Supplementary Information

Supplementary Methods

Criteria used to select libraries for analysis

First, we required libraries to exhibit a consistent damage profile at the last position of each fragment, as expected of ancient DNA [1]. We restricted SS and DS library analyses to those libraries with more than 10% cytosine-to-thymine substitutions in the last nucleotide. For DS.half libraries, we restricted the rate to ≥3% [2]. Otherwise, we considered the library to be contaminated. Second, we compared our mtDNA fragments with 311 worldwide mtDNA sequences to test for the contamination from present-day humans [3]. Using the ContamMix contamination estimator [4], we calculated the fraction of fragments that matched the present-day mtDNA rather than the consensus sequence. If the point estimate was >5%, or if the upper bound of the 95% confidence interval (CI) was >15%, we treated the library as contaminated [5].

When a sample has several libraries (e.g. Sample ID: CSP142, C486, C514, C518, C205, CSP144; Table S1), the library with the least contamination rate was used for analysis, as shown by the narrowest confidence interval. In this way, we excluded six samples (Sample ID: C2595, C2596, C2597, C2598, CSP049, C191). For C2597 (7.7% for DS) there was a low C-to-T rate, and for C2595 (20.1%), C2597 (23.7%), C2598 (6.7%), CSP049 (9.3%) and C191 (10.9%) there were high contamination rates. For C2596, the consensus sequence consisted of too many missing positions ("N") for a haplogroup to be assigned.

Thus, from a total of 73 samples, the samples that could be used for the study were 67, among which the contamination rates of 65 samples were within acceptable limits (point estimate <3.5% and upper bound of 95% CI <6.9%). Two samples (L0551_d and D1958_d) have borderline contamination rates (point estimate of 5.1–7.5% and upper bound of 95% CI 5.9–8.7%), so we only used their damaged fragments for analysis, as these were likely to be ancient DNA.

Description of the 27 archaeological sites

The 20 archaeological sites in the provinces of Eastern Qinghai, Gansu, and Sichuan classified as low-altitude Tibetan Plateau (LTP)

The **Zongri** site[6] is located in the Gonghe Basin, northwest of the Tongde city, in the Qinghai province. It was discovered in 1982 and excavated between 1994 and 1995. The dating of individuals from this site is approximately 5,200 to 3,900 years old and represents the oldest site included in this study. The **Liuwan** site is southeast of the Qinghai Lake and dates to about 4,000 years. Other sites southeast of Qinghai Lake, include the **Hedong** site (4,000 years old), the **Hupo** site (4,000 BP) and the **Shangluzhuang** site (4,000 years old). Furthermore, we obtained individuals from the **Wenpuju** site (850 years old), the **Lierbao** site (380 years old), and the **Dazhuang** site (4,400 years old). The northeastern province of Qinghai includes the **Jinchankou** site (3,800 years old) [7] in the Jiading town of Huzhu city and the **Sanheyi** site (4,000 years old) in the Sanhe town of Haidong city. The **Lajigai** site is in the Hualong city in the northeastern province of Qinghai and is 3,200 years old [8]. The **Hualongqunke** site, in the Hualong city, dates to 2,500 years old. The **Wuba** site [9] is in Minle city in the northwestern province of Gansu and is 3,800 years old. The **Xiahaishi** site [10] is in the Haishiwan town of Lanzhou city in the Gansu province and is 3,800 years old. The **Qijiaping** site [11] was found by Anderson in the 1920s in the Guanghe city of Gansu province, where archaeological materials show evidence of communication between East and West China and dates to 3,500 years old [12]. In the nearby Lintan city, in the Gansu province, there is a site called **Mogou** [11] that dates to 3,400 years old [8, 13]. The **Huoshaogou** site was excavated in 1976 in the Yumen city of the northwestern Gansu province [14] and dates to 3,400 years old. Other sites include the **Guidehexi** site that dates to 2,850 years old in northeastern Qinghai province and the **Hejiatai** site (4,800 years old) in Gansu province. The **Yingpanshan** site is in the Maoxian city of Sichuan province, southeast of the Min River [15] and is 3,000 years old.

The seven archeological sites in Tibet and the province of Western Qinghai classified as high-altitude Tibetan Plateau (HTP)

Sarcophagi were found at the **Pukagongma** site in the Western Qinghai province and dated to 2,800 years old. In **Yushu**, one individual dates to 500 years old. The **Xiaoenda** site is in the Chamdo prefecture of Tibet [16] and our individuals were about 2,600 years old. The **Butaxiongqu** tombs were found in the Nagqu Prefecture of Tibet [17] and an individual dates to 2,500 years old. We have one individual from the **Redilong** site (2,800 years old) and the **Chaxiutang** site (1,000 years old) in Tibet, as well as from the **Gelintang** site (100 years old) in Western Tibet.

Fig. S1. Location of the 27 archeological sites across Tibet, Qinghai, Gansu, Sichuan (enlarged area is the Qinghai Lake region) and their approximate age predominantly based on the range of radiocarbon dates from ancient skeletons recovered at those sites. Ancient Nepal data from Jeong et al. [18] are also included on this map

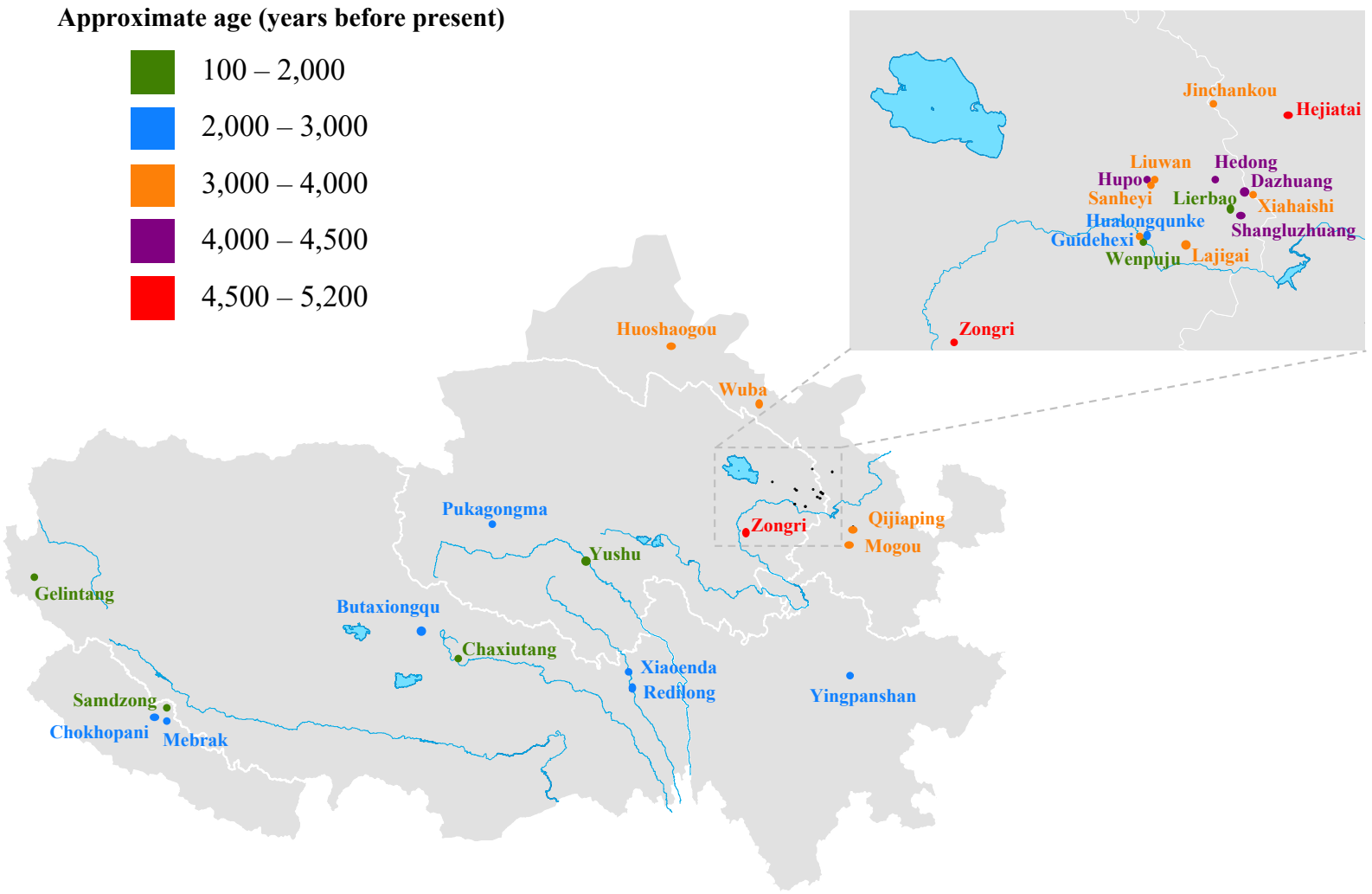


Fig. S2. Pairwise genetic distance ΦST of populations (*P*-value obtained after 10,000 permutations)

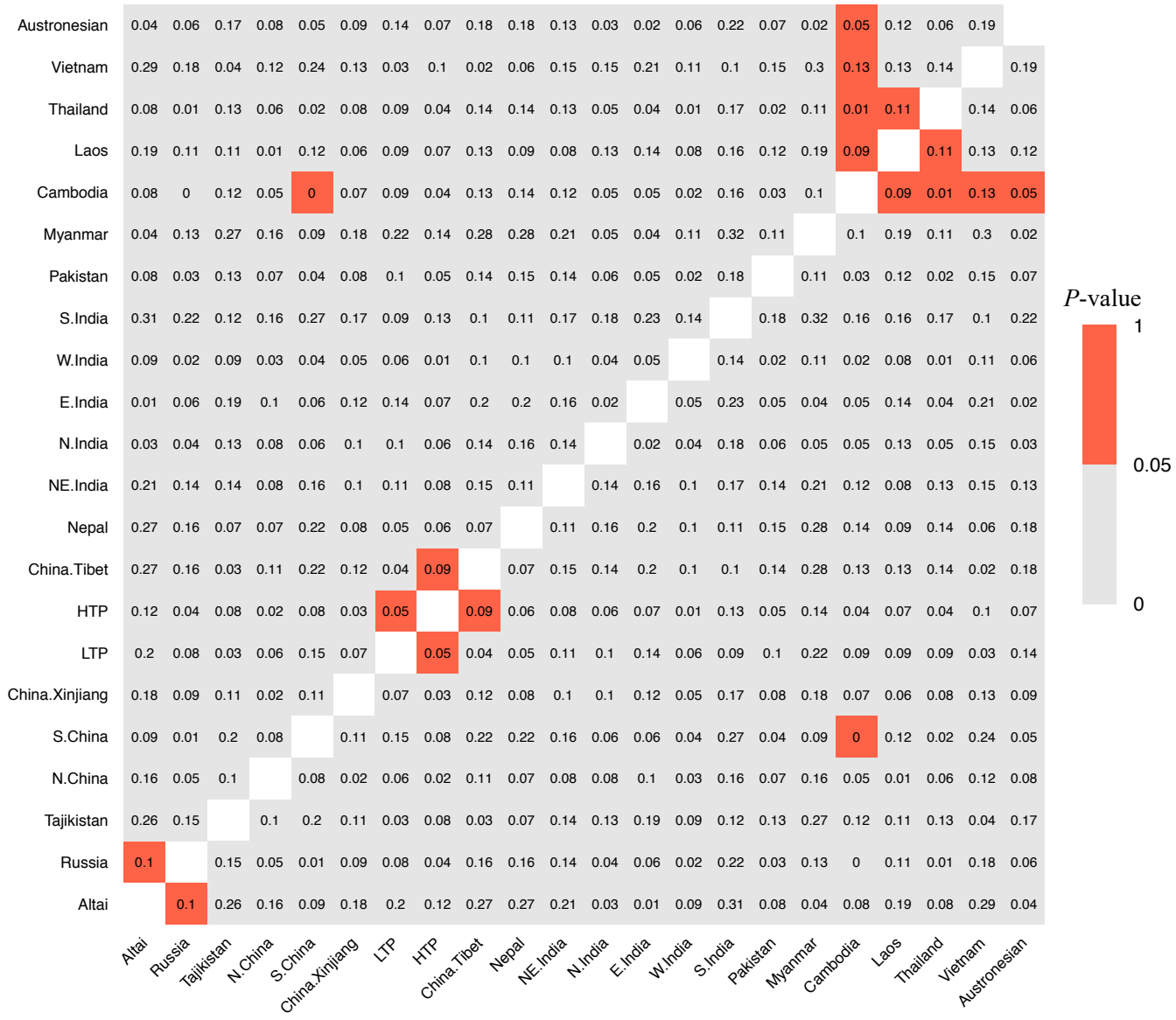
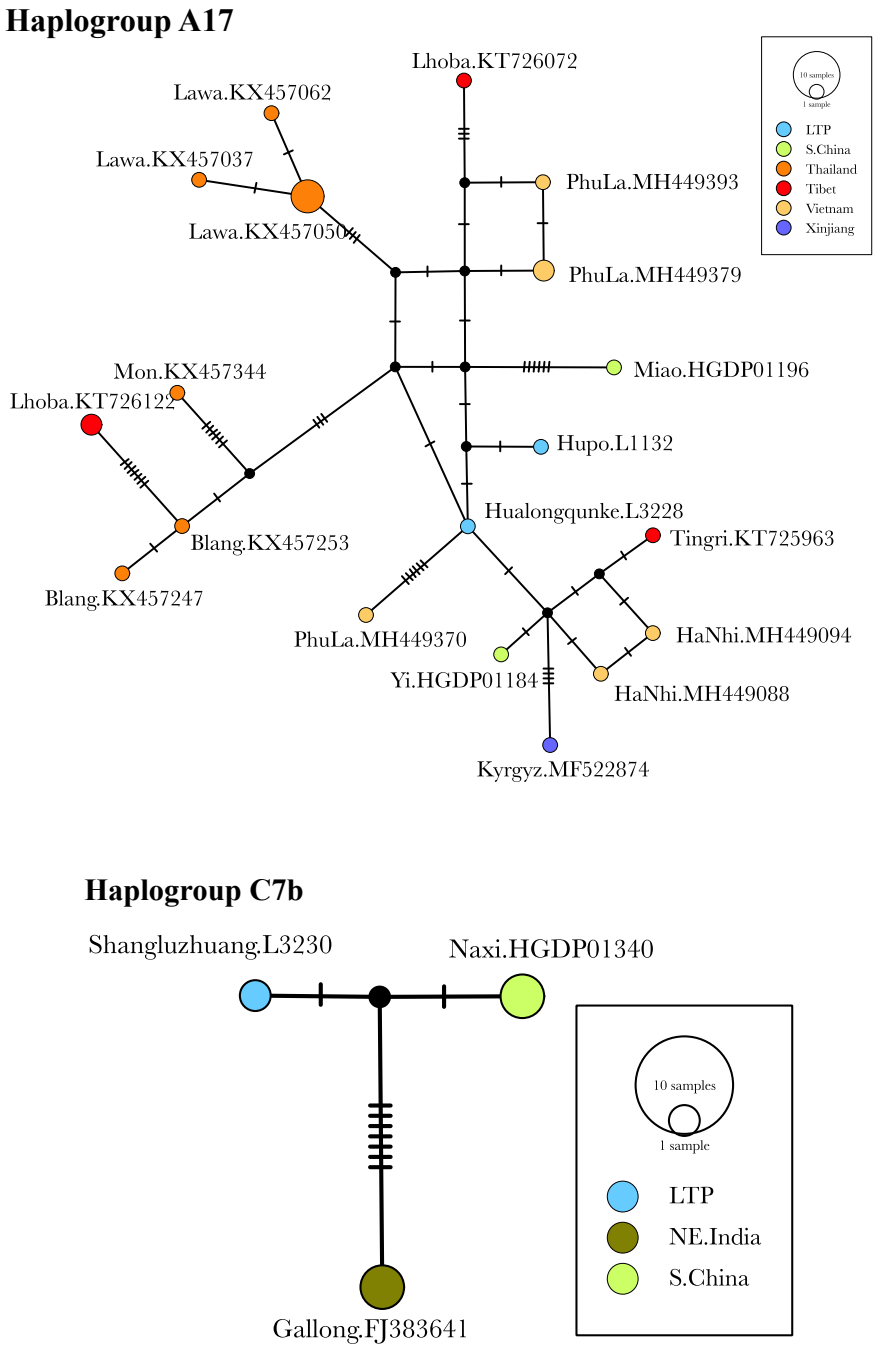
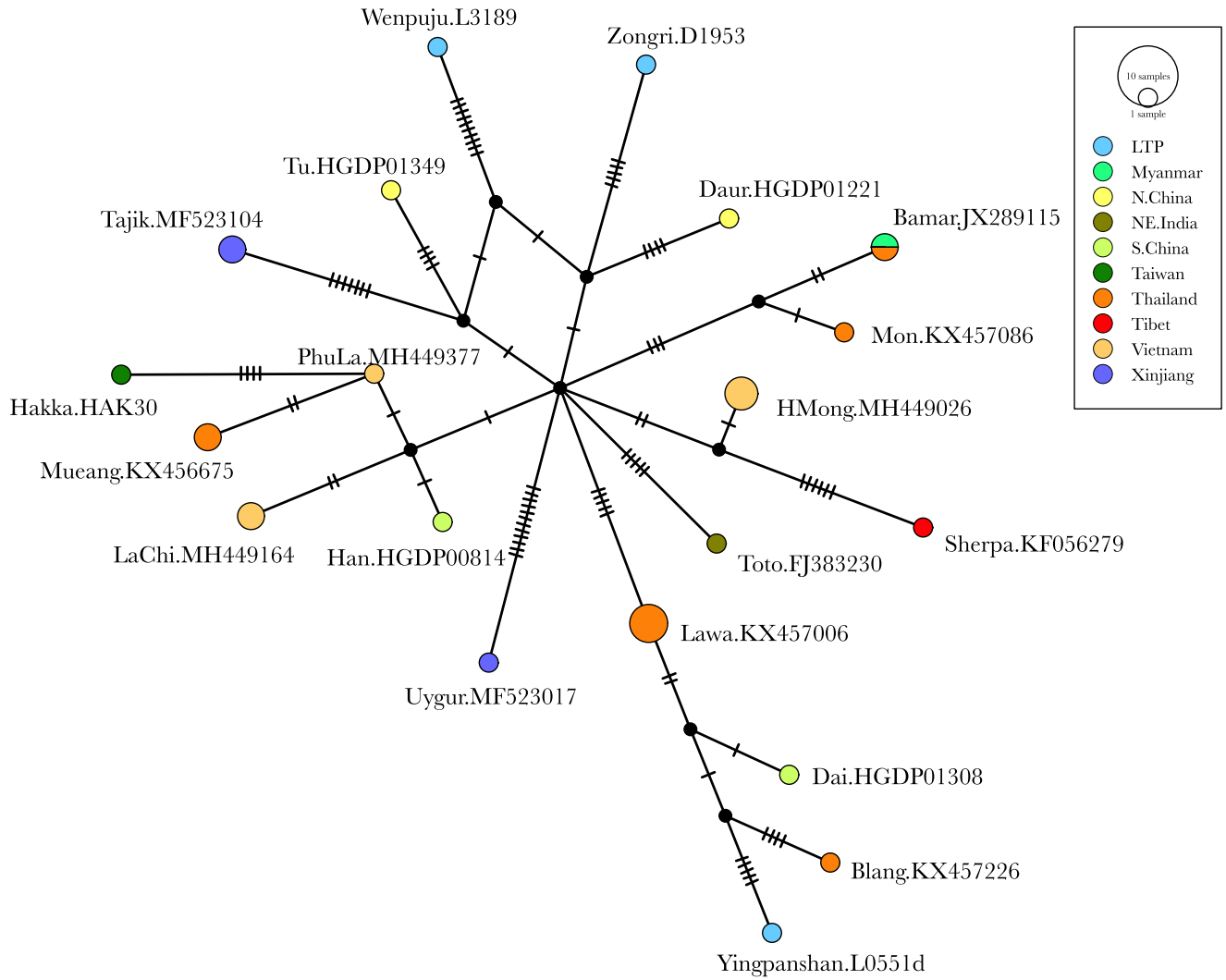


