



Lexicon Genetics Incorporated – Genentech Project Materials

Genentech ID:	UNQ2945	Date of Submission:	12.21.04
Lexicon Contract Name:	DNA478	Mutation Type:	☒ Standard Knock out
LexVision Name:	SEC616N1		☐ Conditional
Reference accessions:	ENSMUST00000026234, AK030678	Is this gene X-linked?	No

Required Materials: x pKOS clone DNA(s) __N/A_____
 x Target Vector DNA __TVscrambler-12_____
 x Targeted ES Cell DNA __1E4_____
 x Genomic Map

Southern Blot Analysis:
External/Internal Probe Strategies

	<u>5' Internal</u>	<u>3' External</u>
Name of Probe:	1+2	28+25
Restriction Enzyme for Genomic Digest:	BamHI	BamHI
Predicted Wild-type Band (kb):	7.1 kb	6.5 kb
Predicted Mutant Band (kb):	6.0 kb	4.5 kb
Probe Size:	286 bp	213 bp

PCR Strategies:*For standard knockouts, give wildtype and mutant-specific strategies**For conditionals, give 5' loxP and cre-excision strategies*

Wild type-specific (absent in targeted allele)		Mutation-specific product (absent in wt)	
5' Primer Name:	DNA478-31	5' Primer Name:	Neo3a
3' Primer Name:	DNA478-32	3' Primer Name:	DNA478-10
Predicted Wild-type Band (bp):	345 bp	Predicted Wild-type Band (bp):	none
Predicted mutant band (bp)	none	Predicted mutant band (bp)	269 bp

5' loxP strategy		Distinguish Cre-excised and wt	
5' Primer Name:		5' Primer Name:	
3' Primer Name:		3' Primer Name:	
Predicted Wild-type Band (bp):		Predicted Wild-type Band (bp):	
Predicted mutant band (bp)		Predicted mutant band (bp)	

Primer sequences:**Southern probes**

DNA478-1 5' – CACCTGATAAAGTGCCGGACAAG
 DNA478-2 5' – GAGGCTAGGGATTAACCTCGACGGA
 DNA478-28 5' – AGACCAGGAGGGGAGCAC
 DNA478-25 5' – GCGAGAGAGGACGGGAAAGCGACTTG

PCR Genotyping

DNA478-31 5' – AGGTTTGAGGTGCCTAAGAGC
 DNA478-32 5' – CAACTCCAGCCTAGCCAGACTATA
 DNA478-10 5' – AGTCAGATTGCTCTAGGCTCCCTC
 Neo3a 5' –GCAGCGCATCGCCTTCTATC

Genomic Sequence Deleted:

TGCCACGCATCCCCTGACAGAAGCAGGGGTGGCCTGCGGGTCTGGCTGGCCGTGCATGCGACTCTTCGTTCCCTACCGTTTTTTTTTTTTTTAGGTT
GGAAATCCAAGGCATAGGTGAGTCTGGTATGTCCCCAGCACCATACCCCCAAGTTTACATCAAGTGTAGTTTTATCTATCTCTGGGGC
AAAGATGCACATCAGAGTTGGGCTGTCCTTGCTACTACCATTATTGCTGGTGGTGTGGACCCAGCTACCCGTTAGCGCGAGGCCGTCCACAGGCCCGATT
ATGCTGTGTATGGGTGTGTGCATCCCTGCATGGGTGTTAGTGATCATTCCCCGATACACTCTCTCTTTATTCCCTAGTCCCCAAGACCAGCTTAATCAA
TTACCAACTGGCATAAACCCCTGGGAATCACCAGGCTTCTTTGTTAGGGCTTCTAGTTGGCTACAGGGTAGCAGAGGATAGAATCAAGCTTTTATACAG
CCTTGACTTTATCTCTGACCTCCAGACCTGGCTTCCCTCTCCTGGCAGGGTGCCACCTACGCGCCGATGCCCCGAGTGTTACAGGGCTTCCAGCTAACT
ATGCTGCACCTACCTTGGCGCTGTCCTTGCTACTACCATTATTGCTGGTGGTGTGGACCCAGCTACCCGTTAGCGCGAGGCCGTCCACAGGCCCGATT
ACCTGCGGCGAGGGCTGGCTGCGGCTGCTAGCCGAGGGCGAGGGTGTGCTCCTGCGGCCAGAAGAGTGCGCTGCGCCGCGGGGATGCCTAGCAGG
CCGGGTGCGGGATGCGTGCGGCTGCTGCTGGGAATGCGCAAACCTGGAGGGGCCAGCTCTGCGATCTGGACCCAGCGCTAACTTCTACGGGCGCTGCG
GCGAGCAGCTCGAGTGCAAGCTGGACGCGGGCGGTGACCTGAGTCGAGGAGAGGTGCGGAGCCGCTGTGTGTCTGCCGCTCGCAGCGCCCGCTCTGT
GGTTCGGACGGCGAACCTACGCGCAGATCTGTCCCTGAGGAGGCCGCCGCTCGGCTGGACGCTAACCTCACTGTGGTGTCATCCGGGGCCCTG
CGAATCGGGTACGCAAGTCCAGGGCTTTTAGTACCAGGAACCTGGCTCCCCAAAGGCACTACTCCCGATCCCCGACAGCGTTGCTCTGTGGTCAGC
AGAATGAATAGTTGAGGGAGACCATGAGCCTCAAAGGCTGCCAACTAAAAAGCAGGTTGAGATTTGTTGCCAGGTTTGAGGTGCCTAAGAGCTCTATC
CAGGCAGGTCTTTGACAGGACTGGCCTCCGAAGGAACAGGCACATAGCCAATAGCTGGGTCTGAAGTGAAGGACCCCGCTTACCCAAAACTTTGCG
TAGACTGTCTGGAGCCCTGTGAGATGCATCCTGTTAACCTGGCTCCCGCTCATCAGTTTTCTACGCATTTAGGAATTAGAGAAGGGAAGATAGCTTCT
TGCCCTCTCTTGCCCTCATCTTTGGGTTGGGTTGGGTTGAGGTTGCTTCTGTTTCTGTTGCGCCACCCACACTTCTCTAGCTTTTACCTACTCTATA
GTCTGGCTAGGCTGGAGTTGCAGTGGAAATAAATGCACTAGCAGGGGCGGGGGGGGGGGTCCCAACAGTTTTCTGCCGTGCAACAAGGAGGTTTCA
GGTTCCTCTGCTGCGGTGTTTTTCCACCTCCTCCTCTCGGAGCCAGATCCTGTCTGATTCTCAGCAGATTTGGAATGTGGCTGCTCTCAAGCCTTTG
GGAATCGGGCTAGTTAGAAAAAGGGGAAGGAGGGAGGGAGGTGTTGGTTACACGACCCCGAGGAAGGGGCCCTTGGGTAGAATGAGGGCAGCGG
AGCAGTCCAGGACAGAGCATGTTTATCTAGCTAAGCTGTGGGTCTGTAGCAACGCTCTGTGTAATGGACACTGCTCTCTGCTGTGCTGCCCTGCGAAC
TTGGCTGTTGTGCCCTTGTGTGCATCCCCCTACTTTGTACGTCTCCTGGCTTGTGGCATATTTTGTTGCAGATGCATGTTGCCCTTGGCATGCTTTGT
GTCCCGCTCCCAACATATCCACATCAATTTGTAATTTGTGTCTCCCCGAGCTGGATACAGCCTCCTGTTCTCAAGCCTCATATTTCCATCCCCCTGCC
CAGAGCCCCAGATCCTGTGCGAGCCTCACAATATTTGGAATGTGACCGCAGGATGTGATCTTTGGCTGTGAGGTGTTTGCCTAGCCCCATGGCCTCGA
TTAGTGGAGGAAAGTGTGGACTTGGACATCCAGCTCGGGGGGAGCCCTCATATCTCTGACAGGTAGGGGACAGGAGCGGCATCTCTTTGA
AAAAACAAAAACAAAAACAAAAAACAGGACTTCTGCAGATGACCTTGTGACAGCAAGGTCTGTCTCCAGTTTAGGGGTGGACCTCAGAAGTTGA
GGTACTGGCTGGCTACAGATTCAAGCTTTGCGCCCTAGTGATGAGGGCACCTACCGTTGCCCTTGGCCGAATGCTCTGGGCCAAGCGGAAGCTTCTGC
AACCCTCACAGTGCTCACACCAGGTAAGGGAGCCCTGAGCGCTGGGCACCAGGATGGGCTGCATTAGGACTCTTGGATGCTGTAAGGAACAGGCTGC
ATGTGATTCGGACACACGCGTGCCCTCCCATACACCAAGTCTCTCCCTGACCTTTTCTTCCACCGTATGTTGACAGCAGCTGAACGCCACG
GGATTCCTCCAGCTGCAATCACGGAGTTTGTTCCTGAGGAGGAGGAGGAGGCGAAGAGTGAAGAGTTGGGCGATTACTACTAGGTCCAGATCTCTGC
TTTGACAGGTGTGGGCATGTGGACAGAGCCCTGCATCCTTGTCTGTCTAGAAAGCCCGGAGAAGACTGGAAAAGGCGAGCAGGGTCTTACATGGATTGT
TTAATGCTCAGTGTAGCCTCAGCTCATCTTTCCTCAAACTCATCTTTCAGAAAGCGTCCGCGGTAGAGATGAGCGCAGCGGAAGTATTAGTTACAGTA
CAGGGAGAGGGGTGGGGTAGCTCCGTGTCTTATACACTCTAGGGGACAAAACCCACCTAGCATACGACTAGACACAGTGGGCACCAATAAAAAAATA
TATAAACAAACCGA

Genomic Locus: (*The deleted sequence represents nt 13223-16394 in the sequence below.*)

