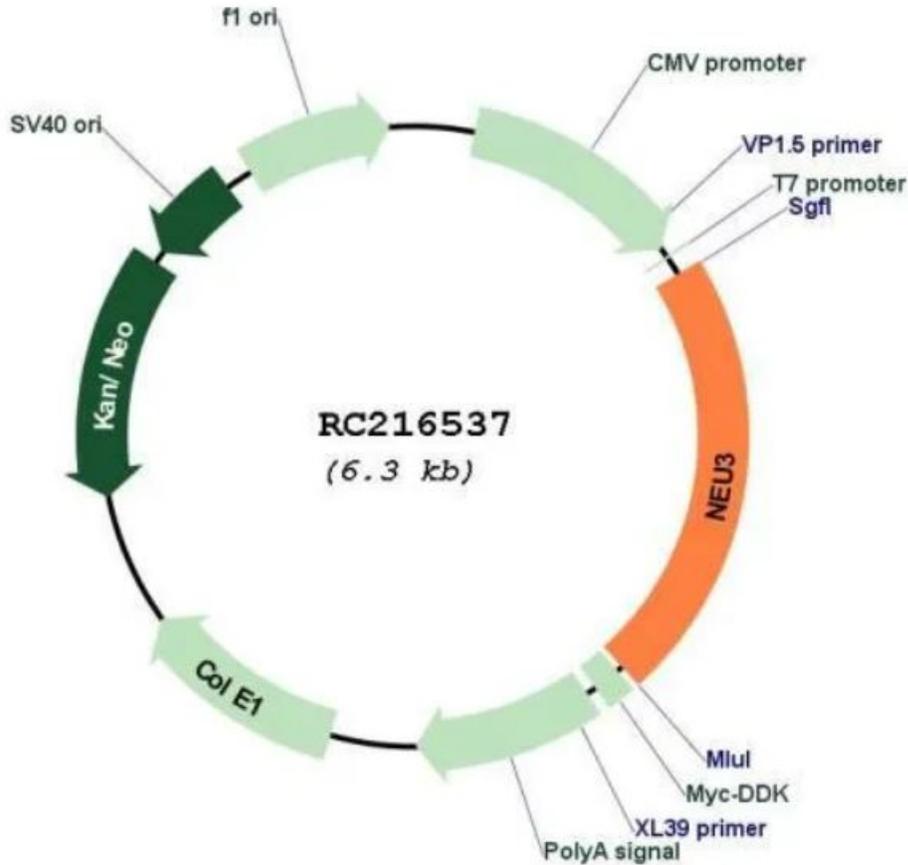


## a. Myc-NEU3 plasmids and primers

### 1. Plasmid map of Myc-NEU3-WT:



### 2. Nucleotide Sequences of Myc-NEU3-WT:

>RC216537 representing NM\_006656

Red=Cloning site Blue=ORF Green=Tags(s)

```

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGAT
CTGCCGCCGCGATCGCCATGAGACCTGCGGACCTGCCCCGCGCCCCATGGAAGAATCCCCGGCG
TCCAGCTCTGCCCCGACAGAGACGGAGGAGCCGGGTCCAGTGCAGAGGTCATGGAAGAAGTGA
CAACATGCTCCTTCAACAGCCCTCTGTTCCGGCAGGAAGATGACAGAGGGATTACCTACCGGATC
CCAGCCCTGCTCTACATACCCCCACCCACACCTTCTGGCCTTTGCAGAGAAGCGTTCTACGAGG
AGAGATGAGGATGCTCTCCACCTGGTGCTGAGGCGAGGGTTGAGGATTGGGCAGTTGGTACAGTG
GGGGCCCTGAAGCCACTGATGGAAGCCACACTACCGGGGCATCGGACCATGAACCCCTGTCTCTG
TATGGGAGCAGAAGAGTGGTTGTGTGTTTCTGTTCTTTCATCTGTGTGCGGGGCCATGTCACAGAGC
GTCAACAGATTGTGTCAGGCAGGAATGCTGCCCGCCTTTGCTTCATCTACAGTCAGGATGCTGGAT
GTTTCATGGAGTGAGGTGAGGGACTTGAAGTACTGAGGAGGTCATTGGCTCAGAGCTGAAGCACTGGGCC
ACATTTGCTGTGGGCCAGGTCATGGCATCCAGCTGCAGTCAGGGAGACTGGTCATCCCTGCGTAT
ACCTACTACATCCCTTCTGTTCTTTTGTCTCCAGCTACCATGTAAAACCAGGCCTCATTCTCTGA
TGATCTACAGTGATGACCTAGGGGTACATGGCACCATGGTAGACTCATTAGGCCCATGGTTACA
GTAGAATGTGAAGTGGCAGAGGTGACTGGGAGGGCTGGCCACCCTGTGCTATATTGCAGTGCCCC

```

GACACCAAACAGGTGCCGGGCAGAGGCGCTCAGCACTGACCATGGTGAAGGCTTTCAGAGACTG  
 GCCCTGAGTCGACAGCTCTGTGAGCCCCACATGGTTGCCAAGGGAGTGTGGTAAGTTTCCGGCC  
 CCTGGAGATCCCACATAGGTGCCAGGACTCTAGCAGCAAAGATGCACCCACCATTTCAGCAGAGCT  
 CTCCAGGCAGTTCACTGAGGCTGGAGGAGGAAGCTGGAACACCGTCAGAATCATGGCTCTTGTA  
 TCACACCCAACCAGTAGGAAACAGAGGGTTGACCTAGGTATCTATCTCAACCAGACCCCCTGGGA  
 GGCTGCCTGCTGGTCCC GCCCTGGATCTTGCACTGTGGGCCCTGTGGCTACTCTGATCTGGCTGC  
 TCTGGAGGAGGAGGGCTTGTGGGTGTTGTTTGAATGTGGGACCAAGCAAGAGTGTGAGCAGA  
 TTGCCTCCGCTGTTTACACACCGGGAGATCCTGAGTCACCTGCAGGGGGACTGCACCAGCCCTG  
 GTAGGAACCAAGCCAATTCAAAGCAATACGCGTACGCGGCCGCTCGAGCAGAACTCATCTC  
AGAAGAGGATCTGGCAGCAAATGATATCCTGGATTACAAGGATGACGACGATAAGGTTTAA

The two Group 4 motifs in NEU3 coding sequence are labeled with pink background.

