtilisin, kexin, sedolisin, Proteinase inhibitor I9, subtilisin prop	eptide, Peptidase S8, sub	tilisin-related,
SP_PIR_KEYWORDS	autocatalytic cleavage, calcium, cholesterol metabolism, disulfide bond, glycoprotein, hy Protease, Secreted, Serine protease, signal, steroid metabolism, zymogen,		
UP_SEQ_FEATURE	active site:Charge relay system, chain:Proprotein convertase subtilisin/kexin type 9, distilisin/kexin type 9, distilisin		
Psmb8	proteasome (prosome, macropain) subunit, beta type 8 (large multifunctional peptidase 7)	Related Genes	Mus musculus
COG_ONTOLOGY	Posttranslational modification, protein turnover, chaperones,		•
GOTERM_BP_FAT	proteolysis, immune response, macromolecule catabolic process, antigen processing ar protein catabolic process, cellular macromolecule catabolic process, proteolysis involve	nd presentation, protein ca d in cellular protein catabo	atabolic process, cellular olic process,
GOTERM_CC_FAT	proteasome complex, endoplasmic reticulum, proteasome core complex, MHC class I peptide loading complex, TAP complex, endoplas reticulum part,		
GOTERM_MF_FAT	nucleotide binding, nucleoside binding, purine nucleoside binding, endopeptidase activity, threonine-type endopeptidase activity, ATP binding, peptidase activity, purine nucleotide binding, adenyl nucleotide binding, ribonucleotide binding, purine ribonucleotide binding, adenyl ribonucleotide binding, peptidase activity, peptidase activity, acting on L-amino acid peptides,		
INTERPRO	Peptidase T1A, proteasome beta-subunit, Proteasome, alpha and beta subunits, Proteasubunit, conserved site,	ssome, subunit alpha/beta	, <u>Proteasome</u> , <u>beta-type</u>
KEGG_PATHWAY	Proteasome,		
PIR_SUPERFAMILY	PIRSF001212:multicatalytic endopeptidase complex chain C9,		
SP_PIR_KEYWORDS	cytoplasm, hydrolase, immune response, nucleus, polymorphism, Protease, proteasome	e, threonine protease, zyr	nogen,
UP_SEQ_FEATURE	active site:Nucleophile, chain:Proteasome subunit beta type-8, propeptide:Removed in site:Cleavage; by autocatalysis,	mature form, sequence co	onflict, sequence variant,
Rpl22	similar to 60S ribosomal protein L22 (Heparin binding protein HBp15); ribosomal protein L22 pseudogene; predicted gene 6784; ribosomal protein L22	Related Genes	Mus musculus
GOTERM_BP_FAT	cell activation, immune system development, leukocyte differentiation, translation, hemopoiesis, lymphocyte differentiation, T cell differentiation, T cell activation, leukocyte activation, alpha-beta T cell activation, alpha-beta T cell differentiation, lymphocyte activation, hemopoietic or lymphoid organ development,		
GOTERM_CC_FAT	ribosome, ribonucleoprotein complex, non-membrane-bounded organelle, intracellular n	on-membrane-bounded o	organelle,
GOTERM_MF_FAT	pattern binding, RNA binding, structural constituent of ribosome, structural molecule activity, glycosaminoglycan binding, heparin binding, carbohydrate binding, polysaccharide binding,		
INTERPRO	Ribosomal protein L22e,		
KEGG_PATHWAY	Ribosome,		
PIR_SUPERFAMILY	PIRSF002223:ribosomal protein L22,		
SP_PIR_KEYWORDS	heparin binding, heparin-binding, protein biosynthesis, ribonucleoprotein, ribosomal protein	tein, <u>ribosome, rna-bindin</u>	g,

Aebp1	AE binding protein 1	Related Genes	Mus musculus
UP_SEQ_FEATURE	chain:60S ribosomal protein L22, compositionally biased region:Asp/Glu-rich (highly ac	idic),	
SIc25a1	solute carrier family 25 (mitochondrial carrier, citrate transporter), member 1	Related Genes	Mus musculus
BIOCARTA	Shuttle for transfer of acetyl groups from mitochondria to the cytosol,		
GOTERM_CC_FAT	mitochondrion, mitochondrial envelope, mitochondrial inner membrane, integral to mem membrane, intrinsic to membrane, mitochondrial membrane, organelle envelope, envel		embrane, <u>organelle</u>
