pHcRed-Tandem-C1 vector restriction map

The data has not been verified by restriction digestion with each enzyme listed and does not take into account possible methylation sites. Enzymes that recognize unambiguous sequences less than 6 basepairs long are not included – for the more complete enzyme list please refer to the Table of restriction sites.

Unique sites shown in bold blue. The location given specifies the 3' end of the cut DNA (the base to the left of the cut site). MCS sequence shown in frame, amino acids coded by MCS and by a linker between two HcRed1 coding sequences (see vector description) shown in black.

```
        Ase1                                                                                Bgl1
          |                                                                                   |
     TAGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAGCCCATATATGGAGTTCCGCGTTACATAACTTACGGTAAATGGCCCGCCTGGCTGACCG
   1 |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 100
     ATCAATAATTATCATTAGTTAATGCCCCAGTAATCAAGTATCGGGTATATACCTCAAGGCGCAATGTATTGAATGCCATTTACCGGGCGGACCGACTGGC

                          Aat2                                                Aat2
                            |                                                   |
     CCCAACGACCCCCGCCCATTGACGTCAATAATGACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGT
 101 |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 200
     GGGTTGCTGGGGGCGGGTAACTGCAGTTATTACTGCATACAAGGGTATCATTGCGGTTATCCCTGAAAGGTAACTGCAGTTACCCACCTCATAAATGCCA

             Bgl1                  Nde1                        Aat2                  Bgl1  Bmr1
               |                     |                           |                     |     |
     AAACTGCCCACTTGGCAGTACATCAAGTGTATCATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTA
 201 |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 300
     TTTGACGGGTGAACCGTCATGTAGTTCACATAGTATACGGTTCATGCGGGGGATAACTGCAGTTACTGCCATTTACCGGGCGGACCGTAATACGGGTCAT

                                         SnaB1                Nco1
                                           |                    |
     CATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGA
 301 |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 400
     GTACTGGAATACCCTGAAAGGATGAACCGTCATGTAGATGCATAATCAGTAGCGATAATGGTACCACTACGCCAAAACCGTCATGTAGTTACCCGCACCT
```

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                                                  Aat2                                                  Eci1
                                                    |                                                     |
            TAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGTA
     401    |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 500
            ATCGCCAAACTGAGTGCCCCTAAAGGTTCAGAGGTGGGGTAACTGCAGTTACCCTCAAACAAAACCGTGGTTTTAGTTGCCCTGAAAGGTTTTACAGCAT

                                                                                                  Nhe1 Afe1
                                                                                                    |    |
            ACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTGGTTTAGTGAACCGTCAGATCCGCTAGCGCTA
     501    |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 600
            TGTTGAGGCGGGGTAACTGCGTTTACCCGCCATCCGCACATGCCACCCTCCAGATATATTCGTCTCGACCAAATCACTTGGCAGTCTAGGCGATCGCGAT

                      Ale1                          Fsp1     BsrG1
     Age1        Nco1 |  BsrB1   EcoN1           FspA1 Eco57   |                                        Bcg1b
        |          | |      |       |               |     |    |                                            |
            CCGGTCGCCACCATGGTGAGCGGCCTGCTGAAGGAGAGTATGCGCATCAAGATGTACATGGAGGGCACCGTGAACGGCCACTACTTCAAGTGCGAGGGCG
     601    |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 700
            GGCCAGCGGTGGTACCACTCGCCGGACGACTTCCTCTCATACGCGTAGTTCTACATGTACCTCCCGTGGCACTTGCCGGTGATGAAGTTCACGCTCCCGC
t-HcRed      >             M  V  S  G  L  L  K  E  S  M  R  I  K  M  Y  M  E  G  T  V  N  G  H  Y  F  K  C  E  G

                                 Nae1                                Nar1
                              NgoM4 |     Bcg1a          Pml1      Kas1|
                                  | |         |             |         ||
            AGGGCGACGGCAACCCCTTCGCCGGCACCCAGAGCATGAGAATCCACGTGACCGAGGGCGCCCCCCTGCCCTTCGCCTTCGACATCCTGGCCCCCTGCTG
     701    |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 800
            TCCCGCTGCCGTTGGGGAAGCGGCCGTGGGTCTCGTACTCTTAGGTGCACTGGCTCCCGCGGGGGGACGGGAAGCGGAAGCTGTAGGACCGGGGGACGAC
t-HcRed      > E  G  D  G  N  P  F  A  G  T  Q  S  M  R  I  H  V  T  E  G  A  P  L  P  F  A  F  D  I  L  A  P  C  C

     Bcg1b                  ApaL1       Bcg1a
        |                      |           |
            CGAGTACGGCAGCAGGACCTTCGTGCACCACACCGCCGAGATCCCCGACTTCTTCAAGCAGAGCTTCCCCGAGGGCTTCACCTGGGAGAGAACCACCACC
     801    |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 900
            GCTCATGCCGTCGTCCTGGAAGCACGTGGTGTGGCGGCTCTAGGGGCTGAAGAAGTTCGTCTCGAAGGGGCTCCCGAAGTGGACCCTCTCTTGGTGGTGG
t-HcRed      >   E  Y  G  S  R  T  F  V  H  H  T  A  E  I  P  D  F  F  K  Q  S  F  P  E  G  F  T  W  E  R  T  T  T
```

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                                                Bgl1             Bpm1       ApaL1
                                                  |                |           |
            TACGAGGACGGCGGCATCCTGACCGCCCACCAGGACACCAGCCTGGAGGGCAACTGCCTGATCTACAAGGTGAAGGTGCACGGCACCAACTTCCCCGCCG
       901  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 1000
            ATGCTCCTGCCGCCGTAGGACTGGCGGGTGGTCCTGTGGTCGGACCTCCCGTTGACGGACTAGATGTTCCACTTCCACGTGCCGTGGTTGAAGGGGCGGC
t-HcRed     >  Y  E  D  G  G  I  L  T  A  H  Q  D  T  S  L  E  G  N  C  L  I  Y  K  V  K  V  H  G  T  N  F  P  A

                                                 Ale1
                                BsrB1 BseY1   BseY1    Xcm1|                            Eag1
                                    |     |       |       ||                              |
            ACGGCCCCGTGATGAAGAACAAGAGCGGCGGCTGGGAGCCCAGCACCGAGGTGGTGTACCCCGAGAACGGCGTGCTGTGCGGCCGGAACGTGATGGCCCT
      1001  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 1100
            TGCCGGGGCACTACTTCTTGTTCTCGCCGCCGACCCTCGGGTCGTGGCTCCACCACATGGGGCTCTTGCCGCACGACACGCCGGCCTTGCACTACCGGGA
t-HcRed     > D  G  P  V  M  K  N  K  S  G  G  W  E  P  S  T  E  V  V  Y  P  E  N  G  V  L  C  G  R  N  V  M  A  L

                           Eco57                                      BssH2                        Bpm1
                              |                                          |                            |
            GAAGGTGGGCGACCGGCACCTGATCTGCCACCACTACACCAGCTACCGGAGCAAGAAGGCCGTGCGCGCCCTGACCATGCCCGGCTTCCACTTCACCGAC
      1101  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 1200
            CTTCCACCCGCTGGCCGTGGACTAGACGGTGGTGATGTGGTCGATGGCCTCGTTCTTCCGGCACGCGCGGGACTGGTACGGGCCGAAGGTGAAGTGGCTG
t-HcRed     >  K  V  G  D  R  H  L  I  C  H  H  Y  T  S  Y  R  S  K  K  A  V  R  A  L  T  M  P  G  F  H  F  T  D

                                                                  Sfi1                    BspM1
                     AlwN1                  Sca1                  Bgl1                    BfuA1       Bgl2
                        |                     |                     |                        |           |
            ATCCGGCTCCAGATGCTGCGGAAGAAGAAGGACGAGTACTTCGAGCTGTACGAGGCCAGCGTGGCCCGGTACAGCGACCTGCCCGAGAAGGCCAACAGAT
      1201  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 1300
            TAGGCCGAGGTCTACGACGCCTTCTTCTTCCTGCTCATGAAGCTCGACATGCTCCGGTCGCACCGGGCCATGTCGCTGGACGGGCTCTTCCGGTTGTCTA
t-HcRed     >  I  R  L  Q  M  L  R  K  K  K  D  E  Y  F  E  L  Y  E  A  S  V  A  R  Y  S  D  L  P  E  K  A  N  R

                                          Fsp1     BsrG1
             Sma1      BsrB1   EcoN1          FspA1 Eco57   |                                        Bcg1b
                |          |       |              |     |   |                                          |
            CTCCCGGGATGGTGAGCGGCCTGCTGAAGGAGAGTATGCGCATCAAGATGTACATGGAGGGCACCGTGAACGGCCACTACTTCAAGTGCGAGGGCGAGGG
      1301  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 1400
            GAGGGCCCTACCACTCGCCGGACGACTTCCTCTCATACGCGTAGTTCTACATGTACCTCCCGTGGCACTTGCCGGTGATGAAGTTCACGCTCCCGCTCCC
t-HcRed     > S  P  G  M  V  S  G  L  L  K  E  S  M  R  I  K  M  Y  M  E  G  T  V  N  G  H  Y  F  K  C  E  G  E  G
```