### 3. Nucleotide Sequences of Myc-NEU3-Mutant1:

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGAT  
 CTGCCGCCCGATCGCATGAGACCTGCGGACCTGCCCCGCGCCCCATGGAAGAATCCCCGGCG  
 TCCAGCTCTGCCCCGACAGAGACGGAGGAGCCGGGTCCAGTGCAGAGGTCATGGAAGAAGTGA  
 CAACATGCTCCTTCAACAGCCCTCTGTTCCGGCAGGAAGATGACAGAGGGATTACCTACCGGATC  
 CCAGCCCTGCTCTACATAACCCCCACCCACACCTTCTGGCCTTTGCAGAGAAGCGTTCTACGAGG  
 AGAGATGAGGATGCTCTCCACCTGGTCTGAGGCGAGGGTTGAGGATTGGGCAGTTGGTACAGTG  
 GGGCCCCTTAAACCACTTATTGAATCCACACTACCGGGGCATCGGACCATGAACCCCTGTCTGT  
 ATGGGAGCAGAAGAGTGGTGTGTCTCTCTCTCATCTGTGTGCGGGGCCATGTCACAGAGCG  
 TCAACAGATTGTGTCAGGCAGGAATGCTGCCGCCTTTGCTTCATCTACAGTCAGGATGCTGGATG  
 TTCATGGAGTGAGGTGAGGGACTTGACTGAGGAGGTCATTGGCTCAGAGCTGAAGCACTGGGCCA  
 CATTGCTGTGGGCCAGGTCATGGCATCCAGCTGCAGTCAGGGAGACTGGTCATCCCTGCGTATA  
 CCTACTACATCCCTTCTGGTTCTTTTGCTTCCAGCTACCATGTAAAACCAGGCCTCATTCTCTGAT  
 GATCTACAGTGATGACCTAGGGGTCACATGGCACCATGGTAGACTCATTAGGCCCATGGTTACAG  
 TAGAATGTGAAGTGGCAGAGGTGACTGGGAGGGCTGGCCACCCTGTGCTATATTGCAGTGCCCGG  
 ACACCAAACAGGTGCCGGGCAGAGGCGCTCAGCACTGACCATGGTGAAGGCTTTCAGAGACTGGC  
 CCTGAGTCGACAGCTCTGTGAGCCCCACATGGTTGCCAAGGGAGTGTGGTAAGTTTCCGGCCCCT  
 GGAGATCCCACATAGGTGCCAGGACTCTAGCAGCAAAGATGCACCCACCATTTCAGCAGAGCTCTC  
 CAGGCAGTTCACTGAGGCTGGAGGAGGAAGCTGGAACACCGTCAGAATCATGGCTCTTGTA  
 CACCCAACCAGTAGGAAACAGAGGGTTGACCTAGGTATCTATCTCAACCAGACCCCCTTGAGGC  
 TGCCTGCTGGTCCC GCCCTGGATCTTGCACTGTGGGCCCTGTGGCTACTCTGATCTGGCTGCTCTG  
 GAGGAGGAGGGCTTGTGGGTGTTGTTTGAATGTGGGACCAAGCAAGAGTGTGAGCAGATTGC  
 CTTCCGCTGTTTACACACCGGGAGATCCTGAGTCACCTGCAGGGGGACTGCACCAGCCCTGGTA  
GGAACCAAGCCAATTCAAAGCAATACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGA  
AGAGGATCTGGCAGCAAATGATATCCTGGATTACAAGGATGACGACGATAAGGTTTAA

5 sites were mutated in the 1<sup>st</sup> Group 4 motif in NEU3 with the following mutation primers:

Forward      GGGCCCTTAAACCACTTATTGAATCCCACTACC  
 Reverse      GGTAGTGTGGATTCAATAAGTGGTTTAAAGGGGCC

### 4. Nucleotide Sequences of Myc-NEU3-Mutant2:

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGAT  
 CTGCCGCCCGGATCGCATGAGACCTGCGGACCTGCCCCGCGCCCCATGGAAGAATCCCCGGCG  
 TCCAGCTCTGCCCCGACAGAGACGGAGGAGCCGGGTCCAGTGCAGAGGTCATGGAAGAAGTGA  
 CAACATGCTCCTTCAACAGCCCTCTGTTCCGGCAGGAAGATGACAGAGGGATTACCTACCGGATC  
 CCAGCCCTGCTCTACATAACCCCCACCCACACCTTCTGGCCTTTGCAGAGAAGCGTTCTACGAGG  
 AGAGATGAGGATGCTCTCCACCTGGTGCTGAGGCGAGGGTTGAGGATTGGGCAGTTGGTACAGTG  
 GGGGCCCTGAAGCCACTGATGGAAGCCACACTACCGGGGCATCGGACCATGAACCCCTGTCTTG  
 TATGGGAGCAGAAGAGTGGTTGTGTGTTCTGTTCTTCATCTGTGTGCGGGGCCATGTCACAGAGC  
 GTCAACAGATTGTGTCAGGCAGGAATGCTGCCCCGCTTTGCTTCATCTACAGTCAGGATGCTGGAT  
 GTTCATGGAGTGAGGTGAGGGACTTGACTGAGGAGGTCATTGGCTCAGAGCTGAAGCACTGGGCC  
 ACATTTGCTGTGGGCCAGGTTCATGGCATCCAGCTGCAGTCAGGGAGACTGGTCATCCCTGCGTAT  
 ACCTACTACATCCCTTCTGGTTCTTTGCTTCCAGCTACCATGTAAAACCAGGCCTCATTCTCTGA  
 TGATCTACAGTGATGACCTAGGGGTCACATGGCACCATGGTAGACTCATTAGGCCCATGGTTACA  
 GTAGAATGTGAAGTGGCAGAGGTGACTGGGAGGGCTGGCCACCCTGTGCTATATTGCAGTGCCCC  
 GACACCAAACAGGTGCCGGGCAGAGGCGCTCAGCACTGACCATGGTGAAGGCTTTCAGAGACTG  
 GCCCTGAGTCGACAGCTCTGTGAGCCCCACATGGTTGCCAAGGGAGTGTGGTAAGTTTCCGGCC  
 CCTGGAGATCCACATAGGTGCCAGGACTCTAGCAGCAAAGATGCACCCACCATTTCAGCAGAGCT  
 CTCCAGGCAGTTCCTTAGACTGGAAGATGAATCTGGAACACCGTCAGAATCATGGCTCTTGACT  
 CACACCCAACAGTAGGAAACAGAGGGTTGACCTAGGTATCTATCTCAACCAGACCCCTTGGAG  
 GCTGCCTGCTGGTCCCGCCCCTGGATCTTGCACTGTGGGCCCTGTGGCTACTCTGATCTGGCTGCTC  
 TGGAGGAGGAGGGCTTGTGTTGGGTGTTGTTGAATGTGGGACCAAGCAAGAGTGTGAGCAGATT  
 GCCTTCCGCTGTTTACACACCGGGAGATCCTGAGTCACCTGCAGGGGGACTGCACCAGCCCTGGT  
 AGGAACCAAGCCAATTCAAAGCAATACCGTACGCGGCCGCTCGAGCAGAACTCATCTCAG  
 AAGAGGATCTGGCAGCAAATGATATCCTGGATTACAAGGATGACGACGATAAGGTTTAA

