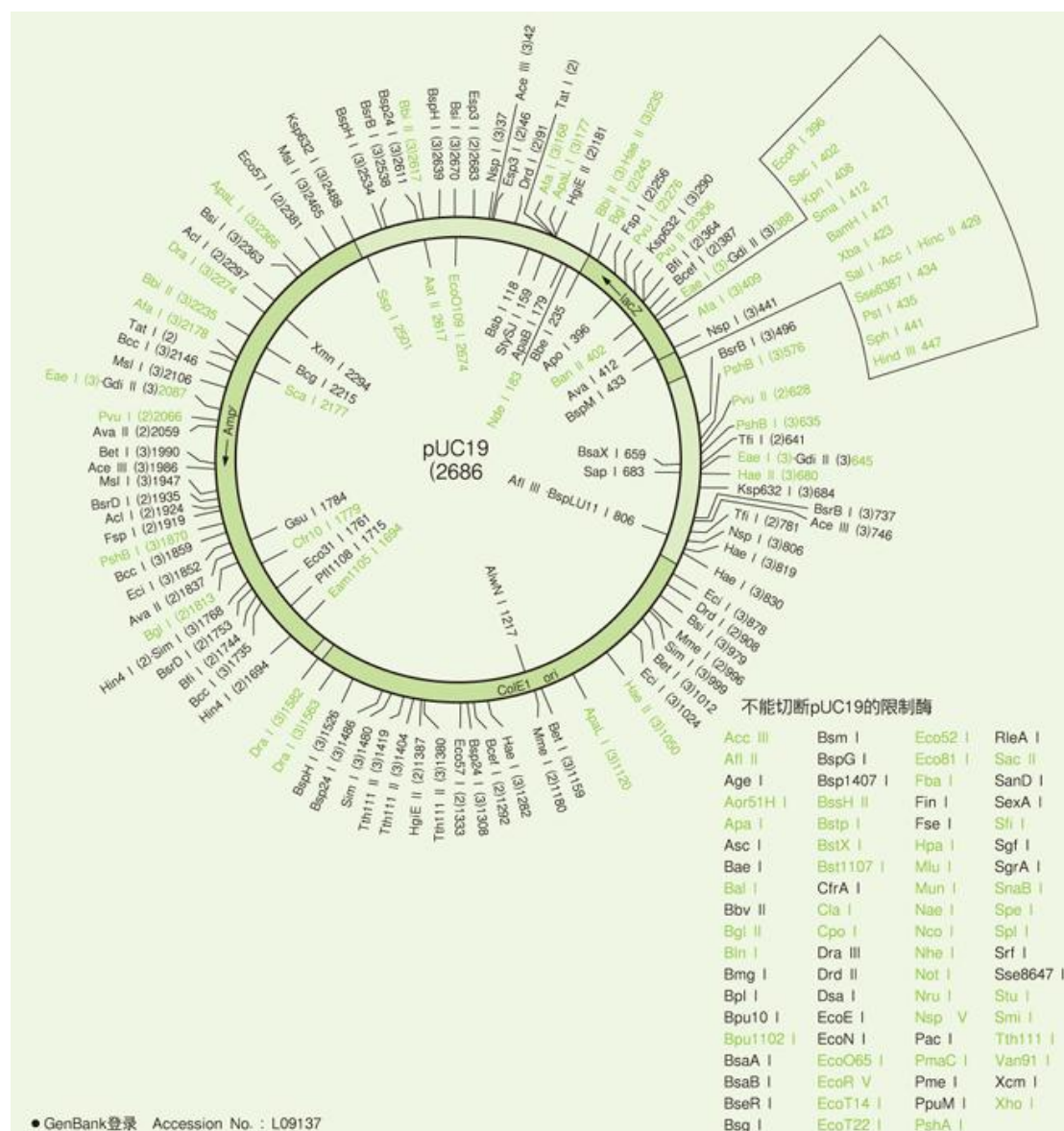


## pUC19 DNA(2686bp) 限制酶切位点图

本图是在 JCU9 DNA 上 TTCGCGTTT 位点的一个作为 1，以此按顺时针方向计算，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 JCU9 DNA 上有 1 个至 3 个的酶切位点的酶，( ) 内的数是酶切位点数。此外，圆外还列举了多克隆位点限制酶切点的分布图。绿字表示 FWKNE 销售的限制酶。



### 参考文献:

1. Yanisch-Perron, C., Vieira, J. and Messing, J. (1985) Gene 33, 103-119.

A: 切断数 B: 限制酶 C: 酶切位点的第一个碱基的位置 D: 切下片段的碱基数 (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    | 2617 | 2686 |   | Gdi II    | 1852      | 1712 |     | 2216   | 168   | 71   |        | 833  | 218 |      |        |    |   |   |
|     | Acc I     | 406  | 2686 |   |           | 385       | 257  |     | 2269   | 992   | 208  |        | 954  | 272 |      |        |    |   |   |
|     | AluI      | 806  | 2686 |   |           | 645       | 987  |     | 2403   | 1339  | 768  |        | 967  | 288 |      |        |    |   |   |
|     | AluNI     | 1217 | 2686 |   |           | 2087      | 1442 | (6) | Bsc I  | 97    | 23   |        | 839  | 470 |      |        |    |   |   |
|     | ApaB I    | 179  | 2686 |   | Hae I     | 819       | 11   |     | 1132   | 222   | 1309 | 506    | 1881 | 501 |      |        |    |   |   |
|     | Apo I     | 396  | 2686 |   |           | 830       | 452  |     | 1477   | 345   | 1622 | 515    | 2232 | 696 |      |        |    |   |   |
|     | Ava I     | 412  | 2686 |   |           | 1282      | 2223 |     | 1699   | 522   | 2137 | 568    |      |     |      |        |    |   |   |
|     | BamHI     | 417  | 2686 |   | Hae II    | 235       | 370  |     | 1722   | 539   | (10) | Acc II | 2    | 2   |      |        |    |   |   |
|     | Ban II    | 402  | 2686 |   |           | 680       | 445  |     | 2244   | 1035  |      | 4      | 2    | 2   |      |        |    |   |   |
|     | Bbe I     | 235  | 2686 |   |           | 1050      | 1871 |     |        | 107   |      | 100    |      |     |      |        |    |   |   |
|     | Bgl I     | 2215 | 2686 |   | Ksp632 I  | 290       | 394  |     | BsiY I | 648   | 166  |        | 652  | 103 |      |        |    |   |   |
|     | BsaX I    | 659  | 2686 |   |           | 684       | 488  |     |        | 822   | 174  |        | 654  | 198 |      |        |    |   |   |
|     | Bsb I     | 118  | 2686 |   |           | 2488      | 1804 |     |        | 840   | 279  |        | 852  | 330 |      |        |    |   |   |
|     | BspLut1 I | 806  | 2686 |   | Msl I     | 1947      | 159  |     |        | 1006  | 601  |        | 1433 | 332 |      |        |    |   |   |
|     | BspM I    | 433  | 2686 |   |           | 2106      | 359  |     |        | 1285  | 1448 |        | 1763 | 493 |      |        |    |   |   |
|     | Cfr10     | 1779 | 2686 |   |           | 2465      | 2168 |     |        | 286   | 17   |        | 2256 | 545 |      |        |    |   |   |
|     | Eam1105 I | 1694 | 2686 |   | Nsp I     | 317       | 384  |     |        | 1741  | 79   |        | 2588 | 581 |      |        |    |   |   |
|     | EcoD109 I | 2674 | 2686 |   |           | 441       | 404  |     |        | 1820  | 222  |        | 413  | 1   |      |        |    |   |   |
|     | EcoRI     | 396  | 2686 |   |           | 806       | 1917 |     |        | 1837  | 297  |        | 417  | 7   | (13) | CviR I | 40 | 8 |   |
|     | Eco31 I   | 1761 | 2686 |   | PshB I    | 576       | 59   |     |        | 2059  | 616  |        | 1368 | 8   |      |        |    |   |   |
|     | Gsu I     | 1784 | 2686 |   |           | 635       | 1235 |     |        | 2675  | 1455 |        | 1447 | 13  |      |        |    |   |   |
|     | Hinc II   | 429  | 2686 |   |           | 1870      | 1392 |     |        | 1308  | 31   |        | 1454 | 79  |      |        |    |   |   |
|     | Hind III  | 447  | 2686 |   | Sim I     | 999       | 298  |     |        | 1339  | 120  |        | 1544 | 90  |      |        |    |   |   |
