

## LEGENDS FOR SUPPLEMENTAL FIGURES

Supplemental fig. 1. Control experiment for microarray analysis. aRNA probes were synthesized from the same sample and were labeled with Cy3 and Cy5. Probes were competitively hybridized with the same DNA microarray. Horizontal axis and vertical axis show intensity of each spot due to Cy3 and Cy5, respectively. Diagonal line indicates no difference in signal intensity between the two samples. Dashed lines indicate a 2-times difference in signal intensities. Signals were normalized against internal control spots (see materials and methods).

Supplemental fig. 2. Cells of *C. merolae* 10D were cultured in MA2 medium in a jar fermenter with light-dark-dependent synchronization as described previously (4) with minor modifications. Cells were cultured at 42°C and were aerated with 2% CO<sub>2</sub> in air. Cultures were subjected to the following light conditions; 6 h light, 18 h dark, and continuous light. Synchronization of the culture was initiated at end of first dark period (time 0). For DNA microarray analyses, cells were sampled during the period from 0 to 48 h (time 0 to 48), during which cell cycle phases were highly synchronous. Values are means of three independent experiments ± SD.

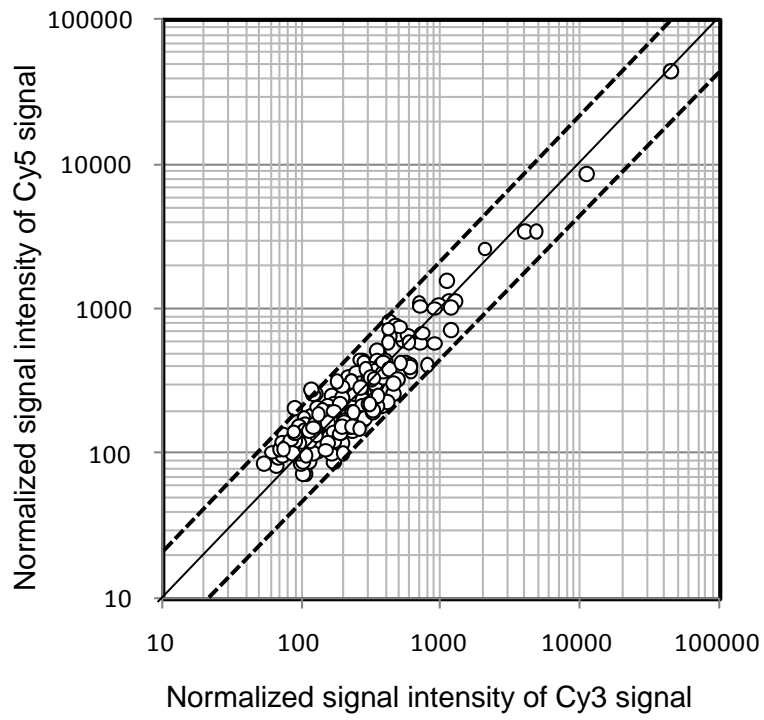
Supplemental fig. 3. Correlation network of organelle genes. Network chart was produced by relative network function of MeV software (TIGR). Each ORF is shown as a gray oval. Interaction between two genes is shown by blue or red line, where blue or red line indicates a correlation coefficient greater than 0.7 or 0.8, respectively.

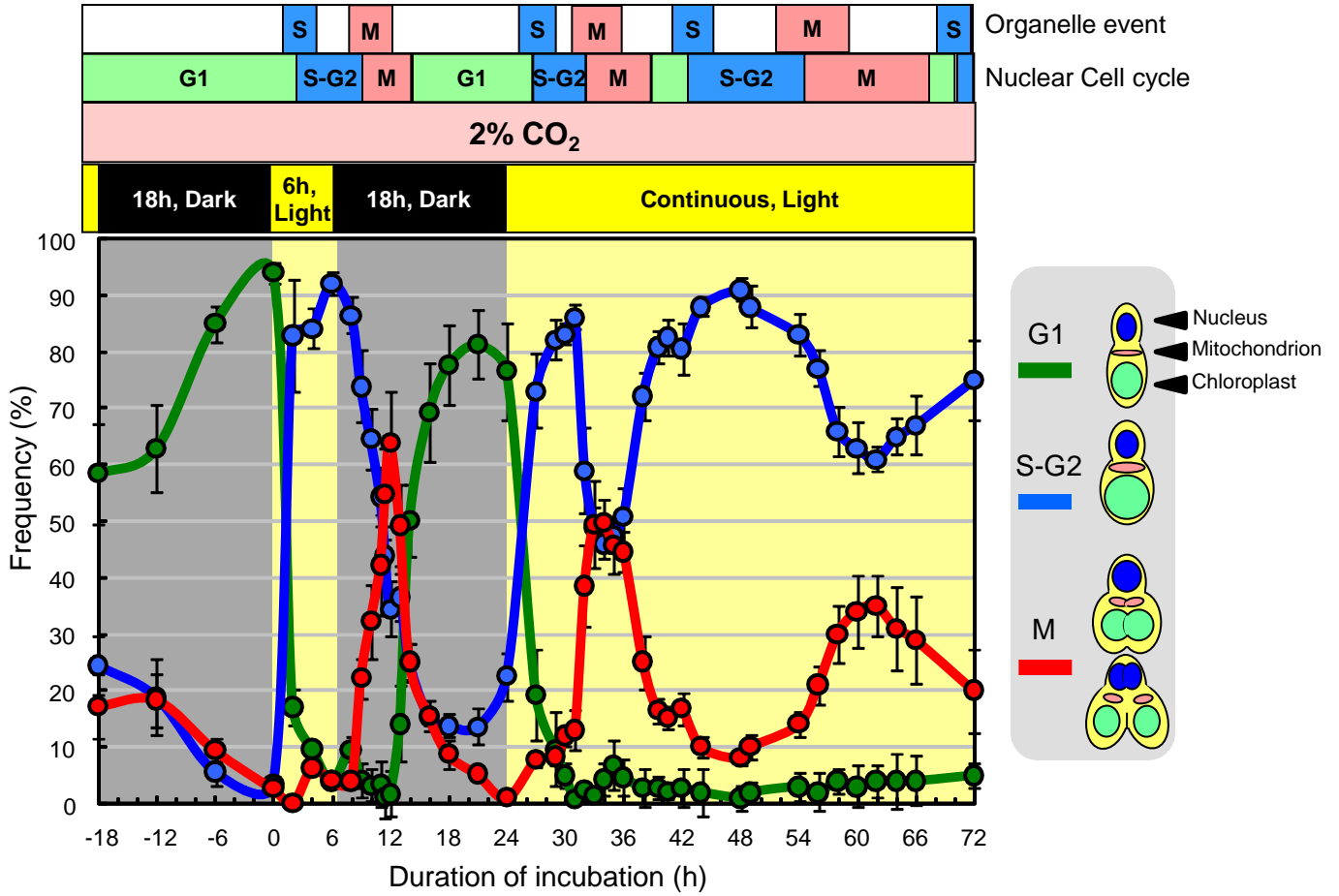
Supplemental fig. 4. Preparation and specificity of antibodies. (A–D) Aliquots of *C. merolae* total protein (Cm) were separated by 10% SDS-PAGE and analyzed by immunoblot analysis with indicated antibodies. (A, C, D) Re. indicates His-tagged CmSIGs, which harbors approximately 10 kDa extra peptide derived from the His-tag and expression vector linker sequence, expressed in *E. coli*. (B) Re. indicates recombinant CmSIG2, which harbors about 60 kDa extra peptide derived from the SecA-fragment. Positions of molecular size markers were indicated at the left.

