

Additional file 1: Supplementary Table S1. List of PCR primers used in this study.

Construction of Cas9 expressing vectors		
Cloning of Cas9	Cas9-F	GCCAGTTTCGTTCTTCAGAAAGCTTATGGACTACAAGGACCATGATGGCG
Cloning of Cas9	Cas9-R	TGATGATTTACAGTAACGTTAAGTGGATCCTCATCACTCATCTTCTGTTTTGGCAC
Cloning of <i>tef1</i> promoter	Ptef1-F1	CTAGGCCACCATGTTGGGCCGCGCGCCGAATTCTCTCCGAGGTTTCGACATCA
Cloning of <i>tef1</i> promoter	Ptef1-R1	CGCCATCATGGTCCTGTAGTCCATAAGCTTCTGAAGAACGAAACTGGC
Cloning of <i>TprC</i> terminator	TprC-F	GTGCCAAAACAGAAAGATGAGTGATGAGGATCCACTTAACGTTACTGAAATCATCA
Cloning of <i>TprC</i> terminator	TprC-R	TCCTGCCCGTCACAGAGATTTGACCATGGGAGCTCCCTCTAAACAAGTGACCTG
Cloning of GFP	GFP-F	TCTCTCCAGCTCGGCGGCGACGAATTCATGGTGAGCAAGGGCGAGGAGCTGTTC
Cloning of GFP	GFP-R	TGATGATTTACAGTAACGTTAAGTGGATCCTTACTCATCTTCTGTTTTGGCACGTTTCCTC GGAGGCTTGACAGCTCGTCCATGC
Construction of sgRNA expressing plasmids		
Cloning of U6 promoter	U6p-F	AGGATCGGTGGAGTGAAGTTCGGAA
Cloning of U6 promoter	U6p-amdS-R	CTAAAACGACCTCCATGCTGTTCCGCCGAGGAAAGAAAGAAAAGAAGAG
Cloning of U6 promoter	U6p-cre1-R	CTAAAACCTGCAGACTTTGCGCGTTGCGAGGAAAGAAAGAAAAGAAGAG
Cloning of U6 promoter	U6p-res1-R	CTAAAACGGTACGAGGGCTCATAGGGCGAGGAAAGAAAGAAAAGAAGAG
Cloning of U6 promoter	U6p-gh1-1-R	CTAAAACGGGATGGCGCAGAATGTGTCGAGGAAAGAAAGAAAAGAAGAG
Cloning of U6 promoter	U6p-alp1-R	CTAAAACCTGAACTGCCGCGGTAGACGAGGAAAGAAAGAAAAGAAGAG
<i>amdS</i> -gRNA 5'	g-amdS-F	TCCTCGCGAACAGCATGGAGGGTCTTTTAGAGCTAGAATAGCAAGTT
<i>cre1</i> -gRNA 5'	g-cre1-R	TCCTCGCAACGCGCAAAGTCTGCAGGTTTTAGAGCTAGAATAGCAAGTT
<i>res1</i> -gRNA 5'	g-res1-R	TCCTCGCCTATGAGCCCTCGTACCCTTTAGAGCTAGAATAGCAAGTT
<i>gh1-1</i> -gRNA 5'	g-gh1-1-R	TCCTCGACACATTCTGCATCCCGTTTTAGAGCTAGAATAGCAAGTT
<i>alp-1</i> -gRNA 5'	g-alp1-R	TCCTCGTCTACCGCGCAAGTTCAGGTTTTAGAGCTAGAATAGCAAGTT
gRNA 3'	gRNA-R	AAAAAAGCACCGACTCGGTGCCACTT
Construction of <i>amdS</i> -expression strains		
Cloning of <i>tef</i> promoter	Ptef1-F2	CCGGAATTCAAAAAAAAGAGAGATGAGTGGGC
Cloning of <i>tef</i> promoter	Ptef1-R2	CCAGTCTTCCAGATTGAGGCATCTGAAGAACGAAACTGGCGACTTG
Cloning of <i>amdS</i>	amdS-F	CAAGTCGCCAGTTTCGTTCTTCAAGATGCCTCAATCTGGGAAGAACTGG
Cloning of <i>amdS</i>	amdS-R	CCCAAGCTTGCCATCCAGAGTCACCTGTGGCAGC
Donor DNA construction		
<i>cre1</i> -upstream	cre1-5'-F	TTGGGCCCGCGCGCCGAATTCGCGGGATCCACCGGGTAAAGTACTCTGTAAGTT
<i>cre1</i> -upstream	cre1-5'-R	GCTCCTCAATATCAGTTAACGTCGTATGTCACCCCTCCCAAGCGGAGTT
Cloning of PtrpC-neo	neo-cre1-F	AACTCCGCTTGGGAGGGTGGACATACGACGTTAACTGATATTGAAGGAGC
Cloning of PtrpC-neo	neo-cre1-R	AAGCGTTTGCTACACCCGGGAACTTCAGAAGAACTCGTCAAGAAGGCGA
<i>cre1</i> -downstream	cre1-3'-F	TCGCCTTCTGACGAGTCTTCTGAAGTCCCGGGGTGAGCAAACGCTT
<i>cre1</i> -downstream	cre1-3'-R	CAGATCTACCATGGTGGACTCCTCTTAAAGCTTTGGGGTGTGGTCCGGCGTGGGGAC
<i>res1</i> -upstream	res1-5'-F	TTGGGCCCGCGCGCCGAATTCGCGGGATCCAACCAACCTCCTTCGACTTTCGGG
<i>res1</i> -upstream	res1-5'-R	GCTCCTCAATATCAGTTAACGTCGACGTCGCGGTGAATTAAGGAGGGAT
Cloning of PtrpC-neo	neo-res1-F	ATCCCTCTTAATTCACCCGGACGTCGACGTTAACTGATATTGAAGGAGC
Cloning of PtrpC-neo	neo-res1-R	AAGTGGGACTGGTACGAGACAAGACTCAGAAGAACTCGTCAAGAAGGCGA
<i>res1</i> -downstream	res1-3'-F	TCGCCTTCTGACGAGTCTTCTGAGTCTTGCTCGTACCAGTCCCACTT
<i>res1</i> -downstream	res1-3'-R	CAGATCTACCATGGTGGACTCCTCTTAAAGCTTTGGTGTCTGTAAGGCTTGTGCGTT
<i>gh1-1</i> -upstream	gh1-1-5'-F	TTGGGCCCGCGCGCCGAATTCGCGGGATCCACTATCAACAGCCCCCGGATTGCT

