





5' gatggcatcgcggctgcactgggtggcccgaaacctctactggaccgacacggggcacggaccgcatcgaggtgacgcgct 2080  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' ctaccgtagcggccagctgacccaccgggctttggagatgacctggctgtgcccgctgcctggcgtagctccactgcgcgga  
D G I A V D W V A R N L Y W T D T G T D R I E V T R L  
419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445

5' caacggcacctcccgcaagatcctgggtgtcggaggacctggacgagccccgagccatcgactgcacccccgtgatgggccc 2160  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' gttgccgtggaggggcggttctaggaccacagcctcctggacctgctcggggctcggtagcgtgacgtggggcactaccggg  
N G T S R K I L V S E D L D E P R A I A L H P V M G  
446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471

5' tcatgtactggacagactggggagagaaccctaaaatcgagtgtgccaaacttggatggggcaggagcggcgtgtgctggtc 2240  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' agtacatgacctgtctgacccctctcttgggatttttagctcacacggttgaacctaccctcctcgccgacacgaccag  
L M Y W T D W G E N P K I E C A N L D G Q E R R V L V  
472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498

Sbfl

5' aatgcctccctcgggtggcccaacggcctggccctggacctgcaggaggggaagctctactggggagacgccaagacaga 2320  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
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N A S L G W P N G L A L D L Q E G K L Y W G D A K T D  
499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525

5' caagatcgaggtgatcaatgttgatgggacgaagaggcggaccctcctggaggacaagctcccgcacattttcgggttca 2400  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
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526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551

5' cgctgctgggggacttcatctactggactgactggcagcggcgcagcatcgagcgggtgcacaaggtcaaggccagccgg 2480  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
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T L L G D F I Y W T D W Q R R S I E R V H K V K A S R  
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5' gacgtcatcattgaccagctgcccgaacctgatggggctcaaagctgtgaatgtggccaaggtcgtcggaaaccaaccctg 2560  
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D V I I D Q L P D L M G L K A V N V A K V V G T N P C  
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5' tgcggacaggaacggggggtgcagccacctgtgcttcttcacacccccacgcaaccgggtgtggctgccccatcggcctgg 2640  
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A D R N G G C S H L C F F T P H A T R C G C P I G L  
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o  
5' ggggtggtgctgctgctggggaccgcgacaagcccagggccatcgctcgtcaacgcggagcgcgaggtacctgtacttcaccaa 4000  
o  
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G V V L R G D R D K P R A I V V N A E R G Y L Y F T N  
o  
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o  
o  
o  
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M Q D R A A K I E R A A L D G T E R E V L F T T G L  
o  
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I R P V A L V V D N T L G K L F W V D A D L K R I E S  
o  
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C D L S G A N R L T L E D A N I V Q P L G L T I L G K  
o  
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H L Y W I D R Q Q Q M I E R V E K T T G D K R T R I  
o  
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o  
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R D N G G C S H I C I A K G D G T P R C S C P V H L V  
o  
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BsrGI

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3' gagcaggtcgtgcttccgggtgcgacatggggcggttaggacttggggcgggggagggggccggtgcttggggagggacatgt  
S S S T K A T L Y P P I L N P P P S P A T D P S L Y  
1486 1487 1488 1489 1490 1491 1492 1493 1494 1495 1496 1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508 1509 1510 1511

5' acatggacatgttctactcttcaaacattccggccactgcgagaccgtacaggccctacatcattcgaggaatggcgccc 5360  
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N M D M F Y S S N I P A T A R P Y R P Y I I R G M A P  
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L N S D S D P Y P P P P T P H S Q Y L S A E D S C P  
1566 1567 1568 1569 1570 1571 1572 1573 1574 1575 1576 1577 1578 1579 1580 1581 1582 1583 1584 1585 1586 1587 1588 1589 1590 1591

5' cctcgcccgccaccgagaggagctacttccatctcttcccgcgccctccgctccccctgcacggactcatcctgaAAGGGT 5600  
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P S P A T E R S Y F H L F P P P P S P C T D S S  
1592 1593 1594 1595 1596 1597 1598 1599 1600 1601 1602 1603 1604 1605 1606 1607 1608 1609 1610 1611 1612 1613 1614 1615 1616

