

# Additional file 7

## pGRNA0

Multi cloning site, Kanamycin-, Ampicillin-resistance gene

AGCGCCAATACGCAAACCGCCTCTCCCGCGCGTTGGCCGATTCTTAATGCAGCTGGCACGACAGGTTTCCCAGCTGGAAGCGGGCAGTGAGCGCAA  
CGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGGAATTGTGAGCGGATAACAATTTACA  
CAGGAAACAGCTATGACCATGATTACGCCAAGCTTGGTACCGAGCTCGGATCCACTAGTTAATTAAGCTCGAGGGGCCGTTATCGGGAAAGAGTGGCTGAT  
CTCAGCCACCGCGAAAATGACATCAAAAACGCCATTAACCTGATGTTCTGGGAATATAAATGTCAGGCATGAGATTATCAAAAAGGATCTTCACCTAGATCCT  
TTTACGTAAGAAAGCCAGTCCGCAGAAACGGTGTGACCCCGGATGAATGTCAGCTACTGGGCTATCTGGACAAGGAAAACGCAAGCGCAAAGAGAAAGC  
AGGTAGCTTGCAGTGGGCTTACATGGCGATAGCTAGACTGGGCGGTTTTATGGACAGCAAGCGAACCAGGATTGCCAGCTGGGGCGCCCTCTGGTAAAGGT  
GGGAAGCCTGCAAAGTAACTGGATGGCTTTCTTCCCGCAAGGATCTGATGGCGCAGGGGATCAAGCTCTGATCAAGAGACAGGATGAGGATCGTTTCG  
CATGATTGAACAAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTCCGGCTGACTGGGCACAACAGACAATCGGCTGCTCTGATG  
CCGCGTGTCCGGCTGTCAGCGCAGGGGCGCCCGGTTCTTTTGTCAAGACCGACCTGTCGGGTGCCCTGAATGAACTGCAAGACGAGGCAGCGCGGC  
TATCGTGGCTGGCCACGACGGGCGTTCTTGCAGCTGTGCTCGACGTTGCTCAAGCGGGAAGGGACTGGCTGCTATTGGGCGAAGTGCCGGGGC  
AGGATCTCTGTACCTCCACTTGTCTCTGCCGAAAGTATCCATCATGGCTGATGCAATGCGGGCTGCATACGCTTATCGGCTACCTGCCATTCC  
ACCACCAAGCAGAAACTGCATCGAGCGAGCACGTTACTCGGATGGAAGCCGCTTGTCTGATCAGGATGATCGGACGAAAGCATCAGGAGCATCGGCGCC  
AGCCGAAGTTCGCCAGGCTCAAGGCGCGCATGCCGACGGCGAGGATCTCGTCTGACCCATGGCGATGCTGCTTCCGAATATCATGGTGGAAAT  
GGCCGTTTTCTGGATTATCGACTGTGGCCGGCTGGGTGTGGCGGACCGCTATCAGGACATAGCGTTGGCTACCCGCTGATATTGCTGAAGAGCTTGGCGG  
CGAATGGGCTGACCGCTTCTCTGCTTTACGGTATCGCCGCTCCCGATTTCGACGCGCATCGCCTTCTATCGCCTTCTTACGAGTTCTTCTGAATTGAAAA  
GGAAGAGTATGAGTATCAACATTTCCGTTGTCGCCCTTATCCCTTTTTTGGCGCATTTTGCCTTCTGTTTTGCTCACCCAGAAACGCTGGTGAAGTAAAA  
GATGCTGAAGATCAGTTGGGTGCACGAGTGGGTTACATCGAACTGGATCTCAACAGCGGTAAGATCCTTGAGAGTTTTCCGCCCGAAGAACGTTTTCCAATGA  
TGAGCACTTTAAAGTCTGCTATGTGGCGCGGTATTATCCCGTATTGACGCCGGGCAAGAGCAACTCGGTCGCCGCATACACTATTCTCAGAATGACTTGGTT  
GAGTACTCACCAGTACAGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGAGTGTGCCATAACCATGAGTGATAACACTGCGGCCAAGTACT  
TCTGACAACGATCGGAGGACCGAAGGAGCTAACCGCTTTTTGCAACAACATGGGGGATCATGTAAGTCCCTTATGATCGTTGGGAACCGGAGCTGAATGAAGC  
CATACCAACGACGAGCGTACACCCAGTGCCTGTAGCAATGGCAACAACGTTGCGCAAACTATTAAGTGGCAACTACTTACTCTAGCTTCCCGGCAACAA  
TTAATAGACTGGATGGAGGCGGATAAAGTTGCAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGTTTTATTGCTGATAAATCTGGAGCCGGTGAGCGT  
GGTTCCGCGCGGTATCATTGCAGCACTGGGGCCAGATGGTAAGCCCTCCCGTATCGTAGTTATCTACACGACGGGGAGCCAGGCAACTATGGATGAACGAAAT  
AGACAGATCGCTGAGATAGGTGCCTCACTGATTAAGCATTGGTAACTGTCAGACCAAGTTTACTCATATATACTTTAGATTGATTTAAAACCTTCATTTTTAATTTAA  
AAGGATCTAGTGGAAGATCCTTTTTGATAATCTCATGACCAAAATCCCTAACGTGAGTTTTCTGTTCCACTGAGCGTCAGACCCCGTAGAAAAGATCAAAGGAT  
CTTCTTGAGATCCTTTTTTCTGCGCGTAATCTGCTGCTTGAACAACAAAAACCACCGCTACCAGCGGTGGTTTTGTTTCCGGATCAAGAGCTACCAACTCT  
TTTTCCGAAGTAACTGGCTTACGACAGCGCAGATACCAAACTACTGTTCTTCTAGTGTAGCCGATGTTAGGCCACCCTCAAGAAGCTGTAGCACCAGCT  
ACATACCTCGCTCTGTAATCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCTGCTTACCAGGTTGGATTCAAGACGATAGTTACCAGATAAGGCG  
CAGCGGTCCGGCTGAACGGGGGGTTCGTGCACACAGCCAGCTTGGAGCGAACGACCTACACCGAAGTGAAGATACCTACAGCGTGAAGTATGAGAAAGC  
GCCACGCTTCCCGAAGGGAGAAAGCGGACAGGATCCGGTAAAGCGGACGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAAACGCCT  
GGTATCTTTATGCTGCTGGGTTCCGCCACCTGACTGAGCGTGCATTTTTGATGATCTCGTCAAGGGGGCGGAGCCTATGGAACAAACGCCAGCAAC  
CGCGCTTTTTACGGTTCTGGCTTTTTGCTGGCCTTTTGTGCTACATGTTCTTCTGCTGTTATCCCTGATTCTGTGGATAACCGTATTACCGCCTTTGAGT  
GAGCTGATACCGCTCGCCGACGCCGAACGACCGAGCGCAGCGAATCAGTGAGCGAGGAAGCGGAAG

## pGRNA1

BsaI site, Linker sequence, AarI site, tRNA sequence, gRNA scaffold sequence

AGCGCCAATACGCAAACCGCCTCTCCCGCGCGTTGGCCGATTCTTAATGCAGCTGGCACGACAGGTTTCCCAGCTGGAAGCGGGCAGTGAGCGCAA  
CGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGGAATTGTGAGCGGATAACAATTTACA  
CAGGAAACAGCTATGACCATGATTACGCCAAGCTTCACTGCGAGCTTAAGTAAGAACAAAGCACCAAGTGGTCTAGTGGTGAATAGTACCCTGCCACGGTACAGA  
CCCGGGTTTCGATTCCCGGCTGGTGAAGAGACCTCCGGAGTGGTCTCAGTTTTAGAGCTAGAAATAGCAAGTTAAAATAAGGCTAGTCCGTTATCACTTGA  
AAAAGTGGCACCAGTCCGTTGCTAAGTAAGGACAGGTCTCGAGGGGCCGTTATCGGGGAAGAAGTGGCTGATCTCAGCCACCGCGAAAATGACATCAA  
AAACGCCATTAACCTGATGTTCTGGGGAATATAAATGTCAGGCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTACGTAAGAAAGCCAGTCCGCAG  
AAACGGTGTGACCCCGGATGAATGTCAGCTACTGGGCTATCTGGACAAGGGAAAACGCAAGCGCAAAGAGAAAGCAGGTAGCTTGCAGTGGGCTTACAT

