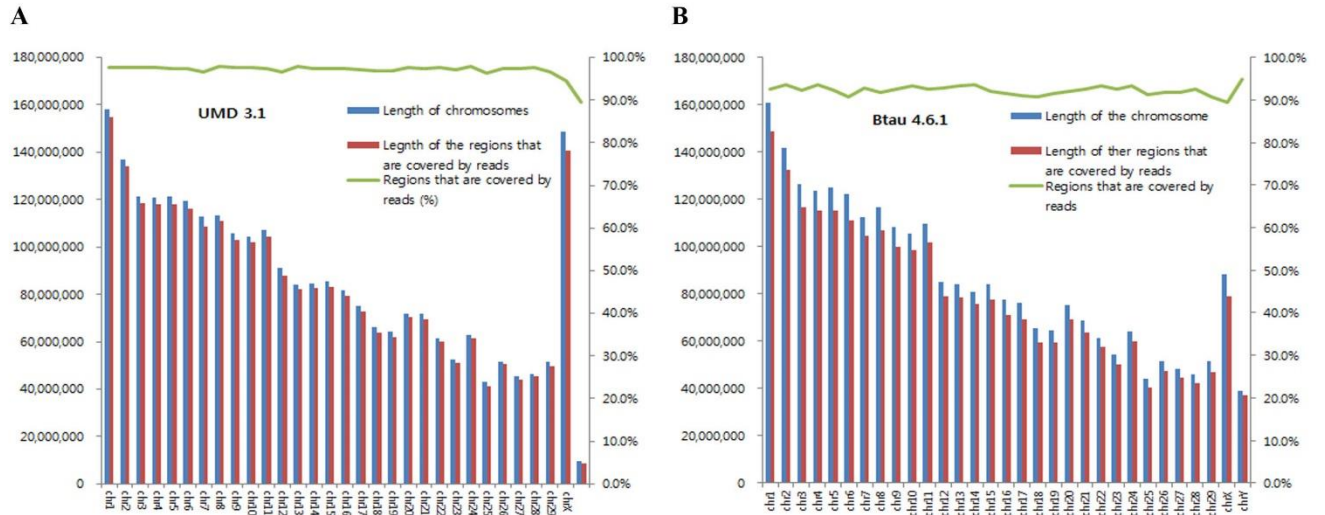
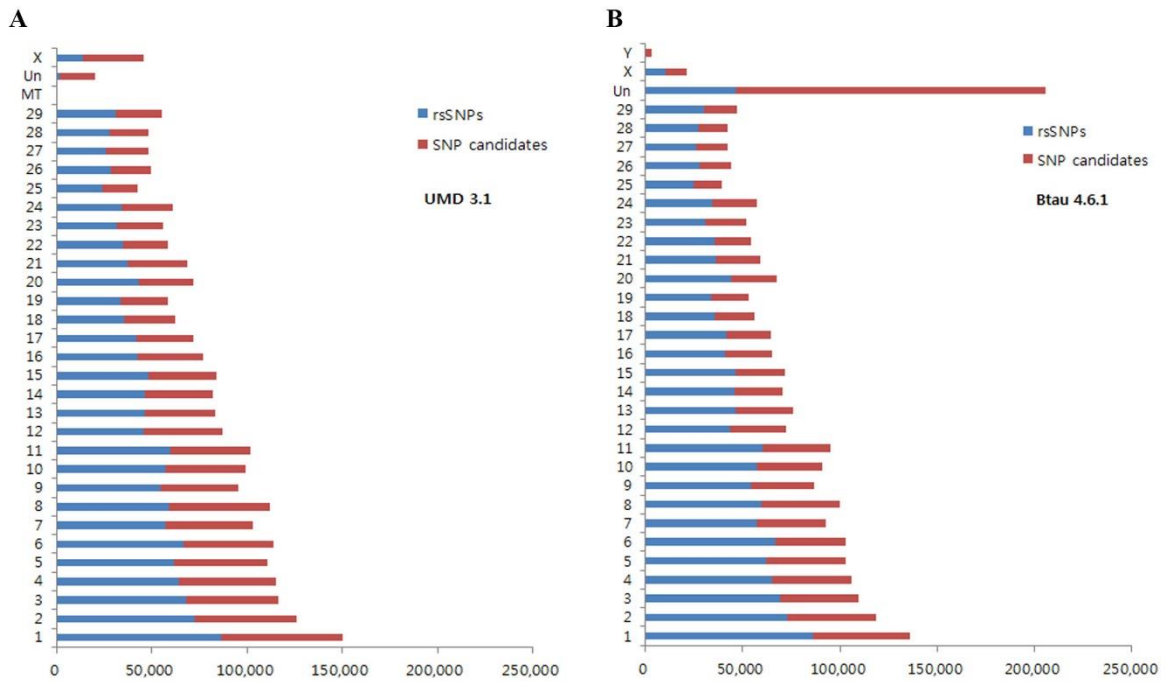


SUPPLEMENTARY MATERIALS



Supplementary Figure 1. Length of the regions that are covered by reads in each chromosome. According to the bovine reference genome of (A) UMD 3.1 and (B) Btau 4.6.1, the length of each chromosome is displayed in the blue column, and that of each region covered by reads is displayed in the red columns. The percentage of the regions that are covered by reads mapped to each chromosome is shown in the green line.



Supplementary Figure 2. Statistics of novel and known SNPs. According to the bovine reference genome of (A) UMD 3.1 and (B) Btau 4.6.1, the known SNPs which are rsSNPs from dbSNP of each chromosome is displayed in the blue bar, and novel SNPs is exhibited red bar. Overall, 1,095,922 (44.3%) and 982,674 (40.9%) novel SNPs were taken through this analysis in UMD 3.1 and Btau 4.6.1, respectively.

Supplementary Table1. The list of genes associate with 5 traits from the biomedical literature in the PubMed and Google Scholar database

Theme	B.tau Gene	Name	Description	EC Number	KEGG ID	KEGG pathway
juiciness	280943	TNF	tumor necrosis factor		hsa:7124, mmu:21926, rno:24835	Adipocytokine signaling pathway, Apoptosis, Cytokine-cytokine receptor interaction, Fc epsilon RI signaling pathway, Hematopoietic cell lineage, MAPK signaling pathway, Natural killer cell mediated cytotoxicity, T cell receptor signaling pathway, TGF-beta signaling pathway, Toll-like receptor signaling pathway
juiciness	281663	CAPN3	calpain 3, (p94)	3.4.22.54	hsa:825, mmu:12335, rno:29155	
juiciness	100139857	RYR1	Ryanodine receptor 1-like		hsa:6261, mmu:20190, rno:114207	Calcium signaling pathway, Long-term depression
juiciness	282359	SLC2A4	solute carrier family 2 (facilitated glucose transporter), member 4		hsa:6517, mmu:20528, rno:25139	Adipocytokine signaling pathway, Insulin signaling pathway, Type II diabetes mellitus
juiciness	280804	GH1	growth hormone		hsa:2688	
juiciness	538598	IRS1	insulin receptor substrate 1		hsa:3667, mmu:16367, rno:25467	Adipocytokine signaling pathway, Aldosterone-regulated sodium reabsorption, Insulin signaling pathway, Neurotrophin signaling pathway, Type II diabetes mellitus
juiciness	280829	INS	insulin		hsa:3630, mmu:16334, rno:24506	Aldosterone-regulated sodium reabsorption, Insulin signaling pathway, Maturity onset diabetes of the young, Oocyte meiosis, Progesterone-mediated oocyte maturation, Prostate cancer, Regulation of actin cytoskeleton, Regulation of autophagy, Type I diabetes mellitus, Type II diabetes mellitus
juiciness	282488	FAS	Fas/APO1		hsa:355, mmu:14102, rno:246097	African trypanosomiasis, Allograft rejection, Alzheimer's disease, Apoptosis, Autoimmune thyroid disease, Chagas disease (American trypanosomiasis), Cytokine-cytokine receptor interaction, Graft-versus-host disease, MAPK signaling pathway, Natural killer cell mediated
juiciness	281416	POMC	proopiomelanocortin		hsa:5443, mmu:18976, rno:24664	Adipocytokine signaling pathway, Melanogenesis, Neuroactive ligand-receptor interaction
juiciness	281662	CAPN2	calpain 2, (m/II) large subunit	3.4.22.53	hsa:824, mmu:12334, rno:29154	Alzheimer's disease, Apoptosis, Focal adhesion, Protein processing in endoplasmic reticulum
juiciness	510767	CYCS	cytochrome c, somatic		hsa:54205, rno:25309, mmu:13067, rno:25310	Alzheimer's disease, Amyotrophic lateral sclerosis (ALS), Apoptosis, Colorectal cancer, Huntington's disease, Parkinson's disease, Pathways in cancer, Small cell lung cancer, Toxoplasmosis, Viral myocarditis
juiciness	281849	IGF2R	insulin-like growth factor 2 receptor		hsa:3482, mmu:16004, rno:25151	Lysosome
juiciness	282089	TGFB1	transforming growth factor, beta 1		hsa:7040, mmu:21803, rno:59086	Cell cycle, Chronic myeloid leukemia, Colorectal cancer, MAPK signaling pathway, Pancreatic cancer, Renal cell carcinoma, TGF-beta signaling pathway, Amoebiasis, Chagas disease (American trypanosomiasis), Cytokine-cytokine receptor interaction
juiciness	534578	VCAM1	vascular cell adhesion molecule 1		hsa:7412, mmu:22329, rno:25361	Cell adhesion molecules (CAMs), Leukocyte transendothelial migration, African trypanosomiasis, Malaria

juiciness	280826	IL6	interleukin 6 (interferon, beta 2)		hsa:3569, mmu:16193, rno:24498	Cytokine-cytokine receptor interaction, Hematopoietic cell lineage, Jak-STAT signaling pathway, Toll-like receptor signaling pathway, African trypanosomiasis, Amoebiasis, Chagas disease (American trypanosomiasis), Cytosolic DNA-sensing pathway, Graft-versus-host disease, Hypertrophic cardiomyopathy (HCM)
juiciness	280765	DES	desmin		hsa:1674, mmu:13346, rno:64362	Arrhythmogenic right ventricular cardiomyopathy (ARVC), Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM)
juiciness	511077	MYC	v-myc myelocytomatosis viral oncogene homolog (avian)		hsa:4609, mmu:17869, rno:24577	Acute myeloid leukemia, Bladder cancer, Cell cycle, Chronic myeloid leukemia, Colorectal cancer, Endometrial cancer, ErbB signaling pathway, Jak-STAT signaling pathway, MAPK signaling pathway, Pathways in cancer
juiciness	281240	IGF2	insulin-like growth factor 2 (somatomedin A)		hsa:3481, mmu:16002, rno:24483	
juiciness	281677	CEBPA	CCAAT/enhancer binding protein (C/EBP), alpha		hsa:1050, mmu:12606, rno:24252	Acute myeloid leukemia, Pathways in cancer
juiciness	281187	MSTN	myostatin		hsa:2660, mmu:17700, rno:29152	
juiciness	281052	CD36	CD36 molecule (thrombospondin receptor)		hsa:948, mmu:12491, rno:29184, rno:499985,	Adipocytokine signaling pathway, ECM-receptor interaction, Hematopoietic cell lineage, PPAR signaling pathway, Fat digestion and absorption, Malaria, Phagosome
juiciness	281004	APOE	apolipoprotein E		hsa:348, mmu:11816, rno:25728	Alzheimer's disease
juiciness	280781	ELN	elastin		hsa:2006, mmu:13717, rno:25043	Protein digestion and absorption
juiciness	535077	GSN	gelsolin		hsa:2934, mmu:227753,	Fc gamma R-mediated phagocytosis, Regulation of actin cytoskeleton
juiciness	338446	PPARGC1A	peroxisome proliferator-activated receptor gamma, coactivator 1 alpha		hsa:10891, mmu:19017, rno:83516	Adipocytokine signaling pathway, Huntington's disease, Insulin signaling pathway
juiciness	280836	LEP	leptin		hsa:3952, mmu:16846, rno:25608	Adipocytokine signaling pathway, Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
juiciness	407231	MEF2A	myocyte enhancer factor 2A		hsa:4205, mmu:17258	
juiciness	533894	LRP1	low density lipoprotein receptor-related protein 1		hsa:4035, mmu:16971, rno:299858	
juiciness	286821	SHH	sonic hedgehog homolog (Drosophila)		hsa:6469, mmu:20423, rno:29499	Basal cell carcinoma, Hedgehog signaling pathway, Pathways in cancer
juiciness	281427	PRNP	prion protein		hsa:5621, mmu:19122, rno:24686	
juiciness	286816	TNNT2	troponin T type 2 (cardiac)		hsa:7139, mmu:21956, rno:24837	Cardiac muscle contraction, Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM)
juiciness	281181	GAPDH	glyceraldehyde-3-phosphate dehydrogenase	1.2.1.12, 2.6.99.-	hsa:2597, rno:24383, rno:500983,	Alzheimer's disease, Glycolysis / Gluconeogenesis, Metabolic pathways

juiciness	281993	PPARG	peroxisome proliferator-activated receptor gamma		hsa:5468, mmu:19016, rno:25664	PPAR signaling pathway, Thyroid cancer, Huntington's disease, Osteoclast differentiation, Pathways in cancer
juiciness	280695	MB	myoglobin		hsa:4151, mmu:17189, rno:59108	
juiciness	281039	CAST	calpastatin		hsa:831, mmu:12380, rno:25403	
juiciness	404185	IGFBP5	insulin-like growth factor binding protein 5		hsa:3488, mmu:16011, rno:25285	
juiciness	524770	ACTN1	actinin, alpha 1		hsa:87, mmu:109711, rno:81634	Adherens junction, Amoebiasis, Arrhythmogenic right ventricular cardiomyopathy (ARVC), Focal adhesion, Leukocyte transendothelial migration, Regulation of actin cytoskeleton, Systemic lupus erythematosus, Tight junction
juiciness	281753	EPB41	erythrocyte membrane protein band 4.1 (elliptocytosis 1, RH-linked)		hsa:2035, mmu:269587, rno:313052	Tight junction
juiciness	280794	FN1	fibronectin ED-B+ region		hsa:2335, mmu:14268, rno:25661	Cell Communication, Focal adhesion, Regulation of actin cytoskeleton, Small cell lung cancer, Amoebiasis, Bacterial invasion of epithelial cells, ECM-receptor interaction, Pathways in cancer
juiciness	286821	SHH	sonic hedgehog homolog			
juiciness	506812	CPT1A	carnitine palmitoyltransferase 1A (liver)	2.3.1.21	hsa:1374, mmu:12894, rno:25757	
juiciness	281276	LDLR	low density lipoprotein receptor		hsa:3949, mmu:16835, rno:300438	Bile secretion, Endocytosis, Hepatitis C, Toxoplasmosis
juiciness	534353	YY1	YY1 transcription factor		hsa:7528, mmu:22632, rno:24919	
juiciness	281876	ITGB1	integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)		hsa:3688, mmu:16412, rno:24511	Arrhythmogenic right ventricular cardiomyopathy (ARVC), Axon guidance, Bacterial invasion of epithelial cells, Cell adhesion molecules (CAMs), Dilated cardiomyopathy, ECM-receptor interaction, Focal adhesion, Hypertrophic cardiomyopathy (HCM), Leishmaniasis, Leukocyte transendothelial migration
juiciness	408017	INSR	insulin receptor	2.7.10.1	hsa:3643, mmu:16337, rno:24954	Adherens junction, Aldosterone-regulated sodium reabsorption, Insulin signaling pathway, Type II diabetes mellitus
juiciness	540741	SP1	Sp1 transcription factor		hsa:6667, mmu:20683, rno:24790	TGF-beta signaling pathway, Huntington's disease
juiciness	281562	UCP2	uncoupling protein 2 (mitochondrial, proton carrier)		hsa:7351, mmu:22228, rno:54315	
juiciness	539361	SREBF1	sterol regulatory element binding transcription factor 1		hsa:6720, mmu:20787, rno:78968	Insulin signaling pathway
juiciness	281583	AANAT	arylalkylamine N-acetyltransferase	2.3.1.87	hsa:15, mmu:11298, rno:25120	Metabolic pathways, Tryptophan metabolism

juiciness	281848	IGF1R	similar to IGF-1 receptor	2.7.10.1	hsa:3480, mmu:16001, rno:25718	Adherens junction, Endocytosis, Focal adhesion, Glioma, Long-term depression, Melanoma, Oocyte meiosis, Pathways in cancer, Progesterone-mediated oocyte maturation, Prostate cancer
juiciness	281992	PPARA	peroxisome proliferator-activated receptor alpha		hsa:5465, mmu:19013, rno:25747	Adipocytokine signaling pathway, Hepatitis C, PPAR signaling pathway
juiciness	768325	GNRH1	gonadotropin-releasing hormone 1 (luteinizing-releasing hormone)		hsa:2796, mmu:14714, rno:25194	GnRH signaling pathway, Neuroactive ligand-receptor interaction
juiciness	282865	ADIPOQ	adiponectin, C1Q and collagen domain containing		hsa:9370, mmu:11450, rno:246253	Adipocytokine signaling pathway, PPAR signaling pathway, Type II diabetes mellitus
juiciness	280924	SCD	stearoyl-CoA desaturase (delta-9-desaturase)	1.14.19.1	hsa:6319, mmu:20249, rno:246074	Biosynthesis of unsaturated fatty acids, PPAR signaling pathway
juiciness	407121	NEB	nebulin		hsa:4703, mmu:17996, rno:311029	
juiciness	540985	ME1	malic enzyme 1, NADP(+)-dependent, cytosolic	1.1.1.40, 1.1.1.4	hsa:4199, mmu:17436, rno:24552	Metabolic pathways, Pyruvate metabolism
juiciness	280843	LPL	lipoprotein lipase	3.1.1.34	hsa:4023, mmu:16956, rno:24539	
juiciness	281946	NR3C1	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)		hsa:2908, mmu:14815, rno:24413	Neuroactive ligand-receptor interaction
juiciness	286879	LIPE	hormone-sensitive lipase	3.1.1.79	hsa:3991, mmu:16890, rno:25330	Insulin signaling pathway
juiciness	281152	FASN	fatty acid synthase	1.1.1.100, 1.3.1.10, 2.3.1.38, 2.3.1.39, 2.3.1.41, 2.3.1.85, 3.1.2.14, 4.2.1.61	hsa:2194, mmu:14104	Fatty acid biosynthesis, Insulin signaling pathway, Metabolic pathways
juiciness	282187	COL1A1	similar to pro alpha 1(I) collagen		hsa:1277, mmu:12842, rno:29393	Amoebiasis, ECM-receptor interaction, Focal adhesion, Protein digestion and absorption
juiciness	503578	HNF1A	HNF1 homeobox A		hsa:6927, mmu:21405, rno:24817	Maturity onset diabetes of the young
juiciness	540561	TTN	similar to mKIAA0657 protein	2.7.11.1	hsa:7273, mmu:22138	
juiciness	282609	DGAT1	diacylglycerol O-acyltransferase 1	2.3.1.20	hsa:8694, mmu:13350, rno:84497	Fat digestion and absorption, Glycerolipid metabolism, Metabolic pathways, Retinol metabolism
juiciness	539337	WNT10B	wingless-type MMTV integration site family, member 10B		hsa:7480, mmu:22410, rno:315294	Basal cell carcinoma, Hedgehog signaling pathway, Melanogenesis, Pathways in cancer, Wnt signaling pathway
juiciness	281246	IL10	interleukin 10		hsa:3586, mmu:16153, rno:25325	African trypanosomiasis, Allograft rejection, Amoebiasis, Asthma, Autoimmune thyroid disease, Chagas disease (American trypanosomiasis), Cytokine-cytokine receptor interaction, Intestinal immune network for IgA production, Jak-STAT signaling pathway, Leishmaniasis
juiciness	539238	ANK2	ankyrin 2, neuronal		hsa:287, rno:362036	
juiciness	404129	DGAT2	diacylglycerol O-acyltransferase 2	2.3.1.20	hsa:84649, mmu:67800,	Fat digestion and absorption, Glycerolipid metabolism, Metabolic pathways

juiciness	281507	STAR	steroidogenic acute regulatory protein		hsa:6770, mmu:20845, rno:25557	
juiciness	281678	CEBPD	CCAAT/enhancer binding protein (C/EBP), delta		hsa:1052, mmu:12609	
juiciness	534069	TGFB2	transforming growth factor, beta 2		hsa:7042, mmu:21808, rno:81809	Amoebiasis, Cell cycle, Chagas disease (American trypanosomiasis), Chronic myeloid leukemia, Colorectal cancer, Cytokine-cytokine receptor interaction, Dilated cardiomyopathy, Endocytosis, Hypertrophic cardiomyopathy (HCM), Leishmaniasis
juiciness	281758	FABP3	fatty acid binding protein 3, muscle and heart (mammary-derived growth inhibitor)		hsa:2170, mmu:14077, rno:79131	PPAR signaling pathway
juiciness	513996	ACOX1	acyl-CoA oxidase 1, palmitoyl	1.3.3.6	hsa:51, mmu:11430, rno:50681	Biosynthesis of unsaturated fatty acids, Fatty acid metabolism, Metabolic pathways, PPAR signaling pathway, Peroxisome, alpha-Linolenic acid metabolism
juiciness	520598	PLIN1	perilipin 1		hsa:5346, mmu:103968,	PPAR signaling pathway
juiciness	281661	CAPN1	calpain 1, (mu/I) large subunit	3.4.22.52	hsa:823, mmu:12333, rno:29153	Alzheimer's disease, Apoptosis, Protein processing in endoplasmic reticulum
juiciness	514770	NR0B2	nuclear receptor subfamily 0, group B, member 2		hsa:8431, mmu:23957, rno:117274	Bile secretion
juiciness	504219	PRKAG2	protein kinase, AMP-activated, gamma 2 non-catalytic subunit		hsa:51422, mmu:108099, rno:373545	Adipocytokine signaling pathway, Hypertrophic cardiomyopathy (HCM), Insulin signaling pathway
juiciness	516318	PER1	period homolog 1 (Drosophila)		hsa:5187, mmu:18626, rno:287422	Circadian rhythm - mammal
juiciness	537224	LPIN1	lipin 1	3.1.3.4	hsa:23175, mmu:14245,	
juiciness	280682	CS	citrate synthase	2.3.3.1	hsa:1431, mmu:12974, rno:170587	Citrate cycle (TCA cycle), Glyoxylate and dicarboxylate metabolism, Metabolic pathways
juiciness	407234	ADIPOR2	adiponectin receptor 2		hsa:79602, mmu:68465,	Adipocytokine signaling pathway
juiciness	515940	THRSP	thyroid hormone responsive		hsa:7069, mmu:21835, rno:25357	
juiciness	536229	PAX7	paired box 7		hsa:5081, mmu:18509, rno:500574	
juiciness	533333	ELOVL6	ELOVL family member 6, elongation of long chain fatty acids (FEN1/Elo2, SUR4/Elo3-like, yeast)	2.3.1.n8	hsa:79071, mmu:170439, rno:171402	Biosynthesis of unsaturated fatty acids
juiciness	282714	MYH7	hypothetical LOC785032		hsa:4625, mmu:140781,	Tight junction, Viral myocarditis

