

1 10 20 30 40  
QUERY K P R S L R F T W S M K T T S S S M D P N D M M R E I R K V L D A N N C D Y E E Q Q R  
UniRef90\_H2SAJ3 K P R S L R F T W S M K T T S S S M D P N D M M R E I R K V L D A N N C D Y E E Q Q R  
UniRef90\_B3S0C9 K P R S L R F T W S M K T T S S S M D P N D M M R E I R K V L D A N N C D Y E E Q Q R  
UniRef90\_B4HPH2 K P R V L R F T W S M K T T S P L M P P N S M I R E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_H2KSV1 K P R S L R F T W S M K T T S H M P P N S M I R E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_A9ZRZ1 K P R S L R F T F S M K T T S S S M D P N D S I G E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_S4RC28 K P R A L R F T W S M K T T S S S M D A R E M M R E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_UPI0003D0831A K P R S L R F T W S M K T T S A L E P G E M L R E I R K V L D A N N C D Y E E Q Q R  
UniRef90\_T1EJ15 K P R S L R F T W N M K T T S S S M D P N D S I G E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_U6J10 K P R S L R F T W T M K T T S S N K D P P I D M L N E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_E4X788 K P R S L R F T W S M K T T S S S M D P F D M V K E I R A L E A N S C D Y E E Q Q R  
UniRef90\_W4X570 K P R S L R F T W S M K T T S S S M D P N E I M S E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_I1FL79 K P R S L R F T W N M K T T S S A M D G T D M I E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_G6DT13 K P R S L R F T W S M K T T S S S M D P N E I M A E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_G6D117 K P R V L R F T W S M K T T S S S R D P N E I M A E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_UPI0003F0D2B8 R P R S L R F A S S M K T M S S M E P S S D I I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_E9C508 K P R S L R F T F S M N T T S S S K K A E D V V T E M R R V L D E L H I V Y E R T T  
UniRef90\_UPI0003C13B9A E P R L L R L T W N V K I T S C K M D P P E D M M A A I R R T A D A N N C D Y E E Q Q R  
UniRef90\_UPI000298C57B K P R S L R F T W S M R T T S S S M E P P C D I M R E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_V8N3A7 K P R S L C F T W S M K T T S S M E P N E M M K E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_G5BIU9 K P R S L R F T W S M K T T S S M E P N E M M K E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_Q28GW8 P R K L R A H Y N V T T T N I M N P E Q L L N Q I R V K V L P S K N V D Y V Q K  
UniRef90\_A9VBY4 K P R A L R F T F S M T N T S T K E P E Y L L Q E L K R V L A L N D V T F E N S  
UniRef90\_UPI00046BF9CB E P R L L R C T W N V K V T S T H P P E A M M A A L R Q A T D S A S C R C R Q Q L  
UniRef90\_O45370 R A V R F T W S L K K T S M L E P D E L K E I R Q K V L D S Y G I D Y E E Q Q R  
UniRef90\_H3ET12 P R K L R R F P W S V S K L T S S G E N P P E A L M A A L H R A T H A A R C R C R Q Q P  
UniRef90\_UPI0004543765 K P R K V K E L Y N V S T T S T L P A D I V V E R L K K E G L M Y S D I I D S Y K Q  
UniRef90\_B3S5D2 E P R K V K A L Y N V S T T S T L P A D I V V E R L K K E G L M Y S D I I D S Y K Q  
UniRef90\_W4XGL7 K P R A L R F T W H M K N T S S A D S P L K M I T E A S R R V L D L N N C D Y E E Q Q R  
UniRef90\_T1G5F9 E P R S I R F A L N V S T T S S A K S A E E I M N E V I R R V L A L N N T T F T  
UniRef90\_H9C896 K P R S L R F T F N S N T T S S K P P D E L I S E I I K A C A K N G I S S R A Q  
UniRef90\_F4NZ63 K P R S L R F T F N S N T T S S K P P D E L I S E I I K A C A K N G I S S R A Q  
UniRef90\_G3U2B4 K P H S L K F T W K M K I T S S M E P P K E M R Q V I C R V L D A N N C D Y E E Q Q R  
UniRef90\_E9C7V3 R T L S G G F N V S T T S S M E P P K E I L A E V R R A L V R A N I R F A E S  
UniRef90\_UPI000441D1F7 E P R L L R F T W N V K L T S T R S A E A I L A A L C Q A T D S A N C C R R E Q T  
UniRef90\_F2U1X5 R P R S L R F S F N T A N T S A R A P E E L V D E M K R V L D A N N C D Y E E Q Q R  
UniRef90\_V9L9E1 K P R S L R A Q Y N V T T T T N A D E V L N E I I G V L S S K R I I D F V Q K  
UniRef90\_G2QRS7 K P V Y L K G I F S V S T T S T K P L P E I R A D I K R V L K R L G V D Y E I K  
UniRef90\_UPI0003C134D8 K P R K L R K P Q Y N V T T T T N M S A D V V L N E I I R I L P K K N V D Y V Q K  
UniRef90\_F4Q1Y1 Q P R I V R F V F V G V H T T S S M K P A P E L M K Q V I L S V V S N F C I P H T Q K  
UniRef90\_G4V0M3 K P V F L K G I F S V S T T S T K P L S E I R A D I K R V L R V L G V E F E I K  
UniRef90\_H9GIS6 K P R S L R F T W S M K T T S S M E P P N E M M K E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_T1NKU2 K P R K L R A H Y N V T M T Q L L N P D Q L L N E I I S L S L S K K Q V E Y V K K  
UniRef90\_H0VVL3 K P Q T L H F T W R M E T T S S M D P R D M L R E T Q R G L D D A N N C D Y E E Q Q R  
UniRef90\_I3ND73 K P R S L R F T W S M K I T S S A M D P S D I M R E I C K S V L D A N N C D Y E E Q Q R  
UniRef90\_F0ZS27 P R T S K G I F K S S T T T T K S P E K T I J E I L K R S L D E E S N G L F T K K K  
UniRef90\_F1QGZ6 P R K I K A Q Y N V T L T N Q T N A D Q V L N Q I L S I L P E K N G L D F V Q K  
UniRef90\_K1Q7Q7 P R K V K A L H N I F R T N E V N P E Y V L E K L K E V V E E K C V I P Y K Q S  
UniRef90\_F4NWC4 P R T I R F A F N C T A T T M V Q P D I L F N R L K S T F E Q N D I D W R H H D  
UniRef90\_B2ARI8 K P V F L K G I F S V S T T S T K P L V E I R A D I K R V L R A L G V D Y K E I  
UniRef90\_T1FSJ3 K P R I V K A M H N V S N I C Q K H P D E L L S D M Q N V L D F M K V Y Y K Q A  
UniRef90\_G2QE59 K P V Y L K G I F S V S T T S T K P L S E I R A D I K R V L K M L N G V D Y E I K  
UniRef90\_A0A058ZC95 P R S L R F Y F S L A T T S S R H V S E V V R E V E R A L Q N M R N A Q Y E R  
UniRef90\_I1F5A6 P R T V K G L F D A N T T S C K S E S E V M Q E I E R R L N D M N I P F T K K  
UniRef90\_E9FUF1 K A L Y N V S T T S S R D P S D F V L S E L R R A L Q S K G I P V K Q K  
UniRef90\_D3BHE2 P R S T K G I F K S S T T T T K S P E K T V D E V K R C L E E T N L F T K K K  
UniRef90\_B0DHE5 K P V F L K G L F S V A T T S T K P P V I T K A D I R T V L D R M Q V Y Y R E N  
UniRef90\_E9CJB4 R T L K G F Y D V S T T S S K P P V D I I T E I S R V L D G E I Q I D Y S W N  
UniRef90\_T1G8N5 P P S D I M E E I K R V L D S H Q C E Y E V R  
UniRef90\_G0SA62 R P V Y L K G I F S V S T T S T K P L P Q L R A D I K R V L R M L A V E F R R  
UniRef90\_I3N7E7 K K K N L H F T W S I E T T S S T D P S D K I R E I R K V L D P N S C D Y E K  
UniRef90\_E5S115 K P R S L R F T W S M K T T S S S L A P S E E M M K E I R K V L D A N N C D Y E Q R  
UniRef90\_F0ZY99 K I R T M R G P F T S G T T T R K T P L I Q L I F S L I E E N L N S N N I V F R K  
UniRef90\_Q54MV2 K I R S M R G P F N S G T T T M L N P I Q L I F S L I E E N L N S N N I V F R K  
UniRef90\_S4BHI5 E A R A T R F A L N A S L T S T K S P D K L I Q E V R R V L D A Q S V P Y T E D  
UniRef90\_S2JNN0 K P V F L K G L F S V T T S T K H P S V I R A D I R R V L D A Q S V P Y T E D  
UniRef90\_W4XXQ6 K P R S L R F T F S M K T T S S S K E P D S I I G E I R R V L E S N G V D F E O R  
UniRef90\_V3ZMD0 P R K V K A L H N V Y R T N E F N P D Y V L N K L K S T V E Q K C I P F K H S  
UniRef90\_S9XJK5 K P V F L K G L F S V S T T S T K N T E T I Q R D L I R V M E L L D I E Y K E K  
UniRef90\_F2UAS4 E P R V V K G L F S A D S T S S K T P E A V L E E I C R V L A D E H C D F T Q R  
UniRef90\_G4V8S0 K P R E V K F P W S V Y T T S T K S A E E L L Q S I I H A L E G C R Y S H D P H  
UniRef90\_C4QUG1 R T R S L R F M F R A E T A S R R Q I T E E M M L D I K Q V L T N N N I I D F E Q V  
UniRef90\_S9Q1S0 K P R S L K G L F S V S T T S T K N T E S I Q R D L I R V M E L L D I E Y K E K  
UniRef90\_UPI000387127B P R K V K A C S N V T T T Q L L N P D Q L S E I I T A L T K N H V E Y V I Q K  
UniRef90\_T2MDN6 P R K V K G F Y K V S T T S T K P P N D V R R E I Q N A L K E N N K I Y S E L  
UniRef90\_E9C931 R I M R G A F N A A T T S S K D P L I M E E I L R V L D E N T V E Y E R V  
UniRef90\_B7PPU6 P R K V K V M Q N V S T M P A L T P D Q V L D C L R G A L L R K G I L C K Q  
UniRef90\_S2JNV7 K S V Y L K G L F S V A T T S S N K K A S V I R Q E I R I L D K K N I S Y R E K  
UniRef90\_E9CEW0 E I R S V R I F T L A K T S A K K P A E L L S D V I T R I L T S L F L P F E K V  
UniRef90\_H2KR06 P R E V R F P W S V H T T S T K S A N D V L K E I I A A L E G C R Y A Y D P H  
UniRef90\_UPI00035A0EDF P R S K A R A L H N V C L T N E L S P D H V L A Q L K A T A L H H K C I P F K Q S  
UniRef90\_U3JA41 K P R S L R F T W S M K T T S S M E P P T E M M R E I R K R V L D A N N C D Y E E Q Q R  
UniRef90\_W5NBZ0 E P R P P R C G W D V R V R S A R D P A E V L Q A L R E A A Q G C G C Q V H P A  
UniRef90\_A0A058ZC47 P R S L R F S L S T S S A K T V T E I M T E A R V L S E N G I K Y V L E N  
UniRef90\_UPI00006A3770 P R K M K A S Y N M S N I N R C P G L L H E L K R I V P T K H M F K E N  
UniRef90\_F4PCH1 R T A R F T F S L N T T S T K E P D L V F A E V R V L K D A G V K H S I A  
UniRef90\_UPI0002B46454 K P R R V K A T I Y H V E N T S T L P A D D V C D E I R V L E R G N I S Y S N P  
UniRef90\_UPI00022C9D88 K P R S L R F T W S M K T T S S S R L P P E A L M A A L R Q A P A A S H S R  
UniRef90\_F6ZQS7 P R S L R F P W S M K L T S S R L P P E A L M A A L R Q A P A A S H S R  
UniRef90\_C3XQD8 P R K L R K L L S V K I T S S L S A E H I V A E L S Q E A R K K F M L C K E K  
UniRef90\_H2MUG7 K P R S L R F T W S M K T T S S M E P P C D I M E E I F K V L D A N D C N Y Q Q  
UniRef90\_W4XB53 E P S P L K H A K S F S M T T C K D L N E I V N E I R R T L D R R Q P D L V Y T

QUERY  
UniRef90\_H2SAJ3  
UniRef90\_B3S0C9  
UniRef90\_B4HPH2  
UniRef90\_H2KSV1  
UniRef90\_A9ZRZ1  
UniRef90\_S4RC28  
UniRef90\_UPI0003D0831A  
UniRef90\_T1EIJ5  
UniRef90\_U6IJ10  
UniRef90\_E4X788  
UniRef90\_W4X570  
UniRef90\_I1FL79  
UniRef90\_G6DTI3  
UniRef90\_G6DI17  
UniRef90\_UPI0003F0D2B8  
UniRef90\_E9C508  
UniRef90\_UPI0003C13B9A  
UniRef90\_UPI000298C57B  
UniRef90\_V8N3A7  
UniRef90\_G5BIU9  
UniRef90\_Q28GW8  
UniRef90\_A9VBY4  
UniRef90\_UPI00046BF9CB  
UniRef90\_O45370  
UniRef90\_H3ET12  
UniRef90\_UPI0004543765  
UniRef90\_B3S5D2  
UniRef90\_W4XGL7  
UniRef90\_T1G5F9  
UniRef90\_H9C896  
UniRef90\_F4NZ63  
UniRef90\_G3U2B4  
UniRef90\_E9C7V3  
UniRef90\_UPI000441D1F7  
UniRef90\_F2U1X5  
UniRef90\_V9L9E1  
UniRef90\_G2QRS7  
UniRef90\_UPI0003C134D8  
UniRef90\_F4Q1Y1  
UniRef90\_G4V0M3  
UniRef90\_H9GIS6  
UniRef90\_F1NKU2  
UniRef90\_H0VVL3  
UniRef90\_I3ND73  
UniRef90\_F0ZS27  
UniRef90\_F1QGZ6  
UniRef90\_K1Q7Q7  
UniRef90\_F4NWC4  
UniRef90\_B2ARI8  
UniRef90\_T1FSJ3  
UniRef90\_G2QES9  
UniRef90\_A0A058ZC95  
UniRef90\_I1F5A6  
UniRef90\_E9FUF1  
UniRef90\_D3BHE2  
UniRef90\_B0DHE5  
UniRef90\_E9CJB4  
UniRef90\_T1G8N5  
UniRef90\_G0SA62  
UniRef90\_I3N7E7  
UniRef90\_E5S115  
UniRef90\_F0ZY99  
UniRef90\_Q54MV2  
UniRef90\_S4BHI5  
UniRef90\_S2JNN0  
UniRef90\_W4XXQ6  
UniRef90\_V3ZMD0  
UniRef90\_S9XJK5  
UniRef90\_F2UAS4  
UniRef90\_G4V8S0  
UniRef90\_C4QUG1  
UniRef90\_S9Q1S0  
UniRef90\_UPI000387127B  
UniRef90\_T2MDN6  
UniRef90\_E9C931  
UniRef90\_B7PPU6  
UniRef90\_S2JNV7  
UniRef90\_E9CEW0  
UniRef90\_H2KR06  
UniRef90\_UPI00035A0EDF  
UniRef90\_U3JA41  
UniRef90\_W5NBZ0  
UniRef90\_A0A058ZC47  
UniRef90\_UPI00006A3770  
UniRef90\_F4PCH1  
UniRef90\_UPI0002B46454  
UniRef90\_UPI00022C9D88  
UniRef90\_F6ZQS7  
UniRef90\_C3XQD8  
UniRef90\_H2MUG7  
UniRef90\_W4XB53