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                                Nae1                                Nar1
                            NgoM4 |     Bcg1a          Pml1      Kas1|                                    Bcg1b
                                | |         |             |         ||                                        |
            CGACGGCAACCCCTTCGCCGGCACCCAGAGCATGAGAATCCACGTGACCGAGGGCGCCCCCCTGCCCTTCGCCTTCGACATCCTGGCCCCCTGCTGCGAG
      1401  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 1500
            GCTGCCGTTGGGGAAGCGGCCGTGGGTCTCGTACTCTTAGGTGCACTGGCTCCCGCGGGGGGACGGGAAGCGGAAGCTGTAGGACCGGGGGACGACGCTC
t-HcRed     >  D  G  N  P  F  A  G  T  Q  S  M  R  I  H  V  T  E  G  A  P  L  P  F  A  F  D  I  L  A  P  C  C  E

                              ApaL1       Bcg1a
                                  |           |
            TACGGCAGCAGGACCTTCGTGCACCACACCGCCGAGATCCCCGACTTCTTCAAGCAGAGCTTCCCCGAGGGCTTCACCTGGGAGAGAACCACCACCTACG
      1501  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 1600
            ATGCCGTCGTCCTGGAAGCACGTGGTGTGGCGGCTCTAGGGGCTGAAGAAGTTCGTCTCGAAGGGGCTCCCGAAGTGGACCCTCTCTTGGTGGTGGATGC
t-HcRed     >  Y  G  S  R  T  F  V  H  H  T  A  E  I  P  D  F  F  K  Q  S  F  P  E  G  F  T  W  E  R  T  T  T  Y

                                                Bgl1             Bpm1       ApaL1
                                                   |                |           |
            AGGACGGCGGCATCCTGACCGCCCACCAGGACACCAGCCTGGAGGGCAACTGCCTGATCTACAAGGTGAAGGTGCACGGCACCAACTTCCCCGCCGACGG
      1601  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 1700
            TCCTGCCGCCGTAGGACTGGCGGGTGGTCCTGTGGTCGGACCTCCCGTTGACGGACTAGATGTTCCACTTCCACGTGCCGTGGTTGAAGGGGCGGCTGCC
t-HcRed     > E  D  G  G  I  L  T  A  H  Q  D  T  S  L  E  G  N  C  L  I  Y  K  V  K  V  H  G  T  N  F  P  A  D  G

                                                 Ale1
                                BsrB1 BseY1   BseY1    Xcm1|                            Eag1
                                    |     |       |       ||                              |
            CCCCGTGATGAAGAACAAGAGCGGCGGCTGGGAGCCCAGCACCGAGGTGGTGTACCCCGAGAACGGCGTGCTGTGCGGCCGGAACGTGATGGCCCTGAAG
      1701  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 1800
            GGGGCACTACTTCTTGTTCTCGCCGCCGACCCTCGGGTCGTGGCTCCACCACATGGGGCTCTTGCCGCACGACACGCCGGCCTTGCACTACCGGGACTTC
t-HcRed     >  P  V  M  K  N  K  S  G  G  W  E  P  S  T  E  V  V  Y  P  E  N  G  V  L  C  G  R  N  V  M  A  L  K

                           Eco57                                        BssH2                       Bpm1
                              |                                            |                           |
            GTGGGCGACCGGCACCTGATCTGCCACCACTACACCAGCTACCGGAGCAAGAAGGCCGTGCGCGCCCTGACCATGCCCGGCTTCCACTTCACCGACATCC
      1801  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 1900
            CACCCGCTGGCCGTGGACTAGACGGTGGTGATGTGGTCGATGGCCTCGTTCTTCCGGCACGCGCGGGACTGGTACGGGCCGAAGGTGAAGTGGCTGTAGG
t-HcRed     >  V  G  D  R  H  L  I  C  H  H  Y  T  S  Y  R  S  K  K  A  V  R  A  L  T  M  P  G  F  H  F  T  D  I
```

