

**Table S1.** Genotypic, allelic frequencies and diversity parameters of two mutations of *BMP1B* in eight sheep populations.

Locus/Breed	Genotype frequency			Allele frequency		Diversity parameter				
						Ho	He	n <sub>e</sub>	PIC	χ <sup>2</sup> (HWE)
c.746A>G (Gln249Arg)	GG	AG	AA	G	A					
UM	0.985	0.015	0.000	0.992	0.008	0.985	0.015	1.016	0.016	0.020
DBU	0.987	0.013	0.000	0.993	0.007	0.987	0.013	1.013	0.014	0.013
SFKU	1.000	0.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000	-
SN	1.000	0.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000	-
MG	0.962	0.038	0.000	0.981	0.019	0.962	0.038	1.039	0.037	0.100
Tan	0.767	0.200	0.033	0.867	0.133	0.769	0.231	1.301	0.204	0.544
Hu	0.167	0.333	0.500	0.333	0.667	0.556	0.444	1.800	0.346	1.875
STH	0.000	0.667	0.333	0.333	0.667	0.556	0.444	1.800	0.346	7.500
c.1470G>T (490Thr)	AA	AC	CC	A	C					
UM	0.166	0.477	0.357	0.405	0.595	0.518	0.482	1.930	0.366	0.033
DBU	0.039	0.365	0.595	0.222	0.778	0.655	0.345	1.528	0.286	0.984
SFKU	0.212	0.606	0.182	0.515	0.485	0.500	0.500	1.998	0.375	3.001
SNT	0.147	0.505	0.348	0.399	0.601	0.520	0.480	1.922	0.365	0.526
MG	0.160	0.412	0.428	0.366	0.634	0.536	0.464	1.866	0.356	3.149
Tan	0.233	0.533	0.233	0.500	0.500	0.500	0.500	2.000	0.375	0.133
Hu	0.000	0.033	0.967	0.017	0.983	0.967	0.033	1.034	0.033	0.009
STH	0.000	0.333	0.667	0.167	0.833	0.722	0.278	1.385	0.240	1.200

\*UM: Ujimqin; DPU: Dorper × Ujimqin; SFKU: Suffolk × Ujimqin; SN: Sonid; MG: Mongolia; STH: Small-tailed Han; *H<sub>o</sub>*: observed heterozygosity; *H<sub>e</sub>*: expected heterozygosity; *n<sub>e</sub>*: effective allele numbers; *PIC*: polymorphism information content; *HWE*: Hardy-Weinberg equilibrium; <sup>1</sup>The classification was conducted according to the *PIC* values (*PIC* value < 0.25, low polymorphism; 0.25 < *PIC* value < 0.5, moderate polymorphism; and *PIC* value > 0.5, high polymorphism); <sup>2</sup>No Hardy-Weinberg departure was detected from the obtained genotype frequencies.