

10 20 30 40 50 60 70 80 90
 SacI ClaI
 gagctcatcg atcTCGACAT TGATTATTGA CTAGTTATTA ATAGTAATCA ATTACGGGGT CATTAGTTCA TAGCCCATAT ATGGAGTTCC
 CAG promoter
 100 110 120 130 140 150 160 170 180
 GCGTTACATA ACTTACGGTA AATGGCCCGC CTGGCTGACC GCCCAACGAC CCCCGCCCAT TGACGTCAAT AATGACGTAT GTTCCCATAG
 CAG promoter
 190 200 210 220 230 240 250 260 270
 TAACGCCAAT AGGGACTTTC CATTGACGTC AATGGGTGGA CTATTTACGG TAAACTGCC ACTTGGCAGT ACATCAAGTG TATCATATGC
 CAG promoter
 280 290 300 310 320 330 340 350 360
 CAAGTACGCC CCCTATTGAC GTCAATGACG GTAAATGGCC CGCCTGGCAT TATGCCCAGT ACATGACCTT ATGGGACTTT CCTACTTGCC
 CAG promoter
 370 380 390 400 410 420 430 440 450
 AGTACATCTA CGTATTAGTC ATCGCTATTA CCATGGGTCG AGGTGAGCCC CACGTTCTGC TTCACTCTCC CCATCTCCCC CCCCTCCCCA
 CAG promoter
 460 470 480 490 500 510 520 530 540
 CCCCCAATT TGTATTTATT TATTTTTTAA TTATTTTGTG CAGCGATGGG GCGGGGGGG GGGGGGGCGC GCGCCAGGCG GGGCGGGGGC
 CAG promoter
 550 560 570 580 590 600 610 620 630
 GGGCGAGGGG CGGGGCGGG CGAGGCGGAG AGGTGCGGCG GCAGCCAATC AGAGCGGCGC GCTCCGAAAG TTTCCTTTTA TGGCGAGGCG
 CAG promoter
 640 650 660 670 680 690 700 710 720
 GCGGCGGCGG CGGCCCTATA AAAAGCGAAG CGCGCGGCGG GCGGGAGTCG CTGCGTTGCC TTCGCCCGT GCCCCGCTCC GCGCCGCTC
 CAG promoter
 730 740 750 760 770 780 790 800 810
 GCGCCGCCCG CCCC GGCTCT GACTGACCGC GTTACTCCCA CAGGTGAGCG GCGGGACCG CCCTTCTCCT CCGGGCTGTA ATTAGCGCTT
 CAG promoter
 820 830 840 850 860 870 880 890 900
 GGTTTAATGA CGGCTCGTTT CTTTTCTGTG GCTGCGTGAA AGCCTTAAAG GGCTCCGGA GGGCCCTTG TCGGGGGGG AGCGGCTCGG
 CAG promoter
 910 920 930 940 950 960 970 980 990
 GGGGTGCGTG CGTGTGTGTG TGCGTGGGA GCGCCGCGTG CCGCCCGCGC TGCCCGGCGG CTGTGAGCGC TCGGGGCGCG GCGCGGGGCT
 CAG promoter
 1000 1010 1020 1030 1040 1050 1060 1070 1080
 TTGTGCGCTC CGCGTGTGCG CGAGGGGAGC GCGGCCGGGG GCGGTGCCCC GCGGTGCGGG GGGGTGCGA GGGGAACAAA GGCTGCGTGC
 CAG promoter
 1090 1100 1110 1120 1130 1140 1150 1160 1170
 GGGGTGTGTG CGTGGGGGGG TGAGCAGGGG GTGTGGGCGC GCGGTGCGGG CTGTAACCCC CCCCTGCACC CCCCTCCCCG AGTTGCTGAG
 CAG promoter
 1180 1190 1200 1210 1220 1230 1240 1250 1260
 CACGGCCCGG CTTCGGGTGC GGGGCTCCGT GCGGGGCGTG GCGCGGGGCT CGCCGTGCCG GCGGGGGGGT GCGGCAGGT GGGGGTGGCC
 CAG promoter
 1270 1280 1290 1300 1310 1320 1330 1340 1350
 GCGGGGGCGG GGCCGCCTCG GGCCGGGGAG GGCTCGGGGG AGGGGCGCGG CGGCCCGGA GCGCCGGCGG CTGTGAGGCG GCGGGGAGCC
 CAG promoter
 1360 1370 1380 1390 1400 1410 1420 1430 1440
 GCAGCCATTG CCTTTTATGG TAATCGTGCG AGAGGGCGCA GGGACTTCCT TTGTCCCAA TCTGGCGGAG CCGAAATCTG GGAGGCGCCG
 CAG promoter
 1450 1460 1470 1480 1490 1500 1510 1520 1530
 CCGCACCCCC TCTAGCGGGC GCGGGCGAAG CCGTGC GGCGCAGGAA GGAAATGGGC GGGGAGGGCC TTCGTGCGTC GCCGCGCCCG
 CAG promoter
 1540 1550 1560 1570 1580 1590 1600 1610 1620
 CGTCCCCTTC TCCATCTCCA GCCTCGGGGC TGCCGAGGGG GGACGGCTGC CTCGGGGGG GACGGGGCAG GCGGGGGTTC GGCTTCTGGC
 CAG promoter
 1630 1640 1650 1660 1670 1680 1690 1700 1710
 Pr. 262
 GTGTGACCGG CGGCTctaGC CTCTGCTAAC CATGTTTCATG CCTTCTTCTT TTTCCTACAG CTCCTGGGCA ACGTGCTGGT TGTGTGCTG
 CAG promoter
 1720 1730 1740 1750 1760 1770 1780 1790 1800
 XbaI
 TCTCATCATT TTGGCAAAtc tagagccgcc ATGGTGAGCA AGGGCGAGGA GCTGTTACC GGGGTGGTGC CCATCCTGGT CGAGCTGGAC
 CAG promoter EG_

1810 1820 1830 1840 1850 1860 1870 1880 1890
GGCGACGTAA ACGGCCACAA GTTCAGCGTG TCCGGCGAGG GCGAGGGCGA TGCCACCTAC GGCAAGCTGA CCCTGAAGTT CATCTGCACC

EG_
1900 1910 1920 1930 1940 1950 1960 1970 1980
ACCGGCAAGC TGCCCGTGCC CTGGCCCACC CTCGTGACCA CCCTGACCTA CGGCGTGCCAG TGCTTCAGCC GCTACCCCGA CCACATGAAG

EG_
1990 2000 2010 2020 2030 2040 2050 2060 2070
CAGCACGACT TCTTCAAGTC CGCCATGCCC GAAGGCTACG TCCAGGAGCG CACCATCTTC TTCAAGGACG ACGGCAACTA CAAGACCCGC

EG_
2080 2090 2100 2110 2120 2130 2140 2150 2160
GCCGAGGTGA AGTTCGAGGG CGACACCCTG GTGAACCGCA TCGAGCTGAA GGCATCGAC TTCAAGGAGG ACGGCAACAT CCTGGGGCAC

EG_
2170 2180 2190 2200 2210 2220 2230 2240 2250
AAGCTGGAGT ACAACTACAA CAGCCACAAC GTCTATATCA TGGCCGACAA GCAGAAGAAC GGCATCAAGG TGAACTTCAA GATCCGCCAC

EG_
2260 2270 2280 2290 2300 2310 2320 2330 2340
AACATCGAGG ACGGCAGCGT GCAGCTCGCC GACCACTACC AGCAGAACAC CCCCATCGGC GACGGCCCCG TGCTGCTGCC CGACAACCAC

EG_
2350 2360 2370 2380 2390 2400 2410 2420 2430
tgaggatccg ctagcctgca ggtcgacgaa ttcgatatcg GCAAGCTGAC CCTGAAGTTC ATCTGCACCA CCGGCAAGCT GCCCGTGCCC

BamHI PstI EcoRI _FP
2440 2450 2460 2470 2480 2490 2500 2510 2520
TGGCCACCC TCGTGACCAC CCTGACCTAC GGCGTGCAGT GCTTCAGCCG CTACCCCGAC CACATGAAGC AGCACGACTT CTTCAAGTCC

EG_
2530 2540 2550 2560 2570 2580 2590 2600 2610
GCCATGCCCC AAGGCTACGT CCAGGAGCGC ACCATCTTCT TCAAGGACGA CGGCAACTAC AAGACCCGCG CCGAGGTGAA GTTCGAGGGC

EG_
2620 2630 2640 2650 2660 2670 2680 2690 2700
GACACCCTGG TGAACCGCAT CGAGCTGAAG GGCATCGACT TCAAGGAGGA CGGCAACATC CTGGGGCACA AGCTGGAGTA CAACTACAAC

EG_
2710 2720 2730 2740 2750 2760 2770 2780 2790
AGCCACAACG TCTATATCAT GGCCGACAAG CAGAAGAACG GCATCAAGGT GAACTTCAAG ATCCGCCACA ACATCGAGGA CGGCAGCGTG

EG_
2800 2810 2820 2830 2840 2850 2860 2870 2880
CAGCTCGCCG ACCACTACCA GCAGAACACC CCCATCGGCG ACGGCCCGGT GCTGCTGCCC GACAACCACT ACCTGAGCAC CCAGTCCGCC

EG_
2890 2900 2910 2920 2930 2940 2950 2960 2970
CTGAGCAAAG ACCCCAACGA GAAGCGCGAT CACATGGTCC TGCTGGAGTT CGTGACCGCC GCCGGGATCA CTCTCGGCAT GGACGAGCTG

EG_
2980 2990 3000 3010 3020 3030 3040 3050 3060
TACAAGTAAc tcgagACTCC TCAGGTGCAG GCTGCCTATC AGAAGGTGGT GGCTGGTGTG GCCAATGCC TGGCTCACAA ATACCACTGA

XhoI Rabbit B globin pA
3070 3080 3090 3100 3110 3120 3130 3140 3150
Rabbit B globin pA

GATCTTTTTT CCTCTGCCAA AAATTATGGG GACATCATGA AGCCCCTTGA GCATCTGACT TCTGGCTAAT AAAGGAAATT TATTTTCATT

EG_
3160 3170 3180 3190 3200 3210 3220 3230 3240
Rabbit B globin pA

GCAATAGTGT GTTGAATTT TTTGTGTCTC TCACTCGGAA GGACATATGG GAGGGCAAAT CATTTAAAAC ATCAGAATGA GTATTTGGTT

EG_
3250 3260 3270 3280 3290 3300 3310 3320 3330
Rabbit B globin pA

TAGAGTTTGG CAACATATGC CCATATGCTG GCTGCCATGA ACAAAGGTTG GCTATAAAGA GGTTCATCAGT ATATGAAACA GCCCCCTGCT

EG_
3340 3350 3360 3370 3380 3390 3400 3410 3420
Rabbit B globin pA

GTCCATTCTT TATTCCATAG AAAAGCCTTG ACTTGAGGTT AGATTTTTTT TATATTTTGT TTTGTGTTAT TTTTTTCTTT AACATCCCTA

EG_
3430 3440 3450 3460 3470 3480 3490 3500 3510
Rabbit B globin pA

AAATTTTCTT TACATGTTTT ACTAGCCAGA TTTTTCCTCC TCTCCTGACT ACTCCCAGTC ATAGCTGTCC CTCTTCTCTT ATGAAGATCC

EG_
3520 3530 3540 3550 3560 3570 3580 3590 3600
Rabbit PacIlobin KpnI

CTCGACttaa ttaaggtacc caattcgccc tatagtgagt cgtattacgc gcgctcaactg gccgtcgttt tacaacgtcg tgactgggaa

Pr. 263

3610	3620	3630	3640	3650	3660	3670	3680	3690
aaccctggcg	ttaccaact	taatgcctt	gcagcacatc	cccctttcgc	cagctggcgt	aatagcgaag	aggccccgac	cgatcgcctt
3700	3710	3720	3730	3740	3750	3760	3770	3780
tccaacagt	tgcgcagcct	gaatggcgaa	tgggacgcgc	cctgtagcgg	cgcattaagc	gcggcggtg	tggtggttac	gcgcagcgtg
3790	3800	3810	3820	3830	3840	3850	3860	3870
accgctacac	ttgccagcgc	cctagcgcgc	gctcctttcg	ctttcttccc	ttcctttctc	gccacgttcg	ccggctttcc	ccgtcaagct
3880	3890	3900	3910	3920	3930	3940	3950	3960
ctaaatcggg	ggctcccttt	agggttccga	tttagtgctt	tacggcacct	cgaccccaaa	aaacttgatt	agggtgatgg	ttcacgtagt
3970	3980	3990	4000	4010	4020	4030	4040	4050
gggccatcgc	cctgatagac	ggtttttcgc	cctttgacgt	tggagtcac	gttctttaat	agtggactct	tgttccaaac	tggaacaaca
4060	4070	4080	4090	4100	4110	4120	4130	4140
ctcaacccta	tctcgggtta	ttcttttgat	ttataaggga	ttttgccgat	ttcggcctat	tggttaaaaa	atgagctgat	ttaacaaaaa
4150	4160	4170	4180	4190	4200	4210	4220	4230
tttaacgcga	attttaacaa	aatattaacg	cttacaattt	aggtggcact	tttcggggaa	atgtgcgcgg	aaccctatt	tgtttatttt
4240	4250	4260	4270	4280	4290	4300	4310	4320
tctaaataca	ttcaaatatg	tatccgctca	tgagacaata	accctgataa	atgcttcaat	aatatgaaa	aaggaagagt	atgagtattc
4330	4340	4350	4360	4370	4380	4390	4400	4410
aacatttccg	tgtcgcctt	attccctttt	ttgcggcatt	ttgccttctt	gtttttgctc	accagaaac	gctggtgaaa	gtaaaagatg
4420	4430	4440	4450	4460	4470	4480	4490	4500
ctgaagatca	gttgggtgca	cgagtgggtt	acatcgaact	ggatctcaac	agcggtaaga	tccttgagag	ttttcgcccc	gaagaacgtt
4510	4520	4530	4540	4550	4560	4570	4580	4590
ttccaatgat	gagcactttt	aaagttctgc	tatgtggcgc	ggtattatcc	cgtattgacg	ccgggcaaga	gcaactcggg	cgccgcatac
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actatttctca	gaatgacttg	gttgagtact	caccagtcac	agaaaagcat	cttacggatg	gcatgacagt	aagagaatta	tgcagtgtctg
4690	4700	4710	4720	4730	4740	4750	4760	4770
ccataacat	gagtgataac	actgcggcca	acttacttct	gacaacgatc	ggaggaccga	aggagctaac	cgcttttttg	cacaacatgg
4780	4790	4800	4810	4820	4830	4840	4850	4860
gggatcatgt	aactgcctt	gatcgttggg	aaccggagct	gaatgaagcc	ataccaaaacg	acgagcgtga	caccacgatg	cctgtagcaa
4870	4880	4890	4900	4910	4920	4930	4940	4950
tggcaacaac	gttgcgcaaa	ctattaactg	gcgaactact	tactctagct	tcccggcaac	aattaataga	ctggatggag	gcggataaag
4960	4970	4980	4990	5000	5010	5020	5030	5040
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5140	5150	5160	5170	5180	5190	5200	5210	5220
agatcgctga	gataggtgcc	tcactgatta	agcattggta	actgtcagac	caagtttact	catatatact	ttagattgat	ttaaaacttc
5230	5240	5250	5260	5270	5280	5290	5300	5310
atTTTTaatt	taaaaggatc	taggtgaaga	tcctttttga	taatctcatg	acaaaaatcc	cttaacgtga	gttttcgttc	cactgagcgt
5320	5330	5340	5350	5360	5370	5380	5390	5400
cagaccctg	agaaaagatc	aaaggatctt	cttgagatcc	ttttttctg	cgcgtaatct	gctgcttgca	aacaaaaaaa	ccaccgctac
5410	5420	5430	5440	5450	5460	5470	5480	5490
cagcgggtgg	ttgtttgccg	gatcaagagc	taccaactct	ttttccgaag	gtaactggct	tcagcagagc	gcagatacca	aatactgtcc
5500	5510	5520	5530	5540	5550	5560	5570	5580
ttctagtgt	gccgtagtta	ggccaccact	tcaagaactc	tgtagcaccg	cctacatacc	tcgctctgct	aatcctgtta	ccagtggctg
5590	5600	5610	5620	5630	5640	5650	5660	5670
ctgccagtg	cgataagtcg	tgtcttaccg	ggttgactc	aagacgatag	ttaccggata	aggcgcagcg	gtcgggctga	acgggggggtt
5680	5690	5700	5710	5720	5730	5740	5750	5760
cgtgcacaca	gcccagcttg	gagcgaacga	cctacaccga	actgagatac	ctacagcgtg	agctatgaga	aagcgcaccg	cttcccgaag
5770	5780	5790	5800	5810	5820	5830	5840	5850
ggagaaaggc	ggacaggtat	ccggtaagcg	gcagggtcgg	aacaggagag	cgcacgaggg	agcttccagg	gggaaacgcc	tggtatcttt
5860	5870	5880	5890	5900	5910	5920	5930	5940
atagtcctgt	cgggtttcgc	cacctctgac	ttgagcgtcg	atTTTTgtga	tgctcgtcag	gggggcggag	cctatggaaa	aacgccagca
5950	5960	5970	5980	5990	6000	6010	6020	6030
acgcggcctt	tttacggttc	ctggcctttt	gctggccttt	tgctcacatg	ttctttctctg	cgttatcccc	tgattctgtg	gataaccgta
6040	6050	6060	6070	6080	6090	6100	6110	6120
ttaccgcctt	tgagtgagct	gataccgctc	gccgcagccg	aacgaccgag	cgcagcagct	cagtgagcga	ggaagcggaa	gagcgcctaa
6130	6140	6150	6160	6170	6180	6190	6200	6210
tacgcaaacc	gcctctcccc	gcgcggttggc	cgattcatta	atgcagctgg	cacgacaggt	ttcccactg	gaaagcgggc	agtgagcgc
6220	6230	6240	6250	6260	6270	6280	6290	6300
acgcaattaa	tgtgagttag	ctcactcatt	aggcaccoca	ggctttacac	tttatgcttc	cggctcgtat	gttgtgtgga	attgtgagcg
6310	6320	6330	6340	6350	6360	6370	6380	6390
gataacaatt	tcacacagga	aacagctatg	accatgatta	cgccaagcgc	gcaattaacc	ctcactaaag	ggaacaaaag	ctg