## pGRNA2

AGCGCCAATACGCAAACCGCCTCTCCCGCGCGTTGGCCGATTCTTAATGCAGCTGGCACGACAGGTTTCCCAGCTGGAAGCGGGCAGTGAGCGCAA  
CGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGGAATTGTGAGCGGATAACAATTTACA  
CAGGAAACAGCTATGACCATGATTACGCCAAGCTTCACTGCGAGCTTAAGTAAGAACAAAGCACCAAGTGGTCTAGTGGTGAATAGTACCCTGCCACGGTACAGA  
CCCGGGTTTCGATTCCCGGCTGGTGAAGAGACCTCCGGAGTGGTCTCAGTTTTAGAGCTAGAAATAGCAAGTTAAAATAAGGCTAGTCCGTTATCACTTGA  
AAAAGTGGCACCAGTCCGTTGCTAAGTAAGGACAGGTCTCGAGGGGCCGTTATCGGGGAAGAAGTGGCTGATCTCAGCCACCGCGAAAATGACATCAA  
AAACGCCATTAACCTGATGTTCTGGGGAATATAAATGTCAGGCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTACGTAAGAAAGCCAGTCCGCAG  
AAACGGTGTGACCCCGGATGAATGTCAGCTACTGGGCTATCTGGACAAGGGAAAACGCAAGCGCAAAGAGAAAGCAGGTAGCTTGCAGTGGGCTTACAT

## pGRNA3

AGCGCCAATACGCAAACCGCCTCTCCCGCGCGTTGGCCGATTCTTAATGCAGCTGGCACGACAGGTTTCCCAGCTGGAAGCGGGCAGTGAGCGCAA  
CGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGGAATTGTGAGCGGATAACAATTTACA  
CAGGAAACAGCTATGACCATGATTACGCCAAGCTTCACTGCGAGCTTAAGTAAGAACAAAGCACCAAGTGGTCTAGTGGTGAATAGTACCCTGCCACGGTACAGA  
CCCGGGTTTCGATTCCCGGCTGGTGAAGAGACCTCCGGAGTGGTCTCAGTTTTAGAGCTAGAAATAGCAAGTTAAAATAAGGCTAGTCCGTTATCACTTGA  
AAAAGTGGCACCAGTCCGTTGCTAAGTAAGGACAGGTCTCGAGGGGCCGTTATCGGGGAAGAAGTGGCTGATCTCAGCCACCGCGAAAATGACATCAA  
AAACGCCATTAACCTGATGTTCTGGGGAATATAAATGTCAGGCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTACGTAAGAAAGCCAGTCCGCAG  
AAACGGTGTGACCCCGGATGAATGTCAGCTACTGGGCTATCTGGACAAGGGAAAACGCAAGCGCAAAGAGAAAGCAGGTAGCTTGCAGTGGGCTTACAT

## pGRNA4

AGCGCCAATACGCAAACCGCCTCTCCCGCGCGTTGGCCGATTCTTAATGCAGCTGGCACGACAGGTTTCCCAGCTGGAAGCGGGCAGTGAGCGCAA  
CGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGGAATTGTGAGCGGATAACAATTTACA  
CAGGAAACAGCTATGACCATGATTACGCCAAGCTTCACTGCGAAGGAAGAACAAAGCACCAAGTGGTCTAGTGGTGAATAGTACCCTGCCACGGTACAGA  
CCCGGGTTTCGATTCCCGGCTGGTGAAGAGACCTCCGGAGTGGTCTCAGTTTTAGAGCTAGAAATAGCAAGTTAAAATAAGGCTAGTCCGTTATCACTTGA  
AAAAGTGGCACCAGTCCGTTGCTAAGTACGCTGACAGGTCTCGAGGGGCCGTTATCGGGGAAGAAGTGGCTGATCTCAGCCACCGCGAAAATGACATCAA  
AAACGCCATTAACCTGATGTTCTGGGGAATATAAATGTCAGGCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTACGTAAGAAAGCCAGTCCGCAG  
AAACGGTGTGACCCCGGATGAATGTCAGCTACTGGGCTATCTGGACAAGGGAAAACGCAAGCGCAAAGAGAAAGCAGGTAGCTTGCAGTGGGCTTACAT

