

**INK2J00065\_POLG\_G737R\_E07\_AB**  
29,664 bp

5' CGCCTGGCAC  
3' GCGGACCGTG

850

POLG

POLG-201

AGTGTGGGGACGCAGTAAATGCTCAAGGAATGATGATTATGGATACACCTATTACATATATGGTAAAATAACGCTTTTATATCAT  
TCACAACCCCTGCGTCATTTACGAGTTCCTTACTACTAATAACCTATGTGGATAATGTATATACCATTTTATTGCGAAATATAGTA

935

POLG

POLG-201

CTGTCTCCTTTAGGATTTGGGGTGGAAAGGCAGGCATGGTCAAACCCATTTCACTGACAGGAGAGCAGAGACAGGACGTGTCTCTC  
GACAGAGGAAATCCTAAACCCACCTTCCGTCCTGACAGTTTGGGTAAAGTGACTGTCTCTCGTCTCTGTCTCTGCACAGAGAG

1020

POLG

POLG-201

TCCACGTCTTCCAGCCAGTAAAAGAAGCCAAGCTGGAGCCCAAAGCCAGGTGTTCTGACTCCCAGCGTGGGGGTCCCTGCACCAA  
AGGTGCAGAAGGTCGGTCATTTTCTTCGGTTCGACCTCGGGTTTCGGTCCACAAGACTGAGGGTCGCACCCCAAGGGACGTGGTT

1105

POLG

POLG-201

CCATGAGCCGCCTGCTCTGGAGGAAGGTGGCCGGCGCCACCGTCCGGGCCAGGGCCGGTTCCAGCTCCGGGGCGCTGGGTCTCCAG  
GGTACTCGGCGGACGAGACCTCCTTCCACCGGCCGCGGTGGCAGCCCGGTCCCAGGCAAGGTTCGAGGGCCCGCGACCCAGAGGGTC

1190

POLG

POLG-201

1 5 10 15 20 25  
M S R L L W R K V A G A T V G P G P V P A P G R W V S S

ENSE0000943530

POLG-201

CTCCGTCCCCGCGTCCGACCCAGCGACGGGCAGCGGGCGGGCGGCAGCAGCAGCAGCAGCAGCAGCAGCAACAGCAGCCT  
GAGGCAGGGGCGCAGGCTGGGGTCGCTGCCCGTCGCCGCGCCGTCGTCGTCGTCGTCGTCGTCGTCGTCGTTGTCGTCGGA

1275

POLG

POLG-201

30 35 40 45 50 55  
S V P A S D P S D G Q R R R Q Q Q Q Q Q Q Q Q Q Q P

ENSE0000943530

POLG-201

CAGCAGCCGCAAGTGCTATCCTCGGAGGGCGGGCAGCTGCGGCACAACCCATTGGACATCCAGATGCTCTCGAGAGGGCTGCACG  
GTCGTCGGCGTTACAGATAGGAGCCTCCCGCCCGTCGACGCCGTGTTGGGTAACCTGTAGGTCTACGAGAGCTCTCCCGACGTGC

1360

POLG

POLG-201

60 65 70 75 80  
Q Q P Q V L S S E G G Q L R H N P L D I Q M L S R G L H

ENSE0000943530

POLG-201

AGCAAATCTTCGGGCAAGGAGGGGAGATGCCTGGCGAGGCCGCGGTGCGCCGACGCTCGAGCACCTGCAGAAGCACGGGCTCTG  
TCGTTTGAAGCCGTTCTCCCTCTACGGACCGCTCCGGCGCCACGCGGGCGTCGACGCTCGTGACGCTTTCGTGCCCGAGAC

1445

POLG

POLG-201

85 90 95 100 105 110  
E Q I F G Q G G E M P G E A A V R R S V E H L Q K H G L W

ENSE0000943530

POLG-201

GGGGCAGCCAGCCGTGCCCTTGCCCGACGTGGAGCTGCGCCTGCCGCCCTCTACGGGGACAACCTGGACCAGCACTTCCGCCTC  
-----  
CCCCGTCGGTCGGCACGGGAACGGGCTGCACCTCGACGCGGACGGCGGGGAGATGCCCTGTTGGACCTGGTTCGTGAAGGCGGAG

1530

POLG

POLG-201

115 120 125 130 135 140  
G Q P A V P L P D V E L R L P P L Y G D N L D Q H F R L

ENSE00000943530

POLG-201

CTGGCCCAAGAAGCAGAGCCTGCCCTACCTGGAGGCGGCCAACTTGCTGTTGACAGGCCAGCTGCCCCCGAAGCCCCCGGCTTGGG  
-----  
GACCGGGTCTTCGTCTCGGACGGGATGGACCTCCGCCGGTTGAACGACAACGTCCGGGTCGACGGGGGCTTCGGGGGCGCAACCC

1615

POLG

POLG-201

145 150 155 160 165  
L A Q K Q S L P Y L E A A N L L L Q A Q L P P K P P A W

ENSE00000943530

POLG-201

CCTGGGCGGAGGGCTGGACCCGGTACGGCCCCGAGGGGGAGGCCGTACCCGTGGCCATCCCCGAGGAGCGGGCCCTGGTGTTCGA  
-----  
GGACCCGCCTCCCAGACCTGGGCCATGCCGGGGCTCCCCCTCCGGCATGGGCACCGGTAGGGGCTCCTCGCCCGGGACCAAGCT

1700

POLG

POLG-201

170 175 180 185 190 195  
A W A E G W T R Y G P E G E A V P V A I P E E R A L V F D

ENSE00000943530

POLG-201

CGTGGAGGTCTGCTTGGCAGAGGGAACTTGCCCCACATTGGCGGTGGCCATATCCCCCTCGGCCTGGTAAGTAGGGGCAGGGTTG  
-----  
GCACCTCCAGACGAACCGTCTCCCTTGAACGGGGTGTAAACGCCACCGGTATAGGGGGAGCCGGACCATTTCATCCCCGTCCCAAC

1785

POLG

POLG-201

200 205 210 215 220  
V E V C L A E G T C P T L A V A I S P S A W

ENSE00000943530

POLG-201

GGGACATAAGCAGGCATGGGGGCCAGCTTAATAGTTTGTTCAGTGAACATTTTCTGAGGTCCTGTTACGGGCTGGGTGCTCAC  
-----  
CCCTGTATTTCGTCCGTACCCCCGGGTCGAATTATCAAACAAAGTCACTTGTAAAAGACTCCAGGACAATGCCCGACCCACGAGTG

1870

POLG

POLG-201

POLG-201

GTAGGGAGCGCTGATGTGTTGAATTAGGACTAGACCCCTGTTTATGTGGGACTCACTTTCTGGTGGGAAGATCACAGGCAGTAAG  
-----  
CATCCCTCGCGACTACACAACCTTAATCCTGATCTGGGGACAAATACACCCTGAGTGAAAGACCACCTTCTAGTGTCCGTCATTC

1955

POLG

POLG-201

POLG-201

CAAATACCCAAGTAAATGTCAGGCAGTAAAGGCCACGCAGAGAATCACAGTAGAGCGCTGTACATGAGACCTTCGGGAGGCCACT  
-----  
GTTTATGGGTTTCATTTACAGTCCGTCATTTCCGGTGCCTCTTCTAGTGTCTCTCGCGACATGTACTCTGGAAGCCCTCCGGTGA

2040

POLG

POLG-201

POLG-201

TAAGATCACGGTGATTTGGTGCCTTTACCCCTCTCCTAATAGCGTCATGAGAAAGTTAGTCTGAAAAGTCATTTGAACAGTGTTT  
ATTCTAGTGCCACTAAACCACGGAAATGGGGGAGAGGATTATCGCAGTACTCTTCAATCAGACTTTTTCAGTAAACTTGTCAAAA

2125

POLG

POLG-201

POLG-201

CTATTTGGGGAGCTATTAATTATTTTGGGCGGTAGAAAAGCTCCCTTTTGTGGGACTGTCCCAGGCAGTATAGGACATTTAGCATC  
GATAAACCCCTCGATAATTAATAAAACCCGCCATCTTTCGAGGGAAAAACACCCTGACAGGGTCCGTCATATCCTGTAAATCGTAG

2210

POLG

POLG-201

POLG-201

CCCAGCCTTTCCCATAAACGCCAGACCAACACCCCCCGCCCCCTGCCCCCGCCGGCAACGTTTCCAGACGCCCCCTTGAGGTG  
GGGTCGAAAGGGTATTTGCGGTCTGGTTGTGGGGGGGCGGGGGGACGGGGGCGGCCGTTGCAAAGGTCTGCGGGGAACTCCAC

2295

POLG

POLG-201

POLG-201

GCATCTGGTTGACCACCCCTAGTTGAGAAACATTGCTTCCTTCCCCAGCCTTCCAAGCAGGCATTTTGGTCCCAAACAAGTATA  
CGTAGACCAACTGGTGGGGATCAACTCTTTGTAACGAAGGAAGGGGGTCGGAAGGTTTCGTCCGTAAAACAGGGTTTGTTCATAT

2380

POLG

POLG-201

POLG-201

TCCAATCTCTCTTTTCTTTTAAATAACTTTCTAAGTGCTACCCAAGTTTCTTTTTCAAACAATGATGGCAGTACTGTTTCTCCC  
AGGTTAGAGAGAAAAGAAAAATTTATTGAAAGATTACGATGGGTTCAAAGAAAAAGTTTGTTACTACCGTCATGACAAAAGAGGG

2465

POLG

POLG-201

POLG-201

CTTTTTTATTCTTCATTCCAGGATTAATACTATTTACAACCTTAATGCTTTTCAGGCATGGCCAGCAAAAAAGTTGGCAGTTT  
GAAAAAATAAGAAGTAAGGTCCTAATTTTATGATAAATGTTGGAATTACGAAAAGTCCGTACCGGTCGTTTTTTCAACCGTCAAA

2550

POLG

POLG-201

POLG-201

CTTTATTCTATTGGAAGCTACATCTTTGTAAAGAAAGCTGCGAAATGTTAAATATGCAGTTGAAAATGGTGAAAACATGGCTAA  
GAAATAAGGATAACCTTCGATGTAGAAACATTTCTTTCGACGCTTACAATTTATACGTCAACTTTTACCACTTTTGTACCGATT

2635

POLG

POLG-201

POLG-201

ATAGATAAGGTAGGCATTAATGGCTGAAAAGAGCAAACTAGATGATTCTGCATTGATTGAGTTCCAGTTACAATGAGAATCACA  
TATCTATTCCATCCGTAATTACCGACTTTTCTCGTTTTGATCTACTAAGACGTAACCTCAAGGTCAATGTTACTCTTAGTGT

2720

POLG

POLG-201

POLG-201

CTACTTAGAATATGTAAC TTGATGGTCAAAGTAAAGGGGAATATCGGCCATCATTGAAAAGATAAAGTAGGCTTTGGTGGCTGA  
GATGAATCTTATACATTGAACTACCAGTTTCATTTCCCTTATAGCCGGTAGTAAACTTTTCTATTTTCATCCGAAACCACCGACT

2805

POLG

POLG-201

POLG-201

AAGAAAATTAGGAAACCAGTGACAAGAAAGATTTGTTTTTGTCTGTCGGTCATTTTAGGCCAAATTACCTCAAGTCCCCTTTT  
TTCTTTTAATCCTTTGGTCACTGTTCTTTCTAAACAAAAAACTAGACAGCCAGTAAAATCCGGTTAATGGAGTTCAGGGGAAAA

2890

POLG

POLG-201

POLG-201

CTTTTCTCTTTCTCCTTCTTTCTCTCTTTTTACCTCTCCTTTCCCTCCCTGTCCTTCCCTGCTCTGCCCTCATTCTCATTCCATT  
GAAAAGAGAAAGAGGAAGAAAGAGAGAAAAATGGAGAGGAAAGGGAGGGACAGGAAGGGACGAGACGGGAGTAAGAGTAAGGTAA

2975

POLG

POLG-201

POLG-201

CTTGCCAGTGGTACTCGGGGCATTGCTTAGTTGACCTGATGGCAGAAAGTCACTGTTAAGGCCTGGGCTCATGCTGGGACCTTCCCT  
GAACGGTCACCATGAGCCCCGTAACGAATCAACTGGACTACCGTCTTCAGTGACAATTCCGGACCCGAGTACGACCCTGGAAGGA

3060

POLG

POLG-201

POLG-201

CCTGGGAGTCTGACTGGTGGGTGGGGGTGGGTGCCACATGGTGCCTAATAGCGGTCCACTTTGAACCTGGGCATGCCCTGCC  
GGACCCTCAGACTGACCACCCACCCACCCACGGTGTACCACGGGATTATCGCCAGGTGAAACTTGGACCCGTACGGGGACGGG

3145

POLG

POLG-201

POLG-201

CTTAGCTGAGTAACATTAGGTACCTGACCAGCCCACAATTTACAATGGGAGGAGAAGCGGTAGTCAGCTATGAGCCTCCCACAGG  
GAATCGACTCATTGTAATCCATGGACTGGTGGGTGTTAAATGTTACCTCCTCTTCGCCATCAGTCGATACTCGGAGGGTGTCC

3230

POLG

POLG-201

POLG-201

GCAGCTTCTTCCCAAAGGGTGTGGTAAGGGCTTCGGCCATCAGGCTAGAGGGACGTCTCTCTGGCCATCAGCATTCTTTCTAAGA  
CGTCTGAAGAAGGGTTTCCCAACAACCATTCCCGAAGCCGGTAGTCCGATCTCCCTGCAGAGAGACCCGGTAGTCGTAAAAAGATTCT

3315

POLG

POLG-201

POLG-201

TTCACAGTAAAAC TAGTATTAATGGCATGGATCCCTACTCATCTTAAATTTGGCTTGTCTTTTAAATCACTAGTTTATAATAT  
AAGTGTCAATTTGATCATAATTACCGTACCTAGGGATGAGTAGAATTTAAACCGAACAAAGAAAAATTAGTGATCAAATATTATA

3400

POLG

POLG-201

POLG-201

GGCTTCATGCACAGCTGCAGAGCTGCATCTTGACACCCAGTGTGGCTTTTTACTGTAACCAAAGTTCCTGTTACCACCATGGCCTC  
CCGAAGTACGTGTCTGACGTCTCGACGTAGAACTGTGGTACACCGAAAAATGACATTGGTTTTCAAGGACAATGGTGGTACCGGAG

3485

POLG

POLG-201

POLG-201

AAAGATTTGGCATTCTTTAGCCTTTTTGTCTGCGTTGTTTTAAGGGCTTTGACATGCTGAATTAANAATGTGGGGGGGTGGGGATT  
TTTTCTAAACCGTAAGAAATCGGAAAAACAGACGCAACAAAATTCCCGAAACTGTACGACTTAATTTTACACCCCCCACCCCTAA

3570

POLG

POLG-201

POLG-201

TCTTTCAGTCCCTTGGCTTATTTTCACCATTTGGAGTATGAGTTCGATTTTGTGAGGTTTAAAAC TAGGAACCTCTTTTTGCTTT  
AGAAAAGTCAGGGAAACCGAATAAAAAGTGGTAAACCTCATACTCAAGCTAAAACAGTCCAAATTTTATCCTTGGAGAAAAACGAAA

3655

POLG

POLG-201

POLG-201

CTCTTTGAAAGAAGTTAGTTTTATGTGTGTTGAATCTGTTGAGGCAGATACTCCCTTTTTCCCTTCCATAAAGGTTGCAAGGAGC  
GAGAAACTTTCTTCAATCAAAAATACACACAACCTTAGACAACCTCCGTCTATGAGGGAAAAAGGGAAGGTATTTCCAACGTTCTCTCG

3740

POLG

POLG-201

POLG-201

TCCTTCGCAGCTGTGTTGTCCACACGTGGCCTCGTCACTCACTTTGATGCTGAGTGGGCCTTGATTGTTTAGAATAATCTGTGGC  
AGGAAGCGTCTGACACAACAGGTGTGCACCCGGAGCAGTGAGTGAACACTACGACTCACCCGGAAC TAACAAATCTTATTAGACACCG

3825

POLG

POLG-201

POLG-201

TTGCAACAGGCATTTTCCTCAGTGGCCATTCCCCTACACCTAGCCTTGTGGATCTTGAGCAAACCTGCAGCCTTTTCCTGAATCAGT  
AACGTTGTCCGTAAGGAGTCACCGGTAAGGGGATGTGGATCGGAACACCTAGAACTCGTTTGACGTCGGAAAAGGACTTAGTCA

3910

POLG

POLG-201

POLG-201

GTCGGGCCCCAACAGGCAGCACTCATCCCCTATCCCTCCCACCCCAACCCTGTCACATACACATACATTTTCTCATTCTGGCAC  
CAGCCCGGGGTTGTCCGTCGTGAGTAGGGGATAGGGAGGGTGGGGTTGGGACAGTGTATGTGTATGTAAAAGAGTAAGACCGTG

3995

POLG

POLG-201

POLG-201

TTTCCCTGGTTCTCACTGAGGGTGGTTGCTTCTCCAAGGTGTGTGATTTGCTCTTTGTCCCCCAGAATCTTTTCAGCCGTGAGAT  
AAAGGGACCAAGAGTGACTIONCCACCAACGAAGAGGTTCCACACACTAAACGAGAAACAGGGGGTCTTAGAAAAGTCGGCACTCTA

4080

POLG

POLG-201

POLG-201

GATTCATCCTGTACATGTGTGCAGCAGCATTGTCATTTTTTTTTTTTTTTGCCAATTCAATTAATCTCCACCTTGGGTTCTGTT  
CTAAGTAGGACATGTACACACGTCGTCGTAACAGTAAAAAAAAAAAAAAAAACGGTTAAGTTAATTTAGAGGTGGAACCCAAGACAA

4165

POLG

POLG-201

POLG-201

ATTGTCTATCTCCTTTACTAGTACTTTGAACAGTAGCTGGTTTGTGCCTGTAGACGTGAGGGGTTGATAATGTTTCATAAAACCTC  
TAACAGATAGAGGAAATGATCATGAAACTTGTTCATCGACCAAACACGGACATCTGCACTCCCCAACTATTACAAGTATTTTTGGAG

4250

POLG

POLG-201

POLG-201

AGAGCTAGATGCAGACTCAGTGAACGCTGGGCCTAGCAAACACCTTGATAGCCCAGGCTGTAATAGAATACCTGCACGTAGGTCT  
TCTCGATCTACGTCTGAGTCACTTGCAGACCCGGATCGTTTGTGGAACATCGGGTCCGACATTATCTTATGGACGTGCATCCAGA

4335

POLG

POLG-201

POLG-201

AATAGCCCAGTAGTTCCATTTTTATGTGCAGAAGTTTAAAGAAGCTTTTGTAGCTCTTGCCCGCCAGCACACACACCCACCCTGC  
TTATCGGGTCATCAAGGTAAAAATACACGTCCTTCAAATTTCTTCGAAAACATCGAGAACGGGCGGTCTGTGTGTGGGTGGGACG

4420

POLG

POLG-201

POLG-201

CACACCTGACCTGTAGCTGTTTGGAGTTAGGAGCACCCCTTTGGTCTCACTTGTGTCCCCAGCTGCCAATGCACCATCTGGCATGTG  
GTGTGGACTGGACATCGACAAACTCAATCCTCGTGGGAAACCAGAGTGAACACAGGGGTCGACGGTTACGTGGTAGACCGTACAC

4505

POLG

POLG-201

POLG-201

GCGGTAGGTGTGCAGTGGTTGTTGTGGAGTGGAAAGTTTAATGTCTCCATGGTGAACCTGCCTGCCTCTCACCTCCCTCAGGTATT  
CGCCATCCACACGTCACCAACAACACCTCACCTTCAAATTACAGAGGTACCACTTGGACGGACGGAGAGTGGAGGGGAGTCCATAA

4590

POLG

POLG-201

Y  
ENSE...

POLG-201

CCTGGTGCAGCCAGCGGCTGGTGGAAAGAGCGTTACTCTTGGACCAGCCAGCTGTCGCCGGCTGACCTCATCCCCCTGGAGGTCCC  
GGACCACGTCGGTCGCCGACCACCTTCTCGCAATGAGAACCTGGTCGGTCGACAGCGGCCGACTGGAGTAGGGGGACCTCCAGGG

4675

POLG

POLG-201

S W C S Q R L V E E R Y S W T S Q L S P A D L I P L E V P

ENSE00003993906

POLG-201

TACTGGTGCCAGCAGCCCCACCCAGAGAGACTGGCAGGAGCAGTTAGTGGTGGGGCACAATGTTTCTTTGACCGAGCTCATATC  
ATGACCACGGTCGTCGGGGTGGGTCTCTCTGACCGTCTCGTCAATCACCACCCCGTGTACAAAGGAAACTGGCTCGAGTATAG

4760

POLG

POLG-201

T G A S S P T Q R D W Q E Q L V V G H N V S F D R A H I

ENSE00003993906

POLG-201

AGGGAGCAGTACCTGATCCAGGTAAGGTTCTGGGGCCAACCTGCAGGTTCTGGCATGGGATGGGCCAGGAGCCCTAATCTCAGTG  
TCCCTCGTCATGGACTAGGTCCATTCCAAGGACCCCGGTTGACGTCCAAGACCGTACCCTACCCGGTCTCGGGATTAGAGTCAC

4845

POLG

POLG-201

R E Q Y L I Q

ENSE00003993906

POLG-201

GTTAGGGGAGGTAICTCTTTCTGGCACGTGTCTCTGTTGCCTTTGCTGAAGCCGCAAGGCGCATCTGTTGACCAGCTGTGCCTC  
CAATCCCCTCCATGAGGAAAGGACCGTGCACAGAGACAACCGAAACGACTTCGGCGTTCCGCGTAGACAACCTGGTCGACACGGAG

4930

POLG

POLG-201

POLG-201

TGGTCTCTGTGCCTAGCTGTTGTATGTCCCCGGGAAAGCCTGGTATAGGACCTAAGTTGTCACAAAGTAATAATGGCCTTCGTCT  
ACCAGAGACACGGATCGACAACATACAGGGGGCCCTTTCGGACCATATCCTGGATTCAACAGTGTTCATTATTACCGGAAGCAGA

5015

POLG

POLG-201

POLG-201



CTGTGGCATT...TAGAGCTTAGCATGGGTCTTGAAGGTTTTGAGCCACAGCCTGGGCTCACTTCCTGCCTTAACCACCGATGACTA  
GACACCGTAAAATCTCGAATCGTACCCAGAACTTCCAAAACCTCGGTGTCTGGACCCGAGTGAAGGACGGAATTGGTGGCTACTGAT

5100

POLG

POLG-201

POLG-201

CTGTGAGCGCCTTAACATCTCTAAGTCTTAGTTTTCTTTTTATAAAAAGGCAGACATAACAGAAATCTCATAGGATTAATAGGA  
GACACTCGCGGAATTGTAGAGATTCAGAATCAAAGGAAAAAATATTTTTCCGTCTGTATTGTCTTTAGAGTATCCTAATTATCCT

5185

POLG

POLG-201

POLG-201

GGGTTGGAACAATGCCTGCATGTCAAACACTCAGCACTCTGCCTGGTGTATAGTAGTGGCAATTCTTAATTTTATGAAAAGTGTT  
CCCAACCTTGTTACGGACGTACAGTTTGTGAGTCGTGAGACGGACCACATATCATCACCGTTAAGAATTAATAACTTTTTCACAA

5270

POLG

POLG-201

POLG-201

TTTTCACTGGATCTTCACAACAGCCCTAGAAGATAGGCCAGGCAGGGGAGAGCAACCTTACCCTATAGCTGAGGGTGCTGAGGCT  
AAAAGTGACCTAGAAGTGTTGTCGGGATCTTCTATCCGGTCCGTCCCTCTCGTTGGAATGGGATATCGACTCCCACGACTCCGA

5355

POLG

POLG-201

POLG-201

CAGACAGCCTTGTTGACATGCTCAGGGCCACAGAGCTTTTGAAGTGGCAGGGTTGGGGCCAGACCAGATAGCCCTGAAGGCTTTAT  
GTCTGTCTGGAAACAACCTGTACGAGTCCCAGGTGCTCGAAAACCTCACCGTCCCAACCCCGGTCTGGTCTATCGGGACTTCCGAAATA

5440

POLG

POLG-201

POLG-201

TTTGGCCACTCTGTATCTACGTTGCTCAGAGCTATTGTTGGAAGCTGAGAAGGACTTGCACATTGGGATTGAGCCAGGCCTGCAT  
AAACCGGTGAGACATAGATGCAACGAGTCTCGATAACAACCTTCGACTCTTCTGAAACGTGTAACCCCTAACTCGGTCCGGACGTA

5525

POLG

POLG-201

POLG-201

CTTAAAGGGTGGCTAGGATTTGGGAAGGCAGGCCCTTACAGGTGATGGGGCAAGCATGAACAAGCATGAGGATTCTGTATTTGG  
GAATTTCCACCGATCCTAAACCTTCCGTCCGGGGAATGTCCACTACCCGTTTCGTACTTGTTCGTACTCCTAAGACATAAACCC

5610

POLG

POLG-201

POLG-201

TGTTGAAGGCTGTGTGCTGGGAGGGGAGGCTGTTTGGAGGAGCTGAGGTGGGGCTGGAGGTCCACACCACCAAGCAGTGGTGGGCT  
ACAACCTCCGACACACGACCCTCCCCTCCGACAAACTCCTCGACTCCACCCCGACCTCCAGGTGTGGTGGTTTCGTCAACCACCCGA

5695

POLG

POLG-201

POLG-201

GGCCCCACAGTTGCAGCCTCCCTCCTTCCCTTCCCTTTTTCTCCTCCTCCTCCTCAGGGTTCCCGCATGCGTTTTCTGGACACCAT  
CCGGGGTGTCAACGTCGGAGGGAGGAAGGGAAAGGGAAAAGAGGAGGAGGAGGAGTCCCAAGGGCGTACGCAAAGGACCTGTGGTA

5780

POLG

POLG-201

POLG-201

290 295  
G S R M R F L D T M

ENSE00003993911

GAGCATGCACATGGCCATCTCAGGGCTAAGCAGCTTCCAGCGCAGTCTGTGGATAGCAGCCAAGCAGGGCAAACACAAGGTCCAG  
CTCGTACGTGTACCGGTAGAGTCCCATTGTCGAAGGTCGCGTCAGACACCTATCGTCGGTTCGTCCCGTTTTGTGTTCCAGGTC

5865

POLG

POLG-201

POLG-201

300 305 310 315 320  
S M H M A I S G L S S F Q R S L W I A A K Q G K H K V Q

ENSE00003993911

CCCCCACAAAGCAAGGCCAGAAGTCCAGAGGAAAGCCAGAAGAGGGCCAGCGGTGAGAGCACACTGCCGGTGGGCAGGAGCAT  
GGGGGGTGTTCGTTCCGGTCTTCAGGGTCTCCTTTCCGGTCTTCTCCGGGTCGCCACTCTCGTGTGACGGCCACCCGTCCTCGTA

5950

POLG

POLG-201

POLG-201

325 330 335 340  
P P T K Q G Q K S Q R K A R R G P A

ENSE00003993911

AGTGCTTGGGACCCCTCTCACCAGCCCGTCTGGCCCGAGGCCAGGCTGATCTGCCATGTCCCTTGCTCTGGTTCCCCAGATCTC  
TCACGAACCCTGGGGGAGAGTGGTCGGGCAGACCGGGCTCCGGTCCGACTAGACGGTACAGGGAACGAGACCAAGGGGTCTAGAG

6035

POLG

POLG-201

POLG-201

I S  
ENSE...

ATCCTGGGACTGGCTGGACATCAGCAGTGTCAACAGTCTGGCAGAGGTGCACAGACTTTATGTAGGGGGGCTCCCTTAGAGAAG  
TAGGACCCTGACCGACCTGTAGTCGTCACAGTTGTTCAGACCGTCTCCACGTGTCTGAAATACATCCCCCGGAGGGAATCTCTTC

6120

POLG

POLG-201

POLG-201

345 350 355 360 365 370  
S W D W L D I S S V N S L A E V H R L Y V G G P P L E K

ENSE00003993913

GAGCCTCGAGAAGTGTGGTGAAGGGCACCATTGAAGGACATTCGTGAGAAGTTCAGGTATGGTGCTGGAGGGGGCTCTGGGGAC  
CTCGGAGCTCTTGACAAACACTTCCCGTGGTACTTCTGTAAAGCACTCTTGAAGGTCCATACCACGACCTCCCCCGAGACCCCTG

6205

POLG

POLG-201

E P R E L F V K G T M K D I R E N F Q

ENSE00003993913

POLG-201

ATGGGCTGTGGCACACCCCTAGCTGCACCTTGGGGAGATGCAGCTGCCAGGCCTGACCCTGAGAGCTGGTGGTGGTAATGGGATGG  
TACCCGACACCGTGTGGGGATCGACGTGAACCCCTCTACGTCGACGGTCCGGACTGGGACTCTCGACCACCACATTACCCCTACC

6290

POLG

POLG-201

POLG-201

CTGCCACCTTGGCGCTTCTGTACCTTGTGCCAGGACCTGATGCAGTACTGTGCCAGGACGTGTGGGCCACCCATGAGGTTT  
GACGGGTGGAACGCGGAAGGACAGTGAACACGGTCTTGGACTACGTCATGACACGGGTCTGACACCCGGTGGGTACTCCAAA

6375

POLG

POLG-201

D L M Q Y C A Q D V W A T H E V

ENSE00003993915

POLG-201

TCCAGCAGCAGCTACCGCTCTTCTTGGAGAGGTGAGGGGGAGCCCATGTGGGAATCTCTGGGGTCAAGTGTGTTCTGGTACCCG  
AGGTGTCGTCGATGGCGAGAAGAACCTCTCCACTCCCCCTCGGGTACACCCTTAGAGACCCCAAGTACACAAGGACCATGGGC

6460

POLG

POLG-201

F Q Q Q L P L F L E R

ENSE00003993915

POLG-201

GGCCACTGTAATCAGGTGGCGCTGGTTCTATCTCAGGTTGGGGACCTTAGCTTTTCTAGGCTGAAAAGTGGAGCCCTTCTGTT  
CCGGGTGACATTAGTCCACCGCGACCAAGATAGAGTCCAACCCCTGGAATCGAAAAGATCCGACTTTCTTACCTCGGGAAGACAA

6545

POLG

POLG-201

POLG-201

CAGTGGTGTCCATCTGGGCCCTGGACTCTGGATTTGACAGAGGCCCTGAAGGGGAGGGCCATGGAGTTGTGCTTGTGTGCATGT  
GTCACCACAGGTAGACCCGGGACCTGAGACCTAAACTGTCTCCGGGACTTCCCCTCCCGGTACCTCAACACGAACACACAGTACA

6630

POLG

POLG-201

POLG-201

GCACGGTCTTGGTTTACTGTGCACCTTCTCTAACTAGATCCTTAGCCAAGGGCTTACATACAGCGTGGTTATGTTTATTAATGA  
CGTGCCAGGACCAAATGACACGTGGAAGAGATTGATCTAGGAATCGGTTCCCGAAGTGTATGTCGCACCAATACAAATAATTACT

6715

POLG

POLG-201

POLG-201

GTCTGTCTTATGAAGTGACCCTTGTATGCTGAAAATTCAGGTATATTTGTACCAAAGATATGGAAAGAAAAAGAAGGGAGGAAA  
CAGACAGAATACTTCACTGGGAACATACGACTTTTAAAGTCCATATAAACATGGTTTTCTATACCTTTCTTTTTTCTTCCCTCCTTT

6800

POLG

POLG-201

POLG-201

ATTTGGGTGTAACCTTTTACTCCCTCAGAGCTTAACTACTAATAGCTTGCTGTTGGCTAGAAGCTTTACTGATAACATAATACAT  
TAAACCCACATTGAAAACCTGAGGGAGTCTCGAATTGATGATTATCGAACGACAACCGATCTTCGAAATGACTATTGTATTATGTA

6885

POLG

POLG-201

POLG-201

ATTTTTTATGTTATACGTATTATATACTGTATTCTTAAAGTAAGCTAGATAAAAGAAAATGTATTAAGAAAATCATGAGGAGAAA  
TAAAAAATACAATATGCATAATATATGACATAAGAATTTCAATTCGATCTATTTTCTTTTACATAAATCTTTTAGTACTCCTCTTT

6970

POLG

POLG-201

POLG-201

ATATGTTTACTATTTCATTAGGTGGAAGTGGATCATCATAAAGATATCTATCCTTCACGTTGAGTAGGCTGAGGGCGGGGGTTGGG  
TATACAAATGATAAGTAATCCACCTTCACCTAGTAGTATTTCTATAGATAGGAAGTGCAACTCATCCGACTCCCGCCCCAACCC

7055

POLG

POLG-201

POLG-201

CTTGCTGTCTCGGGTGGCTAAGGCTGAAGAAAATAAATGTGTAAGTGAACCTTGACAGATCCAGACATGTGTTGTTTAAATGTCAG  
GAACGACAGAGCCACCGATTCCGACTTCTTTTATTTACACATTCACCTTGAACGTGCTAGGTCTGTACACAACAAATTTACAGTC

7140

POLG

POLG-201

POLG-201

CTGTATTTTACCACCCAAGTTGTGAGGTTCAAGGCATGATGTTTTTTCATGTATGGGATTATTAGCACAGTGCCTGGCACAGAGTCA  
GACATAAAATGGTGGGTTCAACACTCCAAGTCCGTAATAAAGTACATAACCCTAATAATCGTGTACAGGACCGTGTCTCAGT

7225

POLG

POLG-201

POLG-201

TTACTCCACGTGTGGCAGCCATTTTCACTTTTGCCATCTATATTTCCACATTACCCCTGAGGATGGGATGATATTGTTCCCAT  
AATGAGGTGCACACCGTTCGGTAAAAGTGAAAACGGTAGATATAAAGGGTGAATGGGGACTCCTACCCTACTATAACAAGGGTAA

7310

POLG

POLG-201

POLG-201

TTATAGATGAAAGAAGAACTGAGGGCTCCGAGAGATGGGGTTGCTTACCCAGGGATGAGTAACAGTAGAGCTGGGATTTAATGCCGTCT  
AATATCTACTTTCTTGACTCCGAGGGCTCTCTACCCCAACGAATGGGTCCCTACTCATTGTTCATCTCGACCCTAAATTACGGCAGA

7395

POLG

POLG-201

POLG-201

GACTTTTGGAGCTGTGCCATGTCAGTGGCTGGGTTGAGGCTTGCTAAACCAGCTCAGGGATTGGGCCAGTCTTGCCTCCTGTGGTC  
CTGAAAACCTCGACACGGTACAGTCAACGACCCAACTCCGAACGATTTGGTCGAGTCCCTAACCCGGTCAGAACGGAGGACACCAG

7480

POLG

POLG-201

POLG-201

ATTTATGGCAGCTCCTGGTGTGGCTTCCAAAGGTGTCCCCACCCAGTACTCTGGCCGGCATGCTGGAGATGGGTGTCTCTACC  
TAAATACCGTCGAGGACCACAAACGGAGGTTCCACAGGGGTGGGTCACTGAGACCGGCCGTACGACCTCTACCCACAGAGGATGG

7565

POLG

POLG-201

C P H P V T L A G M L E M G V S Y  
ENSE00003993901

POLG-201

TGCCTGTCAACCAGAAGCTGGGAGCGTTACCTGGCAGAGGCACAGGGCACTTATGAGGAGCTCCAGCGGGAGATGAAGAAGTCGTT  
ACGGACAGTTGGTCTTGACCCTCGCAATGGACCGTCTCCGTGTCCCGTGAATACTCCTCGAGGTGCGCCCTCTACTTCTTCAGCAA

7650

POLG

POLG-201

L P V N Q N W E R Y L A E A Q G T Y E E L Q R E M K K S L  
ENSE00003993901

POLG-201

GATGGATCTGGCCAATGATGCCTGCCAGCTGCTCTCAGGAGAGAGGTAGCCAGGCCTTGGGTGGGCAGGATCTAGGCAGGGGACT  
CTACCTAGACCGGTTACTACGGACGGTCGACGAGAGTCTCTCTCCATCGGTCCGGAACCCACCCGTCCTAGATCCGTCCCCTGA

7735

POLG

POLG-201

M D L A N D A C Q L L S G E R  
ENSE00003993901

POLG-201

GGCAGGTGGGCAGCCCTAGCCTTTCGGCTTAGCCTTAGCCCTGCCCTAGTGGACTGGCTCTGTAGGTACAAAGAAGACCCCTGGCTC  
CCGTCCACCCGCCGGATCGGAAGCCGAATCGGAATCGGGACGGGATCACCTGACCGAGACATCCATGTTTCTTCTGGGGACCGAG

7820

POLG

POLG-201

Y K E D P W L  
ENSE00003993904

POLG-201

TGGGACCTGGAGTGGGACCTGCAAGAATTTAAGCAGAAGAAAGCTAAGAAGGTGAAGAAGGAACCCAGCCACAGCCAGCAAGTTGC  
ACCCTGGACCTCACCCCTGGACGTTCTTAAATTCGTCTTCTTTTCGATTCTTCCACTTCTTCTTGGTCGGTGTTCGGTTCGTTCAACG

7905

POLG

POLG-201

W D L E W D L Q E F K Q K K A K K V K K E P A T S K L  
ENSE00003993904

POLG-201

CCATCGAGGGGGCTGGGGCCCTGGTGATCCCATGGATCAGGAAGGTGGGGAGCATGGGTGGGAGGTAGGGTAGGGTAGGGGTTG  
GGTAGCTCCCCGACCCCGGGGACCACTAGGGTACCTAGTCTTCCACCCCTCGTACCCACCCCTCCATCCCATCCCATCCCCAAC

7990

POLG

POLG-201

515 520 525  
P I E G A G A P G D P M D Q E

ENSE00003993904

POLG-201

TCTCTGGGAAGGTCTGTGATTGAGGGGGTCTTTCGAAAGGATTGCTCCAGCCTTCTGGAGATGAGCGGGTGGGAGCAGATCTTA  
AGAGACCCTTCCAGGACACTAACTCCCCAGGAAGCTTTCTAACGAGGTCGGAAGACCTCTACTCGCCACCCCTCGTCTAGAAT

8075

POLG

POLG-201

POLG-201

TTGAGAGTTCTTCTCTCTGCTCCTGATTGTCTTCCCCACCCCTCACAGACCTCGGCCCTGCAGTGAGGAGGAGGAGTTTCAACA  
AACTCTCAAGGAAGAGGACGAGGACTAACAGAAGGGGGTGGGAGTGTCTGGAGCCGGGGACGTCACTCCTCCTCCTCAAAGTTGT

8160

POLG

POLG-201

530 535 540  
D L G P C S E E E E F Q Q

ENSE00003993909

POLG-201

AGATGTCATGGCCCGCGCCTGCTTGCAGAAGCTGAAGGGGACCACAGAGCTCCTGCCAAGCGGCCCCAGCACCTTCTGGACAC  
TCTACAGTACCGGGCGCGGACGAACGTCTTCGACTTCCCCTGGTGTCTCGAGGACGGGTTTCGCCGGGGTTCGTGGAAGGACCTGTG

8245

POLG

POLG-201

545 550 555 560 565  
D V M A R A C L Q K L K G T T E L L P K R P Q H L P G H

ENSE00003993909

POLG-201

CCTGGGTGAGCCCTGCCACCCCCAGCAGTGTATCTAGAGTCTACCCTTGCTCCATTCTCAGGACAGCCCTGGTCTGGGTTCTG6  
GGACCCACTCGGGACGGGTGGGGTTCGTACATAGATCTCAGATGGGAACGAGGTAAGAGTCTGTCTGGGACCAGACCCAAGACC

8330

POLG

POLG-201

570  
P G

ENSE...

POLG-201

CACAGAGGCATCATGCACATGTATACTTATTGACCTGCTGCCATTCAGTCACACTGTCTTCCAGTCCTATTCTCATTTGCTCACT  
GTGTCTCCGTAGTACGTGTACATATGAATAACTGGACGACGGTAAGTCAGTGTGACAGAAGGTCAGGATAAGAGTAAACGAGTGA

8415

POLG

POLG-201

POLG-201

CTGGACCGGCTCACTGGACTCATTACGACAGTGTGTTGTGAGCACCTGCTGTGCAATGGCCCGTGGCAGCCACCGGGTGTACACAC  
GACCTGGCCGAGTGACCTGAGTAAGTCGTGTCAACAACACTCGTGGACGACACGTTACCGGGCACCGTCTGGTGGCCACATGTGTG

8500

POLG

POLG-201

POLG-201

TGGAGCATAGCTCCTCCTTTCCAGTAGTTCTTTTTCTAGGAGGAGCCAGGCACGTAGACCAGCCAGTGCAGCTAGTGTCCATAG  
ACCTCGTATCGAGGAGGAAAGGTCATCAAGAAAAAGGATCCTCCTCGGTCCGTGCATCTGGTCGGTCACGTCGATCACAGGTATC

8585

POLG

POLG-201

POLG-201

GTAGAGTTCTGACTCTGCCTCGGGAAATAAATCAAGAAGGCTTCTTTGAGAAGGTGCCCTTCTTTTGGAGCCTCATAGGGTGGCA  
CATCTCAAGACTGAGACGGAGCCCTTATTTAGTTCTTCCGAAGGAACTCTTCCACGGGGAAGGAAACTCGGAGTATCCCACCGT

8670

POLG

POLG-201

POLG-201

GAGATGAGAAAAAGGGCAGCCAGGGTGAGCAGCAGGGTGCCAGCTTTGCACCTGCAAGACCCTGAGAGCAAGTGTCTTGAGTGCC  
CTCTACTCTTTTTCCCGTCGGTCCCCTCGTTCGTCACGGTTCGAAACGTGGACGTTCTGGGACTCTCGTTCACAGGACTCACGG

8755

POLG

POLG-201

POLG-201

TTGCTAGTCTCACCTGGGCTCAACTCTGGTGAACAGCCTGCAAGAGAGCACCCAGAAGGACTGGTGTCTTCTCTAGAGGGGTGGG  
AACGATCAGAGTGGGACCCGAGTTGAGACCACTTGTTCGGACGTTCTCTCGTGGGTCTTCTGACCACAAAGAGATCTCCCCACCC

8840

POLG

POLG-201

POLG-201

GAGGGCAGATCTGCTCCCTCCTCTGGTCAAGTACCCTGGATGAAATGGAGCTTGGGAAGGAGCCCTGCCCTGGGTCAAGGATATGC  
CTCCCGTCTAGACGAGGGAGGAGACCAGTCAATGGGACCTACTTTACCTCGAACCTTCTCCTCGGGACGGGACCCAGTCCCATAACG

8925

POLG

POLG-201

POLG-201

TTTTGTGTCCTGGCTTCTGACTAGTCCAGTGGGACTGACTTAGTGCTTTGCTTTTGAATATTCTTCTAGAGGATTCCATGGGG  
AAAACACAGGACCGAAGACTGATCAGGTCACCCTGACTGAATCACAGAAACGAAAACCTTTATAAGAAGATCTCCTAAGGTACCCC

9010

POLG

POLG-201

POLG-201

GTCCTGGCTAAAGCATCCCAGAGGAGGGGATGGCGGCTGTAGGCTGGGGTCACCAGAAAGCCCCAGGGCTTTGGAGGGTGGGTGG  
CAGGACCGATTTTCGTAGGGTCTCCTCCCCTACCGCCGACATCCGACCCAGTGGTCTTTCGGGGTCCCGAAACCTCCCACCCACC

9095

POLG

POLG-201

POLG-201

9180  
GGACATTGTGAGAGAGAGAACCTTCCCCCAACAACCTGCCCTTACCATCGTGACACTGCTGTCTTCTCTGCTGGGACGTAGATGGT  
CCTGTAACACTCTCTCTCTTGAAGGGGGTGTGTTGACGGGAATGGTAGCACTGTGACGACAGAAGGACGACCTGCATCTACCA

POLG >

POLG-201 >

W  
ENSE...

POLG-201 >

9265  
ACCGGAAGCTCTGCCCCGGCTAGACGACCTTGCATGGACCCCGGGCCAGCCTCCTCAGCCTGCAGATGCGGGTCACACCTAA  
TGGCCTTCGAGACGGGGCCGATCTGCTGGGACGTACCTGGGGCCGGGGTCGGAGGAGTCGGACGTCTACGCCAGTGTGGATT

POLG >

POLG-201 >

Y R K L C P R L D D P A W T P G P S L L S L Q M R V T P K  
575 580 585 590 595 600

ENSE00003993914 >

POLG-201 >

9350  
ACTCATGGCACTTACCTGGGATGGCTTCCCTCTGCACTACTCAGAGCGTCATGGCTGGGGCTACTTGGTGCCTGGGCGGGGGAC  
TGAGTACCGTGAATGGACCTACCGAAGGGAGACGTGATGAGTCTCGCAGTACCGACCCCGATGAACCACGGACCCGCCGCCCTG

POLG >

POLG-201 >

L M A L T W D G F P L H Y S E R H G W G Y L V P G R R D  
605 610 615 620 625

ENSE00003993914 >

POLG-201 >

9435  
AACCTGGCCAAGCTGCCGACAGGTACCACCCTGGAGTCAGCTGGGGTGGTCTGCCCTACAGGTAAGGCTTAGGCCAGGGGAGG  
TTGGACCGGTTTCGACGGCTGTCCATGGTGGGACCTCAGTCGACCCACCAGACGGGGATGTCCATTCCGAATCCGGGTCCCTCC

POLG >

POLG-201 >

N L A K L P T G T T L E S A G V V C P Y R  
630 635 640 645 650

ENSE00003993914 >

POLG-201 >

9520  
AAGGGGCTGGAGCCTAGGGACCCCTTCCCCTGGCTGGTCAGCTCAGGCTAGTGGAAAGAGTTTTGGGTTCAAGAGTCTGGGTTTCAG  
TTCCCGACCTCGGATCCCTGGGGAAGGGACCGACCAGTTCGAGTCCGATCACCTTTCTCAAACCCAAGTTCTCAGACCCAAGTC

POLG >

POLG-201 >

POLG-201 >

9605  
AAGAAGGGAAAAACAGGAAAAAATTAACACACACACACACACCCTCTCTCTCTCTTTCTCTCTCTCTCACTCACTCACTCACT  
TTCTTCCCTTTTGTCTTTTTTAATTGTGTGTGTGTGTGGGAGAGAGAGAGAGAAAGAGAGAGAGAGTGAAGTGAAGTGAAGTGA

POLG >

POLG-201 >

POLG-201 >

9690  
CTCTCTCTCACTCACTCACTCTCTCACTCACTCTCTCACTCACTCTCTCACTCACTCTCTCACTCACTCTCTCTCACTC  
GAGAGAGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAG

POLG >

POLG-201 >

POLG-201 >



TCTCACTCACTCACTCACTCACTCACTCTCTCACTCACTCTCTCACTCACTCACTCACTCTCTCTCACTCTCTCACTCACTCACT  
AGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGAGAGTGAGTGAGTGAGTGAGTGAGTGAGTGAGAGAGAGTGAGAGAGTGAGTGAGTGA

9775

POLG

POLG-201

POLG-201

CTCTCACTCACTCACTCACTCACTCACTCTCTCACTCACTCACTCACTCTCTGGGTTTCAGGTTTTTTTCTTCCATGGCTACCCTTA  
GAGAGTGAGTGAGTGAGTGAGTGAGTGAGAGAGTGAGTGAGTGAGTGAGTGAGAGACCCAAGTCCAAAAAAGAAGGTACCGATGGGAAT

9860

POLG

POLG-201

POLG-201

CCCTCTGGATCTCAGAGCTCTGGGAGGGAGTATGTTGAGATGTTTCACAGTGGGGAGGACTAAAGGCCCTACTCTTGGGCCAGAA  
GGGAGACCTAGAGTCTCGAGACCCTCCCTCATACAACCTTACAAGTGTACCCCTCTGATTTCCGGGATGAGAACCCTGGGTCTT

9945

POLG

POLG-201

POLG-201

GCATAGCTGCCTTCACAGGAACATGCGGAGGGCTGTTACAAGTAGCAGGGAGATGGGCTTTTAAAAAAGTGTGTGTATATAATTT  
CGTATCGACGGAAGTGTCTTGTACGCCTCCCGACAATGTTTCATCGTCCCTCTACCCGAAAATTTTTTTCACACACATATATTTAA

10,030

POLG

POLG-201

POLG-201

GAGTGATAATTATGGGCCAAGCAGTGCTTCCCTTATTTGTTCCCAAGGAGTCCCATGAGCTAGAATGGTTATCCCATGTTGTA  
CTCACTATTAATACCCGGTTTCGTACGAAGGGGAATAAACAAAGGGGTTCTCAGGGTACTCGATCTTACCAATAGGGGTACAACAT

10,115

POLG

POLG-201

POLG-201

GTTGACAAAGGCTTGGTTGACTTAAGATCACAGACCCTGAGCTTTAGGCAGGCAGGTGTTGGGGAGAACTTACAGTGGCCAGAA  
CAACTGTTTCCGAACCAACTGAATTCTAGTGTCTGGGACTCGAAATCCGTCCGTCCACAACCCTCTTTGAATGTCACCCGGGTCT

10,200

POLG

POLG-201

POLG-201

ATTAAGAGTCCTGGCTCTTCAGGGCAGCCTGAGTCTCTTATGGGGCCATGGGACCAAAGGGGATAAACTGGCCTTGCTCCTTTG  
TAATTCTCAGGACCGAGAAGTCCCGTCGGACTCAGAGAATACCCCGGTACCCTGGTTTTCCCTATTGTGACCGGAACGAGGAAAC

10,285

POLG

POLG-201

POLG-201

AGCCCGAGGGTAGGTGAGCGGACAGGAGCCAGCCTGCAGCTGGGCCTTGGGTCCTGTCTCCCGCTGCTGTGCTCTCAGAACTTC  
TCGGGCTCCCATCCACTCGCCTGTCTCGGTCTGGACGTCGACCCGGAACCCAGGACAGGAGGGCGACGACACGAGAGTCTTGAAG

10,370

POLG

POLG-201

POLG-201

TCTTGAGACGGCAGCTCTGTAGTGTAAGAGGAACTTGGATTTGAGTGAGACAAGGCCTTGAACCCAGCCTGCTGCCAGGGTGCT  
AGAACTCTGCCGTCGAGACATCACATTCTCCTTGAACCTAAACTCACTCTGTTCCGGAACCTTGGGGTCGGACGACGGTCCCACGA

10,455

POLG

POLG-201

POLG-201

GTCATTTTCAGTTTGTCAATCAATCCCTGTCTAAAACCCGGGAAAGTGCTATCTGGTTCTGCCTCAGAGCTGATTCTGAGGACTA  
CAGTAAAAGTCAAACAGTTAGTTAGGGACAGATTTTGGGCCCTTTCACGATAGACCAAGACGGAGTCTCGACTAAGACTCCTGAT

10,540

POLG

POLG-201

POLG-201

AACAAAGGGGAATTGTGGAAGGCACTAGCAAGCTGCCTGGCCAGAGTGGGCATCTGGTAATCAGCGGCTGCTGCTGCTACTGTTC  
TTGTTTCCCTTAACACCTTCCGTGATCGTTCGACGGACCGGGTCTCACCCGTAGACCATTAGTCGCCGACGACGACGATGACAAG

10,625

POLG

POLG-201

POLG-201

TCTGCCAGAGCCATCGAGTCCCTGTACAGGAAGCACTGTCTCGAACAGGGGAAGCAGCAGCTGATGCCCCAGGAGGGCCGGCCTG  
AGACGGGTCTCGGTAGCTCAGGGACATGTCCTTCGTGACAGAGCTTGTCCCCTTCGTGTCGACTACGGGGTCTCCGGCCGGAC

10,710

POLG

POLG-201

A I E S L Y R K H C L E Q G K Q Q L M P Q E A G L

ENSE00003993918

POLG-201

GCGGAGGAGTTCCTGCTCACTGACAATAGTGCCATATGGCAAACGGTGAGGGCAGGCTCTGAACCTGAGCTTTGGGGAGGGGAGG  
CGCCTCCTCAAGGACGAGTGACTGTTATCACGGTATACCGTTTGGCACTCCCCTCCGAGACTTGGACTCGAAACCCCTCCCCTCC

10,795

POLG

POLG-201

A E E F L L T D N S A I W Q T

ENSE00003993918

POLG-201

TCTCTGTATTCCACCCAGGGAAGGGGACAGCCTTTGGGTGGGAGGCTGGCACTGGTGGCTCACCCCAGACTGGCCTGCAGTGTCTG  
AGAGACATAAGGTGGGTCCCTTCCCCTCGGAAACCCACCCTCCGACCGTGACCACCGAGTGGGGTCTGACCGGACGTCACAGAC

10,880

POLG

POLG-201

POLG-201

AGTACCATGCAGGGAGGGGGCTGGTGGATTGGGGCCTACCCAGTCCCCTGCTTCACTACTTTGGTCCCTGGACTGCTCCAGGTAGA  
TCATGGTACGTCCCTCCCCGACCACCTAACCCCGGATGGGTGAGGGGACGAAGTGATGAAACCAGGAACCTGACGAGGTCCATCT

10,965

POLG

POLG-201

V E  
ENSE...

POLG-201

PCR Forward

AACTGGATTACTTAGAAGTGGAGGC

AGAACTGGATTACTTAGAAGTGGAGGCTGAGGCCAAGATGGAGAACTTGCAGCTGCAGTGCCAGGTCAACCCCTAGCTCTGGTG  
TCTTGACCTAATGAATCTTCACCTCCGACTCCGGTTCTACCTCTTGAACGCTCGACGTCACGGTCCAGTTGGGGATCGAGACCAC

11,050

POLG

POLG-201

E L D Y L E V E A E A K M E N L R A A V P G Q P L A L

ENSE00003993908

POLG-201

AGCAGTGCGCCGGCTTGGGTTCTCTAGGTGGGTGCTGGGTGGAAAGGGCTTCTCTTGCCACCTAGTTCTTCCCAGCCAGAGTT  
TCGTACGCGGGCCGAACCCAAGAGATCCACCCACGACCCACCTTCCCGAAGGAGAACGGGTGGATCAAGAAGGGTTCGGTCTCAA

11,135

POLG

POLG-201

POLG-201

CCCTAGGTCTTAAGGGGGTTGGAGATGCCACCCTGCCCTGGGAGGCCCCACACGTGTTGGAGCAAGGAGAAAGCCTGGGTGAGA  
GGGATCCAGAATTCCCCAACCTCTACGGTGGGACGGGGACCTCCGGGGTGTGCACAACCTCGTTTCTCTTCGGACCCACTCT

11,220

POLG

POLG-201

POLG-201

CCTCATGGCCATCTTGTCAATTTCCAGCTGATGACGACAGTTTTAGGGCCCTTTTCCACCCCTACCCCATGGCCCTTGCTGAAT  
GGAGTACCGGTAGAACAGTAAAGGGTGCAGTACTGCTGTCAAAGTCCGGGAAAAGGGTGGGGGATGGGGTACCGGGAACGACTTA

11,305

POLG

POLG-201

POLG-201

Donor Template WT -> SNV

GGTGTGTGGCCCTCACAGACTGCCCGTGGTGGCCCCAAGGACACCCAGCCCAGCTATC

GCAGGTGCTGGAGCAGGGCCTGATATAGGTGTGTGGCCCTCACAGACTGCCCGTGGTGGCCCCAAGGACACCCAGCCCAGCTATC  
CGTCCACGACCTCGTCCCGGACTATATCCACACACCGGGAGTGTCTGACGGGCACCACCGGGGTTCTGTGGGTTCGGGTTCGATAG

11,390

POLG

POLG-201

T A R G G P K D T Q P S Y

ENSE00003993898

POLG-201

Donor Template WT -> SNV

Donor Template WT -> SNV

ACCATGGCAAT C GACCTTACAACGACGTGGACATCCCTGGCT

ACCATGGCAAT G GACCTTACAACGACGTGGACATCCCTGGCTGCTGGTTTTTCAAGCTGCCTCACAAGGTGTGTCTCTGGGTCATG  
TGGTACCGTTA C CTGGAATGTTGCTGCACCTGTAGGGACCGACGACCAAAAAGTTTCGACGGAGTGTTCCACACAGGACCCAGTAC

11,475

POLG

POLG-201

H H G N G P Y N D V D I P G C W F F K L P H K

ENSE00003993898

POLG-201

Donor Template WT -> SNV

PAM Protospacer Sequence

SNV

ACCGTTACCTGGAATGTTGC  
gRNA Protospacer

GCCTGTCTGTGGTGTTCCTCATTCTGCTCAAGGCCACAGCAGGCCTTCAGAGTGACACACCTGAGACTTTCTTTTTGTGGG  
CGGACAGGACACCACAAAAGGAGTAAGACGAGTTCCGGGTGTCGTCGGGAAGTCTCACTGTGTGGACTCTGAAAGGAAAAACACCC

11,560

POLG

POLG-201

POLG-201

GGACAGGACACCACAAAAGGA  
Sanger Sequencing

AATGACTAGTAGTGGGACAGAGTGTGATTTTCAGGCACATACTGTCATCTCTCAGCTTTTTGTTTTTCTAATGAAAAGTCGGGTGGCA  
TTACTGATCATCACCCCTGTCTCACACTAAAGTCCGTGTATGACAGTAGAGAGTCGAAAAACAAAAGATTACTTTTCAGCCACCCGT

11,645

POLG

POLG-201

POLG-201

AGGGGCATGGTGGTGGAAATTAATGACATGGGGCACGTCGTATGTTTGGTACGACATCTGGTACGTGATAGGTTTTTCCGATTTG  
TCCCCGTACCACCACCTTAATTTACTGTACCCCGTGCAGCATACAAACCATGCTGTAGACCATGCACTATCCAAAAAGGCTAAAC

11,730

POLG

POLG-201

POLG-201

TTATTATGCAGGGAGCCAGGTTTGTCTGTGTCTGTGTCTTAGGGGGCATGTGTGTGCACGTGTGTGTGTGCGTGCGCGCGTGC  
AATAATACGTCCCTCGGTCCAAACGAACACAGACACACAGAATCCCCGTACACACACGTGCACACACACACGCACGCGCGCACG

11,815

POLG

POLG-201

POLG-201

GCGCGTGCGTGATACAATCAGGGATTTGCCTCAGACTGCTGAGGTTCTGGGCTCAGTGTTGGGAGGAGTGCAGGTA CTACGTTG  
C GCGCACGCACTATGTTAGTCCCTAAACGGAGTCTGACGACTCCAAGACCCGAGTCACAACCTCCTCACGTCCATGAGTGCAAC

11,900

POLG

POLG-201

POLG-201

GTTCCCCACCCAGGGGTCTGCCACCTGCCTCCAGCCCCTGCTTCTTTGCTCTGTCCAGGATGGTAATAGCTGTAATGTGGGAAG  
CAAGGGGTGGGTCCCCAGACGGTGGACGGAGGTCGGGGACGAAGGAAACGAGACAGGTCCTACCATTATCGACATTACACCCCTTC

11,985

POLG

POLG-201

D G N S C N V G S  
ENSE00003993910

POLG-201

CCTACCATTATCGACATTACACCT  
PCR Reverse

CCCCTTTGCCAAGGACTTCTGCCCAAGATGGAGGATGGCACCCCTGCAGGCTGGCCCAGGAGGTGCCAGTGGGCCCCGTGCTCTG  
GGGGAAACGGTTCTGAAGGACGGGTTCTACCTCCTACCCTGGGACGTCCTGACCGGGTCTCCACGGTCACCCGGGGCACGAGAC

12,070

POLG

POLG-201

765 770 775 780 785 790  
P F A K D F L P K M E D G T L Q A G P G G A S G P R A L  
ENSE00003993910

POLG-201

GAAATCAACAAAATGATTTCTTTCTGGAGGAACGCCATAAACGTATCAGGTGGGCCACCATGGGAGGAGTCTCTGGGATGCCTTT  
CTTTAGTTGTTTACTAAAGAAAGACCTCCTTGCGGGTATTTGCATAGTCCACCCGGTGGTACCCTCCTCAGGACCTACGGAAA

12,155

POLG

POLG-201

795 800 805  
E I N K M I S F W R N A H K R I S  
ENSE00003993910

POLG-201

CCCCTCTCTCCACCCAGGGACCCCTGACTAACCCCTGGATTCCACAGAGGGCCAGCCTGACTATGGTCTAGAGGCCTGGCTAC  
GGGGAGAGAAGGGTGGGTCCCTGGGGACTGATTGGGACCTAAGGGTGTCTCCCGGTCGGACTGATACCAGATCTCCGGACCGATG

12,240

POLG

POLG-201

POLG-201

TTTTGGTCTGGTGCCATGGACCTTGGGCAGGTCTCCCCTCTAGCTTCAGTTTCCCTGTTAATGTAAAAAGAATGGTGTGTAGG  
AAAACCAGGACCACGGTACCTGGAACCCGTCCAGAGGGGAGATCGAAGTCAAAGGGACAATTACATTTTTCTTACCACGACATCC

12,325

POLG

POLG-201

POLG-201

ACCATGAGAGCCCTTCGTAGCTCCAACAGAACTTCTTGGTGTAACTGCTGGAGCCGTGGGCTATGGCTGAGGACCATGGAGAGCT  
TGGTACTCTCGGGAAGCATCGAGGTTGTCTTGAAGAACCACATTGACGACCTCGGCACCCGATACCGACTCCTGGTACCTCTCGA

12,410

POLG

POLG-201

POLG-201

GGTGGCCTGTAAGCCCTGTTGGGGGCTGGGAGCTGGGTCTTCTAGTCTGGAATGGCAAATGTATTCATCTTGAAGGCCATTTCCA  
CCACCGGACATTGCGGACAACCCCGACCCCTCGACCCAGAAGATCAGACCTTACCGTTTACATAAGTAGAACTCCGGTAAAGGT

12,495

POLG

POLG-201

POLG-201

AGGTGGTTGTGGCCATCAGCACACTGGCGAGCAGAGTGGGTGTTGGGATGGTGAAGTCTGCCTGTGTGTAGGAAGAGGCATTGGT  
TCCACCAACACCGGTAGTCGTGTGACCGCTCGTCTCACCCACAACCTTACCCTTCAGACGGACACACATCCTTCTCCGTAACCA

12,580

POLG

POLG-201

POLG-201

GGAAGGAGCGCCTCATGGATGCCCCCGGAGAGGAGCGGAAGCTCGCTCGGAGGCCTGGCCGGTTCCAGATGGTTTATGCTCTT  
CCTTCCTCGCGGAGTACCTACGGGGGGCCTCTCCTCGCCTTCGAGCGAGCCTCCGGACCGGCCAAGGGTCTACCAAATACGAGAA

12,665

POLG

POLG-201

POLG-201

GATTGGTGTATCATAGGGCCCCAGTTCTTGGCTGAGCCAGGGCTCACCTTGAGTCCAGTTAGTGAGGCTGGGTAATGGAGTATAG  
CTAACCACATAGTATCCCGGGGTCAAGAACCCTCGGTCCCGAGTGGAAGTCAAGTCAATCACTCCGACCCATTACCTCATATC

12,750

POLG

POLG-201

POLG-201

CAGTCCTGGAGGTGGGCAGGTGAGGGCCATGGTGGGATGTGGGATAGATTCTGCTTCCCATGGCTGTGCTGAGCCTCACGTTGTC  
GTCAGGACCTCCACCCGTCCACTCCCGGTACCACCCTACACCCTATCTAAGACGAAGGGTACCAGACGACTCGGAGTGCAACAG

12,835

POLG

POLG-201

POLG-201

TGTCCCACAGCTCCAGATGGTGGTGTGGCTGCCAGGTCAGCTCTGCCCGTGCTGTGATCAGGTATGGTCTGCTGAGTGGTT  
ACAGGGGTGTCGAGGGTCTACCACCACACCGACGGGTCCAGTCGAGACGGGGCACGACACTAGTCCATACCAGACGACTCACCAA

12,920

POLG

POLG-201

810 S Q M V V W L P R S A L P R A V I R 820 825

ENSE00003993903

POLG-201

GTAGGGATAGGAGAACTGAGGTGAGGTGGTAGGTCCTAAGGCCAAAGCACCCCTGCTAAGACCCATTTCTTCCCCTGCACCCAC  
CATCCCTATCCTCTTGACTCCACTCCACCATCCAGGATTCCGGTTTCGTGGGACGATTCTGGGTAAAGGAAGGGGACGTGGGGTG

13,005

POLG

POLG-201

POLG-201

CAGGCACCCCGACTATGATGAGGAAGGCCTCTATGGGGCCATCCTGCCCAAGTGGTGACTGCCGGCACCATCACTCGCCGGGCT  
GTCCGTGGGGCTGATACTACTCCTTCCGGAGATACCCCGGTAGGACGGGGTTCACCACTGACGGCCGTGGTAGTGAGCGGCCCGA

13,090

POLG

POLG-201

H P D Y D E E G L Y G A I L P Q V V T A G T I T R R A 830 835 840 845 850

ENSE00003993917

POLG-201

GTGGAGCCCACATGGCTCACCGCCAGCAATGCCCGGGTATGTGACCTCTGTACCTCTGGCCCCTGCTCTTCCTCTCCAGGTCTG  
CACCTCGGGTGTACCGAGTGGCGGTCGTTACGGGCCCATACACTGGAGACATGGAGACCAGGAGACGAGAAGGAGAGGGTCCAGAC

13,175

POLG

POLG-201

855 860 865  
V E P T W L T A S N A R

ENSE00003993917

POLG-201

TAGAAACTGGGCTCTGAGGGCCTTTAGGTATTTAGTGAGGATCATGAAAAGGACCCTGTGATCTGGGTCAGGCAGGACTCTAGTC  
ATCTTTGACCCGAGACTCCCGGAAATCCATAAATCACTCCTAGTACTTTTCTGGGACACTAGACCCAGTCCGTCCTGAGATCAG

13,260

POLG

POLG-201

POLG-201

AAATCTGGCTTCATGATTTCTGTCCACTCCTTCAGTAAATATGTTCTGGGCACCTGCTCCTGGCCAGACCGTGACAGGCCTAATA  
TTTAGACCGAAGTACTAAAGACAGGTGAGGAAGTCATTTATACAAGACCCGTGGACGAGGACCGGTCTGGCACTGTCCGCATTAT

13,345

POLG

POLG-201

POLG-201

GCTACAGCTCTCATGGAATTTAGATAGGACCGTGTAGGTGAGGGGTCTGGCATAGCGCTAGGCATAGAGTAGATTCTTTACCTGT  
CGATGTCGAGAGTACCTTAAATCTATCCTGGCACATCCACTCCCAGACCGTATCGCGATCCGTATCTCATCTAAGAAATGGACA

13,430

POLG

POLG-201

POLG-201

CACACCAATTGCTGATAGGTGGCCATCTCTGGAACCTGTGGAATTTGAGCAGTGCTGTCTGGCATTCTCTAAAGCCATCCCCTCAG  
GTGTGGTTAACGACTATCCACCGGTAGAGACCTTGACACCTTAAAGTCGTCACGACAGACCCTAAGAGATTTCCGTTAGGGGAGTC

13,515

POLG

POLG-201

POLG-201

GAAAGGCTCTAGCTCTTTCTCAGTCAACTCTGGCTCCAGGAATGGGGTAGGAAGAGTCTCATTTGGGTATCTCACTCTTCCCACA  
CTTTCCGAGATCGAGAAAGAGTCAGTTGAGACCGAGGTCTTACCCCATCTTCTCAGAGTAAACCCATAGAGTGAGAAGGGTGT

13,600

POLG

POLG-201

POLG-201

GCCTGACCGAGTAGGCAGTGAGTTGAAAGCCATGGTGCAGGCCCCACCTGGCTACACCCCTTGTGGGTGCTGATGTGGACTCCCAA  
CGGACTGGCTCATCCGTCACCTCAACTTTCCGTTACCACGTCCGGGGTGGACCGATGTGGGAACACCCACGACTACACCTGAGGGTT

13,685

POLG

POLG-201

870 875 880 885 890  
P D R V G S E L K A M V Q A P P G Y T L V G A D V D S Q

ENSE00003993907

POLG-201

GAGCTGTGGATTGCAGCTGTGCTTGGAGACGCCCACTTTGCCGGCATGCATGGTGAGCAGGAGCCGGGGTTGGGGCAGCCCAAGCC  
CTCGACACCTAACGTCGACACGAACCTCTGCGGGTGAAACGGCCGTACGTACCACTCGTCTCTCGGCCCAACCCCGTCGGGTCGG

13,770

POLG

POLG-201

895 L W I A A V L G D A H F A G M H 910

ENSE00003993907

POLG-201

CCTCAGCATATTGACAGTTCTGATGAACATTGGGCAGAATGTTCTGAGCTGCTTTTCTCACTCTGCTTTGCTTCCAGGCTGCA  
GGAGTCGTATAACTGTCAAGACTACTTGTAAACCCGCTTACAAGGACTCGACGAAAAGAGTGAGGACGAACAGAAGGTCCGACGT

13,855

POLG

POLG-201

G C  
ENSE0...

POLG-201

CAGCCTTTGGGTGGATGACACTGCAGGGCAGGAAGAGCAGGGGCACTGATCTACACAGTAAGACAGCCACTACTGTGGGCATCAG  
GTCGGAAACCCACCTACTGTGACGTCCCGTCCTTCTCGTCCCCGTGACTAGATGTGTCATTCTGTGCGGTGATGACACCCGTAGTC

13,940

POLG

POLG-201

915 T A F G W M T L Q G R K S R G T D L H S K T A T T V G I S 940

ENSE00003993900

POLG-201

CCGTGAGCATGCCAAAATCTTCAACTACGGCCGCATCTATGGTGCTGGGCAGCCCTTTGCTGAGCGCTTACTAATGCAGTTTAAAC  
GGCACTCGTACGGTTTTAGAAAGTTGATGCCGGCGTAGATACCACGACCCGTCGGGAAACGACTCGCGAATGATTACGTCAAATTG

14,025

POLG

POLG-201

945 R E H A K I F N Y G R I Y G A G Q P F A E R L L M Q F N 970

ENSE00003993900

POLG-201

CACCGGCTCACACAGCAGGAGGCAGCTGAGAAGGCCAGCAGATGTACGCTGCCACCAAGGGCCTCCGCTGGTGAGGGTCCCTCT  
GTGGCCGAGTGTGTCGTCTCCGTCGACTCTCCGGGTCGTCTACATGCGACGGTGGTTCCCGGAGGCGACCACTCCAGGGGAGA

14,110

POLG

POLG-201

H R L T Q Q E A A E K A Q Q M Y A A T K G L R W 990

ENSE00003993900

POLG-201

CCCATCCACTTTAACACCCAGGACCCGAGGCCTGCTTTACTGTCTTTAGTACTACCATCTGTTCTATCTCCTGCCCACTTACTTG  
GGGTAGGTGAAATTGTGGGTCCTGGGCTCCGGACGAAATGACAGGAAATCATGATGGTAGACAAGATAGAGGACGGGTAATGAAC

14,195

POLG

POLG-201

POLG-201

AACTCTCACCTAGCCCTCTCCTTCCACACCTGTGTAACCTGGTTCCAGGATGATTTGTCTATTGTGACATTTGGTTGCTTTAT  
TTGAGAGTGATCGGGGAGAGGAAGGTGTGGACACATTGGACCAAGGTCCTACTAAACAGGATAAACACTGTAAACCAACGAAATA

14,280

POLG

POLG-201

POLG-201



AGTCAGCCTTAAACAGTTTTTTCCTCATGGGAGTAAAGCTATACTTTTTGGTATACTGTTACCAAGTGGTAGCATCTTGACAATTCT  
TCAGTCGGAATTTGTCAAAAAGGAGTACCCTCATTTCGATATGAAAACCATATGACAATGGTTCACCATCGTAGAACTGTTAAGA

14,365

POLG

POLG-201

POLG-201

GATTATGCTGCATAATCAATAATACAGGGGTTGCAAACCTCAGATGCCTACAGGGAATGAGAGCAAATGGAGTGGGTGGAAGACAG  
CTAATACGACGTATTAGTTATTATGTCCCAACGTTTGAGTCTACGGATGTCCCTTACTCTCGTTTACCTCACCCACCTTCTGTC

14,450

POLG

POLG-201

POLG-201

GAGTTGACAGGAGGGCGCTGTGGCAAACCTGGAGCATGTAGGCTGATGTTGATACTGGAGAAAGCATTACCAGGCCCTCCAGGTTAC  
CTCAACTGTCCTCCC CGC GACACCGTTTGACCTCGTACATCCGACTACAACATATGACCTCTTTCGTAATGGTCCGGAGGTCCAATG

14,535

POLG

POLG-201

POLG-201

TTAGCCTAGCTCTCCAATTTGTTTCTCTGATCGTACTGCATACTGTGTGCTCAGGGCCTTAGCAGACTCTCTGCAGGGTTCCAA  
AATCGGATCGAGAGGTTAAACAAAGGAGACTAGCATGACGTATGACACACGAGTCCC GGAATCGTCTGAGAGACGTCCCAAGGTT

14,620

POLG

POLG-201

POLG-201

AAACATTGAGGGAAGAGAGGTACAACCTCCTGAGGTACAGTACACTGTCCACATTTAATTAGCTGGCTCATTGTGGAAACTTCAC  
TTTGTAACCTCCCTTCTCTCCATGTTGAAGGACTCCATGTGATGACAGGTGTAATAATCGACCGAGTAACACCTTTGAAGTG

14,705

POLG

POLG-201

POLG-201

TTTCTCGTCAACAACCTAAAAGTTAAGTATGTGATAAATGATATAGTGGTTGATGACTATAAATGCAGGGAAGGGGAGCTGAGTAT  
AAAGAGCAGTTGTTGATTTTCAATTCATACACTATTTACTATATCACCAACTACTGATATTTACGTCCCTTCCCCTCGACTCATA

14,790

POLG

POLG-201

POLG-201

CGTCCAGTGGATAAAGTGAGGTCGGGTAAGGCTCATACCGTGAGCAGCGTGTGCTGGTGGAGGCGAGAAAGGTGGTGGGGCTTTA  
GCAGGTCACCTATTTCACTCCAGCCATTCCGAGTATGGCACTCGTCGCACACGACCACCTCCGCTCTTTCCACCACCCCGAAAT

14,875

POLG

POLG-201

POLG-201

GTTGTGGACACCTTTGAAAAGTGTACACAGGAGTTTGGACTGTGGGTGCAGGTGGTGGGGAAGCCATTTATGCGAGTGACGTGTCTC  
CAACACCTGTGGAAACTTTTACAGTGTCTCAAACCTGACACCCACGTCCACCACCCCTTCGGTAAATACGCTCACTGCACAGAG

14,960

POLG

POLG-201

POLG-201

TGGAGCCTTCAGGCGACAAGCCTTGTGAGGTCTGCAGGTTAGATGGAAGCTGGGAGTTGTCTAGGGTTGTGGCAGTTGAGAGGGG  
ACCTCGGAAAGTCCGCTGTTTCGGAACACTCCAGACGTCCAATCTACCTTCGACCCTCAACAGATCCCAACACCGTCAACTCTCCCC

15,045

POLG

POLG-201

POLG-201

TAAGCCAGGCCTGGCTGTTGTGTTTTCTGCTTCAACAAATGCCCCCTCCCCTTCAGGGAGTAGCCTATTCTTACCCTATCCCC  
ATTCGGTCCGGACCGACAACACAAAAGACGAAGTTGTTTACGGGGGAGGGGAAGTCCCTCATCGGATAAGAATGGGGATAGGGGG

15,130

POLG

POLG-201

POLG-201

CAAATCTAGAGTGATGGCCCTTGCTGCCTCCTGAATAAAAAGGCCCGTGTTGGTCATTGGGCAATTCAGTGTCTAAAGAAACAGGA  
GTTTAGATCTCACTACCGGGAACGACGGAGGACTTATTTCCGGGCACAACCAGTAACCCGTTAAGTCACAGATTTCTTTGTCTT

15,215

POLG

POLG-201

POLG-201

CAGTAGGAATAGTGGTGCCTCCTGTGCTGGAGTCTTTGTCTTTATTGGGCTACCATGGGGTGGCCAGGCTTTGGGGCTACAAA  
GTCATCCTTATCACCACGGAGGACACGACCTCAGAAACAGGAAATAACCCGATGGTACCCACCCGGGTCCGAAACCCCGATGTTT

15,300

POLG

POLG-201

POLG-201

AGCCTGGGCTGCATCTCTTTCTAGCTCCATGATCCTAGGCAAGGCACTTAGCCTCTCTGAGCCGTTTCTTCTCTGAATAAAAAGC  
TCGGACCCGACGTAGAGAAAAGATCGAGGTAAGGACTAGGATCCGTTCCGTGAATCGGAGAGACTCGGCAAGAAGGAGACTTATTTTCG

15,385

POLG

POLG-201

POLG-201

CTTTAGGGGACTGGCATGATGTCAGTGTTTTTAAAAGTTGAAGTGATATGTGAACATTCCCTTGCCAAGGCACTAGCGTGGCACAG  
GAAATCCCCTGACCGTACTACAGTCACAAAAATTTCAACTTCACTATACTTGTAAAGGAACGGTTCCGTGATCGCACCGTGTC

15,470

POLG

POLG-201

POLG-201

GAAGCACTCCCCTGGAATGATGGTGATAACACTGCCCCAGGTATCGGCTGTCGGATGAGGGCGAGTGGCTGGTGAGGGAGTTGA  
CTTCGTGAGGGCACCTTACTACCACTATTGTGACGGGGGTCCATAGCCGACAGCCTACTCCCGCTCACCGACCACTCCCTCAACT

15,555

POLG

POLG-201

995 1000 1005  
Y R L S D E G E W L V R E L

ENSE00003993899

POLG-201

ACCTCCCAGTGGACAGGACTGAGGGTGGCTGGATTTCCTTGCAGGATCTGCGCAAGGTCCAGAGAGAACTGCAAGGAAGTAAGA  
TGGAGGGTCACCTGTCTGACTCCCACCGACCTAAAGGGACGTCTTAGACGCGTTCCAGGTCTCTCTTTGACGTTCTTCATTCT

15,640

POLG

POLG-201

1010 1015 1020 1025 1030 1035  
N L P V D R T E G G W I S L Q D L R K V Q R E T A R K

ENSE00003993899

POLG-201

ACCTTCTTTGTGTTAAGGATGGAGGGAGGGGTCTGGGCTTGCCCCAGAAGAGCTTGGATGCTTTGTTTTTAGCTTTGAGATGCT  
TGGAAGAAACACAATTCTACCTCCCTCCCAGACCCGAACGGGGTCTTCTCGAACCTACGAAACAAAAAATCGAAACTCTACGA

15,725

POLG

POLG-201

POLG-201

GAAAGACAAAGTCTGCCCTCTGTTTCTGGTCCCTTAGGTACAGTGGGAAGAAGTGGGAGGTGGTTGCTGAACGGGCATGGAAGGG  
CTTTCTGTTTCAGACGGGAGACAAAGACCAGGGAATCCAGTGTACCTTCTTCACCTCCACCAACGACTTGCCCGTACCTTCCC

15,810

POLG

POLG-201

POLG-201

1040 1045 1050  
S Q W K K W E V V A E R A W K G

ENSE00003993916

GGGCACAGAGTCAGAAATGTTCAATAAGCTTGAGAGCATTGCTACGTCTGACATACCACGTACCCCGGTGCTGGGCTGCTGCATC  
CCCGTGTCTCAGTCTTTACAAGTTATTGAACTCTCGTAACGATGCAGACTGTATGGTGCATGGGGCCACGACCCGACGACGTAG

15,895

POLG

POLG-201

POLG-201

1055 1060 1065 1070 1075  
G T E S E M F N K L E S I A T S D I P R T P V L G C C I

ENSE00003993916

AGCCGAGCCCTGGAGCCCTCGGCTGTCCAGGAAGAGGTATCTTGCTACCTTTGGAGCATGGGCAGAGGGGCCCCAGGGAGGGCAG  
TCGGCTCGGGACCTCGGGAGCCGACAGGTCTTCTCCATAGAACGATGGAACCTCGTACCCGCTCCCCGGGGTCCCTCCCGTC

15,980

POLG

POLG-201

POLG-201

1080 1085 1090  
S R A L E P S A V Q E E

ENSE00003993916

GGCAGAGCTCCCTGTGGACCTTACCAATGTTTGTAGGTAGGGCCAGAGTGAAGCTTCTCTTGGGGCTTCTACCCTGGAGTTAATT  
CCGTCTCGAGGGACACCTGGAATGGTTACAAACATCCATCCCGGTCTCACTTGAAGAGAACCCTGAAGATGGGACCTCAATTAA

16,065

POLG

POLG-201

POLG-201

GGTATGTAGCATAGCCCCTTTACCTCTGCCACCTTCCCTTCCCAGTTTATGACCAGCCGTGTGAATTGGGTGGTACAGAGCTC  
CCATACATCGTATCGGGGAAAAGTGGAGACGGGTGGAAGGGAAGGGTCAAATACTGGTCGGCACACTTAACCCACCATGTCTCGAG

16,150

POLG

POLG-201

1095 R V N W V V Q S S  
F M T S R V N W V V Q S S  
ENSE00003993905

POLG-201

TGCTGTTGACTACTTACACCTCATGCTTGTGGCCATGAAGTGGCTGTTTGAAGAGTTTGCCATAGATGGGCGCTTCTGCATCAGC  
ACGACAACCTGATGAATGTGGAGTACGAACACCGGTACTTACCCGACAACTTCTCAAACGGTATCTACCCGCGAAGACGTAGTCG

16,235

POLG

POLG-201

1105 A V D Y L H L M L V A M K W L F E E F A I D G R F C I S  
1110 1115 1120 1125 1130

ENSE00003993905

POLG-201

ATCCATGACGAGGTTTCGCTACCTGGTGCGGGAGGAGGACCGCTACCCGCGCTGCCCTGGCCTTGCCAGATCACCAACCTCTTGACCA  
TAGGTAAGTCTCCAAGCGATGGACCACGCCCTCCTCCTGGCGATGGCGCGACGGGACCGGAACGTCTAGTGGTTGGAGAAGTGGT

16,320

POLG

POLG-201

I H D E V R Y L V R E E D R Y R A A L A L Q I T N L L T  
1135 1140 1145 1150 1155 1160

ENSE00003993905

POLG-201

GGTATGCGGGGCCCCATGGCCTCTAGCCTGGCCATGTGCTCCTATGTGGGGCTTTGGGTGAGCGTTCCTTGGGCCAGACTGGTCAG  
CCATACGCCCCGGGTACCGGAGATCGGACCGGTACACGAGGATACACCCCGAAACCCACTCGCAAGGAACCCGGTCTGACCAGTC

16,405

POLG

POLG-201

I  
R

POLG-201

TTTTGACTTTTTCATCCCCCTAGAAGTGAATGTTTCAGCTTATTTATTTATTTCTAATTTTTAAAAAGTTGTAGAAGTCTAAAAA  
AAAAGTGAAGTGGGGGATCTTCACTTACAAAGTGAATAAATAAATAAAGATTAAAAATTTTTCAACATCTTCAGGATTTTT

16,490

POLG

POLG-201

POLG-201

GACTAGCCTCAATTCGTAAGGAGTTATTGGGTTTGAAGTGTGAAATACCAAGACTGATCATTGAGGGGAAGCAGTGAGGTT  
CTGATCGGAGTTAAGCATTTTTTCTCAATAACCCAAACTTTTACACTTTATGGTTCTGACTAGTAACCTCCCTTCGTCACCTCAA