juiciness	510833	COL3A1	collagen, type III, alpha 1		hsa:1281, mmu:12825, rno:84032	Amoebiasis, ECM-receptor interaction, Focal adhesion, Protein digestion and absorption
juiciness	507176	NR1H3	nuclear receptor subfamily 1, group H, member 3		hsa:10062, mmu:22259,	Hepatitis C, PPAR signaling pathway
juiciness	281782	GHRHR	growth hormone releasing hormone receptor		hsa:2692, mmu:14602, rno:25321	Neuroactive ligand-receptor interaction
juiciness	784894	TGFBR3	transforming growth factor, beta receptor III		hsa:7049, mmu:21814, rno:29610	
juiciness	3283889	CYTB		1.10.2.2	hsa:4519, mmu:17711, rno:26192	
juiciness	282077	SPARC	secreted protein, acidic, cysteine-rich (osteonectin)		hsa:6678, mmu:20692, rno:24791	
juiciness	282191	COL4A1	collagen, type IV, alpha 1		hsa:1282, mmu:12826, rno:290905	Amoebiasis, ECM-receptor interaction, Focal adhesion, Pathways in cancer, Protein digestion and absorption, Small cell lung cancer
juiciness	281875	ITGAV	integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)		hsa:3685, mmu:16410	Arrhythmogenic right ventricular cardiomyopathy (ARVC), Cell adhesion molecules (CAMs), Dilated cardiomyopathy, ECM-receptor interaction, Focal adhesion, Hypertrophic cardiomyopathy (HCM), Pathways in cancer, Phagosome, Regulation of actin cytoskeleton, Small cell lung
juiciness	327688	COX7A2	cytochrome c oxidase subunit VIIa polypeptide 2 (liver)	1.9.3.1	hsa:1347, mmu:12866, rno:29507,	Alzheimer's disease, Cardiac muscle contraction, Huntington's disease, Oxidative phosphorylation, Parkinson's disease
juiciness	517588	GLI1	GLI family zinc finger 1		hsa:2735, mmu:14632, rno:140589	Basal cell carcinoma, Hedgehog signaling pathway, Pathways in cancer
juiciness	281759	FABP4	fatty acid binding protein 4, adipocyte		hsa:2167, mmu:11770, rno:79451	PPAR signaling pathway
juiciness	539379	ABRA	actin-binding Rho activating protein		hsa:137735, mmu:223513, rno:286965	
juiciness	517850	APPL1	adaptor protein, phosphotyrosine interaction, PH domain and leucine zipper containing 1		hsa:26060, mmu:72993	Colorectal cancer, Pathways in cancer
juiciness	353108	ANK1	ankyrin 1, erythrocytic		hsa:286, mmu:11733, rno:306570	
juiciness	286868	RPLP0	acidic ribosomal phosphoprotein P0		hsa:6175, mmu:11837, mmu:667618, rno:64205	Ribosome
juiciness	282704	TBC1D1	TBC1 (tre-2/USP6, BUB2, cdc16) domain family, member 1		hsa:23216, mmu:57915,	
juiciness	282188	COL1A2	collagen, type I, alpha 2		hsa:1278, mmu:12843, rno:84352	Amoebiasis, ECM-receptor interaction, Focal adhesion, Protein digestion and absorption
juiciness	282069	SFRP5	secreted frizzled-related protein 5		hsa:6425, mmu:54612, rno:309377	Wnt signaling pathway

juiciness	511602	COL4A5	collagen, type IV, alpha 5		hsa:1287, mmu:12830, rno:363457	Amoebiasis, ECM-receptor interaction, Focal adhesion, Pathways in cancer, Protein digestion and absorption, Small cell lung cancer
juiciness	533107	FADS1	fatty acid desaturase 1	1.14.19.-	hsa:3992, mmu:76267, rno:84575	Biosynthesis of unsaturated fatty acids
juiciness	528862	DNAJA1	similar to DnaJ homolog subfamily A member 1 (Heat shock 40 kDa protein 4) (DnaJ protein homolog 2) (HSJ-2)		hsa:3301, mmu:15502, rno:65028	Protein processing in endoplasmic reticulum
juiciness	3283886	ND4		1.6.5.3	hsa:4538, mmu:17719, rno:26201	Metabolic pathways, Oxidative phosphorylation, Parkinson's disease
juiciness	281664	CAPNS1	calpain, small subunit 1	3.4.22.17	hsa:826, mmu:12336, rno:29156	
juiciness	511412	MTPAP	mitochondrial poly(A) polymerase	2.7.7.19	hsa:55149, mmu:67440,	
juiciness	359712	COL12A1	collagen, type XII, alpha 1		hsa:1303, mmu:12816, rno:25683	Protein digestion and absorption
juiciness	617293	ELOVL5	ELOVL family member 5, elongation of long chain fatty acids (FEN1/Elo2, SUR4/Elo3-like, yeast)	2.3.1.n8	hsa:60481, mmu:68801, rno:171400	Biosynthesis of unsaturated fatty acids
juiciness	282324	PRKAG1	protein kinase, AMP-activated, gamma 1 non-catalytic subunit		hsa:5571, mmu:19082, rno:25520	Adipocytokine signaling pathway, Hypertrophic cardiomyopathy (HCM), Insulin signaling pathway
juiciness	507881	COL5A3	collagen, type V, alpha 3		hsa:50509, mmu:53867,	Amoebiasis, ECM-receptor interaction, Focal adhesion, Protein digestion and absorption
juiciness	3283885	ND4L		1.6.5.3	hsa:4539, mmu:17720, rno:26200	Metabolic pathways, Oxidative phosphorylation, Parkinson's disease
marbling	616659	LRRC61	leucine rich repeat containing 61		hsa:65999, mmu:243371, rno:500111	
marbling	512939	KRBA1	KRAB-A domain containing 1		hsa:84626, mmu:77827,	
marbling	280943	TNF	tumor necrosis factor		hsa:7124, mmu:21926, rno:24835	Adipocytokine signaling pathway, Apoptosis, Cytokine-cytokine receptor interaction, Fc epsilon RI signaling pathway, Hematopoietic cell lineage, MAPK signaling pathway, Natural killer cell mediated cytotoxicity, T cell receptor signaling pathway, TGF-beta signaling pathway, Toll-like receptor signaling pathway
marbling	281161	FGF2	fibroblast growth factor 2 (basic)		hsa:2247, mmu:14173, rno:54250	MAPK signaling pathway, Melanoma, Regulation of actin cytoskeleton, Pathways in cancer
marbling	282876	NOS2	nitric oxide synthase 2, inducible	1.14.13.39	hsa:4843, mmu:18126, rno:24599	Arginine and proline metabolism, Calcium signaling pathway, Long-term depression, Small cell lung cancer, Amoebiasis, Chagas disease (American trypanosomiasis), Leishmaniasis, Metabolic pathways, Pathways in cancer, Peroxisome

marbling	281663	CAPN3	calpain 3, (p94)	3.4.22.54	hsa:825, mmu:12335, rno:29155	
marbling	535742	SRC	v-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)	2.7.10.2, 2.7.10.1	hsa:6714, mmu:20779, rno:83805	Adherens junction, ErbB signaling pathway, Focal adhesion, Gap junction, GnRH signaling pathway, Tight junction, VEGF signaling pathway, Bacterial invasion of epithelial cells, Endocytosis
marbling	281239	IGF1	insulin-like growth factor 1 (somatomedin C)		hsa:3479, mmu:16000, rno:24482	Focal adhesion, Glioma, Long-term depression, Melanoma, mTOR signaling pathway, Aldosterone-regulated sodium reabsorption, Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM), Oocyte meiosis, Pathways in cancer
marbling	508918	SCP2	sterol carrier protein 2	2.3.1.176	hsa:6342, mmu:20280, rno:25541	Metabolic pathways, PPAR signaling pathway, Peroxisome, Primary bile acid biosynthesis
marbling	280804	GH1	growth hormone		hsa:2688	
marbling	530315	EGF	similar to epidermal growth factor		hsa:1950, mmu:13645, rno:25313	Bladder cancer, Cytokine-cytokine receptor interaction, Endocytosis, Endometrial cancer, ErbB signaling pathway, Focal adhesion, Gap junction, Glioma, Hepatitis C, MAPK signaling pathway
marbling	327672	MAPK1	mitogen-activated protein kinase 1	2.7.11.24, 2.7.1.-	hsa:5594, mmu:26413, rno:116590	Adherens junction, Axon guidance, Chronic myeloid leukemia, Colorectal cancer, Dorso-ventral axis formation, Endometrial cancer, ErbB signaling pathway, Fc epsilon RI signaling pathway, Focal adhesion, Gap junction
marbling	287024	NOS3	nitric oxide synthase 3 (endothelial cell)	1.14.13.39	hsa:4846, mmu:18127, rno:24600	Arginine and proline metabolism, Calcium signaling pathway, Long-term depression, Small cell lung cancer, Metabolic pathways
marbling	280829	INS	insulin		hsa:3630, mmu:16334, rno:24506	Aldosterone-regulated sodium reabsorption, Insulin signaling pathway, Maturity onset diabetes of the young, Oocyte meiosis, Progesterone-mediated oocyte maturation, Prostate cancer, Regulation of actin cytoskeleton, Regulation of autophagy, Type I diabetes mellitus, Type II diabetes mellitus
marbling	338033	TNFRSF1B	tumor necrosis factor receptor superfamily, member 1B		hsa:7133, mmu:21938, rno:156767	Adipocytokine signaling pathway, Amyotrophic lateral sclerosis (ALS), Cytokine-cytokine receptor interaction
marbling	282488	FAS	Fas/APO1		hsa:355, mmu:14102, rno:246097	African trypanosomiasis, Allograft rejection, Alzheimer's disease, Apoptosis, Autoimmune thyroid disease, Chagas disease (American trypanosomiasis), Cytokine-cytokine receptor interaction, Graft-versus-host disease, MAPK signaling pathway, Natural killer cell mediated
marbling	504216	NPY	neuropeptide Y		hsa:4852, mmu:109648,	Adipocytokine signaling pathway, Neuroactive ligand-receptor interaction
marbling	281416	POMC	proopiomelanocortin		hsa:5443, mmu:18976, rno:24664	Adipocytokine signaling pathway, Melanogenesis, Neuroactive ligand-receptor interaction
marbling	281662	CAPN2	calpain 2, (m/II) large subunit	3.4.22.53	hsa:824, mmu:12334, rno:29154	Alzheimer's disease, Apoptosis, Focal adhesion, Protein processing in endoplasmic reticulum
marbling	531391	MAPK3	mitogen-activated protein kinase 3	2.7.11.24, 2.7.11.1	hsa:5595, mmu:26417, rno:50689	Adherens junction, Axon guidance, Chronic myeloid leukemia, Colorectal cancer, Dorso-ventral axis formation, Endometrial cancer, ErbB signaling pathway, Fc epsilon RI signaling pathway, Focal adhesion, Gap junction

marbling	510767	CYCS	cytochrome c, somatic		hsa:54205, rno:25309, mmu:13067, rno:25310	Alzheimer's disease, Amyotrophic lateral sclerosis (ALS), Apoptosis, Colorectal cancer, Huntington's disease, Parkinson's disease, Pathways in cancer, Small cell lung cancer, Toxoplasmosis, Viral myocarditis
marbling	282089	TGFB1	transforming growth factor, beta 1		hsa:7040, mmu:21803, rno:59086	Cell cycle, Chronic myeloid leukemia, Colorectal cancer, MAPK signaling pathway, Pancreatic cancer, Renal cell carcinoma, TGF-beta signaling pathway, Amoebiasis, Chagas disease (American trypanosomiasis), Cytokine-cytokine receptor interaction
marbling	100337083	CAMK4	calcium/calmodulin-dependent protein kinase IV	2.7.11.17	hsa:814, mmu:12326, rno:25050	
marbling	280706	TG	thyroglobulin		hsa:7038, mmu:21819, rno:24826	Autoimmune thyroid disease
marbling	280901	PRL	prolactin		hsa:5617, mmu:19109, rno:24683	Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
marbling	280991	AKT1	v-akt murine thymoma viral oncogene homolog 1	2.7.11.1	hsa:207, mmu:11651, rno:24185	Adipocytokine signaling pathway, Apoptosis, B cell receptor signaling pathway, Chronic myeloid leukemia, Colorectal cancer, Endometrial cancer, ErbB signaling pathway, Fc epsilon RI signaling pathway, Focal adhesion, Glioma
marbling	281240	IGF2	insulin-like growth factor 2 (somatomedin A)		hsa:3481, mmu:16002, rno:24483	
marbling	282001	PRKCA	protein kinase C, alpha	2.7.11.13	hsa:5578, mmu:18750, rno:24680	African trypanosomiasis, Aldosterone-regulated sodium reabsorption, Amoebiasis, Calcium signaling pathway, ErbB signaling pathway, Fc gamma R-mediated phagocytosis, Focal adhesion, Gap junction, Gastric acid secretion, Glioma
marbling	281677	CEBPA	CCAAT/enhancer binding protein (C/EBP), alpha		hsa:1050, mmu:12606, rno:24252	Acute myeloid leukemia, Pathways in cancer
marbling	534712	RB1	similar to Retinoblastoma-associated protein (PP105) (RB)		hsa:5925, mmu:19645, rno:24708	Bladder cancer, Cell cycle, Chronic myeloid leukemia, Glioma, Melanoma, Non-small cell lung cancer, Pancreatic cancer, Pathways in cancer, Prostate cancer, Small cell lung cancer
marbling	281187	MSTN	myostatin		hsa:2660, mmu:17700, rno:29152	
marbling	281605	ADRB2	adrenergic, beta-2-, receptor, surface		hsa:154, mmu:11555, rno:24176	Calcium signaling pathway, Endocytosis, Neuroactive ligand-receptor interaction, Salivary secretion
marbling	281004	APOE	apolipoprotein E		hsa:348, mmu:11816, rno:25728	Alzheimer's disease
marbling	534553	CFL1	cofilin 1 (non-muscle)		hsa:1072, mmu:12631, rno:29271	Axon guidance, Fc gamma R-mediated phagocytosis, Regulation of actin cytoskeleton
marbling	338037	MYLK	myosin light chain kinase	2.7.11.18, 2.7.1.117	hsa:4638, mmu:107589,	Calcium signaling pathway, Focal adhesion, Gastric acid secretion, Regulation of actin cytoskeleton, Vascular smooth muscle contraction
marbling	280802	GCG	glucagon		hsa:2641, mmu:14526, rno:24952	Neuroactive ligand-receptor interaction
marbling	505708	PRKCD	protein kinase C, delta	2.7.11.13, 2.7.11.1	hsa:5580, mmu:18753, rno:170538	Tight junction, Fc gamma R-mediated phagocytosis, Neurotrophin signaling pathway, Vascular smooth muscle contraction

marbling	524530	CCND1	cyclin D1		hsa:595, mmu:12443, rno:58919	Acute myeloid leukemia, Bladder cancer, Cell cycle, Chronic myeloid leukemia, Colorectal cancer, Endometrial cancer, Focal adhesion, Glioma, Jak-STAT signaling pathway, Melanoma
marbling	281713	CREB1	cAMP responsive element binding protein 1		hsa:1385, mmu:12912, rno:81646	Antigen processing and presentation, Melanogenesis, Huntington's disease, Osteoclast differentiation, Prostate cancer, Vasopressin-regulated water reabsorption
marbling	519217	CDK2	cyclin-dependent kinase 2	2.7.11.22	hsa:1017, mmu:12566, rno:362817	Cell cycle, Oocyte meiosis, Pathways in cancer, Progesterone-mediated oocyte maturation, Prostate cancer, Small cell lung cancer, p53 signaling pathway
marbling	281335	MYF5	myogenic factor 5		hsa:4617, mmu:17877, rno:299766	
marbling	281938	MYOD1	myogenic differentiation 1		hsa:4654, mmu:17927, rno:337868	
marbling	516099	HSPB1	heat shock 27kDa protein 1		hsa:3315, mmu:15507, rno:24471	Amoebiasis, MAPK signaling pathway, VEGF signaling pathway
marbling	539003	CTNNB1	catenin (cadherin-associated protein), beta 1, 88kDa		hsa:1499, mmu:12387, rno:84353	Adherens junction, Arrhythmogenic right ventricular cardiomyopathy (ARVC), Bacterial invasion of epithelial cells, Basal cell carcinoma, Colorectal cancer, Endometrial cancer, Focal adhesion, Leukocyte transendothelial migration, Melanogenesis, Pathways in cancer
marbling	281561	UCP1	uncoupling protein 1 (mitochondrial, proton carrier)		hsa:7350, mmu:22227, rno:24860	Huntington's disease, PPAR signaling pathway
marbling	280836	LEP	leptin		hsa:3952, mmu:16846, rno:25608	Adipocytokine signaling pathway, Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
marbling	614055	MYL12B	myosin, light chain 12A, regulatory, non-sarcomeric		hsa:103910, mmu:67938,	Focal adhesion, Leukocyte transendothelial migration, Regulation of actin cytoskeleton, Tight junction
marbling	281343	MYOG	myogenin (myogenic factor 4)		hsa:4656, mmu:17928, rno:29148	
marbling	280717	ALB	albumin	6.1.1.16	hsa:213, mmu:11657, rno:24186	
marbling	535379	ABCA1	ATP-binding cassette, sub-family A (ABC1), member 1		hsa:19, mmu:11303, rno:313210	ABC transporters, Fat digestion and absorption
marbling	281427	PRNP	prion protein		hsa:5621, mmu:19122, rno:24686	
marbling	281181	GAPDH	glyceraldehyde-3-phosphate dehydrogenase	1.2.1.12, 2.6.99.-	hsa:2597, rno:24383, rno:500983,	Alzheimer's disease, Glycolysis / Gluconeogenesis, Metabolic pathways
marbling	281993	PPARG	peroxisome proliferator-activated receptor gamma		hsa:5468, mmu:19016, rno:25664	PPAR signaling pathway, Thyroid cancer, Huntington's disease, Osteoclast differentiation, Pathways in cancer
marbling	100295833	UTS2	urotensin 2		hsa:10911, mmu:24111,	
marbling	281039	CAST	calpastatin		hsa:831, mmu:12380, rno:25403	

marbling	524770	ACTN1	actinin, alpha 1		hsa:87, mmu:109711, rno:81634	Adherens junction, Amoebiasis, Arrhythmogenic right ventricular cardiomyopathy (ARVC), Focal adhesion, Leukocyte transendothelial migration, Regulation of actin cytoskeleton, Systemic lupus erythematosus, Tight junction
marbling	282162	CAMK2G	calcium/calmodulin-dependent protein kinase II gamma	2.7.11.17	hsa:818, mmu:12325, rno:171140	Calcium signaling pathway, ErbB signaling pathway, Gastric acid secretion, Glioma, GnRH signaling pathway, Long-term potentiation, Melanogenesis, Neurotrophin signaling pathway, Olfactory transduction,
marbling	281135	S1PR1	sphingosine-1-phosphate receptor 1		hsa:1901, mmu:13609, rno:29733	Neuroactive ligand-receptor interaction
marbling	407238	ESR1	estrogen receptor		hsa:2099, mmu:13982, rno:24890	
marbling	280794	FN1	fibronectin ED-B+ region		hsa:2335, mmu:14268, rno:25661	Cell Communication, Focal adhesion, Regulation of actin cytoskeleton, Small cell lung cancer, Amoebiasis, Bacterial invasion of epithelial cells, ECM-receptor interaction, Pathways in cancer
marbling	280755	CRH	corticotropin releasing hormone		hsa:1392, mmu:12918, rno:81648	Long-term depression, Neuroactive ligand-receptor interaction
marbling	510059	TFAM	transcription factor A, mitochondrial		hsa:7019, mmu:21780, rno:83474	Huntington's disease
marbling	281604	ADRB1	adrenergic, beta-1-, receptor		hsa:153, mmu:11554, rno:24925	Calcium signaling pathway, Dilated cardiomyopathy, Endocytosis, Gap junction, Neuroactive ligand-receptor interaction, Salivary secretion
marbling	540568	ATP2A2	ATPase, Ca ⁺⁺ transporting, cardiac muscle, slow twitch 2	3.6.3.8	hsa:488, mmu:11938, rno:29693	Alzheimer's disease, Calcium signaling pathway, Pancreatic secretion
marbling	497205	LEPR	leptin receptor		hsa:3953, mmu:16847, rno:24536	Adipocytokine signaling pathway, Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
marbling	536132	NOS1	nitric oxide synthase 1 (neuronal)	1.14.13.39	hsa:4842, mmu:18125, rno:24598	Alzheimer's disease, Amyotrophic lateral sclerosis (ALS), Arginine and proline metabolism, Calcium signaling pathway, Long-term depression, Metabolic pathways, Phagosome, Salivary secretion
marbling	535597	RORA	RAR-related orphan receptor A		hsa:6095, mmu:19883, rno:300807	Circadian rhythm - mammal
marbling	506812	CPT1A	carnitine palmitoyltransferase 1A (liver)	2.3.1.21	hsa:1374, mmu:12894, rno:25757	
marbling	327700	FABP1	fatty acid binding protein 1, liver		hsa:2168, mmu:14080, rno:24360	Fat digestion and absorption, PPAR signaling pathway
marbling	281179	G6PD	similar to Glucose-6-phosphate 1-dehydrogenase (G6PD)	1.1.1.49	hsa:2539, mmu:14381, rno:24377	Glutathione metabolism, Metabolic pathways, Pentose phosphate pathway
marbling	281631	APOA1	apolipoprotein A-I		hsa:335, mmu:11806	African trypanosomiasis, Fat digestion and absorption, PPAR signaling pathway
marbling	408017	INSR	insulin receptor	2.7.10.1	hsa:3643, mmu:16337, rno:24954	Adherens junction, Aldosterone-regulated sodium reabsorption, Insulin signaling pathway, Type II diabetes mellitus
marbling	514090	BAK1	BCL2-antagonist/killer 1		hsa:578, mmu:12018, rno:116502	Protein processing in endoplasmic reticulum

marbling	533656	VDR	vitamin D (1,25-dihydroxyvitamin D3) receptor		hsa:7421, mmu:22337, rno:24873	
marbling	511094	TNNI3	troponin I type 3 (cardiac)		hsa:7137, mmu:21954, rno:29248	Cardiac muscle contraction, Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM)
marbling	539361	SREBF1	sterol regulatory element binding transcription factor 1		hsa:6720, mmu:20787, rno:78968	Insulin signaling pathway
marbling	281485	SELL	selectin L		hsa:6402, mmu:20343, rno:29259	Cell adhesion molecules (CAMs)
marbling	281992	PPARA	peroxisome proliferator-activated receptor alpha		hsa:5465, mmu:19013, rno:25747	Adipocytokine signaling pathway, Hepatitis C, PPAR signaling pathway
marbling	513787	SLC27A1	solute carrier family 27 (fatty acid transporter), member 1	6.2.1.-	hsa:376497, mmu:26457,	PPAR signaling pathway
marbling	281192	GHRL	ghrelin/obestatin prepropeptide		hsa:51738, mmu:58991,	Neuroactive ligand-receptor interaction
marbling	281606	ADRB3	adrenergic, beta-3-, receptor		hsa:155, mmu:11556, rno:25645	Calcium signaling pathway, Endocytosis, Neuroactive ligand-receptor interaction, Salivary secretion
marbling	282865	ADIPOQ	adiponectin, C1Q and collagen domain containing		hsa:9370, mmu:11450, rno:246253	Adipocytokine signaling pathway, PPAR signaling pathway, Type II diabetes mellitus
marbling	280924	SCD	stearoyl-CoA desaturase (delta-9-desaturase)	1.14.19.1	hsa:6319, mmu:20249, rno:246074	Biosynthesis of unsaturated fatty acids, PPAR signaling pathway
marbling	280932	SST	somatostatin		hsa:6750, mmu:20604, rno:24797	Gastric acid secretion, Neuroactive ligand-receptor interaction
marbling	505463	GADD45A	growth arrest and DNA-damage-inducible, alpha		hsa:1647, mmu:13197, rno:25112	Cell cycle, MAPK signaling pathway, p53 signaling pathway
marbling	407121	NEB	nebulin		hsa:4703, mmu:17996, rno:311029	
marbling	280805	GHR	growth hormone receptor		hsa:2690, mmu:14600, rno:25235	Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
marbling	281300	MC4R	melanocortin 4 receptor		hsa:4160, mmu:17202, rno:25635	Neuroactive ligand-receptor interaction
marbling	540985	ME1	malic enzyme 1, NADP(+)-dependent, cytosolic	1.1.1.40, 1.1.1.4	hsa:4199, mmu:17436, rno:24552	Metabolic pathways, Pyruvate metabolism
marbling	523798	PON1	paraoxonase 1	3.1.1.81, 3.1.1.2, 3.1.8.1	hsa:5444, mmu:18979, rno:84024	Metabolic pathways
marbling	280843	LPL	lipoprotein lipase	3.1.1.34	hsa:4023, mmu:16956, rno:24539	
marbling	286879	LIPE	hormone-sensitive lipase	3.1.1.79	hsa:3991, mmu:16890, rno:25330	Insulin signaling pathway
marbling	281152	FASN	fatty acid synthase	1.1.1.100, 1.3.1.10, 2.3.1.38, 2.3.1.39, 2.3.1.41, 2.3.1.85, 3.1.2.14, 4.2.1.61	hsa:2194, mmu:14104	Fatty acid biosynthesis, Insulin signaling pathway, Metabolic pathways