AGAGGTGTTTGGGAGCGGGGCAAAACTAACGACTCAAAAGTCAAATCATGGGTCCAAACAGACAGCCTGTGTTCTGCTTGAGACAGCTTTTCAGATTG
CTGAGTTTGTGTGTGTGTGTGTTTTCTGCTGAGCCTGGACCTAAACTCCCTCTGTCCAGGCAGACCTTGATCTCAGGAATCTGCCTTCCTTTTTTTTT
TTTTTTTTTAATTAAGTTTAAATTAATTTATTATATGTAAGTACACTGTAGCTGTCTTCAGACACTCCAGAAGAGGGAGTCAGATCTTGTAAGGATGGTT
GTGACCCACCAATGTTGTCTGGGATTTGAACTCTTGAACTTCGGAAGAGAGAGTCTGGGTGCTCTTACCCTAGGACCTATCTACCACCGCCGTATTTTT
TTTAAAACTGCTTTGATAAGGGTTGTGAAACCTTCAACCTCCCTTTTAGCCAAAGGTAGGGGAGGAAGATGGCCAGCCTGGTCTACAGAGTGAGTTCC
AGGATAGCCAGGGCTACACAGAGAAAACCTGTCTCGAAAAAACAAAAACAAACAAAAATCCCAATCTACCACATTAGTTTTTCAAACAGCT
ACAGAGTTATTTATGTATAAGAACTTAGGAGTTTTGGGGCCTATTTAAGGGCCAATATTTTAAATATTTAAGGGAACCTTTTAGACAATGTGGGGGCCCTT
CCTAAGTGTAGGAAGGCACACTGCAATGTTTCTAGTCTCAGATCTGTGAAATCATGCAATGTGTCTTTATACAAATGTTCCGACCGGGCGT
GGTGGCGCAGCCTTTGATCCGACCTCTCGGAGGACAGGAGGCTGGGATTTCTGAGTTCGAGGCCAGCCTGGTCTACAAAGTGAGTTCCAGGACAGC
CAGGGCTATACAGAGAAACCTTGTCTCGAAAAACAAAAAATAAAAAAAAAAATTGTTCCCTCACTGGATTCTTTTGCTTCGTGTGTGTGCTAGCA
ACGGGTCTTTCTGACGTTTCGGCAAGGGCTCTTCATTGGGCTGCACCTCCAGCCAATTTCATTGGATTCTTACCCTCCATCTGGGACATAGAATCCTTGCTT
TATTGGTGGTCCACATTTGTATCTGAAGGTATAGGGAGAGAGGAGGCTTAAAGCACTAGTAGTGGATAGTGAATTTGGAAGTCAGAGCTTCA
CTGCCAACCTCCAACTCCAGCTCAGACCTGAAAAGAGAGATAAAGGGCCCTCTTCGCAAGGCTCTGCTGACATCCCTCATAGCTG
CTCTATGTACTGGTATCCGTGGCAATCTGCTTTACAATGCGCCCCCTGGAGGCTACAACCTGTCTGATGGGCTGGGCAGATTAGCAATCTTCCAATCAC
TGGACATCTGAGAGGAGGGGACAGAGTGGGCACCCCTGGGCTTCACTAGAGCCACGTCCTCCCTCCCTCCACACCAGCATCCTCAGGTGGCTAGC
AGGCGCCATAGGGCGGCAACACGCGCAGGACCCGCGGGTCCCCAGCTCCCTGCCCTACATTTAAAGATGCGGAGGGCGCCAGGGCTGCAGTGGCCACA
AACATGAAGACAAATTTAATCCCGACGAAGAAGATGTCTGGAGATGTGGGGCGCGGAGAAAAATGAATTAGGTTTTATTATGTGTTTTATTATGCT
TGCAATTGAACAGGATTAGGTGAGAATACAATATATTTCTGATGCAGCAGGAGGCTGCGGGAGAGAGGCTGACAGCAGGCCCTGAGAAGGTGAACTC
TGAGAGGAGGAGTGTGTGTGTGTGTGGGGGGGGGGTCTGGATGCAGCAGTCCCAAGGGAGAGACCAAGGAGAGGCATAAATGGCTGGCGGGCT
ATTCTCTGTGCCCTAGGAAAGCTTGACTTTGAATGGGGGGTGGTACTCCTTTGAGAGGATGGTATTTGTAGCTTGCTAAAGGAAGGCTTTGAATGTGTG
TGTGTGTGTGTGTGTGTGTGTGTGTGAG
AGATAAAGGTGTTTTCTGAAGGGAAAGTGAGTCTCAGATAGGGATGTGGGCCAGGTATGAAGACTGGACCCCTCTGGGACAATTGCGGTCCGAAGGCCA
GGGACTGACACTGGTTCTTTTGTAGACTCAGTCTCTAGACTCAGGCCCTGAGAGTCATTTTCTTCTATGCCCTGTCTTTATTTTATTTTATTTTATTTT
TTGCTCAGCTTAAATTTTTTACCTTCCGTGTTTGTATGGCAGAGTCTCGGCGCCTTTGTATCTTTAATGTATGAGCCAGGGAGCTAGGGATCTGTAAGTT
ATATTGACTTTGGGAGTGCCCACTGTGTGCTGAGTCTAGCTTATTGCAAGGCTACCTTGTCTTGGTCTCTCCCCCCCCCCCCAAATCCCGCCCAAT
GGCCATCACCATCCCTTCCCTCTCATCCGGGGTCCAAAGGAGACCTCTGGGATGAAGGCTCCAGCTGGAATCTGAGGCTGAGGGTGGAGGAGACGCC
CCTTCTCAGCTGGAACCGTCATCTCCCTTCTCCGAGCACCCAGCCTAGGCAGCTTCATTAAGGGCAGTCCGCCCGTCTCACCTGCTGCAGCGCCC
TCGCGCTCCGCCAGGACCCGTTCTCGCGGTGATGAAGAGGCCATTAGCTGCTTACCTTTAGGGCGGACTGAGCCGCTCCCTCCACCTCCCAATT
AGGACGTGAGAAACCGTCAACCAAGATTAATAGTTGCCGGCCCCGGGGCAGGGAGATGAGCCAGAATCCGGCCCGCGCTGCTTGATCTGTTCCCG
GCCAAGCCAGCGCGGGCGGCCACACCTGGTGCAGCTCCCTTCTCCCCAGCCTTGGCGCATCTTAGATTCTCAGGTGAGCCCAAAAAACAGGGT
GGCCAATGATGAGAGGAAAGTGCTCTCTCCAGAGGGACTTCTCAGTTCTTCCAGACACTCAAATCTTAAATCATGATTTCTGACTATCACTGGCAGT
TTTTCAATTATAGATACTGTATTTGTGCCATTAGAGCTTTGGTGTCTGTCTTCTCTATTAGACCGGGGGTTGGGTGGAAGGGAGAGTGGTTTTGCATACC
ATGTGCCATCAGAAACCGTTGATTAAGTGGGCAGCAGGCTTGCTTGCTCTGTTTATCAGAACATCTGCTTGTGCACACTGCCCATCACTACAGC
ACCTGTGGCTTGTGATGTTGATGTTAATTTTATTTTAAAGTACCTTGTGTTAAGAAATTTATCCACCCCTCCCTGAGGATTTATCCAGGGA
TTATTCTGTGTAGCCCTGGCTGTCTGGAACCTTGCTCTGTAGACTAGGCTGGCCTTGAAGTCTGAGAGATCTGCCTGCCTCTGCCTCTGCCTCTCCAGTG
CTGGGATTAAGGCATGTCCACCATCACTGACCAAAAAAATACTTTAATTTATGTATATGGATGTCTCCCTGTGTAAGGCTATCCAAAGAGGCC
AGAAGAGGGGTGGGACCCCTGGAACCTGGAGTTACAAGTGTTGAGAGATACCCCGTGTGGGTGTTGAGAATGAACCTGGGTCCCTGGGAGATCAG

