

Absent Sites	0	Aarl,AbsI,Ajul,Ajul',AlfI,AlfI',Alol,Alol',AscI,AsiSI,AvrII,BaeI,BaeI',BamHI,BarI,BarI',BclI,BlpI,BmgBI,BsaBI,BsiWI,BspMI,BstBI,BstEII,BstXI,BstZ17I,FspAI,MauBI,MreI,PmlI,PshAI,Psil,PspXI,Psrl,Psrl',RsrII,SbfI,SexAI,Sfil,SgrAI,SmaI,SphI,SrfI,StuI,Swal,TstI,TstI',Tth111I,XcmI,XmaI
Acc65I	1	6223
AfeI	1	3195
AgeI	1	3199
AhdI	1	7688
ApaI	1	2572
BbeI	1	984
BbvCI	1	1767
BmtI	1	3194
BsaXI	1	2191
BsaXI'	1	2161
BsrGI	1	3921
BssHII	1	1054
Bsu36I	1	6219
DrdI	1	6903
EcoNI	1	1513
EcoO109I	1	2277
EcoRI	1	4183
FseI	1	1491
FspI	1	7910
HpaI	1	4058
KasI	1	980
KpnI	1	6227
MscI	1	5034
NarI	1	981
NheI	1	3190
NotI	1	3932
NsiI	1	2598
PacI	1	5399
PciI	1	5375
PpuMI	1	2277
PspOMI	1	2568
PstI	1	2380
SacII	1	6000
SanDI	1	2277
SapI	1	1443
SfoI	1	982
SgrDI	1	2
SpeI	1	253
XbaI	1	2576
XhoI	1	4073

p201 (pPRIME-CMV-GFP-FF3)

SgrDI

5' gtcgacggatcgggagatctcccgatcccctatggtgcactctcagtacaatctgctctgatgccgcatagttaagccagtatctgctccctgcttgtgt  
 100  
 3' cagctgcctagccctctagagggctaggggataccacgtgagagtcagttagacgagactacggcgtatcaattcgggtcatagacgagggacgaacaca  
 +

5' gttggaggtcgctgagtagtgcgcgagcaaaathtaagctacaacaaggcaaggcttgaccgacaattgcatgaagaatctgcttaggggttaggcgttt  
 200  
 3' caacctccagcgactcatcacgcgctcgttttaaattcgatggtgttccgttccgaactggctgtaacgtacttcttagacgaatccaatccgcaaaa  
 +

Spel

5' gcgctgcttcgogatgtacgggcccagatatacgcgcttgacattgattattgactagttattaatagtaatacaattacgggggtcattagttcatagcccat  
 300  
 3' cgcgacgaagcgctacatgcccggctctatatgcgcaactgtaactaataactgatcaataattatcattagttaatgcccagtaatacaagtatcgggta  
 +

5' atatggagttccgcttacataaacttacggtaaatggcccgcctggctgaccgcccacgacccccgccattgacgtcaataatgacgtatgttcccat  
 400  
 3' tatacctcaaggcgcaatgtattgaatgccatttacggggcggaccgactggcgggtgctggggcgggtaactgcagttattactgcatacaagggt  
 +

5' agtaacgccaatagggactttccattgacgtcaatgggtggagatattacggtaaaactgcccaacttggcagtacatcaagtgtatcatatgccaaagtacg  
 500  
 3' tcatgcggttatccctgaaaggtaactgcagttaccacactcataaatgccattgacgggtgaaccgtcatgtagttcacatagatacggttcatgc  
 +

5' cccctattgacgtcaatgacggtaaatggcccgcctggcattatgccagtacatgacctatgggactttcctacttggcagtacatctacgtattag  
 600  
 3' gggggataactgcagttactgccatttacggggcggaccgtaatacgggtcatgtactggaataccctgaaaggatgaaccgtcatgtagatgcataatc  
 +

5' tcatcgctattaccatgggtgatgcgggttttggcagtacatcaatgggcgtggatagcgggttgactcacggggatttccaagtctccacccattgacgt  
 700  
 3' agtagcgataatggtaccactacgcaaaaaccgtcatgtagttaccgcacactatcgccaaactgagtgcccctaaagggttcagaggtgggtaactgca  
 +

