LEXICON

## Lexicon Genetics Incorporated - Genentech Project Materials

| Genentech ID: | UNQ318 | Date of Submission: | 3-24-05 |
| :--- | :---: | :--- | :--- |
| Lexicon Contract Name: | DNA156A | Mutation Type: | X Standard Knock out |
| LexVision Name: | MAS215N1 |  | $\square$ Conditional |
| Reference accessions: | NM_133733 | Is this gene X-linked? | No |


| Required Materials: | X pKOS clone DNA(s) __pKOS18, pKOS30__ |
| :--- | :--- | :--- |
|  | X Target Vector DNA _pKOS30TV___ |
|  | X Targeted ES Cell DNA _1C10_ |
|  | $X$ Genomic Map |

## Southern Blot Analysis:

External/Internal Probe Strategies

|  | 5' External | 3' Internal |
| :--- | :---: | :---: |
| Name of Probe: | $\mathbf{9 + 1 0}$ | $\mathbf{1 5 + 1 6}$ |
| Restriction Enzyme for Genomic Digest: | BamHI | NdeI |
| Predicted Wild-type Band (kb): | $\sim 6.5 \mathbf{~ k b}$ | $\mathbf{9 . 5} \mathbf{~ k b}$ |
| Predicted Mutant Band (kb): | $\sim 5.4 \mathbf{~ k b}$ | $\mathbf{6 . 2} \mathbf{~ k b}$ |
| Probe Size: | $\mathbf{4 8 4} \mathbf{~ b p}$ | $\mathbf{3 2 2} \mathbf{~ b p}$ |

## 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: | DNA156-1 | 5' Primer Name: | Neo3a |
| 3' Primer Name: | DNA156-2 | 3' Primer Name: | DNA156-17 |
| Predicted Wild-type Band (bp): | 514 bp | Predicted Wild-type Band (bp): | none |
| Predicted mutant band (bp) | none | Predicted mutant band (bp) | 209 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

DNA156-9 5’ - GAGAGCAGTATAACTCGGTG
DNA156-10 5' - GTGTGAGCTTGCAGGGTTTG
DNA156-15 5' - CCTTTAGAATGATAGCCACTG
DNA156-16 5' - GCTCTAAACTTCTGTGTGTAG

## PCR Genotyping

DNA156-1 5’ - CGTATTCCAGCCGTCATGTC
DNA156-2 5' - GGCTGTCTCTTGCCTCATAG
DNA156-17 5' - TCCACCGTAAAAGGAAGACAACC
Neo3a 5' - GCAGCGCATCGCCTTCTATC

## Genomic Sequence Deleted:

TATTCCAGCCGTCATGTCTACAATAACTTGACCGAGGAGCAGAAGGGCCGAGTGGCCTTCGCTTCCAACTTCCTGGCAG GAGATGCTTCССTGCAGATTGAGCCTCTGAAACCCAGTGATGAAGGCAGATACACCTGCAAGGTGAAGAATTCAGGAC GCTATGTCTGGAGCCATGTCATCTTGAAAGTGCTAGGTAAAGTAGGACCCCAAAATAAATGTCTGCCTTTTGCTGTTGT GGTTTGGTTTGGTTTGGTTTGGTTTGGTTTGGTTTGATTAGTTAGTTAGTTAGTTAATTAGTTTGTTTGTTTGTTTTTGTTT TTTAAGACAGGTTTTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTAGCCCTGGCTGTCCTGGAACTTACTCT GTAGAAATCCAACTTGCCTCTGCCTCCTGAGTGCTGGACTTAAAAGCATGCACCACCATCACCTGGCAATGCCTGCATC TCAAGTGCTATCTATCTATGAGGCAAGAGACAGCCGCAAGTGGTAAAATCACCTATGTAATTCTTTGTAGTGTGCACTT AGACATCACCACAAAGAAGCATTTATATTCTAGATTTTAGCTATAATGAGAGAAGAAAACACAATTATAGCTTTCTTTT TTAGCCTTATTTTATCGAGTGTGTGCTCGAGTGTGTTTGCAAAGGTCAGAGGACAACTTTCAGGAGTCGCTTCTTTTTGT TCCACTGTTGGTTCTGGGATGGAACTCAGGACTCCGGGCTGATACAGCAAATGCCTTTACCCACCAAGCCATCTCCATG GCCCACAACTATGATTCTTCCATGGTAGCTTATTATAAAATTCAAACGCCCTCTAAGACTCACTGTCCTTTGAATATTTG AАСGАТТАСТТССАААСТАСТТАТСАТТТАТССТТGТТТСААТАТСААТААААТТGТТСАТААСТТТССТТАААТТТСССС ATAAATAGCAGTGTCTACCTTTTCTGCGTCACCGCAGGTTCCAGCGCTGCTAGTAGCAGCTGGGGGCAGAGGATCTTGT TAGGGAGAGGGGCAGAGGAGGAGAGGGTGATCAGGGATCCAGGAGGTGAAGCATGGCTGGATAAATTTCAACTCAAA ACTGAATAAAATCAGGCGTGACGGGAGAGTTGAGTAAAGCGCTAAGTGGGGTGTATTTTTTTCTCCTGGCATTTGGAGA СТСТСТGАСССАТСАGТСТТАААТСТTTTTСАССAGTGAGACCATCCAAGCCCAAGTGTGAGCTGGAAGGAGAGCCGAC CGAAGGAAGTGACCTGACGCTGCAGTGTGAGTCTGCCTCTGGAACTAAGCCCATTGTGTATTATTGGCAGCGAATCCGG GAGAAGGAGGGAGAAGATGAACACCTGCCACCCAAATCCAGAATTGGTAAGTCATCTCCCTGTCAGGCTGCTGGGCCA AAAATATAACGCGGCGTCCACAAATTCCAAATCTTCСTTGTCAGAAGCGCACTAGATGCCCTGGAGCACGCTGCTGAAT CTTGTACGTACGTGCGTGAGTGCGTGTATACTTGCGCGCGCGCGTGCGTGCGTGCGTGCGTGCGTGCGTGCGTGCGTGC GTGCGTGCGTGCGTGCGTGGTTGTCAATGGCTTGTTTTGTTCTGGCTTGGTTTGATTTGGAGTTTTTGCGTTTTGAGGCCC GGTCTCATACAGCATCATGTCCTAGTTTGCTTTTCTGTTGTTGTGATAGAACAGTATGACCAAAAGCTAGTGAAAGAGG GAAGTGTTATGCATCTTATTCTCCAAGGTCACAGTCCATCTTTGAGAGAAGTCAGAGAGGAAGGCAAGTCAAGGACCT GGAGGCAGGAACCATTGTCAAAСССТАСТТАСТGAСТТGСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТ СТСТСТСТСТСТСТСАСТСТСТСТСТСТСАСТСТСТСТСТСТСТСТСТСТСТССТСТСТАААТСАТGСТСАGСТАGСТТGСТ TTTTTTTGTTTTGTTTTGTTTTTTGTTTTTTTCCAGACAGGGTTTTTTCTGTGTAGCCCTGGCTGTCCTGGAACTCACTCTG TAGACCGGGCTGGCTTCGAACTCAGAAATCTGCCTGCTTCTGCCTCCCAAGTGCTGTGATTAAAGGCATGCGCCACCAC TGCCCACTCAGCTAGCTTTCTTATACAGCCCGGACCCTCCCACCTAGGGATGGTGCCACACACAGTGACCTGAGTCCTC СТСССАСАССААТССАТААТСААТАСАААТТТТСАСАGAСATGCCCAGAGGCCAGTCTAATCTGGAATGTTACTTGTTC ССТСТTTCСAGATGTGTCAATTTGACAATTAAAAACTAACCAGCACGGGTCTGTTCTCAACCCTTTGCCTGAGATCAAAT GTGAGGTCTTGTGTAGCCCAGGCTAGCCTTGAACAACTGGTCCTTTAGCTTGTGTAGCCCAGGCTAGCCTTGAACAACT GGTCСTTTAGCTTCСАССТСТАAAGTGСTGGGСTTAСАСАСАСАСАСТАСССССАТGСССАGTGTGAACСTСТСТTGСTG TTATTGTTTTATTTTTAAGACAGGGTGTCATGAAGCCCAGGCTGACATATAACTTCCTACATAGCCAAGGATTGTTTTGA AСTCTGGATTGTTCTGTCTCTGTCTCCCAATTGCTGGGATTACAGGGAATTAACAACATGACTGGGTTGCTGTTAAACCT
 GGTATTTGAATTAACTGGCTTAGTATCTAGTATTCACTAAATATTCGCCATCTTTTTTTTTTTTTTCCTTTTGGTTCTGACT GTGGATTGGACCTAGGACCTTGTACACATATCСССТССTССACAGACTCTTGGGAAGTTGTGCAAAACAGCCTTGAACT САСТTTGTAACCCAGTTAGGACTATGACTGGTAATGTTATGTATGCСTCAGCCTCCCAAATAGCTACAGGTCCTTTGTTC CCGATGTTTTGTAGTTCCTGAGGATGCACAACAATTTCAGATAACATCTCСССАTTTСССАТGСTССАAAACAGGATCTT CTCTGTCAGTTCGTCCСATCCAACCATTCGTCATCACAGGTCTGTGATGCTCATCAATAAACAACAGAGATGCTGTTGTG GAGGGGATTTGCCATCTCGATTTCTGCTCCTACAGATTACAACAACCCTGGCCGAGTGCTGCTGCAGAATCTCACCATG GCСTССТСTGGGCTTTACCAGTGCACAGCAGGCAACGAGGCTGGAAAGGAGAGCTGTGTGGTACGGGTGA

Genomic Locus: (The deleted sequence represents nt12878-16209-in the sequence below. KOS-30 used to generate the TV represents nt 10953-18804 in the sequence below.)

