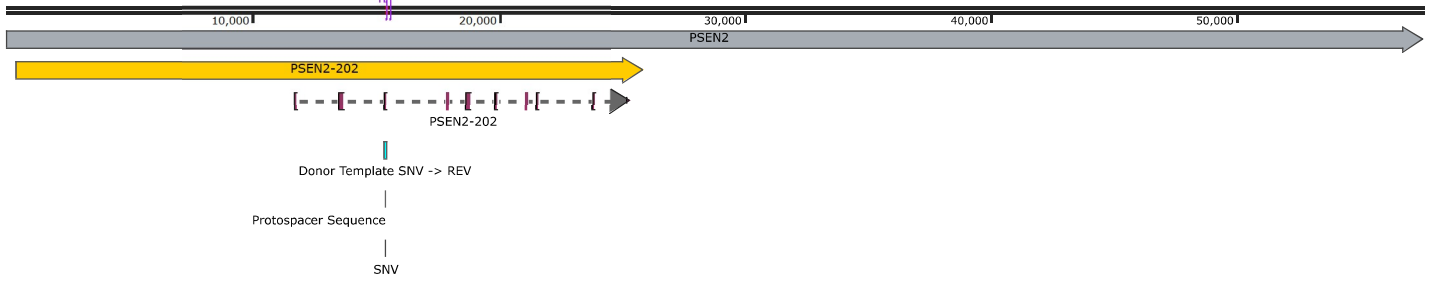
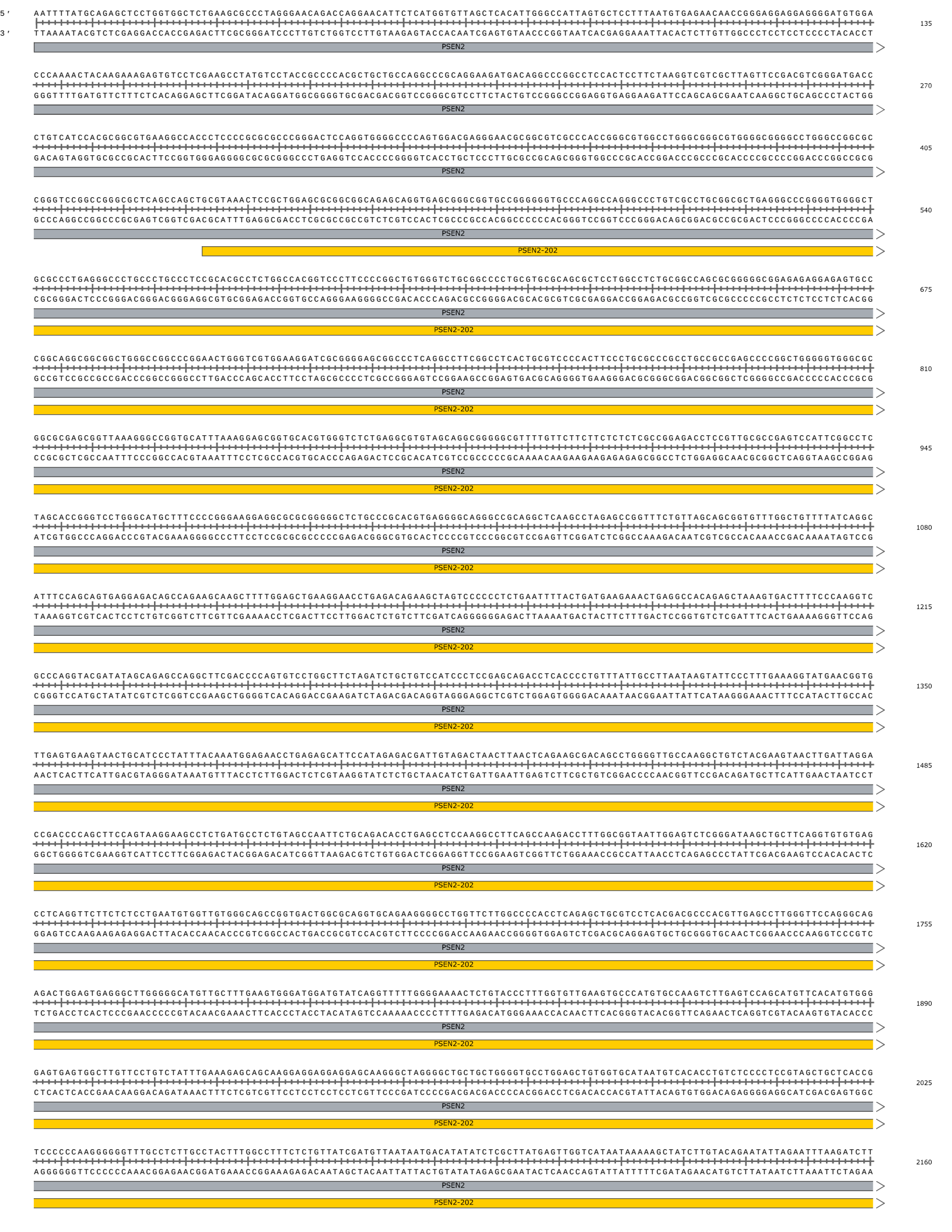


● (15,352 .. 15,451) Donor Template SNV -> REV
(15,171 .. 15,190) PCR Forward
(15,171 .. 15,190) Sanger Sequencing Primer
gRNA Protospacer (15,414 .. 15,433)
PCR Reverse (15,564 .. 15,583)



JIPSC1054_SnappeneDNA_INK2500029.2R_PSEN2_N141I_REVWT
57,543 bp



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2295

PSEN2

PSEN2-202

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2430

PSEN2

PSEN2-202

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2565

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PSEN2-202

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2700

PSEN2

PSEN2-202

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2835

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2970

PSEN2

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3105

PSEN2

PSEN2-202

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3240

PSEN2

PSEN2-202

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3375

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3510

PSEN2

PSEN2-202

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3645

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PSEN2-202

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3780

PSEN2

PSEN2-202

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3915

PSEN2

PSEN2-202

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4050

PSEN2

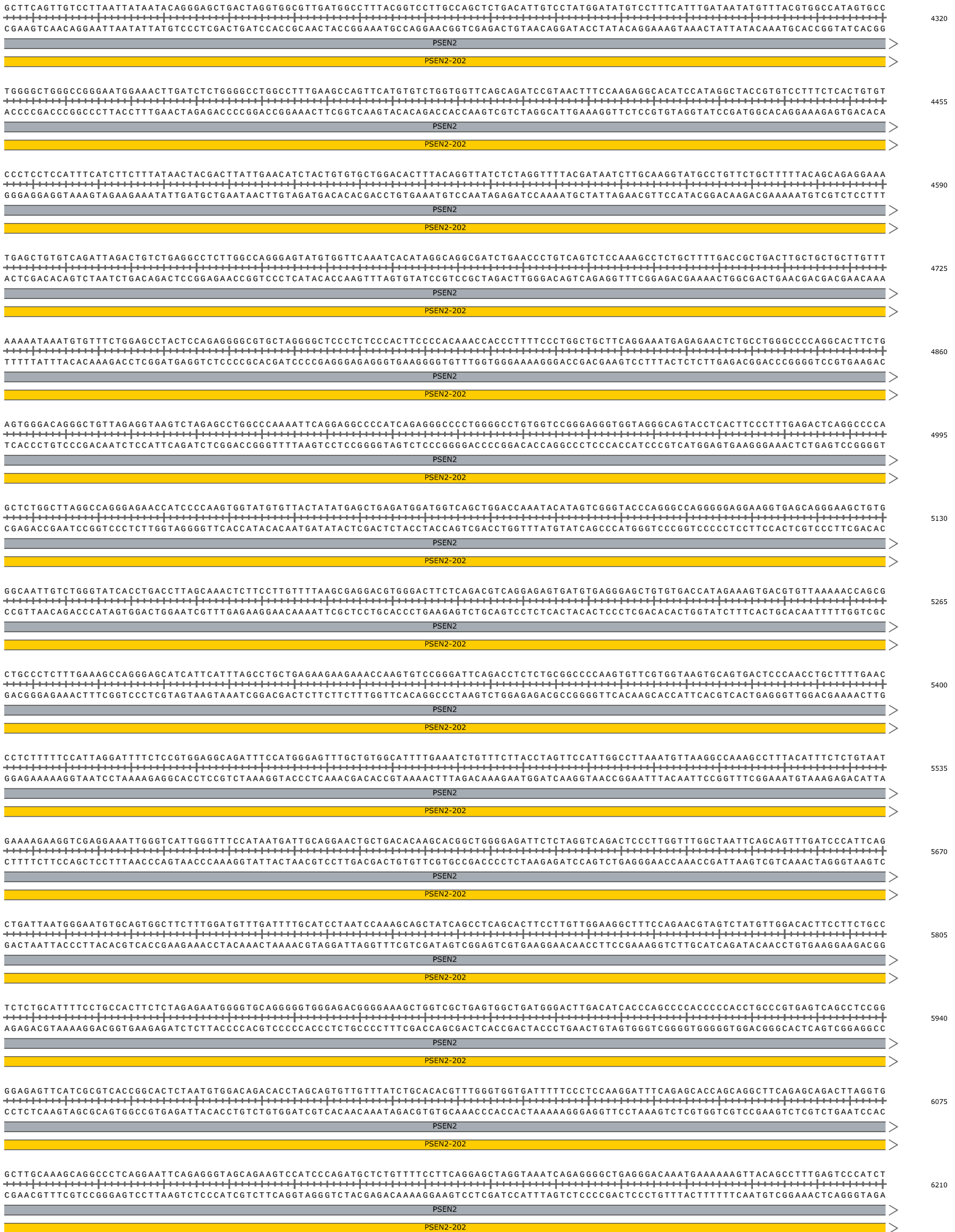
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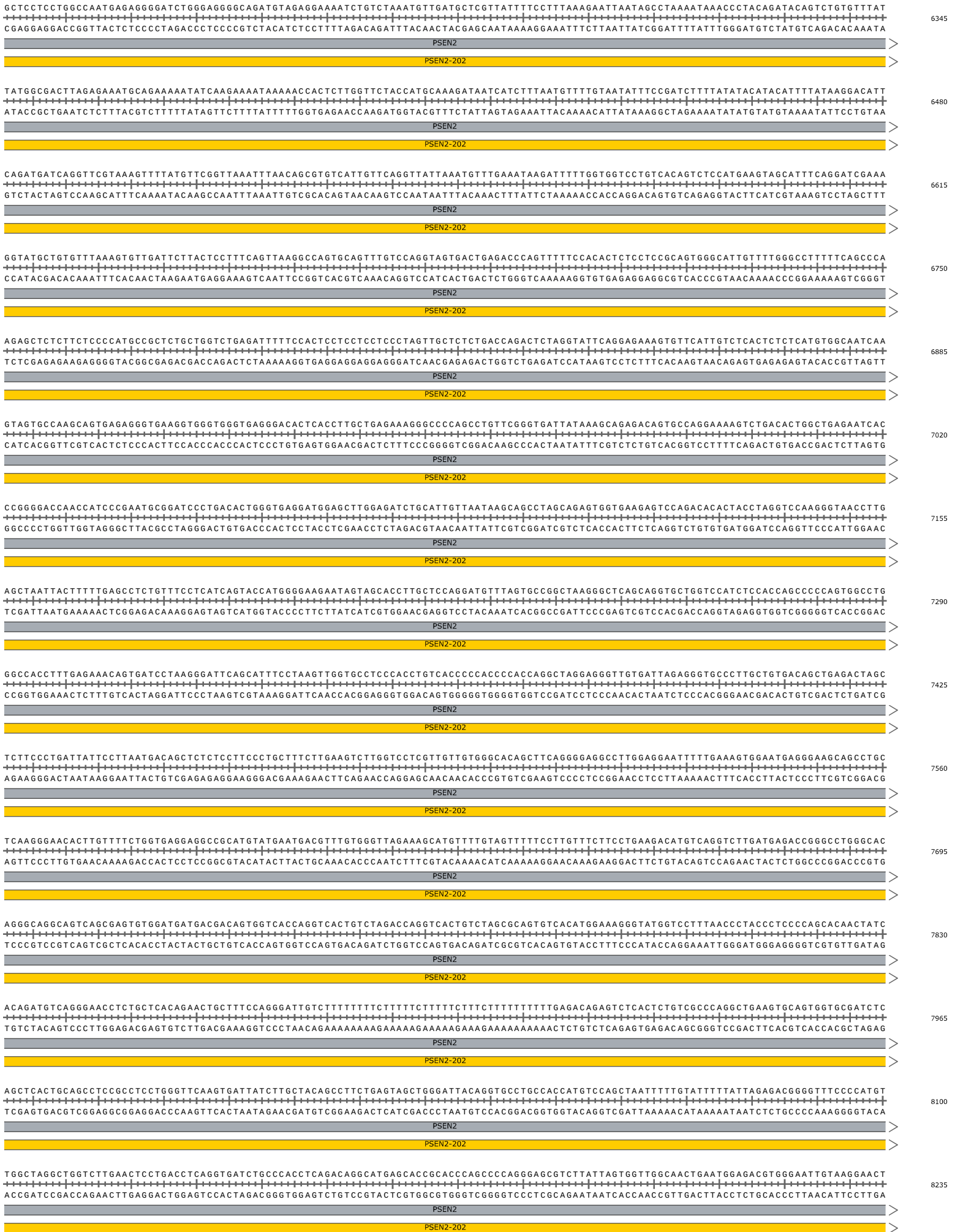
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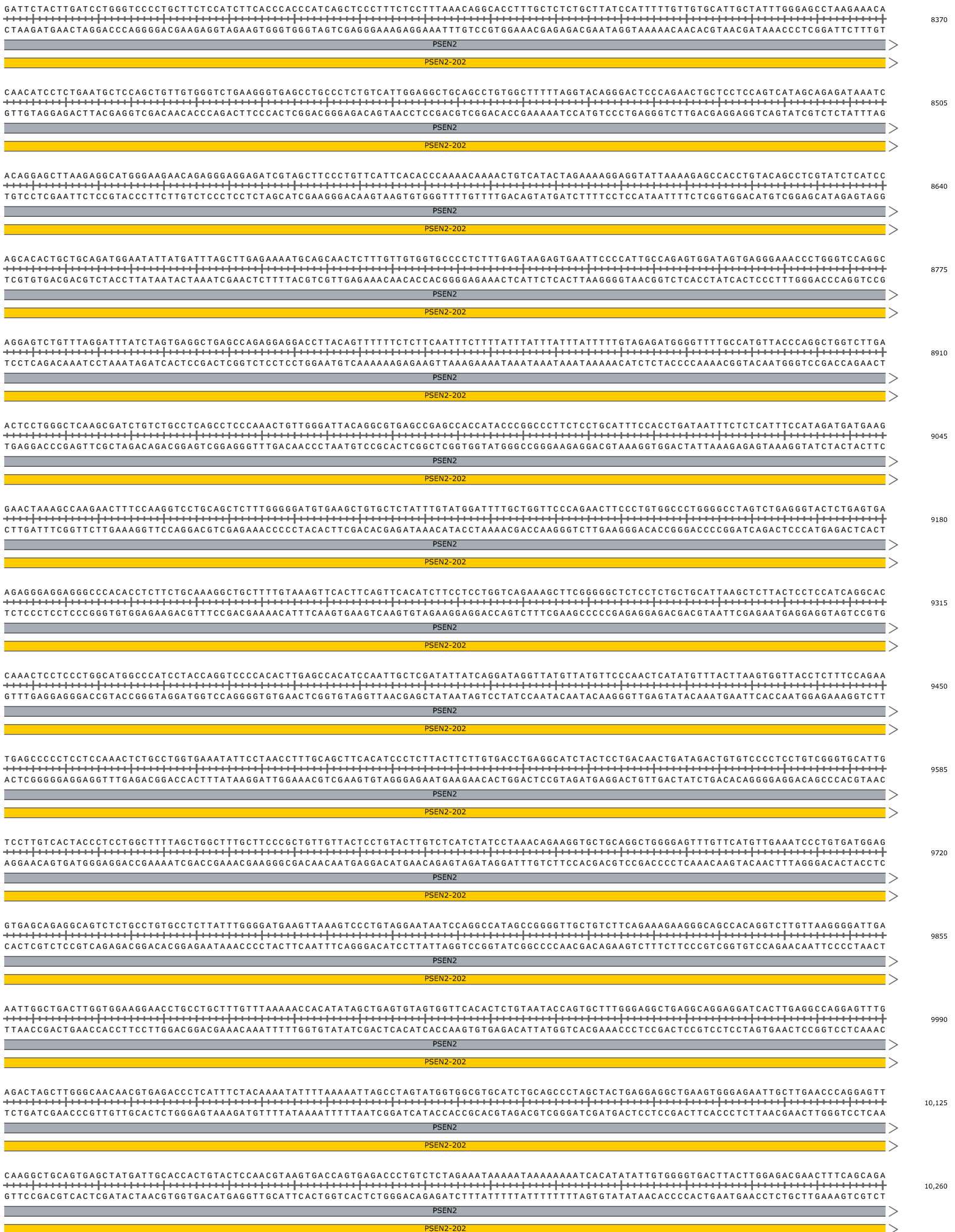
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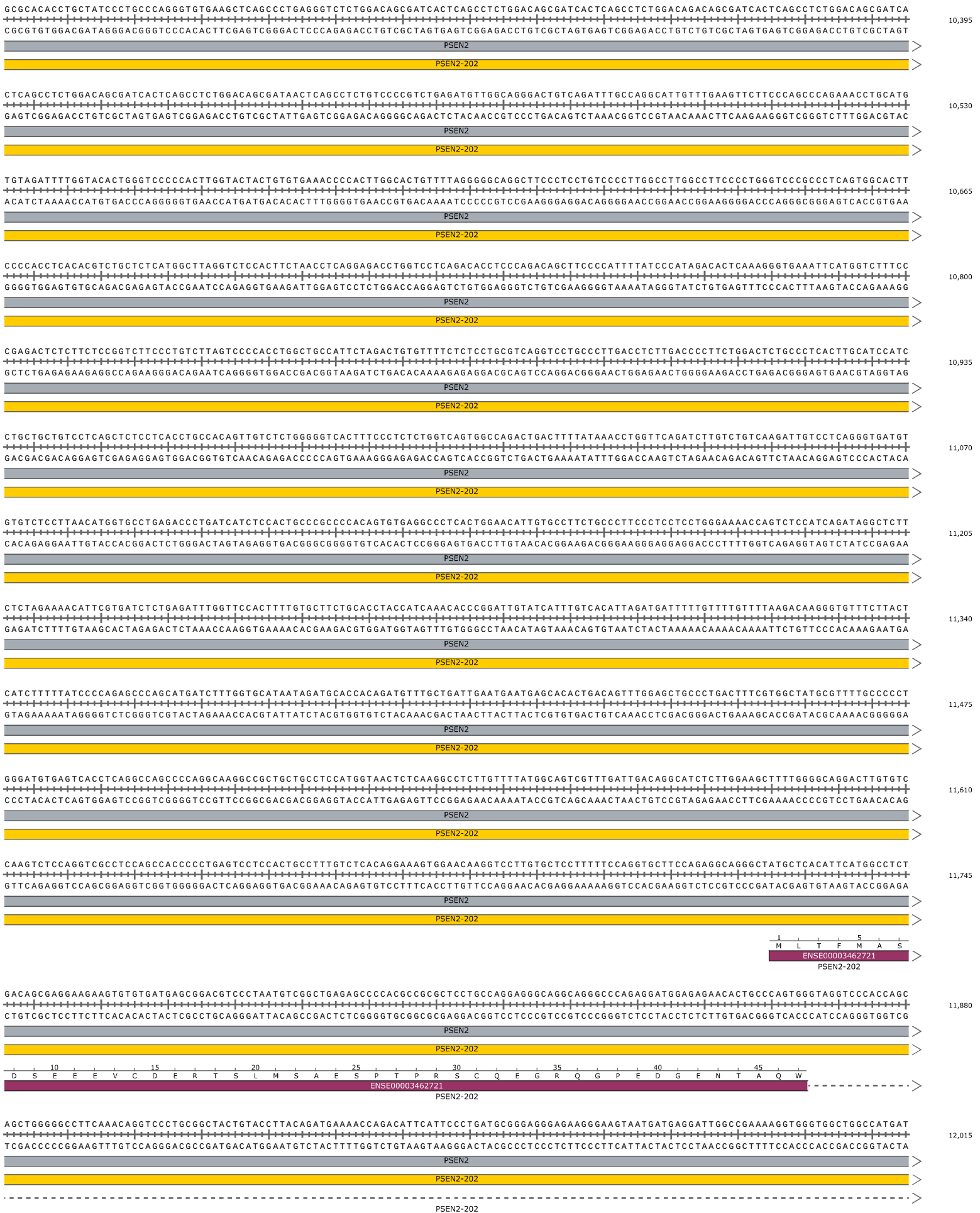
PSEN2

PSEN2-202









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12,150

PSEN2

PSEN2-202

PSEN2-202

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12,285

PSEN2

PSEN2-202

PSEN2-202

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12,420

PSEN2

PSEN2-202

PSEN2-202

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12,555

PSEN2

PSEN2-202

PSEN2-202

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12,690

PSEN2

PSEN2-202

PSEN2-202

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12,825

PSEN2

PSEN2-202

PSEN2-202

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12,960

PSEN2

PSEN2-202

PSEN2-202

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13,095

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PSEN2-202

PSEN2-202

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13,230

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PSEN2-202

PSEN2-202

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13,365

PSEN2

PSEN2-202

PSEN2-202

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13,500

PSEN2

PSEN2-202

PSEN2-202

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13,635

PSEN2

PSEN2-202

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PSEN2-202

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13,770

PSEN2

PSEN2-202

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PSEN2-202

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13,905

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PSEN2-202

PSEN2-202

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14,040

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PSEN2-202

PSEN2-202

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14,175

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PSEN2-202

PSEN2-202

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14,310

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14,445

PSEN2

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PSEN2-202

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14,580

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PSEN2-202

PSEN2-202

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14,715

PSEN2

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PSEN2-202

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14,850

PSEN2

PSEN2-202

PSEN2-202

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14,985

PSEN2

PSEN2-202

PSEN2-202

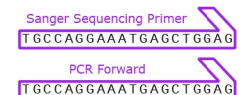
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15,120

PSEN2

PSEN2-202

PSEN2-202



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15,255

PSEN2

PSEN2-202

PSEN2-202

Donor Template SNV -> REV
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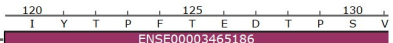
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15,390

PSEN2

PSEN2-202

PSEN2-202



Donor Template SNV -> REV

Donor Template SNV -> REV

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15,525

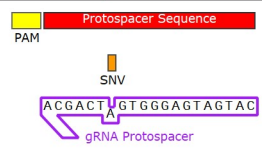
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PSEN2-202

PSEN2-202



Donor Template SNV -> REV



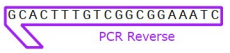
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15,660

PSEN2

PSEN2-202

PSEN2-202



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15,795

PSEN2

PSEN2-202

PSEN2-202

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15,930

PSEN2

PSEN2-202

PSEN2-202

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16,065

PSEN2

PSEN2-202

PSEN2-202

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16,200

PSEN2

PSEN2-202

PSEN2-202

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16,335

PSEN2

PSEN2-202

PSEN2-202

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16,470

PSEN2

PSEN2-202

PSEN2-202

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16,605

PSEN2

PSEN2-202

PSEN2-202

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16,740

PSEN2

PSEN2-202

PSEN2-202

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16,875

PSEN2

PSEN2-202

PSEN2-202

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17,010

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PSEN2-202

PSEN2-202

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17,145

PSEN2

PSEN2-202

PSEN2-202

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17,280

PSEN2

PSEN2-202

PSEN2-202

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17,415

PSEN2

PSEN2-202

PSEN2-202

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17,550

PSEN2

PSEN2-202

PSEN2-202

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17,685

PSEN2

PSEN2-202

PSEN2-202

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17,820

PSEN2

PSEN2-202

PSEN2-202

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17,955

PSEN2

PSEN2-202

PSEN2-202

F I H G W L I M S L M L L F L
ENSE00003590454

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18,090

PSEN2

PSEN2-202

PSEN2-202

F T Y I Y L G
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18,225

PSEN2

PSEN2-202

PSEN2-202

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18,360

PSEN2

PSEN2-202

PSEN2-202

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18,495

PSEN2

PSEN2-202

PSEN2-202

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18,630

PSEN2

PSEN2-202

PSEN2-202

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18,765

PSEN2

PSEN2-202

PSEN2-202

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ENSE00001071130

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18,900

PSEN2

PSEN2-202

PSEN2-202

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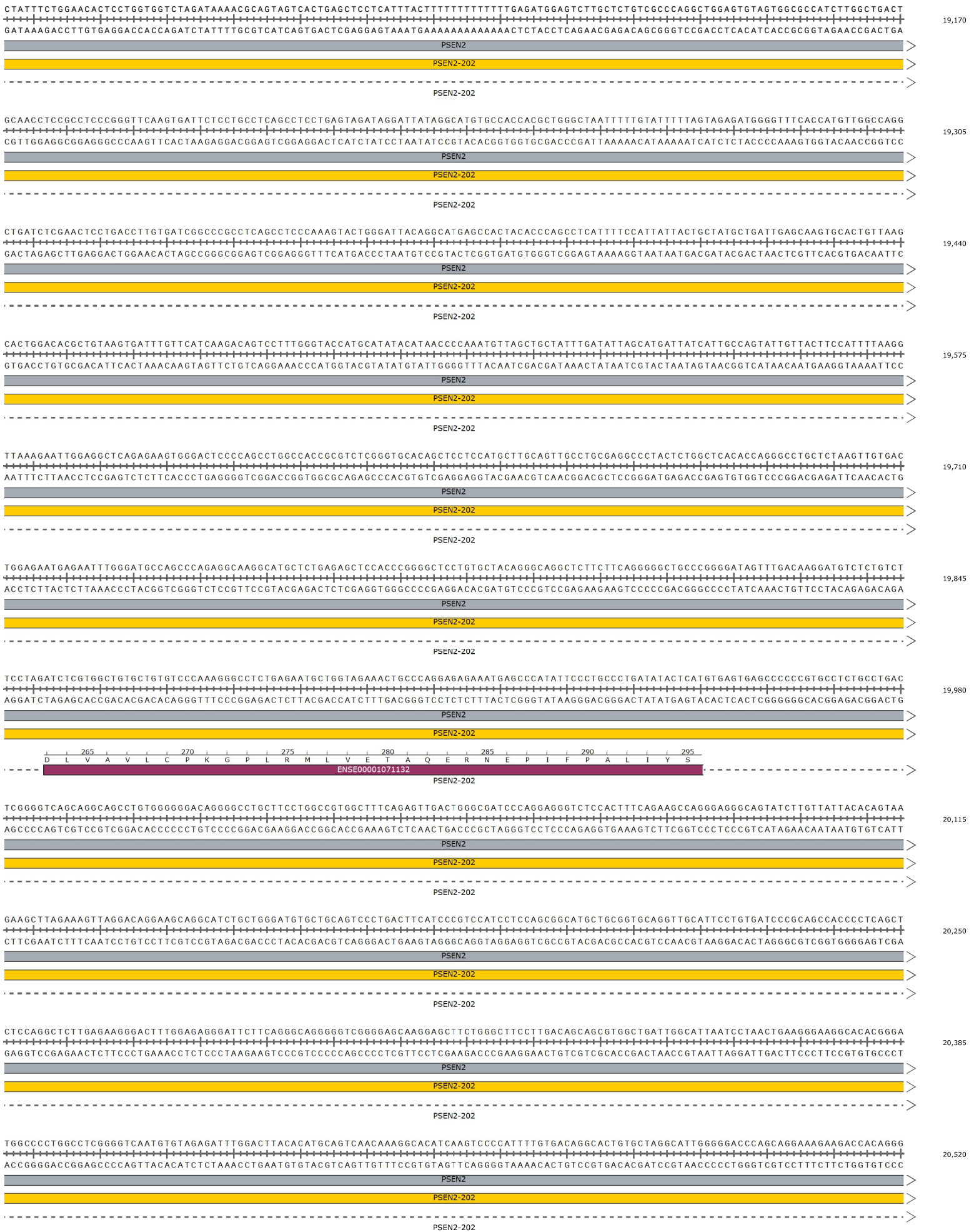
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19,035

PSEN2

PSEN2-202

PSEN2-202



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20,655

PSEN2

PSEN2-202

PSEN2-202

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20,790

PSEN2

PSEN2-202

PSEN2-202

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20,925

PSEN2

PSEN2-202

PSEN2-202

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21,060

PSEN2

PSEN2-202

PSEN2-202

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21,195

PSEN2

PSEN2-202

PSEN2-202

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21,330

PSEN2

PSEN2-202

PSEN2-202

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21,465

PSEN2

PSEN2-202

PSEN2-202

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21,600

PSEN2

PSEN2-202

PSEN2-202

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21,735

PSEN2

PSEN2-202

PSEN2-202

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21,870

PSEN2

PSEN2-202

PSEN2-202

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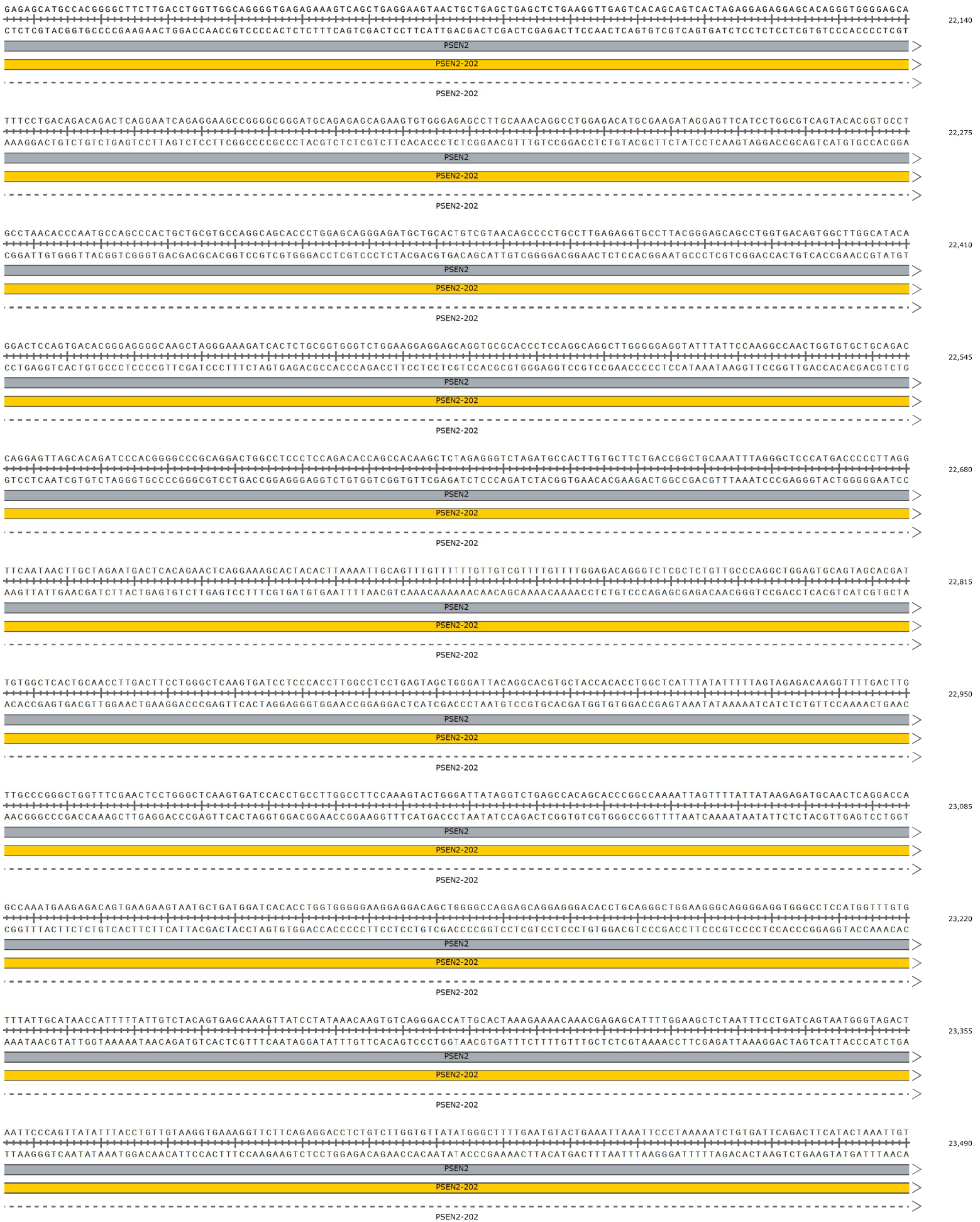
22,005

