```
5'  tggcgaatgggacgcgccctgtagcggcgcattaagcgcggcgggtgtggtggttacgcgcagcgtgacc
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  70
3'  accgcttaccctgcgcgggacatcgccgcgtaattcgcgccgcccacaccaccaatgcgcgtcgcactgg

5'  gctacacttgccagcgccctagcgcccgctcctttcgctttcttcccttcctttctcgccacgttcgccg
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  140
3'  cgatgtgaacggtcgcgggatcgcgggcgaggaaagcgaaagaagggaaggaaagagcggtgcaagcggc

5'  gctttccccgtcaagctctaaatcgggggctccctttagggttccgatttagtgctttacggcacctcga
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  210
3'  cgaaaggggcagttcgagatttagcccccgagggaaatcccaaggctaaatcacgaaatgccgtggagct

                                          DraIII
                                          |
5'  ccccaaaaaacttgattagggtgatggttcacgtagtgggccatcgccctgatagacggtttttcgccct
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  280
3'  ggggtttttgaactaatcccactaccaagtgcatcacccggtagcgggactatctgccaaaaagcggga

     AlolI'                                AlolI
     |                                     |
5'  ttgacgttggagtccacgttctttaatagtggactcttgttccaaactggaacaacactcaaccctatct
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  350
3'  aactgcaacctcaggtgcaagaaattatcacctgagaacaaggtttgaccttgttgtgagttgggataga

5'  cggtctattcttttgatttataagggattttgccgatttcggcctattggttaaaaaatgagctgattta
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  420
3'  gccagataagaaaactaaatattccctaaaacggctaaagccggataaccaatttttactcgactaaat

5'  acaaaaatttaacgcgaattttaacaaaatattaacgcttacaatttaggtggcacttttcggggaaatg
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  490
3'  tgtttttaaattgcgcttaaaattgttttataattgcgaatgttaaatccaccgtgaaaagcccctttac

5'  tgcgcggaacccctatttgtttatttttctaaatacattcaaatatgtatccgctcatgagacaataacc
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  560
3'  acgcgccttggggataaacaaataaaaagatttatgtaagtttatacataggcgagtactctgttattgg

5'  ctgataaatgcttcaataatattgaaaaaggaagagtatgagtattcaacatttccgtgtcgcccttatt
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  630
3'  gactatttacgaagttattataactttttccttctcatactcataagttgtaaaggcacagcgggaataa
                                                 ==========================
                                                 ---------- Ap ----------

5'  ccctttttgcggcattttgccttcctgtttttgctcacccagaaacgctggtgaaagtaaaagatgctg
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  700
3'  gggaaaaaacgccgtaaaacggaaggacaaaaacgagtgggtctttgcgaccactttcattttctacgac
    ==========================================================================
    ---------- Ap ----------

5'  aagatcagttgggtgcacgagtgggttacatcgaactggatctcaacagcggtaagatccttgagagttt
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  770
3'  ttctagtcaacccacgtgctcacccaatgtagcttgacctagagttgtcgccattctaggaactctcaaa
    ==========================================================================
    ---------- Ap ----------
```

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5'  tcgccccgaagaacgttttccaatgatgagcacttttaaagttctgctatgtggcgcggtattatcccgt
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  840
3'  agcggggcttcttgcaaaaggttactactcgtgaaaatttcaagacgatacaccgcgccataatagggca
                                   Ap

5'  attgacgccgggcaagagcaactcggtcgccgcatacactattctcagaatgacttggttgagtactcac
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  910
3'  taactgcggcccgttctcgttgagccagcggcgtatgtgataagagtcttactgaaccaactcatgagtg
                                   Ap

5'  cagtcacagaaaagcatcttacggatggcatgacagtaagagaattatgcagtgctgccataaccatgag
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  980
3'  gtcagtgtcttttcgtagaatgcctaccgtactgtcattctcttaatacgtcacgacggtattggtactc
                                   Ap

