**== Enzymes that DO NOT MAP to this sequence:**

AarI AbsI AgeI AjuI AjuI AloI AloI ApaI AscI AvrII BaeI BaeI BarI BarI BplI CspCI CspCI EcoNI FalI FseI FspAI MauBI MluI NotI PacI PasI SfiI SgrAI SgrDI SnaBI SwaI XbaI XcmI

**== Total Number of Hits per Enzyme:**

AatII 7 BseYI 3 KroI 2 RsrII 1 AclI 3 BsgI 3 MfeI 2 SacI 1 AflII 3 BsmI 6 NaeI 2 SacII 1 AlwNI 2 BspHI 5 NarI 3 SalI 2 ApaLI 2 BspMI 2 NcoI 1 SapI 2 ArsI 1 BsrBI 7 NdeI 2 ScaI 1 ArsI 1 BsrDI 4 NheI 1 SexAI 1 BamHI 2 BstEII 2 NmeAIII 6 SmaI 2 BbvCI 2 BstXI 1 NruI 2 SpeI 2 BcgI 7 BtgZI 4 PflMI 2 SphI 1 BcgI 7 BtsI 4 PfoI 3 SspI 5 BciVI 3 ClaI 1 PmeI 1 StuI 1 BclI 4 DraIII 1 PshAI 1 TaqII 5 BglI 5 DrdI 1 PsiI 4 Tth111I 1 BglII 2 EciI 4 PspXI 1 XhoI 1 Bpu10I 3 EcoRI 1 PsrI 1 XmnI 4 BsaBI 3 EcoRV 1 PsrI 1 BsaXI 1 HindIII 1 PstI 1 BsaXI 1 HpaI 1 PvuI 3 BseRI 3 KpnI 1 PvuII 2

== Linear Map of Sequence:

BglII

\

1 agatctaaaaaagcaccgactcggtgccactttttcaagttgataacggactagccttat 60

tctagattttttcgtggctgagccacggtgaaaaagttcaactattgcctgatcggaata

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

SapI SacI SapI

\ \ \

61 tttaacttgctatttctagctctaaaacggaagagctcgctcttccgaagtattgaggaa 120

aaattgaacgataaagatcgagattttgccttctcgagcgagaaggcttcataactcctt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BclI BsaBI PsiI

\ \ \

121 aacatacctatataaatgatcaacatcaggaaagagcagttgagaattataagaattggc 180

ttgtatggatatatttactagttgtagtcctttctcgtcaactcttaatattcttaaccg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

AflII AflII

\ \

181 aaatggtcttaagaaccctctgcttaagattttcaaaatttcctttagaatcaaagtgtc 240

tttaccagaattcttgggagacgaattctaaaagttttaaaggaaatcttagtttcacag

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

241 ctattgttcgtttgttgaaaacacagttcgatttattgactataataaattgatagtttt 300

gataacaagcaaacaacttttgtgtcaagctaaataactgatattatttaactatcaaaa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

301 aaatatagaggcacgactaagagagtttggttttgttttggttagggaccaaaaaaagta 360

tttatatctccgtgctgattctctcaaaccaaaacaaaaccaatccctggtttttttcat

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

361 tacataacgaataaaaaaggatttaagtgcaaatggtaaaaaagtgtcgagtttttcttg 420

atgtattgcttattttttcctaaattcacgtttaccattttttcacagctcaaaaagaac

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

NmeAIII

BcgI

ArsI BsmI ArsI BcgI

\ \\ \ \ \

421 agttgattgtgctgtaatgagactctgcattcggcatttgactcggcttttcctactcgt 480

tcaactaacacgacattactctgagacgtaagccgtaaactgagccgaaaaggatgagca

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BglII

\

481 gccgtatttcaggctgcaagtcgaacagatctcgctgcctgttatgtggcccacaaacca 540

cggcataaagtccgacgttcagcttgtctagagcgacggacaatacaccgggtgtttggt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

541 agacacgttttatggccattaaagctggctgatcgtcgccaaacaccaaatacataatga 600

tctgtgcaaaataccggtaatttcgaccgactagcagcggtttgtggtttatgtattact

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

601 atatgtacacattcgagaaagaagcgatcaaagaagcgtcttcgggcggagtaggagaat 660

tatacatgtgtaagctctttcttcgctagtttcttcgcagaagcccgcctcatcctctta

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsmI

EciI BseRI

\ \ \

661 gcggaggagaaggagaacgagctgatctagtatctctccacaatccaatgccaactgacc 720

cgcctcctcttcctcttgctcgactagatcatagagaggtgttaggttacggttgactgg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BtgZI PflMI PvuI

