

Supplementary Table:

Table S1. The information of primers used in this study.

	Gene	Primer sequences (5' to 3')	Tm(°C)	Product length (bp)
DNA level	<i>SNX29</i> -CNV	F:AGGTGACATCGGTGCTCAGTGT R: GCCTGCTCCTGGAAGAGAATG	61	107
	<i>MC1R</i>	F: GGGCAGTCCCCTTGACAAAGA R: ATCTCCCCAGCCTCCTCATT	58	129
	Indel-17bp	F: TGGGCACATACATTTTCAGGAC R: AAGCTCCCAAAGTCAGGAACC	56	144
	Indel-21bp	F:GAGGAGATAAAGGGAGGGAGTC R: AGAAAGGCAGGCAGGTAAGG	56	199
mRNA level	<i>SNX29</i>	F: GAACCTGCTTGACGGCGAGATG R: TCCTCCTGTTTCAGCCACCTTCC	59	87
	<i>GAPDH</i>	F: AAAGTGGACATCGTCGCCAT R: CCGTTCTCTGCCTTGACTGT	57	116

Table S2. Genotypic and allelic frequencies and population indexes of *SNX29* gene in Xiangdong black goats.

Loci	Total	Genotypes	Genotypic frequencies	Allelic frequencies	HWE <i>P</i> values	Ho	He	Ne	PIC
17bp-	516	II (360)	0.698	I (0.847)	<i>P</i> >0.05	0.740	0.262	1.351	0.227
		ID (153)	0.297	D (0.155)					
		DD (3)	0.006						
21bp-	516	II (183)	0.355	I (0.565)	<i>P</i> >0.05	0.509	0.493	1.964	0.371
		ID (216)	0.419	D (0.437)					
		DD (117)	0.227						

Note: II: homozygote insertion genotype; DD: homozygote deletion genotype; ID: heterozygote genotype; HWE: Hardy–Weinberg equilibrium; Ho: homozygosity; He: heterozygosity; Ne: effective allele numbers; PIC: polymorphism information content.

Table S3. Relationship between the indel loci within *SNX29* gene and growth traits in Xiangdong black goats.

Loci	Growth traits	Observed genotypes (Mean ± SE)			<i>P</i> Values
		II (n=360)	ID (n=153)	DD (n=3)	
17bp-	Body height (BH)	56.58±0.42	56.04±0.66	60.00±2.00	0.412
	Body length (BL)	58.56±0.53	59.12±0.71	61.50±0.50	0.641
	Body oblique length (OL)	58.81±0.53	59.82±0.71	60.5±2.50	0.493
	Chest	73.71±0.71	72.27±1.24	75.5±0.50	0.521

	circumference (CC)				
	Abdominal circumference (AC)	84.64±0.96	84.02±1.41	82.00±4.00	0.884
	Cross height (CH)	57.50±0.43	57.14±0.50	59.00±0.00	0.777
	Cannon Circumference (CAC)	10.81±0.12	10.92±0.16	12.00±0.00	0.376
	Growth traits	II (n=183)	ID (n=216)	DD (n=117)	P Values
21bp-	Body height (BH)	56.56±0.58	56.44±0.61	56.36±0.64	0.985
	Body length (BL)	58.78±0.75	58.73±0.65	58.72±0.84	0.98
	Body oblique length (OL)	59.81±0.69	58.84±0.67	58.64±0.77	0.476
	Chest circumference (CC)	73.48±1.07	72.8±0.94	73.77±1.30	0.818
	Abdominal circumference (AC)	85.38±1.42	83.27±1.19	84.85±1.56	0.496
	Cross height (CH)	57.47±0.53	56.94±0.59	58.08±0.57	0.414
	Cannon Circumference (CAC)	10.91±0.17 ^{ab}	10.73±0.15 ^b	10.95±0.17 ^{ab}	0.626

Note: Data were shown as mean ± SE.