



A	2bp microhomology		blunt-end DNA joining	
	mtDNA	cpDNA	cpDNA	mtDNA
				
	AAGAAATAAA	<i>Z. mays</i>	GAAAGAAGAG	
	TGCAGGGCAA	<i>Z. luxurians</i>	GAAAGAAGAG	
	TGCAGGGCAA	<i>T. aestivum</i>	AGAGCAAAAT	
	TGCAGGGCAA	<i>S. bicolor</i>	CTTTATCGTA	
	ATCAATTCAA	<i>O. sativa indica</i>	ATTATTGTTCG	
	ATCAATTCAA	<i>O. sativa japonica</i>	ATTATTGTTCG	

B	blunt-end DNA joining		blunt-end DNA joining	
	mtDNA	cpDNA	cpDNA	mtDNA
				
	TACAAGTACG	<i>Z. mays</i>	CTAGAATAAT	
	TACAAGTACG	<i>Z. luxurians</i>	AGGGTCAAAA	
	TACTAAGTCC	<i>T. aestivum</i>	CGAACAATGA	
	GACTTTTTTC	<i>S. bicolor</i>	TCTCTCCCCC	
	AGTCCCTTTA	<i>O. sativa indica</i>	AGAGAAGGGT	
	AGTCCCTTTA	<i>O. sativa japonica</i>	AGAGAAGGGT	

**Figure S4.** Nucleotide-resolution analysis on flanking sequences of chloroplast-derived *trnC* and *trnF* genes in mitochondrial genomes of most *Gramineae* crops. Red color indicates nucleotide sequence micro-homologies. cpDNA and mtDNA are the abbreviations of chloroplast DNA and mitochondrial DNA, respectively. The yellow-green-yellow strip represents the fusion sequence of mtDNA-cpDNA-mtDNA. The sequences under the two yellow strips on the left and right are the flanking sequences of inserted chloroplast-like tRNA gene in the mitochondrial genomes. The red capital English letters close to cpDNA indicate the nucleotides of micro-homologies among the different species.