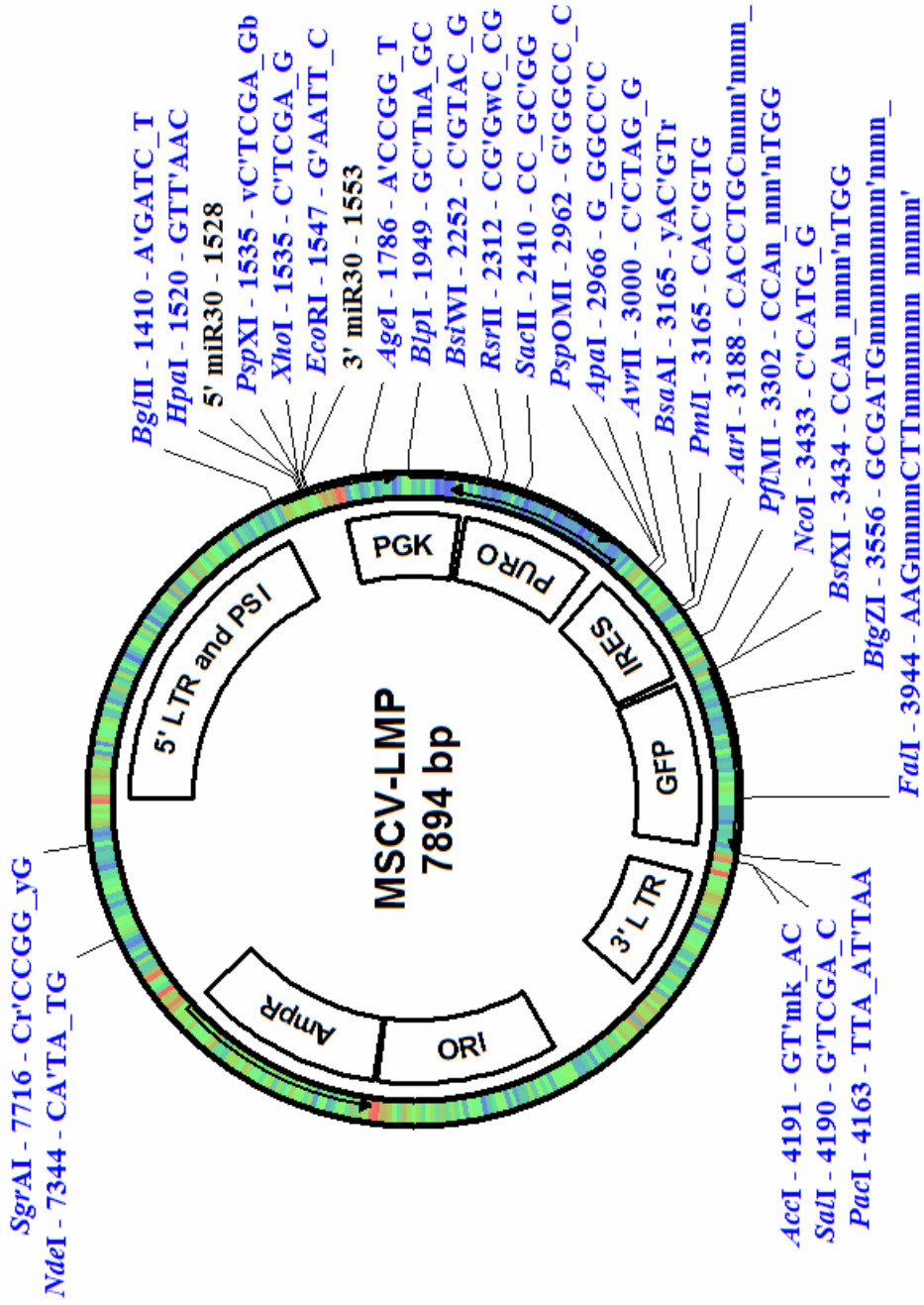


Expression Arrest™LMP microRNA-adapted Retroviral shRNA Vector



Note: Vector map and sequence file has been compiled from published literature, known fragments used to construct vector, and other sources, along with partial sequences obtained by Open Biosystems. This vector has not been completely sequenced. Unique restriction sites shown.

# Expression Arrest™LMP microRNA-adapted Retroviral shRNA Vector

Sequence: LMP Vector

```
1  TGAAAGACCC CACCTGTAGG TTTGGCAAGC TAGCTTAAGT AACGCCATTT
51  TGCAAGGCAT GGAAAATACA TAACTGAGAA TAGAGAAGTT CAGATCAAGG
101 TTAGGAACAG AGAGACAGCA GAATATGGGC CAAACAGGAT ATCTGTGGTA
151 AGCAGTTCCT GCCCCGGCTC AGGGCCAAGA ACAGATGGTC CCCAGATGCG
201 GTCCCGCCCT CAGCAGTTTC TAGAGAACCA TCAGATGTTT CCAGGGTGCC
251 CCAAGGACCT GAAATGACCC TGTGCCTTAT TTGAACTAAC CAATCAGTTC
301 GCTTCTCGCT TCTGTTTCGCG CGCTTCTGCT CCCCAGCTC AATAAAAGAG
351 CCCACAACCC CTCACTCGGC GCGCCAGTCC TCCGATAGAC TGCGTCGCCC
401 GGGTACCCGT ATTCCCAATA AAGCCTCTTG CTGTTTGCAT CCGAATCGTG
451 GACTCGCTGA TCCTTGGGAG GGTCTCCTCA GATTGATTGA CTGCCACCT
501 CGGGGGTCTT TCATTTGGAG GTTCCACCGA GATTTGGAGA CCCCTGCCCA
551 GGGACCACCG ACCCCCCCGC CGGGAGGTAA GCTGGCCAGC GGTCGTTTCG
601 TGTCTGTCTC TGTCTTTGTG CGTGTTTGTG CCGGCATCTA ATGTTTGCGC
651 CTGCGTCTGT ACTAGTTAGC TAACTAGCTC TGTATCTGGC GGACCCGTGG
701 TGGAAGTAC GAGTTCGAA CACCCGGCCG CAACCCTGGG AGACGTCCCA
751 GGGACTTTGG GGGCGTTTTT TGTGGCCCGA CCTGAGGAAG GGAGTCGATG
801 TGGAATCCGA CCCCCTCAGG ATATGTGGTT CTGGTAGGAG ACGAGAACCT
851 AAAACAGTTC CCGCCTCCGT CTGAATTTTT GCTTTCGGTT TGGAACCGAA
901 GCCGCGCGTC TTGTCTGCTG CAGCGCTGCA GCATCGTTCT GTGTTGTCTC
951 TGTCTGACTG TGTTTCTGTA TTTGTCTGAA AATTAGGGCC AGACTGTTAC
1001 CACTCCCTTA AGTTTGACCT TAGGTCACTG GAAAGATGTC GAGCGGATCG
1051 CTCACAACCA GTCGGTAGAT GTCAAGAAGA GACGTTGGGT TACCTTCTGC
1101 TCTGCAGAAAT GGCCAACCTT TAACGTCGGA TGGCCGCGAG ACGGCACCTT
1151 TAACCGAGAC CTCATCACCC AGGTTAAGAT CAAGGTCTTT TCACCTGGCC
1201 CGCATGGACA CCCAGACCAG GTCCCCTACA TCGTGACCTG GGAAGCCTTG
1251 GCTTTTGACC CCCCTCCCTG GGTCAAGCCC TTTGTACACC CTAAGCCTCC
