

Fig. S1

MMP21914

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10      20      30      40      50      60      70      80      90
ATGGATCTCTATATTTCAACTTTTGTGAGAATTACAGTATTATTTATGGACTTTGAAGTGTGTATCTGGTCAAAAAGTTGTATCACGG
M D L S I F O L F V R I T V L L W T L K C V S G Q K V V S R

100     110     120     130     140     150     160     170     180
TCAATCTCAGACGGAATGGACTACCTCATGAAATACGGGTATATGGCCGAGGAGGACACCAATCTGGCTCCCTCCGATCGTATGACCAC
S I S D G M D Y L M K Y G Y M A E E D T K S G S L R S Y D H

190     200     210     220     230     240     250     260     270
ATCAAAGATGCTATACGTAACCTCCAACGTTTTGCAGGGCTCAAGATGACAGGAATAATGGACAGGAAAACGAGGGAATGATGAGTCGC
I K D A I R N F Q R F A G L K M T G I M D R K T R E M M S R

280     290     300     310     320     330     340     350     360
CCGCGGTGTGGAGTTAAAGATGACATTGGTAATGCCAATAGGGCGCGTAGGAGGCGACGGCGTTATGCTTTACACGGCAGCAAAATGGTCC
P R C G V K D D I G N A N R A R R R R R R R Y A L H G S K W S

370     380     390     400     410     420     430     440     450
AAGAAGACAATAACTTACAGAGTTTCCAAGTACAGCAATAAGCTTGAAAAGAAAACACAGACAAGAAAATCAAAGAGCTTTTGATGTT
K K T I T Y R V S K Y S N K L E K K T T D K E I Q R A F D V

460     470     480     490     500     510     520     530     540
TGGAGTAAGGTATCACCATTAAACATTAGAAGGATAGACAAAGGAGACCCGGACATTGACATTCCGGTTTGAAGTAAATGGCACGGCGAT
W S K V S P L T F R R I D K G R P D I D I R F E V K W H G D

550     560     570     580     590     600     610     620     630
AACAAACCTTTTCGATGGGAGGGTCAAACATTGGCACACGCCTATTTTCCACGGTACGGAGGCGACACTCACTTTGATGACGACGAGCCA
N N P F D G R G Q T L A H A Y F P R Y G G D T H F D D D E P

640     650     660     670     680     690     700     710     720
TGGACCTCAAAGTTCCAGCGGTGTTAATTTTTCCAAGTGGCCACACATGAATTCGGTCATTGCTTTGGTTTGGCCCATTCAGACGTT
W T L K V P S G V N F F Q V A T H E F G H S L G L A H S D V

730     740     750     760     770     780     790     800     810
TATAGTGCACCTCATGGCTCCTTTCTACAAAGGTATACCAGGATTTTCGTTTGGGCGTGACGATATTGAAGCTATACAAGCCCTATAT
Y S A L M A P F Y K G Y T R D F R L G R D D I E A I Q A L Y

820     830     840     850     860     870     880     890     900
GGTACGCCCCACAAAGACCGACTCCCAAACTAACTAGCAGAATTATTCCTTTATTTACACCTCGTCCAAAAACCAAGAATA
G T P A Q R P T P K P T K P S R I I P L F T P R P K T P R I

910     920     930     940     950     960     970     980     990
ATACCTCGCCGTAACAACCTGAGTCTCCCGTCCAAGAAACACCGGAAGTATGCCCGGATTCCAACATTGACGCCATTACGAAAACCTCAA
I P R R K T T E S P V Q E T P E V C R D S N I D A I T K T Q

1000    1010    1020    1030    1040    1050    1060    1070    1080
GATGGATCCACTTATGTTTTCAAAGTAAAACACTACAGACTAGGTCGTTATGGAATAGACAAGGTTACCCTAGACCAATAGAATGG
D G S T Y V F K G K N Y Y R L G R Y G I D K G Y P R P I E W

1090    1100    1110    1120    1130    1140    1150    1160    1170
GACTGGAAGGGAGTCAAAGGACCAATTGACGCTGCTTACATGGGATAATGGATATACTTACATTTCAAGGAGAACATTATTGAAA
D W K G V K G P I D A A L T W D N G Y T Y I F K G E H Y W K

1180    1190    1200    1210    1220    1230    1240    1250    1260
TATCTAAACAACGAGGATCTATGGTCCAAACAAGATTACAGAAGTTTTGATGGTGTTCCTGGTAACTGGACGCCGCGATTTGATGG
Y L N K R R I Y G P N K I T E G F D G V P G N L D A A V V W

1270    1280    1290    1300    1310    1320    1330    1340    1350
GGAGGCAATGGCAAACTTACTTTTTCAAAGATAATATATATGGAGATACTCCGGTAGGAACGTAGATTACGGCTATCCAAGACCTATC
G G N G K T Y F F K D N I Y W R Y S G R N V D Y G Y P R P I