                                   PvuI
5'  tgataacactgcggccaacttacttctgacaacgatcggaggaccgaaggagctaaccgctttttgcac
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  1050
3'  actattgtgacgccggttgaatgaagactgttgctagcctcctggcttcctcgattggcgaaaaaacgtg
                                   Ap

5'  aacatgggggatcatgtaactcgccttgatcgttgggaaccggagctgaatgaagccataccaaacgacg
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  1120
3'  ttgtacccccctagtacattgagcggaactagcaacccttggcctcgacttacttcggtatggtttgctgc
                                   Ap

                         PstI
5'  agcgtgacaccacgatgcctgcagcaatggcaacaacgttgcgcaaactattaactggcgaactacttac
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  1190
3'  tcgcactgtggtgctacggacgtcgttaccgttgttgcaacgcgtttgataattgaccgcttgatgaatg
                                   Ap

5'  tctagcttcccggcaacaattaatagactggatggaggcggataaagttgcaggaccacttctgcgctcg
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  1260
3'  agatcgaagggccgttgttaattatctgacctacctccgcctatttcaacgtcctggtgaagacgcgagc
                                   Ap

                                                                BsaI
5'  gcccttccggctggctggtttattgctgataaatctggagccggtgagcgtgggtctcgcggtatcattg
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  1330
3'  cgggaaggccgaccgaccaaataacgactatttagacctcggccactcgcacccagagcgccatagtaac
                                   Ap

