

## Table

**Table S1 Information of 11 microsatellite loci in *Rhinopithecus bieti***

Locus	Forward primer sequence (5'-3')	Reverse primer sequence (5'-3')	$T_A$ (°C)	Reference
<i>D1s207</i>	CACTTCTCCTTGAATCGCTT	GCAAGTCCTGTTCCAAGTCT	50	(Liu et al. 2008)
<i>D1S533</i>	CATCCCCCCCCAAAAATATA	TTGCTAATCAAATAACAATGGG	50	(Liu et al. 2008)
<i>D2S1326</i>	AGACAGTCAAGAATAACTGCCC	CTGTGGCTCAAAAGCTGAAT	55	(Liu et al. 2008)
<i>D6S474</i>	ATCCCAACTCTTAAATGGGC	TTCCATGGCAGAAATTGTTT	52	(Liu et al. 2008)
<i>D6S493</i>	ATCCCAACTCTTAAATGGGC	TTCCATGGCAGAAATTGTTT	50	(Liu et al. 2008)
<i>D8S505</i>	CAAAAGTGAACCCAAACCTA	AGTGCTAAGTCCCAGACCAA	58	(Liu et al. 2008)
<i>D11S2002</i>	CATGGCCCTTCTTTTCATAG	AATGAGGTCTTACTTTGTTGCC	55	(Liu et al. 2008)
<i>D17S1290</i>	GCCAACAGAGCAAGACTGTC	GGAAACAGTTAAATGGCCAA	55	(Liu et al. 2008)
<i>GM108</i>	CAGCGTAAGCCAGTTGCC	GGAAAAGTCTGAAACCCACGA	51	(Hao et al. 2007)
<i>GM109</i>	GGTGGAGGAGGGCCTAAC	CTGATGTCCATAGGCGACCAT	64	(Hao et al. 2007)
<i>GM214</i>	GGGCAACAGAGCGAGACTG	TGCAAAGATGTGAACGGAAAT	58	(Hao et al. 2007)

**Table S2 Homologous sequences for *Rhinopithecus bieti* MHC genes from closely related species and an outgroup sequence from *Mus musculus* for phylogenetic reconstruction**

Species	Allele	GenBank number
<i>Mus musculus</i>	<i>Mumu-H2-Aa</i>	NM_010378.3
<i>Rhinopithecus roxellana</i>	<i>Rhro-DQA1*02</i>	JQ217108.1
	<i>Rhro-DQA1*05</i>	JQ217111.1
	<i>Rhro-DQA1*07</i>	JQ217113.1
	<i>Rhro-DQB1*10</i>	JQ217125.1
	<i>Rhro-DQB1*17</i>	KU184585.1
	<i>Rhro-DQB1*06</i>	JQ217121.1
	<i>Rhro-DPB1*02</i>	PP871676
	<i>Rhro-DPB1*06</i>	PP871680
	<i>Rhro-DPB1*01</i>	PP871675
	<i>Rhro-DRB*10</i>	JQ863331.1
	<i>Rhro-DRB*20</i>	JQ863341.1
	<i>Rhro-DRB*37</i>	JQ863358.1
<i>Papio anubis</i>	<i>Paan-DQA1*01:05</i>	OP375770.1
	<i>Paan-DQA1*05:01</i>	LT607037.1
	<i>Paan-DQB1*18:01:01</i>	LT546107.1
<i>Pan troglodytes</i>	<i>Patr-DQA1*01</i>	DQ924453.1
	<i>Patr-DQA1*05:02:02</i>	LT622882.1
	<i>Patr-DQB1*03:06</i>	LT908065.1
	<i>Patr-DPB1*12</i>	AB183470.1
	<i>Patr-DRB1*02</i>	LR216144.1
	<i>Patr-DRB1*07:01</i>	DQ655659.1
	<i>Patr-DRB5*03</i>	LR216147.1
<i>Macaca mulatta</i>	<i>Mamu-DQA1*26:02:02</i>	OX377330.1
	<i>Mamu-DQB1*15:09</i>	HQ215939.1
	<i>Mamu-DPB1*03</i>	EF426707.1
	<i>Mamu-DRB1*03:12</i>	AM910416.1
	<i>Mamu-DRB5*03:06</i>	HM594300.1
	<i>Mamu-DQA1*01:02</i>	KC428065
<i>Macaca fascicularis</i>	<i>Mafa-DQA1*26:02</i>	AM086060.1
	<i>Mafa-DQA1*01:10</i>	AB764109
	<i>Mafa-DQB1*06:08</i>	AB764119
	<i>Mafa-DQB1*28:02</i>	HG994112.1
	<i>Mafa-DPB1*03:04</i>	AB764135
	<i>Mafa-DPB1*22</i>	AM086165.1
	<i>Mafa-DRB1*03:01</i>	AY340675
<i>Homo sapiens</i>	<i>HLA-DQA1*04:02</i>	HF674388.2
	<i>HLA-DQB1*06</i>	LR777803.1

