

FIG. 1

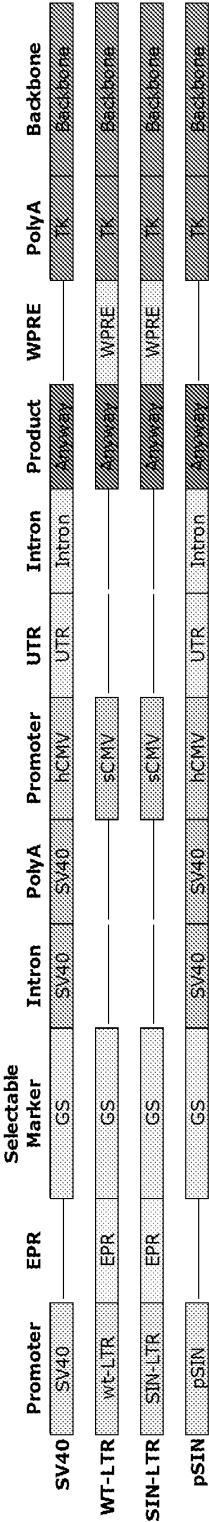


FIG. 2

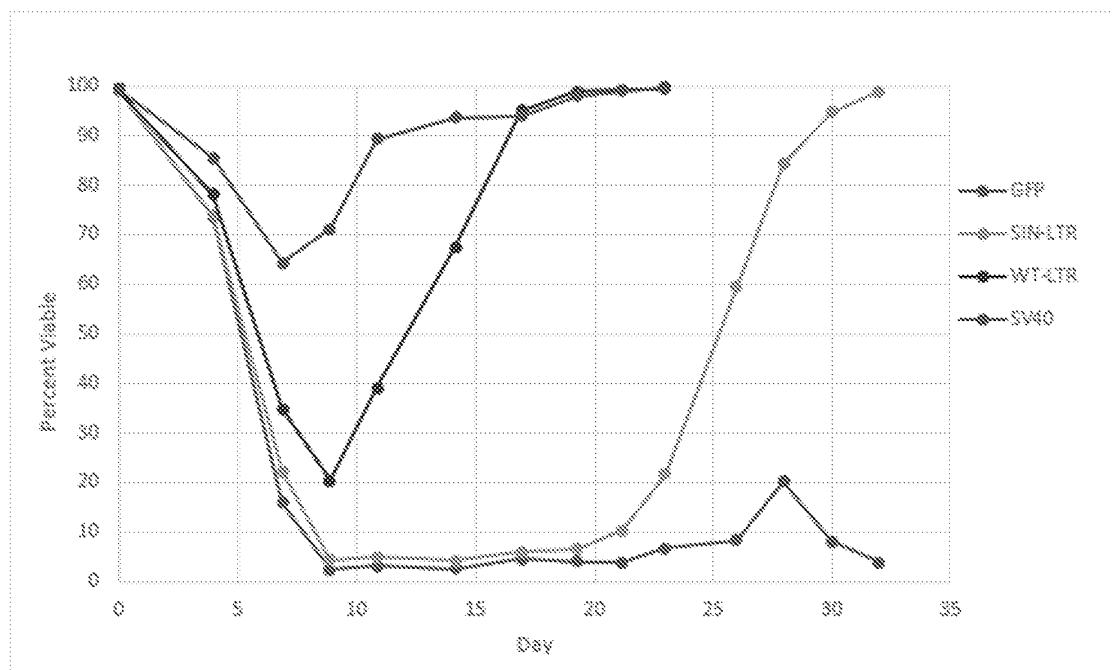


FIG. 3

	SIN-LTR	WT-LTR	SV40
Gene Copy Number	253	13.9	Not determined
Titer (mg/L)	815	14.2	20.2

FIG. 4

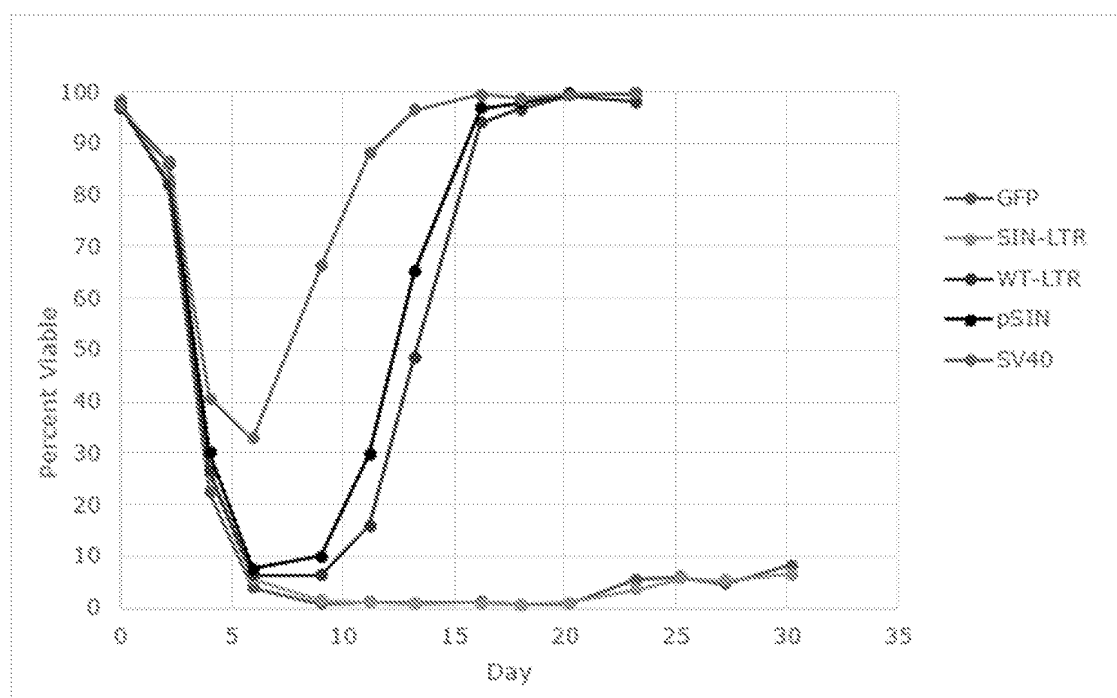


FIG. 5

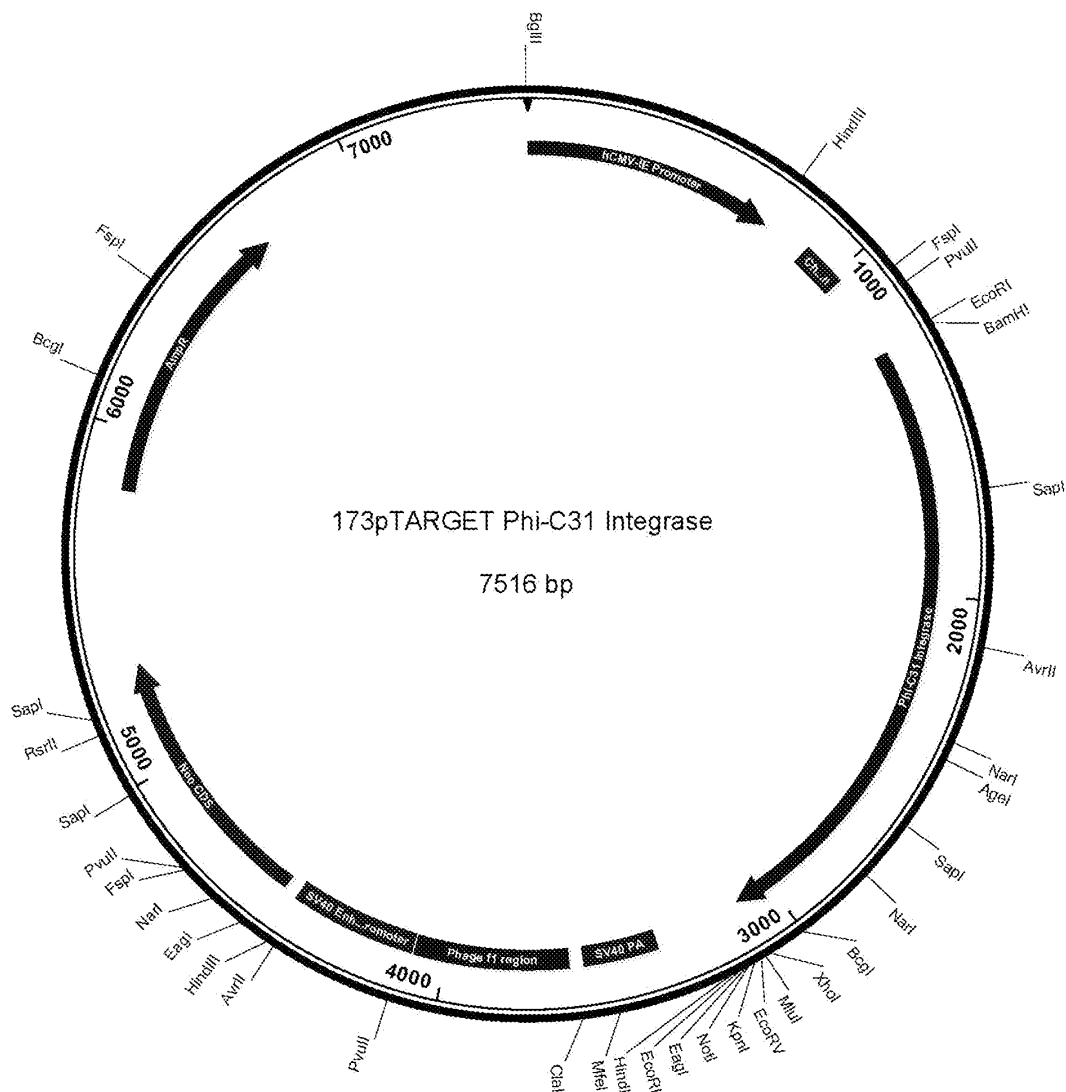


FIG. 6

LOCUS 173pTARGET 7516 bp DNA linear 12-MAY-2021

FEATURES Location/Qualifiers

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misc_feature 4100..4470
/note="SV40 Enhancer-Promoter"

misc_feature 3638..4092
/note="Phage f1 region"

misc_feature 3375..3595
/note="SV40 PA"

misc_feature 890..1022
/note="Chimeric intron"

misc_feature 1..750
/note="hCMV-IE Promoter"

misc_feature 5824..6684
/note="AmpR"

misc_feature 1271..3109
/note="Phi-C31 Integrase"

source 1..7516
/dnas_title="173pTARGET Phi-C31 Integrase"

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1 TCAATATTGG CCATTAGCCA TATTATTCAT TGGTTATATA GCATAAATCA ATATTGGCTA
61 TTGGCCATTG CATACGTTGT ATCTATATCA TAATATGTAC ATTTATATTG GCTCATGTCC
121 AATATGACCG CCATGTTGGC ATTGATTATT GACTAGTTAT TAATAGTAAT CAATTACGGG
181 GTCATTAGTT CATAGCCCAT ATATGGAGTT CCGCGTTACA TAACTTACGG TAAATGGCCC
241 GCCTGGCTGA CCGCCCAACG ACCCCGCCC ATTGACGTCA ATAATGACGT ATGTTCCCAT
301 AGTAACGCCA ATAGGGACTT TCCATTGACG TCAATGGGTG GAGTATTTAC GGTAAACTGC
361 CCACTTGGCA GTACATCAAG TGTATCATAT GCCAAGTCCG CCCCTATTG ACGTCAATGA
421 CGGTAAATGG CCCGCTGGC ATTATGCCA GTACATGACC TTACGGGACT TTCCTACTTG
481 GCAGTACATC TACGTATTAG TCATCGCTAT TACCATGGTG ATGCGGTTTT GGCAGTACAC
541 CAATGGGCGT GGATAGCGGT TTGACTCACG GGGATTTC AAGTCTCCACC CCATTGACGT
601 CAATGGGAGT TTGTTTGGC ACCAAAATCA ACGGGACTTT CCAAATGTC GTAACAATG
661 CGATCGCCCG CCCGTTGAC GCAAATGGG GGTAGGCGTG TACGGTGGGA GGTCTATATA
721 AGCAGAGCTC GTTTAGTGAA CCGTCAGATC ACTAGAAGCT TTATTGCGGT AGTTTATCAC

FIG. 6 (cont'd)

781 AGTTAAATTG CTAACGCAGT CAGTGCTTCT GACACAACAG TCTCGAACTT AAGCTGCAGT
841 GACTCTCTTA AGGTAGCCTT GCAGAAGTTG GTCGTGAGGC ACTGGGCAGG TAAGTATCAA
901 GGTACAAGA CAGGTTTAAG GAGACCAATA GAAACTGGGC TTGTCGAGAC AGAGAAGACT
961 CTTGCGTTTC TGATAGGCAC CTATTGGTCT TACTGACATC CACTTTGCCT TTCTCTCCAC
1021 AGGTGTCCAC TCCCAGTTCA ATTACAGCTC TTA AAAAATTG GATCTCCATT CGCCATTACG
1081 GCTGCGCAAC TGCTGGGAAG GACGATCAGA GCGGGCCTCT TCGCTATTAC GCCAGCTGGC
1141 GAAAGGGACG TGGCAAGCAA GGCGATTAAG TTGAGTTACG CCAGGATTTT CCCAGTCACG
1201 ACGTTGTA AA ACGACGGCCA GAGAATTATA ATACGACTCA CTATAGGGCG AATTCGgatc
1261 cgccgccacc ATGGTGACCT ACGCCGGAGC CTACGACAGA CAGAGCCGGG AGAGAGAGAA
1321 CAGCAGCGCC GCCAGCCCCG CCACCCAGAG AAGCGCCAAC GAGGCCAAGG CCGCCGCCCT
1381 GCAGAGAGAG ATCGAGAGGG CCGGCGGCAG ATTGAGATTT GTGGGCCACT TCAGCGAGGC
1441 CCCTGGCACC AGCGCCTTCG GCACCGCCGA GAGACCCGAG TTCGAGAGAA TCCTGAACGA
1501 GTGTAGGGCC GGCAGGCTGA ACATGATCAT CGTGACGAC GTGTCCCGGT TCAGCAGGCT
1561 GAAGGTGATG GACGCCATCC CTATCGTGTG CGAGCTGCTG GCCCTGGGCG TGACCATCGT
1621 GTCCACCCAG GAAGGCGTCT TTAGACAGGG CAACGTGATG GACCTGATCC ACCTGATCAT
1681 GAGGCTGGAC GCCAGCCACA AGGAGAGCAG CCTGAAGAGC GCCAAGATCC TGGACACCAA
1741 GAACCTGCAG AGGGAGCTGG GCGGCTATGT GGGCGGCAAG GCCCCCTACG GCTTCGAGCT
1801 GGTGTCCGAG ACCAAGGAGA TCACCCGGA CGGCAGGATG GTGAACGTGG TGATCAACAA
1861 GCTGGCCAC AGCACCACCC CCCTGACCGG CCCCTTCGAG TTTGAGCCCG ACGTGATCAG
1921 GTGGTGGTGG CGGGAGATCA AGACCCACAA GCACCTGCCT TTCAAGCCCG GCAGCCAGGC
1981 CGCCATCCAC CCCGGCAGCA TCACCGGCCT GTGTAAGAGA ATGGACGCCG ACGCCGTGCC
2041 CACCAGAGGC GAGACCATCG GCAAGAAAAC CGCCAGCAGC GCCTGGGACC CCGCCACCGT
2101 GATGAGAATC CTGAGGGACC CTAGGATCGC CGGCTTCGCC GCCGAGGTGA TCTACAAGAA
2161 GAAGCCCGAC GGCACCCCCA CCACCAAGAT CGAGGGCTAC AGAATCCAGA GAGACCCCAT
2221 CACCCTGAGA CCTGTGGAGC TGGACTGTGG CCCTATCATC GAGCCTGCCG AGTGGTACGA
2281 GCTGCAGGCC TGGCTGGACG GCAGAGGCAG AGGCAAGGGC CTGAGCAGAG GCCAGGCCAT
2341 CCTGAGCGCC ATGGACAAGC TGTACTGTGA GTGTGGCGCC GTGATGACCA GCAAGAGAGG
2401 CGAGGAGAGC ATCAAGGACA GCTACCGGTG CCGGAGAAGA AAGGTGGTGG ACCCCAGCGC
2461 CCCTGGCCAG CACGAGGGCA CCTGTAATGT GAGCATGGCC GCCCTGGACA AGTTCGTGGC
2521 CGAGCGGATC TTCAACAAGA TCCGGCACGC CGAGGGCGAC GAGGAGACCC TGGCCCTGCT
2581 GTGGGAGGCC GCCAGAAGAT TCGGCAAGCT GACCGAGGCC CCCGAGAAGA GCGGCGAGAG
2641 GGCCAACCTG GTGGCCGAGA GAGCCGACGC CCTGAACGCC CTGGAGGAGC TGTACGAGGA
2701 CAGAGCCGCC GGAGCCTATG ACGGCCCTGT GGGCAGGAAG CACTTCAGAA AGCAGCAGGC
2761 CGCCCTGACC CTGAGACAGC AGGGCGCCGA GGAAAGACTG GCCGAGCTGG AGGCCGCCGA

FIG. 6 (cont'd)

2821 GGCCCCCTAAG CTGCCCCCTGG ATCAGTGGTT CCCCAGGAT GCCGACGCCG ACCCCACCGG
2881 CCCCAAGTCC TGGTGGGGCA GAGCCAGCGT GGACGACAAG AGGGTGTTCTG TGGGCCTGTT
2941 CGTGGATAAG ATCGTGGTGA CCAAGAGCAC CACCGGCAGG GGCCAGGGCA CCCCCATCGA
3001 GAAGAGAGCC AGCATCACCT GGGCCAAGCC TCCCACCGAC GACGACGAGG ATGACGCCCA
3061 GGACGGCACC GAGGACGTGG CCGCCCCTAA GAAAAAGCGG AAAGTGTGAc TCGAGACGCG
3121 TGATATCTTT CCCGGGGGTA CCGTCGACTG CGGCCGCGAA TTCCAAGCTT GAGTATTCTA
3181 TCGTGTCAAC TAAATAACTT GGCCTAATCA TGGTCATATC TGTTTCCTGT GTGAAATTGT
3241 TATCCGCTCA CAATTCCACA CAACATACGA GCCGGAAGCA TAAAGTGTA AGCCTGGGGT
3301 GCCTAATGAG TGAGCTAACT CACATTAATT GCGTTGCGCG ATGCTTCCAT TTTGTGAGGG
3361 TTAATGCTTC GAGAAGACAT GATAAGATAC ATTGATGAGT TTGGACAAAC CACAACAAGA
3421 ATGCAGTGAA AAAAATGCTT TATTTGTGAA ATTTGTGATG CTATTGCTTT ATTTGTAACC
3481 ATTATAAGCT GCAATAACA AGTTAACAAC AACAATTGCA TTCATTTTAT GTTTCAGGTT
3541 CAGGGGGAGA TGTGGGAGGT TTTTAAAGC AAGTAAACC TCTACAAATG TGGTAAATC
3601 CGATAAGGAT CGATTCCGGA GCCTGAATGG CGAATGGACG CGCCTGTAG CGGCGCATT
3661 AGCGCGGCGG GTGTGGTGGT TACGCGCACG TGACCGCTAC ACTTGCCAGC GCCCTAGCGC
3721 CCGCTCCTTT CGCTTTCTT CTTCTCTTC TCGCCACGTT CGCCGGCTTT CCCCCTCAAG
3781 CTCTAAATCG GGGGCTCCCT TTAGGGTTCC GATTAGTGC TTTACGGCAC CTCGACCCCA
3841 AAAAATTGA TTAGGGTGAT GGTTCACGTA GTGGGCCATC GCCCTGATAG ACGGTTTTTC
3901 GCCCTTTGAC GTTGGAGTCC ACGTCTTTA ATAGTGGACT CTTGTTCAA ACTGGAACAA
3961 CACTCAACCC TATCTCGGTC TATTCTTTG ATTTATAAGG GATTTTGCCG ATTTGCGCCT
4021 ATTGGTTAAA AAATGAGCTG ATTTAACAAA AATTTAACGC GAATTTTAAAC AAAATATTAA
4081 CGCTTACAAT TTCGCCTGTG TACCTTCTGA GCGGAAAGA ACCAGCTGTG GAATGTGTGT
4141 CAGTTAGGGT GTGGAAAGTC CCCAGGCTCC CCAGCAGGCA GAAGTAGCA AAGCATGCAT
4201 CTCAATTAGT CAGCAACCAG GTGTGGAAAG TCCCAGGCT CCCCAGCAGG CAGAAGTATG
4261 CAAAGCATGC ATCTCAATTA GTCAGCAACC ATAGTCCCGC CCCTAACTCC GCCCATCCCG
4321 CCCCTAACTC CGCCAGTTC CGCCATTCT CCGCCCATG GCTGACTAAT TTTTTTATT
4381 TATGCAGAGG CCGAGGCCGC CTCGGCCTCT GAGCTATTCC AGAAGTAGTG AGGAGGCTTT
4441 TTTGGAGGCC TAGGCTTTTG CAAAAAGCTT GATTCTTCTG ACACAACAGT CTCGAACTTA
4501 AGGCTAGAGC CACCATGATT GAACAAGATG GATTGCACGC AGGTTCTCCG GCCGCTTGGG
4561 TGGAGAGGCT ATTCGGCTAT GACTGGGCAC AACAGACAAT CGGCTGCTCT GATGCCGCCG
4621 TGTTCGGCT GTCAGCGCAG GGGCGCCCGG TTCTTTTGT CAAGACCGAC CTGTCCGGTG
4681 CCCTGAATGA ACTGCAGGAC GAGGCAGCGC GGCTATCGTG GCTGGCCACG ACGGGCGTTC
4741 CTTGCGCAGC TGTGCTCGAC GTTGCTACTG AAGCGGGAAG GGAAGGCTG CTATTGGGCG
4801 AAGTGCCGGG GCAGGATCTC CTGTCATCTC ACCTTGCTCC TGCCGAGAAA GTATCCATCA
4861 TGGCTGATGC AATGCGGCGG CTGCATACGC TTGATCCGGC TACCTGCCCA TTCGACCACC

FIG. 6 (cont'd)

4921 AAGCGAAACA TCGCATCGAG CGAGCACGTA CTCGGATGGA AGCCGGTCTT GTCGATCAGG
4981 ATGATCTGGA CGAAGAGCAT CAGGGGCTCG CGCCAGCCGA ACTGTTCCGCC AGGCTCAAGG
5041 CGCGCATGCC CGACGGCGAG GATCTCGTCG TGACCCATGG CGATGCCTGC TTGCCGAATA
5101 TCATGGTGGA AAATGGCCGC TTTTCTGGAT TCATCGACTG TGGCCGGCTG GGTGTGGCGG
5161 ACCGCTATCA GGACATAGCG TTGGTACCC GTGATATTGC TGAAGAGCTT GGCGGCGAAT
5221 GGGCTGACCG CTTCTCGTG CTTTACGGTA TCGCCGCTCC CGATTGCAG CGCATCGCCT
5281 TCTATCGCCT TCTTGACGAG TTCTTCTGAG CGGGACTCTG GGGTTCGAAA TGACCGACCA
5341 AGCGACGCCC AACCTGCCAT CACGATGGCC GCAATAAAAT ATCTTTATTT TCATTACATC
5401 TGTGTGTTGG TTTTTGTGT GCGTACGAAG ATCCGCGTAT GGTGCACTCT CAGTACAATC
5461 TGCTCTGATG CCGCATAGTT AAGCCAGCCC CGACACCCGC CAACACCCGC TGACGCGCCC
5521 TGACGGGCTT GTCTGCTCCC GGCATCCGCT TACAGACAAG CTGTGACCGT CTCCGGGAGC
5581 TGCATGTGTC AGAGGTTTTT ACCGTCATCA CCGAAACGCG CGAGACGAAA GGGCCTCGTG
5641 ATACGCCTAT TTTTATAGGT TAATGTCATG ATAATAATGG TTTCTTAGAC GTCAGGTGGC
5701 ACTTTTCGGG GAAATGTGCG CGGAACCCCT ATTTGTTTAT TTTTCTAAAT ACATTCAAAT
5761 ATGTATCCGC TCATGAGACA ATAACCCTGA TAAATGCTTC AATAATATTG AAAAAGGAAG
5821 AGTATGAGTA TTCAACATTT CCGTGTCGCC CTTATCCCT TTTTGCGGC ATTTGTCCTT
5881 CCTGTTTTTG CTCACCCAGA AACGCTGGTG AAAGTAAAAG ATGCTGAAGA TCAGTTGGGT
5941 GCACGAGTGG GTTACATCGA ACTGGATCTC AACAGCGGTA AGATCCTTGA GAGTTTTCGC
6001 CCCGAAGAAC GTTTTCCAAT GATGAGCACT TTAAAGTTC TGCTATGTGG CGCGGTATTA
6061 TCCCGTATTG ACGCCGGGCA AGAGCAACTC GGTGCGCCGA TACACTATTC TCAGAATGAC
6121 TTGGTTGAGT ACTACCAAGT CACAGAAAAG CATCTTACGG ATGGCATGAC AGTAAGAGAA
6181 TTATGCAGTG CTGCCATAAC CATGAGTGAT AACACTGCGG CCAACTTACT TCTGACAACG
6241 ATCGGAGGAC CGAAGGAGCT AACCGCTTTT TTGCACAACA TGGGGGATCA TGTAACTCGC
6301 CTTGATCGTT GGGAAACCGGA GCTGAATGAA GCCATACCA ACGACGAGCG TGACACCAGC
6361 ATGCCTGTAG CAATGGCAAC AACGTTGCGC AAATATTAA CTGGCGAACT ACTTACTCTA
6421 GCTTCCCGGC AACAATTAAT AGACTGGATG GAGGCGGATA AAGTTGCAGG ACCACTTCTG
6481 CGCTCGGCCC TTCCGGCTGG CTGGTTTATT GCTGATAAAT CTGGAGCCGG TGAGCGTGGG
6541 TCTCGCGGTA TCATTGCAGC ACTGGGGCCA GATGGTAAGC CCTCCCGTAT CGTAGTTATC
6601 TACACGACGG GGAGTCAGGC AACTATGGAT GAACGAAATA GACAGATCGC TGAGATAGGT
6661 GCCTCACTGA TTAAGCATTG GTAAGTGTCA GACCAAGTTT ACTCATATAT ACTTTAGATT
6721 GATTAAAAAC TTCATTTTTA ATTTAAAAGG ATCTAGGTGA AGATCCTTTT TGATAATCTC
6781 ATGACCAAAA TCCCTTAACG TGAGTTTTTCG TTCCACTGAG CGTCAGACCC CGTAGAAAAG
6841 ATCAAAGGAT CTTCTGAGA TCCTTTTTTT CTGCGCGTAA TCTGCTGCTT GCAAACAAAA
6901 AAACCACCGC TACCAGCGGT GGTGTTTGG CCGGATCAAG AGCTACCAAC TCTTTTTCCG
6961 AAGGTAAGTG GCTTCAGCAG AGCGCAGATA CCAAATACTG TCCTTCTAGT GTAGCCGTAG

FIG. 6 (cont'd)

7021 TTAGGCCACC ACTTCAAGAA CTCTGTAGCA CCGCCTACAT ACCTCGCTCT GCTAATCCTG
7081 TTACCAGTGG CTGCTGCCAG TGGCGATAAG TCGTGTCTTA CCGGGTTGGA CTCAAGACGA
7141 TAGTTACCGG ATAAGGCGCA GCGGTCGGGC TGAACGGGGG GTTCGTGCAC ACAGCCCAGC
7201 TTGGAGCGAA CGACCTACAC CGAACTGAGA TACCTACAGC GTGAGCTATG AGAAAGCGCC
7261 ACGCTTCCCG AAGGGAGAAA GGC GGACAGG TATCCGGTAA GCGGCAGGGT CGGAACAGGA
7321 GAGCGCACGA GGGAGCTTCC AGGGGGAAAC GCCTGGTATC TTTATAGTCC TGTCGGGTTT
7381 CGCCACCTCT GACTTGAGCG TCGATTTTGG TGATGCTCGT CAGGGGGGCG GAGCCTATGG
7441 AAAAACGCCA GCAACGCGGC CTTTTTACGG TTCCTGGCCT TTTGCTGGCC TTTTGCTCAC
7501 ATGGCTCGAC AGATCT

// (SEQ ID NO: 1)

FIG. 7

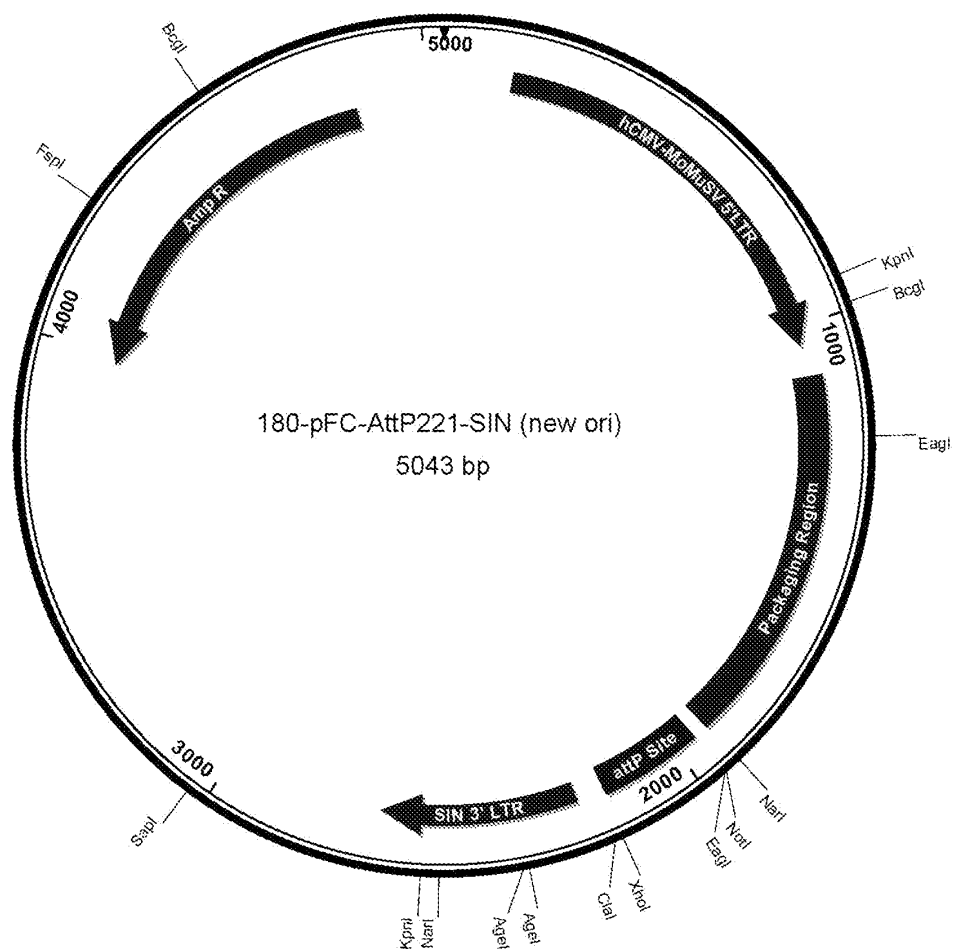


FIG. 8

LOCUS 180pFC-AttP221-S 5043 bp DNA linear 12-MAY-2021

FEATURES Location/Qualifiers

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misc_feature complement(3978..4838)
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/note="attachment site of phage phi-C31"

source 1..5043
/dnas_title="180pFC-AttP221-SIN (new ori)"

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1 GAATTAATTC ATACCAGATC ACCGAAAAC TGCCTCCAAA TGTGTCCCC TCACACTCCC
61 AAATTCGCGG GCTTCTGCCT CTTAGACCAC TCTACCCTAT TCCCCACACT CACCGGAGCC
121 AAAGCCGCGG CCCTCCGTT TCTTTGCTGT CCGGCCATTA GCCATATTAT TCATTGGTTA
181 TATAGCATAA ATCAATATTG GCTATTGGCC ATTGCATACG TTGTATCCAT ATCATAATAT
241 GTACATTAT ATTGGCTCAT GTCCAACATT ACCGCCATGT TGACATTGAT TATTGACTAG
301 TTATTAATAG TAATCAATTA CGGGGTCATT AGTTCATAGC CCATATATGG AGTCCGCGT
361 TACATAACTT ACGGTAAATG GCCCGCCTGG CTGACCGCCC AACGACCCCC GCCCATTGAC
421 GTCAATAATG ACGTATGTTT CCATAGTAAC GCCAATAGGG ACTTTCCATT GACGTCAATG
481 GGTGGAGTAT TTACGGTAAA CTGCCCACTT GGCAGTACAT CAAGTGTATC ATATGCCAAG
541 TACGCCCCCT ATTGACGTCA ATGACGGTAA ATGGCCCGCC TGGCATTATG CCCAGTACAT
601 GACCTTATGG GACTTTCCTA CTTGGCAGTA CATCTACGTA TTAGTCATCG CTATTACCAT
661 GGTGATGCGG TTTTGGCAGT ACATCAATGG GCGTGGATAG CGGTTTGACT CACGGGGATT
721 TCCAAGTCTC CACCCATTG ACGTCAATGG GAGTTTGTG TGGCACCAAA ATCAACGGGA
781 CTTTCAAAA TGTCGTAACA ACTCCGCCCC ATTGACGCAA ATGGGCGGTA GGCgTGTACG
841 GTGGGAGGTC TATATAAGCA GAGCTCAATA AAAGAGCCCA CAACCCCTCA CTCGGCGCGC
901 CAGTCTTCCG ATAGACTGCG TCGCCCGGT ACCCGTATTC CCAATAAAGC CTCTTGCTGT
961 TTGCATCCGA ATCGTGGTCT CGCTGTTCTT TGGGAGGGTC TCCTCTGAGT GATTGACTAC

FIG. 8 (cont'd)

1021 CCACGACGGG GGTCTTTCAT TTGGGGGCTC GTCCGGGATT TGGAGACCCC TGCCCAGGGA
1081 CCACCGACCC ACCACCGGGA GGTAAGCTGG CCAGCAACTT ATCTGTGTCT GTCCGATTGT
1141 CTAGTGCTA TGTTTGATGT TATGCGCCTG CGTCTGTACT AGTTAGCTAA CTAGCTCTGT
1201 ATCTGGCGGA CCCGTGGTGG AACTGACGAG TTCTGAACAC CCGGCCGCAA CCCTGGGAGA
1261 CGTCCCAGGG ACTTTGGGGG CCGTTTTTGT GGCCCCGACCT GAGGAAGGGA GTCGATGTGG
1321 AATCCGACCC CGTCAGGATA TGTGGTCTG GTAGGAGACG AGAACCTAAA ACAGTTCCCC
1381 CCTCCGTCTG AATTTTTGCT TTCGGTTTGG AACCGAAGCC GCGCGTCTTG TCTGCTGCAG
1441 CGCTGCAGCA TCGTTCTGTG TTGTCTCTGT CTGACTGTGT TTCTGTATTT GTCTGAAAA
1501 TAGGGCCAGA CTGTTACCAC TCCCTTAAGT TTGACCTTAG GTCAGTGGA AGATGTGCGAG
1561 CGGATCGCTC ACAACCAGTC GGTAGATGTC AAGAAGAGAC GTTGGGTTAC CTTCTGCTCT
1621 GCAGATGGC CAACCTTTAA CGTCGGATGG CCGCGAGACG GCACCTTTAA CCGAGACCTC
1681 ATCACCCAGG TTAAGATCAA GGTCTTTTCA CCTGGCCCCG ATGGACACCC AGACCAGGTC
1741 CCCTACATCG TGACCTGGGA AGCCTTGGCT TTTGACCCCC CTCCCTGGGT CAAGCCCTTT
1801 GTACACCCTA AGCCTCCGCC TCCTCTTCCT CCATCCGCCC CGTCTCTCCC CTTGAACCT
1861 CCTCGTTCGA CCCCGCCTCG ATCCTCCCTT TATCCAGCCC TCACTCCTTC TCTAGGCGCC
1921 GGaattgaCG CGcgcgtagg cctgcggcgg cagtactgac ggacacaccg aagccccggc
1981 ggcaaccctc agcggatgcc cgggggcttc acgttttccc aggtcagaag cggttttcgg
2041 gagtagtgcc ccaactgggg taacctttga gttctctcag ttgggggctg agggctgcgg
2101 acatgacaca aggggttggt accgggggtg acacgtacgc ggggtgcttac gaccgtcagt
2161 cgcgcgagcg cgatagtctc gagttcgacA TCGATAAAAT AAAAGATTTT ATTTAGTCTC
2221 CAGAAAAAGG GGGGAATGAA AGACCCACC TGTAAGTTTG GCAAGCTAGC TTAAGTAACG
2281 CCATTTTGCA AGGCATGGAA AAATACATAA CTGAGAATAG AaAAGTTCAG ATCAAGGTCA
2341 GGAACAGATG GAACAGGgTC GAccggtcga ccggtcgacC CTAGAGAACC ATCAGATGTT
2401 TCCAGGGTGC CCAAGGACC TGAAATGACC CTGTGCCTTA TTTGAACTAA CCAATCAGTT
2461 CGCTTCTCGC TTCTGTTGCG GCGCTTCTGC TCCCCGAGCT CAATAAAGA GCCACAACC
2521 CCTCACTCGG GCGCCAGTC CTCCGATTGA CTGAGTCGCC CGGGTACCCG TGTATCCAAT
2581 AAACCTCTT GCAGTTGCAT CCGACTTGTG GTCTCGCTGT TCCTGGGAG GGTCTCCTCT
2641 GAGTGATTGA CTACCCGTCA GCGGGGGTCT TTCATTTGGG GGCTCGTCCG GGATCGGGAG
2701 ACCCCTGCCC AGGGACCACC GACCCACCAC CGGGAGGTAA GCTGGCTGCC TCGCGCGTTT
2761 CCGTGATGAC GGTGAAAACC TCTGACACAT GCAGCTCCCG GAGACGGTCA CAGCTTGTCT
2821 GTAAGCGGAT GCCGGGAGCA GACAAGCCCG TCAGGGCGCG TCAGCGGGTG TTGGCGGGTG
2881 TCGGGGCGCA GCCATGACCC AGTCACGTAG CGATAGCGGA GTGTATACTG GCTTAACAT
2941 GCGGCATCAG AGCAGATTGT ACTGAGAGTG CACCATATGC GGTGTGAAAT ACCGCACAGA
3001 TGCCTAAGGA GAAAATACCG CATCAGGCGC TCTCCGCTT CCTCGCTCAC TGACTCGCTG
3061 CGCTCGGTGCT TTCGGCTGCG GCGAGCGGTA TCAGCTCACT CAAAGGCGGT AATACGGTTA

FIG. 8 (cont'd)

3121 TCCACAGAAT CAGGGGATAA CGCAGGAAAG AACATGTatg catGAGCAAA AGGCCAGCAA
3181 AAGGCCAGGA ACCGTAAAAA GGCCGCGTTG CTGGCGTTTT TCCATAGGCT CCGCCCCCT
3241 GACGAGCATC AAAAAATCG ACGCTCAAGT CAGAGGTGGC GAAACCCGAC AGGACTATAA
3301 AGATACCAGG CGTTTCCCC TGAAGCTCC CTCGTGCGCT CTCCTGTTCC GACCCTGCCG
3361 CTTACCGGAT ACCTGTCCGC TTTCTCCCT TCGGGAAGCG TGGCGCTTC TCATAGCTCA
3421 CGCTGTAGGT ATCTCAGTTC GGTGTAGGTC GTTCGCTCCA AGCTGGGCTG TGTGCACGAA
3481 CCCCCGTTT AGCCCGACCG CTGCGCCTTA TCCGGTAACT ATCGTCTTGA GTCCAACCCG
3541 GTAAGACACG ACTTATCGCC ACTGGCAGCA GCCACTGGTA ACAGGATTAG CAGAGCGAGG
3601 TATGTAGGCG GTGCTACAGA GTTCTTGAAG TGGTGGCCTA ACTACGGCTA CACTAGAAGa
3661 ACAGTATTTG GTATCTGCGC TCTGCTGAAG CCAGTTACCT TCGGAAAAAG AGTTGGTAGC
3721 TCTTGATCCG GCAAACAAAC CACCGCTGGT AGCGGTGGTT TTTTGTGTTG CAAGCAGCAG
3781 ATTACGCGCA GAAAAAAGG ATCTCAAGAA GATCCTTTGA TCTTTTCTAC GGGGTCTGAC
3841 GCTCAGTGGA ACGAAAACTC ACGTTAAGGG ATTTTGGTCA TGAGATTATC AAAAAGGATC
3901 TTCACCTAGA TCCTTTTAAA TTAAAAATGA AGTTTTAAAT CAATCTAAAG TATATATGAG
3961 TAAACTTGGT CTGACAGTTA CCAATGCTTA ATCAGTGAGG CACCTATCTC AGCGATCTGT
4021 CTATTCGTT CATCCATAGT TGCCTGACTC CCCGTCGTGT AGATAACTAC GATACGGGAG
4081 GGCTTACCAT CTGGCCCCAG TGCTGCAATG ATACCGCGAG ACCCACGCTC ACCGGCTCCA
4141 GATTATCAG CAATAAACCA GCCAGCCGGA AGGGCCGAGC GCAGAAGTGG TCCTGCAACT
4201 TTATCCGCCT CCATCCAGTC TATTAATTGT TGCCGGAAG CTAGAGTAAG TAGTTCGCCA
4261 GTTAATAGTT TGCGCAACGT TGTTGCCATT GCTGCAGGCA TCGTGGTGTC ACGCTCGTCG
4321 TTTGGTATGG CTTCAATCAG CTCCGGTTCC CAACGATCAA GGCGAGTTAC ATGATCCCCC
4381 ATGTTGTGCA AAAAAGCGGT TAGCTCCTTC GGTCTCCGA TCGTTGTCAG AAGTAAGTTG
4441 GCCGCAGTGT TATCACTCAT GGTATGGCA GCACTGCATA ATTCTCTTAC TGTCATGCCA
4501 TCCGTAAGAT GCTTTTCTGT GACTGGTGAG TACTCAACCA AGTCATTCTG AGAATAGTGT
4561 ATGCGGCGAC CGAGTTGCTC TTGCCGGCG TCAACACGGG ATAATACCGC GCCACATAGC
4621 AGAACTTTAA AAGTGCTCAT CATTGAAAA CGTTCTTCGG GGCGAAAACT CTAAGGATC
4681 TTACCGCTGT TGAGATCCAG TTCGATGTAA CCCACTCGTG CACCCAAGT ATCTTCAGCA
4741 TCTTTACTT TCACCAGCGT TTCTGGGTGA GCAAAAACAG GAAGGCAAAA TGCCGCAAAA
4801 AAGGGAATAA GGGCGACACG GAAATGTTGA ATACTCATAC TCTTCCTTT TCAATATTAT
4861 TGAAGCATTT ATCAGGGTTA TTGTCTCATG AGCGGATACA TATTTGAATG TATTTAGAAA
4921 AATAAACAAA TAGGGGTTCC GCGCACATTT CCCCAGAAAAG TGCCACCTGA CGTCTAAGAA
4981 ACCATTATTA TCATGACATT AACCTATAAA AATAGGCGTA TCACGAGGCC CTTTCGTCTT
5041 CAA

// (SEQ ID NO: 2)

FIG. 9

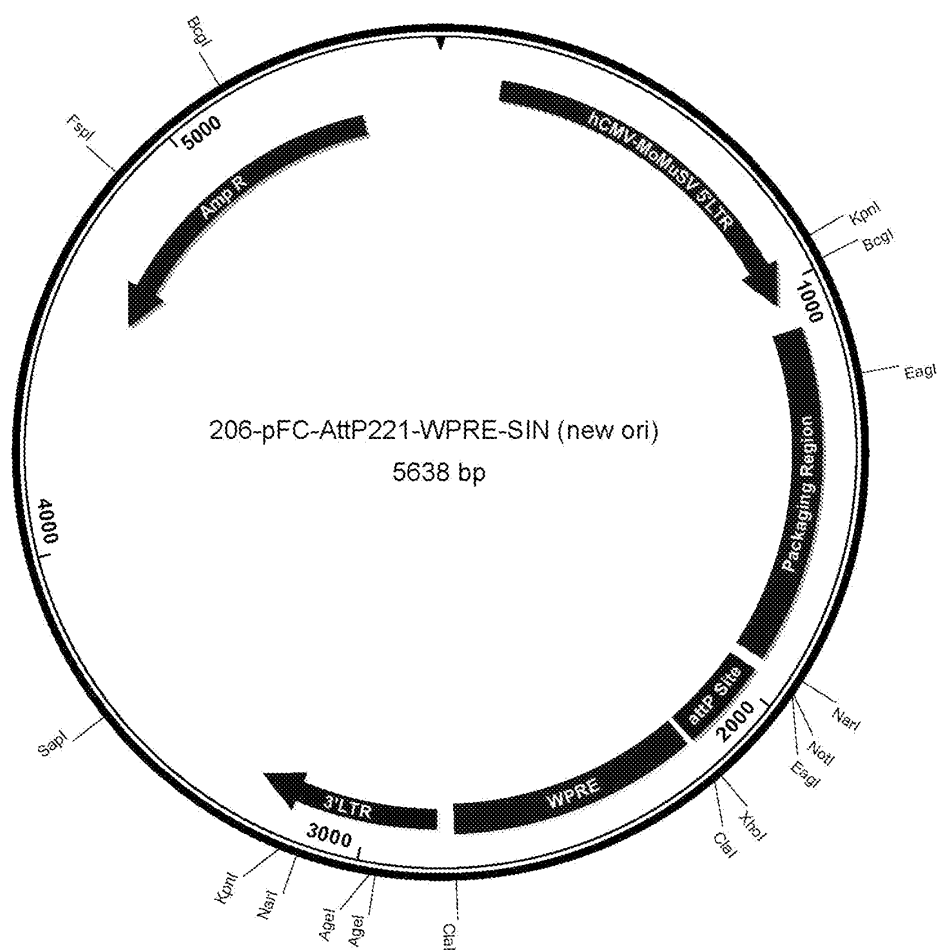


FIG. 10

LOCUS pFC-AttP221-WPRE 5638 bp DNA linear 12-MAY-2021

/* 22JAN2019 DA 4860 bp */

FEATURES Location/Qualifiers

misc_feature 149..1041
 /note="hCMV-MoMuSV 5'LTR"

misc_feature 1111..1920
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source 1..5638
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ORIGIN

1 GAATTAATTC ATACCAGATC ACCGAAACT GTCCTCCAAA TGTGTCCCC TCACACTCCC
 61 AAATTCGCGG GCTTCTGCCT CTTAGACCAC TCTACCCTAT TCCCCACACT CACCGGAGCC
 121 AAAGCCGCGG CCCTCCGTT TCTTTGCTGT CCGGCCATTA GCCATATTAT TCATTGGTTA
 181 TATAGCATAA ATCAATATTG GCTATTGGCC ATTGCATACG TTGTATCCAT ATCATAATAT
 241 GTACATTAT ATTGGCTCAT GTCCAACATT ACCGCCATGT TGACATTGAT TATTGACTAG
 301 TTATTAATAG TAATCAATTA CGGGGTCATT AGTTCATAGC CCATATATGG AGTTCCGCGT
 361 TACATAACTT ACGGTAAATG GCCCGCTGG CTGACCGCCC AACGACCCCC GCCCATTGAC
 421 GTCAATAATG ACGTATGTTC CCATAGTAAC GCCAATAGGG ACTTTCCATT GACGTCAATG

FIG. 10 (cont'd)

481 GGTGGAGTAT TTACGGTAAA CTGCCCACTT GGCAGTACAT CAAGTGTATC ATATGCCAAG
541 TACGCCCCCT ATTGACGTCA ATGACGGTAA ATGGCCCGCC TGGCATTATG CCCAGTACAT
601 GACCTTATGG GACTTTCCTA CTTGGCAGTA CATCTACGTA TTAGTCATCG CTATTACCAT
661 GGTGATGCGG TTTTGGCAGT ACATCAATGG GCGTGGATAG CGGTTTGA CTACGGGGATT
721 TCCAAGTCTC CACCCATTG ACGTCAATGG GAGTTTGT TTGACACAAA ATCAACGGGA
781 CTTTCAAAA TGTCGTAACA ACTCCGCCCC ATTGACGCAA ATGGGCGGTA GGCgTGACG
841 GTGGGAGGTC TATATAAGCA GAGCTCAATA AAAGAGCCCA CAACCCCTCA CTCGGCGCGC
901 CAGTCTTCCG ATAGACTGCG TCGCCCGGGT ACCCGTATTC CCAATAAAGC CTCTTGCTGT
961 TTGCATCCGA ATCGTGGTCT CGCTGTTCT TGGGAGGGTC TCCTCTGAGT GATTGACTAC
1021 CCACGACGGG GGTCTTTCAT TTGGGGGCTC GTCCGGGATT TGGAGACCCC TGCCCAGGGA
1081 CCACCGACCC ACCACGGGGA GGTAAGCTGG CCAGCAACTT ATCTGTGTCT GTCCGATTGT
1141 CTAGTGCTA TGTTTGATGT TATGCGCCTG CGTCTGTACT AGTTAGCTAA CTAGCTCTGT
1201 ATCTGGCGGA CCCGTGGTGG AACTGACGAG TTCTGAACAC CCGGCCGCAA CCCTGGGAGA
1261 CGTCCCAGGG ACTTTGGGGG CCGTTTTTGT GGCCCGACCT GAGGAAGGGA GTCGATGTGG
1321 AATCCGACCC CGTCAGGATA TGTGGTCTG GTAGGAGACG AGAACCTAAA ACAGTTCCCG
1381 CCTCCGTCTG AATTTTGTCT TTCGGTTTGG AACCGAAGCC GCGCGTCTTG TCTGCTGCAG
1441 CGCTGCAGCA TCGTCTGTG TTGTCTCTGT CTGACTGTGT TTCTGTATTT GTCTGAAAAT
1501 TAGGGCCAGA CTGTTACCAC TCCCTAAGT TTGACCTTAG GTCAGTGGA AGATGTCGAG
1561 CGGATCGCTC ACAACAGTC GGTAGATGTC AAGAAGAGAC GTTGGGTTAC CTCTGCTCT
1621 GCAGAATGGC CAACCTTTAA CGTCGGATGG CCGCGAGACG GCACCTTTAA CCGAGACCTC
1681 ATACCCAGG TTAAGATCAA GGTCTTTTCA CCTGGCCCGC ATGGACACCC AGACCAGGTC
1741 CCCTACATCG TGACCTGGGA AGCCTTGGCT TTTGACCCCC CTCCTGGGT CAAGCCCTTT
1801 GTACACCTA AGCCTCCGCC TCCTCTTCT CCATCCGCC CGTCTCTCCC CCTTGAACCT
1861 CCTCGTTCGA CCCCCTCG ATCCTCCCTT TATCCAGCCC TCACTCCTT TCTAGGCGCC
1921 GGaattgaCG CGcgctagg cctgcggccg cagtactgac ggacacaccg aagccccggc
1981 ggcaaccctc agcggatgcc ccggggcttc acgttttccc aggtcagaag cggttttcgg
2041 gagtagtgcc ccaactgggg taacctttga gttctctcag ttggggcggt agggtcgccc
2101 acatgacaca aggggtgtg accgggttg acacgtacgc gggtgcttac gaccgtcagt

FIG. 10 (cont'd)

2161 cgcgcgagcg cgatagtctc gagttcgacA TCGATaatca acctctggat tacaaaattt
2221 gtgaaagatt gactggtatt cttactatg ttgctcctt tacgctatgt ggatacgtg
2281 ctttaatgcc ttgtatcat gctattgctt cccgtatggc ttcatcttc tctccttgt
2341 ataaatcctg gttgctgtct ctttatgagg agttgtggcc cgtgtcagg caacgtggcg
2401 tgggtgtcac tgtgttctg gacgcaacct cactgggtg gggcattgcc accacctgc
2461 agctccttc cggaacttc gcttcccc tccatttgc caggcgga ctcacgccg
2521 cctgccttc cgcgtctgg acaggggctc ggctgttgg cactgacaat tccgtggtg
2581 tgtcgggaa atcatgtcc tttcctggc tgctgcctg tgtgccacc tggattctg
2641 gcgggacgtc cttctgtac gtccctcgg cctcaatcc agcgacctt cttcccg
2701 gcctgctcc ggctctcgg cctctccg gtctgcct tcgccctcag acgagtcga
2761 tctcccttg ggccgctcc ccgATCGAT AAAATAAAAG ATTTATTTA GTCTCCAGAA
2821 AAAGGGGGGA ATGAAAGACC CCACCTGTAG GTTTGGCAAG CTAGCTTAAG TAACGCCATT
2881 TTGCAAGGCA TGGAAAAATA CATACTGAG AATAGAAAG TTCAGATCAA GGTCAGGAAC
2941 AGATGGAACA GGgTCGAccg gtcgaccgt cgacCCTAGA GAACCATCAG ATGTTTCCAG
3001 GGTGCCCCAA GGACCTGAAA TGACCCTGTG CTTATTTGA ACTAACCAAT CAGTTCGCTT
3061 CTCGCTTCTG TTCGCGCGCT TCTGCTCCC GAGCTCAATA AAAGAGCCCA CAACCCCTCA
3121 CTCGGGGCGC CAGTCTCCG ATTGACTGAG TCGCCGGGT ACCCGTGTAT CCAATAAACC
3181 CTCTTGCACT TGCATCCGAC TTGTGGTCTC GCTGTTCTT GGGAGGGTCT CCTCTGAGTG
3241 ATTGACTACC CGTCAGCGG GGTCTTTCAT TTGGGGGCTC GTCCGGGATC GGGAGACCCC
3301 TGCCAGGGA CCACCGACCC ACCACGGGA GGTAAGCTGG CTGCCTCGCG CGTTTCGGTG
3361 ATGACGGTGA AACCTCTGA CACATGCAGC TCCCGGAGAC GGTCACAGCT TGTCTGTAAG
3421 CGGATGCCGG GAGCAGACAA GCCCGTCAGG GCGCGTCAGC GGGTGTGGC GGGTGTCCGG
3481 GCGCAGCCAT GACCCAGTCA CGTAGCGATA GCGGAGTGTA TACTGGCTTA ACTATGCGG
3541 ATCAGAGCAG ATTGTACTGA GAGTGCACCA TATGCGGTGT GAAATACCGC ACAGATGCGT
3601 AAGGAGAAAA TACCGCATCA GCGCTCTC CGCTTCTCG CTCACTGACT CGTGCGCTC
3661 GGTCGTTCCG CTGCGGCGAG CGGTATCAGC TACTCAAAG GCGTAATAC GGTTATCCAC
3721 AGAATCAGGG GATAACGCAG GAAAGAACAT GTatgcatGA GCAAAAGGCC AGCAAAAGGC
3781 CAGGAACCGT AAAAAGGCCG CGTTGCTGGC GTTTTTCAT AGGCTCCGCC CCCCTGACGA

FIG. 10 (cont'd)

3841 GCATCACAAA AATCGACGCT CAAGTCAGAG GTGGCGAAAC CCGACAGGAC TATAAAGATA
3901 CCAGGCGTTT CCCCTGGAA GCTCCCTCGT GCGCTCTCT GTTCCGACCC TGCCGCTTAC
3961 CGGATACCTG TCCGCCTTTC TCCCTTCGGG AAGCGTGGCG CTTTCTCATA GCTCAGCTG
4021 TAGGTATCTC AGTTCGGTGT AGGTCGTTTC CTCCAAGCTG GGCTGTGTGC ACGAACCCCC
4081 CGTTCAGCCC GACCGCTGCG CCTTATCCGG TAACTATCGT CTTGAGTCCA ACCCGGTAAG
4141 ACACGACTTA TCGCCACTGG CAGCAGCCAC TGGTAACAGG ATTAGCAGAG CGAGGTATGT
4201 AGGCGGTGCT ACAGAGTTCT TGAAGTGGTG GCCTAACTAC GGCTACACTA GAAGaACAGT
4261 ATTTGGTATC TCGGCTCTGC TGAAGCCAGT TACCTTCGGA AAAAGAGTTG GTAGCTCTTG
4321 ATCCGGCAAA CAAACCACCG CTGGTAGCGG TGGTTTTTTT GTTTGCAAGC AGCAGATTAC
4381 GCGCAGAAAA AAAGGATCTC AAGAAGATCC TTTGATCTTT TCTACGGGGT CTGACGCTCA
4441 GTGGAACGAA AACTCACGTT AAGGGATTTT GGTCATGAGA TTATCAAAAA GGATCTTCAC
4501 CTAGATCCTT TTAATTAATA AATGAAGTTT TAAATCAATC TAAAGTATAT ATGAGTAAAC
4561 TTGGTCTGAC AGTTACCAAT GCTTAATCAG TGAGGCACCT ATCTCAGCGA TCTGTCTATT
4621 TCGTTCATCC ATAGTTGCCT GACTCCCCGT CGTGTAGATA ACTACGATAC GGGAGGGCTT
4681 ACCATCTGGC CCCAGTGCTG CAATGATACC GCGAGACCCA CGCTCACCGG CTCCAGATTT
4741 ATCAGCAATA AACCAGCCAG CCGGAAGGGC CGAGCGCAGA AGTGGTCCTG CAACTTTATC
4801 CGCCTCCATC CAGTCTATTA ATTGTTGCCG GGAAGCTAGA GTAAGTAGTT CGCCAGTTAA
4861 TAGTTTGCGC AACGTTGTTG CCATTGCTGC AGGCATCGTG GTGTACGCT CGTCGTTTGG
4921 TATGGCTTCA TTCAGTCCG GTTCCAACG ATCAAGGCGA GTTACATGAT CCCCCATGTT
4981 GTGCAAAAAA GCGGTTAGCT CCTTCGGTCC TCCGATCGTT GTCAGAAGTA AGTTGGCCGC
5041 AGTGTATCA CTCATGGTTA TGGCAGCACT GCATAATTCT CTTACTGTCA TGCCATCCGT
5101 AAGATGCTTT TCTGTACTG GTGAGTACTC AACCAAGTCA TTCTGAGAAT AGTGTATGCG
5161 GCGACCGAGT TGCTCTTGCC CGGCGTCAAC ACGGGATAAT ACCGCGCCAC ATAGCAGAAC
5221 TTAAAAGTG CTCATCATTG GAAAACGTTT TTCGGGGCGA AACTCTCAA GGATCTTACC
5281 GCTGTTGAGA TCCAGTTCGA TGTAAACCCAC TCGTGACCC AACTGATCTT CAGCATCTTT
5341 TACTTTCACC AGCGTTTCTG GGTGAGCAAA AACAGGAAGG CAAAATGCCG CAAAAAGGG
5401 AATAAGGGCG ACACGGAAAT GTTGAATACT CATACTCTC CTTTTCAAT ATTATTGAAG
5461 CATTTATCAG GGTTATTGTC TCATGAGCGG ATACATATTT GAATGTATTT AGAAAAATAA

FIG. 10 (cont'd)

5521 ACAAATAGGG GTTCCGCGCA CATTTCCCG AAAAGTGCCA CCTGACGTCT AAGAAACCAT

5581 TATTATCATG ACATTAACT ATAAAAATAG GCGTATCACG AGGCCCTTTC GTCTTCAA

// (SEQ ID NO: 3)

FIG. 11

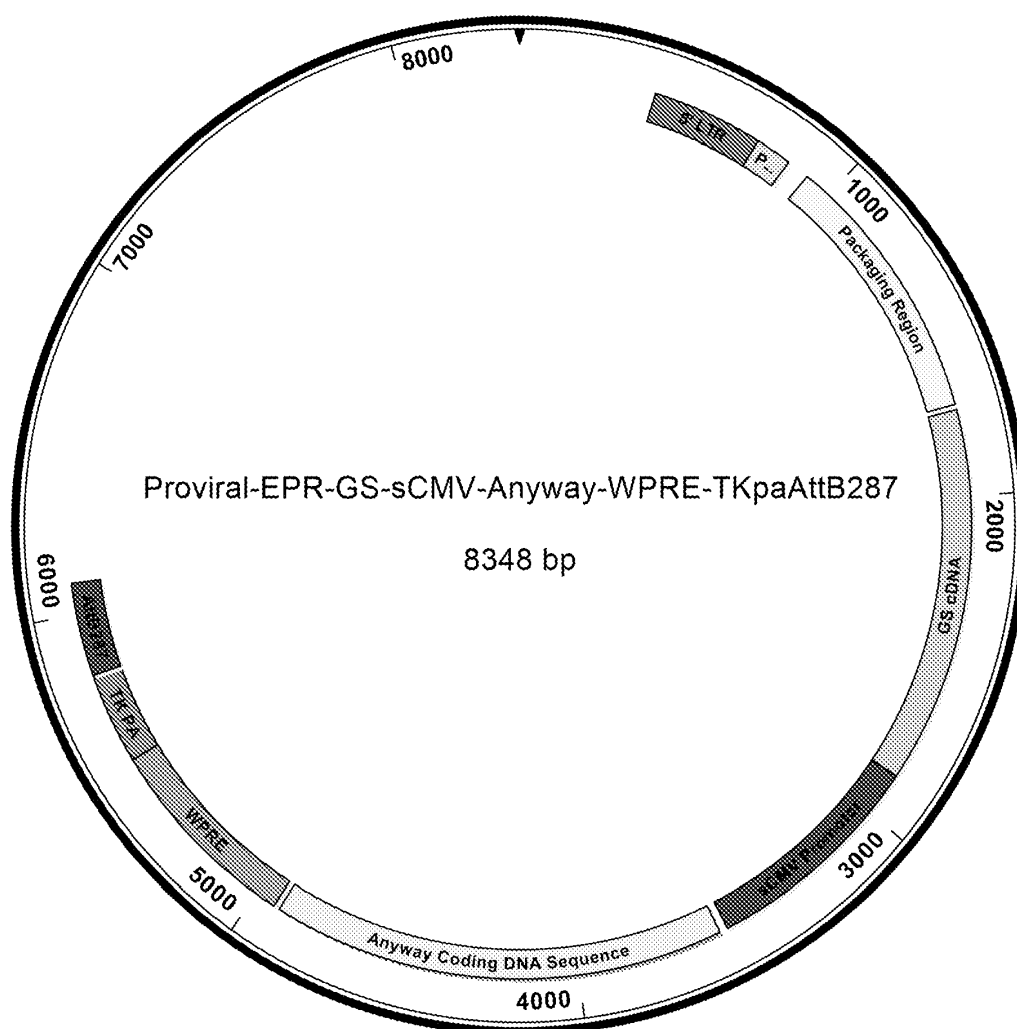


FIG. 12

LOCUS Proviral-EPR-GS- 8348 bp DNA linear 14-MAY-2021

FEATURES Location/Qualifiers

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ORIGIN

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1 TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGTCCCG GAGACGGTCA
61 CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCG TCAGGGCGCG TCAGCGGGTG
121 TTGGCGGGTG TCGGGGCTGG CTAACTATG CGGCATCAGA GCAGATTGTA CTGAGAGTGC
181 ACCATATGCG GTGTGAAATA CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGCGCC
241 ATTCGCCATT CAGGCTGCGC AACTGTTGGG AAGGGCGATC GGTGCGGGCC TCTTCGCTAT
301 TACGCCAGCT GGCGAAAGGG GGATGTGCTG CAAGGCGATT AAGTTGGGTA ACGCCAGGGT
361 TTTCCAGTC ACGACGTTGT AAAACGACGG CAGTGAATT CATTaAATG AAAGACCCCA
421 CCTGTAGGTT TGGCAAGCTA GCTTAAGTAA CGCCATTTTG CAAGGCATGG AAAAATACAT

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FIG. 12 (cont'd)

481 AACTGAGAAT AGAaAAGTTC AGATCAAGGT CAGGAACAGA TGGAACAGGg TCGAccggtc
541 gaccggtcga cCCTAGAGAA CCATCAGATG TTCCAGGGT GCCCAAGGA CCTGAAATGA
601 CCCTGTGCCT TATTTGAACT AACCAATCAG TTCGTTCTC GCTTCTGTTC GCGCGTTCT
661 GCTCCCCGAG CTAATAAAAA GAGCCCACAA CCCCTCACTC GGGGCGCCAG TctTCCGATa
721 GACTGcGTCG CCCGGGTACC CGTATTCCA ATAAAGCCTC TTGCTGTTTG CATCCGAATC
781 GTGGTCTCGC TGTTCTTGG GAGGGTCTCC TCTGAGTGAT TGAACCTCA CGACGGGGGT
841 CTTTCATTTG GGGGCTCGTC CGGGATTGG AGACCCCTGC CCAGGGACCA CCGACCCACC
901 ACCGGGAGGT AAGCTGGCCA GCAACTTATC TGTGTCTGTC CGATTGTCTA GTGTCTATGT
961 TTGATGTTAT GCGCCTGCGT CTGTACTAGT TAGCTAACTA GCTCTGTATC TGGCGGACCC
1021 GTGGTGGAAC TGACGAGTTC TGAACACCCG GCCGCAACCC TGGGAGACGT CCCAGGGACT
1081 TTGGGGGCGG TTTTGTGGC CCGACCTGAG GAAGGGAGTC GATGTGGAAT CCGACCCCGT
1141 CAGGATATGT GGTTCCTGTA GGAGACGAGA ACCTAAAACA GTTCCGCGCT CCGTCTGAAT
1201 TTTTGCTTTC GGTTCGGAAC CGAAGCCGCG CGTCTTGTCT GCTGCAGCGC TGCAGCATCG
1261 TTCTGTGTTG TCTCTGTCTG ACTGTGTTTC TGTATTTGTC TGAAAATTAG GGCCAGACTG
1321 TTACCACTCC CTTAAGTTTG ACCTTAGGTC ACTGGAAAGA TGTCGAGCGG ATCGCTCACA
1381 ACCAGTCGGT AGATGTCAAG AAGAGACGTT GGGTTACCTT CTGCTCTGCA GAATGGCCAA
1441 CCTTTAACGT CGGATGGCCG CGAGACGGCA CCTTTAACCG AGACCTCATC ACCCAGTTA
1501 AGATCAAGGT CTTTTCACCT GGCCCGCATG GACACCCAGA CCAGGTCCCC TACATCGTGA
1561 CCTGGGAAGC CTTGGCTTTT GACCCCTCCT CCTGGGTCAA GCCCTTTGTA CACCCTAAGC
1621 CTCCGCTCC TCTTCTCCA TCCGCCCGT CTCTCCCCT TGAACCTCCT CGTTCGACCC
1681 CGCCTCGATC CTCCCTTAT CCAGCCCTCA CTCCTTCTCT AGGCGCCGGA ATTGccttcc
1741 accatggcca cctcagcaag ttccacttg aacaaaaaca tcaagcaaat gtacttgtgc
1801 ctgccccagg gtgagaaagt ccaagccatg tatactctgg ttgatgtac tggagaagga
1861 ctgcgctgca aaacccgcac cctggactgt gagcccaagt gtgtagaaga gttacctgag
1921 tggaattttg atggctctag tacctttcag tctgagggt ccaacagtga catgtatctc
1981 agccctgttg ccatgtttcg ggaccccttc cgcagagatc ccaacaagct ggtgttctgt
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2101 ataatggaca tggtagacaa ccagcaccct tggtttgaa tggacagga gtatactctg
2161 atgggaacag atgggcaccc ttttggttg ccttcaatg gctttcttg gcccacaggt
2221 ccgtattact gtggtgtggg cgagacaaa gcctatggca gggatatcgt ggaggctcac
2281 taccgacct gcttgatgc tgggtcaag attacaggaa caaatgctga ggtcatgcct
2341 gccagtgagg agttccaaat aggacctgt gaaggaaatcc gcatgggaga tcactctgg
2401 gtggccctt tcacttgca tcgagtatgt gaagactttg gggtaatagc aacctttgac
2461 cccaagccca ttctgggaa ctggaatgt gcaggctgcc ataccaact tagcaccaag