```
                                                                Sfi1                    BspM1
                    AlwN1                   Sca1                Bgl1                    BfuA1 BpuE1     Xho1
                      |                       |                   |                       |     |         |
            GGCTCCAGATGCTGCGGAAGAAGAAGGACGAGTACTTCGAGCTGTACGAGGCCAGCGTGGCCCGGTACAGCGACCTGCCCGAGAAGGCCAACAGAACTCG
      1901  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*| ||||||||* 2000
            CCGAGGTCTACGACGCCTTCTTCTTCCTGCTCATGAAGCTCGACATGCTCCGGTCGCACCGGGCCATGTCGCTGGACGGGCTCTTCCGGTTGTCTTGAGC
t-HcRed     > R  L  Q  M  L  R  K  K  K  D  E  Y  F  E  L  Y  E  A  S  V  A  R  Y  S  D  L  P  E  K  A  N  R  T  R

                                                BamH1
                                               Sma1 |
                                              Apa1| |
                                         PspOM   || |
                                         Sac2|   || |
                 Hind3  EcoR1      Sal1      Kpn1  ||   || |
                Sac1 |BstB1 |     Pst1| Acc65   |  ||   || |        Xba1      Bcl1BsaB1
                   | |    | |         ||      |   |  ||   || |           |         |    |
            AGCTCAAGCTTCGAATTCTGCAGTCGACGGTACCGCGGGCCCGGGATCCACCGGATCTAGATAACTGATCATAATCAGCCATACCACATTTGTAGAGGTT
      2001  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||| ||*|||||||||*|||||||||* 2100
            TCGAGTTCGAAGCTTAAGACGTCAGCTGCCATGGCGCCCGGGCCCTAGGTGGCCTAGATCTATTGACTAGTATTAGTCGGTATGGTGTAAACATCTCCAA
t-HcRed     >  A  Q  A  S  N  S  A  V  D  G  T  A  G  P  G  S  T  G  S  R  *

                                                                Bsm1
                   Dra1                                        Mfe1|        Hpa1                Psi1
                     |                                           ||          |                   |
            TTACTTGCTTTAAAAAACCTCCCACACCTCCCCCTGAACCTGAAACATAAAATGAATGCAATTGTTGTTGTTAACTTGTTTATTGCAGCTTATAATGGTT
      2101  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 2200
            AATGAACGAAATTTTTTGGAGGGTGTGGAGGGGGACTTGGACTTTGTATTTTACTTACGTTAACAACAACAATTGAACAAATAACGTCGAATATTACCAA

                                                        Bts1 Bsm1                                   Mlu1
                                                           |    |                                      |
            ACAAATAAAGCAATAGCATCACAAATTTCACAAATAAAGCATTTTTTTCACTGCATTCTAGTTGTGGTTTGTCCAAACTCATCAATGTATCTTAACGCGT
      2201  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 2300
            TGTTTATTTCGTTATCGTAGTGTTTAAAGTGTTTATTTCGTAAAAAAAGTGACGTAAGATCAACACCAAACAGGTTTGAGTAGTTACATAGAATTGCGCA
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                 Ssp1                                                                                  Psi1
                   |                                                                                     |
      AAATTGTAAGCGTTAATATTTTGTTAAAATTCGCGTTAAATTTTTGTTAAATCAGCTCATTTTTTAACCAATAGGCCGAAATCGGCAAAATCCCTTATAA
2301  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 2400
      TTTAACATTCGCAATTATAAAACAATTTTAAGCGCAATTTAAAAACAATTTAGTCGAGTAAAAAATTGGTTATCCGGCTTTAGCCGTTTTAGGGAATATT

                                                          BsaXb                 Drd1    BsaXa
                                                            |                     |        |
      ATCAAAAGAATAGACCGAGATAGGGTTGAGTGTTGTTCCAGTTTGGAACAAGAGTCCACTATTAAAGAACGTGGACTCCAACGTCAAAGGGCGAAAAACC
2401  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 2500
      TAGTTTTCTTATCTGGCTCTATCCCAACTCACAACAAGGTCAAACCTTGTTCTCAGGTGATAATTTCTTGCACCTGAGGTTGCAGTTTCCCGCTTTTTGG

                          Dra3
                            |
      GTCTATCAGGGCGATGGCCCACTACGTGAACCATCACCCTAATCAAGTTTTTTGGGGTCGAGGTGCCGTAAAGCACTAAATCGGAACCCTAAAGGGAGCC
2501  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 2600
      CAGATAGTCCCGCTACCGGGTGATGCACTTGGTAGTGGGATTAGTTCAAAAAACCCCAGCTCCACGGCATTTCGTGATTTAGCCTTGGGATTTCCCTCGG

                             Nae1
                          NgoM4 |                                      BsrB1
                              | |                                        |
      CCCGATTTAGAGCTTGACGGGGAAAGCCGGCGAACGTGGCGAGAAAGGAAGGGAAGAAAGCGAAAGGAGCGGGCGCTAGGGCGCTGGCAAGTGTAGCGGT
2601  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 2700
      GGGCTAAATCTCGAACTGCCCCTTTCGGCCGCTTGCACCGCTCTTTCCTTCCCTTCTTTCGCTTTCCTCGCCCGCGATCCCGCGACCGTTCACATCGCCA