50 60 70 80

E R F L L F C V H G D A R Q D S L V Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
E R Y M L L F C V S G N D P A H D D S F V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
E S Y V L F W C I Y A D D D V D S S L M V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ B 4 H P H 2  
E R F L L V C K H G D P N T D S S L V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ H 2 K S V 1  
E R Y L L F C V H G D G R V G S D N L I V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ A 9 Z R Z 1  
U n i R e f 9 0 \_ S 4 R C 2 8  
P F L L Y V M G G G G V G S D L L V C W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 3 D 0 8 3 1 A  
E R Y V L L A H G G A P G Q P A F A Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ T 1 E I J 5  
E T Y L L V M H G G D A E A T D S L V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U 6 I J 1 0  
E Q F L L F C V H G D G R D H N V V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ E 4 X 7 8 8  
E R F L L L A H G G E A A T D S E L V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ W 4 X 5 7 0  
D R F L L L A H G G E A A T D S E L V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ I 1 F L 7 9  
E R F L L L C V H G D P N A D S S L V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ G 6 D T I 3  
E R F L L L C V H G D P N A D S S L V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ G 6 D I 1 7  
E R F L L L C V H G D P N A D S S L V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 3 F 0 D 2 B 8  
E T F M V T T A H H E G V V Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ E 9 C 5 0 8  
E S F L L S C S H H G R D N T D Q Y S Q F E V E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 3 C 1 3 B 9 A  
E S F L L C V H H G D G R A E N L V V Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 2 9 8 C 5 7 B  
E K Y M L L M H H G S P G H E A F V V Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ V 8 N 3 A 7  
U n i R e f 9 0 \_ G 5 B I U 9  
E K Y M L L M H H G S P G H E A F V V Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ G 5 B I U 9  
G Y T L L K C K T Q S D F G K V T M Q F E L E M C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ Q 2 8 G W 8  
D D F C L L C E H G D S A S E H F C H F E A E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ A 9 V B Y 4  
U n i R e f 9 0 \_ U P I 0 0 0 4 6 B F 9 C B  
E P F L L S C S H H G R D N T D Q Y S Q F E V E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ O 4 5 3 7 0  
K R Y L L R O C S H H V D P L T D A S V K W D I E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ H 3 E T 1 2  
E R Y L L L C V H H G D P A T D S L V Q Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 4 5 4 3 7 6 5  
Q P F L L L C H H G G G P D P L K L S H F E V E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ B 3 S 5 D 2  
T D Y V L R O C K I L H G D G S R L K A L L S F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ W 4 X G L 7  
K G Y T L R C K K Q D S K G K T V L S F D M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ T 1 G 5 F 9  
N P F V V H C S H G G A N D D S H V F E V V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ H 9 C 8 9 6  
S S Y C A Y C T C G D D V H F E V E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ F 4 N Z 6 3  
S R Y L L E C I W T G G P S K E A S K F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ G 3 U 2 B 4  
H K Y K L L L E N G I P G S K E D F I Q W R M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ E 9 C 7 V 3  
G Y V L L C E A H D T S G K P S Q F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 4 4 1 D 1 F 7  
E P F V L S C T H E K T P S E H F C C F E V E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ F 2 U 1 X 5  
G G P F T L V C T H R A T Q Q F E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ V 9 L 9 E 1  
G G Y T L L K C Q T R S D F G K V T M Q F E L E M C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ G 2 Q R S 7  
G G F S C L H D S G H G S G H G R H L F E I V T V K V P I V S L H G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 3 C 1 3 4 D 8  
G Y T L L K C R T K S D F G K V T M Q F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ F 4 Q 1 Y 1  
G G Y A L E C G E S E G V R F T I E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ G 4 V 0 M 3  
G G F S C R H T P S I N H A E N E L E F E L I V K V P I V S L H G V V R F F K R R I  
U n i R e f 9 0 \_ H 9 G I S 6  
E K Y M L L C M H G A P G H E A F C A V G D G G V Q A P P S A Q R R P L Q A D  
U n i R e f 9 0 \_ F 1 N K U 2  
G Y T L L K C Q T K G P D F G R E S M K F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ H 0 V V L 3  
G P F S L C C S K S D E P G E K L V Q W D M E I W R L P R L F L A V G I R R Q Q A  
U n i R e f 9 0 \_ I 3 N D 7 3  
T L F L L F C X H H D S K I S V Y K K W L S V I C R K K C S I N D I T G F Q F R E L  
U n i R e f 9 0 \_ F 0 Z S 2 7  
G P Y L L F L C F D E D N S V N K F Q I E I V K I S N L D I T G I Q L K R R L  
U n i R e f 9 0 \_ F 1 Q G Z 6  
G Y T L L K C H T Q S D F G K V T M Q F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ K 1 Q 7 Q 7  
D Y T L R C C T V M S D W S R V Q L A F D L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ F 4 N W C 4  
G Y L C D C E W G D I K F E V E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ B 2 A R I 8  
K G G F R C A H S P S I M D D G E I K F E I L I V K V P I V S L H G V V R F F K R R I  
U n i R e f 9 0 \_ T 1 F S J 3  
G G Y L L R C T I S D D W G K V R L A F D L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ G 2 Q E S 9  
G G F S C T H R G E E R V A D G E I R F E V L I V K V P I V S L H G V V R F F K R R I  
U n i R e f 9 0 \_ A 0 A 0 5 8 Z C 9 5  
H L F T F H V N H Q G V E F E V E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ I 1 F 5 A 6  
N N Y T Y L C P Q M K R G S K K P L T F S L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ E 9 F U F 1  
G Y T L R G R I T E G V R S A K L S F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ D 3 B H E 2  
G P Y V F L C F D D E A G V K F Q I E I V K I M H L N L T G V Q L K R R I  
U n i R e f 9 0 \_ B 0 D H E 5  
K S G F E C I H L P S I D L S S V V R F E I N I V K V P W L P L H G I R F R R A  
U n i R e f 9 0 \_ E 9 C J B 4  
N V T V S C M H V I E A A Q A K A T Q F E I V K I P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ T 1 G 8 N 5  
D R F L Y F C T T L E P N V D A L V Q W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ G 0 S A 6 2  
N S F Q F S S Q H R E R V A D G E L K F E T V I V K V P I V S L H G V V R F F K R R I  
U n i R e f 9 0 \_ I 3 N 7 E 7  
E R F L F F R V L G D P H A Q N L M Q W E T E V I K W P R L S N P V L F K Q K  
U n i R e f 9 0 \_ E 5 S 1 1 5  
E K Y L L L C V H G D P N T D S L V Q W E M E A S  
U n i R e f 9 0 \_ F 0 Z Y Y 9  
N C Y V F D C K H I G T L N N E T I N F E I E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ Q 5 4 M V 2  
N F Y V F D C K T L C P R N E T I N F E I E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ S 4 B H I 5  
S P Y L L S C T G R N I R F E I E M C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ S 2 J N N 0  
K R Y F E C V H M P S I D P D L V V R F E I Y L V K V P W L G M H G L Q F R R V  
U n i R e f 9 0 \_ W 4 X X Q 6  
E R Y L L F C V H H G D G R G D N L I Q W E M E D S N L H Q L T  
U n i R e f 9 0 \_ V 3 Z M D 0  
D Y M L R C V T V A G D W G R V K L A F D M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ S 9 X J K 5  
G G Y T V Q V G T S E E P V S V L M F E I Y I V K V P I L S Y L R G V Y R K R R V  
U n i R e f 9 0 \_ F 2 U A S 4  
G F H V R A K F L D D D V K H Y I T I N F E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ G 4 V 8 S 0  
P F L L Q C S W A A D R P G D P V H W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ C 4 Q U G 1  
G D L K L Q C A Y T D R T E H G V V H W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ S 9 Q 1 S 0  
G G Y S C C Y R N T E N L V P S V L T F E I V I V K V P I L S L G S L R G I S F H R I  
U n i R e f 9 0 \_ U P I 0 0 0 3 8 7 1 2 7 B  
G Y C L K C E T L S V K F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ T 2 M D N 6  
T R Y L F K K C L D E R R N K L I F Q L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ E 9 C 9 3 1  
N K W G V S H A L H N G K E G G E I R F V M E I C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ B 7 P P U 6  
D R Y T L R G K V R D E W G K V Q L T F D L E V V Q V P Q P E L L G I R R T R L  
U n i R e f 9 0 \_ S 2 J N V 7  
K D R F E C F M G S N K D P L A V R F D I Y I V K I P L L G M R Y G I S I K R M  
U n i R e f 9 0 \_ E 9 C E W 0  
D S W V L L C Y H S A Q N E Q V V F E I E I V K V P L L S L Y G I S I K R M  
U n i R e f 9 0 \_ H 2 K R 0 6  
P Y L L R C S W H C G L R D D P V H W E M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 3 5 A 0 E D F  
E Y S I R C T V H M D D W G R T K L A F D F E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U 3 J A 4 1  
E R F L L L C V H H G D G H A E S L V Q  
U n i R e f 9 0 \_ W 5 N B Z 0  
G P F L L S C A H G A A G R V A F E A E V C K L P P C V T S G V R F R R V  
U n i R e f 9 0 \_ A 0 A 0 5 8 Z C 4 7  
S P Y V I A D T G D H R L Q F F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 0 6 A 3 7 7 0  
G Y V I R O C Q T K D D F G K V V L D F F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ F 4 P C H 1  
N L V A T C D L E G I Q F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 2 B 4 6 4 5 4  
D R Y L F K C K S G L E N K T V F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ U P I 0 0 0 2 2 C 9 D 8 8  
G F L L Q G E T E D C T E D N A C S F E L E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ F 6 Z Q S 7  
S C W P A T G G V G R P E P L S H F E V E V C K L P R P G L R G V L F C R V  
U n i R e f 9 0 \_ C 3 X Q D 8  
G Y N I V R C K R V D A R G K P T L L F D M E V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ H 2 M U G 7  
E S F L L L C F H G D G R V S D V Q L S A D V C K L P R R L S S L N G V V R F F K R R I  
U n i R e f 9 0 \_ W 4 X B 5 3  
N N E N M F E L Q Q Y G V E M E M E V C K L P R R L S S L N G V V R F F K R R I

