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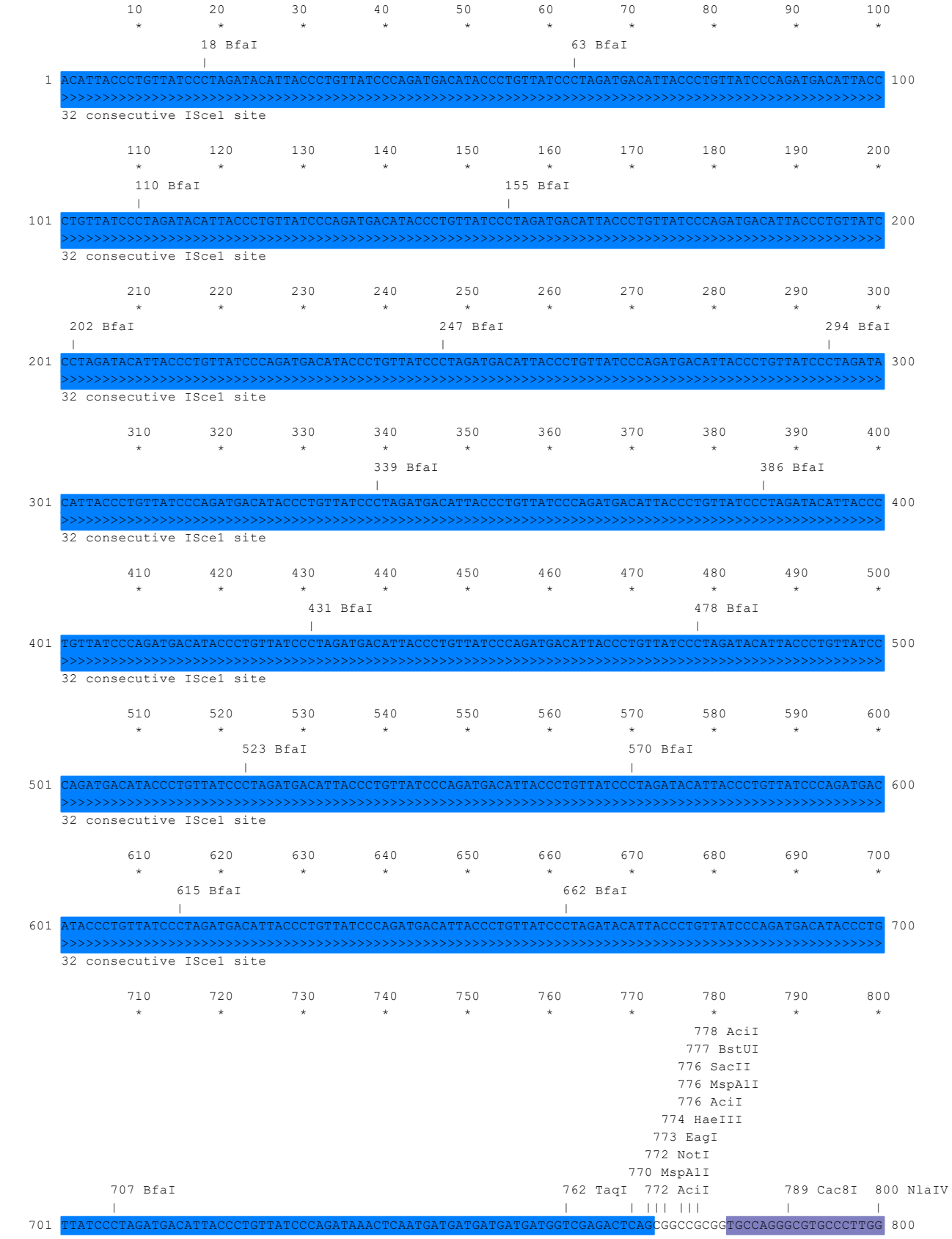

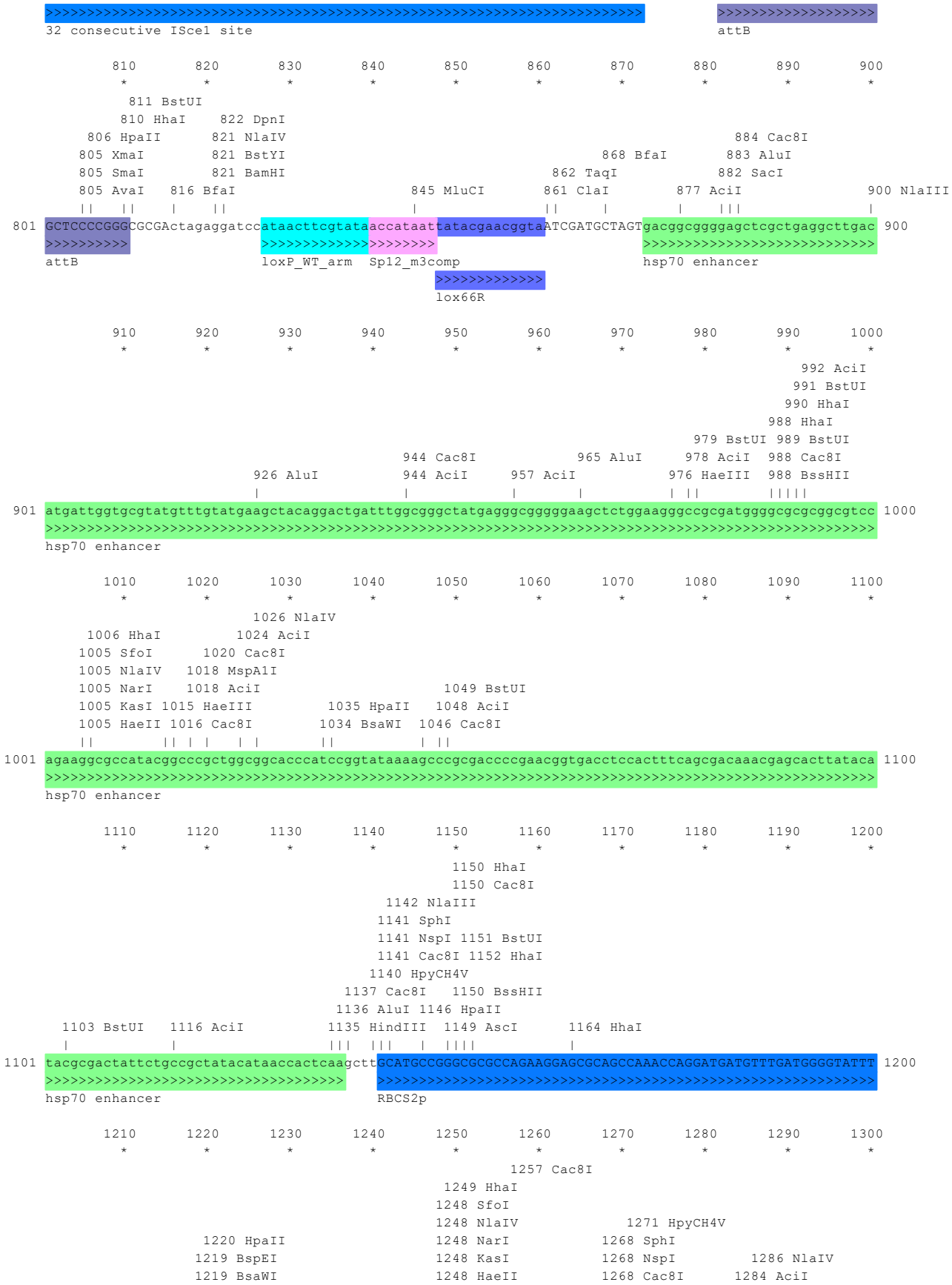
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862 TaqI
882 SacI
805 AvaI
816 BfaI
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861 ClaI
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900 NlaIII
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944 AciI
957 AciI
976 HaeIII
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hsp70 enhancer
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1141 NspI
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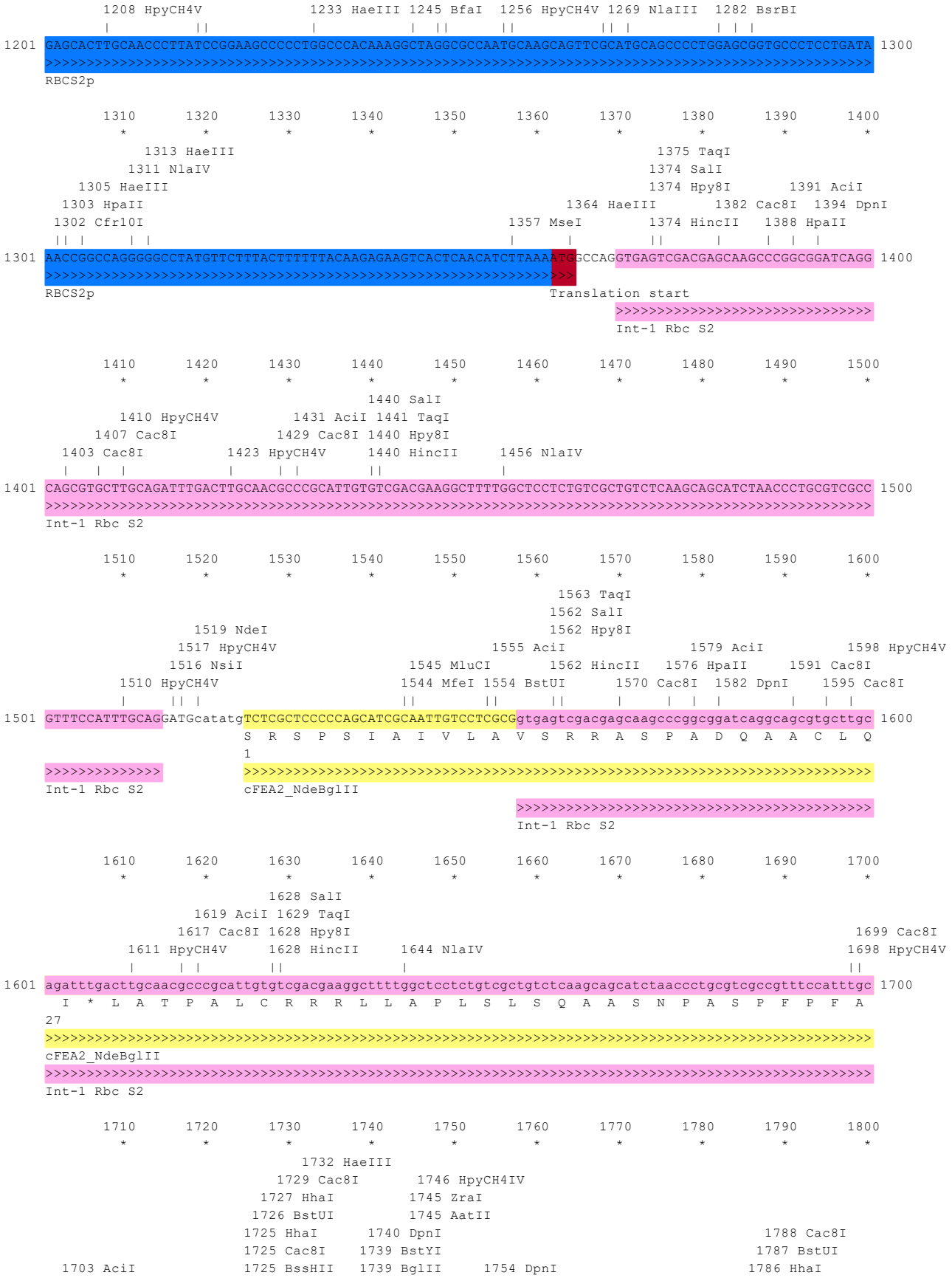
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1313 HaeIII
1375 TaqI
1311 NlaIV
1374 SalI
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1394 DpnI
1302 Cfr10I
1357 MseI
1374 HincII
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RBCS2p
Translation start
Int-1 Rbc S2
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1598 HpyCH4V
1516 NsiI
1545 MluCI
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1544 MfeI 1554 BstUI
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1
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I * L A T P A L C R R R L L A P L S L S Q A A S N P A S P F P F A
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cFEA2_NdeBglII
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1726 BstUI
1745 AatII
1725 HhaI
1740 DpnI
1788 Cac8I
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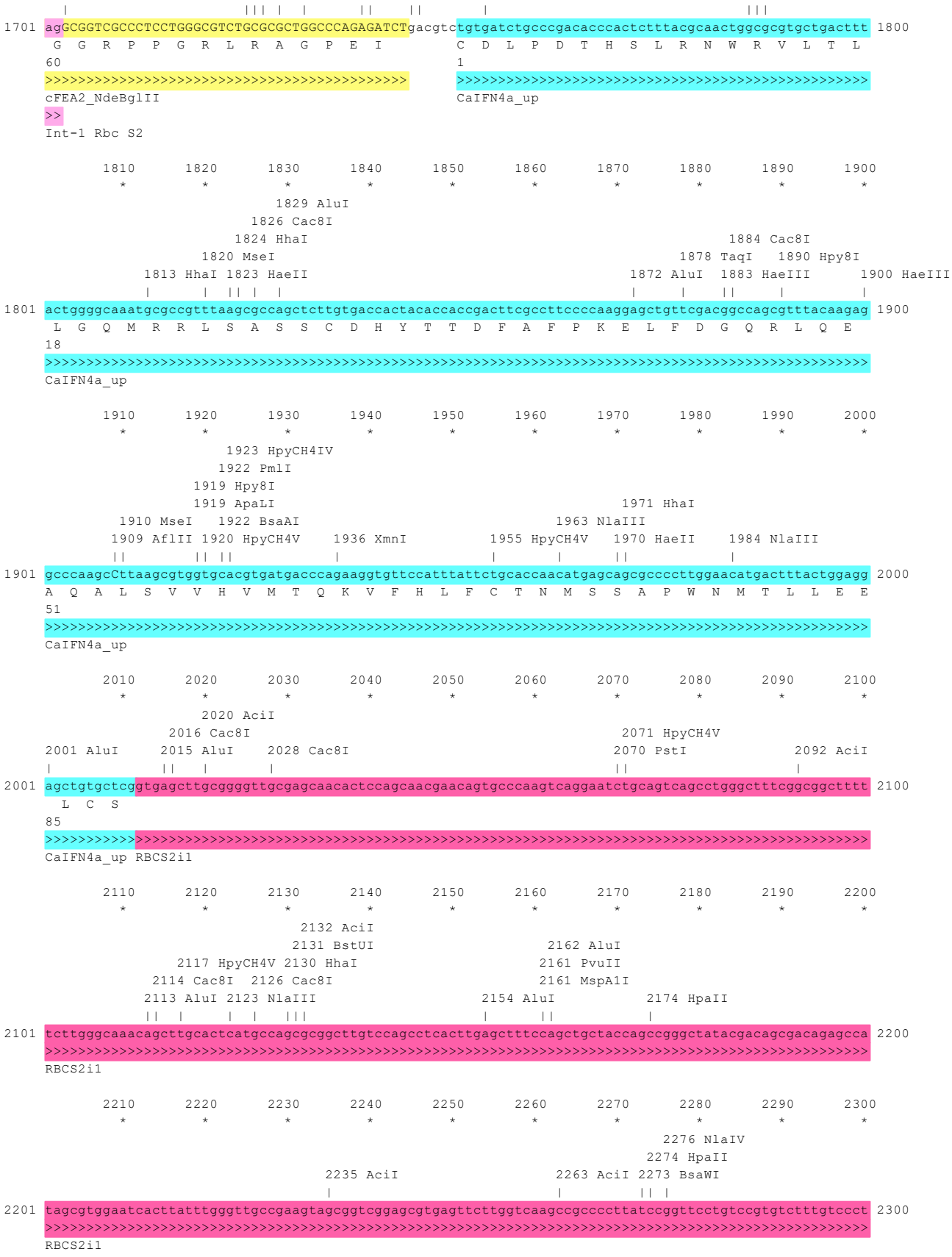
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C D L P D T H S L R N W R V L T L
60
1
cFEA2_NdeBglII
CaIFN4a_up
Int-1 Rbc S2
1810 1820 1830 1840 1850 1860 1870 1880 1890 1900
1829 AluI
1826 Cac8I
1824 HhaI
1884 Cac8I
1820 MseI
1878 TaqI 1890 Hpy8I
1813 HhaI 1823 HaeII
1872 AluI 1883 HaeIII 1900 HaeIII
1801 actggggcaaatgcgccgtttaagcgccagctcttgtgaccactacaccaccgacttcgccttccccaaggagctgttcgacggccagcgtttacaagag 1900
L G Q M R R L S A S S C D H Y T T D F A F P K E L F D G Q R L Q E
18
CaIFN4a_up
1910 1920 1930 1940 1950 1960 1970 1980 1990 2000
1923 HpyCH4IV
1922 PmlI
1919 Hpy8I
1919 ApaLI
1971 HhaI
1910 MseI 1922 BsaAI
1963 NlaIII
1909 AflII 1920 HpyCH4V 1936 XmnI
1955 HpyCH4V 1970 HaeII 1984 NlaIII
