

(from 1-1284 bp)

# pJ2039\_N2only (7295 bp)

ACTTTTCATACTCCCGCCATTTCAGAGAAGAAACCAATTGTCCATATTGCATCAGACATTGCCGTCACCTGCGTCTTTTACTGGCTCTTCTCGCTAACCAAACCGGTAA  
TGAAAAGTATGAGGGCGGTAAGTCTCTCTTTGGTTAACAGGTATAACGTAGTCTGTAACGGCAGTGACGCAGAAAATGACCGAGAAGAGCGATTGGTTTGGCCATT

CCCCGCTTATTAAGCATTCTGTAACAAAGCGGGACCAAAGCCATGACAAAAACGCGTAACAAAAGTGTCTATAATCACGGCAGAAAAGTCCACATTGATTATTTG  
GGGGCGAATAATTTTCGTAAGACATTGTTTCGCCTGGTTTCGGTACTGTTTTGCGCATTGTTTTACAGATATTAGTCCGCTCTTTTACAGGTGTAACATAAACA

CACGGCGTCACACTTTGCTATGCCATAGCATTTTTATCCATAAGATTAGCGGtCTCTACCTGACGCTTTTTATCGCAACTCTCTACTGTTTCTCCATACCGAATTCA  
GTGCCGAGTGTGAAACGATACGGTATCGTAAAAATAGGTATTCTAATCGCCaAGGATGGACTGCGAAAAATAGCGTTGAGAGATGACAAAGAGGTATGGCTTAAGT

Diagram showing restriction sites and features: **EcoRI** (orange box), **P(BAD) promoter** (yellow arrow), **SacI** (purple box), **XhoI** (grey box), **Linker\_14** (orange arrow), **REs...\_8** (pink arrow), **Linker\_0** (orange arrow), **Prefix** (green arrow).

TAGGATAGATTCTGAAAACTTTACCGTCCGAGCTCAGGCTTACCTTACTCGAGCAATAAACAGTTGATAGGGCTTCTCCGTTACAGCCTGCGGTCCGGGTTCACTGC  
ATCCTATCTAAGACCTTTGAAATGGCAGGCTCGAGTCCGAATGGAATGAGCTCGTTATTTGTCAACTATCCCGAAGAGGCAATGTCGGACGCCAGGCCAAGTGACG

CGTATAGGCAGTAATTTGTTAACTTTAAGAAGGAGATATACATATGGTTTCGGTTATCAAACCAGAGATGAAAATGCGTACTATATGGATGGTTCAGTAAATGG  
GCATATCCGTCATTAACAAATTTGAAATTTCTCTCTATATGTATACCAAAGCCAATAGTTTGGTCTCTACTTTTACGCAATGATATACCTACCAAGTCATTACC

Diagram showing features: **Cs...e** (purple arrow), **RBS** (blue arrow), **mK02** (orange arrow).

TCACGAATTTACTATTGAGGGCGAGGGTACGGGACGCCATACGAGGGGACCCAGGAAATGACTTTACGCGTCACAATGGCTGAAGGCGGGCTATGCCGTTTGGCT  
AGTGCTTAAATGATAACTCCCGCTCCCATGCCCTGCGGGTATGCTCCCGTGGTCTTTACTGAAATGCGCAGTGTTACCGACTTCCGCCCGGATACGGCAAACGCA

Diagram showing feature: **mK02** (orange arrow).

TCGATCTTGTAGTCATGTCTTTTGTACGGTACCCTGTATTTACTAAATACCCCGAGGAAATCCAGACTATTTCAAACAAGCCTTCCCGAAGGTTTGTCTTGG  
AGCTAGAACAATCAGTACAGAAAACAATGCCAGTGGCACATAAATGATTTATGGGGCTCTTTAAGGTCTGATAAAGTTTGTTCGGAAGGGCTTCCAAACAGAACC

Diagram showing feature: **mK02** (orange arrow).

GAGCGCAGTTTAGAGTTTGAAGACGGTGGCTCGGCCAGCGTGTGAGTCTATATTAGTCTTTCGCGCAATACATTTTATCACAAGTCAAAGTTCACCGCGTGAACCT  
CTCGCGTCAAATCTCAAACCTTCTGCCACCGAGCCGGTGCACAGTCGAGTATAATCAGAAGCGCCGTTATGTAATAAGTGTTCAGTTTCAAAGTGGCCGCACTTGA

Diagram showing feature: **mK02** (orange arrow).

CCCCGACAGCGCCCAATCATGCAGAATCAAAGTGTGATTGGGAACCGTCCACAGAGAAGATTACAGCTTCCGATGGAGTCTTAAAGGGCGATGAACCATGTACT  
GGGGCGTCTGCCGGTTAGTACGTCTTAGTTTCACTAACTAACCCCTGGCAGGTGTCTCTTCTAATGTGCAAGGCTACCTCAGAATTTCCCGCTACATTGGTACATGA

Diagram showing feature: **mK02** (orange arrow).

TAAAATTAGAAGGGGAGGGAACCATAAATGTCAGATGAAGACTACCTATAAGGCCGAAAAGAGATTCTTGAATGCCCGGAGACCACTACATTGGGCATCGTTTG  
ATTTAATCTTCCCCCTCCCTTGGTATTTACAGTCTACTTCTGATGGATATCCGGCGTTTTCTCTAAGAACCTTACGGGCTCTGGTGTGTAACCCGTAGCAAAC

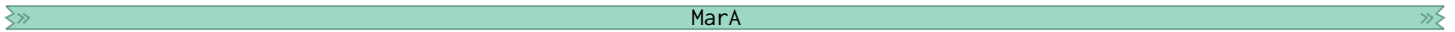
Diagram showing features: **mK02** (orange arrow), **MarA** (green arrow).

GTCCGTAAGACAGAAGGAAATATTACTGAACAGGTGCAAGACGCTGTGGCACACAGCATGTCCCGCGTAATACTGACGCCATCACAATCCACAGCATCTGGATTG  
CAGGCATTCTGTCTTCTTTAATGACTTGTCCAGCTTCTGCGACACCGTGTGTCGTACAGGGCGCATTATGACTGCGGTAGTGTAGGTGTCGTAGGACCTAAC

Diagram showing feature: **MarA** (green arrow).

GATTGAAGACAACCTGGAGTCGCCGTTGAGTTTAAAAAGTTAGTGAACGTAGTGGTACTCAAAGTGGCACCTTCAGCGCATGTTTAAAGAGGAAACGGGTCACT  
CTAACTTCTGTTGAACCTCAGCGGCAACTCAAATCTTTTCAATCACTTGCATACCAATGAGTTTACCCTGGAAGTCCGCTACAAAATCTTCTTTGCCAGTAA

CATTGGGTCAATATATTCGTTCTCGCAAGATGACTGAAATTGCCAGAAATTGAAAGAGTCTAATGAACCTATTTTGTACCTGGCGGAGCGTTACGGCTTTGAAAGT  
GTAACCCAGTTATATAAGCAAGAGCGTTCTACTGACTTTAACGGGTCTTTAACTTTCTCAGATTACTTGGATAAAACATGGACCGCTCGCAATGCCGAACTTTCA



CAGCAAACCTTACACGTACCTTCAAGAATTACTTTGACGTTCCACCACACAAATATCGTATGACCAACATGCAGGGTGAAGTACGTTTTTTCATCCGTTGAATCA  
GTCGTTTGGGAATGTGCATGGAAGTTCTTAATGAACTGCAAGGTGGTGTGTTTATAGCATACTGGTTGTACGTCCCACTCAGTGCAAAAAACGTAGGCAACTTAGT



