

1 **Table S1.** Primers used in this study

Module name	Target sequence	Primer set number	Primer name	Nucleotide sequence (5' to 3') ^a
pyrG		1	Pv pyrG gRNA1 F	TAATACGACTCACTATAGGTGCCACGGGAGAGTACACGAGTTTTAGAGCTAGAAATAGCAAGT
			Pv pyrG gRNA1 R	AAAAAAGCACCGACTCGGTGC
HR-L-MCS-HR-R	HR-L	2	Pv pyrG 5'flk F(KpnI)	ATGCATggtacCAGCTTCCAGACCTTCAGG
			Pv pyrG 5'flk R(MCS)	CGACCTCGAGGGGTCGTTCAATGCAGATAGAG
	MCS	3	MCS F(pyrG 5'flk)	CATTGAACGACCCCTCGAGGTCGACGGTATC
			MCS R(pyrG 3'flk)	CATAGAATATTCGAGCTCCACCGCGGTG
	HR-R	4	Pv pyrG 3'flk F(MCS)	CGGTGGAGCTCGAATATTCTATGATCTGTCTTTTATATTTG
			Pv pyrG 3'flk R(ApaI)	GATGCATGGGCCCGACACTCTCCACGAG
SP-eGFP	signal seq	5	Pv tanSP F(NotI)	GAATGCGGCCGCATCCACTCGTTCACTTG
			Pv tanSP R(eGFP)	CTTGCTCACCATTGCATTGGCGGACGCTG
	eGFP	6	eGFP F(Pv tanSP)	CCGCCAATGCAATGGTGAGCAAGGGCGAG
			eGFP R(NotI)	GAATGCGGCCGCAGGGTATTGCCTTTGGC
Promoters	P _{PH4}	7	Pv PH4 F(Sall)	GTCGACAGATGAAGCGTTGATAG
			Pv PH4 R(SpeI)	ACTAGTCTGCTTGGTTCTAGCC
	P _{P2}	8	Pv PP2 F(Sall)	GTCGACGGAGCTTAAGAACTGC
			Pv PP2 R(SpeI)	ACTAGTAAGCGCGAGGTGCTTC
	P _{S8}	9	Pv PS8 F(Sall)	GTCGACGCATCGTGAGAAAGG
			Pv PS8 R(SpeI)	ACTAGTAGAAGGCCCTCTTCGC
	P _{tub}	10	Pv Pbt F(Sall)	GTCGACAGTACTGGGGCATCG
			Pv Pbt R(SpeI)	ACTAGTCAACAAACGTACGATTTAC
	P _{tef1}	11	Pv Ptef1 F(Sall)	GTCGACCACAGCTACGTATCG
			Pv Ptef1 R(SpeI)	ACTAGTCCGAATGAAGCCCATC
	P _{gpdA}	12	Pv PgpdA F(Sall)	GTCGACCTAGAAATTCGGGCTAAAG
			Pv PgpdA R(SpeI)	ACTAGTGGATTTCGCATCAACAAC
P _{gpdA} -eGFP	P _{gpdA}	13	Pv PgpdA F(Sall)	GTCGACCTAGAAATTCGGGCTAAAG
			Pv PgpdA R(eGFP)	CTTGCTCACCATTTTGTTGAATTGACACCGGC
	eGFP	14	eGFP F(Pv PgpdA)	ATTCAAACAAAATGGTGAGCAAGGGCGAG
			eGFP R(NotI)	GAATGCGGCCGCAGGGTATTGCCTTTGGC
pyrG		15	Pv pyrG flk F	CAGCTTCCAGACCTTCAGG
			Pv pyrG flk R	CGACACTCTCCACGAGTC
Reverse transcription	tubulin	16	Pv bt RT F	GCTGGCAAGAAGTATGTTCC
			Pv bt RT R	CAGCTGGTGAACGGAGAG
	eGFP	17	Pv eGFP RT F	CGACGTAACGGCCACAAG
			Pv eGFP RT R	CTTCTGCTTGTCGGCCATG

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