pRSC-COL1A1-raSOX9-T2A-Puro-Wpre P2224

2023-08-03

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

Oryctolagus cuniculus (rabbit)——SOX9

2023-11-13 NP测序结果：

8211：ins **Atcccgcccctaactccgccc**

8370：del **CTTTTGCGTCGA**

StartOfSeq

aggtggcacttttcggggaaatgtgcgcggaacccctatttgtttatttttctaaatacattcaaatatgtatccgctcatgagacaataaccctgataaatgcttcaataatattgaaaaaggaagagtatgagtattcaacatttccgtgtcgcccttattcccttttttgcggcattttgccttcctgtttttgctcacccagaaacgctggtgaaagtaaaagatgctgaagatcagttgggtgcacgagtgggttacatcgaactggatctcaacagcggtaagatccttgagagttttcgccccgaagaacgttttccaatgatgagcacttttaaagttctgctatgtggcgcggtattatcccgtattgacgccgggcaagagcaactcggtcgccgcatacactattctcagaatgacttggttgagtactcaccagtcacagaaaagcatcttacggatggcatgacagtaagagaattatgcagtgctgccataaccatgagtgataacactgcggccaacttacttctgacaacgatcggaggaccgaaggagctaaccgcttttttgcacaacatgggggatcatgtaactcgccttgatcgttgggaaccggagctgaatgaagccataccaaacgacgagcgtgacaccacgatgcctgtagcaatggcaacaacgttgcgcaaactattaactggcgaactacttactctagcttcccggcaacaattaatagactggatggaggcggataaagttgcaggaccacttctgcgctcggcccttccggctggctggtttattgctgataaatctggagccggtgagcgtgggtctcgcggtatcattgcagcactggggccagatggtaagccctcccgtatcgtagttatctacacgacggggagtcaggcaactatggatgaacgaaatagacagatcgctgagataggtgcctcactgattaagcattggtaactgtcagaccaagtttactcatatatactttagattgatttaaaacttcatttttaatttaaaaggatctaggtgaagatcctttttgataatctcatgaccaaaatcccttaacgtgagttttcgttccactgagcgtcagaccccgtagaaaagatcaaaggatcttcttgagatcctttttttctgcgcgtaatctgctgcttgcaaacaaaaaaaccaccgctaccagcggtggtttgtttgccggatcaagagctaccaactctttttccgaaggtaactggcttcagcagagcgcagataccaaatactgttcttctagtgtagccgtagttaggccaccacttcaagaactctgtagcaccgcctacatacctcgctctgctaatcctgttaccagtggctgctgccagtggcgataagtcgtgtcttaccgggttggactcaagacgatagttaccggataaggcgcagcggtcgggctgaacggggggttcgtgcacacagcccagcttggagcgaacgacctacaccgaactgagatacctacagcgtgagctatgagaaagcgccacgcttcccgaagggagaaaggcggacaggtatccggtaagcggcagggtcggaacaggagagcgcacgagggagcttccagggggaaacgcctggtatctttatagtcctgtcgggtttcgccacctctgacttgagcgtcgatttttgtgatgctcgtcaggggggcggagcctatggaaaaacgccagcaacgcggcctttttacggttcctggccttttgctggccttttgctcacatgttctttcctgcgttatcccctgattctgtggataaccgtattaccgcctttgagtgagctgataccgctcgccgcagccgaacgaccgagcgcagcgagtcagtgagcgaggaagcggaagagcgcccaatacgcaaaccgcctctccccgcgcgttggccgattcattaatgcagctggcacgacaggtttcccgactggaaagcgggcagtgagcgcaacgcaattaaggtgagttagctcactcattaggcaccccaggctttacactttatgcttccggctcgtatgttgtgtggaattgtgagcggataacaatttcacacaggaaacagctatgaccatgattacgccaagcgcgcaattaaccctcactaaagggaacaaaagctggagctgcaagcttaatgtagtcttatgcaatactcttgtagtcttgcaacatggtaacgatgagttagcaacatgccttacaaggagagaaaaagcaccgtgcatgccgattggtggaagtaaggtggtacgatcgtgccttattaggaaggcaacagacgggtctgacatggattggacgaaccactgaattgccgcattgcagagatattgtatttaagtgcctagctcgatacataaacgggtctctctggttagaccagatctgagcctgggagctctctggctaactagggaacccactgcttaagcctcaataaagcttgccttgagtgcttcaagtagtgtgtgcccgtctgttgtgtgactctggtaactagagatccctcagacccttttagtcagtgtggaaaatctctagcagtggcgcccgaacagggacttgaaagcgaaagggaaaccagaggagctctctcgacgcaggactcggcttgctgaagcgcgcacggcaagaggcgaggggcggcgactggtgagtacgccaaaaattttgactagcggaggctagaaggagagagatgggtgcgagagcgtcagtattaagcgggggagaattagatcgcgatgggaaaaaattcggttaaggccagggggaaagaaaaaatataaattaaaacatatagtatgggcaagcagggagctagaacgattcgcagttaatcctggcctgttagaaacatcagaaggctgtagacaaatactgggacagctacaaccatcccttcagacaggatcagaagaacttagatcattatataatacagtagcaaccctctattgtgtgcatcaaaggatagagataaaagacaccaaggaagctttagacaagatagaggaagagcaaaacaaaagtaagaccaccgcacagcaagcggccgctgatcttcagacctggaggaggagatatgagggacaattggagaagtgaattatataaatataaagtagtaaaaattgaaccattaggagtagcacccaccaaggcaaagagaagagtggtgcagagagaaaaaagagcagtgggaataggagctttgttccttgggttcttgggagcagcaggaagcactatgggcgcagcgtcaatgacgctgacggtacaggccagacaattattgtctggtatagtgcagcagcagaacaatttgctgagggctattgaggcgcaacagcatctgttgcaactcacagtctggggcatcaagcagctccaggcaagaatcctggctgtggaaagatacctaaaggatcaacagctcctggggatttggggttgctctggaaaactcatttgcaccactgctgtgccttggaatgctagttggagtaataaatctctggaacagatttggaatcacacgacctggatggagtgggacagagaaattaacaattacacaagcttaatacactccttaattgaagaatcgcaaaaccagcaagaaaagaatgaacaagaattattggaattagataaatgggcaagtttgtggaattggtttaacataacaaattggctgtggtatataaaattattcataatgatagtaggaggcttggtaggtttaagaatagtttttgctgtactttctatagtgaatagagttaggcagggatattcaccattatcgtttcagacccacctcccaaccccgaggggacccgacaggcccgaaggaatagaagaagaaggtggagagagagacagagacagatccattcgattagtgaacggatctcgacggtatcggttaacttttaaaagaaaaggggggattggggggtacagtgcaggggaaagaatagtagacataatagcaacagacatacaaactaaagaattacaaaaacaaattacaaaaattcaaaattttatcgatcacgagactagc

