

Supplementary Data 1. The evidence of relationship between the gene and biological function related to the marbling trait from the literature.

Name	Sentence	PMID	Journal	Year	Volume	Page (start)	Page (end)
ACACA	Fatty acid metabolism was altered with decreased amounts of fat	PMID: 17521938	Mol Genet Metab.	2007	91	209	217
ACLY	ATP citrate lyase (ACLY) is the primary enzyme responsible for the	PMID: 14688200	FASEB J.	2004	18	415	417
ACTA1	Twelve genes, including SLC25A6, EEF1G, EEF1A1, COX1, ACTA1, S	PMID: 19937143	Mol Cells.	2009	28	529	536
ADFP	In this study, we investigated the association between genetic poly	PMID:19712591	BMB Rep	2009	42	529	534
ADIPOQ	We confirmed the presence of QTL affecting marbling, ribeye mus	PMID:17121600	Anim Genet.	2006	37	554	562
ADRB1	Activation of the β 1-adrenergic receptor (ADRB1) causes increas	PMID: 17335470	Diabet Med.	2007	24	392	397
ADRB2	The beta-2 adrenergic receptor is a major lipolytic receptor in hu	PMID: 15672110	Int J Obes (Lond).	2005	29	449	457
ADRB3	A salient feature of chronic ADRb3 activation is pronounced remoc	PMID: 15941787	Am J Physiol Endocrinol Metab.	2005	289	608	616
AGPAT1	AGPAT2 expression was at least 2-fold higher than AGPAT1 in the	PMID: 12107193	J Clin Endocrinol Metab.	2002	87	3019	3022
AKIRIN2	Thus, the akirin 2 (AKIRIN2) gene containing the c17-25 EST seque	PMID:19594944	BMC Res Notes.	2009	2	131	
ALB	In trans-activation assays, celecoxib acted as a PPAR γ agonist whe	PMID: 15629510	J Hepatol.	2005	42	75	81
ATP2A2	The increase in muscle sarcoendoplasmic Ca ²⁺ -ATPase (SERCA2a)	PMID: 16914547	J Biol Chem.	2006	281	31894	31908
CAMK2A	Calcium/calmodulin-dependent protein kinase II alpha (CAMK2A)	PMID:10766915	J Physiol	2000	15	331	337
CAPN1	Regulation of CAPN1 activity has been correlated with varia	PMID: 18423040	BMC Genet.	2008	9	33	
CAPN10	CAPN10 mRNA expression was studied in adipose tissue biopsies f	PMID: 15240652	J Clin Endocrinol Metab.	2004	89	3601	3605
CAPN2	wo genes of calpain [CAPN1 (macro-calpain) and CAPN2 (mili-calp	PMID: 18423040	BMC Genet.	2008	9	33	
CAPNS1	Proportion of the type 2a MHCs was determined for the	PMID: 20563650	Mol Biol Rep.	2010			
CARTPT	Dephosphorylated Crtc1 stimulated expression of the Cartpt and k	PMID: 18758446	Nat Med.	2008	14	1112	1127
CAST	The association of the CAST SNP with carcass and meat quality tra	PMID: 16424255	J Anim Sci.	2006	84	291	299
CCND1	Using real-time PCR in muscle biopsies taken earlier in the fatteni	PMID: 19296579	J Agric Food Chem.	2009	57	3808	3817
CEBPA	We observed higher CEBPA expression levels in subcutaneous fat,	PMID: 15340102	Obes Res.	2004	12	1217	1222
CEBPB	We also selected genes of established and putative transcriptional	PMID: 19535224	Nutrition.	2009	25	1047	1056
COPB1	The mapping results demonstrated that porcine LDHA and COPB1	PMID: 19830590	Mol Biol Rep.	2010	37	629	636
CP	Given the occurrence of possible pancreatic or insulin response dy	PMID: 17659342	Neurotoxicology.	2007	28	899	914
CREM	Calcium/calmodulin-dependent protein kinase activity is regulat	PMID: 17927910	J Biochem Mol Biol.	2007	40	757	764
CRH	The gene corticotropin releasing hormone (CRH) is mapped on bo	PMID:18059556	Genome.	2007	50	936	345
CS	Accordingly, in addition to functional (ex-vivo fatty acid oxidati	PMID: 20084391	Eur J Appl Physiol.	2010	109	307	316
CSRP3	We conclude, therefore, that there is a high recombination rate in	PMID: 19830590	Mol Biol Rep.	2010	37	629	636
CST4	It has been found that cystatin C secretion increased and cathepsir	PMID: 15985526	FASEB J.	2005	19	1540	1542
CTNNA1	The extracellular protein dickkopf homolog 1 (DKK1) binds to a cel	PMID:19776209	Endocr Rev.	2009	30	624	712
CTSB	The gene loci DEFB1 (6.7 Mb)-CTSB (11.7 Mb), CTSB (11.7 Mb)?FLJ	PMID: 15475247	Genomics.	2004	84	696	706
DECR1	Two genes located on BTA14, 2,4 dienoyl CoA reductase 1 (DECR1	PMID:19395506	J Anim Sci.	2009	87	2475	2484
DES	BLAST searches revealed that expression of the MDH, P14-K, ferriti	PMID:17927910	J Biochem Mol Biol.	2007	40	757	764
DGAT1	Previous studies have indicated that single nucleotide polymorphi	PMID:20416823	Meat Sci.	2010	85	515	518
ELOVL2	The positions of other genes related to cholesterol metabolism (A	PMID: 20416790	Meat Sci.	2010	85	721	729
FABP3	The FABP3 is involved in fatty acid transport from cell membrane	PMID: 18304447	BMB Rep.	2008	41	29	34
FABP4	Previous studies have indicated that single nucleotide polymorphi	PMID:20416823	Meat Sci.	2010	85	515	518
FABP5	Recently, FABP4 and FABP5 were proposed as potential candidate	PMID: 16879357	Anim Genet.	2006	37	400	402
FABP6	In our study, the expression levels of FABP4 and FABP6 were high	PMID: 19232135	BMC Genomics.	2009	10	87	
FABP7	Two potential positional candidate genes present within the one L	PMID: 20390338	Biochem Genet.	2010	48	538	547
FABP9	Nine FABPs (FABP1 ? FABP9), expressed in normal liver, intestine,	PMID: 18826602	BMC Cancer.	2008	8	276	
FAS	Significant (P < .05) evidence for QTL was seen on chromosome 7	PMID: 9814894	J Anim Sci.	1998	76	2560	2567
FASN	We found that the fasting-induced reduction in the expression of l	PMID: 18974273	Endocrinology.	2009	150	1225	1234
FGF8	A gene on BTA26, fibroblast growth factor 8 (FGF8), has in recent	PMID:19395506	J Anim Sci.	2009	87	2475	2484
GCG	A rise in serum glucagon, which would augment cAMP production	PMID: 18683021	Amino Acids.	2009	37	169	175
GH1	Growth hormone (GH) is a major participant in the control of severa	PMID:19395506	American Society of Animal Science	2004	55		
GHR	GHR polymorphism was influential on moisture and intra-muscula	-	Meat Sci.	2010	86	270	275
GHRH	The effect of leptin in adult rats appears to be exerted at hypothal	-	Int J Obes	2000	24	s100	s103
GHRH1	GHRH-1 and GHRH-2 were mainly expressed in the stomach, but w	PMID: 19073185	Gen Comp Endocrinol.	2009	160	223	235
GNRH1	Testes function, feedlot performance, and carcass traits were eval	PMID: 8426725	J Anim Sci.	1996	74	950	954
GPD1	The three genes for which the expression pattern most strongly re	PMID: 19587329	Biol Reprod.	2009	81	1083	1092
GPD2	Those associated with the PPARalpha/RXRalpha activation pathwa	PMID: 19393040	Genome Biol.	2009	10	R43	
H6PD	Later an increased H6PD expression was reported during adipocyt	PMID: 18586838	J Mol Endocrinol.	2008	41	123	33
HP	[SAA] and [haptoglobin] were most strongly associated with liver	PMID: 20391639	J Vet Intern Med.	2010	24	213	219
IGF1	Adipocyte differentiation may be induced by both IGF-1 and insuli	PMID: 18849378	J Anim Sci.	2009	87	1218	1246
IGF2	However, there have been QTL identified on BTA 29 close to IGF2	PMID:17785604	J Anim Sci.	2008	86	1	16
INS	These data indicate that i.m. and s.c. adipose tissues exhibit aspec	PMID:2005009	J Anim Sci.	1991	69	162	170
LDHA	Porcine LDHA was highly expressed in lung, kidney, skeletal muscl	PMID: 19830590	Mol Biol Rep.	2010	37	629	636
LEP	Leptin and G6PDH are related to the expression of marbling what	PMID:17591707	J Anim Sci.	2007	85	2882	2894
LINGO4	Ten SNPs were genotyped in RORC and the adjacent gene leucine-	PMID: 17151246	Genetics	2007	175	843	853
LIPE	Hormone-sensitive lipase was firstly identified as an epinephrine-i	PMID: 18755148	Biochem Biophys Res Commun.	2008	376	36	39
LPL	Two experiments were conducted to determine the effects of anal	PMID:17235028	J Anim Sci.	2007	85	430	440
MAPK14	Interestingly, this porcine SSC7 QTL region (9, 10) contains genes v	PMID: 17426114	Physiol Genomics.	2007	30	232	241
MB	Lipid oxidation occurred throughout EO steaks, but metmyoglobin	PMID: 8454531	J Anim Sci.	1993	71	105	118
MC4R	Many mutations in the MC4R gene are associated with obesity, en	PMID:19714485	Mol Biol Rep.	2010	37	535	540
MSTN	Myostatin (as well knows as MSTN, GDF8. growth differentiation 1	-	Journal of Agrobiolgy,	2008	25	81	83
MYF5	There is a report when PPAR γ expressed in the myoblast cell line, i	-	Plains Nutrition Council Spring	2007		9	25
MYF6	Meat production capacity in mammals is related to the numbers o	-	Livestock Science	2009	126	292	297
MYH2	MYBPC2 also clusters with other key components of the fast-twitc	PMID:16985009	Physiol Genomics	2006	13	76	83
MYH4	Myosin heavy chain 2B (Myh4) and phosphoglycerate mutase mus	PMID:17373633	Horm Metab Res.	2007	39	192	196
Myhc	Some previous studies have described a correlation between myo-	-	J Agric Food Chem.	2009	57	10898	10903
MYL1	Significant reduction in the mRNA levels of muscle contractile 338	-	Molecular and Cellular Biology,	2010	30	1182	1198
Mylic2b	Myosin regulatory light chain (MLC) regulates myofilament activat	PMID:16802157	Mol Genet Genomics.	2006	276	264	272
MYLK	Myosin regulatory light chain (MLC) regulates myofilament activat	PMID:16802157	Mol Genet Genomics.	2006	276	264	272
MyIpf	The list includes many skeletal and cardiac sarcomeric proteins su	PMID:14688207	FASEB J.	2004	18	403	405
MYOD1	The LDHA (lactate dehydrogenase A) and COPB1 (coatomer protei	PMID:19830590	Mol Biol Rep.	2010	37	629	636
MYOG	Meat production capacity in mammals is related to the numbers of myofibers in muscl	PMID:19830590	Livestock Science	2009	126	292	297
NCOA6	The amplified in breast cancer-3 (AIB3, ASC-2, RAP250, PRIP, TRBF	PMID: 12368298	J Biol Chem.	2002	277	45356	45360
ND2	As shown Figure 2, the expression of ND2 (P < 0.01) and COX3 (P <	PMID: 19874021	J Agric Food Chem.	2009	57	10898	10903
NEB	In addition, Titin and Nebulin were highly expressed in the low ma	PMID:19123974	BMB Rep.	2008	41	846	851
NHLH2	In mice, targeted deletion of the neuronal transcription factor Nhl	PMID:16886999	Anim Genet.	2006	37	24	27
NPY	Three SNP in the NPY gene showed the associations to marbling (F	PMID:17785604	J Anim Sci	2008	86	1	16
Nq1	Loci including statistically significant and suggestive linkages fo	PMID: 10101257	Biochim Biophys Acta.	1999	1453	385	395
NR1H2	The nuclear receptors liver X receptor α (LXR α) (NR1H3) and LXR β	PMID: 11504730	J Biol Chem.	2001	276	38378	38387
NR1H3	The nuclear receptors liver X receptor α (LXR α) (NR1H3) and LXR β	PMID: 11504730	J Biol Chem.	2001	276	38378	38387
PLIN	These results suggest that genetic variation in PLIN may affect gluc	PMID: 19782423	Diabetes Res Clin Pract.	2009	86	186	192
PMP2	Peripheral myelin protein 2 (PMP2) is a small, basic, and cytoplasm	PMID: 8288226	Genomics.	1993	18	244	248
POMC	This revealed that mRNAs for melanocortin 1 receptor (MC1R), M	-	Poultry Science	2010	47	176	182
POU1F1	Other carcass traits, including weight at slaughter, carcass weight, carcass yield ratio, e	PMID:19123974	Genes & Genomics	2010	32	105	109
PPARG	In the analysis of variance, gene expression of five candidate gene	PMID:19123974	BMB Rep.	2008	41	846	851
PRL	PRL strongly stimulated lipid mobilization in parr; this effect was e	PMID: 3557090	Gen Comp Endocrinol.	1986	64	220	238
PRNP	Romanov PRNP haplotypes were associated with rump width (P =	PMID: 16543554	J Anim Sci.	2006	84	783	788
PROP1	several studies reported that β -catenin regulates transcriptional e	PMID:17251296	J Biol Chem	2007	282	14515	14524
PTH	The present investigation in experimental animals was designed tc	PMID: 7169982	Miner Electrolyte Metab.	1982	7	157	165
RARA	First, RA interferes with the transcriptional activity of C/EBP proteins, so that it blocks	PMID:19820062	Asian-australasian journal of animal sciences	2010	88	47	51
RORC	Variation at the retinoic acid receptor-related orphan receptor C (PMID:19820062	J Anim Sci.	2009	80	631	635
RPL27A	Thus, the ribosomal protein L27a (RPL27A) gene containing the c2	PMID:20163651	J Anim Sci.	2009	87	2475	2484
RUNX1	Two genes located on BTA14, 2,4 dienoyl CoA reductase 1 (DECR1	PMID:19395506	J Anim Sci.	2009	87	2475	2484
RUNX1T1	Two genes located on BTA14, 2,4 dienoyl CoA reductase 1 (DECR1	PMID:19395506	J Anim Sci.	2009	87	2475	2484
RXRA	Second, RA strongly upregulates RAR γ expression in 3T3-L1 preadi	PMID: 12943220	Cell Mol Life Sci.	2003	60	1311	1321
S1PR1	The endothelial differentiation, sphingolipid G-protein-coupled re	PMID: 20163651	Anim Sci J	2009	80	631	635
SCD	In the analysis of variance, gene expression of five candidate gene	PMID:19123974	BMB Rep.	2008	41	846	851
SP1	These results suggest that PPAR γ activation represses the expressi	PMID: 16876120	Biochem Biophys Res Commun	2006	348	253	258
Spe1-r	We investigated the effects of the two SNPs (Kpn2 1 and Msp 1) in	-	Asian-Aust. J. Anim. Sci.	2006	19	1691	1695
SST	We confirmed the presence of QTL affecting marbling, ribeye mus	PMID: 17121600	Anim Genet.	2006	37	554	562
TCAP	In this study, we examined the association between genetic polymorphisms of the titin	PMID:16005429	Meat Sci.	2007	77	257	263
TFAM	Our results suggest for the first time that TFAM gene plays an imp	PMID:16005429	Biochem Biophys Res Commun.	2005	334	516	523
TG	Previous studies have indicated that single nucleotide polymorphi	PMID:20416823	Meat Sci.	2010	85	515	518
THRSP	The messenger RNA expression of ADIPOQ, SCD, and THRSP was h	PMID:18820161	J Anim Sci	2009	87	119	130
TNF	Significant (P < .05) evidence for QTL was seen on chromosome 7	PMID:9814894	J Anim Sci	1998	76	2560	2567
TNNI1	A randomized complete block design experiment with 360 single-s	PMID:20145300	J Appl Genet	2010	51	51	57
TNNI2	A randomized complete block design experiment with 360 single-s	PMID:20145300	J Appl Genet	2010	51	51	57
TNNI3	A randomized complete block design experiment with 360 single-s	PMID:20145300	J Appl Genet	2010	51	51	57
TRH	The results reported here show first, that pharmacological activati	PMID: 19900503	Mol Cell Endocrinol	2010	137	44	52
TTN	As well as EDG1, the titin (TTN) gene, involved in myofibrillogen	PMID:19419586	BMC Res Notes	2009	2	78	
UCP2	In the current study, SNP in the bovine neuropeptide Y (NPY), grov	PMID:17785604	J Anim Sci	2008	86	1	16
UCP3	In the current study, SNP in the bovine neuropeptide Y (NPY), grov	PMID:17785604	J Anim Sci	2008	86	1	16
UTS2	Among 12 phenotypes related to fat deposition and fatty acid con	PMID: 18463714	Int J Biol Sci	2008	4	96	102
UTS2R	Among 12 phenotypes related to fat deposition and fatty acid con	PMID: 18463714	Int J Biol Sci	2008	4	96	102
VDR	We have shown that the expression of retinoic acid receptor (RAR	PMID:8680478	Int J Obes Relat Metab Disord.	1996	20	52	57