5' caatgggagttgttttggcaccaaaatcaacgggactttccaaaatgtcgtacaactccgccccattgacgcaaatggcggttaggcgtgtacgggtg  
 800  
 3' gttaccctcaaacaaaaccgtggttttagttgcctgaaagggttttacagcatggttgaggcgggtaactgcgtttaccggccatccgcatgccacc  
 +

5' gaggtctatagaccagatctgagcctgggagctctctggctaactaggaaccactgcttaagcctcaataaagcttgcttgagtgctcaagtagtg  
 900  
 3' ctccagatatctggctagactcggaccctcgagagaccgattgatccctgggtgacgaattcggagttatttgaacggaactcacgaagttcatcac  
 +

LTR

KasI  
 NarI  
 SfoI  
 BbeI

5' tgtgccgctctgttgtgtgactctggttaactagagatccctcagacccttttagtcagtggtgaaaaatctctagcagtgggcggccgaacagggacttgaa  
 1000  
 3' acacgggcagacaacacactgagaccattgatctctagggagctctgggaaaaatcagtcacaccttttagagatcgtcaccgcgggcttgctccctgaactt  
 +

LTR

BssHII

5' agcgaagggaaccagaggagctctctcgacgcaggactcggcttgcctgaagcgcgcacggcaagaggcgaggggcgactggtagtacgcaaaa  
 1100  
 3' tcgctttcccttggctcctcagagagactgcgctcctgagccgaacgacttcgcgcgctgcccgttctccgctccccgcccgtgaccactcatgcggtttt  
 +

LTR

p201 (pPRIME-CMV-GFP-FF3)

5' atttgactagcggaggctagaaggagagagatgggtgcgagagcgtcagtattaagcgggggagaattagatcgcgatgggaaaaattcgggtaaggc  
 o ++++++  
 3' taaaactgatcgcctccgatcttctctctctaccacgctctcgcagtcataattcgccccctctaatctagcgtacccttttttaagccaattccg  
 o  
 o

LTR

1200

5' caggggaaagaaaaataaataaacatatagtatgggcaagcaggagctagaacgattcgcagttaatctggcctgttagaaacatcagaaggct  
 o ++++++  
 3' gtcccccttcttttttatattttgtatatacataccggttcgctccctcgatcttgtaagcgtcaattaggaccggacaatctttgtagtctccga  
 o  
 o

LTR

1300

5' gtagacaaactactgggacagctacaaccatcccttcagacaggatcagaagaacttagatcattatataatacagtagcaaccctctattgtgtgcatca  
 o ++++++  
 3' catctgtttatgacctgtcgatgttggtaggaagtctgtcctagctctcttgaatctagtaatatattatgtcatcgtgggagataacacacgtagt  
 o  
 o

LTR

1400

5' aaggatagagataaaaagacaccaaggaagctttagacaagatagaggaagagcaaaacaaaagtaagaccaccgcacagcaagcggcggcggcggctgat  
 o ++++++  
 3' ttctatctctatcttctgtggttccctcgaaatctgttctatctccttctcgtttctttcattctggtggcgtgctcgttcgccggcggcggcgacta  
 o  
 o

LTR

1500

SapI

FseI

5' cttcagacctggaggaggagatagagggacaattggagaagtgaattatataaataaaagtagtaaaaattgaaccattaggagtagcaccaccaag  
 o ++++++  
 3' gaagtctggacctcctcctctataactcctgtaacctctcacttaatatatttatattcatcatttttaacttggtaatcctcatcgtgggtggttc  
 o  
 o

EcoNI

1600

LTR

HIV RRE

5' gcaaagagaagagtggcgcagagagaaaaagagcagtggaataggagctttgttccttgggttcttgggagcagcaggaagcactatgggcgacgct  
 o ++++++  
 3' cgtttctctctcaccacgtctctcttttctcgtcacccttatcctcgaacaaggaaccaagaacctcgtcgtcctcgtgataaccgcgctcgca  
 o  
 o

HIV RRE

1700

5' caatgacgctgacggtacaggccagacaattatgtctggtatagtcagcagcagaacaatttgctgagggctattgaggcgcaacagcatctgttgca  
 o ++++++  
 3' gttactgcgactgccatgtccggtctgtaataacagaccatcacgctcgtcgtcttgtaaacgactcccgataactccgcgtgtcgttagacaacgt  
 o  
 o