FIG. 12 (cont'd)

2521 gccatgcggg aggagaatgg tctgaagcac atcgaggagg ccatcgagaa actaagcaag
2581 cggcaccggt accacattcg agcctacgat cccaaggggg gcctggacaa tgcccgtcgt
2641 ctgactgggt tccacgaaac gtccaacatc aacgactttt ctgctggtgt cgccaatcgc
2701 agtgccagca tccgattcc cggactgtc ggccaggaga agaaaggta ctttgaagac
2761 cgccgccct ctgcaaCtg tgacccttt gcagtgcag aagccatcgt ccgcacatgc
2821 ctttcaatg agactggcga cgagccctc caatacaaaa actaaAGATC Cctatggcta
2881 ttggccAggt tcaatactat gtattggccc tatgcatAT AGTATTCCAT ATATGGGTTT
2941 TCCTATTGAC GTAGATAGCC CCTCCAATG GGCGGTCCA TATACCATAT ATGGGGCTTC
3001 CTAATACCGC CCATAGCCAC TCCCCATTG ACGTCAATGG TCTCTATATA TGGTCTTTCC
3061 TATTGACGTC ATATGGGCGG TCCTATTGAC GTATATGGCG CCTCCCCAT TGACGTCAAT
3121 TACGGTAAAT GGCCCGCTG GCTCAATGCC CATTGACGTC AATAGGACCA CCCACCATG
3181 ACGTCAATGG GATGGCTCAT TGCCATTCA TATCCGTTCT CACGCCCCCT ATTGACGTCA
3241 ATGACGGTAA ATGGCCCACT TGGCAGTACA TCAATATCTA TTAATAGTAA CTTGGCAAGT
3301 ACATTACTAT TGGAAGTACG CCAGGGTACA TTGGCAGTAC TCCCATTGAC GTCAATGGCG
3361 GTAAATGGCC CGCGATGGCT GCCAAGTACA TCCCCATTGA CGTCAATGGG GAGGGGCAAT
3421 GACGCAAATG GGCGTTCCAT TGACGTAAT GGGCGTAGG CGTGCCTAAT GGGAGGTCTA
3481 TATAAGCAAT GCTCGTTTAG GGAACCGCCA TTCTGCCTGG GGACGTCGGA GGAGCTCGAa
3541 agcttctaga cAATTgccgc caccATGATG TCCTTTGTCT CTCTGCTCCT GGTGGCATC
3601 CTaTTCCATG CCACCCAGGC CagtgaACA GGTAGAcctt tcGTAgagat gtacAGTgaa
3661 ATCcccgaaA TTATAcacat gACTgaagga aggGAGctcg tcATTccctg ccggGTTACG
3721 tcaCCTaaca tcACTGTTAC TTTAaaaaag tttccacttG ACactTTGat ccctgatGGA
3781 aaaCGCATAa tctgggacag tAGAAAGggc TTCATCATAc caaatgcaac gtacaaaGAA
3841 ataGGGCTTc tgaccTGTga aGCAACAgtc AATgggCATT TGTATAAGac aaactatCTC
3901 ACAtcCGAC AAaccaatac aatcATAgat gtcGTTctgA GTCCGtctca tggaattGAA
3961 CTAtctGTTg gagaaAAGCT TgtcTTAaat tgtacaGCAa gaACTGAACT Aaatgtgggg
4021 attGACttca actgggaata cCCTtctTCG aagCATcagc ataagaaact tgtaaacCGA
4081 GACCTAaaaa cccagtctgg gAGTGAGatg aagAAGttt tgagcaccTT AACTATAGAT
4141 GGTGTAACcC ggAGTgacca aGGATTGTAC accTGTGCAG CAAtcAGTgg gctgatgacc
4201 aagAAAaAcA GCACAtttgt cAGGgtcCAT gaaaaGACA AAActCACAC ATGCCACCG
4261 TGCCAGCAC CTGAACCTCT GGGGGGACCC TCAGTCTTCC TCTTCCCCC AAAACCCAAG
4321 GACACCCTCA TGATCTCCCG GACCCCTGAG GTCACATGCG TGGTGGTGGA CGTGAGCCAC
4381 GAAGACCTG AGGTCAAGTT CAACTGGTAC GTGGACGGCG TGGAGGTGCA TAATGCCAAG
4441 ACAAAGCCAC GGGAGGAGCA GTACAACAGC ACATATCGTG TGGTCAGCGT CCTCACCGTC
4501 CTGCACCAGG ACTGGCTGAA TGGCAAGGAG TACAAGTGCA AGGTCTCAA CAAAGCCCTC

FIG. 12 (cont'd)

4561 CCAGCCCCCA TCGAGAAAAC CATCTCCAAA GCCAAAGGGC AGCCCCGAGA ACCACAGGTG
 4621 TACACCCTGC CCCCATCCCG GGATGAGCTG ACCAAGAACC AGGTCAGCCT GACCTGCCTG
 4681 GTCAAAGGCT TCTATCCAG CGACATCGCC GTGGAGTGGG AGAGCAATGG GCAGCCGGAG
 4741 AACAACTACA AGACCACGCC TCCCGTGCTG GACTCCGACG GCTCCTTCTT CCTCTACAGC
 4801 AAGCTACCG TGGACAAGAG CAGGTGGCAG CAGGGGAACG TCTTCTCATG CTCCGTGATG
 4861 CATGAGGCTC TGCACAACCA CTACACGCGA AAGAGCCTCT CCCTGTCTCC CGGGAAATGA
 4921 tgagatCtgc agttcgacAT CGATaatcaa cctctggatt acaaaatttg tgaagattg
 4981 actggtattc ttaactatgt tgctcctttt acgctatgtg gatacgctgc ttaatgcct
 5041 ttgtatcatg ctattgcttc ccgtatggct ttcatcttct cctccttgta taaatcctgg
 5101 ttgtgtctc tttatgagga gttgtggccc gttgtcaggc aacgtggcgt ggtgtgcact
 5161 gtgtttgtc acgcaacccc cactggttgg ggcattgcca ccactgtca gctcctttcc
 5221 gggactttcg ctttccccct ccctattgcc acggcggaac tcatcgccgc ctgccttgcc
 5281 cgctgctgga caggggctcg gctgttgggc actgacaatt ccgtgtgtt gtcgggga
 5341 tcatcgctct ttccttggtc gctcgctgt gttgccact ggattctgcg cgggacgtcc
 5401 ttctgtacg tcccttcggc cctcaatcca gcggaccttc cttcccgcg cctgctgccg
 5461 gctctgggc cttctccg tcttcgctt cgccctcaga cgagtcgat ctcctttgg
 5521 gccgcctccc cgcATCGATg ggggaggcta actgaaacac ggaaggagac aataccggaa
 5581 ggaacccgcg ctatgacggc aataaaaaga cagaataaaa cgcacgggtg ttgggtcgtt
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 6121 ATCATGGTCA TAGCTGTTTC CTGTGTGAAA TTGTTATCCG CTCACAATTC CACACAACAT
 6181 ACGAGCCGGA AGCATAAAGT GTAAAGCCTG GGGTGCCTAA TGAGTGAGCT AACTCACATT
 6241 AATTGCGTTG CGCTCACTGC CCGCTTTCCA GTCGGGAAAC CTGTCGTGCC AGTGCATTA
 6301 ATGAATCGGC CAACGCGCGG GGAGAGGCGG TTTGCGTATT GGGCGCTCTT CCGCTTCCTC
 6361 GCTCACTGAC TCGTGCCTG CGGTGCTCG GTCGCGGCGA GCGGTATCAG CTCACTCAA
 6421 GGCGGTAATA CGGTTATCCA CAGAATCAGG GGATAACGCA GGAAAGAACA TGTGAGCAA
 6481 AGGCCAGCAA AAGGCCAGGA ACCGTAAAAA GGCCGCGTTG CTGGCGTTTT TCCATAGGCT
 6541 CCGCCCCCT GACGAGCATC ACAAAAATCG ACGCTCAAGT CAGAGGTGGC GAAACCCGAC

FIG. 12 (cont'd)

6601 AGGACTATAA AGATACCAGG CGTTTCCCC TGGAAGCTCC CTCGTGCGCT CTCCTGTTCC
6661 GACCCTGCCG CTTACCGGAT ACCTGTCCGC CTTTCTCCCT TCGGGAAGCG TGGCGCTTTC
6721 TCATAGCTCA CGCTGTAGGT ATCTCAGTTC GGTGTAGGTC GTTCGCTCCA AGCTGGGCTG
6781 TGTGCACGAA CCCCCGTTC AGCCCGACCG CTGCGCCTTA TCCGGTAACT ATCGTCTTGA
6841 GTCCAACCCG GTAAGACACG ACTTATCGCC ACTGGCAGCA GCCACTGGTA ACAGGATTAG
6901 CAGAGCGAGG TATGTAGGCG GTGCTACAGA GTTCTTGAAG TGGTGGCCTA ACTACGGCTA
6961 CACTAGAAGA ACAGTATTTG GTATCTGCGC TCTGCTGAAG CCAGTTACCT TCGGAAAAAG
7021 AGTTGGTAGC TCTTGATCCG GCAAACAAAC CACCGCTGGT AGCGGTGGTT TTTTGTGTTG
7081 CAAGCAGCAG ATTACGCGCA GAAAAAAGG ATCTCAAGAA GATCCTTTGA TCTTTTCTAC
7141 GGGGTCTGAC GCTCAGTGGA ACGAAACTC ACGTTAAGGG ATTTTGGTCA TGAGATTATC
7201 AAAAAGGATC TTCACCTAGA TCCTTTTAAA TAAAAATGA AGTTTAAAT CAATCTAAAG
7261 TATATATGAG TAACTTGGT CTGACAGTTA CCAATGCTTA ATCAGTGAGG CACCTATCTC
7321 AGCGATCTGT CTATTCGTT CATCCATAGT TGCCTGACTC CCCGTCGTGT AGATAACTAC
7381 GATACGGGAG GGCTTACCAT CTGGCCCCAG TGCTGCAATG ATACCGCGAG ACCCAGCTC
7441 ACCGGCTCCA GATTATCAG CAATAAACCA GCCAGCCGGA AGGGCCGAGC GCAGAAGTGG
7501 TCCTGCAACT TTATCCGCT CCATCCAGTC TATTAATTGT TGCCGGAAG CTAGAGTAAG
7561 TAGTTCGCCA GTTAATAGTT TGCGCAACGT TGTGCCATT GCTACAGGCA TCGTGGTGTC
7621 ACGCTCGTCG TTTGGTATGG CTTCAATCAG CTCCGGTTCC CAACGATCAA GGCGAGTTAC
7681 ATGATCCCC ATGTTGTGCA AAAAAGCGGT TAGCTCCTTC GGTCTCCGA TCGTTGTCAG
7741 AAGTAAGTTG GCCGCAGTGT TATCACTCAT GGTTATGGCA GCACTGCATA ATTCTTTAC
7801 TGTCATGCCA TCCGTAAGAT GCTTTTCTGT GACTGGTGAG TACTCAACCA AGTCATTCTG
7861 AGAATAGTGT ATGCGGCGAC CGAGTTGCTC TTGCCCGCG TCAATACGGG ATAATACCGC
7921 GCCACATAGC AGAACTTTAA AAGTGCTCAT CATTGGAAAA CGTTCTTCGG GGCGAAACT
7981 CTCAAGGATC TTACCGCTGT TGAGATCCAG TTCGATGTAA CCCACTCGTG CACCCAACTG
8041 ATCTTCAGCA TCTTTTACTT TCACCAGCGT TTCTGGGTGA GCAAAAACAG GAAGGCAAAA
8101 TGCCGCAAAA AAGGGAATAA GGGCGACACG GAAATGTTGA ATACTCATAC TCTTCTTTT
8161 TCAATATTAT TGAAGCATTT ATCAGGGTTA TTGTCTCATG AGCGGATACA TATTTGAATG
8221 TATTTAGAAA AATAACAAA TAGGGGTTCC GCGCACATTT CCCCAGAAAAG TGCCACCTGA
8281 CGTCTAAGAA ACCATTATTA TCATGACATT AACCTATAAA AATAGGCGTA TCACGAGGCC
8341 CTTTCGTC

// (SEQ ID NO: 4)

FIG. 13

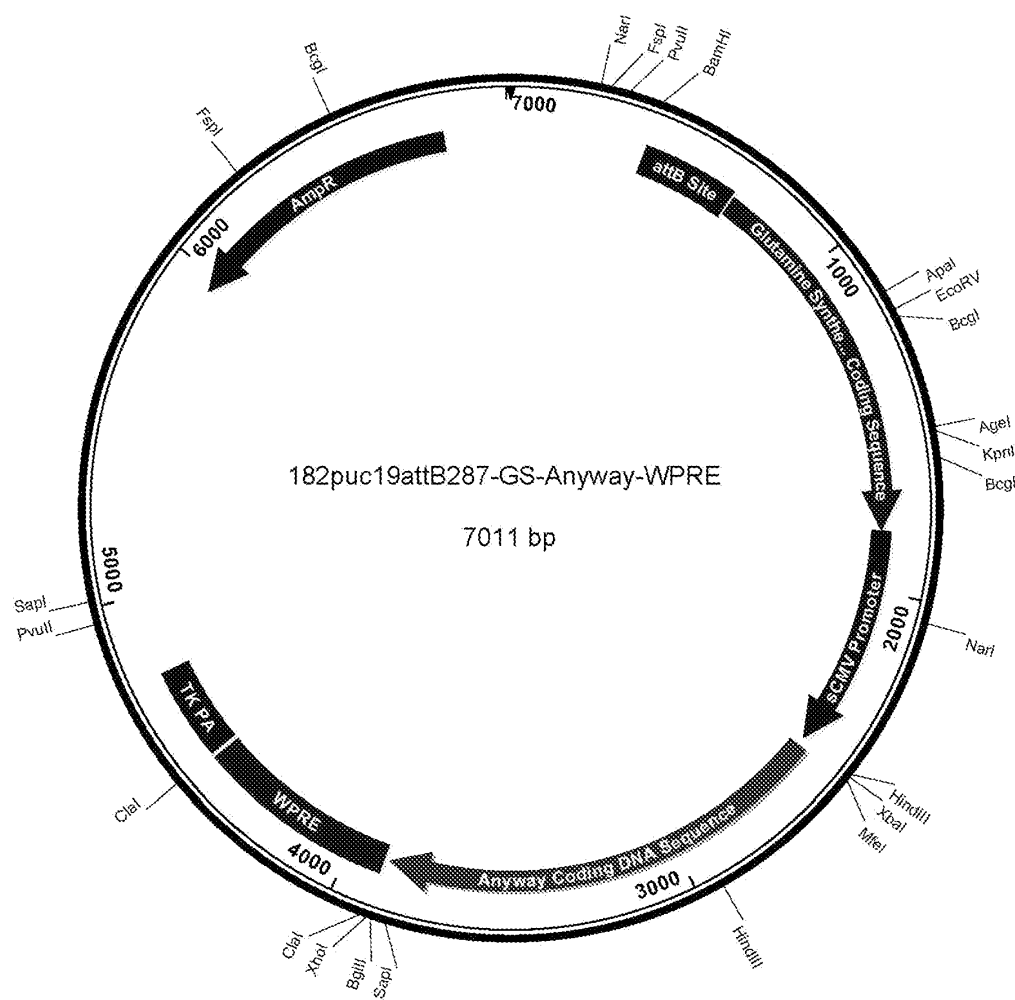


FIG. 14

LOCUS 182puc19attB287- 7011 bp DNA linear 11-MAY-2021

FEATURES Location/Qualifiers

misc_feature 403..689
/note="attB Site"

misc_feature 699..1820
/note="Glutamine Synthetase Coding Sequence"

misc_feature 1821..2494
/note="sCMV Promoter"

misc_feature 2577..3191
/note="Re-coded based on human KDR mRNA"

misc_feature 2520..3875
/note="Anyway Coding DNA Sequence"

misc_feature 3894..4494
/note="WPRE"

misc_feature 4495..4766
/note="TK PA"

misc_feature complement(5951..6811)
/note="AmpR"

source 1..7011
/dnas_title="182puc19attB287-GS-Anyway-WPRE003"

ORIGIN

1 TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGTCCCG GAGACGGTCA
61 CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCG TCAGGGCGCG TCAGCGGGTG
121 TTGGCGGGTG TCGGGGCTGG CTTAACTATG CGGCATCAGA GCAGATTGTA CTGAGAGTGC
181 ACCATATGCG GTGTGAAATA CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGCGCC
241 ATTCGCCATT CAGGCTGCGC AACTGTTGGG AAGGGCGATC GGTGCGGGCC TCTTCGCTAT
301 TACGCCAGCT GCGGAAAGGG GGATGTGCTG CAAGGCGATT AAGTTGGGTA ACGCCAGGGT
361 TTTCCCAGTC ACGACGTTGT AAAACGACGG CCAAGTGGGAT CCcgtcgac gatgtaggtc
421 acggtctcga agccgcggtg cgggtgccag ggcgtgccct tgggtctccc gggcgcgtag
481 tccacctcac ccatctggtc catcatgatg aacgggtcga ggtggcggtg gttgatcccg
541 gcgaacgcgc ggcgcaccgg gaagccctcg ccctcgaaac cgctgggcgc ggtggtcacg
601 gtgagcacgg gacgtgagc ggcgtcgcg ggtgcggata cgcgggcgag cgtcagcggg
661 ttctcgacgg tcacggcggg catgtcgac CTTccacat gccaccta gcaagtccc

FIG. 14 (cont'd)

721 acttgaacaa aaacatcaag caaatgtact tgtgcctgcc ccagggtgag aaagtccaag
781 ccatgtatat ctgggttgat ggtactggag aaggactgcg ctgcaaaacc cgcaccctgg
841 actgtgagcc caagtgtga gaagagttac ctgagtggaa tttgatggc tctagtacct
901 ttcaagtctga gggctccaac agtgacatgt atctcagccc tgttgccatg ttcggggacc
961 ccttcgcag agatccaac aagctggtgt tctgtgaagt tttcaagtac aaccggaagc
1021 ctgcagagac caatttaagg cactcgtga aacggataat ggacatgggt agcaaccagg
1081 acccctggtt tggaatggaa caggagtata ctctgatggg aacagatggg caccctttg
1141 gttggccttc caatggctt cctgggcccc aaggctcgta ttactgtgtg gtggcgag
1201 acaaagccta tggcagggat atcgtggagg ctactaccg cgcctgctg tatgctggg
1261 tcaagattac aggaacaat gctgaggta tgcctgcca gtgggagttc caaataggac
1321 cctgtgaagg aatccgatg ggagatcatc tctgggtggc ccgttcatc ttgcatcgag
1381 tatgtgaaga ctttgggta atagcaacct ttgacccaa gccattcct gggaactgga
1441 atggtgcagg ctgccatacc aactttagca ccaaggccat gcgggaggag aatggtctga
1501 agcacatcga ggaggccatc gagaactaa gcaagcggca ccggtaccac attcagcct
1561 acgatccaa ggggggctg gacaatgcc gtcgtctgac tgggttcac gaaactcca
1621 acatcaacga cttttctgt ggtgtcgca atcgagtc cagcatccg attccccga
1681 ctgtcgcca ggagaagaa ggttactttg aagaccgccc cccctctgcc aaCtgtgacc
1741 ccttgcagt gacagaagcc atcgtccga catgccttct caatgagact ggcgacgagc
1801 cctccaata caaaaactaa AGATCCtat ggctattggc cAggttcaat actatgtatt
1861 ggccctatgc catATAGTAT TCCATATATG GGTTCCTA TTGACGTAGA TAGCCCCTCC
1921 CAATGGGCGG TCCCATATAC CATATATGGG GCTTCCTAAT ACCGCCATA GCGACTCCCC
1981 CATTGACGTC AATGGTCTCT ATATATGGTC TTTCCTATTG ACGTCATATG GGCGGTCTA
2041 TTGACGTATA TGGCGCTCC CCCATTGACG TCAATTACGG TAAATGGCCC GCCTGGCTCA
2101 ATGCCATTG ACGTCAATAG GACCACCCAC CATTGACGTC AATGGGATGG CTCATTGCCC
2161 ATTCATATCC GTTCTCACGC CCCCTATTGA CGTCAATGAC GGTAAATGGC CCACTTGCCA
2221 GTACATCAAT ATCTATTAAT AGTAACTGG CAAGTACATT ACTATTGGAA GTACGCCAGG
2281 GTACATTGGC AGTACTCCA TTGACGTCAA TGGCGGTAAA TGGCCCGCA TGGCTGCCAA
2341 GTACATCCCC ATTGACGTCA ATGGGGAGGG GCAATGACGC AAATGGGCGT TCCATTGACG
2401 TAAATGGGCG GTAGGCGTGC CTAATGGGAG GTCTATATAA GCAATGCTCG TTAGGGAAC
2461 CGCCATTCTG CCTGGGGACG TCGGAGGAGC TCGAaagctt ctagacAATT gccgccaccA
2521 TGATGTCCTT TGTCTCTCTG CTCCTGGTTG GCATCCTaTT CCATGCCACC CAGGCCagtg
2581 atACAGGTAG AcctttcGTA gagatgtacA GTgaaATCcc cgaATTATA cacatgACTg
2641 aaggaaggGA GctcgtcATT ccctgccggG TTACGtcaCC TaacatcACT GTTACTTTAa
2701 aaaagtttcc acttGACact TTGatccctg atGGAaaaCG CATaacttg gacagtAGAA

FIG. 14 (cont'd)

2761 AGggcTTCAT CATAtcaaat gcaacgtaca aaGAAataGG GCTTctgacc TGTgaaGCAA
 2821 CAgtcAATgg gCATTGTAT AAGacaaact atCTCACa tCGACAAacc aatacaatcA
 2881 TAGatgtcGT TctgAGTCCG tctcatggaa ttGAACTAtc tGTTggagaa AAGCTTgtcT
 2941 TAAattgtac aGCAagaACT GAACTAaatg tggggattGA Cttcaactgg gaatacCCTt
 3001 ctTCGaagCA Tcagcataag aaacttghtaa acCGAGACCT Aaaaaccag tctgggAGTG
 3061 AGatgaagAA Gtttttgagc accTTAACTA TAGATGGTGT AACCCggAGT gaccaaGGAT
 3121 TGTACaccTG TGCAGCATcc AGTgggctga tgaccaagAA AaacAGCACA ttgtcAGGg
 3181 tcCATgaaaa aGACAAAAC CACACATGCC CACCGTGCC AGCACCTGAA CTCCTGGGGG
 3241 GACCCTCAGT CTTCTCTTC CCCCCAAAAC CCAAGGACAC CCTCATGATC TCCCGACCC
 3301 CTGAGGTCAC ATGCGTGGTG GTGGACGTGA GCCACGAAGA CCCTGAGGTC AAGTTCAACT
 3361 GGTACGTGGA CGGCGTGGAG GTGCATAATG CCAAGACAAA GCCACGGGAG GAGCAGTACA
 3421 ACAGCACATA TCGTGTGGTC AGCGTCTCA CCGTCTGCA CCAGGACTGG CTGAATGGCA
 3481 AGGAGTACAA GTGCAAGGTC TCCAACAAAG CCCTCCCAGC CCCCATCGAG AAAACCATCT
 3541 CCAAAGCCAA AGGGCAGCCC CGAGAACCAC AGGTGTACAC CCTGCCCCCA TCCCGGATG
 3601 AGCTGACCAA GAACCAGGTC AGCCTGACCT GCCTGGTCAA AGGCTTCTAT CCCAGCGACA
 3661 TCGCCGTGGA GTGGGAGAGC AATGGGCAGC CGGAGAACAA CTACAAGACC ACGCTCCCCG
 3721 TGCTGGACTC CGACGGCTCC TTCTCTCT ACAGCAAGCT CACCGTGGAC AAGAGCAGGT
 3781 GGCAGCAGGG GAACGTCTTC TCATGCTCCG TGATGCATGA GGCTCTGCAC AACCACTACA
 3841 CGCAGAAGAG CCTCTCCCTG TCTCCCGGA AATGAtgaga tCtcgagttc gacATCGATa
 3901 atcaacctct ggattacaaa atttgtgaaa gattgactgg tattcttaac tatgttgctc
 3961 cttttacgct atgtggatac gctgctttaa tgcctttgta tcatgctatt gcttcccgtg
 4021 tggctttcat tttctctcc ttgtataaat cctggttgct gtctctttat gaggagtgt
 4081 ggcccgttgt caggcaacgt ggcggtgtgt gcactgtgtt tgcagacgca acccccactg
 4141 gttggggcat tgccaccacc tgcagctcc tttccgggac tttcgtttc ccctcccta
 4201 ttgccacggc ggaactcatc gccgcctgcc ttgccgctg ctggacaggg gctcggctgt
 4261 tgggcactga caattccgtg gtgtgtcgg ggaaatcatc gtcctttct tggctgctc
 4321 cctgtgtgc cacctggatt ctgcgcggga cgtcctctg ctacgtccct tcggccctca
 4381 atccagcggg ccttcttcc cgcggcctgc tgccggctct cgggcctctt ccgcgtctt
 4441 gccttcgcc tcagacgagt cggatctccc ttggggcgc cttcccgAT CGATggggga
 4501 ggctaactga aacacggaag gagacaatac cggaaggaac ccgcgctatg acggcaataa
 4561 aaagacagaa taaaacgcac ggggtttggg tcgtttgtc ataaacgcgg gggtcggctc
 4621 cagggtggc actctgtcga taccaccg agacccatt ggggccaata cggccggtt
 4681 tcttctttt cccacccca cccccaagt tcgggtgaag gcccagggt cgagccaac
 4741 gtcggggcgg caggccctgc catagcccta gcAGCTTGGC GTAATCATGG TCATAGCTGT

FIG. 14 (cont'd)

4801 TTCCTGTGTG AAATTGTTAT CCGCTCACAA TTCCACACAA CATACGAGCC GGAAGCATAA
4861 AGTGTAAGC CTGGGGTGCC TAATGAGTGA GCTAACTCAC ATTAATTGCG TTGCGCTCAC
4921 TGCCCGCTTT CCACTCGGGA AACCTGTCGT GCCAGCTGCA TTAATGAATC GGCCAACGCG
4981 CGGGGAGAGG CGGTTTGCCT ATTGGGCGCT CTTCCGCTTC CTCGCTCACT GACTCGCTGC
5041 GCTCGGTCGT TCGGCTGCGG CGAGCGGTAT CAGCTCACTC AAAGGCGGTA ATACGTTAT
5101 CCACAGAATC AGGGGATAAC GCAGGAAAGA ACATGTGAGC AAAAGGCCAG CAAAAGGCCA
5161 GGAACCGTAA AAAGGCCGCG TTGCTGGCGT TTTTCCATAG GCTCCGCCCC CCTGACGAGC
5221 ATCACAAAAA TCGACGCTCA AGTCAGAGGT GGCGAAACCC GACAGGACTA TAAAGATACC
5281 AGGCGTTTCC CCCTGGAAGC TCCCTCGTGC GCTCTCCTGT TCCGACCCTG CCGCTTACCG
5341 GATACTGTC CGCCTTCTC CCTTCGGGAA GCGTGGCGCT TTCTCATAGC TCACGCTGTA
5401 GGTATCTCAG TTCGGTGTAG GTCGTTGCT CCAAGCTGGG CTGTGTGCAC GAACCCCCG
5461 TTCAGCCCGA CCGTGCGCC TTATCCGTA ACTATCGTCT TGAGTCCAAC CCGTAAGAC
5521 ACGACTTATC GCCACTGGCA GCAGCCACTG GTAACAGGAT TAGCAGAGCG AGGTATGTAG
5581 GCGGTGCTAC AGAGTTCTT AAGTGGTGGC CTAACACGG CTACACTAGA AGAACAGTAT
5641 TTGGTATCTG CGCTCTGCTG AAGCCAGTTA CCTTCGGAAA AAGAGTTGGT AGCTCTTGAT
5701 CCGGCAAAAC AACCACCGCT GGTAGCGGTG GTTTTTTGT TTGCAAGCAG CAGATTACGC
5761 GCAGAAAAAA AGGATCTCAA GAAGATCCTT TGATCTTTT TACGGGGTCT GACGCTCAGT
5821 GGAACGAAAA CTCACGTAA GGGATTTTGG TCATGAGATT ATCAAAAAGG ATCTTACCT
5881 AGATCCTTTT AAATTAATAA TGAAGTTTA AATCAATCTA AAGTATATAT GAGTAACTT
5941 GGTCTGACAG TTACCAATGC TTAATCAGTG AGGCACCTAT CTCAGCGATC TGTCTATTC
6001 GTTCATCCAT AGTTGCCTGA CTCCCCGTCG TGTAGATAAC TACGATACGG GAGGGCTTAC
6061 CATCTGGCCC CAGTGCTGCA ATGATACCGC GAGACCCACG CTCACCGGCT CCAGATTAT
6121 CAGCAATAAA CCAGCCAGCC GGAAGGGCCG AGCGCAGAAG TGGTCCTGCA ACTTTATCCG
6181 CCTCCATCCA GTCTATTAAT TGTTGCCGGG AAGCTAGAGT AAGTAGTTCG CCAGTTAATA
6241 GTTTGCGCAA CGTTGTTGCC ATTGCTACAG GCATCGTGGT GTCACGCTCG TCGTTTGTA
6301 TGGCTTCATT CAGCTCCGGT TCCAACGAT CAAGGCGAGT TACATGATCC CCCATGTTGT
6361 GCAAAAAAGC GGTTAGCTCC TTCGGTCCTC CGATCGTTGT CAGAAGTAAG TTGGCCGAG
6421 TGTATCACT CATGGTTATG GCAGCACTGC ATAATTCTCT TACTGTCATG CCATCCGTAA
6481 GATGCTTTT TGTGACTGGT GAGTACTCAA CCAAGTCATT CTGAGAATAG TGTATGCGGC
6541 GACCGAGTTG CTCTTGCCCG GCGTCAATAC GGGATAATAC CGCGCCACAT AGCAGAACTT
6601 TAAAGTGCT CATATTGGA AAACGTTCTT CGGGGCGAAA ACTCTCAAGG ATCTTACCGC
6661 TGTTGAGATC CAGTTCGATG TAACCACTC GTGCACCCAA CTGATCTTCA GCATCTTTA
6721 CTTTACCAG CGTTTCTGGG TGAGCAAAAA CAGGAAGGCA AAATGCCGCA AAAAAGGGAA
6781 TAAGGGCGAC ACGGAAATGT TGAATACTCA TACTCTTCT TTTCAATAT TATTGAAGCA

FIG. 14 (cont'd)

6841 TTTATCAGGG TTATTGTCTC ATGAGCGGAT ACATATTTGA ATGTATTTAG AAAAATAAAC
6901 AAATAGGGGT TCCGCGCACA TTTCCCCGAA AAGTGCCACC TGACGTCTAA GAAACCATTA
6961 TTATCATGAC ATTAACCTAT AAAAATAGGC GTATCACGAG GCCCTTTCGT C

// (SEQ ID NO: 5)

FIG. 15

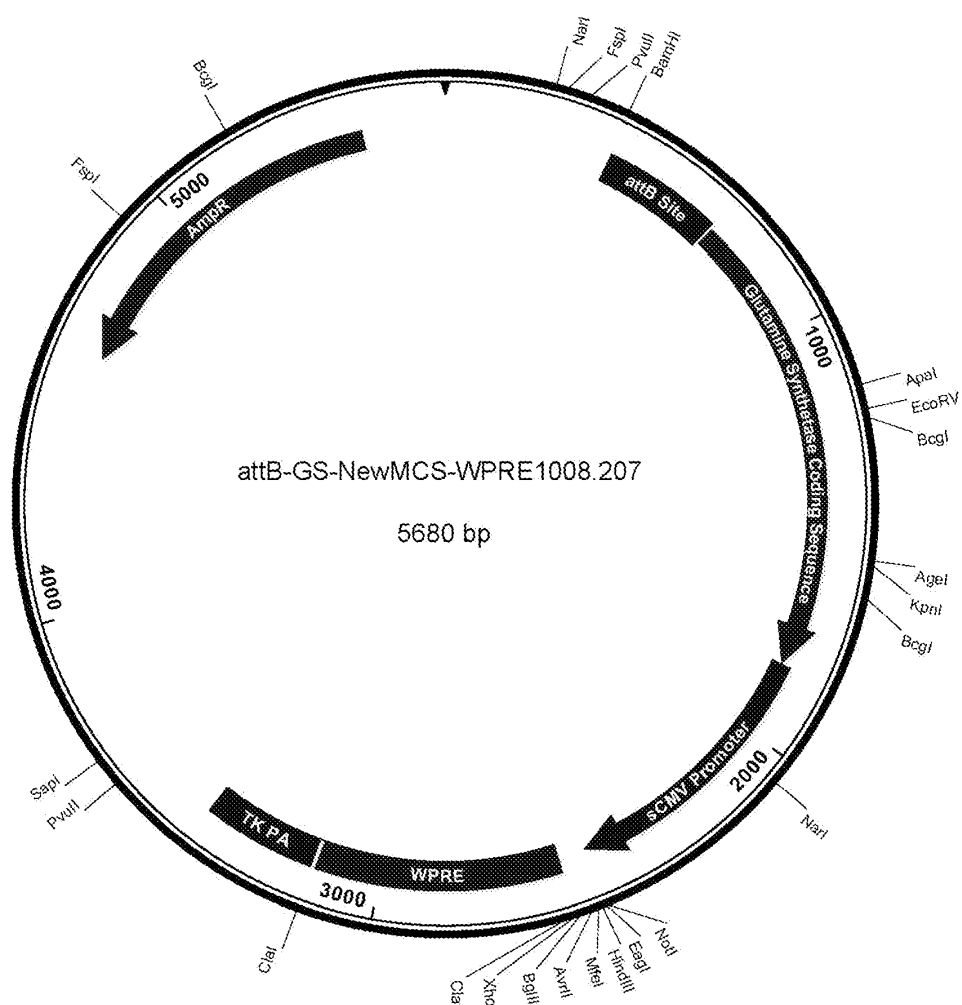


FIG. 16

LOCUS 207puc19attB287- 5680 bp DNA linear 11-MAY-2021

FEATURES Location/Qualifiers

misc_feature (402..690)
/note="attB Recombination Site"

misc_feature 699..1820
/note="Glutamine Synthetase Coding Sequence"

misc_feature 1822..2494
/note="CMV Promoter"

misc_feature 2494..2555
/note="MCS"

misc_feature 2562..3162
/note="WPRE"

misc_feature 3163..3434
/note="TK PA"

misc_feature complement(4620..5480)
/note="AmpR"

source 1..5680
/dnas_title="207puc19attB287-GS-NewMCS-WPRE-TKpa"

ORIGIN

1 TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGTCCCG GAGACGGTCA
61 CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCG TCAGGGCGCG TCAGCGGGTG
121 TTGGCGGGTG TCGGGGCTGG CTTAACTATG CGGCATCAGA GCAGATTGTA CTGAGAGTGC
181 ACCATATGCG GTGTGAAATA CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGCGCC
241 ATTCGCCATT CAGGCTGCGC AACTGTTGGG AAGGGCGATC GGTGCGGGCC TCTTCGCTAT
301 TACGCCAGCT GGCAGAAAGG GGATGTGCTG CAAGGCGATT AAGTTGGGTA ACGCCAGGGT
361 TTTCCCAGTC ACGACGTTGT AAAACGACGG CCACTGGGAT CCcgtcgac gatgtaggtc
421 acggtctcga agccgcggtg cgggtgccag ggcgtgccct tgggtcccc gggcgctac
481 tccacctcac ccatctggtc catcatgatg aacgggtcga ggtggcgta gttgatccg
541 gcgaacgcgc ggcgcaccgg gaagccctcg ccctcgaaac cgctgggagc ggtggtcacg
601 gtgagcacgg gacgtcgac ggcgtcggcg ggtgcggata cgcggggcag cgtcagcggg
661 ttctgacgg tcacggcggg catgtcgac CTTCCACcat ggccacctca gcaagttccc
721 actgaacaa aaacatcaag caaatgtact tgtgcctgcc ccagggtgag aaagtccaag
781 ccatgtatat ctgggttgat ggtactggag aaggactgag ctgcaaaacc cgccacctgg

FIG. 16 (cont'd)

841 actgtgagcc caagtgtgta gaagagttac ctgagtggaa tttgatggc tctagtacct
901 ttcaagtctga gggctccaac agtgacatgt atctcagccc tgttgccatg tttcgggacc
961 ccttcgcgag agatcccaac aagctgggtg tctgtgaagt tttcaagtac aaccggaagc
1021 ctgcagagac caatttaagg cactcgtgta aacggataat ggacatgggtg agcaaccagc
1081 acccctggtt tggaatggaa caggagtata ctctgatggg aacagatggg cacccttttg
1141 gttggccttc caatggcctt cctgggcccc aaggtccgta ttactgtggt gtggcgagcag
1201 acaaagccta tggcagggat atcgtggagg ctactaccg cgctgcttg tatgtgggg
1261 tcaagattac aggaacaaat gctgaggta tgccctgcca gtgggagttc caaataggac
1321 cctgtgaagg aatccgcatg ggagatcatc tctgggtggc ccgtttcatc ttgcatcgag
1381 tatgtgaaga ctttgggta atagcaacct ttgacccaa gccattcct gggaactgga
1441 atggtgcagg ctccatacc aactttagca ccaaggccat gcgggaggag aatggtctga
1501 agcacatcga ggagccatc gagaaactaa gcaagcggca ccggtaccac attcagcct
1561 acgatccaa ggggggcctg gacaatgccc gtcgtctgac tgggtccac gaaactcca
1621 acatcaacga cttttctgt ggtgtcgcca atcgagtgc cagcatccgc attccccgga
1681 ctgtcgcca ggagaagaaa ggttactttg aagaccgccc cccctctgcc aaCtgtgacc
1741 cctttgcagt gacagaagcc atcgtccga catgccttct caatgagact ggcgacgagc
1801 cctccaata caaaaactaa AGATCCtat ggctattggc cAggttcaat actatgtatt
1861 ggccctatgc catATAGTAT TCCATATATG GGTTCCTA TTGACGTAGA TAGCCCCTCC
1921 CAATGGGCGG TCCCATATAC CATATATGGG GCTTCCTAAT ACCGCCATA GCCACTCCCC
1981 CATTGACGTC AATGGTCTCT ATATATGGTC TTTCCTATTG ACGTCATATG GGCGGTCTTA
2041 TTGACGTATA TGGCGCCTCC CCCATTGACG TCAATTACGG TAAATGGCCC GCCTGGCTCA
2101 ATGCCCATTG ACGTCAATAG GACCACCCAC CATTGACGTC AATGGGATGG CTCATTGCCC
2161 ATTCATATCC GTTCTCACGC CCCCTATTGA CGTCAATGAC GGTAAATGGC CCACTTGCCA
2221 GTACATCAAT ATCTATTAAT AGTAACTTGG CAAGTACATT ACTATTGGAA GTACGCCAGG
2281 GTACATTGGC AGTACTCCA TTGACGTCAA TGGCGGTAAA TGGCCCGCGA TGGCTGCCAA
2341 GTACATCCCC ATTGACGTCA ATGGGGAGGG GCAATGACGC AAATGGGCGT TCCATTGACG
2401 TAAATGGGCG GTAGGCGTGC CTAATGGGAG GTCTATATAA GCAATGCTCG TTAGGGAAC
2461 CGCCATTCTG CCTGGGGACG TCGGAGGAGC TCGAaGCGGC CGCaagcttc AATTgAGGCC
2521 TCCTAGGTTA ATTAAGTTTA AACAGATCTC tcgagttcga cATCGATaat caacctctgg
2581 attacaaaat ttgtgaaaga ttgactggta ttcttaacta tgttgctcct ttacgctat
2641 gtggatagc tgctttaatg cctttgatc atgctattgc ttccgcatg gctttcattt
2701 tctcctcctt gtataaatcc tgggtgctgt ctctttatga ggagttgtgg cccgttgtca
2761 ggcaactgg cggtgtgtgc actgtgttg ctgacgcaac cccactggt tggggcattg
2821 ccaccactg tcagctcctt tccgggactt tcgctttccc cctccctatt gccacggcgg

FIG. 16 (cont'd)

2881 aactcatcgc cgctgcctt gcccgctgct ggacaggggc tcggctgttg ggcactgaca
2941 attccgtggt gttgtcgggg aaatcatcgt ccttccttg gctgctgcc tgtgttgcca
3001 cctggattct gcgcgggacg tccttctgct acgtcccttc ggccctcaat ccagcggacc
3061 ttccttccc cggcctgctg cggctctgc ggcccttcc gcgtcttgc cttgccctc
3121 agacgagtcg gatctccctt tggccgcct cccgcATCG ATgggggagg ctaactgaaa
3181 cacggaagga gacaataccg gaaggaacct gcgctatgac ggcaataaaa agacagaata
3241 aaacgcacgg gtgttgggtc gttgttcat aaacgcgggg ttcggtccca gggctggcac
3301 tctgtcgata cccaccgag accccattgg ggccaatacg cccgcgttcc ttcctttcc
3361 ccacccacc cccaagtgc ggtgaaggc ccagggtcgc cagccaacgt cggggcggca
3421 ggccctgcc tagccctagc AGCTTGCCcG TAATCATGGT CATAGCTGTT TCCTGTGTGA
3481 AATTGTTATC CGCTCACAAT TCCACACAAC ATACGAGCCG GAAGCATAAA GTGTAAAGCC
3541 TGGGGTGCCT AATGAGTGAG CTAATCACA TTAATTGCGT TGCCTCACT GCCCGCTTC
3601 CAGTCGGGAA ACCTGCTGTG CCAGCTGCAT TAATGAATCG GCCAACGCGC GGGGAGAGGC
3661 GGTTTGCCTA TTGGGCGCTC TTCCGCTTC TCGCTCACTG ACTCGCTGCG CTCGGTCTGT
3721 CGGCTGCGGC GAGCGGTATC AGCTCACTCA AAGGCGGTAA TACGGTTATC CACAGAATCA
3781 GGGGATAACG CAGGAAAGAA CATGTGAGCA AAAGGCCAGC AAAAGGCCAG GAACCGTAAA
3841 AAGGCCGCGT TGCTGGCGTT TTTCCATAGG CTCCGCCCC CTGACGAGCA TCACAAAAAT
3901 CGACGCTCAA GTCAGAGGTG GCGAAACCCG ACAGGACTAT AAAGATACCA GGCCTTTCCC
3961 CCTGGAAGCT CCCTCGTGCG CTCTCCTGTT CCGACCCTGC CGCTTACCGG ATACCTGTCC
4021 GCCTTTCTCC CTTGCGGAAG CGTGGCGCTT TCTCATAGCT CACGCTGTAG GTATCTCAGT
4081 TCGGTGTAGG TCGTTCGCTC CAAGCTGGGC TGTGTGCACG AACCCCCCGT TCAGCCCGAC
4141 CGCTGCGCCT TATCCGTAA CTATCGTCTT GAGTCCAACC CGTAAGACA CGACTTATCG
4201 CCACTGGCAG CAGCCACTGG TAACAGGATT AGCAGAGCGA GGTATGTAGG CGGTGCTACA
4261 GAGTTCTTGA AGTGGTGGCC TAACTACGGC TAACTAGAA GAACAGTATT TGGTATCTGC
4321 GCTCTGCTGA AGCCAGTTAC CTTGCGAAAA AGAGTTGGTA GCTCTTGATC CGGCAACAA
4381 ACCACCGCTG GTAGCGGTGG TTTTGTGTG TGCAAGCAGC AGATTACGCG CAGAAAAAA
4441 GGATCTCAAG AAGATCCTT GATCTTTCT ACGGGGTCTG ACGCTCAGTG GAACGAAAAC
4501 TCACGTTAAG GGATTTTGGT CATGAGATTA TCAAAAAGGA TCTTACCTA GATCCTTTA
4561 AATTAATAAT GAAGTTTAA ATCAATCTAA AGTATATATG AGTAACTTG GTCTGACAGT
4621 TACCAATGCT TAATCAGTGA GGCACCTATC TCAGCGATCT GTCTATTTG TTCATCCATA
4681 GTTGCTGAC TCCCGTCGT GTAGATAACT ACGATACGGG AGGGCTTACC ATCTGGCCCC
4741 AGTGCTGCAA TGATACCGCG AGACCCACGC TCACCGGCTC CAGATTATC AGCAATAAAC
4801 CAGCCAGCCG GAAGGGCCGA GCGCAGAAGT GGTCTGCAA CTTTATCCGC CTCCATCCAG
4861 TCTATTAATT GTTGCCGGGA AGTAGAGTA AGTAGTTCGC CAGTTAATAG TTTGCGCAAC

FIG. 16 (cont'd)

4921 GTTGTTGCCA TTGCTACAGG CATCGTGGTG TCACGCTCGT CGTTTGGTAT GGCTTCATTC
4981 AGCTCCGGTT CCCAACGATC AAGGCGAGTT ACATGATCCC CCATGTTGTG CAAAAAGCG
5041 GTTAGTCCT TCGGTCCTCC GATCGTTGTC AGAAGTAAGT TGGCCGCAGT GTTATCACTC
5101 ATGGTTATGG CAGCACTGCA TAATTCTCTT ACTGTCATGC CATCCGTAAG ATGCTTTTCT
5161 GTGACTGGTG AGTACTCAAC CAAGTCATTC TGAGAATAGT GTATGCGGCG ACCGAGTTGC
5221 TCTTGCCCGG CGTCAATACG GGATAATACC GCGCCACATA GCAGAACTTT AAAAGTGCTC
5281 ATCATTGGAA AACGTTCTTC GGGGCGAAAA CTCTCAAGGA TCTTACCGCT GTTGAGATCC
5341 AGTTCGATGT AACCCACTCG TGCACCCAAC TGATCTTCAG CATCTTTTAC TTTCACCAGC
5401 GTTCTGGGT GAGCAAAAAC AGGAAGGCAA AATGCCGCAA AAAAGGGAAT AAGGGCGACA
5461 CGGAAATGTT GAATACTCAT ACTCTTCCTT TTTCAATATT ATTGAAGCAT TTATCAGGGT
5521 TATTGTCTCA TGAGCGGATA CATATTTGAA TGTATTTAGA AAAATAAACA AATAGGGGTT
5581 CCGCGCACAT TTCCCGAAA AGTGCCACCT GACGTCTAAG AAACCATTAT TATCATGACA
5641 TTAACCTATA AAAATAGGCG TATCACGAGG CCCTTTCGTC

// (SEQ ID NO: 6)

FIG. 17

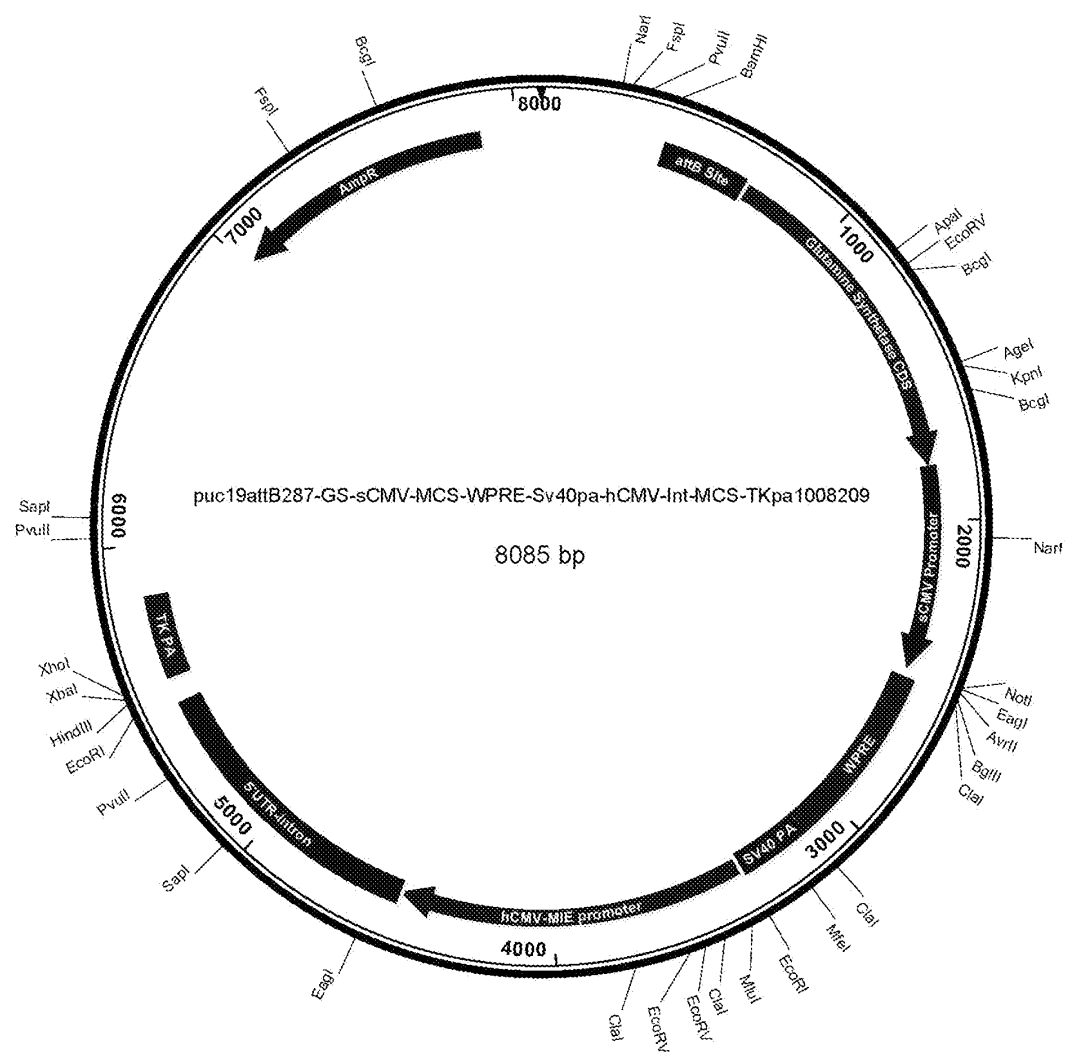


FIG. 18

LOCUS RCpuc19attB287-G 8085 bp DNA linear 12-MAY-2021

FEATURES Location/Qualifiers

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misc_feature 699..1820
/note="Glutamine Synthetase CDS"

misc_feature 1822..2495
/note="sCMV Promoter"

misc_feature 2526..3124
/note="WPRE"

misc_feature 3128..3359
/note="SV40 PA"

misc_feature 3375..4517
/note="hCMV-MIE promoter"

misc_feature 4518..5482
/note="5'UTR-intron"

misc_feature 5492..5564
/note="MCS II"

misc_feature 2498..2523
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misc_feature complement(402..690)
/note="attB Site"

misc_feature complement(7025..7885)
/note="AmpR"

source 1..8085
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ORIGIN

1 TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGCTCCCG GAGACGGTCA
61 CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCG TCAGGGCGCG TCAGCGGGTG
121 TTGGCGGGTG TCGGGGCTGG CTTAACTATG CGGCATCAGA GCAGATTGTA CTGAGAGTGC
181 ACCATATGCG GTGTGAAATA CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGCGCC
241 ATTCGCCATT CAGGCTGCGC AACTGTTGGG AAGGGCGATC GGTGCGGGCC TCTTCGCTAT
301 TACGCCAGCT GCGGAAAGGG GGATGTGCTG CAAGGCGATT AAGTTGGGTA ACGCCAGGGT

FIG. 18 (cont'd)

361 TTTCCCAGTC ACGACGTTGT AAAACGACGG CCAAGTGGGAT CCcgtcgac gatgtaggtc
421 acggtctcga agccgcggtg cgggtgccag ggcgtgccct tgggctcccc gggcgcgtac
481 tccacctcac ccatctggtc catcatgatg aacgggtcga ggtggcggtg gttgatcccc
541 gcgaacgcgc ggcgcaccgg gaagccctcg ccctcgaaac cgctgggcgc ggtggtcacg
601 gtgagcacgg gacgtgcgac ggcgtcgcg ggtgcggata cgcggggcag cgtcagcggg
661 ttctcgacgg tcacggcggg catgtcgacC CTTCACcat ggccacctca gcaagttccc
721 acttgaacaa aaacatcaag caaatgtact tgtgcctgcc ccagggtgag aaagtccaag
781 ccatgtatat ctgggttgat ggtactggag aaggactgcg ctgcaaaacc cgcaccctgg
841 actgtgagcc caagtgtgta gaagagttac ctgagtgga ttttgatggc tctagtacct
901 ttcagtctga gggctccaac agtgacatgt atctcagccc tgttgccatg tttcgggacc
961 ccttccgag agatccaac aagctggtgt tctgtgaagt tttcaagtac aaccggaagc
1021 ctgcagagac caatttaagg cactcgtgta aacggataat ggacatggtg agcaaccagg
1081 acccttggtt tggaatggaa caggagtata ctctgatggg aacagatggg cacccttttg
1141 gttggccttc caatggctt cctgggcccc aaggtccgta ttactgtggt gtgggcgcag
1201 acaaagccta tggcagggat atcgtggagg ctactaccg cgcctgcttg tatgctgggg
1261 tcaagattac aggaacaaat gctgaggtca tgctgccc gtgggagttc caaataggac
1321 cctgtgaagg aatccgcatg ggagatcatc tctgggtggc ccgtttcatc ttgcatcgag
1381 tatgtgaaga ctttgggta atagcaacct ttgacccaa gcccattcct gggaactgga
1441 atggtgcagg ctgccatacc aactttagca ccaaggccat cggggaggag aatggtctga
1501 agcacatcga ggaggccatc gagaactaa gcaagcgga cgggtaccac attcagcct
1561 acgatccaa ggggggcctg gacaatgcc gtcgtctgac tgggttcac gaaacgtcca
1621 acatcaacga cttttctgt ggtgtcgcca atcgagtgc cagcatccg attccccgga
1681 ctgtcgcca ggagaagaaa gttactttg aagaccgccc cccctctgcc aaCtgtgacc
1741 ccttgcagt gacagaagcc atgtccgca catgccttct caatgagact ggcgacgagc
1801 cctccaata caaaaactaa AGATCCtat ggctattggc cAggttcaat actatgtatt
1861 ggccctatgc catATAGTAT TCCATATATG GGTTCCTA TTGACGTAGA TAGCCCCTCC
1921 CAATGGGCGG TCCCATATAC CATATATGGG GCTTCCTAAT ACCGCCATA GCGACTCCCC
1981 CATTGACGTC AATGGTCTCT ATATATGGTC TTTCCTATTG ACGTCATATG GGCGGTCTCA
2041 TTGACGTATA TGGCGCTCC CCCATTGACG TCAATTACGG TAAATGGCCC GCCTGGCTCA
2101 ATGCCATTG ACGTCAATAG GACCACCCAC CATTGACGTC AATGGGATGG CTCATTGCCC
2161 ATTCATATCC GTTCTCACGC CCCCTATTGA CGTCAATGAC GGTAAATGGC CCACTTGGA
2221 GTACATCAAT ATCTATTAAT AGTAACTGG CAAGTACATT ACTATTGGAA GTACGCCAGG
2281 GTACATTGGC AGTACTCCA TTGACGTCAA TGGCGGTAAA TGGCCCGCA TGGCTGCCAA
2341 GTACATCCCC ATTGACGTCA ATGGGGAGGG GCAATGACGC AAATGGGCGT TCCATTGACG

FIG. 18 (cont'd)

2401 TAAATGGGCG GTAGGCGTGC CTAATGGGAG GTCTATATAA GCAATGCTCG TTAGGGAAC
 2461 CGCCATTCTG CCTGGGGACG TCGGAGGAGC TCGAaGCGGC CGCCCTAGGG TTAAACAGA
 2521 TCTATCGATa atcaacctct ggattacaaa atttgtgaaa gattgactgg tattcttaac
 2581 tatgttgctc cttttacgct atgtggatac gctgctttaa tgcctttgta tcatgctatt
 2641 gcttcccgtg tggccttcat tttctcctcc ttgtataaat cctggttgct gtctctttat
 2701 gaggagtgtg ggcccgttgt caggcaacgt ggcggtgtgt gcaactgtgt tgctgacgca
 2761 acccccactg gttggggcat tgccaccacc tgtcagctcc tttccgggac tttcgtttc
 2821 cccctcccta ttgccacggc ggaactcatc gccgcctgcc ttgccgctg ctggacaggg
 2881 gctcggctgt tgggactga caattccgtg gtgtgtcgg ggaaatcatc gtcctttcct
 2941 tggctgctcg cctgtgttc cacctggatt ctgcgcggga cgtccttctg ctacgtccct
 3001 tcggccctca atccagcggg ccttcctcc cgccgcctgc tgccggctct gcggccttt
 3061 ccgctcttc gccttcgcc tcagacgagt cggatctccc ttgggccgc cccccgcAT
 3121 CGATTACtaa tcagccatac cacatttgta gaggttttac ttgctttaa aaacctccca
 3181 cacctcccc tgaacctgaa acataaaatg aatgcaattg ttgttgtaa cttgtttatt
 3241 gcagcttata atggttacia ataaagcaat agcatcacia atttcacaaa taaagcattt
 3301 ttttactgc attctagttg tggttgtcc aaactcatca atgtatctta tcatgtctgg
 3361 aattcggacg gtgactgcag tgaataataa aatgtgtgtt tgtccgaaat acgcgttttg
 3421 agatttctgt cgccgactaa attcatgtcg cgcgatagtg gtgtttatcg ccgatagaga
 3481 tggcgatatt gaaaaaatcg atattgaaa atatggcata ttgaaaatgt cccgatgtg
 3541 agtttctgtg taactgatat cgccattttt ccaaaagtga ttttgggca taccgatat
 3601 ctggcgatag cgcttatatc gtttacgggg gatggcgata gacgactttg gtgacttggg
 3661 cgattctgtg tgtcgcaaat atcgagttt cgatataggt gacagacgat atgaggctat
 3721 atcgccgata gagcgacat caagctggca catggccaat gcataatgat ctatacattg
 3781 aatcaatatt ggccattagc catattatc attggtata tagcataaat caatattggc
 3841 tattggccat tgcatacgtt gtatccatat cataaatgt acatttatat tggctcatgt
 3901 ccaacattac cgccatgttg acattgatta ttactagtt attaatagta atcaattacg
 3961 gggtcattag ttcatagccc atatatggag ttccgcgtta cataacttac ggtaaatggc
 4021 ccgcctggct gaccgcccga cgaccccgcc ccattgacgt caataatgac gtatgttccc
 4081 atagtaacgc caatagggac tttcattga cgtcaatggg tggagtattt acggtaaat
 4141 gccacttgg cagtacatca agtgtatcat atgccaagta cggccctat tgacgtcaat
 4201 gacggtaaat ggcccgcctg gcattatgcc cagtacatga cttatggga ctttctact
 4261 tggcagtaca tctacgtatt agtcacgct attaccatgg tgatgcggtt ttggcagtac
 4321 atcaatgggc gtggatagcg gtttgactca cggggatttc caagtctca cccattgac
 4381 gtcaatggga gttgttttg gcacaaaat caacgggact ttcaaaatg tcgtaaac

FIG. 18 (cont'd)

4441 tccgccccat tgacgcaaat gggcggtagg cgtgtacggt gggaggctta tataagcaga
4501 gctcgttttag tgaaccgtca gatcgcttg agacgccatc cacgctgtt tgacctcat
4561 agaagacacc gggaccgatc cagcctccgc ggccgggaac ggtgcattgg aacgcggatt
4621 ccccggtcca agagtgcgt aagtaccgcc tatagagtct ataggccac ccccttggt
4681 tcttatgcat gctatactgt ttttgcttg ggtctatac accccgctt cctcatgta
4741 taggtgatgg tatagcttag cctatagggt tgggttattg accattattg accactcccc
4801 tattggtgac gatactttc attactaatc cataacatgg ctcttgcca caactctct
4861 tattggctat atgccaatac actgtcctc agagactgac acggactctg tatttttaca
4921 ggatggggtc tcatttatta ttacaaatt cacatataca acaccacgt cccagtgcc
4981 cgcagttttt attaaacata acgtgggatc tccacgcgaa tctcgggtac gtgtccgga
5041 catgggctct tctccggtag cggcggagct tctacatccg agccctgctc ccatgcctcc
5101 agcgactcat ggtcgctcgg cagctcctt ctctaacag tggaggccag acttaggcac
5161 agcacgatgc ccaccaccac cagtgtccg cacaaggccg tggcggtagg gtatgtgtct
5221 gaaaatgagc tcggggagcg ggcttgacc gctgacgat ttggaagact taaggcagcg
5281 gcagaagaag atgcaggcag ctgagttgt gtgttctgat aagagtcaga ggtaactccc
5341 gttcggtgct tgttaacggt ggagggcagt gtagtctgag cagtactcgt tgctgccgcg
5401 cgcgccacca gacataatag ctgacagact aacagactgt tcctttccat gggtctttc
5461 tgcaatcacc gtccttgaca cgaagttcga atcaggataa gggcgaattc cgacgtaggc
5521 ctattcgaag tctacttaac taaAAGCTT CTAGAGCCTC GAGCGATggg ggaggctaac
5581 tgaaacacgg aaggagacaa taccggaagg aaccgcgct atgacggcaa taaaagaca
5641 gaataaaacg cacgggtgtt gggctgttg ttcataaacg cggggttcgg tcccagggt
5701 ggcaactctg cgatacccca ccgagacccc attggggcca atagccccc gtttcttct
5761 tttccccacc ccacccccca agttcgggtg aaggcccagg gctcgagcc aacgtcggg
5821 cggcaggccc tgccatagcc ctgacAGCTT GGCcGTAATC ATGGTCATAG CTGTTTCCTG
5881 TGTGAAATTG TTATCCGCTC ACAATTCCAC ACAACATACG AGCCGGAAGC ATAAAGTGTA
5941 AAGCCTGGGG TGCCTAATGA GTGAGCTAAC TCACATTAAT TCGTTGCGC TCACTGCCCC
6001 CTTCCAGTC GGGAAACCTG TCGTGCCAGC TGCATTAATG AATCGGCCAA CGCGCGGGGA
6061 GAGGCGGTTT GCGTATTGGG CGCTCTCCG CTTCTCGCT CACTGACTCG CTGCGCTCGG
6121 TCGTTCGGCT GCGGCGAGCG GTATCAGCTC ACTCAAAGGC GGTAATACGG TTATCCACAG
6181 AATCAGGGGA TAACGCAGGA AAGAACATGT GAGCAAAAGG CCAGCAAAAG GCCAGGAACC
6241 GTAAAAAGGC CGCGTTGCTG GCGTTTTTCC ATAGGCTCCG CCCCCTGAC GAGCATCACA
6301 AAAATCGACG CTCAAGTCAG AGGTGGCGAA ACCCGACAGG ACTATAAAGA TACCAGGCGT
6361 TTCCCCCTGG AAGCTCCCTC GTGCGCTCTC CTGTTCCGAC CCTGCCGCTT ACCGGATACC
6421 TGTCCGCTT TCTCCCTCG GGAAGCGTGG CGCTTCTCA TAGCTACGC TGAGGTATC

FIG. 18 (cont'd)