СТСТТTССАGTATCСTATTATGTTGGAACGCTGGGAACTCACACTGAGATCAAGAGAGTGGCAGAGGAAAAGGTTACCT TGCССТGTCACCATCAACTGGGGCTTCCCGAGAAAGACACCCTGGACATTGAATGGCTGCTCACCGATAATGAAGGGA AССАAAAAGTGGTAAGTACCССССТАGСTATAGTTGСТСТССТТТСТGСССТСАСGTСАССТТСТТTAGССТTСАСАТСА TTCTTGATGGGTCTAGAAGAGTTTGTTTTCTCACCTAACAGCAACCTGAACGAACTCATGTACAAAACTAGAGAAAAAG GACCCAGGTGGCACACACTTATAATCTTGGCACTCAGGAGGCACGGGCAATAAGAACTCTAGTTTGAAGCTAACCTGG GCTACATAATAAACCCCTGTCTCCAAAAAGCAGGGAAAATAGAGGAGTATCTATGTTAGGAGGGTCTAATCCAGAGAC ACCAGACACTGGGAAAGGAAGTCTGCGCTGTTAACATCTTCATCTAAGAAGCAGGCTAAGATGCAGCAGCTTGATGCC CCGGTCTTGTGAGCAGAACTCAAAGCCCAGAATTCTCTAССТССTGСTTCTCTGAAGCTGTCGTCACCTGAGCAGGCCT TGGCTTCTCGAAGTCATAACCTCCAGGTTCTGAAGATGACAGGTGACATGTGACACAGGAGCACATACGAGACAGGAA CGACAGTGCCGCTCCCAGATGTGACCGTGACCGACTCTTCCACAAGACAGCCGATGCTGGCTCTGAAGTTGGAAAAAA AAGAAGCAGTCTTGGGACTTCCACACTCCAATGTGGGGAGGGCTGTGATGGGCATGGGGTCCTGTGCTTCTGGCAGTGT

GGGCAGAAGTTGTAGTGCTCGGACTCTGGGGGCACCCCATGCTGCCTGCTCGGACTCCCCGGGAACCCCTCGCTTCCTG ССАTTAGACACCAGGGCTAAGTAATCTGCTTACCATCСTTССАТССТTСTTTGССTTGACTGCCTGCAGCCAGGCTCGTC СТСАТТСАGАСАСТТАССАСТССGСТАТТСТСАСТТАСАСАGСGANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNGCGACTT ACTGTTGСТСТTATTCAGACTTAССТTTTTСTTAAGAСTСTCTGATTGAGGAAGATTGGAATAATGAGTGGCTAGAAAAC СTAATTCTTTAGCAACGCCCGTCAGTCACAGACAATACTTGGGGGTGTGCTGCTGAGTTTTAAAATCCAGAATGTGGTC TATTCTTACCAGCCTTGCTGATGCATTTATGGAGCATCTATGCTTTTGGTCTTGGTCTACCCTAGTGACTAAGCAGCCAT ACCCATTGTGAGAGGTCCTGGCATTTCTCACCTGCTATCCGAGATGTGTGGCATGTCCCTTCATAAGGTCTGTTCTTGCT GTGTGTCTGAAGCTGACGCCACTCTTCTGAACCCATCTTTGTCTTTAGGGCTTAGTCTGGCCGGGCAGTGGTGGCGTACG ССТТTAATCACAGCACTTGGAGGGCAGAGGCAGGTGGATTTCTGAGTTCAAGGCCAGCCTGGTCTACAGAGTGAGTTCC AGGACAGCCAGGGCTACACAGAGAAACCCTGTCTCAAAAAAAAAAAAAAAAAAAAAAACCAAGAAAAGAAAAAAAA GAACTTACTCTGTAAATGAGGAAGTATGTCCTACATCCTACTGGGCAATTTTTTTTCATAAGCAGCAATGCTCTTCGACT TTAGACATGGTTACATTTCCATAAACAAACAGGAAAGTTCACAAACTCAGCATACGTTTAATATACCTATCTACTGAAT ACCAAAGCGGGACCTATCCGACCTTAAATATGTTCATATTGTTTGTTTTAGCTTAGGGTTGGGCAAAATGGTCTAGCAT AATGCCTGCTTTTGATTAATAATAGAGTGCCACATGTCTTATGTGAAATAAGATTTTGTGATTTTGCCGGGCGGTGGTGG TGCACGCCTTTAATCCCAGCACTTGGGAGGCAGAGGCAGGTGGATTTCTGAGTTCAAGGCCAGCCTGGTCTACAGAGTG AGTTCCAGGACAGCCAAGGTTACACAGAGAAACCCTGTCTTGAAAAAAACAAAAAACAAAAACAACAACAAAAAAAA AGATTTTGCGATTTTAATTTTTAAATCTACAGCTCAGAGTCTTTTAATCTTACCTCCTTTTTATGGCGCTTTGCTTTTTCCC CTCTCGCTGATTTAAAGAGAGGAAGAAAGGGTGTCCTTCCCTCCGAATGTCCCCGTTATTAATTTCATAGCATGGTTTGT ACAGGGAGAAGCTAAGGTTTCCACTAAAAATACCTCTCATGATCACGCTGGAGTCTTTAACCTGCCTACACGGCTGCCG GTGTCACCTTGTTGTGTGATTCTGCTTGTCATCTTGTTCTCTCСTAGCACGTCCTCCAAAGGCGACCTGTTCTCTGCAGAG CAAGGTCACCTTAACCTGAATGTGTTTACTCGGAGAAGGTCCCGGTCAGTCATAGACATGATAGTCGCAGCCCTGAATA GAGTAAGTGGCTCTGTGTTCCTGGAAGAAAAGCCAACAAACAAGCCTGAAAAAGACTCTCTCCAGAGTCTGACTCCAG TCAGACCCCCAGGTTCTTCATGATCTGGGGCTGCCTTTTCTGTCTGGTGGAATCTGTTTTGAGTGAGAGTCCTGTCTAGT CAGTTCACTACATAGTTCCCATCTTCAGTATCTGCCCATCTTCAACATCAAATCATGGCAATCGCTGTTCAACACCAATC СТСТССАСТСАATAGAGGСAGCAGСТСТСТТАССТСТGATGTTТСТТТАТААТТСАAGGСССТGСТТТАТТСТТТGAATCA GAGTTGAGCCGACCTCTCTCCCTGACTCAAGGCCTGGCAGCAGTAGTGCCTACAGATGTCATCAGTCACCCAGTGGAAT AGATGTTCCСАССАТАТTTAACGAATCTCACTGGAGTACTCTCTCCTGTAGTGCTTGTGTTTATCCCСACTCCCTCAGAG САСССАСААССАСАСАТСТААСТТСТGСССАGAAGTTTTCATTTAAAGGAAGAGGGGGAGAAAAGAGCTTTTGCGTTAT ACATCTGAACGACTCCAGGAGCGAAGAAGTTAATATAGGCTTAAAAACACCACTCAAGTGGCTTTGTGGTCACAGTTTC САААСТТАССТTTGGTGATGGGTGGGCATCATTTATCCGGTCATTCAGATCCTACAGATTTATTTAGCATTATGTCATTC TAGGTGCCAAGATACAGCTGTGAGGAGGTCAACATATCACTGCCTCCTTGGAGCACCCCATGAAAGGCATCCAATAAT TTGAAAGGAAAGGACTGGAGGAAGTAGTGTACTTCСTCСTGTAAGCAGTCCCCCTGGACTGCTGACACAGAATGCACA AAAGCCCTGGGTTCAACCCACAGCGTCAAATAGACTGAGCACGGCAGTGCACACATGCAGTCCCAGCACTTGGATGGA GATGGAGGATCAAAATTCAAGGTCTTCTCTCTACATAGAGAGAAGGAGTGGTACACAGTCTTTGTGACGTGAGTGAGA CCTGAGTTAGCCTTACCAGAAACCATAGCAATTTCAGCACATGGTGTTTCGTTTGTTTGTTTTCTCTGTTAAAGGCAAGA AATTTСАССТTTGACTGAAGGAAGAСTTTTTATGTСТТСТССТСАGСАТТТССАААТТСТСАССАТТТСТАСТGTTGAATC TGCCAGTCAGGTTTCAGAACATAAGTGCTACACTATCTAGACAGCCATGTAAGAGCAGCCTGGTGCTAAGTGACTGAGT САССТАСАGCACGGACAGGCTGGATGAAGGCTCAGGAAGGATGGAATAGAACTGCGAAGGCTTCCCCACACTACCCA GAAGAAGGCTTCСССАСАСТАСССAGAACGGTGCTATTTAACCATATGTATTGTTTCTCTCTGGAATTTTCATGGAATCC GAGATAAGAGGACTGCTATATAAAGCTGGAACCACCCACCAAGACTTGATAGAGGAGGGTCAAGGCTGGCCTTGGATT TGAGACTCTTTCСTCAAGCGCTAGAATAACAGGCGTAGAGCATAATGNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN

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ACAATTGTTCCTCAAAGGAAAACAGTTAAGAGACCGTAGCTATCGGGCTGGAGGGATGGTTCAGTGGTTAAGAGCACT GACTGСTСTTCССAAGGTCTTGAGTTCAATTCCCAGCAACCACATGGTAGCTCACAACCATCTGTAATGAGATCCCATG СССТСТТСTGСTGTGTCTGAAGACAGCTACAGTAGTGTATTCATATACATAAAATAAATATTTTTTAAAGAGAGAGAGA GAGAGCAGTATAACTCGGTGAAAGATGTGCAAGGTCCTGAGTTCAATCCTCTGTCCCCAAAAGGAATAGAACAATGGA ACAAAAAAATACTACAGATGAGACCAAAGTGAAGACATCTTTCTTGCTAAGTTCTGAGTAAACCCAAGGATAAGTATT CTGGGTCTATACTCСTCСССTTGCAAACCTCGCTCAATTGTAATTGAAATCAAAAGGACTTTGCATGTCTGATGGGAAG CAGCCATTCCTGGGTTATGGAGTTTATGCTGAACTGGGCGGCGGTGCTGCTCTTAGAGGACTGGGTTTTGGTAGGCTTG ATCAGCATGGCTTTGTGACTAACAGGAATGACATCCAGCCGCCAGAGTAAAGGACTGCAGGCTGATGGGCAGGCAGGA TATACTGACTAGTCAGGAATTGTTTTCTTTTCTTAGGGAAATCTAAAATGTGCTTTCACTAACTGGGAAAAGCAAACCCT GCAAGCTCACACATTTTATGGGGAAAAAAAAATCAСАTTTATTTCССССААGTAAСААСТТСТТССТСТТССТССССТТС TССТТСТТСТТСТТТТТТТТТТTTTTTTGGTTTTTTGAGACAAGGTTTCTCTGGCTGTCCTGGAACAACTCACTTTGTAGAC CAGGCTGGCCTCGAACTCAGAAATCCACCTGCCTCTGCCTCCTGAGTGCTAGGATTAAAGGTCTGCGCCACCACGCCCG GCTCTTСТTTTTTTTTAGATGTATTTATTTTTATGGTTTGCTTGCGTCTATGTCTGTGTGAAGGTGTCAGATCTCTGGAAC TGTAGTTACAGACAGTTGTGAGCAGTGAGCTCGACTGGGTGAAAACTGAACCCATGTCCTTTACACAAACAGCCAGTTT
 TТТТСТТТАТТТАСАТТТТАААТGТТАТССССТТТССТАGТТТССССТСТGААААСССССАТСССТТСССССТСССССТGСТ САССААСССАСССАСТСССАСТТССТGGСАСАGGСАТТССССТАТАСТGGGAСATAGAATCTTCACAGGACCAAGGGCC TCTCCTGCCGTTGATGACCAACTAGGCCCTCCTCTGCTACATATGCAGTTAGAGCCATGAGTCCCACCATGTGTTTTCTT TGGTTGGTGGTTTAGTGCCAGGGAGCTCTGGGGGTAATGGTTAGTTCATGTTGCTGTTCCTCCTATGGGGCTGTAAACCC СТТСАТТТССТТGAATGСТТТСТСТАGСТССТТСАТTGGGGAСССТGTGСТСАGTССАATGAATGACTTGTGAGCATCCA ССТСТGTATTTGTCAGGCACTGGCAGAGCСTCTCAGGAAACAACTATAGCAGGCTCCTGTCAGCAAGCTCTTGCCAAGT AAСТТАТТСТTATCСATGGAGAAAGCAAACGAGGAGGGGGATGGGGAGAAAGGAGGCAAAAATGACCCTCAAGGCTA GGCCTAAATTCTAATCCTTAATTATCCGGTTTGTCTGGGTTTTCAATTTTTTAATGGTTTTACTTATTTACTTACTTACTTG TTTATTTATTTATTTGTTCACTTATTTCTTTAGTGTGGGTGGGTGTTGTTTTTATCTTTTCTCCTCСATTTCTAAATCTTCTG GGAAAGCTATCGAAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNCAAGATAGAGTTACTCTGTGTATCCCTGTCTGTCAGGGAACTTGCTTGGTAAACCAG GCTGCCATCCAGCTCAGAGATCTGCTTGCCTCTACСTCСССACTGCTGGGATTAAAGACGTGCACCACCATGCCTGGCT GTTGGAGACCCCATCTCAAGAACAAAAAATGAACTCCATGGCTACGGAGACGAATGCTCTGCTGCCTGTCTGTGGAAT AGGCACAATTAACAACGTGTCGGGGGAGGGGCCTACTGAAAAAAAAATGTGATGAGACAGATAGTGTGACAAAGTGA CTAGCAGAGAGAGACAGCGAGAAAGACAGCAGAGAGAGAGACAGCGAGAAAGACAGCAGAGAGAGAGAGTGTGCTC TGAAGAGCCCACACTCCAGTGGTAGAGGAATTCAGAAGAAATGGTTGTGTGGAAGGGCATTTCTCСTCCTAATCCTCTA GCCTGAGGCAAGCACTGGTAACCTCTCCTGCTACACTTCCGGAAACACTATGCTCAGTGCATGGCAGCTGTCCACAGCC AAGCCACCCCAAATGGAGTCGTTCTGAGTATTTAATGAAGTAGTTAGGACTTTATGAATAAACCCTACGCAGGCCCTGC GTGGTGGTGCATACCTTTTGCCCCAGGCGAGGCAGGAGGGTCTCTGAGTTTGAGACTAGCCTGGTCCACATGGTGAGTT CCAGGCTGGCCTGGAAGCTGTGATCCTACTTCCTCGGGCTTGCTGGGATAACTGGTGTTACACTACCACACCTGGCCCT СТССТСАТСТTGATAGCTGGAGAAGGTTGAGTCССАССТТТТGССТСТGTСТGTСТССТСАGGTTATTACGTATTCСAGC CGTCATGTCTACAATAACTTGACCGAGGAGCAGAAGGGCCGAGTGGCCTTCGCTTCCAACTTCCTGGCAGGAGATGCTT CССTGCAGATTGAGCCTCTGAAACCCAGTGATGAAGGCAGATACACCTGCAAGGTGAAGAATTCAGGACGCTATGTCT GGAGCCATGTCATCTTGAAAGTGCTAGGTAAAGTAGGACCCCAAAATAAATGTCTGCCTTTTGCTGTTGTGGTTTGGTT TGGTTTGGTTTGGTTTGGTTTGGTTTGATTAGTTAGTTAGTTAGTTAATTAGTTTGTTTGTTTGTTTTTGTTTTTTAAGACA GGTTTTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTAGCCCTGGCTGTCCTGGAACTTACTCTGTAGAAATC СААСТТGССТСТGССТССTGAGTGCTGGACTTAAAAGCATGCACCACCATCACCTGGCAATGCCTGCATCTCAAGTGCT ATCTATCTATGAGGCAAGAGACAGCCGCAAGTGGTAAAATCACCTATGTAATTCTTTGTAGTGTGCACTTAGACATCAC CACAAAGAAGCATTTATATTCTAGATTTTAGCTATAATGAGAGAAGAAAACACAATTATAGCTTTCTTTTTTAGCCTTAT TTTATCGAGTGTGTGCTCGAGTGTGTTTGCAAAGGTCAGAGGACAACTTTCAGGAGTCGCTTCTTTTTGTTCCACTGTTG GTTCTGGGATGGAACTCAGGACTCCGGGCTGATACAGCAAATGCCTTTACCCACCAAGCCATCTCCATGGCCCACAACT ATGATTCTTCCATGGTAGCTTATTATAAAATTCAAACGCCCTCTAAGACTCACTGTCCTTTGAATATTTGAACGATTACT TССАААСТАСТТАТСАТТТАТССТТGТТТСААТАТСААТААААТТGТТСАТААСТТТССТТАААТТТССССАТАААТАGСА GTGTCTACCTTTTCTGCGTCACCGCAGGTTCCAGCGCTGCTAGTAGCAGCTGGGGGCAGAGGATCTTGTTAGGGAGAGG GGCAGAGGAGGAGAGGGTGATCAGGGATCCAGGAGGTGAAGCATGGCTGGATAAATTTCAACTCAAAACTGAATAAA ATCAGGCGTGACGGGAGAGTTGAGTAAAGCGCTAAGTGGGGTGTATTTTTTTCTCCTGGCATTTGGAGACTCTCTGACC CATCAGTCTTAAATCTTTTTCACCAGTGAGACCATCCAAGCCCAAGTGTGAGCTGGAAGGAGAGCCGACCGAAGGAAG TGACCTGACGCTGCAGTGTGAGTCTGCCTCTGGAACTAAGCCCATTGTGTATTATTGGCAGCGAATCCGGGAGAAGGAG GGAGAAGATGAACACCTGCCACCCAAATCCAGAATTGGTAAGTCATCTCССTGTCAGGCTGCTGGGCCAAAAATATAA CGCGGCGTCCACAAATTCCAAATCTTCCTTGTCAGAAGCGCACTAGATGCCCTGGAGCACGCTGCTGAATCTTGTACGT ACGTGCGTGAGTGCGTGTATACTTGCGCGCGCGCGTGCGTGCGTGCGTGCGTGCGTGCGTGCGTGCGTGCGTGCGTGCG TGCGTGCGTGGTTGTCAATGGCTTGTTTTGTTCTGGCTTGGTTTGATTTGGAGTTTTTGCGTTTTGAGGCCCGGTCTCATA