1301 GCCTCCTCTT CCTCCATCCG CCCCCTCTCT CCCCCTTGAA CCTCCTCGTT
1351 CGACCCCGCC TCGATCCTCC CTTTATCCAG CCCTCACTCC TTCTCTAGGC
1401 GCCGGAATTA GATCTCTCGA CTAGGGATAA CAGGGTAATT GTTTGAATGA
1451 GGCTTCAGTA CTTTACAGAA TCGTTGCCTG CACATCTTGG AAACACTTGC
1501 TGGGATTACT TCTTCAGGTT AACCACAACAG AAGGCTCGAG CAACCAGAAT
1551 TCAAGGGGCT ACTTTAGGAG CAATTATCTT GTTTACTAAA ACTGAATACC
1601 TTGCTATCTC TTTGATACAT TTTTACAAAG CTGAATTAAA ATGGTATAAA
1651 TTAAATCACT TTTTTCAATT CTACCAGGTA GGGGAGGCGC TTTTCCAAG
1701 GTCAGTCTGGA GCATGCGCTT TAGCAGCCCC GCTGGGCACT TGGCGTACA
1751 CAAGTGGCCT CTGGCCTCGC ACACATTCCA CATCCACCGG TAGGCGCCAA
1801 CCGGCTCCGT TCTTTGGTGG CCCCTTCGCG CCACCTTCTA CTCCTCCCCT
1851 AGTCAGGAAG TTCCCCCCCG CCCCAGCTC CGCGTCGTGC AGGACGTGAC
1901 AAATGGAAGT AGCACGTCTC ACTAGTCTCG TGCAGATGGA CAGCACCGCT
1951 GAGCAATGGA AGCGGGTAGG CTTTGGGGC AGCGGCAAT AGCAGCTTTG
2001 CTCCTTCGCT TTCTGGGCTC AGAGGCTGGG AAGGGGTGGG TCCGGGGGCG
2051 GGCTCAGGGG CGGGCTCAGG GGCGGGGCGG GCGCCGAAG GTCCTCCGGA
2101 GGCCCGGCAT TCTGCACGCT TCAAAAGCGC ACGTCTGCCG CGCTGTTCTC
2151 CTCTTCCTCA TCTCCGGGCC TTTTCGACCTG CAGCCCAAGC TTACCATGAC
2201 CGAGTACAAG CCCACGGTGC GCCTCGCCAC CCGCGACGAC GTCCCCAGGG
2251 CCGTACGCAC CCTCGCCGCC GCGTTCGCCG ACTACCCCGC CACGCGCCAC
2301 ACCGTCGATC CGGACCGCCA CATCGAGCGG GTCACCGAGC TGCAAGAACT
2351 CTTCCTCACG CGCGTCGGGC TCGACATCGG CAAGGTGTGG GTCGCGGACG
2401 ACGGCGCCGC GGTGGCGGTC TGGACCACGC CGGAGAGCGT CGAAGCGGGG
2451 GCGGTGTTTC CCGAGATCGG CCCGCGCATG GCCGAGTTGA GCGGTTCCC
2501 GCTGGCCCGC CAGCAACAGA TGAAGGCCT CCTGGCGCCG CACCCGCCCA
2551 AGGAGCCCGC GTGGTTCCTG GCCACCGTGC GCGTCTCGCC CGACCACGAG
2601 GGCAAGGGTC TGGGCAGCGC CGTCGTGCTC CCCGGAGTGG AGGCGGCCGA
2651 GCGCGCCGGG GTGCCCGCCT TCCTGGAGAC CTCCGCGCCC CGCAACCTCC
```

