



125

1 GGATCTGCGATCGCTCCGGTGCCCGTCAGTGGGAGAGCGCACATGCCACAGTCCCGGAGAAGTTGGGGGAGGGTGGCAATTGAACGGGTGCCTA
101 GAGAAGGTGGCGCGGGTAAACTGGGAAAGTATGTCGTGACTGGCTCCGCCTTTTTCCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCC
201 GTGAACGTTCTTTTTCGCAACGGGTTTGCCGCCAGAACACAGCTGAAGCTTCGAGGGCTCGCATCTCTCTTACGCGCCCGCCCTACCTGAGGCC
301 GCCATCCACGCCGTTGAGTCCGCTTTCGCCCGCTCCCGCTGTGGTGCCTCTGAAGTGCCTCCGCGTCTAGGTAAGTTTAAAGCTCAGGTCGAGACC
401 GGGCCTTTGTCCGGCGCTCCCTTGAGCCTACCTAGACTCAGCCGGCTCTCCACGCTTTGCCTGACCTGCTTGTCTAACTCTACGCTTTTGTTCGTTT

AgeI (552)

501 TCTGTTCTGCGCCGTTACAGATCCAAGCTGTGACCGCGCCTACCTGAGATCACCGGTACCATGGCTTTGAACTCAGGGTACCACCAGCTATTGGACC
1▶ M A L N S G S P P A I G P
601 TTAATATGAAAACCATGGATAACCAACCGAAAACCCCTATCCCGCACAGCCACTGTGGTCCCACTGTCTACGAGGTGCATCCGGCTCAGTACTACCCG
13▶ Y Y E N H G Y Q P E N P Y P A Q P T V V P T V Y E V H P A Q Y Y P
701 TCCCCGTGCCAGTACGCCCCGAGGGTCTGACGCAGGCTTCAACCCCGTCTGACGCGAGCCAAATCCCATCCGGGACAGTGTGCACCTCAA
47▶ S P V P Q Y A P R V L T Q A S N P V V C T Q P K S P S G T V C T S
801 AGACTAAGAAAGCACTGTGCATCACCTTGACCTGGGACCTTCTCGTGGGAGTGCCTGGCCGCTGGCCTACTCTGGAAGTTCATGGGACGAAAGTG
80▶ K T K K A L C I T L T L G T F L V G A A L A A G L L W K F M G S K C
901 CTCAACTCTGGGATAGAGTGCAGTCTCAGTACCTGCATCAACCCCTCAACTGGTGTGATGGCGTGCACACTGCCCGGGGGAGGACGAGAAT
113▶ S N S G I E C D S S G T C I N P S N W C D G V S H C P G G E D E N
1001 CGGTGTGTTGCGCTCTACGGACCAAACCTTCCCTCAGGTGACTCATCTCAGAGGAAGTCTGGCACCCCTGTGTGCCAAGACGACTGGAACGAGAAT
147▶ R C V R L Y G P N F I L Q V Y S S Q R K S W H P V C Q D D W N E N
1101 ACGGGCGGGCGGCTGCAGGGACATGGGCTATAAGAATAATTTTTACTCTAGCCAAGGAATAGTGGATGACAGCGGATCCACCAGCTTTATGAACTGAA
180▶ Y G R A A C R D M G Y K N N F Y S S Q G I V D D S G S T S F M K L N
1201 CACAAGTGCCGGCAATGTCGATATCTATAAAAACTGTACCACAGTGTGCCTGTTCTTCAAAGCAGTGGTTTCTTACGCTGTATAGCCTGCGGGGTC
213▶ T S A G N V D I Y K K L Y H S D A C S S K A V V S L R C I A C G V
1301 AACTTGAACCAAGCCGACAGCAGGATTGTGGCGGCGAGAGCGCGCTCCCGGGGCTGGCCCTGGCAGGTGACCTGCACGTCAGACGTCAGAACGTCCACG
247▶ N L N S S R Q S R I V G G E S A L P G A W P W Q V S L H V Q N V H
1401 TGTGCGGAGGCTCCATCATCACCCCGAGTGGATCGTGACAGCGCCCACTGCGTGGAAAAACCTCTTAACAATCCATGGCATTGGACGGCATTGCGGG
280▶ V C G G S I I T P E W I V T A A H C V E K P L N N P W H W T A F A G
1501 GATTTTGAGACAACTTTTTCATGTTCTATGGAGCCGATACCAAGTAGAAAAAGTATTTCTCATCAAATTATGACTCCAAGCAAGAACAATGACATT
313▶ I L R Q S F M F Y G A G Y Q V E K V I S H P N Y D S K T K N N D I
1601 GCGCTGATGAAGTGCAGAAGCCTTGAAGTCAACGACCTAGTGAACCAAGTGTGTCTGCCAACCCAGGCATGATGCTGCAGCCAGAACAGCTCTGCT
347▶ A L M K L Q K P L T F N D L V K P V C L P G M L N P G M L Q P E Q L C
1701 GGATTTCCGGTGGGGGCCACCGAGGAGAAAGGGAAGACCTCAGAAGTGTGAACGCTGCCAAGGTCTTCTCATTGAGACACAGATGCAACAGCAG
380▶ W I S G W G A T E E K G K T S E V L N A A K V L L I E T Q R C N S R
1801 ATATGCTATGACAACCTGATCACACCAGCCATGATCTGTGCCGGTCTCTGCAGGGGAACGTCGATTCTTGCAGGGTGCAGTGGAGGGCCTCTGGTC
413▶ Y V Y D N L I T P A M I C A G F L Q G N V D S C Q G D S G G P L V
1901 ACTTCGAAGAACAATATCTGGTGGCTGATAGGGGATACAAGTGGGGTCTGGCTGTGCCAAAGCTTACAGACCAGGAGTGTACGGGAATGTGATGGTAT
447▶ T S K N N I W W L I G D T S W G S G C A K A Y R P G V Y G N V M V