QUERY	S	G	T	S	I	A	F	K	N	I	A	S	K	I	A	N	E	L	K	L	
UniRef90_H2SAJ3	S	G	T	S	I	A	F	K	N	I	A	S	K	I	A	N	E	L	K	L	
UniRef90_B3S0C9	S	G	T	S	I	A	F	K	N	I	A	S	K	I	A	N	E	L	K	L	
UniRef90_B4H4PH2	S	G	T	S	I	G	F	K	N	I	A	S	R	I	A	F	E	L	K	L	
UniRef90_H2KSV1	S	G	T	A	V	A	Y	K	N	I	A	S	R	I	A	N	D	L	H	M	
UniRef90_A9ZRZ1	S	G	T	S	M	A	F	K	N	I	A	S	K	I	S	N	E	L	K	L	
UniRef90_S4RC28	S	G	S	S	I	A	F	K	N	I	A	S	K	I	S	N	E	L	K	L	
UniRef90_UPI0003D0831A	A	G	T	S	M	A	F	K	N	I	A	S	K	V	A	N	E	L	K	L	
UniRef90_T1EIJ5	S	G	T	S	I	G	F	K	N	V	A	S	K	I	A	N	E	L	N	L	
UniRef90_U6J10	S	G	T	A	I	G	Y	R	N	I	A	T	R	V	S	D	A	L	N	L	
UniRef90_E4X788	S	G	T	S	V	A	F	K	N	I	A	S	R	I	T	D	Q	L	Q	L	
UniRef90_W4X570	S	G	T	S	I	G	F	K	N	I	A	S	K	I	A	N	E	L	K	L	
UniRef90_I1FL79	S	G	N	T	M	S	F	K	M	I	A	S	R	I	A	D	E	M	R	L	
UniRef90_G6DTI3	S	G	T	S	I	G	F	K	N	L	A	S	K	L	A	N	E	L	K	L	
UniRef90_G6DI17	S	G	Q	V	W	A	Y	M	K	M											
UniRef90_UPI0003F0D2B8	S	D	T	S	I	A	F	K	N	I	A	S	K	T	A	N	E	L	K	L	
UniRef90_E9C508	S	G	N	S	L	T	Y	K	N	V	A	K	V	I	D	K	M	K	L	L	
UniRef90_UPI0003C13B9A	S	G	T	F	L	A	F	R	N	I	A	T	K	I	S	N	E	L	Q	L	
UniRef90_UPI000298C57B	S																				
UniRef90_V8N3A7	S	G	T	S	M	A	F	K	N	I	A	S	K	I	A	N	E	L	K	L	
UniRef90_G5BIU9	S	G	T	S	M	A	F	K	K												
UniRef90_Q28GW8	K	G	D	A	W	V	Y	K	R	L	V	E	D	I	L	S	S	C	K	V	
UniRef90_A9VBY4	S	G	S	S	L	D	Y	K	N	I	C	T	K	V	L	N	E	T	Q	L	
UniRef90_UPI00046BF9CB	S	G	T	S	L	A	F	R	T	V	V	T	S	I	A	S	Q	L	Q	L	
UniRef90_O45370	S	G	S	S	S	D	F	K	N	I	T	T	K	I	S	E	E	L			
UniRef90_H3ET12	S	G	T	S	I	G	L	K	N	I	A	S	K	I	A	Q	E	L	N	L	
UniRef90_UPI0004543765	A	G	T	A	P	A	F	R	S	L	V	S	R	I	A	D	D	L	E	L	
UniRef90_B3S5D2	K	G	D	S	W	A	Y	K	K	V	C	E	D	I	L	T	A	A	K	L	
UniRef90_W4XGL7	K	G	D	T	W	E	Y	K	R	M	C	Q	T	I	L	E	H	S	R	L	
UniRef90_T1G5F9	S	G	S	P	L	I	Y	K	N	I	A	A	K	I	S	N	E	L	K	L	
UniRef90_H9C896	S	G	D	A	W	N	Y	K	R	I	A	A	R	L	I	E	Q	M	E	L	
UniRef90_F4NZ63	A	G	S	S	A	D	Y	K	D	L	C	E	K	I							
UniRef90_G3U2B4	S	G	T	S	E	A	F	D	S	T	A	S	K	F	S	R	E	L	V	L	
UniRef90_E9C7V3	R	G	D	I	W	R	H	K	R	V	C	S	T	L	I	A	S	M	N	L	
UniRef90_UPI000441D1F7	A	G	T	S	L	A	F	R	S	L	V	A	K	I	T	D	Q	L	Q	L	
UniRef90_F2U1X5	S	G	A	S	V	D	Y	K	T	I	L	S	K	I	L	N	E	M	E	L	
UniRef90_V9L9E1	K	G	D	A	W	V	Y	K	R	L	V	E	D	I	L	S	S				
UniRef90_G2QRS7	G	G	N	T	W	Q	Y	K	A	M	A	E	Q	I	V	R	E	L	R	L	
UniRef90_UPI0003C134D8	K	G	D	A	W	V	Y	K	R	L	V	E	D	I	L	A	S	S	N	V	
UniRef90_F4Q1Y1	G	G	S	A	W	R	Y	K	G	I	C	K	D	L	V	L	S	Q	M	K	L
UniRef90_G4V0M3	A	G	N	T	W	Q	Y	K	A	L	A	E	Q	I	V	R	E	L	R	L	
UniRef90_H9GIS6	I	G	H	F	H	G	L	R	T	P	S	K	I	A	N	E	L	K	L		
UniRef90_T1NKU2	R	G	D	A	W	V	Y	K	R	L	V	E	D	I	L	S	S	C	Q	V	
UniRef90_H0VVL3	A	A	R	A	A	A	F	K	I	I	A	S	E	L	A	S	E	L	K	L	
UniRef90_I3ND73	L	Y	T	T	C	S	F	Y	D	V	S	Q	K	M	T	S	D	L	K	V	
UniRef90_F0ZS27	S	G	D	T	W	K	Y	K	D	I	C	T	E	L	V	N	S	M	K	L	
UniRef90_F1QGZ6	K	G	D	A	W	V	Y	K	H	L	V	E	D	I	L	S	S				
UniRef90_K1Q7Q7	K	G	D	T	W	H	Y	K	K	L	C	E	D	I	L	T	S	C	K	L	
UniRef90_F4NWC4	S	G	D	I	W	E	Y	K	K	L	C	S	K	I	T	N	D	L	E		
UniRef90_B2ARI8	G	G	D	T	W	Q	Y	K	A	M	A	E	H	I	V	R	E	L	R	L	
UniRef90_T1FSJ3	K	G	T	T	W	Q	Y	K	K	L	C	E	D	I	L						
UniRef90_G2QES9	G	G	D	T	W	Q	Y	K	A	T	A	E	Q	I	V	R	K	L	R	L	
UniRef90_A0A058ZC95	S	G	D	S	W	Q	Y	K	K	T	Y	S	A	L	L	A	D	M	Q	L	
UniRef90_I1F5A6	G	G	D	V	W	R	Y	K	E	T	C	K	Q	I	L	D	S	T	H	L	
UniRef90_E9FUF1	K	G	D	A	W	C	Y	K	R	V	C	E	E	V	L	R	M				
UniRef90_D3BHE2	S	G	D	T	W	K	Y	K	D	I	C	T	D	L	V	E	S	I	H	I	
UniRef90_B0DHE5	S	G	D	G	W	Q	Y	Q	M	L	A	R	R	V	L	T	E	L	K	L	
UniRef90_E9CJB4	S	G	D	I	W	A	Y	R	K	I	C	H	R	L	F	N	S	L	Q	L	
UniRef90_T1G8N5	A	G	S	S	A	Y	K	T	V	A	S	R	I	S	N	D	L	K	L		
UniRef90_G0SA62	G	G	D	T	W	Q	Y	K	T	M	A	G	Q	I	V	K	E	L	R	L	
UniRef90_I3N7E7	S	E	T	S	R	A	F	K	N	I	A	S	K	I	A	N	N	C	K	L	
UniRef90_E5S115																					
UniRef90_F0ZY9	Y	G	D	A	W	C	Y	S	S	L	C	K	Q	I	V	N	G	L	T	L	
UniRef90_Q54MV2	S	G	D	A	W	S	Y	S	S	S	C	I	K	I	V	E	S	L	K	L	
UniRef90_S4BHI5	G	G	D	L	W	A	Y	K	E												
UniRef90_S2JNN0	G	G	D	P	W	Q	Y	K	N	M	C	S	K	I	L	A	E	L	K	L	
UniRef90_W4XXQ6																					
UniRef90_V3ZMD0	K	G	D	T	W	H	Y	K	K	L	F	E	D	I	L	Q	S	A	N	L	
UniRef90_S9XJK5	S	G	N	S	W	Q	Y	K	T	L	A	S	R	I	L	N	E	L	K	L	
UniRef90_F2UAS4	K	G	D	T	W	R	Y	K	K	L	E	D	I	L	R	Q	L	H	L		
UniRef90_G4V8S0	R	G	S	T	L	H	F	R	P	I	A	D	L	V	M	K	S	L	R	L	
UniRef90_C4QUG1	S	G	S	T	S	D	F	K	R	L	A	N	K	L	A	S	D	L	E	I	
UniRef90_S9Q1S0	S	G	N	S	W	Q	Y	K	T	L	A	S	R	I	L	N	E	L	N	L	
UniRef90_UPI000387127B	K	G	D	A	C	V	Y	K	R	V	L	E	G	I	L	S	S	C	Q	L	
UniRef90_T2MDN6	K	G	D	S	W	S	Y	K	K	M	C	D	N	I	M	D	M	I	K	L	
UniRef90_E9C931	Q	G	D	I	W	A	Y	K	R	I	L	D	K	L	P	Q	I	R	L		
UniRef90_B7PPU6	T	G	D	A	W	H	Y	K	R	V	C	E	E	I	L	K					
UniRef90_S2JNV7	S	G	D	S	W	R	Y	K	N	T	C	S	M	I	L	D	N	L	N	L	
UniRef90_E9CEW0	S	G	S	L	W	V	Y	K	E	L	Y	N	Q	I	S	N	Q	L			
UniRef90_H2KR06	R	G	S	A	L	Q	F	R	P	I	A	D	L	L	M	S					
UniRef90_UPI00035A0EDF	K	G	D	V	W	Y	Y	K	R	L	C	E	D	V	M	R					
UniRef90_U3JA41																					
UniRef90_W5NBZ0	W	G	A	P	L	A	F	R	D	I	A	T	K	I	S	K	E	L	E	L	
UniRef90_A0A058ZC47	G	G	S	L	F	H	M	K	K	L	T	A	R	L	F	A	Q	M	N	L	
UniRef90_UPI00006A3770	K	G	D	A	F	V	Y	K	R	V	C	E	G	I	L	A	D				
UniRef90_F4PCH1	M	G	N	T	W	E	Y	K	D	L	L	T	N	L	I	S	K	M	N	L	
UniRef90_UPI0002B46454	K	G	D	A	W	N	Y	K	E	I	I	E	L	V	L	S	M	M	R	L	
UniRef90_UPI00022C9D88	K	G	D	A	W	V	Y	K	R	V	C	E	E	V	L	A					
UniRef90_F6ZQS7	A	G	T	A	L	A	F	R	T	L	V	T	R	I	S	N	D	H	E	L	
UniRef90_C3XQD8	K	G	D	T	F	D	Y	K	K	A	C	E	D	V	L	R	G	A	K	L	
UniRef90_H2MUG7																					
UniRef90_W4XB53	A	G	D	A	S	Q	Y	K	E	L	C	S	E	I	L	Q	T	M	K	L	

UniRef90\_J9FKT6  
UniRef90\_F4PNK7  
UniRef90\_G1TFJ2  
UniRef90\_UPI000273D824  
UniRef90\_G0PCD7  
UniRef90\_UPI0003F08305  
UniRef90\_D3BK5  
UniRef90\_UPI000328EE8E  
UniRef90\_A9UZY3  
UniRef90\_T1HDC1  
UniRef90\_C3XRQ1  
UniRef90\_U6HEA4  
UniRef90\_E5S3V4  
UniRef90\_J9EG47  
UniRef90\_H3G9B3  
UniRef90\_T0S0A5  
UniRef90\_F4WZQ7  
UniRef90\_J9JNU6  
UniRef90\_F2U8G6  
UniRef90\_E2BVK2  
UniRef90\_U6I3R5  
UniRef90\_G7YFL3  
UniRef90\_G7YVP5  
UniRef90\_UPI00017E10DF  
UniRef90\_G4MY59  
UniRef90\_H3ENP8  
UniRef90\_M4UA16  
UniRef90\_F1KUS4  
UniRef90\_B6K1B3  
UniRef90\_R1EW86  
UniRef90\_A0A026W9R8  
UniRef90\_N1QBE4  
UniRef90\_K3VY71  
UniRef90\_UPI00042C6856  
UniRef90\_F0W7F8  
UniRef90\_A0A010RP23  
UniRef90\_A0A010RP23  
UniRef90\_UPI000444A767  
UniRef90\_UPI000444A767  
UniRef90\_F2DIQ5  
UniRef90\_E0VCY1  
UniRef90\_C5M4R4  
UniRef90\_A3LS04  
UniRef90\_R4XD71  
UniRef90\_W0TYN3  
UniRef90\_W3WYJ0  
UniRef90\_I1BXR4  
UniRef90\_P22987  
UniRef90\_G3AJC9  
UniRef90\_T5AMG0  
UniRef90\_V6LC04  
UniRef90\_M4BWW8  
UniRef90\_E4YBN6  
UniRef90\_M3IHZ4  
UniRef90\_T1JSV7  
UniRef90\_UPI000387293C  
UniRef90\_F2UJ64  
UniRef90\_C4R4A2  
UniRef90\_M1W109  
UniRef90\_M1W109  
UniRef90\_G3U4A7  
UniRef90\_F0X9I7  
UniRef90\_A0A044TLN1  
UniRef90\_D8Q7H7  
UniRef90\_Q5AA11  
UniRef90\_U4TRY7  
UniRef90\_K3W6B9  
UniRef90\_E4ZMC4  
UniRef90\_E4ZMC4  
UniRef90\_L8G950  
UniRef90\_L8G950  
UniRef90\_F1A2Y8  
UniRef90\_J0LJU0  
UniRef90\_N1QN98  
UniRef90\_D3B5B2  
UniRef90\_M5FXG0  
UniRef90\_M5FXG0  
UniRef90\_W9XXH0  
UniRef90\_A0A016WZJ4  
UniRef90\_E9C1S1  
UniRef90\_F1Q5N2  
UniRef90\_G8BYG3  
UniRef90\_B8BT41  
UniRef90\_J0D9I0  
UniRef90\_J0D9I0  
UniRef90\_I7LZH6  
UniRef90\_W6MU17  
UniRef90\_UPI0004408287  
UniRef90\_M2QGK7  
UniRef90\_B7FQE9  
UniRef90\_Q0UMR9  
UniRef90\_J8LK02