CAGCATCATGTCCTAGTTTGCTTTTCTGTTGTTGTGATAGAACAGTATGACCAAAAGCTAGTGAAAGAGGGAAGTGTTA TGCATCTTATTCTCСAAGGTCACAGTCСATCTTTGAGAGAAGTCAGAGAGGAAGGCAAGTCAAGGACCTGGAGGCAGG AACCATTGTCAAACССТАСТТАСТGAСТТGСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТСТ СТСТСАСТСТСТСТСТСТСАСТСТСТСТСТСТСТСТСТСТСТССТСТСТАААТСАТGСTСAGCTAGCTTGCTTTTTTTTGTTT TGTTTTGTTTTTTGTTTTTTTCCAGACAGGGTTTTTTCTGTGTAGCCCTGGCTGTCCTGGAACTCACTCTGTAGACCGGGC TGGCTTCGAACTCAGAAATCTGCCTGCTTCTGCCTCCCAAGTGCTGTGATTAAAGGCATGCGCCACCACTGCCCACTCA GCTAGСTTTCTTATACAGCCCGGACССTСССАССTAGGGATGGTGCCACACACAGTGACCTGAGTCСTCСTСССАСАСС AATCCATAATCAATACAAATTTTCACAGACATGCCCAGAGGCCAGTCTAATCTGGAATGTTACTTGTTCCCTCTTTCCAG ATGTGTCAATTTGACAATTAAAAACTAACCAGCACGGGTCTGTTCTCAACCCTTTGCCTGAGATCAAATGTGAGGTCTT GTGTAGCCCAGGCTAGCCTTGAACAACTGGTCCTTTAGCTTGTGTAGCCCAGGCTAGCCTTGAACAACTGGTCCTTTAG СТТССАССТСТАAAGTGCTGGGСTTAСAСАСАСАСАСТАСССССАТGСССАGTGTGAACCTCTCTTGCTGTTATTGTTTT ATTTTTAAGACAGGGTGTCATGAAGCCCAGGCTGACATATAACTTCCTACATAGCCAAGGATTGTTTTGAACTCTGGAT TGTTCTGTCTCTGTCTCCCAATTGCTGGGATTACAGGGAATTAACAACATGACTGGGTTGCTGTTAAACCTCTTGAATTT САТТТTTСАТTTGTAAACTCAGACCATAAACCСATTTCСTTATTTAAATGGCACGGAAATGAGGGGGGGGGGTATTTGA ATTAACTGGCTTAGTATCTAGTATTCACTAAATATTCGCCATCTTTTTTTTTTTTTTCCTTTTGGTTCTGACTGTGGATTGG AССТАGGACСTTGTAСАСАТАТССССТССТССАСАGAСТСTTGGGAAGTTGTGCAAAACAGCCTTGAACTCACTTTGTA ACCCAGTTAGGACTATGACTGGTAATGTTATGTATGCCTCAGCCTCCCAAATAGCTACAGGTCCTTTGTTCCCGATGTTT TGTAGTTCCTGAGGATGCACAACAATTTCAGATAACATCTCСССATTTCССATGCTCCAAAACAGGATCTTCTCTGTCAG TTCGTCССАТССААССАТTСGTCATCACAGGTCTGTGATGCTCATCAATAAACAACAGAGATGCTGTTGTGGAGGGGAT TTGССАТСТСGATTTСТGСТССТАСAGATTAСAACAACССTGGCCGAGTGCTGCTGCAGAATCTCACCATGGCCTCCTCT GGGCTTTACCAGTGCACAGCAGGCAACGAGGCTGGAAAGGAGAGCTGTGTGGTACGGGTGACTGTACAGTGTGAGTAT CTCGGGGTTGTCTTCCTTTTACGGTGGAGATTAAAAACCCAGGACCTTTAGAATGATAGCCACTGAGCTAAACCCCCCA AСTTCССАATAATGCATGGGTAGCTCCCTCGGTAGGATGCCAGCACCACCACCACCACCAGACACACACACACACACA CACACACACAAGTGTGTGCATACACAGAGAGAGACAGAGACAGGCAGACAGACAGACAGAGAGACAGAGACTCTAG AGGCAGAAACAGAGACCGGGTGAGTTTAGAGATACACACTGCAATCCTCAAGTTTAGAAGGTGAAAGCCAGATAACG GAAGTTGAAGATCATCTCССTCССTССССGССССТСТАСАСАСAGAAGTTTAGAGCTAATCAAAGCTACATAAAAACCT GTCTCAAAAAATATTAAAACGGGGCTGGAGGGATGGCTCAGTGGTTAAGAGCACCGGCTGCTCTCCAGAGGTCCTAAG TTССАТТСССАGСААССАСАТGGTGGСTСАСАAССАТСТGTAATGGGATCCAATGTCTTCTGATATGTTTGAAGACAGA GACAGTATACTCACATACATTAAATAAATAAATCTTTTAGAAAATATATTAAGCCGGGCATGGTGGTGCACGCCTTTAA TCCCAGAGCTCGGGAGGCAGAGGCAAAAAGATTTCTGAGTTCGAGGCCAGCCTGGTCTACAAAAGTGAGTTCCAGGAC AGCCAGGGCTATACAGAGAAACCCTGTCTCGAAAAACTAAAATATATATATATATATACACATATATGTATTAAAACA AAAAAGTAGGGTCAGGTGTTTTGGTACATTCTGTAATCCTAGCTCTTGGAACAGGAGGATAATGAATTTGATAGCTGCT GGAGCTACTTGGTAATATAATTTTTCTTTTAATTTTTCTTTTTTTTTAAGAAAGGAAAGAGCCAGGCGTGGTGGCTCATG ССТСТААТТССАСТАGСАТTTACGAGAAAGAAACAGGTAGATTTCTGAGTTTGAAGCCAGCCTGGTCTACATAGTGAGT TCGAGGACAGCCCAGGCTACATAACAAAACCCTGTTTCAAAACAAACAAACAAAGTAAATAAATAAATAAATAAATA AATATGCCAAGGGAGAAAAGCAATCAATAGCCTTAACCAGCTCTGAAGCTTATAGACCACAAAGATGACAGCCTGCCA AGGATAGCAGCCTTCCCATCTTGGGGACTACTAAACACTGTTTTAAGTAAAAGACATCAGAAACCAAGTTACAAAACA AAACCAACCTGAATATCTGTATCTATTTCTGTAGAACAAATTACCCCAAATTTAGTGCACTTAAAACTTTTTTTTTTTTTT GGTTTTTCGAGACAGGGTTTCTCTGTGTCTGTGTAGCCCTGGCTGTCCTGGAACTCACTTTTGTAGACCAGGCTGGCCTT GAATTTAGAAATCTGCCTGCCTCTGCCTCCTGAGTGCTGGGATTAAAGGTGTGTGCCACCATGCCTGGCACAAAACTTT TTTTTAAAAAAAGAATTATTTATTTATGTATGAGTACACTGTAGCTGTCTTCAGACACACCAGAAGAGGGCATCAGACC CTGTTACAGATGGTTATGAGCCACCGTGTGGTTGCTGGGAATTAAATTCAGGACTCTGGAAGCAGTTAGCACTCTTAAC CACTGAGCCATCССTTCAGGCССССАССССАТСССССТGСАСТTAAAACTTCTTAGTCTCAGTTTCTGCAAGTGGCCTAG CTGGGAAGTCAGGCTCACTGTCTCCTCAGGAGAGGTTACACAGAGTGTCAGTCATCTGTGCTGCACACGTGGCAAGACC TGGAGGCTGCAGGCTACCСTCTAAAATGGCTCCCAGTGGCTTTTGGGTGCAGGCCTTCTTTCTTCACATAGACTCTCTTA AAAAAGAAAACAAAAACAAAAAACAAAAACAAAAAAACAAAAACAAATTCACAGGTGGCTTCCCTCAAGCATGACCT GAAAGTTCAAGCCССССТСССССAGСTTTTTGATGAGATGCGGCCTGACACAGGCGTTTGAGATGTAGAGACTTGAGAA CTGAGAATTGTACTGATTTGTATAACCAAAGTCTCAGATGTGACCTGCCATTACTTCTGATCACGTCTGTATTTCATTTA CTACGAGTGAGTCACGGGCAGTAAGAGTGTTCGGGCAGATAAGGCTCTTTGGCACCAAGCCTAATGGTCTGAAGGTCT ATGTCCAGGACTCACATGGTAGAAGGAAGGAAACAACTTCCTTTAGTTGTCCTGTGGCAGCCACTGGAGAGTGGGGGT TGGGGGGGGGGGGGACACGTGCCTATCCAGCACCACCCCACATGCAGCACACAAAAGAAAGAAAGAAAGAAAGAAA GAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGCAAGCTTAAAAAAAAAAA СААССААССААССАААААСТАСТТТАТСАСТТАATGAAAGAAAGAACTGTTAAGATGTTAAAACTGGTCCAAAGGCCA CTTGAGACATTAGATTAGGGACAAAGACACTTTAACTTGGAGACTGTGAAGCTTGCTGGGGCAGGCAGCAAAATAGTT AATGTTCTACAAAATCTGTGATTTCTGTGGTCACCTGTTTAGCTGGAATAGGAATCTTTCTGCTGTAAGTTGCCATCATC GAGTTACAAATTGTCAAGTACTTCTGCCСTTTCAAGTATCAGTTGTCCTACAAATTTAACAAGGTCTTCACTGAAAACGT ATGAGCTGGCTTTCGTGTCAACTGAACATCTGCCCTTTTTATTTCAAGCTATGGTGTTAGTAAAAATCTTAAAGTCAGGA GGATCATAGATTCAAAATCAGTCTGGGCTATAAACCAAGGCTGGGTTTCAAACACACACACACACACACATACACACA TAAATAATAATAATACCAGTTATTAGGAAGATTATGTATTGAAACAACAACAACAACAAAATGGTTCTTTAGCCTGGTG