CGAGTACTCTAACCACTGAGCCATCTCTCCAGCCCTTATTTCATCTTTCTGTGATGATCAGCTCTGTATCTTCTCTCTCGAGGGCCAGCGGCCCTTG
AAAGCACATTGCTGCATTACTGCATCTCAGTGCCAGCAAGCAGGAGTTCTAGGCACTCAGACTATACAGTGTCCAAGGCCAAGAGCCTCAGGACTCCT
CCAGCCCTATCTTCAGTACCCCAAACCTTGCCCAAGGCCACAGACAGCTTAAAAATAACCTTTATCCCAACAGTTTCTTTCTTTGTTTATTTGGAAAG
CCTTGGGGAGTCTGTAGGCGGTTCCCAAGGTATCCTTTGGCTATCACAGTCAAAAACTAAATTGTTTTTTCTCTCCCCGCCCCAGGTTGGGATTT
GGGGCCAGAAATGCCTTGCATTTTGTATTTAGAGAAAATTCTTTCCACTAAGTCTCAGGCTCTGTTGGCCAGTGTCTGCATTACCGGATGAGGCAGGA
GGATGGCTTAAAGCAAGAAGTTGGAGGTTAGTCAGGGAACAAAGGCAGATCTATTTCAGTTTCAAAACAAACAAACAAACAAACAAATAAGTAAT
ANNN
NNNNNNNNNTCAAAGGAGGGTCAAGAAAGGATTTGGGGCAAGATCGATACTTCTCTGGACGCTGATGACCGCAGGCTTTCACCTTGCAGATAATGGGGT
GAGCTGCGGTAAATTCCTCCGACAGAGCGGGCTCCCCTGGCCTTAATGAGATAATCAATACTTGTCTCGGCTTAATTTCCATCTAATTGCTCTTTAAC
GACGCCGGATAATGGGCCGCTCTGTGAGGTGGGAGCTGGCTGGGAATCCGACCCGACTTGGACTCCCTCCTTCTACCCCCCGGGTGGGGTGCCCT
AACGCAGGTGGAAAGGAGCACACCGCTGGCTCGCAACTAGAGCTCCTGGGCGGGCTTCCCCACCTGCCCGTGCGCCAAACCTTTAGTACACCAGGC
CTTCGACAAGGATGCCAGAAAAGGATCGGTTTGGGCTAGGAGCCACCCACCCGATGGGCAGCCTCTGGGCAAGTCTTTGTTCCCTTCTGCTTCTTGCT
CTAAGGAAATTGTTGACTTCTCGGTCTCTACTTAGGTGCTGTTGCTGTCTGAGGGAAGACTCCAGTCACTATTTTCTCTGTGAGAAGGCTGAGTCCAC
CTACAGAAGAATAAGCTGGAGTAGAGCTGCTGTATCATCAGGCCAGCTAGAGATAAGAATGCTGTTCTCCACTCTGGTTAAATGGCTCAGTGGTAAAG
AGCACTGACTGCTCTTCTGAAGGTCTGAGTTCAAATCCCAGAACCCATGATGACTCATCTCCATAAGATCTAACACCCCTCTTGTGTGTCTGAG
AGACAGATACAGTGTACATAGATAAAATAATAATACATCTTTTTTTTTTAAATGCTGTTTTCCCTACCAATCTTTATTTGAATTTTTGTAGTCTGAGG
ATGAGGATCCAAGGACTTGAGACAACGTACTGACAGCTGACCTCTCTTGGTTCCTATCCTGAAGCACCTTAGCCTCAGGGCTGAGAGACT
GTGACCCACAAAGTTCCCTATCACCTTCTTTCATCTTTTCTTTTGGGCCAGCGACTCTCCACCTCCCTAATGCTGGGACTCATTAAACAGTTCTCTCA
TGTGGTGGTGACCTCCCACTAAAGTTATTCTGTTCTTCTACTTCTATAACTCATTTTGTCTGTACGAATCCTAATGTAATCTCGCTTTCAGATGGCTCTT
TGGCAGCCCTCGTGAAGGTTTGTTCGACCCCAAGGGTTGCTCTCCACAGGCTGAGCTGAGCTGATCTGGGACCATTCACCCCTGCATCTGCCACA
GCAGGGCAGCTTGGAGTCTTTATAAACATCTACTCTGGGCTGCAGAGATGGCACAGAAGTTAAGAGTATTGCCGCTCTTCCAGAGGACCAGAGTTTGG
TTCCTAGCCCTCAGATCAGCAGGCCATAACCGTCTATAACTCCAGCTCCAGAGAGCTCCAGAGAGTCCCAACATCTCTGGCTTCTGTGGATACCTGCA
TTCACATACACATACCCACACAGATACACACCACACATAATAAACATTTATTTAAATATACTGCGGTATAATCCAGAGTGGTGGTCCATGCCCTTG
GTCCCAATACCTTTGAAGGCAGATGTCAGTTGAGGCTAGCTGGTCTTCCAAAGGCTCTGAGTCTAAATCCTAGCAACCATAGTGGCTACAGATCCACACCACTG
AAACAAATAAACTCTGAAAAATGCACTGCAGTTTTGATTCCAAGTGCAGGTTGACAAGTAATATCGGGATCGTGAGATGGTGAGAGTTAAGTCTTAGAC
TTGGGCAGCTCCAAGATCAAGTATGAGCTCCGTTGGTCACTAACCAGTCTGACACTGGGCAGACTTATCCAAGGAGCTGGACCTCAGTTTTCATTTAA
AAAAAAAGCTAATTTAAAGCTAATCTTACCTTGCAGGTGTTTTTTTTTGTGTTTTTGTGTTTTTGTGTTTTTGAAGCTGAGACAAG
GGGCTGAAGAGTGGCTGACGGTTGAGAGCACCGACTGCTTTCCAAAGGCTCTGAGTCTAAATCCTAGCAACCATAGTGGCTACAGCCATCTGT
ACAGCTACAGTATACTCATATAATAATAATAATTTAAAAAAACCAAGTCTGAGACGAGCTAAAAATATGTAATTTGTTAACCTCTGTGCTTGGCCCT
GGGACTATTTGCTAAGTGATAGCTTTTGTACCATTGCAGTGTACAGCAGAGGGAACCATCTAGCCCAAGGAACACAACAGTAAGGCTACAGGAGCA
GGCAGGAATCCTAAGTGAAGGAAAGCAGACCAAGAAGAGACCACTGTAGGCTAGAGAAGGCCAGCTTATCCAGAAGAGCATGCGGTATTCACGTGGA
CTTGTAGGCGAGGAAGTACACATGTGGATCAGACATAGTCTCAGGTAATTTTCAAGAGTATCCCTGTCTTTTTTGTGTTGCCCCCCCCACTGTA
GATAGAACTCTCCTCGGTGGCAGCTGGTGTGCCAGTTAGACTCAAGTTGGATGGCAGAGCCAGGAGATCCATCGTGCCTGACCTTTTCTTAGTG
CTGGGGATTTAATTCAGATCTTCTCGTTTTTTTGCAAAAAGCAATTTACCAACAGAGCTATCTTCTGTACCCCTAGGACTCACTGTTGCTGTGCTGCA
TAGGATCAATTTCTCAGTTTTGTGTTGTTTATCCTTAAATAATCAGGCAGCATCAGAGACTTAGGCATTAGCTCTAATTTTCTTCTCCCTAGCTCC
ACAATAGCTGGAATTTCCCTTTAAGAGATTTGCAGGGGCTAAAGAGATGGCTCAGCAGTTAAGAACACTGGCTATTCTTCCAGAGGACCTGGGTTCAA
TTCCAGACTGAACATGATGGCTCTCAATTGCTGTGTAACCCCAACTTCAGGGATCCAAACACCCACATACACATACACCAAGCAATACCAATG
CAAATGAGATAAAAGTAAATAAGTCAATAAAAGACATATTTTAAAGAAAACACTGACCAATTCGGTGTCTGAAGGCTGAATTCACCCCACTTTTTTCCC
AAAGAAACATTTCCCGATAAGTGAGTTACTAGCAAAGCTGACTTTGGTAGCCTAGACCTTTTTTTTTTCTTTGTCATAGACTGTTTTTTAATTTTATTCACA
CACATGTATCTGAATGCCGTTGCCATGGAGGCTCAGAAGAGGGCATTCGATTTCCCAAGGCTGGAGTCAAGGAGGACTGGGAACCAAGCT
CTGGTTCTCTGACGGCCCAAGTGTGGGACCTGAACAACTCTGAAGCCCTAAGGTAGCTCATGTTTCTAAGTCAAAATACCTTCTAGGAGCCATCC
CAGGCTTTGGGGCCTCTGGCTCTACCCAGTGCAGAGGCGAGGCTCATTGTCTGGGGCTTGCAAGGAGCTTAGCGCTCTTAAGCACTCGATCTGGGGTCA
CAGCAGCTCCTCTCTTGTCTGTCCATCTTGCCCTTAAAGTCTGTAGAGAGAAGTGTGACTGGTAACAATCAGGGGACACAGCAAGCAGTTTGTCTGAG
TATTGTTTCGAGTGCCTCCTCTGTTACCTTTCTTCTCTATGTCTTGCTTTGGAAGGAGGACAGAAAAGGCACAAAGTCACTAGGTTGTGTGAGGCT
GAGAATAATCTTATGAAGTTTACAGACTTTCAGACGTGCTTGGTGTGTTAGTACAGTAAGATGCTCTGTGGCAGTACAGGATCTACAATCCA
TTGACGACATCATAGTTCTCTTACGCCITGAGAAAGCACCCTGCTTCTGTTTGGAGTTCTGAGTACCGTTTGCAAGGGGCGCTTTTTTTCAGCA
AGCTGGGCAGTGCCGAGGAAGCTTGCATGCTAACTTATGCCCAATTCTCCTCTCCTCAGAAGCCAACATTAGTCGTTCTGTGTGTGTGTTNNNNNNNN
NNNT
TGAATGAGGGACTTATGGACCCAGTATCTTTTTGCTTCTGTTGGCACTGTCTGCTGTCTGTTGAGTTGTGACCCCATCATGGTCTTTTCCCACCA
TTTTAGCCCTTCAAGGTTAAAGGACCTGTGGGCCAGTCTTCGAGCTTCTGCTGATGGCTTGGCCTGACAGATTTCCCTATATCCTCCTCAGAT
CCTAGGTCATGGTCAATCCTTTTGGTCTCTTTCATGTACAGATGCCACTCTGTAAGCAACACATGTGTAGACAGACCTGTGCTCATTAGAGGGAGC
AGCTCTTTATATTTGGCCAGCATGACAGCGTCCACCCATCTGGGGATTTTTGCTTCTGGGACTCTTTGAGGAAGGCTACCTGACGGTTTATGGTCTTTT
ACCATAACTCCAGGCTGAGTAGTCTGTGTGTGACAGCGCAAGGGAAGGGCCAGACTTCATTATATCCACAGAGAAAAGGCTAGAGGTAGGATGT
GAGCCTGGAGATGGTTAAGATAAGATTTTACAACATGTGGAGAATAGGATTTTCTTACCTGCTGTGGTCTTGTGAGGCTTTAGGAAATGAGGAGG
CCCTTCTCTCCCTCTCGGGGACTTAGAGAATCTAATTTTCAAGTGTAGGGATAAAATAAAGGTTACATTAAGGAATGAGTTGTCACTTCTGTGAGTTTGA
GGCAGGCTGTACTACATGACAGGTTCCAGGACTACATAGTGGGATCAAGAGAACGAGGGCGCTAGAACAGCAGATGGTCCATCGGGTTAAAGCACT
TGCTGGGCAACCTGACCTGTGAGTTTCAGTCCCCACATCTGATGGCAGGAGAAAGGACACCACCCCGCCCGCCCGCCCGCCCTGCCCTT
ACCTGAGTTGTTCTGTGGCTTCGCTCACTCAACTGCACTGCACTTACAGGACCAATACACATAATAATTGTAACCTTAAAGGAATGTAGAATACT
TTAGATACTCCTTCTAATTTATTCTTATGAAAATTGGTCATCAGGTGGTCAAAAGCAGAAGAGATATTAAGGTTGGGTGTGGGTGACAGAAAGAAA
CTGCTCTGAGAAGGAGGAAGGAGGATAAAGAACTGTTGGCCTGGTGTCTGTCTAAGATGTCTTGAATCTGTTACGCTTGCTGAGTGCCTAGGTATT
CCAGAAGCAAGTTCCTGGCTAGTCTAGTTCCATTTATAATGTTACTTGTAGATAAAATTACAATTTTATCTTCTATCTGGCTGACCTGCTTCTGTAT
TTATTTCAACATCTAATTTACCTAAGAATAGTCACTATTTCATTTTGGGGGGGGCGGTATGGGAGACTGGCTCTACTTTTCATTATGAAAATAA
TTTTACAAAATAAAGGATAGTGAGAGTTACAGCAGCCTCATGTTGCAAAATCTCTGTCTGCTGATATTATGATACATCTTTATACAGTTGTGGTCTAC
ATACTTATCTTAATCTTATTTTCTACTTTAATGAGAACATCTATTTGTCATAGTAGACCAATATAAAGCATTTTCATCTTAATTATCGATCTTGAGCCCTC
TGACTTAATTGATTCTAATATTCATAGGAAGCAGGTTTCATCTGTATCCATTTTGTCACTGTGAACCATGTGTTTCACTTCTCTCAAAATGACACCCCA
CCATCCTCCATAACTGTGCCCCACCAAGTTTATGACGTAAAGGCTATAGAGTGAGTCTCCCAAGTCATCCTAAGGTTTTCCTGTTGTCTGATTTTT
GGAGACAGGGTATTGTGTAACCCAGCTGACCTTCAACTCCCTGGTTAGCAAAAGATGGCTTGAACCTTCACTTCTGCTCTGCTCTGAGTCTGAGTCTG
GGATTCTAGGTATGTGTACCAATTACTGGCTTTACCATAAATAAAAGGGGGGGGAGGGGCTGTGGAGATGGCTCAGTGGTTAAGAGCACCAGTTTAC
CTTCCAGAGGACCTGGGTTCATTTCCAGCACCCACACAGCAGCTCCCAACTGTCTATAACTCCAGTTGCAAGGGATCTGATGTGCTCACCCAGGTACA
CTAAACACCAAGGCACATAAAACAAGATTAGGGTTTGGAGAGATGATAGGAAGGCAGGACACTTGCAACCAAGCATGATGCCCTGATTCAATTCCTAG
GGCTCATGGGGTGAAGGATACCTCCCATGTTGTCAGAGAGTGTGTAGCAAGCATGGCTTGAACCTTGAACCTTGAACCTTGAACCTTGAACCTTGAACCTTGA
GGGCGGCAAGATGGTTACGACAGGTAAGGGTGTGCTATGCAAACTCTGATGATGACTTCAAGATGGAAGGAGATGGACTGAGTCTGAAAATCATCCC
GAGCTCAAACACAAATATGTCTACACTCATATACATACACCATAGGCACAAACCAGTAATAGATATTTTGAAGAAGATGAACATCAGGTGTTT
ATCTGAAGCACACCTCGTTTCATTGATATGCCTGGCAGTAACCGCATCATGTGGACTAGAAGTAATTTCCCTTGTCTCAACAATAGGAAGCTAGGGCTGG

