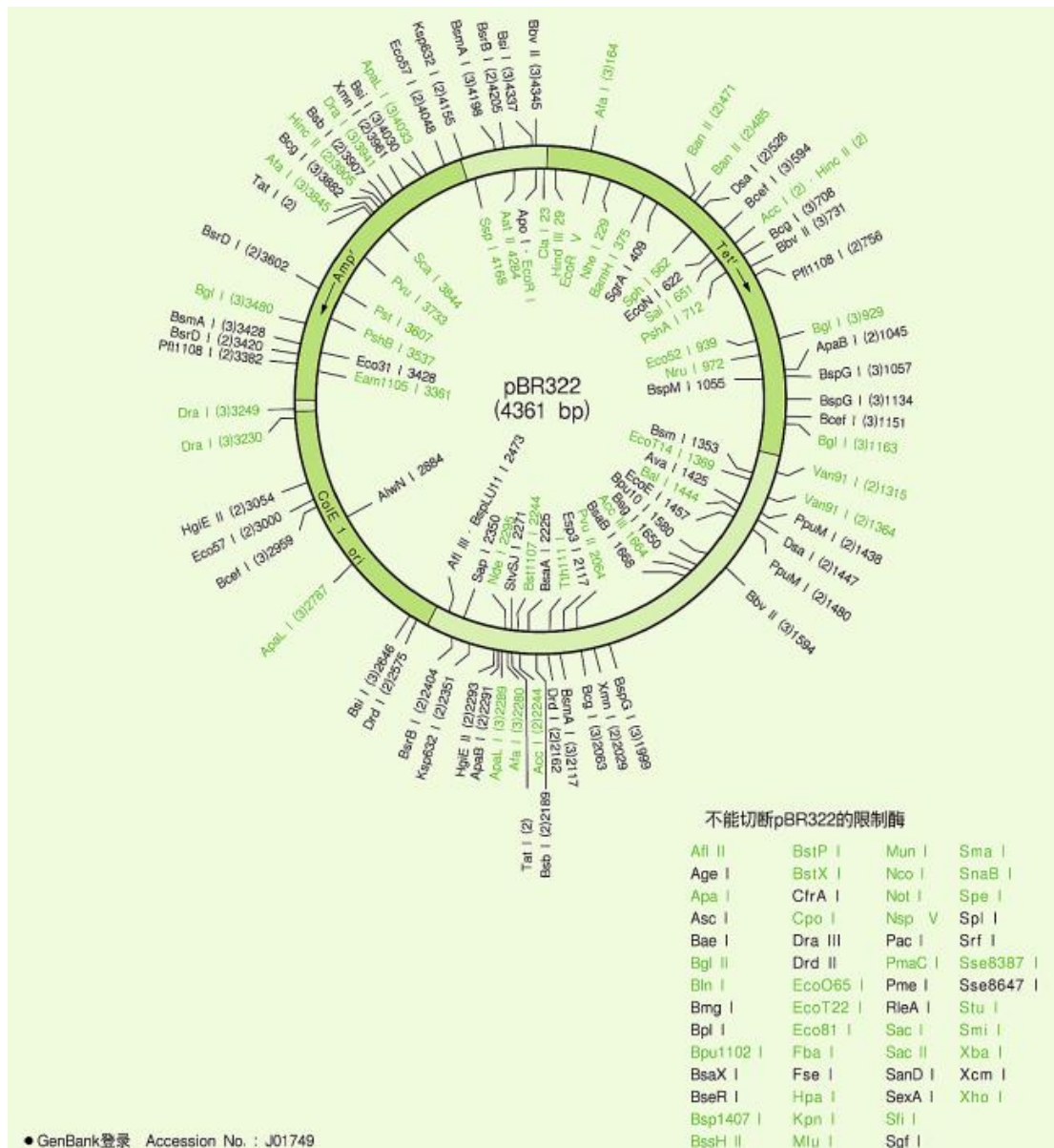


## pBR322 DNA(4361bp) 限制酶切位点图

本图所示数字是以 EcoRI 位点中央计为 0, 从顺时针方向计算, 至各酶切位点的第一个碱基的数。在圆的内部所表示的各限制酶是在 pBR322 DNA 上只有一个酶切位点的酶。圆外所表示的各酶是在 pBR322 DNA 上有 2 个至 3 个的酶切位点的酶。() 内的是酶切位点数。绿字表示 FWKNE 销售的限制酶。



### 参考文献:

1. Sutcliffe. J. G. (1979) Cold Sping Harbor Symposium 43, 77-90.
2. Peden. K. W. C. (1983) Gene 22, 277-280.
3. Watson, N. (1988) Gene 70, 399-403.

A: 切位数 B: 限制酶 C: 酶切位点的第一个碱基的位置 D: 切下片段的碱基 (从小排列) 绿字表示 FWKNE 销售的限制酶。

| A          | B | C    | D    | A           | B | C    | D    | A           | B         | C    | D    | A          | B | C    | D    | A      | B | C    | D    |
|------------|---|------|------|-------------|---|------|------|-------------|-----------|------|------|------------|---|------|------|--------|---|------|------|
| (1) Aat II |   | 4284 | 4361 |             |   | 3428 | 1311 |             |           | 2968 | 1035 |            |   | 3863 | 540  |        |   | 587  | 195  |
| Acc III    |   | 1664 | 4361 |             |   | 4198 | 2280 |             |           | 3221 | 1259 |            |   | 4289 | 1653 |        |   | 1174 | 291  |
| Afl III    |   | 2473 | 4361 | BspG I      |   | 1057 | 77   |             |           | 3555 | 1479 |            |   | 276  | 85   |        |   | 1465 | 498  |
| AlwNI      |   | 2884 | 4361 |             |   | 1134 | 865  |             | Tth111 II | 1920 | 15   |            |   | 587  | 291  |        |   | 2289 | 584  |
| Apo I      |   | 4359 | 4361 |             |   | 1999 | 3419 |             |           | 3047 | 24   |            |   | 1174 | 311  |        |   | 2787 | 607  |
| Ava I      |   | 1425 | 4361 | Dra I       |   | 3230 | 19   |             |           | 3071 | 1127 |            |   | 1465 | 498  |        |   | 3948 | 824  |
| Bal I      |   | 1444 | 4361 |             |   | 3249 | 692  |             |           | 3086 | 1273 |            |   | 2289 | 587  |        |   | 4033 | 1161 |
| BamH I     |   | 375  | 4361 |             |   | 3941 | 3650 |             |           | 4359 | 1922 |            |   | 2787 | 604  | CjeP I |   | 305  | 18   |
| Bpu10 I    |   | 1580 | 4361 | (4) Acl I   |   | 900  | 373  | (6) Bbi II  |           | 413  | 21   |            |   | 3948 | 824  |        |   | 390  | 31   |
| BsaA I     |   | 2225 | 4361 |             |   | 1799 | 899  |             |           | 434  | 114  |            |   | 4033 | 1161 |        |   | 981  | 85   |
| BsaB I     |   | 1668 | 4361 |             |   | 3591 | 1297 |             |           | 548  | 390  | Mfi I      |   | 375  | 11   |        |   | 999  | 120  |
| Bsg I      |   | 1650 | 4361 |             |   | 3964 | 1792 |             |           | 1205 | 482  |            |   | 1667 | 12   |        |   | 2975 | 147  |
| Bsm I      |   | 1353 | 4361 | Aor51H I    |   | 232  | 262  |             |           | 3902 | 657  |            |   | 3114 | 17   |        |   | 3006 | 388  |
| BspLU11 I  |   | 2473 | 4361 |             |   | 494  | 281  |             |           | 4284 | 2697 |            |   | 3125 | 86   |        |   | 3153 | 472  |
| BspM I     |   | 1055 | 4361 |             |   | 775  | 952  | Bce83 I     |           | 664  | 192  |            |   | 3211 | 728  |        |   | 3273 | 533  |
| Bst1107 I  |   | 2244 | 4361 |             |   | 1727 | 2866 |             |           | 856  | 263  |            |   | 3223 | 768  |        |   | 3745 | 591  |
| Cla I      |   | 23   | 4361 | Bbe I       |   | 413  | 21   |             |           | 2565 | 276  |            |   | 3991 | 1292 |        |   | 4278 | 1976 |
| Eam1105 I  |   | 3361 | 4361 |             |   | 434  | 114  |             |           | 2841 | 868  |            |   | 4008 | 1447 | Fau I  |   | 175  | 10   |
| EcoE I     |   | 1457 | 4361 |             |   | 548  | 657  |             |           | 3104 | 1053 | Sec I      |   | 115  | 6    |        |   | 697  | 147  |
| EcoN I     |   | 822  | 4361 |             |   | 1205 | 3569 |             |           | 3972 | 1709 |            |   | 129  | 14   |        |   | 890  | 186  |
