

SUPPLEMENTARY INFORMATION

Plasmids used for the production of the AAV9-CAG-tdTomato vector

- pAAV-CAG-tdTomato
- pRepCap-AAV9
- pHelper

Plasmids used for the production of the AAV-KP3-CAG-tdTomato vector

- pAAV-CAG-tdTomato
- pRepCap-KP3
- pHelper

Plasmid sequences

>pAAV-CAG-tdTomato

```
CTGCGCGCTCGCTCGCTCACTGAGGCCGCCCGGGCAAAGCCCGGGCGTTCGGGCGACCTTTGGTCGCCCCGGCCTCAGT
GAGCGAGCGAGCGCGCAGAGAGGGAGTGGCCAACTCCATCACTAGGGGTTCCCTTGTAAGTTAATGATTAACCCGCCAT
GCTACTTATCTACGTAGCCATGCTCTAGGAAGAGTACCATTGACGTCAATAATGACGTATGTTCCCATAGTAACGCC
AATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCCACTTGGCAGTACATCAAGTGTATC
ATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCCGCTGGCATTATGCCCAGTACATGACCTTA
TGGGACTTTCCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTCGAGGTGAGCCCCACGTTCTG
CTTCACTCTCCCCATCTCCCCCCCCCTCCCCACCCCCAATTTTGTATTTATTTATTTTAAATTATTTTGTGCAGCGA
TGGGGGCGGGGGGGGGGGGGGGGGCGCGGCCAGGCGGGGCGGGGCGGGGCGAGGGGCGGGGCGGGGCGAGGGCGGAGA
GGTGC GCGGCAGCCAATCAGAGCGGCGCGCTCCGAAAGTTTCTTTTATGGCGAGGCGGCGGGCGGGCGGGCCCTA
TAAAAAGCGAAGCGCGCGGGCGGGAGTGCCTGCGCGCTGCCTTCGCCCCGTGCCCGCTCCGCCGCCGCTCGC
GCCGCCGCCCGGCTCTGACTGACCGGTTACTCCCACAGGTGAGCGGGCGGGACGGCCCTTCTCCTCCGGGCTGT
AATTAGCGCTTGGTTTAAATGACGGCTTGTTCCTTTCTGTGGCTGCGTGAAAGCCTTGAGGGGCTCCGGGAGGGCCC
TTTGTGCGGGGGGAGCGGCTCGGGGCTGTCCGCGGGGGGACGGCTGCCTTCGGGGGGGACGGGGCAGGGCGGGGTTT
GGCTTCTGGCGTGTGACCGGCGGCTCTAGAGCCTCTGCTAACCATGTTTCATGCCTTCTTCTTTTCTTACAGCTCCT
GGGCAACGTGCTGGTTATTGTGCTGTCTCATTTTTGGCAAAGAATTGGATCCGGTACCACCACCATGGTGGAGTAA
GGGCGAGGAAGTGATCAAAGAGTTCATGCGGTTTAAAGGTGAGAATGGAAGGAAGCATGAACGGCCACGAGTTCGAAA
TTGAGGGAGAAGGAGAGGGACGGCCCTACGAGGGCACCCAGACAGCCAAGCTGAAAGTGACAAAGGGCGGGCCTCTG
CCATTCGCTTGGGACATCCTGAGCCACAGTTTATGTACGGCTCCAAGGCCTATGTGAAACATCCAGCTGACATTCC
CGATTATAAGAACTGAGCTTCCCCGAGGGGTTTAAAGTGGGAAAGAGTGATGAACTTCGAGGACGGAGGCCTGGTGA
CTGTGACCCAGGACAGCTCCCTGCAGGATGGGACCCTGATCTACAAGGTGAAATGAGAGGGACAAATTTTCCCCCT
GATGGACCTGTGATGCAGAAGAAAACCTATGGGATGGGAGGCCTCCACCAGAAAGGCTGTATCCACGCGACGGGGTGT
GAAAGGAGAAATCCACCAGGCTCTGAAGCTGAAAGATGGGGGACATTACCTGGTGGAGTTCAAGACAATCTACATGG
CCAAGAAACCTGTGCAGCTGCCAGGCTACTATTACGTGGACACAAAACCTGGATATCACTTTCACACAACGAGGACTAC
ACTATTGTGGAGCAGTATGAACGGAGCGAGGGGAGACACCATCTGTTTCTGGGCCATGGGACTGGAAGTACCGGCTC
AGGGTCTAGTGGAACCGCCTCAAGCGAGGATAACAATATGGCTGTGATCAAAGAGTTTCATGAGGTTTAAAGGTGCGCA
TGGAGGGCAGCATGAATGGGCACGAATTTGAGATTGAAGGAGAGGGCGAAGGGAGGGCCTTACGAGGGCACACAGACT
GCCAAGCTGAAAGTGACCAAGGGAGGACCCTGCCTTTTCGCTTGGGATATCCTGTCTCCTCAGTTTATGTACGGGAG
TAAGGCCTATGTCAAGCATCCCCTGACATTCCTGATTACAAGAACTGTCTTTCCAGAGGGCTTTAAGTGGGAGA
GAGTGATGAATTTTGAAGATGGAGGCCTGGTGACCGTGACACAGGACTCCTCTCTGCAGGATGGCACTCTGATCTAC
AAAGTCAAAATGCGCGGCACCAATTTTCCACCCGATGGGCCCGTGATGCAGAAGAAAACAATGGGGTGGGAGGCCAG
CACTGAACGGCTGTATCCTAGAGACGGAGTGCTGAAGGGCGAAATCCACCAGGCCCTGAAGCTGAAAGACGGCGGCC
ACTACCTGGTGGAGTTCAAAAACCTATCTACATGGCCAAGAAAACAGTGCAGCTGCCCGGCTATTACTATGTGGACACC
AAGCTGGATATCACATCCCACAATGAAGACTACACCATTGTGGAACAGTATGAGAGGTCTGAAGGACGCCACCATCT
GTTTCTGTACGGCATGGATGAGCTGTATAAGTAAGAATTCGATATCAAGCTTATCGATAATCAACCTCTGGATTACA
AAATTTGTGAAAGATTGACTGGTATTCTTAACTATGTTGCTCCTTTTACGCTATGTGGATACGCTGCTTTAATGCCT
TTGTATCATGCTATTGCTTCCCGTATGGCTTTCATTTTCTCCTCCTTGTATAAAATCCTGGTTGCTGTCTCTTTATGA
GGAGTTGTGGCCGTTGTGACGGCAACGTGGCGTGGTGTGCACTGTGTTTGTGCTGACGCAACCCCCACTGGTTGGGGCA
TTGCCACCACCTGTGAGCTCCTTTCGGGACTTTTCGCTTTCCTTCCCTATTGCCACGGCGGAACCTCATCGCCGCC
TGCTTGGCCGCTGTGACAGGGGCTCGGCTGTTGGGCACTGACAATTCGTTGGTGTGTCGGGGAAATCATCGTC
CTTTCCTTGGCTGCTCGCCTGTGTTGCCACCTGGATTCTGCGCGGGACGTCTTCTGCTACGTCCCTTCGGCCCTCA
ATCCAGCGGACCTTCTTCCCGGGCCTGCTGCCGGCTCTGCGGCCTCTTCCGCGTCTTCGCTTCGCCCTCAGACG
AGTCGGATCTCCCTTTGGGCCGCTCCCCGCATCGATAACCGTCGACCCGGGCGGGCCGCTTCGAGCAGACATGATAAG
```