1 10 20 30 40  
K L R K I K G P F N V N C T T D R D P Q E V L L E M V R S L E L Q K V S Y K K V  
P R V L P F F W S V K L T T S F R P P Q A L M G A L R Q G T A A A R C R F R Q P  
S L H F R W N M K F T T S M E P X L Q N I K V L D M N G C Q C E L N  
V K N M V N V S M T A W D D P D E V R N R I K N V F D Q E Q M R Y E L N  
E P V T L K Y A R S F S L M T A K E L P S E V V Q E I K E R T L D N S Q S G L K Y E L A  
K L R S I L K G P F T A G T T T L Q P S D I S R H L E D I L L S Q S I K Y Q Q N  
P R S R D P K W R M K V M S S L E P H E I M G E I C R V L D A L G C E W D L M  
F G A A T T S S L N P Y D R V M A E L Q R A L R R R N G V D F E L D  
K N L C N V S T T S F T N P Q D V I S Q L N T A L Q Q K G I L C K I K  
P Q S H K F P P S V K M T S E K N V G E I V Q E V K R M L D N K G P S V M Y T  
K P R E V R N P W G V H V T S T K T A S E L M N E M K H A L K A R G C Q W E A D  
N V S V S A K S P E E V I N T L I N V F Q S K G I V C K R  
R S R G A F D V N C S T T R D P A F L M A E I Y K V L E S N K I Q Y K Q M  
R R R W Y L G I Q S K K E P A H V M S E V Y K A L F V L H F E W K V V  
R R R W Y L G I Q S K K E P A H V M S E V Y K A L F V L H F E W K V V  
K G L S N V S A T C S G C P K H V L S K L R R A L R Q K G I M C R Q K  
K D L C N I S T T V C K D P E K V M N Q L E K A L A M K N V I C S R K  
S M R A F G A A T T S I K P A H V I I H E L K Q A L R S C D V M F E E R  
E P S T L K G L S N V S S T C S C P K Y V L S K L R R A L R R K G I M C R Q K  
R V L F R M E S N T R R Q L N E M M A E L K H A L A S G V S F S Q T  
K P R S L H F V H R L H V V S R D P Q T L L T E T L R V L D K N H I T Y T F R  
R S M R Y V L R P F A R W P L D E V M I E V Q R S L T N H G V D Y E V V  
K G L C N I S S T S S D S P K H V L S Q L R Y A L Q C G I L C R Q K  
A R E E T S R R R D H P  
K G M I N L S V T S S T E P E Q V K E Q L V R V F E K H N M K Y E V N  
E P R A V G R G W N L R G G G R R D P A E V V L C E L M R E A A L G C G C V H H S  
P R K V K S M V N V S M T S S R N P E L V R C E L M R V F A E Q N I C V E Q H  
K P V F L K G L F S V S T T S T K S T E F I Q R D L I R V L R L L N I K F E I K  
S Y T S A E D S E E S D V A D A E G M P R A R A  
K S L S N V S A T C S G C P K Y V L S K L R R A L R Q K G I M C R Q K  
S N P R Q I E R A  
R Q V  
P R R L K P H Y N V T T T R L V N P D Q L L N E L M S L L P K K H V D F V Q K  
R R R W Y L G I Q S K K E P A H V M S E V Y K A L H V L H F D W K A A  
K P V F L K G L F S V S T T S T K N V T E I R A D I K R V L K G L G V D Y T E I  
K P V F L K G L F S V S T T S T K N V T E I R A D I K R V L K G L G V D Y T E I  
K P V F L K G L F S V A T T S T K P P S A I K S D I R R V L D R M Q V Q Y R E T  
K P V F L K G L F S V A T T S T K P P S A I K S D I R R V L D R M Q V Q Y R E T  
R V S K G A F T V E T T T R K T V P Q I E L E R V L D M A F H T R K K  
Q P V I L K N Y S N V S T T T S K S P E E T L L K L Q N T L K E K G I A C R K K  
L V S S R I E H R A R  
S M S R T S R K L S F R R A T R A R A V S N T H G L E P T D D  
V R D A G G S S R R V P  
K P V F L K G L F S V T T T S T K H P S V I R S D L I R V L E R I D V R W R E S  
K P V F L K G L F S V S T T S T K S T E S I Q R D L I R V M G M L D I E Y K E K  
Q R A T S A K T Q S Q H Q R  
G M S S K M P P D L M L N L I E E V F K K L K I K F V K E  
R R R W Y L G I Q S K K E P A H V M S E V Y K A L F V L H F E W K V V  
E P R K I K A V S N V S R L T K Q E P K L V L K T I H E V S K M G V P N R V K  
K T L F L K G F F S V Q T T S A K P L P V I R Y N I N V L S K L G V K F K R V  
N I T M T K F S D P Q M C I E K L M Q A L I Q K G I D C R K K  
S A G C R A R Q P  
T I R Y P L N R R M V S A R S P L E I F E Q L Q R A L R A L D M P F W A S  
E E T  
K P V F L K G L F S V S T T S G R S V P A I R S D I R R V L K Q L N V D F E I K  
K P V F L K G L F S V S T T S G R S V P A L R S D I R R V L K Q L N V D F E I K  
P F S V S L T S S M N P D E M M W M I C Q V R D A S S C E W N L T  
K T M V N V S I T S S K N P D R V R R E L L R V F A E Q K I T A E Q H  
S T R T T S P M P P Q S P F P  
K T L F L K G F F S V Q T T S A K P L P V I R Y N I N V L S K L G V K F E V K  
K E L C N V S T T Q C K D P E F V I A E L S K A L E K K G I V C T R K  
R R R W Y L G I Q S K K E P A H V M S E V Y K A L F V L H F E W K V V  
K P V F L K G L F S V S T T S T R P L S Y I Q D D L I R V L D Q L G V E W E I K  
K P V F L K G L F S V S T T S T R P L S Y I Q D D L I R V L D Q L G V E W E I K  
R P V F L K G L F S V S T T S T K P V N T I R T D I I R V L N Q L N V N Y K E I  
R P V F L K G L F S V S T T S T K P V N T I R T D I I R V L N Q L N V N Y K E I  
W Y L G A I S Q L P H E I M G E L Y R A L K K V G F E W K L T  
W Y L G A L S Q L P P Q E I M R E V Y R S L Q L V G F E W K V T  
K P A S L K G V F S V S T T S S K S P A A I K A D I R R V L D R M H M Q Y R E I  
K P A S L K G V F S V S T T S S K S P A A I K A D I R R V L D R M H M Q Y R E I  
V T N S E G S E E Y L Q Q V R H A G D Q T Q D  
P R K L K G K I N V S V T N S T D P E R I R Q E L I K V F E Q Q C I K Y E V N  
F G V A T T T L S P S K L L D R V T A S L V H N K V R F T I L  
P W D V R A R L S R P A E V V L A L R E A A R G C G C Q V R H A  
V Q D M N K V I N Y N S K G A S Q A  
R F Q N R R W Y L G I Q S K K D P A H V M T E V Y K A L M A L G C E W L I Q L  
K A V P L K G S F S V A T T S T K G A T A L R S D V R R T L T R M G I A F R E I  
K A V P L K G S F S V A T T S T K G A T A L R S D V R R T L T R M G I A F R E I  
R G P F N L R A I T N K D P K Y I V S E L I K T L E S F K M Y K P T  
K P V F L K G L F S V S T T S S K P P S L I K A D I R R V L D R M Q V Q Y R E T  
K P V F M K G L F S V Q T T S T K P P V T L K S D I K R V L D R M Q V Q Y R E T  
W Y L G I Q S K K D P A H V M T E V Y K A L M S L G C E W L I Q L  
P R S L K G F F S V Q T T S S K P L P I V R Y K I M F V L R K K H I D F K E K

UniRef90\_J9FKT6 G N Y G L R C 50 Q K N N V R F E M E I A H L D D L D I F L V K F K R R T  
UniRef90\_F4PNK7 N G F V F E C K N E D Q N D I V I L F E T E I V C C R Q L V S G M D L L F G L V K F F R R R T  
UniRef90\_G1TFJ2 K Q P F L L A C C K H Y G G A G G P Q N T L H F Q V E V V C C C R Q L P R R P S G L L N G G V L F F P R R R T  
UniRef90\_UPI000273D824 K K H M L L C M H Y T P T Q N T L L W K M E T V V C C C R Q L P R R R S G L L N G G V L F F P R R R T  
UniRef90\_G0PCD7 G W K F M A T H E T C H G W M T V L E L E I V C C R Q L H M F D S K V G V I R R R K R R L L  
UniRef90\_UPI0003F08305 N K F S L E N S G V L R M E L E I V C C R Q V P S G M D L V L Y G L R R L K R R K R R L  
UniRef90\_D3BCK5 G Y V F E C K Q S Q Q D L E N S S P L V R F E I E I V C C R Q V S G M D L V L Y G L R R L K F K R R Q  
UniRef90\_UPI000328EE8E G P H G L L C V C G T P G Q E D F L Q W R V E I V C C R L P R R R G L L H G V I Q S K R G C  
UniRef90\_A9UZY3 R N T L T R C R T R N S D E A E E V C S W E M A V Q K I S R L L G L H G V I R L R R R R L L  
UniRef90\_T1HDC1 G F T L R G K V E R R G E G E N C F E L E V V C C R L A S L V G I K R R K R R L L  
UniRef90\_C3XRQ1 H Q D C L F E L E K E G V R M E M V V V C C R V N L G L N G L C V K R R L L  
UniRef90\_U6HEA4 S Q Y L L H C G G S T E V L S D S M L Q W E M E V V C C S I P R L L H Q R A V C L K R R L L  
UniRef90\_E5S3V4 N G W T V K G K S T D A N G K V V L T V V F E I V V I S H L N M V G I K R R K R R L  
UniRef90\_J9EG47 N T Y S L R C C Q R V D P M D P N Q Q M S P E D L A K L Q Q Q L I Q L Y K V Q F Q R K L  
UniRef90\_H3G9B3 A P Y R V K C R W Q S P T G K P N Q Q K I G L G L Y K V Q Q Q H I Y L L Q D F Q R K L  
UniRef90\_T0S0A5 A P Y R V K C R W H D A N P G M K Q Q K I G L G L Y K V Q Q Q H I Y L L Q D F Q R K L  
UniRef90\_F4WZQ7 G F I L Q G E T E E S F S E D K T C S F E L E V L C C R L V E G K R L V G I R R R K R R L L  
UniRef90\_J9JNU6 G F V L R G K L K S D V A D K E K L K F E L E I V C C R L P N D L N M R G I H L R R R R L L  
UniRef90\_F2U8G6 G V K L R C S R V A Q A G G P T I V W E I T V Q V L P N D L N M R G I H L R R R R L L  
UniRef90\_E2BVK2 G F I L Q G E T E E S F S E D K T C S F E L E V L C C R L E T G S L V G I R R R K R R L L  
UniRef90\_U6I3R5 H P H R L H C T R W T S G S G E L L R L E L E V V C C R L P K E G M N G V R F K R R L L  
UniRef90\_G7YFL3 T E Y C L L C S N R E S N S A T A F K W E T E I F R L G K L N R Y G V R F K R R I  
UniRef90\_G7YVP5 G E H K L Q C V Y G D P S H G G I V H W E M E V V G K L A G V G M N G I R R F K R R I  
UniRef90\_UPI00017E10DF R F V L R Y N S T K A F L K N S C S F E L E V V C L I P M I T M V G I R R R K R R L L  
UniRef90\_G4MY59 A G E T R T H V R S D M G E S M V S F E F E L F I V K V I P M I T M V G I R R R K R R L L  
UniRef90\_H3ENP8 G W K I S G R V K D S M G H S M T V L L E I L V Y V E A L G K V G V R R R K R R L L  
UniRef90\_M4AU16 G P F L L S C T H G V A G R L V A F E A E V V C H L S S E T S N G V R Y T R R L L  
UniRef90\_F1KUS4 G G W K I S G K R R D E F A N R L M T V E L E V V L I S S E R L V G V K R R R L L  
UniRef90\_B6K1B3 G G Y L C L Y N D M S P R G S K D V C F E V Y I V K I P I L S L L R G V S F H R I  
UniRef90\_R1EWH6 A G E T T T H V I Q S D M G S G S L V L K F E I Y I V K V P E I L S L L H G I Q F K K V L  
UniRef90\_A0A026W9R8 G F I L K K S S S K S S S Q N S C S F E L E V C L L E I G S L V G I R R R K R R L L  
UniRef90\_N1QBE4 A G E T S T H V I Q S D M G G Q M T L R F E I F I V K V P L L L S L H G I Q F K K V  
UniRef90\_K3VY71 P G E T S T Q V I Q S D L G G S M T L E F E I F I V K V P L L L S L H G I Q F K K V  
UniRef90\_UPI00042C6856 G Y T L K C Q T Q S D F G K V M Q F E L E V C Q L Q K P D V I Y L L D F Q K L  
UniRef90\_F0W7F8 A P Y R V K C R W Q A P K T S N L T K I G L Q L Y K V Q Q H I Y L L D F Q K L  
UniRef90\_A0A010RP23 K G G F L C K H I P S I D L K K V P E V P S S P G Q A P P G H R R R R F S F G A I  
UniRef90\_A0A010RP23 K G G F L C K H I P S I D L K K V P E V P S S P G Q A P P G H R R R R F S F G A I  
UniRef90\_UPI00044A767 K T G F E C I H L P S I D I S S V Q P D P S A T P T V R R G R H R K K Q G  
UniRef90\_UPI00044A767 K T G F E C I H L P S I D I S S V Q P D P S A T P T V R R G R H R K K Q G  
UniRef90\_F2DIQ5 T G Y T V K V P N S K V E V E L E I C K V D K L D I K G I R K M K R A  
UniRef90\_E0VCY1 G F V L L S T D N K N K K D E D K L S F E L E V C W I P S V S V V G I R R R K R L  
UniRef90\_C5M4R4 Q N K M A S K S P L K F E I H I V K V P L V G L Y G V Q F K K L  
UniRef90\_A3LS04 H Q H S A S I S S A S R G K S P L K F E I H I V K V P L V G L Y G V Q F K K L  
UniRef90\_R4XD71 S T E S V F E A S G Q Q D S N L V V R F D I Y I V K V P W F N L H G V Q F K R V  
UniRef90\_W0TYN3 G S D M L G Y T A T N S S V R T P L Q F E I Y I V K V P I L S L H H G L Q F K K M  
UniRef90\_W3WYJ0 G E T T T Q V Q S D L G G S M T L D F E I Y I V K V P I L S L H H G L Q F K R M  
UniRef90\_I1BXR4 K G R F E C V H M P S I D P D L V V R F E I Y I V K V P W L G M H H G L Q F R R V  
UniRef90\_P22987 G G Y A C L Y D D N G E S P A S N L A F E I Y I V K V P I L S L R G V S F H R I  
UniRef90\_G3AJC9 N A S V S S T G S R K I A K K S P L K F E I H I V K V P L V G L Y G V Q F K R I  
UniRef90\_T5AMG0 K Q Y L F K C Q R L N V I M S C E M C K V Q G G E L V C V V F R R M  
UniRef90\_V6LC04 A P Y R V K C R W Q S Q Q Q M Q R I K V G L Q L Y K V Q Q H I Y L L D F Q R L  
UniRef90\_M4BWW8 G W V V R V Q N R D N M G R I Q L D F E L E V C R L V G G R A L L C G V R R H R I  
UniRef90\_E4YBN6 K G G F V C V H T P S V Q Y E M T N T S A N S T V H E D E E S R L Y G D A F K S K  
UniRef90\_M3IHZ4 G F V L S C A L N N K Y H S M L T F N L E I C Q F G D K C A L Q R K R L  
UniRef90\_T1JSV7 Q P F L L S C A L N N K Y H S M L T F N L E I C Q F G D K C A L Q R K R L  
UniRef90\_UPI000387293C Q P F L L S C A L N N K Y H S M L T F N L E I C Q F G D K C A L Q R K R L  
UniRef90\_F2UJ64 S G T D M G V V C R S G G V R L E A E V V K I A G L S M H Y G V H M R R Q  
UniRef90\_C4R4A2 D D D D L G S L N E G S T H R T P L K F E I H I V K V P L V G L Y G V R F K K I  
UniRef90\_M1W109 G G F A C R H T P S I D L N K V Q D L P M S P G H R R R R  
UniRef90\_M1W109 G G F A C R H T P S I D L N K V Q D L P M S P G H R R R R  
UniRef90\_G3U4A7 Q T Y V L L C T H G T G Q E D F V Q W R L K V C T R V V E P L I R V K R I  
UniRef90\_F0X9I7 D M G G N L V L E F E I F L V K V P M I S T H G I Q F K R L  
UniRef90\_A0A044TLN1 G W K I S G R R K D E F N R M M T V R F E I V E M G N K E K L V G V K R R R L  
UniRef90\_D8Q7H7 T G G L D K D M F D S M G S N T L V R F E I T I V K V P W L P L H G I Q F R R L  
UniRef90\_Q5AA11 G G F V C M H T P S V Q P S H S N E L D E E N K L Y G D A F K S K  
UniRef90\_U4TRY7 G F R L K G C L E P N T L D R G G C S F E L E I C F L P E L S L V G I R R K R L  
UniRef90\_K3W6B9 A P Y R V K C R W Q P K G L S A A L N Y E A Q V K Y Q Q R L A Q S R I K F Q R L  
UniRef90\_E4ZMC4 G G F R C R H S P S I D M K N M L  
UniRef90\_E4ZMC4 G G F R C R H S P S I D M K N M L  
UniRef90\_L8G950 R G G F Q C R H M P S I D L K K V V D V P S S S Q N L Q P P G S S H R R R I  
UniRef90\_L8G950 R G G F Q C R H M P S I D L K K V V D V P S S S Q N L Q P P G S S H R R R I  
UniRef90\_F1A2Y8 G P Y Q L R C R M L D S G R P V K L V L Q L F R V A E N R Y L L K K I  
UniRef90\_J0LJU0 F E D N S P L G V R F F E V H V V K V P L L S L Y G I Q F R R V  
UniRef90\_N1QN98 Q N D L G E G L A L K F E I F V V K V P L L S L H G I Q F K K V  
UniRef90\_D3B5B2 G P Y Q L R C R I M N D R P I L K I T V A K E E E Q L F R V T E N R Y L L K K I  
UniRef90\_M5FXG0 P S G F E C V H Q P S I D L K T V A K E E E S T L G V N G A R V K R K  
UniRef90\_M5FXG0 P S G F E C V H Q P S I D L K T V A K E E E S T L G V N G A R V K R K  
UniRef90\_W9XXH0 G G A T R T R V Q D D T G E R L V L R F E I S I V K I P L L S L H G I Q F K K V  
UniRef90\_A0A016WZJ4 G W K I S G R Q D K A G H A L T V E L E V V V V E N M G K L G I R R K R L  
UniRef90\_E9C1S1 G L I V S C S A Q D L S W E L E V C K L P H L D F S G I V F R R T  
UniRef90\_F1Q5N2 G P F L L C C S H G A G S K V A F Q A E V C Q L P A E A N G V R Y T R L  
UniRef90\_G8BYG3 E D D V H A L I D Y S S K E K P P I A F F E I Y I V K V R I V G I A G V H F K K V  
UniRef90\_B8BT41 S S Y R I K C R W R P N M N E A V D V P D E Y C I K I G L T L Y K V Q F Q K M  
UniRef90\_J0D9I0 S G G F E C A H E P S I V P G S S S K M R P L R K K T S K L S I  
UniRef90\_J0D9I0 S G G F E C A H E P S I V P G S S S K M R P L R K K T S K L S I  
UniRef90\_I7LZH6 S K F D I R V E K D L V K F D I S V N I L H N V N L F I I K F T R L  
UniRef90\_W6MU17 N T I K E R T P L R F E I H I V K V P L V G L Y G V Q F K K L  
UniRef90\_UPI0004408287 K G G F V C I H A P S I D L S S V S I D M T S I Q A P A P T E R R H R K R G  
UniRef90\_M2QGK7 K A G F E C I H M P S I D L S S V S I D M T S I Q A P A P T E R R H R K R G  
UniRef90\_B7FQE9 S S Y R I K C K W R P N T G G S G S S T I E Y S I K I G L T L Y K V Q F Q K M  
UniRef90\_Q0UMR9 Q N D M G G N M Y L D F D L I V K V P L F S L H G I Q F K K V  
UniRef90\_J8LK02 G G F V C T Q R F T F N N A A T K K E D