1360    1370    1380    1390    1400    1410    1420    1430    1440
AGTCGCTGGAGGGGACTACCAAGGGTATTACCGCTGCTTTCAGATGGAAGAATGGTAGAACTTACTTCTTTACCGGCAACAGTATTAC
S R W R G L P K G I T A A F R W K N G R T Y F F T G N K Y Y

1450    1460    1470    1480    1490    1500    1510    1520    1530
AGATACAACGATCAACTTTTTACGGTGGATGCTGGTTATCCCGTCTGTTGCTACGTGGTGGTTAGGTTGTCGCCACCGGTAATAC
R Y N D Q L F T V D A G Y P R S V A T W W L G C P D Q G K Y

1540    1550    1560    1570    1580    1590    1600    1610    1620
ATAGATATAAAGGATCCAAGTAGCCAATCGAACACTCATATATCAGAAAATAATCCAGATGAACAGTGGATAACAATAGACGGTAACACT
I D I K D P S S Q S N T H I S E N N P D E Q W I T I D G N T

1630    1640    1650    1660    1670    1680    1690    1700    1710
GTGAAAGAAGCCGTGAAGGCGGTCGGGAATAGTGCATGCAAAAAGACATCTTCGCTGTATTGACTAGTGCAGTTTTAACGGTAGCCTGT
V K E A V K A V G N S A C K K T S S S V L T S A V L T V A C

1720    1730
ACTGTGGGCAGATTGCTCAGCAGGTGA
T V G R L L S R *
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MMP07860

10 20 30 40 50 60 70 80 90
ATGGATTCTAAAGTTTTATACATACTTATTCTTAGCGGGATTTTGAACGTGGGATACTGCGGTGTCATAAAGGATAAGACGGAGGATCCT
M D S K V L Y I L I L S G I L N V G Y C G V I K D K T E D P

100 110 120 130 140 150 160 170 180
AATACTTTAATAGACATAGATGGATATTTGGAGAAATACGGATACATGGAGTCACGCCCTCCATTGAGACGGGAGAGGAGATTCTTAAC
N T L I D I D G Y L E K Y G Y M E S R P P F E T E E E I L N

190 200 210 220 230 240 250 260 270
AGTGATGCATACAGAAAACTGCTATAAGGAAGTTTCAGAGTTTGTCTGGTCTTGATGCCACAGGGATATTAATGACGCTACCATAGAC
S D A Y R K T A I R K F Q S F A G L D A T G I L N D A T I D

280 290 300 310 320 330 340 350 360
GCCATGAGGAAACCTCGATGTGGAGTCAAGACATACAGACACCCGAAAGTAGCACAGGCAGACAGCCGTTAACTTCTACGCACCA
A M R K P R C G V K D I Q T P E E V A Q A D R P L N F Y A P

370 380 390 400 410 420 430 440 450
GGATATAAATGGCCAAGTAAAACAATAACATGGAGAGCATCACGACCCACAGAAAACTCTCTGAAGCTACACAAAGGTATGCCTTTGAG
G Y K W P S K T I T W R A S R P T R K L S E A T Q R Y A F E

460 470 480 490 500 510 520 530 540
AATGCTTTCAAGTACTGGTCTGACGTCCTCCCTGAAGTTTGTAGTACACTACGGTGAACCGGATATTGATATCCAGTTTGCCTGGTGCCT
N A F K Y W S D V T P L K F E Y T Y G E P D I D I Q F A V R

550 560 570 580 590 600 610 620 630
GACCATGGTGACGGACGATACAATGCTTTTGTGAGAAAAGTGGTGTCTTTCGCGATGCCTACTACCCAACCAATGGGGACACACATTTC
D H G D G R Y N A F D G K G G V L A H A Y Y P T N G D T H F

640 650 660 670 680 690 700 710 720
GATGACGAAGAGAGTGGTATTTCAGGAAAAATGAAGGTACTGATATCGAGACAGTGGCTGCCATGAGTTTGGACACGCCCTTGGACTT
D D E E S W V F R K N E G T D I E T V A A H E F G H A L G L

730 740 750 760 770 780 790 800 810
GGACACTCAAGTGAAGCCAAATCTCTGATGGCCCATTTCTACCAAGGATTTAACCCCTGACTTCAAACCTCACGAGGACGACATTAGGGGA
G H S S E P K S L M A P F Y Q G F N P D F K L H E D D I R G

820 830 840 850 860 870 880 890 900
ATACAGTCACTTTACGGTACCAAGGATGGGAAATCACCAACTCATGCTCCAACTACCCTTCTCCGGAATGACGTAACCTCCAGTG
I Q S L Y G T K D G E I T T T H A P T T T S S G N D V T P V

910 920 930 940 950 960 970 980 990
TCACCAACTGTGTGCAACATGAAATTCGATGCTATGACCTTAGGACCGGATGGGTTTACCTACGTATTGAGAAACAAGACTGTTTACCGC
S P T V C N M K F D A M T L G P D G F T Y V F R N K T V Y R

