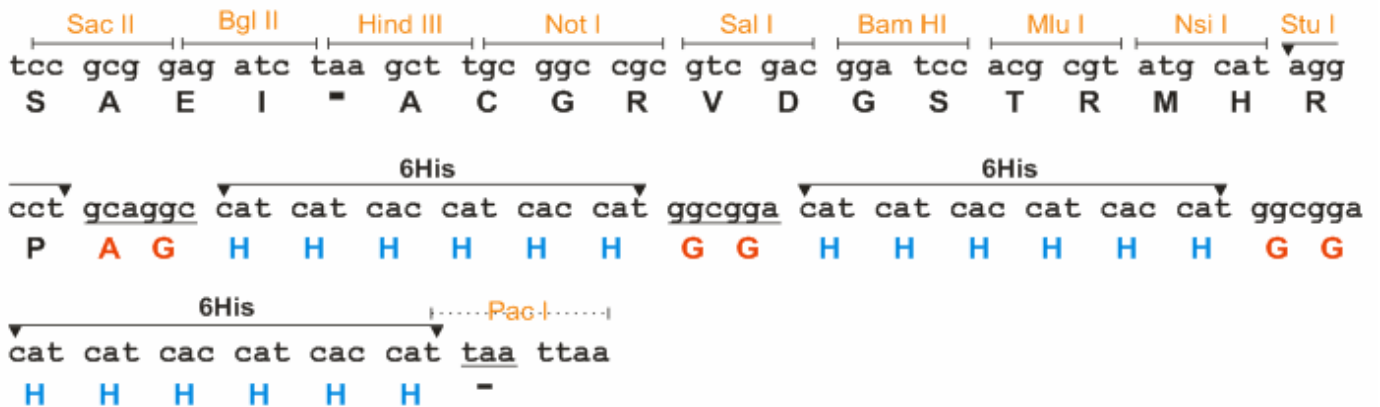
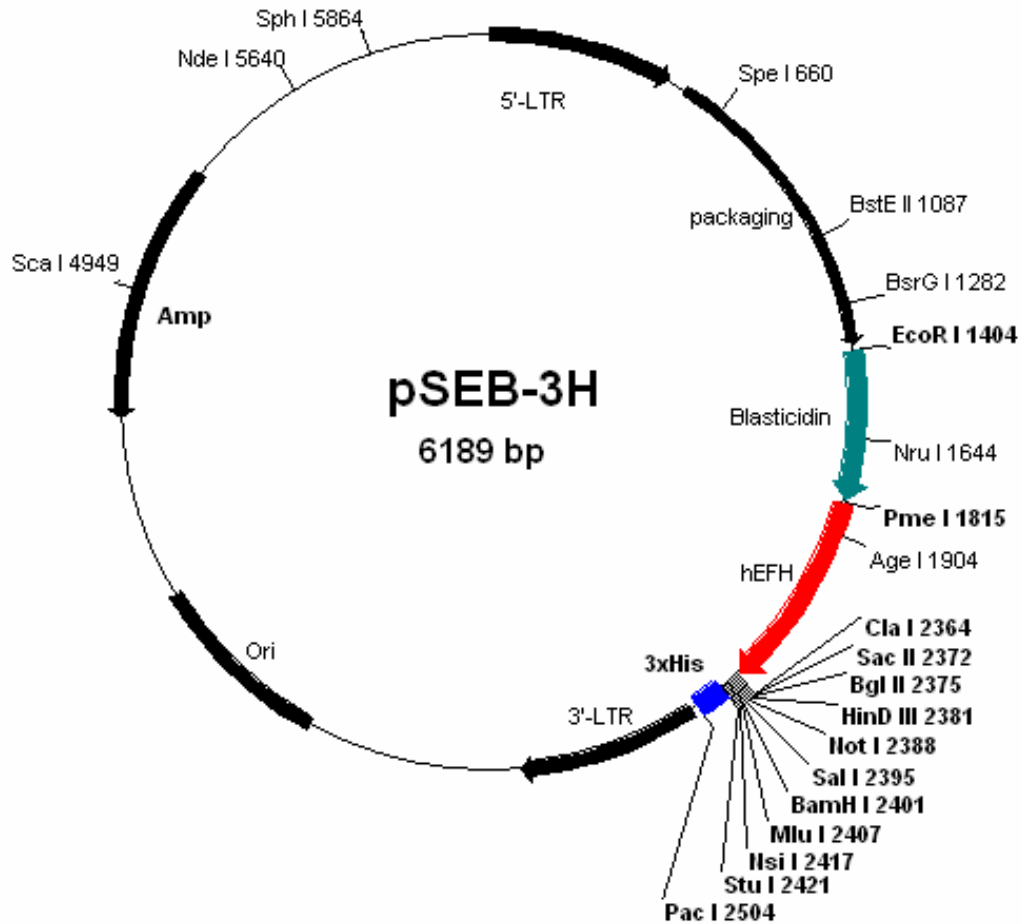