NheI (2044)

2001 TCACGGACTGGATTTATCGACAATGAGGGCAGACGGCTAATCCGCTAGCTGGCCAGACATGATAAGATACATTGATGAGTTGGACAAACCACAACCTAG
480▶ F T D W I Y R Q M R A D G •
2101 AATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGC
2201 ATTCATTTTATGTTTCAGGTTACAGGGGAGGTGTGGGAGGTTTTTAAAGCAAGTAAAACCTTACAATGTGGTATGGAATTCTAAAATACAGCATAGC
2301 AAAACTTTAACCTCCAAATCAAGCCTCTACTTGAATCCTTTTCTGAGGGATGAATAAGGCATAGGCATCAGGGGCTGTGCCAATGTGCATTAGCTGTTT
2401 GCAGCCTCACCTTCTTTCATGGAGTTTAAGATATAGTGTATTTTCCAAGGTTTGAAGTACTGCTTTCATTTCTTATGTTTTAAATGCACTGACCTCCA
2501 CATTCCCTTTTTAGTAAAATATTCAGAAATAATTTAAATACATCATTGCAATGAAAAATAATGTTTTTTATTAGGCAGAATCCAGATGCTCAAGGCCCTT
2601 CATAATATCCCCAGTTTAGTAGTTGGACTTAGGGAACAAGGAACCTTTAATAGAAATTGGACAGCAAGAAAGCGAGCTTCTAGCTTTAGTTCCTGGTG
141▶ • N R T
2701 TACTTGAGGGGATGAGTTCCTCAATGGTGGTTTTGACCAGCTTGCCATTCTCAATGAGCACAAAGCAGTCAGGAGCATAGTCAGAGATGAGCTCTC
136▶ Y K L P I L E E I T T K V L K G N M E I L V F C D P A Y D S I L E R
2801 TGCACATGCCACAGGGGTGACCCCTGATGGATCTGTCCACCTCAGAGTAGGGGTGCTGACAGCCACAATGGTGTCAAAGTCTTCTGCCCCGTT
103▶ C M G C P S V V R I S R D V E D S Y P H R V A V I T D F D K Q G N
2901 GCTCACAGCAGACCCAATGGCAATGGCTTACAGCAGACAGTACCCTGCCAATGTAGGCCTCAATGTGGACAGCAGAGATGATCTCCCCAGTCTTGGTC
70▶ S V A S G I A I A E A C V T V R G I Y A E I H V A S I I E G T K T
3001 CTGATGGCCGCCCGACATGGTCTTGTGCTCATAGAGCATGGTGTCTTCTCAGTGGCGACCTCCACCAGCTCCAGATCCTGCTGAGAGATGTTGA
36▶ R I A A G V H H K N D E Y L M T I K E T A V E V L E L D Q Q S I N F
3101 AGGTCTTCATGGTGGCCCTCTATAGTGAAGTATTACTATGCCGATATACTATGCCGATGATTAATTGTCAAACACGCGTGGATGGCGTCTCCAGC
3▶ T K M

3201 TTATCTGACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCACCGTACACGCCTACCGCCATTTGCGTCAATGGGGCGGAGTTGTTACGACATTT
3301 TGGAAAGTCCCGTTGATTTACTAGTCAAAACAAACTCCATTGACGTCAATGGGGTGGAGACTTGGAAATCCCGTGAGTCAAACCGCTATCCACGCCA
3401 TTGATGTACTGCCAAAACCGCATCATCATGGTAATAGCGATGACTAATACGTAGATGTACTGCCAAGTAGGAAAGTCCATAAGGTCATGTACTGGGCAT
3501 AATGCCAGGCGGGCCATTTACCGTCATTGACGTCAATAGGGGCGTACTTGGCATATGATACACTTGATGTACTGCCAAGTGGGCAGTTTACCGTAAATA
3601 CTCCACCATTGACGTCAATGGAAAGTCCCTATTGGCGTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGTCGTTGGGCGGTCAGCCA
3701 GGCGGGCCATTTACCGTAAGTTATGTAACGCCTGCAGGTTAAITTAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCGTT
3801 GCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAG
3901 GCGTTTTCCCCTGGAAGCTCCCTCGTGCCTCTCTGTTCGACCCTGCCGTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTGGCGCTTT
4001 CTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTCCAGCCGACCGCTGCGCCTT
4101 ATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGC
4201 GGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAA
4301 GAGTTGGTAGCTCTTGATCCGGCAAACAACCACCGCTGGTAGCGGTGGTTTTTTTTTTTGTTCGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGA
4401 AGATCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGGCTAGTTAATTAACATTTAATCAGCG
4501 GCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCGTAACTAACATACGCTCTCCATCAAACAAAACGAAACAAAA
4601 CAAACCTAGCAAATAGGCTGTCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGAA