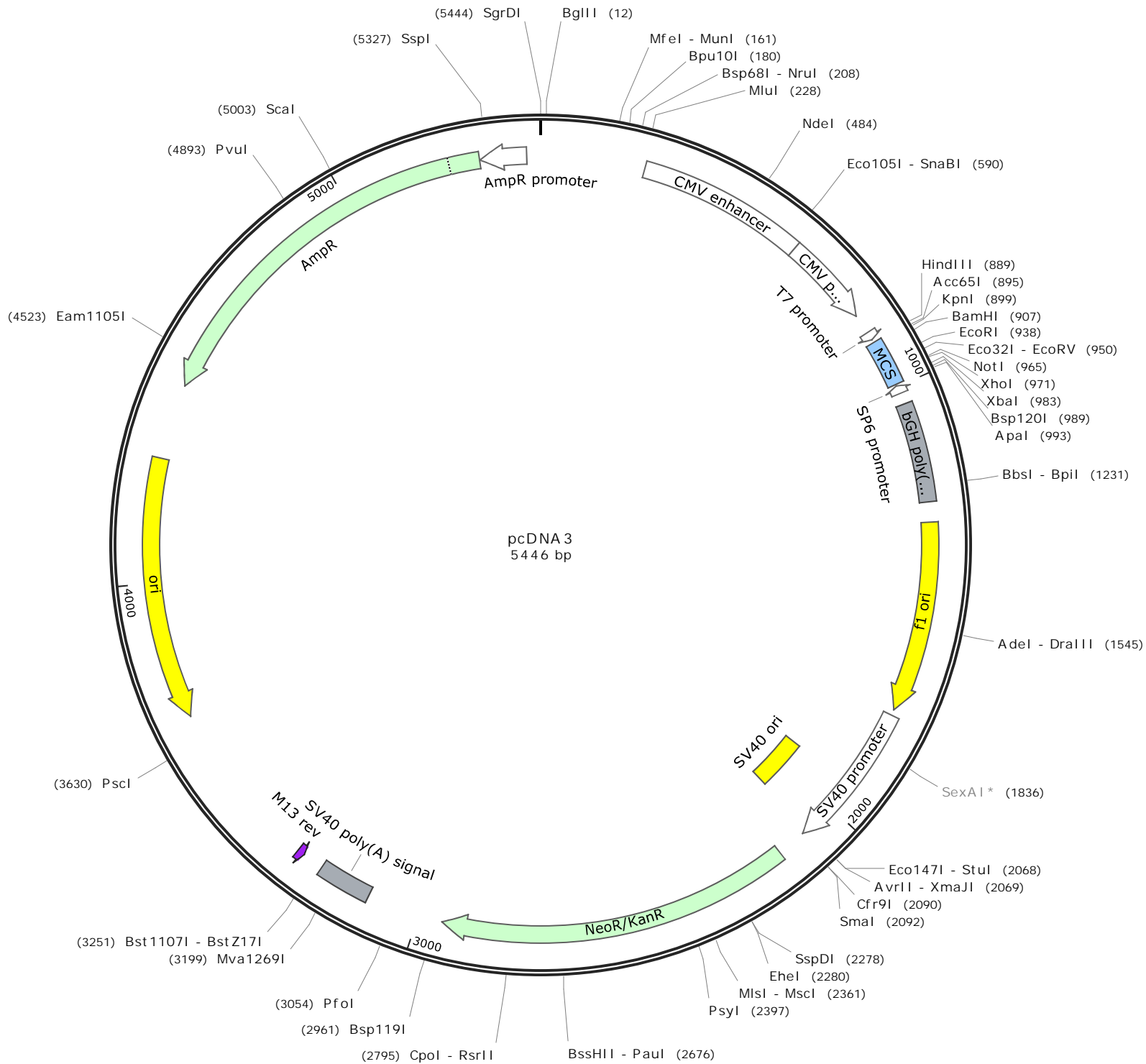


Mammalian expression vector with the CMV promoter and a neomycin-resistance marker.