1000 1010 1020 1030 1040 1050 1060 1070 1080
CTTAATAATACCGGGTAGTTGCCACCATGCTTTCCCGCCATGTATACCCCGGGCTCCTAGATCTCCAGGGGCTGCTGTGTACATGGAC
L N N T G V V A T M L S R H V Y P G A P R S P G A A V Y M D

1090 1100 1110 1120 1130 1140 1150 1160 1170
AACACAAAGAACACTTTTCATATTCAAAGGACGTCGTATATGGAGATACACAGGATTCAGCTGGACGCCGACTATCCTATCACCATTACT
N T K N T F I F K G R R I W R Y T G F Q L D A D Y P I T I T

1180 1190 1200 1210 1220 1230 1240 1250 1260
GACTCTAACTATCCTACCAGAATCCATGCTGCAATAGCATTCAAAAGCACCGGGAGTACAGCACACAATATACCTCTTCAACGATAAC
D S N Y P T R I H A A I A F K S T G S T A Q Q I Y L F N D N

1270 1280 1290 1300 1310 1320 1330 1340 1350
TCTTTTGGGAGTTTAAACCCGAACACAAACAGTATAGTGCCAGGATTTCTCTGACCATTTCCGGTTTCTGGAGGGGAATCCCCGCTGGG
S F W E F N P N T N S I V P G F P L T I S G F W R G I P A G

1360 1370 1380 1390 1400 1410 1420 1430 1440
ATAGAGGCAGCCATACAATGGACAGATGGCGACATCTACTTCTCAAGGGAGATAAGTATAGACGCTTTGACGCCGACCGTCGTACATTG
I E A A I Q W T D G D I Y F F K G D K Y R R F D A D R R T L

1450 1460 1470 1480 1490 1500
ACAAAGGGATACCCAAAAGACAAGGCCCTGCCTGGTTAGGAAGTGTCTGTGGTAGTGCCCCAAGTAA
T K G Y P K D K A P A W L G S V C G S A P K *

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10 20 30 40 50 60 70 80 90
ATGTATCAGTGGAGTATACTACCCACGGGCGTTGTTAGTACTATATTAATATGTATGTATGGGGACTATGTGTATGGCCAAGCCAG
M Y Q W S I L P P R A L L V T I L L C M Y G D Y V Y G Q A Q

100 110 120 130 140 150 160 170 180
ATAGAGGGGGAGGCTATGAAATACCTCAGTCACCTTTCATTATCTACCCAAAGCCAGTCGAGAGCAGGAGAACCTTTTACATGGAGAAAT
I E G E A M K Y L S H F H Y L P K A S R E Q E N L L H G E N

190 200 210 220 230 240 250 260 270
ATCAAGAGCCATTAAAAATCTCAAGGATGGGCAACATACCGGTACAGGGAAAGTGGACGAACGGACACGGACATTGATGCATAAA
I K E A I K N L Q R M G N I P V T G K V D E R T R T L M H K

280 290 300 310 320 330 340 350 360
AAACGGTGCGGGGTCGCCGACCCTGTGGACGAACATTCGGAACAGGGCGTGGTCGAAGGAGGAGGAAAAGATACGTGCTAGCTCCCACC
K R C G V A D P V D E L F G T G R G R R R R K R Y V L A P T

370 380 390 400 410 420 430 440 450
AAGTGGAAAAATATGATCTCACATATAGAATATTGAACTACACTCCTGATCTCCAGTATACTATGTCCGAAAGCTTTGTTGGATGCC
K W K K Y D L T Y R I L N Y T P D L P V Y Y V R K A L L D A

460 470 480 490 500 510 520 530 540
TTTCAAGTATGGAGCACCGTTACCAAGCTGACTTTTACAGAGTCCATGCACGGTGTGCTGACATTATGATACAGTTCCGCTCCGGATAC
F Q V W S T V T K L T F T E S M H G D A D I M I Q F A S G Y

550 560 570 580 590 600 610 620 630
CATAAAGATGGGTACCCATTTCGACGAAAAGTTTGGCTCAGCATTTTCCCGGCAAAGGTAAAGGTGGCGATACACATTTT
H K D G Y P F D G K G L I L A H A F F P G K G K G G D T H F

640 650 660 670 680 690 700 710 720
GACGAGCCGAGCATTGGACTTTCAATTCGTACAGACAGGAGTTGACCTATTTATGGTTGCTGCCACGAGTTTGGTCACGCCATCGGC
D E A E H W T F N S S E T G V D L F M V A A H E F G H A L G

730 740 750 760 770 780 790 800 810
TTAAGCCATAGTAACGAGCCCGGGCGCTGATGTATCCATGGTACCAGGGCTATGACCCCACTTTAAGCTGCCCTATGACGACATCCGG
L S H S N E P G A L M Y P W Y Q G Y D P N F K L P Y D D I R

820 830 840 850 860 870 880 890 900
GGAATACAGACAATATATGGCGGTGTTGGTCTTTGCGAGGCCCCACCACAAACCCCGTCCGAGGACACCAACATCTACCTACC
G I Q T I Y G G V G S L P R P P P Q T P R P R T P N I Y P T

