

Supplemental Data

Mitochondrial DNA and Y-Chromosome Variation

Provides Evidence for a Recent Common Ancestry

between Native Americans and Indigenous Altaians

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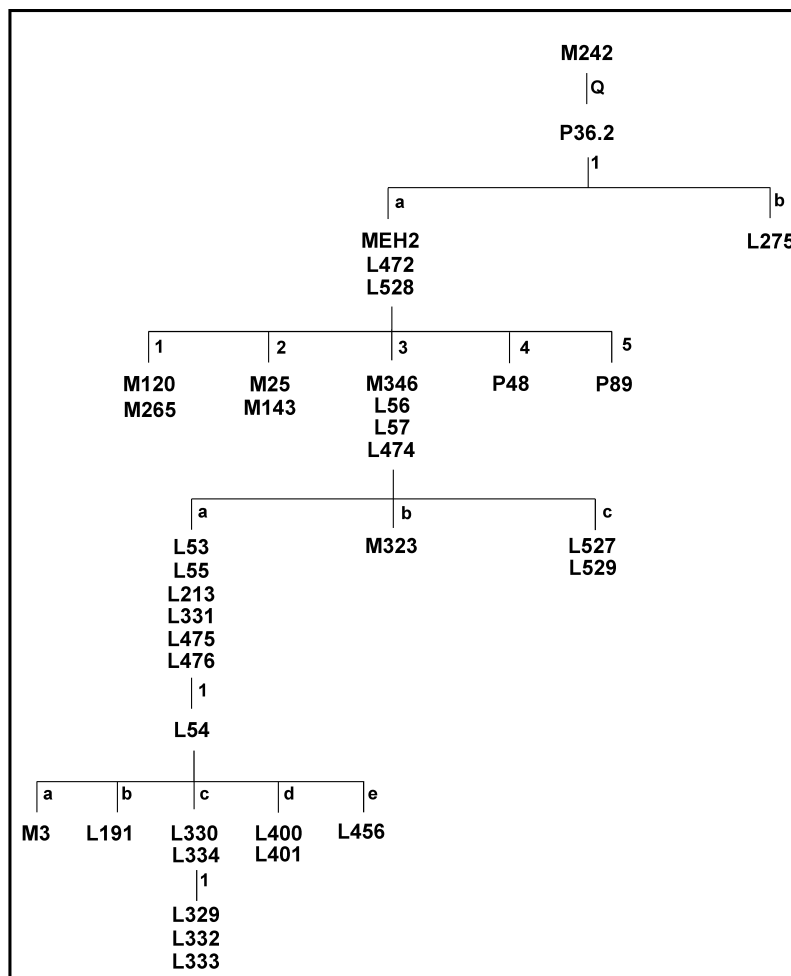