catatg

TATTCCTAAGCTCCATCCCCTAGCCACACCAGAAGACACCCCCAAACAGGCACATCTTTTTAATTCCCAGCTTCCTCTGTTTTGGAGAGGTCCTCAGCATGCCTCTTTATGCCCCTCCCTTAGCTCTTGCCAGGATATCAGAGGGTGACTGGGGCACAGCCAGGAGGACCCCCTCCCCAACACCCCCAACCCTTCCACCTTTGGAAGTCTCCCCACCCAGCTCCCCAGTTCCCCAGTTCCACTTCTTCTAGATTGGAGGTCCCAGGAAGAGAGCAGAGGGGCACCCCTACCCACTGGTTAGCCCACGCCATTCTGAGGACCCAGCTGCACCCCTACCACAGCACCTCTGGCCCAGGCTGGGCTGGGGGGCTGGGGAGGCAGAGCTGCGAAGAGGGGAGATGTGGGGTGGACTCCCTTCCCTCCTCCTCCCCCTCTCCATTCCAACTCCCAAATTGGGGGCCGGGCCAGGCAGCTCTGATTGGCTGGGGCACGGGCGGCCGGCTCCCCCTCTCCGAGGGGCAGGGTTCCTCCCTGCTCTCCATCAGGACAGTATAAAAGGGGCCCGGGCCAGTCGTCGGAGCAGACGGGAGTTTCTCCTCGGGGTCGGAGCAGGAGGCACGCGGAGTGTGAGGCCACGCATGAGCGGACGCTAACCCCCTCCCCAGCCACAAAGAGTCTACATGTCTAGGGTCTAGACgcgatcgcC

atgaatctcctggaccccttcatgaagatgaccgacgagcaggagaagggcctgtccggcgcccccagccccaccatgtccgaggactcggcgggctcgccctgcccgtcgggctccggctccgacaccgagaatacacggccccaggagaacacgttccccaagggcgagccggacctcaagaaggagagcgaagaggacaagttccccgtgtgcatccgcgaggcggtcagccaggtgctcaagggctacgactggacgctggtgcccatgcccgtgcgcgtcaacggctccagcaagaacaagccccacgtcaagcggcccatgaacgccttcatggtgtgggcgcaggcggcgcgcaggaagctggccgaccagtacccgcacctgcacaacgccgagctcagcaagaccctcgggaagctctggagactgctgaacgagagcgagaagcggcccttcgtggaggaggcggagcggctgcgtgtgcagcacaagaaagaccacccggactacaagtaccagccgcggcggaggaagtcggtgaagaatgggcaggcggaggccgaggaggccacggagcagacgcacatctcgcccaacgccatcttcaaggcgctgcaggccgactcgccgcactcctcgtccggcatgagcgaggtccattcccccggcgagcactcgggacaatcccagggtccgccgaccccacccaccactcccaagaccgacgtgcagccgggcaaggctgacctgaagcgagaggggcgccccctgcccgaggggggccggcagccccccatcgacttccgcgacgtggacatcggcgagctgagcagcgacgtcatctccaacatcgagaccttcgacgtcaacgagttcgaccagtacctgccgcccaatggccacccgggggtgccggccacgcacggccaggtcacctacaccggcagctacggcatcagcagcgccgccgcgacccccgcgggcgcgggccacgtgtggatgtccaagcagcaggcgcccccgccgccgccgcccccgcagcagcagccgcccccgcaggcgcccccgcaggccccgcaggcgcccccgcagccgcagcaggcgcccccgcagccgcagccggcgcccccgcagccgcagcaggcgcacaccctgaccacgctgagcagcgagccgggccaggcgcagcgaacgcacatcaagacggagcagctgagccccagccactacagcgagccgcagcactcgccgcagcagatcgcctacagccccttcaacctcccgcactacagcccctcgtacccgcccatcacgcgctcgcagttcgactacgcggagcaccagaactcggggtcctactacagccacgcggccagccagggctccagcctctactccaccttcacctacatgagccccgcccagcgccccatgtacacccccatcgccgacacctccggggtgccttccatcccgcagacccacagcccgcagcactgggagcagccggtgtacacacagctcaccagacctACGCGT

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 |

胡兆龙已确认sanger测序结果，选择P2207-B中摇

P2207-B T4637-COL1A1-530-seq-F TGCTCTCCATCAGGACAGTA(正确.HZL)

Query 4716 GGGGCCCGGGCCAGTCGTCGGAGCAGACGGGAGTTTCTCCTCGGGGTCGGAGCAGGAGGC 4775

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Sbjct 1 GGGGGCGGGGTC-GTCGTCGGAGCAGACGGGAGTTTCTCCTCGGGGTCGGAGCAGGAGGC 59

Query 4776 ACGCGGAGTGTGAGGCCACGCATGAGCGGACGCTAACCCCCTCCCCAGCCACAAAGAGTC 4835

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Sbjct 60 ACGCGGAGTGTGAGGCCACGCATGAGCGGACGCTAACCCCCTCCCCAGCCACAAAGAGTC 119

Query 4836 TACATGTCTAGGGTCTAGACGCGATCGCCATGAATCTCCTGGACCCCTTCATGAAGATGA 4895

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Sbjct 120 TACATGTCTAGGGTCTAGACGCGATCGCCATGAATCTCCTGGACCCCTTCATGAAGATGA 179

Query 4896 CCGACGAGCAGGAGAAGGGCCTGTCCGGCGCCCCCAGCCCCACCATGTCCGAGGACTCGG 4955

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Sbjct 180 CCGACGAGCAGGAGAAGGGCCTGTCCGGCGCCCCCAGCCCCACCATGTCCGAGGACTCGG 239

Query 4956 CGGGCTCGCCCTGCCCGTCGGGCTCCGGCTCCGACACCGAGAATACACGGCCCCAGGAGA 5015

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Sbjct 240 CGGGCTCGCCCTGCCCGTCGGGCTCCGGCTCCGACACCGAGAATACACGGCCCCAGGAGA 299

Query 5016 ACACGTTCCCCAAGGGCGAGCCGGACCTCAAGAAGGAGAGCGAAGAGGACAAGTTCCCCG 5075

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Sbjct 300 ACACGTTCCCCAAGGGCGAGCCGGACCTCAAGAAGGAGAGCGAAGAGGACAAGTTCCCCG 359

Query 5076 TGTGCATCCGCGAGGCGGTCAGCCAGGTGCTCAAGGGCTACGACTGGACGCTGGTGCCCA 5135

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Sbjct 360 TGTGCATCCGCGAGGCGGTCAGCCAGGTGCTCAAGGGCTACGACTGGACGCTGGTGCCCA 419

Query 5136 TGCCCGTGCGCGTCAACGGCTCCAGCAAGAACAAGCCCCACGTCAAGCGGCCCATGAACG 5195

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Sbjct 420 TGCCCGTGCGCGTCAACGGCTCCAGCAAGAACAAGCCCCACGTCAAGCGGCCCATGAACG 479

Query 5196 CCTTCATGGTGTGGGCGCAGGCGGCGCGCAGGAAGCTGGCCGACCAGTACCCGCACCTGC 5255

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Sbjct 480 CCTTCATGGTGTGGGCGCAGGCGGCGCGCAGGAAGCTGGCCGACCAGTACCCGCACCTGC 539

Query 5256 ACAACGCCGAGCTCAGCAAGACCCTCGGGAAGCTCTGGAGACTGCTGAACGAGAGCGAGA 5315

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

Sbjct 540 ACAACGCCGAGCTCAGCAAGACCCTCGGGAAGCTCTGGAGACTGCTGAACGAGAGCGAGA 599

Query 5316 AGCGGCCCTTCGTGGAGGAGGCGGAGCGGCTGCGTGTGCAGCACAAGAAAGACCACCCGG 5375

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Sbjct 600 AGCGGCCCTTCGTGGAGGAGGCGGAGCGGCTGCGTGTGCAGCACAAGAAAGACCACCCGG 659

Query 5376 ACTACAAGTACCAGCCGCGGCGGAGGAAGTCGGTGAAGAATGGGCAGGCGGAGGCCGAGG 5435

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Sbjct 660 ACTACAAGTACCAGCCGCGGCGGAGGAAGTCGGTGAAGAATGGGCAGGCGGAGGCCGAGG 719

Query 5436 AGGCCACGGAGCAGACGCACATCTCGCCCAACGCCATCTTCAAGGCGCTGCA-GGCCGAC 5494

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Sbjct 720 AGGCCACGGAGCAGACGCACATCTCGCCCAACGCCATCTTCAAGGCGCTGCAGGGCCGAC 779

Query 5495 TCGCCGCACTCCTCGTCCGGCATGAGCGAGGTCCATTCCCCCGGCGAGCACTCGGGACAA 5554

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Sbjct 780 TCGCCGCACTCCTCGTCCGGCATGAGCGAGGTCCATTCCCCCGACGAGCACTCGGGACAT 839

Query 5555 TCCC-AGGGTCC-G-CCGACCCCACCCACCACTCCC 5587

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Sbjct 840 TCCAGAGGGTCCCGCCCGACCCCACCCACCACTCCC 875

P2207-B T3539-puro-PEseq-R CTCCACTCCGGGGAGCACGA(正确.HZL)

Query 6031 GCT-GAGCAGCGAGCCGGGCCAGG-CGCAGCG-AACGCACATCAAGACGGAGCAGCTGAG 6087

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Sbjct 865 GCTGGAGCAGCGAGCCCGGCCAGGGCGCAGCGAAACGCACATCAAGACGGAGCAGCTGAG 806

Query 6088 CCCCAGCCACTACAGCGAGCCGCAGCACTCGCC-GCAGCAGATCGCCTACAGCCCCTTCA 6146

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Sbjct 805 CCCCAGC-ACTACAGCGAGCCGCAGCACTCGCCCGCAGCAGATCGCCTACAGCCCCTTCA 747

Query 6147 ACCTCCCGCACTACAGCCCCTCGTACCCGCCCATCACGCGCTCGCAGTTCGACTACGCGG 6206

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Sbjct 746 ACCTCCCGCACTACAGCCCCTCGTACCCGCCCATCACGCGCTCGCAGTTCGACTACGCGG 687

Query 6207 AGCACCAGAACTCGGGGTCCTACTACAGCCACGCGGCCAGCCAGGGCTCCAGCCTCTACT 6266

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Sbjct 686 AGCACCAGAACTCGGGGTCCTACTACAGCCACGCGGCCAGCCAGGGCTCCAGCCTCTACT 627

