

Supplementary Materials

Appendix I. Strains and Plasmid vectors

Strain	Plasmid/ Parts	Relevant characteristics
DH5Alpha	-	Referred to as wild-type (Wt) used as cloning strain
DH5Alpha	pJET-Kan	Kanamycin resistance cassette with Prefix/Suffix for BASIC
DH5Alpha	pJET-Cam	Chloramphenicol resistant portion with Prefix/Suffix for BASIC
DH5Alpha	pJET-SmR	Spectinomycin resistant portion with Prefix/Suffix for BASIC
DH5Alpha	pSWAPGm	Gentamycin resistant plasmid
DH5Alpha	pJET-Gm	Gentamycin resistant portion with Prefix/Suffix for BASIC
DH5Alpha	pJET-eYFP	Enhanced YFP with Prefix/Suffix for BASIC
DH5Alpha	pMB1-Kan	pMB1 origin + Kanamycin resistant portion with Prefix/Suffix for BASIC
DH5Alpha	pMB1	pMB1 origin with Prefix/Suffix for BASIC
DH5Alpha	pJET-GFP	GFP with Prefix/Suffix for BASIC
<i>Synechocystis</i> sp. PCC 6803	-	Referred to as wild-type (Wt) strain
CB1_RBS1_eYFP	-	Mutant strain of <i>Synechocystis</i> 6803 containing an eYFP cassette and a spectinomycin resistance cassette.

Parts	Amplicon Size (bp)
KanR Backbone	4027
CamR Backbone	4009
SpecR Backbone	4085
GmR Backbone	3934
eYFP for KanR	771
eYFP for CamR	777
eYFP for SpecR	766
eYFP for GmR	764

Appendix II: Oligonucleotide primers

Name	Sequence 5'-3'
KanTan-1	GCTTACATAAACAGTAATACAAGTGGTGTATGGTGAGCAAGGGC GAGG
KanTan-2	CCTCGCCCTTGCTCACCATAACACCACTTGTATTACTGTTTATGTA AGC
KanTan-3	GGCATGGACGAGCTGTACAAGATGAGCCATATTCAACGGGAAAC G
KanTan-4	CGTTTCCCGTTGAATATGGCTCATCTTGTACAGCTCGTCCATGCC
SmRTan-1	GCAGTCGCCCTAAAACAAAGTTAAACATCATGGTGAGCAAGGGCG AGG
SmRTan-2	CCTCGCCCTTGCTCACCATGATGTTTAACTTTGTTTTAGGGCGACT GC
SmRTan-3	GGCATGGACGAGCTGTACAAGATGAGGGAAGCGGTGATCGC
SmRTan-4	GCGATCACCGCTTCCCTCATCTTGTACAGCTCGTCCATGCC
CamTan-1	CGAGATTTTCAGGAGCTAAGGAAGCTAAAATGGTGAGCAAGGGC GAGG
CamTan-2	CCTCGCCCTTGCTCACCATTTTAGCTTCCTTAGCTCCTGAAAATCTC G
CamTan-3	GGCATGGACGAGCTGTACAAGATGGAGAAAAAATCACTGGATA TACCACCG
CamTan-4	CGGTGGTATATCCAGTGATTTTTTCTCCATCTTGTACAGCTCGTCC ATGCC
GmTan-1	CGATGTTTGATGTTATGGAGCAGCAACGATGGTGAGCAAGGGCGA GG
GmTan-2	CCTCGCCCTTGCTCACCATCGTTGCTGCTCCATAACATCAAACATC G
GmTan-3	GGCATGGACGAGCTGTACAAGATGTTACGCAGCAGCAACG
GmTan-4	CGTTGCTGCTGCGTAACATCTTGTACAGCTCGTCCATGCC
BASICsuf-b2	CGATAGGTCTCCCGAGCCcgaattgttagtgggcgg
GmR-mod2	TGACGATGCGTGACAGCCGAAACCTTGC
BASICpre-GmR-Mod	TCTGGTGGGTCTCTGTCCTGACGATGCGTGACAGACC
BASIC-PrePHBdn5	TCTGGTGGGTCTCTGTCCTTTTGCGGTACTGTGCAAGAATCC
BASIC-PrePHBup5	TCTGGTGGGTCTCTGTCCAGACCAATGTGCTCCATGAACGG
BASIC-SufPHBdn3	CGATAGGTCTCCCGAGCCGTGAAGATAATCGCTCCAAACTGGTGG
BASIC-SufPHBup3	CGATAGGTCTCCCGAGCTAACTCCGCCTCCAGCTCAATTATGG
BASIC-PreglgCdn5	TCTGGTGGGTCTCTGTCCGCCAGTTTCTTTCCTCGCACCATAGC
BASIC-PreglgCup	TCTGGTGGGTCTCTGTCCCATCAGCAATGCGACGCACAGTGC

Table 3. Primers used for the standardization of PHB/GlgCup and PHB/GlgCdn sequence.

