

Supplementary Table S1 MtDNA and nuclear genomes of all samples used in this study[†]

Site no.	Prefecture	Localities (city, town, or village)	Individual no.	<i>HaeIII</i>	<i>HinfI</i>	CR-RFLP	MtDNA genome	ManDra-A	ManDra-B	<i>RAG1</i> -RFLP	Nuclear genome																																																																								
1	Hokkaido	Akkeshi	1	A	A	I	A	smear	ladder	245/198	A																																																																								
			2	A	A	I	A	smear	ladder	245/198	A																																																																								
			3	A	A	I	A	smear	ladder	245/198	A																																																																								
			4	A	A	I	A	smear	ladder	245/198	A																																																																								
			5	A	A	I	A	smear	ladder	245/198	A																																																																								
			6	A	A	I	A	smear	ladder	245/198	A																																																																								
			7	A	A	I	A	smear	ladder	245/198	A																																																																								
			8	A	A	I	A	smear	ladder	245/198	A																																																																								
<table border="1" style="border-style: dashed; border-width: 2px;"> <tbody> <tr> <td>1</td> <td>-</td> <td>-</td> <td>-</td> <td>A</td> <td>-</td> <td>ladder</td> <td>443</td> <td>A</td> </tr> <tr> <td>2</td> <td>-</td> <td>-</td> <td>-</td> <td>A</td> <td>-</td> <td>ladder</td> <td>443</td> <td>A</td> </tr> <tr> <td>3</td> <td>-</td> <td>-</td> <td>-</td> <td>A</td> <td>-</td> <td>ladder</td> <td>443</td> <td>A</td> </tr> <tr> <td>4</td> <td>-</td> <td>-</td> <td>-</td> <td>A</td> <td>-</td> <td>ladder</td> <td>443</td> <td>A</td> </tr> <tr> <td>5</td> <td>-</td> <td>-</td> <td>-</td> <td>A</td> <td>-</td> <td>ladder</td> <td>443</td> <td>A</td> </tr> <tr> <td>6</td> <td>-</td> <td>-</td> <td>-</td> <td>A</td> <td>-</td> <td>ladder</td> <td>443</td> <td>A</td> </tr> <tr> <td>7</td> <td>-</td> <td>-</td> <td>-</td> <td>A</td> <td>-</td> <td>ladder</td> <td>443</td> <td>A</td> </tr> <tr> <td>8</td> <td>-</td> <td>-</td> <td>-</td> <td>A</td> <td>-</td> <td>ladder</td> <td>443</td> <td>A</td> </tr> </tbody> </table>												1	-	-	-	A	-	ladder	443	A	2	-	-	-	A	-	ladder	443	A	3	-	-	-	A	-	ladder	443	A	4	-	-	-	A	-	ladder	443	A	5	-	-	-	A	-	ladder	443	A	6	-	-	-	A	-	ladder	443	A	7	-	-	-	A	-	ladder	443	A	8	-	-	-	A	-	ladder	443	A
1	-	-	-	A	-	ladder	443	A																																																																											
2	-	-	-	A	-	ladder	443	A																																																																											
3	-	-	-	A	-	ladder	443	A																																																																											
4	-	-	-	A	-	ladder	443	A																																																																											
5	-	-	-	A	-	ladder	443	A																																																																											
6	-	-	-	A	-	ladder	443	A																																																																											
7	-	-	-	A	-	ladder	443	A																																																																											
8	-	-	-	A	-	ladder	443	A																																																																											
2	Nanae		1	C	E	V	B1	ladder	smear	198/147/98	B1																																																																								
			2	C	E	V	B1	ladder	smear	198/147/98	B1																																																																								
			3	C	E	V	B1	ladder	smear	198/147/98	B1																																																																								
			4	C	E	V	B1	unknown	smear	198/147/98	B1																																																																								
3	Ebetsu		1	C	E	V	B1	ladder	smear	198/147/98	B1																																																																								
			2	C	E	V	B1	ladder	smear	198/147/98	B1																																																																								
			3	C	E	V	B1	faint smear	smear	198/147/98	B1																																																																								
			4	C	E	V	B1	faint smear	smear	198/147/98	B1																																																																								
			5	C	E	V	B1	faint smear	smear	198/147/98	B1																																																																								
			6	C	E	V	B1	faint smear	smear	198/147/98	B1																																																																								
			7	C	E	V	B1	faint smear	smear	198/147/98	B1																																																																								
			8	C	E	V	B1	faint smear	smear	245/198	A																																																																								
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1	-	-	-	B1	-	smear	296/147	B1																																																																											
2	-	-	-	B1	-	smear	296/147	B1																																																																											

