Table S1 – Characteristics of the oligonucleotides primers used in this study

Name	Sequence (5'-3')	Purpose
pC and pC derivatives		
pC_Fw	TCATAAATTGCTTTAAGGCG	Forward (Fw) and reverse (Rv) primers for PCR amplification and DNA sequencing of the coding sequences cloned in pC
pC_Rv	GTGTAACAAGGGTGAACAC	
pFC1_Fw	GGCGACGTGCGTCCTCAAGC	Forward (Fw) and reverse (Rv) primers for PCR amplification and DNA sequencing of the coding sequences cloned in pC
pFC1_Rv	GTGTAACAAGGGTGAACAC	
pFC1_seq_rev_Theo	CGTTTCAGTTTGCTCATGGA	Forward (Fw) primer for PCR amplification and sequencing of inserts (*prk gene* or rbc operons) cloned in the pC vector.
Km_HincII_Fw	GGCGCTGAG**GTCGAC**CTCGTGAAGAAG	Forward (Fw) and reverse (Rv) primers used for Km^r cassette amplification and *Hinc*II restriction sites addition.
Km_HincII_Rv	ACCTGCAGGGG**GTCGAC**GGAAAGCCAC	
Mv13_Fw	GTAAAACGACGGCCAGT	Forward (Fw) and reverse (Rv) primers using for sequencing plasmids send by Twist Biosciences and verify the insertion of the Km^r cassette in the good direction
Mv13_Rv	CAGGAAACAGCTATGAC	
Km1_Rv	ACGTTTCCCGTTGAATATGGCTC	
Amplification and cloning of *rbc* operon from various cyanobacteria in the pC vector		
rbcLXS_S6803_For(long)	GTACTA**CATATG**GTACAAGCCAAAGCAGGGTTTAAGGC	Forward (Fw) and reverse (Rv) primers for PCR amplification of rbcLXS operon from S6803 and cloning as a *Nde*I-*Eco*RI DNA fragment in the pC vector
rbcLXS_S6803_Rev(long)	TACGTA**GAATTC**TTAGTAACGGCCTTGGTTTTGGTTGGGT	
rbcLXS_S7002_For(long)	GTACTA**CATATG**GTTCAGACCAAATCTGCTGGGTTTAAT	Forward (Fw) and reverse (Rv) primers for PCR amplification of rbcLXS operon from S7002 and cloning as a *Nde*I-PvuII DNA fragment in the pCvector
rbcLXS_S7002_Rev(long)	TACGTA**CAGCTG**TTAGTAACGGGTTTGGTTGGGCTTGTAAAC	
rbcLS_S7942_For	GTACTA**CATATG**CCCAAGACGCAATCT	Forward (Fw) and reverse (Rv) primers for PCR amplification of of rbcLS operon from S7942 and cloning as a *Nde*I-PvuII DNA fragment in the pCvector
rbcLS_S7942_Rev	TACGTA**CAGCTG**TTAGTAGCGGCCGGGACG	
rbcC7425_For	GTACTA**CTCGAG**ATGTCCTACGCTCAAACA	Forward (Fw) and reverse (Rv) primers for PCR amplification of of rbcLS operon from C7425 and cloning as a XhoI-PvuII DNA fragment in the pCvector
rbcC7425_Rev	TACGTA**TCCGGA**TTAGTAGCGATAGCCAC	
pFC1_RbcS6803(rv_intra)	TAATTGGTAAATTGCTGTCG	Reverse (Rv) primer for sequencing of the *rbcLXS* operon from S6803 cloned in the pC vector