Figure S1: NRY haplogroup Q phylogeny

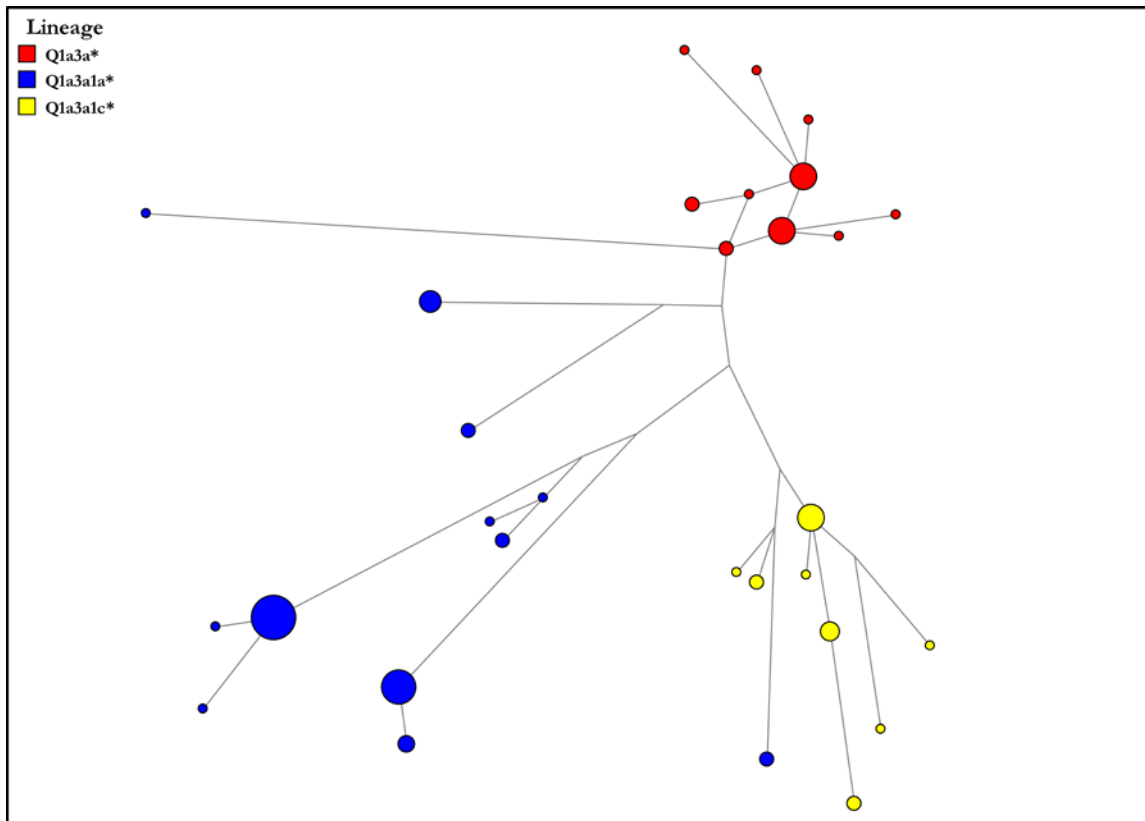


Figure S2: Reduced median-median joining network of 15 loci Y-STR haplotypes for haplogroup Q in Altaians and Native Americans

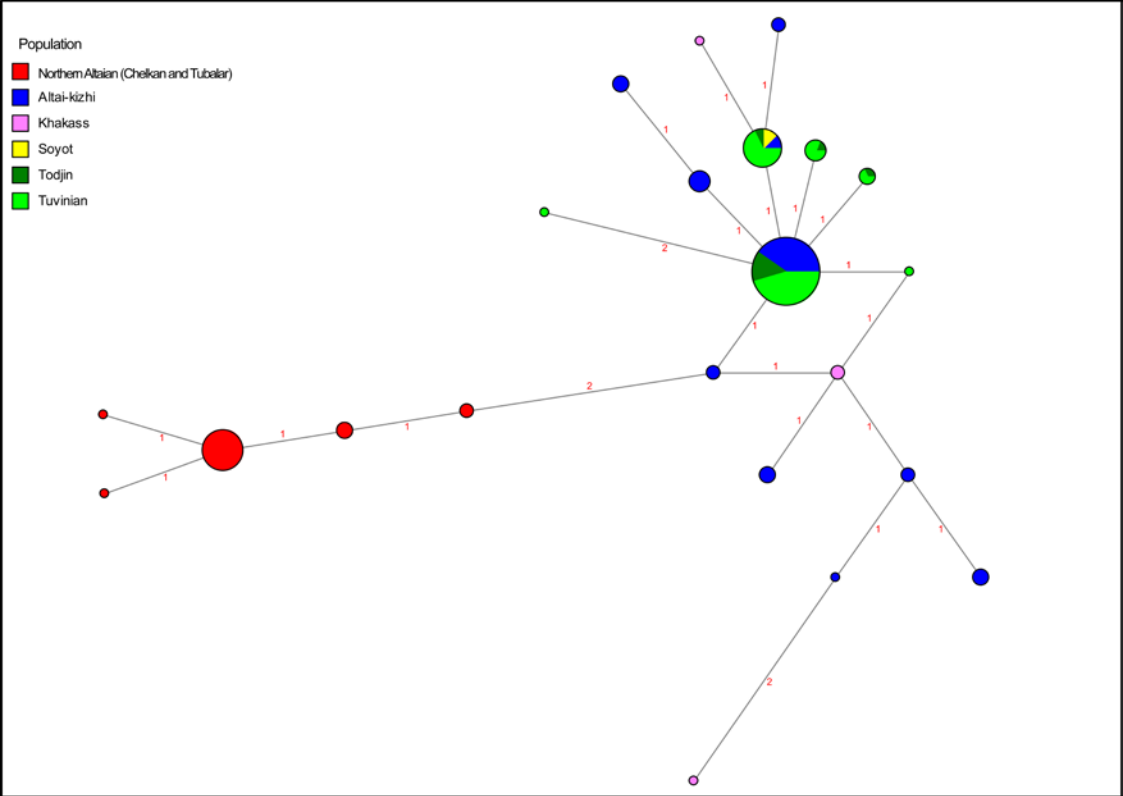


Figure S3: Reduced median-joining network of 10 loci Y-STR haplotypes for haplogroup Q in southern Siberians