## pGRNA2e

AGCGCCAATACGCAAACCGCCTCTCCCCGCGCGTTGGCCGATTCAATTAATGCAGCTGGCACGACAGGTTTCCCGACTGGAAAAGCGGGCAGTGAGCGCAA  
CGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTGGAATTGTGAGCGGATAACAATTTACA  
CAGGAAACAGCTATGACCATGATTACGCCAAGCTT**CACCTGCT**AAAG**TAAG**AACAAGCACCAAGTGGTCTAGTGGTGTAGTACCTG**CCACGGTACAGA**  
**CCCGGGTTCGATTCCCGGCTGGTGCAAGAGACCT**CCGGAGT**GGTCTCAGTTT**GAAA**GCAGGTG**CTCGAGGGGCCCGTTATCGGGGAAGAAGTGGCTGA  
TCTCAGCCACCGCGAAAATGACATCAAAAACGCCATTAACCTGATGTTCTGGGAATATAAATGTCAGGCATGAGATTATCAAAAAGGATCTTCACCTAGATC

## pGRNA3e

AGCGCCAATACGCAAACCGCCTCTCCCCGCGCGTTGGCCGATTCAATTAATGCAGCTGGCACGACAGGTTTCCCGACTGGAAAAGCGGGCAGTGAGCGCAA  
CGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTGGAATTGTGAGCGGATAACAATTTACA  
CAGGAAACAGCTATGACCATGATTACGCCAAGCTT**CACCTGCG**GGCT**GGCT**AACAAGCACCAAGTGGTCTAGTGGTGTAGTACCTG**CCACGGTACAGA**  
**CCCGGGTTCGATTCCCGGCTGGTGCAAGAGACCT**CCGGAGT**GGTCTCAGTTT**GAAA**GCAGGTG**CTCGAGGGGCCCGTTATCGGGGAAGAAGTGGCTGA  
TCTCAGCCACCGCGAAAATGACATCAAAAACGCCATTAACCTGATGTTCTGGGAATATAAATGTCAGGCATGAGATTATCAAAAAGGATCTTCACCTAGATC

## pGRNA4e

AGCGCCAATACGCAAACCGCCTCTCCCCGCGCGTTGGCCGATTCAATTAATGCAGCTGGCACGACAGGTTTCCCGACTGGAAAAGCGGGCAGTGAGCGCAA  
CGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTGGAATTGTGAGCGGATAACAATTTACA  
CAGGAAACAGCTATGACCATGATTACGCCAAGCTT**CACCTGCG**GAAG**GAAG**AACAAGCACCAAGTGGTCTAGTGGTGTAGTACCTG**CCACGGTACAGA**  
**CCCGGGTTCGATTCCCGGCTGGTGCAAGAGACCT**CCGGAGT**GGTCTCAGTTT**GAAA**GCAGGTG**CTCGAGGGGCCCGTTATCGGGGAAGAAGTGGCTGA  
TCTCAGCCACCGCGAAAATGACATCAAAAACGCCATTAACCTGATGTTCTGGGAATATAAATGTCAGGCATGAGATTATCAAAAAGGATCTTCACCTAGATC

## pGRNA5e

AGCGCCAATACGCAAACCGCCTCTCCCCGCGCGTTGGCCGATTCAATTAATGCAGCTGGCACGACAGGTTTCCCGACTGGAAAAGCGGGCAGTGAGCGCAA  
CGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTGGAATTGTGAGCGGATAACAATTTACA  
CAGGAAACAGCTATGACCATGATTACGCCAAGCTT**CACCTGCG**AGCT**AGCT**AACAAGCACCAAGTGGTCTAGTGGTGTAGTACCTG**CCACGGTACAGA**  
**CCCGGGTTCGATTCCCGGCTGGTGCAAGAGACCT**CCGGAGT**GGTCTCAGTTT**GAAA**GCAGGTG**CTCGAGGGGCCCGTTATCGGGGAAGAAGTGGCTGA  
TCTCAGCCACCGCGAAAATGACATCAAAAACGCCATTAACCTGATGTTCTGGGAATATAAATGTCAGGCATGAGATTATCAAAAAGGATCTTCACCTAGATC