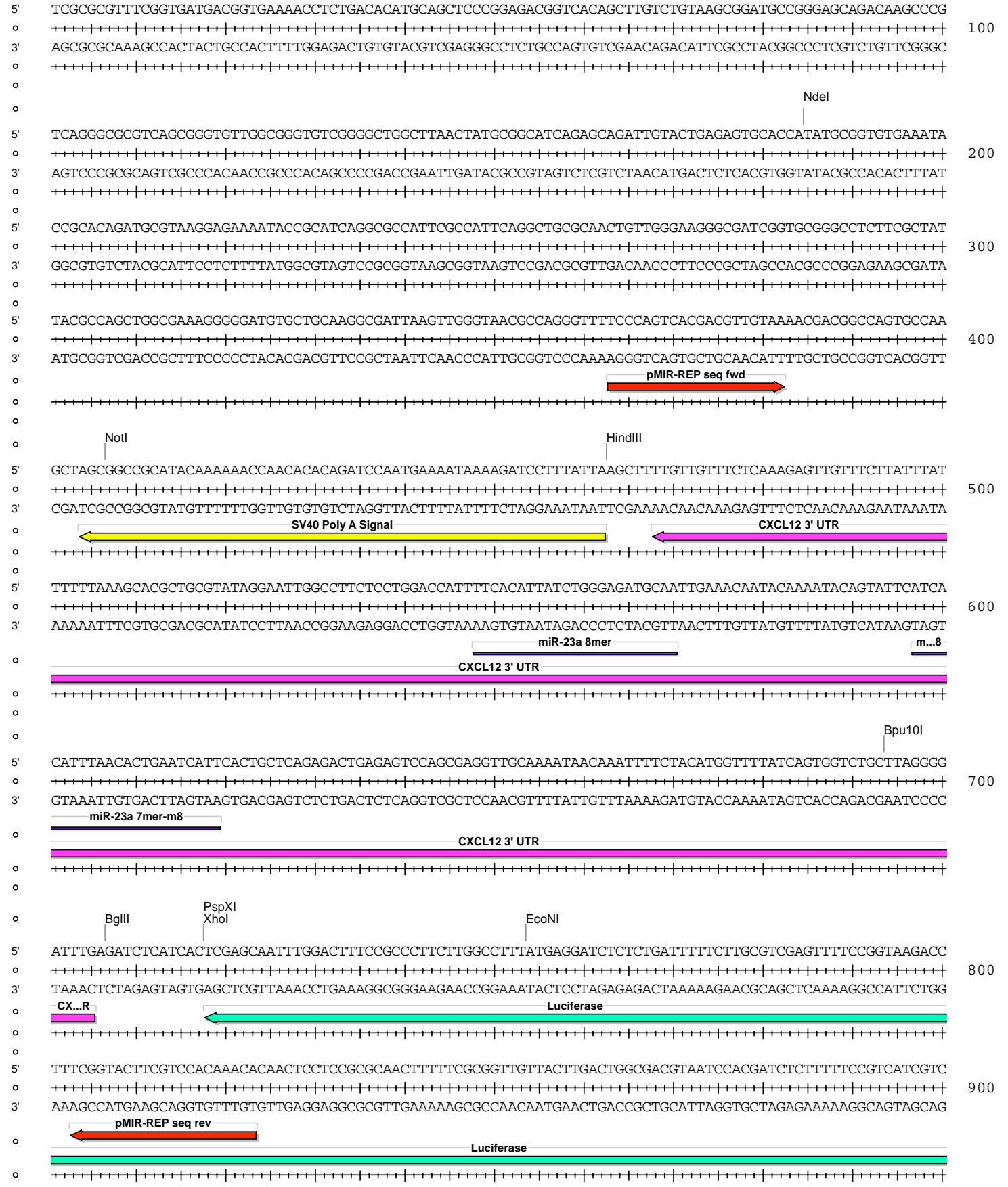


## pMIR-REP-dCMV-CXCL12 3' UTR (2847-3084) wt

| Absent Sites | 0 | AarI,AbstI,AfeI,AfIII,AleI,Apal,Ascl,AsiSI,BaeI,BaeI',BarI,BarI',BbvCI,BclI,BlpI,BmgBI,BsgI,BstXI,BstZ17I,EcoICRI,Fall,Fall',FseI,FspAI,MauBI,MluI,MreI,NaeI,NgoMIV,NruI,PaSI,PfIMI,PmeI,PmlI,PshAI,PspOMI,SacI,SanDI,SgrDI,SpeI,SrfI,Swal |
|--------------|---|--|
| Acc65I       | 1 | 2642 (6312)  |
| AccI         | 1 | 5777 (6312)  |
| AgeI         | 1 | 5945 (6312)  |
| AjuI         | 1 | 1488 (6312)  |
| AjuI'        | 1 | 1520 (6312)  |
| Alol         | 1 | 2401 (6312)  |
| Alol'        | 1 | 2369 (6312)  |
| Arsl         | 1 | 1189 (6312)  |
| Arsl'        | 1 | 1221 (6312)  |
| AvrII        | 1 | 5996 (6312)  |
| BamHI        | 1 | 2377 (6312)  |
| BglII        | 1 | 707 (6312)   |
| Bpu10I       | 1 | 694 (6312)   |
| BsaBI        | 1 | 5161 (6312)  |
| BsmI         | 1 | 5074 (6312)  |
| BsrGI        | 1 | 1878 (6312)  |
| BssHII       | 1 | 5429 (6312)  |
| Bsu36I       | 1 | 1756 (6312)  |
| BtgZI        | 1 | 2627 (6312)  |
| Clal         | 1 | 1005 (6312)  |
| CspCI        | 1 | 2591 (6312)  |
| CspCI'       | 1 | 2556 (6312)  |
| DraIII       | 1 | 5320 (6312)  |
| EcoNI        | 1 | 754 (6312)   |
| EcoO109I     | 1 | 1190 (6312)  |