<i>gh1-1</i> -upstream	gh1-1-5'-R	GCTCCTCAATATCAGTTAACGTCGTGGAGGGGCCACGGCCATCCTCGTT
Cloning of <i>PtpC</i> -neo	neo gh1-1-F	AACGAGGATGGCCGTGGCCCTCCACGACGTTAACTGATATTGAAGGAGC
Cloning of <i>PtpC</i> -neo	neo- gh1-1-R	TTGCACTTGGGGATGGCCTTGAACATCAGAAGAAGCTCGTCAAGAAGGCGA
<i>gh1-1</i> -downstream	gh1-1-3'-F	TCGCCTTCTTGACGAGTTCTTCTGATGTTCAAGGCCATCCCCAAGTGCAA
<i>gh1-1</i> -downstream	gh1-1-3'-R	CAGATCTACCATGGTGGACTCCTCTTAAAGCTTGCAGCCAGAAGGACTGCGTCTCGGG
<i>alp1</i> -upstream	alp1-5'-F	TTGGGCCCCGGCGCCGAATCCCGGGGATCCCTTCCTAGTCCTCGCAGCAAACCTC
<i>alp1</i> -upstream	alp1-5'-R	CAAGCTCCGCTCCAAGGCCGACCACCGACGTTAACTGATATTGAAGGAGC
Cloning of <i>PtpC</i> -neo	neo-alp1-F	CAAGCTCCGCTCCAAGGCCGACCACCGACGTTAACTGATATTGAAGGAGC
Cloning of <i>PtpC</i> -neo	neo-alp1-R	TGTCGTAGGTGTAGGTGGTGGAGCCTCAGAAGAAGCTCGTCAAGAAGGCGA
<i>alp1</i> -downstream	alp1-3'-F	TCGCCTTCTTGACGAGTTCTTCTGAGGCTCCACCACCTACACTACGACA
<i>alp1</i> -downstream	alp1-3'-R	CAGATCTACCATGGTGGACTCCTCTTAAAGCTTGTAGTTGGCGGCGTTCTGGTTCTCGT
PCR analysis of point mutations and gene deletion		
Sequencing and verifying <i>amdS</i>	amdS-in-F	CTCCCCATCTCTCAAGACCAGC
Sequencing and verifying <i>amdS</i>	amdS-in-R	GCTCACTAACCGCCTTGAAACTCTC
PCR detecting <i>cre1</i> disruption	cre1-out-F	ATACAGTACCTCTGCACAACCATCC
PCR detecting <i>cre1</i> disruption	cre1-in-R	AGTTGGGATTGTTGTGTATCCTCGA
PCR detecting <i>res1</i> disruption	res1-out-F	AACCCAGGCATCGTAGATCAGGGC
PCR detecting <i>res1</i> disruption	res1-in-R	GCATATGAGCCTTGAGTCCTTGAA
PCR detecting <i>gh1-1</i> disruption	gh1-1-out-F	CCTCAGTCTCCGCAATATCGTGCAT
PCR detecting <i>gh1-1</i> disruption	gh1-1-in-R	GAAGTAGCCCGTGTGTAGCCAGG
PCR detecting <i>alp1</i> disruption	alp1-out-F	TTCTGGCCTGCCCTTTCTTTCAAC
PCR detecting <i>alp1</i> disruption	alp1-in-R	GCCCCTTCTCCGAAAGGGGAGGTA
Determining <i>PtpC</i>-neo copy numbers by RT-qPCR		
RT-qPCR of <i>actin</i>	actin-RT-F	AACGCTCTGCCTTCTAC
RT-qPCR of <i>actin</i>	actin-RT-R	GTAACACCATCACCAGAGTC
RT-qPCR of <i>PtpC</i> -neo	<i>PtpC</i> -RT-F	CATACCTTCTTAAGTTCG
RT-qPCR of <i>PtpC</i> -neo	neo-RT-R	GCATCAGAGCAGCCGATT