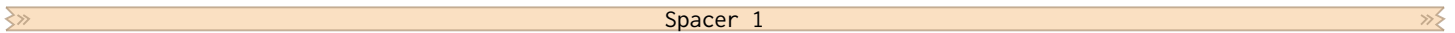
TTACAATTCCTAATAATCGCTGGGACGCCCGCCATGGTTTCAGCAAAAACTTAAGACCGCCGGTCTTGTCCACTACCTTGCAGTAATGCGGTGGACAGGATCGGCG  
AATGTTAAGGATTATTAGCGACCTGCGGGCGGTACCAAGTCGTTTTTTGAATTCTGGCGGCCAGAACAGGTGATGGAACGTCATTACGCCACCTGTCTAGCCGC



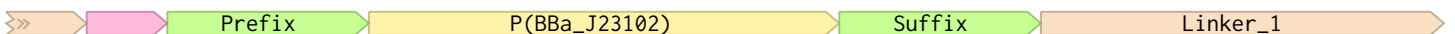
GTTTTCTTTTCTTCTCAATTCTTCTGACCTGTAACGAATAATAGATAGTAAAGTAGTCTCCGATTGAGTTTTCTCTGCCGAGTCCCACCCAGTTCTGTGATTTCA  
CAAAAGAAAAGAGAAGATTAAGAAGACTGGACATTGCTTATTATCTATCATTTTCATCAGAGGCTAACTCAAAAGAGACGGCTCAGGGTGGTCAAGACTAAAGT



GTAAGTTGGTAATTGATACACTGTTGCGAGAAGTCTGCCTGGTAGTAGTAGTTGTTATTGAGTAAGAAGTAAAGTGAACGAAATCCCTGAAACTGAGACTGTA  
CATTCAACCATTAATATGTGACAACGCTCTTGACGACGGACCATCATCTATCCAACAATAACTCATTCTTCCATTTCACTTGTCTTAGGGACTTTGACTCTGACAT



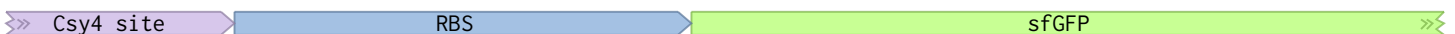
GAAAAAAGCTTCAGCTCGGTCCGGTTGACAGCTAGCTCAGTCTAGTACTGTGCTAGCTCGTGGGACGCCGGGGACTACACTTACGAACTATTGATTGCT  
CTTTTATTGCAAGTCGACGCCAGGCCAAGTGTGATCGAGTCAGGATCCATGACACGATCGAGCGACCCTGCGGGCCCTGATGTGAATGCTTTGATAACTAACGA



CAGCCTGCGGTCCGGccaAGAGTACACTAGCTCAGTCACTCGCTGGGACGCCGGGATCCAAGAGATTTCTACACGATTGAGCACTGTCTCAGCTGCGGTCCGGGT  
GTCGGACGCCAGGCCggtTCTCATGTGATCGAGTCAGTAGCACCCTGCGGGCCCTAGTTTCTCTAAAGATGTGCTAACTCGTGACAGAGTCGGACGCCAGGCCCAA



CACTGCCGTATAGGCAGTAATTTGTTAACTTTAAGAAGGAGATATACATATGCGTAAAGGCGAAGAACTGTTTACCGGTGTGGTTCCGATTCTGGTGAAGTGA  
GTGACGCATATCCGTCATTAACAAATTTGAAATTTCTTCTCTATATGTATACGATTTCCGCTTCTTGACAAATGGCCACACCAAGGCTAAGACCACCTTGACCT



CGCGATGTTAATGGTCATAAATTCAGTGTTCGCGGCGAAGGTGAAGGCGATGCGACGAACGGCAAACCTGACCTGAAATTTATCTGCACCACGGTAAACTGCCG  
GCCGTACAATTACCAGTATTTAAGTCACAAGCGCCGCTTCCACTTCCGCTACGCTGCTTGCCGTTTACTGGGACTTTAATAGACGTGGTGCCTATTTGACGGCC



TCCCGTGGCCGACGCTGGTACCACGCTGACCTATGGCGTTCAATGTTTTGCGCGTTACCGGATCATATGAAACAGCAGACTTTTTCAAATCGCCATGCCGAA  
AGGGCACCAGGCTGCGACCACTGGTGCAGTGGATACCGCAAGTTACAAAACGCGCAATGGGCTAGTGTACTTTGTCGTGCTGAAAAAGTTTAGCCGTACGGCTT

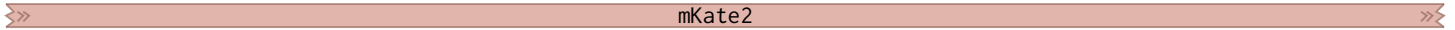


GGCTATGTGCAGGAACGTACGATTAGCTTTAAAGACGATGGTACGTATAAAACCCGCGCGGAAGTGAATTCGAAGGCGATACCCTGGTTAACCGTATCGAACTGAA  
CCGATACAGTCTTGCATGCTAATCGAAATTTCTGCTACCATGCATATTTGGCGCGCCTTCACTTTAAGCTTCCGCTATGGACCAATGGCATAGCTTGACTT

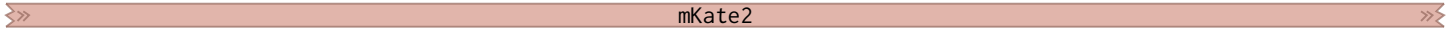




ccGTCGAGGGCGGCCCTCTCCCTTCGCCTTCGACATCCTGGCTACCAGTTCATGTACGGCAGCAAACCTTCATCAACCACACCAGGGCATCCCCGACTTCTTT  
ggCAGCTCCC GCCGGGAGAGGGGAAGCGAAGCTGTAGGACCGATGGTCAAGTACATGCCGTCGTTTTGGAAGTAGTTGGTGTGGTCCCCTAGGGGCTGAAGAAA



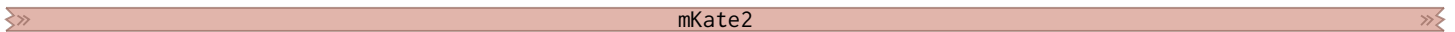
AAGCAGTCTTCCCTGAGGGCTTACATGGGAGAGAGTACCACATACGAAGACGGGGCGTGCTGACCGCTACCCAGGACACCAGCTCCAGGACGGCTGCCTCAT  
TTCGTAGGAAGGGACTCCCAGTGTACCCTCTCTCAGTGGTGTATGCTTCTGCCCCGCACGACTGGCGATGGTCTGTGGTCCGAGGTCCTGCCGACGGAGTA



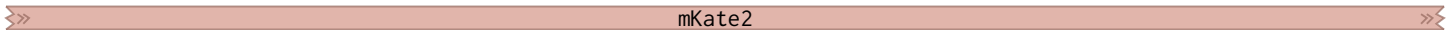
CTACAACGTCAAGATCAGAGGGTGAACCTCCCATCCAACGGCCCTGTGATGCAGAAGAAAACACTCGGCTGGGAGGCTCCACCGAGaccCTGTACCCCGCTGACG  
GATGTTGAGTCTAGTCTCCCACTTGAAGGTAGGTTGCCGGGACACTACGCTTCTTTTGTGAGCCGACCTCCGAGGTGGCTctggGACATGGGGCGACTGC



GCGCCTGGAAGGCAGAgcCGACATGGCCCTGAAGCTCGTGGCGGGGCCACCTGATCTGCAACTTGAAGACCACATACAGATCCAAGAAAACCCGCTAAGAACCTC  
CGCCGACCTTCCGTCTcgGCTGTACCGGACTTCGAGCACCCGCCCGGTGGACTAGACGTTGAACTTCTGGTGTATGTCTAGGTTCTTTGGGCGATTCTGGAG



AAGATGCCCGCGTCTACTATGTGGACAGAAGACTGAAAGAATCAAGGAGGCCGACAAAGAGACCTACGTCGAGCAGCAGAGGTGGCTGTGGCCAGATACTGCGA  
TTCTACGGGCCGAGATGATACACCTGTCTTCTGACCTTCTTAGTTCCTCCGCTGTTTCTCTGGATGCAGCTCGTCTGTCTCCACCGACACCGGTCTATGACGCT



NotI

CCTCCCTAGCAAACCTGGGGCACAgAgtctaATAATCGTGGGACGCCCGGGCGCCGggaaacacagAAAAAGCCCGCACCTGACAGTGGGGCTTTTTTTTTcga  
GGAGGGATCGTTTGACCCCGTGTcTcagatTATTAGCGACCTGCGGGCCGCCGGCgcctttgtgtcTTTTTTCGGGCGTGGACTGTCACGCCGAAAAAAAgct



KasI

BbvCI

AscI

ccaaaggTAGCGAACGACGAGTCACTGTTGAGGATAAATACTTTCTCTACTAGCGCCTGTTACACAGGTCCTCAGCGGCGCCTTTGTCGGTGAACGCTCTCCTG  
ggtttccATCGTCTGCTCAGTGACAACCTCTATTTATGAAAGAGATGATCCGCGGACAATGTGTCCAGGAGTCGCCGCGGAAAACAGCCACTTGCGAGAGGAC



AGTAGGACAAATCCGCCGGGAGCGGATTTGAACGTTGTGAAGCAACGCCCGGAGGGTGGCGGGCAGGACGCCGCCATAAACTGCCAGGCATCAAACCTAAGCAGAA  
TCATCCTGTTTAGGCGGCCCTGCCTAAACTTGAACACTTCGTTGCCGGCCTCCCACCGCCCGTCTGCGGGCGGATTTGACGGTCCGTAGTTTGATTCTGCTT

GGCCATCCTGACGGATGGCCTTTTTGCGTTTCAGATCTACCGGTaaaccagcaatagacataagcggctatTTaacgacctgacctgaaccgacgacaagctgacg  
CCGGTAGGACTGCCTACCGAAAAACGCAAAAGTCTAGATGGCCAtttggctgttatctgtattccgataaattgctgggacgggacttggctgctgttcgactgc

accgggtctccgcaagtggcacttttcgggaaatgtgctgcaaccctatttgtttatTTTTctaaatactcaaatatgtatccgctcatgaattaattctta  
tggcccagaggcgttaccgtgaaaagcccctttacacgccttggggataaacaataaaaagatttatgtaagttatacatagcgagtagtacttaattaagaat

gaaaaactcatcgagcatcaaatgaaactgcaatttattcatatcaggattatcaataccatattttgaaaagccgtttctgtaatgaaggagaaaactcaccga  
ctttttgagtagctcgtagtttactttgacgttaaataagtatagtcctaatagttatggataaaaactttttcggcaagacattacttctcttttgagtggt



ggcagttccataggatggcaagatcctggatcggctctgcatccgactcgtccaacatcaatacaacctattaatttcccctcgtcaaaaataaggttatcaagt  
ccgtcaaggtatcctaccgttctaggaccatagccagacgctaaggctgagcaggttgtagttatgttgataaattaaaggggagcagttttattccaatagttca



gagaatcaccatgagtgacgactgaatccgggtgagaatggcaaaagtttatgcatttctttccagacttgttcaacaggccagccattacgctcgtcatcaaaatc  
ctcttttagtggtagctgactgacttagccactcttaccgttttcaaatacgtaaagaaggctgaacaagttgtccggtcggtaatgcgagcagtagtttag

« KanR »

actcgcacaaacccggttattcattcgtgattgcgctgagcgagacgaaatcgcggctcgtgttaaaggacaattacaacaggaatcgaatgcaaccggc  
tgagcgtagtggtttggcaataagtaagcactaacgcggactcgtctgctttatgcccagcagacaatttctctgtaaatgtttgtccttagcttacgttggccg

« KanR »

gcaggaacactgccagcgcacacaataatcactgaatcaggatattcttctaatacctggaatgctgtttcccggggatcgcagtggtgagtaacctgca  
cgtccttgtgacggtcgctgtagttgtataaaagtgacttagtctataagaagattatggacctacgacaaaaggccctagcgtcaccactcattggtacgt

« KanR »

tcatcaggagtacggataaaatgcttgatggtcgggaagaggcataaattccgtcagcagtttagtctgaccatctcatctgtaacatcattggcaacgctacctt  
agtagtctcatgcttatttacgaactaccagccttctccgtatttaaggcagtcggtaaatcagactggtagagtagacattgtagtaaccgttgcatggaaa

« KanR »

gccatgtttcagaacaactctggcgcacgggcttccatacaatcgatagattgtcgcacactgattgccgacattatcgcgagccatttataccatataaat  
cggtaaaaagctttgttgagaccgctagcccgaagggtatgtagctatctaacagcgtggactaacgggctgtaatagcgtcgggtaaatatgggtatatta

« KanR »

cagcatccatgttgaatttaacgcggcctagagcaagacgtttccggtgaaatggtcactactcttcttttcaatattatgaagcatttatcagggttat  
gtcgtaggtacaacctaaattagcggcggatctcgttctgcaaaaggcaactataaccagtagtagaaggaaaaagtataataacttcgtaaatagtcaccaata

« KanR »

tgtctcatgagcggatacatattgaatgtatttagaaaaataacaataggcatgctagcgcagaacgtcctagaagatgccaggaggatacttagcagagaga  
acagagtactcgcctatgtataaacttacataaactttttatttggttatccgtacgatcgcgtctttgcaggatctctacggctctctatgaatcgtctctc

ColA ori »

caataaggccggagcgaagccgttttccataggtcgcggccctgacgaacatcacgaaatctgacgctcaaatcagtggtggcgaaccggacaggactataaa  
gttattccggcctcgttccggcaaaaaggtatccgaggcgggggactgctttagtgctttagactgaggttagtcaccaccgctttgggctgtcctgatattt

« ColA ori »

gataccaggcgtttcccttgatggctcctcttgcgctcctgttcccgtcctgcccgtcctggttgggtggaggctttacccaatcaccacgtcccgttcc  
ctatggtccgcaaaaggggactaccgagggagaacgcgagaggacaaggcaggacgccgaggcacaacaccacctccgaaatgggttttagtggtgcagggaagg

« ColA ori »

gttagacagttcgtccaagctgggctgtgtgcaagaacccccgttcagcccgactgctgccccttatccgtaactatcatcttgagtccaaccggaaaagaca  
cacatctgtcaagcaggttcgaccgacacacgttcttgggggcaagtcgggctgacgacgcggaataggccattgatagtagaactcaggttggcctttctgt

« ColA ori »

cgacaaaacccactggcagcagccattggttaactgagaattagtgatttagatatcgagagcttgaagtggcctaacagaggctacactgaaggacagta  
gctgttttgcggtgaccgctcgtcggttaaccattgactcttaatacctaaatctatagctctcagaacttaccaccggattgtctccgatgtgactttcctgtcat

« ColA ori »

tttggatctgctccactaaagccagttaccaggttaagcagttcccactgacttaaccttcgatcaaacccctcccaggcggtttttctgttacagagc  
aaaccatagcgcgaggtgatttcggtcaatggtccaattcgtcaagggttactgaattggaagctagtttggcggagggtccgcaaaaaagcaaatgtctcg

« ColA ori »

aggagattacgacgatcgtaaaaggatctcaagaagatcctttacggattccccgacccatcactctagatttcagtgcatttatctcttcaaagttagcacctga  
tcctctaagtctgctagcattttcctagagttcttcttaggaatgcctaagggctgtggtagtagatctaaagtcacgttaaatagagaagtttacatcgtggact

»» ColA ori ««

agtcagccccatacgatataagttgtaattctcatgtagtcatgccccgcgcccaccggaaggagctgactgggttgCTCCTAgGGTCTGATTTCGTTACCAATTAT  
tcagtcggggtatgctatattcaacattaagagtacaatcagtaggggcgcggtggtccttctcgcactgaccaacGAGGATcCCAGACTAAGCAATGTTAATA