|     | Kpn I     | 408  | 2686 |   |           | 1498      | 481  |     |        | 1486  | 481  |        | 1562 | 308 |      |        |    |   |   |
|     | Nde I     | 183  | 2686 |   |           | 1768      | 1917 |     |        | 1606  | 472  |        | 2016 | 464 |      |        |    |   |   |
|     | Pfl1108 I | 1715 | 2686 |   | Tth111 II | 1380      | 15   |     |        | 2078  | 533  |        | 2324 | 761 |      |        |    |   |   |
|     | Pst I     | 435  | 2686 |   |           | 1404      | 24   |     |        | 2611  | 1383 |        | 2337 | 955 |      |        |    |   |   |
|     | Sac I     | 402  | 2686 |   |           | 1419      | 2647 |     |        | 171   | 166  |        | 392  | 13  |      |        |    |   |   |
|     | Sal I     | 429  | 2686 |   | (4)       | Bce83 I   | 898  | 263 |        | 1081  | 235  |        | 593  | 27  |      |        |    |   |   |
|     | Sap I     | 683  | 2686 |   |           | 1174      | 276  |     |        | 1490  | 409  |        | 702  | 105 |      |        |    |   |   |
|     | Sca I     | 2177 | 2686 |   |           | 1437      | 868  |     |        | 1608  | 426  |        | 1058 | 109 |      |        |    |   |   |
|     | Sma I     | 412  | 2686 |   |           | 2305      | 1279 |     |        | 2196  | 540  |        | 1221 | 149 |      |        |    |   |   |
|     | Sph I     | 441  | 2686 |   | BsmA I    | 46        | 48   |     |        | 2622  | 910  |        | 1492 | 201 |      |        |    |   |   |
|     | Sse8387 I | 434  | 2686 |   |           | 1761      | 153  |     |        | 427   | 65   |        | 1641 | 271 |      |        |    |   |   |
|     | StyI      | 2501 | 2686 |   |           | 2531      | 770  |     |        | 641   | 75   |        | 1746 | 347 |      |        |    |   |   |
|     | StyGI     | 159  | 2686 |   |           | 2684      | 1715 |     |        | 706   | 214  |        | 2093 | 506 |      |        |    |   |   |
|     | Xba I     | 423  | 2686 |   | Hga I     | 98        | 558  |     |        | 781   | 396  |        | 2120 | 958 |      |        |    |   |   |
|     | Xmn I     | 2294 | 2686 |   |           | 908       | 578  |     |        | 1177  | 517  |        | 365  | 13  |      |        |    |   |   |
| (2) | Acc I     | 1924 | 373  |   |           | 1498      | 740  |     |        | 1694  | 1419 |        | 1891 | 26  |      |        |    |   |   |
|     | Ava II    | 1837 | 222  |   | HgiC I    | 235       | 142  |     |        | 306   | 245  |        | 1209 | 117 |      |        |    |   |   |
|     | BceI      | 2059 | 2464 |   |           | 408       | 173  |     |        | 628   | 322  |        | 1222 | 118 |      |        |    |   |   |
|     | BclI      | 387  | 905  |   |           | 550       | 1097 |     |        | 1146  | 466  |        | 1339 | 175 |      |        |    |   |   |
|     | Bfi I     | 1292 | 1781 |   | Mae I     | 1647      | 1274 |     |        | 1391  | 518  |        | 1745 | 215 |      |        |    |   |   |
|     | Bgl I     | 364  | 1306 |   |           | 424       | 253  |     |        | 2332  | 941  |        | 1863 | 264 |      |        |    |   |   |
|     | Bgl I     | 1744 | 380  |   |           | 1301      | 335  |     |        | 1906  | 408  |        | 2030 | 48  |      |        |    |   |   |
|     | Bgl I     | 245  | 1118 |   |           | 1554      | 877  |     |        | 157   | 63   |        | 2170 | 603 |      |        |    |   |   |
|     | BsrD I    | 1813 | 1568 |   |           | 1889      | 1221 |     |        | 919   | 127  |        | 2345 | 706 |      |        |    |   |   |
|     | Drd I     | 1753 | 182  |   | Mly I     | 422       | 284  |     |        | 1239  | 320  |        | 287  | 11  |      |        |    |   |   |