	90	100
UniRef90_J9FKT6	A G E T G S Y K D V S N R V L N N M Q L	
UniRef90_F4PNK7	C G Q L N S Y S S V C K L V I E S L Q L	
UniRef90_G1TFJ2	A G	
UniRef90_UPI000273D824	S S I S I V F K S L A S K V T A	
UniRef90_G0PCD7	K G D G F M Y K K V C E M I L S M A K I	
UniRef90_UPI0003F08305	A G D T W Q Y R R L C N E L L A G M D L	
UniRef90_D3BCK5	S G D V W F Y S V I C K K I T D A I Q	
UniRef90_UPI000328EE8E	L G	
UniRef90_A9UZY3	Q G D H W R Y K R L V D H V L Q D A R L	
UniRef90_T1HDC1	K G D A W C Y K Q V C E Q I L K	
UniRef90_C3XRQ1	A G D T Q Q Y K Q L G H E L L T G I N L	
UniRef90_U6HEA4	R G S A I Q F Q K V A T Q V M A A L R	
UniRef90_E5S3V4	N G D A W M Y K R V C E D V M N S	
UniRef90_J9EG47	N G E T Q A Y R D L C Q K V L S S I N L	
UniRef90_H3G9B3	D G N A F T Y M N L C C A R I I T E L K	
UniRef90_T0S0A5	G G D A F T Y M N L C C A R I I T E L K	
UniRef90_F4WZQ7	K G D A W V Y K R V C E E I L A	
UniRef90_J9JNU6	K G D S W M Y K K I C E E I L N	
UniRef90_F2U8G6	K G N H W D Y K K L V D E V I R K A K L	
UniRef90_E2BVK2	K G D A W V Y K R V C E E V L A	
UniRef90_U6I3R5	T G P A S E F K R L S Q K L A E D L K L	
UniRef90_G7YFL3	A G D S T N F R T M E R N L L R Q	
UniRef90_G7YVP5	N G S M S A F K Q T A K K L A A D L K L	
UniRef90_UPI00017E10DF	K G D A W V Y K R V C E E V L A	
UniRef90_G4MY59	G G N T W Q Y K N L A D Q I L K E L K L	
UniRef90_H3ENP8	N G D A F L Y K R V C E S L T	
UniRef90_M4AU16	W G A P L A F R D I A T Q I S K D L E L	
UniRef90_F1KUS4	N G D A F L Y K K V C E Q V L	
UniRef90_B6K1B3	S G D S W T Y K N L A S L I L N K L R L	
UniRef90_R1EW86	D G G T W Q Y K D V A Q K I L N E L R L	
UniRef90_A0A026W9R8	K G D A W V Y K R V C E E I L A	
UniRef90_N1QBE4	D G G T W Q Y K N M A Q K I L N E L R L	
UniRef90_K3VY71	A G N T W Q Y K S M A D H I L R E L R L	
UniRef90_UPI00042C6856	E G N A F T Y M N L C A R I I T E L K	
UniRef90_F0W7F8	R G	
UniRef90_A0A010RP23	R G	
UniRef90_UPI000444A767	S G G S	
UniRef90_UPI000444A767	S G G S	
UniRef90_F2DIQ5	S G D I W E Y K E I Y N K I I K E F R L	
UniRef90_E0VCY1	H G D A W I Y K N V C E E V L A	
UniRef90_C5M4R4	L G N T W N Y K T L A S Q I L N E M N L	
UniRef90_A3LS04	L G N T W N Y K T L A G Q I L T E L N L	
UniRef90_R4XD71	S G D S W Q Y K S L A S K I L S E L S L	
UniRef90_W0TYN3	T G N S W Q Y K N L A G K I L A E L K L	
UniRef90_W3WYJ0	E G N T W Q F K N M A D Q I L K E L R L	
UniRef90_I1BXR4	G A I I Y K	
UniRef90_P22987	S G N S W Q Y K T L A S R I L N E L K L	
UniRef90_G3AJC9	F G N T W N Y K T L A S Q I L N E M N L	
UniRef90_T5AMG0	T G N T W Q Y K N M A D Q I L R E L R L	
UniRef90_V6LC04	T G D A W V Y K E L C Q Q I L S G M G L	
UniRef90_M4BWW8	D G N A F T Y M N L C A Q I I T E L K	
UniRef90_E4YBN6	K G D A M L Y K R M A E D L L S	
UniRef90_M3IHZ4	S S D S F	
UniRef90_T1JSV7	K G D A W H Y K K I C E E I L R	
UniRef90_UPI000387293C	A G T A G A F R A T L A R V A G Q L Q L	
UniRef90_F2UJ64	R G D L E T Y A E I C T R I L D E M N L	
UniRef90_C4R4A2	L G N A W I Y K R L A S K L L Q E L N L	
UniRef90_M1W109		
UniRef90_M1W109		
UniRef90_G3U4A7	S G T S V A F K N F A S Q	
UniRef90_F0X9I7	S G N T W Q Y K S M A D H I L R E L R L	
UniRef90_A0A044TLN1	N G D A F L Y K K V C E Q V L	
UniRef90_D8Q7H7	G G D G W Q Y Q M L A R R V L T E L K L	
UniRef90_Q5AAI1	S S D S F	
UniRef90_U4TRY7	K G D S W C Y K R V C E Q V L A	
UniRef90_K3W6B9	D G N A F T Y M N L C A R I I T E L K	
UniRef90_E4ZMC4		
UniRef90_E4ZMC4		
UniRef90_L8G950	S	
UniRef90_L8G950	S	
UniRef90_F1A2Y8	E G Q L F V F F D I C S L L L E E L N L	
UniRef90_J0LJU0	S G D A W Q Y Q M L A R R V L T E L K L	
UniRef90_N1QN98	D G G T W Q Y K A M A Q K I L N E L R L	
UniRef90_D3B5B2	E G E I F I F F D I C S E L L T E L N L	
UniRef90_M5FXG0	S	
UniRef90_M5FXG0	S	
UniRef90_W9XXH0	Q G G M N Q Y R S M T S A I L N S L R L	
UniRef90_A0A016WZJ4	C G D A F L Y K K V C E Q I L R M A G L	
UniRef90_E9C1S1	A G E L W R Y K Q M T D R L T K D M N L	
UniRef90_F1Q5N2	W G A P L A F R H I A S Q I S K E V E L	
UniRef90_G8BYG3	S G N T W M Y K E L A S H I L S E L N L	
UniRef90_B8BT41	T G D A F S F M T L C A N I I T E L K	
UniRef90_J0D9I0		
UniRef90_J0D9I0		
UniRef90_I7LZH6	I G D T H K Y N E I C N N I L N	
UniRef90_W6MU17	T G N T W M Y K A L A G Q I L S E L N L	
UniRef90_UPI0004408287		
UniRef90_M2QGK7	S S D S	
UniRef90_B7FQE9	T G D A F S F M T L C A N I I T E L K	
UniRef90_Q0UMR9	D G G T W Q Y K N M A Q A I L Q E L R L	
UniRef90_J8LK02		

