



CATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTT  
 GTACTGGAATACCCTGAAAGGATGAACCGTCATGTAGATGCATAATCAGTAGCGATAATGGTACCACTACGCCAA  
 CMV enhancer CMV promoter

375

TTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGGACTCACGGGGATTTCCAAGTCTCCACCCATTGACGTCAA  
 AACCGTCATGTAGTTACCCGCACCTATCGCCAAACTGAGTGCCCTAAAGGTTTCAGAGGTGGGGTAACTGCAGTT  
 CMV promoter

450

TGGGAGTTTGTGTTTGGCACCAAATCAACGGGACTTTCCAAATGTCGTAACAACCTCCGCCCATTTGACGCAAAT  
 ACCCTCAAACAAAACCGTGGTTTTAGTTGCCCTGAAAGGTTTTACAGCATTGTTGAGGCGGGGTAACCTGCGTTTA  
 CMV promoter

525

GGGCGGTAGGCGGTACGGTGGGAGGTCTATATAAGCAGAGCTGGTTTAGTGAACCGTCAGATCCGCTAGCGCTA  
 CCCGCCATCCGCACATGCCACCCTCCAGATATATTCGTCTCGACCAAATCACTTGGCAGTCTAGGCGATCGCGAT  
 CMV promoter MCS

600

CCGGACTCAGATCTCGAGCTCAAGCTTTCGAATTCTGCAGTCGACGGTACC GCGGGCCCGGGATCCGCCCTCTCC  
 GGCTGAGTCTAGAGCTCGAGTTTGAAGCTTAAGACGTCAGCTGCCATGGCGCCCGGGCCCTAGGCGGGGAGAGG  
 MCS IRES2

675

CTCCCCCCCCCTAACGTTACTGGCCGAAGCCGCTTGGGAATAAGGCCGGTGTGCGTTTTGTCTATATGTTATTTTC  
 GAGGGGGGGGGGATTGCAATGACCGGCTTCGGCGAACCTTATTCCGGCCACACGCAAACAGATATAACAATAAAG  
 IRES2

750

CACCATATTGCCGTCTTTTGGCAATGTGAGGGCCCGGAAACCTGGCCCTGTCTTCTTGACGAGCATTCCCTAGGGG  
 GTGGTATAACGGCAGAAAACCGTTACTCTCCGGGCCCTTTGGACCGGGACAGAAGAACTGCTCGTAAGGATCCCC  
 IRES2

825

TCTTTCCCTCTCGCCAAAGGAATGCAAGGTCTGTTGAATGTCGTGAAGGAAGCAGTTCCTCTGGAAGCTTCTTG  
AGAAAGGGGAGAGCGGTTTCTTACGTTCCAGACAACCTACAGCACTTCCTTCGTCAAGGAGACCTTCGAAGAAC

900

IRES2

AAGACAAACAACGTCTGTAGCGACCCTTTCAGGGCAGCGGAACCCCCACCTGGCGACAGGTGCCTCTGCGGCCA  
TTCTGTTTGTTCAGACATCGCTGGGAAACGTCCGTGCGCTTGGGGGGTGGACCCTGTCCACGGAGACGCCGGT

975

IRES2

AAAGCCACGTGTATAAGATACACCTGCAAAGGCGGCACAACCCAGTGCCACGTTGTGAGTTGGATAGTTGTGGA  
TTTCGGTGCACATATTCTATGTGGACGTTTCCGCCGTGTTGGGGTACAGGTGCAACACTCAACCTATCAACACCT

1050

IRES2

AAGAGTCAAATGGCTCTCCTCAAGCGTATTCAACAAGGGGCTGAAGGATGCCAGAAGGTACCCCATTGTATGGG  
TTCTCAGTTTACCGAGAGGAGTTTCGCATAAGTTGTTCCCGACTTCTACGGGTCTTCCATGGGGTAACATACCC

1125

IRES2

ATCTGATCTGGGGCCTCGGTACACATGCTTTACATGTGTTTAGTCGAGGTTAAAAAACGTCTAGGCCCCCGAA  
TAGACTAGACCCCGGAGCCATGTGTACGAAATGTACACAAATCAGCTCCAATTTTTTTGAGATCCGGGGGGCTT

1200

IRES2

CCACGGGGACGTGGTTTTCTTTGAAAAACACGATGATAATATGGCCACAACCATGGTGAGCAAGGGCGAGGAGC  
GGTGCCCTGCACCAAAGGAAACTTTTTGTGCTACTATTATACCGGTGTTGGTACCCTCGTTCCCGCTCCTCG

1275

IRES2

1 Met Val Ser Lys Gly Glu Glu  
EGFP

TGTTACCGGGGTGGTGCCATCCTGGTCGAGCTGGACGGCGACGTAAACGGCCACAAGTTCAGCGTGTCCGGCG  
ACAAGTGGCCCCACCACGGGTAGGACCAGCTCGACCTGCCGCTGCATTTGCCGGTGTTCAGTTCGCACAGGCCCG

1350

EGFP

AGGGCGAGGGCGATGCCACCTACGGCAAGCTGACCTGAAGTTCATCTGCACCACCGGCAAGCTGCCCGTGCCCT  
TCCCGCTCCCGCTACGGTGGATGCCGTTGACTGGGACTTCAAGTAGACGTGGTGGCCGTTTCGACGGGCACGGGA

1425

EGFP

GGCCACCCTCGTGACCACCCTGACCTACGGCGTGCAGTGCTTCAGCCGCTACCCCGACCACATGAAGCAGCACG  
CCGGGTGGGAGCACTGGTGGGACTGGATGCCCGACGTCACGAAGTCGGCGATGGGGCTGGTGTACTTCGTCTGTG

1500

EGFP

ACTTCTTCAAGTCCGCCATGCCCCAAGGCTACGTCCAGGAGCGCACCATCTTCTTCAAGGACGACGGCAACTACA  
TGAAGAAGTTCAGGCGGTACGGGCTTCCGATGCAGGTCCTCGCGTGGTAGAAGAAGTTCCTGCTGCCGTTGATGT

1575

EGFP

AGACCCGCGCCGAGGTGAAGTTCGAGGGCGACACCCTGGTGAACCGCATCGAGCTGAAGGGCATCGACTTCAAGG  
TCTGGGCGCGGCTCCACTTCAAGCTCCCGCTGTGGGACCACTTGGCGTAGCTCGACTTCCCGTAGCTGAAGTTCC

1650

EGFP

Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys

AGGACGGCAACATCCTGGGGCACAAAGCTGGAGTACAACACTACAACAGCCACAACGCTCTATATCATGGCCGACAAGC  
TCCTGCCGTTGTAGGACCCCGTGTTCGACCTCATGTTGATGTTGTCGGTGTTCAGATATAGTACCGGCTGTTCCG

1725

Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys  
EGFP

AGAAGAACGGCATCAAGGTGAACTTCAAGATCCGCCACAACATCGAGGACGGCAGCGTGCAGCTCGCCGACCACT  
TCTTCTTGCCGTAGTTCCAATTGAAGTTCTAGGCGGTGTTGTAGCTCCTGCCGTGCGACGTCGAGCGGCTGGTGA

1800

Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His  
EGFP

ACCAGCAGAACACCCCATCGGGCAGGGCCCGTGCTGCTGCCCGACAACCACTACCTGAGCACCCAGTCCGCC  
TGGTCGTCTTGTGGGGGTAGCCGCTGCCGGGGCACGACGACGGGCTGTTGGTGATGGACTCGTGGGTCAGGCGGG

1875

Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala  
EGFP

TGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCTGGAGTTCGTGACCGCCGCCGGGATCACTCTCG  
ACTCGTTTCTGGGGTTGCTCTTCGCGCTAGTGTACCAGGACGACCTCAAGCACTGGCGGGCCCTAGTGAGAGC

1950

Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr Leu  
EGFP

GCATGGACGAGCTGTACAAGTAAAGCGGCCGCGACTCTAGATCATAATCAGCCATACCACATTTGTAGAGTTTT  
CGTACCTGCTCGACATGTTCAATTCGCCGGCGCTGAGATCTAGTATTAGTCGGTATGGTGTAAACATCTCCAAA

2025

Gly Met Asp Glu Leu Tyr Lys  
EGFP