**Vector:** pSEB-3H (3x6His tags)

**Antibiotic Selection:** Amp

**Creator(s):** Hong Yin, Molecular Oncology Lab of The University of Chicago

**Date of Construction:** August, 2007



# pSEB-3H (human EF1a/HLTV hybrid promoter) Full-Length Sequence

TGAAAGACC CACCTGTAGG TTTGGCAAGC TAGCTTAAGT AACGCCATT TGCAAGGCATGGAAAATACATAACTGAGAA TAGAGAAGT AGATCAAGG  
 TTAGAACAGAGACAGACAGACAATATGGGCCAAACAGGATATCTGTGGTAAGCAGTTCCTCCCGGCTCAGGGCCAAAGAACAGATGGTCCCAGATGCGGTCCCGC  
 CCTACAGCATTTCTAGAGAACCATCAGATGTTCCAGGGTGCCTCCAGGACCTGAAATGACCTGTGCCTTATTGAACTAACCAATCAGATTCGCTTCTCGCTTCT  
 GTTCGCGCGTCTTCTGCTCCCGAGCTCAATAAAAGAGCCCAACCCCTCACTCGGCGGCCAGTCTCCGATAGACTGCGTCCGCGGGTACCCGATTTCCCAAT  
 AAAGCCTCTG CTGTTTGCAT CGAATCGTG GACTCGCTGA TCCTTGGGAG GGTCTCCTCAGATTGATTGACTGCCACCTCGGGGGTCTTTCATTTGGAG  
 GTTCCACCGA GATTTGGAGACCCCTGCCA GGGACCACCGACCCCCCGC CGGGAGGTAA GCTGGCCAGC GGTCTTTCGTGTCTGTCTC TGTCTTTGTG  
 CTGTTTGTGCCGCATCTAATGTTTGGCCTGCGCTCTGACTAGCTAAGTACTAGCTCTGATCTGATCTGGCGGACCCGTTGGAACTGACGAGTTCGTAACACCCG  
 GCCG CAACCCTGGG AGACGTCCAGGGACTTTGGGGCCGTTTTTGTGGCCGACCTGAGGAAGGGAGTGCATGTGGAATCCGACCCCGTCAGGATATGTGGTT  
 CTGGTAGGACGAGAACCT AAAACGATTC CCGCTCCGT CTGAATTTTGTCTTTCGGTT TGAACCCGAAGCCGCGCTC TTGTCTGCTG CAGCGCTGCA  
 GCATCGTTCT GTTGTGTCT TGTCTGACTGTGTTTCTGTA TTTGTCTGAA AATTAGGGCC AGACTGTTC CACTCCCTAAGTTGACCTTAGGTCAGT  
 GAAAGATGTGAGCGGATCG CTCACAACCA GTCGGTAGAT TCTAAGAAAGAGACGTTGGGT TACCTTCTGC TCTGCAGAAAT GGCCAACTTAAACGTCGGA  
 TGGCCGCGAGACGGCACCT TAACCGAGAC CTCATCACCC AGGTTAAGAT CAAGGTCTTT TCACTGGCCGATGGACA CCCAGACCAGGTCCCTACA  
 TCGTGACCTG GGAAGCCTTG GCTTTGACCCCTCCCTG GTTCAAGCCCTTTGTAGACC CTAAGCCTCC GCCTCCTCTT CCTCCATCCGCCCCGTCTCT  
 CCCCCTGAACCTCCTCGTTTCGACCCCGCTCGATCCTCCCTTATTCACGCCCTCACTCCTTCTTAGGCGCCGGAATTCACCATG GCCAAGCCTTTGTCTCAAGA  
 AGAATCCACCCTCATTGAAAGAGCAACGGTACAATCAACAGCATCCCATCTCTGAAGACTACAGCTCGCCAGCGCAGCTCTCTTAGCCAGCGCCGATCTTC  
 ACTGGTGTCAATGTATATCATTTTACTGGGGACCTTGTGCAGAACTCGTGTGCTGGGCACTGCTGCTGCGCAGCTGGCAACCTGACTTGTATCGTCCGGA  
 TCGGAAATGAGAACAGGGCATCTTGTAGCCCTGCGGACGGTGCAGAGGTGCTTCTCGATCTGCATCTGGGATCAAAGCCATAGTGAAGACAGTGTAGGACA  
 GCCGACGGCAGTTGGGATTCTGTAATTGCTGCCCTCTGTTATGTGTGGAGGGCTaa**gtttaa**ad**atg**cag**CGTCCG**T**CGCCG**T**CAGTGGG**CAGAG**CGCACAT**  
**CGCCACAGTCCCGAGAAGTTGGGGGAGGGTCCGCAATTGAACCGGTGCCTAGAGAAGGTGGCGGGGTAACCTGGGAAAGTATGTCGTGTACTGGCTCC**  
**CCTTTTCCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCCCGTGAACGTTCTTTCGCAACGGGTTGGCCGAGAACACAGCTG**AGCTAGCTTCG****  
**AGGGCTCGCATCTCTCTTACGCGCCCGCCGCTACCTGAGCGCCATCCACGCGGTTGAGTCCGCTTCTGCGCCTCCCGCTGTGGTGCCTCTGAACT**  
**CGCTCCGCGCTTAGGTAAGTTAAAGCTCAGGTGCAGACCGGGCTTTGTCCGCGCTCCCTGGAGCCTACCTAGACTCAGCCGGCTCCACGCTTTGCCTGA**  
**CCCTGTCTCACTCTACGCTCTTCTGTTTCTGTTCTGCGCGTTACAGATCCAAGCTGTGACCGCGCCTAC atcgat ccgggg AGAtctaagc**  
**g**ggg ccg cgt cga cgg att ca CGC GT atgcAT AGGCTT **gcaggg** cat cat cat cac cat cac cat **ggcggg** cat cat cac cat  
 cac cat **ggcggg** cat cat cac cat cac cat **T TAATTA**  
**CGATAAAATAAAAGATTTTATTTAGTCTCCAGAAAAGGGGGGAATGAAAGACCCACCTGTAGGTTTGGCAAGCTAGCTTAAGTAACGCCATTTTGCAGGCATG**  
 GAAAATACATAACTGAGAATAGAGAAGTTAGATCAAGTTTAGGAACAGAGACAGCAGATAATGGCCAAACAGGATATCTGTGGTAAGCAGTTCCTGCCCCGG  
 CTACGGGCCAAAGAACACAGATGAGCCAGATGCGGTCCCGCTCAGCAGATTTCTAGAGAACATCAGATGTTTCCAGAACCTGAAATGAAATCCCTGT  
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 TTGACTACCCGTCAGCGGGGCTTTCTATGGTAAACAGTTTCTTGAAGTTGGAGAACAACATTTGAGGGTAGGAGTCAATATAAGTAATCTGACTCAATTAG  
 CCACGTTTGAATCCACACTCCCAATCTCCTGAAATCTCCTGAAATCTCATTATGAGACGCGCAGAGAAGCTGGGAGAAATTAATCTGTAATGTGTATAGTGTTC  
 TGTGTGAAATTTGTTATCCGCTCACAAATCCACACAACATACGAGCCGGAAGCATAAAGTGTAAAGCCTGGGGTGCCTAATGAGTGAAGTAACTCACATTAATGGC  
 TTGCGCTCACTGCCCGCTTTCAGTTCGGGAAACCTGTCTGTCAGCTGCATTAATGAATCGGCCAACGCGGGGAGAGCGGTTTTCGCTATTGGGG  
 CTCTTCCGCT TCTCTGCTCA CTGACTCGCTCGCTCGGTC GTTCGGCTCGCGGAGCGGTATCAGCTCACTCAAAGCGGTAATACCGGTTATCCACAGAA  
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 GCGCTCTCCT GTTCCGACCC TGCCGCTTAC CGGATACCTG TCCGCTTTCTCCCTTCGCGG AAGCGTGGCGCTTTTCTCATA GCTCACGCTGTAGTATCTC  
 AGTTCGGTGTAGGTCGTTCC TCCAAGCTGGGCTGTGTG ACGAACCCCT CGTTCAGCC GACCGTGGCGCTTATCCGG TAACATCTG CTTGAGTCCA  
 ACCCGTAAGACACGACTTA TCGCCACTGGCAGCAGCCAC TGTAACAGG ATTAGCAGG CAGAGTATGT AGGCGGTGCT ACAGAGTCTTGAAGTGGTG  
 GCCTAACTACGGCTACACTA GAAGGACAGT ATTTGGTATC TCGCTCTGCTGAAGCCAGT TACCTTCGAAAAAGAGTTG GTAGCTCTTG ATCCGGCAA  
 CAAACCACCGCTGTGTAGCGG TGGTTTTTTT GTTTGCAAGC AGCAGATTACGCGCAGAAAA AAAGGATCTCAAGAAGATCC TTTGATCTTT TCTACGGGT  
 CTGACGCTCA GTGGAACGAA AACTCACGTTAAGGGATTTT GGTATGAGATTATCAAAA GGATCTTAC CTAGATCTT TTAATTAATAAAGTGAAGTTT  
 TAAATCTAATAAGTATAT ATGACTAAAC TTGGTCTGAC AGTTAACCAATGTATAATCAG TGAGGACCT ATCTCAGCGA TCTGTCTATTTCGTTATCCT  
 ATAGTTGCCCTGACTCCCGT CGTGTAGATA ACTACGATAC GGGAGGGCTT ACCATCTGGC CCCAGTGTGCAATGATACC GCGAGACCCACGCTCACCGG  
 CTCCAGATTT ATCAGCAATA AACCCAGCAGCCGGAAGGGC CGAGCGCAAGTGGTCTG CAACTTATC CGCCTCCATC CAGTCTATTAATTGTTGCCG  
 GGAAGCTAGA GTAAGTAGTT CGCCAGTTAATAGTTTGGCG AACCTTGTGTCATGCTAC AGGCATCGTG GTGTCACGCT CGTCTGTTGGTATGGCTTCA  
 TTCAGCTCCGGTCCCAAGC ATCAAGCGA GTTACATGAT CCCCATGTT GTGCAAAAAA CCGGTTAGTCTTCCGCTT TCCGATTTGTCAAGAGTA  
 AGTTGGCCCG AGTGTATCA CTGATGTTATGGCAGCACT GCATAATTCT CTTACTGTCA TGCCATCCGTAAGATGCTTT TCTGTGACTGGTGAAGTACTC  
 AACCAAGTCA TTCTGAGAAT AGTGTATGCG GCGACCGAGT TGCTCTTCCCGCGCTCAAT ACCGGATAAT ACCGCGCCACATAGCAGAACTTTAAAAGT  
 CTCATCATTTGAAAACGTTT TCCGGGGCGAAAACCTCTCAA GGATCTTACC GCTGTTGGA TCCAGTTCCGATGTAACCCAC TCGTGCACCC AACTGATCTT  
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 CATACTCTTCT CTTTTCAAT ATTATTGAAG CATTATCAG GGTATTGTCTCATGAGCGG ATACATATTTGAATGTATTT AGAAAAATAAACAAATAGGG  
 GTTCCGCGCACATTTCCCG AAAAGTGCCA CCTGACGCTT AAGAAACCATTATTATCATG ACATTAACCTATAAAAATAG CCGTATCACG AGGCCCTTTC  
 GTCTCGCGCG TTTCCGTTGAT GACGGTGAACCTCTGACA CATGCAGCTC CCGGAGACGG TCACAGCTTG TCTGTAAGCGGATCCGGGGAGCAGACAGC  
 CCGTACGGGCGCGTACGGG GTGTTGGCGG GTGTCGGGGC ATACCGCACAGATGCGTAAG GAGAAAAATAC CGCATCAGGC GCCATTTCGCC ATTCAGGCTG  
 ATACCGCACAGATGCGTAAG GAGAAAAATAC CGCATCAGGC GCCATTTCGCC ATTCAGGCTG CGCAACTGTTGGGAAGGGCG ATCCGGTGGCGCCCTCTTCCG  
 TATTACGCCA GCTGGCGAAA GGGGATGTGCTGCAAGGGC ATTAAGTTGGGTAAACGGCAG GGTTTTCCCA GTCACGACGT TGTAAAACGACGGCGCAAG  
 AATGGTGCAT GCAAGGAGAT GCGGCCAACAGTCCCCCGC CCACGGGCGCTGCCACCATA CCCAGCCGA AACAGCGCT CATGAGCCGAAAGTGGCGAG  
 CCCGATCTCCCATCGGTG ATGTCGGCGA TATAGCCGCG AGCAACCGCA CTGTGGCGC CGGTGATGCCGCGCCAGTATG CGTCCGCGCTAGAGGCGATT  
 AGTCCAATTT GTTAAAGACA GGAATCTCAGTGGTCCAGGCT CTAGTTTGA CTTCAACAATA TCACCAGTGAAGCCTATAG AGTACGAGCCATAGATAAAA  
 TAAAAGATTT TATTTAGTCT CCAGAAAAAG GGGGAA