1 10 20 30 40  
UniRef90\_J8LK02 P R S L K G F F S V Q T T S S K P L P I V R Y K I M F V L R K K H I D F K E K  
UniRef90\_R7T0Q5 K P V Y L K G L F S V A T T S T K P P N V I K A D V K R V L D R M Q V Q Y R E T  
UniRef90\_K1VW00  
UniRef90\_M2MV71 W R R Q  
UniRef90\_C5DN11 P R S L K G F F S V Q T T S S K P L P I V R Y K I I S V L K K M N I E F K E K  
UniRef90\_W0T9S6 P R S L K G F F S V Q T T S S K P L P V V R Y K I I S T L K K L N I E F K E V  
UniRef90\_W0T9S6 P R S L K G F F S V Q T T S S K P L P V V R Y K I I S T L K K L N I E F K E V  
UniRef90\_C1FFL2 P R S L K G F F S V Q T T S S K P L P I V R Y K I I M F V L R D M N V Q W K K L  
UniRef90\_J5PAS9 P R S L K G F F S V Q T T S S K P L P I V R Y K I I M F V L R K M H I D F K E K  
UniRef90\_J5PAS9 P R S L K G F F S V Q T T S S K P L P I V R Y K I I M F V L R K M H I D F K E K  
UniRef90\_B8NJN8 K P V Y L K G L F S V S T T S S K P L P V I R A D I I R V L R Q L S V D Y D E I  
UniRef90\_B8NJN8 K P V Y L K G L F S V S T T S S K P L P V I R A D I I R V L R Q L S V D Y D E I  
UniRef90\_G4TPJ9  
UniRef90\_D5GG26 K R N R E R A D T S Y T N S  
UniRef90\_C5FHJ1  
UniRef90\_J7RNT6 P R S L K G F F S V Q T T S S K P L P I V R Y K I I T T L R R M H I E F K E V  
UniRef90\_F4PS85 P R S L K G F F S V Q T T S S K P L P I V R Y K I I S V L R R M N I D F K E R  
UniRef90\_A7TMR5 P R S L K G F F S V Q T T S S K P L P I V R Y K I I M F V L R K M H I D F K E K  
UniRef90\_P13185 P R S L K G F F S V Q T T S S K P L P I V R Y K I I M F V L R K M N I E F K E K  
UniRef90\_P13185 P R S L K G F F S V Q T T S S K P L P I V R Y K I I M F V L R K M N I E F K E K  
UniRef90\_K0KZH0  
UniRef90\_Q4WSZ7 P R S M H T P R S Q R R T S F V S N S E G S D E Y M A P R D S N A P A G E R V  
UniRef90\_A8PWS2 K P V F L K G L F S V Q T T S R R P R A I T R R D L I R V L E Q F G V H Y S E T  
UniRef90\_F4RGK0  
UniRef90\_G0V9H7 P D D I L T T S R I Q D M N K I E S D  
UniRef90\_C4JTW8 K P V Y L K G L F S V S T T S S K P L P F I R S D I I R V L K Q L G V E Y E I R  
UniRef90\_C4JTW8 K P V Y L K G L F S V S T T S S K P L P F I R S D I I R V L K Q L G V E Y E I R  
UniRef90\_C0RYG1 K P V F L K G L F S V S T T S S K P L P F I R A D I S R V L K Q L G V E F T E I  
UniRef90\_C0RYG1 K P V F L K G L F S V S T T S S K P L P F I R A D I S R V L K Q L G V E F T E I  
UniRef90\_S7RK70 K P V F M K G L F S V A T T S T K P P T V L K A D I R R V L D R M A V Q Y R E T  
UniRef90\_R1C2N6 P V A V Q R R W H L G V Q S S M S P A D M M L E I F R A L R V L Q F E W K I V  
UniRef90\_T2M3F2 R L L K T L S V D M T S A L G I E E T V A A V K H C L D R P E I D Y S Q S  
UniRef90\_H2KPU7 P R K I N W A F G I N I Q G D N S Q A L L R S L L R I L E Q K R I D Y V Y Q  
UniRef90\_U4LRC3 K P V Y L K G L F S V Q T T S S T K P L E I R R D I I R V L E Q L G V G Y R E I  
UniRef90\_J8PKV0 S S M S L E Y V Q Q Q V Q N I N D V S G Q S E Q N  
UniRef90\_G0WGT9 P R S L K G F F S V Q T T S S K P L P I V R Y K I I H V L K K Y H I Q F K E K  
UniRef90\_K1QKZ1 N I N L A S T R T V E D I L S E L K R I L Q I G N K  
UniRef90\_M7WMQ0 W M L G S T T T M A P P A V M A E I F R V L T A M G V A W K K L  
UniRef90\_C1N1Y6  
UniRef90\_J7S8T3 S S M S L D Y V Q Q D I L T T S R A Q N I N N V  
UniRef90\_P13186 P R S L K G F F S V Q T T S S K P L P I V R Y K I I S V L K D L N I Q F K E V  
UniRef90\_H2AQC7  
UniRef90\_UPI0004560934 P R S L K G F F S V Q T T S S K P L P I V R Y K I I S V L K R M H I D F K E K  
UniRef90\_S6E5A9 P R S L K G F F S V Q T T S S K P L P I V R Y K I I S V L K R M H I D F K E K  
UniRef90\_S6E5A9 P R S L K G F F S V Q T T S S K P L P I V R Y K I I S V L K R M H I D F K E K  
UniRef90\_G7DXF0  
UniRef90\_W5K1L3 A Q V V L A V R E A A R G C G C Q V S H A  
UniRef90\_C5DVH5 P R S L K G F F S V Q T T S S K P L P I V R Y K I I S V L K K M H I D F K E V  
UniRef90\_A9VBQ5 P R V L S Q A K S V D N V S T A P A E Q V Y D R I Q D A C A A L G L E C K E Q  
UniRef90\_W9X2D3 L Q Q N R G P D T H D  
UniRef90\_T1JFK1 S L Q V V L S E R I I S T T M H V Q E I L N Q L K Q A I E E K A P Q  
UniRef90\_M1CL76 R K I R F T S S L S P K Q L L E R I E N M V T Q M G F H V Q K R  
UniRef90\_B7QGX7 D L L R D I R R R L D A H A P R  
UniRef90\_Q016K3 W M L G T A S K M G A Q D V I N E L L R V L R A M N I A W K K N  
UniRef90\_S8CYN1 R K I R F T S N R S P E E L L E K I K S I V V L L G F H V H Q K  
UniRef90\_G5BKT9 R P R T T T N L F T K L T S K L T R R V T L D P S K R Q N S N R C V S G A S L  
UniRef90\_I1BTR9 K L R I H K G A V D Q D A L T S K A P N E I L F T I K D A L K S M G I S M K R V  
UniRef90\_W2S975  
UniRef90\_I1CTA2 T S R P P Q R I I K D V S H I L R V L G I E A D E D  
UniRef90\_UPI0002B44653 P R F A K G F Y K V S T T S T K P P N D V R R E L Q N T A L K E N N K I Y S E L  
UniRef90\_A0A022RY68 R K I R F T S T H S P K E L L E R I E N T V I Q M G F H V Q K K  
UniRef90\_I1C529 T S R P P Q K V I K E V S R I L R I L G I E A D E D  
UniRef90\_UPI000455DD03 R K I H H G P L D Q T T T T R P P P E V M A R V C A V L D E L G I E F K A E  
UniRef90\_U5FX62 R K I R F T S N H S M S D L L E K V I E D I V T E M G F R V Q K R  
UniRef90\_Q9LGV5 R K I R F T S T H S P K D L F D K I E N V V T E M G F Q V Q R  
UniRef90\_Q5BWW9 R T R S L R F M F R T E T A S R R Q I E E M M L D I K Q V L T K N N V D F E Q V  
UniRef90\_UPI0003F4901C H G V V D Q S T L S S R P P K E V M Q E V I N V L L E M G I D V K R E  
UniRef90\_L7LUW2 D L L L D I Q R R L D A H A P E V L Q P  
UniRef90\_ROF7Q0 T W T L G I Q S R G D P R E I M S E V F K A L R T L K V C W K K I  
UniRef90\_A0A024JQ66 S L K G L F S V Q Y K T H K P A T L L H T E L V R V L E A K S F E P T N K  
UniRef90\_V7B0Z6 R K I R F T S T H P P K D L E E R I E D I V T G M R C R V Q K K  
UniRef90\_Q9FLZ3 T W T L G L Q S T S Q G S P Y D I M T E I F K A L Q N E M K I C W K K I  
UniRef90\_MORU22 R K T R F T S T H S P K D L S D K I E D I V T E M G L E A Q K  
UniRef90\_W5AKT4 R K I K F T S A L P P K D L F D K I E E S A T Q L G F H V R A H  
UniRef90\_G7IQG8 R K I R F T S N H S P K D L T E K I E D I V T E M G F K V H K K  
UniRef90\_A0A059DBB7 R K I R F T S N H S A K D L L E R I E D T V T Q M G F R V Q K K  
UniRef90\_W9RWV1 R K I R F T S N H S A K E L I E R I E E I V T E M G F C V Q K K  
UniRef90\_G7JDP8 V E G K W S L G L Q S R A Q P R E I M T D V L K A L Q E L N V C W K K I  
UniRef90\_K3XHH5 R K I R F T S M H P P K D L F D K I E N V V T E M G F K V H R G  
UniRef90\_S2JV96 K P H K S R S R W H F G I R S K C P A W E V M L E I Y R S L Q N V G M E W R T L  
UniRef90\_B9S009 R K I R F T S N R S M K D L L Q K I E E T A T E M G F R I Q K K  
UniRef90\_M4C9Z3 W A L G L Q S R A H P R E I M T E V Q K A L Q E L N V C W K K I  
UniRef90\_UPI0002C3674B R K I R F T S N H S A K D L L E R I E E I V T E M G Y A V Q K K  
UniRef90\_V7CB12 R K I R F T S N L S V K D L I E R I E D T V T E M E F I V Q R K  
UniRef90\_F7BGN2 F L S S V N L S V A M P T V D I L C E Q R T L Q S R S I D Y K Q E  
UniRef90\_B7FL83 W A L G L Q S R A Q P R E I M T E V L K A L Q E L N V C W K K I  
UniRef90\_V4RF29 R K I R F T S N H S A K D L L E R I E D I V T E M G F R V Q K K  
UniRef90\_M0RG45 W A L G L Q S R A H P R E I M T E V L K A L Q E L N V R W K R I  
UniRef90\_A0A022PWH6 S Q A S P H Q T M L D V L N I F H S L N V R W K R I  
UniRef90\_P92958 W A L G L Q S H A H P R E I M N E V L K A L Q E L N V C W K K I  
UniRef90\_C4P7R3 T S M H S A K E I S K I E E T A K P L G L D V Q Q K  
UniRef90\_I1L1Y4 R K I R F T S H S P K D L V E R I E D I V T E M G F R V Q K K

UniRef90\_J8LK02 G G F V | C T Q R F T F N N A A T K K E D 50 60 70 80  
UniRef90\_R7T0Q5 K T G F E C I H M P S I D V S S L | P A P S A H G K R  
UniRef90\_K1VW00 M H G A N S P L C V R F E V F V V K V P W L P L H G I Q F R R V  
UniRef90\_M2MV71 A G E T S T H V Q N D M G S E S L L R F E I F V V K V P L I N V H G I Q F K K I  
UniRef90\_C5DN11 G G F V | C Y H K Q  
UniRef90\_W0T9S6 K G G F I C C C H R Q S  
UniRef90\_W0T9S6 K G G F I C C C H R Q S  
UniRef90\_C1FFL2 G P Y N L K C L C K P E R K E M Q V K F E I Q V Y K M K D D R Y M I D F Q R M  
UniRef90\_J5PAS9 G G F V | C C C T Q R F F S N N V V A K R E E V Q L T P R A S H H G I R R R Q  
UniRef90\_J5PAS9 G G F V | C C C T Q R F F S N N V V A K R E E V Q L T P R A S H H G I R R R Q  
UniRef90\_B8NJN8 K G G F S C C C H T P S I E I D K V V D V G P P S P D R Q G H H R R R I  
UniRef90\_B8NJN8 K G G F S C C C H T P S I E I D K V V D V G P P S P D R Q G H H R R R I  
UniRef90\_G4TPJ9 F E H T G A S E L V V R F E I M I V K V P L L P L H G I Q F R R I  
UniRef90\_D5GG26 D V S N E S M H D G V L G G S L I L Q F E I Y I V K V P L L A L H G V Q F K S V  
UniRef90\_C5FHJ1 Q T D T G A N L I L R F E I V I V K V P L F S L H G I Q F K K V  
UniRef90\_J7RNT6 K G G F I C V Q R Q P N I N  
UniRef90\_F4PS85 G P Y Q L R C R I T K N D R H I K L F L Q L F R V A D N R Y L L D I K K I  
UniRef90\_A7TMR5 G G F V | C C C T Q R F F S N N V V A K R E E I A Q I P G  
UniRef90\_P13185 G G F V | C C C M Q R F S S N N V A K R E  
UniRef90\_P13185 G G F V | C C C M Q R F S S N N V A K R E  
UniRef90\_K0KZH0 Q N A S N K A R T P L K F E I H V V K V P L V G L S G V H F K K V  
UniRef90\_Q4WSZ7 M G E T T T R V Q S D T G E N L V L R F E I L I V K V P L F S L H G I Q F K K V  
UniRef90\_A8PWS2 K S G F E C S Y Q A P L I E T  
UniRef90\_F4RGK0 G N F S K K T K D D L V V R F E I F I V K M P L L G I N G L Q F R R I  
UniRef90\_G0V9H7 G A S S N G N G A I G M S R T P L K F E I H I V K V R I V G L A G V H F K K V  
UniRef90\_C4JTW8 G G F S C R H A P S I D L K R V V E A R P P S P E Q Q G M V G G H R R R I  
UniRef90\_C4JTW8 G G F S C R H A P S I D L K R V V E A R P P S P E Q Q G M V G G H R R R I  
UniRef90\_C0RYG1 K G G F S C R H A P S I D L N R V V D V S P P S P D R Q G M H R R R I  
UniRef90\_C0RYG1 K G G F S C R H A P S I D L N R V V D V S P P S P D R Q G M H R R R I  
UniRef90\_S7RK70 R S G F E C C H I P S V D I S S V Q  
UniRef90\_R1C2N6 A Q Y S L K C M G Q E P M T R F K V K V G L Q L Y K I Q E D S Y L L D I R K V  
UniRef90\_T2M3F2 D S Y F S L Y K K G V Q V E I D I Q P I W N G S L S G V K M R R V  
UniRef90\_H2KPU7 N P Y R L Q C V Y Q N S Q S G L P I K W E L E I V Q L T R S K N Y G V R F R Y L  
UniRef90\_U4LRC3 K G G F V C V H R P S I D L K S V V E G G D E  
UniRef90\_J8PKV0 G A Y D N K E R P P I R F E I H I V K V R I V G L A G V H F K K V  
UniRef90\_G0WGT9 G G F I C I A R S H H A N F D T L  
UniRef90\_K1QKZ1 G R V V Q F S E N L F R E N S D V V Q M E L E V C Q G D S Y N G L Q V R R I  
UniRef90\_M7WMQ0 Q N K S D M I V R F E I F L V K M P L L G I H G L Q F R R I  
UniRef90\_C1N1Y6 G P Y N L K C L Y K M D K S N T R V K F E I Q V Y K M R D E R Y M V D F Q R M  
UniRef90\_J7S8T3 N T F D K L S V K F E I H I V K V K I V G L A G V H F K K I  
UniRef90\_P13186 N G Q T E Q T N T S G I K E R P P I K F E I H I V K V R I V G L A G V H F K K V  
UniRef90\_U2AQC7 K G G F I C I K N F N K N D K P  
UniRef90\_UPI0004560934 K T M N T A A T E L A V R F E I F V V K V P L L G V N G L Q F R R V  
UniRef90\_S6E5A9 G G F V C V Q K F P Q D K V E E V  
UniRef90\_S6E5A9 G G F V C V Q K F P Q D K V E E V  
UniRef90\_G7DXF0 P Q N E M I V R F D V F V V K V P W L G I H G L Q F R R I  
UniRef90\_W5K1L3 G P F L L R C S H E A P G S K V A F Q A E V C Q L T L G S A N G V R Y T R L  
UniRef90\_C5DVH5 K G G F V C V Q T F P Q D K S G E I A Q S E L  
UniRef90\_A9VBQ5 R P F L L R A N T T D K A V A F N V E V C Q L A D S E L R V V C M K R V  
UniRef90\_W9X2D3 G A A T R T R V Q E D S G E R L V L K F E I A I V K I P L L S L H G I Q F K K V  
UniRef90\_T1JFK1 L E C T Y S D K G F A V G V Q T E L E V C E G P C P S Y K G L K M R R I  
UniRef90\_M1CL76 H G R L K V M Q E Q K H K S P T L V V A E V F E I S P S L Y V V E L Q K S  
UniRef90\_B7QGX7 L P L V L Q P S E R G L A L I E H P V Q I E L E V C D G P R P D E R G L K M R R I  
UniRef90\_Q016K3 G P Y N M K C M C V F H P D N S V L K F F E L Q V Y K L P N D R L M V D Y Q R V  
UniRef90\_S8CYN1 N R K L K V M Q D R N G Q K R L G C F S V S A E V L E C P S L Y V V E L Q K E  
UniRef90\_G5BKT9 P Q G S K I R S Q T N L R E S G D L R S Q V E V C Q L P R P G L R G V L F R R V  
UniRef90\_I1BTR9 H D F K I K C I R P S K H Q P K V F E I A I V K I P L L S L H G I Q F K K V  
UniRef90\_W2S975 Q D D T G E R L V L R F E I A I V K I P L L S L H G I Q F K K V  
UniRef90\_I1CTA2 G P F V L K C T R R S S S K H K E I R F V V E I C R F K N L G L F I V D V K R L  
UniRef90\_UPI0002B44653 T R Y L F K C K C L D E R R N K L F V Q L E V F E I S P G L D T V N V D S R E L  
UniRef90\_A0A022RY68 N G K L K V M Q G K C Q K S P G C L V A A E V F E I S P S L Y V V E L R K A  
UniRef90\_I1C529 G P F V L K C S R R S I D N G E E I R F I V E I C R F K N L G L F I V N V K R L  
UniRef90\_UPI000455DD03 S E F K Y R C V Q Q Q D A G D E V R F S V E L T R I I D R L D T V S I D I R R L  
UniRef90\_U5FX62 G R F Q V I Q E H R G K Q S S G S L S V A T E V F E I S P S L Y V V E L R K S  
UniRef90\_Q9LGV5 G N S K L K V M K N G R G S K N L F L V C T E V V E L S G P S L Y V V E L K K S  
UniRef90\_Q5BWW9 G D L K L Q C V Y G D P S R H G V V H W E M E L C R I K N R  
UniRef90\_UPI0003F4901C N E F K L R C D I H S V D S G D E V K F H V E L C C R I K N L G L Y S L T I K R I  
UniRef90\_L7LUW2 S E R G L A L K H P A A G I V Q I E L E L C D G P H P D E C G L K M R R I  
UniRef90\_R0F7Q0 G L Y N I K C R W S T M T P N S I K F E L Q L Y K V G E S K F L D I Q R V  
UniRef90\_A0A024JQ66 G S C T F Q C S V V I S E R P S S G N E F E V A I V R I P L L S L Y G L Q F S K  
UniRef90\_V7B0Z6 N G L L K V I Q D I K A Q K G S L S V I I E V F E I S P T L Y V V E L S K S  
UniRef90\_Q9FLZ3 G L Y N I K C R W V R S F A P T V I K F E L Q L Y K V R E G K Y L L D I L R I  
UniRef90\_M0RU22 G H G K L K V G T K S K D S K S S L S A A A E I L K L S P S L H V V E L R R I  
UniRef90\_W5AKT4 S K L K I T G N C N G P N N S A F L V C A E V F E V S G P S L Y V V E L R K S  
UniRef90\_G7IQG8 N G K L K V I Q E D K A H K S L L S V A A E V F E V S G P S L Y V V E L R K S  
UniRef90\_A0A059DBB7 N G R L K V M Q E Q K S Q R S P G L S V A A E V F E I S P S L Y V V E L R K S  
UniRef90\_W9RWV1 N G R L V T Q E H K G Q K S P G S L S V A A E V F E I S H S L Y V V E L R K S  
UniRef90\_G7JDP8 G P Y N M K C I W T V V P K S T R V K F E L Q Y K T E E K Y L L D I Q R V  
UniRef90\_K3XHH5 P S K L L K N C K S K N S R N P S K F L V E V F E I S G P S L Y V V E L R K S  
UniRef90\_S2JV96 D P Y H L R C R Y K Y E N L G L V V K F D L Q L Y K L E N N S Y L V D F K  
UniRef90\_B9S009 N G K L K V V Q E R K E Q S S L S V A A E V F E I S P S L H V V E L Q K S  
UniRef90\_M4C9Z3 G P Y N I K C R W V P N N A D N V V K F E T Q L Y K T Q D G K Y L L D I Q R V  
UniRef90\_UPI0002C3674B N G R L K V M Q E N K G Q R N G S L S V A A E V F E I S P T L H V V E L R K S  
UniRef90\_V7CB12 N G K L K V S W E N K V K T V G C V T V E V F E I S L S L Y V V E L R K S  
UniRef90\_F7BGN2 S E L K F A L R K S N V C L E M E V F E G I L Q Q N C L K I R K L  
UniRef90\_B7FL83 G P C N M K C R W E A V P K T T V V K F E L Q L Y K T Q E K Y L L D I Q R L  
UniRef90\_V4RF29 N G K L K A T Q E H K P Q K S G S L S V A A E V F E I S P S L Y V V E L R K S  
UniRef90\_M0RG45 G H Y N M K C Q Y I P G F S D H A V K F E I Q L Y K T E R E E K Y L L D I Q R V  
UniRef90\_A0A022PWH6 D N Y N L K C L W L P L R S N D A I K F E I Q L Y K A T E E F Y V V D L Q Q L  
UniRef90\_P92958 G H Y N M K C R W C A M T S P T V I S K F E L Q L Y K A R E E K Y L L D I Q R V  
UniRef90\_C4P7R3 Q N F K M K L R K S S L G K S F L I S T E V F E I S P S L Y V V E L R K S  
UniRef90\_I1L1Y4 N G M L K V I Q E I K V I Q K P G S F S V E A E V F E I S P S L Y V V E L R K S