                                                                AhdI
5'  cagcactggggccagatggtaagccctcccgtatcgtagttatctacacgacggggagtcaggcaactat
    ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  1400
3'  gtcgtgaccccggtctaccattcgggagggcatagcatcaatagatgtgctgcccctcagtccgttgata
                                   Ap
```

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5'  ggatgaacgaaatagacagatcgctgagataggtgcctcactgattaagcattggtaactgtcagaccaa
o   +++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|  1470
3'  cctacttgctttatctgtctagcgactctatccacggagtgactaattcgtaaccattgacagtctggtt
o   ==========================================================================
                                   Ap
o
5'  gtttactcatatatactttagattgatttaaaacttcatttttaatttaaaaggatctaggtgaagatcc
o   +++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|  1540
3'  caaatgagtatatatgaaatctaactaaattttgaagtaaaaattaaattttcctagatccacttctagg
o
5'  tttttgataatctcatgaccaaaatcccttaacgtgagttttcgttccactgagcgtcagaccccgtaga
o   +++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|  1610
3'  aaaaactattagagtactggttttagggaattgcactcaaaagcaaggtgactcgcagtctggggcatct
o
5'  aaagatcaaaggatcttcttgagatcctttttttctgcgcgtaatctgctgcttgcaaacaaaaaaacca
o   +++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|  1680
3'  tttctagtttcctagaagaactctaggaaaaaaagacgcgcattagacgacgaacgtttgtttttttggt
o                                   Ori
o
5'  ccgctaccagcggtggtttgtttgccggatcaagagctaccaactctttttccgaaggtaactggcttca
o   +++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|  1750
3'  ggcgatggtcgccaccaaacaaacggcctagttctcgatggttgagaaaaaggcttccattgaccgaagt
o                                   Ori
o
5'  gcagagcgcagataccaaatactgtccttctagtgtagccgtagttaggccaccacttcaagaactctgt
o   +++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|  1820
3'  cgtctcgcgtctatggtttatgacaggaagatcacatcggcatcaatccggtggtgaagttcttgagaca
o                                   Ori
o
5'  agcaccgcctacatacctcgctctgctaatcctgttaccagtggctgctgccagtggcgataagtcgtgt
o   +++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|  1890
3'  tcgtggcggatgtatggagcgagacgattaggacaatggtcaccgacgacggtcaccgctattcagcaca
o                                   Ori
o
5'  cttaccgggttggactcaagacgatagttaccggataaggcgcagcggtcgggctgaacggggggttcgt
o   +++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|  1960
3'  gaatggcccaacctgagttctgctatcaatggcctattccgcgtcgccagcccgacttgccccccaagca
o                                   Ori
o
5'  gcacacagcccagcttggagcgaacgacctacaccgaactgagatacctacagcgtgagctatgagaaag
o   +++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|  2030
3'  cgtgtgtcgggtcgaacctcgcttgctggatgtggcttgactctatggatgtcgcactcgatactctttc
o                                   Ori
o
5'  cgccacgcttcccgaagggagaaaggcggacaggtatccggtaagcggcagggtcggaacaggagagcgc
o   +++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|  2100
3'  gcggtgcgaagggcttccctctttccgcctgtccataggccattcgccgtcccagccttgtcctctcgcg
o                                   Ori
o
```

```
5'  acgagggagcttccagggggaaacgcctggtatctttatagtcctgtcgggtttcgccacctctgacttg
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2170
3'  tgctccctcgaaggtcccccttttgcggaccatagaaatatcaggacagcccaaagcggtggagactgaac
o                                   Ori
o
5'  agcgtcgatttttgtgatgctcgtcaggggggcggagcctatggaaaaacgccagcaacgcggcctttttt
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2240
3'  tcgcagctaaaaacactacgagcagtccccccgcctcggatacctttttgcggtcgttgcgccggaaaaa
o                                   Ori
o
o                                   PciI
5'  acggttcctggccttttgctggccttttgctcacatgttctttcctgcgttatcccctgattctgtggat
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2310
3'  tgccaaggaccggaaaacgaccggaaaacgagtgtacaagaaaggacgcaatagggactaagacaccta
o
5'  aaccgtattaccgcctttgagtgagctgataccgctcgccgcagccgaacgaccgagcgcagcgagtcag
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2380
3'  ttggcataatggcggaaactcactcgactatggcgagcggcgtcggcttgctggctcgcgtcgctcagtc
o
o                SapI
5'  tgagcgaggaagcggaagagcgcctgatgcggtattttctccttacgcatctgtgcggtatttcacaccg
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2450
3'  actcgctccttcgccttctcgcggactacgccataaaagaggaatgcgtagacacgccataaagtgtggc
o
o                                                       BstZ17I
5'  catatatggtgcactctcagtacaatctgctctgatgccgcatagttaagccagtatacactccgctatc
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2520
3'  gtatataccacgtgagagtcatgttagacgagactacggcgtatcaattcggtcatatgtgaggcgatag
o
o                Tth111I
5'  gctacgtgactgggtcatggctgcgccccgacacccgccaacacccgctgacgcgccctgacgggcttgt
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2590
3'  cgatgcactgacccagtaccgacgcggggctgtgggcggttgtgggcgactgcgcgggactgcccgaaca
o
5'  ctgctcccggcatccgcttacagacaagctgtgaccgtctccgggagctgcatgtgtcagaggttttcac
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2660
3'  gacgagggccgtaggcgaatgtctgttcgacactggcagaggccctcgacgtacacagtctccaaaagtg
o
5'  cgtcatcaccgaaacgcgcgaggcagctgcggtaaagctcatcagcgtggtcgtgaagcgattcacagat
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2730
3'  gcagtagtggctttgcgcgctccgtcgacgccatttcgagtagtcgcaccagcacttcgctaagtgtcta
o
5'  gtctgcctgttcatccgcgtccagctcgttgagtttctccagaagcgttaatgtctggcttctgataaag
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2800
3'  cagacggacaagtaggcgcaggtcgagcaactcaaagaggtcttcgcaattacagaccgaagactatttc
o
5'  cgggccatgttaagggcggtttttcctgtttggtcactgatgcctccgtgtaagggggatttctgttca
o   ----|----|----|----|----|----|----|----|----|----|----|----|----|----|  2870
3'  gcccggtacaattcccgccaaaaaaggacaaaccagtgactacggaggcacattccccctaaagacaagt
o
```

```
5'  tgggggtaatgataccgatgaaacgagagaggatgctcacgatacgggttactgatgatgaacatgcccg
o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  2940
3'  acccccattactatggctactttgctctctcctacgagtgctatgcccaatgactactacttgtacgggc
o

5'  gttactggaacgttgtgagggtaaacaactggcggtatggatgcggcgggaccagagaaaaatcactcag
o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3010
3'  caatgaccttgcaacactcccatttgttgaccgccatacctacgccgccctggtctctttttagtgagtc
o

5'  ggtcaatgccagcgcttcgttaatacagatgtaggtgttccacagggtagccagcagcatcctgcgatgc
o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3080
3'  ccagttacggtcgcgaagcaattatgtctacatccacaaggtgtcccatcggtcgtcgtaggacgctacg
o

5'  agatccggaacataatggtgcagggcgctgacttccgcgtttccagactttacgaaacacggaaaccgaa
o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3150
3'  tctaggccttgtattaccacgtcccgcgactgaaggcgcaaaggtctgaaatgctttgtgcctttggctt
o

                        Bpu10I
o                       |
5'  gaccattcatgttgttgctcaggtcgcagacgttttgcagcagcagtcgcttcacgttcgctcgcgtatc
o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3220
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o

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o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3290
3'  ccactaagtaagacgattggtcattccgttggggcggtcggatcggcccaggagttgctgtcctcgtgct
o

        FspAI
o       |
5'  tcatgcgcacccgtggggccgccatgccggcgataatggcctgcttctcgccgaaacgtttggtggcggg
o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3360
3'  agtacgcgtgggcaccccggcggtacggccgctattaccggacgaagagcggctttgcaaaccaccgccc
o

5'  accagtgacgaaggcttgagcgagggcgtgcaagattccgaataccgcaagcgacaggccgatcatcgtc
o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3430
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o

5'  gcgctccagcgaaagcggtcctcgccgaaaatgacccagagcgctgccggcacctgtcctacgagttgca
o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3500
3'  cgcgaggtcgctttcgccaggagcggcttttactgggtctcgcgacggccgtggacaggatgctcaacgt
o

                                        PshAI