## Unique enzymes in pSEB-3H:

|         |             |      |
|---------|-------------|------|
| Spe I   | A`CTAG,T    | 660  |
| BstE II | G`GTNAC,C   | 1087 |
| BsrG I  | T`GTAC,A    | 1282 |
| EcoR I  | G`AATT,C    | 1404 |
| Bbv II  | GAAAGC 7/11 | 1497 |
| Bbs I   | GAAAGC 8/12 | 1498 |
| Nru I   | TCG CGA     | 1644 |
| BsaB I  | GATNN NNATC | 1711 |
| Pme I   | CTTT AAAC   | 1815 |
| Mun I   | C`AATT,G    | 1897 |
| Age I   | A`CCGG,T    | 1904 |
| Clal    | AT`CG,AT    | 2364 |
| Sac II  | CC,GC`GG    | 2372 |
| Bgl II  | A`GATC,T    | 2375 |

|                        |            |      |
|------------------------|------------|------|
| Hind III               | A`AGCT,T   | 2381 |
| Not I                  | GC`GGCC,GC | 2388 |
| Sal I                  | G`TCGA,C   | 2395 |
| Acc I                  | GT`MK,AC   | 2396 |
| Hinc II                | GTV RAC    | 2397 |
| Hind II                | GTV RAC    | 2397 |
| BamH I                 | G`GATC,C   | 2401 |
| Mlu I                  | A`CCGG,T   | 2407 |
| Nsi I                  | A,TGCA`T   | 2417 |
| Stu I                  | AGG CCT    | 2421 |
| Pac I                  | TTA,AT`TAA | 2504 |
| Sca I                  | AGT ACT    | 4949 |
| Nde I                  | CA`TA,TG   | 5640 |
| Sph I                  | G,CATG`C   | 5864 |
| Number of enzymes = 28 |            |      |

The following enzymes do not cut in pSEB-3H:

|         |         |           |          |           |               |      |      |      |      |
|---------|---------|-----------|----------|-----------|---------------|------|------|------|------|
| Apa I   | Avr II  | Bcl I     | Blp I    | BsaA I    |               | 2725 | 2738 | 5870 |      |
| BsiC I  | BsiW I  | Bsm I     | Bsp120 I | Bsp1286 I | BsoF I (41)   | 727  | 901  | 917  | 920  |
| BspM I  | BspM II | Bst1107 I | BstB I   | Dra III   |               | 925  | 928  | 1133 | 1513 |
| Eco72 I | Esp I   | Fae I     | Hpa I    | PaeR7 I   |               | 1532 | 1606 | 1609 | 1612 |
| PflM I  | Pml I   | Rsr II    | Sfi I    | SnaB I    |               | 1615 | 1618 | 1782 | 1823 |
| Spl I   | Srf I   | Xca I     | Xcm I    | Xho I     |               | 2043 | 2102 | 2117 | 2148 |
|         |         |           |          |           |               | 2388 | 2391 | 3401 | 3482 |
|         |         |           |          |           |               | 3500 | 3503 | 3621 | 3776 |
|         |         |           |          |           |               | 3919 | 3984 | 3987 | 4193 |
|         |         |           |          |           |               | 4521 | 4860 | 4887 | 4982 |
|         |         |           |          |           |               | 5211 | 5498 | 5607 | 5711 |
|         |         |           |          |           |               | 5784 |      |      |      |
|         |         |           |          |           | BspH I (4)    | 4296 | 5304 | 5409 | 5933 |
|         |         |           |          |           | Bsr I (18)    | 374  | 1030 | 1058 | 1546 |
|         |         |           |          |           |               | 1570 | 1939 | 1960 | 2927 |
|         |         |           |          |           |               | 3377 | 3983 | 3996 | 4110 |
|         |         |           |          |           |               | 4516 | 4634 | 4677 | 4944 |
|         |         |           |          |           |               | 5116 | 5822 |      |      |
|         |         |           |          |           | BsrB I (4)    | 1042 | 3268 | 3509 | 5310 |
|         |         |           |          |           | BsrD I (2)    | 4530 | 4704 |      |      |
|         |         |           |          |           | BsrG I (1)    | 1282 |      |      |      |
|         |         |           |          |           | BssH II (4)   | 317  | 368  | 2870 | 2921 |
|         |         |           |          |           | BssS I (4)    | 1587 | 3749 | 5133 | 5440 |
|         |         |           |          |           | BstE II (1)   | 1087 |      |      |      |
|         |         |           |          |           | BstN I (17)   | 241  | 548  | 735  | 748  |
|         |         |           |          |           |               | 1169 | 1194 | 1217 | 1237 |
|         |         |           |          |           |               | 1267 | 1717 | 2794 | 3316 |
|         |         |           |          |           |               | 3604 | 3725 | 3738 | 5811 |
|         |         |           |          |           |               | 6088 |      |      |      |
|         |         |           |          |           | BstU I (26)   | 317  | 319  | 370  | 903  |
|         |         |           |          |           |               | 905  | 1135 | 1644 | 1926 |
|         |         |           |          |           |               | 2095 | 2140 | 2371 | 2393 |
|         |         |           |          |           |               | 2409 | 2870 | 2872 | 2923 |
|         |         |           |          |           |               | 3423 | 3425 | 3623 | 4204 |
|         |         |           |          |           |               | 4534 | 5027 | 5359 | 5459 |
|         |         |           |          |           |               | 5461 | 5564 |      |      |
|         |         |           |          |           | BstX I (2)    | 2449 | 2473 |      |      |
|         |         |           |          |           | BstY I (9)    | 2337 | 2375 | 2401 | 4217 |
|         |         |           |          |           |               | 4228 | 4314 | 4326 | 5094 |
|         |         |           |          |           |               | 5111 |      |      |      |
|         |         |           |          |           | Bsu36 I (3)   | 781  | 1018 | 2111 |      |
|         |         |           |          |           | Cac8 I (39)   | 28   | 32   | 319  | 370  |
|         |         |           |          |           |               | 582  | 586  | 631  | 650  |
|         |         |           |          |           |               | 1199 | 1508 | 1622 | 2064 |
|         |         |           |          |           |               | 2078 | 2099 | 2262 | 2290 |
|         |         |           |          |           |               | 2385 | 2423 | 2427 | 2579 |
|         |         |           |          |           |               | 2583 | 2872 | 2923 | 3369 |
|         |         |           |          |           |               | 3398 | 3507 | 3593 | 3630 |
|         |         |           |          |           |               | 4190 | 4581 | 5594 | 5742 |
|         |         |           |          |           |               | 5762 | 5766 | 5862 | 5903 |
|         |         |           |          |           |               | 5951 | 5993 | 6023 |      |
|         |         |           |          |           | Cfr10 I (8)   | 629  | 1904 | 2128 | 2260 |
|         |         |           |          |           |               | 2351 | 4549 | 6012 | 6021 |
|         |         |           |          |           | Clf I (1)     | 2364 |      |      |      |
|         |         |           |          |           | Csp6 I (8)    | 402  | 658  | 1283 | 1954 |
|         |         |           |          |           |               | 2955 | 4948 | 5624 | 6135 |
|         |         |           |          |           | Dde I (23)    | 75   | 167  | 208  | 476  |
|         |         |           |          |           |               | 781  | 1018 | 1290 | 1808 |
|         |         |           |          |           |               | 2111 | 2205 | 2256 | 2379 |
|         |         |           |          |           |               | 2626 | 2720 | 2761 | 3030 |
|         |         |           |          |           |               | 3101 | 3851 | 4260 | 4426 |
|         |         |           |          |           |               | 4966 | 5392 | 5627 |      |
|         |         |           |          |           | Dpn I (28)    | 94   | 459  | 1046 | 1178 |
|         |         |           |          |           |               | 1363 | 1647 | 1708 | 1722 |
|         |         |           |          |           |               | 2339 | 2367 | 2377 | 2403 |
|         |         |           |          |           |               | 2646 | 4144 | 4219 | 4230 |
|         |         |           |          |           |               | 4238 | 4316 | 4328 | 4433 |
|         |         |           |          |           |               | 4774 | 4792 | 4838 | 5096 |
|         |         |           |          |           |               | 5113 | 5149 | 5734 | 5958 |
|         |         |           |          |           | DpnII (28)    | 92   | 457  | 1044 | 1176 |
|         |         |           |          |           |               | 1361 | 1645 | 1706 | 1720 |
|         |         |           |          |           |               | 2337 | 2365 | 2375 | 2401 |
|         |         |           |          |           |               | 2644 | 4142 | 4217 | 4228 |
|         |         |           |          |           |               | 4236 | 4314 | 4326 | 4431 |
|         |         |           |          |           |               | 4772 | 4790 | 4836 | 5094 |
|         |         |           |          |           |               | 5111 | 5147 | 5732 | 5956 |
|         |         |           |          |           | Dra I (5)     | 1815 | 2200 | 4335 | 4354 |
|         |         |           |          |           |               | 5046 |      |      |      |
|         |         |           |          |           | Drd I (3)     | 1500 | 3684 | 5553 |      |
|         |         |           |          |           | Dsa I (6)     | 694  | 1411 | 2369 | 2448 |
|         |         |           |          |           |               | 2472 | 5894 |      |      |
|         |         |           |          |           | Eae I (11)    | 582  | 724  | 1109 | 1130 |
|         |         |           |          |           |               | 1414 | 1529 | 2388 | 3415 |
|         |         |           |          |           |               | 4857 | 5891 | 6023 |      |
|         |         |           |          |           | Eag I (3)     | 724  | 1529 | 2388 |      |
|         |         |           |          |           | Ear I (6)     | 1070 | 1311 | 3198 | 3460 |
|         |         |           |          |           |               | 5264 | 5752 |      |      |
|         |         |           |          |           | Eco47 III (3) | 923  | 1826 | 5930 |      |
|         |         |           |          |           | Eco57 I (5)   | 1509 | 2077 | 4123 | 5137 |
|         |         |           |          |           |               | 6141 |      |      |      |
|         |         |           |          |           | EcoN I (4)    | 784  | 1392 | 1915 | 2110 |
|         |         |           |          |           | EcoO109 I (6) | 254  | 1219 | 1572 | 2807 |
|         |         |           |          |           |               | 5445 | 5899 |      |      |
|         |         |           |          |           | EcoR I (1)    | 1404 |      |      |      |
|         |         |           |          |           | EcoR II (17)  | 239  | 546  | 733  | 746  |
|         |         |           |          |           |               | 1167 | 1192 | 1215 | 1235 |
|         |         |           |          |           |               | 1265 | 1715 | 2792 | 3314 |
|         |         |           |          |           |               | 3602 | 3723 | 3736 | 5809 |
|         |         |           |          |           |               | 6086 |      |      |      |
|         |         |           |          |           | EcoR V (3)    | 140  | 2692 | 6077 |      |
|         |         |           |          |           | Ehe I (6)     | 1399 | 2356 | 5693 | 5876 |
|         |         |           |          |           |               | 5990 | 6011 |      |      |
|         |         |           |          |           | Fnu4H I (41)  | 727  | 901  | 917  | 920  |
|         |         |           |          |           |               | 925  | 928  | 1133 | 1513 |
|         |         |           |          |           |               | 1532 | 1606 | 1609 | 1612 |
|         |         |           |          |           |               | 1615 | 1618 | 1782 | 1823 |
|         |         |           |          |           |               | 2043 | 2102 | 2117 | 2148 |
|         |         |           |          |           |               | 2388 | 2391 | 3401 | 3482 |
|         |         |           |          |           |               | 3500 | 3503 | 3621 | 3776 |
|         |         |           |          |           |               | 3919 | 3984 | 3987 | 4193 |
|         |         |           |          |           |               | 4521 | 4860 | 4887 | 4982 |
|         |         |           |          |           |               | 5211 | 5498 | 5607 | 5711 |
|         |         |           |          |           |               | 5784 |      |      |      |
|         |         |           |          |           | Fok I (12)    | 423  | 1140 | 1300 | 1464 |
|         |         |           |          |           |               | 1699 | 2107 | 2975 | 4435 |
|         |         |           |          |           |               | 4616 | 4903 | 5546 | 5790 |
|         |         |           |          |           | Fsp I (2)     | 4691 | 5714 |      |      |
|         |         |           |          |           | Gdl II (11)   | 723  | 725  | 1129 | 1528 |
|         |         |           |          |           |               | 1530 | 2387 | 2389 | 3416 |
|         |         |           |          |           |               | 4856 | 5892 | 6024 |      |
|         |         |           |          |           | Gsu I (3)     | 2520 | 4540 | 6158 |      |
|         |         |           |          |           | Hae I (8)     | 584  | 1111 | 1416 | 2421 |
|         |         |           |          |           |               | 2429 | 3591 | 3602 | 4054 |
|         |         |           |          |           | Hae II (12)   | 925  | 1401 | 1828 | 2235 |

pSEB-3H: sites sorted by name:

|             |      |        |      |      |
|-------------|------|--------|------|------|
| Aat II (2)  | 745  | 5391   |      |      |
| Acc I (1)   | 2396 |        |      |      |
| Acc65 I (2) | 401  | 2954   |      |      |
| Aci I (70)  | 197  | 203    | 566  | 588  |
|             | 688  | 727    | 860  | 901  |
|             | 1042 | 1133   | 1199 | 1298 |
|             | 1317 | 1355   | 1532 | 1614 |
|             | 1681 | 1926   | 1963 | 2043 |
|             | 2099 | 2102   | 2117 | 2148 |
|             | 2155 | 2182   | 2369 | 2371 |
|             | 2387 | 2391   | 2453 | 2477 |
|             | 2750 | 2756   | 3052 | 3266 |
|             | 3369 | 3425   | 3435 | 3459 |
|             | 3502 | 3509   | 3530 | 3621 |
|             | 3649 | 3776   | 3795 | 3916 |
|             | 4026 | 4161   | 4170 | 4532 |
|             | 4623 | 4814   | 4860 | 4981 |
|             | 5025 | 5102   | 5211 | 5310 |
|             | 5357 | 5531   | 5570 | 5580 |
|             | 5606 | 5644   | 5657 | 5683 |
|             | 5740 | 5999   |      |      |
| Afl II (3)  | 35   | 1006   | 2586 |      |
| Afl III (2) | 2407 | 3576   |      |      |
| Age I (1)   | 1904 |        |      |      |
| Aha II (9)  | 742  | 1398   | 2355 | 5006 |
|             | 5388 | 5692   | 5875 | 5989 |
|             | 6010 |        |      |      |
| Ahd I (4)   | 1020 | 2999   | 3045 | 4469 |
| Alu I (33)  | 30   | 34     | 336  | 580  |
|             | 668  | 676    | 1515 | 1620 |
|             | 2056 | 2062   | 2066 | 2204 |
|             | 2345 | 2383   | 2581 | 2585 |
|             | 2889 | 3208   | 3241 | 3336 |
|             | 3400 | 3518   | 3744 | 3834 |
|             | 3880 | 4137   | 4658 | 4758 |
|             | 4821 | 5500   | 5519 | 5764 |
|             | 6120 |        |      |      |
| Alw I (16)  | 453  | 1051   | 1357 | 1727 |
|             | 2333 | 2361   | 2397 | 2408 |
|             | 4138 | 4224   | 4224 | 4321 |
|             | 4322 | 4786   | 5101 | 5107 |
| AlwN I (2)  | 2710 | 3992   |      |      |
| ApaL I (3)  | 3890 | 5136   | 5633 |      |
| Apo I (2)   | 872  | 1404   |      |      |
| Asc I (2)   | 368  | 2921   |      |      |
| Ase I (4)   | 3219 | 3347   | 3406 | 4641 |
| Asp718 (2)  | 401  | 2954   |      |      |
| Ava I (7)   | 331  | 397    | 498  | 1871 |
|             | 1973 | 2884   | 2950 |      |
| Ava II (13) | 186  | 199    | 254  | 551  |
|             | 690  | 1219   | 1572 | 2739 |
|             | 2752 | 2807   | 4607 | 4829 |
|             | 6084 |        |      |      |
| BamH I (1)  | 2401 |        |      |      |
| Ban I (17)  | 244  | 401    | 1142 | 1397 |
|             | 1687 | 1832   | 1907 | 2163 |
|             | 2354 | 2797   | 2954 | 3320 |
|             | 4417 | 5691   | 5874 | 5988 |
|             | 6009 |        |      |      |
| Ban II (8)  | 338  | 351    | 1677 | 2078 |
|             | 2891 | 2904   | 5941 | 5955 |
| Bbe I (6)   | 1401 | 2358   | 5695 | 5878 |
|             | 5992 | 6013   |      |      |
| Bbs I (1)   | 1498 |        |      |      |
| Bbv I (10)  | 931  | 939    | 1524 | 1629 |
|             | 1834 | 3995   | 3998 | 4204 |
|             | 4898 | 5509   |      |      |
| Bbv II (1)  | 1497 |        |      |      |
| Bcn I (15)  | 164  | 399    | 400  | 571  |
|             | 724  | 2219   | 2717 | 2952 |
|             | 2953 | 3957   | 4653 | 5004 |
|             | 5505 | 5540   | 5891 |      |
| Bfa I (16)  | 31   | 219    | 661  | 673  |
|             | 1394 | 1522   | 1912 | 2063 |
|             | 2189 | 2251   | 2582 | 2772 |
|             | 4071 | 4324   | 4659 | 6094 |
| Bgl I (2)   | 4589 | 5707   |      |      |
| Bgl II (1)  | 2375 |        |      |      |
| Bpm I (3)   | 2519 | 4539   | 6157 |      |
| Bsa I (7)   | 476  | 530    | 1149 | 2207 |
|             | 3007 | 3028   | 4530 |      |
| BsaB I (1)  | 1711 |        |      |      |
| BsaH I (9)  | 742  | 1398   | 2355 | 5006 |
|             | 5388 | 5692   | 5875 | 5989 |
|             | 6010 |        |      |      |
| BsaJ I (35) | 161  | 240    | 250  | 397  |
|             | 461  | 497    | 546  | 547  |
|             | 694  | 733    | 734  | 746  |
|             | 747  | 1167   | 1236 | 1245 |
|             | 1265 | 1266   | 1411 | 1716 |
|             | 1974 | 2238   | 2369 | 2448 |
|             | 2472 | 2714   | 2793 | 2803 |
|             | 2950 | 3013   | 3315 | 3736 |
|             | 5810 | 5888   | 5894 |      |
| BsaW I (5)  | 1829 | 1904   | 3782 | 3929 |
|             | 4760 |        |      |      |
| BseR I (4)  | 464  | 1293   | 1332 | 3016 |
| Bsg I (2)   | 1600 | 2022</ |      |      |

|          |      |      |      |      |      |           |      |      |      |      |      |  |  |
|----------|------|------|------|------|------|-----------|------|------|------|------|------|--|--|
|          |      | 2358 | 3454 | 3824 | 5695 | Mun I     | (1)  | 1897 |      |      |      |  |  |
|          |      | 5878 | 5932 | 5992 | 6013 | Nae I     | (3)  | 631  | 2262 | 6023 |      |  |  |
| Hae III  | (32) | 129  | 173  | 584  | 726  | Nar I     | (6)  | 1398 | 2355 | 5692 | 5875 |  |  |
|          |      | 762  | 774  | 987  | 1111 |           |      | 5989 | 6010 |      |      |  |  |
|          |      | 1132 | 1197 | 1416 | 1531 | Nci I     | (15) | 163  | 398  | 399  | 570  |  |  |
|          |      | 2116 | 2221 | 2390 | 2421 |           |      | 723  | 2218 | 2716 | 2951 |  |  |
|          |      | 2429 | 2681 | 2726 | 3417 |           |      | 2952 | 3956 | 4652 | 5003 |  |  |
|          |      | 3591 | 3602 | 3620 | 4054 |           |      | 5504 | 5539 | 5890 |      |  |  |
|          |      | 4512 | 4592 | 4859 | 5446 | Nco I     | (3)  | 1411 | 2448 | 2472 |      |  |  |
|          |      | 5744 | 5893 | 5901 | 6025 | Nde I     | (1)  | 5640 |      |      |      |  |  |
| Hga I    | (12) | 381  | 642  | 895  | 1491 | NgoM I    | (3)  | 629  | 2260 | 6021 |      |  |  |
|          |      | 2168 | 2383 | 2934 | 3686 | Nhe I     | (3)  | 30   | 2062 | 2581 |      |  |  |
|          |      | 4264 | 4996 | 5554 | 6023 | Nla III   | (20) | 62   | 1205 | 1415 | 1822 |  |  |
| HgiA I   | (6)  | 338  | 2891 | 3894 | 5055 |           |      | 2452 | 2476 | 2613 | 3067 |  |  |
|          |      | 5140 | 5637 |      |      |           |      | 3234 | 3580 | 4300 | 4791 |  |  |
| HgiE II  | (2)  | 4155 | 5635 |      |      |           |      | 4801 | 4879 | 4915 | 5308 |  |  |
| Hha I    | (43) | 319  | 321  | 370  | 372  |           |      | 5413 | 5497 | 5864 | 5937 |  |  |
|          |      | 648  | 905  | 924  | 1400 | Nla IV    | (38) | 188  | 201  | 246  | 403  |  |  |
|          |      | 1512 | 1827 | 1854 | 1926 |           |      | 521  | 552  | 692  | 761  |  |  |
|          |      | 2097 | 2234 | 2329 | 2357 |           |      | 893  | 1144 | 1221 | 1399 |  |  |
|          |      | 2872 | 2874 | 2923 | 2925 |           |      | 1573 | 1689 | 1834 | 1909 |  |  |
|          |      | 3200 | 3360 | 3425 | 3453 |           |      | 1961 | 2165 | 2244 | 2356 |  |  |
|          |      | 3486 | 3756 | 3823 | 3923 |           |      | 2403 | 2741 | 2754 | 2799 |  |  |
|          |      | 4097 | 4206 | 4599 | 4692 |           |      | 2956 | 3322 | 3608 | 3647 |  |  |
|          |      | 5029 | 5361 | 5461 | 5564 |           |      | 4419 | 4513 | 4554 | 4765 |  |  |
|          |      | 5694 | 5715 | 5848 | 5877 |           |      | 5355 | 5693 | 5876 | 5900 |  |  |
|          |      | 5931 | 5991 | 6012 |      |           |      | 5990 | 6011 |      |      |  |  |
| Hinc II  | (1)  | 2397 |      |      |      | Not I     | (1)  | 2388 |      |      |      |  |  |
| Hind II  | (1)  | 2397 |      |      |      | Nru I     | (1)  | 1644 |      |      |      |  |  |
| Hind III | (1)  | 2381 |      |      |      | Nsi I     | (1)  | 2417 |      |      |      |  |  |
| Hinf I   | (17) | 442  | 450  | 791  | 802  | Nsp7524 I | (4)  | 1818 | 3576 | 5493 | 5860 |  |  |
|          |      | 1437 | 1769 | 2135 | 2254 | NspB II   | (12) | 588  | 1620 | 2056 | 2371 |  |  |
|          |      | 3111 | 3133 | 3154 | 3411 |           |      | 3052 | 3400 | 3918 | 4163 |  |  |
|          |      | 3476 | 3551 | 3947 | 4464 |           |      | 5104 | 5570 | 5764 | 6120 |  |  |
|          |      | 6102 |      |      |      |           |      | 1822 | 3580 | 5497 | 5864 |  |  |
| HinI I   | (9)  | 742  | 1398 | 2355 | 5006 | NspH I    | (4)  | 1822 | 3580 | 5497 | 5864 |  |  |
|          |      | 5388 | 5692 | 5875 | 5989 | Pac I     | (1)  | 2504 |      |      |      |  |  |
|          |      | 6010 |      |      |      | Pal I     | (32) | 129  | 173  | 584  | 726  |  |  |
| HinP I   | (43) | 317  | 319  | 368  | 370  |           |      | 762  | 774  | 987  | 1111 |  |  |
|          |      | 646  | 903  | 922  | 1398 |           |      | 1132 | 1197 | 1416 | 1531 |  |  |
|          |      | 1510 | 1825 | 1852 | 1924 |           |      | 2116 | 2221 | 2390 | 2421 |  |  |
|          |      | 2095 | 2232 | 2327 | 2355 |           |      | 2429 | 2681 | 2726 | 3417 |  |  |
|          |      | 2870 | 2872 | 2921 | 2923 |           |      | 3591 | 3602 | 3620 | 4054 |  |  |
|          |      | 3198 | 3358 | 3423 | 3451 |           |      | 4512 | 4592 | 4859 | 5446 |  |  |
|          |      | 3484 | 3754 | 3821 | 3921 | Ple I     | (4)  | 799  | 2143 | 3119 | 3955 |  |  |
|          |      | 4095 | 4204 | 4597 | 4690 | Pme I     | (1)  | 1815 |      |      |      |  |  |
|          |      | 5027 | 5359 | 5459 | 5562 | PpmI I    | (4)  | 254  | 1219 | 1572 | 2807 |  |  |
|          |      | 5692 | 5713 | 5846 | 5875 | Psp1406 I | (3)  | 2019 | 4695 | 5068 |      |  |  |
|          |      | 5929 | 5989 | 6010 |      | PspA I    | (2)  | 397  | 2950 |      |      |  |  |
| Hpa II   | (31) | 163  | 398  | 569  | 630  | Pst I     | (4)  | 921  | 929  | 1105 | 2427 |  |  |
|          |      | 723  | 1401 | 1830 | 1905 | Pvu I     | (3)  | 1648 | 4839 | 5735 |      |  |  |
|          |      | 2129 | 2217 | 2229 | 2261 | Pvu II    | (5)  | 1620 | 2056 | 3400 | 5764 |  |  |
|          |      | 2352 | 2716 | 2951 | 3294 |           |      | 6120 |      |      |      |  |  |
|          |      | 3783 | 3930 | 3956 | 4146 | Rsa I     | (8)  | 403  | 659  | 1284 | 1955 |  |  |
|          |      | 4550 | 4584 | 4651 | 4761 |           |      | 2956 | 4949 | 5625 | 6136 |  |  |
|          |      | 5003 | 5504 | 5538 | 5890 | Sac I     | (2)  | 338  | 2891 |      |      |  |  |
|          |      | 6013 | 6022 | 6037 |      | Sac II    | (1)  | 2372 |      |      |      |  |  |
| Hph I    | (19) | 1157 | 1183 | 1401 | 2432 | Sal I     | (1)  | 2395 |      |      |      |  |  |
|          |      | 2438 | 2456 | 2462 | 2480 | Sap I     | (2)  | 3198 | 3460 |      |      |  |  |
|          |      | 2486 | 4313 | 4540 | 4954 | Sau3A I   | (28) | 92   | 457  | 1044 | 1176 |  |  |
|          |      | 5162 | 5195 | 5479 | 5488 |           |      | 1361 | 1645 | 1706 | 1720 |  |  |
|          |      | 5981 | 6026 | 6107 |      |           |      | 2337 | 2365 | 2375 | 2401 |  |  |
| Kas I    | (6)  | 1397 | 2354 | 5691 | 5874 |           |      | 2644 | 4142 | 4217 | 4228 |  |  |
|          |      | 5988 | 6009 |      |      |           |      | 4236 | 4314 | 4326 | 4431 |  |  |
| Kpn I    | (2)  | 405  | 2958 |      |      |           |      | 4772 | 4790 | 4836 | 5094 |  |  |
| Mae I    | (16) | 31   | 219  | 661  | 673  | Sau96 I   | (27) | 127  | 171  | 186  | 199  |  |  |
|          |      | 1394 | 1522 | 1912 | 2063 |           |      | 254  | 551  | 690  | 760  |  |  |
|          |      | 2189 | 2251 | 2582 | 2772 |           |      | 773  | 985  | 1196 | 1219 |  |  |
|          |      | 4071 | 4324 | 4659 | 6094 |           |      | 1572 | 2219 | 2679 | 2724 |  |  |
| Mae II   | (10) | 742  | 1081 | 1122 | 2019 |           |      | 2739 | 2752 | 2807 | 4511 |  |  |
|          |      | 2302 | 4279 | 4695 | 5068 |           |      | 4590 | 4607 | 4829 | 5445 |  |  |
|          |      | 5388 | 5830 |      |      |           |      | 5742 | 5899 | 6084 |      |  |  |
| Mae III  | (20) | 39   | 994  | 1022 | 1087 | Sca I     | (1)  | 4949 |      |      |      |  |  |
|          |      | 1231 | 2331 | 2347 | 2590 | ScrF I    | (32) | 163  | 241  | 398  | 399  |  |  |
|          |      | 3068 | 3932 | 3995 | 4111 |           |      | 548  | 570  | 723  | 735  |  |  |
|          |      | 4394 | 4725 | 4783 | 4936 |           |      | 748  | 1169 | 1194 | 1217 |  |  |
|          |      | 5124 | 5512 | 5803 | 5823 |           |      | 1237 | 1267 | 1717 | 2218 |  |  |
| Mbo I    | (28) | 92   | 457  | 1044 | 1176 |           |      | 2716 | 2794 | 2951 | 2952 |  |  |
|          |      | 1361 | 1645 | 1706 | 1720 |           |      | 3316 | 3604 | 3725 | 3738 |  |  |
|          |      | 2337 | 2365 | 2375 | 2401 |           |      | 3956 | 4652 | 5003 | 5504 |  |  |
|          |      | 2644 | 4142 | 4217 | 4228 |           |      | 5539 | 5811 | 5890 | 6088 |  |  |
|          |      | 4236 | 4314 | 4326 | 4431 | Sec I     | (35) | 161  | 240  | 250  | 397  |  |  |
|          |      | 4772 | 4790 | 4836 | 5094 |           |      | 461  | 497  | 546  | 547  |  |  |
|          |      | 5111 | 5147 | 5732 | 5956 |           |      | 694  | 733  | 734  | 746  |  |  |
| Mbo II   | (14) | 1086 | 1299 | 1445 | 1502 |           |      | 747  | 1167 | 1236 | 1245 |  |  |
|          |      | 1530 | 3214 | 3448 | 4237 |           |      | 1265 | 1266 | 1411 | 1716 |  |  |
|          |      | 4310 | 5065 | 5143 | 5252 |           |      | 1974 | 2238 | 2369 | 2448 |  |  |
|          |      | 5740 | 5952 |      |      |           |      | 2472 | 2714 | 2793 | 2803 |  |  |
| Mlu I    | (1)  | 2407 |      |      |      |           |      | 2950 | 3013 | 3315 | 3736 |  |  |
| Mme I    | (6)  | 829  | 1106 | 3015 | 3067 |           |      | 5810 | 5888 | 5894 |      |  |  |
|          |      | 3790 | 3974 |      |      |           |      | 185  | 444  | 641  | 938  |  |  |
| Mnl I    | (52) | 167  | 216  | 368  | 387  | SfaN I    | (21) | 1485 | 1542 | 1674 | 1720 |  |  |
|          |      | 432  | 460  | 484  | 506  |           |      | 2088 | 2738 | 2996 | 3672 |  |  |
|          |      | 510  | 566  | 776  | 872  |           |      | 4724 | 4917 | 5164 | 5525 |  |  |
|          |      | 1168 | 1271 | 1304 | 1310 |           |      | 5617 | 5655 | 5693 | 6009 |  |  |
|          |      | 1313 | 1319 | 1349 | 1352 |           |      | 6021 |      |      |      |  |  |
|          |      | 1367 | 1374 | 1390 | 1454 | Sfc I     | (11) | 15   | 917  | 925  | 1101 |  |  |
|          |      | 1795 | 1796 | 1880 | 1969 |           |      | 1496 | 2423 | 2566 | 3841 |  |  |
|          |      | 2064 | 2106 | 2160 | 2176 |           |      | 4032 | 4710 | 6128 |      |  |  |
|          |      | 2769 | 2921 | 2940 | 2985 | Sma I     | (2)  | 399  | 2952 |      |      |  |  |
|          |      | 3012 | 3036 | 3096 | 3425 | Spe I     | (1)  | 660  |      |      |      |  |  |
|          |      | 3474 | 3684 | 3757 | 4008 | Sph I     | (1)  | 5864 |      |      |      |  |  |
|          |      | 4408 | 4489 | 4635 | 4841 | Ssp I     | (2)  | 3119 | 5273 |      |      |  |  |
|          |      | 5436 | 5494 | 5754 | 6038 | Stu I     | (1)  | 2421 |      |      |      |  |  |
| Msc I    | (3)  | 584  | 1111 | 1416 |      | Sty I     | (9)  | 250  | 461  | 1245 | 1411 |  |  |
| Mse I    | (26) | 36   | 1007 | 1119 | 1149 |           |      | 2238 | 2448 | 2472 | 2803 |  |  |
|          |      | 1173 | 1814 | 2199 | 2500 |           |      | 3013 |      |      |      |  |  |
|          |      | 2504 | 2587 | 3121 | 3219 |           |      | 794  | 1038 | 1349 | 1360 |  |  |
|          |      |      |      |      |      |           |      |      |      |      |      |  |  |