Table S1 continued

3	-	-	-	B1	-	smear	296/147	B1
4	-	-	-	B1	-	smear	296/147	B1
5	-	-	-	B1	-	smear	296/147	B1
6	-	-	-	B1	-	smear	296/147	B1
7	-	-	-	B1	-	smear	296/147	B1
8	-	-	-	B1	-	smear	296/147	B1

4	Abashiri	1	A	D	IV	A	smear	ladder	245/198	A	
		2	A	A	I	A	smear	ladder	245/198	A	
		3	A	D	IV	A	smear	ladder	245/198	A	
		4	A	C	II	A	smear	ladder	245/198	A	
		5	A	A	I	A	smear	ladder	245/198	A	
		6	A	A	I	A	smear	ladder	245/198	A	
		7	A	C	II	A	smear	ladder	245/198	A	
		8	A	A	I	A	smear	ladder	245/198	A	
		9	B	B	III	A	smear	smear	245/198/147/98	C	
		10	B	B	III	A	smear	smear	245/198/147/98	C	
		11	B	B	III	A	smear	smear	245/198/147/98	C	
		12	B	B	III	A	smear	smear	245/198/147/98	C	
		13	B	B	III	A	smear	smear	245/198/147/98	C	
		14	B	B	III	A	smear	smear	245/198/147/98	C	
		15	B	B	III	A	smear	smear	245/198/147/98	C	
		16	B	B	III	A	smear	smear	245/198/147/98	C	
		17	B	B	III	A	smear	smear	245/198/147/98	C	
		18	B	B	III	A	smear	smear	245/198/147/98	C	
		19	B	B	III	A	smear	smear	245/198/147/98	C	
		20	B	B	III	A	smear	smear	245/198/147/98	C	
		21	B	B	III	A	smear	smear	245/198/147/98	C	
5	Akita	Kakunodate	1	C	E	V	B1	faint smear	smear	198/147/98	B1
			2	C	E	V	B1	faint smear	smear	198/147/98	B1
			3	C	E	V	B1	faint smear	smear	198/147/98	B1
			4	C	E	V	B1	faint smear	smear	198/147/98	B1
			5	C	E	V	B1	faint smear	smear	198/147/98	B1
			6	C	E	V	B1	faint smear	smear	198/147/98	B1
			7	C	E	V	B1	faint smear	smear	198/147/98	B1
			8	C	E	V	B1	faint smear	smear	198/147/98	B1

Table S1 continued

1	-	-	-	B1	-	smear	296/147	B1
2	-	-	-	B1	-	smear	296/147	B1
3	-	-	-	B1	-	smear	296/147	B1
4	-	-	-	B1	-	smear	296/147	B1
5	-	-	-	B1	-	smear	296/147	B1
6	-	-	-	B1	-	smear	296/147	B1
7	-	-	-	B1	-	smear	296/147	B1
8	-	-	-	B1	-	smear	296/147	B1

6 Miyagi Naruko

1	C	I	X	A	smear	ladder	245/198	A
2	C	I	X	A	smear	ladder	245/198	A
3	C	I	X	A	smear	ladder	245/198	A
4	C	I	X	A	smear	ladder	245/198	A
5	C	I	X	A	smear	ladder	245/198	A
6	C	I	X	A	smear	ladder	245/198	A
7	C	I	X	A	smear	ladder	245/198	A
8	C	I	X	A	smear	ladder	245/198	A

