

Supplementary

Supplementary Table 1 List of primers used for vector construction

Primer name	Primer sequence (5'-3')
P1 ANL-F	ATGTTCTCTGGACGGTTTGG
P2 1ANL-R	TCCAACGTGGAAGTCGAGACGCTCCGCACATCAAGTGGT
P3 2ANL-F	CACCACTTGATGTGCGGAGTGTCTCGACTTCCACGTTG
P4 2ANL-R	GTGCCTCCAAAGTTATTTGTCAGGTCAAACCTCCAGCAGC
P5 3ANL-F	TGCTGCTGGAGTTCGACCTGACAAATAACTTTGGAGGCACA
P6 3ANL-R	CGAGGACATCCATAGGTGTACAGTTCAACACTATAACCGTC
P7 4ANL-F	GACGGTTATAGCGTTGAACTGTACACCTATGGATGTCCTCG
P8 4ANL-R	TAGCAGACACTCTGAAATTGC
P9 pCAMANL-F	AGTGGGCCCCGCACCGACACCACTTGATG
P10 pCAMANL-R1	TTAATGATGATGATGATGATGGCTGCTGCCTAGCAGACACTC TGAAATTGCG
P11 pCAMANL-R2	CAGAGATCTGGATCCTTAATGATGATGATGATGATGGCT
P12 kogpdA-F	ACTGGTACCCGGAGAATATGGAGCTTCATC
P13 kogla-R1	CTCAGGGCGAGTAGAGATCGGAACGAATCCATGGTGGCGGT GATGTCTGCTCAAGCGG
P14 kogla-R2	catGGGCCCTGCCAACCCCTGTGCAGACGAGGCCGCTCAGGG CGAGTAGAGATCG
P15 koANL-R1	AAAAGCACTCCAAACCGTCCAGAGAACTCCATGGTGGCGG TGATGTCTGCTCAAGCGG
P16 koANL-R2	catGGGCCCGCAGCACTCAGCGCAGCGAGCGCCGTCAAAA GCACTCCAAACCGTCCA
P17 kocbh-R1	CCGAGATGACGGCCAACTTCCGATACTCCATGGTGGCGGTG ATGTCTGCTCAAGCGG
P18 kocbh-R2	catGGGCCCGACTGAGCACGAGCTGTGGCCAAGAAGGCCG AGATGACGGCCAACTTC

* The bold and italic parts are the restriction enzyme sites.

Supplementary Table 2 List of identification primers

	Primer name	Primer sequence (5'-3')
P19	Ident-hyg-F	CTATTTCTTTGCCCTCGGAC
P20	Ident-hyg-R	ATGAAAAAGCCTGAACTCACC
P21	gpdA-F	GCAGGTACCCGGAGAATATGGAGCTTC
P8	4ANL-R	TAGCAGACACTCTGAAATTGC

Supplementary Table 3 List of signal sequences

Signal name	The signal sequences
1 <i>glaA</i> signal	GCCACCATGG <u>ATT</u> TCGTTCCGATCTCTACTCGCCCTGAGCGGCCTCG TCTGCACAGGGTTGGCA
2 <i>ANL</i> signal	GCCACCATGG <u>AGT</u> TCTCTGGACGGTTTGGAGTGCTTTTGACGGCG CTCGCTGCGCTGAGTGCTGCG
3 <i>cbh I</i> signal	GCCACCATGG <u>AGT</u> ATCGGAAGTTGGCCGTCATCTCGGCCTTCTTG GCCACAGCTCGTGCTCAGTCG

* The bold parts are the kozak sequence. The underlined two nucleotides in each signal sequence were added downstream of the kozak sequence G⁺ to avoid frameshift.