ACGATTGGCTTAGCAGTTAAAGAGCAGTACTGCTCTGCCAGAGGTTCTGAGTTTCAAATCCCGACCAACACAGGGTGCGTACAAACCATCTGTAATGGG
ATCTGATGCTTTCTTCTAGTGTGTGAGAACAGCTGCAGTGTACTCATATAAGTAAAAAAATTTAAAAAAAAGGAAGCTTGTCAAACCGAGTGCAACGT
TTTAAACGTTTAAAGTAACCTCTTTTTCTGATGCCACGGTTGTGCTTTAACGTGTTTTAGAACTTCACTTGATAAAGTCCGGGACGAGAAGCACTGGAG
ACAGGAGTAGTAGGCTTTCAAACCTGCCATATGCAACAACTCCTCTATAAAATATTATTATTGGCCAGAGATACTGCTCGGTGACAACAGTTCTGTG
CTTAACCTCTAAAAGTCCCGGGTTAATCATCAGCAACGCAAGACTACTGTAAGAACGTTTTCAAAGTATAGACAGTATGCATTGTACAGAGTCGCAGCT
GCTGCAAACCCACCAGAGGGCGCTCGTTCTCCGTCGAGTTAATCCCTAGCCTCTCATTAGTGACTGCATCTTTCAGAACCAGGGAGTCTTTCACCTTTTAA
AGCACAAATGCTTCCCAAGAACCTCTCTAGCAGTCGGTCTCGGGCGGGGGGTGGGGGTGGGGGTGGGGGAGTACAGAGACAGAAGACACAGTGATTCC
TACTAGAGGCGGAAGCTAACAGTAACACGCCGGCAACGATTAAAGATGGAAGCGGTGTCTAGGACCGTACGCTGGGGATTTTGTATAGTGGCTCTAG
GGCTGAAAGCTCACAGTCTCTCATTTAGACCTGCGACAGCTCCCACCTCATCATCGGGCAACAGTACACCGCCCCAGTTACAGCTAGGGAGCTCCCTAGA
GTGTCTCCATTCTCCACCAGGCAAGCCCTCTCGCGCTTTTCCAAAACATCCTGCAATTCTCGCTTCACTTCTGCTCCAGGCCAACAGTTAACGCGT
CCTCCAACCAAGGATTGCCTAGCACACCACCTCGGAATCTGCCTGCCCTCGTTCTTCTCTGGCTTAAAAGCCGCGGGCTTTTCTTTTCTAGCTTGGCGT
TGGGATTCTCGCGACAATCCGAAACCTCGCGTGAATTCGCTTCCCTCTCCGAGTTGGGATTGCTGTGACAGCTCTCTTACCTTGTGCGGA
ACCCCTCTGATCAGAGGACGCTCTGTCTGACTGAACGCTCTTTAGGAGGGCTCGGCCAAAGTCAGAACTGCGCGGTGACTGCAAGTCTTCTCTCT
CGCAGGGTAGAGCGGAGCCGCGCAGGCCGCGGACGCACGCGCAGTCAGAACCTCTGACGCTTCTGGGCGGGGCTATATAAGCCCCACCTTCCCT
TGCCTAAAAGCCCGGTTTCTTCTGTCTCTCTCTCTCTAGGAGCTTGGATTGCGGTTTTTGAAGCTGTTTGGGGGCGCGGGGGCGGGGCTGCCA
TTCTCGGGGTGGTGGGCGGAGTCTCCGGAGCTTTGTCTTCTCTCCGCTACACCCAAAGTGCCACCGTGGCGTGGCGGAGGTCTCCAGACTGAACACT
TTTGGCCCGCATGCTCGGAATTTGCAACCTGTAACTCCGAGCCGACAGACGCGCTATGGGGAGTCAACCGCGGGCTTGTGCGGCGGTGACTGCACT
TCCGACCTCTAATCACCAGGCTCCTCCGCGGTTTAAAGCACCTGCCCTATATTGGGAGGGAGGTAGCCAGATGTGGATGGCAGCTGGAAGAGCTTATA
GTCTAGTCTGCGCCCCAGTGGAGAGACTGGGTGAACACAGCTGCAAACCGTGCCAGAGGAAGCTGGCCCCGAGCCTGGCTCCAGAAACGCCCAT
GTGTGAAGTCAATTTTACATTGAGATAAAATTTCTTAGCTTTTCTTCTTTTATATTGTAGCTGTTTGGCGCTCTCCAGACCTAAATCAGATGAGACAG
GACCTGAGGCTCAGCAACAGTTTGTAGCTCTCGGCATTCCACCCCTATTCTTCTCATAGCTTTTGTCTTCCAGTGGCGGCTGTGGTACGCGGC
TCTGTACACTCATTGTGACTTTTGGGCTAGGGTGAAGTGAAGGCGCAGGAGGTCCTGTGTGAGACTGGATAAAATATCGGCTCTGGGGCTGGGAA
GAAGGCGGGTATTCGACATCTGGGGCGGGGAGAAGAGGCGGAGGAGTTTCTTCTCGAATCTTAAGTCTGTGGGTGCCAGCGATCCCTGACAGAAG
CAGGGGTGGCTGCGGTCTGGGTGCGCGTGCATGCGACTCTCTGTTCCCTACCGTTTTTTTTTTTTTTTTTTAGTTGGAATCCAAGGCACTAGGTGAG
TCGCTGGTATGTCCCCAGCACCTACCCCAACCTGAAGTTTTTACATCAAGTGTAGTTTTATCTATCTCTGGGGCAAGATGCATCAGAGTGGGTGG
TTTCTGGAGTGTGCTGGTGTGTGTGTCGCGCGCGCTGCATATATGATGATGCTGTGTGTGTATACCGGTATGTCTGTGTATGGGTGTGTGCAT
CCCTGCATGGGTGTAGTGATCATTCCCCGATACACTCTCTTTATTCCTAGTCCCCAAGACCAGCTTAATCAATTACCAACTGGCATAAACCCCTGG
GAATCACCAGGCTTCTTTGTAGGGCTTCTAGTTGGCTACAGGGTAGCAGAGGATAGAATCAAGCTTTTATACAGCCTTGACTTTATCTCTGACCTCCA
GACCTGGCTTCCCTCTCTCGGAGGTGCCACCTACGCGCGGATGCCCGAGGTTCACAGGCTTCCAGCTAACTATGCTGCGACCTACCTTGGCGCTG
TCTTGTCTACTACCAATTATGCTGGTGTGTGTGACCCAGCTACCGTTAGCGCGAGCGCTCCACGCCCCGATTACCTGCGCGAGGCTGGTGGTGG
CTGCTAGCCGAGGGCGAGGGTTGTGTCTCCGTGCCGGCCAGAAGAGTGCCTGTCGCGCGGGGATGCTAGCAGGCGGGTGGCGGATGCGTGGCGT
GCTGCTGGGAATGCGCAAACCTGGAGGGCCAGCTCTGCGATCTGGACCCAGCGCTAACTTCTACGGGCGTGGCGGAGCAGCTCGAGTGCAGGCTG
GACGCGGGGCTGACCTGAGTCGAGGAGAGGTGCCGGGAGCGCTGTGTGTCTGCGCTCGCAGCGCCGCTGTGTGTCGGACGGCCGAACCTACCG
GCAGATCTGTGCGCTGAGGAGGCGCGCGCTCGGTGACGCTAACCTACTGTGTGTCATCGGCGGCTCGCAATCGGTCAGCAAGTCCAGG
GCTTTTAGTACCAGGAACCCGTGCTCCCCAAAGGCACTATCCCGGATCCCCGACAGGTTGCTGTGTGTTGAGCAAGTAATAGTTAGGGAGACC
ATGAGCCTCAAAGGCTGCCAACTAAAAAGCAGGTTGAGATTTGTTGCCAGGTTTGAAGTGCCTAAGAGCTCTATCCAGGCAGGTCCTTGCAGGGACTG
GCCTCCGAAGGAACAGGCACATAGCCATAGCTGGGTCTGAAGTGAAGGACCCCTCTACCCCAAACTTTGCGTAGACTGCTGGAGCCCTGTGAGA
TGCATCTGTTAAACCTGGCTCCCGCTATCAGTTTTTCTACGACTTTAGGAATTAGAGAAGGGAAGATAGCTTCTTGCCTCTCTTGTCCCTCATCTTT
GGTTGGGGTTGGGATGTTCAAGCTTGTGTTTTGTTTTGCGTTTGGCCACCCACTTCTCAGTTTAACTACTCTATAGTCTGGCTAGGCTGGAGTGCAG
TGGAAATAAATGCACTAGCAGGGGCGGGGGGGGGGGTCCCAACAGTTTTCTGCCGTGCAACAAGGAGGTTTCAGGTTCCCTGTCTGCGGTGTTTTTC
CCACCTCTCTCTCGGAGCCAGATCTGTGCTATTCTCACGACATTTGGAATGTGGTGCTCTTCAAGCCTTTGGGAATGGGCCTAGTTAGAAAA
GGGGGAAGGAGGAGGAGGTGTGGTTACACGACCCGAGGAAGGGCCCTTGGGTAGAATGAGGCCAGCGGAGCTCCAGGACAGAGCATGT
TTATCTAGCTAAGCTGTGGTCTGTAGGCAACGCTGTGTAATGGACACTGCTCTGTGCTGTGAGCTCCGAACCTAGGCTTGTGTGCCCTGTGTGTC
ATCCCCCTACTTTTGTACGTCTCTGGCTTGTGGCATATTTTGTTTGCAGATGCATGTTGCCCTTGGCATGCTTTGTGTCCCGCTCCCAACATATCCACA
TCAATTTGTAAATTGTGTCTCCCCGAGCTGGATACAGCCTCCTGTTCTCAAGCCTCATATTTCCATCCCCCTGCCCCAGAGCCCCAGATCCTGTGCGAG
CCTCACAATATTTGGAATGTGACCCGACAGGATGTGATCTTTGGCTGTGAGGTGTTTGCTACCCCCATGGCCTCGATTGAGTGGAGGAAAGATGGCTTG
GACATCTGCTGCGCGGGATACCTCATATCTGTGTCAGGTAGGGACAGGGAGCGGATACCTTTGAAAAACAAAAACAAAAACAAAA
AAACAGGACTTCTGCGAGATACCTTGTCTGCAGCAAGTGTCTGTCTCAGTTTAGGGGTGACCTCAGAAGTTTGAAAGTACACTGGCTGGATCAGATT
AAGCTTTGCGCCCTAGTGATGAGGGCACCTACCGTTGCCTTGCCCGAATGCTCTGGGCCAAGCGGAAGCTTCTGCAACCCCTACAGTGTCTCACACCAG
GTAAGGAGGCCCTGAGCGCTGGGCACCAGGATGGGCTGCATTAGGACTCTTGGATGCTGTAAAGGAACAGGCTGCATGTGATTTCGGACACACACGCGT
GCCTTCCCATACACCAAGTCTCTCCCTGACCCTTTTTCTTCCACACGTATGTTTGACAGAGCAAGTGAACGCCACGGGATCTCCAGCTGCAATCACG
GAGTTTGTCTGAGGAGGAGGAGGAGGAGCAAGAAAGTGAAGAGTTGGGCGATTACTACTAGTCCAGATCTCTGCTTGTGAGGTGGGCATGTGGAC
AGAGCCCTGCATCCTTGTCTGTAGAAAGCCCGGAGAAGACTGGAAAAGGCGAGCAGGGTCTTACATGGATTGTTAATGCTCAGTGTAGCCTCAGC
TCATCTTTCTCAAACCTCATCTTTCAGAAGCGTCCGCGTAGAGATGAGCGCAGCGGAAGTATTAGTTACGTACAGGAGAGGGGTGGGGTAGCT
CCGTGCTTATACCTTACAGGGGACAAACCCACCTAGCATACGACTAGACACAGTGGGACCAATAAAATAATAAAACCAACCGAGGCCACT
GCTGCGGCAAACTCTACAGATGCGCACATAACAGACTCTGGCTTCTGCACATAACAGATTGCAGGCCATAACTGCCCTCTCTGTCTCTTATGAGG
GAGCCTAGAGCAATCTGACTGGAGAGAGGAGGAAGTCGTCCAGACCCCCCTACTCCCCCCCCCGCACCCCTCCCGCTGGTATAGGGATAGATT
CCCAGGCAGAGTGGGGAACCAAGTCTATGTGGGTGGGACCTCAATATAAATTAGTGGTGGGGGACCTGTGTTAGCCACACCCTTCTCTTCTCCCTCC
TTTCTTTTCCATTTTCCAGAAAAATGTAAAAGTCGTTTCTAACTGTCCAGTTGTTAGCAGTCTTTTCTACTTGTAGTGAAGGTCTTTTCAAAAAGTACTC
TTTGGCGTAGACTCTCCACATACTTTTGTACCTAGCCCCGGGACACTGAGGAGTTTATGAATTTGTTAAAGGTAGGTTGAGTTAGTACCAGGCC
AAGACGCTGTGTGTGGAAGCGACAACCTCTACGCGCGGGGCTGCGCCGAGTCTGGCGCCACCGCGGGAGGAGGCCCTTGTGCTCAGCGTCTG
TGTTTGGGTGTGAGACCCATCGCGGCTGCTGCCCCCTGGAAGGGGCGTGGCTGGAACCCCATGCTCGAGGCTGGCCACCCCTCTGCTGTAT
GAATGTGATCTCCAACCTGCCTGTGCTGGCTGCTGCCACTTTTCCAGTGTGATTCTGACTGTGATTCTCCGCTGAGCCGTGCTGCGGCCAAGTACTGGCAGC
GAATTGTAGGGCGCTGGCAGAACCGGACAGGAGAAACAGTGGGAGGTTGACCGGATGGGGTGGGATGCTCTACTACACGCTTTCAAGAAGG
TCTCTTCAACCCAGTGAGAGAGGACTAGGTCCGGTCCCTGTGTCCATCATAGTCTGTTCTCGTGGCGTCAAGATGTCTGGGGCTGCTGTCCCT
TGTACCTACCTGCAGAGCACAGGCTGGCTCTCGCCAAACCCGAATCTGTGCGATCTGCGGGGAGTAACCTCAGTTCCCGCTCTGCGACCTTGAGGGT
TTGGGCCCCGACGCTGGAGTGAAGGATGTCTGCGGCCACCGCGCTGCACCTCCCCGACACCCCGCTCTGCTGCAGCGGAGGGGTTAATAATGT
CGCCGGAAGGTGACACCGGATTTATTAATGAATGTGGGCGGGGACGGGAAGGTTAATAAACCGCGCTGAGAGGCTAGGATTTACCCG
AAATAAATGAGAGCGCGCGGTGTTTTAATAAATAATTTCCGCGCGTCCCGAGGAGGAGAGGGGAGGAGGAGGAACTAGCGGCTGCGG
GCACTCTCGGCTCCGATCCCCACGGGTTTTAAAGCCCTTGCACATAACGGCTCGTAGCCGAGGTGCGCGGTTCTTTGCTGGAGAGCAGAGCCATAG
AGGCCAGGCTGGCGGTGGGACGTTCCCTGTGCACCGCATCCCGGGGGCCACCTCTGGGGCTTAAAGTCGTTTGTGTAAGATGTAACAAAAGGGT
TCCCTTTTGGCCACCCGAGGTTGTGCTCAGTGAGGAGAGAAGACCACTCTGCATTATACGAACCAACCTCTCCCAAACTGTAGTCTGGCTGTGAC
CTTGCAGCTCGGAAAGGATGCTCTTGTGCTACCTGGCTGCTTCTCTCCATTCAGACAGGCTGTGTGGAGAAACCAAGGGGACCTGCTGTAC
AAGTGTGCATACACTATGTGCTAAAGGACCGGACTCATACCTTTTTTGGAGTGTGATGAACACGGGCGCTGCTGCTTCTGACCACCTCTGCTTAAAG

