

pmCherry-C1

	CMV IE Promoter					
1	TAGTTATTAA	TAGTAATCAA	TTACGGGGTC	ATTAGTTCAT	AGCCCATATA	TGGAGTTCCG
	ATCAATAATT	ATCATTAGTT	AATGCCCCAG	TAATCAAGTA	TCGGGTATAT	ACCTCAAGGC
	CMV IE Promoter					
61	CGTTACATAA	CTTACGGTAA	ATGGCCCGCC	TGGCTGACCG	CCCAACGACC	CCGCCCCATT
	GCAATGTATT	GAATGCCATT	TACCGGGCGG	ACCGACTGGC	GGGTTGCTGG	GGGCGGGTAA
	CMV IE Promoter					
121	GACGTCAATA	ATGACGTATG	TTCCCATAGT	AACGCCAATA	GGGACTTTCC	ATGACGTCA
	CTGCAGTTAT	TACTGCATAC	AAGGGTATCA	TTGCGGTTAT	CCCTGAAAGG	TAAGTGCAGT
	CMV IE Promoter					
181	ATGGGTGGAG	TATTTACGGT	AAACTGCCCA	CTTGGCAGTA	CATCAAGTGT	ATCATATGCC
	TACCCACCTC	ATAAATGCCA	TTTGACGGGT	GAACCGTCAT	GTAGTTCACA	TAGTATACGG
	CMV IE Promoter					
241	AAGTACGCCC	CCTATTGACG	TCAATGACGG	TAAATGGCCC	GCCTGGCATT	ATGCCCAGTA
	TTCATGCGGG	GGATAACTGC	AGTTACTGCC	ATTTACCGGG	CGGACCGTAA	TACGGGTCAT
	CMV IE Promoter					
301	CATGACCTTA	TGGGACTTTC	CTACTGGCCA	GTACATCTAC	GTATTAGTCA	TCGCTATTAC
	GTACTGGAAT	ACCCTGAAAG	GATGAACCGT	CATGTAGATG	CATAATCAGT	AGCGATAATG
	CMV IE Promoter					
361	CATGGTGTAG	CGGTTTTGGC	AGTACATCAA	TGGGCGTGGA	TAGCGGTTTG	ACTCACGGGG
	GTACCACTAC	GCCAAAACCG	TCATGTAGTT	ACCCGCACCT	ATCGCCAAAC	TGAGTGCCCC
	CMV IE Promoter					
421	ATTTCCAAGT	CTCCACCCCA	TTGACGTCAA	TGGGAGTTTG	TTTTGGCACC	AAAATCAACG
	TAAAGGTTC	GAGGTGGGGT	AACTGCAGTT	ACCCTCAAAC	AAAACCGTGG	TTTTAGTTGC
	CMV IE Promoter					
481	GGACTTTCCA	AAATGTCGTA	ACAACCTCCG	CCCATTGACG	CAAATGGGCG	GTAGGCGTGT
	CCTGAAAGGT	TTTACAGCAT	TGTTGAGGCG	GGGTAACCTG	GTTTACCCGC	CATCCGCACA
	CMV IE Promoter					
541	ACGGTGGGAG	GTCTATATAA	GCAGAGCTGG	TTTAGTGAAC	CGTCAGATCC	GCTAGCGCTA
	TGCCACCCTC	CAGATATATT	CGTCTCGACC	AAACTACTTG	GCAGTCTAGG	CGATCGCGAT
	Kozak sequence					
	Agel	mCherry				
601	CCGGTCGCCA	CCATGGTGAG	CAAGGGCGAG	GAGGATAACA	TGGCCATCAT	CAAGGAGTTC
	GGCCAGCGGT	GGTACCACTC	GTTCCCGCTC	CTCCTATTGT	ACCGGTAGTA	GTTCCTCAAG
	mCherry					
661	ATGCGCTTCA	AGGTGCACAT	GGAGGGCTCC	GTGAACGGCC	ACGAGTTCGA	GATCGAGGGC
	TACGCGAAGT	TCCACGTGTA	CCTCCCGAGG	CACTTGCCGG	TGCTCAAGCT	CTAGCTCCCC
	mCherry					
721	GAGGGCGAGG	GCCGCCCTTA	CGAGGGCACC	CAGACCGCCA	AGCTGAAGGT	GACCAAGGGT
	CTCCCGCTCC	CGGCGGGGAT	GCTCCCGTGG	GTCTGGCGGT	TCGACTTCCA	CTGGTTCCCA
	mCherry					
781	GGCCCCCTGC	CCTTCGCCTG	GGACATCCTG	TCCCCTCAGT	TCATGTACGG	CTCCAAGGCC
	CCGGGGGACG	GGAAGCGGAC	CCTGTAGGAC	AGGGGAGTCA	AGTACATGCC	GAGGTTCCGG
	mCherry					
841	TACGTGAAGC	ACCCCGCCGA	CATCCCCGAC	TACTTGAAGC	TGTCCTTCCC	CGAGGGCTTC
	ATGCACCTCG	TGGGGCGGCT	GTAGGGGCTG	ATGAACTTCG	ACAGGAAGGG	GCTCCCGAAG
	mCherry					
901	AAGTGGGAGC	GCGTGATGAA	CTTCGAGGAC	GGCGGCGTGG	TGACCGTGAC	CCAGGACTCC
	TTCACCCTCG	CGCACTACTT	GAAGCTCCTG	CCGCCGCACC	ACTGGCACTG	GGTCCTGAGG
	mCherry					
	PstI					
961	TCCCTGCAGG	ACGGCGAGTT	CATCTACAAG	GTGAAGCTGC	GCGGCACCAA	CTTCCCCTCC
	AGGGACGTCC	TGCCGCTCAA	GTAGATGTTT	CACTTCGACG	GCCTGTGGTT	GAAGGGGAGG
	mCherry					
1021	GACGGCCCCG	TAATGCAGAA	GAAGACCATG	GGCTGGGAGG	CCTCCTCCGA	GCGGATGTAC
	CTGCCGGGGC	ATTACGTCTT	CTTCTGGTAC	CCGACCCTCC	GGAGGAGGCT	CGCTACATG
	mCherry					
1081	CCCGAGGACG	GCGCCCTGAA	GGGCGAGATC	AAGCAGAGGC	TGAAGCTGAA	GGACGGCGGC
	GGGCTCCTGC	CGCGGGACTT	CCCCTCTAG	TTCGTCTCCG	ACTTCGACTT	CCTGCCGCCG
	mCherry					
1141	CACTACGACG	CTGAGGTCAA	GACCACCTAC	AAGGCCAAGA	AGCCCGTGCA	GCTGCCCGGC
	GTGATGCTGC	GACTCCAGTT	CTGGTGGATG	TTCCGGTTCT	TCGGGCACGT	CGACGGGCCG
	mCherry					
1201	GCCTACAACG	TCAACATCAA	GTTGGACATC	ACCTCCCACA	ACGAGGACTA	CACCATCGTG
	CGGATGTTGC	AGTTGTAGTT	CAACCTGTAG	TGGAGGGTGT	TGCTCCTGAT	GTGGTAGCAC

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1261	GAACAGTACG AACGCGCCGA GGGCCGCCAC TCCACCGGCG GCATGGACGA GCTGTACAAG					
	CTTGTTCATGC TTGCGCGGCT CCCGCGGGT AGGTGGCCGC CGTACCTGCT CGACATGTTC					
	MCS					
1321	TCCGACTCA GATCTCGAGC TCAAGCTTCG AATTCTGCAG TCGACGGTAC CGCGGGCCCG					
	AGGCCTGAGT CTAGAGCTCG AGTTCGAAGC TTAAGACGTC AGCTGCCATG GCGCCCGGGC					
	MCS					
1381	GGATCCACCG GATCTAGATA ACTGATCATA ATCAGCCATA CCACATTTGT AGAGGTTTAA					
	CCTAGGTGGC CTAGATCTAT TGAAGTCTAT TAGTCCGGTAT GGTGTAACA TCTCCAAAA					
1441	CTTGCTTTAA AAAACCTCCC ACACCTCCCC CTGAACCTGA AACATAAAAT GAATGCAATT					
	GAACGAAATT TTTTGAGGGG TGTGGAGGGG GACTTGGACT TTGTATTTTA CTTACGTAA					
	SV40 early polyA sig					
1501	GTTGTTGTTA ACTTGTTTAT TGCAGCTTAT AATGGTTACA AATAAAGCAA TAGCATCACA					
	CAACAACAAT TGAACAAATA ACGTCGAATA TTACCAATGT TTATTTCTGT ATCGTAGTGT					
	SV40 early polyA sig					
1561	AATTTACAAA ATAAAGCATT TTTTCACTG CATTCTAGTT GTGGTTTGT CAAACTCATC					
	TTAAAGTGT TATTTCTGTA AAAAAGTGAC GTAAGATCAA CACCAAACAG GTTTGAGTAG					
1621	AATGATCTT AACGCGTAAA TTGTAAGCGT TAATATTTTG TAAAAATTCG CGTTAAATTT					
	TTACATAGAA TTGCGCATT AACATTCGCA ATTATAAAAC AATTTAAGC GCAATTTAAA					
	f1 origin					
1681	TTGTTAAATC AGCTCATTTC TTAACCAATA GGCCGAAATC GGCAAAATCC CTTATAAATC					
	AACAATTTAG TCGAGTAAAA AATTGGTTAT CCGCTTTAG CCGTTTTAGG GAATATTTAG					
	f1 origin					
1741	AAAAGAATAG ACCGAGATAG GGTGAGTGT TGTTCAGTT TGGAAACAAGA GTCCACTATT					
	TTTCTTATC TGGCTCTATC CCAACTCACA ACAAGGTCAA ACCTGTTCT CAGGTGATAA					
	f1 origin					
1801	AAAGAACGTG GACTCCAACG TCAAAGGGCG AAAAACCCTC TATCAGGGCG ATGGCCCACT					
	TTTCTTGAC CTGAGGTTGC AGTTTCCCGC TTTTGGCAG ATAGTCCCGC TACCGGTGA					
	f1 origin					
1861	ACGTGAACCA TCACCCTAAT CAAGTTTTTT GGGGTCGAGG TGCCGTAAAG CACTAAATCG					
	TGCACCTGGT AGTGGGATTA GTTCAAAAAA CCCAGCTCC ACGGCATTTC GTGATTTAGC					
	f1 origin					
1921	GAACCTTAAA GGGAGCCCC GATTTAGAGC TTGACGGGGA AAGCCGGCGA ACGTGGCGAG					
	CTTGGGATT CCCTCGGGGG CTAATCTCG AACTGCCCT TCGGGCGCT TGCACCGCTC					
	f1 origin					
1981	AAAGGAAGGG AAGAAAGCGA AAGGAGCGGG CGTAGGGCG CTGGCAAGTG TAGCGGTCAC					
	TTTCTTCCC TTCTTTCGCT TTCTCGCCC GCGATCCCGC GACCGTTCAC ATCGCCAGTG					
	f1 origin					
2041	GCTGCGCGTA ACCACCACAC CCGCCGCGCT TAATGCGCCG CTACAGGGCG CGTCAGGTGG					
	CGACGCGCAT TGGTGGTGTG GCGGGCGCGA ATTACGCGC GATGTCCCGC GCAGTCCACC					
	f1 origin					
	Kan(R) Promot					
2101	CACTTTTCGG GGAATGTGC GCGGAACCCC TATTTGTTTA TTTTCTAAA TACATTCAAA					
	GTGAAAAGCC CCTTACACG CGCCTGGGG ATAAACAAAT AAAAGATT ATGTAAGTTT					
	Kan(R) Promoter					
2161	TATGTATCCG CTCATGAGAC AATAACCTG ATAAATGCTT CAATAATATT GAAAAAGGAA					
	ATACATAGGC GAGTACTCTG TTATTGGGAC TATTTACGAA GTTATTATAA CTTTTCTCTT					
2221	GAGTCTGAG GCGGAAAGAA CCAGCTGTGG AATGTGTGTC AGTTAGGGTG TGGAAAGTCC					
	CTCAGGACTC GCCTTCTCTT GGTCCACACC TTACACACAG TCAATCCAC ACCTTTCAGG					
2281	CCAGGCTCCC CAGCAGGCG AAGTATGCAA AGCATGCATC TCAATTAGTC AGCAACCAGG					
	GGTCCGAGGG GTCGTCGCTC TTCATACGTT TCGTACGTAG AGTTAATCAG TCGTTGGTCC					
2341	TGTGGAAAGT CCCAGGCTC CCCAGCAGG AGAAGTATGC AAAGCATGCA TCTCAATTAG					
	ACACCTTCA GGGGTCCGAG GGGTCTCCG TCTTCATACG TTTCTGACGT AGAGTTAATC					
	SV40 origin					
2401	TCAGCAACCA TAGTCCCACC CCTAACTCCG CCCATCCC GCCTAACTCC GCCAGTTCC					
	AGTCGTTGGT ATCAGGGCGG GGATTGAGGC GGGTAGGGCG GGGATTGAGG CGGGTCAAGG					

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	SV40 origin						
	SV40 early promot						
2461	GCCCATTCTC	CGCCCCATGG	CTGACTAATT	TTTTTTATTT	ATGCAGAGGC	CGAGGCCGCC	CGGGTAAGAG
	GCGGGGTACC	GACTGATTA	AAAAAATAAA	TACGTCTCCG	GCTCCGGCGG		
	SV40 origin						
2521	TCGGCCTCTG	AGCTATTCCA	GAAGTAGTGA	GGAGGCTTTT	TTGGAGGCCT	AGGCTTTTGC	AGCCGGAGAC
	TCGATAAGGT	CTTCATCACT	CCTCCGAAAA	AACCTCCGGA	TCCGAAAACG		
	Kan(R)/Neo(R)						
2581	AAAGATCGAT	CAAGAGACAG	GATGAGGATC	GTTTCGCATG	ATTGAACAAG	ATGGATTGCA	TTTCTAGCTA
	GTTCTCTGTC	CTACTCCTAG	CAAAGCGTAC	TAACCTGTTC	TACCTAACGT		
	Kan(R)/Neo(R)						
2641	CGCAGGTTCT	CCGGCCGCTT	GGGTGGAGAG	GCTATTCCGG	TATGACTGGG	CACAACAGAC	GCGTCCAAGA
	GGCCGGCGAA	CCCACCTCTC	CGATAAGCCG	ATACTGACCC	GTGTTGTCTG		
	Kan(R)/Neo(R)						
2701	AATCGGCTGC	TCTGATGCCG	CCGTGTTCCG	GCTGTCAGCG	CAGGGGCGCC	CGGTTCTTTT	TTAGCCGACG
	AGACTACGGC	GGCACAAGGC	CGACAGTCGC	GTCCCCGCGG	GCCAAGAAAA		
	Kan(R)/Neo(R)						
2761	TGTCAAGACC	GACCTGTCCG	GTGCCTGAA	TGAACTGCAA	GACGAGGCAG	CGCGGCTATC	ACAGTTCTGG
	CTGGACAGGC	CACGGGACTT	ACTTGACGTT	CTGCTCCGTC	GCGCCGATAG		
	Kan(R)/Neo(R)						
2821	GTGGCTGGCC	ACGACGGGCG	TTCCTTGCGC	AGCTGTGCTC	GACGTTGTCA	CTGAAGCGGG	CACCGACCGG
	TGCTGCCCGC	AAGGAACGCG	TCGACACGAG	CTGCAACAGT	GACTTCGCCC		
	Kan(R)/Neo(R)						
2881	AAGGGACTGG	CTGCTATTGG	GCGAAGTGCC	GGGGCAGGAT	CTCCTGTCTA	CTCACCTTGC	TTCCCTGACC
	GACGATAACC	CGTTCACGG	CCCCGTCTTA	GAGGACAGTA	GAGTGGAAACG		
	Kan(R)/Neo(R)						
2941	TCTTGCCGAG	AAAGTATCCA	TCATGGCTGA	TGCAATGCGG	CGGCTGCATA	CGCTTGATCC	AGGACGGCTC
	TTTCATAGGT	AGTACCGACT	ACGTTACGCC	GCCGACGTAT	GCGAACTAGG		
	Kan(R)/Neo(R)						
3001	GGTACCTGTC	CCATTGACCC	ACCAAGCGAA	ACATCGCATC	GAGCGAGCAC	GTAATCGGAT	CCGATGGACG
	GGTAAGCTGG	TGTTTCGCTT	TGTAGCGTAG	CTCGCTCGTG	CATGAGCCTA		
	Kan(R)/Neo(R)						
3061	GGAAGCCGGT	CTTGTGATC	AGGATGATCT	GGACGAAGAG	CATCAGGGGC	TCGCGCCAGC	CCTTCGGCCA
	GAACAGCTAG	TCCTACTAGA	CCTGCTTCTC	GTAGTCCCGG	AGCGCGGTCCG		
	Kan(R)/Neo(R)						
3121	CGAAGTGTTC	GCCAGGCTCA	AGGCGAGCAT	GCCCGACGGC	GAGGATCTCG	TCGTGACCCA	GCTTGACAAG
	CGGTCCGAGT	TCCGCTCGTA	CGGGCTGCCG	CTCCTAGAGC	AGCACTGGGT		
	Kan(R)/Neo(R)						
3181	TGGCGATGCC	TGCTTGCCGA	ATATCATGGT	GGAAAATGGC	CGCTTTTCTG	GATTCATCGA	ACCGCTACGG
	ACGAACGGCT	TATAGTACCA	CCTTTTACCG	GCGAAAAGAC	CTAAGTAGCT		
	Kan(R)/Neo(R)						
3241	CTGTGGCCGG	CTGGGTGTGG	CGGACCGCTA	TCAGGACATA	GCGTTGGCTA	CCCGTGATAT	GACACCGGCC
	GACCCACACC	GCCTGGCGAT	AGTCCTGTAT	CGCAACCGAT	GGCACTATA		
	Kan(R)/Neo(R)						
3301	TGCTGAAGAG	CTTGGCGGCG	AATGGGCTGA	CCGCTTCCTC	GTGCTTTACG	GTATCGCCGC	ACGACTTCTC
	GAACCGCCGC	TTACCCGACT	GGCGAAGGAG	CACGAAATGC	CATAGCGGGC		
	Kan(R)/Neo(R)						
3361	TCCCGATTTC	CAGCGCATCG	CCTTCTATCG	CCTTCTTGAC	GAGTTCTTCT	GAGCGGGACT	AGGGCTAAGC
	GTCGCGTAGC	GGAAGATAGC	GGAAGAATCG	CTCAAGAAGA	CTCGCCCTGA		
	Kan(R)/Neo(R)						
3421	CTGGGGTTTC	AAATGACCGA	CCAAGCGACG	CCCAACCTGC	CATCACGAGA	TTTCGATTCC	GACCCCAAGC
	TTTACTGGCT	GGTTCGCTGC	GGGTGGACG	GTAGTGCTCT	AAAGCTAAGG		
	Kan(R)/Neo(R)						
3481	ACCGCCGCTT	TCTATGAAAG	GTTGGGCTTC	GGAATCGTTT	TCCGGGACGC	CGGCTGGATG	TGGCGGCGGA
	AGATACTTTC	CAACCCGAAG	CCTTAGCAAA	AGGCCCTGCG	GCCGACCTAC		
	Kan(R)/Neo(R)						
3541	ATCCTCCAGC	GCGGGGATCT	CATGCTGGAG	TTCTTCGCC	ACCCTAGGGG	GAGGCTAACT	TAGGAGGTCG
	CGCCCCTAGA	GTACGACCTC	AAGAAGCGGG	TGGGATCCCC	CTCCGATTGA		
	HSV TK polyA sigr						
3601	GAAACACGGA	AGGAGACAAT	ACCGGAAGGA	ACCCGCGCTA	TGACGGCAAT	AAAAAGACAG	CTTTGTCCCT
	TCCTCTGTGA	TGGCCTTCTT	TGGGCGCGAT	ACTGCCGTTA	TTTTTCTGTC		
	HSV TK polyA sigr						
3661	AATAAAACGC	ACGGTGTGTT	GTCGTTTGT	CATAAACGCG	GGGTTCCGTC	CCAGGGCTGG	TTATTTTGCG
	TGCCACAACC	CAGCAAACAA	GTATTTGCGC	CCCAAGCCAG	GGTCCCAGCC		
	Kan(R)/Neo(R)						
3721	CACCTCTGTC	ATACCCACC	GAGACCCCAT	TGGGGCCAAT	ACGCCCGCGT	TTCTTCCTTT	GTGAGACAGC
	TATGGGGTGG	CTCTGGGGTA	ACCCCGGTTA	TGCGGGCGCA	AAGAAGGAAA		
	Kan(R)/Neo(R)						
3781	TCCCCACCCC	ACCCCCAAG	TTCGGGTGAA	GGCCAGGGC	TGCAGCCAA	CGTCGGGGCG	AGGGGTGGGG
	TGGGGGTTC	AAGCCCACTT	CCGGGTCCCG	AGCGTCGGTT	GCAGCCCCCG		

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3841	GCAGGCCCTG	CCATAGCCTC	AGGTTACTCA	TATATACTTT	AGATTGATT	AAAACTCAT
	CGTCCGGGAC	GGTATCGGAG	TCCAATGAGT	ATATATGAAA	TCTAACTAAA	TTTTGAAGTA
3901	TTTTAATTTA	AAAGGATCTA	GGTGAAGATC	CTTTTTGATA	ATCTCATGAC	CAAATCCCT
	AAAATTAAT	TTTCTAGAT	CCACTTCTAG	GAAAACTAT	TAGAGTACTG	GTTTTAGGGA
				pUC origin		
3961	TAACGTGAGT	TTTCGTTCCA	CTGAGCGTCA	GACCCCGTAG	AAAAGATCAA	AGGATCTTCT
	ATTGCACTCA	AAAGCAAGGT	GACTCGCAGT	CTGGGGCATC	TTTTCTAGTT	TCCTAGAAGA
				pUC origin		
4021	TGAGATCCTT	TTTTCTGCG	CGTAATCTGC	TGCTTGCAA	CAAAAAACC	ACCGTACCA
	ACTCTAGGAA	AAAAAGACGC	GCATTAGACG	ACGAACGTTT	GTTTTTTTGG	TGGCGATGGT
				pUC origin		
4081	GCGGTGGTTT	GTTTGCCGGA	TCAAGAGCTA	CCAACTCTTT	TTCCGAAGGT	AACTGGCTTC
	CGCCACCAA	CAAACGGCCT	AGTTCTCGAT	GGTTGAGAAA	AAGGCTTCCA	TTGACCGAAG
				pUC origin		
4141	AGCAGAGCGC	AGATACCAA	TACTGTTCTT	CTAGTGTAGC	CGTAGTTAGG	CCACCACTTC
	TCGTCTCGCG	TCTATGGTTT	ATGACAAGAA	GATCACATCG	GCATCAATCC	GGTGGTGAAG
				pUC origin		
4201	AAGAACTCTG	TAGCACGCC	TACATACCTC	GCTCTGCTAA	TCCTGTTACC	AGTGGCTGCT
	TTCTTGAGAC	ATCGTGGCGG	ATGTATGGAG	CGAGACGATT	AGGACAATGG	TCACCGACGA
				pUC origin		
4261	GCCAGTGGCG	ATAAGTCGTG	TCTTACCGGG	TTGGACTCAA	GACGATAGTT	ACCGGATAAG
	CGGTACCGC	TATTCAGCAC	AGAATGGCCC	AACCTGAGTT	CTGCTATCAA	TGCCTATTC
				pUC origin		
4321	GCGCAGCGGT	CGGGCTGAAC	GGGGGTTTCG	TGCACACAGC	CCAGCTTGGG	GCGAACGACC
	CGCGTCGCCA	GCCCGACTTG	CCCCCAAGC	ACGTGTGTCG	GGTCGAACCT	CGTTTGCTGG
				pUC origin		
4381	TACACCGAAC	TGAGATACCT	ACAGCGTGAG	CTATGAGAAA	GCGCCACGCT	TCCGAAGGG
	ATGTGGCTTG	ACTCTATGGA	TGTCGCACTC	GATACTCTTT	CGCGGTGCGA	AGGGCTTCCC
				pUC origin		
4441	AGAAAGGCGG	ACAGGTATCC	GGTAAGCGGC	AGGGTCGGAA	CAGGAGAGCG	CACGAGGGAG
	TCTTTCCGCC	TGTCCATAGG	CCATTGCGCC	TCCAGCCTT	GTCCTCTCGC	GTGCTCCCTC
				pUC origin		
4501	CTTCCAGGGG	GAAACGCCTG	GTATCTTTAT	AGTCCTGTCTG	GGTTTCGCCA	CCTCTGACTT
	GAAGGTCCCC	CTTTGCGGAC	CATAGAAATA	TCAGGACAGC	CAAAGCGGT	GGAGACTGAA
				pUC origin		
4561	GAGCGTCGAT	TTTTGTGATG	CTCGTCAGGG	GGGCGGAGCC	TATGGAAAAA	CGCCAGCAAC
	CTCGCAGCTA	AAAACACTAC	GAGCAGTCCC	CCCGCTCGG	ATACCTTTTT	GCGGTCGTTG
				pUC origin		
4621	GCGGCCTTTT	TACGGTTCCT	GGCCTTTTGC	TGGCCTTTTG	CTCACATGTT	CTTTCCTGCG
	CGCCGGAAAA	ATGCCAAGGA	CCGAAAAACG	ACCGAAAAAC	GAGTGACAA	GAAAGGACGC
4681	TTATCCCCTG	ATTCTGTGGA	TAACCGTATT	ACCGCATGC	AT	
	AATAGGGGAC	TAAGACACCT	ATTGCATAA	TGGCGGTACG	TA	