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AATTTTTTACTCGACTAAATTGTTTTTAAATTGCGCTTAATTAAGACACCTTACACACAGTCAATCCCACACCTTTTCAGGGGTCC

f1 ori

SV40 promoter

CTCCCAGGCAGGCAGAAGTATGCAAAGCATGCATCTCAATTAGTCAGCAACCAGGTGTGGAAAGTCCCCAGGCTCCCCAGCAGG
GAGGGGTCCGTCCGTCTTCATACGTTTCGTACGTAGAGTTAATCAGTCGTTGGTCCACACCTTTTCAGGGGTCCGAGGGGTCCGTCC

SexAI *

SV40 promoter

CAGAAGTATGCAAAGCATGCATCTCAATTAGTCAGCAACCATAGTCCCGCCCTAACTCCGCCCATCCCGCCCTAACTCCGCC
GTCTTCATACGTTTCGTACGTAGAGTTAATCAGTCGTTGGTATCAGGGCGGGGATTGAGGCGGGTATGGGCGGGGATTGAGGCGGG

SV40 promoter

SV40 ori

AGTTCGCCCATTCTCCGCCCATGGCTGACTAATTTTTTTTATTTATGCAGAGGCCGAGGCCGCCTCTGCCTCTGAGCTATTCC
TCAAGGCGGGTAAGAGGCGGGGTACCGACTGATTAATAAATAAATACGTCTCCGGCTCCGGCGGAGACGGAGACTCGATAAGG

SV40 promoter

SV40 ori

AGAAGTAGTGAGGAGGCTTTTTTGGAGGCCTAGGCTTTTTGCAAAAAGCTCCCGGGAGCTTGTATATCCATTTTCGGATCTGATCA
TCTTCATCACTCCTCCGAAAAAACCTCCGGATCCGAAAAACGTTTTTTCGAGGGCCCTCGAACATATAGGTAAAAGCCTAGACTAGT

StuI AvrII
Eco147I XmaJI

Cfr9I SmaI

SV40 promoter

SV40 ori

AGAGACAGGATGAGGATCGTTTCGCATGATTGAACAAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTC
TCTCTGTCTACTCCTAGCAAAGCGTACTAACTTGTCTACCTAACGTGCGTCCAAGAGGCCGGCGAACCCACCTCTCCGATAAG

1 5 10 15 20
M I E Q D G L H A G S P A A W V E R L F
NeoR/KanR

GGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCCGGCTGTGTCAGCGCAGGGGCGCCCGTTCTTTTTG
CCGATACTGACCCGTGTTGTCTGTTAGCCGACGAGACTACGGCGGCACAAGGCCGACAGTTCGCGTCCCCGCGGGCCAAGAAAAAC

SspDI EheI

25 30 35 40 45
G Y D W A Q Q T I G C S D A A V F R L S A Q G R P V L F
NeoR/KanR

TCAAGACCGACCTGTCCGGTGCCTGAATGAACTGCAGGACGAGGCAGCGCGGCTATCGTGGCTGGCCACGACGGGCGTTCCCTTG
AGTTCTGGCTGGACAGGCCACGGGACTTACTTGACGTCTGCTCCGTGCGCGCCGATAGCACCGACCGGTGCTGCCCGCAAGGAAC

MisI
MscI

50 55 60 65 70 75
V K T D L S G A L N E L Q D E A A R L S W L A T T G V P C
NeoR/KanR

PsyI

CGCAGCTGTGCTCGACGTTTGTCACTGAAGCGGGAAGGGACTGGCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTCCTGTCATCT
 GCGTCGACACGAGCTGCAACAGTGAAGTTCGCCCTTCCCTGACCGACGATAACCCGCTTACGGCCCCGTCTAGAGGACAGTAGA
 A A V L D V V T E A G R D W L L L G E V P G Q D L L S S
 NeoR/KanR

2465

CACCTTGCTCCTGCCGAGAAAGTATCCATCATGGCTGATGCAATGCGGCGGCTGCATACGCTTGATCCGGCTACCTGCCCATTCG
 GTGGAACGAGGACGGCTCTTTTCATAGGTAGTACCGACTACGTTACGCCGCCGACGATGCGAACTAGGCCGATGGACGGGTAAGC
 H L A P A E K V S I M A D A M R R L H T L D P A T C P F
 NeoR/KanR