Table S1: PCR-RFLP and deletion tests for mtDNA SNPs

Hg	SNP/Indel	RFLP Test	Primers (5'-3')	Size	T _m (C°)	Reference
A	663	+HaeIII 663	534-553 / 725-706	191	51	[1]
B	9-bp deletion	N/A	8188-8207 / 8366-8345	178/169	49	Modified from [1]
C	13263	-HincII 13259	13001-13020 / 13403-13384	402	45	Modified from [1]
C	13263	+AclI 13262	13001-13020 / 13403-13384	402	45	Modified from [1]
C4	15204	-BclI 15204	15161-15180 / 15676-15658	515	53	This study
D	5178A	-AclI 5176	5151-5170 / 5481-5464	330	55	[1]
D5	10397	+BsrI 10396	10279-10296 / 10569-10550	290	51	This study
E	7598	-HhaI 7598	7367-7384 / 7628-7610	261	51	Modified from [2]
F1	12406	-HpaI 12406	12385-12405 / 12576-12595	191	55	Modified from [2, 3]
F1	12406	-HincII 12406	12385-12405 / 12576-12595	191	55	Modified from [2, 3]
F2	7828	+HhaI 7828	6890-6909 / 7131-7115	241	47	This study
G	4883	+HaeII 4830	4651-4670 / 4952-4934	301	46	Modified from [2]
H	7028	-AclI 7025	6890-6909 / 7131-7115	241	47	[4]
H2	4769	+AclI 4769	4651-4670 / 4952-4934	303	49	This study
H8	13101	+HpaII 13101	13001-13020 / 13403-13384	402	45	This study
HV	14766	-MseII 14766	14407-14424 / 14810-14791	403	51	Modified from [5]
V	4577	-NlaI 4577	4500-4519 / 4678-4659	178	51	Modified from [4]
I, X	1719	-DdeI 1715	1615-1643 / 1899-1879	284	54	Modified from [4]
J	13708	-BsrOI 13704	13537-13556 / 13851-13832	314	51	Modified from [4]
K	9055	-HaeII 9052	8925-8953 / 9100-9081	175	53	Modified from [4]
M/	10398	+DdeI 10394	10279-10296 / 10569-10550	290	51	Modified from [1]
M	10400	+AclI 10398	10279-10296 / 10569-10550	290	51	Modified from [1]
N9	5417	+Tsp509I 5417	5151-5170 / 5481-5464	330	55	This study
R	12705	+MboII 12705	12599-12618 / 12785-12766	186	51	This study
R2	14305	-AclI 14304	13940-13959 / 14385-14366	445	57	This study
R6	12285	-AclI 12285	12104-12124 / 12338-12309	234	59	This study
T	15607	+AclI 15606	15409-15428 / 15728-15709	319	51	Modified from [4]
U	12308	+HinfI 12308	12104-12124 / 12338-12309 ^a	234	59	[4]
U1	13104	+MboI 13104	13001-13020 / 13403-13384	402	45	This study
U4	4646	+RsaI 4646	4500-4519 / 4678-4659	178	53	This study
U5	13617	-MboII 13617	13537-13556 / 13851-13832	314	51	This study
W	8994	-HaeIII 8994	8925-8953 / 9100-9081	175	53	Modified from [4]
X	14470	+AclI 14465	14407-14424 / 14810-14791	403	51	Modified from [5]
X2c	15310	+BsrDI 15310	15161-15180 / 15676-15658	515	53	This study
Y	7933	+MboI 7933	7871-7890 / 8020-8001	149	51	This study

References: [1] Torroni et al. 1993; [2] Torroni et al. 1994; [3] Ballinger et al. 1992; [4] Torroni et al. 1996; [5] Macaulay et al. 1999.

^a12338-12309 is a mismatch primer.

