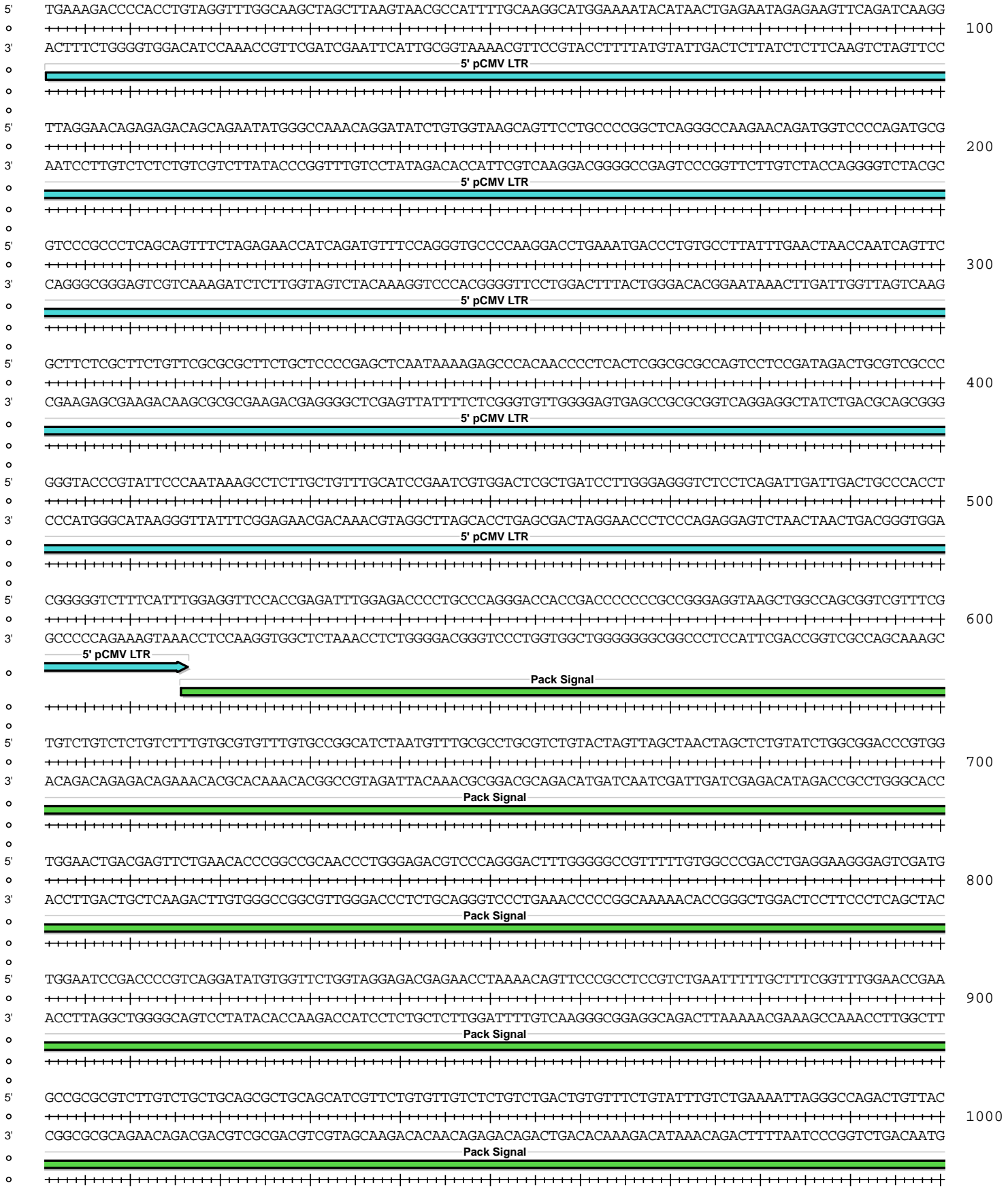


pMSCVpuro-GFP miR-23a cluster

Absent Sites	0	AarI,AbstI,Accl,Ajul,Ajul',AlfI,AlfI',AsiSI,AvrII,BamHI,BarI,BarI',BbsI,BpII,BpII',BsaAI,BsaBI,BstBI,BstXI,BstZ17I,CspCI,CspCI',FseI,FspAI,HincII,HpaI,MauBI,MfeI,MluI,MreI,NruI,Pacl,PmeI,PmlI,PsiI,PspXI,Psrl,Psrl',Sall,Sbfl,Sfil,SgrDI,SnaBI,SrfI,Swal,XcmI,XhoI
AfIII	1	5221
Apal	1	2832
Arsl	1	1732
Arsl'	1	1700
BclI	1	2199
BglII	1	1411
BsiWI	1	3554
BsmI	1	3409
BspMI	1	3487
BtgZI	1	1559
Clal	1	4152
DrallI	1	4069
EcoRI	1	2968
HindIII	1	3489
NcoI	1	1436
NotI	1	2158
Nsil	1	4151
PciI	1	5221
PfIMI	1	2296
PshAI	1	2791
PspOMI	1	2828
RsrII	1	3614
SanDI	1	2875
Scal	1	6594
SgrAI	1	7657

pMSCVpuro-GFP miR-23a cluster



pMSCVpuro-GFP miR-23a cluster

5' CACTCCCTTAAGTTTACCTTAGGTCAGTGGAAAGATGTCGAGCGGATCGCTCACACCAGTCGGTAGATGTCAAGAAGAGACGTTGGGTTACCTTCTGC