INTERPRO	Mitochondrial substrate carrier, Mitochondrial carrier protein, Adenine nucleotide translo	ocator 1, Mitochondrial su	bstrate/solute carrier,
PIR_SUPERFAMILY	PIRSF002458:ADP,ATP carrier protein,		
SP_PIR_KEYWORDS	membrane, repeat, transmembrane, transport,		
Thra	thyroid hormone receptor alpha; similar to thyroid hormone receptor	Related Genes	Mus musculus
GOTERM_BP_FAT	skeletal system development, cartilage condensation, ossification, transcription, regulation from RNA polymerase II promoter, cell adhesion, regulation of heart contrapositive regulation of biosynthetic process, positive regulation of macromolecule biosyn macromolecule biosynthetic process, positive regulation of macromolecule metabolic process, positive regulation of gene expression, negative regulation of gene transcription, biological adhesion, negative regulation of cellular biosynthetic process, positive regulation of DNA binding, negative regulation of transcription factor activity, remolecular function, regulation of transcription, positive regulation of transcription, DNA-nucleoside, nucleotide and nucleic acid metabolic process, positive regulation of nucleometabolic process, positive regulation of transcription system morphogenesis, regulation of transcription factor activity, regulation of binding, inding, negative regulation of nitrogen compound metabolic process, positive regulation of RNA metabolic proces	action, negative regulation thetic process, negative recess, negative recess, negative recess, negative regulation expression, cell-cell adherositive regulation of cellul egulation of system procedependent, negative regulation of mucleon from RNA polymerase I negative regulation of binder of nitrogen compound recessive regulation of nitrogen compound recessive recessive regulation of nitrogen compound recessive recessive regulation of nitrogen compound recessive regulation r	n of biosynthetic process, egulation of n of macromolecule sion, negative regulation of ar biosynthetic process, ss, negative regulation of lation of nucleobase, tide and nucleic acid I promoter, skeletal ding, regulation of DNA metabolic process,
GOTERM_CC_FAT	cytosol,		
GOTERM_MF_FAT	DNA binding, transcription factor activity, steroid hormone receptor activity, RNA bindin nuclear receptor activity, thyroid hormone receptor activity, zinc ion binding, transcriptio transcription regulator activity, identical protein binding, protein homodimerization activi DNA binding, metal ion binding, transition metal ion binding, protein heterodimerization	n activator activity, transc ty, ion binding, cation bind	ription repressor activity, ding, sequence-specific
INTERPRO	Nuclear hormone receptor, ligand-binding, core, Zinc finger, nuclear hormone receptor-receptor, Nuclear hormone receptor, ligand-binding, Zinc finger, NHR/GATA-type,	type, Steroid hormone red	ceptor, Thyroid hormone
KEGG_PATHWAY	Neuroactive ligand-receptor interaction,		
PIR_SUPERFAMILY	PIRSF002533:thyroid hormone receptor,		
SMART	ZnF_C4, HOLI,		
SP_PIR_KEYWORDS	alternative splicing, cytoplasm, DNA binding, dna-binding, isopeptide bond, metal-binding, nucleus, Proto-oncogene, receptor, rna editing, thyroid hormone receptor, Transcription, transcription regulation, ubl conjugation, zinc, zinc finger, zinc-finger,		
UP_SEQ_FEATURE	chain:Thyroid hormone receptor alpha, cross-link:Glycyl lysine isopeptide (Lys-Gly) (interegion:Nuclear receptor, region of interest:Ligand-binding, region of interest:Modulating region:NR C4-type,		
Tgfbi	transforming growth factor, beta induced	Related Genes	Mus musculus