5 sites were mutated in the 2<sup>nd</sup> Group 4 motif in NEU3 with the following mutation primers:

Forward CAGTTCACTTAGACTGGAAGATGAATCTGGAACAC  
 Reverse GTGTTCCAGATTCATCTTCCAGTCTAAGTGAAGTCTG

5. Nucleotide Sequences of Myc-NEU3-Mutant3:

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGAT  
 CTGCCGCCCGGATCGCATGAGACCTGCGGACCTGCCCCGCGCCCCATGGAAGAATCCCCGGCG  
 TCCAGCTCTGCCCCGACAGAGACGGAGGAGCCGGGTCCAGTGCAGAGGTCATGGAAGAAGTGA  
 CAACATGCTCCTTCAACAGCCCTCTGTTCCGGCAGGAAGATGACAGAGGGATTACCTACCGGATC  
 CCAGCCCTGCTCTACATAACCCCCACCCACACCTTCTGGCCTTTGCAGAGAAGCGTTCTACGAGG  
 AGAGATGAGGATGCTCTCCACCTGGTGCTGAGGCGAGGGTTGAGGATTGGGCAGTTGGTACAGTG  
 GGGGCCCTTAAACCACTTATGGAAGCCACACTACCGGGGCATCGGACCATGAACCCCTGTCTTG  
 TATGGGAGCAGAAGAGTGGTTGTGTGTTCTGTTCTTCATCTGTGTGCGGGGCCATGTCACAGAGC  
 GTCAACAGATTGTGTCAGGCAGGAATGCTGCCCCGCTTTGCTTCATCTACAGTCAGGATGCTGGAT  
 GTTCATGGAGTGAGGTGAGGGACTTGACTGAGGAGGTCATTGGCTCAGAGCTGAAGCACTGGGCC  
 ACATTTGCTGTGGGCCAGGTTCATGGCATCCAGCTGCAGTCAGGGAGACTGGTCATCCCTGCGTAT  
 ACCTACTACATCCCTTCTGGTTCTTTGCTTCCAGCTACCATGTAAAACCAGGCCTCATTCTCTGA  
 TGATCTACAGTGATGACCTAGGGGTCACATGGCACCATGGTAGACTCATTAGGCCCATGGTTACA  
 GTAGAATGTGAAGTGGCAGAGGTGACTGGGAGGGCTGGCCACCCTGTGCTATATTGCAGTGCCCC  
 GACACCAAACAGGTGCCGGGCAGAGGCGCTCAGCACTGACCATGGTGAAGGCTTTCAGAGACTG  
 GCCCTGAGTCGACAGCTCTGTGAGCCCCACATGGTTGCCAAGGGAGTGTGGTAAGTTTCCGGCC  
 CCTGGAGATCCACATAGGTGCCAGGACTCTAGCAGCAAAGATGCACCCACCATTTCAGCAGAGCT  
 CTCCAGGCAGTTCCTGAGGCTGGAGGAGGAAGCTGGAACACCGTCAGAATCATGGCTCTTGACT  
 TCACACCCAACAGTAGGAAACAGAGGGTTGACCTAGGTATCTATCTCAACCAGACCCCTTGGAG  
 GGCTGCCTGCTGGTCCCGCCCCTGGATCTTGCACTGTGGGCCCTGTGGCTACTCTGATCTGGCTGC

TCTGGAGGAGGAGGGCTTGTTTGGGTGTTTGAATGTGGGACCAAGCAAGAGTGTGAGCAGA  
TTGCCTCCGCCTGTTTACACACCGGGAGATCCTGAGTCACCTGCAGGGGGACTGCACCAGCCCTG  
GTAGGAACCCAAGCCAATTCAAAGCAATACGCGTACGCGGCCGCTCGAGCAGAACTCATCTC  
AGAAGAGGATCTGGCAGCAAATGATATCCTGGATTACAAGGATGACGACGATAAGGTTTAA

3 sites were mutated in the 1<sup>st</sup> Group 4 motif in NEU3 with the following mutation primers:

Forward GGGCCCTTAAACCACTTATGGAAGCCACACTACC

Reverse GGTAGTGTGGCTTCCATAAGTGGTTTAAGGGGCC

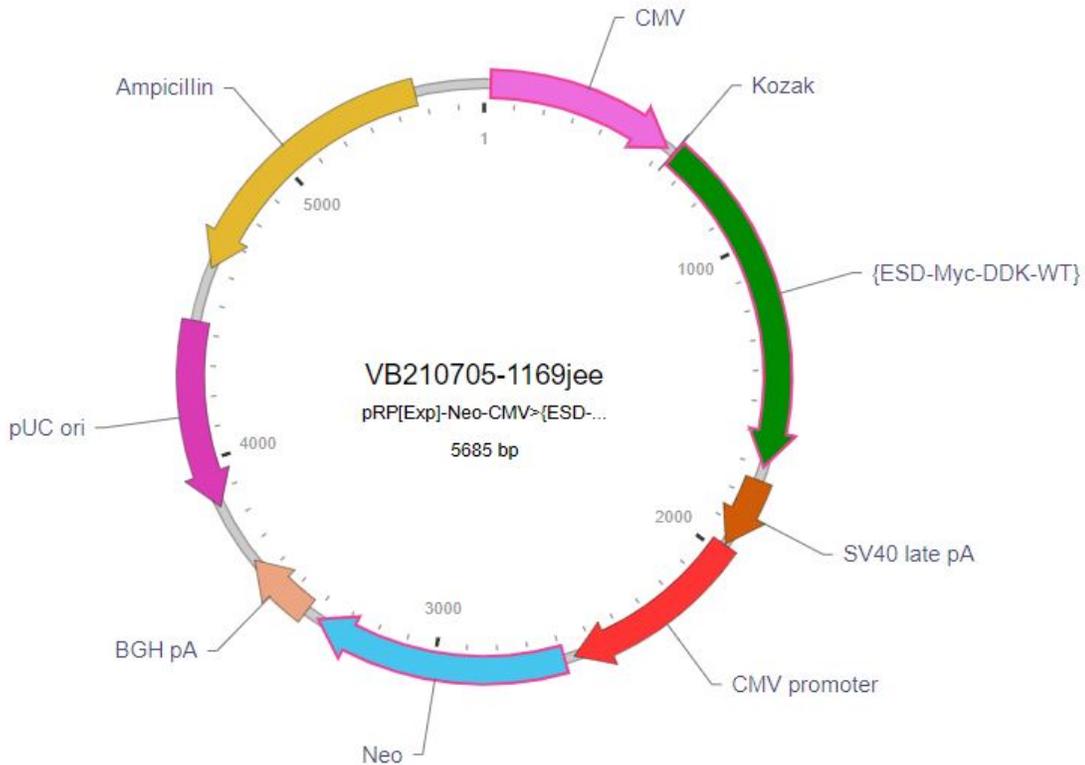
6. qPCR primers for Myc-NEU3 (cover both Myc-Tag and NEU3 sequences)