6481 TCAGTTCGGT GTAGGTCGTT CGCTCCAAGC TGGGCTGTGT GCACGAACCC CCCGTTCAGC
6541 CCGACCGCTG CGCCTTATCC GGTAACATC GTCTTGAGTC CAACCCGGTA AGACACGACT
6601 TATCGCCACT GGCAGCAGCC ACTGGTAACA GGATTAGCAG AGCGAGGTAT GTAGGCGGTG
6661 CTACAGAGTT CTTGAAGTGG TGGCCTAACT ACGGCTACAC TAGAAGAACA GTATTTGGTA
6721 TCTGCGCTCT GCTGAAGCCA GTTACCTTCG GAAAAAGAGT TGGTAGCTCT TGATCCGGCA
6781 AACAAACCAC CGCTGGTAGC GGTGGTTTTT TTGTTTGCAA GCAGCAGATT ACGCGCAGAA
6841 AAAAAGGATC TCAAGAAGAT CCTTTGATCT TTTCTACGGG GTCTGACGCT CAGTGGAACG
6901 AAAACTCACG TTAAGGGATT TTGGTCATGA GATTATCAAA AAGGATCTTC ACCTAGATCC
6961 TTTTAAATTA AAAATGAAGT TTTAAATCAA TCTAAAGTAT ATATGAGTAA ACTTGGTCTG
7021 ACAGTTACCA ATGCTTAATC AGTGAGGCAC CTATCTCAGC GATCTGTCTA TTTCTGTCAT
7081 CCATAGTTGC CTGACTCCCC GTCGTGTAGA TAACTACGAT ACGGGAGGGC TTACCATCTG
7141 GCCCCAGTGC TGCAATGATA CCGCGAGACC CACGCTCACC GGCTCCAGAT TTATCAGCAA
7201 TAAACCAGCC AGCCGGAAGG GCCGAGCGCA GAAGTGGTCC TGCAACTTTA TCCGCTCCA
7261 TCCAGTCTAT TAATTGTTGC CGGGAAGCTA GAGTAAGTAG TTCGCCAGTT AATAGTTTGC
7321 GCAACGTTGT TGCCATTGCT ACAGGCATCG TGGTGTCACG CTCGTCGTTT GGTATGGCTT
7381 CATTGAGCTC CGGTTCCCAA CGATCAAGGC GAGTTACATG ATCCCCCATG TTGTGCAAAA
7441 AAGCGGTTAG CTCCTTCGGT CCTCCGATCG TTGTCAGAAG TAAGTTGGCC GCAGTGTTAT
7501 CACTCATGGT TATGGCAGCA CTGCATAATT CTCTTACTGT CATGCCATCC GTAAGATGCT
7561 TTTCTGTGAC TGGTGAGTAC TCAACCAAGT CATTCTGAGA ATAGTGTATG CGGCGACCGA
7621 GTTGCTCTTG CCCGGCGTCA ATACGGGATA ATACCGCGCC ACATAGCAGA ACTTTAAAAG
7681 TGCTCATCAT TGGAAAACGT TCTTCGGGGC GAAAACTCTC AAGGATCTTA CCGCTGTTGA
7741 GATCCAGTTC GATGTAACCC ACTCGTGCAC CCAACTGATC TTCAGCATCT TTTACTTTCA
7801 CCAGCGTTTC TGGGTGAGCA AAAACAGGAA GGCAAAATGC CGCAAAAAG GGAATAAGGG
7861 CGACACGGAA ATGTTGAATA CTCATACTCT TCCTTTTCA ATATTATTGA AGCATTTATC
7921 AGGGTTATTG TCTCATGAGC GGATACATAT TTGAATGTAT TTAGAAAAAT AAACAAATAG
7981 GGGTCCGCG CACATTTCCC CGAAAAGTGC CACCTGACGT CTAAGAAACC ATTATTATCA
8041 TGACATTAAC CTATAAAAAT AGGCGTATCA CGAGGCCCTT TCGTC

// (SEQ ID NO: 7)

FIG. 19

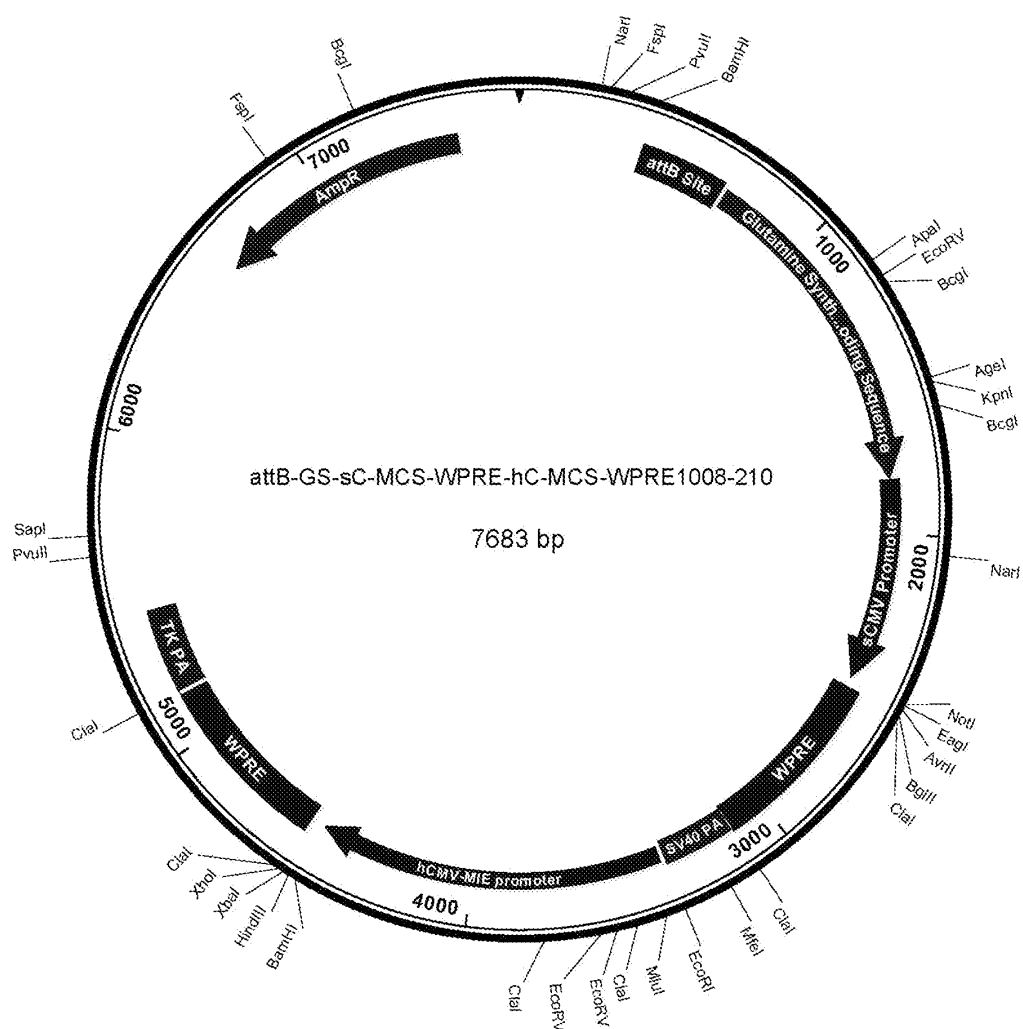


FIG. 20

LOCUS RCpuc19attB287-G 7683 bp DNA linear 12-MAY-2021

FEATURES Location/Qualifiers

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misc_feature 5166..5437
/note="TK PA"

misc_feature 699..1820
/note="Glutamine Synthetase Coding Sequence"

misc_feature 1822..2494
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misc_feature 2495..2524
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misc_feature 2526..3124
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misc_feature 3375..4517
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misc_feature 4517..4564
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misc_feature complement(402..690)
/note="attB Site"

misc_feature 3128..3359
/note="SV40 PA"

misc_feature complement(6623..7483)
/note="AmpR"

source 1..7683
/dnas_title="RCpuc19attB287-GS-sCMV-MCS-WPRE-Sv40pa-hCMV-M
CS-WPRE-TKpa1008"

ORIGIN

1 TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGTCCCG GAGACGGTCA
61 CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCG TCAGGGCGCG TCAGCGGGTG
121 TTGGCGGGTG TCGGGGCTGG CTAACTATG CGGCATCAGA GCAGATTGTA CTGAGAGTGC
181 ACCATATGCG GTGTGAAATA CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGCGCC
241 ATTCGCCATT CAGGCTGCGC AACTGTTGGG AAGGGCGATC GGTGCGGGCC TCTTCGCTAT

FIG. 20 (cont'd)

301 TACGCCAGCT GGCGAAAGGG GGATGTGCTG CAAGGCGATT AAGTTGGGTA ACGCCAGGGT
361 TTTCCCAGTC ACGACGTTGT AAAACGACGG CCACTGGGAT CCcctcgac gatgtagtc
421 acggtctcga agccgcggtg cgggtgccag ggcgtgccct tgggtcccc gggcgctac
481 tccacctcac ccatctgtc catcatgatg aacgggtcga ggtggcgta gttgatccg
541 gcgaacgcgc ggcgcaccgg gaagccctcg ccctcgaac cgctgggcgc ggtggtcacg
601 gtgagcacgg gacgtcgac ggcgtcgcg ggtgcggata cgcggggcag cgtcagcggg
661 ttctcgacgg tcacggcggg catgtcgac CTTCCACcat ggccacctca gcaagtccc
721 actgaacaa aaacatcaag caaatgtact tgtgcctgcc ccagggtgag aaagtccaag
781 ccatgtatat ctgggttgat ggtactggag aaggactcgc ctgcaaaacc cgcaccctgg
841 actgtgagcc caagtgtga gaagagttac ctgagtggaa tttgatggc tctagtacct
901 ttcatctga gggctcaac agtgacatgt atctcagccc tgttgccatg ttcgggacc
961 ccttcgcag agatcccaac aagctggtg tctgtgaagt tttcaagtac aaccggaagc
1021 ctgcagagac caatttaagg cactcgtga aacggataat ggacatggtg agcaaccagc
1081 acccctggtt tggaatggaa caggagtata ctctgatggg aacagatggg caccctttg
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1261 tcaagattac aggaacaaat gctgaggtca tgcctgccca gtgggagttc caaataggac
1321 cctgtgaagg aatccgcatg ggagatcatc tctgggtggc ccgttcatc ttgcatcgag
1381 tatgtgaaga ctttgggta atagcaacct ttgacccaa gccattcct gggaactgga
1441 atggtgcagg ctgccatacc aactttagca ccaaggccat gcgggaggag aatggtctga
1501 agcacatcga ggaggccatc gagaaactaa gcaagcgga ccggtaccac attcagcct
1561 acgatccaa ggggggcctg gacaatgcc gtcgtctgac tgggttcac gaaactcca
1621 acatcaacga ctttctgct ggtgtcgca atcgagtgc cagcatccg attccccga
1681 ctgtcgcca ggagaagaaa ggttactttg aagaccgccc cccctctgcc aaCtgtgacc
1741 cctttgcagt gacagaagcc atcgtccga catgccttct caatgagact ggcgacgagc
1801 cctccaata caaaaactaa AGATCCcat ggctattggc cAggttcaat actatgtatt
1861 ggcctatgc catATAGTAT TCCATATATG GGTTCCTA TTGACGTAGA TAGCCCCTCC
1921 CAATGGGCGG TCCCATATAC CATATATGGG GCTTCCTAAT ACCGCCATA GCCACTCCCC
1981 CATTGACGTC AATGGTCTCT ATATATGGTC TTTCTATTG ACGTCATATG GGCGGTCCTA
2041 TTGACGTATA TGGCGCCTCC CCCATTGACG TCAATTACGG TAAATGGCCC GCCTGGCTCA
2101 ATGCCCATG ACGTCAATAG GACCACCCAC CATTGACGTC AATGGGATGG CTCATTGCCC
2161 ATTCATATCC GTTCTCACGC CCCCTATTGA CGTCAATGAC GGTAAATGGC CCACTTGCA
2221 GTACATCAAT ATCTATTAAT AGTAACTTGG CAAGTACATT ACTATTGGAA GTACGCCAGG
2281 GTACATTGGC AGTACTCCA TTGACGTCAA TGGCGGTAAA TGGCCGCGA TGGCTGCCAA

FIG. 20 (cont'd)

2341 GTACATCCCC ATTGACGTCA ATGGGGAGGG GCAATGACGC AAATGGGCGT TCCATTGACG
2401 TAAATGGGCG GTAGGCGTGC CTAATGGGAG GTCTATATAA GCAATGCTCG TTAGGGGAAC
2461 CGCCATTCTG CCTGGGGACG TCGGAGGAGC TCGAaGCGGC CGCCCTAGGG TTAAACAGA
2521 TCTATCGATa atcaacctct ggattacaaa atttgtaaa gattgactgg tattcttaac
2581 tatgttgctc cttttacgct atgtggatac gctgcttaa tgcctttgta tcatgctatt
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2761 acccccactg gttggggcat tgccaccacc tgcagctcc tttccgggac tttcgtttc
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2941 tggctgctcg cctgtgttc cacctggatt ctgcgcggga cgtccttctg ctacgtcct
3001 tcggccctca atccagcgga ccttccttcc gcggcgctgc tgccggctct gcggcctct
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3181 cacctcccc tgaactgaa acataaaatg aatgcaattg ttgtgttaa ctgtttatt
3241 gcagcttata atggttacia ataaagcaat agcatcacia atttcacaaa taaagcatt
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3421 agatttctgt cgccgactaa attcatgtc gcgcatagt gtgtttatcg ccgatagaga
3481 tggcgatatt ggaanaatcg atattgaaa atatggcata ttgaaatgt cgccgatgtg
3541 agtttctgtg taactgatat cgccattttt ccaaaagtga ttttgggca tacgcgat
3601 ctggcgatag cgcttatatc gttacgggg gatggcgata gacgactttg gtgacttggg
3661 cgattctgtg tgcgcaaat atcgagttt cgatataggt gacagacgat atgaggctat
3721 atcgccgata gagcgacat caagctggca catggccaat gcatatcgat ctatacattg
3781 aatcaatatt ggccattagc catattatc attggttata tagcataaat caatattggc
3841 tattggccat tgcatacgtt gtatccatat cataaatgt acatttatat tggctcatgt
3901 ccaacattac cgccatgtt acattgatta ttgactagt attaatagta atcaattacg
3961 gggtcattag ttcatagccc atataggag ttccgcgtta cataacttac ggtaaatggc
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4081 atagtaacgc caatagggac tttcattga cgtcaatggg tggagtattt acggtaaact
4141 gcccacttgg cagtacatca agtgtatcat atgccaagta cggccctat tgacgtcaat
4201 gacggtaaat ggcccgctg gcattatgcc cagtacatga cttatggga ctttctact
4261 tggcagtaca tctacgtatt agtcatcgct attacatgg tgatgcggtt ttggcagtac
4321 atcaatgggc gtggatagcg gtttgactca cggggatttc caagtctca cccattgac

FIG. 20 (cont'd)

4381 gtcaatggga gttgttttg gcacaaaaat caacgggact ttcaaaatg tcgtaacaac
4441 tccgccccat tgacgcaa at gggcggtagg cgtgtacggt gggaggtcta tataagcaga
4501 gctcgttttag tgaaccgGAT CCTTAACCGT GAAAGCTTAG GCCTTCTAGA GCCtcgagtt
4561 cgacATCGAT aatcaacctc tggattacaa aatttgtgaa agattgactg gtattcttaa
4621 ctatgttgct ctttttacgc tatgtggata cgctgcttta atgcctttgt atcatgctat
4681 tgcttcccg atggctttca ttttctctc cttgtataaa tcctgggtgc tgtctcttta
4741 tgaggagttg tggcccgttg tcaggcaacg tggcgtggtg tgcactgtgt ttgtgacgc
4801 aacccccact ggttggggca tggcaccac ctgtcagctc cttccggga ctttcgcttt
4861 cccctcctt attgccacgg cggaactcat cgccgctgc cttcccgct gctggacagg
4921 ggctcgctg tttggcactg acaattccgt ggtgtgtcg gggaaatcat cgtcctttcc
4981 ttggctgctc gcctgtgtt ccacctggat tctgcgcggg acgtccttct gctacgtccc
5041 ttcggccctc aatccagcgg accttcttc ccgcggcctg ctgcccgcgc tgcggcctct
5101 tccgctctt cgccttcgcc ctcagacgag tcggatctcc ctttgggccc cctccccgcA
5161 TCGATggggg aggctaactg aaacacggaa ggagacaata ccggaaggaa cccgcgctat
5221 gacggcaata aaaagacaga ataaaacgca cgggtgttgg gtcgtttgtt cataaacgcg
5281 gggttcgtc ccagggtg cactctgtc atacccacc gagacccat tggggccaat
5341 acgcccgcgt tttctcttt tccccaccc acccccaag ttcgggtgaa ggcccagggc
5401 tcgacgcaa cgtcggggcg gcaggccctg ccatagccct agcAGCTTGG CcGTAATCAT
5461 GGTCATAGCT GTTTCCTGTG TGAAATTGTT ATCCGCTCAC AATTCCACAC AACATACGAG
5521 CCGGAAGCAT AAAGTGTAAG GCCTGGGGTG CCTAATGAGT GAGCTAACTC ACATTAATTG
5581 CGTTGCGCTC ACTGCCGCT TTCCAGTCGG GAAACCTGTC GTGCCAGCTG CATTAATGAA
5641 TCGGCAACG CGCGGGGAGA GGCGGTTTGC GTATTGGGCG CTCTCCGCT TCCTCGCTCA
5701 CTGACTCGCT GCGCTCGGTC GTTCGGTGC GGCAGCGGT ATCAGCTCAC TCAAAGGCGG
5761 TAATACGTT ATCCACAGAA TCAGGGGATA ACGCAGGAAA GAACATGTGA GCAAAAGGCC
5821 AGCAAAAGGC CAGGAACCGT AAAAAGGCCG CGTTGCTGGC GTTTTCCAT AGGCTCCGCC
5881 CCCCTGACGA GCATCAGAAA AATCGACGCT CAAGTCAGAG GTGGCGAAAC CCGACAGGAC
5941 TATAAAGATA CCAGGCGTTT CCCCTGGAA GCTCCCTCGT GCGCTCTCT GTTCCGACCC
6001 TGCCGCTTAC CGGATACCTG TCCGCCTTC TCCCTTCGGG AAGCGTGGCG CTTTCTCATA
6061 GCTCACGCTG TAGGTATCTC AGTTCGGTGT AGGTCGTTCT CTCCAAGCTG GGCTGTGTGC
6121 ACGAACCCCC CGTTCAGCCC GACCGCTGCG CTTATCCGG TAACTATCGT CTTGAGTCCA
6181 ACCCGTAAG ACACGACTTA TCGCCACTGG CAGCAGCCAC TGGTAACAGG ATTAGCAGAG
6241 CGAGGTATGT AGGCGGTGCT ACAGAGTTCT TGAAGTGGT GCCTAACTAC GGCTACACTA
6301 GAAGAACAGT ATTTGGTATC TGCGTCTGC TGAAGCCAGT TACCTTCGGA AAAAGAGTTG
6361 GTAGCTCTT ATCCGGCAAA CAAACCACCG CTGGTAGCGG TGGTTTTTT GTTTGCAAGC

FIG. 20 (cont'd)

6421 AGCAGATTAC GCGCAGAAAA AAAGGATCTC AAGAAGATCC TTTGATCTTT TCTACGGGGT
6481 CTGACGCTCA GTGGAACGAA AACTCACGTT AAGGGATTTT GGTCATGAGA TTATCAAAAA
6541 GGATCTTCAC CTAGATCCTT TTAAATTAAA AATGAAGTTT TAAATCAATC TAAAGTATAT
6601 ATGAGTAAAC TTGGTCTGAC AGTTACCAAT GCTTAATCAG TGAGGCACCT ATCTCAGCGA
6661 TCTGTCTATT TCGTTCATCC ATAGTTGCCT GACTCCCCGT CGTGTAGATA ACTACGATAC
6721 GGGAGGGCTT ACCATCTGGC CCCAGTGCTG CAATGATACC GCGAGACCCA CGCTCACCGG
6781 CTCCAGATTT ATCAGCAATA AACCAGCCAG CCGGAAGGGC CGAGCGCAGA AGTGGTCTCG
6841 CAACTTTATC CGCCTCCATC CAGTCTATTA ATTGTTGCCG GGAAGCTAGA GTAAGTAGTT
6901 CGCCAGTTAA TAGTTTGCGC AACGTTGTTG CCATTGCTAC AGGCATCGTG GTGTCACGCT
6961 CGTCGTTTGG TATGGCTTCA TTCAGCTCCG GTTCCCAACG ATCAAGGCGA GTTACATGAT
7021 CCCCCATGTT GTGCAAAAAA GCGGTTAGCT CCTTCGGTCC TCCGATCGTT GTCAGAAGTA
7081 AGTTGGCCGC AGTGTTATCA CTCATGGTTA TGGCAGCACT GCATAATTCT CTTACTGTCA
7141 TGCCATCCGT AAGATGCTTT TCTGTGACTG GTGAGTACTC AACCAAGTCA TTCTGAGAAT
7201 AGTGTATGCG GCGACCGAGT TGCTCTTGCC CGGCGTCAAT ACGGGATAAT ACCGCGCCAC
7261 ATAGCAGAAC TTAAAAAGTG CTCATCATTG GAAAACGTTT TCGGGGCGA AAACTCTCAA
7321 GGATCTTACC GCTGTTGAGA TCCAGTTCGA TGTAACCCAC TCGTGCACCC AACTGATCTT
7381 CAGCATCTTT TACTTTCACC AGCGTTTCTG GGTGAGCAAA AACAGGAAGG CAAAATGCCG
7441 CAAAAAGGG AATAAGGGCG ACACGGAAAT GTTGAATACT CATACTCTTC CTTTTCAAT
7501 ATTATTGAAG CATTTATCAG GGTATTGTC TCATGAGCGG ATACATATT GAATGTATTT
7561 AGAAAAATAA ACAAATAGGG GTTCCGCGCA CATTTCCCG AAAAGTGCCA CCTGACGTCT
7621 AAGAAACCAT TATTATCATG ACATTAACT ATAAAAATAG GCGTATCACG AGGCCCTTTC
7681 GTC

// (SEQ ID NO: 8)

FIG. 21

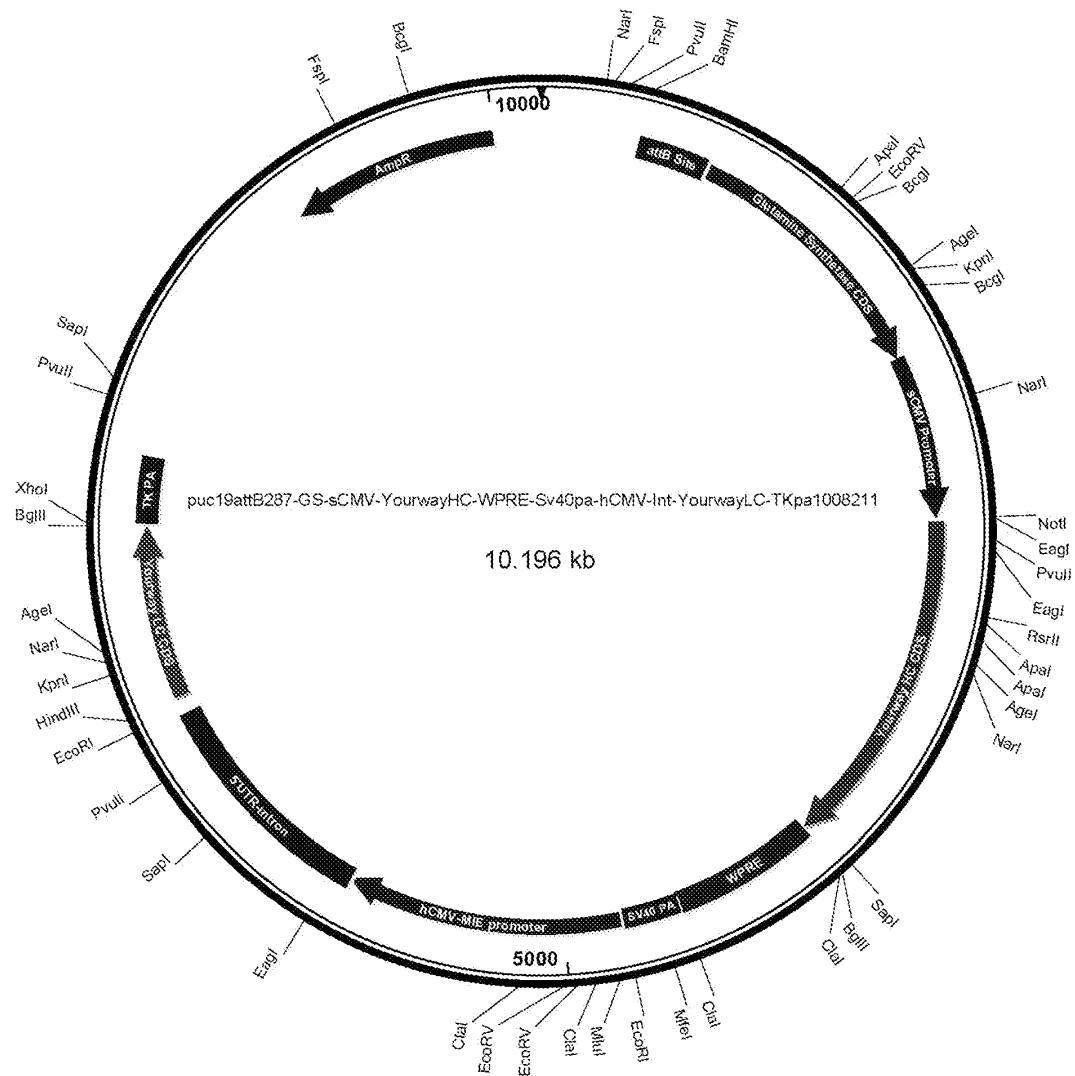


FIG. 22

LOCUS RCpuc19attB287-G 10196 bp DNA linear 12-MAY-2021

/* DA 11MAY2021 Rceived from KZ 1008.0211 10196 bp */

FEATURES Location/Qualifiers

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misc_feature complement(9136..9996)
    /note="AmpR"
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ORIGIN

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61 CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCG TCAGGGCGCG TCAGCGGGTG
121 TTGGCGGGTG TCGGGGCTGG CTTAACTATG CGGCATCAGA GCAGATTGTA CTGAGAGTGC
181 ACCATATGCG GTGTGAAATA CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGCGCC
241 ATTCGCCATT CAGGCTGCGC AACTGTTGGG AAGGGCGATC GGTGCGGGCC TCTTCGCTAT
301 TACGCCAGCT GCGGAAAGGG GGATGTGCTG CAAGGCGATT AAGTTGGGTA ACGCCAGGGT

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FIG. 22 (cont'd)

361 TTTCCCAGTC ACGACGTTGT AAAACGACGG CCAAGTGGGAT CCcgtcgac gatgtagtc
421 acggtctcga agccgcggtg cgggtgccag ggcgtgccct tgggctcccc gggcgcgtac
481 tccacctcac ccatctggtc catcatgatg aacgggtcga ggtggcggtg gttgatcccc
541 gcgaacgcgc ggcgcaccgg gaagccctcg ccctcgaaac cgctgggcgc ggtggtcacg
601 gtgagcacgg gacgtgcgac ggcgtcgcg ggtgcggata cgcggggcag cgtcagcggg
661 ttctcgacgg tcacggcggg catgtcgacC CTTCACcat ggccacctca gcaagttccc
721 acttgaacaa aaacatcaag caaatgtact tgtgcctgcc ccagggtgag aaagtccaag
781 ccatgtatat ctgggttgat ggtactggag aaggactgcg ctgcaaaacc cgcaccctgg
841 actgtgagcc caagtgtgta gaagagttac ctgagtgga ttttgatggc tctagtacct
901 ttcagtctga gggctccaac agtgacatgt atctcagccc tgttgccatg tttcgggacc
961 ccttccgag agatccaac aagctggtgt tctgtgaagt tttcaagtac aaccggaagc
1021 ctgcagagac caatttaagg cactcgtgta aacggataat ggacatggtg agcaaccagg
1081 acccttggtt tggaatggaa caggagtata ctctgatggg aacagatggg cacccttttg
1141 gttggccttc caatggctt cctgggcccc aaggtccgta ttactgtggt gtgggcgcag
1201 acaaagccta tggcagggat atcgtggagg ctactaccg cgctgcttg tatgctgggg
1261 tcaagattac aggaacaaat gctgaggtca tgctgccc gtgggagttc caaataggac
1321 cctgtgaagg aatccgcatg ggagatcatc tctgggtggc ccgttctatc ttgcatcgag
1381 tatgtgaaga ctttgggta atagcaacct ttgacccaa gccattcct gggaactgga
1441 atggtgcagg ctgccatacc aactttagca ccaaggccat gcgggaggag aatggtctga
1501 agcacatcga ggaggccatc gagaactaa gcaagcgga ccggtaccac attcagcct
1561 acgatccaa ggggggcctg gacaatgcc gtcgtctgac tgggttcac gaaacgtcca
1621 acatcaacga cttttctgt ggtgtcgcca atcgagtc cagcatccg attccccgga
1681 ctgtcgcca ggagaagaaa gttactttg aagaccgccc cccctctgcc aaCtgtgacc
1741 ccttgcagt gacagaagcc atgtccgca catgccttct caatgagact ggcgacgagc
1801 cctccaata caaaaactaa AGATCCtat ggctattggc cAggttcaat actatgtatt
1861 ggccctatgc catATAGTAT TCCATATATG GGTTCCTA TTGACGTAGA TAGCCCCTCC
1921 CAATGGGCGG TCCCATATAC CATATATGGG GCTTCCTAAT ACCGCCATA GCGCTCCCC
1981 CATTGACGTC AATGGTCTCT ATATATGGTC TTTCCTATTG ACGTCATATG GGCGGTCTCA
2041 TTGACGTATA TGGCGCTCC CCCATTGACG TCAATTACGG TAAATGGCCC GCCTGGCTCA
2101 ATGCCATTG ACGTCAATAG GACCACCCAC CATTGACGTC AATGGGATGG CTCATTGCCC
2161 ATTCATATCC GTTCTCACGC CCCCTATTGA CGTCAATGAC GGTAAATGGC CCACTTGCCA
2221 GTACATCAAT ATCTATTAAT AGTAACTGG CAAGTACATT ACTATTGGAA GTACGCCAGG
2281 GTACATTGGC AGTACTCCA TTGACGTCAA TGGCGGTAAA TGGCCCGCA TGGCTGCCAA
2341 GTACATCCCC ATTGACGTCA ATGGGGAGGG GCAATGACGC AAATGGGCGT TCCATTGACG

FIG. 22 (cont'd)

2401 TAAATGGGCG GTAGGCGTGC CTAATGGGAG GTCTATATAA GCAATGCTCG TTAGGGAAC
2461 CGCCATTCTG CCTGGGGACG TCGGAGGAGC TCGAaGCGGC Cgcccacc ATGATGTCCT
2521 TTGTCTCTCT GCTCCTGGTT GGCATCCTAT TCCATGCCAC CCAGGCCcag gtcagctgg
2581 tggagtccgg cggcggcgtc gtcagcccg gccggtccct gcggtgtcc tgcgccct
2641 ccggcttcac cttctctcc tacaccatgc actgggtgcg gcaggcccc ggcaagggcc
2701 tggagtgggt gactttcatc tcctacgacg gcaacaacaa gtactacgcc gactccgtga
2761 agggccggtt caccatctcc cgcgacaact ccaagaacac cctgtacctg cagatgaact
2821 ccctgcgggc cgaggacacc gccatctact actgcgccg gaccggctgg ctgggccct
2881 tcgactactg gggccagggc accctgtga ccgtgtctc cGCCTCCACC AAGGGCCCAT
2941 CGGTCTTCCC CCTGGCACCC TCTAGCAAGA GCACCTCTGG GGGCACAGCG GCCCTGGGCT
3001 GCCTGGTCAA GGACTACTC CCCGAACCGG TGACGGTGTG GTGGAActCA GGC GCCCTGA
3061 CCAGCGCGT GCACACCTC CCGGTGTCC TACAGTCTC AGGACTCTAC TCCCTCAGCA
3121 GCGTGGTGAC CGTGCCCTC AGCAGCTTG GCACCCAGAC CTACATCTGC AACGTGAATC
3181 ACAAGCCCAG CAACACCAAG GTGGACAAGc ggGTTGAGCC CAAATCTTGT GACAAAActC
3241 ACACATGCCC ACCGTGCCA GCACCTGAAC TCCTGGGGG ACCGTCAGTC TTCCTTCC
3301 CCCCCAACCAAGGACACC CTCATGATCT CCCGACCCC TGAGGTCACA TCGTGGTG
3361 TGGACGTGAG CCACGAAGAC CCTGAGGTCA AGTTCAActG GTACGTGGAC GGC GTGGAG
3421 TGCATAATGC CAAGACAAAG CCGCGGGAGG AGCAGTACAA CAGCACGTAC CGTGTGGTCA
3481 GCGTCTCAC CGTCTGCAC CAGGACTGG TGAATGGCAA GGAGTACAAG TGCAAGGTCT
3541 CCAACAAAGC CCTCCAGCC CCCATCGAGA AAACCTCTC CAAAGCCAAA GGCAGCCCC
3601 GAGAACCACA GGTGTACACC CTGCCTCCAT CCCGcgatGA GCTGACCAAG AACCAGGTCA
3661 GCCTGACCTG CCTGGTCAA GGCTTCTATC CCAGCGACAT CGCCGTGGAG TGGGAGAGCA
3721 ATGGGCAGCC GGAGAACAAC TACAAGACCA CGCCTCCGT GCTGACTCC GACGGCTCT
3781 TCTCCTCTA TAGCAAGCTC ACCGTGGACA AGAGCAGGTG GCAGCAGGG AACGTCTCT
3841 CATGCTCCGT GATGCATGAG GCTCTGCACA ACCACTACAC GCAGAAGAGC CTCTCCCTGT
3901 CTCtGGGAA ATGAtgaGAT CTATCGATaa tcaacctcg gattacaaaa ttgtgaaag
3961 attgactggt attcttaact atgttgctcc tttacgcta tgtggatcg ctgcttaat
4021 gcctttgat catgctattg cttcccgtat ggctttcatt ttctctct tgtataaatc
4081 ctggttgctg tctcttatg aggagttgt gccgtgtc aggcaactg gcgtggtg
4141 cactgtgtt gctgacgcaa cccactgg ttggggcatt gccaccact gtcagctct
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4261 tgccgctgc tggacagggg ctgggtgtt gggcactgac aattccgtg tttgtcggg
4321 gaaatcatg tccttctt ggctgctgc ctgtgtgcc acctggattc tgcggggac
4381 gtccttctg tacgtcctt cggccctcaa tccagcgac cttcctccc gcggctgct