910 920 930 940 950 960 970 980 990
GGTGGGGAGGGGAGGAGGAAGGCAACCCCGACCCCAAGGGTCCAATCGACCCCTGTAATGCTACTTTCGATGCCATTTCTGTGATACGT
G G G G G G R Q P R P K G P I D P C N A T F D A I S V I R

1000 1010 1020 1030 1040 1050 1060 1070 1080
CAAGAAGTCTTCTGTTTATTGGGAAGTACTTTTGGCGCCTTGATTCAAGAGGACTAGTTAAAGGAGAACCTCTACAATCCATTGTTTC
Q E V F L F I G K Y F W R L D S R G L V K G E P L Q I H S F

1090 1100 1110 1120 1130 1140 1150 1160 1170
TGGTCAAACTTCTAAAGAGATCGACCATTTTGTGCTGTATATGAGAGCAAGAAGACGGGAAAATAGTTTTCTTTGTTGGTGATAGA
W Y K L P K E I D H F D A V Y E S K K D G K I V F F V G D R

1180 1190 1200 1210 1220 1230 1240 1250 1260
TACTGGGATTCGACGGTAACTACCTGTGGTCAACACACCCAAAAGGAAATCCCATACCGATTTCGGAATTCCTGCGGATATCAAA
Y W R F D G N Y P V V N T P K K G N P I T D F G I P A D I K

1270 1280 1290 1300 1310 1320 1330 1340 1350
AAGATAGACGCCGTGTTTATATGGGTTTTAATCAGAGGACGTACTTGGTAAGCGGGATATGTACTGGAACCTCCAGGAGGACCAGGAT
K I D A V F I W G F N Q R T Y L V S G D M Y W K L Q E D Q D

1360 1370 1380 1390 1400 1410 1420 1430 1440
TACGTGGAACCGGACTATCCAGGGATATGAACATCTGGAAAAACGTCCCGTCCCATTTGGATACTGCATTCCAATACTGGGATGAAAA
Y V E P D Y P R D M N I W K N V P V P L D T A F Q Y W D G K

1450 1460 1470 1480 1490 1500 1510 1520 1530
ACTTACTTTTTCAAAGACAAGATGGTGTACAAATCTACGATATGAAAATGCGAGTGGACAAGAAGTATCCCAAACCAATTAAGAACAAT
T Y F F K D K M V Y K F Y D M K M R V D K K Y P K P I K N N

1540 1550 1560 1570 1580 1590 1600 1610 1620
TTTCTGGCTGTAACCAAGCGCATACGTATATGACAATAGACGGCGAAGCTGAAAACTTAAAAAGTCTGACAATTCCTCGGATAAAAATC
F L G C N Q A H T Y M T I D G E A E K L K K S D N S S D K I

1630 1640 1650 1660 1670 1680 1690
TCCCACAGTGTAGTTTTATCATGTCTATGTTTAAATTTTTCTATACATTCAAATCAAATTTGGTTCTTGA
S H S V V L S C L C L I F F Y T F K S N C G S *

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10 20 30 40 50 60 70 80 90
aatactatagtagtactccgatgtgttgacagggagtttcagaaaatggtgggactgccggtgacaggggtacttgacaagcgtactatt
N T I V V L R C V D R E F Q K M V G L P V T G V L D K R T I

100 110 120 130 140 150 160 170 180
aggaaaatgaaatccccgcggtgtggtgtcaaagatgtcctccccgcaagcaaacggggcgtgtcacgtgatcaacctcaagcgttccat
R K M K S P R C G V K D V L P P S K R G V S R D Q P Q A F H

190 200 210 220 230 240 250 260 270
actctgggactaaagtggccaagaaatgaagtcacgtggaagattgtaggttacactggacagcttgctcaatctatacaagacgagcc
T L G L K W P R N E V T W K I V G Y T G Q L A Q S I Q R R A

280 290 300 310 320 330 340 350 360
tattacgacgctttccggaagtggtcagatgtgacgccattgggtgttccgggaagtaaggggaggtaatgctgatattctgataagctac
Y Y D A F R K W S D V T P L V F R E V R G G N A D I L I S Y

370 380 390 400 410 420 430 440 450
gctcgatataacccatggcgacgggagctcgtttgatggaaaaggtggaacccttgcccatgcctttttccctggtaagcaaccatagct
A R Y N H G D G S S F D G K G G T L A H A F F P G K Q P I A

460 470 480 490 500 510 520 530 540
ggagatacacactttgacgacgacgagaagtggacaatgggcaccaaagaaggaacaaacctggagatcgtagcggcccacgaatttggga
G D T H F D D D E K W T M G T K E G T N L E I V A A H E F G

550 560 570 580 590 600 610 620 630
catgctatcgggatgagtcattctaacattcaggaagctctgatggcaccatactaccagggatgatcctaatttccagcttcataga
H A I G M S H S N I Q E A L M A P Y Y Q G Y D P N F Q L H R