1901 gcccaagcCttaagcgtggtgcacgtgatgacccagaaggtgttccatttattctgcaccaacatgagcagcgccccttggaacatgactttactggagg 2000
A Q A L S V V H V M T Q K V F H L F C T N M S S A P W N M T L L E E
51
CaIFN4a_up
2010 2020 2030 2040 2050 2060 2070 2080 2090 2100
2020 AciI
2016 Cac8I
2071 HpyCH4V
2001 AluI 2015 AluI 2028 Cac8I
2070 PstI 2092 AciI
2001 agctgtgctcggtgagcttgcggggttgcgagcaacactccagcaacgaacagtgcccaagtcaggaatctgcagtcagcctgggctttcggcggctttt 2100
L C S
85
CaIFN4a_up RBCS2i1
2110 2120 2130 2140 2150 2160 2170 2180 2190 2200
2132 AciI
2131 BstUI
2162 AluI
2117 HpyCH4V 2130 HhaI
2161 PvuII
2114 Cac8I 2126 Cac8I
2161 MspA1I
2113 AluI 2123 NlaIII
2154 AluI
2174 HpaII
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RBCS2i1
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2276 NlaIV
2274 HpaII
2235 AciI
2263 AciI 2273 BsaWI
2201 tagcgtggaatcacttatttgggttgccgaagtagcggtcggagcgtgagttcttggtcaagccgccccttatccggttcctgtccgtgtctttgtccct 2300
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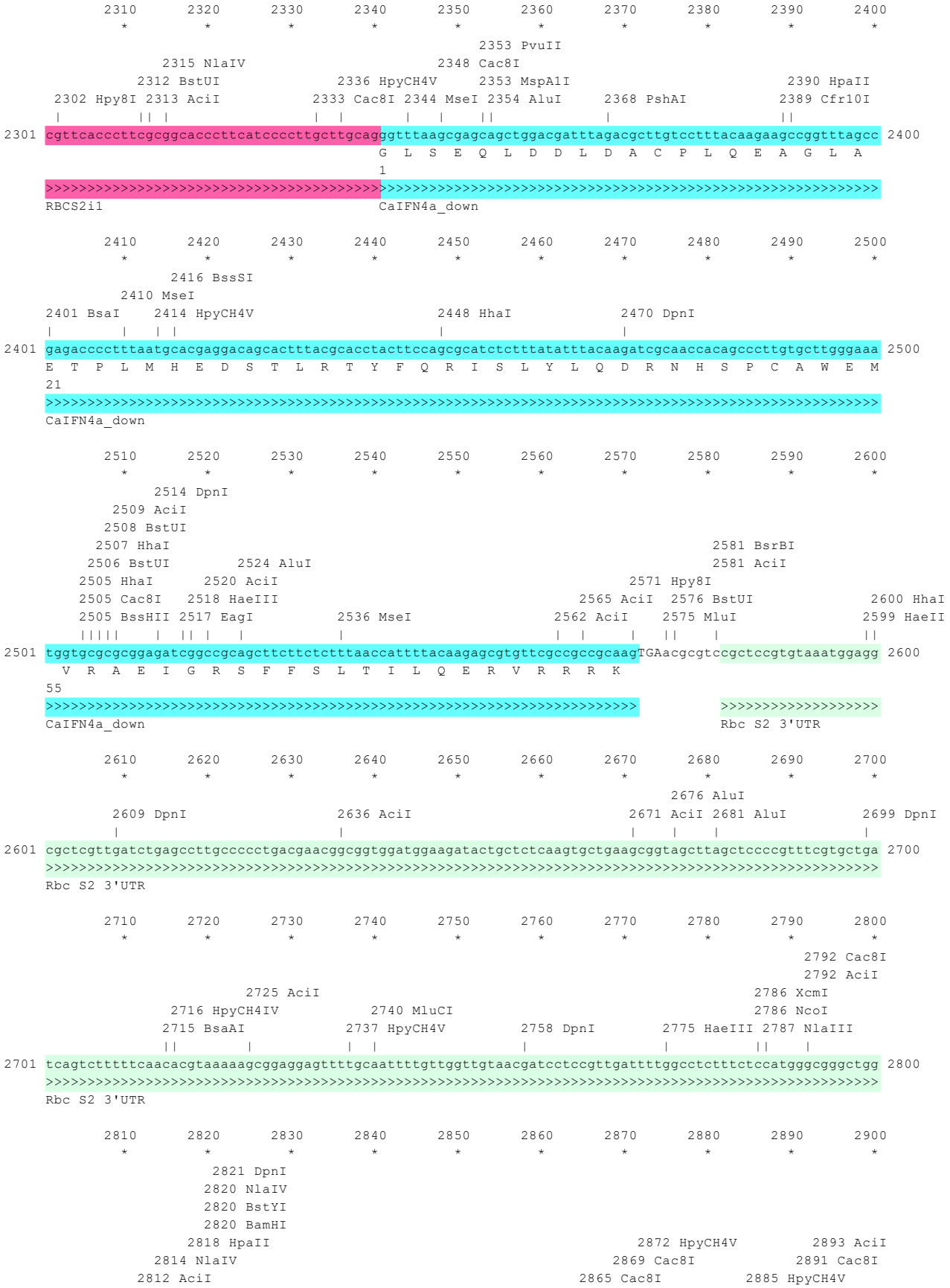
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G L S E Q L D D L D A C P L Q E A G L A
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RBCS2i1
CaIFN4a_down
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21
CaIFN4a_down
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V R A E I G R S F F S L T I L Q E R V R R R K
55
CaIFN4a_down
Rbc S2 3'UTR
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2609 DpnI
2636 AciI
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2775 HaeIII 2787 NlaIII
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2821 DpnI
2820 NlaIV
2820 BstYI
2820 BamHI
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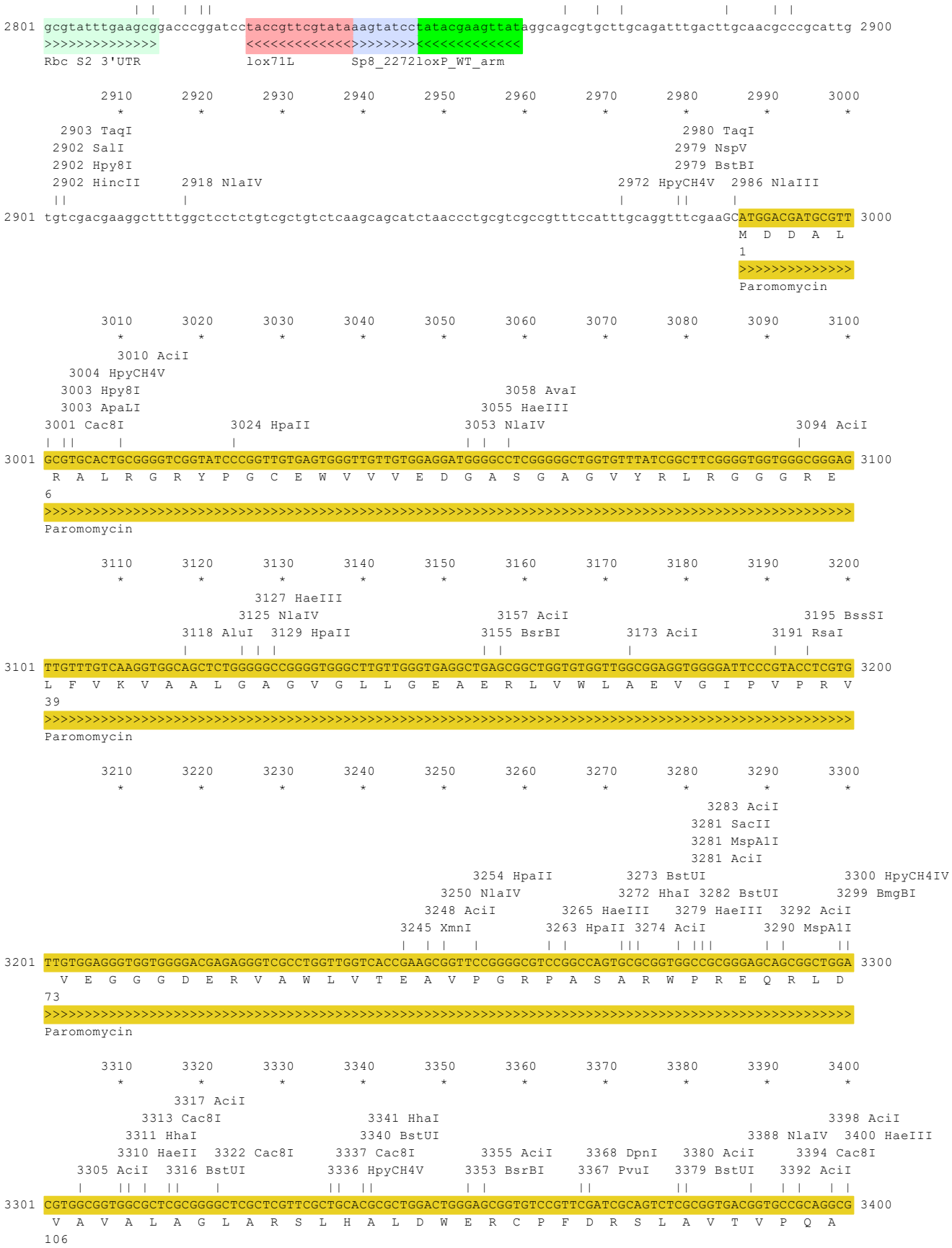
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3003 Hpy8I
3003 ApaLI
3001 Cac8I
3024 HpaII
3053 NlaIV
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3055 HaeIII
3094 AciI
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3125 NlaIV
3118 AluI
3129 HpaII
3157 AciI
3155 BsrBI
3173 AciI
3195 BssSI
3191 RsaI
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3281 SacII
3281 MspA1I
3281 AciI
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3245 XmnI
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3272 HhaI
3282 BstUI
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3299 BmgBI
