pAAVD-COL1A1(HA)-P2A-SOX9-T2A-mNeonGreen-wpre(sgDocut) P2202

2023-06-28

S688 pU6-sgCOL1A1d GAGTTTACAGGAAGCAGACA

S985 pU6-sgDocut(Sp-v2) GGTGGTGCAGATGAACTCCA

pAAVD-PGK1(HA)-mNeonGreen-Wpre(sgDocut) P1945

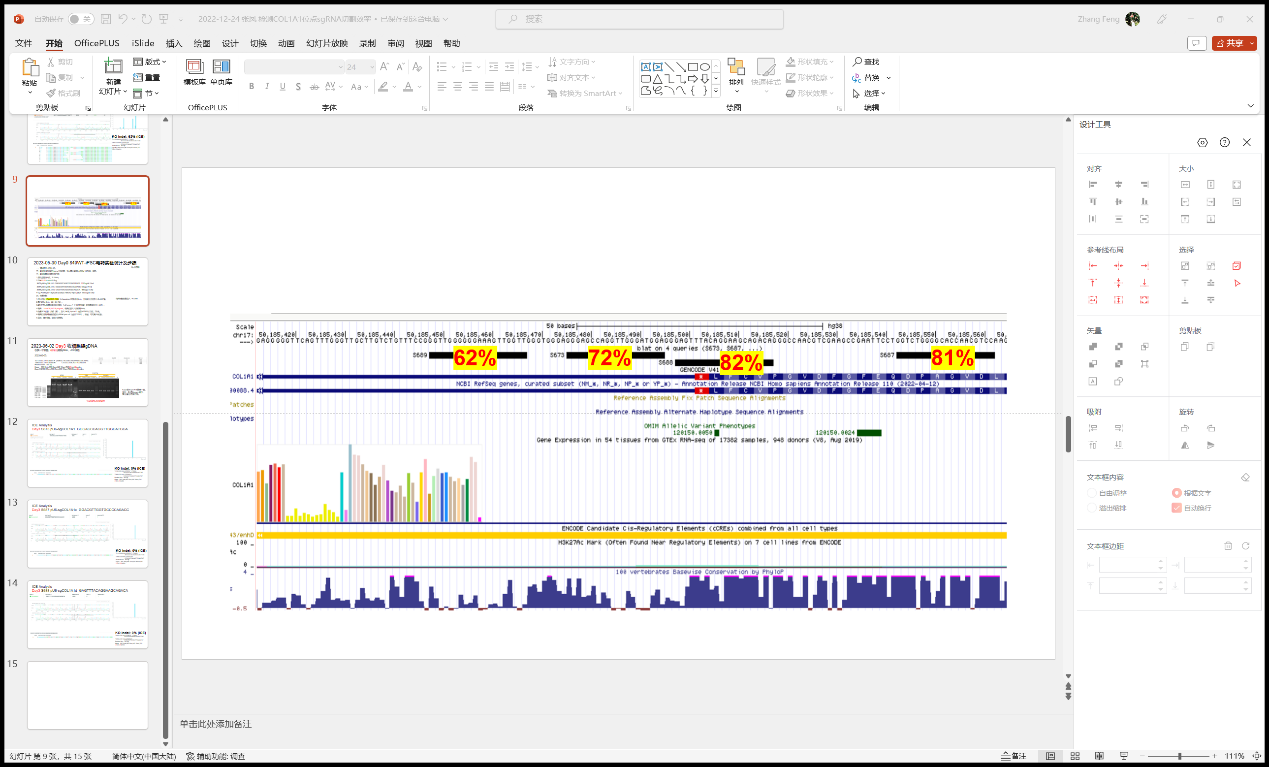
pRSC-COL1A1-OCT4-P2A-SOX9-T2A-Puro-wpre P2153

AAV：2855 bp

1-130: Left ITR

2641-2781: Right ITR

3698-4558: Ampicillin Resistance



2023-07-25

NP测序结果

6505 c➡t

485 多ttttttt

3501 t➡c

3806 c➡t

4569 c➡t

4824 c➡t

4873 c➡t

Startofseq

ACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGaACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTCGTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCTACAGGCATCGTGGTGTCACGCTCGTCGTTTGGTATGGCTTCATTCAGCTCCGGTTCCCAACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCCTCCGATCGTTGTCAGAAGTAAGTTGGCCGCAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAAAACTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCCAACTGATCTTCAGCATCTTTTACTTTCACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATTGAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCATTATTATCATGACATTAACCTATAAAAATAGGCGTATCACGAGGCCCTTTCGTCTCGCGCGTTTCGGTGATGACGGTGAAAACCTCTGACACATGCAGCTCCCGGAGACGGTCACAGCTTGTCTGTAAGCGGATGCCGGGAGCAGACAAGCCCGTCAGGGCGCGTCAGCGGGTGTTGGCGGGTGTCGGGGCTGGCTTAACTATGCGGCATCAGAGCAGATTGTACTGAGAGTGCACCATAAAATTGTAAACGTTAATATTTTGTTAAAATTCGCGTTAAATTTTTGTTAAATCAGCTCATTTTTTAACCAATAGaCCGAAATCGGCAAAATCCCTTATAAATCAAAAGAATAGCCCGAGATAGaGTTGAGTGTTGTTCCAGTTTGGAACAAGAGTCCACTATTAAAGAACGTGGACTCCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCGATGGCCCACTACGTGAACCATCACCCAAATCAAGTTTTTTGGGGTCGAGGTGCCGTAAAGCACTAAATCGGAACCCTAAAGGGAGCCCCCGATTTAGAGCTTGACGGGGAAAGCCGGCGAACGTGGCGAGAAAGGAAGGGAAGAAAGCGAAAGGAGCGGGCGCTAaGGCGCTGGCAAGTGTAGCGGTCACGCTGCGCGTAACCACCACACCCGCCGCGCTTAATGCGCCGCTACAGGGCGCGTACTATGGTTGCTTTGACGTATGCGGTGTGAAATACCGCACAGATGCGTAAGGAGAAAATACCGCATCAGGCGCCCCTGCAGGCAGCTGCGCGCTCGCTCGCTCACTGAGGCCGCCCGGGCAAAGCCCGGGCGTCGGGCGACCTTTGGTCGCCCGGCCTCAGTGAGCGAGCGAGCGCGCAGAGAGGGAGTGGCCAACTCCATCACTAGGGGTTCCTGCGGCCGCTCGGTCCGCACGTGccccgaaaagtgccacctGGTGGTGCAGATGAACTcCAtGGGGTTCCCGCATAGCGGCTCACTCTTCCCTCTCTCCCCTCCCCTGCAGTTCGAGTATGGCGGCCAGGGCTCCGACCCTGCCGATGTGGCCATCCAGCTGACCTTCCTGCGCCTGATGTCCACCGAGGCCTCCCAGAACATCACCTACCACTGCAAGAACAGCGTGGCCTACATGGACCAGCAGACTGGCAACCTCAAGAAGGCCCTGCTCCTCCAGGGCTCCAACGAGATCGAGATCCGCGCCGAGGGCAACAGCCGCTTCACCTACAGCGTCACTGTCGATGGCTGCACGGTGAGTGCCCAGAATCCCCAGGCAGGGCCCCACCTCTCCGGCCTTGGGCTTTTTGGCCAGGCCATAGTGCCCTCTCTCCATCACTCCCACGTGGTAATGCCCCCTCCCGTTGTCTCCaCCCCACCCCAGAGTCACACCGGAGCCTGGGGCAAGACAGTGATTGAATACAAAACCACCAAGACCTCCCGCCTGCCCATCATCGATGTGGCCCCCTTGGACGTTGGTGCCCCAGACCAGGAATTCGGCTTCGACGTTGGCCCTGTGGATCCgcccaaagggagatccgactcgtctgagggcgaaggcgagacgcggaagaggccgcagagccggcagcaggccgcgggaaggaaggtccgctggattgagggccgaagggacgtagcagaaggacgtcccgcgcagaatccaggtggcaacacgggcgagcagccatggaaaggacgtcagcttccccgacaacaccacggaattgtcagtgcccaacagccgagcccctgtccagcagcgggcaaggcaggcggcgatgagttccgccgtggcaatagggagggggaaagcgaaagtcccggaaaggagctgacaggtggtggcaatgccccaaccagtgggggttgcgtcagcaaacacagtgcacaccacgccacgttgcctgacaacgggccacaactcctcataaagagacagcaaccaggatttatacaaggaggagaaaatgaaagccatacgggaagcaatagcatgatacaaaggcattaaagcagcgtatccacatagcgtaaaaggagcaacatagttaagaataccagtcaatctttcacaaattttgtaatccagaggttgattgtcgaCGTTTAAACTTACTTGTACAGCTCGTCCATGCCCATCACATCGGTAAAGGCCTTTTGCCACTCCTTGAAGTTGAGCTCGGTCTTGGAGTGCTTGAGCTCCGTCTTACGGAACACGTACATCGGCTGGTTCTTCAGATAGTTAGCCGCCATTGGCTTGGCAAAGGTGTAGGTGGTCCGCGCAGTGCTCCGGTAGCGCTTGCCATTTCCAGTGGTGTAACTCCACTTAAAGGTACTGATGATGGTTTTGTCGTTGGGGTAAGTCTTCTTCGACCTGCACCAGTCCGCAGCGGTCAGCGAGTTGGTCATCACAGGACCGTCAGCAGGGAAACCAGTCCCCTTCACCTGGGCCTCTCCTTTGATGTGGCTTCCCTCGTAGGTGTAGCGGTAGTTAACAGTAAGGGAGGCACCATCTTCAAACTGCATTGTGCGATGGACTTGGTATCCGGAGCCATCTACCATGGCGGCCTGGAAAGGCGACATCCCGTCAGGGTAGGGCAGGTACTGATGGAAGCCATACCCGATATGAGGGACCAGAATCCAGGGGGAGAACTGGAGGTCACCCTTGGTGGACTTCAGGTTTAACTCCTCATAACCATCATTTGGATTGCCGGTGCCCTGACCCACCATGTCAAAGTCCACACCGTTGATGGAGCCAAAGATGTGTAACTCATGTGTCGCTGGGAGAGAGGCCATGTTATCCTCCTCGCCCTTGCTCACCATCGGGCCAGGATTCTCCTCCACGTCGCCACAAGTCAGCAGAGATCCTCGGCCCTCGCCGCTGCCACGCGTaggtcgagtgagctgtgtgtagacgggttgttcccagtgctgggggctgtgggtctgcgggatggaagggaccccagaggtgtcggcgatgggggtgtacatggggcgctgagcggggttcatgtaggtgaaggtggagtagaggccggtgccctggcctgccgcgtggctgtagtaggagctggagttctggtggtcggtgtagtcgtactgtgagcgggtgatgggcgggtaggaggggctgtagtgtgggaggttgaaggggctgtaggcgatctgttggggcgagtgctgctgctgctcgctgtagtggctggggctcagctgctccgtcttgatgtgcgttcgctgggactggcccggctcgctgctcagcgtggtcagcgtgtgcgcctgtggctgctgcgggggtgccgccggctgctgtgggggctgctgcgggggtggcggcggcgcctgctgcttggacatccacacgtggcccgcgctcgccggggtggccgcggtgctgctgatgccgtagctgcccgtgtaggtgacctggccgtgcgtggccggcacccccgggtggccgttgggcggcaggtactggtcaaactcgttgacatcgaaggtctcgatgttggagatgacgtcgctgctcagctcgccgatgtccacgtcgcggaagtcgatagggggctgtctgcccccctctggcaaggggcgcccctctcgcttcaggtcagccttgcccggctgcacgtcggttttgggggtggtgggtggggtcggtgggccctgggattgccccgagtgctcgccgggggagtgcacctcgctcatgccggaggaggagtgtggcgagtcggcctgcagcgccttgaagatggcgttgggggagatgtgcgtctgctccgtggcctcctctgcctccgcctgcccgttcttcaccgacttcctccgccgcggctggtacttgtaatccgggtggtccttcttgtgctgcacgcgcagccgctccgcctcctccacgaagggccgcttctcgctctcgttcagaagtctccagagcttgcccagcgtcttgctgagctcggcgttgtgcaagtgcgggtactggtccgcgagcttcctgcgcgccgcctgcgcccacaccatgaaggcgttcatgggccgcttgacgtgcggcttgttcttgctggagccgttgacgcgcaccggcatgggcaccagcgtccagtcgtagcctttgagcacctggctgaccgcctcgcggatgcacacggggaacttgtcctcctcgctctccttcttcagatcgggctcgcccttggggaacgtgttctcctggggccgcgtgttctcggtgtccgagccggagcccgacgggcagggcgagcccgcggagtcctcggacatggtggggctgggggcgccggacaggcccttctcctgctcgtcggtcatcttcatgaaggggtccaggagattcaTgctagcGGGGCCAGGGTTTTCTTCGACGTCGCCGGCCTGTTTCAGCAGAGAGAAGTTTGTAGCGCCGGAGCCActccctccatcccaacctggctccctcccacccAACCAACTTTCCCCCCAACCCGGAAACAGACAAGCAACCCAAACTGAACCCCCTCAAAAGCCAAAAAATGGGAGACAATTTCACATGGACTTTGGAAAATATTTTTTTCCTTTGCATTCATCTCTCAAACTTAGTTTTTATCTTTGACCAACCGAACATGACCAAAAACCAAAAGTGCATTCAACCTTACCaaaaaaaaaaaaaaaaaaaaaaaaaagaataaataaataaCTTTTTAAAAAAGGAAGCTTGGTCCACTTGCTTGAAGACCCATGCGGGGGTAAGTCCCTTTCTGCCCGTTGGGCTTATGAAACCCCAATGCTGCCCTTTCTGCTCCTTTCTCCACACCCCCCTTGGGGCCTCCCCTCCACTCCTTCCCAAATCTGTCTCCCCAGAAGACACAGGAAACAATGTATTGTCTGCCCAGCAATCAAAGGCAATGCTCAAACACCCAAGTGGCCCCCACCCTCAGCCCGCTCCTGCCCGCCCAGCACCCCCAGGCCCTGGGGGACCCCaTGGAGTTCATCTGCACCACCtgtgtgaaattgttatccgctCACGCGTGCGGCCGCAGGAACCCCTAGTGATGGAGTTGGCCACTCCCTCTCTGCGCGCTCGCTCGCTCACTGAGGCCGGGCGACCAAAGGTCGCCCGACGCCCGGGCGGCCTCAGTGAGCGAGCGAGCGCGCAGCTGCCTGCAGG

Endofseq

CutP1893 pAAVD-GAPDH(HA600)-E2A-mNeonGreen(sgDocut)

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| --- | --- | --- | --- |
| 1 | NcoI-NcoI | 2102-184 | **2984(pAAV-sgDocutBB)** |
| 2 | NcoI-NcoI | 1156-2101 | 946 |
| 3 | NcoI-NcoI | 185-894 | 710 |
| 4 | NcoI-NcoI | 895-1155 | 261 |

**2984(pAAV-sgDocutBB)：Already?**

PCRtemplate:humangDNA

T4496-COL1A1-gDNA-FTCAAAAACGAAGGGGAGATG

T4497-COL1A1-gDNA-RCTCTCTGAGGACCCTGGACA

ProductSize:1.2k(COL1A1)

SuperFi:98C1min;98C5sec,60C10sec,72C40sec,25cycles.

PCRtemplate:1.2k(COL1A1)

T4498-COL1A1-HAL-FGGTGGTGCAGATGAACTCCAtGGGGTCCCCCAGGGCCTGG

T4499-COL1A1-HAL-P2A-RGAAGTTTGTAGCGCCGGAGCCActccctccatcccaacctgg

0.6k（COL1A1-HAL）

SuperFi:98C1min;98C5sec,60C10sec,72C20sec,25cycles.

PCRtemplate:pRSC-COL1A1-OCT4-P2A-SOX9-T2A-Puro-wpreP2153

T2636-P2A-F GGCTCCGGCGCTACAAACTT

T4504-T2A-mNeonGreen-RTCCTCGCCCTTGCTCACCATCGGGCCAGGATTCTCCTCCA

1.6k（P2A-SOX9-T2A）

SuperFi:98C1min;98C5sec,60C10sec,72C1min,25cycles.

PCRtemplate:pAAVD-PGK1(HA)-mNeonGreen-Wpre(sgDocut)P1945

T4505-T2A-mNeonGreen-F TGGAGGAGAATCCTGGCCCGATGGTGAGCAAGGGCGAGG

T4501-Wpre-COL1A1-HAR-RCGGCTTCGACGTTGGCCCTGTGGATCCgcccaaagggagatccg

1.3k（mNeonGreen-Wpre）

SuperFi:98C1min;98C5sec,60C10sec,72C1min,25cycles.

PCRtemplate:1423bp(TLR8)

T4502-COL1A1-HAR-FACAGGGCCAACGTCGAAGCC

T4503-COL1A1-HAR-RGTGGTGCAGATGAACTcCAtGGGGTTCCCGCATAGCGGCT

0.6k（COL1A1-HAR）

SuperFi:98C1min;98C5sec,60C10sec,72C20sec,25cycles.

Assemble3insertsandBB.

T2875-P2A-seq-R GGGGCCAGGGTTTTCTTCG

T4353-mNeonGreen-604-Seq-FTACGTGTTCCGTAAGACGGA

>hg38\_dnarange=chr17:50184608-501864075'pad=03'pad=0strand=+repeatMasking=lower

HA：500-600

ATAGATGTAGCACCTTTGGTATAAAATGGGGAGCCGCTTCCACCCTGCCCCCATCCCCGCCCCCAGGCAGTTGCCCCGGTGACACATCAAGACAAGAACGAGGTAGTCTTTCAGCAACACAGTTACACAAGGAACAGAACAGTCTCTCCCGCCCAGCCCTGCGGCACAAGGGATTGACACGCGTTCCCCAAATCCGATGTTTCTGCTTTGTCGTGGCCCTTCCTGACTCTCCTCCGAACCCAGTGAGGGGCTGGTGGCTCCCCCGGCATGACCCCCTCAAAAACGAAGGGGAGATGTTGCAAGAGCCATGGGAGCGCCAGATGGCAAGGCTTCTTTGGCAGTCTGAGAACCCCA

[GGTCCCCCAGGGCCTGGGGGTGCTGGGCGGGCAGGAGCGGGCTGAGGGTGGGGGCCACTTGGGTGTTTGAGCATTGCCTTTGATTGCTGGGCAGACAATACATTGTTTCCTGTGTCTTCTGGGGAGACAGATTTGGGAAGGAGTGGAGGGGAGGCCCCAAGGGGGGTGTGGAGAAAGGAGCAGAAAGGGCAGCATTGGGGTTTCATAAGCCCAACGGGCAGAAAGGGACTTACCCCCGCATGGGTCTTCAAGCAAGTGGACCAAGCTTCCTTTTTTAAAAAGttatttatttattctttttttttttttttttttGGTAAGGTTGAATGCACTTTTGGTTTTTGGTCATGTTCGGTTGGTCAAAGATAAAAACTAAGTTTGAGAGATGAATGCAAAGGAAAAAAATATTTTCCAAAGTCCATGTGAAATTGTCTCCCATTTTTTGGCTTTTGAGGGGGTTCAGTTTGGGTTGCTTGTCTGTTTCCGGGTTGGGGGGAAAGTTGGTTgggtgggagggagccaggttgggatggagggagT

ACAGGGCCAACGTCGAAGCCGAATTCCTGGTCTGGGGCACCAACGTCCAAGGGGGCCACATCGATGATGGGCAGGCGGGAGGTCTTGGTGGTTTTGTATTCAATCACTGTCTTGCCCCAGGCTCCGGTGTGACTCTGGGGTGGGGCGGAGACAACGGGAGGGGGCATTACCACGTGGGAGTGATGGAGAGAGGGCACTATGGCCTGGCCAAAAAGCCCAAGGCCGGAGAGGTGGGGCCCTGCCTGGGGATTCTGGGCACTCACCGTGCAGCCATCGACAGTGACGCTGTAGGTGAAGCGGCTGTTGCCCTCGGCGCGGATCTCGATCTCGTTGGAGCCCTGGAGGAGCAGGGCCTTCTTGAGGTTGCCAGTCTGCTGGTCCATGTAGGCCACGCTGTTCTTGCAGTGGTAGGTGATGTTCTGGGAGGCCTCGGTGGACATCAGGCGCAGGAAGGTCAGCTGGATGGCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCGAACTGCAGGGGAGGGGAGAGAGGGAAGAGTGAGCCGCTATGCGGGAACC]

TCTAGTCCTGCCTGGCCTCCCTGTCCAGGGTCCTCAGAGAGCTGCCCAATGCACCGTTATATCGAGAGGAGGCACCACCTGCCCATCGGCAGCCTGTGTCTGAACCACTATCAGGGACCTGAGACCCCTGCCTCCCAGCCCAGCTCTGTCCATCACCCTTAGCAGAGACCTACTCCAGGACTTCATGTCCCTTCTGAGCACTGGGCTAGCCCATCTCCTAACACTGGCTCTGAGGTCCAGCTCACGCACCTGGAATCCATCGGTCATGCTCTCGCCGAACCAGACATGCCTCTTGTCCTTGGGGTTCTTGCTGATGTACCAGTTCTTCTGGGCCACACTG