640 650 660 670 680 690 700 710 720
gacgacattgctggaatccaaagtctttatggcagaccaagaaacacaccgcgaccaacagcaagaccgagacccacaccaagaccaaca
D D I A G I Q S L Y G R P R N T P R P T A R P R P T P R P T

730 740 750 760 770 780 790 800 810
gcgccatctggcgggtggaagtaactgtgatttgaaattcgatgttatatattaatgttacgtcaaacttaatgacagatctagatcaaagt
A P S G G G S N C D L K F D V I F N V T S N L M T D L D Q S

820 830 840 850 860 870 880
actttggctatccccaaaagaaggcagctccatggcttgggtgtggtcaacgcaccccaaagtagagacaaatga
T L A I P K R R Q L H G L G V V N A P Q S R D K *

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10 20 30 40 50 60 70 80 90
ATGGAGCTACGGATCTTTTATTGTTTCTTATTGTGATCAGCGTTACCTGTATTTTCGTGCATTGAGAGTCACGGAGATGATGGTTTCAAT
M E L R I F Y L F L I V I S V T C I S C I E S H G D D G F N

100 110 120 130 140 150 160 170 180
GTTGAAGATGAAGACTTTTTGCTGGTCGATCAAAACGACAGGCCAACAAAAGAAAAAATTCACCGTAGACAATTTCTTTGAAAATTTT
V E D E D F F A G R S K R Q A N K K K K F T V D N F F E N F

190 200 210 220 230 240 250 260 270
GGTTATTGGATGAGAAGAGCACCACAATATTACAAGCCACAGTGATGCAGATATACAAAGAGCAACACGGGAGTTTCAGAAAATGGTG
G Y L D E K S T T N I T S H S D A D I Q R A T R E F Q K M V

280 290 300 310 320 330 340 350 360
GGACTGCCGGTGACAGGGTACTTGACAAGCGTACAATTAGGAAAATGAAATCCCCGCGGTGTGGTGTCAAAGATGCCTCCCGCCAAGC
G L P V T G V L D K R T I R K M K S P R C G V K D V L P P S

370 380 390 400 410 420 430 440 450
AAACGGGGTGTGTACCGTATCAACCTCAAGCGTTCATACACTGGGACTAAAGTGGCCAAGAAATGAAGTACCGTGGAAAGATTGTAGGT
K R G V S R D Q P Q A F H T L G L K W P R N E V T W K I V G

460 470 480 490 500 510 520 530 540
TACTGGACAGCTTGTCTCAATCTATACAAAGACGAGCCTATTACGACGCTTTCCGGAAGTGGTCAGATGTGACGCCACTAGTGTCCGG
Y T G Q L A Q S I Q R R A Y Y D A F R K W S D V T P L V F R

550 560 570 580 590 600 610 620 630
GAAGTAAGGGGAGTAATGCCGATATTCTGATAAGCTACGCTCGGTATAACCATGGCGACGGGAGCTCGTTTGTGAAAAGGTGGGACC
E V R G G N A D I L I S Y A R Y N H G D G S S F D G K G G T

640 650 660 670 680 690 700 710 720
CTTGCCCATGCCTTTTTCCCTGGTAAGCAACCCATAGCTGGAGACACCCATTTTACGACGACGAGAAGTGGACGATGGGCACCAAGAA
L A H A F F P G K Q P I A G D T H F D D D E K W T M G T K E

730 740 750 760 770 780 790 800 810
GGAACAAACCTGGAGATCGTAGCGGCCACGAGTTTGGACATGCTATAGGAATGAGTCATTCTAATATCCAGGAAGCTCTGATGGCACCA
G T N L E I V A A H E F G H A I G M S H S N I Q E A L M A P

820 830 840 850 860 870 880 890 900
TACTACAGGGATATGATCCCAATTTCCAGCTTCATAGAGACGACATTGCTGGGATCCAAAGTCTTTATGGCAGACCAAGAAACACACCCG
Y Y Q G Y D P N F Q L H R D D I A G I Q S L Y G R P R N T P

910 920 930 940 950 960 970 980 990
CGACCAACAGCAAGACCCGAGACCCACCAAGACCAACAGCGCCATCTGGCGGTGGAAGCGACTGTGATTTGAAATTCGATGTTATATTT
R P T A R P R P T P R P T A P S G G G S D C D L K F D V I F

1000 1010 1020 1030 1040 1050 1060 1070 1080
AATGGTCATGACAACAGACTCTACGCCGTCGGTGGACGTAACCTTGTACAGGTTTAAACAGGGATGGTGTGGGAATAGAAAGTGGATATCCT
N G H D N R L Y A V R G R N L Y R F N R D G V G I E S G Y P

1090 1100 1110 1120 1130 1140 1150 1160 1170
AAAAACGCCGTAAGTATACCAACGCTTTCCCTAAAAGTCCAGCAGCGCTGTCCAGGATCGCTACAGAAGAGTCTATGTTTTAAAGAC
K N A R K V Y Q R F P K S P A A A V Q D R Y R R V Y V F K D

1180 1190 1200 1210 1220 1230 1240 1250 1260
AAGAGGGTATCCGATATACTGGGTTCCAGACTGGACGCTGGCTATCCTAAGAGAACTATCGGTAAAAAGAATTTCTTCAGATATCCACAA
K R V F R Y T G F R L D A G Y P K R T I G K K N F F R Y P Q

1270 1280 1290 1300 1310 1320 1330 1340 1350
GCTGCCTTGATGTGGTACGATGGTAGAATTTATCTTTTCAAGGGCGACAAGTATAGCATATGGCGAGATGATTATAAAGAGCCCCACCT
A A L M W Y D G R I Y L F K G D K Y S I W R D D Y K E P P P

1360 1370 1380 1390 1400 1410 1420 1430 1440
GGGTACCCAAAATATCACTTCTTGGAGGGGAGTCCCAAAACAGTGGAAAGCTGCAGTCCGCTGGAACCGATATACCTACTTCTTC
G Y P K T I T S F W R G V P N N V E A A V R W N R Y T Y F F

1450 1460 1470 1480 1490 1500 1510 1520 1530
AAAGGACAAAATTACGTCAAATTAATGACAGATCTAGATCAAAGTACTTCGGCTATCCCAAAAAGAAGGCAGCTCCATGGCTGGGTGT
K G Q N Y V K L N D R S R S K Y F G Y P K K K A A P W L G C

1540 1550
GGTCAACGCACCCCAAAGTAG
G Q R T P K *

MMP54089

10 20 30 40 50 60 70 80 90
ATGAAACGATATATTACTTTAATCGCTTTGTTTTCCCTCATCGTGAGTGTATGGTGTGCTGTTGAAACCCCTTTGGACTGTGACAGATAT
M K R Y I T L I A L F S L I V S V W C A V E T L L D C D R Y

100 110 120 130 140 150 160 170 180
TTATATAAATATGGTTATCTACGAGGCACCTTTGACCCAGACTCCGGACAAGAGGCCCGCTCCATGAACGGACTTATGCCTTAAAGTAC
L Y K Y G Y L R G T F D P D S G Q E A P L H E R T Y A L K Y

190 200 210 220 230 240 250 260 270
TTCCAACATTTTCAAACATACCGATAACAGGAGAATTTGATAGAGCTACGATGATCAAGATGAATCAAAAACGCTGTGCTTGTGAAGAC
F Q H F S N I P I T G E F D R A T M I K M N Q K R C A C E D

280 290 300 310 320 330 340 350 360
GTCATGACAAAGGAAACCATGATGAACACAAGCTTGTCTTTCGCACCTCAACAGTTTAACTTAGGACCAAAATGGTCGAAAACGGATCTG
V M T K E T M M N T S L S F A P Q Q F N L G P K W S K T D L

370 380 390 400 410 420 430 440 450
ACATGGAGATTAAACGGATATCTCGAAAGCTTAGAGACAATGAAGTCATTAGGTCTGAGCTGACGCGAGCTTCCGAGTGTGGTCCGAT
T W R L N G Y S R K L R D N E V I R S E L T R A F R V W S D

460 470 480 490 500 510 520 530 540
GTAACACCACCTACGTTTAGAGAAGTCACGGATCGAAATGTGAAAGTAGATATCGATATGTCCTTTCATCTCGGGGAGCATGGAGATGGT
V T P L T F R E V T D R N V K V D I D M S F H L G E H G D G

550 560 570 580 590 600 610 620 630
CGATTCAATGCTTTTATTACAGAGGTGGAGTTCTGGCTCATGCGTTTTTCCCTGCAAATGGTGATACACATTTTCGATGATGAAAAC
R F N A F D Y R G G V L A H A F F P A N G D T H F D D D E N

640 650 660 670 680 690 700 710 720
TGGCAGATCCAAAATGACGAAGGCACTGAATTCTTACCGTAGCAGCTCATGAGATTGGCCATGCTCTTGGGTTAGCCACTCTACTGAA
W Q I Q N D E G T E F F T V A A H E I G H A L G L A H S T E

730 740 750 760 770 780 790 800 810
GAAAAGGCACCTATGGCGCCTTATTACGCTGGATATGATCCTAATTTTCGTCCTCATTATGATGATATAAGAGGAATACAACTCTTTAT
E K A L M A P Y Y A G Y D P N F R L H Y D D I R G I Q T L Y

820 830 840 850 860 870 880 890 900
GGAAGAACTACAAGGGACCCTTTACACAAAGGCCTGTACCATTGACAACCATGAGACCTGTAAGAACTCCTCGTCCAACACTCCGCCCA
G G T T R D P F T Q R P V P L T T M R P V R T P R P T L R P