GTACATATCTATAATTCCAGTACTTAGGAGGTGGATGTAGAAAGATCCAGAATTCAATGTCATTCTCTTATATAAAGAA TTTGAGGCCGAGCGTGGTGGCGCACACCTTTAATCCCAGCACTCAGGAGGCAGAGGCAGGCGGATTTCGGAGTTCGAG GCCAGCCTGGTCTACAAAGTGAGTTCAAGGACAGCCAGGACTATACAGAGAAACCCTGTCTCAAAAAAACCAAAAAA AAAAAAAATTGAGGCCAGTCTAGGCTACTTGAAACCTTGCTTCAAAGAAATATTTTTTTTCCATTTTTTATTAGGTATTT ААСТСАТТТАСАТТТССААТGСТАТАССААААGТСССССАТАТССАСССАСССССАСТССССТGСССАСССАСТСССССТ TTTTGGCCCTGGTGTTCCCCTGTACTGGGGCATATAAAGTTTGCAAGTCCAATGGGCCTCTCTTTCCAGTGATGACCGAC TAGGCCATCTCTTGATATATATGCAGCTAGAGTCACAAAGAAATATTTTTTAAATAAACTAAAAATGGGGTGGGGGGA ACTAAGTACTGCTATATTCTTGGCCAGTATAAATTCTAGCACCTTTTATTATTGTTTGTAGACTTGAAAAGAGAAAATAT AGTGTAGTGAAACTTCAGAGACCACGTAAACCCTGAGTGTACATTCTGGTAGAATGTCAAGTGAGTGTGACCTTGTAAA TGGCATCATGGGCTGGAGAGATGGCTCAGTGGCTAAGAGGCCCGGAGTTCAATCTCCAGCAACCACATGCTGGCTAAC AACCATCTATAATGGGATCTGATGCCCTCTTCTGGCATGCAGGTGTACATGCAGATAGAGTATGTATGTATGTATGTAT ATGTATATGTATATGTATATGTATATGTATATATGATAAATAAATAAATCTTTATTTTAAAAAAAAAGGCAAGTAGCAT CATAGTCATAGACCAGTCATTGCTCCCTGCTGССТСTTAGACCCAGAGACTAACTTGAGAGATTACTCTTCCTGTTTTAG
 TTGCTGTGATATGTTGGCTGGCATTGAGGTTTTCTGGGTTTGTGGGGAAAGGAAGGTGTAGGGAACTAGAACCCAGAGC CTGGCATGTTCTAAGCAAGCAGTCAGCTTTCATTTTTCTGTGGCAAAGTCTTCAATCTAGCTGAAGCTGGACTTCAAACT CAGGAATTCСTCСTGССTCGACTTCССAAATGCTGAAATTACAGTGTTCCCACCAACTGGACATCCCCATGGTTCTGTA GTGTTTTGTTATACTAGTGTGCCTCAATTACAAATCCATCCTATTGATACATTGAGTGTGTGTGTGTGTGTGTGTGTGTG TATGTGTGTGTATGTATGTATGTGTGTGTAAAATTTTTCTTATTATTGAGACAGGGTCTCACTGTGCAGCCCAGAACTTC AATAGAСTTTCTATATAGCCAAAGATGGATTCAAACTCACAGCAATCССССТGССТСТGССТССATATGCTGAGATTAT AGGCATGTGCCGCCATGCCTCTTATCTATTCTATTTAACTGTAGGTTGAGAAATGCATTTCATTATATTGAGCAACATTT CTGTGAATTTATCGTTTAGATATTTTCCAAAAGCATGCAAACATACATGGAAATTAATGAAATATTTTGATTGTGAAAA AGTAAAGACAGCGGTAATTTCCATTAGTAGATAATCCATCCAGAGTGTATATTGGGGGTGGGGCCATAAGGAAAAGAA CAGTCCTGAACTGAATTTGTTTACATAAAATAAATCCCAAAGCCAGTGAGATGGCCCAGCCGTAGGTGCTTATTGCCTA GCCCCGTGACCTTAATTTGACTACAGGAATCCACATAATGGAGGAAAGAACAGATTCATACAAGTTATCСTCTGACCCC TACACACTCACAAAGGAATAAACACAAAGAAAATAAATAAATAAATGTAATGATTAAACAAGATAAACTCTAGCTTTT CAAGAACCTAGCAATAGCTAAAGTCCAATCTCTTTCCAAAATATATATACATATATATGTGTGTGTGTGTATATATATAT ATATGTATATATATATATATATATATATATACACACATACATACATACATATACACACACAGATGATGGTTGCACACAC CTTTAGTCССАAСАСТСAGGAGACAGAAGCAGGTACATCTCTGAGTTCAAAGCCAGCCTGGTCTTAAGAGCAAGTTCCA GGACAACCAGGGCTACAGAGAAGCCCTGTCTCAAAGAGGGAAACAAACAAACAAACAAAAAGACAGGCATGGTGGGT GGTGCACACCTTTAACCCCAGCATTCCAGAGATAGAAGCAGGAGGATTTCTGTAAGTGAGGACAGGGTGACTTATATA ATGAGTTCAAGGCTACTGTAGACACTATCTTGGGGGGGGGTAGATAAAAGGTAAATTTTTATAGTAAGAGACCACGTC GTTTATAAAAATGTCAACTACTTTCTGTTGGTTGACAACACTTTCAGAACAGAAGCCGTCGCATCGCATCCTTGTACCA GCСTCTGTGCACATTAGGTCCAGCCTGGTCCACTCACTGTCATCTGCGGTTTGCACCGTCAGAAACATCCTGACTTGTAT ССТTGСТTССТTTTСТСССТGTGAAACAСTССАTTTCССССAGGAACAGCCACAGTGTGCTTTCTTCAATGTAACATGAC CСATGCAACTCTTCTGTTGCCTCTATGGTGAAATGCTTGCCTGGCCTATTAGGATCCATGGGAGTGATCCCTTCCTGTCT CTGTGAСTTСАТСТССССGTGСТTTСССТТGTTСАТTGTGСТССАGАСАСАСТТАТТСАССАСАСССТСТGТАССТССТGG AGGGCTGTCTCCAGTTCACCACAAGATGGTCCTGTCTTTTGTATTTCAACTCAAACACCACTTTTCCAAACTGAGACTGT AGTCСССТАТТСТСТТТССАAGCTGССАGTСАТАСАСТТТТGСССТСАСАТGТССАСТGTCTGAAATTATTTGСАТСТАТT СТТТАТТGСТТТТСССТTTTGTGGAGTGCAAACTCAAAAAACAGAGAAACTCTTATTGATCTTTACAAGACTGCTGGCTT AAATGGGCACTTAACAAATATTTAGCATGTGTCATAGCCAAATGAGAGCATATATGTTACTAAATAAAATTTTACCTTG AGCTCAGAGTTTGAGAGTCACCGGCAGTCACACACAGAATTATATGCTGTGGGCTATATTCTATTTTATTTTACTGGTAG AGAGGGGCAGTTAGATAAAGAGGGGCAGAGCTAGAAGACTGCCCAGAAGGATTCTATGAAGGTTGAATTTTTCTTTAC ACGACACAATAACTTTCCCAGCCTGTTTTATCATGTGAACAGAGACAGACGTAGTCACTAAAATCTAAGCAAACCAGTA AAGTGGTGCAGTAACTTCAGCTTGCAAGAATATGGAAAGGCACAGTCACAGCATGCGAGGGTTGCTGGGTGTGGTCTG GAAGCCACCCTGTCCGGGCTTCTGTCCTGGGTATGCAGGAATCTCCGAGCTTATGTTTGACGGTACTTCTGTCTGTGCTT CCGAGGAAACAGATGTGCAGAGCATTGGCATGGTGGCAGGAGCAGTGACAGGCATAGTGGCAGGAGCCCTGCTCATTT TCСTCCTGATATGGCTGCTAATACGAAGGAAAAGCAAAGACAGATACGAGGAAGAAGACAGACCTAATGAAATCCGG TAAGCTTCССTATTTGTGCAAACTCССTTTACAGGCCAATTCCATAGTAACCAGTCAATATCATTCCGTAGGTCCCCTGC ATTATTAATCTCTTCAAAGGGTTATCCTAGCAAGTAGGAAATTACAGTCTGGGGACAGGAGATGTGATTCACTTATTGT GAAACTATCTTTGTCCTGGCTTGCTTTTTGTTGCTATGGCAAACAACATGACCAAAAGCAGCCTGGAAAGAAAAGGGTT TСТТТСССССТАСАGСТТАСАGTCСGTTACCAAGGGAAGGCAGGAAAGGAAAAGAATTCAAGGCAGGAAAGGAATTCA AGGCAGGAAAGGAATTCAAGGCAGGAAAGGAATTCAAGGCAGGAAAGGAATTCAAGGCAGGAAGCTGGGGGTGCCA ACTGAAGCAGAGGCCATGGAGGGGTGCTGCTTACTGGTTTGCTCСTCACAGCTTGCTCAGCCTGCTTTCTAATAGAACC CAGCATCGCCTTCCCAGGAGTGGCACCACCCACAATGAGCAGTACTCTCAGACAGCCATCATTAGTCCAGAAAAAAAA GCACCACAGGCTTGCCAACCAGCCATTCTGATGGAGACATTTCTTCAGCTGAGGCTCССТСТССССGATGACTCTAGCT TGTGTCATGCTAACAACCAACCAGCTTAAGTCTCAGCTTTACCTCTGATTCACTTCCACTTAGCAAGGGTAGATGATAA AAAGGGTATAACCCACAGGACATGAAAGGGTTTAAGTACGCAAACCCCCAAATCAAAGCAATTCTATCAAAGCAATCA AAGTCTCCTGTTGAGCTGTATCCTGGTGCAACTGGCTCAACСTCTCTGGCAGTCACTCAACAAACATTTTCCTAAACTGA

GCATTAAGTCTTAGGAAACCAGAAACTGCTCAGTTCCTTAACTGACTGCCTTGGAGGTTTATGGCTTGAGGAGTTTATT GGAAAAAAAAAAAAAAATCTCAGGAGGAAGTAACTTTAACGAGCGTCAACCCAGCCCCGGCAGTACTAAAGTTTATCT TTGCTATCTGTTCACTTTTCCGCTTTCAGAGAAGACGCCGAAGCGCCCCGAGCCCGCCTTGTGAAGCCTAGCTCCTCTTC CTCAGGCTCCCGGAGCTCACGCTCTGGCTCCTCCTCCACCCGCTCCACCGGGAACAGTGCCTCCAGAAGCCAGCGGACG CTGTCGAGTGAAGCAGCGCCGCAGCAGCCCGGGCTAGCCCCGCAGGCATACAGCCTCATAGGACCGGAAGTGAGAGG TTCTGAACCAAAGAAAGTCCACCATACGACCCTGACCAAAGCAGAAACCACACTCAGCACAACGCCCAGCCAGAGCA AAGCСTTССАAACTGTCTGACTTAGAGTGGACTTGACTTGCGCTTGCCCCAAAGTCAGGATCTTAGCCTAGTCACTGGA GCTCGTCCACCAGCCACGCAAGCCCCTCAGCCAGATACGATCTCACTTAAGTAGCTGCAGAAATGGCACGGACCAGTT CTGATGAGTAСССТССТTATATAGGATACCAAACAAACACAAGGACGGAGGCTGACCATCTATCTCTAAAGGCACCTC ACTGTGCCTTCAGACAGAGTGGAGGGGAGGAGGGGCCCAAGCTTATTTGGTGAAAATAAAGGGAAAGGTGAGGCTGC ACACACCTGAAACATCTTACCTAGGATGTTGCAAGTCACCACAGTCAAGAAGAAGCGGGAATCTCGTAGATCAATTTTC TATTCATTTCTGCAAATTTATTGGATTAGTGTGATTATTCAGATAGTCAAAACAGAAGCCCACGCCTTATAATATACCTA TCTGCAACATGTACTGGGAGAACTGCGTTTAAGAAATTCACATTAAAAAAAAAAAAAAAAGAAGGAAACAC

## Selection Cassette:

TAGAGGCCATAGCGGCCATTTTAAATGGCGCGCCGGATCCCGGGCCGCTCTAGCTAGACTAGTCTAGCTAGAGGAATTC СGССССТСТСССТССССССССССТАAСGTTAСTGGCCGAAGCCGCTTGGAATAAGGCCGGTGTGCGTTTGTCTATATGTT ATTTTССАССАТАТTGССGTCTTTTGGCAATGTGAGGGCCCGGAAACCTGGCCCTGTCTTCTTGACGAGCATTCCTAGGG GTСТTTССССТСТСGССAAAGGAATGCAAGGTCTGTTGAATGTCGTGAAGGAAGCAGTTCCTCTGGAAGCTTCTTGAAG ACAAACAACGTCTGTAGCGACCCTTTGCAGGCAGCGGAACCCCCCACCTGGCGACAGGTGCCTCTGCGGCCAAAAGCC ACGTGTATAAGATACACCTGCAAAGGCGGCACAACCCCAGTGCCACGTTGTGAGTTGGATAGTTGTGGAAAGAGTCAA ATGGCTCTCСTCAAGCGTATTCAACAAGGGGCTGAAGGATGCCCAGAAGGTACCCCATTGTATGGGATCTGATCTGGG GCCTCGGTGCACATGCTTTACATGTGTTTAGTCGAGGTTAAAAAAACGTCTAGGCCCCCCGAACCACGGGGACGTGGTT TTCСTTTGAAAAACACGATGATAAGCTTGCCACAACCATGGAAGATCCCGTCGTTTTACAACGTCGTGACTGGGAAAAC CCTGGCGTTACCCAACTTAATCGCCTTGCAGCACATCCCCCTTTCGCCAGCTGGCGTAATAGCGAAGAGGCCCGCACCG ATCGСССТТСССАAСAGTTGCGCAGCCTGAATGGCGAATGGCGCTTTGCCTGGTTTCCGGCACCAGAAGCGGTGCCGGA AAGCTGGCTGGAGTGCGATCTTCCTGAGGCCGATACTGTCGTCGTCCCCTCAAACTGGCAGATGCACGGTTACGATGCG СССАТСТАСАССААСGTAACСTATCССАTTACGGTCAATCCGCCGTTTGTTCССACGGAGAATCCGACGGGTTGTTACT CGCTCACATTTAATGTTGATGAAAGCTGGCTACAGGAAGGCCAGACGCGAATTATTTTTGATGGCGTTAACTCGGCGTT TCATCTGTGGTGCAACGGGCGCTGGGTCGGTTACGGCCAGGACAGTCGTTTGCCGTCTGAATTTGACCTGAGCGCATTT TTACGCGCCGGAGAAAACCGCCTCGCGGTGATGGTGCTGCGCTGGAGTGACGGCAGTTATCTGGAAGATCAGGATATG TGGCGGATGAGCGGCATTTTCCGTGACGTCTCGTTGCTGCATAAACCGACTACACAAATCAGCGATTTCCATGTTGCCA CTCGCTTTAATGATGATTTCAGCCGCGCTGTACTGGAGGCTGAAGTTCAGATGTGCGGCGAGTTGCGTGACTACCTACG GGTAACAGTTTCTTTATGGCAGGGTGAAACGCAGGTCGCCAGCGGCACCGCGCCTTTCGGCGGTGAAATTATCGATGA GCGTGGTGGTTATGCCGATCGCGTCACACTACGTCTGAACGTCGAAAACCCGAAACTGTGGAGCGCCGAAATCCCGAA TCTCTATCGTGCGGTGGTTGAACTGCACACCGCCGACGGCACGCTGATTGAAGCAGAAGCCTGCGATGTCGGTTTCCGC GAGGTGCGGATTGAAAATGGTCTGCTGCTGCTGAACGGCAAGCCGTTGCTGATTCGAGGCGTTAACCGTCACGAGCAT CATCCTCTGCATGGTCAGGTCATGGATGAGCAGACGATGGTGCAGGATATCCTGCTGATGAAGCAGAACAACTTTAAC GCCGTGCGCTGTTCGCATTATCCGAACCATCCGCTGTGGTACACGCTGTGCGACCGCTACGGCCTGTATGTGGTGGATG AAGCCAATATTGAAACCCACGGCATGGTGCCAATGAATCGTCTGACCGATGATCCGCGCTGGCTACCGGCGATGAGCG AACGCGTAACGCGAATGGTGCAGCGCGATCGTAATCACCCGAGTGTGATCATCTGGTCGCTGGGGAATGAATCAGGCC ACGGCGCTAATCACGACGCGCTGTATCGCTGGATCAAATCTGTCGATCCTTCCCGCCCGGTGCAGTATGAAGGCGGCGG AGCCGACACCACGGCCACCGATATTATTTGCCCGATGTACGCGCGCGTGGATGAAGACCAGCCCTTCCCGGCTGTGCCG AAATGGTCCATCAAAAAATGGCTTTCGCTACCTGGAGAGACGCGCCCGCTGATCCTTTGCGAATACGCCCACGCGATG GGTAACAGTCTTGGCGGTTTCGCTAAATACTGGCAGGCGTTTCGTCAGTATCCCCGTTTACAGGGCGGCTTCGTCTGGG ACTGGGTGGATCAGTCGCTGATTAAATATGATGAAAACGGCAACCCGTGGTCGGCTTACGGCGGTGATTTTGGCGATAC GCCGAACGATCGCCAGTTCTGTATGAACGGTCTGGTCTTTGCCGACCGCACGCCGCATCCAGCGCTGACGGAAGCAAA ACACCAGCAGCAGTTTTTCCAGTTCCGTTTATCCGGGCAAACCATCGAAGTGACCAGCGAATACCTGTTCCGTCATAGC GATAACGAGCTCCTGCACTGGATGGTGGCGCTGGATGGTAAGCCGCTGGCAAGCGGTGAAGTGCCTCTGGATGTCGCT CCACAAGGTAAACAGTTGATTGAACTGCCTGAACTACCGCAGCCGGAGAGCGCCGGGCAACTCTGGCTCACAGTACGC GTAGTGCAACCGAACGCGACCGCATGGTCAGAAGCCGGGCACATCAGCGCCTGGCAGCAGTGGCGTCTGGCGGAAAA CCTCAGTGTGACGCTCCCCGCCGCGTCCCACGCCATCCCGCATCTGACCACCAGCGAAATGGATTTTTGCATCGAGCTG GGTAATAAGCGTTGGCAATTTAACCGCCAGTCAGGCTTTCTTTCACAGATGTGGATTGGCGATAAAAAACAACTGCTGA CGCCGCTGCGCGATCAGTTCACCCGTGCACCGCTGGATAACGACATTGGCGTAAGTGAAGCGACCCGCATTGACCCTA ACGCCTGGGTCGAACGCTGGAAGGCGGCGGGCCATTACCAGGCCGAAGCAGCGTTGTTGCAGTGCACGGCAGATACAC TTGCTGATGCGGTGCTGATTACGACCGCTCACGCGTGGCAGCATCAGGGGAAAACCTTATTTATCAGCCGGAAAACCTA CCGGATTGATGGTAGTGGTCAAATGGCGATTACCGTTGATGTTGAAGTGGCGAGCGATACACCGCATCCGGCGCGGAT TGGCCTGAACTGCCAGCTGGCGCAGGTAGCAGAGCGGGTAAACTGGCTCGGATTAGGGCCGCAAGAAAACTATCCCGA

CCGCCTTACTGCCGCCTGTTTTGACCGCTGGGATCTGCCATTGTCAGACATGTATACCCCGTACGTCTTCCCGAGCGAAA ACGGTCTGCGCTGCGGGACGCGCGAATTGAATTATGGCCCACACCAGTGGCGCGGCGACTTCCAGTTCAACATCAGCC GCTACAGTCAACAGCAACTGATGGAAACCAGCCATCGCCATCTGCTGCACGCGGAAGAAGGCACATGGCTGAATATCG ACGGTTTCCATATGGGGATTGGTGGCGACGACTCCTGGAGCCCGTCAGTATCGGCGGAATTCCAGCTGAGCGCCGGTCG CTACCATTACCAGTTGGTCTGGTGTCAAAAATAATAATAACCGGGCAGGCCATGTCTGCCCGTATTTCGCGTAAGGAAA TCСАТТАТGTACTATTTAAAAAACACAAACTTTTGGATGTTCGGTTTATTCTTTTTCTTTTACTTTTTTATCATGGGAGCC TAСTTCССGTTTTTCCCGATTTGGCTACATGACATCAACCATATCAGCAAAAGTGATACGGGTATTATTTTTGCCGCTAT TTСТСТGTTCTCGСТАTTATTCСAACCGCTGTTTGGTCTGСTTTCTGACAAACTCGGAACTTGTTTATTGCAGCTTATAAT GGTTACAAATAAAGCAATAGCATCACAAATTTCACAAATTTAATTAAGGCCGCGGGATCGATCCCGTCGAGCAGTGTG GTTTTCAAGAGGAAGCAAAAAGCCTCTCCACCCAGGCCTGGAATGTTTCCACCCAATGTCGAGCAGTGTGGTTTTGCAA GAGGAAGCAAAAAGCCTCTCCACCCAGGCCTGGAATGTTTCCACCCAATGTCGAGCAAACCCCGCCCAGCGTCTTGTC ATTGGCGAATTCGAACACGCAGATGCAGTCGGGGCGGCGCGGTCCCAGGTCCACTTCGCATATTAAGGTGACGCGTGT GGCCTCGAACACCGAGCGACCCTGCAGCCAATATGGGATCGGCCATTGAACAAGATGGATTGCACGCAGGTTCTCCGG CCGCTTGGGTGGAGAGGCTATTCGGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCCGGCT GTCAGCGCAGGGGCGCCCGGTTCTTTTTGTCAAGACCGACCTGTCCGGTGCCCTGAATGAACTGCAGGACGAGGCAGC GCGGCTATCGTGGCTGGCCACGACGGGCGTTCCTTGCGCAGCTGTGCTCGACGTTGTCACTGAAGCGGGAAGGGACTG GCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTCCTGTCATCTCAССTTGCTCCTGCCGAGAAAGTATCCATCATGGCT GATGCAATGCGGCGGCTGCATACGCTTGATCCGGCTACCTGCCCATTCGACCACCAAGCGAAACATCGCATCGAGCGA GCACGTACTCGGATGGAAGCCGGTCTTGTCGATCAGGATGATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGCCGAA CTGTTCGCCAGGCTCAAGGCGCGCATGCCCGACGGCGAGGATCTCGTCGTGACCCATGGCGATGCCTGCTTGCCGAATA TCATGGTGGAAAATGGCCGCTTTTCTGGATTCATCGACTGTGGCCGGCTGGGTGTGGCGGACCGCTATCAGGACATAGC GTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATGGGCTGACCGCTTCCTCGTGCTTTACGGTATCGCCGCT CCCGATTCGCAGCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCTTCTGAGGGTCGGCAATAAAAAGACAGAATAAAA CGCACGGGTGTTGGGTCGTTTGTTCGGATCCGAATTCCTCGAGGGCGCGCCATTTAAATGGCCAGCGAGGCCGGTACCC AATTCGCCCTATAG

## Targeted Locus:

ACAGTTGTGAGCAGTGAGCTCGACTGGGTGAAAACTGAACCCATGTCCTTTACACAAACAGCCAGTTTTCTTAACTGCT GAGCCATCTCTCTAGCATCCCAAGTAACTTATTCTTTTAACAAAAAACAAAAAAACCAAAACTAGATATTTTCTTTATTT АСАТТТТАААТGТТАТССССТТТССТАGТТТССССТСТGААААСССССАТСССТТСССССТСССССТGСТСАССААСССАС ССАСТСССАСТТССТGGСАСАGGСАТТССССТАТАСТGGGACATAGAATCTTCACAGGACCAAGGGCCTCTCCTGCCGT TGATGACCAACTAGGCCCTCCTCTGCTACATATGCAGTTAGAGCCATGAGTCCCACCATGTGTTTTCTTTGGTTGGTGGT TTAGTGCCAGGGAGCTCTGGGGGTAATGGTTAGTTCATGTTGCTGTTCСTССТATGGGGCTGTAAACСССТТСАТТТССТ TGAATGCTTTCTCTAGCTCСTTCATTGGGGACCCTGTGСTCAGTCCAATGAATGACTTGTGAGCATCCACCTCTGTATTT GTCAGGCACTGGCAGAGCCTCTCAGGAAACAACTATAGCAGGCTCCTGTCAGCAAGCTCTTGCCAAGTAACTTATTCTT ATCCATGGAGAAAGCAAACGAGGAGGGGGATGGGGAGAAAGGAGGCAAAAATGACCCTCAAGGCTAGGCCTAAATTC TAATCCTTAATTATCCGGTTTGTCTGGGTTTTCAATTTTTTAATGGTTTTACTTATTTACTTACTTACTTGTTTATTTATTT ATTTGTTCAСTTATTTCTTTAGTGTGGGTGGGTGTTGTTTTTATСТТТТСТССТССАТTTСTAAATCTTCTGGGAAAGCTAT CGAAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNCAAGATAGAGTTACTCTGT GTATCCCTGTCTGTCAGGGAACTTGCTTGGTAAACCAGGCTGCCATCCAGCTCAGAGATCTGCTTGCCTCTACCTCCCCA CTGCTGGGATTAAAGACGTGCACCACCATGCCTGGCTGTTGGAGACCCCATCTCAAGAACAAAAAATGAACTCCATGG CTACGGAGACGAATGCTCTGCTGCCTGTCTGTGGAATAGGCACAATTAACAACGTGTCGGGGGAGGGGCCTACTGAAA AAAAAATGTGATGAGACAGATAGTGTGACAAAGTGACTAGCAGAGAGAGACAGCGAGAAAGACAGCAGAGAGAGAG ACAGCGAGAAAGACAGCAGAGAGAGAGAGTGTGCTCTGAAGAGCCCACACTCCAGTGGTAGAGGAATTCAGAAGAAA TGGTTGTGTGGAAGGGCATTTCTCСTCСTAATCСTCTAGCCTGAGGCAAGCACTGGTAACCTCTCCTGCTACACTTCCGG AAACACTATGCTCAGTGCATGGCAGCTGTCCACAGCCAAGCCACCCCAAATGGAGTCGTTCTGAGTATTTAAACAAAGT AGTTAGGACTTTATGAATAAACCCTACGCAGGCCCTGCGTGGTGGTGCATACCTTTTGCCCCAGGCGAGGCAGGAGGGT CTCTGAGTTTGAGACTAGCCTGGTCCACATGGTGAGTTCCAGGCTGGCCTGGAAGCTGTGATCCTACTTCCTCGGGCTT GCTGGGATAACTGGTGTTGTACTACCACACCTGGCCСTCTCСTCATCTTGATAGCTGGAGAAGGTTGAGTCCCACCTTTT GCCTCTGTCTGTCTCCTCAGGTTATTACGGGCCGCTACTAGAGGCCATAGCGGCCATTTTAAATGGCGCGCCGGATCCC GGGCCGCTCTAGCTAGACTAGTCTAGCTAGAGGAATTCCGССССТСТСССТССССССССССТАAСGTTACTGGССGAAG CCGCTTGGAATAAGGCCGGTGTGCGTTTGTCTATATGTTATTTTCCACCATATTGCCGTCTTTTGGCAATGTGAGGGCCC GGAAACCTGGCCCTGTCTTCTTGACGAGCATTCCTAGGGGTCTTTCСССТСTCGCCAAAGGAATGCAAGGTCTGTTGAA TGTCGTGAAGGAAGCAGTTCCTCTGGAAGCTTCTTGAAGACAAACAACGTCTGTAGCGACCCTTTGCAGGCAGCGGAA ССССССАССTGGCGACAGGTGCCTCTGCGGCCAAAAGCCACGTGTATAAGATACACCTGCAAAGGCGGCACAACCCCA GTGCCACGTTGTGAGTTGGATAGTTGTGGAAAGAGTCAAATGGCTCTCCTCAAGCGTATTCAACAAGGGGCTGAAGGA

TGCCCAGAAGGTACCCCATTGTATGGGATCTGATCTGGGGCCTCGGTGCACATGCTTTACATGTGTTTAGTCGAGGTTA AAAAAACGTCTAGGCCCCCCGAACCACGGGGACGTGGTTTTCCTTTGAAAAACACGATGATAAGCTTGCCACAACCAT GGAAGATCCCGTCGTTTTACAACGTCGTGACTGGGAAAACCCTGGCGTTACCCAACTTAATCGCCTTGCAGCACATCCC CСTTTCGCCAGCTGGCGTAATAGCGAAGAGGCCCGCACCGATCGCCCTTCCCAACAGTTGCGCAGCCTGAATGGCGAA TGGCGCTTTGCCTGGTTTCCGGCACCAGAAGCGGTGCCGGAAAGCTGGCTGGAGTGCGATCTTCCTGAGGCCGATACTG TCGTCGTCCССTCAAACTGGCAGATGCACGGTTACGATGCGCCCATCTACACCAACGTAACCTATCCCATTACGGTCAA TCCGCCGTTTGTTCCCACGGAGAATCCGACGGGTTGTTACTCGCTCACATTTAATGTTGATGAAAGCTGGCTACAGGAA GGCCAGACGCGAATTATTTTTGATGGCGTTAACTCGGCGTTTCATCTGTGGTGCAACGGGCGCTGGGTCGGTTACGGCC AGGACAGTCGTTTGCCGTCTGAATTTGACCTGAGCGCATTTTTACGCGCCGGAGAAAACCGCCTCGCGGTGATGGTGCT GCGCTGGAGTGACGGCAGTTATCTGGAAGATCAGGATATGTGGCGGATGAGCGGCATTTTCCGTGACGTCTCGTTGCTG CATAAACCGACTACACAAATCAGCGATTTCCATGTTGCCACTCGCTTTAATGATGATTTCAGCCGCGCTGTACTGGAGG CTGAAGTTCAGATGTGCGGCGAGTTGCGTGACTACCTACGGGTAACAGTTTCTTTATGGCAGGGTGAAACGCAGGTCGC CAGCGGCACCGCGCCTTTCGGCGGTGAAATTATCGATGAGCGTGGTGGTTATGCCGATCGCGTCACACTACGTCTGAAC GTCGAAAACCCGAAACTGTGGAGCGCCGAAATCCCGAATCTCTATCGTGCGGTGGTTGAACTGCACACCGCCGACGGC ACGCTGATTGAAGCAGAAGCCTGCGATGTCGGTTTCCGCGAGGTGCGGATTGAAAATGGTCTGCTGCTGCTGAACGGC AAGCCGTTGCTGATTCGAGGCGTTAACCGTCACGAGCATCATCCTCTGCATGGTCAGGTCATGGATGAGCAGACGATGG TGCAGGATATCCTGCTGATGAAGCAGAACAACTTTAACGCCGTGCGCTGTTCGCATTATCCGAACCATCCGCTGTGGTA CACGCTGTGCGACCGCTACGGCCTGTATGTGGTGGATGAAGCCAATATTGAAACCCACGGCATGGTGCCAATGAATCG TCTGACCGATGATCCGCGCTGGCTACCGGCGATGAGCGAACGCGTAACGCGAATGGTGCAGCGCGATCGTAATCACCC GAGTGTGATCATCTGGTCGCTGGGGAATGAATCAGGCCACGGCGCTAATCACGACGCGCTGTATCGCTGGATCAAATCT GTCGATCCTTCCCGCCCGGTGCAGTATGAAGGCGGCGGAGCCGACACCACGGCCACCGATATTATTTGCCCGATGTACG CGCGCGTGGATGAAGACCAGCCCTTCCCGGCTGTGCCGAAATGGTCCATCAAAAAATGGCTTTCGCTACCTGGAGAGA CGCGCCCGCTGATCCTTTGCGAATACGCCCACGCGATGGGTAACAGTCTTGGCGGTTTCGCTAAATACTGGCAGGCGTT TCGTCAGTATCCCCGTTTACAGGGCGGCTTCGTCTGGGACTGGGTGGATCAGTCGCTGATTAAATATGATGAAAACGGC AACCCGTGGTCGGCTTACGGCGGTGATTTTGGCGATACGCCGAACGATCGCCAGTTCTGTATGAACGGTCTGGTCTTTG CCGACCGCACGCCGCATCCAGCGCTGACGGAAGCAAAACACCAGCAGCAGTTTTTCCAGTTCCGTTTATCCGGGCAAA CCATCGAAGTGACCAGCGAATACCTGTTCCGTCATAGCGATAACGAGCTCCTGCACTGGATGGTGGCGCTGGATGGTA AGCCGCTGGCAAGCGGTGAAGTGCCTCTGGATGTCGCTCCACAAGGTAAACAGTTGATTGAACTGCCTGAACTACCGC AGCCGGAGAGCGCCGGGCAACTCTGGCTCACAGTACGCGTAGTGCAACCGAACGCGACCGCATGGTCAGAAGCCGGG CACATCAGCGCCTGGCAGCAGTGGCGTCTGGCGGAAAACCTCAGTGTGACGCTCCCCGCCGCGTCCCACGCCATCCCG CATCTGACCACCAGCGAAATGGATTTTTGCATCGAGCTGGGTAATAAGCGTTGGCAATTTAACCGCCAGTCAGGCTTTC TTTCACAGATGTGGATTGGCGATAAAAAACAACTGCTGACGCCGCTGCGCGATCAGTTCACCCGTGCACCGCTGGATAA CGACATTGGCGTAAGTGAAGCGACCCGCATTGACCCTAACGCCTGGGTCGAACGCTGGAAGGCGGCGGGCCATTACCA GGCCGAAGCAGCGTTGTTGCAGTGCACGGCAGATACACTTGCTGATGCGGTGCTGATTACGACCGCTCACGCGTGGCA GCATCAGGGGAAAACCTTATTTATCAGCCGGAAAACCTACCGGATTGATGGTAGTGGTCAAATGGCGATTACCGTTGAT GTTGAAGTGGCGAGCGATACACCGCATCCGGCGCGGATTGGCCTGAACTGCCAGCTGGCGCAGGTAGCAGAGCGGGTA AACTGGCTCGGATTAGGGCCGCAAGAAAACTATCCCGACCGCCTTACTGCCGCCTGTTTTGACCGCTGGGATCTGCCAT TGTCAGACATGTATACCCCGTACGTCTTCCCGAGCGAAAACGGTCTGCGCTGCGGGACGCGCGAATTGAATTATGGCCC ACACCAGTGGCGCGGCGACTTCCAGTTCAACATCAGCCGCTACAGTCAACAGCAACTGATGGAAACCAGCCATCGCCA TCTGCTGCACGCGGAAGAAGGCACATGGCTGAATATCGACGGTTTCCATATGGGGATTGGTGGCGACGACTCCTGGAG CCCGTCAGTATCGGCGGAATTCCAGCTGAGCGCCGGTCGCTACCATTACCAGTTGGTCTGGTGTCAAAAATAATAATAA CCGGGCAGGCCATGTCTGCCCGTATTTCGCGTAAGGAAATCCATTATGTACTATTTAAAAAACACAAACTTTTGGATGT TCGGTTTATTCTTTTTCTTTTACTTTTTTATCATGGGAGCCTACTTCCCGTTTTTCCCGATTTGGCTACATGACATCAACCA TATCAGCAAAAGTGATACGGGTATTATTTTTGCCGCTATTTCTCTGTTCTCGCTATTATTCCAACCGCTGTTTGGTCTGCT TTCTGACAAACTCGGAACTTGTTTATTGCAGCTTATAATGGTTACAAATAAAGCAATAGCATCACAAATTTCACAAATT TAATTAAGGCCGCGGGATCGATCCCGTCGAGCAGTGTGGTTTTCAAGAGGAAGCAAAAAGCCTCTCCACCCAGGCCTG GAATGTTTCCACCCAATGTCGAGCAGTGTGGTTTTGCAAGAGGAAGCAAAAAGCCTCTCCACCCAGGCCTGGAATGTTT CСAСССAATGTCGAGCAAACCCCGCCCAGCGTCTTGTCATTGGCGAATTCGAACACGCAGATGCAGTCGGGGCGGCGC GGTCCCAGGTCCACTTCGCATATTAAGGTGACGCGTGTGGCCTCGAACACCGAGCGACCCTGCAGCCAATATGGGATC GGCCATTGAACAAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTCGGCTATGACTGGGCACA ACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCCGGCTGTCAGCGCAGGGGCGCCCGGTTCTTTTTGTCAAGACCGAC CTGTCCGGTGCCCTGAATGAACTGCAGGACGAGGCAGCGCGGCTATCGTGGCTGGCCACGACGGGCGTTCCTTGCGCA GCTGTGCTCGACGTTGTCACTGAAGCGGGAAGGGACTGGCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTCCTGTCA TСТСАССТTGСТССТGССGAGAAAGTATCCATCATGGCTGATGCAATGCGGCGGCTGCATACGCTTGATCCGGCTACCT GCCCATTCGACCACCAAGCGAAACATCGCATCGAGCGAGCACGTACTCGGATGGAAGCCGGTCTTGTCGATCAGGATG ATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGCCGAACTGTTCGCCAGGCTCAAGGCGCGCATGCCCGACGGCGAGG ATCTCGTCGTGACCCATGGCGATGCCTGCTTGCCGAATATCATGGTGGAAAATGGCCGCTTTTCTGGATTCATCGACTGT GGCCGGCTGGGTGTGGCGGACCGCTATCAGGACATAGCGTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAA TGGGCTGACCGCTTCCTCGTGCTTTACGGTATCGCCGCTCCCGATTCGCAGCGCATCGCCTTCTATCGCCTTCTTGACGA