Table S2. NRY marker PCR and sequencing primers and conditions

Hg	Marker	SNP	Primers (5'-3')	Size	T _m (C°)	Reference
C3b	P39	G95A	AAAATTTGCCAAGCATGGTG	184	59	Designed from [6]
			CAAGGGGCAGATTGATTGAT			
N1b	P43	G268A	TTTGGAGGGACATTATTC	519	53	[5]
			GAAGCAATACTCTGAAAAAGT			
N1c	TAT-C M46	A69G	GACTCTGAGTGTAGACTTGTGA	112	60	[3]
			GAAGGTGCCGTAAAAAGTGTGAA			
C3d	M407	A149G	GTTATACCCCTGCTCTAAAGTGCCTC	418	57	[4]
			GTAGAGATGGGGCTTCACCGTGTAC			
Q1a3	M346	C33G	CCCCGTTTTTTCCTCTCTGCC	419	58	[4]
			AATCTGCCTTCCAACAACC			
R1a1	M17	68G del	CTGGTCATAACACTGGAATC	333/ 334	51	[2]
			TGAACCTACAATGTGAACT			
Q1a	MEH2	G880T	ATTTCATAATATTGATTCAGAACAG	938	52	[1]
			TACCATGAAAAATTCATAATCCACA			
C3e	P53.1	T112C	GATGTCACCTTCCGTCTA	476	51	[1]
			ACATGGTCATCTGTAGCTCC			
C3f	P62	443C insert	AACCCCTGCCACAAATACAT	623/ 624	58	[1]
			TCTGGAACCCCTGGAGAGATC			
N1c	P105	G580A	TTATTCCACCCAGCACTGTTA	1090	56	[1]
			AGGCACAAATGGTAAGGTCTT			
R1b	M343	C402A	TTTAACTCCTCCAGCTCTGCA	424	59	[1]
			ACCCACATATCTCCAGG			
Q1a4	P48	428T insert	TGAAGGACAGTAAGTACACA	637/ 638	47	[1]
			TAAGTCCATTGATCTACAGA			
Q1a5	P89	G258T	ACATTACAGGACCTTGAT	857	47	[1]
			TGCCTAACAACTCTCC			
R1a1d	P98	C504T	TGGAGGGTAAGTGAGTAG	954	47	[1]
D3	P99	C533T	TTTTAATGGAACACCGTAG			
O3a3c2	P101	G360A	TGAGGTTGATGTTACTAAGATC	506	51	[1]
			CCTGCTAAATCAGTTCCACAC			
R1a1e	PK5	C186T	TTCCAAACACATGCTTCTGC	393	57	[1]
			TAAAAAGGAGGAGGGACTGC			

Table 3.5 References: [1] Karafet et al. 2008; [2] Underhill et al. 1997; [3] Zerjal et al. 1997; [4] Sengupta et al. 2006; [5] Karafet et al. 2002; [6] Zegura et al. 2004

Table S3. Altaian mtDNA haplotypes

Hg	SNPs	HVS1 (16024-16400) 16,000+	Chelkan	Kumandin	Tubalar	Altai-kizhi
A4	663; 10873	223-290-319-362				4
A4	663; 10873	192-223-290-319-362		1		1
A4a1	663; 10873	223-249-290-319-362				3
B4b1	9-bp del; 10873; 12705	086-136-189-217	3	2	2	4
C	10398; 10400; 13263	223-298-327	1	8	10	5
C	10398; 10400; 13263	223-242-298-327				1
C	10398; 10400; 13263	093-223-298-327				1
C	10398; 10400; 13263	223-298-311-327		1	3	
C	10398; 10400; 13263	223-298-327-329				1
C	10398; 10400; 13263	223-298-327-329h(A/G)				1
C1a	10398; 10400; 13263	223-298-325-327-356				2
C4a1	10398; 10400; 13263	129-150-223-298-327				1
C4a1b	10398; 10400; 13263	129-223-298-327				2
C4a1c	10398; 10400; 13263	093-129-223-298-327	3			19
C4a1c	10398; 10400; 13263	093-129-223-298-311-327				2
C4a1c	10398; 10400; 13263	093-129-223-298-312-327				1
C4a2	10398; 10400; 13263	171-223-298-327-344-357				6
C4a2	10398; 10400; 13263	171-223-278-298-327-344-357				4
C4a2	10398; 10400; 13263	171-223-278-298-344-357				2
C4a2	10398; 10400; 13263	171-223-278-298-344h(T/C)-357				1
C4a2	10398; 10400; 13263	171-223-298-327-344	3		1	
C4b3	10398; 10400; 13263	223-291-298-327			5	22
C5	10398; 10400; 13263	223-288-291-298-327			1	
C5	10398; 10400; 13263	148-223-288-298-327				3
C5a	10398; 10400; 13263	223-261-288-298				5

C5b	10398; 10400; 13263	093-223-288-291-298-327	7	11	3	2
C5b	10398; 10400; 13263	093-223-288-291-298-311-327		1		
C5b	10398; 10400; 13263	093-223-288-291-298-327-362			1	
C5c	10398; 10400; 13263	093-223-288-298-327-390				6
D	5178A; 10398; 10400	223-362	3		3	8
D	5178A; 10398; 10400	218-223-362				1
D	5178A; 10398; 10400	140-223-274-311-362				8
D	5178A; 10398; 10400	082-147A-223-362	3		2	1
D4	5178A; 10398; 10400	223-319-362				5
D4b1	5178A; 10398; 10400	093-172-173-215-223-319-362		3	6	3
D4j	5178A; 10398; 10400	223-291-362				3
D4m	5178A; 10398; 10400	042-214-223-362	4	5	4	3
D4o	5178A; 10398; 10400	223-290-362				3
D4o1	5178A; 10398; 10400	176-183-223-274-290-319-342-362	3		2	
D4o1	5178A; 10398; 10400	129-176-183-223-274-290-319-342-362			1	
D5a2a	5178A; 10397; 10398; 10400	092-126-164-189-223-266-362			3	2
D5c2	5178A; 10397; 10398; 10400	129-188.1C-193.1C-362-390	8	2		
F1a1	10873; 12406; 12705	162-172-304	3	1		
F1b	10873; 12406; 12705	189-232A-249-304-311	7	1		4
F1b	10873; 12406; 12705	189-232A-249-294-304-311				2
F1b	10873; 12406; 12705	189-270-304				1
F1d'e	10873; 12406; 12705	189-304				16
F2	7828; 10873; 12705	092A-291-304	14		2	7
G1a1	4833; 10398; 10400	223-325-362				9
G2a	4833; 10398; 10400	223-227-278-362	2			
G2a	4833; 10398; 10400	223-227 h(G/A)-278-362	1			
G2a	4833; 10398; 10400	223-278-304-362				1
G2a	4833; 10398; 10400	223-278-287-304-362				2
H	7028; 10873; 12705; 14766	CRS			1	
H	7028; 10873; 12705; 14766	311				2
H	7028; 10873; 12705; 14766	092-245-362				1
H	7028; 10873; 12705; 14766	092h(A/C)-245-362				1

H	7028; 10873; 12705; 14766	169-184			1
H	7028; 10873; 12705; 14766	261-311			1
H1b	7028; 10873; 12705; 14766	189-356		1	
H1b	7028; 10873; 12705; 14766	080-189-356	1		1
H2a1	4769; 7028; 10873; 12705; 14766	354			8
H2a1	4769; 7028; 10873; 12705; 14766	311-354			1
H8	7028; 10873; 12705; 13101; 14766	288-362		3	2
I	1719; 8251; 10398; 10873	129-223-391			4
J	10398; 10873; 12705; 13708	069-126-241			3
J	10398; 10873; 12705; 13708	069-126-241-301			1
J	10398; 10873; 12705; 13708	069-126-189-260			1
J	10398; 10873; 12705; 13708	069-126-145-261-290			4
J1b	10398; 10873; 12705; 13708	069-126-145-172-222-261			1
J1b	10398; 10873; 12705; 13708	069-126-145-172-222-261-304G			1
K1a1a	9055; 10398; 10873; 12308; 12705	093-224-311			7
K1a1a	9055; 10398; 10873; 12308; 12705	093-189-224-311			2
M8a	10398; 10400; 14470	184-223-298-319			6
M8a	10398; 10400; 14470	184 h(T/C)-223-298-319			1
M8a	10398; 10400; 14470	134-184-223-298-319			2
M8a1	10398; 10400; 14470	172-184-189-223-298-319			1
M9a1a	10398; 10400	223-234-316-362			3
M9a1a	10398; 10400	223-234-316-344-362			1
M10	10398; 10400	129-186-223-311-362	1		
M10a1	10398; 10400	093-193-223-311-357-381			1
N1b	10873	145-176G-223-258-291-390			1
N9a	5417; 10873	223-248-257A-261-311	16	1	2
R9b1	10873; 12705	093-207-304-362-399			6
R9b1	10873; 12705	145-192-243-304-309-390	1	2	
T1a	10873; 12705; 15607	126-163-186-189-294		1	
T2b	10873; 12705; 15607	111-126-294-296-304-311-327			1
U2e	10398; 10873; 12308; 12705	051-129C-189-214-258-362			2
U4	4646; 10398; 10873; 12308; 12705	356	1		6

U4	4646; 10398; 10873; 12308; 12705	129-356			1	
U4b1b	4646; 10398; 10873; 12308; 12705	311-356	3	2	4	2
U5a1	10398; 10873; 12308; 12705; 13617	192-241-256-270-287-304-325-399	2	5	2	3
U5a1	10398; 10873; 12308; 12705; 13617	192-256-270-319-320-399			1	
U5b2	10398; 10873; 12308; 12705; 13617	192-249-311				5
U5b2	10398; 10873; 12308; 12705; 13617	093-192-249-311				1
W6	1719; 8994; 10873	192-223-292-325	1			
X2e	10873; 14470; 15310	189-223-278		2		6
Z	10398; 10400	185-223-260-298				8
Z1a	10398; 10400	129-185-223-224-260-298			2	4
			91	52	71	276

Table S4. Altaian Y-chromosome STR haplotypes

Haplotype #	Haplogroup	DYS19	DYS385	DYS389I	DYS389b	DYS390	DYS391	DYS392	DYS393	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS635	Y GATA H4	Chelkan	Kumandin	Tubalar	Altai-kizhi
1	C3*	15	12-15	13	16	24	9	11	13	14	11	11	null	16	16	21	11				2
2	C3*	15	12-13	13	16	25	10	11	13	14	10	10	22	15	18	21	11				3
3	C3*	16	12-15	13	16	24	9	11	13	14	11	11	null	16	16	21	11				6
4	C3*	15	12-15	13	16	24	9	11	13	14	12	11	null	16	16	21	11				1
5	C3*	16	12-15	11	16	24	9	11	13	14	11	11	null	16	16	21	11				1
6	C3*	15	13-13	13	16	25	10	11	13	14	10	10	22	15	18	21	11				1
7	C3*	16	12-15	13	16	24	9	11	13	14	11	11	null	16	16	21	11				1
8	C3*	16	12-16	13	16	24	9	11	13	14	11	11	null	16	16	21	11				1
9	C3*	16	12-15	13	16	24	9	11	13	14	11	11	null	15	16	21	11				1
10	C3*	15	12-15	13	16	24	9	11	13	14	11	11	null	16	16	21	11				1
11	C3*	16	12-15	13	16	24	9	11	13	14	11	11	null	16	16	20	11				1
12	C3c	16	12-12	14	17	23	9	11	13	14	10	11	20	15	19	23	10				1
13	C3c	15-17	12-12	14	17	24	9	11	13	14	10	11	20	15	18	22	10				1
14	C3c	15-17	12-12	14	17	24	9	11	13	14	10	11	20	15	18	23	10				1
15	C3c	15-16	12-12	14	17	23	9	11	13	14	10	11	20	15	18	23	10				1
16	C3c	15-17	12-12	14	17	24	9	11	13	15	10	11	20	15	18	23	10				1
17	D3a	15	11-11	14	16	25	11	7	13	14	11	13	18	15	17	21	11				1
18	D3a	15	11-11	14	16	26	11	7	13	14	11	12	19	15	17	21	11				2
19	D3a	15	11-11	14	16	25	11	7	13	14	11	11	19	15	17	21	11				2
20	D3a	15	11-11	14	16	25	11	7	13	14	11	12	19	15	17	21	11				1
21	E1b1b1c	13	17-18	13	18	25	9	11	14	14	10	12	20	15	17	21	11			1	
22	I2a	16	14-16	13	20	24	11	11	13	15	10	13	20	15	18	25	11			1	
23	J2a	14	15-16	13	16	23	10	11	12	15	9	11	21	15	18	23	11				3
24	L	15	9-16	13	17	24	10	14	12	16	10	11	19	15	17	22	11	1			
25	NO*(xN1,O)	14	12-12	13	17	23	11	14	13	14	10	10	19	15	17	24	11				1
26	N1*	17	11-13	14	17	24	10	14	14	15	9.*	11	20	17	17	23	11		1	3	
27	N1b*	14	12-13	13	16	23	10	14	12	14	10	10	19	15	17	23	12				1
28	N1b*	15	12-13	13	16	23	10	14	13	14	10	10	19	15	17	24	12	2			
29	N1b*	14	12-13	13	16	23	10	14	13	14	10	10	19	15	17	24	13	1			
30	N1b*	14	12-13	13	16	23	10	14	13	14	10	10	19	15	17	24	12	1			
31	N1b*	14	12-12	13	16	23	11	14	13	14	10	10	19	15	17	24	12	1			
32	N1b*	14	12-12	13	16	23	10	15	12	14	10	10	19	15	17	24	12				
33	N1b*	14	12-12	13	16	23	10	15	12	14	10	10	19	15	17	24	13		3		
34	N1b*	14	12-12	13	16	23	10	14	12	14	10	10	19	15	17	24	12		2		
35	N1b*	14	11-12	13	16	23	10	15	12	14	10	10	19	15	17	24	12		2		
36	N1c(xN1c1)	14	11-12	13	15	24	11	15	13	14	10	11	20	16	18	21	13				1
37	N1c1	14	11-11	13	16	23	11	14	14	14	10	10	19	14	17	22	12				1
38	N1c1	15	12-13	14	16	23	11	14	14	14	10	11	20	15	18	23	11				1
39	O3a3c*	15	13-18	12	17	23	10	13	12	15	10	12	19	15	17	19	12				1