P2202-mini酶切

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| **#** | **Ends** | **Coordinates** | **Length(bp)** |
| 1 | BglI-BglI | 1784-4126 | 2343 |
| 2 | BglI-BglI | 4373-5997 | 1625 |
| 3 | BglI-BglI | 5998-42 | 1053 |
| 4 | BglI-BglI | 912-1783 | 872 |
| 5 | BglI-BglI | 405-857 | 453 |
| 6 | BglI-BglI | 43-404 | 362 |
| 7 | BglI-BglI | 4127-4372 | 246 |
| 8 | BglI-BglI | 858-911 | 54 |

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Ends** | **Coordinates** | **Length(bp)** |
| 1 | StuI-NheI | 4082-796 | 3723 |
| 2 | NheI-StuI | 797-3016 | 2220 |
| 3 | StuI-StuI | 3017-4081 | 1065 |

P2202-AT2875-P2A-seq-R GGGGCCAGGGTTTTCTTCG(多3个T)

Query4201GGGAACCCCATGGAGTTCATCTGCACCACCAG-GTGGCACT-TT-TCGGGGCACGTGCGG4257

||||||||||||||||||||||||||||||||||||||||||||||

Sbjct575GGGGACCCCATGGAGTTCATCTGCACCACCTGTGTGAAATTGTTATCCGCTCACG--CGT632

Query4258ACCGAGCGGCCGCAGGAACCCCTAGTGATGGAGTTGGCCACTCC4301

|||||||||||||||||||||||||||||||||||||||

Sbjct633-----GCGGCCGCAGGAACCCCTAGTGATGGAGTTGGCCACTCC671

Query100GGAGTGGCCAACTCCATCACTAGGGGTTCCTGCGGCCGCACGCGTGAGCGGATAACAATT159

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Sbjct671GGAGTGGCCAACTCCATCACTAGGGGTTCCTGCGGCCGCACGCGTGAGCGGATAACAATT612

Query160TCACACAGGTGGTGCAGATGAACTCCAtggggtcccccagggcctgggggtgctgggcgg219

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Sbjct611TCACACAGGTGGTGCAGATGAACTCCATGGGGTCCCCCAGGGCCTGGGGGTGCTGGGCGG552

Query220gcaggagcgggctgagggtgggggcCACTTGGGTGTTTGAGCATTGCCTTTGATTGCTGG279

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Sbjct551GCAGGAGCGGGCTGAGGGTGGGGGCCACTTGGGTGTTTGAGCATTGCCTTTGATTGCTGG492

Query280GCAGACAATACATTGTTTCCTGTGTCTTCTGGGGAGACAGATTTGGGAAGGAGTGGAGGG339

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Sbjct491GCAGACAATACATTGTTTCCTGTGTCTTCTGGGGAGACAGATTTGGGAAGGAGTGGAGGG432

Query340GAGGCCCCAAGGGGGGTGTGGAGAAAGGAGCAGAAAGGGCAGCATTGGGGTTTCATAAGC399

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Sbjct431GAGGCCCCAAGGGGGGTGTGGAGAAAGGAGCAGAAAGGGCAGCATTGGGGTTTCATAAGC372

Query400CCAACGGGCAGAAAGGGACTTACCCCCGCATGGGTCTTCAAGCAAGTGGACCAAGCTTCC459

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Sbjct371CCAACGGGCAGAAAGGGACTTACCCCCGCATGGGTCTTCAAGCAAGTGGACCAAGCTTCC312

Query460ttttttaaaaagttatttatttattcttttttttttttttttttt---GGTAAGGTTGAA516

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Sbjct311TTTTTTAAAAAGTTATTTATTTATTCTTTTTTTTTTTTTTTTTTTTTTGGTAAGGTTGAA252

Query517TGCACTTTTGGTTTTTGGTCATGTTCGGTTGGTCAAAGATAAAAACTAAGTTTGAGAGAT576

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Sbjct251TGCACTTTTGGTTTTTGGTCATGTTCGGTTGGTCAAAGATAAAAACTAAGTTTGAGAGAT192

Query577GAATGCAAAGGaaaaaaaTATTTTCCAAAGTCCATGTGAAATTGTCTCCCATTTTTTGGC636

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Sbjct191GAATGCAAAGGAAAAAAATATTTTCCAAAGTCCATGTGAAATTGTCTCCCATTTTTTGGC132