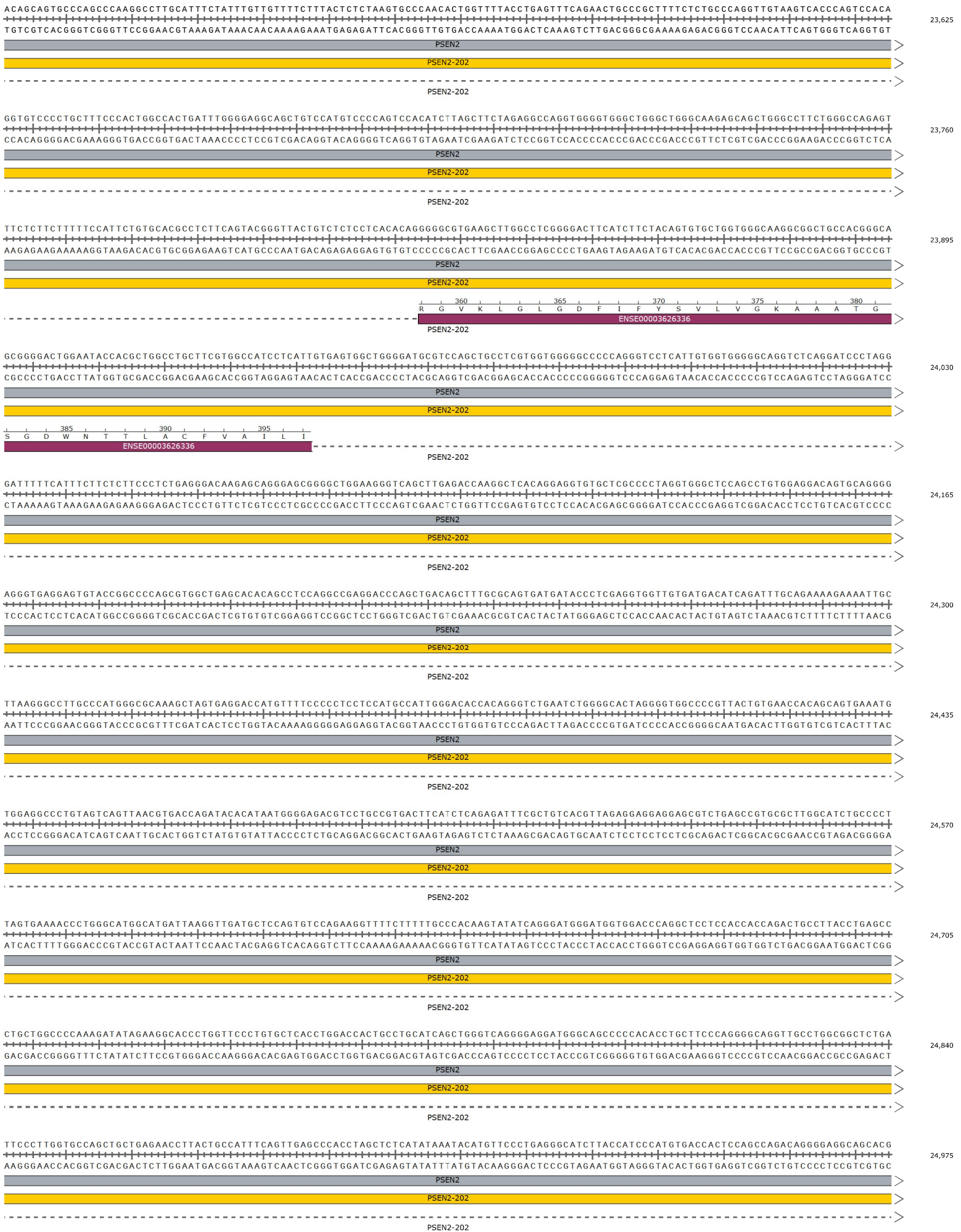
PSEN2

PSEN2-202

PSEN2-202

PSEN2-202





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29,700

PSEN2

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29,835

PSEN2

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29,970

PSEN2

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30,105

PSEN2

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30,240

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30,375

PSEN2

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30,510

PSEN2

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30,645

PSEN2

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30,780

PSEN2

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30,915

PSEN2

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31,050

PSEN2

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31,185

PSEN2

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31,320

PSEN2

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31,455

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31,590

PSEN2

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31,725

PSEN2

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31,860

PSEN2

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31,995

PSEN2

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32,130

PSEN2

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34,830

PSEN2

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34,965

PSEN2

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35,100

PSEN2

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35,235

PSEN2

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35,370

PSEN2

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35,505

PSEN2

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35,640

PSEN2

TTTCATCTGGTGGGAATAGCGTCTCCATCCCTGAGTCACAGGTGGTGGTTTTCTCAGACACTGCATCATCACAACCATGAACTTTCACCCCTGCATGGGACGGTGTACTCACCCCTCCCAAAAAGGACA
AAGTAGGAACCCCTTATCGCAGAGGTAGGGACTCAGTGTCCACCACCAAAAAGTCTGTGACGTAGTAGTGTGGTACTGAAAGTGGGACGTACCCCTGCCACTAGTGAGTGGGGAGGGTGTCTTCTGT

35,775

PSEN2

TGGTGCCATAGTCACTTACATATTCCTTCTGAGGGTATGTTCTGTGCATCCCACTGCTGGTACCAATCTGCCTGCCTTCAATTGGATTAGAAGGAGCAGAAAGCCACTTAGACTGCCTTAGGGAAACACAAGAT
ACCACGGTATCAGTGAATGTATAAGGAAGACTCCCATACAAGACACGTAGGGGTGACGACCATGGTTTAGACGGACGGAAGTAACTAATCTCTCTGCTTTCCGGTGAATCTGACGGAATCCCTTTGTGTTCTA

35,910

PSEN2

TATTACGCACCTGTTAAATATATTTTCTATTTATAACTCTCGCTTTTAAAAGGGTCTGTTTGGTGGCTTTTCTCTACTAAGCACAGGGTCTGGTTAAGCAAGGGGAGCTGAATGCTCTGTATGATAATAC
ATAATGCGTGGACAATTTATATAAAAAGATAAATATTGAGAGCGAAAAATTTCCAGGACAAACACCAGAAAAGAGATGATTCGTTGCCAGACCAATTCGTTCCCTCGACTTACAGAGACATACTATTATG

36,045

PSEN2

TTGGGAGGGATTGGCTCCACTTGATATAGAAGGAAAAGGACCAATAGGAGGCAGGTGGCCACATACTATGATGTAACCTCGCCCAAGAGCCCAAGAACCTTTGATCAGGTCAGTCCAACCTCTGAAATA
AACCCCTCCCTAAACCGGAGGTGAACATATCTTCTTTTCTCGGTTACTCTCGCTCCACCGGTGATGATACTACATTGGAGCGGGGGTCTCGGGGGTCTGGAAACTAGTCCAGTCAAGTTGAGACTTTAT

36,180

PSEN2

GTGACTATTACAGAGAACTCACAGAGTCAGGGATGTGGATTTGATTCTTACTCATCCATCTTGCTCACCATTCCCTGTGCCTTGAATCTGAATATTTGAGTCTTTATTCAGATCTTGGAAATTTTCTCCCTT
CACTGATAAGTGTCTTGGAGTGTCTCAGTCCCTACACCTAACTAAGAATGAGTAGGTAGAACGAGTGGTAAAGGACACGGAACCTTAGACTTATAAACTCAGAATAAGTCTAGAACCCTTAAAAGAGGGGAA

36,315

PSEN2

ATTTATTTCTCTGTTTTCTCTTTTTGAGATTCCCTCAAGACTGGTGTGAGATCTCAGAACTGTTTTTTAGTGTCTCTTCAAGTGTGTCTCCTACTCTCCATCCCTTTGCTTTTTCCCTGCTCTGTATGCTAGG
TAAATAAAGAGACAAAAGAGAAAACCTAAGGGAGTTCTGACCACAGTCTAGAGTCTTGAACAAAATAACAGAGAAGTCAACAAGAGGATGAGAGGTAGGGAAACAGAAAAGGGACGAGACATACGATCC

36,450

PSEN2

ATTTTCTCTAGCCTTTTATGATTTATTTTTGACAATCTTGTGTTTTTTTTAATTTCCAAAACCTCATGATCTTACTTGTCTCTCTCATAGCTGTTATTTTATGAGGCAATATCTTCTCAGC
TAAAAGAAGATCGGAAAACTCAAATAAAAACCTGTTAGAACAACAAAAAAAATTAAGGTTTTTGTAGTACTAGAATGAACGAGGAGAGATGACAAATAAAAACCTCCTCGTTATAGAAGAGTCTG

36,585

PSEN2

TCTTACTGAGAAACGAGTAATCTTGAAGGTTTTCTATTTGATTAATGTCTCAGTTTTCTTTAGCCTTTTTGTTTATCTGTTTCACTTAGGTCCTTTATTTCTTATATAACTCTTGAATAAGGCTGATGAT
AGAATGACTCTTGTCTTAAAGAACTTTCCAAAAGATAAATAAATTAACAGAGTCAAAAAGAACTGGAAAAACAATAGACAAGTGAATCCAGAAAAATAAGAATATATTGAGAACTTTTACCCTACTA

36,720

PSEN2

CCTTGTGACTGTTTACATTTATGAATGAAGAAGTACTAGGTTGCTGGAGTTACTTTCTTGGCAGATGTCAGTCTGGTGGTGGGTTAAAGTATTTCCAGTAAATATTCATTTCCCTTGCCTGCTGGCCTCA
GGAAACGAACTGACAAGTGAATACTTACTTCTTGTCTGATCCACAGACCTCAATGAAAGAACCGTCTACAGTCCAGACACCACCAATTTCAATAAGGTCATTTATAAGTAAAGGAAACGGACGACCCGAGT

36,855

PSEN2

TGAGGAAAGCTGATCCAGGCCATGCTCTCACCCCTTCCGGTGTCTGTGGTGCATGGGAACTGCCTGCACTCAGTTCCTGTTCAGCTCTGCTGCTGGGGACCAAATGAAACAGGACATGCCCAAGT
ACTCCCTTCGGACTAGGGTCCGGTACAGGAGAGTGGGGAGAAGCCACAAGAGACACCAGTACCTTTGACGGAGTGAAGTCAAGGACAAGTCCAGACGACGACCCCTGGTTTAACTTTGTCTGTACGGGGTCA

36,990

PSEN2

TTAGCCAATGTCAACCTCTACTAATACCATCTCATTAGCTAAGAAAATGATCTTCCGGCCAGGTGCAAGTGGCTCATGCCTGTAATCCAGCACTTTAGAAGGCCGAGGCGGACGGATCACCTGAGCTCAGGA
AATCGGTTACAGTGGGAGATGATTAAGTGAAGTAAAGTCTTTTACATAGAAGGCGGCTCCAGTCCAGGACACGAGTACGGGCTGTAAGTCTTCCGGCTCCGCTGCTAGTGGACTCGAGTCTCT

37,125

PSEN2

GTTTGAAGACAGCCTGGCCAAACATGGTGAACCCCATCTCTACTGAAAAATACAAAAATAGCTGTGGCCAGGCACGGTGGCTCATGCCGATAATCCCAACACTTTGGGAAGCCAAAGTGGTGGATCAACAAGTCA
CAAACCTGCTGGTCCGACCGGTTGACCACTTTGGGGTAGAGATGACTTTTATGTTTTAATCGACACCGGTCGGTCCACCGAGTACGGCTATTAGGGTTGTGAACCCCTCGGTTCCACCACCTAGTGTCCAGT

37,260

PSEN2

GGAGATTGGGACCATCCGGTCAACATGGTGAACCCCATCTGTACTAAAAATACAAAAATAGCTGGGTGGTGGTGGTCTCTGTAGTCCCAGCTACTCAGGAGGCTGAGGCAGGAGAATTGCTGGAACCTG
CCTTAACCCCTGGTAGGGCCAGTTGTACCACCTTTGGGGTAGACATGATTTTTATGTTTTTAAATCGACCCACACCACACAGAGACATCAGGGTCGATGAGTCTCCGACTCCGTCCTCTAACGACCTGGAC 37,395
PSEN2 >

GGAGGCAGAGGTTGCAGCAAGCTGAGATTGCACCACTGCACTCTGGCAACAGAGCGAGACTCTCAAAAAAAAAAATTAGTCGGGCATGGTGTGGACACCTGTAATCCAGCTACTTGGGAAGCTGAGGCAGG
CCTCGTCTCCAACGTCGTTGACTTAACTGGTGAAGTGAAGGACCGTTGTCTCGCTGTGAGAGTTTTTTTTTAAATCAGCCGTAACCACTACCTGTGGACATTAGGGTCGATGAACCCCTTGAAGTCCGTC 37,530
PSEN2 >

AAAATCACTTGAACCCAGGGAGTGGAGTTGCAGTGAAGCAGAGATGGCGCCACTGCACTCAGGCCAGGGAGACAACATGAGACTCTGTCTCAAAAAAAGAAAATGTATCTTTCTAAAGTATGTGTGTGTGCG
TTTTAGTGAACCTGGTCCCTCACTCCAACGTCACCTGTCTACCAGGTCGAGTGAAGTGGTCCCTGTGTGACTCTGAGCAGAGTTTTTTTTCTTTTACATAGAAGATTTTCATACACACACACACGC 37,665
PSEN2 >

TGCGTGCCTGTGTGTGATAGTCCCTTATAGTGACAGTTTCTAGCAAAAACAAAAGAGAAAACATAATAAAATGTGTGGGAATTTGGTGTCTAGAAAGCTAAGTTATATTTCTGCTATCAATAGCCATAACCTCTGG
ACGCACGCACACACATATCAGGGAATCACTGTCAAAGGATCGTTTTGTTTTCTTTGTATATTTTACACACCCCTAAACCACAGATCTTTCGATTCAATATAAGACGATAGTTATCGGTATTGGTAGACC 37,800
PSEN2 >

TCAGTTCCTTCTGTGGCCTGTTTCTCATATTTATAAGTGAAGGTTTAAACACATTCATGATCCCAAAC TAGGGATTGGAGAGTAGTAAAGATTATCCAAATAGTCTTATAATAGTTTTAAGGCTAT
AGTCAAGTGAAGACACCCGGACAAGAGTATAAATATTTCACTTCCCAAATTTTGTGTAGTACTAAGGGTTTGATCCCTAAACCTCTCATATTCTTAATAGGTTTATCAGAATATTTCAAAAATTTCTCGATA 37,935
PSEN2 >

GACAAGGCCACTCAAGCTATTAGCTGATTACTGCAGGGAATGGAGGAGTGGAGCAGAATATGGTCCGGGCAAGAACACAGAACTCTGGCATGTGGAAGGTGGGCCCTGGAGCACCTGTGAGCTCCCGCTC
CTGTCCGGTGAGTTCGATAATCGACTAATGACGTCCTTACCTCTCACCTCGTCTTATACACGGCCGTTTCTGTGTCTGAGAACCTACACCTCCACCCGGGACCTCGTGGACGACTCGAGGGCGGAG 38,070
PSEN2 >

AGCCCCAGCTATAGGACCTTACGCCACTGTCCAGGCTCAGCACCATGTGCTTTGAGGGTAGGGCAGAGGGGCTTAGGGGCTCAGCCAGCAGTACCACAGATGTAATCTCCAGGGATATGCTCTGAGCTTG
TCGGGGTCGATATCCTGGAAGTCGGCTGACAGGGTCCGAGTCGTGGTACACGGAACTCCATCCCGTCTCCCGAATCCCGAGTCGGTCTCAGTGGTGTCTACATTAGAAGTCCCTATACGAGACTCGAAC 38,205
PSEN2 >

GGAGGAAATTCCTTCTCATGCCGGGAACGTATGACCCACTTTGGTGTATCCAGGCAATGTGGAGATACAGAAATGAAAGACTCAGTCTCAAGGGCTTGAAGTCTGATTGCTGAAATAATTTTTAGTT
CCTCCTTTAAGTGAAGAAGTACGGCCCTTGCATACTGGGTGAACACATAAAGTCCGTTACACCTCTATGTCTTTACTTTTTCTGAGTCAAGAGTTCCCGAACTTCAGACTAAGCGACTTTATAAAAATCAA 38,340
PSEN2 >

TCCAGAACCACAAGACAGACCCAGAGGGCTGTGTTGGCAAAAACAATGGCAGAGTGGAGCTGGCCAGAGGCATCTGTGCTGGCGACTCCAAGAGAGCACCCGACTCCAGATGGCGACACTGCAGGATGGAGCG
AGGCTTTGGTGTCTGCTGGTTCCTCCGACACAACCGTTTTGTTTACCGTCTCACCTCGACCGGTCTCCGTGAGACGCACCCGCTGAGGTTCTCTGTTGGGCTGAGGCTACCCTGTGACGTCCTACTCTCGC 38,475
PSEN2 >

GGGCATGCCTGCAGACAGGTGTGAGGTGCGAAAAACAGAACAACCCGGACGCTTCTGGCTGCAAGGACCTGAAGCCTTAGGGGGTGATATTGTTTAACTGAGGTAGGCCCTGTGTTAATAGGGTCTCCACCTGAC
CCGTACGAGCTCTGTCCACAGTCCAGCTTTTTGTCTTGTGGCCTGCGAAGACCAGGACGTTCTGGACTTCGGAATCCCGCACTATAACCAATTTGACTCCATCCGGAACACAATTTCCAGAGGTGGACTG 38,610
PSEN2 >

TTTGTAGTTTATTTTCTCACTGACAAGAAGTGGAGTGGGTGGCTTGGGTTGATTTATCCAGCAGTTCAATCCATCTTTGATTTTTTTTTTCCATTCTTTCCATTTTCTCTGCGATTCTTTCTCTC
AAACAGTCAAATAAAGAGTGAAGTGTCTTCCACCTCATCCACCCGAGACCCAACTAAATAGGTCGTCAAGTTAAGGTAGAACTAAAAAAGGTAAGAAAGGTAAGAAAGGAGAGCCGTAAGAAAGGAGAG 38,745
PSEN2 >

CCGCAATTCCTCACTTACATAAAGCCAAGTGCAGGGGAGAGAGAGAGAGACTTCTCTGTGTCATTTTTTAAAGGTCAATGAAAACATTCTTAGGAGCCCTGGGCAGATTTCTCCCTGAATCTCATTGGCC
GGCGTAAGAGTGAATGATTTTGGTTACAGTCCCGCTCTCTCTCTCTGAGAAGGACACAGTAAAAAATTCAGTTACTTTTGGTAAGAAATCCTCGGGGACCCGCTTAAAGAGGACTTAGAGTAAACCGG 38,880
PSEN2 >

AGAAGTGTGTACATCCCCATGCTAAGCCAATCACTGGCAATGGGTGTGGGATAGTTGTGGCCAGCCTGGACCCATCAGAATGTAACCCCTGAGTCTCAAGGGGAGAGTGGATGCCAGAATGAAATCAGAGTTT
TCTTGACACAGTGTAGGGGTACGGATTCCGTTAGTGACCGTTACCCACACCCATCAACACCCGTCGGACCTGGGTAGTCTTACATTGGGACTCAGAGTTCCCCCTCTCACCTACGGTCTTACTTTAGTCTCAAG 39,015
PSEN2 >

CATCCACTTTCCATTAGAAAGAAAAGATGGGAGAGGAGCAGAGAAGGCTCCAGACAGACAACCTAACAGTGTGATACAATAACTTTCTTATGTTTCTGTAACCTAAGGTCATTTTGTCTATTGCTAGCATAT
GTAGGTGAAAGGTAATCTTTCTTTTACCTCTCTCGTCTCTTCGAGGTCGTCTGTTGATGTGCACAAACTATGTTATTGAAAGAAATACAAAGACATTGAATTCAGGTAAACAGATAACGATCGTATA 39,150
PSEN2 >

