pRSC-COL1A1-raSOX9-T2A-Puro-Wpre P2207

2023-08-03

pRSC-COL1A1-SOX9-T2A-Puro-wpre P2152

Oryctolagus cuniculus (rabbit)——SOX9

2023-10-16 NP测序结果：

BB：

1 del ccc

2042 t-g

2441 del a

2647 c-t

2668 ins gag

3346 c-g

3612 ins t

4139 c-at

8209 ins **atcccgcccctaactccgccc**

8370 del cttttgcgtcga

8571 del cgc

9019 t-c

SOX9：

4868 起始密码子ATG的A缺失（sanger已确认）

5921 cgcccccgcaggcgcccccgcaggccccgcaggcgcccccgcagccgcagcaggcgcccccgcagccgcagccggcgcccccgcagccgcagc重复序列含有大量CG，NP测序共识序列未识别上述序列

StartOfSeq

aggtggcacttttcggggaaatgtgcgcggaacccctatttgtttatttttctaaatacattcaaatatgtatccgctcatgagacaataaccctgataaatgcttcaataatattgaaaaaggaagagtatgagtattcaacatttccgtgtcgcccttattcccttttttgcggcattttgccttcctgtttttgctcacccagaaacgctggtgaaagtaaaagatgctgaagatcagttgggtgcacgagtgggttacatcgaactggatctcaacagcggtaagatccttgagagttttcgccccgaagaacgttttccaatgatgagcacttttaaagttctgctatgtggcgcggtattatcccgtattgacgccgggcaagagcaactcggtcgccgcatacactattctcagaatgacttggttgagtactcaccagtcacagaaaagcatcttacggatggcatgacagtaagagaattatgcagtgctgccataaccatgagtgataacactgcggccaacttacttctgacaacgatcggaggaccgaaggagctaaccgcttttttgcacaacatgggggatcatgtaactcgccttgatcgttgggaaccggagctgaatgaagccataccaaacgacgagcgtgacaccacgatgcctgtagcaatggcaacaacgttgcgcaaactattaactggcgaactacttactctagcttcccggcaacaattaatagactggatggaggcggataaagttgcaggaccacttctgcgctcggcccttccggctggctggtttattgctgataaatctggagccggtgagcgtgggtctcgcggtatcattgcagcactggggccagatggtaagccctcccgtatcgtagttatctacacgacggggagtcaggcaactatggatgaacgaaatagacagatcgctgagataggtgcctcactgattaagcattggtaactgtcagaccaagtttactcatatatactttagattgatttaaaacttcatttttaatttaaaaggatctaggtgaagatcctttttgataatctcatgaccaaaatcccttaacgtgagttttcgttccactgagcgtcagaccccgtagaaaagatcaaaggatcttcttgagatcctttttttctgcgcgtaatctgctgcttgcaaacaaaaaaaccaccgctaccagcggtggtttgtttgccggatcaagagctaccaactctttttccgaaggtaactggcttcagcagagcgcagataccaaatactgtccttctagtgtagccgtagttaggccaccacttcaagaactctgtagcaccgcctacatacctcgctctgctaatcctgttaccagtggctgctgccagtggcgataagtcgtgtcttaccgggttggactcaagacgatagttaccggataaggcgcagcggtcgggctgaacggggggttcgtgcacacagcccagcttggagcgaacgacctacaccgaactgagatacctacagcgtgagctatgagaaagcgccacgcttcccgaagggagaaaggcggacaggtatccggtaagcggcagggtcggaacaggagagcgcacgagggagcttccagggggaaacgcctggtatctttatagtcctgtcgggtttcgccacctctgacttgagcgtcgatttttgtgatgctcgtcaggggggcggagcctatggaaaaacgccagcaacgcggcctttttacggttcctggccttttgctggccttttgctcacatgttctttcctgcgttatcccctgattctgtggataaccgtattaccgcctttgagtgagctgataccgctcgccgcagccgaacgaccgagcgcagcgagtcagtgagcgaggaagcggaagagcgcccaatacgcaaaccgcctctccccgcgcgttggccgattcattaatgcagctggcacgacaggtttcccgactggaaagcgggcagtgagcgcaacgcaattaaggtgagttagctcactcattaggcaccccaggctttacactttatgcttccggctcgtatgttgtgtggaattgtgagcggataacaatttcacacaggaaacagctatgaccatgattacgccaagcgcgcaattaaccctcactaaagggaacaaaagctggagctgcaagcttaatgtagtcttatgcaatactcttgtagtcttgcaacatggtaacgatgagttagcaacatgccttacaaggagagaaaaagcaccgtgcatgccgattggtggaagtaaggtggtacgatcgtgccttattaggaaggcaacagacgggtctgacatggattggacgaaccactgaattgccgcattgcagagatattgtatttaagtgcctagctcgatacataaacgggtctctctggttagaccagatctgagcctgggagctctctggctaactagggaacccactgcttaagcctcaataaagcttgccttgagtgcttcaagtagtgtgtgcccgtctgttgtgtgactctggtaactagagatccctcagacccttttagtcagtgtggaaaatctctagcagtggcgcccgaacagggacttgaaagcgaaagggaaaccagaggagctctctcgacgcaggactcggcttgctgaagcgcgcacggcaagaggcgaggggcggcgactggtgagtacgccaaaaattttgactagcggaggctagaaggagagagatgggtgcgagagcgtcagtattaagcgggggagaattagatcgcgatgggaaaaaattcggttaaggccagggggaaagaaaaaatataaattaaaacatatagtatgggcaagcagggagctagaacgattcgcagttaatcctggcctgttagaaacatcagaaggctgtagacaaatactgggacagctacaaccatcccttcagacaggatcagaagaacttagatcattatataatacagtagcaaccctctattgtgtgcatcaaaggatagagataaaagacaccaaggaagctttagacaagatagaggaagagcaaaacaaaagtaagaccaccgcacagcaagcggccgctgatcttcagacctggaggaggagatatgagggacaattggagaagtgaattatataaatataaagtagtaaaaattgaaccattaggagtagcacccaccaaggcaaagagaagagtggtgcagagagaaaaaagagcagtgggaataggagctttgttccttgggttcttgggagcagcaggaagcactatgggcgcagcgtcaatgacgctgacggtacaggccagacaattattgtctggtatagtgcagcagcagaacaatttgctgagggctattgaggcgcaacagcatctgttgcaactcacagtctggggcatcaagcagctccaggcaagaatcctggctgtggaaagatacctaaaggatcaacagctcctggggatttggggttgctctggaaaactcatttgcaccactgctgtgccttggaatgctagttggagtaataaatctctggaacagatttggaatcacacgacctggatggagtgggacagagaaattaacaattacacaagcttaatacactccttaattgaagaatcgcaaaaccagcaagaaaagaatgaacaagaattattggaattagataaatgggcaagtttgtggaattggtttaacataacaaattggctgtggtatataaaattattcataatgatagtaggaggcttggtaggtttaagaatagtttttgctgtactttctatagtgaatagagttaggcagggatattcaccattatcgtttcagacccacctcccaaccccgaggggacccgacaggcccgaaggaatagaagaagaaggtggagagagagacagagacagatccattcgattagtgaacggatctcgacggtatcggttaacttttaaaagaaaaggggggattggggggtacagtgcaggggaaagaatagtagacataatagcaacagacatacaaactaaagaattacaaaaacaaattacaaaaattcaaaattttatcgatcacgagactagc