Query637TTTTGAgggggttcagtttgggttgcttgtctgtttccgggttggggggaaagttggttg696

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Sbjct131TTTTGAGGGGGTTCAGTTTGGGTTGCTTGTCTGTTTCCGGGTTGGGGGGAAAGTTGGTTG72

Query697ggtgggagggagccaggttgggatggagggagtggCTCCGGCGCTACAAACT-TCTCTC754

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Sbjct71GGTGGGAGGGAGCCAGGTTGGGATGGAGGGAGTGGCTCCGGCGCTACAAACTCTCTCTC13

P2202-AT4353-mNeonGreen-604-Seq-FTACGTGTTCCGTAAGACGGA(骨架3.5k**t**→c)

Query2984AGACCGAGCTCAACTTCAAGGAGTGGCAAAAGGCCTTTACCGATGTGATGGGCATGGACG3043

|||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Sbjct9AGA-CGAGCTC-ACTTC-AGGAGTGGCAAAAGGCCTTTACCGATGTGATGGGCATGGACG65

Query3044AGCTGTACAAGTAAGTTTAAACGTCGACAATCAACCTCTGGATTACAAAATTTGTGAAAG3103

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Sbjct66AGCTGTACAAGTAAGTTTAAACGTCGACAATCAACCTCTGGATTACAAAATTTGTGAAAG125

Query3104ATTGACTGGTATTCTTAACTATGTTGCTCCTTTTACGCTATGTGGATACGCTGCTTTAAT3163

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Sbjct126ATTGACTGGTATTCTTAACTATGTTGCTCCTTTTACGCTATGTGGATACGCTGCTTTAAT185

Query3164GCCTTTGTATCATGCTATTGCTTCCCGTATGGCTTTCATTTTCTCCTCCTTGTATAAATC3223

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Sbjct186GCCTTTGTATCATGCTATTGCTTCCCGTATGGCTTTCATTTTCTCCTCCTTGTATAAATC245

Query3224CTGGTTGCTGTCTCTTTATGAGGAGTTGTGGCCCGTTGTCAGGCAACGTGGCGTGGTGTG3283

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Sbjct246CTGGTTGCTGTCTCTTTATGAGGAGTTGTGGCCCGTTGTCAGGCAACGTGGCGTGGTGTG305

Query3284CACTGTGTTTGCTGACGCAACCCCCACTGGTTGGGGCATTGCCACCACCTGTCAGCTCCT3343

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Sbjct306CACTGTGTTTGCTGACGCAACCCCCACTGGTTGGGGCATTGCCACCACCTGTCAGCTCCT365

Query3344TTCCGGGACTTTCGCTTTCCCCCTCCCTATTGCCACGGCGGAACTCATCGCCGCCTGCCT3403

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Sbjct366TTCCGGGACTTTCGCTTTCCCCCTCCCTATTGCCACGGCGGAACTCATCGCCGCCTGCCT425

Query3404TGCCCGCTGCTGGACAGGGGCTCGGCTGTTGGGCACTGACAATTCCGTGGTGTTGTCGGG3463

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Sbjct426TGCCCGCTGCTGGACAGGGGCTCGGCTGTTGGGCACTGACAATTCCGTGGTGTTGTCGGG485

Query3464GAAGCTGACGTCCTTTCCATGGCTGCTCGCCTGTGTTGCCACCTGGATTCTGCGCGGGAC3523

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Sbjct486GAAGCTGACGTCCTTTCCATGGCTGCTCGCCCGTGTTGCCACCTGGATTCTGCGCGGGAC545

Query3524GTCCTTCTGCTACGTCCCTTCGGCCCTCAATCCAGCGGACCTTCCTTCCCGCGGCCTGCT3583

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Sbjct546GTCCTTCTGCTACGTCCCTTCGGCCCTCAATCCAGCGGACCTTCCTTCCCGCGGCCTGCT605

Query3584GCCGGCTCTGCGGCCTCTTCCGCGTCTCGCCTTCGCCCTCAGACGAGTCGGATCTCCCTT3643

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Sbjct606GCCGGCTCTGCGGCCTCTTCCGCGTCTCGCCTTCGCCCTCAGACGAGTCGGATCTCCCTT665

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Query3877CCGGAGA-GGTGGGGCCCTGCCTGGGGATTCTGGGCACTCACCGTGCAGCCATCGACAGT3935

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Query752CTC754

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Sbjct15CTC13

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