Forward CAGATTGCCTTCCGCCTGTT

Reverse CTGCCAGATCCTCTTCTGAGAT

## b. Myc-ESD plasmids and primers

### 1. Plasmid map of Myc-ESD-WT



### 2. Nucleotide Sequences of Myc-ESD-WT:

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aagcgagagtgagtgaggaccggagggcggggcatcatatggcggggctgaggcgaggccccggcgccatcttgagccccgcctttac
ttcgcccgttcttctggtcactccgccaccgtagaatcgctaccatttggtgcaagcaaaaagcaatcagcaattggacaggaaaagaATG
GAGCAGAAACTCATCTCAGAAGAGGATCTGGATTACAAGGATGACGACGATAAAGGCATT
GAAGCAGATTTCCAGCAACAAGTGCTTTGGGGGATTGCAGAAAGTTTTTGAACATGACA
GTGTTGAACTAAACTGCAAATGAAATTTGCTGTCTACTTACCACCAAAGGCAGAAACA
GGAAAGTGCCCTGCACTGTATTGGCTCTCAGGTTTAACTTGCACAGAGCAAAATTTTATA
TCAAATCTGGTTATCATCAGTCTGCTTCAGAACATGGTCTTGTTGTCATTGCTCCAGATA
CCAGCCCTCGTGGCTGCAATATTAAGGTGAAGATGAGAGCTGGGACTTTGGCACTGGT
GCTGGATTTTATGTTGATGCCACTGAAGATCCTTGGAAAACCAACTACAGAATGTACTCT
TATGTCACAGAGGAGCTTCCCCAACTCATAAATGCCAATTTTCCAGTGGATCCCCAAAGG
ATGTCTATTTTTGGCCACTCCATGGGAGGTCATGGAGCTCTGATCTGTGCTTTGAAAAAT
CCTGGAAAATACAAATCTGTGTCAGCATTTGCTCCAATTTGCAACCCTGTACTCTGTCCC
TGGGGCAAAAAGCCTTTAGTGGATATTTGGGAACAGATCAAAGTAAATGGAAGGCTTA
TGATGCTACCCACCTTGTGAAATCCTATCCAGGATCTCAGCTGGACATACTAATTGATCA
AGGGAAAGATGACCAGTTTCTTTTAGATGGACAGTTACTCCCTGATAACTTCATAGCTGC
CTGTACAGAAAAGAAAATCCCCGTTGTTTTTCGATTGCAAGAGGGTTATGATCATAGCTA
CTACTTCATTGCAACCTTTATTACTGACCACATCAGACATCATGCTAAATACCTGAATGC

```

ATGAaaaaactccaataagagaatctcttcagattataaaaagttgtaaaatgcaactgtattgctgagcaaaaaaaaaaattcaaacatt  
ggattttatagtctaaaagggtttattctatagttgaatcacctctgaataaagatataaaccta

A **Myc-Tag** is inserted in frame with the coding sequence of ESD.

### 3. Nucleotide Sequences of Myc-ESD-Motif in CDS:

aaagcgagagtgagtgggaccggagggcggggcatcatatggcggggctgagggcgagccccggcgccatcttgagccccgccttttac  
ttcgccccgcttctctgtgctcactccgccaccgtagaatcgctaccatttgggtgcaagcaaaaagcaatcagcaattggacagaaaagaATG  
**GAGCAGAACTCATCTCAGAAGAGGATCTGGATTACAAGGATGACGACGATAAGGCATT**  
GAAGCAGATTTCCAGCAACAAGTGCTTTGGGGGATTGCAGAAAGTTTTTGAACATGACA  
GTGTTGAACTAACTGCAAAATGAAATTTGCTGTCTACTTACCACCAAAGGCAGAAACA  
GGAAAGTGCCCTGCACTGTATTGGCTCTCAGGTTTAACTTGCACAGAGCAAAAATTTTATA  
TCAAAATCTGGTTATCATCAGTCTGCTTCAGAACATGGTCTTGTTGTCATTGCTCCAGATA  
CCAGCCCTCGTGGCTGCAATATTAAGGTGAAGATGAGAGCTGGGACTTTGGCACTGGT  
GCTGGATTTTATGTTGATGCCACTGAAGATCCTTGGAAAACCAACTACAGAATGTACTCT  
TATGTCACAGAGGAGCTTCCCCAACTCATAAATGCCAATTTTCCAGTGGATCCCCAAAGG  
ATGTCTATTTTT**GGAGGAGGAGGAGGAGGA**GGCCACTCCATGGGAGGTCATGGAGCTCT  
GATCTGTGCTTTGAAAAATCCTGGAAAATACAAATCTGTGTCAGCATTGCTCCAATTTG  
CAACCCTGTACTCTGTCCCTGGGGCAAAAAGCCTTTAGTGGATATTTGGGAACAGATCA  
AAGTAAATGGAAGGCTTATGATGCTACCCACCTTGTGAAATCCTATCCAGGATCTCAGCT  
GGACATACTAATTGATCAAGGGAAAGATGACCAGTTTCTTTTAGATGGACAGTTACTCCC  
TGATAACTTCATAGCTGCCTGTACAGAAAAGAAAATCCCCGTTGTTTTTCGATTGCAAGA  
GGTTATGATCATAGCTACTACTTCATTGCAACCTTTATTACTGACCACATCAGACATCA  
TGCTAAATACCTGAATGCATGAaaaaactccaataagagaatctcttcagattataaaaagttgtaaaatgcaactgtattgct  
gagcaaaaaaaaaaattcaaacattggattttatagtctaaaagggtttattctatagttgaatcacctctgaataaagatataaaccta