      CACGCTGCGCGTAACCACCACACCCGCCGCGCTTAATGCGCCGCTACAGGGCGCGTCAGGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGT
2701  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 2800
      GTGCGACGCGCATTGGTGGTGTGGGCGGCGCGAATTACGCGGCGATGTCCCGCGCAGTCCACCGTGAAAAGCCCCTTTACACGCGCCTTGGGGATAAACA

                                      BciV1
                                  BspH1  |
                                 BsrB1 |  |                              Ssp1  Ear1        Bsu36
                                     | |  |                                 |     |           |
      TTATTTTTCTAAATACATTCAAATATGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAATAATATTGAAAAAGGAAGAGTCCTGAGGCGGAAA
2801  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 2900
      AATAAAAAGATTTATGTAAGTTTATACATAGGCGAGTACTCTGTTATTGGGACTATTTACGAAGTTATTATAACTTTTTCCTTCTCAGGACTCCGCCTTT
```

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                                                                   Nsi1
                                                                 Sph1 |
          Eci1                                                  BfrB1 |
         Pvu2 |                                   BseY1      BstAP  | |            SexA1
            | |                                      |                |  | |                |
      GAACCAGCTGTGGAATGTGTGTCAGTTAGGGTGTGGAAAGTCCCCAGGCTCCCCAGCAGGCAGAAGTATGCAAAGCATGCATCTCAATTAGTCAGCAACC
2901  |||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||* 3000
      CTTGGTCGACACCTTACACACAGTCAATCCCACACCTTTCAGGGGTCCGAGGGGTCGTCCGTCTTCATACGTTTCGTACGTAGAGTTAATCAGTCGTTGG

                                                  Nsi1
                                                Sph1 |
                                               BfrB1 |
                        BseY1                BstAP  | |                      Eci1
                           |                    |  | |                        |
      AGGTGTGGAAAGTCCCCAGGCTCCCCAGCAGGCAGAAGTATGCAAAGCATGCATCTCAATTAGTCAGCAACCATAGTCCCGCCCCTAACTCCGCCCATCC
3001  |||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||* 3100
      TCCACACCTTTCAGGGGTCCGAGGGGTCGTCCGTCTTCATACGTTTCGTACGTAGAGTTAATCAGTCGTTGGTATCAGGGCGGGGATTGAGGCGGGTAGG

             Eci1                                                                  Sfi1
   Eci1     Bmr1|       Eci1            Nco1                                       Bgl1
      |         ||          |               |                                          |
      CGCCCCTAACTCCGCCCAGTTCCGCCCATTCTCCGCCCCATGGCTGACTAATTTTTTTTATTTATGCAGAGGCCGAGGCCGCCTCGGCCTCTGAGCTATT
3101  |||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||* 3200
      GCGGGGATTGAGGCGGGTCAAGGCGGGTAAGAGGCGGGGTACCGACTGATTAAAAAAAATAAATACGTCTCCGGCTCCGGCGGAGCCGGAGACTCGATAA

                              Avr2
                             Stu1|                                                          BspM1
                          BseR1  ||              Cla1              BsaB1                    BfuA1
                              |  ||                 |                 |                          |
      CCAGAAGTAGTGAGGAGGCTTTTTTGGAGGCCTAGGCTTTTGCAAAGATCGATCAAGAGACAGGATGAGGATCGTTTCGCATGATTGAACAAGATGGATT
3201  |||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||* 3300
      GGTCTTCATCACTCCTCCGAAAAAACCTCCGGATCCGAAAACGTTTCTAGCTAGTTCTCTGTCCTACTCCTAGCAAAGCGTACTAACTTGTTCTACCTAA

                 Eag1                                        Bmr1
                    |                                           |
      GCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTCGGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCCGGCTGTCA
3301  |||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||*||||||||||* 3400
      CGTGCGTCCAAGAGGCCGGCGAACCCACCTCTCCGATAAGCCGATACTGACCCGTGTTGTCTGTTAGCCGACGAGACTACGGCGGCACAAGGCCGACAGT
```