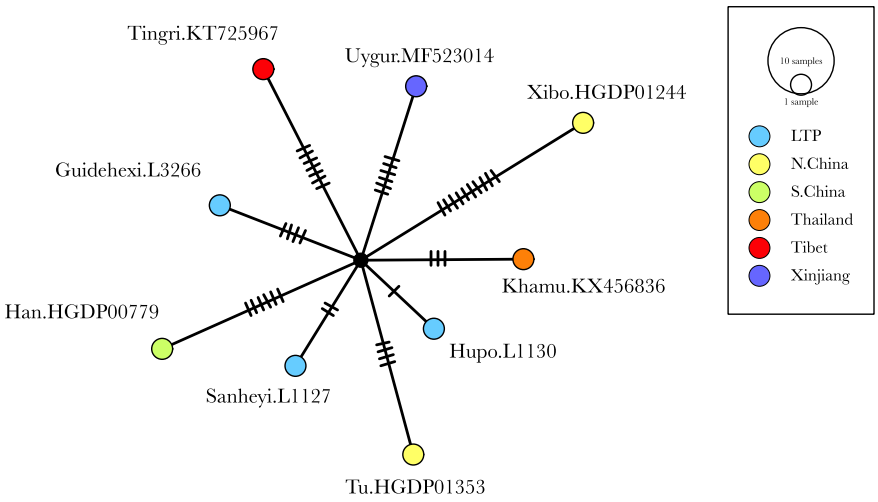
Fig. S3. Network analysis of 21 plateau-associated haplogroup lineages (hatch marks denote positional differences in the complete mtDNA sequence)



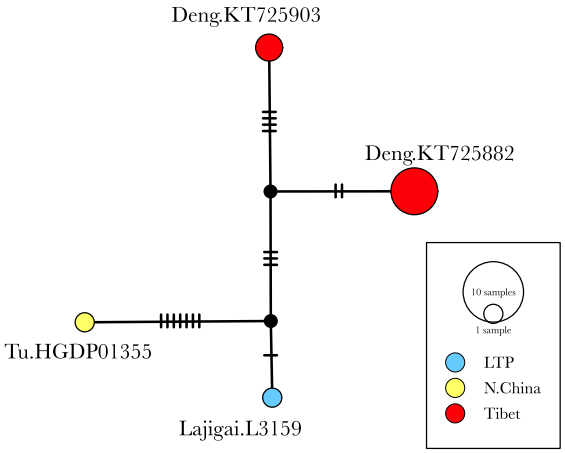
Haplogroup D4



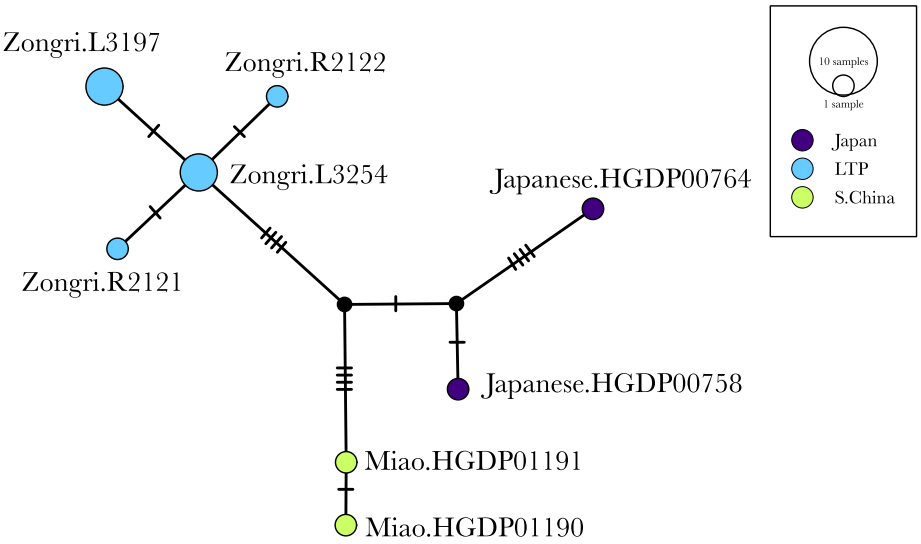
Haplogroup D4b2b



Haplogroup D4h1c



Haplogroup D4i



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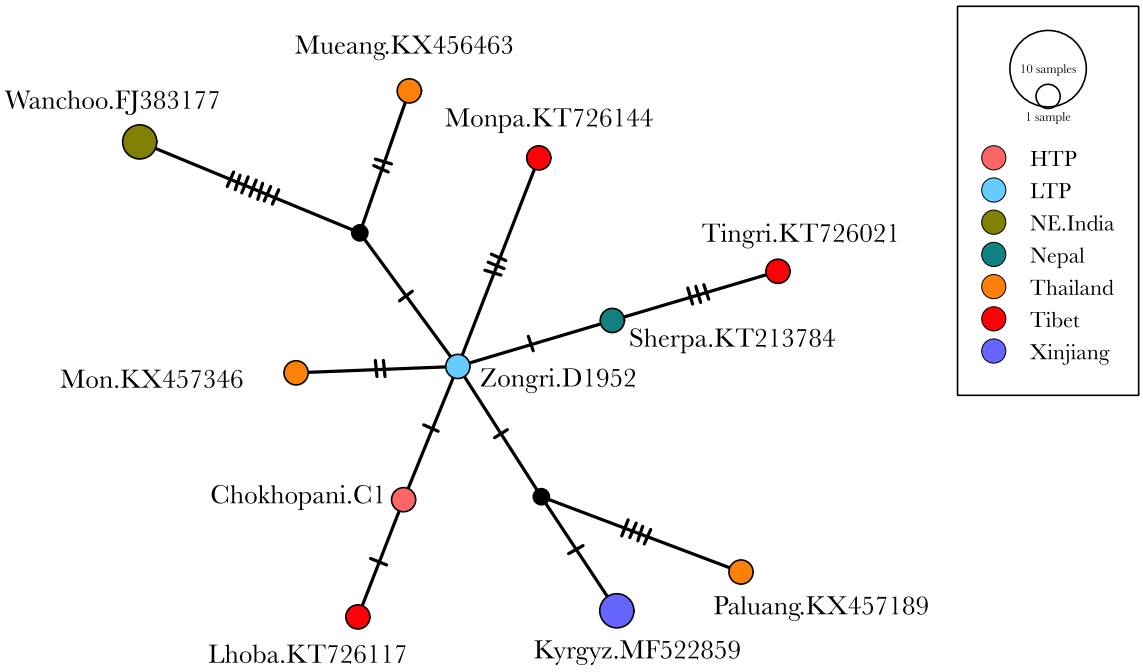

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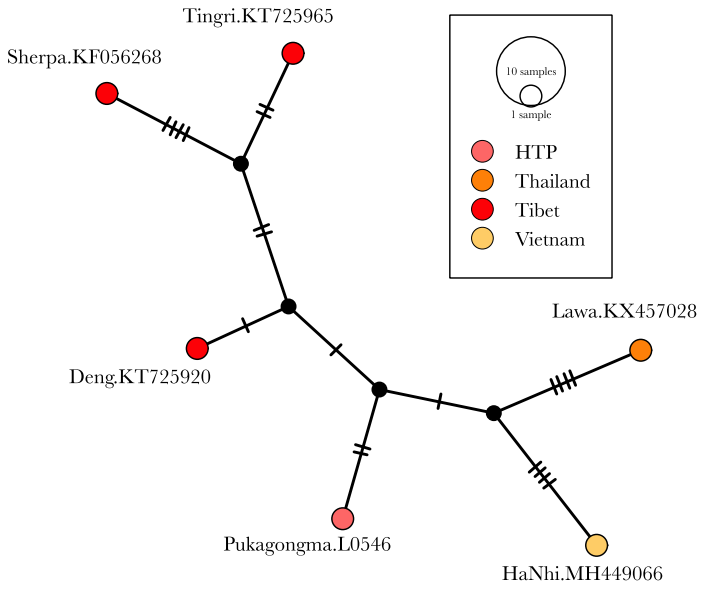

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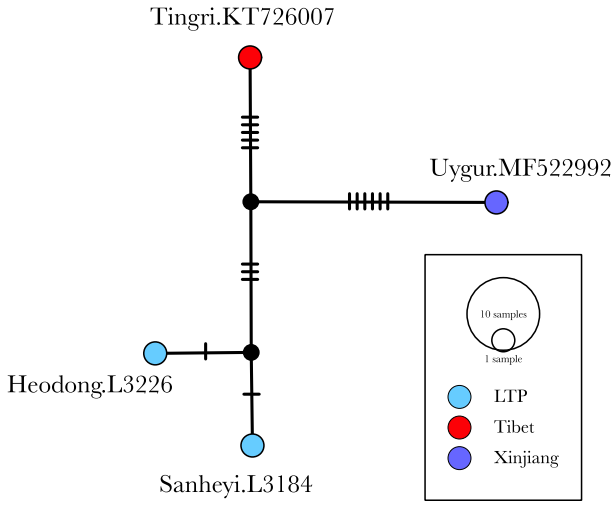

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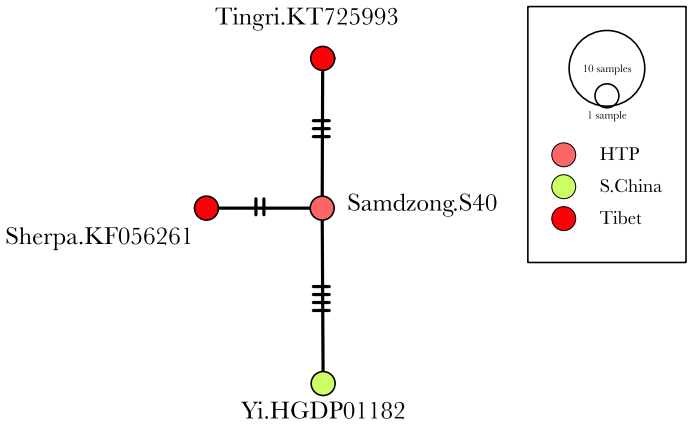

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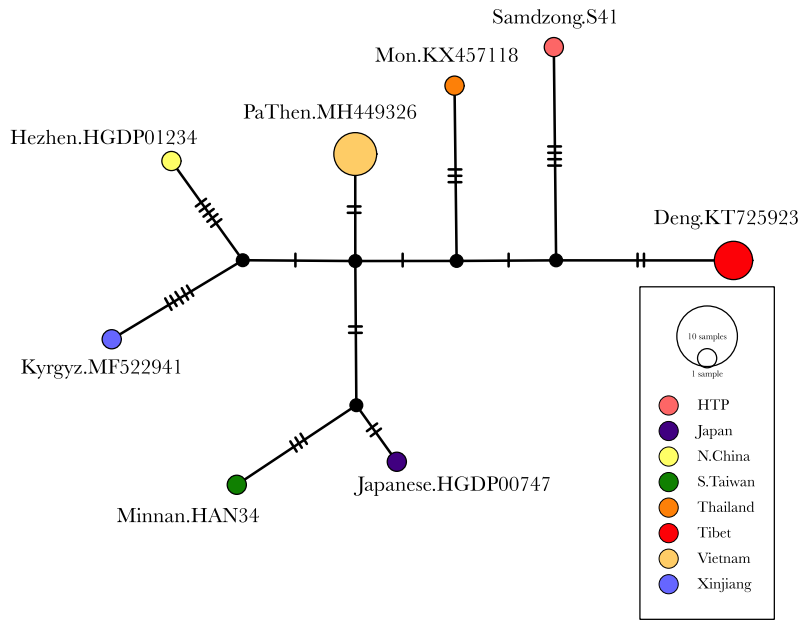

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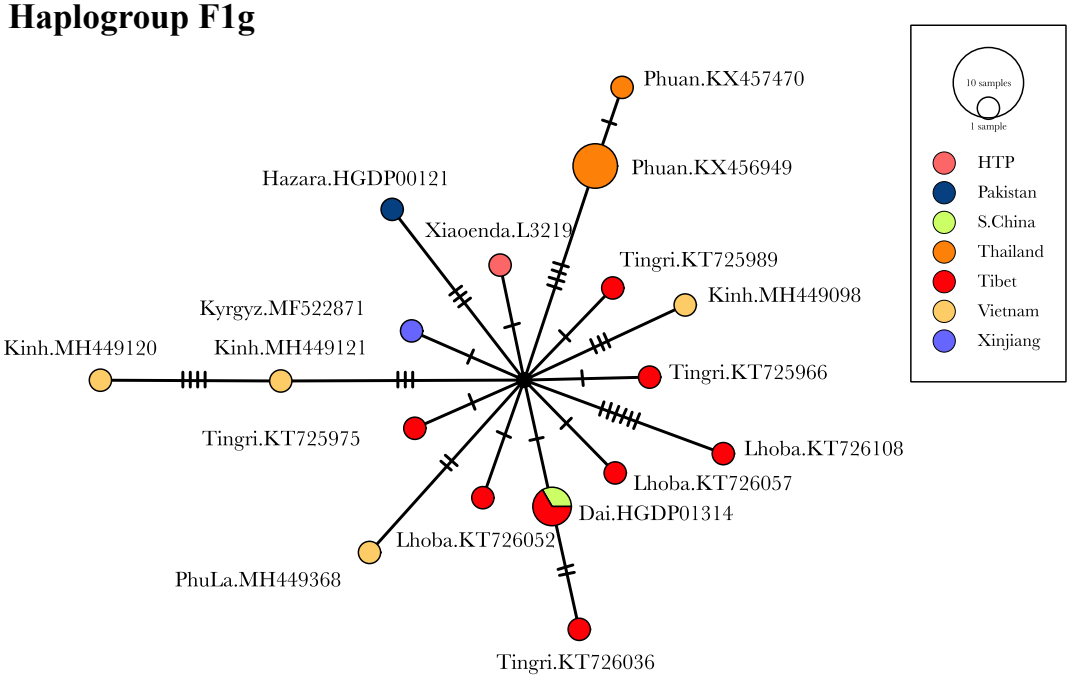

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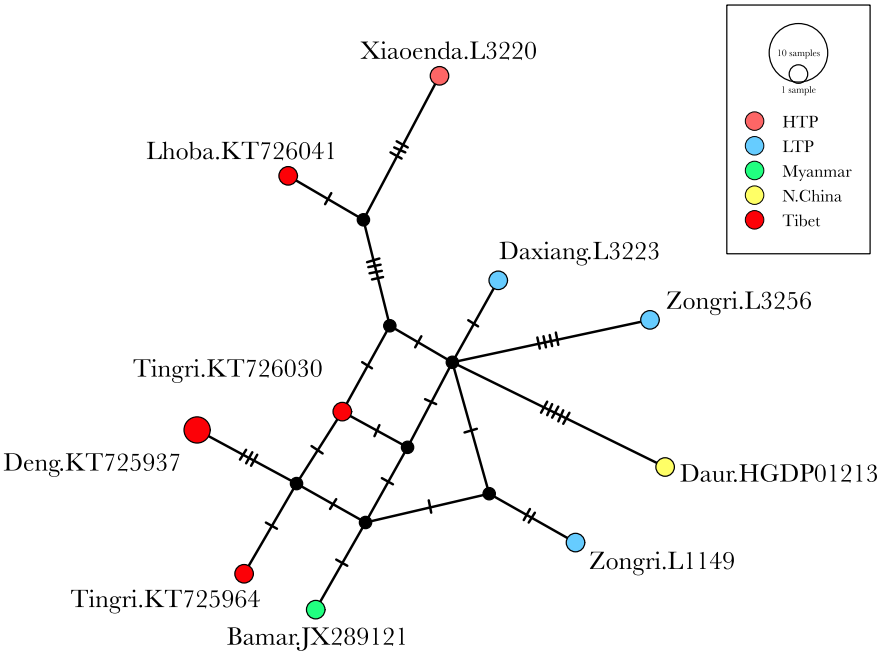

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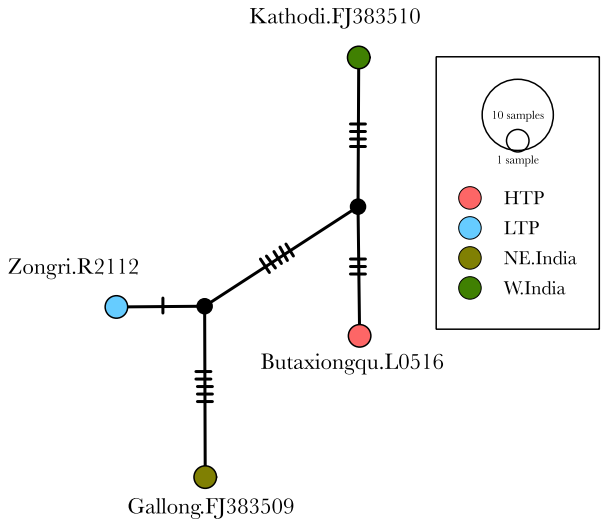

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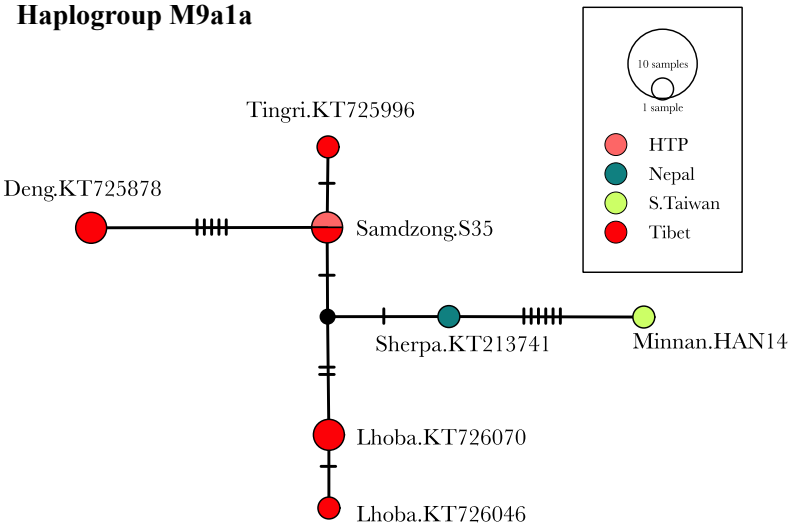

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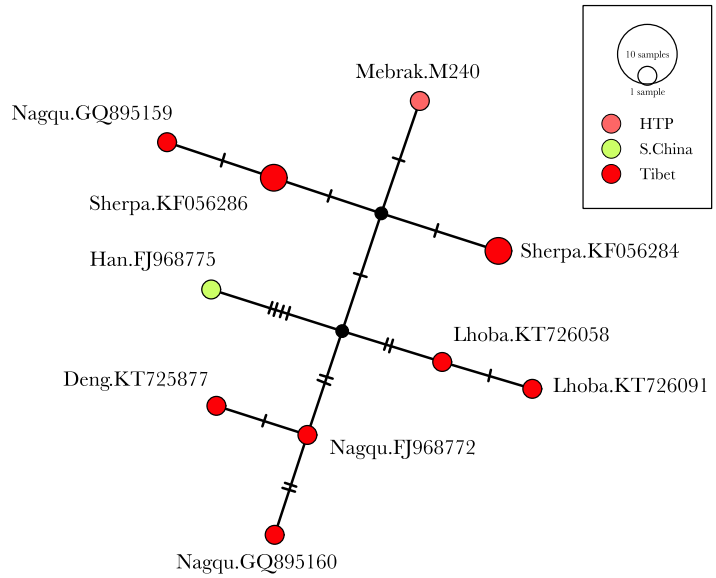

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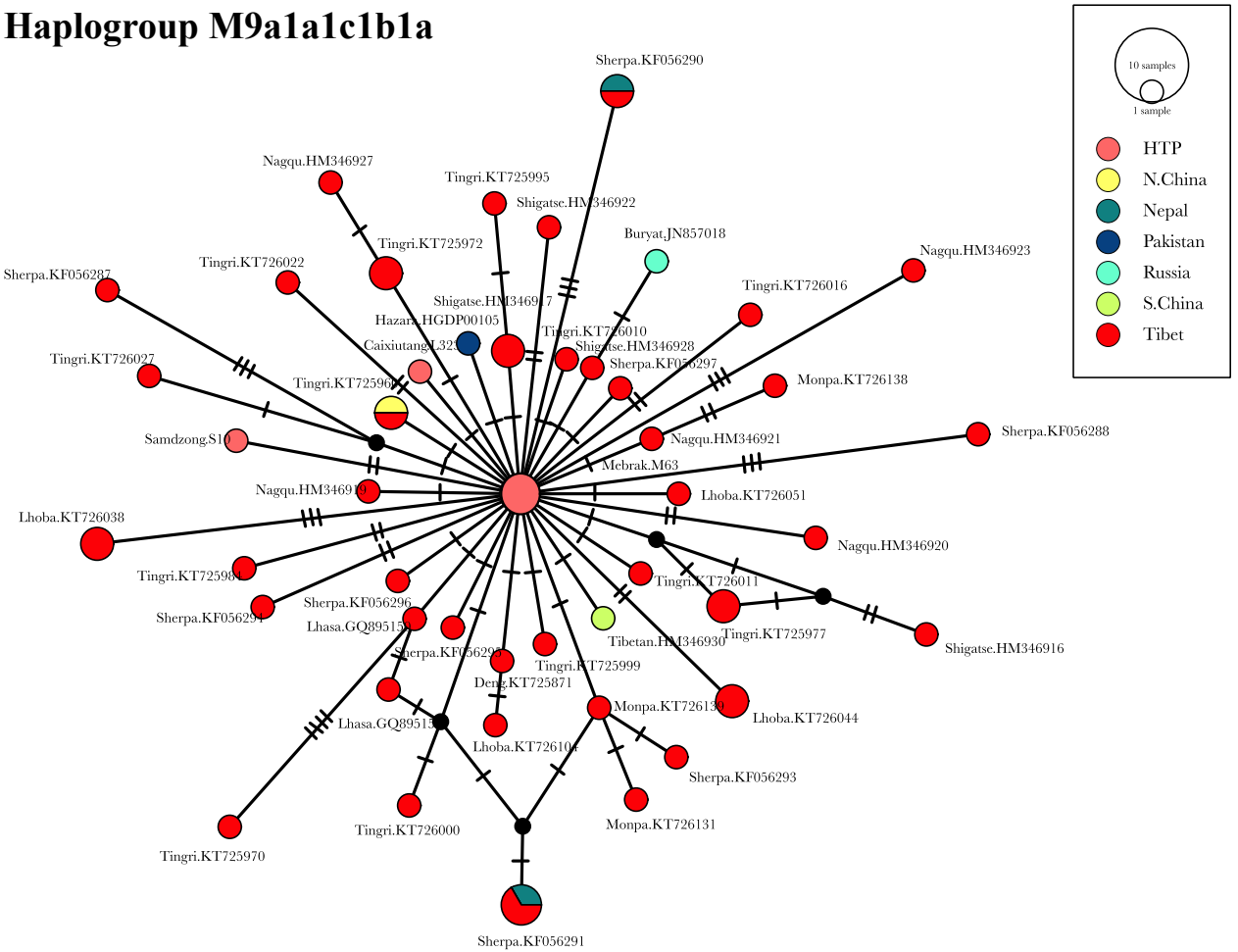

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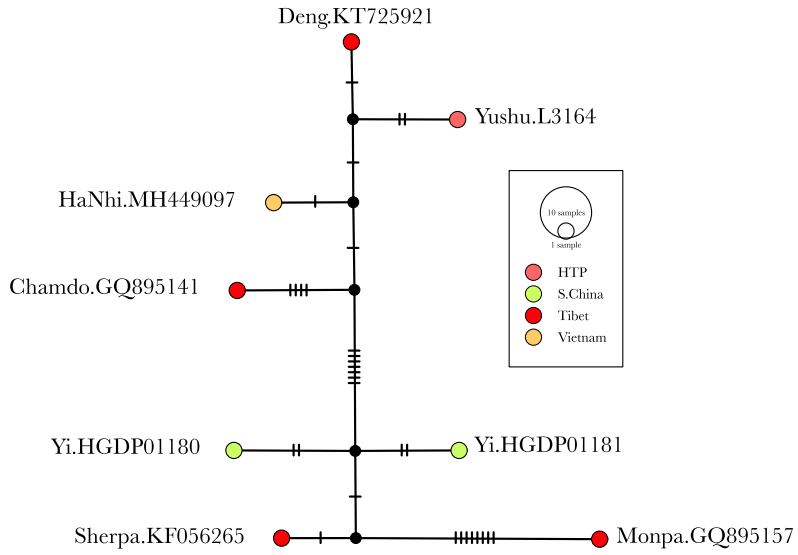

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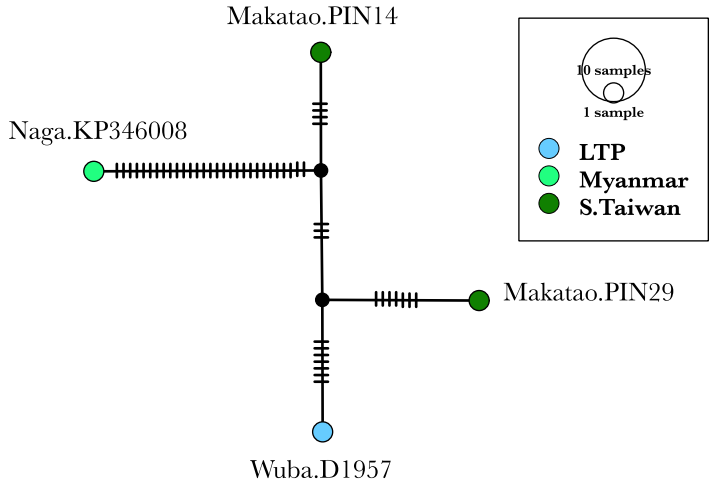

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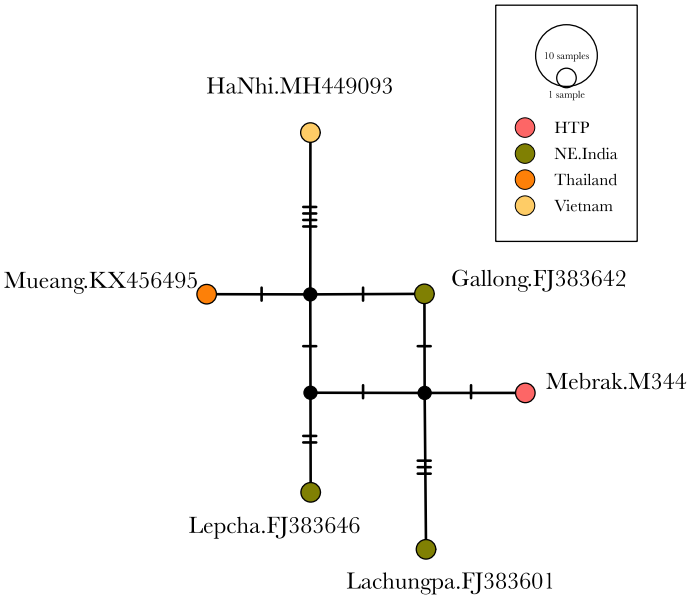

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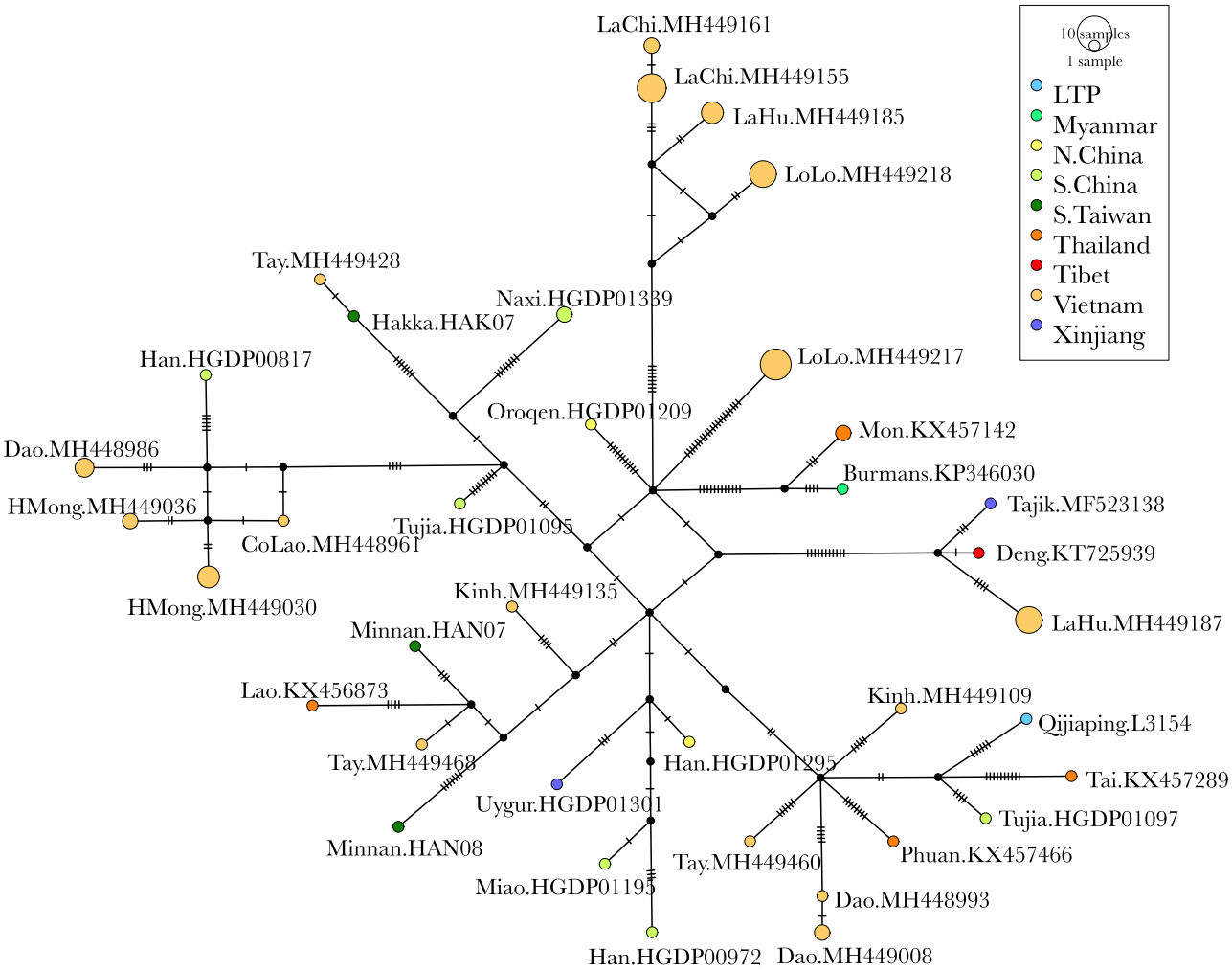

Table S1

Library	Sample ID	Alternate name	Site	Province	Lat	Long	Altitude (masl)	Library Preparation	Contamination 95% CI		Contamination mean (%)	5' C > T %	C14 Lab no.	Uncalibrated C14 age	Calibrated 95% CI (BP)		Mean Age (Cal BP)	IRMS d13C	IRMS d15N	CN	Haplogroup		Library decision
									Upper Bound	Lower Bound					Upper Bound	Lower Bound					mtDNA	Coverage	
D1952	C050	ZongriM1	Zongri	Qinghai	35.3	100.4	2953	SS	2.2	1.5	1.8	32	BA171677	4220±25	4850	4650	4750				D4j1b	1375	pass
D1953	C051	ZongriM251	Zongri	Qinghai	35.3	100.4	2953	SS	3	2	2.5	30.3	BA171678	3765±20	4230	4011	4121				D4	650	pass
L0642	CSP059		Zongri	Qinghai	35.3	100.4	2953	SS	6.7	0.1	1.2	20.5									D4j3	14	pass
L1149_d	C204		Zongri	Qinghai	35.3	100.4	2953	DS.half	0.4	0	0	2.1									G2a1	62	pass
L3254	C202	ZongriM297	Zongri	Qinghai	35.3	100.4	2953	DS	1	0.5	0.7	26.5	BA170709	4405±30	5213	4866	5040				D4i	1346	pass
L3255	C056	ZongriM299	Zongri	Qinghai	35.3	100.4	2953	DS	0.4	0.1	0.2	18.5	BA180101	4225±30	4925	4715	4820	-9.8	8.93	3.2	D4i	1382	pass
L3256	C208	ZongriM273	Zongri	Qinghai	35.3	100.4	2953	DS	1.1	0.6	0.9	20.8	BA180103	4200±25	4911	4712	4812	-10.8	9.61	3.2	G2a1	1352	pass
R2089	CSP046	ZongriM27	Zongri	Qinghai	35.3	100.4	2953	SS	3.9	2.7	3.2	29.4	BA170710	3945±25	4514	4295	4405				D4i	918	pass
R2111	CSP047	ZongriM75	Zongri	Qinghai	35.3	100.4	2953	DS	0.7	0.1	0.3	24.3	BA170711	3870±35	4415	4159	4287				D4i	1921	pass
R2112	CSP048	ZongriM33	Zongri	Qinghai	35.3	100.4	2953	DS	3.4	2.5	2.9	29.2	BA171676	4100±25	4808	4523	4666				G2b2a	1009	pass
R2114	CSP057	ZongriM22	Zongri	Qinghai	35.3	100.4	2953	DS	3.4	1.2	2.2	25.9	BA181885	3870±25	4413	4184	4299	-9.7	8.34	3.2	D4i	109	pass
R2121	CSP054	ZongriM78	Zongri	Qinghai	35.3	100.4	2953	DS	1.1	0	0.2	24.4	BA181886	3805±25	4287	4093	4190	-19.4	8.88	3.2	D4i	71	pass
R2122	CSP055	ZongriM40	Zongri	Qinghai	35.3	100.4	2953	DS	0.7	0	0.2	25.7	BA171679	3980±25	4520	4413	4467				D4i	427	pass
L3197	C205	ZongriM32	Zongri	Qinghai	35.3	100.4	2953	DS	1.1	0.2	0.5	24.2	BA181887	3660±30	4086	3900	3993	-11.4	9.06	3.3	D4i	413	pass
L3183							2953	DS				25.7											
L3231	C2022	Hedong4	Hedong	Qinghai	36.4	102.5	1941	DS	0.2	0	0	13.6	BA172272	375±45	507	315	411	-18.6	10.81	3.2	D4j11	580	pass
L3226	C2016	Hedong6	Hedong	Qinghai	36.4	102.5	1941	DS	0.7	0.1	0.4	26.2	BA172269	3890±40	4423	4160	4292	-7.7	8.22	3.2	F1b1+@152	495	pass
L1129	C493		Hupo	Qinghai	36.4	102.0	2117	DS.half	1.5	0.5	0.9	5.4						-7.8	8.21	3.2	G1c	78	pass
L1130	C494	Hupo13	Hupo	Qinghai	36.4	102.0	2117	DS.half	0.6	0.2	0.3	5.5	BA172258	3660±35	4089	3888	3989	-8.3	7.32	3.2	D4b2b	223	pass
L1131	C495	Hupo14	Hupo	Qinghai	36.4	102.0	2117	DS.half	1	0	0.1	5.5	BA181889	3820±25	4351	4097	4224	-7.6	6.98	3.2	A10	44	pass
L1132	C497		Hupo	Qinghai	36.4	102.0	2117	DS.half	0.8	0.1	0.2	5.9									A17	69	pass
L1133	C502		Hupo	Qinghai	36.4	102.0	2117	DS.half	1.4	0	0.2	5.4									G2a1f	18	pass
L3230	C2021	Shangluzhuang0	Shangluzhuang	Qinghai	36.2	102.8	1817	DS	2.5	1.3	1.9	25.9	BA172271	3850±40	4410	4153	4282	-7.6	7.69	3.4	C7b	549	pass
L3257	C2591	LiuwanQH-1	Liuwan	Qinghai	36.4	102.6	1941	DS	2.2	1.4	1.8	26.7	BA180107	3610±30	4128	3907	4018	-6.8	10.23	3.2	C4a1a2	938	pass
L3258	C2592		Liuwan	Qinghai	36.4	102.6	1941	DS	1.4	0.4	0.8	23.1									M9a	493	pass
L3185	C503	Hejiatai1	Hejiatai	Gansu	36.9	103.1	2381	DS	0.8	0.3	0.5	14.9	BA181888	4270±30	4875	4729	4802	-10	8.16	3.1	B4j	778	pass
L3186	C504		Hejiatai	Gansu	36.9	103.1	2381	DS	1.2	0.3	0.7	27.2									B4j	315	pass
L3152	C462	XiahaishiM9	Xiahaishi	Gansu	36.3	102.8	1772	DS	3.1	2.3	2.6	22.1	BA172259	3580±35	3980	3730	3855				G2a1f	722	pass
L3153	C467		Xiahaishi	Gansu	36.3	102.8	1772	DS	1	0	0	32.2									F2g	66	pass
L3223	C2011	Dazhuang0	Dazhuang	Qinghai	36.4	102.8	1922	DS	2.3	1.5	1.8	21.5	BA172268	3970±30	4524	4299	4412	-7.6	7.94	3.2	G2a1	652	pass
D1954	C113	HuoshaogouM117	Huoshaogou	Gansu	40.0	97.7	1759	SS	2.9	2	2.4	32	BA170736	3185±25	3451	3366	3409				M10a1	612	pass
D1957	C119	WubaM26	Wuba	Gansu	38.6	100.7	1891	SS	2.6	1.7	2.2	26.7	BA181890	3615±25	3984	3850	3917	-6.9	9.02	3.4	R	1132	pass
D1958_d	C121	WubaM47	Wuba	Gansu	38.6	100.7	1891	SS	5.9	4.4	5.1	37.6	BA170738	3490±25	3836	3694	3765				B4c1c1	554	pass
L3189	C507	Wenpuju03	Wenpuju	Qinghai	36.1	102.0	2162	DS	1.13	0.5	0.8	23.8	BA172264	950±40	935	767	851	-16.1	10.78	3.2	D4	577	pass
L3229	C2020	Lierbao0	Lierbao	Qinghai	36.2	102.7	2105	DS	2.1	0.8	1.6	15.9	BA172270	305±30	462	300	381	9.34	9.34	3.1	N9a9	710	pass
L1127	C489		Sanheyi	Qinghai	36.4	102.0	2424	DS.half	1.8	0.1	0.4	8.8									D4b2b	17	pass
L1128	C492		Sanheyi	Qinghai	36.4	102.0	2424	DS.half	0.4	0.1	0.2	4.3									G2b1a2	243	pass
L3184	C486	Sanheyi11	Sanheyi	Qinghai	36.4	102.0	2424	DS	2.6	1.7	2.1	21.6	BA171674	3720±30	4150	3980	4065				F1b1+@152	805	pass
L3163								DS				20.1											
L3165	C518	Jinchankou0	Jinchankou	Qinghai	37.0	102.5	2291	DS	1.3	0.4	0.8	12.9	BA181891	3540±25	3899	3722	3811	-11.5	9.18	3.2	G3a2	234	pass
L3194								DS				14											
L3154	C471	QijiapingM89-2	Qijiaping	Gansu	35.5	103.8	1936	DS	4.3	2.5	3.3	26.9	BA180104	3315±30	3683	3528	3606	-8.5	9.14	3.3	R+16189	423	pass
L3156	C474	QijiapingM108-2	Qijiaping	Gansu	35.5	103.8	1936	DS	0.6	0.1	0.3	23.8	BA172260	3260±40	3573	3394	3484	-9.3	11.34	3.4	G2a+152	399	pass
L3155	C473	QijiapingM104-2	Qijiaping	Gansu	35.5	103.8	1936	DS	1.2	0.4	0.6	17	BA180105	1805±30	1889	1693	1791	-10.1	13.65	3.1	F1a1b	454	pass
L0576	C186		Mogou	Gansu	34.7	103.9	2211	SS	2.1	0.3	1	25.2									D4j	161	pass
L0577	C187		Mogou	Gansu	34.7	103.9	2211	SS	2.6	0.1	0.6	12.9									B4d1	30	pass
L0580	C190		Mogou	Gansu	34.7	103.9	2211	SS	6.9	1.4	3.5	32.8									B4c1b2c	20	pass
L3218	C776		Mogou	Gansu	34.7	103.9	2211	DS	2	1.2	1.6	28.9									D5a2a1b	634	pass
L3159	C508	Lajigai2	Lajigai	Qinghai	36.0	102.3	2059	DS	0.6	0.1	0.3	34.7	BA180106	2995±25	3389	3145	3267				D4h1c	385	pass
L3161	C512		Lajigai	Qinghai	36.0	102.3	2059	DS	2	1	1.5	24.8									G1c2	520	pass
L3190	C511		Lajigai	Qinghai	36.0	102.3	2059	DS	2.7	1.4	2	21.7									Z4a1a	360	pass
L3259	C2594		Hualongqunke	Qinghai	36.0	102.0	2096	DS	4.9	1.5	2.6	30.1									A15a	122	pass
L3228	C2019	Qunke1	Hualongqunke	Qinghai	36.0	102.0	2096	DS	2	0.7	1.3	22.3	BA181892	2480±25	2721	2459	2590	-16.6	10.31	3.2	A17	338	pass
L3264	C2599		Guidehexi	Qinghai	36.0	101.4	2218	DS	0.7	0.2	0.4	26.7									G2a4	499	pass
L3265	C2600		Guidehexi	Qinghai	36.0	101.4	2218	DS	0.6	0.1	0.3	31.2									G2a4	399	pass
L3266	C2602		Guidehexi	Qinghai	36.0	101.4	2218	DS	0.5	0	0.1	32.6									D4b2b	297	pass
L0526	CSP152		Yingpanshan	Sichuan	31.7	103.8	1566	SS	1.9	0	0.2	32.8									D4e1a2	38	pass
L0551_d	CSP153		Yingpanshan	Sichuan	31.7	103.8	1566	SS	8.7	6.3	7.5	37.9									D4	344	pass
L0544	CSP133	PukagongmaM1	Pukagongma	Qinghai	34.9	92.6	4188	SS	2.3	1	1.6	15.8	BA170718	2720±25	2860	2764	2812				D5a2a	296	pass
L0545	CSP134		Pukagongma	Qinghai	34.9	92.6	4188	SS	5	0.4	1.6	21									A15c1	21	pass
L0546	CSP135	PukagongmaM3	Pukagongma	Qinghai	34.9	92.6	4188	SS	1.1	0	0.4	22.7	BA170719	2710±35	2867	2755	2811				D5a2a	110	pass
L0547	CSP136	PukagongmaM5	Pukagongma	Qinghai	34.9	92.6	4188	SS	1.2	0.5	0.8	10.9	BA180102	2800±35	3061	2864	2963	10.68	10.68	3.2	G2a1h	253	pass
L3164	C514	YushuSGZ-1	Yushu	Qinghai	34.3	95.5	4192	DS	1.4	0.8	1.1	19.9	BA171675	520±20	553	511	532				M11a2	681	pass
L3191								DS				17.9											
L3219	C1036	XiaoendaM1	Xiaoenda	Tibet	31.6	97.1	3292	DS	2.1	0.9	1.5	27.6	BA172265	2645±25	2790	2740	2765	-17.3	12.94	3.1	F1g	253	pass
L3220	C1037	XiaoendaM2	Xiaoenda	Tibet	31.6	97.1	3292	DS	1.7	0.9	1.2	23.2	BA172266	2490±25	2723	2473	2598				G2a1	293	pass
L3222	C2010		Xiaoenda	Tibet	31.6	97.1	3292	DS	2.1	1.2	1.7	27						-14.8	10.07	3.2	Z4a1a	668	pass
L3234		RedilongM3					3249	DS	2.7	1.3	1.9	19.9	BA170717	2700±25	2849	2758	2804				B4d1'2'3	475	pass
L0515	CSP142		Redilong	Tibet	31.1	97.2		SS				25											
L0543								SS				22.2											
L0516	CSP144	Butaxiongqu	Butaxiongqu	Tibet	32.0	90.9	4629	SS	2.9	1.3	1.9	25.7	BA170715	2415±25	2680	2353	2517				G2b2a	161	pass
L3235								DS				27.2											
L3233	CSP132	ChaxiutangJ2-13	Chaxiutang	Tibet	31.5	92.1	4505	DS	2.9	2.1	2.5	20	BA172273	1170±40	1221	978	1100	9.5	3.3	3.3	M9a1a1c1b1a	812	pass
L0517	CSP147		Gelintang	Tibet	31.6	79.6	3741	SS	4.5	2.6	3.4	12									U5a1a1	294	pass
L3260	C2595		Hualongqunke	Qinghai	36.0	102.0		DS	23	17.3	20.1	28									A15		excluded
L3261	C2596		Tuanjie	Qinghai	35.2	100.4	1814	DS	0.2	0	0.1	24.5									?		excluded
L3262	C2597		Lierbao	Qinghai	36.2	102.7		DS	27	20.7	23.7	7.7									N		excluded
L3263	C2598		Lierbao	Qinghai	36.2	102.7		DS	8.8	5.1	6.7	26.4									A10		excluded
R2113	CSP049	ZongriM80	Zongri	Qinghai	35.3	100.4		DS	12.7	6.7	9.3	24.1	BA170712	3550±35	3960	3720	3840				D4i		excluded
L0581	C191		Mogou	Gansu	34.7	103.9		SS	18.4	6	10.9	29.6									R11a		excluded

Table S2. Polymorphic positions of the 67 ancient mitogenomes from the Tibetan Plateau

SampleID	Haplogroup	Quality (%)	Found Polymorphisms
Butaxiongqu_L0516_HTP	G2b2a	91.52	73G 263G 489C 709A 750G 1438G 1692G 2706G 4680A 4769G 4833G 5108C 5601T 6932G 7028T 8701G 8860G 8877C 9540C 10398G 10400T 10873C 11719A 12705T 13563G 14569A 14766T 14783C 15043A 15301A 15326G 16223T 16362C
Chaxiutang_L3233_HTP	M9a1a1c1b1a	96.56	73G 153G! 263G 489C 711C 750G 1041G 1438G 2706G 3394C 4491A 4769G 7028T 7142C 7697A 8701G 8860G 9242G 9540C 10398G 10400T 10873C 11719A 12705T 14308C 14417G 14766T 14783C 15043A 15301A 15326G 16223T 16234T 16291T! 16316G 16362C
Dazhuang_L3223_LTP	G2a1	98.13	73G 263G 489C 709A 750G 1438G 2706G 4769G 4833G 5108C 5601T 7028T 7600A 8701G 8860G 9377G 9540C 9575A 10398G 10400T 10873C 11719A 12705T 13563G 14200C 14569A 14766T 14783C 15043A 15301A 15326G 16223T 16227G 16278T 16362C
Gelintang_L0517_HTP	U5a1a1	94.8	73G 263G 750G 1438G 1700C 2706G 3197C 4769G 5495C 7028T 8860G 9477A 11467G 11719A 12308G 12372A 13617C 14766T 14793G 15218G 15326G 15924G 16192T! 16256T 16270T 16399G
Guidehexi_L3264_LTP	G2a4	96.07	73G 152C 263G 489C 709A 750G 1438G 2706G 4769G 4833G 5108C 5601T 7028T 7600A 8701G 8860G 9377G 9540C 9575A 10398G 10400T 10873C 11719A 12280G 12705T 13563G 14569A 14766T 14783C 15043A 15301A 15326G 16223T 16227G 16272G 16278T 16319A 16362C
Guidehexi_L3265_LTP	G2a4	96.07	73G 152C 263G 489C 709A 750G 1438G 2706G 4769G 4833G 5108C 5601T 7028T 7600A 8701G 8860G 9377G 9540C 9575A 10398G 10400T 10873C 11719A 12280G 12705T 13563G 14569A 14766T 14783C 15043A 15301A 15326G 16223T 16227G 16272G 16278T 16319A 16362C
Guidehexi_L3266_LTP	D4b2b	95.47	73G 194T 263G 489C 750G 1382C 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8020A 8414T 8701G 8860G 8964T 9296T 9540C 9824A 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16362C
Hedong_L3226_LTP	F1b1+@152	94.72	73G 152C! 263G 750G 1438G 2706G 3970T 4732G 4769G 5147A 6392C 6962A 7028T 8860G 10310A 10609C 10976T 11719A 12406A 12633T 12882T 13928C 14476A 14766T 15326G 16189C 16232A 16249C 16304C 16311C
Hedong_L3231_LTP	D4j11	97.57	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11218T 11696A 11719A 12630A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16311C 16362C
Hejiatai_L3185_LTP	B4j	78.85	73G 263G 750G 827G 1438G 2706G 3548C 4769G 5300T 6122T 7028T 8860G 11719A 11941G 13911G 14766T 15172A 15326G 15535T 16189C 16217C 16223T
Hejiatai_L3186_LTP	B4j	78.85	73G 263G 750G 827G 1438G 2706G 3548C 4769G 5300T 6122T 7028T 8860G 11719A 11941G 13911G 14766T 15172A 15326G 15535T 16189C 16217C 16223T
Hualongqunke_L3228_LTP	A17	97.05	73G 152C 235G 263G 663G 750G 1438G 1736G 2706G 4113A 4248C 4769G 4824G 5514G 7028T 8794T 8860G 9126C 11719A 12705T 14766T 15217A 15326G 16223T 16290T 16319A 16362C
Hualongqunke_L3259_LTP	A15a	93.65	73G 152C 207A 235G 263G! 663G 750G 1438G 1736G 2706G 4248C 4769G 4824G 7028T 8459G 8794T 8860G 11084G 11719A 12705T 14067T 14766T 15326G 16223T 16290T 16319A 16362C
Huoshaogou_D1954_LTP	M10a1	93.23	73G 263G 489C 709A 750G 1438G 2706G 4140T 4769G 7028T 7250G 8701G 8793C 8856A 8860G 9540C 10398G 10400T 10646A 10873C 11719A 12549T 12705T 13152G 14502C 14766T 14783C 15040T 15043A 15071C 15218G 15301A 15326G 16223T 16311C
Hupo_L1129_LTP	G1c	91.4	73G 263G 489C 593C 709A 750G 1438G 2706G 4769G 4833G 5108C 7028T 8200C 8701G 8860G 9540C 9966A 10398G 10400T 10873C 11719A 12705T 14569A 14766T 14783C 15043A 15301A 15323A 15326G 15497A 16223T 16362C
Hupo_L1130_LTP	D4b2b	97.29	73G 194T 263G 489C 750G 1382C 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8020A 8414T 8701G 8860G 8964T 9296T 9540C 9824A 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16362C
Hupo_L1131_LTP	A10	94.99	73G 235G 263G 663G 750G 1438G 1736G 2706G 4248C 4769G 4824G 5393C 7028T 7468T 8794T 8860G 9948A 10094T 11719A 12705T 14766T 15326G 16223T 16227C 16290T 16311C 16319A
Hupo_L1132_LTP	A17	97.05	73G 152C 235G 263G 663G 750G 1438G 1736G 2706G 4113A 4248C 4769G 4824G 5514G 7028T 8794T 8860G 9126C 11719A 12705T 14766T 15217A 15326G 16223T 16290T 16319A 16362C
Hupo_L1133_LTP	G2a1f	95.04	73G 263G 489C 709A 750G 1438G 2706G 4769G 4833G 5108C 5601T 7028T 7600A 8701G 8860G 9377G 9540C 9575A 10398G 10400T 10873C 11719A 12705T 13563G 14200C 14569A 14766T 14783C 15043A 15301A 15326G 16114T 16223T 16227G 16278T 16362C
Jingchankou_L3165_LTP	G3a2	95.47	73G 143A 263G 489C 709A 750G 1438G 2706G 4769G 4833G 5108C 7028T 7621C 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14569A 14766T 14783C 15043A 15301A 15326G 15746G 16223T 16274A 16362C
Lajigai_L3159_LTP	D4h1c	97.39	73G 152C 263G 489C 750G 1438G 2706G 3010A 3336C 3644C 4769G 4883T 5048C 5178A 7028T 7181T 7673G 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 13914A 14668T 14766T 14783C 15043A 15301A 15326G 16174T 16223T 16311C 16362C
Lajigai_L3161_LTP	G1c2	98.85	73G 263G 489C 593C 709A 750G 1438G 2706G 4769G 4833G 4973C 5108C 7028T 8161T 8200C 8701G 8860G 9540C 9966A 10398G 10400T 10873C 11719A 12705T 14569A 14766T 14783C 15043A 15301A 15323A 15326G 15497A 16223T 16362C
Lajigai_L3190_LTP	Z4a1a	94.16	73G 151T! 152C 263G 489C 750G 1438G 2706G 4715G 4769G 5492C 5894G 6752G 7028T 7196A 8584A 8701G 8860G 9090C 9540C 10398G 10400T 10873C 11719A 12705T 14766T 15326G 16223T 16227C 16290T 16298C 16302G
Lierbao_L3229_LTP	N9a9	90.34	73G 150T 263G 750G 1438G 2706G 2887C 4769G 5231A 5417A 7028T 8860G 11719A 12358G 12372A 12705T 14766T 15326G 16223T 16257A 16261T
Liuwan_L3257_LTP	C4a1a2	97.28	10891G 11719A 11914A 11969A 12672G 12705T 13263G 14318C 14766T 14783C 15043A 15204C 15301A 15326G 15487T 15968C 16093C 16129A 16223T 16298C 16327T
Liuwan_L3258_LTP	M9a	88.57	73G 153G 263G 489C 750G 1438G 2706G 3394C 4491A 4769G 7028T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14308C 14766T 14783C 15043A 15301A 15326G 16234T 16362C
Mogou_L0576_LTP	D4j	94.33	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11696A 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16362C
Mogou_L0577_LTP	B4d1	83.84	73G 263G 750G 827G 1438G 2706G 4769G 7028T 8860G 11719A 11914A 13942G 14766T 15038G 15326G 15535T 15930A 16189C 16217C
Mogou_L0580_LTP	B4c1b2c	87.9	73G 150T 263G 709A 750G 1119C 1438G 2706G 3435T 3497T 3571T 4769G 7028T 8860G 9128C 11440A 11719A 14766T 15326G 15346A 16140C 16189C 16217C 16274A 16335G
Mogou_L3218_LTP	D5a2a1b	96.52	73G 150T 263G 489C 750G 752T 1107C 1438G! 2706G 3528T 4769G 4883T 5178A 5301G 7028T 8701G 8860G 9180G 9540C 10397G 10398G 10400T 10873C 11719A 11944C 12026G 12705T 14766T 14783C 15043A 15301A 15326G 16092C 16164G 16172C 16189C 16223T 16266T 16362C
Pukagongma_L0544_HTP	D5a2a	97.56	73G 150T 263G 489C 750G 752T 1107C 1438G! 2706G 4769G 4883T 5178A 5301G 7028T 8701G 8860G 9180G 9540C 10397G 10398G 10400T 10873C 11719A 11944C 12026G 12705T 14766T 14783C 15043A 15301A 15326G 16172C 16189C 16223T 16266T 16362C
Pukagongma_L0545_HTP	A15c1	96.68	73G 152C 235G 263G! 663G 750G 1438G 1736G 2706G 4248C 4769G 4824G 7028T 8459G 8794T 8860G 9052G 11719A 12705T 13111C 14067T 14766T 15262C 15326G 15924G 16223T 16290T 16319A 16362C
Pukagongma_L0546_HTP	D5a2a1	95.04	73G 150T 263G 489C 750G 752T 1107C 1438G! 2706G 4769G 4883T 5178A 5301G 7028T 8701G 8860G 9180G 9540C 10397G 10398G 10400T 10873C 11719A 11944C 12026G 12705T 14766T 14783C 15043A 15301A 15326G 16164G 16172C 16189C 16223T 16266T 16362C
Pukagongma_L0547_HTP	G2a1h	98.66	73G 263G 489C 709A 750G 1438G 2706G 3777C 4769G 4833G 5108C 5601T 7028T 7600A 8701G 8860G 9377G 9540C 9575A 10398G 10400T 10873C 11719A 12705T 13194A 13563G 14200C 14569A 14766T 14783C 15043A 15301A 15326G 16223T 16227G 16278T 16362C
Qijiaping_L3154_LTP	R+16189	78.55	73G 263G 750G 1438G 2706G 4769G 7028T 8860G 11719A 14766T 15326G 16189C
Qijiaping_L3155_LTP	F1a1b	97.37	64T 73G 263G 750G 1438G 2706G 3970T 4086T 4769G 6392C 6962A 7028T 8860G 9053A 9548A 10310A 10609C 11719A 12406A 12882T 13759A 13928C 14002G 14766T 15326G 16129A 16162G 16172C 16304C
Qijiaping_L3156_LTP	G2a+152	91.8	73G 152C 263G 489C 709A 750G 1438G 2706G 4769G 4833G 5108C 5601T 7028T 7600A 8701G 8860G 9377G 9540C 9575A 10398G 10400T 10873C 11719A 12705T 13563G 14569A 14766T 14783C 15043A 15301A 15326G 16223T 16278T
Redilong_L3234_HTP	B4d1'2'3	78.65	73G 263G 750G 827G 1438G 2706G 4769G 7028T 8860G 11719A 11914A 13942G 14766T 15326G 15535T 15930A 16189C 16217C
Sanheyi_L1127_LTP	D4b2b	95.76	73G 194T 263G 489C 750G 1382C 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8020A 8414T 8701G 8860G 8964T 9296T 9540C 9824A 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16362C
Sanheyi_L1128_LTP	G2b1a2	96.24	73G 263G! 489C 709A 750G 1438G 2706G 3593C 4769G 4833G 4853A 5108C 5601T 7028T 8701G 8860G 8877C 9540C 10398G 10400T 10873C 11151T 11719A 12705T 13563G 14569A 14766T 14783C 15043A 15301A 15326G 16172C 16223T 16362C
Sanheyi_L3184_LTP	F1b1+@152	92.67	73G 152C! 263G 750G 1438G 2706G 3970T 4732G 4769G 5147A 6392C 6962A 7028T 8860G 10310A 10609C 10976T 11719A 12406A 12633T 12882T 13928C 14476A 14766T 15326G 16189C 16232A 16249C 16304C 16311C
Shangluzhuang_L3230_LTP	C7b	95.73	73G 263G 489C 750G 1438G 2706G 3552A 4715G 4769G 5821A 5918C 6338G 7028T 7196A 8584A 8701G 8860G 9540C 9545G 10398G 10400T 10873C 11101G 11719A 11914A 12705T 13263G 14318C 14766T 14783C 15301A 15326G 15487T 15928A 16051G 16223T 16298C 16327T
Wenpuju_L3189_LTP	D4	91.75	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16362C
Wuba_D1957_LTP	R	83.86	73G 263G 750G 1438G 2706G 4769G 7028T 8860G 11719A 14766T 15326G
Wuba_D1958d_LTP	B4c1c1	82.98	73G 150T 195C 214G 263G 750G 1119C 1438G 2706G 3497T 5441G 7028T 8860G 10398G 11719A 13629G 14766T 15326G 15346A 15941C 16189C 16217C 16311C
Xiahaishi_L3152_LTP	G2a1f	96.22	73G 263G 489C 709A 750G 1438G 2706G 4769G 4833G 5108C 5601T 7028T 7600A 8701G 8860G 9377G 9540C 9575A 10398G 10400T 10873C 11719A 12705T 13563G 14200C 14569A 14766T 14783C 15043A 15301A 15326G 16114T 16223T 16227G 16278T 16362C
Xiahaishi_L3153_LTP	F2g	95.83	73G 263G 747G 750G 1005C 1438G 1824C 2706G 3970T 4769G 6392C 7028T 7828G 8860G 10310A 10535C 10586A 11719A 12338C 13708A 13928C 14766T 15326G 16291T 16304C
Xiaoenda_L3219_HTP	F1g	95.01	73G 263G 750G 1438G 2389T 2706G 3398C 3970T 4769G 6392C 6962A 7028T 8860G 10310A 10609C 11719A 12406A 12882T 13928C 14766T 15326G 16189C 16304C
Xiaoenda_L3220_HTP	G2a1	94.75	73G 263G 489C 709A 750G 1438G 2706G 4769G 4833G 5108C 5601T 7028T 7600A 8701G 8860G 9377G 9540C 9575A 10398G 10400T 10873C 11719A 12705T 13563G 14200C 14569A 14766T 14783C 15043A 15301A 15326G 16223T 16227G 16278T 16362C
Xiaoenda_L3222_HTP	Z4a1a	94.16	73G 151T! 152C 263G 489C 750G 1438G 2706G 4715G 4769G 5492C 5894G 6752G 7028T 7196A 8584A 8701G 8860G 9090C 9540C 10398G 10400T 10873C 11719A 12705T 14766T 14783C 15043A 15301A 15326G 15475G 15487T 15784C 16185T 16223T 16260T 16298C 16302G
Yingpanshan_L0526_LTP	D4e1a2	98.69	73G 94A 214G 263G 489C 750G 1438G 2706G 3010A 3316A 4769G 4883T 5178A 5964C 7028T 8414T 8701G 8860G 9536T 9540C 10398G 10400T 10873C 11215T 11719A 12705T 14470C 14668T 14766T 14783C 15043A 15301A 15326G 15924G 16092C 16223T 16362C
Yingpanshan_L0551d_LTP	D4	90.5	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16362C
Yushu_L3164_HTP	M11a2	90.37	73G 146C 198T 215G 263G 318C 326G 489C 750G 1095C 1438G 2706G 4769G 6531T 7028T 7642A 8108G 8701G 8860G 9540C 9950C 10398G 10400T 10873C 11719A 11969A 12705T 13074G 14340T 14766T 14783C 15043A 15301A 15326G 16173T 16223T
Zongri_D1952_LTP	D4j1b	100	73G 263G 489C 750G 1438G 1734T 2706G 3010A 4769G 4883T 5178A 5262A 7028T 7055G 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11696A 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16362C
Zongri_D1953_LTP	D4	94.98	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16362C
Zongri_L0642_LTP	D4j3	96.95	73G 263G 489C 750G 1438G 2706G 3010A 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11696A 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16184T 16223T 16311C 16362C
Zongri_L1149_LTP	G2a1	95.58	73G 263G 489C 709A 750G 1438G 2706G 4769G 4833G 5108C 5601T 7028T 7600A 8701G 8860G 9377G 9540C 9575A 10398G 10400T 10873C 11719A 12705T 13563G 14200C 14569A 14766T 14783C 15043A 15301A 15326G 16223T 16227G 16278T 16362C
Zongri_L3197_LTP	D4i	94.16	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16294T 16362C
Zongri_L3254_LTP	D4i	94.91	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16294T 16362C
Zongri_L3255_LTP	D4i	94.91	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16294T 16362C
Zongri_L3256_LTP	G2a1	93.41	73G 263G 489C 709A 750G 1438G 2706G 4769G 5108C 5601T 7028T 7600A 8701G 8860G 9377G 9540C 9575A 10398G 10400T 10873C 11719A 12705T 13563G 14200C 14569A 14766T 14783C 15043A 15301A 15326G 16223T 16227G 16278T 16362C
Zongri_R2089_LTP	D4i	94.16	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16294T 16362C
Zongri_R2111_LTP	D4i	94.16	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16294T 16362C
Zongri_R2112_LTP	G2b2a	97.69	73G 263G 489C 709A 750G 1438G 1692G 2706G 4680A 4769G 4833G 5108C 5601T 6932G 7028T 8701G 8860G 8877C 9540C 10398G 10400T 10873C 11719A 12705T 13563G 14569A 14766T 14783C 15043A 15301A 15326G 16223T 16362C
Zongri_R2114_LTP	D4i	94.91	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16294T 16362C
Zongri_R2121_LTP	D4i	93.66	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16294T 16362C
Zongri_R2122_LTP	D4i	94.91	73G 263G 489C 750G 1438G 2706G 3010A 4769G 4883T 5178A 7028T 8414T 8701G 8860G 9540C 10398G 10400T 10873C 11719A 12705T 14668T 14766T 14783C 15043A 15301A 15326G 16223T 16294T 16362C

Table S3. Summary of the 67 ancient mitogenomes from the Tibetan Plateau

GSA Accession	Haplogroup (v17)	Haplotype	Ancient individuals
HRR050762	G2a1f	Haplotype 1	Xiahaishi_L3152_LTP*
HRR050763	F2g	Haplotype 2	Xiahaishi_L3153_LTP
HRR050764	M10a1	Haplotype 3	Huoshaogou_D1954_LTP*
HRR050765	R	Haplotype 4	Wuba_D1957_LTP*
HRR050766	B4c1c1	Haplotype 5	Wuba_D1958d_LTP
HRR050767	G3a2	Haplotype 6	Jingchankou_L3165_LTP*
HRR050768	B4j	Haplotype 7	Hejiatai_L3185_LTP*
HRR050769	B4j	Haplotype 7	Hejiatai_L3186_LTP
HRR050770	D4j	Haplotype 8	Mogou_L0576_LTP
HRR050771	B4d1	Haplotype 9	Mogou_L0577_LTP
HRR050772	B4c1b2c	Haplotype 10	Mogou_L0580_LTP
HRR050773	D5a2a1b	Haplotype 11	Mogou_L3218_LTP
HRR050774	R+16189	Haplotype 12	Qijiaping_L3154_LTP*
HRR050775	F1a1b	Haplotype 13	Qijiaping_L3155_LTP*
HRR050776	G2a+152	Haplotype 14	Qijiaping_L3156_LTP*
HRR050777	D4e1a2	Haplotype 15	Yingpanshan_L0526_LTP
HRR050778	D4	Haplotype 16	Yingpanshan_L0551d_LTP
HRR050779	D4j1b	Haplotype 17	Zongri_D1952_LTP*
HRR050780	D4	Haplotype 18	Zongri_D1953_LTP*
HRR050781	D4j3	Haplotype 19	Zongri_L0642_LTP
HRR050782	G2a1	Haplotype 20	Zongri_L1149_LTP
HRR050783	D4i	Haplotype 21	Zongri_L3197_LTP*
HRR050787	D4i	Haplotype 21	Zongri_R2089_LTP*
HRR050788	D4i	Haplotype 21	Zongri_R2111_LTP*
HRR050784	D4i	Haplotype 22	Zongri_L3254_LTP*
HRR050785	D4i	Haplotype 22	Zongri_L3255_LTP*
HRR050790	D4i	Haplotype 22	Zongri_R2114_LTP*
HRR050786	G2a1	Haplotype 23	Zongri_L3256_LTP*
HRR050789	G2b2a	Haplotype 24	Zongri_R2112_LTP*
HRR050791	D4i	Haplotype 25	Zongri_R2121_LTP*
HRR050792	D4i	Haplotype 26	Zongri_R2122_LTP*
HRR050793	G2a1	Haplotype 27	Dazhuang_L3223_LTP*
HRR050794	C7b	Haplotype 28	Shangluzhuang_L3230_LTP*
HRR050795	F1b1+@152	Haplotype 29	Hedong_L3226_LTP*
HRR050796	D4j11	Haplotype 30	Hedong_L3231_LTP*
HRR050797	G1c	Haplotype 31	Hupo_L1129_LTP
HRR050798	D4b2b	Haplotype 32	Hupo_L1130_LTP*
HRR050799	A10	Haplotype 33	Hupo_L1131_LTP*
HRR050800	A17	Haplotype 34	Hupo_L1132_LTP
HRR050801	G2a1f	Haplotype 35	Hupo_L1133_LTP
HRR050802	D4b2b	Haplotype 36	Sanheyi_L1127_LTP
HRR050803	G2b1a2	Haplotype 37	Sanheyi_L1128_LTP
HRR050804	F1b1+@152	Haplotype 38	Sanheyi_L3184_LTP*
HRR050805	C4a1a2	Haplotype 39	Liuwan_L3257_LTP*
HRR050806	M9a	Haplotype 40	Liuwan_L3258_LTP
HRR050807	A15a	Haplotype 41	Hualongqunke_L3259_LTP
HRR050827	A15a	Haplotype 41	Xiaoenda_L3222_HTP
HRR050808	A17	Haplotype 42	Hualongqunke_L3228_LTP*
HRR050813	A17	Haplotype 42	Guidehexi_L3265_LTP
HRR050809	D4h1c	Haplotype 43	Lajigai_L3159_LTP*
HRR050810	G1c2	Haplotype 44	Lajigai_L3161_LTP
HRR050811	Z4a1a	Haplotype 45	Lajigai_L3190_LTP
HRR050812	G2a4	Haplotype 46	Guidehexi_L3264_LTP
HRR050814	D4b2b	Haplotype 47	Guidehexi_L3266_LTP
HRR050815	N9a9	Haplotype 48	Lierbao_L3229_LTP*
HRR050816	D4	Haplotype 49	Wenpuju_L3189_LTP*
HRR050817	M11a2	Haplotype 50	Yushu_L3164_HTP*
HRR050818	D5a2a	Haplotype 51	Pukagongma_L0544_HTP*
HRR050819	A15c1	Haplotype 52	Pukagongma_L0545_HTP
HRR050820	D5a2a1	Haplotype 53	Pukagongma_L0546_HTP*
HRR050821	G2a1h	Haplotype 54	Pukagongma_L0547_HTP*
HRR050822	G2b2a	Haplotype 55	Butaxiongqu_L0516_HTP*
HRR050823	M9a1a1c1b1a	Haplotype 56	Chaxiutang_L3233_HTP*
HRR050824	B4d1l23	Haplotype 57	Redilong_L3234_HTP*
HRR050825	F1g	Haplotype 58	Xiaoenda_L3219_HTP*
HRR050826	G2a1	Haplotype 59	Xiaoenda_L3220_HTP*
HRR050828	U5a1a1	Haplotype 60	Gelintang_L0517_HTP*
Jeong et al study	D4j1b	Haplotype 61	Chokhopani_C1_HTP*
Jeong et al study	M9a1a2	Haplotype 62	Mebrak_M240_HTP*
Jeong et al study	Z3a1a	Haplotype 63	Mebrak_M344_HTP*
Jeong et al study	M9a1a1c1b1a	Haplotype 64	Mebrak_M63_HTP*
Jeong et al study	M9a1a1c1b1a	Haplotype 65	Samdzong_S10_HTP*
Jeong et al study	M9a1a	Haplotype 66	Samdzong_S35_HTP*
Jeong et al study	F1c1a1a	Haplotype 67	Samdzong_S40_HTP*
Jeong et al study	F1d	Haplotype 68	Samdzong_S41_HTP*