 1100
 3' GTGAGGGAATCAAACTGGAATCCAGTGACCTTTCTACAGCTCGCCTAGCGAGTGTGGTCAGCCATCTACAGTTCTTCTCTGCAACCCAATGGAAGACG
 Pack Signal

5' TCTGCAGAATGGCCAACCTTTAACGTCGGATGGCCGCGAGACGGCACCTTTAACCGAGACCTCATCACCAGGTTAAGATCAAGGTCTTTTACCTGGCC
 1200
 3' AGACGTCTTACCGGTTGGAAATTCAGCCTACCGGCGCTCTGCCGTGGAAATTTGGCTCTGGAGTAGTGGGTCCAATTCTAGTTCAGAAAAGTGGACCGG
 Pack Signal

5' CGCATGGACACCCAGACCAGGTCCCCTACATCGTGACCTGGGAAGCCTTGGCTTTTGACCCCCCTCCCTGGGTCAAGCCCTTTGTACACCCTAAGCCTCC
 1300
 3' GCGTACCTGTGGGTCTGGTCCAGGGGATGTAGCACTGGACCCTTCGGAACCGAAACTGGGGGAGGGACCCAGTTCGGGAAACATGTGGGATTCGGAGG
 Pack Signal

5' GCCTCTCTTCTCCATCCGCCCCGTCTCTCCCCTTGAACCTCCTCGTTCGACCCCGCCTCGATCCTCCCTTTATCCAGCCCTCACTCCTTCTTAGGC
 1400
 3' CGGAGGAGAAGGAGGTAGGCGGGGCGAGAGGGGGAACCTTGGAGGAGCAAGCTGGGGCGGAGCTAGGAGGGAAATAGGTGGGAGTGAGGAAGAGATCCG
 Pack Signal