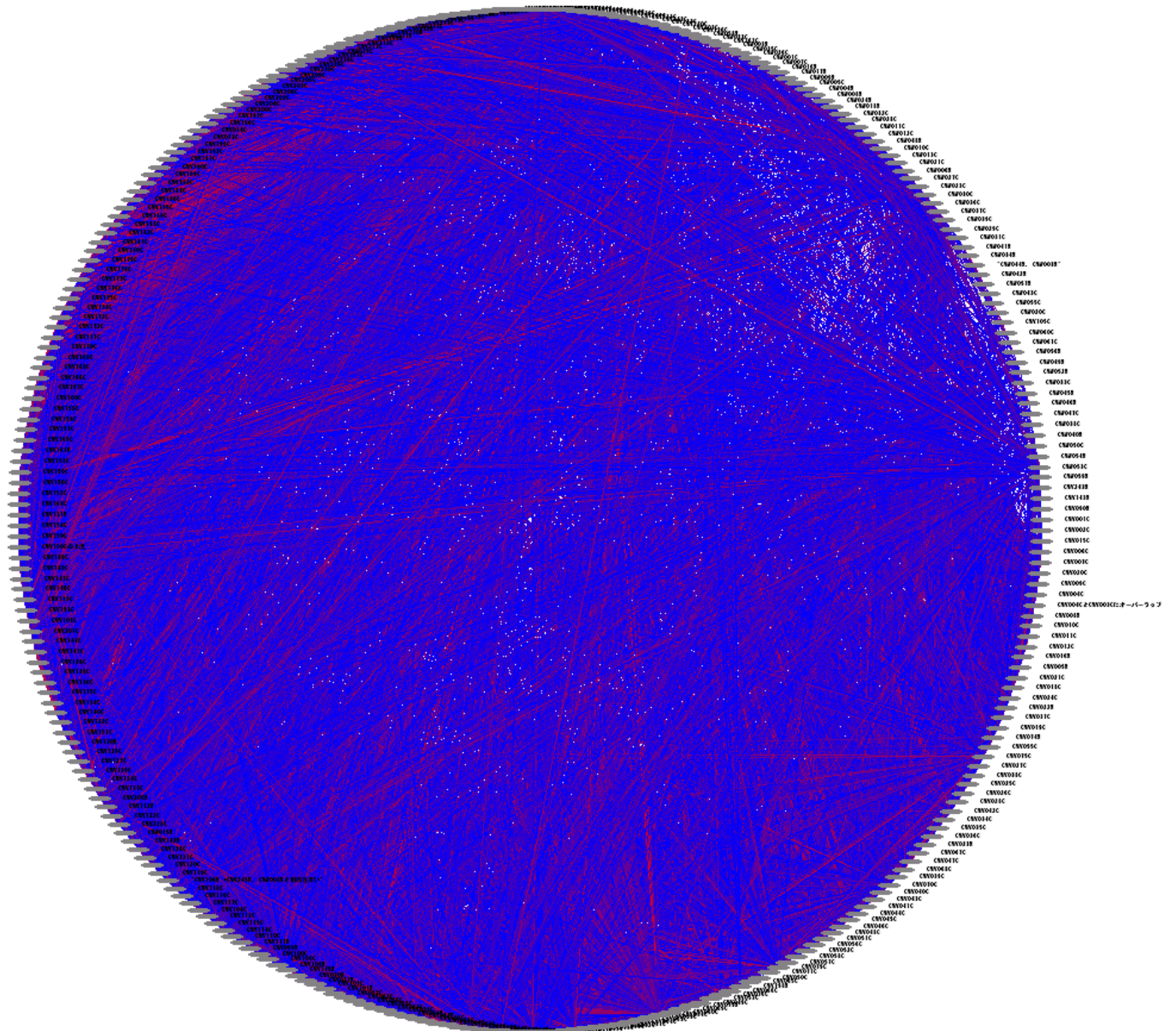
Supplemental fig. 5. Putative element found in 3'-downstream region within 120 base of the ORFs in light-dependent genes in figure 2A. Identification of the element was performed by CONSENSUS, MEME and MD scan in Melina II (<http://melina2.hgc.jp/public/index.html>). The ORFs, which does not possess this element in 3' downstream region was not the terminal gene of the putative operon. Positions of the element in the 3' downstream region are shown in the panel of each gene. Both CONSENSUS and MD scan called almost the same element.

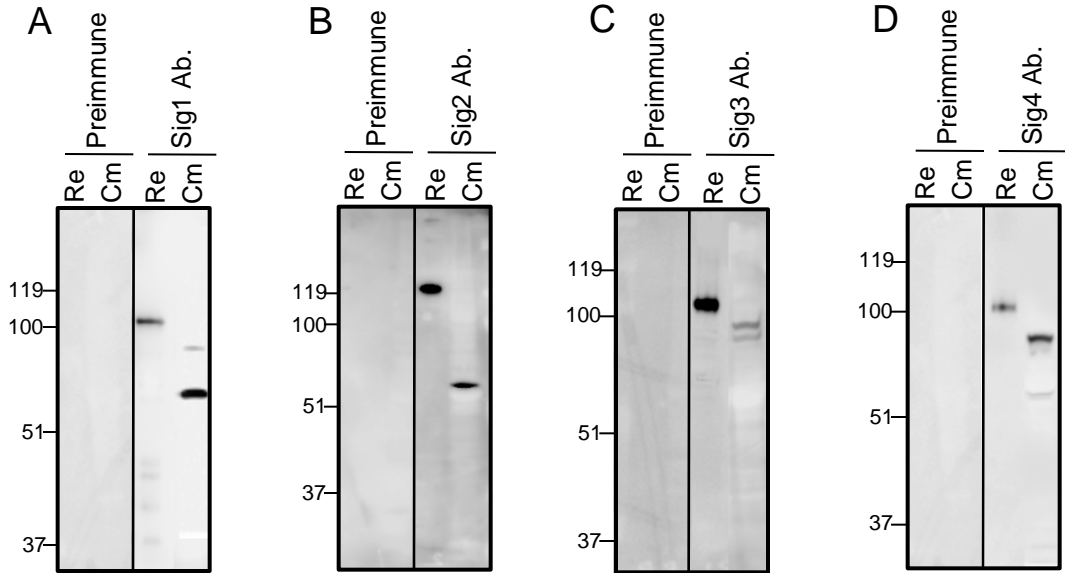