ATACATTGATGAGTTTGGACAAAACCACAACCTAGAAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTA
TTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTTATGTTTCAGGTT
CAGGGGAGATGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTAAAAATCGATAAGGATCTTCCTAG
AGCATGGCTACGTAGATAAGTAGCATGGCGGGTTAATCATTAACACAAGGAACCCCTAGTGATGGAGTTGGCCACT
CCCTCTCTGCGCGCTCGCTCGCTCACTGAGGCCGGGGACCAAAGGTCGCCCCGACGCCGGGCTTTGCCCGGGCGGC
CTCAGTGAGCGAGCGAGCGCGCAGCTGCATTAATGAATCGGCCAACGCGCGGGGAGAGGCGGTTTGCCTATTGGGCG
CTCTTCCGCTTCCTCGCTCACTGACTCGCTCGCTCGGTCGTTTCGGCTGCGGGGAGCGGTATCAGCTCACTCAAAGG
CGGTAATACGGTTATCCACAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGG
AACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTTCATAGGCTCCGCCCCCTGACGAGCATCACAAAATCGACGCTC
AAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTC
CTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCA
CGCTGTAGGTATCTCAGTTCCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTTCAGCCCGA
CCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCA
CTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTAC
ACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATC
CGGCAAACAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTC
AAGAAGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATG
AGATTATCAAAAAGGATCTTACCTAGATCCTTTTTAAATTAATAATGAAGTTTTAAATCAATCTAAAGTATATATGA
GTAACCTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCA
TAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATA
CCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGG
TCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATA
GTTTTCGCAACGTTGTTGCCATTGCTACAGGCATCGTGGTGTACGCTCGTTCGTTTGGTATGGCTTCATTCAGCTCC
GGTTCCCAACGATCAAGGCGAGTTACATGATCCCCATGTTGTGCAAAAAGCGGTTAGCTCCTTCGGTCTCCGAT
CGTTGTCAGAAGTAAGTTGGCCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTTCATGC
CATCCGTAAGATGCTTTTTCTGTGACTGGTGTACTCAACCAAGTCAATTCGAGAATAGTGTATGCGGCGACCCGAGT
TGCTCTTGCCCGGCTCAATACGGGATAATACCGCGCCACATAGCAGAAGTTTAAAAAGTGTCTATCATTGGAAAAAG
TTCTTCGGGGCGAAAACCTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCCAACT
GATCTTCAGCATCTTTTACTTTTACCAGCGTTTTCTGGGTGAGCAAAAACAGGAAGGCCAAAATGCCGCAAAAAGGGA
ATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCTTTTTCAATATTATTGAAGCATTTATCAGGGTTATTG
TCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAACAATAGGGGTTCCGCGCACATTTCCCCGAAAAG
TGCCACCTAAATTTGAAGCGTTAATATTTTGTAAAAATTCGCGTTAAATTTTTGTAAAAATCAGCTCATTTTTTAACC
AATAGGCCGAAATCGGCAAAAATCCCTTATAAATCAAAAAGAAATAGACCGAGATAGGGTTGAGTGTGTTCCAGTTTGG
AACAAGAGTCCACTATTAAGAAGCTGGACTCCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCGATGGCCCACT
ACGTGAACCATCACCTAATCAAGTTTTTTGGGGTCGAGGTGCCGTAAGCACTAAATCGGAACCCCTAAAGGGAGCC
CCCGATTTAGAGCTTGACGGGGAAAGCCGGCGAACGTGGCGAGAAAGGAAGGGAAGAAAGCGAAAGGAGCGGGCGCT
AGGGCGCTGGCAAGTGTAGCGGTACGCTGCGCGTAACCACCACCCCGCCGCGCTTAATGCGCCGCTACAGGGCGC
GTCCCATTCGCCATTACGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGCTATTACGCCAG

>pRepCap-AAV9

CTTCGATCAACTACGCGGACAGGTACCAAAACAAATGTTCTCGTCACGTGGGCATGAATCTGATGCTGTTTCCCTGC
AGACAATGCGAGAGACTGAATCAGAAATCAAAATATCTGCTTCACTCACGGTGTCAAAGACTGTTTAGAGTGCTTCC
CGTGTGAGAATCTCAACCCGTTTCTGTCTGCAAAAAGGCGTATCAGAAACTGTGCTACATTCATCACATCATGGGAA
AGGTGCCAGACGCTTGCACTGCTTGCAGCTGGTCAATGTGGACTTGGATGACTGTGTTTCTGAACAATAAATGACT
TAAACCAGGTATGGCTGCCGATGGTTATCTTCCAGATTGGCTCGAGGACAACCTTAGTGAAGGAATTCGCGAGTGGT
GGGCTTTGAAACCTGGAGCCCCCTCAACCAAGGCAAAATCAACAACATCAAGACAACGCTCGAGGTCTTGTGCTCCG
GGTTACAAATACCTTGGACCCGGCAACGGACTCGACAAGGGGGAGCCGGTCAACGCAGCAGACGCGGCGGCCCTCGA
GCACGACAAGGCCTACGACCAGCAGCTCAAGGCCGGAGACAACCCGTACCTCAAGTACAACCACGCCGACGCCGAGT
TCCAGGAGCGGCTCAAAGAAGATACGTCTTTTTGGGGCAACCTCGGGCAGCAGTCTTCCAGGCCAAAAGAGGCTT
CTTGAACCTCTTGGTCTGGTTGAGGAAGCGGCTAAGACGGCTCCTGGAAAGAAGAGGCTGTAGAGCAGTCTCCTCA
GGAACCGGACTCCTCCGCGGGTATTGGCAAATCGGGTGCACAGCCCGTAAAAAGAGACTCAATTTCCGGTCAGACTG
GCGACACAGAGTCACTCCAGACCCCTCAACCAATCGGAGAACCTCCCGCAGCCCTCAGGTGTGGGATCTCTTACA
ATGGCTTCAGGTGGTGGCCAGCAGTGGCAGACAATAACGAAGTGGCGATGGAGTGGGTAGTTTCTCGGGAAATG
GCATTCGATTTCCCAATGGCTGGGGGACAGAGTCACTACCACCAGCACCAGGCTGGGCCCTGCCACCTACAACA
ATACCTCTACAAGCAAATCTCCAACAGCACATCTGGAGGATCTTCAAATGACAACGCCCTACTTCGGCTACAGCAC
CCCTGGGGTATTTTTGACTTCAACAGATTCCACTGCCACTTCTACCACGTGACTGGCAGCGACTCATCAACAACAA
CTGGGGATTCCGGCCTAAGCGACTCAACTTCAAGCTCTTCAACATTCAGGTCAAAGAGGTTACGGACAACAATGGAG
TCAAGACCATCGCCAATAACCTTACCAGCACGGTCCAGGTCTTCACGGACTCAGACTATCAGCTCCCGTACGTGCTC

GGGTCGGCTCACGAGGGCTGCCTCCCGCCGTTCCAGCGGACGTTTTTCATGATTCCCTCAGTACGGGTATCTGACGCT
TAATGATGGAAGCCAGGCCGTGGGTCGTTTCGTCCTTTTACTGCCTGGAATATTTCCCGTCGCAAATGCTAAGAACGG
GTAACAACCTCCAGTTCAGCTACGAGTTTGAGAACGTACCTTTCCATAGCAGCTACGCTCACAGCCAAAGCCTGGAC
CGACTAATGAATCCACTCATCGACCAATACTTGTACTATCTCTCAAAGACTATTAACGGTTCTGGACAGAATCAACA
AACGCTAAAATTCAGTGTGGCCGACCCAGCAACATGGCTGTCCAGGGAAGAACTACATACCTGGACCCAGCTACC
GACAACAACGTGTCTCAACCCTGTGACTCAAACAACAACAGCGAATTTGCTTGGCCTGGAGCTTCTTCTTGGGCT
CTCAATGGACGTAATAGCTTGTGATGAATCCTGGACCTGCTATGGCCAGCCACAAAGAAGGAGAGGACCGTTTTCTTCC
TTTGTCTGGATCTTTAATTTTTGGCAAACAAGGAAGTGAAGAGACAACGTGGATGCGGACAAAGTCATGATAACCA
ACGAAGAAGAAATTAATACTACTAACCCTGGTAGCAACGGAGTCCATGGACAAGTGGCCACAAACCACCAGAGTGCC
CAAGCACAGGCGCAGACCCGGCTGGGTTCAAACAAGGAATACTTCCGGGTATGGTTTGGCAGGACAGAGATGTGTA
CCTGCAAGGACCCATTTGGGCCAAAATTCCTCACACGGACGGCAACTTTCACCCTTCTCCGCTGATGGGAGGGTTG
GAATGAAGCACCCGCTCCTCAGATCCTCATCAAAAACACACCTGTACCTGCGGATCCTCCAACGGCCTTCAACAAG
GACAAGCTGAACCTTTTCATCACCCAGTATTCTACTGGCCAAGTCAGCGTGGAGATCGAGTGGGAGCTGCAGAAGGA
AAACAGCAAGCGCTGGAACCCGGAGATCCAGTACACTTCCAACATATTACAAGTCTAATAATGTTGAATTTGCTGTTA
ATACTGAAGGTGTATATAGTGAACCCCGCCCCATTGGCACCAGATACCTGACTCGTAATCTGTAATTGCTTGTTAAT
CAATAAACCGTTTTAATTCGTTTTAGTTGAACCTTTGGTCTCTGCGAAGGGCGAATTCGTTTAAACCTGCAGGACTAGA
GTCCTGTATTAGAGGTCACGTGAGTGTTCGCGACATTTTGGCACCACCATGTGGTCACGCTGGGTATTTAAGCCCGA
GTGAGCACGCAGGGTCTCCATTTTGAAGCGGGAGGTTTGAACGCGCAGCCGCAAGCCGAATTCGTCAGATATCCAT
CACACTGGCGGCCGCTCGACTAGAGCGGCCACCAGCGGTGGAGCTCCAGCTTTTGTTCCTTTTAGTGAGGGTTAA
TTGCGCGCTTGGCGTAATCATGGTCATAGCTGTTTTCTGTGTGAAATTTGTTATCCGCTCACAAATTCACACAACATA
CGAGCCGGAAGCATAAAGTGTAAAGCCTGGGGTGCCTAATGAGTGAAGTAACTCACATTAATTCGCTTGCAGTACT
GCCCCGCTTTCCAGTCGGGAAACCTGTGCTGCCAGCTGCATTAATGAATCGGCCAACGCGCGGGGAGAGGCGGTTTGC
GTATTGGGCGCTCTTCCGCTTCCCTCGCTCACTGACTCGCTGCGCTCGGTTCGTTTCGGCTGCGGCGAGCGGTATCAGCT
CACTCAAAGGCGGTAATACGGTTATCCACAGAATCAGGGGATAACGCAGGAAAGAACAATGTGAGCAAAAGGCCAGCA
AAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAA
ATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTC
GTGCGCTCTCCTGTTCCGACCCCTGCCGCTTACCAGGATACCTGTCCGCTTTTCTCCCTTCGGGAAGCGTGGCGCTTTC
TCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCG
TTCAGCCCGACCGCTGCGCCTTATCCGGTAACATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTG
GCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCCTGAAGTGGTGGCCTAA
CTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTA
GCTCTTGATCCGGCAAACAACACCAGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAA
AAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACCTCACGTTAAGGGAT
TTTGGTCAAGATTATCAAAAAGGATCTTACCTAGATCCTTTTAAATTAATAAATGAAGTTTTAAATCAATCTAAA
GTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTT
CGTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGC
TGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACAGCCAGCCGGAAGGGCCGAGC
GCAGAAGTGGTCTGCAACTTTATCCGCTCCATCCAGTCTATTAATGTTGCCGGGAAGCTAGAGTAAGTAGTTCG
CCAGTTAATAGTTTGCGCAACGTGTTGCCATTGCTACAGGCATCGTGGTGTACGCTCGTTCGTTTGGTATGGCTTC
ATTCAGCTCCGGTTCCTAACGATCAAGGCGAGTTACATGATCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCG
GTCTCCGATCGTTGTGCAAGTAAGTTGGCCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTT
ACTGTCAAGCATCCGTAAGATGCTTTTCTGTGACTGGTGAAGTCAACCAAGTCATTCGAGAATAGTGTATGCG
GCGACCGAGTTGCTCTTGGCCGGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAGTGTCTATCA
TTGAAAAACGTTCTTCCGGGGCGAAAACCTCAAGGATCTTACCCTGTTGAGATCCAGTTCGATGTAACCCACTCGT
GCACCAACTGATCTTACGATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAAACAGGAAGGCAAAATGCCGC
AAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCTTTTTCAATATTTATGAAGCATTATC
AGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAATAAGGGGTTCCGCGCACATTT
CCCCGAAAAGTGCCACCTAAATGTAAGCGTTAATATTTGTTAAAATTCGCGTTAAAATTTTTGTTAAATCAGCTCA
TTTTTTAACCAATAGGCCGAAATCGGCAAAATCCCTTATAAATCAAAGAATAGACCGAGATAGGGTTGAGTGTGT
TCCAGTTTGAACAAGAGTCCACTATTAAGAACGTGGACTCCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCG
ATGGCCACTACGTGAACCATCACCTAATCAAGTTTTTTGGGGTCCAGGTGCCGTAAAGCACTAAATCGGAACCT
AAAGGGAGCCCCGATTTAGAGCTTGACGGGGAAAGCCGGCGAACGTCGAGGAGAAAGGAAGGGAAGAAAGCGAAAG
AGCGGGCGCTAGGGCGCTGGCAAGTGTAGCGGTACGCTGCGCGTAACCACCACACCCGCGCTTAATTCGCGCCG
TACAGGCGCGCTCCCATTCAGGCTGCGCAACTGTGGGAAGGGCGATCGGTGCGGGCTCTTCGCTATTA
GCCAGCTGGCGAAAGGGGATGTGCTGCAAGGCGATTAAGTTGGGTAACGCCAGGGTTTTCCAGTCCAGCAGTTG
TAAACGACGGCCAGTGAAGCGCGTAATACGACTCACTATAGGGCGAATTTGGGTACCGGGCCCCCTCGATCGAG
GTCGACGGTATCGGGGGAGCTGCGAGGGTCTCCATTTTGAAGCGGGAGGTTTGAACGCGCAGCCGCCATGCCGGGT
TTTACGAGATTGTGATTAAGGTCCCAGCGACCTTGACGAGCATCTGCCCGGCATTTCTGACAGCTTTGTGAACCTGG

GTGGCCGAGAAGGAATGGGAGTTGCCGCCAGATTCTGACATGGATCTGAATCTGATTGAGCAGGCACCCCTGACCGT
GGCCGAGAAGCTGCAGCGCGACTTCTGACGGAATGGCGCCGTGTGAGTAAGGCCCGGAGGCTCTTTTCTTTGTGC
AATTTGAGAAGGGAGAGAGCTACTTCCACATGCACGTGCTCGTGAAACCACCGGGGTGAAATCCATGGTTTTGGGA
CGTTTTCTGAGTCAGATTCGCGAAAACTGATTCAGAGAATTTACCGCGGGATCGAGCCGACTTTGCCAAACTGGTT
CGCGGTACAAAAGACCAGAAATGGCGCCGGAGGCGGGAACAAGGTGGTGGATGAGTGTACATCCCAATTACTTGC
TCCCCAAAACCCAGCCTGAGCTCCAGTGGGCGTGGACTAATATGGAACAGTATTTAAGCGCCTGTTTTGAATCTCACG
GAGCGTAAACGGTTGGTGGCGCAGCATCTGACGCACGTGTGCGAGACGCAGGAGCAGAACAAGAGAATCAGAATCC
CAATTCTGATGCGCCGGTGTATCAGATCAAAAACCTTCAGCCAGGTACATGGAGCTGGTTCGGTGGCTCGTGGACAAGG
GGATTACCTCGGAGAAGCAGTGGATCCAGGAGGACCAGGCCCTCATACTCTCCTTCAATGCGGCCTCCAACCTCGCGG
TCCCCAAATCAAGGCTGCCTTGGACAATGCGGGAAAGATTATGAGCCTGACTAAAACCGCCCCGACTACCTGGTGGG
CCAGCAGCCCGTGGAGGACATTTCCAGCAATCGGATTTATAAAATTTTGGAACTAAACGGGTACGATCCCAATATG
CGGCTTCGCTCTTTCTGGGATGGGCCACGAAAAAGTTCGGCAAGAGGAACACCATCTGGCTGTTTTGGGCCTGCAACT
ACCGGGAAGACCAACATCGCGGAGGCCATAGCCACACTGTGCCCTTCTACGGGTGCGTAAACTGGACCAATGAGAA
CTTTCCCTTCAACGACTGTGTGCGACAAGATGGTGTATCTGGTGGGAGGAGGGGAAGATGACCGCCAAGGTCTGGAGT
CGGCCAAAGCCATTTCTCGGAGGAAGCAAGGTGCGCGTGGACCAGAAATGCAAGTCTCGGCCAGATAGACCCGACT
CCCGTGATCGTCACCTCCAACACCAACATGTGCGCCGTGATTGACGGGAACCTCAACGACCTTCAACACCCAGCAGCC
GTTGCAAGACCGGATGTTCAAATTTGAACTCACCCGCCGTCTGGATCATGACTTTGGGAAGGTCAACAGCAGGAAG
TCAAAGACTTTTTCCGGTGGGCAAAGGATCACGTGGTTGAGGTGGAGCATGAATTCTACGTCAAAAAGGGTGGAGCC
AAGAAAAGACCCGCCCCAGTGACGCAGATATAAGTGAGCCCAAACGGGTGCGCGAGTCAAGTTCGCGCAGCCATCGAC
GTCAGACGCGGAAG

>pRepCap-KP3

CCGCCATGCCGGGGTTTTACGAGATTGTGATTAAGGTCCCCAGCGACCTTGACGAGCATCTGCCCGGCATTTCTGAC
AGCTTTGTGAAGTGGGTGGCCGAGAAGGAATGGGAGTTGCCGCCAGATTCTGACATGGATCTGAATCTGATTGAGCA
GGCACCCCTGACCGTGGCCGAGAAGCTGCAGCGCGACTTCTGACGGAATGGCGCCGTGTGAGTAAGGCCCGGAGG
CTCTTTTCTTTGTGCAATTTGAGAAGGGAGAGAGCTACTTCCACATGCACGTGCTCGTGAAACCACCGGGGTGAAA
TCCATGGTTTTGGGACGTTTTCTGAGTCAGATTCGCGAAAACTGATTCAGAGAATTTACCGCGGGATCGAGCCGAC
TTTGCCAAACTGGTTTCGCGGTACAAAAGACCAGAAATGGCGCCGGAGGCGGGAACAAGGTGGTGGATGAGTGTACA
TCCCCAATTACTTGCTCCCCAAAACCCAGCCTGAGCTCCAGTGGGCGTGGACTAATATGGAACAGTATTTAAGCGCC
TGTTTTGAATCTCACGGAGCGTAAACGGTTGGTGGCGCAGCATCTGACGCACGTGTGCGAGACGCAGGAGCAGAACA
AGAGAATCAGAATCCCAATTTCTGATGCGCCGGTGTATCAGATCAAAAACCTTCAGCCAGGTACATGGAGCTGGTTCGGT
GGCTCGTGGACAAGGGGATTACCTCGGAGAAGCAGTGGATCCAGGAGGACCAGGCCCTCATACTCTCCTTCAATGCG
GCCTCCAACTCGCGGTCCCAATCAAGGCTGCCTTGGACAATGCGGGAAAGATTATGAGCCTGACTAAAACCGCCCC
CGACTACCTGGTGGGCCAGCAGCCCGTGGAGGACATTTCCAGCAATCGGATTTATAAAATTTTGGAACTAAACGGGT
ACGATCCCCAATATGCGGCTTCCGTCTTTCTGGGATGGGCCACGAAAAAGTTCGGCAAGAGGAACACCATCTGGCTG
TTTGGGCCTGCAACTACCGGGAAGACCAACATCGCGGAGGCCATAGCCACACTGTGCCCTTCTACGGGTGCGTAAA
CTGGACCAATGAGAATTTCCCTTCAACGACTGTGTGCGACAAGATGGTGTATCTGGTGGGAGGAGGGGAAGATGACCG
CCAAGGTCTGGAGTTCGGCCAAAGCCATTTCTCGGAGGAAGCAAGGTGCGCGTGGACCAGAAATGCAAGTCTCGGCC
CAGATAGACCCGACTCCCGTGATCGTCACCTCCAACACCAACATGTGCGCCGTGATTGACGGGAACCTCAACGACCTT
CGAACACCAGCAGCCGTTGCAAGACCGGATGTTCAAATTTGAACTCACCCGCCGTCTGGATCATGACTTTGGGAAGG
TCACCAAGCAGGAAGTCAAAGACTTTTTCCGGTGGGCAAAGGATCACGTGGTTGAGGTGGAGCATGAATTCTACGTC
AAAAAGGGTGGAGCCAAGAAAAGACCCGCCCCAGTGACGCAGATATAAGTGAGCCCAAACGGGTGCGCGAGTCAAGT
TGCGCAGCCATCGACGTGAGACGCGGAAGCTTCGATCAACTACGCAGACAGGTACCAAAAACAATGTTCTCGTCAAG
TGGGCATGAATCTGATGCTGTTTCCCTGCGAGACAATGCGAGAGAATGAATCAGAATCAAATATCTGCTTCACTCAC
GGACAGAAAGACTGTTTAGAGTGTCTCCCGTGTGAGAATCTCAACCCGTTTTCTGTCTCAAAAAGGCATATCAGAA
ACTGTGCTACATTCATCATATCATGGGAAAGGTGCCAGACGCTTGCACTGCCTGCGATCTGGTCAATGTGGATTTGG
ATGACTGCATCTTTGAACAATAAATGATTTAAATCAGGTATGGCTGCCGATGGTTATCTTCCAGATTGGCTCGAGGA
CACTCTCTGAAAGGAATAAGACAGTGGTGGAAAGCTCAAACCTGGCCCACCACCACCAAGCCCGCAGAGCGGCATA
AGGACGACAGCAGGGGTCTTGTGCTTCCCTGGGTACAAGTACCTCGGACCCTTCAACGGACTCGACAAGGAGAGCCG
GTCAACGAGGCGGATGCAGCGGCCCTCGAGCACGACAAGGCCTACGACCAGCAGCTCAAAGCGGGTGACAATCCGTA
CCTTCGGTATAACCACGCCGACGCCGAGTTTCAGGAGCGTCTGCAAGAAGATACGCTCTTTTGGGGGCAACCTCGGGC
GAGCAGTCTTCCAGGCCAAGAAGCGGGTTCTCGAACCTCTCGGTTGGTTGAGGAAGGCGCTAAGACGGCTCCTGGA
AAGAAGAGACCGGTAGAGCCATCACCCAGCCTTCTCCAGACTCCTACGGGCATCGGCAAGAAAGGCCAACAGCC
CGCCAGAAAAAGACTCAATTTTGGTTCAGACTGGCGACTCAGATCAGTTCAGACCCCTCAACCTCTCGGAGAACCTC
CAGCAGCGCCCTCTGGTGTGGGACCTAATAACAATGGCTGCAGGCGGTGGCGCACCAATGGCAGACAATAACGAAGG
GCCGACGGAGTGGGTAATGCCTCAGGAAATTTGGCATTGCGATTCCACATGGCTGGGCGCAGAGTCAACACCAG
CACCCGACCTGGGCCTTGGCCACCTACAATAACCACCTCTACAAGCAAATCTCCAGTGTCTCAACGGGGGCCAGCA
ACGACAACCCTACTTTCGGCTACAGCACCCCTTGGGGGTATTTGACTTCAACAGATTCACCTGCCACTTTTACCA

CGTGACTGGCAAAGACTCATCAACAACAACACTGGGGATTCCGACCCAAGAGACTCAACTTCAAGCTCTTTAACATTCA
AGTCAAAGAGGTCACGCAGAATGAAGGCACCAAGACCATCGCCAATAACCTCACCAGCACCATCCAGGTGTTTACGG
ACTCGGAGTACCAGCTGCCGTACGTTCTCGGCTCTGCCACCAGGGCTGCCTGCCTCCGTTCCCGGGCAGCTGTTC
ATGATTTCCCAGTACGGCTACCTAACACTCAACAACGGTAGTCAGGCCGTGGGACGCTCCTCCTTTTACTGCCTGGA
GTACTTCCCTTCGCAGATGCTAAGGACTGGAAATAACTTCCAATTCAGCTATACCTTCGAGGATGTACCTTTTCACA
GCAGCTACGCTCACAGCCAGAGTTTGGATCGCTTGATGAATCCTCTTATTGATCAGTATCTGTACTACCTGAACAGA
ACGCAAGGAACAACCTCTGGAACAACCAACCAATCACGGCTGCTTTTTTAGCCAGGCTGGGCCTCAGTCTATGTCTTT
GCAGGCCAGAAATTGGCTACCTGGGCCCTGCTACCGGCAACAGAGACTTTCAAAGACTGCTAACGACAACAACAACA
GTAACCTTCCCTTGGACAGCGGCCAGCAAATATCATCTCAATGGCCGCGACTCGCTGGTGAATCCAGGACCAGCTATG
GCCAGTACAAGGACGATGAAGAAAAATTTTTCCCTATGCACGGCAATCTAATATTTGGCAAAGAAGGGACAACGGC
AAGTAACGCAGAATTAGATAATGTAATGATTACGGATGAAGAAGAGATTCGTACCACCAATCCTGTGGCAACAGAGC
AGTATGGAAGTGTGGCAAATAACTTGCAGAGCTCAAATACAGCTCCACGACTAGAAGTGTCAATGATCAGGGGGCC
TTACCTGGCATGGTGTGGCAAGATAGAGACGTGTACCTGCAGGGTCCCTATCTGGGCCAAGATTCCTCACACGGACGG
AACTTTTCATCCCTCGCCGCTGATGGGAGGCTTTGGACTGAAACACCCGCCTCCTCAGATCCTGATCAAGAACACGC
CTGTACCTGCGGATCCTCCGACCACCTTCAACCAGTCAAAGCTGAACTCTTTTCATCACGCAATACAGCACCCGGACAG
GTCAGCGTGGAAATTGAATGGGAGCTGCAGAAGGAAAAACAGCAAGCGCTGGAACCCCGAGATCCAGTACACCTCCAA
CTACTACAAATCTACAAGTGTGGACTTTGCTGTTAATACAGAAGCGTGTACTCTGAACCCCGCCCATTTGGCACCC
GTTACCTCACCCGTAATCTGTAATTGCCTGTTAATCAATAAACCGGTTGATTCGTTTCAGTTGAACTTTGGTCTCTG
CGAAGGGCGAATTCGTTTAAACCTGCAGGACTAGAGGTCCTGTATTAGAGGTCACGTGAGTGTTTTTCGACATTTTG
CGACACCATGTGGTCACGCTGGGTATTTAAGCCCGAGTGAGCACGCAGGGTCTCCATTTTGAAGCGGGAGGTTTGAA
CGCGCAGCCGCAAGCCGAATTCCTGCAGATATCCATCACACTGGCGGCCGCTCGACTAGAGCGGCCGCCACCCGCGGT
GGAGCTCCAGCTTTTGTTCCTTTTAGTGAGGGTTAATTGCGCGCTTGGCGTAATCATGGTTCATAGCTGTTTCTCTGTG
TGAAATGTTTATCCGCTCACAAATCCACACAACATACGAGCCGGAAGCATAAAAGTGTAAAGCCTGGGGTGCCTAATG
AGTGAGCTAACTCACATTAATTGCGTTGCGCTCACTGCCCGCTTTCCAGTCGGGAAACCTGTGCTGCCAGCTGCATT
AATGAATCGGCCAACGCGCGGGGAGAGGCGGTTTGCCTATTGGGCGCTCTTCCGCTTCCCTCGCTCACTGACTCGCTG
CGCTCGGTGCTTCCGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTATCCACAGAATCAGGGGA
TAACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTT
TCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTA
TAAAGATACCAGGCGTTTTCCCTTGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCTGCCGCTTACCGGATACCT
GTCCGCTTTCTCCCTTCCGGAAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCG
TTGCTCCAAGCTGGGCTGTGTGCACGAACCCCGCTTCCAGCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTT
GAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGT
AGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTC
TGCTGAAGCCAGTTACCTTCCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGT
TTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTC
TGACGCTCAGTGAACGAAAACTCACGTTAAGGGATTTTGGTTCATGAGATTATCAAAAAGGATCTTACCTAGATCC
TTTTAAATTAATAATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAACTTTGGTCTGACAGTTACCAATGCTTA
ATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAAC
TACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATT
ATTAATGTTGCCGGGAAGCTAGAGTAAGTAGTTCCGCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCTACAGG
CATCGTGGTGTACGCTCGTCTGTTGGTATGGCTTCATTGAGTCCGGTTCCCAACGATCAAGGCGAGTTACATGAT
CCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCCGTCCTCCGATCGTTGTGCAAGTAAGTTGGCCGAGTGTTA
TCACTCATGGTTATGGCAGCACTGCATAATCTCTTACTGTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGA
GTACTCAACCAAGTCATTCTGAGAAATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGCGTCAATACGGGATAATA
CCGCGCCACATAGCAGAACTTTAAAAGTGTCTCATCATTGGAAAACGTTCTTCCGGGGCGAAAACCTCTCAAGGATCTTA
CCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGACCCAACTGATCTTCAGCATCTTTTACTTTTACCAGCGT
TTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCA
TACTCTTCTTTTTCAATATTATTGAAGCATTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATT
TAGAAAAATAACAATAAGGGGTCCGCGCACATTTCCCCGAAAAGTCCACCTAAATGTAAAGCGTTAATATTTTG
TTAAAATTCGCGTTAAATTTTTGTAAATCAGCTCATTTTTTTAACCAATAGGCCGAAAATCGGGCAAAATCCCTTATAA
ATCAAAAAGAAATAGACCGAGATAGGGTTGAGTGTGTTCCAGTTTGGAAACAAGAGTCCACTATTAAGAACGTTGGACT
CCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCGATGGCCACTACGTGAACCATCACCTAATCAAGTTTTTTG
GGGTGAGGTGCCGTAAAGCACTAAATCGGAACCCATAAAGGGAGCCCGGATTTAGAGCTTTGACGGGGAAAGCCGGC
GAACGTGGCGAGAAAGGAAGGGAAGCAAAAGCGAAAGGAGCGGCGCTAGGGCGCTGGCAAGTGTAGCGGTACGCTGC
GCGTAACCCACACCCCGCGCTTAATGCGCCGCTACAGGGCGCGTCCCATTCGCCATTCAGGCTGCGCACTGT
TGGGAAGGGCGATCGGTGCGGGCTTTCGCTATTACGCCAGCTGGCGAAAGGGGGATGTGCTGCAAGGCGATTAAG
TTGGGTAACGCCAGGGTTTTCCAGTACGACGTTGTAAAACGACGGCCAGTGAGCGCGCGTAATACGACTCACTAT