FIG. 22 (cont'd)

4441 gccggctctg cggcctcttc cgcgtcttcg ccttcgccct cagacgagtc ggatctccct
 4501 ttgggccgcc tccccgcATC GATTACtaat cagccatacc acattttag aggttttact
 4561 tgctttaaaa aacctccac acctcccct gaacctgaaa cataaaatga atgcaattgt
 4621 tgttgtaac tgtttattg cagcttataa tggttacaaa taaagcaata gcatcacaaa
 4681 ttacacaaat aaagcatttt ttctactgca ttctagtgt ggtttgtcca aactcatcaa
 4741 tgatcttat catgtctgga attcggacgg tgactgcagt gaataataaa atgtgtgtt
 4801 gtccgaaata cgcgttttg gatttctgtc gccgactaaa ttcattgtgc gcgtagtggt
 4861 tgtttatgc ctagagat ggcatattg gaaaaatcga ttttgaaaa tatggcatat
 4921 tgaaaatgc gccgatgtga gtttctgtg aactgatatc gccatttttc caaaagtat
 4981 ttttggcat acgcgatatc tggcatagc gcttatatc tttacggggg atggcgaatg
 5041 acgactttgg tgactgggc gattctgtg gtcgcaata tcgcagttc gatatagggt
 5101 acagacgata tgaggctata tcgccgatag aggcgacatc aagctggcac atggccaatg
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 5221 agcataaatc aatattggct attggccatt gcatacgtg tatccatc ataataatga
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 5581 gcccctatt gacgtcaatg acggtaaatg gcccgcctgg cattatgccc agtacatgac
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 6001 gtgattgga acgcggattc cccgtgcaa gtagtgcga agtaccgct atagagtcta
 6061 tagggccacc ccttggtt cttatgatg ctactgtt ttggcttg ggtctataca
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 6301 cggactctgt atttttacg gatgggtct catttatt ttacaaatc acatatacaa
 6361 caccaccgc ccagtggc gcagtttta ttaacataa cgtgggatct ccacgcaat
 6421 ctgggtacg tgtccggac atgggtct ctccgtagc ggcgagctt ctacatccga

FIG. 22 (cont'd)

6481 gccctgctcc catgcctcca gcgactcatg gtcgctcggc agtccttgc tcctaacagt
6541 ggaggccaga ctaggcaca gcacgatgcc caccaccacc agtgtccgc acaaggccgt
6601 ggcggtaggg tatgtgtctg aaaatgagct cggggagcgg gcttgaccg ctgacgatt
6661 tggaaagactt aaggcagcgg cagaagaaga tgcaggcagc tgagttgtt tttctgata
6721 agagtcagag gtaactccc ttgcggtgct gttaacggtg gagggcagtg tagtctgagc
6781 agtactcgtt gctgccgcgc gcgccaccag acataatagc tgacagacta acagactgtt
6841 cctttccatg ggtcttttct gcagtcaccg tccttgacac gaagttcgaa tcaggataag
6901 ggccaattcc gacgtaggcc tattcgaagt ctacttaatt aaAagcttgc cgccaccATG
6961 ATGTCCTTTG TCTCTCTGCT CCTGGTTGGC ATCCTATTCC ATGCCACCCA GGCCgagatc
7021 gtgtgaccc agtcccccg caccctgtcc ctgtccccg gcgagcgggc caccctgtcc
7081 tgccgggcct ccagtcctgt gggctcctcc tacctggcct ggtaccagca gaagcccggc
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7201 ttctccggt cgggtccgg caccgacttc accctgacca tctccgggt ggagcccgag
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7321 accaagggtg agatcaagcg aACTGTGGCT GCACCATCTG TCTTCATCTT CCCGCCATCT
7381 GATGAGCAGC TTAAGTCCGG AACTGCTAGC GTTGTGTGCC TGCTGAATAA CTCTATCCC
7441 AGAGAGGCCA AAGTACAGTG GAAGGTGGAT AACGCCCTCC AATCGGGTAA CTCCAGGAG
7501 AGTGTCACAG AGCAGGACAG CAAGGACAGC ACCTACAGCC TCAGCAGCAC CCTGACGCTG
7561 AGCAAAGCAG ACTACGAGAA ACACAAAGTC TACGCTGCG AAGTCACCA TCAGGGCCTG
7621 AGCTCGCCCG TCACAAAGAG CTTCAACAGG GGAGAGTGTT AGtgagatCT CGAGCGATgg
7681 gggaggctaa ctgaacacg gaaggagaca ataccggaag gaaccgcgc tatgacggca
7741 ataaaaagac agaataaaac gcacgggtgt tgggtcgttt gttcataaac gcggggttcg
7801 gtcccagggc tggcactctg tcgatacccc accgagacct cattggggcc aatacgcccg
7861 cgtttttcc ttttccccac cccaccccc aagttcgggt gaaggcccag ggctcgcagc
7921 caacgtcggg gcggcaggcc ctgcatagc cctagcAGCT TGGCcGTAAT CATGGTCATA
7981 GCTGTTTCCT GTGTGAAATT GTTATCCGCT CACAATTCCA CACAACATAC GAGCCGAAG
8041 CATAAAGTGT AAAGCCTGGG GTGCCTAATG AGTGAGCTAA CTCACATTAA TTGCGTTGCG
8101 CTACTGCCC GCTTCCAGT CGGGAAACCT GTCGTGCCAG CTGCATTAAT GAATCGGCCA
8161 ACGCGCGGG AGAGGCGGTT TCGTATTGG GCGCTCTCC GCTTCCTCGC TCACTGACTC
8221 GCTGCGCTCG GTCGTTGCG TCGGCGAGC GGTATCAGCT CACTCAAAG CGGTAATACG
8281 GTTATCCACA GAATCAGGGG ATAACGCAGG AAAGAACATG TGAGCAAAAG GCCAGCAAAA
8341 GGCCAGGAAC CGTAAAAAG CCGCGTTGCT GCGTTTTTC CATAGGCTCC GCCCCCTGA
8401 CGAGCATCAC AAAAATCGAC GCTCAAGTCA GAGGTGGCGA AACCCGACAG GACTATAAAG
8461 ATACCAGGCG TTTCCCCTG GAAGCTCCCT CGTGCCTCT CCTGTTCCGA CCCTGCCGCT

FIG. 22 (cont'd)

8521 TACCGGATAC CTGTCCGCCT TTCTCCCTTC GGGAAGCGTG GCGCTTTCTC ATAGCTCACG
8581 CTGTAGGTAT CTCAGTTCGG TGTAGGTCGT TCGCTCCAAG CTGGGCTGTG TGCACGAACC
8641 CCCC GTTCAG CCCGACCGCT GCGCCTTATC CGGTAACAT CGTCTTGAGT CCAACCCGGT
8701 AAGACACGAC TTATCGCCAC TGGCAGCAGC CACTGGTAAC AGGATTAGCA GAGCGAGGTA
8761 TGTAGGCGGT GCTACAGAGT TCTTGAAGTG GTGGCCTAAC TACGGCTACA CTAGAAGAAC
8821 AGTATTTGGT ATCTGCGCTC TGCTGAAGCC AGTTACCTTC GGAAAAAGAG TTGGTAGCTC
8881 TTGATCCGGC AAACAAACCA CCGCTGGTAG CGGTGGTTTT TTTGTTTGCA AGCAGCAGAT
8941 TACGCGCAGA AAAAAAGGAT CTCAAGAAGA TCCTTTGATC TTTTCTACGG GGTCTGACGC
9001 TCAGTGGAAC GAAAACTCAC GTTAAGGGAT TTTGGTCATG AGATTATCAA AAAGGATCTT
9061 CACCTAGATC CTTTAAATT AAAAATGAAG TTTTAAATCA ATCTAAAGTA TATATGAGTA
9121 AACTTGGTCT GACAGTTACC AATGCTTAAT CAGTGAGGCA CCTATCTCAG CGATCTGTCT
9181 ATTCGTTCA TCCATAGTTG CTTGACTCCC CGTCGTGTAG ATAACCTACGA TACGGGAGGG
9241 CTTACCATCT GGCCCCAGTG CTGCAATGAT ACCGCGAGAC CCACGCTCAC CGGCTCCAGA
9301 TTTATCAGCA ATAAACCAGC CAGCCGGAAG GGCCGAGCGC AGAAGTGCTC CTGCAACTTT
9361 ATCCGCCTCC ATCCAGTCTA TTAATTGTTG CCGGGAAGCT AGAGTAAGTA GTTCGCCAGT
9421 TAATAGTTTG CGCAACGTTG TTGCCATTGC TACAGGCATC GTGGTGTCAC GCTCGTCGTT
9481 TGGTATGGCT TCATTAGCT CCGGTTCCCA ACGATCAAGG CGAGTTACAT GATCCCCAT
9541 GTTGTGCAAA AAAGCGGTTA GCTCCTTCGG TCCTCCGATC GTTGTGAGAA GTAAGTTGGC
9601 CGCAGTGTTA TCACTCATGG TTATGGCAGC ACTGCATAAT TCTCTTACTG TCATGCCATC
9661 CGTAAGATGC TTTTCTGTGA CTGGTGAGTA CTCAACCAAG TCATTCTGAG AATAGTGTAT
9721 GCGGCGACCG AGTTGCTCTT GCCC GGCGTC AATACGGGAT AATACCGCGC CACATAGCAG
9781 AACTTTAAAA GTGCTCATCA TTGGAAAACG TTCTTCGGGG CGAAAACTCT CAAGGATCTT
9841 ACCGCTGTTG AGATCCAGTT CGATGTAACC CACTCGTGCA CCCAACTGAT CTTGAGCATC
9901 TTTTACTTTC ACCAGCGTTT CTGGGTGAGC AAAAACAGGA AGGCAAAATG CCGCAAAAAA
9961 GGGAATAAGG GCGACACGGA AATGTTGAAT ACTCATACTC TTCCTTTTTC AATATTATTG
10021 AAGCATTTAT CAGGGTTATT GTCTCATGAG CGGATACATA TTTGAATGTA TTTAGAAAAA
10081 TAAACAAATA GGGGTTCCGC GCACATTTC CCGAAAAGTG CCACCTGACG TCTAAGAAAC
10141 CATTATTATC ATGACATTAA CCTATAAAAA TAGGCGTATC ACGAGGCCCT TTCGTC

// (SEQ ID NO: 9)

FIG. 23

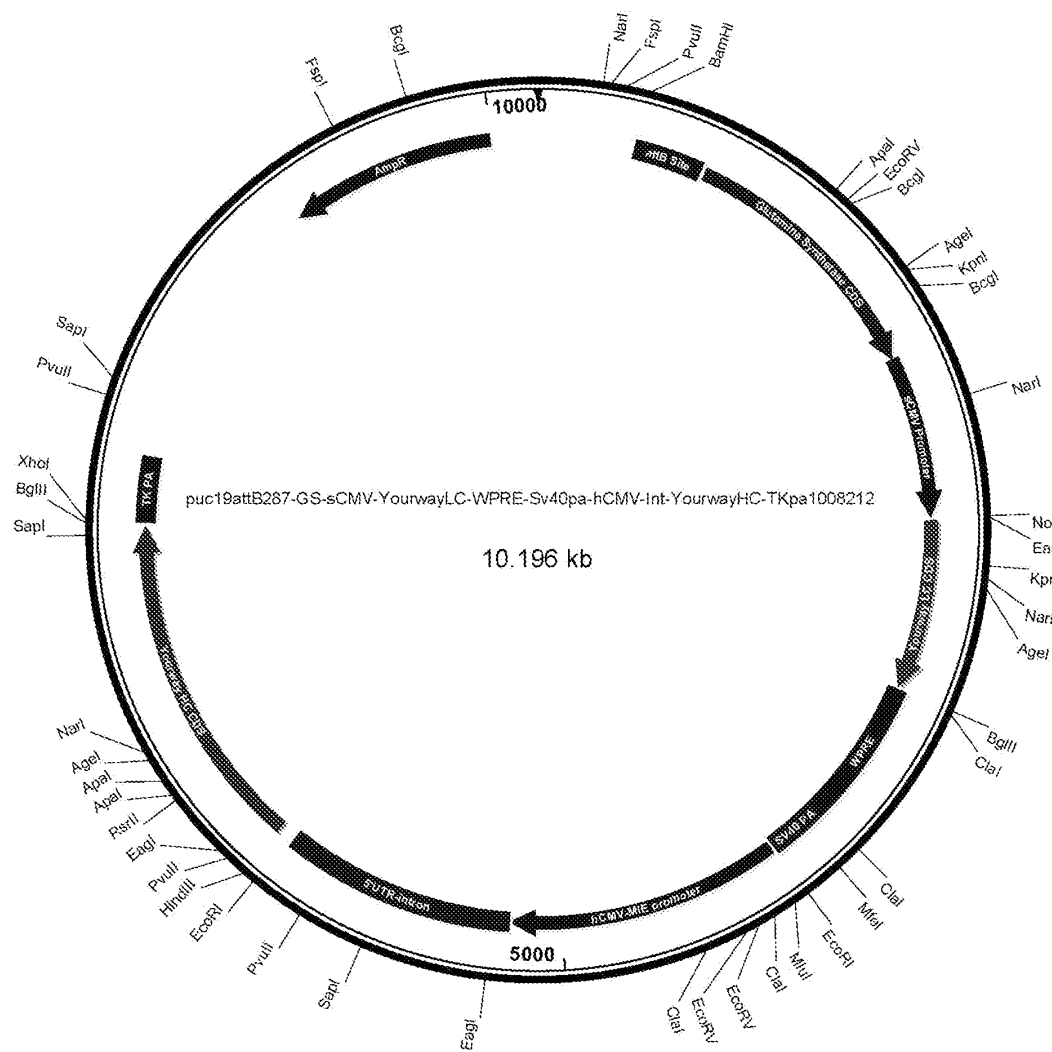


FIG. 24

LOCUS RCpuc19attB287-G 10196 bp DNA linear 12-MAY-2021

FEATURES Location/Qualifiers

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 misc_feature 699..1820
 /note="Glutamine Synthetase CDS"
 misc_feature 1822..2495
 /note="sCMV Promoter"
 misc_feature 2511..3215
 /note="Yourway LC CDS"
 misc_feature 3226..3824
 /note="WPRE"
 misc_feature 3828..4059
 /note="SV40 PA"
 misc_feature 4075..5217
 /note="hCMV-MIE promoter"
 misc_feature 5218..6182
 /note="5'UTR-intron"
 misc_feature 6259..7662
 /note="Yourway HC CDS"
 misc_feature complement(402..690)
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 misc_feature complement(9136..9996)
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 source 1..10196
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ORIGIN

1 TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGCTCCCG GAGACGGTCA
 61 CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCG TCAGGGCGCG TCAGCGGGTG
 121 TTGGCGGGTG TCGGGGCTGG CTTAACTATG CGGCATCAGA GCAGATTGTA CTGAGAGTGC
 181 ACCATATGCG GTGTGAAATA CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGCGCC
 241 ATTCGCCATT CAGGCTGCGC AACTGTTGGG AAGGGCGATC GGTGCGGGCC TCTTCGCTAT
 301 TACGCCAGCT GGCGAAAGGG GGATGTGCTG CAAGGCGATT AAGTTGGGTA ACGCCAGGGT

FIG. 24 (cont'd)

361 TTTCCCAGTC ACGACGTTGT AAAACGACGG CCAAGTGGGAT CCcgtcgac gatgtaggtc
421 acggtctcga agccgcggtg cgggtgccag ggcgtgccct tgggctcccc gggcgcgtac
481 tccacctcac ccatctggtc catcatgatg aacgggtcga ggtggcggtg gttgatcccc
541 gcgaacgcgc ggcgcaccgg gaagccctcg ccctcgaac cgctgggcgc ggtggtcacg
601 gtgagcacgg gacgtgcgac ggcgtcgcg ggtgcggata cgcggggcag cgtcagcggg
661 ttctcgacgg tcacggcggg catgtcgacC CTTCACcat ggccacctca gcaagttccc
721 acttgaacaa aaacatcaag caaatgtact tgtgcctgcc ccagggtgag aaagtccaag
781 ccatgtatat ctgggttgat ggtactggag aaggactgcg ctgcaaaacc cgcaccctgg
841 actgtgagcc caagtgtgta gaagagttac ctgagtgga ttttgatggc tctagtacct
901 ttcagtctga gggctccaac agtgacatgt atctcagccc tgttgccatg tttcgggacc
961 ccttccgcag agatccaac aagctggtgt tctgtgaagt tttcaagtac aaccggaagc
1021 ctgcagagac caatttaagg cactcgtgta aacggataat ggacatggtg agcaaccagg
1081 acccctggtt tggaatggaa caggagtata ctctgatggg aacagatggg cacccttttg
1141 gttggccttc caatggctt cctgggcccc aaggctcgta ttactgtggt gtgggcgcag
1201 acaaagccta tggcagggat atcgtggagg ctactaccg cgcctgcttg tatgctgggg
1261 tcaagattac aggaacaaat gctgaggta tgctgccc gtgggagttc caaataggac
1321 cctgtgaagg aatccgcatg ggagatcatc tctgggtggc ccgtttcatc ttgcatcgag
1381 tatgtgaaga ctttgggta atagcaacct ttgacccaa gccattcct gggaactgga
1441 atggtgcagg ctgccatacc aactttagca ccaaggccat cggggaggag aatggtctga
1501 agcacatcga ggaggccatc gagaactaa gcaagcgga cgggtaccac attcagcct
1561 acgatccaa ggggggcctg gacaatgcc gtcgtctgac tgggttcac gaaacgtcca
1621 acatcaacga ctttctgct ggtgtcgcca atcgagtgc cagcatccg attccccgga
1681 ctgtcgcca ggagaagaaa gttactttg aagaccgccc cccctctgcc aaCtgtgacc
1741 ccttgcagt gacagaagcc atgtccgca catgccttct caatgagact ggcgacgagc
1801 cctccaata caaaaactaa AGATCCtat ggctattggc cAggttcaat actatgtatt
1861 ggccctatgc catATAGTAT TCCATATATG GGTTCCTA TTGACGTAGA TAGCCCCTCC
1921 CAATGGGCGG TCCCATATAC CATATATGGG GCTTCCTAAT ACCGCCATA GCGCTCCCC
1981 CATTGACGTC AATGGTCTCT ATATATGGTC TTTCCTATTG ACGTCATATG GGCGGTCTCA
2041 TTGACGTATA TGGCGCTCC CCCATTGACG TCAATTACGG TAAATGGCCC GCCTGGCTCA
2101 ATGCCATTG ACGTCAATAG GACCACCCAC CATTGACGTC AATGGGATGG CTCATTGCCC
2161 ATTCATATCC GTTCTCACGC CCCCTATTGA CGTCAATGAC GGTAAATGGC CCACTTGGA
2221 GTACATCAAT ATCTATTAAT AGTAACTGG CAAGTACATT ACTATTGGAA GTACGCCAGG
2281 GTACATTGGC AGTACTCCA TTGACGTCAA TGGCGGTAAA TGGCCCGCA TGGCTGCCAA
2341 GTACATCCCC ATTGACGTCA ATGGGGAGGG GCAATGACGC AAATGGGCGT TCCATTGACG

FIG. 24 (cont'd)

2401 TAAATGGGCG GTAGGCGTGC CTAATGGGAG GTCTATATAA GCAATGCTCG TTAGGGAAC
2461 CGCCATTCTG CCTGGGGACG TCGGAGGAGC TCGAaGCGGC Cgccgccacc ATGATGTCCT
2521 TTGTCTCTCT GCTCCTGGTT GGCATCCTAT TCCATGCCAC CCAGGCCgag atcgtgctga
2581 cccagtcccc cggcacccctg tcctgtccc cggcgagcg ggccaccctg tcctgcggg
2641 cctcccagtc cgtgggctcc tcctacctgg cctggtacca gcagaagccc ggccaggccc
2701 cccggctgct gatctacggc gccttctccc ggcaccagg catccccgac cggttctcgg
2761 gctccggctc cggcaccgac ttcaccctga ccatctcccg gctggagccc gaggacttcg
2821 ccgtgtacta ctgccagcag tacggctcct cccctggac cttcggccag ggcaccaagg
2881 tggagatcaa gcgaACTGTG GCTGCACCAT CTGTCTTCAT CTTCCCGCCA TCTGATGAGC
2941 AGCTTAAGTC CGAACTGCT AGCGTTGTGT GCCTGCTGAA TAACTTCTAT CCCAGAGAGG
3001 CCAAAGTACA GTGGAAGGTG GATAACGCCC TCCAATCGGG TAACTCCAG GAGAGTGTCa
3061 CAGAGCAGGA CAGCAAGGAC AGCACCTACA GCCTCAGCAG CACCCTGACG CTGAGCAAAG
3121 CAGACTACGA GAAACACAAA GTCTACGCCT GCGAAGTCAC CCATCAGGGC CTGAGCTCGC
3181 CCGTCACAAA GAGCTTCAAC AGGGGAGAGT GTTAGTgaGA TCTATCGATa atcaacctct
3241 ggattacaaa atttgtaaa gattgactgg tattcttaac tatgttgctc cttttacgt
3301 atgtggatac gctgctttaa tgctttgta tcatgtatt gcttccgta tggcttcat
3361 tttctctcc ttgtataaat cctggttgct gtcttttat gaggagtgtg ggcccgtgt
3421 caggcaactg ggcgtggtg gactgtgtt tgctgacga acccccactg gttggggcat
3481 tgccaccacc tgcagctcc ttccgggac ttctcttc cccctcccta ttgccaggc
3541 ggaactcatc gccgcctgcc ttcccgtg ctggacagg gctcggctgt tggcactga
3601 caattccgtg gtgtgtcgg ggaatcatc gtccttctc tggtgctcg cctgtgtgc
3661 cacctggatt ctgcgcggga cgtcctctg ctacgtcctc tcggccctca atccagcga
3721 ccttcttcc cgcggcctgc tgccggctct gcggcctct ccgctcttc gccttcgcc
3781 tcagacgagt cggatctccc ttggggcgc cccccgcAT CGATTACTaa tcagccatac
3841 cacatttga gaggttttac ttgctttaa aaacctcca cacctcccc tgaacctgaa
3901 acataaaatg aatgcaattg ttgtgttaa ctgtttat gcagcttata atggttaca
3961 ataaagcaat agcatcaca atttcaca taaagcattt ttttactgc attctagt
4021 tggttgtcc aaactcatc atgtatctt tcatgtctg aattcggacg gtgactgcag
4081 tgaataataa aatgtgtgt tgcggaaat acgcgtttg agatttctg cgcgactaa
4141 attcatgtc cgcatagtg gtgtttatc cgatagaga tggcgatatt ggaaaaatc
4201 atatttga atattggcata ttgaaatgt cgcgatgtg agtttctgt taactgat
4261 cgccatttt ccaaaagtga ttttgggca tacgcgat ctggcgatg cgttatatc
4321 gtttacggg gatggcgata gacgacttg gtgactggg cgattctgt tgcgcaaat
4381 atcgagttt cgatataggt gacagacgat atgaggctat atcgcgata gaggcgacat

FIG. 24 (cont'd)

4441 caagctggca catggccaat gcataatgat ctatacattg aatcaatatt ggccattagc
 4501 catattattc attggttata tagcataaat caatattggc tattggccat tgcatacgtt
 4561 gtatccatat cataatatgt acatttatat tggctcatgt ccaacattac cgccatgttg
 4621 acattgatta tgactagtt attaatagta atcaattacg gggtcattag ttcatagcc
 4681 atatatggag ttccgcgtta cataacttac ggtaaatggc ccgcctggct gaccgccc
 4741 cgacccccgc ccattgacgt caataatgac gtatgttccc atagtaacgc caatagggac
 4801 tttcattga cgtcaatggg tggagtattt acggtaaact gccacttgg cagtacatca
 4861 agtgtatcat atgccaagta cggccctat tgacgtcaat gacggtaaat ggccgcctg
 4921 gcattatgcc cagtacatga cttatggga ctttctact tggcagtaca tctacgtatt
 4981 agtcacgct attaccatgg tgatgcggtt ttggcagtac atcaatgggc gtgtagatcg
 5041 gtttgactca cggggatttc caagtctcca cccattgac gtcaatggga gttgttttg
 5101 gcacaaaaat caacgggact ttcaaaaatg tcgtaaac tccgccccat tgacgcaaat
 5161 gggcggtagg cgtgtacggt gggaggtcta tataagcaga gctcgtttag tgaaccgtca
 5221 gatgcctgg agacgccatc cagctgttt tgacctcat agaagacacc gggaccgatc
 5281 cagcctccgc ggccgggaac ggtgcattgg aacgcggatt cccctgcca agagtgcgt
 5341 aagtagccgc tatagagtct ataggccac cccctggct tctatgcat gctatactgt
 5401 ttttgcttg gggctctac accccgctt cctcatgta tagtgatgg tatagcttag
 5461 cctatagtg tggttattg accattattg accactcccc tattggtgac gatactttcc
 5521 attactaat cataacatgg ctcttgcca caactcttt tattggctat atgccaatac
 5581 actgtcttc agagactgac acggactctg ttttttaca ggatggggc tcatttata
 5641 tttacaaatt cacatataca acaccacgt cccagtgcc cgcagtttt attaaacata
 5701 acgtgggac tccacgcga tctcgggtac gtgtccgga catgggctct tctccgtag
 5761 cggcgagct tctacatcc agccctgct ccatgcctcc agcgactcat ggtcgtcgg
 5821 cagctcctg ctctaacag tggaggccag acttaggcac agcacgatgc ccaccaccac
 5881 cagtgtgcc cacaaggccg tggcggtagg gtatgtgtct gaaaatgagc tcggggagcg
 5941 ggcttgacc gctgacgat ttggaagact taaggcagcg gcagaagaag atgcaggcag
 6001 ctgagttgt gtgtctgat aagagtcaga ggtaactccc gttcggtgc tgtaacggt
 6061 ggagggcagt gtatctgag cagtactctg tgctccgcg cgccacca gacataatag
 6121 ctgacagact aacagactgt tctttccat gggtctttc tgcagtcacc gtccttgaca
 6181 cgaagttcga atcaggataa gggcgaattc cgacgtaggc ctattcgaag tctactaat
 6241 taaAagcttg ccgccaccAT GATGTCCTTT GTCTCTCTGC TCCTGGTTGG CATCCTATTC
 6301 CATGCCACCC AGGCCcaggc gcagctggtg gactccggcg gcggcgtcgt gcagccggc
 6361 cggctcctgc ggctgtcctg cgccgctcc ggcttcacct tctctccta cccatgcac
 6421 tgggtgcggc agggcccg caaggcctg gagtgggtga ctttcatctc ctacgaggc

FIG. 24 (cont'd)

6481 aacaacaagt actacgccga ctccgtgaag ggccggttca ccatctcccg cgacaactcc
6541 aagaacaccc tgtacctgca gatgaactcc ctgcgggccg aggacaccgc catctactac
6601 tgcgcccgga cgggctggct gggccccttc gactactggg gccagggcac cctggtgacc
6661 gtgtcctccg CCTCCACCAA GGGCCCATCG GTCTTCCCC TGGCACCTC TAGCAAGAGC
6721 ACCTCTGGGG GCACAGCGGC CCTGGGCTGC CTGGTCAAGG ACTACTTCCC CGAACCGGTG
6781 ACGGTGTCGT GGAACTCAGG CGCCTGACC AGCGGCGTGC ACACCTTCCC GGCTGTCCTA
6841 CAGTCTCAG GACTCTACTC CCTCAGCAGC GTGGTGACCG TGCCCTCCAG CAGCTTGGGC
6901 ACCCAGACCT ACATCTGCAA CGTGAATCAC AAGCCCAGCA ACACCAAGGT GGACAAGcgg
6961 GTTGAGCCCA AATCTTGTGA CAAAACCTAC ACATGCCAC CGTGCCAGC ACCTGAACTC
7021 CTGGGGGGAC CGTCAGTCTT CCTTCTCCCC CAAAAACCA AGGACACCCT CATGATCTCC
7081 CGGACCCCTG AGGTCACATG CGTGGTGGTG GACGTGAGCC ACGAAGACCC TGAGGTCAAG
7141 TTCAACTGGT ACGTGGACGG CGTGGAGGTG CATAATGCCA AGACAAAGCC GCGGGAGGAG
7201 CAGTACAACA GCACGTACCG TGTGGTCAGC GTCCTCACCG TCCTGCACCA GGA CTGGCTG
7261 AATGGCAAGG AGTACAAGT CAAGGTCTCC AACAAAGCCC TCCAGCCCC CATCGAGAAA
7321 ACCATCTCCA AAGCCAAAGG GCAGCCCCGA GAACACAGG TGTACACCCT GCCTCCATCC
7381 CGcgatGAGC TGACCAAGAA CCAGGTCAGC CTGACCTGCC TGGTCAAAGG CTCTATCCC
7441 AGCGACATCG CCGTGGAGTG GGAGAGCAAT GGGCAGCCGG AGAACAATA CAAGACCACG
7501 CCTCCCGTGC TGGACTCCGA CGGCTCCTT TTCCTCTATA GCAAGCTCAC CGTGGACAAG
7561 AGCAGGTGGC AGCAGGGGAA CGTCTTCTCA TGCTCCGTGA TGCATGAGGC TCTGCACAAC
7621 CACTACACGC AGAAGAGCCT CTCCTGTCT CctGGGAAAT GAtgagatCT CGAGCGATgg
7681 gggaggctaa ctgaacacg gaaggagaca ataccggaag gaaccgcgc tatgacggca
7741 ataaaaagac agaataaaac gcacgggtgt tgggtcgttt gttcataaac gcggggttcg
7801 gtcccagggc tggcactctg tcgatacccc accgagaccc cattggggcc aatacgcccg
7861 cgtttcttcc ttttccccac cccaccccc aagttcgggt gaaggcccag ggctcgcagc
7921 caacgtcggg gcggcaggcc ctgcatagc ctagcAGCT TGGCcGTAAT CATGGTCATA
7981 GCTGTTTCCT GTGTGAAATT GTTATCCGCT CACAATTCCA CACAACATAC GAGCCGGAAG
8041 CATAAAGTGT AAAGCCTGGG GTGCCTAATG AGTGAGCTAA CTCACATTAA TTGCGTTGCG
8101 CTCACTGCCC GCTTCCAGT CGGGAAACCT GTCGTGCCAG CTGCATTAAT GAATCGGCCA
8161 ACGCGCGGGG AGAGGCGGTT TGC GTATTGG GCGCTCTCC GCTTCCTCGC TCACTGACTC
8221 GCTGCGCTCG GTCGTTGCGC TGCGGCGAGC GGTATCAGCT CACTCAAAGG CGGTAATACG
8281 GTTATCCACA GAATCAGGGG ATAACGCAGG AAAGAACATG TGAGCAAAAG GCCAGCAAAA
8341 GGCCAGGAAC CGTAAAAAGG CCGCGTTGCT GCGTTTTTC CATAGGCTCC GCCCCCTGA
8401 CGAGCATCAC AAAAATCGAC GCTCAAGTCA GAGGTGGCGA AACCCGACAG GACTATAAAG
8461 ATACCAGGCG TTTCCCCTG GAAGCTCCCT CGTGCCTCT CCTGTTCCGA CCCTGCCGCT

FIG. 24 (cont'd)