catatg

TATTCCTAAGCTCCATCCCCTAGCCACACCAGAAGACACCCCCAAACAGGCACATCTTTTTAATTCCCAGCTTCCTCTGTTTTGGAGAGGTCCTCAGCATGCCTCTTTATGCCCCTCCCTTAGCTCTTGCCAGGATATCAGAGGGTGACTGGGGCACAGCCAGGAGGACCCCCTCCCCAACACCCCCAACCCTTCCACCTTTGGAAGTCTCCCCACCCAGCTCCCCAGTTCCCCAGTTCCACTTCTTCTAGATTGGAGGTCCCAGGAAGAGAGCAGAGGGGCACCCCTACCCACTGGTTAGCCCACGCCATTCTGAGGACCCAGCTGCACCCCTACCACAGCACCTCTGGCCCAGGCTGGGCTGGGGGGCTGGGGAGGCAGAGCTGCGAAGAGGGGAGATGTGGGGTGGACTCCCTTCCCTCCTCCTCCCCCTCTCCATTCCAACTCCCAAATTGGGGGCCGGGCCAGGCAGCTCTGATTGGCTGGGGCACGGGCGGCCGGCTCCCCCTCTCCGAGGGGCAGGGTTCCTCCCTGCTCTCCATCAGGACAGTATAAAAGGGGCCCGGGCCAGTCGTCGGAGCAGACGGGAGTTTCTCCTCGGGGTCGGAGCAGGAGGCACGCGGAGTGTGAGGCCACGCATGAGCGGACGCTAACCCCCTCCCCAGCCACAAAGAGTCTACATGTCTAGGGTCTAGACgcgatcgcC

TgaatctcctggaccccttcatgaagatgaccgacgagcaggagaagggcctgtccggcgcccccagccccaccatgtccgaggactcggcgggctcgccctgcccgtcgggctccggctccgacaccgagaatacacggccccaggagaacacgttccccaagggcgagccggacctcaagaaggagagcgaagaggacaagttccccgtgtgcatccgcgaggcggtcagccaggtgctcaagggctacgactggacgctggtgcccatgcccgtgcgcgtcaacggctccagcaagaacaagccccacgtcaagcggcccatgaacgccttcatggtgtgggcgcaggcggcgcgcaggaagctggccgaccagtacccgcacctgcacaacgccgagctcagcaagaccctcgggaagctctggagactgctgaacgagagcgagaagcggcccttcgtggaggaggcggagcggctgcgtgtgcagcacaagaaagaccacccggactacaagtaccagccgcggcggaggaagtcggtgaagaatgggcaggcggaggccgaggaggccacggagcagacgcacatctcgcccaacgccatcttcaaggcgctgcaggccgactcgccgcactcctcgtccggcatgagcgaggtccattcccccggcgagcactcgggacaatcccagggtccgccgaccccacccaccactcccaagaccgacgtgcagccgggcaaggctgacctgaagcgagaggggcgccccctgcccgaggggggccggcagccccccatcgacttccgcgacgtggacatcggcgagctgagcagcgacgtcatctccaacatcgagaccttcgacgtcaacgagttcgaccagtacctgccgcccaatggccacccgggggtgccggccacgcacggccaggtcacctacaccggcagctacggcatcagcagcgccgccgcgacccccgcgggcgcgggccacgtgtggatgtccaagcagcaggcgcccccgccgccgccgcccccgcagcagcagccgcccccgcaggcgcccccgcaggccccgcaggcgcccccgcagccgcagcaggcgcccccgcagccgcagccggcgcccccgcagccgcagcaggcgcacaccctgaccacgctgagcagcgagccgggccaggcgcagcgaacgcacatcaagacggagcagctgagccccagccactacagcgagccgcagcactcgccgcagcagatcgcctacagccccttcaacctcccgcactacagcccctcgtacccgcccatcacgcgctcgcagttcgactacgcggagcaccagaactcggggtcctactacagccacgcggccagccagggctccagcctctactccaccttcacctacatgagccccgcccagcgccccatgtacacccccatcgccgacacctccggggtgccttccatcccgcagacccacagcccgcagcactgggagcagccggtgtacacacagctcaccagacctACGCGT

