

pJD100GW_complete

attR1, attR2 sites are in lowercase

>pJD100GW

CACCTAAATTGTAAGCGTTAATATTTTGTAAAATTCGCGTTAAATTTTTGTAAATCAG
CTCATTTTTTAACCAATAGGCCGAAATCGGCAAATCCCTTATAAATCAAAGAATAGAC
CGAGATAGGGTTGAGTGTGTTCCAGTTTGAACAAGAGTCCACTATTAAGAACGTGGA
CTCCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCGATGGCCCACTACGTGAACCAT
C
ACCCTAATCAAGTTTTTTGGGGTCGAGGTGCCGTAAAGCACTAAATCGGAACCCTAAAGG
GAGCCCCGATTTAGAGCTTGACGGGGAAAGCCGGCGAACGTGGCGAGAAAGGAAGGG
AA
GAAAGCGAAAGGAGCGGGCGCTAGGGCGCTGGCAAGTGTAGCGGTCACGCTGCGCGTA
AC
CACCACACCCGCCGCGCTTAATGCGCCGCTACAGGGCGCGTCCCATTGCGCATTGAGGC
T
GCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGCTATTACGCCAGCTGGCGA
A
AGGGGGATGTGCTGCAAGGCGATTAAGTTGGGTAACGCCAGGGTTTTCCAGTCACGAC
G
TTGTAAAACGACGGCCAGTGAATTGTAATACGACTCACTATAGGGCGAATTGGatc
acaagttgtacaaaaaaGCTGAACGAGAAACGTAAAATGATATAAATATCAATATATTA
AATTAGATTTTGCATAAAAAACAGACTACATAACTGTAAAACACAACATATCCAGTCA
CTATGGCGGCCGCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATAATG
TGTGGATTTTGTAGTATAGGATCCGTCGAGATTTTCAGGAGCTAAGGAAGCTAAAATGGAGA
AAAAAATCACTGGATATACCACCGTTGATATATCCCAATGGCATCGTAAAGAACATTTTG
AGGCATTTGAGTCAGTTGCTCAATGTACCTATAACCAGACCGTTCAGCTGGATATTACGG
CCTTTTTAAAGACCGTAAAGAAAAATAAGCACAAGTTTTATCCGGCCTTTATTCACATTC
TTGCCCGCCTGATGAATGCTCATCCGGAATTCCGTATGGCAATGAAAGACGGTGAGCTGG
TGATATGGGATAGTGTTACCCCTTGTTACACCGTTTTCCATGAGCAAACGTTT
CATCGCTCTGGAGTGAATACCACGACGATTTCCGGCAGTTTCTACACATATATTGCAAG
ATGTGGCGTGTTACGGTGAAAACCTGGCCTATTTCCCTAAAGGGTTTATTGAGAATATGT
TTTTCGTCTCAGCCAATCCCTGGGTGAGTTTACCAGTTTTGATTTAAACGTGGCCAATA
TGGACAACTTCTTCGCCCCCGTTTTACCATGGGCAAATATTATACGCAAGGCGACAAGG
TGCTGATGCCGCTGGCGATTGAGTTTCATCATGCCGTTTGTGATGGCTTCCATGTCCGGA
GAATGCTTAATGAATTACAACAGTACTGCGATGAGTGGCAGGGCGGGGCGTAAACGCGT
G
GATCCGGCTTACTAAAAGCCAGATAACAGTATGCGTATTTGCGCGCTGATTTTTGCGGTA
TAAGAATATACTGATATGTATAACCCGAAGTATGTCAAAAAGAGGTATGCTATGAAGCA
GCGTATTACAGTGACAGTTGACAGCGACAGCTATCAGTTGCTCAAGGCATATATGATGTC
AATATCTCCGGTCTGGTAAGCACAACCATGCAGAATGAAGCCCGTCTGCGTGCCGAA
CGCTGGAAAGCGGAAAATCAGGAAGGGATGGCTGAGGTCGCCCGTTTTATTGAAATGAA
C
GGCTCTTTTGTGACGAGAACAGGGGCTGGTGAATGCAGTTTAAGGTTTACACCTATAA
AAGAGAGAGCCGTTATCGTCTGTTTGTGGATGTACAGAGTGATATTATTGACACGCCCGG
GCGACGGATGGTGTATCCCCCTGGCCAGTGCACGTCTGCTGTCAGATAAAGTCTCCCGTG