[illegible]

[illegible]

AATTAGAGCCCTTACTTTAACTGTGACACACTCTGAGGCTGAGACTTGAACCTTTTCTCTGTAGTTACGCCAACCTTACAATGAGAGTTTCTGTTTGAT
TTTCTGCAACTTGAGCTCTATTGCTACAAGAGAGAAGATTCTCCTCAAGGACACACTTAGCAACTTTTAGATCGTTTACTTGTGCTGGAGCCTTTCGAT
TTTATCACACAACCTCCTTCTCTTTCATTTCATCATTTTTTCCACAGATACTAAGAGCAGCCAGCCAGTAAAAATCATTTTTTCGATTTTTTCCCCATCTTGTA
AAGCTTTGTGCACTGAATCACCTAATTCATTAAGAAAAAACAAGGGCATTAGCTTCTTTAAGTTCGGAATATAGTTTCAACCATGGGTCTTCAAAATTTCTC
TGAGCTCCCAGGAGGGAGAGAACTCTGGAGAGGTTCAATATTTGAAAGTGCTGGTGGATCACACAAGCCAATTCCAGTATTTTTAAAGATTTCATCCTT
GTACTTCTGTTACTCTAGAACCCTCCTGGTACCAACTTCTGTATTAGTCAGGGTCTCTAGAGTACAGAACTTATGGATAATCTCTAAATAGTAAAGG
AATTTATTGATGACTTACAGTCGGCGAGCCGAATTCCCAACAATTGTTCAGTCGCGAGCTGTGAATGGAAAGTCCAAGGATCTAGCAGTTACTCAGTCTCAC
GCAGCAAGCAGGCAAAGGAGCAAGAGCAAGAGCTAGACTCCCTTCTTCCAATGTCCTTATATTGTCTCCAGCAAAAGGTGTAGCCCAGATTAAAGGTG
TGTTCCACCACACCTTTAATCCAGATGAAAGGCATAGCCAGATTAAAGGTGTGTTCCCTTAACTCGGAGATTCAATCTCTGGAATCCATAGCCACTAT
GGCTCAAGATCTTCAAACCAAGATCCAGATAAGGATCTCCAAGCCCTCCAGATAAGGGTCACTGGTGAGCCTTCCAATTCGGGATTGTAGTTTCATTCCA
AATATTGTCAAGTTGACAACCAGGAATAGCCACTACAGTTCCCTAAGTATGCACTTGCCATGGTATGGCACGTGGAGGTCAAGGACAGTTTGCAGGAGT
GGAGTCTTTCCTTCTACCATCAAACCTTCGAAGTCAAACCTCAAATTATCAGCCTTATGGATAAGCATCTTTAACCCTGAGTGGCGGCTTGGTGTCTCTGA
ATTACAGCTATGAAGTAAGTGCCTCAGAGAGAGGCCTGATGGGGCAGTACACCTTCCAGCCTTGCTTTCTCTCCTGCTCATCTGCGTGTGCCCTGATTCCA
ACACACTCTAGTCTAGTCTCAGTCTCCACGGACCCCTGTTCCAGGGCTGGAGTCTCCAGCAACATCCTTTTGTGGTGGTGGGGTTTCCCAATTGGCTTCGA
TTTGACTGTTGACTGTCCTTCTGCTGCTGACACCAACTCTGAGCAGTGTCAAGACCCATCAAAATCCAGGAACACCCAATCTTCAAGGAGAGGGGA
GGTAAAGTAGAACCATTCATATGTTGTGTAAGAACTGGCCTCACTGCTCAGCCACACCCAGGAGCCCACTCCGGGGGGGGTATTCCAGGGAGGG
CCTGGCACAAGATTCTAGTCTTCCCTCAAGCTGCCCCACCTGCTTGAGTCATTAGGACAAGACTCTGGAGTTCTTTATCCAGCCCAAGGGCACCTGA
AGCCTCTCCATTCTTCTTCTGGCATTCTTCTCTCACTTGGAAGTTGCCAAATGGATAGCGAGCTTGGATGGGTCTTGGTGGCCAAACTCCAAACAGAG
GGGGAGGCATCCTGGCCTCTTGGCAGCATTCTGTCCATGGTAATTTGGCAGCAGAGCACCAGTGCATATATCTGCACATCTGTTTACGCCTCTGGCTT
GTTATTATTCTCTGCTTTCACGGGCAGCAGAGCCAGAACAACACTCAAGTCTTCCCAAGTCTAGTATTAACCTGGAGAGAAAGTATGACACTTCAGTCA
CAGCAATCGCTGAGCCTCATGGAAGGGCCTGCCTTCTCCAGCAGCTGCTGCCACTTTTCAAAGGAACGAAGAGAGGAGGGGAGGAGGAGAGGGGAAA
GGAAGGGAATGAGTGTGAGGGGAACGGAGAGGAAGAGAGGACTGTGAAGTTAGAGCCTTGACATGTGGGGCTGGCCAGGTAGCCTGGTCTAGGC
CTCACTGGAGGCAGACTGTCTGCTTTTTGAAAAACAACAACAACAACAACAACAACCAAAACCCCCCAAAAAACAGCCGCTGAACATTCTTTCT
CTGCTCAGCAGTGTGAATGCTTGATTCAATGTGTGTCTTGTCAAGTCTTCAAGTCTTCACTATGCACTCAATCCCAATTTGGGTCTTCTCTCACCATCTCCCT
TGGCTAACTGAGCTTGAGGGGTTTTCTGGGGTGAATAAATTAAGGGACCAGGTCTGTCTTGGAAATGAGGGACGAGAAGCCAGTAGAGGAGTGGCGGG
AGGAAGCGGAAGAGGAATAACGGGAAGGAGAAGAGAAAGAGATGGTTAGTAAGCAGGGAAATAGGTTTTTCAGAGAAGGAAGAGGGAGGGCTGAG
TGGAGAGCCTTGAGCTGCCCCGTGACGCTGTCTTGGTCTGACAAAGTCTATGCGTGAACCTGAACACCAGCCTGTGTGGACCCGCTTCCCTGCCCT
CAAACCTTCTGCGGCTTCCCTTGAAGGCAACAACCGTGTCAAGTCTTCACTATGCACTCAATCCCAATTTGGGTCTTCTCTCACCATCTCCCT
TCTCTCAAAGCAACTCCCTGTCCAAGCAACATACCTTGAAGAAAGCAGACTGGTGTGGACTCAAAAGTAACCTGGACAGAGCTCCTGGAGAAAGATAA
GGATTCTCAGGTCCAGAAAGACTTTCGGCCTGAGTAGTCTCATGAGATAAATGGATTGGAACGGGAGGTGGAGCTCTGTGGTGGGAAGTACTGGCCCA
GTCCAACTAAAAGCAACAGTGGTACACATGCCTTTAATGGCAGCAGTGGGAGTCAAGGGGACTGAGGGGGCGGTGGGCAAAAGCAGGCAGTCTCTGTG
AGTTCCAGGATAGCCTGGTCTACCAAGTAAACTCCAGGCTGGCCAAAGATTGTTAGTGAACCCCTGTCTCAACACACACACACACACACACACACA
CACACACACACCATTTTATTTTATTTTCTTTGACTGTGCTTCCCTCCCATTTTGTATTAAGTCAAACAACAGTGTTTGGGTTTCACTGGTAGAGCAC
TTGCTAGTCAACAGACATTGTATCCAGCCCCCAGCACTGGTGGTGGGGGGGAATGTTAAACCAA

Selection Cassette: LacZ/Neo

GGCCATAGCGGCCATTTAAATGGCGCGCCGGATCCCGGGCCGCTCTAGCTAGACTAGTCTAGCTAGAGAATTCGCCCCCCCCCCCCCCCCCTCTCC
CTCCCCCCCCCTAAACCTTACTGGCCGAAGCCGCTTGAATAAAGGCCGGTGTGCGTTTGTCTATATGTTATTTTCCACCATATTGCCGTCTTTTGCCAT
GTAGGGGCCGGAACCGTGGCTGCTTCTTGAGCAGACTTCTAGGCTCTTCCCTCTCGCCAAAGGAATCAAGGTCTGTGAATGCTGTGAAG
GAAGCAGTTCTCTGGAAGCTTCTTGAAGACAACAACGCTCTGTAGCGACCTTTGCAAGGCAGCGGAACCCCCCACTGGCGCAGGTGCCTCTGCGG
CCAAAAGCCAGTGTATAAGATACACCTGCAAAGGCGGCACAACCCAGTGCCACGTTGTGAGTTGGATAGTTGTGGAAGAGTCAAATGGCTCTCCT
CAAGCGTATTCAACAAGGGGCTGAAGGATGCCAGAAGGTACCCCATTTGTATGGGATCTGATCTGGGGCCTCGGTGCACATGCTTACATGTGTTAGT
CGAGTTAAAAAAGCCTTAGGCCCCCGAACCACGGGACGTGGTTTTCTTTGAAAAACAGATGATAAGCTTGGCACAACCATGGAAGATCCCGT
CGTTTTACAACGTCGTGACTGGGAAAAACCTGGCGTTACCCCAACTTAATCCAGCACATCCCTTTTCGCCAGTCCGCTGAATTTGACCTGA
CCGCACCGATCGCCCTTCCCAACAGTTGCGCAGCCTGAATGGCGAATGGCGCTTTGCCCTGGTTCCGGCACCAGAAGCGGTGCCGAAAGCTGGCTGG
AGTGCGATCTTCTGAGGCGGATATGTCGTCGTCCCTCAAACCTGGCAGATGCACGGTTACGATGCGCCCATCTACACCAACGTGACCTATCCCATTA
CGGTCAATCCCGCGTTTGTTCACCGGAATCCGACGGGTGTTACTCGCTCACATTTAATGTTGATGAAAGCTGGCTACAGGAAGGCCAGACGCGA
ATTATTTTTGATGGCGTTAATCCGCGTTTCAATCTGTGGTGCAACGGGCGCTGGGTGGTTACGGCCAGGACAGTCCGTTTCCGCTCTGAATTTGACCTGA
GCGCATTTTTACGCGCGGAGAAAAACCGCCTCGCGTGATGGTGTGCTGCGCTGGAGTGACGGCAGTTATCTGGAAGATCAGGATATGTGGCGGATGAGC
GGCATTTTCCGTGACGTCTCGTTGCTGCATAAACCGACTACACAAATCAGCGATTTCATGTTGCCACTCGCTTTAATGATGATTTCAGCCGCGCTGTAC
TGGAGGCTGAAGTTAGATGTGCGCGAGTTGCGTGACTACCTACGGGTAAACAGTTTCTTATGGCAGGGTGAACACGAGGTGCCACGGCAGCCGCG
CCTTTCGGCGGTGAAATTATCATGATAGCGTGGTGGTTAGCCGATCGCTGACACTAGCTGTAACGTCGAAACCCGAAACTGTGGAGCGCCGAAAT
CCCGAATCTCTATCGTGCGGTGGTTGAACTGCACACCGCCGACGGCAGCTGATTGAAGCAGAAGCCTGCGATGTCGGTTTCCGCGAGGTGCGGATTG
AAAATGGTCTGCTGCTGAACGGCAAGCGGTGCTGATTGAGGCGTTAACCGTACAGCATCATCCTCTGCATGGTCAGGTTCATGGATGAGCAG
ACGATGGTGCAGGATATCCTGCTGATGAAGCAGAAACAACCTTAAACGCCGTGCGCTGTTTCGATTATCCGAACCATCCGCTGTGGTACACGCTGTGCGAC
CGTACGGCCTGTATGTGGTGGATGAAGCCAATATTGAAACCCACGGCATGGTGCCAAATGATCGTCTGACCGATGATCCGCGCTGGCTACCGGCGAT
GAGCGAACGCGTAACCGCAATGGTGAGCGCGATCGTAATCAGCGAGTGTGATCATCTGCTGCTGGGGAATGAATCAGGCCACGGCGCTAATCAC
GACGCGCTGTATCGCTGGATCAAATCTGTGATCCTTCCCGCCCGGTGCAGTATGAAGCGCGCGGAGCCGACACCACGGCCACCGATATTATTTGCC
GATGTACGCGCGCGTGGATGAAGACCAGCCCTTCCCGGCTGTGCCGAAATGGTCCATCAAAAAATGGCTTTCGCTACCTGGAGAGACGCGCCGCTGA
TCCTTTTGCGAATACGCCCACGCGATGGGTAACAGTCTTGGCGTTTTCGTAATAACTGCGAGGCGTTTCGTCAGTATCCCCGTTTACAGGGCGGCTTCG
TCTGGGATGGGTGATTCAGTCTGCTGATTAAATATGATGAAACCGGCAACCCGTGGTGGCTTACGGCGGTGATTTCGGCGGAAACCTCAGTGTACGCT
CAGTTCTGTATGAACGGTCTGGTCTTTGCCGACCGCAGCGCATCCAGCGCTGACGGAAGCAAAACACCAGCAGCAGTTTTTCCAGTTCCGTTTATCC
GGGCAAAACCATCGAAGTGACCAGCGAATACCTGTTCCGTCATAGCGATAACGAGCTCCTGCACTGGATGGTGGCGCTGGATGGTAAGCCGCTGGCAAG
CGGTGAAGTGCCTCTGGATGTCGCTCCACAAGGTAACAGTTGATTGAACCTGCTGAACTACCGCAGCGGAGAGCGCGGGCAACTCTGGCTCACAG
TACGGGTAGTGCAACCGAACCGCAGCCGATGGTCAGAAGCCGCGCACATCAGCGCCTGGCAGCAGTGGCGTCTGGCGGAAACCTCAGTGTACGCT
CCCCGCCGCGTCCCACGCCATCCCGCATCTGACCACCAGCGAAATGGATTTTTGTCATCGAGCTGGGTAATAAGCGTTGGCAATTTAACCGCCAGTCAG
CTTCTTTTACAGATGTGGATTGGCGATAAAAAACAACCTGCTGACGCGCTGCGCGATCAGTTACCCCTGTCACCGCTGGATAACGACATTGCGGTAAG
TGAAGCGACCCGATTCACCTAACGCCCTGGGTCAACGCTGGAAGGCGGGGGCAATACCAGGCCGAAGCAGGATTTGTGACGTGCACGCGAGAT
ACACTGTGCTGATCGGTGCTGATTACGACCGTCAACGCTGGCAGTCAAGGGGAACTTATTTATCAGCCGGAACCACTACCGGATTGTGTAG
TGGTCAAATGGCGATTACCGTTGATGTTGAAGTGGCGAGCGATACACCGCATCCGGCGCGGATTGGCCTGAACTGCCAGCTGGCGCAGGTAGCAGAGC
GGGTAAACTGGCTCGGATTAGGGCCGCAAGAAAACCTATCCCGACCGCCTTACTGCCGCTGTTTTGACCGCTGGGATCTGCCATTGTCAGACATGTATA
CCCCGTACGTCTTCCCGAGCGAAAACGGTCTGCGCTGCGGGACGCGCGAATTGAATTATGGCCACACCAGTGGCGCGGCGACTCCAGTTCAACATC
AGCCGCTACAGTCAACAGCAACTGATGGAACACAGCCATCGCCATCTGCTGCACGCGGAAGAAGGCACATGGCTGAATATCGACCGGTTTCCATATGGG

[illegible]