ATAAGCTTAATGCCTGCTAGATTCTGTTGTTTACACTGTCTCTTCTCCCTGGAGTAGTACCAGGGTGAAGGAGCCTGTGGCCTCTGTAATATCAGGACATAGAGGATAGGGTTGCCGGGGGACATGTGGTC
TATTGCAATACGGACGATCAAGACAACAATGTGACAGGAGAAGAGGACCTCATCATGGCTCCCACTCCCTCGGACACCCGAGACATTATAGTCTGTATCTCTATCCCAACGGCCCGGTGACACCG 39,285
PSEN2 >

CCTTGATTGCCAGTCTTCTATTTTGGTTTTCTTTCTTTTAAAGAAAACCTCTTTTATTTATAGATAAGGTCTCATTCTCTCACCCAGGGTGAAGTGCAGTGGCGTGATCTCGCCCTACTGCAGCCTTGGCCTCC
GGAACTAACGGTCAAAAGATAAAAACAAAAGAAAAGAAATTTCTTTTGAAGAAAATAAAATATCTATTCCAGAGTAAAGAGTGGGTCCCACTCACGTCAACGCACTAGAGCCGGATGACGTGGAACCCGAGG 39,420
PSEN2 >

CAGGCTCAAGCAATCTTCCACCTTAGCCTCTGAGTGTGGAAGTACAGGTGCACACCACCGTCCAGGCTAATTTTTTATTTTTTATTTTTGTAAGACGGGCTTGTCTGATTGCCAGGCTAGATTTGA
GTCCGAGTTCGTTAGGAAGGTGAATCGGAGAACTCATCGACCTGTATGTCCACGTGTGGTGGCAGGTCGATGAAAAAATAAAATAAAACATCTCTGCCCCAGAACGACATAACGGGTCGATCTAAACT 39,555
PSEN2 >

ACTCCTGGCCTGAAGTAACTCTCCACCTTGGCCTCCAAAGTTCTGGGACTACAGGTATGAGCCACCTGCCCAGCCCTAAAAAATTTGTTGATTGGTAAACACATAGCATAAAAATTTACCATTGTAACCAT
TGAGGACCGGACTTCATTAGGAGGGTGAACCGGAGGTTTCAAGACCTGATGTCATACTCGGTGGTACGGGCTGGGATTTTTTAACTAACACCACTTTGTGTATCGTATTTAAATGGTAACTTTGTA 39,690
PSEN2 >

TTTTAAGTGTACAGATAATAGTGTAAAGTATATTCATATTTGTTGTGAAACAGATCTCCAGAACTTTTTCTCTGTAATATGAAATCTACACCCATTGAACAACCTCCATTCTCCCTGCAACCCCCACAAGC
AAAATTCACATGTCTATTACAAATTCATATAAGTATAACAACACTTTGTCTAGAGGCTTGAAGAAAGTGAACATTATACTTTAGGATGTGGGTAACCTGTTGAAGGGTAAGAGGGGACGTTGGGGGTGTTTCG 39,825
PSEN2 >

C CCTTGGCAACCACAATTTCTATTTTCTCTTTCTATTTAGTTTGA CTACTCTAGATACCTCATGTAAGTGAATCATACAGTATTTGTC TTTTGTGACTGGCCCTATTTCACTTAGCATAATGCATAATGTCCTCAA
GGACCGTTGGTGTAAAGATAAAAGAGAAAGATAATCAA CTGATGAGATCTATGGAGTACATTTACCTTTAGTATGTCATAAACGAAAAACACTGACCGGGATAAAGTGAATCGTATTACG TATTACAGGAGTT

39,960

PSEN2

G CTTTACGCATGTTGTAGCATGTGACAGGACTTCCTTCGTTTTAAGGCGGAACAATATCCATTGTATGTTTATACCATATTTTGTTCATCTAATCCTCCATCAGTGGACATTTGGGTTGCTTGTACCTCTTG
CGAAGTGCGTACAACATCGTACACTGTCCTGAAGGAAGCAAAAATTCGCGCTTGTATAAGGTAACTATCAAAATATGGTATAAAACAAGTAGATTAGGAGGTAGTCACTGTAAACCCAACGAACATGGAGAACC

40,095

PSEN2

C TATTGTGGATAATGCTGTTCTAAACATGGGTGAGCTAATATCTTTGAGATCCTGCTTTCAATTTAGATGATGAGATTTCTGGGTCATAAGATTTAATTTTTGAGAAACCACCATGCTGTTTCTTTACAGTGG
GATAACACCTATTACGACAAGATTTGTACCCACTCGATTATAGAACTCTAGGACGAAAGTTAAATCTACATACTCTAAAGACCCAGTATTTCAAATTA AAAA ACTCTTTGGTGGTACGACAAGAAATGTCACC

40,230

PSEN2

C TACGTCATCTTACCTTCCCCCAACAGTGTACAAGGATTC AATTTCCCCACATCCTTGCCAACTTTGTTATTTTCTGGTTTTTTTGTAGTAGGGCAATCCTAATAGGTGTGAGGTGGTATCTCATTTGGTT
GATGCACTAGAAATGGAAGGGGGTTGTACATGTTCTAAGGT TAAAGGGGTGAGGAACGGTTGTAACAATAAAAGACCAAAAAA ACTATCACCGTTAGGATTATCCCACTCCACATAGAGTAACACCAA

40,365

PSEN2

T CATGAGGTTTAAAGTTGAGCATCTTTTCATATGCTTTT AGACCACTCGTATATATCTTCTTTGGAGAAATGTGGTGGCAATCTTGGTTCACTGCAACTTCCACTCCTGAGTTCAGCAATCTCCAGTCTCAG
AGTACTCAAATTTCAACTCGTAGAAAAGTATACGAAAATCTGGTAA GCATATATAGAAGAAACCTCTTTACACACCAGCTTAGAACCAAGTGACGTTGAAGGTGGAGGACTCAAGGTCGTTAAGAGGTGAGAGTC

40,500

PSEN2

C CTTCTCGAGTAGCTGGGATTACAGGCATGTGCCACATG CCTGGCCATCTTCGCTCTTGAGCACCTGTGCATGGTAGGTC AAGGACCCCTGACAGTCAGGGTCCCAGGCAGGAGGGGGACATCCCTCTTATTA
GGAGAGCTCATCGACCTAATGTCCGTACACGGTGTACGG ACCGGTAGAAGCGAGAATCTGTGGACACAGTACCATCCAGTTCCTGGGACTGTCA GTCACAGGGTCCGCTCTCCCGTGTAGGGAAGATAAT

40,635

PSEN2

T CTTGGATTCTACCACCCCTTAGAGGGAGACTACAGACC CCGGACTCTCCAGAGACCCATTTGCCAGCACTTCA TTTCTGTTGATCTCTCTTGCACCTTCTGCCTCCCCAGCCTGGAAGAGTTTTAAACAT
AGAACCTAAGATGGTGGGGAAATCTCCCTCGATGTC TGGGGCCGTGAGAAAGGCTCTGGGTAAACGGTCTGGAAGTAA GACAAC TAGAGGAGAACGTAAGACGGAGGGGTCGGACCTTTCTCAAATTTGTA

40,770

PSEN2

C TTGTCCCTGGCAAGGAAACCTGGCTCAGCAGTATTCTT ACCTAATTTTTCTGCCTCGTGTCCAAAGTGCAGCTGTATTAAATGTATTAAATAAAGGAAAACTGGGCCAGAAAGCGGTGGCTCATGCCAG
GAACAGGGACCGTTCCTTTGGGACCGAGTCGGTCA TAAAGATGGATTAAAAGACGGAGCAGAGTTTTACGCTGACATAA TTTACATAATTTATTTTCTTTTGAACCCGGTCTCGCCACCGAGTACCGGTC

40,905

PSEN2

C ACTTTAGGAGGCCAAGGTAGGTGGATCATCTGAGGTCA GGAGTTCGAGACCAGCCTGGCCAACTGGTGAATGCGGTCTG TACTAAAAATACAAAAATAGCCAGGTGTGGTGGTGCACCTGTAATCCCAG
GTGAAATCCTCCGGTTCATCCACTAGTAGACTCCA GTCCTCAAGCTCTGGTCGGACCGGTTGTACCCTTTACGGCAGACATGATTTTATGTTTTAATCGGTCACACCACCACAGTGGACATTAGGGTC

41,040

PSEN2

C TACTCAGGAGGCTGAGGCTGGAGAATTTGCTTGAACC CCGGAGGCAGAGGTTGCAAGTGAAGTGAAGTCA TGCCTGCACTCCAGCCTGGGTAACAGATGGAGACTCCGTCCTAAAAAAGAAAAAAGAAAA
GATGAGTCTCCGACTCCGACCTCTAACGAAC TGGGCCCTCCGCTCCAACGTCACCTGACTCTAGTACGGTGACGTGAGGTCGGACCCATTGTCTACCTCTGAGGCAGAGTTTTTTTTCTTTTTCTTTTT

41,175

PSEN2

A GTTGGAGGGCTTTACCATTTCTGCTGGGAAAGTCTGG AGCAAAGGCCACTGGCAGTGCCACTCAGCTTGAACATAGT GAGGGTGGTGGGAGGGCAGGAATACAGTGTCTTCCACAGGTTGCAGGTGGGCATC
TCAACCTCCGAAATGGTAAAGACGACCCCTTCAGACCT CGTTTTCCGGTGACCGTCAAGGTTGAGTGAACCTTGTATCACTCCACCACCCCTCCGGTCTTATGTCAAGGAAGTGGTCCAACGTCACCCGCTAG

41,310

PSEN2

G ACCTCTTGGTGGTCTGGCGCAGCCTCCCTGCCTGGGG CCGTCTGCCTTGGGCTCGTCACTGCCAAAGGATCAGATGAGCTGCTGGAGGAGGACCCCTGAGCCAGAGTTAGTTCTTAGCTTAAACTCTACAGCCGT
CTGGAGAACCACCAGACCGCTCGGAGGGACGGACCC GCGCAGACGGAACCCGAGCAGTGAACGGGTTCTAGTCTACTCGACGACCTCCTCCTGGGACTCGGTCTCAATCAAGAAATCGAATTTGAGATGTCGGCA

41,445

PSEN2

G CTTCTCAAAGTGTGGTCTGGGGGCCATGAAGTCAAAC TATTTTGAATAAAACTACATTACCTTACCATTCTCCTTCTATTACAAGTG TACACAGGAGTTGCCAGAAGCTGCATGATACGATATGTGATA
CGAAGAGTTTACACCAGGACCCCGGTACTTCAGTTTTGATAAAACATATTTTGTGTAATGGAATGGTAAAGAGGAAGATAATGTTACATGTGCTCAACAGGCTTCGACGTA CTATGCTATACACTAT

41,580

PSEN2

T CACAAGGGATTGACTCCAAAAGCAGGTCGGAGAATCC AGCTGTCTTCTTCTTCTTTTTTTTTTTTTTGTGGAGACAGAGTTTGTCTATTGCCAGGCTGGAGTGCAGTGGTGGCATCTCAGCTCAC
AGTGTCCCTTAACGTAGGTTTTCTGTCAGCCTCTTAGGTCGACAGAGAAGAAAGAAAGAAAAA AAAAAAACCTCTGTCTCAAACGAGATAACGGGTCGACCTCACGTCACCACGCTAGAGTCTGAGTG

41,715

PSEN2

T GCAACTTCTGCCTCTGGGTTCAAGCAATTTCTCCTGC CTGAGCCACAGAGTAGCTGGAATTACAGGCACGCGCCACCACACCTGGCTAATTGTGAGTTTTAGTAGAGATGGGGTTTTACCATGTTGGTCAAG
ACGTTGAAGACGGAGGACCAAGTTCTGTTAAGAGGACGGAGTGGTGGTCTCATGACCTTAATGTCCGTCGCGGGTGGTGTGACCGGATTAACACATCAAATCATCTTACCCCAAAGTGGTACACCAGTCC

41,850

PSEN2

C TGGTCTTGAACCTCTGACTTCAAGTGATCTGCCAGCCT TGGCCTCCAAAGTGGTGGGATTACCGATGTGAGCCACGGT GCGCCGACCTACCTCCTGGTTTTCAAGCAATTTCTCTGCTCAGCCTCCCAAAT
GACCAAGCTTGAAGACTGAAGTCCACTAGACGGTCGGA ACCGGAGGGTTTACCACCCCTAATGGCTACACTCGGTGGCAGGGCTGGAGTGGAGGACCCAAAAGTCGTTAAGAGAGACGGAGTGGAGGGTTCA

41,985

PSEN2

A GCTAGGATTACAGGTCCCAGCCACCATGCTGGCTAAT TTTTGTGTTTTAATAGAGACGGGGTTTTGCCATGTTGGCCAGGCTGGTCTTGAACCTCTGACCTCAGGTGATCCACCACCTGGGCCCTCCAAAAG
TCGATCCTAATGTCCAGGGCGGTGGTACGGACCGATT AAAAAACAAAAAATATCTCTGCCCAAAACGGTAAACACCGTTCGACCAAGAACTTGAAGACTGGAGTCCACTAGGTGGTGGACCCGGAGGGTTTTCT

42,120

PSEN2

T GCTGGGATTACAGGCGTGAGCCACTGTGCCTGGCCGA ATCCAGCTCTCTCTATTAAGATATTTCTTTTTATTTCTAGTAAAGAGAA TTTGCAAAAATGTAACAAATGCCAGTCTTCATGAAAGGTTTTGGTTTTG
ACGACCCCTAATGTCGCACTCGGTGACACGGACCGGCT TAGGTCGAGAGAAGATAATCTATAAGAAAAA AAGATCATTTCTTAAAGTTTTTACATTTGTTTACGGTCAGAAAGTACTTTCCAAAACCAAC

42,255

PSEN2

T AAAAATATAGCTATTTTCAA AAAACTTATTTATGTTAA AATGAAATGTTATTTTGGTATTTTTTAAAAAGTTGATACATAAATAAAATTTCTCAGTTGTAATTTCTCAACAGGATAGAGCTAACCCACATAAC
ATTTTTATATCGATAAAAGTTTTTGAATAAATACAATTTTACTTTACA AATAAAAAAATAAAAAATTTTTCAACTATGATTTATTTTAAAGAGTCAACATTAAGAGTTGCTCTATCTCGATTGGGTGATTTG

42,390

PSEN2

AAAAGGTCCTTGCAGTCCTCAGTAAGTTTTACAAGTTTAAAGGGTCTGAGACCAAACGTTTGAGGACCACTGTCCCTCCGAAAGGCTGCGGCTTTCTTCTGGTGGCTTTACACTTCTGCTGCTCCAGCCA
TTTTCCAGAAACGTCAGGAGTCATTCAAATGTTCAAATTTCCCAAGGACTCTGGTTTTGCAAACCTCTGGTGACAGGGAGGCTTCCGACGCCGAAAGAACACCAGAAATGTGAAGACGACAGGAAGTCGGT 42,525
PSEN2 >

CGTCCCTTTTCGCTCTCCAGGACTCCTCCATTTGCCTTGAAATTTCTCTGTTAGCTCCACTCCAGGTTGCCACATGAGGGCAGCCGATTCCGCCCTGAGCCCTTCGCGGGGCTCAAGCACAGGTGTTACCA
GCAGGGAAAGCGCAGAGGTCCTGAGGAGGTAACGGAACTTAAAGAGGACAATCGAGGTGAGGTCACACGGTGTACTCCCGTGGCTAAGCGGGGACTCGGGAACGCCCCCGGAGTTCGTGTCCAAAGTGGT 42,660
PSEN2 >

GGTCAGCCTTCAGCATCCAGTTCTACCGAGTCCCTGGCTGGTGGTACTGGAGAAGCAAAGACGATAAAACAGGTCCTTGTCTGTGGGAGGCTCAGGCCCTCTGTTCTCTCCCTCCAGGGGCCAGGAGAGG
CCAGTCGGAAGTCGATAGTCAAGGATGGCTCAGGACCGACACCATGACCTTCTGTTCTGCTATTGTTGCCAGAAACAAGACACCCTCCGAGTCCGGAGGACAAGAGAGGGTCCCGGCTCTCTCTCC 42,795
PSEN2 >

CCCCAGCCAGAGCCTGAGCACATCATAGGGTGCACATGTTTGGTGAATGAACATTATCTCTGTGTTGTGCAGAGCTGAGCATAGAAGTCCATCTTCTAGATCTGAACCTTAACTGGAAGGGTTAGGCCCTTCTT
GGGGTCGGTCTCGGACTCGTGTAGTATCCCAACTGTACAAACCACTTACTTGTAAAGAGACACAACACGCTCTCGACTCGTATCTTGAAGTGAAGATCTAGGACTTGAATTTGACCTTCCCAATCCGGAAGAA 42,930
PSEN2 >

GCCATTGCCTGCAGGGAGAGGTGAGCACCTAGAACCTTACTGTTCCGGAGCACGTGTTCTCATGCAGTAAAGTGAAGGGGAGAGGAGGCACCTTTTCTCTAGTCTTGATTAAAGTGAAGTAAAGGGCA
CGGTAAACGGACGTCCTCTCCACTCGTGGGACTTGTGAATGACAAGCCCTCGTGACCAAGAGTACGCTATTTCACTCTCCCTCTCTCCGTTGAAAAGAGATCAGAACCCTAAATTCACCTTCAATTTCCCGT 43,065
PSEN2 >

TATGTGAAGTTTTCCAAAACCTAAGGCTCATTATTTTTATTTTTATCAGAACAAAGTCATGGACATCTCTAGCAATGAAAGCAAAGCCCTGCAGTCAATTAACATAGACATACTCTACATCCTGTTAGC
ATACACTTCAAAAAGGTTTTGATTCGGGAGTAAATAAAAAATAAAAAATAGTCTTGTTCAGTACCTGTAGAGATCGTTACTTTCGTTTCGGGACGTCAGTAAATTTGATCTGTATGAGAGATGTAGGACAATCG 43,200
PSEN2 >