Supplemental fig. 6. Putative element found in 3'-downstream region within 120 base of the ORFs in cell-cycle dependent genes in figure 2B. Identification of the element was performed by CONSENSUS, MEME and MD scan in Melina II (<http://melina2.hgc.jp/public/index.html>). The ORFs, which does not possess this element in 3' downstream region was not the terminal gene of the putative operon without an exception of CMV225C gene. Positions of the element in the 3' downstream region are shown in the panel of each gene. Both CONSENSUS and MD scan called almost the same element (The panel of MD scan shows the element as opposite direction).

Supplemental Table I. Specific oligo-primers for construction of custom DNA microarray.

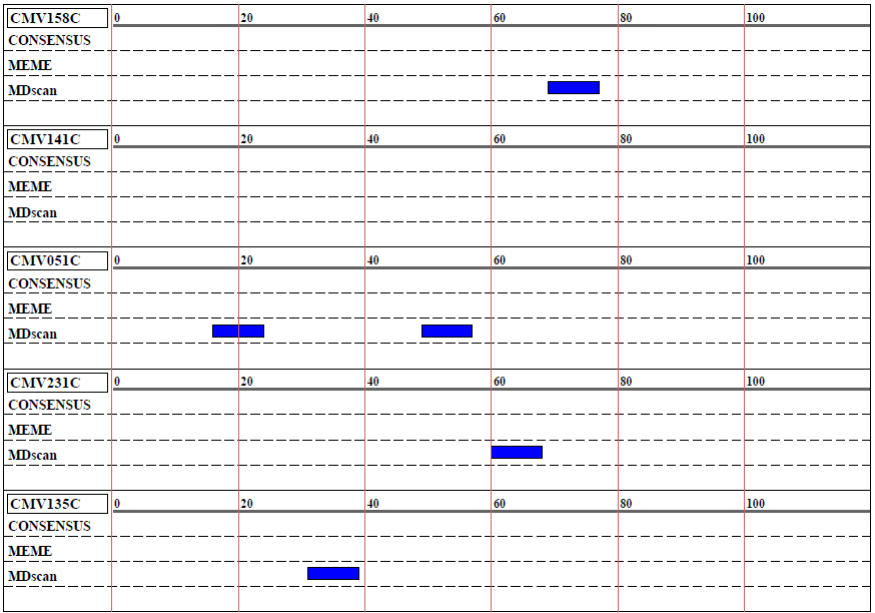
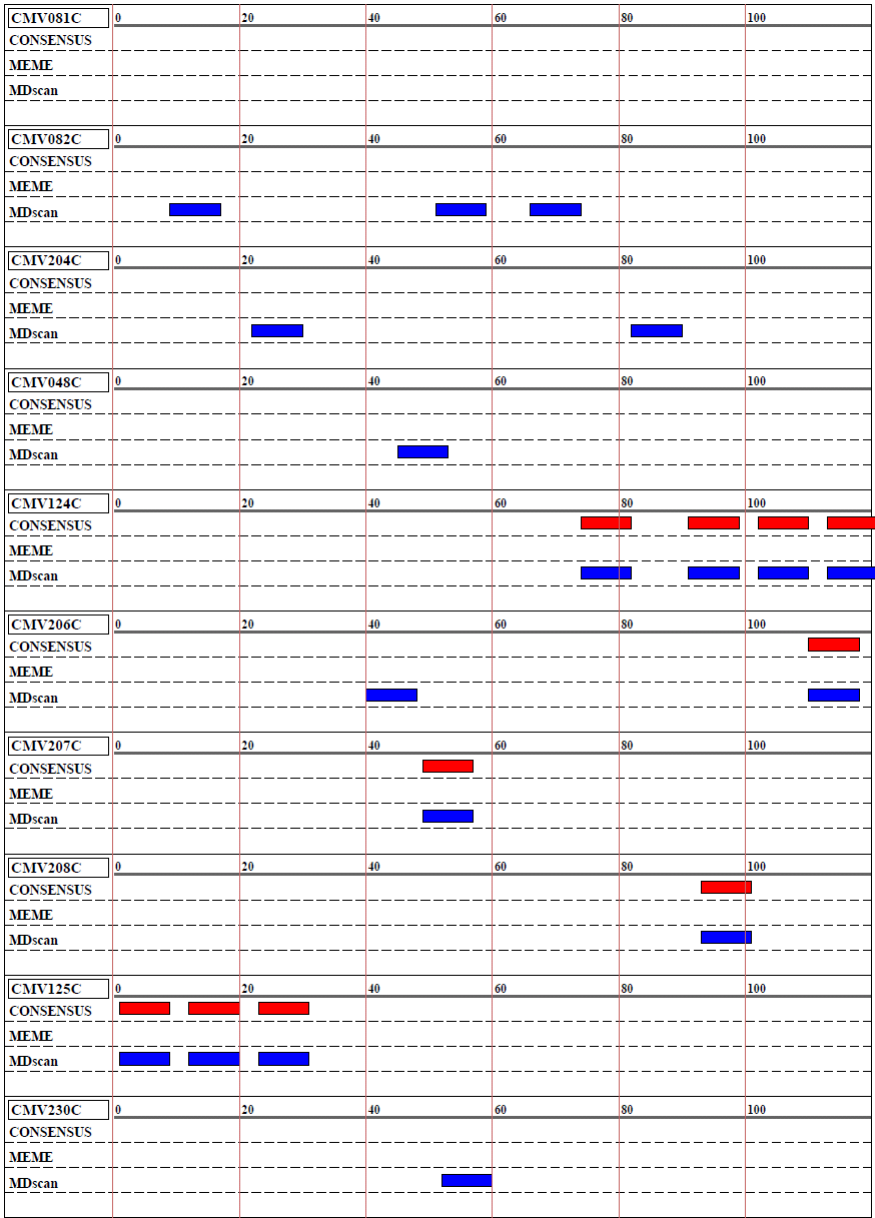








