

**Comparative mitochondrial genomics toward exploring molecular markers in the medicinal fungus *Cordyceps militaris***

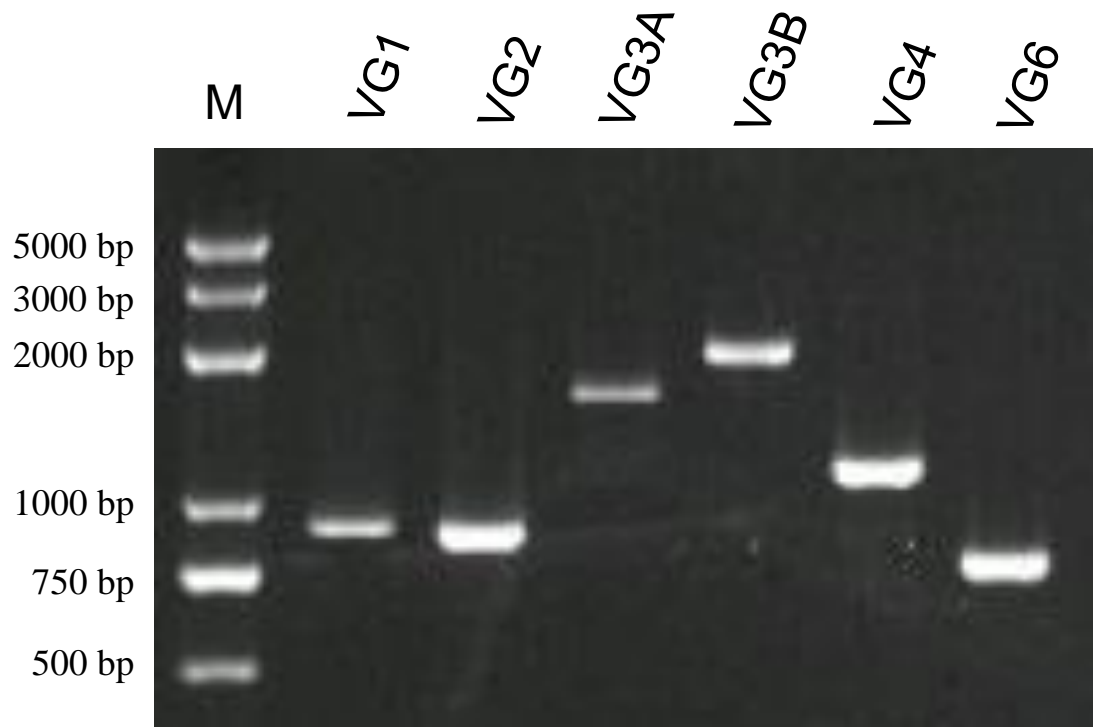
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**Fig. S1** Electrophoretic pattern of five molecular markers (VG1-4, 6) from a representative *C. militaris* strain. The fragment VG3 was amplified by dividing it into two small fragments VG3A and VG3B due to its length. Amplifications in this figure were all performed with the *C. militaris* strain CM06 as templates.

**Table S1. Recombination analysis of various regions**

	No. loci	PrCP	Index of association	<i>P</i> value
Exonic loci	24	0.978	6.444	< 0.001
Intronic loci	8	1.000	1.595	< 0.001
Intergenic loci	15	1.000	4.306	< 0.001
Exonic & intronic loci	32	0.988	7.693	< 0.001
Exonic & intergenic loci	39	0.987	11.115	< 0.001
Intronic & intergenic loci	23	1.000	4.919	< 0.001
Exonic & intronic & intergenic loci	47	0.991	11.975	< 0.001

PrCP, percentage of compatible locus pairs; IA, index of association. *P* values are those to reject the null hypothesis of random recombination.

**Table S2. Loci showing evidence of recombination**

Strain	<i>rnl</i> -E1	<i>rnl</i> -E2	<i>nad3</i>	<i>cox2</i>	E1	<i>nad4L</i>	<i>nad3-atp9</i>	IR	<i>atp9-cox2</i>	IR	<i>cox2-nad4L</i>	IR	<i>nad5-cob</i>	IR
V26-17	1	2	2	2	2	2	2	2	2	2	2	2	2	2
V40-4	1	1	2	2	2	2	2	2	2	2	2	2	2	2
V40-5	1	1	2	3	2	2	2	2	2	2	3	2	2	2
CM09-9-24	1	1	2	2	2	2	2	2	2	2	2	2	2	2
CM09-31-28	1	1	1	2	1	3	1	1	1	1	1	1	3	3
CM552	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CM01	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CM06	2	1	2	2	3	4	3	3	3	3	4	4	4	4
F02	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CMB	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EFCC-C2	2	2	1	1	1	3	1	1	1	1	1	1	3	3

Notes: Numbers in this table are allele identifiers. IR, intergenic region

*rnl*-E1 showed recombination with other loci shown in yellow.

*rnl*-E2 showed recombination with other loci shown in blue.

**Table S3. Primers designed to amplify marker fragments**

Locus	Primer name	Primer sequence	Direction	Size (bp)	Notes
VG1	VG1-F	GTTTCGATCCCTGTCTAGTCTAT	F		
	VG1-R	TGAGATCAGTGTCTAACCGTT	R	884	within <i>rnl</i> - <i>nad2</i> IR
VG2	VG2-F	TATTCGAATTAGGTAAAGGTGCT	F		
	VG2-R	TGGAGTAGCACTATCTTGGAAT	R	888	3' <i>nad3</i> -- 5' <i>cox2</i>
VG3A	VG3A-F	ATATGAACTATTACACCGGCAT	F		
	VG3A-R	AAGAAAGCATCACCAACTCTAT	R	1510	3' <i>cox2</i> -- 5' <i>nad5</i>
VG3B	VG3B-F	AATGTTTGTAGGATGAGAAGGT	F		
	VG3B-R	TATTAGTTGGTTGTGAATGATCA	R	1850	5'- <i>nad5</i> -- 5' <i>cob</i>
VG4	VG4-F	CTAAACCTCATGCATTCGTAAG	F		
	VG4-R	GCTTGAGTAGGTGCTATATATTC	R	1132	3' <i>cox1</i> to 5' <i>nad1</i>
VG6	VG6-F	GTACAATATTCTTAGCAGTAGGT	F		
	VG6-R	TGAAATCGAAGCAAATAATCCT	R	771	3' <i>cox3</i> to 5' <i>nad6</i>

The fragment VG3 was amplified by combining two small fragments VG3A and VG3B.