## Expression Arrest™LMP microRNA-adapted Retroviral shRNA Vector

2701 CTTTCTACGA GCGGCTCGGC TTCACCGTCA CCGCCGACGT CGAGGTGCCC  
2751 GAAGGACCGC GCACCTGGTG CATGACCCGC AAGCCCAGGTG CCTGACGCCC  
2801 GCCCCACGAC CCGCAGCGCC CGACCGAAAG GAGCGCACGA CCCCATCATC  
2851 CAATTCGGCC CCCCCCCCCT AACGTTACTG GCCGAAGCCG CTTGGAATAA  
2901 GGCCGGTGTG CGTTTGTCTA TATGTTATTT TCCACCATAT TGCCGTCTTT  
2951 TGGCAATGTG AGGGCCCGGA AACCTGGCCC TGTCTTCTTG ACGAGCATTC  
3001 CTAGGGGTCT TTCCCCTCTC GCCAAAGGAA TGCAAGGTCT GTTGAATGTC  
3051 GTGAAGGAAG CAGTTCCTCT GGAAGCTTCT TGAAGACAAA CAACGTCTGT  
3101 AGCGACCCTT TGCAGGCAGC GGAACCCCC ACCTGGCGAC AGGTGCCTCT  
3151 GCGGCCAAAA GCCACGTGTA TAAGATACAC CTGCAAAGGC GGCACAACCC  
3201 CAGTGCCACG TTTGTGAGTTG GATAGTTGTG GAAAGAGTCA AATGGCTCTC  
3251 CTCAAGCGTA TTCAACAAGG GGCTGAAGGA TGCCCAGAAG GTACCCCAT  
3301 GTATGGGATC TGATCTGGGG CCTCGGTGCA CATGCTTTAC ATGTGTTTGTAG  
3351 TCGAGGTTAA AAAACGTCTA GGCCCCCGA ACCACGGGGA CGTGGTTTTT  
3401 CTTTGAATAA CACGATGATA ATATGGCCAC AACCATGGTG AGCAAGGGCG  
3451 AGGAGCTGTT CACCGGGGTG GTGCCCATCC TGGTCGAGCT GGACGGCGAC  
3501 GTAAACGGCC ACAAGTTCAG CGTGTCCGGC GAGGGCGAGG GCGATGCCAC  
3551 CTACGGCAAG CTGACCCTGA AGTTCATCTG CACCACCGGC AAGCTGCCCCG  
3601 TGCCCTGGCC CACCCTCGTG ACCACCCTGA CCTACGGCGT GCAGTGCTTC  
3651 AGCCGCTACC CCGACCACAT GAAGCAGCAC GACTTCTTCA AGTCCGCCAT  
3701 GCCCGAAGGC TACGTCCAGG AGCGCACCAT CTTCTTCAAG GACGACGGCA  
3751 ACTACAAGAC CCGCGCCGAG GTGAAGTTCG AGGGCGACAC CCTGGTGAAC  
3801 CGCATCGAGC TGAAGGGCAT CGACTTCAAG GAGGACGGCA ACATCCTGGG  
3851 GCACAAGCTG GAGTACAAC AACAACAGCCA CAACGTCTAT ATCATGGCCG  
3901 ACAAGCAGAA GAACGGCATC AAGGTGAACT TCAAGATCCG CCACAACATC  
3951 GAGGACGGCA GCGTGCAGCT CGCCGACCAC TACCAGCAGA ACACCCCAT  
4001 CGGCGACGGC CCCGTGCTGC TGCCCGACAA CCACTACCTG AGCACCAGT  
4051 CCGCCCTGAG CAAAGACCCC AACGAGAAGC GCGATCACAT GGTCTGTCTG  
4101 GAGTTCGTGA CCGCCGCCGG GATCACTCTC GGCATGGACG AGCTGTACAA  
4151 GTAATGAATT AATTAAGAAT TATCAAGCTT ATCGATACCG TCGACCTGCA  
4201 GCCAAGCTTA TCGATAAAAT AAAAGATTTT ATTTAGTCTC CAGAAAAAGG  
4251 GGGGAATGAA AGACCCACC TGTAGGTTTG GCAAGCTAGC TTAAGTAACG  
4301 CCATTTTGCA AGGCATGGAA AATACATAAC TGAGAATAGA GAAGTTCAGA  
4351 TCAAGTTAG GAACAGAGAG ACAGCAGAAT ATGGGCCAAA CAGGATATCT  
4401 GTGGTAAGCA GTTCTGCCC CGGCTCAGGG CCAAGAACAG ATGGTCCCCA  
4451 GATGCGGTCC CGCCCTCAGC AGTTTCTAGA GAACCATCAG ATGTTTCCAG  
4501 GGTGCCCAA GGACCTGAAA TGACCCTGTG CTTATTTGA ACTAACCAAT  
4551 CAGTTCGCTT CTCGCTTCTG TTCGCGCGCT TCTGCTCCCC GAGCTCAATA  
4601 AAAGAGCCCA CAACCCCTCA CTCGGCGCGC CAGTCTCCG ATAGACTGCG  
4651 TCGCCCGGGT ACCCGTGTAT CCAATAAACC CTCTTGAGT TGCATCCGAC  
4701 TTGTGGTCTC GCTGTTCTTT GGGAGGGTCT CCTCTGAGTG ATTGACTACC  
4751 CGTCAGCGGG GGTCTTTCAT GGGTAACAGT TTCTTGAAGT TGGAGAACAA  
4801 CATTCTGAGG GTAGGAGTCG AATATTAAGT AATCCTGACT CAATTAGCCA  
4851 CTGTTTTGAA TCCACATACT CCAATACTCC TGAATAGTT CATTATGGAC  
4901 AGCGCAGAAG AGCTGGGGAG AATTAATTCT TAATCATGGT CATAGCTGTT  
4951 TCCTGTGTGA AATTGTTATC CGCTCACAA TCCACACAAC ATACGAGCCG  
5001 GAAGCATAAA GTGTAAGCC TGGGGTGCCT AATGAGTGAG CTAACTCACA  
5051 TTAATTGCGT TCGCTCACT GCCCGCTTTC CAGTCGGGAA ACCTGTCGTG  
5101 CCAGCTGCAT TAATGAATCG GCCAACGCGC GGGGAGAGGC GGTGTCGTGA  
5151 TTGGGCGCTC TTCCGCTTCC TCGCTCACTG ACTCGCTGCG CTCGGTCTGT  
5201 CGGCTGCGGC GAGCGGTATC AGCTCACTCA AAGGCGGTAA TACGGTTATC  
5251 CACAGAATCA GGGGATAACG CAGGAAAGAA CATGTGAGCA AAAGGCCAGC  
5301 AAAAGGCCAG GAACCGTAAA AAGGCCGCGT TGCTGGCGTT TTTCCATAGG  
5351 CTCCGCCCCC CTGACGAGCA TCACAAAAAT CGACGCTCAA GTCAGAGGTG  
5401 GCGAAACCCG ACAGGACTAT AAAGATACCA GCGTTTTCCC CCTGGAAGCT  
5451 CCCTCGTGCG CTCTCCTGTT CCGACCCTGC CGTTACCAG ATACCTGTCC  
5501 GCCTTTCTCC CTTGCGGAAG CGTGGCGCTT TCTCATAGCT CACGCTGTAG

## Expression Arrest™LMP microRNA-adapted Retroviral shRNA Vector

```
5551 GTATCTCAGT TCGGTGTAGG TCGTTCGCTC CAAGCTGGGC TGTGTGCACG
5601 AACCCCCCGT TCAGCCCGAC CGCTGCGCCT TATCCGGTAA CTATCGTCTT
5651 GAGTCCAACC CGGTAAGACA CGACTTATCG CCACTGGCAG CAGCCACTGG
5701 TAACAGGATT AGCAGAGCGA GGTATGTAGG CGGTGCTACA GAGTTCTTGA
5751 AGTGGTGGCC TAACTACGGC TACACTAGAA GGACAGTATT TGGTATCTGC
5801 GCTCTGCTGA AGCCAGTTAC CTTTCGAAAA AGAGTTGGTA GCTCTTGATC
5851 CGGCAAACAA ACCACCGCTG GTAGCGGTGG TTTTTTTGTT TGCAAGCAGC
5901 AGATTACGCG CAGAAAAAAA GGATCTCAAG AAGATCCTTT GATCTTTTCT
5951 ACGGGGTCTG ACGCTCAGTG GAACGAAAAA TCACGTAAAG GGATTTTGGT
6001 CATGAGATTA TCAAAAAGGA TCTTCACCTA GATCCTTTTA AATTAAAAAA
6051 GAAGTTTTAA ATCAATCTAA AGTATATATG AGTAAACTTG GTCTGACAGT
6101 TACCAATGCT TAATCAGTGA GGCACCTATC TCAGCGATCT GTCTATTTTCG
6151 TTCATCCATA GTTGCTGAC TCCCCGTCGT GTAGATAACT ACGATACGGG
6201 AGGGCTTACC ATCTGGCCCC AGTGCTGCAA TGATACCGCG AGACCCACGC
6251 TCACCGGCTC CAGATTTATC AGCAATAAAC CAGCCAGCCG GAAGGGCCGA
6301 GCGCAGAAGT GGTCTGCAA CTTTATCCGC CTCCATCCAG TCTATTAATT
6351 GTTGCCGGGA AGCTAGAGTA AGTAGTTCGC CAGTTAATAG TTTGCGCAAC
6401 GTTGTTGCCA TTGCTACAGG CATCGTGGTG TCACGCTCGT CGTTTGGTAT
6451 GGCTTCATT CAGCTCCGTT CCCAACGATC AAGGCGAGTT ACATGATCCC
6501 CCATGTTGTG CAAAAAAGCG GTTAGCTCCT TCGGTCCTCC GATCGTTGTC
6551 AGAAGTAAGT TGGCCGCAGT GTTATCACTC ATGGTTATGG CAGCACTGCA
6601 TAATTCTCTT ACTGTCATGC CATCCGTAAG ATGCTTTTCT GTGACTGGTG
6651 AGTACTCAAC CAAGTCATT CAGAGAATAGT GTATGCGGCG ACCGAGTTGC
6701 TCTTGCCCGG CGTCAATACG GGATAATACC GCGCCACATA GCAGAACTTT
6751 AAAAGTGCTC ATCATTGGAA AACGTTCTTC GGGGCGAAAA CTCTCAAGGA
6801 TCTTACCGCT GTTGAGATCC AGTTCGATGT AACCCACTCG TGCACCCAAC
6851 TGATCTTCAG CATCTTTTAC TTTACCAGC GTTTCTGGGT GAGCAAAAAC
6901 AGGAAGCAA AATGCCGCAA AAAAGGGAAT AAGGGCGACA CGGAAATGTT
6951 GAATACTCAT ACTTTCCTT TTTCAATATT ATTGAAGCAT TTATCAGGGT
7001 TATTGTCTCA TGAGCGGATA CATATTTGAA TGTATTTAGA AAAATAAACA
7051 AATAGGGGTT CCGCGCACAT TTCCCCGAAA AGTGCCACCT GACGTCTAAG
7101 AAACCATTAT TATCATGACA TTAACCTATA AAAATAGGCG TATCACGAGG
7151 CCCTTTCGTC TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT
7201 GCAGCTCCCG GAGACGGTCA CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA
7251 GACAAGCCCG TCAGGGCGCG TCAGCGGGTG TTGGCGGGTG TCGGGGCTGG
7301 CTTAACTATG CGGCATCAGA GCAGATTGTA CTGAGAGTGC ACCATATGCG
7351 GTGTGAAATA CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGCGCC
7401 ATTCGCCATT CAGGCTGCGC AACTGTTGGG AAGGGCGATC GGTGCGGGCC
7451 TCTTCGCTAT TACGCCAGCT GGCGAAAGGG GGATGTGCTG CAAGGCGATT
7501 AAGTTGGGTA ACGCCAGGGT TTTCCAGTC ACGACGTTGT AAAACGACGG
7551 CGCAAGGAAT GGTGCATGCA AGGAGATGGC GCCCAACAGT CCCCCGGCCA
7601 CGGGGCTG CACCATACC ACGCCGAAAC AAGCGCTCAT GAGCCCGAAG
7651 TGGCGAGCCC GATCTTCCCC ATCGGTGATG TCGGCGATAT AGGCGCCAGC
7701 AACCACACTT GTGGCGCCGG TGATGCCGGC CACGATGCGT CCGGCGTAGA
7751 GGCGATTAGT CCAATTTGTT AAAGACAGGA TATCAGTGGT CCAGGCTCTA
7801 GTTTTGACTC AACAATATCA CCAGCTGAAG CCTATAGAGT ACGAGCCATA
7851 GATAAAATAA AAGATTTTAT TTAGTCTCCA GAAAAAGGGG GGAA
```