HIV RRE

BbvCI

1800

5' actcacagtctggggcatcaagcagctccaggcaagaatcctggctgtgaaagatacctaaaggatcaacagctcctggggatttggggtgctctgga  
 o ++++++  
 3' tgagtgtcagacccttagtctcgtcgaggtccgttcttaggaccgacacctttctatggatttctagttgtcaggaccctaaacccaacgagacct  
 o  
 o

HIV RRE

1900

5' aaactcatttgcaccactgctgtgccttggaaatgctagtggagtaataatctctggaacagatttggaaatcacacgacctggatggagtgggacagag  
 o ++++++  
 3' tttagtaaacgtggtgacgacacggaaccttacgatcaacctcattattagagaccttgctctaaaccttagtgtgctggacctacctcacctgtctc  
 o  
 o

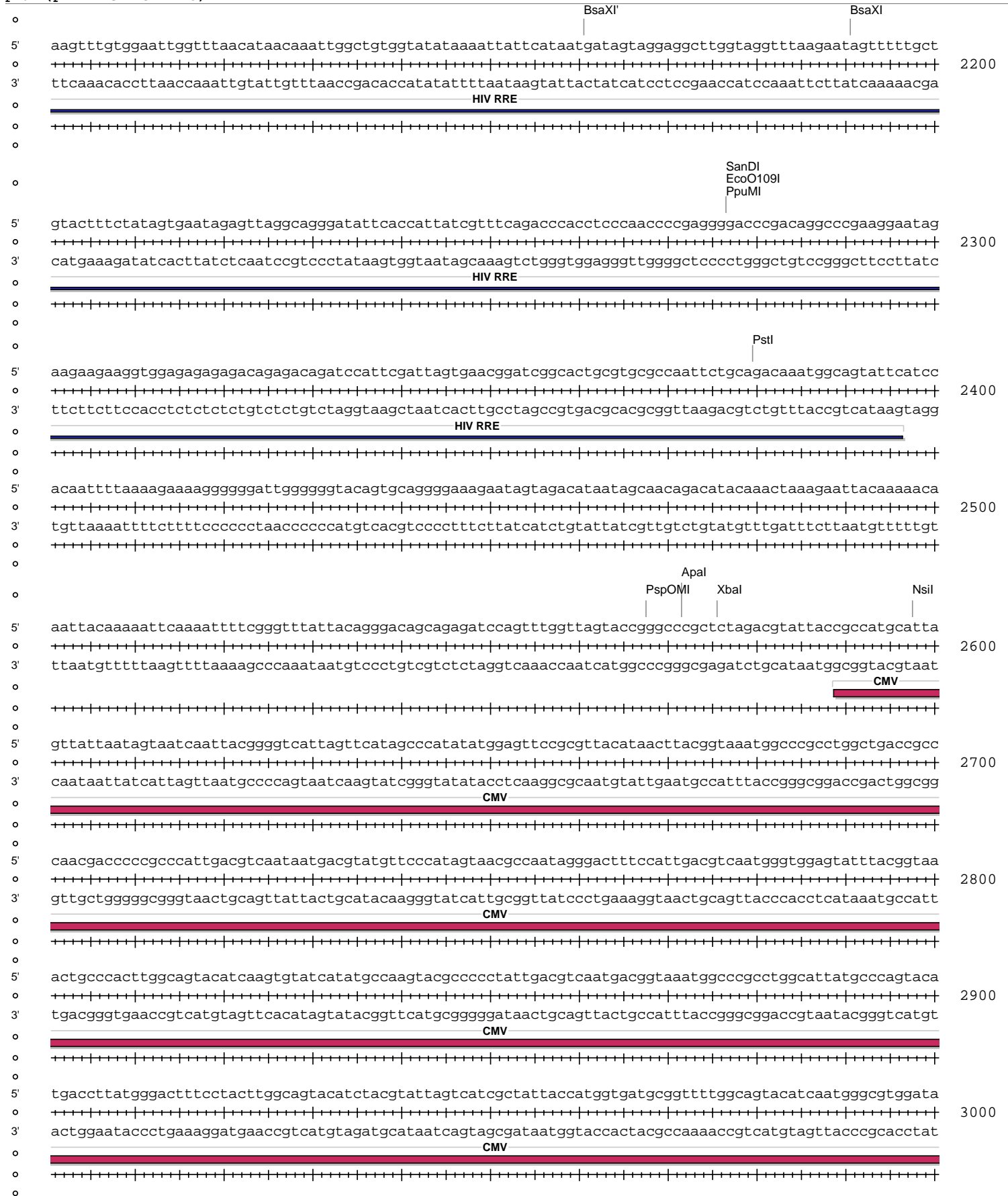
HIV RRE

2000

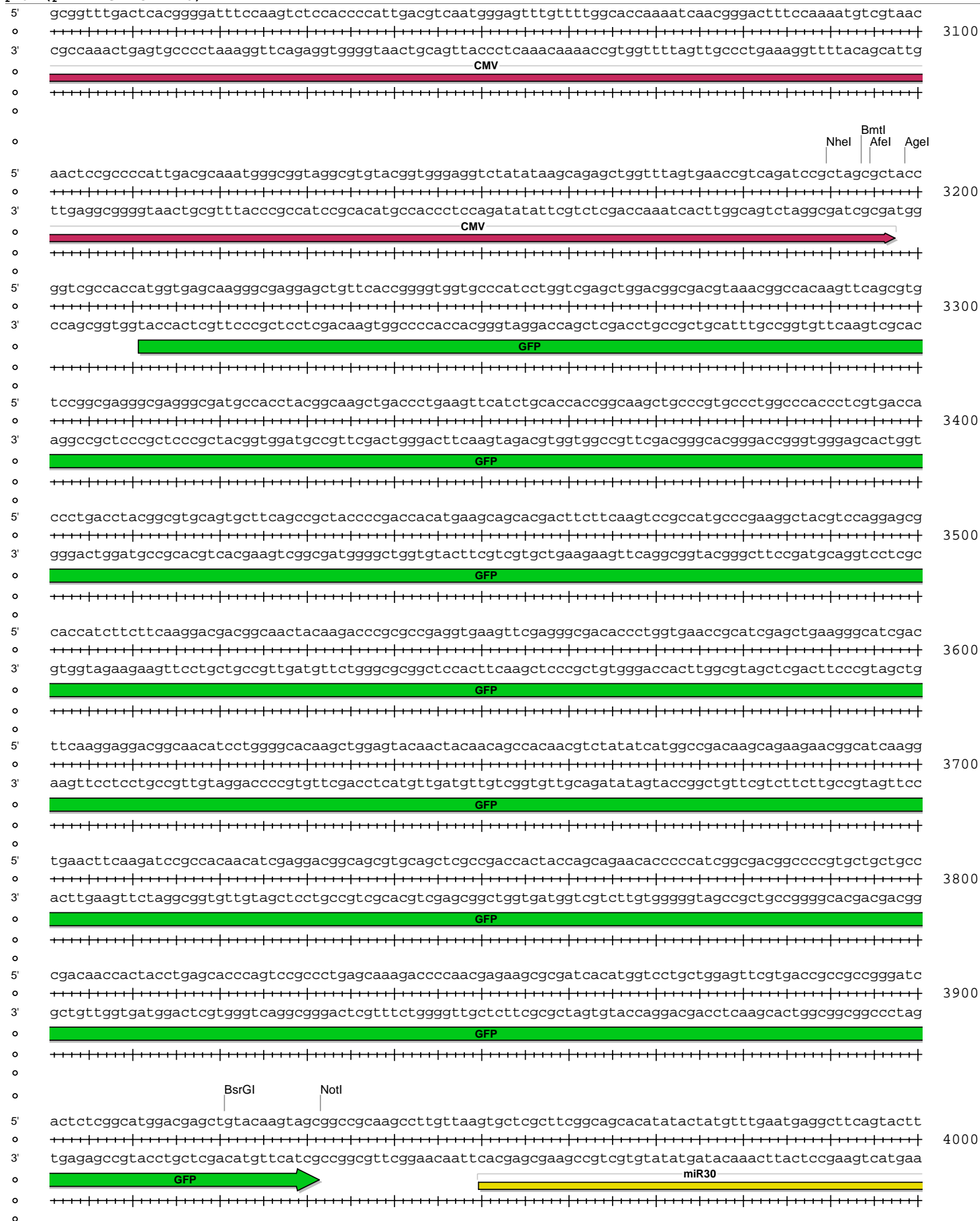
5' aaattaacaattacacaagcttaatacactccttaattgaagaatcgaaaaccagcaagaaaagaatgaacaagaattattggaattagataaatgggc  
 o ++++++  
 3' ttaattgttaatgtgttcgaattatgtgaggaattaacttcttagcgttttggtcgttctttcttacttgttcttaataaccttaactctatttaccg  
 o  
 o