GGCAGCGGCGAGGGCCGAGGATCTCTGCTGACTTGTGGCGACGTGGAGGAGAATCCTGGCCCG

ATGACCGAGTACAAGCCCACGGTGCGCCTCGCCACCCGCGACGACGTCCCCAGGGCCGTACGCACCCTCGCCGCCGCGTTCGCCGACTACCCCGCCACGCGCCACACCGTCGATCCGGACCGCCACATCGAGCGGGTCACCGAGCTGCAAGAACTCTTCCTCACGCGCGTCGGGCTCGACATCGGCAAGGTGTGGGTCGCGGACGACGGCGCCGCGGTGGCGGTCTGGACCACGCCGGAGAGCGTCGAAGCGGGGGCGGTGTTCGCCGAGATCGGCCCGCGCATGGCCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAGATGGAAGGCCTCCTGGCGCCGCACCGGCCCAAGGAGCCCGCGTGGTTCCTGGCCACCGTCGGCGTCTCGCCCGACCACCAGGGCAAGGGTCTGGGCAGCGCCGTCGTGCTCCCCGGAGTGGAGGCGGCCGAGCGCGCCGGGGTGCCCGCCTTCCTGGAGACCTCCGCGCCCCGCAACCTCCCCTTCTACGAGCGGCTCGGCTTCACCGTCACCGCCGACGTCGAGGTGCCCGAAGGACCGCGCACCT GGTGCATGACCCGCAAGCCCGGTGCCTAG

GTTTAAAC

**GTCGAC**AATCAACCTC tggattacaaaatttgtgaaagattgactggtattcttaactatgttgctccttttacgctatgtggatacgctgctttaatgcctttgtatcatgctattgcttcccgtatggctttcattttctcctccttgtataaatcctggttgctgtctctttatgaggagttgtggcccgttgtcaggcaacgtggcgtggtgtgcactgtgtttgctgacgcaacccccactggttggggcattgccaccacctgtcagctcctttccgggactttcgctttccccctccctattgccacggcggaactcatcgccgcctgccttgcccgctgctggacaggggctcggctgttgggcactgacaattccgtggtgttgtcggggaagctgacgtcctttccatggctgctcgcctgtgttgccacctggattctgcgcgggacgtccttctgctacgtcccttcggccctcaatccagcggaccttccttcccgcggcctgctgccggctctgcggcctcttccgcgtcttcgccttcgccctcagacgagtcggatctccctttgggccgcctccccgcctggaattcgagctcggtacctttaagaccaatgacttacaaggcagctgtagatcttagccactttttaaaagaaaaggggggactggaagggctaattcactcccaacgaagacaagatctgctttttgcttgtactgggtctctctggttagaccagatctgagcctgggagctctctggctaactagggaacccactgcttaagcctcaataaagcttgccttgagtgcttcaagtagtgtgtgcccgtctgttgtgtgactctggtaactagagatccctcagacccttttagtcagtgtggaaaatctctagcagtagtagttcatgtcatcttattattcagtatttataacttgcaaagaaatgaatatcagagagtgagaggaacttgtttattgcagcttataatggttacaaataaagcaatagcatcacaaatttcacaaataaagcatttttttcactgcattctagttgtggtttgtccaaactcatcaatgtatcttatcatgtctggctctagct**atcccgcccctaactccgccc**atcccgcccctaactccgcccagttccgcccattctccgccccatggctgactaattttttttatttatgcagaggccgaggccgcctcggcctctgagctattccagaagtagtgaggaggcttttttggaggcctagggacgtacccaattcgccctatagtgagtcgtattacgcgcgctcactggccgtcgttttacaacgtcgtgactgggaaaaccctggcgttacccaacttaatcgccttgcagcacatccccctttcgccagctggcgtaatagcgaagaggcccgcaccgatcgcccttcccaacagttgcgcagcctgaatggcgaatgggacgcgccctgtagcggcgcattaagcgcggcgggtgtggtggttacgcgcagcgtgaccgctacacttgccagcgccctagcgcccgctcctttcgctttcttcccttcctttctcgccacgttcgccggctttccccgtcaagctctaaatcgggggctccctttagggttccgatttagtgctttacggcacctcgaccccaaaaaacttgattagggtgatggttcacgtagtgggccatcgccctgatagacggtttttcgccctttgacgttggagtccacgttctttaatagtggactcttgttccaaactggaacaacactcaaccctatctcggtctattcttttgatttataagggattttgccgatttcggcctattggttaaaaaatgagctgatttaacaaaaatttaacgcgaattttaacaaaatattaacgcttacaattt

EndOfSeq

Backbone:Cut pRSC-COL1A1-SOX9-T2A-Puro-wpre P2152

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | MluI-AsiSI | 6393-4860 | 7477(**(pRSC-COL1A1-X-Puro-wpre)** |
| 2 | AsiSI-MluI | 4861-6392 | 1532 |

Template: 合成Oryctolagus cuniculus (rabbit)——SOX9

T3878-COL1A1-SOX9-F TACATGTCTAGGGTCTAGACgcgatcgcCAtgaatctcctggaccc

T4594-T2A-R GCAGAGATCCTCGGCCCTCGCCGCTGCC

1.6k(raSOX9)

KAPA:98C 2min; 98C 5sec, 64C 5sec, 68C 5sec, 72C 40sec, 25 cycles.