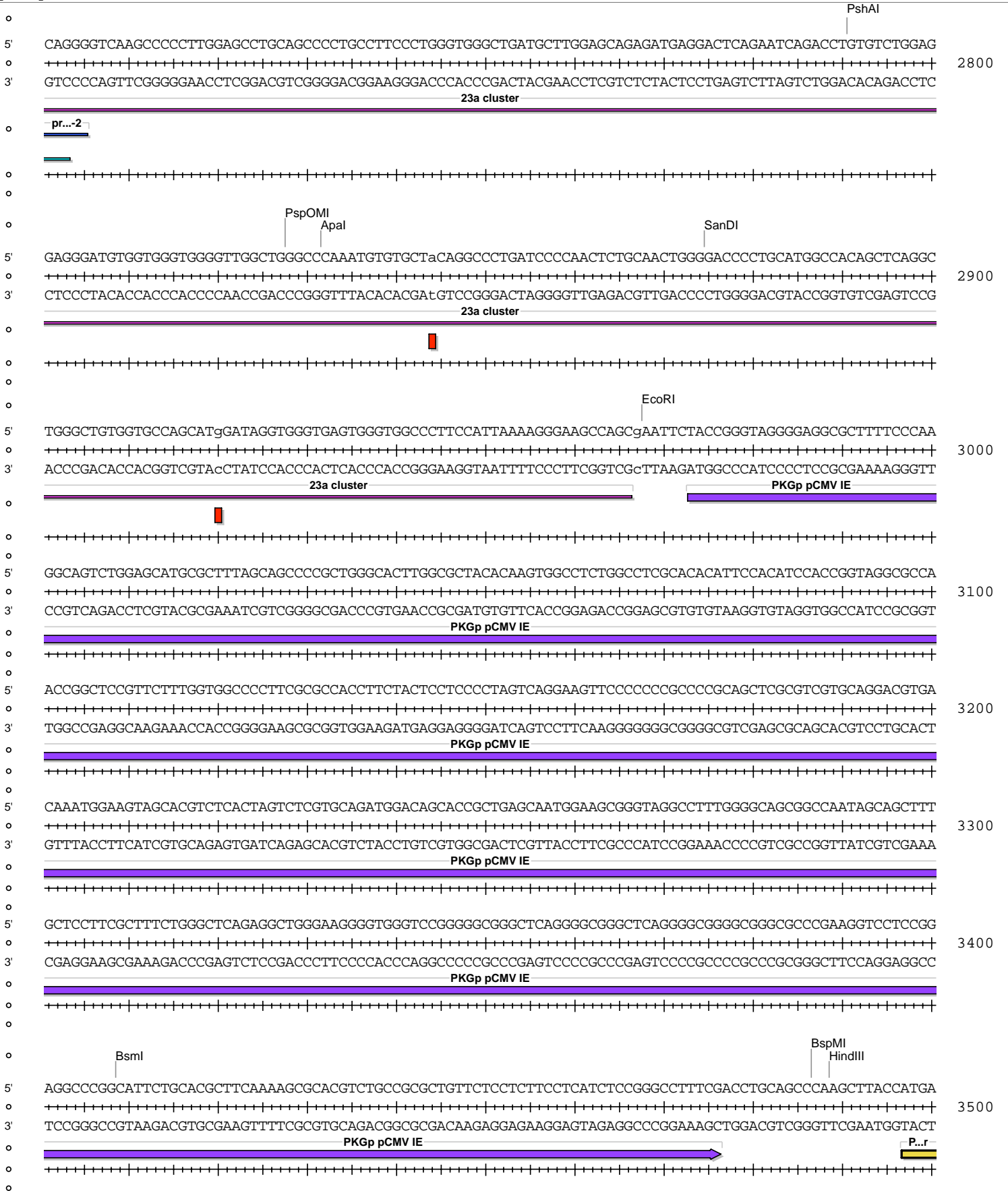
BglII NcoI
 5' GCCGGAATTAGATCTccagcgtgaccggtgcccaccatggtgagcaagggcgaggagctgttcaccggggtggtgcccatcctggtcgagctggacggcg
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 Pa...I GFP