TCGACCTCTAATCAACACAGGCTCTCTCGCGGGTTCAAGACACCTGCCCTATATTGGGAGGGAGGTAGCCAGATGTGGATGGCAGCTGGAAAAAGCTTATA
 GTCTAGTCTGCGCCCCAGTGGAGAGACTGGGTGAACACAGCTGCCAAACCCGTGCCAGAGGAAGCTGGCCCCGAGCCTGGCCTCCAGAAACGCCCATAG
 GTGTGAAGTCAATTTACATTAGTAAAAATTTCTTAGCCTTTCTTCTTCTATATTGTAGCTGTTTGGCCGTCTCCAGACCTCAATCAGATGAGACAG
 GACCTGAGGCTACGCAACAGTTTGTAGCTTCTCGGCATTCCACCTTATTCTTCTCTACAGCTTTGCTTTCCAGCTGGCGGCTGTGTTTACGCGGC
 TCTGTACACTCATTGTGACTTTGGGCTAGGGTCGAAGTGAAAGGCCAGGAGGTCCTTGTGAGACTGGATAAAATTATCGGCCTCGGGGCTGGGAA
 GAAGGCGGGTATTCGACATCTGGGGGCGGGGAGAAGAGGCGGAGGAGTTTCTTCTCGAATCTTAAGTCTGTGGGCCATAGCGGCCATTTAATGGCGC
 GCCGATCCCGGGGCGCTCTAGCTAGACTAGTCTAGCTAGAGAAATTCGCGCCCCCCCCCCCCCCCCCTCTCCCTCCCCCCCCCTAACGTTACTGGCGC
 AAGCCGTGTGGAATAAGGCGGCTGCGTTTGTCTATATTTCACCATATTGCGCTCTTTTGGCAATTGTAGGGCCCCGAAACGTTGCCCTGCTC
 TCTTTGACGAGCAATCTTAGGGTCTTTTCCCTCTCGCCAAAGGAATGCAAGGCTGTGTTGAATGTCTGTGAAGGAAGCAGTTCTCTGGAAGCTTCTTGA
 AGACAAACAACGTCTGTAGCGACCTTTGCAGGCAGCGGAACCCCCACCTGGCGACAGGTGCCTCTGCGGCCAAAAGCCACGTGTATAAGATACACC
 TGCAAAGGCGGCACAACCCAGTGCCACGTTGTGAGTTGGATAGTTGTGGAAAGAGTCAAATGGCTCTCTCAAGCGTATTCAACAACGGGCTGAAGG
 ATGCCCAGAAGGTACCCCATTTGATGGGATCTGATCTGGGGCTCGGTGCACATGCTTTACATGTGTTTAGTCAGGTTAAAAAAACGCTAGGCCCCC
 CGAACCCGGGAGCTGTGTTTTCTTTGAAAAAACACGATGATAAGCTTGCCACAACCATGGAAGATCCCGCTGTTTTACAACGTCGTGACTGGGAAAA
 CCCTGGCGTTACCCAACTTAATCGCCTTGCAGCACATCCCCCTTTTCGCCAGCTGGCGTAATAGCGAAGAGGGCCGACCCGATCGCCCTTCCCAACAGTT
 GCGCAGCCTGAATGGCGAATGGCGCTTTGCCTGGTTTCGCGCACCAAGAGCGGTGCCGGAAAGCTGGCTGGAGTGCATCTTCTCGTAGGCGCGATACTG
 TCGTCTGCTCCCTCAAACCTGGCAGATGCACGGTTACGATGCGCCATCTACACCAACGTGACCTATCCCATACGTTCAATCGGCGTTTGTTCGCCAGG
 AGAATCCGACGGGTGTTTACTCGCTCACATTTAATGTTGATGAAGCTGGCTACAGGAAGCCAGACGCGAATTTTGTATGGCGTTAACTCGGCGT
 TTCATCTGTGGTGCAACGGGCGCTGGGTGCGTTACGGCCAGGACAGTCGTTTGGCGTCTGAATTTGACCTGAGCGCATTTTTACGCGCGGAGAAAAACC
 GCCTCGCGGTGATGGTGCTGCGCTGGAGTGACGGCAGTTATCTGGAAGATCAGGATATGTGGCGGATGAGCGGCATTTTCCGTGACGTCTCGTTGCTGC
 ATAAACCGACTACACAAATCAGCGATTTCATGTTGCCACTCGCTTTAATGATGATTTTACGCCGCGCTGTACTGGAGGCTGAAGTTACAGATGTGCGGG
 AGTTGCGTACTACCTACGGGTAAACAGTTTCTTTATGGCAGGTGAAACGCAAGTGCACCGGACCGGCGCTTTTCGGGCGTGAATATTACGATGAG
 CGTGGTGGTTATGCGGATCGCGTCAACTACGTCTGAACGTGCAAAACCCGAAACTGTGGAGCGCCGAAATCCCGAATCTCTATCTGTCGGTGGTTGA
 ACTGCACACCCCGCAGCGCACGCTGATTGAAGCAGAAGCCTGCGATGTGGTTCGCGAGGTGCGGATTGAAATGGTCTGCTGCTGCTGAACGGCA
 AGCCGTGTGCTGATTTCGAGGCGTTAACCGTCACGAGCATCATCTCTGCATGGTCAGGTCATGGATGAGCAGACGATGGTGCAGGATATCTCTGCTGATG
 AAGCAGTAACAACTTAACGCGTGCCTGTTCGATTACCGAACCTACCGCTGTGGTACACGCTGTGCGACCGCTACCGCTGTATGTTGGTGGATGAA
 GCCAATATTGAAACCCAGCGATGTGCCAATGAATCTGTCACCGATGATCCGCGTGGCTACCGCGGATAGCGGAACGCGTAACGCGAATGGTGCA
 GCGCGATCGTAATCACCCGAGTGTGATCATCTGGTTCGCTGGGGAATGAATCAGGCCACGGCGCTAATCACGACGCGCTGTATCGCTGGATCAAATCTG
 TCGATCCTTCCCGCCCGGTGCGATGTAAGGCGCGCGAGCCGACACCACGGCCACCGATATTATTTGCCCGATGTACGCGCGCGTGGATGAAGACCAG
 CCCTTCCCGCTGTGCGCAATGTGCTCAAAAAATGGCTTTTCGCTACCTGTGGAGAGACGCGCGCGTGTACCTTTGCGAATACGCCACCGCATGGGT
 AACAGTCTTGGCGGTTTCGCTAAATACTGGCAGCGGCTTTCGTCAGTATCCCGGTTTACAGGGCGGCTTCGCTGGAAGTGGGTGGATCGTCTGAT
 AAATATGATGAAAACGGCAACCCGTGGTTCGGCTTACGGCGGTGATTTTGGCGATACGCCGAACGATCGCCAGTTCTGTATGAACGGTCTGGTCTTTGCC
 GACCGCAGCGCGCATCCAGCGCTGACGGAAGCAAAACACCAGCAGCAGTTTTCAGTTCCGTTTATCCGGGCAAAACCATCGAAGTGACCAGCGAATA
 CCTGTTCCGTCATAGCGATAACGAGACTCCTGCACTGGATGGTGGCGCTGGATGGTAAGCCGCTGGCAAGCGGTGAAGTGCCTCTGGATGTCGCTCCAC
 AAGGTAAACAGTTGATGAACCTGCCTGAATACCGCAGCGGAGAGCGCGGCAACTCTGGCTCAGATACGCGTAGTGCACAACCGACCGACCGC
 ATGTTGAGAAGCGCGGCACATCAGCGCTTGGCAGCAGTGGCGCTTGGCGGAAAACCTCAGTGTGACGCTCCCGCGCGGTCCACGCGCATCCCGCATC
 TGACCACAGCGAAATGGATTTTGCATCGAGCTGGGTAATAAGCGTTGGCAATTTAACCGCCAGTCAGGCTTTCTTTCACAGATGTGGATTGGCGATA
 AAAAAACAACCTGCTGACGCCGTGCGGCTACAGTTACCCGTGCACCGGTGATAACGACATTTGGCGTAAGTGAAGCGACCCGCAATTGACCTAACGCC
 TGGGTGCAACGCTGGAAGGGCGGGGCCATTACGAGGCCGAAGCAGCGTGTGTCAGTGCACGGCAGATACACTGTGATGCGGTGCTGATTACGAC
 CGCTCAGCGTGCAGCATCAGGGGAAAAACCTTATTATCAGCGGAAAAACCTACCGGATTGATGGTAGTGGTCAAATGGCGATTACCGTTGATGTG
 AAGTGGCGAGCGATACACCGCATCCGGCGCGGATTGGCTGAACTGCCAGCTGGCGCAGGTAGCAGAGCGGGTAAACTGGCTCGGATTAGGGCCGCA
 AGAAAACTATCCCGACCGCCTTACTGCCGCTGTTTTGACCGCTGGGATCTGCCATTGTGACAGATGTATACCCCGTACGTTCTCCCGAGCGAAAACGG
 TCTGCGCTGCGGGACGCGCGAATTTGAATTGATTTGAGCCACAGCAGTGGCGCGGCGACTCCAGTTTCAACATCAGCGCTACAGCAGCAACTGATGG
 AAACAGCCATCGCCATCTGCTGACGCGGAAGAAGGCACATGGCTGAATATCAGCGTTTCCATATGCGGATTTGGGTAGTGTGGCGACACTCTGGAGCCCG
 TCAGTATCGGCGGAATTCAGCTGAGCGCGGCTCGCTACCATTACCAGTTGGTCTGGTGTCAAAAAATAATAAACCAGGCGAGGCCATGTCTGCCCGTA
 TTTGCGGTAAGGAAATCCATTATGTACTATTTAAAAAACACAAACTTTTGGATGTTCGGTTTTATCTTTTTCTTTTACTTTTTATCATGGGAGCCTACTT
 CCCGTTTTTCCCGATTGGCTACATGACATCAACCATATCAGCAAAAGTGATACGGGTATTATTTTGGCGCTATTTCTCTGTTCTCGCTATTATTCCAAC
 CGCTGTTTGGTCTGCTTTCTGACAACTCGGAAGTTGTTATTGACGATATAATGGTTACAAATAAAGCAATAGCATACAAATTTCAAAATTTAAT
 AAGGCGCGGGATCGATCCCGCTCGAGCAGTGTGGTTTTCAAGAGGAAGCAAAAAGCCTCTCCACCCAGGCGCTGGAATGTTTCCACCAATGTGAGCA
 GTGTGGTTTTGCAAGAGGAAGCAAAAAGCCTCTCCACCCAGGCTGGAATGTTTCCACCAATGTGAGCAAAACCCCGCCAGCGTCTTGTCTATTGGC
 GAATTCGAACAGCAGATGCAGTCGGGGCGGCGCGGTCCCAGGTCCACTTCGATATTAAAGGTGACGCGTGTGGCTCGAACCACCGAGCGACCTGCA
 GCAATATGGGATCGGCCATTGAACAAGATGGATTGCACGCAAGGTTCTCCGGCGCTTTGGGTGGAAGAGGCTATTCGGCTATGACTGGGCACAACAGAC
 ATTCGGCTGCTCTGATCCGCGCGTGTTCGGCTGTGCAGCGAGGGGCGCGGTTCTTTTTGTCAGAACGACCTGTCCGTTGCCCTGAATGAATGCA
 GGACGAGGCGAGCGCGCTATCTGTGGCTGGCCACGACGGGCTTCTTGGCGAGCTGTGCTCGACGTTGTCTACTGAAGCGGGAAGGGACTGGCTGCTAT
 TGGGCGAAGTGGCGGGGAGGATCTCCTGTCTATCTACCTTGTCTCTGCCGAGAAAGTATCCATCATGGCTGATGCAATGCGCGCGCTGCATACGCTTG
 ATCCGGCTACCTGCCCCATTTCGACCAACCGAAACATTCGCATCGAGCGAGCAGCTACCTCGGATGGAAGCGCGCTTGTGCTGATCAGGATGTGCGG
 GAAGAGCATCAGGGGCTCGCGCACCGGAACTGTTCGCCAGGCTCAAGGCGCGCATCCCCAGCGCGAGGATCTCGCTGACCCATGGCATGGCTGCTG
 CTTGCCGAATATCATGGTGGAAAAATGGCCGCTTTTCTGGAATTCATCGACTGTGGCCGGCTGGGTGTGGCGGACCGCTATCAGGACATAGCGTTGGCTAC
 CCGTGATATTGCTGAAGAGCTTGGCGGCAATGGGCTGACCGCTTCTCTGTGCTTACGGTATCGCGCTCCCGATTTCGACGCGCATCGCCTTCTATCG
 CCTTCTTGACGAGTTCTTCTGAGGGGATCGGCAATAAAAAAGACAGAATAAAACCGCAGCGGTGTTGGGTGCTGTTTTCGGATCCGAATTCCTCGAGGGC
 CGCCTATTTAAATGGCCAGCGAGGCCACATGCTCGGCAGAAATCTTACAGATGCGCACATAACAGACTCTGGCTCTGCACATAACAGATTCGAGGC
 CCTATACTGCGCTCTCTGTCTCTATTGAGGAGCGCTAGACGAATCTGACTGGAGAGGAGGAAGTCTGCCAGACCCCTCACTCCCCCCCCCGC
 ACCCCCTCCCCGCTGGTATAGGGATAGATTCCCAGGCAGAGTGGGGAACCAGGTCTATGTGGGTGGGACCTCAATATAAATTAGTGGTGGGGCACC
 TGTGTTAGCCACACCCCTCTCTTCTCCCTCTTCTCTTCCATTTCAGAAAAATGTAAAAAGTCTGTTTCTTAAGTGTCCCAATGTGTTAGCAGTCTTTTCT
 GACTTGAAGTGAAGTCTTTTCACAAAAGTACTCTTTGGCTAGATCTCTCCACATACTCTTTGTACCTAGCCCGGGACACTGAGGAGTTTGAATTTGT
 TTAAGGTAGGGTGAAGTGTAGTACACAGGCCAAGACGCTGTGTGTGGAAGGCAACCTCTACGCGCGGGGCTGCGCGCGAGCTGGCGCCACC
 GCGGGGAGGGACCGCTCTTGGCTCAGCGTCTGTGTTTGGGTGTGAGACCCATCGCGGGCTGCTGCCCCCTGGAAGGGGCGTGGCTGGAACCCCA
 TGCTCGAGGCGCTGGCCACCCCTCTGCTGTATGAATGCATCTCCAATGCCTCTGCCTGGCTGCTGCCACTTTTCCAGTGTGATTCTGACTGTGATTG
 CCGGTAGCCGCTGCTCGGCGCAAGTACTGGCAGCAATTTGAGGCGCTGGCAGAGCGGAGAACGCGGAGGCTGGAAGGGTCTGGACCGGATGGGGG
 TGGGATCGTCTACTACACGCTTTTCAAGAAGTCTCTCCACCCAGTGAGAGAGGACCTAGGTCGGGTCCCTGTGTCCATCATAGCTTGTCTCCGT
 GGCGTCAAGATGTCTGGGGCTGCTGTCCCTTGTACCTACCTGCAGAGCACAGGCTGGCTCTCGCCCAAAACCGAATCTGTGCGATCTGCGGGGAG
 TAACCTCAGTTCCCGCTCTGACGCTTGTAGGGTTTGGGCCCCGAGCCTGGAGTGAAGGATGTCTGCGCGCCACCGCTGCACCCTCCCCGACCC
 CGCTCTGCTGCAGCGGACCGGGTTAATAATGTGCGCGGAAAGTGACACGCGATTATTTAATAAGTAATGCGGGCGCGGGACGGGAAAGGTTTAA
 TAAACCGCTGAGAGCGCTAGGATTTTACCAGCAATAAATGAGAGCGCGGGCGGTGTTTTAATAAATTTTCCCGCGCTCCCGAGGAGGAGAG
 GGGGAGGAGGACGGGAAACTGAGCGCTGCGGCGACTCTCGGCTCCGATCCCCACGGGTTTTAAAGCCCTTTGCACTAAACGCTGCTGATGCCGAGG