1	-	-	-	A	-	ladder	443	A
2	-	-	-	A	-	ladder	443	A
3	-	-	-	A	-	ladder	443	A
4	-	-	-	A	-	ladder	443	A
5	-	-	-	A	-	ladder	443	A
6	-	-	-	A	-	ladder	443	A
7	-	-	-	A	-	ladder	443	A
8	-	-	-	A	-	ladder	443	A

7 Fukui Obama

1	C	E	V	B1	faint smear	unknown	245/198/147/98	C/A×B1
2	C	E	V	B1	faint smear	smear	245/198/147/98	C/A×B1
3	C	E	V	B1	faint smear	smear	245/198/147/98	C/A×B1
4	C	E	V	B1	faint smear	smear	198/147/98	B1
5	C	E	V	B1	faint smear	smear	198/147/98	B1
6	C	E	V	B1	faint smear	smear	198/147/98	B1
7	C	E	V	B1	faint smear	smear	198/147/98	B1
8	C	E	V	B1	faint smear	smear	198/147/98	B1

1	-	-	-	B1	-	smear	296/147	B1
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Table S1 continued

2	-	-	-	B1	-	smear	296/147	B1
3	-	-	-	B1	-	smear	296/147	B1
4	-	-	-	B1	-	smear	296/147	B1
5	-	-	-	B1	-	smear	296/147	B1
6	-	-	-	B1	-	smear	296/147	B1
7	-	-	-	B1	-	smear	296/147	B1
8	-	-	-	B1	-	smear	296/147	B1

8	Tochigi	Nikko	1	C	F	VII	B1 or B2	faint smear	smear	443	B2
			2	C	F	VII	B1 or B2	faint smear	smear	443	B2
			3	C	F	VII	B1 or B2	faint smear	smear	443	B2
			4	C	F	VII	B1 or B2	faint smear	smear	443	B2
			5	C	F	VII	B1 or B2	faint smear	smear	443	B2
			6	C	F	VII	B1 or B2	faint smear	smear	443	B2
			7	C	F	VII	B1 or B2	faint smear	smear	443	B2
			8	C	F	VII	B1 or B2	faint smear	smear	443	B2

1	C	F	VII	B1 or B2	-	smear	443	B2
2	C	F	VII	B1 or B2	-	smear	443	B2
3	C	F	VII	B1 or B2	-	smear	443	B2
4	C	F	VII	B1 or B2	-	smear	443	B2
5	C	F	VII	B1 or B2	-	smear	443	B2
6	C	F	VII	B1 or B2	-	smear	443	B2
7	C	F	VII	B1 or B2	-	smear	443	B2
8	C	F	VII	B1 or B2	-	smear	443	B2

9	Saitama	Hanyu	1	C	F	VII	B1 or B2	faint smear	smear	443	B2
			2	C	E	V	B1	faint smear	smear	443	B2
			3	C	F	VII	B1 or B2	faint smear	smear	443	B2
			4	C	F	VII	B1 or B2	faint smear	smear	443	B2
			5	C	F	VII	B1 or B2	faint smear	smear	443	B2
			6	C	G	VI	B2	faint smear	smear	443	B2
			7	C	F	VII	B1 or B2	faint smear	smear	443	B2
			8	C	F	VII	B1 or B2	faint smear	smear	443	B2

1	C	F	VII	B1 or B2	-	smear	443	B2
2	C	E	V	B1	-	smear	443	B2

Table S1 continued

3	C	F	VII	B1 or B2	-	smear	443	B2
4	C	F	VII	B1 or B2	-	smear	443	B2
5	C	F	VII	B1 or B2	-	smear	443	B2
6	C	F	VII	B1 or B2	-	smear	443	B2
7	C	F	VII	B1 or B2	-	smear	443	B2
8	C	F	VII	B1 or B2	-	smear	443	B2