marbling	282187	COL1A1	similar to pro alpha 1(I) collagen		hsa:1277, mmu:12842, rno:29393	Amoebiasis, ECM-receptor interaction, Focal adhesion, Protein digestion and absorption
marbling	280979	ACTB	actin, beta		hsa:60, mmu:11461, rno:81822	Adherens junction, Arrhythmogenic right ventricular cardiomyopathy (ARVC), Bacterial invasion of epithelial cells, Dilated cardiomyopathy, Focal adhesion, Hypertrophic cardiomyopathy (HCM), Leukocyte transendothelial migration, Phagosome, Regulation of actin cytoskeleton, Tight junction
marbling	282259	IGFBP1	insulin-like growth factor binding protein 1		hsa:3484, mmu:16006, rno:25685	
marbling	282856	PCK2	phosphoenolpyruvate carboxykinase 2 (mitochondrial)	4.1.1.32	hsa:5106, mmu:74551, rno:361042	Adipocytokine signaling pathway, Citrate cycle (TCA cycle), Glycolysis / Gluconeogenesis, Insulin signaling pathway, Metabolic pathways, PPAR signaling pathway, Proximal tubule bicarbonate reclamation, Pyruvate metabolism
marbling	540561	TTN	similar to mKIAA0657 protein	2.7.11.1	hsa:7273, mmu:22138	
marbling	282609	DGAT1	diacylglycerol O-acyltransferase 1	2.3.1.20	hsa:8694, mmu:13350, rno:84497	Fat digestion and absorption, Glycerolipid metabolism, Metabolic pathways, Retinol metabolism
marbling	537161	ACSL1	acyl-CoA synthetase long-chain family member 1	6.2.1.3	hsa:2180, mmu:14081, rno:25288	Adipocytokine signaling pathway, Fatty acid metabolism, Metabolic pathways, PPAR signaling pathway, Peroxisome
marbling	282261	IGFBP3	insulin-like growth factor binding protein 3		hsa:3486, mmu:16009, rno:24484	p53 signaling pathway
marbling	539337	WNT10B	wingless-type MMTV integration site family, member 10B		hsa:7480, mmu:22410, rno:315294	Basal cell carcinoma, Hedgehog signaling pathway, Melanogenesis, Pathways in cancer, Wnt signaling pathway
marbling	281246	IL10	interleukin 10		hsa:3586, mmu:16153, rno:25325	African trypanosomiasis, Allograft rejection, Amoebiasis, Asthma, Autoimmune thyroid disease, Chagas disease (American trypanosomiasis), Cytokine-cytokine receptor interaction, Intestinal immune network for IgA production, Jak-STAT signaling pathway, Leishmaniasis
marbling	514427	SLC27A4	solute carrier family 27 (fatty acid transporter), member 4	6.2.1.-	hsa:10999, mmu:26569,	
marbling	539238	ANK2	ankyrin 2, neuronal		hsa:287, rno:362036	
marbling	286969	UTS2R	urotensin 2 receptor		hsa:2837, mmu:217369,	Neuroactive ligand-receptor interaction
marbling	281967	PCSK1	proprotein convertase subtilisin/kexin type 1	3.4.21.93	hsa:5122, mmu:18548, rno:25204	
marbling	280841	LOX	lysyl oxidase	1.4.3.13	hsa:4015, mmu:16948, rno:24914	
marbling	505987	GK	glycerol kinase	2.7.1.30	hsa:2710, mmu:14933, rno:79223	Glycerolipid metabolism, Metabolic pathways, PPAR signaling pathway
marbling	282357	SLC2A2	solute carrier family 2 (facilitated glucose transporter), member 2		hsa:6514, mmu:20526, rno:25351	Carbohydrate digestion and absorption, Maturity onset diabetes of the young, Type II diabetes mellitus
marbling	281758	FABP3	fatty acid binding protein 3, muscle and heart (mammary-derived growth inhibitor)		hsa:2170, mmu:14077, rno:79131	PPAR signaling pathway

marbling	513996	ACOX1	acyl-CoA oxidase 1, palmitoyl	1.3.3.6	hsa:51, mmu:11430, rno:50681	Biosynthesis of unsaturated fatty acids, Fatty acid metabolism, Metabolic pathways, PPAR signaling pathway, Peroxisome, alpha-Linolenic acid metabolism
marbling	326284	FGF8	fibroblast growth factor 8 (androgen-induced)		hsa:2253, mmu:14179, rno:29349	MAPK signaling pathway, Melanoma, Pathways in cancer, Regulation of actin cytoskeleton
marbling	508990	RARRES2	retinoic acid receptor responder (tazarotene induced) 2		hsa:5919, mmu:71660, rno:297073	
marbling	508493	PNPLA2	patatin-like phospholipase domain containing 2	3.1.1.3	hsa:57104, mmu:66853,	
marbling	281716	CRHR1	corticotropin releasing hormone receptor 1		hsa:1394, mmu:12921, rno:58959	Long-term depression, Neuroactive ligand-receptor interaction
marbling	281661	CAPN1	calpain 1, (mu/I) large subunit	3.4.22.52	hsa:823, mmu:12333, rno:29153	Alzheimer's disease, Apoptosis, Protein processing in endoplasmic reticulum
marbling	522159	PLD2	phospholipase D2	3.1.4.4	hsa:5338, mmu:18806, rno:25097	Endocytosis, Ether lipid metabolism, Fc gamma R-mediated phagocytosis, Glycerophospholipid metabolism, GnRH signaling pathway, Metabolic pathways
marbling	525042	GPD1	glycerol-3-phosphate dehydrogenase 1 (soluble)	1.1.1.8	hsa:2819, mmu:14555, rno:60666	Glycerophospholipid metabolism
marbling	280682	CS	citrate synthase	2.3.3.1	hsa:1431, mmu:12974, rno:170587	Citrate cycle (TCA cycle), Glyoxylate and dicarboxylate metabolism, Metabolic pathways
marbling	511135	ACLY	ATP citrate lyase	2.3.3.8	hsa:47, mmu:104112, rno:24159	Citrate cycle (TCA cycle), Metabolic pathways
marbling	281336	MYF6	myogenic factor 6 (herculin)		hsa:4618, mmu:17878, rno:25714	
marbling	515940	THRSP	thyroid hormone responsive		hsa:7069, mmu:21835, rno:25357	
marbling	509622	NR1H2	nuclear receptor subfamily 1, group H, member 2		hsa:7376, mmu:22260, rno:58851	
marbling	280981	PLIN2	perilipin 2		hsa:123, mmu:11520, rno:298199	
marbling	521831	CRHR2	corticotropin releasing hormone receptor 2		hsa:1395, mmu:12922, rno:64680	Neuroactive ligand-receptor interaction
marbling	494004	APOB	apolipoprotein B	3.5.4.5	hsa:338, mmu:238055, rno:54225	Fat digestion and absorption
marbling	505405	MC3R	melanocortin 3 receptor		hsa:4159, mmu:17201, rno:29310	
marbling	510833	COL3A1	collagen, type III, alpha 1		hsa:1281, mmu:12825, rno:84032	Amoebiasis, ECM-receptor interaction, Focal adhesion, Protein digestion and absorption
marbling	507176	NR1H3	nuclear receptor subfamily 1, group H, member 3		hsa:10062, mmu:22259,	Hepatitis C, PPAR signaling pathway
marbling	280753	CPE	carboxypeptidase E	3.4.17.10	hsa:1363, mmu:12876	Type I diabetes mellitus

marbling	282863	IL17A	interleukin 17A		hsa:3605, mmu:16171, rno:301289	Cytokine-cytokine receptor interaction
marbling	280692	HP	haptoglobin		hsa:3240, mmu:15439, rno:24464	
marbling	541220	H6PD	hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)	3.1.1.31, 1.1.1.47	hsa:9563, mmu:100198, rno:298655	
marbling	508899	NCOA6	nuclear receptor coactivator 6		hsa:23054, mmu:56406,	
marbling	505640	PLTP	phospholipid transfer protein		hsa:5360, mmu:18830, rno:296371	PPAR signaling pathway
marbling	514650	FABP6	fatty acid binding protein 6, ileal		hsa:2172, mmu:16204, rno:25440	PPAR signaling pathway
marbling	506053	FOXP3	forkhead box P3		hsa:50943, mmu:20371,	
marbling	539640	RCAN1	regulator of calcineurin 1		hsa:1827, mmu:54720	
marbling	3283889	CYTB		1.10.2.2	hsa:4519, mmu:17711, rno:26192	
marbling	282077	SPARC	secreted protein, acidic, cysteine-rich (osteonectin)		hsa:6678, mmu:20692, rno:24791	
marbling	513257	TCAP	titin-cap (telethonin)		hsa:8557, mmu:21393	
marbling	327688	COX7A2	cytochrome c oxidase subunit VIIa polypeptide 2 (liver)	1.9.3.1	hsa:1347, mmu:12866, rno:29507,	Alzheimer's disease, Cardiac muscle contraction, Huntington's disease, Oxidative phosphorylation, Parkinson's disease
marbling	281204	GNG3	guanine nucleotide binding protein (G protein), gamma 3		hsa:2785, mmu:14704, rno:114117	Chemokine signaling pathway, Taste transduction
marbling	539364	BTG2	BTG family, member 2		hsa:7832, mmu:12227, rno:29619	RNA degradation
marbling	281759	FABP4	fatty acid binding protein 4, adipocyte		hsa:2167, mmu:11770, rno:79451	PPAR signaling pathway
marbling	282220	EEF1A1	eukaryotic translation elongation factor 1 alpha 1		hsa:1915, mmu:13627, rno:171361	RNA transport
marbling	539674	TNFAIP1	tumor necrosis factor, alpha-induced protein 1 (endothelial)		hsa:7126, mmu:21927, rno:287543	
marbling	539559	GDF5	growth differentiation factor 5		hsa:8200, mmu:14563	Cytokine-cytokine receptor interaction, TGF-beta signaling pathway
marbling	521822	FADS2	fatty acid desaturase 2	1.14.19.-	hsa:9415, mmu:56473, rno:83512	Biosynthesis of unsaturated fatty acids, PPAR signaling pathway, alpha-Linolenic acid metabolism
marbling	529631	RUNX1	runt-related transcription factor 1		hsa:861, rno:50662	Acute myeloid leukemia, Chronic myeloid leukemia, Pathways in cancer
marbling	518658	PLEK	pleckstrin		hsa:5341, mmu:56193, rno:364206	

marbling	286862	YWHAG	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, gamma polypeptide		hsa:7532, mmu:22628, rno:56010	Cell cycle, Neurotrophin signaling pathway, Oocyte meiosis
marbling	510489	SH3KBP1	SH3-domain kinase binding protein 1		hsa:30011, mmu:58194,	Endocytosis
marbling	281298	MC1R	melanocortin 1 receptor (alpha melanocyte stimulating hormone receptor)		hsa:4157, mmu:17199	Melanogenesis, Neuroactive ligand-receptor interaction
marbling	507554	RXRA	retinoid X receptor, alpha		hsa:6256, mmu:20181, rno:25271	Adipocytokine signaling pathway, Bile secretion, Hepatitis C, Non-small cell lung cancer, PPAR signaling pathway, Pathways in cancer, Small cell lung cancer, Thyroid cancer
marbling	534496	MYCBP2	MYC binding protein 2	6.3.2.-	hsa:23077, mmu:105689, rno:290447	
marbling	286806	ADAMTS4	ADAM metalloproteinase with thrombospondin type 1 motif, 4	3.4.24.82	hsa:9507, mmu:240913,	
marbling	615411	CMKLR1	chemokine-like receptor 1		hsa:1240, mmu:14747, rno:60669	
marbling	282857	SNCA	synuclein, alpha (non A4 component of amyloid precursor)		hsa:6622, mmu:20617, rno:29219	
marbling	281760	FABP5	fatty acid binding protein 5 (psoriasis-associated)		hsa:2171, mmu:16592, rno:140868	PPAR signaling pathway
marbling	527470	RORC	RAR-related orphan receptor C		hsa:6097, mmu:19885	Circadian rhythm - mammal
marbling	286868	RPLP0	acidic ribosomal phosphoprotein P0		hsa:6175, mmu:11837, mmu:667618, rno:64205	Ribosome
marbling	511566	EFEMP1	EGF containing fibulin-like extracellular matrix protein 1		hsa:2202, mmu:216616,	
marbling	282419	CSNK2A1	casein kinase 2, alpha 1 polypeptide	2.7.11.1	hsa:1457, mmu:12995, rno:116549	Adherens junction, Tight junction, Wnt signaling pathway
marbling	327693	HINT1	histidine triad nucleotide binding protein 1	3.-.-.-	hsa:3094, mmu:15254, rno:690660	
marbling	282855	PCK1	phosphoenolpyruvate carboxykinase 1 (soluble)	4.1.1.32	hsa:5105, mmu:18534, rno:362282	Adipocytokine signaling pathway, Citrate cycle (TCA cycle), Glycolysis / Gluconeogenesis, Insulin signaling pathway, Metabolic pathways, PPAR signaling pathway, Proximal tubule bicarbonate reclamation, Pyruvate metabolism
marbling	327705	ASAP1	ArfGAP with SH3 domain, ankyrin repeat and PH domain 1		hsa:50807, mmu:13196,	Endocytosis, Fc gamma R-mediated phagocytosis
marbling	514223	ILKAP	integrin-linked kinase-associated serine/threonine phosphatase	3.1.3.16	hsa:80895, mmu:67444,	

marbling	317696	FGFR4	fibroblast growth factor receptor 4	2.7.10.1	hsa:2264, mmu:14186, rno:25114	Endocytosis, MAPK signaling pathway, Regulation of actin cytoskeleton
marbling	282188	COL1A2	collagen, type I, alpha 2		hsa:1278, mmu:12843, rno:84352	Amoebiasis, ECM-receptor interaction, Focal adhesion, Protein digestion and absorption
marbling	777787	FABP7	fatty acid binding protein 7, brain		hsa:2173, mmu:12140, rno:80841	PPAR signaling pathway
marbling	532785	HADH	hydroxyacyl-Coenzyme A dehydrogenase pseudogene	1.1.1.35	hsa:3033, mmu:15107, rno:113965	
marbling	282480	SLC25A6	solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member		hsa:293, mmu:11740, rno:25176	Calcium signaling pathway, Huntington's disease, Parkinson's disease
marbling	512112	AGPAT2	1-acylglycerol-3-phosphate O-acyltransferase 2 (lysophosphatidic acid	2.3.1.51	hsa:10555, mmu:67512, rno:311821	Fat digestion and absorption, Glycerolipid metabolism, Glycerophospholipid metabolism, Metabolic pathways
marbling	282069	SFRP5	secreted frizzled-related protein 5		hsa:6425, mmu:54612, rno:309377	Wnt signaling pathway
marbling	281592	ACTA1	actin, alpha 1, skeletal muscle		hsa:58, mmu:11459, rno:29437	
marbling	515363	PHB2	prohibitin 2		hsa:11331, mmu:12034,	
marbling	509952	DECR1	2,4-dienoyl CoA reductase 1, mitochondrial	1.3.1.34	hsa:1666, mmu:67460, rno:117543	
marbling	508373	RAB2A	RAB2A, member RAS oncogene family		hsa:5862, mmu:59021, rno:65158	
marbling	532626	GPR37	G protein-coupled receptor 37 (endothelin receptor type B-like)		hsa:2861, mmu:14763, rno:117549	Parkinson's disease
marbling	282137	AGPAT1	1-acylglycerol-3-phosphate O-acyltransferase 1 (lysophosphatidic acid	2.3.1.51	hsa:10554, mmu:55979, rno:406165	Fat digestion and absorption, Glycerolipid metabolism, Glycerophospholipid metabolism, Metabolic pathways
marbling	504948	GPD2	glycerol-3-phosphate dehydrogenase 2 (mitochondrial)	1.1.5.3	hsa:2820, mmu:14571, rno:25062	Glycerophospholipid metabolism
marbling	326581	EEF1G	similar to Elongation factor 1-gamma (EF-1-gamma) (eEF-1B gamma)		hsa:1937, mmu:67160, rno:293725	
marbling	533438	TFB1M	similar to transcription factor B1, mitochondrial	2.1.1.-	hsa:51106, mmu:224481, rno:308140	
marbling	513603	PCSK1N	proprotein convertase subtilisin/kexin type 1 inhibitor		hsa:27344, mmu:30052,	
marbling	404190	RPL27A	ribosomal protein L27a		hsa:6157, mmu:26451, mmu:665189, rno:293418	Ribosome

marbling	781683	FAT4	FAT tumor suppressor homolog 4 (Drosophila)		hsa:79633, mmu:329628, rno:310341	
marbling	516874	TFB2M	transcription factor B2, mitochondrial	2.1.1.-	hsa:64216, mmu:15278,	
marbling	100301026	NLRP2	NLR family, pyrin domain containing 2		hsa:55655, mmu:232827	
marbling	504625	SORBS1	sorbin and SH3 domain containing 1		hsa:10580, mmu:20411,	
marbling	3283886	ND4		1.6.5.3	hsa:4538, mmu:17719, rno:26201	Metabolic pathways, Oxidative phosphorylation, Parkinson's disease
marbling	518563	HS6ST1	heparan sulfate 6-O-sulfotransferase 1	2.8.2.-	hsa:9394, mmu:50785, rno:316325	
marbling	521326	HMCN1	hemicentin 1		hsa:83872, mmu:665700, rno:289094	
marbling	514832	PEX5	peroxisomal biogenesis factor 5		hsa:5830, mmu:19305	Peroxisome
marbling	508582	ACAP1	ArfGAP with coiled-coil, ankyrin repeat and PH domains 1		hsa:9744, mmu:216859,	
marbling	530719	CAMK2A	calcium/calmodulin-dependent protein kinase II alpha	2.7.11.17	hsa:815, mmu:12322, rno:25400	Calcium signaling pathway, ErbB signaling pathway, Gastric acid secretion, Glioma, GnRH signaling pathway, Long-term potentiation, Melanogenesis, Neurotrophin signaling pathway, Olfactory transduction,
marbling	535727	SLC27A2	solute carrier family 27 (fatty acid transporter), member 2	6.2.1.3, 6.2.1.-	hsa:11001, mmu:26458,	PPAR signaling pathway, Peroxisome
marbling	281939	MYOZ1	myozenin 1		hsa:58529, mmu:59011,	
marbling	613610	PDHB	pyruvate dehydrogenase (lipoamide) beta	1.2.4.1	hsa:5162, mmu:68263, rno:289950	Butanoate metabolism, Citrate cycle (TCA cycle), Glycolysis / Gluconeogenesis, Metabolic pathways, Pyruvate metabolism, Valine, leucine and isoleucine biosynthesis
marbling	505224	ATP6V0E2	ATPase, H ⁺ transporting V0 subunit e2		hsa:155066, mmu:76252, rno:436582	Collecting duct acid secretion, Metabolic pathways, Oxidative phosphorylation, Phagosome
marbling	100126042	ALDH4A1	aldehyde dehydrogenase 4 family, member A1	1.5.1.12	hsa:8659, mmu:212647	
marbling	508443	ABCG4	ATP-binding cassette, sub-family G (WHITE), member 4		hsa:64137, mmu:192663, rno:300664	ABC transporters
marbling	783104	HPS3	Hermansky-Pudlak syndrome 3		hsa:84343, mmu:12807,	
marbling	505725	PAGE4	P antigen family, member 4 (prostate associated)		hsa:9506	

marbling	282393	UQCRC1	UQCRC1 protein	1.10.2.2	hsa:7384, mmu:22273, rno:301011	
marbling	540802	ASB3	ankyrin repeat and SOCS box containing 3		hsa:51130, mmu:65257,	
marbling	614292	AKIRIN2	akirin 2		hsa:55122, mmu:433693, rno:297968	
marbling	538516	PDLIM3	PDZ and LIM domain 3		hsa:27295, rno:114108	
marbling	515385	FABP9	fatty acid binding protein 9, testis		hsa:646480, mmu:21884,	
marbling	539275	CHD9	chromodomain helicase DNA binding protein 9	3.6.4.12	hsa:80205, mmu:109151	
marbling	511510	REPIN1	replication initiator 1		hsa:29803, mmu:58887,	
marbling	515741	CAPN14	calpain 14	3.4.22.-	hsa:440854	
marbling	530544	CAPN12	calpain 12	3.4.22.-	hsa:147968,	
marbling	535449	MTFR1	mitochondrial fission regulator 1		hsa:9650, mmu:67472, rno:311403	
marbling	3283885	ND4L		1.6.5.3	hsa:4539, mmu:17720, rno:26200	Metabolic pathways, Oxidative phosphorylation, Parkinson's disease
marbling	768209	SFRS18	splicing factor, arginine/serine-rich 18		hsa:25957, mmu:66625,	
milk	523874	FAM184B	similar to hCG40928		hsa:27146, mmu:58227,	
milk	538666	FAM131A	hypothetical LOC538666		hsa:131408, mmu:78408	
milk	280943	TNF	tumor necrosis factor		hsa:7124, mmu:21926, rno:24835	Adipocytokine signaling pathway, Apoptosis, Cytokine-cytokine receptor interaction, Fc epsilon RI signaling pathway, Hematopoietic cell lineage, MAPK signaling pathway, Natural killer cell mediated cytotoxicity, T cell receptor signaling pathway, TGF-beta signaling pathway, Toll-like receptor signaling pathway
milk	540388	TGFA	transforming growth factor, alpha		hsa:7039, mmu:21802, rno:24827	ErbB signaling pathway, Glioma, Non-small cell lung cancer, Pancreatic cancer, Renal cell carcinoma, Pathways in cancer, Prostate cancer
milk	535742	SRC	v-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)	2.7.10.2, 2.7.10.1	hsa:6714, mmu:20779, rno:83805	Adherens junction, ErbB signaling pathway, Focal adhesion, Gap junction, GnRH signaling pathway, Tight junction, VEGF signaling pathway, Bacterial invasion of epithelial cells, Endocytosis
milk	281239	IGF1	insulin-like growth factor 1 (somatomedin C)		hsa:3479, mmu:16000, rno:24482	Focal adhesion, Glioma, Long-term depression, Melanoma, mTOR signaling pathway, Aldosterone-regulated sodium reabsorption, Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM), Oocyte meiosis, Pathways in cancer
milk	613414	TRH	thyrotropin-releasing hormone		hsa:7200, mmu:22044, rno:25569	Neuroactive ligand-receptor interaction