Assemble 2 pieces.

Seq:

T4637-COL1A1-530-seq-F TGCTCTCCATCAGGACAGTA

T3539-puro-PEseq-R CTCCACTCCGGGGAGCACGA

P2207 Midi

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Ends** | **Coordinates** | **Length (bp)** |
| 1 | PvuI-PvuI | 4861-8520 | 3660 |
| 2 | PvuI-PvuI | 2339-4860 | 2522 |
| 3 | PvuI-PvuI | 551-2338 | 1788 |
| 4 | PvuI-PvuI | 8521-550 | 1051 |

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Ends** | **Coordinates** | **Length (bp)** |
| 1 | BglI-BglI | 802-4920 | 4119 |
| 2 | BglI-BglI | 6821-8294 | 1474 |
| 3 | BglI-BglI | 8550-801 | 1273 |
| 4 | BglI-BglI | 5949-6689 | 741 |
| 5 | BglI-BglI | 5436-5948 | 513 |
| 6 | BglI-BglI | 4975-5435 | 461 |
| 7 | BglI-BglI | 8295-8549 | 255 |
| 8 | BglI-BglI | 6690-6820 | 131 |
| 9 | BglI-BglI | 4921-4974 | 54 |

P2207-A T3539-puro-PEseq-R CTCCACTCCGGGGAGCACGA(正确)

Query 5979 cgcagccgcagccggcgcccccgcagccgcagcaggcgcaCACCCTGACCACGCTGAGCA 6038

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

Sbjct 912 CGCAGCCGCAGCCGGCGCCCCCGCAGCAGCAGCAGGCGCACACCCTGACCACGCTGAGCA 853

Query 6039 GCGAGCCGGGCCAGGCGCAGCGAACGCACATCAAGACGGAGCAGCTGAGCCCCAGCCACT 6098

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Sbjct 852 GCGAGCCGGGCCAGGCGCAGCGAACGCACATCAAGACGGAGCAGCTGAGCCCCAGCCACT 793

Query 6099 ACAGCGAGCCGCAGCACTCGCCGCAGCAGATCGCCTACAGCCCCTTCAACCTCCCGCACT 6158

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Sbjct 792 ACAGCGAGCCGCAGCACTCGCCGCAGCAGATCGCCTACAGCCCCTTCAACCTCCCGCACT 733

Query 6159 ACAGCCCCTCGTACCCGCCCATCACGCGCTCGCAGTTCGACTACGCGGAGCACCAGAACT 6218

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Sbjct 732 ACAGCCCCTCGTACCCGCCCATCACGCGCTCGCAGTTCGACTACGCGGAGCACCAGAACT 673

Query 6219 CGGGGTCCTACTACAGCCACGCGGCCAGCCAGGGCTCCAGCCTCTACTCCACCTTCACCT 6278

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Sbjct 672 CGGGGTCCTACTACAGCCACGCGGCCAGCCAGGGCTCCAGCCTCTACTCCACCTTCACCT 613

Query 6279 ACATGAGCCCCGCCCAGCGCCCCATGTACACCCCCATCGCCGACACCTCCGGGGTGCCTT 6338

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

Sbjct 612 ACATGAGCCCCGCCCAGCGCCCCATGTACACCCCCATCGCCGACACCTCCGGGGTGCCTT 553

Query 6339 CCATCCCGCAGACCCACAGCCCGCAGCACTGGGAGCAGCCGGTGTACACACAGCTCACCA 6398

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

Sbjct 552 CCATCCCGCAGACCCACAGCCCGCAGCACTGGGAGCAGCCGGTGTACACACAGCTCACCA 493

Query 6399 GACCTACGCGTGGCAGCGGCGAGGGCCGAGGATCTCTGCTGACTTGTGGCGACGTGGAGG 6458

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Sbjct 492 GACCTACGCGTGGCAGCGGCGAGGGCCGAGGATCTCTGCTGACTTGTGGCGACGTGGAGG 433

Query 6459 AGAATCCTGGCCCGATGACCGAGTACAAGCCCACGGTGCGCCTCGCCACCCGCGACGACG 6518

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Sbjct 432 AGAATCCTGGCCCGATGACCGAGTACAAGCCCACGGTGCGCCTCGCCACCCGCGACGACG 373

Query 6519 TCCCCAGGGCCGTACGCACCCTCGCCGCCGCGTTCGCCGACTACCCCGCCACGCGCCACA 6578

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

Sbjct 372 TCCCCAGGGCCGTACGCACCCTCGCCGCCGCGTTCGCCGACTACCCCGCCACGCGCCACA 313

Query 6579 CCGTCGATCCGGACCGCCACATCGAGCGGGTCACCGAGCTGCAAGAACTCTTCCTCACGC 6638

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Sbjct 312 CCGTCGATCCGGACCGCCACATCGAGCGGGTCACCGAGCTGCAAGAACTCTTCCTCACGC 253

Query 6639 GCGTCGGGCTCGACATCGGCAAGGTGTGGGTCGCGGACGACGGCGCCGCGGTGGCGGTCT 6698

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Sbjct 252 GCGTCGGGCTCGACATCGGCAAGGTGTGGGTCGCGGACGACGGCGCCGCGGTGGCGGTCT 193

Query 6699 GGACCACGCCGGAGAGCGTCGAAGCGGGGGCGGTGTTCGCCGAGATCGGCCCGCGCATGG 6758

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

Sbjct 192 GGACCACGCCGGAGAGCGTCGAAGCGGGGGCGGTGTTCGCCGAGATCGGCCCGCGCATGG 133

Query 6759 CCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAGATGGAAGGCCTCCTGGCGCCGC 6818

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

Sbjct 132 CCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAGATGGAAGGCCTCCTGGCGCCGC 73

Query 6819 ACCGGCCCAAGGAGCCCGCGTGGTTCCTGGCCACCGTCGGCGTCTCGCCCGACCACCAG 6877

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

Sbjct 72 ACCGGCCCAAGGAGCCCGCGTGGTTCCTGGCCACCGTCGGCGTCTCGCCCGACCACCAG 14

P2207-A T4637-COL1A1-530-seq-F TGCTCTCCATCAGGACAGTA(正确)

Query 4728 AGTCGTCGGAGCAGACGGGAGTTTCTCCTCGGGGTCGGAGCAGGAGGCACGCGGAGTGTG 4787

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Sbjct 4 AGTCGTCGGAGCAGACGGGAGTTTCTCCTCGGGGTCGGAGCAGGAGGCACGCGGAGTGTG 63

Query 4788 AGGCCACGCATGAGCGGACGCTAACCCCCTCCCCAGCCACAAAGAGTCTACATGTCTAGG 4847

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Sbjct 64 AGGCCACGCATGAGCGGACGCTAACCCCCTCCCCAGCCACAAAGAGTCTACATGTCTAGG 123

Query 4848 GTCTAGACGCGATCGCCATGAATCTCCTGGACCCCTTCATGAAGATGACCGACGAGCAGG 4907

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Sbjct 124 GTCTAGACGCGATCGCC-TGAATCTCCTGGACCCCTTCATGAAGATGACCGACGAGCAGG 182