\ \ \

721 aactggccatattcggagcaatttgaagccaatttccatcgcctggcgatcgctccattc 780

ttgaccggtataagcctcgttaaacttcggttaaaggtagcggaccgctagcgaggtaag

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

SmaI

\

781 ttggctatatgtttttcaccgttacccggggccattttcaaagactcgtcggcaagataa 840

aaccgatatacaaaaagtggcaatgggccccggtaaaagtttctgagcagccgttctatt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

Bpu10I

BbvCI

BsmI NruI

\ \ \

841 gattgtgtcactcgctgtctctcttcatttgtcgaagaatgctgaggaatttcgcgatga 900

ctaacacagtgagcgacagagagaagtaaacagcttcttacgactccttaaagcgctact

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

AatII BtgZI

\ \

901 cgtcggcgagtattttgaagaatgagaataatttgtatttatacgaaaatcagttagtgg 960

gcagccgctcataaaacttcttactcttattaaacataaatatgcttttagtcaatcacc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

961 aattttctacaaaaacatgttatctatagataattttgttgcaaaatatgttgactatga 1020

ttaaaagatgtttttgtacaatagatatctattaaaacaacgttttatacaactgatact

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PsiI

\

1021 caaagattgtatgtatatacctttaatgtattctcattttcttatgtatttataatggca 1080

gtttctaacatacatatatggaaattacataagagtaaaagaatacataaatattaccgt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsrDI BcgI

\ \

1081 atgatgatactgatgatattttaagatgatgccagaccacaggctgatttctgcgtcttt 1140

tactactatgactactataaaattctactacggtctggtgtccgactaaagacgcagaaa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BtsI BcgI XmnI

\ \ \

1141 tgccgaacgcagtgcatgtgcggttgttgttttttggaatagtttcaattttcggactgt 1200

acggcttgcgtcacgtacacgccaacaacaaaaaaccttatcaaagttaaaagcctgaca

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

1201 ccgctttgatttcagtttcttggcttattcaaaaagcaaagtaaagccaaaaaagcgaga 1260

ggcgaaactaaagtcaaagaaccgaataagtttttcgtttcatttcggttttttcgctct

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

1261 tggcaataccaaatgcggcaaaacggtagtggaaggaaaggggtgcggggcagcggaagg 1320

accgttatggtttacgccgttttgccatcaccttcctttccccacgccccgtcgccttcc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BseYI AatII

\ \

1321 aagggtggggcggggcgtggcggggtctgtggctgggcgcgacgtcaccgacgttggagc 1380

ttcccaccccgccccgcaccgccccagacaccgacccgcgctgcagtggctgcaacctcg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

1381 cactcctttgaccatgtgtgcgtgtgtgtattattcgtgtctcgccactcgccggttgtt 1440

gtgaggaaactggtacacacgcacacacataataagcacagagcggtgagcggccaacaa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

SphI

\

1441 tttttctttttatctcgctctctctagcgccatctcgtacgcatgctcaacgcaccgcat 1500

aaaaagaaaaatagagcgagagagatcgcggtagagcatgcgtacgagttgcgtggcgta

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

1501 gttgccgtgtcctttatgcgtcattttggctcgaaataggcaattatttaaacaaagatt 1560

caacggcacaggaaatacgcagtaaaaccgagctttatccgttaataaatttgtttctaa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

1561 agtcaacgaaaacgctaaaataaataagtctacaatatggttacttattgccatgtgtgt 1620

tcagttgcttttgcgattttatttattcagatgttataccaatgaataacggtacacaca

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsgI

\

1621 gcagccaacgatagcaacaaaagcaacaacacagtggctttccctctttcactttttgtt 1680

cgtcggttgctatcgttgttttcgttgttgtgtcaccgaaagggagaaagtgaaaaacaa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

1681 tgcaagcgcgtgcgagcaagacggcacgaccggcaaacgcaattacgctgacaaagagca 1740

acgttcgcgcacgctcgttctgccgtgctggccgtttgcgttaatgcgactgtttctcgt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