milk	514876	CALCA	calcitonin-related polypeptide		hsa:796	
milk	281060	CD8A	CD8a molecule		hsa:925, mmu:12525, rno:24930	Antigen processing and presentation, Cell adhesion molecules (CAMs), Hematopoietic cell lineage, T cell receptor signaling pathway, Primary immunodeficiency
milk	280804	GH1	growth hormone		hsa:2688	
milk	280829	INS	insulin		hsa:3630, mmu:16334, rno:24506	Aldosterone-regulated sodium reabsorption, Insulin signaling pathway, Maturity onset diabetes of the young, Oocyte meiosis, Progesterone-mediated oocyte maturation, Prostate cancer, Regulation of actin cytoskeleton, Regulation of autophagy, Type I diabetes mellitus, Type II diabetes mellitus
milk	281416	POMC	proopiomelanocortin		hsa:5443, mmu:18976, rno:24664	Adipocytokine signaling pathway, Melanogenesis, Neuroactive ligand-receptor interaction
milk	281237	IFNG	interferon, gamma		hsa:3458, mmu:15978, rno:25712	Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Natural killer cell mediated cytotoxicity, Regulation of autophagy, T cell receptor signaling pathway, TGF-beta signaling pathway, Type I diabetes mellitus, African trypanosomiasis, Allograft rejection, Amoebiasis
milk	282089	TGFB1	transforming growth factor, beta 1		hsa:7040, mmu:21803, rno:59086	Cell cycle, Chronic myeloid leukemia, Colorectal cancer, MAPK signaling pathway, Pancreatic cancer, Renal cell carcinoma, TGF-beta signaling pathway, Amoebiasis, Chagas disease (American trypanosomiasis), Cytokine-cytokine receptor interaction
milk	280826	IL6	interleukin 6 (interferon, beta 2)		hsa:3569, mmu:16193, rno:24498	Cytokine-cytokine receptor interaction, Hematopoietic cell lineage, Jak-STAT signaling pathway, Toll-like receptor signaling pathway, African trypanosomiasis, Amoebiasis, Chagas disease (American trypanosomiasis), Cytosolic DNA-sensing pathway, Graft-versus-host disease, Hypertrophic cardiomyopathy (HCM)
milk	515610	ACTA2	similar to alpha-smooth muscle actin		hsa:59	Vascular smooth muscle contraction
milk	280706	TG	thyroglobulin		hsa:7038, mmu:21819, rno:24826	Autoimmune thyroid disease
milk	280901	PRL	prolactin		hsa:5617, mmu:19109, rno:24683	Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
milk	280991	AKT1	v-akt murine thymoma viral oncogene homolog 1	2.7.11.1	hsa:207, mmu:11651, rno:24185	Adipocytokine signaling pathway, Apoptosis, B cell receptor signaling pathway, Chronic myeloid leukemia, Colorectal cancer, Endometrial cancer, ErbB signaling pathway, Fc epsilon RI signaling pathway, Focal adhesion, Glioma
milk	280828	IL8	interleukin 8		hsa:3576	Leukocyte transendothelial migration, Amoebiasis, Bladder cancer, Chagas disease (American trypanosomiasis), Chemokine signaling pathway, Cytokine-cytokine receptor interaction, Hepatitis C, Malaria, NOD-like receptor signaling pathway, Pathways in cancer
milk	520743	KCNJ6	potassium inwardly-rectifying channel, subfamily J, member 6		hsa:3763, mmu:16522, rno:25743	

milk	281240	IGF2	insulin-like growth factor 2 (somatomedin A)		hsa:3481, mmu:16002, rno:24483	
milk	281251	IL1B	interleukin 1, beta		hsa:3553, mmu:16176, rno:24494	Apoptosis, Cytokine-cytokine receptor interaction, Hematopoietic cell lineage, MAPK signaling pathway, Toll-like receptor signaling pathway, Type I diabetes mellitus, African trypanosomiasis, Alzheimer's disease, Amoebiasis, Chagas disease (American trypanosomiasis)
milk	280903	PTH	parathyroid hormone		hsa:5741, mmu:19226, rno:24694	Neuroactive ligand-receptor interaction
milk	281187	MSTN	myostatin		hsa:2660, mmu:17700, rno:29152	
milk	505554	NEU1	sialidase 1 (lysosomal sialidase)	3.2.1.18	hsa:4758, mmu:18010, rno:24591	Lysosome, Other glycan degradation, Sphingolipid metabolism
milk	281052	CD36	CD36 molecule (thrombospondin receptor)		hsa:948, mmu:12491, rno:29184, rno:499985,	Adipocytokine signaling pathway, ECM-receptor interaction, Hematopoietic cell lineage, PPAR signaling pathway, Fat digestion and absorption, Malaria, Phagosome
milk	531682	CAT	catalase	1.11.1.6	hsa:847, mmu:12359, rno:24248	Amyotrophic lateral sclerosis (ALS), Metabolic pathways, Peroxisome, Tryptophan metabolism
milk	281004	APOE	apolipoprotein E		hsa:348, mmu:11816, rno:25728	Alzheimer's disease
milk	280822	IL2	interleukin 2		hsa:3558, mmu:16183, rno:116562	Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, T cell receptor signaling pathway, Type I diabetes mellitus, Allograft rejection, Autoimmune thyroid disease, Chagas disease (American trypanosomiasis), Graft-versus-host disease, Intestinal immune network for
milk	280955	VIM	vimentin		hsa:7431, mmu:22352, rno:81818	
milk	282325	PRKCB	protein kinase C, beta	2.7.11.13	hsa:5579, mmu:18751, rno:25023	African trypanosomiasis, Aldosterone-regulated sodium reabsorption, Amoebiasis, Calcium signaling pathway, Chemokine signaling pathway, ErbB signaling pathway, Fc gamma R-mediated phagocytosis, Focal adhesion, Gap junction, Gastric acid secretion
milk	281061	CDK1	cyclin-dependent kinase 1	2.7.11.23, 2.7.11.22, 2.7.1.-	hsa:983, mmu:12534, rno:54237	Cell cycle, Gap junction, Oocyte meiosis, Progesterone-mediated oocyte maturation, p53 signaling pathway
milk	281095	CSF2	colony stimulating factor 2 (granulocyte-macrophage)		hsa:1437, mmu:12981, rno:116630	Cytokine-cytokine receptor interaction, Fc epsilon RI signaling pathway, Hematopoietic cell lineage, Jak-STAT signaling pathway, Natural killer cell mediated cytotoxicity, T cell receptor signaling pathway, Amoebiasis
milk	404181	RPS6KB1	ribosomal protein S6 kinase, 70kDa, polypeptide 1	2.7.11.1	hsa:6198, rno:83840	Acute myeloid leukemia, ErbB signaling pathway, Fc gamma R-mediated phagocytosis, Insulin signaling pathway, TGF-beta signaling pathway, mTOR signaling pathway
milk	617510	CCK	cholecystokinin		hsa:885, mmu:12424, rno:25298	Neuroactive ligand-receptor interaction, Pancreatic secretion
milk	281191	GHRH	growth hormone releasing hormone		hsa:2691, mmu:14601, rno:29446	Neuroactive ligand-receptor interaction

milk	617701	BDNF	brain-derived neurotrophic factor		hsa:627, mmu:12064, rno:24225	
milk	282093	TIMP2	TIMP metallopeptidase inhibitor 2		hsa:7077, mmu:21858, rno:29543	
milk	338446	PPARGC1A	peroxisome proliferator-activated receptor gamma, coactivator 1 alpha		hsa:10891, mmu:19017, rno:83516	Adipocytokine signaling pathway, Huntington's disease, Insulin signaling pathway
milk	280836	LEP	leptin		hsa:3952, mmu:16846, rno:25608	Adipocytokine signaling pathway, Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
milk	280717	ALB	albumin	6.1.1.16	hsa:213, mmu:11657, rno:24186	
milk	281427	PRNP	prion protein		hsa:5621, mmu:19122, rno:24686	
milk	281375	SERPINE1	serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1		hsa:5054, mmu:18787, rno:24617	Chagas disease (American trypanosomiasis), Complement and coagulation cascades, p53 signaling pathway
milk	281181	GAPDH	glyceraldehyde-3-phosphate dehydrogenase	1.2.1.12, 2.6.99.-	hsa:2597, rno:24383, rno:500983,	Alzheimer's disease, Glycolysis / Gluconeogenesis, Metabolic pathways
milk	508541	STAT3	signal transducer and activator of transcription 3 (acute-phase response factor)		hsa:6774, mmu:20848, rno:25125	Jak-STAT signaling pathway, Acute myeloid leukemia, Adipocytokine signaling pathway, Chemokine signaling pathway, Hepatitis C, Pancreatic cancer, Pathways in cancer, Toxoplasmosis
milk	510745	ABCG1	ATP-binding cassette, sub-family G (WHITE), member 1		hsa:9619, mmu:11307, rno:85264	ABC transporters
milk	280755	CRH	corticotropin releasing hormone		hsa:1392, mmu:12918, rno:81648	Long-term depression, Neuroactive ligand-receptor interaction
milk	280888	OXT	oxytocin, prepropeptide		hsa:5020, mmu:18429, rno:25504	Neuroactive ligand-receptor interaction
milk	407142	COL2A1	collagen, type II, alpha 1		hsa:1280, mmu:12824, rno:25412	
milk	516010	SMAD2	similar to JV18-1		hsa:4087, mmu:17126, rno:29357	Adherens junction, Cell cycle, Chagas disease (American trypanosomiasis), Colorectal cancer, Endocytosis, Pancreatic cancer, Pathways in cancer, TGF-beta signaling pathway, Wnt signaling pathway
milk	100139219	MTOR	hexokinase 1	2.7.11.1, 2.7.1.1	hsa:2475, mmu:56717, rno:56718	Aminosugars metabolism, Fructose and mannose metabolism, Galactose metabolism, Glycolysis / Gluconeogenesis, Starch and sucrose metabolism, Streptomycin biosynthesis, Amino sugar and nucleotide sugar metabolism, Butirosin and neomycin biosynthesis, Carbohydrate digestion and absorption, Insulin signaling pathway
milk	497205	LEPR	leptin receptor		hsa:3953, mmu:16847, rno:24536	Adipocytokine signaling pathway, Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
milk	281499	SPP1	secreted phosphoprotein 1		hsa:6696, mmu:20750, rno:25353	Cell Communication, ECM-receptor interaction, Focal adhesion, Toll-like receptor signaling pathway

milk	282004	PRKG1	similar to cGMP-dependent protein kinase type I beta	2.7.11.12	hsa:5592, mmu:19091	Gap junction, Long-term depression, Olfactory transduction, Salivary secretion
milk	508829	ABCG8	ATP-binding cassette, sub-family G (WHITE), member 8		hsa:64241, mmu:67470,	ABC transporters, Bile secretion, Fat digestion and absorption
milk	540741	SP1	Sp1 transcription factor		hsa:6667, mmu:20683, rno:24790	TGF-beta signaling pathway, Huntington's disease
milk	515125	SMAD3	SMAD family member 3		hsa:4088, mmu:17127, rno:25631	Adherens junction, Cell cycle, Chagas disease (American trypanosomiasis), Colorectal cancer, Endocytosis, Pancreatic cancer, Pathways in cancer, TGF-beta signaling pathway, Wnt signaling pathway
milk	281057	CD44	CD44 molecule (Indian blood group)		hsa:960, mmu:12505, rno:25406	ECM-receptor interaction, Hematopoietic cell lineage
milk	510814	STAT1	signal transducer and activator of transcription 1, 91kDa		hsa:6772, mmu:20846, rno:25124	Chemokine signaling pathway, Hepatitis C, Jak-STAT signaling pathway, Leishmaniasis, Osteoclast differentiation, Pancreatic cancer, Pathways in cancer, Toll-like receptor signaling pathway, Toxoplasmosis
milk	539361	SREBF1	sterol regulatory element binding transcription factor 1		hsa:6720, mmu:20787, rno:78968	Insulin signaling pathway
milk	535916	SMAD7	SMAD family member 7		hsa:4092, mmu:17131, rno:81516	Endocytosis, TGF-beta signaling pathway
milk	281485	SELL	selectin L		hsa:6402, mmu:20343, rno:29259	Cell adhesion molecules (CAMs)
milk	515536	ABCG5	ATP-binding cassette, sub-family G (WHITE), member 5		hsa:64240, mmu:27409,	ABC transporters, Bile secretion, Fat digestion and absorption
milk	280705	TF	transferrin		hsa:7018, mmu:22041, rno:24825	
milk	768325	GNRH1	gonadotropin-releasing hormone 1 (luteinizing-releasing hormone)		hsa:2796, mmu:14714, rno:25194	GnRH signaling pathway, Neuroactive ligand-receptor interaction
milk	280924	SCD	stearoyl-CoA desaturase (delta-9-desaturase)	1.14.19.1	hsa:6319, mmu:20249, rno:246074	Biosynthesis of unsaturated fatty acids, PPAR signaling pathway
milk	777776	LYZ	lysozyme (macrophage expressed)	3.2.1.17	hsa:4069	
milk	407098	CD4	CD4 molecule		hsa:920, mmu:12504, rno:24932	Antigen processing and presentation, Cell adhesion molecules (CAMs), Hematopoietic cell lineage, Primary immunodeficiency, T cell receptor signaling pathway
milk	280805	GHR	growth hormone receptor		hsa:2690, mmu:14600, rno:25235	Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
milk	286857	PAX6	paired box 6		hsa:5080, mmu:18508, rno:25509	Maturity onset diabetes of the young
milk	281422	PRLR	prolactin receptor		hsa:5618, mmu:19116, rno:24684	Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
milk	497202	GPAM	glycerol-3-phosphate acyltransferase, mitochondrial	2.3.1.15	hsa:57678, mmu:14732,	Glycerolipid metabolism, Glycerophospholipid metabolism, Metabolic pathways
milk	281368	OLR1	oxidized low density lipoprotein (lectin-like) receptor 1		hsa:4973, mmu:108078,	PPAR signaling pathway, Phagosome

milk	281152	FASN	fatty acid synthase	1.1.1.100, 1.3.1.10, 2.3.1.38, 2.3.1.39, 2.3.1.41, 2.3.1.85, 3.1.2.14, 4.2.1.61	hsa:2194, mmu:14104	Fatty acid biosynthesis, Insulin signaling pathway, Metabolic pathways
milk	444867	NOD2	nucleotide-binding oligomerization domain containing 2		hsa:64127, mmu:257632, rno:291912	NOD-like receptor signaling pathway
milk	282187	COL1A1	similar to pro alpha 1(I) collagen		hsa:1277, mmu:12842, rno:29393	Amoebiasis, ECM-receptor interaction, Focal adhesion, Protein digestion and absorption
milk	280979	ACTB	actin, beta		hsa:60, mmu:11461, rno:81822	Adherens junction, Arrhythmogenic right ventricular cardiomyopathy (ARVC), Bacterial invasion of epithelial cells, Dilated cardiomyopathy, Focal adhesion, Hypertrophic cardiomyopathy (HCM), Leukocyte transendothelial migration, Phagosome, Regulation of actin cytoskeleton, Tight junction
milk	510380	CYP2C19	cytochrome P450, family 2, subfamily C, polypeptide 19	1.14.13.80, 1.14.13.48, 1.14.13.49, 1.14.14.1	hsa:1557, mmu:13096, mmu:107141, mmu:404195, rno:29296,	
milk	281428	PROC	protein C (inactivator of coagulation factors Va and VIIIa)	3.4.21.69	hsa:5624, mmu:19123, rno:25268	Complement and coagulation cascades
milk	282609	DGAT1	diacylglycerol O-acyltransferase 1	2.3.1.20	hsa:8694, mmu:13350, rno:84497	Fat digestion and absorption, Glycerolipid metabolism, Metabolic pathways, Retinol metabolism
milk	280897	PLG	plasminogen	3.4.21.7	hsa:5340, mmu:18815, rno:85253	
milk	280832	KIT	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog	2.7.10.1	hsa:3815, mmu:16590, rno:64030	Cytokine-cytokine receptor interaction, Hematopoietic cell lineage, Melanogenesis, Acute myeloid leukemia, Endocytosis, Pathways in cancer
milk	782793	PRKD2	protein kinase D2	2.7.11.13	hsa:25865, mmu:101540, rno:292658	
milk	534923	AKT2	v-akt murine thymoma viral oncogene homolog 2	2.7.11.1	hsa:208, mmu:11652, rno:25233	Acute myeloid leukemia, Adipocytokine signaling pathway, Apoptosis, B cell receptor signaling pathway, Carbohydrate digestion and absorption, Chagas disease (American trypanosomiasis), Chemokine signaling pathway, Chronic myeloid leukemia, Colorectal cancer, Endometrial
milk	280699	SERPINA1	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1		hsa:5265, mmu:20700, mmu:20701, mmu:20702, mmu:20703, mmu:20704,	Complement and coagulation cascades
milk	404129	DGAT2	diacylglycerol O-acyltransferase 2	2.3.1.20	hsa:84649, mmu:67800,	Fat digestion and absorption, Glycerolipid metabolism, Metabolic pathways
milk	282262	IGFBP4	insulin-like growth factor binding protein 4		hsa:3487, mmu:16010, rno:360622	

milk	534069	TGFB2	transforming growth factor, beta 2		hsa:7042, mmu:21808, rno:81809	Amoebiasis, Cell cycle, Chagas disease (American trypanosomiasis), Chronic myeloid leukemia, Colorectal cancer, Cytokine-cytokine receptor interaction, Dilated cardiomyopathy, Endocytosis, Hypertrophic cardiomyopathy (HCM), Leishmaniasis
milk	281407	PLAT	plasminogen activator, tissue	3.4.21.68	hsa:5327, mmu:18791, rno:25692	Complement and coagulation cascades
milk	281646	BGLAP	bone gamma-carboxyglutamate (gla) protein		hsa:632, rno:25295, mmu:12095, mmu:12096, mmu:12097	
milk	282375	STAT5A	signal transducer and activator of transcription 5A		hsa:6776, mmu:20850, rno:24918	Acute myeloid leukemia, Chronic myeloid leukemia, ErbB signaling pathway, Jak-STAT signaling pathway, Pathways in cancer
milk	280749	CGA	glycoprotein hormones, alpha polypeptide		hsa:1081, mmu:12640, rno:116700	
milk	281048	CD14	CD14 molecule		hsa:929, mmu:12475, rno:60350	Hematopoietic cell lineage, MAPK signaling pathway, Regulation of actin cytoskeleton, Toll-like receptor signaling pathway, Amoebiasis,
milk	493713	NR1I2	nuclear receptor subfamily 1, group I, member 2		hsa:8856, mmu:18171, rno:84385	
milk	281661	CAPN1	calpain 1, (mu/I) large subunit	3.4.22.52	hsa:823, mmu:12333, rno:29153	Alzheimer's disease, Apoptosis, Protein processing in endoplasmic reticulum
milk	282382	TGFBR1	transforming growth factor, beta receptor 1	2.7.11.30, 2.7.11.1	hsa:7046, mmu:21812, rno:29591	Adherens junction, Chronic myeloid leukemia, Colorectal cancer, MAPK signaling pathway, Pancreatic cancer, TGF-beta signaling pathway, Chagas disease (American trypanosomiasis), Cytokine-cytokine receptor interaction, Endocytosis, Osteoclast differentiation
milk	281874	ITGAL	integrin, alpha L (antigen CD11A (p180), lymphocyte function-associated antigen 1; alpha polypeptide)		hsa:3683, mmu:16408, rno:308995	Cell adhesion molecules (CAMs), Leukocyte transendothelial migration, Malaria, Natural killer cell mediated cytotoxicity, Regulation of actin cytoskeleton, Staphylococcus aureus infection, Viral myocarditis
milk	281209	GPX1	glutathione peroxidase 1	1.11.1.9	hsa:2876, mmu:14775, rno:24404	Arachidonic acid metabolism, Glutathione metabolism
milk	777597	ANG	angiogenin, ribonuclease, RNase A family, 5	3.1.27.-	hsa:283, mmu:11727, rno:305843,	
milk	511135	ACLY	ATP citrate lyase	2.3.3.8	hsa:47, mmu:104112, rno:24159	Citrate cycle (TCA cycle), Metabolic pathways
milk	281035	SERPING1	serpin peptidase inhibitor, clade G (C1 inhibitor), member 1		hsa:710, mmu:12258, rno:295703	Complement and coagulation cascades
milk	280714	AHR	aryl hydrocarbon receptor		hsa:196, mmu:11622, rno:25690	
milk	511961	PRKAG3	protein kinase, AMP-activated, gamma 3 non-catalytic subunit		hsa:53632, mmu:241113, rno:301518	Adipocytokine signaling pathway, Hypertrophic cardiomyopathy (HCM), Insulin signaling pathway

milk	516067	FOLR1	folate receptor 1 (adult)		hsa:2348, mmu:14275, rno:171049	Endocytosis
milk	280748	CEL	carboxyl ester lipase (bile salt-stimulated lipase)	3.1.1.13, 3.1.1.3	hsa:1056, mmu:12613, rno:24254	Fat digestion and absorption, Glycerolipid metabolism, Metabolic pathways, Pancreatic secretion, Steroid biosynthesis
milk	540261	SERPINC1	serpin peptidase inhibitor, clade C (antithrombin), member 1		hsa:462, mmu:11905, rno:304917	Complement and coagulation cascades
milk	493738	KLK1	kallikrein 1	3.4.21.35	hsa:3816, rno:24523, rno:24594, rno:24841, rno:292855, rno:292858, rno:292866, rno:292868,	
milk	280846	LTF	lactotransferrin	3.4.21.-	hsa:4057, mmu:17002, rno:301034	
milk	317707	HTR1B	5-hydroxytryptamine (serotonin) receptor 1B		hsa:3351, mmu:15551, rno:25075	Neuroactive ligand-receptor interaction
milk	539188	GPT	glutamic-pyruvate transaminase (alanine aminotransferase)	2.6.1.2	hsa:2875, mmu:76282, rno:81670	Alanine, aspartate and glutamate metabolism, Metabolic pathways
milk	511112	CCL21	chemokine (C-C motif) ligand 21		hsa:6366, mmu:18829, mmu:65956, mmu:100041504, mmu:100041593, mmu:100042493, mmu:100504239, mmu:100504346, mmu:100504362, rno:298006	Chemokine signaling pathway, Cytokine-cytokine receptor interaction
milk	511899	INSIG1	insulin induced gene 1		hsa:3638, mmu:231070,	
milk	519403	ARC	activity-regulated cytoskeleton-associated protein		hsa:23237, mmu:11838,	
milk	281894	LALBA	lactalbumin, alpha-	2.4.1.22	hsa:3906, mmu:16770, rno:24528	Galactose metabolism, Metabolic pathways
milk	509003	NUCB2	nucleobindin 2		hsa:4925, mmu:53322, rno:59295	
milk	614154	PER3	period homolog 3 (Drosophila)		hsa:8863, mmu:18628, rno:78962	Circadian rhythm - mammal
milk	504598	SLPI	secretory leukocyte peptidase inhibitor		hsa:6590, mmu:20568	
milk	616239	TCN1	transcobalamin I (vitamin B12 binding protein, R binder family)		hsa:6947	

milk	281283	LIPF	lipase, gastric	3.1.1.3	hsa:8513, mmu:67717, rno:50682	Fat digestion and absorption, Glycerolipid metabolism, Metabolic pathways
milk	540248	SMAD4	SMAD family member 4		hsa:4089, mmu:17128, rno:50554	Adherens junction, Cell cycle, Chronic myeloid leukemia, Colorectal cancer, Pancreatic cancer, Pathways in cancer, TGF-beta signaling pathway, Wnt signaling pathway
milk	536203	ABCG2	ATP-binding cassette, sub-family G (WHITE), member 2		hsa:9429, mmu:26357, rno:312382	ABC transporters, Bile secretion
milk	615329	CSRP1	cysteine and glycine-rich protein 1		hsa:1465, mmu:13007, rno:29276	
milk	507988	CYP3A4	cytochrome P450, subfamily IIIA (niphedipine oxidase), polypeptide 4	1.14.13.97, 1.14.13.32, 1.14.13.67, 1.14.14.1	hsa:1576, mmu:13112, mmu:13114, mmu:53973, mmu:337924, mmu:100041375, rno:25642,	Drug metabolism - cytochrome P450, Drug metabolism - other enzymes, Linoleic acid metabolism, Metabolic pathways, Metabolism of xenobiotics by cytochrome P450, Retinol metabolism, Steroid hormone biosynthesis
milk	100271720	F8	MFGE8 protein-like		hsa:2157, mmu:14069, rno:302470	
milk	286861	FTL	ferritin, light polypeptide		hsa:2512, mmu:14325, mmu:14337, rno:29292, rno:499244,	Porphyrin and chlorophyll metabolism
milk	407128	BMPRI1B	bone morphogenetic protein receptor, type IB	2.7.11.30	hsa:658, mmu:12167	Cytokine-cytokine receptor interaction, TGF-beta signaling pathway
milk	508954	SORD	sorbitol dehydrogenase	1.1.1.14	hsa:6652, mmu:20322, rno:24788	Fructose and mannose metabolism, Metabolic pathways
milk	534164	SLIT2	slit homolog 2 (Drosophila)		hsa:9353, mmu:20563, rno:360272	Axon guidance
milk	282518	SERPINA7	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 7		hsa:6906, mmu:331535, rno:81806	
milk	540951	PAX3	paired box 3		hsa:5077, mmu:18505, rno:114502	
milk	505043	CD320	CD320 molecule		hsa:51293, mmu:54219,	
milk	493998	CRABP2	cellular retinoic acid binding protein 2		hsa:1382, mmu:12904, rno:29563	
milk	407219	MITF	microphthalmia-associated transcription factor		hsa:4286, mmu:17342, rno:25094	Melanogenesis, Melanoma, Osteoclast differentiation, Pathways in cancer
milk	280951	TYR	tyrosinase	1.14.18.1	hsa:7299, mmu:22173, rno:308800	Melanogenesis, Metabolic pathways, Riboflavin metabolism, Tyrosine metabolism

