Detailed information on WiscDsLox**Hs** T-DNA lines.

NOTE: This information does **NOT** apply to ***WiscDsLox*** lines. It only applies to ***WiscDsLoxHs*** lines.

The T-DNA vector used to construct WiscDsLox**Hs** T-DNA lines was derived by modifying pYS11 (Nishal et al, 2005). pYS11 was constructed by the laboratory of Venkatesan Sundaresan and has been demonstrated to effectively function as a *Ds* transposon launchpad. pYS11 carries a copy of the *Ac* transposase gene under the transcriptional control of a heat shock-inducible promoter (Nishal et al, 2005).

The only difference between the pYS11 vector described by Nishal et al and the pDsLoxHs vector used to create WiscDsLoxHs lines is the presence of two *LoxP* sites in the pDsLoxHs vector. One of these *LoxP* sites is located near the Left Border of the T-DNA vector, and the second *LoxP* site is contained within the *Ds* element. After excision of the *Ds* element, the *LoxP* site within the *Ds* element will travel to a new region of the genome with the *Ds* element. The LoxP site near the Left Border is not affected by the excision event, however, and remains in its original location.

Nishal et al, 2005 citation: An Inducible Targeted Tagging System for Localized Saturation Mutagenesis in Arabidopsis. Nishal B, Tantikanjana T, Sundaresan V. Plant Physiol. 2005. 137(1): 3–12. doi: 10.1104/pp.104.050633

The complete sequence of the WiscDsLoxHS T-DNA vector has not been determined. The following maps and partial sequence information are all that is currently available.

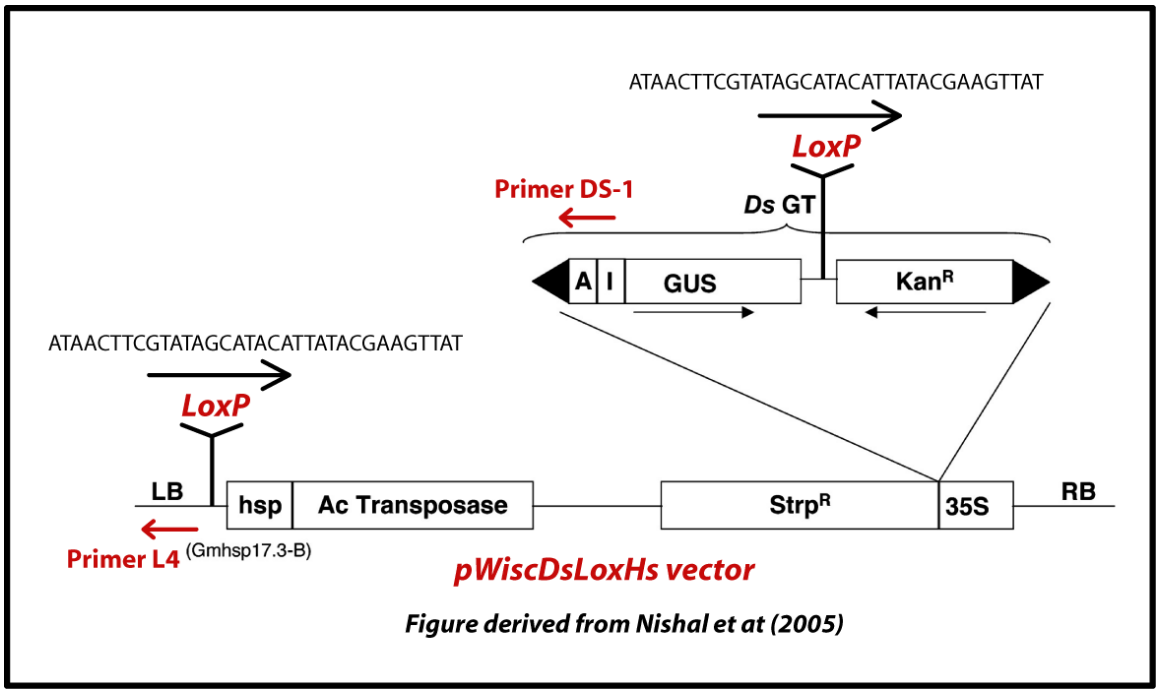

Figure derived from Nishal et at (2005)

PCR primer to use for *Ds* re-insertion mapping:
DS-1 5'-GAGTACAATCAATTTTCCTTGTGGACTTG-3'

PCR primer to use for T-DNA insert mapping:
L4 5'-TGATCCATGTAGATTTCCCGGACATGAAG-3'