16,575

POLG

POLG-201

POLG-201

AGGGGAATTGTTCCGAAGGGTGGTACTCACGCTTTTCTATTTGGAAAATCAAATGACAGAAGCCTTTTCTCATTTTCATAGAAAAT  
TCCCCTTAACAAGGCTTCCCACCATGAGTGCGAAAAGATAAACCTTTTAGTTTACTGTCTTCGGAAAAGAGTAAAGTATCTTTTA

16,660

POLG

POLG-201

POLG-201

TGAGATGTTTGTCTTTCTTTCTCCATAAATGTTTTCTTTCTTAAGTAAGTGCCAAAAGTTTGTATTGACTGCTAACAGAAAA  
ACTCTACAAACAAAAAGAAAGAGGGTATTTACAAAAGAAAGAATTCATTCACGGTTTTCAACAATAAACTGACGATTGTCTTTT

16,745

POLG

POLG-201

POLG-201

CACTGTTAATGGGGACACTCAAATGTGATTTTTAAAAATATCTTATATATTTTATATATTGAGTTGTATTTCTTGAGTAAAAT  
GTGACAATTACCCCTGTGAGTTTACACTAAAAATTTTTATAGAATATATAAAATATATAACTCAACATAAAAAGAACATCATTTTA

16,830

POLG

POLG-201

POLG-201

TCCTAGTTCATATGGATGAATTAATATTACCGTTCATGTTGATCTGCCACTCAGAACCAGTTTGGGAACCATGATCTATCCTG  
AGGATCAAGTATACCTACTTAATTTATAATGGCAAGGTACAACCTAGACGGTGAGTCTTGGTCAAACCCCTTGGTACTAGATAGGAC

16,915

POLG

POLG-201

POLG-201

ATTATTGGGTAAATAACAGATGTTTACAATATTCAACATTGTTCCATTGCCCTCTTAATCATCATCTCCGGGAGGTTATGCTTA  
TAATAACCCATTTATTGTCTACAAATGTTATAAGTTGTAACAAGGGTAACGGGAGAATTAGTAGTAGAGGCCCTCCAATACGAAT

17,000

POLG

POLG-201

POLG-201

ACAAAGCTAAAAGTCTCATTTATGCTTCAAACCTCTGGCCCAATTGGAAGTGATTTTCGTATATTAATTAATAAAGTGACCAAAC  
TGTTCGATTTTCAGGAGTAAATACGAAGTTTGAGACCGGGTTAACCTTCACTAAAGCATATAATTAATTTTACATGGTTTTG

17,085

POLG

POLG-201

POLG-201

TGGGAAAAAAAAAAAAAGTATGTTGAGTCCATAATTGCATTTTCAGTATCTCAGTGGGAGGTTAGGCTGCTGGATGGAAAACAGTG  
ACCCTTTTTTTTTTTTTCATACAACCTCAGGTATTAACGTAAAGTCATAGAGTCACCCTCCAATCCGACGACCTACCTTTTGTAC

17,170

POLG

POLG-201

POLG-201

CTGGACCTTCACCTTTCTTGACTTAGCTAAGTGAACAGATGGGGTGTGGTCCAGGGGAAGCCCTGCTCTAAGGGGTGTGGGGTC  
GACCTGGAAGTGGAAAGAAGTGAATCGATTCACTTGTCTACCCACAACAGGTCCTTCCGGGACGAGATTCCCCACACCCAG

17,255

POLG

POLG-201

POLG-201

ATTGCTCCAGGAGTGATGCATCTGTTTCACAGGAGGGGCATGACTGTGAGAGTAGATTGGGTCTCTTTTCAGGTGCATGTTTGCCTA  
TAACGAGGTCCTCACTACGTAGACAAGTGTCTCTCCCGTACTGACACTCTCATCTAACCCAGAGAAAAGTCCACGTACAAACGGAT

17,340

POLG

POLG-201

C M F A Y  
ENSE00003993912

POLG-201

CAAGCTGGGTCTGAATGACTTGCCCCAGTCAGTCGCCTTTTTTCAGTGCAGTCGATATTGACCGGTGCCTCAGGAAGGAAGTGACC  
GTTTCGACCCAGACTTACTGAACGGGGTCAGTCAGCGGAAAAAGTCACGTCAGCTATAACTGGCCACGGAGTCCCTTCCCTTCACTGG

17,425

POLG

POLG-201

K L G L N D L P Q S V A F S A V D I D R C L R K E V T

ENSE00003993912

POLG-201

ATGGATTGTAAAACCCCTTCCAACCCAACCTGGGATGGAAAGGAGATACGGGATTCCCCAGGGTGAGCACAACACATTTGTTTCTC  
TACCTAACATTTTGGGGAAGGTTGGGTTGACCCTACCTTTCTCTATGCCCTAAGGGGTCCCACTCGTGTGTGTAAACAAGGAG

17,510

POLG

POLG-201

M D C K T P S N P T G M E R R Y G I P Q

ENSE00003993912

POLG-201

ATTACACATAGGATCTGAGGTGGACTAGAAAAGTGGGTCTTGGGAGAACAGGAAACTTGGGGCCCCAGAGAATCCACTCTTGACTCA  
TAATGTGTATCCTAGACTCCACCTGATCTTTACCCAGAACCTCTTGTCTTTGAACCCGGGGTCTCTTAGGTGAGAACTGAGT

17,595

POLG

POLG-201

POLG-201

GGCTATATTCTAGGCTAATTTTCAGTTTATAAGGTGCCCTGTGTCCAGAGTGAATGTGATATGATGTTTCAGAAATGAAGGCAGCA  
CCGATATAAGATCCGATTAAAGTCAAATATTCCACGGGACACAGGTCTCACTTACACTATACTACAAAGTCTTTACTTCCGTCGT

17,680

POLG

POLG-201

POLG-201

GAGCTTCAAATATTCTACCTGTACCTGTCCCCTACTTCAACCACAGAAGAAATGTTTAAAGATAATTTATTCTATAGAGTGCATT  
CTCGAAGTTTATAAGATGGACATGGACAGGGGATGAAGTTGGTGTCTTCTTTACAAATTTCTATTAATAAGATATCTCACGTAA

17,765

POLG

POLG-201

POLG-201

CTTGCACTCTATAGGTGACAGAAAAACAACTGTGCTTTAAATACCAAACAAGTAAATCAGAAAGCTTATTTTCTATTTAAAATA  
GAACGTGAGATATCCACTGTCTTTTTGTTTGACACGAAATTTATGGTTTGTTCATTTAGTCTTTTTCGAATAAAAGATAAATTTTAT

17,850

POLG

POLG-201

POLG-201

TATCTAAGACACACTTATATAAAAAAGAAAACAGACCCTCCTAACATGTAACATTACCGTTCGTGGCAATTGTTCTCAACCTTTCA  
ATAGATTCTGTGTGAATATATTTTTCTTTTGTCTGGGAGGATTGTACATTGTAATGGCAAGCACCGTTAACAAGAGTTGGAAAAGT

17,935

POLG

POLG-201

POLG-201

CTCTCCTTTTGACCTTAGCATTAAAGCTCCTTTGCTCACTTCTGAGCTCTCAGTTACAGTTCTTGAGGTGGCATCCTAACCAATTT  
GAGAGGAAAACTGGAATCGTAATTCGAGGAAACGAGTGAAGACTCGAGAGTCAATGTCAAGAACTCCACCGTAGGATTGGTTAAA

18,020

POLG

POLG-201

POLG-201

GCACTATCTTTTCAGGTGAAGCGCTGGATATTTACCAGATAATTGAACTCACCAAAGGCTCCTTGGA AAAACGAAGCCAGCCTGGA  
CGTGATAGAAAAGTCCACTTCGCGACCTATAAATGGTCTATTA AACTTGAGTGGTTTCCGAGGAACCTTTTTGCTTCGGTCGGACCT

18,105

POLG

POLG-201

1215 G E A L D I Y Q I I 1225 E L T K G 1230 S L E K R S Q P G 1235  
ENSE00003993902

POLG-201

CCATAGCACTGCCTGGAGGCTCTGTATTTGCTCCCGTGGAGCTTCATCGGGGTGGTGCAGGCTCCCAAACCTCAGGCTTTTCAGCTG  
GGTATCGTGACGGACCTCCGAGACATAAACGAGGGGCACCTCGAAGTAGCCCCACCACGTCCGAGGGTTTGAGTCCGAAAAGTCGAC

18,190

POLG

POLG-201

1240  
P  
ENSE...  
POLG-201

TGCTTTTTGCAAAAAGGGCTTGCCTAAGGCCAGCCATTTTTTCAGTAGCAGGACCTGCCAAGAAGATTCTTCTAACTGAAGGTGCA  
ACGAAAAACGTTTTCCCGAACGGATTCCGGTCGGTAAAAAGTCATCGTCCTGGACGGTTCTTCTAAGGAAGATTGACTTCCACGT

18,275

POLG

POLG-201

GTTGAATTCAGTGGGTT CAGAACCAAGATGCCAACATCGGTGTGGACTACAGGACAAGGGGCATTGTTGCTTGTGGGTAAAAAT  
CAACTTAAGTCACCCAAGTCTTGGTTCTACGGTTGTAGCCACACCTGATGTCCTGTTCCCGTAACAACGAACAACCCATTTTTTA

18,360

POLG

POLG-201

GAAGCAGAAGCCCCAAAGTTCACATTA AACTCAGGCATTTTCA TTTATTTTTCTTTTCTTCTTG GCTGGTTCTTTGTTCTGTCCC  
CTTCGTCTTCGGGGTTTCAAGTGTAATTGAGTCCGTAAAGTAAATAAAAAAGGAAAAAGAAGAACCGACCAAGAAAACAAGACAGGG

18,445

POLG

POLG-201

CCATGCTCTGATGCAGTGCCTTAGAAGGGGAAAAGAATTAATGCTCTAACGTGATAAACCTGCTCCAAGGCAGTGGAAATAAAAAG  
GGTACGAGACTACGTACGGGATCTTCCCCTTTCTTAATTACGAGATTGCACTATTTGGACGAGGTTCCGTACCTTTATTTTTTC

18,530

POLG

POLG-201

AAGGAAAAAAAAAGACTCTATCTTCTCATCAAAGCCTTTGTTAGTCATGCTTTCCCACTTTCCCACTCACAGGAGGTAATTATGT  
TTCCTTTTTTTTTCTGAGATAGAAGAGTAGTTTCGGAAACAATCAGTACGAAAGGGGTGAAAGGGTGAGTGTCTCCATTAATACA

18,615

POLG

POLG-201

TGTTGAAGAAGAGGAAGGAGTCCTCCAAAGTGTAGAGTAATAAGACAGTGGCACCTCCTTTTAGGACTTTTTGCTATACTGAGGAT  
ACAACCTCTTCTCCTCCTCAGGAGGTTTCACATCTCATTATTCTGTCCACCGTGGAGGAAAATCCTGAAAACGATATGACTCCTA

18,700

POLG

ACTTATGGGACAAAATGACAAGAGAAGAAGCCATTGACATCAAAATGCTACATGACTCTCCTGAGTGCAGCTGCCAAGTGGGTAA  
TGAATACCCTGTTTTACTGTTCTTCTTTCGGTAACTGTAGTTTTACGATGTACTGAGAGGACTCACGTGACGGTTCACCCATT

18,785

POLG

AGAGAGTGGATGGGGCCAGGTACATTAGAGCCTGGAGTGTGATCATCTGAAGAATGCATGTTCAAATTTCTGAAATCCAGGGCAC  
TCTCTCACCTACCCCGGTCCATGTAATCTCGGACCTCACACTAGTAGACTTCTTACGTACAAGTTTTAAGACTTTAGGTCCCGTG

18,870

POLG

TTGTATGTAACTTCCAGTTTTGAAATGGGAGTGGGCTACTGATTTGCTACTTATTAGACAAACCTAAGATGAAAATTTTAGGTG  
AACATACATTTGAAGGTCAAACCTTTACCCTCACCCGATGACTAAACGATGAATAATCTGTTTGGATTCTACTTTTAAAATCCAC

18,955

POLG

CTAGAAGTAAGGAAACATTGGGTTCTGTTTCAAAGGTGGTGCAGGGATGGGGATGCGGTACTGTCACTTGCTAAGAGTAAAGGGA  
GATCTTCATTCTTTGTAACCCAAGACAAAAGTTTCCACCACGTCCCTACCCTACGCCATGACAGTGAACGATTCTCATTTCCT

19,040

POLG

GAGGAACAAACCACAAGGGAAAAGGACAAGACATTGGCATGAATTGAAGGAAGAAGCCTTAACCCAAACTAATGAGTGGCCTTTG  
CTCCTTGTTTGGTGTCCCTTTTCTGTTCTGTAACCGTACTTAACTTCTTCTTCGGAATTGGGTTTGATTACTCACCGGAAAC

19,125

POLG

AATGAGGGCATGACATGAGAGGTAAACTAGTTTCTGAGCCAGACTGCTATAGCTGGTCATCATCCAGTAGTTTTAAAGATTAACA  
TTACTCCCGTACTGTACTCTCCATTTGATCAAAGACTCGGTCTGACGATATCGACCAGTAGTAGGTCATCAAATTTTCTAATTGT

19,210

POLG

GGAAGAGGACCCACAGCAGGACATTGTTTTGTTACCACCTGCTTCTGGAAGTGTATCAAACAAGTCGGGGCAACTTCATAGG  
CCTTCTCCTGGGTGTCGTCTGTAACAAAACAATGGTGGACGAAGGACCTTCACAAATAGTTTGTTCAGCCCCGTTGAAGTATCC

19,295

POLG

ATTTTGTGTGGTCCAAAGTTTACAACCCTTCTGAGAGTCCTTTGCTCTCATCTTTGCCTGATCACCTTTTAGCCCTTTCCCATTC  
TAAAACACACCAGGTTTCAAATGTTGGGAAGACTCTCAGGAAACGAGAGTAGAAACGGACTAGTGGAAAATCGGGAAAGGGTAAG

19,380

POLG

TGTTGCCCTTCCACTAATCTGTGACTGCTCCAGATAGGCTGCTAACCAGCTAGGAAGAGTGGCTGGGCTCCAGACAGAAGCCAG  
ACAACGGGAAGGTGATTAGACACTGACGAGGGTCTATCCGACGATTGGTTCGATCCTTCTCACCGACCCGAGGTCTGTCTTCGGTC

19,465

POLG

CACTGACCTCTTCATTTTTCATCTTACCATCCTCTCGAAGAACCATGTCTAGGATGTTTCTTTGATCTTGAAGTCTCGTGAGGT  
GTGACTGGAGAAGTAAAAGTAGAAGTGGTAGGAGAGCTTCTTGGTACAGATCCTACAAAGGAAACTAGAACTTCAGAGCACTCCA

19,550

POLG



GCTGAGCTTCATGTGCTGCATCAGGTTACCTATGACAAGATTGTAAGCATGGGACATCTCCCTACTCATAGGTCCTGCCAGAAC  
CGACTCGAAGTACACGACGTAGTCCAAGTGGATACTGTTCTAACATTCGTACCCTGTAGAGGGATGAGTATCCAGGACGGTCTTG  
POLG

19,635

AGCTTAAGCCATTTTTAGTTCACCTCTGAGAAACCTTTCCATTTCTACCTAAAGCAAGCACGCCCACTTCCTTCTGTATGCTG  
TCGAATTCGGTAAAAATCAAGTGGAGACTCTTTGGAAAGGTAAAGATGGATTTTCGTTTCGTGCGTGGGTGAAGGAAGACATACGAC  
POLG

19,720

GGGTTCAAGTCATCAGATCAAGAACAGCAAAGAGGCTGAGTGTGGTGGCTCATGCCTGTAATCCCAGCACTTTGGGAGGCCAAGG  
CCCAAGTCCAGTAGTCTAGTTCTTGTCTGTTTCTCCGACTCACACCACCGAGTACGGACATTAGGGTTCGTGAAACCCTCCGGTTCC  
POLG

19,805

TGGAAGGATCACTTCAGGCCAGGAGTTTGAGACCAGCCTGGGCAGCATAGTGAGACCCCATCTCTACAAAAACAAACCCAAAAA  
ACCTTCCTAGTGAAGTCCGGTCTCAAACCTCTGGTCGGACCCGTCGTATCACTCTGGGGTAGAGATGTTTTTTGTTTGGGTTTTTTT  
POLG

19,890

CTAGTGGGGTATGATGGCATATGACTGTAGTCCCAGCTACTCTGGAGGCTGAGGCCAGAGGATCACTTGAATGTGCACTCCAGCC  
GATCACCCCATACTACCGTATACTGACATCAGGGTCGATGAGACCTCCGACTCCGGTCTCCTAGTGAACCTTACACGTGAGGTCGG  
POLG

19,975

TGGGTGACAGAATGAGACACAGTCTCAAAAAAAAAAAGGGGGGGGGGGGAGAGGGGGGATGGCAAACACACAAATGGCCCAGAG  
ACCCACTGTCTTACTCTGTGTCAGAGTTTTTTTTTTTCCCCCCCCCCCTCTCCCCCTACC GTTTGTGTGTTTACC GGGTCTC  
POLG

20,060

TCTCTTTTCTCCATTGTAGTTGTGCTGCTTCAGTTTGCCAGATCTGTCAAGAAGGTAATGGGAATGGTAGCACATAATAAGAG  
AGAGAAAAGGAGGTAACATCAACACGACGAAGTCAAACGGTCTAGACAGTTCTTCCATTTACCCTTACCATCGTGTATTATTCTC  
POLG

20,145

AATGTTTACCTTGGACTTCTTAGAAAAGGTGGATGAGAAATTTTTCACTACTGTTCTATGGCAAAGATGAGGTTAGGGATTGGCTTG  
TTACAAATGGAACCTGAAGAATCTTTCCACCTACTCTTTAAAAAGTATGACAAGATACC GTTTTCTACTCCAATCCCTAACCGAAC  
POLG

20,230

GTTTCCCGAAGAACTCTGGCCTAAGGGCAAAGAACATAAGACTTAAATTTCAAGTTCAATGGTTTTTGAAGTTTTCTCTGAAGC  
CAAAGGGCTTCTTGAGACCGGATTCCCGTTTTCTTGATTCTGAATTTAAAGTCCAAGTTACCAAAAACCTTCAAAGGAGACTTCG  
POLG

20,315

TGCTACTTACAAAACCTGTATGGCTTTAGGGGAAAACCTAGTCTGTCTCCAATCAAATGCAGTTGTATACCAGTAATCTAAAATTT  
ACAGTGAATGTTTTGACATACCGAAATCCCTTTTTGATCAGACAGAGGGTTAGTTTACGTCAACATATGGTCAATTAGATTTTAAA  
POLG

20,400

TTGGCAGTTCAATCTGGAAGGACCCAAATGCCAGTAGAGATAATTGCACTGATCCATTTTCAATTTATAATTCAGTATTTGTTGTT  
AACCGTCAAGTTAGACCTTCTGGGTTTACGGTCATCTCTATTAACGTGACTAGGTAAAGTAAATATTAAGGTCATAAACAAACAA  
POLG

20,485

ATCTAGAAAATGGCTGAGGAGGGCAGGATCACTTGTAGAAAATTTAGTTGCTTTTCTGACTTGAAAATCTTAAGCCTATTTTGGCC  
TAGATCTTTTACC GACTCCTCCCGTCTAGTGAACATCTTTAAATCAACGAAAAGACTGAACTTTAAGAATTCGGATAAAAACCGG  
POLG

20,570

CTAGCTCTATTTCTTGTCTGGTCTGGGTATGAATTTTCACTGCTGGGATTATATATCTTTCCCCCTAACGTGAATTGTAATTT  
GATCGAGATAAAGGAACAAGACCAGACCCATACTTAAAGTGACGACCCTAATATATAGAAAAGGGGGATTGCACTTAAACATTTAA  
POLG

20,655

GTAGGTTCTACGTGTGTGTGTGTGTGTCTTTCCCCCTAACGAAAGGTCCTACATTTTTGTGTGTGGTCCTACGTTTTTGTGTGTG  
CATCCAAGATGCACACACACACACACAGAAAGGGGGATTGCTTTCCAGGATGTAAAAACACACACCAGGATGCAAAAAACACACAC  
POLG >

TGTCTTTCCTCCTAACGTGAATTGTAATTTGTAGGTCCTACATTTGTGTGTGTGTGTGTGTGTCTGTGATTATATATCTTTCCC  
ACAGAAAGGAGGATTGCACTTAACATTAACATCCAGGATGTAAACACACACACACACACACAGACACTAATATATAGAAAGGGG  
POLG >

CTAACGTGAACTGTAATTTGTAGGTCCTACATTTGTGTGTGTGTGTGTGTGTGTGTGTGTGATTATATATCTTTCCCCCTAAC  
GATTGCACTTGACATTAACATCCAGGATGTAAACACACACACACACACACACACACACTAATATATAGAAAGGGGGATTG  
POLG >

GTGAATTGTAATTTGTAGGTCCTACGTGTGTGTGTGTGTGTGTGTGTGTGTATTTTTAACCCATGAGGATACTGTACAAATTTTT  
CACTTAACATTAACATCCAGGATGCACACACACACACACACACACACATAAAAAATTGGGTACTCCTATGACATGTTTAAAAA  
POLG >