milk	523887	LYZL4	lysozyme-like 4	3.2.1.17	hsa:131375, mmu:69032, rno:363168	
milk	537712	EBF1	early B-cell factor 1		hsa:1879, mmu:13591, rno:116543	
milk	281857	IL12B	interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)		hsa:3593, mmu:16160, rno:64546	Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Toll-like receptor signaling pathway, Type I diabetes mellitus, African trypanosomiasis, Allograft rejection, Amoebiasis, Chagas disease (American trypanosomiasis), Leishmaniasis, RIG-I-like receptor signaling pathway
milk	511771	CXCL14	chemokine (C-X-C motif) ligand 14		hsa:9547, mmu:57266, rno:306748	Chemokine signaling pathway, Cytokine-cytokine receptor interaction
milk	525727	HLA-DOA	major histocompatibility complex, class II, DO alpha		hsa:3111, mmu:15001, rno:24984	Allograft rejection, Antigen processing and presentation, Asthma, Autoimmune thyroid disease, Cell adhesion molecules (CAMs), Graft-versus-host disease, Intestinal immune network for IgA production, Leishmaniasis, Phagosome, Staphylococcus aureus infection
milk	531234	NCAPG	non-SMC condensin I complex, subunit G		hsa:64151, rno:305392	
milk	514373	HERC5	hect domain and RLD 5	6.3.2.-	hsa:51191	
milk	512938	UBD	ubiquitin D		hsa:10537, mmu:24108,	
milk	520336	GCNT2	glucosaminyl (N-acetyl) transferase 2, I-branching enzyme (I blood group)	2.4.1.150	hsa:2651, mmu:14538, rno:306860	Glycosphingolipid biosynthesis - lacto and neolacto series, Metabolic pathways
milk	783257	ABCB6	ATP-binding cassette, sub-family B (MDR/TAP), member 6		hsa:10058, mmu:74104,	ABC transporters
milk	511682	MBTPS1	membrane-bound transcription factor peptidase, site 1	3.4.21.112	hsa:8720, mmu:56453, rno:89842	Protein processing in endoplasmic reticulum
milk	529566	CREB3L4	cAMP responsive element binding protein 3-like 4		hsa:148327, mmu:78284, rno:310616	Huntington's disease, Melanogenesis, Prostate cancer, Vasopressin-regulated water reabsorption
milk	515056	BOP1	block of proliferation 1		hsa:23246, mmu:12181,	
milk	613808	CLK1	CDC-like kinase 1	2.7.12.1	hsa:1195, mmu:12747, rno:301434	
milk	534440	INSIG2	insulin induced gene 2		hsa:51141, mmu:72999,	
milk	513972	MED28	mediator complex subunit 28		hsa:80306, mmu:66999,	
milk	540329	PPM1K	protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent, 1K	3.1.3.16	hsa:152926, mmu:243382, rno:312381	

milk	508467	KIF11	kinesin family member 11		hsa:3832, mmu:16551, rno:171304	
milk	507878	SCAP	SREBF chaperone		hsa:22937, mmu:235623, rno:301024	
milk	281099	CSN2	casein beta		hsa:1447, mmu:12991, rno:29173	
milk	539466	PPP1R3C	protein phosphatase 1, regulatory (inhibitor) subunit 3C		hsa:5507, mmu:53412, rno:309513	Insulin signaling pathway
milk	506132	CH25H	cholesterol 25-hydroxylase	1.14.99.38, 1.14.99.-	hsa:9023, mmu:12642, rno:309527	Primary bile acid biosynthesis
milk	504625	SORBS1	sorbin and SH3 domain containing 1		hsa:10580, mmu:20411,	
milk	506466	LARGE	like-glycosyltransferase	2.4.-.-	hsa:9215, mmu:16795, rno:361368	
milk	282157	BTN1A1	butyrophilin, subfamily 1, member A1		hsa:696, mmu:12231, rno:306956	
milk	281975	PDE6C	phosphodiesterase 6C, cGMP-specific, cone, alpha prime	3.1.4.35	hsa:5146, mmu:110855,	Purine metabolism
milk	541067	MINPP1	multiple inositol-polyphosphate phosphatase 1	3.1.3.62	hsa:9562, mmu:17330, rno:29688,	Inositol phosphate metabolism
milk	506459	ACSS2	acyl-CoA synthetase short-chain family member 2	6.2.1.1	hsa:55902, mmu:60525,	Glycolysis / Gluconeogenesis, Metabolic pathways, Propanoate metabolism, Pyruvate metabolism
milk	533134	MBTPS2	membrane-bound transcription factor peptidase, site 2	3.4.24.85	hsa:51360, mmu:270669, rno:302705	Protein processing in endoplasmic reticulum
milk	536281	FAT3	FAT tumor suppressor homolog 3 (Drosophila)		hsa:120114, mmu:270120, rno:191571	
milk	404163	ST3GAL4	ST3 beta-galactoside alpha-2,3-sialyltransferase 4	2.4.99.4, 2.4.99.-	hsa:6484, mmu:20443, rno:363040	Glycosphingolipid biosynthesis - lacto and neolacto series, Metabolic pathways
milk	511614	AGPAT6	1-acylglycerol-3-phosphate O-acyltransferase 6 (lysophosphatidic acid)	2.3.1.15, 2.3.1.51	hsa:137964, mmu:102247, rno:290843	Glycerolipid metabolism, Glycerophospholipid metabolism, Metabolic pathways
milk	529633	CLK4	CDC-like kinase 4	2.7.12.1	hsa:57396,	
milk	537016	CPEB3	cytoplasmic polyadenylation element binding protein 3		hsa:22849, mmu:208922, rno:309510	
milk	614675	PDLIM1	PDZ and LIM domain 1		hsa:9124, mmu:54132, rno:54133	
milk	527520	HERC6	hect domain and RLD 6	6.3.2.-	hsa:55008, mmu:67138,	

milk	617419	SCD5	stearoyl-CoA desaturase 5	1.14.19.1	hsa:79966	Biosynthesis of unsaturated fatty acids, PPAR signaling pathway
milk	514135	BCO2	beta-carotene oxygenase 2	1.14.99.-, 1.14.99.n2	hsa:83875, mmu:170752, rno:315644	
milk	517248	IMPACT	similar to Impact homolog		hsa:55364,	
milk	532778	ARFGAP3	ADP-ribosylation factor GTPase activating protein 3		hsa:26286, mmu:66251	Endocytosis
milk	282612	CYHR1	cysteine/histidine-rich 1		hsa:50626,	
milk	282605	FAM13A	family with sequence similarity 13, member A1		hsa:10144	
milk	510924	HERC3	hect domain and RLD 3	6.3.2.-	hsa:8916, mmu:73998, rno:362377	
tenderness	281663	CAPN3	calpain 3, (p94)	3.4.22.54	hsa:825, mmu:12335, rno:29155	
tenderness	281239	IGF1	insulin-like growth factor 1 (somatomedin C)		hsa:3479, mmu:16000, rno:24482	Focal adhesion, Glioma, Long-term depression, Melanoma, mTOR signaling pathway, Aldosterone-regulated sodium reabsorption, Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM), Oocyte meiosis, Pathways in cancer
tenderness	514876	CALCA	calcitonin-related polypeptide		hsa:796	
tenderness	282359	SLC2A4	solute carrier family 2 (facilitated glucose transporter), member 4		hsa:6517, mmu:20528, rno:25139	Adipocytokine signaling pathway, Insulin signaling pathway, Type II diabetes mellitus
tenderness	280804	GH1	growth hormone		hsa:2688	
tenderness	280685	F2	prothrombin	3.4.21.5	hsa:2147, mmu:14061, rno:29251	Complement and coagulation cascades, Neuroactive ligand-receptor interaction, Regulation of actin cytoskeleton
tenderness	280829	INS	insulin		hsa:3630, mmu:16334, rno:24506	Aldosterone-regulated sodium reabsorption, Insulin signaling pathway, Maturity onset diabetes of the young, Oocyte meiosis, Progesterone-mediated oocyte maturation, Prostate cancer, Regulation of actin cytoskeleton, Regulation of autophagy, Type I diabetes mellitus, Type II diabetes mellitus
tenderness	281662	CAPN2	calpain 2, (m/II) large subunit	3.4.22.53	hsa:824, mmu:12334, rno:29154	Alzheimer's disease, Apoptosis, Focal adhesion, Protein processing in endoplasmic reticulum
tenderness	282254	HSPA1A	heat shock 70kDa protein 1A		hsa:3303, mmu:15511, mmu:193740, rno:294254, hsa:3304	Antigen processing and presentation, Endocytosis, MAPK signaling pathway, Protein processing in endoplasmic reticulum, Spliceosome, Toxoplasmosis
tenderness	280826	IL6	interleukin 6 (interferon, beta 2)		hsa:3569, mmu:16193, rno:24498	Cytokine-cytokine receptor interaction, Hematopoietic cell lineage, Jak-STAT signaling pathway, Toll-like receptor signaling pathway, African trypanosomiasis, Amoebiasis, Chagas disease (American trypanosomiasis), Cytosolic DNA-sensing pathway, Graft-versus-host disease, Hypertrophic cardiomyopathy (HCM)
tenderness	280706	TG	thyroglobulin		hsa:7038, mmu:21819, rno:24826	Autoimmune thyroid disease

tenderness	280901	PRL	prolactin		hsa:5617, mmu:19109, rno:24683	Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
tenderness	280765	DES	desmin		hsa:1674, mmu:13346, rno:64362	Arrhythmogenic right ventricular cardiomyopathy (ARVC), Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM)
tenderness	511077	MYC	v-myc myelocytomatosis viral oncogene homolog (avian)		hsa:4609, mmu:17869, rno:24577	Acute myeloid leukemia, Bladder cancer, Cell cycle, Chronic myeloid leukemia, Colorectal cancer, Endometrial cancer, ErbB signaling pathway, Jak-STAT signaling pathway, MAPK signaling pathway, Pathways in cancer
tenderness	281240	IGF2	insulin-like growth factor 2 (somatomedin A)		hsa:3481, mmu:16002, rno:24483	
tenderness	280903	PTH	parathyroid hormone		hsa:5741, mmu:19226, rno:24694	Neuroactive ligand-receptor interaction
tenderness	281677	CEBPA	CCAAT/enhancer binding protein (C/EBP), alpha		hsa:1050, mmu:12606, rno:24252	Acute myeloid leukemia, Pathways in cancer
tenderness	281187	MSTN	myostatin		hsa:2660, mmu:17700, rno:29152	
tenderness	505519	MYL2	myosin, light chain 2, regulatory, cardiac, slow		hsa:4633, mmu:17906, rno:363925	Cardiac muscle contraction, Dilated cardiomyopathy, Focal adhesion, Hypertrophic cardiomyopathy (HCM), Leukocyte transendothelial migration, Regulation of actin cytoskeleton, Tight junction
tenderness	534553	CFL1	cofilin 1 (non-muscle)		hsa:1072, mmu:12631, rno:29271	Axon guidance, Fc gamma R-mediated phagocytosis, Regulation of actin cytoskeleton
tenderness	280781	ELN	elastin		hsa:2006, mmu:13717, rno:25043	Protein digestion and absorption
tenderness	535077	GSN	gelsolin		hsa:2934, mmu:227753,	Fc gamma R-mediated phagocytosis, Regulation of actin cytoskeleton
tenderness	281335	MYF5	myogenic factor 5		hsa:4617, mmu:17877, rno:299766	
tenderness	281938	MYOD1	myogenic differentiation 1		hsa:4654, mmu:17927, rno:337868	
tenderness	516099	HSPB1	heat shock 27kDa protein 1		hsa:3315, mmu:15507, rno:24471	Amoebiasis, MAPK signaling pathway, VEGF signaling pathway
tenderness	338446	PPARGC1A	peroxisome proliferator-activated receptor gamma, coactivator 1 alpha		hsa:10891, mmu:19017, rno:83516	Adipocytokine signaling pathway, Huntington's disease, Insulin signaling pathway
tenderness	280836	LEP	leptin		hsa:3952, mmu:16846, rno:25608	Adipocytokine signaling pathway, Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
tenderness	407231	MEF2A	myocyte enhancer factor 2A		hsa:4205, mmu:17258	
tenderness	281343	MYOG	myogenin (myogenic factor 4)		hsa:4656, mmu:17928, rno:29148	

tenderness	511913	HSPD1	similar to 60 kDa heat shock protein, mitochondrial precursor (Hsp60) (60 kDa chaperonin) (CPN60) (Heat shock protein 60) (HSP-60) (Mitochondrial matrix protein P1) (P60 lymphocyte protein) (HuCHA60)		hsa:3329, mmu:15510, rno:63868	RNA degradation, Type I diabetes mellitus
tenderness	286816	TNNT2	troponin T type 2 (cardiac)		hsa:7139, mmu:21956, rno:24837	Cardiac muscle contraction, Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM)
tenderness	280695	MB	myoglobin		hsa:4151, mmu:17189, rno:59108	
tenderness	281039	CAST	calpastatin		hsa:831, mmu:12380, rno:25403	
tenderness	524770	ACTN1	actinin, alpha 1		hsa:87, mmu:109711, rno:81634	Adherens junction, Amoebiasis, Arrhythmogenic right ventricular cardiomyopathy (ARVC), Focal adhesion, Leukocyte transendothelial migration, Regulation of actin cytoskeleton, Systemic lupus erythematosus, Tight junction
tenderness	281753	EPB41	erythrocyte membrane protein band 4.1 (elliptocytosis 1, RH-linked)		hsa:2035, mmu:269587, rno:313052	Tight junction
tenderness	497205	LEPR	leptin receptor		hsa:3953, mmu:16847, rno:24536	Adipocytokine signaling pathway, Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction
tenderness	281499	SPP1	secreted phosphoprotein 1		hsa:6696, mmu:20750, rno:25353	Cell Communication, ECM-receptor interaction, Focal adhesion, Toll-like receptor signaling pathway
tenderness	534353	YY1	YY1 transcription factor		hsa:7528, mmu:22632, rno:24919	
tenderness	540741	SP1	Sp1 transcription factor		hsa:6667, mmu:20683, rno:24790	TGF-beta signaling pathway, Huntington's disease
tenderness	539361	SREBF1	sterol regulatory element binding transcription factor 1		hsa:6720, mmu:20787, rno:78968	Insulin signaling pathway
tenderness	534402	PGM1	phosphoglucomutase 1	5.4.2.2	hsa:5236, mmu:72157, rno:24645	Amino sugar and nucleotide sugar metabolism, Galactose metabolism, Glycolysis / Gluconeogenesis, Metabolic pathways, Pentose phosphate pathway, Purine metabolism, Starch and sucrose metabolism
tenderness	282438	PRDX6	peroxiredoxin 6	1.11.1.15, 1.11.1.7, 3.1.1.-	hsa:9588, mmu:11758, rno:94167	Metabolic pathways, Phenylalanine metabolism
tenderness	282883	CTSD	cathepsin D	3.4.23.5	hsa:1509, mmu:13033, rno:171293	Lysosome
tenderness	407121	NEB	nebulin		hsa:4703, mmu:17996, rno:311029	
tenderness	280805	GHR	growth hormone receptor		hsa:2690, mmu:14600, rno:25235	Cytokine-cytokine receptor interaction, Jak-STAT signaling pathway, Neuroactive ligand-receptor interaction

tenderness	540985	ME1	malic enzyme 1, NADP(+)-dependent, cytosolic	1.1.1.40, 1.1.1.4	hsa:4199, mmu:17436, rno:24552	Metabolic pathways, Pyruvate metabolism
tenderness	281946	NR3C1	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)		hsa:2908, mmu:14815, rno:24413	Neuroactive ligand-receptor interaction
tenderness	281152	FASN	fatty acid synthase	1.1.1.100, 1.3.1.10, 2.3.1.38, 2.3.1.39, 2.3.1.41, 2.3.1.85, 3.1.2.14, 4.2.1.61	hsa:2194, mmu:14104	Fatty acid biosynthesis, Insulin signaling pathway, Metabolic pathways
tenderness	540561	TTN	similar to mKIAA0657 protein	2.7.11.1	hsa:7273, mmu:22138	
tenderness	282609	DGAT1	diacylglycerol O-acyltransferase 1	2.3.1.20	hsa:8694, mmu:13350, rno:84497	Fat digestion and absorption, Glycerolipid metabolism, Metabolic pathways, Retinol metabolism
tenderness	517535	HSPA9	similar to Stress-70 protein, mitochondrial precursor (75 kDa glucose regulated protein) (GRP 75) (Peptide-binding protein 74) (PBP74) (Mortalin) (MOT)		hsa:3313, mmu:15526, rno:291671	RNA degradation
tenderness	539238	ANK2	ankyrin 2, neuronal		hsa:287, rno:362036	
tenderness	280841	LOX	lysyl oxidase	1.4.3.13	hsa:4015, mmu:16948, rno:24914	
tenderness	281105	CTSB	cathepsin B	3.4.22.1	hsa:1508, mmu:13030, rno:64529	
tenderness	281661	CAPN1	calpain 1, (mu/I) large subunit	3.4.22.52	hsa:823, mmu:12333, rno:29153	Alzheimer's disease, Apoptosis, Protein processing in endoplasmic reticulum
tenderness	281336	MYF6	myogenic factor 6 (herculin)		hsa:4618, mmu:17878, rno:25714	
tenderness	767614	MYBPC3	myosin binding protein C, cardiac		hsa:4607, mmu:17868, rno:295929	Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM)
tenderness	510833	COL3A1	collagen, type III, alpha 1		hsa:1281, mmu:12825, rno:84032	Amoebiasis, ECM-receptor interaction, Focal adhesion, Protein digestion and absorption
tenderness	280813	HBB	hemoglobin, beta		hsa:3043, mmu:15129, rno:24440, rno:361619,	African trypanosomiasis, Malaria
tenderness	783645	VCL	vinculin		hsa:7414, mmu:22330, rno:305679	Adherens junction, Amoebiasis, Bacterial invasion of epithelial cells, Focal adhesion, Leukocyte transendothelial migration, Regulation of actin cytoskeleton
tenderness	281998	PRDX3	peroxiredoxin 3	1.11.1.15	hsa:10935, mmu:11757,	
tenderness	286793	PRDX2	peroxiredoxin 2	1.11.1.15	hsa:7001, mmu:21672, rno:29338	
tenderness	327711	CTSS	cathepsin S	3.4.22.27	hsa:1520, mmu:13040, rno:50654	Antigen processing and presentation, Lysosome, Phagosome

tenderness	534656	CAPZA1	capping protein (actin filament) muscle Z-line, alpha 1		hsa:829, mmu:12340, rno:691149	
tenderness	507359	IL6R	interleukin 6 receptor		hsa:3570, mmu:16194, rno:24499	Cytokine-cytokine receptor interaction, Hematopoietic cell lineage, Jak-STAT signaling pathway
tenderness	539379	ABRA	actin-binding Rho activating protein		hsa:137735, mmu:223513, rno:286965	
tenderness	511268	PARK7	Parkinson disease (autosomal recessive, early onset) 7	3.4.-.-	hsa:11315, mmu:57320,	Parkinson's disease
tenderness	538426	DNAJB1	DnaJ (Hsp40) homolog, subfamily B, member 1		hsa:3337, mmu:81489, rno:361384	Protein processing in endoplasmic reticulum
tenderness	281274	LDHA	lactate dehydrogenase A	1.1.1.27	hsa:3939, mmu:16828, rno:24533,	Cysteine and methionine metabolism, Glycolysis / Gluconeogenesis, Metabolic pathways, Propanoate metabolism, Pyruvate metabolism
tenderness	353108	ANK1	ankyrin 1, erythrocytic		hsa:286, mmu:11733, rno:306570	
tenderness	513340	GNB3	guanine nucleotide binding protein (G protein), beta		hsa:2784, mmu:14695, rno:60449	Chemokine signaling pathway, Taste transduction
tenderness	616734	FOXE1	forkhead box E1 (thyroid transcription factor 2)		hsa:2304, mmu:110805,	
tenderness	327693	HINT1	histidine triad nucleotide binding protein 1	3.-.-.-	hsa:3094, mmu:15254, rno:690660	
tenderness	535182	MDH1	malate dehydrogenase 1, NAD (soluble)	1.1.1.37	hsa:4190, mmu:17449, rno:24551	Citrate cycle (TCA cycle), Glyoxylate and dicarboxylate metabolism, Metabolic pathways, Proximal tubule bicarbonate reclamation, Pyruvate metabolism
tenderness	317657	MYL1	myosin, light chain 1, alkali; skeletal, fast		hsa:4632, mmu:17901, rno:56781	
tenderness	510708	ADCY2	adenylate cyclase 2 (brain)	4.6.1.1	hsa:108, mmu:210044, rno:81636	Bile secretion, Calcium signaling pathway, Chemokine signaling pathway, Dilated cardiomyopathy, Gap junction, Gastric acid secretion, GnRH signaling pathway, Melanogenesis, Oocyte meiosis, Pancreatic secretion
tenderness	515687	GUSB	glucuronidase, beta	3.2.1.31	hsa:2990, mmu:110006, rno:24434	Drug metabolism - other enzymes, Glycosaminoglycan degradation, Lysosome, Metabolic pathways, Pentose and glucuronate interconversions, Porphyrin and chlorophyll metabolism, Starch and sucrose metabolism
tenderness	353115	SOX10	SRY (sex determining region Y)-box 10		hsa:6663, mmu:20665, rno:29361	
tenderness	528862	DNAJA1	similar to DnaJ homolog subfamily A member 1 (Heat shock 40 kDa protein 4) (DnaJ protein homolog 2) (HSJ-2)		hsa:3301, mmu:15502, rno:65028	Protein processing in endoplasmic reticulum
tenderness	514739	MAP1B	microtubule-associated protein 1B		hsa:4131, mmu:17755, rno:29456	
tenderness	281664	CAPNS1	calpain, small subunit 1	3.4.22.17	hsa:826, mmu:12336, rno:29156	

tenderness	513641	NCKAP1L	NCK-associated protein 1-like		hsa:3071, mmu:105855,	Regulation of actin cytoskeleton
tenderness	281970	PDE1B	phosphodiesterase 1B, calmodulin-dependent	3.1.4.17	hsa:5153, mmu:18574, rno:29691	Calcium signaling pathway, Purine metabolism
tenderness	510169	MYBPH	myosin binding protein H		hsa:4608, mmu:53311, rno:83708	
tenderness	519271	ERC1	ELKS/RAB6-interacting/CAST family member 1		hsa:23085, mmu:111173, rno:266806	
tenderness	515421	MYL6B	myosin, light chain 6B, alkali, smooth muscle and non-muscle		hsa:140465, mmu:216459, rno:685883	
Yellow_hair	281416	POMC	proopiomelanocortin		hsa:5443, mmu:18976, rno:24664	Adipocytokine signaling pathway, Melanogenesis, Neuroactive ligand- receptor interaction
Yellow_hair	539003	CTNNB1	catenin (cadherin-associated protein), beta 1, 88kDa		hsa:1499, mmu:12387, rno:84353	Adherens junction, Arrhythmogenic right ventricular cardiomyopathy (ARVC), Bacterial invasion of epithelial cells, Basal cell carcinoma, Colorectal cancer, Endometrial cancer, Focal adhesion, Leukocyte transendothelial migration, Melanogenesis, Pathways in cancer
Yellow_hair	767866	NOTCH1	Notch homolog 1, translocation- associated (Drosophila)		hsa:4851, mmu:18128, rno:25496	Dorso-ventral axis formation, Notch signaling pathway
Yellow_hair	404192	ASIP	agouti signaling protein, nonagouti homolog (mouse)		hsa:434, mmu:50518, rno:24152	Melanogenesis
Yellow_hair	527107	CORIN	corin, serine peptidase	3.4.21.-	hsa:10699, mmu:53419,	
Yellow_hair	281298	MC1R	melanocortin 1 receptor (alpha melanocyte stimulating hormone receptor)		hsa:4157, mmu:17199	Melanogenesis, Neuroactive ligand-receptor interaction
Yellow_hair	407219	MITF	microphthalmia-associated transcription factor		hsa:4286, mmu:17342, rno:25094	Melanogenesis, Melanoma, Osteoclast differentiation, Pathways in cancer
Yellow_hair	280951	TYR	tyrosinase	1.14.18.1	hsa:7299, mmu:22173, rno:308800	Melanogenesis, Metabolic pathways, Riboflavin metabolism, Tyrosine metabolism
Yellow_hair	282105	TYRP1	tyrosinase-related protein 1	1.14.18.-	hsa:7306, mmu:22178, rno:298182	Melanogenesis, Metabolic pathways, Tyrosine metabolism
Yellow_hair	507168	RPL23A	ribosomal protein L23a		hsa:6147, mmu:268449, mmu:100043755,	Ribosome
Yellow_hair	281017	ATRN	attractin		hsa:8455, mmu:11990, rno:83526	
Yellow_hair	512034	PRSS12	protease, serine, 12 (neurotrypsin, motopsin)	3.4.21.-	hsa:8492, mmu:19142, rno:85266	

Supplementary Table2. The SNP statistics of trait-associated genes in Hanwoo (using reference genome UMD 3.1)

Trait	GeneID	Gene name	Chromosome	Contig	Contig_sp	Contig_ep	SNP count	Hwspecific SNP	nsSNP	hw_nsSNP	promoter SNP#	downstream SNP#
juiciness	617293	ELOVL5	chr23	NW_003104551	11128589	11201844	154	4	0	0	3	1
juiciness	280943	TNF	chr23	NW_003104557	951133	953906	3	0	0	0	3	0
juiciness	281507	STAR	chr27	NW_003104610	3337473	3344897	3	0	0	0	1	0
juiciness	353108	ANK1	chr27	NW_003104610	6586630	6711803	144	1	2	1	2	0
juiciness	282488	FAS	chr26	NW_003104580	5088236	5122068	58	0	1	0	0	1
juiciness	282069	SFRP5	chr26	NW_003104582	4672979	4677803	4	0	0	0	0	0
juiciness	280924	SCD	chr26	NW_003104582	7028372	7038744	18	0	1	0	4	1
juiciness	281677	CEBPA	chr18	NW_003104465	1053778	1055008	0	0	0	0	0	0
juiciness	281664	CAPNS1	chr18	NW_003104465	4112695	4119615	4	0	0	0	1	0
juiciness	100139857	RYR1	chr18	NW_003104465	5627520	5756226	129	3	0	0	3	1
juiciness	282089	TGFB1	chr18	NW_003104465	7896522	7911092	5	0	0	0	0	0
juiciness	286879	LIPE	chr18	NW_003104466	188204	199580	6	0	0	0	0	0
juiciness	281004	APOE	chr18	NW_003104466	2012290	2014977	2	0	0	0	3	2
juiciness	511602	COL4A5	chrX	NW_003104715	2985516	3306587	61	4	0	0	0	1
juiciness	507881	COL5A3	chr7	NW_003104015	41610	86543	70	0	0	0	2	1
juiciness	281276	LDLR	chr7	NW_003104015	1041626	1075331	19	0	0	0	1	0
juiciness	408017	INSR	chr7	NW_003104015	1552708	1694452	182	3	0	0	0	1
juiciness	281946	NR3C1	chr7	NW_003104037	342320	460846	63	4	0	0	0	1
juiciness	282077	SPARC	chr7	NW_003104041	106494	129126	22	0	0	0	5	0
juiciness	281039	CAST	chr7	NW_003104062	333707	469981	196	2	0	0	1	5
juiciness	515940	THRSP	chr29	NW_003104633	5867836	5873742	3	0	0	0	2	1
juiciness	533107	FADS1	chr29	NW_003104646	1377476	1391602	12	0	0	0	0	2
juiciness	281661	CAPN1	chr29	NW_003104647	1821486	1871515	28	1	0	0	0	0
juiciness	506812	CPT1A	chr29	NW_003104648	227203	288116	76	0	0	0	4	2
juiciness	280829	INS	chr29	NW_003104648	3443006	3444167	0	0	0	0	0	0
juiciness	281240	IGF2	chr29	NW_003104648	3453531	3472136	2	0	0	0	0	0
juiciness	407231	MEF2A	chr21	NW_003104530	3141054	3321368	269	4	0	0	1	3
juiciness	281848	IGF1R	chr21	NW_003104530	4063674	4364049	256	6	0	0	0	1
juiciness	520598	PLIN1	chr21	NW_003104533	927220	941082	2	0	0	0	1	0
juiciness	534353	YY1	chr21	NW_003104538	12526550	12551363	35	0	0	0	0	1
juiciness	282188	COL1A2	chr4	NW_003103886	1979112	2015805	15	0	0	0	2	0
juiciness	280826	IL6	chr4	NW_003103889	939256	943624	1	0	0	0	0	0
juiciness	281052	CD36	chr4	NW_003103891	1103245	1156699	16	0	0	0	2	2
juiciness	281782	GHRHR	chr4	NW_003103899	476748	492650	3	0	0	0	1	0
juiciness	510767	CYCS	chr4	NW_003103900	3678602	3681405	2	0	0	0	5	0
juiciness	280836	LEP	chr4	NW_003103904	2996897	3013647	42	1	1	0	1	4
juiciness	504219	PRKAG2	chr4	NW_003103907	13557117	13856406	239	2	0	0	0	0
juiciness	286821	SHH	chr4	NW_003103907	16938078	16947236	0	0	0	0	0	0

juiciness	281246	IL10	chr16	NW_003104427	3775395	3779333	2	0	0	0	3	0
juiciness	534069	TGFB2	chr16	NW_003104435	4399505	4492049	90	0	0	0	0	1
juiciness	281662	CAPN2	chr16	NW_003104436	4170292	4228632	43	0	0	0	4	0
juiciness	286816	TNNT2	chr16	NW_003104439	2637770	2640508	0	0	0	0	0	0
juiciness	326597	CALM	chr20	NW_003104505	5074412	5075572	1	0	0	0	0	0
juiciness	280843	LPL	chr8	NW_003104109	890843	897496	4	0	0	0	5	1
juiciness	280843	LPL	chr8	NW_003104110	98	13571	33	0	0	0	0	3
juiciness	768325	GNRH1	chr8	NW_003104124	599348	603143	2	0	0	0	0	0
juiciness	528862	DNAJA1	chr8	NW_003104126	239170	248925	7	0	0	0	0	0
juiciness	535077	GSN	chr8	NW_003104152	160093	221786	72	1	0	0	4	2
juiciness	359712	COL12A1	chr9	NW_003104168	175243	290376	85	1	0	0	3	0
juiciness	327688	COX7A2	chr9	NW_003104168	348449	353564	9	0	0	0	2	4
juiciness	540985	ME1	chr9	NW_003104175	2300446	2489758	190	5	0	0	3	0
juiciness	281849	IGF2R	chr9	NW_003104255	627819	731105	80	2	0	0	0	3
juiciness	281187	MSTN	chr2	NW_003103830	4502638	4509268	7	0	0	0	0	5
juiciness	510833	COL3A1	chr2	NW_003103830	5606359	5645976	23	0	0	0	0	2
juiciness	281875	ITGAV	chr2	NW_003103832	897671	1006140	63	2	0	0	0	0
juiciness	540561	TTN	chr2	NW_003103835	4942405	5218301	307	3	12	1	3	0
juiciness	781996	CYCT	chr2	NW_003103835	5668413	5687335	6	1	0	0	2	0
juiciness	407121	NEB	chr2	NW_003103838	14932481	15141875	122	2	0	0	0	2
juiciness	280794	FN1	chr2	NW_003103848	3210556	3279716	103	1	0	0	1	0
juiciness	404185	IGFBP5	chr2	NW_003103849	369108	387764	22	1	1	0	1	1
juiciness	280765	DES	chr2	NW_003103849	3065578	3072653	1	0	0	0	2	1
juiciness	511087	OBSL1	chr2	NW_003103849	3193868	3215958	14	1	1	0	2	0
juiciness	538598	IRS1	chr2	NW_003103850	7033493	7097449	29	1	0	0	0	0
juiciness	281758	FABP3	chr2	NW_003103850	14026421	14087026	57	0	0	0	3	2
juiciness	281753	EPB41	chr2	NW_003103851	256066	351166	37	2	0	0	1	0
juiciness	514770	NR0B2	chr2	NW_003103851	2134333	2136081	1	0	0	0	1	1
juiciness	536229	PAX7	chr2	NW_003103851	9754137	9857938	59	2	0	0	0	2
juiciness	280781	ELN	chr25	NW_003104577	3372073	3404617	14	0	0	0	1	0
juiciness	100847304	LOC100847304	chr19	NW_003104488	2139325	2140523	0	0	0	0	0	1
juiciness	282359	SLC2A4	chr19	NW_003104493	2847063	2852653	2	0	0	0	0	0
juiciness	516318	PER1	chr19	NW_003104494	577729	587466	4	0	0	0	0	1
juiciness	539361	SREBF1	chr19	NW_003104494	7422355	7438390	7	0	0	0	0	0
juiciness	282187	COL1A1	chr19	NW_003104495	1140601	1157366	5	0	0	0	1	1
juiciness	280804	GH1	chr19	NW_003104497	4881006	4884402	1	0	0	0	4	4
juiciness	281152	FASN	chr19	NW_003104498	2260852	2279544	3	0	0	0	0	0
juiciness	618594	LOC618594	chr19	NW_003104499	2914612	2915848	0	0	0	0	0	0
juiciness	281583	AANAT	chr19	NW_003104499	2927430	2929271	0	0	0	0	1	1
juiciness	513996	ACOX1	chr19	NW_003104499	3310761	3331819	11	0	0	0	3	0
juiciness	282714	MYH7	chr10	NW_003104268	11334745	11354963	9	0	0	0	0	0
juiciness	281663	CAPN3	chr10	NW_003104278	3966771	4023409	39	0	0	0	3	0

juiciness	524770	ACTN1	chr10	NW_003104283	9392609	9490676	131	0	0	0	1	2
juiciness	281562	UCP2	chr15	NW_003104416	600739	607202	10	0	0	0	5	0
juiciness	404129	DGAT2	chr15	NW_003104418	121901	154373	28	0	0	0	1	0
juiciness	507176	NR1H3	chr15	NW_003104421	9602424	9609573	7	0	0	0	0	0
juiciness	282118	VCAM1	chr3	NW_003103868	13093368	13115678	32	0	1	0	1	0
juiciness	534578	VCAM1	chr3	NW_003103868	13133315	13155767	14	0	1	0	0	0
juiciness	784894	TGFBR3	chr3	NW_003103869	6277901	6402061	139	2	0	0	5	1
juiciness	282609	DGAT1	chr14	NW_003104381	429263	438676	2	0	0	0	1	0
juiciness	511077	MYC	chr14	NW_003104383	4479558	4484754	2	0	0	0	1	1
juiciness	281678	CEBPD	chr14	NW_003104392	5365441	5367034	0	0	0	0	0	0
juiciness	281759	FABP4	chr14	NW_003104397	12507119	12511507	5	0	1	0	2	1
juiciness	539379	ABRA	chr14	NW_003104398	10955627	10966441	17	0	0	0	3	1
juiciness	517850	APPL1	chr22	NW_003104544	4323231	4353836	11	1	0	0	0	1
juiciness	281993	PPARG	chr22	NW_003104546	247163	312412	57	1	0	0	0	1
juiciness	281416	POMC	chr11	NW_003104296	3932101	3939584	4	0	0	0	1	4
juiciness	537224	LPIN1	chr11	NW_003104296	15873433	15951229	72	0	1	0	0	0
juiciness	100847700	LOC100847700	chr11	NW_003104302	580418	581260	0	0	0	0	0	0
juiciness	540741	SP1	chr5	NW_003103918	877409	912510	30	0	0	0	0	0
juiciness	282324	PRKAG1	chr5	NW_003103920	2557589	2572422	6	0	0	0	0	1
juiciness	539337	WNT10B	chr5	NW_003103920	2599641	2605491	1	0	0	0	0	1
juiciness	517588	GLI1	chr5	NW_003103925	8703371	8713754	4	0	0	0	1	1
juiciness	533894	LRP1	chr5	NW_003103925	8943556	9023138	33	1	0	0	0	1
juiciness	280682	CS	chr5	NW_003103925	9747989	9771582	14	0	0	0	0	1
juiciness	280695	MB	chr5	NW_003103927	3092073	3102865	5	0	0	0	1	3
juiciness	281181	GAPDH	chr5	NW_003103940	998481	1002764	5	0	0	0	0	0
juiciness	407234	ADIPOR2	chr5	NW_003103942	1373206	1392758	15	0	0	0	2	0
juiciness	281992	PPARA	chr5	NW_003103945	1171937	1254581	93	1	0	0	0	0
juiciness	286868	RPLP0	chr17	NW_003104457	13645199	13649222	3	0	0	0	2	0
juiciness	503578	HNF1A	chr17	NW_003104457	14253424	14270139	34	1	0	0	2	0
juiciness	539238	ANK2	chr6	NW_003103961	2364172	2525831	68	1	0	0	5	0
juiciness	533333	ELOVL6	chr6	NW_003103961	5359236	5492838	104	5	0	0	1	0
juiciness	338446	PPARGC1A	chr6	NW_003103970	11506965	11613385	133	4	0	0	3	0
juiciness	282704	TBC1D1	chr6	NW_003103973	2642218	2858955	187	1	0	0	0	0
juiciness	282865	ADIPOQ	chr1	NW_003103812	9220205	9231983	25	1	0	0	1	0
juiciness	282191	COL4A1	chr12	NW_003104357	1982803	2116100	79	1	0	0	1	0
juiciness	281876	ITGB1	chr13	NW_003104365	2523479	2565483	11	0	0	0	1	0
juiciness	511412	MTPAP	chr13	NW_003104366	1476447	1507667	48	2	1	0	4	0
juiciness	281427	PRNP	chr13	NW_003104369	3639373	3657467	7	0	0	0	1	1
juiciness	3283885	ND4L	mitochondrion	NC_006853	10239	10535	0	0	0	0	0	0
juiciness	3283886	ND4	mitochondrion	NC_006853	10529	11906	0	0	0	0	0	0
juiciness	3283889	CYTb	mitochondrion	NC_006853	14514	15653	0	0	0	0	0	0
marbling	514090	BAK1	chr23	NW_003104548	7655892	7658885	0	0	0	0	0	0

marbling	282863	IL17A	chr23	NW_003104551	10319835	10323356	8	0	0	0	2	2
marbling	282137	AGPAT1	chr23	NW_003104557	434301	441778	3	0	0	0	2	1
marbling	280943	TNF	chr23	NW_003104557	951133	953906	3	0	0	0	3	0
marbling	280901	PRL	chr23	NW_003104561	4090412	4099027	3	0	0	0	3	0
marbling	537161	ACSL1	chr27	NW_003104605	3829578	3894464	62	1	0	0	5	0
marbling	538516	PDLIM3	chr27	NW_003104605	4375694	4406336	9	0	0	0	0	3
marbling	281606	ADRB3	chr27	NW_003104610	3233068	3236212	0	0	0	0	0	1
marbling	282488	FAS	chr26	NW_003104580	5088236	5122068	58	0	1	0	0	1
marbling	504625	SORBS1	chr26	NW_003104582	2577556	2809696	214	5	0	0	1	2
marbling	282069	SFRP5	chr26	NW_003104582	4672979	4677803	4	0	0	0	0	0
marbling	280924	SCD	chr26	NW_003104582	7028372	7038744	18	0	1	0	4	1
marbling	326284	FGF8	chr26	NW_003104582	8265456	8271262	2	0	0	0	0	0
marbling	281604	ADRB1	chr26	NW_003104583	8178961	8180364	0	0	0	0	0	0
marbling	281298	MC1R	chr18	NW_003104464	3307986	3309736	0	0	0	0	0	0
marbling	539275	CHD9	chr18	NW_003104464	10185246	10410488	118	1	0	0	3	0
marbling	280692	HP	chr18	NW_003104464	27723791	27729947	5	0	1	0	1	0
marbling	281677	CEBPA	chr18	NW_003104465	1053778	1055008	0	0	0	0	0	0
marbling	530544	CAPN12	chr18	NW_003104465	5868767	5880883	0	0	0	0	1	0
marbling	282089	TGFB1	chr18	NW_003104465	7896522	7911092	5	0	0	0	0	0
marbling	286879	LIPE	chr18	NW_003104466	188204	199580	6	0	0	0	0	0
marbling	281004	APOE	chr18	NW_003104466	2012290	2014977	2	0	0	0	3	2
marbling	509622	NR1H2	chr18	NW_003104466	5971045	5977692	2	0	0	0	1	2
marbling	511094	TNNI3	chr18	NW_003104480	898282	902058	2	0	0	0	0	2
marbling	100301026	NLRP2	chr18	NW_003104480	1099052	1112881	39	4	0	0	0	4
marbling	282479	SLC25A5	chrX	NW_003104651	827265	829939	0	0	0	0	0	0
marbling	510489	SH3KBP1	chrX	NW_003104663	1390573	1423505	0	0	0	0	0	2
marbling	281179	G6PD	chrX	NW_003104686	1134321	1151070	2	0	0	0	0	0
marbling	513603	PCSK1N	chrX	NW_003104731	1062065	1066581	0	0	0	0	0	1
marbling	506053	FOXP3	chrX	NW_003104731	1412427	1418784	0	0	0	0	0	0
marbling	505725	PAGE4	chrX	NW_003104731	1630365	1634557	0	0	0	0	0	0
marbling	505987	GK	chrX	NW_003104745	1010923	1085311	4	0	0	0	0	0
marbling	510489	SH3KBP1	chrX	NW_003104767	2233909	2523535	24	1	0	0	1	0
marbling	281592	ACTA1	chr28	NW_003104615	419154	421910	1	0	0	0	2	0
marbling	281939	MYOZ1	chr28	NW_003104625	7856711	7874539	10	1	0	0	0	0
marbling	282162	CAMK2G	chr28	NW_003104625	7954458	8006486	61	0	1	0	1	0
marbling	510059	TFAM	chr28	NW_003104627	3588452	3600378	12	0	0	0	1	0
marbling	513787	SLC27A1	chr7	NW_003104002	774968	814146	44	0	0	0	2	0
marbling	408017	INSR	chr7	NW_003104015	1552708	1694452	182	3	0	0	0	1
marbling	327693	HINT1	chr7	NW_003104019	2104401	2111009	8	0	0	0	1	1
marbling	280841	LOX	chr7	NW_003104022	3057613	3069719	8	0	0	0	0	0
marbling	317696	FGFR4	chr7	NW_003104023	4070703	4081450	3	0	0	0	1	0
marbling	281605	ADRB2	chr7	NW_003104039	2824896	2826802	3	0	0	0	2	1

marbling	530719	CAMK2A	chr7	NW_003104039	4172767	4236838	13	0	0	0	1	1
marbling	282077	SPARC	chr7	NW_003104041	106494	129126	22	0	0	0	5	0
marbling	100294726	LOC100294726	chr7	NW_003104045	1432063	1465817	67	0	2	0	6	2
marbling	514650	FABP6	chr7	NW_003104049	2262572	2268633	10	0	0	0	4	0
marbling	281967	PCSK1	chr7	NW_003104062	44402	88212	47	0	0	0	1	1
marbling	281039	CAST	chr7	NW_003104062	333707	469981	196	2	0	0	1	5
marbling	515940	THRSP	chr29	NW_003104633	5867836	5873742	3	0	0	0	2	1
marbling	521822	FADS2	chr29	NW_003104646	1483843	1520860	28	0	0	0	1	0
marbling	326581	EEF1G	chr29	NW_003104646	2053184	2062778	6	0	0	0	1	1
marbling	281204	GNG3	chr29	NW_003104646	2160965	2163576	1	0	0	0	1	0
marbling	281661	CAPN1	chr29	NW_003104647	1821486	1871515	28	1	0	0	0	0
marbling	534553	CFL1	chr29	NW_003104647	2396919	2400303	2	0	0	0	1	0
marbling	506812	CPT1A	chr29	NW_003104648	227203	288116	76	0	0	0	4	2
marbling	524530	CCND1	chr29	NW_003104648	951285	960747	0	0	0	0	0	0
marbling	280829	INS	chr29	NW_003104648	3443006	3444167	0	0	0	0	0	0
marbling	281240	IGF2	chr29	NW_003104648	3453531	3472136	2	0	0	0	0	0
marbling	508493	PNPLA2	chr29	NW_003104648	4149290	4154066	0	0	0	0	0	0
marbling	280991	AKT1	chr21	NW_003104538	16587201	16604429	1	0	0	0	0	0
marbling	282188	COL1A2	chr4	NW_003103886	1979112	2015805	15	0	0	0	2	0
marbling	523798	PON1	chr4	NW_003103886	2744208	2778101	26	0	0	0	4	0
marbling	521831	CRHR2	chr4	NW_003103899	745780	773800	53	0	0	0	2	0
marbling	510767	CYCS	chr4	NW_003103900	3678602	3681405	2	0	0	0	5	0
marbling	504216	NPY	chr4	NW_003103900	4560650	4567778	8	0	0	0	0	1
marbling	282261	IGFBP3	chr4	NW_003103902	1598505	1606911	2	0	0	0	1	0
marbling	282259	IGFBP1	chr4	NW_003103902	1613825	1618709	1	0	0	0	2	0
marbling	532626	GPR37	chr4	NW_003103903	11447846	11465969	6	0	0	0	1	0
marbling	280836	LEP	chr4	NW_003103904	2996897	3013647	42	1	1	0	1	4
marbling	512939	KRBA1	chr4	NW_003103907	12051399	12066711	8	0	0	0	1	1
marbling	505224	ATP6V0E2	chr4	NW_003103907	12201038	12206191	3	0	0	0	1	0
marbling	616659	LRRRC61	chr4	NW_003103907	12224372	12236803	3	0	0	0	0	0
marbling	100139443	C4H7orf29	chr4	NW_003103907	12230361	12231345	0	0	0	0	0	0
marbling	508990	RARRES2	chr4	NW_003103907	12237079	12240165	1	0	0	0	0	0
marbling	511510	REPIN1	chr4	NW_003103907	12274011	12278475	0	0	0	0	2	6
marbling	287024	NOS3	chr4	NW_003103907	13048640	13067156	15	0	0	0	3	1
marbling	281343	MYOG	chr16	NW_003104426	596916	599757	0	0	0	0	1	0
marbling	539364	BTG2	chr16	NW_003104427	262066	267123	0	0	0	0	1	0
marbling	281246	IL10	chr16	NW_003104427	3775395	3779333	2	0	0	0	3	0
marbling	281662	CAPN2	chr16	NW_003104436	4170292	4228632	43	0	0	0	4	0
marbling	516874	TFB2M	chr16	NW_003104436	7940991	7959371	13	0	0	0	1	0
marbling	281485	SELL	chr16	NW_003104437	1782182	1807753	19	1	0	0	0	1
marbling	338033	TNFRSF1B	chr16	NW_003104438	334357	367881	12	0	0	0	2	0
marbling	541220	H6PD	chr16	NW_003104438	3056562	3084604	14	0	0	0	0	0