Orientation of the LoxP sequences as shown in the accompanying figure:
5'-ATAACTTCGTATAGCATACATTATACGAAGTTAT-3'

The vector used to create WiscDsLoxHs lines is called pDsLoxHs. The complete sequence of the vector has not been determined. The sequence of the Left Border region of the vector is as follows:
5'-
TACGACGGATCGTAATTTGTCGTTTTATCAAAATGTACTTTCATTTTATAATA
ACGCTGCGGACATCTACATTTTTGAATTGAAAAAAAATTGGTAATTACTCTTT
CTTTTTCTCCATATTGACCATCATACTCATTGCTGATCCATGTAGATTTCCCGG
ACATGAAGCCATTTACAATTGAATATATCCTGCC-3'

Sequence surrounding the *LoxP* site within the Ds element (LoxP site highlighted in red):
5'-
TCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATTGAAG
CATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGA

AAAATAAACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGA
CGTCTAAGAAACCATTATTATCATGACATTAACCTATAAAAATAGGCGTATC
ACGAGGCCCTTTCGTCTTCAAGAATTCGAGCTCGGTACCCCTAGACTAGTACC
CACGTCCGAACACTTGATACATGTGCCTGAGAAATAGGGTACCTAATAACTT
CGTATAGCATACATTATACGAAGTTATATGGATCTATATGTTTTTCGTCTCAG
CCAATCCCTGGGTGAGTTTCACCAGTTTTGATTTAAACGTGGCCAATATGGAC
AACTTCTTCGCCCCCGTTTTCACCATGGGCAAATATTATACGCAAGGCGACAA
GGTGCTGATGCCGCTGGCGATTCAGGTTCATCATGCCGTTTGTGATGGCTTCC
ATGTCGGCAGAATGCTTAATGAATTACAACAGTACTGCGATGAGTGGCAA-3'

Sequence surrounding the LoxP site located near the heat shock promoter (LoxP site highlighted in red):

5'-
CAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAG
AAACCATTATTATCATGACATTAACCTATAAAAATAGGCGTATCACGAGGCC
CTTTCGTCTTCAAGAATTCGAGCTCGGTACCCCTAGACTAGTACCCACGTCCG
AACACTTGATACATGTGCCTGAGAAATAGGGTACCTAATAACTTCGTATAGC
ATACATTATACGAAGTTATATGGACTAGTCAGCCTTTTAAGAGATAGAATTTA
AAATATAATTTGCGTAAAACATTATTAAAAATACAAATTTATAAATTAAGTTC
AACTCATCCTATCTCACTCTTTAAATACGATGTTTACTTATTAGACTCATTAAT
AAAAAAAAAAAAAATCATTTGTACAAAGCCCACCATAAAGGCAATTTGGGCC
TGGTAGACCAATCCTAACCAATGTCTGGTTAAGATGGTCCAATCCCGAAACTT
CTAGTTGCGGTTCGAAGAAGTC-3'

Partial DNA sequence of the DsLoxHS vector:

CAGGTCGAGGTGGCCCGGCTCCATGCACCGCGACGCAACGCGGGGAGGCAG
ACAAGGTATAGGGCGGCGCCTACAATCCATGCCAACCCGTTCCATGTGCTCG
CCGAGGCGGCATAAATCGCCGTGACGATCAGCGGTCCAGTGATCGAAGTTAG
GCTGGTAAGAGCCGCGAGCGATCCTTGAAGCTGTCCCTGATGGTCGTCATCT
ACCTGCCTGGACAGCATGGCCTGCAACGCGGGCATCCCGATGCCGCCGGAAG
CGAGAAGAATCATAATGGGGAAGGCCATCCAGCCTCGCGTCGCGAACGCCA
GCAAGACGTAGCCCAGCGCGTCGGCCGCCATGCCGGCGATAATGGCCTGCTT
CTCGCCGAAACGTTTGGTGGCGGGACCAGTGACGAAGGCTTGAGCGAGGGCG
TGCAAGATTCCGAATACCGCAAGCGACAGGCCGATCATCGTCGCGCTCCAGC
GAAAGCGGTCCTCGCCGAAAATGACCCAGAGCGCTGCCGGCACCTGTCCTAC
GAGTTGCATGATAAAGAAGACAGTCATAAGTGCGGCGACGATAGTCATGCCC
CGCGCCCACCGGAAGGAGCTGACTGGGTTGAAGGCTCTCAAGGGCATCGGTC
GGCGCTCTCCCTTATGCGACTCCTGCATTAGGAAGCAGCCCAGTAGTAGGTTG
AGGCCGTTGAGCACCGCCGCCGCAAGGAATGGTGCATGTAAGGAGATGGCG
CCCAACAGTCCCCCGGCCACGGGGCCTGCCACCATACCCACGCCGAAACAAG
CGCTCATGAGCCCGAAGTGGCGAGCCCGATCTTCCCCATCGGTGATGTCGGC
GATATAGGCGCCAGCAACCGCACCTGTGGCGCCGGTGATGCCGGCCACGATG
CGTCCGGCGTAGAGAATCCACAGGACGGGTGTGGTCGCCATGATCGCGTAGT

CGATAGTGGCTCCAAGTAGCGAAGCGAGCAGGACTGGGCGGCGGCCAAAGC
GGTCGGACAGTGCTCCGAGAACGGGTGCGCATAGAAATTGCATCAACGCATA
TAGCGCTAGCAGCACGCCATAGTGACTGGCGATGCTGTCGGAATGGACGATA
TCCCGCAAGAGGCCCGGCAGTACCGGCATAACCAAGCCTATGCCTACAGCAT
CCAGGGTGACGGTGCCGAGGATGACGATGAGCGCATTGTTAGATTTCATACA
CGGTGCCTGACTGCGTTAGCAATTTAACTGTGATAAACTACCGCATTAAAGCT
TGGGGGATCTGATCAAGAGACAGGGGCCGGCCCACGCTGTCGTCCAATCTCC
CAAGACACGCCGCCACCGCGCACCGTCGCGGCGAGCTGCTCCCCAAGCCGCT
GTTCGATGGGCTTCCACCGCACGAGGCTGGACCCCTTGGCGTCATCAAGCAT
CCCATTTCGCCCGCTGGCGAGCATGACGGGGCGCCGATAGACGCCGGCAACG
CGCTGGCCGTCGGCCACGGGGCGATGCTCCAGGCCGGTATCGGCGGCAATGT
CCTTCGCGGCCTGCGCCAGTTCCCGAGCCCGCTGCTGCCCAGCAGATTCCGGT
GAGGATCACGCGCTGCCCGCGCCGCTCGGCCAGTCCCTGTTCGGCCAGGAAG
TCCGCGCGCTGCTGTATCGCCTACTTGGCCTCACTGCTAAAGCCCAGGTCGCC
CAAGCCCGAGCCACCGTCGATCAACTGCTGGTCAAGCCAGGTGGCACCGATC
AGCGCGGGCCTGCCGCTCGATGGGCAGGTGCGATTTCAGCTCCACCGTCACG
CCACCAAGACGCTGGGGCGTCATAGCGGCGGCCCTGCTCGGGCAGATCGTCC
GGCCCCCTTCCATAGTCCCTCGGCCACGCACACCCACGATGCCGGCCTGGTG
CAGGGCTTCGAGGCGGCGGGTGTGGCCCGCAACGACTTCCAGCGGATCACGC
CCGACACGGCCTGACCTAGCTCGACGACCAGGTGAGATCGGTGACCTGCTGA
GCCTCGACATGTTGTCGCAAAATTCGCCCTGGACCCGCCCAACGATTTGTCGT
CACTGTCAAGGTTTGACCTGCACTTCATTTGGGGCCCACATACACCAAAAAA
ATGCTGCATAATTCTCGGGGCAGCAAGTCGGTTACCCGGCCGCCGTGCTGGA