10	Chiba	Futtsu	1	C	F	VII	B1 or B2	faint smear	smear	443	B2
			2	C	F	VII	B1 or B2	faint smear	smear	443	B2
			3	C	F	VII	B1 or B2	faint smear	smear	443	B2
			4	C	E	V	B1	faint smear	smear	198/147/98	B1
			5	C	F	VII	B1 or B2	faint smear	smear	443	B2
			6	C	F	VII	B1 or B2	faint smear	smear	443/198/147/98	B1xB2
			7	E	F	XI	A	smear	ladder	245/198	A
			8	C	F	VII	B1 or B2	smear	ladder	443/245/198	AxB2

1	C	F	VII	B1 or B2	-	smear	443	B2
2	C	F	VII	B1 or B2	-	smear	443	B2
3	C	F	VII	B1 or B2	-	smear	443	B2
4	C	E	V	B1	-	smear	296/147	B1
5	C	F	VII	B1 or B2	-	smear	443	B2
6	C	F	VII	B1 or B2	-	smear	443/296/147	B1xB2
7	E	F	XI	A	-	ladder	443	A
8	C	F	VII	B1 or B2	-	smear	443	B2

11	Nagano	Ueda	1	C	F	VII	B1 or B2	faint smear	smear	443	B2
			2	C	F	VII	B1 or B2	faint smear	smear	443	B2
			3	C	F	VII	B1 or B2	faint smear	smear	443	B2
			4	C	F	VII	B1 or B2	faint smear	smear	443	B2
			5	C	F	VII	B1 or B2	faint smear	smear	443	B2
			6	C	F	VII	B1 or B2	faint smear	smear	443	B2
			7	C	E	V	B1	faint smear	smear	443	B2
			8	C	F	VII	B1 or B2	faint smear	ladder	443	B2

1	C	F	VII	B1 or B2	-	smear	443	B2
2	C	F	VII	B1 or B2	-	smear	443	B2
3	C	F	VII	B1 or B2	-	smear	443	B2

Table S1 continued

			4	C	F	VII	B1 or B2	-	smear	443	B2
			5	C	F	VII	B1 or B2	-	smear	443	B2
			6	C	F	VII	B1 or B2	-	smear	443	B2
			7	C	E	V	B1	-	smear	443	B2
			8	C	F	VII	B1 or B2	-	smear	443	B2
12	Tokushima	Hiwasa	1	C	E	V	B1	ladder	smear	198/147/98	B1
			2	C	E	V	B1	faint smear	smear	198/147/98	B1
			3	C	E	V	B1	faint smear	smear	198/147/98	B1
			4	C	E	V	B1	ladder	smear	198/147/98	B1
			5	C	E	V	B1	faint smear	smear	198/147/98	B1
			6	C	E	V	B1	faint smear	faint smear	245/198	A
			7	C	E	V	B1	faint smear	smear	198/147/98	B1
			8	C	E	V	B1	faint smear	smear	198/147/98	B1
			1	-	-	-	B1	-	smear	296/147	B1
			2	-	-	-	B1	-	smear	296/147	B1
			3	-	-	-	B1	-	smear	296/147	B1
			4	-	-	-	B1	-	smear	296/147	B1
			5	-	-	-	B1	-	smear	296/147	B1
			6	-	-	-	B1	-	smear	296/147	B1
			7	-	-	-	B1	-	smear	296/147	B1
			8	-	-	-	B1	-	smear	296/147	B1

† MtDNA genome was determined using control region RFLP haplotypes (CR-RFLP). Nuclear genome was comprehensively determined from results of ManDra-A genotype, ManDra-B genotype, and improved *RAG1*-RFLP. Dashed boxes indicate previous results obtained from the same individuals including the *RAG1*-RFLP markers (standard methodology, not improved) described in Morishima et al. (2008) and Fujimoto et al. (2017).