GOTERM BP FAT	cell adhesion, biological adhesion, extracellular matrix organization, extracellular structu	ure organization,	

Aebp1	AE binding protein 1	Related Genes	Mus musculus
GOTERM_CC_FAT	extracellular region, proteinaceous extracellular matrix, extracellular space, extracellular matrix, extracellular region part,		
Notch3	Notch gene homolog 3 (Drosophila)	Related Genes	Mus musculus

GOTERM_MF_FAT	extracellular matrix binding,		
INTERPRO	FAS1 domain, EMI domain, TGF beta-induced protein bIGH3/osteoblast-specific factor 2,		
PIR_SUPERFAMILY	PIRSF016553:BIGH3_OSF2, PIRSF016553:TGF beta-induced protein bIGH3/osteoblast-specific factor 2,		
SMART	FAS1,		
SP_PIR_KEYWORDS	cell adhesion, disulfide bond, extracellular matrix, gamma-carboxyglutamic acid, repeat, Secreted, signal,		
UP_SEQ_FEATURE	chain:Transforming growth factor-beta-induced protein ig-h3, disulfide bond, domain:EMI, domain:FAS1 1, domain:FAS1 2, domain:FAS3, domain:FAS1 4, modified residue, short sequence motif:Cell attachment site, signal peptide,		
Trim65	tripartite motif-containing 65 Related Genes Mus musculus		
GOTERM_BP_FAT	proteolysis, macromolecule catabolic process, modification-dependent protein catabolic process, protein catabolic process, modification-dependent macromolecule catabolic process, cellular protein catabolic process, cellular macromolecule catabolic process, proteolysis involved in cellular protein catabolic process,		
GOTERM_MF_FAT	protein C-terminus binding, zinc ion binding, protein domain specific binding, ion binding, cation binding, metal ion binding, transition me ion binding,		
INTERPRO	Zinc finger, B-box, Zinc finger, RING-type, B302 (SPRY)-like, SPla/RYanodine receptor SPRY, Butyrophylin-like, SPRY-associated, Zinc finger, RING-type, conserved site, SPla/RYanodine receptor subgroup, Zinc finger, C3HC4 RING-type,		
SMART	RING, BBOX, SPRY, PRY,		
SP_PIR_KEYWORDS	acetylation, alternative splicing, coiled coil, cytoplasm, ligase, metal-binding, nucleus, ubl conjugation pathway, zinc, zinc-finger,		
UP_SEQ_FEATURE	chain:Tripartite motif-containing protein 11, chain:Tripartite motif-containing protein 65, domain:B30.2/SPRY, modified residue, splice variant, zinc finger region:B box-type, zinc finger region:RING-type,		
Vegfb	vascular endothelial growth factor B Related Genes Mus musculus		
GOTERM_BP_FAT	angiogenesis, blood vessel development, vasculature development, blood vessel morphogenesis, regulation of cell division, positive regulation of cell division,		
GOTERM_CC_FAT	extracellular region,		
GOTERM_MF_FAT	pattern binding, glycosaminoglycan binding, growth factor activity, heparin binding, carbohydrate binding, polysaccharide binding,		
INTERPRO	Platelet-derived growth factor (PDGF),		
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, mTOR signaling pathway, Focal adhesion, Pathways in cancer, Renal cell carcinoma, Pancreati cancer, Bladder cancer,		
SMART	PDGF,		
SP_PIR_KEYWORDS	alternative splicing, angiogenesis, developmental protein, differentiation, disulfide bond, glycoprotein, growth factor, heparin-binding, mitogen, Secreted, signal,		
UP_SEQ_FEATURE	chain:Vascular endothelial growth factor B, disulfide bond, sequence conflict, signal peptide, splice variant,		

KEGG_PATHWAY	Dorso-ventral axis formation, Notch signaling pathway,		
Agrn	<u>agrin</u>	Related Genes	Mus musculus
KEGG_PATHWAY	ECM-receptor interaction,		
Noigh3	alpha-N-acetyigucosaminidase (Santilippo disease IIIB)	Related Genes	MAS WASSAIRS
KEGG_BATHWAY	Porso-ventral axis formation, ivoich signaling pathway,		
c34436	collagen, type IV, alpha 6	Related Genes	AHS WHEEHINS
KEGG_PATHWAY	Focal adhesion, ECM-receptor interaction, Pathways in cancer, Small cell lung cancer,		