CCGGGTTGAATGGTGCCCGTAACTTTCGGTAGAGCGGACGGCCAATACTCAA
CTTCAAGGAATCTCACCCATGCGCGCCGGCGGGGAACCGGAGTTCCCTTCAG
TGAGCGTTATTAGTTCGCCGCTCGGTGTGTCGTAGATACTAGCCCCTGGGGCA
CTTTTGAAATTTGAATAAGATTTATGTAATCAGTCTTTTAGGTTTGACCGGTTC
TGCCGCTTTTTTTAAAATTGGATTTGTAATAATAAAACGCAATTGTTTGTTATT
GTGGCGCTCTATCATAGATGTCGCTATAAACCTATTCAGCACAATATATTGTT
TTCATTTTAATATTGTACATATAAGTAGTAGGGTACAATCAGTAAATTGAACG
GAGAATATTATTCATAAAAATACGATAGTAACGGGTGATATATTCATTAGAA
TGAACCGAAACCGGCGGTAAGGATCTGAGCTACACATGCTCAGGTTTTTTAC
AACGTGCACAACAGAATTGAAAGCAAATATCATGCGATCATAGGCGTCTCGC
ATATCTCATTAAAGCAGGTGAC:CGCG:CTAGTCAAGCAACCGGCGTGCCATA
GCGTTTACGGCCAGATCAATCGCAGCGCCCTCGCCGTCGCCGTCGCCGATGA
ACCAGGCTGCCGACAAGCCCGTCCATGCAATGATCCAGCGAAGAAGCCGTTC
GGGCTCAAACCCGGTCGTCGCGACCACAATGCTGAGTCGAGCCTCCAGCCTG
CCCGGCAGGATCGCAAGCGGGCGACCGGGGTCGCTGAGATCGGGATTCGTG
AAGATGTTGGCATAGTCGAA:GGTGCGCTCGCCGAGCAGT:CCGTGCGGGTCG
ATGGCCAGCCAGCCGCGGTCGCCGAAGTCGAGCACGTTCTCGTGGTGCAGGT
CGCCGTGGAGCGGGCACACCTCGCGCGGCGCCGCCAGAAGTTGGCGCGCTAC
GCTGGCGGCGGGCGCAAGTGCCGCGTGCTCAGCGGCCAACCGGAAAAGCGG
CTGGAACCATTCCTGTAGCGGATGGAGATCGGGCGGCGGTCCGGACCGCGGC
GCGTGCAGACGAGCGGCGGTGTCGCAGAGGATYCTGCAAGCCTCGTCGTCCT
GGCCGGACCACGCTATCTGTGCAAGGTCCCCGGCCCCGGACGCGCGCTCCAT
GAGCAGAGCGCCCGCCGCCGAGGCGAAGACTCGGGCGGCGCCCTGCCCGTC

