Supplementary information

Table S1. Primers of *ZBED1* and *β-actin* used for real time PCR.

Gene	Primer	Base sequence (5'- 3')	Tm (°C)	Products (bp)
ZBED1	Sense	TGACGTAGGTCCTGTTCTGGTT	60.0	238
	Anti-sense	CTCATCTGCGATGGGCTGT		
β-actin *	Sense	GACCTCTATGCCAACACAG	60.0	190
	Anti-sense	CATCTGCTGGAAGGTGGAC		

*Primer pair of *β-actin* was obtained in Chen et al. 2008.

Table S2. Sample information used for phylogenetic and positive selection analyses. The sampling sites and their corresponding mtDNA clades are shown. NE, Northeast group; CE, Central-East group; SW, Southwest group.

Sites No.	Sites	Evolutionary Group	Location Latitude	Longtitude	Samples No.
1	Ji'an, Jilin	NE	41°03′	125°50′	JL07, JL09, JL10, JL11, JL12, JL13
2	Shenyang, Liaoning	NE	41°48′	123°23′	LN1307, LN1308, LN1309, LN1310, LN1344
3	Fangshan, Beijing	CE	39°43′	115°59′	BJ1311, BJ1312, BJ1315, BJ1316, BJ1317
4	Jinan, Shandong	CE	36°43′	117°07′	SD19, SD20
5	Feixian, Shandong	CE	35°08′	117°44′	SD1185, SD1188, SD1189
6	Datong, Shanxi	CE	40°03′	113°19′	SX0827, SX0830, SX0831
7	Lantian, Shaanxi	CE	34°04′	109°24′	SXi1216, SXi1217, SXi1218, SXi1220, SXi1221
8	Anyang, Henan	CE	35°47′	113°56′	HeN1201, HeN1202, HeN1204, HeN1208, HeN1211
9	Chaohu, Anhui	CE	31°57′	117°52′	AH0801
10	Lu'an, Anhui	CE	31°22′	116°12′	AH1002, AH1004
11	Tianshui, Gansu	SW	34°20′	106°06′	GS1005, GS1008, GS1009, GS1011
12	Kunming, Yunnan	SW	24°30′	102°20′	YN21, YN07205
13	Dali, Yunnan	SW	25°20′	100°07′	YN22, YN23, YN24

Table S3. 39 *ZBED1* haplotypes and their corresponding individuals (alleles). Different alleles from each individual are distinguished by adding 'A' or 'B' tags to their individual identifiers.

Haplotype	Allele	Haplotype	Allele	Haplotype	Allele
Hap 1	AH0801A, SX0827A	Hap 14	GS1011A	Hap 27	SD1189B
Hap 2	AH0801B, AH1002B, BJ1317A, HeN1208A, SD1185A, SD1188A, Sxi1218	Hap 15	GS1011B	Hap 28	SX0830A
Hap 3	AH1002A	Hap 16	HeN1202A	Hap 29	SX0831A
Hap 4	AH1004A	Hap 17	HeN1204A	Hap 30	SX0831B
Hap 5	AH1004B	Hap 18	HeN1204B	Hap 31	Sxi1216
Hap 6	BJ1311A, BJ1312A, BJ1315B, HeN1201B, Sxi1220B	Hap 19	JL07, JL09, JL11B, JL12, JL13B, LN1307, LN1308, LN1309, LN1310,LN1344	Hap 32	Sxi1220A
Hap 7	BJ1311B, BJ1317B, HeN1201A, HeN1208B, HeN1211	Hap 20	JL10, SD1189A	Hap 33	YN21A
Hap 8	BJ1312B	Hap 21	JL11A, SD19, Sxi1217	Hap 34	YN21B
Hap 9	BJ1315A, HeN1202B, Sxi1221	Hap 22	JL13A	Hap 35	YN22A
Hap 10	BJ1316	Hap 23	SD20A	Hap 36	YN22B
Hap 11	GS1005A, GS1009	Hap 24	SD20B	Hap 37	YN23, YN24
Hap 12	GS1005B	Hap 25	SD1185B	Hap 38	YN07205A
Hap 13	GS1008	Hap 26	SD1188B, SX0827B, SX0830B	Hap 39	YN07205B

Table S4. The positive selection analyses of the *ZBED1* gene based on SLAC, FEL, REL, MEME and FUBAR methods.

Codon	SLAC		FEL		REL		MEME		FUBAR	
	dN-dS	p-value	dN-dS	p-value	dN-dS	Bayes factor	ω^+	p-value	dN-dS	Post. Pr.
120	10.974	0.667	33.867	0.491	-	-	1.759	0.487	-	-
197	10.974	0.667	34.305	0.483	-	-	1.331	0.485	-	-
228	-	-	-	-	-	-	102.699	0.437	-	-
243	10.941	0.669	30.806	0.511	-	-	1.402	0.507	-	-
312	10.962	0.668	31.473	0.505	-	-	1.710	0.490	-	-
324	54.870	0.132	166.558	0.125	5.583	4.726E+06*	7.018	0.218	3.233	0.971*
327	10.974	0.667	34.068	0.292	-	-	1.825	0.280	-	-
356	10.717	0.683	29.944	0.531	-	-	1.623	0.500	-	-
536	10.974	0.667	34.292	0.483	-	-	1.794	0.484	-	-
701	10.228	0.715	37.965	0.276	-	-	1.545	0.320	-	-

*Statistically significant value.