2550

ACCACCAAGCGAAACATCGCATCGAGCGAGCACGTAAGGCGGCTCTTGTGCGATCAGGATGATCTGGACGAAGAGCA
 TGGTGGTTTCGCTTTGTAGCGTAGCTCGCTCGTGCATGAGCCTACCTTCGGCCAGAAGAGCTAGTCTACTAGACCTGCTTCTCGT
 D H Q A K H R I E R A R T R M E A G L V D Q D D L D E E H
 NeoR/KanR

2635

Paul
BssHI I

TCAGGGGCTCGCGCCAGCCGAAGTTCGCCAGGCTCAAGGCGCGCATGCCCGACGGCGAGGATCTCGTCTGACCCATGGCGAT
 AGTCCCCGAGCGCGGTCGGCTTGACAAGCGGTCGGAGTTCGCCGCGGTACGGGCTGCCGCTCCTAGAGCAGCACTGGGTACCGCTA
 Q G L A P A E L F A R L K A R M P D G E D L V V T H G D
 NeoR/KanR

2720

CpoI
RsrI I

GCCTGCTTGCCGAATATCATGGTGGAAAATGGCCGCTTTTCTGGATTCATCGACTGTGGCCGGCTGGGTGTGGCGGACCGCTATC
 CGGACGAACGGCTTATAGTACCACCTTTTACCAGCGAAAAGACCTAAGTAGCTGACACCGGCCGACCCACACCGCCTGGCGATAG
 A C L P N I M V E N G R F S G F I D C G R L G V A D R Y
 NeoR/KanR

2805

AGGACATAGCGTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATGGGCTGACCGCTTCTCGTGCTTTACGGTATCGC
 TCCTGTATCGCAACCGATGGGCACTATAACGACTTCTCGAACCGCGCTTACCCGACTGGCGAAGGAGCACGAAATGCCATAGCG
 Q D I A L A T R D I A E L G G E W A D R F L V L Y G I A
 NeoR/KanR

2890

Bsp119I

CGCTCCCGATTTCGAGCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCTTCTGAGCGGGACTCTGGGGTTCGAAATGACCGACC
 GCGAGGGCTAAGCGTTCGCTAGCGGAAGATAGCGGAAGAAGTCTCAAGAAGACTCGCCCTGAGACCCCAAGCTTTACTGGCTGG
 A P D S Q R I A F Y R L L D E F F
 NeoR/KanR

2975

PfoI

AAGCGACGCCAACCTGCCATCACGAGATTTGATTCCACCGCCGCTTCTATGAAAGGTTGGGCTTCGGAATCGTTTTCCGGGA
 TTCGCTGCGGGTTGGACGGTAGTGCTCTAAAGCTAAGGTGGCGGCGGAAGATACTTTCCAACCCGAAGCCTTAGCAAAAGGCCCT
 CGCCGGCTGGATGATCCTCCAGCGCGGGGATCTCATGCTGGAGTTCTTCCGCCACCCCAACTTGTTTATTGCAGCTTATAATGGT
 GCGGCCGACCTACTAGGAGGTCGCGCCCCTAGAGTACGACCTCAAGAAGCGGGTGGGGTTGAACAAATAACGTCGAATATTACCA

3060

3145

SV40 poly(A) signal

Mva1269I

TACAAATAAAGCAATAGCATCACAAATTTACAAATAAAGCATTTTTTTCACTGCATTCTAGTTGTGGTTTTGTCCAAACTCATCA
 ATGTTTATTTTCGTTATCGTAGTGTAAAGTGTATTTTCGTAATAAAGTGCAGTAAGATCAACACCAAACAGGTTTGAGTAGT

SV40 poly(A) signal

3230

BstZ17I
Bst1107I

ATGTATCTTATCATGTCTGTATACCGTTCGACCTCTAGCTAGAGCTTGGCGTAATCATGGTCATAGCTGTTTCTGTGTGAAATTG
 TACATAGAATAGTACAGACATATGGCAGCTGGAGATCGATCTCGAACCGCATTAGTACCAGTATCGACAAAGGACACACTTTAAC