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          Nar1
         Kas1|                       Drd1                                                  Msc1
            ||                          |                                                     |
     GCGCAGGGGCGCCCGGTTCTTTTTGTCAAGACCGACCTGTCCGGTGCCCTGAATGAACTGCAAGACGAGGCAGCGCGGCTATCGTGGCTGGCCACGACGG
3401 |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 3500
     CGCGTCCCCGCGGGCCAAGAAAAACAGTTCTGGCTGGACAGGCCACGGGACTTACTTGACGTTCTGCTCCGTCGCGCCGATAGCACCGACCGGTGCTGCC

                Pvu2
            Fsp1   |       PflF1                        Eco57
               |   |           |                           |
     GCGTTCCTTGCGCAGCTGTGCTCGACGTTGTCACTGAAGCGGGAAGGGACTGGCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTCCTGTCATCTCACCT
3501 |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 3600
     CGCAAGGAACGCGTCGACACGAGCTGCAACAGTGACTTCGCCCTTCCCTGACCGACGATAACCCGCTTCACGGCCCCGTCCTAGAGGACAGTAGAGTGGA

                                                                                   BspM1
                            BciV1         BsrD1                                    BfuA1
                                |             |                                       |
     TGCTCCTGCCGAGAAAGTATCCATCATGGCTGATGCAATGCGGCGGCTGCATACGCTTGATCCGGCTACCTGCCCATTCGACCACCAAGCGAAACATCGC
3601 |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 3700
     ACGAGGACGGCTCTTTCATAGGTAGTACCGACTACGTTACGCCGCCGACGTATGCGAACTAGGCCGATGGACGGGTAAGCTGGTGGTTCGCTTTGTAGCG

                                                   Sap1
                                                   Ear1                            BpuE1
                                                      |                               |
     ATCGAGCGAGCACGTACTCGGATGGAAGCCGGTCTTGTCGATCAGGATGATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGCCGAACTGTTCGCCAGGC
3701 |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 3800
     TAGCTCGCTCGTGCATGAGCCTACCTTCGGCCAGAACAGCTAGTCCTACTAGACCTGCTTCTCGTAGTCCCCGAGCGCGGTCGGCTTGACAAGCGGTCCG

                Sph1                        Nco1
                   |                           |
     TCAAGGCGAGCATGCCCGACGGCGAGGATCTCGTCGTGACCCATGGCGATGCCTGCTTGCCGAATATCATGGTGGAAAATGGCCGCTTTTCTGGATTCAT
3801 |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 3900
     AGTTCCGCTCGTACGGGCTGCCGCTCCTAGAGCAGCACTGGGTACCGCTACGGACGAACGGCTTATAGTACCACCTTTTACCGGCGAAAAGACCTAAGTA
```

```
                BseY1
               Nae1 |                                          Sap1
           NgoM4 | |        Rsr2         Eci1                 Ear1                  Eco57
               | | |           |            |                     |                     |
      CGACTGTGGCCGGCTGGGTGTGGCGGACCGCTATCAGGACATAGCGTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATGGGCTGACCGCTTC
3901  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 4000
      GCTGACACCGGCCGACCCACACCGCCTGGCGATAGTCCTGTATCGCAACCGATGGGCACTATAACGACTTCTCGAACCGCCGCTTACCCGACTGGCGAAG

  BssS1                BsrB1                                                BsrB1          BstB1
      |                    |                                                    |              |
      CTCGTGCTTTACGGTATCGCCGCTCCCGATTCGCAGCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCTTCTGAGCGGGACTCTGGGGTTCGAAATGAC
4001  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 4100
      GAGCACGAAATGCCATAGCGGCGAGGGCTAAGCGTCGCGTAGCGGAAGATAGCGGAAGAACTGCTCAAGAAGACTCGCCCTGAGACCCCAAGCTTTACTG

                           BssS1                                                                Nae1
                           BspM1                                                             NgoM4 |
                           BfuA1                                                              Bpm1 |
                               |                                                                | |
      CGACCAAGCGACGCCCAACCTGCCATCACGAGATTTCGATTCCACCGCCGCCTTCTATGAAAGGTTGGGCTTCGGAATCGTTTTCCGGGACGCCGGCTGG
4101  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 4200
      GCTGGTTCGCTGCGGGTTGGACGGTAGTGCTCTAAAGCTAAGGTGGCGGCGGAAGATACTTTCCAACCCGAAGCCTTAGCAAAAGGCCCTGCGGCCGACC

                                                Bpm1
                                            Avr2  |
                                                |  |
      ATGATCCTCCAGCGCGGGGATCTCATGCTGGAGTTCTTCGCCCACCCTAGGGGGAGGCTAACTGAAACACGGAAGGAGACAATACCGGAAGGAACCCGCG
4201  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 4300
      TACTAGGAGGTCGCGCCCCTAGAGTACGACCTCAAGAAGCGGGTGGGATCCCCCTCCGATTGACTTTGTGCCTTCCTCTGTTATGGCCTTCCTTGGGCGC