marbling	100295833	UTS2	chr16	NW_003104438	4330790	4336737	2	0	0	0	1	0
marbling	521326	HMCN1	chr16	NW_003104441	1428425	1968916	437	5	3	0	0	1
marbling	280805	GHR	chr20	NW_003104514	568407	741871	136	2	0	0	2	1
marbling	282480	SLC25A6	chrUnknown	NW_003100874	1867	6353	3	0	0	0	0	3
marbling	280981	PLIN2	chr8	NW_003104083	718333	727009	8	0	1	0	1	0
marbling	280843	LPL	chr8	NW_003104109	890843	897496	4	0	0	0	5	1
marbling	280843	LPL	chr8	NW_003104110	98	13571	33	0	0	0	0	3
marbling	535379	ABCA1	chr8	NW_003104143	44779	161101	85	2	0	0	4	1
marbling	282220	EEF1A1	chr9	NW_003104167	1512796	1515709	1	0	0	0	0	1
marbling	327688	COX7A2	chr9	NW_003104168	348449	353564	9	0	0	0	2	4
marbling	540985	ME1	chr9	NW_003104175	2300446	2489758	190	5	0	0	3	0
marbling	777787	FABP7	chr9	NW_003104181	352124	355910	2	0	0	0	0	0
marbling	768209	SFRS18	chr9	NW_003104201	1051366	1056517	3	0	1	0	0	0
marbling	614292	AKIRIN2	chr9	NW_003104212	1315748	1338591	17	0	0	0	0	0
marbling	407238	ESR1	chr9	NW_003104241	423948	426504	1	0	0	0	0	0
marbling	407238	ESR1	chr9	NW_003104242	18407	284984	262	3	0	0	3	0
marbling	533438	TFB1M	chr9	NW_003104249	604597	671582	28	0	0	0	4	0
marbling	518563	HS6ST1	chr2	NW_003103830	2400943	2438444	37	0	0	0	1	1
marbling	281187	MSTN	chr2	NW_003103830	4502638	4509268	7	0	0	0	0	5
marbling	510833	COL3A1	chr2	NW_003103830	5606359	5645976	23	0	0	0	0	2
marbling	540561	TTN	chr2	NW_003103835	4942405	5218301	307	3	12	1	3	0
marbling	781996	CYCT	chr2	NW_003103835	5668413	5687335	6	1	0	0	2	0
marbling	280802	GCG	chr2	NW_003103838	4784500	4794882	1	0	0	0	2	2
marbling	504948	GPD2	chr2	NW_003103838	10151690	10299405	71	0	0	0	0	1
marbling	407121	NEB	chr2	NW_003103838	14932481	15141875	122	2	0	0	0	2
marbling	281713	CREB1	chr2	NW_003103846	3167464	3199810	21	0	0	0	0	0
marbling	280794	FN1	chr2	NW_003103848	3210556	3279716	103	1	0	0	1	0
marbling	511087	OBSL1	chr2	NW_003103849	3193868	3215958	14	1	1	0	2	0
marbling	281758	FABP3	chr2	NW_003103850	14026421	14087026	57	0	0	0	3	2
marbling	100126042	ALDH4A1	chr2	NW_003103851	9587593	9621866	21	0	0	0	4	2
marbling	531505	MYL12A	chr24	NW_003104569	2362092	2371745	12	0	0	0	0	3
marbling	614055	MYL12B	chr24	NW_003104569	2376363	2451907	64	1	0	0	4	1
marbling	281300	MC4R	chr24	NW_003104569	24211891	24213698	3	0	1	0	1	0
marbling	531391	MAPK3	chr25	NW_003104575	920663	927748	2	0	0	0	0	0
marbling	516099	HSPB1	chr25	NW_003104577	4442389	4444986	0	0	0	0	0	0
marbling	286862	YWHAG	chr25	NW_003104577	4468230	4490590	21	0	0	0	3	0
marbling	280979	ACTB	chr25	NW_003104577	8927584	8930998	0	0	0	0	0	0
marbling	100847304	LOC100847304	chr19	NW_003104488	2139325	2140523	0	0	0	0	0	1
marbling	281590	ACACA	chr19	NW_003104490	1206829	1450395	202	2	0	0	0	0
marbling	282876	NOS2	chr19	NW_003104490	7213101	7244801	43	0	0	0	5	0
marbling	539674	TNFAIP1	chr19	NW_003104492	447383	456064	4	0	0	0	1	3
marbling	522159	PLD2	chr19	NW_003104493	2407390	2420311	7	1	0	0	0	0

marbling	508582	ACAP1	chr19	NW_003104493	2903454	2915099	7	0	0	0	1	0
marbling	539361	SREBF1	chr19	NW_003104494	7422355	7438390	7	0	0	0	0	0
marbling	282187	COL1A1	chr19	NW_003104495	1140601	1157366	5	0	0	0	1	1
marbling	513257	TCAP	chr19	NW_003104496	209799	211007	0	0	0	0	0	1
marbling	511135	ACLY	chr19	NW_003104496	2210029	2254295	13	0	0	0	1	0
marbling	281716	CRHR1	chr19	NW_003104497	2543912	2595920	38	1	0	0	1	0
marbling	280804	GH1	chr19	NW_003104497	4881006	4884402	1	0	0	0	4	4
marbling	286969	UTS2R	chr19	NW_003104498	1690300	1691921	0	0	0	0	2	4
marbling	281152	FASN	chr19	NW_003104498	2260852	2279544	3	0	0	0	0	0
marbling	513996	ACOX1	chr19	NW_003104499	3310761	3331819	11	0	0	0	3	0
marbling	282001	PRKCA	chr19	NW_003104502	1342366	1640999	312	4	0	0	0	3
marbling	282856	PCK2	chr10	NW_003104268	10879615	10887902	4	0	0	0	1	2
marbling	281663	CAPN3	chr10	NW_003104278	3966771	4023409	39	0	0	0	3	0
marbling	535597	RORA	chr10	NW_003104280	9260882	10062556	792	11	0	0	2	0
marbling	535727	SLC27A2	chr10	NW_003104282	2775958	2830841	38	0	0	0	2	1
marbling	524770	ACTN1	chr10	NW_003104283	9392609	9490676	131	0	0	0	1	2
marbling	100337083	CAMK4	chr10	NW_003104283	15666656	15934187	171	0	0	0	4	1
marbling	281631	APOA1	chr15	NW_003104408	6493003	6494890	2	0	0	0	0	0
marbling	508443	ABCG4	chr15	NW_003104409	624449	638900	6	0	0	0	0	0
marbling	281938	MYOD1	chr15	NW_003104409	5698094	5700741	1	0	0	0	4	2
marbling	404190	RPL27A	chr15	NW_003104409	14836026	14838821	2	0	0	0	1	0
marbling	507176	NR1H3	chr15	NW_003104421	9602424	9609573	7	0	0	0	0	0
marbling	286806	ADAMTS4	chr3	NW_003103856	3789359	3797219	10	0	0	0	1	4
marbling	527470	RORC	chr3	NW_003103863	1279685	1303613	14	0	0	0	2	1
marbling	281135	S1PR1	chr3	NW_003103868	12573804	12578459	1	0	0	0	0	0
marbling	505463	GADD45A	chr3	NW_003103871	7231306	7234394	0	0	0	0	2	1
marbling	497205	LEPR	chr3	NW_003103871	9330843	9406154	66	1	1	0	3	1
marbling	508918	SCP2	chr3	NW_003103873	7124386	7246259	93	2	1	0	1	1
marbling	514223	ILKAP	chr3	NW_003103878	507584	532118	16	0	0	0	2	1
marbling	282609	DGAT1	chr14	NW_003104381	429263	438676	2	0	0	0	1	0
marbling	280706	TG	chr14	NW_003075585	626	3662	3	0	0	0	1	0
marbling	280706	TG	chr14	NW_003104383	6513	219254	173	3	0	0	2	1
marbling	327705	ASAP1	chr14	NW_003104383	2038297	2406600	730	28	0	0	2	2
marbling	508373	RAB2A	chr14	NW_003104395	141752	214033	121	10	0	0	1	2
marbling	535449	MTFR1	chr14	NW_003104396	2632618	2691852	31	2	0	0	1	1
marbling	280755	CRH	chr14	NW_003104396	3111020	3111603	0	0	0	0	3	0
marbling	281760	FABP5	chr14	NW_003104397	12318013	12324075	5	1	0	0	0	1
marbling	515385	FABP9	chr14	NW_003104397	12491212	12494898	4	0	1	0	2	4
marbling	281759	FABP4	chr14	NW_003104397	12507119	12511507	5	0	1	0	2	1
marbling	509952	DECR1	chr14	NW_003104400	6754167	6797674	51	2	1	0	2	0
marbling	539003	CTNNB1	chr22	NW_003104540	13075226	13121991	26	0	0	0	1	1
marbling	613610	PDHB	chr22	NW_003104544	3387346	3392759	5	0	0	0	5	0

marbling	505708	PRKCD	chr22	NW_003104544	8233374	8263912	31	1	1	0	5	0
marbling	282393	UQCRC1	chr22	NW_003104544	11773437	11782189	3	0	0	0	0	0
marbling	281192	GHRL	chr22	NW_003104545	2120558	2124568	3	0	0	0	1	1
marbling	281993	PPARG	chr22	NW_003104546	247163	312412	57	1	0	0	0	1
marbling	540802	ASB3	chr11	NW_003104293	18383480	18500476	93	0	0	0	0	1
marbling	511566	EFEMP1	chr11	NW_003104293	20468197	20537739	66	0	0	0	0	1
marbling	327700	FABP1	chr11	NW_003104294	2606898	2612598	5	0	0	0	3	1
marbling	518658	PLEK	chr11	NW_003104295	3650222	3676008	24	0	0	0	2	0
marbling	515741	CAPN14	chr11	NW_003104295	5566270	5602568	37	0	0	0	2	2
marbling	281416	POMC	chr11	NW_003104296	3932101	3939584	4	0	0	0	1	4
marbling	494004	APOB	chr11	NW_003104296	7776123	7863099	75	0	1	0	1	0
marbling	100847700	LOC100847700	chr11	NW_003104302	580418	581260	0	0	0	0	0	0
marbling	514427	SLC27A4	chr11	NW_003104302	1200333	1212749	13	0	0	0	3	3
marbling	534512	HMCN2	chr11	NW_003104302	2844023	3018899	77	1	0	0	0	0
marbling	512112	AGPAT2	chr11	NW_003104302	6375214	6387484	4	0	0	0	0	1
marbling	507554	RXRA	chr11	NW_003104304	719967	750410	6	0	0	0	0	0
marbling	281336	MYF6	chr5	NW_003103915	350907	352421	1	0	0	0	2	0
marbling	281335	MYF5	chr5	NW_003103915	359863	363098	2	0	0	0	3	0
marbling	525042	GPD1	chr5	NW_003103920	1548820	1554404	1	0	0	0	0	1
marbling	539337	WNT10B	chr5	NW_003103920	2599641	2605491	1	0	0	0	0	1
marbling	533656	VDR	chr5	NW_003103921	1177020	1232643	43	2	0	0	1	0
marbling	280682	CS	chr5	NW_003103925	9747989	9771582	14	0	0	0	0	1
marbling	519217	CDK2	chr5	NW_003103925	10046355	10051038	2	0	0	0	0	0
marbling	281239	IGF1	chr5	NW_003103925	18914860	18986680	39	1	0	0	0	1
marbling	514832	PEX5	chr5	NW_003103940	291324	308687	14	0	0	0	2	0
marbling	515363	PHB2	chr5	NW_003103940	614090	618633	3	0	0	0	2	1
marbling	281181	GAPDH	chr5	NW_003103940	998481	1002764	5	0	0	0	0	0
marbling	281992	PPARA	chr5	NW_003103945	1171937	1254581	93	1	0	0	0	0
marbling	280753	CPE	chr17	NW_003104442	546402	697923	163	1	0	0	3	0
marbling	281561	UCP1	chr17	NW_003104447	3250208	3256692	3	0	0	0	1	3
marbling	781683	FAT4	chr17	NW_003104449	1572899	1750214	147	2	1	0	1	0
marbling	281161	FGF2	chr17	NW_003104449	4059980	4119500	44	0	0	0	2	0
marbling	540568	ATP2A2	chr17	NW_003104457	5294695	5348840	14	0	0	0	0	1
marbling	536132	NOS1	chr17	NW_003104457	8883086	8970139	114	2	0	0	1	0
marbling	286868	RPLP0	chr17	NW_003104457	13645199	13649222	3	0	0	0	2	0
marbling	615411	CMKLR1	chr17	NW_003104458	133521	134609	0	0	0	0	2	1
marbling	327672	MAPK1	chr17	NW_003104461	1068967	1086196	10	0	1	0	5	0
marbling	539238	ANK2	chr6	NW_003103961	2364172	2525831	68	1	0	0	5	0
marbling	530315	EGF	chr6	NW_003103961	5548212	5651659	124	1	2	0	2	0
marbling	532785	HADH	chr6	NW_003103961	7441973	7485403	43	0	0	0	0	0
marbling	282857	SNCA	chr6	NW_003103970	2938346	3085282	81	3	0	0	3	0
marbling	531234	NCAPG	chr6	NW_003103970	5418821	5464908	44	1	0	0	1	4

marbling	280717	ALB	chr6	NW_003103980	2541204	2559564	8	0	0	0	0	1
marbling	539640	RCAN1	chr1	NW_003103793	278372	289572	19	0	0	0	5	0
marbling	338037	MYLK	chr1	NW_003103811	3253904	3341970	65	1	0	0	0	1
marbling	280932	SST	chr1	NW_003103812	8463813	8465256	1	0	0	0	1	0
marbling	282865	ADIPOQ	chr1	NW_003103812	9220205	9231983	25	1	0	0	1	0
marbling	282357	SLC2A2	chr1	NW_003103817	3389462	3419601	52	0	0	0	6	1
marbling	783104	HPS3	chr1	NW_003103819	6742755	6783670	38	0	0	0	0	0
marbling	529631	RUNX1	chr1	NW_003103826	2572066	2842409	344	9	0	0	2	0
marbling	534712	RB1	chr12	NW_003104311	9643969	9764093	95	1	0	0	1	1
marbling	534496	MYCBP2	chr12	NW_003104317	75971	348220	97	1	0	0	1	0
marbling	281427	PRNP	chr13	NW_003104369	3639373	3657467	7	0	0	0	1	1
marbling	282855	PCK1	chr13	NW_003104370	11065642	11071768	4	0	0	0	5	0
marbling	505405	MC3R	chr13	NW_003104370	12106183	12107154	0	0	0	0	0	1
marbling	282419	CSNK2A1	chr13	NW_003104370	12970647	13028338	42	0	0	0	0	0
marbling	508899	NCOA6	chr13	NW_003104370	16551365	16612304	19	1	0	0	0	0
marbling	539559	GDF5	chr13	NW_003104370	17261186	17264943	4	0	0	0	0	0
marbling	535742	SRC	chr13	NW_003104370	18906932	18925845	6	0	0	0	1	0
marbling	505640	PLTP	chr13	NW_003104370	27295627	27305788	14	0	0	0	0	1
marbling	3283885	ND4L	mitochondrion	NC_006853	10239	10535	0	0	0	0	0	0
marbling	3283886	ND4	mitochondrion	NC_006853	10529	11906	0	0	0	0	0	0
marbling	3283889	CYTB	mitochondrion	NC_006853	14514	15653	0	0	0	0	0	0
milk	525727	HLA-DOA	chr23	NW_003104548	7218685	7264231	33	4	0	0	2	2
milk	505554	NEU1	chr23	NW_003104557	722878	726839	6	0	0	0	2	2
milk	280943	TNF	chr23	NW_003104557	951133	953906	3	0	0	0	3	0
milk	504548	LOC504548	chr23	NW_003104558	97925	100286	4	0	1	0	4	3
milk	512938	UBD	chr23	NW_003104558	143131	145451	10	0	1	0	6	5
milk	282157	BTN1A1	chr23	NW_003104561	347712	351885	0	0	0	0	4	2
milk	788801	LOC788801	chr23	NW_003104561	3204398	3236367	52	1	0	0	8	3
milk	280901	PRL	chr23	NW_003104561	4090412	4099027	3	0	0	0	3	0
milk	520336	GCNT2	chr23	NW_003104562	1896961	1932260	23	0	0	0	1	3
milk	511614	AGPAT6	chr27	NW_003104610	6532896	6549531	12	0	0	0	2	1
milk	281407	PLAT	chr27	NW_003104610	7059374	7083381	10	1	0	0	1	0
milk	282004	PRKG1	chr26	NW_003104580	1279364	2717677	1497	25	0	0	0	0
milk	541067	MINPP1	chr26	NW_003104580	3544293	3580986	20	0	0	0	3	0
milk	281283	LIPF	chr26	NW_003104580	4848278	4884911	31	0	0	0	2	3
milk	515610	ACTA2	chr26	NW_003104580	5036405	5053690	10	0	0	0	0	0
milk	506132	CH25H	chr26	NW_003104580	5350235	5352293	2	0	0	0	3	4
milk	539466	PPP1R3C	chr26	NW_003104581	931143	936043	0	0	0	0	0	1
milk	537016	CPEB3	chr26	NW_003104581	1274242	1424684	103	0	0	0	1	1
milk	508467	KIF11	chr26	NW_003104581	1703514	1748889	21	0	0	0	1	1
milk	281975	PDE6C	chr26	NW_003104582	846458	899655	60	2	0	0	3	1
milk	535243	CYP2C18	chr26	NW_003104582	1822412	1863753	18	0	1	0	1	0

milk	616593	CYP2C87	chr26	NW_003104582	1920719	1955822	19	0	0	0	0	0
milk	540627	LOC540627	chr26	NW_003104582	2020992	2049741	34	0	0	0	8	3
milk	505468	LOC505468	chr26	NW_003104582	2122044	2178860	35	0	0	0	0	0
milk	510380	CYP2C19	chr26	NW_003104582	2226625	2273921	33	0	1	0	0	0
milk	785540	LOC785540	chr26	NW_003104582	2301532	2358011	68	1	0	0	1	0
milk	522146	LOC522146	chr26	NW_003104582	2389160	2446680	35	0	0	0	2	0
milk	614675	PDLIM1	chr26	NW_003104582	2496395	2537025	45	0	0	0	9	1
milk	504625	SORBS1	chr26	NW_003104582	2577556	2809696	214	5	0	0	1	2
milk	280924	SCD	chr26	NW_003104582	7028372	7038744	18	0	1	0	4	1
milk	497202	GPAM	chr26	NW_003104583	6337280	6377229	20	0	0	0	1	2
milk	511682	MBTPS1	chr18	NW_003104463	7165191	7200552	10	1	0	0	1	1
milk	444867	NOD2	chr18	NW_003104464	7732626	7763261	15	0	0	0	1	0
milk	534923	AKT2	chr18	NW_003104465	7028812	7058855	13	1	0	0	0	0
milk	282089	TGFB1	chr18	NW_003104465	7896522	7911092	5	0	0	0	0	0
milk	281004	APOE	chr18	NW_003104466	2012290	2014977	2	0	0	0	3	2
milk	782793	PRKD2	chr18	NW_003104466	3196641	3226260	35	0	0	0	1	4
milk	286861	FTL	chr18	NW_003104466	4965095	4966929	0	0	0	0	1	0
milk	493738	KLK1	chr18	NW_003104466	6310891	6315980	2	0	0	0	2	0
milk	100271720	F8	chrX	NW_003104684	715994	859826	13	0	0	0	0	0
milk	282518	SERPINA7	chrX	NW_003104693	2890852	2896227	0	0	0	0	0	0
milk	533134	MBTPS2	chrX	NW_003104767	480241	524456	3	0	0	0	1	0
milk	281061	CDK1	chr28	NW_003104624	625436	639090	8	0	0	0	0	0
milk	505043	CD320	chr7	NW_003104016	67824	72540	2	0	2	0	3	2
milk	281095	CSF2	chr7	NW_003104019	1283406	1285771	0	0	0	0	3	3
milk	529633	CLK4	chr7	NW_003104024	1041952	1063718	52	1	0	0	0	1
milk	511771	CXCL14	chr7	NW_003104033	1044311	1052676	6	0	0	0	0	0
milk	281048	CD14	chr7	NW_003104035	1582902	1584318	1	0	0	0	1	0
milk	537712	EBF1	chr7	NW_003104049	742221	1152293	210	6	0	0	0	0
milk	281857	IL12B	chr7	NW_003104049	1354818	1365211	17	1	0	0	1	2
milk	536281	FAT3	chr29	NW_003104628	1965869	2605170	903	20	1	0	1	0
milk	280951	TYR	chr29	NW_003104632	583870	694233	67	1	0	0	0	3
milk	404163	ST3GAL4	chr29	NW_003104641	538764	578289	49	2	0	0	0	1
milk	281661	CAPN1	chr29	NW_003104647	1821486	1871515	28	1	0	0	0	0
milk	280829	INS	chr29	NW_003104648	3443006	3444167	0	0	0	0	0	0
milk	281240	IGF2	chr29	NW_003104648	3453531	3472136	2	0	0	0	0	0
milk	280699	SERPINA1	chr21	NW_003104538	5287337	5296706	0	0	0	0	2	1
milk	280991	AKT1	chr21	NW_003104538	16587201	16604429	1	0	0	0	0	0
milk	280714	AHR	chr4	NW_003103887	10363578	10413683	34	0	1	0	3	0
milk	280826	IL6	chr4	NW_003103889	939256	943624	1	0	0	0	0	0
milk	281052	CD36	chr4	NW_003103891	1103245	1156699	16	0	0	0	2	2
milk	280836	LEP	chr4	NW_003103904	2996897	3013647	42	1	1	0	1	4
milk	511899	INSIG1	chr4	NW_003103907	16579471	16592696	14	0	0	0	2	1