8521 TACCGGATAC CTGTCCGCCT TTCTCCCTTC GGGAAGCGTG GCGCTTTCTC ATAGCTCACG
8581 CTGTAGGTAT CTCAGTTCGG TGTAGGTCGT TCGCTCCAAG CTGGGCTGTG TGCACGAACC
8641 CCCCGTTTCTAG CCCGACCGCT GCGCCTTATC CGGTAACATAT CGTCTTGAGT CCAACCCGGT
8701 AAGACACGAC TTATCGCCAC TGGCAGCAGC CACTGGTAAC AGGATTAGCA GAGCGAGGTA
8761 TGTAGGCGGT GCTACAGAGT TCTTGAAGTG GTGGCCTAAC TACGGCTACA CTAGAAGAAC
8821 AGTATTTGGT ATCTGCGCTC TGCTGAAGCC AGTTACCTTC GGAAAAAGAG TTGGTAGCTC
8881 TTGATCCGGC AAACAAACCA CCGCTGGTAG CGGTGGTTTT TTTGTTTGCA AGCAGCAGAT
8941 TACGCGCAGA AAAAAAGGAT CTCAAGAAGA TCCTTTGATC TTTTCTACGG GGTCTGACGC
9001 TCAGTGGAAC GAAAACTCAC GTTAAGGGAT TTTGGTCATG AGATTATCAA AAAGGATCTT
9061 CACCTAGATC CTTTAAATT AAAAATGAAG TTTTAAATCA ATCTAAAGTA TATATGAGTA
9121 AACTTGGTCT GACAGTTACC AATGCTTAAT CAGTGAGGCA CCTATCTCAG CGATCTGTCT
9181 ATTCGTTCA TCCATAGTTG CTTGACTCCC CGTCGTGTAG ATAACTACGA TACGGGAGGG
9241 CTTACCATCT GGCCCCAGTG CTGCAATGAT ACCGCGAGAC CCACGCTCAC CGGCTCCAGA
9301 TTTATCAGCA ATAAACCAGC CAGCCGGAAG GGCCGAGCGC AGAAGTGCTC CTGCAACTTT
9361 ATCCGCTCC ATCCAGTCTA TTAATTGTTG CCGGGAAGCT AGAGTAAGTA GTTCGCCAGT
9421 TAATAGTTTG CGCAACGTTG TTGCCATTGC TACAGGCATC GTGGTGTCAC GCTCGTCGTT
9481 TGGTATGGCT TCATTAGCT CCGGTTCCCA ACGATCAAGG CGAGTTACAT GATCCCCAT
9541 GTTGTGCAAA AAAGCGGTTA GCTCCTTCGG TCCTCCGATC GTTGTGAGAA GTAAGTTGGC
9601 CGCAGTGTTA TCACTCATGG TTATGGCAGC ACTGCATAAT TCTCTTACTG TCATGCCATC
9661 CGTAAGATGC TTTTCTGTGA CTGGTGAGTA CTCAACCAAG TCATTCTGAG AATAGTGTAT
9721 GCGGCGACCG AGTTGCTCTT GCCCGGCGTC AATACGGGAT AATACCGCGC CACATAGCAG
9781 AACTTTAAAA GTGCTCATCA TTGGAAAACG TTCTTCGGGG CGAAAACTCT CAAGGATCTT
9841 ACCGCTGTTG AGATCCAGTT CGATGTAACC CACTCGTGCA CCCAACTGAT CTTGAGCATC
9901 TTTTACTTTC ACCAGCGTTT CTGGGTGAGC AAAAACAGGA AGGCAAAATG CCGCAAAAAA
9961 GGGAATAAGG GCGACACGGA AATGTTGAAT ACTCATACTC TTCCTTTTTC AATATTATTG
10021 AAGCATTTAT CAGGGTTATT GTCTCATGAG CGGATACATA TTTGAATGTA TTTAGAAAAA
10081 TAAACAAATA GGGGTTCCGC GCACATTTC CCGAAAAGTG CCACCTGACG TCTAAGAAAC
10141 CATTATTATC ATGACATTAA CCTATAAAAA TAGGCGTATC ACGAGGCCCT TTCGTC

// (SEQ ID NO: 10)

FIG. 25

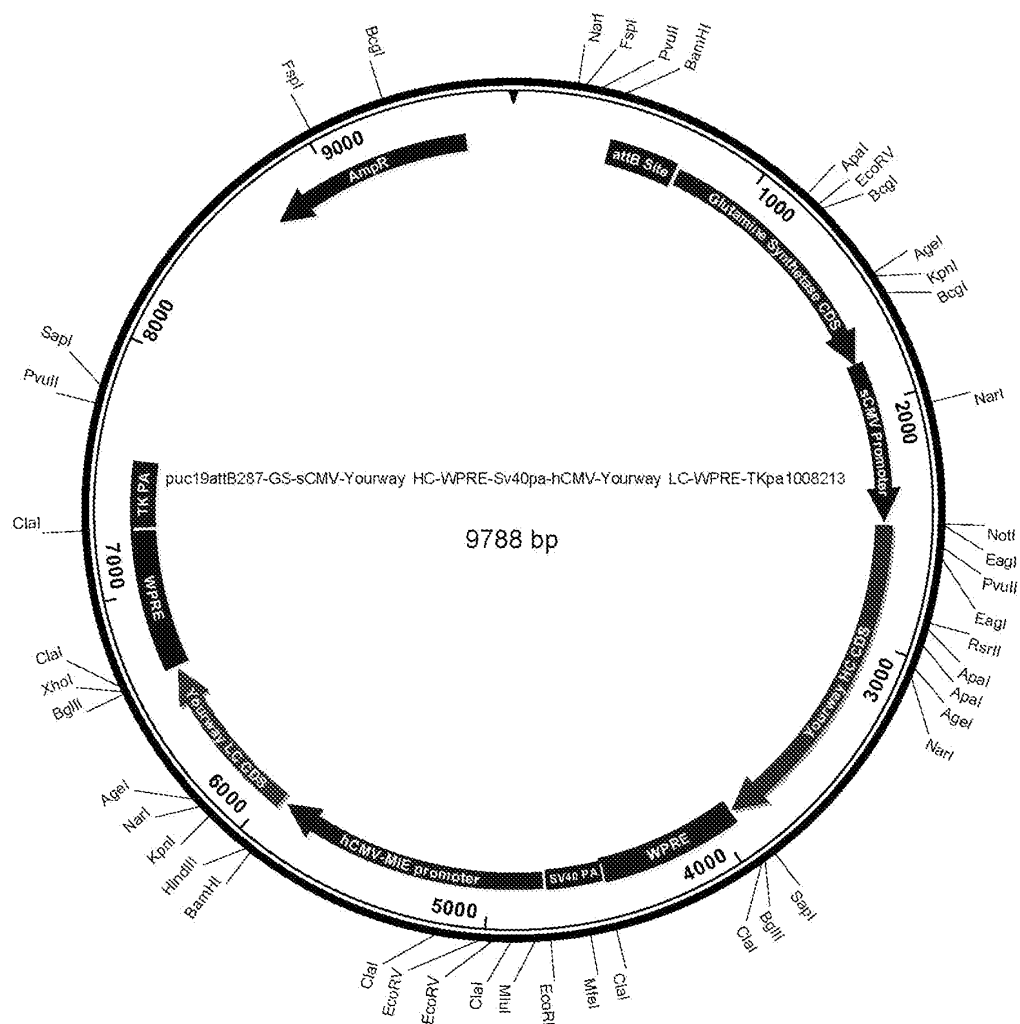


FIG. 26

LOCUS RCpuc19attB287-G 9788 bp DNA linear 12-MAY-2021

FEATURES Location/Qualifiers

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 /note="WPRE"
 misc_feature 7271..7542
 /note="TK PA"
 misc_feature 699..1820
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 misc_feature 1822..2494
 /note="sCMV Promoter"
 misc_feature 2511..3914
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ORIGIN

1 TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGCTCCCG GAGACGGTCA
 61 CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCG TCAGGGCGCG TCAGCGGGTG
 121 TTGGCGGGTG TCGGGGCTGG CTTAACTATG CGGCATCAGA GCAGATTGTA CTGAGAGTGC
 181 ACCATATGCG GTGTGAAATA CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGCGCC
 241 ATTCGCCATT CAGGCTGCGC AACTGTTGGG AAGGGCGATC GGTGCGGGCC TCTTCGCTAT
 301 TACGCCAGCT GCGGAAAGGG GGATGTGCTG CAAGGCGATT AAGTTGGGTA ACGCCAGGGT

FIG. 26 (cont'd)

361 TTTCCCAGTC ACGACGTTGT AAAACGACGG CCAAGTGGGAT CCcgtcgac gatgtagtc
421 acggtctcga agccgcggtg cgggtgccag ggcgtgccct tgggctcccc gggcgcgtac
481 tccacctcac ccatctggtc catcatgatg aacgggtcga ggtggcggtg gttgatcccc
541 gcgaacgcgc ggcgcaccgg gaagccctcg ccctcgaac cgctgggcgc ggtggtcacg
601 gtgagcacgg gacgtgcgac ggcgtcgcg ggtgcggata cgcggggcag cgtcagcggg
661 ttctcgacgg tcacggcggg catgtcgacC CTTCACcat ggccacctca gcaagttccc
721 acttgaacaa aaacatcaag caaatgtact tgtgcctgcc ccagggtgag aaagtccaag
781 ccatgtatat ctgggttgat ggtactggag aaggactgcg ctgcaaaacc cgcaccctgg
841 actgtgagcc caagtgtgta gaagagttac ctgagtgga ttttgatggc tctagtacct
901 ttcagtctga gggctccaac agtgacatgt atctcagccc tgttgccatg tttcgggacc
961 ccttccgcag agatccaac aagctggtgt tctgtgaagt tttcaagtac aaccggaagc
1021 ctgcagagac caatttaagg cactcgtgta aacggataat ggacatggtg agcaaccagg
1081 acccctggtt tggaatggaa caggagtata ctctgatggg aacagatggg cacccttttg
1141 gttggccttc caatggctt cctgggcccc aagggtccga ttactgtggt gtgggcgcag
1201 acaaagccta tggcagggat atcgtggagg ctactaccg cgctgcttg tatgctgggg
1261 tcaagattac aggaacaaat gctgaggtca tgctgccc gtgggagttc caaataggac
1321 cctgtgaagg aatccgcatg ggagatcatc tctgggtggc ccgtttcatc ttgcatcgag
1381 tatgtgaaga ctttgggta atagcaacct ttgacccaa gcccattcct gggaactgga
1441 atggtgcagg ctgccatacc aactttagca ccaaggccat gcgggaggag aatggtctga
1501 agcacatcga ggaggccatc gagaactaa gcaagcgga ccggtaccac attcagcct
1561 acgatccaa ggggggcctg gacaatgcc gtcgtctgac tgggttcac gaaacgtcca
1621 acatcaacga cttttctgt ggtgtcgcca atcgagtgc cagcatccg attccccgga
1681 ctgtcgcca ggagaagaaa gttactttg aagaccgccc cccctctgcc aaCtgtgacc
1741 cctttgcagt gacagaagcc atgtccgca catgccttct caatgagact ggcgacgagc
1801 cctccaata caaaaactaa AGATCCtat ggctattggc cAggttcaat actatgtatt
1861 ggccctatgc catATAGTAT TCCATATATG GGTTCCTA TTGACGTAGA TAGCCCCTCC
1921 CAATGGGCGG TCCCATATAC CATATATGGG GCTTCCTAAT ACCGCCATA GCGACTCCCC
1981 CATTGACGTC AATGGTCTCT ATATATGGTC TTTCCTATTG ACGTCATATG GGCGGTCTCA
2041 TTGACGTATA TGGCGCCTCC CCCATTGACG TCAATTACGG TAAATGGCCC GCCTGGCTCA
2101 ATGCCCATTG ACGTCAATAG GACCACCCAC CATTGACGTC AATGGGATGG CTCATTGCCC
2161 ATTCATATCC GTTCTCACGC CCCCTATTGA CGTCAATGAC GGTAAATGGC CCACTTGGA
2221 GTACATCAAT ATCTATTAAT AGTAACTGG CAAGTACATT ACTATTGGAA GTACGCCAGG
2281 GTACATTGGC AGTACTCCA TTGACGTCAA TGGCGGTAAA TGGCCCGCA TGGCTGCCAA
2341 GTACATCCCC ATTGACGTCA ATGGGGAGGG GCAATGACGC AAATGGGCGT TCCATTGACG

FIG. 26 (cont'd)

2401 TAAATGGGCG GTAGGCGTGC CTAATGGGAG GTCTATATAA GCAATGCTCG TTAGGGAAC
2461 CGCCATTCTG CCTGGGGACG TCGGAGGAGC TCGAaGCGGC Cgcccacc ATGATGTCCT
2521 TTGTCTCTCT GCTCCTGGTT GGCATCCTAT TCCATGCCAC CCAGGCCcag gtcagctgg
2581 tggagtccgg cggcggcgtc gtgcagccc gcccgtccct gcggctgtcc tgcgccgct
2641 ccggcttcac cttctctcc tacaccatgc actgggtgcg gcaggcccc ggcaagggcc
2701 tggagtgggt gactttcatc tcctacgacg gcaacaacaa gtactacgcc gactccgtga
2761 agggccggtt caccatctcc cgcgacaact ccaagaacac cctgtacctg cagatgaact
2821 ccctgcgggc cgaggacacc gccatctact actgcgccc gaccggctgg ctgggccct
2881 tcgactactg gggccagggc accctgtga ccgtgtctc cGCCTCCACC AAGGGCCCAT
2941 CGGTCTTCCC CCTGGCACCC TCTAGCAAGA GCACCTCTGG GGGCACAGCG GCCCTGGGCT
3001 GCCTGGTCAA GGACTACTC CCCGAACCGG TGACGGTGTG GTGGAActCA GGCGCCCTGA
3061 CCAGCGCGT GCACACCTC CCGGTGTCC TACAGTCTC AGGACTCTAC TCCCTCAGCA
3121 GCGTGGTGAC CGTGCCCTC AGCAGCTTG GCACCCAGAC CTACATCTGC AACGTGAATC
3181 ACAAGCCCAG CAACACCAAG GTGGACAAGc ggGTTGAGCC CAAATCTTGT GACAAAActC
3241 ACACATGCCC ACCGTGCCA GCACCTGAAC TCCTGGGGG ACCGTCAGTC TTCCTTCC
3301 CCCCCAACCAAGGACACC CTCATGATCT CCCGGACCCC TGAGGTCACA TCGTGGTG
3361 TGGACGTGAG CCACGAAGAC CCTGAGGTCA AGTTCAActG GTACGTGGAC GCGTGGAG
3421 TGCATAATGC CAAGACAAAG CCGCGGGAGG AGCAGTACA CAGCACGTAC CGTGTGGTCA
3481 GCGTCTCAC CGTCTGCAC CAGGACTGG TGAATGGCAA GGAGTACAAG TGCAAGGTCT
3541 CCAACAAAGC CCTCCAGCC CCCATCGAGA AAACCTCTC CAAAGCCAAA GGGCAGCCCC
3601 GAGAACCACA GGTGTACACC CTGCCTCCAT CCCGcgatGA GCTGACCAAG AACCAGGTCA
3661 GCCTGACCTG CCTGGTCAA GGCTTCTATC CCAGCGACAT CGCCGTGGAG TGGGAGAGCA
3721 ATGGGCAGCC GGAGAACAAC TACAAGACCA CGCCTCCGT GCTGGAActC GACGGTCTCT
3781 TCTCCTCTA TAGCAAGCTC ACCGTGGACA AGAGCAGGTG GCAGCAGGG AACGTCTTCT
3841 CATGCTCCGT GATGCATGAG GCTCTGCACA ACCACTACAC GCAGAAGAGC CTCTCCCTGT
3901 CTCtGGGAA ATGAtgaGAT CTATCGATaa tcaacctctg gattacaaaa ttttgaaag
3961 attgactggt attcttaact atgttgctcc ttttacgcta tgtggatag ctgctttaat
4021 gcctttgat catgctattg cttcccgtat ggctttcatt ttctctct tgtataaatc
4081 ctggttgctg tctctttatg aggagttgtg gcccgtgtc aggcaactg gcgtggtgtg
4141 cactgtgttt gctgacgcaa cccactgg ttggggcatt gccaccact gtcagctcct
4201 ttccgggact ttgctttcc ccctccctat tgccacggcg gaactcatg ccgctgcct
4261 tgcccgtgc tggacagggg ctgggtgtt gggcactgac aattccgtg tttgtcggg
4321 gaaatcatg tccttctt ggctgctgc ctgtgtgcc acctggattc tgcggggac
4381 gtccttctg tacgtcctt cggccctcaa tccagcgac cttcctccc gggcctgct

FIG. 26 (cont'd)

4441 gccggctctg cggcctcttc cgcgtcttcg ccttcgccct cagacgagtc ggatctccct
 4501 ttgggccgcc tccccgcATC GATTACtaat cagccatacc acattttag aggttttact
 4561 tgctttaaaa aacctccac acctcccct gaacctgaaa cataaaatga atgcaattgt
 4621 tgttgtaac tgtttattg cagctataa tggttacaaa taaagcaata gcatcacaaa
 4681 ttacacaaat aaagcatttt ttactgca ttctagtgt ggtttgtcca aactcatcaa
 4741 tgatcttat catgtctgga attcggacgg tgactgcagt gaataataaa atgtgtgtt
 4801 gtccgaaata cgcgtttga gatttctgt gccgactaaa tcatgtcgc gcgtagtg
 4861 tgtttatcgc ctagagat ggcatattg gaaaaatcga ttttgaaa tatggcatat
 4921 tgaagtgtc gccgatgtga gtttctgt aactgatat gccattttt caaagtgt
 4981 ttttggcat acgcgatatc tggcatagc gcttatatc ttacggggg atggcatag
 5041 acgactttg tgactgggc gattctgtg gtcgcaata tcgcagttc gatatagtg
 5101 acagacgata tgaggctata tcgccgatag aggcgacatc aagctggcac atggccaatg
 5161 catatcgtat tatacattga atcaatttg gccattagc atattattca ttggtatat
 5221 agcataaatc aatattggct attggccatt gcatacgtg tatccatc ataattatga
 5281 catttatatt ggctcatgt caacattacc gccatttga cattgattat tgactagta
 5341 ttaatagtaa tcaattacgg ggtcattagt tcatagcca tatatggagt tccggttac
 5401 ataactacg gtaaatggc cgcctggctg accgccaac gaccccccc cattgacgtc
 5461 aataatgac tatgttcca tagtaaccc aataggact ttccattgac gtcaatggg
 5521 ggagtattta cgttaaactg cccacttggc agtacatca gtgtatcata tgccaagtac
 5581 gcccctatt gacgtcaatg acggtaaatg gcccgcctg cattatgcc agtacgac
 5641 ctatgggac ttctactt ggcatgac ctacgtatta gtcacgcta ttacatgt
 5701 gatcggtt ttgcatgac tcaatggcg tggatagcg ttgactcac ggggatttc
 5761 aagtctcac ccattgacg tcaatgggag ttgttttg caccaaaatc aacgggact
 5821 tcaaaatgt cgtacaact ccgccccatt gacgcaatg ggcggtaggc gtgtacgtg
 5881 ggaggtctat ataagcagag ctcttttagt gaaccgATC CTTAACCGTG AAagcttgcc
 5941 gccaccATGA TGTCCTTTGT CTCTGCTC CTGGTTGGCA TCCTATTCCA TGCCACCCAG
 6001 GCCgagatcg tgctgacca gtccccggc acctgtccc tgtccccgg cgagcggg
 6061 acctgtctt gccgggctc ccagtcgtg ggctctctt acctggcctg gtaccagcag
 6121 aagcccgcc aggcccccg gctgctgac tacggcgct tctccgcgc caccggcatc
 6181 ccgaccggg tctccggctc cggctccgc accgactca cctgacct ctccggctg
 6241 gagccgagg acttcgctg gtactactg cagcagtac gtcctccc ctggacctc
 6301 ggccagggca ccaagggtga gatcaagca ACTGTGGCTG CACCATCTGT CTTCATCTC
 6361 CCGCATCTG ATGAGCAGCT TAAGTCCGA ACTGCTAGCG TTGTGTGCCT GCTGAATAAC
 6421 TTCTATCCA GAGAGGCCAA AGTACAGTG AAGGTGGATA ACGCCCTCA ATCGGGTAAC

FIG. 26 (cont'd)

6481 TCCCAGGAGA GTGTCACAGA GCAGGACAGC AAGGACAGCA CCTACAGCCT CAGCAGCACC
 6541 CTGACGCTGA GCAAAGCAGA CTACGAGAAA CACAAAGTCT ACGCCTGCGA AGTCACCCAT
 6601 CAGGGCCTGA GCTCGCCCGT CACAAAGAGC TTCAACAGGG GAGAGTGTTA GtgagatCtc
 6661 gagttcgacA TCGATaatca acctctggat tacaaaattt gtgaaagatt gactggtatt
 6721 cttactatg ttgctccttt tacgctatgt ggatacgctg cttaatgcc ttgtatcat
 6781 gctattgctt cccgtatggc ttctatttc tcctccttg ataaatcctg gttgctgtct
 6841 cttatgagg agttgtggcc cgtgtcagg caacgtggcg tgggtgcac tgtgtttgct
 6901 gacgcaacc cactggttg gggcattgcc accacgtgc agctccttc cgggacttcc
 6961 gctttcccc tccctattgc cacggcggaa ctcacgccg cctgcctgc ccgctgctgg
 7021 acaggggctc gggtgtggg cactgacaat tccgtggtgt tgcggggaa atcatcgtcc
 7081 tttcctggc tgctgcctg tgttgccacc tggattctgc gcgggacgtc cttctgtac
 7141 gtccctcgg cctcaatcc agcggacctt cttcccgcg gcctgctgcc ggctctcggg
 7201 cctctccgc gtctcgcct tcgccctcag acgagtcgga tctcccttg ggccgcctcc
 7261 ccgcATCGAT gggggaggct aactgaaaca cggaaggaga caataccgga aggaacccgc
 7321 gctatgacgg caataaaaag acagaataaa acgcacgggt gttgggtcgt ttgtcataa
 7381 acgcggggtt cggtcaccg gctggcactc tgcgatacc ccaccgagac cccattgggg
 7441 ccaatacgcc cgcgtttctt cttttcccc accccacccc ccaagttcgg gtaaggccc
 7501 agggctcgca gccaacgtcg gggcggcagg cctgccata gccctagcAG CTTGGCcGTA
 7561 ATCATGGTCA TAGCTGTTTC CTGTGTGAAA TTGTTATCCG CTCACAATTC CACACAACAT
 7621 ACGAGCCGGA AGCATAAAGT GTAAAGCCTG GGGTGCCTAA TGAGTGAGCT AACTCACATT
 7681 AATTGCGTTG CGCTCACTGC CCGCTTTCCA GTCGGGAAAC CTGTCGTGCC AGCTGCATTA
 7741 ATGAATCGGC CAACGCGCGG GGAGAGGCGG TTTGCGTATT GGGCGCTCTT CCGCTTCTC
 7801 GCTCACTGAC TCGCTGCGCT CGGTCGTTTC GCTGCGGCGA GCGGTATCAG CTCACTCAA
 7861 GGCGGTAATA CGGTTATCCA CAGAATCAGG GGATAACGCA GGAAAGAACA TGTGAGCAAA
 7921 AGGCCAGCAA AAGGCCAGGA ACCGTAAAAA GGCCGCGTTG CTGGCGTTTT TCCATAGGCT
 7981 CCGCCCCCT GACGAGCATC AAAAAATCG ACGCTCAAGT CAGAGGTGGC GAAACCCGAC
 8041 AGGACTATAA AGATACCAGG CGTTTCCCC TGGAAGCTCC CTCGTGCGCT CTCCTGTTCC
 8101 GACCTGCGG CTTACCGGAT ACCTGTCCG CTTTCTCCCT TCGGGAAGCG TGGCGCTTTC
 8161 TCATAGCTCA CGCTGTAGGT ATCTCAGTTC GGTGTAGGTC GTTCGCTCCA AGCTGGGCTG
 8221 TGTGCACGAA CCCCCGTT AGCCCGACCG CTGCGCCTTA TCCGTAACCT ATCGTCTTGA
 8281 GTCCAACCCG GTAAGACACG ACTTATCGCC ACTGGCAGCA GCCACTGGTA ACAGGATTAG
 8341 CAGAGCGAGG TATGTAGGCG GTGCTACAGA GTTCTGAAG TGGTGGCCTA ACTACGGCTA
 8401 CACTAGAAGA ACAGTATTG GTATCTGCGC TCTGCTGAAG CCAGTTACCT TCGGAAAAAG
 8461 AGTTGGTAGC TCTTGATCCG GCAAACAAAC CACCGCTGGT AGCGGTGGTT TTTTGTGTTG

FIG. 26 (cont'd)

8521 CAAGCAGCAG ATTACGCGCA GAAAAAAGG ATCTCAAGAA GATCCTTTGA TCTTTTCTAC
8581 GGGGTCTGAC GCTCAGTGGA ACGAAACTC ACGTTAAGGG ATTTTGGTCA TGAGATTATC
8641 AAAAAGGATC TTCACCTAGA TCCTTTTAAA TAAAAATGA AGTTTAAAT CAATCTAAAG
8701 TATATATGAG TAAACTTGGT CTGACAGTTA CCAATGCTTA ATCAGTGAGG CACCTATCTC
8761 AGCGATCTGT CTATTCGTT CATCCATAGT TGCCTGACTC CCCGTCGTGT AGATAACTAC
8821 GATACGGGAG GGCTTACCAT CTGGCCCCAG TGCTGCAATG ATACCGCGAG ACCCACGCTC
8881 ACCGGCTCCA GATTATCAG CAATAAACCA GCCAGCCGGA AGGGCCGAGC GCAGAAGTGG
8941 TCCTGCAACT TTATCCGCCT CCATCCAGTC TATTAATTGT TGCCGGAAG CTAGAGTAAG
9001 TAGTTCGCCA GTTAATAGTT TGCGCAACGT TGTTGCCATT GCTACAGGCA TCGTGGTGTC
9061 ACGCTCGTCG TTTGGTATGG CTTCAATCAG CTCCGGTTCC CAACGATCAA GCGAGTTAC
9121 ATGATCCCCC ATGTTGTGCA AAAAAGCGGT TAGCTCCTTC GGTCTCCGA TCGTTGTCAG
9181 AAGTAAGTTG GCCGCAGTGT TATCACTCAT GGTTATGGCA GCACTGCATA ATTCTCTTAC
9241 TGTCATGCCA TCCGTAAGAT GCTTTTCTGT GACTGGTGAG TACTCAACCA AGTCATTCTG
9301 AGAATAGTGT ATGCGGCGAC CGAGTTGCTC TTGCCCGGCG TCAATACGGG ATAATACCGG
9361 GCCACATAGC AGAACTTTAA AAGTGCTCAT CATTGGAAAA CGTTCTTCGG GCGGAAACT
9421 CTCAAGGATC TTACCGCTGT TGAGATCCAG TTCGATGTAA CCCACTCGTG CACCCAAGT
9481 ATCTTCAGCA TCTTTTACTT TCACCAGCGT TTCTGGGTGA GCAAAAACAG GAAGGCAAAA
9541 TGCCGCAAAA AAGGGAATAA GGGCGACACG GAAATGTTGA ATACTCATAC TCTTCCTTTT
9601 TCAATATTAT TGAAGCATT ATCAGGGTTA TTGTCTCATG AGCGGATACA TATTTGAATG
9661 TATTTAGAAA AATAACAAA TAGGGGTTCC GCGCACATTT CCCCAGAAAG TGCCACCTGA
9721 CGTCTAAGAA ACCATTATTA TCATGACATT AACCTATAAA AATAGGCGTA TCACGAGGCC
9781 CTTTCGTC

// (SEQ ID NO: 11)

FIG. 27

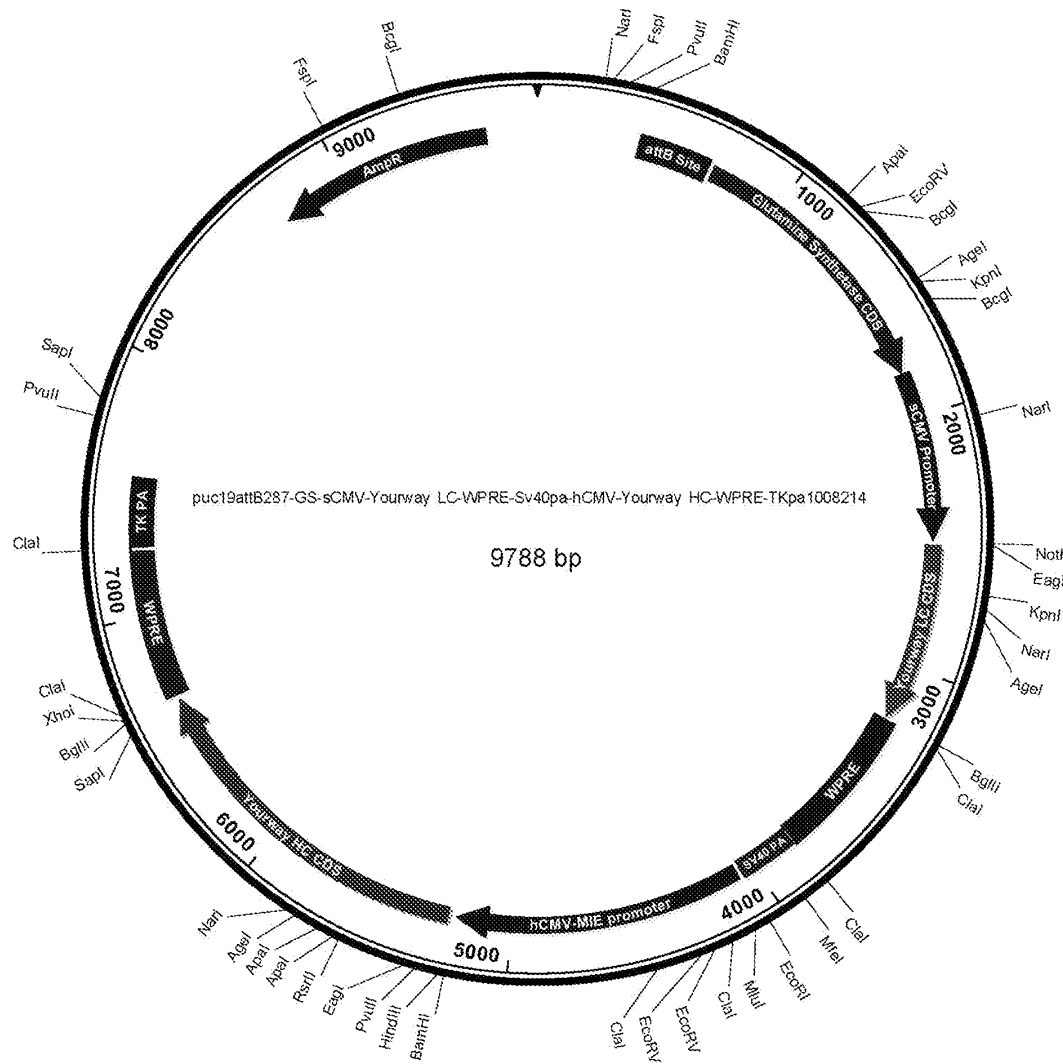


FIG. 28

LOCUS RCpuc19attB287-G 9788 bp DNA linear 12-MAY-2021

FEATURES Location/Qualifiers

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misc_feature 7271..7542
/note="TK PA"
misc_feature 699..1820
/note="Glutamine Synthetase CDS"
misc_feature 1822..2494
/note="sCMV Promoter"
misc_feature 2511..3215
/note="Yourway LC CDS"
misc_feature 3226..3824
/note="WPRE"
misc_feature 3828..4059
/note="SV40 PA"
misc_feature 4075..5217
/note="hCMV-MIE promoter"
misc_feature 5248..6651
/note="Yourway HC CDS"
misc_feature complement(402..690)
/note="attB Site"
misc_feature complement(8728..9588)
/note="AmpR"
source 1..9788
/dnas_title="puc19attB287-GS-sCMV-Yourway LC-WPRE-Sv40pa-hCMV-Yourway HC-WPRE-

TKpa1008214"

ORIGIN

1 TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGCTCCCG GAGACGGTCA
61 CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCG TCAGGGCGCG TCAGCGGGTG
121 TTGGCGGGTG TCGGGGCTGG CTTAACTATG CGGCATCAGA GCAGATTGTA CTGAGAGTGC
181 ACCATATGCG GTGTGAAATA CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGCGCC
241 ATTCGCCATT CAGGCTGCGC AACTGTTGGG AAGGGCGATC GGTGCGGGCC TCTTCGCTAT
301 TACGCCAGCT GCGGAAAGGG GGATGTGCTG CAAGGCGATT AAGTTGGGTA ACGCCAGGGT

FIG. 28 (cont'd)

361 TTTCCCAGTC ACGACGTTGT AAAACGACGG CCAAGTGGGAT CCcgtcgac gatgtaggtc
421 acggtctcga agccgcggtg cgggtgccag ggcgtgccct tgggctcccc gggcgcgtac
481 tccacctcac ccatctggtc catcatgatg aacgggtcga ggtggcggtg gttgatcccc
541 gcgaacgcgc ggcgcaccgg gaagccctcg ccctcgaac cgctgggcgc ggtggtcacg
601 gtgagcacgg gacgtgcgac ggcgtcgcg ggtgcggata cgcggggcag cgtcagcggg
661 ttctcgacgg tcacggcggg catgtcgacC CTTCACcat ggccacctca gcaagttccc
721 acttgaacaa aaacatcaag caaatgtact tgtgcctgcc ccagggtgag aaagtccaag
781 ccatgtatat ctgggttgat ggtactggag aaggactgcg ctgcaaaacc cgcaccctgg
841 actgtgagcc caagtgtgta gaagagttac ctgagtgga ttttgatggc tctagtacct
901 ttcagtctga gggctcaac agtgacatgt atctcagccc tgttgccatg tttcgggacc
961 ccttccgag agatccaac aagctggtgt tctgtgaagt tttcaagtac aaccggaagc
1021 ctgcagagac caatttaagg cactcgtgta aacggataat ggacatggtg agcaaccagg
1081 acccctggtt tggaatggaa caggagtata ctctgatggg aacagatggg cacccttttg
1141 gttggccttc caatggctt cctgggcccc aaggtccgta ttactgtggt gtgggcgcag
1201 acaaagccta tggcagggat atcgtggagg ctactaccg cgcctgcttg tatgctgggg
1261 tcaagattac aggaacaaat gctgaggtca tgctgccc gtgggagttc caaataggac
1321 cctgtgaagg aatccgcatg ggagatcatc tctgggtggc ccgttctatc ttgcatcgag
1381 tatgtgaaga ctttgggta atagcaacct ttgacccaa gcccattcct gggaactgga
1441 atggtgcagg ctgccatacc aactttagca ccaaggccat cggggaggag aatggtctga
1501 agcacatcga ggaggccatc gagaactaa gcaagcgga cgggtaccac attcagcct
1561 acgatccaa ggggggcctg gacaatgcc gtcgtctgac tgggttcac gaaacgtcca
1621 acatcaacga ctttctgct ggtgtcgcca atcgagtc cagcatccg attccccgga
1681 ctgtcgcca ggagaagaaa ggttactttg aagaccgccc cccctctgcc aaCtgtgacc
1741 ccttgcagt gacagaagcc atgtccgca catgccttct caatgagact ggcgacgagc
1801 cctccaata caaaaactaa AGATCCtat ggctattggc cAggttcaat actatgtatt
1861 ggccctatgc catATAGTAT TCCATATATG GGTTCCTA TTGACGTAGA TAGCCCCTCC
1921 CAATGGGCGG TCCCATATAC CATATATGGG GCTTCCTAAT ACCGCCATA GCCACTCCCC
1981 CATTGACGTC AATGGTCTCT ATATATGGTC TTTCCTATTG ACGTCATATG GGCGGTCTCA
2041 TTGACGTATA TGGCGCTCC CCATTGACG TCAATTACGG TAAATGGCCC GCCTGGCTCA
2101 ATGCCATTG ACGTCAATAG GACCACCCAC CATTGACGTC AATGGGATGG CTCATTGCCC
2161 ATTCATATCC GTTCTCACGC CCCCTATTGA CGTCAATGAC GGTAAATGGC CCACTTGGA
2221 GTACATCAAT ATCTATTAAT AGTAACTGG CAAGTACATT ACTATTGGAA GTACGCCAGG
2281 GTACATTGGC AGTACTCCA TTGACGTCAA TGGCGGTAAA TGGCCGCGA TGGCTGCCAA
2341 GTACATCCCC ATTGACGTCA ATGGGGAGGG GCAATGACGC AAATGGGCGT TCCATTGACG

FIG. 28 (cont'd)

2401 TAAATGGGCG GTAGGCGTGC CTAATGGGAG GTCTATATAA GCAATGCTCG TTAGGGAAC
 2461 CGCCATTCTG CCTGGGGACG TCGGAGGAGC TCGAaGCGGC Cgcccacc ATGATGTCCT
 2521 TTGTCTCTCT GCTCCTGGTT GGCATCCTAT TCCATGCCAC CCAGGCCgag atcgtgctga
 2581 cccagtcccc cggcacccctg tcctgtccc cggcgagcg ggccaccctg tcctgcggg
 2641 cctcccagtc cgtgggctcc tcctacctgg cctggtacca gcagaagccc ggccaggccc
 2701 cccggctgct gatctacggc gccttctccc ggcaccagg catccccgac cggttctcgg
 2761 gctccggctc cggcaccgac ttcaccctga ccatctcccg gctggagccc gaggacttcg
 2821 ccgtgtacta ctgccagcag tacggctcct cccctggac cttcggccag ggcaccaagg
 2881 tggagatcaa gcgaACTGTG GCTGCACCAT CTGTCTTCAT CTTCCCGCCA TCTGATGAGC
 2941 AGCTTAAGTC CGGAAGTGT AGCGTTGTGT GCCTGCTGAA TAACTTCTAT CCCAGAGAGG
 3001 CCAAAGTACA GTGGAAGGTG GATAACGCCC TCCAATCGGG TAACTCCAG GAGAGTGTCA
 3061 CAGAGCAGGA CAGCAAGGAC AGCACCTACA GCCTCAGCAG CACCCTGACG CTGAGCAAAG
 3121 CAGACTACGA GAAACACAAA GTCTACGCCT GCGAAGTCAC CCATCAGGGC CTGAGCTCGC
 3181 CCGTCACAAA GAGCTTCAAC AGGGGAGAGT GTTAGtgaGA TCTATCGATa atcaacctct
 3241 ggattacaaa atttgtaaa gattgactgg tattcttaac tatgttgctc cttttacgt
 3301 atgtggatac gctgctttaa tgctttgta tcatgtatt gcttccgta tggcttcat
 3361 tttctctcc ttgtataaat cctggttgct gtcttttat gaggagtgtg ggcccgtgt
 3421 caggcaactg ggcgtggtg gactgtgtt tgctgacga acccccactg gttggggcat
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 3601 caattccgtg gtgtgtcgg ggaatcatc gtccttctc tggctgctc cctgtgtgc
 3661 cacctggatt ctgcgcggga cgtcctctg ctacgtcctc tcggccctca atccagcga
 3721 ccttcttcc cgcggcctg tgccggctc gcggcctct ccgcgttcc gccttcgcc
 3781 tcagacgagt cggatctccc ttggggccg cttcccgAT CGATTACTaa tcagccatac
 3841 cacatttga gaggttttac ttgctttaa aaacctcca cacctcccc tgaacctgaa
 3901 acataaaatg aatgcaattg ttgtgttaa ctgtttatt gcagcttata atggttaca
 3961 ataaagcaat agcatcaca atttcaca taaagcat ttttactgc attctagt
 4021 tggttgtcc aaactcatc atgtatctt tcatgtctg aattcggacg gtgactgcag
 4081 tgaataataa atgtgtgtt tgcggaaat acgcgtttg agatttctg cgcgactaa
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 4261 cgccatttt ccaaaagtga ttttgggca tacgcgat ctggcgatg cgttatatc
 4321 gtttacggg gatggcgata gacgacttg gtgactggg cgattctgt tgcgcaaat
 4381 atcgagttt cgatataggt gacagacgat atgaggctat atcgcgata gaggcgacat

FIG. 28 (cont'd)

4441 caagctggca catggccaat gcataatgat ctatacattg aatcaatatt ggccattagc
4501 catattattc attggttata tagcataaat caatattggc tattggccat tgcatacgtt
4561 gtatccatat cataatatgt acatttatat tggctcatgt ccaacattac cgccatgttg
4621 acattgatta ttgactagt attaatagta atcaattacg gggctattag ttcataagccc
4681 atatatggag ttccgcgtta cataacttac ggtaaatggc ccgcctggct gaccgcccac
4741 cgacccccgc ccattgacgt caataatgac gtatgttccc atagtaacgc caatagggac
4801 tttccattga cgtcaatggg tggagtattt acggtaaact gcccacttg cagtacatca
4861 agtgtatcat atgccaagta cggcccctat tgacgtcaat gacggtaaat ggccgcctg
4921 gcattatgcc cagtacatga cttatggga ctttctact tggcagtaca tctacgtatt
4981 agtcatcgct attaccatgg tgatcggtt ttggcagtac atcaatgggc gtggatagcg
5041 gtttgactca cggggatttc caagtctcca cccattgac gtcaatggga gttgttttg
5101 gcacaaaaat caacgggact ttcaaaaatg tcgtaaacac tccgccccat tgacgcaaat
5161 gggcggtagg cgtgtacgtt gggaggtcta tataagcaga gctcgtttag tgaaccgGAT
5221 CCTTAACCGT GAAagcttg cgcaccATG ATGTCCTTTG TCTCTCTGCT CCTGGTTGGC
5281 ATCCTATTCC ATGCCACCCA GGCCcaggtg cagctggtgg agtccggcgg cggcgtcgtg
5341 cagccccgcc ggtccctgcg gctgtcctgc gccgcctcgg gcttcacctt ctctctctac
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5521 gacaactcca agaacacct gtacctgcag atgaactccc tgcgggccga ggacaccgcc
5581 atctactact gcgcccggac cggctggctg ggccccttcg actactgggg ccagggcacc
5641 ctggtgaccg tgtctccGC CTCCACCAAG GGCCCATCGG TCTTCCCCCT GGCACCCTCT
5701 AGCAAGAGCA CCTCTGGGGG CACAGCGGCC CTGGGCTGCC TGGTCAAGGA CTACTCCCC
5761 GAACCGGTGA CGGTGTCGTG GAACTCAGGC GCCCTGACCA GCGGCGTGCA CACCTCCCC
5821 GCTGTCCTAC AGTCCTCAGG ACTCTACTCC CTCAGCAGCG TGGTGACCGT GCCCTCCAGC
5881 AGCTTGGGCA CCCAGACCTA CATCTGCAAC GTGAATCACA AGCCCAGCAA CACCAAGGTG
5941 GACAAGcggG TTGAGCCCCA ATCTTGTGAC AAAACTCACA CATGCCCACC GTGCCAGCA
6001 CCTGAACTCC TGGGGGGACC GTCAGTCTTC CTCTCCCCC CAAAACCCAA GGACACCCTC
6061 ATGATCTCCC GGACCCCTGA GGTACATGC GTGGTGGTGG ACGTGAGCCA CGAAGACCTT
6121 GAGGTCAAGT TCAACTGTA CGTGGACGGC GTGGAGGTGC ATAATGCCAA GACAAAGCCG
6181 CGGGAGGAGC AGTACAACAG CACGTACCGT GTGGTCAGCG TCCTACCGT CCTGCACCAG
6241 GACTGGCTGA ATGGCAAGGA GTACAAGTGC AAGGTCTCCA ACAAAGCCCT CCCAGCCCCC
6301 ATCGAGAAAA CCATCTCAA AGCCAAAGGG CAGCCCCGAG AACCACAGGT GTACACCCTG
6361 CCTCCATCCC GcgatGAGCT GACCAAGAAC CAGGTCAGCC TGACCTGCCT GGTCAAAGGC
6421 TTCTATCCCA GCGACATCGC CGTGGAGTGG GAGAGCAATG GGCAGCCGGA GAACAACCTAC

FIG. 28 (cont'd)

6481 AAGACCACGC CTCCGTGCT GGA CTCCGAC GGCTCCTTCT TCCTCTATAG CAAGCTCACC
6541 GTGGACAAGA GCAGGTGGCA GCAGGGGAAC GTCTTCTCAT GCTCCGTGAT GCATGAGGCT
6601 CTGCACAACC ACTACACGCA GAAGAGCCTC TCCCTGTCTC CtGGGAAATG AtgagatCtc
6661 gagttcgacA TCGATaatca acctctggat tacaaaattt gtgaaagatt gactggtatt
6721 cttactatg ttgctcctt tacgctatgt ggatacgctg cttaatgcc ttgtatcat
6781 gctattgctt cccgtatggc ttccatttc tcctccttgt ataaatcctg gttgctgtct
6841 ctttatgagg agttgtggcc cgtgtcagg caacgtggcg tgggtgcac tgtgtttgct
6901 gacgcaacc cactggttg gggcattgcc accacgtgc agctccttc cgggacttc
6961 gctttcccc tccattatgc caggcgga ctcacgccg cctgcctgc cgcgtgctg
7021 acaggggctc ggctgtggg cactgacaat tccgtggtgt tgcggggaa atcatcgtcc
7081 ttccttggc tgctgcctg tgttgccacc tggattctgc gcgggacgtc cttctgtac
7141 gtccctcgg cctcaatcc agcggacctt cttcccgcg gcctgctgcc ggctctcgg
7201 cctctccgc gtctcgcct tcgacctcag acgagtcgga tctcccttg ggccgcctc
7261 ccgcATCGAT gggggaggct aactgaaaca cggaaggaga caataccgga aggaacccgc
7321 gctatgacgg caataaaaag acagaataaa acgcacgggt gttgggtcgt ttgtcataa
7381 acgcggggtt cgtgccagg gctggcactc tgcgatacc ccaccgagac cccattgggg
7441 ccaatacgcc cgcgtttctt cttttcccc accccacccc ccaagttcgg gtaaggccc
7501 agggctcgca gccaacgtcg gggcggcagg cctgccata gccctagcAG CTTGGCcGTA
7561 ATCATGGTCA TAGCTGTTTC CTGTGTGAAA TTGTTATCCG CTCACAATTC CACACAACAT
7621 ACGAGCCGGA AGCATAAAGT GTAAAGCCTG GGGTGCCTAA TGAGTGAGCT AACTCACATT
7681 AATTGCGTTG CGCTACTGC CCGCTTTCCA GTCGGGAAAC CTGTCGTGCC AGCTGCATTA
7741 ATGAATCGGC CAACGCGCGG GGAGAGGCGG TTTGCGTATT GGGCGCTCTT CCGCTTCTC
7801 GCTCACTGAC TCGTGCCTG CGGTGCTTCG GCTGCGGCGA GCGGTATCAG CTCACTCAA
7861 GGCGGTAATA CGGTTATCCA CAGAATCAGG GGATAACGCA GGAAAGAACA TGTGAGCAAA
7921 AGGCCAGCAA AAGGCCAGGA ACCGTAAAAA GGCCGCGTTG CTGGCGTTTT TCCATAGGCT
7981 CCGCCCCCT GACGAGCATC AAAAAATCG ACGCTCAAGT CAGAGGTGGC GAAACCCGAC
8041 AGGACTATAA AGATACCAGG CGTTTCCCC TGGAAGCTCC CTCGTGCGCT CTCCTGTTCC
8101 GACCTGCGG CTTACCGGAT ACCTGTCCG CTTTCTCCCT TCGGGAAGCG TGGCGCTTTC
8161 TCATAGCTCA CGCTGTAGGT ATCTCAGTTC GGTGTAGGTC GTTCGCTCCA AGCTGGGCTG
8221 TGTGCACGAA CCCCCGTT AGCCCGACCG CTGCGCCTTA TCCGTAACCT ATCGTCTTGA
8281 GTCCAACCCG GTAAGACACG ACTTATCGCC ACTGGCAGCA GCCACTGGTA ACAGGATTAG
8341 CAGAGCGAGG TATGTAGGCG GTGCTACAGA GTTCTGAAG TGGTGGCCTA ACTACGGCTA
8401 CACTAGAAGA ACAGTATTG GTATCTGCGC TCTGCTGAAG CCAGTTACCT TCGGAAAAAG
8461 AGTTGGTAGC TCTTGATCCG GCAAACAAAC CACCGCTGGT AGCGGTGGT TTTTGTTTG

FIG. 28 (cont'd)

8521 CAAGCAGCAG ATTACGCGCA GAAAAAAGG ATCTCAAGAA GATCCTTTGA TCTTTTCTAC
8581 GGGGTCTGAC GCTCAGTGGA ACGAAACTC ACGTTAAGGG ATTTTGGTCA TGAGATTATC
8641 AAAAAGGATC TTCACCTAGA TCCTTTTAAA TAAAAATGA AGTTTAAAT CAATCTAAAG
8701 TATATATGAG TAAACTTGGT CTGACAGTTA CCAATGCTTA ATCAGTGAGG CACCTATCTC
8761 AGCGATCTGT CTATTCGTT CATCCATAGT TGCCTGACTC CCCGTCGTGT AGATAACTAC
8821 GATACGGGAG GGCTTACCAT CTGGCCCCAG TGCTGCAATG ATACCGCGAG ACCCACGCTC
8881 ACCGGCTCCA GATTATCAG CAATAAACCA GCCAGCCGGA AGGGCCGAGC GCAGAAGTGG
8941 TCCTGCAACT TTATCCGCCT CCATCCAGTC TATTAATTGT TGCCGGAAG CTAGAGTAAG
9001 TAGTTCGCCA GTTAATAGTT TGCGCAACGT TGTTGCCATT GCTACAGGCA TCGTGGTGTC
9061 ACGCTCGTCG TTTGGTATGG CTTCAATCAG CTCCGGTTCC CAACGATCAA GCGAGTTAC
9121 ATGATCCCCC ATGTTGTGCA AAAAAGCGGT TAGCTCCTTC GGTCTCCGA TCGTTGTCAG
9181 AAGTAAGTTG GCCGCAGTGT TATCACTCAT GGTTATGGCA GCACTGCATA ATTCTCTTAC
9241 TGTCATGCCA TCCGTAAGAT GCTTTTCTGT GACTGGTGAG TACTCAACCA AGTCATTCTG
9301 AGAATAGTGT ATGCGGCGAC CGAGTTGCTC TTGCCCGGCG TCAATACGGG ATAATACCGG
9361 GCCACATAGC AGAACTTTAA AAGTGCTCAT CATTGGAAAA CGTTCTTCGG GCGGAAACT
9421 CTCAAGGATC TTACCGCTGT TGAGATCCAG TTCGATGTAA CCCACTCGTG CACCCAAGTG
9481 ATCTTCAGCA TCTTTTACTT TCACCAGCGT TTCTGGGTGA GCAAAAACAG GAAGGCAAAA
9541 TGCCGCAAAA AAGGGAATAA GGGCGACACG GAAATGTTGA ATACTCATAC TCTTCCTTTT
9601 TCAATATTAT TGAAGCATT ATCAGGGTTA TTGTCTCATG AGCGGATACA TATTTGAATG
9661 TATTTAGAAA AATAACAAA TAGGGGTTCC GCGCACATTT CCCCAGAAAG TGCCACCTGA
9721 CGTCTAAGAA ACCATTATTA TCATGACATT AACCTATAAA AATAGGCGTA TCACGAGGCC
9781 CTTTCGTC

// (SEQ ID NO: 12)

FIG. 29

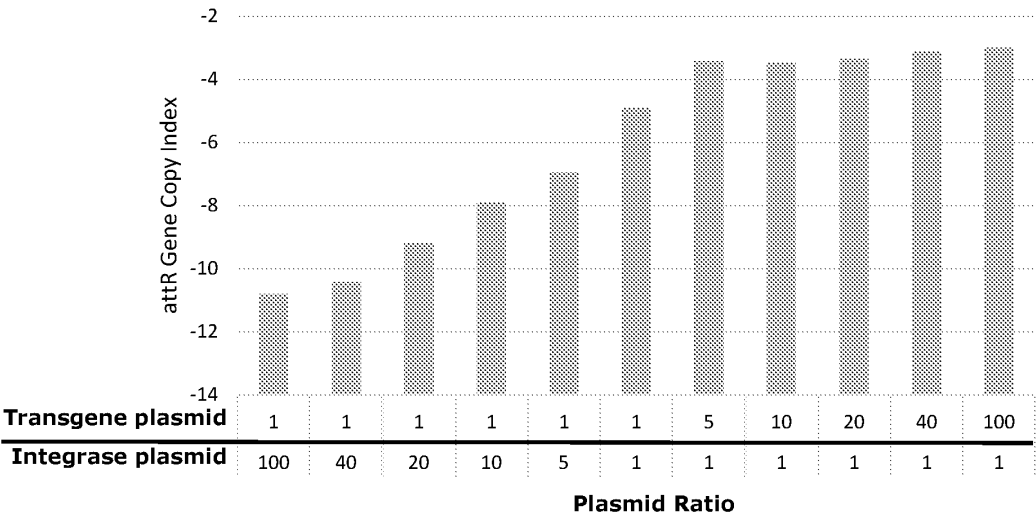


FIG. 30

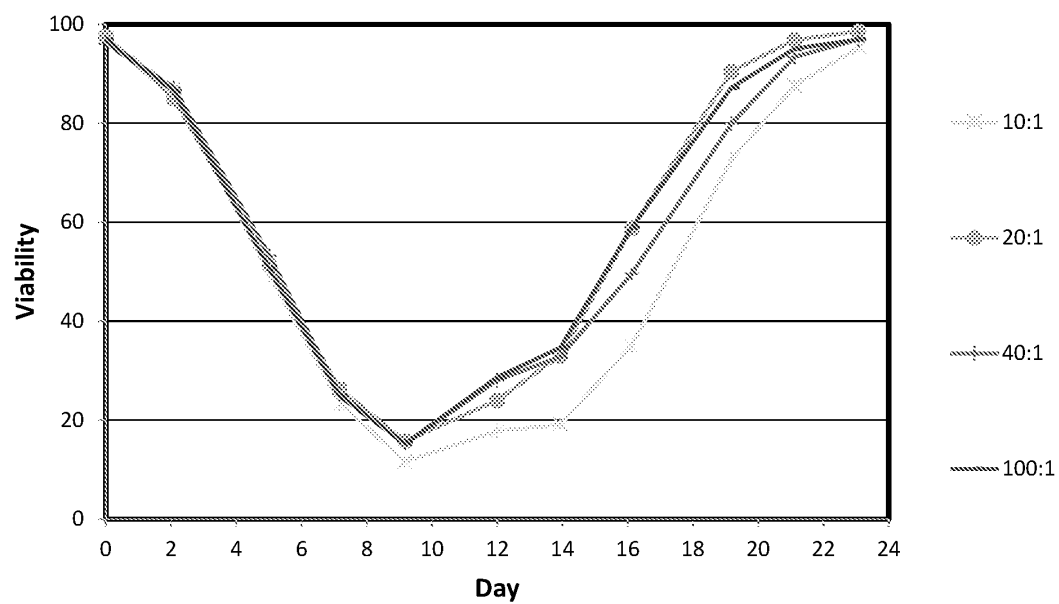


FIG. 31

Transgene:Integrase Plasmid Ratio	attR Gene Copy Index	attR Copy Number
10:1	2.7	16.0
20:1	1.9	7.2
40:1	3.6	21.2
100:1	4.3	27.6

FIG. 32

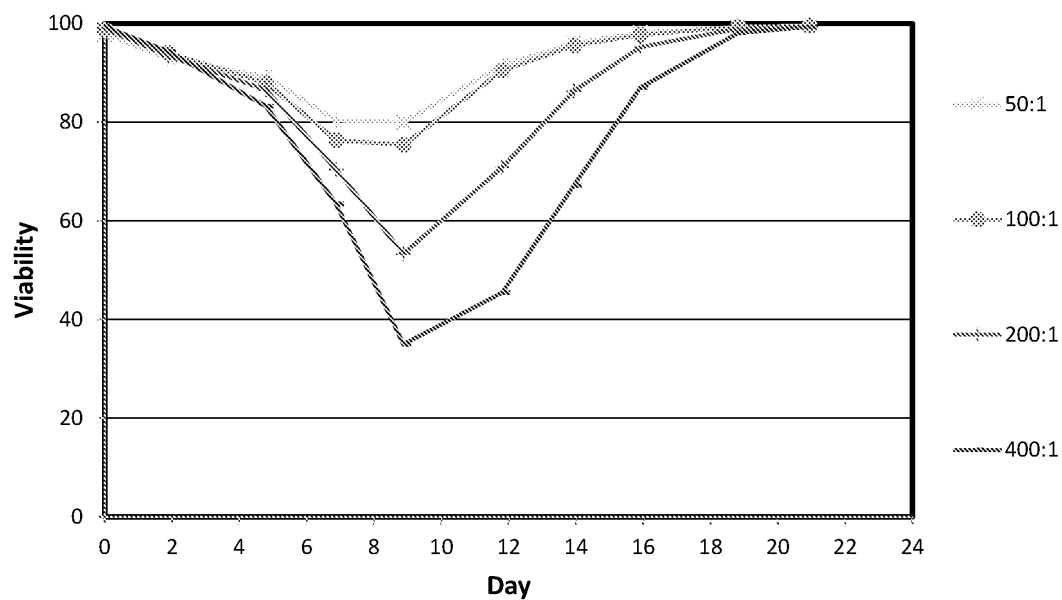


FIG. 33

Transgene:Integrase Plasmid Ratio	attR Gene Copy Index
50:1	5.9
100:1	6.1
200:1	6.5
400:1	6.7

FIG. 34

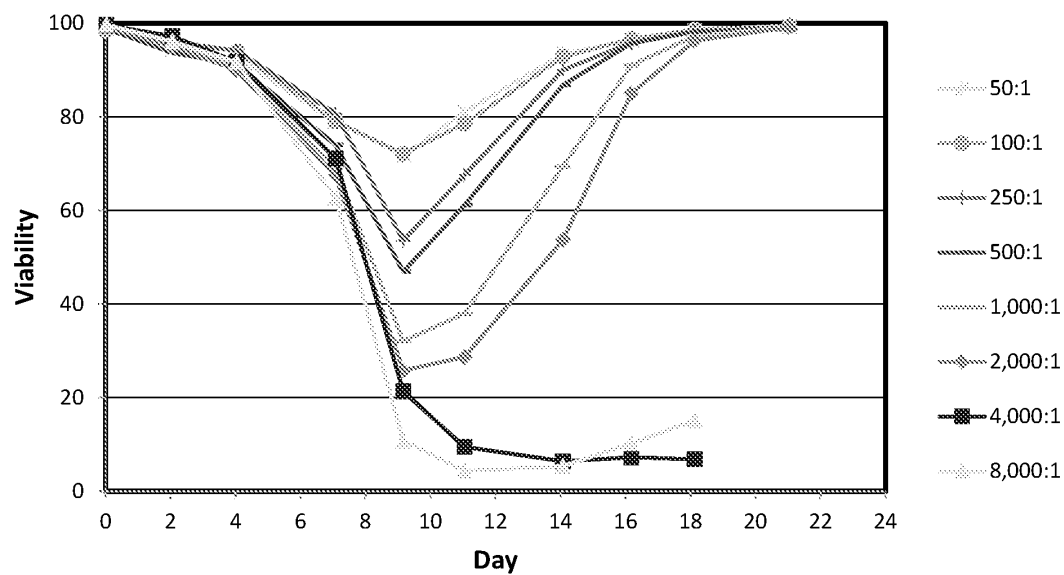


FIG. 35

Transgene:Integrase Plasmid Ratio	attR Gene Copy Index
50:1	4.5
100:1	4.7
250:1	5.3
500:1	5.6
1,000:1	4.4
2,000:1	4.6

FIG. 36

Clone	attR Gene Copy Index	attP Gene Copy Index	% Filled Docks	Titer (mg/L)
1B1	6.9	6.3	57%	4169
1B5	7.2	5.3	73%	3823
1B7	7.5	-11.2	100%	4656
1B11	6.3	6.5	47%	3327
1C3	7.5	5.4	75%	3107
1C11	6.7	6.0	59%	2621
1E5	6.9	6.2	60%	3583
1E11	7.1	6.8	55%	3311
1F1	7.0	6.4	58%	3631
1F9	7.1	6.1	64%	3261
1F11	7.3	5.7	70%	4195
1G5	7.5	3.6	88%	3800
1G7	7.1	4.5	80%	4947
1G9	7.1	6.1	62%	2812
1G11	7.0	7.0	49%	2408
1H5	6.5	7.0	44%	3693
2A5	5.2	7.7	21%	2447
2D3	6.9	6.5	55%	3369
2F3	7.2	4.9	77%	4423
2F5	6.2	7.5	34%	2551
2F7	7.7	4.8	82%	4023
2G1	6.9	6.9	50%	2843
2G7	7.6	3.3	91%	5008
2H1	7.4	6.6	60%	4250
2H3	6.7	4.7	74%	2301
2H5	7.5	3.6	88%	3633

FIG. 37

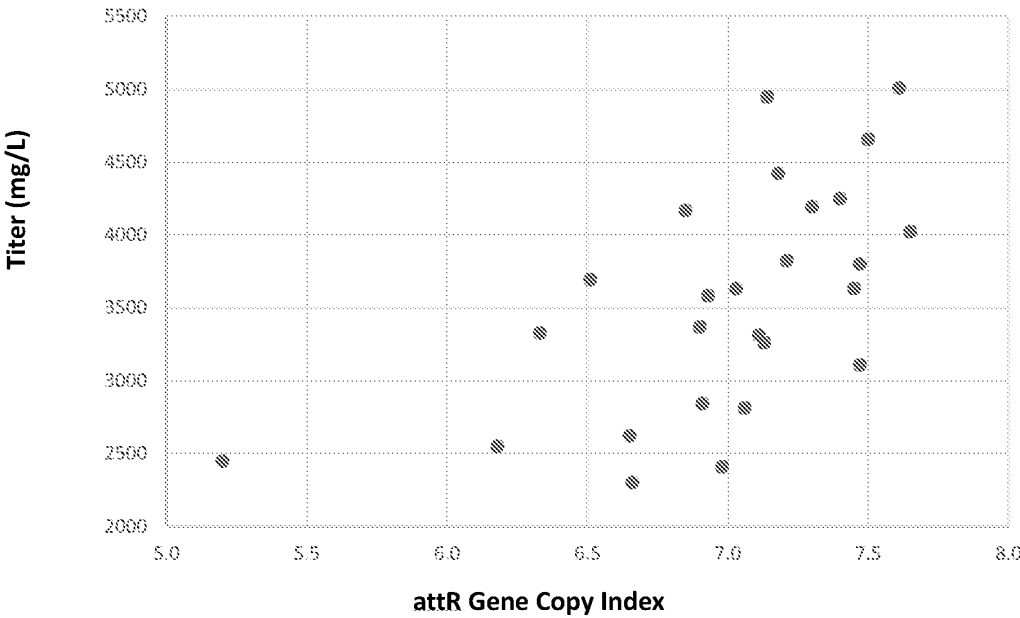


FIG. 38

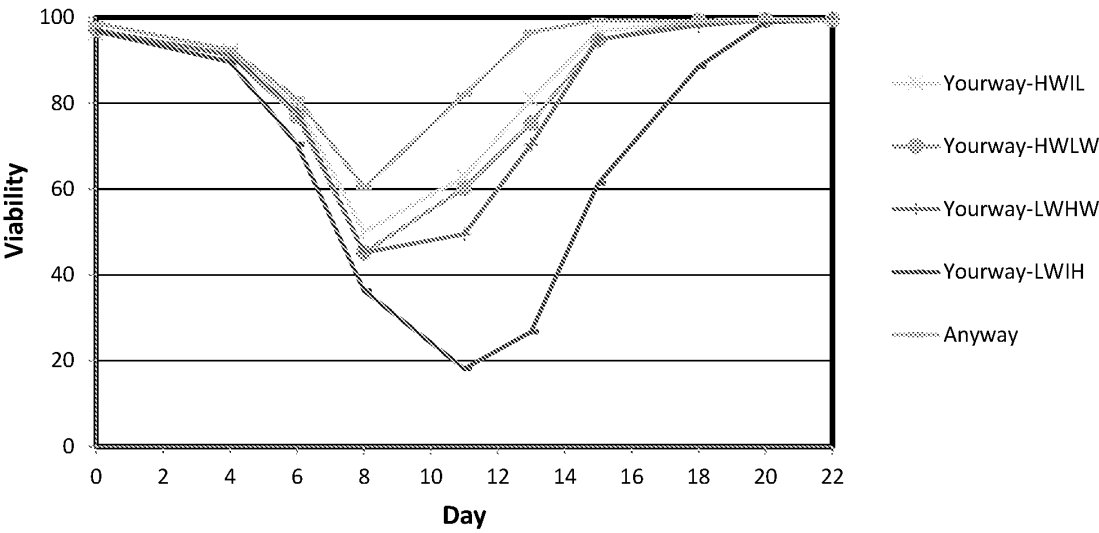


FIG. 39

Expression Construct	attR Gene Copy Index	Titer (mg/L)
Yourway-HWIL	5.8	4434
Yourway-HWLW	6.1	3038
Yourway-LWHW	6.2	4248
Yourway-LWIIH	5.2	892
Anyway	6.8	2574

FIG. 40

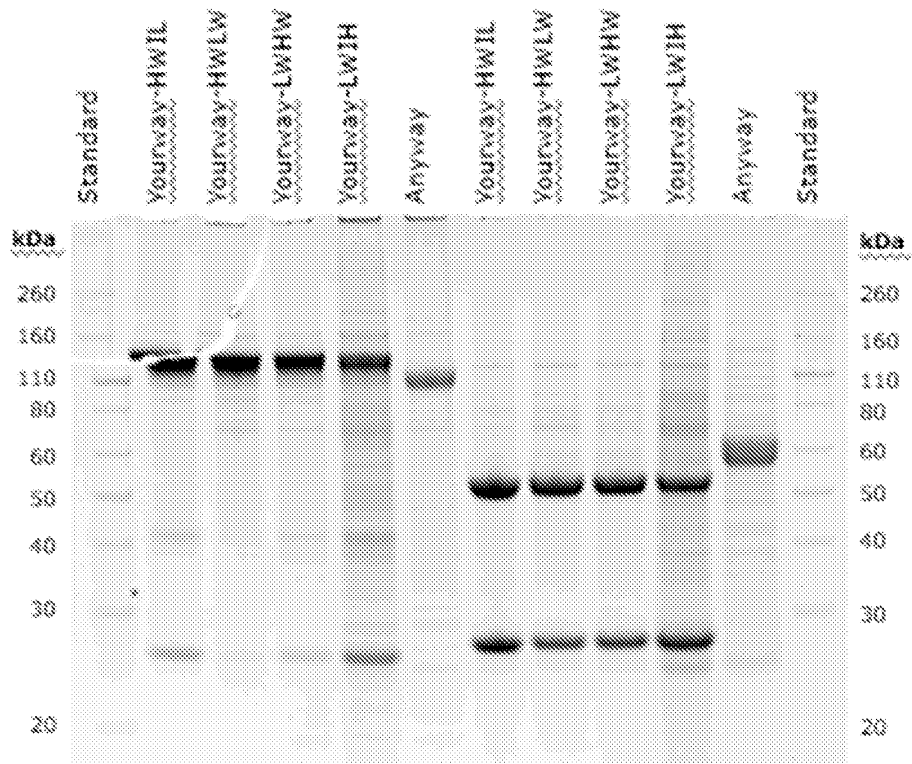


FIG. 41