Agel

PmeI

5' TCGATCCCTACCGGTTAGTAATGAGTTTAAACGGGGGAGGCTAACTGAAACACGGAAGGAGACAATACCGGAAGGAACCC 5680  
3' AGCTAGGGATGGCCAATCATTACTCAAATTTGCCCCCTCCGATTGACTTTGTGCCTTCCCTCTGTTATGGCCTTCCTTGGG

TK poly A signal

CGATTGACTTTGTGCCTTCC

5' GCGCTATGACGGCAATAAAAAGACAGAATAAAACGCACGGGTGTTGGGTCGTTTGTTCATAAACGCGGGGTTCCGGTCCCA 5760  
3' CGCGATACTGCCGTTATTTTTCTGTCTTATTTTGCCTGCCACAACCCAGCAAACAAGTATTTGCGCCCAAGCCAGGGT

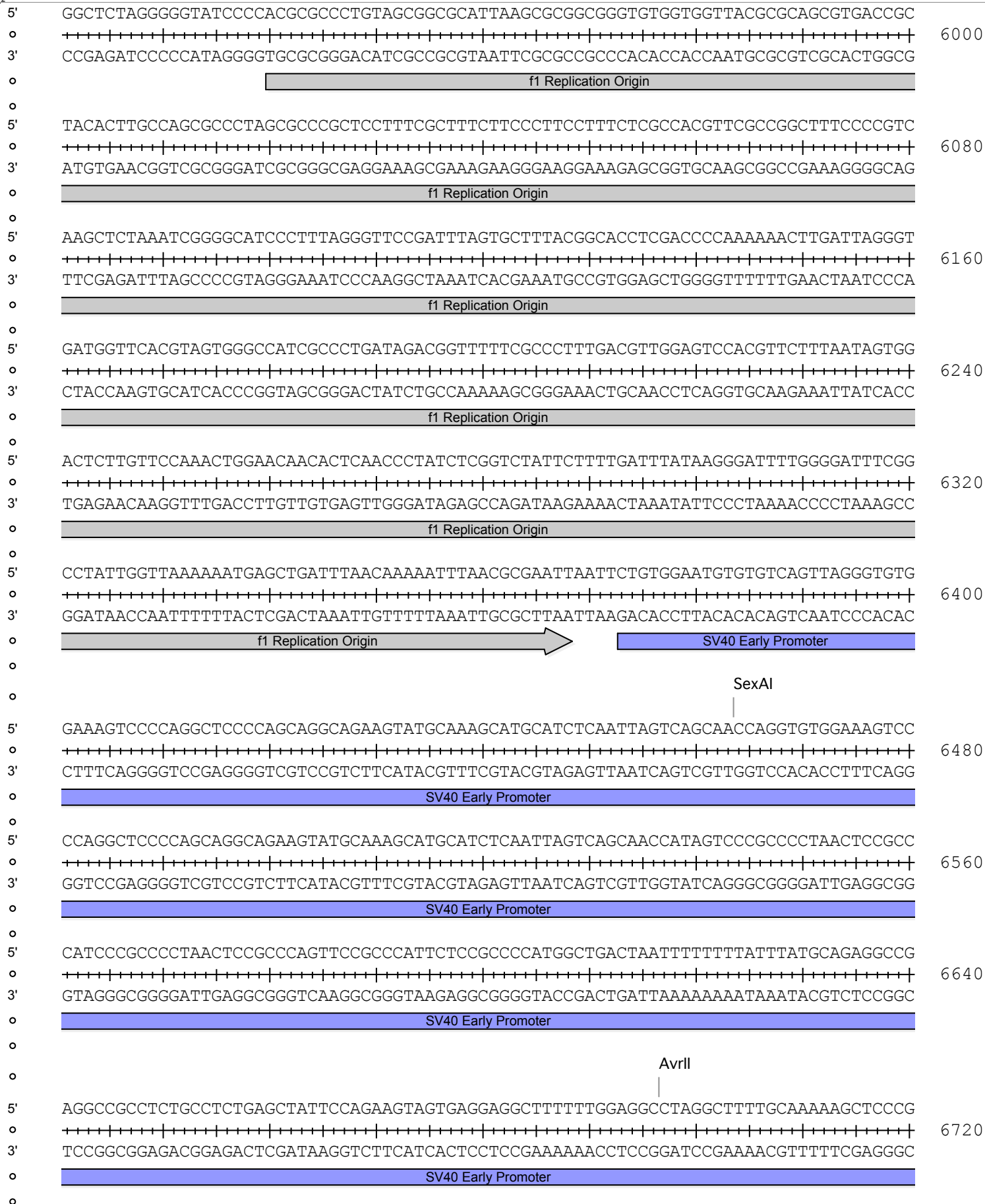
TK poly A signal

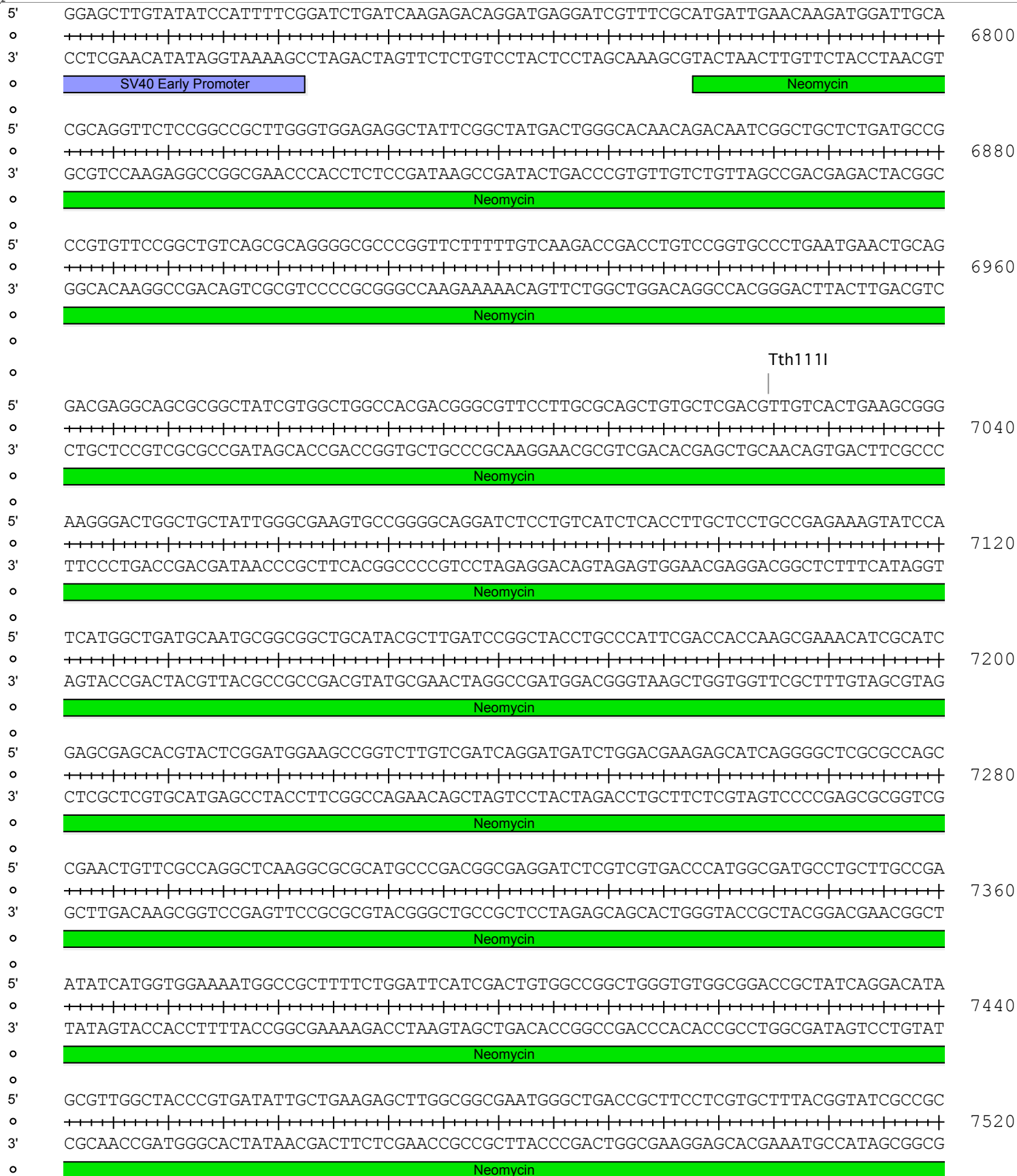
5' GGGCTGGCACTCTGTGATAACCCACCGAGACCCCATTTGGGGCCAATACGCCCGGTTTCTTCCCTTTTCCCCACCCACC 5840  
3' CCCGACCGTGAGACAGCTATGGGGTGGCTCTGGGGTAACCCGGTTATGCGGGCGCAAAGAAGGAAAAGGGGTGGGGTGG

TK poly A signal

5' CCCCAGTTCGGGTGAAGGCCAGGGCTCGCAGCCAACGTCGGGGCGCAGGCCCTGCCATAGCAGATCTGCGCAGCTGG 5920  
3' GGGGTTCAAGCCCACTTCCGGGTCCCGAGCGTCGGTTGCAGCCCCGCGTCCGGGACGGTATCGTCTAGACCGCTCGACC

TK poly A signal







5' AAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCG 8480  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' TTCTATGGTCCGCAAAGGGGGACCTTCGAGGGAGCACGCGAGAGGACAAGGCTGGGACGGCGAATGGCCTATGGACAGGC  
pUC Origin

5' CCTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCAATGCTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCC 8560  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' GGAAAGAGGGGAAGCCCTTCGCACCGCGAAAGAGTTACGAGTGCACATCCATAGAGTCAAGCCACATCCAGCAAGCGAGG  
pUC Origin

5' AAGCTGGGCTGTGTGCACGAACCCCCCGTTTCAGCCCGACCCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCC 8640  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' TTCGACCCGACACACGTGCTTGGGGGGCAAGTCGGGCTGGCGACGCGGAATAGCCATTGATAGCAGAACTCAGGTTGGG  
pUC Origin

5' GGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAG 8720  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' CCATTCTGTGCTGAATAGCGGTGACCGTCGTCGGTGACCATTGTCTTAATCGTCTCGCTCCATACATCCGCCACGATGTC  
pUC Origin

5' AGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACC 8800  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' TCAAGAACTTACCACCGGATTGATGCCGATGTGATCTTCTGTGCATAAACCATAGACGCGAGACGACTTCGGTCAATGG  
pUC Origin

5' TTCGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTTGTTTGAAGCAGCA 8880  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' AAGCCTTTTTCTCAACCATCGAGAACTAGGCCGTTTGTTTGGTGGCGACCATCGCCACCAAAAAACAAACGTTCTGTCGT  
pUC Origin

5' GATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAAC 8960  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' CTAATGCGCGTCTTTTTTCTTAGAGTTCTTCTAGGAACTAGAAAAGATGCCCCAGACTGCGAGTCACCTTGCTTTTGA  
pUC Origin

5' CACGTTAAGGGATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAATAAAGGATTTTAAA 9040  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' GTGCAATTCCTAAAACCAGTACTCTAATAGTTTTTCTAGAAAGTGGATCTAGGAAAATTAATTTTACTTCAAAATTT  
pUC Origin

5' TCAATCTAAAGTATATATGAGTAAACTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTG 9120  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' AGTTAGATTTTCATATATACTCATTGTAACCAGACTGTCAATGGTTACGAATTAGTCACTCCGTGGATAGAGTCGCTAGAC  
Ampicillin

Ahdi  
5' TCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCA 9200  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' AGATAAAGCAAGTAGGTATCAACGGACTGAGGGGACAGACATCTATGATGCTATGCCCTCCCGAATGGTAGACCGGGGT  
Ampicillin

5' GTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACCGCCAGCCGGAAGGGCCGAG 9280  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
3' CACGACGTTACTATGGCGCTCTGGGTGCGAGTGGCCGAGGCTAAATAGTCGTTATTTGGTCGGTCGGCCTTCCCGGCTC  
Ampicillin