Parts	Amplicon size (kb)	Forward primer	Reverse primer
PHBup	1.402	BASIC-Pre-PHBup5	BASIC-Suf-PHBup3
PHBdn	1.075	BASIC-Pre-PHBdn5	BASIC-Suf-PHBdn3
GlgCup	1.357	BASIC-Pre-glgCup	BASIC-Suf-glgCup3
GlgCdn	1.254	BASIC-Pre-glgCdn5	BASIC-Suf-glgCdn3

Figure S2 The storage vector of SpecR eYFP.

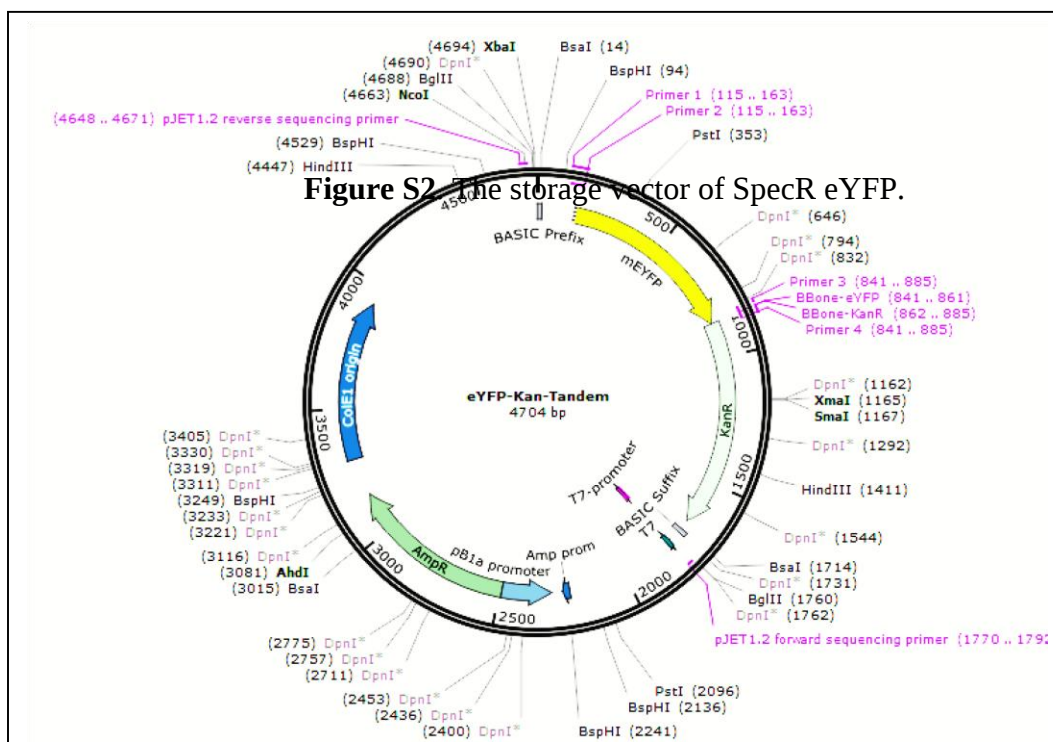


Figure S1 The storage vector of KanR eYFP

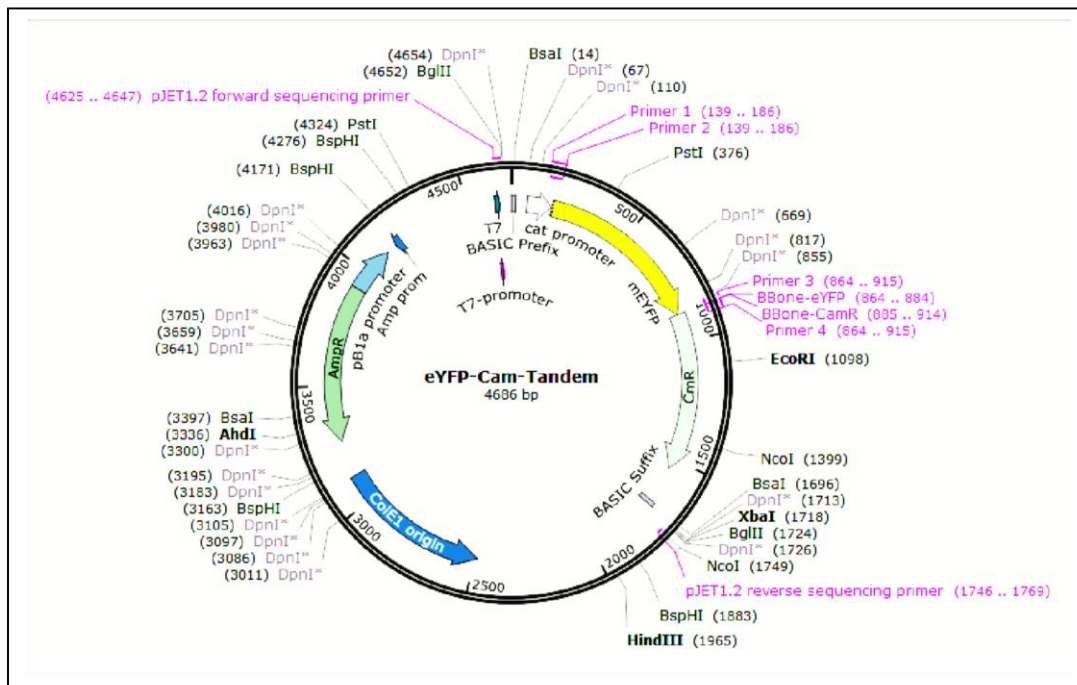


Figure S 3. The storage vector of CamR eYFP .

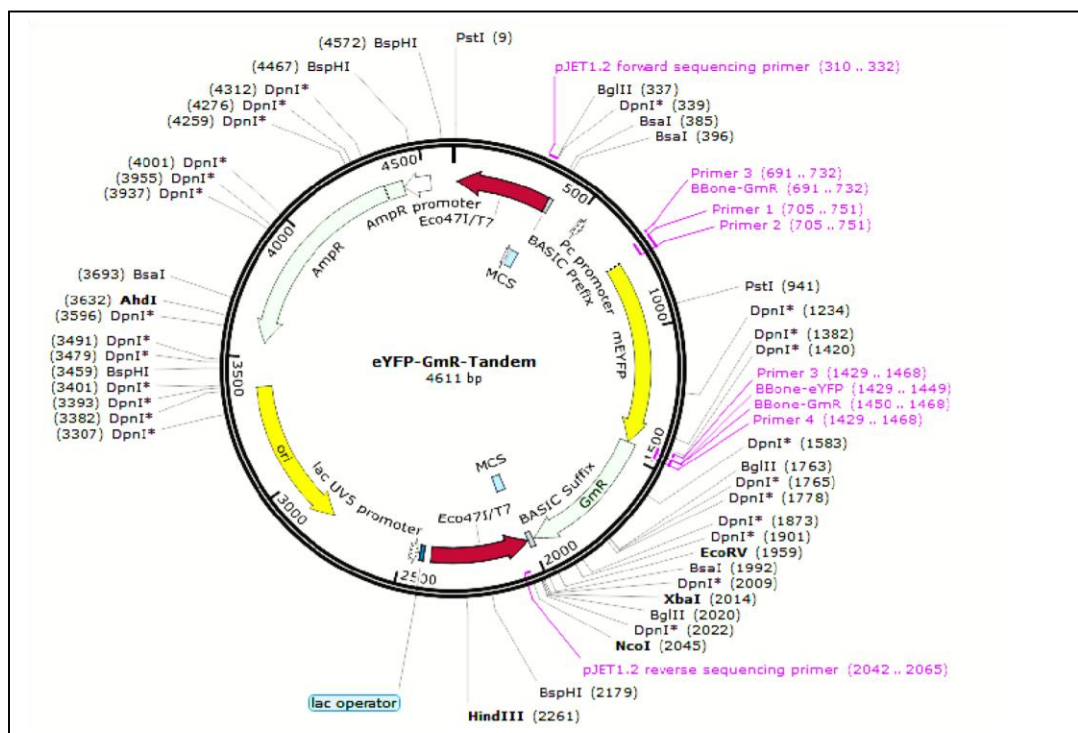


Figure S 4. The storage vector of GmR eYFP .

Table S1. Design of the 5 parts assembly. **(a)** Design of two different shuttle plasmids, **(b)** List of parts with subsequent linkers

(a)	Design	Purpose
	1. (pMBI)-PHB up-GmR eYFP-PHB dn-SpecR	Knockout the cyanobacterial PHB region
	2. (pMBI)- GlgC up- GmR eYFP- GlgC dn- SpecR	Knockout the cyanobacterial GlgC region

(b)	Parts	Prefix-Linker	Suffix-Linker
	pMBI	6P	1S
	PHB up / GlgC up	1P	2S
	GmR eYFP	2P	3S
	PHB dn / GlgC dn	3P	5S
	SpecR	5P	6S