TTTAACATTATCTTGGAGATAATCCAGAGAGCTGAACATTTAGATGTTTATTTTTTTCATATCTCTCCAGTATAAATATATTAT  
AAATTGTAATAGAACCTCTATTAAGGTCTCTCGACTTGTAATCTACAAATAAAAAAAGTATAGAGAGGTCATATTTATATAATA  
POLG >

AACCTATTTAGCCAGTCCTCTATTAATGGATATCTTTGTTTCTAATATTTCACTTTTATAAATAATGTTGTGAGGACCATCCTGT  
TTGGATAAATCGGTCAGGAGATAATTACCTATAGAAACAAAGATTATAAAGTGAAAAATTTTATTACAACACTCCTGGTAGGACA  
POLG >

ACACAGGCCTGTATATCCTAAAAAGTGAACCTGCTACATCAGAATGGGATTCAGTAGTCATTGCTAAGCCTCTGGAGAGGCTGTAC  
TGTGTCCGGACATATAGGATTTTCACTTTGACGATGTAGTCTTACCCTAAGTCATCAGTAACGATTCCGGAGACCTCTCCGACATG  
POLG >

TAATTTTACCTTTGCCAGCAATGTAATAAGTGCCTCCTTTCTGTACCCCGCTGACTCTTACACATCTTTTAGGGAGCACCTT  
ATTAAGAGTGGAAACGGTCGTTACATGATTCACGGAGGAAAGGACATGGGGGCGACTGAGAATGTGTAGAAAAATCCCTCGTGGAA  
POLG >

TTGCATTCACCAACTTTACCTAAAAATAATTTCTCCCAATTGAGTATCGTAAGTTATTTTACTATTTCCATTTCAACTCAAGATT  
AACGTAAGTGGTTGAAATGGATTTTTATTAAAGAGGGTTAACTCATAGCATTCAATAAAATGATAAAGGTAAAGTTGAGTTCTAA  
POLG >

TTCTGGTGCTTCGTGAATAAAACATGTTTTTGGTTTCAGAGGAAAAATAAGATGCTCCATCTGATCATAAAATCCCTGAGTTGAGA  
AAGACCACGAAGCACTTATTTTGTACAAAAACCAAGTCTCCTTTTTATTCTACGAGGTAGACTAGTATTTTAGGGACTCAACTCT  
POLG >

AGCAGCCATGTATATAATACACACAATTTTTCTAACAGCTTGATAGAGCTGTAATTCATATACCATAACAATTCACTCACAATGT  
TCGTCGGTACATATATTATGTGTGTTAAAAAAGATTGTCGAACTATCTCGACATTAAGTATATGGTATGTTAAGTGAGTGTTACA  
POLG >

ACTTTTTTTTTCAGTATTTGCAGAGTTGTGCAACCATCATCACAGTCAATTTCTAAAACATTTTCATCACCCCAAAAAGAAATCCA  
TGAAAAAAAAGTCATAAACGTCTCAACACGTTGGTAGTAGTGTGAGTTAAGATTTTGTAAAAGTAGTGGGGGTTTTCTTTAAGGT  
POLG >

TACCGTTTTTTCAGTGTACCCCAAGTCTCCCATCTTCCAACCCACCTAGCTCTACGCTACCACTAATCTAGTTTGCCTTTTTAGA  
ATGGCAAAAATCGACAGTGGGGTCAGAGGGGTAGAAGGTTGGGTGGATCGAGATGCGATGGTGATTAGATCAAACGGAAAAATCT  
POLG >

TGATTTATTCTGGGCACTTCATGAAAATGGAATCATACAACACGTGGTCTTTTTGTCACTGGCTTCTTCCGCTTCATGTTTTTCGG  
ACTAAATAAGACCCGTGAAGTACTTTTACCTTAGTATGTTGTGCAACCAGAAAAACAGTGACCGAAGAAGGCCGAAGTACAAAAGCC  
POLG

21,845

GTTCAACCAACAAGCATATTTTAACGGTCAGTGTGTCAGCAGCTTACCATGGCTGTGGCAACGGCAGCAGGTTTCTCCTTTTTCTCTC  
CAAGTGGTTGTTTCGTATAAAAATTGCCAGTCCAGTCCGTCGAATGGTACCACACCGTTGCCGTCGTCCAAAAGAGGAAAAAGAGAG  
POLG

21,930

CCGTATAGTTCAGGCTCTTACTCTTATTCTAAAGAAAATAGAAAACACATTCTCTTATTCTGATGATTTTTCTGTGGAGCTAGCAT  
GGCATATCAAGTCCGAGAATGAGAATAAGATTTCTTTATCTTTGTGTAAGAGAATAAGGACTACTAAAAAGACACCTCGATCGTA  
POLG

22,015

GCTAGTGCTAATTTTTTTTTTTTTTTTTTAAGACAGAGCTTTGCTGTCACCCAGGCTGGTGTGCAAGTGGCGTGATGTCGACCCA  
CGATCACGATTAATAAAAAAAAAAAAAAAAAAATTCTGTCTCGAAAACGACAGTGGGTCCGACCACACGTCACCGCACTACAGCTGGGT  
POLG

22,100

CTGTAACCTCTGCGCCCCGAGTTAAGTGATTCTTGTGCCTCAGCCTCCCGAGTAGCTGGGACTACAGGCACGTGCCACCACACTC  
GACATTGGAGACGCGGGGCTCAATTCACTAAGAACACGGAGTCGGAGGGCTCATCGACCCTGATGTCCGTGCACGGTGGTGTGAG  
POLG

22,185

AGCTAATTTTTGTATTTTTAGTAGAGACGGTGTGTTGCCATGTTGGCCAGGCTGGTCTCGAACTCTGGCCTCAGGTGATCTGCC  
TCGATTAATAAACATAAAAATCATCTCTGCCACAAAACGGTACAACCGGTCCGACCAGAGCTTGAGGACCGGAGTCCACTAGACGG  
POLG

22,270

GGCCTCAGCCTCCCAAAGTGCTGGGATTACAGGCCTAAGCCACCATGCCACCAACTAGTGGCAATTTTCTTAGAAGGTAATTAC  
CCGGAGTCGGAGGGTTTTACGACCCTAATGTCCGGATTCCGGTGGTACGGGTGGTTGATCACCGTTAAAAGAATCTTCCATTAATG  
POLG

22,355

ACAGGGTATGAGGACCAAGTCTGGAGTAAACAGGACTATCTGTGCAACAGATGTTAGAAGATAGGGAAAAAATGGATGCTTTGTA  
TGTCCATACTCTGGTTTCAGACCTCATTTGTCTGATAGACACGTTGTCTACAATCTTCTATCCCTTTTTTACCTACGAAACAT  
POLG

22,440

ATCCTCAGATATTTTTCTTTTTAGTTGTTGAGAGGTTTACAATCTGTTGTTCTTAGAGCTGGCACATGGAAGTTGAAGGCAGG  
TAGGAGTCTATAAAAAAGAAAAAATCAACAACCTCTCCAAATGTTAGACAACAAGAATCTCGACCCTGTACCTTCAACTTCCGTCC  
POLG

22,525

ACTATTACTGCAAGTGGGTCAGCCAAGGGGCTGGTGAGGTAATAAGAATGGTTAAAATGGGGACTGTCAAGGTGGTAGCAGGAAT  
TGATAATGACGTCACCCAGTCCGGTCCCGGACCACTCCATGATTTCTTACCAATTTTACCCCTGACAGTTCCACCATCGTCCTTA  
POLG

22,610

ATTCATTTCTATTTCTATTTTAGCCAGTGGGCTAGAAGGATCCCATAAAAGGAGAGGAAGCTGAGGAGGCTGCTGCAGGGCCCTGC  
TAAGTAAAGATAAAGATAAAAATCGGTCACCCGATCTTCTTAGGGTATTTCTCTCCTTCGACTCCTCCGACGACGTCCTCCGGGACG  
POLG

22,695

AGTCTTCCCACTTACAGGCAATCACCAGATATATTTATTTTCGTTACTCAGCAAAGCCAAAACCAGATATATTTTATGTGCAAT  
TCAGAAGGGTGAATGTCCGTTAGTGGTCTATATAAAAATAAAGCAATGAGTCGTTTCCGGTTTTGGTCTATATAAAAATACACGTTA  
POLG

22,780

GGGTTATCATGCTCAAGAAGGGTTAAAAGGGTCACAGAACACTTCCCTGTGTTGTAATTTATTGGGTAATAAAGAGCTCCTGGAG  
CCCAATAGTACGAGTTCTTCCCAATTTTCCAGTGTCTTGTGAAGGGACACAACATTTAATAACCCATTATTTCTCGAGGACCTC  
POLG

22,865

AGGGATGAATAACTAATAAAAAGGAACCAAAAAGTGTAAAGATTCTGATAAAGCAAAAAGAAAATCAAGACTTGAGTCAGGAGAGACT 22,950  
-----  
TCCCTACTTATTGATTATTTTCCCTTGGTTTTTTCACATTCTAAGACTATTTTCGTTTTCTTTTAGTTCTGAACTCAGTCCTCTCTGA  
POLG >

GGGGAGAAAAACCACCCAAATGTAAGGTACGGTACAGAAATGTAGGCAGCTTTTTACCTCAAGGGGAGTTCTAAACCTTCTTAGG 23,035  
-----  
CCCCTCTTTTTGGTGGGTTTACATTCCATGCCATGTCTTTACATCCGTCGAAAAATGGAGTTCCCTCAAGATTTGGAAGAATCC  
POLG >

AAGGGAACATAACCATGCTCCACGAGGGCAACAGAATAAAGAAACAGACCTGAAAATACAGAGAGGCTCTGCAACTGGAGCCATGA 23,120  
-----  
TTCCCTTGATGGTACGAGGTGCTCCCGTTGTCTTATTTCTTTGTCTGGACTTTTTATGTCTCTCCGAGACGTTGACCTCGGTACT  
POLG >

GAGAAACAGGAGACTTGTTCCACATGCCACGTTCTGGAAAATAAGGAACTGCAGACATTCCAGAGGGGCTGGTATGCAGTAATCT 23,205  
-----  
CTCTTTGTCTCTGAAACAAGGTGTACGGTGAAGACCTTTTATTCTTTGACGTCTGTAAGGTCTCCCGACCATACGTCATTAGA  
POLG >

GTTTTTGGCCCTGGAAGGCAGGGTAGAGCATGGAAGAGGGTGAAGGCAGCAGAAGAGGGCAAGGAAGCAGTCACGGATCGACCTC 23,290  
-----  
CAAAAACCGGGACCTTCCGTCCCATCTCGTACCTTCTCCCACTTCCGTCTTCTTCCCGTTCTTTCGTAGTGCCTAGCTGGAG  
POLG >

ACTGACCAAGTGGGAAGTGAACCATCTTCCAGAGGTTGTGTCCAAGATGGGGCCCTGTTGGAACCTCCTTAGATCAACCCTGTTT 23,375  
-----  
TGACTGGTTCACCTTCACTTGGTAGAAGGGTCTCCAACACAGGTTCTACCCCGGGACAACCTTGAGGAATCTAGTTGGGACAAG  
POLG >

CCTGCCATTCCAACCTGATCCGGGCGGGCAGGACTAAAATTAGAGCCAGAAGAGAAGCATCTTTTTTTGAGGTGGAGTTTCACTC 23,460  
-----  
GGACGGGTAAGGTTGACTAGGCCCGCCGTCCTGATTTTAATCTCGGTCTTCTTTCGTAGAAAAAACTCCACCTCAAAGTGAG  
POLG >

TGTCGCCCAGGCTGGAGTACAATGGTGCATCTCAGCTCACTGCAACCTCTGCCTCCAGGTTCAAGCGATTCTCCTGCCTCAGC 23,545  
-----  
ACAGCGGGTCCGACCTCATGTTACCACGCTAGAGTCGAGTGACGTTGGAGACGGAGGGTCCAAGTTCGTAAGAGGACGGAGTCG  
POLG >

TTCCCGAGTAGCTGGGATTACAGGCACGCACTACCATGCCCGGCTAATTTTTTTTTTTGAGACAGAGTCATGCTCTGTTGCCAG 23,630  
-----  
AAGGGCTCATCGACCCTAATGTCCGTGCGTGATGGTACGGGCGGATTAATAAAAAAAAAAATCTGTCTCAGTACGAGACAACGGGTC  
POLG >

GCTGGAGTGCAGTGGTGTGATCTCATCTCACTGCAACCTCCACCTCCCGGGTTCAAGCAATTCTCCTGCCTCAGCCTCCCGAGTA 23,715  
-----  
CGACCTCACGTCAACCACTAGAGTAGAGTGACGTTGGAGGTGGAGGGCCCAAGTTCGTTAAGAGGACGGAGTCGGAGGGCTCAT  
POLG >

GCTGGGATTACAGGCGCCTGCCACCATGCCAGCTAATTTTTGTATTTTTTTTAGTAGAAATGGGGTTTACCATTGTTGGCCGGG 23,800  
-----  
CGACCCTAATGTCCGCGGACGGTGGTACGGGTCGATTAATAAACATAAAAAAAAAATCATCTTTACCCCAAAGTGGTACAACCGGCC  
POLG >

CTAGTTTCGAACTCCTGACCTTGTGATCCGCCTGCCTCAGCCTCCAAAATGCTGAGATTACAGGTGTGAGCCACCGTGCCTGC 23,885  
-----  
GATCAAAGCTTGAGGACTGGAACACTAGGCGGACGGAGTCGGAGGGTTTTACGACTCTAATGTCCACACTCGGTGGCACGGGACG  
POLG >

TATTTTTGTATCTTTAGTTGAGACGGGATTTACCATGTTGGCCAGGCTGGTCTCAAACCTCCAGACCTTGTGATTCTCCACCT 23,970  
-----  
ATAAAAAACATAGAAATCAACTCTGCCCTAAAGTGGTACAACCGGTCCGACCAGAGTTTTGAGGTCTGGAACACTAAGAGGGTGA  
POLG >

CGGCCTCCCAAAGTGCTGGGATTACAGGCATGAGCCACCATGTCCGACCCTTGAGAAGCATCTTTTAAAGGTATACAGTTCTGGG  
GCCGGAGGGTTTACGACCCTAATGTCCGTACTIONCGGTGGTACAGGCTGGGAACCTCTTCGTAGAAAAATTTCCATATGTCAAGACCC  
POLG

24,055

CAGGATGCTAAGAGTTGCAGCAATGGTTTTTCGTTGCTTTCTTCCATTGAGATCTAAGGAACTGGGGAAATGAAGAGGGGGCTAC  
GTCCCTACGATTCTCAACGTCGTTACCAAAAGCAACGAAAGAAGGGTAACTCTAGATTCTTTGACCCCTTTACTTCTCCCCCGATG  
POLG

24,140

AAGAGAATTAACAGTTCACTGAGAGGTGTGGAAAATGCAATCCCCATTTCTAGTTAAGAGCTGGAGTTAATGGAACCATGCATGG  
TTCTCTTAATTGTCAAGTGACTCTCCACACCTTTTACGTTAGGGGTAAAGATCAATTCTCGACCTCAATTACCTTGGTACGTACC  
POLG

24,225

GCTCTTGCCAGGGGGCACTCATTAAATACATCTCACAAAAACAGAAAAATGTAANAATGTTTGCCTGCAGATCAGCTGACTTGTC  
CGAGAACGGGTCCCCCGTGAGTAATTTATGTAGAGTGTTTTTGTCTTTTTACATTTTACAAACGGACGTCTAGTCGACTGAACAG  
POLG

24,310

AGTAAGGCTTTAAGTCAAATATGGATGGAGGAGGAGGAAAAATGCCTAGGGAGGAAATGAAACTGATTACTGTGTAATGAGGGGAA  
TCATTCCGAAATTCAGTTTATACCTACCTCCTCCTCTTTTACGGATCCCTCCTTTACTTTGACTAATGACACATTACTCCCTTT  
POLG

24,395

AATAATAGCAGTCTAGGAAGTAGTAGTGATTCCAGAAGAAAAATGCTTGAAAAATGGGGTCAGAAACACGAAAAATCAAAACCTTCC  
TTATTATCGTCAGATCCTTCATCATCACTAAGGGTCTTCTTTTTACGAACTTTTACCCAGTCTTTGTGCTTTTTAGTTTTGGAAGG  
POLG

24,480

AACATTTTACATGTCAACAAGTACCAGGTATGACTCTAGAGCAATGGTTGACTGACTATAGCCCATAGTATAAATCTGGCCCACT  
TTGTAANAATGTACAGTTGTTTCATGGTCCATACTGAGATCTCGTTACCAACTGACTGATATCGGGTATCATATTTAGACCGGGTGA  
POLG

24,565

GCCTGTTTTTGATAAGAAAAATTTCAATTGGAACATAGCCATGCTCGTTTTATTTGTAAGTTATCTATGGCTGCTTTTTATGTTCTAAT  
CGGACAAAAACTATTCTTTTTAAAGTAACCTTGTATCGGTACGAGCAAATAAACATTCAATAGATACCGACGAAAAATACAAGATTA  
POLG

24,650

AGTAGAGTTGAGTAGGTGTGATAGAGACTGTATGACCCACATTTACTATCTGGCCCTTTACAGAAAAAGTGTGCCAATTCCTGCT  
TCATCTCAACTCATCCACACTATCTCTGACATACTGGGTGTAATGATAGACCGGGAAATGTCTTTTTTACACGCGTTAAGGACGA  
POLG

24,735

ATCGAGTCTAACTAGCTGGGTTCAAAGTCTCAGATCTGCCTTTTACTCATGGTCTGTTCTTGGGCATTCTGATTAACCTTTCTCAT  
TAGCTCAGATTGATCGACCCAAGTTCAGAGTCTAGACGGAAAAATGAGTACCAGACAAGAACCCTGTAAGACTAATTGGAAAGAGTA  
POLG

24,820

CATGCATATGGGGATAACTACTAATCATAACCTATAGCTAGGATGAATGAGATGATGTATGAAAAGAGCTTAACACATCAGACAC  
GTACGTATACCCCTATTGATGATTAGTATTGGATATCGATCCTACTTACTCTACTACATACTTTTTCTCGAATTGTGTAGTCTGTG  
POLG

24,905

AAGGTAGAGGTTCTCTAAGCATTACCTGTTCTAATAAAAATTATTAGACAATGTGACTTTTGAATCATAACAAGGGTAGTAAATAG  
TTCCATCTCCAAGAGATTTCGTAATGGACAAGATTATTTTAATAATCTGTTACACTGAAAACCTTAGTATTGTTCCCATCATTTATC  
POLG

24,990

CATTTAACAGCAGTATTTCCCAAACCTGACTCTATGGAACATTATTCTGCCAAATAGTAACATTTGTTATTTTTTAAAAATGTT  
GTAANAATGTCGTCATAAAGGGTTTGACATGAGATACCTTGTAAATAAGACGGTTTATCATTGTAACAATAAAAAAATTTTTACAA  
POLG

25,075

CTTGAATAGGTCTGAAAACACTAATGAACATACTGTTGGAACCTCTCAGCACTGTTTTTATTTTTCTTGAGACAGGGTCTCACGC  
-----  
GAACCTTATCCAGACTTTTGATGATTACTTGTATGACAACCTTGAGAGTCGTGACAAAAATAAAAAAGAACTCTGTCCCAGAGTGCG  
-----  
POLG >

TGTTGCCTTGGAGTACAGTGGCATGATCATGGCTCACTGCAGCCTTCAAGTCCTAGGCTCAAGTGATCTTCTGCCTCAGCCTCC  
-----  
ACAACGGAACTCATGTCAACCGTACTAGTACCGAGTGACGTCGGAAGTTCAGGATCCGAGTTCAGTACTAGAAGGACGGAGTCGGAGG  
-----  
POLG >

CAAGTAACTGGGACTATAGGCAAAACACCTGGCTTAAATTTTTAAATTTTTTGTAGAGACGGGGTCTCACTATGTTGCCAGGCTGG  
-----  
GTTCAATTGACCCTGATATCCGTTTGTGGACCGAATTTAAATTTAAAAAACATCTCTGCCCCAGAGTGATACAACGGGTCCGACC  
-----  
POLG >

TCTTGAACCTCTGGCCTCAAGTGATCTTCTTACCTCAGCCTCCATTAACCACCATGACTGGTCTCAGCACCTTTAATATGCAAAT  
-----  
AGAACTTGAGGACCGGAGTTCAGTACTAGAAGAATGGAGTCGGAGGTAATTGGTGGTACTGACCAGAGTCGTGGAAATTATACGTTTA  
-----  
POLG >

GGACACCACGAATCTCTAAGGTGAGAGATATACGGTATGAGCATCTCTCCCTGAATTCCTTTTTTTTTGAGGACTGTCTCAGTC  
-----  
CCTGTGGTGCTTAGAGATTCCACTCTCTATATGCCATACTCGTAGAGAGGGACTTAAGGAAAAAAAAAACTCCTGACAGAGTCAG  
-----  
POLG >

TATATAGCATATTTTGTGAAATGTGTCTTTATAGGTATCATTAAAGACTTGGAGATGAGGAAACTCAAAACCCAAATATGGGAATG  
-----  
ATATATCGTATAAAACACTTTACACAGAAATATCCATAGTAATTCTGAACCTCTACTCCTTTGAGTTTTGGGTTTATACCTTAC  
-----  
POLG >

GACAGATATATATCCTATATATAGACAACAGATTTGTTTGACGAATGGCACCCACATGAAAATTTACAAGCATGAGGTTTGAGAA  
-----  
CTGTCTATATATAGGATATATATCTGTTGTCTAAACAAACTGCTTACCGTGGGTGTACTTTTTAAATGTTTCGTACTCCAAACTCTT  
-----  
POLG >

AGCATTCTGCAAGCATTTGGGTGAGATAAAAGGAGAGGACCAGAAGTAATAGCTTTATGACAGTTGACTACTGGCTGGATGGCT  
-----  
TCGTAAGGACGTTTCGTAACCCACTCTATTTTCTCTCTGGTCTTCATTATCGAAATACTGTCAACTGATGACCGACCTACCGA  
-----  
POLG >

GGATATAGAAAATGGATGATGCATTCCTGACCCAGATCACAAAACCTGATACAAAGGCAAGGTGACAGAGAGTCTCAACTATCAGC  
-----  
CCTATATCTTTTACCTACTACGTAAGGACTGGGTCTAGTGTTTTGACTATGTTTTCCGTTCCACTGTCTCTCAGAGTTGATAGTCG  
-----  
POLG >

CCATTAAGAACTCCTTCAGCTAAACCCAGATGACAGCCCACTTGATGGCTGATTCTTTATTTTTTTTTTTTTGAGACGGAG  
-----  
GGTAATGATTCTTGAGGAAGTCGATTTGGGTCTACTGTGCGGTGAACTACCGACTAAGAAAATAAAAAAAAAAAAAAACTCTGCCTC  
-----  
POLG >

TTTCGCTCTTGTTGCTAGGCTGGAGCACAAACAGTGCATCTTTGCTCACTGCAACCTCCGCCCTCCAGGTTCCAGGCGATTCTCCT  
-----  
AAAGCGAGAACAACGATCCGACCTCGTGTTGTACGCTAGAAAACGAGTGACGTTGGAGGCGGGAGGTCCAAGTCCGCTAAGAGGA  
-----  
POLG >

GCCTCAGCCTCCCAAGTAGCTGGGATTACAGGTGCCCGCCAGCATGCTCAGCTAATTTTTGTATTTTTGTAGAGATGGGGTTT  
-----  
CGGAGTCGGAGGGTTTCATCGACCCTAATGTCCACGGGCGGTGCTACGAGTCGATTAATAAACATAAAAAACATCTCTACCCAAA  
-----  
POLG >

CACCATGTTGGCCAGGCTGGTCTTGAAGTCCTGACCTCAGGTGATCCACCCGCCTCGGCCCTCCCAAAGTGCTGCAATTACAGGCA  
-----  
GTGGTACAACCGGTCCGACCAGAACCTCAGGACTGGAGTCCACTAGGTGGGCGGAGCCGGAGGGTTTTACGACGTTAATGTCCGT  
-----  
POLG >

TGAGCCACTGTGCCAGCTGATTGCTGATTCTTAAAGGGAGGGGAAGAGGCACCCTGAATACACATAATGAGGCAAGTTACTGAT  
ACTCGGTGACACGGGTCGACTAACGACTAAGAATTTCCCTCCCCTTCTCCGTGGGACTTATGTGTATTACTCCGTTCAATGACTA  
POLG

26,265

AGAATGATATTGTGCCTGTAAGTGATGCAGAGGCAGAAAACAAGTGAAGCATCACTACCAAAGTGGTCACGATCCATTGCTTTAA  
TCTTACTATAACACGGGACATTCACTACGTCTCCGTCTTTTGTTCACCTTCGTAGTGATGGTTTCACCAGTGCTAGGTAACGAAATT  
POLG

26,350

TAATTGGTTCTAGAATCTTGGCTGAGATTGACACTTAGTGGACCCATTCTCTTTGATTCTCCTCAAAGATCAGTAACAGCCCTGTGA  
ATTAACCAAGATCTTAGAACCGACTCTAACTGTGAATCACCTGGGTAAGAGAACTAAGGAGTTTCTAGTCATTGTCGGGACACT  
POLG

26,435

TACATTTACTGCATGACTAAGTGGCCTTAGGAGACAGTAGATCTCTCGTTTCTTCTCTTTCCAACGAGGGGTGATTCTGTCCCT  
ATGTAATGACGTAAGTGGCCTTAGGAGACAGTAGATCTCTCGTTTCTTCTCTTTCCAACGAGGGGTGATTCTGTCCCT  
POLG

26,520

TAAGGACAACCTGGCAATTTCTGGAGACATTTTTGGCTGTTAAACTAGGGGGCTGCTACTGGCATCTGGTAGGTGGAGGCCAGGG  
ATTCCTGTTGACCGTTAAAGACCTCTGTAAAAACCGACAATTTTATGATCCCCGACGATGACCGTAGACCATCCACCTCCGGTCCC  
POLG

26,605

ATGCTACTCAACATCCCAAAATGCACAGAACAGGTCCCACAACAAGAATTATCTAGCGCAACATGTCAATAGTGGTGAGGTTAA  
TACGATGAGTTGTAGGGTTTTACGTGTCTTGTCCAGGGTGTGTTTCTTAATAGATCGCGTTGTACAGTTATCACCCTCCAATT  
POLG

26,690

AAAACCTGGTTTAAGCAAACAGTAAAGGAGATTCAAGTACTGCAGGAATCTGATGGTATTTAGGACCAAATGACACTTACAAAGCC  
TTTTGACCAAATTCGTTTGTCAATTTCTCTAAGTTCATGACGTCTTAGACTACCATAAATCCTGGTTTTACTGTGAATGTTTCGG  
POLG

26,775

ACGTCCTTCCACTTCCCTGAAAAGTGCCTCACTGCACTGCCGTCTCATCACAACCCTTCTTCATGTGCTTGCTGCTACTCTGCTC  
TGCAGGAAGGTGAAGGGACTTTCACGGGAGTGACGTGACGGCAGAGTAGTGTTGGGAAGAAGTACACGAACGACGATGAGACGAG  
POLG

26,860

ACATTCCCAGAGGATGCCTCATGGCATGGACTTTCAGTCAACCAGGAATAAACCAAGTCCTTGAGCCTGAGCATGCTTGTTTCCTT  
TGTAAGGGTCTCCTACGGAGTACCGTACCTGAAAAGTCAAGTGGGTCTTATTTGGTTTCAGGAACTCGGACTCGTACGAACAAGGAA  
POLG

26,945

CCTTGCTCCAAATGCAAACATATATGCTTCCCTTCTCCAAATTAAGTGAACAGTTTTCTTTACATAAAAGATGTCCTTGCTGCAA  
GGAACGAGGTTTACGTTTGTATATACGAAGGAAAGAGGTTTAATTCACCTTTGTCAAAGAAATGTATTTCTACAGGAACGACGTT  
POLG

27,030

AGCCCTCAAGCCTTGGCTTGGTCTCTGATGGGTGCCTCCAGCTTGTGGTAAGCAGGGAAAAAAGTTTTATATATGCTCAGTTCAGG  
TCGGGAGTTCGGAACCGAACCCAGAGACTACCCACGGAGGTGCAACACCATTTCGTCCCTTTTTTCAAATATATACGAGTCAAGTCC  
POLG

27,115

TGATCAATAGTCCCCTGGGCATGTAAGAAATCCTTTCTTGAAGACCTATTGGGTACTGCCTCTGAATCTCTTACCTGTACGTAAG  
ACTAGTTATCAGGGGACCCGTACATTCTTTAGGAAAGAATCTTGGATAACCCATGACGGAGACTTAGAGAATGGACATGCATTC  
POLG

27,200

AAATGAAAGAATAACACAGGGGGGTGAGATGAGAACCAGACAGCTTACCTGCACAACAAGGGAGAAGGAAACCAATGTAACCAG  
TTTACTTTCTTATTGTGTCACCCAGTCTACTCTTGGTCTGTGCAAGTGGACGTGTTGTTCCCTCTTCTTTGGTTACATTGGTC  
POLG

27,285

CAGTAAAAGTGCTTCCCCATTCTAGGAAAGGCATTCTCAACTCACCAGCTTTTCCATATTTTTTGGAAATTCCTCCGGAGCTCT  
GTCATTTTACGAAGGGGGTAAGGATCCTTTCCGTAAGAGTTGAGTGGTCGAAAAGGTATAAAAAACCTTAAGGAGGCCTCGAGA  
POLG >

27,370

GACACACCTGGAGATACTAATAAAAAAAGATTCCCTAGATTTAGTAGACTGTCCTATGAAACTACAAGTGACTGCTGCAGTGAGCC  
CTGTGTGGACCTCTATGATTATTTTTTTCTAAGGATCTAAATCATCTGACAGGATACTTTGATGTTCACTGACGACGTCACCTCGG  
POLG >

27,455

TATGGAGTGTGACTCATCATTCTGACTGAAGAGGAAAAACAAAATTCACAGAGAAGCCAAGACACAAGCTTCCTTATTCCTCTCC  
ATACCTCACACTGAGTAGTAAGACTGACTTCTCCTTTTTGTTTTAAGTGTCTCTTCGGTTCTGTGTTTGAAGGAATAAGGAGAGG  
POLG >

27,540

TCCAAAGCTCCTAAGCTTCCCAGACAATAAGTAATGAAGGGTTTGTCTGATTTGCTCATTCTTTAAAAATTCCTCAGGCTGG  
AGGTTTCGAGGATTCGAAGGGTCTGTTATTCATTACTTCCCAAACAAAGACTAAACGAGTAAAGAAAATTTTTAAGGAGTCCGACC  
POLG >

27,625

TAGTCCCTGCATGTAAAAAACCAACAACCTTTGCTGTTTTTCTTTTAAAGATGCCAATAAAGAGAAGAGGCTCTCAGTATTTCCA  
ATCAGGGACGTACATTTTTTTGGTTGTTGAAACGACAAAAAGGAAAATTTCTACGGTTATTTCTCTTCTCCGAGAGTCATAAAGGT  
POLG >

27,710

CTACAGCAGCTTAGCCACATGTAGCTAGAGCTACACATTCTGAGAGAGCCACACTGCTGTGATGCGGGGTGGTCCACATCTTTCT  
GATGTCGTCGAATCGGTGTACATCGATCTCGATGTGTAAGACTCTCTCGGTGTGACGACACTACGCCCCACCAGGTGTAGAAAAGA  
POLG >

27,795

TGGATTATCTGTGCCTTTCTAAGTATTTAATATGGATCATTGCTAGGAACATAAACAGTAAGGGCAGGGTATGCCTTGTATTTTT  
ACCTAATAGACACGGAAAGATTTCATAAATTATACCTAGTAACGATCCTTGTATTTGTCATTCCCGTCCCATACGGAACATAAAAA  
POLG >

27,880

ATAAAAAATAATTTTCTTCCCACCTTAGTATTTGATCTATAAGGCATTTAACACCTACATGTTAAAGGAATGAAAAAGGAATA  
TATTTTTTTATTAAGAAGGGGTGGAATCATAAACTAGATATTCCGTAATTTGTGGATGTACAATTTCTTACTTTTTTCTTAT  
POLG >

27,965

AACATCTCTTTAAGTGTCCAGACTGGTTAGAAATGGTATAATTTCTATGCATTATGGGCCAGATTTAATTCTAGGATAGTTATA  
TTGTAGAGAAATTCACAGGTCTGACCAATCTTTACCATATTAAGATACGTAATACCCGGGTCTAAATTAAGATCCTATCAATAT  
POLG >

28,050

GTTTAGATTAAACCTTAGAAGGTATTTAAAAGAGGCATTCTCAATCAGGTGCCACATACATGCCAAAGAATTAAGGGCCTC  
CAAATCTAATTTGGAATCTTCCATAAATTTTCTCCGTAAGTAAGAGTTAGTCCACGGTGTATGTACGGTTTTCTTAATTTCCGGAG  
POLG >

28,135

CAAAAGCAGATTTTTACTTTATTTTTTAAATTTTTGAGATGGAGTCTCACTCTATTGCCAACGCTGGAGTACAGTGGCACAATCT  
GTTTTCGTCTAAAAATGAAATAAAAAAATTA AAAACTCTACCTCAGAGTGAGATAACGGTTGCGACCTCATGTACCGTGTTAGA  
POLG >

28,220

CAGCTCACTGCAACCTCCGCCTCCTGGGTTCAAGCGATTCTCCTGCCTCAGCCTCCTGAGTAGCTGGGATTACAGGTGCCACCA  
GTCGAGTGACGTTGGAGGCGGAGGACCCAAGTTCGCTAAGAGGACGGAGTCGGAGGACTCATCGACCCTAATGTCCACGGGTGGT  
POLG >

28,305

CCACGCCAGCTACTTTTTGTATTTTTAGTAGAGACGGGGTTTACCATGTTGGCCAGGCTGGTCTCGAACTCCTGACCTCAGGT  
GGTGC GGTCGATGAAAAACATAAAAAATCATCTCTGCCCAAAGTGGTACAACGGTCCGACCAGAGCTTGAGGACTGGAGTCCA  
POLG >

28,390



GATCCGCCCCTCTCAGCCTACCAAAGTGCTGGGATTACAGGCATGAACCACCGTGACAGGCCCAAAAGCAGATTAGAATTATAAA  
CTAGGCGGGCAGAGTCGGATGGTTTTACGACCCCTAATGTCCGTACTTGGTGGCACTGTCCGGGTTTTTCGTCTAATCTTAATATTT

28,475

POLG

CTGTTTTTCCCTGGCCTGTGGAGATGCCTGCCACCTACTGACCAAACATAAAATGAAACCATGACCTGCCAAGATGGAGGCAAATG  
GACAAAAAGGGACCGGACACCTCTACGGACGGTGGATGACTGGTTTTGATTTTACTTTGGTACTGGACGGTTCTACCTCCGTTTAC

28,560

POLG

CTCTCTTGTAGGGGCATTCTGCAGCAGTGGGCTGCTGCCCATCCTCATCTCCTGGCTCACTGGGGTAGAATGGTGGGGCGAA  
GAGAGAACAATCCCCGTAAGACGTCGTCACCCGACGACGGGGTAGGAGTAGAGGACCGAGTGACCCCATCTTACCACCCCGCTT

28,645

POLG

TCTGCTTGTCTCAAATACTCACATATCTGACAAGGGCTGTAAGTGTGGTGTACATTTTGCACAAGTCCTTTAACAAGGTGTCCAC  
AGACGAACAGAGTTTATGAGTGTATAGACTGTTCCCGACATTCACACCACATGTAAAACGTGTTTCAGGAAATTGTTCCACAGGTG

28,730

POLG

ACAGCTGCCTGATGGCAGAGCTGTCTGCACCAGCTCGTGGAAAAATGTAAGCAGAGTTCCAGTTGCATGATGATAGCTTTCTCA  
TGTCGACGGACTACCGTCTCGACAGACGTGGTCGAGCACCTTTTTACATTCGTCTCAAGGGTCAACGTACTACTATCGAAAGAGT

28,815

POLG

ACAGGCTGA 3'  
..... 28,824  
TGTCGACT 5'











POLG

| Feature                 | Location  | Size      | Type            |
|-------------------------|---|-----------|-----------------|
| ✓ <b>POLG</b>           | 1 .. 29,664   | 29,664 bp | gene            |
| /note                   | = gene <a href="#">ENSG00000140521</a><br>Protein coding  |           |                 |
| <b>POLG-202</b>         | 1 .. 18,542   | 18,542 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000442287</a>  |           |                 |
| ✓ <b>POLG-201</b>       | 38 .. 18,542  | 18,505 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000268124</a>  |           |                 |
| <b>POLG-217</b>         | 38 .. 18,178  | 18,141 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000636774</a><br>Nonsense mediated decay   |           |                 |
| <b>POLG-219</b>         | 43 .. 18,542  | 18,500 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000636937</a>  |           |                 |
| <b>POLG-213</b>         | 45 .. 18,557  | 18,513 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000631044</a><br>Nonsense mediated decay   |           |                 |
| <b>POLG-215</b>         | 151 .. 18,523   | 18,373 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000635986</a><br>Nonsense mediated decay   |           |                 |
| <b>POLG-228</b>         | 151 .. 18,507   | 18,357 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000672071</a><br>Retained intron   |           |                 |
| <b>POLG-224</b>         | 418 .. 1012   | 595 bp    | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000637711</a><br>protein_coding_CDS_not_defined  |           |                 |
| <b>POLG-225</b>         | 1053 .. 4654  | 3602 bp   | CDS             |
| ▶ 2 segments = 783 bp   |   |           |                 |
| /note                   | = coding sequence <a href="#">ENSP00000497242</a>   |           |                 |
| /translation            | = LEPKARCSDSQRGGPCTNHEPPALEEGRRRHRARRAGSSSGALGLQLRPRVPRQRRRAAAAAAAAAAAAAAAAAAATAASAAASAILGGRAAA<br>AQPIGHPDALERAAANLRRRGDAWRGRGAPQRRAPAEARALGAASRALARRGAAPAPLRGQPGPALPPPPEAEAPALPGGGQLAV<br>AGPAAPEAPGLGLGGGLDVPVRPRGGGRTRGHPRGAGPGVRRGGLLGRGNLPHIGGGHIPLGL,,VFLVQPAAGGRALLLDQPAVAG*<br>260 amino acids = 25.5 kDa  |           |                 |
| <b>POLG-225</b>         | 1053 .. 4654  | 3602 bp   | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000650303</a>  |           |                 |
| ✓ <b>POLG-201</b>       | 1108 .. 18,111  | 17,004 bp | CDS             |
| ▶ 22 segments = 3720 bp |   |           |                 |
| /note                   | = coding sequence <a href="#">ENSP00000268124</a>   |           |                 |
| /translation            | = MSRLLRKVVAGATVGGPVPVAPGRWVSSVPSADPSDQRRRQQQQQQQQQQQQQPQPQVLSSEGGQLRHNPLDIQMLSRGLHE<br>QIFGQGGEMPGEAAVRRSVEHLQKHGLWGQPAVPLPDVELRLPPLYGDNDLQHFRLLAQKQSLPYLEAANLLLQAQLPPKPPAWAWAEG<br>WTRYGPEGEAVPVAIPEERALVFDVEVCLAEGTCPTLAVAISSPAW,,YSWCSQRLVEEERYSWTSQSLPADLIPLEVPTGASSPTQRDWQE<br>QLVVGHNVSFDRAHIREQYLIQ,,GSRMRFLDTMSMHMAISGLSSFQ RSLWIAAKQ GKHKVQ PPTKQ GQKSQRKARRGPA,,ISSWDWLDI<br>SSVNSLAEVHRLYVGGPPLEKEPRELFVKGTMKDIRENFQ,,DLMQYCAQDVWATHEVFQQQLPLFLER,,CPHPVTLAAGLMEGVSYLPV<br>NQNWERYLAEAGTYEELQREMKKSLMDLANDACQLLSGER,,YKEDPWLWDLEWDLQEFKQKAKKVKKPATASKLPIEGAGAPGDPM<br>DQE,,DLGPCSEEEEFQ QDVMARACLQKLGTTTELLPKRPQHLPGHG,,WYRKLCPRLDDPAWTPGPSLLSLQMRVTPKLMALTWDGFPLH<br>YSERHGWGYLVPGRRDNLAKLPTGTTLESA G V C P Y R,,AIESLYRKHCLEQ GKQQLMPQEAAGLAEFFLLTDNSAIWQT,,VEELDYLEVEAE<br>AKMENLRAAVPGQPLAL,,TARGGPKDTQPSYHHGNGPYNDVDIPGCWFFKLPKH,,DGNSCNVGSPFAKDFLPKMEDGTLQAGPGGASG<br>PRALEINKMISFWRNAHKRIS,,SQMVVWLPRSALPRAVIR,,HPDYDEEGLYGAILPQVVVTA GTITRRAVEPTWLTASNAR,,PDRV GSELKA<br>MVQAPPGYTLVGADVDSQELWIAAVLGDAHFAGMH,,GCTAFGWMTLQGRKSRGTDLHSKTATTVGISREHAKIFNYGRIYGAGQPFAER<br>LLMQFNHRLTQEEAAEKAQQMYAATKGLRW,,YRLSDEGEWLVRELNLVDRTEGGWISLQDLRKVQRETARK,,SQWKKWEVVAERAWK<br>GRTCEMFNKLESIAATSDLRTPV LGCCISRALEPSAVQEE,,FMTSRVNWVVQSSAVDYLHMLVAMKWLFEFAIDGRFCISIHDEVRYL<br>VREEDRYRAALALQITNLLTR,,CMFAYKLGNDLPQSVAFFSAVDIDRCLRKEVTMDCKTPSNPTGMERRYGIPQ,,GEALDIYQIIELTKGS<br>LEKRSQPGP* |           |                 |

| Feature                 | Location  | Size      | Type            |
|-------------------------|---|-----------|-----------------|
| <b>POLG-202</b>         | 1108 .. 18,111  | 17,004 bp | CDS             |
| ▶ 22 segments = 3720 bp |   |           |                 |
| /note                   | = coding sequence <a href="#">ENSP00000399851</a>   |           |                 |
| /translation            | = MSRLLRKLVAGATVGGPVPVAPGRWVSSVSPADSPDGQRRRQQQQQQQQQQQQQPPQVLSSEGGQLRHNPLDIQMLSRGLHE<br>QIFGQGGEMPGEAAVRRSVEHLQKHGLWGQPAVPLPDVELRPLPLYGDNDLQHFRLLAQKQSLPYLEAANLLLQAQLPPKPPAWA<br>WAEGWTRYGPEGEAVPVAIPEERLVFDVEVCLAEGTCLPTLAVAISSPAW,,YSWCSQRLVEEERSWTSQLSPADLIPLEVPTGASSPTQ<br>RDWQEQLVVGHNVSFDRADHIREQYLIQ,,GSRMRFLDTMSMHMAISGLSSFRSLWIAAKQGKHQVPPPTKQGQKSQRKARRGPA,,ISSWDWLDI<br>SSVNSLAEVHRLYVGGPPLEKEPRELRFVKGTMKDIRENFQ,,DLMQYCAQDVWATHEVFQQQLPLFLER,,CPHPVTLAGMLEMGVSYLPV<br>NQNWERYLAEAGTYEELQREMKKSLMDLANDACQLLSGER,,YKEDPWLWDLEWDLQEFKQKAKKVKKEPATASKLPIEGAGAPGDP<br>DQE,,DLGPCSEEEEFQDVMARACLQKLGTTLLPKRPQHLP GHPG,,WYRKLCPRLDDPAWTPGPSLLSLQMRVTPKLMALTWDGFPLH<br>YSERHGWGVLVPGRRDNLAKLPTGTTLESAGVVCPYR,,AIESLYRKHCLEQGGKQLMPQEAGLAEEFLTDNSAIWQT,,VEELDYLEVEAE<br>AKMENLRAAVPGQPLAL,,TARGPKDTPSYHHGNGPYNDVIPGCWFFKLPHK,,DGNSCNVGSPFAKDFLPKMEDGTLAGP<br>GGASGPRALEINKMISFWRNAHKRIS,,SQMVVWLPRLSALPRAVIR,,HPDYDEEGLYGAILPQVVTAGTITRAVEPTWLTAS<br>NAR,,PDRVGSELKAMVQAPPGYTLVGADVDSQELWIAAVLGDAHFAFMH,,GCTAFGWMTLQGRKSRGTDLHSTKATTVGISRE<br>HAKIFNYGRIYGAAGQPFAERLLMQFNHRLTQQAEEAKAQQMYAATKGLRW,,YRLSDEGEWLVRELNLVDRTEGGWISLQDLR<br>KVQRETARK,,SQWKKWEVVAERAWKGGTCSMFAKLSLSTDLRTPALGCCISRALEPSAVQEE,,FMTSRVNWVVQSSAVDYLHML<br>LVAMKWLFFEEAIDGRFCISIHDEVRYLVREEDRYRAALALQITNLLTR,,CMFAKYLGLNDLPQSVAFFSAVDIDRCLRKEVTMD<br>CKTSPNSPTGMERRYGIPQ,,GEALDIYQIIELTKGSLEKRSQPGP* |           |                 |
| <b>POLG-219</b>         | 1108 .. 18,111  | 17,004 bp | CDS             |
| ▶ 22 segments = 3720 bp |   |           |                 |
| /note                   | = coding sequence <a href="#">ENSP00000516154</a>   |           |                 |
| /translation            | = MSRLLRKLVAGATVGGPVPVAPGRWVSSVSPADSPDGQRRRQQQQQQQQQQQQQPPQVLSSEGGQLRHNPLDIQMLSRGLHE<br>QIFGQGGEMPGEAAVRRSVEHLQKHGLWGQPAVPLPDVELRPLPLYGDNDLQHFRLLAQKQSLPYLEAANLLLQAQLPPKPPAWA<br>WAEGWTRYGPEGEAVPVAIPEERLVFDVEVCLAEGTCTPLAVAISSPAW,,YSWCSQRLVEEERSWTSQLSPADLIPLEVPTGASSPTQ<br>RDWQEQLVVGHNVSFDRADHIREQYLIQ,,GSRMRFLDTMSMHMAISGLSSFRSLWIAAKQGKHQVPPPTKQGQKSQRKARRGPA,,ISSWDWLDI<br>SSVNSLAEVHRLYVGGPPLEKEPRELRFVKGTMKDIRENFQ,,DLMQYCAQDVWATHEVFQQQLPLFLER,,CPHPVTLAGMLEMGVSYLPV<br>NQNWERYLAEAGTYEELQREMKKSLMDLANDACQLLSGER,,YKEDPWLWDLEWDLQEFKQKAKKVKKEPATASKLPIEGAGAPGDP<br>DQE,,DLGPCSEEEEFQDVMARACLQKLGTTLLPKRPQHLP GHPG,,WYRKLCPRLDDPAWTPGPSLLSLQMRVTPKLMALTWDGFPLH<br>YSERHGWGVLVPGRRDNLAKLPTGTTLESAGVVCPYR,,AIESLYRKHCLEQGGKQLMPQEAGLAEEFLTDNSAIWQT,,VEELDYLEVEAE<br>AKMENLRAAVPGQPLAL,,TARGPKDTPSYHHGNGPYNDVIPGCWFFKLPHK,,DGNSCNVGSPFAKDFLPKMEDGTLAGP<br>GGASGPRALEINKMISFWRNAHKRIS,,SQMVVWLPRLSALPRAVIR,,HPDYDEEGLYGAILPQVVTAGTITRAVEPTWLTAS<br>NAR,,PDRVGSELKAMVQAPPGYTLVGADVDSQELWIAAVLGDAHFAFMH,,GCTAFGWMTLQGRKSRGTDLHSTKATTVGISRE<br>HAKIFNYGRIYGAAGQPFAERLLMQFNHRLTQQAEEAKAQQMYAATKGLRW,,YRLSDEGEWLVRELNLVDRTEGGWISLQDLR<br>KVQRETARK,,SQWKKWEVVAERAWKGGTCSMFAKLSLSTDLRTPALGCCISRALEPSAVQEE,,FMTSRVNWVVQSSAVDYLHML<br>LVAMKWLFFEEAIDGRFCISIHDEVRYLVREEDRYRAALALQITNLLTR,,CMFAKYLGLNDLPQSVAFFSAVDIDRCLRKEVTMD<br>CKTSPNSPTGMERRYGIPQ,,GEALDIYQIIELTKGSLEKRSQPGP*  |           |                 |
| <b>POLG-226</b>         | 1451 .. 18,512  | 17,062 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000666746</a><br>Nonsense mediated decay   |           |                 |
| <b>POLG-208</b>         | 1507 .. 18,534  | 17,028 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000530292</a><br>Nonsense mediated decay   |           |                 |
| <b>POLG-223</b>         | 1718 .. 4651  | 2934 bp   | CDS             |
| ▶ 2 segments = 100 bp   |   |           |                 |
| /note                   | = coding sequence <a href="#">ENSP00000490427</a>   |           |                 |
| /translation            | = QRELAPHWRWPYPPRP,,ASGWKSVTLGPASCRR<br>33 amino acids = 3.9 kDa  |           |                 |
| <b>POLG-223</b>         | 1718 .. 4651  | 2934 bp   | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000637307</a>  |           |                 |
| <b>POLG-222</b>         | 5825 .. 18,532  | 12,708 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000637264</a>  |           |                 |
| <b>POLG-222</b>         | 5825 .. 18,111  | 12,287 bp | CDS             |
| ▶ 20 segments = 2732 bp |   |           |                 |
| /note                   | = coding sequence <a href="#">ENSP00000489844</a>   |           |                 |
| /translation            | = VCG*QPSRANTRSSPPQSKARSPRGKPEEAQR,,SHPGTGWTSVSTVWQRCTDFM*GGLP*RRSLENCL*RAP*RTFVRTSR,,T*CSTV<br>PRTCGLPPMRFSSSSYSRWSR,,GVPTQ*LWPACWRWVSP TCLSTRTGSV T WQRHRA LMRSSSR*RSR*WIWPMMPASC SQR,,GT<br>KKT<br>GGTWSGTCKNLSRRKLR*RRNQPPASCPSRGLGPLVPIWIRK,,TSAPAVRRRSFNKMSWPA PACRS*RG PQSSCPSPG<br>STFLD LTL,,DGTGSSAPG*TLHGPRAPASSACRCGSHLSWHLPGMALSCTTQSVMAGATWCLGGGTTWPSCRQVPPWSQL<br>GWSAPT,,EPSSPCTG<br>TVSNRGS S*CPRRPAWRRSSCSLTIVPYGKR,,*KNWIT*KWRLRPRWRTCELQCVNP*L*,,LPVVAPRT<br>PSPAITMAMD LTTTWTSLAAGFSSCLTR,,MVIAMWEA PLPRTSCPRWRMAPCRLAQEVPVGPV<br>LWKSTK*FLSGGTPINV S,,APRWWC GC PGQLCPVL*S,,GTPTMMR<br>KASMGPSCKPW*LPA PSLA GLWSPHGSPAMP G,,L TE*AVS*KPWCRPHLATPLVWLMWTPKSCGLQLC<br>LETPTLPACM,,AAQPLGG*HCRAGRAGALIYTVRQPLLWASAVSMPKSSTTASMVLSGPLLSAY*CSLT<br>TGSHSRRQLRRPSRCTLPPRAS A,,GIGCRMRSW*GS*TSQWTGLRVA GFPCRICARSREK<br>LQG,,SHSGRSGRLLNGHGRGAQSQKCSISLRA LLRLTYHVPRCWAASAE PWS<br>PRLSRKS,,L*PAV*GGWYCBADL(T3YTRCHW*59GCBISL)*MGASASASMT<br>RFATWCGRR TATLPWPCRSP T*S,P,,VQSILT GASGRK*PWIVKLP<br>LPTQLGWKGDTGFPR,,VKRWIFTR*LNSPKAPWKN<br>EASLDH  |           |                 |
| <b>POLG-230</b>         | 5900 .. 18,521  | 12,622 bp | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000672923</a><br>Retained intron   |           |                 |
| <b>POLG-210</b>         | 6150 .. 7849  | 1700 bp   | prim_transcript |
| /note                   | = primary transcript <a href="#">ENST00000532363</a><br>Retained intron   |           |                 |

| Feature                              | Location   | Size      | Type            |
|--------------------------------------|--|-----------|-----------------|
| <b>POLG-221</b>                      | 7526 .. 18,505   | 10,980 bp | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000637238</a><br>Nonsense mediated decay  |           |                 |
| <b>MIR6766</b>                       | 8052 .. 8123   | 72 bp     | gene            |
| /note                                | = gene <a href="#">ENSG00000275101</a><br>miRNA  |           |                 |
| <b>MIR6766-201</b>                   | 8052 .. 8123   | 72 bp     | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000622641</a><br>miRNA  |           |                 |
| <b>POLG-203</b>                      | 8157 .. 12,120   | 3964 bp   | CDS             |
| ▶ 5 segments = 700 bp                |  |           |                 |
| /note                                | = coding sequence <a href="#">ENSP00000432389</a>  |           |                 |
| /translation                         | = NKMSWPAPACRS*RGPPQSSCPSPSTFLDTL,,DGTGSSAPG*TTLHGPRAPASSACRCGSHLNSWHLPGMASLCTTQSVMAGATWCLG<br>GGTTWPSCRQVPPWSQLGWSAPT,,EPSSPCTGSTVSNRGSSS*CPRRPAWRRSSCSLTIVPYGKR,,*KNWIT*KWRLRPRWRTCELQCQ<br>VNP*LW,,MVIAMWEAPLPTSCPRWRMAPCRLAQEVPVGPVLWKSTK*FLSGGTPINVS<br>233 codons (7 internal stop codons)                             |           |                 |
| <b>POLG-203</b>                      | 8157 .. 12,120   | 3964 bp   | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000526314</a>   |           |                 |
| <b>POLG-227</b>                      | 8219 .. 15,570   | 7352 bp   | CDS             |
| ▶ 8 segments = 859 bp                |  |           |                 |
| /note                                | = coding sequence <a href="#">ENSP00000499709</a>  |           |                 |
| /translation                         | = KRQHLPHPG,,WYRKLCPRLDDPAWTPGSPSLSLQMRVTPKLMALTWDGFPLHYSERHWGWLVPGRRDNLAKLPTGTTLESAGVVCY<br>R,,AIESLYRKHCLEQ GKQQLMPQEA GLAEEFLLDNSAIWQT,,VEELDYLEVEAEA KMENLRAAVPGQPLAL,,TARGGPKDTQPSYHHGN<br>GPYNDVDIPGCWFFKLPKH,,DGNSCNVGSPFAKDFLPKMEDGTLQAGP GGA SGPRALEINKMISFWRNAHKRIS,,SQMVVWLP RSALPRA<br>YSS,ARHSDERFVLRLEINLPAV D |           |                 |
| <b>POLG-227</b>                      | 8219 .. 15,570   | 7352 bp   | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000670281</a>   |           |                 |
| <b>POLG-211</b>                      | 9262 .. 13,087   | 3826 bp   | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000532584</a><br>Retained intron  |           |                 |
| <b>POLG-204</b>                      | 9275 .. 12,057   | 2783 bp   | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000526398</a><br>Nonsense mediated decay  |           |                 |
| <b>POLG-205</b>                      | 9378 .. 11,348   | 1971 bp   | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000526573</a><br>Retained intron  |           |                 |
| <b>POLG-212</b>                      | 10,571 .. 11,342   | 772 bp    | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000533857</a><br>Retained intron  |           |                 |
| ✓ <b>Donor Template WT -&gt; SNV</b> | 11,333 .. 11,432   | 100 bp    | misc_feature    |
| ✓ <b>PAM</b>                         | 11,392 .. 11,394   | 3 bp      | misc_feature    |
| ✓ <b>Protospacer Sequence</b>        | 11,395 .. 11,414   | 20 bp     | misc_feature    |
| ✓ <b>SNV</b>                         | 11,402 .. 11,402   | 1 bp      | misc_feature    |
| /note                                | = WT = G<br>SNV = C  |           |                 |
| <b>POLG-207</b>                      | 11,425 .. 14,042   | 2618 bp   | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000528881</a><br>Nonsense mediated decay  |           |                 |
| <b>POLG-209</b>                      | 11,435 .. 15,594   | 4160 bp   | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000530715</a><br>Nonsense mediated decay  |           |                 |
| <b>POLG-229</b>                      | 13,939 .. 18,542   | 4604 bp   | prim_transcript |
| /note                                | = primary transcript <a href="#">ENST00000672695</a><br>protein_coding_CDS_not_defined   |           |                 |
| <b>POLG-218</b>                      | 14,061 .. 15,524   | 1464 bp   | CDS             |
| ▶ 2 segments = 100 bp                |  |           |                 |
| /note                                | = coding sequence <a href="#">ENSP00000490403</a>  |           |                 |
| /translation                         | = PADVRCHQGPPL,,RGTGSTPVE*W**HCPQVSAV<br>33 codons (3 internal stop codons)  |           |                 |

| Feature          | Location   | Size      |   | Type            |
|------------------|--|-----------|---|-----------------|
| <b>POLG-218</b>  | 14,061 .. 15,524   | 1464 bp   | → | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000636812</a>                                   |           |   |                 |
| <b>POLG-216</b>  | 15,483 .. 15,798   | 316 bp    | → | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000636530</a><br>protein_coding_CDS_not_defined |           |   |                 |
| <b>POLG-220</b>  | 16,853 .. 17,419   | 567 bp    | → | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000637042</a><br>protein_coding_CDS_not_defined |           |   |                 |
| <b>POLG-206</b>  | 17,034 .. 18,345   | 1312 bp   | → | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000526671</a><br>Retained intron                |           |   |                 |
| <b>FANCI</b>     | 17,601 .. 90,917   | 73,317 bp | ← | gene            |
| /note            | = gene <a href="#">ENSG00000140525</a><br>Protein coding                               |           |   |                 |
| <b>FANCI-201</b> | 17,601 .. 90,913   | 73,313 bp | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000300027</a><br>Protein coding                 |           |   |                 |
| <b>FANCI-202</b> | 17,731 .. 90,883   | 73,153 bp | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000310775</a><br>Protein coding                 |           |   |                 |
| <b>FANCI-212</b> | 17,734 .. 56,175   | 38,442 bp | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000566895</a><br>Retained intron                |           |   |                 |
| <b>FANCI-222</b> | 17,751 .. 90,882   | 73,132 bp | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000696717</a><br>Protein coding                 |           |   |                 |
| <b>FANCI-219</b> | 17,759 .. 25,939   | 8181 bp   | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000675352</a><br>Retained intron                |           |   |                 |
| <b>FANCI-223</b> | 17,760 .. 90,866   | 73,107 bp | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000696718</a><br>Protein coding                 |           |   |                 |
| <b>FANCI-224</b> | 17,782 .. 90,845   | 73,064 bp | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000696719</a><br>Protein coding                 |           |   |                 |
| <b>FANCI-221</b> | 17,888 .. 25,190   | 7303 bp   | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000676110</a><br>Retained intron                |           |   |                 |
| <b>FANCI-220</b> | 18,028 .. 90,879   | 72,852 bp | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000676003</a><br>Protein coding                 |           |   |                 |
| <b>POLG-214</b>  | 18,084 .. 29,664   | 11,581 bp | → | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000635831</a>                                   |           |   |                 |
| <b>POLG-214</b>  | 18,084 .. 18,111   | 28 bp     | → | CDS             |
| /note            | = coding sequence <a href="#">ENSP00000490231</a>                                      |           |   |                 |
| /translation     | = GGTKPAWTI<br>9 amino acids = 1.0 kDa   |           |   |                 |
| <b>FANCI-203</b> | 18,381 .. 90,858   | 72,478 bp | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000447611</a><br>Nonsense mediated decay        |           |   |                 |
| <b>FANCI-218</b> | 18,391 .. 90,917   | 72,527 bp | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000674831</a><br>Protein coding                 |           |   |                 |
| <b>FANCI-226</b> | 18,393 .. 35,663   | 17,271 bp | ← | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000696721</a><br>Retained intron                |           |   |                 |

| Feature          | Location   | Size      |     |     | Type            |
|------------------|--|-----------|---|---|-----------------|
| <b>FANCI-204</b> | 18,418 .. 71,425   | 53,008 bp |    |    | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000561894</a><br>Protein coding                 |           |   |   |                 |
| <b>FANCI-211</b> | 18,436 .. 27,003   | 8568 bp   |  |  | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000566615</a><br>protein_coding_CDS_not_defined |           |   |   |                 |
| <b>FANCI-210</b> | 20,216 .. 90,612   | 70,397 bp |  |  | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000565522</a><br>protein_coding_CDS_not_defined |           |   |   |                 |
| <b>FANCI-227</b> | 26,133 .. 28,003   | 1871 bp   |  |  | prim_transcript |
| /note            | = primary transcript <a href="#">ENST00000696722</a><br>Retained intron                |           |   |   |                 |

| Primer                               | Length  | Binding Sites    | Tm   | Date Added   |
|--------------------------------------|---|------------------|------|--------------|
| ✓ <b>PCR Forward</b>                 | 25-mer  | 10,968 .. 10,992 | 58°C | Jan 11, 2023 |
| /sequence                            | = AACTGGATTA CTTAGAA GTGGAGGC   |                  |      |              |
|                                      | 44% GC / 7770.1 Da  |                  |      |              |
| ✓ <b>Donor Template WT -&gt; SNV</b> | 100-mer   | 11,333 .. 11,432 | 82°C | Jan 11, 2023 |
| /sequence                            | = GGTGTGTGGCCCTCACAGACTGCCCGTGGTGGCCCAAGGACACCCAGCCCAGCTATCACCATGGCAATCGACCTTACAACGAC |                  |      |              |
|                                      | 61% GC / 80,656.8 Da  |                  |      |              |
| ✓ <b>gRNA Protospacer</b>            | 20-mer  | 11,395 .. 11,414 | 58°C | Jan 11, 2023 |
| /sequence                            | = CGTTGTAAGGTCCATTGCCA  |                  |      |              |
|                                      | 50% GC / 6108.0 Da  |                  |      |              |
| ✓ <b>Sanger Sequencing</b>           | 20-mer  | 11,477 .. 11,496 | 59°C | Jan 11, 2023 |
| /sequence                            | = AGGAAACACCACAGGACAGG  |                  |      |              |
|                                      | 55% GC / 6178.1 Da  |                  |      |              |
| ✓ <b>PCR Reverse</b>                 | 25-mer  | 11,959 .. 11,983 | 58°C | Jan 11, 2023 |
| /sequence                            | = TCCCACATTACAGCTATTACCATCC   |                  |      |              |
|                                      | 44% GC / 7480.9 Da  |                  |      |              |