                                                                                                  Bsa1
                                                                                                    |
      CTATGACGGCAATAAAAAGACAGAATAAAACGCACGGTGTTGGGTCGTTTGTTCATAAACGCGGGGTTCGGTCCCAGGGCTGGCACTCTGTCGATACCCC
4301  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 4400
      GATACTGCCGTTATTTTTCTGTCTTATTTTGCGTGCCACAACCCAGCAAACAAGTATTTGCGCCCCAAGCCAGGGTCCCGACCGTGAGACAGCTATGGGG

      ACCGAGACCCCATTGGGGCCAATACGCCCGCGTTTCTTCCTTTTCCCCACCCCACCCCCCAAGTTCGGGTGAAGGCCCAGGGCTCGCAGCCAACGTCGGG
4401  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 4500
      TGGCTCTGGGGTAACCCCGGTTATGCGGGCGCAAAGAAGGAAAAGGGGTGGGGTGGGGGGTTCAAGCCCACTTCCGGGTCCCGAGCGTCGGTTGCAGCCC
```

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            BstAP
            AlwN1      Bsu36                            Dra1               Dra1
                |          |                               |                  |
      GCGGCAGGCCCTGCCATAGCCTCAGGTTACTCATATATACTTTAGATTGATTTAAAACTTCATTTTTAATTTAAAAGGATCTAGGTGAAGATCCTTTTTG
4501  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 4600
      CGCCGTCCGGGACGGTATCGGAGTCCAATGAGTATATATGAAATCTAACTAAATTTTGAAGTAAAAATTAAATTTTCCTAGATCCACTTCTAGGAAAAAC

        BspH1
            |
      ATAATCTCATGACCAAAATCCCTTAACGTGAGTTTTCGTTCCACTGAGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTTCT
4601  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 4700
      TATTAGAGTACTGGTTTTAGGGAATTGCACTCAAAAGCAAGGTGACTCGCAGTCTGGGGCATCTTTTCTAGTTTCCTAGAAGAACTCTAGGAAAAAAAGA

    BpuE1                                                                                Eco57
       |                                                                                    |
      GCGCGTAATCTGCTGCTTGCAAACAAAAAAACCACCGCTACCAGCGGTGGTTTGTTTGCCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAACTGGC
4701  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 4800
      CGCGCATTAGACGACGAACGTTTGTTTTTTTGGTGGCGATGGTCGCCACCAAACAAACGGCCTAGTTCTCGATGGTTGAGAAAAAGGCTTCCATTGACCG

      TTCAGCAGAGCGCAGATACCAAATACTGTCCTTCTAGTGTAGCCGTAGTTAGGCCACCACTTCAAGAACTCTGTAGCACCGCCTACATACCTCGCTCTGC
4801  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 4900
      AAGTCGTCTCGCGTCTATGGTTTATGACAGGAAGATCACATCGGCATCAATCCGGTGGTGAAGTTCTTGAGACATCGTGGCGGATGTATGGAGCGAGACG

                  AlwN1                     BpuE1
                     |                         |
      TAATCCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCGTGTCTTACCGGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTCGGGCTG
4901  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 5000
      ATTAGGACAATGGTCACCGACGACGGTCACCGCTATTCAGCACAGAATGGCCCAACCTGAGTTCTGCTATCAATGGCCTATTCCGCGTCGCCAGCCCGAC

              ApaL1     BseY1
                  |         |
      AACGGGGGGTTCGTGCACACAGCCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAA
5001  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 5100
      TTGCCCCCCAAGCACGTGTGTCGGGTCGAACCTCGCTTGCTGGATGTGGCTTGACTCTATGGATGTCGCACTCGATACTCTTTCGCGGTGCGAAGGGCTT
```

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                                BciV1
                            Eci1   |                    BssS1
                               |   |                       |
      GGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAAACGCCTGGTATCTTTATAGTCCTG
5101  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 5200
      CCCTCTTTCCGCCTGTCCATAGGCCATTCGCCGTCCCAGCCTTGTCCTCTCGCGTGCTCCCTCGAAGGTCCCCCTTTGCGGACCATAGAAATATCAGGAC

                            Drd1            BpuE1                         Eci1
                               |               |                            |
      TCGGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGGCGGAGCCTATGGAAAAACGCCAGCAACGCGGCCTTTTTACGGTT
5201  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||* 5300
      AGCCCAAAGCGGTGGAGACTGAACTCGCAGCTAAAAACACTACGAGCAGTCCCCCCGCCTCGGATACCTTTTTGCGGTCGTTGCGCCGGAAAAATGCCAA