pFC1_RbcS7002(rv_intra	AGCTGCTGACTAATTAGACG	Reverse (Rv) primer for sequencing of the *rbcLXS* operon from S7002 cloned in the pC vector
pFC1_RbcS7942(rv_intra	ATGTGCCACACGTGGATAC	Reverse (Rv) primer for sequencing of the *rbcLS* operon from S7942 cloned in the pC vector
pFC1_RbcC7425(rv_intra)	TGGTTGTATCTTTGGATATT	Reverse (Rv) primer for sequencing of the *rbcLS* operon from C7425 cloned in the pC vector
Amplification and cloning in the pC of phosphoribulokinase encoding gene		
PRK_C7425_Fwd	GTACTA**CATATG**ACCTCTAAGCCAGACCGT	Forward (Fw) and reverse (Rv) primers for PCR amplification of prk gene from C7425 and cloning as a *Nde*I-*Eco*RI DNA fragment in the pC vector
PRK_C7425_Rev	TACGTA**GAATTC**CTACACCACAGCGGGTTC	
Construction of the pCFS-CrtE plasmids		
CrtE6803_XhoI_Fwd	AATGGTCA**CTCGAG**AGGAGAACAGCT**ATG**GTTGCCCAACAAACACG	Forward primer for amplification of *crtE* from S.6803 and cloning downstream the stop codon of the FS gene in the pCFS (Table S1). Addition of a *XhoI* site (bold) and a RBS (underlined) before the start codon
CrtE6803_EcoRI_Rev	TTATCTCCG**GAATTC**TCAATATTTTCTGGCAACAATATATTCGG	Reverse primer for amplification of *crtE* from S.6803 and cloning downstream the FS gene in the pCFS (Table S1). Addition of an *Eco*RI site (bold) after the stop codon (underlined)
CrtE6803_int_Rev	TCAAACGCATAGGCTAGCAG	Reverse primer to verify the *FScrtE* operon
CrtE7002_XhoI_Fwd	TTTCCAAA**CTCGAG**AGGAGAACAGCT**ATG**GTAGTTGCAGACG	Forward primer for amplification of *crtE* from S.7002 and cloning downstream the stop codon of the FS gene in the pCFS (Table S1). Addition of a *XhoI* site (bold) and a RBS (underlined) before the start codon
CrtE7002_EcoRI_Rev	TTGGCACT**GAATTC**TTAGTTTTTACGGTTAACGATGTATTCC	Reverse primer for amplification of *crtE* from S.7002 and cloning downstream the FS gene in the pCFS (Table S1). Addition of an *Eco*RI site (bold) after the stop codon (underlined)
CrtE7002_int_Rev	TTCTACGGCAACATCGGTTT	Reverse primer to verify the *FscrtE* operon
FS_Fwd2	TTGCTCCGCGCGAGTTACAT	Forward primers to verify the *FscrtE* operon
FS_Fwd3	CCAAGGCCGTGATATGTTGA	
FS_Fwd4	AGTAATGCGTACCGTACTGG	
Construction of pCLS-CrtE plasmids		
CrtE6803_EcoRI_Fwd	AATGGT**GAATTC**AGAGGAGAACAGCT**ATG**GTTGCCCAACAAAC	Forward primer for amplification of *crtE* from S.6803 and cloning downstream the stop codon of the LS gene in the pCLS (Table S1).

		Addition of a *Eco*RI site (bold) and a RBS (underlined) before the start codon
CrtE6803_AclI_Rev	GTCCATCGTTACGG**AACGTT**TCAATATTTTCTGGCAACAA	Reverse primer for amplification of *crtE* from S.6803 and cloning downstream the FS gene in the pCLS (Table S1). Addition of an *Acl*I site (bold) after the stop codon (underlined)
CrtE7002_EcoRI_Fwd	AATGGT**GAATTC**AGAGGAGAACAGCTATGGTAGTTGCAGACGCTCA	Forward primer for amplification of *crtE* from S.6803 and cloning downstream the stop codon of the LS gene in the pCLS (Table S1). Addition of a *Eco*RI site (bold) and a RBS (underlined) before the start codon
CrtE7002_AclI_Rev	GTCCCTCGTTACGG**AACGTT**TTAGTTTTTACGGTTAACGATGTATTCC	Reverse primer for amplification of *crtE* from S.7002 and cloning downstream the FS gene in the pCLS (Table S1). Addition of an *Acl*I site (bold) after the stop codon (underlined)
LS_Fwd3	TGTCCGATTATAATGCCTCCG	Forward (Fw) and reverse (Rev) primers for amplification of the LS part of *LscrtE* operon
Pr_LS_Rev	cctgcaggtc**TTA**AGCAAAGGGCTCAAAC	
Deletion of *phaAB* in *Synechocystis* PCC 6803		
phaAB_Fw	GCATCCCATTGGAGCGTCG	Forward (Fw) and reverse (Rv) primers used to monitor the segregation of *ΔphaAB::Km^R* chromosome in *Synechocystis* PCC 6803
phaAB_Rv	CCCAGGGCTTCAGTATTACC	
Deletion of CrtR in *Synechocystis* PCC 6803		
crtR_Fw	CGTCAATACACCATCTGGCT	Forward (Fw) and reverse (Rv) primers used to monitor the segregation of *Δcrt::Km^R* chromosome in *Synechocystis* PCC 6803
crtR_Rw	GTGTTGATCTCCTTGATTGG	
Deletion of *cruF* in *Synechocystis* PCC 6803		
cruF_Fw	ATAGCGAGCTTGTCGTGCCA	Forward (Fw) and reverse (Rv) primers used to monitor the segregation of *ΔcruF::Km^R* chromosome in *Synechocystis* PCC 6803
cruF_Rv	CCACCTGGGACTCGCCAATA	
Deletion of *ccmK genes* in *Synechocystis* PCC 6803		
CcmK3 FW	GGCTGGCCACCATAGCG	Forward (Fw) and reverse (Rv) primers used to monitor the segregation of *ΔccmK3K4::Km^R* chromosome in *Synechocystis* PCC 6803
CcmK4 rev	GTAACCCACCTTATCTCG	

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