Haplotype #	Haplogroup	DYS19	DYS385	DYS389I	DYS389b	DYS390	DYS391	DYS392	DYS393	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS635	Y GATA H4	Chelkan	Kumandin	Tubalar	Altai-kizhi
40	O3a3c1*	14	12-17	12	15	23	10	15	12	15	11	13	20	15	17	20	12			1	1
41	Q1a2	13	13-16	13	15	24	10	15	13	14	11	13	22	16	17	24	11			1	
49	Q1a3a1c*	13	15-19	14	17	24	10	14	13	14	11	12	19	17	16	22	11	1			1
50	Q1a3a1c*	13	15-18	14	19	23	10	15	14	13	11	12	19	15	16	22	11				8
51	Q1a3a1c*	13	14-14	13	18	23	10	14	13	13	11	12	19	15	16	22	11				4
52	Q1a3a1c*	13	15-16	13	18	23	10	14	13	13	11	12	19	15	18	22	11				2
53	Q1a3a1c*	13	15-16	13	19	23	10	14	13	13	11	11	18	15	18	22	11				2
54	Q1a3a1c*	13	15-16	13	17	23	10	14	13	13	11	12	19	15	18	22	11				2
55	Q1a3a1c*	13	15-16	13	17	23	9	14	13	13	11	12	19	15	17	22	11				1
56	Q1a3a1c*	13	14-14	13	18	23	10	14	13	13	11	12	19	14	16	22	11				1
57	Q1a3a1c*	13	15-16	14	18	23	10	14	13	13	11	12	19	15	18	22	11				1
58	Q1a3a1c*	13	15-19	14	17	23	10	14	13	14	11	12	19	17	16	22	11	2			
59	Q1a3a1c*	10	15-19	14	17	24	10	14	13	14	11	13	19	17	16	22	11	1			
60	Q1a3a1c*	13	15-19	14	17	25	10	14	13	14	11	13	19	17	16	22	11	1			
42	Q1a3a*	13	15-19	14	17	24	10	14	13	14	11	13	19	18	16	22	10	1			
43	Q1a3a*	13	15-19	14	17	24	10	14	13	14	11	13	19	17	16	22	11	6		1	
44	Q1a3a*	13	15-16	14	17	24	10	14	13	14	11	13	19	16	16	22	11	1		1	
45	Q1a3a*	13	15-18	14	17	24	10	14	13	14	11	13	19	16	16	22	11	1		4	
46	Q1a3a*	13	15-18	14	17	24	10	14	13	14	11	13	19	17	16	22	11	1			
47	Q1a3a*	13	15-18	15	17	24	10	14	13	14	11	13	19	16	16	22	12				1
48	Q1a3a*	13	15-17	14	17	24	10	14	13	14	11	12	19	16	16	22	11				2
61	R1a1a1*	17	11-17	14	17	26	11	11	13	14	11	11	19	15	15	23	11				2
62	R1a1a1*	16	11-14	14	18	25	11	11	13	14	11	10	21	16	15	23	10				5
63	R1a1a1*	15	11-15	12	18	25	11	11	13	14	11	10	21	15	15	23	12				1
64	R1a1a1*	16	11-17	14	17	26	11	11	13	14	11	11	19	15	15	23	11				4
65	R1a1a1*	16	11-18	14	17	25	11	11	13	14	11	11	19	15	15	23	10				2
66	R1a1a1*	16	11-17	13	17	26	11	11	13	15	11	11	19	15	15	23	11				1
67	R1a1a1*	16	11-14	14	18	25	11	11	13	14	11	10	21	16	15	23	12				9
68	R1a1a1*	16	11-14	15	18	25	11	11	13	14	11	10	21	17	15	23	12				2
69	R1a1a1*	16	11-14	14	18	26	10	11	13	14	11	10	21	16	15	23	12				3
70	R1a1a1*	16	11-14	14	18	25	11	11	13	14	12	10	21	16	15	23	12				1
71	R1a1a1*	16	11-14	14	18	25	11	11	13	14	11	10	21	16	15	24	12				2
72	R1a1a1*	16	11-14	14	17	25	11	11	13	14	11	10	21	15	15	23	12				1
73	R1a1a1*	16	11-14	14	17	25	11	11	13	14	11	10	21	17	15	23	12				1
74	R1a1a1*	16	11-14	14	18	25	12	11	13	14	11	10	21	17	15	23	12				2
75	R1a1a1*	16	11-14	14	18	25	11	11	13	14	11	10	21	17	15	23	12				5
76	R1a1a1*	16	11-14	14	18	25	11	11	13	14	11	10	21	15	15	23	12				1
77	R1a1a1*	16	11-17	14	18	26	10	11	13	14	11	11	19	15	15	23	11				3
78	R1a1a1*	16	11-14	14	18	25	11	11	13	14	11	10	21	17	15	23	11				1
79	R1a1a1*	16	11-17	14	18	26	11	11	13	14	11	12	19	15	15	23	11				1
80	R1a1a1*	16	11-17	14	18	26	11	11	13	14	11	11	19	15	15	23	11				1
81	R1a1a1*	16	11-17	14	18	26	10	11	13	14	11	12	19	15	15	23	11				1
82	R1a1a1*	16	11-14	14	18	25	11	11	13	14	11	10	21	16	15	23	11				1