pJD100GW_complete

A
ACTTTACCCGGTGGTGCATATCGGGGATGAAAGCTGGCGCATGATGACCACCGATATGG
C
CAGTGTGCCGGTCTCCGTTATCGGGGAAGAAGTGGCTGATCTCAGCCACCGCGAAAATG
A
CATCAAAAACGCCATTAACCTGATGTTCTGGGGAATATAAATGTCAGGCTCCCTTATACA
CAGCCAGTCTGCAGGTCGACCATAGTACTGGATATGTTGTGTTTTACAGTATTATGTAG
TCTGTTTTTTATGCAAAATCTAATTTAATATATTGATATTTATATCATTTTACGTTTCTC
GTTTCAGCtttctgtacaaagtggatCGGGCCCCCCTCGAGGTCGACTGTTTAAATA
GCCAGGCCCCCGATTGCAAAGACATTATAGCGAGCTACCAAAGCCATTTCAAACACCTA
GATCACTACCACTTCTACACAGGCCACTCGAGGTCGACGGTATCGATAAGCTTGATATCG
AATTAGGCCAACGCTGTCAAGGGATCGTTTGGGATCGGGGCAATCAGCACCGGCTCAGG
A
CGAAACCATCAAGATGGGTGCCCTCGCGGTGTTGCGCGTCTGCTTGCCTCGCGGCAGTGG
C
GTCGGTTGCGCATGCGGCCGACACCAAAAAGCCCAACTTTGTGGTGATCTTCACCGTAAG
TATGCCGAGTAGACTGGGGGCCCGACGGGGACGGGGACGGTTTTAGCTGTCAGACTG
AG
GCCATCTATCTGGGTTTACGAACGGGGTGTTTATCGCCGAACCGGTTCCCTCCCTGCCATC
CTTTGCGTCTGCTAACTTCCCCTGTTGCCCTTCTGGTCTGTCCTGTCCTTGCTCCCGTAG
GATGACCAGGACGCCATTCAGAACAGCACCCACCCGCACTACATGCCCAGCCTGCACAA
G
TACATCCGCTACCCGGGAGTGGAGCTGTCTCAGTACTTCGTCACCACCCCGTGTGCTG
C
CCCTCGCGGACAAACCTGTGAGTCATCGCAGCGCAGTGGTCCGGTGTCCCAAGCAACAGC
G
TCCACTGTCAAGATCAGATGGTGTCCCTTGTCTCCGTGCTTGCCTCCCCATCATGCCTGC
GCCTGTGCGTGGCAATGTGTAAATGTGATGACCTGACCCGAGTCCATCCTTTCCCTCCCA
CCCTATCAGGTGGCGCGGCCAGTTCGCCACAACACCAACTTCACCAGCGTGCTGCCTC
C
CTACGGTGGCTGGGCCAAGTGGAAAGGGCCTGGGCATCGACCAGTCCTACCTGCCGCTG
TG
GCTCAAGGACCAAGGCTATAACACCTACTACGTGGGCAAGGTGAGCGAGGGAGGACGGA
G
TGGTGGGGCGGGAGGGCTGTGGGGAATGGCAGAGGGAGGGGCCTTTGCAGCCAGACA
GTC
ACACTTGTTGTTGTTGCTGTGAGACTTGACCGGACCGCCTCACATCAGCTGCAAAGCTTG
CTCCTGATGCCCGTTCTTATCGCCTCCCTCACCGCCTCCCGCCCGCCGAGTTCCTTGTG
GACTACTCGGTCAGCAACTACCAGCAGGTGCCCGCGGGCTGGGACGACATCGATGCCCT
G
GTCACCCCTACACCTTTGACTACAACACCCCCGGCTTCAGCCGGTGAGCGGCTCCTATG
TTGCCATAGGGTGGATAGGGTAGCGACTTGGCGCCAGTGGTAGCTGCCCTCTGAACCG
C
TGCCGTCTCTGCTGCCGGACAACGGCTGCGTGGCCAACCTGCTTCCCGCCCCCAACCCA
C
CTGCCCTTGCATCTTATCCTCTTCTTGTGTTTCTGTTGCTCCCTTCCCTCCCCACCTGCAG

pJD100GW_complete

CAACGGCGCGACCCCCAACATCTACCCCGGCGAGTACAGCACTGACGTCATTTCGCGACA
A
GGGCATTGCTCAGATCAAGTCGGCCGTGGCTGCCGGAAAGCCCTTCTACGCGCAGATCT
C
GCCCATCGCGCCGCACACCTCCACCCAGATTTCCACCGACCCCGTACCGGAGTGTGAG
T
GTTTGCATGGGTGCGGCCCTGGTGTCCCTTCATTTGGATCCTAGTGACACGAATCACACGA
TCACGTGCACCAGCCGTACCCGCGGCTGCAACCGCTTTCCCCGGCGGGGCGTTGGGCC
CA
ACCCGGCATGCGAGCAGCAACGCCGCATGCGTACGTGGCGCCGTGCTTGACCCTGCCG
TA
TGCGCGCCGTATGAAACACACACAGCACGCGCCCCTGCCCTCGAGCCTAGCTCCTGATC
C
CCGCCGTGGCCCGCCCCGCCCTTCTCTCCCACCGCAGGACGAGGTCCTTCTTCTACCC
G
CCCATCCCCGCCCCCGCCACTGGCAGCTGTTCTCCGACGCCAACCTGCCCGGGCGGCA
CG
CCCAACAAGAACCTGTACGAGGTGGACGTGAGCGACAAGCCCGCCTGGGTCCGCGCCC
TG
CCGCTGTGAGTACGACAGGAATAATGAGCACACGTACGTGCGTAACGTGAACGCATGCA
C
ACGTGCTTACGAATTGGCATGCTTCCCTTTGGGCTTGTGCTCATTGACACGTTTGATACG
GTAGCCCGGGCGTTCAATGATCATGTCTCCGGCTCCGGCCCAAATCCTGCCCAAACCCA
A
CCCAACTCCACCATTGGCCCAACTCCCTGCACCCACACAGGGCCCAGCAGAACAACCGC
A
CCTACCTGGAGGAGATCTACCGCCTGCGCCTGAGGTCGCTGGCGGCCGTGGACGAGCT
GA
TTGAGCAAGTCGGTGAGTGCATGGGTCCAGTCTGGCACGACGTGTGTTGCTGTGCCGGC
G
TGGCGTGTGGGTGCACAGCTTGGGCTGCAAAGAGCAGCCGTGTGCACCCAAGGTTTCCA
T
TAGCATTGCAAGCAACACCCGCGCGGCCCGTAACATCCCGTAACGTTCCCCTGCGCTGG
T
CCCCTTGCCTCCCTCCCCTCTCCTCCTGACCCTGTGCAGTCAAGACCCTGGATGAGGCG
G
GTGTGCTTGACAACACCTACATCATCTACAGCGCTGACAACGGCTACCACGTGAGTGCAT
GTTGTTACATGTGTGTGCGCGTGTGTCTGTGTGTGTGCGCGCTCTCCCAACCTGAATGC
GTACACGGTCCTCGGCTGGGACCCTACAAAACACACCACGCGCGCTAAACTTCTGTGCC
G
GTAGAAGTAGCTGCAGGCGACGGTGCCTCCTCGCCAATCTCTTCGACCCATTCTCCTCC
CGCCACCCGTCCCTTTCCCGCACCACTTGCAGGTGGGTGCCACCCGCTTCGGCGCGGG
CA
AGACCACGGGCTATGAGGAGGACCTGCGTGTGCCCTTCTCATCCGCGGCCAGGCATC
A
AGGCCAGCCAGTCCGACAAGCCGCAGAACAGCAAGGTGTGGGGGGCGTGGGGGCCGTA