# Supplemental Figure 5



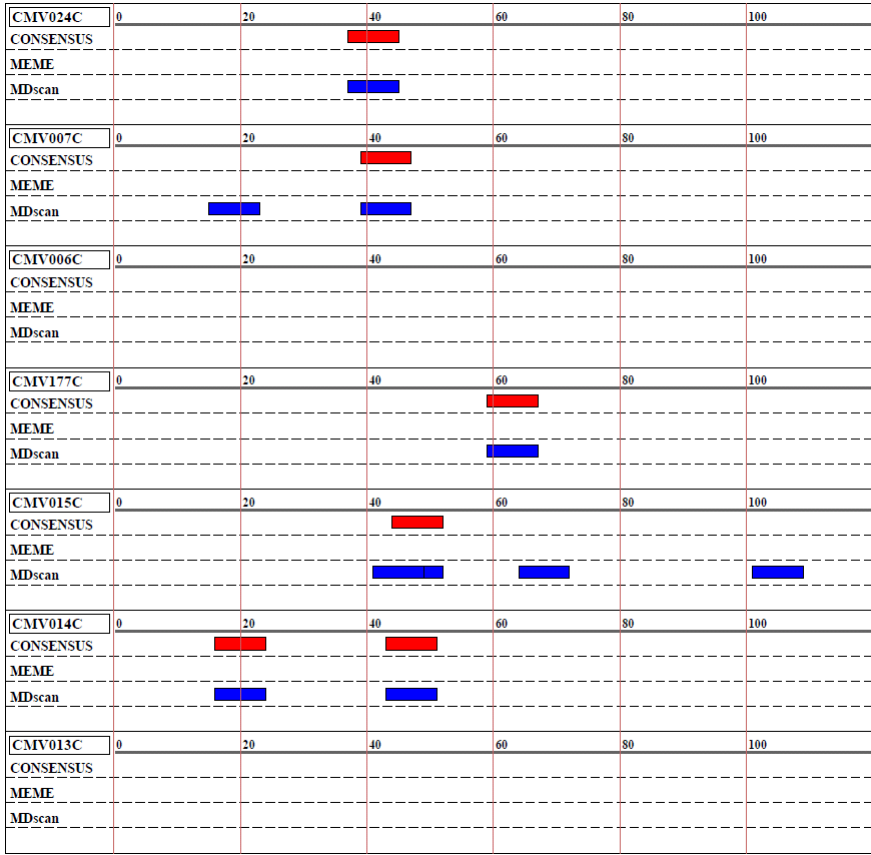
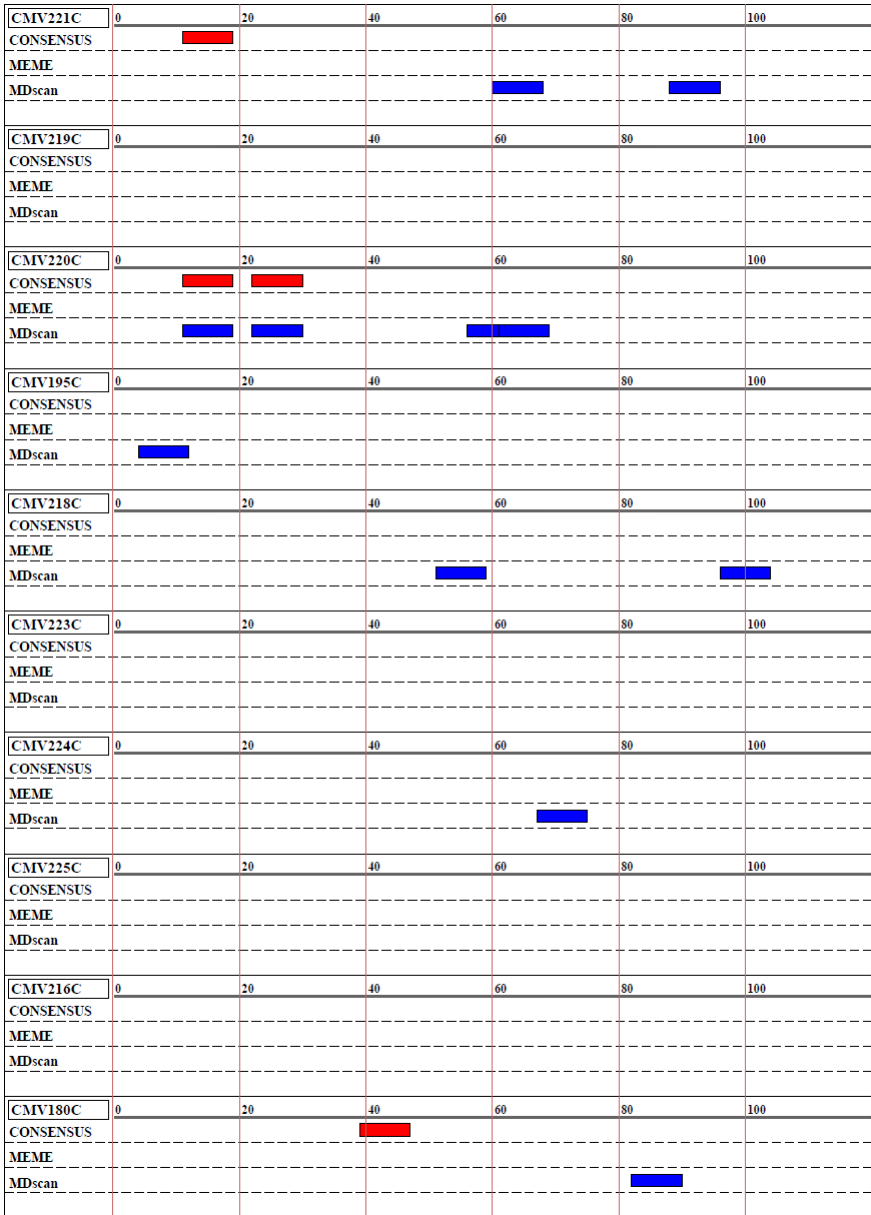
CONSENSUS



MD Scan



# Supplemental Figure 6



CONSENSUS



MD Scan





Supplemental table I. Specific oligo-primers for construction of custom DNA microarray.

Organelle	ORF number	Name	Sequence of designed 50 mer oligonucleotide	Additional information
Plastid	CMV001C	ycf24	AATTAGTTGGACACAAGTGGAAACAGGATCAGCTATAACATGGAATATC	
Plastid	CMV002C	ycf16	GCCTATGTCTTAATTACGCATTATCCAAGACTCTAGAATATATCAAGCC	
Plastid	CMV003C	ycf12	CGTTCTAGCTCAATTAACCGTTTTAGCTTTTGTATAGCAGTAGGTCCTA	
Plastid	CMV004C	ycf62	ACTACTGAACAAGATGCACGCCAATACCGATATGCTAATTTAATTCAGCT	
Plastid	CMV005R	trnK	CTAACTCAATGGTAGAGTACTCGGCTTTAACCGATTAGTCCGGGTTTCG	
Plastid	CMV006C	trpA	CGTGATAGAAATAGGAGTTCATATTCAGATGCTTTAGCTGATGGTGCGA	
Plastid	CMV007C	infB	ACAGGTGGAGAATATGAAATCTGGCGAAAGAATCAATATCAAGCAAGAGC	
Plastid	CMV008R	trnT	TAGTATAGCTCAATGGTAGAGCAGCTGATTTGTAATCAGCCGGTTGCAG	
Plastid	CMV009C	rps4	TGCAAGATATTTAGGACCAAGAGTTCGATTATTCGTCGTTTAGGCATC	
Plastid	CMV010C	ycf80	CCCTCTCGACAACCTTTGCAAAATGGTCCAATTTGAAGGTAATCCTGTTT	
Plastid	CMV011C	rpl28	ATGAGTCGTGTTTGCCTTTAACTCTAAGAAGTGTAAATCATGCTTTTCG	
Plastid	CMV012C	trxM	CGTGTGATACTGTTATCGGTGCTGTTCCCTAAATCCATTTAATTCATAC	
Plastid	CMV013C	rbcL	ATCGTTACTTATATGTAATGGAAGGTGTGAATAGAGCAGCCGACATCT	
Plastid	CMV014C	rbcS	GGGATTACCTCTATTTGATGTGAAAGACCCTGCTACAATCATGTTTGAAG	
Plastid	CMV015C	cfxQ	GTGACACGAGATGATTTAGTAGGACAATATATAGGACATACAGCACCAAA	
Plastid	CMV016R	trnC	CAAGCGGTAAAGGAGAGGATTGCAAAATCCTTTACCCCAAGTTCGAATCTG	
Plastid	CMV017R	trnL	CAGACTTAAAATCTGTTGATTCTTTTCGAATCGTGAGGGTTCAAGTCCCT	
Plastid	CMV018C	ilvH	AAACATACTTTATCTGTATTAGTAGAAGATGAGGCAGGCGTTTTAACTCG	
Plastid	CMV019C	ycf84	CAACAGCCTGGATAAGTCAACAACAATGGCAACCTATGTGGATGAATGTA	
Plastid	CMV020C	ycf85	TCTCCCAACAAGTATGCAGCCATTATCTGGTGGTGAACGCAAACGAGTC	
Plastid	CMV021C	infC	AAGAAATCAAATGAGTTACAACATGGAAGAACATGACTATCAAGTGCGA	
Plastid	CMV022R	trnM	TATGGCCGAGCGGCTTAAGGACGCGGACTCATAATCCGTGGACAAGAATT	
Plastid	CMV023R	ssrA	GCTGTAACATGGGGCTGAAGGTGTTTCGACATAAGTTGTTGTTATTCAAT	
Plastid	CMV024C	chlI	GATATTGTACCAATAGAGCTGCTTGTGCTCACGCCGCTTAAGAAATTG	
Plastid	CMV025C	trmE	CTACAAGTGCTCTTGATGAGGGTTATCCTTTAGAAATTATCAGTTGGCA	
Plastid	CMV026C	lpxC	TGTAAGGGAATAGGGTTACATACAGGGCGATTGGTGAAGTAAAGATGT	
Plastid	CMV027C	lpxA	GGAGATTAAGTATGATTGCAGGCATGAGTAGGATTGATAGAGATGTACCA	
Plastid	CMV028C	psaM	AGTGTGTTGAGCTTTGATTATGGCTTTAGTTTGGGGTATTTGGCTGTAA	
Plastid	CMV029R	rrn16	CTGGCTCAGGATGAACGCTGGCGGTATGCTTAACACATGCAAGTGAACG	
Plastid	CMV030R	trnI	CTATTAGCTCAGTTGGTGGAGCGCACCCCTGATAAGGGTGAAGTCTCTG	
Plastid	CMV031R	trnA	GGGGTATAGCTCAGTTGGTAGAGCGCTGCCTTTGCAAGACAGTGGTCAGC	
Plastid	CMV032R	rrn23	CATGGAGTTGTGGGAAAGGCCTTGAACGTACAGCTAAGGTTAGTTTAAAG	
Plastid	CMV033R	rrn5	CGAGGGTGTCTATGCGACTCATGATCCACTCCGACTCCTTTCCGAATTC	
Plastid	CMV034C	rpl21	TGCTCGTCAACTTTAACTCGTATCTACATTCATCCTTTCCATGGCTCAT	
Plastid	CMV035C	rpl27	ACCTACAATCCATATTCATCCTATCAGTCATCCTATCAGTCATCCTATCA	
Plastid	CMV036C	carA	GAGTTATGCACGCCATCGCTTCCAATCAACTTCTTGATCTCTCAACTT	
Plastid	CMV037C	ycf53	AGAAGGATTTGGTTAGCGAAACAGAAGGATTGGATGAAATTTGGGAACA	
Plastid	CMV038C	ycf55	GGTATAGAGAAGGGTATAGAGATTTGAAACCTAGTTGGTTACGAGCCATG	
Plastid	CMV039C	cobA	TTAGGTACGATTTCTACAATCAACCATCAAATCCAACGCCATCAATTTGG	
Plastid	CMV040C	ycf54	CAATTCATGCTTATTGTTTCTACTGATGCTACTTGGATTGATTGGCTCAA	
Plastid	CMV041C	crtR	ACATTCTAATGAATACATCAACGGTATCATAGGTCACGTATGTGGGTTCT	
Plastid	CMV042C	cysW	GGTAGATTAAGTGTCTTATGTAGTACAGCTACTGTATTGATGAATGGCCT	
Plastid	CMV043C	cysT	GCCTAATTTAGTACCAGCGATCAAACTGTTTAGGTTAACCTGGAGTC	
Plastid	CMV044C	ycf30	TCTCTATCGGTTAAGATTTGTCAGCTTAGATCGTCATCCACCATACGAA	
Plastid	CMV045C	psbY	TTTGCTTCTATTATCGCCGCGCTTCTGGGCTATTTATAACATTTGGTA	
Plastid	CMV046C	rpl32	AAAACGTACACCTAAGTCAAAAACCTCGAAGCCGAAAAGTCAATGGATGC	
Plastid	CMV047C	psbA	TATCTTAAACCGTGCGAATCTAGGTATCGAAGTTATGCATGAACGTAATG	
Plastid	CMV048C	apcF	ATGCTTTATTTACATCACAACCTGAATTACTTCGACCTAGTGGAAATGCT	
Plastid	CMV049C	ycf20	TGGATGTCTCATTGTTTCATTTGTTGTTAGGTGTTGCTTATCTTCCCT	
Plastid	CMV050C	lipB	GCATTCTACAGCGGCCAGTATCTTGGGTGCATTGCGTCTTCACTACTACA	
Plastid	CMV051C	cpcG	GATACATTACCAACTGCATCAGAGATGGATCAGTTAATCTGGGCAGCTTA	
Plastid	CMV052C	nblA	TGAAACTTACTTTAGAACAAGAATTTCAATTACGAGTTTATCGACAACAA	
Plastid	CMV053C	ccsA	CAGTGGCGTTAAGTATTGCTATTGGTACACCTCTAGTGATGCTTGTAGT	
Plastid	CMV054C	ORF47.1	AACTCAAACATCTTTGAATGTCAACTTAACTTAACTCAACCTCACTATTCA	
Plastid	CMV055C	psaK	GGTACATTATAGGAGTGGGTATAGTCTTAGGTTTATCAAACATGGGCGT	
Plastid	CMV056C	accA	ATGAGTCAAGATTGGATTGAATTGCACGGAGATCGAAAAGGTAGTGATGA	
Plastid	CMV057C	ycf22	ATGTGTAGTTTAAACGAATTTAAGTATGAAATGTTGGCTTTAATCCGCAT	
Plastid	CMV058C	ycf23	GTGTGAAGGCAGGGGAGACATGCTGGAATTTGGGAATTATGATAGTTTG	
Plastid	CMV059C	psaC	TGTATAGGATGTACACAATGTGTAAGAGCATGTCATTAGATGTGTTAGA	
Plastid	CMV060C	glbB	ATTCAGTCTGAGTCCAAGTCTGAGTCCACAAGTCAAGATACTTATATCC	
Plastid	CMV061C	rpoZ	TGAAACTGTTAAATCAAATGGAATTTATTGTTCTACTTGAAGAATCGT	
Plastid	CMV062C	glmS	TATCGGCATGTAGTTTAACTAGCCATAAGTCAATCAGGAGAAACAGCG	
Plastid	CMV063C	cpcA	GTAGGTAAGCTAAATGTTCTAGAGATGTTGGCTATTACTTACGTATGAT	
Plastid	CMV064C	cpcB	ATATCAGCTATGCTATGATCGCAGGTGATTCAAGCGTATTAGATGACCGT	
Plastid	CMV065C	ORF47.2	TGCATCTAACATTTCTTATTCTCCTTGTCTTCAATTTCCAGTCT	
Plastid	CMV066C	ORF32	AAACTTCGATAAATATCTTGAATTTAATCGTATCATATTTGCATGGA	
Plastid	CMV067C	ORF40	GGTATTGCTTCGGGGATTCTTAGTCTACACCTTGTGGAACACCACCC	
Plastid	CMV068C	ORF45	TTAGTCACTTGCCTTCGAGGGTGTGCGCTAGGGGAGAGTGGGGTTC	
Plastid	CMV069C	ORF44	ATGAATGAGGATACACCTTGTGGAAGAGGCGGAGTTGGGGACGGCGG	
Plastid	CMV070C	ORF60	ATTAGATTCATCAGATTCATCAACTTCTACCCTTTCTTCTCTCT	
Plastid	CMV071C	secA	AAGGACGGACATATTAAGAAGTGAAGAGGTAGGAGAATGGAGTAAGAGTT	
Plastid	CMV072C	rpl34	GGTGAAGAGTAAAAAGTGATAAATAGGAGAAGAAGGAAAGGGAGAAGT	
Plastid	CMV073R	rpl34	AATGGTAGACCGCCAGACTTAGGATCTGGTAAGTTCTTGTGAGAGT	
Plastid	CMV074R	trnL	GATAGCTCAGCGGTAGAGCGGTGGCTGTTAACCATTGGCCGTAGGTTTC	
Plastid	CMV075C	ycf44	AAAGGAAGATGGATCTATCAACAGATTGGAAGTGGGAAGGAGTAAGGAT	
Plastid	CMV076C	trpG	TCTTCCCTTCTCTTTTACCATTGCTCTATCATTATCTCTCTGGACC	
Plastid	CMV077C	thiG	TGTCGTACTTGTCTCCGAAAGCTGTTGTTGGCTCTTCTTGTCTGTCAT	
Plastid	CMV078C	ycf60	ATATTATTATATTGAGGATGGGAAGTGTGATCTACGCAAGTTATCAAGT	