CAGCGGCTCTACGACTTCTCCCAACATCTTAAAGCAACCTGGCATGAAGGAGCTGGCTCAAATGCTGGTCAAGTGAAGGGGCAATAAGCTCTGAAGTCAACAACAAGGGTTCAAATCCGACCTCCCGGCTCC
GTCGCCGAGGATGCTGAAGAGGGTTGTTAGAATTTGTTGACCCGTACTTCTCGACCGAGTTTACGACCACTCACTTCCCGTATTCGAGACTTCAGTGTGTTGTTCCCAAGTTTGAAGTGGGAGGGCCGAGG 43,335
PSEN2 >

TGGTCTGTGCTCTCCCCCTTACTGTAATGCCAAGTCACTTTGGTTTTACCCCTGCAAAATATTCATCATTGTTGAGTCAACACAATGATACATAAAAAATCAGCAGTCTCTGATAAAGTGTGGCTACTG
ACCAGACACGAGAGAGGGGGAATGACATTACGGTTGAAGTGAACCAAAAAATGGGGACGTTTATAAGTAGTAAACACAACCTCAGTTGTGTTACTATGATTTTTTAGTCGTGAGAGACTATTTTACACCGGATGAC 43,470
PSEN2 >

GTTAAGAGGAGCAGGGCTTTGAAAGGATAGCCAAGGTAACACTCCTGGTCCACCATGTTAGCTGTGTAACCTCGGGCAAGCTGCTTAACTCTCTGAGTCTCAATTTCTCAACTGTAGAAAGCAGACATAA
CAATTCCTCTGTCGCGAAACTTCTCATCGGTTCCATTGTGAGGACCAAGGTTGACACAATCGACACATGGAGCCGTTGACGAATTTGAGAGACTCAGAGTTAAAGAGTTGACATCTTTCGCTGTATT 43,605
PSEN2 >

TATTACAGGGTTGCTGAGAGAATAATGACATTAGGTTTCTAAAGTCTTAATTCAGTACCTGGCTCATAGTAAAGTCTCAATAAACACCAGTTATAAACATCACTGCATTTGAAATTCACAGCTTTTTCAAAG
ATAATGTCACCAAGCTCTCTTATTACTGTAATCCAAAGATTTACGAATTAAGTCAATGGACCGAGTATCATTACAGGATATTTGTTGTTCAATATTTGATGACGTAACCTTAAAGTTCGAAAAAGTTTC 43,740
PSEN2 >

TTAGAGTCAGAAAGAAATTCAGAAGTCTGTAATCAATGTTTTCAAAGTGTGTTCAAACACTCACTTCCCTCAAGATGCTCCATGAAAAGGGTCTGTGGCCAAATATGATGGTTGTATATTAAGCCTC
AATCTCAGTCTTTCTTAAAGTCTCAGGACATAAGTTACAAAAGGTTTACACAAGTTTTGTAGTGAAGGGAGTCTACGAGGACTTTTTCCCAAGACACCGGTTTATACCTCAACATATAATTTCCGGAG 43,875
PSEN2 >

AGAGAAGCCACAGAGTAAAGAAACCTGTTGAACCTTGATTACTCCAACCTTTATCAAATGGATTTGACTGTAGAACCCTTTCACACATCACTTTTTAACTTCCAGGTTGCTGGTAGACAGACTCAGTCATTA
TCTCTCGGTGCTCATTTCTTGGACAACCTGAAACTAATGAGGTTGGAATAAGTTTACCTAACTGACATCTGGGAGAAGTGTAGTGAATAATGAAGTCCAACGACCATCTGCTCGAGTCAGTAAT 44,010
PSEN2 >

CCATCATTAAAGATCATACAATACTGGATAACATTTATGGAGGGTTGCTCTATGCCAGGCACTGTGATATGCACAAGGCATGATTTATCTCACTTTATTCATAACAACACTAAGAAGTAGTGCTATCATCTT
GGTAGTAATTTCTAGTATTGTTTATGACCTATTGTAATACCTCCAAACGAGATACGGTCCGTGACACTATACGTGTTCCGTACATAAATAGAGTGAATAAGTATTGTTGATTCTTCATCACGATAGTAGAA 44,145
PSEN2 >

TTACGGATGAAAAATAGGCTTAGAAGACTAAGTAACTGGCCAAGGTCACATACCAAGAAATGTCAGCATGCAAACTCAGGTTGGCTGGCTGGAATTCAGCCTTCCACCTCCCTGTATGGTTCCGCAG
AATGCCTACTTTTTATCCGAATCTTCTGATTCAATGAACCGGTTCCAGTGTATGGTTCTTTAGCAGTCTGACGTTTGAAGTCAAACCGGACGAGACTTAAAGTCGGAACGGTGGAGGGACATACAAAAGCGCTC 44,280
PSEN2 >

CCCCTGACTTACCCCTGACTGTTGGACAGTCTTCTTGTATTGAGCTGAAATCCAATTCAGTTCCAATCACACTGTTCTCCAGGGTGCACATAAATATATGGTGAATGTATTATTTAGTTTCAATTTCTAA
GGGTGACGTAATGGGACTGACAACCTGTGAGGAAGGACATAACTCGACTTATAGGTTAAGGTCAGGTTAGTGTGACAAGAGGTTCCACGCTGATTTATATACCCTTTACATAAATAAATCAAAGTTAAGATT 44,415
PSEN2 >

ATATCCTTTATTTGTCATTTGTTCTCGAATTTGATTTATTTCTGTTCCCTTTTCTCTTGACTTGTCAAGTACTTCAAGCATTTTATTTGACTAAAAAACTCAACACAATTTCTGCTGCTTTCTTATAGTATGATA
TATAGGAAATAACAGTAACAAAGGCTTACATAAATAAGACAAGGGAAAAGAGAACTGAACGAGTTCATGAAGTCGTAAGTAAACCTGATTTTTGAGTTGTGTTAAGACAGACGAAAGAAATACATACTAT 44,550
PSEN2 >

TTTTCATTTTTAGGAAGTACACATTATCAAACCCATAAGAACTAAATTTTTTAAAGAGGGGAAAAAGACAAGGTCAGGAGGCTGAGGTTGGGAGGATCGTTGAGCCAGGAGTTCCAGACCAGCTGGGCAA
AAAAGTAAAAATCCTTCACTGTGAATGATTTGGGTAATCTTGTATTTAAAAAATCTCCCTCTTTCTGTTCCAGTCTCCGACTCCACCTCTTAGCGAACTCGGGTCTCAAGCTCTGGTCGGACCGCTT 44,685
PSEN2 >

CAGAGTGAGACCCTGTCTACAAAACACCACCACCAACAAAAAATAAGTTGGGCATGGTGGCACATGCCTGTGGCACATGCCTACTCAGGAGCCTGAGGTTGGGAGGAGTCACTTGAGCCCAAGAGGTCG
GTCTCACTCTGGGACAGAGATGTTTGGTGGTGGTGGTGGTTTTTTTTTAAATCAACCGTACCACCGTGTACGGACACCGTGTACGGATGAGTCTCGGACTCCACCTCTCAGTGAACCTGGGTTCTCCAGC 44,820
PSEN2 >

AGGCTATTAGTGAGCCATGATCACACCCTGACTCCAGCCTGGGCAACAGAGCAAGACCCCATCAAAAAAGAAAGTTTTAGATGTATACAATAACTAAGTATTTTCCCTCGAGGAATTTGATAACAAGTTG
TCCGATAATCACTCGGACTAGTGTGGTGGTGGTGGTGGTTTTTTTTTAAATCAACCGTACCACCGTGTACGGACACCGTGTACGGATGAGTCTCGGACTCCACCTCTCAGTGAACCTGGGTTCTCCAGC 44,955
PSEN2 >

TCTTTTATAGCTCTAGTAGTATTGCTGTAAAGCTATAAAAGTACCTCTGGCTTTTGCCTAAGTGTAGTGTCTGCTCTCTCTGCTCTCCATAGCAGCACATTGTTAACTGTTTCTTACCAGTAGCACTA
AGAAAATATCGAGATCATCATAACGACATTTTCGATATTTTCATGGAGACCGAAAACGGGTTTCACATCATCACAGACAGAGAGAGACAGAGAGGATCGTCTGTAAACAATTGACAAAAGAAATGGTCATCGTGAT 45,090
PSEN2 >

CTTTCATTACTTTTATGACTCATTGTCTCCCTATTTAGTAAACAAAGTATACAGCCACTAAAAGCAAGTAGCTGGGCTATTCACAGCAGCTTCTCCCCATACACTGTGGTAGTTCCTAACTACAATCTGTTTG
GAAAGTAATGAAAATACTGAGTAAACAGAGGGAATAATCATTGTTTTCATATGTCGGTGATTTCCTGTTTTCGACCCGATAAGTGTCTGCGAAGAGGGGGTATGTGACACCATCAAGGATTGATGTTAGACAAAC 45,225
PSEN2 >

TGTCCAATAGCAGTTCCTAGTGATGCAAAATAGTACTTCCATTTAAACAATTTTCATTATAGCCAATTTCTAGTTCTGAAAATACCACTGGAAGAAAAACACTTGAGTTCTCAGTATGGTTTGACCAATATAGCTTG
ACAGGTTATCGTCAAGGATCACTACGTTTATCATGAAAGGTAATTTGTTAAAGTAATATCGGTTAAGATCAAGACTTTTATGGTGACCTCTTTTGTGAACTCAAGAGTCATACCAAACTGGTTATATCGAAC 45,360
PSEN2 >

GAACTATCACTTTCCTTGTCTGAACATTATACTTCACTAGTTTCAGCTCGAGATCTCATTATTTGGGTAACCTGCATTACCTATACCTGCTTGTGGAGTTTGTCTCCAACCAATTAATTTTCCCTACAATTTCT
CTTGATAGTGAAGGAACAAGACTTGTAAATGAAGTATCAAGTCAAGTCTAGAGTAATAAAACCCATTGACGTAATGGGATATGGACGAACACCTCAACACAGAGTTGTTAATTTAAAGGGGATGTTAAGA 45,495
PSEN2 >

GCTATACATCAGCAGTGTATTTTGGAGCCACGTGAAAGGAACTATACTTACATCTGTTCCAGTTCATCTGTTTAGGCTGGCTCGTTGTCAGCCTGTGACAATCATCTGGAGTGGCGATCATTCTCCTTC
CGATATGTAGTCTGCAACATAAAACCTCGGGTGCACCTTTCCTTTGATATGAATGTAGACAAGGTCAAGTAGACAAATCCAGACCAGACCAAGTGGACACTGTTAGTAGACCTCACCCTGATGAAGGAAAG 45,630
PSEN2 >

AGCCCATGTCTCTGTGAAACTGATAAACCTGCCTTAGAGCAGCACTTTCCAACAGAATGTTCTGTGAACATGGAATAATACAGATCTATGCTGTCCAATATGGTAGCCACTAGCCACATGCAAGTTTGGAGCA
TCGGTACAGGAGACACTTTGACTATTTGGACGGGATCTGCTGCGTGAAGGTTGCTTACAAGACACTGTACCTTTATATGGTCTAGATACGACAGGTTATACCATCGGTGATCGGTGACGTCACAAAACCTGCT 45,765
PSEN2 >

CTTGAAATTAGGCTCATGCAACTGGGAACCTTAATTTTAAATGCTTTAATTTTAAATTAATTTAAATAATCCCATATGGCTAATAGATATCATACTGGACAGTGTCTGAGCTAGATGTTTACCTGAAATGCAAG
GAACCTTAAATCCGAGTACGTTGACCCCTGAATTTAAATTTAAACAGAAATTTAAATTTAATTTAAATTTATTAGGGTATACCGATTATCTATAGTATGACCTGTACAGCATCGAGATCTACAAATGGACTTTACGTC 45,900
PSEN2 >

GTAATAATTTAAGTAGAACAGGGACCTGCTTCTGTCCTGGAGTCCAACTCTGGACTGGGGATGGCCATTCAGGATTATCAACCACCTGTGTTTATAAATACTCGGTGCACAATTTTATCCACCAGCGTATA
CATTTTTATAATTTATCTTGTCCCTGGACGAAGACAGGGACCTCAGGTTTGAAGCTGACCCCTACCGGTAAGTTCCTAATAGTTGGTGGACACAAATATATTAGGCCAGGTGTTAAATAGGTGGTGCATAT 46,035
PSEN2 >

TGAGTATCAGTGAAGGACTTTGTCAAATGCCTTGTAAGAAAGCAAGATGGCCCTAGAAATATGTGGCACTGCCCTGCTCTACCAGCCTCATGATTTTTTTTTCTAGAAAATAGGGTGTGTTTTTTTTCTATTTGT
ACTCATAGTCACTTCTGAAACAGTTTACGGAACATTTTTCGTTCTACCGGATCTTTATACACCGTGACGGGACAGAGTGGTGGAGTACTAAAAAAAAGGATCTTTTATCCACACAAAAAAAAGATAAACA 46,170
PSEN2 >

AGAAGTCATACATACCTACTGTGGCAAATGCGAGAAAGTACCTAGAGGAAATTAACAATGACCAAAATTTCTGCCATCTTGAGATAACTACTGTTAAACATTTTCAGCATTTTTCTTTTTCAGCTTTTTTCTGTGTTG
TCTTCAGTATGTATGGATGACACCCTTTACGTCCTTTTCATGGATCTCCTTTAATTTGTTACTGGTTTTAAGACGGTGAAGTCTATTGATGACAATTTGAAAGTGTAAAAAGAAAGTCAAAAAAAGACACAAAC 46,305
PSEN2 >

GTATTTTTACATCACTGAAATCATACCTTCTCTGTTACCTCCTGTTTTTTTTAATTTAAAAAATTTAAAAAATTTAATCGACAAAAATATATATGTTTATCATGTACAACATGCTGTTACACTGTGGAATGG
CATAAAAAGTGTAGTACTTTAGTATGGAGAGACAATGGAGGACAAAAAATTTAATTTTTTAAATTTTTTAAATTTAGCTGTTTTATATATACAAATAGTACATGTTGTACGACAATGTGACACCTTACC 46,440
PSEN2 >

CTAAATCAAGTTAATAAGCACACACTTACTTACATATATATCATTTTTTGTAGTAAAGGACACTTAAACCTACTCAGCAATTTTCAGTACAATAAATGTTATTAACTGTAGTTACATAAACCAAAAAATAAA
GATTTAGTTCAATTTTCGTTGTGTGAATGAAGTGTATATATAGTAAAAAATCATCTTCTGTTGAAATTTGGATGAGTCTGTTAAAGTCAATGTTATTAAACAATAAATGACATCAATGATTTGGTTTTTATTT 46,575
PSEN2 >

ATTCTAAGGCCCTGCAACCATCTGAAAGGATCCCTCCTCCTGGCTAGGGCATTCCAAGTTAGCCTAAAAACTGGTTCAAGCCATGATGGGAAAGGAGGGTCGGACATCGCTCATTATACTCTTTCGCTTTGGG
TAAGATTCCGGGACGTTGGTAGACTTTCCTAGGGAGGAGGACCGATCCCGTAAGGTTTCAATCGATTTTTGACCAAGTCCGGTACTACCTTTCTCCAGCCTGTACGGAGTAATGAGAAAGCAGGAAACCC 46,710
PSEN2 >

ATTTCAAGAAAAGCTGACGAGCATTAAACATCAACACAGGACCTTAAGTCCGTAAGAAACATTTACAATCTCTCTCTGTGAAGCTTCAACCTGAAGGCTTCACTGATGATCAAACTTTGGTCTCCACAAC
TAAAGTCTTTTTCGACTGCTCGTAAATTTGATGTTGTCTGGAATTCAGGCGATTCTTTGTAATGTTGAGAGAGACACTTCAAGCTTGGACTTCCGAAGTGGAGCTAGTGTGAAACAGAGGTTGGGA 46,845
PSEN2 >

CCCTTATCATAATCCAGACATTTCTTCTATTCAATAAATCTTTCAACCAATTTGCAACCAATGCAAAAGTTTTAAATCTACATAGAACCTAGAATTTCCCTCACTTCAAATTTGCCACCTTTCTGGACTGAAGCAA
GGGAATAGTATTAGGTCGTGAAGGAAAGATAAGTATTTAGAGAAAGTTGGTTAACGGTTAGTTTTCAAATTTAGATGTATCTTGGATCTTAAAGGGAGTGAAGTTAACAGGGTGGAAAGACTGACTTCGTT 46,980
PSEN2 >

TGTATATCTTACATTTTATGCTCATGTCTCTAAAAATGTATAAAGAGGTTGTGCCCCGACCCCTGGGGACATGTTCTGAGGGTCTCTGAGGGCTGTGCTTGGGCTATTGGTCACTCATATTTGGCTCAG
ACATATAGAAATGAAAAATACAGAGTACAGAGATTTTACATATTTCTTCAACACGGGGCTGGTGGGACCCCTGTACAAGACTCCAGAGGACTCCGACACAGAACCCAGTAACAGTGAATATAAACCGAGTC 47,115
PSEN2 >

GATAAATCTCTCAAATATTTTACAGAGTCTGACTCTTTTTGTCCACAACCCATGTTGTACAATAGATCTCTGAACTCATCCGCTTATCTAACTGAAATCTGTATCCTTTTACTAACCTTTTCAACCTT
CTATTTAGAGAAGTTTATAAAATGTCTCAGACTGAGAAAAACAGGTTGTTGGTACACCATGTTATCTAGAGAACTTGAAGTGGGCAATAGATTGACTTTAGAACATAGGAAAAATGATTTGGAAAGGTTGGGA 47,250
PSEN2 >