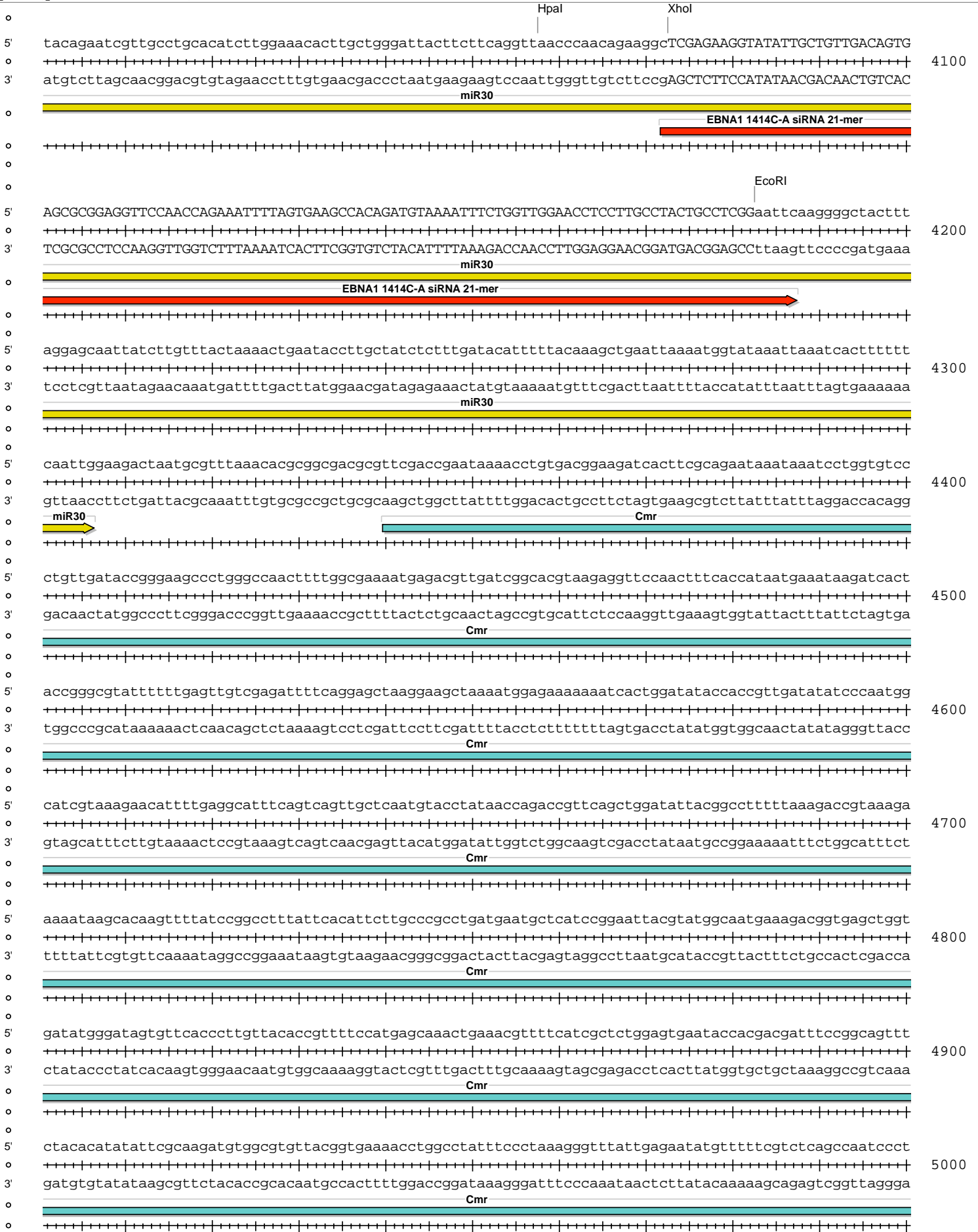
HIV RRE

2100



p201 (pPRIME-CMV-GFP-FF3)