milk	534069	TGFB2	chr16	NW_003104435	4399505	4492049	90	0	0	0	0	1
milk	281485	SELL	chr16	NW_003104437	1782182	1807753	19	1	0	0	0	1
milk	100139219	MTOR	chr16	NW_003104438	1233869	1355121	27	0	0	0	0	0
milk	614154	PER3	chr16	NW_003104438	4344513	4408608	43	1	1	0	0	1
milk	615329	CSRP1	chr16	NW_003104439	2711252	2732000	13	1	0	0	2	1
milk	540261	SERPINC1	chr16	NW_003104439	10102150	10112763	11	0	0	0	5	0
milk	280805	GHR	chr20	NW_003104514	568407	741871	136	2	0	0	2	1
milk	281422	PRLR	chr20	NW_003104515	4636107	4700341	66	0	0	0	2	0
milk	282382	TGFBR1	chr8	NW_003104106	227728	299431	54	2	0	0	1	0
milk	768325	GNRH1	chr8	NW_003104124	599348	603143	2	0	0	0	0	0
milk	511112	CCL21	chr8	NW_003104127	1074193	1075339	1	0	1	0	1	2
milk	317707	HTR1B	chr9	NW_003104168	2609031	2610200	0	0	0	0	1	2
milk	280749	CGA	chr9	NW_003104212	1866400	1883268	2	0	0	0	1	0
milk	280897	PLG	chr9	NW_003104255	1006302	1053920	51	1	1	0	1	0
milk	281428	PROC	chr2	NW_003103830	3323511	3334038	4	0	0	0	0	0
milk	281187	MSTN	chr2	NW_003103830	4502638	4509268	7	0	0	0	0	5
milk	534440	INSIG2	chr2	NW_003103842	3856218	3878509	11	0	0	0	1	1
milk	510814	STAT1	chr2	NW_003103844	3366080	3398477	14	0	0	0	1	0
milk	613808	CLK1	chr2	NW_003103845	8413807	8418389	2	0	0	0	0	0
milk	511961	PRKAG3	chr2	NW_003103849	2499570	2507099	22	0	0	0	5	2
milk	783257	ABCB6	chr2	NW_003103849	2874288	2881917	4	0	0	0	0	0
milk	540951	PAX3	chr2	NW_003103850	2430988	2532835	112	0	0	0	3	5
milk	517248	IMPACT	chr24	NW_003104568	6218	41058	43	6	0	0	5	0
milk	516010	SMAD2	chr24	NW_003104569	12512815	12563830	22	0	0	0	2	0
milk	535916	SMAD7	chr24	NW_003104569	13612910	13640484	4	0	0	0	0	0
milk	540248	SMAD4	chr24	NW_003104569	15555235	15587022	27	0	0	0	1	0
milk	282325	PRKCB	chr25	NW_003104572	10249159	10620980	393	4	0	0	6	0
milk	281874	ITGAL	chr25	NW_003104575	1394171	1444104	33	1	0	0	2	2
milk	281375	SERPINE1	chr25	NW_003104577	5782505	5790810	0	0	0	0	0	0
milk	282214	CYP3A5	chr25	NW_003104577	6586332	6628678	69	4	0	0	2	3
milk	507988	CYP3A4	chr25	NW_003104577	6709880	6759113	51	3	1	0	0	0
milk	526682	CYP3A5	chr25	NW_003104577	6773737	6826527	25	0	0	0	3	0
milk	280979	ACTB	chr25	NW_003104577	8927584	8930998	0	0	0	0	0	0
milk	404181	RPS6KB1	chr19	NW_003104488	2970255	3006688	36	2	0	0	1	0
milk	539361	SREBF1	chr19	NW_003104494	7422355	7438390	7	0	0	0	0	0
milk	282187	COL1A1	chr19	NW_003104495	1140601	1157366	5	0	0	0	1	1
milk	282262	IGFBP4	chr19	NW_003104496	845339	856928	3	0	0	0	0	1
milk	511135	ACLY	chr19	NW_003104496	2210029	2254295	13	0	0	0	1	0
milk	282375	STAT5A	chr19	NW_003104496	2552274	2572867	13	1	0	0	3	0
milk	508541	STAT3	chr19	NW_003104496	2575320	2651285	103	0	0	0	0	0
milk	280804	GHI	chr19	NW_003104497	4881006	4884402	1	0	0	0	4	4
milk	281152	FASN	chr19	NW_003104498	2260852	2279544	3	0	0	0	0	0

milk	282093	TIMP2	chr19	NW_003104499	1089696	1141453	71	1	0	0	4	0
milk	515125	SMAD3	chr10	NW_003104268	3867256	3989711	146	0	0	0	2	0
milk	783225	LOC783225	chr10	NW_003104277	1065897	1066343	2	0	1	0	1	3
milk	777597	ANG	chr10	NW_003104277	1174205	1174852	0	0	0	0	3	0
milk	783907	ANG2	chr10	NW_003104277	1178985	1190823	0	0	0	0	2	0
milk	508954	SORD	chr10	NW_003104282	8130251	8164483	17	0	0	0	0	2
milk	514135	BCO2	chr15	NW_003104408	1399045	1466750	47	0	0	0	3	2
milk	509003	NUCB2	chr15	NW_003104409	6059990	6095988	29	0	0	0	1	1
milk	514876	CALCA	chr15	NW_003104409	8408271	8411310	3	0	0	0	1	3
milk	614663	CALCA	chr15	NW_003104409	8527626	8533134	4	0	0	0	2	1
milk	280903	PTH	chr15	NW_003104409	10095027	10097563	3	0	0	0	0	0
milk	516067	FOLR1	chr15	NW_003104415	902756	908027	3	0	0	0	2	2
milk	539750	FOLR1	chr15	NW_003104415	913337	924197	15	0	0	0	3	1
milk	404129	DGAT2	chr15	NW_003104418	121901	154373	28	0	0	0	1	0
milk	617701	BDNF	chr15	NW_003104418	3345663	3382052	18	0	0	0	1	0
milk	286857	PAX6	chr15	NW_003104418	7537762	7565438	5	0	0	0	0	0
milk	531682	CAT	chr15	NW_003104419	828397	864344	39	0	0	0	1	2
milk	281057	CD44	chr15	NW_003104419	1503403	1590864	108	1	0	0	1	4
milk	281035	SERPING1	chr15	NW_003104422	3026485	3039154	10	0	0	0	0	1
milk	616239	TCN1	chr15	NW_003104425	859761	875062	9	0	0	0	3	0
milk	493998	CRABP2	chr3	NW_003103861	264158	269142	1	0	0	0	0	1
milk	281646	BGLAP	chr3	NW_003103861	694248	695292	0	0	0	0	0	0
milk	529566	CREB3L4	chr3	NW_003103861	2612491	2618220	3	0	0	0	1	0
milk	497205	LEPR	chr3	NW_003103871	9330843	9406154	66	1	1	0	3	1
milk	539188	GPT	chr14	NW_003104381	257740	260745	0	0	0	0	0	0
milk	282612	CYHR1	chr14	NW_003104381	298261	311357	0	0	0	0	0	0
milk	282609	DGAT1	chr14	NW_003104381	429263	438676	2	0	0	0	1	0
milk	515056	BOP1	chr14	NW_003104381	460212	478426	2	0	0	0	0	0
milk	519403	ARC	chr14	NW_003104381	1526511	1528836	0	0	0	0	0	0
milk	280706	TG	chr14	NW_003075585	626	3662	3	0	0	0	1	0
milk	280706	TG	chr14	NW_003104383	6513	219254	173	3	0	0	2	1
milk	280755	CRH	chr14	NW_003104396	3111020	3111603	0	0	0	0	3	0
milk	617510	CCK	chr22	NW_003104540	14423240	14428848	2	0	0	0	1	0
milk	523887	LYZL4	chr22	NW_003104540	14478509	14483362	3	0	0	0	3	1
milk	407219	MITF	chr22	NW_003104541	12315257	12348733	24	1	1	0	4	1
milk	281209	GPX1	chr22	NW_003104544	11251238	11252406	0	0	0	0	0	2
milk	507878	SCAP	chr22	NW_003104544	12650655	12744808	69	0	1	0	1	1
milk	280846	LTF	chr22	NW_003104545	696929	731112	53	1	0	0	5	1
milk	613414	TRH	chr22	NW_003104545	3705217	3708178	3	0	0	0	3	2
milk	540388	TGFA	chr11	NW_003104291	576983	691450	64	1	0	0	1	5
milk	515536	ABCG5	chr11	NW_003104293	8253690	8285862	43	1	0	0	3	1
milk	508829	ABCG8	chr11	NW_003104293	8286099	8304101	27	0	0	0	2	0

milk	281251	IL1B	chr11	NW_003104294	1229536	1238044	18	0	0	0	0	0
milk	281060	CD8A	chr11	NW_003104294	2807582	2814653	4	0	1	0	2	1
milk	281416	POMC	chr11	NW_003104296	3932101	3939584	4	0	0	0	1	4
milk	280748	CEL	chr11	NW_003104302	5342440	5351301	0	0	0	0	0	0
milk	540741	SP1	chr5	NW_003103918	877409	912510	30	0	0	0	0	0
milk	281894	LALBA	chr5	NW_003103920	2938180	2940201	4	0	0	0	0	0
milk	407142	COL2A1	chr5	NW_003103921	1076797	1107775	12	0	0	0	3	1
milk	785803	LOC785803	chr5	NW_003103924	863814	869574	9	0	1	0	3	0
milk	781146	LOC781146	chr5	NW_003103924	886231	890842	18	1	1	0	10	3
milk	617219	LOC617219	chr5	NW_003103924	976536	981796	4	0	0	0	2	0
milk	493637	LYSB	chr5	NW_003103924	996977	1002564	6	0	0	0	6	3
milk	280849	LYZ2	chr5	NW_003103924	1015499	1021170	4	0	0	0	2	0
milk	781349	LYZ1	chr5	NW_003103924	1042020	1049775	3	0	0	0	2	0
milk	281289	LYZ3	chr5	NW_003103924	1073924	1080918	0	0	0	0	1	0
milk	787241	LOC787241	chr5	NW_003103924	1095179	1119035	10	0	0	0	0	0
milk	777776	LYZ	chr5	NW_003103924	1154812	1163618	3	0	0	0	0	1
milk	281237	IFNG	chr5	NW_003103924	2272802	2277625	3	0	0	0	1	0
milk	281239	IGF1	chr5	NW_003103925	18914860	18986680	39	1	0	0	0	1
milk	506466	LARGE	chr5	NW_003103927	1077876	1535799	687	5	0	0	1	2
milk	281368	OLR1	chr5	NW_003103939	176430	187735	11	0	0	0	2	0
milk	407098	CD4	chr5	NW_003103940	755423	771281	26	0	1	0	2	0
milk	281181	GAPDH	chr5	NW_003103940	998481	1002764	5	0	0	0	0	0
milk	532778	ARFGAP3	chr5	NW_003103944	2551086	2601023	34	0	0	0	0	1
milk	280822	IL2	chr17	NW_003104449	4478480	4483226	2	0	0	0	0	0
milk	407128	BMPR1B	chr6	NW_003103968	2847275	2898607	46	0	0	0	0	0
milk	282605	FAM13A	chr6	NW_003103970	4008420	4110345	94	1	1	0	0	0
milk	510924	HERC3	chr6	NW_003103970	4131458	4277754	101	4	0	0	0	3
milk	514373	HERC5	chr6	NW_003103970	4336555	4381454	39	1	0	0	1	1
milk	527520	HERC6	chr6	NW_003103970	4388990	4446131	66	4	0	0	0	1
milk	540329	PPM1K	chr6	NW_003103970	4529322	4551377	22	0	0	0	1	0
milk	536203	ABCG2	chr6	NW_003103970	4612388	4683437	92	0	1	0	2	1
milk	281499	SPP1	chr6	NW_003103970	4773430	4780393	4	0	0	0	0	0
milk	513972	MED28	chr6	NW_003103970	5255886	5261693	9	0	0	0	2	0
milk	523874	FAM184B	chr6	NW_003103970	5266848	5387715	162	3	0	0	2	1
milk	531234	NCAPG	chr6	NW_003103970	5418821	5464908	44	1	0	0	1	4
milk	534164	SLIT2	chr6	NW_003103970	7889122	8293947	235	3	0	0	0	1
milk	338446	PPARGC1A	chr6	NW_003103970	11506965	11613385	133	4	0	0	3	0
milk	280832	KIT	chr6	NW_003103975	3353006	3474119	91	0	0	0	2	0
milk	281099	CSN2	chr6	NW_003103978	4684175	4692680	10	0	0	0	3	2
milk	280717	ALB	chr6	NW_003103980	2541204	2559564	8	0	0	0	0	1
milk	280828	IL8	chr6	NW_003103980	2868324	2872089	10	0	0	0	6	1
milk	617419	SCD5	chr6	NW_003103982	553907	731381	197	6	0	0	0	1

milk	493713	NR1I2	chr1	NW_003103810	14980528	15013316	27	0	1	0	0	5
milk	538666	FAM131A	chr1	NW_003103813	219521	225927	5	1	0	0	2	1
milk	783224	LOC783224	chr1	NW_003103820	2875721	2879605	1	0	0	0	1	0
milk	280705	TF	chr1	NW_003103822	504219	543217	56	0	0	0	1	1
milk	510745	ABCG1	chr1	NW_003103824	1652454	1715537	66	0	1	0	2	5
milk	520743	KCNJ6	chr1	NW_003103826	5411238	5544780	131	0	0	0	1	0
milk	280955	VIM	chr13	NW_003104365	14219513	14227442	8	0	0	0	2	2
milk	281427	PRNP	chr13	NW_003104369	3639373	3657467	7	0	0	0	1	1
milk	280888	OXT	chr13	NW_003104370	4496344	4497242	0	0	0	0	0	0
milk	506459	ACSS2	chr13	NW_003104370	16715782	16762574	21	0	0	0	0	0
milk	281191	GHRH	chr13	NW_003104370	18784279	18793585	5	0	0	0	2	0
milk	535742	SRC	chr13	NW_003104370	18906932	18925845	6	0	0	0	1	0
milk	504598	SLPI	chr13	NW_003104370	26258331	26260624	3	0	0	0	2	2
tenderness	282254	HSPA1A	chr23	NW_003104557	749004	751102	2	0	0	0	2	6
tenderness	280901	PRL	chr23	NW_003104561	4090412	4099027	3	0	0	0	3	0
tenderness	353108	ANK1	chr27	NW_003104610	6586630	6711803	144	1	2	1	2	0
tenderness	281998	PRDX3	chr26	NW_003104584	753868	763222	8	0	0	0	1	0
tenderness	281677	CEBPA	chr18	NW_003104465	1053778	1055008	0	0	0	0	0	0
tenderness	281664	CAPNS1	chr18	NW_003104465	4112695	4119615	4	0	0	0	1	0
tenderness	783645	VCL	chr28	NW_003104625	8129732	8242243	60	2	0	0	1	1
tenderness	538426	DNAJB1	chr7	NW_003104012	53058	56738	2	1	0	0	0	0
tenderness	286793	PRDX2	chr7	NW_003104013	183152	185788	0	0	0	0	0	1
tenderness	327693	HINT1	chr7	NW_003104019	2104401	2111009	8	0	0	0	1	1
tenderness	280841	LOX	chr7	NW_003104022	3057613	3069719	8	0	0	0	0	0
tenderness	517535	HSPA9	chr7	NW_003104034	214147	229446	4	0	0	0	0	0
tenderness	281946	NR3C1	chr7	NW_003104037	342320	460846	63	4	0	0	0	1
tenderness	281039	CAST	chr7	NW_003104062	333707	469981	196	2	0	0	1	5
tenderness	533224	C29H11orf67	chr29	NW_003104633	6033657	6067216	17	0	0	0	0	1
tenderness	281274	LDHA	chr29	NW_003104637	2771861	2783743	3	0	0	0	0	0
tenderness	281661	CAPN1	chr29	NW_003104647	1821486	1871515	28	1	0	0	0	0
tenderness	534553	CFL1	chr29	NW_003104647	2396919	2400303	2	0	0	0	1	0
tenderness	280829	INS	chr29	NW_003104648	3443006	3444167	0	0	0	0	0	0
tenderness	281240	IGF2	chr29	NW_003104648	3453531	3472136	2	0	0	0	0	0
tenderness	282883	CTSD	chr29	NW_003104648	3758969	3768402	0	0	0	0	6	0
tenderness	407231	MEF2A	chr21	NW_003104530	3141054	3321368	269	4	0	0	1	3
tenderness	534353	YY1	chr21	NW_003104538	12526550	12551363	35	0	0	0	0	1
tenderness	280826	IL6	chr4	NW_003103889	939256	943624	1	0	0	0	0	0
tenderness	280836	LEP	chr4	NW_003103904	2996897	3013647	42	1	1	0	1	4
tenderness	281343	MYOG	chr16	NW_003104426	596916	599757	0	0	0	0	1	0
tenderness	510169	MYBPH	chr16	NW_003104427	132976	141271	4	0	0	0	2	0
tenderness	281662	CAPN2	chr16	NW_003104436	4170292	4228632	43	0	0	0	4	0
tenderness	511268	PARK7	chr16	NW_003104438	4207276	4224033	6	0	0	0	1	0

tenderness	286816	TNNT2	chr16	NW_003104439	2637770	2640508	0	0	0	0	0	0
tenderness	282438	PRDX6	chr16	NW_003104439	9768287	9778206	9	0	0	0	1	0
tenderness	514739	MAP1B	chr20	NW_003104505	6334017	6427133	97	1	2	0	0	1
tenderness	280805	GHR	chr20	NW_003104514	568407	741871	136	2	0	0	2	1
tenderness	510708	ADCY2	chr20	NW_003104521	9824151	10262383	669	2	0	0	3	2
tenderness	281105	CTSB	chr8	NW_003104073	61948	70432	10	0	0	0	3	1
tenderness	616734	FOX E1	chr8	NW_003104105	1365536	1366657	0	0	0	0	0	0
tenderness	528862	DNAJA1	chr8	NW_003104126	239170	248925	7	0	0	0	0	0
tenderness	535077	GSN	chr8	NW_003104152	160093	221786	72	1	0	0	4	2
tenderness	540985	ME1	chr9	NW_003104175	2300446	2489758	190	5	0	0	3	0
tenderness	281187	MSTN	chr2	NW_003103830	4502638	4509268	7	0	0	0	0	5
tenderness	510833	COL3A1	chr2	NW_003103830	5606359	5645976	23	0	0	0	0	2
tenderness	540561	TTN	chr2	NW_003103835	4942405	5218301	307	3	12	1	3	0
tenderness	407121	NEB	chr2	NW_003103838	14932481	15141875	122	2	0	0	0	2
tenderness	511913	HSPD1	chr2	NW_003103845	4932201	4942594	4	0	0	0	2	0
tenderness	317657	MYL1	chr2	NW_003103846	5398622	5426283	39	5	0	0	0	0
tenderness	280765	DES	chr2	NW_003103849	3065578	3072653	1	0	0	0	2	1
tenderness	511087	OBSL1	chr2	NW_003103849	3193868	3215958	14	1	1	0	2	0
tenderness	281753	EPB41	chr2	NW_003103851	256066	351166	37	2	0	0	1	0
tenderness	515687	GUSB	chr25	NW_003104575	2646187	2658574	8	0	0	0	3	1
tenderness	280781	ELN	chr25	NW_003104577	3372073	3404617	14	0	0	0	1	0
tenderness	516099	HSPB1	chr25	NW_003104577	4442389	4444986	0	0	0	0	0	0
tenderness	282359	SLC2A4	chr19	NW_003104493	2847063	2852653	2	0	0	0	0	0
tenderness	539361	SREBF1	chr19	NW_003104494	7422355	7438390	7	0	0	0	0	0
tenderness	280804	GH1	chr19	NW_003104497	4881006	4884402	1	0	0	0	4	4
tenderness	281152	FASN	chr19	NW_003104498	2260852	2279544	3	0	0	0	0	0
tenderness	281663	CAPN3	chr10	NW_003104278	3966771	4023409	39	0	0	0	3	0
tenderness	524770	ACTN1	chr10	NW_003104283	9392609	9490676	131	0	0	0	1	2
tenderness	281938	MYOD1	chr15	NW_003104409	5698094	5700741	1	0	0	0	4	2
tenderness	514876	CALCA	chr15	NW_003104409	8408271	8411310	3	0	0	0	1	3
tenderness	614663	CALCA	chr15	NW_003104409	8527626	8533134	4	0	0	0	2	1
tenderness	280903	PTH	chr15	NW_003104409	10095027	10097563	3	0	0	0	0	0
tenderness	280813	HBB	chr15	NW_003104412	1051564	1053206	1	0	0	0	0	1
tenderness	781674	LOC781674	chr15	NW_003104412	1101681	1103603	2	0	0	0	2	3
tenderness	100337028	LOC100337028	chr15	NW_003104412	1367733	1370263	4	0	0	0	5	3
tenderness	280685	F2	chr15	NW_003104421	8809905	8824275	16	2	0	0	1	2
tenderness	767614	MYBPC3	chr15	NW_003104421	9663023	9680756	4	0	0	0	1	0
tenderness	507359	IL6R	chr3	NW_003103861	2270235	2322649	49	2	0	0	0	0
tenderness	327711	CTSS	chr3	NW_003103863	2312024	2334948	23	0	0	0	0	1
tenderness	534656	CAPZA1	chr3	NW_003103868	1199815	1243897	15	0	0	0	0	1
tenderness	497205	LEPR	chr3	NW_003103871	9330843	9406154	66	1	1	0	3	1
tenderness	534402	PGM1	chr3	NW_003103872	661854	727562	53	0	0	0	2	3

tenderness	282609	DGAT1	chr14	NW_003104381	429263	438676	2	0	0	0	1	0
tenderness	280706	TG	chr14	NW_003075585	626	3662	3	0	0	0	1	0
tenderness	280706	TG	chr14	NW_003104383	6513	219254	173	3	0	0	2	1
tenderness	511077	MYC	chr14	NW_003104383	4479558	4484754	2	0	0	0	1	1
tenderness	539379	ABRA	chr14	NW_003104398	10955627	10966441	17	0	0	0	3	1
tenderness	535182	MDH1	chr11	NW_003104294	16789726	16813738	44	1	0	0	5	0
tenderness	281336	MYF6	chr5	NW_003103915	350907	352421	1	0	0	0	2	0
tenderness	281335	MYF5	chr5	NW_003103915	359863	363098	2	0	0	0	3	0
tenderness	281970	PDE1B	chr5	NW_003103917	3039848	3065221	19	1	0	0	8	1
tenderness	513641	NCKAP1L	chr5	NW_003103917	3069499	3114791	49	0	2	0	3	2
tenderness	540741	SP1	chr5	NW_003103918	877409	912510	30	0	0	0	0	0
tenderness	515421	MYL6B	chr5	NW_003103925	9871449	9874154	2	0	0	0	1	0
tenderness	281239	IGF1	chr5	NW_003103925	18914860	18986680	39	1	0	0	0	1
tenderness	280695	MB	chr5	NW_003103927	3092073	3102865	5	0	0	0	1	3
tenderness	513340	GNB3	chr5	NW_003103940	725634	732081	4	0	0	0	1	1
tenderness	519271	ERC1	chr5	NW_003103942	976459	1217443	171	1	0	0	1	1
tenderness	353115	SOX10	chr5	NW_003103943	851749	871339	9	0	0	0	0	0
tenderness	616076	LOC616076	chr5	NW_003103944	1277218	1297348	5	0	0	0	0	0
tenderness	505519	MYL2	chr17	NW_003104457	5789758	5797548	4	1	0	0	9	1
tenderness	539238	ANK2	chr6	NW_003103961	2364172	2525831	68	1	0	0	5	0
tenderness	281499	SPP1	chr6	NW_003103970	4773430	4780393	4	0	0	0	0	0
tenderness	338446	PPARGC1A	chr6	NW_003103970	11506965	11613385	133	4	0	0	3	0
tenderness	515992	MGC133636	chr13	NW_003104367	320712	324740	2	0	0	0	2	3
Yellow_hair	281298	MC1R	chr18	NW_003104464	3307986	3309736	0	0	0	0	0	0
Yellow_hair	280951	TYR	chr29	NW_003104632	583870	694233	67	1	0	0	0	3
Yellow_hair	782171	LOC782171	chr4	NW_003103894	1430408	1430878	0	0	0	0	1	1
Yellow_hair	282105	TYRP1	chr8	NW_003104088	1216304	1232516	11	1	0	0	2	0
Yellow_hair	507168	RPL23A	chr19	NW_003104492	771473	774343	3	2	0	0	1	2
Yellow_hair	539003	CTNNB1	chr22	NW_003104540	13075226	13121991	26	0	0	0	1	1
Yellow_hair	407219	MITF	chr22	NW_003104541	12315257	12348733	24	1	1	0	4	1
Yellow_hair	281416	POMC	chr11	NW_003104296	3932101	3939584	4	0	0	0	1	4
Yellow_hair	767866	NOTCH1	chr11	NW_003104302	6226253	6256822	4	0	0	0	0	1
Yellow_hair	512034	PRSS12	chr6	NW_003103959	766784	843700	72	2	0	0	0	0
Yellow_hair	527107	CORIN	chr6	NW_003103974	4331822	4583383	227	3	1	0	6	3
Yellow_hair	281017	ATRN	chr13	NW_003104370	3924158	4114033	85	1	0	0	2	2
Yellow_hair	404192	ASIP	chr13	NW_003104370	16134366	16161018	17	0	0	0	0	1