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3263 HpaII
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3290 MspA1I
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3310 HaeII
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3305 AciI
3316 BstUI
3341 HhaI
3340 BstUI
3337 Cac8I
3336 HpyCH4V
3355 AciI
3353 BsrBI
3368 DpnI
3367 PvuI
3380 AciI
3379 BstUI
3398 AciI
3388 NlaIV
3400 HaeIII
3394 Cac8I
3392 AciI

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     >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
     Paromomycin

            3410      3420      3430      3440      3450      3460      3470      3480      3490      3500
               *         *         *         *         *         *         *         *         *         *
                          3426 TaqI
                         3425 SalI                                                           3493 AciI
                         3425 Hpy8I 3436 BstYI     3451 AciI           3472 AciI           3491 BsrBI
                         3425 HincII 3437 DpnI   3449 BsrBI           3470 BsrBI      3486 AluI
                         ||          ||           | |                   | |             |    | |
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     A  R  A  V  A  E  G  S  V  D  L  E  D  L  D  E  E  R  K  G  W  S  G  E  R  L  L  A  E  L  E  R  T  R
     139
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     Paromomycin

            3510      3520      3530      3540      3550      3560      3570      3580      3590      3600
               *         *         *         *         *         *         *         *         *         *
         3506 AciI      3521 AciI                                                                3597 HpyCH4IV
     3502 Cac8I   3515 DpnI                          3552 HpyCH4IV     3570 RsaI             3592 DpnI
     3501 HaeIII  3514 BstYI                  3545 HpaII       3561 TaqI              3585 HpaII 3596 BmgBI
     ||   |       ||     |                         |      |         |        |              |      |  ||
3501 GGCCTGCGGACGAGGATCTGGCGGTTTGCCACGGTgACCTGTGCCCGGACAACGTGCTGCTCGACCCTCGTACCTGCGAGGTGACCGGGCTGATCGACGT 3600