MscI

5' ggggtgagtttcaccagttttgatttaaacgtggccaatatggacaacttcttcgccccggtttccaccatgggcaaataattatacgaaggcgacaaggt 5100  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' cccactcaaagtggtcaaaactaaatttgaccgggtatacctgttgaagaagcgggggcaaaagtggtaccggtttataatatgcggtcccgctgttcca

Cmr

5' gctgatgccgctggcgattcaggttcatcatgcccgtttgtgatggcttccatgctcggcagaatgcttaataatgaaacagtagctgcatgagtgccag 5200  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' cgactacggcgaccgctaagtccaagtagtacggcaaacactaccgaaggtacagccgctctacgaattacttaatggtgcatgacgctactcaccgctc

Cmr

5' ggccggggcgtaaatTTTTTaaaggcagttattggtgcccttaaaccgctggttgctacgcctgaataagtataataagcggatgaaaggcagaaattcgg 5300  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' ccgccccgcattaaaaaattccgtcaataaccacgggaatttgccgaccaacagatgcccacttattcactattattcgcctactaccgctcttaagcc

Cmr

PciI

Pacl

5' atctcgaccgcttggggcggtggtccctgccacgcccctcgaacagaagctgatctccgaagaggatctgacatggtttaaacctcgacttaatta 5400  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' tagagctggcgcaaacccgccaccgagggacggtgcccggaggctgtcttcgactagaggcttctcctagactgtacacaaatttgagctgaattaat

Cmr

5' agtcgagggctcgacggtatcgataagctcgcttcacgagatcatgtttaagggttccggttccactaggtacaattcgatatcaagcttatcgataatca 5500  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' tcagctcccagctgccatagctattcgagcgaagtgtcttagtacaattccaaggccaaggtgatccatgtaagctatagttcgaatagctattagt

5' acctctggattacaaaatttgtaaagattgactggtattcttaactatggtgctccttttacgctatgtggatagcgtgctttaatgcctttgtatcat 5600  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' tggagacctaatgttttaaacactttctaactgaccataagaattgatacaacgaggaaaatgcgatcacctatgagcgaatttacggaacatagta

WRE

5' gctattgcttcccgtatggctttcattttctcctcctgtataaatcctgggtgctgctctttatgaggagtgtggcccgtgtcaggcaacgtggcg 5700  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' cgataacgaagggcataaccgaaagtaaaagaggaggaacatattaggaccaacgacagagaaatactcctcaacaccgggcaacagtcggtgacccgc

WRE

5' tgggtgactgctgtttgctgacgcaacccccactgggtggggcattgccaccacctgtcagctcctttccgggactttcgctttccccctccctattgc 5800  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' accacacgtgacacaaaacgactgctgtgggggtgaccaaccccgtaacgggtggtggacagtcgaggaaagccctgaaagcgaagggggaggataacg

WRE

5' cacggcggaaactcatcgccgctgccttgcccgtgctggacaggggctcggctgttgggcaactgacaattccgtgggtgtgtcggggaaatcatcgtcc 5900  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' gtgccgcttgagttagcggcgagcgaacgggacgacacgtcctccgagccgacaacccgtgactgtaaggcaccacaacagcccttagtagcagg