CCACCAGGTCAACAGGCGGTAACCGGCCTCTTCATCGG:GAATGCGCGCGAC
CTTCAGCATCGCCGGCATGTCCCCCTGGCGGACGGGAAGTATCCAGCTYGAG
TGGGTGGTGAGCAGCTCGCCGTCGCGCAGCAGGCGCCAGCGCTCCATSSWMR
YWGTRAMYWSWRRYKGWAAWSKKGWWKRYWSWYTSWTGTTGTTGGTAAT
TGTTGTAAAAATAGAGCTCTAGGGATGAAAACGGTCGGTAACGGTCGGTAAA
ATACCTCTACCGTTTTCATTTTCATATTTAACTTGCGGGACGGAAACGAAAAC
GGGATATACCGGTAACGAAAACGAACGGGATAAATACGGTAATCGAAAACC
GATACGATCCGGTCGGGTTAAAGTCGAAATCGGACGGGAACCGGTATTTTTG
TTCGGTAAAATCACACATGAAAACATATATTCAGATCCAAGTCCACAAGGAA
AATTGATTGTACTCTTTACTTAAATTTACTTATGAATCCTGCTAATTGAATGAT
ACAAATTTACTAATTTGCAGGTTATATGCAGGTTATATGCAGGTCCATGTTAC
GTCCTGTAGAAACCCCAACCCGTGAAATCAAAAAACTCGACGGCCTGTGGGC
ATTCAGTCTGGATCGCGAAAACTGTGGAATTGATCAGCGTTGGTGGGAAAGC
GCGTTACAAGAAAGCCGGGCAATTGCTGTGCCAGGCAGTTTTAACGATCAGT
TCGCCGATGCAGATATTCGTAATTATGCGGGCAACGTCTGGTATCAGCGCGA
AGTCTTTATACCGAAAGGTTGGGCAGGCCAGCGTATCGTGCTGCGTTTCGATG
CGGTCACTCATTACGGCAAAGTGTGGGTCAATAATCAGGAAGTGATGGAGCA
TCAGGGCGGCTATACGCCATTTGAAGCCGATGTCACGCCGTATGTTATTGCCG
GGAAAAGTGTACGTATCACCGTTTGTGTGAACAACGAACTGAACTGGCAGAC
TATCCCGCCGGGAATGGTGATTACCGACGAAAACGGCAAGAAAAAGCAGTCT
TACTTCCATGATTTCTTTAACTATGCCGGAATCCATCGCAGCGTAATGCTCTA
CACCACGCCGAACACCTGGGTGGACGATATCACCGTGGTGACGCATGTCGCG
CAAGACTGTAACCACGCGTCTGTTGACTGGCAGGTGGTGGCCAATGGTGATG
TCAGCGTTGAACTGCGTGATGCGGATCAACAGGTGGTTGCAACTGGACAAGG
CACTAGCGGGACTTTGCAAGTGGTGAATCCGCACCTCTGGCAACCGGGTGAA
GGTTATCTCTATGAACTGTGCGTCACAGCCAAAAGCCAGACAGAGTGTGATA
TCTACCCGCTTCGCGTCGGCATCCGGTCAGTGGCAGTGAAGGGCGAACAGTT
CCTGATTAACCACAAACCGTTCTACTTTACTGGCTTTGGTCGTCATGAAGATG
CGGACTTGCGTGGCAAAGGATTCGATAACGTGCTGATGGTGCACGACCACGC
ATTAATGGACTGGATTGGGGCCAACTCCTACCGTACCTCGCATTACCCTTACG
CTGAAGAGATGCTCGACTGGGCAGATGAACATGGCATCTGGTGATTGATGAA
ACTGCTGCTGTCGGCTTTAACCTCTCTTTAGGCATTGGTTTCGAAGCGGGCAA
CAAGCCGAAAGAACTGTACAGCGAAGAGGCAGTCAACGGGGAAACTCAGCA
AGCGCACTTACAGGCGATTAAAGAGCTGATAGCGCGTGACAAAAACCACCC
AAGCGTGGTGATGTGGAGTATTGCCAACGAACCGGATACCCGTCCGCAAGGT
GCACGGGAATATTTCGCGCCACTGGCGGAAGCAACGCGTAAACTCGACCCGA
CGCGTCCGATCACCTGCGTCAATGTAATGTTCTGCGACGCTCACACCGATACC
ATCAGCGATCTCTTTGATGTGCTGTGCCTGAACCGTTATTACGGATGGTATGT
CCAAAGCGGCGATTTGGAAACGGCAGAGAAGGTACTGGAAAAAGAACTTCT
GGCCTGGCAGGAGAAACTGCATCAGCCGATTATCATCACCGAATACGGCGTG
GATACGTTAGCCGGGCTGCACTCAATGTACACCGACATGTGGAGTGAAGAGT
ATCAGTGTGCATGGCTGGATATGTATCACCGCGTCTTTGATCGCGTCAGCGCC
GTCGTCGGTGAACAGGTATGGAATTTCGCCGATTTTGCGACCTCGCAAGGCA
TATTGCGCGTTGGCGGTAACAAGAAAGGGATCTTCACTCGCGACCGCAAACC
GAAGTCGGCGGCTTTTCTGCTGCAAAAACGCTGGACTGGCATGAACTTCGGT
GAAAAACCGCAGCAGGGAGGCAAACAATGAATCAACAACTCTCCTGGCGCA