UniRef90\_J8LK02  
UniRef90\_R7T0Q5  
UniRef90\_K1VW00 G G D G W Q Y Q Q L A K T I L R E M R L  
UniRef90\_M2MV71 D G G T W Q Y K E M A Q R I V Q E L R L  
UniRef90\_C5DN11  
UniRef90\_W0T9S6  
UniRef90\_W0T9S6  
UniRef90\_C1FFL2 D G G V M S C M D M A A A V S R Q L R L  
UniRef90\_J5PAS9  
UniRef90\_J5PAS9  
UniRef90\_B8NHN8  
UniRef90\_B8NHN8  
UniRef90\_G4TPJ9 S  
UniRef90\_D5GG26 S G D G W Q Y H M L A R R V L T Q L R L  
UniRef90\_C5FHJ1 S K N T W Q Y K S L A S R I L A E L R L  
UniRef90\_J7RNT6 S G G M W Q Y R E M A K K I L D N L R L  
UniRef90\_F4PS85  
UniRef90\_A7TMR5 E G E I F I F F D I C S D L L T E L S L  
UniRef90\_P13185  
UniRef90\_P13185  
UniRef90\_K0KZH0 L G N T W M Y K A L A G Q I L N D L N L  
UniRef90\_Q4WSZ7 S G G M W Q Y R E M A K K I L D A L R L  
UniRef90\_A8PWS2  
UniRef90\_F4RGK0 S G N V W Q Y Q T F A K R I L Q E L K L  
UniRef90\_G0V9H7 S G N T W L Y K E L A S H I L K D L N L  
UniRef90\_C4JTW8  
UniRef90\_C4JTW8  
UniRef90\_C0RYG1  
UniRef90\_C0RYG1  
UniRef90\_S7RK70  
UniRef90\_R1C2N6 D G D V L P F M D V C S L L L S E L K L  
UniRef90\_T2M3F2 G G D K W A Y K K M R D D I L S G L  
UniRef90\_H2KPU7 S G D Q S Q Y R I L E K S I  
UniRef90\_U4LRC3  
UniRef90\_J8PKV0 S G N T W L Y K E L A S Y I L K E L N L  
UniRef90\_G0WGT9  
UniRef90\_K1QKZ1 S G D K G H Y R Q L C H D L L S G I N L  
UniRef90\_M7WMQ0 G G D A W Q Y Q M L A R R V L Q E M K L  
UniRef90\_C1N1Y6 D G G V M T C M D A A A Q L M K N L Q L  
UniRef90\_J7S8T3 S G N T W V Y K E V A S K F L E E L K L  
UniRef90\_P13186 S G N T W L Y K E L A S Y I L K E L N L  
UniRef90\_H2AQC7  
UniRef90\_UPI0004560934 A G N P W Q Y Q M L A K R I L Q E L K L  
UniRef90\_S6E5A9  
UniRef90\_S6E5A9  
UniRef90\_G7DXF0 T G D P W Q Y S Q L A R R V L S E L R L  
UniRef90\_W5K1L3 W G A P L A F R H I A S Q I S K E V E L  
UniRef90\_C5DVH5  
UniRef90\_A9VBQ5 K G D T F L Y Q K V  
UniRef90\_W9X2D3 Q G G M N Q Y R S M T S A I L N A L R L  
UniRef90\_T1JFK1 S G D N S K Y S Q L C Q E L I T C M N  
UniRef90\_M1CL76 S G D S T V Y R Q L C N R L S N D L  
UniRef90\_B7QGX7 S G D S L Q Y S Q L C H Q L V A C M N M  
UniRef90\_Q016K3 E G G V M V A L D F A A K L M T F M N L  
UniRef90\_S8CYN1 T G D P I I Y R Q L C K I L S N E L  
UniRef90\_G5BKT9 A G T A L A F R T L V T R I S N D L E L  
UniRef90\_I1BTR9 R G N I W A Y K F L Y H T L L N L L D L  
UniRef90\_W2S975 Q G G M N Q Y R S M T G T I L S S L R L  
UniRef90\_I1CTA2 K G S V W A Y K F L Y H K L I D F L N L  
UniRef90\_UPI0002B44653 K G S I H N L K F L A E N E V N E V K  
UniRef90\_A0A022RY68 Y G D P I V Y R E L C N K L S D E L  
UniRef90\_I1C529 K G N V W A Y K F L Y H K L I D F L D L  
UniRef90\_UPI000455DD03 K G N L R S Y K F L Y D T L  
UniRef90\_U5FX62 Y G D S S A Y R Q L C T K L S N D L  
UniRef90\_Q9LGV5 H G D P I L Y R Q L C E R L S D E L  
UniRef90\_Q5BWY9  
UniRef90\_UPI0003F4901C K G S V W S F K F I Y Q T V V E  
UniRef90\_L7LUW2 S G D S L Q Y S E L C Q R L V A C M N M  
UniRef90\_R0F7Q0 D G P Q F I F F D L C V A F L R E L  
UniRef90\_A0A024JQ66 P G N A S S W K K L V K E I V S G I R L  
UniRef90\_V7B0Z6 C G D A S A Y R Q L C Q K L S N E L  
UniRef90\_Q9FLZ3 D G P Q F I F F D L C V A F L R E L  
UniRef90\_M0RU22 D G D S S L Y R K M C A K L S E E L  
UniRef90\_W5AKT4 Q G D T A V Y R E L C D R I S S D L  
UniRef90\_G7IQG8 Y G D A S V Y R Q L C K R L S N D L  
UniRef90\_A0A059DBB7 H G D S T V Y R Q L C K R L S N E L  
UniRef90\_W9RWV1 Y G D A S V Y R Q L C K R L S N D L  
UniRef90\_G7JDP8 E G P Q F A F L D L C A S F L E R L H V  
UniRef90\_K3XHH5 H G D S T L Y R Q L C E R L S D E L  
UniRef90\_S2JV96  
UniRef90\_B9S009 N G D P S V Y R Q L C K K L S N D L R L  
UniRef90\_M4C9Z3 H G A Q F L F L E L C A A F L T Q L R V  
UniRef90\_UPI0002C3674B Y G D P S A Y R Q L C K K L S N E L  
UniRef90\_V7CB12 C G D A S V Y K Q L C N K L S N D L  
UniRef90\_F7BGN2 A G D N L E Y N Q L C R E L L S G M K L  
UniRef90\_B7FL83 E G P Q F L F L D L C A A F L A Q L R V  
UniRef90\_V4RF29 Y G D P T V Y R Q L C N K L S S D L G L  
UniRef90\_M0RG45 S G S Q L L F L D L C A A F L A Q L R V  
UniRef90\_A0A022PWH6 S G S P F L F L N I C A  
UniRef90\_P92958 N G P Q F L F L D L C A A F L T E L R V  
UniRef90\_C4P7R3 E G D T L E Y R T F Y K S L S S L K  
UniRef90\_I1L1Y4 C G D A S L Y R Q L C K K L S N D L