o                                       |
5'  tgataaagaagacagtcataagtgcggcgacgatagtcatgccccgcgcccaccggaaggagctgactgg
o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3570
3'  actatttcttctgtcagtattcacgccgctgctatcagtacggggcgcgggtggccttcctcgactgacc
o

5'  gttgaaggctctcaagggcatcggtcgagatcccggtgcctaatgagtgagctaacttacattaattgcg
o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3640
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o

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o   ++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|++++|  3710
3'  aacgcgagtgacgggcgaaaggtcagccctttggacagcacggtcgacgtaattacttagccggttgcgc
o
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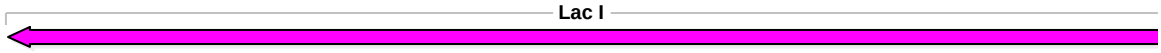

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Lac I

5' gattgcccttcaccgcctggccctgagagagttgcagcaagcggtccacgctggtttgccccagcaggcg 3850
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Lac I

HpaI
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Lac I

BssHII
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Lac I

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Lac I

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Lac I

PspOMI
ApaI
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Lac I

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Lac I

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Lac I

BclI MluI

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Lac I

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Lac I

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EcoNI

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5' gtgcatgcaaggagatggcgcccaacagtcccccggccacggggcctgccaccatacccacgccgaaaca 4970
3' cacgtacgttcctctaccgcgggttgtcagggggccggtgccccggacggtggtatgggtgcggctttgt

5' agcgctcatgagcccgaagtggcgagcccgatcttccccatcggtgatgtcggcgatataggcgccagca 5040
3' tcgcgagtactcgggcttcaccgctcgggctagaaggggtagccactacagccgctatatccgcggtcgt

SgrAI

5' accgcacctgtggcgccggtgatgccggccacgatgcgtccggcgtagaggatcgagatcgatctcgatc 5110
3' tggcgtggacaccgcggccactacggccggtgctacgcaggccgcatctcctagctctagctagagctag

XbaI

5' ccgcgaaattaatacgactcactatagggaattgtgagcggataacaattcccctctagaaataatttt 5180
3' ggcgctttaattatgctgagtgatatcccttaacactcgcctattgttaaggggagatctttattaaaa

T7 Promoter — Lac Operator

BarI — BarI'

5' gtttaactttaagaaggagatatacatatgagcgataaaattattcacctgactgacgacagttttgaca 5250
3' caaattgaaattcttcctctatatgtatactcgctattttaataagtggactgactgctgtcaaaactgt

Trx Tag

M S D K I I H L T D D S F D
1 2 3 4 5 6 7 8 9 10 11 12 13 14

RsrII

5' cggatgtactcaaagcggacggggcgatcctcgtcgatttctgggcagagtggtgcggtccgtgcaaaat 5320
3' gcctacatgagtttcgcctgccccgctaggagcagctaaagacccgtctcaccacgccaggcacgtttta

Trx Tag

T D V L K A D G A I L V D F W A E W C G P C K M
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

5' gatcgccccgattctggatgaaatcgctgacgaatatcagggcaaactgaccgttgcaaaactgaacatc 5390
3' ctagcggggctaagacctactttagcgactgcttatagtcccgtttgactggcaacgttttgacttgtag

Trx Tag

I A P I L D E I A D E Y Q G K L T V A K L N I
39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61

5' gatcaaaaccctggcactgcgccgaaatatggcatccgtggtatcccgactctgctgctgttcaaaaacg 5460
3' ctagttttgggaccgtgacgcggctttataccgtaggcaccatagggctgagacgacgacaagtttttgc

Trx Tag

D Q N P G T A P K Y G I R G I P T L L L F K N
62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84

5' gtgaagtggcggcaaccaaagtgggtgcactgtctaaaggtcagttgaaagagttcctcgacgctaacct 5530
3' cacttcaccgccgttggtttcacccacgtgacagatttccagtcaactttctcaaggagctgcgattgga

Trx Tag

G E V A A T K V G A L S K G Q L K E F L D A N L
85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108

MscI

5' ggccggttctggttctggccatatgcaccatcatcatcatcattcttctggtctggtgccacgcggttct 5600
3' ccggccaagaccaagaccggtatacgtggtagtagtagtagtaagaagaccagaccacggtgcgccaaga