910 920 930 940 950 960 970 980 990
ACGCCCCGCCAACACCAGTCAGACTCAGACGCCACGCCAACACCAGTCAGACGCCCGCCACCCCGCACGGAAACGACCTGTGGTG
T P R P T P R Q T Q T P R P T P R Q T P R P P R T E R P V V

1000 1010 1020 1030 1040 1050 1060 1070 1080
ACACCCAGTACGAGGGAGGAGTGCAATATCAAAGTGAGGGCCGAGTCACAGATTTTGTGGACACTTCTTCTTTACGAATGAACT
T P S T R E E C N I K V R A A V T D F D G T L L L F T N G T

1090 1100 1110 1120 1130 1140 1150 1160 1170
ACTATTTATCAAGTAGATTTAATCGACGTTATAGCCCTATCAAACTGATCAGTCAACGAAATTTCTCAAACCTAAAAGAAACCCAGAT
T I Y Q V D L N R R Y S P I K S D Q S T K F S N P K R N P D

1180 1190 1200 1210 1220 1230 1240 1250 1260
GCAGTGTATAGATTACTCAACATGGGGATGACATTTATCATGAAAGGACAGATGATATGGCAGTTTGACCGTATGGGAAACCAATGAAG
A V Y R L L N M G M T F I M K G Q M I W Q F D R M G N Q M K

1270 1280 1290 1300 1310 1320 1330 1340 1350
CGAATTTTGTTCAGGGAGGAGTTATTCTTACCAGAGCGTCTAGAGCCGTGATAGCACCCACAGATAACGAGATATGGATCATTATG
R I F V Q G G G Y S L P E R P R A V I A P T D N E I W I I M

1360 1370 1380 1390 1400 1410 1420 1430 1440
TCACATATTGTGTCAGAATGACTCCGCGGGGAGAAGTGATAAGAGGATCTCATGCTTACTTCAGTCGCACATATCGTGGCGTTCCTAT
S H I V C R M T P R G E V I R G S H A Y F S R T Y R G V P Y

1450 1460 1470 1480 1490 1500 1510 1520 1530
CCTGTCGACGAGCTGTTGCCTTGAATAATGATGAAACTATATACTTTTTCAAAGATCAAAGGTTTTACGAATATTCACAAGGAGGAGA
P V D A A V A L K N D E T I Y F F K D Q R F Y E Y S T R R R

1540 1550 1560 1570 1580
GGTGTATTAGAAATGGCGATATCGGCAGAGAATTTCTTCTCTGTTTCATAG
G V I R N G D I G R E F F S C S *

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10 20 30 40 50 60 70 80 90
ATGGCAAACGTGTTCCAGTGGATATTTGCGGTACTGCAGATTGTTTTATTGGTTGGAGCAGAAAAGTTTTCCAGTACCGTGATCATAGA
M A N C S Q W I F A V L Q I V L L V G A E K F F Q Y R D H R

100 110 120 130 140 150 160 170 180
GACCAATCCAAGTATTTACGTCCAAGACAGATGGAATAGTACATAGCAGCGAAGAAGCAACAGTCCAATTAGAAAAATATGGTTACCTT
D Q S K Y L R P R Q M E I V H S S E E A T V Q L E K Y G Y L

190 200 210 220 230 240 250 260 270
CGCTGCAAGTCAAAACGAAAAAGACGGTCACCTATGGGCTTTGGTATATCTGAGGGAATCCACCCACGGAAGATAGAGAAGTAGACGAG
R C K S K R K R R S P M G F G I S E G I H P T E D R E V D E

280 290 300 310 320 330 340 350 360
GACCTCCGTATTGTAACCAAAAACAAGTAGAAAATGCAATCAAAGAATATCAAAGAGGTACAAATTACCTGAGACCGGTATTTTACG
D L P Y C N Q K Q V E N A I K E Y Q K R Y K L P E T G I L D

370 380 390 400 410 420 430 440 450
GAAGTGACTAGAAAATTTATGAGCACGTCTAGATGTGAAACAAGACAAGGAGAAACGGAAGTTAAAGAAGACGTTAAAACATCAGAT
E V T R K F M S T S R C G N K D K E E T E V K E D V K T S D

460 470 480 490 500 510 520 530 540
TCTGAAAAGTCCGGTCAATGATAGCACACGATCCGGATTTTAGAAAATTTCAAATCATTTCAAAAATAAAAATAGACCTTGAAAAGA
S E K V G A M I A H D P D F R K I S N H F K N K N R P W K R

550 560 570 580 590 600 610 620 630
TCAGCAAAAGTGACTACATTAATGAGAGTACTAACCGAACAAAGTAGAACAGATCCATTAATAATCAAAGAAGAAAAATTTAAAAGAA
S A K V T T L M R V L T E Q S R T D P L N N Q R R K Y L K E

640 650 660 670 680 690 700 710 720
TTCGTGAAAATATAAAAAATAATAGTACTTCTTCAACCATATACAGAAGAGGAAAGACGAAAACGTTCTATTAAAGTTCATCTC
F V E N I K N N S D Y L L Q P Y T E E E R R K R S I K V H L