A **Myc-Tag** and a **Group 4 motif** are inserted in frame with the coding sequence of ESD.

### 4. Nucleotide Sequences of Myc-ESD-Motif in 3'UTR:

aaagcgagagtgagtgggaccggagggcggggcatcatatggcggggctgagggcgagccccggcgccatcttgagccccgccttttac  
ttcgccccgcttctctgtgctcactccgccaccgtagaatcgctaccatttgggtgcaagcaaaaagcaatcagcaattggacagaaaagaATG  
**GAGCAGAACTCATCTCAGAAGAGGATCTGGATTACAAGGATGACGACGATAAGGCATT**  
GAAGCAGATTTCCAGCAACAAGTGCTTTGGGGGATTGCAGAAAGTTTTTGAACATGACA  
GTGTTGAACTAACTGCAAAATGAAATTTGCTGTCTACTTACCACCAAAGGCAGAAACA  
GGAAAGTGCCCTGCACTGTATTGGCTCTCAGGTTTAACTTGCACAGAGCAAAAATTTTATA  
TCAAAATCTGGTTATCATCAGTCTGCTTCAGAACATGGTCTTGTTGTCATTGCTCCAGATA  
CCAGCCCTCGTGGCTGCAATATTAAGGTGAAGATGAGAGCTGGGACTTTGGCACTGGT  
GCTGGATTTTATGTTGATGCCACTGAAGATCCTTGGAAAACCAACTACAGAATGTACTCT  
TATGTCACAGAGGAGCTTCCCCAACTCATAAATGCCAATTTTCCAGTGGATCCCCAAAGG  
ATGTCTATTTTTGGCCACTCCATGGGAGGTCATGGAGCTCTGATCTGTGCTTTGAAAAAT  
CCTGGAAAATACAAATCTGTGTCAGCATTGCTCCAATTTGCAACCCTGTACTCTGTCCC  
TGGGGCAAAAAGCCTTTAGTGGATATTTGGGAACAGATCAAAGTAAATGGAAGGCTTA  
TGATGCTACCCACCTTGTGAAATCCTATCCAGGATCTCAGCTGGACATACTAATTGATCA  
AGGGAAAGATGACCAGTTTCTTTTAGATGGACAGTTACTCCCTGATAACTTCATAGCTGC

CTGTACAGAAAAGAAAATCCCCGTTGTTTTTCGATTGCAAGAGGGTTATGATCATAGCTA  
CTACTTCATTGCAACCTTTATTACTGACCACATCAGACATCATGCTAAATACCTGAATGC  
ATGAaaaaactcaaataagagaatctcttcaggattataaaagtgtaaaatgcaactgtattgctgagcaaaaaaaaaaaaaattcaaacatt  
**GGAGGAGGAGGAGGAGGA**ggatattatagtctaaaagggtttattctatagttgaatcacctctgaataaagataaaaaccta

A **Myc-Tag** is inserted in frame with the coding sequence of ESD. A **Group 4 motif** is inserted into the 3'UTR of ESD.

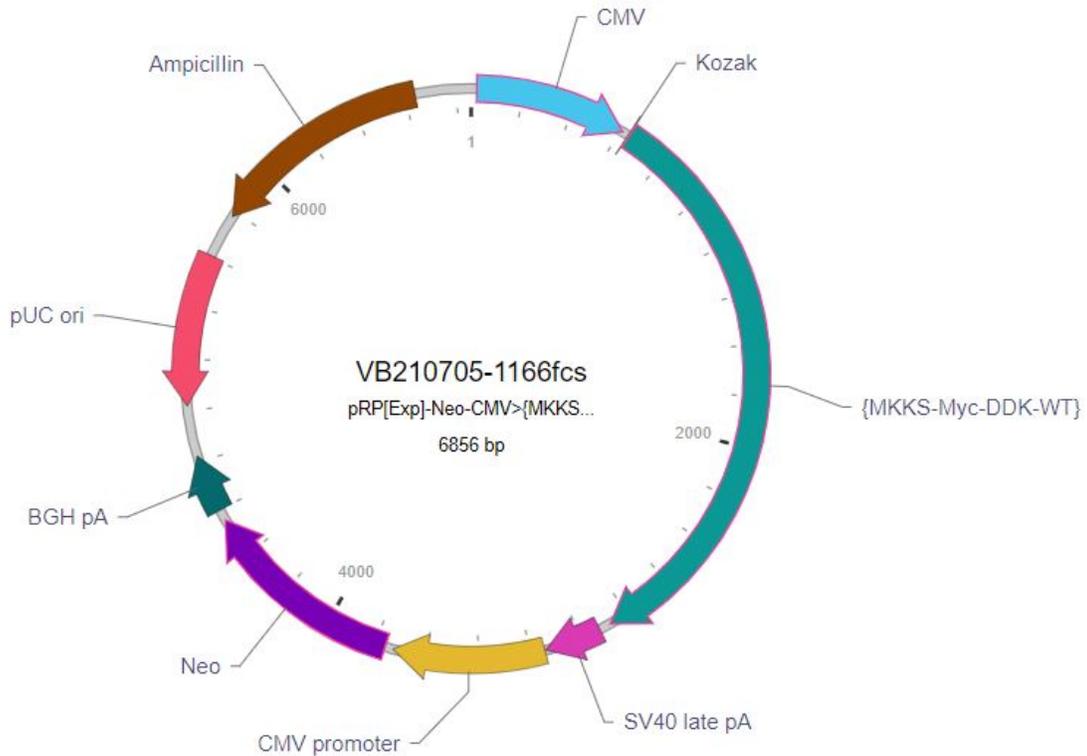
5. qPCR primers for Myc-ESD (cover both Myc-Tag and ESD sequences)

Forward      GGATCTGGATTACAAGGATGAC

Reverse      CTGCCTTTGGTGGTAAGTAGAC

### c. Myc-MKKS plasmids and primers

#### 1. Plasmid map of Myc-MKKS-WT



#### 2. Nucleotide Sequences of Myc-MKKS-WT:

agagctgcgcgtgctccgtgcctcgcgcgacgcgaaggtgtcgggatccgcggcagcagcggctgctgagatctgtttctggggcctctggc  
 ggtggcggcctggggcggcgcgacggctggtgcgcaggtacactgatctgaagtactatgagccttcggaacttgaggagactacaaagt  
 tggttgtatggcccttagttgggtcatacattgggggtgtacagaatcaaaagcagccctgtttccaaatacctaaaacgacgacattcctga  
 gcaagatagctgggactttcaaatctcagaagagccaaatccaggggaagtagcaggtgcaatctcaggtaaagaagcagcttgaactga  
 gcttcatatcgaagaagagatgaaaaataccagttggattagaagaactggcttctgtagctgggatatttcataggttccatcttgaacata  
 cttttgcagaggtctgcaaagcagctctgaaaatttcagctcacaagcaaaaagagtattgaagagtgaagtaaaataaatattggaattactaa  
 tttgtcattaatcattctatgctgattagcttcataaacattgaacttttgattttatagcccaatgctgcataatcactttaattcctaaagaataat  
 aatgttaaacgtgataatgcaataatagaaaaatgtggtttacaaaataaaaacggcttctcactagttaccacctgaagtaagATGGAGCA  
 GAAACTCATCTCAGAAGAGGATCTGGATTACAAGGATGACGACGATAAGTCTCGTTTGG  
 AAGCTAAGAAGCCATCATTGTGTAAGAGTGAACCACTGACAACCTGAGAGAGTCAGGACC  
 AACTTTTCTGTCTTGAAAAGAATTGTAACATCATGCTATGGCCCCTCAGGTAGGCTGAAG  
 CAGCTGCACAATGGCTTTGGAGGTTACGTGTGTACAACCTCACAGTCCTCAGCTCTGCTC  
 AGTCACCTTTTGGTCACACATCCCATTTTAAAGATCCTGACAGCCTCCATACAGAATCAT  