Query 6267 CCACCTTCACCTACATGAGCCCCGCCCAGCGCCCCATGTACACCCCCATCGCCGACACCT 6326

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Sbjct 626 CCACCTTCACCTACATGAGCCCCGCCCAGCGCCCCATGTACACCCCCATCGCCGACACCT 567

Query 6327 CCGGGGTGCCTTCCATCCCGCAGACCCACAGCCCGCAGCACTGGGAGCAGCCGGTGTACA 6386

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Sbjct 566 CCGGGGTGCCTTCCATCCCGCAGACCCACAGCCCGCAGCACTGGGAGCAGCCGGTGTACA 507

Query 6387 CACAGCTCACCAGACCTACGCGTGGCAGCGGCGAGGGCCGAGGATCTCTGCTGACTTGTG 6446

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Sbjct 506 CACAGCTCACCAGACCTACGCGTGGCAGCGGCGAGGGCCGAGGATCTCTGCTGACTTGTG 447

Query 6447 GCGACGTGGAGGAGAATCCTGGCCCGATGACCGAGTACAAGCCCACGGTGCGCCTCGCCA 6506

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Sbjct 446 GCGACGTGGAGGAGAATCCTGGCCCGATGACCGAGTACAAGCCCACGGTGCGCCTCGCCA 387

Query 6507 CCCGCGACGACGTCCCCAGGGCCGTACGCACCCTCGCCGCCGCGTTCGCCGACTACCCCG 6566

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Sbjct 386 CCCGCGACGACGTCCCCAGGGCCGTACGCACCCTCGCCGCCGCGTTCGCCGACTACCCCG 327

Query 6567 CCACGCGCCACACCGTCGATCCGGACCGCCACATCGAGCGGGTCACCGAGCTGCAAGAAC 6626

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Sbjct 326 CCACGCGCCACACCGTCGATCCGGACCGCCACATCGAGCGGGTCACCGAGCTGCAAGAAC 267

Query 6627 TCTTCCTCACGCGCGTCGGGCTCGACATCGGCAAGGTGTGGGTCGCGGACGACGGCGCCG 6686

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Sbjct 266 TCTTCCTCACGCGCGTCGGGCTCGACATCGGCAAGGTGTGGGTCGCGGACGACGGCGCCG 207

Query 6687 CGGTGGCGGTCTGGACCACGCCGGAGAGCGTCGAAGCGGGGGCGGTGTTCGCCGAGATCG 6746

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Sbjct 206 CGGTGGCGGTCTGGACCACGCCGGAGAGCGTCGAAGCGGGGGCGGTGTTCGCCGAGATCG 147

Query 6747 GCCCGCGCATGGCCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAGATGGAAGGCC 6806

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Sbjct 146 GCCCGCGCATGGCCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAGATGGAAGGCC 87

Query 6807 TCCTGGCGCCGCACCGGCCCAAGGAGCCCGCGTGGTTCCTGGCCACCGTCGGCGTCTCGC 6866

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Sbjct 86 TCCTGGCGCCGCACCGGCCCAAGGAGCCCGCGTGGTTCCTGGCCACCGTCGGCGTCTCGC 27

Query 6867 CCGACCACCAGGGCAAG 6883

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Sbjct 26 CCGACCACCAGG-CAAG 11

P2207-C T4637-COL1A1-530-seq-F TGCTCTCCATCAGGACAGTA(正确.HZL)

Query 4722 CGGGCCAGTCGTCGGAGCAGACGGGAGTTTCTCCTCGGGGTCGGAGCAGGAGGCACGCGG 4781

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Sbjct 6 CGGGGGAGTCGTCGGAGCAGACGGGAGTTTCTCCTCGGGGTCGGAGCAGGAGGCACGCGG 65

Query 4782 AGTGTGAGGCCACGCATGAGCGGACGCTAACCCCCTCCCCAGCCACAAAGAGTCTACATG 4841

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Sbjct 66 AGTGTGAGGCCACGCATGAGCGGACGCTAACCCCCTCCCCAGCCACAAAGAGTCTACATG 125

Query 4842 TCTAGGGTCTAGACGCGATCGCCATGAATCTCCTGGACCCCTTCATGAAGATGACCGACG 4901

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Sbjct 126 TCTAGGGTCTAGACGCGATCGCCATGAATCTCCTGGACCCCTTCATGAAGATGACCGACG 185