T...g | His6-tag | Thrombin

A G S G S G H M H H H H H H S S G L V P R G S
109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131

BglII

5' ggtatgaaagaaaccgctgctgctaaattcgaacgccagcacatggacagcccagatctgggtaccgacg 5670
3' ccatactttctttggcgacgacgatttaagcttgcggtcgtgtacctgtcgggtctagacccatggctgc

En...e

G M K E T A A A K F E R Q H M D S P D L G T D
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154

NcoI

5' acgacgacaaggccatggcgatATCAACAAGTTTGTACAAAAAAGCAGGCTctgaaaacttgtactttca 5740
3' tgctgctgttccggtaccgctaTAGTTGTTCAAACATGTTTTTTCGTCCGAgacttttgaacatgaaagt

Enterokinase | attB1 | TEV site

BGT03_T01c-pDONR221

D D D K A M A I S T S L Y K K A G S E N L Y F Q
155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178

5' aggcGTAAAAGATTTATTAACCCCCGATTATATCTTCGAGTCCAGCTGGGAAGTATGTAATAAAGTGGGA 5810
3' tccgCATTTTCTAAATAATTGGGGGCTAATATAGAAGCTCAGGTCGACCCTTCATACATTATTTCACCCT

T... BGT03_T01c

BGT03_T01c-pDONR221

G V K D L L T P D Y I F E S S W E V C N K V G
179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201

5' GGGATATACACCGTATTGTCGACACGGGCGAATACATTGCAGGAAAAATTCCGCGACAGAATTTTTTTCA 5880
3' CCCTATATGTGGCATAACAGCTGTGCCCGCTTATGTAACGTCCTTTTTAAGGCGCTGTCTTAAAAAAAGT

BGT03_T01c

BGT03_T01c-pDONR221

G I Y T V L S T R A N T L Q E K F R D R I F F
202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224

5' TAGGTCCTGATGTGTGGCAAGGAAAAGAGAACCCTCTATTCATCGAGTCGGATAATCTGTGCGCTGACTG 5950
3' ATCCAGGACTACACACCGTTCCTTTTCTCTTGGGAGATAAGTAGCTCAGCCTATTAGACACGCGACTGAC

BGT03_T01c

BGT03_T01c-pDONR221

I G P D V W Q G K E N P L F I E S D N L C A D W
225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248

BsmI

5' GAAAAAGCACGCATTCAAAAACGATCATCTTTCCGTCCGTGTAGGACGATGGAATATACCCGGTGAACCC 6020
3' CTTTTTCGTGCGTAAGTTTTTGCTAGTAGAAAGGCAGGCACATCCTGCTACCTTATATGGGCCACTTGGG

BGT03_T01c

BGT03_T01c-pDONR221

K K H A F K N D H L S V R V G R W N I P G E P
249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271

PsrI PsrI'

5' ATTGTCATCCTTGTTGATTTCCAACCTTTTTTTGAACAGAAGAACGAAATTTACACAGAAATGTGGAATC 6090
3' TAACAGTAGGAACAACTAAAGGTTGGAAAAAAACTTGTCTTCTTGCTTTAAATGTGTCTTTACACCTTAG

BGT03_T01c

BGT03_T01c-pDONR221

I V I L V D F Q P F F E Q K N E I Y T E M W N
272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294

5' GTTTTCAAGTAGACTCGTTGCACGCTTATGGCGATTACGACGAGGCTTCGATGTTTTCGTATGCTGCCGG 6160
3' CAAAAGTTCATCTGAGCAACGTGCGAATACCGCTAATGCTGCTCCGAAGCTACAAAAGCATACGACGGCC

BGT03_T01c

BGT03_T01c-pDONR221

R F Q V D S L H A Y G D Y D E A S M F S Y A A G
295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318

5' AAAAGTAGTAGAGAGTTTCTACCGCTACAACCTGACAGAAACGGATAAGGTGGTATATCAGGCACATGAA 6230
3' TTTTCATCATCTCTCAAAGATGGCGATGTTGGACTGTCTTTGCCTATTCCACCATATAGTCCGTGTACTT

BGT03_T01c

BGT03_T01c-pDONR221

K V V E S F Y R Y N L T E T D K V V Y Q A H E
319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341

5' TGGATGACCGGAATGGGAGCACTTTATGTACAGGAAGCTGTCCCCGAAGTGGCTACTATTTTTACAACCC
6300
3' ACCTACTGGCCTTACCCTCGTGAAATACATGTCCTTCGACAGGGGCTTCACCGATGATAAAAATGTTGGG

BGT03_T01c

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W M T G M G A L Y V Q E A V P E V A T I F T T
342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364

5' ACGCTACTTCCATCGGACGTTCGATAGCCGGCAATCATAAGCCGCTGTATGACTATCTGTTTGCTTATAA
6370
3' TGCGATGAAGGTAGCCTGCAAGCTATCGGCCGTTAGTATTCGGCGACATACTGATAGACAAACGAATATT

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H A T S I G R S I A G N H K P L Y D Y L F A Y N
365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388

5' CGGTGACCAGATGGCGCAGGAACTGAATATGCAGTCAAAGCACTCTATTGAGAAGCAGACGGCGCATTAT
6440
3' GCCACTGGTCTACCGCGTCCTTGACTTATACGTCAGTTTCGTGAGATAACTCTTCGTCTGCCGCGTAATA

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G D Q M A Q E L N M Q S K H S I E K Q T A H Y
389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411