TGCCCTCCAGTCCCTGGCACCCACCACTCTGCACTCCGCTTCTACGAATTTAATGTTTCTCGTTTGTGTTTTGTTTTTTTTCTGAGATGGCGTCTCACTCTTGTGCCCAGGCTGGAGTGCAATGGTG
ACGGAGGGTCAAGGACCGTGGTGGTGAAGCTGAGGCGAAGATGCTTAAATTACACAAAAGAGCAACAAACAAAAAAGACTCTACCAGAGTGAAGAACACGGGTCGACCTCACGTTACCAC 47,385
PSEN2 >

CGATTTGGCTCACTGTGGCCTCTGCTCCCGGGTTCAAGCGATTCTCCTGCCTCAGCCTCCCATACCAAGTCAACTTTTTAGATTCCAGGTGAAGTAAAGATCATGCAAGTGTCTGCTTTCTGTGCTGCTGCTTA
GCTAAACCGAGTGACACCGGAGACGGAGGCGCAAGTTGCTAAGAGGACGGAGTGGGAGGGTATGGTCAAGTTGAAAAGTCTAAGGTGCACATTCATTCTAGTACGTCACAGACAGAAAGACACGGACCGAAT 47,520
PSEN2 >

TTTCACTTAATAATGCCTCCAGGTTTCATCCATGTTGTTGGAAATGACAGGATTTCCCTCTTTTCAAGGCTGAATAGTATCCATTGTGTGTATATCCACAGTTTCTTTATCCATTCATGCACTGATGAACA
AAAGTGAATTATATTACGGAGTCCAAGTAGGTACAACAACCTTTACTGTCTAAAGGAAGAAAAGATTCCGACTTATCATAAGGTAACACACATATATGGTGTCAAAGAAATAGGTAAGTACGTGACTACTTGT

47,655

PSEN2

CCTAAGTTGATTCATTTTTGGCCATTGTGAATAATGCTGTAATGAATGTGGGAGTGCCGATATCTCTGGACATACTGATTTCATTTTCTTTGTATGTTATATATTATAGTAGCGGAATTGCTGGATCATATG
GGATTCAACTAAGGTAACAAACCGGTAACTATTACGACATTACTTACACCTCACGGCTATAGAGAACCTGTATGACTAAAGTAAAGAAACATACACATATAAATATCATCGCTTAAACGACCTAGTATAC

47,790

PSEN2

GTAGTCTGTTTTAATTTCTGCTTTTTATTTTTCTTATATTTTTAAAAATTTAAGAATTTTTATAAGTATTTCTTACATTATTAATACTCTTTGAAAAAATCTTGAAGGCTGTATCAATGGTTAATAATT
CATCAGGACAAAAATTAAGACGAAAAATATAAAGAAATATAAAATTTTAAAAATCTTAAAAATATTCATAAAGAAATGTAATAATTTATGAGAACTTTTGTAGAACTTCCGACATAGTTACCAATTTTAA

47,925

PSEN2

TGCATAGCAATCCCTGTTGCTGTACTTTACGCTTGTATCTAAGTTTTGCTATTACAAATAAACTGTGCTGAATATCTTCTTGTACAAAAAATCTTCTGAAAGGTTATTAATAAAGTAAATATGAACA
ACGTATCGTTAAGGGGACAACGACATGAAAGTCGAACATAGATTCAAAAACGATAATGTTTATTTGACACGACTTATAGAAGAACATGTTTTATTGAAGGACTTCCACATAATAATTTTGTATCTTACTTGT

48,060

PSEN2

TTGTTGAGGCTAACTCTCTGAAAGAGGAAATAAGTTATCCTGGACCACATGCTGGCTCTTAGTGGCAATTCTTCCCTTCTGAATATCAAGGCCACCCATTTTCATCCTCTCTTTAGCCACTCATCCATA
AACAACTCCGATTGAGAAGACTTCTCCTTTATTCCAATAGGACCTGGTGTACAGCCGAGAATCACCGGTTAAGAAAGGGAAGACTTATAAGTTCCGGTGGTAAAGTAGGAGAGAAAAATCGGTGAGTAGGGTAT

48,195

PSEN2

TTAATGTCAAGCTCACCTTAATAATACTTTTTAGATCTAATTTCTTAGCCTTTTTGAAATCAGGAAGACATTGCCTGCCTCGTCAGTCTTCCAGCAATATTTCTGTTCAATGAAGGTTTCTAAAAATGAAGTCT
AATTACAGTTCGAGTGAATATATGAAAACTAAGATTAAGAAATCGGAAAACTTTTAGTCTTCTGTAAACGGACGGAGCAGTCAGAAGGTCGTTATAAAGACAAGTACTTCAAAGAATTTTACTTCAGA

48,330

PSEN2

CCTGATCTGTGAGCTCCCTCAGTAGCCTTGAATATGACATTTACAGGTCAGAAGACCTGAGTGTCTGAGGCAGCAGGGTCTTCTTACTGCCTCCTCTGCTGCTGGAGCTTCAATTTCTTTCCAATAGT
GGACTAGACACTCGAGGGAGTCATCGAACTTATACTGTAATGTCCAGTCTTCTGACTCAACAAGACTCCGTCGTCACGAAAGAAATGACGGAGGAGACACGAACTCGAAGTTAAGAGAAAGGTTATCA

48,465

PSEN2

GCTCTCACTTTCCACCTGACCGTAATCTCTTAATAAGGAAACCACAGGAGTGTGTGGCAGAGAAATCAGCGCTGGGCAAACTCATGCTCTCCTCTACTTCCAGGCACACAGCTGGGGGACATCTCC
CGAGAAGTTGAAAGGTTGGGACTGGCATTAAAGAGAAATATTCCCTTTGGTGTCTCACACACGCTCTTATAGTCTGCGACCCGTTTTGAGTACGAGAGGAGATGAAGGTTCCGTGTGCGACCCCTGTAGAGG

48,600

PSEN2

CAGACTCCCCTGCAGCCAGCTGTGGCTATGTCATTGAGGGCCAGCCAGTGAAGCGTGGGCAGAAGTGATGTGTGCCTTGCCTGGCCTGATTAAGACCCCGCATGGAGTGGAGACGACACCAGGGCGACCT
GTCTGAGGGGACGTGGTGCACACCGATACAGTAACCTCCGGTGGTCACTTGCACCCGCTTCTACTACACAGGACGGCCGGACCCGTAATCTGGGGGCTACCTCACCTCTGCTGTGGTCCCGCTGGA

48,735

PSEN2

TGGAAGTGGCATGATGAAGAGACCAGAGCTTTTGGGAGCAGTAGTGCAGGAGGAGGACCTGCTGAACCACTACTCCCGACAGTTGTGTTGGATTGGAGCTGTTTTCTTTGCCACTCTGGGCTCAT
ACCTTACCCTACTACTTCTCTGGTCTCGAAAAACCTCGTCATCACGCCCTCTCTCTGTCGACGACTTGGTGAAGTGGAGGGCTGTCAACACAACTAACACCTGGACAAAAGAGAAACGGGTGAGACCCGAGTA

48,870

PSEN2

TTGCAATTATAACCTCGTTGCTTCTGCTTGAAGTATCTTTCTTTGCTTGGATCATGGATCAAGCATGCGTAATTTTTCTCAAATACCTTGGGATCTTCTTCTAAGTCTTGGTACAGAGTCCAGCTGTCC
AACGTTAATATTGGAGCAACGAAGCAAACTCGATAGAAAGGAAACAGAACCTAGTACCTAGTTCGTACGCATAAAAAGAGGTTTATGGAACTTAAAGAGAGGATTGAGAACCATGTCTCAGGTCGACAGG

49,005

PSEN2

CAGGCTCCTGGATGACAGGGAGCTTTCTCTCACTCTCATCTGACCAACAGGTTCCCTAGCGGTACATAATTAGATCCAAAATGGTGTCTTCTTTATCATTTTCTCTGCTTTCTGAGAAATGGAATTTGCATTT
GTCCGAGGACTACTGTCCCTCGAAAGAGAGTGAAGTAGACTGGTGTCCAAGGGGATCGCATGATTAATCTAGGTTTTACCAGAGAGAAATAGTAAAGAGACGAAAGACTTTTACCTTAAACAGTAAA

49,140

PSEN2

TGGCAAGAAATTTGGCAGAAATTTGATTTTCAAGATTTAATACAATTGAGAAAAACCATTCATAACCACTGCTGCTGGTACGTAATGAAGGTAGATCTTCCGCAATGGAACATCTTCTCTGCAACTTGGTGGGT
ACCGTTCTTAAACCGTCTTAAACATAAAGTCTAAATTTATGTTAACTCTTTTTGGTAAGTATTTGGTGTCAACAGACCATGCATTACTTCCATCTAGAACGGCTTACCTTGTAGGAGAGAGCTTGAACCAACCA

49,275

PSEN2

TTGAATGGCTGAGTTTGGCAGAAAGGATGGTAGAGAAATAGTAGCTCTACAGAAATAATGGGAAGGATTTGGAGTCTGGAAGCAATATAAAGGGAAGGGTAAAGAGGAGAGATGGGAAGATGAGGAGCCA
AACTTACCGACTCAAACCGTCTTCTTACCATCTCTTTATCTACTGAGATGCTTATTTACCCCTTCTTAAACCTCAAGACCTCGTTATATTTCCCTTCCCATTTCTCTCTTACCCTTCTACTCTCTCGGT

49,410

PSEN2

GCTGGATCACTCTGTAAGGGGAGCTAGCCTAAAATCCTAATGGGACCGGATGGCTCAAGAGCTTTTGGAAACTGCTGGTCCAATATTTTCAATTTGAAGTTGTTGAGTAGATCTCTCCACTCCCTGAGGGGTTG
CGACCTAGTGAGACATTTCCCTCGATCGGATTTTAGGATTTACCCTGGCTACCGAGTTCTCGAAACTCTTGTGACCACAGGTTATAAAGTAACTTCAACAACCTCATCTAGAGGAGGTGAGGGGACTCCCAAC

49,545

PSEN2

GTGCCAGGCTGGACAGGGACAGCACACAGATGGTGAAGACGCCACAAGCTGAATTTCTCCACTTGCAGAGGCTGAGAACCAGCGATGACTGTAATGTGAGTCTCTGCCGCTTCTGCCCTGGCCTCCCTCTG
CACGGTCCGACCTGTCCCTGTCTGTGCTTACCCTGTGCGGGTGTTCGACTTAAAGAGGTGAACGCTCTCCGACTTGGTCTGCTACTGACATTTACTCTAGAGACGGGCGAAGACGGGACCGAGGGAGGAC

49,680

PSEN2

AGAAGTGGCCAGACTTTTGAAGGAGAAATTTAGACTTCAAAGGGTGGAGAATAGAAGTTTATCCAGTCTTATCTAGGGAAGCTCCGCTGACATCCAAATACATAATAAACACGGCCAGTAAAACTACTGCT
TCTTGACCGGTCTGAAACTCCTCCTTAAATCTGAAGGTTTCCACCTCTTATCTTCAAAGTAGTCAAGAAATAGTCCCTTCCGAGGCGACTGTAGGTTTAAATGATATTTTGTGCCGCTCATTTATGATGACG

49,815

PSEN2

TACTACTATCATAAAAATAAATAAGGAATTAAGTAGATAGGTCAGGAATTTGGCCCTTAAAACTGAGGCCAGAGAGATTACACAGTGTGCCTCAGGGATGTTTTGCTCTGTTCTCAGGTTATCTGGCTCCTA
ATGATGATAGTATTTTATTTTATTCTTAATTCATCTATCCAGTCTTAAACCGGGAAATTTGTGACTCCGGTCTCTCTAATGTGTCACACGGAGTCCCTACAAACGAGACAAGAGTCCAATAGACCGAGGAT

49,950

PSEN2

TTCTTGTGCTCCTCAGTCTTGCCTGGGAGAGAGTGCAGTGAGCAGGGTAGCTCCTCACCCCTCTCCTCAGGTACCAAGTGTCTCTG66CCCTCAAGGCTCAGCTTCCCTCCGAGCTCCTGCAGGGGCT
AAGGAACACAGGAGTCAAGAACGGACCTTCTCTACGTCACCTGTCATCGAGGAGTGGGGGAGAGGATCCATGGTCCACGAGGACCCGGAGTTCCGAGTCTGAGAAAGGAGGCGTCAAGGACGCTCCCGA

50,085

PSEN2

GCGGGTCTTTCCCGTACTGTTACCTCTTGAGATCTGATAGTTTTATAAAGGGAGTTCTGCACAAGCTCTTTGCTGCCTCATGTAAGACATGACTGCTTCTCATTGGCCCTCCACCATAATTGTGAGGCCT
CGCCAGAAAGGGCATGACAAGTGGAGAAGCTCTAGACTATCAAATATTTCCCTCAAGACGTGTTCCGAGAAAACGGACGGGAGTACATTTCTGACTGACGAAGAGTAAACGGAAAGTGGTATTAACACTCCGGA

52,785

PSEN2

TTGACCCATGTGGAAGTGTGAGTGCATAAAACCTTTCTTTATAAATTACCCAGTCTCGGTAGCAGCGTGAGAACAACTAATAGAGGGACCACCCTAGAGCTGGGTGAGACCAATGCCACTCAAATTG
AACGTCGGTACACCTTGACACTCACGTAATTTGAGAAAGGAAATTTAATGGTTCAGAGCAATCGTGCACCTCTGTTTGTATATCTCCCGTGGTGGGATCTGACCCACTCTGGTTACGGTGAGTTAAC

52,920

PSEN2

ATGGTACTACACAATGGGGAGGAGAATGGGTGATAAACATTCCCAATGCTACCACACCTTGGTAGCCATTTAAACTTTTTTTTTATTTAAAGCGTACTGTCTAGGTTTAAAGTACTGTAAGAGATATAAAGAT
TACCCTGATGTGTTACCCCTCTCTTACCCTACTTTGTAAGGTTACAGATGGTGTGAACCATCGGTAATTTGAAAAAAAATAAATTCGCATGACAGATCCAAATTCATGACATTCTCTATATTTCTA

53,055

PSEN2

ACACAGTGCACAATCTATTAGATATAAAAAGACAAGCTGACAAATAACTACAATACACTATTATAGGTGTAATGTAATAAGTACACATGTAATGCTAAAAACGAGTACAGTAAATGTAAGGAGAGAGACAGA
TGTGTCAACTGTTAGATAATCTATATTTCTGTTGACTGTTTATGATGTTATGTGATAAATCCACATTACATTTTTACTGTGTACATTTACGATTTTGTCTCATGTCAITTACATTTCTCTCTCTGTCT

53,190

PSEN2

TTGTTCTGAGGTGATCAGAGAGGTGTCGCATAGCAATAACTGGAATTAGGCTTAAAGAGTGAAGTGGATTTTAAATTATTATATGGAGGCAGGGAGCTTAAAGAGTAAAGCCAGAGGCAGAAAGCCA
AACAAAGACTCCACTAGTCTCTCCACAGCGTATCGTTTATGTGACCTTAATCCAGAATTTCTACACTCACCTAAAATTAATAATATACCCTCCGTCCTCCGAAATTCATTTCCGGGTCTCCGCTTTCCGGT

53,325

PSEN2

AGGGAAGAGTTGGAGAAATGGCCAGGTAAGTTGGAGCACAAGTCTAGAAAGTGTGCTGAAGGCAAGAAATGTTCCCAATACAAAGATATCTCAGAGTTCAGATAACACCTGAGGAAGTGGATAATAAAGT
TCCCTCTCAACCTCTTACCGGGTCCATTCAACCTCGTGTCAAGATCTCAACGACGATTCGGTCTTTACAAAGGGGTTATGTTCTATAGAGTCTCAAGTCTATTGTGGACTCTTGATCTATTATTTCA

53,460

PSEN2

CAGGGTGCAGAGTGAATATGCTTTATTTCTCCCATAAAGAAACCTGGCTTAAAGCCTCCATTTACCTGATTAGTGGGAAATTCAGTATCTCCTTCGTGGGGCTCCCCCACTCTTGTGTTCAACCCACGCTT
GTCCACGTTCCACTTATACAGAAATAAAGAGGGTATTTCTTTGGACCGAATTCGGAGGTAATGGACTAATCACCTTTAAGTCATAGAGGAAGCACCCGAGGGGTTGAGGAACACAAGTTGGGTTGCGAA

53,595

PSEN2

TACACAGTCCAAAGAGGGAGCAGGGCCAGTCTGACTTTCACATGCAGGCAGAGGCCACTGGTCTCTTGTGAGTCTGGTGGACAACACGCATCCCAGGTCCTGTGGCTTCTCAGGGAGCAGTATCACTCATG
ATGTGTCAGGTTTCTCCCTCGTCCGGTCAGACTGAAAGTGTACGTCGCTCTCCGGTACCCAGAGAACAGTCAAGCACCTGTTGTGCGTAGGGGTCAGAGACACCGAAGAGTCCCTCTGTCATAGTGAGTAC

53,730

PSEN2

TCACTTTGAAGTGGTCTGAGTGTTCCTTTTCAGGATCCAGGGCCATTATCTCAGAGCTCTGCCCTTCAGTTAAATTCAGTTTCCCATTGCAAGTCACTCGCTGTCCCAAGGACTTTGGATAAGAAGTAGC
AGTGAACCTTGAACAGCACTACAAGGAAAGTCTAGGTCCTCGGTAATAGAGTCTCGAGACGGGAAGTCAATTTAAGTCAAAGGGGTAACGGTTCAGTGAAGCAGAGGGTCTGAAACCTATTTCTCATCG