Query 4908 AGAAGGGCCTGTCCGGCGCCCCCAGCCCCACCATGTCCGAGGACTCGGCGGGCTCGCCCT 4967

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

Sbjct 183 AGAAGGGCCTGTCCGGCGCCCCCAGCCCCACCATGTCCGAGGACTCGGCGGGCTCGCCCT 242

Query 4968 GCCCGTCGGGCTCCGGCTCCGACACCGAGAATACACGGCCCCAGGAGAACACGTTCCCCA 5027

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

Sbjct 243 GCCCGTCGGGCTCCGGCTCCGACACCGAGAATACACGGCCCCAGGAGAACACGTTCCCCA 302

Query 5028 AGGGCGAGCCGGACCTCAAGAAGGAGAGCGAAGAGGACAAGTTCCCCGTGTGCATCCGCG 5087

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

Sbjct 303 AGGGCGAGCCGGACCTCAAGAAGGAGAGCGAAGAGGACAAGTTCCCCGTGTGCATCCGCG 362

Query 5088 AGGCGGTCAGCCAGGTGCTCAAGGGCTACGACTGGACGCTGGTGCCCATGCCCGTGCGCG 5147

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Sbjct 363 AGGCGGTCAGCCAGGTGCTCAAGGGCTACGACTGGACGCTGGTGCCCATGCCCGTGCGCG 422

Query 5148 TCAACGGCTCCAGCAAGAACAAGCCCCACGTCAAGCGGCCCATGAACGCCTTCATGGTGT 5207

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Sbjct 423 TCAACGGCTCCAGCAAGAACAAGCCCCACGTCAAGCGGCCCATGAACGCCTTCATGGTGT 482

Query 5208 GGGCGCAGGCGGCGCGCAGGAAGCTGGCCGACCAGTACCCGCACCTGCACAACGCCGAGC 5267

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Sbjct 483 GGGCGCAGGCGGCGCGCAGGAAGCTGGCCGACCAGTACCCGCACCTGCACAACGCCGAGC 542

Query 5268 TCAGCAAGACCCTCGGGAAGCTCTGGAGACTGCTGAACGAGAGCGAGAAGCGGCCCTTCG 5327

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

Sbjct 543 TCAGCAAGACCCTCGGGAAGCTCTGGAGACTGCTGAACGAGAGCGAGAAGCGGCCCTTCG 602

Query 5328 TGGAGGAGGCGGAGCGGCTGCGTGTGCAGCACAAGAAAGACCACCCGGACTACAAGTACC 5387

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Sbjct 603 TGGAGGAGGCGGAGCGGCTGCGTGTGCAGCACAAGAAAGACCACCCGGACTACAAGTACC 662

Query 5388 AGCCGCGGCGGAGGAAGTCGGTGAAGAATGGGCAGGCGGAGGCCGAGGAGGCCACGGAGC 5447

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Sbjct 663 AGCCGCGGCGGAGGAAGTCGGTGAAGAATGGGCAGGCGGAGGCCGAGGAGGCCACGGAGC 722

Query 5448 AGACGCACATCTCGCCCAACGCCATCTTCAAGGCGCTGCAGGCCGACTCGCCGCACTCCT 5507

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Sbjct 723 AGACGCACATCTCGCCCAACGCCATCTTCAAGGCGCTGCAGGCCGACTCGCCGCACTCCT 782

Query 5508 CGTCCGGCATGAGCGAGGTCCATTCCCCCGGCGAGCACTCGGGACAATCCCAGGGTCCGC 5567

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Sbjct 783 CGTCCGGCATGAGCGAGGTCCATTCCCCCGGCGAGCACTCGGGACAATCCCAGGGTCCGC 842

Query 5568 CGACCCCACCCACCACTCCCAAGACCGACGTGCAGCCGGGCAAGGCTGACCTGAAGCGAG 5627

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Sbjct 843 CGACCCCACCCACCACTCCCAAGACCGACGTGCAGCCGGGCAAGGCTGACCTGAAGCGAG 902

Query 5628 AGGGGCGCCCCCTGCCCGAGGGGGGCCGGCAGCCCCCCATCGACTTCCGCGACGTGGACA 5687

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Sbjct 903 AGGGGCGCCCCCTGCCCGAGGGGGGCCGGCAGCCCCCCATCGACTTCCGCGACGTGGACA 962

Query 5688 TCGGCGAGCTGAGCAGCGACGTCATCTCCAACATCGAGACCTTCGACGTCAACGAGTTCG 5747

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Sbjct 963 TCGGCGAGCTGAGCAGCGACGTCATCTCCAACATCGAGACCTTCGACGTCAACAAGTTCG 1022

Query 5748 ACCAGTAC 5755

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Sbjct 1023 ACCAGTAC 1030