Plastid	CMV079C	rps6	AAAGTTGGAGAAGTATTTGCAGGTAATGAGAAGGGATTGAGATATATGA	
Plastid	CMV080C	ycf27	TATCAAAGGTTTACTTCGACGTACAAATCAGGATCAAAGTTGGCACTTGG	
Plastid	CMV081C	psbD	TGTGTTTCATAGGTTGGTCAGGCTTACTTCTGTTCCCTTGTCTTATCTTG	
Plastid	CMV082C	psbC	TGGGTTTCATTAATTCAGTAGGAGGTGTGGCAACAGAAATTAACCTCAGTG	
Plastid	CMV083C	ycf19	TCTACATAGCAATAATCTTACTGCGGATTTGTTAAGTTGGTTCCAGCA	
Plastid	CMV084C	rps16	GTCGTGAGGAATGCCTAGCTATAGAGTGGTAGTTATGAGAAGTCAGACT	
Plastid	CMV085C	ycf65	GGATATCGGCCATACAAAGGAAAGTACTACTAGATGAGGCAACATATGTC	
Plastid	CMV086C	groEL	CGATGTGAACAAATTAACAACAATGGGCTCGCAGTGATTCCAGTTACGA	
Plastid	CMV087R	trnR	CTTGTAGCTCAGGGGATAAGAGCACGTGGCTACGAACCACGGTGTGGGG	
Plastid	CMV088R	trnQ	CCAAGTGGTAAGGCAGCGGACTTTGACTCCGCCATTGTTAGGTTTCAATC	
Plastid	CMV089C	psbW	CGTTTAACTCGTTCAAGAGATGGACAACTGGTACGGCAGTATTTGTTT	
Plastid	CMV090R	rnpB	TATTTAACATAGGTAAGGGTGCAAAGGTGCGGTAAGAGCGTACCAATTA	
Plastid	CMV091C	rps1	GTATCATGTCAAAGCTTGATCTACTCACGTTCTTAAGTCGTTTATTGCA	
Plastid	CMV092C	ycf40	TGCTTGTGATTTATATTAACGGTCATCTACTTTATTCAAACGTGTCATG	
Plastid	CMV093R	rps1	AAGTGGTTAAGGCAATGGATTGTGGCTCCATCATCTCGCGGTTCAAATC	
Plastid	CMV094C	ycf29	GAGTTGACGCCAAAGAACAACATCTACTCAATGCTACTGCCAGAGGCTT	
Plastid	CMV095C	ycf28	TTGGCGTATTATTATGCTCAAGAATCTCCAAAAGGCTTGTATATCCCATG	
Plastid	CMV096C	petB	GTTTGCATACGTTAGTTTTACCAGTCTTGTCTTAGTCTTTATGTTAGCG	
Plastid	CMV097C	petD	GTTCTTAGTGGGCACAGTGGTAACGATTTGGTTAGGAATAGGAGCAACAA	
Plastid	CMV098C	dnaB	AGAATTGGATGTTCTGTAGTGGTTCTATCTCAACTTAGTCGGAATGTGG	
Plastid	CMV099R	petD	GAGAGATGGCTGAGTGGTCTAAAGCGTAGCATTGGAATGCTATGAAAAC	
Plastid	CMV100C	moeB	CTCTGTAGTATAGGAGTGGGTTACTTAGGCTTAGTGGATGGAGATGAAGT	
Plastid	CMV101R	trnS	ACATAGGCTCCTAAAACCTATTGTGGAAGGTTGAGTCCCTCAGGGCGTG	
Plastid	CMV102C	rpl11	GTTACTCATTCTCTCAAACCCACCGCTTCTGTACTTTTAAAACGT	
Plastid	CMV103C	rpl1	GCAATCAAAGAATCTGTAGAACTAATAAACCTCCGGTGTCTTGGACT	
Plastid	CMV104C	rpl12	TCCGCATCTGAAGCTGAACAACCTAAGACTCAATTAACGGAAGCTGGTGC	
Plastid	CMV105C	ORF41.1	TGTCAGAAGTAGAGAAATGGATAAGATTGAGGAAAGTTCTTATCTTAAA	
Plastid	CMV106R	trnF	AGTTGGTAGAGCAGAGGACTGAAAATCCTTGTGTACGAGTTCAAATCTC	86% and 84% identical with CMV245R and CMW008R, respectively
Plastid	CMV107C	clpC	AAGGATGCAGCATTAGAACGCGGATTCACCTGTGTCATGGTAGGAGAACC	
Plastid	CMV108C	rpl19	ACGATCAGAAGTCTTCTATCCGGGGTAGGTTGAACGATTTTTGTATTT	
Plastid	CMV109R	clpC	GATATATAGCTCAGTCTGGTAGAGCATCACGTTGACGTCGTGAGGGTCAC	
Plastid	CMV110C	ycf17	AACAATGCCGAGATGTTGAATGGTGCCTTGCTATGTTAGGGTTGTAGC	
Plastid	CMV111R	trnV	CCCGAGTGGCTAATGGGGGCGGACTGTAATCCGCTGGCTACGCCTACG	
Plastid	CMV112R	ycf17	CTTGTAGCTCATTGGTAGAGCATTCCCTTGGTAAGGAAAGGTGGCGAGT	
Plastid	CMV113C	menB	GATGATGATATAGGAGTCGTGATCTTAACCGGAGAAGGAACAAGAGCGTT	
Plastid	CMV114C	menF	ATATTCATATTCGCCTACTCTATCTGGTTGGAATCAATGCTTACATCAA	
Plastid	CMV115C	menD	ATGATCCTGTTTCATGTGTTTGGTAACCGTGGAGTAAGTGAATGATGGC	
Plastid	CMV116C	menA	ATGGTTGATCTTTTCGACCCTTGGTTTTGGTTGCTTATGATGTGTGTTT	
Plastid	CMV117C	menC	TGGTTTACCTCGGATGATCGATTTGGTGAATCATTGTTTGTACATACATC	
Plastid	CMV118C	menE	ACCCTATGTTGATATGTGTTCACTGGTACCCACTCAAATATTTCCGGTTGA	
Plastid	CMV119C	ycf83	TCATTATCGCATTGCAAACATCATCAACTGGTAGCCTCTGTTTCTATGA	
Plastid	CMV120C	ORF138	GCCTTGATGATTATGAGTGGAACTAATACACATAGCGACGGTTTGTTC	
Plastid	CMV121C	ycf82	CTACAGATGCAGGAGCAGATCGGAAGTGTAGAACCTAACTTAGGAGTC	
Plastid	CMV122C	ilvB	CGATTATCCCTTACTAATTCCTCGTCCTTCTCTTATCTATCCGCACAAG	
Plastid	CMV123C	ycf33	AGTTTATTATTTCTTCTCTGTTAGGTTAATTACCTTTCTCTTGACACCT	
Plastid	CMV124C	psbB	CATCGCATCATATAGCAGCAGGACTGTAGGATCTTGGCAGGAGTCTTC	
Plastid	CMV125C	psbT	GGTACATTGATGATTATCTTCTTTGCCATTTCTTTAGAGAACCTCCAAG	
Plastid	CMV126C	psbN	TAGTGTGTTTGTGCTAGTCTCGTTATCGGATTAAGTCTTATGCCATTT	
Plastid	CMV127C	psbH	ATTTATAATTCAGTATTGCTTAAATGATGTACAAGTGGATTGGATGGG	
Plastid	CMV128C	psaE	TTATATCCTGACTCGTGGATTTGATAAAGTTAATTATAGCGGCTTAA	
Plastid	CMV129C	ftsH	GGGTGCTGGGATAGGAGGAGAAATGATGAAAGAGAACAGACATTAATC	
Plastid	CMV130R	trnD	GCACCGCCTGTACGGCGGAAGTTGCGGTTTCGAGCCCCGTAGTCCCG	
Plastid	CMV131R	trnS	CTGAGTGGTCGAAAGCAACAGATTGCTAATCTGTCGTATGGCCAAATTC	
Plastid	CMV132C	acpP	GAGTGAACGCTCTCAAATTTCTCCTAATGCCAGTTTACGCATGATTTA	
Plastid	CMV133C	ycf86	AAATCAGGATTAAAGCGTACCGATGAAGAACCAAATAGGACAGATAGCT	
Plastid	CMV134C	accB	ACACCGAGACGTTGAAAGAAAGTTCAAAGAAAGTTGAAAGAAAGTTGCG	
Plastid	CMV135C	psaA	ATATGTACGCAATGCCACCTATCCATACTTAGCAACCGATTATCCAACG	
Plastid	CMV136C	psaB	CTTAGCTTGGACAGGTCAGTTAGTTCATGTGGCAATTCCTGCGTCAAGAG	
Plastid	CMV137C	rps14	AAGACGCAGATGTTGGTTAACAGGCGGTAGTAGAGGTGTCTACCGTTATT	
Plastid	CMV138C	hisH	GTTACCAGTGAAGTGATACCTCATATGGGTTGGAACAGGTTAGAGTGTG	
Plastid	CMV139C	petG	GGTCTTATACCTATTACTATTCTGGGATTACTTATGGCCGCTTATTTCCA	
Plastid	CMV140C	psbK	TTGATCGCTCAACTACCCGAAACTTATTCGATTTTGTCTCTGTTATTGA	
Plastid	CMV141C	psbZ	ACCGCATCTGGTTGGTCTAAATCTAAATCTAGCATTGTTACTGCTCCAT	
Plastid	CMV142R	trnG	GGTAGAGCGCAACCTTGCCAAAGTTGATGTGCGCGCTTGAATCGCGTTG	
Plastid	CMV143R	trnS	GGCAGAGTGGTTGATTGCGGTAGTCTGAAAACCTATTGAATCGTGAGATT	
Plastid	CMV144C	psaD	GCGTACTACCATACCAAGTTAATAAAGGTCGTGAACAAGTAGGACGTGTC	
Plastid	CMV145R	trnS	GCGGAGTAGAGCAGTCTGGTAGCTCGTGGGCTCATAACCCGAAGGCCAA	
Plastid	CMV146C	ORF47.3	AGGTTTGGCCTATTTTAGCACTTACCTTATCATCATATGCTTATCGGGT	
Plastid	CMV147C	petM	GATCATATGCCGTTAATGGTTATGGTTGGTTTAGGAATGGGATTTGCAC	
Plastid	CMV148C	petN	CAGTATAACTTGGGGTTGTCTGATGGCTACATTTACTGCCTCATTGGCAC	
Plastid	CMV149C	ycf59	GGCGTTATATCAGGATTTATAGACATTTAGAGGCTCATCCAAAATGGAGT	
Plastid	CMV150C	rpl35	AGGATTCAAATACCAAAGCACATTTAAGACGTAAAGCAGGCAAAAGTCA	
Plastid	CMV150C (ups)	ORF38	GTGCAATCTTATTAGTGCAATCTTACAAAACAAAGTGCAATCTTACA	putative transcribed region
Plastid	CMV151C	rpl20	GCCTATGGATTACCCGCTCAACGCCATCTTGGCGTATAAGTACAGTAAA	
Plastid	CMV152C	preA	GAAATGATTCACACGGCTAGTTTATTGCATGATGATGGTAGATGAAGC	
Plastid	CMV153C	odpA	TCAACAGGAGTAATCAAGCACTTGACAGAACATGATTATGTATGTAGTAC	
Plastid	CMV154C	odpB	TTCAGCAGAACATTTCAACGTATAGAAGCCTACTTCCAAGCGGTTCCAG	
Plastid	CMV155C	petA	TCCTCTTAAAGCACAGATCTACAAACCAATAACAAGTTCACTTTGTGA	
Plastid	CMV156C	tatC	TCTCTTAGTTCCTTGTGTAAGTGTGTTGACGTTTCGAGTCAACCTG	
Plastid	CMV157C	apcE	TCCATGTCAATACCATCAGCATTACCTCAAGATCGTCTAGAAGCCAATG	

Plastid	CMV158C	apcA	GTGTAAGAAATGTACAACCTACTAGGAACACCAATTTTCAGCGGTAGCC
Plastid	CMV159C	apcB	GGAGCAACGATCCAATCTATTCAAGCGATGAAAGAAGTAACAGCAAGTTT
Plastid	CMV160C	argB	TATTTCTCACTTGTGTGGATTTCAAATCGTGGTAGTACATGGTGGAGGG
Plastid	CMV161R	trnI	AGGTTAGAGCGGGGACTCATAAGCCTCAGGTCGTAGGTTCAAATCTTAC
Plastid	CMV162C	hupA	AACAAGCGTCCCAATCTCAGGAAGATGCAGATAACAAACAAGATGACAAA
Plastid	CMV163C	dnaK	TTATTGCCGTTATGGAAGGTGGTCAACCTACCGTTGTGCCTAATTCGGAA
Plastid	CMV164C	rpl3	TTGGATTGAGAAATTTGAGTGAAGCACCTTTCTGCTTATCCCATAGGAA
Plastid	CMV165C	rpl4	AAAGGAACAGGACGTGCCAGAGCAGGTTCAAGACGCTCACCTCTTTGGCG
Plastid	CMV166C	rpl23	GTCAGTATACATTCCAAGTGTCTCCAAAATGCGCAAACCAGACTTGAGA
Plastid	CMV167C	rpl2	GAATCCTGTAGATCATCCTCATGGTGGTGAAGGTAGATGTGGTATAG
Plastid	CMV168C	rps19	TATTCATAACAGATGCATTAGTAGGGCATAAGTTGGGAGAATTTGCGCCT
Plastid	CMV169C	rpl22	AAATATCAAGCCAAATATATAAGAATGTCTCCAATCAAGTGAGGCGTGT
Plastid	CMV170C	rps3	GGGCTGAAATGCTCGTAGTGGTGAAGCATGGTCAAATTCCTTTG
Plastid	CMV171C	rpl16	AGTATAGAAAACCGCATTTAGGAAGATTAAGGGTAGAGCTAGTCGATGT
Plastid	CMV172C	rpl29	AGAAGCATGATTTGGCGAAAGAGTTGAAACAATCATGGAAACCTCATG
Plastid	CMV173C	rps17	GCTTCTTTAGGAGAGCTCATTGGATTGCTACATGCAGACCTATAAGTAA
Plastid	CMV174C	rpl14	CCTAAAGGCACAAGAGTATTTGGACCCATCGCAAGAGAATTAAGAGAAGC
Plastid	CMV175C	rpl24	GGAAATCTAAGGGTCAAATAGGTGAGGTGCTAGTCATTGATCGTAAGCG
Plastid	CMV176C	rpl5	ATATAGCTACTCAAATGTTCAATAACCGAAATACGTTCCATTTCATC
Plastid	CMV177C	rps8	TACTAGTGCTGCCAGTAGAATGAATTGGAATGTAGCTCAAGTACTCCGT
Plastid	CMV178C	rpl6	TCGTGCACAGTTAATGAAAACGATTTAGTACTTTATGTGGGATTTAGTC
Plastid	CMV179C	rpl18	GATGGCATAGTACGATGAAAGATGCTCAAGAAGTAGGTCAAAAACCTTGGC
Plastid	CMV180C	rps5	ATGAATGAACAACAAGAACAGTGGCAAGAACGAGTTATACAAATTAGACG
Plastid	CMV181C	secY	TCTTCAGTGGTTTTGGGGCTACTTCTTTATAATTGTCATAGGTGTATCT
Plastid	CMV182C	rpl36	ATCAAAAGGCGTATGGAGTATTGAGAGTATTGTAAGTAAATCCAAAACA
Plastid	CMV183C	rps13	TAGCCAAAGAGATTTTAGAAGCATGTCAGTTATCACCGGATTTACGTGTG
Plastid	CMV184C	rps11	GATTCAAGATGTTACAGGCATACCACATAATGGATGTCGTCCCCAAAAC
Plastid	CMV185C	rpoA	CAACCATTACAAGATTGAAAGTGAAGGACCTGCTATAGTAACTGCGGCA
Plastid	CMV186C	rpl13	AATCCGTGACCTGATTGAAATGTGCAAGCTAACAGATTCAAGTAACG
Plastid	CMV187C	rps9	ATGTATGCCATAGGAAAACGTAATGTGCCATAGCGCGTGTATGGTTAAG
Plastid	CMV188C	rpl31	AACAAGTAGATACAGAAGGTAGAATCGAGAAATTTATGCGTAAATACGGT
Plastid	CMV189C	rps12	CGGGTCAAATTAACCTCAGGGTATGAAGTGACAGCTTATATCCAGGAAT
Plastid	CMV190C	rps7	GATGCCATTAGTATGCGTGAAGCAAGACGCGTAGGAGGTGCTACATATC
Plastid	CMV191C	tufA	CCAGTAGCCATAGAACAAGGGATGCGATTTGCCATTAGAGAAGGAGGACG
Plastid	CMV192C	rps10	CATCAGCAGCAACGATCGATGCCTAATGAAAGTAGATTTAGCTTACGGG
Plastid	CMV193C	petF	AAGGTGTCGATCTACCCTATCTTGTGCTGCTGGTGTCTGCTACTTGC
Plastid	CMV194C	ycf38	ATAGAATTTGGGTTGCTCCTTTAGTGTCCAGAAGCAGTATTTGGATCAGT
Plastid	CMV195C	atpE	CTTACAGCATTAGATATAGGTGTGATGAGAGCCAAAACCGCCCAAGGATG
Plastid	CMV196C	atpB	TTACAAGAACGTATCACCTCCACTGTTGATGGCTCTATTACCTCTATCCA
Plastid	CMV197C	ycf3	AGCCGCTTATTGGCGTAAAGCTATTCAATTAGCACCTGGTCAATATCTAG
Plastid	CMV198R	atpE	ATCGTCTAGAGGCTAGGACATCTCCCTTTCACGGAGGTAACGGGGATTC
Plastid	CMV199R	atpB	GATATAGCGTAGTTTGGTAGCGCGCTGCTTTGGGAGCAGGATGTCGCAG
Plastid	CMV200C	ycf52	AACTTGAATGCAACCATTTGGGATGTGGTTATTCATCCAGACTATCAAC
Plastid	CMV201C	psaF	GTTAACTCCTTGCCAACAAGTGAAGCTTCCATAAACGTGAAATCAATG
Plastid	CMV202C	psaJ	CCGGTAGTCGCTACTTTGTGGTTATTTTAAACAGCTGGGATTTTAATTGA
Plastid	CMV203C	ORF41.2	TTTGTGAATCTTTGTTATCTAGTACTTATGTTCTACTCATTACCTTAATA
Plastid	CMV204C	apcD	ACGTTAATTACTTATGCTCTTATCGAAGGTGATGCCATGGTCTTAGAAA
Plastid	CMV205R	psaJ	GAAATTTGGTAAACACGCATGCTTGAGGGGCATGTTTTTGGCAGTTCGAG
Plastid	CMV206C	psbX	CAAGTCTAGCAGCATTCTTTTGGAGTCTTATATGGGCAGCTGCTTAGTC
Plastid	CMV207C	accD	GTGTGTGGAATGTGATTATCATTGGCGTATGCCAGTAGAGAACGTATTG
Plastid	CMV208C	psbV	GATGACTCCCATGATCAGCTGGGCTACAGAAGTGGTCAAAGATGTTAGTG
Plastid	CMV209C	petJ	ATGCCATCATTTAGTCGTTTAACTGACAGTGATATTGAAGACGTAGCGAA
Plastid	CMV210R	trnR	GGGCTCATCGTCTAAGGGATTAGGACAGGAACCTTCTAAGTTTCTAATGT
Plastid	CMV211R	trnV	GTTAGCTCAGCGGTAGAGCGCTGCCTTACAAGCAGGTGGTCACTGGTTC
Plastid	CMV212C	ycxr	TTGGTGCCTTACTAGCTCTCATTAGTTGCCATTACGCACTTATCACTCGT
Plastid	CMV213C	rps18	ATGAAGAGAGAAAAGGAGAGAGAAGCATGAATATCCAAAGATGATGAA
Plastid	CMV214C	rpl33	GTGTGGGTATTAGCTTAGAATGCACGGCATGTCGAGCTAATGCGAATCAA
Plastid	CMV215C	rps20	CTTATGAAACATGCTACCAAAGATGAAGTTGAATCAGCCATTGATAAAGC
Plastid	CMV216C	rpoB	GAACATTAGTGTACGTGTGAGTGTGGCCGTGAAGCGTGAATCCAAGTAG
Plastid	CMV217C	rpoC	TTATCATGCCCTCACAGGATATGGTCATAGGTTGTTATTATCTCACAGCC
Plastid	CMV218C	rps2	TTAACAGTTCAAGTAAGTGAAGGTAACCGTGTCTTGTGTTGAGGAACAAA
Plastid	CMV219C	tsf	AGCGTCAAGTCAAGTAGCTGAACAATTAGTGAACAATTAGCCAATAA
Plastid	CMV220C	atpI	CACGTTATGTATTACCTACACCCATCTTATTACCTATTAATATCTAGAA
Plastid	CMV221C	atpH	CCGCGATAGGACCAGGAATCGGCCAAGGAAGTGCAGCAGCCAACGCTGTG
Plastid	CMV222C	atpG	GTTACCCGTGATGGGATTGCAAGTAGTCTTGTAAAGTTGGCTGTTAGAGC
Plastid	CMV223C	atpF	CGCCAATAGATGGTAGTCAAATCTAGATCGACATATTTCTCTCCTCAGC
Plastid	CMV224C	atpD	CAGTTAACACGTATGTGTCAAGCCAAACATTTGCAATGTGAGTATCAGGT
Plastid	CMV225C	atpA	CAGACCAGCGATCAATGTAGGTATATCAGTATCACGAGTAGGATCAGCAG
Plastid	CMV226C	frC	AATTTGCTTGTGTTCTATGCGTGAACGCAAGAATGTCATTGTATGTT
Plastid	CMV227C	psaI	TGTCAGCGTCATATTTACCATCTATATTAGTACCTACGGTGGGCTTAATT
Plastid	CMV228C	psbJ	TTGTTGCCACGATGGAGGATTGCTGTTTTAACTGTCTTAGGTTTGT
Plastid	CMV229C	psbL	GGACCAAATCCAAATAAACAACCAGTAGAATTAATCGAACATCTCTTTA
Plastid	CMV230C	psbF	TTTACCTTTGCTGGTGTAGCTATCCATGGTTTGGCGTCCCTACTGTATT
Plastid	CMV231C	psbE	GCAGGATGGTGTGTTGTAAGTACAGGATTAGCCTATGATGTTTGGAAAC
Plastid	CMV232R	trnG	GGGCATAGTTTGTGGTAAAACCCTAGCCTTCCAAGCTAGTATGCGGGT
Plastid	CMV233C	ycf4	CCAATGCCTTTGGCCGAGTTGGAACAGAAAGCCACACAGTTAGCACAAATG
Plastid	CMV234C	ycf49	CAGCGATAAGTTGGCATATGACACATAATCGAGTGAATGGTGTAGTATC
Plastid	CMV235C	petL	TGGATTAGTTATCTAGGTTTCTTGATATTTTATTTTATTTAGCAGCAGC
Plastid	CMV236C	psaL	GCCGTTGGTGGTGGTGGTTCGCTTATCTTTTACTCACTTATTTTCTTA
Plastid	CMV237C	ycf10	AGCTTCCTTGAATATTTATTGTTGTGATCTTAATTCGGTGGTGGTCA

Plastid	CMV238C	ORF340	ATAAGAATCAAGCTTATGCACTCATTGATTTTCACCTCCTAACACTAGT	
Plastid	CMV239C	ORF147	AGTTGGCATTTAGCTTCCAATCATCTATGTTTTCTTCTAGTCGTGTGT	
Plastid	CMV240C	psbI	TTTTATCGAATGATCCATCACGCAACCCGAATCGAAAAGATTGGAAATA	
Plastid	CMV241C	ORF515	GAAGAGCAAGTTGAAGACGATGTAAGTGAGCAAGAGTGTGAGCAAGAATC	
Plastid	CMV242C	ycf39	CTTAATCTCTCGTATGCTCTTCTATATTAGATTACCGTACGATCTGGT	
Plastid	CMV243R	trnL	AATTCAAAATTTGACGACAAAAGTCATGGGTTCAAGTCCCCTACTACC	
Mitochondrion	CMW001C	sdhC	GCTCTGGCATTATCATTTGCTTTTAGAATTAGGGTATTTTTACCATATG	
Mitochondrion	CMW002C	sdhB	TCATACAAAGTATATAGATGTCATACAATTATGAACTGTAAGACATG	
Mitochondrion	CMW003R	trnH	GGCGAGTATAGCTTAGTTGGTCAAAGCGACAGACTGTGAATCTGTGATCA	
Mitochondrion	CMW004R	trnG	AAAGGTAGAGTATAATCTTGCCAAGATTATGGTTGAGGGTTCAAATCCCT	
Mitochondrion	CMW005C	nad6	ATTTAATAGGAAGTATTTTAGGAATTATTTCTTAGTACAACTTTCTT	
Mitochondrion	CMW006R	trnL	GATTAGGATCTGATGGGTATCAACCCTGTGGGTTCAACTCCCCTGTC	
Mitochondrion	CMW007C	cytB	GCATTATACGCCTCATGTGGATTTGGCATTATAGTGTAGAACATATTA	
Mitochondrion	CMW008R	trnF	CTAGGGTTAGAGCAGAGGACTGAAAATCCTCGTGCAGAGTTCAAATCC	
Mitochondrion	CMW009R	trnK	GGGTGCATAGCTTAGTTGGCTAAAGCATCAGACTTTAATCTGTAGATCT	
Mitochondrion	CMW010C	cox2	GCTGTACTGTTAAAGCAGTGGGACATCAATGGTATTGGAGTTATGAATA	
Mitochondrion	CMW011C	cox3	TCAGTAGTTTGGTGGCAGATGTAATCGTGAATCAACATATGAGGGATC	
Mitochondrion	CMW012C	ORF171	ACCCAAATAGTTATGTGAATAAATCATGGAATTATTTACATGGTTCTGT	
Mitochondrion	CMW013C	rpl6	ATAGAGGTATTAATTAATGTAATGAACTGAGTTCCTATGTACCTCACATT	
Mitochondrion	CMW014R	rrn5	TGAAACTTGTGTTGTCAGAAAATACTACTTAGATGGGAATCCTGGGAAC	
Mitochondrion	CMW015R	trnM	AGCGGACTAGTTCAGTGGCTAGAACAGCAGAATCATAATCTGCGTGTCCGG	
Mitochondrion	CMW016R	trnC	ATGCAAAAAGATTGCAAATCTTTGGATGATGGTTCAAGTCCATTCTAGCT	
Mitochondrion	CMW017R	trnP	AGCTGGTAGCGCATCTGTTTTGGGTACAGAAGTTCGCGTGTCAAATCAC	
Mitochondrion	CMW018R	trnL	ACGGTAGTTTCAAATCTATTACTTACTTTAAGTTTGGTTCGAGTCC	
Mitochondrion	CMW019C	cox1	AGAATGGAATTAGTTCACCTGGTAATCAATTACTTATGGGAATCATCA	
Mitochondrion	CMW020C	nad3	TACTATCGGTTTTCTTTATGAGTGGTTAAAGGTGCCTTAGATTGGGAGT	
Mitochondrion	CMW021C	nad1	AACGTAAGGACCTAATGTCGTAGGTATGTTGGCCTGTTACAACCCTTA	
Mitochondrion	CMW022C	nad2	TTAAACTTAGCGCCGACCTTCCATATGTGGAGCCAGATGTTACGA	
Mitochondrion	CMW023C	nad4	AAAGTTCCTATGATTCCTTTCCATTTGGTTACCAGAAGCTCATGCAGA	
Mitochondrion	CMW024R	trnI	TTAGAGCGCACGCTGATAAGCGTGAGGGTGGTTGTTCAAGTCAACTTAG	
Mitochondrion	CMW025C	nad5	CTTATCAACTTGCAGTCAATTAGGTTACATGATATTCGCTTGTGGAATT	
Mitochondrion	CMW026C	atp8	TTGGCTTTACTTATTATGATTGTAGCTTATAGCTTTGTAATTAAGAA	
Mitochondrion	CMW027C	atp6	AAGGAAAGCTCTTAGTGCCCAATAGATGGCAGTATGTTATAGAAATACT	
Mitochondrion	CMW028C	ccmF	TGGTTATTAAGCCTTGCTTTATTACATAGTTTGTGCTAACTTGAAGTT	
Mitochondrion	CMW029C	ccmA	TCTGATTATATGCTAACCTATTTGGTTGTTAGATGAACCTGAGTCGA	
Mitochondrion	CMW030C	ccmB	AAACAATGATTATGACATCTTCTTAGTTAAATTTACAATATCCCTTCA	
Mitochondrion	CMW031C	rpl20	GAGAAATAAAGTAAATATAATAATCTTGTATTAAATAGTTCAATATTTA	
Mitochondrion	CMW032C	rps11	TGGAAGCACAGGTTTCAGTGGGTTCAAGAAAATAACAATTTCTGCCATTA	
Mitochondrion	CMW033C	rps8	ACTCCCTATTATTTAGATCTATTACATTTACTATTACATGAAGGCTTC	
Mitochondrion	CMW034R	trnW	AAAGGAATCAAAGTTTGGTCTCCAAAACCAAAGATAAGGGTTCGAGTCC	
Mitochondrion	CMW035C	rps14	CAAAGTTCATCATTCCAGCATTTTATGAAAGTTAGAAATCGATGTGTTTT	
Mitochondrion	CMW036C	rpl5	AAGTTACAATTACCAGCTTTTCTAAGTGTATTATCTATGCGGACAAAGC	
Mitochondrion	CMW037C	rpl14	CGATCTTTGGATAATATATGGACTAACTTTATAGACAACGGTGTAGTTCT	
Mitochondrion	CMW038C	rpl16	CAACAGAATCAGGTTACATTACTGCTTCAACTGGAACCTGTCAAACGT	
Mitochondrion	CMW039C	rps3	ACCGTCCCATTACAACTAAAGAACATGAGATTTTATATTCGACTAGAGA	
Mitochondrion	CMW040R	trnQ	GGGATATAGCCAAGAGGTAAGGCAGTAGTTTTTGACACTAAGACCAAAGG	
Mitochondrion	CMW041R	trnR	TGCTTGTAGCTCAATCGGATAGAGTATTAGACTACGAATCTAAAGGTTGG	
Mitochondrion	CMW042R	trnS	GATGAATGGCTGAGCGGTTTAAAGCACTAGTCTTGAAAACCTAGCGTATTT	
Mitochondrion	CMW043C	ORF267	TTCCCAACTAATTATTTTGGCTGTTATTATGTATAAATATGAGATTATGA	
Mitochondrion	CMW044R	trnE	TCTAAAGGTCAGGACAGTGTCTTTTTCGACGACAAAATACGAGTTCGATTC	
Mitochondrion	CMW045R	trnFM	ACTCATCAGACTCATAATCTGAAAATCATAGGTTCAAATCCTATTCCTCCG	
Mitochondrion	CMW046R	trnR	AGCTTAATGGATAGAGCATCAACCTTCTAAGTTGAGTTGTGTAGTTCAA	
Mitochondrion	CMW047C	atp9	TTTAGCTACAATTGGTTTAGCAGGAGTTGGAGCAGGTTGGGATCGTTT	
Mitochondrion	CMW048R	trnG	TTAATGGTAAATCATCTATCTTCCAAGTAGAAAATTATGGGTTCGAATCCC	
Mitochondrion	CMW049R	trnL	AGGTAACACGACGGACTTAAATCCGTTCCAATATGGTTATCGGTTCA	
Mitochondrion	CMW050C	rps4	TTGCAACGAGCATCCAAGAGGTACATCAATGGATTAACCATAGATTAGTT	
Mitochondrion	CMW051R	trnS	GGAGAGATGGCCGAGTGGTTAAGGCAATAGTTTGCTAAACTATCATATA	
Mitochondrion	CMW052R	trnV	AATTAGCTCAGCGGTAGAGCATCTCGTTTACACCGAGGTTGTGAGCGGTT	
Mitochondrion	CMW053C	rps12	AGCAGAAAAGGAAAGTAGCATTAGTAAAATATCAAATGATCGACGTGCA	
Mitochondrion	CMW054R	trnA	AATTGATAGAATATATGTTTTGCACACATAAAGTTGTTGGTTCGAGTCCA	
Mitochondrion	CMW055C	sdhD	TTATTTACACCAACCAATCTAATTTTATTTATCAACTTATTAAGAA	
Mitochondrion	CMW056R	trnD	GAGTAATCAAAGGTAGAATATTAGTCTGTACGCTAAACGGTGCAGGTT	
Mitochondrion	CMW057R	trnY	AGCGATAGACTGTAATCTATTGATTTATCTACGCAGGTTTCAATCCT	
Mitochondrion	CMW058R	rrnS	ATTGATGACAGGATTAAGGACTGGAGTGAAGTCGTAACAAGGTATCCGTA	
Mitochondrion	CMW059R	trnN	GCAATTGACTGTTAATCAATGGGTTGCTAGTTCAAATCTAGCTCAGAGAG	
Mitochondrion	CMW060C	nad4L	TTTAGTAGTTTATATAGAATCTGTGGAACATTTCCGTTGAGTTAATTA	
Mitochondrion	CMW061C	ccmC	GAAAACCTACATGGGAACTTGGTGGGTGTGGATGCTAGACTTACTTCA	
Mitochondrion	CMW062R	rrnL	AGAAGAAGTAAAGGCTGACGTTTGGCCAGGTGCTTGTGGTTAATTTAT	