

**Supplementary Table 1.** Information for CRISPR/Cas9 mutagenesis

Cluster		Tm	Size (bp)
<b>Botromycin</b>			
LA_1	5' TCTAGAatggaacggaccggtcc 3'	64	1,419
LA_2	5' aagcttggtaccgaattctgacaccgtggtgatcgcca 3'	70	
RA_3	5' gaattcgtaccaagcttaccactacgaggtgctgaag 3'	64	820
RA_4	5' TCTAGAggtgtcaccagataggtgct 3'	64	
gRNA	5'GAGACATCTTTGAAGACAAacgcatggctcccgaacaccgcggttttagagctagaatagcaagttaaataaggc- tagtccggtatcaactgaaaaagtggcaccgagtcggtgcttttttagcataacccctggggcctctaaacgggtcttgagggtttttg- gctgctcttcggtcggacgtgctgtctacgggcacctaccgcagccgctggctgtgacacggacggatcgggcgaactggccgat- gctgggagaagcgcgctgctgtacggcgccaccgggtgaggagccctcggcgagcgggtgtgaaactctgtgaatggcctgtcg- gttgctttttatatacggctgccagataagcctgacgacatctgggcggctaccgctatgatcggggcgttctgcaattcttagtgcgagtatct- gaaaggggatacggccggatgctcccctaccggtttAAGTCTTCTTTCACGTGGC 3'	-	499
<b>Salinomycin</b>			
LA_1	5' TCTAGAcagcagctcctgggacatcacc 3'	67	988
LA_2	5' aagcttggtaccgaattcgtcatctggtccaggaaccacaa 3'	67	
RA_3	5' gaattcgtaccaagcttgcgctgtccaatgtgacg 3'	64	960
RA_4	5' TCTAGAggtatcgagcacgtactc 3'	60	
gRNA	5'GAGACATCTTTGAAGACAAacgcaccgggcccagatcacctcgggttttagagctagaatagcaagttaaataaggc- tagtccggtatcaactgaaaaagtggcaccgagtcggtgcttttttagcataacccctggggcctctaaacgggtcttgagggtttttg- gctgctcttcggtcggacgtgctgtctacgggcacctaccgcagccgctggctgtgacacggacggatcgggcgaactggccgat- gctgggagaagcgcgctgctgtacggcgccaccgggtgaggagccctcggcgagcgggtgtgaaactctgtgaatggcctgtcg- gttgctttttatatacggctgccagataagcctgacgacatctgggcggctaccgctatgatcggggcgttctgcaattcttagtgcgagtatct- gaaaggggatacgc agatcctccgcgccgggtag gtttAAGTCTTCTTTCACGTGGC 3'	-	499
<b>Aturatamycin</b>			
LA_1	5' TCTAGAAgcaccaacgtcggcatc 3'	65	1,103
LA_2	5' aagcttggtaccgaattcatggccagcgcgtacagactg 3'	68	
RA_3	5' gaattcgtaccaagctttaccaggtgcacctgaccgcg 3'	72	1,215
RA_4	5' TCTAGAgttggcccgatgcagcagg 3'	69	
gRNA	5'GAGACATCTTTGAAGACAAacgcgtggagcggctgcgccacatgttttagagctagaatagcaagttaaataaggc- tagtccggtatcaactgaaaaagtggcaccgagtcggtgcttttttagcataacccctggggcctctaaacgggtcttgagggtttttg- gctgctcttcggtcggacgtgctgtctacgggcacctaccgcagccgctggctgtgacacggacggatcgggcgaactggccgat- gctgggagaagcgcgctgctgtacggcgccaccgggtgaggagccctcggcgagcgggtgtgaaactctgtgaatggcctgtcg- gttgctttttatatacggctgccagataagcctgacgacatctgggcggctaccgctatgatcggggcgttctgcaattcttagtgcgagtatct- gaaaggggatacgcctctacctcaggacacctcgtttAAGTCTTCTTTCACGTGGC 3'	-	499

Large alphabet: *Xba*I (primer) and *Bbs*I (gRNA) restriction enzyme site.