Query 4902 AGCAGGAGAAGGGCCTGTCCGGCGCCCCCAGCCCCACCATGTCCGAGGACTCGGCGGGCT 4961

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Sbjct 186 AGCAGGAGAAGGGCCTGTCCGGCGCCCCCAGCCCCACCATGTCCGAGGACTCGGCGGGCT 245

Query 4962 CGCCCTGCCCGTCGGGCTCCGGCTCCGACACCGAGAATACACGGCCCCAGGAGAACACGT 5021

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Sbjct 246 CGCCCTGCCCGTCGGGCTCCGGCTCCGACACCGAGAATACACGGCCCCAGGAGAACACGT 305

Query 5022 TCCCCAAGGGCGAGCCGGACCTCAAGAAGGAGAGCGAAGAGGACAAGTTCCCCGTGTGCA 5081

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Sbjct 306 TCCCCAAGGGCGAGCCGGACCTCAAGAAGGAGAGCGAAGAGGACAAGTTCCCCGTGTGCA 365

Query 5082 TCCGCGAGGCGGTCAGCCAGGTGCTCAAGGGCTACGACTGGACGCTGGTGCCCATGCCCG 5141

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Sbjct 366 TCCGCGAGGCGGTCAGCCAGGTGCTCAAGGGCTACGACTGGACGCTGGTGCCCATGCCCG 425

Query 5142 TGCGCGTCAACGGCTCCAGCAAGAACAAGCCCCACGTCAAGCGGCCCATGAACGCCTTCA 5201

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Sbjct 426 TGCGCGTCAACGGCTCCAGCAAGAACAAGCCCCACGTCAAGCGGCCCATGAACGCCTTCA 485

Query 5202 TGGTGTGGGCGCAGGCGGCGCGCAGGAAGCTGGCCGACCAGTACCCGCACCTGCACAACG 5261

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Sbjct 486 TGGTGTGGGCGCAGGCGGCGCGCAGGAAGCTGGCCGACCAGTACCCGCACCTGCACAACG 545

Query 5262 CCGAGCTCAGCAAGACCCTCGGGAAGCTCTGGAGACTGCTGAACGAGAGCGAGAAGCGGC 5321

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Sbjct 546 CCGAGCTCAGCAAGACCCTCGGGAAGCTCTGGAGACTGCTGAACGAGAGCGAGAAGCGGC 605

Query 5322 CCTTCGTGGAGGAGGCGGAGCGGCTGCGTGTGCAGCACAAGAAAGACCACCCGGACTACA 5381

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Sbjct 606 CCTTCGTGGAGGAGGCGGAGCGGCTGCGTGTGCAGCACAAGAAAGACCACCCGGACTACA 665

Query 5382 AGTACCAGCCGCGGCGGAGGAAGTCGGTGAAGAATGGGCAGGCGGAGGCCGAGGAGGCCA 5441

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Sbjct 666 AGTACCAGCCGCGGCGGAGGAAGTCGGTGAAGAATGGGCAGGCGGAGGCCGAGGAGGCCA 725

Query 5442 CGGAGCAGACGCACATCTCGCCCAACGCCATCTTCAAGGCGCTGCA-GGCCGACTCGCCG 5500

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Sbjct 726 CGGAGCAGACGCACATCTCGCCCAACGCCATCTTCAAGGCGCTGCAGGGCCGACTCGCCG 785

Query 5501 CACTCCTCGTCCGGCATGAGCGAGGTCC-ATTCCCCCGGCGAGCACTCGGGACAATCCCA 5559

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Sbjct 786 CACTCCTCGTCCGGCATGAGCGAGGTCCAATTCCCCCGGCGAGCACTCGGGACATTCAGA 845

Query 5560 GGG--T-CCG-CC-G-A--CCCCACCCACCACTCCC 5587

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Sbjct 846 GGGGGTTCCGGCCCGGAACCCCCACCCACCACTCCC 881

P2207-C T3539-puro-PEseq-R CTCCACTCCGGGGAGCACGA(正确.HZL)

Query 6039 GCGAGCCGGGCCAGG--CGCAGCGAACGCACATCAAGACGG-AGCAGCTGAGCCCCAGCC 6095

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Sbjct 857 GCGAGCCGGGGCAGGGCCGCAGCGAACGCACATCAAGACGGGAGCAGCTGAGCCCCAGCC 798

Query 6096 ACTACAGCGAGCCGCAGCACTCGCCGCAGCAGATCGCCTACAGCCCCTTCAACCTCCCGC 6155

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Sbjct 797 ACTACAGCGAGCCGCAGCACTCGCCGCAGCAGATCGCCTACAGCCCCTTCAACCTCCCGC 738

Query 6156 ACTACAGCCCCTCGTACCCGCCCATCACGCGCTCGCAGTTCGACTACGCGGAGCACCAGA 6215

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Sbjct 737 ACTACAGCCCCTCGTACCCGCCCATCACGCGCTCGCAGTTCGACTACGCGGAGCACCAGA 678

Query 6216 ACTCGGGGTCCTACTACAGCCACGCGGCCAGCCAGGGCTCCAGCCTCTACTCCACCTTCA 6275

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Sbjct 677 ACTCGGGGTCCTACTACAGCCACGCGGCCAGCCAGGGCTCCAGCCTCTACTCCACCTTCA 618

Query 6276 CCTACATGAGCCCCGCCCAGCGCCCCATGTACACCCCCATCGCCGACACCTCCGGGGTGC 6335

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Sbjct 617 CCTACATGAGCCCCGCCCAGCGCCCCATGTACACCCCCATCGCCGACACCTCCGGGGTGC 558

Query 6336 CTTCCATCCCGCAGACCCACAGCCCGCAGCACTGGGAGCAGCCGGTGTACACACAGCTCA 6395

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Sbjct 557 CTTCCATCCCGCAGACCCACAGCCCGCAGCACTGGGAGCAGCCGGTGTACACACAGCTCA 498

Query 6396 CCAGACCTACGCGTGGCAGCGGCGAGGGCCGAGGATCTCTGCTGACTTGTGGCGACGTGG 6455

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Sbjct 497 CCAGACCTACGCGTGGCAGCGGCGAGGGCCGAGGATCTCTGCTGACTTGTGGCGACGTGG 438

Query 6456 AGGAGAATCCTGGCCCGATGACCGAGTACAAGCCCACGGTGCGCCTCGCCACCCGCGACG 6515

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Sbjct 437 AGGAGAATCCTGGCCCGATGACCGAGTACAAGCCCACGGTGCGCCTCGCCACCCGCGACG 378

Query 6516 ACGTCCCCAGGGCCGTACGCACCCTCGCCGCCGCGTTCGCCGACTACCCCGCCACGCGCC 6575

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Sbjct 377 ACGTCCCCAGGGCCGTACGCACCCTCGCCGCCGCGTTCGCCGACTACCCCGCCACGCGCC 318

Query 6576 ACACCGTCGATCCGGACCGCCACATCGAGCGGGTCACCGAGCTGCAAGAACTCTTCCTCA 6635

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Sbjct 317 ACACCGTCGATCCGGACCGCCACATCGAGCGGGTCACCGAGCTGCAAGAACTCTTCCTCA 258

Query 6636 CGCGCGTCGGGCTCGACATCGGCAAGGTGTGGGTCGCGGACGACGGCGCCGCGGTGGCGG 6695

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Sbjct 257 CGCGCGTCGGGCTCGACATCGGCAAGGTGTGGGTCGCGGACGACGGCGCCGCGGTGGCGG 198

Query 6696 TCTGGACCACGCCGGAGAGCGTCGAAGCGGGGGCGGTGTTCGCCGAGATCGGCCCGCGCA 6755

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Sbjct 197 TCTGGACCACGCCGGAGAGCGTCGAAGCGGGGGCGGTGTTCGCCGAGATCGGCCCGCGCA 138

Query 6756 TGGCCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAGATGGAAGGCCTCCTGGCGC 6815

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Sbjct 137 TGGCCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAGATGGAAGGCCTCCTGGCGC 78

Query 6816 CGCACCGGCCCAAGGAGCCCGCGTGGTTCCTGGCCACCGTCGGCGTCTCGCCCGACCACC 6875

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Sbjct 77 CGCACCGGCCCAAGGAGCCCGCGTGGTTCCTGGCCACCGTCGGCGTCTCGCCCGACCACC 18

Query 6876 AGGGCAAGGGTCTGGGC 6892

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Sbjct 17 AGG-CAAGG-TCTAGGC 3