



Lexicon Genetics Incorporated – Genentech Project Materials

Genentech ID:	UNQ341	Date of Submission:	1-10-05
Lexicon Contract Name:	DNA138	Mutation Type:	X Standard Knock out
LexVision Name:	ENZ764N1		☐ Conditional
Reference accessions:	ENSMUST00000034377, NM_133792	Is this gene X-linked?	No

Required Materials: X pKOS clone DNA(s) __pKOS64_____
X Target Vector DNA __pKOS64.TV_____
X Targeted ES Cell DNA __2D10_____
X Genomic Map

Southern Blot Analysis: External/Internal Probe Strategies

	<u>5' External</u>	<u>3' External</u>
Name of Probe:	18+20	7+8
Restriction Enzyme for Genomic Digest:	EcoRV	EcoRV
Predicted Wild-type Band (kb):	14.2 kb	14.2 kb
Predicted Mutant Band (kb):	11.3 kb	7.9 kb
Probe Size:	371 bp	380 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:	DNA138-22	5' Primer Name:	Neo3A
3' Primer Name:	DNA138-21	3' Primer Name:	DNA138-21
Predicted Wild-type Band (bp):	485 bp	Predicted Wild-type Band (bp):	none
Predicted mutant band (bp)	none	Predicted mutant band (bp)	400 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**

DNA138-7 5' – TCTTTGTGAAGGTGGTGTCC
DNA138-8 5' – CGATCCATCATCTTGTGTGC
DNA138-18 5' – CGGTCCTGGTTAATCATAGC
DNA138-20 5' – TCCGAGTCCTTGCATAATCG

PCR Genotyping

DNA138-21 5' – GAATTGCCTCAGTCTTTCCAGC
DNA138-22 5' – TCCCTAATCTCTAAAGCAGCCC
Neo3A 5' – GCAGCGCATCGCCTTCTATC

Genomic Sequence Deleted:

CTGAGCTGCGGCCCGGGCCTAGGCACGATCCCTAATCTCTCTAAAGCAGCCCCTTGGACCTGCGACCACAGTCTCACGCCA
TGGATCGCCATCTCTGCACCTGTCGCGAGACCCAGCTCCGGAGTGGCCTCCTGTTACCTCTGTTTCTACTAATGATGCTG
GCAGACCTGACGCTCCCGGCCCAACGTCACCCCCCGGTGGTGCTGGGTGAGACTCGTGTTACAGGGTGGTGGTGGGTGG
ATCCTGCAGGATCCAGTGCAGCCAGGGTCTGGTG

Genomic Locus: (The deleted sequence represents nt15735-16005 in the sequence below. KOS64 used to generate the TV represents nt-11799-19653 in the sequence below.)

GAATTTCTCTGCGGAGGTCGTAGAAGGAGAGAAGAAGGTGTCTGGGGAGCACACAGGTTTCTGGGAGCACATGGGAGTGGGGG
TGAATAGGTAACCTAAGGTGTTTACAACAGGGGCCCTTGGGAACCCAACCGTACCCATGTGCCCTCAATGACATACCTTC
CTGGAGGCCTCAGGATGCAGAACCTGTGCAACAGCTGCTGCCCATCAGTGCAGAGCACATAGGGGGCCCCCGCCAGC
AGAGCCACATCCCCGCTCACCAGCTGTGAGAACTGGGGACAGGGAGTGGAGACTCAGACATAGACTCACAGCTAGAC
AGCTGAAACTGGGGGGGAGGGGTAGCAGGAGGGAGGGACTCAGGCTGCAAAGCTGGTTCATCAGGATGTTCAACCT
ACCCTGCCTGGGAAGTAAAAGGCCTTGCCCTAAATCCCAGGCTCCTAATCCCCACCCCTAGCCTAGTTCCTGTACCT
CCTCTAGGCCAAATGAGAGCAGTTCGCACATAACCCAAGCCCCCATTAAACACACTCCAGGAGTCTGGAGTCTGGGGCCAG
AGCAAACACCTGGTGGAGTGAGGCAAGCAGGTGGGGAGGGGAGGAGCAAAGCAGGTTAAACCTGTCTTGGACCAGGC
ACCACCTCAGACAGGTGGGGGAGGTTACACCTGCCCGAGGGCCAAAAGGCCCATGGTCAATGGCAGCCCCGCCCT
TGGTCCGACCAACCCAGGAACAGAGCCACCAAGGACAGAGCTTCATACTTGGCCACTCGCAGCAGCCTGAGCTTTGAC
CCACACCCCATCGACCAACTGGCACAGAAGTGTGTTGCTCGTAGAGGGGGGTGGGTGGCACTTGAAGGCTATCCAGCA
CGATCCGGCCCTTTCCCTTGGCAATTCTGTGACACTTTCCAATCTAAGGCCGACAGACAGCAAGGCAACAGATTTTTTCT
ACAGCACCTCCAGGTGAGCAGTGGGCCTGGAGCCCTTCTGTAACCTGGCATCTGTAGGTCTTCTCATTAAGAACAGAG
AGTCAGAAGAGGAAAGGACTTAACACTCATTACAACCTCAGTCATGGGGTGAGTGAGCAATGCAAACAGGGAAGAACTC
ACTCCCACTTGGCCAGGGTTCGGGGGTGGGTATGGGAGGGGGGCATGCGCCTAGGCCTTTGCGCTCATTGGGCAGGTAGC
CCCTAGATAATGTTTCGGACAGCACCCACTCACCCACGCCTGGCCAGTCAGCTGGGACAGGCAGGCCTAAACCAGCCGG
CCTCACCTAGAGGCGTCTGCCCCCGAGGCAGACACCGCCCCGACGCCCTCGCTTACGCGGTTCCAGGAGAGCAGGCGG
CAGAGACCAAGTGATCTACCGCTAAACCTGAGCCACCTCGACCCTATTTCTGACGTGTCCTCTGCTAGCGGGGGGAGT
GGGAGGGAGAGGAAGGGGCCCTCGGGGGGATGGATCCCTTAGCCGCTATTGTCAACTTCCTCGGCAGGAGTGGATGTCT
GTAAAGGTTGGAAGGTAAGGTGGCTCTGGGAATGGCCTAGCACGCTTCCACGCGGTAGTCGCTCAAAAGTTTCAAACA
AGACCTTGTCTACTGGCCGTGCCACTGGGTTCGCGTCGCTCCAGGTCTCCCTCTCTCCCTCCCCCTCGAAGTAGTGTCC
CTGCCACTCCGCAGTTCACACCCACGCGGGCCCCCACGCTCACCTGTTGCAGCACTTGTGTCAGGGACTCCGCCCGC
GCTAGGCTGTCTGCGCTGAGTCCACTCGCCTCGCGGCATTGTGGACTCAGGGCAGCCGCCTCGGCGCGAACTAGCGACT
TGTGCAGCGTCCCCACCTAAAAGCACCGAGGGTAACCCCATGAGCCGCTGTGCCTCAACAGGCTCTGAAGCGTCCCGA
GGTCCCTCTTTCCACCTACCTGTGCGCTGCGCGGCTCCACCACTTGCCAAACTAGGAGGATTAAGTCGGTCTCGTCC
GAGCCTAGGTCCGGCCCCAGCGCACCGGCAGTGGCCCCGAACAAAACCACAGCGACTGAGGTTCTGGGACAAGGGTCT
GTGGCCGAGTCTACTGCGGGATCTGGGCCCGGGGTGGGGGCGGCGGCGGCGGAGTCATGGCCGCAGAGGAAGG
GGGCGCTCGGCCACACACGCGGACCCGACGAGGCGCACACACGTACCGACCGACAGCAGACAGACGAGCTTGGGCGGG
ATCCGCTGTGTTGGGGGCGGCACCTGCGGCGGGGTGTAGTGGGAGCTGCAGAGACCCCGCGGTGCCCTTGGGGC
TGGGCGGTGCGGCTCCTATCCCTGCCTACTCTCGGCGAGTTACCTGCGGCGGAGAGGCCACGTGATCAGGAGGCC
CAGGGAACCCCGCGGGAGGGCCAAAACCTGCCCAGGAGGCAAGAGCTCACTTCTGCTGAGGCGTTCGCTCGCCGGCT
GGAGTCCCACCTCTTGCTGCAGTCCGGCGAGACTCCTGGGACGAATCCATTCTTTCTCCTACTTCCTCTCTAGCAGGCAC
TCTGAGTCTCCGCAAAAAGAAATGTGCAGGATCAGAGGCCTCTTTCCATTCTGCAAGGGTCACGCAAGACCCATGGAATT
CAACAGGAGGCAATCTAGGGACTATAAAAGGTTCGCGACGTCTGGCTTGAGGTTAATGGAAGTTACAAAGGGTCAAAAG
CCGACAGTGAGCGCTACCAGGTATCCACTGGAAGTCGGTGAGAGAGATCCGTTGGGGAAAGGGAGGGAGGTAAAGAT
CAAGGGTTCTTAGAACTGTGGGCGGTCACTAGAGATCACAGAGAAGGACGTGCCCATACAGGTGTCTGGGTCGGCGTAG
TGCCGGCAGTGCAAGGCGCACGTTACTGTGGACCTGAAGGCTCAGGCCTTGGTGCCAAGGTAGGAAAATCGTGCTTAA
ACTTTAGAGAGCTGTATCCTAAATGAAGCCGTGTCTGCTGGTAGAGATCTGGAAGTTCAGCCTACCAACCCCACTTGGG
GTTTGCTGCTTGTGTTTTGTCTCTCTTGATGATGATAGAAGTGTTATCTGGCTATTGAAAGCACTCCAGCAGAGAGCGG
CTAGAGTTGAGATGTGTAGAGTTGAGTCTGCATCCCCCAACCCAGTTCAGAAGAGTCCCATTTCATCCCATGCAGTTTGG
TGAAACTCCCTTACTGTTGTTTCCAGGCGGCCCTGTGGGCTCAGGATAGTTTCCACCTACTCGACTGTAATTAGTACTC
TGCGGAGAGTAAAAAGGTACTGGCGTGGGACTTAGAATACAGGATGCCACCGGCTGAAGAAGAACCTTGTGTGTTTGG
AAAAGCGGGCTGCTTCTATCGGTCTTGATAAAAGGCAACCCAGAGCCCGGGTGCATCCCTAACTCATGCCCAAGGA
AGGTCTGTGCGGAGCCAGAGGACCTAGAATGTATAGTGCGCCTTCTGGGTTTGTCCACACAATAGCGCAGGAACACAGC
GACCAATATAGTGAGAAGTGGCCGACGCGCACACCTTGAGACCTTACCCAGGCGGCCCCACCCGAGGCCTGCTACT
CAGCCCCGCTACCACGATAAGCCTGGAATGTCAATATTTGTTCTAGGAACCCAGTGAACCTTGAGTTAAGGCCCCCTC
CCCTCCTCCCTCCCATTCGAGAGCGCGCTGCGTCACTGAGTCCAGGCTTTCGGTAAGGACACTCCCTTCCAATAAGTTCCT
CTCGACACCCCTGCAACCCATCGTCTGACTATTTAAACTTCACAAGGTCTTCGCTACAGGCTCAGGTTCAGTGAGGCA
GAGTCTTGGCTTCCCTACCCAGTTATCCCAGAGCTACTGGTATCGGTTTCTACCCACAACCTCCGAGCAAGGCTCCCTT

TCAACCTGTAGACCTCGCCTCCCGATTCTCGGGAGATCTTGCTGACTGTGGAATCCCTGGCTGTTCCGAACCCCTGGA
AAGAAGCGGCTGTTCCAGGTTTCTGCAAGGTAACGAATCTGAAGAGTCAACAGAATTGAGCGGCTCCATTTCATTCGA
CTCTGGTTCTCTCAACCAGGCATTCCCCATATTAACAAATTCCAGAACTTCAAAGTCTTTGGTATTTTGCTTTATCACC
TTTATTTGTTTTGTGTAGGCACGCACAAGGCACAGTGCCAGGGTGGAGGTCCGAGAACAGCTTGTGGGACTTGGTCTCT
CTCCTTCCACAAGTGGGTCTTGGGCACAGAACTCAAGCAAGCCCTCTTACATCCCCGTTTTGTTTCTATACCATGTACTC
GATAGAGGATGACCTTGCAAGTCTGATTTTCTCAAGTGCTTAGGAACCCAGCTAGAGGTGCCTCTGCACTCATAGCTAC
AAGATCCAAGATAGTTTGGGCTCAGTTTTGAAAGTTCCAGGCCCTAAATCAACAAAGCCAATAAGATTAGTAGCTGAG
GGTGATGGGTTTGTAAATCACACAGGAGTTCCAGCCCACCCGGAGCTGCTAGTTAAGCAAAAAGTAAATACTTTTTTTTT
TTTTTCGTTTTTTCGAGACAGGGTTTCTCTGTGTAGTCCTGGCTATCCTGGAACCTCACTTTGTAGACCAGGCTGGCCTCG
AACTCAGAAATCCACCTGCCTCTGCCTCCCAAGTGCTGGGATTAAAGGCGTGCGCCACCACACCCGGCTAAGTAAATA
CATTTTTAAACTAATTATTTAGCCAGAGGGTGGTGGCTCCTTCTAGTCCCAGCACTGGGAAAGCAGGACAGGCAG
ATCTCTGAGTTCGAGACCAACCAGAGCTCCAGAGAGAAACCCCTGTCTAGAAAAACAAACGACAAAATCGTTTATAGCC
AAGTGTAGTAGTCCATGCCTTTAGTTCAAGCAGAGACCAGTGGATCTCTGTGTAGATCAAGGCTAGCCTGGTCTAGGACA
GCTTGCATACAGAGACCTGTCTCAAAAACAAATCGTAATGAGATCAATCACACTATCATTTAATAGACAACCTTGTACT
CCTTACACGACCCCTTGAAGCCAACTTTTAACACGTTTTCTTTAAGACCCTATCTGTGTACTAAGGTTTATTTACTTATTT
ATTTACTTAGTGGTTTTTGTACAGTACTGGAACCTTGCTTTGTAGGCCAGGCTGGCTTTGAACCCCTAAGAGATCTGCCTAT
TTCTGCCACCCAGTGATGGGATTAAAGGCATGTGGTACCATGCCTAACGACTTTCTTTTTGTGTTATTTAATGCATTT
ATTTTTAAATTTAATGTGTGTCTTAGTTGGGGTTTGTATTCTGCACAAATATCATGACCAAAAAGCAAGTTGGGGAGG
GAAGGATTTATTCAGCTTACACCTCCACATTGCCAAAGAAAGTCAGGACGGGAATTCACACAGGGCAAGAACTTGGAG
GCAGGAGCTGATACAGAGGCCATGGAGCGTGTGCTTACTGTCTTGGCTTCCCCTGGCTTGCTCAGTTTGCTTATAGAACC
TAGGACCATCAGCCAGGGATGGCACCACCCACAATGAGCACCCTCCCCCCCCATCACAGTTTTTCAAAGGAGACTC
CTTTCTCTGTGATAACTCCAGTTTGTGTCAAGTTGACACACAAAACCAGCCAGTACAAACGTGTATAAGTATTTGGCCTT
CAAGTATATGTGTGTTCTATATGCCTGCATGCCTGGTGTTCACAACGATCAGGTGTCAGACCGTCTGGAATGGGAGTCA
CTTGTTGGGTGCTGGGAATTAATCGGGTCTCAGCAAGAGCAATGGTGTCTAACTTTGAAGCCATCTCTTCAGCCCTG
CTTCTGCTTTCTATGCCAGCAATTGTAAACTTTTGTGGCTTTTCTCCAGCCACCTCTACTCTTCTGAGATATTTTCAC
CTCTTAAAGTACCCCTAACTGTAGCAGACCAGTACAGTCTGAGATTTCTGTACTGATGAAGGTCCCAGCCACAGTCAAG
GAACAGAGTAAGTCTATCCCAAACCTGCACTCTAGGAAGAAGAGACCATGTTTCAAGGGAGTGCACGTGAGGTTCTGC
GTGCAATAAAATACAGTTTGTCCACTGTCACCTCATGGGTAGGCTGGGGGAGGTTGCTATAATCTTTTATATTAACAGGAG
TGGCAGAAAACCTGTTCCCTTCCTTTTTGACCAGAACATATCCTGCGATAGAACAAAGATTGCACTAGAGGATCATTATTC
TAACTCCGCTGCTTCCAGCTAACCCCTCTTCCAGGGGTCTTCTGAGTAACTAGAGATATCCAGCCAGCCCAAGATTTTTT
CATCTCCGAGTCTTGCATAATCGCTTCATACCACCAGAGGGCGCGCTGACTCTGTGGCTTTAATCTGTTTGAGCAATGA
GGGAGTTAGCCGGATGAGGGTAATGTGTTAGAGCATACAGCCTTCAGTGGCCAATAACCAAGGACAGAAAGGGAGTG
ACTTGATGCTACCAGCCAAGCGGTTCCCTCTGTCTTCAGAATCTACATGTGACTCCTGAGACGCAGGATTGAATCTGCT
AATCGACAGTTTCATACACGCATATAACATTCTGCTTATACCCGTCCCTGCACCTACTCCTCCCCTCCTCCCACCAATT
CTATTCCACTTCCATGTTTGTGTTTGTGTCTTTACAACCTGCTATGATTAACAGGACCGCCAGCATGGACATAGGTATGA
AGCTATTCACTGGAATATTAGAGACGCATCAGTGGCTACATCACTGAAGACAATGACTTCTCTCTAAAGCCCTGCCC
TGGACCAGGTGTCCACCCGTGAGCCTTTTCCACTATGGCTGAATGTTGAAAGGTTCTGTCTTGGGGCTGGAGAGATGG
CTCAGTGGCAAAGAGCACTAACTTGCTCTTCCAGAGGTCTGAGTTCAATTCTCAGTAACACATGGTAGCTCACAAAC
ATCTATAATGAGATCTGACGCCCTCTTCTGGTGTGTCTGAAGATAGCTACAGTGTACTCATACACATAAAATAAATAAA
TCTTTAAAAACAAATAGATTAAAAGAAAGAAAGGAGTCAGGCATGGTGGCGCACGCCTTTAGTCCCAGCACTTGGGAGG
CAGAGGCAGGCTGATTTCTGAGTTCTAGGACAGCCTAGTCTACAAAGTGAGTTCCAGGACAGCCAGAGCTATACAGAG
AAACCCTGTCTCAAAAAAAAAAAAAAAAAAAAAAAAAAAGGAAAGAAAGAAAAAAGGAAAGGTTTTGTCTTTTAAAGCT
TTATGTAAGCAACTGCAGCTGATATAAGTACCACAGCTGGGGCTAGAGAGGTTGCTCAGTGGTTAAGAGCACTGACGT
GGATTCAATTCCCAGTAACCACATGGTGGCTCACAACCATCTGTAATGGGATCTGATGCCCTCTTCTGGTGTGTCAATGT
TGGAGTTCGTCAAAAGACCCTCACTCACAAAGATTACAGAGATCACCATCGCTGCAAACCACAAGAGAATGTTTTTTGT
TTTTTGTTTTATTCCCATATGTTGGGGACTCCCCTTTCAGCACACAGGCCAGAGGAGAGACCCAGAACAAAAGAACACA
CTTTTTAATACCTTTGTAAGGGACAGATTGGACAATAGGGCTAGCTGGCCTATTCTCATTGGTGTAGCAAGTAACCTCT
TCAGGCATTGGTTGGTTTGCATAGTGAATCTGCTTATAGTCAAAAGGTTTGGCTTGGCCCCATGGTGGGTTATTAGAA
TTTGGTCAGCAAAGCAATAGTACATTTGAACTTATGGGTGAGCTATCAACATCAGGGGAATCCTAGCAAGGGCAGGG
CGGTTTGTGGTTTTTTTTCTCAGAATTCAGTGTGGGAGTGTGGAGCGGGGTAGAGGAATCTTCTGAGAATGTTATTTT
GTTATGGTTATTTCTCTGAGAACAGCTAATATTTATTTTGGCAGTTTGCAGGCTTAATCATTTTGAAGTCTTAACTATGT
TTTTACATTTGTTTAGTCAGCCAGCTTCCTTATCTGGCTCTGCACTTGGCCTGCTAGTACAGTTTGGAAAGTCTTTTTCAA
AGGGGGAAGGTACTGGGTGGTCTTGAATTCATTTTGGATATTACATCTGAAGACAGCTACAGTGTACTCATACATGAAT
AAATCTTTCCAAAAAAAAAAGAATACCAAGCCGGGCGTGGTGGCGCACGCCTTTAATCCCAGTACTCGGGAGGCAGAG
GCAGGTGAATTTCTGAGTTCCAGGCCAGCCTGGTCTACAAAGTGAGTTCCAGAACAGTCAGGGCTACACAAAGAAACC
CTGTCTAAAAAAAAAAAAAAAAACCCCTCAGCTATGTCATGCTTATAAGTCAAAGGTTTTTGGTTTTGGGTTTTGTTTTCAAG
ACAAGGTTTGTGTCTGGAACCTCACTCTGTAGACCAGGCTGGCCTTGAACCTCAGAAATCTGCCTGCCTCTGCCTTCTGGGT
GCTGGGATTAAAGACTTGTGTTACCATGCCAGCTTTTTTTTTTTAATTAGGTATTTTCCACATTTACATTTCCAAAGCTA
TCCCAAAGTCCCCCATACCCACCCCTCCAATCCCCTACCCACCCACTCCCCCTTTTTGGCCCTGGCGTTCCCTGTAC

[illegible]

AGAACAGGCTCACCTGGAACCTCAGAAATCCACCTGCCTCTGCCTCCCGAGTGCTGGGATTAAAGGCGTGTGCCACCACT
GCCCTGGCCTCAGCCTGTTTTCTTAGAGAACACAGGACCATCAGCCAGGGATGGCACCACCCACAGTGGGCTGGACC
TTCCCATGATCACTAAGAAAATCTCCTACAGGCTTAAGTCTCACATTCTGATCCTCTGGAGGCTTTTTTGAAGTGAAGT
TCCCTCTCTTTTTTTTTTTTTTTTTTTTTTGGCAAGTTGACAGAAAACCAGCCAAGACATTGGGCCATGTAGTAAACCTT
TGCTTTTAAAAAGAGGGAGGGAGCTCAACTCCCATTGTTGCCACAGTGCCAGCAAAGGTCACGGTTAGCCATTCCCGT
AGCAATCCTGACTCCTAATAGCTTGGGTGCTTGGGGAGGTGGTGCATCAGTAAATCCCAGTTGAAAGAGTTGAAAGCA
GTGCCACTCTTCTGAAGTCTGTGGTCTTCTGGGACTGTGGTCATCTGAGGATGATAGTTTAGCCAAGATGTTCATACTGG
CCAATGCCCAAGGTTGTCCAAGCCTTCTAGCACCTCCCCACCCCTCTTGGCTCTGGACTTCTGACTGTTCTAGTCTTG
GCAGAGTGTCTCGATGACTCTGTACTGGCCTTCACCAGACCAGTCTGTAGCAACCTCTTACAGATGCAAGAGATTAAG
TAGGAGGCAGTGGGGCCTAATGTATTGGTTAGTGGGCTTTAAAATGCCCTGTTCTCTGGGGCTAGAGAGATGGCTCTGT
AGTTATGAGCACTTGTGTCTTCCAGAGCCTACAGTTTGATTCCCAGTACCTATATGGTGCCTCACAACCTGTCTGTAA
CTCTATTACATTAGACTGAAGTCCTCTTCTGACTTCTGCAGGCACCAGGCATGTATGTGATACACATACATGTAGGCA
GAAATACTCATACTATAAATAAAACAAATAGATCGTTTAAAAACAAAACAAAACAAAACCTTTCTAAGCTGTGAGGTG
ATGGCACACACCTTTAATGCCAGCTCTAGGGAGGCAGAGGCAGGGGGATCTCTGTAAGGTTGGGGCCCAGCTTGGTGA
GTACCAGGATACCCAGAACGGCCGAGAGAAATCCTCCTGTCTCAAAAAACCAAATAACAATTTAATAAATAAATAACT
TCCTATTTTGTCTATAAAAACTAGAATTGTTGGCATTAACTGTTGGGTCAGCTGTTTACCAAGAAGAGGGAAGGAAGAGG
TGGGGGGTGGAGCAGAAGTCTTGGGACCAAGCAGTGTCCCAGAAGCACAGTTGGCCTTCAGAAGGAAGTATGTAGAG
GGTTATTTCTCAGAAGCACTGGTCAGTTCACCCCCAGAGTGTGGCATATTACTGGGTGTTGAGCCTTTTGCCTACTACC
GTCTGGGCCCCAGCTCCTCGCTCCAGTCAGTCTTATGCCCTTCCTGAGTCTCAGGCTTGCGCGGACAGGGGCTAAAGT
GCCAACATGAGCTCTCGAGCCCTGTTCTTTGCAGGGGAATCCTACAGAGAAATGGTTCAGACTTTCAGATCCAAACCAC
TCCCAACTCTATTCTGTGTCTGCACTTACAGAGTGACAGACCGTTTGAACAGGCTGATCTCTGGGCCGTAGTGCCGCA
AGCCTTTAATCCCAGCACTTGGGAGGCAGAGGCAGGCGGATTTCTGAGTTCAAGGCCAGCCTGGTCTACAAAGTGAGT
TCCAGGACAGCCAGGACTGCACAGAGAAACCCTGTCTCGAAAAACAAAACAGAAAGAAAGAAAGAAAGAAAGAAAG
AAAGAAAGAAAGAAAGAAAGGAAGGAAGGAAGGAAGGAAGGAAGGAAGGAAGGAAGGAAGAAAGAAAGAAAGAAAGAA
AGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAA
AAAAGAAAAGAAAGAAAGGCTGTTTTAGCTTCTTCTCCCAGACCTGCTTCTTGGGTTCTAACATGCATTTCTACCGGCA
AGGCAGACAGTAAAAGTTTTCTGGACGTGGGCGGCCAAACCTAGATGCCCCTGGGGATGCCAGTGTAAGGCCGTATA
AAGTCTCTGGACAGCTGCTGGTCACCCGAGTTCCAAAACACTAAGTTCCTCTTTTTTTGTTTAGAGACCATTACCCATA
GCAAATGAAGGGCATGTTTTTGGTCCTTGTGCTGTGGGAAGGCTAGGAATTAGGAATGAGAACTACTTGAGTGGACTTT
GAGAATTGTTCTGTGTTGGGTTACGGTGAGGTGAGATGGGGCTGTGTAGGAGCAGGGCGACAGCTGGGATGATAAGC
GGCTCCCATCGGTTGGTCGATCGATGCGTTCGGCGCGCAGCAAAGTCCCGGAGGTGGGCATGGGCGGTGGTGAGCTC
CGGTGGGAGGGACGCTCGTGGCGGAGAGTTGCAATTGGTAGAGCCTTAGCAAGAGGCGGGTCTTAATTGACTGGTATC
TGCGAGCGGTGGGGTTAACTAGCTGAGCTGCGGCCCGGGCCTAGGCACGATCCCTAATCTCTAAAGCAGCCCTTGGA
CCTGCGACCACAGTCTCACGCCATGGATCGCCATCTCTGCACCTGTGCGGAGACCCAGCTCCGGAGTGGCCTCCTGTTA
CCTCTGTTTCTACTAATGATGCTGGCAGACCTGACGCTCCCGGCCCAACGTCACCCCCCGGTGGTGCTGGGTGAGACTC
GTGTTACGGGTGGTGGGTGGATCCTGCAGGATCCAGTGCAGCCAGGGTCTGGTGGGCCAAGTCTGTTGTGTCAT
CTGCTTTAAGCACGAAACCCAGAGCATTGTTTTCTAACCTGGGTCAGTTCGGTTAGCCACCTCCCGCCATACCGGGC
ATGGGTGTGGTCTGGAGCCCTCTGAAACGTGAGAGTAAAGGGAATAGATAATGTCTGGCTTTCCACTCCACCTAACTGC
AACAGCTCCAAACCTTGCTCGCCATGCCCCATTTCTTAGCTGGAAAGACTGAGGCAATTCAACCCTACTTCAGCGGG
TTCCTAGGCAGTCTCAGAATCGGTCAATTACCTCCTACCTCTCTATTTACAGGGAATGAGTGGTAGCAAGTTCTATCCA
CGCTGGCCCCCAAAGCATTCTCTGCTCTCAGCTTATGGAATGGATGGTATTGACTTTGAGGAGATGGCCTAAGGGA
AACAGGGTGGCTAAGGGAAGGGAGGAGAGGAATGGGGTTGGGACAACAGTCTTGAAGTGGCGTTGAGGGAGTCCG
GGAGTCTGAGAGCATGCCTCCACTCTCCGCTTCCAGACCTAATTACTCTAGGCTGTACTGAGGCCAGGTGACATTCCCT
GCCACTTGCTCTTCTGTCTTAGACTTGGCAGCGGAACAGAAATAACAATGTTTCTATGTGGTAATAGGCCAGGCTAAA
ATCTCTAGGAGTCTTAGATGCCCCATTACGCCAATGGAAGTCGTTTTGAACTGGTGTTCGCTGGCCAGGACTCCTGAG
AACAGAGACATGCTGAAACGTACGCTATATATATGTTTATGTATGTATATGTGTGTGTGTGTATATATATATATATTT
TCTTTCTGCTGGAGCATAAATCCTGTGCTCTTTCTTCCCTTTTTCTTTTTGTCTTGTCTTAGACAGGGTTTTCTGTGTA
ACCCTGGCTGTCTGGAACGCACTCTGTAGACCAGGCTGGCCTTGAAGTCAAGTACCCACCTGCCTCTCCCTCCCAAGT
ACTAAGATCAAGGGTGTATGCCACCATGCCTAGCTGAGAAACCTCTCTTGAAGCAATGTCATTCTAGGTCAGCGAA
GGGATGGGGGATTCTGAGCCTAGGTTCCCTTTGAGATTTGTATACAGCTGGACCTGCCTCTCTCAAGCTTCCCTGGATG
GTAGTAATAGTGCCTCTCAGAGAGGTCATCCTGAGAGGTGAGAGAGAGAGGTGTGGGAGCGCTGGGGAAGCCTTCCTG
GAATATGCAGGAAGTAAGGTGGCTTGGAAAGATTGCTCCAGGCTGGTCAGCATGGAAGTGGGGGAAGGCAGGAGATAT
GGGTGGTGTAGAACTTGTGACTTGGTCATCTGGACTTTAACCCTGAGGACCAGTGTGAAGAAGTCACGTGTGAATGTAA
GAAGATCTAAGAATAAGGCCCATGACATTGAGATGTGTGATTCTCTGACCACATACGCGTTTCCCTACTTGAGGCAGAG
TCTTTGTAGCCTTGTCTTCTTGTCTGTAGATCAGGCTGGTCTTGAAGTCAAGAGATCTGTCTGCTTCTCCCTCCCTAGCAC
TAGGATTAAAGGAGTGACCATCACACCTGGCTTATTTGCAGCATAGTATCGCTTGGACAGATGGGCACTAACTGCCAA
TTAATCTATGCAGACTTTGGTTATCCTAAATCATAGCTGAGAAGCCTTAGACTCTGAAAGAATCTGAGCTCCTGTATCCT
TGTGCATCTTTTCAAGGACCAGGGCTGCTGCCAGAGAGAGCTTTTTCTTGTTTTGTGTTTTGTTTTGTTTTTCCGAGACAGG
GTTTCTCTGTATAGTCTGACTGTCTGGAGCTCACTCTGTAGACCAGGCTGGCCTCGAACTCAGAAATTCTCCTGCCTC

TCGCTCCCAAGCTCTGGGATTAAAGAGCGTGAGCCATCACCGCCCGGCCAGAGAGAGCTTTTTCTAGGCCACAAAAGCTG
CTGCAGGGTCTCTGAGTTAGTGGGAGAGGTAGCAGAAAACCTGATCTTGGAAACAGGGGGGTGGGATCTTAGGCCAAACAGT
TTGCATCCCTCTCAGCCTCAGTCTTCTTATCTGTTAAATGAACAAAGAGGGCCTGCAAGATGGTTCAGTGGACGAAGGG
GATTGCCACCAAGCCTGAAGACCCGAGTTCTATCCCCAGAAGAAACCAATTCTGAAAAGTTGTCCTCCAGCCTCTGCAC
ATGTGCTGTGTTGTGCTCTCGTCTTACCCCTGCACATACATGTAGACTAAACATAATTTGATAATGTGTATGAAAGTAAA
GAGGACTCTTCCCAGGGTTATTTGAAGTAAAAGTTTTGTGTCTGGTTCTTGTCTATGTCTCAACCACCAAGTATCTCAGG
AAGGGGCCATTGCTATTTTTAGAGGCCTCCCAGCCTGACCAGGAAGAGGGGTAAGTGGTGGCTTCTCTTTTACCCATT
TCCTCGTCAGTGCATGGAGACATTGACCAGTCGTCATGCCCTGCTCATAGGTATGTCATGTCGAAGCTCCCATTGGTGGG
AATTTCTGTCATCAGCACCCACATCATGAAGGGAGTGGAAGGCACGTGTCTTCCCACAACACTCTGAAGACACTGGGA
TAACTGCTTAGGCAAGGACATGTGCTATGCTGGGTTCAAAGACACTGTTGAGAAAAGTCAAGGGGCTCTTTATAGTGAC
TGTGGGTCTCAAAAAGGGTTTTTTTTTTTTTACCCCTCGGGCGTTGGTACCACACCCCTTTGATCTTATCACGCAGGAGG
CAGAGATAGGCAGATCTGAGTTCCAGGACAGCCAGGGCTACACAGAGAAACCTTTTAAAAAAAAGACGGGGAGGG
GAGGTTGTCCTTGTAAGTTGTACAGCCTGTGGATGTAGGTGGTGACCTGTAAGGTAACAGGCTTTAAATGCTGGGAGT
TGAAGGGATGGGTGTAAGCTTTGGGTGTTATCAGGGCCCTAGGGTTTGAGTGGCTCAAAGAGATTGACAGGAGTGGTAT
CCAGTCATGCTTTGGAATCTGGTCACACCCCTCGCCCCATGCCTGTGCTGTGGCTTGTACTGCAGATTAACCATCACCAGC
ACACCTCTGCACCTGCCTTAAGGCTTTCCACAGGACCTACCTCTGCAACTTTCTGGCCTTTAGCAAGGCCTACACATCT
TGGTAGGTCTGCTGGAACCATTACAGATGTCTCTCATTTGTGTTTTTATCAGGGCTCCTACTGATGAGCTTGAATCCC
AGAATTTGGCAGGTTGGAGAAGCAGGCTTTGGATGTCAGCAAGACCCTGTCTCAGACAAAAGCTAAAACTAAATAGAA
GAGTACTGCCTCTGGGTTTAATTCTTGGTTTACCACTCTATCTTGTGTCCCACTGCCTGGGGGTAGAGAAGACCTTGCTT
ACCTTTTTTCTGTTTTAAGCCTGGAGAGGGTGGTACATATCTAATATCAGGGCCATAGCACTGGCCAAATTCTGGAGG
TTCTGAAAAACTCCCATGAGCCTCAAAATCTCTTCTAGTTAAGAGTATGATCTGGAAGCCGGGCGGTGGTGGCACACAC
CTTTGATCCCAGCACTTGGAAGACAGAGGCAGGCGGATTTCTGAGTTTGAGGCTAGCCTGGTCTACAGAGTGAGTTCCA
GGACAGCCAGGACTACACAGAGATGATCTGGGTCCATTAACCCTAGAAACCATCAGTAGCTGAGGTCTCAGAGGGATC
CACAGCCTCTCTCAGGGAAGTAACTTTGGTTTTTTAATTCCCTTCTGAATGGCCAACGAGGAAGTTCCATTCGAGATCGT
GGAGAAGTTATTTTCATCCCATACAATACATCCCCCACCACAACTCCCACCCCCAAACATGCCAGGCCTCTCTTTA
AGCCTCCACTATCTGCTGGTAGCTTCTTTCCCATTAATGTGGCTCTTGTTTTTGTTTGAAATAGGATCCCATTGTGTAGC
CCGGGTTGAGTTAGCACGAACCTGATCCTCCTGCCTCAGCCTCCCAATTACTGGATTTACAGGTATCCACTGCGGTCCCC
CGATAGTAGGGGCTTTTCTTTGTGAAGGTGGTGTCTTGGCCTTTTCTGATTTTCCCAACCCTGGCGTTGTACTTCAACTT
GAGAGTGGGATTGCAAAGATGTGCCATGGTATTCATCACTCTGGGTGGCTCTTTTGCACTGCAAGAGGCTTGGGGGT
TCCAGCCTGCTGGGGCCTGGGGCCATGCCTGTCTTTTTCTCCTGCAGTGCCTGGTGATTTGGGTAAACCAGTTGGAAGCA
AAGCTGGATAAGCCAAAGGTTGTACACTACCTTTGCTCCAAGAAGACGGACAGCTACTTCACACTCTGGCTGAATCTGG
AACTGCTTCTGCCTGTTATCATTGACTGCTGGATTGACAATATCAGGTGAGGGCTGGTGCACACAAGATGATGGATCGC
TCATCCTAGGGGCTAGAGAGGCCTTCAGAGTCCTTGTCTCATTCTCAATAGATGGAAAAATGATATCTCTCTCTCT
AGGCTCTCCTGCCCTTGATCTGGTCTGGTCTGGTCTGGTCTGGTCAGCACTAGCTTACACTCTCAGAAGCATGAATTTCT
TTTTCTTCTCTAGTTCCAGTTCTCCTTCTTCCAGTTCAACTATCAGGTTTTAAGCTCAGGTTTTGTGTTTTATTCTTT
TGCCTAACCCCTATTACAGACTCTGTGTGTTCCCTTCTCCTTTGCTGGCTGCTGAGCTGAGCTGCTCTCTCTGCTGCT
CTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGTGTTTTTCAAGACAGGGTTTCTCTGTGTAGCCCTGGCTGTCTGCAACTACT
TTGTAGACCAGGCTGGCTTCAAACCTCAGAAATTCGCCTGCCTCTGCGTCCCGAGTGCTGGGATTAAGGCGTGTGCCAC
CACACCTGGCCATAACTGTAATTTTACTACTGTTATGAATCATGGTAAGTAGCTAATATGCAGGATATCTGACATGCAA
CCCCACAGTGGTTGCAAACCAGACTGAGCAGTATTGCCCTAGGTTGGTTCTTGGCACCCACAGGGTAGCTCACAACCTC
TTTGTGACTTCAGTCCCGGGGAATCTGTTGCCCTCTTGACTTCTCTGGGAACTGTACACACAAACGCTCATAACAGAA
AATAAAATATATAAAAATCTCAAAAAAAAATCAAAACAAAGCCAAAAAACCGCCTTTGCTGGTAACTACCCCTTACA
AAATTGTGTTGCCAAGGAAGTGGGTTTTACTAAATTCCATATAGGATATATATATTTCTGTTATAAAGTGAATTTTATTG
CCAACAGAGTGTGGTGGATCAAAAACCTCATTCTTACTTTACCCATCATCGTCATCTTGCTTTTAAGAAACATGTATATA
TATGATCAATCTAAACCTGATCAGTTATTAACCATAAAATATGTTTATAAACTAGAAACAATGTGGGTGTGGTGGTTTGT
CTATAATCCCAGCATTACAGGAGAGATGCTGAGGCAGGAGGATTGCCACCAATTTGAGGCCTGCTTGGGTACAGAATG
AGTACAAGCCAGACTTAAGTAGCAAGACCTTGTCCCAAGACCCAAAACAAACACTGACAGGTGGAGTGACTCCTTTTA
CGTGCCAGCCGATCAGCGGTGTTACAGCAGGTTAAGTTATGAGGGCTGAGAAGTAAACATTTTAATTGGATGGCAGAGG
TTTTAGTGGTCTTTTGGTTTTTGTGTTTGTGTTTGGTTTTGGTTTTAGAGACAGGTTTGCTTCATGTAGCCCTGGCCGTCC
TGGAAGTCACTCTATAGACAAGGCTGGCCTCAAACCTCATAGAGATCTGCCTGCTTCTACCTTCTGAGTGCTGAGATTAA
AGGCTTGTGCCATTATCTGCCAGACAAATACAAATGACTTCTTTTTTAAAAAGATTTATTTATTTATTTTCATGTATGTGG
GTACACTGTGCTGTCTTCAGACAGACCAGAAGATGGCATCAGATCCCATACAGATGGTTGTGAGCCACCATGTGGTT
GCTGGGATTTGAACTCAGGACCTCTGAAAGAGCAGTCAGTGCTCTTAACCACTGAGCCATCTCTCCAGCCCAAATGGAT
TTTTTTTTTTCTTTTTGGTTTTTCAAGACAGGGTTTCTCTGTTTAGCCCTGGCTGTCTTGGAACTCACTTTGTAGACCAGG
CTGGCCTGGAACCTCAGAGATCCGCCTGCCTCTGCCTCCCAAGTGCTGGGATTAAGAGGGAGCATCACCATGCCCGGC
TGTAAATCTTGTCAATGACAGCAAAAGACTGACAAAACAAAGGGGTAGTAAGGTGGCCGAGTATGACTGCTGCT
CTCTTGCAGAGGATTTAGACCCCATCAGTTACTCGGTGCGCTAAAGCTGTCAATGACAGCAGTATCCAAGGGATCTAATG
GTCTGTCTTGACCTCTGTAGGTATCAGGCACGCATGTGGTGCCTGTGTATGCATGCAGGCAAAAATTCATACTCATACA
ATTAAACTTTTTTAAAAATTTTTTATTTTATTTTATTTTATTTTATTTTATTTTTTTTTTGGTTTTCTAGACAGGGTTTCTCTGTGTAG

CCCTGGCTGTCCTGGAACCTCACTTTGTAGACCAGGCTGGCCTCGAACTCAGAAATCTACCTGTCTCTGTAAACTTTTTAA
AAGGTATTTGAGACAGGGCTCTTACCATGTAGCTCAGGTTGGCCTTTAATTCCTCGTGTAGCCCAGACTGGAACCTGACA
ATCCTGGCTCTGCCTCTTGAATGCTGGGATTAGGGTGTGCTTTATCAGCTCTGTCTCCTGTGGGTGAGTATCTTGATTGC
CTCAAGTGTACACCTGAGTGAGTGACCTACACTCTAGATTTGTCTACTCAGTAATGAACTTTCTAACTCTCTGGAAATGG
CATTGTCAATTAACCTTGCTTTAAAGGAGGAAGTGGGGGTGTGGCTCAGTGATAAGTCACCTTGAGTGATAATCACATAAG
TAAAGCTCTGAATTTGAGCCTTAAACCAACAATAAAGCAAACCTGACTTTATTGATAAGGAAAAGATGGAAGCGCAAAGA
ATTTATAAAATTGGCTACAGCCCTTTCATTACATGATAAATCACAGCATCAGAATTCAGACTCAAAAATTGTATTATTC
TTTTTTTTTCATCTGCTTGCTTGTTTTGTTTTCAAGACAGGATTTCTTTTGTTTTTTTTTTGTTTTTTGTTTTTTGTTT
TTTTTTTTATGTAAGCACACTGTAGCTGTCTTCAGACACTCCAGAAGAGGGAGTCAGATCTTGTTACAGATGGTTGTGA
GCCACCATGTGGTTGCTGGGATTTGAACTCTGGACCTTCGGAAGAGCAGTCGGGTGCTCTTACTACTGAGCCATCTCA
CCAGCCCAAGACAGGATTTCTTTGGCCATCTAGAACTGTTCTGTGGACCAGGCTGGCCTAAAACCTCAAGAGTTTGCCT
CTGCCTCTGCCTCTGCCTCCTGGGTGTGGTATTCTAAGGTTCCCTTGCAGAGAGAAATCTTTAAAGGCAGAGACTATGT
ATCTATTTGTTTGTTGTTGTTTCTAGATTTATTTTATAATTTTATGTGTATGAGTGTTGCTTGCGTCTATGTAAGTGTACC
ACATGTGCTGGGTGCCAGAGAAAGTCAGAAGAGGATATCAGATCCCCTAGGACTAGGAGGGAGTTACAGTTGGTTGTG
AGCCACTGTATGGGTGCTGGGAATTGAACCTGGGTCTCTGCAAAAGCAACAAGTGCTCTTAATAGCCAAGCCAAATC
GTTCTTCAATTTGAGTAATTGGTGCTGGCTGGCAAATGTTTGAGCTGATTAGAGCTTCATCAATTAAGGCTTTTCCAG
AAACCTGCTAGCTGATCCTCTGGGCACCTAGTCCAGACGGTTGTCTGTGCGGCCCTCTTTGTTGACTGTTTTTGGTGTGT
GGTTCAGCTATTCTGGGCTGTTGATCTACATTGCTATTTCTGTCTGTGGAGACTCGTGGCCTCAGGTGCTGCCAGTGGA
GGCACAGGCCGACGATAACCGATGCTGGCCGGAGTCTTTTGCTTTCATTGCTCCTCTGACCTGTTTCGATATTCATCTTG
CACAAAACCTGCCTTGGTGCTTACAGCCATTTTCTGTACTTAGCTGGTATCTACTGAGAGTGGCCTCCAGCCCTATCATG
TGATCAATGTTAGGGGTTATAGCTGAGTTTTGTTTGTTTGTTTGTTTGTTTGTTTGTTTGTTTGTTTGTTTGTTTGTTT
CCGAGACAAAAGGGGTTTCTCTGTATAGCCTTGGCTGTCTGGAACCTCACTTTGTAGACCAGGCTGGCCTCGAACTCAG
AAATCTGCCTGCCTCTACCTCCCAAGTGCTGGGATTGTTTGTTTTTTAGATATGGTTTCTCTGTGTAGCCGTGGCTGTCC
TGGAACCTGTTCTGTATTATACCAGGCTGGCCTTGAACCTCACAGAGATCCACCTGCCTATGCCTCCTGAGTGCTGGGATT
AAAAGCGTGCCTACTACCATTTAATACGTATGGATTTCTGCCTTCTGTATGCTTGTTGTGTGCCAGGTGTGTACAGTGCCTGT
GGAAGCCAAAAGAGGTGGAAGAATCCTCTAGAACCTGGAGTTATAGATGGTGTGAACCACCACGTGGGTAATGGGGCTG
CAACTCTGGGGCCTCGGAAACAGCATCAAGTGCTCTTAACCACTGAGCCCTCTTCTCCGGGCCTCTTGGTAGTTGATCTT
TAATGATGGTAGGATTCAGGACCACTAATGCACTCAGCTTTTCGTGGGCATGTTTACCTCTGGTGTCTCCTAGTACTTCT
CCTGGCCTTGCCCTACACCTGGCCTGAGGAAGTTTGTTGTTTTTTTTTTTTTATGGCAACCACAGAAGCTATGCAATGAT
AAAATCTTGAGTTAGGAGCTGCTAAATCTGTGGCTGTGTAGCTCAGTCTGGGTGAGGGGACACCTGGGGAAGAGAATT
TGCTTCAGGGCTCCCCACCTCACCCCTTAGTCTCTGGAGTAAGGCTTCATGGGGTTTGGATTTTGTTATTCTGATCCT
CTGTACTGTTGGGGGTTTTGTTTGCTTGTTTGAGACAAGGTCTCCTATAGCCTCAAACCTTATATGTAATCCTTAAAGAA
TATCTTCTCCCCCACCCCCCACAGAGACAAGGTTTCTGTGTAGCCCTGACTGTCTGGAACCTCACTTTATAGACCA
GGTTGGCCTCTAACTCAGAAATTCACCTGCCTCTACCTCCCAAGTGTTGAGATTAAAGGTGTGAGCCACCACTCACTGC
CCCTGGCTTAAAGGATATCCTTAACTGCCTGATCTTCCCAACTCTACTTCCCAAGTCCATGAATGGCATCGATCTGTGTT
TTATAAGCCTGCTTTGTTTTTTTTTTTCAAATCTCCTTTAGACCTCAGACCAATCTGCACATGAGGCTGGAGTGTG
GCTAAGGTACAGGGCAGTATTGAGACAGACTGAGCTCAGCGGTACCAGTGAGCTCCTAACTCACTGTCTTCTCTGAC
AGGCTGGTTTACAACAGAACATCTCGGGCCACCCAGTTTCCCGATGGTGTGGACGTGCGTGTCCCTGGCTTTGGGGAAA
CATTTTCTATGGAATTCCTAGACCCACGCAAGAGGAATGTGGGTATGTAGCTCTTGCTCAAGACCTCCAGGGTATGTGG
CTGGGGCCTCCAGGCTCTGTGGGCCTACTACGTTGCTTTGAAGGGGTAGCCTGCGAGCTTTCTTTGATTAGTAGACACA
GGTTCCTTTTCCACTCCTTCAGGGAGACAGACGTCACTGTCTCTGGGTGTGGTGCAGGTAGCTAACACTGGTTATATTTT
ATATAATTCTAAGCATTCTGCCCTTAGGTTCACTGTCTCTGGGTGTGGTGCAGGTAGCTAACACTGGTTATATTTTATAT
AATTCTAAGCATTCTGCCCTTAGGTTCTATTTCTACACTATGGTGGAGAGCCTTGTTGGGCTGGGGCTACACACGGGGT
GAAGACGTTTCGAGGTGCTCCCTATGATTGGCGGCGAGCCCCAAGTAAG

Selection Cassette:

CGCTCTAGAGGCCATAGCGGCCGGATCCTCGAGGCGCGCCGATCCCGGGCCGCTCTAGCTAGACTAGTCTAGCTAGA
GAATTCGCCCCCTCTCCCTCCCCCCCCCTAACGTTACTGGCCGAAGCCGCTTGGAATAAGGCCGGTGTGCGTTTGTCTA
TATGTTATTTTCCACCATAATTGCCGTCTTTTGGCAATGTGAGGGCCCGGAAACCTGGCCCTGTCTTCTTGACGAGCATTC
CTAGGGGTCTTTCCCTCTCGCCAAAGGAATGCAAGGTCTGTTGAATGTCGTGAAGGAAGCAGTTCCTCTGGAAGCTTC
TTGAAGACAAACAACGTCTGTAGCGACCCTTTCAGGCAGCGGAACCCCCACCTGGCGACAGGTGCCTCTGCGGCCA
AAAGCCACGTGTATAAGATACACCTGCAAAGGCGGCACAACCCCAAGTGCACGTTGTGAGTTGGATAGTTGTGGAAAG
AGTCAAATGGCTCTCCTCAAGCGTATTCAACAAGGGGCTGAAGGATGCCAGAAGGTACCCATTGTATGGGATCTGA
TCTGGGGCCTCGGTGCACATGCTTTACATGTGTTTAGTCGAGGTTAAAAAACGTCTAGGCCCCCGAACCACGGGGAC
GTGGTTTTCTTTGAAAAACACGATGATAAGCTTGCCACAACCATGGAAGATCCCGTCGTTTTACAACGTGCTGACTGG
GAAAACCTGGCGTTACCCAACCTAATCGCCTTGACGACATCCCCCTTTGCGCAGCTGGCGTAATAGCGAAGAGGCC
GCACCGATCGCCCTTCCCAACAGTTGCGCAGCCTGAATGGCGAATGGCGCTTTGCCTGGTTTTCCGGCACCAGAAGCGGT
GCCGGAAGCTGGCTGGAGTGCGATCTTCTGAGGCCGATACTGTGCTGCTCCCTCAAACCTGGCAGATGCACGGTTAC

GATGCGCCCATCTACACCAACGTAACCTATCCATTACGGTCAATCCGCCGTTTGTTCACGAGAAATCCGACGGGTT
GTTACTCGCTCACATTTAATGTTGATGAAAGCTGGCTACAGGAAGGCCAGACGCGAATTATTTTTGATGGCGTTAACTC
GGCGTTTCATCTGTGGTGCAACGGGCGCTGGGTGCGTTACGGCCAGGACAGTCGTTTGCCGTCTGAATTTGACCTGAGC
GCATTTTTACGCGCCGGAGAAAACCGCCTCGCGGTGATGGTGCTGCGCTGGAGTGACGGCAGTTATCTGGAAGATCAG
GATATGTGGCGGATGAGCGGCATTTCCGTGACGTCTCGTTGCTGCATAAACCGACTACACAAATCAGCGATTTCCATG
TTGCCACTCGCTTTAATGATGATTTTCAGCCGCGCTGTAAGGCTGAAGTTCAGATGTGCGGCGAGTTGCGTGACTA
CCTACGGGTAACAGTTTCTTTATGGCAGGGTGAAACGCAGGTCGCCAGCGGCACCGCGCCTTTTCGGCGGTGAAATTATC
GATGAGCGTGTTGGTTATGCCGATCGCGTCACACTACGTCTGAACGTCGAAAACCCGAAACTGTGGAGCGCCGAAATC
CCGAATCTCTATCGTGCGGTGGTTGAACTGCACACCGCCGACGGCACGCTGATTGAAGCAGAAGCCTGCGATGTCGGTT
TCCGCGAGGTGCGGATTGAAAATGGTCTGCTGCTGCTGAACGGCAAGCCGTTGCTGATTTCGAGGCGTTAACCGTCACGA
GCATCATCTCTGCATGGTCAGGTCATGGATGAGCAGACGATGGTGACGAGATATCCTGCTGATGAAGCAGAACAACCTT
AACGCCGTGCGCTGTTTCGCATTATCCGAACCATCCGCTGTGGTACACGCTGTGCGACCGCTACGGCCTGTATGTGGTGG
ATGAAGCCAATATTGAAACCCACGGCATGGTGCCAATGAATCGTCTGACCGATGATCCGCGCTGGCTACCGGCGATGA
GCGAACGCGTAACGCGAATGGTGACGCGCATCGTAATCACCCGAGTGTGATCATCTGGTCGCTGGGGAATGAATCAG
GCCACGGCGCTAATCACGACGCGCTGTATCGCTGGATCAAATCTGTGATCCTTCCCGCCCGGTGACGATGAAGGCGG
CGGAGCCGACACCACGGCCACCGATATTATTTGCCCGATGTACGCGCGCGTGGATGAAGACCAGCCCTTCCCGGCTGT
GCCGAAATGGTCCATCAAAAAATGGCTTTTCGCTACCTGGAGAGACGCGCCCGCTGATCCTTTGCGAATACGCCACGC
GATGGGTAACAGTCTTGCGCGTTTCGCTAAATACTGGCAGGCGTTTCGTCAGTATCCCCGTTTACAGGGCGGCTTCGTC
TGGGACTGGGTGGATCAGTCGCTGATTAAATATGATGAAAACGGCAACCCGTGGTCGGCTTACGGCGGTGATTTTGGC
GATACGCCGAACGATCGCCAGTTCTGTATGAACGGTCTGGTCTTTGCCGACCGCACGCGCATCCAGCGCTGACGGAA
GCAAAACACCAGCAGCAGTTTTTCCAGTTCCGTTTATCCGGGCAAACCATCGAAGTGACCAGCGAATACCTGTTCCGTC
ATAGCGATAACGAGCTCCTGCACTGGATGGTGGCGCTGGATGGTAAGCCGCTGGCAAGCGGTGAAGTGCTCTGGATG
TCGCTCCACAAGGTAAACAGTTGATTGAACTGCCTGAACTACCGCAGCCGGAGAGCGCCGGGCAACTCTGGCTCACAG
TACGCGTAGTGCAACCGAACGCGACCGCATGGTCAGAAGCCGGGCACATCAGCGCCTGGCAGCAGTGGCGTCTGGCGG
AAAACCTCAGTGTGACGCTCCCCGCCGCTCCACGCCATCCCGCATCTGACCACCAGCGAAATGGATTTTTGCATCGA
GCTGGGTAATAAGCGTTGGCAATTTAACCGCCAGTCAGGCTTTCTTTCACAGATGTGGATTGGCGATAAAAAACAACCTG
CTGACGCCGCTGCGCGATCAGTTCACCCGTGCACCGCTGGATAACGACATTGGCGTAAGTGAAGCGACCCGCATTGAC
CCTAACGCCTGGGTGCAACGCTGGAAGGCGGCGGGCCATTACCAGGCCGAAGCAGCGTTGTTGCAGTGACGGCAGAT
ACACTTGCTGATGCGGTGCTGATTACGACCGCTCACGCGTGGCAGCATCAGGGGAAAACCTTATTTATCAGCCGGA
ACCTACCGGATTGATGGTAGTGGTCAAATGGCGATTACCGTTGATGTTGAAGTGGCGAGCGATACACCGCATCCGGCG
CGGATTGGCCTGAACTGCCAGCTGGCGCAGGTAGCAGAGCGGGTAAACTGGCTCGGATTAGGGCCGCAAGAAAATAT
CCCGACCGCCTTACTGCCGCTGTTTTGACCGCTGGGATCTGCCATTGTCAGACATGTATACCCCGTACGTCTTCCCGAG
CGAAAACGGTCTGCGCTGCGGGACGCGCGAATTGAATTATGGCCACACCAGTGGCGCGGCGACTTCCAGTTCAACAT
CAGCCGCTACAGTCAACAGCAACTGATGGAACACGACCATCGCCATCTGCTGCACGCGGAAGAAGGCACATGGCTGAA
TATCGACGAGTTTCCATATGGGGATTGGTGCCAGCACTCCTGGAGCCCGTCAGTATCGCGGAATTCAGCTGAGCGCC
GGTCGCTACCATACCAGTTGGTCTGGTGTCAAAAATAATAAACCGGCAGGCCATGTCTGCCCGTATTTTCGCGTAA
GGAAATCCATTATGTACTATTTAAAAAACACAAACTTTTGGATGTTTCGGTTTATTCTTTTTCTTTACTTTTTATCATGG
GAGCCTACTTCCCGTTTTTCCCGATTGGCTACATGACATCAACCATATCAGCAAAAGTGATACGGGTATTATTTTTGCC
GCTATTTCTCTGTTCTCGCTATTATTCCAACCGCTGTTTGGTCTGCTTTCTGACAAACTCGGAACTTGTTTATTGCAGCTT
ATAATGGTTACAAATAAAGCAATAGCATCACAAATTTACAAATTTAATTAAGGCCGCGGGATCGATCCCGTCGAGCA
GTGTGGTTTTTCAAGAGGAAGCAAAAAGCCTCTCCACCCAGGCCTGGAATGTTTCCACCCAATGTCGAGCAGTGTGGTTT
TGCAAGAGGAAGCAAAAAGCCTCTCCACCCAGGCCTGGAATGTTTCCACCCAATGTCGAGCAAAACCCCGCCAGCGTC
TTGTCATTGGCGAATTCGAACACGCAGATGCAGTCGGGGCGGCGCGGTCCCAGGTCCACTTCGCATATTAAGGTGACGC
GTGTGGCCTCGAACACCGAGCGACCCCTGCAGCCAATATGGGATCGGCCATTGAACAAGATGGATTGCACGCAGGTTCT
CCGGCCGCTTGGGTGGAGAGGCTATTTCGGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCC
GGCTGTCAGCGCAGGGGCGCCCGTTCTTTTTGTCAAGACCGACCTGTCCGGTGCCCTGAATGAACTGCAGGACGAGG
CAGCGCGGCTATCGTGCTGGCCACGACGGGCGTTCTTTCGCGAGCTGTGCTCGACGTTGTACTGAAGCGGGAAGGG
ACTGGCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTCCTGTCTATCTCACCTTGTCTCTGCCGAGAAAGTATCCATCAT
GGCTGATGCAATGCGGCGGCTGCATACGCTTGATCCGGCTACCTGCCATTTCGACCACCAAGCGAAACATCGCATCGA
GCGAGCACGTACTCGGATGGAAGCCGGTCTTGTGATCAGGATGATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGC
CGAACTGTTCCGCCAGGCTCAAGGCGCGCATGCCCAGCGCGAGGATCTCGTCGTGACCCATGGCGATGCCTGCTTGCC
GAATATCATGGTGAAAAATGGCCGTTTTCTGGATTTCGACTGTGGCCGGCTGGGTGTGGCGGACCGCTATCAGGAC
ATAGCGTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATGGGCTGACCGCTTCTCTGTGCTTTACGGTATCG
CCGCTCCCGATTTCGACGCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCTTCTGAGGGGATCGGCAATAAAAAGACAG
AATAAACGCACGGGTGTTGGGTCGTTTGTTCGGATCCGAATTCCTCGAGGGCGCGCCGGCCAGCGAGGCCGGTACCC
AATTCGCCCTATAG

Targeted Locus:

[illegible]

AACACGATGATAAGCTTGCCACAACCATGGAAGATCCCGTCGTTTTACAACGTCGTGACTGGGAAAACCTGGCGTTAC
CCAACCTTAATCGCCTTGACGACATCCCCCTTTCGCCAGCTGGCGTAATAGCGAAGAGGGCCCCGACCGATCGCCCTTCC
CAACAGTTGCGCAGCCTGAATGGCGAATGGCGCTTTGCTGGTTTTCCGGCACCAGAAGCGGTGCCGGAAAGCTGGCTG
GAGTGGGATCTTCTGAGGCCGATACTGTCTGCTGCCCTCAAACCTGGCAGATGCACGGTTACGATGCGCCCATCTACA
CCAACGTAACCTATCCCATACGGTCAATCCGCCGTTTGTTCACCGGAGAATCCGACGGGTGTTACTCGCTCACATTT
AATGTTGATGAAAGCTGGCTACAGGAAGGCCAGACGCGAATTATTTTTGATGGCGTTAACTCGGCGTTTCATCTGTGGT
GCAACGGGGCGTGGGTGCGTTACGGCCAGGACAGTCGTTTGCCGTCTGAATTTGACCTGAGCGCATTTTTACGCGCCGG
AGAAAACCGCCTCGCGGTGATGGTGCTGCGCTGGAGTGACGGCAGTTATCTGGAAGATCAGGATATGTGGCGGATGAG
CGGCATTTTCCGTGACGTCTCGTTGCTGCATAAACCGACTACACAAATCAGCGATTTCCATGTTGCCACTCGCTTTAATG
ATGATTTACAGCCGCTGTACTGGAGGCTGAAGTTCAGATGTGCGGCGAGTTGCGTGACTACCTACGGGTAAACAGTTTC
TTTATGGCAGGGTGAACACGAGGTCGCCAGCGGCCCGCTTTTCGGCGGTGAAATTATCGATGAGCGTGGTGGTTAT
GCCGATCGCGTCACACTACGTCTGAACGTGCAAAACCCGAAACTGTGGAGCGCGGAAATCCCGAATCTCTATCGTGCG
GTGGTTGAACTGCACACCGCCGACGGCACGCTGATTGAAGCAGAAGCCTGCGATGTGCGTTTTCCGCGAGGTGCGGATT
GAAAATGGTCTGCTGCTGCTGAACGGCAAGCCGTTGCTGATTTCGAGGCGTTAACCGTCACGAGCATCATCCTCTGCATG
GTCAGGTCATGGATGAGCAGACGATGGTGCAGGATATCCTGCTGATGAAGCAGAACTTTAACGCCGTGCGCTGTT
CGCATTATCCGAACCATCCGCTGTGGTACACGCTGTGCGACCGCTACGGCCTGTATGTGGTGGATGAAGCCAATATTGA
AACCACGGCATGGTGCCAATGAATCGTCTGACCGATGATCCGCGCTGGCTACCGGCGATGAGCGAACGCGTAACGCG
AATGGTGCAGCGCGATCGTAATCACCCGAGTGTGATCATCTGGTCTGCTGGGGAATGAATCAGGCCACGGCGCTAATCA
CGACGCGCTGTATCGCTGGATCAAATCTGTCGATCCTTCCCGCCCGGTGCAGTATGAAGGCGGCGGAGCCGACACCAC
GGCCACCGATATTATTTGCCCGATGTACGCGCGCGTGGATGAAGACCAGCCCTTCCCGGCTGTGCCGAAATGGTCCATC
AAAAAATGGCTTTTCGCTACCTGGAGAGACGCGCCCGCTGATCCTTTGCGAATACGCCCACGCGATGGGTAACAGTCTTG
GCGGTTTCGCTAAATACTGGCAGGCGTTTCGTCAGTATCCCCGTTTACAGGGCGGCTTCGTCTGGGACTGGGTGGATCA
GTCGCTGATTAAATATGATGAAAACGGCAACCCGTGGTTCGGCTTACGGCGGTGATTTTGGCGATACGCCGAACGATCG
CCAGTTCTGTATGAACGGTCTGGTCTTTGCCGACCGCACGCCGATCCAGCGCTGACGGAAGCAAAACACCAGCAGCA
GTTTTTCCAGTTCGTTTATCCGGGCAAACCATCGAAGTGACCAGCGAATACCTGTTCCGTCATAGCGATAACGAGCTC
CTGCACTGGATGGTGGCGCTGGATGGTAAGCCGCTGGCAAGCGGTGAAGTGCCTCTGGATGTGCTCCACAAGGTAAA
CAGTTGATTGAACTGCCTGAACTACCGCAGCCGGAGAGCGCCGGGCAACTCTGGCTCACAGTACGCGTAGTGCAACCG
AACGCGACCGCATGGTCAGAAGCCGGGCACATCAGCGCCTGGCAGCAGTGGCGTCTGGCGGAAAACCTCAGTGTGACG
CTCCCCGCCGCTCCACGCCATCCCGCATCTGACCACCAGCGAAATGGATTTTGCATCGAGCTGGGTAATAAGCGTT
GGCAATTTAACCGCCAGTCAGGCTTTCTTTCACAGATGTGGATTGGCGATAAAAAACAACTGCTGACGCCGCTGCGCGA
TCAGTTCACCCGTGCACCGCTGGATAACGACATTGGCGTAAGTGAAGCGACCCGATTGACCCTAACGCCTGGGTGCA
ACGCTGGAAGGCGGCGGGCCATTACCAGGCCGAAGCAGCGTTGTTGCAGTGCACGGCAGATACACTTGCTGATGCGGT
GCTGATTACGACCGCTCACGCGTGGCAGCATCAGGGGAAACCTTATTTATCAGCCGGAAAACCTACCGGATTGATGG
TAGTGGTCAAATGGCGATTACCGTTGATGTTGAAGTGGCGAGCGATACACCGCATCCGGCGCGGATTGGCCTGAACTG
CCAGCTGGCGCAGGTAGCAGAGCGGGTAAACTGGCTCGGATTAGGGCCGCAAGAAAACCTATCCCGACCGCCTTACTGC
CGCTGTTCGACCGCTGGGATCTGCCATTGTACAGACATGTATACCCCGTACGTCTTCCCGAGCGAAAACGGTCTGCGC
TGCGGGACGCGCGAATTGAATTATGGCCACACCAAGTGGCGCGGCGACTTCCAGTTCAACATCAGCCGCTACAGTCAA
CAGCAACTGATGGAACCAGCCATCGCCATCTGCTGCACGCGGAAGAAGGCACATGGCTGAATATCGACGGTTTTCCAT
ATGGGGATTGGTGGCGACGACTCCTGGAGCCCGTCAAGTATCGGCGGAATTCCAGCTGAGCGCCGGTGCCTACCATAC
CAGTTGGTCTGGTGTCAAAAATAATAAACCAGGGCAGGCCATGTCTGCCCGTATTTCCGCTAAGGAAATCCATTATGT
ACTATTTAAAAAACACAACTTTTGGATGTTTCGGTTTATTTCTTTTTCTTTTACTTTTTTATCATGGGAGCCTACTTCCCGT
TTTTCCCGATTTGGCTACATGACATCAACCATATCAGCAAAAGTGATACGGGTATTATTTTTGCCGCTATTTCTCTGTTT
TCGCTATTATTCCAACCGCTGTTTGGTCTGCTTTCTGACAACTCGGAACTTGTTTATTGCAGCTTATAATGGTTACAAA
TAAAGCAATAGCATCACAATTTACAAATTTAATTAAGGCCGCGGGATCGATCCCGTCGAGCAGTGTGGTTTTCAAGA
GGAAGCAAAAAGCCTCTCCACCCAGGCCTGGAATGTTTCCACCCAATGTCGAGCAGTGTGGTTTTGCAAGAGGAAGCA
AAAAGCCTCTCCACCCAGGCCTGGAATGTTTCCACCCAATGTCGAGCAAAACCCGCCCAGCGTCTTGTCAATTGGCGAAT
TCGAACACGCAGATGCAGTCGGGGCGGCGCGGTCCAGGTCCACTTCGCATATTAAGGTGACGCGTGTGGCCTCGAAC
ACCGAGCGACCCTGCAGCCAATATGGGATCGGCCATTGAACAAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGT
GGAGAGGCTATTCGGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCCGGCTGTCAGCGCA
GGGGCGCCCGGTTCTTTTTGTCAAGACCGACCTGTCCGGTGCCTGAATGAACTGCAGGACGAGGCAGCGCGGCTATC
GTGGCTGGCCACGACGGGGCGTTTCTTGCGCAGCTGTGCTCGACGTTGTCACTGAAGCGGGAAGGGACTGGCTGCTATTG
GGCGAAGTGCCGGGGCAGGATCTCCTGTCTCTCACCTTGCTCCTGCCGAGAAAGTATCCATCATGGCTGATGCAATGC
GGCGGCTGCATACGCTTGATCCGGCTACCTGCCCATTCGACCACCAAGCGAAACATCGCATCGAGCGAGCACGTACTC
GGATGGAAGCCGGTCTTGTGATCAGGATGATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGCCGAATGTTTCGCCA
GGCTCAAGGCGCGCATGCCCCAGGCGGAGGATCTCGTCTGTACCCATGGCGATGCCTGCTTGCCGAATATCATGGTGG
AAAATGGCCGCTTTTCTGGATTTCGACTGTGGCCGGCTGGGTGTGGCGGACCGCTATCAGGACATAGCGTTGGCTAC
CCGTGATATTGCTGAAGAGCTTGGCGGCGAATGGGCTGACCGCTTCTCTGTGCTTTACGGTATCGCCGCTCCCGATTTCG
CAGCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCTTCTGAGGGGATCGGCAATAAAAAGACAGAATAAAAACGCACG
GGTGTGGGTGCTTTGTTTCGGATCCGAATTCCTCGAGGGCGCGCCGGCCAGCGAGGCCGGTACCCAATTCGCCCTATAG