## Expression Arrest™LMP microRNA-adapted Retroviral shRNA Vector

LMP, 7894 bp. (CIRCULAR)  
Restriction analysis 9/12/2005  
pDRAW32 revision 1.1.86  
Rebase containing 252 enzymes.  
26 enzymes match enzyme selection criteria.

\*\*\*\*\*

**AarI** (CACCTGCnnnn'nnnn\_)

Cuts 1 time.  
Cuts at position 3188.

**AccI** (GT'mk\_AC) [FblI,XmiI]

Cuts 1 time.  
Cuts at position 4191.

**AgeI** (A'CCGG\_T) [AsiAI,BshTI,CspAI,PinAI]

Cuts 1 time.  
Cuts at position 1786.

**ApaI** (G\_GGCC'C) [Bsp120I,PspOMI]

[dcm methylated]  
Cuts 1 time.  
Cuts at position 2966.

**AvrII** (C'CTAG\_G) [AspA2I,BlnI,XmaJI]

Cuts 1 time.  
Cuts at position 3000.

**BglII** (A'GATC\_T)

Cuts 1 time.  
Cuts at position 1410.

**BlpI** (GC'TnA\_GC) [Bpu1102I,Bsp1720I,CelIII]

Cuts 1 time.  
Cuts at position 1949.

**BsaAI** (yAC'GTr) [BstBAI]

Cuts 1 time.  
Cuts at position 3165.

**BsiWI** (C'GTAC\_G) [Pfl123II,PspLI,SunI]

Cuts 1 time.  
Cuts at position 2252.

**BstXI** (CCAn\_nnnn'nTGG)

Cuts 1 time.  
Cuts at position 3434.

**BtgZI** (GCGATGnnnnnnnnnn'nnnn\_)

Cuts 1 time.

## Expression Arrest™LMP microRNA-adapted Retroviral shRNA Vector

Cuts at position 3556.

***EcoRI*** (G'AATT\_C) [FunII]

Cuts 1 time.

Cuts at position 1547.

***FalI*** (AAGnnnnnCTTnnnnnnnnn\_nnnnn')

Cuts 1 time.

Cuts at position 3944.

***HpaI*** (GTT'AAC) [KspAI]

Cuts 1 time.

Cuts at position 1520.

***NcoI*** (C'CATG\_G) [Bsp19I]

Cuts 1 time.

Cuts at position 3433.

***NdeI*** (CA'TA\_TG) [FauNDI]

Cuts 1 time.

Cuts at position 7344.

***PacI*** (TTA\_AT'TAA)

Cuts 1 time.

Cuts at position 4163.

***PflMI*** (CCAn\_nnn'nTGG) [AccB7I,PflBI, Van91I]

[dcm methylated]

Cuts 1 time.

Cuts at position 3302.

***PmlI*** (CAC'GTG) [PmaCI,AcvI,BbrPI,Eco72I,PspCI]

Cuts 1 time.

Cuts at position 3165.

***PspOMI*** (G'GGCC\_C) [ApaI,Bsp120I]

Cuts 1 time.

Cuts at position 2962.

***PspXI*** (vC'TCGA\_Gb)

Cuts 1 time.

Cuts at position 1535.

***RsrII*** (CG'GwC\_CG) [CpoI,CspI,Rsr2I]

Cuts 1 time.

Cuts at position 2312.

***SacII*** (CC\_GC'GG) [Cfr42I,KspI,Sfr303I,SgrBI]

Cuts 1 time.

Cuts at position 2410.

## Expression Arrest™LMP microRNA-adapted Retroviral shRNA Vector

***SalI*** (G'TCGA\_C)

Cuts 1 time.

Cuts at position 4190.

***SgrAI*** (Cr'CCGG\_yG)

Cuts 1 time.

Cuts at position 7716.

***XhoI*** (C'TCGA\_G) [BssHI,Paer7I,Sfr274I,SlaI,StrI,TliI]

Cuts 1 time.

Cuts at position 1535.