WRE

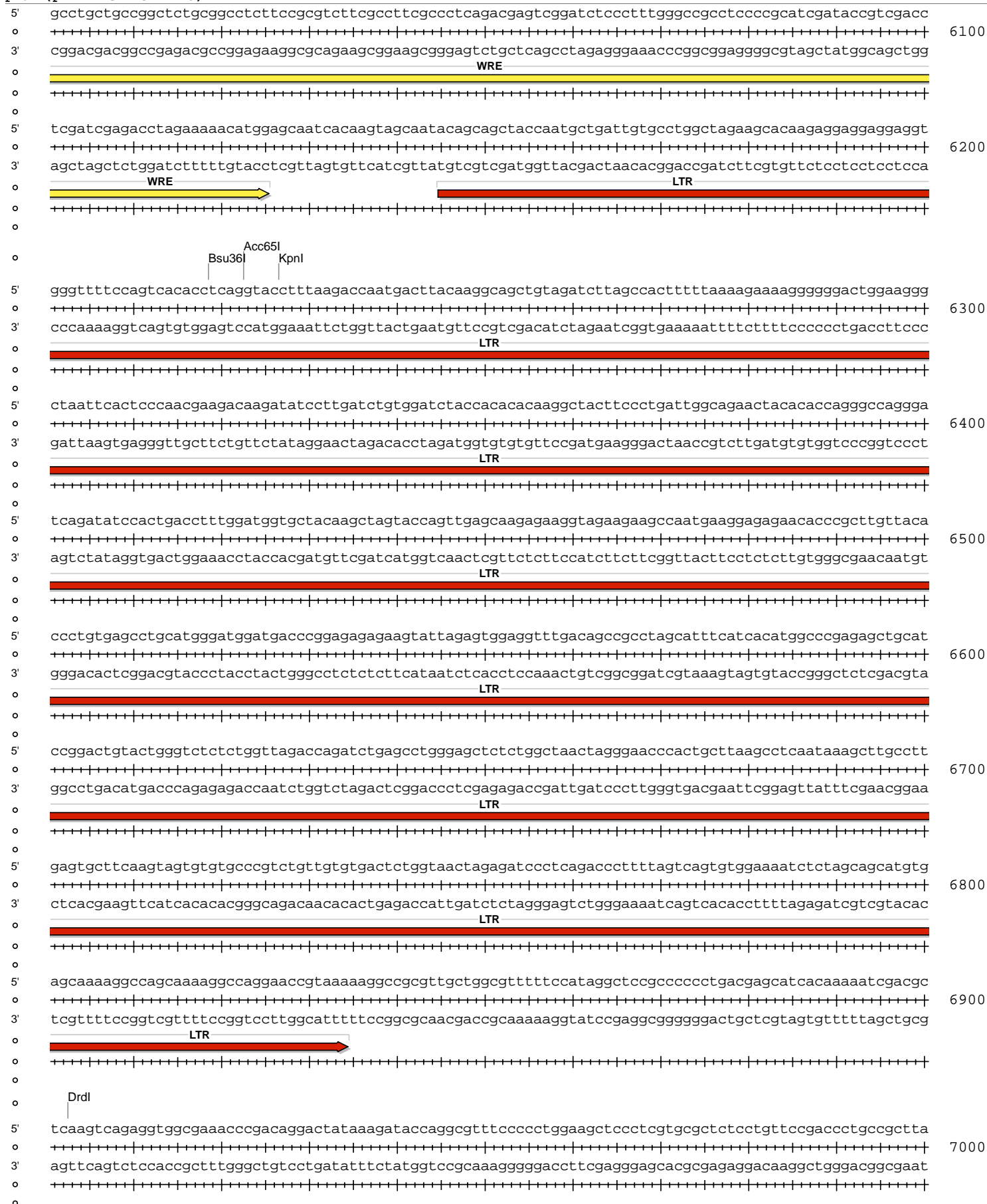
SacII

5' tttccttggtgctcgctgtgttgccacctggattctgcggggagctccttctgctacgtcccttcggccctcaatccagcggaccttcttcccgcg 6000  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' aaaggaaaccgacgagcggacacaaacggtggacctaaagacgcccctgcaggaagacgatgcagggaaagccgggagtaggtcgctggaaggaagggcgc

WRE



p201 (pPRIME-CMV-GFP-FF3)





p201 (pPRIME-CMV-GFP-FF3)

```

5'   aaaactctcaaggatcttaccgctggtgagatccagttcgatgtaacccactcgtgcacccaactgatcttcagcatcttttactttcaccagcgtttct
o   ++++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|
3'   ttttgagagttcctagaatggcgacaactctaggtcaagctacattgggtgagcacgtgggtgactagaagtcgtagaaaatgaaagtggcgcgaaaga
o   ++++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|
o
5'   gggtgagcaaaaacaggaaggcaaaatgccgcaaaaagggaataagggcgacacggaaatgtgaatactcatactcttcctttttcaatattattgaa
o   ++++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|
3'   ccactcgtttttgtccttccgttttacggcgtttttcccttattcccgctgtgcctttacaacttatgagtatgagaaggaaaaagttataataactt
o   ++++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|
o
5'   gcatttatcagggttattgtctcatgagcggatacatattgaaatgtatttagaaaaataaacaataggggttccgcgcacatttccccgaaaagtgcc
o   ++++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|
3'   cgtaaatagtcccaataacagagtactcgcctatgtataaacttacataaatctttttatttgtttatcccgaaggcgcgtgtaaaggggcttttcacgg
o   ++++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|
o
5'   acctgac
o   ++++++
3'   tggactg
o   ++++++
o

```