|         |     |      |      |      |
|---------|-----|------|------|------|
| Xma I   | (2) | 397  | 2950 |      |
| Xma III | (3) | 724  | 1529 | 2388 |
| Xmn I   | (3) | 3182 | 3220 | 5068 |

Site usage in pSEB-3H:

|          |                |    |           |               |    |
|----------|----------------|----|-----------|---------------|----|
| Aat II   | G,ACGT`C       | 2  | Acc I     | GT`MK,AC      | 1  |
| Acc65 I  | G`GTAC,C       | 2  | Acc I     | C`CG,C        | 70 |
| Afl III  | C`TTAA,G       | 3  | Afl III   | A`CRYG,T      | 2  |
| Age I    | A`CCGG,T       | 1  | Aha II    | GR`CG,YC      | 9  |
| Ahd I    | GACNN,N`NNGTC  | 4  | Alu I     | AG CT         | 33 |
| Alw I    | GGATC 8/9      | 16 | Alw I     | CAG,NNN`CTG   | 2  |
| Apa I    | G,GGCC`C       | -  | ApaL I    | G`TGCA,C      | 2  |
| Apo I    | R`AATT,Y       | 2  | Asc I     | GG`CGCG,CC    | 2  |
| Ase I    | AT`TA,AT       | 4  | Asp718    | G`GTAC,C      | 2  |
| Ava I    | C`YCGR,G       | 7  | Ava II    | G`GWC,C       | 13 |
| Avr II   | C`CTAG,G       | -  | BamH I    | G`GATC,C      | 1  |
| Ban I    | G`GYRC,C       | 17 | Ban II    | G,RGCY`C      | 8  |
| Bbe I    | G,GGCC`C       | 6  | Bbs I     | GAAGAC 8/12   | 1  |
| Bbv I    | GCAGC 13/17    | 10 | Bbv II    | GAAGAC 7/11   | 1  |
| Bel I    | T`GATC,A       | -  | Bcn I     | CC,S`GG       | 15 |
| Bfa I    | C`TA,G         | 16 | Bgl I     | CCCN,NNN`NGGC | 2  |
| Bgl II   | A`GATC,T       | 1  | Blp I     | GC`TNA,GC     | -  |
| Bpm I    | CTGGAG 22/20   | 3  | Bsa I     | GGTCTC 7/11   | 7  |
| BsaA I   | YAC GTR        | -  | BsaB I    | GATNN NNATC   | 1  |
| BsaH I   | GR`CG,YC       | 9  | BsaJ I    | C`CNNG,G      | 35 |
| BsaW I   | W`CCGG,W       | 5  | BseI I    | GAGGAG 16/14  | 4  |
| Bsg I    | GTGCAG 22/20   | 2  | BsiC I    | TT`CG,AA      | -  |
| BsiE I   | CG,RY`CG       | 10 | BsiHKA I  | G,WGCW`C      | 6  |
| BsiW I   | C`GTAC,G       | -  | Bsm I     | GAATG,C 7     | -  |
| BsmA I   | GTCTC`/9       | 22 | BsmB I    | CGTCTC 7/11   | 7  |
| BsmF I   | GGGAC 15/19    | 11 | BsoF I    | GC`N,GC       | 41 |
| Bsp120 I | G`GGCC,C       | -  | Bsp1286 I | G,DGCH`C      | -  |
| BspH I   | T`CATG,A       | 4  | BspM I    | ACCTGC 10/14  | 2  |
| BspM II  | T`CCGG,A       | -  | Bsr I     | ACT,GG`       | 18 |
| BsrB I   | GAG CGG        | 4  | BsrD I    | GCAATG, 8     | 2  |
| BsrG I   | T`GTAC,A       | 1  | Bssh II   | G`CGCG,C      | 4  |
| Bsss I   | C`TCGT,G       | 4  | Bst1107 I | GTA TAC       | -  |
| BstB I   | TT`CG,AA       | -  | BstE II   | G`GTNAC,C     | 1  |
| BstN I   | CC`W,GG        | 17 | BstU I    | CG CG         | 26 |
| BstX I   | CCAN,NNNN`NTGG | 2  | BstY I    | R`GATC,Y      | 9  |
| Bsu36 I  | CC`TNA,GG      | 3  | Ca8 I     | GCN NGC       | 39 |
| Cfr10 I  | R`CCGG,Y       | 8  | Cla I     | AT`CG,AT      | 1  |
| Csp6 I   | G`TA,C         | 8  | Dde I     | C`TNA,G       | 23 |
| Dpn I    | GA TC          | 28 | DpnII     | `GATC,        | 28 |
| Dra I    | TTT AAA        | 5  | Dra III   | CAC,NNN`GTG   | -  |
| Drd I    | GACNN,NN`NNGTC | 3  | Dsa I     | C`CRYG,G      | 6  |
| Eae I    | Y`GGCC,R       | 11 | Eag I     | C`GGCC,G      | 3  |
| Ear I    | CTCTTC 7/10    | 6  | Eco47 III | AGC GCT       | 3  |
| Eco57 I  | CTGAAG 21/19   | 5  | Eco72 I   | CAC GTG       | -  |
| EcoN I   | CCCTNN`N,NNAGG | 4  | Eco109 I  | RG`GNC,CY     | 6  |
| EcoR I   | G`AATT,C       | 1  | EcoR II   | `CCWGG,       | 17 |
| EcoR V   | GAT ATC        | 3  | Ehe I     | GGC GCC       | 6  |