 GTGTCAAGCTTCAGTGATTGTGGCTTATTCACAGCTATTCTTTGCTGCAACCTGATTGAA  
 AATGTTCAAGATTAGGCTTGACACCCACCACTGTCATTAGATTAAATAAACATCTTTTG  
 AGTCTTTGCATCAGTTATCTCAAGTCTGAGACCTGTGGTTGTCTGAATCCCAGTGGACTTT  
 AGTAGTACTCAGATCCTCCTTTGTTTGGTGCGTAGTATATTAACAAGTAAACCTGCCTGT

ATGCTCACCAGAAAGGAAACAGAGCATGTCAGTGCTTTGATCCTGAGAGCCTTTTTGCTT  
ACAATTCCAGAAAATGCTGAAGGCCACATCATTTTAGGAAAGAGTTTAATTGTACCTTTA  
AAAGGTCAAAGAGTTATAGATTCCACTGTATTACCTGGGATACTCATTGAAATGTCAGA  
AGTTCAATTAATGAGGCTATTACCTATCAAAAAATCAACTGCCCTCAAGGTGGCACTCTT  
TTGTACAACCTTTATCCGGAGACACTTCTGACACTGGAGAAGGAAGTGTGGTGGTCAGTTA  
TGGGGTTTCTCTTGAAAATGCAGTCTTGGACCAGCTGCTTAACCTAGGAAGGCAGCTAAT  
CAGTGACCACGTAGATCTTGTCTGTGCCAAAAAGTTATACATCCATCTTTGAAGCAGTT  
TCTCAATATGCATCGTATTATTGCCATAGACAGAATTGGAGTGACTCTGATGGAACCCCT  
GACTAAAATGACAGGAACACAGCCTATTGGATCCCTAGGCTCAATATGTCCTAATAGTT  
ATGGAAGTGTGAAAGATGTGTGCACTGCAAAATTTGGCTCCAACATTTTTTTCATCTTA  
TTCCTAATGAAGCAACAATCTGCAGCTTGCTTCTCTGCAACAGAAATGCACTGCCTGGG  
ATGAGCTGAAGCTCACGTGTCAGACGGCACTGCATGTCCTGCAGTTAACTCAAGGAA  
CCATGGGCTTTGTTGGGAGGTGGCTGTACTGAAACTCATTGGCTGCATATATCAGACAC  
AAGACTCACAACGACCCAGAAAGCATTCTCAAAGATGATGAATGTACTCAAACAGAAGT  
TCAATTAATTGCTGAAGCATTGTCAGTGCCCTAGAATCTGTTGTTGGCTCTTTAGAACAT  
GATGGAGGTGAAATTCTCACTGACATGAAGTATGGACACCTTTGGTCAGTTCAGGCAGA  
TTCTCCCTGTGTTGCTAACTGGCCAGATTTGCTTTCACAGTGTGGCTGTGGATTATACAAT  
AGCCAGGAAGAAGTCAACTGGTCTTTCTTAAGAAGCACACGTCGTCCATTTGTGCCACAA  
AGCTGCCTTCCACATGAAGCTGTGGGCTCAGCCAGCAACCTGACCTGGACTGTTTGACT  
GCAAAGCTTAGTGGCCTACAGGTGGCTGTAGAGACAGCCAATTTGATTTGGATCTTTCA  
TATGTTATTGAAGATAAAAATAAgagaatagcatgttcgtattacaagagaacaataaactagtctgtggcaattgaga  
aaaattgtgagtgatttttctccaaagcctgttctacatattggacaaatgactcataaattatagatacacttatttaggaaaaaggtgattc  
gtgaatggaatgccatgaaacaataaaaaatgaagcattattttaaaaatattatagttatcttagggattctatactggtctgtacattgtcta  
aattttgttatgtggcatcattttgagagcaacaataaaaaagactcctaaccatgctctagttggatatacatatttagatatttccagtagca  
gtaattacatatgcttaaaagtataaaaactagatctcaaaaggtcacaacattcagtatattgctcaatcaaaagagattcaaaactgacatt

A **Myc-Tag** is inserted in frame with the coding sequence of MKKS.

### 3. Nucleotide Sequences of Myc-MKKS-Motif in CDS:

agagctgcgcgtgctccgtgcctcgcgcgacgcgaaggtgtcgggatccgcggcagcagcggctgcttgagatctgttctggggcctctggc  
ggtggcggcctggggcggcgcgacggctggtgcgcaggtactgatgctgaagtactatgagccttcggaactgtggagagactacaaagttt  
tggttgtatggtcccttagttgggtctacacatttgggtggtacagaatcaaaagcagccctgtttccaaatacctaaaaacgacgacattcctga  
gcaagatagctgggacttcaaatctcagaagagccaaatccaggggaagtagcaggcttgcaatctcaggtaaagaagcagcttgaatctga  
gcttcatacgaagaagagatgaaaaataccagttgattagaaagaactgcttctgtagctgggatatttcataggtgcatcttggaaacata  
cttttgcagaggtctgcaaaagcagctgtgaaaattcagctcacaagcaaaagagattgaagagtgaaagtaaaataaatttggaaactactaa  
ttgtcattaatcattctatgctgattagctcataaacattgaacttttgattttatagccacaatgctgcatattcactttaattcctaaagaataatttt  
aatgttaaacgtgataatgcaataatagaaaaatgtggtttacaaaataaaaacggcttctcactagttaccacctgaagtaagATGGAGCA  
GAAACTCATCTCAGAAGAGGATCTGGATTACAAGGATGACGACGATAAGTCTCGTTTGG  