AGGGCGAATTGGGTACCGGGCCCCCTCGATCGAGGTCGACGGTATCGGGGGAGCTCGCAGGGTCTCCATTTTGAA
GCGGGAGGTTTGAACGCGCAG

>pHelper

CTAAATGTAAACGTTAATATTTTGTAAAATTCGCGTTAAATTTTTGTAAATCAGCTCATTTTTTAACCAATAGG
CCGAAATCGGCAAAATCCCTTATAAATCAAAGAATAGACCGAGATAGGGTTGAGTGTGTTCCAGTTTGGAAACAAG
AGTCCACTATTAAGAACGTGGACTCCAACGTCAAAGGGCGAAAACCGTCTATCAGGGCGATGGCCCACTACGTGA
ACCATCACCTAATCAAGTTTTTTGGGGTCGAGGTGCCGTAAAGCACTAAATCGGAACCTAAAGGGAGCCCCGAT
TTAGAGCTTGACGGGGAAAGCCGCGAACGTGGCGAGAAAGGAAGGGAAGAAAGCGAAAGGAGCGGGCGCTAGGGCG
CTGGCAAGTGTAGCGGTACGCTGCGCGTAACCACCACACCCGCCGCGCTTAATGCGCCGTACAGGGCGCGATGGA
TCCGGTACCAACTCCATGCTTAACAGTCCCCAGGTACAGCCCACCCTGCGTCGCAACCAGGAACAGCTCTACAGCT
TCCTGGAGCGCCACTCGCCCTACTTCCGCAGCCACAGTGCAGATTAGGAGCGCCACTTCTTTTTGTCACTTGAAA
AACATGTAAAATAATGTACTAGGAGACACTTTCAATAAAGGCAAATGTTTTTATTTGTACTCTCGGGTGATTAT
TTACCCCCACCCTTGCCGTCTGCGCGTTTTAAAATCAAAGGGTTCTGCCGCGCATCGCTATGCGCCACTGGCAG
GGACACGTTGCGATACTGGTGTTTAGTGCTCCACTTAAACTCAGGCACAACCATCCGCGCAGCTCGGTGAAGTTT
CACTCCACAGGCTGCGCACCATCACCAACGCGTTTTAGCAGGTCGGGCGCCGATATCTTGAAGTCGCAGTTGGGGCCT
CCGCCCTGCGCGCGAGTTGCGATACACAGGGTTGCAGCACTGGAACACTATCAGCGCCGGGTGGTGCACGCTGGC
CAGCACGCTCTTGTGCGAGATCAGATCCGCGTCCAGGTCTCCGCGTTGCTCAGGGCGAACGGAGTCAACTTTGGTA
GCTGCCTTCCAAAAGGGTGCATGCCAGGCTTTGAGTTGCACTCGCACCGTAGTGCCATCAGAAGGTGACCGTGC
CCGGTCTGGGCGTTAGGATACAGCGCCTGCATGAAAGCCTTGATCTGCTTAAAAGCCACCTGAGCCTTTGCGCCTC
AGAGAAGAATGCCGCAAGACTTGCCGAAAACCTGATTGGCCGGACAGGCCGCGTCATGCACGCAGCACCTTGCGT
CGGTGTTGGAGATCTGCACCACATTTGGGCCACCAGGTTCTTACGATCTTGGCCTTGCTAGACTGCTCCTTCAGC
GCGCGCTGCCCGTTTTTCGCTCGTCACATCCATTTCAATCACGTGCTCCTTATTTATCATAATGCTCCCGTGTAGACA
CTTAAGCTCGCCTTCGATCTCAGCGCAGCGGTGCAGCCACAACGCGCAGCCCGTGGGCTCGTGGTGTGTTAGGTTA
CCTCTGCAAACGACTGCAGGTACGCCGTGCAGGAATCGCCCCATCATCGTCACAAAGGTCTTGTGCTGGTGAAGGTC
AGCTGCAACCCGCGGTGCTCCTCGTTTAGCCAGGTCTTGATACGGCCGCCAGAGCTTCCACTTGGTCAGGCAGTAG
CTTGAAGTTTGCCTTTAGATCGTTATCCACGTGGTACTTGTCCATCAACGCGCGCGCAGCCTCCATGCCCTTCTCCC
ACGCAGACAGATCGGCAGGCTCAGCGGGTTATCACCGTGCTTTCACTTTCCGCTTCACTGGACTCTTCTTTTTCC
TCTTGCCTCCGCATACCCCGCGCCACTGGGTGCTTTCATTCAGCCGCCGACCCGTGCGCTTACCTCCCTTGCCGTG
CTTGATTAGCACCGGTGGGTTGCTGAAACCCACCATTTGTAGCGCCACATCTTCTCTTCTTCTCCTCGCTGTCCACGA
TCACCTCTGGGGATGGCGGGCGCTCGGGCTTGGGAGAGGGGCGCTTCTTTTTCTTTTTGGACGCAATGGCCAAATCC
GCCGTGAGGTCGATGGCCGCGGGCTGGGTGTGCGCGGCACCAGCGCATCTTGTGACGAGTCTTCTTCGTCTCTCGGA
CTCGAGACGCGCCTCAGCCGCTTTTTTGGGGGCGCGGGGAGGCGGCGGCGACGGCGACGGGGACGACACGTCTCT
CCATGGTTGGTGGACGTGCGCCGACCCGCGTCCGCGCTCGGGGGTGGTTTTGCGCTGCTCCTCTTCCCAGACTGGCC
ATTTCTTCTCTATAGGCAGAAAAAGATCATGGAGTCAGTCGAGAAGGAGGACAGCCTAACCGCCCCCTTTGAGTT
CGCCACCACCGCCTCCACCGATGCCGCCAACGCGCCTACCACCTTCCCCGTGAGGACCCCCGCTTGGAGGAGGAGG
AAGTGATATCGAGCAGGACCCAGGTTTTGTAAGCGAAGACGACGAGGATCGCTCAGTACCAACAGAGGATAAAAAG
CAAGACCAGGACGACGAGAGGCAAACGAGGAACAAGTCGGGCGGGGGACCAAAGGCATGGCGACTACCTAGATGT
GGGAGACGACGTGCTGTTGAAGCATCTGCAGCGCCAGTGCGCCATTATCTGCGACGCGTTGCAAGAGCGCAGCGATG
TGCCCCCTCGCCATAGCGGATGTCAGCCTTGCCCTACGAACGCCACCTGTTCTCACCGCGGTACCCCCAAACGCCAA
GAAAACGGCACATGCGAGCCAAACCCGCGCCTCAACTTCTACCCCGTATTTGCCGTGCCAGAGGTGCTTGCCACCTA
TCACATCTTTTTCCAAAACCTGCAAGATAACCCCTATCCTGCCGTGCCAACCGCAGCCGAGCGGACAAGCAGCTGGCCT
TGCGGCAGGGCGCTGTACATCTGATATCGCCTCGCTCGACGAAGTGCCAAAATCTTTGAGGGTCTTGGACGCGAC
GAGAAACGCGCGGCAAACGCTCTGCAACAAGAAAACAGCGAAAATGAAAGTCACTGTGGAGTGTGGTGGAACTTGA
GGGTGACAACGCGCGCCTAGCCGTGCTGAAACGCAGCATCGAGGTCACCCACTTTGCCCTACCCGGCACTTAACCTAC
CCCCAAGGTTATGAGCACAGTCATGAGCGAGCTGATCGTGCGCCGTGCACGACCCCTGGAGAGGGATGCAAACTTG
CAAGAACAACCGAGGAGGGCCTACCCGCAAGTTGGCGATGAGCAGCTGGCGCGCTGGCTTGGAGACGCGCGAGCCTGC
CGACTTGGAGGAGCGACGCAAGCTAATGATGGCCGAGTGTGTTACCGTGGAGCTTGAAGTGCATGCAGCGGTCTCT
TTGCTGACCCGGAGATGCAGCGCAAGCTAGAGGAAACGTTGCACTACACCTTTGCCAGGGCTACGTGCGCCAGGCC
TGCAAAATTTCCAACGTGGAGCTCTGCAACCTGGTCTCTTACCTTGAATTTTGCACGAAAACCCGCTCGGGCAAAA
CGTGTCTCATTTCCACGCTCAAGGGCGAGGCGCCGCGACTACGTCGCGACTGCGTTACTTATTTCTGTGCTACA
CCTGGCAAACGGCCATGGGCGTGTGGCAGCAATGCCTGGAGGAGCGCAACCTAAAGGAGCTGCAGAAGCTGCTAAAG
CAAACTTGAAGACCTATGGACGGCCTTCAACGAGCGCTCCGTGGCCGCGCACCTGGCGGACATTTCTCCCCGA
ACCCCTGCTTAAAACCCCTGCAACAGGGTCTGCCAGACTTACCAGTCAAAGCATGTTGCAAACTTTAGGAACCTTA
TCCTAGAGCGTTTCAAGAACTTGCCTGCCACCTGCTGTGCGCTTCTTAGCGACTTTGTGCCCATTAAGTACCGTGAA
TGCCCTCCGCTCTTGGGGTCACTGCTACCTTCTGCAGCTAGCCAACCTACCTTGCCTACCCTCCGACATCATGGA
AGACGTGAGCGGTGACGGCCTACTGGAGTGTCACTGTGCGCTGCAACCTATGCACCCCGCACCGCTCCCTGGTCTGCA
ATTCGCAACTGCTTAGCGAAAAGTCAAATATCGGTACCTTTGAGCTGCAGGGTCCCTCGCCTGACGAAAAGTCCGCG

GCTCCGGGGTTGAAACTCACTCCGGGGCTGTGGACGTCGGCTTACCTTCGCAAATTTGTACCTGAGGACTACCACGC
CCACGAGATTAGGTTCTACGAAGACCAATCCCGCCCGCAAATGCGGAGCTTACCGCTGCGTCATTACCCAGGGCC
ACATCCTTGGCCAATTGCAAGCCATCAACAAAGCCCGCAAAGAGTTTCTGCTACGAAAGGACGGGGGGTTTACCTG
GACCCCAAGTCCGGCGAGGAGCTCAACCAATCCCCCGCCGCGCAGCCCTATCAGCAGCCGCGGGCCCTTGCTTC
CCAGGATGGCACCCAAAAAGAAGCTGCAGCTGCCGCCGCCACCACGGACGAGGAGGAATACTGGGACAGTCAG
GCAGAGGAGGTTTTGGACGAGGAGGAGGAGATGATGGAAGACTGGGACAGCCTAGACGAAGCTTCCGAGGCCGAAGA
GGTGTGACAGAAACACCGTCAACCCTCGGTTCGATTCCCTCGCCGGCGCCCCAGAAATGGCAACCGTTCCAGCA
TCGCTACAACCTCCGCTCCTCAGGCGCCGCCGCACTGCCTGTTCCGCCACCCAACCGTAGATGGGACACCCTGGA
ACCAGGGCCGGTAAGTCTAAGCAGCCGCCGCCGTTAGCCCAAGAGCAACAACAGCGCCAAGGCTACCCTCGTGGCG
CGGGCACAAGAACGCCATAGTTGCTTGCTTGCAAGACTGTGGGGCAACATCTCCTTCGCCCGCCGCTTTCTTCTCT
ACCATCAGGCGTGGCCTTCCCCGTAACATCCTGCATTACTACCGTCATCTCTACAGCCCTACTGCACCCGGCGGC
AGCGGCAGCGGCAGCAACAGCAGCGGTACACAGAAGCAAAGGCGACCCGATAGCAAGACTCTGACAAAGCCCAAGA
AATCCACAGCGGCGGCAGCAGCAGGAGGAGCGCTGCGTCTGGCGCCAACGAACCCGTATCGACCCGCGAGCTT
AGAAATAGGATTTTTCCACTCTGTATGCTATATTTCAACAAAGCAGGGGCAAGAACAAGAGCTGAAAATAAAAAA
CAGGTCTCTGCGCTCCCTCACCCGAGCTGCCTGTATCACAAAAGCGAAGATCAGCTTCGGCGCACGCTGGAAGACG
CGGAGGCTCTTTCAGCAAATACTGCGCGTGACTCTTAAGGACTAGTTTTCGCGCCCTTCTCAAATTTAAGCGCGA
AAACTACGTCATCTCAGCGGCCACACCCGGCGCCAGCACCTGTCGTCAGCGCCATTATGAGCAAGGAAATTTCCAC
GCCCTACATGTGGAGTTACCAGCCACAAATGGGACTTGGCGTGGAGCTGCCCAAGACTACTCAACCCGAATAAACT
ACATGAGCGCGGGACCCACATGATATCCCGGTCAACGGAATCCGCGCCACCGAAACCGAATTTCTCCTCGAACAG
GCGGCTATTACCACCACACCTCGTAATAACCTTAATCCCCGTAGTTGGCCCGCTGCCCTGGTGTACCAGGAAAGTCC
CGCTCCCACCACTGTGGTACTTCCAGAGACGCCAGGCCGAAGTTCAGATGACTAACTCAGGGGCGCAGCTTGGCG
GCGGCTTTCGTACAGGGTGCGGTGCGCCGGGCAACTTGCATGTATTGGGAATTGTAGTTTTTTTTAAATGGGAAGT
GACGTATCGTGGGAAAACGGAAGTGAAGATTTGAGGAAGTGTGGGTTTTTTGGCTTTTCGTTTTCTGGGCGTAGGTTT
GCGTGCGGTTTTTCTGGGTGTTTTTTGTGGACTTTAACCGTTACGTCATTTTTTAGTCTATATACTCGCTCTGTA
CTTGGCCCTTTTTACACTGTGACTGATTGAGCTGGTGCCGTGTCGAGTGGTGTTTTTTAATAGGTTTTTTTTACTGGT
AAGGCTGACTGTTATGGCTGCCGCTGTGGAAGCGCTGTATGTTGTTCTGGAGCGGGAGGGTGCATTTTTGCCTAGGC
AGGAGGGTTTTTCAGGTGTTTATGTTTTTTCTCCTATTAATTTGTATACCTCCTATGGGGGCTGTAATGTTG
TCTCTACGCCGTGCGGGTATGATTTCCCCGGGCTATTTCCGTCGTTTTTAGCACTGACCGATGTTAACCAACCTGA
TGTGTTTACCGAGTCTTACATTATGACTCCGGACATGACCGAGGAACTGTCGGTGGTGCCTTTTTAATCACGGTGACC
AGTTTTTTTTACGGTACGCCGGCATGGCCGTAGTCCGTCTTATGCTTATAAGGGTGTTTTTTCTGTTGTAAGACAG
GCTTCTAATGTTTAAATGTTTTTTTTTGTATTTTTATTTGTGTTAATGCAGGAACCCGCGAGACATGTTTGAGAGA
AAAATGGTGTCTTTTTCTGTGGTGGTTCGGAACTTACCTGCCTTTTATCTGCATGAGCATGACTACGATGTGCTTGC
TTTTTTGCGCGAGGCTTTGCCTGATTTTTTGAGCAGCACCTTGCATTTTATATCGCCGCCATGCAACAAGCTTACA
TAGGGGCTACGCTGGTTAGCATAGCTCCGAGTATGCGTGTACATAATCAGTGTGGGTTCTTTTGTCATGGTTCTTGGC
GGGGAAGTGGCCGCGCTGGTCCGTGCAGACCTGCACGATTATGTTACAGCTGGCCCTGCGAAGGGACCTACGGGATCG
CGGTATTTTTGTTAATGTTCCGCTTTTGAATCTTATACAGGTCGTGAGGAACTGAATTTTTGCAATCATGATTCG
CTGCTTGAGGCTGAAGGTGGAGGGCGCTCTGGAGCAGATTTTTACAATGGCCGGACTTAATATTCGGGATTTGCTTA
GAGACATATTGATAAGGTGGCGAGATGAAAATTATTTGGGCATGGTTGAAGGTGCTGGAATGTTTATAGAGGAGATT
CACCTGAAGGGTTTAGCCTTTACGTCCACTTGGACGTGAGGGCAGTTTGCCTTTTGAAGCCATTGTGCAACATCT
TACAAATGCCATTATCTGTTCTTTGGCTGTAGAGTTTACCACGCCACCGGAGGGGAGCGGTTCACTTAATAGATC
TTCATTTGAGGTTTTGGATAATCTTTTGAATAAAAAAAAAAAAAACATGGTTCCTCCAGCTCTTCCCGCTCCTCC
CGTGTGTGACTCGCAGAACGAATGTGTAGGTTGGCTGGGTGTGGCTTATTCTGCGGTGGTGGATGTTATCAGGGCAG
CGGCGCATGAAGGAGTTTACATAGAACCCGAAGCCAGGGGGCGCCTGGATGCTTTGAGAGAGTGGATATACTACAAC
TACTACACAGAGCGAGCTAAGCGACGAGACCCGAGACGCAGATCTGTTTGTACGCCCGCACCTGGTTTTGCTTCAG
GAAATATGACTACGTCGGCGTTCATTTGGCATGACACTACGACCAACACGATCTCGGTTGTCTCGGCGCACTCCG
TACAGTAGGGATCGCCTACCTCCTTTTGGAGACAGAGACCCGCGCTACCATACTGGAGGATCATCCGCTGCTGCCCGA
ATGTAACACTTTGACAATGCACAACGTGAGTTACGTGCGAGGTCTTCCCTGCAGTGTGGGATTTACGCTGATTCAGG
AATGGGTTGTTCCCTGGGATATGGTCTGACGCGGGAGGAGCTTGTAACTCCTGAGGAAGTGTATGCACGTGTGCCTG
TGTTGTGCCAACATTGATATCATGACGAGCATGATGATCCATGGTTACGAGTCCCTGGGCTCTCCACTGTGCTGTTTC
CAGTCCCGGTTCCCTGCAGTGCATAGCCGGCGGGCAGGTTTTGGCCAGCTGGTTTTAGGATGGTGGTGGATGGCGCCA
TGTTTTAATCAGAGGTTTATATGGTACCGGGAGGTTGGTGAATTAACAACATGCCAAAAGAGGTAATGTTTTATGTCCAGC
GTGTTTATGAGGGTTCGCCACTTAATCTACCTGCGCTTGTGGTATGATGGCCACGTGGGTTCTGTGGTCCCCGCCAT
GAGCTTTGGATACAGCGCCTTGCACTGTGGGATTTGAACAATATTGTGGTGTGCTGCTGCAGTTACTGTGCTGAT
TAAGTGAGATCAGGTGCGCTGTGCCCCGAGGACAAGGCGTCTCATGCTGCGGGCGGTGCCAATCATGCTGAG
GAGACCACTGCCATGTTGTATCTTGCAGGACCGAGCGGCGGCGAGCAGTTTATTTCGCGCGCTGCTGCAGCACCA
CCGCCCTATCCTGATGCACGATTATGACTCTACCCCATGTAGGCGTGGACTTCCCTTCGCCCGCCGTTGAGCAAC
CGCAAGTTGGACAGCAGCCTGTGGCTCAGCAGCTGGACAGCGACATGAACTTAAGCGAGCTGCCCGGGGAGTTTTAT
AATATCACTGATGAGCGTTTTGGCTCGACAGGAAACCGTGTGGAATATAACACCTAAGAATATGTCTGTTACCCATGA

TATGATGCTTTTTAAGGCCAGCCGGGGAGAAAGGACTGTGTACTCTGTGTGTTGGGAGGGAGGTGGCAGGTTGAATA
CTAGGGTTCTGTGAGTTTGGATTAAGGTACGGTGATCAATATAAGCTATGTGGTGGTGGGGCTATACTACTGAATGAA
AAATGACTTGAATTTTCTGCAATTGAAAAATAAACACGTTGAAACATAACATGCAACAGGTTACAGATTCTTTATT
CCTGGCAATGTAGGAGAAGGTGTAAGAGTTGGTAGCAAAAAGTTTTCAGTGGTGTATTTCCACTTTCCCAGGACCAT
GTAAAAGACATAGAGTAAGTGCTTACCTCGCTAGTTTCTGTGGATTCACTAGAATCGATGTAGGATGTTGCCCTCC
TGACGCGGTAGGAGAAGGGGAGGGTGCCCTGCATGTCTGCCGCTGCTCTTGCTCTTGCCGCTGCTGAGGAGGGGGC
GCATCTGCCGAGCACCAGGATGCATCTGGGAAAAGCAAAAAAGGGGCTCGTCCCTGTTCCGGAGGAATTTGCAAGC
GGGGTCTTGCATGACGGGGAGGCAAACCCCGTTCCGCCGAGTCCGGCCGGCCCGAGACTCGAACCAGGGGGTCCCTGC
GACTCAACCCTTGGAAAATAACCTCCGGCTACAGGGAGCGAGCCACTTAATGCTTTTCGTTTTCCAGCCTAACCGCT
TACGCCGCGCGCGGCCAGTGGCCAAAAAGCTAGCGCAGCAGCCGCCGCGCCTGGAAGGAAGCCAAAAGGAGCGCTC
CCCCGTTGTCTGACGTGACACACCTGGGTTGACACGCGGGCGGTAACCGCATGGATCACGGCGGACGGCCGGATCC
GGGGTTCGAACCCCGTCCGCTCCGATGATACCCTTGCGAATTTATCCACCAGACCACGGAAGAGTGCCCGCTTACA
GGCTCTCCTTTTGCACGGTCTAGAGCGTCAACGACTGCGCACGCCTCACCGGCCAGAGCGTCCCGACCATGGAGCAC
TTTTTGGCGCTGCGCAACATCTGGAACCGCTCCGCGACTTTCCGCGCGCCTCCACCACCGCCCGCCGGCATCACCTG
GATGTCCAGGTACATCTACGGATTACGTGACGTTTTAAACCATATGATCAGCTCACTCAAAGGCGGTAATACGGTTA
TCCACAGAATCAGGGGATAACGCAGGAAAGAATGTGAGCAAAAGGCCAGCAAAAAGGCCAGGAACCGTAAAAAGGC
CGCGTTGCTGGCGTTTTTCCATAGGCTCGGCCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGC
GAAACCCGACAGGACTATAAAGATACCAGGCGTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCCTG
CCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCAATGCTCACGCTGTAGGTATCT
CAGTTCGGTGTAGGTGCTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTTCAGCCCGACCGCTGCGCCTTAT
CCGGTAACCTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATT
AGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGT
ATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCA
CCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAAGGATCTCAAGAAGATCCTTTG
ATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTTTGGTCATGAGATTATCAAAAAAG
GATCTTACCTAGATCCTTTTTAAATTAATAATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAACTTGGTCTG
ACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTG
CCCGTCTGTGATAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACG
CTCACCGGCTCCAGATTTATCAGCAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAGAAAGTGGTCTGCAACTTTAT
CCGCTCCATCCAGTCTATTAATGTTGCCGGGAAGCTAGAGTAAGTAGTTCCGCCAGTTAATAGTTTGCGCAACGTT
GTTGCCATTGCTACAGGCATCGTGGTGTACGCTCGTCTGTTGGTATGGCTTCATTTCAGCTCCGGTTCCCAACGATC
AAGGCGAGTTACATGATCCCCATGTTGTGAAAAAAGCGGTTAGCTCCTTCGGTCTCCGATCGTTGTGAGAAAGTA
AGTTGGCCGAGTGTATCACTCATGCTTATGGCAGCACTGCATAATTCTCTTACTGTGATGCCATCCGTAAGATGC
TTTTCTGTGACTGGTGAAGTCAACCAAGTCATTCTGAGAAATAGTGTATGCGGGCAGCCGAGTTGCTCTTGCCCGGC
GTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAA
AACTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTTCGATGTAACCCACTCGTGACCCAACTGATCTTCAGCATCT
TTTACTTTCACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAGGGGAATAAGGGCGACACG
GAAATGTTGAATACTCATACTCTCCTTTTTCAATATTATTGAAGCATTATCAGGGTTATTGTCTCATGAGCGGAT
ACATATTTGAATGTATTTAGAAAAATAACAATAGGGGTTCCGCGCACATTTCCCGAAAAGTGCCAC