CCNTCGTCGGCTACAGCCTCGGGAATTCAGATCCGTCGACCTGCAGATCGTTC
AAACNTTTGGCNATAAAGTTTCTTAAGATTGAATCCTGTTGCCGGTCTTGCGA
TGATTATCATATAATTTCTGTTGAATTACGTTAAGCATGTAATAATTAACATG
TAATGCATGACGTTATTTATGAGATGGGTTTTTATGATTAGAGTCCCGCAATT
ATACATTTAATACGCGATAGAAAACAAAATATAGCGCGCAAACTAGGATAAA
TTATCGCGCGCGGTGTCATCTATGTTACTAGATCCGGTACCCTGATGTCCGGC
GGTGCTTTTGCCGTTACGCACCACCCCGTCAGTAGCTGAACAGGAGGGACAG
CTGATAGAAACAGAAGCCACTGGAGCACCTCAAAAACACCATCATACACTAA
ATCAGTAAGTTGGCAGCATCACCCGACGCACTTTGCGCCGAATAAATACCTG
TGACGGAAGATCACTTCGCAGAATAAATAAATCCTGGTGTCCCTGTTGATAC
CGGGAAGCCCTGGGCCAACTTTTGGCGAAAATGAGACGTTGATCGGCACGTA
AGAGGTTCCAACTTTCACCATAATGAAATAAGATCACTACCGGGCGTATTTTT
TGAGTTATCGAGATTTTCAGGAGCTAAGGAAGCTAAAATGGAGAAAAAAATC
ACTGGATATACCACCGTTGATATATCCCAATGGCATCGTAAAGAACATTTTGA
GGCATTTCAGTCAGTTGCTCAATGTACCTATAACCAGACCGTTCAGCTGGATA
TTACGGCC:TTTTTAAAGACCGTAAAGAAAAATAAGCACAAGTTTTATCCGGC
CTTTATTCACATTCTTGCCCGCCTGATGAATGCTCATCCGGAATTCCGTATGG
CAATGAAAGACGGTGAGCTGGTGATATGGGATAGTGTTCACCCTTGTTACAC
CGTTTTCCATGAGCAAACTGAAACGTTTTCATCGCTCTGGAGTGAATACCACG
ACGATTTCCGGCAGTTTCTACACATATATTCGCAAGATGTGGCGTGTTACGGT
GAAAACCTGGCCTATTTCCCTAAAGGGTTTATTGAGAATATGTTTTTCGTCTC
AGCCAATC:CCTGGGTGAGTTTCACCAGTTTTGATTTAAACGTGGCCAATATG
GACAACTTCTTCGCCCCCGTTTTCACCATGGGCAAATATTATACGCAAGGCGA
CAAGGTGCTGATGCCGCTGGCGATTCAGGTTCATCATGCCGTTTGTGATGGCT
TCCATGTCGGCAGAATGCTTAATGAATTACAACAGTACTGCGATGAGTGGCA
GGGCGGGGCGTAATTTTTTTAAGGCAGTTATTGGTGCCCTTAAACGCCTGGTT
GCTACGCCTGAATAAGTGATAATAAGCGGATGAATGGCAGAAATTCGAAAGC
AAATTCGACCCGGTCGTCGGTTCAGGGCAGGGTCGTTAAATAGCCGCTTATG
TCTATTGCTGGTTTACCGGTTTATTGACTACCGGAAGCAGTGTGACCGTGTGC
TTCTCAAATGCCTGAGGCCAGTTTGCTCAGGCTCTCCCCGTGGAGGTAATAAT
TGACGATATGATCATTTATTCTGCCTCCCAGAGCCTGATAAAAACGGTTAGGG
GATCGATCTCTAGAAGCTCGACCAAAGCGGCCATCGTGCCTCCCCACTCCTG
CAGTTCSGRGGCATGGATGCGCGGATAGNCCGCTGCTGGTTTCCCTGGATGCC
GACGGATTTGCACTGCCGGTAGAACTCCGCGAGGTCGTCCAGCCTCAGGCAG
CAGCTGAACCAACTCGCGAGGGGGATC:GAGCCCCTGCTGAGCCTCGACATG
TTGTCG:CAAAA:TTCGCCCTGGACCCCGCCCAACGATTTGTCGTCACTGGTCA
AGGTTTGACCTGCACTTCATTTGGGGCCCACATACACCAAAAAAATGCTGCA
TAATTCTCGGGGCAGCAAGTCGGTTACCCGGCCGCCGTGCTGGACCGGGTTG
AATGGTGCCCGTAACTTTCGGTAGAGCGGACGGCCAATACTCAACTTCAAGG
AATCTCACCCATGCGCGCCGGCGGGGAACCGGAGTTCCCTTCAGTGAGCGTT
ATTAGTTCGCCGCTCGGTGTGTCGTAGATACTAGCCCCTGGGGCACTTTTGAA
ATTTGAATAAGATTTATGTAATCAGTCTTTTAGGTTTGACCGGTTCTGCCGCTT
TTTTTAAAATTGGATTTGTAATAATAAAACGCAATTGTTTGTTATTGTGGCGC
TCTATCATAGATGTCGCTATAAACCTATTCAGCACAATATATTGTTTTCATTTT
AATATTGTACATATAAGTAGTAGGGTACAATCAGTAAATTGAACGGAGAATA
TTATTCATAAAAATACGATAGTAACGGGTGATATATTCATTAGAATGAACCG