GGCCAACTGCTCTGTTGTGCATCTGCTTTAAGCACGAAACCCAGAGCATTGGTTTCTAACCTGGGTCAGTTCGGTTAGC
CCACCTCCC GCCATACCGGGCATGGGTGTGGTCTGGAGCCCTCTGAAACGTGAGAGTAAAGGGAATAGATAATGTCTG
GCTTTCCACTCCACCTAACTGCAACAGCTCCAAACCTTGCCTCGCCATGCCCCATTTCTTAGCTGGAAAGACTGAGGC
AATTCAACCCTACTTCAGCGGGTTCTAGGCAGTCTCAGAATCGGTCATTACCTCCTACCTCTCTATTTACAGGGAAT
GAGTGGTAGCAAGTTCTATCCACGCTGGCCCCAAAAGCATTTCTCTGCTCTCAGCTTATGGAATGGATGGTATTGACT
TTCGAGGAGATGGCCTAAGGGAACAGGGTGGCTAAGGGAAGGGAGGAGAGGAATGGGGTTGGGACAACAGTCTT
GAACTGGCGTTGAGGGAGTCCGGGAGTCTGAGAGCATGCCTCCACTCTCCGCTTCAGACCTAATTACTCTAGGCTGTA
CTGAGGCCAGGTGACATTCCCTGCCCCTTGGCTCTTCTGTCTTAGACTTGGCAGCGGAACAGAAATAACAATGTTTCTA
TGTGGTAATAGGCCAGGCTAAAATCTCTAGGAGTCTTAGATGCCCCATTAGCCAATGGAAGTCGTTTTGAACTGGTGT
TTCGCTGGCCAGGACTCCTGAGAACAGAGACATGCTGAAACGTACGCTATATATATGTTTATGTATGTATATGTGTGTG
TGTGTGTATATATATATATATTTTCTTTCTGCTGGAGCATAAATTCCTGTGCTCTTTCTTCCCTTTTTCTTTTGTCTTGT
CTTAGACAGGGTTTTTCTGTGTAAACCTGGCTGTCTTGGAACGCACCTGTAGACCAGGCTGGCCTTGAACCTCAGATAC
CCACCTGCCTCTCCCTCCCAAGTACTAAGATCAAGGGTGTATGCCACCATGCCTAGCTGAGAAACCCTCTCTTGAAAAG
CAATGTCAATTCTAGGTCAGCGAAGGGGATGGGGGATTCTGAGCCTAGGTTCCCTTTGAGATTTGTATACAGCTGGACCT
GCCTCTCTCAAGCTTCCTGGATGGTAGTAATAGTGCCTCTCAGAGAGGTCATCCTGAGAGGTGAGAGAGAGAGGTGTG
GGAGCGCTGGGGAAGCCTTCCTGGAATATGCAGGAAGTAAGGTGGCTTGGAAGATTGCTCCAGGCTGGTCAGCATGGA
ACTGGGGGAAGGCAGGAGATATGGGTGGTGTAGAACTTGTGACTTGGTCATCTGGACTTTAACCTGAGGACCAGTGT
GAAGAAGTCACGTGTGAATGTAAGAAGATCTAAGAATAAGGCCCATGACATTGAGATGTGTGTATTCTCTGACCACAT
ACGCGTTTTCTACTTGAGGCAGAGTCTTTGTAGCCTTGTCTTCTTGTGTAGATCAGGCTGGTCTTGAACCTCACAGAGAT
CTGTCTGCTTCTCCCTCCCTAGCACTAGGATTAAGGAGTGCACCATCACACCTGGCTTATTTGCAGCATAGTATCGCTT
GGACAGATGGGCACTAACTGCCAATTAATCTATGCAGACTTTGGTTATCCTAAATCATAGCTGAGAAGCCTTAGACTCT
GAAAGAATCTGAGCTCCTGTATCCTTGTGCATCTTTTCAAGGACCAGGGCTGCTGCCAGAGAGAGCTTTTTCTTGTTTTG
TTTTGTTTTTGTTTTTCCGAGACAGGGTTTCTCTGTATAGTCCTGACTGTCTTGGAGCTCACTCTGTAGACCAGGCTGGCC
TCGAACTCAGAAATTCTCCTGCCTCTGCCTCCCAAGTCCTGGGATTAAGGCGTGAGCCATCACCGCCCGGCCAGAGAG
AGCTTTTTCTAGGCACAAAAAGTGCTGCAGGGTCTGAGTTAGTGGGAGAGGTAGCAGAAAACCTGATCTTGGAACAGG
GGGGTGGGATCTTAGGCCAAACAGTTTGCATCCCTCTCAGCCTCAGTCTTCTTATCTGTAAATGAACAAAGAGGGCCTG
CAAGATGGTTTCAGTGGACGAAGGGGATTGCCACCAAGCCTGAAGACCCGAGTTCTATCCCCAGAAAGAAACCAATTCTG
GAAAGTTGTCTCCAGCCTCTGCACATGTGCTGTGTTGTGCTCTCGTCTTACCCCTGCACATACATGTAGACTAAACATA
ATTTGATAATGTGTATGAAAGTAAAGAGGACTCTTCCCAGGGTTATTTGAAGTAAAGTTTTTGTGTCTGGTTCTTGTCTA
TGTCTCAACCACCAAGTATCTCAGGAAGGGGCCATTGCTATTTTTAGAGGCCTCCAGCCTGACCAGGAAGAGGGGTA
ACTGGTGGCTTCTCTTTACCCATTTCCTCGTCAGTGCATGGAGACATTGACCAGTCGTCATGCCCTGCTCATAGGTAT
GTCATGTCGAAGCTCCCATGGTGGGAATTTCTGCATCAGCACCCACATCATGAAGGGAGTGGAAGGCACGTGTCTTCC
CACAACACTCTGAAGACACTGGGATAACTGCTTAGGCAAGGACATGTGCTATGCTGGGTTCAAAGACACTGTTGAGAA
AAGTCAAGGGGCTCTTTATAGTGACTGTGGGTCTCAAAAAGGGTTTTTTTTTTTACCCCTCGGGCGTTGGTACCACAC
CCCTTTGATCTTATCACGCAGGAGGCAGAGATAGGCAGATCTGAGTTCCAGGACAGCCAGGGCTACACAGAGAAACCT
TTTAAAAAAGACGGGGAGGGGAGGTTGTCCTTGTAAGTTGTACAGCCTGTGGATGTAGGTGGTGACCTGTAAG
GTAACAGGCTTTAAATGCTGGGAGTTGAAGGGATGGGTGTAAGCTTGGGTGTTATCAGGGCCCTAGGGTTTGAGTGGCT
CAAAGAGATTGACAGGAGTGGTATCCAGTCATGCTTGGAACCTTGGTCACACCCCTCGCCCCATGCCTGCTGTGGCTTG
TTACTGCAGATTAACCATCACAGCACACCTCTGCACTGCCTTAAGGCTTTCCACAGGACCTACCCTCTGCAACTTTCTT
GGCCTTTAGCAAGGCCTACACATCTTGGTAGGTCTGCTGGAACCATACAGATGTCTCTCATTTGTGTTTTTTATCAGGG
CTCCTACTGATGAGCTTGCAATCCCAGAAATTTGGCAGGTTGGAGAAGCAGGCTTTGGATGTCAGCAAGACCCTGTCTCA
GACAAAAGCTAAACTAAATAGAAGAGTACTGCCTCTGGGTTTAATTCCTTGGTTTACCCTCTATCTTGTGTCCCCTGC
CTGGGGGTAGAGAAGACCTTGCTTACCTTTTTCTGCTTTAAGCCTGGAGAGGGTGGTACATATCTAATATCAGGGCC
ATAGCACTGGCCAAATTCTGGAGGTTCTGAAAACTCCCATGAGCCTCAAATCTCTTCTAGTTAAGAGTATGATCTGG
AAGCCGGGCGGTGGTGGCACACACCTTTGATCCCAGCACTTGAAGACAGAGGCAGGCGGATTTCTGAGTTTGAGGCT
AGCCTGGTCTACAGAGTGAGTTCCAGGACAGCCAGGACTACACAGAGATGATCTGGGTCCATTAACCCTAGAAACCAT
CAGTAGCTGAGG