53,865

PSEN2

TTGGGATATCCATGTGGATGCAAGATTTCTTTTATTTATTTATTTAGAGACAGTGTCTCACTCTGATGGAGTGCAGTGGTATGATCCCAGTCACTGTAACCTCTGCCTCCTGGGTTCAAGTATTCTCTG
AACCTATAGGTACACCTACGCTTTAAGAAAGTAAATAAATAAATAAATCTCTGTACAGAGTGGAGTACCTCACGTCACCATACTAGGGTCGAGTGCATTTGAGACGGAGGACCAAGTTCACTAAGAGGAC

54,000

PSEN2

CCTCAGCTCCTAAGTAACTGGGACTATAGGTGCCCGCCAGCATAACCCAGCTGATTTTTATTTGTAGTAGAGATGGGCTGGCTCATCTGCCAGGCTGGTCTCAAACCTCTGACCTCAGGTGATCTCCACC
GGAGTCGGAGGATTCATTGACCTGATATCCACGGCCGGTGTATGGGTGACTAAAAATATAAACATCATCTCTACCAGCCGAGTAGACCGGTCGACAGAGTTGAGGACTGGAAGTCCACTAGGAGGGTGG

54,135

PSEN2

TCAGCCTGCCAAAGTGTGAGATTACAAGTGTGAGCCACTGCGCCTGGGCTGGATGCAAGATTCCTATCCTCTGTTCTCCTGGGATCCACCGCACCCAGAAAGTGGGAGATTTTCTTGTGGCTGTCCCC
AGTGGACGGTTTACGACTCTAATGTTACACTCGGTGACGCGGACCCGGAACCTACGCTTAAAGGATAGGAGACAAGGAGGACCCTAGGTGGCTGGGCTTTTACCCTCAAAGGAAACGACGACAGGGG

54,270

PSEN2

CAACCCCTATGGGCTTCCCTTTGTGCACCTTTCTGGCCACACATACCCCTGGGGTCTGTTGGGTTGGAGGCACCTCTCTGAAATGCTTGGCATCTTTCTGGTGAAGGAAAGAAAAATAAACCCAAA
GTTGGGGGATACCCGAAAGGGGAAACAGTGGGAAAGGACCGGTGTGTATGGGGGACCCCAAGCACCCACCTCCGTGGAGAGACTTACGAACCGTAGAAAGAGACCAAGTTCCTTTCTTTATTTGGGTTT

54,405

PSEN2

GTTCAGACCACTGGGACATTTACTTACTTGGATTTATAGTCCACGCTCTTAGTCTCTTCCAGGATTGCTTATTTACCCAAGGGAGCCAGGCTCCTGTGCTCTTTTATAAATTTTATATTAACAT
CAAGTCTGTGGTACCTGTAAAGATAAGATGAACCTAAATATCCAGGTGCGGAGAATCAGAGAAGTCTAACGAATAAAGTGGTTCCTCGGTCCGGGAGGACAGAGAAATAATTTTAAAGTATAATTGTA

54,540

PSEN2

TTAACTTCTTGGTCAATGGCAAAATCTGTGCTTAGTCTGCTCACCTTGAAGTTGAAATCTTTTATTTGACGCACTTAGACCTGCCTTGTGGCATTTCCTGCCACAGCAGGCTCTGAACTAAGTCT
AATTGGAAGAACAGTAAACGTTTATAGACACAGGAATCAGACAGGAGTGAACCTCAACTTAAAGAAATAAACGTCGGTGAATCTGGGACGGAACCTACGTAAGGACGGGTGCTCGGAGACTTGATTCAGA

54,675

PSEN2

TGCTGCTGTTTTGGACACATGGTACTCTCTTCTGAGATGGAGTCTCGCTTTGTCGCCAGGCTGGAGTGCAGTGGCAGGATCTGGCTCACTGCAACCTCTGCTTCCAGGTTCAAGTATTCTTCTACCTC
ACGACAGACAAAACCTGTGTACCACTGAGAGAAAGACTCTACCTCAGAGCGAAACAGCGGGTCCGACCTCAGCTACCGTCTAGAACCGAGTGACGTTGGAGACGAAGGGTCCAAGTTCACTAAGAAAGTGGAG

54,810

PSEN2

AGTCTCCGAGTACTGGAAGTGCAGGCGATGCCACCACCCAGCTAATTTTTGATTTTTAGTAGAGATGGGTTTACCATATTGGCCAGGATGGTCTTGAACCTCTGACCTTGTGATCCGCTGCCCTCG
TCAGAGGGCTCATGACCTTACGTCGCGTACGGTGGTGGGTCGATTAATAACATAAAATCATCTCTACCCTCAAAGTGGTATAACCGGCTTACCAGAACTTGAAGACTGGAACACTAGGCGGACGGAGCC

54,945

PSEN2

CCTCCAAAGTGTGGGATTACAGGTGTGAGCCACTACGCCGGCCAGTACTCTTTTCTAAACTCCCTTCAAAATTTGCTCTCTTACCCTGCTTCTGTATACTACAAGGAAAGTGGGTAACAGATTGTC
GGAGGGTTTACGACCTAATGTCCACACTCGGTGATCGGGCCGGTCACTGAGAGAAAGATTTGAGGGGAAAGTAAACAGAGAGAAGTGGGACGAAGACATAGAGTTCCTTACCCTATGCTAACAG

55,080

PSEN2

GGAATTAAGCTCGGCTCATGGTTGACGCTTCTCGCTGTTGCTGCTTCTAGTTTAAACCTTGGGGTCCAAATGTTGAAATTACTCCAAACTTGGTGAATTAAGAAACAAGTATCCAGTACTGCTGTA
CCTTAATCCGAGCCAGTACCAACGTCGAAGAGCGGACAAACGACGAAGAGATCAAATTTTGAACCCCAAGGTTTACACCTTAAAGAGGTTTTGAATCCACTTAACTTTGTTTATAGGTTCACTGACAGACT

55,215

PSEN2

GGGAGAACAAAGTAAAATACATATTTCAGCAACTAGGCAAGTAGGATGGCTTCCCAATACAGTAGAGCATTTAAGAACTGGAGAAATGGGGTCTGGAGAAATGTATATTCTGTTGATTTGGGGTGGAGAGTTCT
CCCTCTTGTTTCATTTTATGTATAAGTCGTTGATCCGTTTCATCCTACCGAAGGGGTTATGTCATCTCGTAAATCTTGACCTCTTACCCACGACTCTTCTTACATATAAGACAATAAACCCACCTCTCAAGA

55,350

PSEN2

GTAGATGTCTATTAAGTCCGCTTGGTGCAGAGCTGAATTCATTCCTGGGTATCCTTGTAACTTTCTGTTTCGTTGATCTGTCTAATGTTGACAGTGGGTGTTAAAGTCTCCATTATTATTGTGGGAGTC
CATCTACAGATAATTCAGGCGAACACGCTCTGACTTAAGTTAAGGACCCATAGGAACAATTGAAAGACAAGCAACTAGACAGATTACAACGTGACCCACAATTTCAGAGGGTAATAAACAACACCTCTCAG

55,485

PSEN2

TAAGTCTCTTTGTAGGCTGTAAAGGACTTGCTTTATGAATCTGGGTGCTCCTGTATTCCGGTGCATATATATTTAGGATAGTTAGCTCTTCTTGTGAATTGATCCCTTACCATTATGTAATGGCTTCTTTGT
ATTACAGAAAACATCCAGACATTTCTGTAACGAATACTTAGACCCAGGAGCATAAGCCAGTATATATAAATCTATCAATCGAGAAGAACTAACTAGGGAATGGTAATACATTACCGGAAGAAACA

55,620

PSEN2

CTCTTTTGATCTTTGTTGGTTTAAAGTCTGTTTTATCAGAGACTAGGATGGCAACCCCTGCCTTTTTTTGTTTTCCATTTGCTTGGTAGACTCTCTCCATCCCTTTATTTTGAACCTATGTGCATCTCTGCAT
GAGAAAACAGAAAACAAATTCAGACAAAATAGTCTGTATCTAACGTTGGGGACGGAATAAACAAGGTAACGAACTCTAGAAGGAGTAGGGAAATAAACTCGGATACAGTACAGGACGTA

55,755

PSEN2

GTGAGATGGGTCTCCTGAATACAGCACATTGATGGATCTTACTATCCAATTTGCCAGTCTGTGCTTTAATTGGAGCATTAGCCATTACATTTAAGGTTAATATTGTTATGTGTAATTTGATCCTGTCA
CACTCTACCAGAGGACTTATGTCGTGTAACCTAGAACTGATAGGTTAAACGGTGCAGACACAGAAAATTAACCTCGTAAATCGGGTAAATGTAATTTCAATTTATAACAATACACACTTAACTAGGACAGT

55,890

PSEN2

TTATGATGTTAGCTGGTTATTTGCTCGTTAGTTGATGCAATTTCTCCAGCATCGATGGTCTTTACAATTTGGCATGTTTTGTCAGTGGCTGGTACCAGTTGTTCTTTGCATGTTTAGTCTTCCCTCAGGA
AATACTACAATCGACCAATAAACAGGACATCAACTACGTTAAAGAGGGTCTGAGTACCAGAAATGTTAAACGTACAAAACGTCACCGACCATGGTCAACAAGGAAACGTACAATCACGAGGAAAGTCTCT

56,025

PSEN2

GCTCTTGAAGGCAGGCTGGTGGTGACAAAATCTCTCAGCATTTGCTTGTCTGTAAGGATTTTATTTCTCTTCACTTATGAAGCTTAGTTGGCTGGATAGAAATCTGGGTTGAAAATCTTTCTTTAA
CGAGAACATTCGTCGGACCACTGTTTAGAGAGTCTAAACGACAGACATTTCTAAATTAAGAGAAAGTGAATACTTCGAATCAAACCGACCTATACTTTAAGACCACTTTTAAAGAAAAGAAAT

56,160

PSEN2

GAATGTTGAATATTGGCCCACTCTCTTCTGGCTTATAGAGTTCTGCTGAGAGATCAGCTGTTAGTCTGATGGCTTCCCTTTGGGGTAACTGACTTTTCTCTGCTGCCCTTAACATTTTTCTTCA
CTTACAACCTATAAAGCGGGTGGAGAGAAACCGAATATCTCAAAGAGGACTCTCTAGTCGAACTCAGACTACCAGAAAGGAAACCCATTGGACTGAAAAGAGAGACGACGGGAATTTGTAATAAAGGAAAT

56,295

PSEN2

TTTCAACTTTAGTGAATCTGACAATATGTTGCTTGGAGTTGCTTCTCGAGGAGTATCTTTGGCGTTCTCTGATTTTCTGAAATTAATGTTGGCCTGCCTTGTAGGTTGGGAAAGTTCTCCTGGATAT
AAAGTTGAAATCACTTAGACTGTTAATACACAGAACCTCAACGAGAGAGCTCCTCATGAAACACCGCAAGAGACATAAAGGACTTAAATTTACAACGGACGGAACGATCCAACCTTCAAGAGGACTATA

56,430

PSEN2

ATCTGTCAGAGTGTTCCTCAACTTGGTTCCATCTCCTCCGTCATTTTCAAGTACACCAATCAGACGTAGATTTGGTCTTTTACATAGTCCCATATTTTTTGGAGGCTTTGTTGGCTTCTTTTTACTCTTTTTTC
TAGGACGCTCACAAAAGTTGAACCAAGTTAAGAGGGGCAAGTAAAGTCCATGTGGTTAGTCTGCATCTAAACAGAAAGTGTATCAGGGTATAAAAAACCTCCGAAACAACCGAAGAAAATGAGAAAAAG

56,565

PSEN2

TCTATACTCTCTTCTGGCTTCAATTAATTCATTTGATCTTCAATCACTGATACCTTTCTTCCAGTTGATCGAATCGGGCTACTGAAATGACCACATAGTTGGAAGTAAAGTACTCCTCAGCAATGTAAGG
AGATATGAAGAGAAACCGAAGTAAATTAAGTAACTAGAAGTTAGTGACTATGGGAAAGAAAGTCAACTAGCTTAGCCGATGACTTTAAGTGGTGTATCAACCTTCAATTCATGAGGAGTCGTTTACATTTTC

56,700

PSEN2

AACGAAATTTATAACAACTGTCTTTAGACACAGTGCATCAAACTAGAATCAGGATTAAGAACTCAAACCGCTCAACTACATGGAACCTGAACAATCTGATCCTGAATGACTACTGGGTACATAACGAA
TTGCTTAAATATTGTTGACAGAAAGTCTGGGTGACGTTAGTTGATCTTGGTCTTAATCTTTGAGTTTTGGCGAAGTTGATGACCTTTGACTTGTAGACTAGGACTTACTGATGACCCATGATTGCTT

56,835

PSEN2

ATGAAGCGAGAAATAAAGATGTTCTTTGAAACCAACGAGAAACAAAGACACAACATACCAGAATCTCTGGGACACATTCAAAGCAGTGCATAGAAGGAAATTTATAGCACTAAATGCCACAAGAGAAAGCAGGAA
TACTTCCGCTTTATTTCTACAAGAACTTTGGTTGCTCTGTTTCTGTTTGTATGGTCTTAGAGACCTGTGTAAGTTTCGTACGATCTTCTTTAAATATCGTGATTTACGGGTTCTCTTTCTGCTCTT

56,970

PSEN2

AGATCTAAAATTGACACCTAACATCACGATTAAAAGAACTAGAGAAGCAAGAACAAACACATTCAAAAGCTAGCAGAAAGCAAGAAATACTAAGATCAGAGCAGAACTGAAGGAAATAGAGACACAAAAACC
TCTAGATTTTAACTGTGGGATTTGATGCTAATTTCTTGATCTCTCGTCTTGTGTTGTGTAAGTTTCGATCGCTTCCGTTCTTTATGATTCTAGTCTCGCTTGACTTCTTTATCTCTGTGTTTTTGG

57,105

PSEN2

CTTCAAAAATTAATGAATCCAGGAGCTGGTTTTGTGAAAAGATCAACAAAATTGATAGACTGTAGCAAGACTAATAAAGAAAGAAAAGAGAGAAGAAATCAATAGACGCAATAAAAAATGGCAAAGGGGATATC
GAAGTTTTTAATTACTTAGGCTCTGACCAAAAACACTTTCTAGTTGTTTAACTATCTGACGATGCTTCTGATTTCTTCTTTCTCTTCTTAGTTTATCTGCGTTATTTTTACCCTTTCCCTATAG

57,240

PSEN2

ACCCTGATCCCACAGAAATACAACTACCATCAGAGAATACTATAAACACCTCTATGCAATAAATAGAAAATCTAGAAGAAATGGATAAATTCCTCCGACACATACACTCTCCCAAGACTAAACAGGAAAGAA
TGGTACTAGGGTGTCTTTATGTTGATGGTAGTCTCTTATGATATTTGGGAGATACGTTTATTTGATCTTTAGACTTCTTTACCTATTTAAGGGGCTGTGATGTGAGAGGGTTCTGATTTGGTCTTCTT

57,375

PSEN2

GTTGAATCTCTGAATAGCCAATAACAGGCTCTGAAATGAGGCAATAATTAAGCTTACCAACGAAAAAGTCCAGGACCAGATGGATTACAGCCGAAATCTACCAGAGATACAAGGAGGAGCTGGTACCA
CAACTTAGAGACTTATCTGGTTATTGTCAGAGACTTTAACTCCGTTATTAATATCGAATGGTTGGTCTTTTCAGGTCCTGGTCTACCTAAGTCTGGCTTAAAGTGGTCTTATGTTCTCTCGACCATGGT

57,510

PSEN2

TTACTTCTGAACTATTCCAATCAATAGAAAA 3'
AATGAAGACTTTGATAAGGTTAGTTATCTTTT 5'

