

Supplementary Material

High Levels of Genetic Diversity within One Population of *Rheum tanguticum* on the Qinghai-Tibet Plateau have Implications for Germplasm Conservation

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KF514612 TGTCGAAACC TGCACGAGCA GACAGACCCG CGAACCCGTC TCTAACCCGC CGCCGGGGCG GGGGATCGGG CCCTCTCTCG 80bp
KF514614 .....
KF514613 -----

KF514612 AGCCCCGCC CCCCTCCCG CGCGCGCAA CCAACCCCG GTGCGGATTG CGCCAAGGAC TATGAACAAG AGCGCGTCCC 160bp
KF514614 .....
KF514613 ---.....C.....

KF514612 GCGCGCCCG GCGCGCGTGC GACGTGCGT CGTTT-TACC TAACAGAAG ACTCTCGCA ACGGATATCT CGGCTCTCGC 240bp
KF514614 .....
KF514613 .T.....C.....

KF514612 ATCGATGAAG AACGTAGCGA AATGCGATAC TTGGTGTGAA TTGCAGAATC CCGTGAACCA TCGAGTCTTT GAACGCAAGT 320bp
KF514614 .....
KF514613 .....

KF514612 TGCGCCGAA GCCTTCTGGC CGAGGGCAGC TCTGTCTGGG CGTCACGCAC CGCGTCGCTC CCGCCCCCTC TGGGGGCGAG 400bp
KF514614 .....
KF514613 .....C..T...C.....

KF514612 GGGCGGAGAC TGGCCCCCGG TGCGCCCGG CGCGGGCCG GCCTAAACGC AGGCCCCCGG GCCGCGAGAA GCCGCGACGA 480bp
KF514614 .....
KF514613 .....

KF514612 CTGTGTGTGT ACCAGCGGCC TCGTGCCGCG AAGCATCGCG TCGCTCTTGT CGCGGCCACC GTGAGCGCCA AAAGGGCCCC 560bp
KF514614 .....
KF514613 T.....C.....C.....

KF514612 GACCACCGTT G 571bp
KF514614 .....
KF514613 .....

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Fig. S1. The complete alignment matrix of the ITS sequences from sample RTM23 of *Rheum tanguticum*.

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KF514609 TGTCAAAC TCGCGAGCA GACAGACCG CGAACCCGTC TCTAACCCGC CGTCGGGGGG AGGACCGGGC TCTCTTCTGA 80bp
KF514610 .....
KF514611 -----

KF514609 GCCCGCCCC CCTCTCCCG CGCGCGCAA CCAAACCCCG GCGTGGATTG CGCCAAGGAC TATGAACAAG AGCGCGTCCC 160bp
KF514610 .....
KF514611 -----

KF514609 GCGCGCCCC GCGCGCGTGC GACGTGCGT CGTTTCTACC TAACAGAACG ACTCTCGGCA ACGGATATCT CGGCTCTCGC 240bp
KF514610 .....
KF514611 .T.....

KF514609 ATCGATGAAG AACGTAGCGA AATGCGATAC TTGGTGTGAA TTGCAGAGTC CCGTGAACCA TCGAGTCTTT GAACGCAAGT 320bp
KF514610 .....A.....
KF514611 .....A..T.....

KF514609 TGCGCCGAA GCCTTCTGGC CGAGGGCAGC TCTGTCTGGG CGTCACGCAC CGCGTCGCC CCGCCCCCTC CGGGGGGAG 400bp
KF514610 .....
KF514611 .....T.....

KF514609 GGGCGGAGAC TGGCCCCCG TGGCCCCGG CGCGCGCCG GCCTAAACGC AGGCCCGCG GCCGCGAGAA GCCGCGACGA 480bp
KF514610 .....T.....
KF514611 .....

KF514609 CTGGTGGTGT ACCAGCGGCC CCGTGCCGCG AAGCATCGCG TCGCGTCTCG CGCGGCCACC GTGAGCGCCA AAAGGGCCCC 560bp
KF514610 .....
KF514611 T.....

KF514609 GACCACCGTT G 571bp
KF514610 .....
KF514611 .....

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Fig. S2. The complete alignment matrix of the ITS sequences from sample RTM05 of *Rheum tanguticum*.

