



Lexicon Genetics Incorporated – Genentech Project Materials

Genentech ID:	UNQ729	Date of Submission:	10/14/2004
Lexicon Contract Name:	DNA293	Mutation Type:	x Standard Knock out
LexVision Name:	PSC209N1		☐ Conditional
Reference accessions:	NM_172899	Is this gene X-linked?	No

Required Materials: x pKOS clone DNA(s) __pKOS44_____
x Target Vector DNA __DNA293-44TV_____
x Targeted ES Cell DNA __1H2_____
x Genomic Map

Southern Blot Analysis: *External/Internal Probe Strategies*

	<u>5' Internal</u>	<u>3' External</u>
Name of Probe:	19 + 20	22+23
Restriction Enzyme for Genomic Digest:	NheI	XbaI
Predicted Wild-type Band (kb):	(6.7+n) 7.2 kb	7.5 kb
Predicted Mutant Band (kb):	(12.2+n) 12.7 kb	5.0 kb
Probe Size:	341bp	381bp

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:	DNA293-18	5' Primer Name:	DNA293-24
3' Primer Name:	DNA293-21	3' Primer Name:	GT-IRES
Predicted Wild-type Band (bp):	386 bp	Predicted Wild-type Band (bp):	none
Predicted mutant band (bp)	none	Predicted mutant band (bp)	474 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**

DNA299-19 5' – GACTGGGCTGCAGACATCC
 DNA299-20 5' – CCAGAGATCTTGCTGCTTCC
 DNA299-22 5' – GCCTGCACATGGTAACATTG
 DNA299-23 5' – AATGCTGTCCTGCTATCCACT

PCR Genotyping

DNA293-18 5' – GCTAAAGAAGCAGCCAGCTC
 DNA299-21 5' – AGGGAATCAGAACCATCAGG
 DNA293-24 5' - CAGGAGATGCCATTAGCCA
 GT-IRES 5' – CCCTAGGAATGCTCGTCAAGA

GGGTAGATGCTGTCCACAACGCTGGGTCTGGGTGAGTGGCTGGGAAGCCGGGTGTGCGGACAGGGGGTGGGGGTGGCTGGGTCAAGAACCTGGAGA
TGGATCAGAGGGTGAAGAGATAGTTTCTATTGTGTCATGAATCTTCTCTTCTGTCATGGTCCCCCTCCCCCTTCTTCTCTCCCTGATGGTTCGATT
CCCTCTCATGTGTTGCAGACTAAGGACCTGGTGTATTGCTTTTGCAGGGACATCTGGAGTTCATGGCGCATATGGCTCTCAAGGTGGTGTGGAGT
CAGGGCAATCTCTGGTCTCTCAAGGGACACCTGGGCCTCAGGAGGCAACTATGGCACTAACTCTTGGGTGGCTCTTGGGTGAGGGTGGCAATGGCGG
ACCACTCAACTATGAAACCAATGCCCAGGTAAAGTCACTACCCAGACCCATCCCTCAACCTGTTCTCTCCACCCCTCCTTATTTCTGGATCCTAAACTC
GGTCTCTGGTCTCTGCCTCCATGCAGGGAGCTGTGGCTCAGCCTGGGCTACGGGACAGTGAGAGGCAACAACCAGAACTCAGGGGTAAGAAGAAGTGT
GCACGGGACACAGTGGCAGGGATGAATAGAAGGGGAGGAGGAAGGGGGGAGAGTGGAGGTCACAAGCCAGGGAAGAGGGAGGGAACTGGAAAGG
GGCAAGAAAGCCAAGCCACAGGCAGCAAGCTAGCCTGGCCTGTGGAGGTCGTTTTGACATCTCGTCCCTCATGACATCCCTTCCATCCACAGTGTA
CCAACCCCCCACCTTCTGGCTCCCATGAAAGCTTCAAGTAAGTCTGGGGTAAGAGGAGTG

[illegible]

Selection Cassette:
 GGCGCGCCGGATCCGAATTCTCGAGGCTAGAACTAGCGATAAGCTTCGAGCGGGATCAATTCCGCCCCCCCCCTAACGTTACTGGCCGAAGCCGCTT
 GGAATAAGGCCGGTGTGCGTTTGTCTATATGTTATTTTCCACCATAATTGCCGTCTTTTGCCAATGTGAGGGCCCGGAAACCTGGCCCTGTCTTCTTGACG
 AGCATCTCTAGGGGTCTTTCCCTCTCGCCAAAGGAATGCCAGGTCTGTTGAATGTCGTGAAGGAAGCAGTCTCTCTGGAAGCTTCTTGAAGACAACA
 ACGTCTGTAGGACCCCTTTGCAGGCAGCGGAACCCGCCAACCTGGCGACAGGTGCTCTGCGGCCAAAAGGCCAGTGTATAAGATACACGTGCGAAAGGC
 GGCACAACCCCAAGTGCCACGTTGTGAGTTGGATAGTTGTGGAAGAGTCAAAATGGCTCTCTCTCAAGCGTATTCAACAAGGGGCTGAAGGATGCCCAGA
 AGGTACCCCATTTGTATGGGATCTGATCTGGGGCCCTCGGTGCACATGCTTTACATGTGTTTGTAGTCGAGGTTAAAAAAACGTCTAGGCCCCCCCGAACCCAG
 GGGACGTGGTTTTCTTTGAAAAACACGATAATACCATGGGGATCCCGCTGTTTACAACGTCGTGACTGGGAAAACCTGGCGTTACCCCACTTAAT
 CGCCTTGCAGCAGCATCCCCCTTTCCGCAGCTGGCGTAATAGCGAAGAGAGCGCCGACCCGATCGCCCTTCCCAACAGTTGCGCAGCGCTGAATGGCGAATG

GCGCTTTGCTGGTTTCCGGCACCAGAAGCGGTGCCGGAAAGCTGGCTGGAGTGCATCTTCTGAGGCCGATACTGTCGTCGTCGCCCTCAAACCTGGCA
GATGCACGGTTACGATGCGCCCATCTACACCAACGTGACCTATCCCATTACGGTCAATCCGCCGTTTGTTCACGGAGAATCCGACGGGTGTTACTC
GCTCACATTTAATGTTGATGAAAGCTGGCTACAGGAAGGCCAGACGCGAATTATTTTTGATGGCGTTAACTCGGCGTTTCATCTGTGGTGCAACGGGCG
CTGGGTGCGTTACGGCCAGGACAGTCTGTTTCCGCTCTGAATTTGACCTGAGCGCATTTTTACGCGCCGGAGAAAAACCGCCTCGCGGTGATGGTGCTGCG
CTGGAGTGACGGCAGTTATCTGGAAGATCAGGATATGTGGCGGATGAGCGGCATTTTCCGTGACGTCTCGTTGCTGCATAAACCGGACTACACAAATCA
GCGATTTCCATGTTGCCACTCGCTTTAATGATGATTTACGCCGCGCTGACTGGAGGCTGAAGTTCAGATGTGCGGCGAGTTGCGTGACTACCTACGGG
TAACAGTTTCTTTATGGCAGGGTGAACACGCAGGTGCGCAGCGGCCGCTTTCGGCGGTGAAATTATCGATGAGCGTGGTGGTTATGCCGATCGC
GTCACACTACGTCTGAACGTCGAAAACCCGAAACTGTGGAGCGCCGAAATCCCGAATCTCTATCGTGCGGTGGTTGAACTGCACACCGCCGACGGCAC
GCTGATTGAAGCAGAAGCCTGCGATGTCGGTTTCCGCGAGGTGCGGATTGAAAATGGTCTGTGCTGCTGAACGGCAAGCCGTTGCTGATTTCGAGGCG
TTAACCGTCACGAGCATCATCTCTGCATGGTCAGGTTCATGGATGAGCAGACGATGGTGACGATATCCTGCTGATGAAGCAGAACAACCTTTAACGCC
GTGCGCTGTTCCGATTTATCCGAACCATCCGCTGTGGTACACGCTGTGCGACCGCTACGGCCTGTATGTGGTGATGAAGCCAATATTGAAAACCCACGGC
ATGGTGCCAATGAATCGTCTGACCGATGATCCGCGCTGGCTACCGGCGATGAGCGAACGCGTAACGCGAATGGTGCAGCGCGATCGTAATCACCCGAG
TGTGATCATCTGGTCGCTGGGGAATGAATCAGGCCACGGCGCTAATCACGACGCGCTGTATCGCTGGATCAAATCTGTGATCCTTCCCGCCCGGTGCA
GTATGAAGGCGCGGAGCCGACACCCACGGCCACCGATATTATTTGCCCGATGTACGCGCGCTGGATGAAGACGACGCCCTTCCCGGCTGTGCCGAAAT
GGTCCATCAAAAAATGGCTTTTCGCTACCTGGAGAGACGCGCCGCTGATCTTTGCGAATACGCCACGCGATGGGTAACAGTCTTGGCGGTTCGCTA
AATACTGGCAGGGCTTTCGTGATGATCCCCGTTTACAGGGCGGCTTCGTCTGGGACTGGGTGGATCAGTCGCTGATTAATATGATGAAAAACGGCAACC
CGTGGTGGGCTTACGGCGGTGATTTTGGCGATACGCCGAACGATCGCCAGTTCTGTATGAACGGTCTGGTCTTTGCCGACCGCACGCCGCTACCGCGC
TGACGGAAGCAAAACACCAGCAGCAGTTCCTCAGTTCGCTTTATCCGGGCAAAACCATCGAAGTGACCAGCGAATACCTGTTCCGTCATAGCGATAAC
GAGCTCTGCACTGGATGGTGGCGCTGGATGGAAGCCGTGGCAAGCGGTGAAGTGCCTCTGGATGTGCTCCCAAGGTAACAGTTGATGTAAC
GCCTCAACTACCGCAGCGGAGAGCGCGGGCACTGTGGCTCAGACGATACGCGTACGCTGTAACCGAACCGACCGCATGGTCAGGAAGCGGGCAGCATC
AGCGCCTGGCAGCAGTGGCGTCTGGCGGAAAACCTCAGTGTGACGCTCCCCGCCGCTCCCACGCCATCCCGCATCTGACCACCAGCGAAATGGATTT
TTGATCGAGCTGGTAATAAGCGTTGGCAATTTAACCGCCAGTCAGGCTTCTTTACAGATGTGGATTGGCGATAAAAAACAACCTGCTGACGCCGCT
GCGCGATCAGTTACCCCGTGACCCGTGGATAACGACATTTGGCGTAAGTGAAGCGACCCGCTTACCCCTAACGCCTGGGTGCAACGCTGGAAGGGCGG
CGGGCACTTACCAGCGGAAGCAGCGTTGTTGCACTGACCGGACAGATACACTTTGGCTGCTGATTACGACCGCTGCTGATTACGCGGTGGCAGCATC
GGGAAAACCTTATTTATCAGCCGGA AAAACCTACCGGATTGATGGTAGTGGTCAAATGGCGATTACCGTTGATGTTGAAGTGGCGAGCGATACACCGCA
TCCGCGCGGATTGGCCTGAAC TGCCAGCTGGCGCAGGTAGCAGAGCGGGTAAACTGGCTCGGATTAGGGCCGCAAGAAAACCTATCCCGACCGCCTTA
CTGCCGCTGTTTTGACCGCTGGGATCTGCCATTGTGACAGCTATATACCCGCTACGCTTCTCCCGAGCGAAAACGGTCTCGCTGCGGGACGCGCGAAT
TGAATTATGGCCCAACACAGTGGCGCGGACTTCCAGTTCAACATACAGCGCTACAGTCAACAGCAACTGATGGAACAGCAACGACCATGCCATGCCATGCT
CACGCGGAAGAAGGCACATGGCTGAATATCGACGCTTTCATATGGGGATTGGTGGCGACGACTCTGGAGCCCGTCACTATCGGCGGAATTCCAGCT
GAGCGCCGCTGCTACCATTACCAGTTGGTCTGGTGTGAGGGGATCCCCGGGCTGCAGCCAATATGGGATCGGCCATTGAACAAGATGGATTGCACG
CAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTCCGGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCGGGCTGTCAGCGC
AGGGCGCGCGGCTTCTTTTGCAGAACGACCTGTCCGGTGCCCTGAATGAAC TGCAGGACGAGGACGCGGCTATCGTGGCTGCCACGACGGCG
GTTCTTGGCGAGCTGTGCTGACAGTTGTCACTGAAGCGGGAAGCTGCGCTGCTATTGGGCGAAGTGGCGGCGCAGGATGCTGCTGCTCATCTCACCTT
GCTCTGCGGAGAAAGTATCCATCATGGCTGATGCAATGCGGCGGCTGCATACGCTTGATCCGGCTACCTGCCCATTCGACCACCAAGCGAAACATCG
CATCGAGCGAGCAGTACTCGGATGGAAGCCGCTCTTGTGATCAGGATGATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGCCGAACCTGTTCCGCCA
GGCTCAAGGCGCGCATGCCCGACGGCGAGGATCTCGTCTGACCCATGGCGATGCCTGCTTGCCGAATATCATGGTGAAAAATGGCCGCTTTTCTGGA
TTACATCGAGCTGTGGCCGCTGGGTGTGGCGGACCGCTATCAGGACAGATAGCGTTGGCTGATACCGGTGATATTGCTGAAGAGCTTGGCGGATGGGCTGA
CCGCTTCTCTGCTGCTTTACGGTATCGCCGCTCCCGATTGCGAGCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCTTCTGAGGGGATCAATTCTCTAGA
GCTCGCTGATCAGCCTCGACTGTGCTTCTAGTTGCCAGCCATCTGTTGTTTGGCCCTCCCCCGTACCTTCTTGACCTGGAAGGTGCCACTCCCAGT
TCCTTTCTAATAAAAAATGAGGAATTTGCATCGCATTTGCTCTAGTAGGTTGTCATTCTATTCTGGGGGTGGGGTGGGGCAGGACGCAAGGGGGAGGAT
TGGGAAGACAATAGCAGGCTATGGGATGGGCTGGGCTCTAGGCTCTGAGCGGAAAGAACAGTGGGCTGCTACTCTAGCTAGCTAGCTAGCTAGCTAGC
GGGTAGGGGAGGCGCTTTTCCCAAGGCAGTCTGGAGCATGCGCTTTAGCAGCCCCGCTGGGCACCTTGGCGCTACACAAGTGGCCTCTGGCCTCGCACA
CATTCACATCCACCGGTAGGCGCCAACCGGCTCCGTTCTTTGGTGGCCCTTCGCGCCACCTTCTACTCTCCCTAGTCAGGAAGTTCCCCCCGGCC
CGCAGCTCGCGTCTGACAGGACGTGACAAATGGAAGTAGCAGCTCTCACTAGTCTCGTGAGATGGACAGCACCGCTGAGCAATGGAAGCGGGTAGG
CCTTTGGGCGAGGCCAATAGCAGTTTGTCTCTTCTGGCTCAGAGCTGGGAAGGGGTGGTCCGGGGGCGGCTCAGGGCGGCTCAGGGCGGCTCA
GGGGCGGGGCGGGCGCCGAAGGTCTCCGAGGGCCGCGCATTTCTGACGCTTCAAAGCAGACGCTGCGCGCTGTCTCTCTTCTCTCATCTCCGG
GCCTTTCGACCTGCACTGCGCGCCAGCTTACCATGACCGAGTACAAGCCACGGTGCGCCTCGCCACCCGCGACGACGTCCCCAGGGCCGTACGCACC
CTCGCGCGCGGCTTCCGCGACTACCCGCGCACGCGCCACACCGTCGATCCAGACCGCCACATCGAGCGGGTACCGGAGCTGCAAGAACTCTTCTCTAC
GCGCGTGGGCTCGACATCGGCAAGGTGTGGGTGCGCGACACGCGCGCAGCAGTGGCGGTCTGGACCACGCGGAGCGCTGCAAGCGGGGCGGTG
TTGCGCGAGATCGGCGCGCGCATGGCCGAGTTGAGCGGTTCCCGCTGCGCGCACGCTGCTGCAACCTTCTGTAACCTTCTGTAACAGAGGATGCA
AGCCCGCGTGGTTCCTGGCCACCGTTCGGTGTCTCGCCGACCAACAGGGCAAGGGTCTGGGCAGCGCGCTCGTCTCCCGGAGTGAGAGCGGCGGAG
CGCGCGGGGTGCGCGCTTCTGAGACCTCCGCGCCCCGCAACCTCCCTTCTACGAGCGGCTCGGCTTACCGGTACCGCGGACGTGAGGTGCCC
GAAGACCGCGCACCTGGTGCATGACCCGCAAGCCCGGTGCTGACGCCCGCCACGACCGCCGAGCGCCGAGCGCAAGGAGCGCACGACCCCATG
CATGATGATCTAGAGTCTGCTGATACGCTCAGCTGTGCTTCTAGTTGCCAGCTATCTGTTGTTGCCCCCTCCCCGCTGCTGCTGACCTTGAAAG
GTGCCACTCCCAGTGTCTTTCTAATAAAAAATGAGGAAATTCATCGCATTTGCTGAGTAGGTTGTCATTCTATTCTGGGGGTGGGGTGGGGCAGGACA
GCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCTGGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACAGCTGATTACCCTGTTA
TCCCTACTCGACCTCGAGGGCGCGCC

Targeted Locus:

NN
NN
NN
GAGAGAGATATTTGTAAGTATGATCCCTCTTCTCACCAGGGCTGCCCTGGCCCTGGAAGGCTTCGGGCAGTGAGCAAGCAGCAGTACAGTGGCTGTGA
GCTCTTACAGGCACACATGTCTTTCCATCGAGGTAACAGGATGGGTGTCTAGGTGACGTTCTCCCTCCCTGCTTCTCCCGCTACTCTTGGCTGGGG
GTGACTGACCTCCCAATTTCCCTGCTCCGCACCTGGGCTCTGAACTCTGACGTGACGATGCAACCTTCTGTAACCTTCTGTAACAGAGGATGCA
CTCCTTCAACACCAGGGTACCCAGAACCTCAGAACTTAACCAAGCCCTAGAATTCCAGTGTCTGACTGCACTGTGGATGTGTGAGAGGACAGGCAC
CTGCAAGGTAGAGGCATGCCAGGAGAAAGATGGGAGCTGGAATGGTCACTCTTTCCAGTCTTCTGTCGCCCTGTGCATGCTGGCTTACCCGGGATGGG
TCCTCTATCTGTGGCTTGTCTCTTTATACCTCTTGGGCTTCACTGTTTGTGAGCCCTGCTTCTAAGTACCCCAACCTGCGGCTCTCAAAAGACA
CAACACCTATCTCTAGATGCTCTGTCCCAACCTGTGCCCAAACTTCTGAGTTAGGCAACTGGAACACTTTTGCAAGCTCTCATCTATTCTTCTTCT
CCCTCCCTCCCGATGGCCTGCTCCGGAGAGCTCTCTGTTTCAACACAAGCTCTCGGCTCACAATTAAGCTTCATTACCTATCTGTGGATAGGCCCTG
AGTCACTGGAGGAGGGATCTTAAGCGGCCAGCCCTGTTACCTTTTCCCAACCTACAGTATAAGGGGTAGTGGAAGAAGAAAGACTGTGGAAGCAG
GGAAGTCTGGGAACAGAGAGAGAAGGCTGTGGGTCTGGGGAAGGAGAATAAGGAAGCAAGGAAGGAAGGAAGGAAGGTTCTCAGCCACAGAGGAAGA
AAGAAGGGAACAAATAGACTGGGTGTCAGAGGATGAGAGGAGCTGGGCAGAGATGAAGTCAAGGGCTCTTGGCTGCTCTGCTCTGCTCTGCT
GGCCCTATGTCTGGGTGGTGGGGCAGCTAACCCTGTCACAGTGAGGGGAGGGACAGGGGCAAGTGCTGCCCATGGAGATGCGCATTAGC
CATGGAATTGGAGAGGCTGTGGGCAAGGGGCTAAAGAAGCAGCCAGCTCTGGAATCCAGAATGCCCTAGGCCAGGGGCACGGAGAGGAAGGTGGCT

CCACATTGATGGGGAGCAGAGGCGATGTTTTTGTAGCACCGGCTTGGGGAAGCAGCAAGATCTCTGGGGAACGCTGGGAATGAGATTGGCAGACAGGC
TCAGGATATCATTCGCCAAGCGCTCTAGAGGCCATAGCGGCCGATCCTCGAGGCGCGCGGATCCGAATTCCTCGAGGCTAGAACTAGCGATAAGCT
TCGAGCGGGATCAATTCGCCCCCCCCCCCTAACGTTACTGGCCGAAGCGCTTGAATAAGGCCGGTGTGCGTTTGTCTATATGTTATTTTCCACCATATT
GCCGTCTTTTGGCAATGTGAGGGCCCCGGAACCTGGCCCTGTCTTCTTGACGAGCATTCTAGGGGTCTTTCCCTCTCGCCAAAGGAATGCAAGGTCT
GTTGAATGTCTGTGAAGGAAGCAGTTCCTCTGGAAGCTTCTTGAAGACAAACACGTCTGTAGCGACCCTTTGCAGGCAGCGGAACCCCCACCTGGCG
ACAGGTGCTCTGCGGCCAAAAGCCACGTGTATAAGATACACCTGCAAAGGCGGCACAACCCCACTGCCACGTTGTGAGTTGGATAGTTGTGGAAAGA
GTCAAATGGCTCTCCCTGAGGCCGATCTGTCTGTCTCCCTCAAACCTGGCAGATGCACGTTACGATGCGCCCATCTACACCAACGTCAGGTGCACATG
CTTTACATGTGTTTGTGAGGTTAAAAAACGTCTAGGCCCCCGAACCACGGGGACGTGGTTTTCTTTGAAAAACACGATAATACCATGGGGGATC
CCGTGTTTTTACAACGTCTGTAGCTGGGAAAACCTGGCGTTACCCAACTTAATCGCCTTGCAGCACATCCCCCTTTGCGCAGCTGGCGTAATAGCGAAG
AGGCCCGCACCGATCGCCCTTCCCAACAGTTGCGCAGCCTGAATGGCGAATGGCGCTTTGCTGTTTTCCGGCACCAAGCGGTGCCGGAAGCTGG
CTGGAGTGGCATCTTCTGAGGCCGATACGTCTGTCTGTCTCCCTCAAACCTGGCAGATGCACGTTACGATGCGCCCATCTACACCAACGTCAGGTGCACATG
ATTACGGTCAATCCGCCGTTTGTTCACCGGAGAATCCGACGGGTGTTACTCGCTCACATTTAATGTTGATGAAAAGCTGGCTACAGGAAGGCCAGACG
CGAATTATTTTTGATGGCGTTAACTCGGCGTTTCATCTGTGGTGCAACGGGGCGTGGGTGGTTACGGCCAGGACAGTCGTTTGGCTCTGAATTTGAC
CTGAGCGCATTTTTACGCGCCGGAGAAAAACCGCCTCGCGGTGATGGTGCTGCGCTGGAGTGACGGCAGTTATCTGGAAGATCAGGATATGTGGCGGAT
GAGCGGATTTTTCCGTGACGTCTGTGCTGCATAAACCGCATACAACTACGCAATTCATGTTTGCCTGTTTAAATGATGATTTTTCAGCCGCT
GTACTGCGAGGCTGAAGTTGAGATGTGCGCGAGTTGCGTGACTACCTACGGGTAAACAGTTTCTTTATGGCAGGGTGAACACGAGGTCGCGACGGGCAC
CGCGCCTTTGCGCGGTGAAATTATCGATGAGCGTGGTGTTATGCCGATCGCGTCACACTACGTCTGAACGTGCAAAAACCCGAAACTGTGGAGCGCCG
AAATCCCGAATCTCTATCGTGGCGTGGTTGAAGTGCACACCGCCGACGGCAGCTGATTGAAGCAGAAGCCTGCGATGTGCGTTTCCGCGAGGTGGCG
ATTGAAAAATGGTCTGTGCTGCTGAACGGCAAGCGTGTGCTGATTGAGGCGCTTAACCGTCACGAGCATCATCTCTGATGGTCAGGTTCATGATGATGAG
CAGACGATGGTGAGGATGCTGCTGCTGATGAAGCAGAACTTAAACGCGGTGCGCTGTTTCCGATTATCCGAAGTACCTCCGCTGAGTACAGCGCTGTGC
GACCGCTACGGCCTGTATGTGGTGGATGAAGCCAATATTGAAACCCACGGCATGGTGCCAATGAATCGTCTGACCGATGATCCGCGCTGGCTACCGGC
GATGAGCGAACGCGTAACGCGAATGGTGCAGCGCATCGTAATCACCCGAGTGTGATCATCTGGTCTGCGTGGGGAATGAATCAGGCCACGGCGCTAATC
ACGACGCGCTGTATCGCTGGATCAAACTGTGCTATCTTCCCGCCGGTCAGTATGAAGGCGCGGAGCCGACACCCAGCCGACCGATATTATTTGC
CCGATGTACGCGCGCTGGATGAAGACGAGCCCTTCCCGCTGTGCGGAAATGGCTTTCGCTACCTGAGTGGTGGCGCTGGATGGTGGCGTGGCA
GATCCTTTGCGAATACGCCCACGGATGGGTAACAGTCTTGGCGTTTCGCTAAATACTGGCAGGCGTTTCGTCAGTATCCCCGTTTACAGGGCGGCTT
CGTCTGGGACTGGGTGGATCAGTCGCTGATTAATATGATGAAAACGGCAACCCGTGGTGGCTTACGGCGGTGATTTTGGCGATACGCCGAACGATC
GCCAGTTCTGTATGAACGGTCTGGTCTTTGCCGACCCGACCGCGCATCCAGCGCTGACGGAAGCAAAACACACGACGAGTCTTTCCAGTTCCGTTTAT
CCGGGCAAACTCAAGTGAAGCAGCAATACCTGTTCGCTATAGCGATAACGAGCTCTGACTGGATGGTGGCGCTGGATGGTGGCGTGGCA
AGCGGTGAAGTGCCTCTGGATGTGCTCCACAAGGTAAACAGTTGATTGAAGTGCCTGAACTACCGCAGCCGAGAGCGCGCGGCAACTCTGGCTCAC
AGTACGCGTAGTGCAACCGAACGCGACCGCATGGTCAGAAGCCGGGCACATCAGCGCCTGGCAGCAGTGGCGTCTGGCGGAAAACCTCAGTGTGACG
CTCCCCGCGCGTCCCACGCCATCCCGCATCTGACCACACGCGAAATGGATTTTGCATCGAGCTGGGTAATAAGCGTTGGCAATTTAACCGCCAGTCA
GGCTTTCTTACAGATGTGGATTGGCGATAAAAAACAACTGCTGACGCGCTGCGCGATCAGTTACCCCGTGACCGCTGGATAACGACATTGGCGTA
AGTGAAGCCACCGCATTGACCTTGAACCGCTGGGTGCAAGCTGGAAGGCGCGCGGCCATTACAGGCGCAAGCAGCGTTTGTGACGATGCACGGCAG
ATACACTTGCTGATGCGGTGCTGATTACGACCGCTACGCGTGGCAGCATCAGGGGAAAACCTTATTTATCAGCCGAAAACCTACCGGATTGATGGT
AGTGGTCAAAATGGCGATTACCGTTGATGTTGAAGTGGCGACGATACACCGCATCCGGCGCGGATTGGCCTGAACCTGCCAGCTGGCGCAGGTAGCAGA
GCGGGTAAACTGCTCGGATTAGGGCCGCAAGAAAACCTACCCGACCGCTTACTGCGCGCTGTTTTGACCGCTGGGATCTGCCATTGTGACAGCATGTA
TACCCCGTACGTTCTTCCGAGCGGAAAACGGTCTGCGTGGCGGACCGCGGAATTGCGCAATTTATGGCCACACACAGGTGGCGCGGCTTCCAGTTCAACA
TCAGCCGCTACAGTCAACAGCAACTGATGGAACACAGCCATCGCCATCTGCTGCACGCGGAAGAAGGCACATGGCTGAATATCGACGTTTCCATATG
GGGATTGGTGGCGACGACTCCTGGAGCCCGTCAGTATCGCGGAATTCAGCTGAGCGCGGTGCGTACCATTACAGTTGGTCTGGTGTGACGGGAT
CCCCCGGGTCTGACGCAATATGGATCGGCCATTGAACAAGATGGATTGACCGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTCGGTATGACT
GGGCAACAACAGACATCGGCTGCTGTGATGCGCGCTGTTCCGGCTGTGACGACGGGCGCGCGTCTTTTGTCAAGACCGACCTGTGCGGTGCC
TGAATGAACTGCAGGACGAGGCAGCGCGCTATCGTGGCTGGCCACGACGGGCGTTCTTGGCGAGCTGTGCTCGACGTTGTACTGAAGCGGGAAGG
GACTGGCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTCCTGTCTATCTACCTTGCTCCTGCGGAGAAAGTATCCATCATGGCTGATGCAATGCGGCGG
CTGCATACGCTTGATCCGGCTACCTGCCCATTCGACCACCAAGCGAAACATCGCATCGAGCGAGCAGTACTCGGATGGAAGCCGGTCTTGTCTGATCA
GGATGATCTGGACGAAGAGCTCAGGGGCTCGGCCAGCCGAACCTTTCGCGAGGCTCAAGGCGCGCATGCCGACGGAGGATCTCGTCTGACG
CATGGCGATGCGCTGTTGCCAATATCATGTTGGAAAAATGGCCGCTTTTCTGGAATTCATCGACTGTGGCCGCTGGGTGTGGCGGACCGCTATCAGGAC
ATAGCGTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCAATGGGCTGACCGCTTCTCTGTGCTTTACGGTATCGCGCTCCCGATTTCGACGCGC
ATCGCCTTCTATCGCCTTCTGTGACGAGTCTTCTGAGGGGATCAATTCTCTAGAGCTCGTGATCAGCCTCGACTGTGCCTTCTAGTTGCCAGCCATCTG
TTGTTTCCCCCTCCCCGTACCTTCTTGACCTTGAAGGTGCCACTCCCAGTGTCTTCTAATAAAAAATGAGGAAATTCATGCAATGCTGTGATGATG
GTGCTATTCTATTCTGGGGGTGGGGTGGGGCAGGACAGCAAGGGGGAGGATTGGGAAGCAATAGCAGGCATCTGGGATCGCGTGGGTCTATG
GCTTCTGAGGCGGAAAGAACCAGCTGGGGCTCGATCCTCTAGAGTGCAGTACCGGGTAGGGGAGGCGCTTTTCCCAAGGCAGTCTGGAGCATGCGCTT
TAGCAGCCCCGCTGGGCACTTGGCGCTACACAAGTGGCCTCTGGCCTCGCACACATTCCACATCCACCGGTAGGCGCCAACCGGCTCCGTTCTTTGGTG
GCCCCCTCGCGCCACCTTCTACTCTCCCCTAGTCAGGAAGTTCCCCCGCCCGCCGAGCTCGCGTCTGTCAGGACGTGACAAATGGAAATGACGATG
TCATAGTCTCTGTCAGATGACGACGACCTGAGCAATGAAGACCGGTTAGGCCCTTTGGGCGAGCGGCAATAGCAGCTTGTCTGCTTCTGCTTCTGGG
CTCAGAGGCTGGGAAGGGGTGGGTCCGGGGGCGGGCTCAGGGGCGGGCTCAGGGGCGGGGCGGGCGCCGAAGGTCTCCGGAGGCCGGCATTCTG
CACGTTCAAAAGCGCACGTCTGCCGCGCTGTTCTCTCTCTATCTCCGGGCTTTGACCTGCACTGCGCGCCAGCTTACCATGACCGAGTACAA
GCCACGGTGCGCCTCGCCACCCGCGACGACGTCCCCAGGGCGGTACGCACCTCGCGCGCGGCTTCCGCGACTACCCCGCCACGCGCCACACCGTCG
ATCCAGACCCACATCGGACGGGTACCGAGCTGCAAGAACTTCTCTCAGCGCGTGGCTCGACATCGGCAAGGTGTGGGTCTCGGACACAGCGG
GCAGCAGTGGCGGTCTGGACCACGCGGAGAGCGTCGAAGCGGGGGCGGTGTTTCGCGAGATCGGCCCGCGCATGGCCGAGTTGAGCGGTTCCCGGC
TGGCCGCGCAGCAACAGATGGAAGGCCTCTGGCGCGCACCGGCCAAGGAGCCCGCTGTTTCTGGCCACCGTCTGGTGTCTCGCCCGACACCAG
GGCAAGGGTCTGGGACGCGCGTCTGTCTCCCCGAGTGGAGGCGCGGAGCGCGCGGGGTGCCCCGCTTCTGGAGACCTCCGCGCCCCGCAACCT
CCCCCTTACGAGCGGCTCGGCTTACCGTCAACCGGACGCTCGAGGTGCCCCAAGGACGCGCAGCTGGTGCATACCCGCAAGCCCGGTGCTGAC
GCCCCCCCCACGACCCGACGCGCCGACGGAAGGACGCGCACGCCCATGCATGATGATAGCTCGCTGATCAGGCTGCTGCTGCTGCTTCTAG
TTGCCAGCCATCTGTTGTTTGGCCCTCCCCCGTGCCTTCTTGACCCTGGAAGGTGCCACTCCCAGTGTCTTCTTCTAATAAAAAATGAGGAAATTCATCG
CATGTCTGAGTAGGTGTCACTTATTCTGGGGGTGGGGTGGGGCAGGACAGCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCTGGGGATG
CGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACCAGCTGATTACCTGTTATCCCTACTCGACCTCGAGGGCGCGCGGCCAGCGAGGCCGTTACCC
AATTCCGCTATAGCTGTCTCTGTTTGGCTCTGGGAAGGCGGGATACAATGCTTCTGAGGGTGGGGTGAGGGTGGGGGAAGCTATGACAGGGCCCT
GTAAGGGGACAAGGAAGACAATTGTGGAGTCTCTGTCTTAGATATTGCTCTGTCTTCTTGGCCCTTAGGGAAGCAGCAATGATGGCAGTCGTGGTAGC
CAAGGCCAGTCATGGCAGTAATGGTCAGGGCAGCAGCGGTAGAGGCGGTGGCCAAGGCAACAGCGACAACAATGGCAGCAGTAGCAGTAGCAGCGG
CAGCAACAGTGGCAACAGCAACAGTGGCAACAGCGGCAACAGCAACAGTGGCAACAGCGGCAACAGCGGTTCTGGGTCCCGGGTAAGTTCTTTCTT
AGAATGGGATACAGATTCTGTTGGTGGGACACTGACAGTACGAGTTTCCCTTAAAGCTGTACAGCCCTCGAGTGGTGGTCTCAGTGAGTGCAGGGCTCA
TCCGCAACTCTTTCAGCCCCCGCCCCGACTTTCCCGGCCCTAATTACAGGGCTCCTTACGACGGGACCGACTGTGCACACTGCCATGGTGGGAAA
GCTCTGGCCCGGACCTAACCTTTACTGCTGTGCTGAGCAGAGCCGAGGTGGAGGGGAGGGAAGAAGGCAGGTGGGCATAGGATAATATTGTAATCTCA
GCACAGGGGAAGCCGAAGCAGGAGGATTGCTATGAATATGAGGGCAGCCAGAGCTACATAGCTATGTCTTAAACAAAGCAATAAGAAAACCCCCAC

