

Figure S1. Distribution of phenotypes in Qinchuan cattle (A), Fu cattle (B), Yak (C), Chaidam cattle (D). BH=body height, CW=chest width, HIW=hip-width, WH=withers height, BL=body length, CG=chest girth, CCB=circumference of cannon bone, BM=body mass.



Figure S2. Significant motifs of KAT2B across the 11 species. Motifs were detected using the MEME suite. The different color letters show abbreviations of different amino acids, given through motif analysis on the MEME suite system.

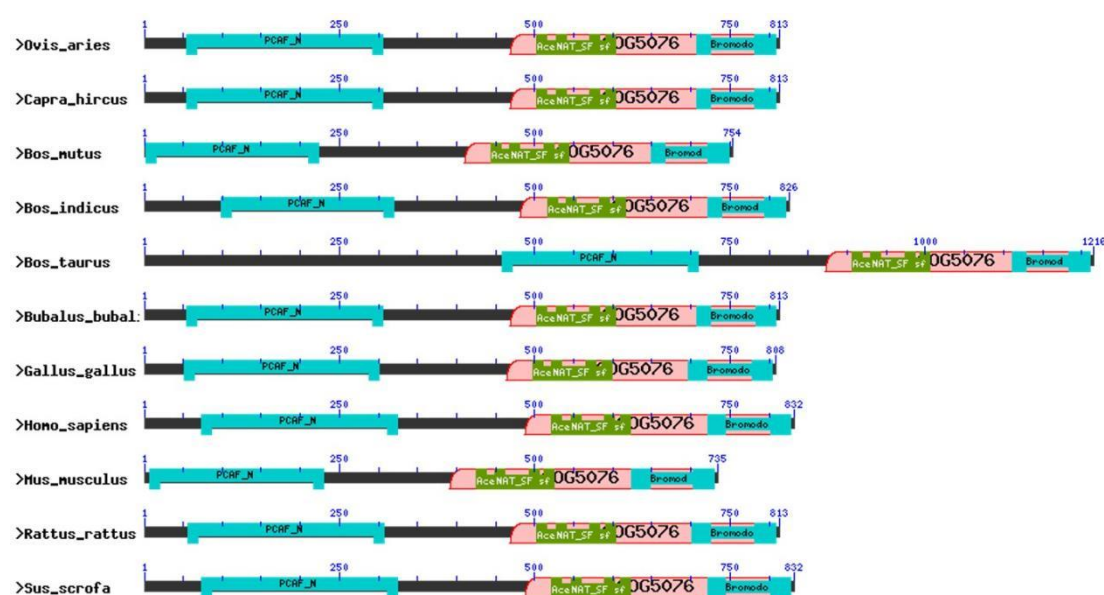


Figure S3. Structure of KAT2B protein domain families in the 11 species. Each color bar is a specific hit representing a different domain superfamily.

Table S1. Primers for exploring genetic variations of bovine *KAT2B* gene.

Targeted Exon	Sequence (5'-3')	Tm (°C)	Production Size (bp)
Exon1	F: TCCTGGGATGCTCTTGCGCC	63	597
	R: AAGCCATGTTCTCTGAGGTGATGTT		
Exon2	F: TCAGCGGAAAAGAAACCAAA	57	827
	R: GGAAAAGTGAGCGGAGACAA		
Exon3	F: TGGCTGTAAGGAAGGGGTGA	55	874
	R: GTGGGTCTTGATGCTCTGTG		
Exon4	F: GTGTCCCACCTGTCCTCC	53	772
	R: TGTCTTCACATTGCTCCTG		
Exon5	F: GCAAAGCTGCATGAGTAAAC	52	770
	R: TGGAGATGAGTCTGAGCAAG		
Exon6	F: CTTATCACTTCCTGCGTTTT	53	757
	R: ACCCAAAGTCAACCTCATCT		
Exon7	F: CCTACATGGAGCCCAAAGAG	57	881
	R: GCACTGCACGTCCTGAGACT		
Exon8	F: TTGCTTCCTTATTTCTTGCC	55	796
	R: AACTGCGTTTCTTCTGCTC		
Exon9	F: AGTCCCTGCTCAAGGAAATC	55	508
	R: AGCATCAGACAACACGCAAA		
Exon10	F: ACTGCTGTGGACTGTCCCTT	55	706
	R: ACCCGAGTGGTTCCTCTTTC		
Exon11	F: CCCAAACAGGAGGTGAGACA	54	635
	R: CCAAAAGACCACATTCCAAA		
Exon12	F: GGAAGGATTGCTGATTTGTT	59	828
	R: CCCCCTTTTGAATGTTAGG		
Exon13	F: CAGGATAGTTGGAAGGAGC	55	578
	R: GTGGGTGAAGGATGAAGACA		
Exon14	F: CCGAGATAACTGGCACTACG	48	712
	R: AGCAGAGCAGACGCAAAGGA		

F: TGC GTTACAAGCAGGGTCTG
R: TTGCGTGAAGTGGAGGAAAA
F: GGCTGGAGGATATTGATGGA
R: ACACGCCCTAACCTATGACA
F: GTTTCCCACTTTAGTTCTGT
R: CATTATGTCCAATTCTTTGT