| EcoRV        | 1 | 1034 (6312)  |
| HindIII      | 1 | 463 (6312)   |
| HpaI         | 1 | 5060 (6312)  |
| KpnI         | 1 | 2646 (6312)  |
| MscI         | 1 | 5513 (6312)  |
| NdeI         | 1 | 185 (6312)   |
| NotI         | 1 | 407 (6312)   |
| Pacl         | 1 | 1050 (6312)  |
| PciI         | 1 | 3106 (6312)  |
| PpuMI        | 1 | 1190 (6312)  |
| PspXI        | 1 | 718 (6312)   |
| Psrl         | 1 | 2239 (6312)  |
| Psrl'        | 1 | 2207 (6312)  |
| PstI         | 1 | 5968 (6312)  |
| RsrII        | 1 | 5769 (6312)  |
| SacII        | 1 | 5676 (6312)  |
| Sall         | 1 | 5776 (6312)  |
| SbfI         | 1 | 5968 (6312)  |
| Scal         | 1 | 4479 (6312)  |
| SfiI         | 1 | 6050 (6312)  |
| SgrAI        | 1 | 940 (6312)   |
| SnaBI        | 1 | 2625 (6312)  |
| SspI         | 1 | 4803 (6312)  |
| Tth111I      | 1 | 5845 (6312)  |
| XcmI         | 1 | 1638 (6312)  |
| XhoI         | 1 | 718 (6312)   |
| XmnI         | 1 | 4598 (6312)  |

pMIR-REP-dCMV-CXCL12 3' UTR (2847-3084) wt



SgrAI

5' TTTCGGTGCTCCAAAACAACAACGGCGGGGAGTTTACCGCGGTCATCGTCGGGAAGACCTGCCACGCCCGCTCGAAGATGTTGGGGTGTGTGAACA  
1000  
3' AAAGGCACGAGGTTTTTGTGTGTCGCCCGCCCTTCAAGTGGCCGAGTAGCAGCCCTTCTGGACGGTGC GGCGCAGCTTCTACAACCCCAACATTGT

Luciferase

Clal

EcoRV

PacI

5' ATATCGATTCCAATTAGCGGGGCCACCTGATATCCTTTGTATTTAATTAAGACTTCAAGCGGTCAACTATGAAGAAGTGTTCGTCTTCGTCCAGTA  
1100  
3' TATAGCTAAGGTTAAGTCGCCCCGGTGGACTATAGGAAACATAAATTAATTTCTGAAGTTCGCCAGTTGATACTTCTTACAAGCAGAAGCAGGGTCAT

Luciferase

ArsI  
EcoO109I  
PpuMI

5' AGCTATGTCTCCAGAATGTAGCCATCCATCCTTGTCAATCAAGGCGTTGGTTCGCTTCCGGATTGTTTACATAACCGGACATAATCATAGGTCCTCTGACA  
1200  
3' TCGATACAGAGGCTTACATCGGTAGGTAGGAACAGTTAGTTCGCAACCAGCGAAGGCCTAACAAATGTATTGGCCTGTATTAGTATCCAGGAGACTGT

Luciferase

ArsI

5' CATAATTCGCCTCTCTGATTAACGCCAGCGTTTTTCCCGGTATCCAGATCCACAACCTTCGCTTCAAAAAATGGAACAACCTTACCAGCCGCGCCCGTT  
1300  
3' GTATTAAGCGGAGAGACTAATTCGGGTTCGCAAAAGGGCCATAGGTCTAGGTGTTGGAAGCGAAGTTTTTTACCTTGTGAAATGGCTGGCGGGGCCAA

Luciferase

5' TATCATCCCCCTCGGGTGTAAATCAGAATAGCTGATGTAGTCTCAGTGAGCCCATATCCTTGTGCGTATCCCTGGAAGATGGAAGCGTTTTGCAACCGCTTC  
1400  
3' ATAGTAGGGGAGCCACATTAGTCTTATCGACTACATCAGAGTCACTCGGGTATAGGAACAGCATAGGGACCTTCTACCTTCGCAAAACGTTGGCGAAG

Luciferase

AjuI

5' CCCGACTTCTTTCGAAAGAGGTGCGCCCCAGAAAGCAATTCGTGTAAATTAGATAAATCGTATTTGTCAATCAGAGTGCTTTTGGCGAAGAATGAAAT  
1500  
3' GGGCTGAAGAAAGCTTTCTCCACGCGGGGGTCTTCGTAAAGCACATTTAATCTATTTAGCATAAACAGTTAGTCTCACGAAAACCGCTTCTTACTTTTA

Luciferase

AjuI

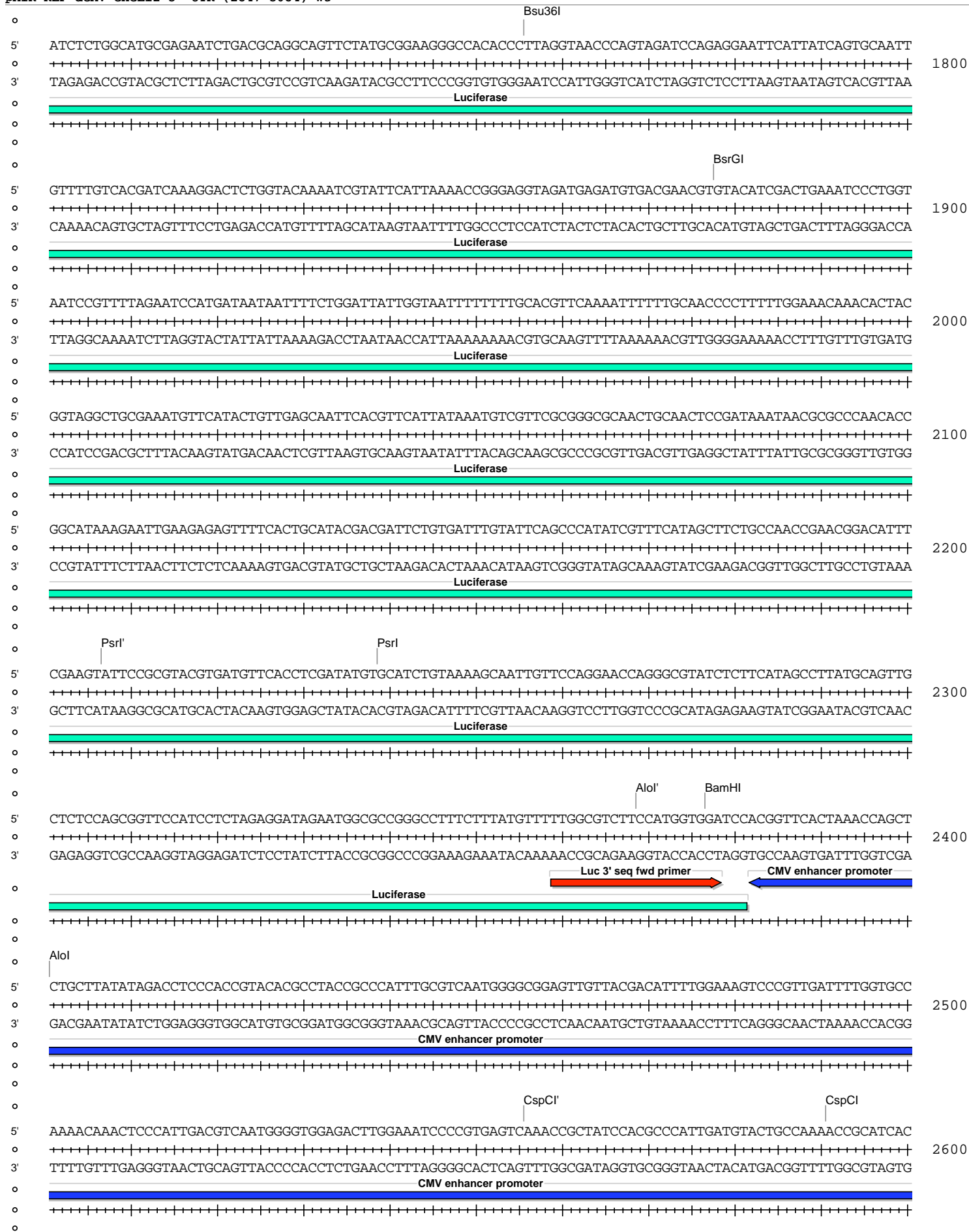
5' AGGGTTGGTACTAGCAACGCACCTTTGAATTTTGAATCCTGAAGGGATCGTAAAAACAGCTCTTCTTCAAATCTATACATTAAGACGACTCGAAATCCAC  
1600  
3' TCCCAACCATGATCGTTGCGTGAAACTTAAACATTAGGACTTCCCTAGCATTTTTGTGCGAGAAGAAGTTTAGATATGTAATCTGCTGAGCTTTAGGTG

Luciferase

XcmI

5' ATATCAAATATCCGAGTGTAGTAAACATTCCAAAACCGTGATGGAATGGGACAACACTTAAATTCGCAGTATCCGGAACGATTTGATTGCCAAAAATAGG  
1700  
3' TATAGTTTATAGGCTCACATCATTTGTAAGGTTTTGGCACTACCTTACCCTGTTGTGAATTTTACGTCATAGGCCTTGCTAAACTAACGGTTTTTATCC

Luciferase



pMIR-REP-dCMV-CXCL12 3' UTR (2847-3084) wt

SnaBI  
 BtgZI  
 Acc65I  
 KpnI  
 PciI

5' CATGGTAATAGCGATGACTAATAACgtaggttcaactGATCTGGTACCTTGAATTCATGCTTCTCCTCCCTTTAGTGAGGGTAATTCTCTCTCTCCCTAT  
 3' GTACCATTATCGCTACTGATTATGcatccaagtgaCTAGACCATGGAAC'TTAAGTACGAAGAGGAGGAAATCACTCCCATTAAGAGAGAGAGAGGGATA  
**CMV enhancer promoter**  
 2700

5' AGTGAGTCGTATTAATTCCTTCTCTTATAGTGTACCTAAATCGTTGCAATTCGTAATCATGTCATAGCTGTTTCTGTGTGAAATTGTTATCCGCTC  
 3' TCACTCAGCATAAATTAAGGAAGAGAAGATATCACAGTGGATTTAGCAACGTTAAGCATTAGTACAGTATCGACAAAGGACACACTTTAACAATAGGCGAG  
 2800

5' ACAATTCACACAACATACGAGCCGGAAGCATAAAAGTGTAAAGCCTGGGGTGCCTAATGAGTGAGCTAACTCACATTAATTGCGTTGCGCTCACTGCCCG  
 3' TGTTAAGGTGTGTTGTATGCTCGGCCTTCGTATTTACATTTTCGACCCACGGATTACTCACTCGATTGAGTGTAAATTAACGCAACGCGAGTGACGGGC  
 2900

5' CTTTCCAGTCGGGAAACCTGTCGTGCCAGCTGCATTAATGAATCGGCCAACGCGGGGAGAGGCGGTTTGCCTATTGGGCGCTCTTCCGCTTCTCGCT  
 3' GAAAGTTCAGCCCTTTGGACAGCACGGTTCGACGTAATTAAGTTCAGCGGTTGCGCGCCCTCTCCGCCAAACGCATAACCCGCGAGAAGGCGAAGGAGCGA  
**ColE1 origin**  
 3000

5' CACTGACTCGCTGCGCTCGGTCGTTCCGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGTAATACGGTTATCCACAGAATCAGGGGATAACGCAGGA  
 3' GTGACTGAGCGACGCGAGCCAGCAAGCCGACGCGCTCGCCATAGTCGAGTGAGTTTCCGCCATTATGCCAATAGGTGTCTTAGTCCCCTATTGCGTCCT  
**ColE1 origin**  
 3100

5' AAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACA  
 3' TTCTTGTAACACTCGTTTTCCGGTCGTTTTCCGGTCCTTGCCATTTTTCCGGCGCAACGACCCGCAAAAAGGTATCCGAGGCGGGGGACTGCTCGTAGTGT  
**ColE1 origin**  
 3200

5' AAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGAC  
 3' TTTTAGCTGCGAGTTTCCAGTCTCCACCGCTTTGGGCTGTCTGATATTTCTATGGTCCGCAAAGGGGGACCTTCGAGGGAGCACGCGAGAGGACAAGGCTG  
**ColE1 origin**  
 3300

5' CCTGCCCTTACCGGATACCTGTCCGCCTTCTCCCTTCGGAAGCGTGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTT  
 3' GGACGGCGAATGGCTATGGACAGGCGGAAAGAGGGAAGCCCTTCGCACCCGAAAGAGTATCGAGTGCACATCCATAGAGTCAAGCCACATCCAGCAA  
**ColE1 origin**  
 3400

5' CGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTTCAGCCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACT  
 3' GCGAGGTTCCAGCCGACACACGTGCTTGGGGGGCAAGTCGGGCTGGCGACGCGGAATAGGCCATTGATAGCAGAACTCAGGTTGGGCCAATCTGTGCTGA  
**ColE1 origin**  
 3500

5' TATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACAC  
 3' ATAGCGGTGACCGTCGTCGGTGACCATTTGTCCTAATCGTCTCGTCCATACATCCGCCACGATGTCTCAAGAACTTACCACCGGATTGATGCCGATGTG  
**ColE1 origin**  
 3600

pMIR-REP-dCMV-CXCL12 3' UTR (2847-3084) wt

5' TAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAAAACCACCGCTGGTAGC  
 3' ATCTTCTTGTGCATAAACCATAGACGCGAGACGACTTCGGTCAATGGAAGCCTTTTCTCAACCATCGAGAACTAGGCCGTTTTTTTGGTGGCGACCATCG  
 ColE1 origin

5' GGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACG  
 3' CCACCAAAAAAACAACGTTTCGTCGTCTAATGCGCGTCTTTTTTCTCCTAGAGTTCCTTAGGAACTAGAAAAGATGCCCCAGACTGCGAGTCACCTTGC  
 ColE1 origin

5' AAAACTCACGTTAAGGGATTTTGGTCATGAGATTATCAAAAAGGATCTTACCTAGATCCTTTTAAATTAAAAATGAAGTTTTAAATCAATCTAAAGTAT  
 3' TTTTGGAGTGCAATTCCTTAAACCAGTACTCTAATAGTTTTTCTTAGAAGTGGATCTAGGAAAAATTAATTTTTACTTCAAAATTTAGTTAGATTTTCATA  
 ColE1 origin

5' ATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCCATAGTTGCCTGACTCCCC  
 3' TATACTCATTTGAACCAGACTGTCAATGGTTACGAATTAGTCACTCCGTGGATAGAGTCGCTAGACAGATAAAGCAAGTAGGTATCAACGGACTGAGGGG  
 AMPr

5' GTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAA  
 3' CAGCACATCTATTGATGCTATGCCCTCCGAATGGTAGACCGGGTACGACGTTACTATGGCGCTCTGGGTGCGAGTGGCCGAGGTCTAAATAGTCGTT  
 AMPr

5' TAAACCAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATGTTGCCGGAAGCTAGAGTAAGTAG  
 3' ATTTGGTCGTCGGCCTTCCCGCTCGCGTCTTACCAGGACGTTGAAATAGGCGGAGGTAGTTCAGATAAATTAACAACGGCCCTTCGATCTCATTATC  
 AMPr

5' TTCGCCAGTTAATAGTTTGCACAACGTTGTTGCCATTGCTACAGGCATCGTGGTGTACGCTCGTCTTGGTATGGCTTCATTACGCTCCGGTTCCTCAA  
 3' AAGCGGTCAATTATCAAAACGCGTTGCAACAACGGTAACGATGTCCGTAGCACACAGTGCAGCAGCAAAACCATACCAGTAAGTCGAGGCCAAGGGTT  
 AMPr

5' CGATCAAGGCGAGTTACATGATCCCCATGTTGTGCAAAAAGCGTTAGTCTCCTTCGGTCTCCGATCGTTGTCAGAAGTAAGTTGGCCGAGTGTAT  
 3' GCTAGTTCGCTCAATGTACTAGGGGTACAACACGTTTTTTCGCAATCGAGGAAGCCAGGAGGCTAGCAACAGTCTTCAATCAACCGGCTCACAATA  
 AMPr

5' CACTCATGGTTATGGCAGCACTGCATAATCTCTTACTGTGTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCAATCTGAGA  
 3' GTGAGTACCAATACCGTCGTGACGTATTAAGAGAATGACAGTACGGTAGGCATTCTACGAAAAGACTGACCACTCATGAGTTGGTTCAGTAAGACTCT  
 AMPr

5' ATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGTCTATCATTTGAAAACGT  
 3' TATCACATACGCCGCTGGCTCAACGAGAACGGGCCGAGTTATGCCCTAATTATGGCGGGTGTATCGTCTTGAATTTTTACAGTAGTAACCTTTTGCA  
 AMPr

Scal

Xmnl

pMIR-REP-dCMV-CXCL12 3' UTR (2847-3084) wt

5' TCTTCGGGGCGAAAACTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCCAACTGATCTTCAGCATCTTTTACTTTCA  
 4700  
 3' AGAAGCCCCGCTTTTGAGAGTTCTTAGAATGGCGACAACCTCTAGGTCAAGCTACATTGGGTGAGCACGTGGGTTGACTAGAAGTCGTAGAAAATGAAAGT

AMPr

5' CCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAAATGCCGCAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCTTTTCA  
 4800  
 3' GGTTCGCAAAGACCCACTCGTTTTGTCTTCCGTTTTACGGCGTTTTTCCCTTATTCCCGCTGTGCCTTTACAACCTTATGAGTATGAGAAGGAAAAAGT

AMPr

Sspl

5' ATATTATTGAAGCATTATCAGGGTTATGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAACAAATAGGGGTTCCGCGCACATTTCCC  
 4900  
 3' TATAATAACTTCGTAAATAGTCCAATAACAGAGTACTCGCCTATGTATAAACTTACATAAATCTTTTATTTGTTTATCCCAAGGCGGTGTAAGGG

5' CGAAAAGTGCCACCTGACGTCTAAGAAACCATTATTATCATGACATTAACCTATAAAAATAGGCGTATCACGAGATTGCAGTGAAAAAATGCTTTATTT  
 5000  
 3' GCTTTTCACGGTGGACTGCAGATTCTTTGGTAATAATAGTACTGTAATTGGATATTTTATCCGCATAGTGCTCTAACGTCACCTTTTTTACGAAATAAA

SV4... A

HpaI

BsmI

5' GTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCAATTTATGTTTCAGGTTTCAGGG  
 5100  
 3' CACTTTAAACACTACGATAACGAAATAAACATTGGTAATATTCGACGTTATTTGTTCAATTGTGTTGTTAACGTAAGTAAAATACAAAGTCCAAGTCCC

SV40 Poly A

BsaBI

5' GGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGCTGATTATGATCCTCTAGAGTCGGTGGCCCTCGGGGCGGGTGCAGGG  
 5200  
 3' CCTCCACACCTCCAAAAAATTCGTTTCATTTTGGAGATGTTTACACCATACCGACTAATACTAGGAGATCTCAGCCACCCGGAGCCCGCCACGCCC

5' GTCGGCGGGGCGCCCGGGTGGCTTCGGTCCGAGCCATGGGGTTCGTGCGCTCCTTTTCGGTCCGGGCGTGGGGTTCGTGGGGCGGGCGTCAGGCACCGGG  
 5300  
 3' CAGCCGCCCCGGCGGGGCCACCGAAGCCAGCCTCGGTACCCAGCACGCGAGGAAAGCCAGCCCGCGACGCCAGCACCCCGCCGAGTCCGTGGCCC

Puomyc...istance

DrallI

5' CTTGCGGGTCATGCACCAGGTGCGCGGTCTTTCGGGCACCTCGACGTCGGCGGTGACGGTGAAGCCGAGCCGCTCGTAGAAGGGGAGGTTGCGGGGCGCG  
 5400  
 3' GAACGCCAGTACGTGGTCCACGCGCCAGGAAGCCCGTGGAGCTGCAGCCGCCACTGCCACTTCGGCTCGGCGAGCATCTTCCCTCCAACGCCCGCGC

Puomycin resistance

BssHII

5' GAGGTCTCCAGGAAGGCGGGCACCCCGCGCTCGGCCGCTCCACTCCGGGGAGCACGACGGCGCTGCCAGACCTTGCCCTGGTGGTTCGGGCGAGA  
 5500  
 3' CTCCAGAGGTCTTCCGCCGTTGGGGCCGCGAGCCCGGAGGTGAGGCCCTCGTGCTGCCGCGAGGGTCTGGGAACGGGACCACCAGCCCGCTCT

Puomycin resistance