TCGTTTGGGGTGCTTCCAGGAGAATAGGGGAAGGTTGTTATCATGGAGACTTAAAGGATAGCTGCGGTGTAGACAATGCTAGTAACTAAGTGTGCACGC
GTGAGGTTCCCATGTGATGAGTGAGAGCCCCAGGAGAGGCCACCTTAGAGAGGAGCTGAGAGAGAGACAGAGACAAGGAGAGACACAGAGAGA
GACAGAGAGACAGAGACAGGCAGAGGCAGACAGACAGAGTTCAAACCTTGGAGGCCACACGAGTTTCTTAGGGGTCTGAGAATTGTGGCACCCAA
AGGAGGAGGCTGGTGCTGGTGCCAGCGGTGGAGAGTGCTTGTCTGGGGTGTACTAAGTCCATGTTCAATCCTCAGTTCACATAAGCCAAGTGTGGT
GACATACCTTTGCAACCCCTAGCTCCTGCAGGTAGAGGCAGGATCAGGAGTTAAGGCCATCCATGGCTACATAATGAATTCAAGGTTATCTGGGTAC
ATGAGAACCAAAAAATCACCACCAACAAACAAACCCAAATAAAGGCCAGTTGCGGGTGGTTTTATGTGAAGAGTCTGAGACCACCCCTTTCTCCC
CATTGGGACATAGAAACATCTAATTTTGTATGAAGGCTATTCGGTCTCCAGGGTAAGAACCCCTAGGGTCCCATTTACCTTTTTTTTTTTTTTTTT
GGAAGCAAAGGTTCAAAGGAAGGGCGAGGGTGGACAAGCCCAGCCTGCCCCCTAGGGGCAGTGCTTTAATTTTTTTTTTTTTATGTGGTATATATGTGT
ATGTAGGTCATACATGCAGGTGCCCACAGAGGCCAGACTGGTAGATCCCCTAGAGGTGGAGTTCACAAAGATTTGAACCTCCCATGTGTCCTGGCTAC
TGAACCTCGGGTCTCTCAAAGAACATGAATAAGATGCTCTTAACCTCTGAGGCATCTCTTCAGCCTCAATAGCAGCTTCTTATAGTGTGTGTGTGTGT
GTGTGTGTGTGTGTGTGTGTGTGTGCATGCACTCGTGAGAGAGAGGGGAGAGAGAGAGAGAGAGGGGAGAGGGGAGAGGGGAGAGGGGAGAGGGA
GAGAGAGAGAGAGAGAGAGAGTAAACAGCTCAGTCACTGTGTATTTTCAAAGCCTGGGCCAGGCCTGGCCTTCTATTGTCTGAAGTTCAACTGCCTCTC
ACAACCAAGTTGGCCAAAGTCAGGGAAGGATGGAGGCTGGGGACACGGCTGGGAGCTCCTGGGTCTCTTTGCATATGCTTTATGGACATTATTTCTTGC
AGGGAACCCGCAGCAGGGGTGCAAGTGGTGGAAGTGGTGGAAGTGGTGGAAACAAACCCGAGGTGAGTGGACACTGGAGATCTGGAAGAGCT
GTCAGGATGGAGCTGGCTGCACATGTAACATTTTCCAAGAAGTGTGAAGACAATGTGCCATAGTGGGGCTGGGAGTCTAGAGCAGCAGGAG
ACTGAGAAAAAAAATCTTTCTCCTACAGTGTAAACACCCAGGGAATGATGTGCGCATGGCCGAGGATCTGGGAGTCAGGTGAGAGACGGACAAATT
CACACGCACAGCGGCAGCCTTTACCCTGTAGTATGGCCCCACCCAGGAGCCACTCTGCTCAGCATCATTACTGATGCTCACCTTCAGGCAACCTGG
GAGGGAATCCAAACTTGACAAGGAAGCTACCAAACAGAAACCTCTAAACCTCAAGTCAAAAACCTCAAGTCTCCAAAGACACAGTGGATAGCAGGAC
AGCATTGCTTCATTCTGATGCTTGT
NN
ACTGGGGGATTCTAGGCAGGGGTCTACCACTGAGCCACGCCCCCAGCCCCCTACTGGGGGATTCTAGGCAGGGGCTCTACCACTGAGCCACGCCCC
AGCTCCTCACTGTTGGATTCTAGGCAGGGGTCTACCACTGAGCAGCCTGCCCCCTACCCTACTCTAGCTTCTAAATGCTGGATGGATTTTAGGCAAGT
GTTCTACCATGGAATAAAATCCCCCTCCCCCTCTCTTTCTCAAGGCAAGTTCTCAATAACAGGATCAGTCCAGGCTGCCCTTAAACCCATAGCAAT
CCTATTGCTCTAAGCCTTAAAGTGTGAGATTACAGTAACTACCAAGCCAGCTAGTCTTTTCTAGTTTATCTTCAGATAAGGGTTCTACTAGGTGCC
TCAGGCTGGCCTTTAACTTTGATAGCAAAGTCTTATTATGCATTATGCTTTGCTATATACCCAGATGAGGCTGTGAAGAATCCATGTGTAAACCAGTCTG
ATTTTATTTATTTATTTTGGAGATAGGCTCTACCCCAGGCTAACCTCAGACTTTTGATGCTCCTGCCTCAGCCTTGTGATTGCCAGAGTTACAGGTCTGC
ACCATCTGCCCCACTGTCAAGTATTTTATTAGCCTATTTCAAATGCTCCCATCCCTGGCCAGGGGACCGGAACCCACTGAACTCTTAAGAGTGCACACAC
ACCTTCTAGTTATTCTGGAAGTCTGGGTACTAGGCTCAGTACCCGAGTACAGTACGCGGTGAGTAAGTATGACACCCGGTCCACAGGTACAGGTC
TTGTGCAAAATGCAGGTTGAGCCAGCAGATCTGGGGTGGGGCTGGAATTCTGAGTTTCTCATCCCTTCCTGGAGATGCTGAGGCTGCAGGGCTGGGCC
CTGGTGGCAGCAGGGGTCACTGGGCAGGGAGCAAGATAAGACTGGGAGAAAATAGGGTGTGTTGGGGGAGGGGATGCAGGATGCTAAGCAGAAGCA
GCTCTCCGAAGAACTTGAATATTAGGCTGCTAAGTTTTATGGGTGCCAGGTTTAGGAGCAGCTCTTTAGCTGTGTTAACTCTTGTTCCTATTTATTTA
TTTTTAAATCAGCTTTAAGAACACAGAGAGCCGTGTAGGCTTTGTGGCCACACCTCCAGCAGTGGGAGGCAGAGACAGGTAGATCTCCGTGAATTC
AAGCTCAGCCTAGTGTACAAGATATATTTCCAAGGCAGCCAGGCTACACAGAGAAACCTTGTCTCAAAAAACAGAACAAACCAAAACCAAAACAA
CAGCAAGAAGACCATCAGCAACAGCACCAGTTTTCTTCTATGGCCTCTGCCATTTTCTTTTTTTCACCTTTTTCTTCTTTTTTTTTTTTTTGGTACTTCAGC
AGACAACAGGGAAGTCTAGAGTCTCCAGGGGAGGAGCGCTCTGCCTGTCACTAATCTTCAGTAGCACTACTGACAGGGCAGGTGTCCCCACATCTT
GGCCAGGCTACAGCTAGCTCTGGGAATGAGAAAAGACAATGGAGCCGCTGATCTCTAACCAGGAGCTGGCTAAGCGGCAACAGGTGTGCTCTTCTC
ACCCGCTGCCACTCCTTTCTGCCAGTTAAGAGAGACCCGCCCCAGCTGGAGTTTCTAGGTCTGTTCAGTTGAGCCAGCAGCCTGGCCAGGAGGGCTC
TGATGACTTAGTAGCAATGGTGCTTCTCGCTGTGCTCTGGGGAAGAGACTATTATCAGCAAGCGATAGATTATAAGCGTAAGTTAGCAGTCAGCGGTC
CCACATGTGACAGGTGGAAGAAGAGCTGGGGGACAGAAGGACCTGCCTTTATATCCACACACCCCTCTGCTCCTACCCCTCTGCCCCACCCCTGA
CTTCTGCACATTATGTTTTCTAGGAAGTAAAGAAAGCAGTCATCTCTTGGAGGCTCCCATGACTACCAGTGAGCAAGGGAAGGCAGCCAGGACAGCT
TAACAGAAGGGATGTGGTGAAGAGAATGCCAAGAGCAAAAGGACTTATCTCTCTGTGAAGCTGCTTTAACTGCTGGGCTCCGGGTGACTACCAGG
AAGCCAAAATGGTGAAGTGGGATCTACCTCATAGCCATCTGATGGCAAGTGGGAAATGAGACAGAAGTAAACAGAAGGACAGAGATCCGGGCCTGGAA
GTGACACTTGGAGTCACATTTCTGGATGAGGCACGAGGATTACAAGTTCAAGGACTGCCTGGTCTATAGTGTGTGTTTATGGCCAGCCTGGACAACCTCA
GAGAAATCTTACCTTAAAAAGTAAAAAGAACTGGAACATGGCTTAGAAGTAGAGCAGTTAGCCTAGTATCTCCCAGTGAGGACCTGGGGGTGTGGCTC
AGTGTAGAGTCCCTCTAGAATCTCCAGTGAAGGCTGGGGCTGGCTCAGAGGTAGAGCCCTGTACAACATATGTGAGGATCTAGATTCAAT
TCCGTAATGACACCCCCCCGAGAGATCAAGAGAATATACATACATATGTTATGTATGTATATACACACACACATACATATGTGCATATAAATGT
GCTTAATAGGTAAGTATTGAGAAGTGGAAAGTTGCTGAACCTTTGGGCATAAAGATGGGGGTTAAAGGTCAGGTCTGCCCTTATTATCTATGTATTTT
AGGCAAGTCTTTTGGCCCTTTGTATCTGGGAACCCGACTCTTCTCTGCTTCTTAAACCACTGTACACTGTAAACAAACCAAGGCCAGGGTCCAGA
CAGGTAGACAGGCTGATACATCTGCTAACCATTCTGTTAAATGCAGTCATCTCAACAGGTCCTATGGCAAGATAAGGTGTGGTGTGGTGTGGGC
ACAGTAGGGCCACATGTACATCTATCAACTTCTTGTGTTGTGGGACAGCAATAAAGCGGAGGCAAGGATGTGAAGTGTGACGTGAGGCAGGC
ATGACGGTGGATCACTGTTAATCCCTGTAAATCTGGGGAGAGGATGACTCCAAACACGCTCTCAAGAGTCTAAGTCAGCCACATGTTGAAGTTACTCA
TCTTTTGTAGCTGAGAATGCAGGTGTGGGAGAGAGATAAGAAAGAGTTATGGAGAGGAGAGATGAGGGGCCAGTGGTGCAGTGGGTGGGTCTGGGAT
AGACTGACAGGATTTGTCTGACAGTGGACATGAGTCTTGAACATGTCTCTCTCTCTATGCAGGGGATGGGTCCAATGGTGGCAATATACAAA
AGAAGTGTCAATGGACTCAACACTATGGTGAGTGTCTTCTCTACCTGGGTGGGACCGGGGTGCAGGCACACTTATCATCTTCTCTCTCT
ACACCCACATCTCTGCTCTGCTCTGCTCACCTCGCGCCCTCTCTCGTCCATTCTTGAAGTCTCGGATGCATCTACCTTGCCTTCAACATTGACAAT
TTCTGGGAGGTGAGTTCTGGAAGCTTCTCTGCTCCCTTTGGAGAAGCACCCCTTATCCTCACTCCTCCGCATCCTGCGAGAAAGCCACACCCCTCGCCCT
GACATTTGTTTTTATTTTGTACATATGAATGCTCTGCTGGCATAGATGTGTGCACATTTGTGTGTGTGTGCCAGTGCCAGCAGAGGCCAGAGAGGCCAGCA
GAGGGCATCAGATCTCCGAACTGGAGTTACAGACTCTGTGAACCAACCATGTGGGTGCTTGGAAATAGAATTAGGTCCTCCCTGTAAGCAGATCAGGA
TTCTTACCCACTTAGTGACCTCTCCAGCCCAGCCCTTGACCTTTCTGGCCCCAAAAAAGAGAACAAAACGAAAACCAACCAAAACATTTTTTTTAAAT
GATCTGACTTAAATATATCTTATTTTCTCTGCAGAACTTAAAGTCCAAGACGCGCTTCATTAAGTGGATGCCATAAACAAGGTAAGGGCCACAAG
GCCATGACCTGCTGACTTGAGAGCAGAGAAACAGAGAGTGGGGGGCCAGACATCTTCATGGTGAGGCAGGGGGAGAGTCATGATAGCCACTAAAATG
GTATTTAAGTAAATGTCAAACAAAATGATCCACAGTGGGAGCCAATGGAGATCTGGAAGAAGGGTGTAAATTCATAGATTCTCTGGGAGCTGGGCA
TGTGTGGGTGGGATGGAAAGTTGATAATTTTCAACATAAAGAACAGCAGACCTCAACCTCAGTCGAGTCTCCTCAGACCTGCAAGAGTGTCAAGGTGACGGC
TTATTATTCTGGTAATTTTGAAGAAAAGGCAGTATGGTTGGCAAAATCAAGGCCATCCTGGACTACAGAGGGAGTTTATAGCCTGTTTGGGTGATTTA
AGAAGAGGATATCTCAGAATTAAAACCCACCACTGAATGCCCCAGTTGAAACTCTAGGTAGAGATCTGCCTAGAATTCCCTAATGAGGGGCTGGGGG
TGTGGCTCAGCAGTAGACCACTTTATCAGGCTCTCTAGTGGCCCTAGATTCAATCTCAAGCATTTGAAAAAGTTAATTTTTTAAACCAAGATAGGGCT
GGAGAACTGTCTGTGTTTCAGATATATGCTGATCTTGCAGATGAAAGAGTCCCCAGCAACCATCAGGCACCTCAGCTCAGACCTGCTCAAAATCTAATG
CCAGGGGATCTAATGCCCTCTTCTGGCCTCTCTCCCAACACACAGAGAAAGAGACAGATATAGTTATACACACACACACACACACACACACACACAC
ACACACACACACACACAGAGGCACACATGTAAACATTTTTTAAAGTGAAGCAAACTCCAACCTTGCTTTAAAAAAGAGTGGTCCAAACAGG
TACCTCTGTCATCCACAGTCATGTTTTCTGCCAGGGGAGTTGGGGCTTTTTCTTGGCCCTTATCTCTCAATTCGCATCAAACATACAGATGCCAAACC
ATTCTGGCCAGGGGCATCCACTGTGAATAAAGGAAGGTTGGGGTGCAGAAAGGAGAAAGAAATTCAGTGGCCTAGCTGGGAGGATTCATATGACAGG
GACACTTCCAACACCTGTCAACCATCTGGTGACAGCAGCTCCCTGTGCATTTTCTTGTCTCTGATTGTCAAACCTTCATATGCTCTCACTCAGT
AAATTCCTACCATCATGCCTACTCAGTCTGCCTAATCCCTTTGTATAGAGCTGGGGACTGAACCTAGAGTGTACCAGGGGCTACATAAGCAGCTCTA
CCTGTAAGCCACGCTCCAACCACTCACTGAAGGATTTCTAGGCAGATTTCTACCACTGGTCCATCCCTCACTGGGGGATTCTAGGTAGGTGCTCTAC

CACTGAGCCACGCCCCAGCCCCCACTGGGGGATTCTAGGGCAGGGCTCTACCACTGAGCCACACCCCCAGCCCCTCACTGGGGGATTCTACTGCA
GGGCTCTACCACTNN
NNNNNNNNNNNNNNNNNNNNCCTTACTGGGGGATTCTAGGCAGGGGCTCTACCACTGAGCCACGCCCCAGGCCCCCACTGGGGGATTCTAGGCAGG
GCTCTACCACTGAGTCACACCCCCAGCCCCTCACTGGGGGATTTTAGGCAGAGGCTCTACCACTGAACCACACCCCCAGCCCCTCACTGGGGGATTCTA
GGCAGGGGCTCTACCACTGAGCCACGCCCCAGCCCCTCCCTGGGGGATTCTAGGCAGGTGAGTACTACTGAGCTGTATCCCTAGCATTCTTTTCACT
TTTTGAGACAGGGATTTCAGTAAGTTGTCGGGCAGTCCTTGAACCTCAATGTCCTCCTGCCTCAGTCTCCTTAGTAGCTGGATTGACAGACCTGAGATACT
GGGCTCAGAAAACTTGGGGGTGACAGCACACACCCAAGTGATGGGGTGCCCTTCTCAAGAGTCACCAAGACACATTTAAAAAGAGAATATGAAGTAC
CTGCTAAAGTTTAAAAATCAGCACTTAATAATTTAGGTGCCTGGCTTATCTTGAATATTTGGCCAGTCTAGGTCTCCTTTCCATGGGATAGAGTGGCT
TACTCTGTGCTATGGGTCTTGTTCCTCAGTGGCTGCTCTGACCCTGTCCATTGAGCCTTCCAGGACTTAAGGTCTTTATGGAAGTAGGCATTGTGA
GATGGGGGGAGAACTGCCTAGACAGTTTTGACCTCTGAGGGCTGAGGCAAGGAATGAGAGATGCAGATTTCCCCACAGCAGTGCCTTTCTGGTTTAAA
TGAACAAAATTATTTTTTTTTTAAAGTCCTTATCACTTAACTTTGAGACAGAGCCTTCCAATGTAGCTCCAGTTAGCTTTGAACTTATTAGGTAGCCCAG
AATTACCTCAAACCTGAGAGTTTCCTGCCTCAGCCTCTTGAATGCTTGGATTCCAGGCATGCACCGTGCCTGGATTAGAGGTTTGACTGTTTGTGGTTT
TTTTGAGACACGGTTTCTTTGTGTAGTCCTGGCTGTCTGGAACCTCACTCTGTAGACCAGGCTGGCCTCAAACCTCAGAAATCCGCCTGCCTCTGCCTCCC
GAGTGCTGGGATTAAAGGCGTGTGACACCACTGCCCGGTGAGAGGTCTGTTTTTAAAGAAACCAGCTTCTGGTGGGATAAGTCTCCTTCTAAAGTCTTT
GGAGATGGGTGGGGGTGGGACTCAGGACTCCAGAGGAGGCCAGGGTACAGGCTTGCACTATACTAGGGGCTGCACACATGACCAAGCATTGTGCC
CATGTGGGAATGCTAGGGAGGTAGGATTCATAGGAACTGGCCTTCCAGCAATCAGTCCAGGAGAAAGGAGTGCTGGGCAGAATCGGCACCCAGCTCC
AGTCTTTCCAGAGGAAGGGATGTGGAAGCTGAGCACTTTAGCCAATGGGAGGAGTGAGGGGAGGGGCTCTAGCCCAAGCTGGAACATCTGGTTTGTG
TGGAGAATAGATAGCATCTTAAAGATCCGTGCAGATTTTGAGAGCAGGGTCCCTG