5' GTAGACTGTTTTACGACAGTAAGTGAAATCACGAATAACGAGTGCAAGGAATTGCTCGACAAACCGGCAG
6510
3' CATCTGACAAAATGCTGTCATTCACTTTAGTGCTTATTGCTCACGTTCCTTAACGAGCTGTTTGGCCGTC

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V D C F T T V S E I T N N E C K E L L D K P A
412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434

5' ACGTAGTACTGATGAACGGTTTCGAAGACGATTTCGTACCTAAAGGCAGTACATTTACCGGAAAACGTAA
6580
3' TGCATCATGACTACTTGCCAAAGCTTCTGCTAAAGCATGGATTTCCGTCATGTAAATGGCCTTTTGCATT

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D V V L M N G F E D D F V P K G S T F T G K R K
435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458

5' ACGTGCCCGCTCATTGATGTTGAACGTAGCCAATAAATTGTTGGGAACAAATCTGGATGACGATACGTTA 6650
3' TGCACGGGCGAGTAACTACAACTTGCATCGGTTATTTAACAACCCTTGTTTAGACCTACTGCTATGCAAT

BGT03_T01c

BGT03_T01c-pDONR221

R A R S L M L N V A N K L L G T N L D D D T L
459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481

5' ATTATCGGTACCAGTGGTCGATATGAATTCAAGAACAAGGGTATTGACGTATTCCTGGAGTCATTGAACC 6720
3' TAATAGCCATGGTCACCAGCTATACTTAAGTTCTTGTTCCCATAACTGCATAAGGACCTCAGTAACTTGG

BGT03_T01c

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I I G T S G R Y E F K N K G I D V F L E S L N
482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504

5' GTCTGAACAGGGATAAAAAGCTCCATAAGAACGTATTGGCGTTTATCAATGTCCCCGGTTGGGTAGGAGA 6790
3' CAGACTTGTCCCTATTTTTCGAGGTATTCTTGCATAACCGCAAATAGTTACAGGGGCCAACCCATCCTCT

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R L N R D K K L H K N V L A F I N V P G W V G D
505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528

5' TCCCCGTGAAGACTTGCAGGAACGTCTGAAAAGCAAAGAAAAATTTGATACACCGCTTGAAGTTCCTTTC 6860
3' AGGGGCACTTCTGAACGTCCTTGCAGACTTTTCGTTTCTTTTTAAACTATGTGGCGAACTTCAAGGAAAG

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BGT03_T01c-pDONR221

P R E D L Q E R L K S K E K F D T P L E V P F
529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551

5' ATCACTCATTGGCTGCACAATATGACGCATGACCAAGTGCTGGATATGCTGAAATATCTGGGGATGGGCA 6930
3' TAGTGAGTAACCGACGTGTTATACTGCGTACTGGTTCACGACCTATACGACTTTATAGACCCCTACCCGT

BGT03_T01c

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I T H W L H N M T H D Q V L D M L K Y L G M G
552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574

5' ACCGTCCCGATGATAAAGTAAAGGTGATTTTTGTGCCTTGCTATCTGGACGGGCGTGATGGTATCCTGAA 7000
3' TGGCAGGGCTACTATTTCATTTCCACTAAAAACACGGAACGATAGACCTGCCCGCACTACCATAGGACTT

BGT03_T01c

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N R P D D K V K V I F V P C Y L D G R D G I L N
575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598

5' TAAAGAGTATTATGATATATTGCTGGGACAGGATTTGAGTGTATATGCTTCCTATTACGAACCGTGGGGA 7070
3' ATTTCTCATAATACTATATAACGACCCTGTCCTAAACTCACATATACGAAGGATAATGCTTGGCACCCCT

BGT03_T01c

BGT03_T01c-pDONR221

K E Y Y D I L L G Q D L S V Y A S Y Y E P W G
599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621

BspMI

5' TATACTCCGCTGGAAAGTGTAGCGTTCCGTGTGCCTACCATTACTACTGATCTGGCAGGTTTTGGCCTTT 7140
3' ATATGAGGCGACCTTTCACATCGCAAGGCACACGGATGGTAATGATGACTAGACCGTCCAAAACCGGAAA

BGT03_T01c

BGT03_T01c-pDONR221

Y T P L E S V A F R V P T I T T D L A G F G L
622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644

5' GGGTGAACAGCCTGAAGAATCAGCATGGCATCAATGATGGAGTGGAAGTGCTGCATCGTTCGGACTATAA 7210
3' CCCACTTGTCGGACTTCTTAGTCGTACCGTAGTTACTACCTCACCTTCACGACGTAGCAAGCCTGATATT

BGT03_T01c

BGT03_T01c-pDONR221

W V N S L K N Q H G I N D G V E V L H R S D Y N
645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668

5' TGATTCGGAAGTGGCGGATGGCATCAAAGATACGATTACGCTGTTTGCAGATAAGTCGGAAAAAGAAGTG 7280
3' ACTAAGCCTTCACCGCCTACCGTAGTTTCTATGCTAATGCGACAAACGTCTATTCAGCCTTTTTCTTCAC

BGT03_T01c

BGT03_T01c-pDONR221

D S E V A D G I K D T I T L F A D K S E K E V
669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691

```
5'  AAGGAGATCCGTAAGCATGCGGCAGATGTTGCAGAGCAGGCATTGTGGAAACACTTCATTCAATATTATT
                                                                          7350
3'  TTCCTCTAGGCATTCGTACGCCGTCTACAACGTCTCGTCCGTAACACCTTTGTGAAGTAAGTTATAATAA
```

BGT03_T01c

BGT03_T01c-pDONR221

```
K   E   I   R   K   H   A   A   D   V   A   E   Q   A   L   W   K   H   F   I   Q   Y   Y
692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714

5'  ACGAGGCTTATGATATTGCCTTGCGCAATGCCATGAAGCGTCAGTTAGGCTAGGACCCAGCTTTCTTGTA
                                                                          7420
3'  TGCTCCGAATACTATAACGGAACGCGTTACGGTACTTCGCAGTCAATCCGATCCTGGGTCGAAAGAACAT
```

BGT03_T01c attB2

BGT03_T01c-pDONR221

```
Y   E   A   Y   D   I   A   L   R   N   A   M   K   R   Q   L   G   .
715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732
```

PspXI XhoI AvaI BmeT110I EcoICRI SacI BamHI HindIII NotI EagI

```
5'  CAAAGTGGTTGATatcggatccgaattcgagctccgtcgacaagcttgcggccgcactcgagcaccacca
                                                                          7490
3'  GTTTCACCAACTAtagcctaggcttaagctcgaggcagctgttcgaacgccggcgtgagctcgtggtggt
```

attB2

BlpI

```
5'  ccaccaccactgagatccggctgctaacaaagcccgaaaggaagctgagttggctgctgccaccgctgag
                                                                          7560
3'  ggtggtggtgactctaggccgacgattgtttcgggctttccttcgactcaaccgacgacggtggcgactc
```

T7 T...tor

```
5'  caataactagcataaccccttggggcctctaaacgggtcttgaggggttttttgctgaaaggaggaacta
                                                                          7630
3'  gttattgatcgtattggggaaccccggagatttgcccagaactccccaaaaaacgactttcctccttgat
```

T7 Terminator

```
5'  tatccggat
                                                                          7639
3'  ataggccta
```