SV40 poly(A) signal

M13 rev

3315

TTATCCGCTCACAAATCCACACAACATACGAGCCGGAAGCATAAAGTGTAAAGCCTGGGGTGCCTAATGAGTGAGCTAACTCACA
 AATAGGCGAGTGTAAAGGTGTGTGTATGCTCGGCCTTCGTATTTACATTTTCGGACCCACGGATTACTCACTCGATTGAGTGT

3400

TTAATTGCGTTGCGCTCACTGCCCGCTTTCAGTCGGGAAACCTGTCGTGCCAGCTGCATTAATGAATCGGCCAACGCGCGGGGA
 AATTAACGCAACGCGAGTGACGGGCGAAAGGTCAGCCCTTTGGACAGCACGGTCGACGTAATTACTTAGCCGGTTGCGCGCCCT

3485

GAGGCGGTTTTCGTTATGGGCGCTCTTCCGCTTCTTCGCTCACTGACTCGCTGCGCTCGGTCGTTTCGGCTGCGGCGAGCGGTATC
 CTCGCGCAAACGCATAAACC GCGAGAAGGCGAAGGAGCGAGTGACTGAGCGACGCGAGCCAGCAAGCCGACGCCGCTCGCCATAG

3570

PscI

AGCTCACTCAAAGGCGGTAATACGGTTATCCACAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAGGCCAGCAAAG
 TCGAGTGAGTTTCCGCCATTATGCCAATAGGTGTCTTAGTCCCCTATTGCGTCTTTCTTGTACACTCGTTTTCCGGTCTGTTTTC

3655

GCCAGGAACCGTAAAAAGGCCGCTTGGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAA
 CGGTCTTTGGCATTTCGCGCGCAACGACCGCAAAAAGGTATCCGAGGCGGGGGGACTGCTCGTAGTGTTTTTAGCTGCGAGTT

ori

3740

GTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGAC
 CAGTCTCCACCGCTTTGGGCTGTCTGATATTTCTATGGTCCGCAAAGGGGGACCTTCGAGGGAGCACGCGAGAGGACAAGGCTG

ori

3825

CCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCAATGCTCACGCTGTAGGTATCTCAGT
 GGACGGCGAATGGCCTATGGACAGGCGGAAAGAGGGAAAGCCCTTCGCACCGCGAAAGAGTTACGAGTGCGACATCCATAGAGTCA

ori

3910

TCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATC
 AGCCACATCCAGCAAGCGAGGTTTCGACCCGACACACGTGCTTGGGGGGCAAGTCGGGCTGGCGACGCGGAATAGGCCATTGATAG

ori

3995

GTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGG
 CAGAACTCAGGTTGGGCCATTCTGTGCTGAATAGCGGTGACCGTCGTCGGTGACCATTGTCCTAATCGTCTCGCTCCATACATCC

ori

4080

CGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCA
 GCCACGATGTCTCAAGAACTTACCACCGGATTGATGCCGATGTGATCTTCTGTCATAAACCATAGACGCGAGACGACTTCGGT

ori

4165

GTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGC
CAATGGAAGCCTTTTTCTCAACCATCGAGAAGTCTAGGCCGTTTGTGGTGGCGACCATCGCCACCAAAAAACAAACGTTTCGTCG

4250

ori

AGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACTCACG
TCTAATGCGCGTCTTTTTTCTAGAGTTCTTCTAGGAACTAGAAAAGATGCCCCAGACTGCGAGTCACCTTGCTTTTGAGTGC

4335

ori

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4420

AGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCAT
TCATATATACTCATTTGAACCAGACTGTCAATGGTTACGAATTAGTCACTCCGTGGATAGAGTCGCTAGACAGATAAAGCAAGTA

4505

285 280 275 270
W H K I L S A G I E A I O R N R E D
AmpR

Eam1105I

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GGTATCAACGGACTGAGGGGCAGCACATCTATTGATGCTATGCCCTCCCGAATGGTAGACCGGGGTCACGACGTTACTATGGCGC

4590

265 260 255 250 245
M T A Q S G T T Y I V V I R S P K G D P G L A A I I G R
AmpR

AGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCTTGCAACTTTA
TCTGGGTGCGAGTGGCCGAGGTCTAAATAGTCGTTATTTGGTCGGTCGGCCTTCCCGGCTCGCGTCTTACCAGGACGTTGAAAT

4675

240 235 230 225 220 215
S G R E G A G S K D A I F W G A P L A S R L L P G A V K
AmpR

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AGGCGGAGGTAGGTACAGATAATTAACAACGGCCCTTCGATCTCATTCAAGCGGTCAATTATCAAACGCGTTGCAACAACGGT

4760

210 205 200 195 190 185
D A E M W D I L Q Q R S A L T L L E G T L L K R L T T A M
AmpR

TTGCTACAGGCATCGTGGTGTACGCTCGTCTTTGGTATGGCTTCATTACGCTCCGGTTCCEAACGATCAAGGCGAGTTACATG
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4845

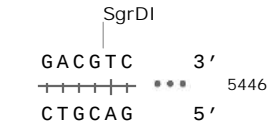
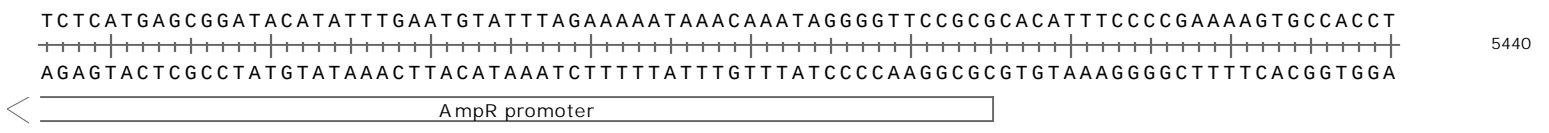
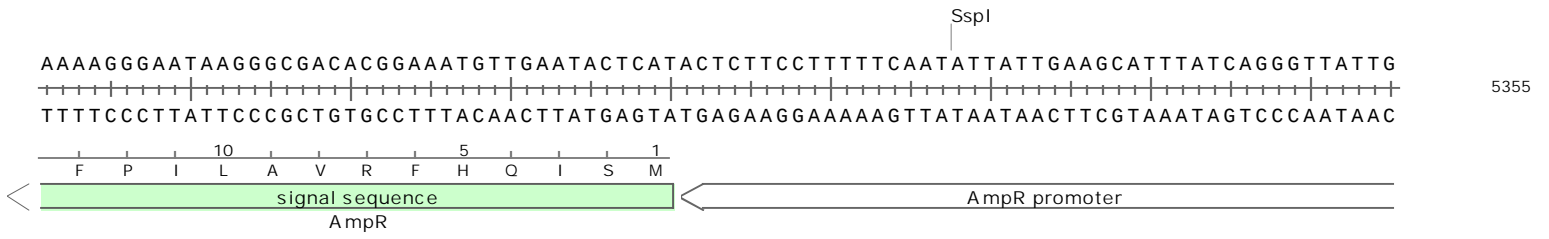
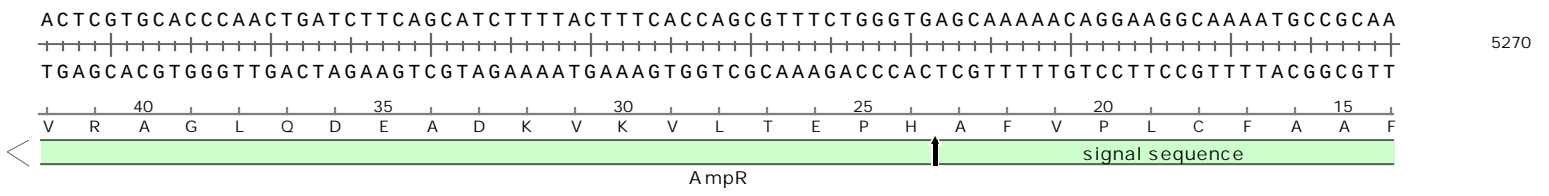
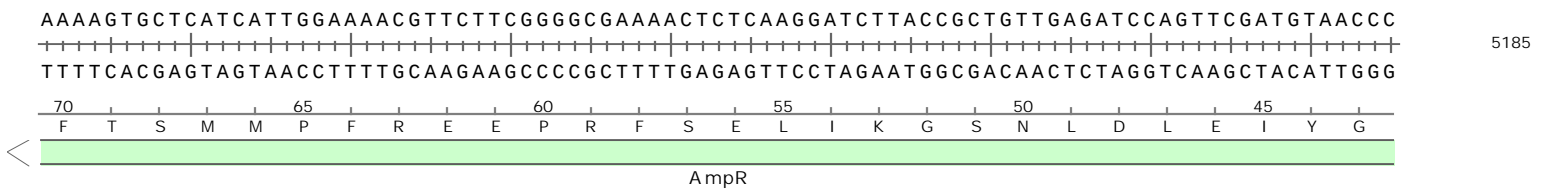
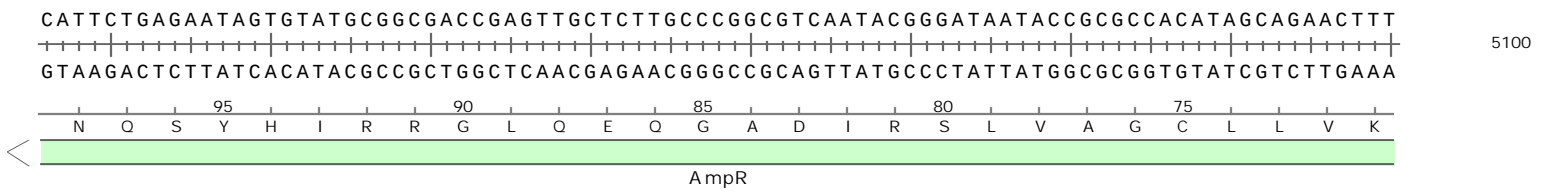
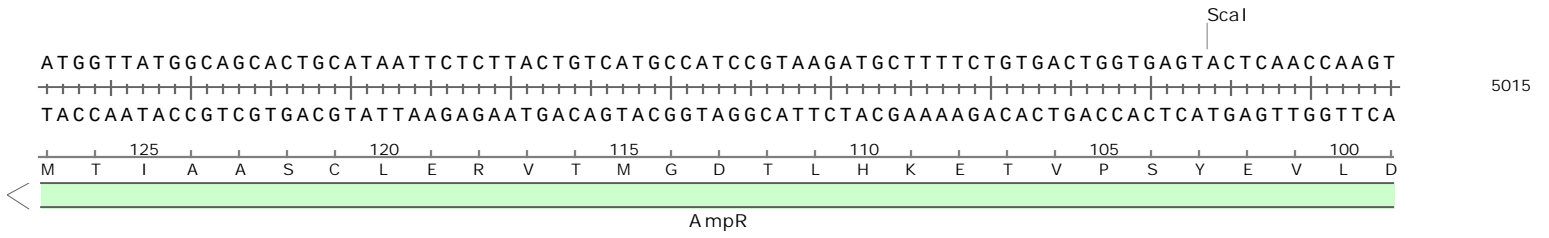
180 175 170 165 160
A V P M T T D R E D N P I A E N L E P E W R D L R T V H
AmpR