[illegible]

[illegible]

TACTCAGAGGACCCATGTCAATAAACTCAGCCTGCTCTAGTTTTATGTTCCCTCCACCCTTATCCACACCCCTTAAAAATCCATTCCCACACATATTCACC
AGGTTTCTGCTTGAATGAATTAGCAAACCTATTAAGCTCCTTAGTAGTGTAGCGAATTCCTCATGGACTATACTTTCTACCTCCCCTCTAGGAGCCTGT
TTTGCTTTGAGTCTGGTTACAGGTCTAGAAGAACTATTGGTGGGCCGTGAGCAGACTCTGCAAAATTAATTTCCCTCATGTGGGGAAGGCATTATTTCA
AGAGGTGGGGCTGAGGGTACTACTTCCTCAGGTGGGGCAAACCCCTTGAGAATCTGAGGATTCAAAATTTCTCAGCTTCAACATGGTCTTCCCACACATCC
CCGTCCCATGTTGTAGGATCCCATTCTTTGCCAATTAGAGCCCTTACTTTAACTGTGACACACTCTGAGGCTGAGACTTGAACTTTTCTCTGTAGTTCA
GCCAACCTTACAATGAGAGTTTCTGTGTTGATTTTCTGCAACTTGAGCTCTATTGCTACAAGAGAGAAGATTCTCTCAAGGACACACTTAGCAACTTTT
AGATCGTTTACTTGTGTCTGGAGCCTTTCGATTTTATCACACAACCTCCTTCCTTTCATTTCATCATTTTTTCCACAGATACTAAGAGCAGCCAGCCAGTAA
AATCATTTTTTCGATTTTTTCCCCATCTTGTAGAAAGCTTTGTGCACTGAATCACCTAATTCATTAAGAAAATCAAGGGCATTAGCTTCTTTAAGTTCGGA
ATATAGTTTCAACCATGGGTCTTCAAAATTTCTGTGAGCTCCCAGGAGGGAGAGAATCTGGAGAGGTTTCAATATTTGAAAGTGCTGGTGGATCACACA
AGCCAATTCCAGTATTTTAAAGATTATCCTTGTACTTCTGTTACTCTAGAACCCTCCTGGTACCAACTTCTGTATTAGTCAGGGTTCTCTAGAGTCA
CAGAACTTATGGATAATCTCTAAATAGTAAAGGAATTTATTGATGACTTACAGTCGGCAGCCGAATTCCTCAACAATTGTTTCAGTCGCAGCTGTGAATGG
AAGTCCAAGGATCTAGCAGTTACTCAGTCTCACGCAGCAAGCAGGCAAAGGAGCAAGAGCAAGAGCTAGACTCCCTTCTCCAATGTCCTTATATTGT
CTCCAGCAAAAGGTGTAGCCAGATTAAAGGTGTGTTCCACCACACCTTAAATCCCAGATGAAAGGCATAGCCAGATTAAAGGTGTGTTCCCTAAGTCTG
GAGATTCAATCTTCTGGAATCCATAGCCACTATGGCTCAAGATCTTCAAACCAAGATCCAGATAAGGATCTCCAAGCCCTCCAGATAAGGGTCACTGGT
GAGCTTCCAATCCGAGATTGTAGTTTCAATCCAAATATTGTCAAGTTGACAACCAGGAATAGCCACTACAGTTTCTAAGTATGCTATGCCACTGCTATG
GCACGTGGAGGTCAAGGACAGTTTGCAGGAGTGGAGTCTTTCCTTCTACCATCAAACCTCGAAGTCAAACCTCAAATATCAGCCTTATGGATAGGCATC
TTTAACCACTGAGTGGCGGCTTGGTGTCTCTGAATTCAGCTATGAAGTAAGTGCCTCAGAGAGAGGGCCTGATGGGGCAGTACACCTTCCAGCCTTGCTT
TCTCTCTGCTCATCTGCGTTGTCCCTGATTCCAACACACTCCTAGCTAGTCTCAGTCTCCACGGACCCTGTTCCAGGGCTGGAGTCTCCAGCAACATCC
TTTTGTGGTGGTGGGGTTTCCAATTGGCTTCGATTTGACTGTTGACTGTCCCTTGCACTGCACACCAACTCTGAGCAGTGTGAGAAGCCATCAAAATCC
AGGAACACCCAATCTTCAATCAGGAGAGGGGAGGTAAAGTAGAACCATTCAATGTTGTAaaaaaactGGCCTCAAGTCACTCCCAGCCACACCCAGGG
AGCCCACTCCGGGGGGGGGTATTCAAGGAGGGCCTGGCACAAGATTCTAGTCTTCCCTCAAGCTGCCCCCACCTGCTTGAGTCATTAGGACAAGACT
CTGGAGTTCTTTATCCAGCCCAAGGGCACCTGAAGCCTCTCCATTCCCTTCTGTCCTTCTCTCACTTGGAAGTTGCCAAATGGATAGCGAGCTTG
GATGGGTCTTGGTGGCCAACTCCAACAGAGGGGGAGGCATCCTGGCCTCTTGCCAGCATTCTGTCCATGGTAATTTGGCAGCAGAGCACCAGCTGC
ATATATCTGCACATCTGTTTACGCCCTCTGGCTTGTTATTTATTCTCTGCCTTTCACGGGCAGCAGAGCCAGAACACACCTCAAGTCTTCCCAAGTTAGAT
TAACTGGGAGAGAAGGCTAGGACATTCAAGTACAGCAATCGCTGAGCCTCATGGAAGGGCCTGCCTTCTCCAGCAGCTGCTGCCACTTTTCAAAGGAA
CGAAGAGAGGAGGGGAGGAGAGAGGGGAAAGGAAGGGAATGAGTGTGAGGGGAACGGAGAGGAAGAGAGGACTGTGAAGTTAGAGCCTTGGACA
TGTTGGGGCTGGCCAGGTAGCCTGGTCTAGGCCTCACTGGAGGCAGCACTGTCTGGTCTTTGAAAACAACAACAACAACAACAACAACAACAAAA
CCCCCAAAAAACAGCCGCCTGAACATTCTTTCCTGCTCAGCACTTGAATGCTTGATTTTCAATGTGTGTGTTCTTGCAAGGTTGAGGATTTAGTCATGGG
AATAAAGTTTTCAACAGATACTTCTGGGGAGCTTGGCTAACTGAGCTTGAGGGGTTTTCTGGGGTGAAAAATTAAGGGACCAGGTCTGTCCCTGGAAT
GAGGGACGAGAAGCCAGTAGAGGAGTGGCGGGAGGAAGCGGAAGAGGAATAACGGGAAGGAGAAGAGAAAAGAGATGGTTAGTAAGCAGGGAAATA
GGTTTTTCAGAGAAGGAAGAGGGAGGGCTGAGTGGAGAGCCTTGAGCTGCCCCGTGACGCTGTCTTGGTCTGACAAAGTCTATGCGTGAACCTGAA
CACCAGCCTGTGTGGACCGCCCTCCCTGCCCCAACTCTCTGCGGCTTCCCTTGAAAGGCGAACAACGGGTGTGAAGTCTACCTCATGAGCACTCAAT
CCCAATTGGGTTTTCTCTCCTACACCATCTCCCTTCTCTCAAAGCAACTCCCTGTCCAAGCAACATACCTTGAAGAAAAGCAGACTGGTGTGGACTCAA
AGTAACCTGGACAGAGCTCCTGGAGAAAGATAAGGATTCTCAGGTCCCAGAAGACTTCGGCCTGAGTAGTCTCATGAGATAAATGGATTGGAACGGG
AGGTGGAGCTCTGTGGTGGGAAGTACTGGCCAGTCCAATAAAAGCAACAGTGGTACACATGCCTTTAATGGCAGCACTGGGAGTCAGGGGACTGA
GGGGGCGGTGGGCAAAAGCAGGCAGTCTCTGTGAGTTCAGGATAGCCTGGTCTACCAAGTAAACTCCAGGCTGGCCAAGATTGTTTTAGTGAAACCT
GTCTCAACACACACACACACACACACACACACACACACACCATTTTATTTTTTTTTTTTCTTTGACTTGTCTCCCATTCCTTTTGTATAAGTC
AAACAACAGTGTGTTGGGTTCAAGTGGTAGAGCACTTGCCTAGTCTATCACAAGACATTGTATCCAGCCCCCCCAGCACTGGTGGTGGGGGGGAATGTAA
ACCAAA