

10 20 30 40 50 60 70 80 90  
 hU6 promoter  
 gagggcctat ttccatgat tccttcataat ttgcatatac gatacaaggc tggtagagag ataattggaa ttaatttgac tgtaaacaca  
 100 110 120 130 140 150 160 170 180  
 Pr-gRNACheck

hU6 promoter  
 aagatattag tacaaaatac gtgacgtaga aagtaataat ttcttgggta gtttgcagtt ttaaaattat gttttaaaat ggactatcat  
 190 200 210 220 230 240 250 260 270  
 Pr-gRNACheck

hU6 promoter  
 atgcttaccg taacttgaaa gtatttcgat ttcttggcct tatatatcct GTGGAAAGGA CGAAACACCG GCAACGTTTG acttctctgag  
 280 290 300 310 320 330 340 350 360  
 guide RNA scaffold  
 ttttagagct aGAAAtagca agttaaaata aggctagtc gttatcaact tgaaaaagtg gcaccgagtc ggtgcTTTTT Tgttttagag  
 370 380 390 400 410 420 430 440 450  
 U6 terminator  
 XbaI KpnI CBh promoter  
 ctagaaatag caagttaaaa taaggctagt ccgtTTTTag cgcgtgcgcc aattctgcag acaaatggct ctagaggtag ccgttacata  
 460 470 480 490 500 510 520 530 540  
 CBh promoter  
 acttacggta aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat agtaacgcca atagggactt tccattgacg  
 550 560 570 580 590 600 610 620 630  
 CBh promoter  
 tcaatgggtg gagtatttac ggtaaactgc ccacttggca gtacatcaag tgtatcatal gccaaagtac cccctattg acgtcaatga  
 640 650 660 670 680 690 700 710 720  
 CBh promoter  
 cggtaaatgg cccgctggc attGtgccca gtacatgacc ttatgggact ttectacttg gcagtagatc tacgtattag tcatcgctat  
 730 740 750 760 770 780 790 800 810  
 CBh promoter  
 taccatggtc gaggtgagcc ccacgttctg cttcactctc cccatctccc cccctcccc accccaatt ttgtatttat ttatttttta  
 820 830 840 850 860 870 880 890 900  
 CBh promoter  
 attattttgt gcagcgatgg gggcgggggg gggggggggg cgcgcgccag gcggggcggg gcggggcgag gggcggggcg gggcgagggc  
 910 920 930 940 950 960 970 980 990  
 CBh promoter  
 gagaggtgcg gcggcagcca atcagagcgg cgcgctccga aagtttctt ttatggcgag gcggcggcgg cggcggccct ataaaaagcg  
 1000 1010 1020 1030 1040 1050 1060 1070 1080  
 CBh promoter  
 aagcgcgcgg cggcggggag tcgctgcgac gctgcctctg ccccgctgcc cgtccgcgag ccgcctcgcg ccgcccgcgc cggctctgac  
 1090 1100 1110 1120 1130 1140 1150 1160 1170  
 CBh promoter  
 tgaccgcgtt actcccacag gtgagcgggc gggacggccc ttctctcgcg ggctgtaatt agctgagcaa gaggtaaggg ttaagggat  
 1180 1190 1200 1210 1220 1230 1240 1250 1260  
 CBh promoter  
 ggttggttgg tgggtatta atgtttaatt acctggagca cctgcctgaa atcacttttt ttcaggttGG accggtgcca ccATGGACTA  
 1270 1280 1290 1300 1310 1320 1330 1340 1350  
 3xFLAG NLS  
 TAAGGACCAC GACGGAGACT ACAAGGATCA TGATATFGAT TACAAAGACG ATGACGATAA GATGGCCCCA AAGAAGAAGC GGAAGGTCCG  
 1360 1370 1380 1390 1400 1410 1420 1430 1440  
 NLS  
 hSpCsn1  
 TATCCACGGA GTCCCAGCAG CCGACAAGAA GTACAGCATC GGCCTGGACA TCGGCACCAA CTCTGTGGGC TGGGCCGTGA TCACCGACGA  
 1450 1460 1470 1480 1490 1500 1510 1520 1530  
 hSpCsn1  
 Pr-hCas9/214-195  
 GTACAAGCTG CCCAGCAAGA AATTC AAGGT GCTGGGCAAC ACCGACCGGC ACAGCATCAA GAAGAACC TG ATCGGAGCCC TGCTGTTCGA  
 1540 1550 1560 1570 1580 1590 1600 1610 1620  
 hSpCsn1  
 CAGCGGCGAA ACAGCCGAGG CCACCCGGCT GAAGAGAACC GCCAGAAGAA GATACACCAG ACGGAAGAAC CGGATCTGCT ATCTGCAAGA  
 1630 1640 1650 1660 1670 1680 1690 1700 1710  
 hSpCsn1  
 GATCTTCAGC AACGAGATGG CCAAGGTGGA CGACAGCTTC TTCCACAGAC TGAAGAGATC CTTCCTGGTG GAAGAGGATA AGAAGCACGA  
 1720 1730 1740 1750 1760 1770 1780 1790 1800  
 hSpCsn1  
 GCGGCACCCC ATCTTCGGCA ACATCGTGGG CGAGGTGGCC TACCACGAGA AGTACCCAC CATCTACCAC CTGAGAAAGA AACTGGTGGG  
 1810 1820 1830 1840 1850 1860 1870 1880 1890  
 hSpCsn1  
 CAGCACCGAA AAGGCCGACC TCGGGCTGAT CTATCTGGCC CTGGCCACAA TGATCAAGTT CCGGGGCCAC TTCCTGATCG AGGGCGACCT  
 1900 1910 1920 1930 1940 1950 1960 1970 1980  
 hSpCsn1  
 GAACCCCGAC AACAGCGACG TGGACAAGCT GTTCATCCAG CTGGTGCAGA CCTACAACCA GCTGTTTCGAG GAAAACCCCA TCAACGCCAG  
 1990 2000 2010 2020 2030 2040 2050 2060 2070  
 hSpCsn1  
 CCGCGTGGAC GCCAAGGCCA TCCTGTCTGC CAGACTGAGC AAGAGCAGAC GGCTGGAAAA TCTGATCGCC CAGCTGCCCG GCGAGAAGAA

2080	2090	2100	2110	2120	2130	2140	2150	2160
hSpCsn1								
GAATGGCCTG TTCGAAACC TGATTGCCCT GAGCCTGGGC CTGACCCCA ACTTCAAGAG CAACTTCGAC CTGGCCGAGG ATGCCAAACT								
2170	2180	2190	2200	2210	2220	2230	2240	2250
hSpCsn1								
GCAGCTGAGC AAGGACACCT ACGACGACGA CCTGGACAAC CTGCTGGCCC AGATCGGCCA CCAGTACGCC GACCTGTTTC TGGCCGCCAA								
2260	2270	2280	2290	2300	2310	2320	2330	2340
hSpCsn1								
GAACCTGTCC GACGCCATCC TGCTGAGCGA CATCCTGAGA GTGAACACCG AGATCACCAA GGCCCCCTG AGCGCCTCTA TGATCAAGAG								
2350	2360	2370	2380	2390	2400	2410	2420	2430
hSpCsn1								
ATACGACGAG CACCACCAGG ACCTGACCCT GCTGAAAGCT CTCGTGCGGC AGCAGCTGCC TGAGAAGTAC AAAGAGATTT TCTTCGACCA								
2440	2450	2460	2470	2480	2490	2500	2510	2520
hSpCsn1								
GAGCAAGAAC GGCTACGCCG GCTACATTGA CGGCGGAGCC AGCCAGGAAG AGTTCTACAA GTTCATCAAG CCCATCCTGG AAAAGATGGA								
2530	2540	2550	2560	2570	2580	2590	2600	2610
hSpCsn1								
CGGCACCGAG GAACTGCTCG TGAAGCTGAA CAGAGAGGAC CTGCTGCGGA AGCAGCGGAC CTTGACAAC GGCAGCATCC CCCACCAGAT								
2620	2630	2640	2650	2660	2670	2680	2690	2700
hSpCsn1								
CCACCTGGGA GAGCTGCACG CCATTCTGCG GCGGCAGGAA GATTTTACC CATTCCTGAA GGACAACCGG GAAAAGATCG AGAAGATCCT								
2710	2720	2730	2740	2750	2760	2770	2780	2790
hSpCsn1								
GACCTTCCGC ATCCCCTACT ACGTGGGCC TCTGGCCAGG GGAAACAGCA GATTCGCCTG GATGACCAGA AAGAGCGAGG AAACCATCAC								
2800	2810	2820	2830	2840	2850	2860	2870	2880
hSpCsn1								
CCCCGGAAC TTCGAGGAAG TGGTGGACAA GGGCGCTTCC GCCCAGAGCT TCATCGAGCG GATGACCAAC TTCGATAAGA ACCTGCCCAA								
2890	2900	2910	2920	2930	2940	2950	2960	2970
hSpCsn1								
CGAGAAGGTG CTGCCCAAGC ACAGCCTGCT GTACGAGTAC TTCACCGTGT ATAACGAGCT GACCAAAGTG AAATACGTGA CCGAGGGAAT								
2980	2990	3000	3010	3020	3030	3040	3050	3060
hSpCsn1								
GAGAAAGCCC GCCTTCCTGA GCGGCGAGCA GAAAAAGGCC ATCGTGGACC TGCTGTTCAA GACCAACCGG AAAGTGACCG TGAAGCAGCT								
3070	3080	3090	3100	3110	3120	3130	3140	3150
hSpCsn1								
GAAAGAGGAC TACTTCAAGA AAATCGAGTG CTTGACTCC GTGGAAATCT CCGGCGTGGG AGATCGGTTT AACGCCTCC TGGGCACATA								
3160	3170	3180	3190	3200	3210	3220	3230	3240
hSpCsn1								
CCACGATCTG CTGAAAATTA TCAAGGACAA GGACTTCCTG GACAAATGAGG AAAACGAGGA CATTCTGGAA GATATCGTGC TGACCCTGAC								
3250	3260	3270	3280	3290	3300	3310	3320	3330
hSpCsn1								
ACTGTTGAG GACAGAGAGA TGATCGAGGA ACGGCTGAAA ACCTATGCC ACCTGTTCTGA CGACAAAGTG ATGAAGCAGC TGAAGCGGCG								
3340	3350	3360	3370	3380	3390	3400	3410	3420
hSpCsn1								
GAGATACACC GGCTGGGGCA GGCTGAGCCG GAAGCTGATC AACGGCATCC GGGACAAGCA GTCCGGCAAG ACAATCCTGG ATTTCTGAA								
3430	3440	3450	3460	3470	3480	3490	3500	3510
hSpCsn1								
GTCCGACGGC TTCGCCAACA GAAACTTCAT GCAGCTGATC CACGACGACA GCCTGACCTT TAAAGAGGAC ATCCAGAAAG CCCAGGTGTC								
3520	3530	3540	3550	3560	3570	3580	3590	3600
hSpCsn1								
CGGCCAGGGC GATAGCCTGC ACGAGCACAT TGCCAATCTG GCCGGCAGCC CGCCATTAA GAAGGGCATC CTGCAGACAG TGAAGGTGGT								
3610	3620	3630	3640	3650	3660	3670	3680	3690
hSpCsn1								
GGACGAGCTC GTGAAAGTGA TGGGCCGGCA CAAGCCCAG AACATCGTGA TCGAAATGGC CAGAGAGAAC CAGACCACCC AGAAGGGACA								
3700	3710	3720	3730	3740	3750	3760	3770	3780
hSpCsn1								
GAAGAACAGC CGCGAGAGAA TGAAGCGGAT CGAAGAGGGC ATCAAAGAGC TGGGCAGCCA GATCCTGAAA GAACACCCCG TGGAAAACAC								
3790	3800	3810	3820	3830	3840	3850	3860	3870
hSpCsn1								
CCAGCTGCAG AACGAGAAGC TGTACCTGTA CTACCTGCAG AATGGGCGGG ATATGTACGT GGACCAGGAA CTGGACATCA ACCGGCTGTC								
3880	3890	3900	3910	3920	3930	3940	3950	3960
hSpCsn1								
CGACTACGAT GTGGACCATA TCGTGCCTCA GAGCTTCTG AAGGACGACT CCATCGACAA CAAGGTGCTG ACCAGAAGCG ACAAGAACCG								
3970	3980	3990	4000	4010	4020	4030	4040	4050
hSpCsn1								
GGGCAAGAGC GACAACGTGC CCTCCGAAGA GGTGCTGAAG AAGATGAAGA ACTACTGGCG GCAGCTGCTG AACGCCAAGC TGATTACCCA								
4060	4070	4080	4090	4100	4110	4120	4130	4140
hSpCsn1								
GAGAAAGTTC GACAATCTGA CCAAGGCCGA GAGAGGCGGC CTGAGCGAAC TGATAAAGC CGGCTTCTC AAGAGACAGC TGGTGGAAAC								
4150	4160	4170	4180	4190	4200	4210	4220	4230
hSpCsn1								
CCGGCAGATC ACAAAGCACG TGGCACAGAT CCTGGACTCC CGGATGAACA CTAAGTACGA CGAGAATGAC AAGCTGATCC GGAAGTGAA								
4240	4250	4260	4270	4280	4290	4300	4310	4320
hSpCsn1								
AGTGATCACC CTGAAGTCCA AGCTGGTGTG CGATTTCCGG AAGGATTTCC AGTTTACAA AGTGCGCGAG ATCAACAACCT ACCACCACGC								

4330	4340	4350	4360	4370	4380	4390	4400	4410
hSpCsn1								
CCACGACGCC TACCTGAACG CCGTCGTGGG AACCGCCCTG ATCAAAAAGT ACCCTAAGCT GGAAAGCGAG TTCGTGTACG GCGACTACAA								
4420	4430	4440	4450	4460	4470	4480	4490	4500
hSpCsn1								
GGTGTACGAC GTGCGGAAGA TGATCGCCAA GAGCGAGCAG GAAATCGGCA AGGCTACCGC CAAGTACTTC TTCTACAGCA ACATCATGAA								
4510	4520	4530	4540	4550	4560	4570	4580	4590
hSpCsn1								
CTTTTTCAAG ACCGAGATTA CCCTGGCCAA CGGCGAGATC CGGAAGCGGC CTCTGATCGA GACAAACGGC GAAACCGGGG AGATCGTGTG								
4600	4610	4620	4630	4640	4650	4660	4670	4680
hSpCsn1								
GGATAAGGC CGGGATTTTG CCACCGTGCG GAAAGTGTGT AGCATGCCCC AAGTGAATAT CGTGAAAAAG ACCGAGGTGC AGACAGGGCGG								
4690	4700	4710	4720	4730	4740	4750	4760	4770
hSpCsn1								
CTTCAGCAAA GAGTCTATCC TGCCCAAGAG GAACAGCGAT AAGCTGATCG CCAGAAAGAA GGACTGGGAC CCTAAGAAGT ACGGCGGCTT								
4780	4790	4800	4810	4820	4830	4840	4850	4860
hSpCsn1								
CGACAGCCCC ACCGTGGCCT ATTCTGTGCT GGTGGTGGCC AAAGTGGAAA AGGCAAGTC CAAGAAACTG AAGAGTGTGA AAGAGCTGCT								
4870	4880	4890	4900	4910	4920	4930	4940	4950
hSpCsn1								
GGGGATCACC ATCATGGAAA GAAGCAGCTT CGAGAAGAAT CCCATCGACT TTCTGGAAGC CAAGGGCTAC AAAGAAGTGA AAAAGGACCT								
4960	4970	4980	4990	5000	5010	5020	5030	5040
hSpCsn1								
GATCATCAAG CTGCCTAAGT ACTCCCTGTT CGAGCTGGAA AACGGCCGGA AGAGAATGCT GGCCTCTGCC GGCGAACTGC AGAAGGGAAA								
5050	5060	5070	5080	5090	5100	5110	5120	5130
hSpCsn1								
CGAACTGGCC CTGCCCTCCA AATATGTGAA CTTCCCTGAT CTGGCCAGCC ACTATGAGAA GCTGAAGGGC TCCCCGAGG ATAATGAGCA								
5140	5150	5160	5170	5180	5190	5200	5210	5220
hSpCsn1								
GAAACAGCTG TTTGTGGAAC AGCACAAGCA CTACCTGGAC GAGATCATCG AGCAGATCAG CGAGTTCCTC AAGAGAGTGA TCCTGGCCGA								
5230	5240	5250	5260	5270	5280	5290	5300	5310
hSpCsn1								
CGCTAATCTG GACAAAGTGC TGTCCGCTA CAACAAGCAC CGGGATAAGC CCATCAGAGA GCAGGCCGAG AATATCATCC ACCTGTTTTAC								
5320	5330	5340	5350	5360	5370	5380	5390	5400
hSpCsn1								
CCTGACCAAT CTGGGAGCCC CTGCCGCTT CAAGTACTTT GACACCACCA TCGACCAGAA GAGGTACACC AGCACCAAAG AGGTGCTGGA								
5410	5420	5430	5440	5450	5460	5470	5480	5490
Pr-hCas9/4198-4217								
hSpCsn1								
CGCCACCCTG ATCCACCAGA GCATCACCGG CCTGTACGAG ACACGGATCG ACCTGTCTCA GCTGGGAGGC GACAAAAGGC CGGCGGCCAC								
5500	5510	5520	5530	5540	5550	5560	5570	5580
NLS								
GAAAAAGGCC GGCCAGGCAA AAAAGAAAAA Gtaagaattc CTAGAGCTCG CTGATCAGCC TCGACTGTGC CTTCTAGTTG CCAGCCATCT								
5590	5600	5610	5620	5630	5640	5650	5660	5670
bGH polyA								
GTTGTTTGCC CCTCCCCCGT GCCTTCCTTG ACCCTGGAAG GTGCCACTCC CACTGTCTTT TCCTAATAAA ATGAGGAAAT TGATCGCAT								
5680	5690	5700	5710	5720	5730	5740	5750	5760
bGH polyA								
TGTCTGAGTA GGTGTCATTC TATTCTGGGG GGTGGGGTGG GGCAGGACAG CAAGGGGGAG GATTGGGAAG AgAATAGCAG GCATGCTGGG								
5770	5780	5790	5800	5810	5820	5830	5840	5850
bGH polyA								
GAgcggccgc aggaaccct agtgatggag ttggccactc cctctctgcg cgctcgtcgc ctcactgagg ccggcgacc aaaggtcgcc								
5860	5870	5880	5890	5900	5910	5920	5930	5940
cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc gagcgcgag ctgcctgcag gggcgccctga tgcggtatct tctccttacg								
5950	5960	5970	5980	5990	6000	6010	6020	6030
catctgtgcg gtatttcaca ccgcatacgt caaagcaacc atagtagcgc cctgtagcgc gcgcattaaag cgcggcgggt gtggtggtta								
6040	6050	6060	6070	6080	6090	6100	6110	6120
cgcgagcgt gaccgctaca cttgccagcg ccctagcgcc cgctcctttc gctttcttcc cttcctttct cgccacgttc gccggtttc								
6130	6140	6150	6160	6170	6180	6190	6200	6210
cccgtcaagc tctaaatcgg gggctccct tagggttccg atttagtgct ttacggcacc tcgaccccaa aaaacttgat ttgggtgatg								
6220	6230	6240	6250	6260	6270	6280	6290	6300
gttcacgtag tgggcatcgc ccctgataga cggtttttcg ccttttgacg ttggagtcca cgttctttaa tagtggactc ttgttccaaa								
6310	6320	6330	6340	6350	6360	6370	6380	6390
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6400	6410	6420	6430	6440	6450	6460	6470	6480
tttaacaaaa atttaacgcg aattttaaca aaatattaac gtttacaatt ttatggtgca ctctcagtac aatctgctct gatgccgcat								
6490	6500	6510	6520	6530	6540	6550	6560	6570
agttaagcca gcccagacac ccgccaacac ccgctgagcg gccctgacgg gcttgtctgc tcccggcacc cgcttacaga caagctgtga								
6580	6590	6600	6610	6620	6630	6640	6650	6660
ccgtctccgg gagctgcatg tgtcagaggt tttcacgctc atcaccgaaa cgcgagagac gaaagggcct cgtgatagcg ctatctttat								
6670	6680	6690	6700	6710	6720	6730	6740	6750
aggttaatgt catgataata atggtttctt agacgtcagg tggcactttt cggggaaatg tgcgcggaac ccctatttgt ttatctttct								
6760	6770	6780	6790	6800	6810	6820	6830	6840
aaatacattc aaatatgtat ccgctcatga gacaataacc ctgataaatg cttcaataat attgaaaaag gaagagtatg agtattcaac								
6850	6860	6870	6880	6890	6900	6910	6920	6930
atctccgtgt cgcccttatt cccttttttg cggcattttg ccttctgtgt tttgctcacc cagaaacgct ggtgaaagta aaagatgctg								
6940	6950	6960	6970	6980	6990	7000	7010	7020
aagatcagtt ggggtgcacga gtgggttaca tcgaactgga tctcaacagc ggtaagatcc ttgagagttt tcgccccgaa gaacgttttc								

7030	7040	7050	7060	7070	7080	7090	7100	7110
caatgatgag	cactttttaa	gttctgctat	gtggcgcggt	attatcccgt	attgacgccg	ggcaagagca	actcggtcgc	cgatacact
7120	7130	7140	7150	7160	7170	7180	7190	7200
attctcagaa	tgacttggtt	gagtactcac	cagtcacaga	aaagcatctt	acggatggca	tgacagtaag	agaattatgc	agtgctgcc
7210	7220	7230	7240	7250	7260	7270	7280	7290
taaccatgag	tgataacact	gcggccaact	tacttctgac	aacgatcgga	ggaccgaagg	agctaaccgc	ttttttgcac	aacatggggg
7300	7310	7320	7330	7340	7350	7360	7370	7380
atcatgtaac	tcgccttggt	cgttgggaac	cggagctgaa	tgaagccata	ccaaacgacg	agcgtgacac	cacgatgcct	gtagcaatgg
7390	7400	7410	7420	7430	7440	7450	7460	7470
caacaacggt	gcgcaaacct	ttaactggcg	aactacttac	tctagcttcc	cggcaacaat	taatagactg	gatggaggcg	gataaagttg
7480	7490	7500	7510	7520	7530	7540	7550	7560
caggaccact	tctgcgctcg	gcccttccgg	ctggctgggt	tattgctgat	aaatctggag	ccggtgagcg	tggaagccgc	ggtatcattg
7570	7580	7590	7600	7610	7620	7630	7640	7650
cagcaactggg	gccagatggt	aagccctccc	gtatcgtagt	tatctacacg	acggggagtc	aggcaactat	ggatgaacga	aatagacaga
7660	7670	7680	7690	7700	7710	7720	7730	7740
tcgctgagat	aggtgcctca	ctgattaagc	attggtaact	gtcagaccaa	gtttactcat	atatacttta	gattgattta	aaacttcatt
7750	7760	7770	7780	7790	7800	7810	7820	7830
tttaatttaa	aaggatctag	gtgaagatcc	tttttgataa	tctcatgacc	aaaatccctt	aacgtgagtt	ttcgttccac	tgagcgtcag
7840	7850	7860	7870	7880	7890	7900	7910	7920
accccgtaga	aaagatcaaa	ggatcttctt	gagatccttt	ttttctgcgc	gtaatctgct	gcttgcaaac	aaaaaaacca	ccgctaccag
7930	7940	7950	7960	7970	7980	7990	8000	8010
cggtggtttg	tttgccggat	caagagctac	caactctttt	tccgaaggta	actggcttca	gcagagcgca	gataccaaat	actgtccttc
8020	8030	8040	8050	8060	8070	8080	8090	8100
tagtgtagcc	gtagttagcc	caccacttca	agaactctgt	agcaccgcct	acatacctcg	ctctgctaata	cctgttacca	gtggctgctg
8110	8120	8130	8140	8150	8160	8170	8180	8190
ccagtggcga	taagtctgt	cttaccgggt	tggactcaag	acgatagtta	ccggataagg	cgcagcggtc	gggctgaacg	gggggttcgt
8200	8210	8220	8230	8240	8250	8260	8270	8280
gcacacagcc	cagcttgagg	cgaacgacct	acaccgaact	gagataccta	cagcgtgagc	tatgagaaaag	cgccacgctt	cccgaagggg
8290	8300	8310	8320	8330	8340	8350	8360	8370
gaaaggcggg	caggtatccg	gtaagcggca	gggtcggaac	aggagagcgc	acgagggagc	ttccaggggg	aaacgcctgg	tatctttata
8380	8390	8400	8410	8420	8430	8440	8450	8460
gtcctgtcgg	gtttcgccac	ctctgacttg	agcgtcgatt	tttgtgatgc	tcgtcagggg	ggcggagcct	atggaaaaac	gccagcaacg
8470	8480	8490	8500	8510	8520	8530	8540	8550
cggccttttt	acggttcctg	gccttttgct	ggccttttgc	<u>tcacatgt</u>				

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