pJD100GW_complete

TG
TGCGGCTGTGACTACGGCTGGGGCTGGCTGGGGGGGCTGGGGGCAGGTTGGGGTTGT
GGG
GTCTGTGGAGCTGGTCGTTCTTGTGCATCCACGCCCCATCCGTA TCCCACTCATATATA
CACACACGCCCCACAGGTTGGCCTGCACGTGGACTTTGCGCCCACCA TTTCTCAGCCTG
G
CCGGCGCCTCGCACCTGCTCGGGGACAAGGGGCTGGACGGCACCCCGCTGGGCCTGG
TGA
GTGGCGGATCGACGCGTGTTGGCAGGGAGGTCGTGACCAGCTGACTGACGCCTGGCGG
CG
GCGCGTTGAGGCGGCGTGTCGCGCTTACGCTCTCTTGGGTCGCGTCTTGGCGCCCCA
CC
TTTCCGACCCTCTAGCGCTCGCCACCTCTTGCTTGCCCCTCGCTGACCTGTTGACCTCCC
TCACCACCCTCTCCACCAACGACGACGCGCCACAGTACGCCAACGACGACGGCACTCT
T
CGCTCCGACTACCCTCGTCCGGAGCAGCACCCGCCAGCAGTTCCAGGGCGAGTTCTGGG
GC
GGCTGGAGTGATGAGCTGCTGCAGAACCTCAGGTCCCAGCCCAACAACACTTGGAAGGT
G
GTGCGCACGTATGACGAGAGCAGCAAGCAGGGATGGAAGCTCATCGCGCAGTGACCA
GT
GAGTACTGGTAGTTGGCAGGGCCGCTGCCAGGGCTGGGCAGAGTGTGCGTGGCACGGT
GT
GCGCCTGTCTCGCGGTTTCCACACACACAATCCAGAGCCTACGCACACACACGAAC
CCGCTTACCCCTGCCTTCCCGCGCTCGCCCCCTGTACGGCACACAGACGAGCGCGAGCT
G
TACGACCTGCGCAAGGACCCCGGTGAGCTGTACAACATCTACGACAAGGCCAAGCCCGC
C
GTGCGCAGCCGCCTGGAGGGGCTGCTGGCGGTGCTGGCCGTGTGCAAGGGGGAGAGC
TGC
TCCAACCCGTGGAAGGTGAGGCCTGGTCGGGCGTGTGTGCAGGGCTGCCGGCGGTTGC
GC
GTGGGCAACAGTGGA AACTACAGTTGCATGCATGGGCACGAACCCATTCCCCTCCTCTG
C
CCCCGCCTACAGATCCTGCACCCCGACGGCACCGTCAAGAACTTCACCCAGGCACTCAA
C
TCCAAGTACGACCGCATCTACAACGCAATCCGCCCTTCACCTACAAGACGTGCCTGCAG
TACCTGGTGC GTTGCGCCGGGGGCTTGCCGCGTGTGTGGGGTGCGGGCACGCGGCC
AGG
CCTGCTGTTGACCTTCTCACATGCAACGCTCACCCCGCCCGTACTAATTTCCATGCCT
AACACACACCCACAGGATTGGGACAACGAGGACAGTCAGTTTAAGACGCAGATCCGCGG
C
GCCAACCCCGCAGCCGGCGTGGGGCCACCACCGCCTGCTCACCGCCGCCAGCGAGCGC
GCC
ATCGCCACCCGCGCCGCGCCAGGCCGCGTCAAGTCCGAGCTGGCGGAGCGGCCG
GCT

pJD100GW_complete

GTGTTCCAGGCAAAGGTTCGAGGTGAGAGAAAGAGTAGAGCAAGCGGGGGTGGGCCTTG
TG
GGGAGCGGGCGTCAGTGAAGAAAGTGGTCTGGGCGGCGTTGGGGGCGCGCCGGGGC
GGG
GACGTGGATTTCGACGGGATAGGTTCCGGCTCGTGTCTGTTTGTCTTTTGGCTCACTGTGTC
GCTTGCACCCCAACCCAATCCACCCCCACAGGAGAAGTCGGTGCCGGTGCCCCAGGACA
T
CCTGAAGGCCGACGTGGAGAAGTGGTTCGCCTTCAACAATGCCGAGTACTACCTGGCTT
A
GATGGTCGATATTATATAAAAGCCAATGCAAGCGCGCATGGACATAGCGCATCGACCAAG
CGCCACCATGGCTTGGGTTTTCTTTGATACGGTTGGGCTAAGTTTGTATATGTGGGTTTTGG
ACGTGGCCGCTTGGTCAGTAAGCGGTCCACGTGGTAATGCCGTGTGCGTGATCCCCCT
G
GAGTGGTGTGGGGTAGGTTAATGACAAGGTAAAGCAGTGGGTACATGCACGCACAATT
G
CGTCGGACAGAAGAGTACCGGGACGTGATCCATGAAGAAATGGTATAAGGCGCCTCATG
C
ATCCGTAGATGGCGCTCACGTGCGCTTAATTGCATGCGCGCCGTCACCTGTTTGTGATT
GCGGAATTAAGTGGTTAGGCCACTTGGTTGCGAAGAGTGTTGTGCGCCGCCCTCGGTAG
T
TCGGTGCGCCGCTGGAACTTGCCTTGGTGTCTGAGCTGCGGAGCTCTGGTTGGTCAC
T
TGGTCTGCTGTTGTGCCTGTATGTTAAGAGGTGCTGGGTAAAGAAGTGGGCTTGCCTGGA
TGTTGACTGGCTGGCAGATAGGACTGTGCAGCGGCCTTGCTGCCGCGTGGTAAAGACTG
A
GAAAGGTATGTACCCGGCGTGGTGCCATGGAGCCATGGAACGAAGCCCTGTAAACATGC
T
GTGTGCTTCAGAGCAGGGCATAACCGTACTGAATAATGTCGTGGGCACAACACCTTGACTA
TATATGGAGGCGGGGGTGGCTTGGCGGTGCCGGAGCACCGAGCCACCGACGGGTC
CT
TTTGATGCCGCTCGCCGATCACCTACCCTGGGTGACGCCGTGTGCGCGTGACAAGAAA
G
CACCGCAGCCGGCGAAGCGGGCTTCCCTGTAACGCCATACACATTGTAGGCAGACGCTA
C
GAAGGAGTCACGTAGCATCCCAAGACCCAAGCTACCGTATTCTCTCTTCAATTGATATGG
ACTCTTCAAGTAATCCTTGAGATGGCGCCGCCACCGCGCAGACGCCGCCGACACCCCG
C
ACAGGCTTGGGAGTTGGGAGCAGGACCATTAGACAGGATGCACTTAACGGCATGACACA
C
ACTTGGAGCGGGGTTGTGTGCCGCCCAACTGTGCGTTATGCTGCTATCCCACACGCAT
G
TTGGAGATGGGCTCCACCACGCGGCTGTGGCAGGGCAGGCCTCTGGATTTCGTGGGGCC
TG
CGGACCACTAGCGGACCGGAGGGGTCGGGGTCAGTTGGGGCCCAGCACCTCATCGGGG
AA
ATGGAGTCTGGGGGAAGGGAAATGGGATCCGTTGACCTGCAGGTCGCCAGCTTTTGTTC

pJD100GW_complete

C
CTTTAGTGAGGGTTAATTTTCGAGCTTGGCGTAATCATGGTCATAGCTGTTTTCTGTGTGA
AATTGTTATCCGCTCACAATTCACACAACATACGAGCCGGAAGCATAAAGTGTAAGCC
TGGGGTGCCTAATGAGTGAGCTAACTCACATTAATTGCGTTGCGCTCACTGCCCGCTTTC
CAGTCGGGAAACCTGTCGTGCCAGCTGCATTAATGAATCGGCCAACGCGCGGGGAGAGG
C
GGTTTGCATATTGGGCGCTCTTCCGCTTCCTCGCTCACTGACTCGCTGCGCTCGGTTCGTT
CGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTATCCACAGAATC
A
GGGGATAACGCAGGAAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAA
A
AAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAT
CGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCC
C
CCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCC
GCCTTTCTCCCTTCGGGAAGCGTGCGCTTTTCTCATAGCTCACGCTGTAGGTATCTCAGT
TCGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTCAGCCCGA
C
CGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCG
C
CACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTAC
A
GAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGC
GCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAA
ACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAA
GGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAAAC
TCACGTTAAGGGATTTTGGTTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTA
AATTAATAATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAACTTGGTCTGACAGT
TACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATA
GTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCC
C
AGTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAAC
CAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCTGCAACTTTATCCGCCTCCATCCA
G
TCTATTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTTCGCGCAAC
GTTGTTGCCATTGCTACAGGCATCGTGGTGTACGCTCGTTCGTTTGGTATGGCTTCATTC
AGCTCCGGTCCCAACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAAAAGCG
GTTAGCTCCTTCGGTCTCCGATCGTTGTCAGAAGTAAGTTGGCCGCGAGTGTTATCACTC
ATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGATGCTTTTTCT
GTGACTGGTGAAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGC
TCTTGCCCGGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTC
ATCATTGGAACGTTCTTCGGGGCGAAAACCTCAAGGATCTTACCGCTGTTGAGATCC
AGTTTCGATGTAACCCACTCGTGCACCCAACTGATCTTCAGCATCTTTTACTTTACCAGC
GTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAGGGAATAAGGGCGAC
A
CGGAAATGTTGAATACTCATACTCTTCTTTTTCAATATTATTGAAGCATTATCAGGGT
TATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAATAGGGGTT

pJD100GW_complete

CCGCGCACATTTCCCCGAAAAGTGC