AAGCTAAGAAGCCATCATTGTGTAAGAGTGAACCACTGACAAGTGAAGAGAGTCAAGGACC  
ACACTTTCTGTCTTGAAGAATTGTAACATCATGCTATGGCCCTCAGGTAGGCTGAAG  
CAGCTGCACAATGGCTTTGGAGGTTACGTGTGTACAACCTCACAGTCCTCAGCTCTGCTC  
AGTCACCTTTTGGTCACACATCCATTTTAAAGATCCTGACAGCCTCCATACAGAATCAT  
GTGTCAAGCTTCAGTGATTGTGGAGGAGGAGGAGGAGGAGGCTTATTCACAGCTATTCT  
TTGCTGCAACCTGATTGAAAATGTTTCAGAGATTAGGCTTGACACCCACCACTGTCATTAG  
ATTAATAAACATCTTTTGGAGTCTTTGCATCAGTTATCTCAAGTCTGAGACCTGTGGTTGT  
CGAATCCCAGTGGACTTTAGTAGTACTCAGATCCTCCTTTGTTTGGTGCAGTATATTA

ACAAGTAAACCTGCCTGTATGCTCACCAGAAAGGAAACAGAGCATGTCAGTGCTTTGAT  
CCTGAGAGCCTTTTTGCTTACAATCCAGAAAATGCTGAAGGCCACATCATTTTAGGAAA  
GAGTTTAATTGTACCTTTAAAAGGTCAAAGAGTTATAGATTCCACTGTATTACCTGGGAT  
ACTCATTGAAATGTCAGAAGTTCAATTAATGAGGCTATTACCTATCAAAAAATCAACTGC  
CCTCAAGGTGGCACTCTTTTGTACAACCTTATCCGGAGACACTTCTGACACTGGAGAAGG  
AACTGTGGTGGTCAGTTATGGGGTTTCTCTTGAAAATGCAGTCTTGGACCAGCTGCTTAA  
CCTAGGAAGGCAGCTAATCAGTGACCACGTAGATCTTGTCTGTGCCAAAAAGTTATAC  
ATCCATCTTTGAAGCAGTTTCTCAATATGCATCGTATTATTGCCATAGACAGAATTGGAG  
TGACTCTGATGGAACCCCTGACTAAAATGACAGGAACACAGCCTATTGGATCCCTAGGC  
TCAATATGTCCTAATAGTTATGGAAGTGTGAAAGATGTGTGCACTGCAAAAATTTGGCTCC  
AAACATTTTTTTCATCTTATTCTAATGAAGCAACAATCTGCAGCTTGCTTCTCTGCAACA  
GAAATGACACTGCCTGGGATGAGCTGAAGCTCACGTGTCAGACGGCACTGCATGTCCTG  
CAGTTAACACTCAAGGAACCATGGGCTTTGTTGGGAGGTGGCTGTACTGAAACTCATTG  
GCTGCATATATCAGACACAAGACTCACAACGACCCAGAAAGCATTCTCAAAGATGATGA  
ATGTACTCAAACAGAACTTCAATTAATTGCTGAAGCATTTTGCAGTGCCTAGAATCTGT  
TGTTGGCTCTTTAGAACATGATGGAGGTGAAATTTCTACTGACATGAAGTATGGACACCT  
TTGGTCAGTTCAGGCAGATTCTCCCTGTGTTGCTAACTGGCCAGATTTGCTTTCACAGTGT  
GGCTGTGGATTATACAATAGCCAGGAAGAACTCAACTGGTCTTTCTTAAGAAGCACACG  
TCGTCCATTTGTGCCACAAAGCTGCCTTCCACATGAAGCTGTGGGCTCAGCCAGCAACCT  
GACCTTGGACTGTTGACTGCAAAGCTTAGTGGCTACAGGTGGCTGTAGAGACAGCCA  
ATTTGATTTTGGATCTTTCATATGTTATTGAAGATAAAAATAAgagaatagcatgttcgtattacaagag  
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atagatacacttatttaggaaaaaagggtgattcgtgaatggaatgccatgaaacaataaaaatgaagcattatttataaaatattatagttatctt  
agggattctatactggctgctgtacattgttctaattttgtatgttggcatcattttgagagcaacaataaaaaagactcctaaccatgctctagttt  
ggatatacatattttagatattttccagtagcagtaattacatatgcttaaaagtataaaaactagatctcaaaggtgcacaaaacattcagtatattgtc  
aatcaaaagaagtattcaaaactgcacatt

A **Myc-Tag** and a **Group 4 motif** are inserted in frame with the coding sequence of MKKS.

#### 4. Nucleotide Sequences of Myc-ESD-Motif in 3'UTR:

agagctgcgcgtctccgtgcctcgcgcgacgcgaaggtgtcgggatccgcggcagcagcggctgcttgagatctgtttctggggcctctggc  
ggtggcggcctggggcggcgcgacggctggtgcgcaggtacactgatctgaagtactatgagccttcggaactgtggagagactacaagttt  
tggttattggtcccttagttgggctcacaattgggggtgtacagaatcaaaagcagccctgtttccaaatacctaaaaacgacgacattcctga  
gcaagatagctgggactttcaaatctcagaagagccaaatccaggggaagtagcaggcttgcattctcaggtaaagaagcagctttgaaatcga  
gcttcatatcgaagaagagatgaaaaataccagttggattagaaagaactggcttctgtagctgggatattttcataggtgtccatcttgaacata  
cttttgcagaggctgcaaaagcagctgtgaaaatttcagttcctcaaaagcaaaaagagattgaagagtgaagtaaaataaatttgaactactaa  