*individuals with date information in Table S1 and Jeong et al.
boxes are individuals sharing same haplotype

Table S4. Present-day populations used in this study (and their grouping in this study)

Population	n	Group 1	Group 2	Reference
Daur	10	N.China	China	[19]
Hezhen	10	N.China	China	[19]
Mongolia	10	N.China	China	[19]
Oroqen	10	N.China	China	[19]
Tu	10	N.China	China	[19]
Xibo	9	N.China	China	[19]
Naxi	10	S.China	China	[19]
Dai	10	S.China	China	[19]
Han	45	S.China	China	[19]
Lahu	10	S.China	China	[19]
Miao	10	S.China	China	[19]
She	10	S.China	China	[19]
Tujia	10	S.China	China	[19]
Yi	10	S.China	China	[19]
Yunnan.Han	8	S.China	China	[20]
Hakka	45	S.China	China	[21]
Minnan	50	S.China	China	[21]
Kyrgyz	125	China.Xinjiang	China.Xinjiang	[22]
Sarikoli.Tajik	86	China.Xinjiang	China.Xinjiang	[22]
Uygur	37	China.Xinjiang	China.Xinjiang	[19, 22]
Wakhan.Tajik	66	China.Xinjiang	China.Xinjiang	[22]
Chamdo	5	China.Tibet	China.Tibet	[23]
Lhasa	7	China.Tibet	China.Tibet	[23]
Nagqu	17	China.Tibet	China.Tibet	[24]
Ngari	1	China.Tibet	China.Tibet	[23]
Nyingchi.Deng	91	China.Tibet	China.Tibet	[25]
Nyingchi.Lhoba	91	China.Tibet	China.Tibet	[25]
Nyingchi.Monpa	22	China.Tibet	China.Tibet	[25]
Shannan	9	China.Tibet	China.Tibet	[23]
Sherpa	6	China.Tibet	China.Tibet	[25]
Shigatse	18	China.Tibet	China.Tibet	[24]
Shigatse.Sherpa	76	China.Tibet	China.Tibet	[25]
Shigatse.Tingri	86	China.Tibet	China.Tibet	[25]
Nepalese	21	Nepal	Nepal	[26]
Sherpa	83	Nepal	Nepal	[27]
Tharu	35	Nepal	Nepal	[28]
Kamar	53	N.India	S.Asia	[29]
Malpaharia	15	N.India	S.Asia	[29]
Munda	30	N.India	S.Asia	[29]
Dirang.Monpa	30	NE.India	NE.India	[29]
Monpa.Dirang	32	NE.India	NE.India	[29]
Gallong	39	NE.India	NE.India	[29]
Lachungpa	25	NE.India	NE.India	[29]

Lepcha	20	NE.India	NE.India	[29]
Shertukpen	15	NE.India	NE.India	[29]
Sonowal.Kachari	19	NE.India	NE.India	[29]
Toto	28	NE.India	NE.India	[29]
Wanchoo	22	NE.India	NE.India	[29]
Pauri.Bhuiya	32	E.India	S.Asia	[29]
Andh	19	W.India	S.Asia	[29]
Dongri.Bhill	43	W.India	S.Asia	[29]
Hill.Kolam	8	W.India	S.Asia	[29]
Kathakur	19	W.India	S.Asia	[29]
Kathodi	15	W.India	S.Asia	[29]
Katkari	19	W.India	S.Asia	[29]
Korku	15	W.India	S.Asia	[29]
Madia	20	W.India	S.Asia	[29]
Mathakur	11	W.India	S.Asia	[29]
Nihal	30	W.India	S.Asia	[29]
Betta.Kuruba	30	S.India	S.Asia	[29]
Jenu.Kuruba	79	S.India	S.Asia	[29]
Balochi	24	Pakistan	S.Asia	[19]
Brahui	25	Pakistan	S.Asia	[19]
Burusho	25	Pakistan	S.Asia	[19]
Hazara	24	Pakistan	S.Asia	[19]
Kalash	25	Pakistan	S.Asia	[19]
Makrani	25	Pakistan	S.Asia	[19]
Pathan	25	Pakistan	S.Asia	[19]
Sindhi	25	Pakistan	S.Asia	[19]
Altaian.Kazakh	12	Russia	N.Asia	[30]
Altaian.Kizhi	16	Russia	N.Asia	[30]
Barghut	14	Russia	N.Asia	[30]
Buryat	53	Russia	N.Asia	[30]
Khamnigan	14	Russia	N.Asia	[30]
Yakut	25	Russia	N.Asia	[30]
Lowland.Taijik	28	Tajikistan	C.Asia	[22]
Pamir.Tajik	50	Tajikistan	C.Asia	[22]
Ami	50	Austronesian	Austronesian	[21]
Atayal	50	Austronesian	Austronesian	[21]
Bunun	50	Austronesian	Austronesian	[21]
Makatao	50	Austronesian	Austronesian	[21]
Paiwan	50	Austronesian	Austronesian	[21]
Puyuma	39	Austronesian	Austronesian	[21]
Rukai	50	Austronesian	Austronesian	[21]
Saisiat	24	Austronesian	Austronesian	[21]
Tao	44	Austronesian	Austronesian	[21]
Tsou	48	Austronesian	Austronesian	[21]
Arakanese	4	Myanmar	Myanmar	[31]
Bamar	23	Myanmar	Myanmar	[31]

Burmans	34	Myanmar	Myanmar	[31]
Chin	18	Myanmar	Myanmar	[31]
Karen	12	Myanmar	Myanmar	[31]
Mon	2	Myanmar	Myanmar	[31]
Naga	10	Myanmar	Myanmar	[31]
Rakhine	11	Myanmar	Myanmar	[31]
Shan	2	Myanmar	Myanmar	[31]
Laos	24	Laos	MSEA	[32]
Cambodian	11	Cambodia	MSEA	[19]
Black.Tai	50	Thailand	MSEA	[33]
Blang	50	Thailand	MSEA	[33]
Bru	24	Thailand	MSEA	[33]
Htin	75	Thailand	MSEA	[33]
Kalueng	25	Thailand	MSEA	[33]
Khamu	25	Thailand	MSEA	[33]
Khmer	44	Thailand	MSEA	[33]
Khon.Mueang	244	Thailand	MSEA	[33]
Lao	25	Thailand	MSEA	[33]
Lao.Isan	100	Thailand	MSEA	[33]
Lawa	70	Thailand	MSEA	[33]
Mon	110	Thailand	MSEA	[33]
Nyahkur	23	Thailand	MSEA	[33]
Nyaw	25	Thailand	MSEA	[33]
Paluang	25	Thailand	MSEA	[33]
Phuan	125	Thailand	MSEA	[33]
Phutai	25	Thailand	MSEA	[33]
Seak	26	Thailand	MSEA	[33]
Shan	24	Thailand	MSEA	[33]
Soa	22	Thailand	MSEA	[33]
Suay	25	Thailand	MSEA	[33]
Yuan	42	Thailand	MSEA	[33]
CoLao	34	Vietnam	MSEA	[32]
Dao	44	Vietnam	MSEA	[32]
Ede	24	Vietnam	MSEA	[32]
Giarai	30	Vietnam	MSEA	[32]
HaNhi	33	Vietnam	MSEA	[32]
HMong	41	Vietnam	MSEA	[32]
Kinh	51	Vietnam	MSEA	[32]
LaChi	36	Vietnam	MSEA	[32]
LaHu	32	Vietnam	MSEA	[32]
LoLo	36	Vietnam	MSEA	[32]
Mang	37	Vietnam	MSEA	[32]
Nung	37	Vietnam	MSEA	[32]
PaThen	36	Vietnam	MSEA	[32]
PhuLa	35	Vietnam	MSEA	[32]
SiLa	31	Vietnam	MSEA	[32]

Tay	48	Vietnam	MSEA	[32]
Thai	24	Vietnam	MSEA	[32]
Total individuals	**4,656**		**(137 populations)**	

Table S5. Haplogroup frequencies between ancient and present-day plateau populations

	HTP	LTP	Tibetan
A+152+16362	0	0	0.5
A10	0	1.8	0
A11+16234	0	0	0.2
A11a	0	0	4.1
A11b	0	0	0.5
A15a	0	1.8	0.2
A15c1	5	0	3.7
A17	0	3.6	0.9
A21	0	0	0.9
A6	0	0	1.4
A6b	0	0	0.5
A7	0	0	1.1
B4a1c4	0	0	0.2
B4c1b2c	0	1.8	0
B4c1c1	0	1.8	0
B4d1	0	1.8	0
B4d123	5	0	0.2
B4j	0	3.6	0
B5b1	0	0	0.2
C4+152+16093	0	0	0.2
C4a1a2	0	1.8	0
C4a1a4a	0	0	0.2
C4a2b	0	0	0.9
C4a2b2	0	0	1.1
C4a2b2a	0	0	3.4
C4d	0	0	0.7
C7b	0	1.8	0
D2b1	0	0	0.2
D4	0	5.5	0.2
D4b2b	0	5.5	0.2
D4b2b5	0	0	0.5
D4e1a	0	0	0.2
D4e1a2	0	1.8	0
D4h1c	0	1.8	1.8
D4h4	0	0	0.2
D4i	0	14.5	0
D4j	0	1.8	0
D4j11	0	1.8	0
D4j13	0	0	0.7
D4j15	0	0	0.2
D4j1a1	0	0	0.7
D4j1a1a	0	0	0.7
D4j1a2	0	0	0.2

D4j1b	5	1.8	0.7
D4j3	0	1.8	0.2
D4n2	0	0	0.5
D4q	0	0	0.9
D5a2a	5	0	0
D5a2a1	5	0	0.7
D5a2a1b	0	1.8	3.4
D5a2b	0	0	0.9
D5a3a	0	0	0.7
D6a1	0	0	0.7
F1a1	0	0	0.5
F1a1b	0	1.8	0
F1a1c	0	0	0.2
F1b1+@152	0	3.6	0.2
F1c1a1a	5	0	0.5
F1c1a2	0	0	1.6
F1d	5	0	0.9
F1d1	0	0	2.1
F1f	0	0	0.2
F1g	5	0	2.1
F2a1	0	0	0.5
F2g	0	1.8	0
G1a2	0	0	0.2
G1c	0	1.8	0
G1c2	0	1.8	0
G2a+152	0	1.8	0
G2a1	5	5.5	1.1
G2a1+16189	0	0	0.2
G2a1f	0	3.6	0
G2a1h	5	0	0
G2a4	0	3.6	0
G2b1a2	0	1.8	0
G2b2a	5	1.8	0
G3a1	0	0	0.2
G3a1a	0	0	0.5
G3a2	0	1.8	0
G3b	0	0	0.5
G3b1	0	0	0.9
H10a1	0	0	0.2
M10a1	0	1.8	0
M10a1b	0	0	0.5
M11a1	0	0	0.5
M11a2	5	0	0.9
M12a1b	0	0	0.5
M13a1b	0	0	0.9
M13a2	0	0	2.7

M33b1	0	0	1.8
M38	0	0	0.2
M3d1a1	0	0	0.7
M49e	0	0	0.2
M54	0	0	0.5
M5b2b1a	0	0	0.7
M5c2	0	0	0.2
M60a1	0	0	0.2
M60a2	0	0	0.5
M62a	0	0	0.5
M62b	0	0	0.2
M62b+204	0	0	0.5
M62b1	0	0	2.1
M62b2	0	0	0.7
M70	0	0	0.2
M7b1a1+(16192)	0	0	0.9
M9a	0	1.8	0.2
M9a1a	5	0	1.6
M9a1a1c1a	0	0	0.2
M9a1a1c1b1a	15	0	11.4
M9a1a1c1b1a1	0	0	1.6
M9a1a1c1b1a2	0	0	0.5
M9a1a2	5	0	2.3
M9a1b	0	0	0.7
M9a1b+150	0	0	2.3
M9a1b1	0	0	6.2
M9a1b1c	0	0	2.7
M9a1b2	0	0	0.2
N11a1	0	0	0.5
N9a9	0	1.8	0
R	0	1.8	0
R+16189	0	1.8	0.2
R11b1b	0	0	0.2
R22	0	0	0.2
U2a2	0	0	0.2
U2b1	0	0	0.2
U2b1a	0	0	0.7
U5a1a1	5	0	0
U7a3a	0	0	0.5
W	0	0	0.2
Y1a	0	0	0.2
Z3a	0	0	0.2
Z3a1a	5	0	0
Z3b	0	0	1.8
Z4a1a	5	1.8	0
Z7	0	0	0.2

Table S6. Haplogroups (top) and haplotypes (bottom) shared among populations

	North Asia	Central Asia	China.Xinjiang	China	LTP	HTP	China.Tibet	Nepal	Northeast India	South Asia	Myanmar	MSEA	Austronesian
North Asia	52.63	7.24	19.08	4.61	1.32	0.66	1.32	0.66	1.32	7.89	0.66	2.63	0.00
Central Asia	11.11	16.16	44.44	0.00	0.00	0.00	0.00	2.02	0.00	21.21	2.02	3.03	0.00
Xinjiang	8.92	13.54	26.77	8.31	3.08	1.23	6.46	0.62	1.85	17.54	0.92	10.15	0.62
China	1.96	0.00	7.56	24.37	5.60	2.52	11.48	0.84	3.08	1.68	1.68	32.77	6.44
LTP	2.17	0.00	10.87	21.74	15.22	4.35	16.30	1.09	6.52	2.17	5.43	10.87	3.26
HTP	1.92	0.00	7.69	17.31	7.69	1.92	26.92	9.62	7.69	5.77	1.92	11.54	0.00
Tibet	0.51	0.00	5.37	10.49	3.84	3.58	31.71	10.74	11.00	1.53	2.56	17.14	1.53
Nepal	0.81	1.63	1.63	2.44	0.81	4.07	34.15	21.14	8.94	13.01	3.25	7.32	0.81
Northeast India	0.84	0.00	2.52	4.62	2.52	1.68	18.07	4.62	48.32	4.20	3.36	8.40	0.84
South Asia	1.96	3.43	9.30	0.98	0.33	0.49	0.98	2.61	1.63	73.41	1.14	3.75	0.00
Myanmar	0.82	1.64	2.46	4.92	4.10	0.82	8.20	3.28	6.56	5.74	22.95	37.70	0.82
MSEA	0.41	0.30	3.34	11.85	1.01	0.61	6.79	0.91	2.03	2.33	4.66	62.72	3.04
Austronesian	0.00	0.00	0.48	5.57	0.73	0.00	1.45	0.24	0.48	0.00	0.24	7.26	83.54