AAACCGGCGGTAAGGATCTGAGCTACACATGCTCAGGTTTTTTACAACGTGC
ACAACAGAATTGAAAGCAAATATCATGCGATCATAGGCGTCTCGCATATCTC
ATTAAAGCAGGGGGTGGGCGAAGAACTCCAGCATGAGATCCCCGCGCTGGA
GGATCATCCAGCCGGCGTCCCGGAAAACGATTCCGAAGCCCAACCTTTCATA
GAAGGCGGCGGTGGAATCGAAATCTCGTGATGGCAGGTTGGGCGTCGCTTGG
TCGGTCATTTCGAACCCCAGAGTCCCGCTCAGAAGAACTCGTCAAGAAGGCG
ATAGAAGGCGATGCGCTGCGAATCGGGAGCGGCGATACCGTAAAGCACGAG
GAAGCGGTCAGCCCATTCGCCGCCAAGCTCTTCAGCAATATCACGGGTAGCC
AACGCTATGTCCTGATAGCGGTCCGCCACACCCAGCCGGCCACAGTCGATGA
ATCCAGAAAAGCGGCCATTTTCCACCATGATATTCGGCAAGCAGGCATCGCC
ATGGGTCACGACGAGATCCTCGCCGTCGGGCATGCGCGCCTTGAGCCTGGCG
AACAGTTCGGCTGGCGCGAGCCCCTGATGCTCTTCGTCCAGATCATCCTGATC
GACAAGACCGGCTTCCATCCGAGTACGTGCTCGCTCGATGCGATGTTTCGCTT
GGTGGTCGAATGGGCAGGTAGCCGGATCAAGCGTATGCAGCCGCCGCATTGC
ATTCAGCCTGATGGATACTTTCTCGGCAGGAGCAAGGTGAGATGACAGGAGA
TCCTGCCCCGGCACTTCGCCCAATAGCAGCCAGTCCCTTCCCGCTTCAGTGAC
AACGTCGAGCACAGCTGCGCAAGGAACGCCCGTCGTGGCCAGCCACGATAG
CCGCGCTGCCTCGTCCTGCAGTTCATTCAGGGCACCGGACAGGTCGGTCTTGA
CAAAAAGAACCGGGCGCCCCTGCGCTGACAGCCGGAACACGGCGGCATCAG
AGCAGCCGATTGTCTGTTGTGCCCAGTCATAGCCGAATAGCCTCTCCACCCAA
GCGGCCGGAGAACCTGCGTGCAATCCATCTTGTTCAATCATAGATCCACGTGT
GGAAGATATGAATTTTTTTGAGAAACTAGATAAGATTAATGAATATCGGTGT
TTTGGTTTTTTCTTGTGGCCGTCTTTGTTTATATTGAGATTTTTCAAATCAGTG
CGCAAGACGTGACGTAAGTATCCGAGTCAGTTTTTATTTTTCTACTAATTTGG
TCGTTTATTTCGGCGTGTAGGACATGGCAACCGGGCCTGAATTTCGCGGGTAT
TCTGTTTCTATTCCAACTTTTTCTTGATCCGCAGCCATTAACGACTTTTGAATA
GATACGCTGACACGCCAAGCCTCGCTAGTCAAAAGTGTACCAAACAACGCTT
TACAGCAAGAACGGAATGCGCGTGACGCTCGCGGTGACGCCATTTCGCCTTT
TCAGAAATGGATAAATAGCCTTGCTTCCTATTATATCTTCCCAAATTACCAAT
ACATTACACTAGCATCTGAATTTCATAACCAATCTCGATACACCAAATCGATA
AGCTTGATATCGAATTCCTGCAGCCCGGGGGATCTAGCTTCTTTAGGCTAACC
ACTTCATCGTACTTATAAGGCTCAATGAGATTTATGTCTTTGCCATGATCCTTT
TCACTTTTTAGACACAACTGACCTTTAACTAAACTATGTGATGTTCTCAAGTG
ATTTCGAAATCCGCTTGTTCCATGATGACCCTCAGCCCTATACTTAGCCTTGC
AATTAGGAAAGTTGCAATGTCCCCATACCTGAACGTATTTCTTTCCATCGACC
TCCACTTCAATTTCCTTCTTGGTGAAATGCTGCCATACATCCGATGTGCACTTC
TTTGCCCTCTTCTGTGGTGCTTCTTCTTCGGGTTCAGGTTGTGGCTGTGGTTGT
GGTTCTGGTTGTGGTTGTGGTTGTGGTTGTGGTTCATGGAACAATAGCCATAT
CATCTTGACTCGGATCTGTAGCTGTACCATTTGCATTACTACTGCTTACACTCT
GAATAAAATGCCTCTCGGCCTCAGCTGTTGATGATGATGGTGATGTGCGGCC
ACATCCATGCCCACGCGCACGTGCACGTACATTCTGAATCCGACTAGAAGAG
GCTTCAGCTTTTCTTTTCAACCCTGTTATAAACAGATTTTTCGTATTATTCTAC
AGTCAATATGATGCTTCCCAATCTACAACCAATTAGTAATGCTAATGCTATTG
CTACTGTTTTTCTAATATATACCTTGAGCATATGCAGAGAATACGGAATTTGT
TTTGCGAGTAGAAGGCGCTCTTGTGGTAGACATCAACTTGGCCAATCTTATGG
CTGAGCCTGAGGGAGGATTATTTCCAACCGGAGGCGTCATCTGAGGAATGGA