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KF514542 TGTGCGAAAC TGCACGAGCA GACAGACCCG CGAACCCGTC TCTAACCCGC CGCCGGGGCG GGGGATCGGG CCCTCTTCTG 80bp
KF514543 .....
KF514544 .....G.....A.....T.....A.....T.....
KF514545 .....
KF514546 -----

KF514542 AGCCCCGCC CTCC-TCCG GCGCGCGCCA ACCAAACCCG GGTGCGGATT GCGCCAAGGA CTATGAACAA GAGCGCGTCC 160bp
KF514543 .....-.....
KF514544 .A.....C..C.....C.T.....
KF514545 .....-.....
KF514546 -----C.....

KF514542 CGCGCGCCCC GCGCGCGGTG CGACGTCGCG TCGTTT-TAC CTAACAGAAC GACTCTCGGC AACGGATATC TCGGCTCTCG 240bp
KF514543 .....T...-...
KF514544 .....C.....
KF514545 .....-...
KF514546 .....C.....

KF514542 CATCGATGAA GAACGTAGCG AAATGCGATA CTTGGTGTGA ATTGCAGAAT CCCGTGAACC ATCGAGTCTT TGAACGCAAG 320bp
KF514543 .....
KF514544 .....
KF514545 .....
KF514546 .....

KF514542 TTGCGCCGA AGCCTTCTGG CCGAGGGCAC GTCTGTCTGG GCGTCACGCA CCGGTCGCT CCGCCCCCT CTGGGGGGCA 400bp
KF514543 .....
KF514544 .....A.....C...T.....C.....
KF514545 .....
KF514546 .....C.....C.....

KF514542 GGGCGGAGA CTGGCCCCG GTGCGCCCCG GCGCGCGGCC GGCCTAAACG CAGGCCCGC GGCCGCGAGA AGCCGCGACG 480bp
KF514543 .....
KF514544 .....T.....
KF514545 .....
KF514546 .....T.....T.....

KF514542 ACTGGTGGTG TACCAGCGGC CTCGTGCCG GAAGCATCGC GTCGCGTCTT GCGCGGCCAC CGTGAGCGCC AAAAGGGCCC 560bp
KF514543 .....C.....T.....
KF514544 .T.....C.....C.....
KF514545 .....
KF514546 .T.....C.....C.....

KF514542 CGACCACCGT TG 572bp
KF514543 .....
KF514544 .....
KF514545 .....
KF514546 .....

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Fig. S3. The complete alignment matrix of the ITS sequences from sample RTM17 of *Rheum tanguticum*.

Table S1. GenBank Accession Numbers and the Average Intra-Genomic Distances Between ITS Sequences within *Rheum Tanguticum* Individuals

Sample no.	GenBankAccession no. of ITS Sequences	Average intra-genomic Distance (Range)
RTM01	KF514596	N/A
RTM02	KF514597~KF514600	0
RTM03	KF514601~KF514603	0.2164 (0.1233~0.2641)
RTM04	KF514604~KF514608	0.1582(0.0072~0.2589)
RTM05	KF514609~KF514611	0.0035
RTM06	KF514563	N/A
RTM07	KF514564~KF514568	0.0530(0.0072~0.0109)
RTM08	KF514569~KF514573	0.0897(0~0.2221)
RTM09	KF514574~KF514578	0.2356(0~0.3338)
RTM10	KF514579~KF514583	0.1159(0.0018~0.1626)
RTM11	KF514584~KF514587	0.1755(0.0058~0.2532)
RTM12	KF514588~KF514591	0.0174(0~0.0252)
RTM15	KF514592~KF514595	0.0194(0.0035~0.0288)
RTM16	KF514537~KF514541	0.0021(0~0.0035)
RTM17	KF514542~KF514546	0.0189(0~0.0381)
RTM19	KF514547~KF514551	0.0716(0~0.1167)
RTM20	KF514552~KF514556	0.0021(0~0.0035)
RTM21	KF514557~KF514558	0.0018
RTM22	KF514559~KF514562	0.0155(0.0018~0.0293)
RTM23	KF514612~KF514614	0
RTM24	KF514615~KF514616	0.1389
RTM25	KF514617~KF514621	0.1610(0~0.2388)
RTM27	KF514622~KF514624	0.0216(0.0142~0.0308)
RTM31	KF514625~KF514626	0.0106
RTM33	KF514627~KF514630	0.1201(0.0096~0.2286)
RTM35	KF514631~KF514632	0.1364
RTM36	KF514633~KF514636	0.1890(0.0164~0.2791)
RTM39	KF514637~KF514640	0.1918(0.0295~0.2686)
RTM40	KF514641	N/A
Total		0.0922(0~0.3338)