««

GACAACTTGACGGCTACATCATTCACTTTTTCTTACAACCGGCACGGAACCTCGCTCGGGCTGGCCCCGGTGCATTTTTTAAATACCCGCGAGAAATAGAGTTGATC  
CTGTTGAACTGCCGATGTAGTAAGTAAAAAGAAGTGTGGCCGTGCCTTGAGCGAGCCCCACCGGGGCCACGTAATAAATTTATGGGCGCTCTTTATCTCAACTAG

«« araC ««

GTCAAACCAACATTGCGACCGACGGTGGCGATAGGCATCCGGTGGTGTCTAAAAGCAGCTTCGCCTGGCTGATACGTTGGTCTCGCGCCAGCTTAAGACGCTAA  
CAGTTTTGGTTGTAACGCTGGCTGCCACCGCTATCCGTAGGCCACCACGAGTTTTCGTGAAGCGGACCGACTATGCAACCAGGAGCGCGGTGCAATTCTGCGATT

«« araC ««

TCCCTAACTGCTGGCGGAAAAGATGTGACAGACGCGACGGCGACAAGCAAACATGCTGTGCGACGCTGGCGATATCAAAATTGCTGTCTGCCAGGTGATCGCTGATG  
AGGGATTGACGACCGCCTTTTCTACACTGTCTGCCGTGCCGCTGTTGTTTTGTACGACACGCTGCGACCGCTATAGTTTTAACGACAGACGGTCCACTAGCGACTAC

«« araC ««

TACTGACAAGCCTCGGTACCCGATTATCCATCGGTGGATGGAGCGACTCGTTAATCGCTTCCATGCGCCGAGTAACAATTGCTCAAGCAGATTTATCGCCAGCAG  
ATGACTGTTGCGAGCGCATGGGCTAATAGGTAGCCACCTACCTCGCTGAGCAATTAGCGAAGGTACGCGGCGTCATTGTTAACGAGTTCGTCTAAATAGCGGTGCTC

«« araC ««

CTCCGAATAGCGCCCTTCCCCTTGCCCGCGTTAATGATTTGCCAAACAGGTCGCTGAAATGCGGCTGGTGCCTTCATCCGGGCGAAAGAACCCCGTATTGGCAA  
GAGGCTTATCGCGGGAAGGGGAACGGGCCGAATTAATAACGGGTTTGTCCAGCGACTTTACGCCGACCACGCGAAGTAGGCCGCTTTCTTGGGCATAACCGTT

«« araC ««

ATATTGACGGCCAGTTAAGCCATTCATGCCAGTAGGCGCGGACGAAAGTAAACCCACTGGTGATACCATTGCGGAGCCTCCGGATGACGACCGTAGTGATGAATC  
TATAACTGCCGGTCAATTCGGTAAAGTACGGTCATCCGCGCGCTGCTTTTCATTTGGGTGACCACTATGGTAAGCGCTCGGAGGCCACTGCTGGCATCACTACTTAG

«« araC ««

TCTCTGGCGGGAACAGCAAAATATACCCGGTCGCAACAAATTCTCGTCCCTGATTTTTACCACCCCTGACCGCAATGGTGAGATTGAGAATATAACCTTT  
AGAGGACCGCCCTTGTGTTTTATAGTGGGCCAGCCGTTTGTAAAGAGCAGGGACTAAAAAGTGGTGGGGGACTGGCGCTTACCACTCTAACTCTTATATTGGAAA

«« araC ««

CATTCCCAGCGGTGGTTCGATAAAAAATCGAGATAACCGTTGGCCTCAATCGGCGTTAAACCCGCCACCAGATGGGCATTAACGAGTATCCCGGCAGCAGGGGAT  
GTAAGGGTCGCCAGCCAGCTATTTTTTAGCTCTATTGGCAACCGGAGTTAGCCGCAATTTGGGCGGTGGTCTACCCGTAATTTGCTCATAGGGCCGTCGTCCCTTA

«« araC ««

CATTTTGGCTTCAGCCAT  
GTAAAACGCGAAGTCGGTA

«« araC ««