1 10 20 30 40

UniRef90\_M8BLH9 WA L G L Q S R A H P R E I I T E V L K A L Q E L N V C W K K I

UniRef90\_W5DSC3 T S D K P A S A I I S K L E Y V A K A L N L R V R K K I

UniRef90\_J3M950 WA L G L Q S R A H P R E I I T E V L K A L Q E L N V C W K K I

UniRef90\_Q8LIG4 T S A H P P K D L F D K I E V I A T Q S G F H V Q R A I

UniRef90\_W4ZXD0 R K I R F T S N G S A K D L L E R I E E A A N L L G F L I Q K

UniRef90\_E5GC46 R K T R F T S N G S A K D L L E R I E E A A N L L G F L I Q K

UniRef90\_W4MLJ8 WT L G L Q S Q A H P S E I M M E I L K T L Q D L D I N W K T V

UniRef90\_A9RBZ5 G S WA V G L Q S Q A H P S E I M M E I L K T L Q D L D I N W K T V

UniRef90\_M4DCB1 R Q I R F M I R F T S N R L A T D V M E K I K T I L M E M G F C V I Q K

UniRef90\_V4KHS7 I R F T S N R L A T D V M E K I K T I L M E M G F C V I Q K

UniRef90\_S8E449 T S R S R P Q E L M A Q I L A V L Q G L N V R W K K I

UniRef90\_Q75L42 R R I R F T S T H P P K D A F D K I E S S A T E L G F Q V Q R

UniRef90\_K3Z5X8 R K I R F T T T H P P E D L F D K I E R S A S E M G F Q V Q R

UniRef90\_F6T684 K P L A V K A K W H L G I R S Q S R P G D I M A E V Y R A M R Q L G F Q W K V V

UniRef90\_G7JR06 R K I R F T A N L S A K V L M E K I E D S V T E M E F R V K K N

UniRef90\_G4V6Z8 T S N Y S E K D L L E R I I E D I V T E M G F R V Q K K I

UniRef90\_W1P2Y1 WT L G L Q S Q A H P R E I M S E I F K A L Q N L K V S W K M I

UniRef90\_V4NL25 R K I R F T S R A L P P K D L F N K I E V T A T Q S G L H V Q R V

UniRef90\_M7ZFK7 WA L G L Q S R A H P R E I M T E V L K A L Q G L N V R W K K I

UniRef90\_Q40544 R K I R F T S N H S P P K H L F E K I E N I V T E M G F Q V Q K G

UniRef90\_M0S2V8 T E R P P K Y E V F I V V K Q T L V S M G I E I K R E

UniRef90\_U9UHU7 WA L G L Q S R A Q P R Q I M T E V L K A L Q E L N V C W K K I

UniRef90\_D7SXG2 T S K S S P K E I V R K L E E A A K P L G F D V Q K

UniRef90\_M0Z1K4 T T T K S S M I M S K F E Q L A M A E S V S F K K K

UniRef90\_A0MNJ8 WA L G L Q S R A H P R E I M T E V L K A L Q E L N V S W K K I

UniRef90\_K3XGE5 G K W A L G L Q S R A H P R D I M M K V L K V L Q E L N V C W K K I

UniRef90\_UPI0002B4252B P V K R A K W H L G I R S Q S K P N D I M N E V Y R A M K A L N F E W K I V

UniRef90\_UPI00046C2104 S T K D L C N V S T T Q C N D P E Y V I T E L S K A F Q K K G F E C V R K

UniRef90\_M4EWA4 WA L G L Q S Q A H P R E I M N E V L K A L Q E L N V C W K K I

UniRef90\_Q38997 WA L G L Q S R A H P R E I M T E V L K A L Q D L N V C W K K I

UniRef90\_J3PTI5 K P K P L K A K W H L G I R S Q S K P Y D I M A E V Y R A M K Q E L D Y E W K V A

UniRef90\_H3A9U2 WA L G L Q S R A Q P R E I M I E V L K A L Q E L N V C W K K N

UniRef90\_W5E3N5 S R L N S E A I L G R V K Q I I D A R A P P

UniRef90\_UPI00046D6DFB T S Q C P P E E I I S R I E E A A K P L G F D I Q K

UniRef90\_M7Z793 WA L G L Q S R A H P R E I M T E V L K A L R E L N V C W K K I

UniRef90\_A0A059AE48 M W L V G L Q S R A N P K E I M N Q V L G T L L E L N V R W K K I

UniRef90\_M1CA53 WA L G L Q S R A H P R E I M T E V L K A L Q E L N V S W K K I

UniRef90\_B9H0G4 R S R W H L G M R S R N R P A E I M G E V Y R S L E A L N L Q W K V I

UniRef90\_A9UQM5 T S K C P A N E I V T K I E A A A A P M G F D V K K

UniRef90\_M4D2T0 R K I R F A S N L S V T S V Y P A K D I V H K I E E T V R A M G F Q V Q R K

UniRef90\_I1MRYS R K T R F S K L H A N D I L E M V K R T I H D Q I Q P K Q L

UniRef90\_D5ACS1 T S T K P A N E I L S T I E K A A K P L G F N V Q K

UniRef90\_U4UQF1 T S N H A P K H L F N K I E D I A T E M G L Q A H R

UniRef90\_A9RKW0 R K I R F T M S R A H P R E I M T E V L K A L Q E L N V C W K K I

UniRef90\_M0TPE5 T S K C P A N E I V S K I E Q A A I P M G F D V K K

UniRef90\_B9SVJ9 WA L G L Q S R A H P R E V M T E V L K A L Q E L N V Y W K K I

UniRef90\_S8CT67 P E A V Q R R W H L G V Q S S M S P A D M M L E I F R A L R V L Q F E W K I V

UniRef90\_W5D7X1 K G A F N L K C T T N R D P P E R L V E D L K K F M N Q M Q I K L Q Q N

UniRef90\_R1DGR9 WA L G L Q S R A Q P K E I M T E V L K A L Q E L N V A W K K I

UniRef90\_A0D4T8 T S D K P A S A I I S K I E D V A K M L N L R V R K K

UniRef90\_W1NU23 P V K R A K W H L G I R S Q S K P N D I M N E V Y R A M K A L N F E W K I

UniRef90\_K3ZIG7 M K I T S S M E P D K M M W E K E R V L D A S S S V Q A

UniRef90\_A5BJJ8 R E I R F T S K C P A N E I I N K I E E A A K P L G F D V Q K

UniRef90\_E2C5L6 S F T S K H P P N E I M S K I E E A A K P L G F N V H K R

UniRef90\_L5KYC7 R K I R F T T N Q Y S T K E D I F K Q I E F L V T E M G F L I H K K

UniRef90\_G7E7V6 K P K S L K A K W H L G I R S Q S K P Y D I M A E V Y R A M K Q L D F E W K V V

UniRef90\_V7BJM6 T S K L P A N E I L S K I E E A A K P L G F E A R K

UniRef90\_A0A022QU00 K R R W Y L G I Q S K K D P A H V M T E V Y K A L Q L R C E W S A V

UniRef90\_UPI0002B4CFEB K A K W H L G I R S Q S K P H D I M S E V Y R A M K Q L N Y E W K M V

UniRef90\_G3GTJ7 S Q R T P Q E I M S K I E E A C G P L G F N V R K

UniRef90\_M0STR6 L R F T S T C P P R E I I H R I E E A A T T L G F S V Q K

UniRef90\_W7TMX0 T S T Q P A S S I M S K L E E I A S L F R F S F K K S

UniRef90\_C3YCL4 T S R W S A S E I M A K I E G I G K E I N M K V K K T

UniRef90\_H3ESX9 T S Q K P A S S I V I S K L E E V A Q R L K L S I R K R

UniRef90\_M0XS06 T T V Q Y E D L V V R L K Q S V F E K L R I K A D S S

UniRef90\_K3ZJ44 R K I R S M F S N Y P A Y L F E K I E S L V R K M G F Q V H K S

UniRef90\_V4K3J1 T S K C P A K E I I K K I E E A A K P L G F D I K K K

UniRef90\_M4CEM3 M R F M T S R S S A T E V M E K I E T V T K E M N M K V K R T

UniRef90\_A8BU43 T S K R P A S S I I S K L E E I A K S L R L K M M K K

UniRef90\_B4FXT1 R A K W H L G I R S Q S R P T D I M N E V Y R A M K A L N F Q W K V

UniRef90\_M0SD51 S R L P A N E I L S K I E E A A G P M G F N V Q K

UniRef90\_Q9LEU7 R P K W H L G I R S Q S E P N D L M S E V Y R A M V T L G Y E W K V V

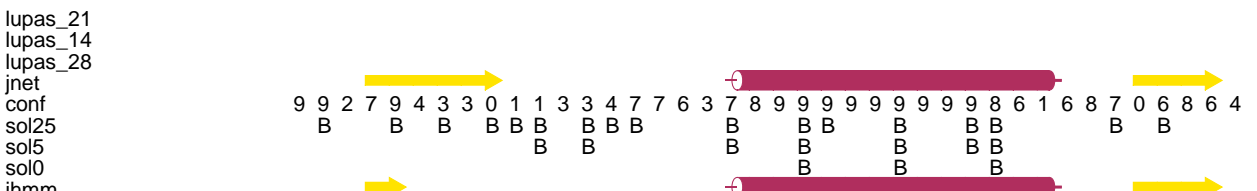
UniRef90\_V7B5E8

UniRef90\_V4V0H8

UniRef90\_J9JY44

UniRef90\_Q6ZLP5

UniRef90\_A7SJE6



Multi-sequence alignment of UniRef90 proteins. The alignment is shown in columns with residue positions 50, 60, 70, and 80 indicated above. Each sequence is listed on the left with its UniRef90 ID. Residues are color-coded: red for conserved, green for semi-conserved, blue for non-conserved, and yellow for gaps. Conserved residues are highlighted in yellow boxes. The alignment shows a high degree of conservation, particularly in the regions indicated by the yellow boxes.

Annotations at the bottom of the page:

- lupas\_21
- lupas\_14
- lupas\_28
- jnet
- conf
- sol25
- sol5
- sol0
- jhmm

Below these annotations is a sequence of numbers and letters: 8 7 2 7 8 9 8 5 1 6 7 7 7 7 7 7 3 5 7 8 7 4 1 5 7 4 1 7 8 8 6 3 1 8 8 7 5 6 5 2. Below this sequence are several horizontal arrows pointing to the right, indicating specific regions or features. Some letters (B) are placed below the numbers, likely corresponding to specific residues in the alignment above.

UniRef90\_M8BLH9 S G P Q L L F L D L C S A F L T Q L R V

UniRef90\_W5DSC3 S G D P L E Y R E L L E D I R P A L K R V

UniRef90\_J3M950 S G P Q L L F L D L C S A F L T Q L R V

UniRef90\_Q8LIG4 K G D T L E F Q K F Y Q T L S T Q L K

UniRef90\_W4ZXD0 H G D T A V Y K K L C D R I S S D L

UniRef90\_E5GC46 F G D S S A Y R Q L C C E R L S S D L

UniRef90\_D7MJL8 D G H Q F I F L D L C C A D F L L E L

UniRef90\_A9RBZ5 D G P T F L F M D L C C T A F L A E L

UniRef90\_M4DCB1 H G D S S L Y K Q L C E R L L N E L

UniRef90\_V4KHS7 H G D S F L Y K E L Y E R L L N E L

UniRef90\_S8E449 S G P I F L F L D F C A S F L K Q L

UniRef90\_Q75L42 N G D P A L Y R Q L C C E R I S S D M

UniRef90\_K3Z5X8 H G E P A L Y R Q L C C E R I G S D L

UniRef90\_F6T684 D G E T

UniRef90\_G7JR06 Y G D A S V Y R Q L C K K L L N D L

UniRef90\_G4V6Z8 D G D L R H L R S I E K S L T G Q L

UniRef90\_W1P2Y1 H G D A D L Y R K L C C T K L S D H L

UniRef90\_V4NL25 T G A H F V F L K L C L A L L K E L H V

UniRef90\_M7ZFK7 H G D P A V Y R Q L C C D R I S G D L

UniRef90\_Q40544 Q G P Q F L F L D L C A A F L A Q L R V

UniRef90\_M0S2V8 Y G D S T L Y R Q L C T K L S G D L

UniRef90\_U9UHU7 K G N L W G Y K F L Y H T L L E K L D L

UniRef90\_D7SXG2 Q G P Q F L F L D L C A A F L A Q L R V

UniRef90\_M0Z1K4 K G D T L E F H K F Y K N L S N T L K

UniRef90\_A0MNJ8 S G D S F E Y K E F C D H E L K

UniRef90\_K3XGE5 S G P Q L L F L D L C A A F L A Q L R V

UniRef90\_UPI0002B4252B Q G P Q F L F L N L C C A T F I S Q L R V

UniRef90\_F4WKU5 S S H T M E F F E M C A A L I T Q L

UniRef90\_UPI00046C2104

UniRef90\_M4EWA4 N G P Q F L F L G L C A A F L T K L R V

UniRef90\_Q38997 Q G P Q F L F L D L C A A F L A Q L R V

UniRef90\_J3PTI5 S G N A W Q Y Q T

UniRef90\_H3A9U2 D D D I M E Q K S

UniRef90\_W5E3N5 T G P Q L L F L D F C A A F L T N L R V

UniRef90\_UPI00046D6DFB S G D Q L Q Y S Q L C Q Q L I S

UniRef90\_M7Z793 K G D T L E F Q K V

UniRef90\_A0A059AE48 Q G P Q F L F L D L C A A F L A Q L R V

UniRef90\_M1CA53 S G P Q F L F L D F C A G F I R Q L E

UniRef90\_B9H0G4 Q G P Q F L F L D L C A A F L A Q L R V

UniRef90\_A9UQM5

UniRef90\_M4D2T0 G G D T L E F H K F Y K N L T T G L K

UniRef90\_I1MRYS Y G D G S V Y K Q L C N K L L N D L

UniRef90\_D5ACS1 A G D I A Q Y R Q L C I K L S S D L S L

UniRef90\_U4UQF1 S G D H L V Y S Q L C Q Q L I S C M

UniRef90\_A9RKW0 G G D T L E Y H N F Y R D L S K G L Q

UniRef90\_M0TPE5 Q G D S S L Y R K M C A K L S E N L

UniRef90\_B9SVJ9 Q G P Q F L F L D L C A A F L A Q L R V

UniRef90\_S8CT67 G G D T L E F H K F Y K D I S T G L K

UniRef90\_W5D7X1 S G P H L L F L D L C A A F L A Q L R V

UniRef90\_R1DGR9

UniRef90\_A0D4T8 S G D W N T Y Q E T L N K L I Q L L H

UniRef90\_W1NU23 Y G P F L F L D L C A A F F A Q L R V

UniRef90\_K3ZIG7 S G D S L E Y Q K L F E E

UniRef90\_A5BJJ8 S G D T L E Y Q K L V K Q

UniRef90\_E2C5L6 S

UniRef90\_L5KYC7

UniRef90\_G7E7V6 K G Q L W G Y K Y I Y Q H M L D K L N L

UniRef90\_V7BJM6 K G D T L E F L K F Y N K L S T C L E

UniRef90\_A0A022QUD0 G G D T L E F H K V C

UniRef90\_UPI0002B4CFEB H G D S S S F R Q L C N I L S S D L

UniRef90\_G3GTJ7 D V L Y G K N F R I L K E L

UniRef90\_M0STR6 K G D T L E F H K F Y K S L S T S L K

UniRef90\_W7TMX0

UniRef90\_C3YCL4 S

UniRef90\_H3ESX9

UniRef90\_M0XS06 G G D T L E F H S F Y Q N F S S E L K

UniRef90\_K3ZJ44 E G D T L E F H K F Y K D L S K T L K

UniRef90\_M1CU55 S G D A I D Y Q N M L T Q T I R

UniRef90\_D5ABG2 G G D T L E Y S K F C S Q

UniRef90\_V4K3J1 A G D T L E Y N R L Y E E

UniRef90\_M4CEM3 N G D T L E Y Q K L V K E

UniRef90\_A8BU43 S G D G A T Y K E I G Q I V F K G L K L

UniRef90\_B4FXT1 S G D C S L Y R K L C E T L S E D L

UniRef90\_M0SD51 K G D T L E F Q K F Y R S L S T Q L K

UniRef90\_Q9LEU7 A G D T L E Y D R L Y E E

UniRef90\_V7B5E8 N G D T M E Y Q K L F T Q

UniRef90\_V4V0H8 N G D T L E Y K K L L K D

UniRef90\_J9JY44 T N D

UniRef90\_Q6ZLP5 N G D T L E F H K F Y H N I S N G L K

UniRef90\_A7SJE6 S

lupas\_21

lupas\_14

lupas\_28

jnet

conf 6 8 5 6 8 9 9 9 9 9 9 9 9 9 9 8 7 3 8 9

sol25 B B B B B B B

sol5 B B B B

sol0 B B B

jhmm