PvuI





























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





4930

155 150 145 140 135 130
D G M N H L F A T L E K P G G I T T L L L N A A T N D S
AmpR



Enzymes	Sites	
Acc65I	1	895
Adel	1	1545
Apal	1	993
AvrII	1	2069
BamHI	1	907
BbsI	1	1231
BglII	1	12
BpiI	1	1231
Bpu10I	1	180
Bsp68I	1	208
Bsp119I	1	2961
Bsp120I	1	989
BssHII	1	2676
Bst1107I	1	3251
BstZ17I	1	3251
Cfr9I	1	2090
CpoI	1	2795
DraIII	1	1545
Eam1105I	1	4523
Eco32I	1	950
Eco105I	1	590
Eco147I	1	2068
EcoRI	1	938
EcoRV	1	950
EheI	1	2280
HindIII	1	889
KpnI	1	899
MfeI	1	161
MisI	1	2361
MluI	1	228
MscI	1	2361
MunI	1	161
Mva1269I	1	3199
NdeI	1	484
NotI	1	965
NruI	1	208
Paul	1	2676
PfoI	1	3054
PscI	1	3630
PsyI	1	2397
PvuI	1	4893
RsrII	1	2795
ScaI	1	5003
SexAI	1*	1836*
SgrDI	1	5444
SmaI	1	2092
SnaBI	1	590
SspI	1	5327
SspDI	1	2278
StuI	1	2068
XbaI	1	983
XhoI	1	971
XmaJI	1	2069

Feature	Location	Size (bp)			Type
✓ CMV enhancer /note = human cytomegalovirus immediate early enhancer	235 .. 614	380			enhancer
✓ CMV promoter /note = human cytomegalovirus (CMV) immediate early promoter	615 .. 818	204			promoter
✓ T7 promoter /note = promoter for bacteriophage T7 RNA polymerase	863 .. 881	19			promoter
✓ MCS /note = multiple cloning site	889 .. 994	106			misc_feature
✓ SP6 promoter /note = promoter for bacteriophage SP6 RNA polymerase	998 .. 1016	19			promoter
✓ bGH poly(A) signal /note = bovine growth hormone polyadenylation signal	1042 .. 1266	225			polyA_signal
✓ f1 ori /direction = RIGHT /note = f1 bacteriophage origin of replication; arrow indicates direction of (+) strand synthesis	1312 .. 1740	429			rep_origin
✓ SV40 promoter /note = SV40 enhancer and early promoter	1754 .. 2084	331			promoter
✓ SV40 ori /note = SV40 origin of replication	1935 .. 2070	136			rep_origin
✓ NeoR/ KanR /gene = aph(3')-II (or nptII) /product = aminoglycoside phosphotransferase from Tn5 /note = confers resistance to neomycin, kanamycin, and G418 (Geneticin) /translation = MIEQDGLHAGSPAAWVERLFGYDWAQQTIGCSDAAVFRLSAQGRPVLFVKTDLSGALNELODEAARLSWLATTGVPCA AVL DVV TEAGRDWLLLGEVPGQDLLSSHLAPAEKVSIMADAMRRLHTLDPATCPFHDQA KHRIERARTRMEAGLVDQDDLDEEHQGLAPAE LFARLKARMPDGEDLVVTHGDA CLPNIMVENGRFSGFIDCGRLGVADRYQDIALATRDIAEELGGEWADRFLVLYGIAAPDSORIA FYRIIDFFF* 264 amino acids = 29.0 kDa	2151 .. 2945	795			CDS
✓ SV40 poly(A) signal /note = SV40 polyadenylation signal	3119 .. 3240	122			polyA_signal
✓ M13 rev /note = common sequencing primer, one of multiple similar variants	3289 .. 3305	17			primer_bind
✓ ori /direction = LEFT /note = high-copy-number ColE1/pMB1/pBR322/pUC origin of replication	3691 .. 4279	589			rep_origin

Feature	Location	Size (bp)			Type
✓ AmpR	4450 .. 5310	861			CDS
▶ 2 segments					
/gene	= bla				
/product	= -lactamase				
/note	= confers resistance to ampicillin, carbenicillin, and related antibiotics				
/translation	= MSIQHFRVALIPFFAAFCLPVFA,HPETLVKVKDAEDQLGARVGYIELDLNSGKILESFRPEERFPMSTFKVLLCGAVLSRIDAGQE QLGRRIHYSQNDLVEYSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLTTIGGPKELTAFLHNMGDHVTRLDRWEPELNEAIPN DERDITMPVAMATTLRKLTLGELLTLASRQQLIDWMEADKLVAGPLLRSAALPAWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIY TTGSOATMDFRNROIAFIGASIKHW* 286 amino acids = 31.6 kDa				
✓ AmpR promoter	5311 .. 5415	105			promoter
/gene	= bla				

Description: Mammalian expression vector with the CMV promoter and a neomycin-resistance marker.

Created: Sunday, May 6, 2012

Last Modified: Saturday, Jan 5, 2013

Accession Number:

Code Number:

Sequence Author: Invitrogen (Life Technologies)

DNA Type: Synthetic DNA

Laboratory Host Organism: Mammalian Cells

Bacterial Transformation Strain: Unspecified

Dam⁺ Dcm⁺ EcoKI⁺

Comments: The cloned gene must include a Kozak sequence and start codon.

References: