
Precise transcript targeting by CRISPR-Csm complexes

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Supplementary Information

Precise transcript targeting by CRISPR-Csm complexes

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Supplementary Figures:

Supplementary Figure 1. Additional information regarding flow cytometry and FACS experiments.

Supplementary Figure 2. Additional information regarding RT-qPCR and RNA FISH experiments.

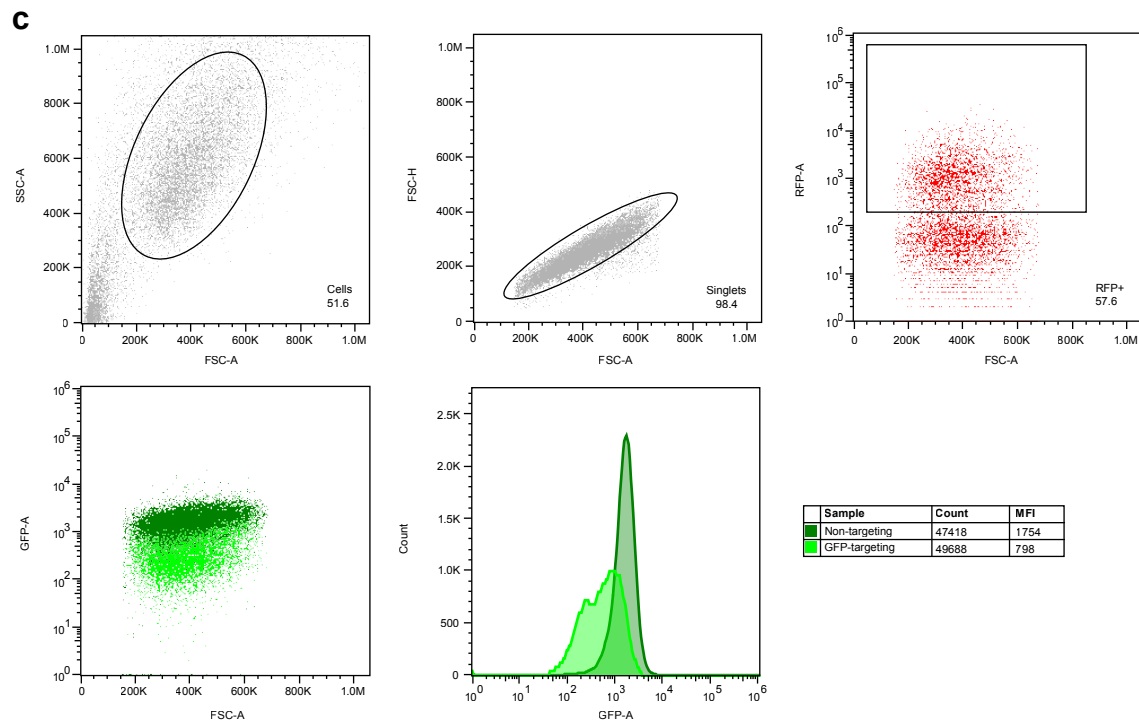
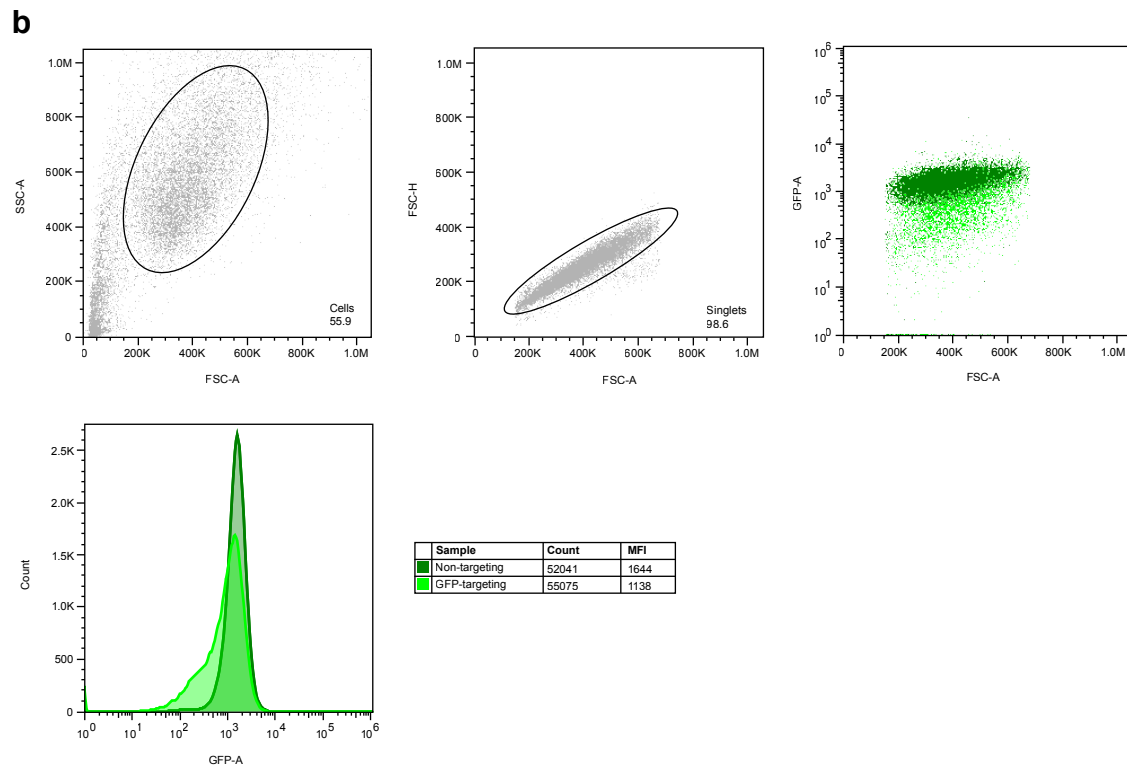
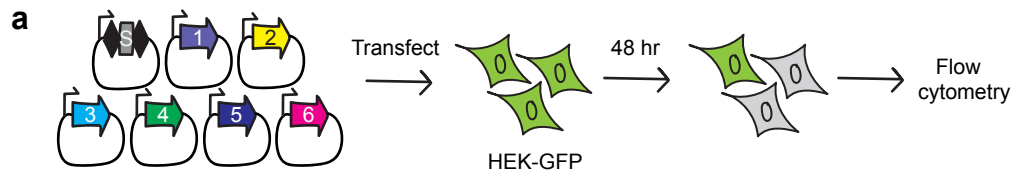
Supplementary Figure 3. Additional information regarding RNA-sequencing experiments.

Supplementary Figure 4. Additional information regarding live-cell RNA imaging experiments.

Supplementary Tables:

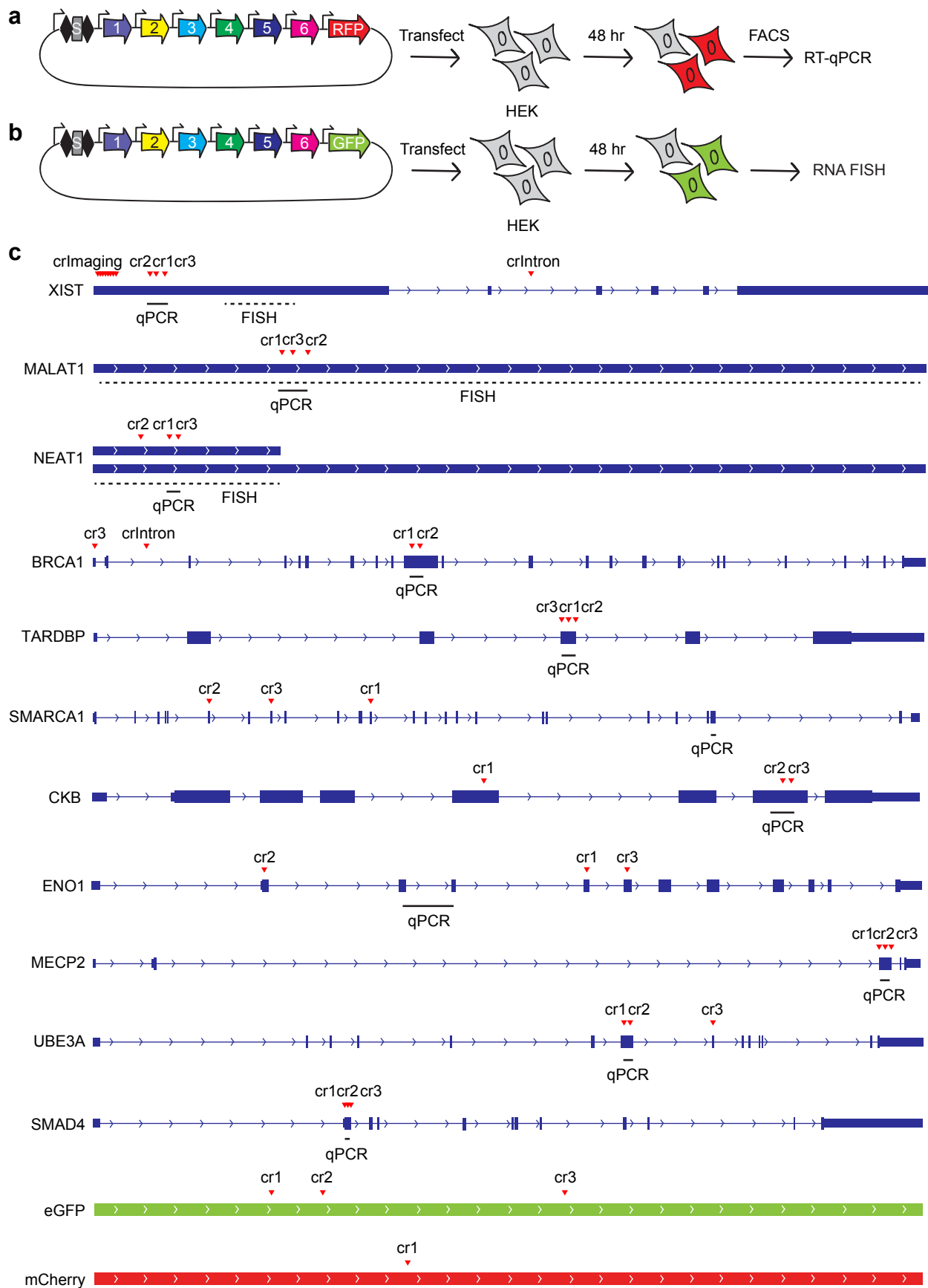
Supplementary Table 1. qPCR primer, crRNA, shRNA, and FISH probe sequences.

Supplementary Table 2. Plasmid sequences.



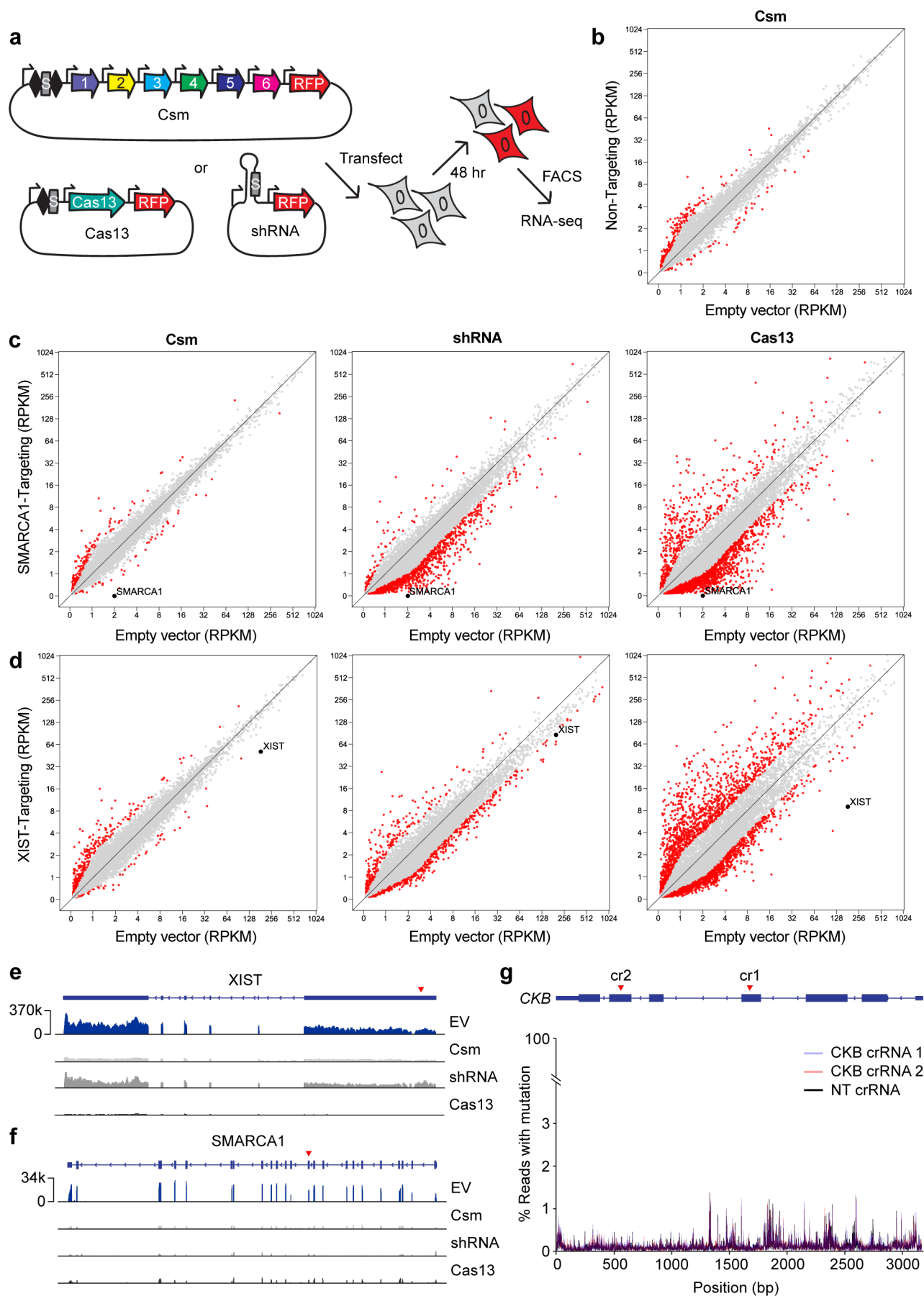
Supplementary Figure 1. Additional information regarding flow cytometry and FACS experiments.

a, Diagram showing workflow for flow cytometry experiments. Delivery plasmids and recipient cell lines are indicated in each experiment. **b**, Diagram showing gating strategy for flow cytometry experiments. **c**, Diagram showing gating strategy for flow cytometry and FACS experiments in which transfected (RFP-positive) cells were enriched.



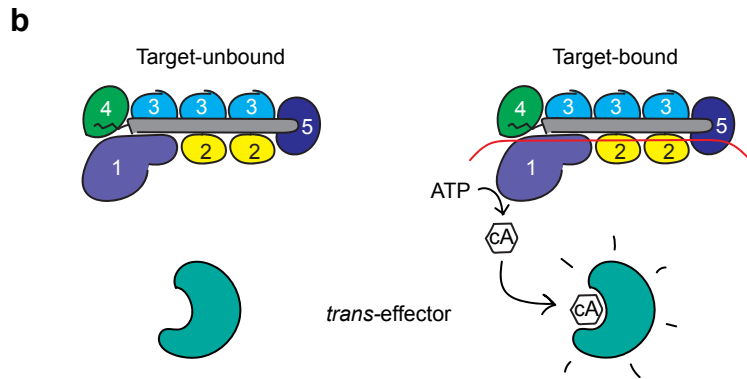
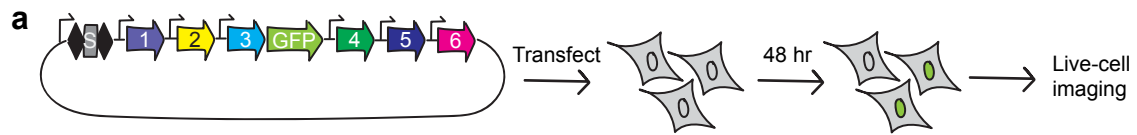
Supplementary Figure 2. Additional information regarding RT-qPCR and RNA FISH experiments.

a, Diagram showing workflow for RT-qPCR experiments. **b**, Diagram showing workflow for RNA FISH experiments. **c**, Diagram showing location of crRNA target site (red arrow), qPCR amplicon (solid black line), and FISH probe (dashed black line) for each transcript. Transcripts are shown 5' to 3', with thinner blocks representing UTR regions, thicker blocks representing coding regions, and lines representing intronic regions. Transcripts not to scale.



Supplementary Figure 3. Additional information regarding RNA-sequencing experiments.

a, Diagram showing workflow for RNA-seq experiments. **b**, Scatterplot showing differential transcript levels between HEK293T cells transfected with plasmid expressing Csm with non-targeting crRNA versus empty vector control. Up- or down-regulated transcripts (≥ 2 -fold change) indicated in red. **c**, **d**, Scatterplots showing differential transcript levels between HEK293T cells transfected with plasmid expressing Csm, Cas13, or shRNA targeting SMARCA1 (**b**) or XIST (**c**), versus empty vector control. Target transcript indicated in black; off-targets (≥ 2 -fold change) indicated in red. **e**, **f**, RNA-seq read coverage across target transcripts SMARCA1 (**d**) or XIST (**e**). Red arrow indicates location of crRNA/shRNA target site; EV, empty vector. **g**, Plot showing % reads with mutation compared to reference genome across the *CKB* locus in HEK293T cells transfected with all-in-one plasmid expressing Cas/Csm proteins and the indicated crRNAs, assayed by genomic PCR followed by DNA-seq. Red arrow indicates location of crRNA target site; NT, non-targeting.



Supplementary Figure 4. Additional information regarding live-cell RNA imaging experiments.

a, Diagram showing workflow for live-cell RNA imaging experiments. **b**, Diagram showing target-dependent activation of downstream effectors by the Csm complex.

Supplementary Table 1. qPCR primer, crRNA, shRNA, and FISH probe sequences.

Target	qPCR primer F	qPCR primer R
XIST	GTTGTATCGGGAGGCAGTAAGAATCATCTTT	GAAAAGCACACAGCAAAGACAAAGAGGC
MALAT1	ACTAGCATTAATTGACAGCTGACCCAGG	GCTACCTTCATCACCAAATTGCACTCG
NEAT1	GCTTAGGAGGAGGAAGTCTCCAATGT	CTCCATCTGCAAGCTCCATCTACAAG
BRCA1	TACATCAGGCCTTCATCCTGAGGATTTATC	ACAATTAGGTGGGCTTAGATTTCTACTGACTACTA
TARDBP	GTCAAGAAAGATCTTAAGACTGGTCATTCAAAGGG	CTTAGAATTAGGAAGTTTGCAGTCACACCATC
SMARCA1	GATAAACCAAGTCAAATCTAAACTGGGGAGCA	GATACAAGGCTCCATTTTCATCAGTTGCG
CKB	TTAAGCACCTCCGAGAACTTCTCATGC	TTGAAACTCTCTTCAAGTCTAAGGACTATGAGTTCA
ENO1	GGAACATCATTAATATACTTAATGGGCTGGAGACG	CTTCAACTGGTATCTATGAGGCCCTAGAG
MECP2	GGAAGAAAAGTCAGAAGACCAGGACC	TTGATCAAATACACATCATACTTCCCAGCAGAG
UBE3A	ATATTGATGCCATTAGAAGGGTCTACACCAGAT	CTTTGCAAAATAATGGCAAAGCCATTTCAG
SMAD4	ATGGACAATATGTCTATTACGAATACACCAACAAG TAATG	CTGAAGCCTCCCATCCAATGTTCTCT
GAPDH	CCAGAACATCATCCCTGCCTCTACTG	GGAAATGAGCTTGACAAAGTGGTCGTTG

Target	Genomic PCR primer F	Genomic PCR primer R
CKB	AATGGAATGAATGGGCTATAAATAGCCGCC	CTTGTCCCATCTCACAGAAGGCGAG

Target	Csm crRNA 1	Csm crRNA 2	Csm crRNA 3
XIST	GCCACTTGAACACTGCGACAGA ACTGGATCCG	TTGGACAACCTAACAAAGCACAGC CCGCCATG	CGCACATGTCCACCACCATGCTAA CCACTTAA
MALAT1	AGCTTCCTTCACCAAATCGCAC TGGCTCCTGG	GCCGCCTGCTACCTTCATCACCAA ATTGCACT	CCTAGCTTCACCACCAAATCGTTA GCGCTCCT
NEAT1	CCGGATGCATCTGCTGTGGACT TTTTAAGATT	CACCATTACCAACAATACCGACTC CAACAGCC	GAAGATGCAGCATCTGAAAACCTT TACCCAG
BRCA1	GGTTAGGATTTTTCTCATTTCTG AATAGAATCA	ATTGTGGATATTTAATTCGAGTTC CATATTGC	GAGCAGAGGGTGAAGGCCTCTGA GCGCAGGG
TARDBP	CTTGTGTTTCATATTTCCGTAAA ACGAACAAAG	GTCCATCTATCATATGTCGCTGTG ACATTACT	CTTTGAATGACCAGTCTTAAGATC TTTCTTGA
SMARCA1	GTCCATCCAGTCGACAATACTC ATAACCACGC	CCGACAAAACAAATGACACGGAGA GATGGGAC	AAAAGTTGAGTAAGGCCACAGTT CATGCAGG
CKB	GCTTGTCGAAGAGGAAGTGGTC GTCGATGAGC	TTGATATGCACACCTGCCCGCAGC CCGGTGCC	CGAGAACTTCTCATGCTTGCCAG GTTGGGCA
ENO1	CATCCATCTCGATCATCAGTTT GTCAATCTTC	TTCCCGCAGAGTCAAAGATCTCC CTGGCATG	GACCCCTTCTCAACGGCACCAGC TTTGACAG
MECP2	CAGAGTGGTGGGCTGATGGCTG CACGGGCTCA	GGCAGAAGCTTCCGGCACAGCCGG GGCGGAGC	CAAATACACATCATACTTCCCAGC AGAGCGGC
UBE3A	CTCGAGAGTATACATTGTGATA CGTCAAGTCA	GAGATTTCTATTCTCCATTACGAT AATGAACA	AAATCCACATACAACTGCTTCTT CAAGTCTG
SMAD4	TCCACCTTGTCTATGGCACATC AAACTATGCA	AGCTTCTTTACCAAACCTTTCAATT GCTCTTTT	TCCAATGTTCTCTGTATGGTAACA CATTTACT
GFP	CAGCTTGCCGGTGGTGCAGATG AACTTCAGGG	TGAAGCACTGCACGCCGTAGGTCA GGGTGGTC	AGGATGTTGCCGTCTCCTTGAAG TCGATGCC
RFP	CTTGAAGCCCTCGGGGAAGGAC AGCTTCAAGT		
NT	TCTCCGAACGTGTCACGTCTTT AGCGACTAAA		

Target	Csm crRNA intronic
XIST	GTCAGTAAATGAACCTTTCCTATCCCACGTGT
BRCA1	CCAGTCATGATCATTCCTGATCACATATTAAG

Target	Cas13 crRNA
XIST	GCCACTTGAACACTGCGACAGAACTGGATC
MALAT1	GCCGCCTGCTACCTTCATCACCAAATTGCA
CKB	GCTTGTCGAAGAGGAAGTGGTCGTCGATGA
SMAD4	TCCACCTTGTCTATGGCACATCAAACATATG
NT	TCTCCGAACGTGTCACGTCTTTAGCGACTA

Target	shRNA
XIST	GTTCTGTGCGAGTGTTCAAGTcctgacccaACTTGAACACTGCGACAGAAC
MALAT1	GTGATGAAGGTAGCAGGCGGCcctgacccaGCCGCCTGCTACCTTCATCAC
CKB	GACCACTCCTCTTCGACAAGcctgacccaCTTGTCGAAGAGGAAGTGCTC
SMAD4	GATGTGCCATAGACAAGGTGGcctgacccaCCACCTGTCTATGGCACATC
NT	GCTAAAGACGTGACACGTTGcctgacccaCGAACGTGTCACGTCTTTAGC

Spacer length	Csm crRNA (GFP)
24 nt	CAGCTTGCCGGTGGTGCAGATGAA
28 nt	CAGCTTGCCGGTGGTGCAGATGAACTTC
32 nt	CAGCTTGCCGGTGGTGCAGATGAACTTCAGGG
36 nt	CAGCTTGCCGGTGGTGCAGATGAACTTCAGGGTCAG
40 nt	CAGCTTGCCGGTGGTGCAGATGAACTTCAGGGTCAGCTTG
44 nt	CAGCTTGCCGGTGGTGCAGATGAACTTCAGGGTCAGCTTGCCGT
48 nt	CAGCTTGCCGGTGGTGCAGATGAACTTCAGGGTCAGCTTGCCGTAGGT

Target	Live-cell imaging Csm crRNA
XIST	AAAAGCAGGTATCCGCGGCCCGATGGGCAAA
MALAT1	AGCTTCCTTCACCAAATCGCACTGGCTCCTGG
NEAT1	CACCATTACCAACAATACCGACTCCAACAGCC

Target	RNA FISH probe
XIST	/5Cy3/GGGCACTCCCTGCTGGAAGGGAA; /5Cy3/AATTGTGCACCTTGACTGTCCAAA; /5Cy3/TCTGAGAGTAGGACCTTATTCA; /5Cy3/TCAGCACCCCTGCTGTACTGCAAAA
MALAT1	SMF-2035-1 (LGC Biosearch Technologies)
NEAT1	SMF-2036-1 (LGC Biosearch Technologies)

Supplementary Table 2. Plasmid sequences.

Plasmid	pDAC338
Description	Expression of Csm1
Utility	
Features	Pcmv-FLAG-NLS-Csm1-pA
Sequence	ACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGG CTCCGCCCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATA AAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGAT ACCTGTCCGCCTTCTCCCTTCGGAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTTCG GTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTCAGCCCAGCCGCTGCGCCTTATC CGGTAACCTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA GGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCTAACTACGGCTACACT AGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTG ATCCGGCAAAACAAACCACCGCTGGTAGCGGTGTTTTTTGTTTGCAAGCAGATTACGTCGCAGAAAAA AAGGATCTCAAGAAGATCCTTTGATCTTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAACTCACGTTAA GGGATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAATAAGTTTAA ATCAATCTAAAGTATATATAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCT CAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAG GGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACC GGCTCCAGATTATCAGC AATAAACACGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCTGCAACTTTATCCGCCTCCATCCAGTCTA TTAATTGTTGCGGGGAAGCTAGAGTAAGTAGTTGCGCAGTTAATAGTTTGCAGCAGTTACGTCGCAGTAA ACAGGCATCGTGGTGTACGCTCGTCTTGGTATGGCTTCATTAGCTCCGGTTCCCAACGATCAAGGCG AGTTACATGATCCCCATGTTGTGCAAAAAGCGGTTAGCTCCTTCGGTCCCTCCGATCGTTGTCAGAAGTA AGTTGGCCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTATGCCATCCGTA AGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTG CTCTTGCCCGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAA AACGTTCTTCGGGGCGAAAACCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGT GCACCCAACTGATCTTCAGCATCTTTTACTTTTACCAGCGTTTTCTGGGTGAGCAAAAACAGGAAGGCAAAA TGCCGCAAAAAGGGAATAAGGGCGACACGGAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATT GAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAACAAATA GGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCGGATCCGacattgattattgactagttat taatagtaatcaattacggggtcattagttcatagcccatatatggagttccgCGTTACATAACTTACGGT AAATGGCCCGCTGGCTGACCGCCCAACGACCCCGCCCATTTGACGTCAATAATGACGTATGTTCCCATAG TAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCACTTGGCAGTA CATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCTGGCATT TGCCAGTACATGACCTTATGGGACTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCA TGGTGATGCGGTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTACGGGGATTTCGAAGTCTC CACCCCATTTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAA CTCCGCCCCATTGACGCAAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAG TGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAG AAACGCAAAAGTGCGGGGCATGAAGAAAGAAAAGATTGATCTGTTTACGGAGCCCTGCTGCACGACATCGG AAAGGTCTACCGAGCAACCGGAGAGCGGAAGAAACACGCACTTGTGGGCGCCGACTGGTTGCAGCAGA TCGCCGACAACCAAGTCATCTCGGATCAGATCCGGTACCATATGGCCAACTACCAGTCTGATAAGCTCGGC AACGATCACCTGGCTTACATCACCTACATTGCCGACAACATCGCTCCGGTGTGACCGCCCGCAATCCAA CGAAGAGTCAGACGAAGATACCTCCGCAAAGATCTGGGACACCTACACGAACCAAGGCCGACATCTTTAACG TGTTTCGGAGCGCAGACCGATAAGCGGTACTTCAAGCCTACCGTGCTGAATCTCAAGTCGAAGCCCAACTTC GCGTCCGCCACTTACGAACCCCTTAGCAAGGGCGATTACGCTGCCATCGCCACCCGGATTAAAGAACGAACT GGCCGAGTTCGAGTTCAACCAAGTCCAGATTGACTCCCTGCTCAACCTTTTCGAGGCTACTCTCTCCTTCG TGCCGTCAAGCACCAACACTAAGGAAATCGCCGACATCTCCCTGGCCGACCATTCCCCTTGACTGCTGCC TTCGCTCTGGCGATCTACGACTACCTGGAGGACAAGGGTTCGGCACAACCTACAAAGAGGACCTGTTACCAA AGTGTACAGCGTTCTATGAAGAAGAAGCCTTCCTGCTGGCCTCCTTCGACCTGTGCGGAATCCAGGACTTTA TCTACAACATTAACATCGCAACTAACGGCGCGGCGAAGCAGCTGAAGGCCCGGAGCCTCTACCTGGACTTT ATGTCCGAGTACATCGCCGATAGCCTGCTGGACAAGCTGGGACTGAACAGGGCTAACATGCTTTACGTGCG CGCGGACACGCTACTTCGTCCTGGCCACACCGGAAAGACTGTGGAACCCCTGGTAGCTTTTGAGAAGG ATTTCAACCAGTTCCTGTTGGCAAACCTCCAGACCCGCTCTATGTGGCCTTTGGCTGGGGTTCTCTCGCG GCCAAGGACATCATGTCCGAGCTGAATAGCCCCGAGTCTACCGCAAGTGTACCAAAAGGCTTCGCGCAT GATCTCCAAAAGAAAATCTCCAGATACGACTACCAGACACTGATGCTCCTGAATCGCGGTGGAAGTCTCT CAGAGAGAGAGTGCAGATTGTCCTCCGACTCCGTGGAGAACCTGGTGTCTACCACGACCAGAAAGTCTGTGAC ATTTGCCGGGACTGTACCAGTTCTCGAAAGAAATTGCCCATGACCACTTCATCATTACCGAAAATGAGGG GCTGCCGATTGGACCAACGCGTGCTTAAAGGGCGTGCCATTGCAAAAGCTGTCCCAAGAAGCGTTACGCC GGGTCTACGTGAAGAATGACTATAAGGCCGGTACCGTGAAGGCTACGCATGTGTCTGTTGGGGGATTACCG

	TGCGACGAGATCTACAACCTACGCCGCCCTGAGCAAGAACGAGAACGGCCTAGGCATCAAGAGACTGGCCGT GGTCCGGCTCGACGTGGATGACTTGGGCGCCGCCCTTCATGGCCGGTTTCAGCCAGCAGGGAAACGGACAAT ACTCCACTCTGTCAAGATCGGCCACATTCTCCCGGAGCATGTCGCTGTTCTTCAAAGTGATACATTAACCAG TTCGCCCTCCGACAAGAAGCTGAGCATTATCTACGCGGGCGGCGATGACGTGTTCCGCAATTGGATCGTGGCA GGATATCATCGCGTTCACTGTGGAACTTCGCGAAAACCTTCATCAAGTGGACCAACGGGAAGCTCACCTCT CCGCGGGGATAGGGTTGTTCCGCCGACAAGACTCCTATTAGCCTGATGGCTCACCAGACCGGGGAAGCTGGAA GAGGCCGCCAAGGGCAACGAAAAGGACTCCATCTCGCTGTTCTCAAGCGACTACACTTTCAAGTTTGATAG GTTTCATCACTAACGTGTACGACGACAAAACCTGGAACAGATTAGATACTTCTTCAACCATCAAGACGAGAGGG GAAAGAAGTTTCATCTATAAGCTTATTGAGCTTTTGAGGAACACGACCGCATGAATATGGCAGCGCTCGCC TATTACCTCACTCGCTGGAAGAACTGACCCGGGAGACTGACAGGGACAAGTTCAAGACCTTCAAGAACCT GTTTCTACTCTGGTACACCAACAAGAAGGATAAGGACCGGAAGGACCGAGCTCGCGCTCTGCTGTACA CTTACGAAATCAGAAAGGATTAAcggcaataaaaagacagaataaaaacgcacggtgttgggctcgtttgttc AAGCTC
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Plasmid	pDAC803
Description	Expression of Csm1 (DNase mut)
Utility	
Features	Pcmv-FLAG-NLS-Csm1 (DNase mut) -pA
Sequence	ACATGTGAGCAAAAAGGCCAGCAAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGG CTCCGCCCCCTGACGAGCATCAAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGACTATA AAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGAT ACCTGTCCGCCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTTCG GTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCCGACCGCTGCGCCTTATC CGGTAAGTATCGTCTTGAGTCCAAACCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA GGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACT AGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTG ATCCGGCAAAACAACACCGCTGGTAGCGGTGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAA AAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAAACTCACGTAA GGGATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAATAAGTATTTAA ATCAATCTAAAGTATATATAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCT CAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAG GGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACC GGCTCCAGATTATCAGC AATAAACAGCCAGCCGGAAGGGCGAGCGCAGAAGTGGTCTGCAACTTTATCCGCTTCCATCCAGTCTA TTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCT ACAGGCATCGTGGTGTACGCTCGTCTGTTGGTATGGCTTCATTAGCTCCGGTTCCCAACGATCAAGGCG AGTTACATGATCCCCATGTTGTGCAAAAAAGCGTTAGCTCCTTCGGTCCCTCCGATCGTTGTCAGAAGTA AGTTGGCCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTATGCCATCCGTA AGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTG CTCTTGCCCGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAGTGCTCATCATTGGAA AACGTTCTTCGGGGCGAAAACCTCAAGGATCTTACCGCTGTTGAGATCCAGTTTCGATGTAACCCACTCGT GCACCCAACTGATCTTCAGCATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAA TGCCGCAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATT GAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAACAAATA GGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCCGATCCgacattgattattgactagttat taatagtaatcaattacggggtcattagttcatagcccatatatggagttccgCGTTACATAACTTACGGT AAATGGCCCCGCTGGCTGACCGCCCAACGACCCCGCCCATTTGACGTCAATAATGACGTATGTTCCCATAG TAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCACTTGGCAGTA CATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCTGGCATT TGCCAGTACATGACCTTATGGGACTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCA TGGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTACTCACGGGGATTTCCAAGTCTC CACCCCATTTGACGTCAATGGGAGTTTGTGTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAA CTCCGCCCATTTGACGCAAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGTTT TGAAACGCTCAGATCTTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCTTAAGAAG AAACGCAAAAGTGCGGGGCATGAAGAAAAGAAAAGATTGATCTGTGTTTACGGAGCCCTGCTGGCCGCCATCGG AAAGGTCATCCAGCGAGCAACCGGAGAGCGGAAGAAACACGCACTTGTGGGCGCCGACTGGTTTCGACGAGA TCGCCGACAACCAAGTCATCTCGGATCAGATCCGGTACCATATGGCCAACCTACAGTCTGATAAGCTCGGC AACGATCACCTGGCTTACATCACCTACATTGCCGACAACATCGCTCCGGTGTGACCGCCCGCAATCCAA CGAAGAGTCAGACGAAGATACCTCCGCAAAGATCTGGGACACCTACACGAACCAAGGCCGACATCTTTAACG GTTCGGAGCGCAGACCGATAAGCGGTACTTCAAGCTACCGTGCTGAATCTCAAGTCGAAGCCCAACTTC CGTCCGCCACTTACGAACCTTTAGCAAGGGCATACGCTGCCATCGCCACCCGATTAAGTAAGCAACT GGCCGAGTTTCAGTTCAACCAAGTCCAGATTGACTCCCTGCTCAACCTTTTCGAGGCTACTCTCTCCTTCG TGCCGTCAAGCACCAACACTAAGGAAATCGCCGACATCTCCCTGGCCGACCATTTCCGCTTGACTGCTGCC TTCGCTCTGGCGATCTACGACTACCTGGAGGACAAGGGTCGGCACAACTACAAAGAGGACCTGTTACCAA

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Plasmid	pDAC804
Description	Expression of Csm1 (cA mut)
Utility	
Features	Pcmv-FLAG-NLS-Csm1 (cA mut) -pA
Sequence	ACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGG CTCCGCCCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATA AAGATACCAAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGAT ACCTGTCCGCCCTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCAGCTCAGGTATCTCAGTTTCG GTCTAGGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGCTTCAGCCCGACCGCTGCCGCTTATC CGGTAACATATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA GGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCTAACTACGGCTACACT AGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTG ATCCGGCAAACAACACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAA AAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTGACGCTCAGTGGAAACGAAAACACAGTTAA GGGATTTTGGTCAAGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTTAA ATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCT CAGCGATCTGTCTATTTGTTTCATCCATAGTTGCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAG GGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCAGCTCCAGATTATCAGC AATAAACACAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCTGCAACTTTATCCGCTCCATCCAGTCTA TTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCT ACAGGCATCGTGGTGTACGCTCGTCTGTTGGTATGGCTTCAATCAGCTCCGGTTCCTAACGATCAAGGCG AGTTACATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCCCTCCGATCGTTGTGAGAAGTA AGTTGGCCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTATGCCATCCGTA AGATGCTTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTG CTCTTGCCCGGCTCAATACGGGATAATACCGCGCCACATAGCAGAACCTTTAAAGTGCTCATATTGGAA AACGTTCTTCGGGGCGAAAACCTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTTCGATGTAACCCACTCGT GCACCAACTGATCTTCAGCATCTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCCAAAA TGCCGCAAAAAAGGAATAAGGGCGACACGGAATGTTGAATACTCATACTTTCCTTTTTTCAATATTATT GAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTGAATGTATTAGAAAAATAACAAATA GGGGTTCGCGGCACATTTCCCCGAAAAGTGCCACCTGACGTCGGATCCgacattgattattgactagttat taatagtaatcaattacggggtcattagttcatagcccatatatggagttccgCGTTACATAACTTACGGT AAATGGCCCGCTGGCTGACCGCCCAACGACCCCGCCCATTGACGTCAATAATGACGTATGTTCCCATAG TAACGCCAATAGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAACTGCCACTTGGCAGTA CATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCTGGCATT TGCCAGTACATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTGATCATCTGCTATTACCA TGGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCGAAGTCTC CACCCCATTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCGAAAATGTCTGAACAA CTCCGCCCATTGACGCAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAG

	TGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAG AAACGCCAAAGTGCGGGGCATGAAGAAAGAAAAGATTGATCTGTTTTACGGAGCCCTGCTGCACGACATCGG AAAGGTCATCCAGCGAGCAACCGGAGAGCGGAAGAAACACGCACTTGTGGGCGCCGACTGGTTTCGACGAGA TCGCCGACAACCAAGTCATCTCGGATCAGATCCGGTACCATATGGCCAACTACCAGTCTGATAAGCTCGGC AACGATCACCTGGCTTACATCACCTACATTGCCGACAACATCGCTCCGGTGTGACCGCCGCAATCCAA CGAAGAGTCAGACGAAGATACCTCCGCAAAGATCTGGGACACCTACACGAACCAGGCCGACATCTTTAACG TGTTTCGGAGCGCAGACCGATAAGCGGTACTTCAAGCCTACCGTGCTGAATCTCAAGTCGAAGCCCAACTTC GCGTCGCCCACTTACGAACCCTTTAGCAAGGGCGATTACGCTGCCATCGCCACCCGGATTAAGAACGAAC GGCCGAGTTCGAGTTCAACCAAGTCCAGATTGACTCCCTGCTCAACCTTTTCGAGGCTACTCTCTCCTTCG TGCCGTCAAGCACCAACACTAAGGAAATCGCCGACATCTCCCTGGCCGACCATTCCCCTTGACTGCTGCC TTTCGCTCTGGCGATCTACGACTACCTGGAGGACAAGGTCGGCACAACACTACAAAGAGGACCTGTTACACAA AGTGTACGCGTTCTATGAAGAAGAAGCCTTCCTGCTGGCCTCCTTCGACCTGTGCGGAATCGAGCAATTTA TCTACAACATTAACATCGCAACTAACGGCGCGGCGAAGCAGCTGAAGGCCCGGAGCCTCTACCTGGACTTT ATGTCCGAGTACATCGCCGATAGCCTGCTGGACAAGCTGGGACTGAACAGGGCTAACATGCTTTACGTCGG CGGCGGACACGCCACTTTCGTCTCGGCCAACACGAAAAGACTGTGGAAACCTGGTGCAGTTTGAGAAGG ATTTCAACCAGTTCCTGTTGGCAAACCTTCAGACCCGCCTCTATGTGGCCTTTGGCTGGGGTTCCTTCGCG GCCAAGGACATCATGTCCGAGCTGAATAGCCCCGAGTCTACCGCAAAGTGTACCAAAAGGCTTCGCGCAT GATCTCCAAAAAGAAAATCTCCAGATACGACTACCAGACACTGATGCTCCTGAATCGCGGTGGAAAGTCCCT CAGATGAGAGAGTGCAGAGATTTGCCACTCCGTGGAGAACCTGGTGTCTACCACGACCAGAAAGTCTGTGAC ATTTGCCGGGACTGTACCAGTTCTCGAAAGAAATTGCCCATGACCACTTCATCATTACCGAAAATGAGGG GCTGCCGATTGGACCAAACGCGTGCTTAAAGGGCGTGGCATTGAAAAGCTGTCCCAAGAAGCGTTCAGCC GGGTCTACGTGAAGAATGACTATAAGGCCGGTACCCTGAAGGCTACGCATGTGTCTGTGGGGGATTACCAG TGCAGCAGATCTACAACACGCCGCCCTGAGCAAGAACGAGAACGGCCTAGGCATCAAGAGACTGGCCGT GGTCCGGCTCGACGTGGATGACTTGGGCGCCGCCTTCATGGCCGGTTTCAGCCAGCAGGGAAACGGACAAT ACTCCACTCTGTCAAGATCGGCCACATTCTCCCGGAGCATGTCGCTGTTCTTCAAGTGATACATTAACCCAG TTCGCCTCCGACAGAAGCTGAGCATTATCTACCGGGCGGCGCCGCGCTGTTTCGCCATTGGATCGTGGCA GGATATCATCGCGTTCACTGTGGAACCTTCGCGAAAACCTTCATCAAGTGGAACCAACGGGAAGCTCACCTCT CCGCGGGGATAGGGTTGTTTCGCCGACAAGACTCCTATTAGCCTGATGGCTCACCAGACCGGGGAACCTGGAA GAGGCCGCCAAGGGCAACGAAAAGGACTCCATCTCGCTGTTCTCAAGCGACTACACTTTCAAGTTTGATAG GTTCACTACTAACGTGTACGACGACAAACTGGAACAGATTAGATACTTCTTCAACCATCAAGACGAGAGGG GAAAGAACCTCATCTATAAGCTTATTGAGCTTTTGAGGAACCACGACCGCATGAATATGGCAGCGCTCGCC TATTACCTCACTCGCCTGGAAGAAGTACCCGGGAGACTGACAGGGACAAGTTCAAGACCTTCAAGAACCT GTTCTACTCCTGGTACACCAACAAGAACGATAAGGACCGGAAGGAAGCCGAGCTCGCGCTCCTGCTGTACA TCTACGAAATCAGAAAGGATTAAcggcaataaaaaagacagaataaaaacgcacggtgtttgggtcgtttggttc AAGCTC
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Plasmid	pDAC309
Description	Expression of Csm2
Utility	
Features	Pcmv-FLAG-NLS-Csm2-pA
Sequence	ACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGCTGGCGTTTTTCCATAGG CTCCGCCCCCTGACGAGCATCAGAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATA AAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGAT ACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTTCG GTGTAGGTCTGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCCGACCGCTGCGCCTTATC CGGTAACATATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA GGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACT AGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTG ATCCGGCAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAA AAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTACGTTAA GGGATTTTGGTCATGAGATTATCAAAAAGGATCTTACCTAGATCCTTTTAAATTAATAAATGAAGTTTTAA ATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCT CAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCGTCGTGTAGATAACTACGATACGGGAG GGCTTACCATCTGGCCCCAGTGCTGCAATGATACCCGCGAGACCCACGCTCACCAGCTCCAGATTATCAGC AATAAACAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCCTGCAACTTTATCCGCTCCATCCAGTCTA TTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCT ACAGGCATCGTGGTGTACGCTCGTCTTGGTATGGCTTCATTACGCTCCGTTCCCAACGATCAAGGCG AGTTACATGATCCCCCATGTTGTGCAAAAAAGCGGTAGCTCCTTCGGTCCCTCCGATCGTTGTCAGAAGTA AGTTGGCCGCAAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCTGCCATCCGTA AGATGCTTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGCGCCGACGAGTTG CTCTTGCCCGGCTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTTGGAA AACGTTCTTCGGGGCGAAAACCTCTCAAGGATCTTACCCTGTTGAGATCCAGTTTCATGTAACCCACTCGT GCACCCAACTGATCTTCAGCATCTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAA

	TGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATT GAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATA GGGGTTCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCGGATCCgacattgattattgactagttat taatagtaatcaattacggggtcattagttcatagcccatatatggagttccgCGTTACATAACTTACGGT AAATGGCCCGCCTGGCTGACCGCCCAACGACCCCGCCCATTTGACGTCAATAATGACGTATGTTCCCATAG TAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCACTTGGCAGTA CATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATT TGCCAGTACATGACCTTATGGGACTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCA TGGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTC CACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAA CTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAG TGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAG AAACGCAAAGTGCGGGGCATGACCATCCTGACCAGCAGAACTACGTGGACATCGCCGAGAAAGCCATCCT GAAGCTGGAAAGAAACACCAGAAATAGAAAGAACCCCTGATGCCTTCTTCTGACCACATCTAAGCTGCGGA ACCTGCTGAGCCTGACAAGCACCTGTTCGACGAGAGCAAGGTGAAGGAATACGACGCCCTGCTGGACAGA ATCGCTTATCTGAGAGTGCAGTTCGTGTACCAGCCGGCAGAGAGATCGCCGTGAAAGATCTGATCGAGAA GGCCAGATCCTGGAAGCTCTGAAAGAGATCAAGGACCGGAAACCCCTGCAGAGATTCTGCAGATACATGG AAGCCCTGGTGGCCTACTTCAAGTCTACGGCGCAAGGACTGAcggcaataaaaagacagaataaaacgc acggtgttggggtcgtttgttcAAGCTC
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Plasmid	pDAC310
Description	Expression of Csm3
Utility	
Features	Pcmv-FLAG-NLS-Csm3-pA
Sequence	ACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGCTGGCGTTTTTCCATAGG CTCCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATA AAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCTGTTCCGACCTGCCGCTTACCGGAT ACCTGTCCGCGTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTTCG GTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCCACTGGCAGCAGCCACTGGTAACA CGTTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA GGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCTAACTACGGCTACACT AGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAGAGATTGGTAGCTCTTG ATCCGGCAAAACAAACCACCGCTGGTAGCGGTGTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAA AAGCATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTTCTGACGCTCAGTGGGAACGAAAACTCAGTTAA GGGATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTTTAA ATCAATCTAAAGTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCT CAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAG GGCTTACCATCTGGCCCCAGTGTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTATCAGC AATAAACACAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTA TTAATTGTTGCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCT ACAGGCATCGTGGTGTACGCTCGTCTTGGTATGGCTTCATTACGCTCCGGTTCCCAACGATCAAGGCG AGTTACATGATCCCCCATGTTGTGCAAAAAGCGGTTAGCTCCTTCGGTCCCTCGATCGTTGTCAGAAGTA AGTTGGCCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTATGCCATCCGTA AGATGCTTTTCTGTGACTGGTGTAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTG CTCTTGCCCGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAA AACGTTCTTCGGGGCGAAAACCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGT GCACCAACTGATCTTCAGCATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAA TGCCGCAAAAAAGGGAATAAGGGCGACACGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATT GAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATA GGGGTTCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCGGATCCgacattgattattgactagttat taatagtaatcaattacggggtcattagttcatagcccatatatggagttccgCGTTACATAACTTACGGT AAATGGCCCGCCTGGCTGACCGCCCAACGACCCCGCCCATTTGACGTCAATAATGACGTATGTTCCCATAG TAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCACTGGCAGTA CATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATT TGCCAGTACATGACCTTATGGGACTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCA TGGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTC CACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAA CTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAG TGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAG AAACGCAAAAGTGCGGGGCATGACCTTCGCCAAGATCAAAATTCAGCGCCAGATCCGGCTGAAACCCGCT GCACATCGGAGGATCTGATGCCTTTGCGGCTATCGGCGCCATCGACAGCCCTGTGATCAAGGACCCCATCA CCAACCTGCCTATCATCCCCGGCTCTAGCCTGAAGGGCAAGATGAGAACACTGCTGGCCAAGGTGTACAAC GAAAAGGTGGCCGAGAAGCCTAGCGACGACAGCGACATCCTGAGCAGACTGTTCCGAAATAGCAAGGATAA

	GCGGTTCAAGATGGGCAGACTGATCTTCCGGGACGCCTTCCTGAGCAACGCCGACGAGCTGGATTCTCTGG GCGTGCGGAGCTACACCGAGGTGAAGTTCGAGAACACCATCGATAGAAATCACCGCCGAGGCCAATCCTAGA CAGATCGAGAGAGCCATTTCGGAATCAACATTCGACTTCGAGCTGATCTACGAGATCACTGATGAGAATGA GAACCAGGTCGAGGAAGATTTCAAGGTGATCAGAGACGGCCTGAAGCTGCTGGAACCTGGACTACCTGGGCG GAAGCGGCTCCAGAGGCTACGGCAAAGTGGCTTTTGAGAACCCTGAAAGCCACCACAGTGTTCGGCAACTAC GACGTGAAAACCCCTGAACGAGCTGCTGACCGCCGAAGTGTGAcggaataaaaaagacagaataaaacgcac ggtgttgggtcgtttgttcAAGCTC
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Plasmid	pDAC327
Description	Expression of Csm3 (RNase mut)
Utility	
Features	Pcmv-FLAG-NLS-Csm3 (RNase mut) -pA
Sequence	ACATGTGAGCAAAAAGGCCAGCAAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGG CTCCGCCCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATA AAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGAT ACCTGTCCGCCTTTCTCCCTTCGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTTCG GTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCCGACCGCTGCCGCTTATC CGGTAACCTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA GGATTAGCAGAGCGAGGTATGTAGGCGGTGTACAGAGTTCTTGAAGTGGTGGCTAACTACGGCTACACT AGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTG ATCCGGCAAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAA AAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGCTCTGACGCTCAGTGAACGAAAACTCACGTTAA GGGATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAATAAGTTTAA ATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCT CAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAG GGCTTACCATCTGGCCCCAGTGTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTATCAGC AATAAAACAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCTGCAACTTTATCCGCTCCATCCAGTCTA TTAATTGTTGCCGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGGCGAACGTTGTTGCCATTGCT ACAGGCATCGTGGTGTACGCTCGTCTGTTGGTATGGCTTCATTCAGCTCCGGTTCCCAACGATCAAGGCG AGTTACATGATCCCCATGTTGTGCAAAAAGCGGTTAGCTCCTTCGGTCTCCGATCGTTGTGAGAAGTA AGTTGGCCGAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCTATGCCATCCGTA AGATGCTTTTCTGTGACTGGTGAAGTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTG CTCTTGCCCGGCTCAATAACGGGATAATACCGGCCACATAGCAGAACTTTAAAGTGTCTCATCTTGGAA AACGTTCTTCGGGCGGAAAACTCTCAAGGATCTTACCCTGTTGAGATCCAGTTCCGATGTAACCCACTCGT GCACCCAACTGATCTTCAGCATCTTTTACTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAA TGCCGCAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCTTTTCAATATTATT GAAGCATTTATCAGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTAGAAAAATAAACAAATA GGGGTTCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCCGATCCGacattgattattgactagttat taatagtaataattacggggtcattagttcatagcccatatatggagttccgCGTTACATAACTTACGGT AAATGGCCCGCCTGGCTGACCGCCCAACGACCCCGCCCATTTGACGTCAATAATGACGTATGTTCCCATAG TAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCCACCTTGGCAGTA CATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATT TGCCAGTACATGACCTTATGGGACTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCA TGGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGAATCACGGGGATTTCCAAGTCTC CACCCCATTTGACGTCAATGGGAGTTTGTGTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAA CTCCGCCCCATTGACGCAAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGTTT TGAACCGTCAGATCTCTAGAcgcgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAG AAACGCAAAAGTGGGGGCATGACCTTCGCCAAGATCAAATTCAGCGCCAGATCCGGCTGGAACCGGCCT GCACATCGGAGGATCTGATGCCTTTGCCGCTATCGGCGCCATCGCCAGCCCTGTGATCAAGGACCCCATCA CCAACTGCCTATCATCCCCGGCTCTAGCCTGAAGGGCAAGATGAGAACACTGCTGGCCAAGGTGTACAAC GAAAAGGTGGCCGAGAAGCCTAGCGACGACAGCGACATCCTGAGCAGACTGTTTCGGAAATAGCAAGGATAA GCGGTTCAAGATGGGCAGACTGATCTTCCGGGACGCCTTCCTGAGCAACGCCGACGAGCTGGATTCTCTGG GCGTGCGGAGCTACACCGAGGTGAAGTTCGAGAACACCATCGATAGAAATCACCGCCGAGGCCAATCCTAGA CAGATCGAGAGAGCCATTTCGGAACCTCAACATTCGAGCTTCGAGCTGATCTACGAGATCACTGATGAGAATGA GAACCAGGTCGAGGAAGATTTCAAGGTGATCAGAGACGGCCTGAAGCTGCTGGAACCTGGACTACCTGGGCG GAAGCGGCTCCAGAGGCTACGGCAAAGTGGCTTTTGAGAACCCTGAAAGCCACCACAGTGTTCGGCAACTAC GACGTGAAAACCCCTGAACGAGCTGCTGACCGCCGAAGTGTGAcggaataaaaaagacagaataaaacgcac ggtgttgggtcgtttgttcAAGCTC

Plasmid	pDAC339
Description	Expression of Csm4
Utility	

Features	Pcmv-FLAG-NLS-Csm4-pA
Sequence	ACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGG CTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATA AAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGAT ACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTTCG GTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCCGACCGCTGCGCCTTATC CGGTAAGTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA GGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCTAACTACGGCTACACT AGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTG ATCCGGCAAAACAACACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAA AAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAAACGAAAACTACGTTAA GGGATTTTGGTTCATGAGATTATCAAAAAAGATCTTCACCTAGATCCTTTTAAATTA AAAATGAAGTTTAA ATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCT CAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAG GGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACC GGCTCCAGATTATCAGC AATAAACAGCCAGCCGGAAGGGCCGAGCGCAGAGTGGTCCGCAACTTTATCCGCTCCATCCAGTCTA TTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCT ACAGGCATCGTGGTGTACGCTCGTCTGTTGGTATGGCTTCATTACGCTCCGGTCCCCAACGATCAAGGCG AGTTACATGATCCCCCATGTTGTGCAAAAAAGCGTTAGCTCCTTCGGTCTCCGATCGTTGTGAGAAAGTA AGTTGGCCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTATGCCATCCGTA AGATGCTTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTG CTCTTGCCCGGCTCAATACGGGATAATACCGCGCCACATAGCAGAAGTTTAAAAGTGCTCATATTGGAA AACGTTCTTCGGGGCGAAAACTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTTCGATGTAACCCACTCGT GCACCAACTGATCTTCAGCATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAA TGCCGCAAAAAAGGAATAAGGGCGACACGGAATGTTGAATACTCATACTCTTCTTTTTCAATATTATT GAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATA GGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCGGATCCgacattgattattgactagttat taatagtaatcaattacggggtcattagttcatagccatataatggagttccgCGTTACATAACTTACGGT AAATGGCCCGCTGGCTGACCGCCCAACGACCCCGCCCATGACGTCAATAATGACGTATGTTCCCATAG TAACGCCAATAGGGAAGTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCCACCTTGGCAGTA CATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCTGGCATT TGCCGAGTACATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGTATTACCA TGGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCGAAGTCTC CACCCCATTTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAA CTCCGCCCATTTGACGCAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAG TGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAG AAACGCAAAAGTGGGGGCATGACTTACAAGCTCTACATTATGACCTTTCAAACGCCCACTTCGGTTCCGG CACTCTGGACTCATCGAAGCTGACCTTCTCCGCGGATAGAATCTCTCGGCACTCGTGTCTGAGGCTCTGA AGTCCGAGTAAAGCTCGACGCTTCTTGGCCGAGGCCAACAGGATAAGTTCACTTGACCGCAGCGTTCCCA TTCCAATTCGGTCTTTCTGCGGAAACCGATTGGTTACCCCAAGCACGACCAGATCGACCAGTCTGTGGA CGTGAAGGAAGTCCGCCGCCAAGCGAAGCTGTCCAAAAGCTCCAGTTCTGGCTCTGGAAGACGTCGACG ACTACCTGAACGGAGAGCTGTTTTGAGAATGAGGAACACGCCGTGATCGACACAGTGACCAAGAACCAGCCC CATAAAGATGATAATCTGTACCAAGTGGCCACCACTCGGTTCTCGAACGACACCTCCCTTTACGTGATCGC CAACGAATCCGATCTGCTGAACGAAGTGTAGCAGCCTTCAGTACTCCGGGCTGGGCGGCAAAAGGTCTCT CAGGATTCGGCAGATTTGAGCTGGACATCCAGAACATTTCCCTTGAAGTGTCCGACCGCTGACGAAGAAC CACACGACAAGGTCATGTCACTTACCACCGCCCTCCCGGTGGACGCTGATCTCGAGGAAGCGATGGAAGA TGGCCATTACCTGTTGACCAAGTCGTCCGATTTCGCATTCTCCACGCCACCAACGAAAACATATCGGAAGC AGGACCTGTACAAGTTCGCCTCCGGGAGCACCTTCAGCAAGACTTTCGAGGGACAGATCGTGGACGTGCGC CCTCTCGATTTCCCTCACGCCGTGCTGAAGTACGCCAAGCCGCTGTTCTTTAAGCTCGAAGTCTAAcggca ataaaaagacagaataaaacgcacggtggttgggtcggtttgttcAAGCTC

Plasmid	pDAC312
Description	Expression of Csm5
Utility	
Features	Pcmv-FLAG-NLS-Csm5-pA
Sequence	ACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGG CTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATA AAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGAT ACCTGTCCGCTTTTCTCCCTTCGGGAAGCGTGGCGCTTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTTCG GTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCCGACCGCTGCGCCTTATC CGGTAAGTATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA GGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCTAACTACGGCTACACT AGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGAAAAAGAGTTGGTAGCTCTTG

	ATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAA AAGGATCTCAAGAAGATCCTTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAA GGGATTTTGGTTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTTTAA ATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCT CAGCGATCTGTCTATTTGTTTCATCCATAGTTGCCTGACTCCCGTCGTGTAGATAAATACTACGATACGGGAG GGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACC GGCTCCAGATTATCAGC AATAAACAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTA TTAATTGTTGCCGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCT ACAGGCATCGTGGTGTCACGCTCGTCGTTTGGTATGGCTTCATTCAGCTCCGGTTCCCAACGATCAAGGCG AGTTACATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCCCTCCGATCGTTGTCAGAAGTA AGTTGGCCGCAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCTGCCATCCGTA AGATGCTTTTTCTGTGACTGTTGAGTACTCAACCAAGTCAATTCTGAGAATAGTGTATGCGCGCAGCCAGTTG CTCTTGCCCGGCTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAA AACGTTCTTCGGGGCGAAAACCTCTCAAGGATCTTACCCTGTTGAGATCCAGTTTCGATGTAACCCACTCGT GCACCCAACTGATCTTCAGCATCTTTTACTTTACCAGCGTTTTCTGGGTGAGCAAAAACAGGAAGGCAAAA TGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATT GAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATA GGGGTTCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCGGATCCgacattgattattgactagttat taatagtaataatcaattacggggtcattagttcatagcccatatatggagttccgCGTTACATAACTTACGGT AAATGGCCCGCCTGGCTGACCGCCCAACGACCCCCGCCCATTTGACGTCAATAATGACGTATGTTCCCATAG TAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCCACTTGGCAGTA CATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATT TGCCAGTACATGACCTTATGGGACTTTCTACTTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCA TGGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTC CACCCTATTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAA CTCCGCCCCATTGACGCAAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTTAG TGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAG AAACGCAAAGTGCGGGGCATGAAAAATGACTACCGGACCTTCAAGCTGAGCCTGCTGACCCTGGCTCCTAT CCACATCGGCAACGGCGAGAAGTACACCAGCAGAGAATTCATCTACGAGAACAGAAGTTCTACTTCCCCG ACATGGGCAAGTTCTACAACAAGATGGTGGAAAAGAGACTGGCCGAGAAGTTCGAGGCCTTCTCTGATCCAG ACCAGACCCAACGCCAGAAACAACCGGCTGATTTCTTTTCTGAACGACAACAGAATCGCCGAAAGATCTTT TGGCGGCTACAGCATCAGTGAAACCGGCCTTGGAACTCTGATAAGAACCCCTAACAGCGCCGGAGCTATCAACG AGGTGAACAAATTCATCCGGGACGCCCTTCGAAATCCTTACATCCCAGGCAGCAGCCTGAAGGGCGCCATC CGCACCATCTGTATGAACACCACACCTAAGTGGAAACAACGAGAACGCCGTGAACGACTTCGGCAGATTCCC AAAGGAAAACAAGAACCTGATCCCTTGGGGACCTAAGAAAGGCAAGGAATACGACGACCTGTTCAACGCCA TCAGAGTGTCGACAGCAAGCCCTTCGACAACAAAAGCCTGATCCTCGTGCAAGTGGGACTACAGCGCC AAAACCAACAAGGCCAAGCCTCTGCCTCTGTACAGAGAGTCTATCAGCCCTCTGACCAAGATCGAGTTCGA GATAACAACAACCACTGATGAGCCGGCAGACTGATCGAGGAACCTGGGAAAGCGGGCCAGCCTTTTATA AGGATACAAGGCCCTTTTCTGTCTGAATTCCCTGATGATAAGATCCAGGCTTAATCTGCAATCCCCATC TACCTGGGCGCCGGCAGCGGCGCTTGGACAAAGACCCTGTTTAAAGCAGGCCGACGGCATCTGCAGCGGAG ATACTCCAGAATGAAAACCAAGATGGTCAAGAAGGGCGTGCTGAAGCTGACAAAGGCCCTCTGAAAACAG TGAAGATCCCCAGCGGCAACCACAGCCTGGTGAAGAATCACGAGAGCTTCTACGAGATGGGCAAGGCCAAC TTCATGATCAAGGAAATCGACAAGTGAcggcaataaaaagacagaataaaaacgcacgggtgttgggtcgttt gttcAAGCTC
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Plasmid	pDAC307
Description	Expression of Cas6
Utility	
Features	Pcmv-FLAG-NLS-Cas6-pA
Sequence	ACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGCTGGCGTTTTTCCATAGG CTCCGCCCCCTGACGAGCATCAGAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATA AAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGAT ACCTGTCCGCTTTTCTCCCTTCGGGAAGCGTGGCGCTTTTCTCATAGCTCAGCTGAGGTATCTCAGTTG GTGTAGGTCTGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCGTTACGCCGACCGCTGCCGCTTATC CGGTAACATATCGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACA GGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCTAACTACGGCTACACT AGAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAGAGAGTTGGTAGCTCTTG ATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAA AAGGATCTCAAGAAGATCCTTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTACGTTAA GGGATTTTGGTTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTTTAA ATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCT CAGCGATCTGTCTATTTGTTTCATCCATAGTTGCCTGACTCCCGTCGTGTAGATAACTACGATACGGGAG GGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACC GGCTCCAGATTATCAGC

	AATAAACCCAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTA TTAATTGTTGCCGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCACGTTGTTGCCATTGCT ACAGGCATCGTGGTGTCACGCTCGTCGTTTGGTATGGCTTCATTCAGCTCCGGTTCCTAACGATCAAGGCG AGTTACATGATCCCCCATGTTGTGCAAAAAAGCGGTAGCTCCTTCGGTCCCTCGATCGTTGTCAGAAGTA AGTTGGCCGAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTTACTGTCATGCCATCCGTA AGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTG CTCTTGCCCGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAA AACGTTCTTTCGGGGCGAAAACCTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGT GCACCCAACTGATCTTCAGCATCTTTTACTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAA TGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATT GAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATA GGGTTCGCGCGCATTTTCCCCGAAAAGTGCCACCTGACGTCGGATCCgacattgattattgactagttat taatagtaatcaattacggggtcattagttcatagcccatatatggagttccgCGTTACATAACTTACGGT AAATGGCCCGCTGGCTGACCGCCCAACGACCCCGCCCATTTGACGTCAATAATGACGTATGTTCCCATAG TAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAACTGCCACTTGGCAGTA CATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCTGGCATT TGCCAGTACATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCA TGGTGATGCGGTTTTGGCAGTACATCAATGGCGTGGATAGCGGTTTGACTCAGGGGATTTCCAAGTCTC CACCCTTACGTCATCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAA CTCCGCCCCATTGACGCAAATGGGCGGTAGGCGGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAG TGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAG AAACGCAAAAGTGCGGGGCATGAAAAGCTCGTGTTACCTTTAAGCGGATCGACCACCCTGCTCAGGACCT GGCCGTGAAATTCACGGCTTCTCTGATGGAACAGCTGGATAGCGACTACGTGGACTACCTGCACCAGCAGC AGACCAACCCCTACGCCACAAAGGTGATCCAGGGCAAAGAGAACACCCAGTGGGTGCTGCATCTGCTGACA GACGACATCGAGGACAAGGTGTTATGACCCCTGCTGCAGATCAAGGAAGTGTCCCTGAACGACCTGCCTAA GTTGTCTGTGGAAGGTGGAATCCAGGAGCTGGGCGCTGATAAGCTGCTCGAGATCTTCAACAGCGAGG AAAACCAGACCTACTTCAGCATCATCTTCGAGACACCTACAGGCTTTAAAAGCCAGGGCAGCTACGTGATC TTCCCCAGCATGCGGCTGATCTTTCAGAGCCTGATGCAGAAGTACGGCAGACTGGTGGAAAACCAGCCTGA GATCGAGGAAGATACCCTGGACTACCTGAGCGAGCACAGCACCATCACCAATTACAGACTGGAAACAAGCT ACTTCAGAGTGCATAGACAGAGAATCCCCGCTTCCGGGGCAAGCTGACCTTCAAGGTGCAGGGAGCCAG ACACTGAAGGCCCTACGTGAAGATGCTGCTGACCTTCGGCGAGTACAGCGGCCCTGGGCATGAAAACCAGCCT GGGAATGGGCGGCATCAAGCTGGAAGAAAGAAAGGACTGAcggcaataaaaaagacagaataaaaacgcacg tgttgggctcgtttggttcAAGCTC
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Plasmid	pDAC324
Description	Expression of crRNA
Utility	
Features	Pu6-crRNA-pT
Sequence	TCGCGCGTTTTCGGTGATGACGGTGAAAACCTCTGACACATGCAGCTCCCGGAGACGGTCACAGCTTGTCTG TAAGCGGATGCCGGGAGCAGACAAGCCCGTCAGGGCGCGTCAGCGGGTGTTGGCGGGTGTCGGGGCTGGCT TAACTATGCGGCATCAGAGCAGATTGTACTGAGAGTGCACCATATGGAGGGCCTATTTCCCATGATTCCCTT CATATTTGCATATACGATACAAGGCTGTTAGAGAGATAATTAGAATTAATTTGACTGTAAACACAAAGATA TTAGTACAAAATACGTGACGTAGAAAGTAATAATTTCTTGGGTAGTTTGCAGTTTTAAAATTATGTTTTAA AATGGACTATCATATGCTTACCGTAACTTGAAAGTATTTTCGATTTCCTTGGCTTTATATATCTTGTGGAAAG GACGAAACACCGATATAAACCTAATTACCTCGAGAGGGGACGGAAACCCGTCCTTCGATGAAGCGATTGAGA AGACTTGATATAAACCTAATTACCTCGAGAGGGGACTTTTTTACATGTGAGCAAAAGGCCAGCAAAAGGCC AGGAACCGTAAAAAGGCCGCGTTTCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAA TCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCT CCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCCTTCTCCCTTCGGGAAGC GTGGCGCTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTTCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTG TGTGCACGAACCCCCCGTTACGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGG TAAGACACGACTTATCGCCACTGGCAGACGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGT GCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCT GCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTATGCTCTTGATCCGGCAAACAAACACCGCTGGTAGCG GTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAAGGATCTCAAGAAGATCCTTTGATCTTT TCTACGGGTCTGACGCTCAGTGAACGAAAACCTACGTTAAGGGATTTTGGTCATGAGATTATCAAAAAG GATCTTCACCTAGATCCTTTTTAAATTAAAAATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAAACTT GGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTCTGTTTCATCCATA GTTGCTTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAAT GATACCGCGAGACCACGCTCACCGGCTCCAGATTTATCAGCAATAAAACGAGCCGGAAGGGCCGAGC GCAGAAGTGGTCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAGTAAGT AGTTCGCCAGTTAATAGTTTGGCAACGTTGTTGCCATTGCTACAGGCATCGTGGTGTACAGCTCGTCGTT TGGTATGGCTTCATTCAGCTCCGTTTCCCAACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAA

	AAGCGGTTAGCTCCTTCGGTCCTCCGATCGTTGTCAGAAGTAAGTTGGCCGCAGTGTTATCACTCATGGTT ATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTC AACCAAGTCATTCTGAGAATAGTGATGCGGCGACCGAGTTGCTCTTGCCCGCGTCAATACGGGATAATA CCGCGCCACATAGCAGAACTTTAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAAAACCTCTCAAGG ATCTTACCGCTGTTGAGATCCAGTTCGATGTAAACCCACTCGTGCAACCAACTGATCTTCAGCATCTTTTAC TTTCACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAGGGAATAAGGGCGACAC GGAAATGTTGAATACTCATACTCTTCCTTTTCAATATTATTGAAGCATTATCAGGGTTATTGTCTCATG AGCGGATACATATTGAATGTATTAGAAAAATAAACAAATAGGGGTTCGCGGCACATTTCCCCGAAAAGT GCCACCTGACGTCTAAGAAACCATTATTATCATGACATTAACCTATAAAAAATAGGCGTATCACGAGGCCCT TTCGTC
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Plasmid	pDAC439
Description	Expression of Csm complex from single promoter; RFP backbone
Utility	RNA KD
Features	Pcmv-FLAG-NLS-Csm5-2A-FLAG-NLS-Csm4-2A-FLAG-NLS-Csm3-2A-FLAG-NLS-Csm2-pA; Pcmv-RFP-2A-FLAG-NLS-Cas6-2A-FLAG-NLS-Csm1-pA; Pu6-crRNA-pT
Sequence	CTCGAGTAGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAGCCCATATATGGAGTTCGCGGTTA CATAACTTACGGTAAATGGCCCGCTGGCTGACCGCCCAACGACCCCGCCCATTTGACGTCAATAATGACG TATGTTCCCATAGTAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGC CCACTTGGCAGTACATCAAGTGTATCATGCAAGTACGCCCCCTATTGACGTAATGACGCTAAATGGC CCGCTGGCATTATGCCAGTACATGACCTTATGGGACTTTCTACTTGGCAGTACATCTACGTATTAGTC ATCGCTATTACCATGGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGG ATTTCCAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCCAA AATGTCGTAACAACCTCCGCCCATTTGACGCAAAATGGGCGGTAGGCGTGACGTTGGGAGGTCTATATAAGC AGAGCTGGTTTTAGTGAACCGTCAGATCCGCTAGGGATCCgcccgcaccATGGATTACAAAGACGATGACGA TAAGATGGCGCCTAAGAAGAAACGCAAAGTGCGGGGCATGAAAAATGACTACCGGACCTTCAAGCTGAGCC TGCTGACCCCTGGCTCCTATCCACATCGGCAACGGCGAGAAGTACACCAGCAGAGAATTCATCTACGAGAAC AAGAAGTTCTACTTCCCCGACATGGGCAAGTTCTACAACAAGATGGTGAAAAGAGACTGGCCGAGAAGTT CGAGGCCTTCTGATCCAGACCAGACCCAACGCCAGAAACAACCGGCTGATTTCTTTCTGAACGACAACA GAATCGCCGAAAGATCTTTTGGCGCTACAGCATCAGTGAAACCGGCCTGGAATCTGATAAGAACCCTAAC AGCGCCGGAGCTATCAACGAGGTGAACAAATTCATCCGGGACGCCTTCGGAATCCTTACATCCAGGCAG CAGCCTGAAGGGCGCCATCCGCACCATCCTGATGAACACCACACCTAAGTGGAAACGAGAACGCCGTGA ACGACTTCGGCAGATTCCTCAAAGGAAAACAAGAACCTGATCCCTTGGGGACCTAAGAAGGGCAAGGAATAC GACGACCTGTTTCAACGCCATCAGAGTGTCCGACAGCAAGCCCTTCGACAACAAAGCCTGATCCTCGTGCA GAAGTGGGACTACAGCGCCAAAACCAACAAGGCCAAGCCTCTGCCTCTGTACAGAGAGTCTATCAGCCCTC TGACCAAGATCGAGTTCGAGATAACAACAACCACTGATGAGGCGGCAGACTGATCGAGGAACCTGGGAAAG CGGGCCAGGCCTTTTATAAGGACTACAAGGCCTTTTTCTGTCTGAATTCCTGATGATAAGATCCAGGC TAATCTGCAATACCCCATCTACCTGGGCGCCGGCAGCGGCGCTTGGACAAAGACCCTGTTTAAGCAGGCCG ACGGCATCCTGCAGCGGAGATACTCCAGAATGAAAACCAAGATGGTCAAGAAGGGCGTGCTGAAGCTGACA AAGGCCCTCTGAAAACAGTGAAGATCCCCAGCGGCAACCACAGCCTGGTGAAGAATCACGAGAGCTTCTA CGAGATGGGCAAAGCCAACTTCATGATCAAGGAAATCGACAAGgaaggaaggggtccctcctcacttggtg gagatgtcgaagaaaatcctggacctGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAAACGC AAAGTGCGGGGCATGACTTACAAGCTCTACATTATGACCTTTCAAACGCCCACTTCGGTTCGGCACTCT GGACTCATCGAAGCTGACCTTCTCCGCGGATAGATCTTCTCGGCACTCGTGCTCGAGGCTCTGAAGATGG GAAAGCTCGACGCCTTCTTGGCCGAGGCCAACCAGGATAAGTTCACTCTGACCACGCGTTCCTCATTCCT TTCCGGTCTTTCTGCGGAAACCGATTGGTTACCCCAAGCACGACCAGATCGACCACTGTGTGACGTGAA GGAAGTCCGCGCCCAAGCGAAGCTGTCCAAAAAGCTCCAGTTCTGGCTCTGGAAAACGTCGACGACTACC TGAACGGAGAGCTGTTTGAGAATGAGGAACACGCCGTGATCGACACAGTGACCAAGAACCAGCCCCATAAA GATGATAATCTGTACCAAGTGGCCACCCTCGGTTCTCGAACGACACCTCCCTTTACGTGATCGCCAACGA ATCCGATCTGCTGAACGAAGTATGAGCAGCCTTCAGTACTCCGGGCTGGGCGGCAAAAGGTCTCAGGAT TCGGCAGATTTGAGCTGGACATCCAGAATTCCTTGGAACTGTCCGACCGGCTGACGAAGAACCACAGC GACAAGGTCTGTCACTTACCACCGCCCTCCCGGTGGACGCTGATCTCGAGGAAGCGATGGAAGATGGCCA TTACCTGTTGACCAAGTCGTCGGATTTCGATTCTCCACGCCACCAACGAAAACCTATCGGAAGCAGGACC TGTACAAGTTTCGCTCCGGGAGACCTTCAGCAAGACTTTTCGAGGGACAGATCTGGACGTGCGCCCTCTC GATTTCCCTCACGCCGTGCTGAACTACGCCAAGCCGCTGTTCTTTAAGCTCGAAGTCgagggcagaggaag tctgtctaacatgcggtgacgtcgaggagaatcctggacctGATTACAAAGACGATGACGATAAGATGGCGC CTAAGAAGAAACGCAAAGTGCGGGGCATGACCTTCGCCAAGATCAAATTCAGCGCCAGATCCGGCTGGAA ACCGGCCTGCACATCGGAGGATCTGATGCCTTTGCCGCTATCGGCGCCATCGACAGCCCTGTGATCAAGGA CCCCATCACCAACCTGCCTATCATCCCCGGCTCTAGCCTGAAGGGCAAGATGAGAACACTGCTGGCCAAGG TGTACAACGAAAAGGTGGCCGAGAAGCCTAGCGACGACAGCGACATCCTGAGCAGACTGTTTCGGAAATAGC AAGGATAAGCGGTTCAAGATGGGCAGACTGATCTTCCGGGACGCCTTCTGAGCAACGCCGACGAGCTGGA TTCTCTGGGCGTGCGGAGCTACACCGAGGTGAAGTTTCGAGAACACCATCGATAGAATCACCGCCGAGGCCA ATCTTAGACAGATCGAGAGAGCCATTTCGGAACCAACATTTCGACTTCGAGCTGATCTACGAGTCACTGAT

	GAGAATGAGAACCAGGTCGAGGAAGATTTCAAGGTGATCAGAGACGGCCTGAAGCTGCTGGAACCTGGACTA CCTGGGCGGAAGCGGCTCCAGAGGCTACGGCAAAGTGGCTTTTGAGAACCTGAAAGCCACCACAGTGTTTCG GCAACTACGACGTGAAAACCCCTGAACGAGCTGCTGACCGCCGAAGTGgaggggcggggggtctttgttgact tgcgggggatgttgaggagaacccaggggccaGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAA ACGCAAAGTGCGGGGCATGACCACTCTGACCGACGAGAACTACGTGGACATCGCCGAGAAAGCCATCCTGA AGCTGGAAGAAACACCAGAAATAGAAAGAACCCTGATGCCTTCTTCTGACCACATCTAAGCTGCGGAAC CTGCTGAGCCTGACAAGCACCCCTGTTTCGACGAGAGCAAGGTGAAGGAATACGACGCCCTGCTGGACAGAAT CGCTTATCTGAGAGTGCAGTTCGTGTACCAGGCCGGCAGAGAGATCGCCGTGAAAGATCTGATCGAGAAGG CCCAGATCCTGGAAGCTCTGAAAGAGATCAAGGACCGGGAAACCCTGCAGAGATCTGACAGATACATGGAA GCCCTGGTGGCCTACTTCAAGTTCTACGGCGGCAAGGACTGAGCTAGCGCGGCCGCATCGATAAGCTTGTCTC GACGATATCTCCAGAGGATCATAATCAGCCATACCACATTTGTAGAGGTTTTACTTGCTTTAAAAAACCTC CCACACTCCCCCTGAACCTGAAACATAAAATGAATGCAATTGTGTTGTTAACTGTTTTATTGCAGCTTA TAATGGTTACAAATAAAGCAATAGCATCACAAATTTACAAATAAAGCATTTTTTTTTCACTGCCCGGAGCTT CCTCGCTCACTGACTCGCTGCGCTCGGTCGTTTCGGCTGCGGCGAGCGGTATCAGTCACTCAAAGCGGGTA ATACGGTTATCCACAGAATCAGGGGATAACGCAGGAAAGAAACTAGTGAGGGCCTATTTCCCATGATTCTCT TCATATTTGCATATACGATACAAGGCTGTTAGAGAGATAATTAGAATTAATTTGACTGTAAACACAAAGAT ATTAGTACAAAATACGTGACGTAGAAAGTAATAATTTCTTGGGTAGTTTGCAGTTTTAAATTTATGTTTTA AAATGGACTATCATATGCTTACCGTAACCTTGAAGTATTTTCGATTCTTGGCTTATATATCTTGTGGAAA GGACGAAACACCGATATAAACCTAATTACCTCGAGAGGGGACGGAACCCGCTCTCATGAAGCGATTTCAG AAGACTTGATATAAACCTAATTACCTCGAGAGGGGACTTTTTTACATGTGAGCAAAAGGCCAGCAAAAGGC CAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAA ATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGC TCCCTCGTGCGCTCTCTGTTCCGACCCTGCGCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAG CGTGGCGCTTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCT GTGTGCACGAACCCCGTTTCAGCCGACCCGTCGCGCTTATCCGGTAACATATCGTCTTGAGTCCAACCCG GTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGG TGCTACAGAGTTCTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTC TGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACACCACCGCTGGTAGC GGTGGTTTTTTTTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAGAAGATCCTTTGATCTT TTCTACGGGCTCTGACGCTCAGTGGAAACGAAACTCACGTTAAGGGATTTTGGTCATGAGATTATCAAAAA GGATCTTACCTAGATCCTTTTTAAATTAATAATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAAACT TGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCAT AGTTGCCTGACTCCCCGTGCTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAA TGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACAGCCAGCCGGAAGGGCCGAG CGCAGAAGTGGTCTGCAACTTTATCCGCTCCATCCAGTCTATTAATTGTTGCCGGAAGCTAGAGTAAG TAGTTCCGCAGTTAATAGTTTGCACAACGTTGTTGCCATTGTCTACAGGCATCGTGGTGTACGCTCGTCTGT TTGGTATGGCTTCATTACGCTCCGGTTCCCAACGATCAAGGCGAGTTACATGATCCCCATGTTGTGCAAA AAAGCGGTTAGCTCCTTCGGTCTCCGATCGTTGTGCAAGTAAGTTGGCCGAGTGTTATGACTCATCTAGGT TATGGCAGCACTGCATAATTCTCTTACTGTCTGCCATCCGTAAGATGCTTTTTCTGTGACTGGTGACTACT CAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCCGGCGTCAACACGGGATAAT ACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAAAACCTCTCAAG GATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCAACTGATCTTCAGCATCTTTTA CTTTCACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAGGGAATAAGGGCGACA CGGAAATGTTGAATACTCATACTCTTCTTTTTCAATATTATTGAAGCATTATCAGGGTTATTTGCTTCAT GAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCGCAAAAG TGCCACCTGACGTCGGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAA CCATTATAAGCTGCAATAAACAAAGTTAACAACAACAATTGCATTCAATTTATGTTTCAGGTTACGGGGGAG GTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTATGGCTGATTATGATCCTCTAGATTA ATCCTTTCTGATTTTCGTAGATGTACAGCAGGAGCGCGAGCTCGGCTTCCTTCCGGTCCTTATCGTCTTGT TGGTGTACCAGGAGTAGAACAGGTTCTTGAAGGTCTTGAACCTTGTCCTGTGAGTCTCCCGGTCAGTTCT TCCAGGCGAGTGAGGTAATAGGCGAGGCGTGCCATATTCATGCGGTGCTGGTTCTCTCAAAAGCTCAATAAG CTTATAGATGAAGTTCTTTTCCCTCTCGTCTTGATGGTTGAAGAAGTATCTAATCTGTTCCAGTTTGTCTGT CGTACACGTTAGTGATGAACCTATCAAACCTGAAAGTGATGCTGCTTGAGAACAGCGAGATGGAGTCTTTT TCGTTGCCCTTGCGGGCTCTTCCAGTTCCTCCGGTCTGGTGAGCCATCAGGCTAATAGGAGTCTTGTGCGC GAACAACCCCTATCCCGCGGAGAGGGTGAGCTTCCCGTTGGTCCACTTGATGAAGTTTTTCGCGAAGTTCCA CAGTGAACGCGATGATATCCTGCCACGATCCAATGGCGAACACGTCATCGCCGCCCGCGTAGATAATGCTC AGCTTCTTGTGCGAGGCGAACTGGTTAATGTACACTTTGAAGAACAGCGACATGCTACGGGGAGAAATGTGGC CGATCTTGACAGAGTGGAGTATTGTCCGTTTCCCTGCTGGCTGAAACCGGCCATGAAGGCGGCCCAAGT CATCCACGTCGAGCCGACACGCGCAGTCTCTTGATGCCTAGGCCGTTCTCGTTCTTGCTCAGGGCGGCG TAGTTGTAGATCTCGTCGCACTGGTAATCCCCACGAACACATGCGTAGCCTTACGGTACCGGCTTATATA GTCATTCTTACGTAGACCCGGCTGAACGCTTCTTGGACAGCTTTTCAATGCCACGCCCTTTAAGCACG CGTTTGGTCCAATCGGCAGCCCCTCATTTTCGTAATGATGAAGTGGTCATGGCAATTTCTTTTCGAGAAC TGGTACAGTCCCCGGCAATGTACAGACTTTCTGGTCTGGTAGGACACCAGGTTCTCCACGGAGTGGCA
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	AATCTCGCACTCTCTCTCTGAGGACTTTCCACCGCGATTTCAGGAGCATCAGTGTCTGGTAGTCGTATCTGG AGATTTTCTTTTTGGAGATCATGCGCGAAGCCTTTTGGGTACACTTGGCGGTAGGACTCGGGGCTATTTCAGC TCGGACATGATGTCTTGGCCGCGAAGGAACCCAGCCAAAGGCCACATAGAGCGGGTCTGGAAGTTTGC CAACAGGAACCTGGTTGAAATCCTTCTCAAACGACACAGGGTTTCCACAGTCTTTTCGGTGTGGCCAGGA CGAAGTAGGCGTGTCCGCGCCGACGTAAAGCATGTTAGCCCTGTTTCAGTCCAGCTTGTCCAGCAGGCTA TCGGCGATGTACTCGGACATAAAGTCCAGGTAGAGGCTCCGGGCCTTCAGTGTCTCGCCGCGCCGTTAGT TGCGATGTTAATGTTGTAGATAAAGTCTTGGATTCCCGACAGGTGCAAGGAGGCCAGCAGGAAGGCTTCTT CTTCATAGAACGCTGACACTTTTGGTGAACAGGTCTCTTTGTAGTTGTGCCGACCCTTGTCTCCAGGTAG TCGTAGATCGCCAGAGCGAAGGCAGCAGTCAAGCGGGAATGGTTCGGCCAGGGAGATGTGCGCGATTTCTT AGTGTGGTGTGCTTACGGCACGAAGGAGAGAGTAGCCTCGAAAAGGTTGAGCAGGGAGTCAATCTGGACTT GGTTGAACCTCGAACTCGGCCAGTTTCGTTCTTAATCCGGGTGGCGATGGCAGCGTAATCGCCCTTGCTAAAG GGTTCGTAAGTGGCGGACGCGAAGTTGGGCTTCAGATTCAGCAGGTGAGTTCAGCAGGTGAGTCAACGCTT ATCGGTCTGCGCTCCGAACACGTTAAAGATGTGCGCCTGGTTCGTGTAGGTGTCCAGATCTTTGCGGAGG TATCTTCGTCTGACTCTTCGTTGGATTGCCGGCGGTGACACCGGAGGCGATGTTGTGCGCAATGTAGGTG ATGTAAGCCAGGTGATCGTTGCCGAGCTTATCAGACTGGTAGTTGGCCATATGGTACCGGATCTGATCCGA GATGACTTGGTTGTGCGCGATCTCGTCAACAGCTCGGCGCCCAAGTGCCTGTTTCTTCCGCTCTCCGG TTGCTCGCTGGATGACCTTTCCGATGTCTGTCAGCAGGGCTCCGTAAAACAGATCAATCTTTTCTTTCTTCT ATGCCCCGCACTTTGCGTTTCTTCTTAGCGCCATCTTATCGTCATCGTCTTTGTAATCGCCGAATGGTG ATGGTGATGGTGTggtccttgattttcttcaacatctccacaagttagcaaaacttcctcttctcttcGTCCT TTCTTTCTTCCAGCTTGTGCGGCCATTCCCAGGCTGGTTTTTCATGCCAGGCCGCTGTACTCGCCGAAG GTCAGCAGCATCTTCAGTAGGCTTCAGTGTCTGGGCTCCCTGCACCTTGAAGGTGAGCTTCCCCGGAA GGCGGGGATTCTCTGTCTATGCACTCTGAAGTAGCTTGTTCAGTCTGTAATTGGTGATGGTGCTGTGCT CGCTCAGGTAGTCCAGGGTATCTTCTCTGATCTCAGGCTGGTTTTCCACCAGTCTGCCGTACTTCTGCATC AGGCTCTGAAAGATCAGCCGATGCTGGGGAAGATCAGTAGCTGCCCTGGCTTTTAAAGCCTGTAGGTGT CTCGAAGATGATGCTGAAGTAGGTCTGGTTTTCTCGCTGTTGAAGATCTCGAGCAGCTTATCAGCGCCA GCTCCTGGATTTCCACCTTTTCCACAGACAACCTTAGGCAGGTGCTTCAGGGACACTTCTTGATCTGCAGC AGGGTCATGAACACCTTGTCTCTGATGTCTGTCTGTGTCAGCAGATGCACGACCCACTGGGTGTTCTCTTTGCC CTGGATCACCTTTGTGGCGTAGGGGTTGGTCTGTCTGTGCTGGTGCAGGTAGTCCAGTAGTCGTATCCAGCT GTTCCATCAGGAAGCCGTGGAATTTACGCGCCAGGTCTGAGCAGGGTGGTTCGATCCGCTTAAAGGTGAAC ACGAGCTTTTTTCATGCCCCGCACTTTGCGTTTCTTCTTAGGCGCCATCTTATCGTCATCGTCTTTGTAATC ggggccggggttctcctccacgtcgccgcaggtcagcaggtgcctctgcctcCTTGTAAGCTCGTCCA TGCCGCCGCTGGAGTGGCGGCCCTCGGCGCGTTGCTATGTTCCACGATGGTGTAGTCTCTCGTTGTGGAG GTGATGTCCAACCTTGATGTTGACGTTGTAGGCGCCGGGACGCTGCACGGGCTTCTTGGCCTTGTAGGTGGT CTTGACCTCAGCGTCGTAGTGGCGCCGTCCTTACGCTTCAGCTCTGCTTGATCTCGCCCTTACAGGGCGC CGTCTCGGGGTACATCCGCTCGGAGGAGGCCTCCAGCCCATGGTTTTCTTCTGCAATTACGGGGCCGTGCG GAGGGGAAGTTGGTGCCGCGCAGCTTCACCTTGATAGTGAATCGCCGTCCTGCAGGGAGGAGTCTCTGGGT CACGGTCACCACGCCCGCTCCTCGAAGTTCATCAGCGCTCCCACTTGAAGCCCTCGGGGAAGGACAGCT TCAAGTAGTCGGGGATGTCTCGGCGGGGTGCTTACGTAGGCCTTGAGCCGTACATGAAGTGAAGGGACAGG ATGTCCAGGCGAAGGGCAGGGGGCCACCCTTGGTACCTTCAGCTTGGCGGTCTGGGTCGCCCTCGTAGGG GCGGCCCTCGCCCTCGCCCTCGATCTCGAATCGTGGCCGTTACAGGAGCCCTCCATGTGCACCTTGAAGC GCATGAACCTCTTGATGATGGCCATGTTATCTCTCGCCCTTGCTCACCATggtggcggcACCGGTGAAT TCTCCAGGCGATCTGACGGTTCATAAACGAGCTCTGCTTATATAGGCCTCCACCGTACACGCCACCTCG ACATA
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Plasmid	pDAC435
Description	Expression of Csm complex from separate promoters; RFP backbone
Utility	RNA KD
Features	Pcmv-FLAG-NLS-Csm1-pA; Pcmv-FLAG-NLS-Csm2-pA; Pcmv-FLAG-NLS-Csm3-pA; Pcmv-FLAG-NLS-Csm4-pA; Pcmv-FLAG-NLS-Csm5-pA; Pcmv-FLAG-NLS-Cas6-pA; Pu6-crRNA-pT; Pcmv-RFP-pA
Sequence	GTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGAATCACGGGGATTTCGAAGTCTCCA CCCCATTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAAC CCGCCCCATTGACGCAAAATGGGCGGTAGGCGGTACGGTGGGAGGTCTATATAGCAGAGCTCGTTTAGTG AACCGTCAGATCTCTAGAgccgccaccATGCACCATCACCATCACCATTCCGGCGATATACAAAGACGATGA CGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGCGGGGCATGAAGAAAGAAAAGATTGATCTGTTTTACG GAGCCCTGCTGCACGACATCGGAAAGGTCATCCAGCGAGCAACCGGAGAGCGGAAGAAACACGCACTTGTG GGCGCCGACTGGTTCGACGAGATCGCCGACAACCAAGTCATCTCGGATCAGATCCGGTACCATATGGCCAA CTACCAGTCTGATAAGCTCGGCAACGATCACCTGGCTTACATCACCTACATTGCCGACAACATCGCCTCCG GTGTCGACCGCCCGCAATCCAACGAAGAGTCAGACGAAGATACCTCCGCAAAGATCTGGGACACCTACACG AACCAGCCGACATCTTTAACGTGTTTCGGAGCGACACCGATAAGCGGTACTTCAAGCTACCGTGTCTGAA TCTCAAGTCGAAGCCCAACTTCGCGTCCGCCACTTACGAACCCCTTAGCAAGGGCGATTACGCTGCCATCG CCACCCGGATTAAAGAACGAACCTGGCCGAGTTCGAGTTCAACCAAGTCCAGATTGACTCCCTGCTCAACCTT TTCGAGGCTACTCTCTCTTCTGTCGCGTCAAGCACCAACACTAAGGAAATCGCCGACATCTCCTTGGCCGA

	CCATTCCCCTTGACTGCTGCCTTCGCTCTGGCGATCTACGACTACCTGGAGGACAAGGGTCGGCACAAC ACAAAGAGGACCTGTTACCAAAGTGTACAGCGTTCTATGAAGAAGAAGCCTTCTGCTGGCCTCCTTCGAC CTGTCGGGAATCCAGGACTTTATCTACAACATTAACATCGCAACTAACGGCGCGGCGAAGCAGCTGAAGGC CCGGAGCCTCTACCTGGACTTTATGTCCGAGTACATCGCCGATAGCCTGCTGGACAAGCTGGGACTGAACA GGGCTAACATGCTTTACGTCCGGCGGGACACGCCTACTTCGTCTTGGCCAACCCGAAAAGACTGTGGAA ACCTTGGTGCAGTTTGAGAAGGATTTCAACCAGTTCCTGTTGGCAAACCTCCAGACCCGCCTCTATGTGGC CTTTGGCTGGGGTTCCTTCGCGGCCAAGGACATCATGTCCGAGCTGAATAGCCCCGAGTCTTACCGCCAAG TGTACCAAAAGGCTTCGCGCATGATCTCCAAAAAGAAAATCTCCAGATACGACTACCAGACACTGATGCTC CTGAATCGCGGTGAAAAGTCTCAGAGAGAGAGTGCAGAGATTTGCCACTCCGTGGAGAACCTGGTGTCTTA CCACGACCAGAAAGTCTGTGACATTTGCCGGGGACTGTACCAGTTCTCGAAAGAAATTGCCCATGACCACT TCATCATACCGAAAATGAGGGGCTGCCGATTGGACCAAACGCGTGCTTAAAGGGCGTGGCATTGCAAAAAG CTGTCCCAAGAAGCGTTTACGTCCGGGTCTACGTGAAGAATGACTATAAGGCCGTGCGTGAAGGCTACGCA TGTGTTCTGTGGGGATTACAGTGCAGACGAGATCTACAACACTACGCCGCCCTGAGCAAGAACGAGAACGGCC TAGGCATCAAGAGACTGGCCGTGGTCCGGCTCGACGTGGATGACTTGGGCGCCGCCTTCATGGCCGGTTTC AGCCAGCAGGGAAACGGACAATACTCCACTCTGTCAAGATCGGCCACATTCTCCCGGAGCATGTGCTGTT CTTCAAAGTGTACATTAACCAGTTCGCCTCCGACAAGAAGCTGAGCATTATCTACGCGGGCGGCGATGACG TGTTCCGCATTGGATCGTGGCAGGATATCATCGCGTTCAGTGTGGAACCTTCGGAAAACCTTCATCAAGTGG ACCAACGGGAAGCTCACCTCTCCGCGGGGATAGGTTGTTTCGCGGACAAGACTCTTATTAGCTGATGGC TCACCAGACCGGGGAACGTGAAGAAGGCCGCCAAGGGCAACGAAAAGGACTCCATCTCGCTGTTCTCAAGCG ACTACACTTTCAAGTTTGATAGGTTTCATCACTAACGTGTACGACGACAAACTGGAACAGATTAGATACTTC TTCAACCATCAAGACGAGAGGGGAAAGAACTTCATCTATAAGCTTATTGAGCTTTTGAGGAACACGACCG CATGAATATGGCAGCCTCGCCTATTACCTCACTCGCCTGGAAGAACTGACCCGGGAGACTGACAGGGACA AGTTCAAGACCTTCAAGAACCTGTTCTACTCCTGGTACACCAACAAGAACGATAAGGACCGGAAGGAAGCC GAGCTCGCGCTCCTGCTGTACATCTACGAAATCAGAAAGGATTAacggcaataaaaagacagaataaaaacg cacggtggttggtcggtttgttcGCACACATTAGCTAGCCGTACGACACACATTGTGATGCGGTTTGGCAGT ACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCGAAGTCTCCACCCCATTGACGTCAATGGG AGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAACCTCCGCCCATTTGACGCAAT GGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAAACCGTCAGATCTCTAGAg ccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGCGGGGCATG ACCATCCTGACCGACGAGAACTACGTGGACATCGCCGAGAAAGCCATCCTGAAGCTGGAAGAAACACCAG AAATAGAAAGAACCTGATGCCTTCTTCTTGACCACATCTAAGCTGCGGAACCTGCTGAGCCTGACAAGCA CCGTGTTTCGACGAGAGCAAGGTGAAGGAATACGACGCCTGCTGACAGAAATCGCTATCTGAGAGTGCAG TTCGTGTACCAGGCCGCGCAGAGAGATCGCCGTGAAAGATCTGATCGAGAAGGCCAGATCCTGGAAGCTCT GAAAGAGATCAAGGACCGGGAACCTGCGAGAGATTCTGCGAGATACATGGAAGCCCTGGTGGCTACTTCA AGTTCTACGGCGCAAGGACTGAcggcaataaaaagacagaataaaaacgcacggtggttggtcggtttgttc AGTTCTTTTGCCCTTACTTTCAATGCATGCGGTGATGCGGTTTGGCAGTACATCAATGGGCGTGGATAGCG GTTTGACTCACGGGGATTTCGAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATC AACGGGACTTTCCAAAATGTCTGAACAACATTCGCCCATTTGACGCAAATGGGCGGTAGGCGGTACGGTGG GAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGA CGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGCGGGGCATGACCTTCGCCAAGATCAAATTCA GCGCCCAGATCCGGCTGGAACCGGCCTGCACATCGGAGGATCTGATGCCTTTGCCGCTATCGCGCCCATC GACAGCCCTGTGATCAAGGACCCCATCACCAACCTGCCTATCATCCCCGGCTCTAGCCTGAAGGGCAAGAT GAGAACACTGCTGGCCAAGGTGTACAACGAAAAGGTGGCCGAGAAGCCTAGCGACGACAGCGACATCCTGA CGAGACTGTTTCGAAATAGCAAGGATAAGCGGTTCAAGATGGGCAGACTGATCTTCCGGGACGCCTTCTCTG AGCAACGCGCAGAGCTGAGATTCTTGGGCGTGCAGGACTACACCGAGGTGAAGTTCGAGAACCACTTCGA TAGAATCACCGCCGAGGCCAATCCTAGACAGATCGAGAGAGCCATTTCGGAACCTCAACATTGACTTCGAGC TGATCTACGAGATCACTGATGAGAATGAGAACCAGGTGAGGAAGATTTCAAGGTGATCAGAGACGGCCTG AAGCTGCTGGAACCTGGACTACCTGGGCGGAAGCGGCTCCAGAGGCTACGGCAAAGTGCGCTTTTGAGAACCT GAAAGCCACCACAGTGTTTCGGCAACTACGACGTGAAAACCTGAACGAGCTGCTGACCGCCGAGTGTTGAc ggcaataaaaagacagaataaaaacgcacggtggttggtcggtttgttcTGGATTGCGAGAATGGACTAGTAG CAAACTGTGATGCGGTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGATTTCCAAG TCTCCACCCCATTTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCTGTA ACAACTCCGCCCATTTGACGCAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGT TTAGTGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAA GAAGAAACGCAAAGTGCGGGGCATGACTTACAAGCTCTACATTATGACCTTTCAAACGCCCACTTCGGTT CCGGCACTCTGGACTCATCGAAGCTGACCTTCTCCGCGGATAGAATCTTCTCGGCACTCGTGCTCGAGGCT CTGAAGATGGGAAAGCTCGACGCCTTCTTGGCCGAGGCCAACAGGATAAGTTCACTCTGACCGACGCGTT CCCATTTCCAATTTCGTCTTCTTCCGCCGAAACCGATTGGTTACCCCAAGCACGACGACGATGACCAAGCTG TGACGTGAAGGAAGTCCGCCGCCAAGCTGTGTTCCAAAAAGCTCCAGTTCTGGCTCTGGAAAAACGTC GACGACTACCTGAACGGAGAGCTGTTTGAGAATGAGGAACACGCCGTGATCGACACAGTGACCAAGAACCA GCCCCATAAGATGATAATCTGTACCAAGTGGCCACCACTCGGTTCTCGAACGACACCTCCCTTTACGTGA TCGCCAACGAATCCGATCTGCTGAACGAAGTATGAGCAGCCTTCAGTACTCCGGGCTGGGCGGCAAAAGG TCCTCAGGATTCCGCAGATTTGAGCTGGACATCCGAACATTCCTTGGAACTGTCCGACCGGCTGACGAA
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	GAACCACAGCGACAAGGTCATGTCACTTACCACCGCCCTCCCGGTGGACGCTGATCTCGAGGAAGCGATGG AAGATGGCCATTACCTGTTGACCAAGTCGTCCGGATTTCGCATTCTCCACGCCACCAACGAAAACTATCGG AAGCAGGACCTGTACAAGTTCGCCCTCCGGGAGCACCTTCAGCAAGACTTTCGAGGGACAGATCGTGGACGT GCGCCCTCTCGATTTCCTTCACGCCGTGCTGAACTACGCCAAGCCGCTGTTCTTTAAGCTCGAAGTCTAAc ggcaataaaaagacagaataaaaacgcacggtgttgggtcggtttgttcGCACATTCAAAAACAGGCAATTGG ACAAGCGTGATGCGGTTTTTGGCAGTACATCAATGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAG TCTCCACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTA ACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGT TTAGTGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAA GAAGAAACGCAAAGTGCGGGGCATGAAAAATGACTACCGGACCTTCAAGCTGAGCCTGCTGACCCTGGCTC CTATCCACATCGGCAACGGCGAGAAGTACACCAGCAGAGAATTCATCTACGAGAACAAGATTCTACTTC CCCGACATGGGCAAGTTCTACAACAAGATGGTGGAAAAGAGACTGGCCGAGAAGTTCGAGGCCTTCTCGAT CCAGACCAGACCCAACGCCAGAAACAACCGGCTGATTTCTTTTCTGAACGACAACAGAATCGCCGAAAGAT CTTTTGGCGGCTACAGCATCAGTGAACCCGGCCTGGAATCTGATAAGAACCCTAACAGCGCCGGAGCTATC AACGAGGTGAACAAATTCATCCGGGACGCCTTCGGAAATCCTTACATCCCAGGCAGCAGCCTGAAGGGCGC CATCCGCACCATCCTGATGAACACCACACCTAAGTGGAACAACGAGAACGCCGTGAACGACTTCGGCAGAT TCCCAAAGGAAAAACAAGAACCTGATCCCTTGGGGACCTAAGAAAGGCAAGGAATACGAGACACCTGTTCAAC GCCATCAGAGTGTCCGACAGCAAGCCCTTCGACAACAAAGCCTGATCCTCGTCAGAGGACTACAG CGGCAAAACCAACAAGGCCAAGCCTCTGCCTCTGTACAGAGAGTCTATCAGCCCTCTGACCAAGATCGAGT TCGAGATAACAACAACCACTGATGAGGCCGGCAGACTGATCGAGGAAGTGGGAAAGCGGGCCAGGCCCTTT TATAAGGACTACAAGGCCTTTTTCTGTCTGAATTCCTGATGATAAGATCCAGGCTAATCTGCAATACCC CATCTACCTGGGCGCCGGCAGCGCGCTTGGACAAAGACCCTGTTTAAGCAGGCCGACGGCATCCTGCAGC GGAGATACTCCAGAATGAAAACCAAGATGGTCAAGAAGGGCGTGCTGAAGCTGACAAAGGCCCTCTGAAA ACAGTGAAGATCCCAGCGGCAACCACAGCTGGTGAAGAATCACGAGAGCTTCTACGAGATGGGCAAAGC CAACTTCATGATCAAGGAAATCGACAAGTGAcggcaataaaaagacagaataaaaacgcacggtgttgggtc gtttgttcATGTGTGCCGCGCGGAGAATAAAAGTCTAAGTGATGCGGTTTTTGGCAGTACATCAATGGCGT GGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCA CCAAAATCAACGGGACTTTCCAAAATGTCTGTAACAACTCCGCCCATTTGACGCAAATGGGCGGTAGGCGTG TACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgccaccATGGAT TACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGCGGGGCATGAAAAAGCTCGTGTT CACCTTTAAGCGGATCGACCACCCTGCTCAGGACCTGGCCGTGAAATTCACGGCTTCTCTGATGGAACAGC TGGATAGCGACTACGTGGACTACCTGCACACGACGACCAACCCCTACGCCACAAAGGTGATCCAGGGC AAAGAGAACACCCAGTGCGTGCATCTGCTGACAGACGACATCGAGGACAAGGTGTTTCATGACCCTGCT GCAGATCAAGGAAGTGTCCCTGAACGACCTGCCTAAGTTGTCTGTGGAAAAGGTGGAATCCAGGAGCTGG GCGTGATAAGCTGCTCGAGATCTTCAACAGCGAGGAAAACCAGACCTACTTCAGCATCATCTTCGAGACA CCTACAGGCTTTAAAAGCCAGGGCAGCTACGTGATCTTCCCCAGCATGCGGCTGATCTTTCAGAGCCTGAT GCAGAAGTACGGCAGACTGGTGGAAAACCAGCCTGAGATCGAGGAAGATACCTTGACTACCTGAGCGAGC ACAGCACCATACCAATTACAGACTGGAACAAGCTACTTCAGAGTGCATAGACAGAGAATCCCCGCCCTTC CGGGCAAGCTGACCTTCAAGGTGCAGGGAGCCAGACACTGAAGGCCTACGTGAAGATGCTGCTGACCTT CGGCGAGTACAGCGGCTGGGCATGAAAACCAGCCTGGGAATGGGCGGCATCAAGCTGGAAGAAAGAAAGG ACTGAcggcaataaaaagacagaataaaaacgcacggtgttgggtcggtttgttcGTGCGATAGAGGGATCCC GCATTGAATTATGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATT TCCAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAAT GTCGTAACAACTCCGCCCATTTGACGCAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGA GCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgccaccATGGTGAGCAAGGGCAGAGGATAACATAGGC CATCATCAAGGAGTTCATGCGCTTCAAGGTGCACATGGAGGGCTCCGTGAACGGCCACGAGTTCGAGATCG AGGGCGAGGGCGAGGGCCGCCCTACGAGGGCACCCAGACCGCCAAGCTGAAGGTGACCAAGGGTGGCCCC CTGCCCTTCGCCTGGGACATCCTGTCCCCTCAGTTCATGTACGGCTCCAAGGCCTACGTGAAGCACCCCGC CGACATCCCCGACTACTTGAAGCTGTCTTCCCCGAGGGCTTCAAGTGGGAGCGCGTGATGAACCTCGAGG ACGGCGGCGTGGTGACCGTGACCCAGGACTCCTCCCTGCAGGACGGCGAGTTCATCTACAAGGTGAAGCTG CGCGCACCAACTTCCCCCTCCGACGGCCCCGTAATGCAGAAGAAAACCATGGGCTGGGAGGCCCTCCTCCGA GCGATGTACCCCGAGGACGGCGCCCTGAAGGGCGAGATCAAGCAGAGGCTGAAGCTGAAGGACGGCGGCC ACTACGACGCTGAGGTCAAGACCACCTACAAGGCCAAGAAGCCCGTGCAGCTGCCCGGCGCTACAACGTC AACATCAAGTTGGACATCACCTCCACAACGAGGACTACACCATCGTGAACAGTACGAACGCGCCGAGGG CCGCCACTCCACCGCGGCATGGACGAGCTGTACAAGTAAcggcaataaaaagacagaataaaaacgcacgg tgttgggtcggtttgttcGAGCAGATTGTACTGAGAGTGCACCGGTTGGAGGGCTATTTCCCATGATTCTT TCATATTTGCATATACGATACAAGGCTGTTAGAGAGATAATTAGAATTAATTTGACTGTAAACAAAGAT ATTAGTACAAAATACGTGACTAGAGAAAGTAATAATTTCTTGGGTAGTTTGCAGTTTATAAATTATGTTTAA AAATGGACTATCATATGCTTACCCTAAGTTGAAGTATTTTCGATTTCTTGGCTTTATATATCTTGTGGAAA GGACGAAACACCGATATAAACCTAATTACCTCGAGAGGGGACGGAACCCGCTCTCGATGAAGCGATTTCAG AAGACTTGATATAAACCTAATTACCTCGAGAGGGGACTTTTTTACATGTGTGACAGGTTTTTCACCGTCATC ACCGAAACGCGGAGACGAAAGGGCCTCGTGATACGCCTATTTTATAGGTTAATGTCATGATAATAATGG TTTCTTAGACGTGAGGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTCTAAATA
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	CATTCAAATATGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAATAATATTGAAAAAGGAAGAG TATGAGTATTCAACATTTCCGTGTCGCCCTTATCCCTTTTTTTCGCGGCATTTTGCCTTCCTGTTTTGCTC ACCCAGAAACGCTGGTGAAAGTAAAGATGCTGAAGATCAGTTGGGTGCACGAGTGGGTTACATCGAACTG GATCTCAACAGCGGTAAGATCCTTGAGAGTTTTCGCCCCGAAGAACGTTTTCCAATGATGAGCACTTTTAA AGTTCTGCTATGTGGCGCGGTATTATCCCGTATTGACGCCGGGCAAGAGCAACTCGGTTCGCCGCATACACT ATTCTCAGAATGACTTG GTTGAGTACTACCCAGTCACAGAAAAGCATCTTACGGATGGCATGACAGTAAGA GAATTATGCAGTGTGCCATAACCATGAGTGATAAACACTGCGGCCAACTTACTTCTGACAACGATCGGAGG ACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGGATCATGTAACCTGCCTTGATCGTTGGGAACCGG AGCTGAATGAAGCCATACCAAACGACGAGCGTGACACCACGATGCCTGTAGCAATGGCAACAACGTTGCGC AAACTATTAACGGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAGGCGGATAA AGTTGCAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCTGATAAATCTGGAGCCGGTG AGCGTGGGTCTCGCGGTATCATTCAGCACTGGGGCCAGATGGTAAGCCCTCCGCTATCGTACTTATCTAC ACGACGGGGAGTCAGGCAACTATGGATGAACGAAATAGACAGATCGCTGAGATAGGTGCCTCACTGATTAA GCATTGGTAACCTGTCAGACCAAGTTTACTCATATATACTTTAGATTGATTTAAAACCTTCATTTTTAATTTA AAAGGATCTAGGTGAAGATCCTTTTTGATAATCTCATGACCAAATCCCTTAACGTGAGTTTTCGTTCCAC TGAGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTTCTGCGCGTAATCTGCTG CTTGCAAACAAAAAACACCCTACCAGCGGTGGTTTGTGTTGCCGGATCAAGAGCTACCAACTCTTTTTTC CGAAGGTAACCTGGCTTCAGCAGAGCGCAGATACCAAATAGTTCCTTCTAGTGTAGCCGTAGTTAGGCCAC CACTTCAAGAACTCTGTAGCACCCTACATACCTCGCTCTGCTAATCCTGTTACCAAGTGGCTGCTGCCAG TGGCGATAAGTCGTGCTTACC GGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTGCGGCT GAACGGGGGGTTCGTGCACACAGCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCTACAGCGT GAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCCGTAAGCGGCAGGGTTCGG AACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAAACGCCTGGTATCTTTATAGTCTGTGCGGTTTCGCC ACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGCGGAGCCTATGAAAAACGCCAGCAAC GCGGCCTTTTTCTTAAGC
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Plasmid	pDAC446
Description	Expression of Csm complex from separate promoters; GFP backbone
Utility	RNA KD
Features	Pcmv-FLAG-NLS-Csm1-pA; Pcmv-FLAG-NLS-Csm2-pA; Pcmv-FLAG-NLS-Csm3-pA; Pcmv-FLAG-NLS-Csm4-pA; Pcmv-FLAG-NLS-Csm5-pA; Pcmv-FLAG-NLS-Cas6-pA; Pu6-crRNA-pT; Pcmv-GFP-pA
Sequence	GTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGATTTTCCAAGTCTCCA CCCCATTGACGTCAATGGGAGTTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAACT CCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTG AACCCTCAGATCTCTAGAgccgccaccATGCACCATCACCATCACCATTCCGGCGATTACAAAGACGATGA CGATAAGATGGCGCTAAGAAGAAACGCAAAGTGC GGCGCATGAAGAAAGAAAAGATTGATCTGTTTTACG GAGCCCTGCTGCACGACATCGGAAAGGTCAATCCAGCGAGCAACCGGAGAGCGGAAGAAACACGCACTTGTG GGCGCCGACTGGTTCGACGAGATCGCCGACAACCAAGTCATCTCGGATCAGATCCGGTACCATATGGCCAA CTACCACTCTGATAAGCTCGGCAACGATCACCTGGCTTACATCACCTACATTGGCACAACATCGCCTCCG GTGTCGACCGCCGCAATCCAACGAAGAGTCAGACGAAGATACCTCCGCAAAGATCTGGGACACCTACACG AACCAGGCCGACATCTTTAACGTGTTTCGGAGCGCAGACCGATAAGCGGTACTTCAAGCCTACCGTGCTGAA TCTCAAGTCGAAGCCCAACTTCGCGTCCGCCACTTACGAACCCTTTAGCAAGGGCGATTACGCTGCCATCG CCACCCGGATTAAAGAACGAACCTGGCCGAGTTCGAGTTCAACCAAGTCCAGATTGACTCCCTGCTCAACCTT TTCGAGGCTACTCTCTCCTTCGTGCCGTCAAGCACCAACACTAAGGAAATCGCCGACATCTCCCTGGCCGA CCATTCCCGCTTGACTGCTGCCCTTCGCTCTGGCGATCTACGACTACCTGGAGGACAAGGGTCGGCACAAC ACAAAGAGGACCTGTTCAACCAAAGTGTGAGCGTTCTATGAAGAAGAAGCCTTCTGCTGGCCTCCTTCGAC CTGTGCGGAATCCAGGACTTTATCTACAACATTAACATCGCAACTAACGGCGCGGCGAAGCAGCTGAAGGC CCGGAGCCTCTACCTGGACTTTATGTCCGAGTACATCGCCGATAGCCTGCTGGACAAGCTGGGACTGAACA GGGCTAACATGCTTTACGTGCGCGCGGACACGCCTACTTCGTCTGCGCAACACCGAAAAGACTGTGGAA ACCTGGTGCAGTTTGAGAAGGATTTCAACCAGTTCCTGTTGGCAAACCTCCAGACCCGCTCTATGTGGC CTTTGGCTGGGGTTCTTCGCGGCCAAGGACATCATGTCAGCTGAATAGCCCCGAGTCTACCGCCAAG GTACCAAAAAGGCTTCGCGCATGATCTCCAAAAAGAAATCTCCAGATACGACTACGACACTGATGCTC CTGAATCGCGGTGGAAGTCCCTCAGAGAGAGAGTGCAGATTTGCCACTCCGTGAGAGAACCTGGTGCTCTA CCACGACCAGAAAGTCTGTGACATTTGCCGGGGACTGTACCAGTTCTCGAAAGAAATTGCCCATGACCACT TCATCATTACCGAAAATGAGGGGCTGCCGATTGGACCAAACGCCTGCTTAAAGGGCGTGGCATTGAAAAG CTGTCCCAAGAAGCGTTCAGCCGGGTCTACGTGAAGAATGACTATAAGGCCGTACCGTGAAGGCTACGCA TGTTGTCGTGGGGGATTACCAAGTGCACGAGATCTACAACCTACGCCGCCCTGAGCAAGAACGAGAACGGCC TAGGCATCAAGAGACTGGCCGTGGTCCGGCTCGACGTGGATGACTTGGGCGCCGCTTCATGGCCGGTTTC AGCCAGCAGGGAACGGGACAATACTCCACTCTGTCAAGATCGGCCAATTCTCCCGGAGCATGTCCGTGTT CTTCAAAGTGTACATTAACCAGTTCGCCTCCGACAAGAAGCTGAGCATTATCTACGCGGGCGGCGATGACG TGTTCCGCATTGGATCGTGGCAGGATATCATCGCGTTCACTGTGGAACCTTCGCGAAAACCTTCATCAAGTGG ACCAACGGGAAGCTCACCTCTCCGCGGGGATAGGGTTGTTCCGCCACAAGACTCCTATTAGCTGATGGC

	TCACCAGACCGGGGAACCTGGAAGAGGCCGCCAAGGGCAACGAAAAGGACTCCATCTCGCTGTTCTCAAGCG ACTACACTTTTCAAGTTTGATAGGTTTCATCACTAACGTGTACGACGACAAACTGGAACAGATTAGATACTTC TTCAACCATCAAGACGAGAGGGGAAAAGAACTTCATCTATAAGCTTATTGAGCTTTTGAGGAACACGACCG CATGAATATGGCACGCCTCGCCTATTACCTCACTCGCCTGGAAGAACTGACCCGGGAGACTGACAGGGACA AGTTCAAGACCTTCAAGAACCTGTTCTACTCCTGGTACACCAACAAGACGATAAGGACCGGAAGCAACCC GAGCTCGCGCTCCTGCTGTACATCTACGAAATCAGAAAGGATTAAcggcaataaaaaagacagaataaaacg cacggtggttggtcggtttgttcGCACACATTAGCTAGCCGTGACGACACATTGTGATGCGGTTTTTGGCAGT ACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTTGACGTCAATGGG AGTTTGTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCTGTAACAACCTCCGCCCATTTGACGCAAA GGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAg ccgcccacATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGGGGGCGCATC ACCATCCTGACCGACGAGAACCTACGTGGACATCGCCGAGAAAGCCATCCTGAAGCTGGAAAGAAACACAG AAATAGAAAGAACCCTGATGCCTTCTTCTGACCACATCTAAGCTGCGGAACCTGCTGAGCCTGACAAGCA CCCTGTTTCGACGAGAGCAAGGTGAAGGAATACGACGCCCTGCTGGACAGAATCGCTTATCTGAGAGTGCAG TTCGTGTACCAGGCCGGCAGAGAGATCGCCGTGAAAGATCTGATCGAGAAGGCCAGATCCTGGAAGCTCT GAAAGAGATCAAGGACCGGGAAACCCCTGCAGAGATTCTGCAGATACATGGAAGCCCTGGTGGCCTACTTCA AGTTCTACGGCGGCAAGGACTGAcggcaataaaaaagacagaataaaacgcacggtggttggtcggtttgttc AGTTCTTTTGGCCTTACTTTCAATGCATGCGGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGATAGCG GTTTCTACTCACGGGGATTTTCCAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTGTGTTTTGGCACCAAAATC AACGGGACTTTTCCAAAATGTCTGTAACAACCTCCGCCCATTTGACGCAAATGGGCGGTAGGCGTGTACGGTGG GAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgcccacATGGATTACAAAGA CGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGGGGGCGCATGACCTTCGCCAAGATCAAATTCAG GCGCCAGATCCGGCTGGAAACCGGCCTGCACATCGGAGGATCTGATGCCTTTGCCGCTATCGGCGCCATC GACAGCCCTGTGATCAAGGACCCCATCACCAACCTGCCTATCATCCCCGGCTCTAGCCTGAAGGGCAAGAT GAGAACACTGCTGGCCAAGGTGTACAACGAAAAGGTGGCCGAGAAAGCCTAGCGACGACGACATCTGTGA GCAGACTGTTTCGAAATAGCAAGGATAAGCGGTTCAAGATGGGCAGACTGATCTTCCGGGACGCCTTCCTG AGCAACGCCGACGAGCTGGATTCTCTGGGCGTGGCGAGCTACACCGAGGTGAAGTTCGAGAACACCATCGA TAGAATCACCGCCGAGGCCAATCCTAGACAGATCGAGAGAGCCATTCGGAACCAACATTGACTTCGAGC TGATCTACGAGATCACTGATGAGAATGAGAACCAGGTGAGGAAGATTTCAAGGTGATCAGAGACGGCCTG AAGCTGCTGGAACCTGGACTACCTGGGCGGAAGCGGCTCCAGAGGCTACGGCAAAGTGGCTTTTGAAGACCT GAAAGCCACCACAGTGTTTCGGCAACTACGACGTGAAACCCCTGAACGAGCTGCTGACCGCCGAAGTGTGAc ggcaataaaaaagacagaataaaacgcacggtggttggtcggtttgttcTGATTGCGAGAATGGACTAGTAG CAAAGTGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGATAGCGGTTTGACTCACGGGGATTTCCAAG TCTCCACCCCATTTGACGTCAATGGGAGTTTGTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCTGTA ACAACTCCGCCCATTTGACGCAAATGGGCGGTAGGCGTGTACGTTGGGAGGTCTATATAAGCAGAGCTCGT TTAGTGAACCGTCAGATCTCTAGAgccgcccacATGGATTACAAAGACGATGACGATAAGATGGCGCCTAA GAAGAAACGCAAAGTGGGGGCGATGACTTACAAGCTCTACATTATGACCTTTCAAACGCCCACTTCGGTT CCGGCACTCTGGACTCATCGAAGCTGACCTTCTCCGCGGATAGAATCTTCTCGGCACTCGTGTGCGAGGCT CTGAAGATGGGAAAGCTCGACGCCTTCTTGGCCGAGGCCAACCAGGATAAGTTCACTCTGACCGACGCGTT CCCATTTCCAATTCGGTTCCTTTCTGCGGAAACCGATTGGTTACCCCAAGCACGACAGATCGACCAAGTCTG TGGACGTGAAGGAAGTCCGCCGCCAAGCGAAGCTGTCCAAAAGCTCCAGTTCCTGGCTCTGGAACACGTC GACGACTACCTGAACGGAGAGCTGTTTGAAGATGAGGAACACGCGGTGATCGACACAGTGACCAAGAACCA GCCCCATAAGATGATAATCTGTACCAAGTGGCCACCACTCGGTTCTCGAACGACACCTCCCTTTACGTGA TCGCCAACGAATCCGATCTGCTGAACGAACATGATGAGCAGCCTTCAGTACTCCGGCTGGGCGGCAAAAG TCCTCAGGATTCGGCAGATTTTGAAGTGGACATCCGAAACATTCCTTGAACCTCCGACCGGCTGACGAA GAACCACAGCGACAAGGTGATGTCACTTACCACCGCCCTCCCGGTGGACGCTGATCTCGAGGAAGCGATGG AAGATGGCCATTACCTGTTGACCAAGTCTGTCGGATTTCGATTCTCCACGCCACCAACGAAAATATCGG AAGCAGGACCTGTACAAGTTCGCCTCCGGGAGCACCTTCAGCAAGACTTTCGAGGGACAGATCGTGGACGT GCGCCCTCTCGATTTCCTCTACGCGGTGCTGAACCTACGCCAAGCGGCTGTTCTTTAAGCTCGAAGTCTAAc ggcaataaaaaagacagaataaaacgcacggtggttggtcggtttgttcGCACATTCAAAAACAGGCAATTGG ACAAGCGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGATAGCGGTTTGACTCACGGGGATTTCCAAG TCTCCACCCCATTTGACGTCAATGGGAGTTTGTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCTGTA ACAACTCCGCCCATTTGACGCAAATGGGCGGTAGGCGTGTACGTTGGGAGGTCTATATAAGCAGAGCTCGT TTAGTGAACCGTCAGATCTCTAGAgccgcccacATGGATTACAAAGACGATGACGATAAGATGGCGCCTAA GAAGAAACGCAAAGTGGGGGCGATGAAAAATGACTACCGGACCTTCAAGCTGAGCCTGCTGACCTGGCTC CTATCCACATCGGCAACGGCGAGAAGTACACCAGCAGAGAATTCATCTACGAGAACAAGAAGTTCTACTTC CCCGACATGGGCAAGTTCTACAACAAGATGGTGAAAAGAGACTGGCCGAGAAGTTCGAGGCCCTTCCTGAT CCAGACGACCCAACGCCAGAAACAACCGGCTGATTTCTTTTCTGAACGACAACAGAATCGCCGAAAGAT CTTTTGGCGGCTACAGCATCAGTGAACCGGCTGGAATCTGTATAAGAACCTTAACAGCGCCGAGCTATC AACGAGGTGAACAAATTCATCCGGGACGCCTTCGGAAATCCTTACATCCCAGGCAGCAGCTGAAGGGCGC CATCCGCACCATCTGATGAACACCACACCTAAGTGAACAACGAGAACGCCGTGAACGACTTCGGCAGAT TCCCAAAGGAAAAACAAGAACCTGATCCCTTGGGACCTAAGAAAGGCAAGGAATACGACGACCTGTTCAAC GCCATCAGAGTGTCCGACAGCAAGCCCTTCGACAACAAAAGCCTGATCCTCGTGCAAGTGGGACTACAG
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	CGCCAAAACCAACAAGGCCAAGCCTCTGCCTCTGTACAGAGAGTCTATCAGCCCTCTGACCAAGATCGAGT TCGAGATAACAACAACCACTGATGAGGCCGGCAGACTGATCGAGGAAGTGGGAAAGCGGGCCAGGCCTTT TATAAGGACTACAAGGCCTTTTTCCTGTCTGAATTCCCTGATGATAAGATCCAGGCTAATCTGCAATACCC CATCTACCTGGGCGCCGGCAGCGGCGCTTGGACAAAGACCCTGTTTAAAGCAGGCCGACGGCATCCTGCAGC GGAGATACTCCAGATGAAAACCAAGATGGTCAAGAAAGGCGTGCTGAAGCTGACAAAGGCCCTCTGAAA ACAGTGAAGATCCCCAGCGGAACCAACAGCCTGGTGAAGAATCACGAGAGCTTCTACGAGATGGGCAAAGC CAACTTCATGATCAAGGAAATCGACAAGTGAcggcaataaaaaagacagaataaaacgcacggtgttgggtc gtttgttcATGTGTGCCGGCCGGAGAATAAAAGTCTAAGTGATGCGGTTTTTGGCAGTACATCAATGGGCGT GGATAGCGGTTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTTGTTTTGGCA CCAAAATCAACGGGACTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTG TACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgccaccATGGAT TACAAAAGCAGATGACGATAAGATGGCGCCTAAGAACGCAAAAGTGCGGGGGATGAAAGAGCTGTGT CACCTTTAAGCGGATCGACCACCTGCTCAGGACCTGGCCGTGAAATTCCACGGCTTCTGTATGGAACAGC TGGATAGCGACTACGTGGACTACCTGCACCAGCAGCAGACCAACCCCTACGCCACAAAGGTGATCCAGGGC AAAGAGAACACCCAGTGGGTGCTGCATCTGCTGACAGACGACATCGAGGACAAGGTGTTTATGACCCTGCT GCAGATCAAGGAAGTGTCCTGAACGACCTGCCTAAGTTGTCTGTGGAAAAGGTGGAAAATCCAGGAGCTGG GCGCTGATAAGCTGCTCGAGATCTTCAACAGCGAGGAAAACAGACCTACTTCAGCATCATCTTCGAGACA CCTACAGGCTTTTAAAGCCAGGGCAGCTACGTGATCTTCCCAGCATGCGGCTGATCTTTTCAGAGCCTGAT GCAGAGTACGGCAGACTGGTGGAAAACAGCCTGAGATCGAGGAAGATACCCCTGGACTACCTACCTGAGCGAGC ACAGACCATCACCAATTACAGACTGGAAACAAGTACTTTCAGAGTGCATAGACAGAGAATCCCCGCCCTTC CGGGGCAAGCTGACCTTCAAGGTGCAGGGAGCCAGACACTGAAGGCCTACGTGAAGATGCTGCTGACCTT CGGCAGGTACAGCGCCTGGGCATGAAAACAGCCTGGGAATGGCGGCATCAAGCTGGAAGAAAGAAAGG ACTGAcggcaataaaaaagacagaataaaacgcacggtgttgggtcggtttgttcGTGCGATAGAGGGATCCC GCATTGAATTATGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATT TCCAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTGTTTTTGGCACCAAAATCAACGGGACTTTCCAAAAT GTCGTAACAACCTCCGCCCCATTGACGCAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGA GCTCGTTTTAGTGAACCGTCAGATCTCTAGAgccgccaccatggtgagcaagggcgaggagctgttcaccgg ggtggtgcccacctcgtgagctggacggcgacgtaaacggccacaagttcagcgtgtccggcgaggggcg agggcgatgccacctacggcaagctgacctgaagttcatctgcaccaccggcaagctgcccgtgccctgg cccaccctcgtgaccaccctgacctacggcgtgacgtgcttcagccgctaccccgaccacatgaagcagca cgacttcttcaagtccgccatgccgaaggctacgtccaggagcgcaccatcttcttcaaggacgcagggca actacaagaccgcgcgcaggtgaagttcgaggcgacaccctggtgaaccgcagctgagctgaagggcatc gacttcaaggaggacggcaacatcctggggcacaagctggagtacaactacaacagccacaacgtctatat catggccgacaagcagaagaacggcatcaaggtgaacttcaagatccgccacaacatcgaggacggcagcg tgcagctcgcgcgaccactaccagcagaacaccccccatcggcgacggccccgtgctgctgcccgacaaccac tacctgagcaccagtcgcctcctgagcaaaccccaacgagaagcgcgatcacatggtcctgctggagtt cgtgaccgcgcgcgggatcactctcgcatggacgagctgtacaagtgacggcaataaaaaagacagaataa aacgcacggtgttgggtcggtttgttcGTAGATGGCGCGCCTTTTGTGACCGGTTGGAGGGCCTATTTCCC ATGATTCCTTTCATATTTGCATATACGATAACGAGCTGTTAGAGAGATAATTAGATAATTTGACTGTAAA CACAAAGATATTAGTACAAAATACGTGACGTAGAAAAGTAATAATTTCTTGGGTAGTTTGCAGTTTTAAAT TATGTTTTTAAATGGACTATCATATGCTTACCGTAACTTGAAAGTATTTTCGATTTCTTGGCTTTATATATC TTGTGGAAAGGACGAAACACCGATATAAACCTAATTACCTCGAGAGGGGACGGAACCCGCTTTCGATGAA GCGATTCAGAAGACTTGATATAAACCTAATTACCTCGAGAGGGGACTTTTTTACATGTGTGACAGGTTTTTC ACCGTCATCACGAAACGCGCGAGACGAAAGGGCCTCGTGATACGCCTATTTTTATAGGTTAATGTCAATGA TAATAATGGTTTTCTAGACGTCAAGTGGCATTTCGGGGAATGTGCGCGGAACCCCTATTTGTTTTATTT TTCTAAATACATTCAAATATGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAATAATATTGAAA AAGGAAGAGTATGAGTATTCAACATTTCCGTGTCGCCCTTATTCCTTTTTTTCGGGCATTTTGCCTTCCTG TTTTTGCTCACCCAGAAACGCTGGTGAAAGTAAAGATGCTGAAGATCAGTTGGGTGCACGAGTGGGTTAC ATCGAACTGGATCTCAACAGCGGTAAGATCCTTGAGAGTTTTTCGCCCGAAGAACGTTTTTCCATGATGAG CACTTTTAAAGTTCTGCTATGTGGCGCGGTATTATCCCGTATTGACGCCGGGCAAGAGCAACTCGGTGCGC GCATACACTATTCTCAGATGACTTGGTTGAGTACTCACCAGTCACAGAAAAGCATCTTACGGATGGCATG ACAGTAAGAGAATTATGCAAGTGTGCCATAACCATGAGTGATAAACACTGCGGCCAACTTACTTCTGACAAC GATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGGATCATGTAACTCGCCTTGATCGTT GGGAACCGGAGCTGAATGAAGCCATACCAAACGACGAGCGTGACACCACGATGCCTGTAGCAATGGCAACA ACGTTGCGCAAACTATTAACCTGGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGA GGCGGATAAAGTTGACAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCTGATAAATCTG GAGCCGGTGAGCGTGGGTCTCGCGGTATCATTCGAGCACTGGGGCCAGATGGTAAGCCCTCCCGTATCGTA GTTATCTACACGACGGGAGTCAGGCAACTATGGATGAACGAAATAGACAGATCGCTGAGATAGGTGCCTC ACTGATTAAGCATTTGGTAACCTGTGACACCAAGTTTACTCATATATACTTTAGATTGATTTAAACTTCATT TTTAATTTTAAAGGATCTAGGTGAAGATCCTTTTTTGATAATCTCATGACCAAAATCCCTTAACGTGAGTTT TCGTTCCACTGAGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTTCTGCGCGT AATCTGCTGCTTGCAAACAAAAAACCACCGCTACCAGCGGTGGTTTGTGTTGCCGGATCAAGAGCTACCAA CTCTTTTTCCGAAGGTAACCTGGCTTCAGCAGAGCGCAGATACCAAACTGTCTCTAGTGTAGCCGTAG
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	TTAGGCCACCACTTCAAGAACTCTGTAGCACCGCCTACATACCTCGCTCTGCTAATCCTGTTACCACTGGC TGCTGCCAGTGGCGATAAGTTCGTCTTACCGGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGC GGTCGGGCTGAACGGGGGGTTCGTGCACACAGCCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATAC CTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCCGGTAAGCGG CAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAACGCCTGGTATCTTTATAGTCTGTCTG GGTTTCGCCACCTCTGACTTGAGCGTCGATTTTGTGTATGCTCGTCAGGGGGCGGAGCCTATGAAAAAC GCCAGCAACGCGGCCTTTTTCTTAAGC
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Plasmid	pDAC627
Description	Expression of Csm complex from separate promoters; Puro backbone
Utility	RNA KD
Features	Pcmv-FLAG-NLS-Csm1-pA; Pcmv-FLAG-NLS-Csm2-pA; Pcmv-FLAG-NLS-Csm3-pA; Pcmv-FLAG-NLS-Csm4-pA; Pcmv-FLAG-NLS-Csm5-pA; Pcmv-FLAG-NLS-Cas6-pA; Pu6-crRNA-pT; Pcmv-Puro-pA
Sequence	GTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGAAGTACACGGGGATTTCCAAGTCTCCA CCCCATTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAACT CCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTG AACCGTCAGATCTCTAGAGcgcgccaccATGCACCATCACCATCACCATTCCGGCGGATTACAAAGACGATGA CGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGCAGGAGCATGAAGAAAGAAAGATTGATCTGTTTTAC GAGCCCTGCTGCACGACATCGGAAAGGTCATCCAGCGAGCAACCGGAGAGCGGGAAGAAACACGCACTGTG GGCGCCGACTGGTTCGACGAGATCGCCGACAACCAAGTCATCTCGGATCAGATCCGGTACCATATGGCCAA CTACCAGTCTGATAAGCTCGGCAACGATCACCTGGCTTACATCACCTACATTGCCGACAACATCGCCTCCG GTGTGACCGCCGGCAATCCAACGAAGAGTCAGACGAAGATACCTCCGCAAAGATCTGGGACACCTACACG AACCAGGCCGACATCTTTAACGTGTTTCGGAGCGCAGACCGATAAGCGGTACTTCAAGCCTACCGTGCTGAA TCTCAAGTCGAAGCCCAACTTCGCGTCCGCCACTTACGAACCCTTAGCAAGGGCGATTACGCTGCCATCG CCACCCGGATTAAGAACGAAGTGGCCGAGTTCGAGTTCACCAAGTCCAGATTGACTCCCTGCTCAACCTT TTCGAGGCTACTCTCTCCTTCGTGCCGTCAAGCACCAACACTAAGGAAATCGCCGACATCTCCCTGGCCGA CCATTCCCGCTTGACTGCTGCCTTCGCTCTGGCGATCTACGACTACCTGGAGGACAAGGGTCGGCACAAC ACAAAGAGGACCTGTTACCAAAGTGTGACGCTTCTATGAAGAAGAAGCCTTCTGCTGGCCTCCTTCGAC CTGTTCGGGAATCCAGGACTTTATCTACAACATTAACATCGCAACTAACGGCGCGCGGAAGCAGCTGAAGGC CCGGAGCCTCTACCTGGACTTTATGTCCGAGTACATCGCCGATAGCCTGCTGGACAAGCTGGGACTGAACA GGGCTAACATGCTTTACGTTCGGCGGCGGACACGCCTACTTCGTCTGGCCAACACCGCAAGAACTGTGGAA ACCTGTGTCAGTTTGAGAAGGATTTCAACCAAGTTCCTGTTGGCAAACCTCCAGACCCGCTATGTCGGC CCTTGGCTGGGGTTCTTCGCGGCCAAGGACATCTGTCCGAGCTGAATAGCCCCGAGTCTTACCGCAAG TGTACCAAAAGGCTTCGCGCATGATCTCCAAAAGAAAATCTCCAGATACGACTACCAGACACTGATGCTC CTGAATCGCGGTGAAAGTCTCAGAGAGAGAGTGCAGATTTGCCACTCCGTGGAGAACCTGGTGTCTTA CCACGACCAGAAAAGTCTGTGACATTTGCCGGGGACTGTACCACTTCTCGAAAGAAATTGCCCATGACCACT TCATCATTACCGAAAATGAGGGGCTGCCGATTGGACCAAAACGCGTGCTTAAAGGGCGTGGCATTGCAAAAG CTGTCCCAAGAAGCGTTTCAGCCGGGTCTACGTGAAGAATGACTATAAGGCCGGTACCCTGAAGGCTACGCA TGTGTTTCGTGGGGATTACCAAGTGCAGCAGATCTACAACCTACGCCGCCCTGAGCAAGAACGAGAACGGCC TAGGCATCAAGAGACTGGCCGTGGTCCGGCTCGACGTGGATGACTTGGGCGCCGCTTCATGGCCGGTTTT AGCCAGCAGGGAAACGGACAATACTCCACTCTGTCAAGATCGGCCACATTTCTCCCGGAGCATGTCGCTGTT CTTCAAAGTGTACATTAACAGTTCGCCTCCGACAAGAAGCTGAGCATTATCTACGCGGGCGGCGATGACG TGTTTCGCCATTGGATCGTGGCAGGATATCATCGCGTTCACTGTGGAACCTTCGCGAAAACCTCATCAAGTGG ACCAACGGGAAGCTCACCTCTCCGCGGGGATAGGGTTGTTTCGCGGACAAGACTCCTATTAGCCTGATGGC TCACCAGACCGGGAACTGGAAGAGGCGGCCAAGGGCAACGAAAAGGACTCCATCTCGCTGTTCTCAAGCG ACTACACTTTCAAGTTTGATAGGTTTCATCACTAACGTGTACGACGACAACTGGAACAGATTAGATACTTC TTCAACCATCAAGACGAGAGGGGAAAGAACTTCATCTATAAGCTTATTGAGCTTTTGAGGAACACGACCG CATGAATATGGCACGCCTCGCCTATTACCTCACTCGCCTGGAAGAAGTACCCGGGAGACTGACAGGGACA AGTTCAAGACCTTCAAGAACCTGTCTACTCCTGGTACACCAACAAGAACGATAAGGACCGGAAGGAAGCC GAGCTCGCGCTCTGCTGTACATCTACGAAATCAGAAAGGATTAacggcaataaaaagacagaataaaaacg cacggtgttggtcggtttgttcGCACACATTAGCTAGCCGTCAGCACACATTGTGATGCGGTTTTTGGCAGT ACATCAATTGGGCGTGGATAGCGGTTTGACTCACGGGAGTTTCCAAGTCTCCACCCCATTTGACGTCAATGGG AGTTTGTGTTTTGGACCAAAATCAACGGGACTTTCCAAAATGTCTGTAACAACCTCCGCCCCATTGACGCAAT GGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAg ccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGCAGGGCATG ACCATCCTGACCGACGAGAAGTACGTGGACATCCCGGAGAAAGCCATCCTGAAGCTGGAAGAAACACCGAG AAATAGAAAGAACCCTGATGCCTTCTTCTGACCACATCTAAGCTGCGGAACCTGCTGAGCCTGACAAGCA CCCTGTTTCGACGAGAGCAAGGTGAAGGAATACGACGCCCTGCTGGACAGAATCGCTTATCTGAGAGTGCAG TTCGTGTACCAAGGCCGCGCAGAGATCGCGTGAAAGATCTGATCGAGAAGGCCAGATCCTGGAAGCTCT GAAAGAGATCAAGGACCGGGAACCCCTGCAGAGATTCTGCAGATACATGGAAGCCCTGGTGGCTACTTCA AGTTCTACGGCGCAAGGACTGAcggcaataaaaagacagaataaaaacgcacggtgttggtcggtttgttc AGTTCTTTTGCCTTACTTTCAATGCATGCGGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCG

	GTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGT TTTGGCACCAAATC AACGGGACTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGGTGACGGTGG GAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGA CGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGCGGGGCATGACCTTCGCCAAGATCAAATTCA GCGCCAGATCCGGCTGGAAACCGGCCTGCACATCGGAGGATCTGATGCCTTTGCCGCTATCGCGCCATC GACAGCCCTGTGATCAAGGACCCCATCACCAACCTGCCTATCATCCCCGGCTCTAGCCTGAAGGGCAAGAT GAGAACACTGCTGGCCAAGGTGTACAACGAAAAGGTGGCCGAGAAGCCTAGCGACGACAGCGACATCCTGA GCAGACTGTTTCGGAAATAGCAAGGATAAGCGGTTCAGATGGGCAGACTGATCTTCGGGGACGCCTTCCTG AGCAACGCCGACGAGCTGGATTCTCTGGGCGTGC GGAGCTACACCGAGGTGAAGTTTCGAGAACACCATCGA TAGAATCACCGCCGAGGCCAATCCTAGACAGATCGAGAGAGCCATTTCGGAACCAACATTCGACTTCGAGC TGATCTACGAGATCACTGATGAGAATGAGAACAGGTTCGAGGAAGATTTCAAGGTGATCAGAGACGGCCTG AAGCTCTGGAACCTGGACTACCTGGGCGGAAGCGCTCCAGAGGCTACGGCAAAGTGTGAGAACCT GAAAGCCACCACAGTGTTCGGCAACTACGACGTGAAAACCTGAACGAGCTGCTGACCGCCGAAGTGTGAc ggcaataaaaaagacagaataaaaacgcacggtgttgggtcggtttgttcTGGATTGCGAGAATGGACTAGTAG CAAAGTGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAG TCTCCACCCCATTGACGTCAATGGGAGTTTGT TTTTGGCACCAAATCAACGGGACTTTCCAAAATGTCGTA ACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGT TTAGTGAACCGTCAGATCTCTAGAgccgccaccATTGGAATTACAAAGACGATGACGATAAGATGGCGCCTAA GAAGAAACGCAAAGTGC GGGGCATGACTTACAAGCTCTACATTATGACCTTTCAAACGCCCACTTCGGTT CCGGCACTCTGGACTCATCGAAGCTGACCTTCTCCGCGGATAGAATCTTCTCGGCACTCGTGCTCGAGGCT CTGAAGATGGGAAAGCTCGACGCCTTCTTGGCCGAGGCCAACAGGATAAGTTCCTCTGACCGACGCGTT CCCATTTCCAATTCGGTCTCTTCTGCCGAAACCGATTGGTTACCCCAAGCAGCAGCAGATCGACCAGTCTG TGGACGTGAAGGAAGTCCGCCGCCAAGCGAAGCTGTCCAAAAAGCTCCAGTTCTTGGCTCTGAAAAACGTC GACGACTACCTGAACGGAGAGCTGTTTGAGAATGAGGAACACGCCGTGATCGACACAGTGACCAAGAACCA GCCCCATAAAGATGATAATCTGTACCAAGTGGCCACCACCTCGGTTCTCGAACGACACCTCCCTTTACGTGA TCGCCAACGAATCCGATCTGCTGAACGAAGTATGAGCAGCCTTCAGTACTCCGGGCTGGGCGGCAAAAGG TCCTCAGGATTCCGCAGATTTGAGCTGGACATCCAGAACATTCCCTTGGAACGTCCGACCGGCTGACGAA GAACCACAGCGACAAGGTCATGTCACTTACCACGCCCCTCCCGTGGACGCTGATCTCGAGGAAGCGATGG AAGATGGCCATTACCTGTTGACCAAGTCGTCCGGATTTCGATTCTCCCACGCCACCAACGAAACTATCGG AAGCAGGACCTGTACAAGTTCGCCTCCGGGAGCACCTTCAGCAAGACTTTCGAGGGACAGATCGTGACGT GCGCCTCTCGATTTCCTTACGCCGTGCTGAACACGCCAAGCCGTGTTCTTTAAGCTCGAAGTCTAAc ggcaataaaaaagacagaataaaaacgcacggtgttgggtcggtttgttcGCACATTCAAAAACAGGCAATTGG ACAAGCGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAG TCTCCACCCCATTGACGTCAATGGGAGTTTGT TTTTGGCACCAAATCAACGGGACTTTCCAAAATGTCGTA ACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGT TTAGTGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAA GAAGAAACGCAAAGTGC GGGGCATGAAAAATGACTACCGGACCTTCAAGCTGAGCCTGCTGACCCTGGCTC CTATCCACATCGGCAACGGGAGAGTACACCAGCAGAGAATTATCTACGAGAACAAGAAGTTCTACTTTC CCGCACATGGGCAAGTTCTACAACAAGATGGTGGAAAAAGAGACTGGCCGAGAAAGTTCGAGGCTTCTGAT CCAGACCAGACCCAACGCCAGAAACAACCGGCTGATTTCTTTTCTGAACGACAACAGAATCGCCGAAAGAT CTTTTGGCGGCTACAGCATCAGTGAAACCGGCCTGGAATCTGATAAGAACCCTAACAGCGCCGGAGCTATC AACGAGGTGAACAAATTCATCCGGGACGCCTTCGGAAATCCTTACATCCCAGGCAGCAGCCTGAAGGGCGC CATCCGCACCATCCTGATGAACACCACACCTAAGTGAACAACGAGAACGCCGTGAACGACTTCGGCAGAT TCCCAAAGGAAAAACAAGAACCTGATCCCTTGGGGACCTAAGAAAGGCAAGGAATACGAGACCTGTTCAAC GCCATCAGAGTGTCCGACAGCAAGCCCTTCGACAAACAAAGCCTGATCCTCGTGCAAGAGTGGGACTACAG CGCCAAAACCAACAAGGCCAAGCCTCTGCCTCTGTACAGAGAGTCTATCAGCCCTCTGACCAAGATCGAGT TCGAGATAACAACAACCACTGATGAGGCCGGCAGACTGATCGAGGAAGTGGGAAAGCGGGCCAGGCCCTTT TATAAGGACTACAAGGCCTTTTTCTGTCTGAATTCCCTGATGATAAGATCCAGGCTAATCTGCAATACCC CATCTACCTGGGCGCCGGCAGCGCGCTTGGACAAAGACCCTGT TTAAGCAGGCCGACGGCATCTCTGCAGC GGAGATACTCCAGAATGAAAACCAAGATGGTCAAGAAGGGCGTGCTGAAGCTGACAAAGGCCCTCTGAAA ACAGTGAAGATCCCAGCGGCAACCACAGCCTGGTGAAGAATCACGAGAGCTTCTACGAGATGGGCAAAG CAACTTCATGATCAAGGAAATCGACAAGTGAcggcaataaaaaagacagaataaaaacgcacggtgttgggtc gtttgttcATGTGTGCCGCGCGGAGAATAAAAGTCTAAGTGATGCGGTTTTTGGCAGTACATCAATGGGCGT GGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGT TTTTGGCA CCAAAATCAACGGGACTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTG TACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgccaccATGGAT TACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGC GGGGCATGAAAAAGCTCGTGTT CACCTTTAAGCGGATCGACCACCCTGCTCAGGACCTGGCCGTGAAATTCACCGCTTCTGATGAGAACGACG TGATAGCGACTACGTGGACTACCTGCACCAGCAGCAGACCAACCCCTACGCCAAAGGTGATCCAGGGC AAAGAGAACACCCAGTGGGTCTGTCATCTGCTGACAGACGACATCGAGGACAAGGTGTTTCATGACCCTGCT GCAGATCAAGGAAGTGTCCCTGAACGACCTGCCTAAGTTGTCTGTGAAAAAGGTGGAATCCAGGAGCTGG GCGCTGATAAGCTGCTCGAGATCTTCAACAGCGAGGAAAACCAGACCTACTTCAGCATCATCTTCGAGACA CCTACAGGCTTTAAAAGCCAGGGCAGCTACGTGATCTTCCCCAGCATGCGGCTGATCTTTCAGAGCCTGAT
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	GCAGAAGTACGGCAGACTGGTGGAAAACCAGCCTGAGATCGAGGAAGATACCCTGGACTACCTGAGCGAGC ACAGCACCATCACC AATTACAGACTGGAAACAAGCTACTTCAGAGTGCATAGACAGAGAATCCCCGCCTTC CGGGGCAAGCTGACCTTCAAGGTGCAGGGAGCCAGACACTGAAGGCCTACGTGAAGATGCTGCTGACCTT CGGCGAGTACAGCGGCCTGGGCATGAAAACCAGCCTGGGAATGGGCGGCATCAAGCTGGAAGAAAGAAAGG ACTGAcggcaataaaaaagacagaataaaacgcacggtggttggtcggtttgttcGTGCGATAGAGGGATCCC GCATTGAATTATGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATT TCCAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCCAAAAT GTCGTAACAACCTCCGCCCCATTGACGCAAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGA GCTCGTTTTAGTGAACCGTCAGATCTCTAGAgccgccaccATGACCGAGTACAAGCCCACGGTGCGCCTCGC CACCCGCGACGACGTCCCCAGGGCCGTACGCACCTCGCCGCCGCGTTCCGCCGACTACCCCGCCACGCGCC ACACCGTCGATCCGGACCGCCACATCGAGCGGGTCACCGAGCTGCAAGAACTCTTCTCACGCGCGTCGGG CTCGCATCGGC AAGGTGTGGGTGCGCGGACGACGCGCGCGGTGGCGGTCTGCACCCGCGGAGCGT CGAAGCGGGGGCGGTGTTCCGCCGAGATCGGCCCGCGCATGGCCGAGTTGAGCGGTTCCCGGCTGGCCGCGC AGCAACAGATGGAAGGCCTCCTGGCGCCGCACCGGCCCAAGGAGCCCGCGTGGTTCTTGGCCACCGTCGGA GTCTCGCCCGACCAACAGGGCAAGGGTCTGGGCGAGCGCGTCTGCTCCCCGGAGTGGAGGCGCGGAGCG CGCCGGGGTGCCCGCTTCTGGAACCTCCGCGCCCCGCAACCTCCCCCTTCTACGAGCGGCTCGGCTTCA CCGTACCCGCCGACGTGAGGTGCCCCAAGGACCGCGCACCTGGTGCATGACCCGCAAGCCCGGTGCCTGA cggcaataaaaaagacagaataaaacgcacggtggttggtcggtttgttcGAGCAGATTGTACTGAGAGTGCA CCGGTTGGAGGGCCTATTTCCCATGATTCTTTCATATTTGCATATACGATACAGGCTGTTAGAGAGATAA TTAGAATTAATTTGACTGTAAACACAAAGATATTAGTACAAAATACGTGACGTAGAAAGTAATAATTTCTT GGGTAGTTTGCAGTTTTTAAATTTATGTTTTTAAATGGACTATCATATGCTTACCGTAACCTTGAAAGTATTT CGATTTCTTGGCTTTATATATCTTGTGGAAGGACGAAACACCGATATAAACCTAATTACCTCGAGAGGGG ACGGAACCCGCTCTTCGATGAAGCGATTGAGAAGACTTGATATAAACCTAATTACCTCGAGAGGGGACTTT TTTACATGTGTCAGAGGTTTTACCGTCATCACCAGAACGCGGAGACGAAAGGGCCTCGTGATACGCCTA TTTTTATAGGTTAATGTGTCATGATAATAATGGTTTTCTTAGACGTGAGTGGCACTTTTCGGGGAAATGTGCG CGGAACCCCTATTTGTTTATTTTTCTAAATACATTCAAATATGTATCCGCTCATGAGACAATAACCCCTGAT AAATGCTTCAATAATATTGAAAAAGGAAGAGTATGAGTATTCAACATTTCCGTGTCGCCCTTATTTCCCTTT TTTTCGGCATTTTGCCTTCCTGTTTTTGGCTCACCAGAAACGCTGGTGAAAGTAAAGATGCTGAAGATCA GTTGGGTGCACGAGTGGGTTACATCGAACTGGAATCTCAACAGCGGTAAGATCCTTGAGAGTTTTTCGCCCGC AAGAACGTTTTTCAATGATGAGCACTTTTAAAGTTCTGCTATGTGGCGCGGTATTATCCCGTATTGACGCC GGGCAAGAGCAACTCGGTGCGCCGCATACACTATTCTCAGAATGACTTGGTTGAGTACTCACCAGTCACAGA AAAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGCAAGTGTGCCATAACCATGAGTGATAACACTG CGGCCAACTTACTTCTGACAACGATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGGAT CATGTAACCTCGCCTTGATCGTTGGGAACCGGAGCTGAATGAAGCCATACCAACGACGAGCGTGACACCAC GATGCCTGTAGCAATGGCAACAACGTTGCGCAAACTATTAACCTGGCGAACTACTTACTCTAGCTTCCCGGC AACAAATTAATAGACTGGATGGAGCGGGATAAAGTTGCAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGC TGTTTTATTGCTGATAAATCTGGAGCCGGTGAGCGTGGGTCTCGCGGTATCATTGCAGCACTGGGGCCAGA TGGAATGCCCTCCGTATCGTAGTTATCTACAGACGGGGAGTCAGGCAACTATGGATGAACGAAATAGAC AGATCGCTGAGATAGGTGCCTCACTGATTAAAGCATTTGGTAACCTGTCAGACCAAGTTTACTCATATATACTT TAGATTGATTTAAACTTCATTTTTTAATTTAAAGGATCTAGGTGAAGATCCTTTTTGATAATCTCATGAC CAAAATCCCTTAACGTGAGTTTTTCGTTCCACTGAGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTTCTT GAGATCCTTTTTTCTGCGCGTAATCTGCTGCTTGCAACAAAAAAACCACCGCTACCAGCGGTGGTTTTGT TTGCCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAACCTGGCTTACAGCAGAGCGCAGATACCAAATAC TGTTCTTCTAGTGTAGCCGTAGTTAGGCCACCCTTCAAGAACTCTGTAGCACCGCCTACATACCTCGCTC TGCTAATCTGTGTACAGTGGCTGCTGCCAGTGGCGGATAAGTCTGTCTTACCGGGTGGACTCAAGACGA TAGTTACCGGATAAGGCGCAGCGGTGCGGCTGAACGGGGGGTTGCTGCACACAGCCAGCTTGGAGCGAAC GACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGG CGGACAGGTATCCGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAAACGCC TGGTATCTTTATAGTCTGTGCGGTTTTGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGG GGGCGGAGCCTATGAAAAACGCCAGCAACGCGGCCTTTTTCTTAAGC
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Plasmid	pDAC569
Description	Expression of Csm complex (RNase mut) from separate promoters; GFP backbone
Utility	RNA binding/tethering/pulldown
Features	Pcmv-FLAG-NLS-Csm1-pA; Pcmv-FLAG-NLS-Csm2-pA; Pcmv-FLAG-NLS-Csm3 (RNase mut) -pA; Pcmv-FLAG-NLS-Csm4-pA; Pcmv-FLAG-NLS-Csm5-pA; Pcmv-FLAG-NLS-Cas6-pA; Pu6-crRNA-pT; Pcmv-GFP-pA
Sequence	GTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCA CCCCATTGACGTCAATGGGAGTTTTGTTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTGCGTAACAAC CCGCCCCATTGACGCAAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTG AACCCTGATCTCTAGAgccgccaccATGCACCATCACCATCACCATTCCGGCGATTACAAAGACGATGA CGATAAGATGGCGCCTAAGAAGAAACGCAAAAGTGGGGGCATGAAGAAAGAAAAGATTGATCTGTTTTACG

	GAGCCCTGCTGCACGACATCGGAAAGGTCATCCAGCGAGCAACCGGAGAGCGGAAGAAACACGCACTTGTG GGCGCCGACTGGTTCGACGAGATCGCCGACAACCAAGTCATCTCGGATCAGATCCGGTACCATATGGCCAA CTACCAGTCTGATAAGCTCGGCAACGATCACCTGGCTTACATCACCTACATTGCCGACAACATCGCCTCCG GTGTCGACCGCCGGCAATCCAACGAAGAGTCAGACGAAGATACCTCCGCAAAGATCTGGGACACCTACACG AACCAGGCCGACATCTTTAACGTGTTCCGAGCGCAGACCGATAAGCGGTACTTCAAGCCTACCGTGCTGAA TCTCAAGTCGAAGCCCAACTTCGCGTCCGCCACTTACGAACCCTTTAGCAAGGGCGATTACGCTGCCATCG CCACCCGGATTAGAACGAACCTGGCCGAGTTCGAGTTCACCAAGTCCAGATTGACTCCCTGCTCAACCTT TTCGAGGCTACTCTCTCCTTCGTGCCGTCAAGCACCAACACTAAGGAAATCGCCGACATCTCCCTGGCCGA CCATTCCCCTTGACTGCTGCCTTCGCTCTGGCGATCTACGACTACCTGGAGGACAAGGGTCGGCACAACCT ACAAAGAGGACCTGTTACCAAAGTGTGAGCGTTCTATGAAGAAGAAGCCTTCCTGCTGGCCTCCTTCGAC CTGTGCGGAATCCAGGACTTTATCTACAACATTAACATCGCAACTAACGGCGCGGCAAGCAGCTGAAGGC CCGAGCCTCTACCTGGACTTTATGTCCGAGTACATCGCCGATAGCCTGCTGGGACTGAGCTGGGACTGAACA GGGCTAACATGCTTTACGTGCGCGGCGGACACGCCCTACTTCGTCTGGCCAACACCGAAAAGACTGTGGAA ACCTTGGTGCAGTTTGAGAAGGATTTCAACCAGTTCCTGTTGGCAAACCTCCAGACCCGCTCTATGTGGC CTTTGGCTGGGGTTCCTTCGCGGCAAGGACATCATGTCCGAGCTGAATAGCCCGAGTCTACCGCCAAG TGTAACAAAAGGCTTCGCGCATGATCTCCAAAAGAAAATCTCCAGATACGACTACCAGACACTGATGCTC CTGAATCGCGGTGGAAAGTCTCAGAGAGAGAGTGCAGAGATTGCCACTCCGTGGAGAACCTGGTGTCTTA CCAGACCGAAGTCTGTGACATTTGCCGGGACTGTACCAGTTCTCGAAAGAAATTTGCCCATGACCATT TCACTATTACCGAAAATGAGGGGCTGCCGATTGACCAAACGCGTGCTTAAAGGGCGTGGCATTGCAAAAAG CTGTCCCAAGAAGCGTTCAGCCGGGTCTACGTGAAGAATGACTATAAGGCCGGTACCCTGAAGGCTACGCA TGTTGTCGTGGGGGATTACCAGTGCAGCAGATCTACAACCTACGCCGCCCTGAGCAAGAACGAGAACGGCC TAGGCATCAAGAGACTGGCCGTGGTCCGGCTCGACGTGGATGACTTGGGCGCCGCTTCATGGCCGGTTTC AGCCAGCAGGGAAACGGACAATACTCCACTCTGTCAAGATCGGCCACATTTCTCCCGGAGCATGTGCTGTT CTTCAAAGTGTACATTAACAGTTCGCCTCCGACAAGAAGCTGAGCATTATCTACGCGGGCGGCGATGACG TGTTCCGCATTGGATCGTGGCAGGATATCATCGCGTTCACTGTGGAACCTTCGCGAAAACCTTCATCAAGTGG ACCAACGGGAAGCTCACCTCTCCGCGGGGATAGGGTTGTTTCGCGGACAAGACTCCTATTAGCCTGATGGC TCACCAGACCGGGGAACCTGGAAGAGGCCGCCAAGGGCAACGAAAAGGACTCCATCTCGCTGTTCTCAAGCG ACTACACTTTCAAGTTTGATAGGTTTCATCACTAACGTGTACGACGACAACTGGAACAGATTAGATACTTC TTCAACCATCAAGACGAGAGGGGAAAGAACTTCATCTATAAGCTTATTGAGCTTTTGAGGAACCACGACCG CATGAATATGGCACGCCTCGCCTATTACCTCACTCGCCTGGAAGAACTGACCCGGGAGACTGACAGGGACA AGTTCAGACCTTCAAGAACCTGTTCTACTCTGGTACACCAACAAGAACGATAAAGACCGGAAGGAAGCC GAGTTCGCGCTCCTGCTGTACATCTACGAAATCAGAAAGGATTAAcggcaataaaaagacagaataaaaacg cacggtggttgggtcggttgggttcGCACACATTAGCTAGCCGTCAGCACACATTGTGATGCGGTTTTGGCAGT ACATCAATGGGCGTGGATAGCGGTTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTTGACGTCAATGGG AGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCTAACAACCTCGCCCCATTGACGCAAAAT GGGCGGTAGGCGGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTTAGTGAACCGTCAGATCTCTAGAG ccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGGCGGGCATG ACCATCTTGACCGACGAGAACCTACGTGGACATCGCCGAGAAAGCCATCTGAAGCTGGAAGAAACACCAAG AAATGAAAGAACCTGATGCCTTCTTCTGACCAATCTAAGCTGCGGAACCTGCTGAGCCTGACAAGCA CCCTGTTTCGACGAGAGCAAGGTGAAGGAATACGACGCCCTGCTGGACAGAATCGCTTATCTGAGAGTGCAG TTCGTGTACCAGCCGGCAGAGAGATCGCCGTGAAAGATCTGATCGAGAAGGCCCAGATCCTGGAAGCTCT GAAAGAGATCAAGGACCGGGAAACCTGACAGAGATTCTGCAGATACATGGAAGCCTGGTGGCTACTTCA AGTTCTACGGCGGCAAGGACTGAcggcaataaaaagacagaataaaaacgcacggtggttgggtcggttgggttc AGTTCTTTTGCCTTACTTTCAATGCATGCGGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCG GTTTGACTCACGGGATTTTCCAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTTGTTTTGGCACCAAAATC AACGGGACTTTCCAAAATGTCTGAACAACCTCCGCCCATTTGACGCAAAATGGGCGGTAGGCGTGTACGGTGG GAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAGccgccaccATGGATTACAAAGA CGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGGGGGCATGACCTTCGCCAAGATCAAATTCA GCGCCAGATCCGGCTGGAAACCGGCCTGCACATCGGAGGATCTGATGCCTTTGCCGCTATCGGCGCCATC GCCAGCCCTGTGATCAAGGACCCCATCACCAACCTGCCTATCATCCCCGGCTCTAGCCTGAAGGGCAAGAT GAGAACACTGCTGGCCAAGGTGTACAACGAAAAGGTGGCCGAGAAGCCTAGCGACGACGCGACATCCTGA GCAGACTGTTTCGGAAATAGCAAGGATAAGCGGTTCAAGATGGGCAGACTGATCTTCCGGGACGCTTCTCTG AGCAACGCCGACGAGCTGGATTCTCTGGGCGTGCAGGAGCTACACCGAGGTGAAGTTCGAGAACACCATCGA TAGAATCACCGCCGAGGCCAATCCTAGACAGATCGAGAGAGCCATTGGAACCTCAACATTGACTTCGAGC TGATCTACGAGATCACTGATGAGAATGAGAACCAGGTGAGGAAGATTTCAAGGTGATCAGAGACGGCCTG AAGCTGCTGGAACCTGGACTACCTGGGCGGAAGCGGCTCCAGAGGCTACGGCAAAGTGGCTTTTGAGAACCT GAAAGCCACCACAGTGTTTCGGCAACTACGACGTGAAAACCTGAACGAGCTGCTGACCGCCGAAGTGTGAC ggcaataaaaagacagaataaaaacgcacggtggttgggttcTGGATTGCGGAGATTGGACTAGTAG CAACTGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTGACGCGGATTTTCCAAG TCTCCACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCTGA ACAACTCCGCCCATTTGACGCAAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGT TTAGTGAACCGTCAGATCTCTAGAGccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAA GAAGAAACGCAAAGTGGCGGGCATGACTTACAAGCTCTACATTATGACCTTTCAAACGCCCACTTCGGTT
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	CCGGCACTCTGGACTCATCGAAGCTGACCTTCTCCGCGGATAGAATCTTCTCGGCACTCGTGCTCGAGGCT CTGAAGATGGGAAAGCTCGACGCCTTCTTGGCCGAGGCCAACAGGATAAGTTCACTCTGACCGACGCGTT CCCATTCCAATTCGGTCCCTTCTTCCGCGAAACCGATTGGTTACCCCAAGCACGACCAGATCGACCAGTCTG TGGACGTGAAGGAAGTCCGCCGCCAAGCGAAGCTGTCCAAAAAGCTCCAGTTCTTGGCTCTGGAAAAAGCTC GACGACTACCTGAACGGAGAGCTGTTTGAGAATGAGGAACACGCGGTGATCGACACAGTGACCAAGAACCA GCCCCATAAAGATGATAATCTGTACCAAGTGGCCACCACTCGGTTCTCGAACGACACCTCCCTTTACGTGA TCGCCAACGAATCCGATCTGCTGAACGAAGTATGAGCAGCCTTCAGTACTCCGGGCTGGGCGGCAAAAGG TCCTCAGGATTTCGGCAGATTTGAGCTGGACATCCAGAACATTCCCTTGGAACTGTCCGACCGGCTGACGAA GAACCACAGCGACAAGGTCTGTCACTTACCACCGCCCTCCCGGTGGACGCTGATCTCGAGGAAGCGATGG AAGATGGCCATTACCTGTTGACCAAGTCTGTCGGATTTCGCATTCTCCCACGCCACCAACGAAAACTATCGG AAGCAACTGTACAAAGTTCGCCTCCGGGAGCACCTTCAGCAAGACTTTCGAGGGACAGATCGTGGACGT GCGCCCTCTCGATTTCCTCACGCGGTGCTGAAGTACGCCAAGCCGCTGTTCTTAAAGTCTGAAGTCTAAc ggcaataaaaaagacagaataaaaacgcacggtgttgggtcggttgggttcGACATTCAAAAACAGGCAATTGG ACAAGCGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCGAAG TCTCCACCCCATTCAGCTCAATGGGAGTTTGTCTTGGCACCAAAATCAACGGGACTTTCCAAAATGTGCGTA ACAAATCCGCCCATTCAGCGCAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGT TTAGTGAACCGTCAGATCTCTAGAgccgcccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAA GAAGAAACGCAAAAGTGGGGGCGATGAAAAATGACTACCGGACCTTCAAGCTGAGCTGCTGACCCCTGGCTC CTATCCACATCGGCAACGGCGAGAAAGTACACCCAGCAGAGAATTCTATCTACGAGAACAAAGAAAGTTCTACTTC CCCGACATGGGCAAGTTCTACAACAAGATGGTGGAAAAGAGACTGGCCGAGAAGTTCGAGGCCCTTCTGAT CCAGACCAGACCCAACGCCAGAAACAACCGGCTGATTTCTTTTCTGAACGACAACAGAATCGCCGAAAGAT CTTTTGGGCGGCTACAGCATCAGTGAAACCGGCTTGAATCTGATAAGAACCCTAACAGCGCCGAGCTATC AACGAGGTGAACAAATTCATCCGGGACGCCTTCGGAATCCTTACATCCCAGGCAGCAGCCTGAAGGGCGC CATCCGCACCATCCTGATGAACACCACACCTAAGTGGAAACAACGAGAACGCCGTGAACGACTTCGGCAGAT TCCCAAAGGAAAAACAAGAACCCTGATCCCTTGGGGACCTAAGAAAGGCAAGGAATACGACGACCTGTTCAAC GCCATCAGAGTGTCCGACAGCAAGCCCTTCGACAACAAAAGCCTGATCCTCGTGCAGAAGTGGGACTACAG CGCCAAAACCAACAAGGCCAAGCCTCTGCCTCTGTACAGAGAGTCTATCAGCCCTCTGACCAAGATCGAGT TCGAGATAACAACAACCACTGATGAGGCCGGCAGACTGATCGAGGAAGTGGGAAAGCGGGCCAGGCCCTTT TATAAGGACTACAAGGCCTTTTTCTGTCTGAATTCCTGATGATAAGATCCAGGCTAATCTGCAATACCC CATCTACCTGGGCGCCGGCAGCGGCGCTTGGACAAAGACCCTGTTTAAAGCAGGCCGACGGCATCCTGCAGC GGAGATACTCCGAATGAAAACCAAGATGGTCAAGAAGGGCGTGTGAAGTACAAAAGGCCCTCTGAAA ACAGTGAAGATCCCCAGCGCAACCACAGCCTGGTGAAGAATCACGAGAGCTTCTACGAGATGGGCAAGC CAACTTCATGATCAAGGAAATCGACAAGTGAaggcaataaaaaagacagaataaaaacgcacggtgttgggtc gtttgggtcATGTGTGCCGGCCGGAGAATAAAAGTCTAAGTGATGCGGTTTTTGGCAGTACATCAATGGGCGT GGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTCAGCTCAATGGGAGTTTGTCTTGGCA CCAAAATCAACGGGACTTTCCAAAATGTCTGTAACAACCTCCGCCCATTCAGCGCAATGGGCGGTAGGCGTG TACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgcccaccATGGAT TACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAACGCAAAAGTGGCGGCGATGAAAAGCTCGTGTT CACCTTTAAGCGGATCGACACCCTGCTCAGGACTGGCCGTGAAATTCACGGCTTCTGATGGAACAGC TGGATAGCGACTACGTGGACTACCTGCACCAGCAGCAGACCAACCCCTACGCCACAAAGGTGATCCAGGGC AAAGAGAACACCCAGTGGGTCTGTCATCTGCTGACAGACGACATCGAGGACAAGGTGTTTCATGACCCTGCT GCAGATCAAGGAAGTGTCCCTGAACGACCTGCCTAAGTTGTCTGTGGAAAAGGTGGAATCCAGGAGCTGG GCGTGTATAAGCTGCTCGAGATCTTCAACAGCGAGGAAAACAGACCTACTTCAGCATCATCTTCGAGACA CCTACAGGCTTTTAAAGCCAGGGCAGCTACGTGATCTTCCCCAGCATGCGGCTGATCTTTTCAGAGCCTGAT GCAGAAGTACGGCAGACTGGTGGAAAACAGCCTGAGATCGAGGAAGATACCTTGGACTACCTGAGCGGAGC ACAGCACCATCACCAATTACAGACTGGAAAACAAGCTACTTCAGAGTGCATAGACAGAGAATCCCCGCCCTTC CGGGGCAAGCTGACCTTCAAGGTGCAGGGAGGCCAGACACTGAAGGCCTACGTGAAGATGCTGCTGACCTT CGGCGAGTACAGCGCCTGGGCATGAAAACAGCCTGGGAATGGGCGGCATCAAGCTGGAAGAAAGAAAGG ACTGAaggcaataaaaaagacagaataaaaacgcacggtgttgggtcggttgggttcGTGCGATAGAGGGATCCC GCATTGAATTATGTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATT TCCAAGTCTCCACCCCATTCAGCTCAATGGGAGTTTGTCTTGGCACCAAAATCAACGGGACTTTCCAAAAT GTCGTAACAACCTCCGCCCATTCAGCGCAAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGA GCTCGTTTTAGTGAACCGTCAGATCTCTAGAgccgcccaccatggtgagcaagggcgaggagctgttcaccgg ggtggtgcccacacctggtcgagctggacggcgacgtaaacggccacaagttcagcggtgtccggcgaggggcg agggcgatgccacctacggcaagctgacctgaagttcatctgcaccaccggcaagctgcccgtgccctgg cccacctcgtgaccacctgacctacggcgctgacgtgcttcagccgctaccccgaccacatgaagcagca cgacttcttcaagtcggccatgcccgaaggctacgtccaggagcgcaccatcttcttcaaggacgcaggca actacaagaccgcgcccaggtgaagttcgaggcgacaccctggtgaaccgcatcgagctgaagggcatc gacttcaaggagacgggcaacatcctggggcacaagctggagtacaactacaacgacccacaacgctctatat catggccgacaagcagaagaacggcatcaaggtgaacttcaagatccgccacaacatcgaggacggcgagcg tgcagctcgccgaccactaccagcagaacacccccatcggcgacggccccgtgctgctgcccgacaaccac tacctgagcaccagtcgcccctgagcaagaccccaacgagaagcgcgatcacatggctcctgctggagtt cgtgaccgcccgggatcactctcgcatggacgagctgtacaagtgacggcaataaaaaagacagaataa
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	aaccgacgggtgttgggtcgctttgttcGTAGATGGCGCGCCTTTGTTGACCCGGTTGGAGGGCCTATTTCCC ATGATTCCTTCATATTTGCATATACGATACAAGGCTGTTAGAGAGATAATTAGAAATTAATTTGACTGTAAA CACAAAAGATATTAGTACAAAATACGTGACGTAGAAAAGTAATAATTTCTTGGGTAGTTTGCAGTTTAAAAAT TATGTTTTTAAATGGACTATCATATGCTTACCGTAACTTGAAAGTATTTGATTTCTTGGCTTTATATATC TTGTGGAAAGGACGAAACACCGATATAAACCTTAATTACCTCGAGAGGGGACGGAAACCCGCTCTCGATGAA GCGATTGAGAAGACTTGATATAAACCTAATTACCTCGAGAGGGGACTTTTTTACATGTGTCAGAGGTTTTTC ACCGTCATCACCGAAACGCGCGAGACGAAAGGGCCTCGTGATACGCCTATTTTTATAGGTTAATGTCATGA TAATAATGGTTTTCTTAGACGTCAGGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTT TTCTAAATACATTCAAATATGTATCCGCTCATGAGACAATAACCTGATAAATGCTTCAATAATATTGAAA AAGGAAGAGTATGAGTATTCAACATTTCCGTGTCGCCCTTATTCCTTTTTTGCGGCATTGTCCTTCCTG TTTTTGCTCACCCAGAAACGCTGGTGAAAGTAAAGATGCTGAAGATCAGTTGGTGCACGAGTGGGTTAC ATCGAAGTGGATCTCAACAGCGTAAAGATCCTTGAGAGTTTTTCGCCCGAAGAAGCTTTTCCAAATGATGAG CACTTTTAAAGTTCTGCTATGTGGCGCGGTATTATCCCGTATTGACGCCGGGCAAGAGCAACTCGGTGCGC GCATACACTATTCTCAGAATGACTTGGTTGAGTACTACCCAGTCACAGAAAAGCATCTTACGGATGGCATG ACAGTAAGAGAATTATGCAGTGCTGCCATAACCATGAGTGATAACACTGCGGCCAACTTACTTCTGACAAC GATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGGATCATGTAACCTCGCCTTGATCGTT GGGAACCGGAGCTGAATGAAGCCATACCAAACGACGAGCGTGACACCACGATGCCTGTAGCAATGGCAACA AGCTTGGCGCAAACTATTAAGTGGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGA GGCGGATAAAGTTGCAGGACCCTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTTGCTGATAAATCTG GAGCCGGTGAGCGTGGGTCTCGCGGTATCATTCAGCACTGGGGCCAGATGGTAAGCCCTCCCGTATCGTA GTTATCTACACGACGGGGAGTCAGGCAACTATGGATGAACGAAATAGACAGATCGCTGAGATAGGTGCCTC ACTGATTAAGCATTTGGTAACTGTGAGACCAAGTTTACTCATATATACTTTAGATTGATTTAAAACCTTCATT TTTAATTTAAAAGGATCTAGGTGAAGATCCTTTTTTGATAATCTCATGACCAAAATCCCTTAACGTGAGTTT TCGTTCCACTGAGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTTCTGCGCGT AATCTGCTGCTTGCAAAACAAAAAACCCGCTACACGCGGTGGTTTGTGTTGCCGGATCAAGAGCTACCAA CTCTTTTTTCCGAAGGTAAGTGGCTTCAGCAGAGCGCAGATACCAAATACTGTTCTTCTAGTGATGCCGTAG TTAGGCCACCACTTCAAGAAGTCTGTAGCACCGCTACATACCTCGCTCTGCTAATCCTGTTACCAGTGGC TGCTGCCAGTGGCGATAAGTCTGTCTTACCGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGC GGTCGGGCTGAACGGGGGGTTCGTGCACACAGCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATAC CTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCCGGTAAGCGG CAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAAACGCCTGGTATCTTTATAGTCTCTGTCG GGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGCGGAGCCTATGGAAAAAC GCCAGCAACGCGGCCTTTTTCTTAAGC
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Plasmid	pDAC565
Description	Expression of Csm-GFP complex (RNase mut) from separate promoters
Utility	RNA imaging
Features	Pcmv-FLAG-NLS-Csm1-pA; Pcmv-FLAG-NLS-Csm2-pA; Pcmv-FLAG-NLS-Csm3 (RNase mut) -GFP-pA; Pcmv-FLAG-NLS-Csm4-pA; Pcmv-FLAG-NLS-Csm5-pA; Pcmv-FLAG-NLS-Cas6-pA; Pu6-crRNA-pT
Sequence	GTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGAAGTACACGGGGATTTCCAAGTCTCCA CCCCATTGACGTCAATGGGAGTTTGTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAAC CCGCCCCATTGACGCAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTGTG AACCCTGATGATCTCTAGAGcgccgaccATGCACCATCACCATCACCATTTCCGGCGATTACAAAGACGATGA CGATAAGATGGCGCCTAAGAAGAAACGCAAGTGCAGGGGATGAAGAAAGAAAGATTGATCTGTTTTACG GAGCCCTGCTGCACGACATCGGAAAGTTCATCCAGCGAGCAACCGGAGAGCGGAAGAAACACGCACTTGTG GGCGCCGACTGGTTCGACGAGATCGCCGACAACCAAGTCATCTCGGATCAGATCCGGTACCATATGGCCAA CTACCAGTCTGATAAGCTCGGCAACGATCACCTGGCTTACATCACCTACATTGCCGACAACATCGCCTCCG GTGTCGACCGCCGCAATCCAACGAAGAGTCAGACGAAGATACCTCCGCAAGATCTGGGACACCTACACG AACCAGGCCGACATCTTTAACGTGTTGCGAGCGCAGACCGATAAGCGGTACTTCAAGCCTACCGTGCTGAA TCTCAAGTCGAAGCCCAACTTCGCGTCCGCCACTTACGAACCCCTTTAGCAAGGGCGATTACGCTGCCATCG CCACCCGGATTAGAAGCAACTGGCCGAGTTCGAGTTCAACCAAGTCCAGATTGACTCCCTGCTCAACCTT TTCGAGGCTACTCTCTCCTTTCGTGCCGTCAAGCAACACATAAGGAAATCGCCGACATCTCCCTGGCCGA CCATTCCCGCTTGACTGCTGCCTTCGCTCTGGCGATCTACGACTACCTGGAGGACAAGGGTCCGACAACT ACAAAGAGGACCTGTTACCAAAAGTGTACGCGTTCTATGAAGAAGAAGCCTTCTGCTGGCCTCCTTCGAC CTGTGCGGAATCCAGGACTTTATCTACAACATTAACATCGCAACTAACGGCGCGGCAAGCAGCTGAAGGC CCGAGCCTCTACCTGGACTTTATGTCCGAGTACATCGCCGATAGCCTGCTGGACAAGCTGGGACTGAACA GGGCTAACATGCTTTACGTGCGCGCGGACACGCCTACTTCGTCTGGCCAACACCGAAAAGACTGTGGAA ACCTGGGTGCAGTTTGAGAAGGATTTCAACCAAGTTCCTGTTGGCAAACCTCCAGACCCGCCTCTATGTGGC CTTTGGCTGGGGTTCCCTTCGCGGCCAAGGACATCATGTCCGAGCTGAATAGCCCGAGCTCCTACCGCAAG TGTACCAAAAGGCTTCGCGCATGATCTCAAAAAGAAAATCTCCAGATACGACTACCAGACACTGATGCTC CTGAATCGCGGTGGAAGTCTTCAGAGAGAGAGTGCAGAGATTTGCCACTCCGTGGAGAACCTGGTGTCTTA CCACGACCAGAAAGTCTGTGACATTTGCCGGGGACTGTACCAGTTCTCGAAAGAAATTGCCCATGACCACT

	TCATCATTACCGAAAATGAGGGGCTGCCGATTGGACCAAACGCGTGCTTAAAGGGCGTGGCATTGCAAAAG CTGTCCCAAGAAGCGTTACGCCGGGTCTACGTGAAGAATGACTATAAGGCCGTACCGTGAAGGCTACGCA TGTTGTCGTGGGGGATTACCAAGTGCACGAGATCTACAACCTACGCCGCCCTGAGCAAGAACGAGAACGGCC TAGGCATCAAGAGACTGGCCGTGGTCCGGCTCGACGTGGATGACTTGGGCGCCGCTTCATGGCCGGTTTC AGCCAGCAGGGAACGGACAATACTCCACTCTGTCAAGATCGGCCACATTCTCCGGAGCATGTGCGTGTT CTTCAAAGTGTACATTAACCAGTTCGCCTCCGACAAGAAGCTGAGCATTATCTACGCGGGCGGCGATGACG TGTTCCGCCATTGGATCGTGGCAGGATATCATCGCGTTCCTGTGGAACCTTCGCGAAAACCTTCATCAAGTGG ACCAACGGGAAGCTCACCCTCTCCGCGGGGATAGGGTTGTTCCGCCGACAAGACTCCTATTAGCCTGATGGC TCACCAGACCGGGGAACTGGAAGAGGCCGCCAAGGGCAACGAAAAGGACTCCTATCTCGCTGTTCTCAAGCG ACTACACTTTCAAGTTTGATAGTTTCATCACTAACGTGTACGACGACAACTGGAACAGATTAGATACTTC TTCAACCATCAAGACGAGAGGGGAAAGAACTTCATCTATAAGCTTATTGAGCTTTTGAGGAACACGACCG CATGCAATATGGCACGCTCGCTTATTAACCTCACTCGCTGGAAGAAGCTGACCCGGAGCATGTGCGGACACA AGTTCAAGACCTTCAAGAACCTGTTCTACTCTGGTACACCAACAAGAACGATAAGGACCGGAAGGAAGCC GAGCTCGCGCTCCTGCTGTACATCTACGAAATCAGAAAGGATTAacggcaataaaaagacagaataaaacg cacggtgttgggtcgtttggttcGCACACATTAGCTAGCCGTGACGACACATTGTGATGCGGTTTGGCAGT ACATCAATGGGCGTGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGG AGTTTGTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAACCTCCGCCCATTTGACGCAAA GGCGGCTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGG ccgcccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGGCGGATG ACCATCCTGACCGACGAGAAGTACGTGGACATCGCCGAGAAAGCCATCCTGAAGCTGGAAGAAACACCG AAATAGAAAGAACCCTGATGCCTTCTTCTGACCACATCTAAGCTGCGGAACCTGCTGAGCCTGACAAGCA CCCTGTTTCGACGAGCAAGGTGAAGGAATACGACGCCCTGCTGGACAGAATCGCTTATCTGAGAGTGCAG TTCGTGTACCAGGCCGCGAGAGATCGCCGTGAAAGATCTGATCGAGAAGGCCCAGATCCTGGAAGCTCT GAAAGAGATCAAGGACCGGGAAACCCTGCAGAGATTCTGCAGATACATGGAAGCCCTGGTGGCCTACTTCA AGTTCTACGGCGGCAAGGACTGAcggcaataaaaagacagaataaaacgcacggtgttgggtcgtttggttc AGTTCTTTTGCTTACTTTCAATGCGGTGATGCGGTTTGGCAGTACATCAATGGGCGTGATAGCG GTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTGTTTGGCACCAAAATC AACGGGACTTTCCAAAATGTCGTAACAACCTCCGCCCATTTGACGCAAAATGGGCGGTAGGCGTGTACGGTGG GAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgcccaccATGGATTACAAAGA CGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGGGGGCGATGACCTTCGCCAAGATCAAATTCA CGCCCCAGATCCGGCTGGAACCGGCCCTGCACATCGGAGGATCTGATGCCTTTGCGGCTATCGGCGCCATC GCCAGCCCTGTGATCAAGGACCCCATCAACCAACCTGCCTATCATCCCCGGCTTAGCCTGAAGGGCAAGAT GAGAACACTGCTGGCCAAGGTGTACAACGAAAAGGTGGCCGAGAAGCCTAGCGACGACAGCGACATCCTGA GCAGACTGTTTCGGAATAGCAAGGATAAGCGGTTCAAGATGGGCAGACTGATCTTCCGGGACGCCTTCTTG AGCAACGCCGACGAGCTGGATTCTTGGGCGTGCGGAGCTACACCGAGGTGAAGTTCGAGAACACCATCGA TAGAATCACCGCCGAGGCCAATCCTAGACAGATCGAGAGAGCCATTCGGAACCTCAACATTGACTTCGAGC TGATCTACGAGATCACTGATGAGAATGAGAACCAGGTTCAGGAAGATTTCAAGGTGATCAGAGACGGCCTG AAGCTGCTGGAACCTGGACTACCTGGCGGGAAGCGGCTCCAGAGGCTACGGCAAAAGTGGCTTTTGAGAACCT GAAAGCCACCACAGTGTTCGGCAACTACGACGTGAAAACCCCTGAACGAGCTGTGACCGCGAAGTGGGCG GAGGTGCTGCCGCAAtggtgagcaagggcgaggagctgttcaccggggtggtgcccatacctggtcgagctg gacggcgacgtaaacggccacaagttcagcgtgtccggcgagggcgagggcgatgccacctacggcaagct gacctgaagttcatctgcaccaccggcaagctgcccgtgccctggcccacctctgtagaccacctgacct acggcgtagctgttcagccgctaccccgaccacatgaagcagcagcacttctcaagtccgcatgcc gaaggctacgtccaggagcgcaccatcttcttcaaggacgacggcaactacaagaccgcgcgaggtgaa gttcgagggcgacacctggtgaaccgcacgtgaagggcatcgacttcaaggagacggaacatcc tggggcacaagctggagtacaactacaacagccacaacgtctatatcatggccgacagaagacaagcgc atcaaggtgaactcaagatccgcccacaacatcgaggacggcagcgtgcagctcgccgaccactaccagca gaacacccccatcgcgacgccccgtgctgctgcccgacaaccactacctgagcaccacgtccgcccctga gcaaagaccccaacgagaagcgcgatcacatggtcctgctgaggttcgtgaccgcccgcgggatcactctc ggcatggacgagctgtacaagtgcaggcaataaaaagacagaataaaacgcacggtgttgggtcgtttggtt cTGGAATTGCGAGAATGGACTAGTAGCAAACTGTGATGCGGTTTGGCAGTACATCAATGGGCGTGATAGC GGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCACCAAAAT CAACGGGACTTTCCAAAATGTCGTAACAACCTCCGCCCATTTGACGCAAAATGGGCGGTAGGCGTGTACGGT GGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgcccaccATGGATTACAAAG ACGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGGGGGCGATGACTTACAAGCTCTACATTATG ACCTTTCAAAACGCCCACTTCGGTTCCGGCACTCTGGACTCATCGAAGCTGACCTTCTCCGCGGATAGAAT CTTCTCGGCACTCGTGCTCGAGGCTCTGAAGATGGGAAAGCTCGACGCCTTCTTGGCCGAGGCCAACGAG ATAAGTTCACTCTGACCGACGCTTCCCATTCCATTCGGTCTTCTGCTGCCGAAACCGATTGGTTACCC AAGCACGACAGATCGACAGTCTGTGGACGTGAAGGAAGTCCCGCCGAAGCAGGCTGTCCAAAAGCT CCAGTTCTGGCTCTGGAACAGTCGACGACTACCTGAACGGAGAGCTGTTTGAGAATGAGGAACACGCCG TGATCGACACAGTGACCAAGAACCAGCCCCATAAAGATGATAATCTGTACCAAGTGGCCACCACTCGGTTT TCGACGACACCTCCCTTTACGTGATCGCCAACGAATCCGATCTGCTGAACGAACTGATGAGCAGCCTTCA GTACTCCGGGCTGGGCGGCAAAAGGTCTCAGGATTCGGCAGATTTGAGCTGGACATCCAGAACATTCCCT
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	TGGAAGTGTCCGACCGGCTGACGAAGAACCACAGCGACAAGGTCATGTCACCTTACCACCGCCCTCCCGGTG GACGCTGATCTCGAGGAAGCGATGGAAGATGGCCATTACCTGTTGACCAAGTCGTCGGGATTCCGATTCTC CCACGCCACCAACGAAAACATATCGGAAGCAGGACCTGTACAAGTTGCGCTCCGGGAGCACCTTCAGCAAGA CTTTCGAGGGACAGATCGTGGACGTGCGCCCTCTCGATTTCCCTCACGCCGTGCTGAAGTACGCCAAGCCG CTGTTCTTTAAGCTCGAAGTCTAACggcaataaaaagacagaataaaacgcacggtgttgggtcgtttgtt cGCACATTCAAAAACAGGCAATTGGACAAGCGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGC GGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCACCAAAAT CAACGGGACTTTTCAAAAATGTCTGTAACAACCTCCGCCCCATTGACGCAAATGGGCGGTAGGCGGTACGGTG GGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCTCTAGAgccgccaccATGGATTACAAAG ACGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAGTGCGGGGCATGAAAAATGACTACCGGACCTTC AAGCTGAGCCTGCTGACCCTGGCTCCTATCCACATCGGCAACGGCGAGAAGTACACCGAGAGAAATTCAT CTACGAGAACAAGTCTTACTTCCCCGACATGGGCAAGTTCTACAACAAGATGGTGGAAAAAGAGACTGG CCGAGAAGTTCGAGGCCTTCTGTATCCAGACCAGACCCAACGCCAGAAACAACCGGCTGATTTCTTTTCTG AACGACAACAGAATCGCCGAAAGATCTTTTGGCGGCTACAGCATCAGTGAACCGGCCTGGAATCTGATAA GAACCTTAACAGCGCCGGAGCTATCAACGAGGTGAACAAATTCATCCGGGACGCCTTCGGAAATCCTTACA TCCCAGGCAGCAGCCTGAAGGGCGCCATCCGCACCATCCTGATGAACACCACACCTAAGTGGAAACAACGAG AACGCCGTGAACGACTTCGGCAGATTTCCCAAAGGAAAAACAAGAACCTGATCCCTTGGGGACCTAAGAAAGG CAAGGAATACGACGACCTGTTTCAACGCCATCAGAGTGTCCGACAGCAAGCCCTTCGACACAACAAAGCCTGA TCTCGTGAGAGAAGTGGGACTACAGCGCCAAAACCAACAGGCCAAGCCTCTGCCTCTGTACAGAGAGTCT ATCAGCCCTCTGACCAAGATCGAGTTCGAGATAACAACAACCACTGATGAGGCCGGCAGACTGATCGAGGA ACTGGGAAAGCGGGCCAGGCCTTTTATAAGGACTACAAGGCCTTTTCTGTCTGAATTCCTGATGATA AGATCCAGGCTAATCTGCAATACCCCATCTACCTGGGCGCCGGCAGCGCGCTTGGACAAAGACCCCTGTTT AAGCAGGCCGACGGCATCCTGCAGCGGAGATACTCCAGAATGAAAACCAAGATGGTCAAGAAGGGCGTGCT GAAGCTGACAAAGGCCCTCTGAAAACAGTGAAGATCCCCAGCGGCAACCACAGCCTGGTGAAGAATCACG AGAGCTTCTACGAGATGGGCAAGCCAACCTTCATGATCAAGGAATCGACAAGTGAAGcgaataaaaagac agaataaaaacgcacggtgttgggtcgtttgttcATGTGTGCCGGCCGAGAAATAAAAGTCTAAGTGATGCG GTTTTGGCAGTACATCAATGGGCGTGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTTG ACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTTCAAAAATGTCTGTAACAACCTCCGCCCCA TTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCA GATCTCTAGAgccgccaccATGGATTACAAAGACGATGACGATAAGATGGCGCCTAAGAAGAAACGCAAAG TGCGGGGCATGAAAAAGCTCGTGTTACCTTTAAGCGGATCGACCACCCCTGCTCAGGACCTGGCCGTGAAA TTCCACGGCTTCTGATGGAACAGCTGGATAGCGACTACGTGGACTACCTGCACAGCAGCAGACCAACCC CTACGCCACAAAGGTGATCCAGGGCAAAGAGAACCCAGTGGGTGCTGCATCTGCTGACAGACGACATCG AGGACAAGGTGTTTCATGACCCTGCTGCAGATCAAGGAAGTGTCCCTGAACGACCTGCCTAAGTTGTCTGTG GAAAAGGTGGAATCCAGGAGCTGGGCGCTGATAGCTGCTCGAGATCTTCAACAGCGAGGAAAACAGAC CTACTTCAGCATCATCTTCGAGACACCTACAGGCTTTAAAGCCAGGGCAGCTACGTGATCTTCCCCAGCA TGCGGCTGATCTTTCAGAGCCTGATGCAGAAGTACGGCAGACTGGTGGAAAACCGCCTGAGATCGAGGAA GATACCTTGGACTACCTGAGCGAGCAGACCACTACCAATTACAGACTGGAACAAGTACTTTCAGAGT GCATGACAGAGAATCCCCGCCTTCCGGGGCAAGCTGACCTTCAAGGTGCAGGGAGCCAGACACTGAAGG CCTACGTGAAGATGCTGCTGACCTTCGGCGAGTACAGCGGCCTGGGCATGAAAACCGCCTGGGAATGGGC GGCATCAAGCTGGAAGAAAGAAAGGACTGAcggcaataaaaagacagaataaaaacgcacggtgttgggtcg tttgttcGTGCGATAGAGGGATCCAGTGCACCGGTTGGAGGGCCTATTTCCCATGATTTCCTTCATATTTGC ATATACGATACAAGGCTGTTAGAGAGATAATTAGAATTAATTGACTGTAAACACAAAGATATTAGTACAA AATACGTGACGTAGAAAGTAATAATTTCTTGGGTAGTTTGCAGTTTTTAAATTTATGTTTTAAATGGACATA TCATATGCTTACCCTAAGTTGAAAGTATTTTCGATTTTCTTGGCTTTATATATCTTGTGGAAGGACGAAACA CCGATATAAACCTAATTACCTCGAGAGGGGACGGAACCCGCTCTTCGATGAAGCGATTTCAGAAGACTTGAT ATAAACCTAATTACCTCGAGAGGGGACTTTTTTACATGTGTGACAGGTTTTTACCCTCATCACCGAAACGC GCGAGACGAAAGGGCCTCGTGATACGCCTATTTTTATAGGTTAATGTGATGATAATAATGGTTTCTTAGAC GTCAGGTGGCACTTTTCGGGGAATGTGCGCGGAACCCCTATTTGTTTTATTTTCTAAATACATTCAAATA TGATCCGCTCATGAGACAATAACCTGATAAATGCTTCAATAATATTGAAAAAGGAAGAGTATGAGTATT CAACATTTCCGTGTCGCCCTTATTCCTTTTTTGGCGCATTTCCTTCCTGTTTTGCTCACCAGAAAC GCTGGTGAAGTAAAAGATGCTGAAGATCAGTTGGGTGCACGAGTGGGTTACATCGAACTGGATCTCAACA GCGGTAAGATCCTTGAGAGTTTTTCGCCCCGAAGAACGTTTTTCCAATGATGAGCACTTTTAAAGTTCTGCTA TGTTGGCGCGGTATTATCCCGTATTGACGCCGGGCAAGAGCAACTCGGTGCGCGCATACACTATTCTCAGAA TGACTTGGTTGAGTACTACCAGTCAAGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGCA GTGCTGCCATAACCATGAGTGATAAAGTGCAGGCAACTTACTTCTGACAACGATCGGAGGACCGAAGGAG CTAACCGCTTTTTTGCACAACATGGGGGATCATGTAACCTCGCCTTGATCGTTGGGAACCGGAGCTGAATGA AGCCATACCAACGACGAGCGTGACCAACGATGCCTGTAGCAATGGCAACAACGTTTCGCGCAACTATTAA CTGGCGAACTACTTACTAGCTTCCCGGCAACAAATTAAGACTGGATGGAGGCGGATAAAAGTTGCAGGA CCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCTGATAAATCTGGAGCCGGTGAGCGTGGGTC TCGCGGTATCATTGCAGCACTGGGGCCAGATGGTAAGCCCTCCCGTATCGTAGTTATCTACACGACGGGGA GTCAGGCAACTATGGATGAACGAAATAGACAGATCGCTGAGATAGGTGCCTCACTGATTAAGCATTGGTAA CTGTCAGACCAAGTTTACTCATATATACTTTAGATTGATTTAAACTTCATTTTAAATTTAAAGGATCTA
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	GGTGAAGATCCTTTTGGATAATCTCATGACCAAAATCCCTTAACGTGAGTTTTCGTTCCACTGAGCGTCAG ACCCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTCTGCGCGTAATCTGCTGCTTGCAAACA AAAAAACACCGCTACCAGCGGTGGTTTGTGTTGCCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAAC TGGCTTCAGCAGAGCGCAGATACCAAATACTGTTCTTCTAGTGTAGCCGTAGTTAGGCCACCACTTCAAGA ACTCTGTAGCACCGCTACATACCTCGCTCTGCTAATCCTGTTACCAAGTGGCTGCTGCCAGTGGCGATAAG TCGTGTCTTACCGGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTGCGGGCTGAACGGGGGG TTCGTGCACACAGCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAG AAAGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAG CGCAGAGGGAGCTTCCAGGGGAAACGCCTGGTATCTTTATAGTCCTGTCGGGTTTCGCCACCTCTGACT TGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGGCGGAGCCTATGGAAAAACGCCAGCAACGCGGCCTTTT TCTTAAGC
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Plasmid	pDAC689
Description	Expression of Cas13; RFP backbone
Utility	RNA KD
Features	Pcmv-NLS-Cas13-NLS-pA; Pu6-crRNA-pT; Pcmv-RFP-pA
Sequence	GTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGATTTCCAAGTCTCCA CCCCATTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCTGTAACAACT CCGCCCCATTGACGCAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTG AACCGTCAGATCTCTAGAgccgccaccATGcccaagaagaagagaaggtggagggcagcatcgagaagaa gaagagcttcgccaaagggcatgggagtgaaagacccctgggtgtccggctctaaggtgtacatgaccacat ttgtctgaggggaagcgacgccaggctggagaagatcggtggagggcgatagcatcagatccgtgaacgagggga gaggttttcagcgccgagatggctgacaagaacgctggctacaagatcggaacgccaagttttccacccc aaagggctacgccgtgggtggctaacaacccactgtacaccggaccagtgacagcaggacatgctgggactga aggagacactggagaagaggtacttcggcgagtcgcccgacggaaacgataacatctgcatccagggtcatc cacaacatcctggatatcgagaagatcctggctgagtagcatcacaaacgccgttacgccgtgaacaacat ctccggcctggacaagatatcatcggtcttcggaagttttctaccgtgtacacatacagacaggttcaagg atccagagcaccacggggccgcttttaacaacaacgcagaagctgatcaacgccatcaaggctcagtagcac gagttcgataactttctggataaccccaggctgggctacttcggacaggctttcttttctaaggagggcgag aaactacatcatcaactacggaacgagtggttacgatatcctggcgctgctgagcggactgaggcactggg tggtgcacaacaacgaggaggaggtctcggtatctctgcacactggctgtacaacctggacaagaacctggat aacgagtacatctccacactgaactacctgtacgacaggatcaccaacgagctgacaaacagcttctccaa gaactctgccgctaactgaactacatcgctgagaccctgggcatcaaccagctgagttcgtctgagcagtg acttcagattttccatcatgaaggagcgagaagaacctgggcttaacatcacaaagctgagagaagtgatg ctggacagaaaggatatgtccgagatcaggaagaaccacaaggtgttcgattctatcagaaccaaggtgta cacaatgatggactttgtgatctacaggtactacatcgaggaggatgccaaggtggccgctgccacaaga gcctgcccgcacaacgagaagtcctgagcgagaaggatattctcgatgatcaacctgagagggtcctttaac gacgatcagaaggacgctctgtactacgatgagggcaacaggatctggagaaagctggagaacatcatgca caacatcaaggagttccgggggaacaagaccgcgagtacaagaagaaggacgctccaaggctgcctagga tcctgctgctggaaggagcgtgagcgcttcagcaagctgatgtacgccctgacaatgtttctggaacgga aaggagatcaacgatctgctgaccacactgatcaacaagttcgacaacatccagtccttttctgaaagtgat gcctctgatcgccgtgaacgctaagttcgtggaggagtacgccttctttaaggacagcgccaagatcgctg atgagctgcggtgatcaagtcctttgcccaggatgggagagccaatcgctgacgctaggagagctatgtac atcgatgccatccgatcctgggaaccaacctgtcttacgacgagctgaaggctctggccgacaccttcag cctggatgagaacggcaacaagctgaagaagggcaagcaggaatgcgcaactcatcatcaacaacgtga tcagcaacaacgggtttcactacctgatcagatacggcgaccagctcacctgacagagatcgtaagaac gagggcgtggtgaagttcgtgctgggacggatcccgatatccagaagaagcagggccagaacggaaagaa ccagatcgaccgctactacgagacctgcacggaaggataagggaagtcctgtctgagaaggtggacg ctctgaccaagatcatcacaggcatgaactacgaccagtttcgataagaagagatctgtgatcgaggacacc ggaaggggagaacgagagagagaagtttaagaagatcatcagcctgtacctgacagtgatctaccacat cctgaagaacatcgtgaacatcaacgctagatcgtgatcggttccactgcgtggagcgcatgccagc tgtacaaggagaagggatacgacatcaacctgaagaagctggaggagaagggtcttagctccgtgaccaag ctgtgctgctggaatcgacgagacagccccgacaagaggaaggtgtggagaaggagatggccgagagagc taaggagagcatcgactccctggagtcgttaaccctaagctgtacgccaactacatcaagtaactccgatg agaagaaggccgaggagtttaccaggcagatcaacagagagaaggccaagaccgctctgaacgcctacctg aggaacacaaagtgaacgtgatcatccgggaggacctgctgctgcacatcgataacaagacctgtacactgtt ccggaacaaggctgtgcacctggaggtggctcgtacgtgcacgcctacatcaacgacatcgccgaggtga actcctactttcagctgtaccactacatcatgcagaggatcatcatgaacgagagatacgagaagtcctagc ggcaagggtgtctgagtacttcgacgccgtgaacgatgagaagaagtacaacgatagactgctgaagctgct gtgctgcttttcgataactgtatccacgggttaagaacctgagcatcgaggcctgttcgaccgcaacg aggctgccaaagtttgataaggagaagaagaaggtgagcggaactccggatccggacctaagaaaaagagg aagggtgtgacggcaataaaaaagacagaataaaacgcacgggtgttggtcgtttgttcGTGCGATAGAGGGA TCCCGCATTGAATTATGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGG

	GATTTCGAAGTCTCCACCCCATTTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCCA AAATGTGCGTAACAACTCCGCCCATTTGACGCAAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAG CAGAGCTCGTTTTAGTGAAACCGTCAGATCTCTAGAgccgccaccATGGTGAGCAAGGGCGAGGAGGATAACA TGCCCATCATCAAGGAGTTCATGCGCTTCAAGGTGCACATGGAGGGCTCCGTGAACGGCCACGAGTTCGAG ATCGAGGGCGAGGGCGAGGGCGCCCTACGAGGGCACCCAGACCGCCAAGCTGAAGGTGACCAAGGGTGG CCCCCTGCCCTTCGCCTGGGACATCCTGTCCCCTCAGTTCATGTACGGCTCCAAGGCCTACGTGAAGCACC CCGCCGACATCCCCGACTACTTGAAGCTGTCCCTCCCCGAGGGCTTCAAGTGGGAGCGCGTGATGAACTTC GAGGACGGCGGCGTGGTGACCGTGACCCAGGACTCCTCCCTGCAGGACGGCGAGTTCATCTACAAGGTGAA GCTGCGCGGCACCAACTTCCCCTCCGACGGCCCCGTAATGCAGAAGAAAACCATGGGGCTGGGAGGCCTCCT CCGAGCGGATGTACCCCGAGGACGGCGCCCTGAAGGGCGAGATCAAGCAGAGGGCTGAAGCTGAAGGACGGC GGCCATACGACGCTGAGGTCAAGACCCTACAAGGCCAAGAAGCCCCGTGCAGCTGCCCGCGCCTACAA CGTCAACATCAAGTTGGACATCACCTCCCAACAGGACTACACCATCGTGGAAACGATACGAAACGGCCCG AGGGCCGCCACTCCACCGCGGCGCATGGACGAGCTGTACAAGTAACgggaataaaaaagacagaataaaacgc acggtgttggtcggtgttggttcGAGCAGATTGTACTGAGAGTGCACCGGTTGGAGGGCCTATTTCCCATGAT TCCTTCATATTTGCATATACGATACAAGGCTGTAGAGAGATAATTAGAATTAATTTGACTGTAACACAA AGATATTAGTACAAAATACGTGACGTAGAAAGTAATAATTTCTTGGGTAGTTTGCAGTTTTAAATATATGT TTTAAATGGACTATCATATGCTTACCGTAACCTGAAAGTATTTGATTTCTTGGCTTTATATATCTTGTG GAAAGGACGAAACACCGcaagtaaaccctaccactggtcggggtttgaaacgggtcttcgagaagaccc TTTTTTACATGTGTGAGAGTTTTTACCCTCATCACGAAACGCGGAGACGAAAGGGCCTCGTGATACGC CTATTTTTATAGGTTAATGTCATGATAATAATGGTTTCTTAGACGTGAGGTGGCACTTTTCGGGAAATGT GCGCGGAACCCCTATTTGTTTATTTTCTAAATACATTCAAATATGTATCCGCTCATGAGACAATAACCCCT GATAAATGCTTCAATAATATTGAAAAAGGAAGAGTATGAGTATCAACATTTCCGTGTCGCCCTTATTCCC TTTTTTGCGGCATTTTGCTTCTGTGTTTGTCTACCCAGAAACGCTGGTGAAAGTAAAAGATGCTGAAGA TCAGTTGGGTGCACGAGTGGTTACATCGAAGTGGATCTCAACAGCGGTAAGATCCTTGAGAGTTTTCGCC CCGAAGAACGTTTTCCAATGATGAGCACTTTTAAAGTTCTGCTATGTGGCGCGGTATTATCCCGTATTGAC GCCGGGCAAGAGCAACTCGGTGCGCGCATACACTATTCTCAGAATGACTTGGTTGAGTACTACCAGTCAC AGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGCAGTGCTGCCATAACCATGAGTGATAACA CTGCGGCCAACTTACTTCTGACAAAGATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGG GATCATGTAACCTCGCCTTGATCGTTGGGAACCGGAGCTGAATGAAGCCATACCAAACGACGAGCGTGACAC CACGATGCCTGTAGCAATGGCAACAACGTTGCGCAAACTATTAAGTGGCGAACTACTTACTCTAGCTTCCC GGCAACAATTAATAGACTGGATGGAGCGGATAAAGTTGACGAGCACTTCTGCGCTCGGCCCTTCCGGCT GGCTGGTTTTATTGCTGATAAATCTGGAGCCGGTGAGCGTGGGTCTCGCGGTATCATTGCAGCATGGGGCC AGATGGTAAGCCCTCCCGTATCGTAGTTATCTACACGACGGGGAGTCAGGCAACTATGGATGAACGAAATA GACAGATCGCTGAGATAGGTGCCTCACTGATTAAGCATTGGTAACTGTCAGACCAAGTTTACTCATATATA CTTTAGATTGATTTAAACTTCAATTTTAAATTTAAAGGATCTAGGTGAAGATCCTTTTTTGATAATCTCAT GACCAAAATCCCTTAACGTGAGTTTTCTGTTCCACTGAGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTT CTTGAGATCCTTTTTTCTGCGCGTAATCTGCTGCTTGCAACAAAAAAACCACCGCTACCAGCGGTGGTT TGTTTGCCGATCAAGAGTACCAACTCTTTTTCCGAAGGTAAGTGGCTTCAGCAGAGCGCAGATACCAAA TACTGTTCTTCTAGTGATAGCGTAGTTAGGCCCACTTCAAGAACTCTGTAGCACCGCCTACATACCTCG CTCTGCTAATCCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCGTGTCTTACCAGGTTGGACTCAAGA CGATAGTTACCGGATAAGGCGCAGCGGTGCGGCTGAACGGGGGGTTCGTGCACACAGCCAGCTTGAGGCG AACGACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAA AGGCGGACAGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAAAC GCCTGGTATCTTTATAGTCCTGTGCGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTC AGGGGGCGGAGCCTATGAAAAACGCCAGCAACGCGGCCTTTTCTTAAGC
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Plasmid	pDAC690
Description	Expression of shRNA; RFP backbone
Utility	RNA KD
Features	Pu6-shRNA-pT; Pcmv-RFP-pA
Sequence	GTGATGCGGTTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGAAGTACACGGGGATTTCCAAGTCTCCA CCCCATTGACGTCAATGGGAGTTTGTGTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTAACAAC CCGCCCCATTGACGCAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTG AACCCTCAGATCTCTAGAgccgccaccATGGTGAGCAAGGGCGAGGAGGATAACATGGCCATCATCAAGGA GTTTCATGCGCTTCAAGGTGCACATGGAGGGCTCCGTGAACGGCCACGAGTTCGAGATCGAGGGCGAGGGCG AGGGCCGCCCCCTACGAGGGCACCCAGACCGCCAAGCTGAAGGTGACCAAGGGTGGCCCCCTGCCCTTCGCC TGGGACATCCTGTCCCCTCAGTTCATGTACGGTCCAAGGCCTACGTGAAGCACCCTCCGACATCCCCGA CTACTTGAAGCTGTCCCTCCCCGAGGGCTTCAAGTGGGAGCGCGTGATGAACTTCGAGGACGGCGGCGTG TGACCGTGACCCAGGACTCCTCCCTGCAGGACGGCGAGTTTCATCTACAAGGTGAAGCTGCGCGGCACCA TTCCCCCTCCGACGGCCCCGTAATGCAGAAGAAAAACCATGGGCTGGGAGGCCTCCTCCGAGCGGATGTACCC CGAGGACGGCGCCCTGAAGGGCGAGATCAAGCAGAGGCTGAAGCTGAAGGACGGCGGCCACTACGACGCTG AGGTCAAGACCACCTACAAGGCCAAGAAGCCCCGTGCAGCTGCCCCGGCGCTACAACGTCAACATCAAGTTG GACATCACCTCCCAACGAGGACTACACCATCGTGAACAGTACGAACGCGCCGAGGGCCGCACTCCAC

	CGGCGGCATGGACGAGCTGTACAAGTAACggcaataaaaaagacagaataaaaacgcacggtgttgggtcggt tgttcGAGCAGATTGTACTGAGAGTGCACCGGTTGGAGGGCCTATTTCCCATGATTCCTTCATATTTGCAT ATACGATACAAGGCTGTTAGAGAGATAATTAGAATTAATTTGACTGTAAACACAAAGATATTAGTACAAAA TACGTGACGTAGAAAAGTAATAATTTCTTGGGTAGTTTGCAGTTTAAAAATTATGTTTTAAAATGGACTATC ATATGCTTACCGTAACTTGAAAGTATTTTCGATTTCTTGGCTTTATATATCTTTGTGAAAAGGACGAAACACC GcgtcttcCCTGACCCAgaagacgCTTTTTTACATGTGTGACAGGTTTTTCACCGTCATCACCGAAACGCGC GAGACGAAAGGGCCTCGTGATACGCCTATTTTTTATAGGTTAATGTCATGATAATAATGGTTTTCTTAGACGT CAGGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTTCTAAATACATTCAAATATG TATCCGCTCATGAGACAATAACCCGTATAAATGCTTCAATAATATTGAAAAAGGAAGAGTATGAGTATTCA ACATTTCCGTGTCGCCCTTATTCCTTTTTTTCGGGCATTTTGCCCTTCCTGTTTTTGTCTACCCAGAAACGC TGGTGAAAGTAAAAGATGCTGAAGATCAGTTGGGTGCACGAGTGGGTACATCGAACTGGATCTCAACAGC GGTAAGATCCTTGAGAGTTTTTCGCCCCGAAGAACGTTTTTCCAATGATGAGCATTTTTAAAGTTCTGCTATG TGGCGCGGTATTATCCCGTATTGACGCCGGGCAAGAGCAACTCGGTGCGCGCATACACTATTCTCAGAATG ACTTGGTTGAGTACTACCACTCACAGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGCAGT GCTGCCATAACCATGAGTGATAAAGTGCAGGCACTTACTTCTGACAACGATCGGAGGACCGAAGGAGCT AACCCTTTTTTGCACAACATGGGGGATCATGTAAGTTCGCTTGATCGTTGGGAACCGGAGCTGAATGAAG CCATACCAAACGACGAGCGTGACACCACGATGCCTGTAGCAATGGCAACAACGTTGCGCAAACCTATTAAC GGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAGGCGGATAAAGTTGCAGGACC ACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCTGATAAATCTGGAGCCGGTGAGCGTGGGTCTC GCGGTATCATTGCAGCACTGGGGCCAGATGGTAAGCCCTCCCGTATCGTAGTTATCTACACGACGGGGAGT CAGGCAACTATGGATGAACGAAATAGACAGATCGCTGAGATAGGTGCCTCACTGATTAAGCATTGGTAACT GTCAGACCAAGTTTACTCATATATACTTTAGATTGATTTAAACTTCATTTTTTAATTTAAAAGGATCTAGG TGAAGATCCTTTTTGATAATCTCATGACCAAAATCCCTTAACGTGAGTTTTTCGTTCCACTGAGCGTCAGAC CCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTTCTGCGCGTAATCTGCTGCTTGCAAACAAA AAAACCAACCGCTACCAGCGGTGGTTTGGTTTGCCGGATCAAGAGCTACCAACTCTTTTCCGAAGGTAAGT GCTTCAGCAGAGCGCAGATACCAATACTGTTCTTCTAGTGTAGCCGTAGTTAGGCCACCACTTCAAGAAC TCTGTAGCACCGCTACATACCTCGCTCTGCTAATCCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTC GTGTCTTACCGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTGCGGCTGAACGGGGGGTT CGTGACACAGCCAGCTTGGAGCGAACGACCTACACCGAAGTACCTACAGCGTGAGCTATGAGAA AGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGGTCGGAACAGGAGAGCG CACGAGGGAGCTTCCAGGGGGAAACGCTGGTATCTTTATAGTCCTGTCGGGTTTCGCCACCTCTGACTTG AGCGTCGATTTTTGTGATGCTCGTCAGGGGGCGGAGCCTATGAAAAACGCCAGCAACGCGGCCTTTTTTC TTAAGC
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