| EcoR I     |   | 4359 | 4361 | BspH I      |   | 489  | 105  | Eae I       |           | 295  | 104  |            |   | 528  | 78   |        |   | 1037 | 193  |
| EcoRV      |   | 185  | 4361 |             |   | 3193 | 544  |             |           | 399  | 132  |            |   | 534  | 202  |        |   | 1232 | 195  |
| EcoT14 I   |   | 1369 | 4361 |             |   | 4201 | 1008 |             |           | 531  | 408  |            |   | 1167 | 399  |        |   | 1491 | 230  |
| Eco31 I    |   | 3428 | 4361 |             |   | 4306 | 2704 |             |           | 939  | 505  |            |   | 1369 | 633  |        |   | 1763 | 259  |
| Eco52 I    |   | 939  | 4361 | Bsp24 I     |   | 390  | 178  |             |           | 1444 | 902  |            |   | 1447 | 1186 |        |   | 1949 | 272  |
| Esp3 I     |   | 2117 | 4361 |             |   | 2975 | 473  |             |           | 3754 | 2310 |            |   | 2633 | 1843 |        |   | 2179 | 522  |
| Hind III   |   | 29   | 4361 |             |   | 3153 | 1125 | Mva I       |           | 130  | 13   | Sim I      |   | 783  | 44   | Hinf I |   | 632  | 75   |
| Nde I      |   | 2295 | 4361 |             |   | 4278 | 2585 |             |           | 1059 | 121  |            |   | 1438 | 257  |        |   | 852  | 154  |
| Nhe I      |   | 229  | 4361 | Eci I       |   | 1393 | 146  |             |           | 1442 | 383  |            |   | 1482 | 288  |        |   | 1006 | 220  |
| Nru I      |   | 972  | 4361 |             |   | 2545 | 828  |             |           | 2500 | 929  |            |   | 1739 | 449  |        |   | 1304 | 221  |
| PshA I     |   | 712  | 4361 |             |   | 2691 | 1152 |             |           | 2621 | 1058 |            |   | 2217 | 478  |        |   | 1525 | 298  |
| PshB I     |   | 3537 | 4361 |             |   | 3519 | 2235 |             |           | 2634 | 1857 |            |   | 2666 | 481  |        |   | 2029 | 344  |
| Pst I      |   | 3607 | 4361 | EcoO109 I   |   | 523  | 42   | NspB II     |           | 1139 | 119  |            |   | 3147 | 655  |        |   | 2373 | 396  |
| Pvu I      |   | 3733 | 4361 |             |   | 1438 | 543  |             |           | 2064 | 245  | StyLT I    |   | 3435 | 1709 |        |   | 2448 | 504  |
| Pvu II     |   | 2064 | 4361 |             |   | 1480 | 915  |             |           | 2183 | 630  |            |   | 779  | 26   |        |   | 2844 | 517  |
| Sai I      |   | 651  | 4361 |             |   | 4341 | 2861 |             |           | 2813 | 925  |            |   | 1756 | 63   |        |   | 3361 | 1632 |
| Sap I      |   | 2350 | 4361 | Fin I       |   | 538  | 196  |             |           | 3058 | 941  |            |   | 2101 | 168  |        |   | 901  | 24   |
| Sca I      |   | 3844 | 4361 |             |   | 888  | 350  |             |           | 3999 | 1501 |            |   | 2269 | 317  | Mae II |   | 957  | 56   |
| SgrA I     |   | 409  | 4361 |             |   | 1084 | 677  | Taq II      |           | 654  | 34   |            |   | 2586 | 320  |        |   | 1546 | 230  |
| Sph I      |   | 562  | 4361 |             |   | 1761 | 3138 |             |           | 2376 | 153  |            |   | 2906 | 345  |        |   | 1570 | 320  |
| Ssp I      |   | 4168 | 4361 | Fsp I       |   | 280  | 98   |             |           | 3715 | 188  |            |   | 2932 | 877  |        |   | 1800 | 373  |
| StySJ I    |   | 2271 | 4361 |             |   | 1356 | 1035 |             |           | 3883 | 945  |            |   | 2995 | 2145 |        |   | 2226 | 416  |
| Tth111 I   |   | 2217 | 4361 |             |   | 1454 | 1096 |             |           | 4036 | 1339 | TspE I     |   | 59   | 14   |        |   | 3176 | 428  |
| (2) Acc I  |   | 651  | 1593 |             |   | 3586 | 2132 |             |           | 4070 | 1722 |            |   | 252  | 60   |        |   | 3592 | 589  |
| ApaB I     |   | 2244 | 2768 | Gsu I       |   | 811  | 580  |             |           | 852  | 154  |            |   | 1320 | 193  |        |   | 3965 | 950  |
| Ban II     |   | 2291 | 3115 |             |   | 1401 | 590  |             |           | 1006 | 221  |            |   | 1334 | 255  |        |   | 4285 | 977  |
| Bbs I      |   | 471  | 14   |             |   | 1981 | 1470 |             |           | 1304 | 298  |            |   | 3234 | 306  |        |   |      |      |
| Bbs II     |   | 485  | 4347 | Mly I       |   | 3451 | 1721 |             |           | 1525 | 419  |            |   | 3540 | 565  |        |   |      |      |
| Bbs I      |   | 2189 | 1718 |             |   | 627  | 466  |             |           | 2029 | 504  |            |   | 3795 | 1068 |        |   |      |      |
| BsrB I     |   | 3907 | 2643 |             |   | 2373 | 522  | (7) Ctr10 I |           | 2448 | 2765 | (9) Bcc I  |   | 458  | 12   |        |   |      |      |
| BsrD I     |   | 2404 | 1801 |             |   | 2839 | 1627 |             |           | 160  | 9    |            |   | 552  | 90   |        |   |      |      |
| BsrD I     |   | 4205 | 2560 | Mme I       |   | 3361 | 1746 |             |           | 401  | 160  |            |   | 988  | 94   |        |   |      |      |
| BsrD I     |   | 3420 | 182  |             |   | 284  | 184  |             |           | 410  | 241  |            |   | 1078 | 124  |        |   |      |      |
| BsrD I     |   | 3602 | 4179 |             |   | 2663 | 1711 |             |           | 769  | 354  |            |   | 1385 | 287  |        |   |      |      |
| BsrD I     |   | 2162 | 413  |             |   | 2847 | 2379 |             |           | 929  | 359  |            |   | 1397 | 307  |        |   |      |      |
| BsrD I     |   | 2575 | 3948 | Nae I       |   | 401  | 160  |             |           | 1283 | 1075 |            |   | 3402 | 436  |        |   |      |      |
| Dsa I      |   | 528  | 919  |             |   | 769  | 354  | Hae I       |           | 918  | 11   |            |   | 3526 | 1006 |        |   |      |      |
| Dsa I      |   | 1447 | 3442 |             |   | 929  | 368  |             |           | 990  | 57   |            |   | 3813 | 2005 |        |   |      |      |
| Eco57 I    |   | 3000 | 1048 |             |   | 1283 | 3479 |             |           | 1047 | 72   | Cje I      |   | 391  | 1    |        |   |      |      |
| HgiE II    |   | 4048 | 3313 | Nsp I       |   | 562  | 292  |             |           | 1444 | 397  |            |   | 894  | 78   |        |   |      |      |
| Hinc II    |   | 2293 | 761  |             |   | 1816 | 365  |             |           | 2486 | 452  |            |   | 2294 | 99   |        |   |      |      |
| Ksp632 I   |   | 3054 | 3600 |             |   | 2108 | 1254 |             |           | 2497 | 1042 |            |   | 2500 | 206  |        |   |      |      |
| Pfi1108 I  |   | 651  | 1107 |             |   | 2473 | 2450 |             |           | 2949 | 2330 |            |   | 2976 | 474  |        |   |      |      |
| Pfu91 I    |   | 3905 | 3254 | Ple I       |   | 632  | 476  |             |           | 286  | 149  |            |   | 3054 | 476  |        |   |      |      |
| Pfu91 I    |   | 2351 | 1804 |             |   | 2368 | 512  |             |           | 653  | 286  |            |   | 3055 | 503  |        |   |      |      |
| Pfu91 I    |   | 4155 | 2557 |             |   | 2844 | 1637 |             |           | 939  | 367  |            |   | 3154 | 1124 |        |   |      |      |
| Pfu91 I    |   | 756  | 1735 |             |   | 3356 | 1736 |             |           | 2386 | 424  |            |   | 4278 | 1400 |        |   |      |      |