NarI BsmI MfeI

\ \ \

1741 gacgaagttttggccgaaaaacatcaaggcgcctgatacgaatgcatttgcaataacaat 1800

ctgcttcaaaaccggctttttgtagttccgcggactatgcttacgtaaacgttattgtta

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

SspI

\

1801 tgcgatatttaatattgtttatgaagctgtttgacttcaaaacacacaaaaaaaaaaata 1860

acgctataaattataacaaatacttcgacaaactgaagttttgtgtgtttttttttttat

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

1861 aaacaaattatttgaaagagaattaggaatcggacagcttatcgttacgggctaacagca 1920

tttgtttaataaactttctcttaatccttagcctgtcgaatagcaatgcccgattgtcgt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

AatII AlwNI

\ \

1921 caccgagacgaaatagcttacctgacgtcacagcctctggaagaactgccgccaagcaga 1980

gtggctctgctttatcgaatggactgcagtgtcggagaccttcttgacggcggttcgtct

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

1981 gagagagagaaaaagagggagagcagcttagaccgcatgtgcttgtgtgtgaggcgtctc 2040

ctctctctctttttctccctctcgtcgaatctggcgtacacgaacacacactccgcagag

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsgI ClaI

\ \

2041 tctcttcgtctcctgtttgcgcaaacgcatagactgcactgagaaaatcgattacctatt 2100

agagaagcagaggacaaacgcgtttgcgtatctgacgtgactcttttagctaatggataa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

SspI BsaBI

\ \

2101 ttttatgaatgaatatttgcactattactattcaaaactattaagatagcaatcacattc 2160

aaaatacttacttataaacgtgataatgataagttttgataattctatcgttagtgtaag

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BclI

Bpu10I BtgZI

\ \\

2161 aatagccaaatactataccacctgagcgatgcaacgaaatgatcaatttgagcaaaaatg 2220

ttatcggtttatgatatggtggactcgctacgttgctttactagttaaactcgtttttac

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

XmnI BcgI

\ \

2221 ctgcatatttaggacggcatcattatagaaatgcttcttgctgtgtacttttctctcgtc 2280

gacgtataaatcctgccgtagtaatatctttacgaagaacgacacatgaaaagagagcag

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PvuII BcgI AflII SpeI

\ \ \ \

2281 tggcagctgtttcgccgttattgttaaaaccggcttaagttaggtgtgttttctacgact 2340

accgtcgacaaagcggcaataacaattttggccgaattcaatccacacaaaagatgctga

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

2341 agtgatgcccctactagaagatgtgtgttgcacaaatgtccctgaataaccaatttgaag 2400

tcactacggggatgatcttctacacacaacgtgtttacagggacttattggttaaacttc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsgI SspI

\ \

2401 tgcagatagcagtaaacgtaagctaatatgaatattatttaactgtaatgttttaatatc 2460

acgtctatcgtcatttgcattcgattatacttataataaattgacattacaaaattatag

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

NdeI

\

2461 gctggacattactaataaacccactataaacacatgtacatatgtatgttttggcataca 2520

cgacctgtaatgattatttgggtgatatttgtgtacatgtatacatacaaaaccgtatgt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

2521 atgagtagttggggaaaaaatgtgtaaaagcaccgtgaccatcacagcataaagataacc 2580

tactcatcaaccccttttttacacattttcgtggcactggtagtgtcgtatttctattgg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PvuII

\

2581 agctgaagtatcgaatatgagtaacccccaaattgaatcacatgccgcaactgataggac 2640

tcgacttcatagcttatactcattgggggtttaacttagtgtacggcgttgactatcctg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

NcoI

\

2641 ccatggaagtacactcttcatggcgatatacaagacacacacaagcacgaacacccagtt 2700

ggtaccttcatgtgagaagtaccgctatatgttctgtgtgtgttcgtgcttgtgggtcaa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PsrI

\

2701 gcggaggaaattctccgtaaatgaaaacccaatcggcgaacaattcatacccatatatgg 2760

cgcctcctttaagaggcatttacttttgggttagccgcttgttaagtatgggtatatacc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsrDI

PsrI BsrBI

\ \ \

2761 taaaagttttgaacgcgacttgagagcggagagcattgcggctgataaggttttagcgct 2820

attttcaaaacttgcgctgaactctcgcctctcgtaacgccgactattccaaaatcgcga

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PsiI

\

2821 aagcgggctttataaaacgggctgcgggaccagttttcatatcactaccgtttgagttct 2880

ttcgcccgaaatattttgcccgacgccctggtcaaaagtatagtgatggcaaactcaaga

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BseRI

BciVI BsrBI

\\ \

2881 tgtgctgtgtggatactcctcccgacacaaagccgctccatcagccagcagtcgtctaat 2940

acacgacacacctatgaggagggctgtgtttcggcgaggtagtcggtcgtcagcagatta

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

SpeI fwd primer

KpnI BstXI BstEII

\ \ \ \

2941 ccagagaccccggatcggggtacctactagtccagtgtggtggaattggaggcggttacc 3000

ggtctctggggcctagccccatggatgatcaggtcacaccaccttaacctccgccaatgg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PfoI

AatII BamHI

\ \

3001 catacgatgttcctgactatgcgggctatccctatgacgtcccggactatgcaggatcct 3060

gtatgctacaaggactgatacgcccgatagggatactgcagggcctgatacgtcctagga

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BclI

BspHI

NdeI EcoRV

\ \ \ \ dhfr

3061 atccatatgacgttccagattacgctgatatcatgatcagtctgattgcggcgttagcgg 3120

taggtatactgcaaggtctaatgcgactatagtactagtcagactaacgccgcaatcgcc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PflMI BspMI

\ \

3121 tagattacgttatcggcatggaaaacgccatgccgtggaacctgcctgccgatctcgcct 3180

atctaatgcaatagccgtaccttttgcggtacggcaccttggacggacggctagagcgga

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PmeI TaqII

\ \

3181 ggtttaaacgcaacaccttaaataaacccgtgattatgggccgccatacctgggaatcaa 3240

ccaaatttgcgttgtggaatttatttgggcactaatacccggcggtatggacccttagtt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

Bpu10I

SspI BbvCI

\ \

3241 tcggtcgtccgttgccaggacgcaaaaatattatcctcagcagtcaaccgagtacggacg 3300

agccagcaggcaacggtcctgcgtttttataataggagtcgtcagttggctcatgcctgc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PvuI BtgZI BglI

\ \ \

3301 atcgcgtaacgtgggtgaagtcggtggatgaagccatcgcggcgtgtggtgacgtaccag 3360

tagcgcattgcacccacttcagccacctacttcggtagcgccgcacaccactgcatggtc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

3361 aaatcatggtgattggcggcggtcgcgttattgaacagttcttgccaaaagcgcaaaaac 3420

tttagtaccactaaccgccgccagcgcaataacttgtcaagaacggttttcgcgtttttg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PfoI

\

3421 tgtatctgacgcatatcgacgcagaagtggaaggcgacacccatttcccggattacgagc 3480

acatagactgcgtatagctgcgtcttcaccttccgctgtgggtaaagggcctaatgctcg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BcgI EcoRI BcgI

\ \ \

3481 cggatgactgggaatcggtattcagcgaattccacgatgctgatgcgcagaactctcaca 3540

gcctactgacccttagccataagtcgcttaaggtgctacgactacgcgtcttgagagtgt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsrBI HindIII

\ \ T2A

3541 gctattgctttgagattctggagcggcgaaagcttgagggcagaggaagtcttctaacat 3600

cgataacgaaactctaagacctcgccgctttcgaactcccgtctccttcagaagattgta

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

NheI

BseRI

\ \ puro

3601 gcggtgacgtggaggagaatcccggccctgctagcggtagcggcagcggtagcatgaccg 3660

cgccactgcacctcctcttagggccgggacgatcgccatcgccgtcgccatcgtactggc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

AatII

TaqII Tth111I SmaI

\ \ \ \

3661 agtacaagcccacggtgcgcctcgccacccgcgacgacgtcccccgggccgtacgcaccc 3720

tcatgttcgggtgccacgcggagcggtgggcgctgctgcagggggcccggcatgcgtggg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

SalI RsrII

\ \

3721 tcgccgccgcgttcgccgactaccccgccacgcgccacaccgtcgacccggaccgccaca 3780

agcggcggcgcaagcggctgatggggcggtgcgcggtgtggcagctgggcctggcggtgt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BstEII

BsrBI

\ \

3781 tcgagcgggtcaccgagctgcaagaactcttcctcacgcgcgtcgggctcgacatcggca 3840

agctcgcccagtggctcgacgttcttgagaaggagtgcgcgcagcccgagctgtagccgt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

SacII

NarI BglI

\ \ \

3841 aggtgtgggtcgcggacgacggcgccgcggtggcggtctggaccacgccggagagcgtcg 3900

tccacacccagcgcctgctgccgcggcgccaccgccagacctggtgcggcctctcgcagc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsrBI

NmeAIII

\ \

3901 aagcgggggcggtgttcgccgagatcggcccgcgcatggccgagttgagcggttcccggc 3960

ttcgcccccgccacaagcggctctagccgggcgcgtaccggctcaactcgccaagggccg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsaXI

NmeAIII StuI NarI BglI

\ \ \ \ \

3961 tggccgcgcagcaacagatggaaggcctcctggcgccgcaccggcccaaggagcccgcgt 4020

accggcgcgtcgttgtctaccttccggaggaccgcggcgtggccgggttcctcgggcgca

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsaXI BcgI

\ \

4021 ggttcctggccaccgtcggcgtctcgcccgaccaccagggcaagggtctgggcagcgccg 4080

ccaaggaccggtggcagccgcagagcgggctggtggtcccgttcccagacccgtcgcggc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PfoI

BcgI NmeAIII

\ \\

4081 tcgtgctccccggagtggaggcggccgagcgcgccggggtgcccgccttcctggagacct 4140

agcacgaggggcctcacctccgccggctcgcgcggccccacgggcggaaggacctctgga

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

NmeAIII BsrBI AatII

\ \ \

4141 ccgcgccccgcaacctccccttctacgagcggctcggcttcaccgtcaccgccgacgtcg 4200

ggcgcggggcgttggaggggaagatgctcgccgagccgaagtggcagtggcggctgcagc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

SexAI XhoI

DraIII PspXI BamHI

\ \ puro \ \

4201 aggtgcccgaaggaccgcgcacctggtgcatgacccgcaagcccggtgcctgactcgagg 4260

tccacgggcttcctggcgcgtggaccacgtactgggcgttcgggccacggactgagctcc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsmI

\

4261 gatccagacatgataagatacattgatgagtttggacaaaccacaactagaatgcagtga 4320

ctaggtctgtactattctatgtaactactcaaacctgtttggtgttgatcttacgtcact

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BtsI PsiI

\ \

4321 aaaaaatgctttatttgtgaaatttgtgatgctattgctttatttgtaaccattataagc 4380

ttttttacgaaataaacactttaaacactacgataacgaaataaacattggtaatattcg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsmI

HpaI MfeI

\ \ \

4381 tgcaataaacaagttaacaacaacaattgcattcattttatgtttcaggttcagggggag 4440

acgttatttgttcaattgttgttgttaacgtaagtaaaatacaaagtccaagtccccctc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BclI

BsaBI

\\

4441 gtgtgggaggttttttaaagcaagtaaaacctctacaaatgtggtatggctgattatgat 4500

cacaccctccaaaaaatttcgttcattttggagatgtttacaccataccgactaatacta

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

reverse primer

SalI TaqII BcgI

\ \ \

4501 cagtcgaccgatgcccttgagagccttcaacccagtcagctccttccggtgggcgcgggg 4560

gtcagctggctacgggaactctcggaagttgggtcagtcgaggaaggccacccgcgcccc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

PshAI BcgI

\ \

4561 catgactatcgtcgccgcacttatgactgtcttctttatcatgcaactcgtaggacaggt 4620

gtactgatagcagcggcgtgaatactgacagaagaaatagtacgttgagcatcctgtcca

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

NaeI

KroI

\ \

4621 gccggcagcgctctgggtcattttcggcgaggaccgctttcgctggagcgcgacgatgat 4680

cggccgtcgcgagacccagtaaaagccgctcctggcgaaagcgacctcgcgctgctacta

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

4681 cggcctgtcgcttgcggtattcggaatcttgcacgccctcgctcaagccttcgtcactgg 4740

gccggacagcgaacgccataagccttagaacgtgcgggagcgagttcggaagcagtgacc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

NaeI

AclI KroI BglI

\ \ \ \

4741 tcccgccaccaaacgtttcggcgagaagcaggccattatcgccggcatggcggccgacgc 4800

agggcggtggtttgcaaagccgctcttcgtccggtaatagcggccgtaccgccggctgcg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BseYI NruI

\ \

4801 gctgggctacgtcttgctggcgttcgcgacgcgaggctggatggccttccccattatgat 4860

cgacccgatgcagaacgaccgcaagcgctgcgctccgacctaccggaaggggtaatacta

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BspMI

\

4861 tcttctcgcttccggcggcatcgggatgcccgcgttgcaggccatgctgtccaggcaggt 4920

agaagagcgaaggccgccgtagccctacgggcgcaacgtccggtacgacaggtccgtcca

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

4921 agatgacgaccatcagggacagcttcaaggatcgctcgcggctcttaccagccagcaaaa 4980

tctactgctggtagtccctgtcgaagttcctagcgagcgccgagaatggtcggtcgtttt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

EciI

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4981 ggccaggaaccgtaaaaaggccgcgttgctggcgtttttccataggctccgcccccctga 5040

ccggtccttggcatttttccggcgcaacgaccgcaaaaaggtatccgaggcggggggact

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

DrdI

\

5041 cgagcatcacaaaaatcgacgctcaagtcagaggtggcgaaacccgacaggactataaag 5100

gctcgtagtgtttttagctgcgagttcagtctccaccgctttgggctgtcctgatatttc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BciVI

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5101 ataccaggcgtttccccctggaagctccctcgtgcgctctcctgttccgaccctgccgct 5160

tatggtccgcaaagggggaccttcgagggagcacgcgagaggacaaggctgggacggcga

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

EciI

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5161 taccggatacctgtccgcctttctcccttcgggaagcgtggcgctttctcaatgctcacg 5220

atggcctatggacaggcggaaagagggaagcccttcgcaccgcgaaagagttacgagtgc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BseYI ApaLI

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5221 ctgtaggtatctcagttcggtgtaggtcgttcgctccaagctgggctgtgtgcacgaacc 5280

gacatccatagagtcaagccacatccagcaagcgaggttcgacccgacacacgtgcttgg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

5281 ccccgttcagcccgaccgctgcgccttatccggtaactatcgtcttgagtccaacccggt 5340

ggggcaagtcgggctggcgacgcggaataggccattgatagcagaactcaggttgggcca

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

AlwNI

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5341 aagacacgacttatcgccactggcagcagccactggtaacaggattagcagagcgaggta 5400

ttctgtgctgaatagcggtgaccgtcgtcggtgaccattgtcctaatcgtctcgctccat

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

5401 tgtaggcggtgctacagagttcttgaagtggtggcctaactacggctacactagaaggac 5460

acatccgccacgatgtctcaagaacttcaccaccggattgatgccgatgtgatcttcctg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

5461 agtatttggtatctgcgctctgctgaagccagttaccttcggaaaaagagttggtagctc 5520

tcataaaccatagacgcgagacgacttcggtcaatggaagcctttttctcaaccatcgag

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

5521 ttgatccggcaaacaaaccaccgctggtagcggtggtttttttgtttgcaagcagcagat 5580

aactaggccgtttgtttggtggcgaccatcgccaccaaaaaaacaaacgttcgtcgtcta

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

5581 tacgcgcagaaaaaaaggatctcaagaagatcctttgatcttttctacggggtctgacgc 5640

atgcgcgtctttttttcctagagttcttctaggaaactagaaaagatgccccagactgcg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BspHI

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5641 tcagtggaacgaaaactcacgttaagggattttggtcatgagattatcaaaaaggatctt 5700

agtcaccttgcttttgagtgcaattccctaaaaccagtactctaatagtttttcctagaa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

5701 cacctagatccttttaaattaaaaatgaagttttaaatcaatctaaagtatatatgagta 5760

gtggatctaggaaaatttaatttttacttcaaaatttagttagatttcatatatactcat

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

5761 aacttggtctgacagttaccaatgcttaatcagtgaggcacctatctcagcgatctgtct 5820

ttgaaccagactgtcaatggttacgaattagtcactccgtggatagagtcgctagacaga

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

5821 atttcgttcatccatagttgcctgactccccgtcgtgtagataactacgatacgggaggg 5880

taaagcaagtaggtatcaacggactgaggggcagcacatctattgatgctatgccctccc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BsrDI

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5881 cttaccatctggccccagtgctgcaatgataccgcgagacccacgctcaccggctccaga 5940

gaatggtagaccggggtcacgacgttactatggcgctctgggtgcgagtggccgaggtct

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BglI EciI NmeAIII

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5941 tttatcagcaataaaccagccagccggaagggccgagcgcagaagtggtcctgcaacttt 6000

aaatagtcgttatttggtcggtcggccttcccggctcgcgtcttcaccaggacgttgaaa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

6001 atccgcctccatccagtctattaattgttgccgggaagctagagtaagtagttcgccagt 6060

taggcggaggtaggtcagataattaacaacggcccttcgatctcattcatcaagcggtca

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

AclI BsrDI PstI

\ \ \

6061 taatagtttgcgcaacgttgttgccattgctgcaggcatcgtggtgtcacgctcgtcgtt 6120

attatcaaacgcgttgcaacaacggtaacgacgtccgtagcaccacagtgcgagcagcaa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

6121 tggtatggcttcattcagctccggttcccaacgatcaaggcgagttacatgatcccccat 6180

accataccgaagtaagtcgaggccaagggttgctagttccgctcaatgtactagggggta

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

TaqII PvuI

\ \

6181 gttgtgcaaaaaagcggttagctccttcggtcctccgatcgttgtcagaagtaagttggc 6240

caacacgttttttcgccaatcgaggaagccaggaggctagcaacagtcttcattcaaccg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BtsI BtsI

\ \

6241 cgcagtgttatcactcatggttatggcagcactgcataattctcttactgtcatgccatc 6300

gcgtcacaatagtgagtaccaataccgtcgtgacgtattaagagaatgacagtacggtag

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

ScaI BcgI

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6301 cgtaagatgcttttctgtgactggtgagtactcaaccaagtcattctgagaatagtgtat 6360

gcattctacgaaaagacactgaccactcatgagttggttcagtaagactcttatcacata

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

TaqII BcgI

\ \

6361 gcggcgaccgagttgctcttgcccggcgtcaacacgggataataccgcgccacatagcag 6420

cgccgctggctcaacgagaacgggccgcagttgtgccctattatggcgcggtgtatcgtc

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

AclI

XmnI

\

6421 aactttaaaagtgctcatcattggaaaacgttcttcggggcgaaaactctcaaggatctt 6480

ttgaaattttcacgagtagtaaccttttgcaagaagccccgcttttgagagttcctagaa

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

ApaLI

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6481 accgctgttgagatccagttcgatgtaacccactcgtgcacccaactgatcttcagcatc 6540

tggcgacaactctaggtcaagctacattgggtgagcacgtgggttgactagaagtcgtag

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

6541 ttttactttcaccagcgtttctgggtgagcaaaaacaggaaggcaaaatgccgcaaaaaa 6600

aaaatgaaagtggtcgcaaagacccactcgtttttgtccttccgttttacggcgtttttt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

SspI

\

6601 gggaataagggcgacacggaaatgttgaatactcatactcttcctttttcaatattattg 6660

cccttattcccgctgtgcctttacaacttatgagtatgagaaggaaaaagttataataac

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BciVI

BspHI BsrBI

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6661 aagcatttatcagggttattgtctcatgagcggatacatatttgaatgtatttagaaaaa 6720

ttcgtaaatagtcccaataacagagtactcgcctatgtataaacttacataaatcttttt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

AatII

\

6721 taaacaaataggggttccgcgcacatttccccgaaaagtgccacctgacgtctaagaaac 6780

atttgtttatccccaaggcgcgtgtaaaggggcttttcacggtggactgcagattctttg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

BspHI

\

6781 cattattatcatgacattaacctataaaaataggcgtatcacgaggccctttcgtcttca 6840

gtaataatagtactgtaattggatatttttatccgcatagtgctccgggaaagcagaagt

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

XmnI BspHI

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6841 aggaattaattctatattctaaaaacacaaatgatacttctaaaaaaaatcatgaatggc 6900

tccttaattaagatataagatttttgtgtttactatgaagattttttttagtacttaccg

^ \* ^ \* ^ \* ^ \* ^ \* ^ \*

6901 atcaactctgaatcaaatctttgcagatgcacctacttctcatttccactgtcacatcat 6960

tagttgagacttagtttagaaacgtctacgtggatgaagagtaaaggtgacagtgtagta

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6961 ttttcc 7020

aaaagg

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