GTCGTAGCCGGCTAGCCGAAGTGGAGAGCAGAGCCCTGGACAGCAGGTGTTC
AGCAATCAGCTTGGTGCTGTACTGCTGTGACTTGTGAGCACCTGGACGGCTG
GACAGCAATCAGCAGGTGTTGCAGAGCCCCTGGACAGCACACAAATGACAC
AACAGCTTGGTGCAATGGTGCTGACGTGCTGTACTGCTAAGTGCTGTGAGCCT
GTGAGCAGCCGTGGAGACAGGGAGACCGCSGATGGCCGGATGGGCGAGCGC
CGAGCAGTGGAGGTCTGGAGGACCGCTGACCGCAGATGGCGGATGGCGGAT
GGGCGGACCGCGGATGGGCGAGCAGTGGAGTGGAGGTCTGGGCGGATGGGC
GGACCGCGGCGCGGATGGCCGAGTCGCGAGCAGTGGAGTGGAGGGCGGACC
GTGGATGCCGGCGTCTGCGTCCGGCGTGCCGCGTCACGGCCGTCACCGCGTG
TGGTGCCTGGTGCAGCCCAGCGGCCGGCCGGCTGGGAGACAGGGAGAGTCG
GAGAGAGCAGGCGAGAGCGAGACGCGTCGCCGGCGTCGGCGTGCGGCTGGC
GGCGTCCGGACTCCGGCGTGGGCGCGTGGCGGCGTGTGAATGTGTGATGCTG
TTACTCGTGTGGTGCCTGGCCGCCTGGGAGAGAGGCAGAGCAGCGTTCGCTA
GGTATTTCTTACATGGGCTGGGCCTCAGTGGTTATGGATGGGAGTTGGAGCTG
GCCATATTGCAGTCATCCCGAATTAGAAAATACGGTAACGAAACGGGATCAT
CCCGATTAAAAAMGGGATCCCGGTGRAACGGTCGGGAAACTAGCTCTMCSG
TTTCCGNTTTCCGNTTTACCGATTTTGCTATATCCCGGTTTCCGTTCCGTTTTC
GTTTTTTACCTCGGGTTCGAAATCGATCGGGATAAAACTAACAAAATCGGTTA
TACGATAACGGTCGGTACGGGATTTTCCCATCCTACTTTCATCCCTGGGTCAC
GCAACGCGCCCCACGTACAGCCTCCCCCTCCGCGCGCGGGGTACCGAGCTCT
TATACTCGAGCGCYGNTCCTCTCCAAATGAAATGAACTTCCTTATATAGAGG
AAGGGTCTTGCGAAGGATAGTGGGATTGTGCGTCATCCCTTACGTCAGTGGA
GATGTCACATCAATCCACTTGCTTTGAAGACGTGGTTGGAACGTCTTCTTTTT
CCACGATGCTCCTCGTGGGTGGGGGTCCATCTTTGGGACCACTGTCGGCAGA
GAGATCAACATCTACAAATTGCCTTTTCTTATCGACCATGTACGTAAGCGCTT
ACGTTTTTGGTGGACCCTTGAGGAAACTGGTAGCTGTTGTGGGCCTGTGGTCT
CAAGATGGATCATTAATTTCCACCTTCACCTACGATGGGGGGCATCGCACCG
GTGAGTAATATTGTACGGCTAAGAGCGAATTTGGCCTGTAGACCTCAATTGC
GAGCTTTCTAATTTCAAACTATTCGGGCCTAACTTTTGGTGTGATGATGCTGA
CTGGCAGGATATATACCGTTGTAATTTGCGTGTGAATAAGTCGCTGTGTATGT
TTGTTTGATTGTTTCTGTTGGAGTGCAGCCCATTTCACCGGACAAGTCGGCTA
GATTGATTTAGCCCTGATGAACTGCCGAGGGGAAGCCATCTTGAGCGCGGAA
TGGGAATGGATTTCGTTGTACAACGAGACGACAGAACACCCACGGGACCGAG
CTTCGCGAGCTTTTGTATCCGTGGCATCCCTGGTCCGGGCGATTTGTTCACGT
CCATGAGGCGCTCTCCAAAGGGACGCATATTTTCCGGTGCAGCCTTTCTGGTT
CTTCTTCTGCTCGACTTCTTGAAGTCCCCAGCATGGATGTTCGACCGCTCCGC
AAGCGGATCTTGGNGCAACCAGCCGGTTCCNCACGTCGATCTCGCGGAGCCC
TGCATACTTTGGCAAGATTGCTGAATGACGCTGA