| Pfu91 I    |   | 3382 | 2626 | Sfe I       |   | 138  | 191  |             |           | 2810 | 765  | HgiC I     |   | 76   | 21   |        |   |      |      |
| Pfu91 I    |   | 1438 | 42   |             |   | 2738 | 678  |             |           | 3733 | 923  |            |   | 119  | 43   |        |   |      |      |
| Pfu91 I    |   | 1480 | 4319 |             |   | 2929 | 892  |             |           | 3882 | 1447 |            |   | 413  | 84   |        |   |      |      |
| Pfu91 I    |   | 2279 | 1565 |             |   | 3607 | 2600 |             |           | 1027 | 159  |            |   | 434  | 114  |        |   |      |      |
| Pfu91 I    |   | 3844 | 2796 | (5) Ace III |   | 685  | 128  |             |           | 1458 | 195  |            |   | 548  | 218  |        |   |      |      |
| Pfu91 I    |   | 1315 | 49   |             |   | 1985 | 300  |             |           | 1653 | 359  |            |   | 766  | 294  |        |   |      |      |
| Pfu91 I    |   | 1364 | 4312 |             |   | 2113 | 1240 |             |           | 2044 | 391  |            |   | 1205 | 439  |        |   |      |      |
| Pfu91 I    |   | 2029 | 1932 |             |   | 2413 | 1300 |             |           | 3614 | 431  |            |   | 1289 | 1123 |        |   |      |      |
| Pfu91 I    |   | 3961 | 2429 |             |   | 3653 | 1393 |             |           | 3773 | 1256 |            |   | 3314 | 2025 |        |   |      |      |
| Pfu91 I    |   | 164  | 680  | Bet I       |   | 693  | 147  |             |           | 4132 | 1570 |            |   | 125  | 88   |        |   |      |      |
| Pfu91 I    |   | 2280 | 1565 |             |   | 1664 | 831  |             |           | 24   | 141  | Tsp45 I    |   | 213  | 95   |        |   |      |      |
| Pfu91 I    |   | 3845 | 2116 |             |   | 2679 | 971  |             |           | 339  | 313  |            |   | 881  | 211  |        |   |      |      |
| Pfu91 I    |   | 2289 | 498  |             |   | 2626 | 1015 |             |           | 652  | 315  |            |   | 1148 | 213  |        |   |      |      |
| Pfu91 I    |   | 2787 | 1246 |             |   | 3657 | 1397 |             |           | 1127 | 368  |            |   | 1915 | 267  |        |   |      |      |
| Pfu91 I    |   | 4033 | 2617 | Bfi I       |   | 304  | 69   |             |           | 1268 | 475  |            |   | 2128 | 652  |        |   |      |      |
| Pfu91 I    |   | 731  | 747  |             |   | 610  | 306  |             |           | 2573 | 1305 |            |   | 2223 | 668  |        |   |      |      |
| Pfu91 I    |   | 1594 | 863  |             |   | 679  | 1192 |             |           | 4017 | 1444 |            |   | 3623 | 767  |        |   |      |      |
| Pfu91 I    |   | 4345 | 2751 |             |   | 2219 | 1254 |             |           | 799  | 42   |            |   | 3834 | 1400 |        |   |      |      |
| Pfu91 I    |   | 594  | 557  |             |   | 3411 | 1540 |             |           | 887  | 88   | (10) Bcn I |   | 170  | 35   |        |   |      |      |
| Pfu91 I    |   | 1151 | 1808 | Gdi II      |   | 295  | 104  |             |           | 1136 | 222  |            |   | 534  | 226  |        |   |      |      |
| Pfu91 I    |   | 2959 | 1996 |             |   | 399  | 132  |             |           | 1439 | 249  |            |   | 1258 | 306  |        |   |      |      |
| Pfu91 I    |   | 708  | 1187 |             |   | 531  | 408  |             |           | 1481 | 279  |            |   | 1484 | 328  |        |   |      |      |
| Pfu91 I    |   | 2063 | 1355 |             |   | 939  | 902  |             |           | 1760 | 303  |            |   | 1812 | 351  |        |   |      |      |
| Pfu91 I    |   | 3882 | 1819 |             |   | 3754 | 2815 |             |           | 3504 | 1434 |            |   | 2118 | 364  |        |   |      |      |