	North Asia	Central Asia	China.Xinjiang	China	LTP	HTP	China.Tibet	Nepal	Northeast India	South Asia	Myanmar	MSEA	Austronesian
North Asia	94.55	0.00	2.73	0.00	0.00	0.00	1.36	0.00	0.68	0.68	0.00	0.00	0.00
Central Asia	0.00	88.52	10.04	0.00	0.00	0.00	0.00	0.00	0.00	1.43	0.00	0.00	0.00
China.Xinjiang	1.63	2.86	87.75	1.23	0.41	0.00	1.23	0.00	0.00	3.68	0.00	0.82	0.41
China	0.00	0.00	1.02	89.43	0.34	0.00	1.36	0.00	0.00	0.34	0.00	6.14	1.36
LTP	0.00	0.00	1.86	1.86	85.11	1.86	9.31	0.00	0.00	0.00	0.00	0.00	0.00
HTP	0.00	0.00	0.00	0.00	5.00	90.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
China.Tibet	0.61	0.00	0.91	1.21	1.51	0.30	88.19	2.72	2.12	0.30	0.00	2.12	0.00
Nepal	0.00	0.00	0.00	0.00	0.00	0.00	9.30	84.51	2.07	1.03	0.00	3.10	0.00
Northeast Asia	0.57	0.00	0.00	0.00	0.00	0.00	4.01	1.15	93.13	0.00	0.00	1.15	0.00
South Asia	0.18	0.18	1.63	0.18	0.00	0.00	0.18	0.18	0.00	97.10	0.00	0.36	0.00
Myanmar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	89.62	10.38	0.00
MSEA	0.00	0.00	0.19	1.68	0.00	0.00	0.65	0.28	0.19	0.19	1.03	95.33	0.47
Austronesian	0.00	0.00	0.34	1.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	96.59

Table S7. Haplotypes shared between populations

Population 1	Mean age	Population 2	Mean age	Haplogroup
Between HTP and China.Tibet				
HTP_Pukagongma_L0544	2,812	Tibet_Deng_KT725920	present-day	D5a2a
Between HTP and LTP				
HTP_Xiaoenda_L3222	?	LTP_Lajigai_L3190	?	Z4a1a
Between LTP and China.Tibet				
LTP_Mogou_L3218	?	Tibet_Lhoba_KT726067	present-day	D5a2a1b
LTP_Mogou_L3218	?	Tibet_Lhoba_KT726094	present-day	D5a2a1b
LTP_Mogou_L3218	?	Tibet_Lhoba_KT726097	present-day	D5a2a1b
LTP_Mogou_L3218	?	Tibet_Lhoba_KT726115	present-day	D5a2a1b
LTP_Yingpanshan_L0526	?	Tibet_Deng_KT725924	present-day	D4e1a2
LTP_Zongri_D1952	4,750	Tibet_Monpa_KT726144	present-day	D4j1b
LTP_Dazhuang_L3223	4,412	Tibet_Tingri_KT726030	present-day	G2a1
LTP_Dazhuang_L3223	4,412	Tibet_Deng_KT725937	present-day	G2a1
LTP_Hualongqunke_L3259	?	Tibet_Tingri_KT726018	present-day	A15a
Between LTP and China				
LTP_Hupo_L1130	3,989	South China_Hakka_HAK19	present-day	D4b2b
Between LTP and China.Xinjiang				
LTP_Dazhuang_L3223	4,112	Xinjiang_Uygur_MF523002	present-day	G2a1
LTP_Dazhuang_L3223	4,112	Xinjiang_Uygur_MF523003	present-day	G2a1

Haplotype used is the mtDNA coding region sequence

Mean age, years ago, are calibrated radiocarbon dates are from Table S1

Table S8. Systematic comparison of the best grouping with ancient plateau populations using analysis of molecular variance (AMOVA)

Classification*	Source of variance	d.f.	Variance components	%Variance	Fixation index	*P*-value**
(HTP, LTP), NA, CA, XJ, CH, TB, NP, NEI, SA, MM, MSEA, AN	Among groups	10	0.0845	0.42	*FCT* = 0.00425	0.313
	Among population within groups	2	1.54665	7.78	*FSC* = 0.07808	<0.001
	within populations	4726	18.26134	91.8	*FST* = 0.08200	<0.001
(HTP, LTP, CN), NA, CA, XJ, TB, NP, NEI, SA, MM, MSEA, AN	Among groups	10	0.90589	4.56	*FCT* = 0.04556	0.0665
	Among population within groups	2	0.71638	3.6	*FSC* = 0.03775	<0.001
	within populations	4726	18.26134	91.84	*FST* = 0.08159	<0.001
(HTP, LTP, TB), NA, CA, XJ, CN, NP, NEI, SA, MM, MSEA, AN	Among groups	10	0.78213	3.93	*FCT* = 0.03933	0.0831
	Among population within groups	2	0.84089	4.23	*FSC* = 0.04402	<0.001
	within populations	4726	18.26134	91.84	*FST* = 0.08162	<0.001
(HTP, LTP, MM), NA, CA, XJ, CN, TB, NP, NEI, SA, MSEA, AN	Among groups	10	0.57496	2.89	*FCT* = 0.02892	0.139
	Among population within groups	2	1.04573	5.26	*FSC* = 0.05416	<0.001
	within populations	4726	18.26134	91.85	*FST* = 0.08152	<0.001
(HTP, LTP, NEI), NA, CA, XJ, CN, TB, NP, SA, MM, MSEA, AN	Among groups	10	0.52247	2.63	*FCT* = 0.02628	0.145
	Among population within groups	2	1.09866	5.53	*FSC* = 0.05675	<0.001
	within populations	4726	18.26134	91.85	*FST* = 0.08154	<0.001
(HTP, LTP, SA), NA, CA, XJ, CN, TB, NP, NEI, MM, MSEA, AN	Among groups	10	0.46907	2.36	*FCT* = 0.02359	0.188
	Among population within groups	2	1.15355	5.8	*FSC* = 0.05942	<0.001
	within populations	4726	18.26134	91.84	*FST* = 0.08160	<0.001
(HTP, LTP, AN), NA, CA, XJ, CN, TB, NP, NEI, SA, MM, MSEA	Among groups	10	0.03809	0.19	*FCT* = 0.00192	0.353
	Among population within groups	2	1.58712	7.98	*FSC* = 0.07996	<0.001
	within populations	4726	18.26134	91.83	*FST* = 0.08172	<0.001
(HTP, LTP, XJ), NA, CA, CN, TB, NP, NEI, SA, MM, MSEA, AN	Among groups	10	0.02064	0.1	*FCT* = 0.00104	0.406
	Among population within groups	2	1.59948	8.05	*FSC* = 0.08053	<0.001
	within populations	4726	18.26134	91.85	*FST* = 0.08149	<0.001
(HTP, LTP, MSEA), NA, CA, XJ, CN, TB, NP, NEI, SA, MM, AN	Among groups	10	-0.04193	-0.21	*FCT* = -0.00211	0.405
	Among population within groups	2	1.65999	8.35	*FSC* = 0.08333	<0.001
	within populations	4726	18.26134	91.86	*FST* = 0.08139	<0.001
(HTP, LTP, NP), NA, CA, XJ, CN, TB, NEI, SA, MM, MSEA, AN	Among groups	10	-0.05304	-0.27	*FCT* = -0.00267	0.408
	Among population within groups	2	1.67304	8.42	*FSC* = 0.08393	<0.001
	within populations	4726	18.26134	91.85	*FST* = 0.08148	<0.001
(HTP, LTP, NA), CA, XJ, CN, TB, NP, NEI, SA, MM, MSEA, AN	Among groups	10	-0.51686	-2.6	*FCT* = -0.02600	0.647
	Among population within groups	2	2.13628	10.75	*FSC* = 0.10473	<0.001
	within populations	4726	18.26134	91.85	*FST* = 0.08146	<0.001
(HTP, LTP, CA), NA, XJ, CN, TB, NP, NEI, SA, MM, MSEA, AN	Among groups	10	-1.15716	-5.82	*FCT* = -0.05821	0.873
	Among population within groups	2	2.77633	13.97	*FSC* = 0.13197	<0.001
	within populations	4726	18.26134	91.86	*FST* = 0.08145	<0.001

*Populations within parenthesis is treated as one group

Abbreviations: North Asia (NA), Central Asia (CA), Xinjiang (XJ), China (CN), Tibet (TB), Nepal (NP), Northeast India (NEI), South Asia (SA), Myanmar (MM), Mainland Southeast Asia (MSEA), Austronesian (AN)

**per 10,000 permutations

Table S9. Summary of 21 ancient plateau-related haplogroups selected for network analysis and Bayesian coalescence age estimates

Haplogroup	*n*	aDNA with same haplogroup	*n*	aDNA with radiocarbon dating	*n*	Present-day individuals in the same haplogroup*	Coalescence age, years ago (mean, 95% HPD)	Proportion that are Tibetan (%)
Within LTP								
A17	2	Hupo, Hualongqunke	1	Hualongqunke	23	Miao(1), Yi(1), Tingri(1), Lhoba(3), Kyrgyz(1), Blang(2), Lawa(7), Mon(1), HaNhi(2), PhuLa(4)	21,195 (29,298 – 13,551)	17
C7b	1	Shangluzhuang	1	Shangluzhuang	4	Naxi(2), Gallong(2)	14,469 (23,203 – 6,645)	0
D4	3	Yingpanshan, Zongri, Wenpuju	2	Zongri, Wenpuju	26	Han(1), Daur(1), Tu(1), Dai(1), Sherpa(1), Uygur(1), Tajik(2), Toto(1), Bamar(1), Hakka(1), Blang(1), Mueang(4), Lawa(3), Mon(1), Hmong(3), LaChi(2), PhuLa(1)	25,492 (36,880 – 16,680)	4
D4b2b	3	Hupo, Sanheyi, Guidehexi	1	Hupo	6	Han(1), Tu(1), Xibo(1), Tingri(1), Uygur(1), Khamu(1)	19,971 (27,706 – 12,731)	17
D4h1c	1	Lajigai	1	Lajigai	9	Tu(1), Tingri(1), Deng(7)	20,870 (31,485 – 12,180)	89
D4i	8	Zongri x8	8	Zongri x8	4	Miao(2), Japanese(2)	9,544 (16,454 – 5,040)	0
F1b1+@152	2	Heodong, Sanheyi	2	Heodong, Sanheyi	2	Tingri(1), Uygur(1)	20,514 (29,962 – 11,874)	50
R	1	Wuba	1	Wuba	3	Naga(1), Makatao(2)	54,726 (71,776 – 38,040)	0
R+16189	1	Qijiaping	1	Qijiaping	72	Han(3), Oroqen(1), Miao(1), Naxi(2), Tujia(2), Deng(1), Uygur(1), Tajik(1), Burmans(1), Hakka(1), Minnan(2), Tai(1), Lao(1), Mon(2), Phuan(1), CoLao(1), Dao(6), Hmong(6), Kinh(2), LaChi(9), LaHu(10), LoLo(14), Tay(3)	44,854 (61,796 – 32,056)	1
Between HTP and LTP								
D4j1b	2	Zongri, Chokhopani	2	Zongri, Chokhopani	11	Tingri(1), Monpa(1), Lhoba(1), Kyrgyz(2), Sherpa(1), Wanchoo(2), Mueang(1), Mon(1), Paluang(1)	10,508 (16,034 – 5,657)	27
G2a1	4	Zongri, Zongri, Dazhuang, Xiaoenda	3	Zongri, Dazhuang, Xiaoenda	7	Daur(1), Tingri(2), Deng(2), Lhoba(1), Bamar(1)	15,970 (22,667 – 10,186)	71

G2b2a	2	Zongri, Butaxiongqu	2	Zongri, Butaxiongqu	2	Gallong(1), Kathodi(1)	19,085 (29,021 – 10,837)	0
Within HTP								
D5a2a1	1	Pukagongma	1	Pukagongma	5	Sherpa(1), Tingri(1), Deng(1), Lawa(1), HaNhi(1)	15,049 (22,194 – 8,735)	60
F1c1a1a	1	Samdzong	1	Samdzong	3	Yi(1), Sherpa(1), Tingri(1)	11,949 (19,998 – 4,619)	67
F1d	1	Samdzong	1	Samdzong	14	Hezhen(1), Deng(1), Lhoba(3), Kyrgyz(1), Japanese(1), Minnan(1), Mon(1), PaThen(5)	16,152 (22,540 – 9,878)	29
F1g	1	Xiaoenda	1	Xiaoenda	21	Dai(1), Tingri(6), Lhoba(3), Kyrgyz(1), Hazara(1), Phuan(5), Kinh(3), PhuLa(1)	9,684 (14,544 – 5,883)	43
M11a2	1	Yushu	1	Yushu	7	Yi(2), Chamdo(1), Sherpa(1), Monpa(1), Deng(1), HaNhi(1)	26,744 (41,773 – 13,128)	57
M9a1a	1	Samdzong	1	Samdzong	9	Tingri(2), Deng(2), Lhoba(3), Sherpa(1), Minnan(1)	10,275 (17,503 – 4,124)	78
M9a1a1c1b1a	3	Chaxiutang, Mebrak, Samdzong	3	Chaxiutang, Mebrak, Samdzong	55	Tu(1), Tibetan(2), Lhasa(2), Nagqu(5), Shigatse(4), Tibetan Sherpa(10), Tingri(19), Monpa(3), Deng(1), Lhoba(4), Nepal Sherpa(2), Hazara(1), Buryat(1)	6,048 (7,890 – 4,353)	91
M9a1a2	1	Mebrak	1	Mebrak	11	Han(1), Nagqu(3), Shigatse(1), Sherpa(3), Deng(1), Lhoba(2)	9,883 (15,609 – 4,889)	91
Z3a1a	1	Mebrak	1	Mebrak	5	Gallong(1), Lachungpa(1), Lepcha(1), Mueang(1), HaNhi(1)	8,198 (13,353 – 3,718)	0
Total individuals	**41**		**36**		**299**			

*Parenthesis indicates the number of individuals in that population; their associated placement in the network is shown in Figure S1.

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