57,543

PSEN2

Feature		Location	Size		Type
		1 ..117,362	117,362 bp	■ →	gene
/note	= gene ENSG00000288674 Protein coding				
		1 ..117,362	117,362 bp	■ →	prim_transcript
/note	= primary transcript ENST00000366779 Nonsense mediated decay				
		1 ..113,672	113,672 bp	■ →	prim_transcript
/note	= primary transcript ENST00000676884 Nonsense mediated decay				
PSEN2		1 .. 57,543	57,543 bp	■ →	gene
/note	= gene ENSG00000143801 Protein coding				
PSEN2-211		1 .. 26,494	26,494 bp	■ →	prim_transcript
/note	= primary transcript ENST00000524196				
PSEN2-217		267 .. 25,903	25,637 bp	■ →	prim_transcript
/note	= primary transcript ENST00000676888 Nonsense mediated decay				
PSEN2-235		334 .. 33,449	33,116 bp	■ →	prim_transcript
/note	= primary transcript ENST00000678835 Nonsense mediated decay				
PSEN2-224		378 .. 51,972	51,595 bp	■ →	prim_transcript
/note	= primary transcript ENST00000677599				
PSEN2-228		378 .. 49,171	48,794 bp	■ →	prim_transcript
/note	= primary transcript ENST00000678233 Nonsense mediated decay				
PSEN2-234		378 .. 48,858	48,481 bp	■ →	prim_transcript
/note	= primary transcript ENST00000678820 Nonsense mediated decay				
PSEN2-219		378 .. 47,872	47,495 bp	■ →	prim_transcript
/note	= primary transcript ENST00000676945				
PSEN2-230		378 .. 33,461	33,084 bp	■ →	prim_transcript
/note	= primary transcript ENST00000678655 Nonsense mediated decay				
PSEN2-237		378 .. 33,461	33,084 bp	■ →	prim_transcript
/note	= primary transcript ENST00000679098 Nonsense mediated decay				
PSEN2-218		378 .. 25,903	25,526 bp	■ →	prim_transcript
/note	= primary transcript ENST00000676907 Nonsense mediated decay				
PSEN2-222		378 .. 25,903	25,526 bp	■ →	prim_transcript
/note	= primary transcript ENST00000677529 Retained intron				
PSEN2-225		378 .. 25,903	25,526 bp	■ →	prim_transcript
/note	= primary transcript ENST00000677748 Retained intron				
PSEN2-229		378 .. 25,903	25,526 bp	■ →	prim_transcript
/note	= primary transcript ENST00000678320				
PSEN2-231		378 .. 25,903	25,526 bp	■ →	prim_transcript
/note	= primary transcript ENST00000678706 Nonsense mediated decay				
PSEN2-221		385 .. 25,905	25,521 bp	■ →	prim_transcript
/note	= primary transcript ENST00000677414				
PSEN2-233		389 .. 28,263	27,875 bp	■ →	prim_transcript
/note	= primary transcript ENST00000678784 Nonsense mediated decay				
PSEN2-216		389 .. 21,077	20,689 bp	■ →	prim_transcript
/note	= primary transcript ENST00000676840 Nonsense mediated decay				
PSEN2-236		417 .. 25,905	25,489 bp	■ →	prim_transcript
/note	= primary transcript ENST00000679088				
PSEN2-215		421 .. 47,406	46,986 bp	■ →	prim_transcript
/note	= primary transcript ENST00000676747 Nonsense mediated decay				
PSEN2-227		429 .. 25,903	25,475 bp	■ →	prim_transcript
/note	= primary transcript ENST00000678021 Nonsense mediated decay				
PSEN2-202		433 .. 25,915	25,483 bp	■ →	prim_transcript
/note	= primary transcript ENST00000366783				
PSEN2-226		433 .. 25,903	25,471 bp	■ →	prim_transcript
/note	= primary transcript ENST00000677880				
PSEN2-209		433 .. 15,385	14,953 bp	■ →	prim_transcript
/note	= primary transcript ENST00000495488				
PSEN2-203		437 .. 25,620	25,184 bp	■ →	prim_transcript
/note	= primary transcript ENST00000422240				
PSEN2-223		444 .. 25,903	25,460 bp	■ →	prim_transcript
/note	= primary transcript ENST00000677596 Nonsense mediated decay				

Feature	Location	Size	Type
PSEN2-213	584 .. 25,903	25,320 bp	prim_transcript
/note	= primary transcript ENST00000676467 Nonsense mediated decay		
PSEN2-210	680 .. 5369	4690 bp	prim_transcript
/note	= primary transcript ENST00000521431 Retained intron		
PSEN2-232	871 .. 25,903	25,033 bp	prim_transcript
/note	= primary transcript ENST00000678776 Nonsense mediated decay		
PSEN2-204	1081 .. 21,161	20,081 bp	prim_transcript
/note	= primary transcript ENST00000460775		
PSEN2-201	1085 .. 25,915	24,831 bp	prim_transcript
/note	= primary transcript ENST00000366782		
PSEN2-212	10,472 .. 25,905	15,434 bp	prim_transcript
/note	= primary transcript ENST00000626989		
PSEN2-224	11,725 .. 48,668	36,944 bp	CDS
▶ 11 segments = 1416 bp			
/note	= coding sequence ENSP00000503673		
/translation	= MLTFMADSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEDPDRYVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPTLCMIVV VVATIKSVRFYTEKNGQL,,IYTPFTEDTPSGQRLNLSVNL TLIMISIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTWNFGAVGMVCIHWKGPLVLQQA YLIMISALMALVFIKYLPEWSA W WILGAISVY,,DLVAVLCPKGPLRMLVETAQER NEPIFPALIS,,SAMVWTVGMAKLDPSSQALQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTGYPGEELEEEEE,,RGV KLG L G D F I F Y S V L V G K A A T G S G D W N T T L A C F V A I L I,,M A S H S C C P G W S A M V R F G S L W L P P G F K R F S C H R C R M E R G M P A D R C Q,,R R G L A V L P R L D L N S W P E V I L P P W P K V L G L Q,,M A S H S C C P G W S A M V R F G S L W L P P G F K R F S C L S L P Y Q F N F R F H V * 527 amino acids = 59.6 kDa		
PSEN2-219	11,725 .. 47,481	35,757 bp	CDS
▶ 12 segments = 1584 bp			
/note	= coding sequence ENSP00000504433		
/translation	= MLTFMADSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEDPDRYVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPTLCMIVV VVATIKSVRFYTEKNGQL,,IYTPFTEDTPSGQRLNLSVNL TLIMISIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTWNFGAVGMVCIHWKGPLVLQQA YLIMISALMALVFIKYLPEWSA W WILGAISVY,,DLVAVLCPKGPLRMLVETAQER NEPIFPALIS,,SAMVWTVGMAKLDPSSQALQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTGYPGEELEEEEE,,RGV KLG L G D F I F Y S V L V G K A A T G S G D W N T T L A C F V A I L I,,F P E P Q D R P K R A V L A K Q M A E W S W P E A S V R G D S K R A P D S R W R H C R M E R G M P A D R C Q,,R R G L A V L P R L D L N S W P E V I L P P W P K V L G L Q,,M A S H S C C P G W S A M V R F G S L W L P P G F K R F S C L S L P Y Q F N F R F H V * 527 amino acids = 59.6 kDa		
PSEN2-201	11,725 .. 25,396	13,672 bp	CDS
▶ 10 segments = 1347 bp			
/note	= coding sequence ENSP0000035746		
/translation	= MLTFMADSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEDPDRYVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPTLCMIVV VVATIKSVRFYTEKNGQL,,IYTPFTEDTPSGQRLNLSVNL TLIMISIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTWNFGAVGMVCIHWKGPLVLQQA YLIMISALMALVFIKYLPEWSA W WILGAISVY,,DLVAVLCPKGPLRMLVETAQER NEPIFPALIS,,SAMVWTVGMAKLDPSSQALQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTGYPGEELEEEEE,,RGV KLG L G D F I F Y S V L V G K A A T G S G D W N T T L A C F V A I L I,,G L C L T L L L L A V F K K A L P A L P I S I T F G L I F Y F S X B N H W R P E M D T L A S H Q L Y D S 527 amino acids = 59.6 kDa		
PSEN2-202	11,725 .. 25,396	13,672 bp	CDS
▶ 10 segments = 1347 bp			
/note	= coding sequence ENSP0000035747		
/translation	= MLTFMADSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEDPDRYVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPTLCMIVV VVATIKSVRFYTEKNGQL,,IYTPFTEDTPSGQRLNLSVNL TLIMISIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTWNFGAVGMVCIHWKGPLVLQQA YLIMISALMALVFIKYLPEWSA W WILGAISVY,,DLVAVLCPKGPLRMLVETAQER NEPIFPALIS,,SAMVWTVGMAKLDPSSQALQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTGYPGEELEEEEE,,RGV KLG L G D F I F Y S V L V G K A A T G S G D W N T T L A C F V A I L I,,G L C L T L L L L A V F K K A L P A L P I S I T F G L I F Y F S X B N H W R P E M D T L A S H Q L Y D S 527 amino acids = 59.6 kDa		
PSEN2-203	11,725 .. 25,396	13,672 bp	CDS
▶ 10 segments = 1344 bp			
/note	= coding sequence ENSP00000403737		
/translation	= MLTFMADSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEDPDRYVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPTLCMIVV VVATIKSVRFYTEKNGQL,,IYTPFTEDTPSGQRLNLSVNL TLIMISIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTWNFGAVGMVCIHWKGPLVLQQA YLIMISALMALVFIKYLPEWSA W WILGAISVY,,DLVAVLCPKGPLRMLVETAQER NEPIFPALIS,,SAMVWTVGMAKLDPSSQALQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTGYPGEELEEEEE,,RGV KLG L G D F I F Y S V L V G K A A T G S G D W N T T L A C F V A I L I,,G L C L T L L L L A V F K K A L P A L P I S I T F G L I F Y F T Q N H W R P E M D T L A S H Q L Y D S 527 amino acids = 59.6 kDa		
PSEN2-211	11,725 .. 25,396	13,672 bp	CDS
▶ 10 segments = 1347 bp			
/note	= coding sequence ENSP00000429036		
/translation	= MLTFMADSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEDPDRYVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPTLCMIVV VVATIKSVRFYTEKNGQL,,IYTPFTEDTPSGQRLNLSVNL TLIMISIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTWNFGAVGMVCIHWKGPLVLQQA YLIMISALMALVFIKYLPEWSA W WILGAISVY,,DLVAVLCPKGPLRMLVETAQER NEPIFPALIS,,SAMVWTVGMAKLDPSSQALQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTGYPGEELEEEEE,,RGV KLG L G D F I F Y S V L V G K A A T G S G D W N T T L A C F V A I L I,,G L C L T L L L L A V F K K A L P A L P I S I T F G L I F Y F S X B N H W R P E M D T L A S H Q L Y D S 527 amino acids = 59.6 kDa		
PSEN2-212	11,725 .. 25,396	13,672 bp	CDS
▶ 10 segments = 1347 bp			
/note	= coding sequence ENSP00000486498		
/translation	= MLTFMADSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEDPDRYVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPTLCMIVV VVATIKSVRFYTEKNGQL,,IYTPFTEDTPSGQRLNLSVNL TLIMISIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTWNFGAVGMVCIHWKGPLVLQQA YLIMISALMALVFIKYLPEWSA W WILGAISVY,,DLVAVLCPKGPLRMLVETAQER NEPIFPALIS,,SAMVWTVGMAKLDPSSQALQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTGYPGEELEEEEE,,RGV KLG L G D F I F Y S V L V G K A A T G S G D W N T T L A C F V A I L I,,G L C L T L L L L A V F K K A L P A L P I S I T F G L I F Y F S X B N H W R P E M D T L A S H Q L Y D S 527 amino acids = 59.6 kDa		
PSEN2-221	11,725 .. 25,396	13,672 bp	CDS
▶ 10 segments = 1347 bp			
/note	= coding sequence ENSP00000503116		
/translation	= MLTFMADSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEDPDRYVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPTLCMIVV VVATIKSVRFYTEKNGQL,,IYTPFTEDTPSGQRLNLSVNL TLIMISIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTWNFGAVGMVCIHWKGPLVLQQA YLIMISALMALVFIKYLPEWSA W WILGAISVY,,DLVAVLCPKGPLRMLVETAQER NEPIFPALIS,,SAMVWTVGMAKLDPSSQALQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTGYPGEELEEEEE,,RGV KLG L G D F I F Y S V L V G K A A T G S G D W N T T L A C F V A I L I,,G L C L T L L L L A V F K K A L P A L P I S I T F G L I F Y F S X B N H W R P E M D T L A S H Q L Y D S 527 amino acids = 59.6 kDa		
PSEN2-229	11,725 .. 25,396	13,672 bp	CDS
▶ 9 segments = 1248 bp			
/note	= coding sequence ENSP00000503680		
/translation	= MLTFMADSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEDPDRYVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPTLCMIVV VVATIKSVRFYTEKNGQL,,IYTPFTEDTPSGQRLNLSVNL TLIMISIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTWNFGAVGMVCIHWKGPLVLQQA YLIMISALMALVFIKYLPEWSA W WILGAISVY,,A A M V W T V G M A K L D P S S Q A L Q L P Y D P E M,,E E D S Y D S F G E P S Y P E V F E P P L T G Y P G E E L E E E E E,,R G V K L G L G D F I F Y S V L V G K A A T G S G D W N T T L A C F V A I L I,,G L C L T L L L L A V F K K A L P A L P I S I T F G L I F Y F 415 amino acids = 46.5 kDa		
PSEN2-236	11,725 .. 25,396	13,672 bp	CDS
▶ 10 segments = 1347 bp			
/note	= coding sequence ENSP00000504727		
/translation	= MLTFMADSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEDPDRYVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPTLCMIVV VVATIKSVRFYTEKNGQL,,IYTPFTEDTPSGQRLNLSVNL TLIMISIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTWNFGAVGMVCIHWKGPLVLQQA YLIMISALMALVFIKYLPEWSA W WILGAISVY,,DLVAVLCPKGPLRMLVETAQER NEPIFPALIS,,SAMVWTVGMAKLDPSSQALQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTGYPGEELEEEEE,,RGV KLG L G D F I F Y S V L V G K A A T G S G D W N T T L A C F V A I L I,,G L C L T L L L L A V F K K A L P A L P I S I T F G L I F Y F S X B N H W R P E M D T L A S H Q L Y D S 527 amino acids = 59.6 kDa		

Feature	Location	Size	Type
PSEN2-209	11,725 .. 15,385	3661 bp	CDS
▶ 3 segments = 387 bp			
/note	= coding sequence ENSP00000429682		
/translation	= MLTFMASDSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQW,,RSQENEEDGEEEDPDYVCSGVPGRPPGLEEEELTKYGAKHVIMLFVPTLCLMIVVVATIKSVRFYTEKNGQL,,IYTPFTEDTP 129 amino acids = 14.5 kDa		
PSEN2-220	12,820 .. 25,903	13,084 bp	prim_transcript
/note	= primary transcript ENST00000677065 Retained intron		
PSEN2-206	14,440 .. 25,508	11,069 bp	prim_transcript
/note	= primary transcript ENST00000472139		
Donor Template SNV -> REV	15,352 .. 15,451	100 bp	misc_feature
PAM	15,411 .. 15,413	3 bp	misc_feature
Protospacer Sequence	15,414 .. 15,433	20 bp	misc_feature
SNV	15,420 .. 15,420	1 bp	misc_feature
/note	= REV=A SNV=T		
PSEN2-206	15,431 .. 25,396	9966 bp	CDS
▶ 8 segments = 915 bp			
/note	= coding sequence ENSP00000427806		
/translation	= MISVIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTVWNFGAVGMVCIHWKGPLVLQQAAYLIMISALMALVFIKYLPEWSAWVILGAISVY,,DLVAVLCPKGPLRMLVETAQERNEP IFPALIYS,,SAMVWTVGMAKLDPSSQGAQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTYGPGEEEEEE,,RGV KLGDFIFYSVLVGKAAATGSGDWNTTLCFVAILI,,GLCLTLLLLAVFKKALPALPISITFGLIFYFSTD 134 amino acids = 15.0 kDa		
PSEN2-226	15,431 .. 25,396	9966 bp	CDS
▶ 8 segments = 912 bp			
/note	= coding sequence ENSP00000503121		
/translation	= MISVIVVMTIFLVVLYKYRCYK,,FIHGWLIMSSMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTVWNFGAVGMVCIHWKGPLVLQQAAYLIMISALMALVFIKYLPEWSAWVILGAISVY,,DLVAVLCPKGPLRMLVETAQERNEP IFPALIYS,,SAMVWTVGMAKLDPSSQGAQLPYDPEM,,EDSYDSFGEPSYPEVFEPPLTYGPGEEEEEE,,RGV KLGDFIFYSVLVGKAAATGSGDWNTTLCFVAILI,,GLCLTLLLLAVFKKALPALPISITFGLIFYFSTD 134 amino acids = 15.0 kDa		
PSEN2-204	17,929 .. 21,161	3233 bp	CDS
▶ 4 segments = 434 bp			
/note	= coding sequence ENSP00000427912		
/translation	= MSSLMLLFLFTYIYLG,,EVLKTYNVAMDYPTLLTVWNFGAVGMVCIHWKGPLVLQQAAYLIMISALMALVFIKYLPEWSAWVILGAISVY,,DLVAVLCPKGPLRMLVETAQERNEP IFPALIYS,,SAMVWTVGMAKLDPSSQGAQLPYDPEM,,EEDSYDSFGEPSYPEVFEPPLTYGPGEEEEEE,,RGV KLGDFIFYSVLVGKAAATGSGDWNTTLCFVAILI,,GLCLTLLLLAVFKKALPALPISITFGLIFYFSTD 134 amino acids = 16.1 kDa		
PSEN2-205	19,568 .. 25,903	6336 bp	prim_transcript
/note	= primary transcript ENST00000471728 Retained intron		
PSEN2-208	20,383 .. 21,637	1255 bp	prim_transcript
/note	= primary transcript ENST00000487450		
PSEN2-207	26,705 .. 33,616	6912 bp	prim_transcript
/note	= primary transcript ENST00000485677		
PSEN2-214	29,182 .. 57,543	28,362 bp	prim_transcript
/note	= primary transcript ENST00000676616		

Primer	Length	Binding Sites	Tm	Date Added
✓ PCR Forward	20-mer	15,171 .. 15,190 →	59°C	Jun 15, 2022
/sequence = TGCCAGGAAATGAGCTGGAG 55% GC / 6231.1 Da				
✓ Sanger Sequencing Primer	20-mer	15,171 .. 15,190 →	59°C	Jun 15, 2022
/sequence = TGCCAGGAAATGAGCTGGAG 55% GC / 6231.1 Da				
✓ Donor Template SNV -> REV	100-mer	15,352 .. 15,451 →	81°C	Jun 15, 2022
/sequence = CAGCATCTACACGCCATTCACTGAGGACACACCCTCGGTGGGCCAGCGCCTCCTCAACTCCGTGCTGAACACCCTCATCATGATCAGCGTCATCGTGGTT 58% GC / 30,516.7 Da				
✓ gRNA Protospacer	20-mer	15,414 .. 15,433 ←	50°C	Jun 15, 2022
/sequence = CATGATGAGGGTGATCAGCA 50% GC / 6206.1 Da				
✓ PCR Reverse	20-mer	15,564 .. 15,583 ←	59°C	Jun 15, 2022
/sequence = CTAAAGGCGGCTGTTTCACG 55% GC / 6133.0 Da				