Haplotype #	Haplogroup	DYS19	DYS385	DYS389I	DYS389b	DYS390	DYS391	DYS392	DYS393	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS635	Y GATA H4	Chelkan	Kumandin	Tubalar	Altai-kizhi
83	R1a1a1*	17	11-13	12	18	25	10	11	13	14	11	10	20	16	15	23	13				1
84	R1a1a1*	16	11-17	14	17	26	11	11	13	14	11	11	19	15	16	23	11				1
85	R1a1a1*	16	11-18	14	18	26	10	11	13	14	11	11	19	15	15	23	11				1
86	R1a1a1*	16	11-17	14	17	26	11	11	13	14	11	11	20	15	15	23	11				1
87	R1a1a1*	16	11-14	14	17	25	11	11	13	14	11	10	21	16	15	23	12				1
88	R1a1a1*	16	11-14	14	18	25	10	11	13	14	11	10	21	16	15	23	12				1
89	R1a1a1*	16	12-14	14	17	24	10	11	13	14	11	10	20	17	14	23	12				1
90	R1a1a1*	16	14-15	14	19	25	11	11	13	14	11	10	21	17	15	23	12				1
91	R1a1a1*	15	11-15	13	19	25	10	11	13	14	11	10	20	15	16	23	13				1
92	R1a1a1*	16	12-14	14	18	24	9	11	13	14	11	10	20	18	14	23	12	3			
93	R1a1a1*	16	11-14	14	17	25	11	11	13	14	11	11	20	16	17	23	13	1			
94	R1a1a1*	15	11-14	13	17	25	11	11	13	14	11	10	20	16	15	23	11		1		
95	R1a1a1*	15	11-15	13	17	24	10	11	13	14	11	10	20	16	15	23	12		1		
96	R1a1a1*	16	11-14	14	17	24	11	11	13	14	11	11	20	16	16	23	14			2	
97	R1a1a1*	16	12-14	14	18	24	10	11	13	14	11	10	20	17	14	23	12			1	
98	R1a1a1*	16	11-14	14	17	24	11	11	13	14	11	11	20	16	16	23	13			1	
99	R1a1a1*	16	12-14	14	19	24	9	11	13	14	11	10	20	17	14	23	12			2	
100	R1a1a1*	16	11-14	13	17	25	10	11	13	14	11	11	20	17	16	23	11			1	
101	R1a1a1*	16	11-14	13	17	25	11	11	14	14	11	12	21	16	17	23	14			1	
102	R1a1a1*	16	12-14	14	18	24	10	11	13	14	11	10	20	16	14	23	12			1	
103	R1a1a1*	16	11-14	14	17	25	11	11	13	14	11	11	20	16	16	23	14			1	
104	R1b1b1	14	13-13	13	16	19	10	13	13	15	10	13	19	15	18	24	11		2		
105	R1b1b1	14	13-13	13	16	19	10	13	13	15	10	13	19	15	17	24	11		3		
106	R1b1b1	14	13-16	13	17	22	11	13	13	15	10	13	20	15	16	23	11		1		

Table S5. F_{ST} values between Altaian ethnic groups

	Chelkan	Kumandin	Tubalar	Altai-kizhi
Chelkan	*	0.000	0.000	0.000
Kumandin	0.046	*	0.097	0.007
Tubalar	0.041	0.011	*	0.028
Altai-kizhi	0.037	0.017	0.008	*

F_{ST} values are displayed in the lower matrix. P-values are located in the upper matrix

Table S6. R_{ST} values between Altaian ethnic groups

	Chelkan	Kumandin	Tubalar	Altai-kizhi
Chelkan	*	0.000	0.146	0.000
Kumandin	0.316	*	0.000	0.000
Tubalar	0.024	0.331	*	0.000
Altai-kizhi	0.237	0.414	0.124	*

R_{ST} values are displayed in the lower matrix. P-values are located in the upper matrix.