       P  A  D  E  D  L  A  V  C  H  G  D  L  C  P  D  N  V  L  L  D  P  R  T  C  E  V  T  G  L  I  D  V
     173
     >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
     Paromomycin

            3610      3620      3630      3640      3650      3660      3670      3680      3690      3700
               *         *         *         *         *         *         *         *         *         *
                                                             3658 HaeIII
                                                          3655 Cac8I                              3698 AciI
                        3622 HpaII                       3654 AluI                              3696 SacII
             3611 HaeIII               3638 HhaI    3651 Cac8I                                  3696 MspA1I
            3610 EagI  3621 Cfr10I    3637 BstUI   3650 BstUI         3670 NlaIV      3686 HpaII 3697 BstUI
       3604 AciI   3617 AciI      3632 DpnI       3649 HhaI   3662 BssSI           3684 HaeIII 3696 AciI
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      G  R  V  G  R  A  D  R  H  S  D  L  A  L  V  L  R  E  L  A  H  E  E  D  P  W  F  G  P  E  C  S  A
     206
     >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
     Paromomycin

            3710      3720      3730      3740      3750      3760      3770      3780      3790      3800
               *         *         *         *         *         *         *         *         *         *
                                                                                                3800 BsrBI
                     3723 AciI                                                                  3800 AciI
                    3722 BstUI                                                              3792 TaqI
              3715 RsaI                            3754 Cac8I  3766 HpaII                  3791 XhoI
          3709 AciI   3721 HhaI      3737 AciI    3753 AluI   3765 Cfr10I                  3791 AvaI
            |     |     |||             |               ||          ||                      ||        |
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     A  F  L  R  E  Y  G  R  G  W  D  G  A  V  S  E  E  K  L  A  F  Y  R  L  L  D  E  F  F  *
     239
     >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
     Paromomycin

            3810      3820      3830      3840      3850      3860      3870      3880      3890      3900
               *         *         *         *         *         *         *         *         *         *
                              3828 DpnI
                     3819 HhaI                                                                3895 AluI
                    3818 HaeII                          3855 AciI                          3890 AciI 3900 AluI
                    ||         |                          |                                  |    |    |
3801 CGCTCCGTGTAAATGGAGGCGCTCGTTGATCTGAGCCTTGCCCCCTGACGAACGGCGGTGGATGGAAGATACTGCTCTCAAGTGCTGAAGCGGTAGCTTA 3900
     >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
     Rbc S2 3'UTR

            3910      3920      3930      3940      3950      3960      3970      3980      3990      4000
               *         *         *         *         *         *         *         *         *         *
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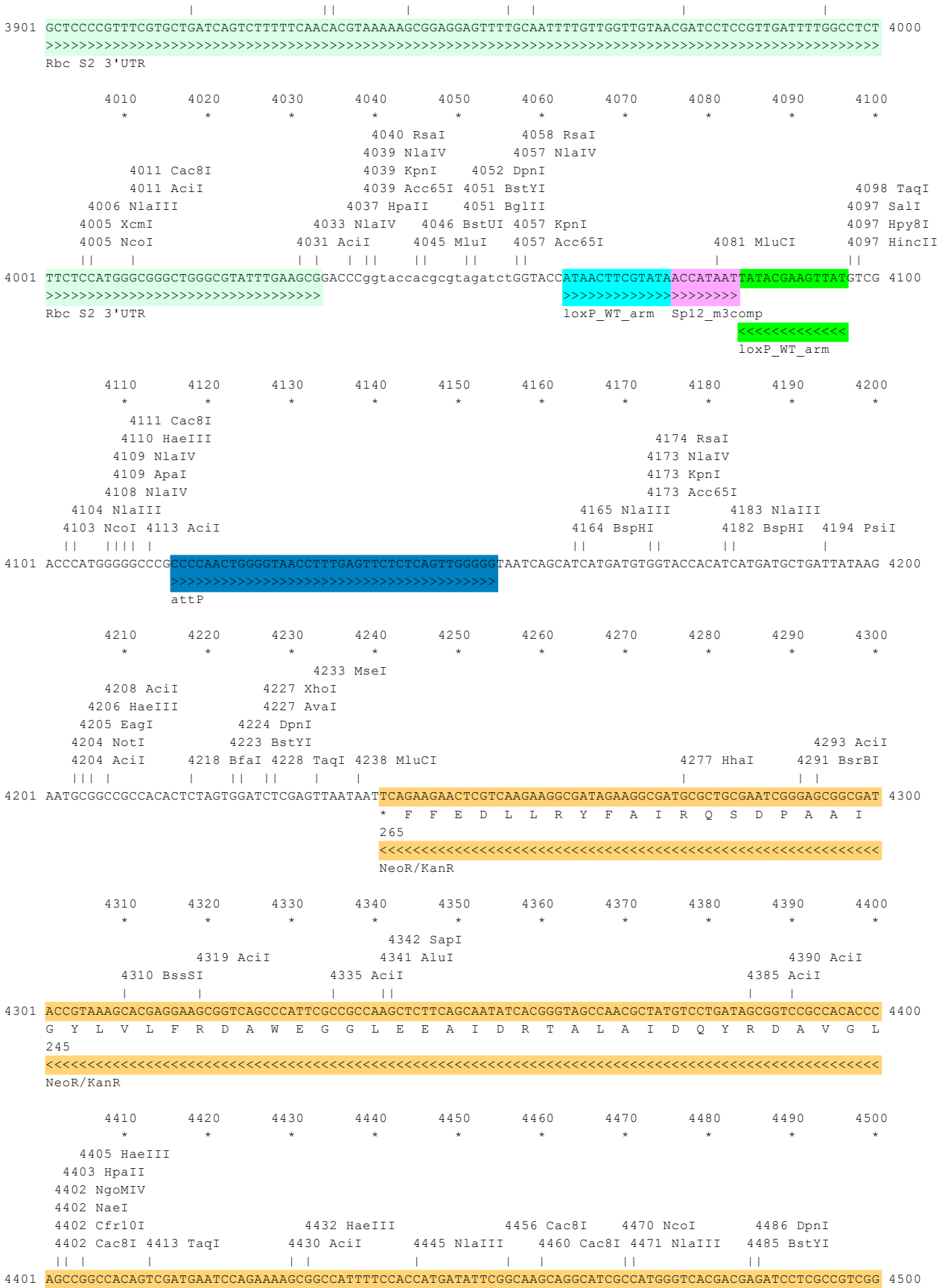
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4040 RsaI
4058 RsaI
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4057 NlaIV
4011 Cac8I
4039 KpnI
4052 DpnI
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4051 BstYI
4098 TaqI
4006 NlaIII
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4108 NlaIV
4173 Acc65I
4104 NlaIII
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4183 NlaIII
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4113 AciI
4164 BspHI
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4204 NotI
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4228 TaqI
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NeoR/KanR
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4342 SapI
4319 AciI
4341 AluI
4390 AciI
4310 BssSI
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4385 AciI
4301 ACCGTAAAGCACGAGGAAGCGGTCAGCCCATTCGCCGCCAAGCTCTTCAGCAATATCACGGGTAGCCAACGCTATGTCCTGATAGCGGTCCGCCACACCC 4400
G Y L V L F R D A W E G G L E E A I D R T A L A I D Q Y R D A V G L
245
NeoR/KanR
4410 4420 4430 4440 4450 4460 4470 4480 4490 4500
4405 HaeIII
4403 HpaII
4402 NgoMIV
4402 NaeI
4402 Cfr10I
4432 HaeIII
4456 Cac8I
4470 NcoI
4486 DpnI
4402 Cac8I 4413 TaqI
4430 AciI
4445 NlaIII
4460 Cac8I
4471 NlaIII
4485 BstYI
4401 AGCCGGCCACAGTCGATGAATCCAGAAAAGCGGCCATTTTCCACCATGATATTCGGCAAGCAGGCATCGCCATGGGTCACGACGAGATCCTCGCCGTCGG 4500

```
  R  G  C  D  I  F  G  S  F  R  G  N  E  V  M  I  N  P  L  C  A  D  G  H  T  V  V  L  D  E  G  D  P
211
<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
NeoR/KanR

       4510      4520      4530      4540      4550      4560      4570      4580      4590      4600
          *         *         *         *         *         *         *         *         *         *

    4505 Cac8I
 4502 NlaIII                          4539 Cac8I
4501 SphI                            4538 BstUI
4501 NspI                           4537 HhaI                            4573 DpnI  4584 HpaII      4600 BsaAI
4501 Cac8I                      4533 Cac8I         4552 SapI   4564 DpnI           4583 Cfr10I     4599 RsaI
||  |                           |   |||            |           |        |          ||              ||
4501 GCATGCTCGCCTTGAGCCTGGCGAACAGTTCGGCTGGCGCGAGCCCCTGATGCTCTTCGTCCAGATCATCCTGATCGACAAGACCGGCTTCCATCCGAGT 4600
 M  S  A  K  L  R  A  F  L  E  A  P  A  L  G  Q  H  E  E  D  L  D  D  Q  D  V  L  G  A  E  M  R  T
178
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NeoR/KanR

       4610      4620      4630      4640      4650      4660      4670      4680      4690      4700
          *         *         *         *         *         *         *         *         *         *

          4611 TaqI                                                  4673 AciI
    4605 Cac8I                                     4654 DpnI      4670 AciI          4688 NlaIII
4601 HpyCH4IV                     4635 TaqI     4651 HpaII    4665 HpyCH4V   4679 HpyCH4V
|   |     |                       |               |  |          |    |  |     |        |
4601 ACGTGCTCGCTCGATGCGATGTTTCGCTTGGTGGTCGAATGGGCAGGTAGCCGGATCAAGCGTATGCAGCCGCCGCATTGCATCAGCCATGATGGATACT 4700
R  A  R  E  I  R  H  K  A  Q  H  D  F  P  C  T  A  P  D  L  T  H  L  R  R  M  A  D  A  M  I  S  V  K
145
<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
NeoR/KanR

       4710      4720      4730      4740      4750      4760      4770      4780      4790      4800
          *         *         *         *         *         *         *         *         *         *
                                                                                                4799 AluI
                                                                                               4798 PvuII
                                                                                              4798 MspA1I
                                     4741 HpaII
                            4732 DpnI                                                  4791 TaqI
                           4731 BstYI                                    4774 AciI    4788 HpyCH4IV
                               ||        |                                |            |  |      ||
4701 TTCTCGGCAGGAGCAAGGTGAGATGACAGGAGATCCTGCCCCGGCACTTCGCCCAATAGCAGCCAGTCCCTTCCCGCTTCAGTGACAACGTCGAGCACAG 4800
  E  A  P  A  L  H  S  S  L  L  D  Q  G  P  V  E  G  L  L  L  W  D  R  G  A  E  T  V  V  D  L  V  A
111
<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
NeoR/KanR

       4810      4820      4830      4840      4850      4860      4870      4880      4890      4900
          *         *         *         *         *         *         *         *         *         *

                      4824 Cac8I      4840 HhaI                        4872 HpaII
  4803 HhaI          4823 HaeIII     4839 BstUI                      4871 BsaWI
 4802 FspI          4822 MscI       4838 AciI        4854 HpyCH4V   4868 NlaIV                      4900 HpaII
 ||                 |||             |||              |              |  ||                          |
4801 CTGCGCAAGGAACGCCCGTCGTGGCCAGCCACGATAGCCGCGCTGCCTCGTCTTGCAGTTCATTCAGGGCACCGGACAGGTCGGTCTTGACAAAAAGAAC 4900
 A  C  P  V  G  T  T  A  L  W  S  L  R  A  A  E  D  Q  L  E  N  L  A  G  S  L  D  T  K  V  F  L  V
78
<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
NeoR/KanR

       4910      4920      4930      4940      4950      4960      4970      4980      4990      5000
          *         *         *         *         *         *         *         *         *         *
           4912 HhaI
   4904 HhaI
  4903 SfoI
  4903 NlaIV                                                                                    4999 HpaII
  4903 NarI                                                                                    4997 HaeIII
  4903 KasI                     4932 AciI                                                     4996 EagI
  4903 HaeII          4922 HpaII                                                             4995 AciI
  ||        |         |         |                                                            ||| |
4901 CGGGCGCCCCTGCGCTGACAGCCGGAACACGGCGGCATCAGAGCAGCCGATTGTCTGTTGTGCCCAGTCATAGCCGAATAGCCTCTCCACCCAAGCGGCC 5000
P  R  G  Q  A  S  L  R  F  V  A  A  D  S  C  G  I  T  Q  Q  A  W  D  Y  G  F  L  R  E  V  W  A  A  P
45
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NeoR/KanR
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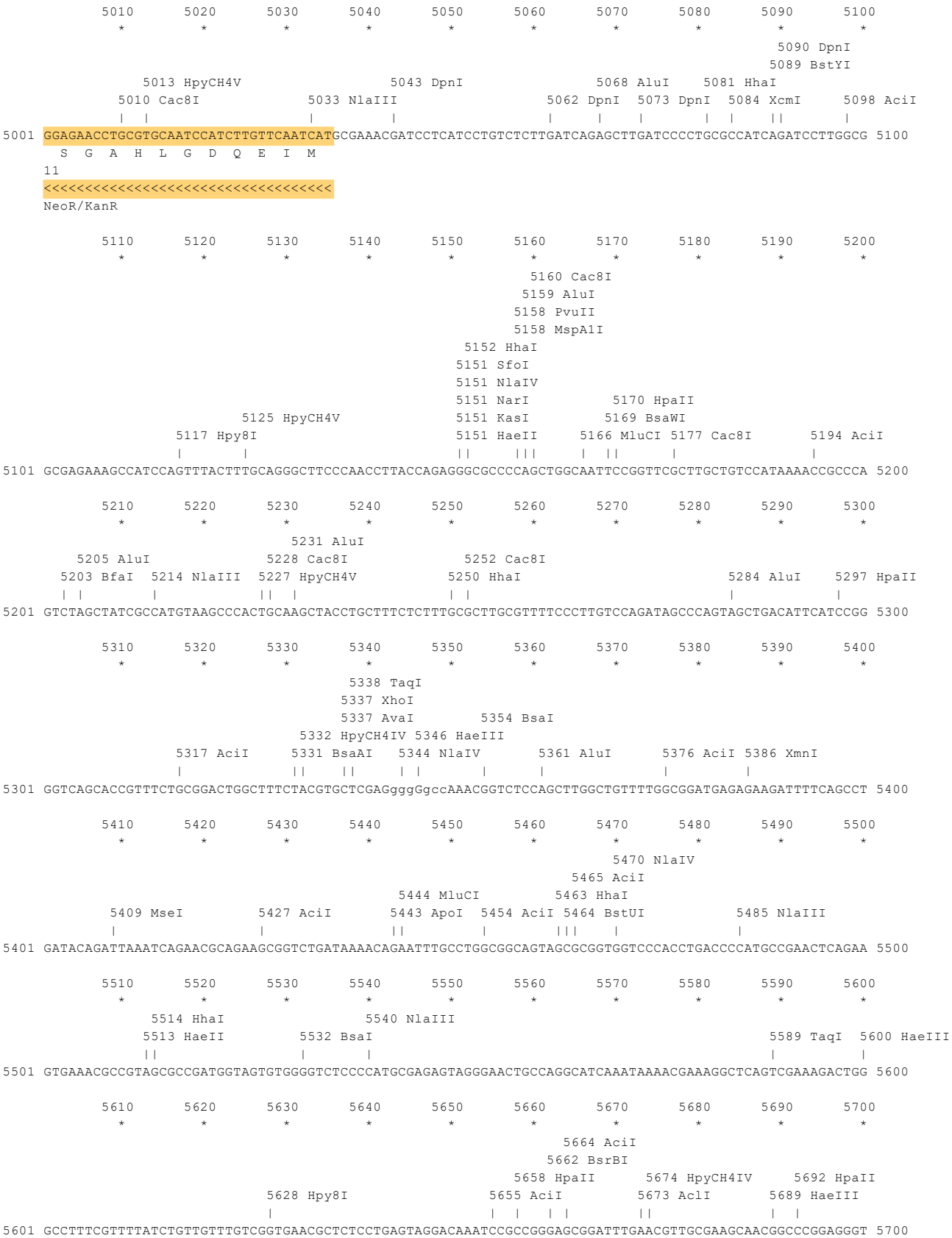
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5033 NlaIII
5062 DpnI
5073 DpnI
5084 XcmI
5098 AciI
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11
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NeoR/KanR
5110 5120 5130 5140 5150 5160 5170 5180 5190 5200
5160 Cac8I
5159 AluI
5158 PvuII
5158 MspA1I
5152 HhaI
5151 SfoI
5151 NlaIV
5151 NarI
5170 HpaII
5125 HpyCH4V
5151 KasI
5169 BsaWI
5117 Hpy8I
5151 HaeII
5166 MluCI 5177 Cac8I
5194 AciI
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5210 5220 5230 5240 5250 5260 5270 5280 5290 5300
5231 AluI
5205 AluI
5228 Cac8I
5252 Cac8I
5203 BfaI 5214 NlaIII 5227 HpyCH4V
5250 HhaI
5284 AluI
5297 HpaII
5201 GTCTAGCTATCGCCATGTAAGCCCACTGCAAGCTACCTGCTTTCTCTTTGCGCTTGCGTTTTCCCTTGTCCAGATAGCCCAGTAGCTGACATTCATCCGG 5300
5310 5320 5330 5340 5350 5360 5370 5380 5390 5400
5338 TaqI
5337 XhoI
5337 AvaI
5354 BsaI
5332 HpyCH4IV 5346 HaeIII
5317 AciI
5331 BsaAI
5344 NlaIV
5361 AluI
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5470 NlaIV
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5444 MluCI
5463 HhaI
5409 MseI
5427 AciI
5443 ApoI
5454 AciI 5464 BstUI
5485 NlaIII
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5540 NlaIII
5513 HaeII
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5662 BsrBI
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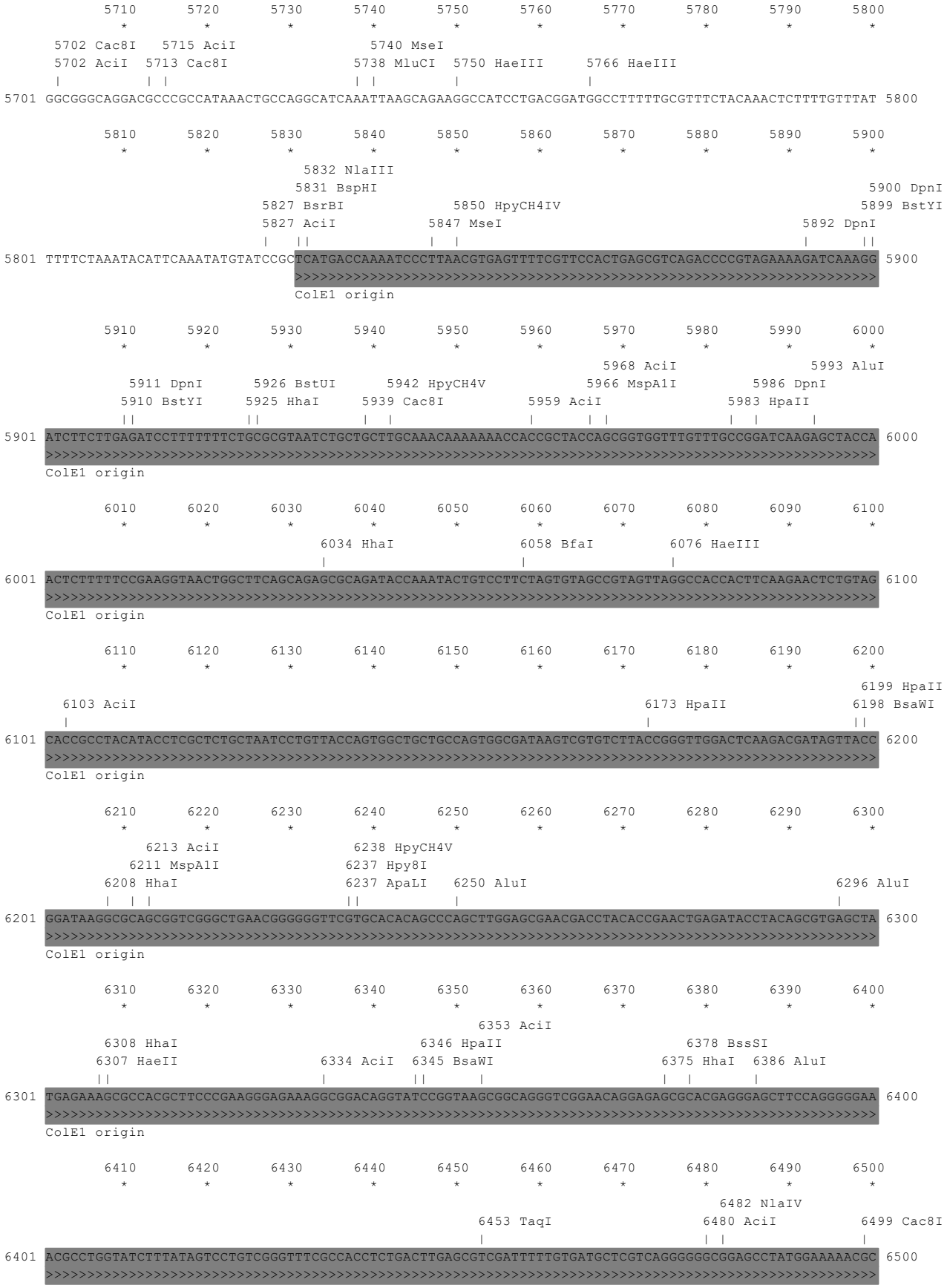
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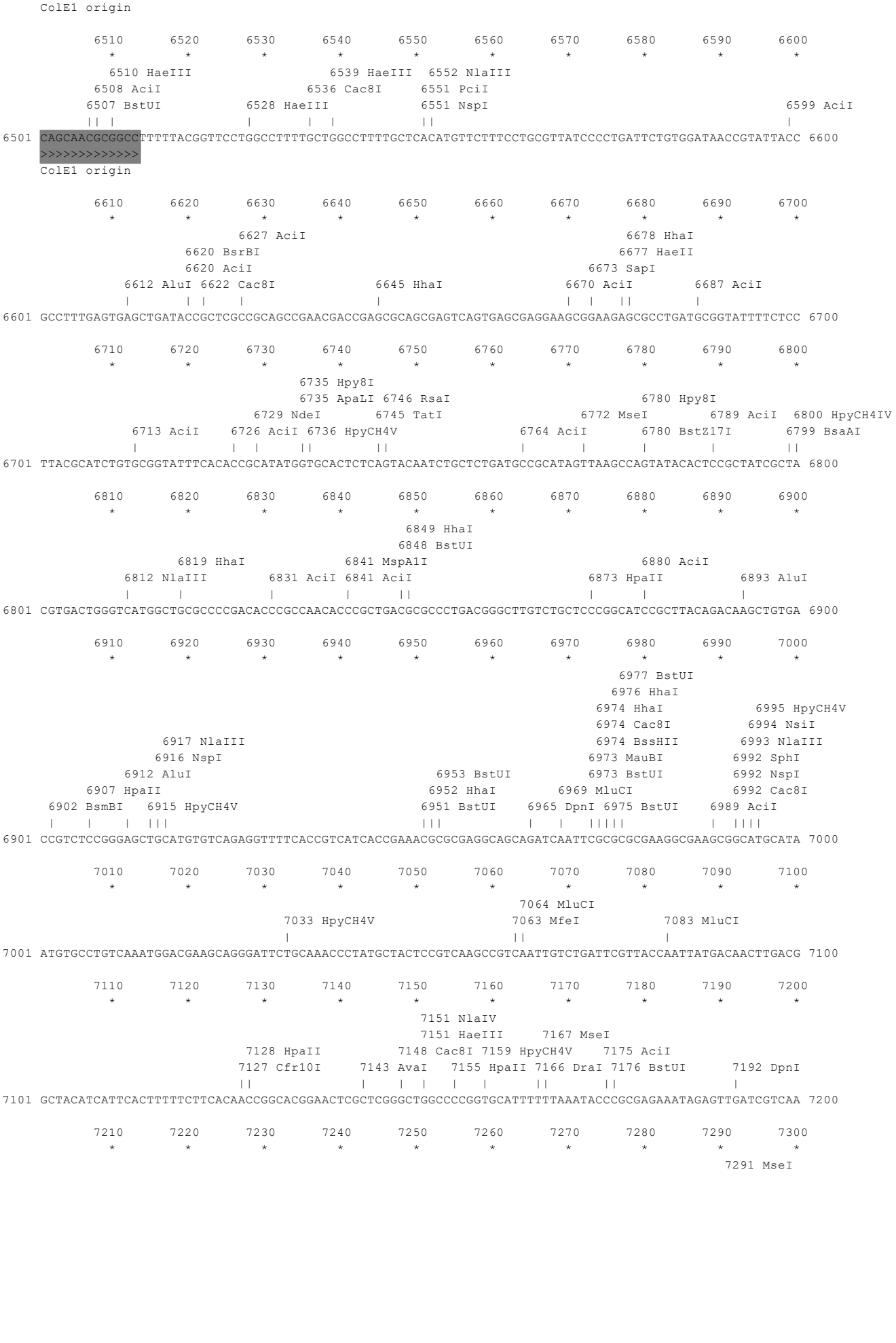
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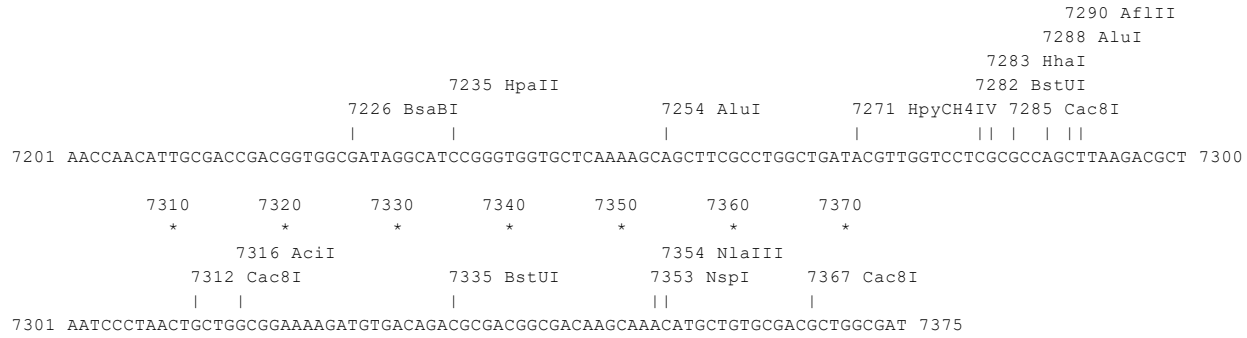
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