tttgcattaaatcattctatgctgattagcttcataaacattgaactttttgattttatagccacaatgctgcatattcactttaattcctaaagaataatttt  
aatgttaaaactgataatgcaataaatagaaaaatgtggtttacaaaataaaaacgggtcttcaactgttaccacctgaagtaagATGGAGCA  
GAAACTCATCTCAGAAGAGGATCTGGATTACAAGGATGACGACGATAAGTCTCGTTTGG  
AAGCTAAGAAGCCATCATTGTGTAAGAGTGAACCACTGACAACCTGAGAGAGTCAGGACC  
ACACTTCTGTCTTGAAAAGAATTGTAACATCATGCTATGGCCCCTCAGGTAGGCTGAAG  
CAGCTGCACAATGGCTTTGGAGGTTACGTGTGTACAACCTCACAGTCCTCAGCTCTGCTC  
AGTCACCTTTTGGTCACACATCCCATTTTAAAGATCCTGACAGCCTCCATACAGAATCAT  
GTGTCAAGCTTCAGTGATTGTGGCTTATTCACAGCTATTCTTTGCTGCAACCTGATTGAA  
AATGTTCAAGAGATTAGGCTTGACACCCACCACTGTCATTAGATTAATAAACATCTTTTG

AGTCTTTGCATCAGTTATCTCAAGTCTGAGACCTGTGGTTGTCTGAATCCCAGTGGACTTT  
 AGTAGTACTCAGATCCTCCTTTGTTTGGTGCCTAGTATATTAACAAGTAAACCTGCCTGT  
 ATGCTCACCAGAAAGGAAACAGAGCATGTCAGTGCTTTGATCCTGAGAGCCTTTTTGCTT  
 ACAATTCCAGAAAATGCTGAAGGCCACATCATTTTAGGAAAGAGTTTAATTGTACCTTTA  
 AAAGGTCAAAGAGTTATAGATTCCACTGTATTACCTGGGATACTCATTGAAATGTCAGA  
 AGTTCAATTAATGAGGCTATTACCTATCAAAAAATCAACTGCCCTCAAGGTGGCACTCTT  
 TTGTACAACCTTTATCCGGAGACACTTCTGACACTGGAGAAGGAAGTGTGGTGGTTCAGTTA  
 TGGGGTTTCTCTTGAAAATGCAGTCTTGGACCAGCTGCTTAACCTAGGAAGGCAGCTAAT  
 CAGTGACCACGTAGATCTTGTCTGTGCCAAAAAGTTATACATCCATCTTTGAAGCAGTT  
 TCTCAATATGCATCGTATTATTGCCATAGACAGAATTGGAGTGACTCTGATGGAACCCCT  
 GACTAAAATGACAGGAACACAGCCTATTGGATCCCTAGGCTCAATATGTCCTAATAGTT  
 ATGGAAGTGTGAAAGATGTGTGCACTGCAAAATTTGGCTCCAAACATTTTTTTCATCTTA  
 TTCCTAATGAAGCAACAATCTGCAGCTTGCTTCTCTGCAACAGAAATGACACTGCCTGGG  
 ATGAGCTGAAGCTCACGTGTCAGACGGCACTGCATGTCCTGCAGTTAACACTCAAGGAA  
 CCATGGGCTTTGTTGGGAGGTGGCTGTACTGAAACTCATTTGGCTGCATATATCAGACAC  
 AAGACTCACAACGACCCAGAAAGCATTCTCAAAGATGATGAATGTACTCAAACAGAACT  
 TCAATTAATTGCTGAAGCATTTTGCAGTGCCCTAGAATCTGTTGTTGGCTCTTTAGAACAT  
 GATGGAGGTGAAATTCTCACTGACATGAAGTATGGACACCTTTGGTCAGTTCAGGCAGA  
 TTCTCCCTGTGTTGCTAACTGGCCAGATTTGCTTTCACAGTGTGGCTGTGGATTATACAAT  
 AGCCAGGAAGAAGTCAACTGGTCTTTCTTAAGAAGCACACGTCGTCCTTTGTGCCACAA  
 AGCTGCCTTCCACATGAAGCTGTGGGCTCAGCCAGCAACCTGACCTTGGACTGTTTGACT  
 GCAAAGCTTAGTGGCCTACAGGTGGCTGTAGAGACAGCCAATTTGATTTTGGATCTTTCA  
 TATGTTATTGAAGATAAAAACTAAgagaatagcatgttcgtattacaagagaacaaataaactagtctgttgcaattgaga  
 aaaattgtgagtgtattgttttcccaaagcctgttctacatatttGGAGGAGGAGGAGGAGGAaggacaaatgactcataaaatta  
 tagatacacttatttaggaaaaagggtgattcgtgaatggaatgcatgaacaataaaaatgaagcattattttaaaaatattatagttatcta  
 gggattctatactggctgctgtacattgttctaaatgttatgttgcatcattttgagagcaacaaataaaaagactcctaattccatgctctagttt  
 ggatacatatatttagatatttccagtagcagtaattacatagcttaaagtataaaaactagatctcaaagtgcaaaaacattcagtatattgctc  
 aatcaaaagaagtattcaactgcacatt

A **Myc-Tag** is inserted in frame with the coding sequence of MKKS. A **Group 4 motif** is inserted into the 3'UTR of MKKS.

5. qPCR primers for Myc-MKKS (cover both Myc-Tag and MKKS sequences)

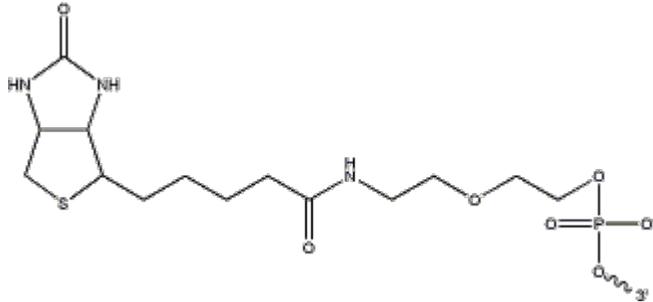
Forward	CATCTCAGAAGAGGATCTGG
Reverse	CAAGACAGAAAGTGTGGTCC

#### d. Biotin labeled Group 4 Motif

1. Biotin-Group 4 Motif sequence:

/5Biosg/ GGAGGAGGAGGAGGAGGAGG

2. 5' Biotin information:



MW: 393.4