H2-Q7, H2-Q2	histocompatibility 2, Q region locus 1; histocompatibility 2, Q region locus 9; similar to H-2 class I histocompatibility antigen, L-D alpha chain precursor; histocompatibility 2, Q region locus 8; histocompatibility 2, Q region locus 2; similar to MHC class Ib antigen; histocompatibility 2, Q region locus 7; histocompatibility 2, Q region locus 6; hypothetical protein LOC100044307; similar to H-2 class I histocompatibility antigen, Q7 alpha chain precursor (QA-2 antigen); RIKEN cDNA 0610037M15 gene	Related Genes	<u>Mus musculus</u>
KEGG_PATHWAY	Endocytosis, Cell adhesion molecules (CAMs), Antigen processing and presentation, Ty disease, Allograft rejection, Graft-versus-host disease, Viral myocarditis,	pe I diabetes mellitus, Au	toimmune thyroid
H2-T23	histocompatibility 2, T region locus 23; similar to RT1 class lb, locus H2-Q-like, grc region	Related Genes	Mus musculus
KEGG_PATHWAY	Endocytosis, Cell adhesion molecules (CAMs), Antigen processing and presentation, Na diabetes mellitus, Autoimmune thyroid disease, Allograft rejection, Graft-versus-host disease.		cytotoxicity, Type I
Nlgn2	neuroligin 2	Related Genes	Mus musculus
KEGG_PATHWAY	Cell adhesion molecules (CAMs),		
Pltp	phospholipid transfer protein	Related Genes	Mus musculus
KEGG_PATHWAY	PPAR signaling pathway,		
Psmb8	proteasome (prosome, macropain) subunit, beta type 8 (large multifunctional peptidase 7)	Related Genes	Mus musculus
KEGG_PATHWAY	Proteasome,		
Rpl22	similar to 60S ribosomal protein L22 (Heparin binding protein HBp15); ribosomal protein L22 pseudogene; predicted gene 6784; ribosomal protein L22	Related Genes	Mus musculus
KEGG_PATHWAY	Ribosome,		
Thra	thyroid hormone receptor alpha; similar to thyroid hormone receptor	Related Genes	Mus musculus
KEGG_PATHWAY	Neuroactive ligand-receptor interaction,		
Vegfb	vascular endothelial growth factor B	Related Genes	Mus musculus
KEGG_PATHWAY	Cytokine-cytokine receptor interaction, mTOR signaling pathway, Focal adhesion, Pathward cancer, Bladder cancer,	ays in cancer, Renal cell	carcinoma, Pancreat

Naglu KEGG_PATHWAY	alpha-N-acetylglucosaminidase (Sanfilippo disease IIIB)	Related Genes	Mus musculus
KEGG_PATHWAY			wus musculus
	Glycosaminoglycan degradation, Lysosome,		
Col4a6	collagen, type IV, alpha 6	Related Genes	Mus musculus
KEGG_PATHWAY	Focal adhesion, ECM-receptor interaction, Pathways in cancer, Small cell lung cancer,		
H2-Q7, H2-Q2	histocompatibility 2, Q region locus 1; histocompatibility 2, Q region locus 9; similar to H-2 class I histocompatibility antigen, L-D alpha chain precursor; histocompatibility 2, Q region locus 8; histocompatibility 2, Q region locus 2; similar to MHC class Ib antigen; histocompatibility 2, Q region locus 7; histocompatibility 2, Q region locus 6; hypothetical protein LOC100044307; similar to H-2 class I histocompatibility antigen, Q7 alpha chain precursor (QA-2 antigen); RIKEN cDNA 0610037M15 gene	Related Genes	<u>Mus musculus</u>
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KEGG_PATHWAY	PPAR signaling pathway,		
Psmb8	proteasome (prosome, macropain) subunit, beta type 8 (large multifunctional peptidase 7)	Related Genes	Mus musculus
KEGG_PATHWAY	Proteasome,		
Rpl22	similar to 60S ribosomal protein L22 (Heparin binding protein HBp15); ribosomal protein L22 pseudogene; predicted gene 6784; ribosomal protein L22	Related Genes	Mus musculus
KEGG_PATHWAY	Ribosome,		
Thra	thyroid hormone receptor alpha; similar to thyroid hormone receptor	Related Genes	Mus musculus
KEGG_PATHWAY	Neuroactive ligand-receptor interaction,		
Vegfb	vascular endothelial growth factor B	Related Genes	Mus musculus
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Down-regulated Gene Pathway Analysis