                                                                                          Nsi1
                            BspLU                                                      BfrB1 |
                                |                                                          | |
      CCTGGCCTTTTGCTGGCCTTTTGCTCACATGTTCTTTCCTGCGTTATCCCCTGATTCTGTGGATAACCGTATTACCGCCATGCAT
5301  |||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*|||||||||*||||| 5385
      GGACCGGAAAACGACCGGAAAACGAGTGTACAAGAAAGGACGCAATAGGGGACTAAGACACCTATTGGCATAATGGCGGTACGTA
```

Found:

Aat2	**Acc65**	**Afe1**	**Age1**	Ale1	AlwN1	**Apa1**	ApaL1	**Ase1**	Avr2	**BamH1**	Bcg1a	Bcg1b	BciV1
Bcl1	BfrB1	BfuA1	Bgl1	**Bgl2**	Bmr1	Bpm1	BpuE1	**Bsa1**	BsaB1	**BsaXa**	**BsaXb**	**BseR1**	BseY1
Bsm1	BspH1	**BspLU**	BspM1	BsrB1	**BsrD1**	BsrG1	BssH2	BssS1	BstAP	BstB1	Bsu36	**Bts1**	**Cla1**
Dra1	**Dra3**	Drd1	Eag1	Ear1	Eci1	Eco57	EcoN1	**EcoR1**	FspA1	Fsp1	**Hind3**	**Hpa1**	Kas1
Kpn1	**Mfe1**	**Mlu1**	**Msc1**	Nae1	Nar1	Nco1	**Nde1**	NgoM4	**Nhe1**	Nsi1	**PflF1**	Pml1	Psi1
PspOM	**Pst1**	Pvu2	**Rsr2**	**Sac1**	**Sac2**	**Sal1**	Sap1	Sca1	**SexA1**	Sfi1	Sma1	**SnaB1**	Sph1
Ssp1	**Stu1**	**Xba1**	Xcm1	**Xho1**									

Unique:

Acc65	**Afe1**	**Age1**	**Apa1**	**Ase1**	**BamH1**	**Bcl1**	**Bgl2**	**Bsa1**	**BsaXa**	**BsaXb**	**BseR1**	**BspLU**	**BsrD1**
Bts1	**Cla1**	**Dra3**	**EcoR1**	**Hind3**	**Hpa1**	**Kpn1**	**Mfe1**	**Mlu1**	**Msc1**	**Nde1**	**Nhe1**	**PflF1**	**PspOM**
Pst1	**Rsr2**	**Sac1**	**Sac2**	**Sal1**	**SexA1**	**SnaB1**	**Stu1**	**Xba1**	**Xho1**				

Not found:

Aar1	Acl1	Afl2	Ahd1	Asc1	AsiS1	Bae1a	Bae1b	Bbs1	BbvC1	Blp1	BmgB1	Bpu10	Bsg1
BsiW1	BsmB1	BspE1	BstE2	BstX1	BstZ1	_Chi	EcoK	EcoRV	ScFRT	Fse1	I_Ceu	loxP	Not1
Nru1	Pac1	PflM1	Pme1	PshA1	Pvu1	SanD1	Sbf1	Sgf1	SgrA1	Spe1	Srf1	Swa1	PISce
Xmn1													

Excluded by site complexity:

Acc1	Aci1	Afl3	Alu1	Alw1	Apo1	Ava1	Ava2	Ban1	Ban2	Bbv1	BceA1	Bfa1	Bme15
BsaA1	BsaH1	BsaJ1	BsaW1	BseM2	BsiE1	BsiH1	Bsl1	BsmA1	BsmF1	Bsp12	BspCa	BspCb	Bsr1
BsrF1	BssK1	BstF5	BstN1	BstU1	BstY1	Btg1	Cac8	CviJ1	Dde1	Eae1	EcoO1	Fau1	Fnu4H
Fok1	Hae2	Hae3	Hga1	Hha1	Hinc2	Hinf1	HinP1	Hpa2	Hph1	Hpy99	Hpy1	Hpy3	HpyC3
HpyC4	HpyC5	Mae3	Mbo2	Mnl1	Mse1	Msl1	MspA1	Mwo1	Nci1	Nla3	Nla4	Nsp1	Ple1
PpuM1	Rsa1	Sau3A	Sau96	SfaN1	Sfc1	Sml1	Sty1	Taq1	Tat1	Tfi1	Tse1	Tsp45	Tsp50
TspR1													