730 740 750 760 770 780 790 800 810
AATATGACATCTGGAAATGGTGA AAAAATTTGGGATGGACAAAATTTACCAACATTATATTCGATGGAGATTACTTAAAACAGGATTT
N M T S G N G E K I W D G Q K F T K H Y I R W R L L K T G F

820 830 840 850 860 870 880 890 900
AGTACCAGAATTCGGGTAGAAGAACAAGAAGTAGTTAAATCTAGCTTTTCGAATGTGGAGTGAAGTGGTTCCATTGAAGTTTGAGGAG
S T R I P V E E Q R S S L N L A F R M W S E V V P L K F E E

910 920 930 940 950 960 970 980 990
GATGCATCGGGGACATTCAAAGTGTAGACATAGAAAATGCTTTTGAAGAGGTTCTCATCAGAATTGTGGTAGGAAGTTCGATGGGCAT
D A S G D I Q S V D I E I A F G R G S H Q N C G R K F D G H

1000 1010 1020 1030 1040 1050 1060 1070 1080
GGAGGAAAATAGCTCACTCTTGGAGTGGTAGAAAATGTTCACTTCGATGACGAAGAGGATTACAATCTATAGAGACCATCACAATGAA
G G E I A H S W S G R N V H F D D E E D Y K S I E T I T N E

1090 1100 1110 1120 1130 1140 1150 1160 1170
AAGGATGGGATCTATTTACTACGGGTAGCAGTACACGAGATAGGTCATGTCCTCGGATTGGCTCATACGGACAAGGGTATTCCATTATG
K D G I Y L L R V A V H E I G H V L G L A H T D K G Y S I M

1180 1190 1200 1210 1220 1230 1240 1250 1260
TAGCGAATTTATCATGAGAACATCAACCTCGAAAAGAGTTTGGCTTGGCTGGGAGGACAGAAAAGAGGTTTCAGAAACTCTATGGTACT
Y A I Y H E N I N P G K E F E L G W E D R K E V Q K L Y G T

1270 1280 1290 1300 1310 1320 1330 1340 1350
TGTCGAGGCACATTTAATACCCTATTTGACTGGGTAAGAAAGCGCCCTGACAACAAATTCATCTTCAACACATACATGTTTCGTAACAA
C R G T F N T L F D W V R K R P D N K F I F N T Y M F R N N

1360 1370 1380 1390 1400 1410 1420 1430 1440
CACTACTGGATGTATGAAAACCATGCCAACAGGACCCGCTATGGAGACCCCTCTATATATTGCCAGAGAATGGGAGGGTGTCCAAACCAC
H Y W M Y E N H A N R T R Y G D P L Y I A R E W E G V P N H

1450 1460 1470 1480 1490 1500 1510 1520 1530
GTGGATGGTACTTACATGTTTGGTATTTGCTGGCAAGCACGATAGCCGACGAAGCTTTCTTCTCAAAGGTGACAAGTACTACAAATAT
V D G Y L H V W Y F A G K H V A D E A F F F K G D K Y Y K Y

1540 1550 1560 1570 1580 1590 1600 1610 1620
GACAGTGACACTGACAAGGTGTACCCGGGATGGCCTCGCCTCATCAAGGAAGACTTTGGACCAACCTGGCCAGACAGAGGGCATCCCA
D S D T D K V Y P G W P R L I K E D F G P K P G Q T E G I P

1630 1640 1650 1660 1670 1680 1690 1700 1710
GATAATATTGATACAGTCTCTTCGACATGAGGGACAGAAATATATATTTCTTCAAAGACGATATGGTGTACGTCCTTTGATCCTAAGCTT
D N I D T V L F D M R D R N I Y F F K D D M V Y V F D P K L

1720 1730 1740 1750 1760 1770 1780 1790 1800
CCTCCTGAAACAAGGGGCTGTGCGAAAGGAAGCGTAAAATCTGGGAGGAATTTCCAGCACTTGATGGGAGGATCCATTCGCTGGTAGT
P P E T R G C C E R K R K I W E E F P A L D G E D P L P G S

1810 1820 1830 1840 1850 1860 1870 1880 1890
ATTGATGCCGCTTATTACTCATAAATGAGAGTTCTGTTTATTTTTGAAAGGAGAACATGTTTGGCAGAAGCTTCTATTTTCATCCGAGG
I D A A Y Y S Y N E S S V Y F L K G E H V W Q N V L F H P R

1900 1910 1920 1930 1940 1950 1960 1970 1980
CAAAAACAGATTCGGAACGGTGTGAAGTATCTAGGACATTGGTACAATAAGTGGTTTGATATATGTGACGTTAGGAATATGGATTACCT
Q K Q I R N G V K Y L G H W Y N K W F D I C D V R N M D S P

1990 2000 2010 2020 2030 2040
CCTCCCTGTGGTACAGAATGATAAACCGGAAACAACATAAGCCCAATCGTCAGACGGTGA
P P P V V Q N D K P E T T I S P I V R R *