Table S1 The number of genome-wide effective SNPs in each chromosome and the chromosome-wide significant threshold

Chromosome	effective SNPs	*P*-value
1	1268	3.94×10^{-5}
2	436	0.000115
3	580	8.62×10^{-5}
4	823	6.08×10^{-5}
5	650	7.69×10^{-5}
6	563	8.88×10^{-5}
7	812	6.16×10^{-5}
8	585	8.55×10^{-5}
9	654	7.65×10^{-5}
10	481	0.000104
11	545	9.17×10^{-5}
12	409	0.000122
13	812	6.16×10^{-5}
14	819	6.11×10^{-5}
15	694	7.20×10^{-5}
16	458	0.000109
17	517	9.67×10^{-5}
18	383	0.000131
X	550	9.09×10^{-5}
Total	12039	

Table S2 The primers for candidate casual mutations of *NR6A1* and *VRTN* and *TGFβ3* resequencing

SNP		Primer (5'–3')	Amplificated region
NR6A1 c.748 C > T	F	AAAGAATAGACTCAGGGACA	
	R	GAAGGAGCAAGAGCACAA	
VRTN g.19034 A>C	F	GGAATGGGACCAGCACCTA	
	R	GCATGGACCGTCTACAGC	
VRTN g.20311_20312ins291	F	CCACAGTCTTAGCCAGTCTTC	
	R	CGTCAACCCACTGAGCAA	
TGFβ3-1	F	AGCGGCGTTTGGCAATAT	5'UTR
	R	TGGGATGGGAGTTTAGCAG	
TGFβ3-2	F	AGCGGCGTTTGGCAATAT	Exon1
	R	TGGGATGGGAGTTTAGCAG	
TGFβ3-3	F	AGAACGCAGATGGAGTGG	Exon2
	R	GCAGGAGCAAATGAGGAC	
TGFβ3-4	F	GCTCCTGCTGACCTCG	Exon3
	R	GACCAAAAGCCCCATG	
TGFβ3-5	F	TCCTCGCCCAACCAA	Exon4
	R	AGGCAAGGCAGAACCC	
TGFβ3-6	F	CGAAGACTGCTCCATCC	Exon5
	R	GGTGCTCCCAGAACAAC	
TGFβ3-7	F	ACGATGACCAGTAAAGACG	Exon6
	R	TTCAGAACCCTCACCAAA	
TGFβ3-8	F	CTGAGGCGGCATTGGT	Exon7
	R	CCTCTGATTAGTAGATGCGAAC	
TGFβ3-9	F	CTGAGGCGGCATTGGT	3'UTR
	R	CCTCTGATTAGTAGATGCGAAC	

Table S3 Genotype frequencies of F_0 animals for mutations in *VRTN*, *TGFFβ3*, and *NR6A1*

SNP	Breed	N	Genotype frequency[1]		
			AA	AB	BB
VRTN19034A>C	Minzhu	16	68.75% (AA)	25.00% (AC)	6.25% (CC)
	Large White	4	0.00% (AA)	25.00% (AC)	75.00% (CC)
TGFβ3c.1749G>A	Minzhu	16	62.50% (AA)	31.25% (AG)	6.25% (GG)
	Large White	4	0.00% (AA)	0.00% (AG)	100% (GG)
NR6A1748CT	Minzhu	16	18.75% (CC)	43.75% (CT)	37.50% (TT)
	Large White	4	0.00% (CC)	0.00% (CT)	100% (TT)

Note: [1] Genotypes of mutations was shown in parentheses.

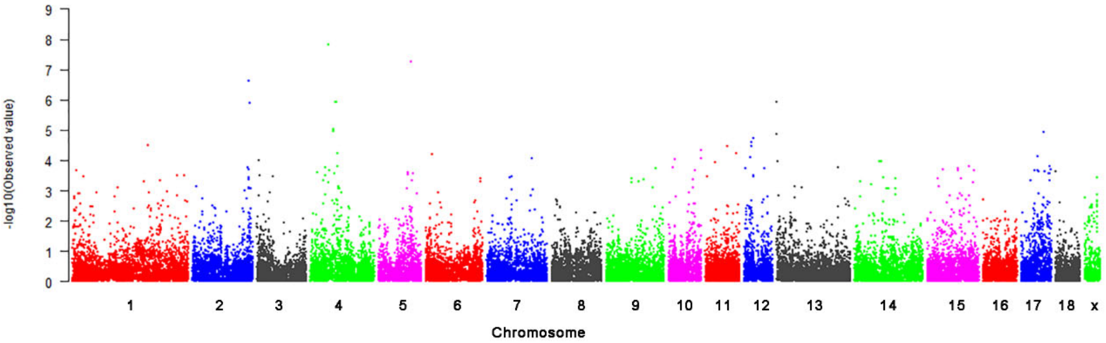

Fig. S1 The Manhattan plot obtained from GWAS using VRTN19034A>C as a fixed effect. Chromosomes 1–18, and X are shown in different colors. The genome-wide significance level was 4.15×10^{-6}.