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	<i>HLA-DQB1*05</i>	LR778295.1
	<i>HLA-DPB1*02</i>	LT630703.1
	<i>HLA-DPB1*16</i>	LT882730.1
	<i>HLA-DRB1*10</i>	AJ920405.1
	<i>HLA-DRB1*13</i>	AJ920408.1
<i>Gorilla gorilla</i>	<i>Gogo-DQB1*05:02</i>	KP872253
	<i>Gogo-DPB1*01</i>	KP872242
	<i>Gogo-DRB5*05:01</i>	KP872282
<i>Chlorocebus sabaeus</i>	<i>Chsa-DQA1*01:01</i>	KA650601
	<i>Chsa-DQA1*05:01</i>	KA650600
	<i>Chsa-DQB1*06:01</i>	KA650615
	<i>Chsa-DQB1*15:01</i>	KA650616
	<i>Chsa-DPB1*09:01</i>	KA650617
	<i>Chsa-DRB1*03:01</i>	KA650612
	<i>Chsa-DRB5*01:01</i>	KA650607

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**Table S3 Rate of non-synonymous substitutions ( $d_N$ ) and synonymous substitutions ( $d_S$ ) of five *Rhinopithecus bieti* MHC loci**

Locus		N	$d_N$	$d_S$	$\omega$ ( $d_N/d_S$ )	Z	P
	ABS	15	0.244 ±0.090	0.266 ±0.198	0.917	-0.095	0.924
<i>DPB1</i>	Non-ABS	72	0.070 ±0.017	0.157 ±0.050	0.446	-1.628	0.106
	All	87	0.098 ±0.020	0.172 ±0.047	0.570	1.390	0.084
	ABS	19	0.227±0.107	0.228±0.216	0.996	-0.004	0.997
<i>DQA1</i>	Non-ABS	63	0.130±0.030	0.226±0.085	0.575	-0.986	0.326
	All	82	0.150 ±0.031	0.227±0.078	0.661	0.855	0.197
	ABS	21	0.229±0.102	0.000±0.000	≥1	0.004	0.498
<i>DQB1</i>	Non-ABS	68	0.097±0.030	0.108±0.053	0.898	-0.181	0.857
	All	89	0.127 ±0.033	0.085±0.040	1.494	0.778	0.438
	ABS	20	0.207±0.096	0.125±0.118	1.656	0.587	0.559
<i>DRB1</i>	Non-ABS	69	0.053±0.020	0.042±0.032	1.262	0.324	0.747
	All	89	0.085±0.025	0.058±0.032	1.466	0.739	0.231
	ABS	20	0.294±0.112	0.090±0.092	3.267	1.314	0.191
<i>DRB5</i>	Non-ABS	69	0.019±0.011	0.114±0.059	0.167	-1.430	0.155
	All	89	0.073±0.023	0.109±0.047	0.670	0.641	0.262

**Table S4 likelihood ratio test of codon evolution for the second exons of five *Rhinopithecus bieti* MHC loci**

	Models compared	<i>df</i>	Test statistic	Significance( <i>P</i> )
<i>DQA1</i>	M2a vs. M1a	2	1.474	> 0.05
	M3 vs. M0	4	2.026	> 0.05
	M8 vs. M7	2	1.504	> 0.05
<i>DPB1</i>	M2a vs. M1a	2	0.000	> 0.05
	M3 vs. M0	4	3.694	> 0.05
	M8 vs. M7	2	0.000	> 0.05
<i>DQB1</i>	M2a vs. M1a	2	7.160	< 0.05
	M3 vs. M0	4	11.156	< 0.05
	M8 vs. M7	2	7.160	> 0.05
<i>DRB1</i>	M2a vs. M1a	2	10.816	< 0.01
	M3 vs. M0	4	16.144	< 0.01
	M8 vs. M7	2	11.174	< 0.01
<i>DRB5</i>	M2a vs. M1a	2	1.472	> 0.05
	M3 vs. M0	4	7.46	> 0.05
	M8 vs. M7	2	1.474	> 0.05

1. Hao Y.L., Liu Z.J., Wu H., Ren B.P., Wei F.W. & Li M. (2007) Isolation and characterization of 11 microsatellite loci for the Sichuan snub-nosed monkey, *Rhinopithecus roxellana*. *Conservation Genetics* 8, 1021-4.
2. Liu Z.J., Ren B.P., Hao Y.L., Zhang H.R., Wei F.W. & Li M. (2008) Identification of 13 human microsatellite markers via cross-species amplification of fecal samples from *Rhinopithecus bieti*. *International Journal of Primatology* 29, 265-72.