

Table S1. Sequence information of primers used in this study

Fragments	Primers	Sequence (5'-3')
<i>aceB</i>	aceB-up-F	GAAGATATTCAGGATCAGAACTTTGACG
	aceB-up-R	CTCCATAGTTATGTGGTGGTTTACATCGTGCAGCTCCTCGTCATGGAT
	aceB-dn-F	CACGATGTAAACCACCACATAACTATGGAGCATCTGCA
	aceB-dn-R	CCGCCAGTCAGTGCGCCGAGGCGGCACCCGAAGGTGCCTGAGGTAAGGTG
	aceB-F-tetA	ACTGAACAGGCAACAACAACCGATGAACTGGCTTTCACAAGGCCGTATGGTCCTAATTTTTGTTGACAC TCTA
	aceB-R-sacB	CGCTAACAGGCGGTAGCCTGGCAGGGTCAGGAAATCAATTAATCATCGGATCAAAGGGAAAACGTGC CATAT
<i>glcB</i>	glcB-up-F	AGCAACGCACCAAAGGAGAAACCAATC
	glcB-up-R	GGCTTTTTTGACGCTATTACATTGTTTATCTCCTCGTTTTCGCTTA
	glcB-dn-F	AACAATGTAATAGCGTCAAAAAAGCCCCGGCAAG
	glcB-dn-R	GCGGGAACATATGCGTTAACGCATC
	glcB-F-tetA	ATGACTTCTTTTTTCGCGTAAACGCCAGGCGTGTAATAACGGTTCGGTATTCCTAATTTTTGTTGACACTC TA
	glcB-R-sacB	CGTTTAAAATTGGCGTCAATGCGTAAACGGCTCTGGGTATGGTTTGACTATCAAAGGGAAAACGTGCC ATAT
<i>gcl</i>	gcl-up-F	TGGGGGAAGTTCGTCGGTTAGCGA
	gcl-up-R	ACATTATTTATCTCCCTTACATTTTATTCTACCTCTATTTATTGG
	gcl-dn-F	TAAAATGTAAGGGAGATAAATAATGTTACGTTTC
	gcl-dn-R	AATTCAGACAACACGATCCCCTGC
	gcl-F-tetA	CAAAATTTGAAAGTTGGAAAAATTTTCCAATAAATAGAGGTAGGAATAAATCCTAATTTTTGTTGACAC TCTATC
	gcl-R-sacB	CCAAATAACATCGATAAATTAGCAGAGAAACGTAACATTATTTATCTCCCATCAAAGGGAAAACGTGCC ATATGC
<i>ycdW</i>	ycdW-up-F	GTAACCAGACAGTTGATGTGCACG
	ycdW-up-R	GCAGGAATCCTGATGCTTTAACTGACTCCCGAAAAGCGTTGTGC
	ycdW-dn-F	TAAAGCATCAGGATTCCTGCTATCCTTGGC
	ycdW-dn-R	GTTTCGCAGCCAGTTTCCCCTCACGAATC
	ycdW-F-tetA	GATATCATCTTTTATCACCCAACGTTTCGATACCCAATGGTGGATTGAGGCTCCTAATTTTTGTTGACACTC TA
	ycdW-R-sacB	GTAGCCGCGTGCGCGGTCGACTTGCCCGCAGACCCTCTCCCCTTTTTCGAATCAAAGGGAAAACGTGCC ATAT
pLB6	pyc-F	CCATGATTACATGTGCTGACTCACACATCTTC
	pyc-R	GCTCGAATTCTTAGGAAACGACGACGATC

	pTV118N- <i>pyc</i> -F	CGTTTCCTAAGAATTCGAGCTCGGTACC
	pTV118N- <i>pyc</i> -R	GAGTCGACATGTAATCATGGCCATGGTC
pSR13	<i>gltA</i> -F	TAGGCGTATCACGAGGCCAAGGAGATATAATGGCTGATACAAAAGC
	<i>gltA</i> -R	TTAACGCTTGTTAACGCTTGATATCGCCTTTTAAAG
	<i>aceA</i> -F	CAAGCGTTAAAAGGAGATACCATGAAAACCCGTACACAAC
	<i>aceA</i> -R	TGTTTATCAGACCGCTTCTGCGTTAGAACTGCGATTCTTC
	pGV3-F	CGCAGAAGCGGTCTGATAAAACAGAATTG
	pTV118N-R	GGTCTGTTTCCTGTGTGAAATTGTTATCCG