|           |                     |    |           |               |    |
|-----------|---------------------|----|-----------|---------------|----|
| Esp I     | GC`TNA,GC           | -  | Fnu4H I   | GC`N,GC       | 41 |
| Fok I     | GGATG 14/18         | 12 | Fse I     | GG,CCGG`CC    | -  |
| Fsp I     | TGC GCA             | 2  | Gdi II    | `YGGC,CG      | 11 |
| Gsu I     | CTGGAG 21/19        | 3  | Hae I     | WGG CCW       | 8  |
| Hae II    | R,GGCC`Y            | 12 | Hae III   | GG CC         | 32 |
| Hga I     | GACGC 9/14          | 12 | HgiA I    | G,WGCW`C      | 6  |
| HgiE II   | ACCCNNNNNGGT -1/132 | -  | Hha I     | G,CG`C        | 43 |
| Hinc II   | GTY RAC             | 1  | Hind II   | GTY RAC       | 1  |
| Hind III  | A`AGCT,T            | 1  | Hinf I    | G`ANT,C       | 17 |
| HinI I    | GR`CG,YC            | 9  | HinP I    | C`CG,C        | 43 |
| Hpa I     | GTT AAC             | -  | Hpa II    | C`CG,G        | 31 |
| Hph I     | GGTGA 12/11         | 19 | Kas I     | G`GGCC,C      | 6  |
| Kpn I     | G,GTAC`C            | 2  | Mae I     | C`TA,G        | 16 |
| Mae II    | A`CG,T              | 10 | Mae III   | `GTNAC,       | 20 |
| Mbo I     | `GATC,              | 28 | Mbo II    | GAAGA 12/11   | 14 |
| Mlu I     | A`CGCG,T            | 1  | Mme I     | TCCRAC 25/23  | 6  |
| Mnl I     | CCTC 10/10          | 52 | Msc I     | TGG CCA       | 3  |
| Mse I     | T`TA,A              | 26 | Msl I     | CAYNN NNRTG   | 4  |
| Msp I     | C`CG,G              | 31 | MspAl I   | CMG CKG       | 12 |
| Mun I     | C`AATT,G            | 1  | Nae I     | GCC GGC       | 3  |
| Nar I     | GG`CG,CC            | 6  | Nci I     | CC`S,GG       | 15 |
| Nco I     | C`CATG,G            | 3  | Nde I     | CA`TA,TG      | 1  |
| NgoM I    | G`CCGG,C            | 3  | Nhe I     | G`CTAG,C      | 3  |
| Nla III   | ,CATG`              | 20 | Nla IV    | GGN NCC       | 38 |
| Not I     | GC`GGCC,GC          | 1  | Nru I     | TCG CGA       | 1  |
| Nsi I     | A,TGCA`T            | 1  | Nsp7524 I | R`CATG,Y      | 4  |
| NspB II   | CMG CKG             | 12 | NspH I    | R,CATG`Y      | 4  |
| Pac I     | TTA,AT`TAA          | 1  | PaeR7 I   | C`TCGA,G      | -  |
| Pal I     | GG CC               | 32 | Pf1M I    | CCAN,NNN`NTGG | -  |
| Ple I     | GAGTC 9/10          | 4  | Pme I     | CTTT AAAC     | 1  |
| Pml I     | CAC GTG             | -  | PpuM I    | RG`GWC,CY     | 4  |
| Psp1406 I | AA`CG,TT            | 3  | PspA I    | C`CCGG,G      | 2  |
| Pst I     | C,TGCA`G            | 4  | Pvu I     | CG,AT`CG      | 3  |
| Pvu II    | CAG CTG             | 5  | Rsa I     | GT AC         | 8  |
| Rsr II    | CG`GWC,CG           | -  | Sac I     | G,ACCT`C      | 2  |
| Sac II    | CC,GC`GG            | 1  | Sal I     | G`TCGA,C      | 1  |
| Sap I     | GCTCTTC 8/11        | 2  | Sau3A I   | `GATC,        | 28 |
| Sau96 I   | G`GNC,C             | 27 | Sca I     | AGT ACT       | 1  |
| ScrF I    | CC`N,GG             | 32 | Sec I     | C`CNNG,G      | 35 |
| SfaN I    | GCATC 9/13          | 21 | Sfc I     | C`TRYA,G      | 11 |
| Sfi I     | GGCCN,NNN`NGGCC     | -  | Sma I     | CCC GGG       | 2  |
| SnaB I    | TAC GTA             | -  | Spe I     | A`CTAG,T      | 1  |
| Sph I     | G,CATG`C            | 1  | Spl I     | C`GTAC,G      | -  |
| Srf I     | GGCC GGGC           | -  | Ssp I     | AAT ATT       | 2  |
| Stu I     | AGG CCT             | 1  | Sty I     | C`CWVG,G      | 9  |
| Taq I     | T`CG,A              | 12 | Tfi I     | G`AWT,C       | 7  |
| Tsp45 I   | `GTSAC,             | 7  | Tth111 I  | GACN`N,NGTC   | 4  |
| Tth111 II | CAARCA 16/14        | 9  | Vsp I     | AT`TA,AT      | 4  |
| Xba I     | T`CTAG,A            | 2  | Xca I     | GTA TAC       | -  |
| Xcm I     | CCANNRN,N`NNNTGG-   | -  | Xho I     | C`TCGA,G      | -  |
| Xho II    | R`GATC,Y            | 9  | Xma I     | C`CCGG,G      | 2  |
| Xma III   | C`GGCC,G            | 3  | Xmn I     | GAANN NNNTTC  | 3  |