GTTCTTCTGAGGGTCGGCAATAAAAAGACAGAATAAAACGCACGGGTGTTGGGTCGTTTGTTCGGATCCGAATTCCTCG AGGGCGCGCCATTTAAATGGCCAGCGAGGCCGGTACCCAATTCGCCCTATAGCTGTACAGTGTGAGTATCTCGGGGTTG TCTTCСTTTTACGGTGGAGATTAAAAACCCAGGACCTTTAGAATGATAGCCACTGAGCTAAACCCCCСAACTTCССАAT AATGCATGGGTAGCTCCCTCGGTAGGATGCCAGCACCACCACCACCACCAGACACACACACACACACACACACACACA AGTGTGTGCATACACAGAGAGAGACAGAGACAGGCAGACAGACAGACAGAGAGACAGAGACTCTAGAGGCAGAAAC AGAGACCGGGTGAGTTTAGAGATACACACTGCAATCCTCAAGTTTAGAAGGTGAAAGCCAGATAACGGAAGTTGAAGA TСАТСТСССТСССТССССGССССТСТАСАСАСАGAAGTTTAGAGСТАATCAAAGCTACATAAAAACCTGTCTCAAAAAA TATTAAAACGGGGCTGGAGGGATGGCTCAGTGGTTAAGAGCACCGGCTGCTCTCCAGAGGTCCTAAGTTCCATTCCCAG CAACCACATGGTGGCTCACAACCATCTGTAATGGGATCCAATGTCTTCTGATATGTTTGAAGACAGAGACAGTATACTC ACATACATTAAATAAATAAATCTTTTAGAAAATATATTAAGCCGGGCATGGTGGTGCACGCCTTTAATCCCAGAGCTCG GGAGGCAGAGGCAAAAAGATTTCTGAGTTCGAGGCCAGCCTGGTCTACAAAAGTGAGTTCCAGGACAGCCAGGGCTAT ACAGAGAAACCCTGTCTCGAAAAACTAAAATATATATATATATATACACATATATGTATTAAAACAAAAAAGTAGGGT CAGGTGTTTTGGTACATTCTGTAATCCTAGCTCTTGGAACAGGAGGATAATGAATTTGATAGCTGCTGGAGCTACTTGG TAATATAATTTTТСТТТТААТТТТТСТТТТТТTTTAAGAAAGGAAAGAGCCAGGCGTGGTGGCTCATGCCTCTAATTCCAC TAGCATTTACGAGAAAGAAACAGGTAGATTTCTGAGTTTGAAGCCAGCCTGGTCTACATAGTGAGTTCGAGGACAGCC CAGGCTACATAACAAAACCCTGTTTCAAAACAAACAAACAAAGTAAATAAATAAATAAATAAATAAATATGCCAAGG GAGAAAAGCAATCAATAGCCTTAACCAGCTCTGAAGCTTATAGACCACAAAGATGACAGCCTGCCAAGGATAGCAGCC TTCССАTСTTGGGGACTACTAAACACTGTTTTAAGTAAAAGACATCAGAAACCAAGTTACAAAACAAAACCAACCTGA ATATCTGTATCTATTTCTGTAGAACAAATTACCCCAAATTTAGTGCACTTAAAACTTTTTTTTTTTTTTGGTTTTTCGAGA CAGGGTTTCTCTGTGTCTGTGTAGCCCTGGCTGTCCTGGAACTCACTTTTGTAGACCAGGCTGGCCTTGAATTTAGAAAT CTGCСTGССТСТGССТССTGAGTGCTGGGATTAAAGGTGTGTGССАССАТGССTGGCACAAAACTTTTTTTTAAAAAAA GAATTATTTATTTATGTATGAGTACACTGTAGCTGTCTTCAGACACACCAGAAGAGGGCATCAGACCCTGTTACAGATG GTTATGAGCCACCGTGTGGTTGCTGGGAATTAAATTCAGGACTCTGGAAGCAGTTAGCACTCTTAACCACTGAGCCATC ССТТСAGGСССССАССССАТСССССТGСАСТТААААСТТСТТАGTCTCAGTTTCTGСAAGTGGCCTAGCTGGGAAGTCAG GCTCAСTGTCTCСTCAGGAGAGGTTACACAGAGTGTCAGTCATCTGTGCTGCACACGTGGCAAGACCTGGAGGCTGCAG GСТАСССТСТАAAATGGCTCCCAGTGGСTTTTGGGTGCAGGССТТСТТТСТТСАСАТАGAСТСТСТТАAAAAAGAAAAC AAAAACAAAAAACAAAAACAAAAAAACAAAAACAAATTCACAGGTGGCTTCCCTCAAGCATGACCTGAAAGTTCAAG ССССССТСССССАGСТTTTTGATGAGATGCGGCCTGACACAGGCGTTTGAGATGTAGAGACTTGAGAACTGAGAATTGT ACTGATTTGTATAACCAAAGTCTCAGATGTGACCTGCCATTACTTCTGATCACGTCTGTATTTCATTTACTACGAGTGAG TCACGGGCAGTAAGAGTGTTCGGGCAGATAAGGCTCTTTGGCACCAAGCCTAATGGTCTGAAGGTCTATGTCCAGGACT CACATGGTAGAAGGAAGGAAACAACTTCСTTTAGTTGTCCTGTGGCAGCCACTGGAGAGTGGGGGTTGGGGGGGGGGG GGACACGTGCCTATCCAGCACCACCCCACATGCAGCACACAAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAA GAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGCAAGCTTAAAAAAAAMAACAACCAACCAAC CAAAAACTAСTTTATCACTTAATGAAAGAAAGAACTGTTAAGATGTTAAAACTGGTCCAAAGGCCACTTGAGACATTA GATTAGGGACAAAGACACTTTAACTTGGAGACTGTGAAGCTTGCTGGGGCAGGCAG

