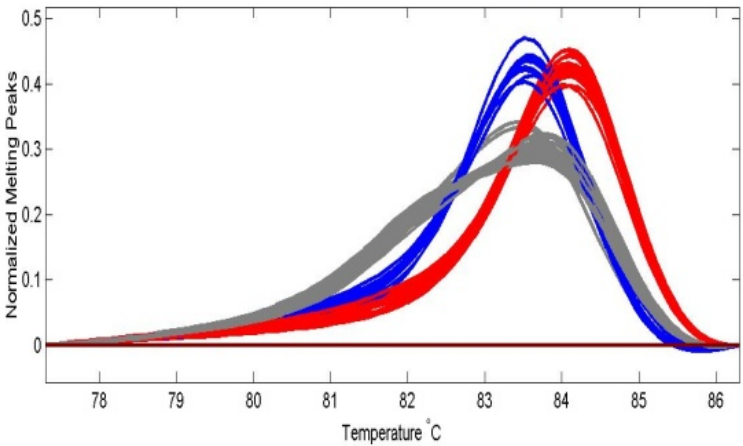
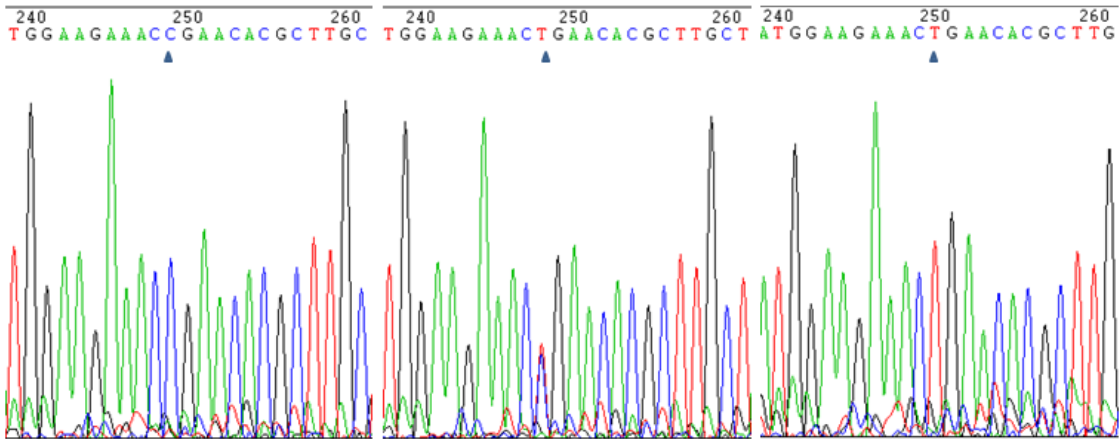


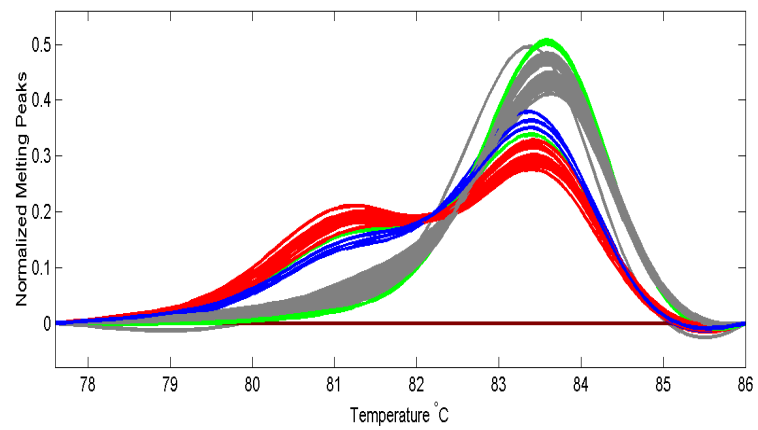
Supplementary materials



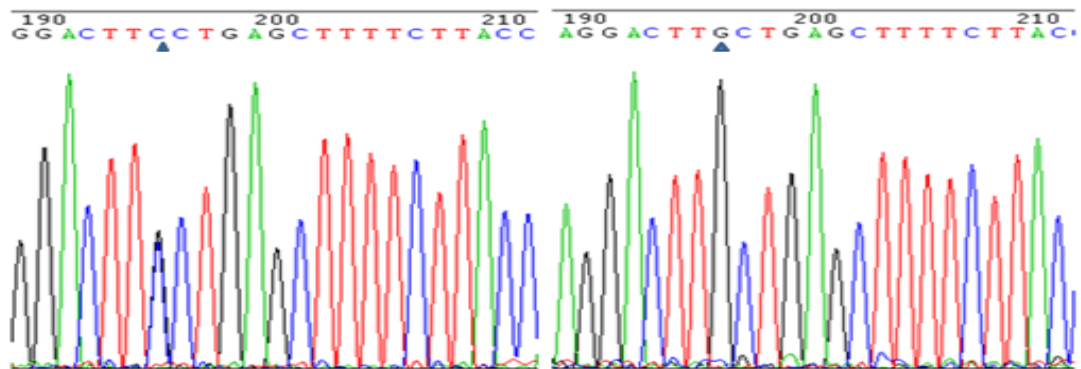
Appendix A the HRM genotype of *MITF* g.1548 C/T