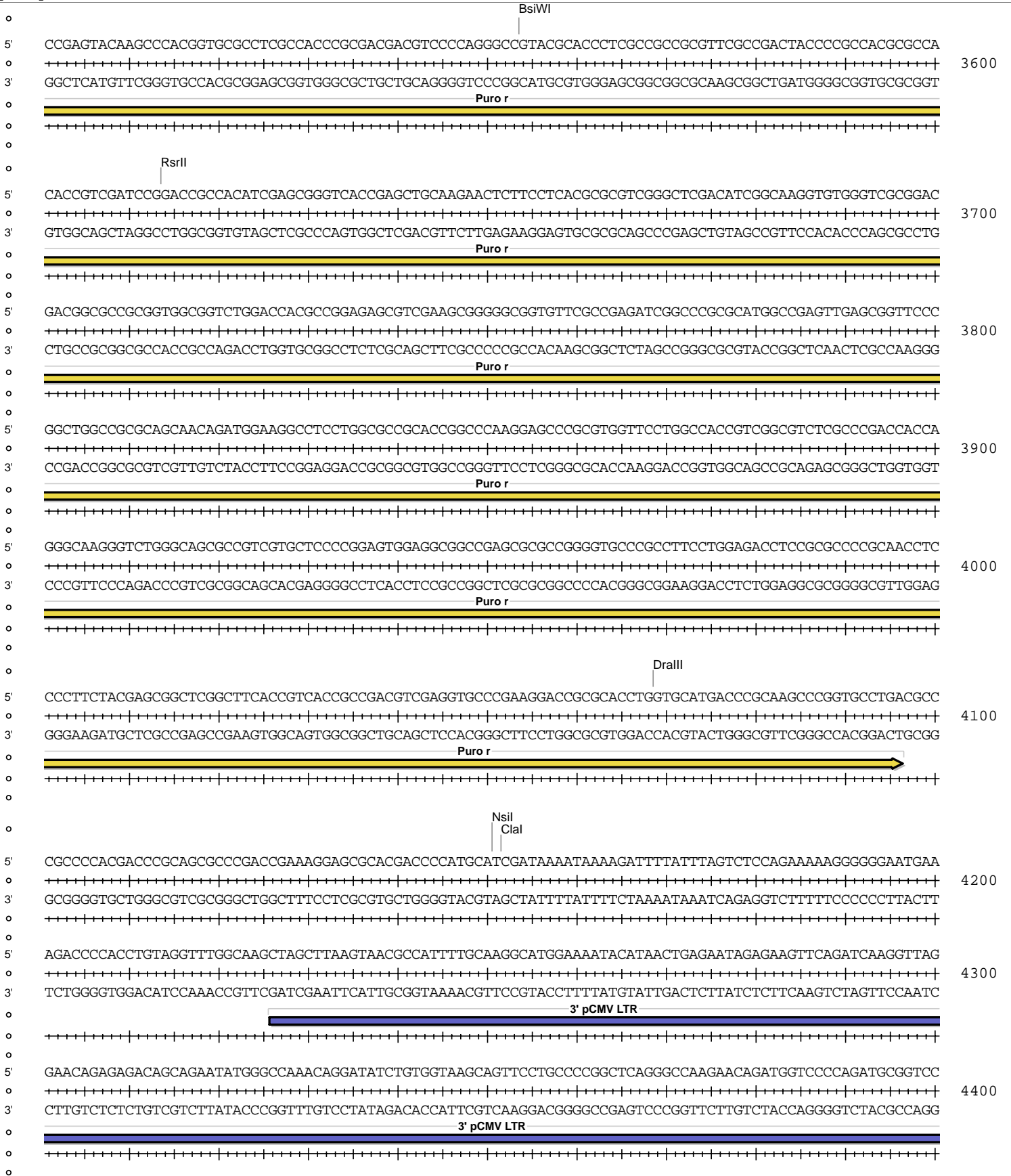
BtgZI
 5' acgtaaacggccacaagttcagcgtgtccggcgagggcgagggcgatgccacctacggcaagctgacctgaagttcatctgcaccaccggcaagctgcc
 1600
 3' tgcatttgcgggtgttcaagtcgcacaggccgctcccgtcccgtacggtggatgcccgttcgactgggacttcaagtagacgtggtggcgttcgacgg
 GFP

ArsI
 5' cgtgcctggccaccctcgtgaccaccctgacctacggcgtgacgtgcttccagccgtaccccgaccacatgaagcagcagacttcttcaagtccgcc
 1700
 3' gcacgggaccgggtgggagcactggtgggactggatgcccacgtcacgaagtccgcgatggggctggtgtacttcgtcgtgctgaagaagttcaggcgg
 GFP

ArsI
 5' atgcccgaaggctacgtccaggagcgcaccatcttcttcaaggacgacggcaactacaagaccgcgccgaggtgaagttcgagggcgacaccctggtga
 1800
 3' tacgggcttccgatgcaggtcctcgcgtggtagaagaagttcctgctgcccgttgatgttctgggcgaggctccacttcaagctcccgtgtgggaccact
 GFP

5' accgcatcgagctgaaggcatcgacttcaaggaggacggcaacatcctggggcacaagctggagtacaactacaacagccacaacgtctatatcatggc
 1900
 3' tggcgtagctcgacttcccgtagctgaagttcctcctgcccgtttaggaccccgtgttcgacctcatgtgatgttgcggtgtgcagatatagtaccg
 GFP





pMSCVpuro-GFP miR-23a cluster

5' CGCCCTCAGCAGTTTCTAGAGAACCATCAGATGTTCCAGGGTGCCCCAAGGACCTGAAATGACCCTGTGCCTTATTTGAACTAACCAATCAGTTCGCTT
 4500
 3' GCGGGAGTCGTCAAAGATCTCTTGGTAGTCTACAAAGGTCCCACGGGGTTCCTGGACTTTACTGGGACACGGAATAAACTTGATTGGTTAGTCAAGCGAA
 3' pCMV LTR

5' CTCGCTTCTGTTTCGCGCGCTTCTGCTCCCCGAGCTCAATAAAAGAGCCACAAACCCCTCACTCGGCGGCCAGTCCCTCCGATAGACTGCGTCGCCCGGGT
 4600
 3' GAGCGAAGACAAGCGCGGAAGACGAGGGGCTCGAGTTATTTTCTCGGGTGTGGGGAGTGAGCCGCGCGGTCAAGGAGCTATCTGACGCAGCGGGCCCA
 3' pCMV LTR

5' ACCCGTGTATCCAATAAACCCCTCTTGCAGTTGCATCCGACTTGTGGTCTCGCTGTTCCCTGGGAGGGTCTCCTCTGAGTGATTGACTACCCGTGACGGG
 4700
 3' TGGGCACATAGGTTATTTGGGAGAACGTCAACGTAGGCTGAACACCAGAGCGACAAGGAACCCCTCCAGAGGAGACTCACTAACTGATGGGCAGTCGCCC
 3' pCMV LTR

5' GGTCTTTTCATGGGTAACAGTTTCTTGAAGTTGGAGAACAACATTCTGAGGGTAGGAGTCAATATTAAGTAATCCTGACTCAATTAGCCACTGTTTGTAA
 4800
 3' CCAGAAAGTACCCATTGTCAAAGAACTCAACCTCTTGTGTGAAGACTCCCATCCTCAGCTTATAATTCATTAGGACTGAGTTAATCGGTGACAAAACCTT
 3' pCMV LTR

5' TCCACATACTCCAATACTCCTGAAATAGTTTATTATGGACAGCGCAGAAGAGCTGGGGAGAATTAATTCGTAATCATGGTCATAGCTGTTTCTGTGTGA
 4900
 3' AGGTGTATGAGGTTATGAGGACTTTATCAAGTAATACCTGTCGCTCTTCTCGACCCTCTTAATTAAGCATTAGTACCAGTATCGACAAAAGGACACACT

5' AATTGTTATCCGCTCACAATTCCACACAACATACGAGCCGGAAGCATAAAGTGTAAGCCTGGGGTGCCTAATGAGTGAGCTAACTCACATTAATTGCGT
 5000
 3' TTAACAATAGGCGAGTGTAAAGGTGTGTGTATGCTCGGCCTTCGTATTTACATTTTCGACCCACGGATTACTCACTCGATTGAGTGTAAATTAACGCA

5' TGCGCTCACTGCCCGCTTCCAGTCGGGAAACCTGTGCTGCCAGCTGCATTAATGAATCGGCCAACGCGGGGAGAGGCGGTTTTCGCTATTGGGCGCTC
 5100
 3' ACGCGAGTGACGGGCGAAAGGTGAGCCCTTTGGACAGCAGGTCGACGTAATTACTTAGCCGTTGCGCGCCCTCTCCGCCAAACGCATAACCCGCGAG

5' TTCCGCTTCTCGCTCACTGACTCGCTGCGCTCGGTGTTTCGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTATCCACAGAATCA
 5200
 3' AAGGCGAAGGAGCGAGTGACTGAGCGACGCGAGCCAGCAAGCCGACGCGCTCGCCATAGTCGAGTGAGTTTCCGCCATTATGCCAATAGGTGTCTTAGT

5' GGGGATAACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGCTGGCGTTTTCCATAGGCTCCGCCCCC
 5300
 3' CCCCTATTGCGTCTTTCTTGTACACTCGTTTTCCGGTCTTTTTCCGGTCTTGGCATTTTTCCGGCGCAACGACCGCAAAAAGGTATCCGAGGCGGGG

5' CTGACGAGCATCAGAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCG
 5400
 3' GACTGCTCGTAGTGTTTTCTAGCTGCGAGTTCAGTCTCCACCGCTTTGGGCTGTCTGATATTTCTATGGTCCGCAAAGGGGACCTTCGAGGGAGCACGC

5' CTCCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGT
 5500
 3' GAGAGGACAAGGCTGGGACGGCGAATGGCTATGGACAGCGGAAAGAGGGAAGCCCTTCGCACCAGGAAAGAGTATCGAGTGCACATCCATAGAGTCA

5' TCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCAGAACCCCGTTCAGCCCGACCGCTGCGCTTATCCGGTAACTATCGTCTTGTAGTCCAACC
 5600
 3' AGCCACATCCAGCAAGCGAGGTTTCGACCCGACACAGTGTCTTGGGGGCAAGTCCGGCTGGCGACGCGGAATAGGCCATTGATAGCAGAACTCAGGTTGG

PciI
 AflIII

pMSCVpuro-GFP miR-23a cluster

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5' ATCATTTGAAAACGTTCTTCGGGGCGAAAACCTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCCAAGTATCTTCAG
o ++++++
3' TAGTAACCTTTTGCAAGAAGCCCGCTTTTGAGAGTTCCTAGAATGGCGACAACCTTAGGTCAAGCTACATTGGGTGAGCACGTGGGTTGACTAGAAGTC
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o
5' CATCTTTTACTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCAT
o ++++++
3' GTAGAAAATGAAAGTGGTCGCAAGACCCACTCGTTTTTGTCTTCCGTTTTACGGCGTTTTTTCCCTTATTCCCGCTGTGCCTTTACAACCTATGAGTA
o
o
o
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5' ACTCTTCCTTTTTCAATATTATTGAAGCATTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATAGGGGTT
o ++++++
3' TGAGAAGGAAAAAGTTATAATAACTTCGTAAATAGTCCCAATAACAGAGTACTCGCTATGTATAAACTTACATAAAATCTTTTTATTGTTTATCCCCAA
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5' CCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCATTATTATCATGACATTAACCTATAAAAAATAGGCGTATCACGAGGCCCTTTTCGTC
o ++++++
3' GGCGCGTGTAAAGGGGCTTTTACGGTGGACTGCAGATTCCTTTGGTAATAATAGTACTGTAATTGGATATTTTATCCGCATAGTGCTCCGGGAAAGCAG
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5' TCGCGCGTTTCGGTGTGACGGTGAAAACCTCTGACACATGCAGCTCCCGGAGACGGTCACAGCTTGTCTGTAAGCGGATGCCGGGAGCAGACAAGCCCG
o ++++++
3' AGCGCGCAAAGCCACTACTGCCACTTTTGGAGACTGTGTACGTGAGGGCCTCTGCCAGTGTGCAACAGACATTCGCCCTACGGCCCTCGTCTGTTCCGGC
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5' TCAGGGCGGTCAGCGGGTGTGGCGGGTGTGGGGCTGGCTTAACTATGCGGCATCAGAGCAGATTGTACTGAGAGTGCACCATATGCGGTGTGAAATA
o ++++++
3' AGTCCCGCGCAGTCGCCACAACCGCCACAGCCCGACCGAATTGATACGCCGTAGTCTCGTCTAACATGACTCTCACGTGGTATACGCCACACTTTAT
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3' GGCGTGTCTACGCATTCCTCTTTTATGGCGTAGTCCGCGGTAAGCGGTAAGTCCGACGCGTTGACAACCCTTCCCGCTAGCCACGCCGGAGAAGCGATA
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5' AAGATTTTATTTAGTCTCCAGAAAAGGGGGAA
o ++++++
3' TTCTAAAATAAATCAGAGGTCTTTTCCCCCCTT
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Amp Res

Amp Res

SgrAI

6800
6900
7000
7100
7200
7300
7400
7500
7600
7700
7800
7834