**mScarlet-Gamma 9**

5’Cccaagcttatggtgagcaagggcgaggcag3’(HindIII) and 5’cgcggtacccttgtacagctcgtccatgccg 3’(KpnI)were the sense and antisense primers respectively which were used to make the mScarlet PCR product.

The mcherry in mcherry Gamma 9 in pcDNA3.1(previously described Proc Natl Acad Sci U S A. 2013 Apr 23;110(17):E1565-74. doi: 10.1073/pnas.1220697110) was then replaced with this HindIII-KpnI fragment to make the mScarlet Gamma 9 in pcDNA3.1.

Nnnnnnnnnnnnnncgttnaacttaagctt

X X X X X V X L K L

atggtgagcaagggcgaggcagtgatcaag

M V S K G E A V I K

gagttcatgcggttcaaggtgcacatggagggctccatgaacggccacgagttcgagatc

 E F M R F K V H M E G S M N G H E F E I

gagggcgagggcgagggccgcccctacgagggcacccagaccgccaagctgaaggtgacc

 E G E G E G R P Y E G T Q T A K L K V T

aagggtggccccctgcccttctcctgggacatcctgtcccctcagttcatgtacggctcc

 K G G P L P F S W D I L S P Q F M Y G S

agggccttcatcaagcaccccgccgacatccccgactactataagcagtccttccccgag

 R A F I K H P A D I P D Y Y K Q S F P E

ggcttcaagtgggagcgcgtgatgaacttcgaggacggcggcgccgtgaccgtgacccag

 G F K W E R V M N F E D G G A V T V T Q

gacacctccctggaggacggcaccctgatctacaaggtgaagctccgcggcaccaacttc

 D T S L E D G T L I Y K V K L R G T N F

cctcctgacggccccgtaatgcagaagaagacaatgggctgggaagcgtccaccgagcgg

 P P D G P V M Q K K T M G W E A S T E R

ttgtaccccgaggacggcgtgctgaagggcgacattaagatggccctgcgcctgaaggac

 L Y P E D G V L K G D I K M A L R L K D

ggcggccgctacctggcggacttcaagaccacctacaaggccaagaagcccgtgcagatg

 G G R Y L A D F K T T Y K A K K P V Q M

cccggcgcctacaacgtcgaccgcaagttggacatcacctcccacaacgaggactacacc

 P G A Y N V D R K L D I T S H N E D Y T

gtggtggaacagtacgaacgctccgagggccgccactccaccggcggcatggacgagctg

 V V E Q Y E R S E G R H S T G G M D E L

tacaag

Y K

ggtaccatgcatcaccatcaccatcacgcccaggatctcagcgagaaggacctg

 G T M H H H H H H A Q D L S E K D L

ttgaagatggaggtggagcagctgaagaaagaagtgaaaaacacaagaattccgatttcc

 L K M E V E Q L K K E V K N T R I P I S

aaagcgggaaaggaaatcaaggagtacgtggaggcccaagcaggaaacgatcctttt

 K A G K E I K E Y V E A Q A G N D P F

ctcaaaggcatccctgaggacaagaatcccttcaaggaaaaaggcggttgtataataagc

 L K G I P E D K N P F K E K G G C I I S

tgagaattctgcagatatccagcacagtggcggccgctcgagtctagagggcccgtttaa

 - E F C R Y P A Q W R P L E S R G P V -

Nnnnnnnnnnnnnncgttnaacttaagctt

atggtgagcaagggcgaggcagtgatcaag

gagttcatgcggttcaaggtgcacatggagggctccatgaacggccacgagttcgagatc

gagggcgagggcgagggccgcccctacgagggcacccagaccgccaagctgaaggtgacc

aagggtggccccctgcccttctcctgggacatcctgtcccctcagttcatgtacggctcc

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gacacctccctggaggacggcaccctgatctacaaggtgaagctccgcggcaccaacttc

cctcctgacggccccgtaatgcagaagaagacaatgggctgggaagcgtccaccgagcgg

ttgtaccccgaggacggcgtgctgaagggcgacattaagatggccctgcgcctgaaggac

ggcggccgctacctggcggacttcaagaccacctacaaggccaagaagcccgtgcagatg

cccggcgcctacaacgtcgaccgcaagttggacatcacctcccacaacgaggactacacc

gtggtggaacagtacgaacgctccgagggccgccactccaccggcggcatggacgagctg

tacaagggtaccatgcatcaccatcaccatcacgcccaggatctcagcgagaaggacctg

ttgaagatggaggtggagcagctgaagaaagaagtgaaaaacacaagaattccgatttcc

aaagcgggaaaggaaatcaaggagtacgtggaggcccaagcaggaaacgatcctttt

ctcaaaggcatccctgaggacaagaatcccttcaaggaaaaaggcggttgtataataagc

tgagaattctgcagatatccagcacagtggcggccgctcgagtctagagggcccgtttaa