|     | Drd I     | 1935 | 2504 |   |           | 706       | 466  |     |        | 1265  | 762  |        | 389  | 18  |      |        |    |   |   |
|     | Eco57 I   | 91   | 817  |   |           | 1172      | 522  |     | (7)    | Bcn I | 1328 | 1388   |      | 646 | 80   |        |    |   |   |
|     | Eco57 I   | 908  | 1869 |   | Ple I     | 1694      | 1414 |     |        | 47    | 1    |        | 820  | 102 |      |        |    |   |   |
|     | Eco57 I   | 1333 | 1048 |   |           | 274       | 32   |     |        | 82    | 34   |        | 1741 | 298 |      |        |    |   |   |
|     | Esp3 I    | 2381 | 1638 |   |           | 701       | 476  |     |        | 412   | 330  |        | 849  | 257 |      |        |    |   |   |
|     | Esp3 I    | 46   | 49   |   |           | 1177      | 512  |     |        | 413   | 351  |        | 1283 | 267 |      |        |    |   |   |
|     | Fsp I     | 2683 | 2637 |   |           | 1689      | 1424 |     |        | 1185  | 501  |        | 1741 | 298 |      |        |    |   |   |
|     | Fsp I     | 256  | 1023 |   | Sfe I     | 435       | 191  |     |        | 1881  | 696  |        | 1821 | 434 |      |        |    |   |   |
|     | HgiE II   | 1919 | 1663 |   |           | 1071      | 636  |     |        | 2232  | 772  |        | 2088 | 458 |      |        |    |   |   |
|     | HinI      | 181  | 1206 |   |           | 1262      | 678  |     |        | 12    | 9    |        | 2675 | 587 |      |        |    |   |   |
|     | HinI      | 1387 | 1480 |   | Tsp45 I   | 1840      | 1181 |     |        | 21    | 57   |        | 348  | 58  |      |        |    |   |   |
|     | HinI      | 1694 | 74   |   |           | 57        | 211  |     |        | 1543  | 219  |        | 368  | 63  |      |        |    |   |   |
|     | Mme I     | 1768 | 2612 |   |           | 368       | 311  |     |        | 1770  | 227  |        | 368  | 63  |      |        |    |   |   |
|     | Mme I     | 996  | 184  |   |           | 1956      | 576  |     |        | 2173  | 284  |        | 1163 | 116 |      |        |    |   |   |
|     | Pvu I     | 1180 | 2502 |   |           | 2167      | 1588 |     |        | 2392  | 403  |        | 1226 | 153 |      |        |    |   |   |
|     | Pvu I     | 276  | 896  |   | Taq I     | 400       | 30   |     |        | 2414  | 1522 |        | 1342 | 188 |      |        |    |   |   |
|     | Pvu II    | 2068 | 1790 |   |           | 430       | 476  |     |        | 284   | 71   |        | 1625 | 283 |      |        |    |   |   |
|     | Pvu II    | 306  | 322  |   |           | 906       | 736  |     |        | 678   | 76   |        | 1956 | 291 |      |        |    |   |   |
|     | Tat I     | 628  | 2364 |   |           | 2350      | 1444 |     |        | 1469  | 109  |        | 2014 | 331 |      |        |    |   |   |
|     | Tat I     | 167  | 676  |   | (5)       | Bsp1286 I | 177  | 85  |        | 1540  | 394  |        | 2167 | 388 |      |        |    |   |   |
|     | Tfi I     | 2177 | 2010 |   |           | 402       | 225  |     |        | 2295  | 488  |        | 2355 | 795 |      |        |    |   |   |
|     | Tfi I     | 641  | 140  |   |           | 1120      | 497  |     |        | 2373  | 755  |        | 38   | 10  |      |        |    |   |   |
|     | Tfi I     | 781  | 2546 |   |           | 2281      | 718  |     |        | 2482  | 791  |        | 442  | 19  |      |        |    |   |   |
| (3) | Ace III   | 42   | 704  |   |           | 2366      | 1161 |     |        | 417   | 11   |        | 461  | 36  |      |        |    |   |   |
|     |           | 746  | 742  |   | Fau I     | 108       | 10   |     |        | 1447  | 12   |        | 807  | 78  |      |        |    |   |   |
|     |           | 1986 | 1240 |   |           | 118       | 51   |     |        | 1458  | 17   |        | 1527 | 84  |      |        |    |   |   |
|     | Ala I     | 168  | 241  |   |           | 278       | 160  |     |        | 1544  | 86   |        | 2018 | 105 |      |        |    |   |   |
|     | Ala I     | 409  | 676  |   |           | 598       | 320  |     |        | 1556  | 762  |        | 2028 | 346 |      |        |    |   |   |
|     | ApaL I    | 2178 | 1769 |   |           | 649       | 2145 |     |        | 2324  | 768  |        | 2106 | 393 |      |        |    |   |   |
|     |           | 177  | 497  |   | Fok I     | 91        | 181  |     |        | 2341  | 1030 |        | 2142 | 404 |      |        |    |   |   |
|     |           | 1120 | 943  |   |           | 335       | 244  |     |        | 150   | 118  |        | 2535 | 491 |      |        |    |   |   |
|     | Bbi II    | 2366 | 1246 |   |           | 1666      | 287  |     |        | 732   | 122  |        | 2640 | 720 |      |        |    |   |   |
|     | Bbi II    | 235  | 304  |   |           | 1847      | 643  |     |        | 850   | 155  |        | 235  | 9   |      |        |    |   |   |
|     |           | 2235 | 382  |   |           | 2134      | 1331 |     |        | 1005  | 229  |        | 408  | 39  |      |        |    |   |   |
|     | Bcc I     | 2617 | 2000 |   | HgiA I    | 177       | 85   |     |        | 2089  | 396  |        | 417  | 41  |      |        |    |   |   |
|     | Bcc I     | 1735 | 124  |   |           | 402       | 225  |     |        | 2211  | 582  |        | 550  | 94  |      |        |    |   |   |
|     | Bet I     | 1859 | 287  |   |           | 1120      | 497  |     |        | 2440  | 1084 |        | 836  | 133 |      |        |    |   |   |
|     | Bet I     | 2146 | 2275 |   |           | 2281      | 718  |     |        | 397   | 17   |        | 875  | 173 |      |        |    |   |   |
|     | Bsi I     | 1012 | 147  |   |           | 2366      | 1161 |     |        | 487   | 75   |        | 211  | 437 |      |        |    |   |   |
|     | Bsi I     | 1159 | 681  |   | Mae II    | 374       | 320  |     |        | 504   | 90   |        | 1741 | 286 |      |        |    |   |   |
|     | Bsi I     | 1990 | 1708 |   |           | 1509      | 373  |     |        | 579   | 255  |        | 1782 | 338 |      |        |    |   |   |
|     | BspH I    | 979  | 307  |   |           | 1925      | 416  |     |        | 1567  | 306  |        | 1993 | 590 |      |        |    |   |   |
|     | BspH I    | 2363 | 995  |   |           | 2298      | 442  |     |        | 1873  | 955  |        | 2583 | 772 |      |        |    |   |   |
|     | BspH I    | 2670 | 1384 |   |           | 2618      | 1135 |     |        | 2128  | 988  |        | 41   | 3   |      |        |    |   |   |
|     | Bsp24 I   | 1526 | 105  |   | Mcr I     | 276       | 149  |     | (8)    | Cje I | 182  | 1      |      | 242 | 18   |        |    |   |   |
|     | Bsp24 I   | 2534 | 1008 |   |           | 719       | 424  |     |        | 302   | 78   |        | 315  | 73  |      |        |    |   |   |
|     | Bsp24 I   | 2639 | 1573 |   |           | 1143      | 443  |     |        | 833   | 99   |        | 618  | 77  |      |        |    |   |   |
|     | BsrB I    | 1308 | 178  |   |           | 2086      | 747  |     |        | 1309  | 120  |        | 699  | 81  |      |        |    |   |   |
|     | BsrB      |      |      |   |           |           |      |     |        |       |      |        |      |     |      |        |    |   |   |