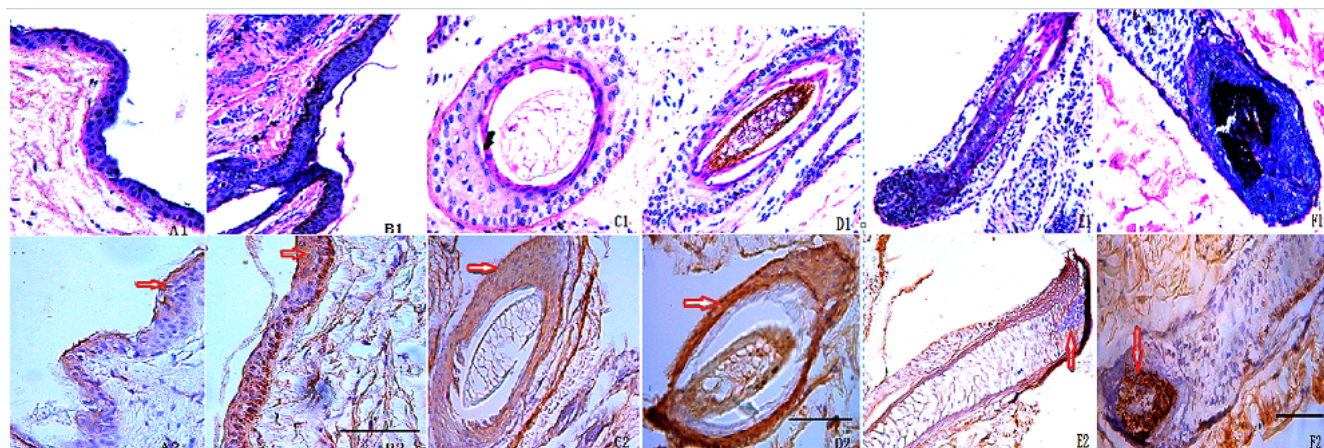
Appendix B the genotypes sequencing of *MITF* g.1548 C/T Loci



Appendix C the HRM genotype of *KIT* g.2316 G/C



Appendix D the genotypes sequencing of *KIT* g.2316 G/C Loci



Appendix E Immunohistochemical staining for MITF in tissue sections from Tibetan sheep

A1, B1, C1, D1, E1, and F1 show H&E staining; A2, B2, C2, D2, E2, and F2 show immunofluorescent staining for MITF. A, C, and E are sections of white coat skin tissue, and B, D, and F are sections of black coat skin tissue. A and B show skin epidermis; C and D show root sheath; E and F show hair follicle dermal papilla and hair bulb.

Appendix F sample information

Populations	Source area	Latitude and longitude	penotypes
Guide black Tibetan sheep	Qinghai, China	35.57N, 100.51E	Solid black
Tianjun white Tibetan sheep	Qinghai, China	37.34N, 98.36E	Solid white
Grass-type Tibetan sheep	Gansu, China	33.97N, 102.04E	Variegated

Appendix G the sequence of PCR primers

Name	Primer sequence 5' to 3'	Product length
<i>KIT</i>	F-GATTTCTCTTCGTTCTGCT	849
	R-ACACATGAACACACCGGAAT	
	F-AACAGCCAGCAGAGTAAAGC	426
	R-GTAAGTGCCTCCTTCAGTCC	
	F-TCCACTGATAAGTGGGACGA	712
	R-CCAAGGTTTTCCCAAAACTC	
	F-TGGAAAGTTGTCGAGGAGAT	560
	R-GCAGATCTCCTCTTGTCTGC	
	F-AGGAAGATCATGCCGAAGTG	857
	R-GCTTCAGACATCTTCGTGGA	
<i>MITF</i>	F- GTGCCATTCCGTGACTTGAT	1068
	R-GTTCCCTTGTTCCAGCGCAT	
	F-GACCGCATTAAAGGAACTAGG	620
	R-GAAAGCAGAGCAGGGAGAAT	

Appendix H PCR primers sequences for small amplicons of HRM

Name	Primer sequence 5' to 3'	Product length
<i>KIT</i> -HRM	F-CATGGAAGATGATGAGCTGGC	65
	R-TTGCCACCTGGTAAGAAAAGC	
<i>MITF</i> -HRM	F-GGAGCATCCAAAACCAGCAG	77
	R-GGGAGAATTTGCTAGCAAGCG	

Appendix I Primers used for quantitative PCR

Gene	GeneBank	Sequence (5'→3')	Product
name	Accession No.		length (bp)
<i>GAPDH</i>	NM_001190390.1	F: ACCTTCTGCTGACGCTCCCA R: GTCATAAGTCCCTCCACGAT	159
<i>KIT</i>	XM_004010070	F:AGAAAGCAGAGGCCACAAATACA R:TACAAGGGAAGGTCAATCAGGAA	121
<i>MITF</i>	NM_001001150	F:GATTGGGGCCACCTAAAACGT R:ACTGCTTTACCTGCTGCCTTTG	128